U.S. Department
of Transportation
**Federal Highway Administration**

**Illinois Division**

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Springfield, IL 62703
(217) 492-4640
www.fhwa.dot.gov/ildiv

November 10, 2015

In Reply Refer To:
HB-IL

Mr. Kensil Garnett
Deputy Director of Highways
Region 3 Engineer, District 5
Illinois Department of Transportation
13473 IL Highway 133, P.O. Box 610
Paris, IL 61944-0610

Subject: Interstate-57 at Interstate -74 Interchange Reconstruction,
Final Approval of Interstate Access Revision

Dear Mr. Garnett:

The Interstate 57 (I-57) at Interstate 74 (I-74) system interchange project (P-95-030-11) includes reconstruction of the existing cloverleaf interchange to a semi-directional interchange to improve safety and traffic flow on I-57 and I-74. An Access Justification Report (AJR) was prepared and conceptually approved on May 4, 2015.

The project's Environmental Assessment was approved on April 23, 2015, and the Federal Highway Administration (FHWA) issued a Finding of No Significant Impact (FONSI) on July 9, 2015. Additionally, FHWA issued design approval of the Phase I report on October 16, 2015.

As documented in the approved FONSI and Phase I report, conditions detailed in the AJR have not changed substantially. Therefore, FHWA grants final approval of the I-57 at I-74 Interstate access revision. A reevaluation of the AJR must be coordinated with FHWA if the project has not progressed to construction by May 4, 2023.

Sincerely,

Catherine A. Batey
Division Administrator

ecc: Mr. John Baranzelli, Bureau of Design and Environment, IDOT
Mr. Vince Madonia, Bureau of Design and Environment, IDOT
Ms. Scott Neihart, District 5, IDOT
Mr. Rustin Keys, District 5, IDOT

# Combined Design Report

VOLUME 1 OF 3

## Interstate 57 and Interstate 74

Section 10(5-1-RS-1, 14-1, 6)R
Job No. P-95-030-11

Champaign, IL
Champaign County



**September 2015**

Prepared For:

Illinois Department of Transportation

**Region 3 – District 5**

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Illinois Department of Transportation

# Phase I Report Approval

Key Route: Federal-Aid Interstate 57&74 Marked Route/Road Name: I-57 at I-74

F.A. Route: FAI 57 & 74 Job Number: P95-030-11 Contract No.: * See Funding Breakdown Sheet

Section: 10(5-1-RS-1,14-1,6)R Project Length: 1.95 miles I-57; 2.66 miles I-74

PPS No.: * See Funding Breakdown Sheet

Location/Limits: From the Norfolk Southern Railroad to Olympian Drive on I-57 and from North Duncan Road to North Prospect Avenue on I-74

County: Champaign

**General Description of Existing Facility**: The existing facility, constructed in 1965, is a full conventional cloverleaf interchange that connects Interstate 57 and Interstate 74 in Champaign County. Each of these interstates consists of four lanes of concrete pavement with multiple hot-mix asphalt overlays. Both I-57 and I-74 have open grass medians which are typically 64 feet and 40 feet in width, respectively. The adjacent section of I-74 to the east has a closed paved median with concrete barrier wall separating the two directions of travel.

I-74 and I-57 both have a regulatory speed limit of 70 mph. The interchange loop ramps and the outer wrap-around connection ramps have regulatory speed limits of 25 mph and 30 mph, respectively.

Structures 010-0018 and 010-0019 carry I-74 EB and I-74 WB over I-57, respectively. They are both 4 span composite structures, 261'-2" in length, with 7.5" reinforced concrete decks on continuous steel girders. Their substructures consist of concrete open abutments and columnar piers on spread footings. Current NBIS ratings for the decks, superstructures, and substructures are 6, 7, and 6, respectively. The sufficiency rating of the two structures is 95%. Minimum vertical clearance on I-57 is 16'-2" and minimum horizontal clearance on I-74 is 50'-1".

**Need for Proposed Improvement**: The purpose of the proposed improvement is to address operational, safety and capacity deficiencies of access at the I-57 and I-74 interchange. The project is needed because: I-74 operates at a level of service D for capacity during peak traffic flow; the design speed of the interior loop ramps is deficient which limits capacity and contributes to crashes due to speed difference; and limited weaving lengths have caused a section of I-74 to become a 5% crash location.

Design Policies Used: ☒ New Construction ☒ Reconstruction ☐ 3R ☐ Other _____

**General Description of Proposed Improvement**: The proposed improvement will consist of constructing a semi-directional interchange as shown on the approved Interchange Design Study (IDS) included within the Combined Design Report. I-74 will provide a total of 6 lanes throughout the proposed limits of improvement. There will be a 60' open grass median for the majority of I-74. The median on I-74 east of I-57 and near Mattis Avenue will be a closed paved median with concrete barrier wall to provide route continutity with existing conditions. Reconstruction of the Mattis Avenue structure over I-74 will be required. A minimum vertical clearance of 16'-9" will be provided at all overhead structures.

Due to the close proximity of the I-57/Olympian interchange, auxillary lanes will be constructed on I-57 between the I-57/I-74 interchange and the Olympian Drive interchange. The proposed structures carrying I-74 over I-57 will be constructed to allow for future lanes on I-57. Reconstruction of the I-57/US 150 (Bloomington Road), I-57/Mattis Avenue, and I-74/Mattis Avenue structures will also be required.

Retaining structures, lighting, and signing will also be required on both interstate routes.

Approximate Amount of ROW to be Purchased: 15 Parcels Totaling 46.7 Acres.

Number of Businesses 0 and Residences 0 to be acquired. ROW Cost: $ 4,550,000 *

Estimated Program Cost: $ 149,125,000 * (in FY 20 & 21 ) Fund Type: Major Bridge

Construction Cost: $ 140,000,000 Utility Reloc. Cost: $ 2,000,000 * Consultant PE Cost: $ 6,500,000 *

*See Funding Breakdown Sheet

Design Exceptions:

- Level One Required? ☐ Yes ☒ No
- Level Two Required? ☒ Yes ☐ No
- If yes, note date approved: 5/20/2015

☐ Categorical Exclusion I Action

☐ Categorical Exclusion II Action

☒ Environmental Assessment

Type of Public Involvement Activity:

- Public Hearing Offered? ☒ Yes ☐ No
- Informational Meeting Held? ☒ Yes ☐ No
- Property Owners Contacted? ☒ Yes ☐ No

FHWA FONSI Approval

—
FHWA Representative Signature — Date 7/9/15

FHWA Design Concurrence

FHWA Representative Signature — Date 10/16/15

Regional Design Approval

Kensil A. Garrett CME
IDOT Regional Engineer Signature — Date 10/13/15

BDE Design Approval

N.A.
IDOT Representative Signature — Date

## Funding Breakdown

**Contract 70897 – FAI 74**

PPS 5-52954-0000 - $110,000,000 Construction (Major Bridge Fund) – FY OUT
PPS 5-52954-0400 - $1,500,000 Utility - FY OUT
PPS 5-52954-0500 - $3,500,000 Land Acquisition - FY OUT

**Contract 70B38 – FAI 57 under FAU 7158 (Mattis Avenue), FAI 74 under FAU 7158 (Mattis Avenue), FAI 57 under FAP 719 (US 150)**

PPS 5-52954-1000 - $26,075,000 Construction (Major Bridge Fund) – FY 2020
PPS 5-52954-1100 - $1,050,000 Land Acquisition – FY 2017
PPS 5-52954-1200 - $500,000 Utility – FY 2018

**Consultant PE**

PPS 5-52954-0300 - $2,500,000 Preliminary Engineering (Phase II) – FY 2015
PPS 5-52954-0600 - $3,000,000 Preliminary Engineering (Phase III) – FY OUT
PPS 5-52954-1300 - $1,000,000 Preliminary Engineering (Phase III) – FY 2020

# 1. Introduction

## 1.1 Location and Description

This project is located in the central portion of Champaign County on the northwest side of the City of Champaign (See **Exhibit 1: Site Map**). The study limits extend to the adjacent interchanges on each side of the I-57 and I-74 interchange. The approximate study limits along Interstate 57 are the I-57 and I-72 interchange 2 miles to the south and the I-57 and Olympian Drive interchange 1 mile to the north. The approximate study limits along Interstate 74 are the I-74 and South Prairieview Road interchange 5 miles to the west and the I-74 and Prospect Avenue interchange 1.5 miles to the east. The approximate improvement limits are the south diamond interchange ramps of Olympian Drive over I-57 to the north, the west diamond interchange ramps of North Prospect Avenue over I-74 to the east, the Norfolk Southern Railroad over I-57 to the south, and North Duncan Road over I-74 to the west (See **Exhibit 2: Quadrangle Map** and **Exhibit 3: Champaign County Map)**.

This report summarizes the location design studies completed and references all of the technical reports prepared for the evaluation of the identified project alternatives. The analysis and selection process for the preferred interchange concept for the improvement of the I-57 & I-74 interchange is included herein. The project consists of the reconstruction of an existing cloverleaf interchange, the replacement of three adjacent grade separation structures, and all other associated approach roadway and ramp improvements. The study area includes several roadways and structures, different land use types, utilities and a variety of environmental resources.

## 1.2 Project History

Review of record plans for the I-57 and I-74 interchange indicate that the Interchange Design Study for the existing full conventional cloverleaf interchange was completed in 1958. Construction plans for the interchange were developed in 1963, and the interchange construction was completed in 1965. The initial construction included four lanes of pavement, two in each direction, consisting of 12 foot wide lanes constructed with 10 inches of PCC pavement. The two directions of travel were separated by a 40 feet open grass median on I-74 and a 64 feet open grass median on I-57. Interchange lighting was added in 1969 to all four quadrants of the interchange. In 1990, the structures carrying I-74 over I-57 were rehabilitated, and the improvements included the complete removal and replacement of the existing superstructure. Several HMA overlays have been constructed on both I-57 and I-74 throughout the lifetime of the interchange.

## 1.3 Functional Classifications and Design Speeds

**Table 1** below describes the roads within the project limits, their classification, description and design speed.

| Table 1: Functional Classifications and Design Speeds | | | |
|---|---|---|---|
| **Roadway** | **Classification** | **Description** | **Design Speed** |
| Interstate 57 | Interstate | Urban | 75 mph |
| Interstate 74 | Interstate | Urban | 75 mph |
| Interchange Ramps | Interstate | Connector, Directional, Semi-Directional | 55 mph |
| Interchange Ramps | Interstate | Loops | 40 mph |
| N. Mattis Avenue | Minor Arterial | Suburban | 45 mph |
| U.S. 150 (Bloomington Rd) | Other Principal Arterial | Suburban | 50 mph |

### 1.4 Referenced Project Documents

The following technical studies and reports were prepared and submitted separately during different stages of the Phase I Study (Included in the **Appendices**):

| Table 2: Project Reference Documents | | |
|---|---|---|
| **Roadway** | **Submittal Date** | **Approval / Acceptance Date** |
| Interchange Type Study | August 2014 | 9/16/2014 |
| Bridge Condition Reports | October 2014 | 12/08/2014 |
| Value Engineering Study | November 2014 | 1/12/2015 |
| Environmental Assessment | December 2014 | 4/23/2015 |
| Interchange Design Study | February 2015 | 2/17/2015 |
| Access Justification Report | February 2015 | 5/4/2015 |
| Transportation Management Plan | April 2015 | Concurrent Submittal |

## 2. Purpose and Need

### 2.1 Project Purpose

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the I-57 and I-74 interchange by eliminating deficient geometric features and reducing points of access in order to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps.

### 2.2 Project Need

The need for the proposed improvement is to address operational, geometric, safety, and capacity deficiencies. The existing interchange presents several deficiencies (see **Exhibit 4**), all of which cannot be mitigated without adding lanes to I-74 and reconstructing the interchange configuration and modifying the type to meet current design criteria. Reasonable alternatives to the proposed improvement were

considered including no-build, roadway system improvements, interchange access and configuration alternatives and transportation demand strategies. The result of the operational analysis shows that the proposed interchange reconfiguration enhances safety and operations of both interstates.

A crash analysis of the existing cloverleaf interchange reveals that a contributing factor for the reported crashes is vehicles attempting to negotiate the deficient weaving sections and ramp terminals for ramps entering and exiting I-57 and I-74. Fixed object crashes are occurring when vehicles either speed up too fast to enter the mainline, losing control and going off the roadway, or fail to slow down enough to stay on the pavement around the ramp curves, going off the roadway (See **Exhibits 5-11** for crash data information). The Enhanced Interchange Safety Analysis Tool (ISATe) and CORSIM were used to predict future crash rates for the existing cloverleaf interchange and the proposed alternative. The proposed alternative reduces potential conflicts compared to the existing interchange geometry as a result of eliminating conflict points associated with the number of access points and eliminating the mainline interstate weaving movements.

### 2.3 Presentation of Project Purpose and Need

The formal project Purpose and Need was presented to the Federal Highway Administration (FHWA) and cooperating agencies on February 27, 2014, at the Illinois NEPA/404 Merger Meeting conducted at the FHWA office in Springfield, Illinois. The Purpose and Need presented is included in **Appendix C** and is also included in the **Access Justification Report** (AJR) and **Environmental Assessment** (EA), both of which are also included in the **Appendices** for reference.

## 3. Existing Conditions

### 3.1 Description of Project Study Area

The approximate project limits for the I-57 & I-74 interchange improvements are Olympian Drive to the north, North Prospect Avenue to the east, the Norfolk Southern Railroad to the south, and North Duncan Road to the west. See **Exhibit 12** for the existing cloverleaf interchange with aerial image.

The existing facility was originally constructed in 1965 and is a full conventional cloverleaf interchange connecting I-57 and I-74 with free flowing connecting movements in all directions between the two interstates. There are a total of eight ramps, four loop ramps, with a posted speed limit of 25 mph, along with four wrap-around outer ramps, with a posted speed of 30 mph. Each interstate consists of four lanes (two lanes in each direction) of concrete pavement with multiple overlays. Both I-57 and I-74 have open grass medians which are typically 64 feet and 40 feet in width,

respectively. The adjacent section of I-74 to the east between Mattis Avenue and Prospect Avenue consists of a 26 foot paved median with concrete barrier.

I-57 is a full access controlled north-south facility that is functionally classified as an Interstate and serves local, regional, and interstate traffic. It originates in Southeastern Missouri and crosses numerous other interstates before terminating in Chicago in northern Illinois. I-57 serves as a vital link in the transportation network between northern and southern Illinois and is a Class I truck route carrying an average of 32,400 vehicles per day in 2013 with approximately 23 percent truck volume (9,450 trucks per day average) within the study limits.

I-74 is a full access controlled east-west facility that is functionally classified as an Interstate and serves local, regional, and interstate traffic. It crosses numerous other north-south and east-west interstates as it passes through Iowa, Illinois, Indiana, and Ohio. I-74 serves as a vital link in the transportation network between the Quad Cities on the Iowa-Illinois border and Cincinnati, Ohio and is a Class I truck route carrying an average of 38,900 vehicles per day in 2013 with approximately 22 percent truck volume (7,350 trucks per day average) within the study limits.

Other adjacent cross roadways or grade separations within the study limits include: Mattis Avenue, a north-south minor arterial with a grade separation structure over I-57, approximately one half mile north of I-74, and a grade separation structure over I-74, approximately one half mile east of I-57 and U.S. 150 (Bloomington Road), an east-west other principal arterial with grade separation structure over I-57 approximately one quarter mile south of I-74.

## 3.2 Existing Structures

Structures 010-0018 and 010-0019 carry I-74 EB and I-74 WB over I-57, respectively. These existing dual bridges were constructed in 1965 as four-span rolled steel beam structures with pin and link systems in the end spans. The abutments are open stub abutments on concrete piles. The four column reinforced concrete piers with crash walls are supported on spread footings. In 1989, the superstructure of each structure was replaced with rolled steel W36 beams composite in the positive moment regions only. The north fascia beam of the north bridge and the south fascia beam of the south bridge are flared to carry the flared deck to accommodate ramp terminals on each structure. The wingwalls were reconstructed, and the seat elevations were adjusted with concrete extensions. They are both 4 span composite structures, 261’-2” in length, with 7.5” reinforced concrete decks on continuous steel girders. Their substructures consist of concrete open abutments and columnar piers on spread footings.

Adjacent cross roadways with grade separation structures within the project study limits include Mattis Avenue with a grade separation structure over I-57 and a grade separation structure over I-74; U.S. 150 (Bloomington Road) with grade separation

structure over I-57; the Norfolk Southern Railroad with a grade separation structure over I-57; Duncan Road, with grade separation structure over I-74; Olympian Drive with a grade separation structure over I-57; and Prospect Avenue with a grade separation structure over I-74.

The existing bridge that carries Mattis Avenue over I-74 (SN 010-0270) was constructed in 1992 as a two-span 48" web steel plate girder structure, composite in the positive moment regions. The superstructure is supported by open stub abutments on concrete piles and multi-column reinforced piers on spread footings.

The existing bridge that carries Mattis Avenue over I-57 (SN 010-0100) was constructed in 1965 as a four-span steel wide flange beam structure, composite in the positive moment regions. The superstructure is supported by open stub abutments on concrete piles and multi-column reinforced concrete piers. Pier 1 is supported on creosoted timber piles. Piers 2 and 3 are supported on spread footings.

The existing bridge that carries U.S. 150 (Bloomington Road) over I-57 (SN 010-0050) was originally constructed in 1964 as a four-span rolled steel beam structure with open stub abutments on concrete piles and single hammerhead reinforced concrete piers supported on spread footings. In 2000, the structure was widened, the deck was replaced, and the existing abutments and piers were widened. The area below the existing pier cap overhangs was filled in during the widening, creating a solid wall straight stem type pier. The beams were painted, raised approximately 2.5", and steel studs were added in the positive moment regions to make them composite with the new deck.

The existing Norfolk Southern Railroad, Duncan Road, Olympian Drive, and Prospect Avenue structures are not anticipated to be impacted by the proposed interchange reconstruction improvements.

**Table 3** below gives a description of the existing structures that are within the project area. Detailed structure information and discussion can be found in the **Bridge Condition Reports** (BCRs) included in **Appendix I**.

| **Table 3: Existing Structures** | | |
|---|---|---|
| **Location** | **S.N.** | **Description** |
| I-74 EB over I-57 | 010-0018 | 261'-2" four-span rolled steel beam bridge |
| I-74 WB over I-57 | 010-0019 | 261'-2" four-span rolled steel beam bridge |
| U.S. 150 over I-57 | 010-0050 | 42'-7 3/4" four-span rolled steel beam bridge |
| Mattis Ave. over I-57 | 010-0100 | 332'-4" four-span steel wide flange beam bridge |
| Mattis Ave. over I-74 | 010-0270 | 249'-10 ¾" two-span web steel plate girder bridge |
| I-74 over Copper Slough | 010-2004 | 142'-3" triple barrel cast-in-place concrete box culvert |
| I-57 over Copper Slough | 010-8306 | 232'-5" double barrel cast-in-place concrete box culvert |

## 3.3 Land Use

The Champaign Urbana Urbanized Area Transportation Study (CUUATS) and the City of Champaign's future Land Use maps indicate all four interchange quadrants have the potential for development as employment centers. There are several land types, school districts and emergency services that could be potentially impacted by the project alternatives.

The northeast quadrant of the I-57 and I-74 interchange is primarily agricultural land use. Copper Slough passes through the center of the quadrant and there is a detention pond in the southeast corner of the quadrant. The southeast quadrant is mostly agricultural land use with some office development. Clearlake Boulevard provides access to the quadrant from U.S. 150 (Bloomington Road). There is a two story office building located in the northeast corner of the quadrant. The southwest quadrant also is primarily agricultural land use with some commercial and light industrial development. Midwest Court provides access to the quadrant from U.S. 150 (Bloomington Road). There is also a church located in the southwest corner of the quadrant and a detention pond between Midwest Court and the interchange ramp. The northwest quadrant is mainly agricultural land use with a roadway network for future potential development. There is a detention pond carrying Copper Slough through the center of the quadrant and there is a multi-use path surrounding the detention pond. The area east of Mattis Avenue is developed with businesses. Both the north and south side of I-74 are also developed with businesses east of Mattis Avenue towards Prospect Avenue.

The proposed project would be consistent with local/regional land use plans and it is not anticipated that any appreciable land use changes in the project area would be experienced as the proposed project is primarily a replacement project. The proposed project would not provide any new access or eliminate access to any existing areas. In addition, all surrounding roadways will remain in the same location; therefore, no changes in travel patterns and access in the project area would be anticipated.

## 3.4 Environmental Resources

The project area was inventoried for environmental resources. The original Environmental Survey Request (ESR) Form for the project was submitted on September 18, 2012. The project limits were adjusted as the preliminary design progressed, resulting in subsequent ESR Addendums dated March 25, 2013 (Addendum A), December 19, 2013 (Addendum B) and August 8, 2014 (Addendum C). The results of the environmental surveys were reviewed and applicable agency reviews and signoffs were obtained and are referenced in the Environmental Assessment (EA). The EA assessed the applicable issues and potential impact areas of the preferred alternative and identified all sensitive, natural, physical, and socio-economic resources, and special

waste sites in the study area along with right-of-way needs, property owner displacements, noise analysis, and stream and floodplain analysis. Resources potentially impacted by the proposed action or that require discussion pursuant to applicable laws and regulations were addressed or mitigated and the detailed environmental documentation and discussion can be found in the **Environmental Assessment** included in **Appendix D.**

## 3.5 Drainage

The project area lies on the edge of the Upper Kaskaskia Watershed and the edge of the Mahomet Aquifer. The drainage pattern through the project site is generally from north to south, with drainage being conveyed either in open ditches or through culverts. Overall, the project site is drained by Copper Slough which flows through the northwest quadrant, then south through the project site, crossing under I-57, through the northeast quadrant crossing under I-74, then turns and flows southwest towards U.S. 150 (Bloomington Road). There is a 100-year floodplain associated with Copper Slough, with no base flood elevations determined in the project area. Both I-57 and I-74 have open drainage medians and utilize ditches to carry the stormwater runoff. The adjacent section of I-74 to the east has a closed median drainage system with a concrete barrier separating the two directions of travel. Some drainage improvements have been completed recently in the northwest quadrant to accommodate future development and infrastructure. This work consisted of installation of a series of detention ponds along Copper Slough west of I-57 along with the installation of a road network and other storm sewer infrastructure to accommodate the future Clearview subdivision development. As a result, this area will likely be experiencing urbanization in the near future. A more detailed discussion and additional information regarding the existing and proposed drainage patterns and analysis can be found in the **Location Drainage Study** document.

## 3.6 Utilities

There are several utilities located within the project limits. These include, but are not limited to electric, natural gas, water, storm sewer, sanitary sewer, telephone, and fiber optic. The locations of existing utilities are based on record plans, field investigations, data collection surveys and the best available information from the utility companies. The following are utilities that are located partially or entirely within the proposed footprint of the project limits. They have been identified by type, grouped by roadway, and listed west to east along I-74 or south to north along I-57, including ramps and crossroads. See **Exhibit 27** for schedules delineating the various existing utility facilities.

### 3.6.1 I-74

Water

A 20-inch water main crosses I-74 at station 1084+83. A 20-inch water main crosses I-74 at station 1090+69. An 8-inch water main crosses I-74 at station 1111+93.

Sanitary Sewer

A sanitary sewer line of unknown diameter crosses I-74 at station 1046+85. A sanitary sewer line of unknown diameter crosses I-74 at station 1083+37. A 12-inch sanitary sewer line crosses I-74 at station 1121+89.

Gas Pipeline

An 8-inch natural gas line crosses I-74 at station 1096+97.

Telephone Cable

A telephone cable crosses I-74 at station 1086+24. A telephone cable crosses I-74 at station 1089+09. A telephone cable runs parallel to I-74 from station 1114+55 to station 1136+21 at an offset of approximately 97 feet to 151 feet left of the centerline, respectively.

Fiber Optic

A fiber optic cable runs parallel to I-74 from station 1842+73 to station 1870+24.62 BK = 1035+05.17 AH and then to station 1050+23 at an offset of approximately 109 feet to 150 feet right of the centerline. A fiber optic cable crosses I-74 at station 1072+92.

Underground Electric

An underground electric cable runs parallel to I-74 from station 1062+94 to station 1083+95 at an offset of approximately 73 feet to 63 feet right of the centerline, respectively. An underground electric cable crosses I-74 at station 1083+93.

Overhead Electric

An overhead electric cable crosses I-74 at station 1845+89. An overhead electric cable crosses I-74 at station 1086+20. An overhead electric cable crosses I-74 at station 1095+98. There are various power poles and guy wires located throughout the project along I-74 that could be impacted by grading.

### 3.6.2 I-57

Water

A 20-inch water main crosses I-57 at station 577+90. A 16-inch water main crosses I-57 at station 583+61. A 20-inch water main crosses I-57 at station

623+69. A 16-inch water main crosses I-57 at station 627+83. A 24-inch water main crosses I-57 at station 644+63. The same 24-inch water main crosses Olympian Drive Ramp C at station 14+68 and Olympian Drive Ramp B at station 16+53.

Sanitary Sewer

A sanitary sewer line of unknown diameter crosses I-57 at station 610+43.

Gas Pipeline

An 8-inch natural gas line that is no longer in use crosses I-57 at station 547+18. An 8-inch natural gas line crosses I-57 at station 625+10. An 8-inch natural gas line crosses I-57 at station 627+90. An 8-inch natural gas line crosses the SB I-57 lanes at station 648+00 approximately 40 feet left of the centerline. The same 8-inch natural gas line crosses Olympian Drive Ramp C at station 12+75 and Olympian Drive Ramp B at station 20+29.

Telephone Cable

A telephone cable crosses I-57 at station 581+43. A telephone cable crosses I-57 at station 583+48. A telephone cable crosses I-57 at station 627+90.

Fiber Optic

A fiber optic cable runs parallel to I-57 from station 545+00 to station 576+40 at an offset of approximately 148 feet to 112 feet right of the centerline, respectively. A fiber optic cable crosses I-57 at station 586+66. A fiber optic cable runs parallel to I-57 from station 608+22 to station 624+13 at an offset of approximately 146 feet to 112 feet right of the centerline, respectively. A fiber optic cable crosses I-57 at station 625+36. A fiber optic cable runs parallel to I-57 from station 626+95 to station 637+90 at an offset of approximately 104 feet to 128 feet right of the centerline, respectively. The same fiber optic cable then runs parallel to Olympian Drive Ramp B from station 9+70 to station 17+81 at an offset of approximately 61 feet to 56 feet right of the Olympian Drive Ramp B centerline, respectively.

Overhead Electric

An overhead electric cable crosses I-57 at station 548+01. An overhead electric cable crosses I-57 at station 567+22. An overhead electric cable crosses I-57 at station 579+92. An overhead electric cable crosses I-57 at station 625+18. An overhead electric cable crosses I-57 at station 647+73. The same overhead electric cable crosses the Olympian Drive Ramp C at station 12+92. There are various power poles and guy wires located throughout the project along I-57 that could be impacted by grading.

### 3.6.3 Ramps

Water

An 8-inch water main crosses Ramp C at station 326+20. A 16-inch water main crosses Ramp B at station 239+28. The same 16-inch water main crosses Ramp A at station 110+17. A 20-inch water main crosses Ramp B at station 245+80. The same 20-inch water main crosses Ramp A at station 105+26.

Sanitary Sewer

A sanitary sewer line of unknown diameter crosses Ramp H at station 822+66. The same sanitary sewer line crosses Ramp D at station 401+85 and Ramp B at station 217+86. A sanitary sewer line of unknown diameter runs along Ramp B from station 213+08 to station 217+86 at an offset of approximately 68 feet to 15 feet right of the Ramp B centerline, respectively. This sanitary sewer line intersects with the sanitary sewer line crossing ramp B at station 217+86 at an offset of approximately 15 feet right of the Ramp B centerline. Then a sanitary sewer line of unknown diameter runs along Ramp B from station 217+86 to station 220+69 at an offset of approximately 15 feet to 188 feet right of the Ramp B centerline, respectively. A sanitary sewer line of unknown diameter crosses Ramp H at station 803+15. The same sanitary sewer line then crosses Ramp D at station 426+39 and Ramp G at station 736+32. Two sanitary sewer lines of unknown diameter intersect with a 24-inch sanitary sewer line under the Ramp G pavement at station 711+72 at an offset of approximately 11 feet left of the Ramp G centerline.

Gas Pipeline

An 8-inch natural gas line crosses Ramp G at station 750+34. An 8-inch natural gas line crosses Ramp G at station 753+24.

Telephone Cable

A telephone cable crosses Ramp B at station 239+38. The same telephone cable crosses Ramp A at station 110+01. A telephone cable crosses Ramp B at station 241+60. The same telephone cable crosses Ramp A at station 108+11. A telephone cable crosses Ramp G at station 707+12. A telephone cable crosses Ramp G at station 710+15. A telephone cable crosses Ramp G at station 753+27.

Fiber Optic

A fiber optic cable runs parallel to Ramp B from station 201+68 to station 207+56 at an offset of approximately 44 feet to 6 feet right of the Ramp B centerline, respectively. The same fiber optic cable crosses Ramp B at station 208+50. The same fiber optic cable then runs parallel to Ramp B from station 210+74 to station 216+00 at an offset of approximately 20 feet to 62 feet left of the Ramp B centerline, respectively. The same fiber optic cable then runs parallel to Ramp D from station 400+00 to station 405+53 at an offset of approximately 46 feet to

35 feet left of the Ramp D centerline, respectively. The same fiber optic cable then crosses Ramp D at station 406+10, Ramp C at station 329+40 and Ramp B at station 224+79. The same fiber optic cable then runs along the infield of Ramp B from station 225+06 to station 229+09 at an offset of approximately 14 feet to 130 feet right of the Ramp B centerline, respectively. The same fiber optic cable then continues along the infield of Ramp B from station 229+09 to station 232+20 at an offset of approximately 130 feet to 17 feet right of the Ramp B centerline, respectively. The same fiber optic cable then runs under the proposed abutment for the bridge on Ramp B at station 232+64 at an offset of approximately 10 feet right of the Ramp B centerline. The same fiber optic cable then crosses Ramp C at station 313+51. The same fiber optic cable then runs under the proposed abutment for the bridge on Ramp B at station 234+01 at an offset of approximately 18 feet left of the Ramp B centerline. The same fiber optic cable then runs under Ramp E from station 525+38 to station 526+78 at an offset of approximately 7 feet right of the Ramp E centerline to 2 feet left of the ramp E centerline. The same fiber optic cable then makes a 90 degree turn and crosses Ramp E at station 526+78 and Ramp A at station 113+31. A fiber optic cable runs parallel to Ramp A from station 103+00 to station 107+64 at an offset of approximately 40 feet to 28 feet right of the Ramp A centerline, respectively. A fiber optic cable runs parallel to Ramp A from station 110+02 to station 117+14 at an offset of approximately 23 feet to 132 feet right of the Ramp A centerline, respectively. A fiber optic cable crosses Ramp A at station 128+17. The same fiber optic cable crosses Ramp F at station 629+26. The same fiber optic cable runs along the infield of Ramp G from station 724+49 to station 729+19 at an offset of approximately 220 feet to 107 feet left of the Ramp G centerline, respectively. The same fiber optic cable then continues along the Ramp G infield from station 729+19 to station 732+97 at an offset of approximately 107 feet to 204 feet left of the Ramp G centerline, respectively. The same fiber optic cable then crosses Ramp F at station 613+87. The same fiber optic cable then crosses Ramp D at station 423+45. The same fiber optic cable then crosses Ramp G at station 745+15.

Underground Electric

An underground electric cable crosses Ramp A at station 126+97. The same underground electric cable then runs parallel to Ramp A from station 127+30 to station 139+30 at an offset of approximately 6 feet to 10 feet right of the Ramp A centerline, respectively. An underground electric cable ends at a utility pole in the middle of Ramp G at station 711+57 at an offset of approximately 9 feet left of the Ramp G centerline.

Overhead Electric

A utility pole from an overhead electric line is located on the shoulder of Ramp B at station 208+23 at an offset of approximately 7 feet right of the Ramp B centerline. The same overhead electric line crosses Ramp B at station 209+15.

The same overhead electric line then runs to a utility pole located near the shoulder of Ramp D at station 405+26 at an offset of approximately 37 feet left of the ramp D centerline. The same overhead electric line then ends at a utility pole located within the Ramp D pavement at station 405+91 at an offset of approximately 7 feet left of the Ramp D centerline. An overhead electric line crosses Ramp C at station 328+26. An overhead electric line crosses Ramp B at station 243+88. The same overhead electric line crosses Ramp A at station 107+38. An overhead electric line crosses Ramp G at station 710+26. A utility pole from the same overhead electric line is located on the shoulder of Ramp G at station 710+31 at an offset of approximately 8 feet right of the Ramp G centerline. The same overhead electric line then crosses Ramp G again at station 750+41. There are various, additional, power poles and guy wires located throughout the project along the ramps that could be impacted by grading.

### 3.6.4 Crossroads

Water

A 20-inch water main runs parallel to Mattis Avenue over I-74 from station 14+00 to station 17+21 at an offset of approximately 66 feet to 101 feet left of the Mattis Avenue centerline, respectively. A 16-inch water main runs parallel to Mattis Avenue over I-57 from station 19+35 to station 30+00 at an offset of approximately 81 feet to 72 feet right of the Mattis Avenue centerline, respectively. A 20-inch water main runs along Bloomington Road from station 161+68 to station 162+00 at an offset of approximately 61 feet to 33 feet right of the Bloomington Road centerline, respectively.

Sanitary Sewer

A 24-inch sanitary sewer line crosses Mattis Avenue over I-74 at station 15+99. A 24-inch sanitary sewer line crosses Mattis Avenue over I-74 at station 22+44. A sanitary sewer of unknown diameter runs parallel to Mattis Avenue over I-74 from station 22+24 to station 23+50 at an offset of approximately 92 feet to 99 feet right of the Mattis Avenue centerline, respectively.

Gas Pipeline

An 8-inch natural gas line crosses Mattis Avenue over I-74 at station 23+36.

Telephone Cable

A telephone cable runs parallel to Mattis Avenue over I-74 from station 14+00 to station 23+50 at an offset of approximately 64 feet to 113 feet right of the Mattis Avenue centerline, respectively.

Fiber Optic

A fiber optic cable crosses Mattis Avenue over I-57 at station 22+45. A fiber optic cable crosses Bloomington Road at station 158+95.

Overhead Electric

An overhead electric line crosses Bloomington Road at station 160+24. There are various light poles, power poles, guy wires and handholes located throughout the project along the crossroad bridges.

# 4. Alternatives Considered – Interchange Type Concepts

## 4.1 Introduction

The primary alternatives considered for the project included new interchange type configurations in order to satisfy the purpose and need goals established. With the intent to optimize the preferred interchange type given the existing conditions, several sub-elements of the interchange were studied and alternatives developed for each of these elements to collectively determine the preferred configuration. Some of these sub-element design considerations included alignment of the interstates, typical cross sections, loop ramp criteria and structure types. This section of the report will summarize the approach taken to identify the initial interchange type concept alternatives and the individual components of the interchange studied and carried forward for consideration.

### 4.1.1 Traffic

The initial step in identifying alternatives was to establish the design year for this project as 2040. Traffic volumes on roadways and ramps were then forecasted based on existing volumes and projected growth rates. All facilities within the study limits are expected to encounter an increase in traffic volume over time. **Table 4** below illustrates the forecasted increase in traffic volumes (provided by IDOT) for the design year of 2040.

| Table 4: Average Daily Traffic (ADT) | | | |
|---|---|---|---|
| | 2013 ADT | 2040 ADT | % Increase |
| **Interstate 57** | | | |
| South of I-74 | 32,400 | 49,900 | 54% |
| North of I-74 | 22,200 | 33,400 | 50% |
| **Interstate 74** | | | |
| West of I-57 | 32,900 | 41,800 | 27% |
| East of I-57 | 38,900 | 59,900 | 54% |
| **Interchange Ramps** | | | |
| I-57 NB to I-74 EB | 5,600 | 8,800 | 57% |
| I-74 EB to I-57 SB | 2,800 | 4,550 | 62% |
| I-57 SB to I-74 EB | 2,100 | 2,650 | 26% |
| I-74 EB to I-57 NB | 500 | 1,000 | 100% |
| I-74 WB to I-57 SB | 5,700 | 9,900 | 74% |
| I-57 NB to I-74 WB | 3,300 | 4,950 | 50% |
| I-74 WB to I-57 NB | 2,100 | 2,650 | 26% |
| I- 57 SB to I-74 WB | 650 | 1,200 | 85% |

### 4.1.2 Design Criteria

For the purpose of the initial interchange type screening, the mainline design speed was 70 mph. During development of the Phase I, IDOT BDE issued Procedure Memorandum 14-02 which changed mainline interstate design speeds to 75 mph to accommodate new posted speed limits of 70 mph. It was agreed in the March 18, 2014 Bi-Monthly Coordination Meeting that the final alternative analysis should be completed with a 70 mph mainline design speed. Subsequently, at the June 6, 2014 District coordination meeting, it was agreed to further study and evaluate the alternatives remaining from the initial screening utilizing the increased mainline design speed. The increased mainline design speed of 75 mph and consequential directional ramp design speed increases from 50 mph to 55 mph were established and implemented as the controlling criteria for selection of a preferred alternative.

### 4.1.3 Sub-Element Design Alternative Considerations

The following sub-element design considerations, including typical cross sectional elements, mainline alignments, loop ramp criteria and structure types, were studied in detail to determine their impacts on the interchange type configuration and the geometric layout of the system interchange ramps.

Typical Cross Sectional Elements

Based on the traffic volumes presented above, I-74 warrants a six-lane section currently but I-57 will only warrant four-lanes even in the design year. Since I-57 will remain at four-lanes in the proposed condition and the existing 64 foot grass median currently exceeds the 60 foot policy minimum open median width, it was determined that the I-57 lane configuration would remain as is and reconstructed on its current location with new 12 foot inside and outside shoulders. The proposed geometrics along I-57 would accommodate a future six-lane section even though initially it would be reconstructed to only four-lanes. I-74 was studied for both an open and closed median. The current I-74 open 40 foot grass median is substandard and would need to be increased to at least 60 foot to remain as an open type or could be reduced to 27 foot and be closed with barrier wall and the inside and outside shoulder widths increased to 12 foot for either option. The I-74 median would transition to match into existing at the west (40' open) and east (26' closed) ends of the project. Additional structure studies determined that the I-74 median should remain open through the interchange and be widened to 60 foot to better accommodate the substructure elements necessary for the new ramp structures.

Mainline Alignments

The existing I-57 alignment through the interchange is on tangent and intersects I-74 at 83˚-14'-49". The existing l-74 alignment is on tangent at the western limits and this tangent extends through the interchange to approximately 1,100' west of Mattis Avenue, where a 7,040.65' radius curve to the left is introduced with a 3.4% superelevation rate. This curve extends for 2,289.60' east (approximately 1200' east of Mattis Avenue) before compounding into a 12,277+ radius curving to the left with a 2.0% superelevation rate. The 12,277+ radius continues eastward another 6,463', beyond the Prospect Avenue diamond interchange and the limits of this project. Alignment studies concluded that the existing I-57 alignment throughout the project limits would be maintained. However, based on stakeholder coordination and project meetings conducted on the identified alternatives, it was determined that shifting the tangent section of I-74 to the north would greatly reduce the six lane expansion impacts on the existing facilities located south of I-74 that also have increased development plans for each of their respective sites. The studied alignment shifted the centerline of I-74 north to provide for the 60' minimum policy open median width and to allow the proposed eastbound inside edge of pavement for the new six-lane section to coincide with the eastbound inside edge of pavement of the existing four-lane section. Since the current I-74 alignment includes the horizontal curve east of the interchange, the centerline alignment and median width is proposed to transition back to the existing alignment and to a closed median near Mattis Avenue. See the approved **Interchange Design Study** in **Appendix G**.

Loop Ramp Criteria

The geometrics of the existing cloverleaf loop ramps was one of the primary reasons for the need to reconfigure the existing interchange. Given the operational and safety deficiencies identified during the development of the purpose and need, it was determined that any interchange type concept that proposed a loop ramp would need to be studied in detail in order to prevent any of the deficiencies already encountered with the existing conditions. The existing loop ramps introduce weaving sections, deficient ramp terminal deceleration lengths and substandard radii necessary to accommodate the desired design speeds. Each of these components was studied in detail and the following loop ramp guidelines developed for consideration when establishing the new interchange type concepts:

1. No weaving movements are desired for the new interchange type, which results in loop ramps needing to be placed in diagonal quadrants to prevent entering and exiting traffic from needing to weave to/from the interstate to complete the system movements. This guideline permits a maximum of two loops ramps for the new interchange type.

2. The entrance and exit ramp terminals to/from the interstate would be standard tapered type terminals versus the cloverleaf or parallel type terminal. This will provide additional acceleration/deceleration distance and allow adequate time for speed increases/reductions to/from any new loop ramps proposed.

3. Various loop ramp design speeds were studied ranging from 30 mph to 45 mph and the impact of the geometric layout and surrounding encroachments were evaluated for each. It was determined that the 40 mph design speed of any loop ramp proposed was preferred and this would meet the suggested BDE criteria for freeway to freeway loop ramps.

Structure Types

Since the I-57 & I-74 interchange is a system type facility with free-flow ramps for all movements and since the existing cloverleaf interchange type is no longer desired and based on performance is no longer adequate to accommodate the anticipated design year traffic, the structure elements become a key component when developing and studying new interchange type concepts. Structural coordination was conducted with both IDOT District Five and the Central Office Bureau of Bridges & Structures and although TS&L Drawings will be prepared and approved prior to the design of any of the structures, the following ramp

structure guidelines were developed for consideration when establishing the new interchange type concepts:

1. Integral abutments are preferred wherever possible to eliminate future maintenance needs at expansion joints.

2. The ramp pier column types will be rectangular and will include hammerhead type caps and all pier caps are anticipated to be radial to the ramp baselines. Barrier wall or guardrail protection will be provided as needed along the interstates to protect the piers that are within the clear zone.

3. Since many of the proposed interchange concepts include curved ramps, increased shoulder widths (varying from 14'-8" to 16'-6") along the inside of the ramp flyover structures are anticipated to meet sight distance criteria. The increased shoulder width also provides space for emergencies or stalled vehicles and creates a structure wide enough to accommodate six girder lines and better facilitate future staged construction/rehabilitation.

4. Maximum curved span lengths of approximately 230' were considered when establishing flyover ramp geometry. Longer span lengths are required at locations along the ramp flyover structures where there is a large skew between the overhead ramp and interstate below.

5. Both concrete and steel beam types were evaluated for cost to determine the most economical structure type but it was decided that integral pier caps would not be considered when determining structure depths and roadway clearances.

6. The use of MSE retaining walls was anticipated. Consideration was been given to include additional retaining walls to reduce the project costs and number of ramp flyover structure spans. A 30 foot maximum wall height was considered during the planning stages of this project. Maximum height to width ratios of approximately 0.6 or 0.7 were considered for locations with retaining walls on both sides of the ramps.

7. Shorter curved ramp bridges were studied to determine if tangent structures could be considered within the allowable offsets instead a curved bridge.

In addition to the ramp structures required for the new interchange types considered, structural improvements were also studied for the dual mainline I-74 bridges required over I-57 and the grade separation structures on U.S. 150 (Bloomington Road) and Mattis Avenue. These structure types and components were also coordinated with the District and Bridge Office during refinement of the interchange type alternatives.

### 4.1.4 Proposed Access Control / Management

Both I-57 & I-74 are full access controlled interstate facilities with no access allowed except at ramp entrance and exit terminals. This project will maintain this full access control for the two interstates. U.S. 150 (Bloomington Road), Mattis Avenue and Midwest Court all provide access accommodations to other local or collector streets and/or entrances to commercial or private properties.

The existing frontage roads on both sides of I-74 between Mattis Avenue and the Prospect Avenue diamond interchange to the east are anticipated to remain in service and continue to facilitate numerous direct access points primarily to commercial property entrances.

### 4.1.5 Bicycle and Pedestrian Accommodations

Since both I-57 & I-74 are full access controlled interstate facilities with no direct at-grade access allowed, pedestrian and bicycle usage is prohibited on these facilities. This project will maintain this access control and not allow for pedestrians and bicycles to utilize the interstates. However, the necessary adjacent roadways and grade separation structural improvements have been coordinated with both CUUATS and the City of Champaign in order to confirm the need for bicycle and pedestrian accommodations along these facilities. Both U.S. 150 (Bloomington Road) and Mattis Avenue corridors are proposed to provide bicycle and pedestrian accommodations in the area long range plan and therefore were studied to include the necessary provisions for each. While bicycle and pedestrian alternatives have been considered for U.S. 150 (Bloomington Road) and Mattis Avenue, these locally desired improvements will necessitate local agency funding participation in order to be fully implemented. A **Bicycle Travel Assessment** in included in **Appendix A**.

## 4.2 No-Build Concept

The existing full conventional cloverleaf interchange consists of four loop ramps, four wrap around outer ramps, four mainline weaving segments, and sixteen points of access off of the interstates. See **Exhibit 12** for an aerial image of the existing interchange and **Exhibit 13** for the existing interchange ramp radii. As stated

previously in **Section 2**, the existing interchange without improvement has several deficiencies including operations, geometrics, safety, and capacity. All of these deficiencies could be mitigated by adding lanes to the interstate and reconstructing the interchange type to meet current design criteria. Therefore, the No-Build Concept is not adequate to be considered as a proposed interchange type since it does not accomplish the purpose and need established for the project.

### 4.3 Development of Proposed Interchange Type Concepts

Initial studies of the interchange type concepts included identifying preferred components and characteristics of the proposed interchange as discussed previously herein and summarized as part of this section. AASHTO's "A Policy on Geometric Design of Highways and Streets" and the Institute of Transportation Engineer's "Freeway and Interchange Geometric Design Handbook" were both referenced for identification of conventional types of interchanges to be considered.

Additional design parameters studied during interchange type consideration included increased ramp design speeds, use of loop ramps, elimination of mainline weaves, number of access points off of the interstates, number, length, and area of proposed structures, and impacts to the surrounding area and adjacent roadways. Standard entrance and exit terminals are utilized for all proposed interchange access points.

An initial progress meeting was conducted at the IDOT District 5 office in November of 2012 to review the alternatives studied to date and identify which alternatives or variations thereof to consider for further studies. These primary alternatives initially presented included:

Alternate A: Semi-Directional Interchange with Three Loops (4 Sub-Alternates)
Alternate B: Semi-Directional Interchange with Two Diagonal Loops (6 Sub-Alternates)
Alternate C: Semi-Directional Interchange with Two Adjacent Loops (4 Sub-Alternates)
Alternate D: Semi-Directional Interchange Type with One Loop (4 Sub-Alternates)
Alternate E: Full Directional Interchange Type (3 Sub-Alternates)
Alternate F: Semi-Directional Interchange Type with No Loops (2 Sub-Alternates)
Alternate G: Circle Interchange

In addition to the new interchange types listed above, a new full cloverleaf type interchange was also discussed as an alternative for the replacement of the existing cloverleaf interchange. However, even with collector distributor roadways or the addition of a third lane along the interstate, this interchange type concept still has weaving movements to navigate between interstates and substantial right-of-way impacts due to the large loop ramps to accommodate higher design speeds in each quadrant and was therefore not considered as a desirable alternative. For a more detailed discussion of the development of the interchange type concepts see the **Interchange Type Study** in **Appendix E**.

## 4.4 Selected Interchange Type Concepts

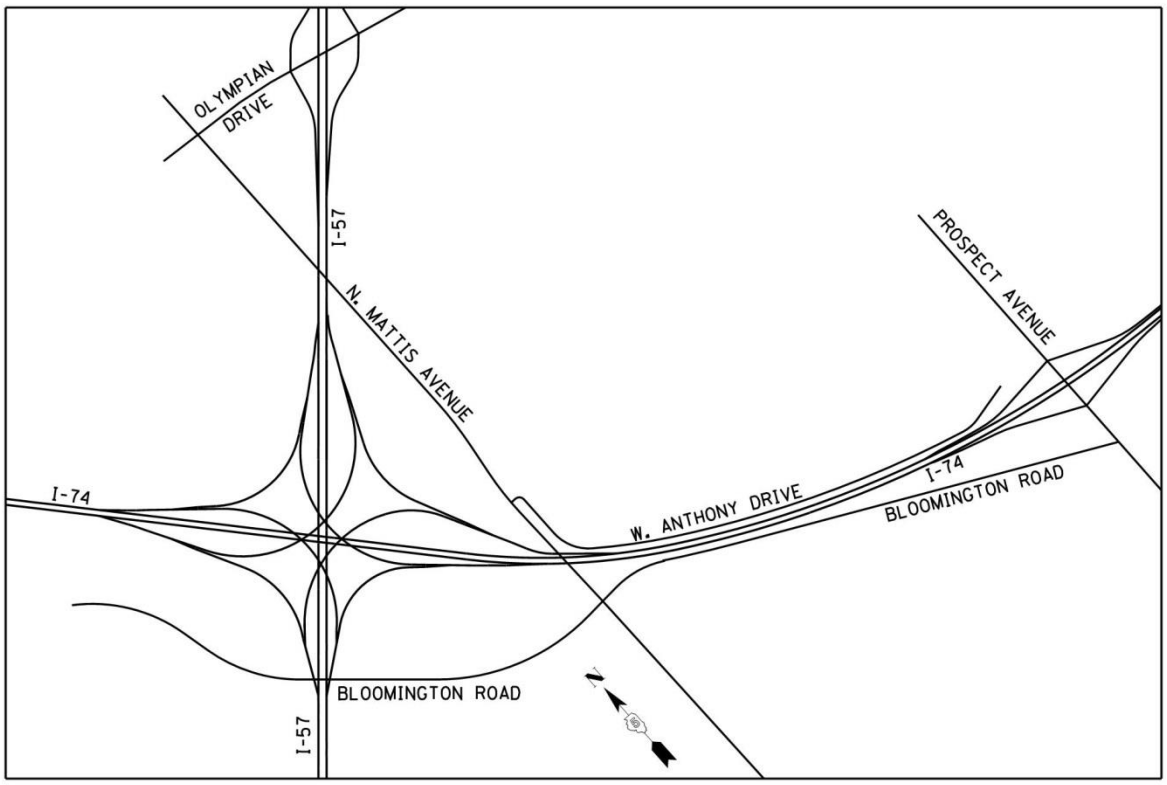
After review of the seven interchange type concepts listed above, five interchange type alternatives were selected for further studies and investigation in the Interchange Type Study. Each interchange type alternative met or exceeded current design criteria with no deficiencies or design exceptions anticipated.

Mainline I-57 remains on the existing horizontal alignment and I-74 is anticipated to have a grade raise of approximately 3 feet to meet clearance requirements for the proposed structures over reconstructed I-57, which will remain at approximately the same profile as existing. Reconstruction of adjacent cross roadways and structures along U.S. 150 (Bloomington Road) and Mattis Avenue were also required to meet policy horizontal and vertical clearances to accommodate the anticipated mainline interstate and ramp reconstruction.

Following is a brief summary and basic schematic for each of the initial interchange type configurations selected. For a more detailed discussion of these five interchange type concepts see the **Interchange Type Study** in **Appendix E**.

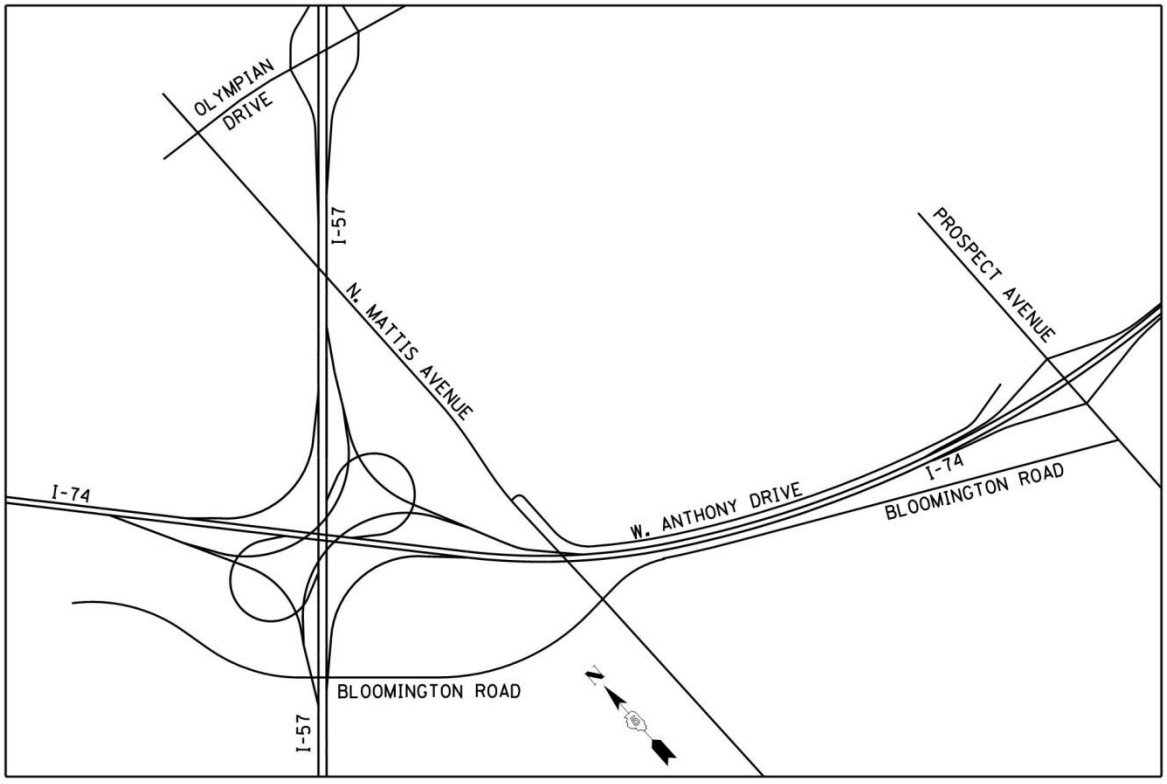
### 4.4.1 Alternate 1: Full Directional

This full directional interchange type alternative does not include any inner loop ramps and eliminates the mainline weaving movements within the interchange. The proposed design consists of eight access points along the interstates, which is half of the access points for the existing cloverleaf interchange. The use of minor convergences and divergences along the ramps reduces the number of entrance and exit terminals from four in each direction of travel to two. All ramps in the full directional interchange type alternative are designed for a 50 mph design speed. This alternative consists of compact ramp flyovers centered around the intersection of I-57 and I-74.



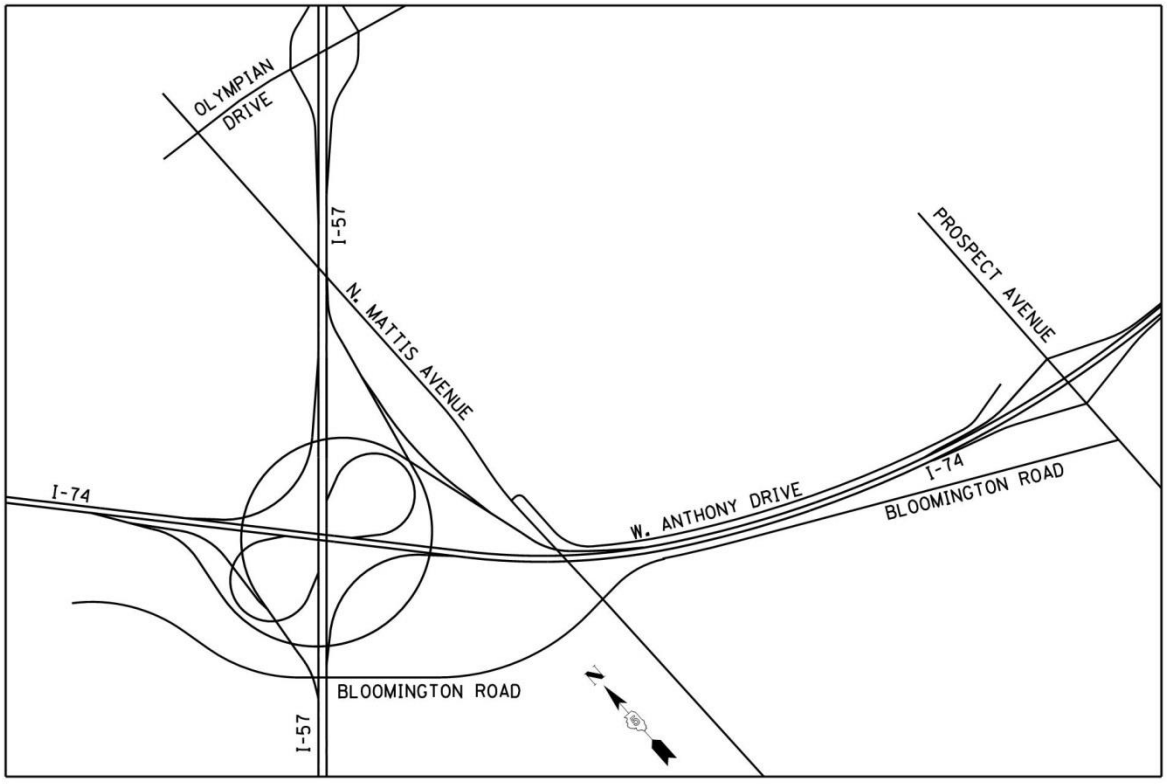
### 4.4.2 Alternate 2: Semi-Directional with Directional Flyovers and Two Loops

This interchange type alternative is a semi-directional interchange with directional flyovers and two loops. The loop ramps are placed in diagonal quadrants in order to eliminate any mainline weaving movements within the interchange. The proposed design consists of twelve access points along the interstates, compared to sixteen for the existing cloverleaf interchange. The use of minor convergences and divergences in the northeast and southwest quadrants reduces the number of entrance and exit terminals from four in each direction for the existing cloverleaf to three for the proposed alternative. Loop ramps are designed for a 40 mph design speed, while all other ramps are designed for a 50 mph design speed.



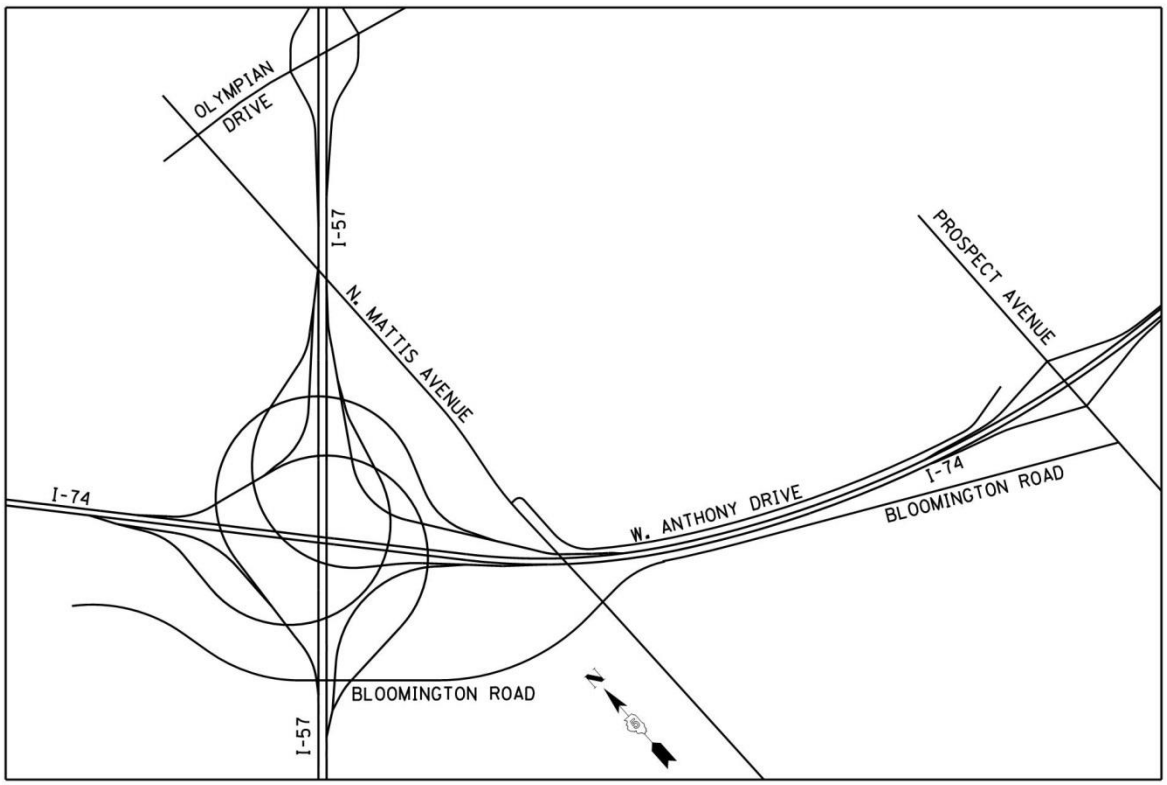
### 4.4.3 Alternate 3: Semi-Directional with Semi-Directional Flyovers and Two Loops

The third interchange type alternative is a semi-directional interchange with semi-directional flyovers and two loops. Similar to Alternative 2, the loop ramps are placed in diagonal quadrants to eliminate any mainline weaving movements within the interchange. The proposed design consists of twelve access points along the interstates, compared to sixteen for the existing cloverleaf interchange. The use of minor convergences and divergences in the northeast and southwest quadrants reduces the number of entrance and exit terminals from four in each direction for the existing cloverleaf to three for the proposed alternative. Loop ramps are designed for a 40 mph design speed, while all other ramps are designed for a 50 mph design speed.



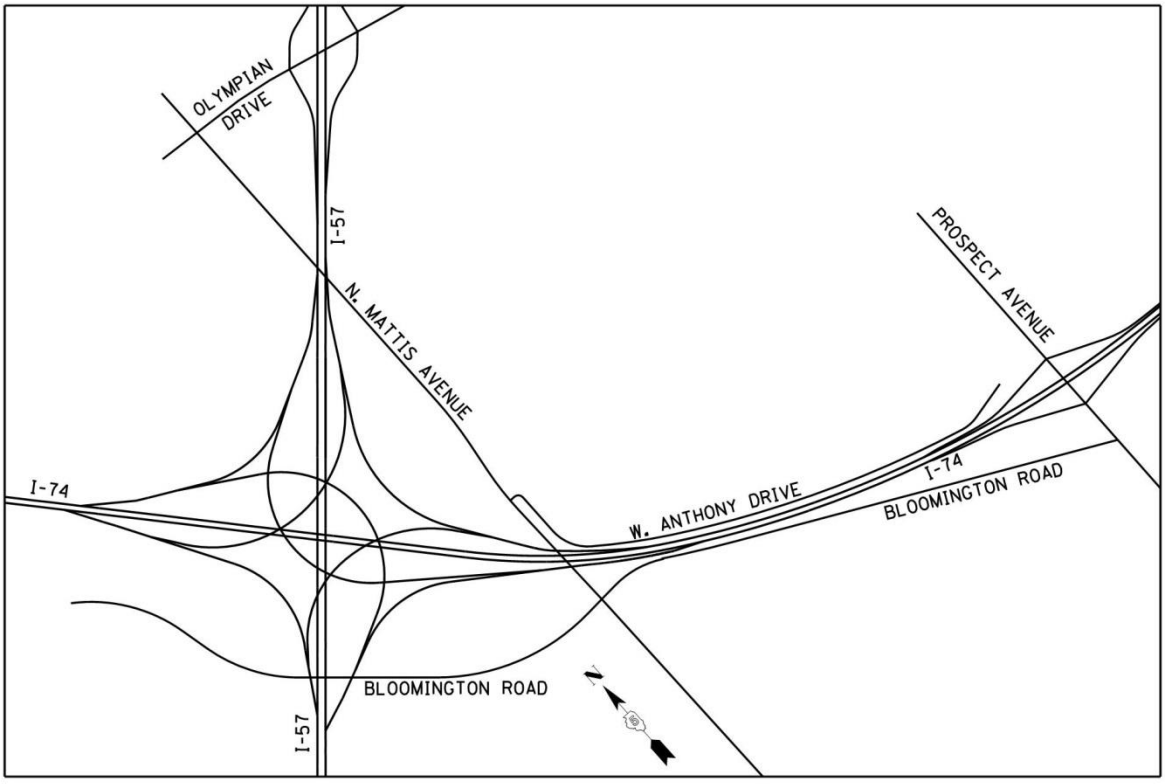
### 4.4.4 Alternate 4: Semi-Directional with No Loops

Similar to Alternative 1, the proposed semi-directional interchange type alternative with no loops does not include any inner loop ramps and eliminates the mainline weaving movements within the interchange. The proposed design consists of eight access points along the interstates, which is half of the access points for the existing cloverleaf interchange. The use of minor convergences and divergences along the ramps reduces the number of entrance and exit terminals from four in each direction of travel to two. All ramps in the semi-directional interchange type alternative are designed for a 50 mph design speed.



### 4.4.5 Alternate 5: Full Directional with Two Convex Ramps

The proposed full directional interchange type alternative does not include any inner loop ramps and eliminates the mainline weaving movements within the interchange. The proposed design consists of eight access points along the interstates, which is half of the access points for the existing cloverleaf interchange. The use of minor convergences and divergences along the ramps reduces the number of entrance and exit terminals from four in each direction of travel to two. All ramps in the full directional interchange type alternative are designed for a 50 mph design speed. This alternative consists of ramp flyovers that cross over each other and are spread further out over the center of the I-57 and I-74 intersection than Alternative 1.



# 5. Analysis of Alternatives Studied in Detail

## 5.1 Evaluation of Proposed Interchange Type Alternatives

The five selected interchange type concepts, Alternatives 1 through 5 summarized in Section 4, were then evaluated based on the following criteria: traffic and operational analysis, operational safety analysis, guide signs, proposed structures, maintenance of traffic, environmental impacts, preliminary construction cost, and design exceptions. Following is brief summary of each of these parameters. For a more detailed discussion of the evaluation of each of these five interchange type concepts see the **Interchange Type Study** in **Appendix E**.

### 5.1.1 Traffic and Operational Analysis

The proposed interchange type concepts were analyzed using CORridor SIMulation (CORSIM), a microscopic simulation model that represents movements of individual vehicles and includes the influence of driver behavior. CORSIM allows for a detailed comparison between alternatives in order to quantify and differentiate the traffic operations of the proposed interchange systems.

### 5.1.2 Operational Safety Analysis

An Operational Safety Analysis was conducted for the existing interchange and the proposed alternatives for a study period of 2011-2031 and is included in the approved Interchange Type Study. The analysis consisted of two primary components: a Road Safety Audit and a Safety Analysis. The Road Safety Audit identified deficiencies of the existing cloverleaf interchange and provided recommendations for safety improvements. Each of the proposed alternatives will address the deficiencies identified and improve the safety of the interchange. The Safety Analysis included use of the Enhanced Interchange Safety Analysis Tool (ISATe) to predict future crash rates for the existing cloverleaf interchange and all proposed alternatives.

CORSIM is also used to compare the safety differences between interchange alternatives by quantifying the number of conflicts within each simulation, where a conflict is defined as a moment when the time-to-collision between two simulated vehicles is less than or equal to 2.0 seconds. The number of conflicts is not an estimation of the number of collisions that are likely to occur, but rather a surrogate for the potential exposure to conflicts.

### 5.1.3 Guide Signing

Significant changes are anticipated to be made to the highway signing along the I-57 and I-74 corridors with this project. A preliminary layout of the proposed interstate guide signing for each alternative configuration was developed.

The conversion of the existing cloverleaf interchange to a new interchange type will consolidate some of the access points of two ramps into a single ramp. The service signs on both I-57 and I-74 will also be redesigned for the new ramp locations. Given the reduced number of access points for the new interchange type as compared to the cloverleaf, the proposed signage plan can be simplified from the existing signing. The highway signing for each interchange alternative was evaluated in the Interchange Type Study.

### 5.1.4 Proposed Structures

It is anticipated that all interchange type concepts will require the removal and replacement of the structures carrying I-74 over I-57, U.S. 150 (Bloomington Road) over I-57, Mattis Avenue over I-74, and Mattis Avenue over I-57. Alternates 1, 4 and 5 will also require the removal and replacement of the structure carrying Duncan Road over I-74. Reconstruction of these structures is anticipated in order to accommodate the proposed roadway typical sections on the bridge deck, provide the clear opening underneath the structure for the proposed under passing roadway and ramp terminals, and to provide the design vertical clearance. Proposed ramp structures are also anticipated at new locations for each interchange type concept where the ramps cross over the interstates or other ramps.

The proposed structure lengths and number of spans vary based on the interchange type concept. The construction of these structures has been considered in development and cost estimating for each alternative.

### 5.1.5 Maintenance of Traffic

The maintenance of traffic during staged construction of the I-57 and I-74 interchange and associated improvements is a critical component of the proposed project. Construction will need to be completed while maintaining traffic at all times on I-57 and I-74 regardless of the recommended alternative. Use of temporary pavement will be minimized, but will be required for mainline staging operations and temporary ramp connections and tie-ins. Short-term duration closures will also be considered for completion of portions of ramp construction items in lieu of temporary pavement or detour routes.

Each alternative generally follows the same sequencing for staging of construction to maintain traffic. In general, the cross roadways are constructed first in order to provide the necessary opening below for the proposed interstate reconstruction and any associated ramp terminals. Outer ramps or portions thereof that do not interfere with the existing ramp configuration are constructed next. After traffic is placed onto the proposed outer ramps, the proposed flyover and loop ramps can be constructed. Proposed ramp geometry,

location of proposed substructure units, and staging of individual ramps were evaluated in order to maintain traffic on the existing loops with minimal disturbance and limited use of temporary pavement. Upon completion of the proposed ramp construction, placement of traffic on the proposed ramps, and closure of the existing loop ramps, the mainline I-57 and I-74 pavement and I-74 structure can be constructed. Proposed interstate staging will allow for two lanes of travel in each direction at all peak times.

### 5.1.6 Environmental Impacts

This project was determined to require an Environmental Assessment (EA). Various environmental surveys were conducted for the project site in order to identify all of the natural resources and inventory any environmental constraints. See the **Environmental Assessment** in **Appendix D** for a summary of environmental studies completed, findings from these studies and any mitigation or commitments resulting from the EA.

### 5.1.7 Preliminary Estimated Construction Cost

Preliminary construction costs were estimated for all five proposed interchange alternatives. The estimates included mainline I-57 and I-74 reconstruction and widening; reconstruction of the structure carrying I-74 over I-57; proposed ramp pavement, embankment, and structures; cross roadway reconstruction and structure replacement for Bloomington Road over I-57, Mattis Avenue over I-74, Mattis Avenue over I-57, Duncan Road over I-74 (Alternates 1, 4, and 5 only); and other items associated with the construction of these facilities.

### 5.1.8 Design Exceptions

The alternatives were reviewed for their adherence to IDOT's interchange design criteria. The initial designs of all alternatives were prepared to avoid any proposed design exceptions.

## 5.2 Comparison of Interchange Alternatives

### 5.2.1 Comparison Features

Evaluation of the I-57/I-74 interchange type alternatives was based on the following primary objectives:

- Accommodate future peak hour design year (2040) traffic volumes
- Increase Efficiency of the Interchange (Ramp Travel Times)
- Improve safety of vehicles entering and exiting the interstates
- Minimize impacts to environmental resources

- Determine preliminary estimated construction cost
- Minimize Design Exceptions
- Obtain and consider Public & Stakeholder input

Additional criteria considered when evaluating the alternates are included in the evaluation matrix table (**Table 5.6**), which is presented later in this section of the report.

***Accommodation of Future Peak Hour Traffic Volumes***

Accommodation of future traffic volumes for each alternative can be evaluated by reviewing the Level of Service (LOS) at different locations within the project. The LOS for the five proposed interchange alternatives and the No-Build alternative are shown in the following **Table 5**: 2040 Peak Hour Analysis.

As shown, the No-Build option does not provide acceptable LOS on I-74 EB between the interchange ramps and Prospect Avenue, and since one of the main objectives of the proposed interchange reconstruction is to provide increased capacity for future traffic, it should not be given further consideration. Each of the proposed interchange alternatives provides improved LOS compared to the existing cloverleaf interchange, although there are not many differences between the five build alternatives and the LOS provided. Alternates 1, 4, and 5 provide LOS A for the 2040 PM peak hour for I-74 mainline between the interchange ramps, whereas Alternates 2 and 3 provide LOS B. Alternates 1, 2, and 3 provide LOS B for the 2040 AM peak hour for I-74 mainline between the interchange ramps and Prospect Avenue, while Alternate 4 and 5 provide LOS C. At all other locations, the level of service is the same for each of the five build alternatives.

| Table 5: 2040 Peak Hour Analysis – Speed, Density, and LOS | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Road Segment** | | | **Alternate 1** | | **Alternate 2** | | **Alternate 3** | | **Alternate 4** | | **Alternate 5** | | **No-Build** | |
| | | | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| **I-57 Mainline Between I-57/I-74 Ramps and I-57/I-72 Interchange** | NB | Speed | 65.5 | 65.5 | 65.9 | 65.6 | 66.0 | 65.8 | 65.4 | 65.7 | 65.4 | 65.5 | 65.9 | 65.8 |
| | | Density | 10.3 | 12.0 | 9.9 | 12.1 | 9.9 | 11.5 | 10.4 | 11.2 | 10.2 | 12.0 | 11.3 | 13.4 |
| | | LOS | A | B | A | B | A | B | A | B | A | B | B | B |
| | SB | Speed | 65.6 | 64.2 | 65.4 | 63.8 | 65.2 | 63.5 | 64.7 | 63.6 | 65.5 | 64.1 | 64.6 | 63.5 |
| | | Density | 12.2 | 15.2 | 12.3 | 15.3 | 12.5 | 15.2 | 12.6 | 14.7 | 12.2 | 15.5 | 14.3 | 17.6 |
| | | LOS | B | B | B | B | B | B | B | B | B | B | B | B |
| **I-57 Mainline Between Interchange Ramps** | NB | Speed | 69.2 | 68.7 | 65.0 | 65.8 | 65.0 | 65.9 | 68.7 | 68.9 | 69.1 | 68.8 | 54.7 | 62.9 |
| | | Density | 1.3 | 3.6 | 3.2 | 6.1 | 3.2 | 5.8 | 1.3 | 3.5 | 1.4 | 3.6 | 4.8 | 6.5 |
| | | LOS | A | A | A | A | A | A | A | A | A | A | A | A |
| | SB | Speed | 68.9 | 69.0 | 67.4 | 67.5 | 67.7 | 67.6 | 68.6 | 68.8 | 68.8 | 68.9 | 51.0 | 46.6 |
| | | Density | 4.7 | 4.7 | 6.0 | 5.7 | 6.0 | 5.8 | 4.8 | 4.4 | 4.6 | 4.7 | 11.6 | 15.8 |
| | | LOS | A | A | A | A | A | A | A | A | A | A | B | B |
| **I-57 Mainline Between Olympian Dr. and I-57/I-74 Ramps** | NB | Speed | 63.7 | 65.4 | 63.1 | 65.4 | 62.9 | 65.1 | 63.4 | 65.4 | 63.4 | 65.3 | 64.8 | 65.4 |
| | | Density | 2.3 | 4.1 | 2.4 | 4.2 | 2.3 | 4.1 | 2.3 | 3.9 | 2.3 | 4.0 | 4.2 | 7.4 |
| | | LOS | A | A | A | A | A | A | A | A | A | A | A | A |
| | SB | Speed | 66.5 | 66.0 | 67.6 | 67.5 | 67.6 | 67.1 | 65.1 | 65.0 | 65.4 | 65.1 | 65.6 | 65.3 |
| | | Density | 4.8 | 5.1 | 4.7 | 5.0 | 4.7 | 5.0 | 5.0 | 4.8 | 4.9 | 5.2 | 8.9 | 9.5 |
| | | LOS | A | A | A | A | A | A | A | A | A | A | A | A |
| **I-74 Mainline Between Prairieview Rd. and I-57/I-74 Ramps (3 lane section only)** | EB | Speed | 64.4 | 65.6 | 63.8 | 65.9 | 63.9 | 65.6 | 63.5 | 65.8 | 64.0 | 65.7 | 64.3 | 66.2 |
| | | Density | 14.2 | 8.5 | 14.4 | 8.4 | 14.0 | 8.5 | 14.4 | 8.0 | 14.3 | 8.5 | 21.4 | 12.7 |
| | | LOS | B | A | B | A | B | A | B | A | B | A | C | B |
| | WB | Speed | 66.4 | 64.2 | 67.1 | 64.6 | 67.2 | 63.8 | 66.1 | 64.3 | 66.6 | 64.2 | 66.2 | 64.7 |
| | | Density | 7.0 | 12.1 | 8.2 | 14.2 | 8.4 | 14.7 | 7.9 | 12.4 | 8.3 | 14.2 | 11.0 | 18.4 |
| | | LOS | A | B | A | B | A | B | A | B | A | B | A | C |
| **I-74 Mainline Between Interchange Ramps** | EB | Speed | 67.1 | 68.1 | 65.5 | 66.4 | 65.3 | 66.0 | 66.8 | 68.0 | 66.9 | 68.1 | 62.3 | 65.0 |
| | | Density | 11.2 | 6.3 | 11.6 | 6.8 | 11.4 | 7.0 | 11.2 | 6.0 | 11.3 | 6.1 | 19.8 | 11.3 |
| | | LOS | B | A | B | A | B | A | B | A | B | A | C | B |
| | WB | Speed | 69.0 | 67.9 | 65.9 | 65.5 | 66.0 | 65.1 | 68.8 | 67.9 | 68.8 | 68.0 | 56.0 | 53.7 |
| | | Density | 5.3 | 9.5 | 6.8 | 11.0 | 7.0 | 11.4 | 5.4 | 8.8 | 5.3 | 9.5 | 12.1 | 20.9 |
| | | LOS | A | A | A | B | A | B | A | A | A | A | B | C |
| **I-74 Mainline Between I-57/I-74 Ramps and Prospect Ave.** | EB | Speed | 61.2 | 64.7 | 62.1 | 65.3 | 62.3 | 65.1 | 59.0 | 63.3 | 58.8 | 63.3 | 53.1 | 62.0 |
| | | Density | 17.8 | 10.4 | 17.5 | 10.6 | 17.2 | 10.5 | 18.5 | 10.3 | 18.4 | 10.7 | 30.0 | 16.2 |
| | | LOS | B | A | B | A | B | A | C | A | C | A | D | B |
| | WB | Speed | 66.5 | 64.8 | 66.4 | 64.7 | 66.7 | 65.1 | 66.6 | 65.5 | 66.4 | 65.0 | 66.0 | 63.0 |
| | | Density | 9.3 | 16.6 | 9.4 | 16.7 | 9.4 | 16.7 | 9.2 | 15.1 | 9.3 | 16.5 | 13.6 | 24.7 |
| | | LOS | A | B | A | B | A | B | A | B | A | B | B | C |

***Ramp Travel Times***

Each interchange alternative was evaluated for its travel efficiency, which is measured as the free-flow travel times through the interchange. Travel efficiency usually decreases with the addition of access points. Providing free flow conditions is preferred in order to maximize travel efficiency. Each of the alternatives has different travel times due to the loop ramp design speeds and varying ramp lengths. The calculation of travel time encompasses both of these factors into a single comparable value. The ramp travel times were calculated from common beginning and ending points along the interstates for the five interchange alternatives and are shown in **Table 6** below.

**Table 6: Ramp Travel Time**

| Ramp Movement | Ramp Free-Flow Travel Time (minutes) | | | | | |
|---|---|---|---|---|---|---|
| | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 | No-Build |
| **Ramp A** | 1.44 | 1.35 | 1.35 | 1.38 | 1.39 | 1.66 |
| **Ramp B** | 1.43 | 1.43 | 1.41 | 1.42 | 1.45 | 1.84 |
| **Ramp C** | 1.56 | 2.19 | 2.19 | 1.70 | 1.78 | 2.08 |
| **Ramp D** | 1.57 | 1.56 | 2.18 | 1.96 | 1.53 | 1.78 |
| **Ramp E** | 1.68 | 1.66 | 2.13 | 2.36 | 1.61 | 1.90 |
| **Ramp F** | 1.60 | 2.21 | 2.21 | 2.09 | 1.88 | 1.87 |
| **Ramp G** | 1.35 | 1.37 | 1.31 | 1.37 | 1.36 | 1.73 |
| **Ramp H** | 1.30 | 1.24 | 1.27 | 1.31 | 1.28 | 1.67 |
| **TOTAL TIME** | **11.93** | **13.01** | **14.05** | **13.59** | **12.27** | **14.53** |

Each of the proposed interchange alternatives provides a total ramp travel time savings to the users of the interchange compared to the no-build option. Alternate 1 has the most efficient ramp configuration of the interchanges studied with a total ramp travel time of more than one minute less than Alternates 2, 3, and 4, and 20 seconds less than Alternate 5. Alternative 5 is the second most efficient alternative, followed by Alternatives 2, 4, and 3. The No-Build cloverleaf has the highest travel time of all interchange types.

***Safety of Vehicles Entering and Exiting the Interstates***

A study comparing projected vehicle-to-vehicle conflicts of the five proposed interchange alternatives and the No-Build alternate was performed using CORSIM. The purpose of this inquiry was to provide comparative data of the alternatives, not to correlate data with historic crash rates. The estimated number of conflicts for the five interchange alternatives and the No-Build alternative are shown in **Table 7**.

| Table 7: CORSIM Conflict Analysis | | | | | | |
|---|---|---|---|---|---|---|
| | Estimated number of conflicts | | | | | |
| | No-Build | Alternate 1 | Alternate 2 | Alternate 3 | Alternate 4 | Alternate 5 |
| **2040 AM** | 534 | 219 | 220 | 238 | 348 | 309 |
| **2040 PM** | 96 | 60 | 81 | 66 | 74 | 61 |
| **TOTAL** | 630 | 279 | 301 | 304 | 422 | 370 |
| **Difference from No-Build** | **N/A** | **-56%** | **-52%** | **-52%** | **-33%** | **-41%** |

Each of the build alternatives has significantly fewer potential conflicts than the existing interchange geometry as a result of eliminating conflict points associated with the number of access locations along the interstates and eliminating the mainline weaving movements. Alternate 1 has the fewest number of projected conflicts of all five proposed alternatives. Alternates 2 and 3 have the second fewest projected conflicts, followed by Alternates 5 and 4.

An Operational Safety Analysis was conducted utilizing the Enhanced Interchange Safety Analysis Tool (ISATe) to predict future crash rates for the existing cloverleaf interchange and all proposed alternatives. The results of this analysis are presented in the following table.

| Table 8: ISATe Analysis Summary | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Study Period: 2011-2031 | | Existing (predicted) | Existing (expected*) | Alternative 1 (predicted) | Alternative 2 (predicted) | Alternative 3 (predicted) | Alternative 4 (predicted) | Alternative 5 (predicted) |
| Total Number of Crashes | | 741 | 1195 | 802 | 791 | 814 | 840 | 825 |
| Total Number of Crashes per Type | K | 7 | 9 | 7 | 6 | 7 | 7 | 7 |
| | A | 18 | 22 | 17 | 17 | 18 | 18 | 18 |
| | B | 93 | 113 | 93 | 91 | 96 | 99 | 96 |
| | C | 130 | 157 | 145 | 143 | 150 | 155 | 149 |
| | PDO | 496 | 897 | 542 | 534 | 545 | 563 | 557 |
| | KAB | 118 | 144 | 117 | 114 | 121 | 124 | 121 |

*Using the EB method combined with the predictive method

Alternate 2 has the least amount of predicted total crashes and KAB crashes, followed by Alternate 1. However, the difference in predicted crashes between the five alternates is minimal.

***Impacts to Environmental Resources***

The environmental impacts and disturbance to adjacent properties for each proposed interchange alternative were also studied concurrently in the Environmental Assessment and compared when selecting a preferred concept. Wetlands, detention ponds, streams, flood plains, T&E species/habitat/natural

areas, special waste sites (RECs), potential archaeological resources, and social resources have all been identified as having potential impacts associated with the construction of the proposed interchange alternatives. Alternate 2 has the least number of potential impacts to the environmental resources. Alternate 1 has the second least amount of potential impacts, followed by Alternate 3, 5, and 4.

***Preliminary Estimated Construction Cost***

The total preliminary estimated cost for each alternative, shown in **Table 9**, includes the construction cost and additional costs associated with land acquisition and utility relocations.

**Table 9: Summary of Preliminary Costs**

| | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|
| **Construction Cost** | $106,200,000 | $102,500,000 | $91,800,000 | $123,600,000 | $121,900,000 |
| **R.O.W. / Land Acquisition** | $4,200,000 | $ 2,500,000 | $5,700,000 | $6,400,000 | $5,300,000 |
| **Utilities** | $1,800,000 | $1,800,000 | $2,800,000 | $2,800,000 | $2,800,000 |
| **Total** | **$112,200,000** | **$106,800,000** | **$100,300,000** | **$132,800,000** | **$130,000,000** |

***Design Exceptions***

Compliance with design criteria and potential proposed design exceptions are also a factor in selecting the recommended interchange alternative. No proposed design exceptions were identified during the initial alternative development and screening process.

***Public & Stakeholder Input***

Input received from the public and project stakeholders at the various meetings conducted indicated a preference for Alternatives 1 and 2. This was considered in determining the recommendation for the preferred interchange alternative concept. See the Public Involvement Document, **Appendix B**, for public meeting attendance lists, public comments, responses to specific questions or requests for additional information, stakeholder meeting documentation, and newspaper articles.

### 5.2.2 Evaluation Matrix

The following evaluation matrix table was developed during the Interchange Type Study to present a side-by-side comparison of the five interchange alternatives. A ranking system was developed for each category, where 1 is the best alternate and 5 is the worst alternate. All of the individual rankings were then added to determine the overall ranking.

**Table 10: Evaluation Matrix**

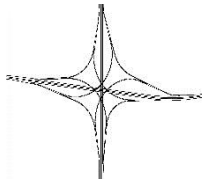
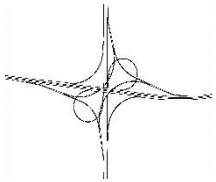
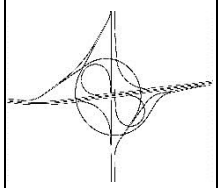
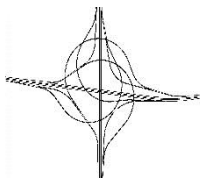
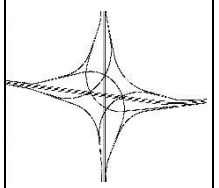
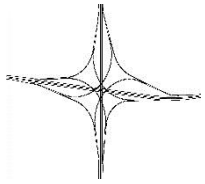
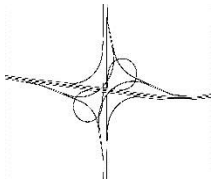
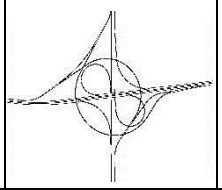
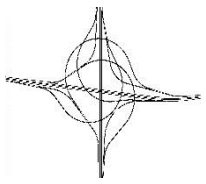
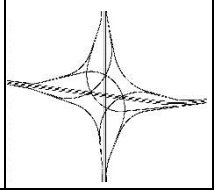
| Category | Comparison Features | Alternate 1 | Alternate 2 | Alternate 3 | Alternate 4 | Alternate 5 |
|---|---|---|---|---|---|---|
| | |  |  |  |  |  |
| Geometrics | Number of Loop Ramps | 0 | 2 | 2 | 0 | 0 |
| | Number of Mainline Access Points | 8 | 12 | 12 | 8 | 8 |
| | Number of Transposed Ramps | 0 | 0 | 2 | 8 | 0 |
| | Number of Ramp Structures | 4 | 6 | 7 | 8 | 6 |
| | Total Length of Ramp Structures (ft) | 3,665 | 4,535 | 2,370 | 5,815 | 4,600 |
| | Total Length of Ramps (ft) | 32,700 | 31,400 | 37,100 | 43,300 | 37,100 |
| | Fully Directional | YES | NO | NO | NO | YES |
| | Number of Design Exceptions | 0 | 0 | 0 | 0 | 0 |
| | **Ranking** | **1** | **2 T** | **5** | **4** | **2 T** |
| Traffic | Capacity – Level of Service: I-57 NB | B | B | B | B | B |
| | Capacity – Level of Service: I-57 SB | B | B | B | B | B |
| | Capacity – Level of Service: I-74 EB | B | B | B | C | C |
| | Capacity – Level of Service: I-74 WB | B | B | B | B | B |
| | Total Ramp Travel Time (minutes) | 11.93 | 13.01 | 14.05 | 13.59 | 12.27 |
| | **Ranking** | **1** | **2** | **3** | **5** | **4** |
| Safety | CORSIM Conflict Analysis (potential conflicts in peak hour) | 279 | 301 | 304 | 422 | 370 |
| | ISATe Analysis: Predicted Total Crashes | 802 | 791 | 814 | 840 | 825 |
| | ISATe Analysis: Predicted KAB Crashes | 117 | 114 | 121 | 124 | 121 |
| | **Ranking** | **1 T** | **1 T** | **3** | **5** | **4** |

**Table 10: Evaluation Matrix (Continued)**

| Category | Comparison Features | Alternate 1 | Alternate 2 | Alternate 3 | Alternate 4 | Alternate 5 |
|---|---|---|---|---|---|---|
| | |  |  |  |  |  |
| **Potential Environmental Impacts** | Wetlands # (acres) | 6 (4.02) | 6 (3.52) | 6 (4.72) | 8 (7.00) | 7 (5.75) |
| | Detention Ponds # (acres) | 1 (1.47) | 1 (1.47) | 1 (1.47) | 1 (1.47) | 2 (1.80) |
| | Streams – Copper Slough (ft) | 1,970 | 814 | 2,082 | 2,013 | 707 |
| | Floodplains | Yes | Yes | Yes | Yes | Yes |
| | T&E Species/Habitat/Natural Areas | None | None | None | None | None |
| | Special Waste Sites (RECs) | 5 | 5 | 4 | 6 | 6 |
| | Potential Archaeological Resources | 1 | 0 | 1 | 1 | 1 |
| | Social Resources | 1 | 0 | 2 | 2 | 1 |
| | **Ranking** | **2** | **1** | **3** | **5** | **4** |
| **Implementation** | Construction Cost | $106,200,000 | $102,500,000 | $91,800,000 | $123,600,000 | $121,900,000 |
| | Right-of-Way Acquisition Cost (acres) | $4,200,000 (66) | $2,500,000 (37) | $5,700,000 (89) | $6,400,000 (106) | $5,300,000 (78) |
| | Utility Relocation Cost | $1,800,000 | $1,800,000 | $2,800,000 | $2,800,000 | $2,800,000 |
| | Total Cost | $112,200,000 | $106,800,000 | $100,300,000 | $132,800,000 | $130,000,000 |
| | **Ranking** | **3** | **2** | **1** | **5** | **4** |
| | **Overall Ranking** | **1 T** | **1 T** | **3** | **5** | **4** |

### 5.2.3 Recommendation for Further Studies

After initial evaluation of the proposed I-57 and I-74 interchange concepts, Alternatives 1 and 2 ranked the highest overall compared to the other concepts. During preparation of the Interchange Type Study, BDE Procedure Memorandum 14-02 was issued and included the change of mainline interstate design speed from 70 mph to 75 mph and directional ramps from 50 mph to 55 mph. It was determined that the increase in design speeds could significantly affect the key comparison features in the alternative evaluation, and thus the selection of a preferred alternative. Since Alternatives 1 and 2 were the top ranked concepts after the preliminary evaluation, it was agreed that these two alternatives would be recommended to be studied further and an evaluation conducted based on the new policy design speeds.

## 5.3 Further Study of Alternates 1 & 2

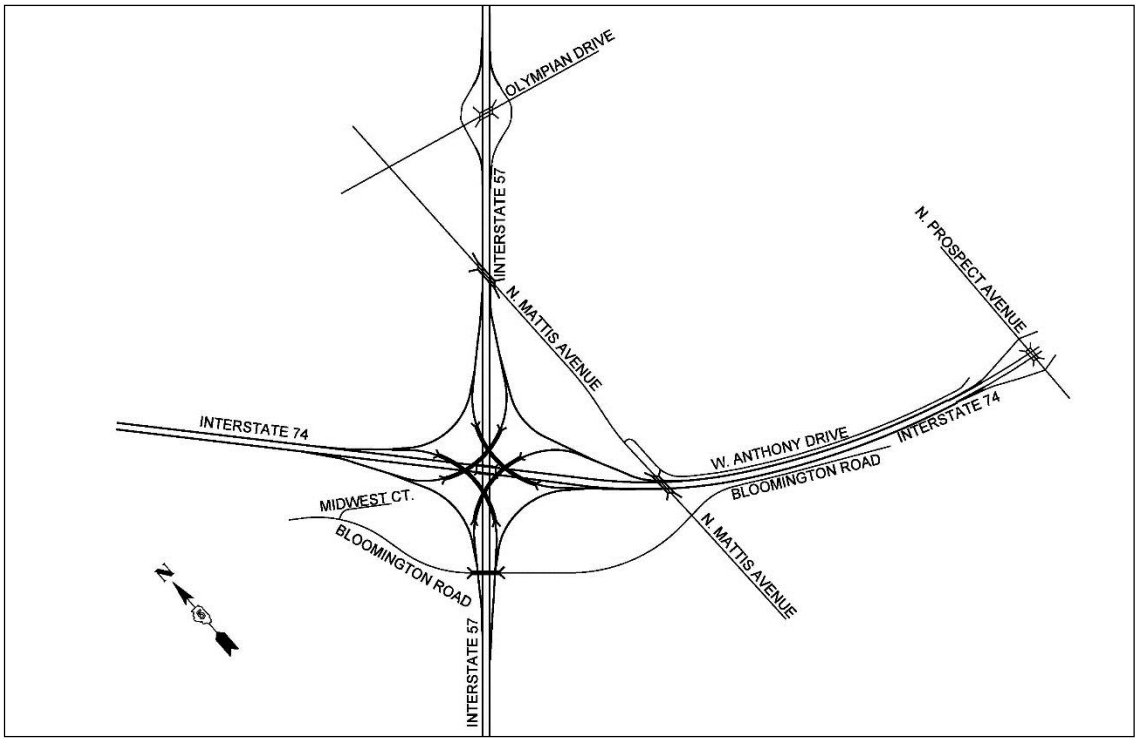
### 5.3.1 Refinement of Previous Alternatives

The design criteria for the interstates and ramps was updated for Alternatives 1 and 2 based on the revised design speeds. The ramp design is affected more than the mainline by these changes, since both interstates are primarily tangent with only large radii curvature on I-74 towards the east end of the project. Some of the key changes to the ramp design criteria include: increased minimum radius from 760 ft to 960 ft; increased stopping sight distance from 425 ft to 495 ft; and flatter rates of vertical curvature (K values) from 84 to 114 for crest curves and 96 to 115 for sag curves.

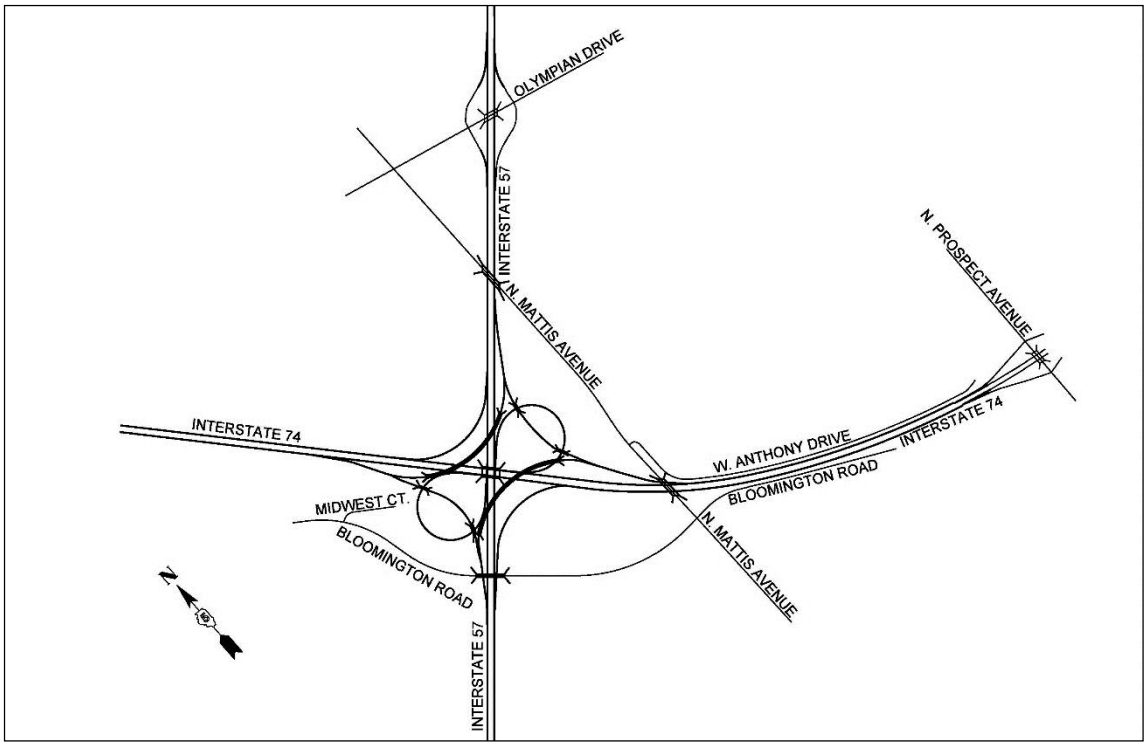
Based on the new design speeds and preferred typical sections for I-57 and I-74, revisions were made to Alternatives 1 and 2. Some of the items that were reviewed and adjusted based on the new criteria included the location of the entrance and exit ramp terminals; the radii along each ramp; maximum span lengths where the ramps cross over the interstates; the length of ramps to achieve policy vertical gradients, curvature, and clearances; and increased inside shoulder widths along the ramp structures to provide sight distance.

Proposed site plans developed for some of the surrounding areas were obtained by IDOT and additional geometric studies were completed in order to reduce impacts to the ultimate configuration desired by some of the local businesses.

**Alternative 1: Full Directional**




**Alternative 2: Semi-Directional with Directional Flyovers and Two Loops**



### 5.3.2 Revised Evaluation Matrix

The following evaluation matrix has been prepared to include values from the revised Alternatives 1 and 2 described and shown above.

| Priority | | | Difference Significance | | | Rating Points | | |
|---|---|---|---|---|---|---|---|---|
| 1 | - | 5 | 1 | - | 5 | 1 | - | 2 |
| Low | | High | Low | | High | Low | | High |

**Weighted Score** = Priority x Difference Significance x Rating Points

**Table 11: Revised Evaluation Matrix**

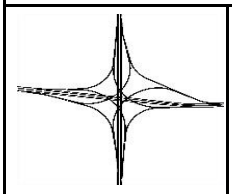
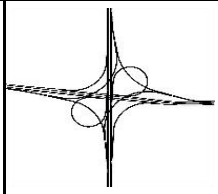
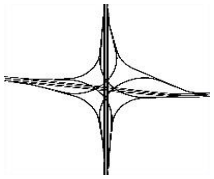
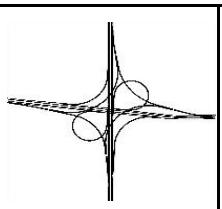
| Category | Comparison Features | Priority | Difference Significance | Alternate 1 | | | Alternate 2 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | |  | Rating Points | Weighted Score |  | Rating Points | Weighted Score |
| Geometrics | Number of Loop Ramps | 3 | 3 | 0 | 2 | 18 | 2 | 1 | 9 |
| | Number of Mainline Access Points | 3 | 2 | 8 | 2 | 12 | 12 | 1 | 6 |
| | Number of Ramp Structures | 2 | 2 | 4 | 2 | 8 | 6 | 1 | 4 |
| | Total Length of Ramp Structures (ft) | 4 | 3 | 5230 | 1 | 12 | 3860 | 2 | 24 |
| | Total Area of Ramp Structures (sq ft) | 5 | 3 | 213,215 | 1 | 15 | 154,230 | 2 | 30 |
| | Total Length of Ramps (ft) | 4 | 1 | 33,705 | 2 | 8 | 33,730 | 1 | 4 |
| | Use of Maximum Policy Gradients | 5 | 5 | YES | 1 | 25 | NO | 2 | 50 |
| | Fully Directional | 3 | 5 | YES | 2 | 30 | NO | 1 | 15 |
| | Number of Anticipated Design Exceptions | 5 | 1 | 0 | 2 | 10 | 0 | 2 | 10 |
| | **Ranking** | | | | **2** | **138** | | **1** | **152** |
| Traffic | Capacity – Level of Service: I-57 NB | 3 | 1 | B | 2 | 6 | B | 2 | 6 |
| | Capacity – Level of Service: I-57 SB | 3 | 1 | B | 2 | 6 | B | 2 | 6 |
| | Capacity – Level of Service: I-74 EB | 3 | 1 | B | 2 | 6 | B | 2 | 6 |
| | Capacity – Level of Service: I-74 WB | 3 | 1 | B | 2 | 6 | B | 2 | 6 |
| | Total Ramp Travel Time (minutes) | 3 | 2 | 11.84 | 2 | 12 | 12.90 | 1 | 6 |
| | **Ranking** | | | | **1** | **36** | | **2** | **30** |
| Safety | Potential Conflicts in Peak Hour (CORSIM) | 5 | 1 | 330 | 2 | 10 | 367 | 1 | 5 |
| | ISATe Analysis (predicted crashes) | 5 | 1 | 772 | 1 | 5 | 714 | 2 | 10 |
| | Total KAB's | 5 | 1 | 116 | 1 | 5 | 108 | 2 | 10 |
| | **Ranking** | | | | **2** | **20** | | **1** | **25** |

**Table 11: Revised Evaluation Matrix (Continued)**

| Category | Comparison Features | Priority | Difference Significance | Alternate 1 | | | Alternate 2 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | |  | Rating Points | Weighted Score |  | Rating Points | Weighted Score |
| Potential Environmental Impacts | Wetlands # (acres) | 5 | 1 | 6 (3.52) | 2 | 10 | 6 (3.52) | 2 | 10 |
| | Detention Ponds # (acres) | 5 | 1 | 1 (1.47) | 2 | 10 | 1 (1.47) | 2 | 10 |
| | Streams – Copper Slough (ft) | 5 | 1 | 2,520 | 2 | 10 | 2,520 | 2 | 10 |
| | Floodplains | 5 | 1 | Yes | 2 | 10 | Yes | 2 | 10 |
| | T&E Species/Habitat/Natural Areas | 5 | 1 | None | 2 | 10 | None | 2 | 10 |
| | Special Waste Sites (RECs) | 5 | 1 | 5 | 2 | 10 | 5 | 2 | 10 |
| | Potential Archaeological Resources | 5 | 5 | 1 | 1 | 25 | 0 | 2 | 50 |
| | Social Resources | 5 | 3 | 2 | 1 | 15 | 1 | 2 | 30 |
| | **Ranking** | | | | **2** | **100** | | **1** | **140** |
| Preliminary Implementation Costs | Construction Cost | 5 | 4 | $164,702,000 | 1 | 20 | $134,926,500 | 2 | 40 |
| | Right-of-Way Acquisition Cost (acres) | 5 | 3 | $3,786,000 (63) | 1 | 15 | $2,887,500 (46) | 2 | 30 |
| | Utility Relocation Cost | 5 | 1 | $1,800,000 | 2 | 10 | $1,800,000 | 2 | 10 |
| | Total Cost | 5 | 3 | $170,288,000 | 1 | 15 | $139,614,000 | 2 | 30 |
| | **Ranking** | | | | **2** | **60** | | **1** | **110** |

| Category | Category Priority | Alternate 1 | | Alternate 2 | |
|---|---|---|---|---|---|
| | | Average Feature Score | Weighted Score | Average Feature Score | Weighted Score |
| **Geometrics** | 3 | 16 | 48 | 17 | 51 |
| **Traffic** | 3 | 8 | 24 | 6 | 18 |
| **Safety** | 5 | 7 | 35 | 9 | 45 |
| **Potential Environmental Impacts** | 5 | 13 | 65 | 18 | 90 |
| **Preliminary Implementation Costs** | 5 | 15 | 75 | 28 | 140 |
| **Total Score** | | | 247 | | 344 |
| **Overall Ranking** | | | **2** | | **1** |

## 6. Recommended Alternative

The recommended I-57 & I-74 interchange type is Alternative 2, the semi-directional interchange type with two directional flyover ramps and two loop ramps (see **Exhibit 14**). As summarized in **Table 11**, which was developed during the Interchange Type Study, Alternate 2 provides the highest ranking based on the evaluation results. This table does not include all items covered in the Environmental Assessment and was a separate comparison of the interchange alternatives. Alternate 2 was also the preferred alternate based on the evaluation criteria in the Environmental Assessment/FONSI. While Alternate 1 provides slightly better traffic operations, Alternate 2 ranks better in geometry, safety, environmental, and cost categories. The traffic operations of Alternate 2 meet the design criteria of the project and are a significant improvement over the no-build condition. The operational advantages of Alternate 1 are minimal compared to Alternate 2 and are not great enough to outweigh the benefits of Alternate 2 in all other categories. Additional advantages of Alternative 2 include increasing the ramp design speeds, eliminating the mainline weaves, reducing the number of access points along the interstates, increasing the mainline and ramp capacities and reducing travel time through the interchange. Analysis results for this preferred interchange type can be found in the **Access Justification Report** in **Appendix F**.

### 6.1 Attainment of Purpose & Need

Alternative 2 best satisfies the project purpose and need to address operational, geometric, safety, and capacity deficiencies while minimizing the impacts to environmental resources and surrounding land and providing a cost effective solution. The improvements associated with this alternative will improve operational performance along both Interstate 57 and Interstate 74 by increasing the average speed and reducing the number of predicted crashes. The project also substantially improves upon the no-build alternative by constructing a third lane in both directions along Interstate 74.

### 6.2 Interchange Type

Alternative 2 is a semi-directional interchange with two directional flyovers and two loops. The loop ramps are placed diagonally in order to eliminate any mainline weaving movements within the interchange. The proposed design consists of twelve access points along the interstates, compared to sixteen for the existing cloverleaf interchange. The use of minor convergences and divergences in the northeast and southwest quadrants reduces the number of entrance and exit terminals from four in each direction for the existing cloverleaf to three for the proposed concept. Loop ramps are designed for a 40 mph design speed, while all other ramps are designed for a 55 mph design speed. Outer Ramps B and G cross over loop Ramps C and F; and flyover Ramp D is carried over I-57 and I-74, and flyover Ramp E is carried over I-57, I-74 and Loop Ramp F. An **Interchange Design Study (IDS)** was developed for this

preferred alternative and is included in **Appendix G**. The IDS contains further geometric and capacity details of the recommended alternative.

## 6.3 Alignments

The existing tangent I-57 alignment was maintained for the preferred interchange configuration. The existing tangent l-74 alignment was maintained through the interchange but the existing centerline became the proposed baseline and the theoretical centerline was shifted 10' north to better accommodate existing and proposed development south of the interstate. This preferred alignment of I-74 provides for the 60' policy open median width and allows the proposed eastbound inside edge of pavement for the new six-lane section to coincide with the eastbound inside edge of pavement of the existing four-lane section. The existing sideroad alignments for U.S. 150 (Bloomington Road) and Mattis Avenue were maintained as the preferred proposed alignments. The preferred interchange ramp alignments are shown on the approved **Interchange Design Study** in **Appendix G**.

## 6.4 Typical Sections

I-57 is proposed to remain at four-lanes with the existing 64 foot grass median and new 12 foot inside and outside shoulders. I-74 is proposed to be reconstructed to six-lanes with a 60 foot open grass median through the interchange and transition east of the interchange to a 27 foot closed median with barrier wall and the inside and outside shoulder widths increased to 12 foot. Proposed typical sections for mainline interstates, sideroad grade separations and interchange ramps can be seen on **Exhibits 15 to 20**.

## 6.5 Proposed Structures

The dual I-74 (SN's 010-0018 and 010-0019) bridges that carry I-74 over I-57 will be replaced and the adjacent cross roadways with grade separation structures at Mattis Avenue over I-57 and over I-74 and U.S. 150 (Bloomington Road) over I-57 will also be replaced to accommodate the necessary horizontal and vertical clearances for the new interchange type. The existing box culverts under I-57 and I-74 required to convey runoff from the Copper Slough are planned to be improved and extended. **Bridge Condition Reports** describing the existing condition of all of these structures and the proposed improvements for each are included in **Appendix I**. The preferred interchange type will also require two new flyover ramp structures (Ramps D & E) and new outer ramp structures on Ramps B & G along with some MSE walls at some of the abutments to accommodate the approved geometric layout for the new interchange. The two flyover ramp structures will be curved steel plate beam girder type structures while the four shorter outer ramp bridges will be precast deck beam girder type and built on tangent alignment even though these are curved ramps. Preliminary **TS&L**

**Drawings** have been developed for each of these new structures and are included in **Appendix J**.

## 6.6 Cross Road Grade Separation Improvements

As discussed above, improvements will be necessary to the existing structures on both Mattis Avenue and U.S. 150 (Bloomington Road) in order to accommodate the new interchange. In addition to these anticipated bridge replacements, roadway approach improvements are required to transition from the existing profile and approach width to the proposed conditions at the structures.

The proposed Mattis Avenue roadway improvements at I-74 includes five twelve foot lanes with a four foot on-street bike lane on each side and a five foot sidewalk along each side with curb and gutter. The proposed Mattis Avenue roadway improvements at I-57 include two twelve foot lanes with an eight foot paved shoulder and a five foot sidewalk along each side.

The proposed U.S. 150 (Bloomington Road) roadway improvements include two twelve foot lanes with an eight foot paved shoulder and a five foot sidewalk along the north side.

## 6.7 Bicycle and Pedestrian Accommodations

Both I-57 & I-74 are proposed to remain full access controlled interstate facilities per policy with pedestrian and bicycle usage prohibited. Based on stakeholder coordination and local agency input, the adjacent cross roadway grade separations will be improved with both bicycle and pedestrian accommodations along these facilities. Since both the Mattis Avenue and U.S. 150 (Bloomington Road) corridors are planned to provide bicycle and pedestrian accommodations in the long range plan, these facilities will be constructed within the project improvement limits along each roadway to allow for future extension and connections by the City of Champaign. These locally desired improvements will necessitate local agency funding participation, but this has been coordinated with Champaign with an understanding agreed upon (see **Appendix A**).

## 6.8 Proposed Drainage Plan Summary

The existing drainage pattern through the interchange will be generally maintained from north to south, with the majority all of the stormwater runoff conveyed either in open ditches or through culverts. In order to facilitate the new roadway and interchange geometry, the drainage related improvements for this project will include modifications to existing culverts, replacement of existing culverts, and installation of new culverts, as well as installation of new storm sewer along the eastern leg of I-74. Several of the existing culverts studied within the interchange area did not meet IDOT's

three-foot freeboard requirement for the 50 year event. Some of these existing culverts that do not meet the freeboard requirement will be eliminated due to the reconfiguration of the interchange ramps, while the remaining culverts will be replaced with a culvert adequate to convey the calculated design flows while providing the policy freeboard. The proposed culvert analyses and preliminary sizing conducted for this study indicates that all of the proposed culvert locations meet the three-foot freeboard requirement for the 50 year design event. The preliminary analysis also indicates that the 100-year design event does not overtop any of the proposed roadways at any of the culvert locations. See the **Location Drainage Study** document for detailed drainage analysis and calculations.

## 6.9 Environmental Consequences

The project required the preparation of an Environmental Assessment (EA). The EA assessed the applicable issues and potential impact areas of reconstructing the existing full conventional cloverleaf interchange and approaches at I-57 and I-74. The recommended build alternative minimizes the environmental impacts through a smaller interchange footprint.

### 6.9.1 Direct Impacts

The following public facilities are located within the project area: one elementary and one high school, one college, one library, one fire station, one surgery center, four parks and four places of worship. However, the planned corridor expansion is not anticipated to negatively impact the current and future land use or the feasibility for commercial businesses to thrive along the corridor.

<u>Businesses</u>

Two businesses are located in the southwest quadrant along I-74. The preferred alternative would require acquisition of a portion of the storage lot for Midwest Underground Technology, Inc. (MUTI). No businesses will be relocated. Approximately 0.66 acres of the MUTI storage lot would be acquired. MUTI has been informed of this project and is aware that a portion of the property and storage lot will be acquired. During the stakeholder meeting with MUTI, their representatives indicated a preference for the alternative ultimately selected and IDOT land acquisition staff in attendance at the meeting explained the process for mitigation of potential impacts. Compensation or mitigation for the acquisition of the land and lot will be negotiated during ROW acquisition. All property acquisition will be conducted under the provisions of the *Uniform Relocation Assistance and Real Property Acquisition* Policies *Act of 1970*, as amended, and the *IDOT Land Acquisition Policies and Procedures Manual*.

The areas north and south of I-74 between Mattis Avenue and Prospect Avenue are developed with businesses. No economic impacts to these businesses, or other area businesses, are anticipated.

Churches

There are several churches located near the project but only one church located in the southwest corner of the southwest quadrant of the interchange may be affected by the project. Kingdom Hall of Jehovah's Witness church is located on Midwest Court off of U.S. 150 (Bloomington Road) and is in close proximity to the proposed improvement limits. The existing facility is planned to remain with partial right-of-way and/or easement acquisition to be coordinated during design. (See **Exhibit 21**).

Schools Districts and Bus Routes

The project study area is served by the Champaign Unit 4 School District (see **Exhibit 22**). Within this district there are 12 elementary schools, 3 middle schools, and 3 high schools. The Champaign Unit 4 School District partners with the Champaign Urbana Mass Transit District to provide transportation for middle school and high school students. None of the schools are expected to be directly affected by the proposed project; however, the Champaign Urbana Mass Transit District has a route using Mattis Avenue that services Centennial High School, Central High School, Edison Middle School, Franklin Middle School, and Jefferson Middle School. The proposed Transportation Management Plan will require coordination with these local entities for any temporary or long term closures and detour routes.

Fire Protection and Ambulance Service

Support for fire operations is provided by the City of Champaign Fire Department. Champaign Fire Station #5 is located within the study area. Arrow Carle Ambulance and Pro Ambulance both serve the Champaign Area (see **Exhibit 23**). The Champaign Fire Department also offers emergency medical services. During construction, the Transportation Management Plan will require coordination with the fire departments and ambulance services on any temporary or long term closures and detour routes. Temporary traffic signal preemption capability requested by the City of Champaign Fire Department will be accommodated with the I-57/ Mattis structure reconstruction.

Mail Routes

The project limits are located in the 61821 and 61822 zip codes (see **Exhibit 24**). The existing mail routes are not expected to be directly or adversely affected by the proposed project.

### 6.9.2 Indirect & Cumulative Impacts

An improved I-57 & I-74 Interchange is anticipated to have a positive impact on local and regional economics and businesses in general, in terms of increased transportation safety and efficiency. The proposed improvements will improve interchange geometry and operations, enhance safety conditions, and increase capacity for growing traffic volumes. The proposed project could have an indirect effect on land use in the area with the generation of new development that would complement the current and proposed development in the area, and may accelerate the rate in which development would occur. However, this effect corresponds with CUUATS and the City of Champaign's land use plan; therefore, no mitigation would be considered.

Based on local, state, and federal regulations in place for protection of resources, there could be minimal cumulative impacts to water quality, streams, floodplains, land use, cultural resources, and potentially hazardous material sites.

There could also be a cumulative impact to agricultural land in the area due to the conversion of undeveloped lands to light industrial and office uses. Over time, agricultural land has been reduced in this area, and this trend will continue due to the expected future development, as most of the open space in the interchange area is owned by land developers. Coordination with IDOT District 5 and the City of Champaign indicated there are no active building permits within the study corridor. However, undeveloped land in the study corridor is currently zoned for future commercial land uses.

The proposed project would not have any significant impacts to environmental resources to cumulatively add or assess in comparison to the past, the present, or the reasonably foreseeable future. Therefore, it can be assumed that there would be no significant cumulative impacts.

### 6.9.3 Summary

Construction of the proposed action requires 46.7 acres of right-of-way from 15 parcels with 7 separate owners. One parcel would require removing approximately 0.66 acres of a parking/storage lot, but the acquisitions would not displace any residences or businesses. Five special waste sites are located in the acquisition area and may be affected. Based on the traffic noise analysis and noise abatement evaluation conducted, including the viewpoints of the benefited receptors, highway traffic noise abatement measures are likely to be implemented based on preliminary design. The project would also require fill within the 100-year floodplain and re-routing approximately 1,500 feet of Copper Slough.

The FHWA has determined that the proposed action, identified as Alternative 2 in the Environmental Assessment, will not have any significant impact on the human environment. This Finding of No Significant Impact is based on the Environmental Assessment and the Environmental Assessment Errata, which have been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. Resources potentially impacted by the proposed action or that require discussion pursuant to applicable laws and regulations are included with the detailed environmental documentation and discussion that can be found in the **Environmental Assessment** included in **Appendix D**.

## 6.10 Traffic Management Analysis

A Transportation Management Plan was developed for the recommended alternative to assess alternatives for accommodating traffic during construction. The staged construction of the I-57 & I-74 interchange is proposed to be implemented with three separate construction contracts that include multiple construction stages to maintain traffic at all times during construction. Additional contracts could be identified during design or as funding becomes available. The first two contracts, identified as Contract 1 and Contract 2, include the replacement of the adjacent grade separation structures over the interstates and reconstruction of the approach roadways for these bridges. These are planned to be constructed prior to Contract 3, proposed interstate and interchange reconstruction, to provide the necessary horizontal and vertical clearances for the proposed roadways and ramps anticipated to be below the adjacent grade separation structures.

Contract 1 includes the replacement of both of the North Mattis Avenue bridges over I-74 and over I-57. The new structures will be longer than the existing to allow for the proposed roadway configurations and ramps beneath them. Both proposed structures will be wider than the existing to allow for the addition of an on-road bike lane and sidewalk on each side of the roadway. Each roadway profile grade of Mattis Avenue over I-74 and over I-57 will be raised to provide policy vertical clearance for the roadway underneath. Mattis over I-74 will be staged to allow for two travel lanes, one in each direction, during construction, while Mattis over I-57 will be staged to allow for one travel lane, one-way operations, controlled by temporary signals during construction.

Contract 2 includes the replacement of the U.S. 150 (Bloomington Road) bridge over I-57. The new structure will be longer than the existing to allow for the proposed roadway configurations and ramps beneath it. The proposed structure will be wider than the existing to allow for the addition of a sidewalk on the north side. The roadway profile grade of U.S. 150 (Bloomington Road) over I-57 will be raised to provide policy vertical clearance for the roadway underneath. U.S. 150 (Bloomington Road) over I-57

will be staged to allow for one travel lane, one-way operations, controlled by temporary signals during construction.

Contract 3 consists of the removal of the existing cloverleaf interchange and reconfiguration to the preferred semi-directional interchange type; the reconstruction of I-74 from North Duncan Road to North Prospect Avenue; the reconstruction of I-57 from south of the Norfolk Southern Railroad to Olympian Drive; the Prospect Avenue ramp connections and the Olympian Drive ramp connections. The alternatives studied and proposed for construction staging assumed that a flexible pavement structure would be used for mainline and ramp construction. This will be further evaluated during design and the staging plan adjusted as needed if a rigid pavement structure is selected to be implemented during construction.

General considerations for the interstate construction include maintaining two 12' lanes of traffic in each direction wherever possible. Short term single lane closures will be required at certain locations to complete construction of the proposed lanes and shoulders. Temporary concrete barrier wall protection to the work zone is desirable and provided where possible. Shoulder widths during staged construction are desirably 2' minimum. The general proposed construction sequence of Contract 3 is to allow for construction of the outer ramps first, working inward toward the interchange with the mainline I-57 and I-74 interstate work to be completed last in order to reduce impacts to the facilities with the highest volumes of traffic until the end. See the **Transportation Management Plan** included in **Appendix H** for a more detailed description and discussion of the individual stages and possible detour routes planned for each construction contract.

### 6.11 Utility Impacts

There are several utilities located within the project limits. These include, but are not limited to electric, natural gas, water, storm sewer, sanitary sewer, telephone, and fiber optic. The locations of existing utilities are based on record plans, field investigations, data collection surveys and the best available information from the utility companies. The following are utilities that are located partially or entirely within the proposed footprint of the project limits. They have been identified by type, grouped by roadway, and listed west to east along I-74 or south to north along I-57, including ramps and crossroads. See **Section 3.6** for a more detailed description and see **Exhibit 27** for schedules delineating the various existing utility facilities.

## 6.12 Right-of-Way Requirement and Mitigation Measures

The approximate right-of-way / land acquisition requirements have been calculated and are summarized in **Table 12**.

| Table 12: Right-of-Way Summary – Recommended Alternative |
|---|
| **Proposed Right-of-Way (Acres)** |
| **46.7 (15 Parcels with 7 Owners)** |

## 6.13 Cost Estimate

An estimate of cost has been prepared for the recommended alternative. The total cost is $153,000,000. The cost estimate includes roadway construction, structure construction, land acquisition, utility adjustments, and engineering costs (see **Exhibit 26** for a breakdown of these costs).

## 6.14 Commitments

Private Land Owner Commitments
There are no commitments.

Environmental Commitments

- Compensatory flood storage volume will be provided to compensate for any floodplain storage losses resulting from the project. The volumes required will be computed during the final design phase.

- During the final design phase of the project, attempts will be made to avoid and minimize impacts to wooded areas and individual trees. The impacted trees will be replaced in accordance with IDOT policy "D&E-18 Preservation and Replacement of Trees."

- A Preliminary Site Investigation (PSI), if required, will be performed for the affected REC sites during the final design phase. The PESA will be re-validated before conducting the PSI. The PSI would determine the type and extent of any contamination that may be encountered during construction. Any special waste encountered during construction will be disposed of following the IDOT's specifications and IEPA guidelines.

- A Stormwater Pollution Prevention Plan will be developed during the final design stage of the project.

- Dust and airborne dirt generated by construction activities will be controlled through dust control procedures outlined in IDOT's Standard Specifications for Road and Bridge Construction.

- Based on the traffic noise analysis and noise abatement evaluation conducted, highway traffic noise abatement measures are likely to be implemented based on preliminary design. The noise barriers determined to meet the feasible and reasonable criteria are along the north and south side of I-74 between Mattis Avenue and Prospect Avenue. If it subsequently develops during final design that constraints not foreseen in the preliminary design occur, or public input substantially changes reasonableness, the abatement measure may need to be modified or removed from the project plans. A final decision on the installation of abatement measure(s) will be made upon completion of project's final design and the public involvement process.

- A Section 106 Memorandum of Agreement (MOA) was executed in 2014 between FHWA, IDOT, and the Illinois SHPO. FHWA and IDOT shall ensure that the stipulations of the MOA are implemented if an archaeological site near the project area cannot be avoided.

## 7. Coordination Activities

Various public and stakeholder coordination activities have taken place and are summarized below and included in **Appendix A** and **Appendix B**. See **Table 7.1** at the end of this section for a complete list of meetings that were conducted during the Phase I planning process.

### 7.1 Federal, State, and Local Agencies

Several meetings and memorandums involving federal, state, and local agency coordination occurred during development of the project and the various interchange alternatives. Documentation for these activities along with other agency coordination can be found in **Appendix A**.

11/10/2011: Scoping Meeting
An initial scoping meeting was held on November 10, 2011 at the Illinois Department of Transportation District 5 Office in Paris, Illinois. IDOT representatives discussed their involvement in the project and confirmed the scope and limits of the interchange study.

02/05/2013: Early Involvement Meeting
An Early Involvement Meeting was held to introduce both FHWA and IDOT BDE to the project. IDOT presented the preliminary interchange concepts. IDOT BDE and FHWA representatives suggested that all concepts for comparison evaluation should ultimately be documented in the Interchange Type Study.

06/27/2013: Illinois Department of Transportation Memorandum

The biological resources review for the original ESR and first Addendum (A) determined that there will be no effect to any listed threatened and endangered species and concludes consultation with the IDNR and USFWS. The memo further states that the IDNR Natural Heritage Database has no records of listed species, natural areas or nature preserves within the project corridor and that consultation is terminated with IDNR. Additionally, the memo discussed the wetlands surveyed as a part of the INHS wetland delineation report.

01/07/2014: Illinois Department of Transportation Memorandum

The natural resources review for the second ESR Addendum (B) area determined that the Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the project location and therefore; consultation is terminated. The memo further terminates wetland review. Additionally, IDOT determined that listed endangered, threatened, proposed and candidate species and critical habitat are not present in the area.

01/13/2014: Illinois Department of Transportation Memorandum

The memo transmits the No Historic Properties Affected – cultural resources clearance for the environmental survey area B.

01/29/2014: City of Champaign Presentation

A meeting was conducted with Champaign city officials to review the current proposed project improvements and interchange reconstruction alternatives. Items discussed included: coordinating with the city for the proposed typical sections for Mattis Avenue and U.S. 150 (Bloomington Road); minimizing the impacts to adjacent properties in order to allow for future development around the interchange; and drainage impacts and embankment sources for the potential future construction of the interchange.

02/20/2014: Illinois Department of Transportation Memorandum

The memo discusses the proposed projects potential to cause an Adverse Effect to an ancient American Indian archaeological habitation site. Additionally, this memo includes the concurrence, from the Illinois State Historic Preservation Officer (SHPO), with IDOT's determination of a "Preliminary Adverse Effect".

02/27/2014: NEPA-404 Merger Meeting

A NEPA 404 Merger Meeting was held at the Federal Highway Administration building in Springfield, Illinois. The interchange reconstruction project was presented at this meeting to review the project purpose and need, the current alternatives being studied, the environmental impacts, and the project complexity and suitability for the merger process. It was decided that the project will be processed as an Environmental Assessment. It was also determined by the agencies represented that the project complexity does not warrant the merger process and the individual agencies that have

jurisdiction over the natural resources impacted will be coordinated with during the planning and environmental assessment process. Since the project will not go through the NEPA-404 Merger process, a formal concurrence on the purpose and need was not required from all the agencies represented. It was therefore determined that the purpose and need received formal concurrence from IDOT BDE and FHWA at the 2/7/2014 bi-monthly coordination meeting in which purpose and need was approved for presentation at the NEPA 404 Merger Meeting.

07/09/2014: Illinois Department of Transportation Memorandum
The memo transmits the ratified MOA to the local IDOT district office.

07/15/2014: IDOT Bureau of Bridges and Structures Meeting
A meeting was held at IDOT Central Office Bureau of Bridges and Structures to discuss structure type components, curved vs. short tangent bridges, ramp structure considerations, other grade separation structures, the use of MSE retaining walls, and future structural coordination.

07/17/2014: City of Champaign and Hensley Township Coordination Meeting
A meeting was conducted with Champaign city officials and Hensley Township officials to coordinate proposed improvements to the local and urban state routes affected by the interchange reconstruction as well as outline local participation requirements. The City and Township were presented with preliminary roadway and structure typical sections as well as preliminary plan and profile sheets for North Mattis Avenue over I-74, North Mattis Avenue over I-57, U.S. 150 (Bloomington Road) over I-57, and Duncan Road. Each roadway improvement plan was discussed in detail.

07/31/2014: Federal Highway Administration Memorandum
The letter submits the MOA to the Advisory Council on Historic Preservation ACHP.

08/19/2014: Advisory Council on Historic Preservation (ACHP)
The letter from ACHP acknowledged receipt of the MOA, which completes the requirements of Section 106 of the National Historic Preservation Act.

10/21/2014: NRCS Correspondence
The AD-1006 with associated attachments was submitted to the NRCS for their coordination and completion.

11/10/2014: Illinois Department of Agriculture Correspondence
The letter from IDOA determined the project complies with IDOT's Agricultural Land Preservation Policy and Illinois' Farmland Preservation Act. Included was a copy of the USDA NRCS form AD-1006.

11/13/2014: Illinois Department of Transportation Memorandum

The memo of the Natural Resources Review discusses review for Illinois Endangered Species Protection and Illinois Natural Areas Preservation – Part 1075, review for Illinois Interagency Wetland Policy Act – Part 1090, and review for Endangered Species Act – Section 7.

12/04/2014: Department of the Army

The letter from the Department of the Army determined that the project will not impact jurisdictional waters or wetlands and a Department of the Army permit was not required for the proposed work.

Progress Meetings & Bi-Monthly Coordination Meetings

Several District Progress Meetings and Bi-Monthly Coordination Meetings were held during Phase I to discuss and coordinate design considerations, interchange type concepts, traffic and operational analysis, purpose and need, environmental concerns, structural coordination, and project schedule. A summary of each meeting and the minutes of the primary discussion items are included in **Appendix A**.

## 7.2 Value Engineering Study

11/06/2014 to 11/07/2014: Value Engineering Study

The value engineering study occurred early in the project planning phase during preparation of the preliminary Interchange Design Study, Draft Environmental Assessment, and Draft Design Report, when the design team was still able to implement recommendations as part of the continuing interchange concept evaluation process. The primary goals of the VE Study at this stage was to focus on recommendations for improved vehicular traffic operations, safety design concepts, right of way acquisition, construction staging and schedule, and the entire project delivery process with cost saving measures as a priority.

The VE Team was comprised of members from the consultant team, IDOT District Five, IDOT BDE, IDOT Bureau of Bridges & Structures, and FHWA. The VE Team identified twenty-five (25) overall general conceptual ideas and five (5) of these were further developed as recommendations for implementation with the largest potential cost savings of approximately $33M based on evaluating performance and cost of a different interchange type. These five (5) ideas originated from an evaluation of construction components by cost, which revealed the greatest percentage of project costs was attributed to the proposed bridges and associated structures. Reducing structure costs, while maintaining the same performance was a primary consideration. Project constraints, construction costs, identified potential areas of risk, and the expectations of the VE study were discussed at the conclusion of the VE Study and presented to the project study group. The **Value Engineering Study Report** can be found in **Appendix A**.

## 7.3 Public Involvement Activities

The public involvement process consisted of several elements, including the following:

1. A general public informational meeting.
2. A formal Public Hearing.
3. Several individual Stakeholder meetings.
4. Preparation of a public involvement document (**Appendix B**).

### 7.3.1 Public Informational Meeting

02/19/2014: Public Information Meeting #1

An open house format Public Information Meeting was held at Champaign County Highway Department, Champaign, IL, with exhibit boards displayed throughout the meeting room and handouts available for participants. Public input was encouraged and comment forms were available for all attendees. The general consensus of the attendees at the meeting was that this interchange reconstruction project is necessary.

Public Comments

Several attendees, including members of the public, County Board and local developers, expressed that Alternatives 1 and 2 were their preferred concepts. Additional discussions indicated that Alternative 1 was preferred by the local agencies, because it does not have any proposed loop ramps; and that Alternative 2 was preferred by local landowners and developers, because it had the least amount of additional ROW acquisition and potential impacts to developable land.

A total of 24 comment forms/letters were received, all with the exception of one are in favor of the proposed interchange reconstruction project. One of the comment forms suggested that Alternative 1 as their preferred concept, while ten comments received preferred Alternative 2.

### 7.3.2 Public Hearing

05/14/2015: Public Hearing

The public hearing for the I-57 & I-74 Interchange Reconstruction was held May 14, 2015 at Parkland College – Building T in Champaign, IL. The meeting was an open house format with voice recording capabilities and a formal session offered at 5:00 PM to allow public speaking. IDOT staff members and the consultant team were present at the meeting and available for discussion.

At this meeting, the overall project study area, general project information, and proposed improvement exhibits were displayed for public viewing through an open house format, with exhibit boards set up throughout the meeting room.

Exhibits included a site map, existing aerial image map, proposed aerial image map, existing and proposed renderings, noise wall exhibits, project purpose and need statements, environmental features, typical sections, the approved Interchange Design Study, the signed Environmental Assessment, and the Access Justification report (with conceptual approval). A handout with a project summary sheet and exhibit displaying the proposed interchange configuration were provided to attendees. A station was setup in the back of the room to allow for verbal statements to be recorded. A formal session was scheduled for 5:00 PM with sign-up forms available at the room entrance. No attendees provided verbal statements or signed up to address to the public.

Public Comments

Public input was encouraged and comment forms were available for all attendees. The public comment period extended to June 5, 2015. No comment forms were received. The general consensus of the attendees at the meeting was that this interchange reconstruction project is necessary. The land owner in the southeast quadrant of the interchange was pleased with the selection of the proposed alternate, since it required less land acquisition and minimized impacts to his property.

### 7.3.3 Stakeholder Meetings

Various stakeholder coordination meetings were conducted and are summarized below and included in **Appendix B**:

08/20/2013: Illinois State Senator Chapin Rose Presentation

A local stakeholder coordination meeting was held to discuss the proposed interchange type alternatives currently being considered. Future development adjacent to the interchange was discussed and any site plans being considered were requested by IDOT for consideration during development of the proposed interchange types. The City of Champaign's Future Land Use Map indicates all four quadrants of the interchange have the potential for development as employment centers.

01/21/2014: Champaign Elected Public Officials Presentation

A meeting was conducted with Champaign city officials to review the current proposed project improvements and interchange reconstruction alternatives. Items discussed included: minimizing the impacts to adjacent properties in order to allow for future development around the interchange; project funding and construction schedule.

02/19/2014: Champaign Urbana Urbanized Area Transportation Study (CUUATS) Presentation

The proposed project improvements and interchange type alternatives were presented to the local metropolitan planning organization (MPO). Since the project was not funded at the time in the state multi-year program for construction, funding options were discussed. CUUATS and the individual entities represented were encouraged to formally submit a letter to IDOT with their preference on the interchange type alternative for consideration in selection of an alternative.

04/07/2014: Midwest Underground Technology, Inc. (MUTI)
MUTI are property owners in the southwest quadrant of the interchange. The purpose of the meeting was to review the current proposed project improvements and interchange reconstruction alternatives. MUTI explained ongoing and future plans to expand, including additional buildings to the east and west and additional parking/storage to the east. A temporary aggregate parking/storage site has been constructed on the east side of the existing building since the original field surveys and aerial photography images were collected. This site is anticipated to be impacted by Alternatives 1 and 2 and has been included as a potential social resource impact in the Evaluation Matrix. Site plans have been developed and were made available to IDOT for consideration during development of the interchange design studies.

### 7.3.4 Project Website

The IDOT website contains a link to the I-57 & I-74 Interchange Reconstruction project. The website gives an overall description of the project, discusses the purpose and need, and explains the project timeline. As the project progresses, the website is updated periodically to assure that the stakeholders and motorists of Illinois are kept informed of project developments, public involvement opportunities, and construction related activities.

http://www.idot.illinois.gov/projects/I-57-I-74-Reconstruction-Project

### 7.3.5 Public Involvement Documentation

The Public Involvement Documentation, **Appendix B**, contains public meeting attendance lists, public comments, responses to specific questions or requests for additional information, stakeholder meeting documentation, and newspaper articles. Please refer to the Public Involvement Document for further details. All other correspondence for the project is included in **Appendix A**.

Various newspaper articles have been published regarding the interchange and are summarized below:

01/22/2014: The News-Gazette

The article discussed the proposed project and the time and expense involved for the new interchange. Additionally, the article listed the information for the public meeting ultimately conduced on February 19, 2014.

02/01/2014: The News-Gazette
The article reported a fatal accident on the I-74 westbound ramp to I-57 northbound.

02/03/2014: The News-Gazette
The article discussed the proposed project and the reasons why a new interchange is needed.

**Table 13: Meetings List**

| Date | Meeting | Location | Comments |
|---|---|---|---|
| 9/10/2011 | Scoping Meeting | IDOT D5 | Consultants and IDOT D5 met to discuss project scope |
| 9/6/2012 | Progress Meeting | IDOT D5 | Discussed Data Collection, ITS Approach, FHWA Coordination, Location Drainage Study, and Project Schedule |
| 11/9/2012 | Progress Meeting | IDOT D5 | Discussed Data Collection, Constraints, Design Considerations, Traffic and Operational Analysis, Structural Coordination, Interchange Concept Alternatives, and Project Schedule |
| 2/5/2013 | Early Involvement Meeting | IDOT D5 | IDOT presented interchange concepts; BDE and FHWA representatives requested additional concepts for comparison and documentation |
| 3/4/2013 | Bi-Monthly Coordination Meeting | IDOT Central Office | FHWA and IDOT Central Office advised IDOT D5 that further explanation of the Purpose and Need was necessary and that the project should be processed as an Environmental Assessment |
| 4/30/2013 | Progress Meeting | IDOT D5 | Discussed FHWA/BDE Coordination, Data Collection, ITS, and Project Schedule |
| 5/21/2013 | Bi-Monthly Coordination Meeting | Video Conference | IDOT D5 asked BDE and FHWA if project could be pursued as abbreviated EA; an email followed later on 5/21/13 approved this; Email on 5/6/13 proposed four interchange concepts to FHWA and BDE; Email dated 5/14/13 approved this |
| 8/20/2013 | Senator's Stakeholder Meeting | Champaign Co. Highway Dept. | Present Interchange Reconstruction Project with Alternatives to Senator Chapin Rose |
| 9/24/2013 | Bi-Monthly Coordination Meeting | Video Conference | FHWA is requesting that Purpose and Need include more detailed information regarding the safety issues of the project; CMT and BFW presented 5 design alternatives; was decided to present the project for exemption at the February 2014 NEPA 404 Merger Meeting |

| Table 13: Meetings List (continued) | | | |
|---|---|---|---|
| **Date** | **Meeting** | **Location** | **Comments** |
| 1/21/2014 | Elected Public Officials Meeting | City of Champaign | Present Interchange Reconstruction Project with Alternatives to Elected Officials |
| 1/29/2014 | City of Champaign Meeting | City of Champaign | Present Interchange Reconstruction Project with Alternatives to City of Champaign |
| 2/7/2014 | Bi-Monthly Coordination Meeting | Video Conference | FHWA advised that their allowing the Purpose and Need to be presented at the 2/27/14 NEPA 404 Merger Meeting is the concurrence |
| 2/19/2014 | CUUATS Coordination | Champaign Co. Highway Dept. | CMT and BFW presented Interchange Alternatives |
| 2/19/2014 | Public Information Meeting | Champaign Co. Highway Dept. | Open House for interested persons to attend and see the alternatives and provide input |
| 2/27/2014 | NEPA 404 Merger Meeting | FHWA Springfield | Process project as EA and agreed by all agencies that project will not go through NEPA 404 Merger process and formal concurrence on the purpose and need was not required; Assumed that formal P&N concurrence from BDE and FHWA at 2/7/14 bi-monthly coordination meeting |
| 3/18/2014 | Bi-Monthly Coordination Meeting | Video Conference | Discuss PIM and NEPA 404 Merger Meeting; It was agreed with not adjusting the alternatives to meet new interstate design speed of 75 mph and to develop only the IDS to reflect this new policy interstate design speed |
| 4/7/2014 | Midwest Underground Technology, Inc. (MUTI) | MUTI Conference Room | MUTI explained plans to expand. Site plans were made available to IDOT for consideration during development of IDS plans |
| 5/20/2014 | Bi-Monthly Coordination Meeting | Video Conference | Discussed ITS status and design speed, EA status, and I-57 typical section revision to include open median |
| 6/6/2014 | Progress Meeting | IDOT D5 | Discussed ITS Revisions, Discussed Alt 1 and Alt 2 Considerations, Discussed project schedule and coordination |
| 7/15/2014 | BBS Meeting | IDOT Bureau of Bridges and Structures | Discussed ramp structure considerations, other grade separation structures, and future coordination |
| 7/17/2014 | City of Champaign and Hensley Township Coordination Meeting | City of Champaign | Coordinate proposed improvements to the local and urban state routes affected by the interstate reconstruction project |
| 7/22/2014 | Bi-Monthly Coordination Meeting | Video Conference | Discussed coordination with BBS and City of Champaign, status update of ITS, project schedule, and VE Study |

| Table 13: Meetings List (continued) | | | |
|---|---|---|---|
| **Date** | **Meeting** | **Location** | **Comments** |
| 9/16/2014 | Bi-Monthly Coordination Meeting | Video Conference | Discussed status of EA, request approval of ITS, coordination of VE Study with District 5 staff, and discussed project schedule |
| 10/28/2014 | Bi-Monthly Coordination Meeting | Video Conference | Discussed EA addendum clearances, approval of ITS received 9/16/2014, VE Study schedule, agreed that public hearing could be conducted as informational open house |
| 1/28/2015 | Bi-Monthly Coordination Meeting | Video Conference | Discussed pending review of EA submittal, discussed project status , and discussed project schedule and future submittals |
| 3/4/2015 | Progress Meeting | IDOT Central Office | Discussed status of EA, project deliverables, BBS Coordination for BCRs and TSLs, and dates for a Public Hearing |
| 3/17/2015 | Bi-Monthly Coordination Meeting | Video Conference | Discussed Traffic Noise Analysis, Access Justification Report, Traffic Management Plan, Location Drainage Study, and Combined Design Report status; Discussed interchange lighting and Public Hearing Tentative dates |
| 5/14/2015 | Public Hearing | Parkland College | Open House for interested persons to attend and see the selected alternative and provide input |
| 5/19/2015 | Bi-Monthly Coordination Meeting | Video Conference | Discussed final Traffic Noise Analysis, EA Errata development, AJR Conceptual Approval, Traffic Management Plan, Location Drainage Study, TS&L submittals and Combined Design Report status; Design Exception Approval |
| 7/21/2015 | Bi-Monthly Coordination Meeting | Video Conference | Discussed Project Deliverables - EA, AJR Submittal, TMA Revisions, LDS Submittal, R, and Draft Combined Design Report |

## 8. Conclusions / Recommendations

### 8.1 Recommended Alternative for Design

The recommended I-57 and I-74 interchange alternative is the semi-directional interchange type with two directional ramps and two loops. Advantages of the proposed interchange alternative include increasing the ramp design speeds, eliminating the mainline interstate weaves, reducing the number of access points along the interstates, increasing the mainline I-74 and ramp capacities, reducing travel time through the interchange, and improving safety. This interchange type was selected during development of the Interchange Type Study and Environmental Assessment because it impacted the least amount of potential environmental resources, required the least amount of additional right-of-way to implement and resulted in the lowest construction cost of the alternatives studied. This alternative best satisfies the project purpose and need to address operational, geometric, safety, and capacity deficiencies while minimizing impacts to the environment and surrounding land while providing a cost effective solution.

In conclusion, the improvements associated with this project will improve operational performance along both Interstate 57 and Interstate 74 by increasing the average speed and reducing the number of anticipated crashes. The project substantially improves upon the no-build alternative by constructing a third lane in both directions along Interstate 74.

### 8.2 Design Exceptions

Level One design exceptions involve the controlling design criteria established by FHWA. These criteria are judged to be those design elements that are the most critical indicators of a highway's safety and its overall serviceability. Based on the IDOT **Design Criteria Checklist** (see **Exhibit 25**) prepared for this project, there are no Level One design exceptions associated with the recommended alternative.

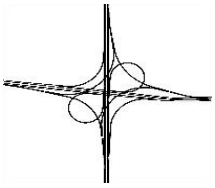
Level Two design exceptions involve other important indicators of a highway's safety and serviceability but they are not considered as critical as exceptions to the Level One criteria. A Level Two design criteria exception was identified during development of the proposed roadway and structure improvements associated with U.S. 150 (Bloomington Road) required to accommodate the preferred interchange configuration. This design exception consisted of a deficient superelevation transition distribution between the tangent and horizontal curve. The design element policy value required a maximum 50% of superelevation runoff length on the horizontal curve and the proposed design element value was for 55% of superelevation runoff length to be placed on curve (3.9' further into curve). The location of this design exception was on the horizontal curve immediately west of the U.S. 150 (Bloomington Road) bridge over I-57 and was proposed to prevent any superelevation runoff transition from being located within the limits of the new structure.

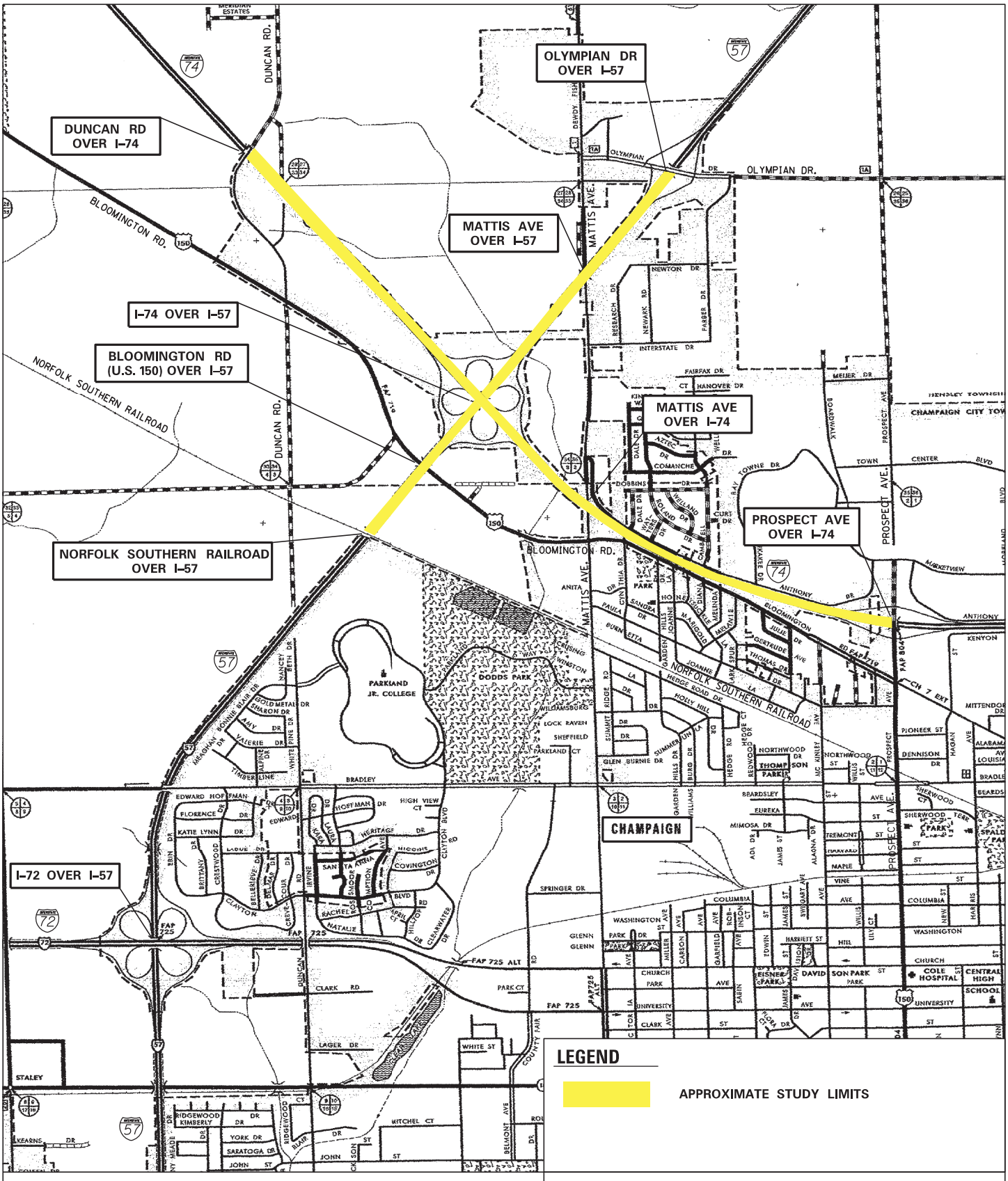
This design exception was presented and discussed at the District Bi-Monthly Coordination Meeting on May 20, 2015 and was concurred upon and granted approval by IDOT's Bureau of Design & Environment and FHWA at this meeting (see approved **Design Exception Request** in **Appendix A**).

## 8.3 Impact Summary

The summary of design impacts for the recommended alternative, including environmental impacts and implementation costs, is shown in **Table 14**.

**Table 14: Impact Summary - Recommended Alternative**

| Category | Impact Feature | Recommended Alternative  |
|---|---|---|
| Potential Environmental Impacts | Wetlands # (acres) | 6 (3.52) |
| | Detention Ponds # (acres) | 1 (1.47) |
| | Streams – Copper Slough (ft) | 1,500 |
| | Floodplains | Yes |
| | T&E Species/Habitat/Natural Areas | None |
| | Special Waste Sites (RECs) | 5 |
| | Potential Archaeological Resources | 0 |
| | Impacts to Existing Developments | 1 |
| Implementation Costs | Construction Cost | $140,000,000 |
| | Right-of-Way Acquisition Cost (acres) | $4,550,000 (46.7) |
| | Utility Relocation Cost | $2,000,000 |
| | Engineering Cost | $6,500,000 |
| | Total Project Cost | $153,000,000 |




# SITE MAP

**I–57 & I–74 INTERCHANGE**
**IDOT – DISTRICT 5**
**CHAMPAIGN COUNTY**
**CHAMPAIGN, IL**

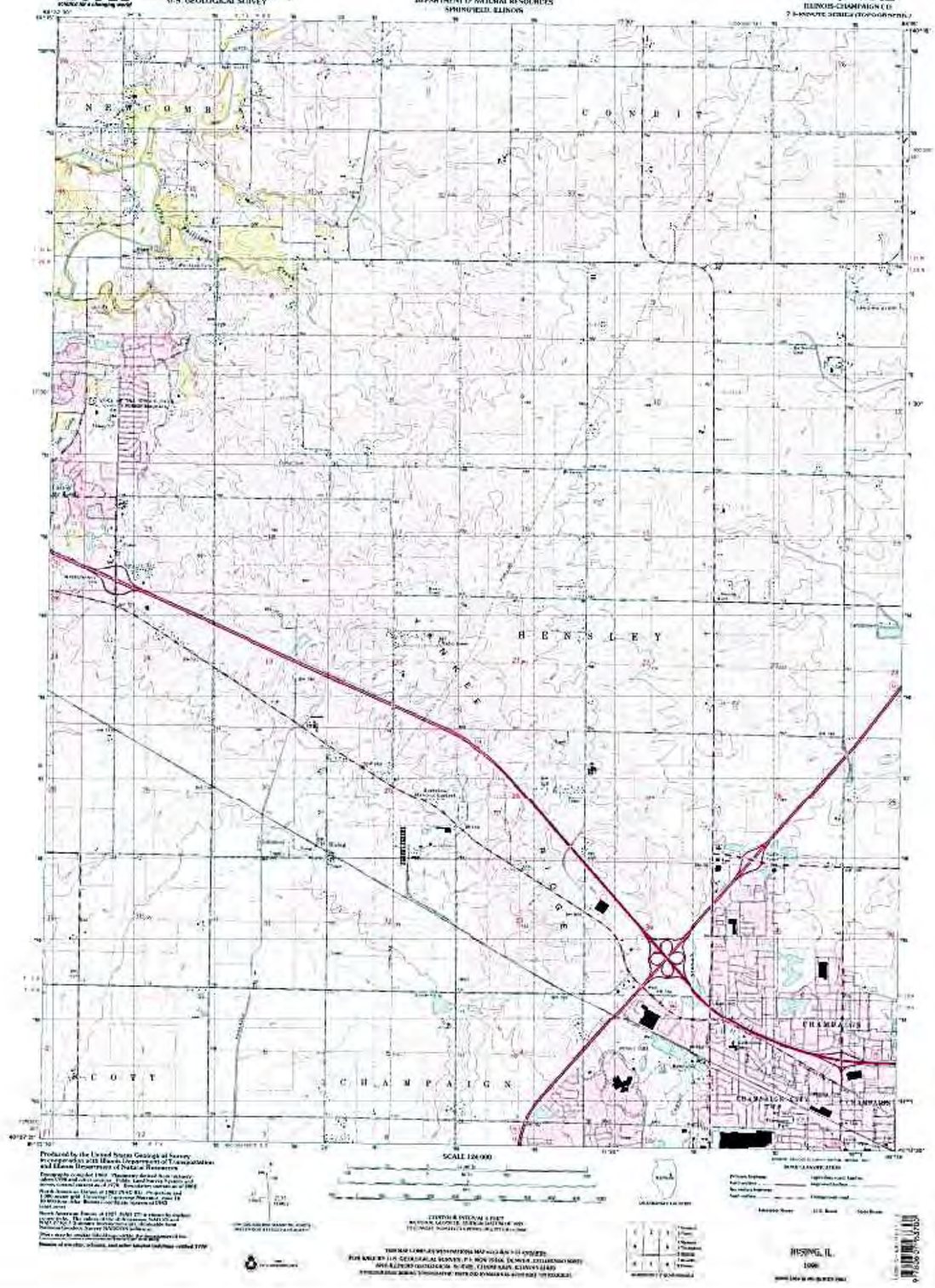
**EXHIBIT 1**

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U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DEPARTMENT OF NATURAL RESOURCES
SPRINGFIELD, ILLINOIS

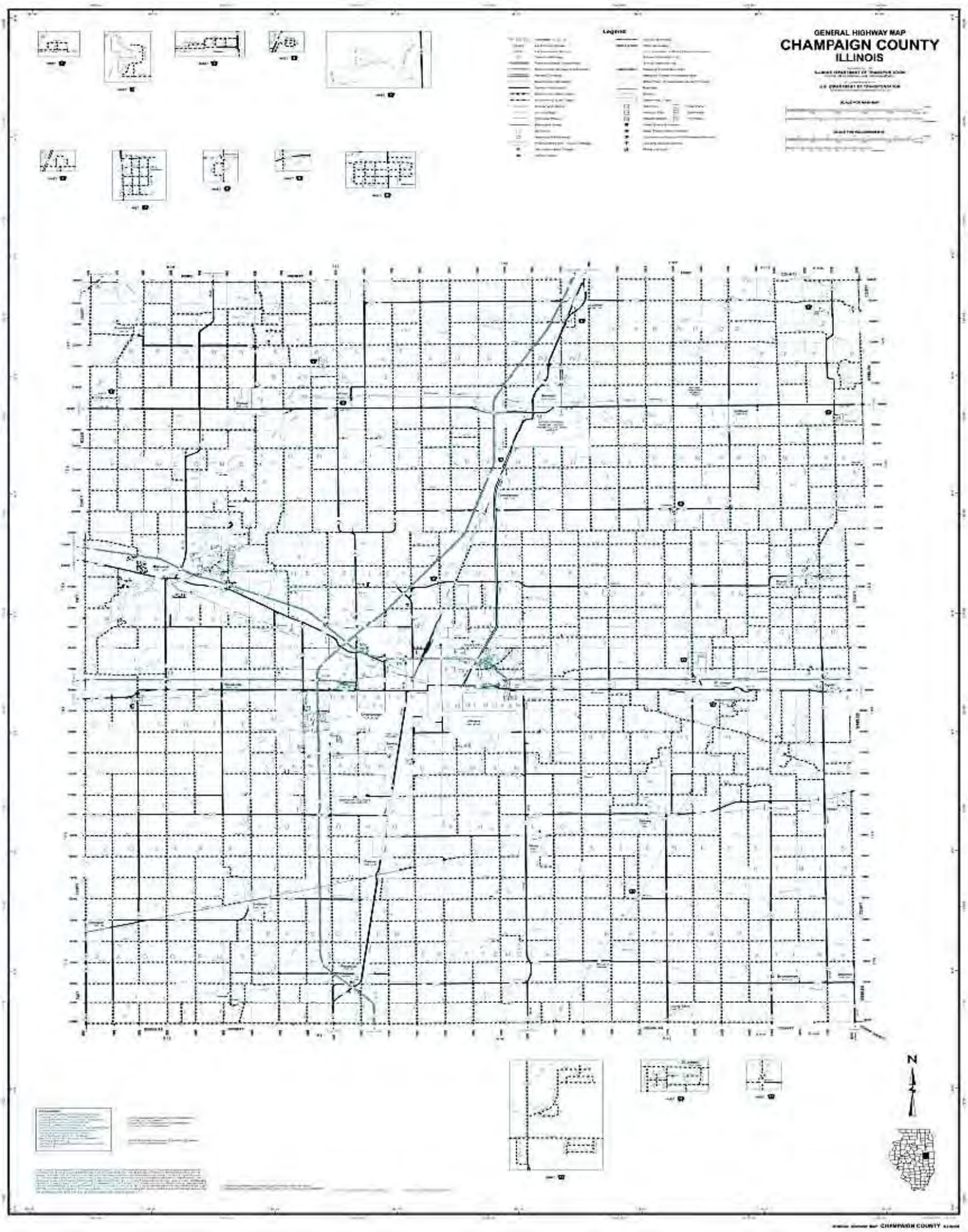
RISING QUADRANGLE
ILLINOIS-CHAMPAIGN CO.
7.5-MINUTE SERIES (TOPOGRAPHIC)




**QUADRANGLE**
**MAP 040088B3**

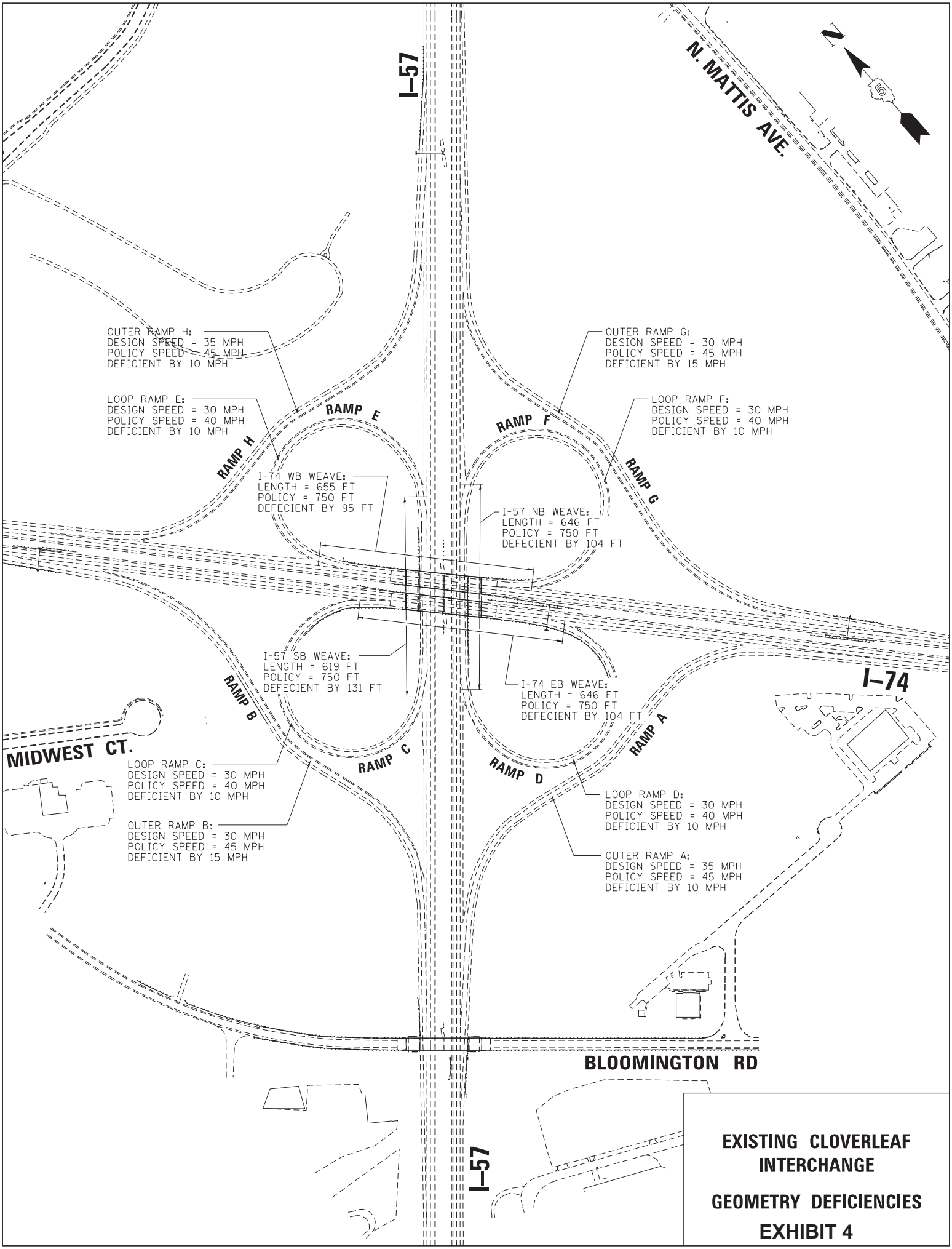
**EXHIBIT 2**

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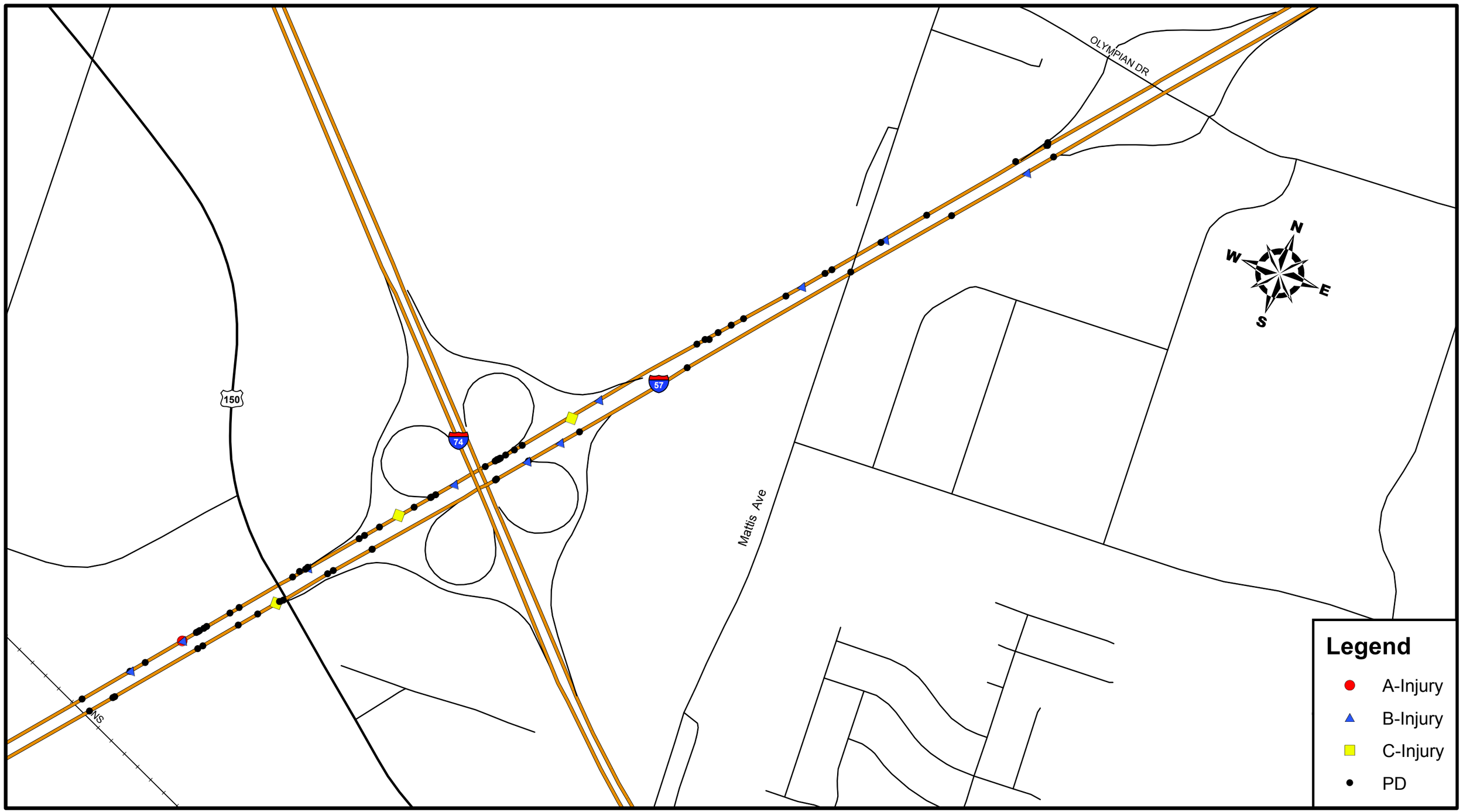

CHAMPAIGN COUNTY MAP

EXHIBIT 3


I-57
N. MATTIS AVE.
OUTER RAMP H:
DESIGN SPEED = 35 MPH
POLICY SPEED = 45 MPH
DEFICIENT BY 10 MPH
LOOP RAMP E:
DESIGN SPEED = 30 MPH
POLICY SPEED = 40 MPH
DEFICIENT BY 10 MPH
RAMP E
RAMP H
I-74 WB WEAVE:
LENGTH = 655 FT
POLICY = 750 FT
DEFECIENT BY 95 FT
OUTER RAMP G:
DESIGN SPEED = 30 MPH
POLICY SPEED = 45 MPH
DEFICIENT BY 15 MPH
LOOP RAMP F:
DESIGN SPEED = 30 MPH
POLICY SPEED = 40 MPH
DEFICIENT BY 10 MPH
RAMP F
RAMP G
I-57 NB WEAVE:
LENGTH = 646 FT
POLICY = 750 FT
DEFECIENT BY 104 FT
I-57 SB WEAVE:
LENGTH = 619 FT
POLICY = 750 FT
DEFECIENT BY 131 FT
I-74 EB WEAVE:
LENGTH = 646 FT
POLICY = 750 FT
DEFECIENT BY 104 FT
I-74
RAMP B
RAMP C
RAMP D
RAMP A
MIDWEST CT.
LOOP RAMP C:
DESIGN SPEED = 30 MPH
POLICY SPEED = 40 MPH
DEFICIENT BY 10 MPH
OUTER RAMP B:
DESIGN SPEED = 30 MPH
POLICY SPEED = 45 MPH
DEFICIENT BY 15 MPH
LOOP RAMP D:
DESIGN SPEED = 30 MPH
POLICY SPEED = 40 MPH
DEFICIENT BY 10 MPH
OUTER RAMP A:
DESIGN SPEED = 35 MPH
POLICY SPEED = 45 MPH
DEFICIENT BY 10 MPH
BLOOMINGTON RD
I-57
EXISTING CLOVERLEAF INTERCHANGE
GEOMETRY DEFICIENCIES
EXHIBIT 4

# Interchange Reconstruction Project
# I-57 Crashes from 2008 to 2012

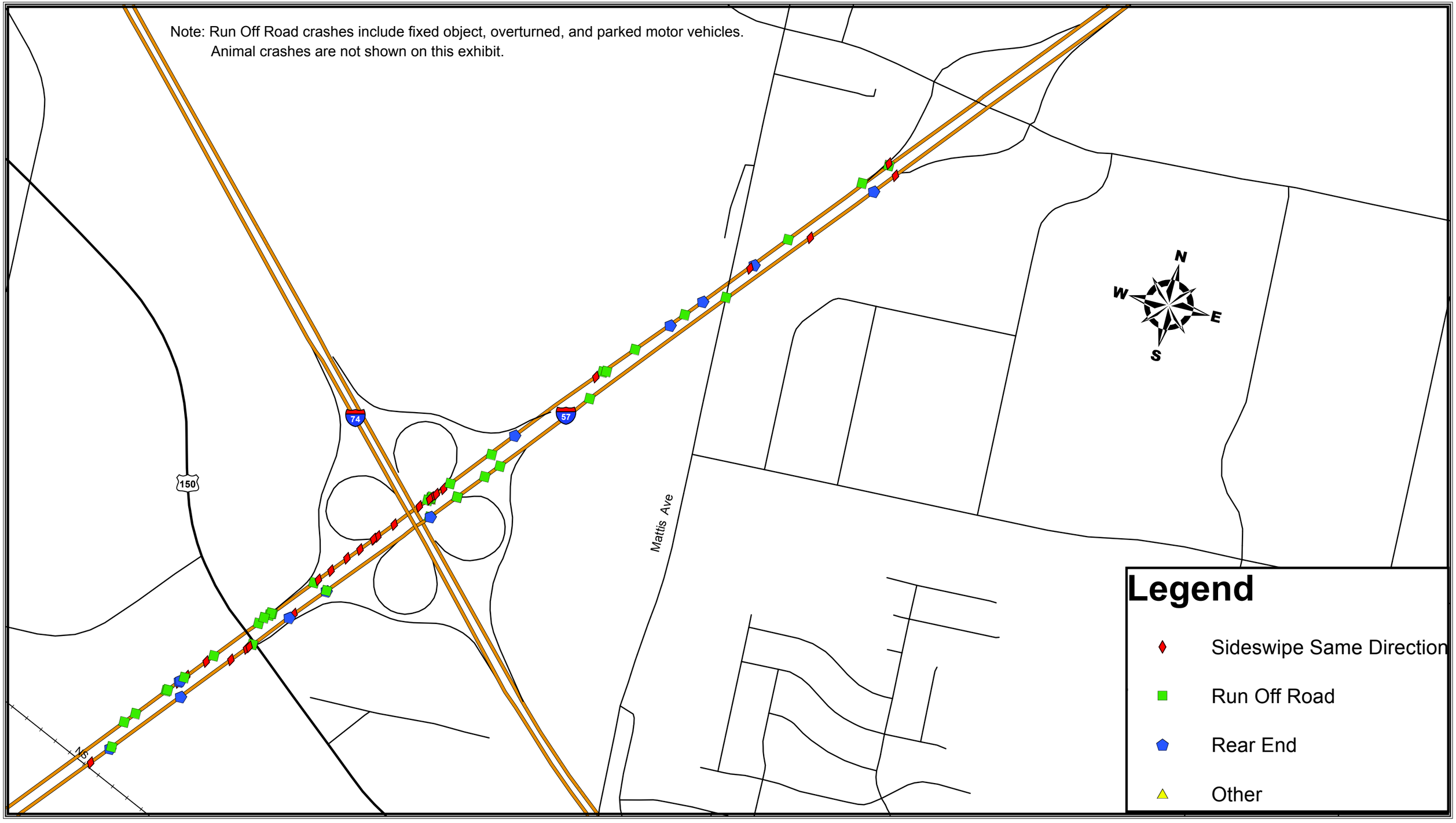
EXHIBIT 5



# Interchange Reconstruction Project
# I-57 Crashes from 2008 to 2012

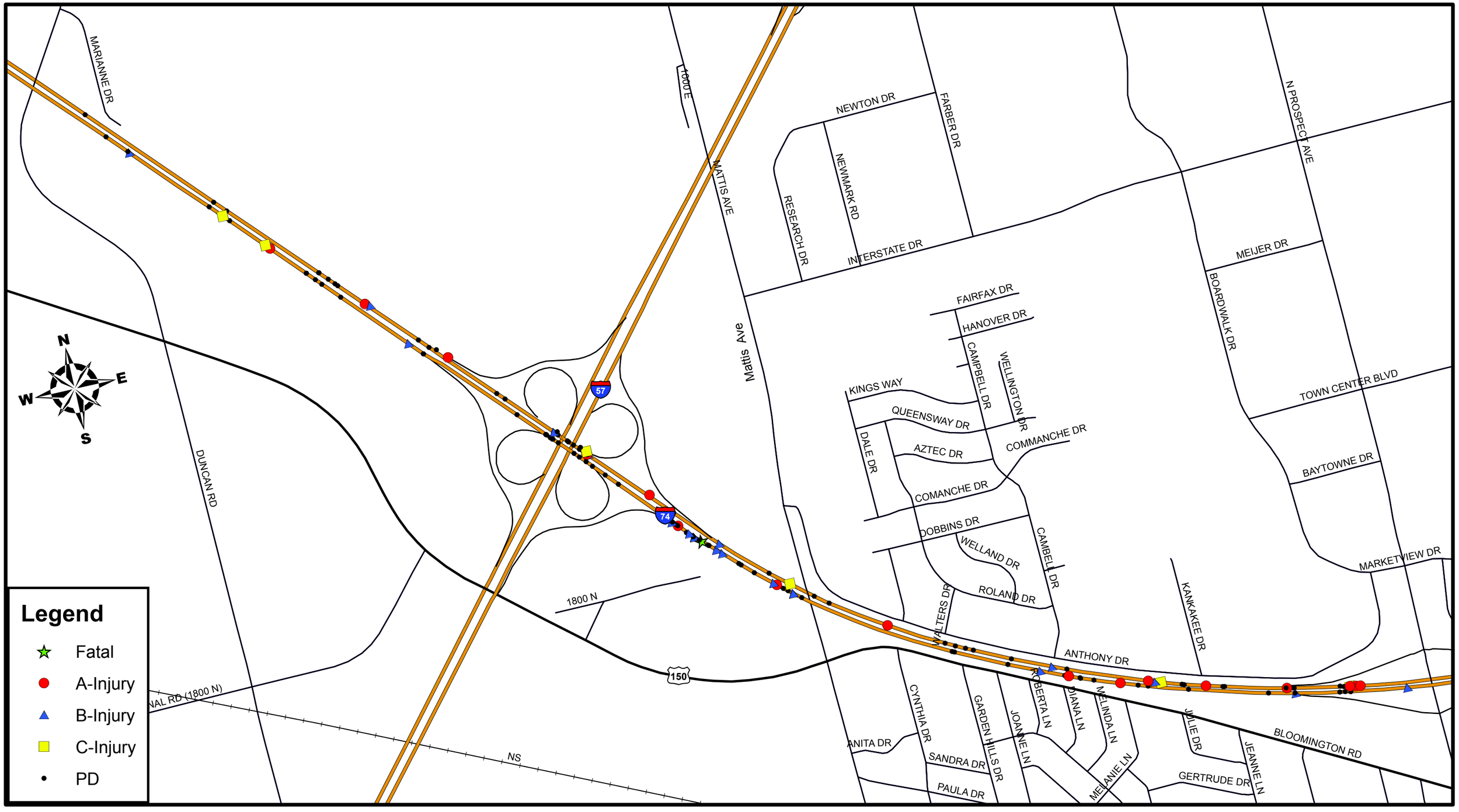
EXHIBIT 6

Note: Run Off Road crashes include fixed object, overturned, and parked motor vehicles.
Animal crashes are not shown on this exhibit.



# Interchange Reconstruction Project
# I-74 Crashes from 2008 to 2012

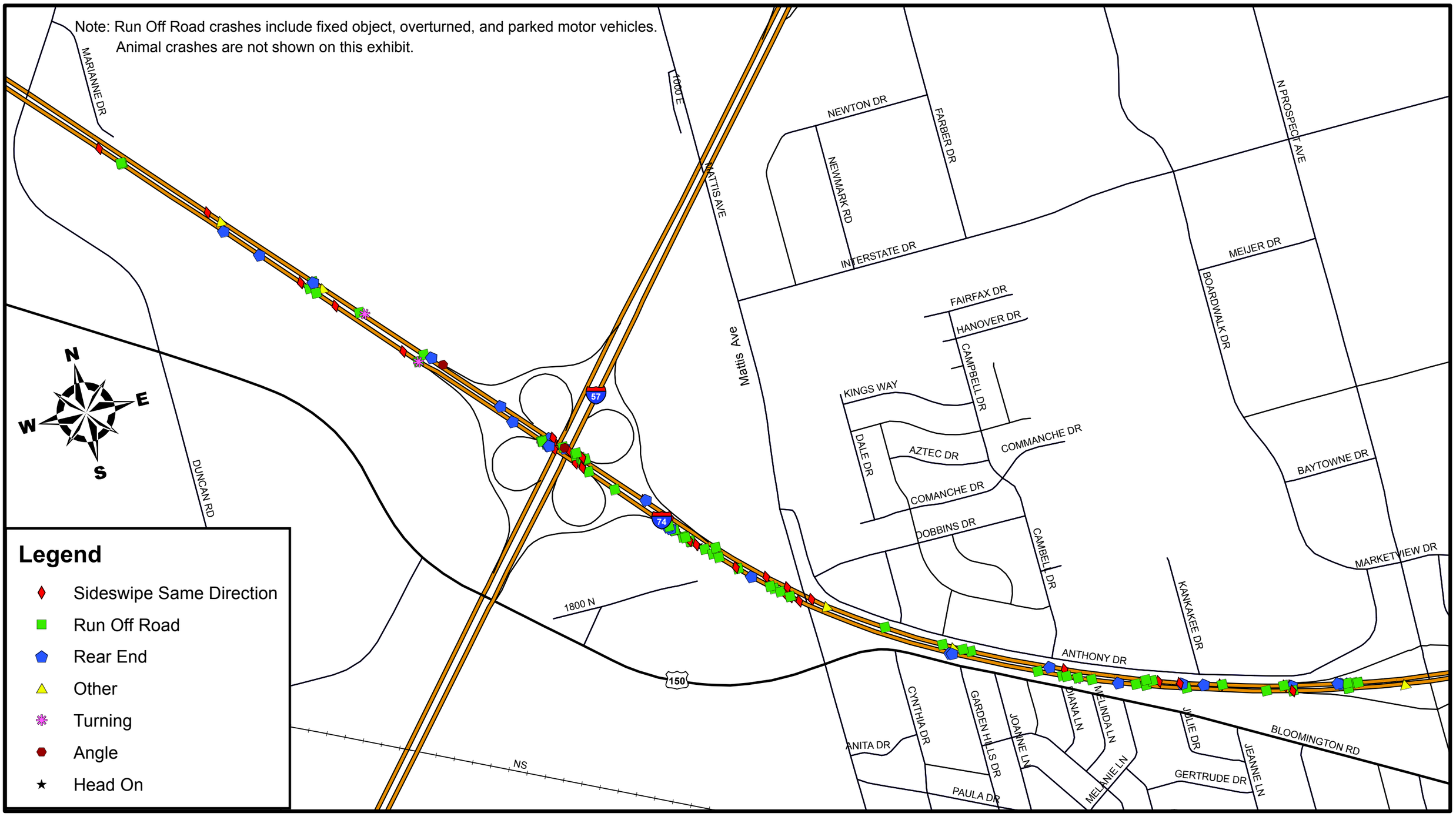
EXHIBIT 7



# Interchange Reconstruction Project
# I-74 Crashes from 2008 to 2012

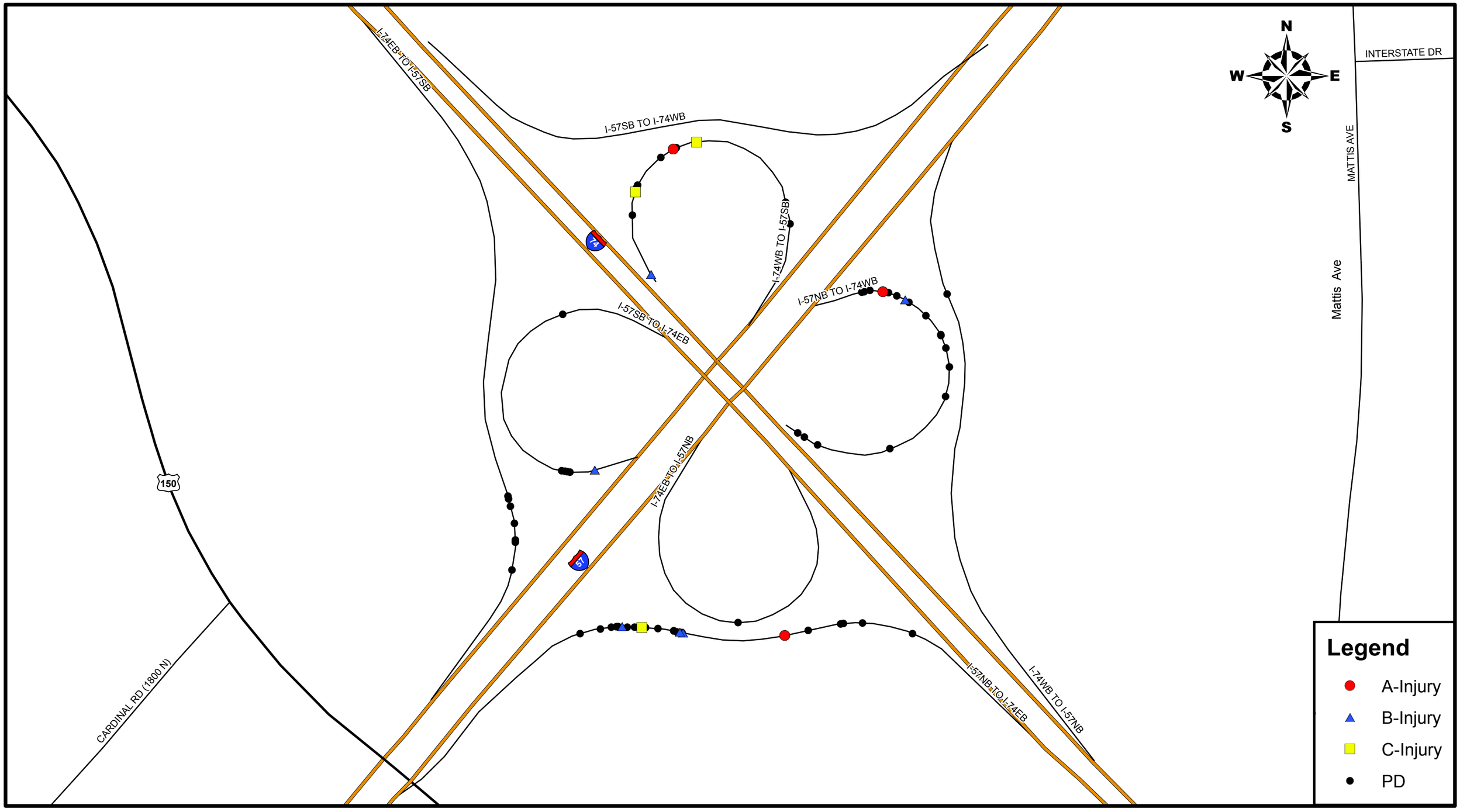
EXHIBIT 8

Note: Run Off Road crashes include fixed object, overturned, and parked motor vehicles.
Animal crashes are not shown on this exhibit.



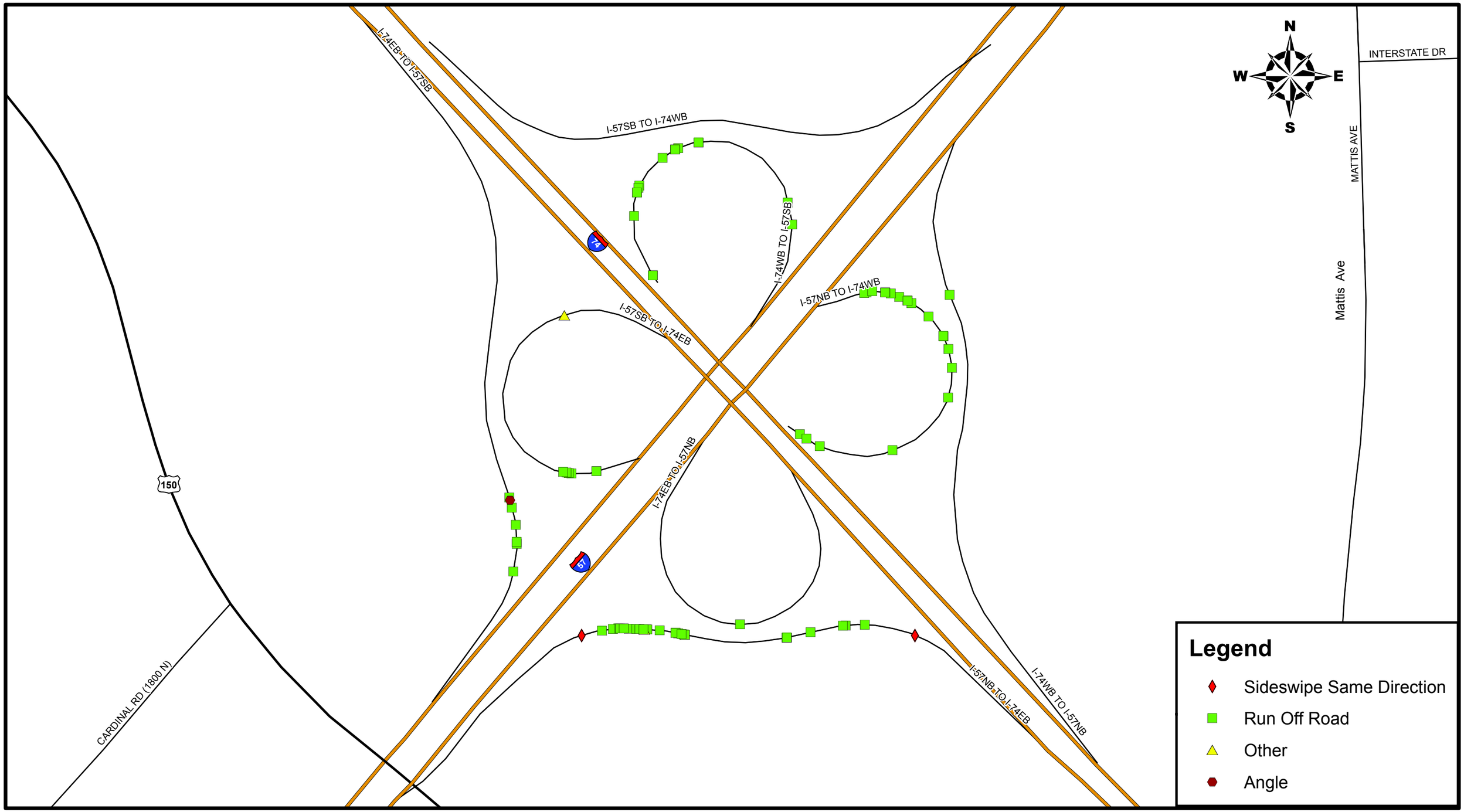
# Interchange Reconstruction Project
# Ramp Crashes from 2008 to 2012

EXHIBIT 9



# Interchange Reconstruction Project
# Ramp Crashes from 2008 to 2012

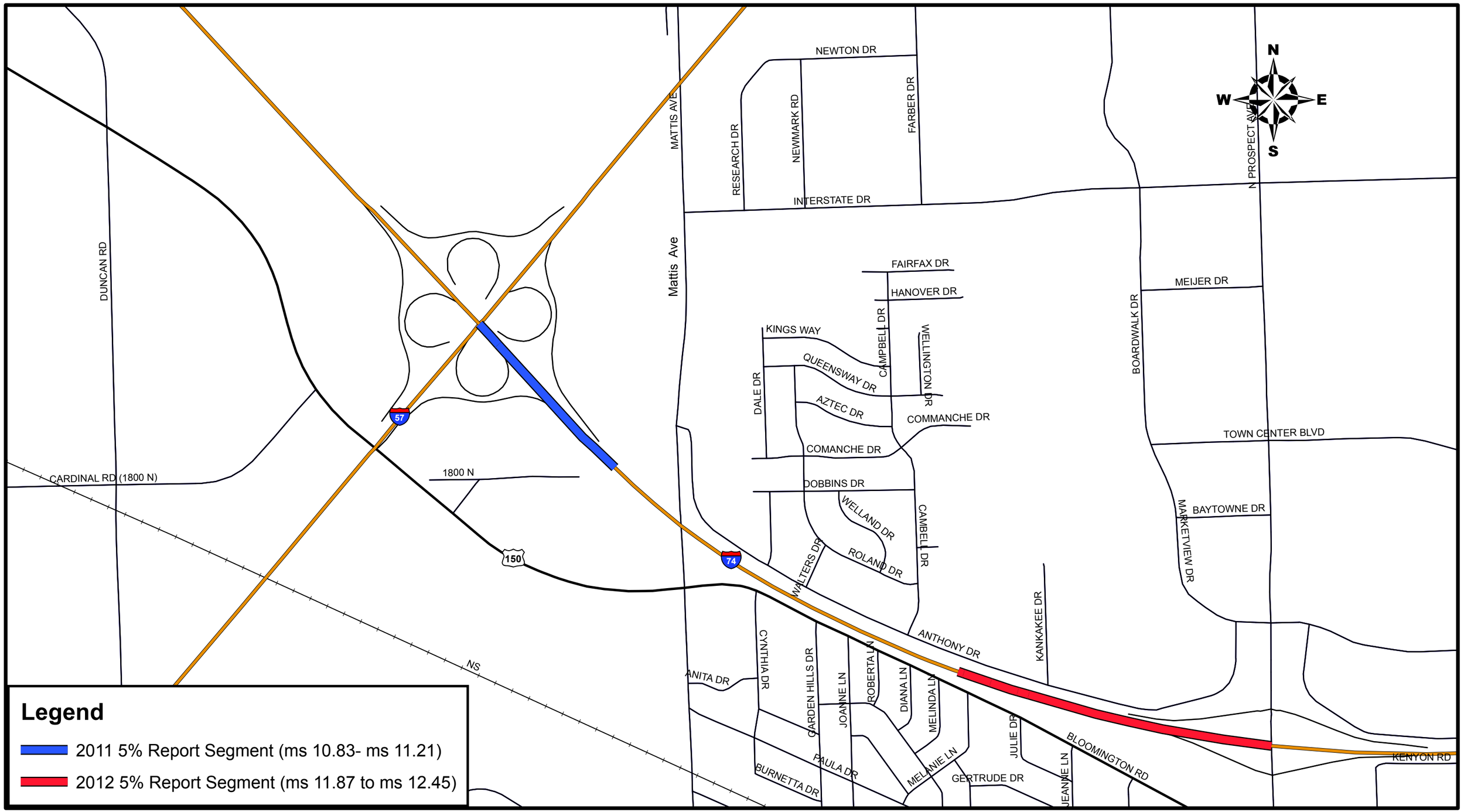
EXHIBIT 10




Note: Run Off Road crashes include fixed object, other object, overturned, and parked motor vehicle crashes

# Interchange Reconstruction Project
# 5% Report Locations for years 2011 and 2012

EXHIBIT 11




## Legend

- 2011 5% Report Segment (ms 10.83- ms 11.21)
- 2012 5% Report Segment (ms 11.87 to ms 12.45)

PLOT DATE = 3/13/2014 - 11:45:02 AM
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USER NAME = Brad Downen

I–74

I–57

N. MATTIS AVE.

MIDWEST CT.

BLOOMINGTON RD.

BLOOMINGTON RD.

W. ANTHONY DR.

BLOOMINGTON RD.

I–74

N. MATTIS AVE.

I–57

300' 0 300' 600'
SCALE: 1" = 300'

**EXISTING CLOVERLEAF INTERCHANGE WITH AERIAL IMAGE**

**EXHIBIT 12**

BDE-9908

PLOT DATE = 3/13/2014 - 11:45:47 AM
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USER NAME = Brad Downen

R = 430′
R = 311.62′
R = 430′
R = 310′
R = 229.62′
R = 690′
1050
I-74
1060
I-57
1600
R = 430′
R = 302′
R = 230′
R = 270′
R = 690′
R = 310′
R = 690′
200′ 0 200′ 400′
SCALE: 1" = 200′
R = 690′
R = 310′
R = 690′
R = 270′
R = 230′
R = 302′
R = 430′
1070
I-74
R = 690′
R = 430′
R = 229.62′
R = 310′
R = 311.62′
1590
I-57
R = 430′
R = 430′

**EXISTING INTERCHANGE RAMP RADII**

**EXHIBIT 13**

BDE-9908

OLYMPIAN DRIVE

OLYMPIAN RAMP C

OLYMPIAN RAMP B

INTERSTATE 57

DUNCAN ROAD

INTERSTATE 74

N. MATTIS AVE

RAMP H

RAMP D

RAMP G

RAMP F

U.S. 150 (BLOOMINGTON ROAD)

RAMP B

RAMP E

RAMP C

RAMP A

PROSPECT AVE

PROSPECT RAMP A

W. ANTHONY DRIVE

INTERSTATE 74

PROSPECT RAMP C

U.S. 150 (BLOOMINGTON ROAD)

N. MATTIS AVE.

NORFOLK SOUTHERN RAILROAD

INTERSTATE 57

N

500′ 0 500′ 1000′

SCALE: 1″ = 500′

LOCATION MAP




# EXHIBIT 14

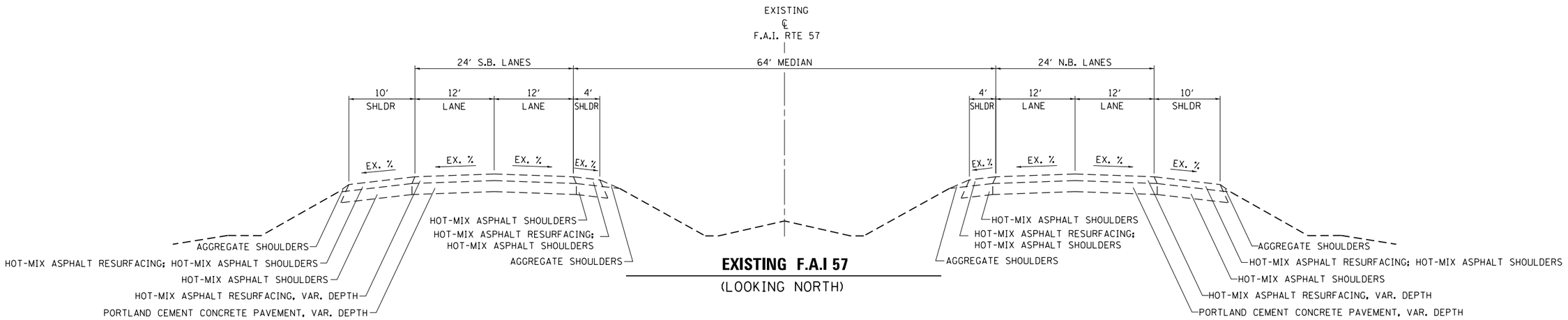
| | | | |
|---|---|---|---|
| FILE NAME : L:\IDOT\JJ86802\Draw\Exhibits\... Default | USER NAME : Brad Downen | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 1000.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 7/7/2015 - 2:18:14 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**PROPOSED INTERCHANGE LAYOUT**

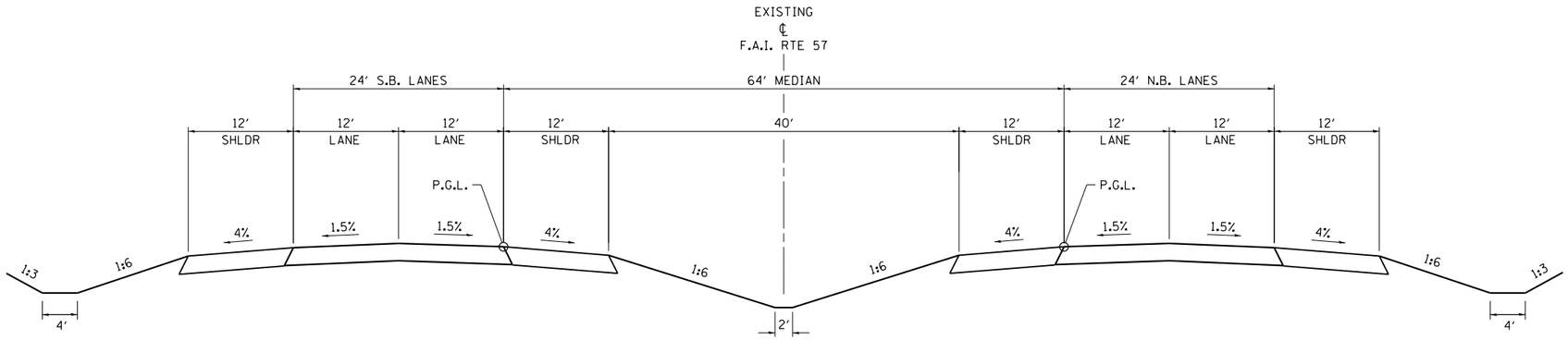
SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1)RS-1, 14-1, 61R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |



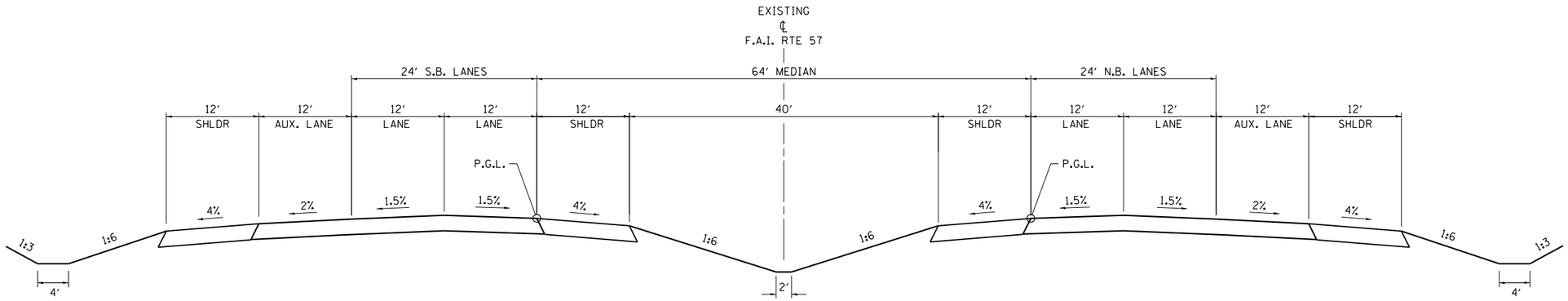

**EXISTING F.A.I 57**

(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
WITH AUXILIARY LANE
(LOOKING NORTH)

**EXISTING & PROPOSED TYPICAL SECTIONS**

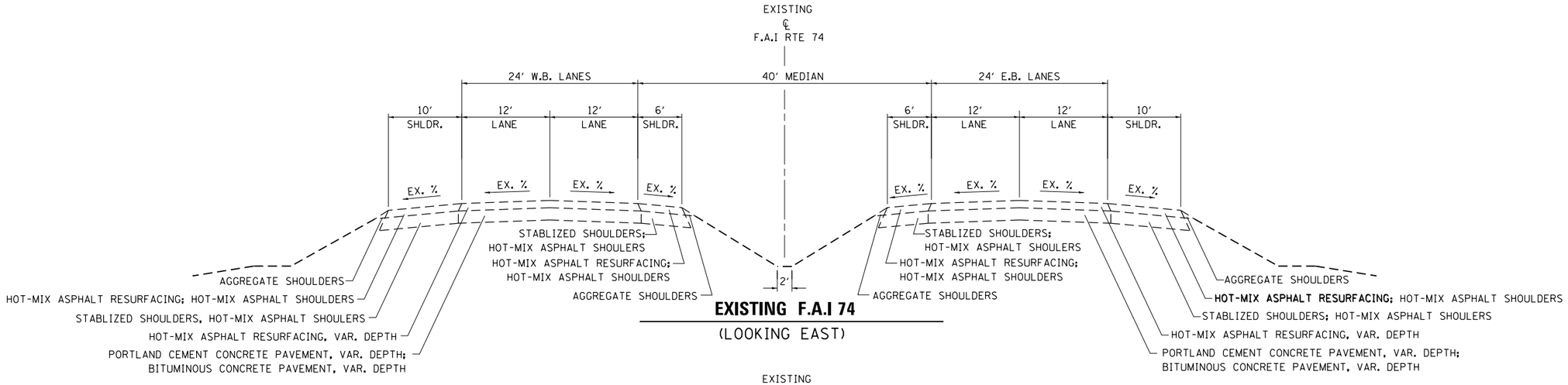
**INTERSTATE 57**

**EXHIBIT 15**

BDE-9908

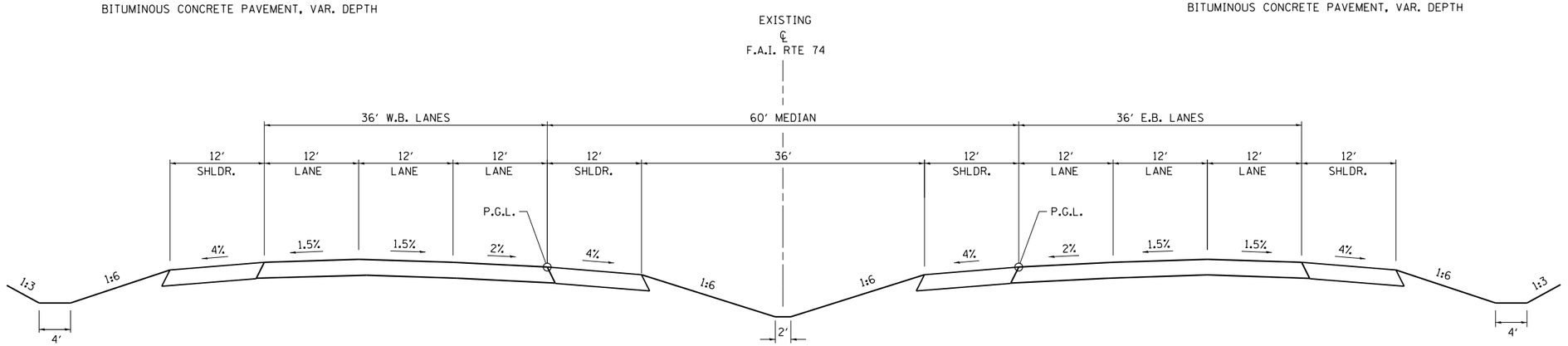
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PLOT SCALE = 16.0000 ' / in.
USER NAME = bemery

PLOT DATE = 8/25/2015
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USER NAME = bemery



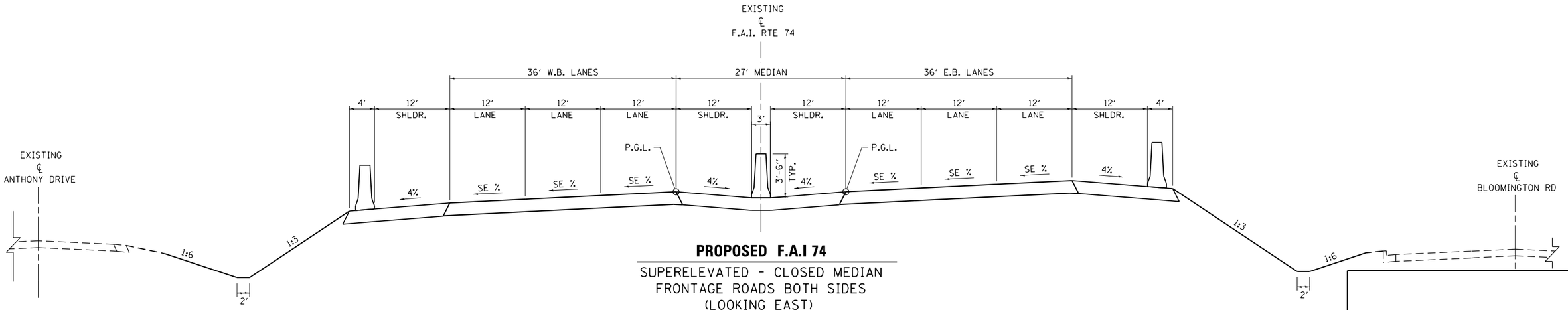

**EXISTING F.A.I 74**

(LOOKING EAST)




**PROPOSED F.A.I 74**

NORMAL CROWN - OPEN MEDIAN
(LOOKING EAST)




**PROPOSED F.A.I 74**

SUPERELEVATED - CLOSED MEDIAN
FRONTAGE ROADS BOTH SIDES
(LOOKING EAST)

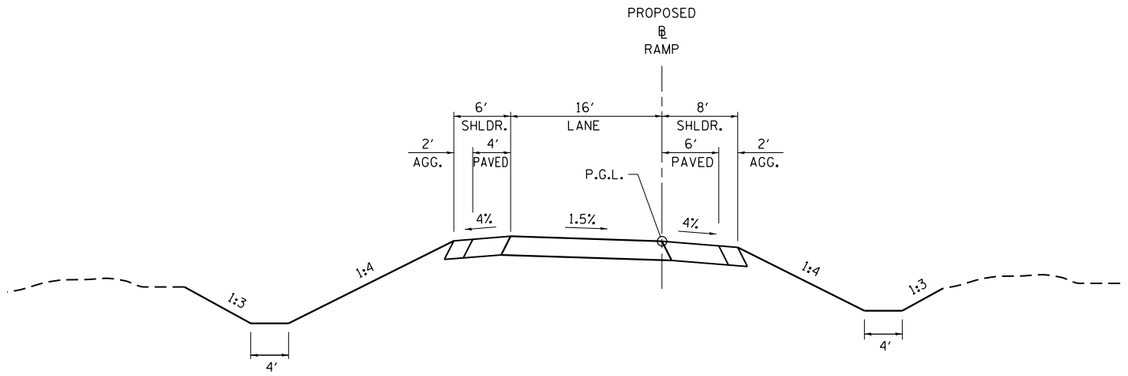
**EXISTING & PROPOSED TYPICAL SECTIONS**

**INTERSTATE 74**

**EXHIBIT 16**

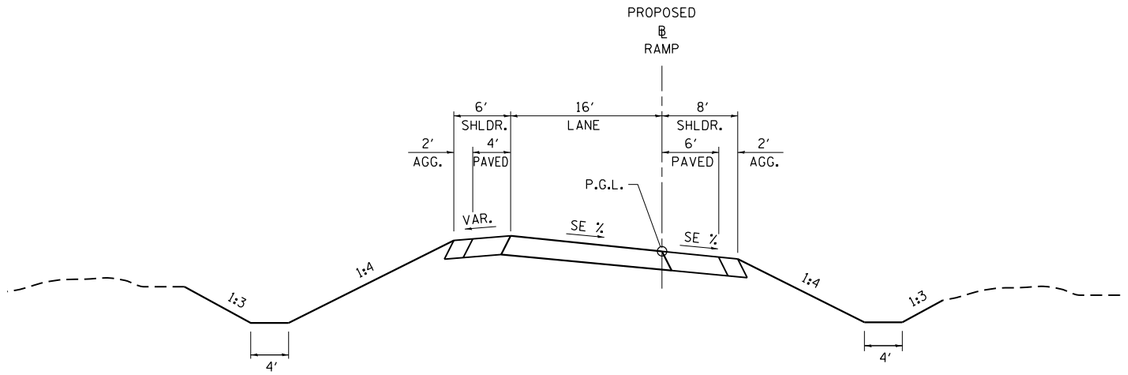
BDE-9908

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PLOT SCALE = 16.0000 ' / in.
USER NAME = Brad Downen




**PROPOSED RAMP**

NORMAL CROWN




**PROPOSED RAMP**

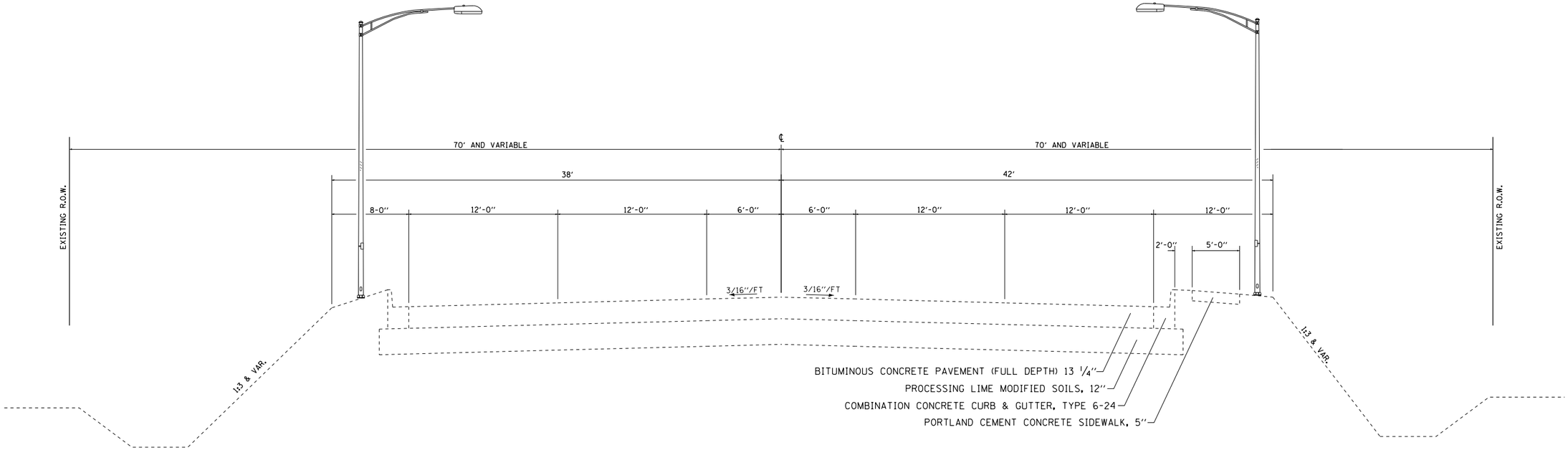
SUPERELEVATED

**EXISTING & PROPOSED TYPICAL SECTIONS**

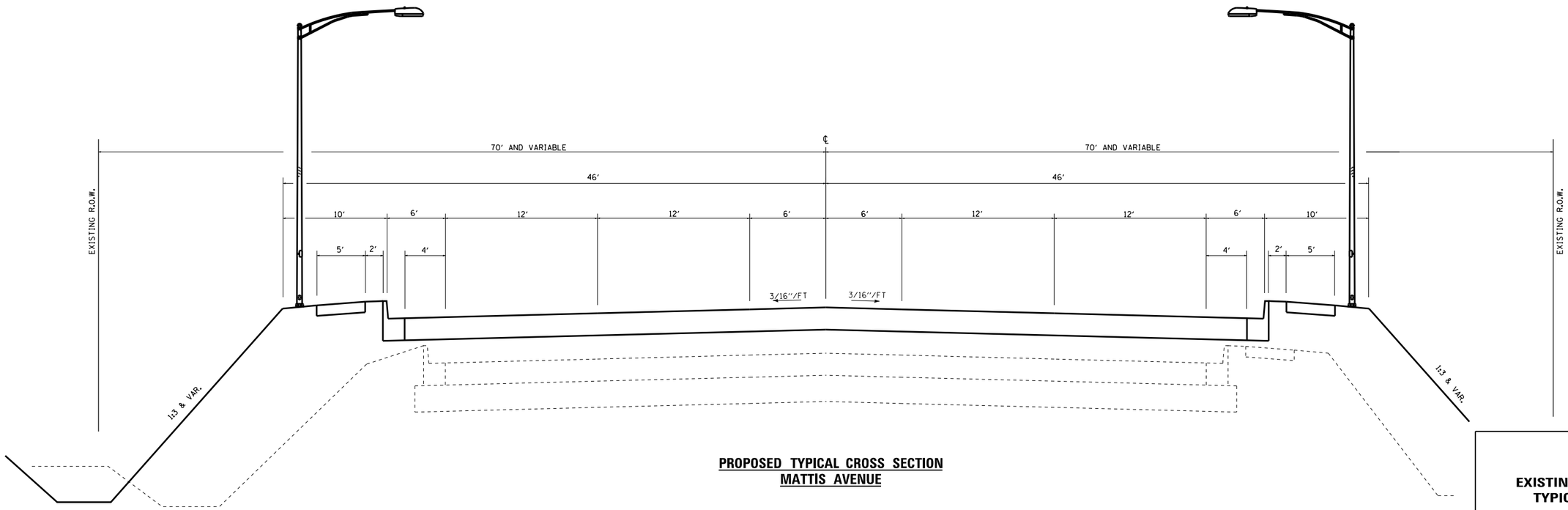
**RAMPS**

**EXHIBIT 17**

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USER NAME = bemery



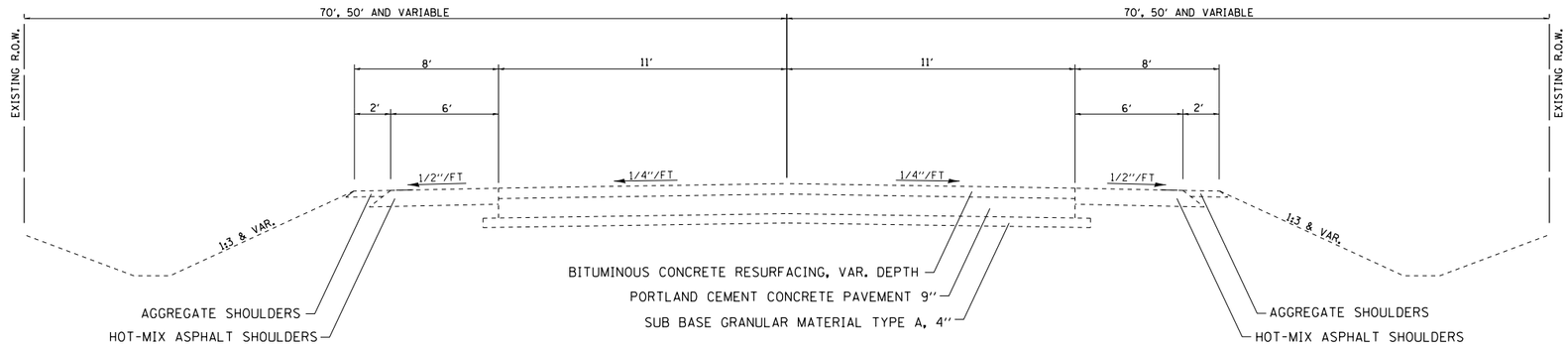

**EXISTING TYPICAL CROSS SECTION**
**MATTIS AVENUE**



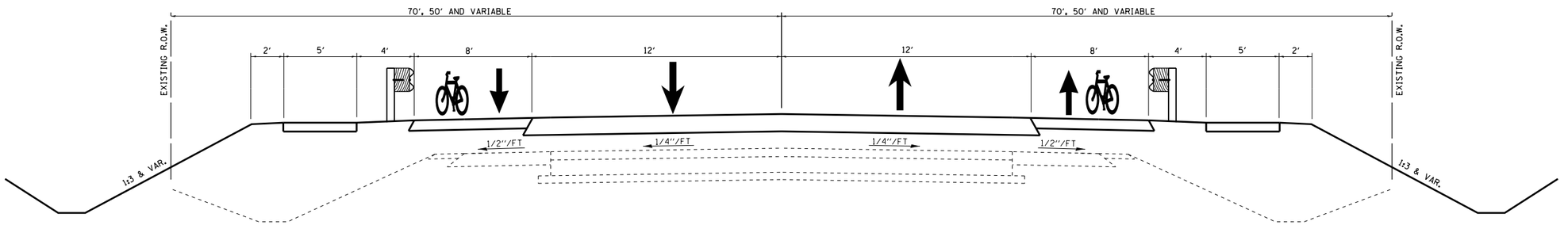

**PROPOSED TYPICAL CROSS SECTION**
**MATTIS AVENUE**

**EXISTING & PROPOSED TYPICAL SECTIONS**

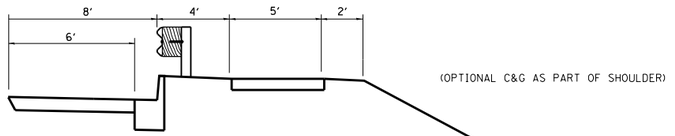
**MATTIS AVENUE**
**(NEAR I–74)**
**EXHIBIT 18**




**EXISTING TYPICAL CROSS SECTION**
**MATTIS AVENUE**




**PROPOSED TYPICAL CROSS SECTION**
**MATTIS AVENUE**

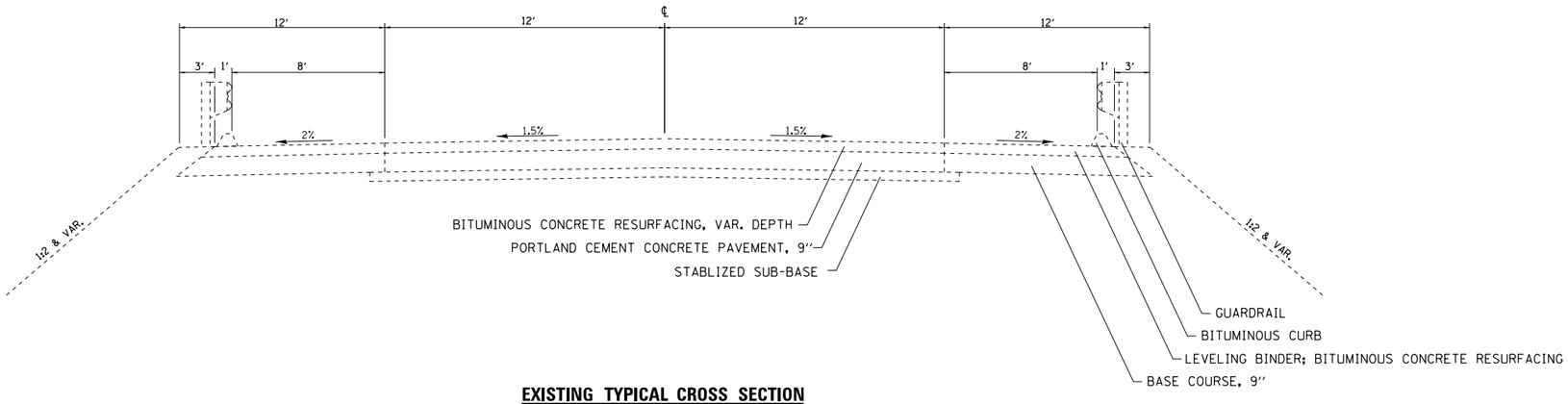



**EXISTING & PROPOSED TYPICAL SECTIONS**

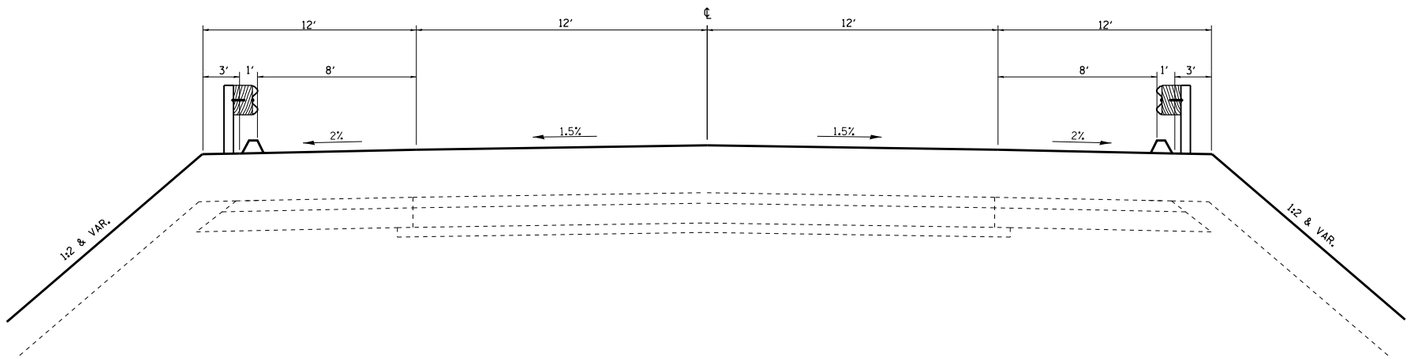
**MATTIS AVENUE (NEAR I–57) EXHIBIT 19**

BDE-9908

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USER NAME = bemery




**EXISTING TYPICAL CROSS SECTION**
**U.S. 150**




**PROPOSED TYPICAL CROSS SECTION**
**U.S. 150**

**EXISTING & PROPOSED TYPICAL SECTIONS**

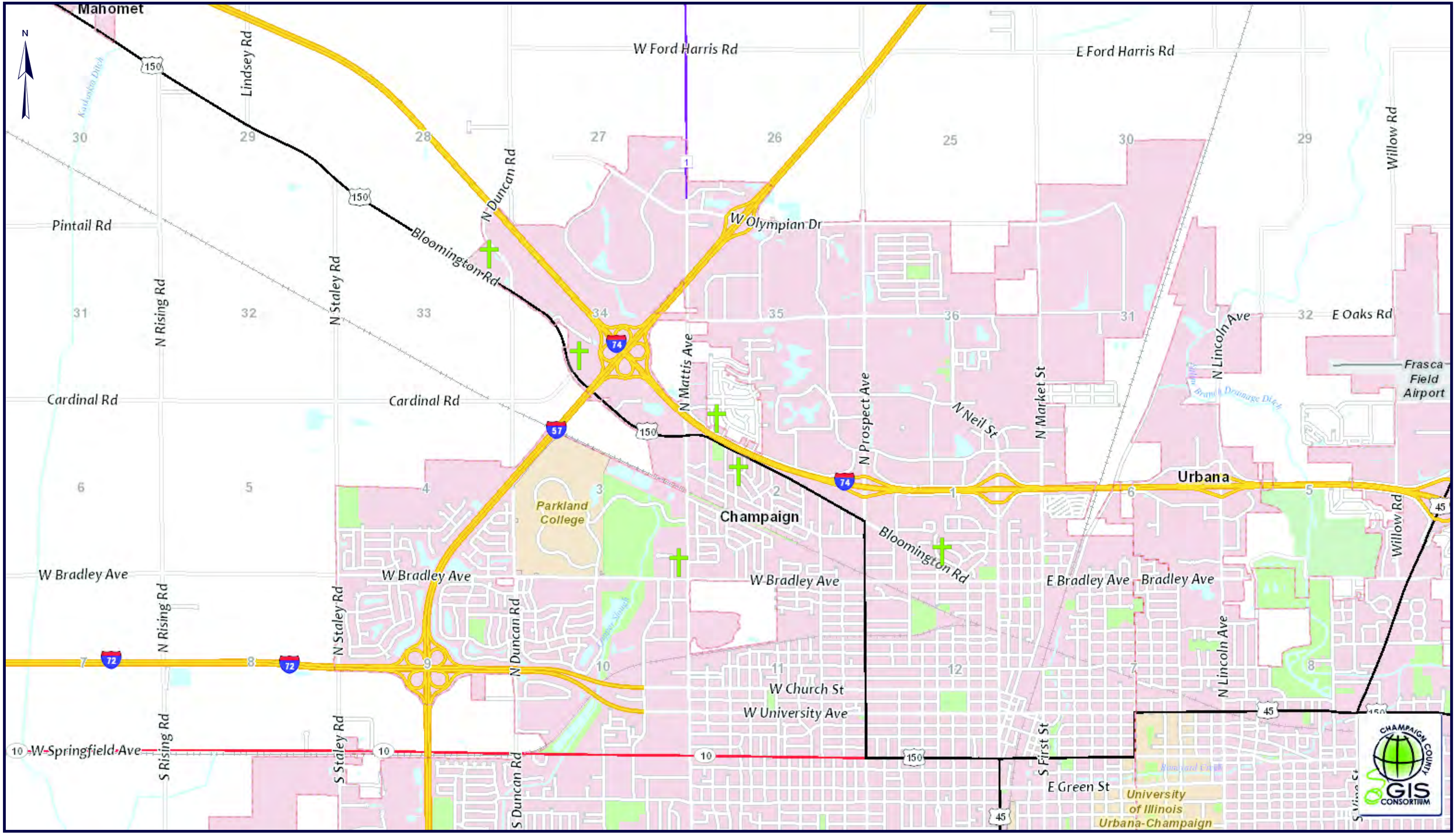
**U.S. 150**
**(BLOOMINGTON AVENUE)**
**EXHIBIT 20**

BDE-9908

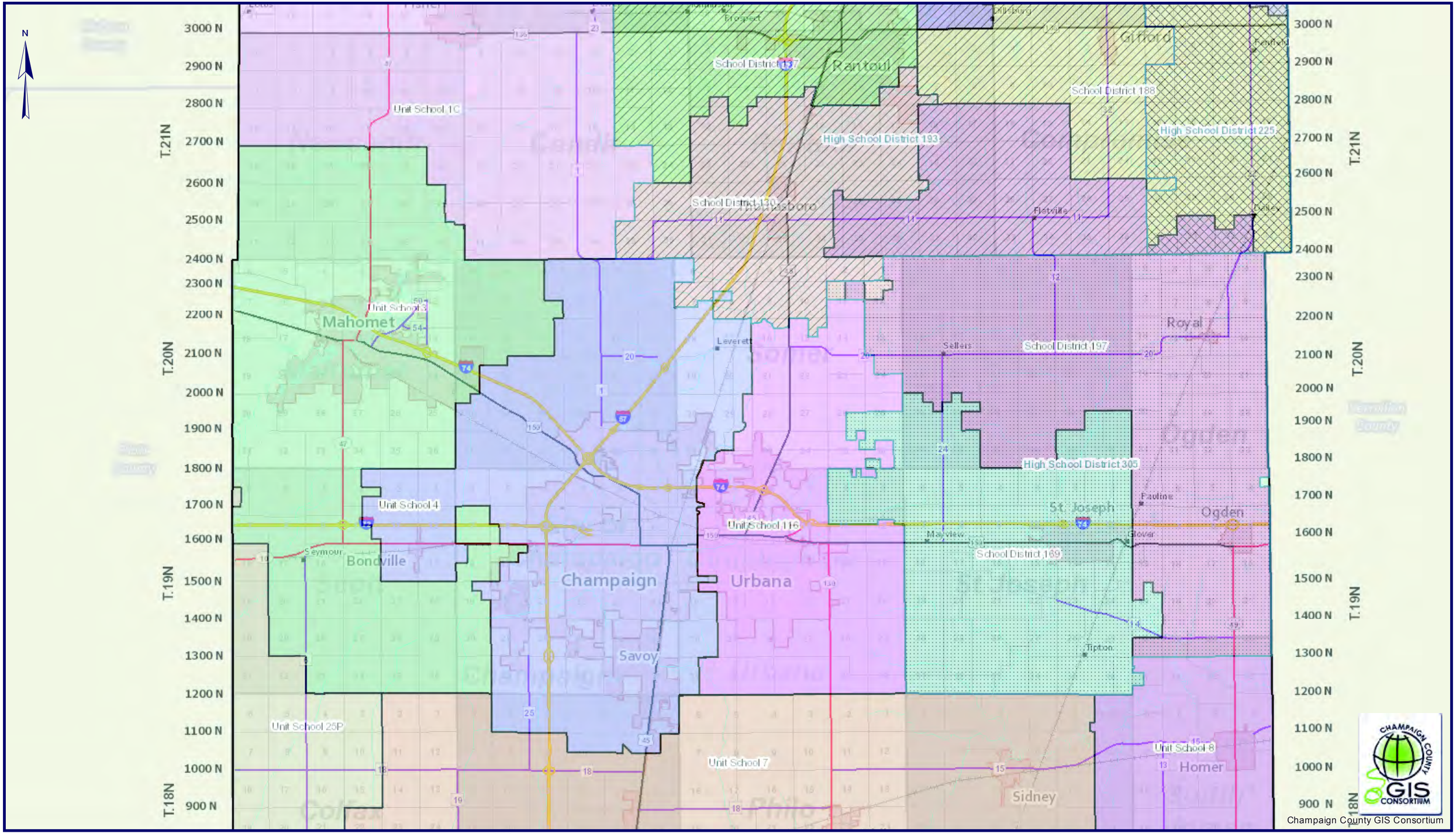
PLOT DATE = 8/25/2015
FILE NAME = Exhibit 20 Typicals.Bloomington.dgn
PLOT SCALE = 16.0000 ' / in.
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**CHURCH LOCATIONS**
**EXHIBIT 21**

✝ **CHURCH LOCATIONS**



**SCHOOL DISTRICT MAP**
**EXHIBIT 22**

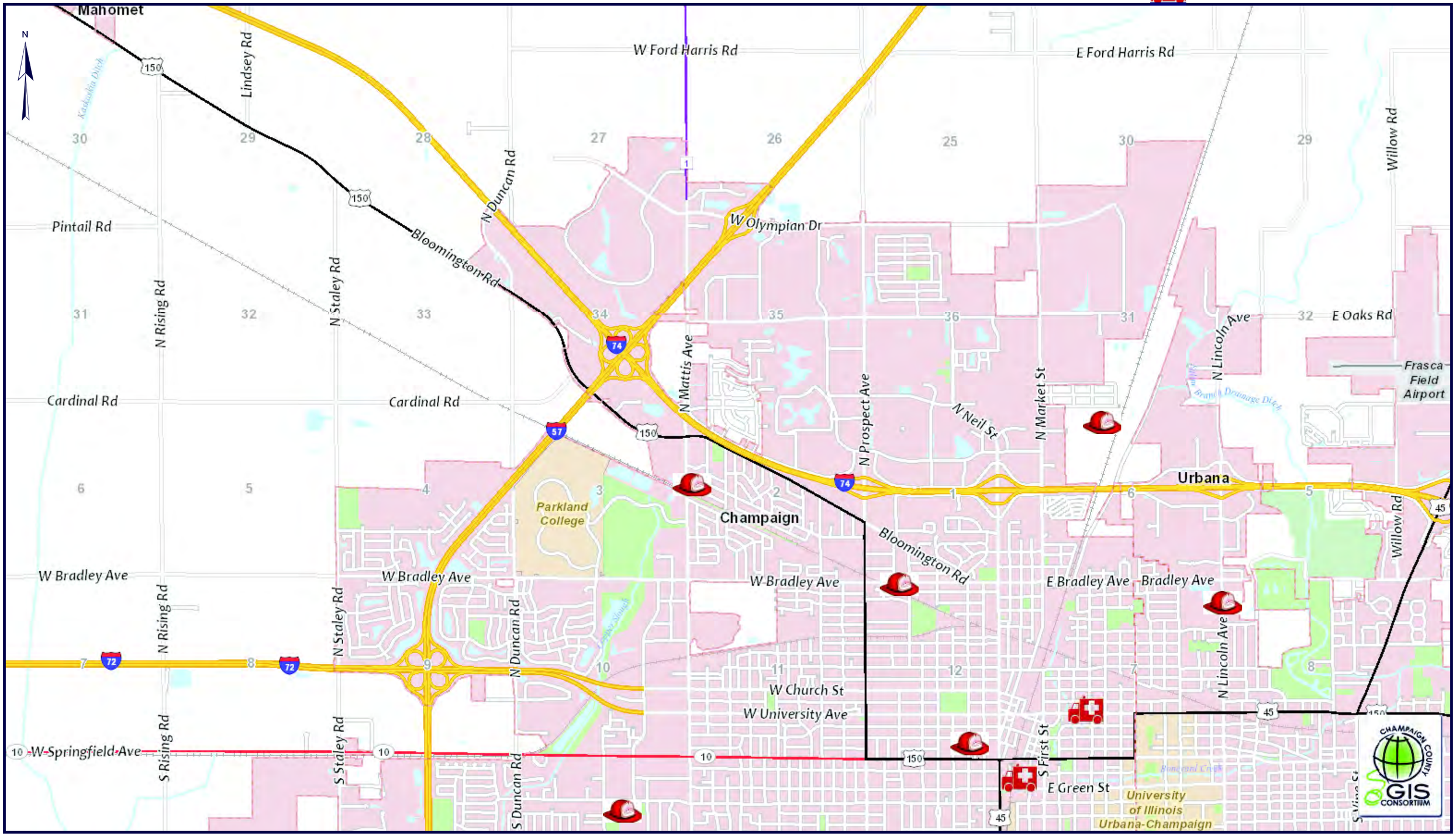



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Date: Friday, September 12, 2014

**FIRE STATION AND AMBULANCE SERVICE LOCATIONS**
**EXHIBIT 23**

FIRE STATION LOCATIONS
AMBULANCE SERVICE LOCATIONS



**ZIP CODE MAP**
**EXHIBIT 24**

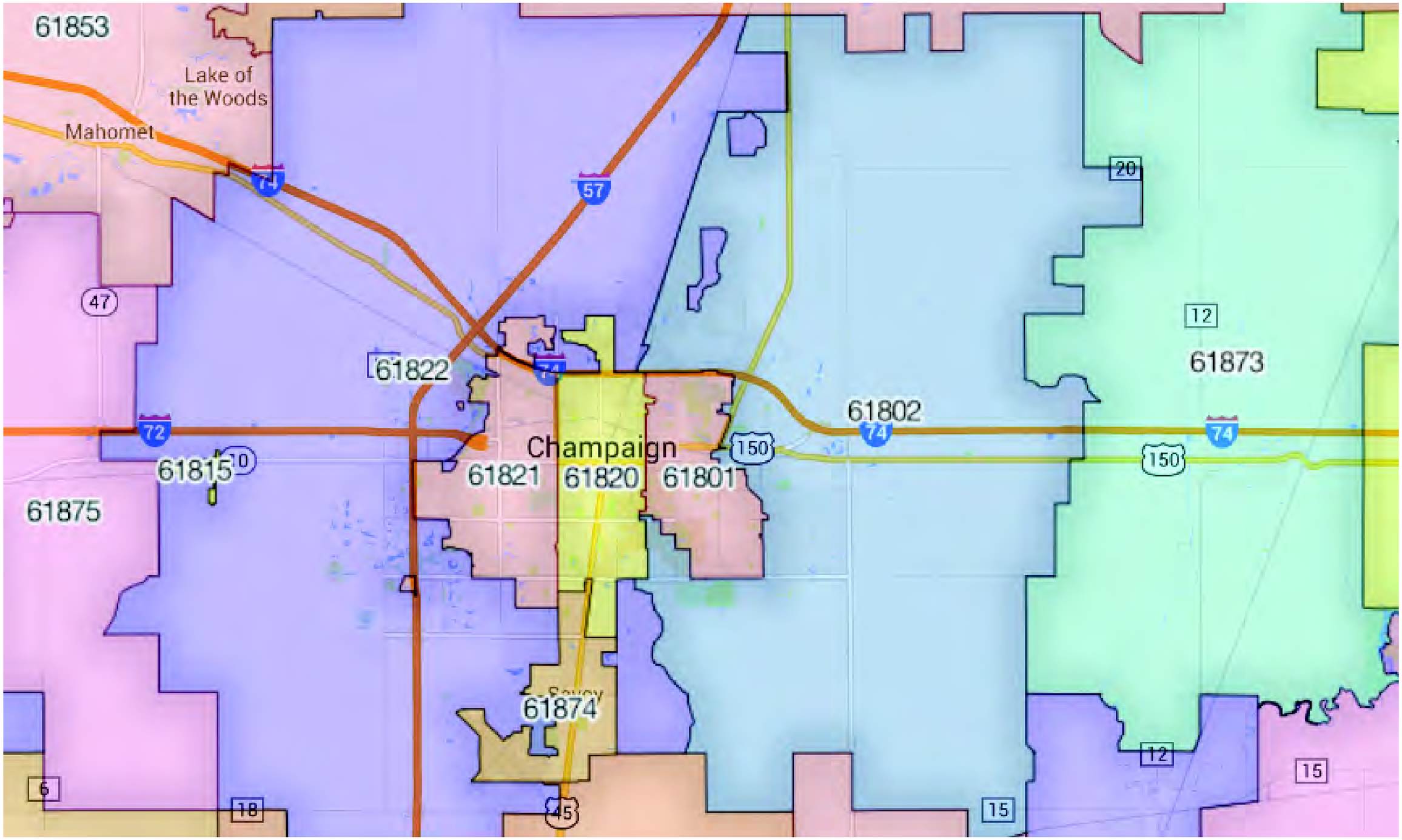


EXHIBIT 25

Illinois Department of Transportation

# Design Criteria Checklist

1. **Application**

The Design Criteria Checklist is intended to summarize and document a proposed project's compliance with the relevant Level One and Level Two design criteria. The checklist must be completed for each new construction, reconstruction, or 3R project. The checklist is then included in the Phase I engineering report and becomes a part of the permanent project file.

For both the Level One and Level Two criteria, check the appropriate boxes on the checklist as applicable. For any criteria not met, a design exception must be processed / approved per Chapter 31-8 of the BDE Manual.

2. **Project Identification**

State Job No.: P-95-030-11 Marked Route No.: FAI 57
Functional Classification: Urban Principal Arterial Highway Type: Interstate
County/City: Champaign Project Length: 1.67 miles I-57; 2.66 miles I-74
Project Location:
From Olympian Drive to the Norfolk Southern Railroad on I-57 and from North Prospect Avenue to North Duncan Road on I-74.

3. **Project Scope of Work**

a. Is project located on NHS? ☒ Yes ☐ No

b. Check the appropriate box. See Section 31-6 for definitions.

☐ New construction ☒ *Reconstruction ☐ 3R (non-freeway) ☐ *3R (freeway)

**Note: May include "Allowed to Remain in Place" criteria.* "

c. Provide a brief project description:

Reconstruction of I-57 and I-74 Interchange from cloverleaf interchange to semi-directional interchange.

4. **Evaluating Exceptions**

When evaluating exceptions to design criteria, the primary considerations are: safety, capacity, compatibility with adjacent sections, time to construction of ultimate improvement, and construction costs.

5. **District Coordination Meetings**

Has project been discussed at district coordination meetings? ☒ Yes ☐ No

Date: 2/5/2013, 3/4/2013, 5/11/2013, 9/24/2013, 2/7/2014, 3/18/2014, 5/20/2014, 7/22/2014, 9/16/2014, 10/28/2014, 1/28/2015, 3/17/2015, 5/19/2015, 7/21/2015

**Level One Design Criteria Checklist**

Route: FAI-57 and FAI-74 Section: 10(5-1-RS-1, 14-1, 6)R County: Champaign

| Design Criteria for Mainline Only (Provide numerical value for project, where indicated.) | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|
| | Yes | No | N/A |
| 1. Design Speed: 75 mph (km/h) | ☒ | ☐ | ☐ |
| 2. Lane Widths: 12 feet (meters) | ☒ | ☐ | ☐ |
| 3. Through Travel Lane Cross - Slopes in Percent Lane 1 1.50% | ☒ | ☐ | ☐ |
| Lane 2 1.50% | ☒ | ☐ | ☐ |
| Lane 3 2.00% | ☒ | ☐ | ☐ |
| 4. Shoulder Widths: 12 feet (meters) (inside) | ☒ | ☐ | ☐ |
| 12 feet (meters) (outside) | ☒ | ☐ | ☐ |
| 5. Horizontal Curvature (Minimum Radius for selected design speed) 2500 feet (meters) | ☒ | ☐ | ☐ |
| 6. Superelevation Rates ($e_{max}$ = 6.0% %) | ☒ | ☐ | ☐ |
| 7. Stopping Sight Distance at Crest Vertical Curves (Level SSD for Passenger Cars) | ☒ | ☐ | ☐ |
| 8. Stopping Sight Distance at Sag Vertical Curves (Level SSD for Passenger Cars) | ☒ | ☐ | ☐ |
| 9. Stopping Sight Distance on Inside of Horizontal Curves (Level SSD for Passenger Cars) | ☒ | ☐ | ☐ |
| 10. Clear Roadway Bridge Widths: 60 feet (meters) | ☒ | ☐ | ☐ |
| 11. Structural Capacity of Bridges: HS-20 | ☒ | ☐ | ☐ |
| 12. Vertical Clearances: 16'-9" | ☒ | ☐ | ☐ |
| 13. Maximum Grades: 3.0% | ☒ | ☐ | ☐ |

Note: Criteria numbers 1, 2, 3, and 4 apply throughout the project. The remaining criteria apply to specific sites within the project limits.

EXHIBIT 25

**Level Two Design Criteria Checklist**

Route: FAI-57 and FAI-74 Section: 10(5-1-RS-1, 14-1, 6)R County: Champaign

| Design Criteria | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| 1. Design Speed: 75 mph | | | | |
| a. Level of Service (mainline)<br>C | | ☒ | ☐ | ☐ |
| b. SSD application at horizontal curves (downgrade adjusted SSD used) | Horz.<br>Varies | ☒ | ☐ | ☐ |
| c. SSD application for vertical curves (downgrade adjusted SSD used) | Vert.<br>820' | ☒ | ☐ | ☐ |
| d. Truck SSD (level) (at specific sites) | | ☒ | ☐ | ☐ |
| 2. Horizontal Alignment (Mainline) | | | | |
| a. Traveled way widening | | ☒ | ☐ | ☐ |
| b. Superelevation transition lengths<br>Varies | | ☒ | ☐ | ☐ |
| c. Superelevation distribution between tangent and curve 2/3 - 1/3 | | ☒ | ☐ | ☐ |
| d. "Breakover" of outside shoulder on super-elevated curves 8.0% | | ☒ | ☐ | ☐ |
| e. Relative longitudinal slope of shoulder to edge of traveled way on high side of S.E. curve adjacent to bridge with S.E. 0.40% | | ☒ | ☐ | ☐ |
| f. Superelevation development at reverse curves Varies | | ☒ | ☐ | ☐ |
| g. Is superelevation transition length located off of bridges and bridge approach pavements? | | ☒ | ☐ | ☐ |

| Design Criteria | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|
| | Yes | No | N/A |
| 3. Vertical Alignment (Mainline) | | | |
| a. Minimum grades considering drainage<br>0.30% | ☒ | ☐ | ☐ |
| b. Critical length of grade<br>Varies per grade | ☒ | ☐ | ☐ |
| c. Warrants for truck-climbing lanes | ☒ | ☐ | ☐ |
| d. Design criteria for truck-climbing lanes (e.g., lane width and shoulder width)<br>12 ft lane, 6 ft shoulder | ☒ | ☐ | ☐ |
| e. Minimum length of vertical curves for selected design speed<br>375' | ☒ | ☐ | ☐ |
| f. Maximum length of vertical curves (drainage of curbed facilities and bridges)<br>K <or= 167 | ☒ | ☐ | ☐ |
| 4. Cross Section Elements (Mainline) | | | |
| a. Design of parking lanes:<br>• Cross-slope _____ %<br>• Width _____ feet (meters) | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| b. Design of sidewalks:<br>• Cross-slope _____ %<br>• Width _____ feet (meters)<br>• Longitudinal slopes _____ % | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| c. Type of curb and gutter used on median: | ☐ | ☐ | ☒ |
| d. Drainage of raised curb medians:<br>• Direction of flow of median surface or pavement _____<br>• Direction of cross-slope on gutter _____ % | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| e. Type of curb and gutter used along outside edges of pavement _____ | ☐ | ☐ | ☒ |
| f. TWLTL width:<br>• Flush type _____ feet (meters)<br>• Traversable type _____ feet (meters) | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |

| Design Criteria | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|
| | Yes | No | N/A |
| g. Median widths:<br>• Urban 23 feet (meters)<br>• Suburban _____ feet (meters)<br>• Rural 60 feet (meters) | ☒<br>☐<br>☒ | ☐<br>☐<br>☐ | ☐<br>☒<br>☐ |
| h. Shoulder cross slopes 4.0 % | ☒ | ☐ | ☐ |
| i. Fill slopes: 6:1 (V:H) | ☒ | ☐ | ☐ |
| j. Outside roadway ditch:<br>• Slopes 6:1 • Depth _____<br>• Widths 4<br>Median ditch:<br>• Widths 4 • Slopes 6:1<br>• Depth _____ | ☒<br>☒<br>☒<br>☒ | ☐<br>☐<br>☐<br>☐ | ☐<br>☐<br>☐<br>☐ |
| k. Cross-section transitions into bridges/ underpasses | ☒ | ☐ | ☐ |
| l. Use of mountable curbs (V > 45 mph (70 km/h)) | ☐ | ☐ | ☒ |
| m. Cross-section transition details (e.g., four-lane to two-lane) | ☐ | ☐ | ☒ |
| n. Design of frontage roads:<br>• Des. speed _____ • Pvmt. width _____<br>• Shld. width _____ • Cross-slopes _____<br>• Super. rate _____ • Ditch slopes _____ | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| 5. Roadside Safety | | | |
| a. Horizontal clearances:<br>• Clear zones on tangent sections 30'<br>• Clear zones on outside of horizontal curves 30' | ☒<br>☒ | ☐<br>☐ | ☐<br>☐ |
| b. Barrier warrants<br>VARIES | ☒ | ☐ | ☐ |
| c. Barrier length of need<br>VARIES | ☒ | ☐ | ☐ |
| d. Deceleration criteria for impact attenuators | ☒ | ☐ | ☐ |

EXHIBIT 25

| Design Criteria | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| 6. Intersections | | | | |
| a. Accommodation of design vehicle (Identify Vehicle) _____ | | ☐ | ☐ | ☒ |
| b. Level of service: | | | | |
| • Through Lanes _____ | | ☐ | ☐ | ☒ |
| • Turn Lanes _____ | | ☐ | ☐ | ☒ |
| c. Skew angle | | ☐ | ☐ | ☒ |
| d. Profiles | | ☐ | ☐ | ☒ |
| e. Volume guidelines for turn-lanes: | | | | |
| • Right-turns | | ☐ | ☐ | ☒ |
| • Left turns | | ☐ | ☐ | ☒ |
| f. Design of right-turn lanes | | ☐ | ☐ | ☒ |
| Design of left-turn lanes | | ☐ | ☐ | ☒ |
| g. Turn-lane tapers | Approach Taper | ☐ | ☐ | ☒ |
| | Departure Taper | ☐ | ☐ | ☒ |
| | Bay Taper | ☐ | ☐ | ☒ |
| h. Turning roadway widths | | ☐ | ☐ | ☒ |
| i. Turn-lane lengths | Deceleration (Rural) | ☐ | ☐ | ☒ |
| | Storage (Urban) | ☐ | ☐ | ☒ |
| j. Intersection sight distance: List criteria and type: _____ _____ | | ☐ | ☐ | ☒ |
| k. Median opening length: _____ | | ☐ | ☐ | ☒ |
| l. Minimum corner island size: _____ | | ☐ | ☐ | ☒ |
| m. Does right-turn radius accommodate design vehicle without encroachment? | | ☐ | ☐ | ☒ |
| n. Driveway widths | | ☐ | ☐ | ☒ |

EXHIBIT 25

| Design Criteria | | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|---|
| | | | Yes | No | N/A |
| o. Type of traffic control:<br>• Two-way stop<br>• All-way stop<br>• Traffic signals | | | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| p. Is maximum grade exceeded on any approach? | | | ☐ | ☐ | ☒ |
| q. Max “e” for intersections on curve | | | ☐ | ☐ | ☒ |
| 7. Interchanges | | | | | |
| a. Exit Terminal | Standard Type<br>Design speed of first curve<br>Are any exit terminals located on mainline horizontal curve? | Diverge<br>55 mph | ☒<br>☒<br>☒ | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ |
| b. Entrance Terminal | Standard Type<br>Length of tangent after the entering curve<br>Design speed of entering curve | Merge<br>1150'<br>55 mph | ☒<br>☒<br>☒ | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ |
| c. Design speed of ramp proper:<br>55mph (40 mph loop) mph (km/h) | | | ☒ | ☐ | ☐ |
| d. Design speed of crossroad:<br>75 mph (km/h) | | | ☒ | ☐ | ☐ |
| e. Maximum ramp grades:<br>• Exit ramp +4.0% to -6.0% %<br>• Entrance ramp +4.0% to -6.0% % | | | ☒<br>☒ | ☐<br>☐ | ☐<br>☐ |
| f. Ramp pavement width<br>16 | | | ☒ | ☐ | ☐ |
| g. Ramp shoulder widths<br>• Left 4 ft paved<br>• Right 6 ft paved | | | ☒<br>☒ | ☐<br>☐ | ☐<br>☐ |
| h. Horizontal ramp curvature in conjunction with selected design speeds | | | ☒ | ☐ | ☐ |

EXHIBIT 25

| Design Criteria | | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|---|
| | | | Yes | No | N/A |
| i. Superelevation development on ramps | Superelevation Rate | 8.0% | ☒ | ☐ | ☐ |
| | Transition Length | 272 ft | ☒ | ☐ | ☐ |
| | Distribution Between Tangent & Curve | 2/3-1/3 | ☒ | ☐ | ☐ |
| j. Vertical curvature compliance with selected design speed on ramp | | | ☒ | ☐ | ☐ |
| k. Length of access control at crossroad | | | ☒ | ☐ | ☐ |
| l. Type of traffic control at crossroad: | | | | | |
| • Stop signs | | | ☐ | ☐ | ☒ |
| • Traffic signals | | | ☐ | ☐ | ☒ |
| • Free flow | | | ☒ | ☐ | ☐ |
| m. Is length of crest vertical curve used on crossroad ≥ that required by the selected design speed of crossroad? 375 ft | | | ☒ | ☐ | ☐ |
| n. Are crossroad approach grades through ramp/ crossroad intersections ≤ 2%? | | | ☒ | ☐ | ☐ |
| o. Are ramp/crossroad intersections located on a tangent section of crossroad alignment? | | | ☐ | ☐ | ☒ |
| p. Is decision sight distance available in advance of exit gore? 1025 ft | | | ☒ | ☐ | ☐ |
| q. Is clear recovery area available beyond gore nose? | | | ☒ | ☐ | ☐ |
| r. Level of service: | | | | | |
| • Exit terminal | C | | ☒ | ☐ | ☐ |
| • Entrance terminal | C | | ☒ | ☐ | ☐ |
| • Ramp proper | C | | ☒ | ☐ | ☐ |
| • Weaving area | C | | ☒ | ☐ | ☐ |
| • Ramp/crossroad intersection | C | | ☒ | ☐ | ☐ |

EXHIBIT 25

| Design Criteria | | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|---|
| | | | Yes | No | N/A |
| s. Freeway lane drops | Location | Upgrade | ☒ | ☐ | ☐ |
| | | Downgrade | ☒ | ☐ | ☐ |
| | | Inside Lane | ☒ | ☐ | ☐ |
| | | Outside Lane | ☒ | ☐ | ☐ |
| | | At Exit Terminal | ☒ | ☐ | ☐ |
| | | Beyond Exit Terminal | ☒ | ☐ | ☐ |
| | | Taper Length 840 | ☒ | ☐ | ☐ |

Prepared By: BFW Engineering & Testing (Feb. 2015)
Designer (IDOT or Consultant)

**Level One Design Criteria Checklist**

Route: FAI-57 and FAI-74 Section: 10(5-1-RS-1, 14-1, 6)R County: Champaign

| Design Criteria for US 150 over I-57 (Provide numerical value for project, where indicated.) | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|
| | Yes | No | N/A |
| 1. Design Speed: 50 mph (km/h) | ☒ | ☐ | ☐ |
| 2. Lane Widths: 12 feet (meters) | ☒ | ☐ | ☐ |
| 3. Through Travel Lane Cross - Slopes in Percent Lane 1 1.5% | ☒ | ☐ | ☐ |
| Lane 2 2.0% | ☒ | ☐ | ☐ |
| Lane 3 | ☐ | ☐ | ☒ |
| 4. Shoulder Widths: 6 feet (meters) (inside) | ☐ | ☐ | ☒ |
| 8 feet (meters) (outside) | ☒ | ☐ | ☐ |
| 5. Horizontal Curvature (Minimum Radius for selected design speed) 930 feet (meters) | ☒ | ☐ | ☐ |
| 6. Superelevation Rates ($e_{max}$ = 4.0% %) | ☒ | ☐ | ☐ |
| 7. Stopping Sight Distance at Crest Vertical Curves (Level SSD for Passenger Cars) | ☒ | ☐ | ☐ |
| 8. Stopping Sight Distance at Sag Vertical Curves (Level SSD for Passenger Cars) | ☒ | ☐ | ☐ |
| 9. Stopping Sight Distance on Inside of Horizontal Curves (Level SSD for Passenger Cars) | ☒ | ☐ | ☐ |
| 10. Clear Roadway Bridge Widths: 40 feet (meters) | ☒ | ☐ | ☐ |
| 11. Structural Capacity of Bridges: HS-20 | ☒ | ☐ | ☐ |
| 12. Vertical Clearances: 16'-9" | ☒ | ☐ | ☐ |
| 13. Maximum Grades: 4.0% | ☒ | ☐ | ☐ |

Note: Criteria numbers 1, 2, 3, and 4 apply throughout the project. The remaining criteria apply to specific sites within the project limits.

EXHIBIT 25

**Level Two Design Criteria Checklist**

Route: FAI-57 and FAI-74 Section: 10(5-1-RS-1, 14-1, 6)R County: Champaign

| Design Criteria<br>US 150 over I-57 | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| 1. Design Speed: 50 mph | | | | |
| a. Level of Service (mainline)<br>C | | ☒ | ☐ | ☐ |
| b. SSD application at horizontal curves (downgrade adjusted SSD used) | Horz.<br>Varies | ☒ | ☐ | ☐ |
| c. SSD application for vertical curves (downgrade adjusted SSD used) | Vert.<br>425’ | ☒ | ☐ | ☐ |
| d. Truck SSD (level) (at specific sites) | | ☒ | ☐ | ☐ |
| 2. Horizontal Alignment (Mainline) | | | | |
| a. Traveled way widening | | ☒ | ☐ | ☐ |
| b. Superelevation transition lengths<br>Varies | | ☒ | ☐ | ☐ |
| c. Superelevation distribution between tangent and curve 2/3 - 1/3 | | ☒ | ☐ | ☐ |
| d. “Breakover” of outside shoulder on super-elevated curves 8.0% | | ☒ | ☐ | ☐ |
| e. Relative longitudinal slope of shoulder to edge of traveled way on high side of S.E. curve adjacent to bridge with S.E. 0.40% | | ☒ | ☐ | ☐ |
| f. Superelevation development at reverse curves Varies | | ☒ | ☐ | ☐ |
| g. Is superelevation transition length located off of bridges and bridge approach pavements? | | ☐ | ☒ | ☐ |

| Design Criteria<br>US 150 over I-57 | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|
| | Yes | No | N/A |
| 3. Vertical Alignment (Mainline) | | | |
| a. Minimum grades considering drainage<br>0.30% | ☒ | ☐ | ☐ |
| b. Critical length of grade<br>Varies per grade | ☒ | ☐ | ☐ |
| c. Warrants for truck-climbing lanes | ☒ | ☐ | ☐ |
| d. Design criteria for truck-climbing lanes (e.g., lane width and shoulder width)<br>12 ft lane, 4 ft shoulder | ☒ | ☐ | ☐ |
| e. Minimum length of vertical curves for selected design speed<br>150’ | ☒ | ☐ | ☐ |
| f. Maximum length of vertical curves (drainage of curbed facilities and bridges)<br>K <or= 167 | ☒ | ☐ | ☐ |
| 4. Cross Section Elements (Mainline) | | | |
| a. Design of parking lanes:<br>• Cross-slope _____ %<br>• Width _____ feet (meters) | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| b. Design of sidewalks:<br>• Cross-slope 2.00% %<br>• Width 5 feet (meters)<br>• Longitudinal slopes _____ % | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| c. Type of curb and gutter used on median:<br>B-6.24 | ☐ | ☐ | ☒ |
| d. Drainage of raised curb medians:<br>• Direction of flow of median surface or pavement _____<br>• Direction of cross-slope on gutter _____ % | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| e. Type of curb and gutter used along outside edges of pavement B-6.24 | ☐ | ☐ | ☒ |
| f. TWLTL width:<br>• Flush type 12 feet (meters)<br>• Traversable type _____ feet (meters) | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |

| Design Criteria<br>US 150 over I-57 | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|
| | Yes | No | N/A |
| g. Median widths:<br>• Urban _____ feet (meters)<br>• Suburban _____ feet (meters)<br>• Rural _____ feet (meters) | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| h. Shoulder cross slopes 4.0 % | ☒ | ☐ | ☐ |
| i. Fill slopes: 4:1 (V:H) | ☒ | ☐ | ☐ |
| j. Outside roadway ditch:<br>• Slopes 4:1 • Depth _____<br>• Widths 6.0 ft<br>Median ditch:<br>• Widths _____ • Slopes :<br>• Depth _____ | ☒<br>☒<br><br>☐<br>☐ | ☐<br>☐<br><br>☐<br>☐ | ☐<br>☐<br><br>☒<br>☒ |
| k. Cross-section transitions into bridges/ underpasses | ☒ | ☐ | ☐ |
| l. Use of mountable curbs (V > 45 mph (70 km/h)) | ☐ | ☐ | ☒ |
| m. Cross-section transition details (e.g., four-lane to two-lane) | ☐ | ☐ | ☒ |
| n. Design of frontage roads:<br>• Des. speed _____ • Pvmt. width _____<br>• Shld. width _____ • Cross-slopes _____<br>• Super. rate _____ • Ditch slopes _____ | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| 5. Roadside Safety | | | |
| a. Horizontal clearances:<br>• Clear zones on tangent sections 28'<br>• Clear zones on outside of horizontal curves VARIES | ☒<br>☒ | ☐<br>☐ | ☐<br>☐ |
| b. Barrier warrants<br>VARIES | ☒ | ☐ | ☐ |
| c. Barrier length of need<br>VARIES | ☒ | ☐ | ☐ |
| d. Deceleration criteria for impact attenuators | ☒ | ☐ | ☐ |

| Design Criteria<br>US 150 over I-57 | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| 6. Intersections | | | | |
| a. Accommodation of design vehicle<br>(Identify Vehicle) _____ | | ☐ | ☐ | ☒ |
| b. Level of service:<br>• Through Lanes _____<br>• Turn Lanes _____ | | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| c. Skew angle | | ☐ | ☐ | ☒ |
| d. Profiles | | ☐ | ☐ | ☒ |
| e. Volume guidelines for turn-lanes:<br>• Right-turns<br>• Left turns | | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| f. Design of right-turn lanes<br>Design of left-turn lanes | | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| g. Turn-lane tapers | Approach Taper<br>Departure Taper<br>Bay Taper | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| h. Turning roadway widths | | ☐ | ☐ | ☒ |
| i. Turn-lane lengths | Deceleration (Rural)<br>Storage (Urban) | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| j. Intersection sight distance:<br>List criteria and type: _____ | | ☐ | ☐ | ☒ |
| k. Median opening length: _____ | | ☐ | ☐ | ☒ |
| l. Minimum corner island size: _____ | | ☐ | ☐ | ☒ |
| m. Does right-turn radius accommodate design vehicle without encroachment? | | ☐ | ☐ | ☒ |
| n. Driveway widths | | ☐ | ☐ | ☒ |

EXHIBIT 25

| Design Criteria<br>US 150 over I-57 | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| o. Type of traffic control:<br>• Two-way stop<br>• All-way stop<br>• Traffic signals | | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| p. Is maximum grade exceeded on any approach? | | ☐ | ☐ | ☒ |
| q. Max “e” for intersections on curve | | ☐ | ☐ | ☒ |
| 7. Interchanges | | | | |
| a. Exit Terminal | Standard Type<br>Design speed of first curve<br>Are any exit terminals located on mainline horizontal curve? | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| b. Entrance Terminal | Standard Type<br>Length of tangent after the entering curve<br>Design speed of entering curve | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| c. Design speed of ramp proper:<br>_____ mph (km/h) | | ☐ | ☐ | ☒ |
| d. Design speed of crossroad:<br>_____ mph (km/h) | | ☐ | ☐ | ☒ |
| e. Maximum ramp grades:<br>• Exit ramp _____ %<br>• Entrance ramp _____ % | | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| f. Ramp pavement width<br>16 | | ☐ | ☐ | ☒ |
| g. Ramp shoulder widths<br>• Left<br>• Right _____ | | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| h. Horizontal ramp curvature in conjunction with selected design speeds | | ☐ | ☐ | ☒ |

EXHIBIT 25

| Design Criteria<br>US 150 over I-57 | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| i. Superelevation development on ramps | Superelevation Rate | ☐ | ☐ | ☒ |
| | Transition Length | ☐ | ☐ | ☒ |
| | Distribution Between Tangent & Curve | ☐ | ☐ | ☒ |
| j. Vertical curvature compliance with selected design speed on ramp | | ☐ | ☐ | ☒ |
| k. Length of access control at crossroad | | ☐ | ☐ | ☒ |
| l. Type of traffic control at crossroad: | | | | |
| • Stop signs | | ☐ | ☐ | ☒ |
| • Traffic signals | | ☐ | ☐ | ☒ |
| • Free flow | | ☐ | ☐ | ☒ |
| m. Is length of crest vertical curve used on crossroad ≥ that required by the selected design speed of crossroad? | | ☐ | ☐ | ☒ |
| n. Are crossroad approach grades through ramp/ crossroad intersections ≤ 2%? | | ☐ | ☐ | ☒ |
| o. Are ramp/crossroad intersections located on a tangent section of crossroad alignment? | | ☐ | ☐ | ☒ |
| p. Is decision sight distance available in advance of exit gore? | | ☐ | ☐ | ☒ |
| q. Is clear recovery area available beyond gore nose? | | ☐ | ☐ | ☒ |
| r. Level of service: | | | | |
| • Exit terminal _____ | | ☐ | ☐ | ☒ |
| • Entrance terminal _____ | | ☐ | ☐ | ☒ |
| • Ramp proper _____ | | ☐ | ☐ | ☒ |
| • Weaving area _____ | | ☐ | ☐ | ☒ |
| • Ramp/crossroad intersection _____ | | ☐ | ☐ | ☒ |

EXHIBIT 25

| Design Criteria US 150 over I-57 | | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|---|
| | | | Yes | No | N/A |
| s. Freeway lane drops | Location | Upgrade | ☐ | ☐ | ☒ |
| | | Downgrade | ☐ | ☐ | ☒ |
| | | Inside Lane | ☐ | ☐ | ☒ |
| | | Outside Lane | ☐ | ☐ | ☒ |
| | | At Exit Terminal | ☐ | ☐ | ☒ |
| | | Beyond Exit Terminal | ☐ | ☐ | ☒ |
| | | Taper Length | ☐ | ☐ | ☒ |

Prepared By: BFW Engineering & Testing (Aug. 2015)
Designer (IDOT or Consultant)

**Level One Design Criteria Checklist**

Route: FAI-57 and FAI-74 Section: 10(5-1-RS-1, 14-1, 6)R County: Champaign

| Design Criteria for Mattis Ave. over I-57 (Provide numerical value for project, where indicated.) | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|
| | Yes | No | N/A |
| 1. Design Speed: 45 mph (km/h) | ☒ | ☐ | ☐ |
| 2. Lane Widths: 12 feet (meters) | ☒ | ☐ | ☐ |
| 3. Through Travel Lane Cross - Slopes in Percent Lane 1 1.50% | ☒ | ☐ | ☐ |
| Lane 2 2.00% | ☒ | ☐ | ☐ |
| Lane 3 | ☐ | ☐ | ☒ |
| 4. Shoulder Widths: 6 feet (meters) (inside) | ☒ | ☐ | ☐ |
| 8 feet (meters) (outside) | ☒ | ☐ | ☐ |
| 5. Horizontal Curvature (Minimum Radius for selected design speed) 665 feet (meters) | ☒ | ☐ | ☐ |
| 6. Superelevation Rates ($e_{max}$ = 4.0% %) | ☒ | ☐ | ☐ |
| 7. Stopping Sight Distance at Crest Vertical Curves (Level SSD for Passenger Cars) | ☒ | ☐ | ☐ |
| 8. Stopping Sight Distance at Sag Vertical Curves (Level SSD for Passenger Cars) | ☒ | ☐ | ☐ |
| 9. Stopping Sight Distance on Inside of Horizontal Curves (Level SSD for Passenger Cars) | ☒ | ☐ | ☐ |
| 10. Clear Roadway Bridge Widths: 40 feet (meters) | ☒ | ☐ | ☐ |
| 11. Structural Capacity of Bridges: HS-20 | ☒ | ☐ | ☐ |
| 12. Vertical Clearances: 16'-9" | ☒ | ☐ | ☐ |
| 13. Maximum Grades: 6.0% | ☒ | ☐ | ☐ |

Note: Criteria numbers 1, 2, 3, and 4 apply throughout the project. The remaining criteria apply to specific sites within the project limits.

EXHIBIT 25

**Level Two Design Criteria Checklist**

Route: FAI-57 and FAI-74 Section: 10(5-1-RS-1, 14-1, 6)R County: Champaign

| Design Criteria<br>Mattis Ave. over I-57 | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| 1. Design Speed: 45 mph | | | | |
| a. Level of Service (mainline)<br>C | | ☒ | ☐ | ☐ |
| b. SSD application at horizontal curves (downgrade adjusted SSD used) | Horz.<br>Varies | ☒ | ☐ | ☐ |
| c. SSD application for vertical curves (downgrade adjusted SSD used) | Vert.<br>360' | ☒ | ☐ | ☐ |
| d. Truck SSD (level) (at specific sites) | | ☒ | ☐ | ☐ |
| 2. Horizontal Alignment (Mainline) | | | | |
| a. Traveled way widening | | ☒ | ☐ | ☐ |
| b. Superelevation transition lengths<br>Varies | | ☒ | ☐ | ☐ |
| c. Superelevation distribution between tangent and curve 2/3 - 1/3 | | ☒ | ☐ | ☐ |
| d. "Breakover" of outside shoulder on super-elevated curves 8.0% | | ☒ | ☐ | ☐ |
| e. Relative longitudinal slope of shoulder to edge of traveled way on high side of S.E. curve adjacent to bridge with S.E. 0.40% | | ☒ | ☐ | ☐ |
| f. Superelevation development at reverse curves Varies | | ☒ | ☐ | ☐ |
| g. Is superelevation transition length located off of bridges and bridge approach pavements? | | ☒ | ☐ | ☐ |

| Design Criteria<br>Mattis Ave. over I-57 | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|
| | Yes | No | N/A |
| 3. Vertical Alignment (Mainline) | | | |
| a. Minimum grades considering drainage<br>0.30% | ☒ | ☐ | ☐ |
| b. Critical length of grade<br>Varies per grade | ☒ | ☐ | ☐ |
| c. Warrants for truck-climbing lanes | ☒ | ☐ | ☐ |
| d. Design criteria for truck-climbing lanes (e.g., lane width and shoulder width)<br>12 ft lane, 4 ft shoulder | ☒ | ☐ | ☐ |
| e. Minimum length of vertical curves for selected design speed<br>135' | ☒ | ☐ | ☐ |
| f. Maximum length of vertical curves (drainage of curbed facilities and bridges)<br>K <or= 167 | ☒ | ☐ | ☐ |
| 4. Cross Section Elements (Mainline) | | | |
| a. Design of parking lanes:<br>• Cross-slope _____ %<br>• Width _____ feet (meters) | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| b. Design of sidewalks:<br>• Cross-slope 2.00% %<br>• Width 5 feet (meters)<br>• Longitudinal slopes _____ % | ☒<br>☒<br>☒ | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ |
| c. Type of curb and gutter used on median:<br>B-6.24 | ☐ | ☐ | ☒ |
| d. Drainage of raised curb medians:<br>• Direction of flow of median surface or pavement -1.50%<br>• Direction of cross-slope on gutter +6.00 % | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| e. Type of curb and gutter used along outside edges of pavement B-6.24 | ☒ | ☐ | ☐ |
| f. TWLTL width:<br>• Flush type 12 feet (meters)<br>• Traversable type 16 feet (meters) | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |

| Design Criteria<br>Mattis Ave. over I-57 | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|
| | Yes | No | N/A |
| g. Median widths:<br>• Urban _____ feet (meters)<br>• Suburban 18 feet (meters)<br>• Rural _____ feet (meters) | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| h. Shoulder cross slopes 4.0 % | ☒ | ☐ | ☐ |
| i. Fill slopes: 4:1 (V:H) | ☒ | ☐ | ☐ |
| j. Outside roadway ditch:<br>• Slopes 4:1 • Depth _____<br>• Widths 2.0 ft<br>Median ditch:<br>• Widths _____ • Slopes :<br>• Depth _____ | ☒<br>☒<br><br>☐<br>☐ | ☐<br>☐<br><br>☐<br>☐ | ☐<br>☐<br><br>☒<br>☒ |
| k. Cross-section transitions into bridges/ underpasses | ☒ | ☐ | ☐ |
| l. Use of mountable curbs (V > 45 mph (70 km/h)) | ☐ | ☐ | ☒ |
| m. Cross-section transition details (e.g., four-lane to two-lane) | ☐ | ☐ | ☒ |
| n. Design of frontage roads:<br>• Des. speed _____ • Pvmt. width _____<br>• Shld. width _____ • Cross-slopes _____<br>• Super. rate _____ • Ditch slopes _____ | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| 5. Roadside Safety | | | |
| a. Horizontal clearances:<br>• Clear zones on tangent sections 18'<br>• Clear zones on outside of horizontal curves VARIES | ☒<br>☒ | ☐<br>☐ | ☐<br>☐ |
| b. Barrier warrants<br>VARIES | ☒ | ☐ | ☐ |
| c. Barrier length of need<br>VARIES | ☒ | ☐ | ☐ |
| d. Deceleration criteria for impact attenuators | ☒ | ☐ | ☐ |

EXHIBIT 25

| Design Criteria<br>Mattis Ave. over I-57 | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| 6. Intersections | | | | |
| a. Accommodation of design vehicle<br>(Identify Vehicle) _____ | | ☐ | ☐ | ☒ |
| b. Level of service:<br>• Through Lanes _____ | | ☐ | ☐ | ☒ |
| • Turn Lanes _____ | | ☐ | ☐ | ☒ |
| c. Skew angle | | ☐ | ☐ | ☒ |
| d. Profiles | | ☐ | ☐ | ☒ |
| e. Volume guidelines for turn-lanes:<br>• Right-turns | | ☐ | ☐ | ☒ |
| • Left turns | | ☐ | ☐ | ☒ |
| f. Design of right-turn lanes | | ☐ | ☐ | ☒ |
| Design of left-turn lanes | | ☐ | ☐ | ☒ |
| g. Turn-lane tapers | Approach Taper | ☐ | ☐ | ☒ |
| | Departure Taper | ☐ | ☐ | ☒ |
| | Bay Taper | ☐ | ☐ | ☒ |
| h. Turning roadway widths | | ☐ | ☐ | ☒ |
| i. Turn-lane lengths | Deceleration (Rural) | ☐ | ☐ | ☒ |
| | Storage (Urban) | ☐ | ☐ | ☒ |
| j. Intersection sight distance:<br>List criteria and type: _____ | | ☐ | ☐ | ☒ |
| k. Median opening length: _____ | | ☐ | ☐ | ☒ |
| l. Minimum corner island size: _____ | | ☐ | ☐ | ☒ |
| m. Does right-turn radius accommodate design vehicle without encroachment? | | ☐ | ☐ | ☒ |
| n. Driveway widths | | ☐ | ☐ | ☒ |

EXHIBIT 25

| Design Criteria<br>Mattis Ave. over I-57 | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| o. Type of traffic control:<br>• Two-way stop<br>• All-way stop<br>• Traffic signals | | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| p. Is maximum grade exceeded on any approach? | | ☐ | ☐ | ☒ |
| q. Max “e” for intersections on curve | | ☐ | ☐ | ☒ |
| 7. Interchanges | | | | |
| a. Exit Terminal | Standard Type<br>Design speed of first curve<br>Are any exit terminals located on mainline horizontal curve? | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| b. Entrance Terminal | Standard Type<br>Length of tangent after the entering curve<br>Design speed of entering curve | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| c. Design speed of ramp proper:<br>_____ mph (km/h) | | ☐ | ☐ | ☒ |
| d. Design speed of crossroad:<br>_____ mph (km/h) | | ☐ | ☐ | ☒ |
| e. Maximum ramp grades:<br>• Exit ramp _____ %<br>• Entrance ramp _____ % | | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| f. Ramp pavement width<br>16 | | ☐ | ☐ | ☒ |
| g. Ramp shoulder widths<br>• Left _____<br>• Right _____ | | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| h. Horizontal ramp curvature in conjunction with selected design speeds | | ☐ | ☐ | ☒ |

EXHIBIT 25

| Design Criteria<br>Mattis Ave. over I-57 | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| i. Superelevation development on ramps | Superelevation Rate | ☐ | ☐ | ☒ |
| | Transition Length | ☐ | ☐ | ☒ |
| | Distribution Between Tangent & Curve | ☐ | ☐ | ☒ |
| j. Vertical curvature compliance with selected design speed on ramp | | ☐ | ☐ | ☒ |
| k. Length of access control at crossroad | | ☐ | ☐ | ☒ |
| l. Type of traffic control at crossroad: | | | | |
| • Stop signs | | ☐ | ☐ | ☒ |
| • Traffic signals | | ☐ | ☐ | ☒ |
| • Free flow | | ☐ | ☐ | ☒ |
| m. Is length of crest vertical curve used on crossroad ≥ that required by the selected design speed of crossroad? | | ☐ | ☐ | ☒ |
| n. Are crossroad approach grades through ramp/ crossroad intersections ≤ 2%? | | ☐ | ☐ | ☒ |
| o. Are ramp/crossroad intersections located on a tangent section of crossroad alignment? | | ☐ | ☐ | ☒ |
| p. Is decision sight distance available in advance of exit gore? | | ☐ | ☐ | ☒ |
| q. Is clear recovery area available beyond gore nose? | | ☐ | ☐ | ☒ |
| r. Level of service: | | | | |
| • Exit terminal _____ | | ☐ | ☐ | ☒ |
| • Entrance terminal _____ | | ☐ | ☐ | ☒ |
| • Ramp proper _____ | | ☐ | ☐ | ☒ |
| • Weaving area _____ | | ☐ | ☐ | ☒ |
| • Ramp/crossroad intersection _____ | | ☐ | ☐ | ☒ |

EXHIBIT 25

| Design Criteria<br>Mattis Ave. over I-57 | | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|---|
| | | | Yes | No | N/A |
| s. Freeway lane drops | Location | Upgrade | ☐ | ☐ | ☒ |
| | | Downgrade | ☐ | ☐ | ☒ |
| | | Inside Lane | ☐ | ☐ | ☒ |
| | | Outside Lane | ☐ | ☐ | ☒ |
| | | At Exit Terminal | ☐ | ☐ | ☒ |
| | | Beyond Exit Terminal | ☐ | ☐ | ☒ |
| | | Taper Length | ☐ | ☐ | ☒ |

Prepared By: BFW Engineering & Testing (Aug. 2015)
Designer (IDOT or Consultant)

EXHIBIT 25

**Level One Design Criteria Checklist**

Route: FAI-57 and FAI-74 Section: 10(5-1-RS-1, 14-1, 6)R County: Champaign

| Design Criteria for Mattis Ave. over I-74 (Provide numerical value for project, where indicated.) | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|
| | Yes | No | N/A |
| 1. Design Speed: 45 mph (km/h) | ☒ | ☐ | ☐ |
| 2. Lane Widths: 12 feet (meters) | ☒ | ☐ | ☐ |
| 3. Through Travel Lane Cross - Slopes in Percent Lane 1 1.50% | ☒ | ☐ | ☐ |
| Lane 2 2.00% | ☒ | ☐ | ☐ |
| Lane 3 | ☐ | ☐ | ☒ |
| 4. Shoulder Widths: 6 feet (meters) (inside) | ☒ | ☐ | ☐ |
| 8 feet (meters) (outside) | ☒ | ☐ | ☐ |
| 5. Horizontal Curvature (Minimum Radius for selected design speed) 665 feet (meters) | ☒ | ☐ | ☐ |
| 6. Superelevation Rates ($e_{max}$ = 4.0% %) | ☒ | ☐ | ☐ |
| 7. Stopping Sight Distance at Crest Vertical Curves (Level SSD for Passenger Cars) | ☒ | ☐ | ☐ |
| 8. Stopping Sight Distance at Sag Vertical Curves (Level SSD for Passenger Cars) | ☒ | ☐ | ☐ |
| 9. Stopping Sight Distance on Inside of Horizontal Curves (Level SSD for Passenger Cars) | ☒ | ☐ | ☐ |
| 10. Clear Roadway Bridge Widths: 72 feet (meters) | ☒ | ☐ | ☐ |
| 11. Structural Capacity of Bridges: HS-20 | ☒ | ☐ | ☐ |
| 12. Vertical Clearances: 16'-9" | ☒ | ☐ | ☐ |
| 13. Maximum Grades: 6.0% | ☒ | ☐ | ☐ |

Note: Criteria numbers 1, 2, 3, and 4 apply throughout the project. The remaining criteria apply to specific sites within the project limits.

EXHIBIT 25

**Level Two Design Criteria Checklist**

Route: FAI-57 and FAI-74 Section: 10(5-1-RS-1, 14-1, 6)R County: Champaign

| Design Criteria<br>Mattis Ave. over I-74 | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| 1. Design Speed: 45 mph | | | | |
| a. Level of Service (mainline)<br>C | | ☒ | ☐ | ☐ |
| b. SSD application at horizontal curves (downgrade adjusted SSD used) | Horz.<br>Varies | ☒ | ☐ | ☐ |
| c. SSD application for vertical curves (downgrade adjusted SSD used) | Vert.<br>360' | ☒ | ☐ | ☐ |
| d. Truck SSD (level) (at specific sites) | | ☒ | ☐ | ☐ |
| 2. Horizontal Alignment (Mainline) | | | | |
| a. Traveled way widening | | ☒ | ☐ | ☐ |
| b. Superelevation transition lengths<br>Varies | | ☒ | ☐ | ☐ |
| c. Superelevation distribution between tangent and curve 2/3 - 1/3 | | ☒ | ☐ | ☐ |
| d. "Breakover" of outside shoulder on super-elevated curves 8.0% | | ☒ | ☐ | ☐ |
| e. Relative longitudinal slope of shoulder to edge of traveled way on high side of S.E. curve adjacent to bridge with S.E. 0.40% | | ☒ | ☐ | ☐ |
| f. Superelevation development at reverse curves Varies | | ☒ | ☐ | ☐ |
| g. Is superelevation transition length located off of bridges and bridge approach pavements? | | ☒ | ☐ | ☐ |

| Design Criteria<br>Mattis Ave. over I-74 | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|
| | Yes | No | N/A |
| 3. Vertical Alignment (Mainline) | | | |
| a. Minimum grades considering drainage<br>0.30% | ☒ | ☐ | ☐ |
| b. Critical length of grade<br>Varies per grade | ☒ | ☐ | ☐ |
| c. Warrants for truck-climbing lanes | ☒ | ☐ | ☐ |
| d. Design criteria for truck-climbing lanes (e.g., lane width and shoulder width)<br>12 ft lane, 4 ft shoulder | ☒ | ☐ | ☐ |
| e. Minimum length of vertical curves for selected design speed<br>135' | ☒ | ☐ | ☐ |
| f. Maximum length of vertical curves (drainage of curbed facilities and bridges)<br>K <or= 167 | ☒ | ☐ | ☐ |
| 4. Cross Section Elements (Mainline) | | | |
| a. Design of parking lanes:<br>• Cross-slope _____ %<br>• Width _____ feet (meters) | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| b. Design of sidewalks:<br>• Cross-slope 2.00% %<br>• Width 5 feet (meters)<br>• Longitudinal slopes _____ % | ☒<br>☒<br>☒ | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ |
| c. Type of curb and gutter used on median:<br>B-6.24 | ☐ | ☐ | ☒ |
| d. Drainage of raised curb medians:<br>• Direction of flow of median surface or pavement -1.50%<br>• Direction of cross-slope on gutter +6.00 % | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| e. Type of curb and gutter used along outside edges of pavement B-6.24 | ☒ | ☐ | ☐ |
| f. TWLTL width:<br>• Flush type 12 feet (meters)<br>• Traversable type 16 feet (meters) | ☒<br>☐ | ☐<br>☐ | ☐<br>☒ |

| Design Criteria<br>Mattis Ave. over I-74 | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|
| | Yes | No | N/A |
| g. Median widths:<br>• Urban _____ feet (meters)<br>• Suburban 18 feet (meters)<br>• Rural _____ feet (meters) | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| h. Shoulder cross slopes 4.0 % | ☒ | ☐ | ☐ |
| i. Fill slopes: 4:1 (V:H) | ☒ | ☐ | ☐ |
| j. Outside roadway ditch:<br>• Slopes 4:1 • Depth _____<br>• Widths 2.0 ft<br>Median ditch:<br>• Widths _____ • Slopes :<br>• Depth _____ | ☒<br>☒<br><br>☐<br>☐ | ☐<br>☐<br><br>☐<br>☐ | ☐<br>☐<br><br>☒<br>☒ |
| k. Cross-section transitions into bridges/ underpasses | ☒ | ☐ | ☐ |
| l. Use of mountable curbs (V > 45 mph (70 km/h)) | ☐ | ☐ | ☒ |
| m. Cross-section transition details (e.g., four-lane to two-lane) | ☐ | ☐ | ☒ |
| n. Design of frontage roads:<br>• Des. speed _____ • Pvmt. width _____<br>• Shld. width _____ • Cross-slopes _____<br>• Super. rate _____ • Ditch slopes _____ | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| 5. Roadside Safety | | | |
| a. Horizontal clearances:<br>• Clear zones on tangent sections 18'<br>• Clear zones on outside of horizontal curves VARIES | ☒<br>☒ | ☐<br>☐ | ☐<br>☐ |
| b. Barrier warrants<br>VARIES | ☒ | ☐ | ☐ |
| c. Barrier length of need<br>VARIES | ☒ | ☐ | ☐ |
| d. Deceleration criteria for impact attenuators | ☒ | ☐ | ☐ |

| Design Criteria<br>Mattis Ave. over I-74 | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| 6. Intersections | | | | |
| a. Accommodation of design vehicle<br>(Identify Vehicle) _____ | | ☐ | ☐ | ☒ |
| b. Level of service:<br>• Through Lanes _____<br>• Turn Lanes _____ | | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| c. Skew angle | | ☐ | ☐ | ☒ |
| d. Profiles | | ☐ | ☐ | ☒ |
| e. Volume guidelines for turn-lanes:<br>• Right-turns<br>• Left turns | | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| f. Design of right-turn lanes<br>Design of left-turn lanes | | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| g. Turn-lane tapers | Approach Taper<br>Departure Taper<br>Bay Taper | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| h. Turning roadway widths | | ☐ | ☐ | ☒ |
| i. Turn-lane lengths | Deceleration (Rural)<br>Storage (Urban) | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| j. Intersection sight distance:<br>List criteria and type: _____ | | ☐ | ☐ | ☒ |
| k. Median opening length: _____ | | ☐ | ☐ | ☒ |
| l. Minimum corner island size: _____ | | ☐ | ☐ | ☒ |
| m. Does right-turn radius accommodate design vehicle without encroachment? | | ☐ | ☐ | ☒ |
| n. Driveway widths | | ☐ | ☐ | ☒ |

EXHIBIT 25

| Design Criteria<br>Mattis Ave. over I-74 | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| o. Type of traffic control:<br>• Two-way stop<br>• All-way stop<br>• Traffic signals | | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| p. Is maximum grade exceeded on any approach? | | ☐ | ☐ | ☒ |
| q. Max “e” for intersections on curve | | ☐ | ☐ | ☒ |
| 7. Interchanges | | | | |
| a. Exit Terminal | Standard Type<br>Design speed of first curve<br>Are any exit terminals located on mainline horizontal curve? | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| b. Entrance Terminal | Standard Type<br>Length of tangent after the entering curve<br>Design speed of entering curve | ☐<br>☐<br>☐ | ☐<br>☐<br>☐ | ☒<br>☒<br>☒ |
| c. Design speed of ramp proper:<br>_____ mph (km/h) | | ☐ | ☐ | ☒ |
| d. Design speed of crossroad:<br>_____ mph (km/h) | | ☐ | ☐ | ☒ |
| e. Maximum ramp grades:<br>• Exit ramp _____ %<br>• Entrance ramp _____ % | | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| f. Ramp pavement width<br>16 | | ☐ | ☐ | ☒ |
| g. Ramp shoulder widths<br>• Left<br>• Right _____ | | ☐<br>☐ | ☐<br>☐ | ☒<br>☒ |
| h. Horizontal ramp curvature in conjunction with selected design speeds | | ☐ | ☐ | ☒ |

EXHIBIT 25

| Design Criteria<br>Mattis Ave. over I-74 | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|
| | | Yes | No | N/A |
| i. Superelevation development on ramps | Superelevation Rate | ☐ | ☐ | ☒ |
| | Transition Length | ☐ | ☐ | ☒ |
| | Distribution Between Tangent & Curve | ☐ | ☐ | ☒ |
| j. Vertical curvature compliance with selected design speed on ramp | | ☐ | ☐ | ☒ |
| k. Length of access control at crossroad | | ☐ | ☐ | ☒ |
| l. Type of traffic control at crossroad: | | | | |
| • Stop signs | | ☐ | ☐ | ☒ |
| • Traffic signals | | ☐ | ☐ | ☒ |
| • Free flow | | ☐ | ☐ | ☒ |
| m. Is length of crest vertical curve used on crossroad ≥ that required by the selected design speed of crossroad? | | ☐ | ☐ | ☒ |
| n. Are crossroad approach grades through ramp/ crossroad intersections ≤ 2%? | | ☐ | ☐ | ☒ |
| o. Are ramp/crossroad intersections located on a tangent section of crossroad alignment? | | ☐ | ☐ | ☒ |
| p. Is decision sight distance available in advance of exit gore? | | ☐ | ☐ | ☒ |
| q. Is clear recovery area available beyond gore nose? | | ☐ | ☐ | ☒ |
| r. Level of service: | | | | |
| • Exit terminal _____ | | ☐ | ☐ | ☒ |
| • Entrance terminal _____ | | ☐ | ☐ | ☒ |
| • Ramp proper _____ | | ☐ | ☐ | ☒ |
| • Weaving area _____ | | ☐ | ☐ | ☒ |
| • Ramp/crossroad intersection _____ | | ☐ | ☐ | ☒ |

EXHIBIT 25

| Design Criteria<br>Mattis Ave. over I-74 | | | Does the proposed design meet IDOT criteria? | | |
|---|---|---|---|---|---|
| | | | Yes | No | N/A |
| s. Freeway lane drops | Location | Upgrade | ☐ | ☐ | ☒ |
| | | Downgrade | ☐ | ☐ | ☒ |
| | | Inside Lane | ☐ | ☐ | ☒ |
| | | Outside Lane | ☐ | ☐ | ☒ |
| | | At Exit Terminal | ☐ | ☐ | ☒ |
| | | Beyond Exit Terminal | ☐ | ☐ | ☒ |
| | | Taper Length | ☐ | ☐ | ☒ |

Prepared By: BFW Engineering & Testing (Aug. 2015)
Designer (IDOT or Consultant)

# EXHIBIT 26
# PRELIMINARY COST ESTIMATE - I-57 & I-74 INTERCHANGE

Date: September 2015 | Designer: BFW Engineering & Testing
Route: Interstate 57 and Interstate 74 | City/County: Champaign, IL / Champaign County
Section: 10(5-1-RS-1, 14-1, 6)R | Base Year: 2015

| WORK CLASSIFICATION | Estimated Costs in $1000's | | | |
|---|---|---|---|---|
| | Segments | | | |
| | 1 | 2 | 3 | Totals |
| 1. Clear and Grub (Minor removal items and demolition) | $177 | $218 | $1,868 | $2,263 |
| 2. Earthwork | | | | |
| a. Mainline grading and drainage (minor structures) | $138 | $99 | $4,139 | $4,376 |
| b. Frontage road grading and drainage (minor structures) | N/A | N/A | N/A | N/A |
| 3. Pavement | | | | |
| a. Mainline subbase, base, surface, and shoulder | $0 | $0 | $16,376 | $16,376 |
| b. Frontage road subbase, base, surface, and shoulder | N/A | N/A | N/A | N/A |
| 4. Grade Separations | | | | |
| a. Railroads | N/A | N/A | N/A | N/A |
| b. Highway grade separations, including earthwork and pavement (without ramps). List each separately. | N/A | N/A | N/A | N/A |
| c. Structural removal | N/A | N/A | N/A | N/A |
| 5. Interchanges (structure, crossroad and ramp earthwork, and crossroad and ramp pavements). List each separately. (Do not include mainline grading or pavement) | $11,366 | $37,014 | $10,783 | $59,162 |
| 6. Structures | | | | |
| a. Drainage (major structures) | $193 | $0 | $1,097 | $1,290 |
| b. Walls (retaining or reinforced earth) | $0 | $1,722 | $0 | $1,722 |
| 7. Miscellaneous Items | | | | |
| a. Guardrail, fencing, and lighting | $237 | $833 | $3,866 | $4,936 |
| b. Traffic Control | $1,665 | $1,239 | $2,184 | $5,089 |
| c. Traffic Signals (modernization or new) | N/A | N/A | N/A | N/A |
| d. Signing | $13 | $2,532 | $342 | $2,887 |
| e. Railroad Crossing Improvements | N/A | N/A | N/A | N/A |
| f. Field Office, Laboratory, and Mobilization | $1,060 | $1,060 | $1,060 | $3,180 |

# EXHIBIT 26
# PRELIMINARY COST ESTIMATE - I-57 & I-74 INTERCHANGE

Date: September 2015
Designer: BFW Engineering & Testing
Route: Interstate 57 and Interstate 74
City/County: Champaign, IL / Champaign County
Section: 10(5-1-RS-1, 14-1, 6)R
Base Year: 2015

| WORK CLASSIFICATION | Estimated Costs in $1000's | | | |
|---|---|---|---|---|
| | Segments | | | |
| | 1 | 2 | 3 | Totals |
| 8. Other Items | | | | |
| a. Construction Site Stormwater Pollution Control | $163 | $113 | $361 | $637 |
| b. Landscaping | $51 | $51 | $153 | $256 |
| c. Rest areas or other amenities | N/A | N/A | N/A | N/A |
| d. Environmental mitigation | N/A | N/A | N/A | N/A |
| 9. Transportation Management Plan Costs | | | | |
| a. Crossovers | N/A | N/A | N/A | N/A |
| b. Temporary Roadways | $1,521 | $1,157 | $3,225 | $5,903 |
| c. Detours | $370 | $0 | $0 | $370 |
| 10. Subtotal (Categories 1 - 9) | $16,954 | $46,039 | $45,453 | $108,447 |
| 11. Contingencies (10% of Line 10). | $1,695 | $4,604 | $4,545 | $10,845 |
| 12. Total Construction Cost (Lines 10 and 11) | $18,650 | $50,643 | $49,999 | $119,291 |
| 13. Right-of-Way | $3,500 | $0 | $0 | $3,500 |
| 14. Utility Adjustments | $1,500 | $0 | $0 | $1,500 |
| 15. Preliminary Engineering | $708 | $708 | $709 | $2,125 |
| 16. Construction Engineering | $1,000 | $1,000 | $1,000 | $3,000 |
| 17. Total Project Cost (Lines 12 - 16) | $25,358 | $52,351 | $51,708 | $129,416 |
| 18. Local Participation | N/A | N/A | N/A | N/A |

# EXHIBIT 26
# PRELIMINARY COST ESTIMATE - OUTER ROADS

Date: September 2015 | Designer: BFW Engineering & Testing
Route: Interstate 57 and Interstate 74 | City/County: Champaign, IL / Champaign County
Section: 10(5-1-RS-1, 14-1, 6)R | Base Year: 2015

| WORK CLASSIFICATION | Estimated Costs in $1000's | | | |
|---|---|---|---|---|
| | Segments | | | |
| | US 150 (Bloomington) | Mattis over I-57 | Mattis over I-74 | Totals |
| 1. Clear and Grub (Minor removal items and demolition) | $24 | $25 | $39 | $89 |
| 2. Earthwork | | | | |
| a. Mainline grading and drainage (minor structures) | $12 | $12 | $32 | $56 |
| b. Frontage road grading and drainage (minor structures) | N/A | N/A | N/A | N/A |
| 3. Pavement | | | | |
| a. Mainline subbase, base, surface, and shoulder | N/A | N/A | N/A | N/A |
| b. Frontage road subbase, base, surface, and shoulder | N/A | N/A | N/A | N/A |
| 4. Grade Separations | | | | |
| a. Railroads | N/A | N/A | N/A | N/A |
| b. Highway grade separations, including earthwork and pavement (without ramps). List each separately. | $3,485 | $4,570 | $6,257 | $14,312 |
| c. Structural removal | $200 | $200 | $200 | $600 |
| 5. Interchanges (structure, crossroad and ramp earthwork, and crossroad and ramp pavements). List each separately. (Do not include mainline grading or pavement) | N/A | N/A | N/A | N/A |
| 6. Structures | | | | |
| a. Drainage (major structures) | N/A | N/A | N/A | N/A |
| b. Walls (retaining or reinforced earth) | $0 | $0 | $228 | $228 |
| 7. Miscellaneous Items | | | | |
| a. Guardrail, fencing, and lighting | $59 | $58 | $41 | $157 |
| b. Traffic Control | $222 | $272 | $373 | $867 |
| c. Traffic Signals (modernization or new) | N/A | N/A | N/A | N/A |
| d. Signing | $4 | $0 | $0 | $4 |
| e. Railroad Crossing Improvements | N/A | N/A | N/A | N/A |
| f. Field Office, Laboratory, and Mobilization | $1,030 | $515 | $515 | $2,060 |

# EXHIBIT 26
# PRELIMINARY COST ESTIMATE - OUTER ROADS

Date: September 2015 | Designer: BFW Engineering & Testing
Route: Interstate 57 and Interstate 74 | City/County: Champaign, IL / Champaign County
Section: 10(5-1-RS-1, 14-1, 6)R | Base Year: 2015

| WORK CLASSIFICATION | Estimated Costs in $1000's | | | |
|---|---|---|---|---|
| | Segments | | | |
| | US 150 (Bloomington) | Mattis over I-57 | Mattis over I-74 | Totals |
| 8. Other Items | | | | |
| a. Construction Site Stormwater Pollution Control | $39 | $30 | $31 | $99 |
| b. Landscaping | $7 | $5 | $5 | $17 |
| c. Rest areas or other amenities | N/A | N/A | N/A | N/A |
| d. Environmental mitigation | N/A | N/A | N/A | N/A |
| 9. Transportation Management Plan Costs | | | | |
| a. Crossovers | N/A | N/A | N/A | N/A |
| b. Temporary Roadways | $76 | $76 | $33 | $186 |
| c. Detours | N/A | N/A | N/A | N/A |
| 10. Subtotal (Categories 1 - 9) | $5,158 | $5,763 | $7,754 | $18,674 |
| 11. Contingencies (10% of Line 10). | $516 | $576 | $775 | $1,867 |
| 12. Total Construction Cost (Lines 10 and 11) | $5,674 | $6,339 | $8,529 | $20,542 |
| 13. Right-of-Way | $350 | $350 | $350 | $1,050 |
| 14. Utility Adjustments | $166 | $167 | $167 | $500 |
| 15. Preliminary Engineering | $125 | $125 | $125 | $375 |
| 16. Construction Engineering | $333 | $333 | $334 | $1,000 |
| 17. Total Project Cost (Lines 12 - 16) | $6,648 | $7,314 | $9,505 | $23,467 |
| 18. Local Participation | N/A | N/A | N/A | N/A |

| WATERMAIN | | | | | |
|---|---|---|---|---|---|
| **ROUTE** | **STATION** | **OFFSET** | **OWNER OF UTILITY** | **POTENTIAL CONFLICT** | **DESCRIPTION** |
| I-74 | 1084+83 | CL | | GRADE/DEPTH | 20" CROSSING I-74 |
| I-74 | 1090+69 | CL | | GRADE/DEPTH | 20" CROSSING I-74 |
| I-74 | 1111+93 | CL | | GRADE/DEPTH | 8" CROSSING I-74 |
| I-57 | 577+90 | CL | | GRADE/DEPTH | 20" CROSSING I-57 |
| I-57 | 583+61 | CL | | GRADE/DEPTH | 16" CROSSING I-57 |
| I-57 | 623+69 | CL | | GRADE/DEPTH | 20" CROSSING I-57 |
| I-57 | 627+83 | CL | | GRADE/DEPTH | 16" CROSSING I-57 |
| I-57 | 644+63 | CL | | GRADE/DEPTH | 24" CROSSING I-57 |
| OLYMPIAN RAMP B | 16+53 | CL | | GRADE/DEPTH | 24" CROSSING OLYMPIAN RAMP B |
| OLYMPIAN RAMP C | 14+68 | CL | | GRADE/DEPTH | 24" CROSSING OLYMPIAN RAMP C |
| RAMP C | 326+20 | CL | | GRADE/DEPTH | 8" CROSSING RAMP C |
| RAMP B | 239+28 | CL | | GRADE/DEPTH | 16" CROSSING RAMP B |
| RAMP A | 110+17 | CL | | GRADE/DEPTH | 16" CROSSING RAMP A |
| RAMP B | 245+80 | CL | | GRADE/DEPTH | 20" CROSSING RAMP B |
| RAMP A | 105+26 | CL | | GRADE/DEPTH | 20" CROSSING RAMP A |
| BLOOMINGTON RD | 161+68 TO 162+00 | 60.5' RT TO 32.5' RT | | GRADE/DEPTH | 20" ALONG BLOOMINGTON RD |
| MATTIS OVER I-74 | 14+00 TO 17+21 | 66.2' LT TO 101.4' LT | | GRADE/DEPTH | 20" PARALLEL TO MATTIS AVE |
| MATTIS OVER I-57 | 19+35 TO 30+00 | 80.7' RT TO 72.3' RT | | GRADE/DEPTH | 16" PARALLEL TO MATTIS AVE |
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**EXHIBIT 27**

| SANITARY SEWER | | | | | |
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| **ROUTE** | **STATION** | **OFFSET** | **OWNER OF UTILITY** | **POTENTIAL CONFLICT** | **DESCRIPTION** |
| I-74 | 1046+85 | CL | | GRADE/DEPTH | CROSSING I-74 |
| I-74 | 1083+37 | CL | | GRADE/DEPTH | CROSSING I-74 |
| I-74 | 1121+89 | CL | | GRADE/DEPTH | 12" CROSSING I-74 |
| I-57 | 610+43 | CL | | GRADE/DEPTH | CROSSING I-57 |
| RAMP H | 822+66 | CL | | GRADE/DEPTH | CROSSING RAMP H |
| RAMP D | 401+85 | CL | | GRADE/DEPTH | CROSSING RAMP D |
| RAMP B | 217+86 | CL | | GRADE/DEPTH | CROSSING RAMP B |
| RAMP B | 213+08 TO 217+86 | 68.1' RT TO 14.9' RT | | GRADE/DEPTH | ALONG RAMP B |
| RAMP B | 217+86 TO 220+69 | 14.9' RT TO 188.1' RT | | GRADE/DEPTH | ALONG RAMP B |
| RAMP H | 803+15 | CL | | GRADE/DEPTH | CROSSING RAMP H |
| RAMP D | 426+39 | CL | | GRADE/DEPTH | CROSSING RAMP D |
| RAMP G | 736+32 | CL | | GRADE/DEPTH | CROSSING RAMP G |
| RAMP G | 711+72 | 10.9' LT | | GRADE/DEPTH | INTERSECTION OF 3 PIPES |
| MATTIS OVER I-74 | 15+98 | CL | | GRADE/DEPTH | 24" CROSSING MATTIS AVE |
| MATTIS OVER I-74 | 22+44 | CL | | GRADE/DEPTH | 24" CROSSING MATTIS AVE |
| MATTIS OVER I-74 | 22+24 TO 23+50 | 91.5' RT TO 99.4' RT | | GRADE/DEPTH | PARALLEL TO MATTIS AVE |
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**EXHIBIT 27**

| GAS PIPELINE | | | | | |
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| **ROUTE** | **STATION** | **OFFSET** | **OWNER OF UTILITY** | **POTENTIAL CONFLICT** | **DESCRIPTION** |
| I-74 | 1096+97 | CL | | GRADE/DEPTH | 8" CROSSING I-74 |
| I-57 | 547+19 | CL | | GRADE/DEPTH | 8" CROSSING I-57 (NOT IN USE) |
| I-57 | 625+10 | CL | | GRADE/DEPTH | 8" CROSSING I-57 |
| I-57 | 627+90 | CL | | GRADE/DEPTH | 8" CROSSING I-57 |
| I-57 | 648+00 | 39.7' LT | | GRADE/DEPTH | 8" CROSSING SB I-57 |
| OLYMPIAN RAMP C | 12+75 | CL | | GRADE/DEPTH | 8" CROSSING OLYMPIAN RAMP C |
| OLYMPIAN RAMP B | 20+29 | CL | | GRADE/DEPTH | 8" CROSSING OLYMPIAN RAMP B |
| RAMP G | 750+34 | CL | | GRADE/DEPTH | 8" CROSSING RAMP G |
| RAMP G | 753+24 | CL | | GRADE/DEPTH | 8" CROSSING RAMP G |
| MATTIS OVER I-74 | 23+36 | CL | | GRADE/DEPTH | 8" CROSSING MATTIS AVE |
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**EXHIBIT 27**

| TELEPHONE CABLE | | | | | |
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| **ROUTE** | **STATION** | **OFFSET** | **OWNER OF UTILITY** | **POTENTIAL CONFLICT** | **DESCRIPTION** |
| I-74 | 1086+24 | CL | | GRADE/DEPTH | CROSSING I-74 |
| I-74 | 1089+09 | CL | | GRADE/DEPTH | CROSSING I-74 |
| I-74 | 1114+55 TO 1136+21 | 97' LT TO 151' LT | | GRADE/DEPTH | PARALLEL TO I-74 |
| I-57 | 581+43 | CL | | GRADE/DEPTH | CROSSING I-57 |
| I-57 | 583+48 | CL | | GRADE/DEPTH | CROSSING I-57 |
| I-57 | 627+90 | CL | | GRADE/DEPTH | CROSSING I-57 |
| RAMP B | 239+38 | CL | | GRADE/DEPTH | CROSSING RAMP B |
| RAMP B | 241+60 | CL | | GRADE/DEPTH | CROSSING RAMP B |
| RAMP A | 108+11 | CL | | GRADE/DEPTH | CROSSING RAMP A |
| RAMP A | 110+01 | CL | | GRADE/DEPTH | CROSSING RAMP A |
| RAMP G | 710+15 | CL | | GRADE/DEPTH | CROSSING RAMP G |
| RAMP G | 707+12 | CL | | GRADE/DEPTH | CROSSING RAMP G |
| RAMP G | 753+27 | CL | | GRADE/DEPTH | CROSSING RAMP G |
| MATTIS OVER I-74 | 14+00 TO 23+50 | 64' RT TO 112.5' RT | | GRADE/DEPTH | PARALLEL TO MATTIS AVE |
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**EXHIBIT 27**

| FIBER OPTIC | | | | | |
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| **ROUTE** | **STATION** | **OFFSET** | **OWNER OF UTILITY** | **POTENTIAL CONFLICT** | **DESCRIPTION** |
| I-74 | 1842+73 TO 1050+23 | 109.2' RT TO 149.7' RT | | GRADE/DEPTH | PARALLEL TO I-74 |
| I-74 | 1072+92 | CL | | GRADE/DEPTH | CROSSING I-74 |
| I-57 | 545+00 TO 576+40 | 148.2' RT TO 112.4' RT | | GRADE/DEPTH | PARALLEL TO I-57 |
| I-57 | 586+66 | CL | | GRADE/DEPTH | CROSSING I-57 |
| I-57 | 608+22 TO 624+13 | 146.8' RT TO 112.2' RT | | GRADE/DEPTH | PARALLEL TO I-57 |
| I 57 | 625+36 | CL | | GRADE/DEPTH | CROSSING I-57 |
| I-57 | 626+95 TO 637+90 | 103.9' RT TO 128.3' RT | | GRADE/DEPTH | PARALLEL TO I-57 |
| OLYMPIAN RAMP B | 9+70 TO 17+81 | 60.9' RT TO 56.4' RT | | GRADE/DEPTH | PARALLEL TO OLYMPIAN RAMP B |
| RAMP B | 201+68 TO 207+56 | 43.7' RT TO 6.0' RT | | GRADE/DEPTH | PARALLEL TO RAMP B |
| RAMP B | 208+50 | CL | | GRADE/DEPTH | CROSSING RAMP B |
| RAMP B | 210+74 TO 216+00 | 20.0' LT TO 61.6' LT | | GRADE/DEPTH | PARALLEL TO RAMP B |
| RAMP D | 400+00 TO 405+53 | 45.8' LT TO 35.3' LT | | GRADE/DEPTH | PARALLEL TO RAMP D |
| RAMP D | 406+10 | CL | | GRADE/DEPTH | CROSSING RAMP D |
| RAMP C | 329+40 | CL | | GRADE/DEPTH | CROSSING RAMP C |
| RAMP B | 224+79 | CL | | GRADE/DEPTH | CROSSING RAMP B |
| RAMP B | 225+06 TO 232+20 | 13.5' RT TO 17.2' RT | | GRADE/DEPTH | ALONG THE INFIELD OF RAMP B |
| RAMP B | 232+64 | 10.2' RT | | BRIDGE PILES | RUNS UNDER PROPOSED BRIDGE PIER |
| RAMP C | 313+51 | CL | | GRADE/DEPTH | CROSSING RAMP C |
| RAMP B | 234+01 | 18' LT | | BRIDGE PILES | RUNS UNDER PROPOSED BRIDGE PIER |
| RAMP E | 525+38 TO 526+78 | 7.1' RT TO 1.6' LT | | GRADE/DEPTH | RUNS UNDER RAMP E |
| RAMP E | 526+78 | 1.6' LT | | GRADE/DEPTH | CROSSING RAMP E TO THE LEFT |
| RAMP A | 103+00 TO 107+64 | 39.5' RT TO 27.5' RT | | GRADE/DEPTH | PARALLEL TO RAMP A |
| RAMP A | 110+02 TO 117+14 | 23.4' RT TO 132.3' RT | | GRADE/DEPTH | PARALLEL TO RAMP A |
| RAMP A | 113+31 | CL | | GRADE/DEPTH | CROSSING RAMP A |
| RAMP A | 128+17 | CL | | GRADE/DEPTH | CROSSING RAMP A |
| RAMP F | 629+26 | CL | | GRADE/DEPTH | CROSSING RAMP F |
| RAMP G | 724+49 TO 732+97 | 220.2' LT TO 204.2' LT | | GRADE/DEPTH | ALONG THE INFIELD OF RAMP G |
| RAMP F | 613+87 | CL | | GRADE/DEPTH | CROSSING RAMP F |
| RAMP D | 423+45 | CL | | GRADE/DEPTH | CROSSING RAMP D |
| RAMP G | 745+15 | CL | | GRADE/DEPTH | CROSSING RAMP G |
| MATTIS OVER I-57 | 22+45 | CL | | GRADE/DEPTH | CROSSING MATTIS AVE |
| BLOOMINGTON RD | 158+95 | CL | | GRADE/DEPTH | CROSSING BLOOMINGTON RD |
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**EXHIBIT 27**

| ELECTRIC CABLE | | | | | |
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| **ROUTE** | **STATION** | **OFFSET** | **OWNER OF UTILITY** | **POTENTIAL CONFLICT** | **DESCRIPTION** |
| I-74 | 1062+94 TO 1083+95 | 73' RT TO 62.8' RT | | GRADE/DEPTH | PARALLEL TO I-74 |
| I-74 | 1083+93 | CL | | GRADE/DEPTH | CROSSING I-74 |
| RAMP A | 126+97 | CL | | GRADE/DEPTH | CROSSING RAMP A |
| RAMP A | 127+30 TO 139+30 | 6.0' RT TO 9.9' RT | | GRADE/DEPTH | PARALLEL TO RAMP A |
| RAMP G | 711+57 | 9.4' LT | | GRADE/DEPTH/POLE | UTILITY POLE IN THE MIDDLE OF RAMP G |
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**EXHIBIT 27**

| OVERHEAD (AERIAL) ELECTRIC | | | | | |
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| **ROUTE** | **STATION** | **OFFSET** | **OWNER OF UTILITY** | **POTENTIAL CONFLICT** | **DESCRIPTION** |
| I-74 | 1845+89 | CL | | VERTICAL CLEARANCE | CROSSING I-74 |
| I-74 | 1086+20 | CL | | VERTICAL CLEARANCE | CROSSING I-74 |
| I-74 | 1095+98 | CL | | VERTICAL CLEARANCE | CROSSING I-74 |
| I-57 | 548+01 | CL | | VERTICAL CLEARANCE | CROSSING I-57 |
| I-57 | 567+22 | CL | | VERTICAL CLEARANCE | CROSSING I-57 |
| I-57 | 579+92 | CL | | VERTICAL CLEARANCE | CROSSING I-57 |
| I-57 | 625+18 | CL | | VERTICAL CLEARANCE | CROSSING I-57 |
| I-57 | 647+73 | CL | | VERTICAL CLEARANCE | CROSSING I-57 |
| OLYMPIAN RAMP C | 12+92 | CL | | VERTICAL CLEARANCE | CROSSING OLYMPIAN RAMP C |
| RAMP B | 208+23 | 6.9' RT | | UTILITY POLE | POLE ON RAMP B SHOULDER |
| RAMP B | 209+15 | CL | | VERTICAL CLEARANCE | CROSSING RAMP B |
| RAMP D | 405+26 | 37' LT | | UTILITY POLE | POLE NEAR RAMP D SHOULDER |
| RAMP D | 405+91 | 6.7' LT | | UTILITY POLE | POLE WITHIN RAMP D PAVEMENT |
| RAMP B | 243+88 | CL | | VERTICAL CLEARANCE | CROSSING RAMP B |
| RAMP A | 107+38 | CL | | VERTICAL CLEARANCE | CROSSING RAMP A |
| RAMP G | 750+41 | CL | | VERTICAL CLEARANCE | CROSSING RAMP G |
| RAMP C | 328+26 | CL | | VERTICAL CLEARANCE | CROSSING RAMP C |
| RAMP G | 710+26 | CL | | VERTICAL CLEARANCE | CROSSING RAMP G |
| RAMP G | 710+31 | 7.8' RT | | UTILITY POLE | POLE ON RAMP G SHOULDER |
| BLOOMINGTON RD | 160+24 | CL | | VERTICAL CLEARANCE | CROSSING BLOOMINGTON RD |
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**EXHIBIT 27**

# APPENDIX A
# Coordination Activities

A1 - Meetings

A2 - Letters and Approvals

A3 - Other Agency Coordination

A4 – Value Engineering Study Report

# Appendix A1
# Meetings

**Scoping Meeting Minutes**
**PTB 161/28**
**I-74 (FAI 74)**
**Job No. P-95-030-11**
**IDOT District 5**
**November 10, 2011**

A Scoping Meeting for the above described projects was held on November 10, 2011 at 10:00 a.m. at the IDOT offices of District 5. Those in attendance were as follows:

**Consultants:**
Kevin Crider ' Bacon Farmer Workman Engineering & Testing, Inc.
Tim Choate ' Bacon Farmer Workman Engineering & Testing, Inc.
Blake Emery ' Bacon Farmer Workman Engineering & Testing, Inc.
Stan Hansen ' Crawford, Murphy & Tilly, Inc.
Lou Dixon ' Crawford, Murphy & Tilly, Inc.
Dale Rasmussen ' Fuhrmann Engineering, Inc.
Mary Lou Goodpaster ' Kaskaskia Engineering Group, LLC
Bryan Cross ' Kaskaskia Engineering Group, LLC
Mike Matzke – Quigg Engineering, Inc.
Mike Trello ' Quigg Engineering, Inc.

**IDOT District 5**
Rustin Keys – Squad Leader
Craig Emberton – Studies & Plans Engineer
Kelly Fender – Environmental Coordinator
Scott Neihart – Geometrics Engineer
Jason Stults – Project Engineer

The following notes were taken during the discussion:

- The project will have a Start' up Agreement and anticipated date is mid December.
- The contract will be a cost plus fixed fee method of payment.
- QC/QA plan required for all consultants.
- All submittals must be accompanied by a transmittal form that states that the submittal was prepared in accordance with the approved QC/QA plan.
- QC/QA markups must be maintained in project files – IDOT has the right to request them at any time.
- Manhours should be negotiated within the next couple of weeks and IDOT prefers to do email/phone negotiations.
- BFW and CMT will modify the manhours worksheet that was provided by IDOT and send it to IDOT for approval before they fill in their hours.

- The interchange has just been added to the 5% selected segments list (high accident locations).
- IDOT has developed 3 preliminary alternatives for interchange reconfiguration and wants the consultant to assume some other alternatives when developing their manhour estimate.
- Consultant is to assume that the ultimate build-out is 6-lanes, with the new lanes being added to the inside to minimize right-of-way requirements.
- IDOT will do the BCR's in-house.
- IDOT plans to do borings after Phase I – may provide old boring logs for consultant to use.
- Project schedule is 24 months but there is some flexibility with this.
- Environmental
    - IDOT has not determined whether this project can be processed as a Categorical Exclusion.
    - Consultant should assume preparation of an Environmental Assessment when developing manhours.
    - IDOT will complete and submit the ESR.
    - The only apparent environmental issue is noise. All reasonable alternatives will have to be analyzed for noise in accordance with the new policy.
    - IDOT noted that the origin of the Kaskaskia River is within the project area and is signed.
    - Air quality requirements are undetermined. IDOT will run preliminary COSIM analysis and coordinate requirements for additional air-quality analysis with Walt Z. at BDE.
    - Champaign County is in attainment for all criteria air pollutants.
- Public Involvement
    - This is not a CSS project.
    - Consultant to assume one Public Informational Meeting and one Public Hearing. The meetings will be information providing meetings, not information gathering.
    - Consultant to prepare meeting materials and provide staff to run the meetings.
    - There is no known public controversy concerning this project.

**Items given to consultant at meeting**

- Folder containing IDOT D5 Checklist Information and Preferences
- Printout of 3 preliminary alternatives for interchange reconfiguration
- IDOT D5 Intersection Design Study Checklist / Preferences
- Manhours Worksheet

**IDOT D5 Obligations**

- As-Built construction plans
- Existing ROW Information
- Traffic Data
- Crash Data

- Bridge Condition Reports
- Environment Survey Request
- Pavement Design Information
- Topographic Survey
- Recent Aerial Image – may be available from Champaign County

**Bacon Farmer Workman Engineering & Testing, Inc. Obligations**

- Scoping Meeting Minutes
- Provide IDOT D5 with a username and password to BFW's FTP Site
- QC/QA Plans for prime and sub' consultant submitted upfront for review
- Negotiated Manhour worksheet

Kevin R. Crider, P.E.
Bacon Farmer Workman Engineering & Testing, Inc.

# MEETING MINUTES

**DATE:** September 6, 2012, 10:00 A.M.

**PROJECT:** Phase I
FAI 57 (I-57) and FAI 74 (I-74)
Interchange Reconstruction

**LOCATION:** IDOT District Five Office

**ATTENDANCE:**

Rustin Keys ..... District 5 – Squad Leader
Jason Stults ..... District 5 – Project Engineer
Scott Neihart ..... District 5 – Geometrics Engineer
Jeannie Bland ..... District 5 – Acting Studies & Plans Engineer
Jacob ..... District 5 – Geometrics
Kevin Crider ..... Bacon Farmer Workman Engineering & Testing, Inc.
Stan Hansen ..... Crawford, Murphy & Tilly, Inc.
Brad Downen ..... Crawford, Murphy & Tilly, Inc.

A project progress meeting was conducted (see attached agenda) to review the project, discuss the interchange alternatives studied to date, and coordinate the project approach. Following is a summary of the items discussed at the meeting:

I. Data Collection

A. The data collection log of items provided to date was reviewed and appeared to contain all of the available files and documents provided by the District.

B. If any additional items are identified or needed, BFW/CMT can request them through Rustin.

C. Existing Centerline / Baseline Alignments & Stationing
   i. An exhibit was prepared and provided to the District at the meeting with the existing centerlines and baselines. These alignments were drawn based on record construction plans and the Geopak gpk file provided by the District. A separate handout sheet was also provided indicating the specific record plans referenced. The District will review the alignments and provide any comments.
   ii. Some of the crossroad (US 150, Mattis Ave, etc.) alignments were not previously provided and there is currently not enough topographic information to best fit centerline chains at these locations. BFW/CMT will provide the District with additional limits for survey pickups, including these cross roads and additional mapping that will likely be required along I-74 to the east.

D. Existing utility linework has been added by BFW to the topographic mapping based on the information provided by the District. Quarter size drawings will be prepared at 50 scale with plan view only and submitted to the District for distribution to the utility companies.

E. The traffic data was reviewed and the proposed volumes appear to be reasonable based on existing counts conducted. Only one traffic volume was provided for each roadway and typically both AM and PM peak volumes are provided for traffic analysis and capacity studies. Scott said that he would prefer both the AM and PM values for the IDS. Rustin will investigate the traffic data and provide both or confirm that these are the peak volumes. (Rustin provided Peak Hour volumes on 9/11/12).

F. The Environmental Survey Request is being processed and is expected to take approximately six months to obtain the results.

G. The District provided a disc with additional survey pickups and NBIS reports for some of the structures within the project limits. The remaining inspection reports are being conducted this year and will be provided when completed.

H. The District is coordinating development of the pie charts for the crash data and will provide them when available.

II. Interchange Type Study Approach

A. Primary Geometric Items
   i. The District provided some design criteria preferences:
      1. Both interstates should be designed for 70 mph.
      2. The maximum superelevation rate for the proposed ramps is 8%, but reduced maximums (6%) will be investigated and provided where possible.
      3. Radii for any proposed loop ramps will be studied, and 40 mph curves are desirable where practical. At a minimum, the curves will be improved from the existing condition. Design Exceptions would be considered by the District if the ramps are improved but still cannot meet current design criteria.
      4. Proposed vertical clearance for overpassing bridges will be 17’-1” to accommodate future resurfacing projects.
      5. The District will review the Design Criteria provided by BFW/CMT and provided any comments or additional preferences.

ii. Typical cross sections:
    1. The District suggested that I-57 should be a 4 lane rural section with an open median, 12' inside and outside shoulders
    2. The District suggested that I-74 should be a 6 lane urban section with a concrete median barrier wall, 12' inside and outside shoulders, and a closed to open median transition at the west end of the project.
    3. The I-74 structure will carry 6 lanes over I-57 and should accommodate a future 6 lane section on I-57.
    4. Full depth reconstruction vs. use of existing pavement:
        a. Existing I-57 pavement could be considered for use in the proposed pavement structure but should initially be studied as being reconstructed. The record drawings will be investigated to determine the existing pavement and condition.
        b. Existing I-74 pavement is in poor condition and should be removed and replaced with full depth pavement.
        c. The District will review their construction program so the proposed pavement structure can be coordinate with any future resurfacing projects within the limits.
        d. The same service life should be provided for each roadway regardless of the typical section selected.
    5. Existing typical cross sections for I-57 and I-74 have been drafted and a copy was given to the District for review. The asphalt overlays are not yet shown, but will be added after further investigation of the overlay contracts within the project area.

iii. Adjacent interchanges:
    1. The District suggested the use of auxiliary lanes on I-57 from the northern ramp terminals at I-74 to the Olympian Drive ramp terminals, and auxiliary lanes on I-74 from the eastern ramp terminals at I-57 to the Prospect Avenue ramp terminals.
    2. The adjacent interchanges to the west and south are probably far enough away that auxiliary lanes should not be needed.
    3. Any necessary improvements to the Norfolk Southern Railway bridge should be avoided and proposed improvements should be designed to utilize the existing bridge opening if at all possible.

iv. Construction staging:
    1. Due to the high traffic volumes and truck percentages through the interchange, 4 lanes of traffic will need to be kept open to traffic during construction staging, with the exception of temporary night time lane closures for various work items such as widening.
    2. Construction of new mainline pavement on a different alignment than existing (primarily I-74 due to the horizontal curve) may be beneficial to the staging of this project, and will be coordinated with the typical sections and full reconstruction limits.

B. Traffic & Operational Analysis
    i. Interchange traffic modeling
        1. HCS will be used for the traffic analysis and capacity studies to be shown on the Interchange Design Study.
        2. CORSIM is preferred by the District for the overall corridor traffic modeling based on having this program for review purposes.
        3. Adjustment factors:
            a. The District suggested a Peak Hour Factor of 0.9.
            b. No population adjustment is needed. (1.0)
            c. Scott can provide assistance with any other adjustment factors as the modeling is being conducted.
    ii. The traffic data also appears reasonable for the truck volumes and percentages.
    iii. Analysis of the existing cloverleaf will be initiated with HCS and CORSIM and the preliminary results will be coordinated with the District.

C. Interchange Type Alternatives
    i. The existing cloverleaf interchange will be reviewed
    ii. The modified cloverleaf interchange with C-D roadways is no longer a desirable alternative because of the use of loop ramps in all four quadrants with four weaving movements and will likely not be included in the type study.
    iii. Semi-directional interchange with loop ramps:
        1. Several configurations could be considered, including leaving one, two, or three of the quadrants as loop ramps. Any proposed loop would be improved from the existing condition to meet higher design criteria.
        2. The loop in the northwest quadrant has the highest traffic volume and second most number of crashes and should be removed and replaced with a directional ramp.

3. The loop in the northeast quadrant has the second highest traffic volume and the highest number of crashes and should be considered for removal and replacement with a directional ramp.
4. The record crash data (including 5% segment along I-74) will need to be considered with any proposed loop ramps or weaving sections.

iv. One full-directional interchange will studied and included in the ITS.

v. Other considerations
   1. Outer ramps will be designed to meet current design criteria and try to avoid the use of a middle curve to reduce the potential for crashes and overturning.
   2. Directional ramps will be studied for profiles, to maximize design speed, lower superelevation, provide adequate sight distance, and reduce the number of structures and the length and height of structures.
   3. Directional ramps could be merged into outer ramps and reduced to a single lane prior to entering onto mainline.
   4. Pending final environmental studies, additional right-of-way could possibly be obtained in all four quadrants.

vi. Alternatives will be prepared/submitted and reviewed by the District for final inclusion into the ITS. A meeting will be scheduled for sometime in November to determine the final four alternatives. It is anticipated that the ITS will include one fully directional interchange and three semi-directional alternatives.

III. FHWA Coordination

A. Paul Niedernhofer and Scott Stitt with the Central Office will be involved with the review and approval of the preferred interchange concept.

B. After the four preferred interchange alternatives have been identified by the District, a bi-monthly meeting will be scheduled with FHWA (possibly in January) to begin coordination of the Interchange Type Study and the Access Justification Report.

IV. Location Drainage Study

A. Existing drainage studies and peak run-offs will be initiated to determine any existing problems and potential impacts by the proposed alternatives.

B. The District is not aware of any historic maintenance problems or flooding, but Rustin will check with maintenance again to see if any records exist. (Rustin checked and maintenance has no known issues, 9/11/12)

C. Bridge Condition Reports will be initiated for the two box culverts under Copper Slough.

D. There are no known previous drainage studies within the project location.

V. Project Schedule

A. A project bar schedule was provided to the District with preliminary task items and approximate timeframes.

B. The next project milestone is to prepare preliminary traffic studies and geometric concepts in order to select the four preferred interchange type alternatives to further refine in the Interchange Type Study. A meeting is tentatively scheduled for November to review these findings.

These minutes constitute our understanding of the items discussed at the meeting. If you have any questions, additions or corrections, please contact me by telephone 270-443-1995, fax 270-443-1904 or by email kcrider@bfwengineers.com.

Prepared by Bacon Farmer Workman Engineering & Testing, Inc.

By:_____ 9/12/12
Kevin Crider, PE, CPESC Date
Bacon Farmer Workman Engineering & Testing, Inc.

# MEETING MINUTES

**DATE:** November 9, 2012, 9:00 A.M.

**PROJECT:** Phase I
FAI 57 (I 57) and FAI 74 (I 74)
Interchange Reconstruction

**LOCATION:** IDOT District Five Office

**ATTENDANCE:**

Rustin Keys ..... District 5 – Squad Leader
Jason Stults ..... District 5 – Project Engineer
Scott Neihart ..... District 5 – Geometrics Engineer
Jacob Fritschle ..... District 5 – Geometrics
Bart Sherer ..... District 5 – Railroad Coordinator
Tim Brandenburg ..... District 5 – Bridge & Hydraulics Engineer
Kevin Crider ..... Bacon Farmer Workman Engineering & Testing, Inc.
Linda Smothers ..... Bacon Farmer Workman Engineering & Testing, Inc.
Stan Hansen ..... Crawford, Murphy & Tilly, Inc.
Brad Downen ..... Crawford, Murphy & Tilly, Inc.

A project progress meeting was conducted (see attached agenda) to review the project, discuss the interchange concepts and design alternatives studied to date, and coordinate the project approach for arriving at the four interchange types to be further studied. Following is a summary of the items discussed at the meeting:

I. Data Collection

a. Additional topographic data has been requested and the District is in the process of acquiring additional surveys to supplement the current mapping. Lidar surveys are also available from the County, and have been requested for additional two dimensional topographic mapping.

b. The Lidar files previously provided by the District do include TIN information that can be used for profile development during this project. An additional panel to the west could provide more complete coverage for profile development.

c. After review of the existing Right of Way provided by the District, it appears that the mapping file is not located on the correct coordinate system, and the existing linework is not complete throughout the project limits. The District will update the file and provide revised mapping.

II. Constraints

a. The Environmental Survey Request is still being processed, so there are currently no known environmental constraints identified to be avoided.

b. Any land use or development plans have been requested, including the development in the northwest corner. The District indicated that plans for a school in the northeast quadrant also exist, and they have a preliminary site plan that could be provided. Any known plans for adjacent development would be helpful in determining constraints for the proposed geometrics and proposed right of way.

c. Drainage constraints are being investigated as part of the existing drainage analysis, and will be further coordinated as the proposed drainage plan is developed.

III. Design Considerations

a. Typical Sections
   i. I 57 will have 2 thru lanes, with the addition of an auxiliary lane to the outside between the I 74 ramp terminals and Olympian Drive. The proposed inside edge of pavement and 64’ open median will match the existing. 12’ wide shoulders will be provided on both the left and right sides.
   ii. I 74 will have 2 thru lanes, with the addition of auxiliary lanes through the I 57 interchange (varies with interchange type), and addition of auxiliary lanes to the outside between the I 57 ramp terminals and Prospect Avenue. The proposed median will be closed with barrier wall and the inside and outside shoulders will be 12’. The median will transition to match existing at the west (40’ open) and east (26’ closed) ends of the project. Barrier wall and/or retaining walls will be considered along the outside of I 74 where there are adjacent frontage roads and parking lots.

b. Mainline Alignment
   i. In order to facilitate staged construction, the mainline I 74 alignment could be slightly shifted to allow complete or partial construction of the proposed structures while maintaining traffic on the existing bridges. Two options were presented: one to construct only the proposed westbound structure; the other to construct both the proposed westbound and eastbound structures while maintaining traffic on both existing structures. The alignment could be set to allow the proposed bridges to be on tangent in normal crown.

ii. Other options to maintain traffic during staged construction include:
    A. Widening one of the existing structures to provide 4 thru lanes at 12' width with 2' inside and outside shoulders and a concrete barrier wall separating opposing traffic.
    B. Maintaining 4 lanes of traffic on one existing bridge. The existing bridge opening would limit the lanes to approximately 11' and shoulders approximately 1' (inside and outside) with a concrete barrier wall separating opposing traffic.
    C. Reduce either EB or WB I 74 to only one lane. Maintain the 3 thru lanes of traffic on one existing bridge.

c. Loop Ramp Entrance and Exit Terminals
    i. Four terminal types could be considered for loop ramp entrance and exit terminals:
        A. Cloverleaf
        B. Parallel
        C. Auxiliary
        D. Standard
    ii. The terminal type affects whether or not the terminal meets spacing requirements to/from adjacent structures.
    iii. The District prefers elimination of the weaving and cloverleaf type terminals.

d. Loop Ramp Design Speeds
    i. Loop ramp design speeds of 30, 35, 40, and 45 mph have been considered.
    ii. The ramp design speed affects whether or not the terminal meets spacing requirements to/from adjacent structures.
    iii. The District prefers loop ramps with 40 mph design speeds to meet the suggested criteria for freeway to freeway loops.

IV. Traffic & Operational Analysis

a. Preliminary HCS analyses have been performed for the existing interchange and each of the proposed concepts. Summary tables were provided and also attached to these Meeting Minutes.

b. Deficiencies have been highlighted as shown on the key at the bottom of the tables. The proposed alternatives are an improvement from the existing, but still have locations with deficiencies that will be further investigated as the analysis and refinement of the concepts continues.

c. Once the four alternatives are chosen for further development in the type study, a more sophisticated model will be developed for each concept. CORSIM is preferred by the District and FHWA.

d. The preliminary HCS analysis will be sent to the District for review.

V. Structural Coordination

a. Existing Bridges
   i. The existing mainline I 74 structures over I 57 are anticipated to be removed and replaced with new dual structures.
   ii. The existing US 150 / Bloomington Ave. structure over I 57 and Mattis Avenue over I 57 are four span structures, in which the existing substructure elements conflict with the proposed lane configurations. The District prefers that these structures be removed and replaced as part of the interchange reconstruction.
   iii. The existing Mattis Avenue over I 74 structure was reconfigured in the early 1990's to be a two span structure (previously four span). The proposed lane configurations conflict with the existing abutment slope wall, but consideration will be given to reconfiguring the wall or using a retaining wall to allow for use of this structure in the proposed condition.
   iv. Any improvements to the Norfolk Southern Railway bridge over I 57 should be avoided and proposed improvements should be designed to utilize the existing bridge opening.

b. Proposed Bridge Geometry and Sight Distance
   i. Many of the proposed interchange concepts include curved ramp bridges. The inside shoulder widths and ramp radii will need to be coordinated in order to provide adequate sight distance (horizontal sightline offset). The 42" parapet walls block a driver's view, so wider shoulders need to be provided to meet sight distance requirements.
   ii. 3 dimensional views will be checked during refinement of the concepts, but based on the 2 dimensional equations, the following inside shoulder widths must be provided to meet minimum sight distance for the appropriate radii:
      A. R = 1610', Inside shoulder = 6'
      B. R = 1408', Inside shoulder = 8'
      C. R = 1251', Inside shoulder = 10'
      D. R = 1125', Inside shoulder = 12'
      E. R = 1022', Inside shoulder = 14'
      F. R = 936', Inside shoulder = 16'
   iii. Design exceptions will be required if the sight distances are not provided.

c. Structure Types and Preferences
   i. Any District structure preferences will need to be coordinated, since they could affect proposed interchange concepts and roadway configurations.

ii. The District prefers integral abutments wherever possible to eliminate maintenance needs at joints.
iii. Proposed preliminary bridges sketches will be drawn once the four interchange types are chosen for refinement in the type study.

VI. Proposed Interchange Concept Alternatives

a. Five concepts, each with sub alternatives, have been studied to date:
    i. Concept A: Three Loops
        A. Four sub alternatives have been drawn to include loop ramps ranging in design speed from 30, 35, 40, and 45 mph.
        B. This concept includes a weave along both I 74 and I 57.
    ii. Concept B: Two Diagonal Loops
        A. Six sub alternatives have been drawn to include 35 and 40 mph loops, along with several other design variations.
        B. This concept eliminates any weave between ramps on mainline.
    iii. Concept C: Two Adjacent Loops
        A. Four sub alternatives have been drawn to include loop ramps ranging in design speed from 30, 35, 40, and 45 mph.
        B. This concept includes a weave along I 74.
    iv. Concept D: One Loop
        A. Four sub alternatives have been drawn to include loop ramps ranging in design speed from 30, 35, 40, and 45 mph.
        B. This concept eliminates any weave between ramps on mainline.
    v. Concept E: Full Directional
        A. Two sub alternatives have been drawn to show two different configurations of how the ramps can be configured at the center of the four level interchange.
        B. This concept eliminates any weave between ramps on mainline and reduces the number of mainline access points to eight (the lowest number possible).

b. A sixth concept (Circle Interchange) was presented by the District.
    i. This concept could have short tangents in the weaving sections or could be one continuous radius.
    ii. Superelevation, breakover, and signing are some features of this concept that would need to be closely investigated.

c. The District suggested that any concepts with mainline weaving should not be considered for further studies.

d. The District also suggested that loop ramps should be designed for 40 mph to meet design criteria for freeway to freeway ramps.

VII. Selection of Four Concepts for Interchange Type Study

a. A preliminary evaluation matrix was drafted and included with the meeting agenda (see attached). This type of matrix could be used to qualitatively or quantitatively analyze the interchange alternatives. The matrix could be used at various points throughout the evaluation process, including the type study.

b. The District suggested that the four alternatives to be further developed include Concept B, D, and E, along with the circle interchange. All loops will be designed for 40 mph and directional ramps 50 mph.

VIII. Project Schedule

a. A meeting could still be scheduled for January to discuss the concepts with FHWA. The District would like to have all of the alternatives selected and refined prior to meeting with FHWA.

IX. District Follow Up Action Items

a. Data Collection
    i. Additional topographic mapping (including any available Lidar 2 D)
    ii. Additional TIN panel to the west from LIDAR mapping provided
    iii. Updated existing R.O.W. Microstation file
b. Constraints
    i. Results of Environmental Survey Request
    ii. Plans for any adjacent developments, including the school in the northeast quadrant, the proposed development in the northwest quadrant, any planned development off the cul de sac in the southwest quadrant, and any additional development in the southeast quadrant
c. Design Considerations
    i. Staging preferences, including options for shifting mainline I 74 alignment, closure of traffic lanes on interstates, minimum width of travel lanes and shoulders, and possibility of widening an existing bridge
    ii. Loop ramp terminal preferences
    iii. Preferences for compounding of curves (loops and directional ramps)
    iv. Any preference for balance of ramp radius and inside shoulder width across structures, or consideration to obtain design exceptions for inadequate sight distance

X. BFW & CMT Follow Up Action Items

a. Refined geometry for Concepts B, D, E, and the circle interchange with a minimum loop ramp design speed of 40 mph
b. The preliminary HCS existing traffic analysis and assumptions will be sent to the District for review and concurrence

These minutes constitute our understanding of the items discussed at the meeting. If you have any questions, additions or corrections, please contact me by telephone 270 443 1995, fax 270 443 1904 or by email mkcrider@bfwengineers.com.

Prepared by Bacon Farmer Workman Engineering & Testing, Inc.

By:_____

Kevin Crider, PE, CPESC Date
Bacon Farmer Workman Engineering & Testing, Inc.

## Blake Emery

**From:** Keys, Rustin B <Rustin.Keys@illinois.gov>
**Sent:** Thursday, February 07, 2013 12:19 PM
**To:** Kevin Crider; Stan Hansen; 'Brad Downen'
**Cc:** Emberton, Craig A; Neihart, Scott W; Stults, Jason W; Allen, Jeffery L; Brandenburg, Timothy J
**Subject:** 70897 Meeting

Kevin,

The main purpose of our meeting on Tuesday was to make both FHWA and BDE aware of the project. They would like to have a follow-up meeting in Springfield possibly the first week of March to discuss the project further with others from central office and FHWA. Please let me know what days you would be unable to attend.

During Tuesday's meeting, we showed them all of the concepts that you've created to date and the "stack" concept that we are moving towards. As you know, our original intent was to have 4 concepts in the ITS for more detailed comparison. We then decided to limit the ITS to 2 concepts. After discussing this approach with FHWA and BDE, they stated that they would like to see all of the concepts that you came up with documented in the ITS. They certainly don't want a detailed analysis of all the concepts, but they do want to have an extremely brief justification stating why concepts were dropped from consideration. For example, many of the concepts were dropped from consideration when we decided that we did not want to have adjacent loops due to weaving concerns. Other reasons for dropping options include minimizing ROW and environmental impacts(e.g. relocation of copper slough), additional travel time, transposed ramps, minimum ramp design speed criteria, structure lengths, costs, LOS, etc. etc. They want to document why particular configurations weren't chosen in case the question ever arises during a public meeting or in case questions arise from others working on this project in the future. They also noted that the AJR typically only compares the do nothing option with the chosen build option.

While you likely already have a good handle on these expectations since you have considerable experience with interchange design, I still want to be sure that we all stay on the same page of what is expected/required in order to get approvals. I'm sure the meeting in March will only help to solidify both BDE and FHWA expectations.

I'll be in touch with the details of the meeting.

Thanks,

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

Please consider the environment before printing this e-mail.

# MEETING MINUTES

**DATE:** April 30, 2013, 10:30 A.M.

**PROJECT:** Phase I
FAI 57 (I 57) and FAI 74 (I 74)
Interchange Reconstruction

**LOCATION:** IDOT District Five Office

**ATTENDANCE:**

Rustin Keys ..... District 5 – Squad Leader
Jason Stults ..... District 5 – Project Engineer
Scott Neihart ..... District 5 – Acting Studies & Plans Engineer
Bart Sherer ..... District 5 – Environmental Coordinator
Jeff Allen ..... District 5 – Geometrics Engineer
Kevin Crider ..... Bacon Farmer Workman Engineering & Testing, Inc.
Stan Hansen ..... Crawford, Murphy & Tilly, Inc.
Brad Downen ..... Crawford, Murphy & Tilly, Inc.

A project progress meeting was conducted (see attached agenda) to review the project, discuss the interchange concepts and design alternatives studied to date, and coordinate the project approach for arriving at the four interchange types to be further studied. Following is a summary of the items discussed at the meeting:

I. FHWA / BDE Coordination & Meetings

A. The project Purpose and Need will be further developed and expanded during preparation of the Environmental Assessment (EA) and the Access Justification Report (AJR) and will include items such as levels of service and crash summaries. Emphasis should be placed on reduction of crash severity and safety improvements to the interchange as a result of the proposed modifications.

B. Context Sensitive Solutions will not be required for this project, but some additional stakeholder coordination may be conducted with the local agencies and businesses.

C. The Enhanced Interchange Safety Analysis Tool (ISATe) is anticipated to be used to evaluate the freeway and interchange safety for this project. Although not officially published, the ISATe spreadsheet and user manual are available for consideration on this project, and the results will be shared with FHWA and the Bureau of Safety Engineering to evaluate the results. Since the publication date of the ISATe is currently unknown, results of the safety analysis utilizing the ISATe will not be included in any public documents and will be used for internal evaluation only. Several

people from the District attended an ISATe training course, which emphasized similar limits (out to out) for existing and proposed conditions and the way that the interchange is broken out into segments. The overall impact of the proposed interchange configuration on adjacent interchange operations will be investigated as part of the operational safety analysis.

D. The logical termini for this project will be Olympian to the north, Prospect to the east, I 72 to the south, and Prairie View to the west. Additional record plans will be provided by the District for I 74 west of I 57 to Prairie View and I 57 south of I 74 to I 72. These entire sections will not be studied in detail for this project, but will be included where required for limits of the logical termini.

II. Data Collection

A. The District has provided revised topographic mapping which has been reviewed and appears to have sufficient coverage for the anticipated limits of construction, with the exception of the north leg of Mattis beyond I 57. Rustin will put in a request for additional surveys at this location.

B. Existing centerline/baseline alignments and stationing have been provided by the District. Kevin asked if the stationing could be revised to eliminate the station equations on I 74. Rustin said that he would ask Land Acquisition if a change would be acceptable. Later Rustin replied that the stationing should not be changed.

C. No additional utility information is available at this time. The District is currently reviewing the costs for utility relocations.

D. The District has met with the Atkins Group, owners of the land in three of the four quadrants, and informed them of the project. There are no plans currently known for new development within the project limits. The Atkins Group indicated to the District that they would likely work on another location for the potential school previously discussed in the east quadrant . The District suggested that there may be a recently constructed baseball field in the north quadrant, but it could be outside of the project limits.

E. New ESR limits were requested on March 25, 2013. The previous limits have been processed and a PESA has been provided. Additional investigations are required at the potential 106 site in the eastern quadrant. Scott suggested that BDE Form 2401 (Abbreviated Environmental Assessment) may be able to be used for the EA for this project, and they would inquire with FHWA / CO at the next coordination meeting if this would be possible.

F. Rustin provided a CD with additional data collection items, including the police accident reports, environmental CADD files, FHWA Interstate Access Policy Workshop, Enhanced Interchange Safety Analysis Tool workshop, and the Preliminary PESA.

III. Interchange Type Study (ITS)

A. Selection of the four alternatives to further refine is the next step required for advancement of the Interchange Type Study. BFW / CMT has previously sent the District an email with their ranking of the seven latest concepts (E- 1, B- 3, B- 2, E- 2, B- 1, D- 2, D- 1). A formal request will be sent to the District by BFW / CMT for concurrence on the four alternatives to include detailed studies on in the ITS. The request will include BFW / CMT's recommendation, and the District will seek concurrence from FHWA / CO for the alternatives to be included. All previous alternatives considered will be discussed in the ITS, and the reason for eliminating these options will be thoroughly documented.

B. Upon confirmation from the District on the four alternatives to be further studied, BFW / CMT will further refine the geometry and develop the CORSIM models in preparation for a draft ITS. All calibration factors used in the CORSIM model will be documented as requested by FHWA in the Interstate Access Policy Workshop attended by the District.

C. Accommodations for future widening of I- 57 will be provided as part of this project. The configuration of the future widening will affect the bridge geometry and ramp geometry for the proposed concepts to be studied as part of this project. It was discussed during the meeting that widening to the outside of the existing lanes would require reconstruction of all the bridges along the corridor, and widening to the inside of the existing lanes would result in a closed median with an inadequate shoulder width of 6.5'. Rustin later pointed out that since there is an existing 64' median, sufficient space exists for 12' lanes and 12' shoulders if widened to the inside. Two options for the proposed I- 57 configuration and future widening have been drawn and are attached to these Minutes with brief summaries of each option.

D. Proposed improvements will be coordinated with the City of Champaign in order to accommodate local needs and interests for modifications to the local roadway network. Pedestrian usage and typical cross sections for new bridges at Mattis over I- 57, Mattis over I- 74, and Bloomington Road over I- 57 will be considered and require concurrence from the City. The program for proposed local improvements should also be discussed to possibly coincide with the interchange reconstruction.

IV. Project Schedule

A. The revised project schedule was discussed and acceptable to the District, but the primary unknown is the environmental. The next milestone for the project will be a preliminary ITS. The ITS should be nearly complete prior to any public meetings, and a public meeting should be held prior to initiation of the Interchange Design Study. The District will conduct a meeting with local officials prior to a public meeting to inform them of the project and field any questions.

B. BFW / CMT will attend future meetings with FHWA and the Central Office. The next anticipated coordination meeting will be in July, and the District will send a schedule with the dates for all upcoming meetings. BFW / CMT could participate in the meeting from the Central Office, while the District participates via video conference from the office in Paris.

V. Supplemental Agreement

A. The Environmental Assessment (EA) hours and tasks are still being reviewed by the Central Office.

B. The counteroffer sent by BFW / CMT has been reviewed by the District and is acceptable pending the final EA review.

C. It was discussed whether or not the work included in the Supplemental Agreement could be initiated prior to authorization, since there are hours/fee still remaining in Prime Agreement. The District said they would discuss this internally and inform BFW / CMT on when work activities included in the supplement could begin.

These minutes constitute our understanding of the items discussed at the meeting. If you have any questions, additions or corrections, please contact me by telephone 270 443 1995, fax 270 443 1904 or by email kcrider@bfwengineers.com.

Prepared by Bacon Farmer Workman Engineering & Testing, Inc.

By:  5 20 13

Kevin Crider, PE, CPESC Date
Bacon Farmer Workman Engineering & Testing, Inc.

**City of Champaign Meeting**

**I-57 & I-74 Interchange**

**Champaign, Champaign County, Illinois**

**January 29, 2014**

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PRESENTATION NOTES

A meeting was conducted with Champaign city officials on January 29, 2014 to review the current proposed project improvements and interchange reconstruction alternatives for the I-57 and I-74 cloverleaf interchange in Champaign, IL. Attached is the list of attendees, the presentation outline, the presentation Power Point slides, and a copy of the handout given to each attendee.

A question and answer session was held following the presentation and the following is a list of the items of most concern to the meeting participants:

- Mayor Gerard indicated that he has just prepared and submitted a letter on behalf of the city opposing the large multi-unit trucks being considered on state highways. He indicated his concern for this and asked whether this potential vehicle size was being studied during development of the interchange concepts.
- The city is very interested in coordinating the proposed typical section on both Mattis Avenue and Bloomington Road for consistency with the local long rang plan. Complete streets accommodations are also of interest on both of these corridors.
- The city is very much in favor of minimizing impacts to adjacent properties in order to allow for additional development around the interchange. Any proposed future development should be coordinated with IDOT to identify potential constraints and allow for possible adjustments to the interchange alternative geometry to accommodate these developments.
- City Engineer Dave Clark was curious about how drainage impacts would be mitigated (specifically in the northwest quadrant) and the source for embankment material for constructing the large fill areas for the new directional ramps.
- City Administrator Dorothy David asked about the process for including public participation and the selection process for the new interchange type. She was also interested in aesthetic treatments and enhancements for the final concept.
- All participants expressed interest in being able to visualize the magnitude of the height and proportional relationships of the flyover ramps structures to the interstate. IDOT suggested that sample interchange photos and perspectives be displayed at the public meeting to give a general feel of what the new interchange might look like in 3D.
- Funding for the project is anticipated to be 90% federal and 10% state, but the state has to completely fund the project up front until all construction documentation and certification is complete and then request federal reimbursement after close-out.
- If construction funds are appropriated, the interchange construction could be completed in five to six years:
    - Design approval could be granted in 2015
    - Design of the construction plans will probably take two years
    - Construction of the interchange will probably take three years
- A public meeting will be held on February 5$^{th}$ as part of the planning process for the interchange and all participants of this meeting are invited to attend.

I-57 & I-74 Interchange Reconstruction

Champaign, Champaign County, Illinois

January 29, 2013

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**SIGN-IN SHEET**

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| CRAIG ROST | " | craig.rost@ci.champaign.il.us | " " | 217.403.8710 |
| MAYOR DON GERARD | " | don.gerard@ci.champaign.il.us | " " | 217.403.8720 |
| JOE CROWE | | | | |
| CRAIG EMBERTON | | | | |
| | | | | |

**City of Champaign Meeting**

**I-57 & I-74 Interchange**

**Champaign, Champaign County, Illinois**

**January 29, 2014**

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PRESENTATION OUTLINE

I. Introduction
   a. Agenda
   b. Existing Facility
   c. Project Description
   d. Project Schedule

II. Purpose and Need

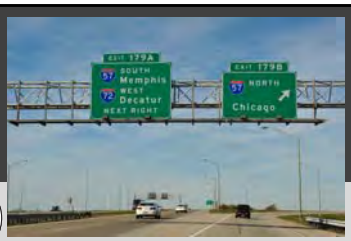
III. Roadway Improvements
   a. Interstate 57
   b. Interstate 74
   c. North Mattis Avenue
   d. Bloomington Road

IV. Interchange Type Alternatives
   a. Alternate 1: Full Directional
   b. Alternate 2: Semi Directional with Directional Flyovers and Two Loops
   c. Alternate 3: Semi Directional with Semi Directional Flyovers and Two Loops
   d. Alternate 4: Semi Directional with No Loops
   e. Alternate 5: Full Directional

V. Preliminary Cost Estimates

VI. Existing Features and Future Land Use

VII. Questions & Open Discussion




# I-57 and I-74 Interchange Reconstruction

**Champaign, Champaign County, Illinois**

**January 29, 2014**

BFW | Illinois Department of Transportation | CMT

## Introduction

**I-57 and I-74 Interchange Reconstruction**

Agenda:

- Existing Facility
- Project Description
- Purpose and Need
- Roadway Improvements
- Interchange Type Alternatives
- Existing Features and Future Land Use
- Questions and Open Discussion

## Existing Facility

- Existing Full Cloverleaf Type Interchange
- Study Limits
  - North
    Olympian Drive
  - East
    Prospect Avenue
  - South
    Norfolk Southern Railroad
  - West
    Duncan Road



## Project Description

- Proposed improvements being considered:
  - New interchange type
  - Adding lanes for I-57 and I-74
  - Ramp and access improvements
  - Reconstruction of cross roadways and structures
- Phase I: Preliminary Engineering
  - Interchange Type Study
  - Access Justification Report
  - Location Drainage Studies
  - Environmental Analysis
  - Interchange Design Study
  - Public Involvement Activities
  - Combined Design Report

## Project Schedule




## Purpose and Need

**Purpose of the Proposed Action**

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the Interstate 57 (I-57) and Interstate 74 (I-74) interchange by eliminating deficient geometric features and reducing points of access in order to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps.

**Need for the Proposed Action**

The need for the proposed improvement is to address operational, geometric, safety, and capacity deficiencies.

**Concurrence**

The Purpose and Need is scheduled to be presented at the February 11, 2014 coordination meeting for FHWA and IDOT Central Office concurrence.

## Roadway Improvements

- Design Year 2040
- 2040 Traffic Volume Projections
- Average Daily Traffic
  - Interstate 57: 49,900 vehicles
  - Interstate 74: 59,900 vehicles
  - North Mattis Avenue: 18,700 vehicles
  - Bloomington Road: 12,100 vehicles

## Interstate 57

**Existing**
- Four lane facility with two lanes in each direction
- Open grass median

**Proposed**
- Six lane facility with three lanes in each direction plus auxiliary lane from I-57 to Olympian Drive
- Closed median with concrete barrier wall

## Interstate 74

**Existing**
- Four lane facility with two lanes in each direction
- Open grass median

**Proposed**
- Six lane facility with three lanes in each direction
- Closed median with concrete barrier wall

## North Mattis Avenue

**Existing Near I-74**
- Five lane facility with two lanes in each direction
- Flush striped median
- Curb and gutter along outside edges

**Existing Near I-57**
- Two lane facility with one lane in each direction
- Paved shoulders

**Proposed**
- Coordination to be completed with the City of Champaign

## Bloomington Road

**Existing**
- Two lane facility with one lane in each direction
- Paved Shoulders with curbing

**Proposed**
- Two lane facility with one lane in each direction
- Curb and gutter along outside edges
- Bike and pedestrian accommodations to be coordinated with the City of Champaign

## Interchange Type Alternatives

**Process for developing alternatives:**

- Conventional interchange types and variations
- Provide policy geometrics
- Eliminate mainline weave
- Reduce access points
- Increased design speeds on ramps
- Increased capacity along interstates
- Identification of constraints

## Alternate 1

**Full Directional**

- Minimizes access points off interstates
- Eliminates mainline weave and all loops
- Increased design speed on all ramps (50 mph)
- Minimizes right-of-way acquisition in all quadrants



## Alternate 2

**Semi Directional with Directional Flyovers and Two Loops**

- Reduces access points off Interstates
- Eliminates mainline weave
- Increased design speed on all ramps (40 mph loops, 50 mph all others)



## Alternate 3

**Semi Directional with Semi Directional Flyovers and Two Loops**

- Reduces access points off Interstates
- Eliminates mainline weave
- Increased design speed on all ramps (40 mph loops, 50 mph all others)



## Alternate 4

**Semi Directional with No Loops**

- Minimizes access points off Interstates
- Eliminates mainline weave and all loops
- Increased design speed on all ramps (50 mph)



## Alternate 5

**Full Directional**

- Minimizes access points off interstates
- Eliminates mainline weave and all loops
- Increased design speed on all ramps (50 mph)



## Preliminary Cost Estimates

| | |
|---|---|
| **Construction** | $100 to $125 Million |
| **Land Acquisition** | $3 to $6 Million |
| **Utilities** | $2 to $4 Million |
| **Total** | $105 to $135 Million |

## Existing Features and Future Land Use

**Northwest Quadrant**
- Primarily agricultural land use with some development
- Detention pond carrying Copper Slough through center of quadrant
- Multi-use path surrounding detention pond

**Northeast Quadrant**
- Primarily agricultural land use
- Copper Slough passes through center of quadrant
- Detention pond in far southeast corner of quadrant

**Southwest Quadrant**
- Primarily agricultural land use with some development
- Midwest Court provides access to quadrant from Bloomington Road
- Church located in the southwest corner of quadrant
- Detention pond between Midwest Court and interchange ramp

**Southeast Quadrant**
- Primarily agricultural land use with some development
- Clearlake Boulevard provides access to quadrant from Bloomington Road
- Two story office building located in far northeast corner of quadrant

## Questions and Open Discussion

Illinois Department of Transportation

# PROPOSED RECONSTRUCTION OF THE INTERSTATE 57 / INTERSTATE 74 INTERCHANGE CHAMPAIGN COUNTY

## CONTACT INFORMATION

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Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
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## PURPOSE OF MEETING

- **PRESENT PROPOSED ALTERNATIVES**
- **OBTAIN PUBLIC COMMENTS & INPUT**
- **ANSWER QUESTIONS**

## Project Description

This project is located on the northwest side of the City of Champaign, Illinois. The approximate project limits are the Olympian Drive / I.57 interchange to the north, North Prospect Avenue / I.74 interchange to the east, the Norfolk Southern Railroad over I.57 to the south, and North Duncan Road over I. 74 to the west (see Site Map on backside).

## Purpose of the Project

The purpose of the proposed interchange reconstruction im. provement is to provide safer and more efficient transportation at the Interstate 57 (I.57) and Interstate 74 (I.74) interchange by eliminating deficient geometric features in order to reduce crashes and improve travel efficiency and traffic capacity of the roadways on both the mainline interstates and ramps.

## Existing Facility

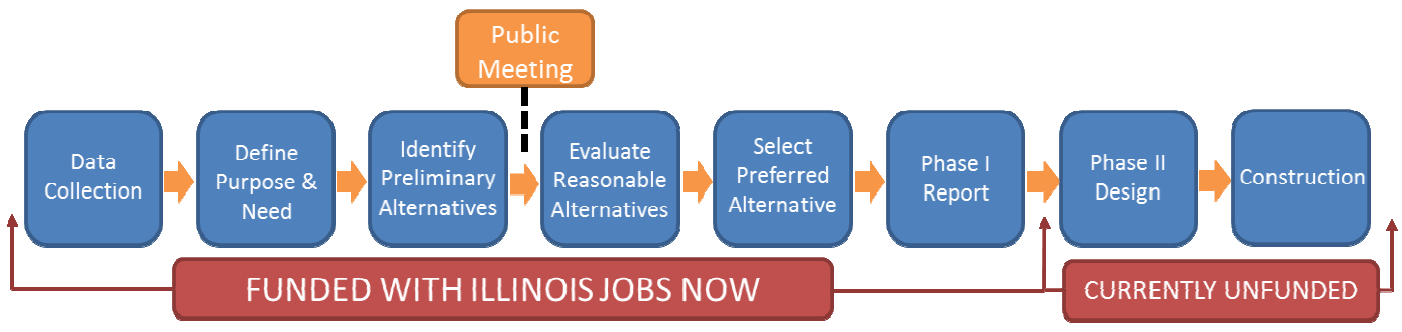
The existing facility was originally constructed in 1965 and is a full conventional cloverleaf interchange connecting I.57 and I.74. Each interstate consists of four lanes (two lanes in each direction) of concrete pavement with multiple over. lays. Both interstates have open grass medians which are 64 feet and 40 feet. The section of I.74 between Mattis Avenue and Prospect Avenue consists of a 26 foot paved median with concrete barrier.

I.57 and I.74 are full access controlled facilities that serves local, regional, and interstate traffic. I.57 is a Class I truck route carrying an average of 33,600 vehicles per day with approximately 28 percent truck volume (9,400 trucks per day average) within the project limits. I.74 is also a Class I truck route carrying an average of 38,400 vehicles per day with approximately 22 percent truck volume (8,500 trucks per day average) within the project limits.

Two 5% Segments have been identified along I.74 within the project limits. The 2011 5% Segment along I.74 begins west of I.57 and extends 2000 feet to the east through the loop ramp weaving areas and I.57 outer ramp terminals. The 2012 5% Segment along I.74 begins 3000 feet west of Prospect Avenue and continues east through the Prospect Avenue ramp terminals to the Prospect Avenue cross roadway structure. (See map on backside for locations)

The project study, started in May 2012 and funded with the Illinois Jobs Now program, is anticipated to be completed in 2015. The project design, land acquisition, utility relocation, and construction are currently not funded. Once com. pleted, the project is anticipated to cost between $105 million to $135 million.

## PROJECT SCHEDULE






BFW CMT

INTERCHANGE TYPE STUDY

**EXISTING INTERCHANGE LOCATION MAP**

BDE-9908

# Illinois NEPA/404 Merger Meeting
# February 27, 2014

**Federal Highway Administration**
**Training Room**
**3250 Executive Park Drive**
**Springfield, IL 62703**

**Chicago Metropolitan Agency for Planning**
**Lake County Room**
**233 South Wacker Drive, Suite 800**
**Chicago, IL 60606**

**9 am – 12 noon**

- I-55 in Springfield (District 6, Sangamon County) (60 min)
  - Concurrence – Alternatives to be Carried Forward

- Reconstruction of the structure carrying eastbound US 150 over the Illinois River (District 4, Peoria County) (45 min)
  - Information - Project Introduction

- Interstate 57 and Interstate 74, Interchange Reconstruction (District 5, Champaign County) (60 min)
  - Concurrence – Purpose and Need
  - Discuss project complexity and suitability for merger process

**12 noon – 1 pm**

Lunch Break

**1 pm – 4 pm**

- North Lake Shore Drive (District 1, Cook County) (60 min)
  - Information – Project Update, P&N Outline

- IL 47 (Reed Road to US 14) (District 1, McHenry County) (30 minutes)
  - BMP Presentation

***Note: The following project is not subject to the NEPA-404 merger process concurrence points. The project is being presented for information only.***

- I-290 (the Eisenhower) (District 1, Cook County) (60 min)
  - Information – Alternatives to be Carried Forward



Printed: January 28, 2014

**NEPA/404 Merger Meeting**
**February 27, 2014**
**Chicago, IL**

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# Teleconference

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|---|---|---|---|
| Ken Westlake | USEPA | | |
| Norm Westlake | USEPA | | |
| Terry Savko (AM/PM) | IDOA | | |
| Bob O'brien (AM/PM) | USEPA | | |
| Donna Jones | USACE-RI | | |
| Darren Gove (AM/PM) | IEPA | | |
| PM — Shawn Cirton | USFWS | | |
| Lori Brown | IDOT | | |
| Aren Kreks | IDOT | | |
| Kimberly Murphy | IDOT | | |
| Vanessa Ruiz | IDOT | | |
| Pete Harmet | IDOT | | |
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**NEPA/404 Merger Meeting**
**February 27, 2014**
**Springfield, IL**

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| Bob O'Brien | | | |
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**IDOT District 5, Champaign County**
**Interstate 57 and Interstate 74 Interchange Reconstruction**
**Environmental Assessment**
**Concurrence – Purpose and Need; Discussion of complexity to continue in NEPA-404 Merger process**

**DECISIONS:**
The following agencies agreed that the project was not of sufficient complexity to remain in the merger process: USEPA, USACE, USFWS, IDNR, and IEPA. The project will continue through the NEPA process but will not be brought back to the merger process based on agreement with the agencies.

Because the project will not continue through the merger process, concurrence on the purpose and need was not requested.

**NEXT STEPS:**
The project team will continue to develop the project through the NEPA process.

**DISCUSSION:**
The I-57 & I-74 interchange reconstruction project was presented at the NEPA 404 Merger Meeting to review the project purpose and need, the current alternatives being studied, the environmental impacts, and the project complexity and suitability for the merger process (see attached Power Point presentation, handout, and list of attendees). Following is a summary of additional items discussed at the meeting:

1. After the purpose and need were presented, it was decided that concurrence of the purpose and need from the various agencies would be determined after the decision has been made on whether the project is suitable for the merger process.

2. The proposed alternates for this interchange reconstruction project all have similar footprints and will utilize the existing right-of-way to the fullest extent possible. Since the mainline I-57 and I-74 roadways will remain on current alignments, the project is localized to the intersection of the two roadways and will not include any new corridor studies or mainline re-alignments. The environmental resources impacted by the project are similar between all alternatives and minimal.

3. The wetlands that could be potentially impacted by the interchange reconstruction project are all of low quality. USEPA questioned if the quality of the wetlands or Copper Slough improved outside of the project area. The upper reaches of the Copper Slough watershed are approximately one mile northwest of the crossing under I-57, and the land use is primarily agricultural. The District also noted that a wastewater treatment plant is located along Copper Slough just south of the interchange.

4. While there is high value in bringing complex projects with large ranges of reasonable alternatives through the NEPA-404 Merger process, it is anticipated that this project will not have a large range of reasonable alternatives, will be constructed on existing and

near-existing right-of-way, and close coordination with the agencies that have jurisdiction over the resources impacted could streamline the process.

5. During refinement of the proposed alternatives and ultimately preparation of the construction plans, impacts to environmental resources will be minimized as much as possible while still addressing the project needs and providing any necessary mitigation.

6. This project will be processed as an Environmental Assessment.

7. It was agreed by all agencies that this project will not go through the NEPA-404 Merger process due to the reasons above and discussion during this meeting.

8. Since the project will not go through the NEPA-404 Merger process, a formal concurrence on the purpose and need was not required from all of the agencies represented. It is therefore assumed that the purpose and need has formal concurrence from BDE and FHWA at the 2/7/2014 bi-monthly coordination meeting in which the purpose and need was approved for presentation at the NEPA merger meeting.

**I-57 & I-74 Interchange**

**Champaign, Champaign County, Illinois**

**June 6, 2014**

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DISCUSSION ITEMS

I. Introduction

II. Interchange Type Study
   a. ISATe Review (Distribution to Stakeholders)
   b. Agency Review Comments (Signing)
   c. Revisions to Design Speeds, I-57 Typical, Ramp Structure Widths, Cost, Etc.
   d. Selection of Preferred Alternate (Further Discussed Below)

III. Alternate 1 Considerations
   a. Ramps C& F Vertical Clearance over I-74
      i. Profile Gradients
      ii. Integral Pier Caps (NCHRP Report)
      iii. Clearance over Pier Caps
      iv. Widening of I-74 Median
   b. Column Width
      i. Impact Loading
      ii. Height of Structure
      iii. Shoulder Encroachment
   c. Use of MSE Walls
      i. Locations
      ii. Maximum Heights
   d. Ramp Structure Widths
      i. Stopping Sight Distances
      ii. Emergency/Stalled Vehicles
      iii. Future Staging & Number of Girder Lines

IV. Alternate 2 Considerations
   a. Reduction in Bridge Area
   b. Ramps D & E Vertical Clearance over I-74
   c. Column Width
   d. Ramp Structure Widths

V. Environmental Analysis
   a. 2nd PESA Addendum
   b. Noise Study

VI. Project Schedule & Future Coordination
   a. Cost/Quantity Estimates
   b. Final Interchange Type Study
   c. Preliminary Interchange Design Study
   d. Draft Access Justification Report
   e. Draft Environmental Assessment
   f. Value Engineering
   g. Bridge Condition Reports
   h. Soil Borings
   i. Type, Size, & Location Drawings
   j. Further BBS Coordination
   k. Local Agency Coordination of Grade Separations

VII. Open Discussion

## Blake Emery

**From:** Kevin Crider
**Sent:** Monday, June 09, 2014 3:48 PM
**To:** Rustin Keys (Rustin.Keys@illinois.gov)
**Cc:** Brad Downen
**Subject:** I-57/74 Items for District Consideration

Rustin

Thanks again for meeting with us last Friday. Below is a summary of some of the items for the District's consideration as we continue to develop the Final Interchange Type Study (ITS) and begin to develop the Interchange Design Study (IDS).

1. The preliminary interchange signing layout was reviewed and comments from FHWA were discussed. The signing exhibit and a copy of the comments were left for the District's consideration for the use of Urbana as a destination, the location of the Champaign/Urbana exit information signs, and the use of the campus and sport complex signing.

2. The vertical clearances were discussed for Alternate 1 and include a few options to achieve policy gradients and clearances. The critical pier locations for clearance are where Ramps C and F cross I-74. At these locations, a pier is required in the I-74 median and the pier cap is radial to the ramp geometry. The angles between the ramps and interstates is too great for a skewed pier configuration.

    a. An integral pier cap was initially considered at these two locations in order to allow Ramps C and F to clear I-74 without having to also clear the pier cap in addition to the girders, deck, fillets, and cross slopes. While this option can provide the policy clearances with ramp gradients below maximums (+4% and -6%), it is not considered desirable by the Bridge Office, and therefore not considered for further studies.
    b. The profiles for this alternate were revised to include clearing the 9 foot (+/-) pier caps where Ramps C and F cross I-74. Undesirable plan view modifications and use of maximum ramp gradients are required in order to achieve the policy clearances for this option.
    c. The use of an open median along I-74 would eliminate the need to clear the pier caps where Ramps C and F cross I-74. Barrier wall or guardrail would be installed along the I-74 inside edge of shoulder to protect vehicles from the pier caps. The I-74 median could match the proposed I-57 median, which is 64' from inside edge of through lane to inside edge of through lane. This is the recommended option for achieving policy clearance.

3. Ramps C, D, E, and F each have one substructure unit in the I-74 median. There are two options for treatment of these piers:

    a. Closed median along I-74: This configuration includes single column piers along the centerline of I-74. The estimated diameter of the piers would be approximately 8 feet, which takes into account the impact loading at the base of the pier and the height of the Ramp D and E structures. The barrier wall adjacent to the piers would be flared to match the diameter of the columns and would result in a 9.5 foot shoulder width at the piers. A design exception would be required, since the shoulders do not meet the policy width of 10 feet.
    b. Open median along I-74: This option would allow for policy shoulders along I-74. Guardrail or barrier wall can be provided to protect vehicles from the ramp substructure units. This is the recommended option for meeting policy shoulder widths.

4. MSE walls with a maximum height of approximately 30 feet have been considered for the current ramp structure limits. Additional consideration will be given for taller walls to reduce the bridge lengths and number of spans. These wall heights could reach approximately 70 feet and will be coordinated with the Bridge Office for feasibility. Quantities will be estimated for comparison of the current layout vs. the use of tall walls with minimized structure lengths.

5. The inside shoulder along the ramp structures will be approximately 16.5 feet in order to provide Stopping Sight Distance for 55 mph. The additional width will allow for emergencies or stalled vehicles and future staging.

6. After discussions with the Bridge Office at the Coordination Meeting May 20th concerning the unit price per square foot for the ramp structures, Alternate 2 was revised to minimize the structure lengths and embankment heights. The ramp flyovers were pulled out to eliminate the crossing over the loop ramps and eliminate a three-level crossing over the interstates. It is recommended that this Alternate be re-considered and evaluated compared to Alternate 1. A significant cost difference could change the preferred alternate for the final ITS. Alternate 2 also has slightly less environmental impacts than Alternate 1, has the least amount of additional right-of-way acquisition, and has been selected in addition to Alternate 1 as one of the preferred alternates by the project stakeholders.

The geometry for Alternates 1 and 2 could be revised to include the preferred I-57 and I-74 median type/widths and the 75/55 mph design speeds and quantities estimated for cost comparison. The Final ITS could include a further discussion/comparison of these two updated alternates for final consideration of the preferred interchange type concept.

Please advise as to the District's preference on the above items, including the proposed signing plans, I-74 median type, and alternatives to be further studied for inclusion in the Final ITS.

Please let us know if you have any questions or would like to further discuss any of the items above.

Thanks,

**Kevin R. Crider, PE, CPESC**
Project Manager
500 South 17th Street
P.O. Box 120
Paducah, KY 42002-0120
270-443-1995 *phone*
270-443-1904 *fax*

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# MEETING MINUTES

**DATE:** July 15, 2014, 1:30 P.M.

**PROJECT:** Phase I
FAI 57 (I-57) and FAI 74 (I-74)
Interchange Reconstruction

**LOCATION:** IDOT Bureau of Bridges and Structures

**ATTENDANCE:**

Tim Craven ..... IDOT Bridge Programming & Planning Unit
Pat Claussen ..... IDOT Bridge Planning Section Chief
Alex Siudyla ..... IDOT Bridge Project Group Engineer
Rustin Keys ..... District 5 – Squad Leader
Jason Stults ..... District 5 – Project Engineer
Scott Neihart ..... District 5 – Studies & Plans Engineer
Tim Brandenburg ..... District 5 – Bridge and Hydraulics Engineer
Brandon Poiter ..... Bacon Farmer Workman Engineering & Testing, Inc.
Bill Bailey ..... Crawford, Murphy & Tilly, Inc.
Stan Hansen ..... Crawford, Murphy & Tilly, Inc.
Brad Downen ..... Crawford, Murphy & Tilly, Inc.

A project progress meeting was conducted (see attached agenda) to review the project, discuss the interchange alternatives and proposed structures, and coordinate the project approach. Following is a summary of the items discussed at the meeting:

I. Self-introductions were made and the geometry and structures proposed for the two alternatives being considered (Alternate 1 and Alternate 2) were reviewed. The alternatives have been revised since the last Bi-Monthly Coordination Meeting on May 20 that was attended by Tim and Alex on behalf of the Bridge Office. Alternate 1 includes a full-directional four level stacked interchange with four multi-span ramp flyover structures. Alternate 2 includes a semi-directional two level interchange with two loop ramps, two multi-span ramp flyover structures, and four ramp structures where the outer ramps cross over the loop ramps. Profile gradients for Alternate 1 are at or nearing the maximum policy values in order to achieve the clearances over the four interchange levels.

II. The Final Interchange Type Study is currently being prepared and will include an additional analysis of Alternates 1 and 2 based on the revised mainline design speed (75 mph), revised ramp design speed (55 mph), and revised medians along I-57 and I-74 (now both open grass medians). The profiles and structure limits have been adjusted based on the latest geometry and will be included in the analysis to select a preferred alternate. Other items being considered to select a preferred alternate include the geometric characteristics,

accommodation of peak hour traffic, safety, potential environmental impacts, area of right-of-way acquisition, and the project construction cost.

III. Ramp Structure Considerations
   a. The ramp pier column types have been revised to include rectangular columns instead of circular columns. This revision has been made since the medians are now proposed to be open and do not require the narrow circular layout that was previously required for clearance with the closed medians. The piers still include hammerhead type caps and all pier caps are anticipated to be radial to the ramp baselines. Barrier wall protection will be provided as needed along the interstates to protect the piers that are within the clear zone. Columns will either be designed to withstand the crash loading or walls will be provided for the proper crash test level.
   b. Maximum span lengths of approximately 230' were considered when revising the geometry for the two alternates. Long span lengths are required at locations along the ramp flyover structures where there is a large skew between the overhead ramp and interstate below.
   c. Increased shoulder widths (varying from 14'-8" to 16'-6") along the inside of the ramp flyover structures are anticipated to meet sight distance criteria for the 55 mph design speed. The increased shoulder width provides space for emergencies or stalled vehicles and also provides a structure wide enough to accommodate six girder lines and facilitate future staged construction/rehabilitation.
   d. The use of MSE retaining walls is anticipated for both proposed alternates. Consideration has been given to include additional retaining walls to reduce the project costs and number of ramp flyover structure spans for both alternates. While tall walls exceeding 50 feet could be constructed, the Bridge Office suggested that a more conservative approach of approximately 30 foot maximums should be considered during the planning stages of this project. Maximum height to width ratios of approximately 0.6 or 0.7 will be considered for locations with retaining walls on both sides of the ramps. Optimal structure spans will also be considered for the flyover layouts in order to avoid end spans that are the longest bridge span within a structure. Based on the criteria above, it is possible that four bridge spans could be eliminated for each alternate if additional retaining wall is provided. While this could be desirable for Alternate 1, it may not be desirable for Alternate 2 due to the short section of embankment between the proposed structures (constructability and settlement issues). See the attached markups which depict the spans that could be eliminated. An analysis will be performed to determine the cost effectiveness of the use of additional retaining walls and reduced structure spans.

IV. Other adjacent grade separation structures will be reconstructed as part of this project, including the dual I-74 over I-57 structures, Duncan Road over I-74, Mattis over I-57, Mattis over I-74, and US 150 over I-57. It is anticipated that the

geometry and typical sections of the proposed interchange will require complete removal and replacement of these structures. Bridge Condition Reports (BCRs) have been initiated for these grade separation structures. The condition of the existing bridges and adjacent roadways will need to be considered when determining the staged construction and maintenance of traffic for the project. The overall staging of the proposed interchange could include an advance contract to reconstruct these grade separation structures prior to the ramps or mainline. Construction funding is not currently available for any of the proposed improvements.

V. Project Schedule & Future Coordination
   a. Once a preferred interchange alternative is selected, the Final Interchange Type Study will be prepared and submitted for agency review and the Preliminary Interchange Design Study (IDS) will be initiated. Further coordination with the Bride Office is anticipated during the development of the IDS.
   b. The Bridge Condition Reports will be submitted upon completion for District and Bridge Office review. Staggered submittals are expected as the reports are completed.
   c. Field work for the soil borings will be prioritized in order to stagger the development of the SGRs and TSLs. Structures that do not vary in substructure layout between the two proposed alternates could be considered first for drilling of the soil borings. It is anticipated that soil borings, SGRs and TSLs will be initiated for the grade separation/cross roadway structures prior to the ramp structures.
   d. A Bi-Monthly Coordination Meeting is scheduled for July 22nd at the Central Office and the Bridge Office is welcome to attend.

These minutes constitute our understanding of the items discussed at the meeting. If you have any questions, additions or corrections, please contact me by telephone 270-443-1995, fax 270-443-1904 or by email bdownen@cmtengr.com.

Prepared by Crawford, Murphy, & Tilly, Inc.

By: _____ 7/21/2014

Brad Downen, PE — Date
Crawford, Murphy, & Tilly, Inc.

**I-57 & I-74 Interchange**

**Champaign, Champaign County, Illinois**

**July 15, 2014**

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DISCUSSION ITEMS

I. Introduction

II. Interchange Type Study & Selection of Preferred Alternate

III. Ramp Structure Considerations
- a. Column Types
- b. Maximum Span Lengths
- c. Ramp Structure Widths
  - i. Stopping Sight Distances
  - ii. Emergency/Stalled Vehicles
  - iii. Future Staging & Number of Girder Lines
- d. Use of MSE Walls
  - i. Locations
  - ii. Maximum Heights
  - iii. Height to Width Ratios

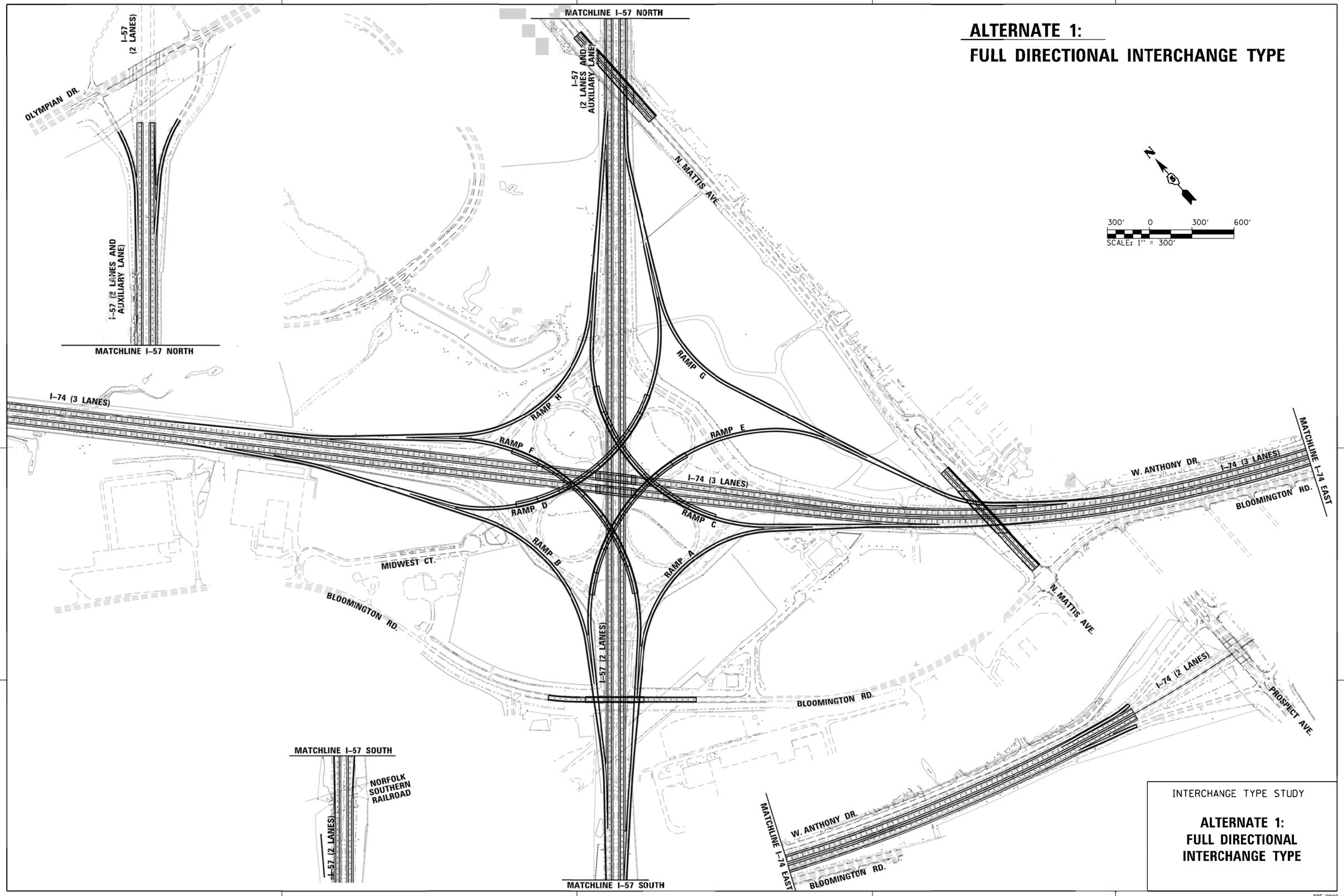
IV. Other Grade Separation Structures
- a. I-74 over I-57
- b. Duncan Road over I-74
- c. Mattis over I-57
- d. Mattis over I-74
- e. US 150 over I-57

V. Project Schedule & Future Coordination
- a. Final Interchange Type Study
- b. Preliminary Interchange Design Study
- c. Bridge Condition Reports
- d. Type, Size, & Location Drawings / Soil Borings / SGRs
- e. Bi-Monthly Coordination Meeting 7/22 – BBS Attendance

VI. Open Discussion

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# FULL DIRECTIONAL INTERCHANGE TYPE




INTERCHANGE TYPE STUDY

**ALTERNATE 1:**
**FULL DIRECTIONAL INTERCHANGE TYPE**

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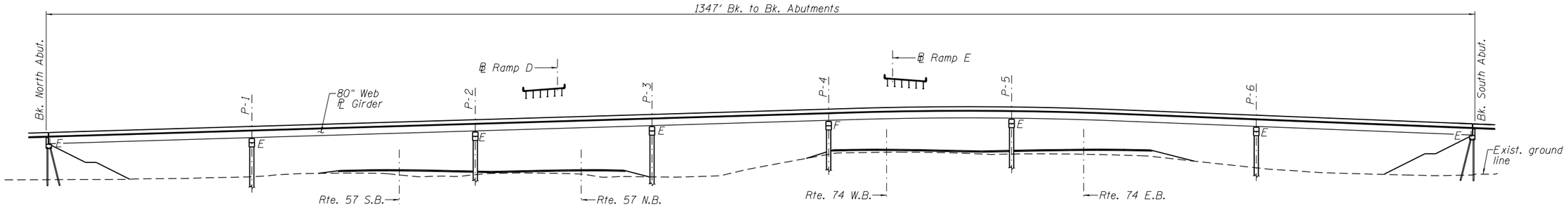
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I–57 (2 LANES AND AUXILIARY LANE)
N. MATTIS AVE.
I–57 (2 LANES)
OLYMPIAN DR.
I–57 (2 LANES AND AUXILIARY LANE)
MATCHLINE I–57 NORTH
I–74 (3 LANES)
RAMP F
RAMP G
RAMP H
RAMP D
RAMP E
RAMP A
RAMP B
RAMP C
MIDWEST CT.
BLOOMINGTON RD.
I–57 (2 LANES)
I–74 (3 LANES)
W. ANTHONY DR.
BLOOMINGTON RD.
MATCHLINE I–74 EAST
N. MATTIS AVE.
I–74 (2 LANES)
PROSPECT AVE.
BLOOMINGTON RD.
MATCHLINE I–57 SOUTH
NORFOLK SOUTHERN RAILROAD
I–57 (2 LANES)
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MATCHLINE I–74 EAST
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BLOOMINGTON RD.

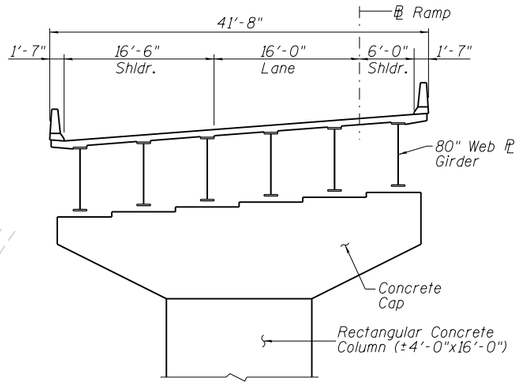
INTERCHANGE TYPE STUDY

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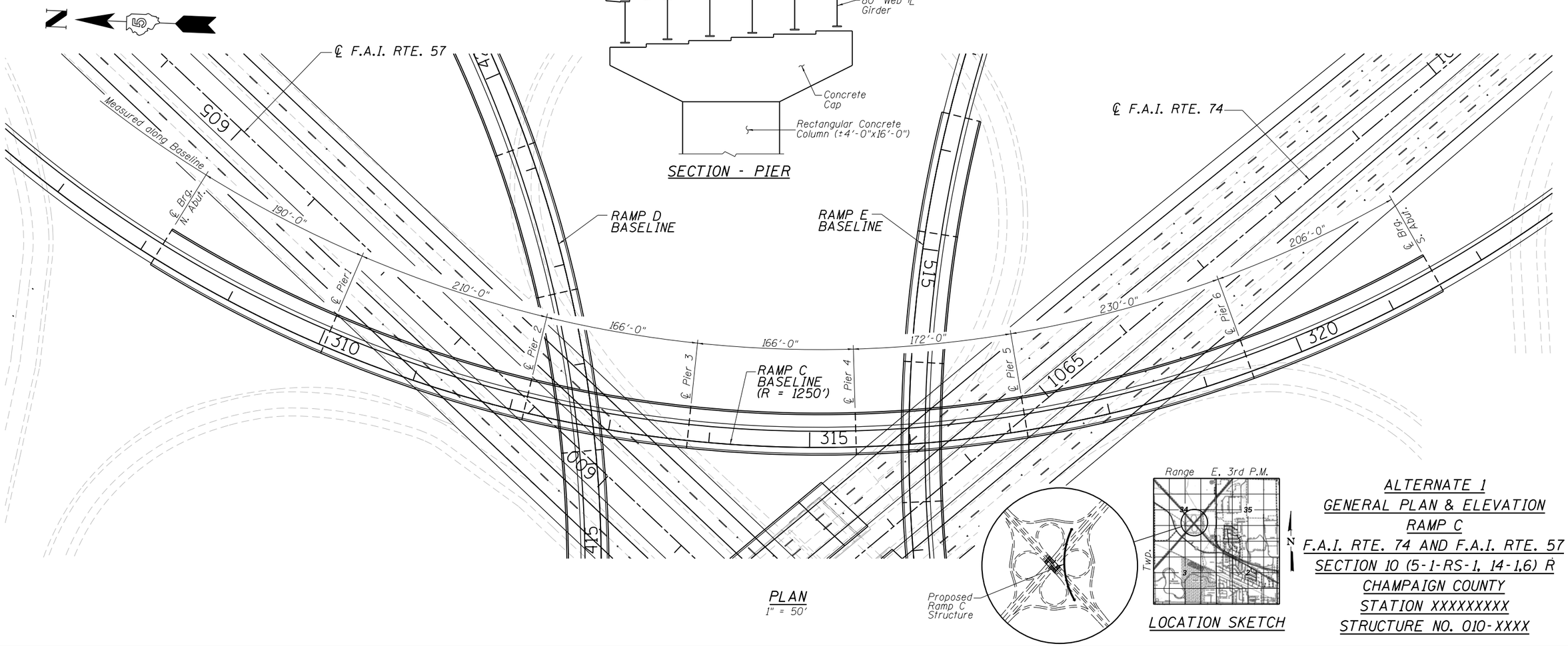
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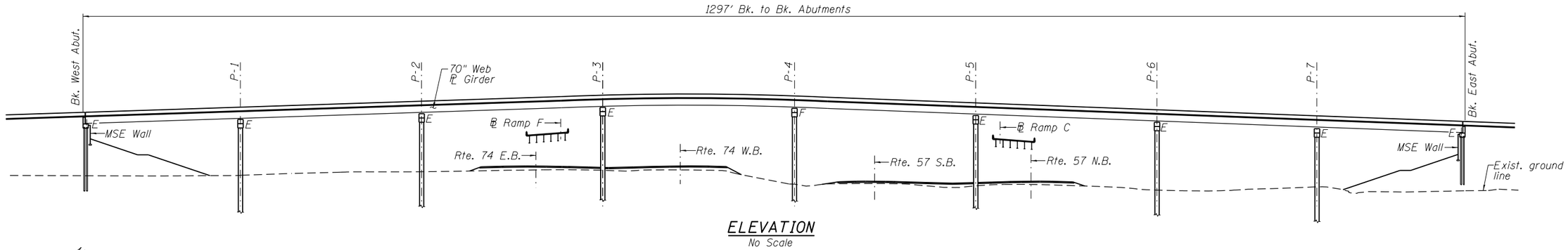
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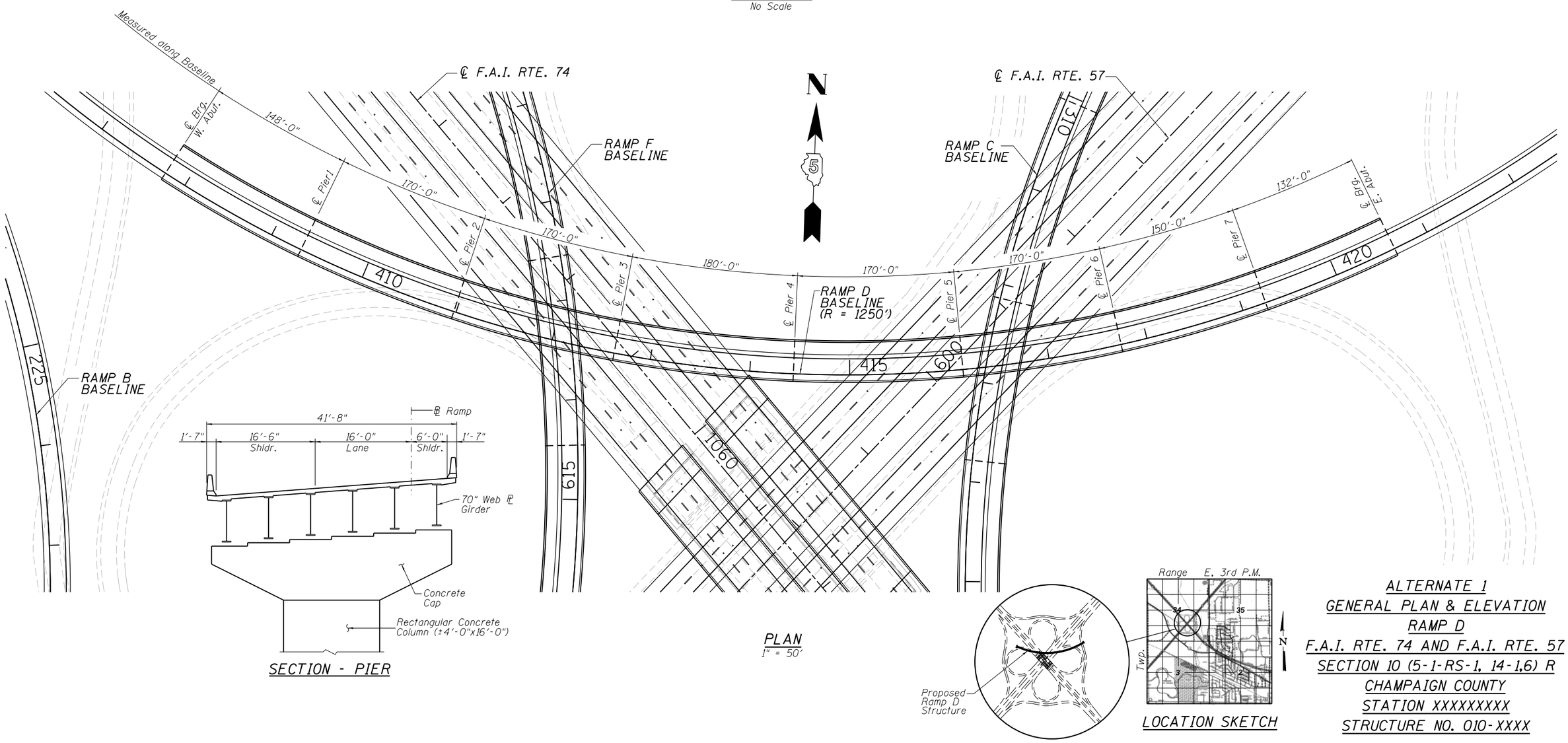
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**DEPARTMENT OF TRANSPORTATION**

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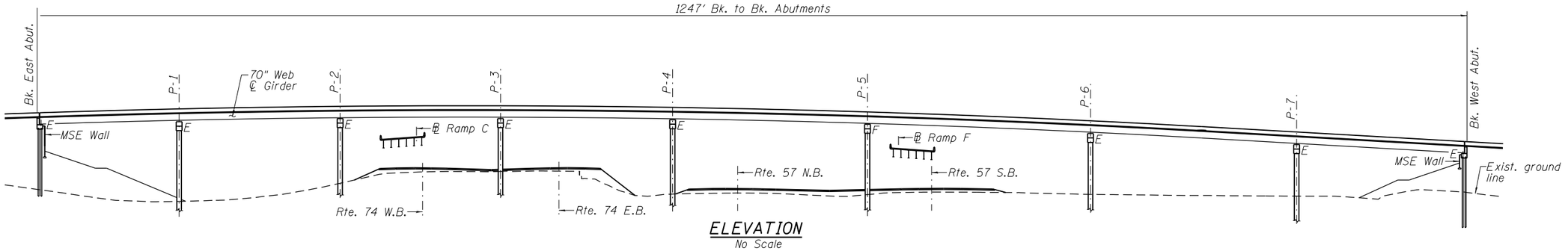
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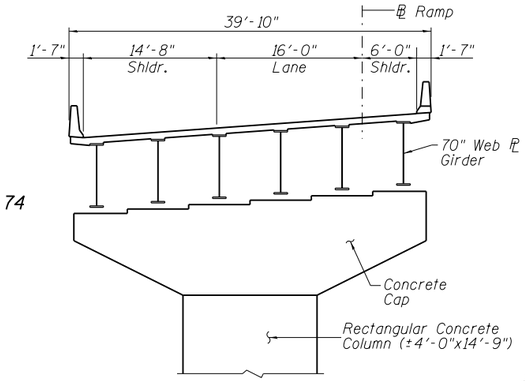
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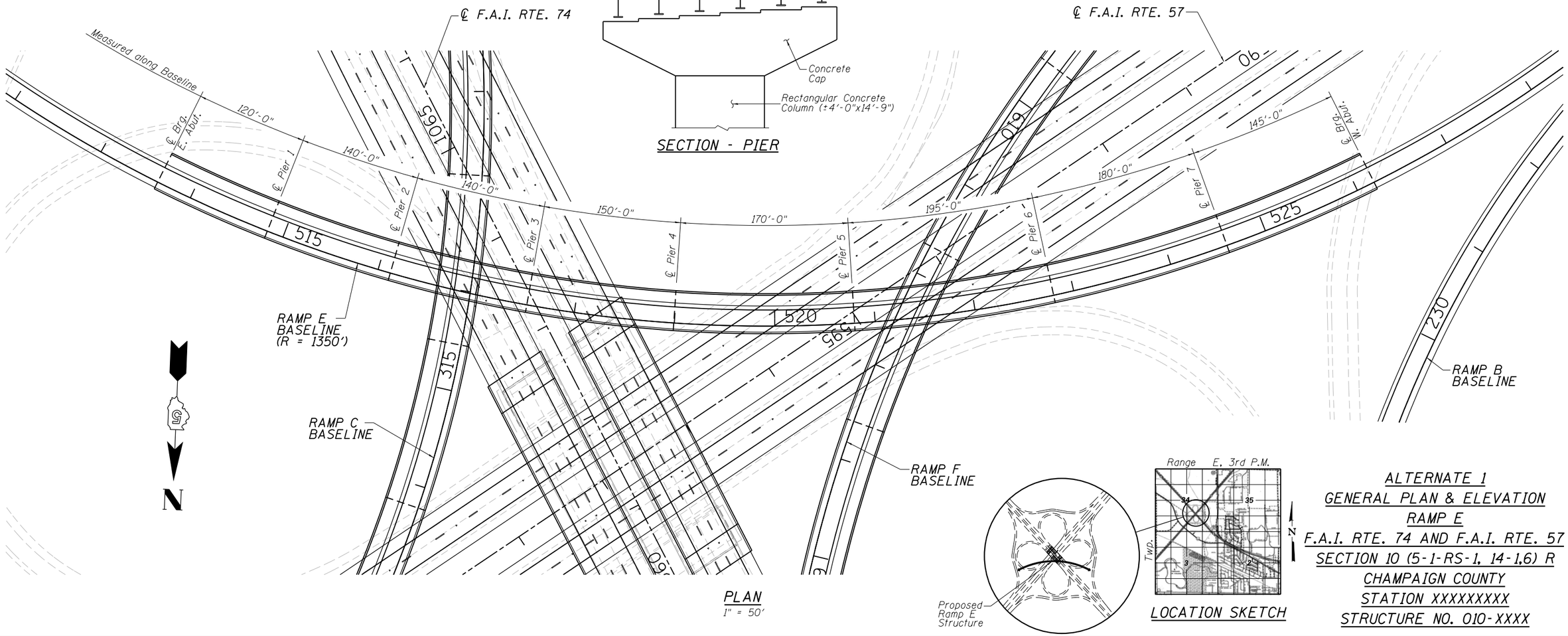
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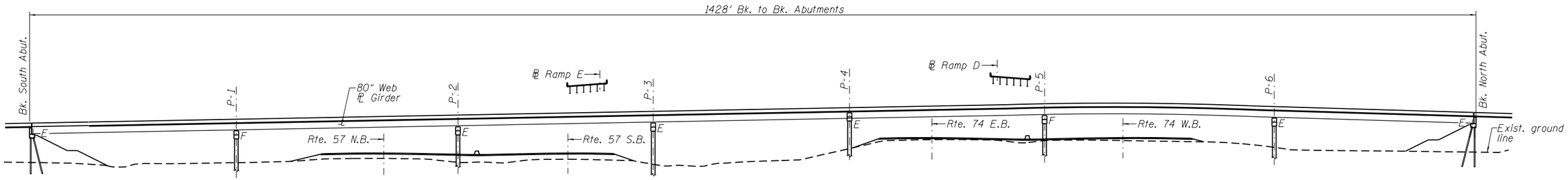
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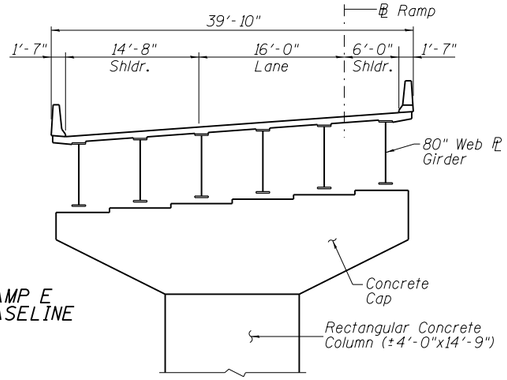
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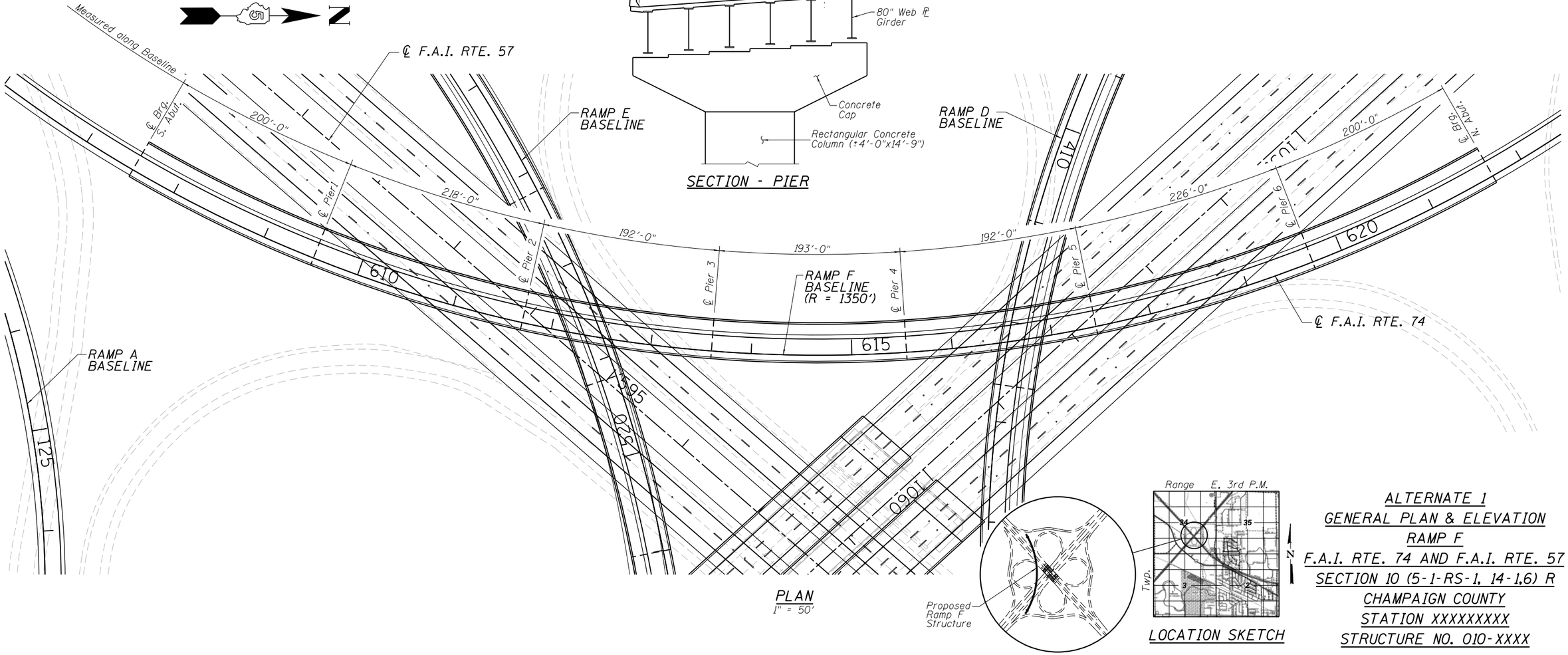
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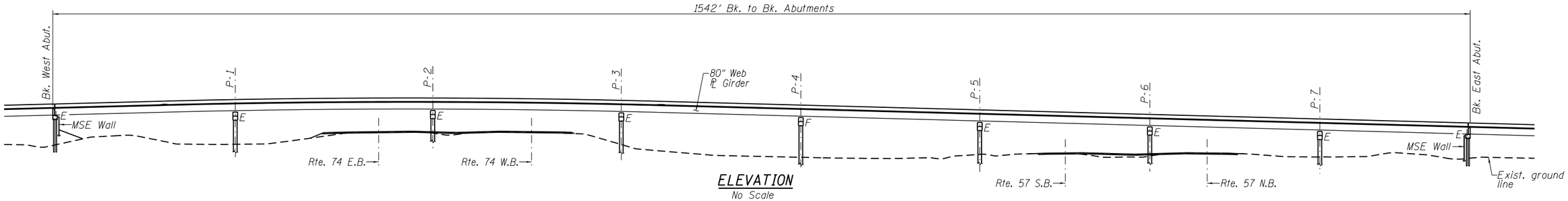
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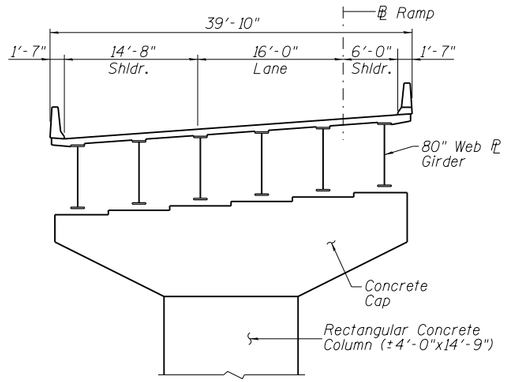
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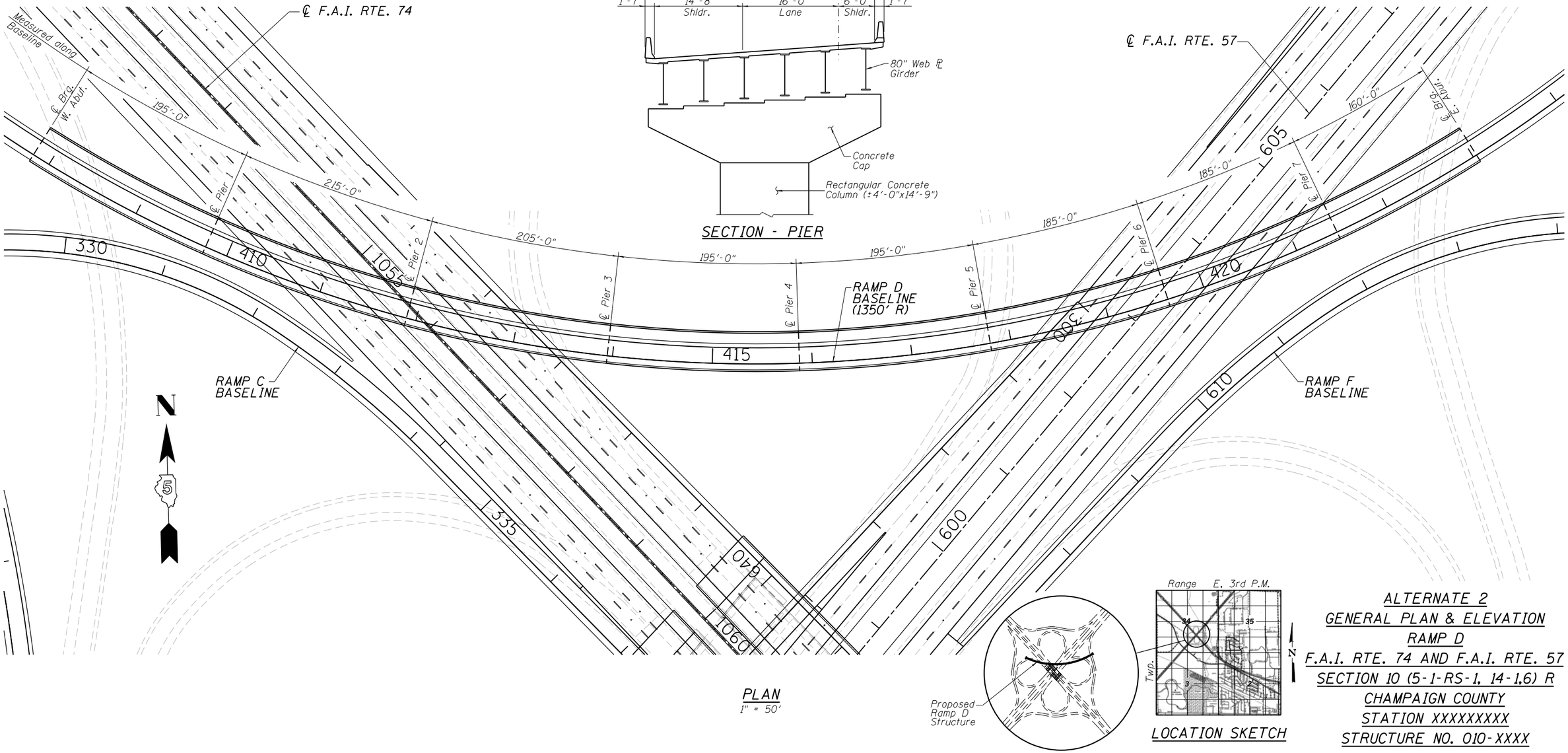
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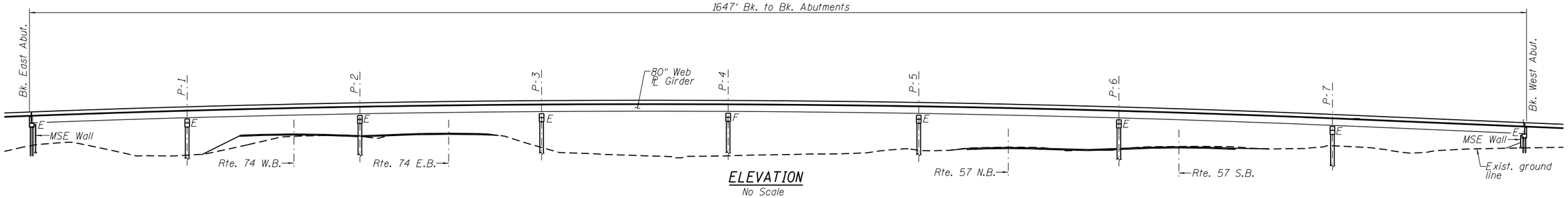
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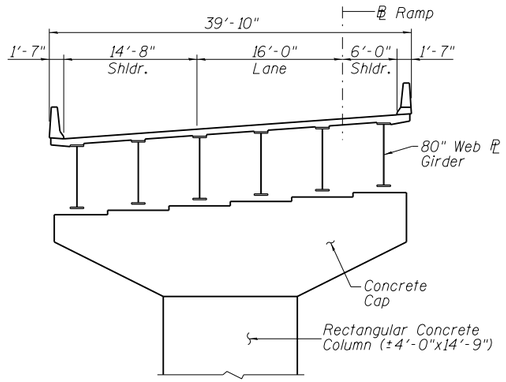
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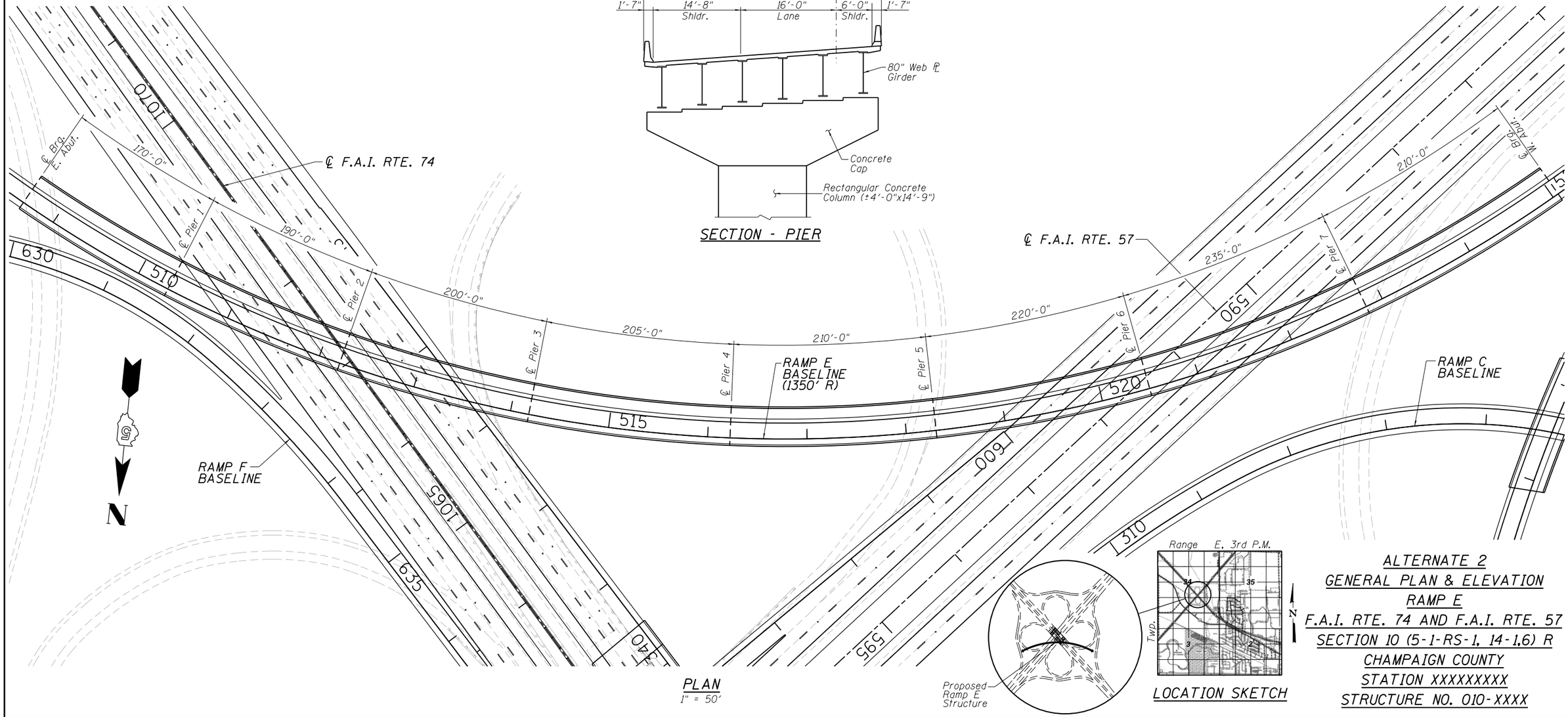
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LOCATION SKETCH

ALTERNATE 2
GENERAL PLAN & ELEVATION
RAMP E
F.A.I. RTE. 74 AND F.A.I. RTE. 57
SECTION 10 (5-1-RS-1, 14-1,6) R
CHAMPAIGN COUNTY
STATION XXXXXXXXX
STRUCTURE NO. 010-XXXX

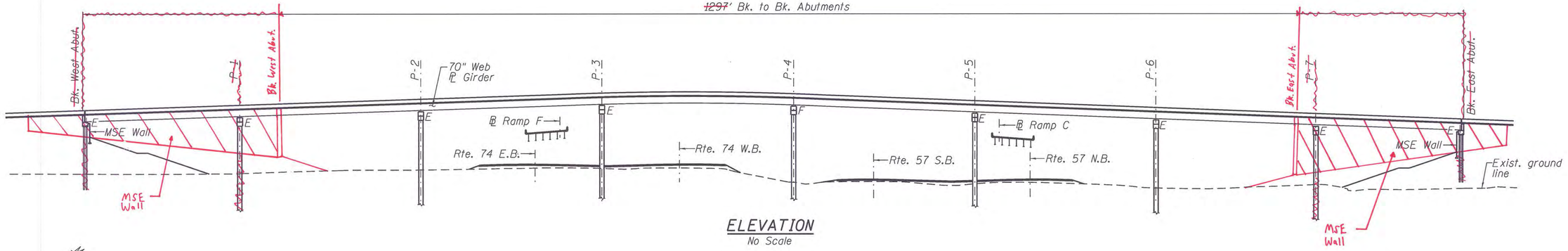
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

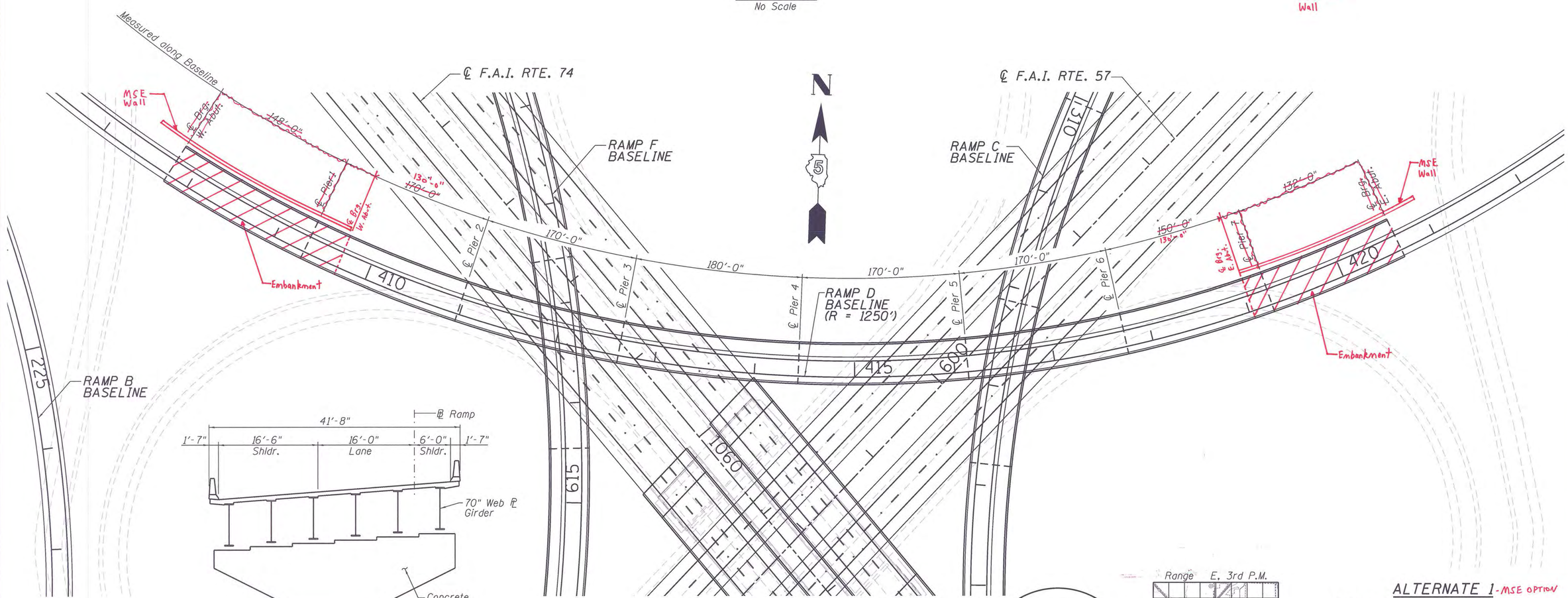
**I-57 & I-74 INTERCHANGE**
**CHAMPAIGN, ILLINOIS**
SHEET NO. OF SHEETS

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
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| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |

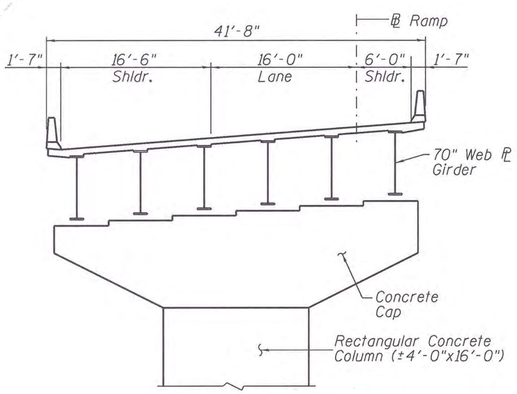
957'
~~1297~~' Bk. to Bk. Abutments



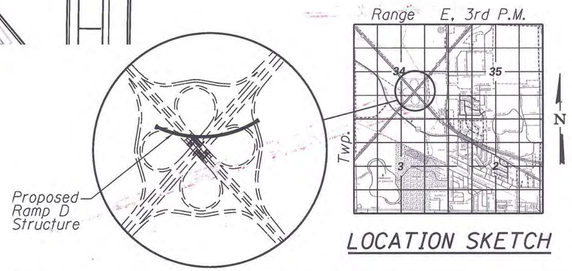

ELEVATION
No Scale




PLAN
1" = 50'




SECTION - PIER




LOCATION SKETCH

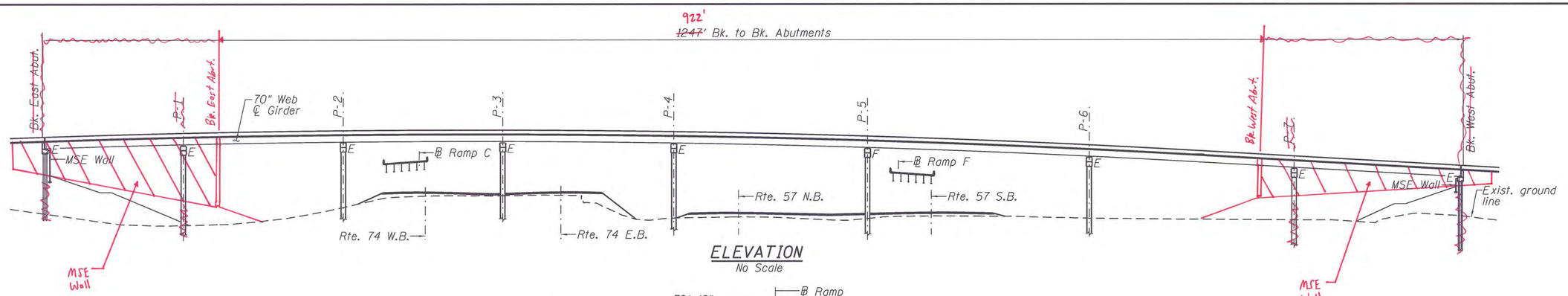
ALTERNATE 1 - MSE OPTION
GENERAL PLAN & ELEVATION
RAMP D
F.A.I. RTE. 74 AND F.A.I. RTE. 57
SECTION 10 (5-1-RS-1, 14-1,6) R
CHAMPAIGN COUNTY
STATION XXXXXXXXX
STRUCTURE NO. 010-XXXX

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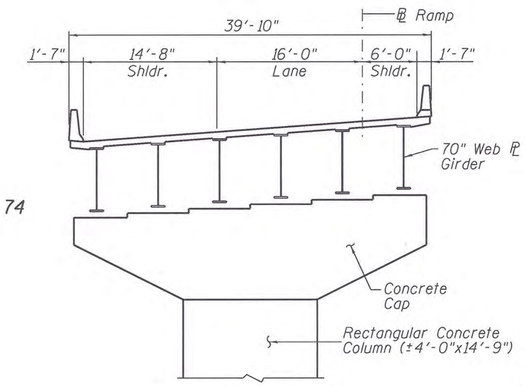
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**I-57 & I-74 INTERCHANGE**
**CHAMPAIGN, ILLINOIS**
SHEET NO. OF SHEETS

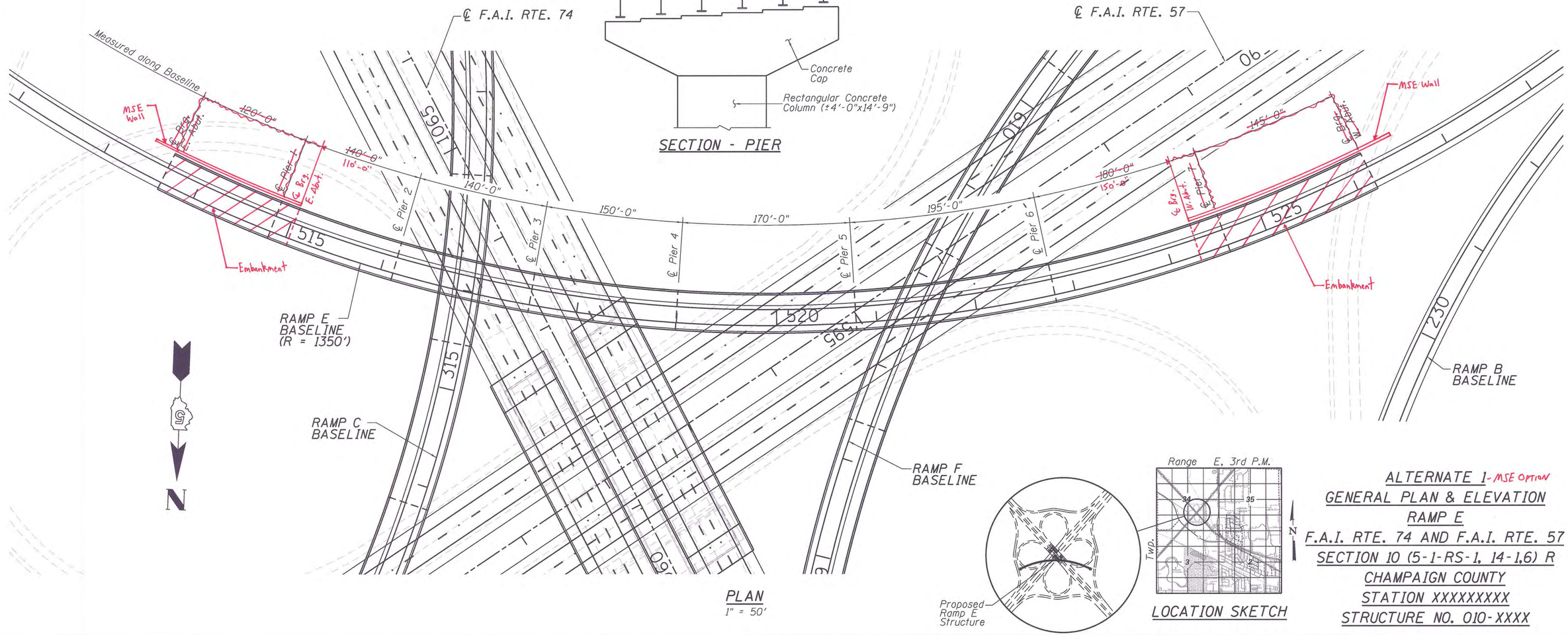
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|---|---|---|---|---|
| | | | | |
| | | CONTRACT NO. | | |
| ILLINOIS FED. AID PROJECT | | | | |




## ELEVATION
No Scale




## SECTION - PIER




## PLAN
1" = 50'




## LOCATION SKETCH

# ALTERNATE 1 - MSE Option
# GENERAL PLAN & ELEVATION
# RAMP E
# F.A.I. RTE. 74 AND F.A.I. RTE. 57
# SECTION 10 (5-1-RS-1, 14-1,6) R
# CHAMPAIGN COUNTY
# STATION XXXXXXXXX
# STRUCTURE NO. 010-XXXX

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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**I-57 & I-74 INTERCHANGE**
**CHAMPAIGN, ILLINOIS**
SHEET NO. OF SHEETS

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |

CONTRACT NO.
ILLINOIS FED. AID PROJECT

587' Bk. to Bk. Abutments

1542' Bk. to Bk. Abutments

502' Bk. to Bk. Abutments

Bk. West Abut.

P-1

P-2

Bk. E. Abut.

P-3

80" Web ℄ Girder

P-4

P-5

Bk. West Abut.

P-6

P-7

Bk. East Abut.

℄ MSE Wall

℄ Rte. 74 E.B.

℄ Rte. 74 W.B.

MSE Wall

Embankment

MSE Wall

℄ Rte. 57 S.B.

℄ Rte. 57 N.B.

MSE Wall

Exist. ground line

## ELEVATION
No Scale

39'-10"

℄ Ramp

1'-7" | 14'-8" Shldr. | 16'-0" Lane | 6'-0" Shldr. | 1'-7"

80" Web ℄ Girder

Concrete Cap

Rectangular Concrete Column (±4'-0"x14'-9")

## SECTION - PIER

℄ F.A.I. RTE. 74

Measured along Baseline

℄ Brg. W. Abut.

195'-0"

215'-0"

℄ Pier 1

℄ Pier 2

170'-0"

205'-0"

℄ Brg. E. Abut.

℄ Pier 3

MSE Wall

℄ Pier 4

195'-0"

195'-0"

RAMP D BASELINE (1350' R)

150'-0"

185'-0"

℄ Brg. W. Abut.

MSE Wall

Pier 5

℄ Pier 6

℄ Brg. E. Abut.

℄ F.A.I. RTE. 57

160'-0"

185'-0"

℄ Pier 7

605

420

330

410

1055

415

1065

1610

1600

1640

1060

RAMP C BASELINE

RAMP F BASELINE

MSE Wall

MSE Wall

Embankment

MSE Wall

N

5

## PLAN
1" = 50'

Proposed Ramp D Structure

Range E, 3rd P.M.

Twp.

34

35

3

2

N

## LOCATION SKETCH

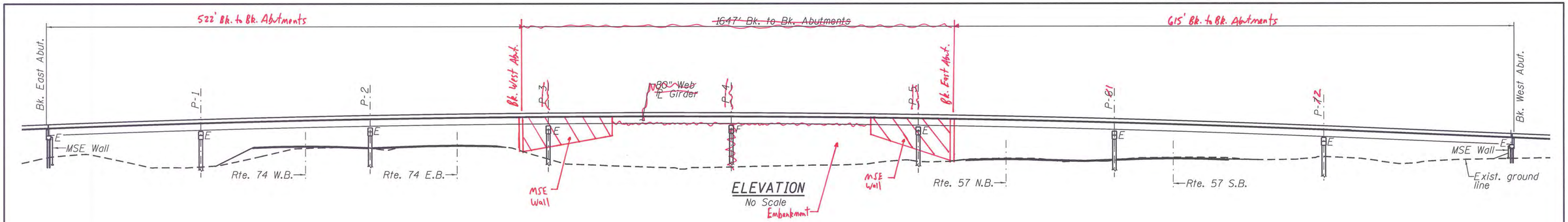
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# GENERAL PLAN & ELEVATION
# RAMP D
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# SECTION 10 (5-1-RS-1, 14-1,6) R
# CHAMPAIGN COUNTY
# STATION XXXXXXXXX
# STRUCTURE NO. 010-XXXX

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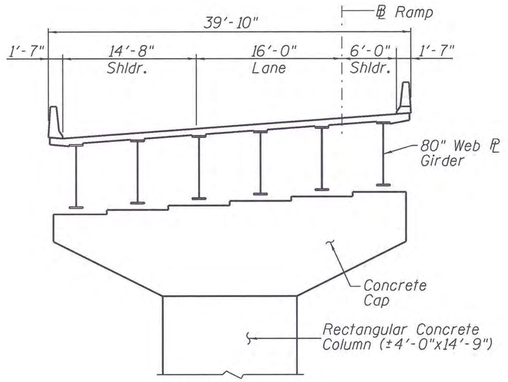
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**I-57 & I-74 INTERCHANGE**
**CHAMPAIGN, ILLINOIS**
SHEET NO. OF SHEETS

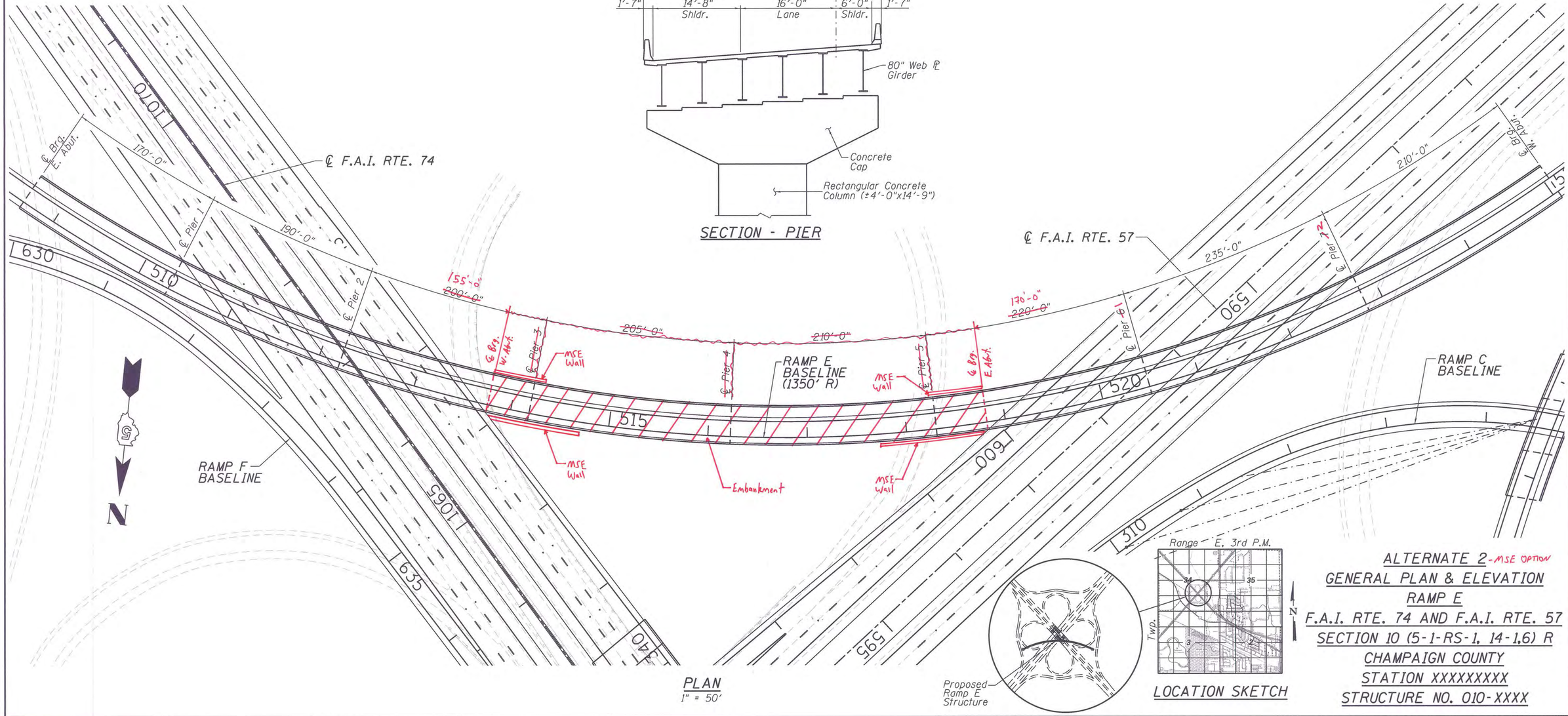
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |
| | | | CONTRACT NO. | |
| | ILLINOIS | FED. AID PROJECT | | |




ELEVATION
No Scale




SECTION - PIER




PLAN
1" = 50'







LOCATION SKETCH

# ALTERNATE 2 - MSE OPTION
## GENERAL PLAN & ELEVATION
## RAMP E
## F.A.I. RTE. 74 AND F.A.I. RTE. 57
## SECTION 10 (5-1-RS-1, 14-1,6) R
## CHAMPAIGN COUNTY
## STATION XXXXXXXXX
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**I-57 & I-74 INTERCHANGE**
**CHAMPAIGN, ILLINOIS**
SHEET NO. OF SHEETS

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |

# MEETING MINUTES

**DATE:** July 17, 2014, 11:00 A.M.

**PROJECT:** Phase I
FAI 57 (I- 57) and FAI 74 (I- 74)
Interchange Reconstruction

**LOCATION:** City of Champaign

**ATTENDANCE:**

Rustin Keys ..... District 5 – Squad Leader
Jason Stults ..... District 5 – Project Engineer
Scott Neihart ..... District 5 – Studies & Plans Engineer
Tim J. Brandenburg ..... District 5 – Bridge and Hydraulics Engineer
Dave Clark ..... City of Champaign – Acting City Engineer
Bruce Knight ..... City of Champaign – Planning and Development Director
Kevin Knoepfel ..... District 5 – Project Support Engineer
Dan Magee ..... District 5 – Utility Coordination
Bob Sherman ..... Hensley Township
Melvin Drennan ..... Hensley Township
Kevin Crider ..... Bacon Farmer Workman Engineering & Testing, Inc.
Stan Hansen ..... Crawford, Murphy & Tilly, Inc.
Brad Downen ..... Crawford, Murphy & Tilly, Inc.

A project progress meeting was conducted to review the project, discuss the interchange alternatives, and coordinate the project. Following is a summary of the items discussed at the meeting:

I. Rustin indicated that the main purpose of the meeting was to coordinate proposed improvements to the local and urban state routes affected by the interchange reconstruction project as well as outline local participation requirements. Rustin indicated that the interchange reconstruction design study and proposed structure type, size, and location details would be completed in the spring of 2015. He emphasized that timely coordination with the City and Township would be necessary to meet the project's phase I schedule.

The City and Township were given preliminary roadway and structure typical sections as well as preliminary plan and profile sheets for the following routes (these exhibits are attached to these meeting minutes):

A. North Mattis Avenue over I- 74

1. The City prefers to have sidewalk on both sides of the roadway to match future long range planning.
2. Lighting currently exists at this location and the City indicated that lighting would be desired within the limits of the preliminary improvements on both sides of the route.
3. The cost of participation for items required to meet IDOT policy for reconstruction of the grade separations are as follows: Construction of sidewalk will be 80% State / 20% City (note: embankment for sidewalk is 100% State), lighting placement and relocation cost is 100% City. Also, the City's participation cost for engineering and inspection is 15% of their total participation costs for the project. Jurisdiction and maintenance will remain the City's responsibility.

B. North Mattis Avenue over I- 57
1. Lighting was discussed for this area also. The City will discuss internally and make a final decision on whether it wants this included with the project at a later date.
2. The City indicated that improvements to Mattis Avenue were currently not in their long range improvement plans. However, there was discussion that the City may try to link the two construction sections on each end of North Mattis Avenue. This work could be completed as part of the interchange and grade separation construction projects but the cost of any additional work would be the City's responsibility.
3. Rustin indicated that the preliminary two lane proposed cross section was based upon BLRS policy and 2040 DHV projections that are based upon historic traffic growth rates. He indicated that the lower limit DHV warrant for a 4 lane cross section on Mattis in the 2040 design year is 1250 vehicles per hour. The City has an LRTP model with traffic projections that will be provided to IDOT for review. This model accounts for traffic generated by future development. If found acceptable, the projections may be used to determine the proposed typical section.
4. Hypothetical discussion ensued on the premise that the the LRTP traffic projections justify the 4 lane cross section. The current posted speed limit and design speed are 45 mph. This speed requires a barrier between traffic and sidewalk on the structure. If a 4 lane is justified, the City may want to consider lowering the posted speed limit in order to mirror the preliminary typical section proposed for Mattis over I- 74. IDOT will coordinate based on City provided traffic volumes.

C. US 150 (Bloomington Road) over I- 57
1. The City concurred with the overall typical section as presented. Rustin indicated that the City's 2011 trail plan called for a shared use path on the south side of US 150 and that the proposed structure profile will be set to accommodate the future path with respect to future vertical

clearance on I 57. The City believed that the future trail is planned to be on the north side of US 150. With this in mind, the City requested a sidewalk be placed on the north side of the structure as part of the interchange project. Rustin agreed to check sidewalk warrants and provide the City with their participation cost for this work.

07/22/2014 UPDATE: The City now agrees that the future shared use path is to planned to be on the south side of US 150. Dave will discuss the need for sidewalk on the north side internally and make a final decision at a later date. IDOT will still check sidewalk warrants and provide participation costs for the north side sidewalk to aid in the City's final decision.This structure may need protective fencing along barrier for pedestrians/bicyclists.

2. This structure may need protective fencing along the barrier for pedestrians/bicyclists that is not shown on the preliminary typical structure cross section.

D. Duncan Road
   1. The City's jurisdiction is from the northern abutment on the north side of I 74 to the south along Duncan Road. The Hensley Township jurisdiction extends from the northern abutment on the north side of I 74 to the north.
   2. The concept of realigning Duncan Road south to US 150 was desired by both the City and Township officials. IDOT has requested the consultant team to study some alternatives for consideration. The City would be required to participate in the cost of the realignment for the additional length of roadway replacement. IDOT will only fund and construct the new alignment if the City agrees to participate in the cost and accept jurisdiction of the new alignment once construction is complete. The City was acceptable to the proposal of acquiring jurisdiction of the new roadway alignment.
   3. Any realignment should avoid the cell tower in the southeast quadrant of the intersection of Duncan Road and I 74. The proposed horizontal alignment should also consider future embankment needed for a 10' shared path on the east side of Duncan.
   4. The City's summer 2015 Olympian Drive/Duncan road connection project was briefly discussed. Rustin requested that Microstation files of the proposed improvement be provided by the City. The City provided the files on 7/22/14.

E. Preliminary Estimates
   1. Preliminary construction estimates for all of the crossroad reconstruction for Alternate #1 totaled $29 million.
   2. Preliminary construction estimates for all of the crossroad reconstruction for Alternate #2 totaled $28 million.

F. Miscellaneous

1. Bridge fencing/railing will be vinyl/powder coated black as specified on the recent Windsor Road structure replacement project. This vinyl/powder coating is a special request and will be at the City's cost.

By:  7/24/14

Kevin Crider, PE, CPESC Date
Bacon Farmer Workman Engineering & Testing, Inc.

# CITY OF CHAMPAIGN COORDINATION MEETING PACKET




DUNCAN ROAD OVER I-74
SN 010-0169

MATTIS AVENUE OVER I-57
SN 010-0100

US 150 OVER I-57
SN 010-0050

MATTIS AVENUE OVER I-74
SN 010-0270

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| | PLOT DATE = 7/16/2014 | CHECKED - | REVISED - |
| | | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**CITY OF CHAMPAIGN COORDINATION PACKET – 07/17/2014**
**MATTIS AVE, US 150, DUNCAN ROAD**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1,14-1,6)R | CHAMPAIGN | 20 | 1 |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS | FED. AID PROJECT | | |

| SHEET NO. | SHEET |
|---|---|
| 1 | COVER |
| 2 | INDEX OF SHEETS, ROADWAY DATA |
| 3-4 | MATTIS AVE OVER I-74 - ROADWAY AND STRUCTURE TYPICAL SECTIONS |
| 5-6 | MATTIS AVE OVER I-74 - PLAN AND PROFILE (ALT. #1 AND ALT. #2) |
| 7-8 | MATTIS AVE OVER I-57 - ROADWAY AND STRUCTURE TYPICAL SECTIONS |
| 9-10 | MATTIS AVE OVER I-57 - PLAN AND PROFILE (ALT. #1 AND ALT. #2) |
| 11-12 | US 150 OVER I-57 - ROADWAY AND STRUCTURE TYPICAL SECTIONS |
| 13-14 | US 150 OVER I-57 - PLAN AND PROFILE (ALT. #1 AND ALT. #2) |
| 15-16 | DUNCAN ROAD OVER I-74 - ROADWAY AND STRUCTURE TYPICAL SECTIONS |
| 17-20 | DUNCAN OVER I-74 - PLAN AND PROFILE (ALT. #1 AND ALT. #2) |

## ROUTE DATA

| ROUTE | FUNCTIONAL CLASSIFICATION | POSTED SPEED LIMIT | DESIGN SPEED (M.P.H.) | CURRENT ADT | DESIGN TRAFFIC (2040 PROJECTION) | | |
|---|---|---|---|---|---|---|---|
| | | | | | ADT | DHV | % HEAVY COMMERCIAL |
| MATTIS AVE. (FAU 7158) OVER I-74 | URBAN MINOR ARTERIAL | 40 | 40 | 16,400 | 18,700 | 1,760 | 7.2% |
| | | | | | | | |
| MATTIS AVE. (FAU 7158) OVER I-57 | SUBURBAN MINOR ARTERIAL | 45 | 45 | 5,800 | 9,100 | 825 | 10.2% |
| | | | | | | | |
| US 150 (FAP 719) | SUBURBAN OTHER PRINCIPAL ARTERIAL | 50 | 50 | 7,450 | 12,100 | 1,040 | 11.1% |
| | | | | | | | |
| DUNCAN ROAD (FAP 813) | SUBURBAN OTHER PRINCIPAL ARTERIAL | NOT POSTED | 45 | 400 | 500* | 55 | 10.8% |

*DUNCAN ROAD ADT PROJECTED TO BE 3,150 IN 2033 AFTER OLYMPIAN DRIVE CONNECTION IS COMPLETE.

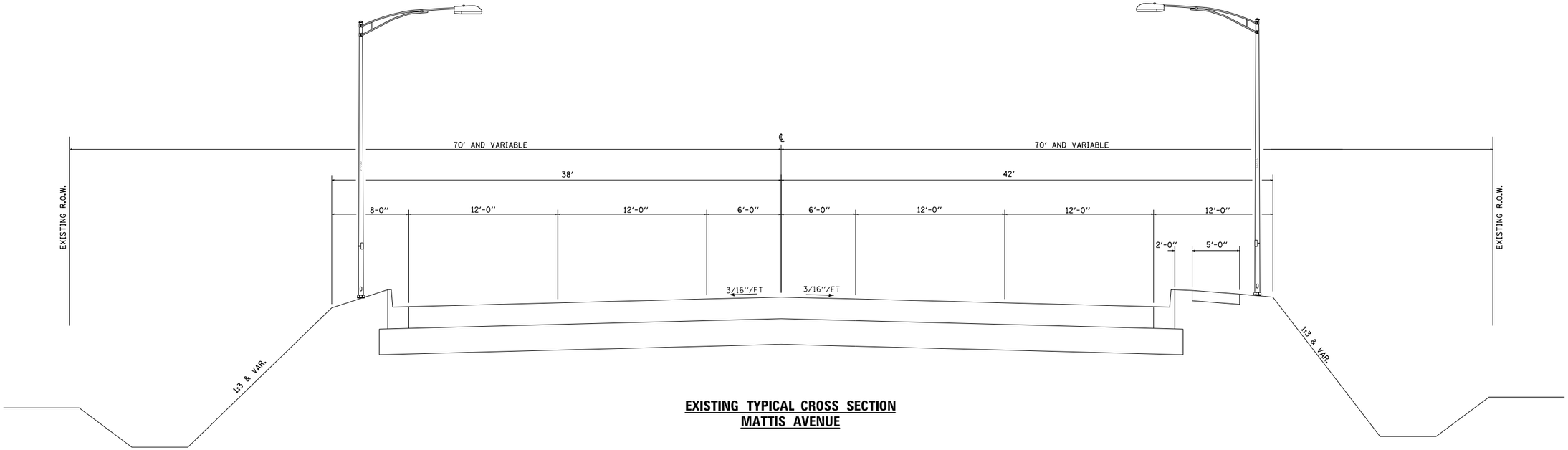
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| | PLOT DATE = 7/16/2014 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

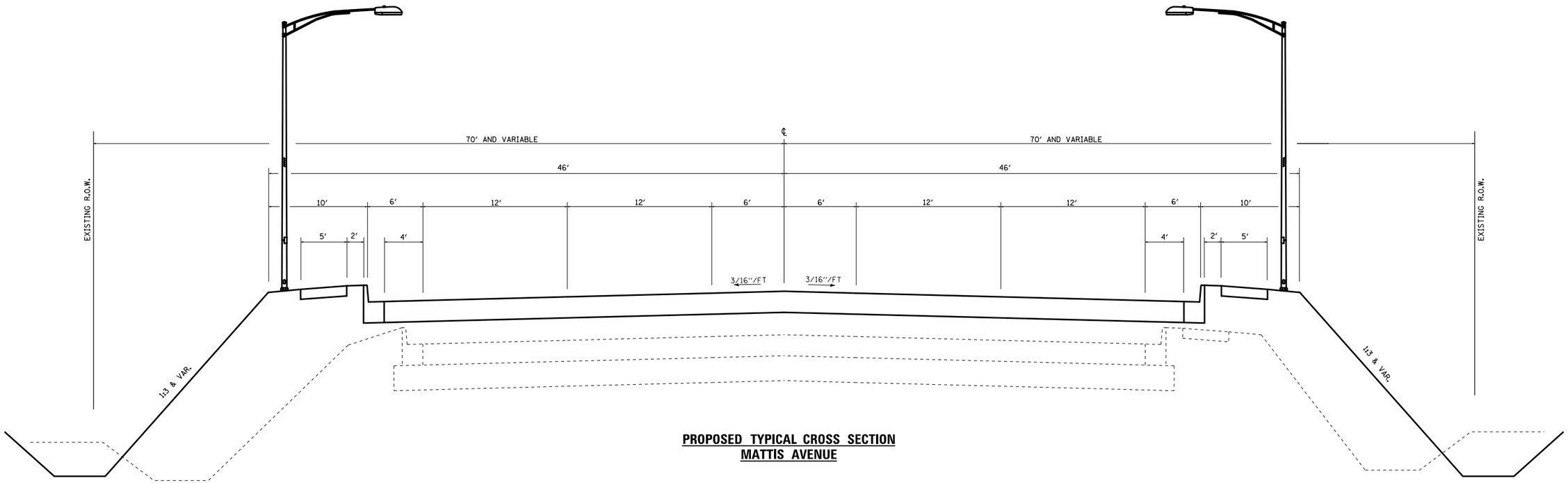
**CITY OF CHAMPAIGN COORDINATION PACKET - 07/17/2014**
**MATTIS AVE, US 150, DUNCAN ROAD**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
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| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**EXISTING TYPICAL CROSS SECTION**
**MATTIS AVENUE**




**PROPOSED TYPICAL CROSS SECTION**
**MATTIS AVENUE**

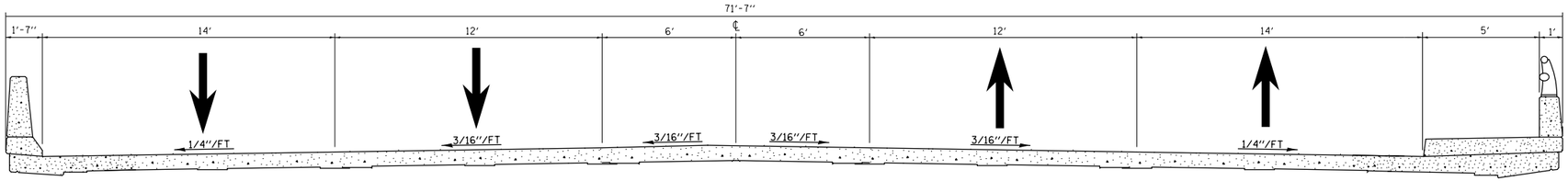
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| | PLOT DATE = 7/16/2014 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

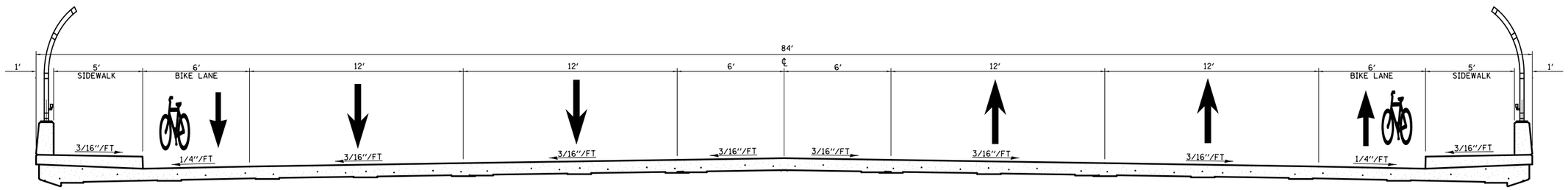
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**(SOUTH OF WEST ANTHONY DRIVE INTERSECTION)**

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| | | CONTRACT NO. 70897 | | |
| | | ILLINOIS FED. AID PROJECT | | |




**EXISTING MATTIS AVENUE OVER I–74 (EX. S.N. 010–0270)**




**PROPOSED MATTIS AVENUE OVER I–74**

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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**FAU 7158 (MATTIS AVENUE)**
**(SOUTH OF WEST ANTHONY DRIVE INTERSECTION)**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

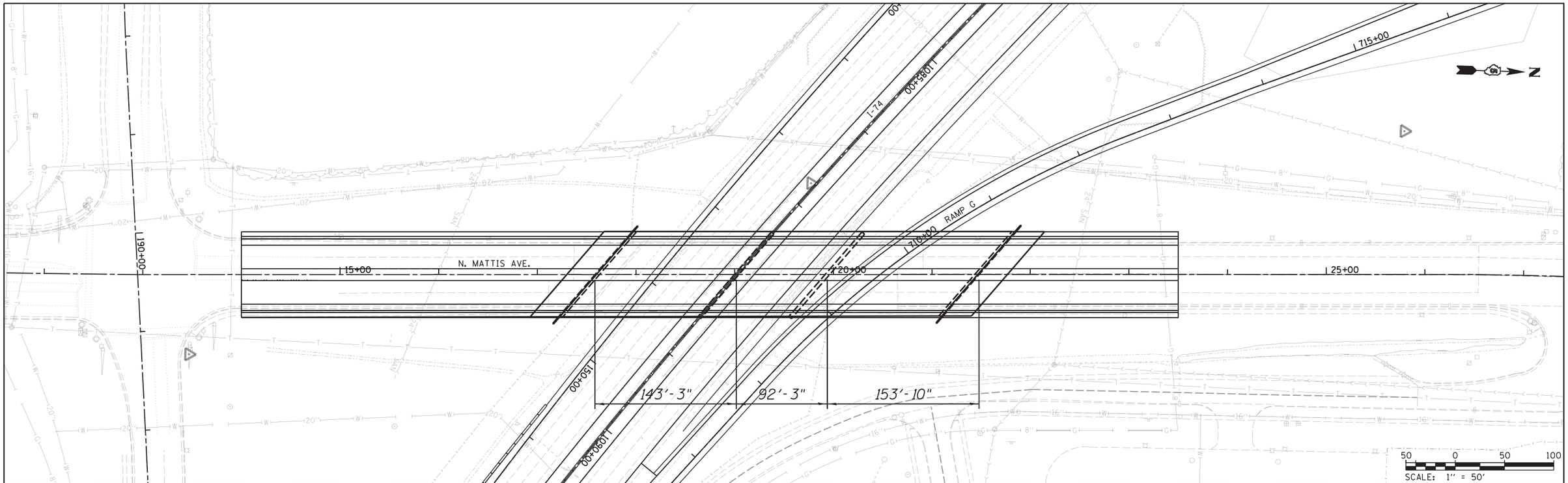
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| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

PLAN

| BY | DATE |
|---|---|
| | |

SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME

NOTE BOOK
NO.

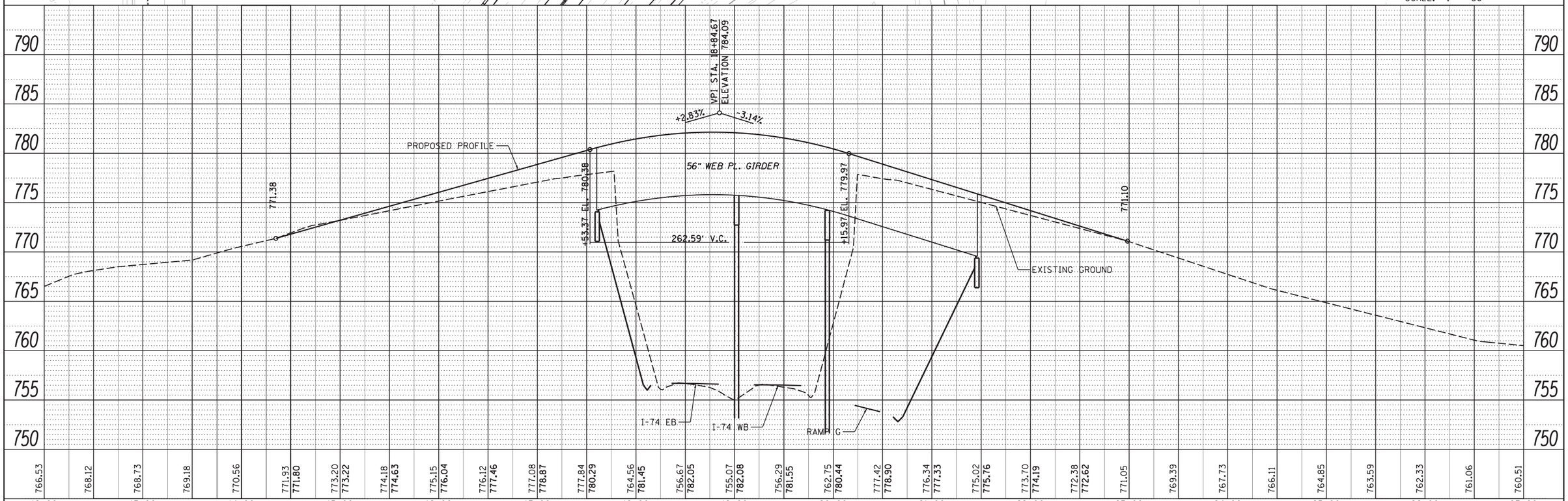



PROFILE

| BY | DATE |
|---|---|
| | |

SURVEYED
PLOTTED
ALIGNMENT CHECKED
BM. NOTED
STRUCTURE NOTATNS CHKD

NOTE BOOK
NO.




| | | | |
|---|---|---|---|
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| | | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

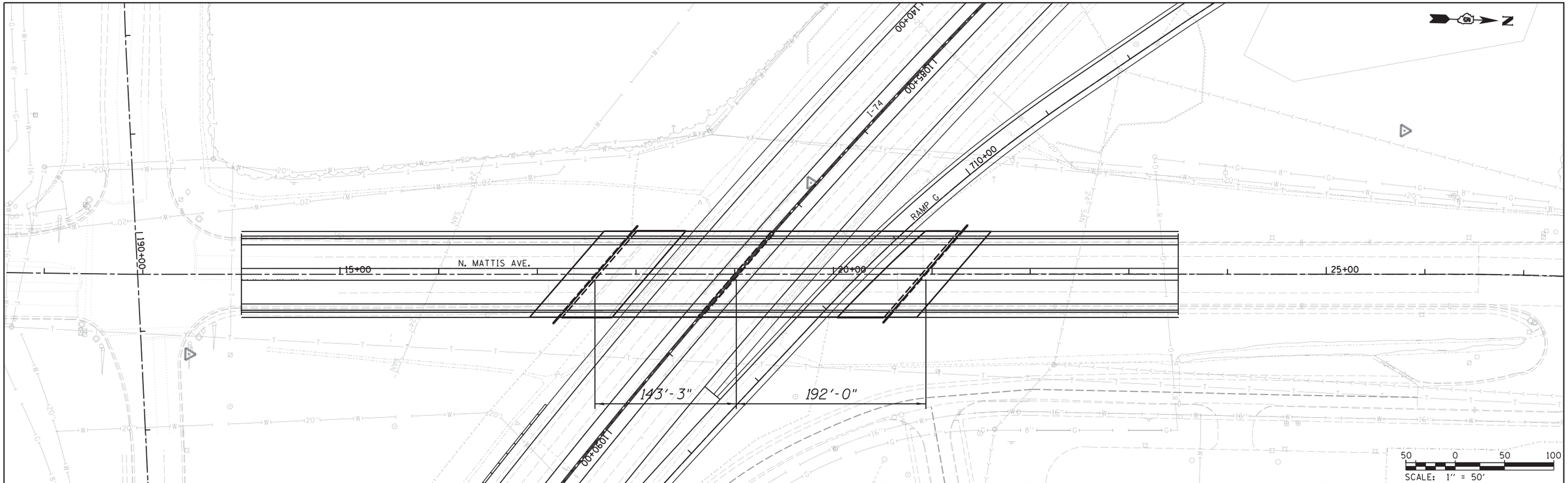
**ALTERNATE #1, NORTH MATTIS AVE. OVER I-74**
**PLAN & PROFILE**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | 20 | 5 |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |

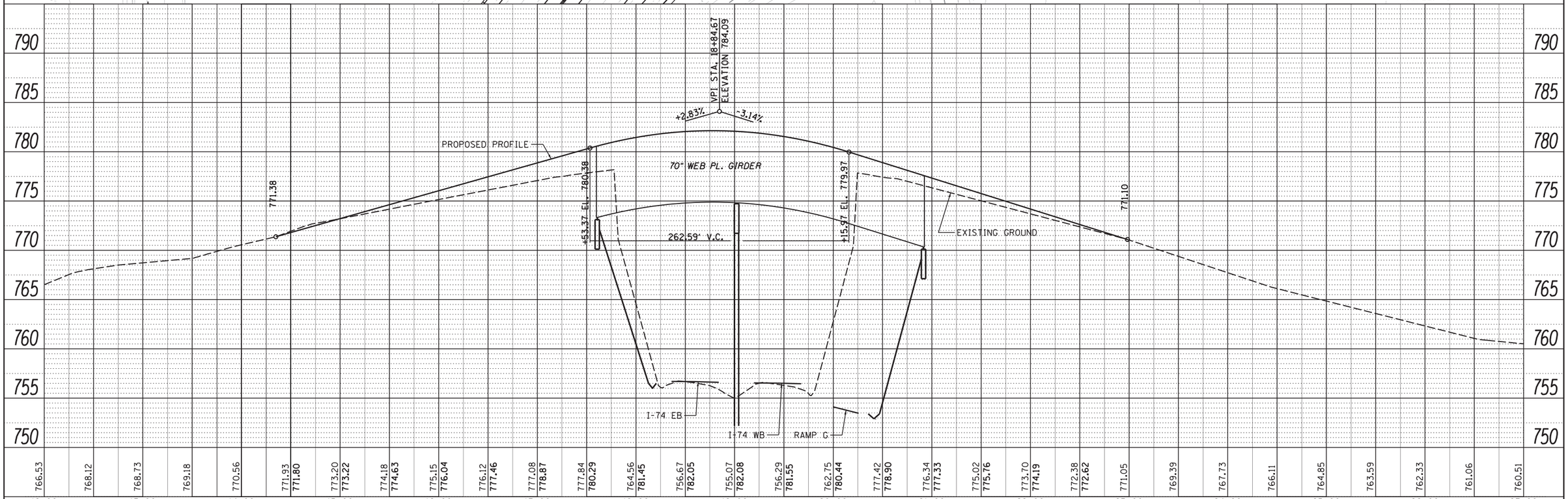
PLAN

| | BY | DATE |
|---|---|---|
| SURVEYED | | |
| PLOTTED | | |
| ALIGNMENT CHECKED | | |
| RT. OF WAY CHECKED | | |
| CADD FILE NAME | | |
| NOTE BOOK | | |
| NO. | | |




PROFILE

| | BY | DATE |
|---|---|---|
| SURVEYED | | |
| PLOTTED | | |
| ALIGNMENT CHECKED | | |
| BM. NOTED | | |
| STRUCTURE NOTATNS CHKD | | |
| NOTE BOOK | | |
| NO. | | |



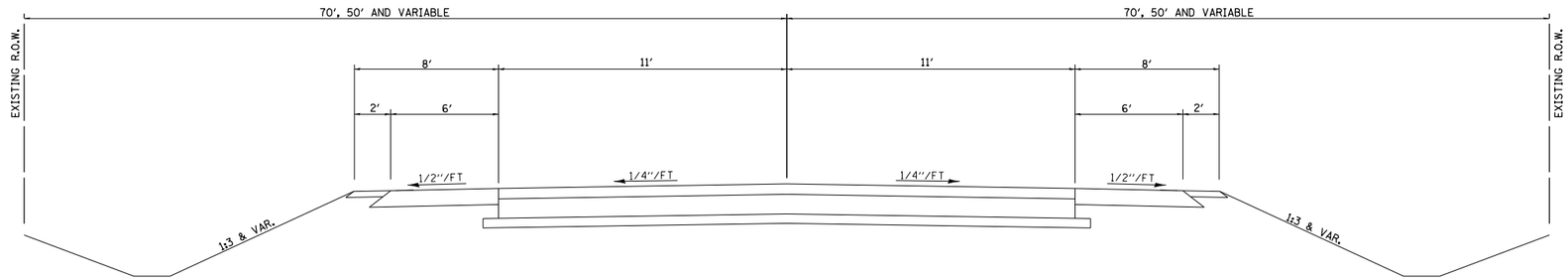

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| | | DRAWN - | REVISED - |
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

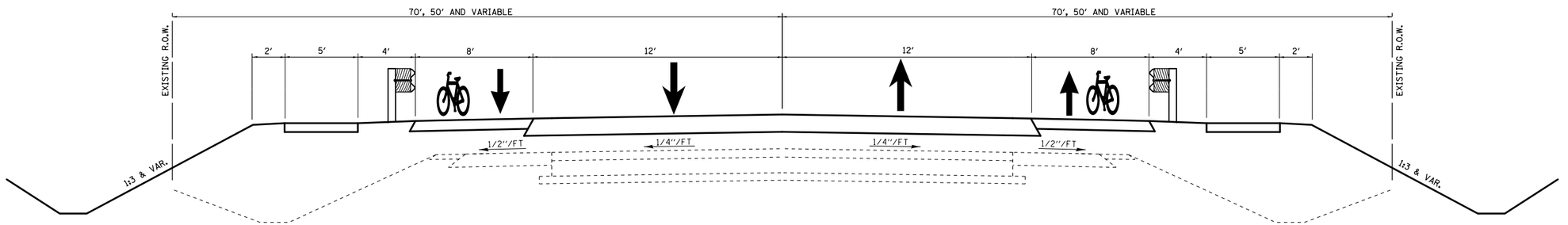
**ALTERNATE #2, NORTH MATTIS AVE. OVER I-74**
**PLAN & PROFILE**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

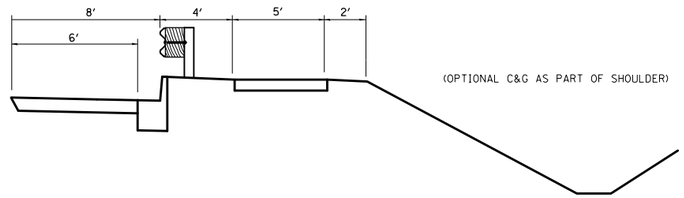
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | 20 | 6 |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




**EXISTING TYPICAL CROSS SECTION**
**MATTIS AVENUE**




**PROPOSED TYPICAL CROSS SECTION**
**MATTIS AVENUE**



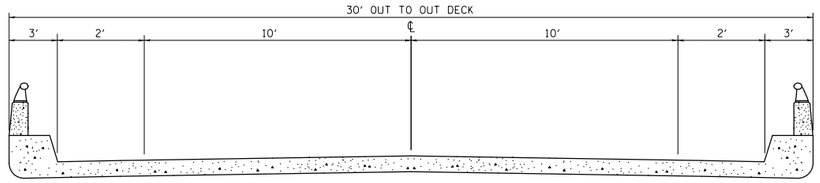

| | | | |
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| | | DRAWN - | REVISED - |
| | PLOT SCALE = 50.00 ' / in. | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = 7/16/2014 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

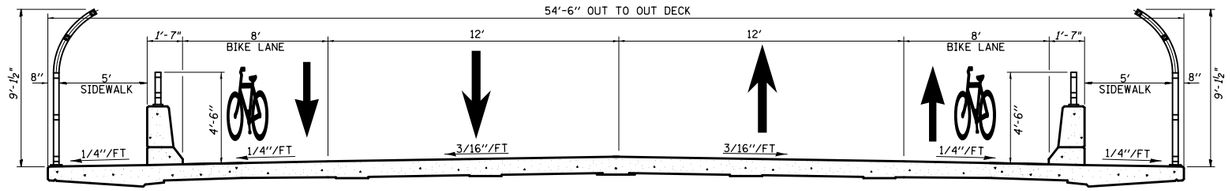
**FAU 7158 (MATTIS AVENUE)**
**(NORTH OF WEST ANTHONY DRIVE)**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 7158 | 10(5-1-RS-1,14-1,6)R | CHAMPAIGN | 20 | 7 |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**EXISTING MATTIS AVENUE OVER I–57 (EX. S.N. 010–0100)**




**PROPOSED MATTIS AVENUE OVER I–57**

| | | | |
|---|---|---|---|
| FILE NAME = C:\Users\keysrb\Desktop\RBK Projects and Squad Files\70897\CADD\Structure Typical Section\$MODELNAME$ | USER NAME = keysrb | DESIGNED - | REVISED - |
| | PLOT SCALE = 50.00 ' / in. | DRAWN - | REVISED - |
| | PLOT DATE = 7/16/2014 | CHECKED - | REVISED - |
| | | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**FAU 7158 (MATTIS AVENUE)**
**(NORTH OF WEST ANTHONY DRIVE)**

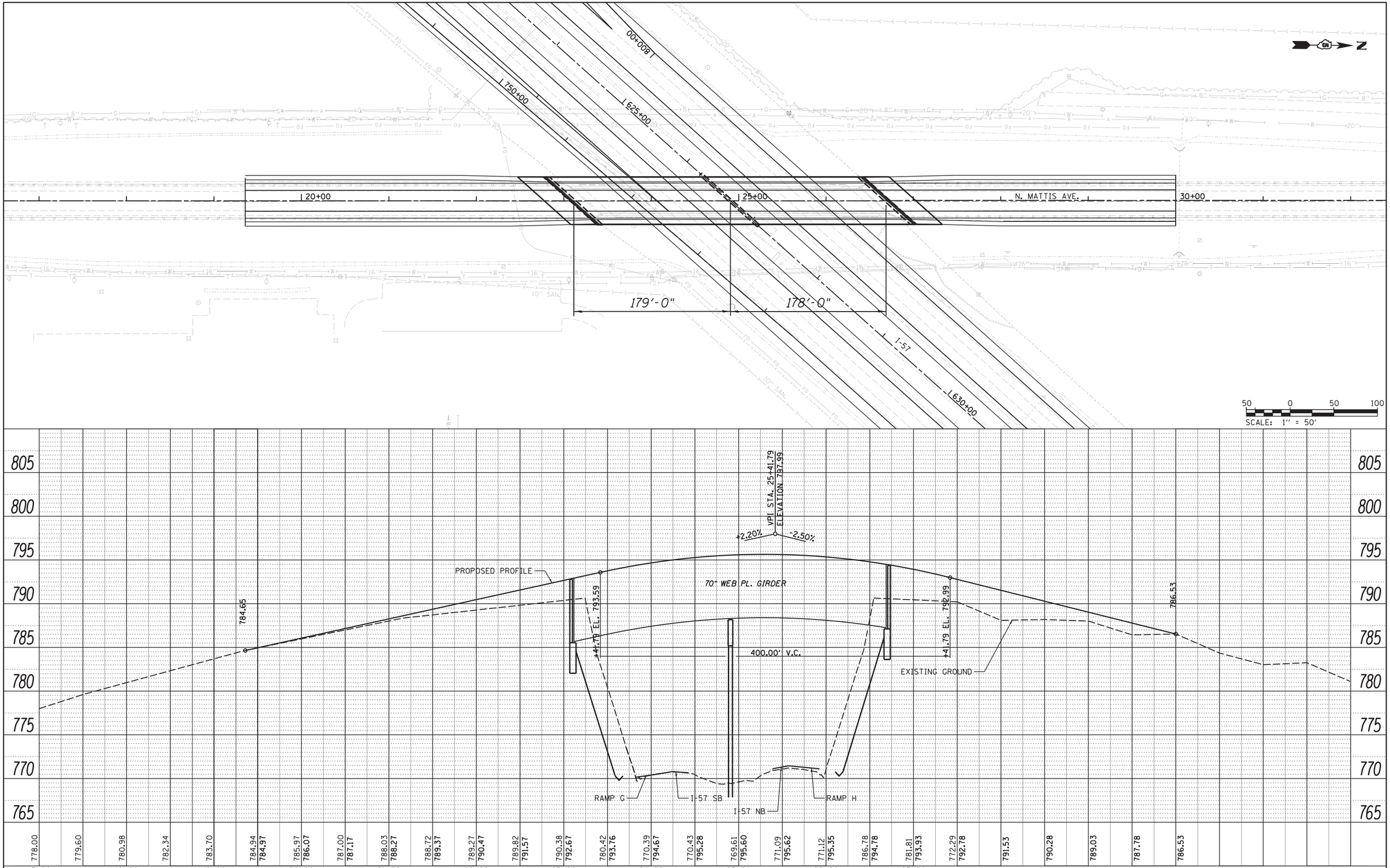
SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 7158 | 10(5-1-RS-1,14-1,6)R | CHAMPAIGN | 20 | 8 |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

PLAN

| | |
|---|---|
| SURVEYED | |
| PLOTTED | |
| ALIGNMENT CHECKED | |
| RT. OF WAY CHECKED | |
| CADD FILE NAME | |
| NOTE BOOK | |
| NO. | |

| BY | DATE |
|---|---|
| | |




PROFILE

| | |
|---|---|
| SURVEYED | |
| PLOTTED | |
| ALIGNMENT CHECKED | |
| B.M. NOTED | |
| STRUCTURE NOTATNS CHKD | |
| NOTE BOOK | |
| NO. | |

| BY | DATE |
|---|---|
| | |

| | | | |
|---|---|---|---|
| FILE NAME = $FILE$ | USER NAME = $USER$ | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ALTERNATE #1, NORTH MATTIS AVE. OVER I-57**
**PLAN & PROFILE**

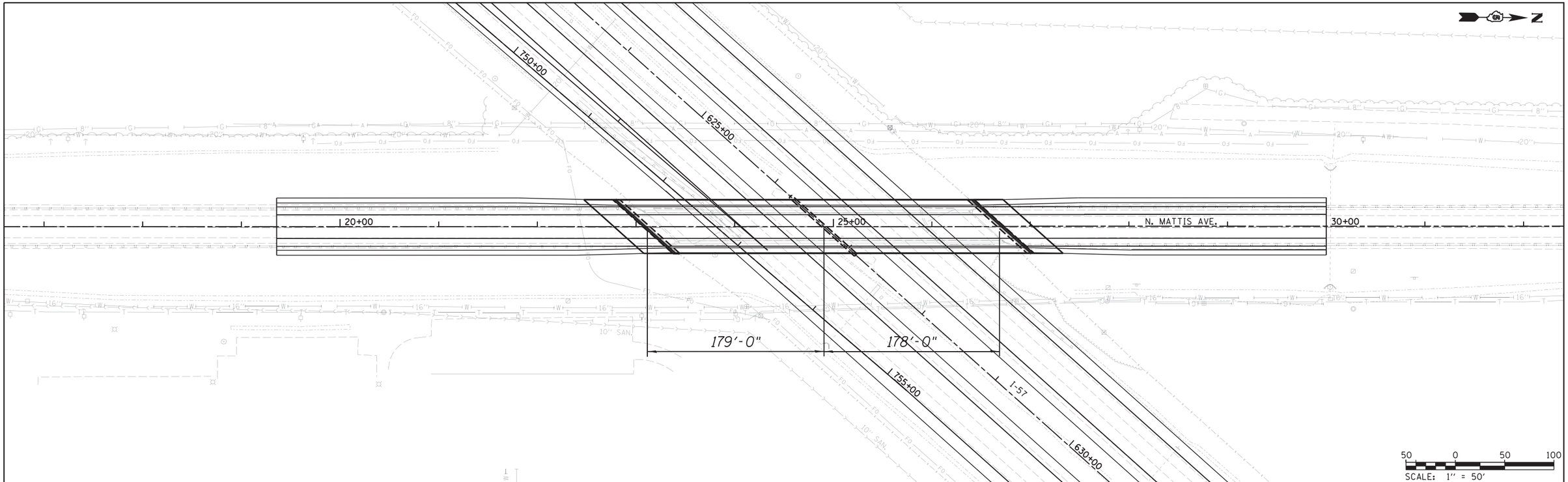
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| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | 20 | 9 |
| | | CONTRACT NO. | | |
| | ILLINOIS | FED. AID PROJECT | | |

PLAN

| DATE | BY | |
|---|---|---|
| | | SURVEYED |
| | | PLOTTED |
| | | ALIGNMENT CHECKED |
| | | RT. OF WAY CHECKED |
| | | CADD FILE NAME |

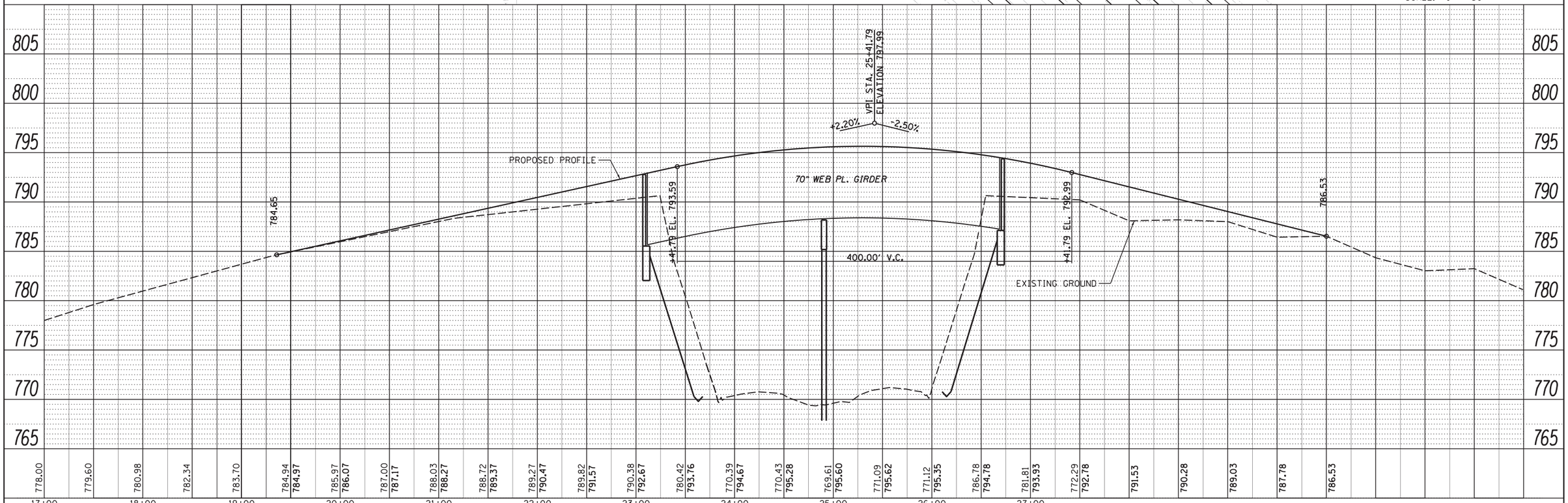
NOTE BOOK
NO.




PROFILE

| DATE | BY | |
|---|---|---|
| | | SURVEYED |
| | | PLOTTED |
| | | ALIGNMENT CHECKED |
| | | B.M. NOTED |
| | | STRUCTURE NOTATNS CHKD |

NOTE BOOK
NO.



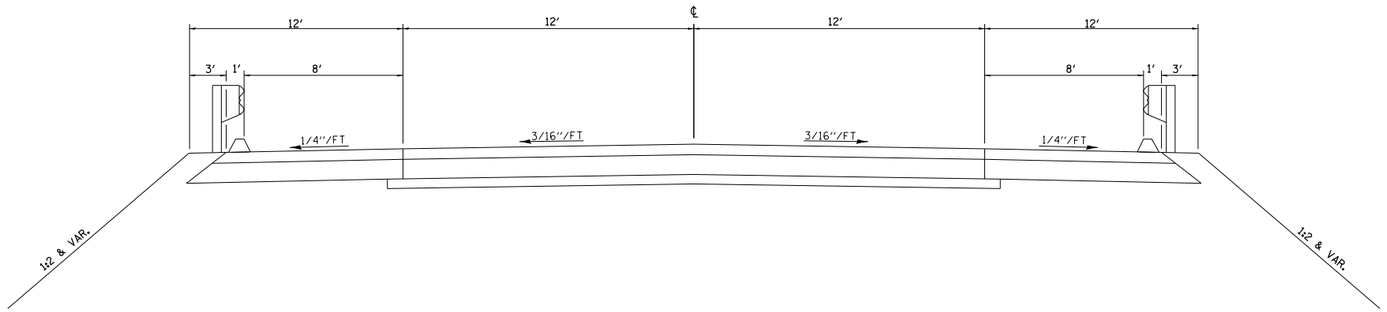

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|---|---|---|---|
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| | | DRAWN - | REVISED - |
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

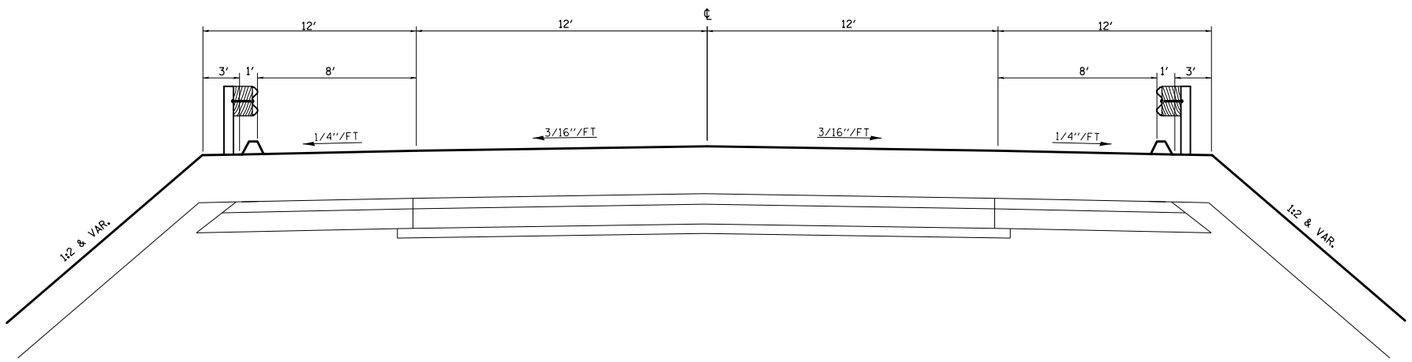
**ALTERNATE #2, NORTH MATTIS AVE. OVER I-57**
**PLAN & PROFILE**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | 20 | 10 |
| | | CONTRACT NO. | | |
| | ILLINOIS | FED. AID PROJECT | | |




**EXISTING TYPICAL CROSS SECTION**
**U.S. 150**




**PROPOSED TYPICAL CROSS SECTION**
**U.S. 150**

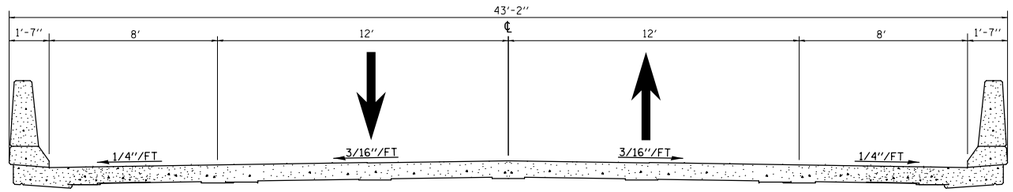
| | | | |
|---|---|---|---|
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| | | DRAWN - | REVISED - |
| | PLOT SCALE = 50.00 ′ / in. | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = 7/16/2014 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

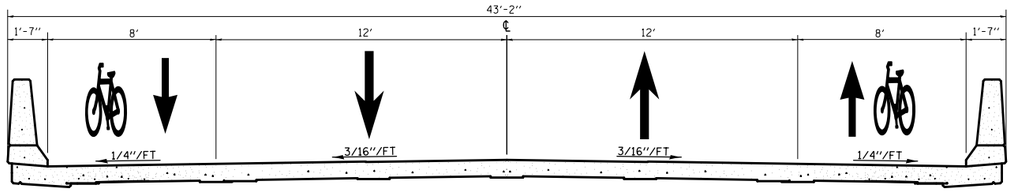
**FAP 719 (U.S. 150)**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 719 | 10(5-1-RS-1,14-1,6)R | CHAMPAIGN | 20 | 11 |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**EXISTING U.S. 150 OVER I–57 (EX. S.N. 010–0050)**




**PROPOSED U.S. 150 OVER I–57**

NOTE: THE 2011 CHAMPAIGN TRAIL PLAN PROPOSES A MULTI-USE PATH ON THE SOUTH SIDE OF US 150 FROM STALEY AVENUE TO MATTIS AVENUE. DUE TO THE INDEFINITE TIMELINE FOR FUNDING AND CONSTRUCTION OF THE MULTI-USE PATH, IDOT PROPOSES THAT STRUCTURE CARRYING US 150 OVER I-57 ACCOMMODATE BICYCLE TRAFFIC ON THE 8' SHOULDERS. THIS STRUCTURE WILL BE MODIFIED AS NECESSARY TO ACCOMMODATE THE MULIT-USE PATH IN THE FUTURE.

| | | | |
|---|---|---|---|
| FILE NAME = C:\Users\keysrb\Desktop\RBK Projects and Squad Files\70897\CADD\Structure Typical Section.dgn | USER NAME = keysrb | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 50.00 ' / in. | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = 7/16/2014 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**FAP 719 (U.S. 150)**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 719 | 10(5-1-RS-1,14-1,6)R | CHAMPAIGN | 20 | 12 |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

PLAN

| BY | DATE |
|---|---|
| | |

SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME

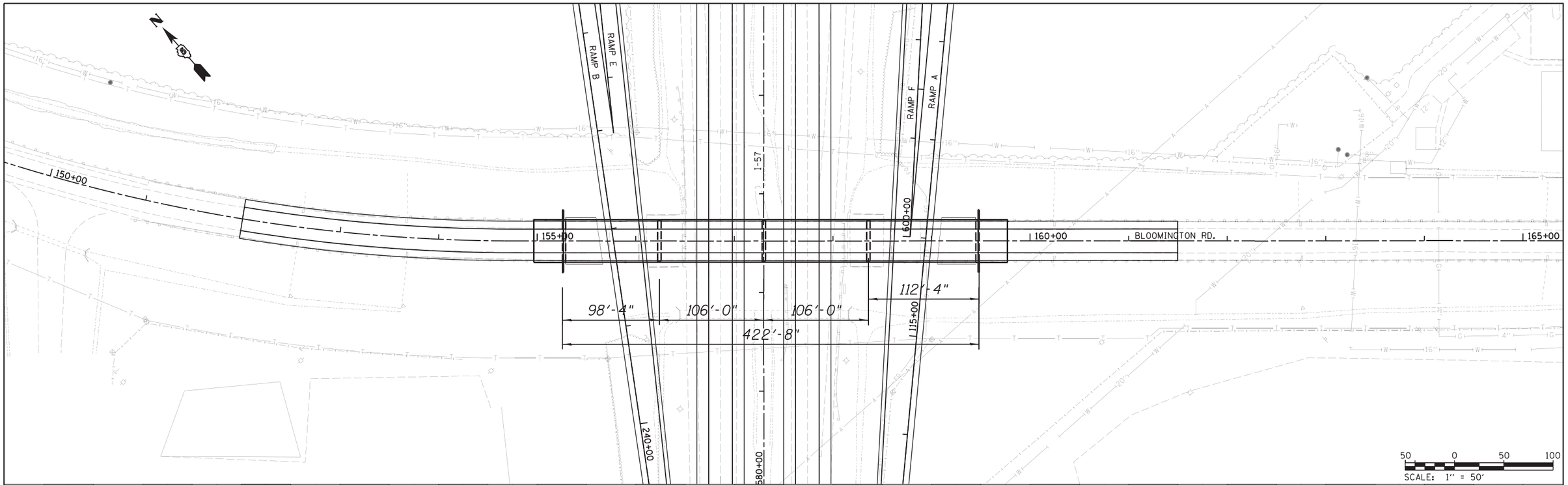
NOTE BOOK
NO.

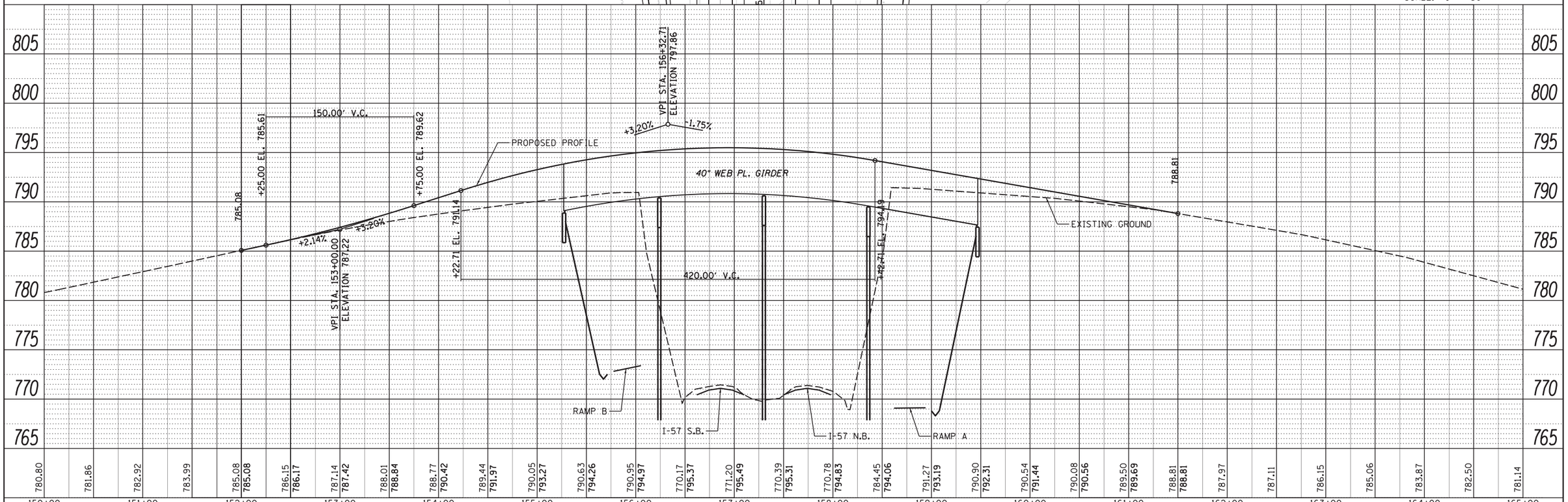
PROFILE

| BY | DATE |
|---|---|
| | |

SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NO'S/NS CHKD

NOTE BOOK
NO.




| | | | |
|---|---|---|---|
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| | | DRAWN - | REVISED - |
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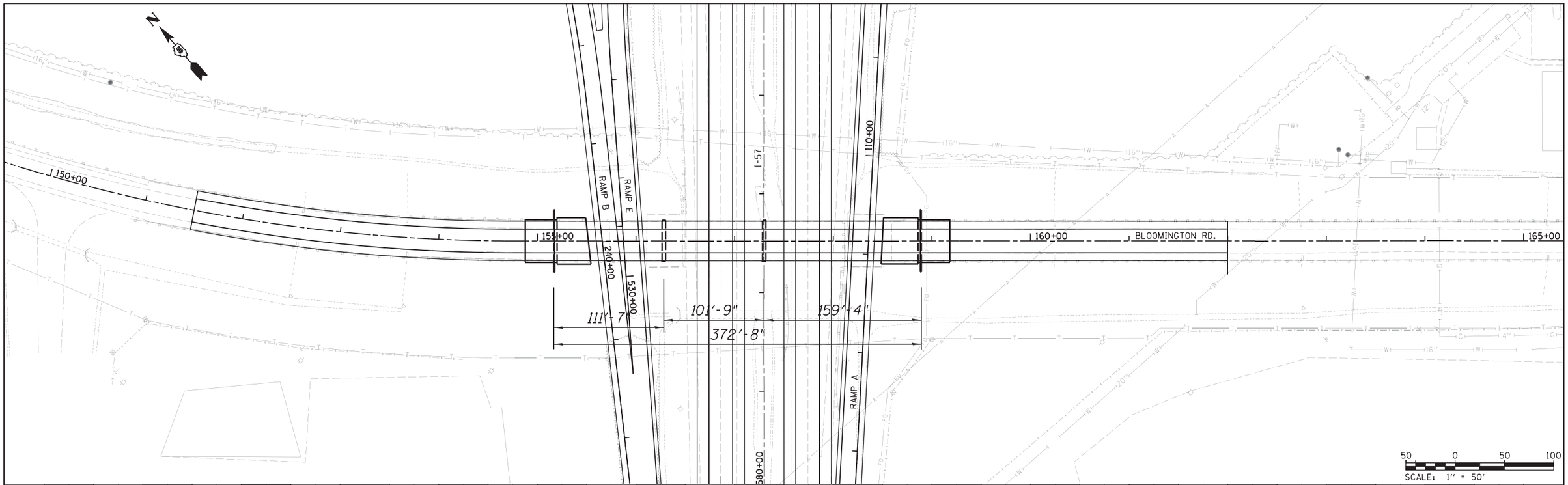
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ALTERNATE #1, BLOOMINGTON RD.**
**PLAN & PROFILE**

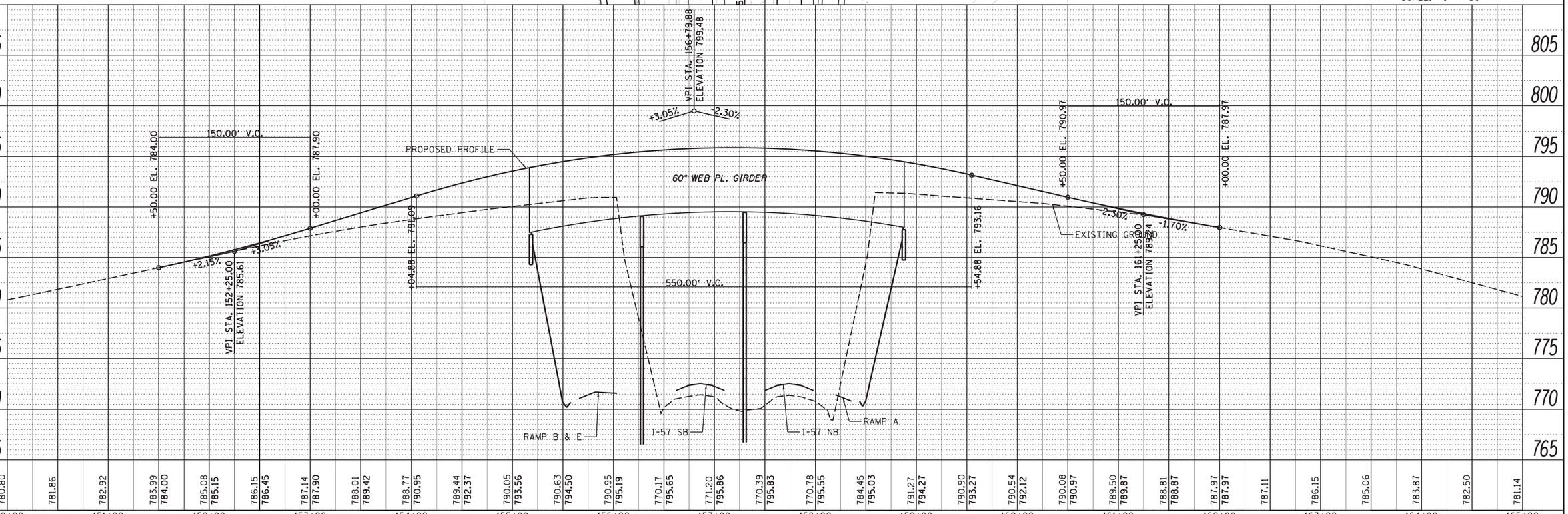
SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | 20 | 13 |
| | | CONTRACT NO. | | |
| | | ILLINOIS FED. AID PROJECT | | |

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE




PROFILE
SURVEYED
PLOTTED
DRAWN
CHECKED
B.M. NOTED
STRUCTURE NO(TA)TNS CHKD
NOTE BOOK
NO.
BY
DATE




| | | | |
|---|---|---|---|
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| $MODELNAME$ | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

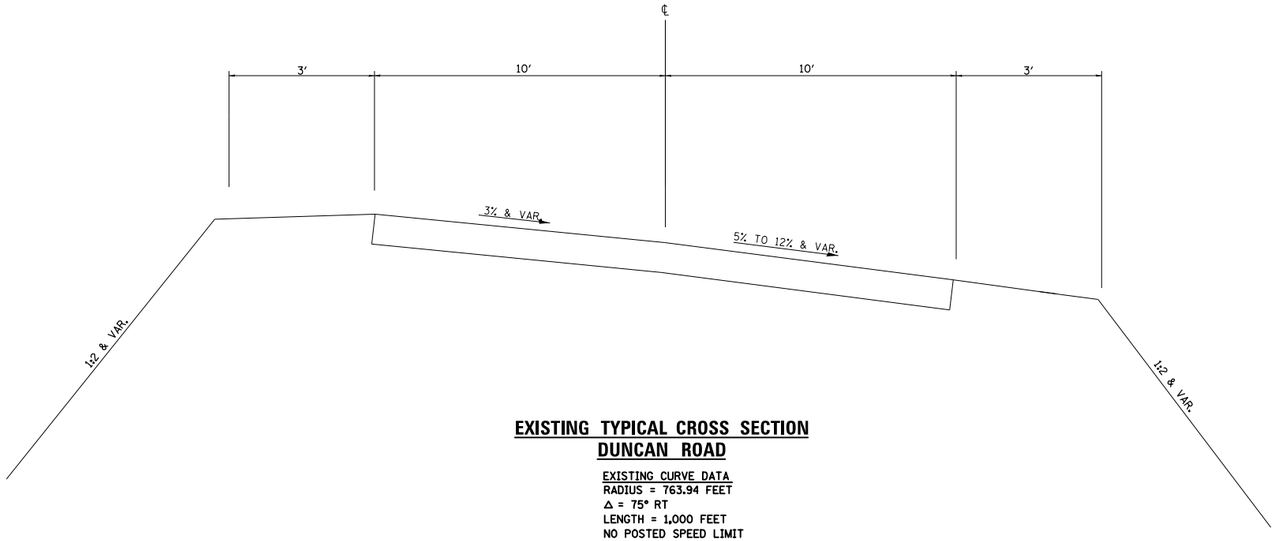
**ALTERNATE #2, BLOOMINGTON RD.**
**PLAN & PROFILE**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | 20 | 14 |
| | | CONTRACT NO. | | |
| | | ILLINOIS FED. AID PROJECT | | |

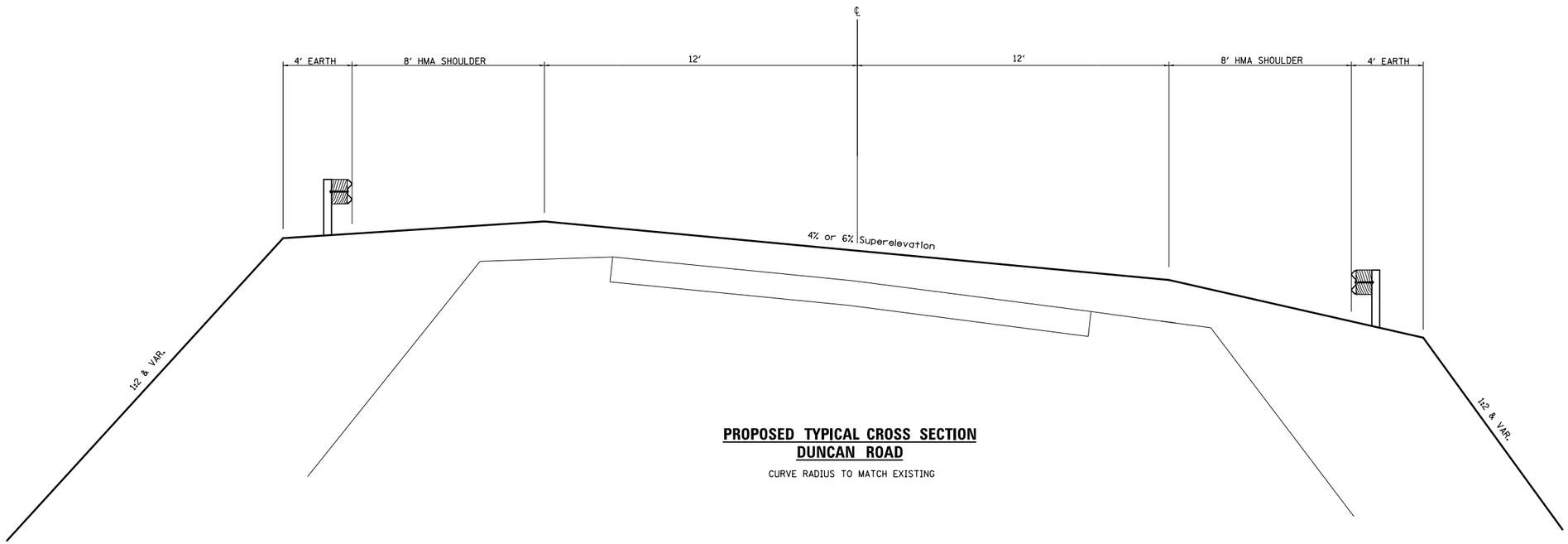
BLRS RECONSTRUCTION POLICY :

Design Speed = 45, min. Radius = 665' with emax = 4% (BLRS Fig. 32-3B)




**EXISTING TYPICAL CROSS SECTION**
**DUNCAN ROAD**

EXISTING CURVE DATA
RADIUS = 763.94 FEET
Δ = 75° RT
LENGTH = 1,000 FEET
NO POSTED SPEED LIMIT




**PROPOSED TYPICAL CROSS SECTION**
**DUNCAN ROAD**

CURVE RADIUS TO MATCH EXISTING

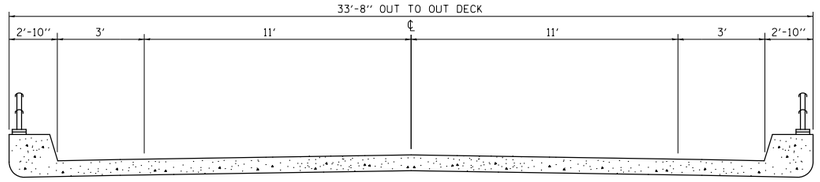
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| | | DRAWN - | REVISED - |
| | PLOT SCALE = 50.00 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 7/16/2014 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

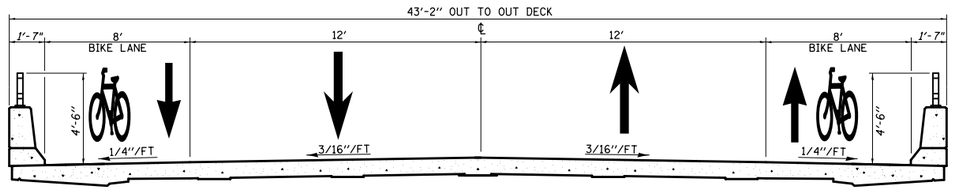
**FAP 813 /TR 126 (DUNCAN ROAD)**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 813 | 10(5-1-RS-1,14-1,6)R | CHAMPAIGN | 20 | 15 |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**EXISTING MATTIS AVENUE OVER I–57 (EX. S.N. 010–0100)**




**PROPOSED DUNCAN ROAD OVER I–74**

NOTE: THE 2011 CHAMPAIGN TRAIL PLAN PROPOSES A MULTI-USE PATH ON THE SOUTH SIDE OF OLYMPIAN DRIVE AND THE SOUTHSIDE OF US 150. DUNCAN ROAD INTERSECTS BOTH OF THESE ROUTES AND A MULTIUSE PATH ON THE EAST SIDE OF DUNCAN WOULD INTERCONNECT THESE PATHS.
DUE TO THE INDEFINITE TIMELINE FOR FUNDING AND CONSTRUCTION OF THE MULTI-USE PATHS ON US 150 AND OLYMPIAN DRIVE, IDOT PROPOSES THAT STRUCTURE CARRYING DUNCAN OVER I-74 ACCOMMODATE BICYCLE TRAFFIC ON THE 8' SHOULDERS. THIS STRUCTURE WILL BE MODIFIED AS NECESSARYTO ACCOMMODATE THE MULIT-USE PATH IN THE FUTURE.

| | | | |
|---|---|---|---|
| FILE NAME = C:\Users\keysrb\Desktop\RBK Projects and Squad Files\70897\CADD\Structure Typical Section.dgn | USER NAME = keysrb | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 50.00 ' / in. | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = 7/16/2014 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

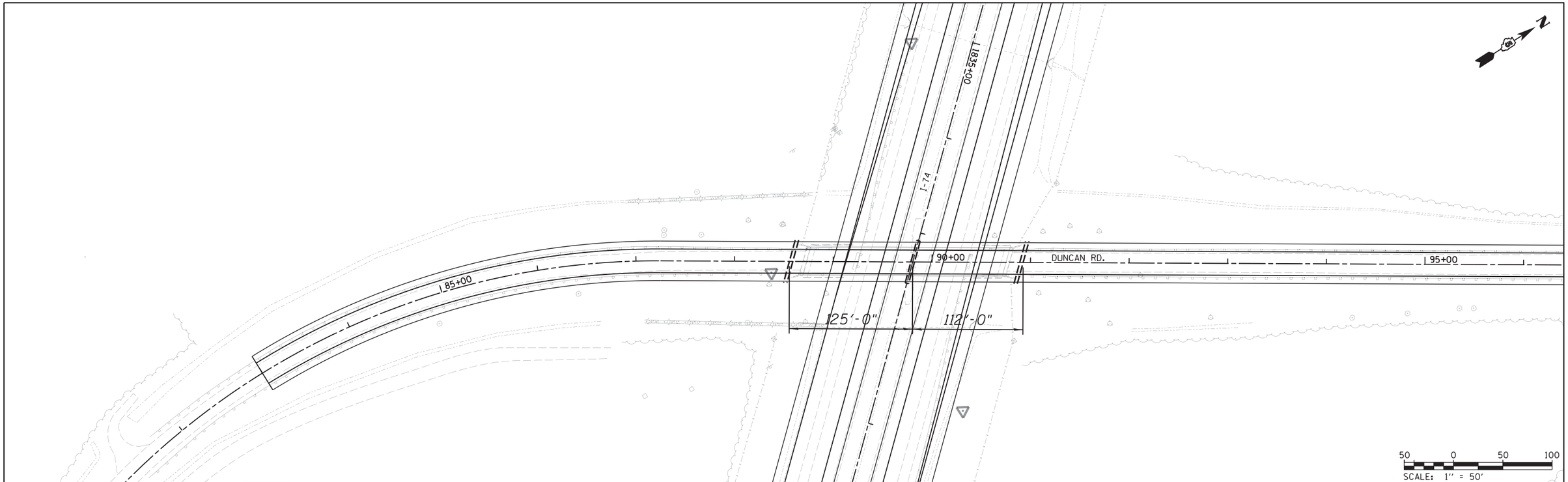
**FAP 813 /TR 126 (DUNCAN ROAD)**

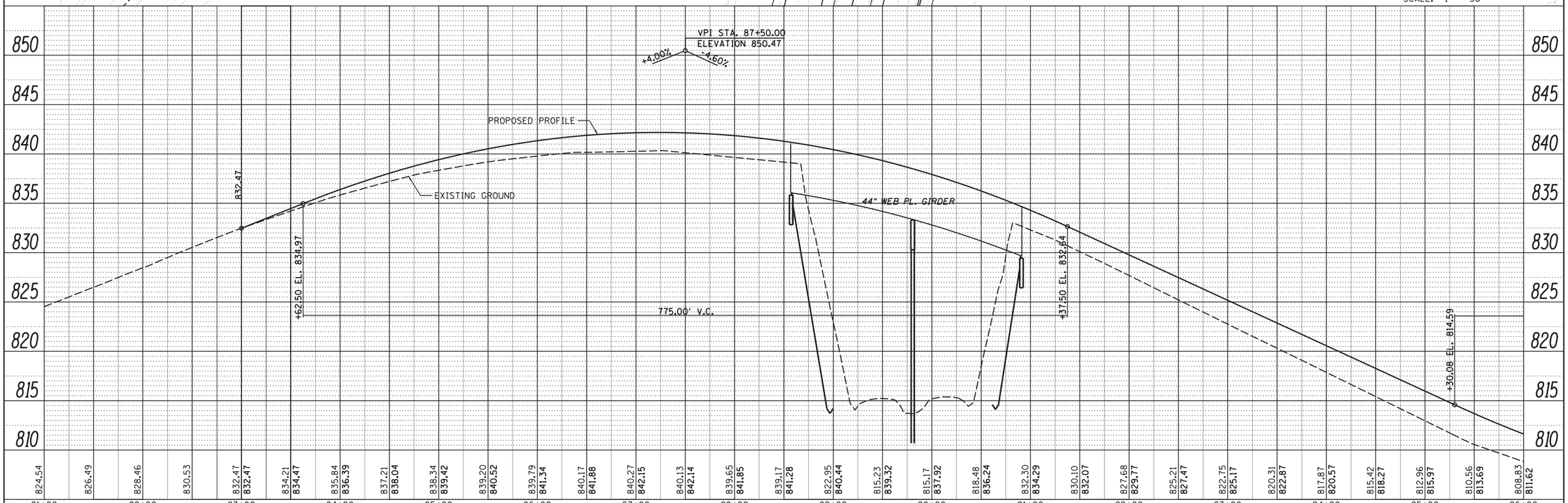
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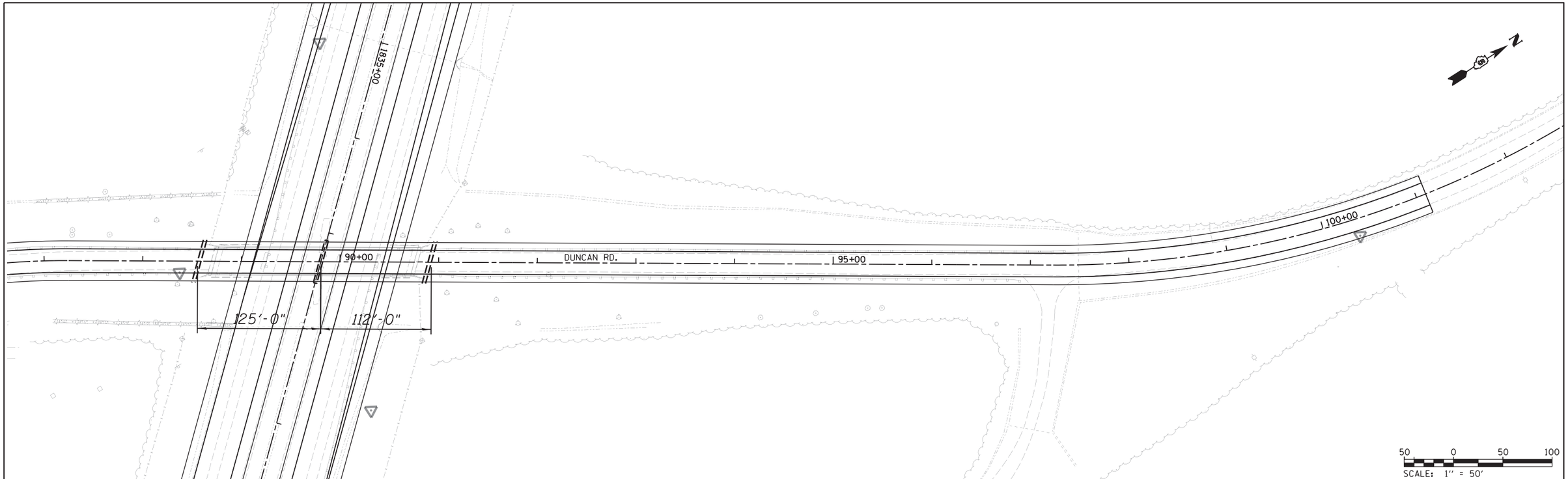
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**DEPARTMENT OF TRANSPORTATION**

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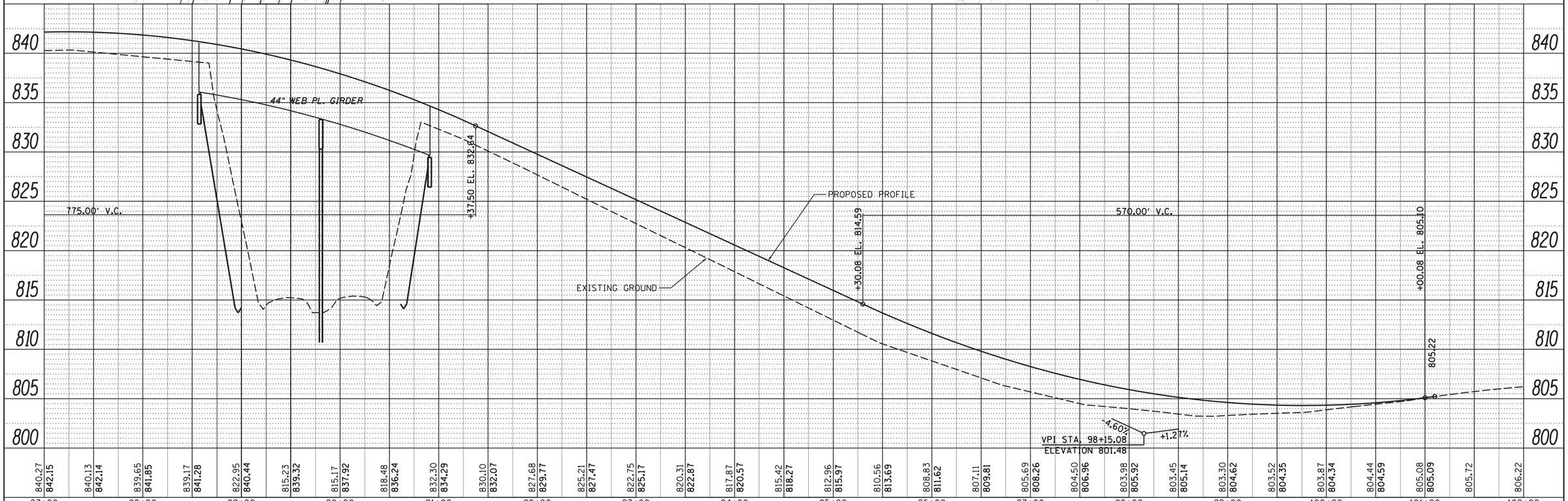
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ALTERNATE #1, DUNCAN RD.**
**PLAN AND PROFILE**

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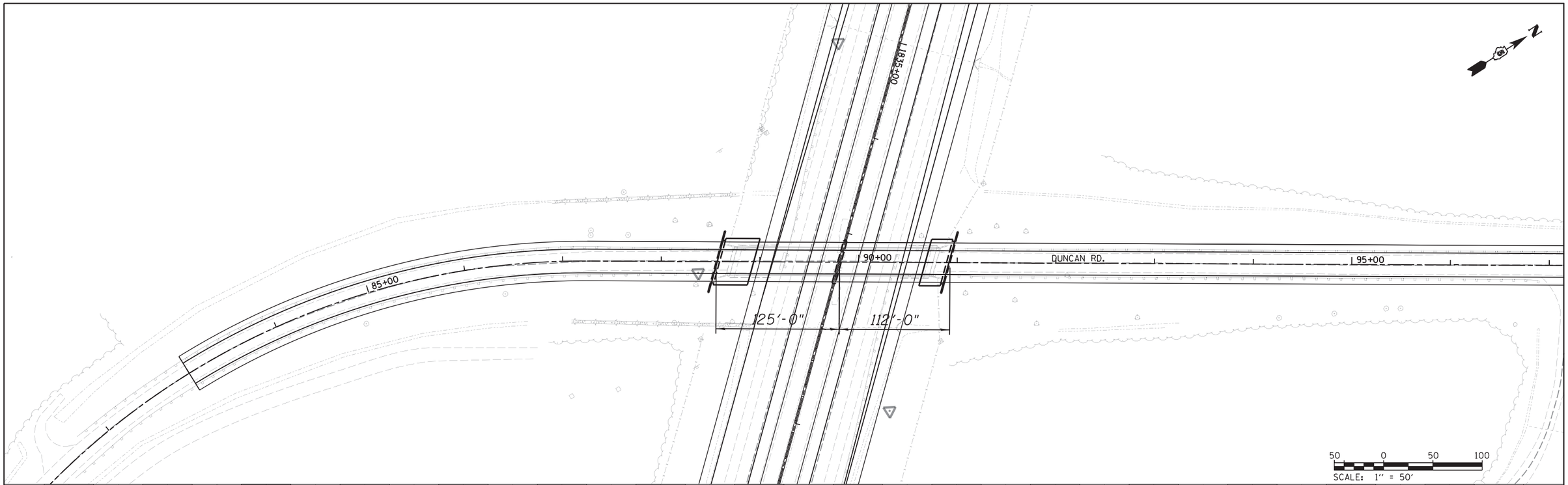
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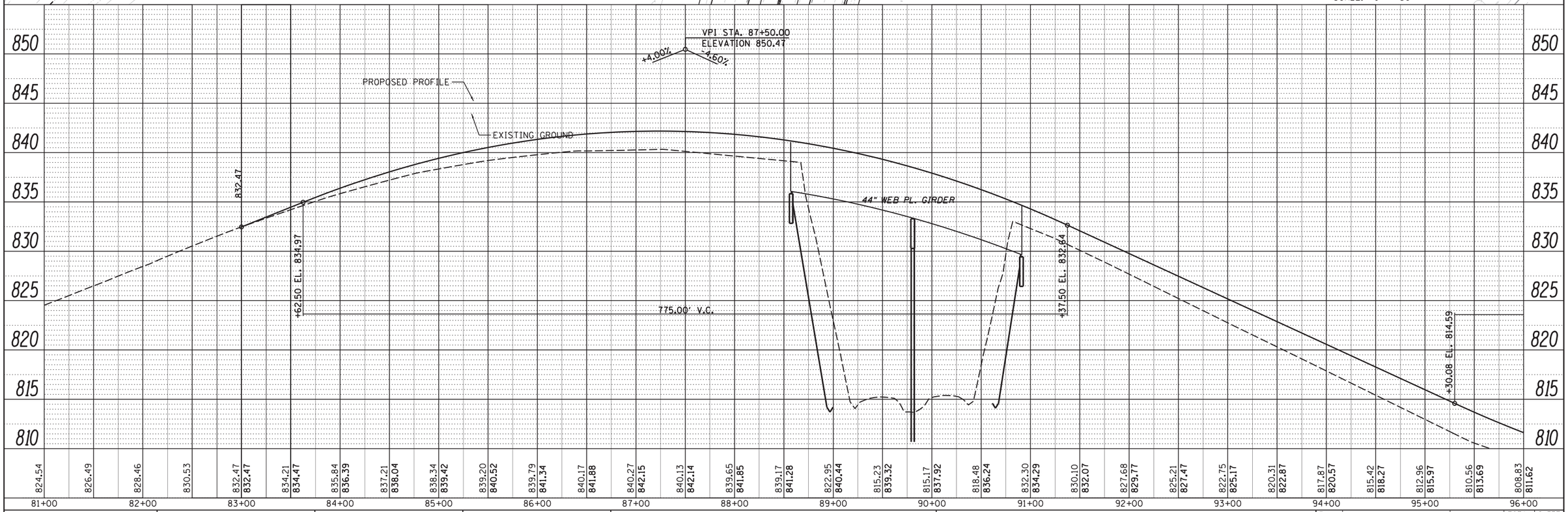
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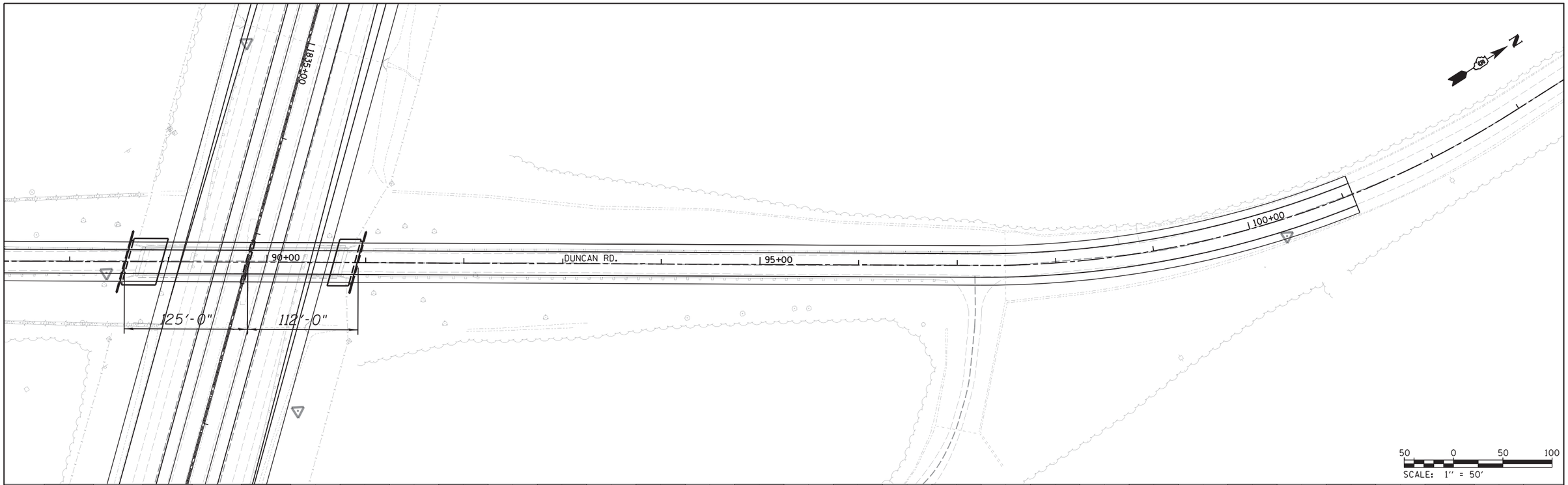




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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ALTERNATE #2, DUNCAN RD.**
**PLAN AND PROFILE**

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# MEETING MINUTES

**DATE:** March 4, 2015, 10:00 A.M.

**PROJECT:** Phase I
FAI 57 (I-57) and FAI 74 (I-74)
Interchange Reconstruction

**LOCATION:** IDOT Central Office

**ATTENDANCE:**

Rustin Keys ..... District 5 – Squad Leader
Jason Stults ..... District 5 – Project Engineer
Scott Neihart ..... District 5 – Studies and Plans Engineer
Bart Sherer ..... District 5 – Environmental Coordinator
Tim Brandenburg ..... District 5 – Bridge and Hydraulics Engineer
Paul Niedernhofer ..... IDOT Bureau of Design and Environment
Ken Runkle ..... IDOT Bureau of Design and Environment
Alex Siudyla ..... IDOT Bridge Project Group Engineer
Heidi Liske ..... Federal Highway Administration
Kevin Crider ..... Bacon Farmer Workman Engineering & Testing, Inc.
Stan Hansen ..... Crawford, Murphy & Tilly, Inc.
Brad Downen ..... Crawford, Murphy & Tilly, Inc.

A project coordination meeting was conducted (see attached agenda) to review the project, discuss the key project deliverables, and coordinate the approach for obtaining design approval. Following is a summary of the items discussed at the meeting:

I. Environmental Assessment

a. All comments have been received from FHWA, BDE, and the District for the Draft EA and revisions are underway.

i. FHWA had commented that all of the Appendices may not need to be included in the EA and that they could just be referenced. FHWA and BDE agreed that the Appendices B-H could be removed from the document and just provided as a reference.

ii. BDE had questioned in Section XIV. “Environmental Commitments” if a statement about mitigation needed to be included. Paul verified with Kim Kessinger, who had written the comment, that this comment can be removed from the review.

iii. Resurfacing of an additional 1,500’ of I-57 will be included as part of this project on the south end to match the improvement limits of

a project that will be let in 2016. This section is anticipated to be a mill and overlay project.

b. The Traffic Noise Analysis was revised based on agency review comments and re-submitted to the District. The letters to the benefited noise receptors were sent out Friday February 27th and are due back by Friday March 13th. If responses are not received from one-third of the benefited receptors, another follow-up letter will be sent out.

c. The EA will be revised and resubmitted based on the review comments to date and responses received from the first round of letters to the benefited receptors. All agencies will then have the opportunity to provide any additional comments. These comments will then be addressed, the EA revised, and if responses are received by one-third of the benefited receptors, the EA could be submitted for BDE and FHWA signature. If one-third of the benefited receptors do not reply to the noise barrier solicitation, then the next round of letters will be mailed out and the EA will not be signed off on until the benefited receptors have had an additional two weeks to respond with their preference.

d. Once the EA has been approved by BDE and FHWA, it will be made available to the public at the District, FHWA, and on IDOT's website. The EA will be made available to the public a minimum of two weeks prior to holding the public hearing.

e. After the public hearing is held, the EA Errata will be prepared to include the public comments. The EA Errata and FONSI will then be submitted to BDE and FHWA for final consideration.

II. Other Key Project Deliverables

a. The Interchange Design Study was approved on February 17, 2015.

b. The AJR was revised based on agency review comments and re-submitted on February 18th for FHWA conceptual approval. Agency review comments are pending and will be addressed once received. After the EA has been approved by BDE and FHWA, it will be included as an attachment to the AJR. The AJR will then be submitted for final approval.

c. The Traffic Management Analysis is being prepared based on the approved IDS geometry. In order to accommodate two lanes of traffic on I-57 and construct full depth pavement, 12' inside shoulders will be required. Two options for the construction of I-74 could be provided, one that requires a crossover of traffic and one that does not. The crossover option will require staged construction of the westbound lanes, then placing all EB and WB traffic on the WB pavement. The EB lanes could

then be constructed under a full closure. Closure of the interchange ramps with detours could be considered for short durations. Rustin will provide the staging plans from the recent high friction surface treatment project on the ramps for consideration of detour alternatives.

d. The Location Drainage Study is being developed, and the existing analysis is compete. The proposed analysis is being prepared based on the approved IDS geometry. The proposed location and future maintenance of the two affected detention ponds (one near the Ramp G exit and Mattis Avenue and the other at the end of Midwest Court) will need to be coordinated with the District, City of Champaign, and/or private property owners. The District questioned if there was a sanitary lift station near the pond at the Ramp G exit near Mattis Avenue. It was later confirmed in an email from Rustin that there is not a sanitary lift station, but there is an interchange lighting controller cabinet near this pond.

e. The Draft Combined Design Report is being prepared based on the approved IDS geometry.

f. The Value Engineering Study was conducted in November 2014 and recommended five potential cost saving measures. The proposed recommendations included design speed reductions, reconfiguration of the interchange to an expanded cloverleaf type or cloverleaf with collector-distributor roads, reduction in the flyover ramp outside shoulder width, and rehabilitation of the mainline pavement instead of complete reconstruction. The District reviewed all of these recommendations and determined to not incorporate any of them into the proposed design. The primary reasons for not accepting any recommendations were to provide the policy design speeds and cross sectional elements and to satisfy the project purpose and need. Rustin will provide Paul and Heidi a copy of the final Value Engineering Study Report.

III. Structural Items and BBS Coordination

a. The BCRs were submitted and review comments have been received from the Bridge Office. The review comments were all minor in nature and the BCRs will be revised and re-submitted with the TSLs and SGRs.

b. Field work has been completed for the soil borings, but the analyses have not yet been provided for use in developing the SGRs. Several of the TSLs have been prepared and will be ready to submit once the SGRs are completed. Submittal of the TSLs and SGRs will be staggered to allow better review time for the Bridge Office. Typically, the Bridge Office requires a two month review period for TSLs and SGRs. Review will also be required by FHWA, and they will receive the documents concurrently

with BBS. FHWA will require approximately one month review time and then forward their comments to BBS for consideration.

c. Preliminary lighting plans have been prepared by the Central Office and include attaching some lights to structures. Rustin will provide these preliminary lighting plans, and the lights attached to structures will be shown on the TSLs.

IV. An open house format public hearing with recording capabilities is anticipated in April. As soon as the EA is approved and made public, a date can be selected for the public hearing. The News-Gazette requires that notices be sent one week prior to publication. The initial publication must be two weeks in advance of the public hearing. Therefore, the public hearing could be scheduled as soon as three weeks from when the EA is approved and made public. Rustin will contact the County for availability of their facility from mid-April to early May.

V. Paul indicated that the District may want to begin studying the proposed pavement structure. The proposed pavement design could have a significant impact on the staged construction of the roadways, or the requirements for staging construction may be a factor in selecting a preferred pavement type.

VI. This project will be presented at the Bi-Monthly Coordination meeting on March 17th.

These minutes constitute our understanding of the items discussed at the meeting. If you have any questions, additions or corrections, please contact me by telephone at 217-787-8050 or by email bdownen@cmtengr.com.

Prepared by Crawford, Murphy, & Tilly, Inc.



By: _____ 3/5/2015

Brad Downen, PE — Date
Crawford, Murphy, & Tilly, Inc.

**I-57 & I-74 Interchange**

**Champaign, Champaign County, Illinois**

**March 4, 2015**

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DISCUSSION ITEMS

I. Project Overview

II. Environmental Assessment
   a. Draft EA: Final Agency Comments Received 3/2/2015
   b. Traffic Noise Analysis
      i. Report Revised and Submitted to District
      ii. Letters to Benefited Receptors due back 3/13/2015
   c. Revised EA Submittal
      i. Include Additional 1500' of I-57 to the South
      ii. Address Any Additional Comments As Needed
      iii. BDE & FHWA Approve EA
      iv. Document Made Available to Public
   d. Prepare EA Errata Based on Public Comments & Submit FONSI

III. Other Key Project Deliverables
   a. Interchange Design Study Approved 2/17/2015
   b. Revised AJR Submitted for Conceptual Approval 2/18/2015
   c. Traffic Management Analysis – Being Prepared Based on Final IDS
   d. Location Drainage Study
      i. Existing Analysis Complete
      ii. Proposed Analysis Being Developed Based on Final IDS
   e. Draft Combined Design Report

IV. Structural Items and BBS Coordination
   a. BCRs submitted & review comments received from BBS
   b. TSLs and SGRs being advanced and submittals pending soil borings & analysis

V. Public Hearing
   a. Open House Informational Meeting Format with Recording Capabilities
   b. Two Weeks After EA Available to Public (Publication in News-Gazette)

VI. Other Items Affecting Phase I Design Approval

VII. Bi-Monthly Coordination Meeting 3/17/2015

Illinois Department of Transportation

**Coordination Meeting**
**Project Information**

| | | | | | |
|---|---|---|---|---|---|
| Item Number | 14 | | | | |
| Contract Number | 70897 | | | | |
| Job Number | P-95-030-11 | | | | |
| Date | 03/17/2015 | | | Funding Source | NHPP |
| Route | FAI 57 | | | | |
| Marked Route | I-57 | | | Guidelines Used | Reconstruction |
| Local Name | | | | Functional Classification | Interstate |
| Section | 10(5-1-RS-1,14-1,6)R | | | Design Speed | 70mph main, 40mph min ramps |
| County | Champaign | | | Posted Speed | 65mph main, 25/30mph ramps |
| ADT | See Attachment | Year | | Percent Trucks | |
| | | Year | | | |

**Limits of Project**
West of I-57 to Prospect Avenue on I-74 and South of US 150 to Olympian Drive on I-57

**Dates Previously Discussed**
See below running minutes

**Scope of Discussion**
Please see attached running meeting minutes below.

**General Description of Existing Facility**
The existing facility, constructed in 1965, is a full conventional cloverleaf interchange that connects interstate 57 and interstate 74 in Champaign County. Each of these interstates consist of four lanes of concrete pavement with multiple hot-mix asphalt overlays. Both I-57 and I-74 have open drainage medians which are typically 64' feet and 40' in width, respectively. The adjacent section of I-74 to the east has a 40' closed drainage median with concrete barrier separating the two directions of travel.

I-74 and I-57 both have a regulatory speed limit of 65 mph. The inner interchange loop ramps and the outer connection ramps have regulatory speed limits of 25 mph and 30 mph, respectively.

Structures 010-0018 and 010-0019 carry I-57 under I-74 EB and I-74 WB, repsectively. They are both 4 span composite structures, 261.2' in length, with 7.5" reinforced concrete decks on continuous steel girders. Their substructures consist of concrete open abutments and columnar piers on spread footings. Current NBIS ratings for the decks, superstructures, and substructures are 6, 7, and 6, respectively. The sufficiency rating of the two structures is 95%. Minimum vertical clearance on I-57 is 16'-2" and minimum horizontal clearance on I-74 is 50'-1".

**Need for Proposed Improvement**
The purpose of the proposed improvement is to address operational, safety and capacity deficiencies of access at the I-57 and I-74 interchange. The project is needed because I-74 operates at a level of service D for capacity during peak traffic flow, the design speed of the interior loop ramps is deficient limiting capacity and causing accidents due to speed difference and limited weaving lengths have caused a section I-74 to become a 5% crash location.

**General Description of Proposed Improvement**
The proposed improvement will consist of constructing a directional "stack" interchange as shown in the attached concept drawing. Auxillary lanes will be contructed on I-74 from the Prospect Avenue interchange to the west side of the I-57 interchange for a total of 6 lanes on I-74 throughout the section. The median on I-74 will be converted to a closed median with concrete barrier in order to minimize land acquisition and to provide route continuity since the median to the east is a closed median with concrete median barrier. Reconstruction of the I-74/Mattis Avenue structure will be required. A minimum vertical clearance of 17'-1 will be provided at all overhead structures to allow for future resurfacings.

Due to the close proximity of the I-57/Olympian Drive interchange, auxillary lanes will also be constructed on I-57 between the I-57/I-74 interchange and the Olympian Drive interchange. The proposed structures carrying I-57 under I-74 will be constructed to allow for future lanes on I-57. Reconstruction of the I-57/US150 and I-57/Mattis Avenue stuctures will be required.

Retaining structures, lighting, and signing will also be required on both interstate routes.

**Traffic Control**
Traffic control will be a combination of road/ramp closures, median crossovers, and lane reductions. Temporary concrete barriers will provide positive protection. Detour signing will be required. The existing I-57/I-74 interchange structures may require widening in order to maintain a minimum of 2 lanes of travel in each direction during construction.

**Review of Crash Data**

2006-2010 Crash Data:

Ramps: There were 121 crashes on all 8 ramps resulting in 4 A-injury and 21 B-Injury crashes. The EB to SB outer connection ramp, NB to EB outer connection ramp, and NB to WB loop ramp had the highest proportion of those crashes, totaling 99 crashes and accounting for all 4 A-injury crashes and 16 of the 21 B-injury crashes. These 3 ramps accounted for 25 of the 29 overturning crashes and 65 of the 80 fixed object crashes.

I-74 Mainline: I-74 at the interchange is a 5 percent location with a 2011 potential for safety improvement (PSI) of 53 (critical PSI for interstate is 25). There were 152 crashes, resulting in 2 fatalities, 13 A-injury, and 18 B-injury crashes. Of these 152 crashes, there were 47 fixed object crashes, 40 rear end crashes, and 26 sideswipe(same direction) crashes.

I-57 Mainline: There were 62 crashes, resulting in 8 B-injury crashes. Of these 62 crashes, there were 23 fixed object crashes and 17 sideswipe(same direction) crashes.

**Explanation of Exceptions**
To Be Determined (TBD)

**Environmental Actions Desired**

| | |
|---|---|
| Nationwide 404 Permits | TBD |
| Environmental Survey Request | |
| Submitted | 09/18/2012 |
| Cultural Clearance | TBD |
| Biological Clearance | TBD |
| T & E Clearance | TBD |
| Special Waste Assessment | TBD |
| Categorical Exclusion | EA |

**Additional Right-of-Way Cleared**
Land acquisition will be necessary. Limits of acquisition are to be determined.

**Agencies From Which Further Coordination is Required**
USACE, IDNR

**Attachment(s)**
Aerial Location Map
Interchange Concept Plan
Preliminary I-57 and I-74 Typical Sections
Traffic Forecasts

# RUNNING COORDINATION MEETING MINUTES

**02/05/2013** The project was presented by Rustin Keys in the Early Involvement Meeting held at the Region 3/District 5 Office on February 5th, 2013. Mr. Keys presented one concept for the new interchange. Representatives from BDE and FHWA were interested in looking at additional concepts for comparison. The project was previously classified as a CE2; policy changes brought up by Mr. Brand may change the classification to an EA. The District was asked to come to the CO at a later date to formally present the project. A meeting is scheduled for 10:00 AM March 4, 2013 at the Central Office.

**03/04/2013** A meeting to further discuss the project was held at the Central Office in Springfield, IL on March 4th, 2013. People in attendance were; Mr. Mike Staggs, Ms. Heidi Liske and Ms. Jan Piland with the Federal Highway Administration (FHWA), Mr. Mike Brand, Mr. Scott Stitt, Mr. Lance Kidd and Mr. Greg Feeny with IDOT Central Office (CO) and Mr. Craig Emberton, Mr. Scott Neihart, Mr. Rustin Keys, Mr. Jeff Allen, Mr. Jason Stults and Mr. Bart Sherer with IDOT Region 3/District 5. FHWA and CO advised the District that further explanation of the Purpose and Need for the project was necessary and that it needs to be well supported with data. All the alternatives will be evaluated based on meeting the Purpose and Need. CO also believes the project should be a Context Sensitive Solutions (CSS) project. Preliminary discussions regarding the project indicated the project would not classified as an Environmental Assessment (EA); however given the scope of the project, potential impacts to the community and the number of complex alternatives under evaluation, it is of the opinion of the CO and FHWA that the project should be processed as an EA. The operational and safety impacts to the adjacent interchanges (Olympian Drive, Prairieview Rd, Prospect Avenue, and I-72) will be addressed in the AJR; impacts to economic development shall be discussed with the local business community and documented in the AJR as well. The ITS shall be included as an appendix to the AJR with the FHWA giving conceptual approval of the AJR prior to completion of the NEPA; FHWA will grant approval of the AJR upon completion of the NEPA. FHWA emphasized the need for logical termini to be established for the project; Prairieview Road and Prospect Avenue interchanges were suggested for I-74 and I-72, Olympian Drive or Market Street interchanges were suggested for I-57. FHWA advised the District needed to perform a deeper crash analysis for the project by reviewing the individual crash reports to determine the cause of the crashes in the 5% location. The proposed interchange design should address the cause of the crashes in the 5% location with an emphasis on eliminating fatal and type A injury crashes. FHWA noted this would be considered a Type 1 project due to the addition of a through lane in each direction on I-74, thus requiring a noise study. CO also asked that Value Engineering be performed on the project. Several different concepts of the interchange were presented for discussion as well. It was also suggested that the project be a regular item discussed at the bi-monthly scheduled Early Involvement Meetings.

**05/21/2013** A meeting to further discuss the project was held via video conference on May 21, 2013. In attendance were Jason Stults, Rustin Keys, Nancy Fasig, Brent Cearlock, Jeff Allen, Bright Avusuglo and Bart Sherer from IDOT/D5, Heidi Liske with the Federal Highway Administration (FHWA) and Lance Kidd with IDOT Central Office Bureau of Design and Environment (BDE). The District formally advised FHWA and BDE that the project will be pursued as an Environmental Assessment (EA). It was asked if the project could follow the abbreviated EA format for the project. An e-mail from FHWA and IDOT Central Office received later on 05/21/2013 advised the abbreviated EA format could be followed for the project. Four concepts for the proposed interchange were presented to FHWA and BDE on May 6, 2013 via e-mail. The District was asking FHWA and BDE for concurrence before the District could proceed into refining the geometry and developing CORSIM models for the 4 concepts. An e-mail dated 05/14/2013 was received by the District stating both FHWA and BDE concur with the four concepts allowing the District to proceed. BDE and FHWA were also advised that the District will be pursuing construction of a six lane cross section with auxiliary lanes on I-57 with this project.

**09/24/2013** The project was discussed via a video conference on September 24, 2013. In attendance were Scott Neihart, Jason Stults, Rustin Keys, Jeff Allen, Avoree Gore, David Jayme and Bart Sherer from IDOT/D5, Heidi Liske with the Federal Highway Administration (FHWA), John Sherrill and Paul Niedernhofer with IDOT Central Office Bureau of Design and Environment (BDE), Kevin Crider with Bacon Farmer Workman (BFW) and Stan Hansen and Brad Downen with Crawford Murphy Tilly (CMT). A draft Purpose and Need (P&N) statement was previously distributed to IDOT Central Office, FHWA and District 5 for comment; comments have been received from all agencies and have been forwarded to BFW/CMT . FHWA is requesting that the P&N include more detailed information regarding the safety issues associated with the project; do this IF this is an identified need of the project to address identified safety problems. During the meeting it was described as if reducing access points was a goal of the new design, but it wasn't discussed or mentioned in the P&N. If this is a need and it is supported with the data, include it. If it is not, then it does not need to be included in the P&N. Data was provided in the P&N, but it was not evident the data was strongly analyzed to determine why crashes were occurring. Recommended revisions; 'FHWA recommends CMT drill down into the individual crash reports at key problem locations to properly identify and/or confirm what is causing the crashes. CMT will be preparing a second draft of the P&N incorporating the comments received to date. CMT asked about the status of the Section 106 site identified within the project limits. Bart Sherer advised that the District ran into some difficulty in obtaining access to the private property where the 106 site is located to conduct a Phase 2 Archeological survey. After discussing with the property owner, the District should have access to the site after harvest is over; we anticipate the harvest to be completed in late October to early November. Depending on what is found during the survey, the Central Office cultural unit will provide clearance or determine if further survey is required. CMT was advised that as soon as the cultural information is available, it will be forwarded on to them.

CMT and BFW presented 5 design alternatives for the interchange reconstruction. Each alternative design includes a 3 lane cross section with median barrier wall on both I-57 and I-74. All 5 alternatives maintain the current alignments for I-57 and I-74. Auxiliary lanes on I-57 between the subject interchange and the Olympian Dr. interchange to the north are expected for each alternative. Reconstruction of the bridges in close proximity to the interchange will be required to accommodate the additional thru and auxiliary lanes. There are no design exceptions to date. John Sherrill mentioned truck rollovers. It was conveyed that the rollover issue would be addressed in the safety analysis.

Two areas in the vicinity of the interchange are being considered for a new school. Rustin Keys advised there was a website that provides information regarding the school. Rustin will be sending a link for the website to everyone in attendance.

A brief conversation was held regarding the NEPA 404 merger meeting process. The District plans to pursue an exemption for the NEPA 404 merger process if an Individual 404 Permit is needed. The first step for exception is to request exception, via letter, from FHWA. Specific instructions regarding the letter and a potential merger meeting presentation were addressed in FHWA's 9/24 follow-up email. Due to the timing, it was decided to present the project for exemption at the February 2014 NEPA 404 merger meeting if necessary.

CMT will be preparing a second draft of the P&N. A target date of October 18th for submittal of the second draft for comment was set.

**02/07/2014** The project was discussed via a video conference on February 7, 2014. In attendance were Scott Neihart, Jason Stults, Rustin Keys, Jeff Allen, Tim Brandenburg, Matthew Murphy, Greg Eaglin, Joe Graziano, Carl Baker and Bart Sherer from IDOT/D5, Heidi Liske with the Federal Highway Administration (FHWA), John Sherrill, Paul Niedernhofer and Scott Stitt with IDOT Central Office Bureau of Design and Environment (BDE) and Stan Hansen and Brad Downen with Crawford Murphy Tilly (CMT). CMT advised that there has been no change in the Purpose and Need (P&N) for the project. In addition, CMT asked about concurrence from FHWA for the P&N. FHWA advised that their allowing the P&N to be presented at the February 27, 2014 NEPA 404 Merger Meeting is basically their concurrence; formal concurrence of the P&N will come from the various resource agencies associated with the NEPA process. A public meeting for the project was scheduled for February 5, 2014, but due to adverse weather, the public meeting was rescheduled for February 19th.

The question was asked if any feedback from the public or local news agencies has been heard of or received regarding the project to date. As noted, nothing has been received or has been heard so far except it was mentioned that there may have been some question from the local newspaper as to why work was being done to this interchange when other interchanges should be addressed first. Heidi Liske with FHWA provided a recap of what can be expected when the project is presented at the NEPA 404 Merger Meeting.

**03/18/2014** The project was discussed via a video conference on March 18, 2014. In attendance were Scott Neihart, Jason Stults, Jeff Allen, Brian Hogan, Ben Deters, Brian Castro, Nancy Fasig and Bart Sherer from IDOT/D5, Heidi Liske with the Federal Highway Administration (FHWA), Scott Stitt with IDOT Central Office Bureau of Design and Environment (BDE) and Brad Downen with Crawford Murphy Tilly (CMT). Mr. Downen provided the following information regarding the project:

- Several stake holder meetings have been held regarding the project to date; the stake holder meetings included local municipalities, politicians etc.
- A public open house was held on February 19, 2014; all comments received to date have been positive. The deadline for comments was March 12, 2014. A summary of the comments will be prepared.
- The project was presented at the February 27, 2014 NEPA 404 Merger Meeting. Concurrence on the Purpose and Need was given by the resource agencies. In addition, the resource agencies determined the project did not have to go through the 404 Merger process. Ms. Liske mentioned that she received very positive feedback from the resource agencies regarding the presentation provided at the merger meeting
- The Interchange Type Study (ITS) was submitted to the District on Friday March 14, 2014; review of the ITS is expected by April 1, 2014
- Will be pursuing Alternative 1 as the preferred alternative
- Currently working on the Access Justification Report (AJR) seeking conceptual approval of the AJR from the FHWA
- Currently working on preparation of the Interchange Design Study (IDS)
- Noise monitoring for the Noise should begin the week of March 24, 2014
- Development of the draft EA has begun
- Still waiting on the results of the addendum Preliminary Environmental Site Assessment

Mr. Downen asked about the status of the Section 106 site within the project limits. Bart Sherer advised that the Department was not allowed access to the site to conduct a Phase 2 Archeological Survey. Since the Department is unable to conduct the survey Mr. Sherer is working with Mr. Brad Koldehoff, Cultural Resources Unit Chief (Acting)/Chief Archaeologist for IDOT to coordinate the actions needed to keep the project moving forward regarding cultural resources.

District 5 advised the current alternatives reflect an interstate design speed of 70 mph with an interstate design ramp speed of 50 mph. A recent policy change mandates an interstate design speed of 75 mph. The District advised that the development of the Interchange Design Study (IDS) will reflect the new policy; **Mr. Stitt agreed with not adjusting the alternatives to meet the new policy interstate design speed and developing the IDS to reflect the new policy interstate design speed.**

**05/20/2014** The project was discussed via a video conference on May 20, 2014. In attendance were Scott Neihart, Jason Stults, Nancy Fasig, Todd Black, Tim Brandenburg, and Bart Sherer from IDOT/D5, Heidi Liske with the Federal Highway Administration (FHWA), Paul Niedernhofer with IDOT Central Office Bureau of Design and Environment (BDE), Mr. Alex Siudyla and Mr. Tim Craven with IDOT Central Office Bridges and Structures, Stan Hansen, Brad Downen, and Mr. Bill Bailey with Crawford Murphy Tilly (CMT) and Mr. Kevin Crider and Mr. Branden Poiter with Bacon Farmer Workman. Mr. Downen with CMT provided the following outline of items to be discussed:

**I. Project Overview-** Mr. Downen provided a short overview of the project for those in attendance that have not been involved with previous Coordination Meetings.

**II. Interchange Type Study (ITS)**

a. Agency Review Comments- FHWA, BDE, and District pre-final ITS review comments were forwarded to Kevin Crider on 4/2/2014
b. ISATe Review (Safety/CH2M Hill)- Review is currently ongoing with comments expected by Friday, 5/30/2014.
c. Preferred Alternative- FHWA indicated FHWA has no issues with pursuing the ITS preferred alternative at this point. In the event the EA determines a different preferred alternative, the alternatives (EA and ITS) will need to be revisited.
d. Further CUUATS Coordination- Coordination is currently ongoing.

**III. Environmental Analysis**

a. 2nd PESA Addendum- Mr. Downen asked about the status of the PESA for Addendum B. At the time of the meeting, the PESA for addendum B had not been received by the District. The District did receive the Addendum B PESA on 05/23/2014. A copy was forwarded to BFW and CMT on 05/28/2014.
b. Noise Monitoring, Modeling, Analysis- The field work is finished; currently working towards completion of the analysis.
c. Development of Draft EA- The development of the Draft EA has begun.

**IV. I-57 Typical Section Revision**

a. Open Median to Match Existing Configuration-
b. Four Lanes (Two Each Direction)
c. Accommodate Future Widening to Inside for Six Lanes

a, b, and c- Studies have indicated that I-57 does not warrant a 6-lane cross section in either direction;I-74 does warrant a 6-lane cross section. I-57 will be now designed to provide for a 4-lane cross section with future widening to 6 lanes being accommodated to the inside/median.

**V. BDE Manual Interstate & Ramp Design Speed Update (75/55 mph)**

a. ITS to Be Completed with 70/50 mph Design Speeds- As discussed at the March Coordination meeting, the current alternatives reflect an interstate design speed of 70 mph with an interstate design ramp speed of 50 mph; the ITS was developed along those guidelines and is far enough along that development of a new ITS is not feasible. A recent policy change mandates an interstate design speed of 75 mph and a ramp speed of 55 mph; the development of the Interchange Design Study (IDS) will reflect the new policy.
b. Inside Shoulder Width & Stopping Sight Distance along Structures- Structure shoulder widths were discussed in some detail. Design studies indicate the shoulder widths could be significant in width. Design exceptions for a narrower structure ramp width were mentioned. It was decided to pursue the shoulder width per current design standards; at the time the shoulder widths are determined, the possibility of a design exception will be discussed again in greater depth.
c. Structural Coordination- The cost estimate per foot for structure used by the District was $150/ft. Central Office Bureau of Bridges and Structures mentioned this estimated dollar amount was low; a cost of $300 was more appropriate. Additional structure related items discussed were the use of MSE wall to reduce structure lengths, different beam types, concerns for current column widths, structure span to depth ratios and integral abutments and pier caps. The Central Office Bridges and Structures also asked that piers be eliminated at the edge of shoulders.

**VI. Future Coordination**

a. Final Interchange Type Study- See comments in section V, a. above.
b. Access Justification Report and Conceptual Approval- The District will pursue conceptual approval of the AJR.

c. Interchange Design Study- As indicated in previous coordination meetings, the development of the IDS will reflect the current policy of an interstate design speed of 75 mph and a ramp speed of 55 mph. Central Office Bureau of Bridges and Structures will be involved in the coordination for development of the IDS.

**07/22/2014** The project was discussed via video conference on July 22, 2014. In attendance were Ms. Nancy Fasig, Mr. Rustin Keys, Mr. Jeff Allen, Mr. Tim Brandenburg, Mr. Jason Stults, Mr. Bright Avusuglo-Ahia and Mr. Scott Neihart from IDOT/D5, Ms. Heidi Liske with the Federal Highway Administration (FHWA), Mr. Paul Niedernhofer, Mr. John Sherrill and Mr. Ken Runkle with IDOT Central Office Bureau of Design and Environment (BDE) and Mr. Brad Downen with Crawford Murphy Tilly (CMT).

Mr. Downen with CMT presented the following outline of items to be discussed:

I. Project Overview
II. Environmental Analysis
    a. Project determined not necessary to go through the NEPA Merger Process
    b. Received 2nd PESA Addendum 5/28/2014
    c. Noise Monitoring, Modeling, Analysis
    d. Development of Draft EA
III. Recent Coordination Activities
    a. Bridge Office 7/15/2014
    b. City of Champaign 7/17/2014
IV. Interchange Type Study (ITS)
    a. Agency Review Comments (Signing)
    b. ISATe Review/Update
    c. Selection of Preferred Alternate & Revisions to Alternates 1 & 2
        i. Design Speeds
        ii. I-57 & 74 Typical Sections
        iii. Ramp Structures
        iv. Additional Analysis to be included in Final ITS
V. Project Schedule & Future Coordination
    a. Final Interchange Type Study
    b. Preliminary Interchange Design Study
    c. Draft Access Justification Report
    d. Draft Environmental Assessment
    e. Value Engineering Study
    f. Structural Items and BBS Coordination

Ms. Liske inquired if the district planned to use the EA form; the District advised that they intend to use the form. Mr. Downen discussed the recent coordination activities with the Bureau of Bridges and Structures and the City of Champaign. The District noted the City is interested in the realignment of Duncan Road over I-74. Ms. Liske noted the FHWA will be interested in the signing plans during phase II engineering as part of their oversight. Mr. Downen indicated there were no significant comments generated by the Bureau of Safety Engineering's ISATe analysis review. Mr. Downen provided a status update on the ITS; the previously reviewed ITS was completed prior to the increase in design speed. The final ITS will contain the original 5 alternate designs and will be supplemented with a study on the revisions to alternates 1 and 2; these revisions will reflect the current design speed revised median widths, and a four lane cross section on I-57. Mr. Downen discussed the project schedule; a Value Engineering Study will be conducted after the submittal of the preliminary IDS.

**09/16/2014** The project was discussed via video conference on September 16, 2014. In attendance were Ryan Carroll, Avoree Gore, Jason Stults, Rustin Keys, Tim Brandenburg, Jeff Allen, & Scott Neihart from IDOT/D5, Heidi Liske with the Federal Highway Administration (FHWA), Ken Runkle and Paul Niedernhofer with IDOT Central Office Bureau of Design and Environment (BDE) and Stan Hansen and Brad Downen with Crawford Murphy Tilly (CMT). Brad Downen of CMT presented an update on the I-57/I-74 interchange project; the following items were discussed:

I. Project Overview
II. Environmental Analysis
    a. 2"d ESR Addendum Submitted (no sign-offs or clearances yet)
    b. 2nd PESA Addendum Received 5/28/20 I 4
    c. 3rd ESR Addendum Submitted in August 2014
    d. Noise Monitoring, Modeling, Analysis
    e. Development of Draft EA
III. Interchange Type Study (ITS)
    a. Revisions to Alternates I & 2 for New Policy Design Speeds
    b. Additional Analysis included in Final ITS
    c. Selection of Preferred Alternate
    d. Agency Review Comments
    e. Concurrence on Recommended Interchange Type Configuration
    f. Approval of Final ITS
IV. Project Schedule & Future Coordination
    a. Preliminary Interchange Design Study
    b. Draft Access Justification Report
    c. Draft Environmental Assessment
    d. Value .Engineering Study
    e. Structural Items and BBS Coordination
    f. Inside Shoulder Widths on Ramp Structures

Mr. Downen noted there have been no sign-offs or clearances for the 2nd ESR submittal. The 2nd PESA addendum was received on 5/28/2014. The 3rd ESR addendum was submitted in August 2014. This addendum included Duncan Road. The existing noise modeling and analysis is complete. The proposed noise analysis will be based upon the final alternate. The ITS revisions and disposition of comments were submitted in August. Paul Niedernhofer and Heidi Liske found the responses acceptable. Mr. Niedernhofer will discuss the ITS with Scott Stitt also. Mr. Niedernhofer and Ms. Liske did not indicate any objections to alternate 2 as the preferred alternate. Under “Project Schedule and Future Coordination”, Mr. Downen indicated the preliminary IDS based upon alternate 2 and the draft access justification report will likely be submitted in early October. The draft Environmental Assessment prepared by Kaskaskia Engineering will likely be submitted in October or early November. Ms. Liske noted the Access Justification Report and the Environmental Assessment should be submitted as Microsoft Word documents. This allows FHWA to use the “track changes” feature. Mr. Downen is coordinating the Value Engineering (VE) Study with District 5 staff. The IDS will serve as the primary document in the VE study. Mr. Niedernhofer recommended either Greg Feeney or Scott Stitt as potential participants in the VE study representing BDE. Soil borings for the proposed structures will be the next structural items to address. Mr. Downen discussed the inside shoulder widths on the ramp structures. Using a wider shoulder to accommodate the 55 mph design speed will cost approximately $6,000,000 more than using a 50 mph design speed with the subsequently narrower shoulders. Mr. Niedernhofer noted shoulders wider than those proposed for the 55 mph design speed have been used successfully in the Chicago area, and he was not aware of any safety issues related to the wide shoulders. Mr. Brandenburg noted that the bridge office may find an additional beam line could be required to accommodate the additional shoulder width. This may cause the bridge office to oppose the wider shoulders. Mr. Neihart noted that it would be less than desirable to request a design exception for design speed on a reconstructed interchange that has safety issues stemming from deficient roadway geometry.

**10/28/2014** The project was discussed via video conference on October 28, 2014. In attendance were Jason Stults, Nancy Fasig, Rustin Keys, David Jayme, Ben Deters, Steve Coombes and Bart Sherer from IDOT/D5, Heidi Liske with the Federal Highway Administration (FHWA), Ken Runkle and Paul Niedernhofer with IDOT Central Office Bureau of Design and Environment (BDE), Stan Hansen with Crawford Murphy Tilly (CMT) and Kevin Crider with Bacon Farmer & Workman (BFW). Mr. Hansen and Mr. Crider presented an update on the I-57/I-74 interchange project; the following items were discussed:

I. Project Overview

II. Environmental Analysis

a. 2nd ESR Addendum Submitted December 2013 (no sign-offs or clearances yet)
b. 2nd PESA Addendum Received 5/28/2014
c. 3rd ESR Addendum Submitted in August 2014
d. Noise Monitoring, Modeling, Analysis (advancing with IDS geometry)
e. Development of Draft EA (submittal anticipated in November 2014)

III. Project Status
a. Approval of Final Interchange Type Study Received 9/16/2014
b. Preliminary Interchange Design Study (submitted for review)
c. Draft Access Justification Report (submitted for review)

IV. Project Schedule & Future Coordination
a. Draft Environmental Assessment
b. Value Engineering Study 11/6 – 11/7/2014
    i. Micah Loesch, FHWA
    ii. Greg Feeny, IDOT BDE
    iii. Derek Verhulst, IDOT BBS
    iv. David Speicher, IDOT D5
    v. Ken Crawford, IDOT D5
    vi. Five additional members from the consultant staff
c. Structural Items and BBS Coordination
    i. BCRs submitted for existing structures
    ii. Soil borings being coordinated
    iii. SGRs and TSLs pending preliminary IDS review
d. Draft Project Report
e. Public Involvement Activity

Mr. Hansen inquired about the status of the 2nd and 3rd addendum ESR environmental clearances; Mr. Sherer advised he had not received any additional information regarding the addendums; Mr. Sherer will check on the status and provide an update. In addition, Mr. Sherer will be contacting the Illinois Department of Natural Resources and the US Army Corps of Engineers regarding wetlands and wetland mitigation options. The results of the noise monitoring and analysis should be completed by the end of October. A draft of the EA is anticipated in November 2014. All parties involved asked that the Draft EA be provided in WORD format to allow for ease in making comments. Approval of the Final ITS was received on 09/16/2014; the Preliminary IDS and the Draft AJR are still under review. A value Engineering Study will be conducted on November 6 & 7, 2014; a total of ten people will be involved with the study. The Draft Project Report is currently being worked on in conjunction with all other activities. Policy requires that BDE and FHWA decide at a coordination meeting if the project warrants a public hearing, which is a type of public involvement activity that specifically requires the preparation of transcripts and/or electronic recordings of the proceedings. Ken asked about the feedback received from the public at the first public involvement activity (a public open house meeting); Mr. Keys explained that comments from the public were positive in regards to the need for the project and that the Department's preferred alternative is coincident with that of the meeting's attendees and adjacent property owners. BDE and FHWA then agreed that a public hearing was not required for the project due to the lack of adversity. The District informed BDE/FHWA that our next public involvement activity would be an informational public open house meeting identical to the previous public involvement activity held in February of 2014.

**01/28/2015** The project was discussed via video conference on January 28, 2015. In attendance were Ken Runkle, Paul Niedernhofer with IDOT Central Office Bureau of Design and Environment (BDE), Heidi Liske with the Federal Highway Administration (FHWA), Scott Neihart, Jason Stults, Rustin Keys, Jeff Allen, Ryan Carroll and Bart Sherer from IDOT/D5 and Brad Downen with Crawford Murphy Tilly (CMT). Mr. Downen presented an update on the I-57/I-74 interchange project; the following items were discussed with comments shown in red:

I. Project Overview

II. Environmental Analysis It was reiterated that per coordination with the IDNR and USACE, there are no jurisdictional wetlands within the project limits; no wetland mitigation is required for the project.
   a. Draft EA Submitted 12/10/2014 (Agency Review Pending) FHWA comments have been received, district comments have been received. Ken advises BDE comments are still being work on but should be completed soon; possibly around February 14, 2015. FHWA and BDE asked that the Districts comments be sent to them.
   b. 3rd ESR Addendum Submitted in August 2014
   c. 3rd PESA Addendum Received 1/5/2015 The District advised they are working on a PESA response for the project; however to effectively respond to the PESA for PSI work, more project specific plans are needed.
   d. Traffic Noise Analysis (Report Submitted with Draft EA) Ken advised he would review the Noise analysis as soon as possible and provide comments and or recommended changes. By reviewing the analysis and providing comments, the District and consultant can move forward with the additional noise analysis processes including polling of the residents in the vicinity of the potential noise wall. The noise solicitation will be completed prior to the Final Public Involvement meeting.
   e. Viewpoints of Benefited Receptors for Noise Abatement Measure Reasonableness

III. Project Status
   a. Preliminary Interchange Design Study Submitted 10/10/2014 (Reviews Received)
   b. Draft Access Justification Report Submitted 10/10/2014 (Reviews Received)
   c. Value Engineering Study 11/6 – 11/7/2014 (IDOT Review Completed)- Will need to be a part of the Project Report
   d. Structural Items and BBS Coordination
      i. BCRs submitted & review comments received from BBS
      ii. Soil borings being conducted All participants were made aware that the soil borings are currently being worked on by IDOT staff; it is anticipated that weather permitting, the first boring reports may be complete by February 2, 2015.
      iii. TSLs and SGRs being advanced and submittals pending soil borings
   e. Traffic Management Analysis Rustin asked that he receive a copy of the Traffic Management Analysis for review prior to the draft design report submittal
   f. Design Exceptions: None Identified to Date

IV. Project Schedule & Future Coordination
   a. Revised IDS Submittal – February 2015
   b. Revised AJR Submittal – February 2015 Heidi was asked if the EA must be complete before conceptual AJR approval; she was going to follow up on whether conceptual approval of the AJR could be given before Final approval
   c. Draft Project Report Submittal – February 2015 The project is a full oversight project; that being the case, a copy of the project report will be sent to BDE and FHWA for review and comment.
   d. Public Involvement – Open House Informational Meeting – April 2015 This will be the Final Public Involvement Meeting

Shoulder widths on I-57 were briefly discussed. Policy doesn't require 12' based on future traffic, but the District may consider designing for 12' width due to MOT considerations.

**03/17/2015** The project was discussed via video conference on March 17, 2015. In attendance were Ken Runkle, Paul Niedernhofer and Kim Kessinger with IDOT Central Office Bureau of Design and Environment (BDE), Heidi Liske and Jan Piland with the Federal Highway Administration (FHWA), Scott Neihart, Jason Stults, Rustin Keys, Nancy Fasig, Ben Deters, Brian Hogan, Bright Avusuglo-Ahia and Bart Sherer from IDOT/D5 and Brad Dowen and Stan Hansen with Crawford Murphy Tilly (CMT). Mr. Downen presented an update on the I-57/I-74 interchange project; the following items were discussed with comments following in red:

I. Project Overview

II. Environmental Assessment

a. Traffic Noise Analysis

i. Letters to Benefited Receptors Received 3/13/2015

ii. Next Step to Obtain Noise Concurrence

The District advised that out of the 375 letters to benefitted receptors, only 47 had replied to date; the number of responses did not meet the minimum number of responses (1/3); Tuesday March 13 was the deadline for the first mailing. Due to not meeting the minimum number of responses, a second mailing is warranted; the second round of letters will be sent via certified mail March 20, 2015; respondents will be given two weeks to reply.

b. Draft EA:

i. Comments Received to Date Have Been Addressed

ii. Appendices B-H Have Been Removed and Are Referenced Only

iii. Submit EA for Further Consideration

c. Revised EA Submittal with Noise Confirmation

i. Address Any Additional Comments As Needed

ii. BDE & FHWA Approve EA

iii. Document Made Available to Public

d. Prepare EA Errata Based on Public Hearing Comments & Submit FONSI

FHWA asked that verbiage be included in the EA regarding cell towers and wind mills in the vicinity of the project. It was discussed whether the EA should be sent to other agencies such as the EPA, USACE etc. for review. It was decided that since the project was presented at a 404 Merger meeting and that all parties determined this project did not meet the need to go through the 404 Merger process, the EA would not be sent for their review. It was also agreed that the revised draft EA will be submitted with the traffic noise analysis (TNA) information gathered to date; the EA will be revised to reflect the final results of the TNA when received. Once completed, CMT will send a copy of the Final draft EA to FHWA, CO and the District for one last review before being published for public comment. The Final EA will be made available to the Public for 15 days prior to the final public Hearing. After the final public hearing, a request for the FONSI will be submitted.

III. Other Key Project Deliverables

a. Process to Submit Revised AJR for Conceptual Approval to FHWA HQ

The District should receive review comments for the AJR by April 13th, 2015 or before.

b. Traffic Management Analysis – Continuing Preparation, Considering District Provided Information

The District should receive review comments or the TMA by the end of March or before.

b. Location Drainage Study – Completing Proposed Plan

Some discussion was brought up regarding the construction of retention/detention basins on IDOT ROW. It was noted that retention/detention basins could be constructed in IDOT ROW if necessary.

d. Draft Combined Design Report Being Developed

IV. Structural Items and BBS Coordination

a. Soil Borings & Preliminary Analysis Provided for Foundation Studies

b. TSLs and SGRs Being Advanced – Submittals to Begin in March

The District advised a benefit cost analysis for LED vs Sodium Vapor interchange lighting is currently being worked on; as soon as the results are available and a type of light is selected, all parties will be notified. Conduits for traffic signal interconnect and interchange lighting was briefly discussed; an empty conduit running along the east side of the project will be utilized for traffic signal interconnects and a conduit along the west side will be utilized for lighting. The District asked that they be kept in the loop on coordination between CMT and the CO Bridge Unit; the District did note that integral abutments are the preferred structure type. .

V. Public Hearing (Tentative Dates Reserved April 16, 23, & 30)

a. Open House Informational Meeting Format with Recording Capabilities

b. Notice Will Be Sent to News-Gazette Once EA Is Made Public (Pending Noise)

c. Notice to Be Published Two Weeks Prior to Public Hearing
CMT is currently working on a draft public notice; the draft will be sent to the District for review and comment. CMT also advised they are currently working on a 3D rendering of the project as well as other various exhibits for presentation at the final public hearing. Jan Piland with FHWA strongly encouraged the public hearing format include a formal session affording the public time and the opportunity to stand in front of their peers and comment. Jan provided an example of how this has been addressed in past public hearings. It is anticipated that the final public hearing will be held in late April or Early May and will be held at the Champaign County Highway office.

**05/20/2015** The project was presented via video conference on May 19 2015. In attendance were Scott Neihart, Nancy Fasig, Rustin Keys, Todd Black, and Bart Sherer from IDOT/D5, Heidi Liske with the Federal Highway Administration (FHWA), Ken Runkle, Paul Niedernhofer and Vince Madonia with IDOT Central Office Bureau of Design and Environment (BDE) and Stan Hansen and Brad Dowen with Crawford Murphy Tilly (CMT). Mr. Downen presented an update on the project; the following items were discussed with comments shown in red:

I. Project Overview

II. Environmental Assessment
   a. Noise analysis complete
      i. Benefitted receptors are in favor of noise barriers
      ii. Noise barriers likely to be implemented Looking at construction of approximately 3000 feet of barrier wall.
   b. BDE & FHWA Approved EA 4/23/2015
   c. Document Made Available to Public 4/23/2015 A second Public hearing was held on 05/14/2015; currently waiting to hear back from public with any additional comments; comment period ends 06/05/2015
   d. Prepare EA Errata Based on Public Hearing Comments & Submit FONSI Should be submitted soon

III. Other Key Project Deliverables
   a. Received AJR Conceptual Approval 5/4/2015
   b. Submit AJR for FHWA Final Approval after completion of NEPA Process
   c. Traffic Management Analysis Submitted to District 4/24/2015
   d. Location Drainage Study – Completing Proposed Plan
   e. Draft Combined Design Report Being Developed Should be submitted soon

IV. Structural Items and BBS Coordination
   a. TSL and Structure Report with SGR
      i. Four Bridge Structures Submitted to Date Structures 010-0002 & 0003, 010-1050 and 010-1100 have been submitted.
      ii. Eight Bridge Structures Being Developed
      iii. Five Retaining Walls Being Developed
      iv. Three Box Culverts Being Developed Boxes being developed are the boxes carrying Copper Slough under I-57 and ramps E and G for I-74.

V. Public Hearing 5/14/2015
   a. Open House Informational Meeting Format
   b. Verbal Statements Offered with Recording Capabilities No verbal comments received
   c. Formal Session Provided with Opportunity to Speak to Public No one from the public spoke
   d. Public Comment Period Ends 6/5/2015

VI. Potential Design Exceptions Rustin Keys with IDOT D5 presented one Design Exception (DE) for the project. **Mr. Niedernhofer and Mr. Madonia with CO and Ms. Liske with the FHWA gave concurrence and approval for the DE.**

VII. Design Phase Estimated to Begin September 1st 2015

**07/21/2015** The project was discussed via video conference on July 21, 2015. In attendance were Scott Neihart, Nancy Fasig, Steve Coombes, Michael Leroy, and Jason Stults from District 5, Vince Madonia, Ken Runkle, and Paul Niedernhofer with IDOT Central Bureau of Design and Environment, Heidi Liske and Sterling Jackson with the Federal Highway Administration and Brad Downen and Stan Hansen with CMT. Mr. Downen presented an update on the project; the following items were discussed with comments shown in red:

I. Project Overview- The environmental portion of the project is now complete. The new FHWA and IDOT oversight agreement is in place. It is believed that the fnal combined design report will be signed by BDE with a concurrence letter from FHWA.

II. Environmental Assessment
   a. EA Errata and Traffic Noise Analysis submitted 6/18/2015
      i. Legal Sufficiency Review
      ii. Public Hearing
      iii. Final Noise Survey Responses
   b. Draft FONSI submitted 6/25/2015- ~~Signed FONSI expected later this month~~
   c. Received BDE & FHWA Comments 7/1/2015
   d. Re-Submitted EA Errata, Draft FONSI, and Traffic Noise Analysis 7/2/2015

III. Other Key Project Deliverables
   a. Submit AJR for FHWA Final Approval after completion of NEPA Process- Heidi will check on the final AJR submittal requirements
   b. Traffic Management Analysis Revisions Underway- CMT is currently working on the TMA revisions
      i. Safety Engineering Policy Memorandum 4-15 Issued 3/1/2015
      ii. Positive Protection, Drop-Off Policy, and Temporary Concrete Barrier
      iii. Evaluating Pinning Concrete Barrier vs. Additional Temporary Pavement
      iv. Consideration for Temporary Pavement to Remain In-Place for Wider Proposed Permanent Shoulders
   c. Location Drainage Study Submitted to District 6/12/2015
   d. Draft Combined Design Report Submittal July 2015- Rustin will send the link for the Preliminary CDR to Heidi

IV. Structural Items and BBS Coordination- CMT has not received review comments from BBS on the TS&L's.
   a. TSL and Structure Report with SGR
      i. Six Bridge Structures Submitted to Date
      ii. Five Bridge Structures Being Developed
      iii. Five Retaining Walls Being Developed
      iv. Three Box Culverts Being Developed

V. Design Phase Estimated to Begin September 2015

BDE advised that if desired, they are willing to meet outside the regularly scheduled Coordination meeting dates to facilitate completion of the project.

# Appendix A2
# Letters and Approvals

**DATE:** December 6, 2012
**PROJECT:** Phase I
FAI 57 (I-57) and FAI 74 (I-74)
Interchange Reconstruction
**Re:** Submittal of revised concepts

In our November 9th meeting, 5 main concepts with 20 +/- sub-concepts were presented. A sixth concept was identified by the District.

During this meeting, the District made the following suggestions:

1) The District indicated that any concepts with mainline weaving should not be considered for further studies.

2) The District also stated that loop ramps should be designed for 40 mph to meet design criteria for freeway to freeway ramps.

3) The District preferred that the four alternatives to be further studied include Concept B, D, and E, along with the circle interchange. All loops will be designed for 40 mph and directional ramps 50 mph. Later the District decided that the circle interchange concept should no longer be considered.

<u>District follow-up action items remaining after the meeting were:</u>

1) Staging preferences, including options for shifting mainline I-74 alignment, closure of traffic lanes on interstates, minimum width of travel lanes and shoulders, and possibility of widening an existing bridge

   District Comments: Decided against shifting the I-74 alignment. Prefers 2-lanes of traffic in each direction which may require widening an existing structure in order to meet the minimum 11' Lanes and 2' shoulders. Requested that the consultant consider that any widening of the existing structures try to be incorporated into the final design.

2) Loop ramp terminal preferences

   District Comments: By eliminating the cloverleaf ramps and the weaving segments, the cloverleaf terminals should be eliminated from consideration. The AASHTO parallel terminal type might require a design exception. While it is possible to obtain a design exception since the terminal is in the AASHTO green book, it would be preferable to use the standard BDE terminals.

3) Preferences for compounding of curves (loops and directional ramps)

   District Comments: The BDE manual provides guidance on the compounding curves on the loop ramps: “The free-flow loop is a standard component of the cloverleaf interchange, the four-quadrant partial cloverleaf interchange, and the trumpet interchange. Free-flow loops are designed so that the central arc is a sharper radius than that of either the initial or final arcs, or the central arc is intermediate between the two. Motorists decelerate from the speed of the through highway over the initial portion of the ramp and accelerate uniformly over the final portion of the ramp. Avoid flatback loops or loop ramps where the central arc has a greater radius than either the initial or final arcs.”

BFW/CMT Follow-up action items after the meeting were:

1) Refine the geometry for Concepts B, D, & E with a minimum loop ramp design speed of 40 mph

   Comments: Refined concepts were sent electronically by email and hardcopies by mail on December 6, 2012 along with this letter. The concepts represent the discussions that were made in previous meetings. Provided are 7 sub-concepts offering different advantages and disadvantages.

2) The preliminary HCS existing traffic analysis and assumptions will be sent to the District for review and concurrence.

   Comments: The existing analysis and assumptions were submitted on November 26, 2012. The District has reviewed the existing analysis and concurs with the traffic volumes, distributions, and modeling assumptions. Analysis of the proposed alternatives will be submitted for review after the interchange concepts are selected for further studies.

Project Schedule

If these concepts are satisfactory for further studies in the Interchange Type Study, a meeting could now be coordinated with FHWA to confirm concepts for proceeding.



Kevin Crider, PE, CPESC
Bacon Farmer Workman Engineering & Testing, Inc.

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

Date: May 4, 2013

Re: Phase I
FAI 57 (I-57) and FAI 74 (I-74)
Interchange Reconstruction
Selection of alternatives for ITS

Rustin,

One of the primary tasks for Phase I is to continue with the Interchange Type Study (ITS). Currently we have several concepts that we have developed and discussed. Through discussions with the District we suggest the following list of four alternatives to study in further detail in the ITS. These alternatives are as follows:

1) E-1, Fully Directional with no loop ramps
2) B-3, Two loop ramps and 2 directional ramps
3) B-2, Two loop ramps and 2 directional ramps
4) E-2, Fully Directional with no loop ramps

We are seeking concurrence on these four alternatives for further studies in the ITS. All concepts will be discussed in the ITS, and the reason for eliminating other options will be thoroughly documented. Upon confirmation from the District on the four alternatives to be further studied, BFW / CMT will further refine the geometry and develop the CORSIM models in preparation for a draft ITS.

If you have any questions, please contact us by telephone 270-443-1995, fax 270-443-1904 or by email kcrider@bfwengineers.com.

Kevin R. Crider, PE, CPESC
Bacon Farmer Workman Engineering &Testing, Inc.

## Blake Emery

**From:** Kevin Crider
**Sent:** Monday, January 12, 2015 2:54 PM
**To:** Blake Emery
**Subject:** FW: I-57 / I-74 Interchange, Concurrence for Concepts to carry to ITS

---

**From:** Keys, Rustin B [mailto:Rustin.Keys@illinois.gov]
**Sent:** Tuesday, May 14, 2013 3:53 PM
**To:** Kevin Crider
**Cc:** Brad Downen; Stan Hansen
**Subject:** FW: I-57 / I-74 Interchange, Concurrence for Concepts to carry to ITS

Kevin,

FHWA and BDE concur with studying concepts E-1, B-3, B-2, and E-2 in the ITS (see below).

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

Please consider the environment before printing this e-mail.

---

**From:** Niedernhofer, Paul R
**Sent:** Tuesday, May 14, 2013 3:21 PM
**To:** Keys, Rustin B
**Cc:** Stults, Jason W; Neihart, Scott W; Allen, Jeffery L; Sherer, Bart L; Magee, Daniel A; 'Heidi.Liske@dot.gov'; Staggs, Mike
**Subject:** FW: I-57 / I-74 Interchange, Concurrence for Concepts to carry to ITS

Rustin,

Both FHWA and BDE concur and ask that you proceed with the four proposed concepts attached to the original email.

Paul Niedernhofer, P.E.
Region Two Field Engineer
Bureau of Design & Environment
Tel: 217-524-1651 Fax: 217-524-9357
Paul. Niedernhofer@illinois.gov

---

**From:** Heidi.Liske@dot.gov [mailto:Heidi.Liske@dot.gov]
**Sent:** Tuesday, May 14, 2013 3:17 PM
**To:** Niedernhofer, Paul R
**Subject:** RE: I-57 / I-74 Interchange, Concurrence for Concepts to carry to ITS

Paul—

Mike Staggs and I have reviewed the proposed concepts outlined below. FHWA concurs to proceed as proposed. Please forward our response to the District.

Thank you—

***Heidi Liske, P.E.***
Transportation Engineer – Districts 4 & 5
Federal Highway Administration – Illinois Division
3250 Executive Park Drive
Springfield, Illinois 62703
Phone: 217.492.4637
Fax: 217.492.4621
*heidi.liske@dot.gov*

---

**From:** Keys, Rustin B [mailto:Rustin.Keys@illinois.gov]
**Sent:** Monday, May 06, 2013 3:48 PM
**To:** Niedernhofer, Paul R; Liske, Heidi (FHWA)
**Cc:** Stults, Jason W; Neihart, Scott W; Allen, Jeffery L; Sherer, Bart L; Magee, Daniel A
**Subject:** FW: I-57 / I-74 Interchange, Concurrence for Concepts to carry to ITS

Paul and Heidi,

Please read the attached letter which discusses the preferred concepts that we plan to analyze in more detail in the ITS. As stated below, we are seeking your concurrence before we proceed into refining the geometry and developing CORSIM models for these 4 concepts.

Let me know if you have any questions.

Thanks,

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

Please consider the environment before printing this e-mail.

---

**From:** Kevin Crider [mailto:kcrider@bfwengineers.com]
**Sent:** Monday, May 06, 2013 2:54 PM
**To:** Keys, Rustin B
**Cc:** Stan Hansen; Brad Downen
**Subject:** I-57 / I-74 Interchange, Concurrence for Concepts to carry to ITS

Rustin, attached is the letter seeking concurrence on the preferred concepts to study further in the ITS. Also attached are 4 concepts mentioned in the letter.

I will also forward a hard copy of this letter and concepts that you may forward on to FHWA.

Thanks

**Kevin R. Crider, PE, CPESC**
Project Manager / Civil Engineer

500 South 17th Street
P.O. Box 120
Paducah, KY 42002-0120
270-443-1995 *phone*
270-443-1904 *fax*

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ENGINEERING & TESTING, INC.

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Illinois Department of Transportation

# Bicycle Travel Assessment/ Public Coordination Checklist

| | | | |
|---|---|---|---|
| Date | 8/20/2013<br>Revised 8/21/203 | | |
| Route | Mattis Ave over I-74 & I-57 | Contract No. | 70897 |
| Section | 10(5-1-RS-1,14-1,6)R | Job No. | |
| County | Champaign | TIP No. | A167 |

1. Where would bicyclists cross the project?

   This BTA addresses the replacement of SN 010-0270 (over I-74) and SN 010-0100 (over I-57). The type of construction has not been determined. If construction is road closure bicyclists would not be in the work area.

2. Where would bicyclists need to ride parallel to the project?

   There are various local routes that bicyclists can utilize to detour around the proposed project area.

3. Does the project provide access across a river, railroad, highway corridor or other natural or man-made barrier?

   Yes. The structures provide access over I-74 and I-57 in north Champaign.

4. Will the highway project negatively affect the recreational or transportation utility of an independent bikeway or trail? (Highway projects will negatively affect at-grade paths and trails when they are severed, when the projected roadway traffic volumes increase to a level that prohibits safe crossings at-grade, or when the widening of the roadway prohibits sufficient time for safe crossing.)

   No. There are no trails or bikeways in the area.

5. Does the route provide primary access to a park, recreational area, school or other significant destination?

   Yes. Champaign Co. Parks Tennis Center is located 0.40 mile east of Mattis and a high school campus north of Olympian Drive. Parkland College and Dobbs park is located a mile south of I-74. The majority of residential neighborhoods are south of I-74.

6. Is the highway or street designated as a bikeway in a regionally or locally adopted bike plan or is published in a regionally or locally adopted map as a recommended bike route?

   Yes. The City of Champaign is currently working on a bike plan in which they designate Mattis Ave to have 6 foot bike lanes.

7. Will the projected two-way bicycle traffic volume (see Section 17-1.04) approximate 25 ADT or more during the peak three months of the bicycling season at a highway or street location where the current vehicular traffic volume will exceed 1000 ADT? (Estimate the bicycle ADT projections based on a five-year time frame from completion of the project.)

   Yes. Given that residential development is located to the east of Mattis Ave and there are a number of commerical locations that may attract bicyclists it is reasonable to assume a bike ADT of 25.

| Organization and Public Coordination | Yes | n/a |
|---|---|---|
| Metropolitan Planning Organization (if applicable) | ☒ | ☐ |
| Local Municipalities | ☒ | ☐ |
| Park or Forest Preserve Districts | ☐ | ☒ |
| Sub-Regional Planning Council (as appropriate) | ☐ | ☒ |
| Local Bicycle Clubs, Advocacy Groups | ☐ | ☒ |
| League of Illinois Bicyclists | ☐ | ☒ |
| Illinois Department of Natural Resources | ☐ | ☒ |
| Illinois Trails Conservancy | ☐ | ☒ |
| Active Transportation Alliance (District One only) | ☐ | ☒ |

| Bicycle Travel Generators in Project Vicinity | Yes | n/a |
|---|---|---|
| Residential Areas | ☒ | ☐ |
| Parks | ☒ | ☐ |
| Recreation Areas | ☐ | ☒ |
| Churches | ☒ | ☐ |
| Schools | ☒ | ☐ |
| Libraries | ☐ | ☒ |
| Existing Bicycle Trails | ☐ | ☒ |
| Planned Bicycle Trails | ☐ | ☒ |
| Shopping Centers | ☒ | ☐ |
| Hospitals | ☐ | ☒ |
| Employment Center | ☒ | ☐ |
| Government Offices | ☒ | ☐ |
| Local Businesses | ☒ | ☐ |
| Industrial Plants | ☒ | ☐ |
| Public Transportation Facilities | ☒ | ☐ |
| Other ( ) | ☐ | ☐ |

**Remarks/Comments:**

See attached.

Prepared by: Robert M. Nelson, Planning & Services Chief Date: 8/20/2013

**CONTRACT 70897, Interchange reconstruction at I-74 & I-57.**

**BTA for Mattis Ave structures over I-74 & I-57.**

**August 20, 2013**

This Bicycle Travel Assessment (BTA) is for SN 010-0270 (over I-74) and SN 010-0100 (over I-57) both of which carry Mattis Ave in Champaign. Reconstruction or replacement is planned for SN 010-0270 and replacement is planned for SN 010-0100. The work will be done as part of the interchange reconstruction at I-74 & I-57.

Mattis Ave has a Functional Classification of Minor Arterial across both structures. Design ADT on Mattis Ave over I-74 is 18,700 and over I-57, 9,100. The speed limit over I-74 is 40 MPH and over I-57, 45 MPH. Bicycle Level of Service (BLOS) calculations were run and found that over I-74 the BLOS grade is “E”. BLOS grade over I-57 is “F”. The Bicycle Compatibility Level for both locations is in the low range. There are no bicycle accommodations on Mattis Ave at this time.

The Bicycle Facility Selection table (Fig. 17-2.A in the BDE) was used to determine the best accommodations. An urban criterion was used for both locations. SN 010-0270 over I-74 falls in the line for speed 36-44 MPH and ADT >15,000. SN 010-0100 over I-57 falls in the line for speed >44 MPH and ADT >8,000. The recommended accommodation for both structures is a 10’-12’ Side Path based on the facility selection table.

BLOS calculations were run to see what the improvement would be with 6 foot or 8 foot shoulder or bike lane. The BLOS for SN 010-0270 over I-74 improved to a “C” when a 6 foot shoulder or bike lane is used and a “B” when an 8 foot shoulder or bike lane is used. BLOS for SN 010-0100 over I-57 improved to a “D” when a 6 foot shoulder or bike lane is used and a “C” when an 8 foot shoulder or bike lane is used. BCI improves to “Moderately High” when an 8 foot shoulder or bike lane is used at both locations.

The City of Champaign is in the process of completing a bike plan. In their bike plan, they recommend 6 foot bike lanes for Mattis Ave. Coordination will be required with the City to determine the cross section in order to make sure the roadway and the structures are the same. Accommodations are warranted on both structures, but the type of accommodation cannot be determined until coordination has been completed with the City of Champaign.

Illinois Department of Transportation

# Bicycle Travel Assessment/ Public Coordination Checklist

| | | | |
|---|---|---|---|
| Date | 8/20/2013 | | |
| Route | US 150 over I-57 | Contract No. | 70897 |
| Section | 10(5-1-RS-1,14-1,6)R | Job No. | |
| County | Champaign | TIP No. | A167 |

1. Where would bicyclists cross the project?

   This BTA addresses the reconstruction or replacement of SN 010-0050 (over I-57). The type of construction has not been deteremined. If construction is road closure, bicyclists will not be in the work area.

2. Where would bicyclists need to ride parallel to the project?

   There are no nearby parallel routes for bicyclists to use. Bradley Ave is the nearest crossing , located approximately 1 mile south of US 150.

3. Does the project provide access across a river, railroad, highway corridor or other natural or man-made barrier?

   Yes. The structure provides access over I-57 in north Champaign.

4. Will the highway project negatively affect the recreational or transportation utility of an independent bikeway or trail? (Highway projects will negatively affect at-grade paths and trails when they are severed, when the projected roadway traffic volumes increase to a level that prohibits safe crossings at-grade, or when the widening of the roadway prohibits sufficient time for safe crossing.)

   No. There are no trails or bikeways in the area.

5. Does the route provide primary access to a park, recreational area, school or other significant destination?

   Yes. At this time there are no parks but the City of Champaign is in the process of developing a former landfill on the north side of US 150 west of SN 010-0050. This park will include multi-use paths that are to connect to the future US 150 multi-use path.

6. Is the highway or street designated as a bikeway in a regionally or locally adopted bike plan or is published in a regionally or locally adopted map as a recommended bike route?

   Yes. US 150 is designated for a multi-use trail in the Champaign Trails Plan 2011. A US 150 multi-use path is also shown on the 2013 Greenways and Trails map.

7. Will the projected two-way bicycle traffic volume (see Section 17-1.04) approximate 25 ADT or more during the peak three months of the bicycling season at a highway or street location where the current vehicular traffic volume will exceed 1000 ADT? (Estimate the bicycle ADT projections based on a five-year time frame from completion of the project.)

   With the current land use being agricultural a bike ADT of 25 is not likely. However has development occurs along US 150 and a side path is constructed with the development a bike ADT of 25 can be anticipated.

| Organization and Public Coordination | Yes | n/a |
|---|---|---|
| Metropolitan Planning Organization (if applicable) | ☒ | ☐ |
| Local Municipalities | ☒ | ☐ |
| Park or Forest Preserve Districts | ☐ | ☒ |
| Sub-Regional Planning Council (as appropriate) | ☐ | ☒ |
| Local Bicycle Clubs, Advocacy Groups | ☐ | ☒ |
| League of Illinois Bicyclists | ☐ | ☒ |
| Illinois Department of Natural Resources | ☐ | ☒ |
| Illinois Trails Conservancy | ☐ | ☒ |
| Active Transportation Alliance (District One only) | ☐ | ☒ |

| Bicycle Travel Generators in Project Vicinity | Yes | n/a |
|---|---|---|
| Residential Areas | ☐ | ☒ |
| Parks | ☒ | ☐ |
| Recreation Areas | ☐ | ☒ |
| Churches | ☒ | ☐ |
| Schools | ☐ | ☒ |
| Libraries | ☐ | ☒ |
| Existing Bicycle Trails | ☐ | ☒ |
| Planned Bicycle Trails | ☒ | ☐ |
| Shopping Centers | ☐ | ☒ |
| Hospitals | ☐ | ☒ |
| Employment Center | ☐ | ☒ |
| Government Offices | ☐ | ☒ |
| Local Businesses | ☐ | ☒ |
| Industrial Plants | ☒ | ☐ |
| Public Transportation Facilities | ☐ | ☒ |
| Other (  ) | ☐ | ☒ |

**Remarks/Comments:**

Warrants are met for a multi-use path crossing I-57 on US 150 due to the future development of a multi-use path from Staley Rd to Mattis Ave and a park west of I-57 at the former landfill site. The multi-use trail is part of the Champaign Trail Plan 2011 and the Reseeding Tomorrow Park Plan details the former landfill site park.

The development of the US 150 multi-use trail and the former landfill site park are part of a future vision of the area. The multi-use trail is expected to be constructed as development occurs. The park is still in the planning stages with construction not expected for 10-15 years. Further coordination will need to be done with the City of Champaign in determining timelines for the projects. It is recommended that any reconstruction or replacement of SN 010-0050 be designed with a mult-use path located on the south side of US 150 as it crosses I-57 in mind. The multi-use path can be added to the structure when the future multi-use path along US 150 is constructed.

Prepared by: Robert M. Nelson, Planning & Services Chief Date: 8/20/2013


High School campus
Site of future park
SN 010-0100
Champaign Co Park Tennis Center
SN 010-0270
SN 010-0050
N
W
E
S
MERIDIAN DR
DEWEY-FISHER RD
1100 E
Olympian Dr
RION DR
OLYMPIA DR TO I-57NB
OLYMPIAN DR
MARIANNE DR
1000 E
FARBER DR
N PROSPECT AVE
RESEARCH DR
INTERSTATE DR
74
57
I-74EB TO I-57SB
I-74WB TO I-57NB
FAIRFAX DR
BOARDWALK DR
KINGS WAY
DALE DR
POLAND DR
CAMBELL DR
MARKETVIEW DR
KANKAKEE DR
STALEY RD
DUNCAN RD
150
CARDINAL RD (1800 N)
1800 N
ANTHONY DR
MATTIS AVE
CYNTHIA DR
DIANA LN
JULIE DR
BLOOMINGTON RD
PARKLAND WAY
PAULA DR
HEDGEROAD DR
JOANNE LN
GRAYROCK LN
SHARON DR
Boulder Ridge Dr
WILLIAMSBURG DR
FRANCIS DR

CHAMPAIGN COUNTY
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PLANNING
COMMISSION

CUUATS
CHAMPAIGN URBANA URBANIZED AREA
TRANSPORTATION STUDY

1776 East Washington Street
Urbana, IL 61802

Phone 217.328.3313
Fax 217.328.2426

www.ccrpc.org

April 9, 2014

Secretary Ann Schneider
Illinois Department of Transportation
2300 S Dirksen Parkway
Springfield, IL 62764

Dear Secretary Schneider,

I am writing on behalf of the Policy Committee of the Champaign-Urbana Urbanized Area Transportation Study (CUUATS), the Metropolitan Planning Organization responsible for long range transportation planning for the Champaign-Urbana urbanized area, to express our support for the Illinois Department of Transportation (IDOT) and its efforts to rebuild the interchange of FAI Route 57 and FAI Route 74 in Champaign County.

The cloverleaf design of the current I-57 and I-74 interchange was at one time the standard for interstate interchanges. However, today, the I-57 and I-74 interchange is considered functionally obsolete and unsafe due to its inherently high number of traffic conflict points.

This past February IDOT presented for public comment five alternatives for a new I-57 and I-74 interchange. Each alternative represents a modern interchange design offering significant safety improvements over the current cloverleaf interchange and has differing advantages and levels of impact to the surrounding land. One important consideration that was not available at the February public meetings was a safety analysis of each interchange alternative. IDOT representatives indicated that completing an interchange operational safety analysis was one of the next steps in their study.

Recently IDOT representatives indicated that the interchange safety analysis has been completed. The analysis draft results show that Alternative 1, Full Directional, and Alternative 2, Semi-Directional with Semi-Directional Flyovers and Two Loop Ramps, are the two safest (lowest predicted crash rate) interchanges of the five alternatives.

While safety is a critical factor in selecting a new interchange, another important consideration is how the new interchange will impact the surrounding land. Significant investments in utilities and infrastructure have been made in three of the four interchange quadrants. These areas are ready for growth and economic development within the City of Champaign. Selecting an interchange alternative that is not only operationally safe, but also minimizes impact to adjacent developed and developing land is very important.

Taking into account the preliminary results of the safety analysis and considering each alternative's impact to adjacent properties, CUUATS is supportive of either interchange Alternative 1 or Alternative 2, pending the final results of the safety analysis.

CUUATS also supports IDOT's efforts to study and incorporate complete-street elements on the Mattis Avenue and I-57, Mattis Avenue and I-74, and Bloomington Road and I-57 bridges. These three structures have been identified for replacement as part of the I-57 and I-74 interchange reconstruction. As the urbanized area continues to grow to the north and west, accommodating pedestrians and bicyclists on these three replacement structures is essential to successful long term transportation planning.

CUUATS appreciates the opportunity to provide input on the proposed I-57 and I-74 interchange design alternatives. CUUATS is supportive of a new interchange and supports IDOT with this once in a lifetime opportunity to improve the safety of this important interchange.

Sincerely,

Ronald J. Polera - Fr Don Uchtmann

Don Uchtmann
CUUATS Policy Committee Chair

# Illinois Department of Transportation

| | | |
|---|---|---|
| To: | Kensil Garnett | Attn: District Five |
| From: | John D. Baranzelli | |
| Subject: | Interchange Type Study | |
| Date: | September 16, 2014 | |

Interchange Type Study
FAI 57 (I-57) and FAI 74 (I-74) Interchange
Section 10 (5-1-RS-1, 14-1, 6)R
Champaign County

We have completed our review of the subject Interchange Type Study. We concur with the preferred interchange alternate as presented in the above report and do not have any additional comments.

If you have any questions, please contact Paul Niedernhofer at (217) 524-1651.

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Kensil A. Garnett, District 5 | Attn: Craig A. Emberton |
| From: | D. Carl Puzey | By: Patrik D. Claussen |
| Subject: | Bridges and Structures | |
| Date: | December 8, 2014 | |

FAU 7158
Section 10-34HB-3
Champaign County

Mattis Ave over I-57

P-95-030-11
SN 010-0100

CN 10897

We received the Bridge Condition Report (BCR) for the above referenced structure, sent with the consultant's email dated October 17, 2014. The proposed scope of work recommended by the report is total structure replacement.

Since the district has decided to upgrade this interchange, we have no objections to replacing this structure to satisfy the new geometric requirements for the improved interchange.

We offer the following comments:

1. Stage construction appears feasible, but a bracing system may be needed at each pier depending upon the location of the stage removal line.

2. We concur with the proposed clear width between parapets of 40 feet if the 8 foot shoulders will accommodate bicycle traffic. Given the design speed of 45 mph, verify a barrier is not needed between the bike traffic and the vehicular traffic.

Please direct questions to Derek Verhulst at 217-785-2918.

DGV/kkt0100100-20141208

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Kensil A. Garnett, District 5 | Attn: Craig A. Emberton |
| From: | D. Carl Puzey | By: Patrik D. Claussen |
| Subject: | Bridges and Structures | |
| Date: | December 8, 2014 | |

FAI 74
Section 10-34HB-1
Champaign County

I-74 over I-57

P-95-030-11
SN 010-0018
010-0019

CN 10897

We received the Bridge Condition Report (BCR) for the above referenced structures, sent with the consultant's email dated October 17, 2014. The proposed scope of work recommended by the report is total structure replacement.

Since the district has decided to upgrade this interchange, we have no objections to replacing these structures to satisfy the new geometric requirements for the improved interchange.

Stage construction is feasible, but a bracing system may be needed at each pier depending upon the location of the stage removal line.

Please direct questions to Derek Verhulst at 217-785-2918.

DGV/kkt0100018-20141208

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Kensil A. Garnett, District 5 | Attn: Craig A. Emberton |
| From: | D. Carl Puzey | By: Patrik D. Claussen |
| Subject: | Bridges and Structures | |
| Date: | December 8, 2014 | |

FAU 7158
Section (10-5-1HB)BR
Champaign County

Mattis Ave over I-74

P-95-030-11
SN 010-0270

We received the Bridge Condition Report (BCR) for the above referenced structure, sent with the consultant's email dated October 17, 2014. The proposed scope of work recommended by the report is total structure replacement.

Since the district has decided to upgrade this interchange, we have no objections to replacing this structure to satisfy the new geometric requirements for the improved interchange.

We offer the following comments:

1. Stage construction appears feasible, but a bracing system may be needed at the pier depending upon the location of the stage removal line.
2. The cross section of the proposed bridge will be determined once the proposed cross section of Mattis Road is finalized.
3. Given the design speed of 45 mph, verify a barrier is not needed between the bike traffic and the vehicular traffic. Also verify a barrier is not needed between the roadway and sidewalk.

Please direct questions to Derek Verhulst at 217-785-2918.

DGV/kkt0100270-20141208

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Kensil A. Garnett, District 5 | Attn: Craig A. Emberton |
| From: | D. Carl Puzey | By: Patrik D. Claussen |
| Subject: | Bridges and Structures | |
| Date: | December 8, 2014 | |

FAP 719
Section (10-34HB)BR
Champaign County

US 150 over I-57

P-95-030-11
SN 010-0050

CM 70897

We received the Bridge Condition Report (BCR) for the above referenced structure, sent with the consultant's email dated October 17, 2014. The proposed scope of work recommended by the report is total structure replacement.

Since the district has decided to upgrade this interchange, we have no objections to replacing this structure to satisfy the new geometric requirements for the improved interchange.

We offer the following comments:

1. Stage construction appears feasible.
2. We recommend bike accommodations be considered for this location. — 8' shoulders accomodate bikes
3. We recommend the clear width between parapets be 44 feet based on the reconstruction criteria in the Design and Environment manual. — 44' is for ~~rural~~ arterial (ch. 47, DHV ≥ 650. US 150 is suburban/urban, use ch. 48 criteria, 30' ff min. b no CRF for DS = 50. we will be providing 40' clear width. Also, additional width would only encourage higher speeds as traffic enters an urban area.
4. We recommend the sidewalk be removed from the proposed cross section since there is no room for a sidewalk on the existing or proposed approach roadway typical sections. ← No room?? Sidewalk requested by City

Please direct questions to Derek Verhulst at 217-785-2918.

DGV/kkt0100050-20141208

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Kensil A. Garnett, District 5 | Attn: Craig A. Emberton |
| From: | D. Carl Puzey | By: Patrik D. Claussen |
| Subject: | Bridges and Structures | |
| Date: | December 16, 2014 | |

FAI 57
Section 10-34-1
Champaign County

I-57 over Copper Slough

P-95-030-11
SN 010-8306

CN 70897

We received the Bridge Condition Report (BCR) for the above referenced structure, sent with the consultant's email dated October 17, 2014. The proposed scope of work recommended by the report is culvert extension.

Since the district has decided to upgrade this interchange, we have no objections to extending the culvert to satisfy the new geometric requirements for the improved interchange. If the loading conditions (minimum or maximum fill heights) change, then the culvert shall be re-evaluated.

Please direct questions to Derek Verhulst at 217-785-2918.

DGV/kkt0108306-20141216

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Kensil A. Garnett, District 5 | Attn: Craig A. Emberton |
| From: | D. Carl Puzey | By: Patrik D. Claussen |
| Subject: | Bridges and Structures | |
| Date: | December 16, 2014 | |

FAI 74
Section 10-5-1B-1
Champaign County

P-95-030-11
SN 010-2004

CN 70897

I-74 over Copper Slough

We received the Bridge Condition Report (BCR) for the above referenced structure, sent with the consultant's email dated October 17, 2014. The proposed scope of work recommended by the report is culvert extension.

Since the district has decided to upgrade this interchange, we have no objections to extending the culvert to satisfy the new geometric requirements for the improved interchange. If the loading conditions (minimum or maximum fill heights) change, then the culvert shall be re-evaluated.

Please direct questions to Derek Verhulst at 217-785-2918.

DGV/kkt0102004-20141216

# CERTIFICATE

I, Kitty Kay Strong, duly Appointed, fully Qualified, and Deputy City Clerk of the City of Champaign, County of Champaign, State of Illinois, do hereby certify that the attached is a true and correct copy of Council Bill No. 2015-015 "A Resolution Approving a Letter of Intent with the Illinois Department of Transportation for the Funding, Design and Construction of Complete Street Improvements to the Bloomington Road Bridge Overpass Over Interstate 57 and the Mattis Avenue Bridge Overpasses Over Interstates 57 and 74 (Public Works – IDOT) "

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City of Champaign, County of Champaign, State of Illinois this 11th day of February, 2015.

Kitty Kay Strong
Deputy City Clerk

SEAL

COUNCIL BILL NO. 2015 - 015

A RESOLUTION

APPROVING A LETTER OF INTENT WITH THE ILLINOIS DEPARTMENT OF TRANSPORTATION FOR THE FUNDING, DESIGN AND CONSTRUCTION OF COMPLETE STREET IMPROVEMENTS TO THE BLOOMINGTON ROAD BRIDGE OVERPASS OVER INTERSTATE 57 AND THE MATTIS AVENUE BRIDGE OVERPASSES OVER INTERSTATES 57 AND 74
(Public Works - IDOT)

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CHAMPAIGN, ILLINOIS, as follows:

**Section 1**. That the Letter of Intent attached hereto with the Illinois Department of Transportation for the funding, design, and construction of complete street improvements to the Bloomington Road bridge overpass over Interstate 57 and to the Mattis Avenue bridge overpasses over Interstates 57 and 74, with a City cost participation estimated at $933,800, is hereby approved and accepted.

**Section 2**. That the City Manager, or the City Manager's designee, is hereby authorized to execute the Letter of Intent approved in Section 1.

COUNCIL BILL NO. 2015 - 015

PASSED: February 3, 2015

APPROVED: _____
Mayor

ATTEST: _____
City Clerk

APPROVED AS TO FORM:

_____
City Attorney

**Illinois Department of Transportation**
Division of Highways / Region 3 / District 5
13473 IL Highway 133 / P.O. Box 610 / Paris, Illinois / 61944
Telephone 217/465-4181

RECEIVED
OCT 31 2014

October 28, 2014

PROGRAM DEVELOPMENT-Letter of Intent
FAI ROUTE 57
Section 10(5-1-RS-1,14-1,6)R
Champaign County
Contract No. 70897
District Code A 167

Ms. Dorothy David, City Manager
City of Champaign
102 North Neil Street
Champaign, Illinois 61820

Dear Ms. David:

The STATE OF ILLINOIS, acting through its Department of Transportation, is currently in the study phase of a proposed improvement to the interchange of FAI routes 57 and 74, a portion of which is within the corporate limits of the City of Champaign. Reconstruction of the structures carrying the Mattis Avenue structure over I-74 and I-57 as well as the structure carrying Bloomington Road over I-57 will be necessary to accommodate the reconfiguration of the interchange. The reconstruction of these structures will increase the profile of these facilities thereby requiring approach roadway work to be performed in addition to the structure work.

The purpose of this letter is to outline the intended division of project responsibilities on these routes between the State of Illinois (State) and the City of Champaign (City) in an effort to move forward with project plan development. These responsibilities shall be formalized by agreement between the State and the City after completion of the study and prior to the project letting date.

Through ongoing coordination between the State and the City, the intended division of project responsibilities between these parties is as stated herein.

Intent of the State:

1. The State intends to improve the Bloomington Road and Mattis Avenue roadways and structures as shown in the attached preliminary roadway and structure typical sections.
2. The State intends to make the surveys, obtain all necessary right-of-way, prepare plans and specifications, receive bids, award the contract and furnish construction engineering for the improvement.
3. The State intends to pay upfront, or cause to be paid, all costs associated with the improvement.
4. The State intends to retain jurisdiction of the proposed Mattis Avenue structures over I-74 and I-57 from back to back of abutments.
5. The State intends to retain jurisdiction of the Bloomington Road structure and roadway improvements.

Intent of the City:

1. The City intends to provide written approval of that portion of the plans and specifications relative to their financial, maintenance or jurisdictional obligations prior to the letting date.
2. The City intends to retain jurisdiction of the Mattis Avenue roadway improvements.
3. The City intends to pass a resolution prior to the project letting which appropriates sufficient funds to reimburse the State for the improvement items outlined in the attached participation cost estimate.
4. The City intends to adopt, or continue to enforce, ordinances which:
    a. require parallel or prohibits motor vehicle parking within the limits of improvement as determined necessary by the project study,
    b. prohibit the discharge of sanitary sewage and industrial waste into storm sewers,
    c. regulate encroachments on public right-of-way.
5. The City intends to cause its utilities on its or the State's existing or proposed right-of-way to be relocated and/or adjusted if required, at no expense of the State.
6. The City intends to maintain the proposed lighting and sidewalk improvements on Mattis Avenue and Bloomington Road.

Further details concerning maintenance responsibilities will be addressed in the formal agreement prepared by the State, based upon previous Agreements, Letters of Understanding, and in accordance with State policy.

This Letter of Intent between the City of Champaign and the State will provide confirmation of agreed items from our coordination with you and will become a part of the formal agreement prepared by the State when the project is ready to let for construction.

Two (2) copies of this Letter of Intent are enclosed; please sign one (1) copy and return it to us. Upon receipt of the signed copy, we will assume that the City agrees with the intent of each party as outlined herein and shown in the attachments.

Sincerely,

Kensil A. Garnett CAE

Kensil A. Garnett, P.E.
Acting Deputy Director of Highways,
Region Three Engineer

KLK/als
Attach.

City of Champaign

Dorothy Ann David 2/5/2015

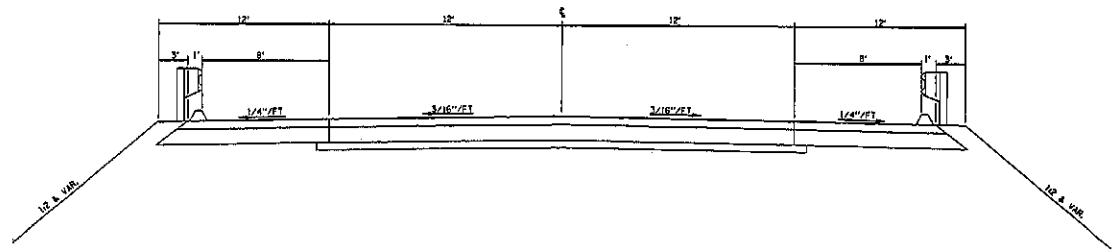
**Dorothy David, City Manager** Date

CB 2015-015

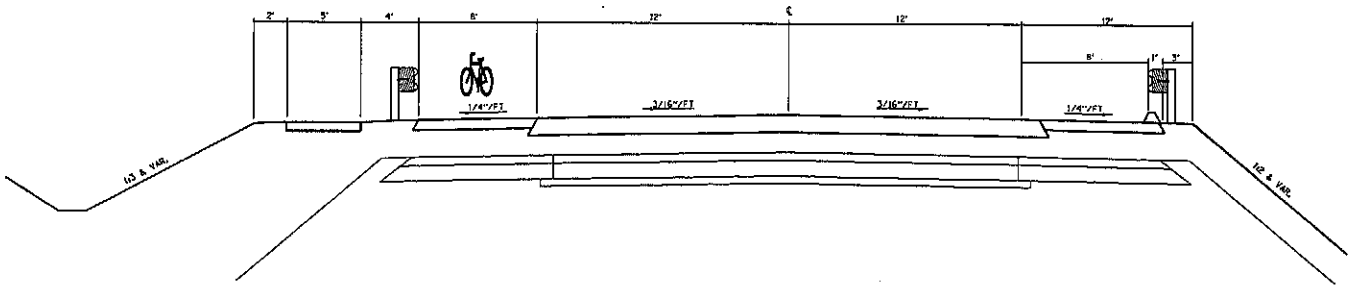
APPROVED AS TO FORM:

Assistant City Attorney

# PRELIMINARY




**EXISTING TYPICAL CROSS SECTION**
**U.S. 150**

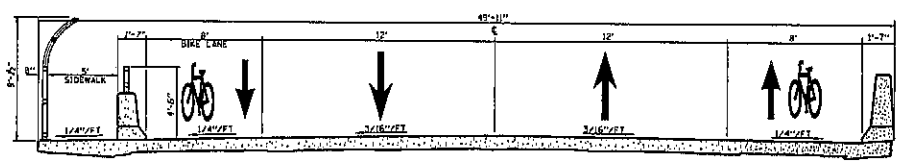



**PROPOSED TYPICAL CROSS SECTION**
**U.S. 150**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**U.S. 150**
**(BLOOMINGTON AVENUE)**

# PRELIMINARY




PROPOSED U.S. 150 OVER I-57

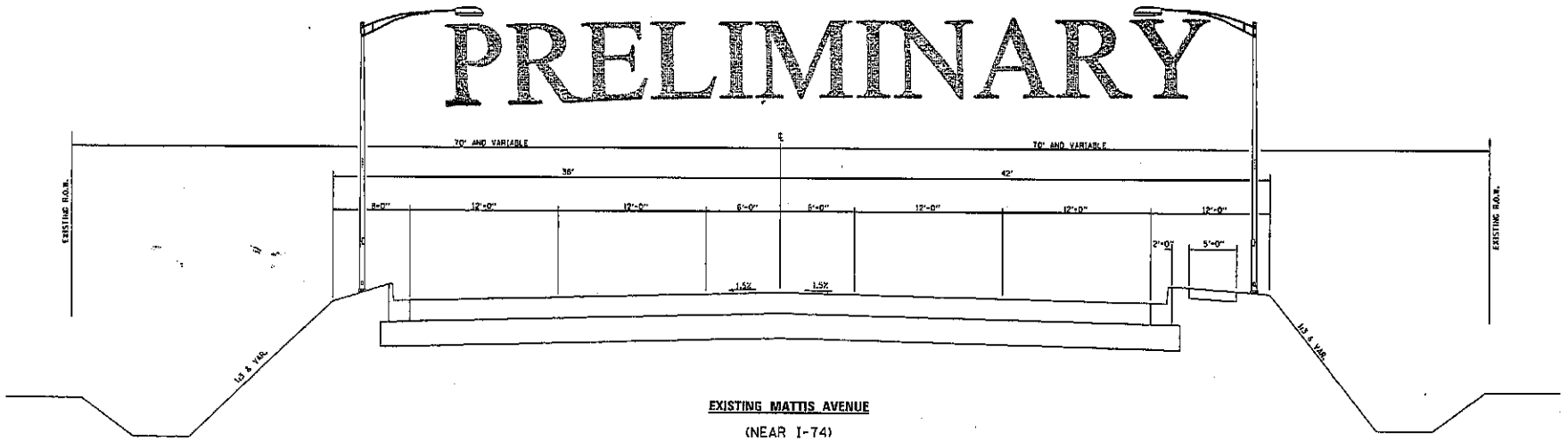
U.S. 150

STRUCTURE

TYPICAL SECTIONS

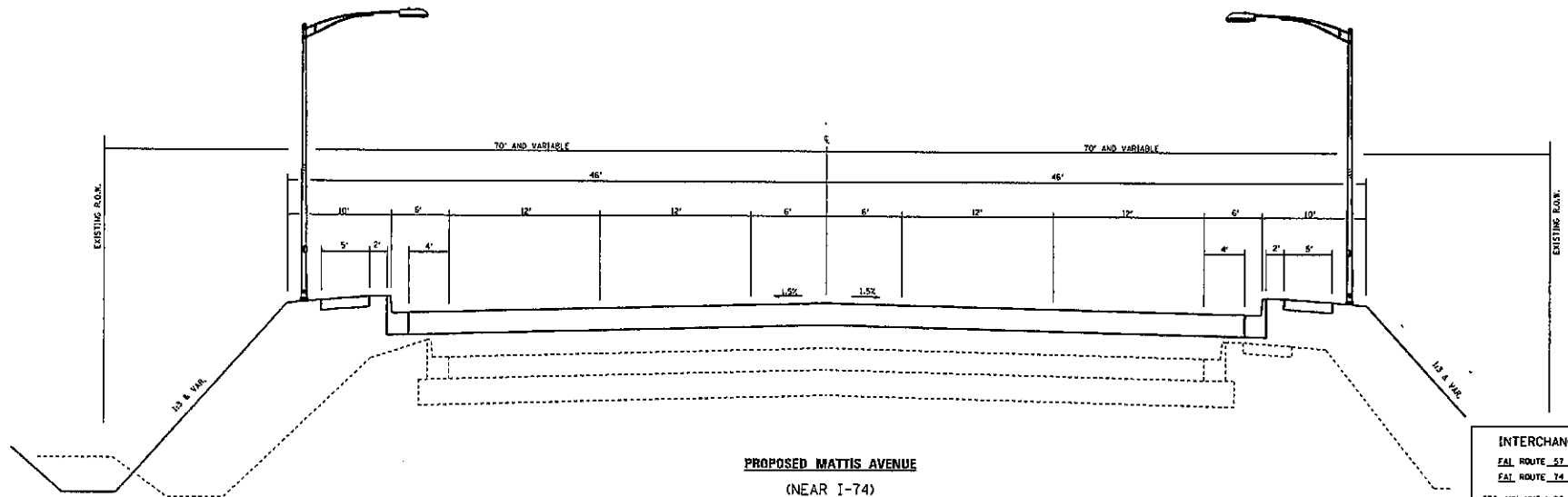
BDE-9004

# PRELIMINARY




**EXISTING MATTIS AVENUE**

(NEAR I-74)




**PROPOSED MATTIS AVENUE**

(NEAR I-74)

INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )

FAI ROUTE 74 WITH (I-74 )

SEC. NO. 1015-1-RS-1,14-1,6HR

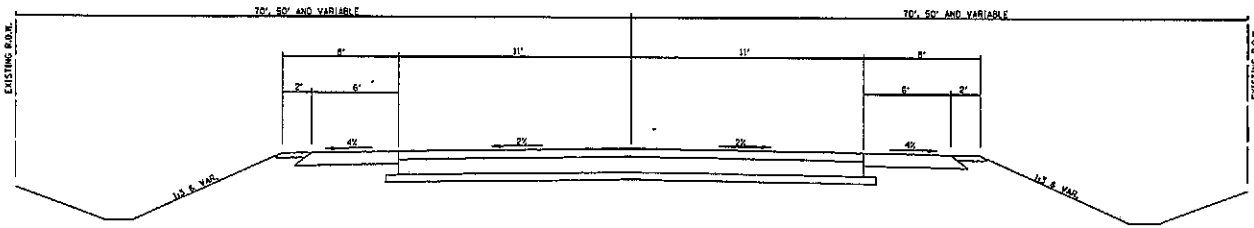
SCALE N.T.S. COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 8 OF 49

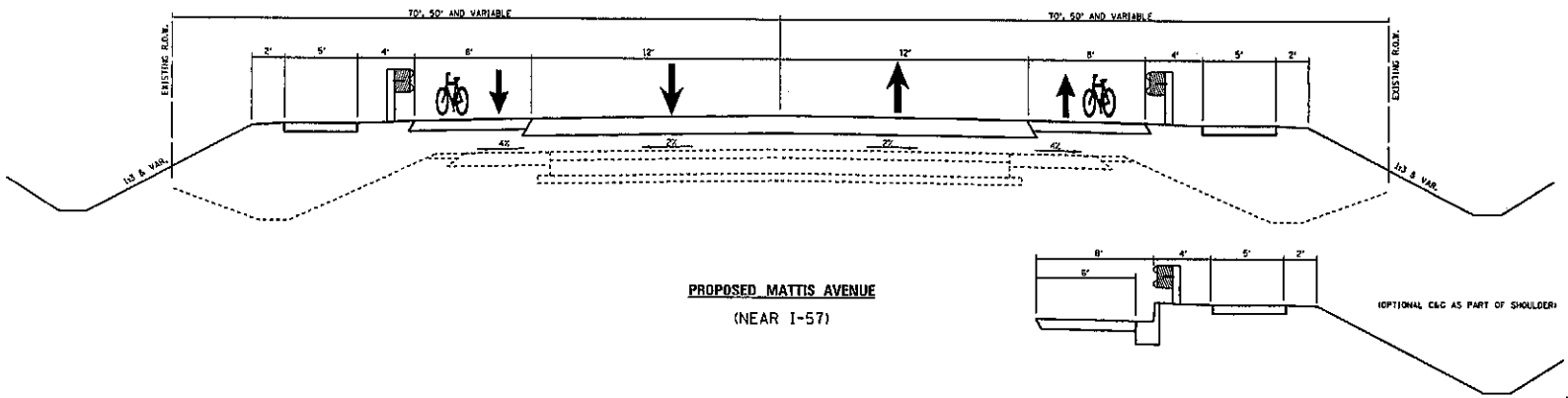
006-9908

# PRELIMINARY




**EXISTING MATTIS AVENUE**

(NEAR I-57)




**PROPOSED MATTIS AVENUE**

(NEAR I-57)

INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )

FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10IS-1-RS-1,14-1,61R

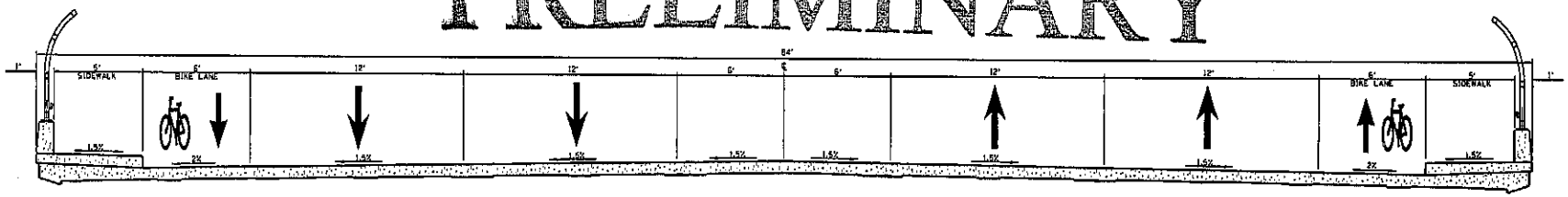
SCALE N.T.S. COUNTY CHAMPAIGN

SJN # _____ PROJ. NO. _____

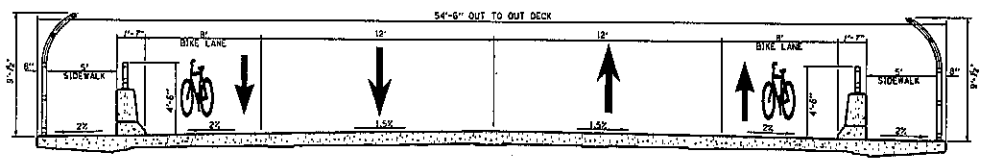
I.D.S. SHEET 9 OF 49

IDE-0908

# PRELIMINARY




**PROPOSED MATTIS AVENUE BRIDGE OVER I-74**




**PROPOSED MATTIS AVENUE BRIDGE OVER I-57**

INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 1015-1-RS-1,14-1.6R

SCALE N.T.S. COUNTY CHAMPAIGN

SJN # _____ PROJ. NO. _____

I.D.S. SHEET 13 OF 49

BDE-9908

LOCAL AGENCY PARTICIPATION COST ESTIMATE
I-57/I-74 INTERCHANGE RECONSTRUCTION
CONTRACT 70897

PRELIMINARY

| ITEM | QUANTITY | UNIT | COST PER UNIT | ITEM COST | LOCAL PARTICIPATION PERCENTAGE | LOCAL PARTICIPATION COST |
|---|---|---|---|---|---|---|
| *US 150 (BLOOMINGTON ROAD) OVER I-57* | | | | | | |
| ROADWAY SIDEWALK ON NORTH SIDE[1] | 3390 | SQ. FT. | $ 6.00 | $ 20,340.00 | 100% | $ 20,340 |
| ADDITIONAL EMBANKMENT ON NORTH SIDE[1] | 2652 | CU. YD. | $ 12.00 | $ 31,824.00 | 100% | $ 31,824 |
| STRUCTURE SIDEWALK ON NORTH SIDE[1] | 2113 | SQ. FT. | $ 250.00 | $ 528,250.00 | 100% | $ 528,250 |
| RIGHT-OF-WAY ON NORTH SIDE[1] | 0.04 | ACRES | $ 60,000.00 | $ 2,400.00 | 100% | $ 2,400 |
| | | | | | ***SIDEWALK WORK SUBTOTAL*** | ***$ 582,814*** |
| BRIDGE FENCE RAILING[3] | 746 | FOOT | $ 195.00 | $ 145,470.00 | 5% | $ 7,274 |
| BRIDGE FENCE RAILING COATING[1] | 746 | FOOT | $ 45.00 | $ 33,570.00 | 100% | $ 33,570 |
| | | | | | ***BRIDGE RAILING SUBTOTAL*** | ***$ 40,844*** |
| | | | | | **US 150 TOTAL** | **$ 623,658** |
| *MATTIS AVENUE OVER I-74* | | | | | | |
| ROADWAY SIDEWALK, WEST SIDE | 3075 | SQ. FT. | $ 6.00 | $ 18,450.00 | 20% | $ 3,690 |
| | | | | | ***SIDEWALK WORK SUBTOTAL*** | $ 3,690 |
| BRIDGE FENCE RAILING[3] | 671 | FOOT | $ 195.00 | $ 130,845.00 | 5% | $ 6,542 |
| BRIDGE FENCE RAILING COATING[1] | 671 | FOOT | $ 45.00 | $ 30,195.00 | 100% | $ 30,195 |
| | | | | | ***BRIDGE RAILING SUBTOTAL*** | ***$ 36,737*** |
| LIGHTING (4 POLES W/ CONTROLLER)[2] | 1 | L SUM | $ 50,000.00 | $ 50,000.00 | 100% | $ 50,000 |
| EXISTING LIGHTING REMOVAL (6 POLES) | 1 | L SUM | $ 10,000.00 | $ 10,000.00 | 100% | $ 10,000 |
| | | | | | ***LIGHTING SUBTOTAL*** | ***$ 60,000*** |
| | | | | | **MATTIS OVER I-74 TOTAL** | **$ 90,427** |
| *MATTIS AVENUE OVER I-57* | | | | | | |
| ROADWAY SIDEWALK, EAST AND WEST SIDES | 7000 | SQ. FT. | $ 6.00 | $ 42,000.00 | 20% | $ 8,400 |
| | | | | | ***SIDEWALK WORK SUBTOTAL*** | $ 8,400 |
| BRIDGE FENCE RAILING[3] | 714 | FOOT | $ 195.00 | $ 139,230.00 | 5% | $ 6,962 |
| BRIDGE FENCE RAILING COATING[1] | 714 | FOOT | $ 45.00 | $ 32,130.00 | 100% | $ 32,130 |
| | | | | | ***BRIDGE RAILING SUBTOTAL*** | ***$ 39,092*** |
| LIGHTING (4 POLES W/ CONTROLLER)[2] | 1 | L SUM | $ 50,000.00 | $ 50,000.00 | 100% | $ 50,000 |
| | | | | | ***LIGHTING SUBTOTAL*** | ***$ 50,000*** |
| | | | | | **MATTIS OVER I-57 TOTAL** | **$ 97,492** |
| | | | | | **SUB-TOTAL LOCAL PARTICIPATION** | **$ 812,000** |
| | | | | | **15% PRELIMINARY & CONSTRUCTION ENGINEERING** | **$ 121,800** |
| | | | | | **TOTAL LOCAL PARTICIPATION** | **$ 933,800** |

General Note: Local Participation Percentages based upon Chapter 5, Section 5 of the BDE Manual.

[1]This item is not required by policy. Therefore, the cost apportionment for this 100% local agency.

[2]These are costs to provide new LED luminaires with powder coated poles only within the proposed work limits on Mattis Avenue. The preliminary lighting design does not require any poles to be mounted to the parapet of either structure.

[3]BDE Manual section 5-5.02(j) makes reference to Part 510 of the Illinois Administrative Code. Section 510.50 of this code apportions the cost as 90% Federal, 5% State, 5% Local Agency.

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | BDE | Attn: Paul Niedernhofer |
| From: | Program Development | By: Jeff Allen |
| Subject: | * IDS Review | |
| Date: | February 17, 2015 | |

* FAI Rt 57 (I-57) and FAI Rt 74 (I-74)
Section 10 (5-1-RS-1, 14-1, 6) R
Champaign County

The IDS for the above-referenced project has been reviewed and found to be in compliance with Department policy. There are no requested design exceptions for this IDS.

U.S. Department of Transportation
**Federal Highway Administration**

# Memorandum

Subject: **ACTION:** Illinois, Access Justification Report, I-57 at I-74, Champaign County

Date: May 4, 2015

From: Jeffrey F. Paniati
Executive Director

In Reply Refer To: HIPA-20

To: Catherine Batey
Division Administrator
Springfield, Illinois

We reviewed the Access Justification Report (AJR) submitted on March 15 to reconstruct the system interchange on I-57 at I-74 in Champaign. The project will include reconstruction of the existing cloverleaf interchange to a semi-directional interchange. The proposed reconstruction will improve the safety and flow of traffic on I-57 and I-74.

Based on a review of the AJR, the proposed interchange reconstruction is acceptable. An Environmental Assessment is being conducted for this project and is expected to be completed in June. Final approval may be given provided that the scope and design of this project is consistent with the design that was included in the March 15 AJR and the approved environmental document. This approval is subject to reevaluation if significant changes occur in the final design or if the construction is delayed (as specified in 23 CFR 771.129).

Should you have any questions, please contact Michael Matzke at (202) 366-4658.

Illinois Department of Transportation

**Design Exception Request**
**Project Identification**

| | | |
|---|---|---|
| Route:F.A.P. 719 (U.S. 150) | Street:Bloomington Road | Marked: |
| Contract #: | State Job #:P-95-030-11 | Section:10(5-1-RS-1, 14-1, 6)R |
| County: Champaign | Municipality: | |
| Local Agency: | LRS Section #: | |
| Permit Applicant: | Permit #: | |
| Project Limits: Sta. 151+50 to Sta. 162+00 | | |
| Project Length: 1,050 ft | FHWA Oversight?: ☒ Yes ☐ No | |
| Estimate of Cost: $4,800,000 | Functional Classification: Urban Principal Arterial (Other) | |
| Design Year: 2040 | Design Traffic: ADT 12,100 DHV 1,040 | Current Posted Speed: 50 MPH |
| On the NHS System? ☒ Yes ☐ No | Structure Numbers: 010-0050 (Existing) 010-1050 (Proposed) | |
| Type of Project (Construction, Reconstruction, 3R, HES, etc): Reconstruction | | |
| Brief Project Description: U.S. 150 over I-57 grade separation structure replacement to accommodate intechange reconstruction | | |

EXCEPTION DOCUMENTATION

| | |
|---|---|
| Level of Exception: Level I ☐ Level II ☒ | |
| Design Element for Which an Exception Is Requested: Super-elevation distribution between tangent and curve | |
| Design Element Policy Value: Maximum 50% of superelevation runoff length on curve | |
| Proposed Design Element Value: 55% of superelevation runoff length on curve (3.9' further into curve) | |
| Location(s) of Exception: Horizontal curve immediately west of US 150 Bridge over I-57 | |
| Accident History and Potential of Exception Location(s): None | |
| Cost of Using Policy Value: $310,000 | Cost of Using Proposed Exception Value: $0 |
| Impacts Other Than Cost, of Using Policy Value: Bridge joint maintenance - cannot use integral abutments | |
| Proposed Mitigation To Address Exception: Full S.E. runoff length still provided; the distribution is less than 4' from policy | |
| Geometric Compatibility with Adjacent Sections: Compatible | |
| Potential Effects On Other Design Elements: None | |
| Potential Impacts On Mobility or Traffic Operations: None | |
| Summary of Justification for Exception: Minimizing bridge maintenance and length of U.S. 150 reconstruction limits | |
| Coordination Meeting Date: 5/19/2015 | |
| Prepared By: Bacon Farmer Workman | Date: 5/15/2015 |

PAVEMENT/RESURFACING EXCEPTIONS

| | | | |
|---|---|---|---|
| ☐ New Pavement ☐ Pavement Widening ☐ Resurfacing | | | |
| Design Period/Expected Service Life: | | Design Year: | |
| Structural Design Traffic: | %PV: | %SU: | %MU: |
| Design Element Policy Value: | | Proposed Design Element Value: | |
| Location(s) of Exception: | | | |
| Cost of Using Policy Value: | | Cost of Using Proposed Exception Value: | |
| Summary of Justification: | | | |
| Prepared By: | | Date: | |

APPROVAL/DISAPPROVAL

| | |
|---|---|
| BDE Approval Date: 5/19/2015 | BDE Disapproval Date: |
| BDE Comments on Disapproval: | |
| DOH Approval Date: 5/19/2015 | DOH Disapproval Date |
| DOH Comments on Disapproval: | |
| FHWA Approval Date: 5/19/2015 | FHWA Disapproval Date: |

# Appendix A3
# Other Agency Coordination

## Blake Emery

**From:** Kevin Crider
**Sent:** Tuesday, October 21, 2014 2:01 PM
**To:** Blake Emery
**Subject:** FW: Proposed I-74/57 Interchange - Coordination with IDA/FAA

FYI, place in Phase 1 Report

---

**From:** Keys, Rustin B [mailto:Rustin.Keys@illinois.gov]
**Sent:** Monday, October 20, 2014 4:41 PM
**To:** 'Laura Sakach'
**Cc:** Brad Downen; Kevin Crider
**Subject:** RE: Proposed I-74/57 Interchange - Coordination with IDA/FAA

Laura,

Thank you for checking into this. Since this project will not meet the FAA requirements for coordination, we won't be filing the form 7460-1 with the FAA. The correspondence below completes our FAA/IDA coordination for the project. Please include this as part of the Phase I report.

Thanks,

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

Please consider the environment before printing this e-mail.

---

**From:** Laura Sakach [mailto:lsakach@cmtengr.com]
**Sent:** Monday, October 20, 2014 4:28 PM
**To:** Keys, Rustin B
**Cc:** Brad Downen; Kevin Crider (kcrider@bfwengineers.com)
**Subject:** FW: Proposed I-74/57 Interchange - Coordination with IDA/FAA

Rustin,

Below is the email correspondence and responses from FAA and IDA regarding the potential need for formal FAA review of the I-74/57 Interchange project. Based on the link provided by Gary Wilson (FAA) below and the note from Dennis Jarman (IDA), it appears that the project would not meet the following criteria required for notifying FAA of proposed construction or alternation using FAA Form 7460-1.

**Who Needs to File**

14 CFR Part 77.9 states that any person/organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the FAA:

- any construction or alteration exceeding 200 ft above ground level
- any construction or alteration:

- within 20,000 ft of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with its longest runway more than 3,200 ft
- within 10,000 ft of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 ft
- within 5,000 ft of a public use heliport which exceeds a 25:1 surface

- any highway, railroad or other traverse way whose prescribed adjusted height would exceed the above noted standards
- when requested by the FAA
- any construction or alteration located on a public use airport or heliport regardless of height or location.

If IDOT would still prefer to complete the FAA Form 7460-1 to provide the FAA an opportunity to comment on the project, this could occur during the detailed design phase once the actual lighting structure locations and elevations have been determined.

Let me know if you need any further information.

Thank you,

**LAURA SAKACH** | Project Engineer

**Crawford, Murphy & Tilly | Engineers & Consultants**
2750 West Washington Street | Springfield, IL | 62702
Direct: 217.572.1046 | Mobile: 217.652.8280 | Fax: 217.787.4183
lsakach@cmtengr.com

www.cmtengr.com | *Centered in Value* | *2014 Midwest Design Firm of the Year*

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**From:** Jarman, Dennis [mailto:Dennis.Jarman@Illinois.gov]
**Sent:** Monday, October 20, 2014 3:41 PM
**To:** Wilson, Gary; Laura Sakach
**Cc:** Brad Downen; Hahn, Robert L
**Subject:** RE: Proposed I-74/57 Interchange - Coordination with IDA/FAA

Laura,

As far as the state is concerned it shouldn't be a problem.

Thank you,

**Dennis Jarman**

Illinois Department of Transportation
Division of Aeronautics

**Flight Safety Coordinator**
**Division of Aeronautics - Bureau of Aviation Safety**
**1 Langhorne Bond Drive**
**Springfield, IL 62707**

**T: (217)-785-5798**
**C: (217) 494-3511**
**F: (217) 785-4533**

---

**From:** Gary.D.Wilson@faa.gov [mailto:Gary.D.Wilson@faa.gov]
**Sent:** Monday, October 20, 2014 11:20 AM
**To:** lsakach@cmtengr.com; Jarman, Dennis
**Cc:** bdownen@cmtengr.com; Hahn, Robert L
**Subject:** RE: Proposed I-74/57 Interchange - Coordination with IDA/FAA

Hi Laura –

As long as they file the FAA Form 7460-1, the FAA will have an opportunity to review and comment.

Here is the web site to file:

https://oeaaa.faa.gov/oeaaa/external/portal.jsp

Thanks,
Gary

Gary D. Wilson
Program Manager
FAA Chicago Airports District Office
2300 E. Devon Ave
Des Plaines IL 60018
(847) 294-7631
Gary.D.Wilson@faa.gov

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**From:** Laura Sakach [mailto:lsakach@cmtengr.com]
**Sent:** Monday, October 20, 2014 7:53 AM
**To:** Dennis.Jarman@Illinois.gov; Wilson, Gary D (FAA)
**Cc:** Brad Downen
**Subject:** Proposed I-74/57 Interchange - Coordination with IDA/FAA

Dennis/Gary,

CMT is currently working on a Phase 1 Engineering Project for IDOT for proposed improvements to the I-74/57 Interchange in Champaign County, Illinois. The project will include reconstruction/reconfiguration of the interchange with new ramps, including new light poles. This project is in the preliminary planning/design phase and IDOT has asked CMT to coordinate with FAA and IDA regarding any potential conflicts with existing airports. The closest airport is Frasca Field approximately 4 miles to the east as shown on the map below. The University of Illinois Willard Airport is located approximately 7 miles south.

Let us know if this project will require further review/coordination with FAA and IDA as the project progresses into detailed design or if the project is located beyond the limits of potential airspace concerns with existing airports.




Thank you,

**LAURA SAKACH** | Project Engineer

**Crawford, Murphy & Tilly | Engineers & Consultants**
2750 West Washington Street | Springfield, IL | 62702
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## Lana Sumner

**From:** Lana Sumner
**Sent:** Thursday, October 30, 2014 2:25 PM
**To:** 'Savko, Terry'
**Subject:** RE: Farmland Conversion Impact Rating (AD-1006) Submittal

Terry,
Per our telephone conversation, following is the project Introduction and Purpose and Need statements from the Abbreviated EA:

1. Introduction

The proposed project is located on the northwest side of the City of Champaign, Illinois. The approximate project limits are the Olympian Drive over I-57 diamond interchange to the north, North Prospect Avenue over I-74 diamond interchange to the east, the Norfolk Southern Railroad over I-57 to the south, and North Duncan Road over I-74 to the west.

The existing facility was originally constructed in 1965 and is a full conventional cloverleaf interchange connecting I-57 and I-74. Each interstate consists of four lanes (two lanes in each direction) of concrete pavement with multiple overlays. Both I-57 and I-74 have open grass medians which are typically 64 feet and 40 feet in width, respectively. The adjacent section of I-74 to the east beginning between Mattis Avenue and Prospect Avenue consists of a 26 foot paved median with concrete barrier.

I-57 is a full access controlled north-south facility that serves local, regional, and interstate traffic. It originates in Southeastern Missouri and crosses numerous other interstates before terminating in Chicago in northern Illinois. I-57 serves as a vital link in the transportation network between northern and southern Illinois and is a Class I truck route carrying an average of 33,600 vehicles per day with approximately 28 percent truck volume (9,400 trucks per day average) within the project limits.

I-74 is a full access controlled east-west facility that serves local, regional, and interstate traffic. It crosses numerous other north-south and east-west interstates as it passes through Iowa, Illinois, Indiana, and Ohio. I-74 serves as a vital link in the transportation network between the Quad Cities on the Iowa-Illinois border and Cincinnati, Ohio and is a Class I truck route carrying an average of 38,400 vehicles per day with approximately 22 percent truck volume (8,500 trucks per day average) within the project limits.

2. Purpose and Need

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the I-57 and I-74 interchange by eliminating deficient geometric features and reducing points of access in order to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps.

The need for the proposed improvement is to address operational, geometric, safety, and capacity deficiencies.

If you need any further information, please let me know.
Thanks,

*Lana*

**LANA SUMNER** | Senior Transportation & Environmental Planner

**Crawford, Murphy & Tilly | Engineers & Consultants**
2750 West Washington Street | Springfield, IL | 62702
Direct: 217.572.1082 | Operator: 217.787.8050 | Fax: 217.787.4183
lsumner@cmtengr.com

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**From:** Savko, Terry [mailto:Terry.Savko@Illinois.gov]
**Sent:** Tuesday, October 21, 2014 11:59 AM
**To:** Lana Sumner; ron.collman@il.usda.gov
**Cc:** kerry.goodrich@il.usda.gov; kevin.donoho@il.usda.gov; Prescott, Timothy - NRCS, Champaign, IL
**Subject:** RE: Farmland Conversion Impact Rating (AD-1006) Submittal

Hi Lana,
Thanks for the early coordination with the 1006 form.
Please submit the project information so that we can include our comment letter when we send the AD01006 back to you for inclusion in the EA.
Highway (IDOT) projects are never exempt from IDOA review whenever ag land will be converted to a non-ag use. And projects in the municipal boundaries are never exempt from review if ag land is converted. It's a cursory review, but required nonetheless in accordance with the IDOT - IDOA Cooperative Working Agreement on the protection of IL farmland.
.
Only linear projects requiring 3 acres or less per mile and 10 acres or less per site specific projects do not require written signoff. They do always require the 1006 initiation with NRCS.
Should you have questions regarding specifics, please give me a call and we'll discuss.
Terry

**Terry Savko, IL Dept of Agriculture**
Bureau of Land and Water Resources
State Fairgrounds, P.O. Box 19281, Springfield, IL 62794-9281
**217.785.4458** **terry.savko@illinois.gov**

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**From:** Lana Sumner [mailto:lsumner@cmtengr.com]
**Sent:** Tuesday, October 21, 2014 10:51 AM
**To:** ron.collman@il.usda.gov
**Cc:** kerry.goodrich@il.usda.gov; kevin.donoho@il.usda.gov; Savko, Terry
**Subject:** Farmland Conversion Impact Rating (AD-1006) Submittal
**Importance:** High

Mr. Collman,
Per the Illinois Department of Transportation-Bureau of Design and Environment Manual I have attached a Form AD-1006 submittal package for your action.
Upon completion of Parts II, IV and V, please copy the completed form to Ms. Terry Savko at the IL Department of Agriculture (Terry.Savko@illinois.gov).
Thank you for your assistance in this matter.
*Lana*

**LANA SUMNER** | Senior Transportation & Environmental Planner

**Crawford, Murphy & Tilly | Engineers & Consultants**
2750 West Washington Street | Springfield, IL | 62702
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## Blake Emery

**From:** Kevin Crider
**Sent:** Monday, April 13, 2015 7:58 AM
**To:** Blake Emery
**Subject:** FW: I-57/I-74 Interchange Preliminary lighting design
**Attachments:** LCCA evaluation Summary_040115.pdf

---

**From:** Keys, Rustin B [mailto:Rustin.Keys@illinois.gov]
**Sent:** Wednesday, April 01, 2015 2:54 PM
**To:** Kevin Crider; Brad Downen
**Subject:** FW: I-57/I-74 Interchange Preliminary lighting design

Gentlemen,

The decision has been made to proceed with the LED lighting.

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

Please consider the environment before printing this e-mail.

---

**From:** Emberton, Craig A
**Sent:** Wednesday, April 01, 2015 1:24 PM
**To:** Keys, Rustin B
**Cc:** Neihart, Scott W
**Subject:** RE: I-57/I-74 Interchange Preliminary lighting design

Given the LCCA indicating LEDs were more cost effective and the anticipated adoptions of LEDs statewide, go ahead with the design using LEDs. Thanks for looking into this.

---

**From:** Keys, Rustin B
**Sent:** Wednesday, April 01, 2015 12:21 PM
**To:** Emberton, Craig A
**Subject:** FW: I-57/I-74 Interchange Preliminary lighting design

See below and attached.

Rustin

---

**From:** Seppelt, Mark E
**Sent:** Wednesday, April 01, 2015 11:59 AM
**To:** Sims, Gary M
**Cc:** Keys, Rustin B; Neihart, Scott W; Burkybile, David H; Stults, Jason W; Speicher, David A; Gurskas, Vilmantas; Poulter, Michael A
**Subject:** RE: I-57/I-74 Interchange Preliminary lighting design

Gary,

Sorry for the delay in responding to your request. We have been carefully evaluating numbers before sending them to you. Attached is a life cycle cost analysis (LCCA) we ran to compare the cost of a traditional HPS lighting design with LED. In my opinion, LCCA figures are based on too many variables that are somewhat subjective and the resulting cost comparison lacks credibility. In response to this concern, please note this LCCA tool was developed over the last 2 years by the University of Illinois as part of ICT Research Project #R27-123, Street Lighting Technologies - LED Street Lighting Evaluation, Phase 2. IDOT and the technical review panel for the research project invested considerable time verifying the parameters used to develop this LCCA tool and the attached summary for the I-74/57 interchange has notes to explain important parameters used in the comparison. I hope this provides meaningful data and helps answer some of your questions.

The luminaire is usually designed to be installed over the edge of the active lane. Therefore, a 15 ft pole setback with a 15 ft luminaire arm is a very common installation around the State. The use by IDOT of LED luminaires to date has been very limited. There are concerns with LED that have not been fully addressed. One is the inability at the present time to detect the point at which LED luminaires no longer deliver adequate light to the pavement. HPS is designed for end-of-life and when the luminaire is relamped (every 4 – 6 yrs) light is restored to almost its full output. LEDs by comparison depreciate in light output over time but generally do not burn out. That makes the end-of-life determination difficult and raises the concern that adequate light is being maintained on the roadway.

Our LCCA figures indicate LED is an economically viable alternative to HPS. Please let me know if you have questions or comments regarding these figures. Upper management is currently considering the adoption of LED roadway lighting and clear direction should be forthcoming. Thanks.

Mark

---

**From:** Sims, Gary M
**Sent:** Friday, March 06, 2015 10:17 AM
**To:** Seppelt, Mark E
**Subject:** Fw: I-57/I-74 Interchange Preliminary lighting design

Mark, can you provide a response to the concerns raised by Craig Emberton? Operations is definitely in favor of the LED's from a energy and maintenance savings standpoint but PD is looking for some more justification.
Thank you,
Gary

---

**From**: Emberton, Craig A
**Sent**: Friday, March 06, 2015 08:58 AM
**To**: Keys, Rustin B
**Cc**: Neihart, Scott W; Sims, Gary M; Burkybile, David H; Stults, Jason W; Speicher, David A
**Subject**: RE: I-57/I-74 Interchange Preliminary lighting design

Based on first costs and utility costs, I don't see that LED is the best option. Do we have an estimated cost for maintenance? What is the life expectancy of HPS vs LED?

The setback is designed at 15ft…are there any locations in the State where we have a 15ft setback or LED use?

---

**From:** Speicher, David A
**Sent:** Wednesday, March 04, 2015 4:37 PM
**To:** Keys, Rustin B; Emberton, Craig A
**Cc:** Neihart, Scott W; Sims, Gary M; Burkybile, David H; Stults, Jason W
**Subject:** RE: I-57/I-74 Interchange Preliminary lighting design

I agree LED is the way to go. For an additional $400k we get reduced energy costs, significantly longer bulb life, and a huge bump in public perception. Not having crews out there on the ramps changing bulbs is a significant safety benefit. I actually had a conversation last week with a commercial lighting contractor from Effingham who couldn't

believe that the Department was so short sighted that we didn't do LED highway lighting on the I-70 reconstruction project in Effingham. Yes we do have more poles that could get hit, but Rustin assures me this is a safe design, so I assume there won't be any crashes ;-)

DAS

---

**From:** Keys, Rustin B
**Sent:** Wednesday, March 04, 2015 4:18 PM
**To:** Emberton, Craig A; Speicher, David A
**Cc:** Neihart, Scott W; Sims, Gary M; Burkybile, David H; Stults, Jason W
**Subject:** FW: I-57/I-74 Interchange Preliminary lighting design

Dave and Craig,

Attached is the preliminary lighting layout for both the LED and Sodium Vapor lighting units. Gary has indicated that he prefers LED due to utility and maintenance cost savings that will make up for upfront additional costs in the long term and I agree. Do you have any issue with proceeding with the LED option? Do you have any other concerns (e.g. the 15 ft pole offset)?

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

Please consider the environment before printing this e-mail.

---

**From:** Seppelt, Mark E
**Sent:** Friday, February 27, 2015 3:00 PM
**To:** Keys, Rustin B
**Cc:** Sims, Gary M; Burkybile, David H; Neihart, Scott W; Stults, Jason W; Gurskas, Vilmantas
**Subject:** FW: I-57/I-74 Interchange Preliminary lighting design

Rustin,

Attached is the Phase 1 reconstruction estimate for lighting you requested for the I-57/74 interchange at Champaign. Please give me a call when you have had an opportunity to review it and we can discuss what additional information you may need. Thanks.

Mark

---

**From:** Gurskas, Vilmantas
**Sent:** Friday, February 27, 2015 1:27 PM
**To:** Seppelt, Mark E
**Subject:** I-57/I-74 Interchange Preliminary lighting design

Mark,

I finalized the preliminary lighting design for I-74 and I-57 Interchange near Champaign - Urbana. Proposed lighting layouts, cost estimates and energy cost calculations are attached. Below is the list of items that explain the design criteria, assumptions and other important issues that should be brought up to the District at this time:

1. Lighting is designed to meet RP-8-14 criteria for Freeway Class A classification (0.6 cd/m2 avg luminance).
2. The limits of proposed lighting are:

- I-74 West, Lane transitions near Sta. 1841+00
- I-74 East, Existing median lighting near Sta. 1141+00

- I-57 South, Lane transitions near Sta. 568+00
- I-57 North, Existing lighting near Sta. 640+00

3. We evaluated two different designs: 400HPS and LED. Both options are submitted.
4. We also evaluated two different pole setbacks - 15ft and 20ft. Placing poles at 15ft setback from the edge of traveled lane resulted in better pole spacing. Attached design documents are based on 15ft setback. If the District desires to use 20ft setback, pole spacing will be shorter and the layouts and estimates will need to be revised. We are estimating that the total cost would increase by 10-15%.
5. The design is based on 480V service.
6. If LED design is selected, smart control system can be added to the design if desired.
7. Cost estimates do not include the cost of temporary lighting.

Please let my know if you have comments. Thanks.

Vilmantas Gurskas
Illinois Department of Transportation
217-558-0631

## I-57 and I-74 Interchange

4/1/2015

## LCCA SUMMARY

| Description | HPS | LED |
|---|---|---|
| Initial Installation Cost* | $1,383,600 | $1,703,400 |
| Present Value of 38.4 year Life Cycle Luminaire Replacement, Relamping and Energy | $1,802,327 | $1,412,571 |
| | | |
| TOTAL PROJECT COST* | **$3,185,927** | **$3,115,971** |

(*) does not include existing lighting removal, temporary lighting, sign lighting, underpass lighting and other misc. items which are unknown at this time

LCCA based on the following factors:

| | |
|---|---|
| Length of analysis period***: | 38.4 years |
| Price of electricity ($/kWh): | $0.10 |
| Nominal Interest Rate (%): | 3.00% |
| Inflation rate (%): | 2.50% |

| | HPS luminaire | LED luminaire |
|---|---|---|
| Life (years): | 38.4 | 19.2 (70,000 hours) |
| Luminaire burn time (hr/day): | 10 | 10 |
| Luminaire power usage (W): | 478W for 400W | 300W |
| Luminaire relamping (years)**: | 4 | N/A |
| Luminaire cost: | $600 | $1,690 |

(**) Luminaire relamping also includes luminaire cleaning and reballasting as needed for HPS. LED luminaires may require cleaning on a set cycle time but no costs have been added for any LED luminaire maintenance. Both HPS and LED share the possibility of an occasional luminaire failure and those replacement costs have not been added.

(***) A 38.4 yr lifecycle was used because it is based on 70,000 hrs (19.2 yrs) being a reasonable amount of time to expect the LED luminaire to reach the point at which it no longer provides adequate light to the roadway and needs to be replaced. The 38.4 yr lifecycle results in one LED luminaire replacement and both luminaires being at the end of their useful life. 38 to 40 yrs is also the point where the poles, conductors, and entire lighting infrastructure is ready for replacement.

| Electric Service | |
|---|---|
| Electric Service Installation | $3,000 |

| Length of analysis period (years) | Assumed lamp usage (hr/ day) | Price of electricity ($/ kW-h) | Nominal interest rate (%) | General inflation rate (%) |
|---|---|---|---|---|
| **38.4** | **10.0** | **$0.100** | **3.00%** | **2.50%** |

| Mounting Height | Pole Cost |
|---|---|
| 40' Height, 15' Davit Arm | $2,250 |
| 40' Height, Two 15' Davit Arms | $2,750 |
| 45' Height, 8' Davit Arm | $2,400 |
| 45' Height, 8' Davit Arm, Twin | $3,000 |
| 45' Height, 15' Davit Arm | $2,500 |
| 45' Height, 15' Davit Arm, Twin | $3,000 |
| 47.5' Height, 6' Mast Arm | $2,800 |
| 47.5' Height, 15' Mast Arm (editable) | $2,900 |
| 50' Height, 15' Davit Arm (editable) | $3,000 |
| 100' Height, 4 Luminaires | $37,000 |
| 100' Height, 6 Luminaires | $39,000 |
| 110' Height, 4 Luminaires | $40,000 |
| 110' Height, 6 Luminaires (editable) | $41,000 |
| 120' Height, 6 Luminaires (editable) | $44,000 |

| Unit Duct Costs ($/ft.) | Cost |
|---|---|
| 2-1C No. 2, 1/C No. 4, 1" Dia. | $10 |
| 2-1C No. 4, 1/C No. 6, 1" Dia. | $8 |
| 3-1C No. 4, 1/C No. 6, 1.25" Dia. | $12 |
| 2-1C No. 6, 1/C No. 8, 1" Dia. (editable) | $6 |
| 3-1C No. 6, 1/C No. 8, 1.25" Dia. (editable) | $10 |

| Electric Cable in Conduit ($/ft.) | Cost |
|---|---|
| No. 2 | $3.50 |
| No. 4 | $2.50 |
| No. 6 (editable) | $2.00 |
| No. 8 (editable) | $1.75 |

| Foundation Type | Cost |
|---|---|
| 15" Bolt Circle, 8"x6' | $750 |
| 15" Bolt Circle, 8"x8' | $800 |
| 15" Bolt Circle, 8"x10' | $1,050 |
| 48" Diameter | $600 |
| 54" Diameter (editable) | $700 |
| Integral with Barrier Wall (editable) | $1,200 |

| Breakaway Device Type | Cost |
|---|---|
| Transformer Base, 15" Bolt Circle (editable) | $400 |
| Coupling with Stainless Steel Screen (editable) | $125 |

| Junction Box Type | Cost |
|---|---|
| Attached to Structure (editable) | $750 |
| Embeded in Structure (editable) | $750 |

| Controller Type | Cost |
|---|---|
| 100 Amp | $7,000 |
| 150 Amp (editable) | $7,500 |
| 200 Amp (editable) | $8,000 |

| Underground Conduit ($/ft.) | Cost |
|---|---|
| 2.5" Diameter | $16 |
| 3" Diameter | $22 |
| 4" Diameter | $24 |
| Conduit Embeded in Structure (editable) | $10 |
| Conduit Attached to Structure (editable) | $60 |

| | LUMINAIRE INPUT | | | | | | |
|---|---|---|---|---|---|---|---|
| | HPS | HPS, High Mast | LED | LED, High Mast | Plasma | Plasma, High Mast | CMH |
| Luminaire cost ($) | $600 | $1,250 | $1,690 | $1,800 | $1,200 | $1,900 | $800 |
| Wattage | 478 | 480 | 300 | 570 | 280 | 540 | 315 |
| Lamp life, HPS & CMH (h) or Luminaire life, LED & Plasma (h) | 24,000 | 24,000 | 70,000 | 70,000 | 50,000 | 50,000 | 30,000 |
| Luminaire life (h) | 336,000 | 263,000 | | | | | 263,000 |
| Luminaire lifetime (year) | 38.4 | 30.0 | 19.2 | 19.2 | 13.7 | 13.7 | 30.0 |
| No. of luminaire replacements | 0 | 0 | 1 | 1 | 2 | 2 | 1 |

| Maintenance | |
|---|---|
| Re-lamping and Re-balasting Maintenance Cost | $250 |
| Luminaire Replacement Maintenance Cost | $0 |
| Re-lamping and Re-balasting Cycle for HPS (years) | 4 |
| Re-lamping and Re-balasting Cycle for CMH (years) | 6 |

Illinois Department of Agriculture

Pat Quinn, Governor
Robert F. Flider, Director

**Bureau of Land and Water Resources**
State Fairgrounds • P.O. Box 19281 • Springfield, IL 62794-9281 • 217/782-6297 • TDD 217/524-6858 • Fax 217/557-0993

November 10, 2014

Ms. Lana Sumner
Crawford, Murphy & Tilly, Inc.
2750 W. Washington Street
Springfield, Illinois 62702-3497

Re: Interstate 57 and Interstate 74 Interchange Reconstruction
Abbreviated Environmental Assessment – 46.7 acres
Champaign County, Illinois
Federal Highway Administration Funds
USDA NRCS Form AD-1006

Dear Ms. Sumner:

The Illinois Department of Agriculture (IDOA) has completed its review of the agricultural impacts associated with proposed interchange improvements in Champaign County, Illinois. The project was examined for its compliance with IDOT's Agricultural Land Preservation Policy as well as the Illinois Farmland Preservation Act (505 ILCS 75/1 et seq.).

The existing conventional full cloverleaf interchange facility connecting I-57 and I-74 was constructed in 1965. The purpose of the proposed interchange reconstruction is to provide safer and more efficient transportation at the interchange. Its construction ultimately results in the conversion of 44.3 acres of Prime farmland soils to a non-agricultural use.

Because the interchange improvements are adjacent to existing Interstate right-of-way and the agricultural impacts have been mitigated to the greatest extent possible, the IDOA has determined that the project complies with IDOT's Agricultural Land Preservation Policy and Illinois' Farmland Preservation Act.

Enclosed are two copies of the USDA NRCS form AD-1006. One copy must be included in the project's environmental assessment; the other is for your files. Should you have any questions or comments, please contact Terry Savko of my staff at 217-785-4458.

Sincerely,

Steven D. Chard, Acting Chief
Bureau of Land and Water Resources

SDC:TS

Enclosures-2
cc: Jonathon Manuel, Champaign Co SWCD
Agency project file

U.S. Department of Agriculture

# FARMLAND CONVERSION IMPACT RATING

| | | | |
|---|---|---|---|
| **PART I** *(To be completed by Federal Agency)* | | Date Of Land Evaluation Request 10/21/2014 | |
| Name of Project I-57 & I-74 Interchange Improvements | | Federal Agency Involved Federal Highway Administration | |
| Proposed Land Use Transportation | | County and State Champaign, Illinois | |
| **PART II** *(To be completed by NRCS)* | | Date Request Received By NRCS 10/21/14 | Person Completing Form: Tim Prescott |
| Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)* | YES ☑ NO ☐ | Acres Irrigated N/A | Average Farm Size 372 |
| Major Crop(s) Corn, Soybeans, Wheat, Hay | Farmable Land In Govt. Jurisdiction Acres: 29,633 ± 97% | Amount of Farmland As Defined in FPPA Acres: 27,69± 91% | |
| Name of Land Evaluation System Used Illinois | Name of State or Local Site Assessment System Statewide | Date Land Evaluation Returned by NRCS 11/5/14 | |

| **PART III** *(To be completed by Federal Agency)* | Alternative Site Rating | | | |
|---|---|---|---|---|
| | Site A | Site B | Site C | Site D |
| A. Total Acres To Be Converted Directly | 46.7 | | | |
| B. Total Acres To Be Converted Indirectly | 0 | | | |
| C. Total Acres In Site | 46.7 | | | |
| **PART IV** *(To be completed by NRCS)* Land Evaluation Information | | | | |
| A. Total Acres Prime And Unique Farmland | 44.3 | | | |
| B. Total Acres Statewide Important or Local Important Farmland | 0 | | | |
| C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted | 0.00000 | | | |
| D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value | | | | |
| **PART V** (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points) | 140 | | | |

| **PART VI** *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)* | Maximum Points | Site A | Site B | Site C | Site D |
|---|---|---|---|---|---|
| 1. Area In Non-urban Use | (15) | | | | |
| 2. Perimeter In Non-urban Use | (10) | | | | |
| 3. Percent Of Site Being Farmed | (20) | | | | |
| 4. Protection Provided By State and Local Government | | | | | |
| 5. Distance From Urban Built-up Area | | | | | |
| 6. Distance To Urban Support Services | | | | | |
| 7. Size Of Present Farm Unit Compared To Average | | | | | |
| 8. Creation Of Non-farmable Farmland | | | | | |
| 9. Availability Of Farm Support Services | | | | | |
| 10. On-Farm Investments | (20) | | | | |
| 11. Effects Of Conversion On Farm Support Services | (10) | | | | |
| 12. Compatibility With Existing Agricultural Use | (10) | | | | |
| TOTAL SITE ASSESSMENT POINTS | 160 | 0 | 0 | 0 | 0 |
| **PART VII** *(To be completed by Federal Agency)* | | | | | |
| Relative Value Of Farmland *(From Part V)* | 100 | 140 | 0 | 0 | 0 |
| Total Site Assessment *(From Part VI above or local site assessment)* | 160 | 65 | 0 | 0 | 0 |
| **TOTAL POINTS** *(Total of above 2 lines)* | 260 | 205 | 0 | 0 | 0 |

**See the attached Illinois LESA Site Assessment *CORRIDOR* Factors**

| Site Selected: | Date Of Selection | Was A Local Site Assessment Used? YES ☐ NO ☑ |
|---|---|---|

Reason For Selection: Illinois LESA Corridor

*** When utilizing the Illinois State Site Assessment Corridor factors, 150 points are assigned to the Land Evaluation portion, and 150 points are assigned to the Site Assessment portion of the LESA System for a maximum score of 300 points.

Name of Federal agency representative completing this form: Lana Sumner, AICP (consultant) | Date: 10/21/2014

*(See Instructions on reverse side)*

Form AD-1006 (03-02)

# I-57 and I-74 Interchange Improvements
# Champaign County, Illinois
# Federal Highway Administration Funds

| **PART VI-B**<br>**Illinois Site Assessment *CORRIDOR* Factors** | **Maximum Points** | **Site A** |
|---|---|---|
| 1. Amount of agricultural land required | 30 | 30 |
| 2. Location of the proposed alignment | 30 | 20 |
| 3. Acres of off-site agricultural land required for borrow materials | 15 | 15 |
| 4. Acres of Prime and Important farmland required for mitigation | 15 | 0 |
| 5. Creation of severed farm parcels | 10 | 0 |
| 6. Creation of uneconomical remnants | 10 | 0 |
| 7. Creation of landlocked parcels | 10 | 0 |
| 8. Creation of adverse travel | 10 | 0 |
| 9. Relocations of rural residences and farm buildings | 10 | 0 |
| 10. Utilization of minimum design standards | 10 | 0 |
| **TOTAL SITE ASSESSMENT *CORRIDOR* POINTS** | **150** | **65** |

| **PART VII** | | |
|---|---|---|
| Relative Value of Farmland | 150 | 140 |
| Total Site Assessment ***CORRIDOR*** Factors | 150 | 65 |
| **TOTAL ILLINOIS LESA POINTS** | **300** | **205** |

111014
TS

* *The Illinois LESA System applies the **225 point cutoff** when evaluating state and federally funded projects. Site or Corridor alternatives receiving **175 or fewer points** have a **low rating** for protection, and it is not necessary to evaluate additional alternatives. Those alternatives receiving **176 to 225 points** are in the **moderate range** for protection. In most cases, alternatives **exceeding the 225 point level should be retained for agricultural use**, and an alternate site should be utilized for the intended project. Selecting the alternative with the lowest total points will usually protect the best farmland located in the most agriculturally viable areas. LESA also serves to maintain and promote the agricultural industry in Illinois.*

**From:** Malone, Pat
**Sent:** Wednesday, November 05, 2014 11:22 AM
**To:** Sherer, Bart L
**Cc:** Hamer, Steve; Brooks, Thomas C
**Subject:** RE: 17502 70897 I-74-57 interchange Champaign Wetlands

Hi Bart,

The areas described within the interchange and maintained ROW are not considered State jurisdictional wetlands and are not subject to review under IPWA.

Pat

**From:** Sherer, Bart L
**Sent:** Wednesday, October 29, 2014 8:29 AM
**To:** 'gregory.a.mckay@usace.army.mil'; Malone, Pat; Hamer, Steve
**Cc:** Neihart, Scott W; Stults, Jason W; Keys, Rustin B; Brooks, Thomas C; 'Wiesbrook, Scott M'
**Subject:** 17502 70897 I-74-57 interchange Champaign Wetlands

Gentlemen,

IDOT District 5 is in the process of conducting an Environmental Assessment (EA) for the reconstruction of the I-74/I-57 interchange in Champaign, IL.

A wetland survey of the project area has been performed; several wetlands were delineated within the project corridor. The District is currently pursuing a preferred alternative; with a preferred alternative being chosen we can better identify the wetlands that may be affected by the project.

The District is interested in meeting with you to discuss the following items:

- Of the wetlands delineated, which wetlands would the USACE take jurisdiction of requiring mitigation
- Wetland mitigation options

Attached above is a location map, preferred alternative wetland impact exhibit and wetland delineation report for your information.

The District would like to ask if you are available to meet at the project site on Thursday November 13th, 2014 at 10:30 AM to discuss the project.

If you should have any questions or need additional information, feel free to contact me.

**Bart L Sherer**
**Environmental Coordinator**
**IDOT Region 3/District 5**
**Office 217-466-7305**
**Fax 217-465-3101**
**bart.sherer@illinois.gov**

DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT CORPS OF ENGINEERS
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

REPLY TO
ATTENTION OF:

December 4, 2014

Regulatory Branch
File Number: MVS-2014-760

Bart L. Sherer
Illinois Department of Transportation
District 5
Paris, Illinois 61944-0610

Dear Mr. Sherer:

We have reviewed your application in regard to the reconstruction of the I-74/I-57 interchange in Champaign, Champaign County, Illinois. Based upon a review of the U.S. Geological Survey 7.5-minute topographical map, the National Wetland Inventory maps, USDA's Web Soil Survey, aerial photos and the application; we have determined that the project will not impact jurisdictional waters or wetlands. Since the project will not be completed within waters of the U.S., a Department of the Army permit is **not** required for the proposed work. If work may infringe on areas believed to be jurisdictional, you are instructed to contact the Corps of Engineers Regulatory Branch for guidance prior to completing any work.

This determination is applicable only to the permit program administered by the Corps of Engineers Regulatory Branch. It does not eliminate the need to obtain other federal, state or local approvals before beginning work. You are reminded that although your proposal does not need a Section 404 permit, based on your submitted plans, any revisions to your proposal may be subject to Section 404 and require subsequent authorization from this office.

The jurisdictional determination for this project is considered a Preliminary jurisdictional determination in accordance with Corps regulations at 33 CFR Part 331. A preliminary jurisdictional determination is not appealable. If you wish, you may request an Approved Jurisdictional Determination (which may be appealed) by contacting our office for further instruction.

If you have any questions, please contact me at (314) 331-8584. Please refer to file number **MVS-2014-760**. The St. Louis District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment

to go to our Customer Service Survey found on our web site at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

Keith A McMullen

Keith McMullen
Illinois Section Chief
Regulatory Branch

CC:

Heacock, IEPA
Diedrichsen, IDNR-OWR

# Wetlands

**Submittal Date:** 09/18/2012 **Sequence No:** 17502
**District:** 5 **Requesting Agency:** DOH **Project No:**
**Contract #:** 70897 **Job No.:** C- 95-030-11
**Counties:** Champaign
**Route:** FAI 74/57 **Marked:** I-74/I-57
**Street:** **Section:** 10(5-1-RS-1,14-1,6)R
**Municipality(ies):** City of Champaign (see additional info) **Project Length:** 8.0467 **km** 5 **miles**
**FromTo (At):** I-74 Sta 1150+00 (E end)-Sta 1840+00 (W end) I-57 Sta 540+00 (S end) Sta 655+00 (N end)
**Quadrangle:** Rising Quadrangle **Township-Range-Section:** Sec 34 T20N R8E (see additional info)
**Survey Target Date:** 03/18/2013 **Anticipated Design Apprvl:** 03/18/2013 **Cleared for Design Apprvl:** 12/10/2014
**Cleared for Letting:** 12/10/2014 **Mitigation:** No

**Initial Survey and WIE** **Addendum No:**

| Initiated | Due Date | Results Received | Wetland Present | District Notified | WIE Requested | WIE Received | Wetland Impacts | Resp to District | Coord Complete |
|---|---|---|---|---|---|---|---|---|---|
| 10/02/2012 | 06/24/2013 | 06/24/2013 | Yes | 06/27/2013 | Yes | 12/10/2014 | No | 12/10/2014 | Yes |

**Comments:** Revised original due date to 6-24-13 due to addendum A submittal. (JMV)

**Clearances:** **Cultural:** **Bio** 6/27/2013 **SW:** 3/15/2013

---

**Submittal Date:** 03/25/2013 **Sequence No:** 17502 A
**District:** 5 **Requesting Agency:** DOH **Project No:**
**Contract #:** 70897 **Job No.:** C- 95-030-11
**Counties:** Champaign
**Route:** FAI 74/57 **Marked:** I-74/I-57
**Street:** **Section:** 10(5-1-RS-1,14-1,6)R
**Municipality(ies):** City of Champaign (see additional info) **Project Length:** 8.0467 **km** 5 **miles**
**FromTo (At):** I-74 Sta 1150+00 (E end)-Sta 1840+00 (W end) I-57 Sta 540+00 (S end) Sta 655+00 (N end)
**Quadrangle:** Rising Quadrangle **Township-Range-Section:** Sec 34 T20N R8E (see additional info)
**Survey Target Date:** 09/25/2013 **Anticipated Design Apprvl:** **Cleared for Design Apprvl:** 12/10/2014
**Cleared for Letting:** 12/10/2014 **Mitigation:** No

**Initial Survey and WIE** **Addendum No:** A

| Initiated | Due Date | Results Received | Wetland Present | District Notified | WIE Requested | WIE Received | Wetland Impacts | Resp to District | Coord Complete |
|---|---|---|---|---|---|---|---|---|---|
| 04/11/2013 | 06/24/2013 | 06/26/2013 | Yes | | | | | | |

**Comments:**

**Clearances:** **Cultural:** **Bio** 6/27/2013 **SW:** 9/9/2013

**Submittal Date:** 12/19/2013 **Sequence No:** 17502 B
**District:** 5 **Requesting Agency:** DOH **Project No:**
**Contract #:** 70897 **Job No.:** C- 95-030-11
**Counties:** Champaign
**Route:** FAI 74/57 **Marked:** I-74/I-57
**Street:** **Section:** 10(5-1-RS-1,14-1,6)R
**Municipality(ies):** City of Champaign (see additional info) **Project Length:** 8.0467 **km** 5 **miles**
**FromTo (At):** I-74 Sta 1150+00 (E end)-Sta 1840+00 (W end) I-57 Sta 540+00 (S end) Sta 655+00 (N end)
**Quadrangle:** Rising Quadrangle **Township-Range-Section:** Sec 34 T20N R8E (see additional info)
**Survey Target Date:** 06/19/2014 **Anticipated Design Apprvl:** 06/19/2014 **Cleared for Design Apprvl:** 12/10/2014
**Cleared for Letting:** 12/10/2014 **Mitigation:** No

**Initial Survey and WIE** **Addendum No:** B

| Initiated | Due Date | Results Received | Wetland Present | District Notified | WIE Requested | WIE Received | Wetland Impacts | Resp to District | Coord Complete |
|---|---|---|---|---|---|---|---|---|---|
| 08/11/2014 | 11/15/2014 | 11/11/2014 | Yes | 11/13/2014 | Yes | 12/10/2014 | No | 12/10/2014 | Yes |

**Comments:** Add. B shapefiles sent to INHS; tasked for wet del for Add. B & C together

**Clearances:** **Cultural:** 1/13/2014 **Bio** 1/7/2014 **SW:** 5/23/2014

**Submittal Date:** 08/08/2014 **Sequence No:** 17502 C
**District:** 5 **Requesting Agency:** DOH **Project No:**
**Contract #:** 70897 **Job No.:** C- 95-030-11
**Counties:** Champaign
**Route:** FAI 74/57 **Marked:** I-74/I-57
**Street:** **Section:** 10(5-1-RS-1,14-1,6)R
**Municipality(ies):** City of Champaign (see additional info) **Project Length:** 8.0467 **km** 5 **miles**
**FromTo (At):** I-74 Sta 1150+00 (E end)-Sta 1840+00 (W end) I-57 Sta 540+00 (S end) Sta 655+00 (N end)
**Quadrangle:** Rising Quadrangle **Township-Range-Section:** see additional info
**Survey Target Date:** 02/08/2015 **Anticipated Design Apprvl:** 02/08/2015 **Cleared for Design Apprvl:** 12/10/2014
**Cleared for Letting:** 12/10/2014 **Mitigation:** No

**Initial Survey and WIE** **Addendum No:** C

| Initiated | Due Date | Results Received | Wetland Present | District Notified | WIE Requested | WIE Received | Wetland Impacts | Resp to District | Coord Complete |
|---|---|---|---|---|---|---|---|---|---|
| 08/11/2014 | 11/15/2014 | 11/11/2014 | Yes | 11/13/2014 | Yes | 12/10/2014 | No | 12/10/2014 | Yes |

**Comments:** Wetlands tasked for Add. B and C together (SDH)

**Clearances:** **Cultural:** **Bio** 11/13/2014 **SW:**

**Processing**
**Individual Compensation Plan Required:**
**404 Individual Permit Required:**

**Mitigation Site:**
**Mitigation Basin:**
**Bank:**
**Accumulation:**

**Owner:**
**Name:**
**Location:**
**Size:**
**Types:**
**Quad:**
**Basin:**

**Processing Comments:**

**Wetland Impacts Evaluation**

| | | | |
|---|---|---|---|
| **Submittal Date:** | 12/10/2014 | **Submitted By:** | |
| **Does the project have wetland impacts?** | No | **Type:** | |
| **Briefly describe the measures considered to avoid and minimize adverse impacts to the wetlands:** | See addtl info tab for information regarding the wetlands | | |
| **Summarize briefly why there are no practicable alternatives to the use of the wetland(s):** | | | |
| **Wetland mitigation is being proposed:** | | ☐ **Reviewed** | |

| | | | |
|---|---|---|---|
| **Memo Date:** | 12/10/2014 | **Memo By:** | Vince Hamer |
| **Memo:** | This office has reviewed the WIE and it is acceptable to this office.Per ACOE and IDNR there are no jurisdictional wetlands within the environmental survey request limits of the proposed improvement, no mitigation or permits are required. This project is cleared for construction with respect to wetlands. | | |
| **Memo Date:** | 06/27/2013 | **Memo By:** | Janel Veile |
| **Memo:** | The National Wetland Inventory Map (Rising Quadrangle) depicts wetlands in the project area. The project was sent for field survey. The INHS wetland delineation report and GIS data are posted on the shared drive. The results of the survey indicate the presence of 16 jurisdictional wetlands within the project area (Sites 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 17 and 18).<br><br>In accordance with IDOT BDE Manual Section 26-8, wetland impacts are to be avoided, minimized and then mitigated. Section 26-8.05©4 states that for all projects that are surveyed for wetlands and determined to have wetlands within the study area, a Wetland Impact Evaluation (WIE) form must be completed and submitted to the BDE, even if there are no wetland impacts. Further information on completing and processing of WIEs is contained in IDOT BDE Manual Section 26-8. | | |

**Wetland Impacts and Mitigation Required**

**Mitigation Site Suitability Study:**

**Wetland Compensation Plan:**

**Preparer:** **Preparer:**

| Conceptual | | | | | Final | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Plan Received** | **Agency** | **Report Sent and District Notified** | **Agency Response** | **District Notified** | **Plan Received** | **Agency** | **Report Sent and District Notified** | **Agency Response** | **District Notified** |
| | **IDNR** | | | | | **IDNR** | | | |
| | **USFWS** | | | | | **USFWS** | | | |
| | **COE** | | | | | **COE** | | | |

**Monitoring**

| | Monitoring Reports | | | |
|---|---|---|---|---|
| | **Received** | **COE Notified** | **IDNR Notified** | **District Notified** |
| **Year 1** | | | | |
| **Year 2** | | | | |
| **Year 3** | | | | |
| **Year 4** | | | | |
| **Year 5** | | | | |

**Monitoring Agency:**

| | |
|---|---|
| **Construction Begin Date:** | |
| **Construction Complete Date:** | |
| **Tasked Date:** | |
| **Monitoring Begin Date:** | |
| **Monitoring Complete Date:** | |

**Monitoring Comments:**

**Permit(s)** **Type:** **Corps Dist.:** **Permit Issued:**

☐ **Special Conditions:**

☐ **Permit Agreements/Commitments:**

**Project Phase**

| | |
|---|---|
| **Project Phase Comments:** | |

# Illinois Department of Transportation

## Memorandum

| | | | |
|---|---|---|---|
| To: | Joseph E. Crowe | Attn: | Dennis L. Markwell |
| From: | John D. Baranzelli | By: | Thomas C. Brooks Thomas C Brooks |
| Subject: | Biological Resources Review | | |
| Date: | June 27, 2013 | | |

FAI 74/57
I-74 Sta 1150+00 (E end) Sta 1840+00 (W end) & I-57 Sta 540+00 (S end) Sta 655+00 (N end)
Job No.: C-95-030-11
BDE Seq. No.: 17502 & 17502A
Champaign County

The proposed project involves interchange reconstruction of I-74 and I-57. An undetermined amount of new ROW is required.

A preliminary review was performed of the project area for the potential impact on threatened or endangered species pursuant to Section 7 of the Endangered Species Act as amended. The U.S. Fish and Wildlife Service Region 3 list of threatened or endangered species in Illinois (http://www.fws.gov/midwest/endangered/lists/illinois-cty.html) lists Indiana bat (*Myotis sodalis*), Eastern prairie fringed orchid (*Platanthera leucophaea*) and Prairie bush clover (*Lespedeza leptostachya*) as occurring in Champaign County.

Appendix 2 of the Indiana bat (*Myotis sodalis*) Draft Recovery Plan: First Revision lists no records for the Indiana bat in Champaign County. Also, there are no caves, mines (hibernacula); small stream corridors with well developed riparian woods or upland forests (foraging) in the project area. We conclude no effect to the Indiana bat in the project area.

The federally threatened and Illinois endangered Eastern prairie fringed orchid is a plant of open-canopied mesic to wet prairies and high quality wetlands. There is no prairie or high quality wetlands within the project area. Therefore, we conclude absence of the Eastern prairie fringed orchid in the project area.

Prairie bush clover requires dry to mesic prairies with gravelly soils. There is no such habitat in the project corridor. Therefore, we conclude absence of Prairie bush clover in the project area.

This office has determined that there will be no effect to the species listed for Champaign County, Illinois as described above. Please keep this memorandum in your project files as it documents and concludes consultation with the IDNR and USFWS.

The IDNR Natural Heritage Database has no records of listed species, natural areas or nature preserves within the project corridor (NRRT/DIRT report dated September 17, 2012 for the original project and May 25, 2013 for Addendum A). In accordance with the 2013 Memorandum of Understanding by and between IDNR and IDOT, consultation is terminated.

The National Wetland Inventory Map (Rising Quadrangle) depicts wetlands in the project area. The project was sent for field survey. The INHS wetland delineation report and GIS data are posted on the shared drive. The results of the survey indicate the presence of 16 jurisdictional wetlands within the project area (Sites 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 17 and 18).

In accordance with IDOT BDE Manual Section 26-8, wetland impacts are to be avoided, minimized and then mitigated. Section 26-8.05(c)4 states that for all projects that are surveyed for wetlands and determined to have wetlands within the study area, a Wetland Impact Evaluation (WIE) form must be completed and submitted to the BDE, even if there are no wetland impacts. Further information on completing and processing of WIEs is contained in IDOT BDE Manual Section 26-8.

The Natural Resources Unit has reviewed this project. The project, as described on the Environmental Survey Request Form, does not require biological surveys. By agreement, no coordination with the Illinois Department of Natural Resources and the U.S. Fish and Wildlife Service is necessary.

JMV

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Paul A. Loete | Attn: Dennis L. Markwell |
| From: | John D. Baranzelli | By: Thomas C. Brooks |
| Subject: | Natural Resources Review | Thomas C. Brooks |
| Date: | January 7, 2014 | |

I-74/I-57
T20N/R8E/S34
Seq #17502B
Champaign County

The proposed project involves reconstruction of I-74/I-57 interchange.

The amount of land acquisition and tree removal is undetermined at this time. There will not be in-stream work. Land cover in the vicinity of the proposed improvement is primarily residential and agriculture land.

**Review for Illinois Endangered Species Protection and Illinois Natural Areas Preservation – Part 1075**

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location. **Therefore, consultation under Part 1075 is terminated**.

**This review for compliance with 17 Ill. Adm. Code Part 1075 is valid for two years unless new information becomes available that was not previously considered; the proposed improvement is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the proposed improvement has not been implemented within two years of the date of this memorandum, or any of the above listed conditions develop, a new review will be necessary.**

**Review for Illinois Interagency Wetland Policy Act – Part 1090**

The National Wetlands Inventory does not show wetlands in the vicinity of the project location. **Therefore, the wetland review under Part 1090 is terminated**.

**Review for Endangered Species Act - Section 7**

See the attached US Fish and Wildlife Service list of endangered, threatened, proposed and candidate species and proposed and designated critical habitat that may be present within the county in which the proposed project is located. We cross-referenced the preferred habitat of each listed species with our knowledge of the project area and determined that listed species and critical habitat are not present.

Should the proposed improvement be modified or new information indicate listed or proposed species may be affected, consultation or additional coordination should be initiated.

Attachment—USFWS species county list

VH

# Illinois County Distribution

## Federally Endangered, Threatened, and Candidate Species

**List Revised October 2013**

| County | Species | Status | Habitat |
|---|---|---|---|
| **Champaign**<br>**Field Office to Contact:**<br>U.S. Fish and Wildlife Service<br>Marion Illinois Sub-Office<br>8588 Route 148<br>Marion, Illinois 62959<br>Phone: (618) 997-3344, ext. 340<br>FAX: (618) 997-8961<br>e:mail Marion@fws.gov+A49 | Indiana bat *(Myotis sodalis)* | Endangered | Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging) |
| | Northern long-eared bat *Myotis septentrionalis* | Proposed as Endangered | Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests and woods. |
| | Eastern prairie fringed orchid *(Platanthera leucophaea )* | Threatened | Mesic to wet prairies |
| | Prairie bush clover *(Lespedeza leptostachya)* | Threatened | Dry to mesic prairies with gravelly soil |

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Joseph Crowe | Attn: Bart Sherer |
| From: | John Baranzelli | By: Brad Koldehoff |
| Subject: | Cultural Resource Clearance | |
| Date: | January 13, 2014 | |

**Champaign County**
**FAI 74/57, I-74/I-57**
**Sec. 10(5-1-RS-1,14-1-6)R**
**Job No. P-95-030-11**
**Seq. #17502B**

Attached is a copy of the Environmental Survey Request Form submitted for the above project. The professional staff of the Cultural Resources Unit has made the following determination: "No Historic Properties Affected." This determination follows the stipulations of the joint Programmatic Agreement for the Delegation of Authority for Minor Projects ratified by the Advisory Council on Historic Preservation, FHWA, SHPO, and IDOT on June 14, 2011.

The stamped request form attached documents that no further coordination is required for cultural resources.

Brad Koldehoff

Attachment

BK:km

Attention: Central Office BD&E
Environment Section
Room 330

# Environmental Survey Request Addendum

**A. Project Information** ☑ Bio ☑ Cultural ☐ Wetlands ☑ Special Waste

Submittal Date: 12/19/2013 Sequence No: 17502 B

District: 5 Requesting Agency: DOH Project No:

Contract #: 70897 Job No.: C- 95-030-11

Counties: Champaign

Route: FAI 74/57 Marked: I-74/I-57

Street: Section: 10(5-1-RS-1,14-1,6)R

Municipality(ies): City of Champaign (see additional info) Project Length: 8.0467 km 5 miles

FromTo (At): I-74 Sta 1150+00 (E end)-Sta 1840+00 (W end) I-57 Sta 540+00 (S end) Sta 655+00 (N end)

Quadrangle: Rising Quadrangle Township-Range-Section: Sec 34 T20N R8E (see additional info)

Survey Target Date: 06/19/2014 Anticipated Design Approval: 06/19/2014

**B. Reason for Submittal: (Check all that apply)**

☐ Acquisition of additional ROW or easement Addendum: acres Total Project: acres

☐ In-Stream Work Stream Name:

☑ Other: ESR Limits were expanded

☐ Field Sign Off (Bio & Cultural Only)

**C.** Addendum Description: An addendum was required due to a change in the ESR limits from what was originally submitted.

**D.** Tree Removal?: Don't Know Number?: ha/ acres

| | | | |
|---|---|---|---|
| Existing Bridge(s) Structure Number: | 010-1071 | On Historic Bridge List: | No |
| Existing Bridge(s) Structure Number: | 010-0169 | On Historic Bridge List: | No |

Wetland delineation performed by: BDE End. Species Consultation performed by: BDE

**E.**

| | | | |
|---|---|---|---|
| Contact Person: | Bart Sherer | Local Contact Person: | |
| Telephone #: | (217) 465-4181 ext. 317 | Telephone #: | |
| Env.Contact: | | E-Mail: | |
| Telephone #: | | Title/Company: | |

**F.** ☐ Update Entire Project

☐ Addendum Only

☐ Field Sign Off (Bio & Cultural Only) ☐ Received in CO

**CULTURAL RESOURCES:**
NO SURVEY OR FURTHER COORDINATION REQUIRED

Brad Koldehoff 1/13/14
SIGNED DATE

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Joseph E. Crowe | Attn: Bart L. Sherer |
| From: | John D. Baranzelli | By: Brad H. Koldehoff |
| Subject: | Cultural Resources – Adverse Effect | |
| Date: | February 20, 2014 | |

**Champaign County**
**FAI-57/74, I-57/74**
**Champaign**
**Intersection Reconstruction**
**IDOT Sequence #17502, 17502A**
**ISAS Log #12197, 13044**

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the above referenced project has the potential to cause an Adverse Effect to an ancient American Indian archaeological habitation site (11CH608). Preliminary investigations conducted by Illinois State Archaeological Survey (ISAS) personnel have identified the site as requiring test excavations to evaluate its National Register eligibility. However, access to the site has been denied by the landowner. Therefore, test excavations by ISAS must be undertaken when IDOT has control of the site area that will be potentially impacted by the project.

The Illinois State Historic Preservation Officer (SHPO) has concurred with IDOT's determination of a "Preliminary Adverse Effect," see attached letter. Therefore, a Memorandum of Agreement (MOA) will be developed that stipulates, (1) archaeological test excavations must be conducted prior to construction, and (2) if National Register eligible cultural resources are identified, data-recovery excavations (mitigation) must be completed prior to any construction activities in the vicinity of the site. When the MOA has been ratified, the project will be clear for design approval.

Brad H. Koldehoff, RPA
Cultural Resources Unit
Bureau of Design and Environment

Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

**Champaign County**
**FAI-57/74, I-57/74**
**Champaign**
**Intersection Reconstruction**
**IDOT Sequence #17502, 17502A**
**ISAS Log #12197, 13044**

**January 10, 2014**

RECEIVED
JAN 10 2014
PRESERVATION SERVICES

***Federal Section 106 – Preliminary Adverse Effect***

Ms. Anne Haaker
Deputy State Historic Preservation Officer
Illinois Historic Preservation Agency
Springfield, Illinois 62701

Dear Ms. Haaker:

Enclosed are copies of the Phase I Survey Report completed by Illinois State Archaeological Survey (ISAS) personnel concerning archaeological and historical resources potentially impacted by the above referenced project. Survey of the 579-acre project area resulted in the identification of nine archaeological sites within or adjacent to the project limits: 11CH290, 11CH603-609, and 11CH611. No architectural resources eligible for National Register consideration were identified by IDOT's cultural resources staff.

One archaeological site, 11CH608, may hold new information about the prehistory of the region, while the remaining sites appear to lack integrity and information potential. To evaluate the National Register eligibility of site 11CH608, test excavations are recommended. However, access to the site has been denied by the landowner. Therefore, a draft MOA will be developed in coordination with FHWA and submit to your office for review and comment. The MOA will stipulate that (1) site 11CH608 will be evaluated once IDOT controls the portion of the site to be impacted, and (2) data-recovery excavations will be conducted, if warranted.

In accordance with the established procedure for coordination of IDOT projects, we request the concurrence of the State Historic Preservation Officer in our preliminary determination that the proposed project may cause an adverse to an historic property subject to protection under Section 106 of the National Historic Preservation Act of 1966, as amended.

Very truly yours,

Brad H. Koldehoff
Cultural Resources Unit
Bureau of Design & Environment

CONCUR
By: Anne E. Haaker
Deputy State Historic Preservation Officer
Date: 1-10-14

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Joseph E. Crowe | Attn: Bart L. Sherer |
| From: | John D. Baranzelli | By: Brad H. Koldehoff |
| Subject: | Cultural Resources – Adverse Effect, Ratified MOA | |
| Date: | July 9, 2014 | |

**Champaign County**
**FAI-57/74, I-57/74**
**Champaign**
**Interchange Reconstruction**
**IDOT Sequence #17502, 17502A, 17502B**
**ISAS Log #12197, 13044**

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the above referenced project has the potential to cause an Adverse Effect to an ancient American Indian archaeological habitation site (11CH608). Preliminary investigations conducted by Illinois State Archaeological Survey (ISAS) personnel have identified the site as requiring test excavations to evaluate its National Register eligibility. However, access to the site has been denied by the landowner. Therefore, test excavations by ISAS must be undertaken when IDOT has control of the site area that will be potentially impacted by the project.

A Memorandum of Agreement (MOA) has been developed and ratified (see attached) with the following stipulations: (1) archaeological test excavations must be conducted prior to construction, and (2) if National Register eligible cultural resources are identified, data-recovery excavations (mitigation) must be completed prior to any construction activities in the vicinity of the site.

***The project is cleared for design approval provided District 5 ensures the above stipulations are completed in coordination with my office and ISAS personnel prior to any construction activities in the vicinity of the site.***

Brad H. Koldehoff, RPA
Cultural Resources Unit
Bureau of Design and Environment

**MEMORANDUM OF AGREEMENT**
**AMONG**
**THE FEDERAL HIGHWAY ADMINISTRATION,**
**ILLINOIS DEPARTMENT OF TRANSPORTATION,**
**AND**
**ILLINOIS STATE HISTORIC PRESERVATION OFFICER,**
**REGARDING**
**RECONSTRUCTION OF I-57/I-74 INTERCHANGE**
**CHAMPAIGN, CHAMPAIGN COUNTY, ILLINOIS**

**WHEREAS**, the Illinois Department of Transportation (IDOT) plans to reconstruct the interchange of I-57 and I-74 in Champaign, Champaign County, Illinois (Project), IDOT Sequence #17502, 17502A, 17502B; and

**WHEREAS,** the Federal Highway Administration (FHWA) may fund the Project thereby making the Project an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. Section 470f, and its implementing regulations, 36 C.F.R. Part 800; and

**WHEREAS**, the FHWA has defined the undertaking's area of potential effect (APE) as the proposed project area (as shown in Exhibit A); and

**WHEREAS**, the FHWA in consultation with the Illinois State Historic Preservation Officer (SHPO) has determined that no standing structures that are eligible for listing on the National Register of Historic Places will be adversely effected by the Project (Exhibit B); and

**WHEREAS**, the FHWA invited the following Tribes to enter consultation: the Kickapoo, Miami, and Peoria, and no Tribe expressed an interest in consultation; and

**WHEREAS**, the FHWA has invited the IDOT to participate in consultation and to become a signatory to this Memorandum of Agreement (MOA); and

**WHEREAS**, the FHWA and IDOT, in consultation with the SHPO, have identified an ancient American Indian habitation area (Site) that has the potential to yield important information about the prehistory of region (11CH608), thus, making the Site eligible for the National Register of Historic Places (NRHP) under Criterion D, and the Site may be adversely effected by the Project; and

**WHEREAS**, the Site has no affiliation with historic Indian Tribes and is important for the scientific data it likely contains; therefore, it does not require preservation in place; and

**WHEREAS**, in accordance with 36 CFR Part 800, the FHWA acknowledges and accepts the advice and conditions outlined in the Council's "Recommended Approach for Consultation on the Recovery of Significant Information from Archaeological Sites," published in the Federal Register on June 17, 1999; and

**WHEREAS**, the FHWA notified the Advisory Council on Historic Preservation (ACHP) of the preparation of this MOA in a letter dated April 8, 2014 and the ACHP has declined to participate in consultation; and

**WHEREAS**, execution and implementation of this MOA evidences that the FHWA has satisfied its Section 106 responsibilities for the Project; and

**NOW, THEREFORE**, the FHWA, IDOT, and SHPO agree that the Project shall be implemented in accordance with the following stipulations to ensure that potential effects on historic properties are taken into account.

## STIPULATIONS

The FHWA, IDOT, and SHPO agree that the following steps will be undertaken for the Project:

### I. ARCHAEOLOGICAL TESTING (PHASE II)

**A.** When the IDOT has secured access to the Site (11CH608), the Illinois State Archaeological Survey (ISAS) on behalf of the IDOT will conduct test excavations within the project limits to identify and evaluate archaeological resources. The IDOT will seek SHPO concurrence in determining the NRHP eligibility of the archaeological resources.

B. If the resources are determined eligible for the NRHP, and adverse impacts by the Project cannot be avoided, the IDOT, in coordination with the SHPO, will ensure that data-recovery excavations (mitigation) are completed.

### II. ARCHAEOLOGICAL MITIGATION (PHASE III)

**A.** To mitigate the adverse effect, the IDOT will ensure that data-recovery excavations are completed by the ISAS in accordance with the attached data-recovery plan (Exhibit C), which is consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties, the Secretary of the Interior's Standards and Guidelines for Archaeological and Historic Preservation, and the Advisory Council on Historic Preservation's Treatment of Archaeological Properties: A Handbook. The IDOT will ensure that no construction activities will be undertaken in the vicinity of the Site prior to the conclusion of data-recovery excavations.

**B.** Human remains are not expected to be found during the investigations covered by this MOA. However, if encountered, required notifications of the discovery will be made to the county coroner and the SHPO, then after authorization under Illinois Human Skeletal Remains Protection Act (20 ILCS 3440, 17 IAC 4170) and its rules (the Act), the remains along with

any associated artifacts will be removed following procedures for recording and reporting established under the Act. No excavation of human remains will be performed except under the direction of a Certified Skeletal Analyst (17 IAC 4170.300(f)). Disposition of the remains and associated artifacts will be accomplished as determined under the Act.

## III. PROFESSIONAL STANDARDS

For the purpose of implementing this MOA, the IDOT shall continue to employ departmental staff with qualifications that meet the requirements of 36 CFR Part 61, Appendix A. At a minimum, the professional staff required to carry out the terms of this MOA shall consist of one permanent, full time, archaeologist. In the event of a prolonged absence of the IDOT archaeologist, IDOT will, in consultation with the FHWA and SHPO, appoint an archaeologist that meets the requirements of 36 CFR Part 61, Appendix A.

## IV. DURATION

This MOA will be null and void if its stipulations are not carried out within ten years from the date of its execution. In such an event, the FHWA shall so notify the parties to this MOA and, if it chooses to continue with the Project, then it shall reinitiate review of the Project in accordance with 36 CFR Part 800.

## V. POST REVIEW DISCOVERIES

**A.** *Procedures for an Unanticipated Discovery of Human Remains and Burials:* In the case of an unanticipated discovery of human remains or burials on state land, the IDOT will comply with 20 Illinois Compiled Statutes 3440/0.01, et seq. (Human Skeletal Remains Protection Act) and follow these procedures:

(a) Upon encountering human remains or an unmarked human burial during ground disturbing construction activities, the IDOT will ensure that the construction contractor immediately stops work within a one-hundred-fifty (150) foot radius from the point of discovery. The IDOT will ensure that the construction contractor implements interim measures to protect the discovery from vandalism and looting, but must not remove or otherwise disturb any human remains or other items in the immediate vicinity of the discovery.

(b) Immediately following receipt of such notification, the IDOT will ensure that construction activities have halted within a one-hundred-fifty (150) foot radius from the point of discovery and assume responsibility for implementing additional measures, as appropriate, to protect the discovery

from looting and vandalism until the requirements of state law have been completed.

(c) The IDOT will determine if the skeletal remains are human, the degree to which they were disturbed, and, if possible, assess their potential age and cultural affiliation without any further disturbance.

(d) The IDOT will notify the county coroner, Illinois Historic Preservation Agency (IHPA) and SHPO, and other interested parties within forty-eight (48) hours of the discovery.

(e) Within seventy-two (72) hours after notification the county coroner will determine jurisdiction. If the remains are older than 100 years, the county coroner will notify the IHPA and SHPO.

(f) The IHPA is responsible for notifying FHWA, IDOT, and other interested parties within twenty-four (24) hours of its findings.

(g) If it is determined that intact or fragmented human remains are present the IDOT will consult with the IHPA, SHPO, FHWA, and other interested parties regarding additional measures to avoid and protect or mitigate the adverse effect of the Project on the human remains and burial site. These measures may include:

i. formal archaeological evaluation of the site;
ii. if the remains are determined to be Native American, consultation with appropriate Tribes will be required;
iii. visits to the site by the SHPO and other interested parties;
iv. exploration of potential alternatives to avoid the human remains or burial;
v. for Native American remains, implementation of a mitigation plan by the IDOT in consultation with appropriate Tribes, including procedures for disinterment and re-interment;
vi. implementation of the mitigation plan; and
vii. FHWA approval to resume construction following completion of the fieldwork component of the mitigation plan.

**B.** *Procedures for an Unanticipated Discovery of Historic Properties:* In the event of an unanticipated discovery of historic properties during IDOT construction activities, IDOT will follow these procedures:

(a) The construction contractor must immediately stop all construction activity within a three-hundred (300) foot radius of the discovery, notify IDOT of the discovery and implement interim

measures to protect the discovery from looting and vandalism. Within forty-eight (48) hours of receipt of this notification of the discovery, the IDOT shall:

i. inspect the work site to determine the extent of the discovery and ensure that construction activities have halted;
ii. clearly mark the area of the discovery;
iii. implement additional measures, as appropriate, to protect the discovery from looting and vandalism; and
iv. notify the FHWA, the SHPO, and other interested parties of the discovery.

(b) IDOT/FHWA will have seven (7) business days following notification to determine the National Register eligibility of the discovery after considering the filed comments of the SHPO and other interested parties. IDOT/FHWA may assume the newly discovered property to be eligible for the National Register for the purposes of Section 106 pursuant to 36 CFR§ 800.13(c)

(c) If the find is determined to be potentially significant the IDOT will consult with the SHPO and other interested parties regarding appropriate measures for site treatment. For properties determined eligible for the National Register, IDOT/FHWA will notify the SHPO and other interested parties, of those actions for which it proposes to resolve adverse effects. The SHPO and other interested parties will have seven (7) business days to provide their views on the proposed actions to resolve adverse effects. These measures may include:

i. formal archaeological evaluation of the site;
ii. visits to the site by the SHPO and other interested parties;
iii. exploration of potential alternatives to avoid the site;
iv. preparation of a mitigation plan by the IDOT in consultation with other interested parties for approval by the SHPO;
v. implementation of a mitigation plan; and
vi. FHWA approval to resume construction following completion of the fieldwork component of the mitigation plan.

(d) If the find is determined to be either isolated or completely disturbed by construction activities, the IDOT will consult with the SHPO and other interested parties prior to resuming construction.

Execution of this MOA by the FHWA, SHPO, and IDOT and implementation of its terms evidence that FHWA has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment

FEDERAL HIGHWAY ADMINISTRATION

By: Matt Tucker Date: July 3, 2014

ILLINOIS STATE HISTORIC PRESERVATION OFFICER

By: Anne E. Haaker Date: July 3, 2014

**INVITED SIGNATORY**

ILLINOIS DEPARTMENT OF TRANSPORTATION

By: Kensil A. Garnett COR Date: 6-25-14

U.S. Department
of Transportation
**Federal Highway Administration**

**Illinois Division**

3250 Executive Park Dr.
Springfield, IL 62703
(217) 492-4640
www.fhwa.dot.gov/ildiv

July 31, 2014

In Reply Refer To:
HPER-IL

Mr. Reid Nelson
Advisory Council on Historic Preservation
401 F Street NW, Suite 308
Washington, DC 20001-2637

Subject: Memorandum of Agreement, Reconstruction of I-57/I-74 Interchange

Dear Mr. Nelson:

The Illinois Department of Transportation proposes to use Federal-aid funding to reconstruct the I-57 and I-74 interchange in Champaign, Champaign County, Illinois. The Federal Highway Administration (FHWA) has determined the undertaking will have an adverse effect. We notified the Advisory Council on Historic Preservation of the adverse effect determination and the Council chose not to participate in the consultation.

The FHWA notified the Tribes who have an interest in this project area, and no responses were received.

This adverse effect will be mitigated through the stipulations as described in the enclosed Memorandum of Agreement (MOA). We are submitting this executed MOA Pursuant to 36 Code of Federal Regulations 800.6. If you have any questions, please call me at (217) 492-4625.

Sincerely,

Matt Fuller
Environmental Programs Engineer

Enclosure

**MEMORANDUM OF AGREEMENT**
**AMONG**
**THE FEDERAL HIGHWAY ADMINISTRATION,**
**ILLINOIS DEPARTMENT OF TRANSPORTATION,**
**AND**
**ILLINOIS STATE HISTORIC PRESERVATION OFFICER,**
**REGARDING**
**RECONSTRUCTION OF I-57/I-74 INTERCHANGE**
**CHAMPAIGN, CHAMPAIGN COUNTY, ILLINOIS**

**WHEREAS**, the Illinois Department of Transportation (IDOT) plans to reconstruct the interchange of I-57 and I-74 in Champaign, Champaign County, Illinois (Project), IDOT Sequence #17502, 17502A, 17502B; and

**WHEREAS,** the Federal Highway Administration (FHWA) may fund the Project thereby making the Project an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. Section 470f, and its implementing regulations, 36 C.F.R. Part 800; and

**WHEREAS**, the FHWA has defined the undertaking's area of potential effect (APE) as the proposed project area (as shown in Exhibit A); and

**WHEREAS**, the FHWA in consultation with the Illinois State Historic Preservation Officer (SHPO) has determined that no standing structures that are eligible for listing on the National Register of Historic Places will be adversely effected by the Project (Exhibit B); and

**WHEREAS**, the FHWA invited the following Tribes to enter consultation: the Kickapoo, Miami, and Peoria, and no Tribe expressed an interest in consultation; and

**WHEREAS**, the FHWA has invited the IDOT to participate in consultation and to become a signatory to this Memorandum of Agreement (MOA); and

**WHEREAS**, the FHWA and IDOT, in consultation with the SHPO, have identified an ancient American Indian habitation area (Site) that has the potential to yield important information about the prehistory of region (11CH608), thus, making the Site eligible for the National Register of Historic Places (NRHP) under Criterion D, and the Site may be adversely effected by the Project; and

**WHEREAS**, the Site has no affiliation with historic Indian Tribes and is important for the scientific data it likely contains; therefore, it does not require preservation in place; and

**WHEREAS**, in accordance with 36 CFR Part 800, the FHWA acknowledges and accepts the advice and conditions outlined in the Council's "Recommended Approach for Consultation on the Recovery of Significant Information from Archaeological Sites," published in the Federal Register on June 17, 1999; and

**WHEREAS**, the FHWA notified the Advisory Council on Historic Preservation (ACHP) of the preparation of this MOA in a letter dated April 8, 2014 and the ACHP has declined to participate in consultation; and

**WHEREAS**, execution and implementation of this MOA evidences that the FHWA has satisfied its Section 106 responsibilities for the Project; and

**NOW, THEREFORE**, the FHWA, IDOT, and SHPO agree that the Project shall be implemented in accordance with the following stipulations to ensure that potential effects on historic properties are taken into account.

## STIPULATIONS

The FHWA, IDOT, and SHPO agree that the following steps will be undertaken for the Project:

### I. ARCHAEOLOGICAL TESTING (PHASE II)

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B. If the resources are determined eligible for the NRHP, and adverse impacts by the Project cannot be avoided, the IDOT, in coordination with the SHPO, will ensure that data-recovery excavations (mitigation) are completed.

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## IV. DURATION

This MOA will be null and void if its stipulations are not carried out within ten years from the date of its execution. In such an event, the FHWA shall so notify the parties to this MOA and, if it chooses to continue with the Project, then it shall reinitiate review of the Project in accordance with 36 CFR Part 800.

## V. POST REVIEW DISCOVERIES

**A.** *Procedures for an Unanticipated Discovery of Human Remains and Burials:* In the case of an unanticipated discovery of human remains or burials on state land, the IDOT will comply with 20 Illinois Compiled Statutes 3440/0.01, et seq. (Human Skeletal Remains Protection Act) and follow these procedures:

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(b) Immediately following receipt of such notification, the IDOT will ensure that construction activities have halted within a one-hundred-fifty (150) foot radius from the point of discovery and assume responsibility for implementing additional measures, as appropriate, to protect the discovery

from looting and vandalism until the requirements of state law have been completed.

(c) The IDOT will determine if the skeletal remains are human, the degree to which they were disturbed, and, if possible, assess their potential age and cultural affiliation without any further disturbance.

(d) The IDOT will notify the county coroner, Illinois Historic Preservation Agency (IHPA) and SHPO, and other interested parties within forty-eight (48) hours of the discovery.

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(f) The IHPA is responsible for notifying FHWA, IDOT, and other interested parties within twenty-four (24) hours of its findings.

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i. formal archaeological evaluation of the site;
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iv. exploration of potential alternatives to avoid the human remains or burial;
v. for Native American remains, implementation of a mitigation plan by the IDOT in consultation with appropriate Tribes, including procedures for disinterment and re-interment;
vi. implementation of the mitigation plan; and
vii. FHWA approval to resume construction following completion of the fieldwork component of the mitigation plan.

**B.** *Procedures for an Unanticipated Discovery of Historic Properties:* In the event of an unanticipated discovery of historic properties during IDOT construction activities, IDOT will follow these procedures:

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iv. notify the FHWA, the SHPO, and other interested parties of the discovery.

(b) IDOT/FHWA will have seven (7) business days following notification to determine the National Register eligibility of the discovery after considering the filed comments of the SHPO and other interested parties. IDOT/FHWA may assume the newly discovered property to be eligible for the National Register for the purposes of Section 106 pursuant to 36 CFR§ 800.13(c)

(c) If the find is determined to be potentially significant the IDOT will consult with the SHPO and other interested parties regarding appropriate measures for site treatment. For properties determined eligible for the National Register, IDOT/FHWA will notify the SHPO and other interested parties, of those actions for which it proposes to resolve adverse effects. The SHPO and other interested parties will have seven (7) business days to provide their views on the proposed actions to resolve adverse effects. These measures may include:

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ii. visits to the site by the SHPO and other interested parties;
iii. exploration of potential alternatives to avoid the site;
iv. preparation of a mitigation plan by the IDOT in consultation with other interested parties for approval by the SHPO;
v. implementation of a mitigation plan; and
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Execution of this MOA by the FHWA, SHPO, and IDOT and implementation of its terms evidence that FHWA has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment

FEDERAL HIGHWAY ADMINISTRATION

By: Matt Tucker Date: July 3, 2014

ILLINOIS STATE HISTORIC PRESERVATION OFFICER

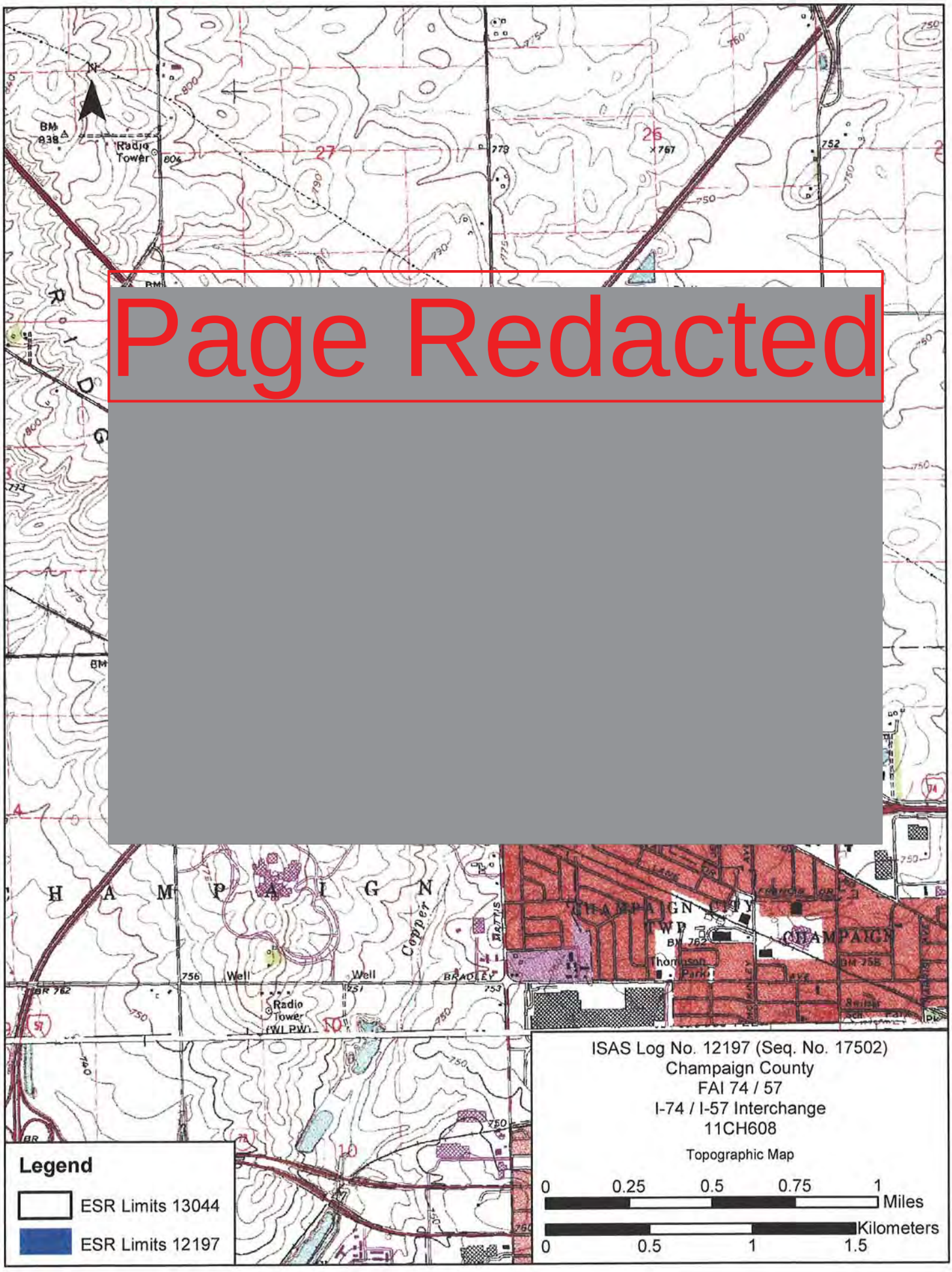
By: Anne E. Haaker Date: July 3, 2014

**INVITED SIGNATORY**

ILLINOIS DEPARTMENT OF TRANSPORTATION

By: Kensil A. Garnett COR Date: 6-25-14

EXHIBIT A


Page Redacted
Legend
ESR Limits 13044
ESR Limits 12197
ISAS Log No. 12197 (Seq. No. 17502)
Champaign County
FAI 74 / 57
I-74 / I-57 Interchange
11CH608
Topographic Map
0 0.25 0.5 0.75 1 Miles
0 0.5 1 1.5 Kilometers

**From:** Malone, Pat
**Sent:** Wednesday, November 05, 2014 11:22 AM
**To:** Sherer, Bart L
**Cc:** Hamer, Steve; Brooks, Thomas C
**Subject:** RE: 17502 70897 I-74-57 interchange Champaign Wetlands

Hi Bart,

The areas described within the interchange and maintained ROW are not considered State jurisdictional wetlands and are not subject to review under IPWA.

Pat

**From:** Sherer, Bart L
**Sent:** Wednesday, October 29, 2014 8:29 AM
**To:** 'gregory.a.mckay@usace.army.mil'; Malone, Pat; Hamer, Steve
**Cc:** Neihart, Scott W; Stults, Jason W; Keys, Rustin B; Brooks, Thomas C; 'Wiesbrook, Scott M'
**Subject:** 17502 70897 I-74-57 interchange Champaign Wetlands

Gentlemen,

IDOT District 5 is in the process of conducting an Environmental Assessment (EA) for the reconstruction of the I-74/I-57 interchange in Champaign, IL.

A wetland survey of the project area has been performed; several wetlands were delineated within the project corridor. The District is currently pursuing a preferred alternative; with a preferred alternative being chosen we can better identify the wetlands that may be affected by the project.

The District is interested in meeting with you to discuss the following items:

- Of the wetlands delineated, which wetlands would the USACE take jurisdiction of requiring mitigation
- Wetland mitigation options

Attached above is a location map, preferred alternative wetland impact exhibit and wetland delineation report for your information.

The District would like to ask if you are available to meet at the project site on Thursday November 13th, 2014 at 10:30 AM to discuss the project.

If you should have any questions or need additional information, feel free to contact me.

**Bart L Sherer**
**Environmental Coordinator**
**IDOT Region 3/District 5**
**Office 217-466-7305**
**Fax 217-465-3101**
**bart.sherer@illinois.gov**

Preserving America's Heritage

August 19, 2014

Mr. Matt Fuller
Environmental Programs Engineer
Federal Highway Administration
Illinois Division
3250 Executive Park Drive
Springfield, IL 62703

Ref: *Proposed Reconstruction of I-57/I-74 Interchange*
*Champaign, Champaign County, Illinois*

Dear Mr. Fuller:

The Advisory Council on Historic Preservation (ACHP) has received the Memorandum of Agreement (MOA) for the above referenced project. In accordance with Section 800.6(b)(1)(iv) of the ACHP's regulations, the ACHP acknowledges receipt of the MOA. The filing of the MOA, and execution of its terms, completes the requirements of Section 106 of the National Historic Preservation Act and the ACHP's regulations.

We appreciate your providing us with a copy of the MOA and will retain it for inclusion in our records regarding this project. Should you have any questions or require additional assistance, please contact Ms. Najah Duvall-Gabriel at (202) 517- 0210 or via e-mail at ngabriel@achp.gov.

Sincerely,

LaShavio Johnson

LaShavio Johnson
Historic Preservation Technician
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION
401 F Street NW, Suite 308 • Washington, DC 20001-2637
Phone: 202-517-0200 • Fax: 202-517-6381 • achp@achp.gov • www.achp.gov

Illinois Department of Agriculture

Pat Quinn, Governor
Robert F. Flider, Director

**Bureau of Land and Water Resources**
State Fairgrounds • P.O. Box 19281 • Springfield, IL 62794-9281 • 217/782-6297 • TDD 217/524-6858 • Fax 217/557-0993

November 10, 2014

Ms. Lana Sumner
Crawford, Murphy & Tilly, Inc.
2750 W. Washington Street
Springfield, Illinois 62702-3497

Re: Interstate 57 and Interstate 74 Interchange Reconstruction
Abbreviated Environmental Assessment – 46.7 acres
Champaign County, Illinois
Federal Highway Administration Funds
USDA NRCS Form AD-1006

Dear Ms. Sumner:

The Illinois Department of Agriculture (IDOA) has completed its review of the agricultural impacts associated with proposed interchange improvements in Champaign County, Illinois. The project was examined for its compliance with IDOT's Agricultural Land Preservation Policy as well as the Illinois Farmland Preservation Act (505 ILCS 75/1 et seq.).

The existing conventional full cloverleaf interchange facility connecting I-57 and I-74 was constructed in 1965. The purpose of the proposed interchange reconstruction is to provide safer and more efficient transportation at the interchange. Its construction ultimately results in the conversion of 44.3 acres of Prime farmland soils to a non-agricultural use.

Because the interchange improvements are adjacent to existing Interstate right-of-way and the agricultural impacts have been mitigated to the greatest extent possible, the IDOA has determined that the project complies with IDOT's Agricultural Land Preservation Policy and Illinois' Farmland Preservation Act.

Enclosed are two copies of the USDA NRCS form AD-1006. One copy must be included in the project's environmental assessment; the other is for your files. Should you have any questions or comments, please contact Terry Savko of my staff at 217-785-4458.

Sincerely,

Steven D. Chard, Acting Chief
Bureau of Land and Water Resources

SDC:TS

Enclosures-2
cc: Jonathon Manuel, Champaign Co SWCD
Agency project file

U.S. Department of Agriculture

# FARMLAND CONVERSION IMPACT RATING

| | | | |
|---|---|---|---|
| **PART I** *(To be completed by Federal Agency)* | | Date Of Land Evaluation Request 10/21/2014 | |
| Name of Project I-57 & I-74 Interchange Improvements | | Federal Agency Involved Federal Highway Administration | |
| Proposed Land Use Transportation | | County and State Champaign, Illinois | |
| **PART II** *(To be completed by NRCS)* | | Date Request Received By NRCS 10/21/14 | Person Completing Form: Tim Prescott |
| Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)* | YES ☑ NO ☐ | Acres Irrigated N/A | Average Farm Size 372 |
| Major Crop(s) Corn, Soybeans, Wheat, Hay | Farmable Land In Govt. Jurisdiction Acres: 29,633 ± 97% | Amount of Farmland As Defined in FPPA Acres: 27,69± 91% | |
| Name of Land Evaluation System Used Illinois | Name of State or Local Site Assessment System Statewide | Date Land Evaluation Returned by NRCS 11/5/14 | |

| **PART III** *(To be completed by Federal Agency)* | Alternative Site Rating | | | |
|---|---|---|---|---|
| | Site A | Site B | Site C | Site D |
| A. Total Acres To Be Converted Directly | 46.7 | | | |
| B. Total Acres To Be Converted Indirectly | 0 | | | |
| C. Total Acres In Site | 46.7 | | | |
| **PART IV** *(To be completed by NRCS)* Land Evaluation Information | | | | |
| A. Total Acres Prime And Unique Farmland | 44.3 | | | |
| B. Total Acres Statewide Important or Local Important Farmland | 0 | | | |
| C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted | 0.00000 | | | |
| D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value | | | | |
| **PART V** (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points) | 140 | | | |

| **PART VI** *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)* | Maximum Points | Site A | Site B | Site C | Site D |
|---|---|---|---|---|---|
| 1. Area In Non-urban Use | (15) | | | | |
| 2. Perimeter In Non-urban Use | (10) | | | | |
| 3. Percent Of Site Being Farmed | (20) | | | | |
| 4. Protection Provided By State and Local Government | | | | | |
| 5. Distance From Urban Built-up Area | | | | | |
| 6. Distance To Urban Support Services | | | | | |
| 7. Size Of Present Farm Unit Compared To Average | | | | | |
| 8. Creation Of Non-farmable Farmland | | | | | |
| 9. Availability Of Farm Support Services | | | | | |
| 10. On-Farm Investments | (20) | | | | |
| 11. Effects Of Conversion On Farm Support Services | (10) | | | | |
| 12. Compatibility With Existing Agricultural Use | (10) | | | | |
| TOTAL SITE ASSESSMENT POINTS | 160 | 0 | 0 | 0 | 0 |
| **PART VII** *(To be completed by Federal Agency)* | | | | | |
| Relative Value Of Farmland *(From Part V)* | 100 | 140 | 0 | 0 | 0 |
| Total Site Assessment *(From Part VI above or local site assessment)* | 160 | 65 | 0 | 0 | 0 |
| **TOTAL POINTS** *(Total of above 2 lines)* | 260 | 205 | 0 | 0 | 0 |

**See the attached Illinois LESA Site Assessment *CORRIDOR* Factors**

| Site Selected: | Date Of Selection | Was A Local Site Assessment Used? YES ☐ NO ☑ |
|---|---|---|

Reason For Selection: Illinois LESA Corridor

*** When utilizing the Illinois State Site Assessment Corridor factors, 150 points are assigned to the Land Evaluation portion, and 150 points are assigned to the Site Assessment portion of the LESA System for a maximum score of 300 points.

Name of Federal agency representative completing this form: Lana Sumner, AICP (consultant) | Date: 10/21/2014

*(See Instructions on reverse side)*

Form AD-1006 (03-02)

# I-57 and I-74 Interchange Improvements
# Champaign County, Illinois
# Federal Highway Administration Funds

| **PART VI-B**<br>**Illinois Site Assessment *CORRIDOR* Factors** | **Maximum Points** | **Site A** |
|---|---|---|
| 1. Amount of agricultural land required | 30 | 30 |
| 2. Location of the proposed alignment | 30 | 20 |
| 3. Acres of off-site agricultural land required for borrow materials | 15 | 15 |
| 4. Acres of Prime and Important farmland required for mitigation | 15 | 0 |
| 5. Creation of severed farm parcels | 10 | 0 |
| 6. Creation of uneconomical remnants | 10 | 0 |
| 7. Creation of landlocked parcels | 10 | 0 |
| 8. Creation of adverse travel | 10 | 0 |
| 9. Relocations of rural residences and farm buildings | 10 | 0 |
| 10. Utilization of minimum design standards | 10 | 0 |
| **TOTAL SITE ASSESSMENT *CORRIDOR* POINTS** | **150** | **65** |

| **PART VII** | | |
|---|---|---|
| Relative Value of Farmland | 150 | 140 |
| Total Site Assessment ***CORRIDOR*** Factors | 150 | 65 |
| **TOTAL ILLINOIS LESA POINTS** | **300** | **205** |

111014
TS

* *The Illinois LESA System applies the **225 point cutoff** when evaluating state and federally funded projects. Site or Corridor alternatives receiving **175 or fewer points** have a **low rating** for protection, and it is not necessary to evaluate additional alternatives. Those alternatives receiving **176 to 225 points** are in the **moderate range** for protection. In most cases, alternatives **exceeding the 225 point level should be retained for agricultural use**, and an alternate site should be utilized for the intended project. Selecting the alternative with the lowest total points will usually protect the best farmland located in the most agriculturally viable areas. LESA also serves to maintain and promote the agricultural industry in Illinois.*

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Kensil A. Garnett | Attn: Craig Emberton |
| From: | John D. Baranzelli | By: Thomas C. Brooks |
| Subject: | Natural Resources Review | |
| Date: | November 13, 2014 | Thomas C. Brooks |

I-74/ I-57
T20N/R8E/S26
Champaign County
Seq. #17502 B & C

The proposed project involves reconstruction of the I-74/ I-57 interchange; Addendum C calls for an expansion of the ESR limits.

There will be an unknown amount of land acquisition. There will be in-stream work. There will be an unknown amount of tree removal. Land cover in the vicinity of the proposed improvement is agriculture as well as maintained right-of-way of the existing interchange, and adjacent residential subdivisons.

**Review for Illinois Endangered Species Protection and Illinois Natural Areas Preservation – Part 1075**

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location. **Therefore, consultation under Part 1075 is terminated.**

**This review for compliance with 17 Ill. Adm. Code Part 1075 is valid for two years unless new information becomes available that was not previously considered; the proposed improvement is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the proposed improvement has not been implemented within two years of the date of this memorandum, or any of the above listed conditions develop, a new review will be necessary.**

**Review for Illinois Interagency Wetland Policy Act – Part 1090**

The National Wetlands Inventory shows wetlands in the vicinity of the project location. Addendum B had been previously cleared for wetlands under NRR dated 01/07/2014. However, after further review, a survey for wetlands was conducted within the Environmental Survey Request limits for the proposed

improvements for Addenda B and C. All potential sites were examined and 10 were determined to be wetlands. The Wetland Delineation Report and spatial information (ArcGIS shapefile) are saved in the project folder.

The project sponsor will consider location and design alternatives to avoid and minimize adverse wetland impacts to the extent practical. After the extent of impacts is determined, a Wetland Impact Evaluation (WIE) form will be completed and submitted to the IDOT Bureau of Design and Environment. Unavoidable adverse wetland impacts are subject to the applicable ratios specified in 17 Ill. Adm. Code Part 1090.50 (c)(8). If the project will avoid adverse wetland impacts, the WIE should reflect the determination that adverse wetland impacts will not occur. The WIE form and instructions for its completion can be accessed at http://www.dot.il.gov/environment/wetlands.asp.

**Review for Endangered Species Act - Section 7**

See the attached US Fish and Wildlife Service list of endangered, threatened, proposed and candidate species and proposed and designated critical habitat that may be present within the county in which the proposed project is located. We cross-referenced the preferred habitat of each listed species with our knowledge of the project area and determined that listed species and critical habitat are not present.

Should the proposed improvement be modified or new information indicate listed or proposed species may be affected, consultation or additional coordination should be initiated.

Attachment—USFWS species county list

VH

# Illinois County Distribution

## Federally Endangered, Threatened, and Candidate Species

**List Revised October 2013**

| County | Species | Status | Habitat |
|---|---|---|---|
| **Champaign**<br>**Field Office to Contact:**<br>U.S. Fish and Wildlife Service<br>Marion Illinois Sub-Office<br>8588 Route 148<br>Marion, Illinois 62959<br>Phone: (618) 997-3344, ext. 340<br>FAX: (618) 997-8961<br>e:mail Marion@fws.gov+A49 | Indiana bat *(Myotis sodalis)* | Endangered | Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging) |
| | Northern long-eared bat *Myotis septentrionalis* | Proposed as Endangered | Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests and woods. |
| | Eastern prairie fringed orchid *(Platanthera leucophaea )* | Threatened | Mesic to wet prairies |
| | Prairie bush clover *(Lespedeza leptostachya)* | Threatened | Dry to mesic prairies with gravelly soil |

DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT CORPS OF ENGINEERS
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

REPLY TO
ATTENTION OF:

December 4, 2014

Regulatory Branch
File Number: MVS-2014-760

Bart L. Sherer
Illinois Department of Transportation
District 5
Paris, Illinois 61944-0610

Dear Mr. Sherer:

We have reviewed your application in regard to the reconstruction of the I-74/I-57 interchange in Champaign, Champaign County, Illinois. Based upon a review of the U.S. Geological Survey 7.5-minute topographical map, the National Wetland Inventory maps, USDA's Web Soil Survey, aerial photos and the application; we have determined that the project will not impact jurisdictional waters or wetlands. Since the project will not be completed within waters of the U.S., a Department of the Army permit is **not** required for the proposed work. If work may infringe on areas believed to be jurisdictional, you are instructed to contact the Corps of Engineers Regulatory Branch for guidance prior to completing any work.

This determination is applicable only to the permit program administered by the Corps of Engineers Regulatory Branch. It does not eliminate the need to obtain other federal, state or local approvals before beginning work. You are reminded that although your proposal does not need a Section 404 permit, based on your submitted plans, any revisions to your proposal may be subject to Section 404 and require subsequent authorization from this office.

The jurisdictional determination for this project is considered a Preliminary jurisdictional determination in accordance with Corps regulations at 33 CFR Part 331. A preliminary jurisdictional determination is not appealable. If you wish, you may request an Approved Jurisdictional Determination (which may be appealed) by contacting our office for further instruction.

If you have any questions, please contact me at (314) 331-8584. Please refer to file number **MVS-2014-760**. The St. Louis District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment

to go to our Customer Service Survey found on our web site at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

Keith A McMullen

Keith McMullen
Illinois Section Chief
Regulatory Branch

CC:

Heacock, IEPA
Diedrichsen, IDNR-OWR

# Appendix A4
# Value Engineering Study Report




# Value Engineering Study Report

## I-57 & I-74 Interchange Reconstruction

**Section 10(5-1-RS-1, 14-1, 6)R**

**Champaign County, IL**

**November, 2014**

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# APPENDICES

Appendix A: Workshop Agenda

Appendix B: Workshop Presentation

Appendix C: Value Engineering Recommendation Approval Form

## EXECUTIVE SUMMARY

### Introduction

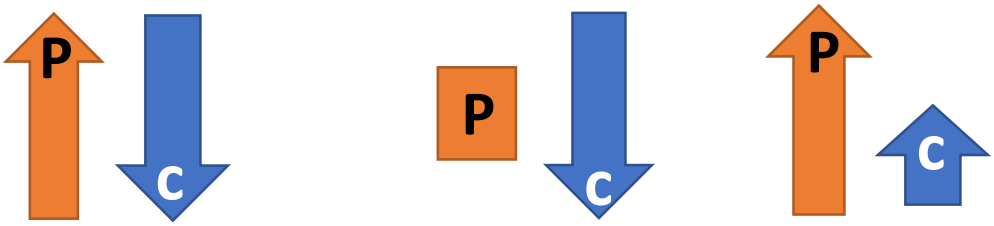
The Illinois Department of Transportation contracted to conduct a Phase I Planning Study which included a value engineering study of the I-57 and I-74 Interchange Reconstruction in Champaign, Illinois. The value engineering study was conducted according to FHWA and Illinois DOT requirements and consisted of the following phases:

- Pre-workshop planning
- Information gathering and review
- Function analysis, including risk identification and cost analysis
- Creative brainstorming
- Evaluation of ideas
- Development of ideas
- Presentation of recommendations
- Resolution or implementation decision of each recommendation

The value engineering study occurred early in the project planning phase during the Preliminary Interchange Design Study, Draft Environmental Assessment, and Draft Design Report phase of the project when the design team was still able to implement recommendations as part of the continuing concept evaluation process. As is usually the case for VE studies at this stage, the recommendations focused on vehicular traffic operations, design concepts, utility coordination, right of way acquisition, the design and construction schedule, and the entire project delivery process.

### Value Engineering Recommendations

Value engineering seeks to improve performance (P) and reduce costs (C). Some examples and a graphic illustration of positive value engineering analyses are:




Increased Performance Decreased Cost | Same Performance Decreased Cost | Increased Performance Small Increase Cost

The VE team identified 25 overall ideas and 5 of these further developed as recommendations for implementation with the largest potential cost savings of approximately $33M based on evaluating performance and cost of a different type of interchange. The 5 ideas originated from an evaluation of construction components by cost, which revealed the greatest percentage of project costs was attributed to bridge structures. Decreasing bridge costs, while maintaining the same performance was a primary consideration. Project constraints, construction costs, identified potential areas of risk, and the expectations of the VE study were discussed. The Summary of Recommendations is shown in the table below for the 5 recommendations.

## SUMMARY OF RECOMMENDATIONS

| | Idea | Change in Cost | Change in Performance | VE Team Recommended Action |
|---|---|---|---|---|
| 1 | ***Reduction of interstate design speed from 75mph to 70mph.***<br>Use 70 MHP design instead of 75 MPH.<br>Post speed at either 65 MPH or 70 MPH.<br>Ramps could subsequently be reduced from 55 MPH to 50 MPH. | $6.0M Savings | Capacity and/or Level of Service may slightly decrease. | Design team coordinate with IDOT and FHWA to discuss the reduction of the design speed from 75mph to 70mph, and confirm that the design speed and posted speed can be the same as stated in BDE Section 31-2.02. Ramps could subsequently be reduced from 55 mph to 50 mph. |
| **Advantages:** Substantial cost savings due to narrowing of ramp inside shoulder width on structures to accommodate stopping sight distances.<br><br>**Disadvantages:** Possible reduction in project performance and/or safety risk. | | | | |
| 2 | ***Modern Cloverleaf with Partial Collector/Distributor Roadways (I-57).*** | $22.5M Savings | Optimize and validate design. | Design team evaluate a modern cloverleaf interchange with partial collector/distributor roadways on I-57. |
| **Advantages**: No ramp structures to build or maintain, reduced overhead work, eliminates weaves on mainline I-57<br><br>**Disadvantages**: 2 weave locations on I-74, bridge involvement at railroad and Olympia Drive, coordination with railroad, and additional signage north of the Olympian interchange. Possible negative impacts for future development near ramp locations. Possible less than desirable design speeds for loop ramps. | | | | |

| SUMMARY OF RECOMMENDATIONS cont. | | | | |
|---|---|---|---|---|
| | **Idea** | **Change in Cost** | **Change in Performance** | **VE Team Recommended Action** |
| 3 | ***Reconstruction to a Modern Cloverleaf to meet current standards.*** | $33M Savings | Optimize and validate design. | Design team to evaluate a modern cloverleaf interchange with a design speed of 70mph. |
| **Advantages**: Reduced overhead work, no flyover construction, no new bridge at Mattis over I-74<br><br>**Disadvantages**: 4 weave locations, add 4 ramp bridges, add embankment, and reduced speed on ramps to 35mph | | | | |
| 4 | ***Reduction in flyover ramp outside shoulder width from 6' to 4'.*** | $2.0M Savings | Optimize and validate design. | If the design speed is maintained at 75mph with ramp design speed at 55mph, the VE team recommends that the design team review a reduction in the flyover ramp outside shoulder width from 6' to 4'. |
| **Advantages**: Cost saving due to less structure<br><br>**Disadvantages**: Narrower outside shoulder for traffic to pull off and future maintenance of traffic staging | | | | |
| 5 | ***Mainline pavement rehabilitation instead of total reconstruction***. | $0.4M Savings | Improve project delivery process. | The VE team recommends that the design team consider rehabilitation of the mainline pavement instead of total reconstruction. |
| **Advantages**: Recycling existing material, improvement of delivery time<br><br>**Disadvantages**: Possible elevation change of proposed structures to achieve clearance | | | | |

**Implementation**
IDOT is required to report Value Engineering results annually to the Federal Highway Administration (FHWA). To facilitate the reporting requirement, a Value Engineering Recommendation Approval Form is included in the Appendix C.

# VALUE ENGINEERING STUDY REPORT

**Information Phase**

**Project Description**

This project is located in the Hensley and Champaign City Townships in the central portion of Champaign County and in the City of Champaign on the northwest side. The approximate project limits are the Olympian Drive to the north, North Prospect Avenue to the east, the Norfolk Southern Railroad to the south, and North Duncan Road to the west.

The existing facility was originally constructed in 1965 and is a full conventional cloverleaf interchange connecting I-57 and I-74. Each interstate consists of four lanes (two lanes in each direction) of concrete pavement with multiple overlays. Both I-57 and I-74 have open grass medians which are typically 64 feet and 40 feet in width, respectively. The adjacent section of I-74 to the east beginning between Mattis Avenue and Prospect Avenue consists of a 26 foot paved median with concrete barrier.

I-57 is a full access controlled north-south facility that serves local, regional, and interstate traffic. It originates in Southeastern Missouri and crosses numerous other interstates before terminating in Chicago in northern Illinois. I-57 serves as a vital link in the transportation network between northern and southern Illinois and is a Class I truck route carrying an average of 33,600 vehicles per day with approximately 28 percent truck volume (9,400 trucks per day average) within the project limits.

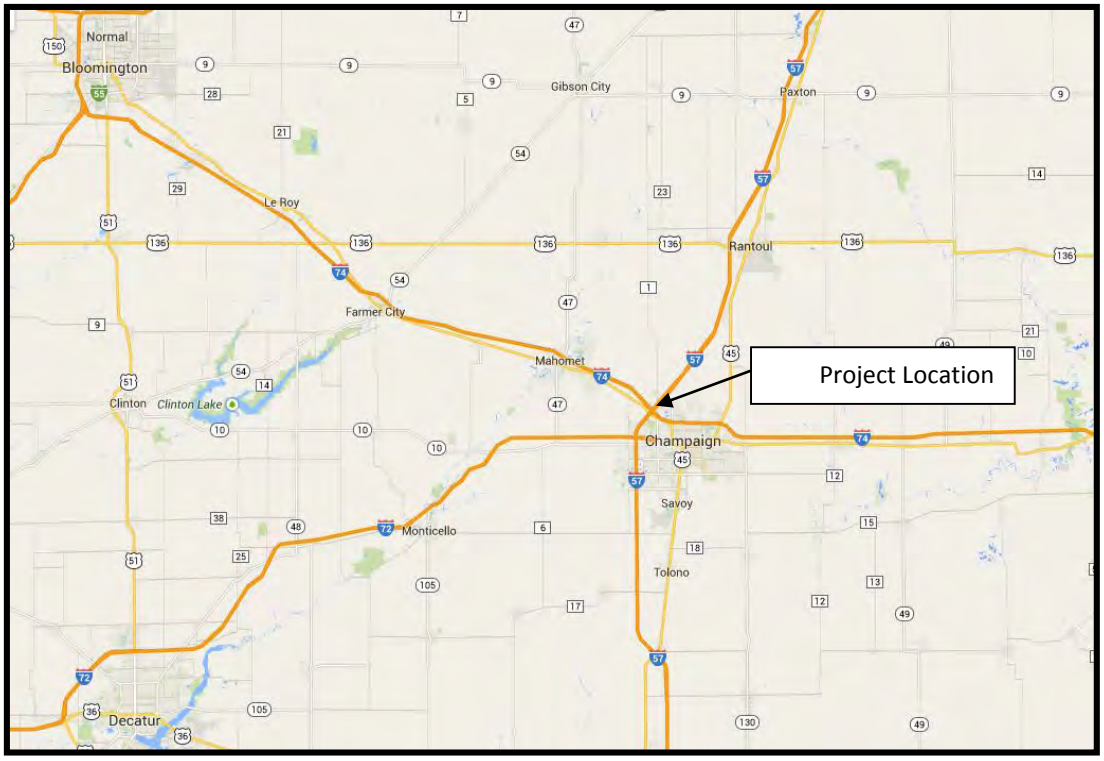
I-74 is a full access controlled east-west facility that serves local, regional, and interstate traffic. It crosses numerous other north-south and east-west interstates as it passes through Iowa, Illinois, Indiana, and Ohio. I-74 serves as a vital link in the transportation network between the Quad Cities on the Iowa-Illinois border and Cincinnati, Ohio and is a Class I truck route carrying an average of 38,400 vehicles per day with approximately 22 percent truck volume (8,500 trucks per day average) within the project limits.

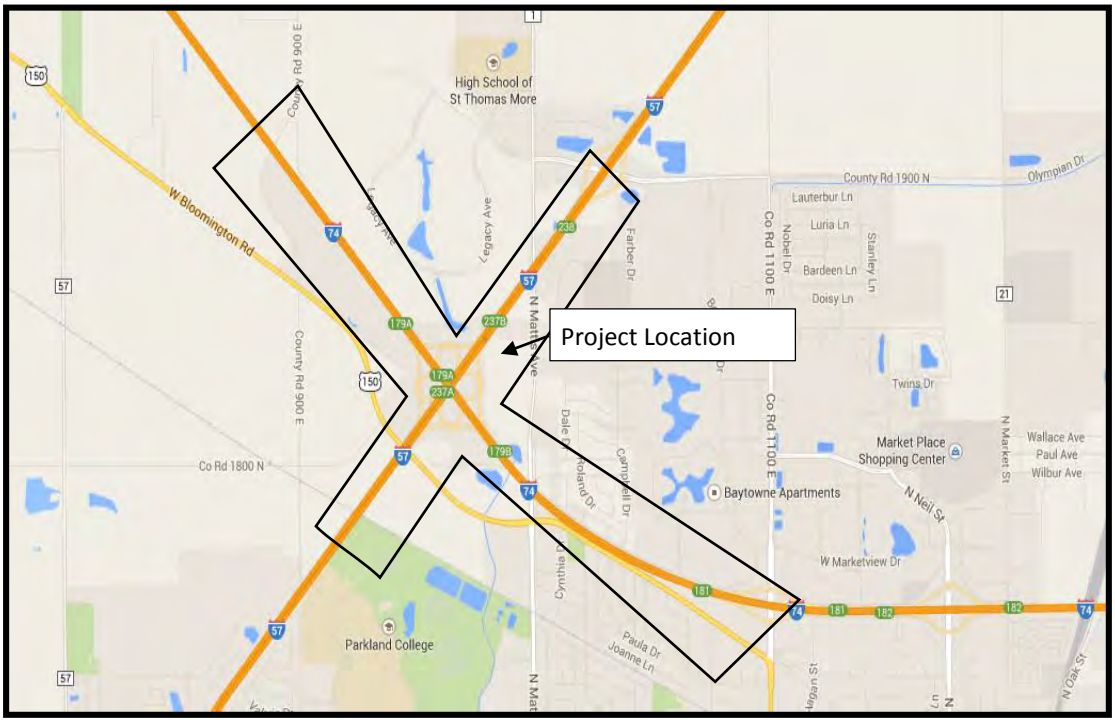
Immediately adjacent interchanges include: Olympian Drive, an east-west principal arterial with a grade separation structure and diamond type interchange at I-57, approximately one mile north of I-74; Prospect Avenue, a north-south minor arterial with a grade separation structure and diamond type interchange at I-74, approximately one and a half miles east of I-57; I-72, a full access controlled east-west interstate facility with grade separation structures and a conventional cloverleaf type interchange at I-57, approximately two miles to the south; and South Prairie View Road, a north-south major collector north of I-74 and minor arterial south of I-74 with a grade separation structure and diamond type interchange with I-74, approximately five miles to the west.

Other adjacent cross roadways or grade separations within the project limits include: Mattis Avenue, a north-south minor arterial with a grade separation structure over I-57, approximately one half mile north of I-74, and a grade separation structure over I-74, approximately one half mile east of I-57; Bloomington Avenue (US 150), an east-west principal arterial with grade separation structure over I-57 approximately one quarter mile south of I-74; the Norfolk Southern Railroad, an east-west railroad with a grade separation structure over I-57, approximately one half mile south of I-74; and Duncan Road, a north-south principal arterial with grade separation structure over I-74, approximately one mile west of I-57.

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the I-57 and I-74 interchange by eliminating deficient geometric features and reducing points of access in order to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps.

# Project Location Maps



**Value Engineering Study Team Members**
The members of the value engineering team are shown in the following table. Resource team members assisted with obtaining project design information; provided insight into project concepts; and shared cost estimating information with the VE team.

| VALUE ENGINEERING STUDY TEAM | | |
|---|---|---|
| **VE Team Member (names listed alphabetically)** | **Representing** | **Position** |
| Boyer, Geri | Kaskaskia Engineering Group, LLC | Team Leader / Facilitator |
| Choate, Tim | Bacon Farmer Workman Engineering & Testing, Inc. | Planning, Design, Operations, Safety, Traffic |
| Chrisman, Lance | Kaskaskia Engineering Group, LLC | Geometrics, safety, traffic control, cost estimating and land acquisition |
| Crawford, Ken | IDOT, D5 Project Implementation Engineer | Construction |
| Feeny, Greg | IDOT DBE | Planning, Policy, Design & VE Workshops |
| Loesch, Micah | FHWA, Assistant Bridge Engineer | Structures |
| Matzke, Mike | Quigg Engineering Inc. | Geometrics, design and drainage |
| Michael, Jim | Crawford, Murphy, and Tilly, Inc. | Large scale design, Drainage, Traffic Control |
| Smith, Matt | Fuhrmann Engineering | Geometrics and Traffic Control Staging |
| Speicher, David | IDOT, D5 Operations Engineer | Planning, Design, Geotechnical, Local Roads, Operations |
| Verhulst, Derek | IDOT, Bureau of Bridges and Structures | Structures |
| **VALUE ENGINEERING RESOURCE TEAM** | | |
| Brad Downen | Crawford, Murphy, and Tilly, Inc. | Design Team |
| Kevin Crider | Bacon Farmer Workman Engineering & Testing, Inc. | Design Team |

**Dates and Locations of Value Engineering Study**
The value engineering study was conducted from November 6 through November 7, 2014, at the ILEAS Training Center and Headquarters Office located at 1701 E. Main Street, Urbana, Illinois.

**Reference Materials**
The following material was provided to the value engineering study team on the project during the workshop.

| REFERENCE MATERIALS |
|---|
| Cost Estimate |
| I57 & I74 Ramp Flyover Structure Sketches |
| Quantity spreadsheet |
| I57 & I74 IDS |
| Interchange Type Study |
| Preliminary Cross Sections |
| AASHTO Guidelines for Value Engineering, March 2010 edition |
| Value Methodology Standard and Body of Knowledge, SAVE International Value Standard, 2007 edition |

**Project Goals and Objectives**
The project goals and objectives were discussed and tested with ideas and recommendations in order to validate their appropriateness in terms of performance and cost.

Identified Goals and Objectives

- Reduce capital cost
- Reduce operations and maintenance costs
- Maintaining or improving safety, performance, and quality
- Relieve traffic congestion
- Improve safety
- Improve traffic operations

**Constraints to the VE Study**
The constraints were identified by the VE study team and the design team. Both the Project Goals and the Constraints were discussed throughout the value engineering workshop study.

Identified Constraints

- Avoid railroad bridge impacts to the south on I-57
- Minimize or avoid impacts to developments in southwest and southeast quadrants
- Provide adequate sight distance at exit ramps near structures and on curved bridges
- Keep superelevation and transitions off of the structures
- Accommodate future six lanes on I-57
- Design speeds: 75 mph mainline, 55 mph directional ramps, 40 mph loop ramps
- Maintain all movements during construction

**Identification of Potential Risks to Scope, Schedule, or Costs**
Throughout the workshop, VE team members recognized that there were risks and pitfalls – situations that could either affect project performance, delay construction, or increase cost. The VE study team and the resource team identified several risks for management and monitoring including land acquisition and public perception.

**Workshop Expectations**

During presentation and discussion of the project, the VE study and resource teams identified expectations and objectives for the workshop. The primary objective was to provide recommendations that improve performance and reduce costs. Evaluation criteria was as follows:

- Potential for cost savings, initial and future (life cycle)
- Enhances operations and maintains mobility
- No violation of validated constraints
- Meets needs and satisfies desires of users, owners, and stakeholders
- Safety, including work zone safety
- Feasibility and constructability
- Potential for implementation
- Ability to meet schedules, for both design and construction (No scheduled letting date. IDS assumes 2020 as the year of construction.)
- Engineering judgment and experience
- Performance measures are clear and well defined in the advantages and disadvantages

**Cost Estimate and Cost Analysis**

The cost analysis sorted the construction components by cost and then applied the principle that 80% of the cost savings could come from the top 20% of the cost items. See results of cost model split below.

| COST MODEL SPLIT | | | |
|---|---|---|---|
| Item | Description | Construction | % of Project |
| P | Pavement | $31,685,500.00 | 30.5% |
| | | | |
| B | Bridge | $60,240,000.00 | 58.0% |
| | | | |
| E | Earthwork | $11,625,000.00 | 11.2% |
| | | | |
| | Subtotal | $103,550,500.00 | 99.6% |
| | | | |
| S | Seeding | $400,000.00 | 0.4% |
| | | | |
| | Subtotal | $103,950,500.00 | 100.0% |
| | | | |
| M | Miscellaneous | $31,185,150.00 | |
| | | | |
| ROW | | $3,000,000.00 | |
| | | | |
| | Total | $138,135,650.00 | |

The cost analysis is most beneficial to those projects which contain a number of different design components that have been identified and estimated. For this project, however, evaluation of construction components by cost revealed the greatest percentage of project costs was

attributed to bridge structures, therefore, the structures were given the greatest amount of consideration.

**VE Methodology**

Information/Investigation: The team reviewed and defined the current conditions of the project and identified the goals of the study. The team also reviewed the IDS, estimates, alternatives studied, right-of-way, constraints, commitments, and project needs.

Functional Analysis: The team defined the project functions using a two-word active verb/measurable noun context. The team reviewed and analyzed these functions to determine which needed improvement, elimination, or creation to meet the project's goals.

Speculation/Creative Phase: The team employed creative techniques to identify other ways to perform the project's function(s). Brainstormed ideas to improve quality, eliminate unnecessary cost, and reduce life-cycle cost.

Evaluation: The team followed a structured evaluation process to select those ideas that offer the potential for value improvement while delivering the project's function(s) and considering performance requirements and resource limits.

Development: The team developed the selected ideas into alternatives (or proposals) with costs savings, advantages, and disadvantages documented to allow decision makers to determine if the alternative should be implemented.

Presentation: The team presented recommendations to decision makers for their consideration and potential approval. See Appendix B for Workshop Presentation.

# APPENDICES

# APPENDIX A
# Workshop Agenda

## Workshop Agenda

Thursday, November 6 - 8:00 AM to 5:00 PM

08:00 AM Welcome/Introductions
08:10 AM Purpose of Workshop/Review of Agenda
08:20 AM Presentation of Project Information/Q&A
08:40 AM VE Study Goals, Objectives, Constraints, Evaluation Criteria
08:55 AM VE Methodology/Cost Model/Function Analysis
09:25 AM Creative Speculation/Generation of Ideas
10:00 AM Break
10:10 AM Creative Speculation/Generation of Ideas
12:00 PM Lunch
01:00 PM Evaluation/Prioritization of Ideas
02:45 PM VE Alternative Development Process/Assignment of VE Alternatives
03:00 PM Break
03:10 PM VE Alternative Development
05:00 PM Adjourn

Friday, November 7 - 8:00 AM to 3:00 PM

08:00 PM Recap/Q&A
08:30 PM VE Alternative Development
10:00 AM Break
10:10 AM VE Alternate Development
11:10 AM Finalize VE Proposals
12:10 PM Lunch
01:00 PM Finalize VE Proposals/Prepare for Presentation
02:00 PM Break
02:10 PM Presentation of VE Study Results
02:50 PM VE Study Evaluation
03:00 PM Adjourn

# APPENDIX B
# Workshop Presentation

# Value Engineering Study

## I-57 & I-74 Interchange Reconstruction
## Section 10(5-1-RS-1, 14-1, 6)R
## Champaign County, IL

Presented to the Illinois Department of Transportation and the Project Design Team

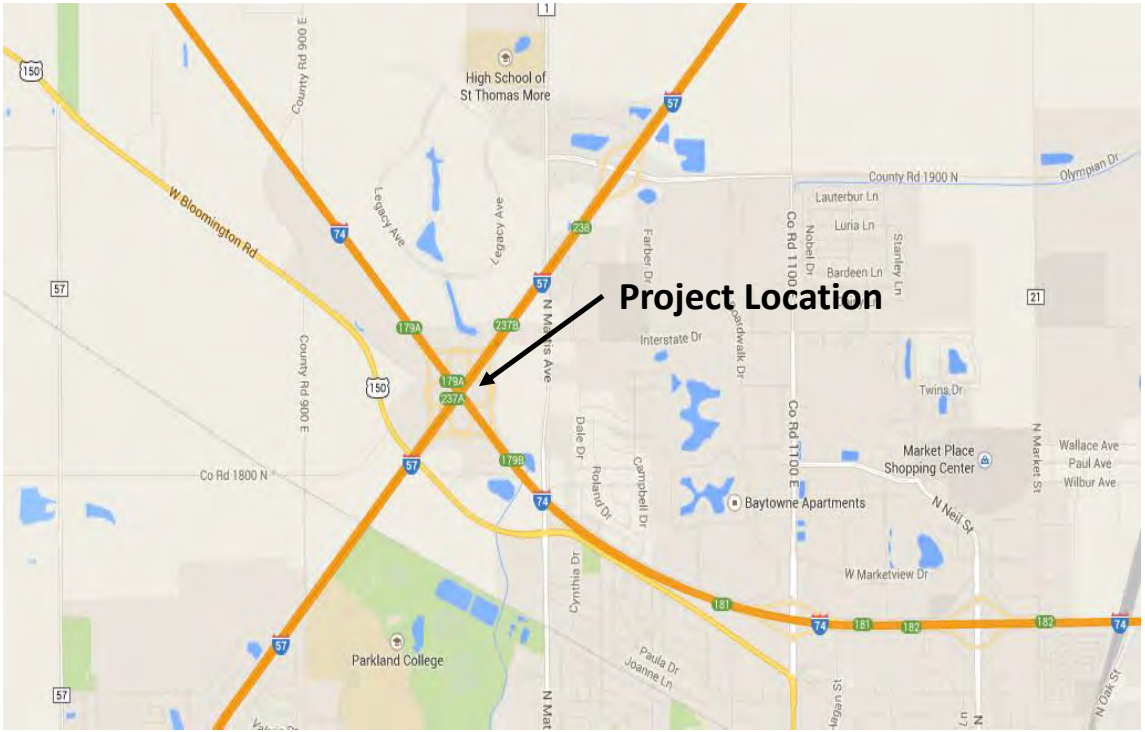
November 7, 2014

## Kick-off Meeting Attendees

| VE Study Team Members | Representing |
|---|---|
| Boyer, Geri | Kaskaskia Engineering Group |
| Choate, Tim | Bacon Farmer Workman |
| Chrisman, Lance | Kaskaskia Engineering Group |
| Crawford, Ken | IDOT, D5 Project Implementation Engineer |
| Feeny, Greg | IDOT DBE |
| Loesch, Micah | FHWA, Assistant Bridge Engineer |
| Matzke, Mike | Quigg Engineering |
| Michael, Jim | Crawford, Murphy, & Tilly |
| Smith, Matt | Fuhrmann Engineering |
| Speicher, David | IDOT, D5 Operations Engineer |
| Verhulst, Derek | IDOT, Bureau of Bridges and Structures |
| | |
| VE Resource Members | Representing |
| Brad Downen | Crawford, Murphy, & Tilly |
| Kevin Crider | Bacon Farmer Workman |

# Proposed Project

Improve the existing Interstate 57 (I-57) and Interstate 74 (I-74) cloverleaf interchange in Champaign, Illinois



# Speculation/Creative Phase

The VE team identified 25 ideas. Five design recommendations for implementation with a potential cost savings were evaluated for consideration.





Evaluation of construction components by cost revealed the greatest percentage of project costs was attributed to bridge structures.

Reducing bridge costs was a primary consideration.

**Cost Model Split**

| Item | Description | Construction $ Amount | % of Project |
|---|---|---|---|
| P | Pavement | $31,685,500.00 | 30.5% |
| B | Bridge | $60,240,000.00 | 58.0% |
| E | Earthwork | $11,625,000.00 | 11.2% |
| | Subtotal | $103,550,500.00 | 99.6% |
| S | Seeding | $400,000.00 | 0.4% |
| | Subtotal | $103,950,500.00 | 100.0% |
| M | Miscellaneous | $31,185,150.00 | |
| ROW | | $3,000,000.00 | |
| | Total | $138,135,650.00 | |

# Recommendations

1. **Reduction of design speed from 75mph to 70mph**
2. **Modern Cloverleaf with Partial Collector/Distributor Roadways (I-57)**
3. **Reconstruction to a Modern Cloverleaf to meet current standards**
4. **Reduction in flyover ramp outside shoulder width**
5. **Mainline pavement rehab instead of total reconstruction**

# 1. Reduction of design speed from 75mph to 70mph

BDE Manual - Section 31-2.02:
"….the selected design speed should equal or exceed the anticipated posted/regulatory speed limit of the facility after construction."

| Inside Shoulder Width | | |
|---|---|---|
| Ramp | Interstate Design Speed | |
| | 75mph | 70mph |
| D | 14' 8" | 10'* |
| | | |
| E | 16' 6" | 10' |
| | | |
| B | 17' 6" | 10' 9" |
| | | |
| G | 10' 9" | 10'* |

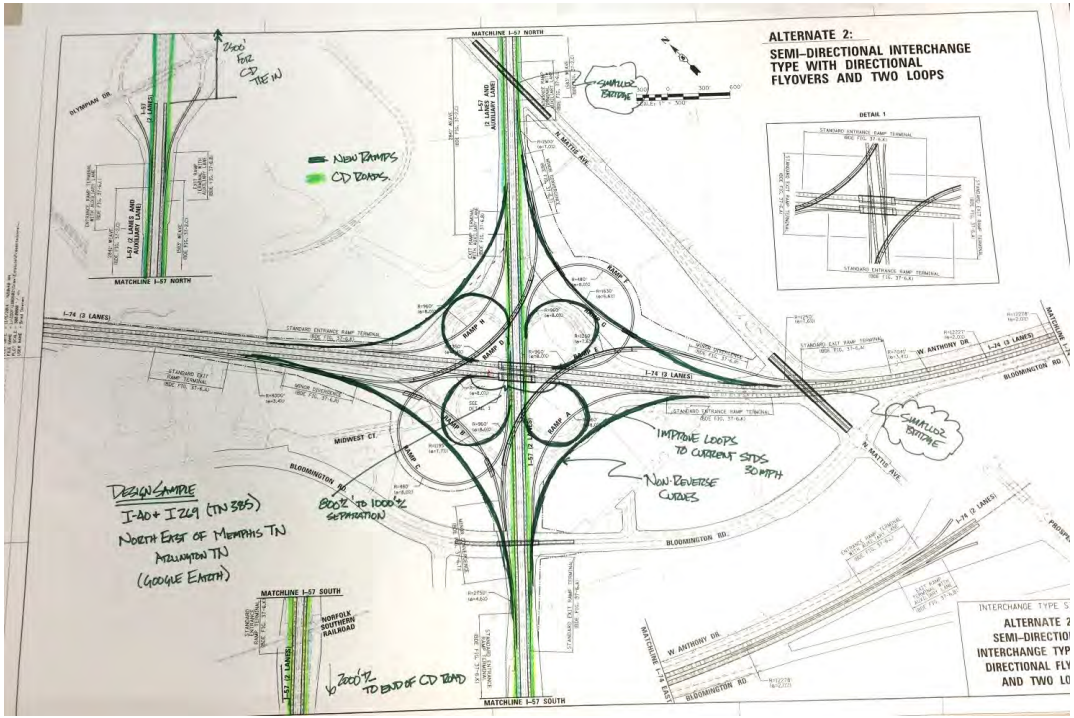
*10' Minimum width provided for future staging and accommodation of stalled/emergency vehicles

**Change in Cost: -$6.0M**

**(Cost verification by Design Team)**



# 2. Modern Cloverleaf with Partial Collector/Distributor Roadways (I-57)




**Change in Cost: -$22.5M**

**Advantages**

- **No ramp bridges**
- **Reduced overhead work**
- **Eliminates weaves on mainline I-57**

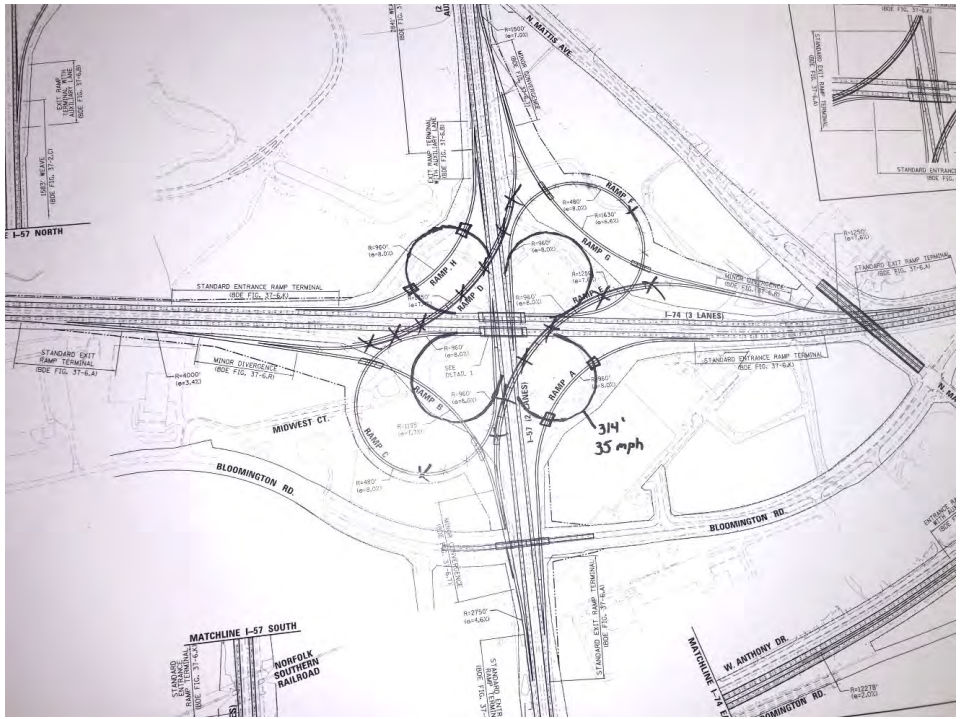
**Disadvantages**

- **2 weave locations on I-74**
- **Bridge involvement at railroad and Olympia Drive**

Example for recommendation #2: I-40/I-269 northeast of Memphis, TN



# 3. Modern Cloverleaf (70mph Design Speed)




**Change in Cost: -$33M**

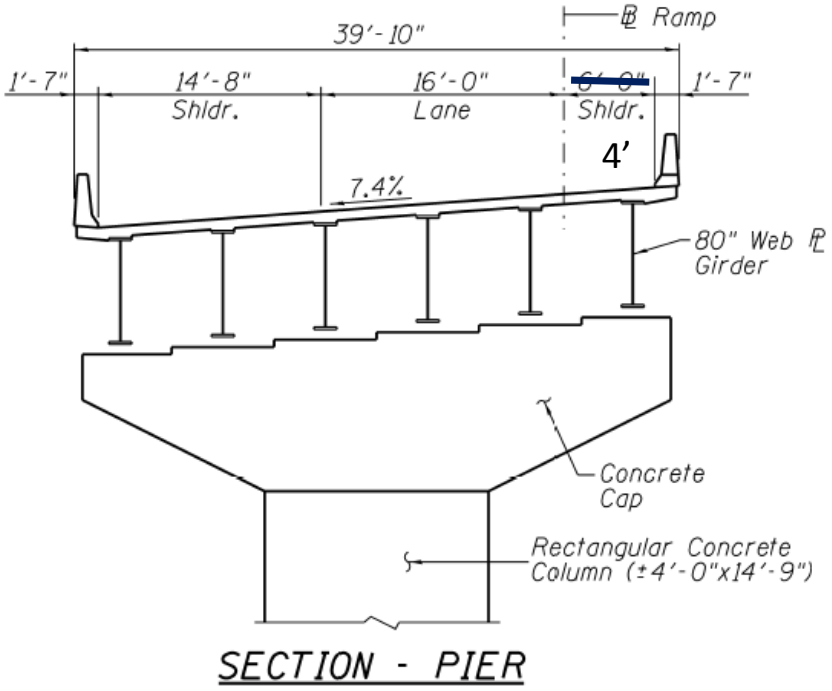
**Advantages**

- Reduced overhead work
- No flyover construction
- Less ROW acquisition
- No new bridge @ Mattis over I-74 or Mattis over I-57

**Disadvantages**

- 4 weave locations
- Reduced speed on ramps

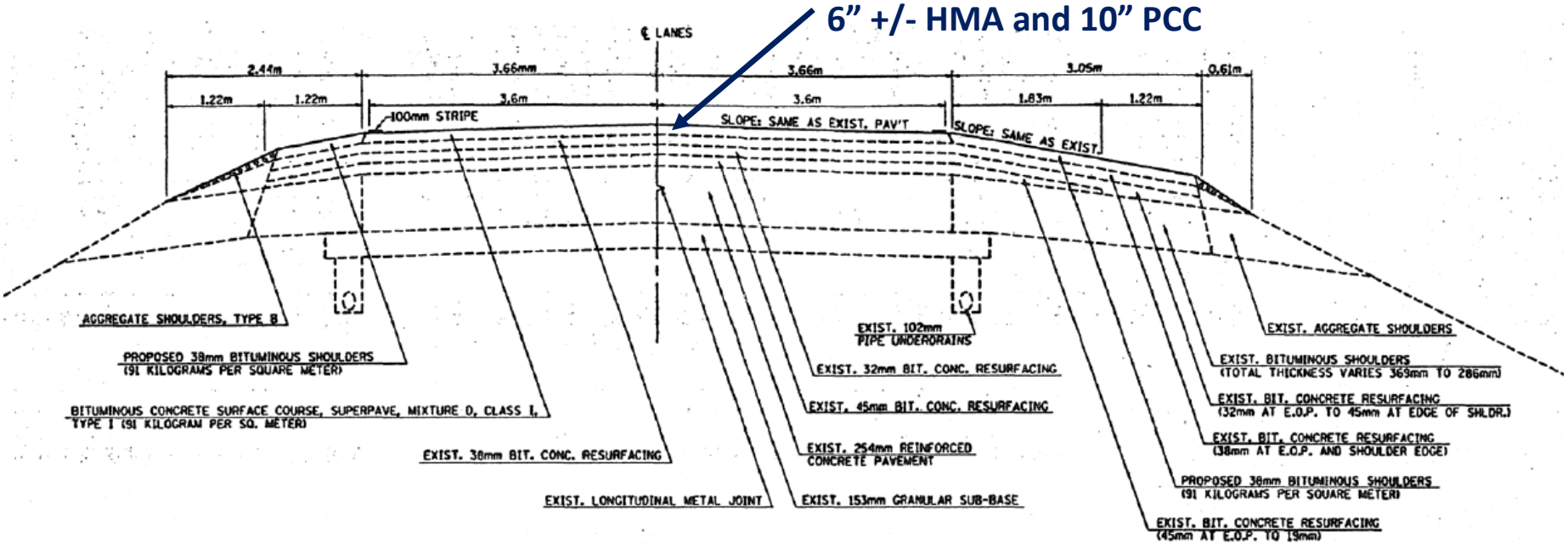
# 4. Reduction in flyover ramp outside shoulder width from 6’ to 4’




**Change in Cost: -$2.0M**

**Action Item: Design exception request needed**

# 5. Mainline pavement rehab instead of total reconstruction



# 5. Mainline pavement rehab instead of total reconstruction

**Change in Cost: -$400,000**

**Advantages**

- **Recycling existing material**
- **Improvement of delivery time**

**Disadvantages**

- **Possible elevation change of proposed structures to achieve clearance**

# Questions/Discussion

# APPENDIX C
## Value Engineering Recommendation Approval Form

# Value Engineering Recommendation Approval Form

**Project: I-57 & I-74 Interchange Reconstruction**
**VE Study Date: November 6 and 7, 2014**
**Form updated: January 12, 2015**

| | | Approved, Rejected or Accepted for Further Review | Reason for Acceptance or Rejection | FHWA Functional Benefit | | | | | VE Team Estimated Change of Cost | VE Team Estimated Change in Performance |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Safety | Operations | Environment | Construction | Other | | |
| 1 | The VE team recommends that the design team coordinate with IDOT and FHWA to discuss the reduction of the design speed from 75mph to 70mph, and confirm that the design speed and posted speed can be the same as stated in DBE Section 31-2.02. | Rejected | The purpose of this project is to provide safer and more efficient transportation by implementing policy design speed and cross sectional elements on both mainline interstates and ramps. While BDE Section 31-2.02 provides for a general discussion and suggestions on the selection of design, BDE Figure 44-5.A states that the policy design speed for a rural interstate shall be at least 75 mph. This project is on the edge of an urban area with flat topography and agricultural land use. These conditions are conducive to users selecting a speed that is above the posted speed limit. Given the District's experience that the existing operating speed on the subject facilities is already above the posted speed limit of 70 mph, the District's conclusion is that utilizing a design speed less than the policy value of 75/55 mph could have unacceptable safety and operational implications that conflict with the purpose and need for the project. | | | | | X | -$5.12M | Optimize and validate design |
| 2 | The VE team recommends that design team evaluate a modern cloverleaf interchange with partial collector/distributor roadways on I-57. | Rejected | The cloverleaf configuration, with and without a collector-distributor roadway, was discussed in the beginning phases of the Interchange Type Study. These configurations were eliminated from consideration because of both the undesirable safety and mobility implications that adjacent loop ramps impose as well as the substantial negative environmental and social impacts required to accommodate four large 40 MPH loop ramps. | | | | X | | -$22.5M | Optimize and validate design |

| | | Approved, Rejected or Accepted for Further Review | Reason for Acceptance or Rejection | FHWA Functional Benefit | | | | | VE Team Estimated Change of Cost | VE Team Estimated Change in Performance |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Safety | Operations | Environment | Construction | Other | | |
| 3 | The VE team recommends that design team evaluate a modern cloverleaf interchange with a design speed of 70mph. | Rejected | The cloverleaf configuration, with and without a collector-distributor roadway, was discussed in the beginning phases of the Interchange Type Study. These configurations were eliminated from consideration because of both the undesirable safety and mobility implications that adjacent loop ramps impose as well as the substantial negative environmental and social impacts required to accommodate four large 40 MPH loop ramps. | | | | X | | -$33M | Optimize And validate design |
| 4 | If the design speed is maintained at 75mph, the VE team recommends that the design team review a reduction in the flyover ramp outside shoulder width from 6' to 4'. | Rejected | The parapet to be located just outside the bridge shoulder is a hazard. Reducing the shoulder width and moving the parapet closer to the travelled way will have a negative effect on both the safety and operation of the facility. From an operational point of view, this hazard is perceived by drivers and they respond with a reduction in speed which negatively affects the capacity of the facility. From a safety point of view, the reduced shoulder width reduces the area for errant vehicle recovery and would result in an increase in crashes. Reducing this margin for error, particularly given that the shoulder reductions are suggested on the outside of horizontal curves, is not desirable and does not satisfy the purpose and need for the project. | | | | | X | -$1.3M | Optimize And validate design |

| | | Approved, Rejected or Accepted for Further Review | Reason for Acceptance or Rejection | FHWA Functional Benefit | | | | | VE Team Estimated Change of Cost | VE Team Estimated Change in Performance |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Safety | Operations | Environment | Construction | Other | | |
| 5 | The VE team recommends that the design team consider rehabilitation of the mainline pavement instead of total reconstruction. | Rejected | The proposed interchange will require changes to the profile grade in some areas that preclude the rehabilitation of the existing pavement. Also, the mainline pavement has been in service for more than fifty years. Given the relatively small estimated benefit that pavement rehabilitation provides relative to pavement reconstruction, and given the likelihood that the facility's pavement will be required to provide a similar service life as the existing pavement continues to provide, reconstruction of the existing pavement structure is necessary. | | | | X | | -$400,000 | Improve project delivery process |

| | Approved, Rejected or Accepted for Further Review | Reason for Acceptance or Rejection | FHWA Functional Benefit | | | | | VE Team Estimated Change of Cost | VE Team Estimated Change in Performance |
|---|---|---|---|---|---|---|---|---|---|
| | | | Safety | Operations | Environment | Construction | Other | | |
| Total for all # recommendations: | | | | | | 3 | 2 | $33,400,000 | Reduced |
| Total for # accepted recommendations: | | | | | | 0 | | | |
| Total Project Cost (Revised Phase I PDR Data) | | | | | | | | | |
| | | | | | | | | | |
| Number of Design Suggestions | | | | | | | | 5 | |

Please provide justification if the value engineering study recommendations are **not** approved or are implemented in a modified form.
The DOT is required to report Value Engineering results annually to FHWA. To facilitate this reporting requirement, this Value Engineering Recommendation Approval Form may be used.

IDOT, through its project management team, has implemented the above recommendations by issuing directives and guidance to its design team.

* FHWA Functional Benefit Criteria

Each year, State DOT's are required to report VE recommendations to FHWA. In addition to cost implications, FHWA requires the DOT's to evaluate each approved recommendation in terms of
**Safety:** Recommendations that mitigate or reduce hazards on the facility.
**Operations:** Recommendations that improve real-time service and/or local, corridor or regional levels of service of the facility.
**Environment:** Recommendations that successfully avoid or mitigate impacts to natural and/or cultural resources.
**Construction:** Recommendations that improve work zone conditions or expedite the project delivery.

# APPENDIX B
# Public Involvement Document

B1 - Public Information Meeting

B2 - Public Hearing

B3 - Stakeholder Meetings

B4 - Newspaper Articles

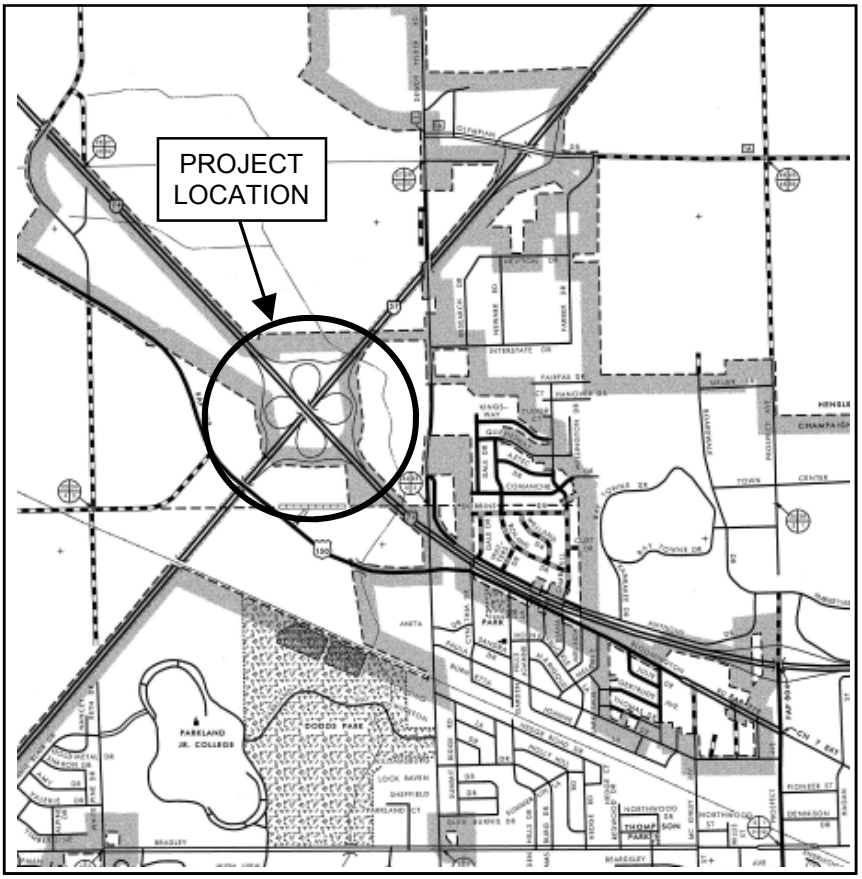
# Appendix B1
# Public Information Meeting

Illinois Department of Transportation

Fax: (217) 465-3101
TDD: (217) 463-2279
Media Contact: Craig A. Emberton
Phone: (217) 217-465-4181

# OPEN HOUSE PUBLIC INFORMATIONAL MEETING

FOR THE PROPOSED RECONSTRUCTION OF THE
INTERSTATE 57 / INTERSTATE 74 INTERCHANGE
CHAMPAIGN COUNTY




## DATE & LOCATION

**WEDNESDAY FEBRUARY 19th**
**3:00 P.M. — 6:00 P.M.**
**CHAMPAIGN COUNTY**
**HIGHWAY DEPARTMENT**
**1605 EAST MAIN STREET**
**URBANA, ILLINOIS 61802**

## PURPOSE OF MEETING

- **PRESENT PROPOSED ALTERNATIVES**
- **OBTAIN PUBLIC COMMENTS & INPUT**
- **ANSWER QUESTIONS**

## CONTACT INFORMATION

Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944
Phone: (217) 465-4181
Fax: (217) 465-3101
TDD: (217) 463-2279

Interested persons are invited to attend this meeting at any time during the open house hours. The purpose of this project is to select a preferred interchange configuration to improve the existing I-57 and I-74 cloverleaf interchange in Champaign, Illinois. Wetlands are expected to be impacted by this project. A noise study will be conducted as part of this project. This project has the potential to impact a cultural resource protected by the National Historic Preservation Act.

The meeting will be conducted on an open house basis with no formal presentation being made. Information provided will include the status of the project. IDOT representatives and their consultants will be available to receive input, provide information and answer questions.

Contact Craig A. Emberton at the address above for information on availability and to submit comments. The comment period ends March 12th, 2014.

This meeting is accessible to persons with a disability. Persons planning to attend who will need a sign language interpreter or other special accommodations should notify IDOT at least five days prior to the meeting. The contact may be by telephone, in writing, by fax or by telecommunications device for the deaf

Illinois Department of Transportation

# PROPOSED RECONSTRUCTION OF THE INTERSTATE 57 / INTERSTATE 74 INTERCHANGE CHAMPAIGN COUNTY

## CONTACT INFORMATION

Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944
Phone: (217) 465-4181
Fax: (217) 465-3101
TDD: (217) 463-2279

## PURPOSE OF MEETING

- **PRESENT PROPOSED ALTERNATIVES**
- **OBTAIN PUBLIC COMMENTS & INPUT**
- **ANSWER QUESTIONS**

## Project Description

This project is located on the northwest side of the City of Champaign, Illinois. The approximate project limits are the Olympian Drive / I-57 interchange to the north, North Prospect Avenue / I-74 interchange to the east, the Norfolk Southern Railroad over I-57 to the south, and North Duncan Road over I-74 to the west (see Site Map on backside).

## Purpose of the Project

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the Interstate 57 (I-57) and Interstate 74 (I-74) interchange by eliminating deficient geometric features in order to reduce crashes and improve travel efficiency and traffic capacity of the roadways on both the mainline interstates and ramps.

## Existing Facility

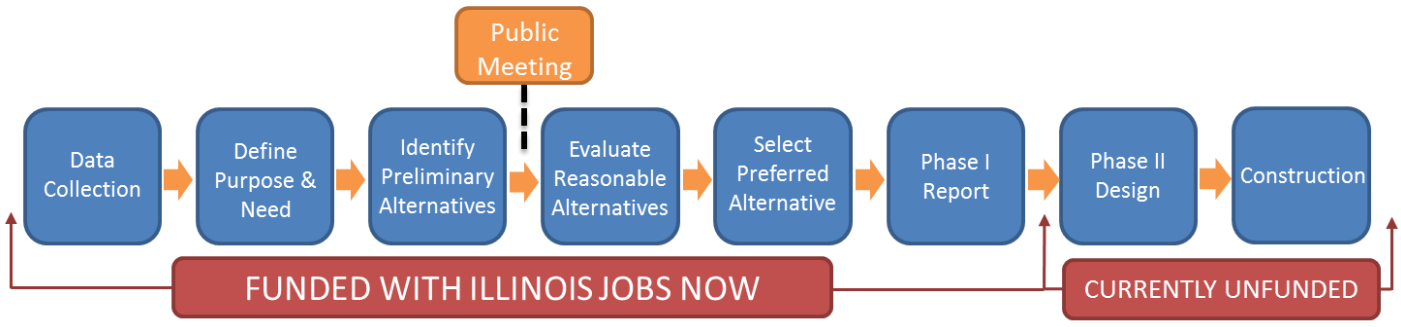
The existing facility was originally constructed in 1965 and is a full conventional cloverleaf interchange connecting I-57 and I-74. Each interstate consists of four lanes (two lanes in each direction) of concrete pavement with multiple overlays. Both interstates have open grass medians which are 64 feet and 40 feet. The section of I-74 between Mattis Avenue and Prospect Avenue consists of a 26 foot paved median with concrete barrier.

I-57 and I-74 are full access controlled facilities that serves local, regional, and interstate traffic. I-57 is a Class I truck route carrying an average of 33,600 vehicles per day with approximately 28 percent truck volume (9,400 trucks per day average) within the project limits. I-74 is also a Class I truck route carrying an average of 38,400 vehicles per day with approximately 22 percent truck volume (8,500 trucks per day average) within the project limits.

Two 5% Segments have been identified along I-74 within the project limits. The 2011 5% Segment along I-74 begins west of I-57 and extends 2000 feet to the east through the loop ramp weaving areas and I-57 outer ramp terminals. The 2012 5% Segment along I-74 begins 3000 feet west of Prospect Avenue and continues east through the Prospect Avenue ramp terminals to the Prospect Avenue cross roadway structure. (See map on backside for locations)

The project study, started in May 2012 and funded with the Illinois Jobs Now program, is anticipated to be completed in 2015. The project design, land acquisition, utility relocation, and construction are currently not funded. Once completed, the project is anticipated to cost between $105 million to $135 million.

## PROJECT SCHEDULE






BFW CMT

INTERCHANGE TYPE STUDY

**EXISTING INTERCHANGE LOCATION MAP**

# CERTIFICATE OF PUBLICATION
# IN
# The News-Gazette

The undersigned, THE NEWS-GAZETTE, INC. by its authorized agent, does hereby certify that said corporation is the publisher of The News-Gazette and that the same is the daily secular newspaper of general circulation published in Champaign, Champaign County, Illinois, and said newspaper is a newspaper as defined by 715 ILCS 5/5 (1992) and 715 ILCS 10/1 (1992); said publisher further certifies that the annexed notice was published in said newspaper, on the following date(s);

02/09/2014 02/16/2014

OPEN HOUSE

Said publisher further certifies that the date of the first paper containing the said notice was on the first date hereinabove set forth and that the date of the last paper continuing the said notice was on the last date hereinabove set forth.

The News-Gazette, Inc.
Publisher of The News-Gazette

By: Linda Albright
Authorized Agent

Publisher's fee $909.30
Ad # 1215958

generally described as follows:

or hydraulic water jet cleaning, root cting/televising of City storm sewers ) and cleaning manholes and inlets. ed debris from the sewers and man- rt of the project. There are two parts hase 1 and Phase 2/Diagnostic ser- onsists of approximately 125,000 lin- sewer cleaning and televising and holes/inlets as defined in the project s a target completion of one (1) year f commencement. Performance of ic Services will be at the option of the efined at a later date. Diagnostic Ser- de cleaning and televising of storm fined locations and diameters in order m sewer problems that are encoun- contract project. Diagnostic cleaning y occur at any location within the City uring the contract period.

ns and Contract Documents may be e listed City Department at a price of ment shall be in cash, bank draft or vable to City of Champaign. Payments nded. The Plans and Contract docu- xamined at the listed City Department siness hours.

accompanied by an acceptable form in an amount equal to at least TEN ), as a guarantee that if the bid is ac- der will execute the contract and all ocuments and file acceptable contract of insurance within fourteen (14) days f the contract and prior to commence-

paign, Illinois, reserves the right to re- ds or portions thereof and to waive any nicality in any bids in the interest of the for selection of the lowest responsible orth in Section 12.5-38 of the Cham- Code, 1985, as amended and the bid

nall comply with the Illinois Prevailing Veteran's Preference Act, the Employ- Workers on Public Works Act, the City's ity in Purchasing Ordinance and the Illi- hts Act.

e used to finance this project, the con- nply with the Davis-Bacon Act.

n
3, 2014

Attorneys for Plaintiff
44 Main Street, Suite 310
Champaign, IL 61820
PH: 217/359-6494
FX: 217/359-6468
jchamley@efbclaw.com

1215604 2/2,9,16

Priced to sell at $230,000.
Contact
**Kurt Kiser**
**Burch Kiser Real Estate**
**217-369-8962**

## Public Notices 599

**Illinois Department of Transportation**

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INTERSTATE 57 / INTERSTATE 74 INTERCHANGE
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**DATE & LOCATION**
WEDNESDAY FEBRUARY 19th
3:00 P.M. — 6:00 P.M.
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HIGHWAY DEPARTMENT
1605 EAST MAIN STREET
URBANA, ILLINOIS 61802

**PURPOSE OF MEETING**
- PRESENT PROPOSED ALTERNATIVES
- OBTAIN PUBLIC COMMENTS & INPUT
- ANSWER QUESTIONS

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Program Development Engineer
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1215958

SALE $19,990

14 Ford Escape
AUTO
0% APR 60 mos.

SALE $20,990

14 Ford Edge
SYNC
1.9% + $500 60 mos.

SALE $27,990

14 Ford Explorer
0% APR 60 mos.
Ecoboost

SALE $28,990

RICK RIDINGS
Ford
762-2521
Price includes factory rebate. Special APR in lieu of rebate. All units plus tax, license, title fees extra. Offer expires February 28, 2014

ts 501 Announcements 501 Announcements 501 Announcements 501 Announcements 501 Announcements 501 Announcements 501

ARKETPLACE SPECIALS (*Some Restrictions Apply) 1-800-660-7323

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Productive Farmland
CLASS A SOILS
Open Farm Tenancy
6,000 Bushel Grain Bin
+/- 77.33 Deeded Acres
2013 tax $2,170.88
+/- 76 Tillable Acres
Excellent opportunity to own prime farm land in Douglas County, Illinois.
Property is located 4 miles south of Newman, Illinois at the intersection of County

2

**Thursday, February 27, at 10:00 AM**
**Arrowsmith Community Center**
*(Old Elementary School)*
**202 East Ulmer Street • Arrowsmith, Illinois**
- Located near Arrowsmith in excellent farming community
- High quality farm offering good earning potential
- Excellent access

**For additional information, contact:**
**Roy Bracey, AFM/Agent**

CLASS A SOILS
Open Farm Tenancy
+/- 78.149 Surveyed Acres
+/- 77.5 Tillable Acres
2013 tax $1,868
Excellent opportunity to own prime farm land in Champaign County, Illinois.
Property is located 3 miles southwest of Homer, Illinois at the intersection of County Roads 700N and 2400E.

**Travis Selby Auctioneer, license # 441.001485**

Public Notices 599

## APPRENTICE BRICKLAYERS

The **Twin City Brickmasons Joint Apprentice Committee** will accept applications for apprentice bricklayers at any time and on a continuing basis. Application can be made at Bricklayers Local #8, 3301 N. Boardwalk, Champaign, Illinois, any Monday through Friday, 8:00 A.M. through 12:00 Noon.

All applicants shall be at least the age of 17, be high school graduates or equivalent, and be physically able to perform the work of the trade.

Appointments to make application can be made by calling (217) 356-0419. Applicants should bring with them a transcript of high school courses and grades and/or a certificate of G.E.D. completion, plus a $20.00 non-refundable application fee. In addition, applicants shall show proof of a valid Drivers License.

Upon selection, applicant apprentices will be subject to a pre-employment drug screening and physical which are necessary for entrance into the apprenticeship program.

The Committee actively seeks and encourages women and minorities to apply for apprentice training.

The recruitment, selection, employment and training of apprentices during their apprenticeship shall be without discrimination because of race, color, religion, national origin, or sex. The Sponsor will take affirmative action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required under Title 29 of the Code of Federal Regulations, Part 30.

1162271 2/3, 8/3

## NOTICE OF INVITATION FOR BIDS
**Facility Addition**

Piatt County, Illinois, will receive sealed Bids from General Contractors for all Work as indicated in the Contract Documents, of an approximately 3,700 SF Project entitled **Piatt County Transit Facility Addition**. Bids will be received until **11:00 AM local prevailing time on Wednesday, March 12, 2014**, at the Office of the Piatt County Clerk, Piatt County Courthouse, located at 101 West Washington Street, Monticello, Illinois 61856. Immediately following said time all Bids will be publicly opened and read aloud in the Piatt County Board Room at the same address. Bids not submitted by the deadline will be returned to the Bidder unopened.

A Pre-Bid Meeting will be held **Friday, February 21, 2014** at 11:00 AM in the Piatt County Board Room, Piatt County Courthouse, located at 101 West Washington Street, Monticello, Illinois 61856.

Contract Documents, including the full text of the Invitation For Bids, are on file and may be examined after **Thursday, February 13, 2014** at the Office of the Project Architect, MSA Professional Services, 201 West Springfield Avenue, Suite 400, Champaign, Illinois 61820, or viewed on the Internet by request of a web link for reference purposes only. To submit a Bid for this Project, Bidders must obtain a signed and sealed hard copy set of the Contract Documents from the Office of the Project Architect, MSA Professional Services, by paying a non-refundable amount of One Hundred and 00/100 Dollars ($100.00) for each set. All questions should be directed to the Office of the Project Architect, MSA Professional Services, at (217) 352-6976 or epeterson@msa-ps.com.

Funding for this Project is provided by the American Recovery and Reinvestment Act (ARRA) and the State of Illinois through the Illinois Department of Transportation. A Contract for construction will be awarded to the responsive and responsible Bidder submitting the lowest Bid. The right is reserved to accept any Bid or to reject any and all Bids and to waive any informalities in the bidding. Any Contract resulting from these Bids is subject to financial assistance Contracts between Piatt County, Illinois, and the Illinois Department of Transportation. Contractor will be required to comply with all applicable Equal Employment Opportunity laws and regulations. Attention is called to the fact that all Contractors must observe and adhere to the ORDINANCE ESTABLISHING PREVAILING RATE OF WAGE as included in the Contract Documents and that there is a 3% Disadvantaged Business Enterprise (DBE) requirement for this Project.

BY ORDER OF PIATT COUNTY, ILLINOIS

Date: February 13, 2014

1216899 2/16

Public Notices 599

IN THE CIRCUIT COURT
OF THE SIXTH JUDICIAL
CIRCUIT
OF CHAMPAIGN
COUNTY, ILLINOIS
IN PROBATE

IN THE MATTER OF THE ESTATE OF FRANCES L. JOHNSON, deceased.
No. 2013-P-355
CLAIM NOTICE

NOTICE IS GIVEN to creditors of the death of Frances L. Johnson. Letters of Office as Independent Executor were issued to Robert W. Lotty, of 1212 Post Road, Fairfield, CT 06824, whose

continued next column

**HOT! HOT! HOT!**
Cool down with an air conditioner from the classifieds.

Each Issue of
**At Home**
in Central Illinois magazine highlights beautiful area homes and gardens and is full of home improvement ideas, cooking, entertaining and enjoying home life in central Illinois.
Look for it at area bookstores, grocery stores and retail outlets.

Public Notices 599

counsel is Betsy Pendleton Wong, 115 North Neil Street, Suite 101, Champaign, IL 61820.

Claims against the estate may be filed in the office of the Clerk of the Circuit Court, Champaign County Courthouse, Urbana, IL 61801, or with the representative, or both, on or before August 5, 2014, and any claims not filed on or before that date are barred. Copies of a claim filed with the Clerk must be mailed or delivered to the Independent Executor and to the attorney at their respective addresses stated herein within ten (10) days after it has been filed.

ROBERT W. LOTTY,
Independent Executor

Betsy Pendleton Wong
Attorney for Independent Executor
115 North Neil Street, Suite 101
Champaign, IL 61820
Telephone: (217) 239-1818
1215537 2/2,9,16

**Music you can relate to - Lite rock 97.5 WHMS.**

Public Notices 599

IN THE CIRCUIT COURT
OF THE SIXTH JUDICIAL
CIRCUIT CHAMPAIGN
COUNTY, IL
JUVENILE DIVISION

**NOTICE BY PUBLICATION**

**IN THE INTEREST OF RICKY L. GREEN, 2014-JD-17**

Notice is given you, Ricky Green Sr. Father of RICKY L. GREEN and to all whom it may concern: that on February 6, 2014 a petition was filed under the Juvenile Court Act by Matthew P. Banach, and

continued next column

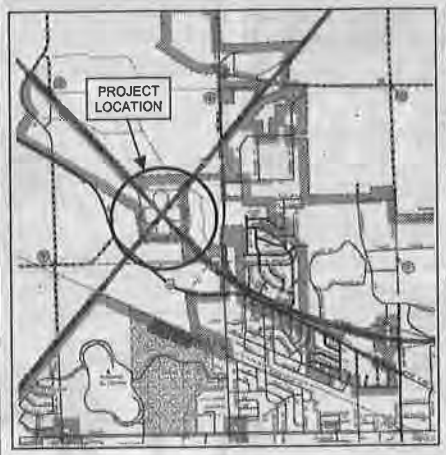
**Can't fix the hole in the wall?**
Check out our home improvement/repairs section in the classifieds to find handyman services.

**NewsTalk 1400 WDWS-AM**
has the largest and most experienced news staff in Central Illinois. Tune in for local and national news, entertainment, interviews, comprehensive weather programming, and University of Illinois sports.

**Illinois Department of Transportation**

Fax: (217) 465-3101
TDD: (217) 463-2279
Media Contact: Craig A. Emberton
Phone: (217) 217-465-4181

## OPEN HOUSE PUBLIC INFORMATIONAL MEETING
FOR THE PROPOSED RECONSTRUCTION OF THE
INTERSTATE 57 / INTERSTATE 74 INTERCHANGE
CHAMPAIGN COUNTY




**DATE & LOCATION**
**WEDNESDAY FEBRUARY 19th**
**3:00 P.M. — 6:00 P.M.**
**CHAMPAIGN COUNTY HIGHWAY DEPARTMENT**
**1605 EAST MAIN STREET**
**URBANA, ILLINOIS 61802**

**PURPOSE OF MEETING**
- PRESENT PROPOSED ALTERNATIVES
- OBTAIN PUBLIC COMMENTS & INPUT
- ANSWER QUESTIONS

**CONTACT INFORMATION**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944
Phone: (217) 465-4181
Fax: (217) 465-3101
TDD: (217) 463-2279

Interested persons are invited to attend this meeting at any time during the open house hours. The purpose of this project is to select a preferred interchange configuration to improve the existing I-57 and I-74 cloverleaf interchange in Champaign, Illinois. Wetlands are expected to be impacted by this project. A noise study will be conducted as part of this project. This project has the potential to impact a cultural resource protected by the National Historic Preservation Act.

The meeting will be conducted on an open house basis with no formal presentation being made. Information provided will include the status of the project. IDOT representatives and their consultants will be available to receive input, provide information and answer questions.

Contact Craig A. Emberton at the address above for information on availability and to submit comments. The comment period ends March 12th, 2014.

This meeting is accessible to persons with a disability. Persons planning to attend who will need a sign language interpreter or other special accommodations should notify IDOT at least five days prior to the meeting. The contact may be by telephone, in writing, by fax or by telecommunications device for the deaf

1216956

**THE HOUSING AUTHORITY OF CHAMPAIGN COUNTY**

## Sign In

**Public Information Meeting for Proposed Reconstruction of the I-57 / I-74 Interchange - February 19th, 2014**

| | Name (Printed) | Address | Phone Number | Email |
|---|---|---|---|---|
| 1 | GOSIA ADAMCZYK | 1605 E. Main, Urbana IL | 384 3800 | gadamczyk.co.champaign.il.us |
| 2 | CHRIS BUTLER | 3301 N BOARDWALK, CHAMP IL | 356-9313 | LOCAL143OFFICE@OPCMIA143.org |
| 3 | Brad LaPayne | 305 N. Prospect Champ. | 356-8928 | brad@lapayne.com |
| 4 | SCOTT KISTING | 2626 MIDWEST CT | 819-3040 | SKISTINGKMOTIONLINE.COM |
| 5 | BRIAN SWARTZ | 2813 N RISING ROAD CHAMPAIGN | 840.2602 | bswartz@harvestco.com |
| 6 | PAT DORSEY | 1918 MAYNARD DR. CHAMPAIGN | 369-1487 | PDORSEY@PETRY-KUHNE.COM |
| 7 | HABEEB HABEEB | 2110 Clearlake Blvd Ste 200 Champaign 61822 | 217-355-2300 | habeeb@bpcinc.com |
| 8 | TED COMBES | 4101 N. FISLER RD. MONTICELLO | 762-7552 | TCOMBES@OPENROADPAVING.COM |
| 9 | Dave Clark | 702 Edgebrook Dr., Champaign, IL 61820 | 403-4700 | dave.clark@ci.champaign.il.us |
| 10 | KIP POPE | 1806 MAYNARD DR, CHAMPAIGN 61822 IL | 217 352-3344 | Kippope@comcast.net |
| 11 | RICK HANNAH | 3802 N COTTONWOOD RD URBANA | 2173778282 | RICK10255@GMAIL.COM |
| 12 | Tony Kecick | 17 Main St, Urbana Champ | 351.5221 | Kecicka news-gazette.com |
| 13 | Rusty Davenport | 108 E Anthony Dr Urbana IL 61802 | 367-0703 | rusty703@att.net |
| 14 | Josh Hartke | 303 S. Fair Dr. Champaign | 390-3808 | jthartke713@yahoo.com |
| 15 | Tom Carrino | 400 S Vine St. Urbana, IL | 384-2442 | tcarrino@urbanaillinois.us |
| 16 | Ryan Roth | 303 W Kirby Ave Champ 61820 | | ~~prof~~ ryanr@champaigncounty.org |
| 17 | Landon Stenger (Seg. Chaplin Rose) | 510 S. Staley Rd. Ste. D champ 61822 | 217-607-1853 | LS@chaplrose.net |
| 18 | JIM McGUIRE | 2605 Wedgewood dr ch | 217 649-7641 | Jmmcguire@gmail.com |
| 19 | Michael Burton | | | michael.burton@wandtv.com |
| 20 | | | | |

## Sign In

**Public Information Meeting for Proposed Reconstruction of the I-57 / I-74 Interchange - February 19th, 2014**

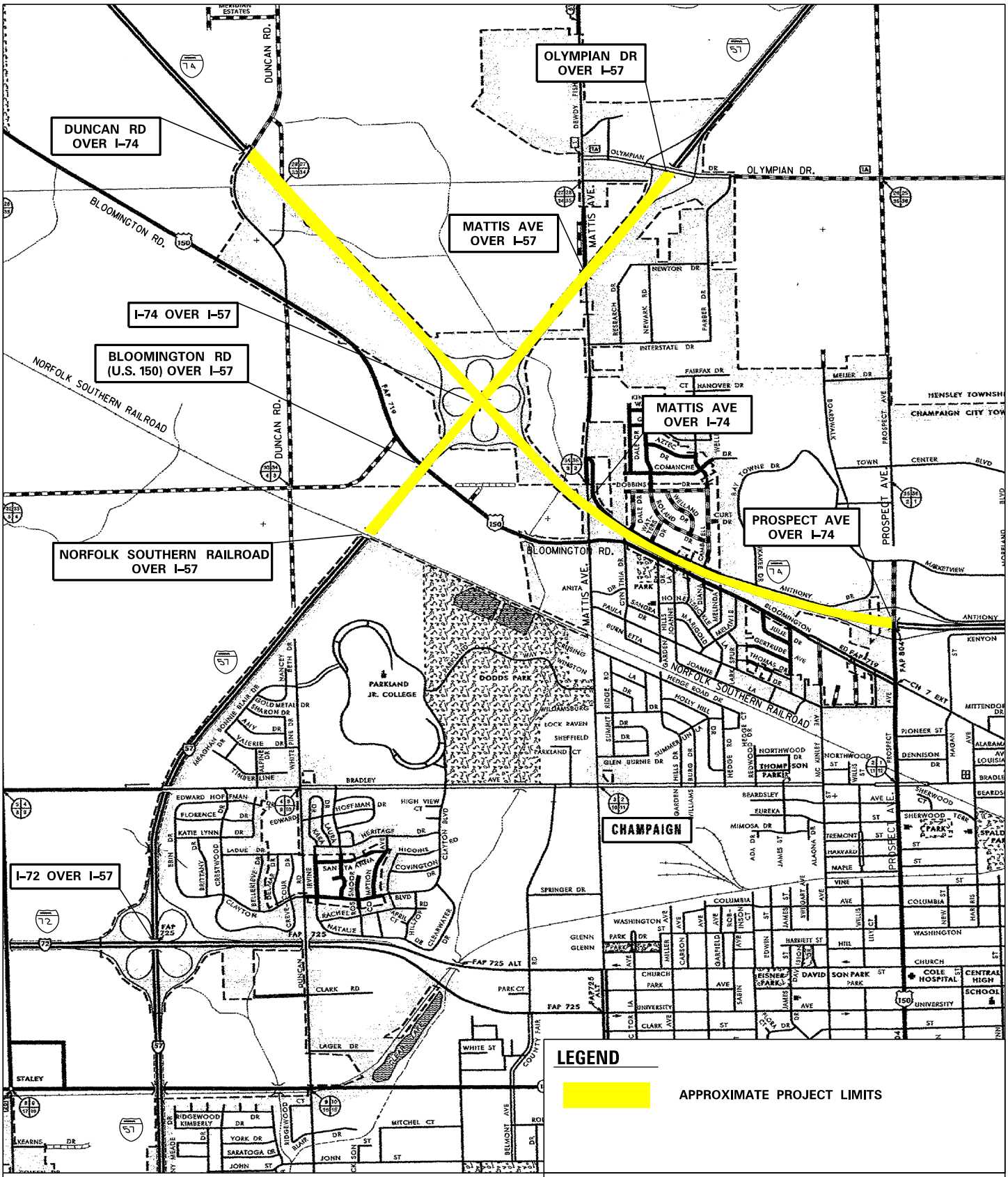
| | Name (Printed) | Address | Phone Number | Email |
|---|---|---|---|---|
| 21 | Chris Billing | 405 E. Main, Urbana, IL 61822 | 384-1144 | cbilling@bernsclancy.com |
| 22 | Rita Black | 1776 E. Washington St. Urbana, IL | 328-3313 | rmoroco@ecrpc.org |
| 23 | John Cooper | 1605 E. Main St - Urbana, IL | 384-3800 | jcooper@co.champaign.il.us |
| 24 | Jason Frericks | 2602 Worcester Dr - Champaign | 356-3863 | frericks1979@hotmail.com |
| 25 | GREG COOK | 2610 S NOTTINGHAM CT CHAMPAIGN | 355-7020 | GREG.COOK@FOTH.COM |
| 26 | Ellen Hedrick | 340 NEIL CHAMPAIGN | 352-7689 | [redacted] ehedrick@fehr-graham.com |
| 27 | Jenny H. Park | 306 W. Church St., Champaign | 352-1800 | jpark@meyercapel.com |
| 28 | CAMPBELL D. SMITH | 2409 MELROSE C. TWP | 3574907 | |
| 29 | Mark Dixon | 2005 S. Boulder, Urbana, IL | 367-2121 x16 | mark@atkinsgroup.com |
| 30 | Kevin Sage | 1005 N. Dunlap Ave, Savoy, IL | 359-5201 | ksage@ualocal249.com |
| 31 | STEVE SODEMANN | 2617 WEDGEWOOD, CHAMPAIGN | 352-7608 | ssodemann@fehr-graham.com |
| 32 | Kensil Garnett | IDOT | 466-7240 | Kensil.garnett@illinois.gov |
| 33 | KEVIN NEWCOMB | 1173 CR 900 E Champaign IL 61822 | 352-0323 | |
| 34 | Don Wauthier | 405 E Main St Urbana | 384-1144 | dwauthier@bernsclancy.com |
| 35 | | | | |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |

## Purpose of the Proposed Action

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the Interstate 57 (I-57) and Interstate 74 (I-74) interchange by eliminating deficient geometric features and reducing points of access in order to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps.

## Need for the Proposed Action

The need for the proposed improvement is to address operational, geometric, safety, and capacity deficiencies.




# SITE MAP

**I–57 & I–74 INTERCHANGE**
**IDOT – DISTRICT 5**
**CHAMPAIGN COUNTY**
**CHAMPAIGN, IL**

**EXHIBIT 1**

# EVALUATION MATRIX

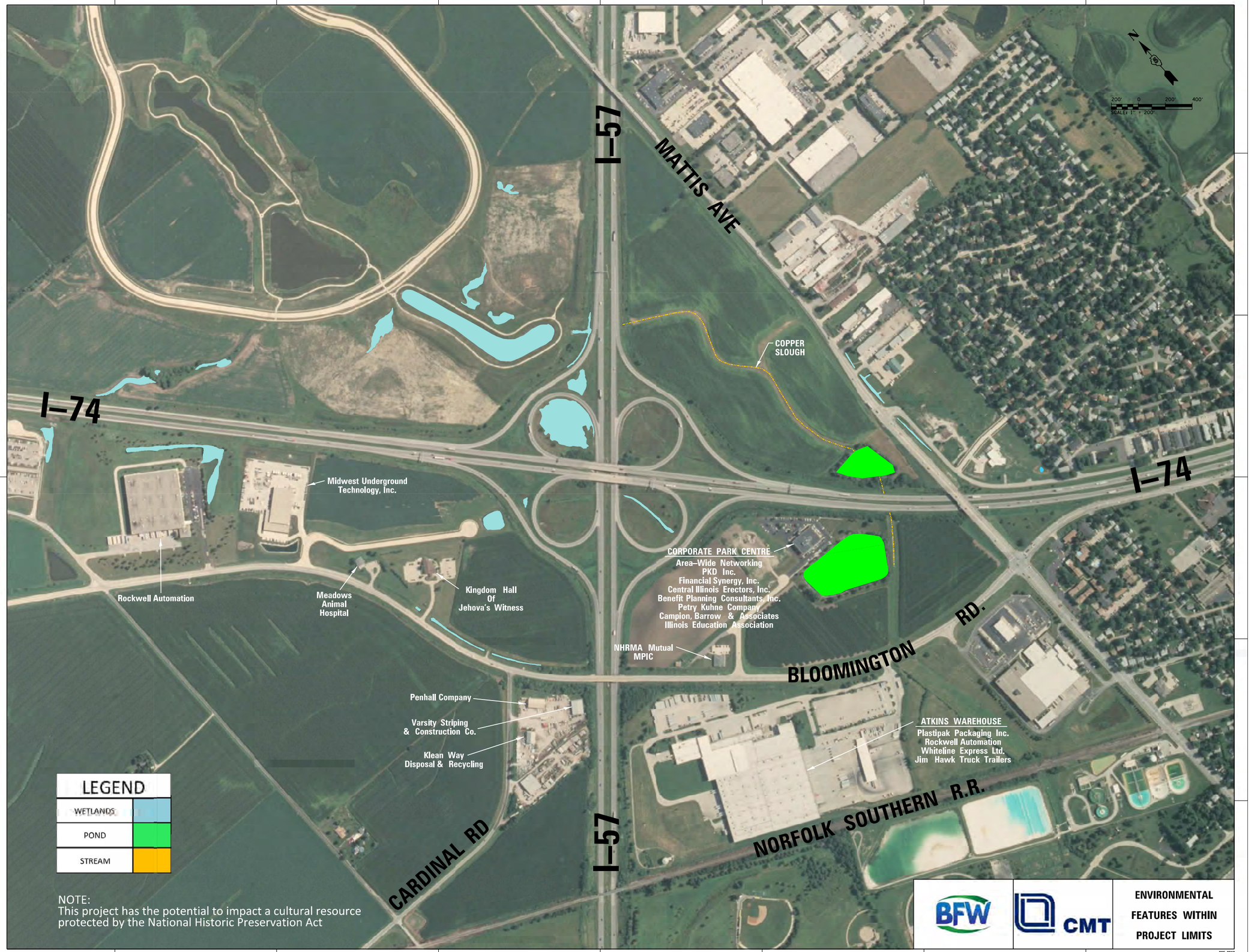
| Comparison Features | Alternate 1 | Alternate 2 | Alternate 3 | Alternate 4 | Alternate 5 |
|---|---|---|---|---|---|
| Number of Loop Ramps | 0 | 2 | 2 | 0 | 0 |
| Number of Mainline Access Points | 8 | 12 | 12 | 8 | 8 |
| Number of Transposed Ramps | 0 | 0 | 1 | 4 | 0 |
| Number of Ramp Structures | 4 | 6 | 7 | 8 | 6 |
| Fully Directional | YES | NO | NO | NO | YES |
| Number of Design Exceptions | 0 | 0 | 0 | 0 | 0 |
| Capacity – Minimum Level of Service | | | | | |
| I-57 NB | B | B | B | B | B |
| I-57 SB | B | B | B | B | B |
| I-74 EB | B | B | B | C | C |
| I-74 WB | B | B | B | B | B |
| CORSIM Conflict Analysis (potential conflicts in peak hour) | 279 | 339 | 304 | 422 | 370 |
| Total Ramp Travel Time (minutes) | 11.93 | 13.01 | 14.05 | 13.59 | 12.27 |
| Potential Environmental Impacts | | | | | |
| Wetlands | 6 | 6 | 6 | 8 | 7 |
| Detention Ponds | 1 | 1 | 1 | 1 | 1 |
| Streams | 1 | 1 | 1 | 1 | 1 |
| Hazardous Materials | 5 | 4 | 4 | 6 | 8 |
| Archaeological Resources | 1 | 0 | 1 | 1 | 1 |
| Social Resources | 1 | 0 | 2 | 2 | 1 |
| Right-of-Way Acquisition (acres) | 66 | 37 | 89 | 106 | 78 |
| Preliminary Construction Cost (Millions) | 105 | 102 | 95 | 125 | 121 |
| Preliminary Land Acquisition Cost (Millions) | 5 | 3 | 6 | 7 | 6 |
| Preliminary Utility Relocation Cost (Millions) | 2 | 2 | 3 | 3 | 3 |
| Preliminary Total Cost (Millions) | 112 | 107 | 104 | 135 | 130 |




INTERCHANGE TYPE STUDY

**EXISTING INTERCHANGE LOCATION MAP**

BDE-9908


I–57
MATTIS AVE
I–74
COPPER SLOUGH
I–74
Midwest Underground Technology, Inc.
Rockwell Automation
Meadows Animal Hospital
Kingdom Hall Of Jehova's Witness
CORPORATE PARK CENTRE
Area–Wide Networking
PKD Inc.
Financial Synergy, Inc.
Central Illinois Erectors, Inc.
Benefit Planning Consultants, Inc.
Petry Kuhne Company
Campion, Barrow & Associates
Illinois Education Association
NHRMA Mutual
MPIC
BLOOMINGTON RD.
Penhall Company
Varsity Striping & Construction Co.
Klean Way Disposal & Recycling
ATKINS WAREHOUSE
Plastipak Packaging Inc.
Rockwell Automation
Whiteline Express Ltd.
Jim Hawk Truck Trailers
NORFOLK SOUTHERN R.R.
CARDINAL RD
I–57
N
200' 0 200' 400'
SCALE: 1" = 200'
LEGEND
WETLANDS
POND
STREAM
NOTE:
This project has the potential to impact a cultural resource protected by the National Historic Preservation Act
BFW
CMT
ENVIRONMENTAL FEATURES WITHIN PROJECT LIMITS
BCE-9908

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USER NAME = dp Barnhardt

I-57

MATTIS AVE

I-74

I-74

BLOOMINGTON RD.

NORFOLK SOUTHERN R.R.

I-57

N

200' 0 200' 400'
SCALE: 1" = 200'

BFW

CMT

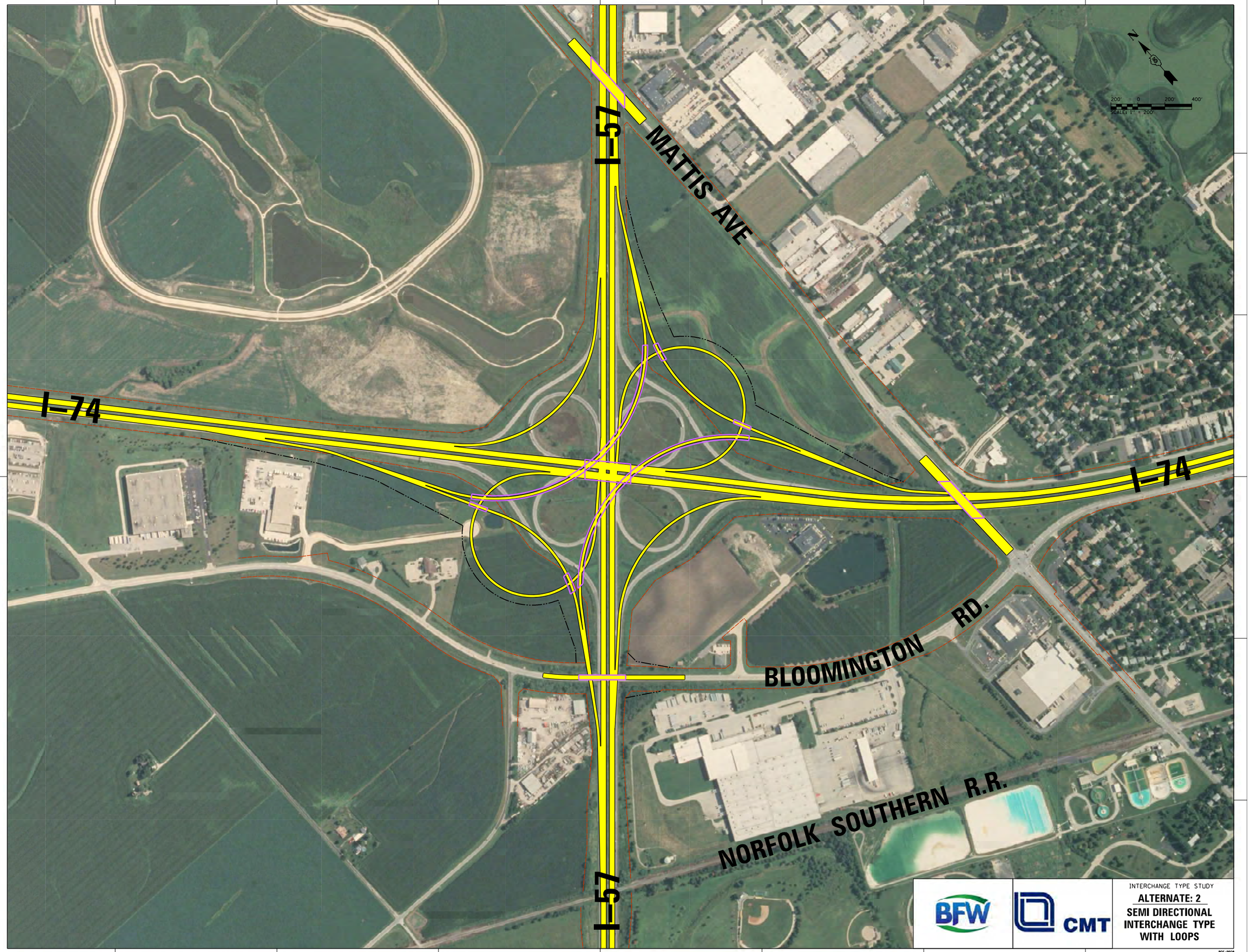
INTERCHANGE TYPE STUDY

**ALTERNATE: 1**

**FULL DIRECTIONAL INTERCHANGE TYPE**

BDE-9908

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USER NAME = Bonnie Reid




INTERCHANGE TYPE STUDY

**ALTERNATE: 2**

**SEMI DIRECTIONAL INTERCHANGE TYPE WITH LOOPS**

BFW CMT

BDE-9908

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I-57

MATTIS AVE

I-74

I-74

BLOOMINGTON RD.

NORFOLK SOUTHERN R.R.

I-57

N

200' 0 200' 400'
SCALE: 1" = 200'

BFW

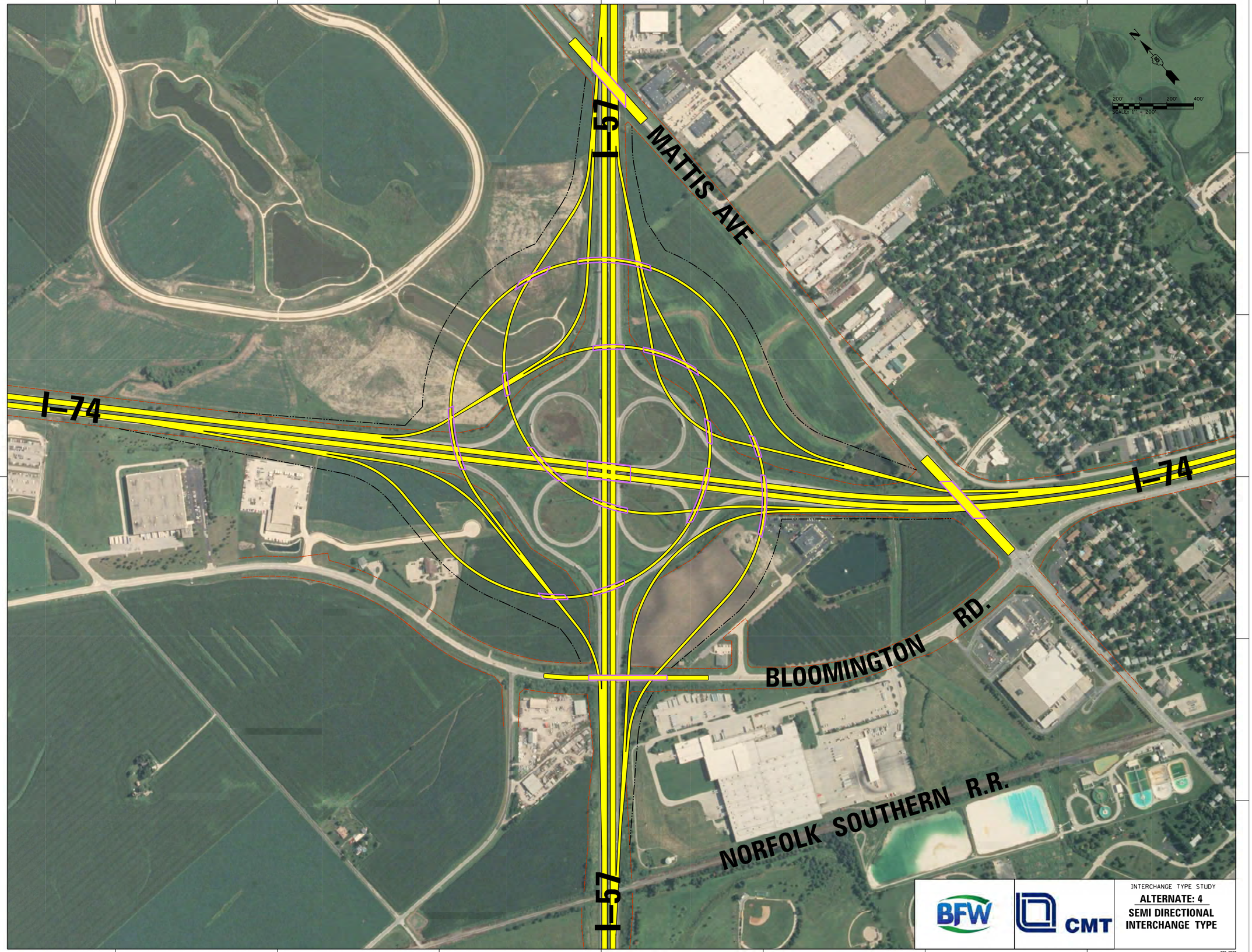
CMT

INTERCHANGE TYPE STUDY

**ALTERNATE: 3**

**SEMI DIRECTIONAL INTERCHANGE TYPE WITH LOOPS**

BDE-9908




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USER NAME = Bradley Beach

INTERCHANGE TYPE STUDY

**ALTERNATE: 4**

**SEMI DIRECTIONAL INTERCHANGE TYPE**

BFW CMT

BDE-9908

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USER NAME = Bradley Begley

I-57

MATTIS AVE

I-74

I-74

BLOOMINGTON RD.

NORFOLK SOUTHERN R.R.

I-57

N

200' 0 200' 400'
SCALE: 1" = 200'

BFW

CMT

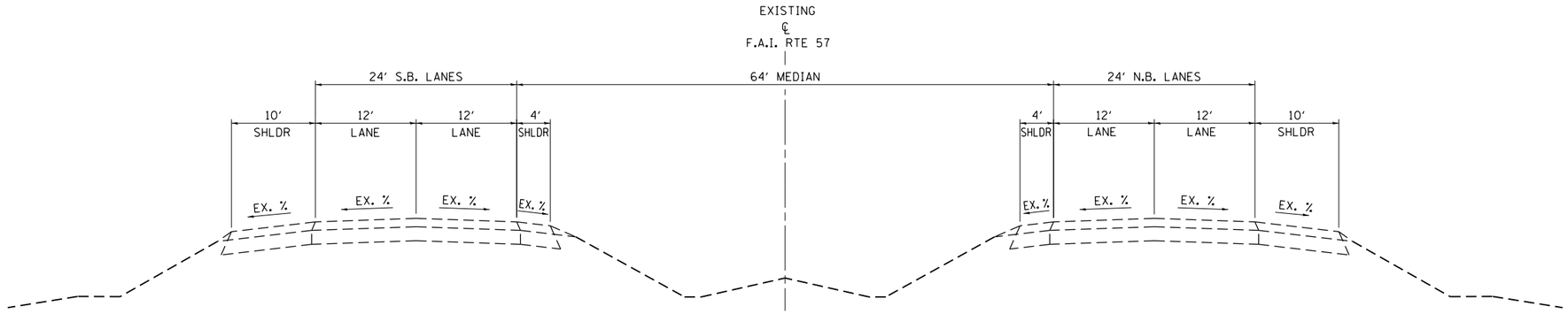
INTERCHANGE TYPE STUDY

**ALTERNATE: 5**

**FULL DIRECTIONAL INTERCHANGE TYPE**

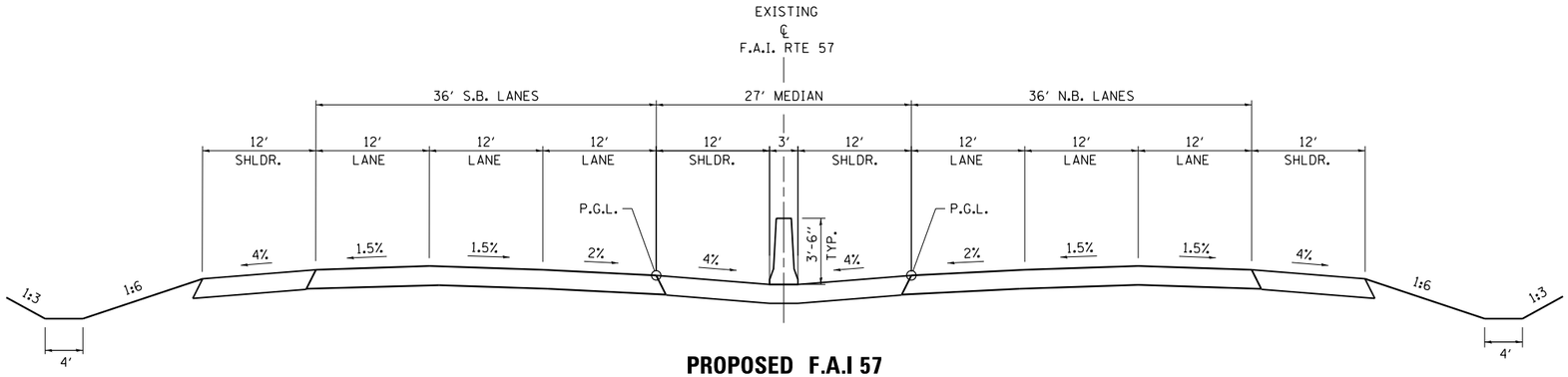
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USER NAME = Brad Downen



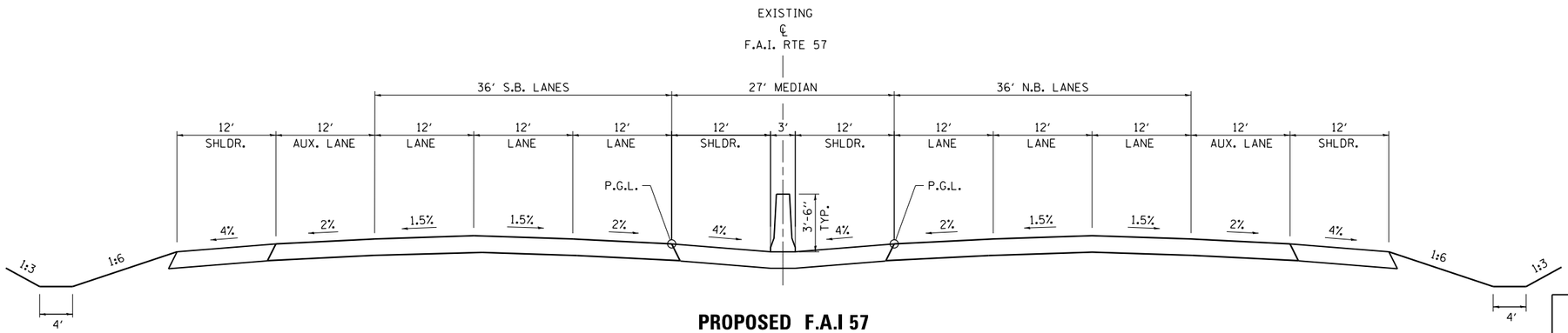

**EXISTING F.A.I 57**

(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
(LOOKING NORTH)




**PROPOSED F.A.I 57**

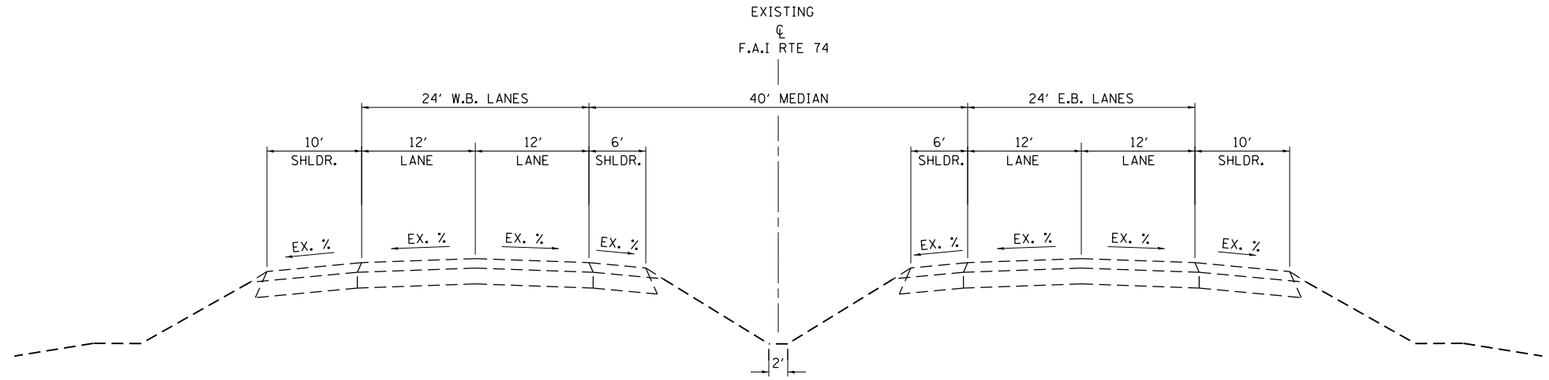
NORMAL CROWN
WITH AUXILIARY LANE
(LOOKING NORTH)

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

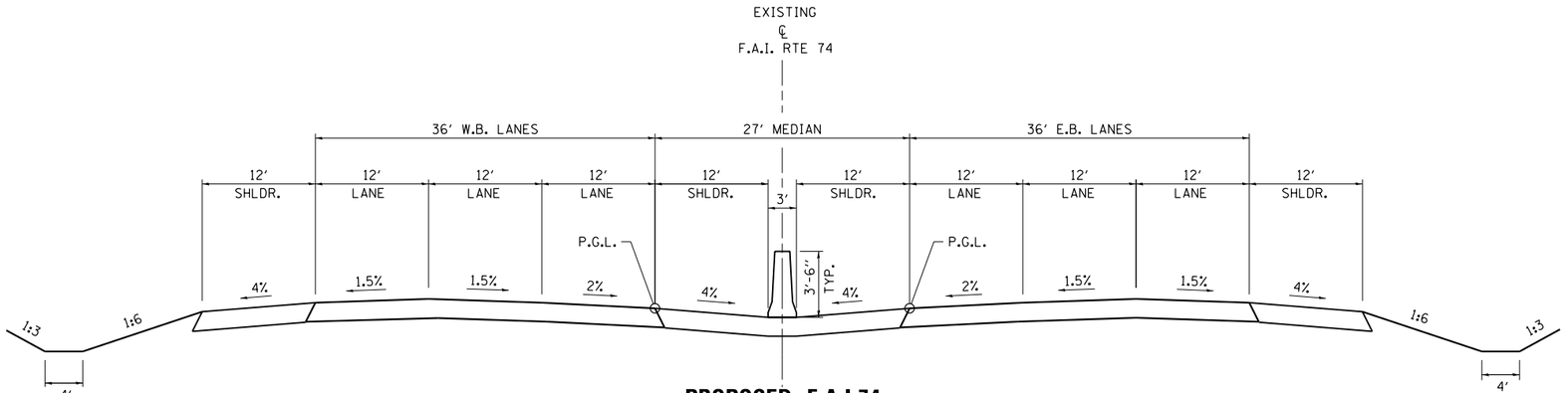
**INTERSTATE 57**

**EXHIBIT 12**



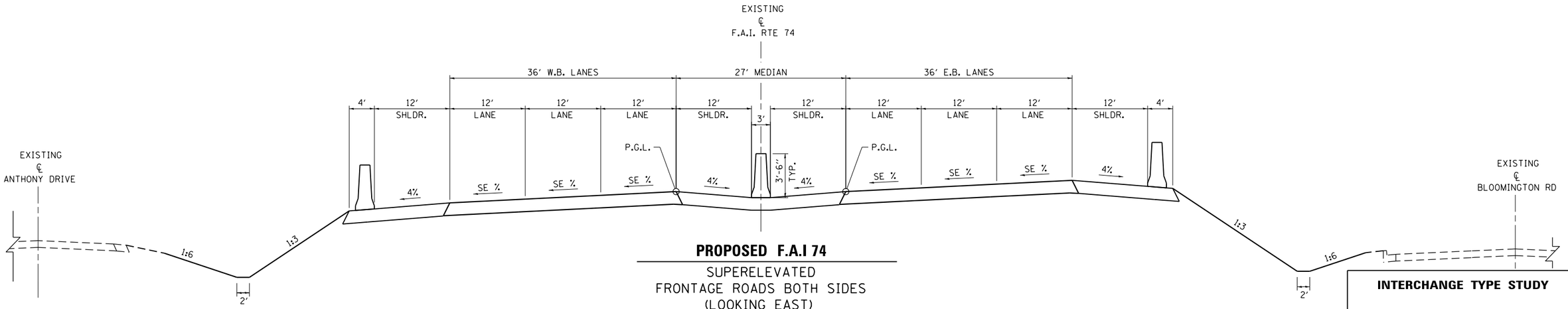

**EXISTING F.A.I 74**

(LOOKING EAST)




**PROPOSED F.A.I 74**

NORMAL CROWN
(LOOKING EAST)




**PROPOSED F.A.I 74**

SUPERELEVATED
FRONTAGE ROADS BOTH SIDES
(LOOKING EAST)

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

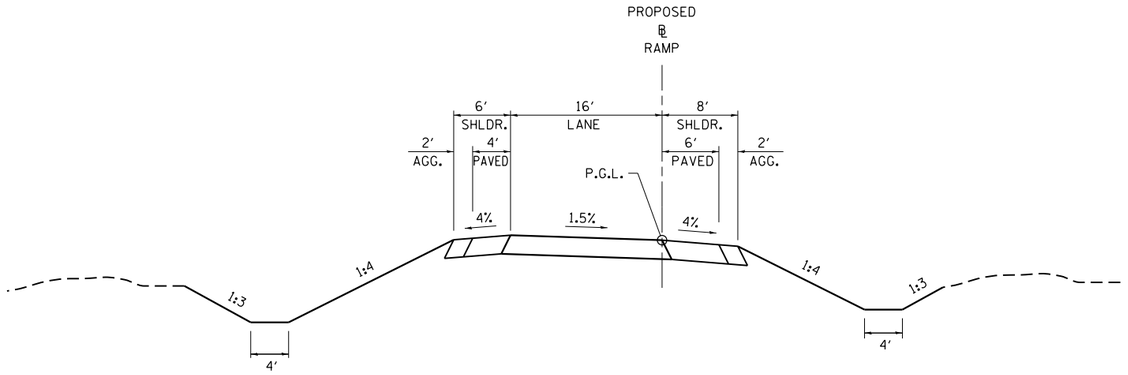
**INTERSTATE 74**

**EXHIBIT 13**

BDE-9908

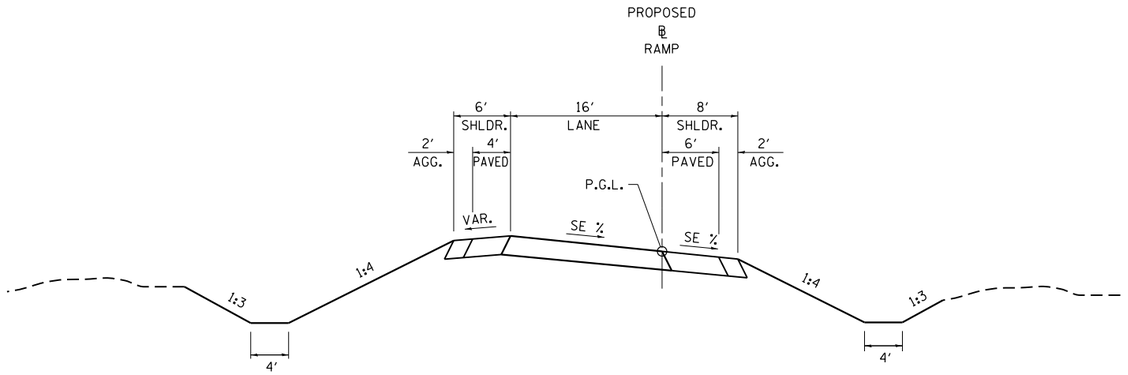
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**PROPOSED RAMP**

NORMAL CROWN




**PROPOSED RAMP**

SUPERELEVATED

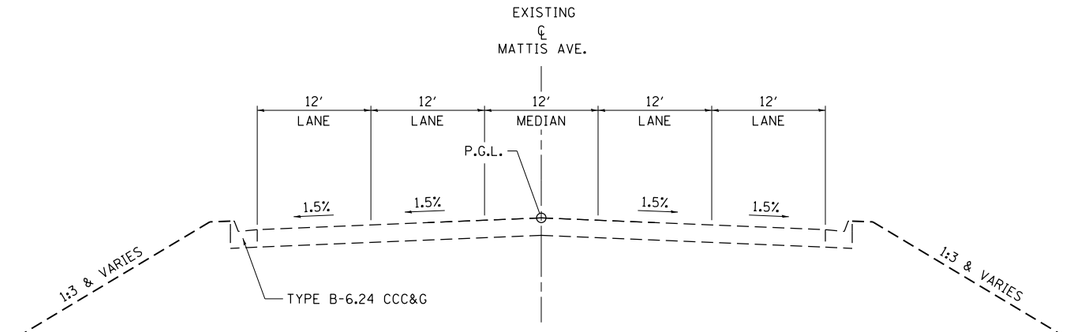
**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**RAMPS**

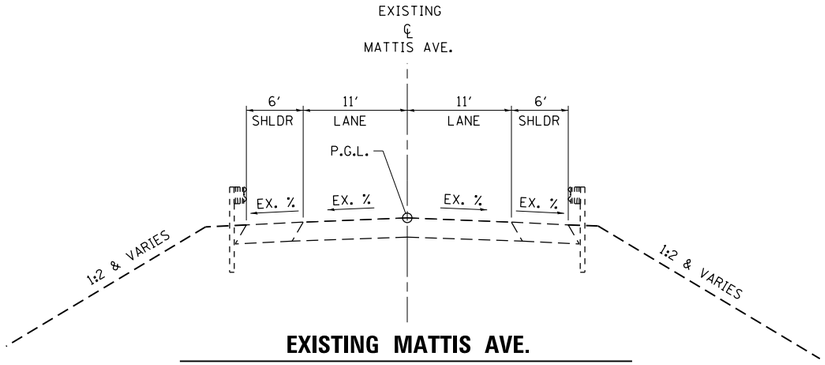
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**EXISTING MATTIS AVE.**

NEAR I-74
(LOOKING NORTH)




**EXISTING MATTIS AVE.**

NEAR I-57
(LOOKING NORTH)

COORDINATION TO BE COMPLETED WITH THE CITY OF CHAMPAIGN

**PROPOSED MATTIS AVE.**

(LOOKING NORTH)

**INTERCHANGE TYPE STUDY**

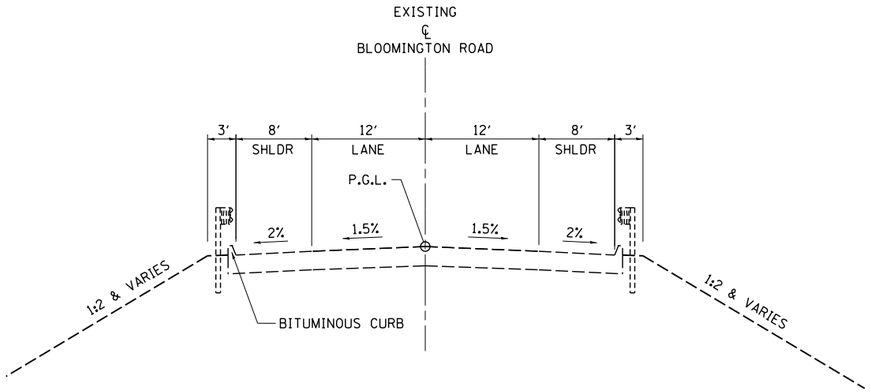
**EXISTING & PROPOSED TYPICAL SECTIONS**

**MATTIS AVENUE**

**EXHIBIT 15**

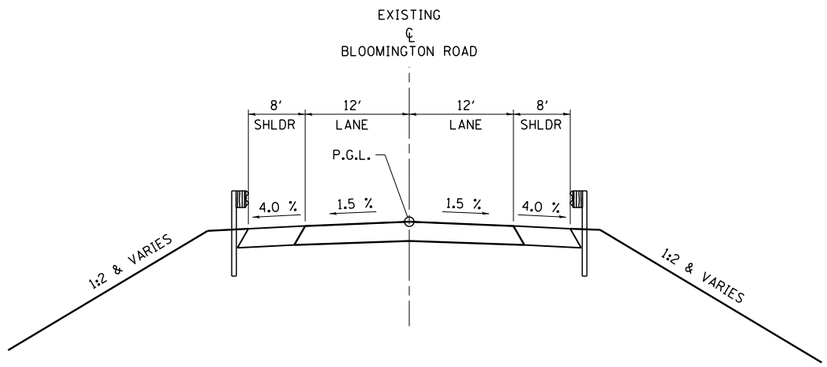
BDE-9908

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PLOT SCALE = $SCALE$
USER NAME = $USER$




**EXISTING BLOOMINGTON ROAD**

(LOOKING EAST)




**PROPOSED BLOOMINGTON ROAD**

(LOOKING EAST)

COORDINATION TO BE COMPLETED WITH THE CITY OF CHAMPAIGN

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**BLOOMINGTON ROAD**

**EXHIBIT 16**

BDE-9908

# Public Information Meeting Comment Form

Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

Please place this form in the comment box or mail by March 12, 2014 to the address on the bottom of this sheet. Your comments assist us in developing a project that will serve the needs of the traveling public as well as the needs of the local community. Your input is welcome and appreciated throughout the design process.

Name: Brad LaPayne

Address: 305 N. Prospect Ave., Champaign

Daytime Phone Number (optional): 217-356-8928

Email Address (optional): brad@lapayne.com

Comments: I would suggest that funds could be better spent on road issues all over this area. Most of the problem from the I57/I74 interchanges arise from distracted drivers, discourteous drivers and from driving to fast. Appropriate signage and warning devices could mediate the problem. The installation and use of electronic signage, signage, reduction of speed limit and rumple strips could solve most problems. I have personally driven well over 500,000 miles, all originating in C-U. I have negotiated the interchange 500-600 times, all successfully. Other solution should be tried before spending vasts amounts of money to change the interchange. How many will be killed and injured during the 3 or 4 seasons of construction? Try other solutions first.

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944

# Public Information Meeting Comment Form

Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

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Name: Ellen Hedrick

Address: 1409 W. Green St. Champaign

Daytime Phone Number (optional):

Email Address (optional):

Comments: I like Alternate 1 the best.
Least property impacts. Least complicated.
Great landscaping opportunities.

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944

# Public Information Meeting Comment Form

Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

'14 FEB 24 9:58AM

Please place this form in the comment box or mail by March 12, 2014 to the address on the bottom of this sheet. Your comments assist us in developing a project that will serve the needs of the traveling public as well as the needs of the local community. Your input is welcome and appreciated throughout the design process.

Name: GARY CORNELius

Address: 118 MoHAWK dR

Daytime Phone Number (optional): 217-474-0599

Email Address (optional): _____

Comments: How MANY PEOPLE HAVE to dIE BEfoRE we get it fixed?

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944

# Public Information Meeting Comment Form

Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

'14 FEB 24 10:01 AM

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Name: Russell Davenport

Address: 108 E Anthony Dr Urbana, IL 61802

Daytime Phone Number (optional): (217) 367-0703

Email Address (optional): rusty703@att.net

Comments: This project has been need for years. ① The safety aspect alone warrants the immediate attention of this project, there have been numerous accidents and fatalities because of the current design. ② This project is needed in order to allow growth and expansion ~~for~~ to this and the surrounding areas, without this project other surrounding infrastructure can not move forwards, thus slowing any more growth to the surrounding areas.

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944

# Public Information Meeting Comment Form

Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

'14 FEB 24 9:59 AM

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Name: Steven Griswold

Address: 307 West Summit Gifford IL 61847

Daytime Phone Number (optional): 217-202-8048

Email Address (optional): _____

Comments: I think the interchange would be a good thing. Also it would would Bring a lot of Good Jobs and Money to this Area. Also It would SAVE on Conjestion on the Interstate. The Interchange would Do the City of Champaign + URBANA Good. Also it would SAVE Lives. and Time. Everyone and there Family in this Area will use it and Also other Areas and really like it.

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
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Champaign County
February 19, 2014

'14 FEB 24 10:00 AM

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Name: Robert King

Address: 207 Florida PO Box 457 Gifford IL 61847

Daytime Phone Number (optional): _____

Email Address (optional): _____

Comments: The I-57 / I-74 interchange is along overdo Project The number of accidents or death will only go up. The shoulder heat is dangerous in a car but share a truck and Trailer.

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
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# Public Information Meeting Comment Form

Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

'14FEB24 10:01AM

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Name: James M Lindsey

Address: 2101 Todd DR Bloomington IL

Daytime Phone Number (optional): 309 826 1368

Email Address (optional): tank52458@yahoo.com

Comments: I use the I57 / I74 interchange quite often both for work as well as travelling for pleasure. As such I am aware that it needs to be changed in my opinion to make the ability to merge and to exit safer. Widening or adding lanes, reconfiguring the type of intersection all are possible solutions.

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944

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Champaign County
February 19, 2014

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Name: Kirk Miller

Address: 3500 W. Powell Lane Mattoon Ill. 61938

Daytime Phone Number (optional): 217-234-8508

Email Address (optional): _____

Comments: I work in Urbana and use this interchange morning and night. Almost without fail the traffic is very heavy. The merging is tough because the ramps are hard to drive on at the speed you need to be safe. Semi tractors with trailers are especially slow to come up to speed with all the ramps so close together. The necessary improvments would in my opinion make the area much safer for all people using this interchange.

Kirk Miller

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944

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Champaign County
February 19, 2014

'14 FEB 24 9:58 AM

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Name: Jeff Roed

Address: 4005 Inverness Champ. IL 61820

Daytime Phone Number (optional): _____

Email Address (optional): _____

Comments: The I-57/I-74 interchange is in need of an up-grade. It is very dangerous. I have see or almost been in several accidents at this Interchange. During peek hour it is very difficult to merge on to I-74. The merge lanes are to short. When both lanes are full, the merging traffic has no where to go!

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
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Champaign County
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Name: James Roedl

Address: 2806 Sunrise TR Mahomet IL

Daytime Phone Number (optional): 217-714-3075

Email Address (optional): jimmyjroedl61853@yahoo.com

Comments: This project needs to start right now. I drive I-74 home from Urbana every day and it is a wonder that there is not more wrecks and roll overs and deaths from this out dated interchange. How many more lives must be lost before our government acts and addresses this problem. The longer we delay this project the more it will cost we need to move forward now. Thank you

James Roedl

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944

# Public Information Meeting Comment Form

Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

'14 FEB 24 10:02 AM

Please place this form in the comment box or mail by March 12, 2014 to the address on the bottom of this sheet. Your comments assist us in developing a project that will serve the needs of the traveling public as well as the needs of the local community. Your input is welcome and appreciated throughout the design process.

Name: Josh Rushing

Address: 2 Southview Dr Sidney, IL

Daytime Phone Number (optional):

Email Address (optional):

Comments: The reconstruction would not only prevent accidents but would put several union braters to work.

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944

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Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

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Name: Sue Sutton

Address: 210 Juniper Dr, Mahomet, IL 61853

Daytime Phone Number (optional): _____

Email Address (optional): _____

Comments: I drive past this interchange twice daily + scares me to death, the oncoming merging w/ what's already travelling on I-74 westbound, the traffic going off to I-57 southbound, it's like every man for himself!!

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
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Name: Charlotte Taylor

Address: 504 Lucia Lane Champaign IL 61822 (Luria)

Daytime Phone Number (optional): _____

Email Address (optional): _____

Comments: The I-57 / I-74 Interchange needs to be changed! I call this interchange the death trap. Anytime to use it is so hard to get on + off. My sister in law was in a bad accident on 74 heading to Monument. Semi was merging on to 74 from 57 North heading west. Came off Ramp and just totaled [redacted] in front of her. [redacted] S.U.V. totaling it. Luckily she was not killed. Just recently a young lady was killed. The interchange can not handle all the traffic & merging of traffic. How many accidents & deaths does it take before this problem is corrected?

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
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Name: Chad Walker

Address: 1764 CR 1650N Urbana IL 61802

Daytime Phone Number (optional):

Email Address (optional):

Comments: I grew up in this area and have used this interchange lots of times. It is dangerous and greatly needs improvement. I would like to see this reconstruction go through not just for the safety concerns but also for the amount of work that it would generate for this area.

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944

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Name: Brian Swartz – harVestco, LLC

Address: 2813 N Rising Rd, Suite 100 – Champaign, IL 61822

Daytime Phone Number (optional): 217-840-2602

Email Address (optional): bswartz@harvestco.com

Comments:

Per your recommendation, I am sending you my views on the proposed reconstruction of the I-57/I-74 interchange. I appreciated the chance to speak with you, many of the staff from IDOT and several consultants at the public meeting held at the Champaign County Highway Department on February 19, 2014. As you may recall, I am a Real Estate Broker and consultant for the owners of Corporate Park Centre, which is located in the Southeast quadrant of the interchange.

I travel that area frequently and can appreciate the need for providing a safer and more efficient design of that intersection. After our discussions and further study of the five design alternatives presented at the meeting, I believe Alternative 2 stands out as the best alternative for several reasons.

Alternative 2 affords the opportunity to reconstruct the interchange to facilitate safer travel with the least amount of right-of-way acreage acquisition. The projected 37 acres needed to complete the project under this design is substantially less than any of the other proposals. Alternative 2 requires 44% less ground than the next lowest option, Alternative 1 (66 acres). Alternative 4 (106 acres) requires the acquisition of 2.9 times the acreage as Alternative 2. Also, the wetland area (3.52 acres) and the water bodies involved are the least affected in Alternative 2. The ability to reconstruct the interchange with the least amount of impact to the local landowners, developers and environmentally sensitive areas should make this option the most desirable. The landowners on all four quadrants of the interchange have invested huge sums of money in developing the infrastructure on their properties, along with promotion and marketing costs. Minimizing the amount of ground taken from these first class development projects would also benefit the City of Champaign by allowing maximum development in the gateway corridor to the community. Additionally, another important aspect of selecting Alternative 2 is that the project could be accomplished at the low end of projected costs to the taxpayers.

Hopefully, the above information will weigh heavily on the decision and Alternative 2 will be selected. If for some reason it is not chosen, Alternative 1 would offer the next best option, considering the points above. Alternatives 3, 4 & 5 require the acquisition of an unacceptable amount of acreage, with Alternative 5 being the least desirable as it consumes one of the most elite and desirable office buildings in the area.

Thank you for your consideration. Please feel free to contact me if you have any questions or comments.

**Mail to:**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944

# The Atkins Group

14 MAR 12 10:30

March 11, 2014

Mr. Craig Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3/District 5
13473 IL Highway 133
Paris, Illinois 61944

**Re: Proposed Reconstruction of Interstate 57 / Interstate 74 Interchange**

Dear Craig:

Thank you for hosting the open house on February 19, 2014 regarding the redesign and reconstruction of the Interstate 57 / Interstate 74 interchange. Having the preliminary plans, diagrams, aerial photos and staff available to answer questions was greatly appreciated.

Of the five alternates presented by IDOT and its consultants that afternoon, The Atkins Group prefers the alternate that was labeled **"Alternate 2"** that afternoon.

This statement matches the sentiment of our letter issued on November 7, 2013 to IDOT. Alternate 2 is preferred based our belief that it has the least amount of immediate and long term impacts to the quadrants than the other proposed alternate designs.

As owners and active developers of land in each quadrant of the interchange, we remain keenly interested in the advancement of this project. We appreciate how IDOT has kept us informed so far and hope that IDOT will continue to keep our office informed.

If you have any questions regarding our stance or how we derived our position, please let us know.

Sincerely,

Mark Dixon
Director of Real Estate

1905 SOUTH ORCHARD DRIVE URBANA, ILLINOIS 61802-6088 (217) 367-2121 FAX (217) 367-0619

**Public Information Meeting Comment Form**

Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014 Public Presentation

To: Mr. Craig A. Emberton
Program Development Engineer Illinois Department of Transportation Region 3 / District 5
13473 IL Hwy 133
Paris, IL 61944

From:

Name: Kip Pope, President of the sole member of Clearlake LLC, owner of the south 30 acres of Corporate Park Centre
Address: 1806 Maynard Drive, Champaign, IL 61822
Daytime Phone Number (optional): 217-352-3344 Cell Phone Number: 217-898-5111
Email Address (optional): kippope@comcast.net

Comments:

We own the south 30 acres, more or less, of the 50-acre "Corporate Park Centre" development, located in the southeast quadrant of the I-57/I-74 interchange, as shown on Attachments 1 and 2. My comments are made in conjunction with those from Brian Swartz, marketing agent and broker for the whole development, and Pat Dorsey of Corporate Park Centre LLC.

As you can see from Attachments 3 and 4, the 50-acre development has been carefully developed and planned as a multi-building 'beltline' office park with a beautiful tree-lined pond as its focal point. The site and planned development is unique to the region, and is reflective of today's modern developments in much larger metropolitan areas than Champaign-Urbana. Encroaching on the north and west sides of the property would seriously damage the developability and aesthetic balance of this unique development.

Accordingly, I believe that IDOT's Alternative 2, which encroaches the least on these properties, stands out as the best alternative, followed by Alternative 1, for the reasons stated in Brian Swartz's comments.

I would also echo Brian's articulation that "Alternatives 3, 4 & 5 require the acquisition of an unacceptable amount of acreage, with Alternative 5 being the least desirable as it consumes one of the most elite and desirable office buildings in the area," as shown on Attachment 5.

Thank you for your consideration. Please don't hesitate to contact me if you have any questions or comments.

Sincerely yours,

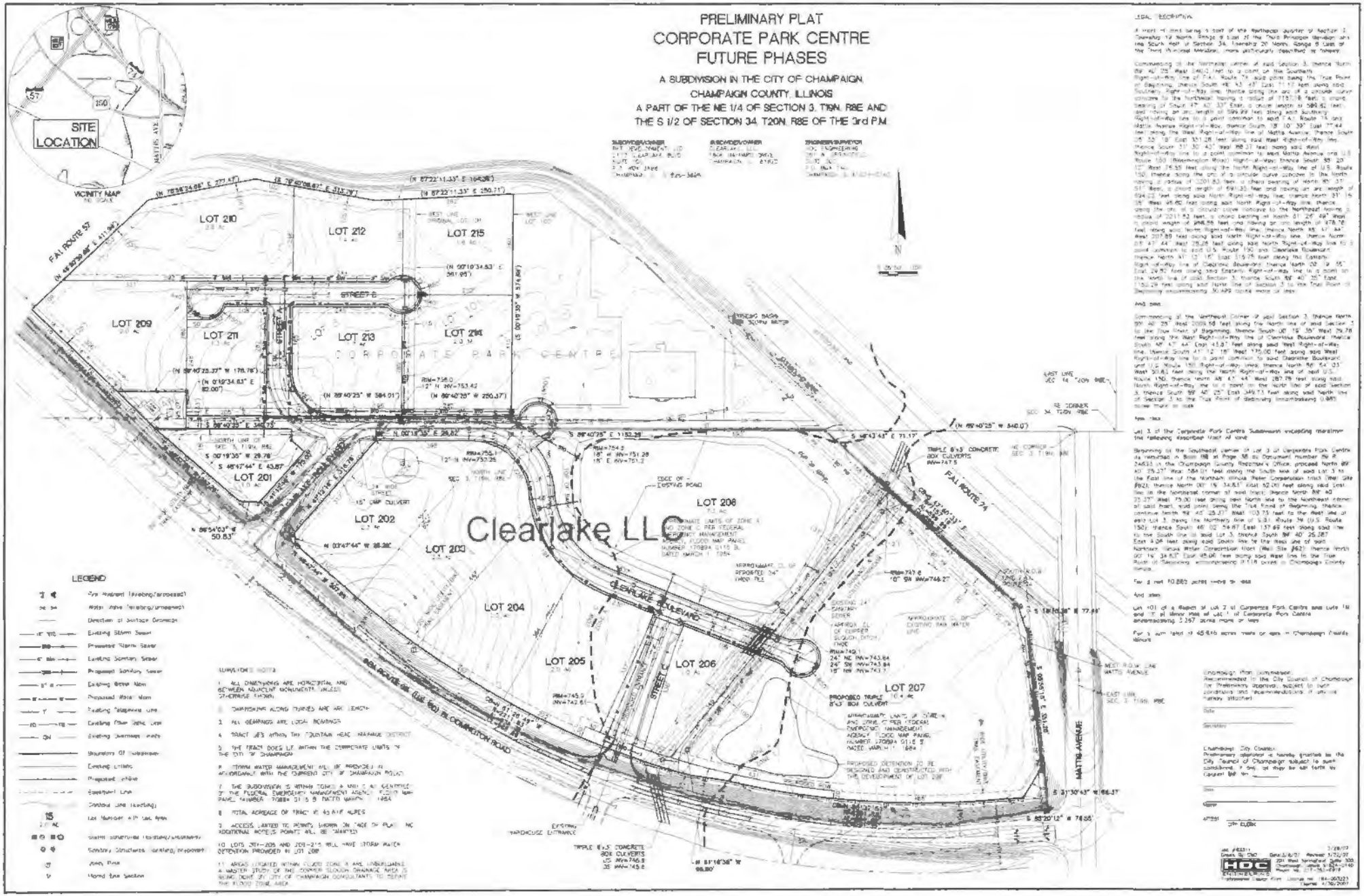
Kip Pope
for Clearlake LLC

APR 11 11:21



**Attachment 1**

Attachment 1




Attachment 2

Attachment 3



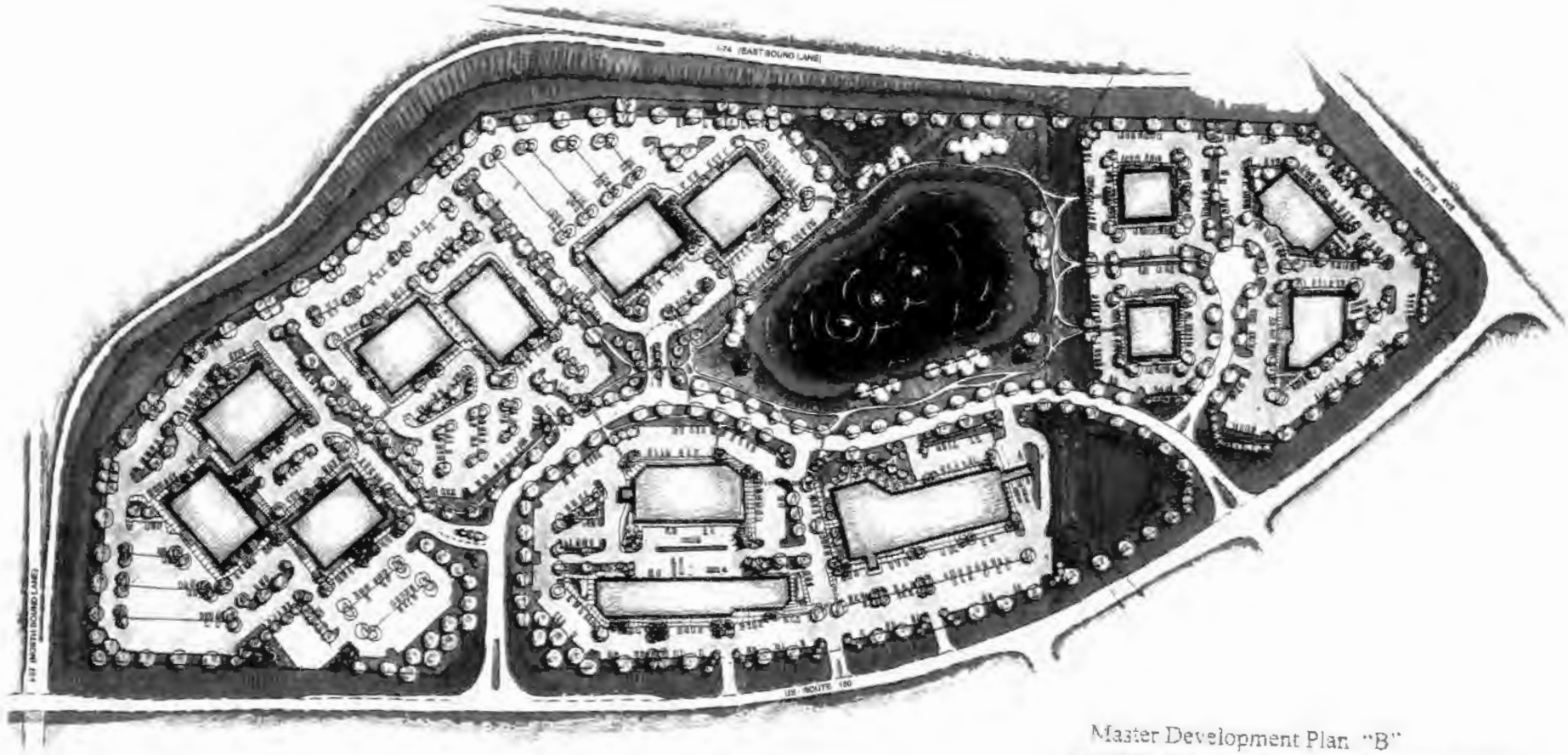

Master Development Plan "A"

CORPORATE PARK CENTRE

Joe David Roller, ASLA

Corporate Park Centre, LLC

**Attachment 4**




Master Development Plan "B"

CORPORATE PARK CENTRE

Joe David Roller, ASLA

Corporate Park Centre LLC

**Attachment 5**

Public Information Meeting Comment Form
Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

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Name: Habeeb Habeeb
Address: 2110 Clearlake Blvd, suite 200, Champaign IL 61822
Daytime phone number: 217-355-2300 ext400
Email Address: habeeb.habeeb@bpcinc.com
Business: Benefit Planning Consultants, Inc.

Comments:

I was able to attend the open house on February 19, 2014. It was very informative to review the planning that is underway. As requested I am sending my views on the proposed reconstruction of I-57 / I- 74 interchange. I am involved in ownership of one or more Condominium office suites. The Condominium ownership is controlled by the Declaration of Condominium Ownership. A major factor in deciding to locate near this intersection is the visibility for our complex. The building is constructed with 12 solid inches of custom formed concrete panels. This design is typical beltway construction. Being a longtime resident and being very familiar with this interchange I would agree that there is a need for a safer and more efficient design. It should be noted that the following paragraphs are in conjunction with comments made from Brian Swartz the Parks Real Estate Broker. Brian used the IDOT Evaluation Matrix document as a guide for evaluation. After discussions and further study of the five design alternatives as presented I believe Alternative #2 stands out as the best alternative for several reasons. Alternative #2 affords the opportunity to reconstruct the interchange to facilitate safer travel with the least amount of right-of-way acreage. The projected 37 acres needed to complete the project under this design is less than any of the other proposals. Alternative #2 requires 44% less ground than the next lowest option, Alternative #1 (66) acres. Alternative #4 (106 acres) requires the acquisition of 2.9 times the acreage as Alternative #2. Also the wetland area (3.52 acres) and the water bodies involved are the least affected in Alternative #2.

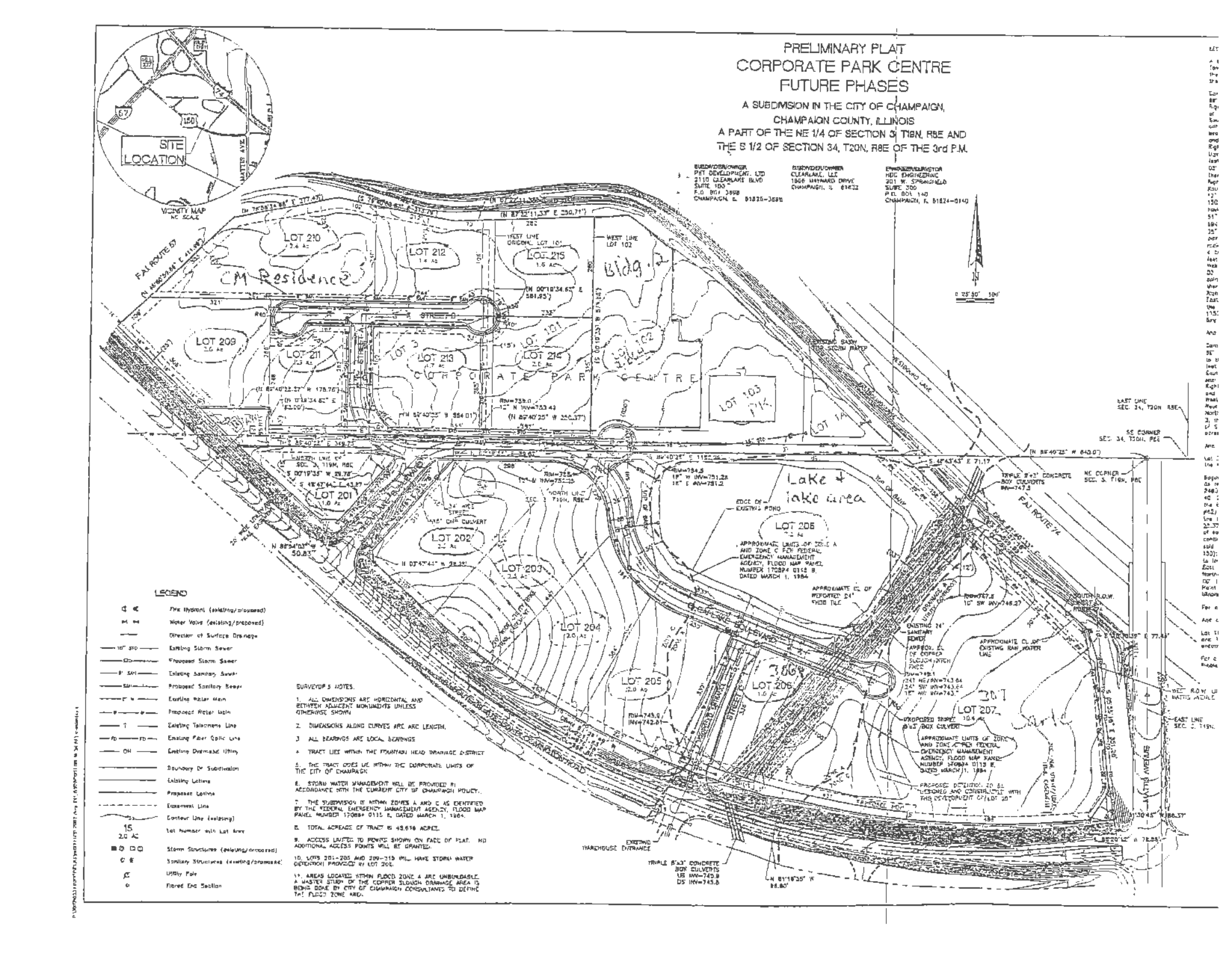
The ability to reconstruct the interchange with the least amount of impact to the local landowners, developers and environmentally sensitive areas should make this option the most desirable. The land owners on all four quadrants of the interchange have invested huge sums of money in developing the infrastructure on their properties, along with promotion and marketing cost. Minimizing the amount of ground taken from these first class development projects would also benefit the City of Champaign by allowing maximum development in the beltway corridor to the community. Additionally, another important aspect of selecting Alternative #2 is that the project could be accomplished at the low end of projected cost to the tax payers.

Hopefully, the above information will weigh heavily on the decision and Alternative #2 will be selected. If for some reason it is not chosen, Alternative #1 would offer the next best option, considering the points above. Alternatives 3, 4, & 5 require the acquisition of an unacceptable amount of acreage, with #5 being completely unacceptable as it consumes one of the most elite and desirable office buildings in Champaign. The entire Corporate Park Centre development would suffer irreversible damage if Alternatives 3, 4 & 5 are selected. I am attaching a copy of the Corporate Park Centre Future Phases Preliminary Plat showing the latest development scheme. It should also be noted that the 6 acre lake with fountain is a main attraction The Lake is 25-30ft deep making it a very healthy body of water. Our park is within the city limits. The 50 acre office park is controlled by restrictive covenants and the two story 42,000 sq. ft. office is a Condominium complex where office suites are owned by certain occupants. All major utilities are either at or in the park. Storm water detention utilizing the lake is for the whole Parks use through the Covenants.
Thank you for your consideration.

Signed: _____

Date: 3/11/2014

Mail to:
Craig Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944


PRELIMINARY PLAT
CORPORATE PARK CENTRE
FUTURE PHASES
A SUBDIVISION IN THE CITY OF CHAMPAIGN,
CHAMPAIGN COUNTY, ILLINOIS
A PART OF THE NE 1/4 OF SECTION 3, T19N, R9E AND
THE S 1/2 OF SECTION 34, T20N, R9E OF THE 3rd P.M.
SUBDIVIDER/OWNER
PNT DEVELOPMENT, LTD
2110 CLEARLAKE BLVD
SUITE 103
P.O. BOX 3898
CHAMPAIGN, IL 61826-3898
ENGINEER/SURVEYOR
HDC ENGINEERING
201 W. SPRINGFIELD
SUITE 300
P.O. BOX 140
CHAMPAIGN, IL 61824-0140
VICINITY MAP
NO SCALE
SITE LOCATION
LOT 210
LOT 212
LOT 215
LOT 209
LOT 211
LOT 213
LOT 216
LOT 201
LOT 202
LOT 203
LOT 204
LOT 205
LOT 206
LOT 207
LOT 103
CM Residence
Bldg. 2
Lake + lake area
CORPORATE PARK CENTRE
STREET A
STREET B
STREET C
CLEARLAKE BOULEVARD
EXISTING SWM FOR STORM WATER
EXISTING WAREHOUSE ENTRANCE
TRIPLE 8'x3' CONCRETE BOX CULVERTS
EAST LINE SEC. 34, T20N, R9E
SE CORNER SEC. 34, T20N, R9E
NE CORNER SEC. 3, T19N, R9E
F.A.I. ROUTE 74
LEGEND
SURVEYOR'S NOTES.
1. ALL DIMENSIONS ARE HORIZONTAL AND BETWEEN ADJACENT MONUMENTS UNLESS OTHERWISE SHOWN.
2. DIMENSIONS ALONG CURVES ARE ARC LENGTH.
3. ALL BEARINGS ARE LOCAL BEARINGS
4. TRACT LIES WITHIN THE FOUNTAIN HEAD DRAINAGE DISTRICT
5. THE TRACT DOES LIE WITHIN THE CORPORATE LIMITS OF THE CITY OF CHAMPAIGN
6. STORM WATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH THE CURRENT CITY OF CHAMPAIGN POLICY.
7. THE SUBDIVISION IS WITHIN ZONES A AND C AS IDENTIFIED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD MAP PANEL NUMBER 170894 0115 E, DATED MARCH 1, 1984.
8. TOTAL ACREAGE OF TRACT IS 43.636 ACRES.
9. ACCESS LIMITED TO POINTS SHOWN ON FACE OF PLAT. NO ADDITIONAL ACCESS POINTS WILL BE GRANTED.
10. LOTS 201-205 AND 209-213 WILL HAVE STORM WATER DETENTION PROVIDED BY LOT 206.
11. AREAS LOCATED WITHIN FLOOD ZONE A ARE UNBUILDABLE. A MASTER STUDY OF THE COPPER SLOUGH DRAINAGE AREA IS BEING DONE BY CITY OF CHAMPAIGN CONSULTANTS TO DEFINE THE FLOOD ZONE AREA.

## 8. Evaluation Matrix

The following evaluation matrix table was developed to present a side-by-side comparison of the five interchange alternatives:

**Table 13: Evaluation Matrix**

| Comparison Features | Alternate 1 | Alternate 2 | Alternate 3 | Alternate 4 | Alternate 5 |
|---|---|---|---|---|---|
| Number of Loop Ramps | 0 | 2 | 2 | 0 | 0 |
| Number of Mainline Access Points | 8 | 12 | 12 | 8 | 8 |
| Number of Transposed Ramps | 0 | 0 | 1 | 4 | 0 |
| Number of Ramp Structures | 4 | 6 | 7 | 8 | 6 |
| Fully Directional | YES | NO | NO | NO | YES |
| Number of Design Exceptions | 0 | 0 | 0 | 0 | 0 |
| Capacity - Level of Service | | | | | |
| I-57 NB | B | B | B | B | B |
| I-57 SB | B | B | B | B | B |
| I-74 EB | B | B | B | C | C |
| I-74 WB | B | B | B | B | B |
| CORSIM Conflict Analysis (potential conflicts in peak hour) | 279 | 339 | 304 | 422 | 370 |
| Total Ramp Travel Time (minutes) | 11.93 | 13.01 | 14.05 | 13.59 | 12.27 |
| Potential Environmental Impacts | | | | | |
| Wetlands | 6 | 6 | 6 | 8 | 7 |
| Detention Ponds | 1 | 1 | 1 | 1 | 1 |
| Streams | 1 | 1 | 1 | 1 | 1 |
| Hazardous Materials | 5 | 4 | 4 | 6 | 8 |
| Archaeological Resources | 1 | 0 | 1 | 1 | 1 |
| Social Resources | 1 | 0 | 2 | 2 | 1 |
| Right-of-Way Acquisition (acres) | 66 | 37 | 89 | 106 | 78 |
| Construction Cost (millions) | $97 | $97 | $87 | $116 | $113 |


I-57
MATTIS AVE
I-74
I-74
BLOOMINGTON RD
NORFOLK SOUTHERN R.R.
I-57
INTERCHANGE TYPE STUDY
ALTERNATE: 1
FULL DIRECTIONAL
INTERCHANGE TYPE


I-74
I-57
MATTIS AVE
I-74
BLOOMINGTON RD.
NORFOLK SOUTHERN R.R.
I-57
INTERCHANGE TYPE STUDY
ALTERNATE: 2
SEMI DIRECTIONAL
INTERCHANGE TYPE
WITH LOOPS

Public Information Meeting Comment Form
Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

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Name: Patrick B. Dorsey
Address: 1918 Maynard Dr. Champaign, IL 61822
Daytime phone number: 217-356-3743
Email Address: pdorsey@petry-Kuhne.com

Comments:

Based on the open house with IDOT and the public I am sending my views on the proposed Reconstruction of the I-57/I-74 interchange. I attended the meeting and I appreciated the chance to meet many of the IDOT staff and several consultants at the meeting. As you may recall I introduced myself as developer with land along the South side of the adjacent area. Our development area is a tract of approximately 50 acres. This property is owned by investors. This tract is known as Corporate Park Centre. As you will notice the development is land locked. As shown on the proposed development chart, that I brought with me to the open house you will notice that 12 two story office buildings are planned. This is a beltway development that you would see along interstate highways near large cities. This development will provide significant tax dollars for our community now and into the future.
Being a lifelong resident with. 35 years of construction management experience, and very familiar with this interchange I would agree that there is a need for a safer and more efficient design. It should be noted that the following paragraphs are in conjunction with comments made from Brian Swartz our Real Estate Broker. After discussions and further study of the five design alternatives as presented I believe Alternative #2 stands out as the best alternative for several reasons. Alternative #2 affords the opportunity to reconstruct the interchange to facilitate safer travel with the least amount of right-of-way acreage. The projected 37 acres needed to complete the project under this design is less than any of the other proposals. Alternative #2 requires 44% less ground than the next lowest option. Alternative #1 (66) acres. Alternative #4 (106 acres) requires the acquisition of 2.9 times the acreage as Alternative #2. Also the wetland area (3.52 acres) and the water bodies involved are the least affected in Alternative #2.
The ability to reconstruct the interchange with the least amount of impact to the local landowners, developers and environmentally sensitive areas should make this option the most desirable. The land owners on all four quadrants of the interchange have invested huge sums of money in developing the infrastructure on their properties, along with promotion and marketing cost. Minimizing the amount of ground taken from these first

class development projects would also benefit the City of Champaign by allowing maximum development in the beltway corridor to the community. Additionally, another important aspect of selecting Alternative #2 is that the project could be accomplished at the low end of projected cost to the tax payers.

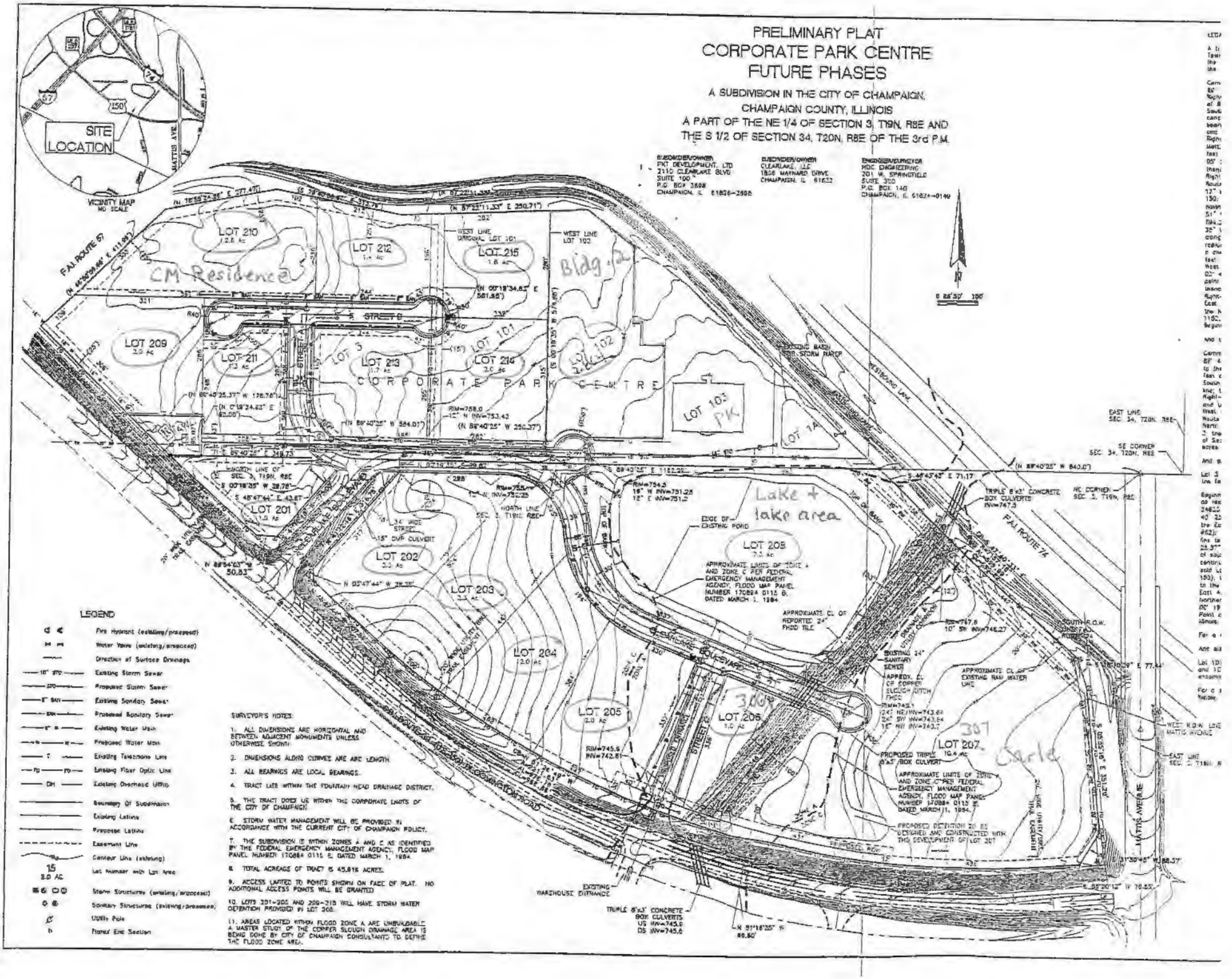
Hopefully, the above information will weigh heavily on the decision and Alternative #2 will be selected. If for some reason it is not chosen, Alternative #1 would offer the next best option, considering the points above. Alternatives 3, 4, & 5 require the acquisition of an unacceptable amount of acreage, with #5 being completely unacceptable as it consumes one of the most elite and desirable office buildings in the area. The entire Corporate Park Centre development would suffer irreversible damage if Alternatives 3, 4 or 5 are selected. I am attaching a copy of the Corporate Park Centre Future Phases Preliminary Plat showing the latest development scheme. It should also be noted that the 6 acre lake with fountain is a main attraction The Lake is 25-30ft deep making it a very healthy body of water. Our park is within the city limits. The 50 acre office park is controlled by restrictive covenants and the two story 42,000 sq.ft office is a Condominium complex where office suites are owned by certain occupants. All major utilities are either at or in the Park. Storm water detention utilizes the lake for most of the parks requirements.

Thank you for your consideration.

Signed: _____

Date: 3-20-14

Mail to:
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944


PRELIMINARY PLAT
CORPORATE PARK CENTRE
FUTURE PHASES
A SUBDIVISION IN THE CITY OF CHAMPAIGN,
CHAMPAIGN COUNTY, ILLINOIS
A PART OF THE NE 1/4 OF SECTION 3, T19N, R8E AND
THE S 1/2 OF SECTION 34, T20N, R8E OF THE 3rd P.M.
SITE LOCATION
VICINITY MAP
NO SCALE
SUBDIVIDER/OWNER
FNT DEVELOPMENT, LTD
2110 CLEARLAKE BLVD
SUITE 100
P.O. BOX 3808
CHAMPAIGN, IL 61826-3808
SUBDIVIDER/OWNER
CLEARLAKE, LLC
1808 MAYNARD DRIVE
CHAMPAIGN, IL 61822
ENGINEER/SURVEYOR
HDC ENGINEERING
201 W. SPRINGFIELD
SUITE 300
P.O. BOX 140
CHAMPAIGN, IL 61824-0140
LOT 210
12.8 AC
LOT 212
1.4 AC
LOT 215
1.8 AC
LOT 209
3.0 AC
LOT 211
7.3 AC
LOT 213
1.7 AC
LOT 216
2.0 AC
LOT 201
1.0 AC
LOT 202
2.3 AC
LOT 203
2.3 AC
LOT 204
12.0 AC
LOT 205
2.0 AC
LOT 206
1.0 AC
LOT 207
LOT 208
7.3 AC
LOT 101
LOT 102
LOT 103
LOT 1A
CM Residence
Bldg. #2
Lake + lake area
Carle
CORPORATE PARK CENTRE
STREET A
STREET B
STREET C
CLEARLAKE BOULEVARD
F.A.I. ROUTE 57
F.A.I. ROUTE 74
MATTIS AVENUE
EXISTING BASIN 1998 STORM WATER
EXISTING WAREHOUSE ENTRANCE
TRIPLE 8'x3' CONCRETE BOX CULVERTS US INV=745.8 DS INV=745.6
TRIPLE 8'x3' CONCRETE BOX CULVERTS INV=747.5
PROPOSED TRIPLE 10'x6' BOX CULVERT
EXISTING 24" SANITARY SEWER
APPROX. CL OF COPPER SLOUGH DITCH
APPROX. CL OF EXISTING RAW WATER LINE
EDGE OF EXISTING POND
APPROXIMATE LIMITS OF ZONE A AND ZONE C PER FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD MAP PANEL NUMBER 17019B 0115 B, DATED MARCH 1, 1984.
PROPOSED DETENTION TO BE DESIGNED AND CONSTRUCTED WITH THIS DEVELOPMENT OF LOT 207
EAST LINE SEC. 34, T20N, R8E
SE CORNER SEC. 34, T20N, R8E
NE CORNER SEC. 3, T19N, R8E
WEST R.O.W. LINE MATTIS AVENUE
EAST LINE SEC. 3, T19N, R8E
LEGEND
Fire Hydrant (existing/proposed)
Water Valve (existing/proposed)
Direction of Surface Drainage
Existing Storm Sewer
Proposed Storm Sewer
Existing Sanitary Sewer
Proposed Sanitary Sewer
Existing Water Main
Proposed Water Main
Existing Telephone Line
Existing Fiber Optic Line
Existing Overhead Utility
Boundary Of Subdivision
Existing Lotline
Proposed Lotline
Easement Line
Contour Line (existing)
Lot Number with Lot Area
Storm Structures (existing/proposed)
Sanitary Structures (existing/proposed)
Utility Pole
Flared End Section
SURVEYOR'S NOTES:
1. ALL DIMENSIONS ARE HORIZONTAL AND BETWEEN ADJACENT MONUMENTS UNLESS OTHERWISE SHOWN.
2. DIMENSIONS ALONG CURVES ARE ARC LENGTH.
3. ALL BEARINGS ARE LOCAL BEARINGS.
4. TRACT LIES WITHIN THE FOUNTAIN HEAD DRAINAGE DISTRICT.
5. THE TRACT DOES LIE WITHIN THE CORPORATE LIMITS OF THE CITY OF CHAMPAIGN.
6. STORM WATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH THE CURRENT CITY OF CHAMPAIGN POLICY.
7. THE SUBDIVISION IS WITHIN ZONES A AND C AS IDENTIFIED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD MAP PANEL NUMBER 17019B 0115 B, DATED MARCH 1, 1984.
8. TOTAL ACREAGE OF TRACT IS 45.81± ACRES.
9. ACCESS LIMITED TO POINTS SHOWN ON FACE OF PLAT. NO ADDITIONAL ACCESS POINTS WILL BE GRANTED.
10. LOTS 201-205 AND 208-215 WILL HAVE STORM WATER DETENTION PROVIDED IN LOT 206.
11. AREAS LOCATED WITHIN FLOOD ZONE A ARE UNBUILDABLE. A MASTER STUDY OF THE COPPER SLOUGH DRAINAGE AREA IS BEING DONE BY CITY OF CHAMPAIGN CONSULTANTS TO DEFINE THE FLOOD ZONE AREA.

## B. Evaluation Matrix

The following evaluation matrix table was developed to present a side-by-side comparison of the five interchange alternatives:

**Table 13: Evaluation Matrix**

| Comparison Features | Alternate 1 | Alternate 2 | Alternate 3 | Alternate 4 | Alternate 5 |
|---|---|---|---|---|---|
| Number of Loop Ramps | 0 | 2 | 2 | 0 | 0 |
| Number of Mainline Access Points | 8 | 12 | 12 | 8 | 8 |
| Number of Transposed Ramps | 0 | 0 | 1 | 4 | 0 |
| Number of Ramp Structures | 4 | 6 | 7 | 8 | 6 |
| Fully Directional | YES | NO | NO | NO | YES |
| Number of Design Exceptions | 0 | 0 | 0 | 0 | 0 |
| Capacity - Level of Service | | | | | |
| I-57 NB | B | B | B | B | B |
| I-57 SB | B | B | B | B | B |
| I-74 EB | B | B | B | C | C |
| I-74 WB | B | B | B | B | B |
| CORSIM Conflict Analysis (potential conflicts in peak hour) | 279 | 339 | 304 | 422 | 370 |
| Total Ramp Travel Time (minutes) | 11.93 | 13.01 | 14.05 | 13.59 | 12.27 |
| Potential Environmental Impacts | | | | | |
| Wetlands | 6 | 6 | 6 | 8 | 7 |
| Detention Ponds | 1 | 1 | 1 | 1 | 1 |
| Streams | 1 | 1 | 1 | 1 | 1 |
| Hazardous Materials | 5 | 4 | 4 | 6 | 8 |
| Archaeological Resources | 1 | 0 | 1 | 1 | 1 |
| Social Resources | 1 | 0 | 2 | 2 | 1 |
| Right-of-Way Acquisition (acres) | 66 | 37 | 89 | 106 | 78 |
| Construction Cost (millions) | $97 | $97 | $87 | $116 | $113 |


I-57
MATTIS AVE
I-74
I-74
BLOOMINGTON RD
NORFOLK SOUTHERN R.R.
I-57
INTERCHANGE TYPE STUDY
ALTERNATE: 2
SEMI DIRECTIONAL
INTERCHANGE TYPE
WITH LOOPS


I-74
I-57
MATTIS AVE
I-74
BLOOMINGTON RD
NORFOLK SOUTHERN R.R.
I-57
INTERCHANGE TYPE STUDY
ALTERNATE: 1
FULL DIRECTIONAL
INTERCHANGE TYPE

Public Information Meeting Comment Form
Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

Please place this form in the comment box or mail by March 12. 2014 to the address on the bottom of this sheet. Your comments assist us in developing a project that will serve the needs of the traveling public as well as the needs of the local community. Your input is welcome and appreciated throughout the design process.

Name: Richard Tryon
Address: PMB 231 275 PALMAS INN WAY, STE. 130
Daytime phone number: 217-417-9817 HUMACAO, PR. 00791
Email Address: keepontryon32@me.com

Comments:

I was unable to attend the open house on February 19, 2014. Therefore I am sending my views on the proposed reconstruction of I57/-I74 interchange. I own 50 % of the remaining 14 acres in property located generally north of the entrance road. This 50 acre tract is known as Corporate Park Centre. As shown on the development drawing provided by the developer, at the open house, you will see that 12 two story office buildings are planned for development. This is a beltway office park that you would typically see along interstate highways near large cities. This development will provide significant tax dollars both now and into the future. The City of Champaign recently add a new zoning classification, Interstate Office Park ( IOP) to help encourage office building construction.

Being a long time resident in Champaign aod being very familiar with this interchange, I would agree that there is a need for a safer and more efficient design. It should be noted that the following paragraphs are in conjunction with comments made from Brian Swartz our Real Estate Broker. After discussions and further study of the five design alternatives as presented I believe Alternative #2 stands out by far as the best alternative for several reasons. Alternative #2 affords the opportunity to reconstruct the interchange to facilitate safer travel with the least amount of right-of-way acreage. The projected 37 acres needed to complete the project, under this design, is less than any of the other proposals. Alternative #2 requires 44% less ground than the next lowest option, Alternative #1 (66) acres. Alternative #4 (106 acres) requires the acquisition of 2.9 times the acreage as Alternative #2. Also the wetland area (3.52 acres) and the water bodies involved are the least affected in Alternative #2.

The ability to reconstruct the interchange with the least amount of impact to the local landowners, developers and environmentally sensitive areas should make this option the most desirable. The land owners on all four quadrants of the interchange have invested huge sums of money in developing the infrastructure on their properties, along with promotion and marketing cost. Minimizing the amount of ground taken from these first class development projects would also benefit the City of Champaign by allowing maximum development in the beltway corridor to the community. Additionally, another

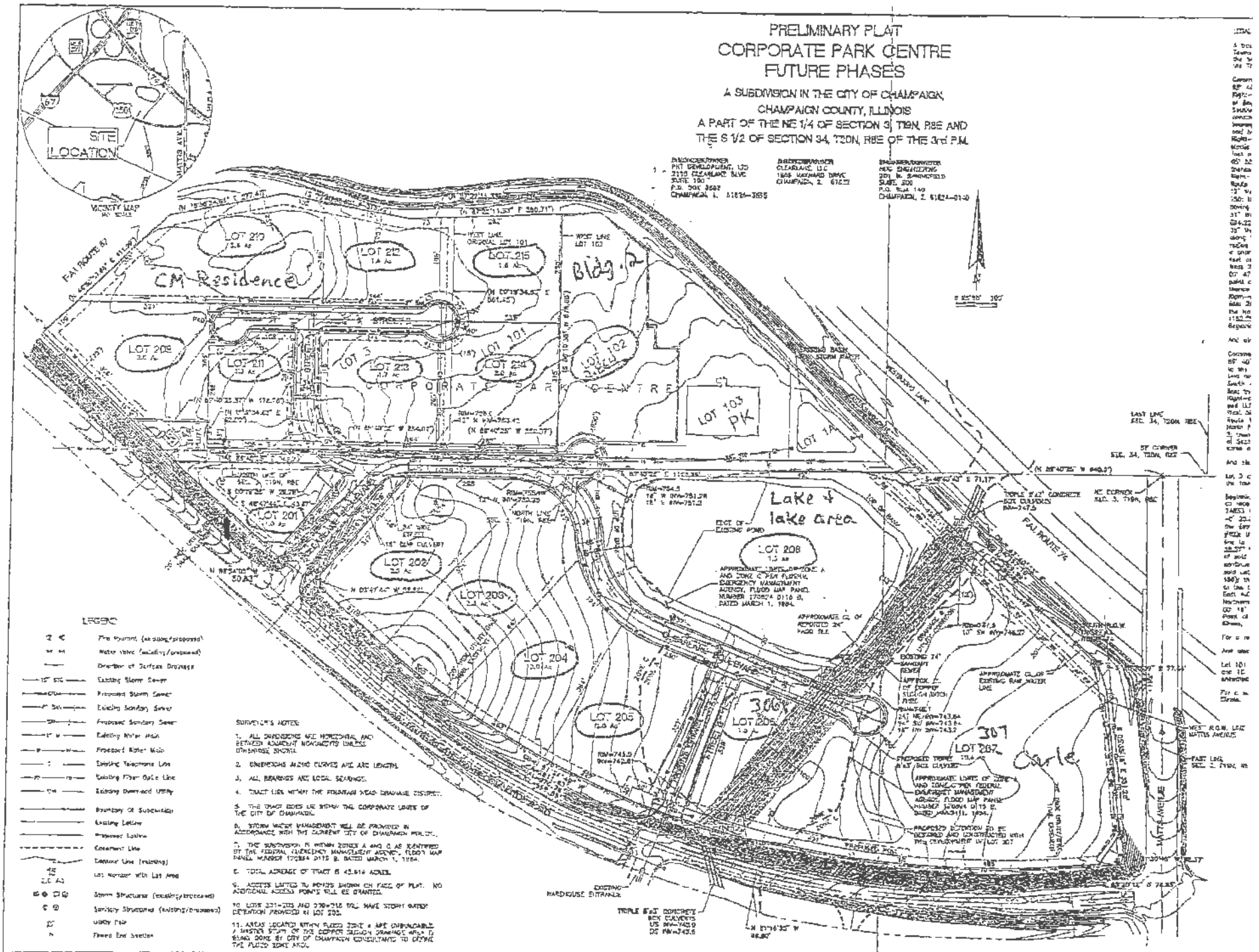
important aspect of selecting Alternative #2 is that the project could be accomplished at the low end of projected cost to the tax payers.
Hopefully, the above information will weigh heavily on the decision and Alternative #2 will be selected. If for some reason it is not chosen, Alternative #1 would offer the next best option, considering the points above. Alternatives 3, 4, & 5 require the acquisition of an unacceptable amount of acreage, with #5 being the least desirable as it consumes one of the most elite and desirable office buildings in Champaign. The entire Corporate Park Centre development would suffer irreversible damage if Alternatives 3, 4 or 5 are selected. I am attaching a copy of the Corporate Park Centre Future Phases Preliminary Plat showing the latest development scheme. It should also be noted that the 6 acre lake with fountain is a major attraction. The lake is 25-30ft deep making it a very healthy body of water. Our park is also within the city limits. The 50 acre office park is controlled by restrictive covenants. The two story 42,000 sq.ft office building is a Condominium complex where office suites are owned by certain occupants. All major utilities are either at or in the Park. Storm water detention utilizes the lake for most the Parks requirements.

Thank you for your consideration.

Signed: Richard Tryon

Date: 3-10-14

Mail to:
Craig Emberton
Program development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944


PRELIMINARY PLAT
CORPORATE PARK CENTRE
FUTURE PHASES
A SUBDIVISION IN THE CITY OF CHAMPAIGN,
CHAMPAIGN COUNTY, ILLINOIS
A PART OF THE NE 1/4 OF SECTION 3, T19N, R9E AND
THE S 1/2 OF SECTION 34, T20N, R9E OF THE 3rd P.M.
SITE LOCATION
VICINITY MAP
DEVELOPER/OWNER
PKT DEVELOPMENT, LTD
2119 CLEARLAKE BLVD
SUITE 100
P.O. BOX 3687
CHAMPAIGN, IL 61826-3687
SURVEYOR
CLEARLAKE, LLC
1905 WESTMARD DRIVE
CHAMPAIGN, IL 61822
ENGINEER/CONTRACTOR
HOH ENGINEERING
201 N. SPRINGFIELD
SUITE 200
P.O. BOX 140
CHAMPAIGN, IL 61824-0140
CM Residence
Bldg. 2
LOT 210
LOT 212
LOT 215
LOT 209
LOT 211
LOT 213
LOT 214
LOT 101
LOT 102
LOT 103 PK
LOT 1A
LOT 201
LOT 202
LOT 203
LOT 204
LOT 205
LOT 206
LOT 207
LOT 208
Lake 4
lake area
CORPORATE PARK CENTRE
EXISTING BASIN AND STORM SEWER
WESTBOUND LANE
EAST LINE SEC. 34, T20N, R9E
SE CORNER SEC. 34, T20N, R9E
NE CORNER SEC. 3, T19N, R9C
TRIPLE 8'x3' CONCRETE BOX CULVERTS
F.A.I. ROUTE 74
EAST LINE OF EXISTING POND
APPROXIMATE LIMITS OF ZONE A AND ZONE C PER FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD MAP PANEL NUMBER 170894 0110 B, DATED MARCH 1, 1984.
APPROXIMATE C.L. OF ABANDONED 24" RCP
EXISTING 24" SANITARY SEWER
APPROX. LOCATION OF EXISTING RAW WATER LINE
PROPOSED TRIPLE 10'x4' BOX CULVERT
APPROXIMATE LIMITS OF ZONE A AND ZONE C PER FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD MAP PANEL NUMBER 170894 0110 B, DATED MARCH 1, 1984.
PROPOSED DETENTION TO BE RECORDED AND CONSTRUCTED WITH THE DEVELOPMENT OF LOT 207
WEST R.O.W. LINE MATTIS AVENUE
EAST LINE SEC. 3, T19N, R9E
EXISTING WAREHOUSE ENTRANCE
TRIPLE 8'x3' CONCRETE BOX CULVERTS
LEGEND
Fire Hydrant (existing/proposed)
Water Valve (existing/proposed)
Direction of Surface Drainage
Existing Storm Sewer
Proposed Storm Sewer
Existing Sanitary Sewer
Proposed Sanitary Sewer
Existing Water Main
Proposed Water Main
Existing Telephone Line
Existing Fiber Optic Line
Existing Overhead Utility
Boundary Or Subdivision
Existing Lotline
Proposed Lotline
Easement Line
Contour Line (existing)
Lot Number with Lot Area
Storm Structures (existing/proposed)
Sanitary Structures (existing/proposed)
Utility Pole
Flared End Section
SURVEYOR'S NOTES:
1. ALL DIMENSIONS ARE HORIZONTAL AND BETWEEN ADJACENT MONUMENTS UNLESS OTHERWISE SHOWN.
2. DIMENSIONS ALONG CURVES ARE ARC LENGTHS.
3. ALL BEARINGS ARE LOCAL BEARINGS.
4. TRACT LIES WITHIN THE FOUNTAIN HEAD DRAINAGE DISTRICT.
5. THE TRACT LIES LIE WITHIN THE CORPORATE LIMITS OF THE CITY OF CHAMPAIGN.
6. STORM WATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH THE CURRENT CITY OF CHAMPAIGN REGULATIONS.
7. THE SUBDIVISION IS WITHIN ZONES A AND C AS IDENTIFIED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD MAP PANEL NUMBER 170894 0110 B, DATED MARCH 1, 1984.
8. TOTAL ACREAGE OF TRACT IS 43.618 ACRES.
9. ACCESS LIMITED TO POINTS SHOWN ON FACE OF PLAT. NO ADDITIONAL ACCESS POINTS WILL BE GRANTED.
10. LOTS 201-205 AND 208-212 WILL HAVE STORM WATER DETENTION PROVIDED IN LOT 206.
11. AREAS LOCATED WITHIN FLOOD ZONE A ARE UNAVAILABLE / UNDER STUDY OF THE COPPER SLOUGH DRAINAGE AREA IS BEING DONE BY CITY OF CHAMPAIGN CONSULTANTS TO DEFINE THE FLOOD ZONE AREA.

### B. Evaluation Matrix

The following evaluation matrix table was developed to present a side-by-side comparison of the five interchange alternatives:

**Table 13: Evaluation Matrix**

| Comparison Features | Alternate 1 | Alternate 2 | Alternate 3 | Alternate 4 | Alternate 5 |
|---|---|---|---|---|---|
| Number of Loop Ramps | 0 | 2 | 2 | 0 | 0 |
| Number of Mainline Access Points | 8 | 12 | 12 | 8 | 8 |
| Number of Transposed Ramps | 0 | 0 | 1 | 4 | 0 |
| Number of Ramp Structures | 4 | 6 | 7 | 8 | 6 |
| Fully Directional | YES | NO | NO | NO | YES |
| Number of Design Exceptions | 0 | 0 | 0 | 0 | 0 |
| Capacity - Level of Service | | | | | |
| I-57 NB | B | B | B | B | B |
| I-57 SB | B | B | B | B | B |
| I-74 EB | B | B | B | C | C |
| I-74 WB | B | B | B | B | B |
| CORSIM Conflict Analysis (potential conflicts in peak hour) | 279 | 339 | 304 | 422 | 370 |
| Total Ramp Travel Time (minutes) | 11.93 | 13.01 | 14.05 | 13.59 | 12.27 |
| Potential Environmental Impacts | | | | | |
| Wetlands | 6 | 6 | 6 | 8 | 7 |
| Detention Ponds | 1 | 1 | 1 | 1 | 1 |
| Streams | 1 | 1 | 1 | 1 | 1 |
| Hazardous Materials | 5 | 4 | 4 | 6 | 8 |
| Archaeological Resources | 1 | 0 | 1 | 1 | 1 |
| Social Resources | 1 | 0 | 2 | 2 | 1 |
| Right-of-Way Acquisition (acres) | 66 | 37 | 89 | 106 | 78 |
| Construction Cost (millions) | $97 | $97 | $87 | $116 | $113 |


I-74
I-57
MATTIS AVE
I-74
BLOOMINGTON RD
NORFOLK SOUTHERN R.R.
I-57
INTERCHANGE TYPE STUDY
ALTERNATE: 2
SEMI DIRECTIONAL
INTERCHANGE TYPE
WITH LOOPS


I-74
I-57
MATTIS AVE
I-74
BLOOMINGTON RD
NORFOLK SOUTHERN R.R.
I-57
INTERCHANGE TYPE STUDY
ALTERNATE: 1
FULL DIRECTIONAL
INTERCHANGE TYPE

Public Information Meeting Comment Form
Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

Please place this form in the comment box or mail by March 12. 2014 to the address on the bottom of this sheet. Your comments assist us in developing a project that will serve the needs of the traveling public as well as the needs of the local community. Your input is welcome and appreciated throughout the design process.

Name: Jeff Facer
Address: 2110 Clearlake Blvd. suite 100, Champaign, IL 61822
Daytime phone number: 217-359-8041
Email Address: jfacer@areawidetech.com
Business: Area-Wide Technologies

Comments:
I was unable to attend the open house on February 19, 2014. Therefore I am sending my views on the proposed reconstruction of I-57 / I-74 interchange. I am the owner of one of the Condominium office suites. Condominium ownership is controlled by the Declaration of Condominium Ownership. All Condo owners agree that a major factor in deciding to locate near this intersection is the visibility for our complex. The building is constructed with 12 inches of custom formed concrete panels. The design is typical beltway construction.
Being a long time resident and being very familiar with this interchange I would agree that there is a need for a safer and more effieient design. The following paragraphs are in conjunction with comments made from Brian Swartz the Parks Real Estate Broker. After discussions and further study of the IDOT evaluation matrix for the five design alternatives as presented I believe Alternative #2 stands out as the best alternative for several reasons. Alternative #2 affords the opportunity to reconstruct the interchange to facilitate safer travel with the least amount of right-of-way acreage. The projected 37 acres needed to complete the project under this design is less than any of the other proposals. Alternative #2 requires 44% less ground than the next lowest option, Alternative #1 (66) acres. Alternative #4 (106 acres) requires the acquisition of 2.9 times the acreage as Alternative #2. Also the wetland area (3.52 acres) and the water bodies involved are the least affected in Alternative #2.
The ability to reconstruct the interchange with the least amount of impact to the local landowners, developers and environmentally sensitive areas should make this option the most desirable. The land owners on all four quadrants of the interchange have invested huge sums of money in developing the infrastructure on their properties, along with promotion and marketing cost. Minimizing the amount of ground taken from these first class development projects would also benefit the City of Champaign by allowing maximum development in the beltway corridor to the community. Additionally, another important aspect of selecting Alternative #2 is that the project could be accomplished at the low end of projected cost to the tax payers.

Hopefully, the above information will weigh heavily on the decision and Alternative #2 will be selected. If for some reason it is not chosen, Alternative #1 would offer the next best option, considering the points above. Alternatives 3, 4, & 5 require the acquisition of an unacceptable amount of acreage, with #5 being completely unacceptable as it consumes one of the most elite and desirable office buildings in the. The entire Corporate Park Centre development would suffer irreversible damage if Alternatives 3, 4 or 5 are selected. It should also be noted that the 6 acre lake with fountain is a major attraction The Lake is 25-30ft deep making it a very healthy body of water. Our park also is within the city limits. The 50 acre office park is controlled by restrictive covenants and the two story 42,000 sq.ft office is a Condominium complex where office suites are owned by certain occupants. All major utilities are either at or in the Park. Storm detention utilizing the lake is for the whole Parks use through the Covenants.

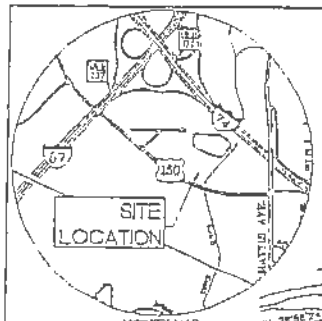
Thank you for your consideration.

Signed: _____

Date: 3/11/2014

# PRELIMINARY PLAT
# CORPORATE PARK CENTRE
# FUTURE PHASES

A SUBDIVISION IN THE CITY OF CHAMPAIGN,
CHAMPAIGN COUNTY, ILLINOIS
A PART OF THE NE 1/4 OF SECTION 3, T19N, R8E AND
THE S 1/2 OF SECTION 34, T20N, R8E OF THE 3rd P.M.

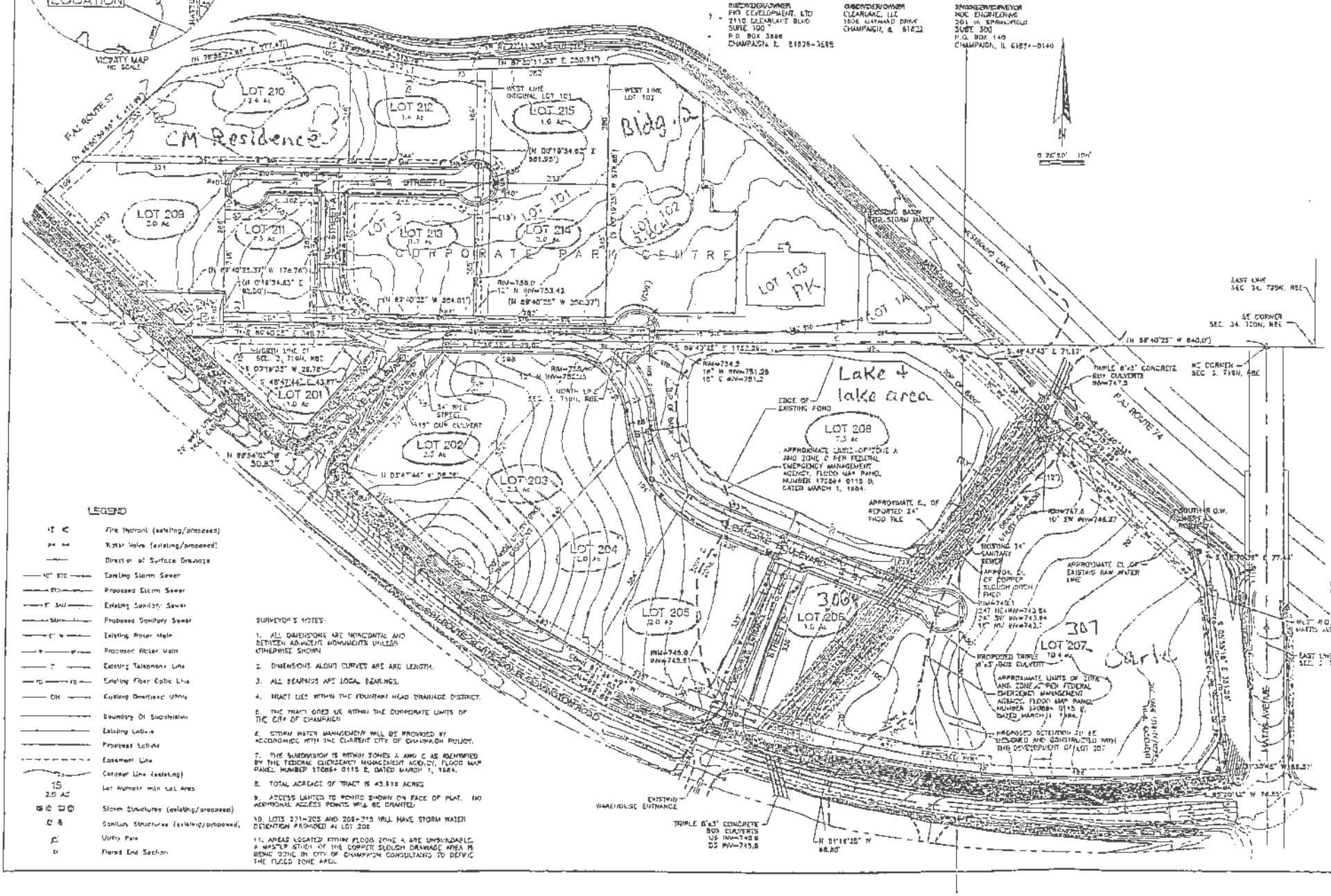



VICINITY MAP
NO SCALE


SUBDIVIDER/OWNER
FMT DEVELOPMENT, LTD
2110 CLEARLAKE BLVD
SUITE 100
P.O. BOX 3888
CHAMPAIGN, IL 61825-3888

OWNER/DEVELOPER
CLEARLAKE, LLC
3006 HAYWARD DRIVE
CHAMPAIGN, IL 61822

ENGINEER/SURVEYOR
HOC ENGINEERING
201 W. SPRINGFIELD
SUITE 300
P.O. BOX 140
CHAMPAIGN, IL 61824-0140



LOT 210
2.6 Ac
LOT 212
1.4 Ac
LOT 215
1.6 Ac
CM Residence
Bldg. 2
LOT 208
2.0 Ac
LOT 211
2.3 Ac
LOT 213
1.7 Ac
LOT 214
2.0 Ac
LOT 101
LOT 102
LOT 103
P.K.
STREET B
STREET A
CORPORATE PARK CENTRE
LOT 201
1.0 Ac
LOT 202
2.5 Ac
LOT 203
2.3 Ac
LOT 204
2.0 Ac
LOT 205
2.0 Ac
LOT 206
1.6 Ac
LOT 207
LOT 208
7.3 Ac
Lake & lake area
EDGE OF EXISTING POND
APPROXIMATE LIMITS OF ZONE A AND ZONE C PER FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD MAP PANEL NUMBER 17019C 0115 B, DATED MARCH 1, 1984.
APPROXIMATE LIMITS OF ZONE A AND ZONE C PER FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD MAP PANEL NUMBER 17019C 0115 E, DATED MARCH 1, 1984.
PROPOSED DETENTION TO BE DESIGNED AND CONSTRUCTED WITH THE DEVELOPMENT OF LOT 207
EXISTING WAREHOUSE ENTRANCE
TRIPLE 8'x3' CONCRETE BOX CULVERTS
US INV=742.8
DS INV=743.8
TRIPLE 8'x3' CONCRETE BOX CULVERTS INV=747.9
PROPOSED TRIPLE 10'x4' BOX CULVERT
EXISTING 36" SANITARY SEWER
APPROX. C/L OF COPPER SLOUGH DITCH
APPROXIMATE C/L OF EXISTING RAW WATER LINE
EXISTING BASIN FOR STORM WATER
MT. SIDNEY LANE
F.A.I. ROUTE 57
F.A.I. ROUTE 74
MATTIS AVENUE
CURTIS ROAD
SOUTH R.O.W. CURTIS ROAD
EAST LINE SEC. 34, T20N, R8E
SE CORNER SEC. 34, T20N, R8E
NE CORNER SEC. 3, T19N, R8E
NORTH LINE OF SEC. 3, T19N, R8E
NORTH L.P.E. SEC. 3, T19N, R8E
36" WIDE STEEL 135° CMP CULVERT
RIM=758.0
12" N INV=753.43
RIM=758.4
12" W INV=752.04
RIM=747.8
10" SW INV=746.97
RIM=745.0
INV=742.81
RIM=743.84
INV=743.84
INV=743.2
RIM=742.1
306
307
N 89°54'03" W 30.83'
N 01°18'35" W 88.80'
S 89°20'16" W 96.85'
S 89°54'03" E 351.04'
S 89°43'22" E 1162.26'
S 48°43'43" E 71.13'
(N 89°40'25" W 640.00')
(N 89°40'25.37" W 178.76')
(N 89°40'25" W 384.01')
(N 89°40'25" W 350.37')
(N 00°19'34.63" E 581.95')
(N 00°19'34.63" E 60.00')
(N 88°55'11.33" E 250.74')
(N 78°56'24.88" E 477.47')
(N 46°43'39.88" E 411.99')
S 00°19'25" W 28.78'
S 48°47'44" E 43.87'
N 01°47'44" W 28.78'
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### B. Evaluation Matrix

The following evaluation matrix table was developed to present a side-by-side comparison of the five interchange alternatives:

**Table 13: Evaluation Matrix**

| Comparison Features | Alternate 1 | Alternate 2 | Alternate 3 | Alternate 4 | Alternate 5 |
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| Number of Mainline Access Points | 8 | 12 | 12 | 8 | 8 |
| Number of Transposed Ramps | 0 | 0 | 1 | 4 | 0 |
| Number of Ramp Structures | 4 | 6 | 7 | 8 | 6 |
| Fully Directional | YES | NO | NO | NO | YES |
| Number of Design Exceptions | 0 | 0 | 0 | 0 | 0 |
| Capacity - Level of Service | | | | | |
| I-57 NB | B | B | B | B | B |
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| Archaeological Resources | 1 | 0 | 1 | 1 | 1 |
| Social Resources | 1 | 0 | 2 | 2 | 1 |
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| Construction Cost (millions) | $97 | $97 | $87 | $116 | $113 |


I-74
I-57
MATTIS AVE
I-74
BLOOMINGTON RD
NORFOLK SOUTHERN R.R.
I-57
INTERCHANGE TYPE STUDY
ALTERNATE: 1
FULL DIRECTIONAL
INTERCHANGE TYPE


I-74
I-57
MATTIS AVE
I-74
BLOOMINGTON RD
NORFOLK SOUTHERN R.R.
I-57
INTERCHANGE TYPE STUDY
ALTERNATE: 2
SEMI DIRECTIONAL
INTERCHANGE TYPE
WITH LOOPS

Public Information Meeting Comment Form
Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

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Name: John T. Petry
Address: 67 Greencroft, Champaign. IL 61821
Daytime phone number: 217- 552-1061
Email Address: none

Comments:

I was not able to attend the open house on February 19, 2014. Therefore I am sending my views on the proposed reconstruction of the I-57/-74 interchange. I own 50% of the remaining 14 acres on property located generally north of the entrance road. I also own lot 102, Approximately 3 acres, in a family trust. This 50 acre tract is known as Corporate Park Centre. As shown on the development drawing, provided by the developer at the open house, you will see that 12 two story office buildings are planned. This is a beltway development that you would typically see along interstate highways near large cities. This development will provide significant tax dollars both now and into the distant future.

Being a life long resident and very familiar with this interchange and the need for a safer and more efficient design of that roadway is needed now or in the near future. The following paragraphs are in conjunction with comments made from Brian Swartz our Real Estate Broker. After discussions and further study of the five design alternatives as presented I believe Alternative #2 stands out as the best alternative for several reasons. Alternative #2 affords the opportunity to reconstruct the interchange to facilitate safer travel with the least amount of right-of-way acreage. The projected 37 acres needed to complete the project under this design is less than any of the other proposals. Alternative #2 requires 44% less ground than the next lowest option, Alternative #1 (66) acres. Alternative #4 (106 acres) requires the acquisition of 2.9 times the acreage as Alternative #2. Also the wetland area (3.52 acres) and the water bodies involved are the least affected in Alternative #2.

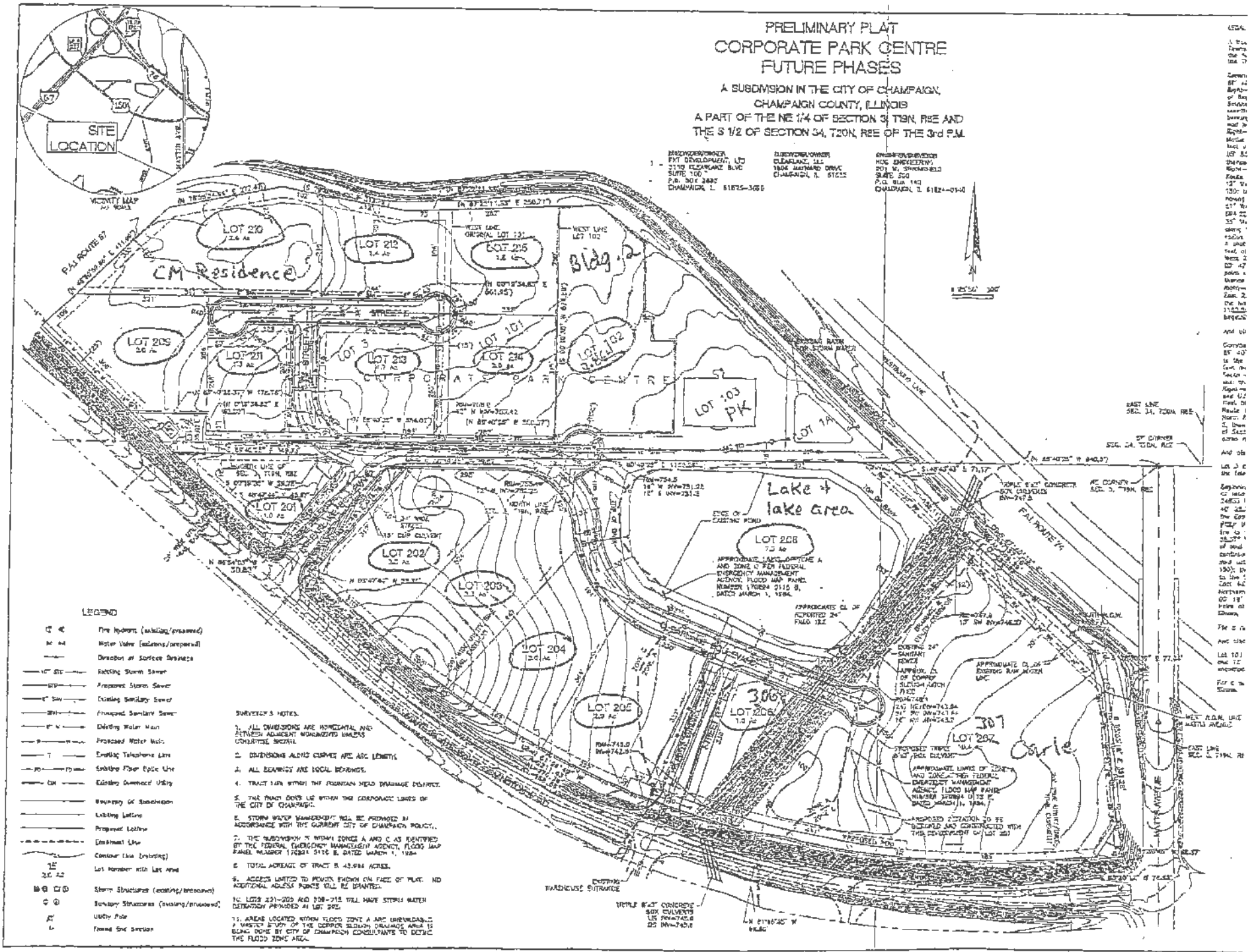
The ability to reconstruct the interchange with the least amount of impact to the local landowners. developers and environmentally sensitive areas should make this option the most desirable. The land owners on all four quadrants of the interchange have invested huge sums of money in developing the infrastructure on their properties, along with promotion and marketing cost. Minimizing the amount of ground taken from these first class development projects would also benefit the City of Champaign by allowing maximum development in the beltway corridor to the community. Additionally, another

important aspect of selecting Alternative #2 is that the project could be accomplished at the low end of projected cost to the tax payers.
Hopefully, the above information will weigh heavily on the decision and Alternative #2 will be selected. If for some reason it is not chosen, Alternative #1 would offer the next best option, considering the points above. Alternatives 3, 4, & 5 require the acquisition of an unacceptable amount of acreage, with #5 being the least desirable as it consumes one of the most elite and desirable office buildings in the area. The entire Corporate Park Centre development would suffer irreversible damage if Alternatives 3, 4 or 5 are selected. I am attaching a copy of the Corporate Park Centre Future Phases Preliminary Plat showing the latest development scheme. It should also be noted that the 6 acre lake with fountain is a main attraction The Lake is 25-30ft deep making it a very healthy body of water. Our park is within the city limits. The 50 acre office park is controlled by restrictive covenants and the two story 42,000 sq.ft office is a Condominium complex where office suites are owned by certain occupants. All major utilities are either at or in the Park. Storm detention utilizing the lake is for the whole Parks use through the Covenants.
Thank you for your consideration.

Signed: John T. Petry

Date: 3/10/14

Mail to:
Craig Emberton Program Development Engineer Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944


PRELIMINARY PLAT
CORPORATE PARK CENTRE
FUTURE PHASES
A SUBDIVISION IN THE CITY OF CHAMPAIGN,
CHAMPAIGN COUNTY, ILLINOIS
A PART OF THE NE 1/4 OF SECTION 3, T19N, R9E AND
THE S 1/2 OF SECTION 34, T20N, R9E OF THE 3rd P.M.
SITE LOCATION
VICINITY MAP
CM Residence
Bldg. 2
Lake + lake area
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LOT 209
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LOT 102
LOT 103 PK
LOT 201
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LOT 203
LOT 204
LOT 205
LOT 206
LOT 207
LEGEND
SURVEYOR'S NOTES
1. ALL DIMENSIONS ARE HORIZONTAL AND BETWEEN ADJACENT MONUMENTED UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ALONG CURVES ARE ARC LENGTHS.
3. ALL BEARINGS ARE LOCAL BEARINGS.
4. TRACT LIES WITHIN THE FOUNTAIN HEAD DRAINAGE DISTRICT.
5. THE TRACT DOES LIE WITHIN THE CORPORATE LIMITS OF THE CITY OF CHAMPAIGN.
6. STORM WATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH THE CURRENT CITY OF CHAMPAIGN POLICY.
7. THE SUBDIVISION IS WITHIN ZONES A AND C AS IDENTIFIED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD MAP PANEL NUMBER 170894 0115 B, DATED MARCH 1, 1984.
8. TOTAL ACREAGE OF TRACT IS 43.686 ACRES.
9. ACCESS LIMITED TO POINTS SHOWN ON FACE OF PLAT. NO ADDITIONAL ACCESS POINTS WILL BE GRANTED.
10. LOTS 201-205 AND 208-215 WILL HAVE STORM WATER DETENTION PROVIDED AT LOT 207.
11. AREAS LOCATED WITHIN FLOOD ZONE A ARE UNDERGOING A MASTER STUDY OF THE CORPORATE SLOUGH DRAINAGE AREA IS BEING DONE BY CITY OF CHAMPAIGN CONSULTANTS TO DEFINE THE FLOOD ZONE AREA.

### B. Evaluation Matrix

The following evaluation matrix table was developed to present a side-by-side comparison of the five interchange alternatives:

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| Fully Directional | YES | NO | NO | NO | YES |
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I-74
I-57
MATTIS AVE.
I-74
BLOOMINGTON RD.
NORFOLK SOUTHERN R.R.
I-57
INTERCHANGE TYPE STUDY
ALTERNATE: 2
SEMI DIRECTIONAL
INTERCHANGE TYPE
WITH LOOPS


I-57
MATTIS AVE
I-74
I-74
BLOOMINGTON RD
NORFOLK SOUTHERN R.R.
I-57
INTERCHANGE TYPE STUDY
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FULL DIRECTIONAL
INTERCHANGE TYPE

Public Information Meeting Comment Form
Proposed Reconstruction of the I-57 / I-74 Interchange
Champaign County
February 19, 2014

Please place this form in the comment box or mail by March 12, 2014 to the address on the bottom of this sheet. Your comments assist us in developing a project that will serve the needs of the traveling public as well as the needs of the local community. Your input is welcome and appreciated throughout the design process.

Name: Gregory A Petry & Patrick B Dorsey
Address: 2110 Clearlake Blvd. suite101, Champaign, IL 61822
Daytime phone number: 217-356-3743
Email Address: gpetry@petry-kuhne.com pdorsey@petry-kuhne.com.
Business: The Petry-Kuhne Company

Comments:

Greg was unable to attend the open house on February 19, 2014. Therefore Greg and I are sending our views on the proposed reconstruction of I-57 / I-74 interchange. We are the owners of three condominiums. Ownership is regulated by the Declaration of Condominium Ownership. All Condo owners agree that a major factor in deciding to locate near this intersection is the visibility for our complex. The building is constructed with 12 inches of custom formed concrete wall panels. The design is typical beltway construction utilizing similar materials.

Being life time residents and being very familiar with this interchange we would agree that there is a need for a safer and more efficient design. The following paragraphs are in conjunction with comments made from Brian Swartz the Parks Real Estate Broker. After discussions and further study of the IDOT evaluation matrix for the five design alternatives, as presented, we believe Alternative #2 stands out as the best alternative for several reasons. Alternative #2 affords the opportunity to reconstruct the interchange to facilitate safer travel with the least amount of right-of-way acreage. The projected 37 acres needed to complete the project under this design is less than any of the other proposals. Alternative #2 requires 44% less ground than the next lowest option, Alternative #1 (66) acres. Alternative #4 (106 acres) requires the acquisition of 2.9 times the acreage as Alternative #2. Also the wetland area (3.52 acres) and the water bodies involved are the least affected in Alternative #2.

The ability to reconstruct the interchange with the least amount of impact to the local landowners, developers and environmentally sensitive areas should make this option the most desirable. The land owners on all four quadrants of the interchange have invested huge sums of money in developing the infrastructure on their properties, along with promotion and marketing cost. Minimizing the amount of ground taken from these first class development projects would also benefit the City of Champaign by allowing maximum development in the beltway corridor to the community. Additionally, another important aspect of selecting Alternative #2 is that the project could be accomplished at the low end of projected cost to the tax payers.

Hopefully, the above information will weigh heavily on the decision and Alternative #2 will be selected. If for some reason it is not chosen, Alternative #1 would offer the next best option, considering the points above. Alternatives 3, 4, & 5 require the acquisition of considerable acreage, with #5 being completely unacceptable as it consumes one of the most elite and desirable office buildings in Champaign. The entire Corporate Park Centre development would suffer irreversible damage if Alternatives 3, 4 or 5 are selected. It should also be noted that the 6 acre lake with fountain is a major attraction The Lake is 25-30ft deep making it a very healthy hody of water. Our park also is within the city limits. The 50 acre office park is controlled by restrictive covenants and the two story 42,000 sq.ft office is a Condominium complex where office suites are owned by certain occupants. All major utilities are either at or in the Park. Storm detention utilizing the lake is for the whole Parks use through the Covenants.

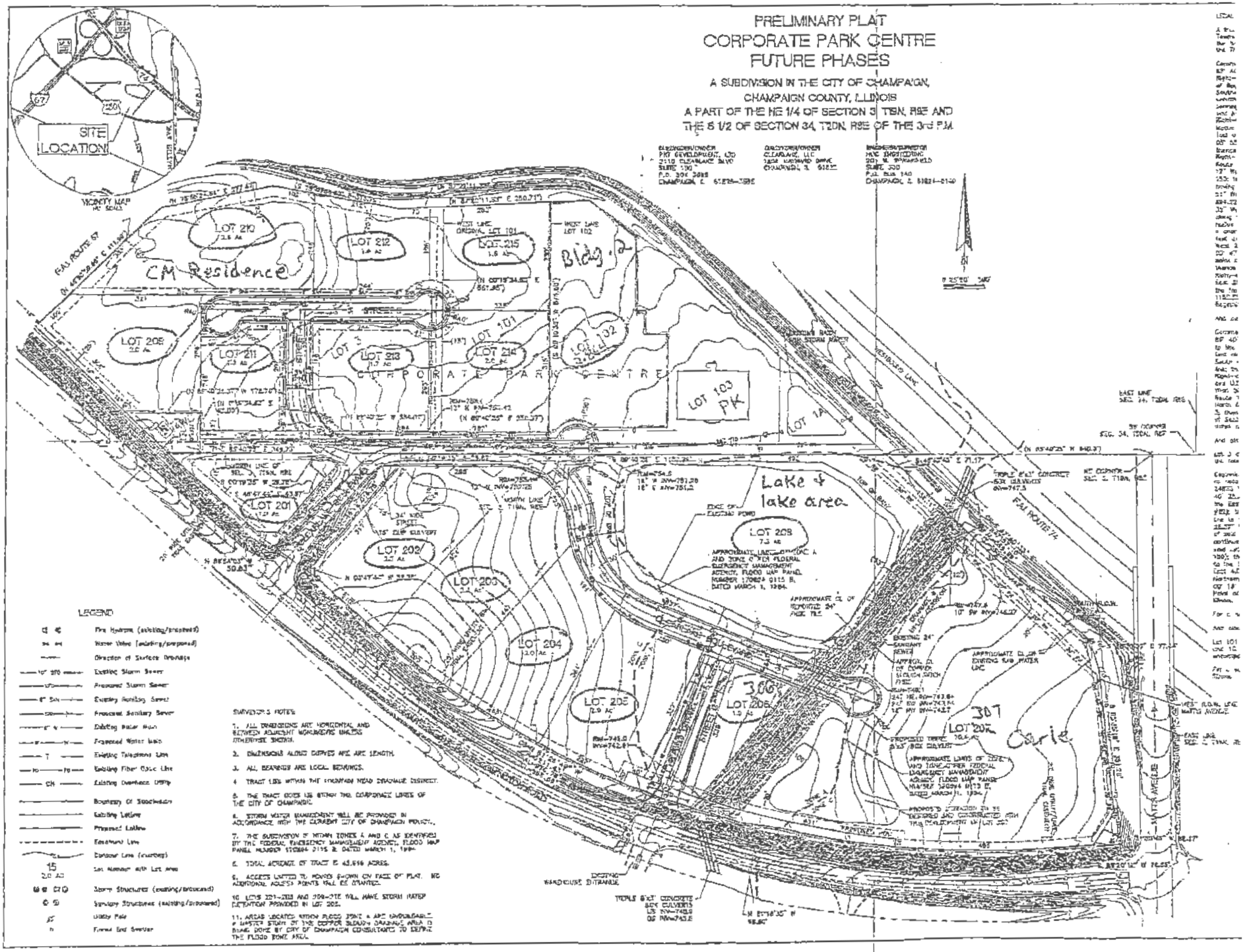
Thank you for your consideration.

Signed: Gregory A. Petry

Date: 3/10/2014

Signed: Patricia B. Dorsey

Date: 3/10/2014


PRELIMINARY PLAT
CORPORATE PARK CENTRE
FUTURE PHASES
A SUBDIVISION IN THE CITY OF CHAMPAIGN,
CHAMPAIGN COUNTY, ILLINOIS
A PART OF THE NE 1/4 OF SECTION 3, T19N, R9E AND
THE S 1/2 OF SECTION 34, T20N, R9E OF THE 3rd P.M.
SITE LOCATION
VICINITY MAP
LOT 210
LOT 212
LOT 215
LOT 209
LOT 211
LOT 213
LOT 214
LOT 102
LOT 103 PK
LOT 1A
LOT 201
LOT 202
LOT 203
LOT 204
LOT 205
LOT 206
LOT 207
LOT 208
CM Residence
Bldg. 2
Lake & lake area
CORPORATE PARK CENTRE
FAI ROUTE 57
FAI ROUTE 74
LEGEND
SURVEYOR'S NOTES:
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LOT 205
LOT 206
LOT 207
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LOT 202
LOT 203
LOT 204
LOT 205
LOT 206
LOT 207
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CORPORATE PARK CENTRE
FAI ROUTE 57
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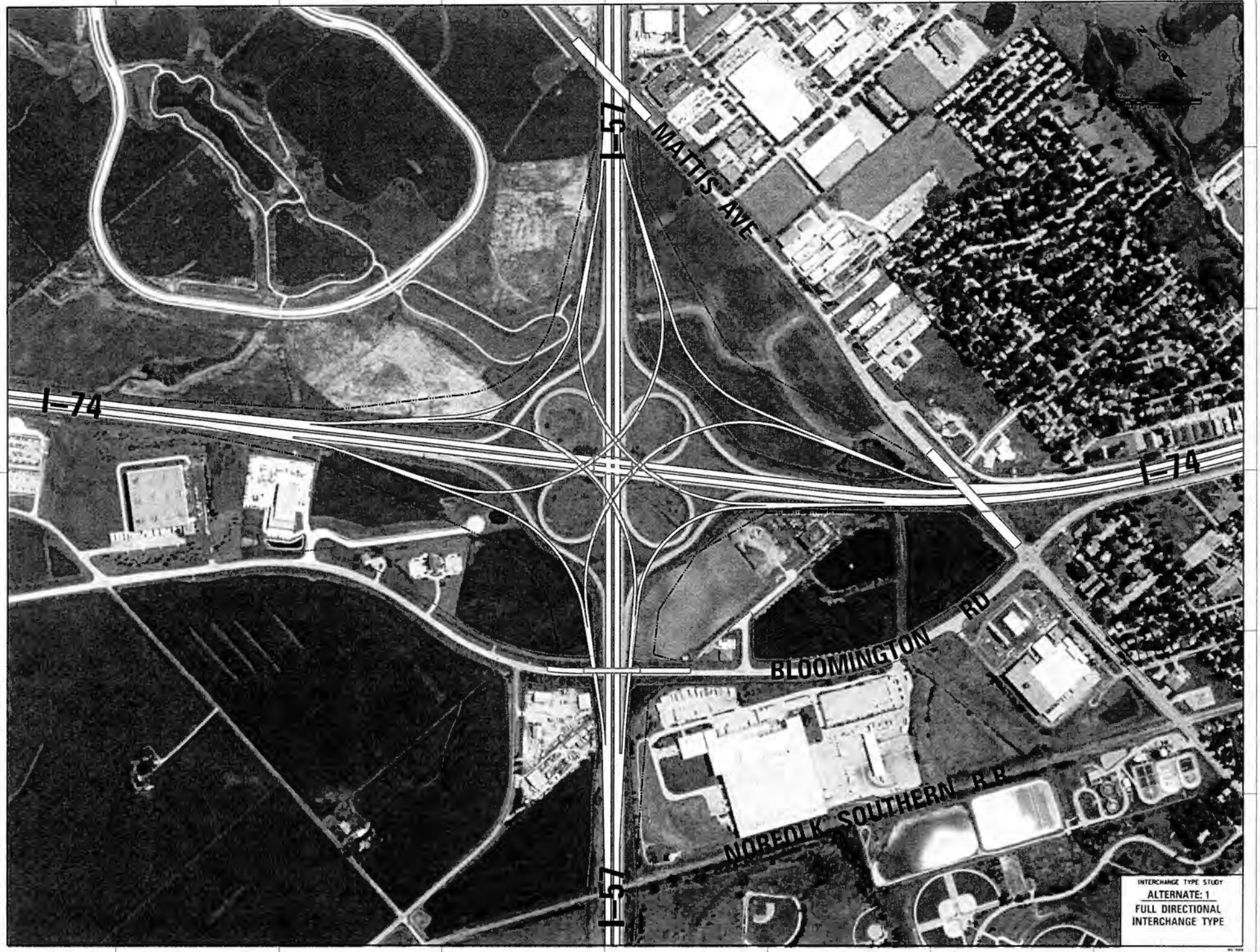
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I-57
INTERCHANGE TYPE STUDY
ALTERNATE: 2
SEMI DIRECTIONAL
INTERCHANGE TYPE
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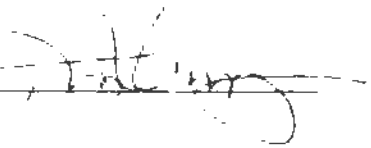
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Name: Tom Campion
Address: 2110 Clearlake Blvd. suite 202, Champaign, IL 61822
Daytime phone number: 217-356-9922
Email Address: tcampion@campionbarrow.com
Business: Campion Barrow and Associates`

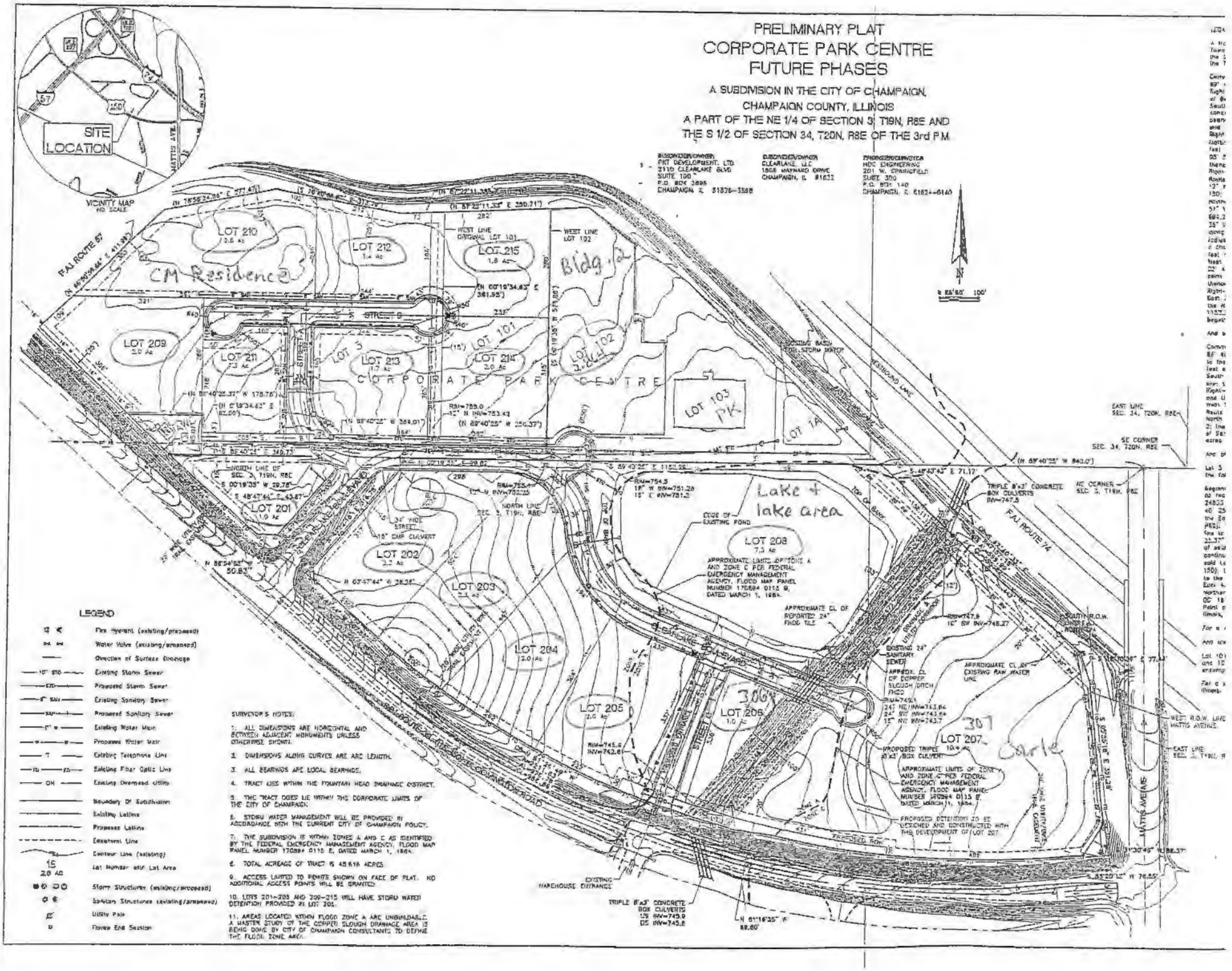
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Signed: 

Date: 3 . 0 . 11


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P.A.I. ROUTE 74
LEGEND
SURVEYOR'S NOTES:

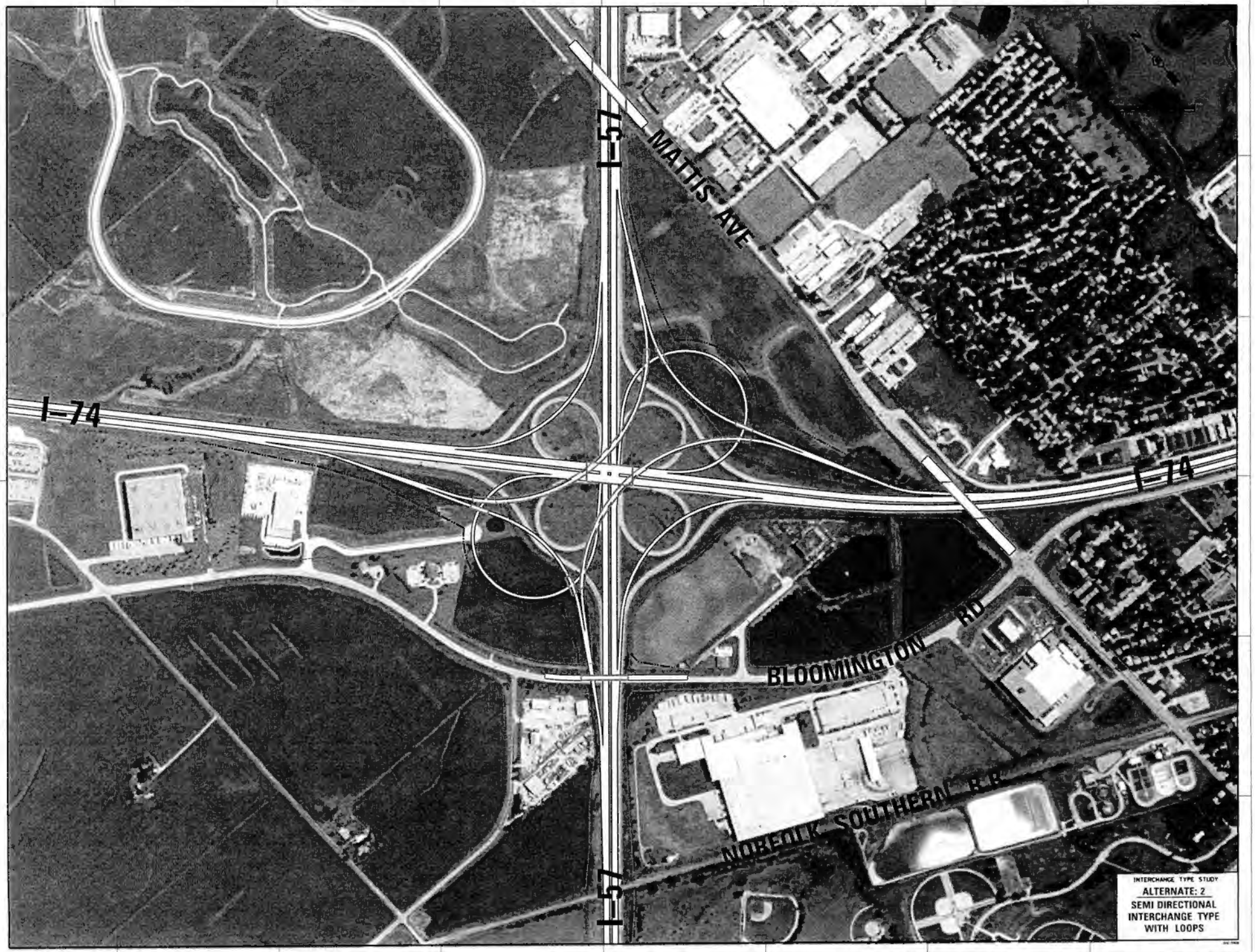
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| CORSIM Conflict Analysis (potential conflicts in peak hour) | 279 | 339 | 304 | 422 | 370 |
| Total Ramp Travel Time (minutes) | 11.93 | 13.01 | 14.05 | 13.59 | 12.27 |
| Potential Environmental Impacts | | | | | |
| Wetlands | 6 | 6 | 6 | 8 | 7 |
| Detention Ponds | 1 | 1 | 1 | 1 | 1 |
| Streams | 1 | 1 | 1 | 1 | 1 |
| Hazardous Materials | 5 | 4 | 4 | 6 | 8 |
| Archaeological Resources | 1 | 0 | 1 | 1 | 1 |
| Social Resources | 1 | 0 | 2 | 2 | 1 |
| Right-of-Way Acquisition (acres) | 66 | 37 | 89 | 106 | 78 |
| Construction Cost (millions) | $97 | $97 | $87 | $116 | $113 |


I-74
I-57
MATTIS AVE
I-74
BLOOMINGTON RD
NORFOLK SOUTHERN R.R.
I-57
INTERCHANGE TYPE STUDY
ALTERNATE: 1
FULL DIRECTIONAL
INTERCHANGE TYPE


I-74
I-57
MATTIS AVE
I-74
BLOOMINGTON RD
NORFOLK SOUTHERN R.R.
I-57
INTERCHANGE TYPE STUDY
ALTERNATE: 2
SEMI DIRECTIONAL
INTERCHANGE TYPE
WITH LOOPS

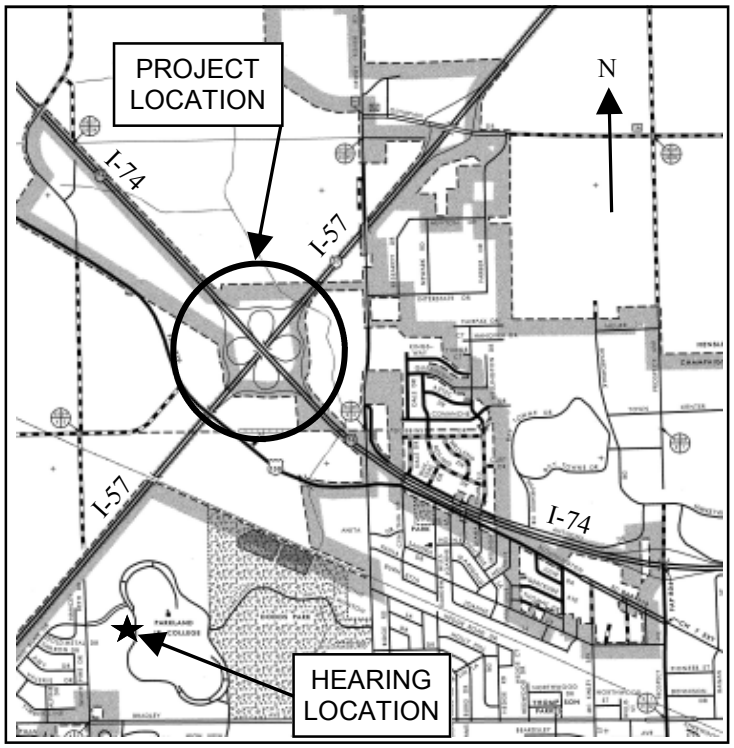
# Appendix B2
# Public Hearing

Illinois Department of Transportation

Fax: (217) 465-3101
TDD: (217) 463-2279
Media Contact: Craig A. Emberton
Phone: (217) 465-4181

# OPEN HOUSE PUBLIC HEARING

FOR THE PROPOSED RECONSTRUCTION OF THE
INTERSTATE 57 / INTERSTATE 74 INTERCHANGE
CHAMPAIGN COUNTY




## DATE & LOCATION

May 14, 2015 3:00 P.M. — 6:00 P.M.
**Parkland College — Building T**
**Applied Technology Center**
2400 West Bradley Avenue
Champaign, IL 61821
Park in Lot W-2

## PURPOSE OF MEETING

- PRESENT SELECTED ALTERNATIVE
- RECEIVE PUBLIC INPUT
- ANSWER QUESTIONS

## CONTACT INFORMATION

Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944
Phone: (217) 465-4181
Fax: (217) 465-3101
TDD: (217) 463-2279

All interested persons are invited to attend an open house public hearing for the proposed I-57/I-74 interchange reconstruction project at any time during the open house hours listed above. The hearing will be conducted on an open house basis with a formal session allowing the public to speak beginning at 5:00 PM. Information provided at the meeting will include the status of the project and exhibits depicting the proposed improvements. IDOT representatives will be available to receive input, provide information and answer questions. Persons interested in speaking during the formal session will be allowed five minutes each to speak publicly on the project. Each person in attendance will also have the opportunity to provide written or verbal statements during the meeting. Comment forms will be available for written statements and recording devices will be available to take verbal testimony.

An Environmental Assessment Report, which provides detail on the project's environmental impact, is available for public review at the IDOT District 5 Headquarters, 13473 IL Hwy 133, Paris, IL 61944, the Federal Highway Administration Illinois Division Office, 3250 Executive Park Drive, Springfield, IL 62703, and the IDOT website at http://www.idot.illinois.gov/transportation-system/environment/environmental-review-documents. Contact Craig A. Emberton at the address or phone number above for information on availability and to submit comments. The public review period ends May 18, 2015.

This project has the potential to impact a cultural resource protected by the National Historic Preservation Act, although it is anticipated that the resource can be avoided. It is anticipated that the proposed project will encroach into the 100-year floodplain, require re-alignment of Copper Slough, and impact wetlands not under the jurisdiction of Illinois Department of Natural Resources or the U.S. Army Corps of Engineers.

Based on preliminary design and feedback from residents adjacent to the project, noise barriers are likely to be implemented along the north and south sides of I-74 between Mattis Avenue and Prospect Avenue. The noise barriers will be designed after the public involvement process and project planning phase is complete.

This meeting is accessible to persons with a disability. Persons planning to attend who will need a sign language interpreter or other special accommodations should notify IDOT at least five days prior to the meeting. The contact may be by telephone, in writing, by fax or by telecommunications device for the deaf (TDD).

Illinois Department of Transportation

# PROPOSED RECONSTRUCTION OF THE INTERSTATE 57 / INTERSTATE 74 INTERCHANGE CHAMPAIGN COUNTY PUBLIC HEARING MAY 14,2015

## CONTACT INFORMATION

Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944
Phone: (217) 46564181
Fax: (217) 46563101
TDD: (217) 46362279

## PURPOSE OF MEETING

- PRESENT SELECTED ALTERNATIVE
- RECEIVE PUBLIC INPUT
- ANSWER QUESTIONS

## Project Description

This project is located on the northwest side of the City of Champaign, Illinois. The approximate project limits are the Olympian Drive / I657 interchange to the north, North Prospect Avenue / I674 interchange to the east, the Norfolk Southern Railroad over I657 to the south, and North Duncan Road over I674 to the west (see Site Map on backside).

## Purpose of the Project

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the Interstate 57 (I657) and Interstate 74 (I674) interchange by eliminating deficient geometric features and reducing points of access in order to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps.

## Existing Facility

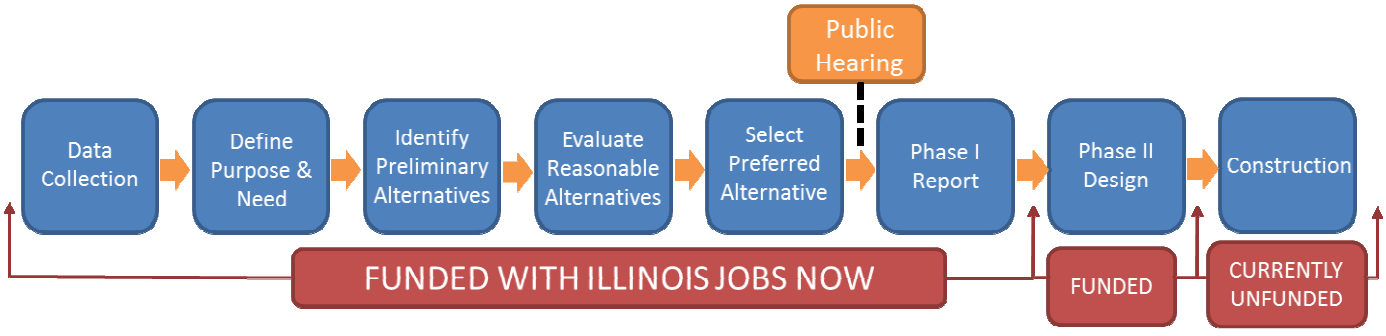
The existing facility was originally constructed in 1965 and is a full conventional cloverleaf interchange connecting I657 and I674. Each interstate consists of four lanes (two lanes in each direction) of concrete pavement with multiple overlays. Both interstates have open grass medians which are 64 feet and 40 feet. The section of I674 between Mattis Avenue and Prospect Avenue consists of a 26 foot paved median with concrete barrier.

The existing interchange has several deficiencies including operations, geometrics, safety, and capacity. All of these deficiencies cannot be mitigated without adding lanes to I674 and reconstructing the interchange to meet the design criteria. All reasonable alternatives to the proposed improvement were considered. Advantages of the proposed alternative include increasing the ramp design speeds, eliminating mainline weaves, reducing the number of access points, increasing the mainline I674 and ramp capacities, reducing travel time through the interchange, and improving safety.

The proposed alternative is a semi-directional interchange with two directional flyovers and two loops. The loop ramps are placed diagonally in order to eliminate any mainline weaving movements within the interchange. Loop ramps are designed for a 40 mph design speed, while all other ramps are designed for a 55 mph design speed. In addition to reconfiguration of the ramps at the interchange, I674 is proposed to be widened to six lanes from west of I657 interchange to Prospect Avenue. I657 remains a four lane interstate.

The Phase I project study, started in May 2012 and funded with the Illinois Jobs Now program, will be completed in 2015 and the Phase II design initiated following FHWA approval. The land acquisition, utility relocation, and construction are currently not funded. Once completed, the project is anticipated to cost approximately $135 million.

## PROJECT SCHEDULE



BDC-9908

BFW

CMT

# PROPOSED INTERCHANGE

I-57

I-74

NORFOLK SOUTHERN R.R.

CARDINAL RD

W. BLOOMINGTON RD.

CLEARLAKE BOULEVARD

MIDWEST CT.

I-74

W. ANTHONY DR.

N. PROSPECT AVE.

MATTIS AVE

I-57

W. OLYMPIAN DR.

SCALE: 1" = 400'

400' 0 400' 800'

N

PLOT DATE = 5/7/2015
DRAWING = C:\Projects\060822-Champaign\Graphics\2015_05\Public Hearing\Proposed Alternatives.dgn
PLOT SCALE = 480.8000 '
USER NAME = Brad Dunwell

**I-57 & I-74 Interchange Reconstruction**

**Champaign, Champaign County, Illinois**

**May 14, 2015**

---

**SIGN-IN SHEET**

| Name | Organization | Email | Address | Phone |
|---|---|---|---|---|
| Brad Downen | CMT | bdownen@cmtengr.com | 2750 West Washington St Springfield, IL 62702 | 217-787-8050 |
| Laura Sakach | CMT | lsakach@cmtengr.com | " | " |
| KEVIN CRIDER | BFW | kcrider@bfwengineers.com | 500 S. 17th PADUCAH, KY 42002 | 270-443-1995 |
| Blake Emery | BFW | bemery@bfwengineers.com | 403 N. Court St. Marion IL 62959 | 618-993-6700 |
| PAT DORSEY | CPC, LLC | PDORSEY@PETRY-KUHNE.COM | 2110 CLEARWATER DR. C, | 217-356-3743 |
| STEVE SODEMANN | | sode2617@gmail.com | 2617 WEDGEWOOD - CHAMP. | |
| Mark Dixon | The Atkins Group | markc atkinsgroup.com | 2805 S. Boulder, Urbana IL | 217-693-5616 |
| Landon Stenger | St. Sen. Chapin Rose | LS@chapinrose.net | 510 S. Staley Rd. Ste D Champaign | 217-607-1853 |
| Rita Morocoma-Black | CUUATS | rmorocoi@ccrpc.org | 1776 E. Washington St. Urbana | 217-328-3313 |
| Ellen Hedrick | Fuhrmann | [redacted] ehedrick@fuhrmann-eng.com | Champaign | 217-840-8191 |
| BILL GRAY | CITY OF URBANA | wrgray@urbanaillinois.us | 706 S. GLOVER U 61802 | 217-384-2377 |
| Garret Hill | CC Chamber of Commerce | garreth@champaigncounty.org | 302 W Kirby | 815-790-0372 |
| John Sherrill | IDOT - Springfield | john.sherrill@illinois.gov | 2300 South Dirksen Spfld. IL. | 217-785-4181 |

**I-57 & I-74 Interchange Reconstruction**

**Champaign, Champaign County, Illinois**

**May 14, 2015**

---

**SIGN-IN SHEET**

| Name | Organization | Email | Address | Phone |
|---|---|---|---|---|
| TED COMBES | OPEN ROAD PAVING | TCOMBES@OPENROADPAVING.COM | 1414 W. ANTHONY DR. CHR. | 356-7280 |
| Jeff Yockey | Champaign County Bikes | jeffyockey@mac.com | 304 W. Washington St. Urbana, IL 61801 | 217 565-1785 |
| Kersil Garnett | IDOT | kersil.garnett@illinois.gov | | |
| SCOTT NEIHART | IDOT | scott.Neihart@illinois.gov | | |
| RUSTIN KEYS | IDOT | rustin.keys@illinois.gov | | |
| Jeff Allen | IDOT | jeffery.Allen@illinois.gov | | |

# CERTIFICATE OF PUBLICATION
# IN
# The News-Gazette

The undersigned, THE NEWS-GAZETTE, INC. by its authorized agent, does hereby certify that said corporation is the publisher of The News-Gazette and that the same is the daily secular newspaper of general circulation published in Champaign, Champaign County, Illinois, and said newspaper is a newspaper as defined by 715 ILCS 5/5 (1992) and 715 ILCS 10/1 (1992); said publisher further certifies that the annexed notice was published in said newspaper, on the following date(s);

04/26/2015 05/10/2015

IDOT OPEN HOUSE PUBLIC

Said publisher further certifies that the date of the first paper containing the said notice was on the first date hereinabove set forth and that the date of the last paper continuing the said notice was on the last date hereinabove set forth.

The News-Gazette, Inc.

Publisher of The News-Gazette

By: Karen C Clapp
Authorized Agent

Publisher's fee $840.00
Ad # 1272364

## Houses 403

## Homes/Champaign, Urbana, Savoy 404

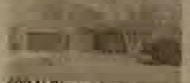
**HOUSE FOR SALE**

**316 W John, Champaign** 1 ½ story, Bungalow, 2 Br 1 ba, LR, DR, kitchen Older but updated. Fenced yard, 1 ½ car garage. $125,000 ono. 356-6406

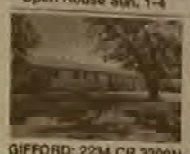


**3402 KATIE LYNN DR.** attractive 3BR, 2.5BA, Cathedral ceiling and gas log FP in Great Room. 2 car gar. 217-493-4035

## Homes/Suburban 405



**602 N Dianne Ln Mahomet** Close to Schools! 1723 sq ft, 3 BR/2BA, 2 car garg., screened porch, large backyard $189,900 217-417-1315 **Open House Sun. 1-4**



**GIFFORD: 2234 CR 3300N** 3BR, 2 BA Ranch, 1 acre, Garage, 1500 sq ft. Geothermal heat/air $129,900. 217-898-3731

**RURAL PROPERTY FOR SALE**
Northern Douglas County, 2700 sf., 2 car garage, mature landscaping on 1.5a. Call 217-493-8123

**Thomasboro, 607 W. Clark** 3BR 2Bath, fenced yard, 1,275 sq. ft. $66000 call 217-202-8492

## Duplexes/Condos/Townhomes 406

**1203 Dean Dr, #4, U. Willow Springs.** 2 Br, 1½ ba, all appls + W/D, new heating & A/C, new flooring in kitchen and tile in hall and bath. 1 car garage. Access to pool & tennis courts and clubhouse. $71,400. Call 896-2528 for showing.

**DUPLEX FOR SALE BY OWNER**
1802 JEANNE, CHAMPAIGN. 2BD/1BA ON EACH SIDE. $1380 TOTAL MONTHLY INCOME. ALL APPLIANCES STAY. GREAT TENANTS. 217-621-1416

## Property/Farm Land 409

***88 acres For Sale,*** by Ashmore, II in Coles County. 40 tillable. Good Crop Production. Embarras Area Water District,18 acres woods, deer & turkey hunting. Call JC Realty 217-508-6482 Jim Cross

## Mobile Homes For Sale 412

**1985 Carlton 3Br, 1Ba** Needs carpeting and bathroom remodel **$1000 217-377-3658**

**MANUFACTURED HOMES TO LEASE OR PURCHASE**
**Private yard, Concrete Streets, Lake Of The Woods Golf & Fishing, Award Winning Schools, Swimming Pools, CANDLEWOOD ESTATES, Mahomet, IL**
**217-586-4937 or 202-2296**

## 500 ANNOUNCEMENTS

## Announcements 501

**GET YOUR MESSAGE** to an estimated 1.4 million readers in 90 East Central Illinois newspapers through the Illinois Press Association's ICAN classified network.

Publish statewide in 318 paid circulation newspapers and over 6.1 million potential customers. It can only be done through the ICAN classified network which can be bought through your local newspaper including the News-Gazette. *Buy three consecutive weeks, get the fourth ad free.*

Call the customer care center 800-660-READ or 217-351-5289 to place your ad in dozens of newspapers for one low price.

**Drop-in visitors?**
Get a sleeper sofa without breaking the bank. Look in the furnishings classified section.

Each issue of
**At Home**
in Central Illinois magazine highlights beautiful area homes and gardens and is full of home improvement ideas, cooking, entertaining and enjoying home life in central Illinois. Look for it at area bookstores, grocery stores and retail outlets.

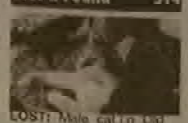
**Want to search Illinois legal notices?**




## Cemeteries & Monuments $12

**Grandview Memorial Gardens:** 2 adult interment spaces, 4 care fund dep. 2 interment space + vault option, 1 companion memorial marker. Best offer. 615-368-2057

## Lost & Found 514



**LOST:** Male calico Dog Farm area Champaign. White stomach, dark tabby on back, declawed. ***Reward!*** 550-1491 or 352-4569

Each issue of
**At Home**
in Central Illinois magazine highlights beautiful area homes and gardens and is full of home improvement ideas, cooking, entertaining and enjoying home life in central Illinois. Look for it at area bookstores, grocery stores and retail outlets.

**Art Project For the Classroom?**
Newsprint end rolls are perfect for art projects.
**$4.00 each**
Available at
**The News-Gazette, 15 Main St., Champaign**
**Mon-Fri 8:00am-5:00pm**

## Business Opportunities 540

**CALL**
LAWN MOWING – experienced and reasonable rates. 217-369-6633

## Public Notices 599

**IN THE CIRCUIT COURT OF THE SIXTH JUDICIAL CIRCUIT CHAMPAIGN COUNTY, ILLINOIS**
**IN PROBATE**
**Estate of Ralph S. Place**
**Estate Number 2015-P-71**

**Death and Claim Notice**

NOTICE IS GIVEN of the death of **Ralph S. Place**. Letters of office were issued on March 27, 2015 to Marilyn R. Place, 303 N. Josephine St., Homer, IL 61849 as Independent Executor, and her attorney is Marilyn K.

continued next column

Absent Offers weekly coverage of entertainment news and employment opportunities. Pick up your **FREE** copy today!

Law, 999 County Road 2500 E., Homer, IL 61849-9731, Telephone 217-896-2379.

Claims against the estate may be filed in the office of the Clerk of the Circuit Court, Champaign County Courthouse, 101 E. Main St., Urbana IL 61801, or with the Executor, or both, **within six (6) months from the date of the first publication of this Notice** and any claim not filed within that period is barred. Copies of a claim filed with the Clerk must be mailed or delivered to the Executor and to the attorney within 10 days after it has been filed.

1272322 4/26,3,10

**ADVERTISEMENT FOR BIDS**
Champaign County Regional Planning Commission
1776 E. Washington Street
Urbana, IL 61802

Seeking sealed bids for contractual janitorial services at the Urbana, Rantoul, and Savoy Head Start locations. Specifications and bid forms are available on the Regional Planning Commission website www.ccrpc.org, or at its offices located at the Brookens Administrative Center, 1776 E. Washington St., Urbana, IL. Bids will be accepted until **11:00 am, Thursday, May 7, 2015.** A pre-bid meeting and walk-through of the buildings will be conducted on **Friday, April 24, 2015 at 9:00 am** at the Savoy Head Start site, 310 W. Church Street, Savoy, IL. The Regional Planning Commission reserves the right to waive any and all bids or to accept that bid which in its final judgment is in the best interest of the Head Start program.

Dated April 12, 2015
Elizabeth Murphy
Chief Operating Officer

1270568 4/12,19,26

RFQ 2015-002

Facility Condition Assessment, Documents, and Capital Planning Study for the County of Champaign

**Requested Services:** Champaign County is interested in obtaining the services of qualified architectural and engineering firms to assist the County in developing a facility condition assessment, documentation, and capital planning study. The request for qualifications, RFQ 2015-002, is available on the County website at www.co.champaign.il.us/bids or for pickup at the Champaign County Administrative Services Office, Brookens Administrative Center, 1776 East Washington Street, Urbana, IL. Inquiries regarding this RFQ should be directed to Champaign County Facilities Director Dana Brenner at 217-384-3765 or dbrenner@co.champaign.il.us.

**Statement of Qualifications Due Date:** Statements of qualifications (SOQ) in response to this RFQ shall be accepted until 12:00 p.m. local time on May 5, 2015. SOQs received after that time will not be considered and will be returned to the respondent unopened.

1270846 4/12,19,26

**CONDIT TOWNSHIP ANNUAL TREASURER'S REPORT ROAD DISTRICT REVENUE FUNDS FISCAL YEAR ENDING MARCH 31, 2015**

| | ROAD DISTRICT FUNDS |
|---|---|
| **REVENUE SUMMARY** | |
| Property Tax | $88,920.02 |
| Replacemnnt Tax | $1,968.05 |
| Interest | $39.87 |
| Insurance Dividend | $500.00 |
| Insurance Reimbursement | $3,304.76 |
| Miscellaneous | $472.25 |
| **TOTAL REVENUE** | **$95,204.97** |
| **COMPENSATION SUMMARY** | |
| Range: Under $25,000 | |
| Ron Hoffman, Ron White, Ryan White, Dennis Carpenter, Denny McCool, Robert Pinake, Lucas Rogers, Taylor Behrens, Anthony Batchelor, Larry Scudder, Lucas Robison | |
| **TOTAL COMPENSATION** | **$11,245.50** |
| **EXPENDITURE SUMMARY** | |
| Illiana Construction | |
| Champaign Co. Highway Dept. | $5,559.78 |
| Midwest Fence | $3,470.00 |
| Illini FS | $6,870.13 |
| Martin Equipment | $11,142.24 |
| Prairie Materials | $2,970.44 |
| Rahn Equipment | $6,214.63 |
| Rural King | $2,771.27 |
| TOIRMA | $3,132.00 |
| Open Road Asphalt Co. | $4,102.80 |
| Tire Central | $10,581.42 |
| Tuscola Stone | $3,632.88 |
| Vulcan Materials | $4,145.11 |
| All others less than $2,500 | $11,329.60 |
| **TOTAL EXPENDITURES** | **$75,922.30** |
| **SUMMARY STATEMENT OF CONDITION** | **ROAD DISTRICT FUND** |
| **Beginning Fund Balance** | $75,697.17 |
| **Revenue** | $95,204.97 |
| **Expenditures & Compensation** | ($87,167.80) |
| **ENDING FUND BALANCE** | **$83,734.34** |

**Subscribed and sworn to this 14th day of April 2015**
**Ellen Nuss, Treasurer/Supervisor**

1271574 4/26

## Public Notices 599

Crown Castle is proposing to add antennas and increase the compound at the following tower site: #872078 Champaign located at 1403 Harris Ave,Champaign, Champaign Co. - lat: 40-7-45.14 long: 88-16-13.61 Crown Castle invites comments from any interested party that believes the proposed action may have a significant impact on the environment or on any districts, sites, buildings, structures or objects significant in American history,archaeology, engineering or culture that are listed or determined eligible for listing in the National Register of Historic Places and/or specific reason the proposed action may have a significant impact on the quality of the human environment. Specific information regarding the project is available by calling Monica Gambino at <tel:724-416-2584> 724-416-2516,during normal business hours. Comments must be received at Crown Castle USA - 2000 Corporate Drive, Canonsburg, PA 15317 attn Legal Dept. by May 22,2015

1272387 4/26

**CONDIT TOWNSHIP ANNUAL TREASURER'S REPORT GENERAL SPECIAL REVENUE FUNDS FISCAL YEAR ENDING MARCH 31, 2015**

| | TOWN GENERAL FUND | RELIEF SPECIAL REVENUE |
|---|---|---|
| **REVENUE SUMMARY** | | |
| Property Tax | $42,127.00 | |
| Miscellaneous Income | $50.00 | $8.00 |
| Replacement Tax | $343.67 | |
| Insurance Dividend | $579.00 | |
| Patronage Dividend | $20.33 | |
| Interest | $9.63 | $9.24 |
| **TOTAL REVENUE** | **$43,129.63** | **$17.24** |
| **COMPENSATION SUMMARY** | | |
| Range: Under $25,000 | | |
| Ellen Nuss, Theresa Hetrick, Rick Nuss, Doug Hansens, Michelle Ponton, Debbie Eates, Ron Scudder | | |
| **TOTAL COMPENSATION** | **$28,650.00** | **$0.00** |
| **EXPENDITURE SUMMARY** | | |
| TOIRMA | $4,326.00 | |
| EIEC | $1,730.84 | |
| Thomas Pring | $1,500.00 | |
| Hicks Gas | $2,334.65 | |
| Payroll Taxes | $2,191.76 | |
| All others less than $1,500 | $4,547.35 | |
| **TOTAL EXPENDITURES** | **$16,629.60** | **$0.00** |
| **SUMMARY STATEMENT OF CONDITION** | **TOWN GENERAL FUND** | **RELIEF SPECIAL REVENUE** |
| **Beginning Fund Balance** | $26,219.14 | $7,909.29 |
| **Revenue** | $43,129.63 | $17.24 |
| **Expenditures** | ($45,279.60) | $0.00 |
| **ENDING FUND BALANCE** | **$24,069.17** | **$7,926.53** |

**Subscribed and sworn to this 14th day of April 2015**
**Ellen Nuss, Treasurer/Supervisor**

1271573 4/26

**REQUEST FOR PROPOSALS**

Notice is hereby given that Proposals will be received by the Board of Commissioners, Champaign County Forest Preserve District, at the Headquarters building at Lake of the Woods Forest Preserve, P.O. Box 1040, 109 South Lake of the Woods Road, Mahomet, IL 61853, until **11:00 A.M., Monday, May 11, 2015,** for the **Middle Fork Road Repairs** described below:

Furnish all labor and materials to repair and build up existing roadways near the campgrounds at the Middle Fork River Forest Preserve.

Proposals must be addressed to the Board of Commissioners, Champaign County Forest Preserve District, P.O. Box 1040, Mahomet, IL 61853. Proposals must be enclosed in a sealed envelope with the name of the bidder and **Middle Fork Road Repairs** clearly marked on the outside of the envelope.

The Owner has determined that the project will not be subject to State of Illinois sales tax. Thus, bidders shall not include said sales tax amounts in their bids.

The successful bidder will be required to furnish a Certificate of Insurance naming the Champaign County Forest Preserve District as Co-Insured. The successful bidder will be required to furnish and pay for a Contract Bond in the amount of 100% of the Contract amount.

Contractors will be required to comply with all federal, state and municipal laws and regulations, including those related to discrimination, prevailing wage, safety, drug-free workplace, bid rigging, human rights, preferential employment of Illinois labor and equal opportunity employment.

Complete sets of contract documents may be obtained after **Monday, April 27, 2015** from the Champaign County Forest Preserve District Headquarters Office, 109 S. Lake of the Woods Rd., Mahomet, IL 61853 (217-586-3360) or from our website at http://cfpd.org/About/bidsrfps.html

There will not be a pre-bid meeting for this project. For further information or questions, please contact Jon Hasselbring (217-586-3360); jhasselbring@cfpd.org.

The Board of Commissioners of the Champaign County Forest Preserve District reserves the right to reject any, part of any, or all proposals, to waive any informality or irregularity in the proposals or the proposal process, to accept any proposals which it deems most favorable, and to continue letting from time to time as deemed necessary.

Board of Commissioners
Champaign County
Forest Preserve District
Sarah Livesay, Secretary

1272393 4/26

## Public Notices 599

**CHAMPAIGN PARK DISTRICT FOR SALE**

**1996 Ford B800 Passenger Bus**

The Champaign District is accepting sealed bids on the following items:

- One (1) 1996 Ford B800 Bus (43 Passenger)

This vehicle may be inspected by contacting Bret Johnson, Grounds Supervisor, 217-819-3550, Monday through Friday between the hours of 8:00 a.m. and 3:00 p.m.

Bid packets may be obtained at the Brennan Meeting Center, 706 Kenwood Road, Champaign IL 61821.

The Park District is not responsible for any omissions or errors in the description of items being offered for sale. The buyer agrees to purchase the items "AS-IS" and agrees there is "NO WARRANTY."

Sealed bids must be sent to **Bret Johnson, Champaign Park District, 706 Kenwood Road, Champaign, Illinois 61821, no later than 10:00 a.m. on Friday, May 8, 2015.**

The District reserves the right to request a best and final offer from the buyer submitting the highest offer, or to award without discussion. Award will be made to the bid determined to be in the best interest of the Park District.

The District reserves the right to reject any and all bids and to waive any informality.

1272089 4/26

**IN THE CIRCUIT COURT OF THE SIXTH JUDICIAL CIRCUIT CHAMPAIGN COUNTY, ILLINOIS**

**BUSEY BANK, an Illinois Banking Corporation,**
**Plaintiff,**
**v.**
**No. 15-CH-94**

**RICHARD K. FRANKLIN, MELODY A. FRANKLIN, CITIMORTGAGE, INC., as asignee of First Bank Richmond, NA, MIDSTATE COLLECTION SOLUTIONS, INC., UNKNOWN OWNERS and NON-RECORD CLAIMANTS,**
**Defendants.**

**PUBLICATION NOTICE**

The requisite affidavit for publication having been filed, notice is hereby given you: UNKNOWN OWNERS AND NONRECORD CLAIMANTS, Defendants in the above entitled suit, that the said suit has been commenced in the Sixth Judicial Circuit Court of Champaign County, Illinois, by the Plaintiff against you and other defendants, praying for the foreclosure of a certain Mortgages conveying the premises described as follows, to wit:

Lot 136 in Schluter's Ninth Subdivision, as per Plat recorded in Plat Book "Z" at Page 39, situated in Champaign County Illinois

PIN #: 20-09-28-302-013

which has the common address of: 606 W. Shurhet Thomasboro, IL 61878

and which said mortgage was made by RICHARD K. FRANKLIN and MELODY A. FRANKLIN, Mortgagors, to BUSEY BANK, an Illinois Banking Corporation, Mortgagee, and recorded as Document No. 2003R04079, in the Office of the Recorder of Deeds of Champaign County, Illinois, and for such relief; that summons was duly issued out of the Sixth Judicial Circuit Court against you as provided by law, and that the said suit is now pending. The present owners of said mortgaged real estate are RICHARD K. FRANKLIN and MELODY A. FRANKLIN.

NOW, THEREFORE, UNLESS YOU, the said above defendants, file your answer to the complaint in this case or otherwise file your appearance in the Office of the Circuit Court Clerk, 101 East Main Street, Urbana, Illinois on or before **May 29, 2015,** a default may be entered against you at any time after that day and decree entered in accordance with the prayer of said complaint. YOU ARE FURTHER ADVISED THAT THE TIME IN WHICH THE SUBJECT REAL ESTATE MAY BE REDEEMED FROM FORECLOSURE, PURSUANT TO LAW, COMMENCES TO RUN WITH THE FIRST DATE OF PUBLICATION OF THIS NOTICE.

Dated: April 17, 2015, at Urbana, Illinois.

Katie M. Blakeman, Clerk
of the Sixth Judicial Circuit Court,
Champaign County, Illinois

Prepared by:
JOSEPH P. CHAMLEY
EVANS, FROEHLICH, BETH & CHAMLEY
Attorneys for Plaintiff
44 Main Street, Suite 310
Champaign, IL 61820
PH: 217/359-6494
FX: 217/359-6468
jchamley@efbclaw.com

1271979 4/26,5/3,10

**NOTICE TO CONTRACTORS**

The Owner will receive sealed Bids for furnishing of all materials and labor for the North Parking Lot / West Parking Lot Construction Project at the **Champaign-Urbana Public Health District** Site, Champaign, IL.

The Owner is:
**Champaign-Urbana Public Health District**
201 West Kenyon Road
Champaign, IL 61820
Phone: (217) 352-7561
Fax: (217) 531-5381

The Engineer is:
**Berns, Clancy and Associates, P.C.**
Engineers · Surveyors · Planners
405 East Main Street
Post Office Box 755
Urbana, IL 61803-0755
Phone: (217) 384-1144
Fax: (217) 384-3355

Sealed Bids will be received until 2:00 p.m. prevailing time on Thursday, May 7, 2015 at the office of Berns, Clancy and Associates, 405 East Main Street, Urbana, Illinois, 61802 at which time and place all bids will be publicly opened and read aloud.

The Contract Documents may be examined at the offices of the Engineer during normal business hours.

Complete sets of Contract Documents may be obtained at the offices of the Engineer upon depositing the sum of $80.00 for each set of Documents. Payment for each set shall be made in currency or by check, bank draft, or money order payable to Berns, Clancy and Associates. Each such deposit will not be refunded. Partial sets of documents will not be provided. Only Plan Holders of Record that obtain documents from the Engineer may submit bids for this project.

Each bid must be accompanied by a Bid Bond, bank cashier's check, or properly certified check in the amount of 5% of the bid amount. A Contract Bond in the total amount of the contract price with a corporate surety approved by the Owner will be required for the faithful performance of the contract.

The project includes demolition of 2,295 square yards of asphalt pavement, demolition of 185 square yards of concrete pavement, demolition of 162 square yards of concrete sidewalk; construction of 3,724 square yards of concrete pavements with 1,251 lineal feet of monolithic curb, construction of 1,492 square feet of concrete sidewalks, storm sewer construction and other construction items.

A pre-bid conference will be held at 3:00 p.m. on April 30, 2015 at the **Champaign-Urbana Public Health District** conference room, 201 West Kenyon Road, Champaign, Illinois 61820.

The commencement date for all work contained in the Contract is May 20, 2015.

The completion date for the West Parking Lot is June 30, 2015.

The completion date for all other work contained in the Contract is October 16, 2015.

The Contractor shall be required to provide certificates of insurance as indicated in the documents.

The Contractor will be required to comply with all Federal, State and Municipal laws and regulations, including those related to discrimination, prevailing wage, safety, bid-rigging, human rights, preferential employment of Illinois labor and equal opportunity employment.

The **Champaign-Urbana Public Health District** reserves the right to reject any and all bids, to waive any formalities or inconsistencies in the bids, to reduce the scope of work to accommodate the project budget, to accept any proposals which it deems most favorable, or to continue the letting from time to time as deemed in the best interest of the Owner.

Bids may be held by the **Champaign-Urbana Public Health District** for a period not to exceed thirty (30) days from the date of the opening of bids for the purpose of reviewing the bids and investigating the qualifications of bidders, prior to awarding the contract.

DATED April 17, 2015.

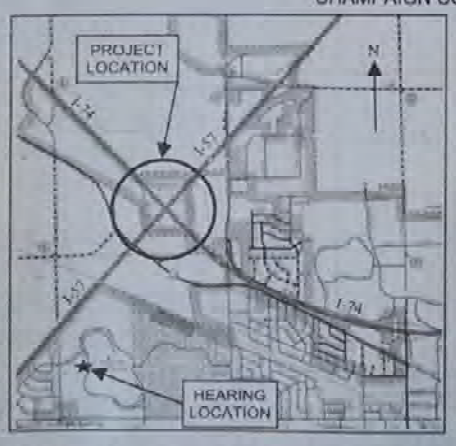
Julie Pryde

1271897 4/22,26

**Illinois Department of Transportation**

Fax: (217) 465-3101
TDD: (217) 463-2279
Media Contact: Craig A. Emberton
Phone: (217) 465-4181

**OPEN HOUSE PUBLIC HEARING**
FOR THE PROPOSED RECONSTRUCTION OF THE
INTERSTATE 57 / INTERSTATE 74 INTERCHANGE
CHAMPAIGN COUNTY




**DATE & LOCATION**
May 14, 2015 3:00 P.M. — 6:00 P.M.
**Parkland College — Building T**
**Applied Technology Center**
2400 West Bradley Avenue
Champaign, IL 61821
Park in Lot W-2

**PURPOSE OF MEETING**
- PRESENT SELECTED ALTERNATIVE
- RECEIVE PUBLIC INPUT
- ANSWER QUESTIONS

**CONTACT INFORMATION**
Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944
Phone: (217) 465-4181
Fax: (217) 465-3101
TDD: (217) 463-2279

All interested persons are invited to attend an open house public hearing for the proposed I-57/I-74 interchange reconstruction project at any time during the open house hours listed above. The hearing will be conducted on an open house basis with a formal session allowing the public to speak beginning at 5:00 PM. Information provided at the meeting will include the status of the project and exhibits depicting the proposed improvements. IDOT representatives will be available to receive input, provide information and answer questions. Persons interested in speaking during the formal session will be allowed five minutes each to speak publicly on the project. Each person in attendance will also have the opportunity to provide written or verbal statements during the meeting. Comment forms will be available for written statements and recording devices will be available to take verbal testimony.

An Environmental Assessment Report, which provides detail on the project's environmental impact, is available for public review at the IDOT District 5 Headquarters, 13473 IL Hwy 133, Paris, IL 61944, the Federal Highway Administration Illinois Division Office, 3250 Executive Park Drive, Springfield, IL 62703, and the IDOT website at http://www.dot.illinois.gov/transportation-system/environment/environmental-review-documents. Contact Craig A. Emberton at the address or phone number above for information on availability and to submit comments. The public review period ends May 18, 2015.

This project has the potential to impact a cultural resource protected by the National Historic Preservation Act, although it is anticipated that the resource can be avoided. It is anticipated that the proposed project will encroach into the 100-year floodplain, require re-alignment of Copper Slough, and impact wetlands not under the jurisdiction of Illinois Department of Natural Resources or the U.S. Army Corps of Engineers.

Based on preliminary design and feedback from residents adjacent to the project, noise barriers are likely to be implemented along the north and south sides of I-74 between Mattis Avenue and Prospect Avenue. The noise barriers will be designed after the public involvement process and project planning phase is complete.

This meeting is accessible to persons with a disability. Persons planning to attend who will need a sign language interpreter or other special accommodations should notify IDOT at least five days prior to the meeting. The contact may be by telephone, in writing, by fax or by telecommunications device for the deaf (TDD).

## Home & Garden 120

**Wheel Horse B-115 automatic 11HP mower , $450. 217-282-9224.**

Check out our award-winning sports coverage, every day in The News-Gazette.

## Public Notices 599

**PUBLIC HEARING ON THE BUDGET**

The Town of Cunningham will hold a public hearing on the budget at 7:00 pm on Monday, July 06, 2015 in the Urbana City Council Chambers, 400 S. Vine St., Urbana, IL, for comment from the public concerning the tentative annual budget for **Fiscal Year 2015-2016.** All interested citizens are encouraged to attend and to submit written or oral comments. The entire tentative budget and appropriation ordinance for **Fiscal Year 2015-2016** is available for public inspection from 8:00 am to 5:00 pm weekdays at the office of the Urbana City Clerk (whom is also the Town Clerk of Cunningham Township) at 400 S. Vine St., Urbana, IL 61801, and the City of Urbana website, www.urbanaillinois.us.

1274076 5/10

## Medical Supply 125

**2 Rollinators.** 1 assembled, 1 in the box. Retail $125. Asking $70 OBO. Has 5" wheels. Seat has basket underneath. 2 handlebars with breaks. 217-892-1616.

## Public Notices 599

## Medical Supply 125

**Electric Go Go Scooter** Used twice, $600. **$$SOLD!!**

**Accent offers** weekly coverage of entertainment news and employment opportunities. Pick up your FREE copy today!

**Electric Hospital bed,** Invacare 5000 IVC. $200 OBO **217-355-3412**

**New Electric Hospital Bed $1200. Wheelchair, $125 618-553-0428**

**Pronto M94** beriatric power wheelchair, 500 lb. Capacity $1100 OBO 217-344-1964

## Public Notices 599

## Miscellaneous Articles 126

**2 Birdeye** Maple dressers and bed frame **SOLD. Weslo** treadmill **SOLD Airdyne** exercise bike $200. 217-493-7395

**4 FOOT WHITE PINE TREES** Delivered/planted/mulched $69.50/N of I-80 $79.50 per tree. Buy 10/1 free. 4 foot Norway Spruce $84.50. Call for sizes, varieties,shades. **217-886-2316**

**Hand bags & purses** $4 each obo **Green glassware** $40 obo **Votives, Candle holders & vases** $.50 each **217-485-5104**

## Public Notices 599

## Miscellaneous Articles 126

**Hot Spot Rythym Hot Tub 5 person, like new. $5,495. (217) 497-3568.**

Jazzy Power chair 1120 $600 obo Everstar portable AC 115volt, 10,000 BTU $150. 217-664-3512

**Leonar Drafting Table, $$SOLD!!**

**NEW TODAY**

**Moving Sale:** Dehumidifier, solid wood furniture: LR/DR/BR, books & bookcases, toy chest, electronics, TV, med. supply, exc. bikes. Call 586-7773

## Public Notices 599

## Miscellaneous Articles 126

**NEED PRINTING?** Whether you need business cards, filers, bulletins, newsletters, programs, posters, raffle tickets, dinner tickets, resumes, cookbooks, pamphlets or whatever, we can provide the best quality color printing. Small or large quantities. Speedy service. Send us your pdf, quantity needed and we'll give you a quote. Contact Bob Shelton at bshelton@news-gazette.com

**Quality.** That's what it's all about in the commercial printing world. We can provide for your business or group the best quality at competitive prices. If we can't do it, we'll tell you so. Full color, single color or black and white copies available. Please contact your local News-Gazette Community Newspaper office in Rantoul at 217-892-9613 to learn more about how you can get great quality printing services.

**Check this OUT!**

**Quart Canning Jars,** $8 per dozen. 5' Ladder, $20. 8' Fiberglass ladder, $65. Wheel Barrel, $20.. Call 282-9541

**Salad Master Cook Ware $$SOLD!!**

## Musical Instruments 128

**Two full size keyboards.** 1 Suzuki, 1 Yamaha. $250 each. **217-446-8576**

## Office Equipment 129

2 Corner workstations w/ side table and hutch $850 each, for both $1600 1 Oak executive desk $350 **217-356-5179**

## Sporting Goods 134

**The News-Gazette, News you can use.**

**Browning 725 Sporting.** 20 ga., 28 in. barrels, 3 choke tubes, Boyt soft case. $2,500. 267-3476.

**CHARITY GUN RAFFLE & LUNCHEON**

Gun raffle and pork chop luncheon at Elks Lodge in Savoy on May 16th to benefit veterans. Go to www.cumarines.org, Facebook.com/cumarines, email hans971@comcast.net, or call Chris at 217-202-5114 for more information.

**EZ GO Remote Control Electric Golf Caddy Cart.** Dual motors, new battery. $325. SOLD

**Regulation Corn toss** choice of logo, hand painted, sports, school business. $150. 217-493-6866

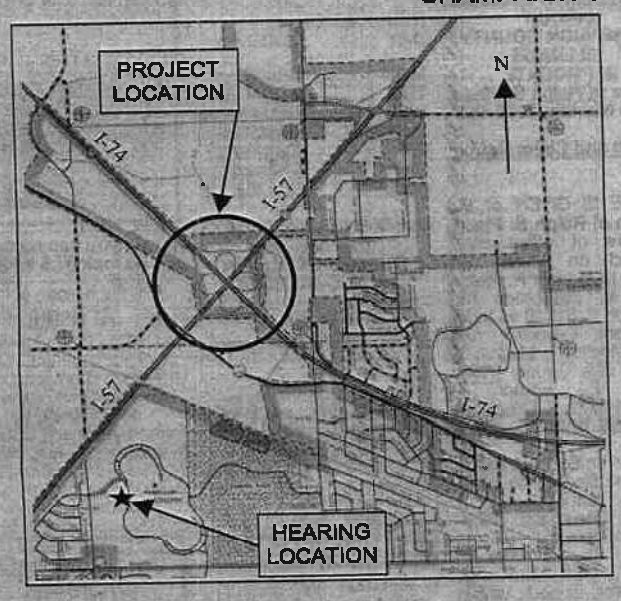
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**Illinois Department of Transportation**

Fax: (217) 465-3101
TDD: (217) 463-2279
Media Contact: Craig A. Emberton
Phone: (217) 465-4181

## OPEN HOUSE PUBLIC HEARING

FOR THE PROPOSED RECONSTRUCTION OF THE INTERSTATE 57 / INTERSTATE 74 INTERCHANGE CHAMPAIGN COUNTY




**DATE & LOCATION**

May 14, 2015 3:00 P.M. — 6:00 P.M.
**Parkland College — Building T**
**Applied Technology Center**
2400 West Bradley Avenue
Champaign, IL 61821
Park in Lot W-2

**PURPOSE OF MEETING**

- PRESENT SELECTED ALTERNATIVE
- RECEIVE PUBLIC INPUT
- ANSWER QUESTIONS

**CONTACT INFORMATION**

Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944
Phone: (217) 465-4181
Fax: (217) 465-3101
TDD: (217) 463-2279

All interested persons are invited to attend an open house public hearing for the proposed I-57/I-74 interchange reconstruction project at any time during the open house hours listed above. The hearing will be conducted on an open house basis with a formal session allowing the public to speak beginning at 5:00 PM. Information provided at the meeting will include the status of the project and exhibits depicting the proposed improvements. IDOT representatives will be available to receive input, provide information and answer questions. Persons interested in speaking during the formal session will be allowed five minutes each to speak publicly on the project. Each person in attendance will also have the opportunity to provide written or verbal statements during the meeting. Comment forms will be available for written statements and recording devices will be available to take verbal testimony.

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Based on preliminary design and feedback from residents adjacent to the project, noise barriers are likely to be implemented along the north and south sides of I-74 between Mattis Avenue and Prospect Avenue. The noise barriers will be designed after the public involvement process and project planning phase is complete.

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1272364

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## NW Champaign Zone 1 301

## GE SALE SPECIALS

**Prepaid GS kit incl:**

- 2 large yellow signs
- Garage sale checklist
- Canvas money apron
- Coupon for $1 off your next classified ad
- Colorful price stickers
- Handy sales log
- Marking pen and pencil
- Bunch of balloons to draw attention to your sale

**Garage Sale ad must cost $32 or more to qualify for free garage sale kit*

***If your garage sale is cancelled due to rain, we will run your ad 1 day free of charge. This must be used within 30 days of the rain date.***

**The News-Gazette**

**Phone Hours:**
Monday - Friday 5a-5p
Saturday - Sunday 5a-10a

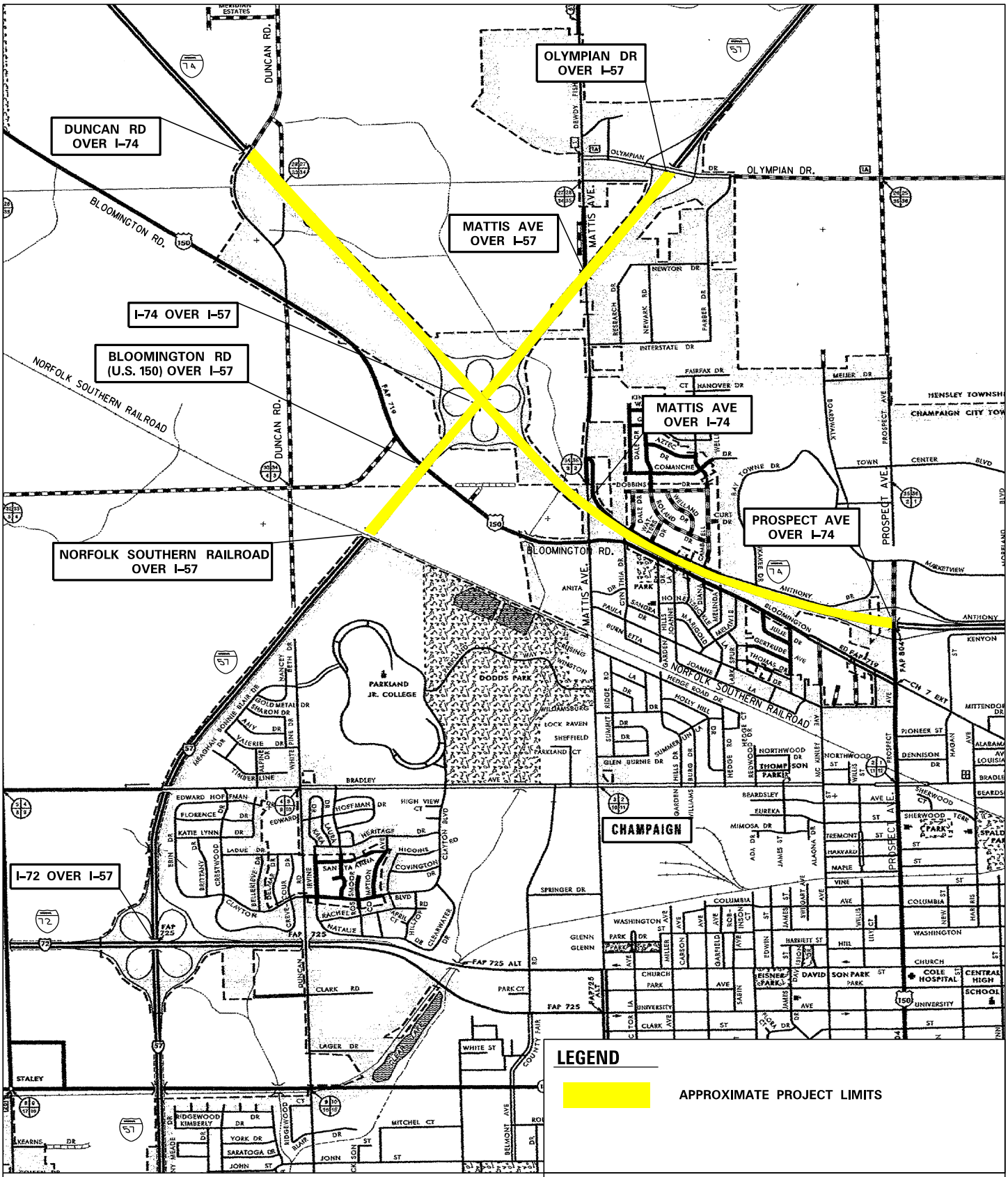
**Office Hours:**

## Purpose of the Proposed Action

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the Interstate 57 (I-57) and Interstate 74 (I-74) interchange by eliminating deficient geometric features and reducing points of access in order to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps.

## Need for the Proposed Action

The need for the proposed improvement is to address operational, geometric, safety, and capacity deficiencies.

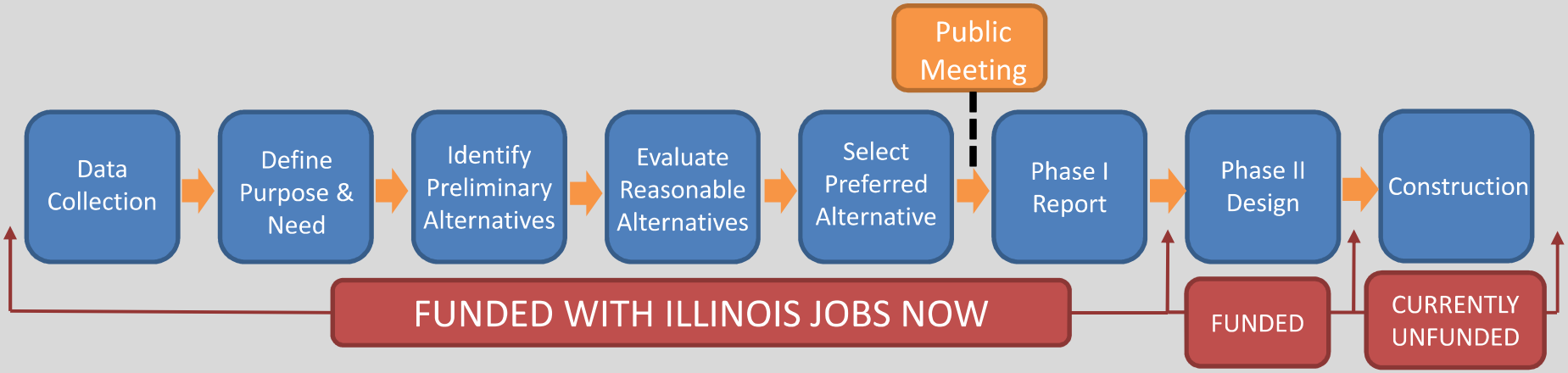



# SITE MAP

**I–57 & I–74 INTERCHANGE**
**IDOT – DISTRICT 5**
**CHAMPAIGN COUNTY**
**CHAMPAIGN, IL**

**EXHIBIT 1**

# Project Schedule






BFW CMT

INTERCHANGE TYPE STUDY

EXISTING INTERCHANGE LOCATION MAP




## WATER BODIES

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| POND #1 | 1.47 |
| POND #2 | 0.00 |
| SITE ID # | LENGTH |
| COPPER SLOUGH | 2520' |

## WETLANDS

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| 2 | 0.005 |
| 4 | 0.19 |
| 9 | 2.36 |
| 10 | 0.36 |
| 11 | 0.40 |
| 12 | 0.04 |
| 13 | 0.09 |
| 14 | 0.17 |
| 15 | 0.08 |
| Total | 3.695 |

Notes:
1. Site number based on INHS Delineation Report
2. These areas are estimated based on preliminary grading and right-of-way limits. Areas are subject to change during development of interchange geometry.
3. This project has the potential to impact a cultural resource protected by the National Historic Preservation Act.
4. REC = Reogn zed Environmental Condition

BFW | CMT | ENVIRONMENTAL FEATURES


W. OLYMPIAN DR.
I-57
MATTIS AVE
N. PROSPECT AVE.
W. ANTHONY DR.
I-74
I-74
MIDWEST CT.
CLEARLAKE BOULEVARD
W. BLOOMINGTON RD.
I-57
NORFOLK SOUTHERN R.R.
CARDINAL RD
N
400' 0 400' 800'
SCALE: 1" = 400'
BFW
CMT
PROPOSED
INTERCHANGE
BDE-9908

OLYMPIAN DRIVE

OLYMPIAN RAMP C

OLYMPIAN RAMP B

INTERSTATE 57

DUNCAN ROAD

INTERSTATE 74

N. MATTIS AVE

RAMP H

RAMP D

RAMP G

RAMP F

U.S. 150 (BLOOMINGTON ROAD)

MIDWEST CT.

RAMP B

RAMP E

RAMP C

RAMP A

PROSPECT AVE

PROSPECT RAMP A

W. ANTHONY DRIVE

INTERSTATE 74

PROSPECT RAMP C

U.S. 150 (BLOOMINGTON ROAD)

N. MATTIS AVE.

NORFOLK SOUTHERN RAILROAD

INTERSTATE 57

N

500' 0 500' 1000'

SCALE: 1" = 500'

LOCATION MAP



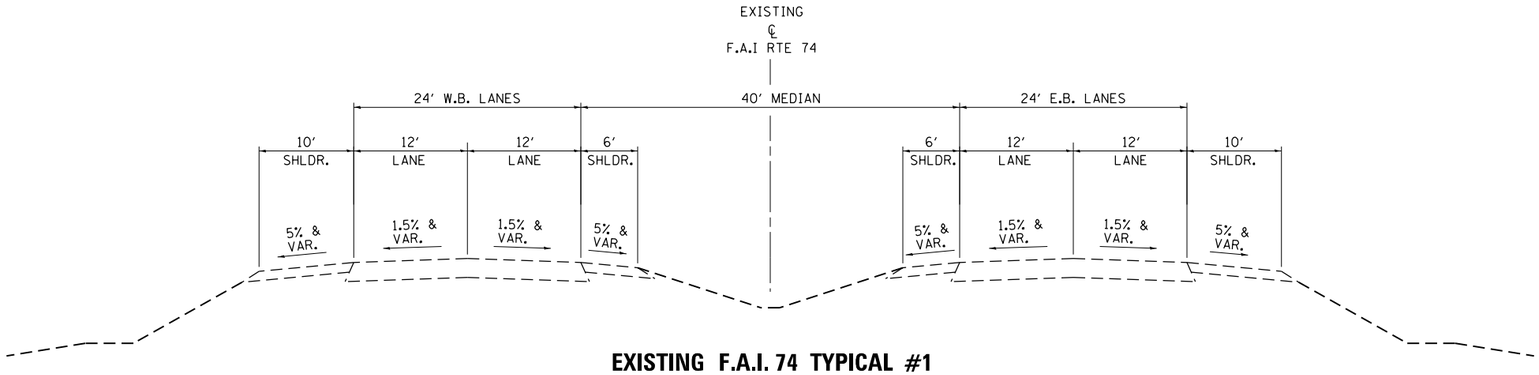

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| | PLOT DATE = 5/7/2015 - 11:38:07 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**PROPOSED INTERCHANGE LAYOUT**

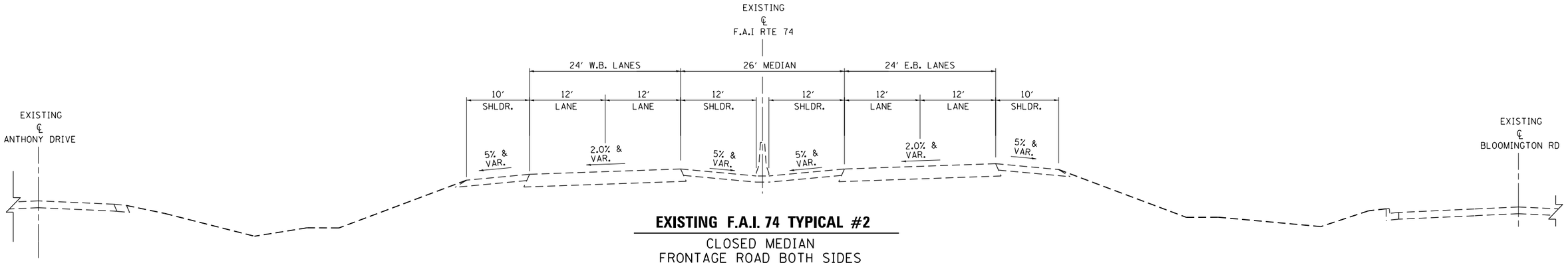
SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




## EXISTING F.A.I. 74 TYPICAL #1

OPEN MEDIAN
(LOOKING EAST)
STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1117+00




## EXISTING F.A.I. 74 TYPICAL #2

CLOSED MEDIAN
FRONTAGE ROAD BOTH SIDES
(LOOKING EAST)
STA. 1117+00 TO STA. 1143+00

# EXHIBIT 5

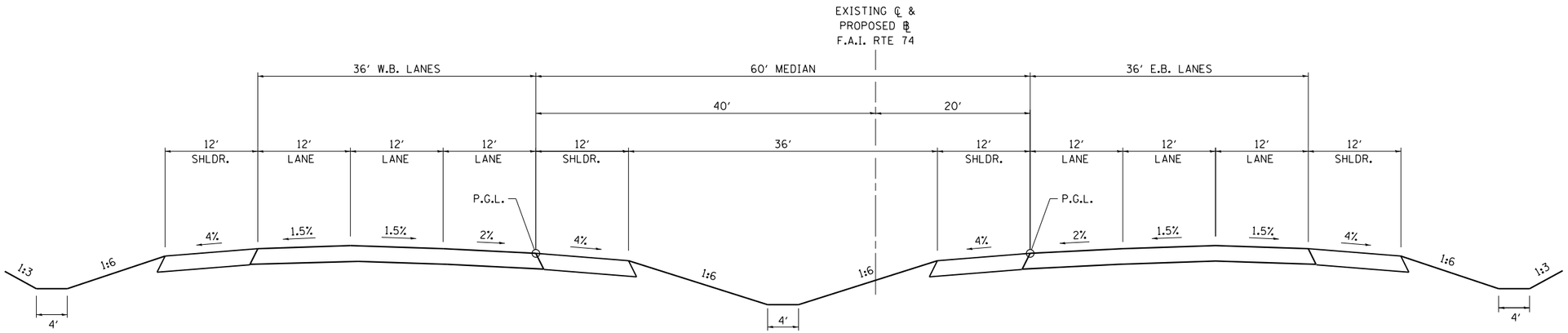
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = 4/22/2015 - 8:45:54 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**I-74**

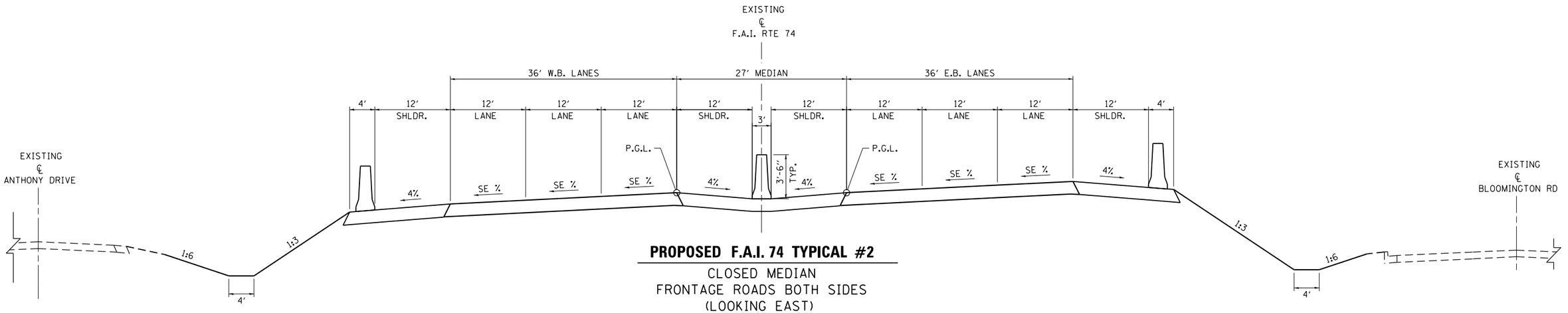
SHEET 1 OF 3 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




## PROPOSED F.A.I. 74 TYPICAL #1

OPEN MEDIAN
(LOOKING EAST)
STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1083+00




## PROPOSED F.A.I. 74 TYPICAL #2

CLOSED MEDIAN
FRONTAGE ROADS BOTH SIDES
(LOOKING EAST)
STA. 1083+00 TO STA. 1143+00

# EXHIBIT 5

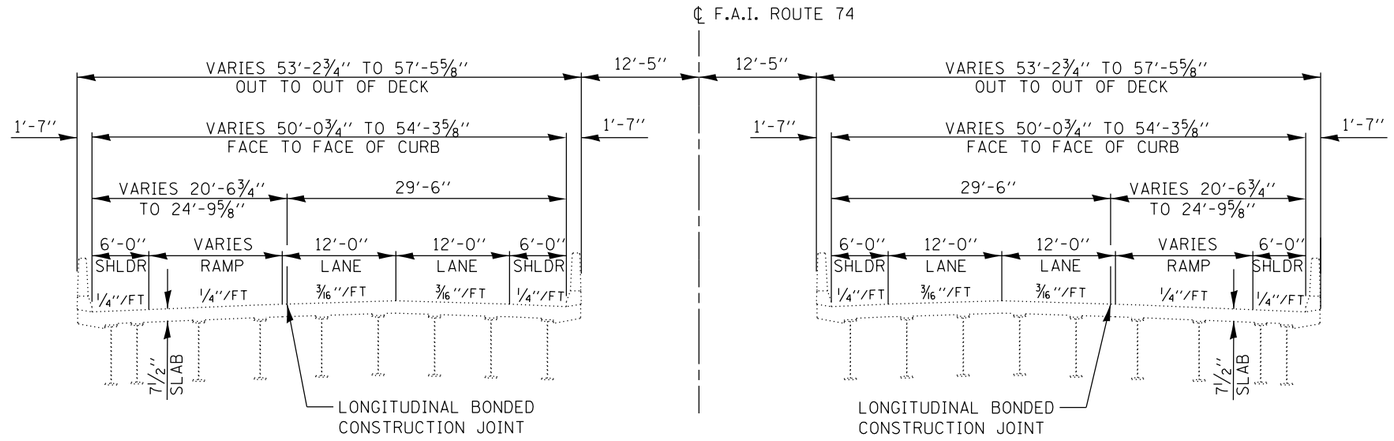
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = 4/22/2015 - 8:45:55 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**I–74**

SHEET 2 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

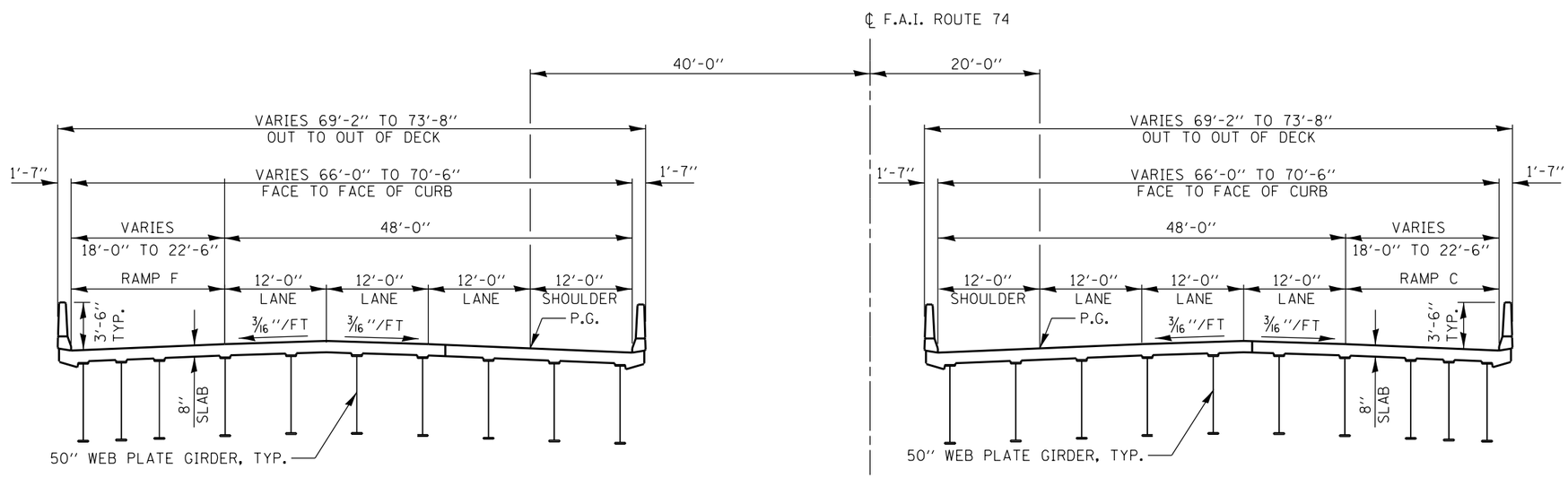



**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## EXISTING TYPICAL SECTION

BRIDGE
(LOOKING EAST)




**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## PROPOSED TYPICAL SECTION

BRIDGE
(LOOKING EAST)

**EXHIBIT 5**

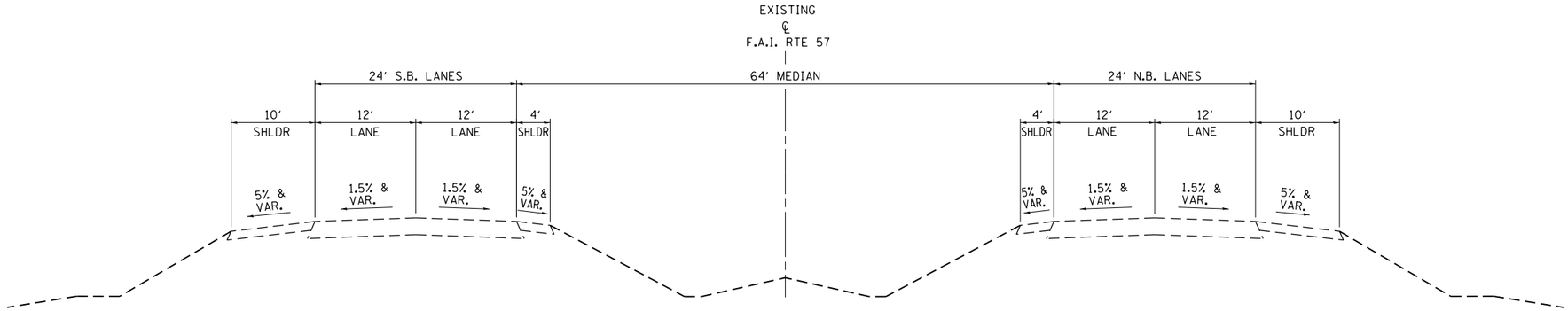
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = 4/22/2015 - 8:45:55 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**I–74**

SHEET 3 OF 3 SHEETS STA. TO STA.

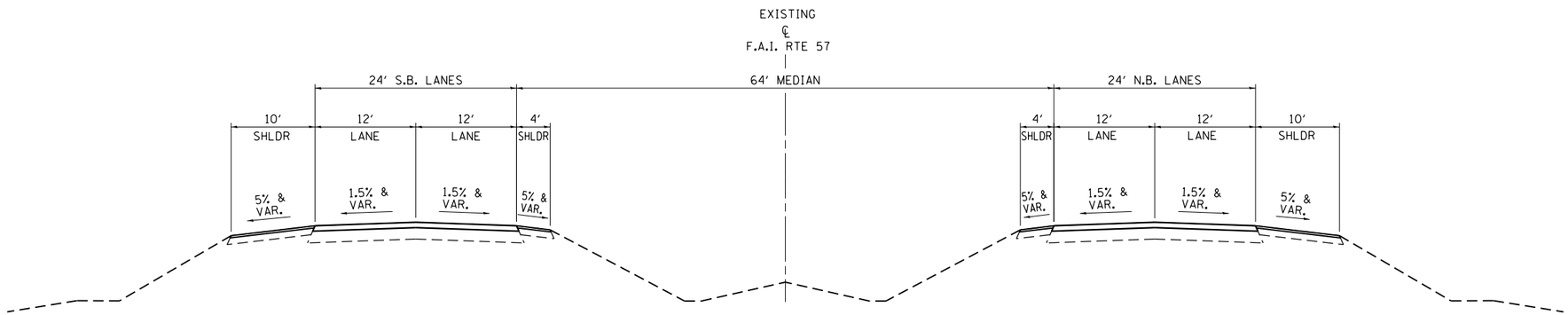
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS | FED. AID PROJECT | | |




**EXISTING F.A.I 57**

(LOOKING NORTH)

STA. 545+00 TO STA. 648+00




**PROPOSED F.A.I 57 TYPICAL #1**

MILL & OVERLAY

(LOOKING NORTH)

STA. 545+00 TO STA. 560+00

**EXHIBIT 6**

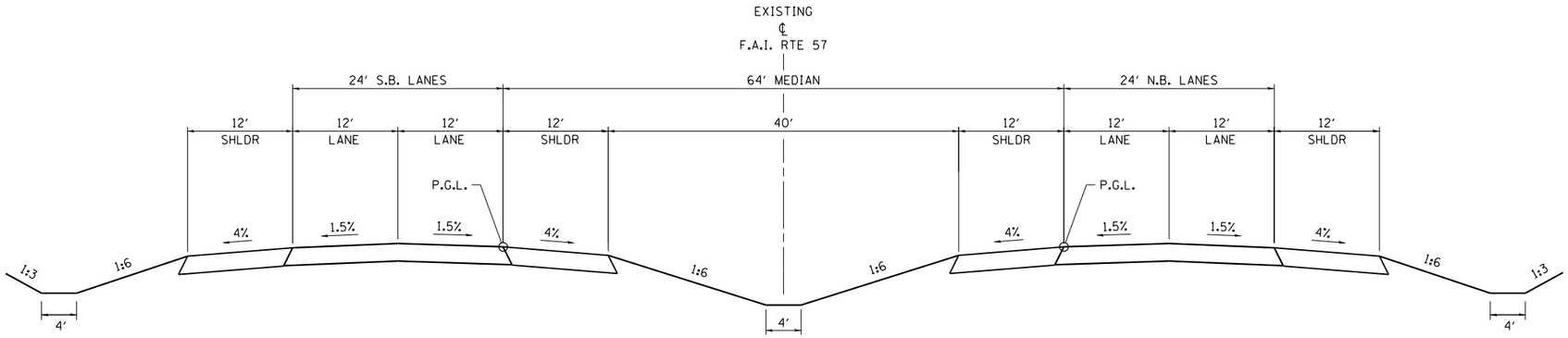
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**I-57**

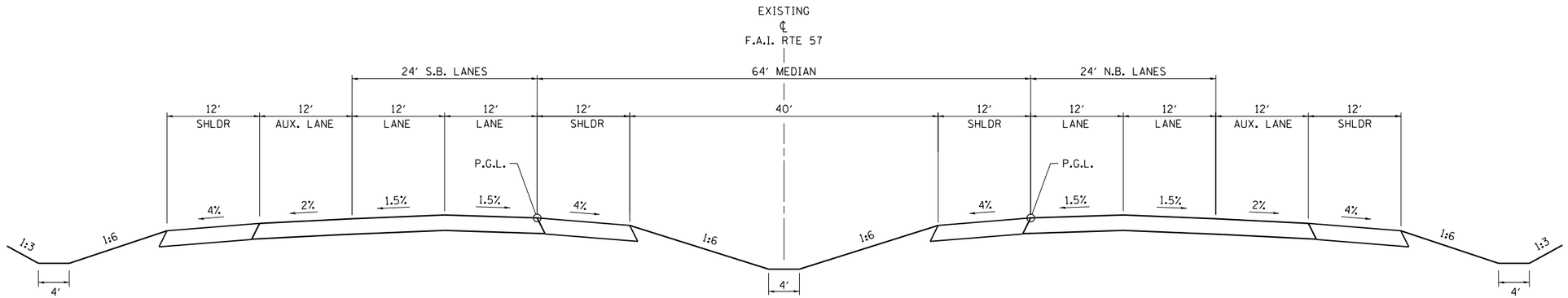
SHEET 1 OF 2 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**PROPOSED F.A.I 57 TYPICAL #2**

TWO LANES
(LOOKING NORTH)
STA. 560+00 TO STA. 615+00

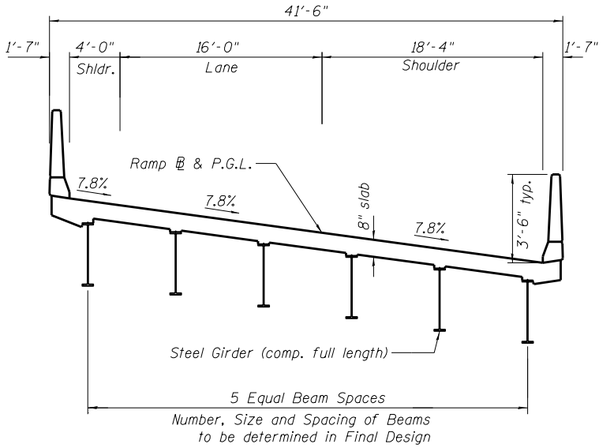



**PROPOSED F.A.I 57 TYPICAL #3**

THREE LANES
(LOOKING NORTH)
STA. 615+00 TO STA. 648+00

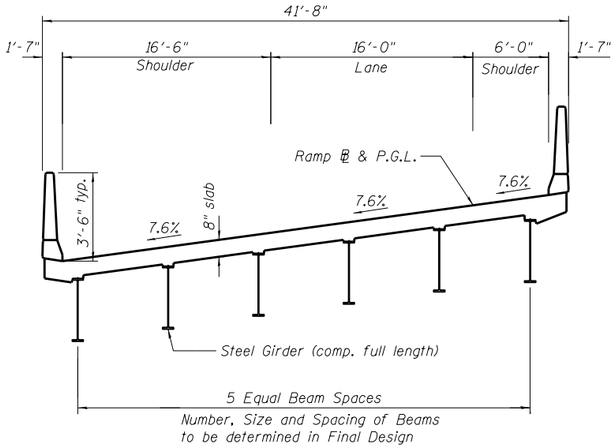
**EXHIBIT 6**

| | | | | | | | | | |
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| | PLOT SCALE = 16.0000 ' / in. | CHECKED - | REVISED - | | | | | CONTRACT NO. 70897 | | |
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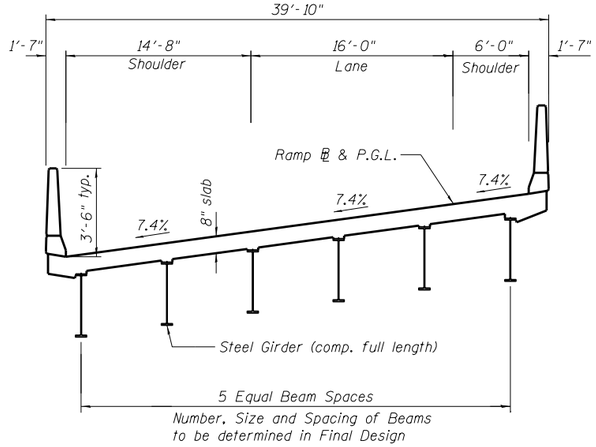

## PROPOSED RAMP B BRIDGE (1160' RADIUS)

(Looking Upstation)



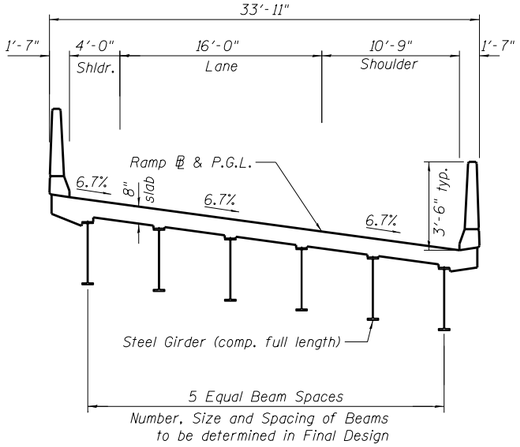

## PROPOSED RAMP E BRIDGE (1250' RADIUS)

(Looking Upstation)




## PROPOSED RAMP D BRIDGE (1350' RADIUS)

(Looking Upstation)




## PROPOSED RAMP G BRIDGE (1635' RADIUS)

(Looking Upstation)

# EXHIBIT 7

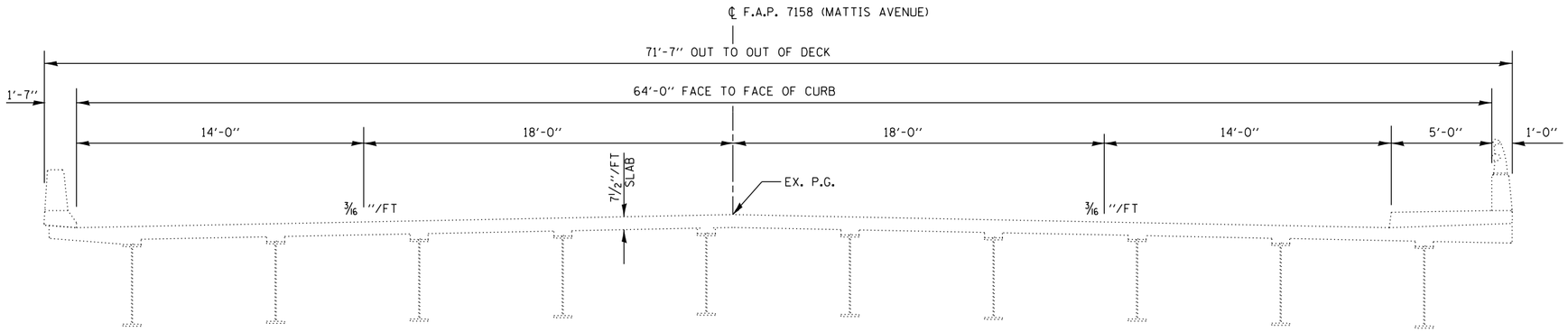
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**RAMP STRUCTURES**

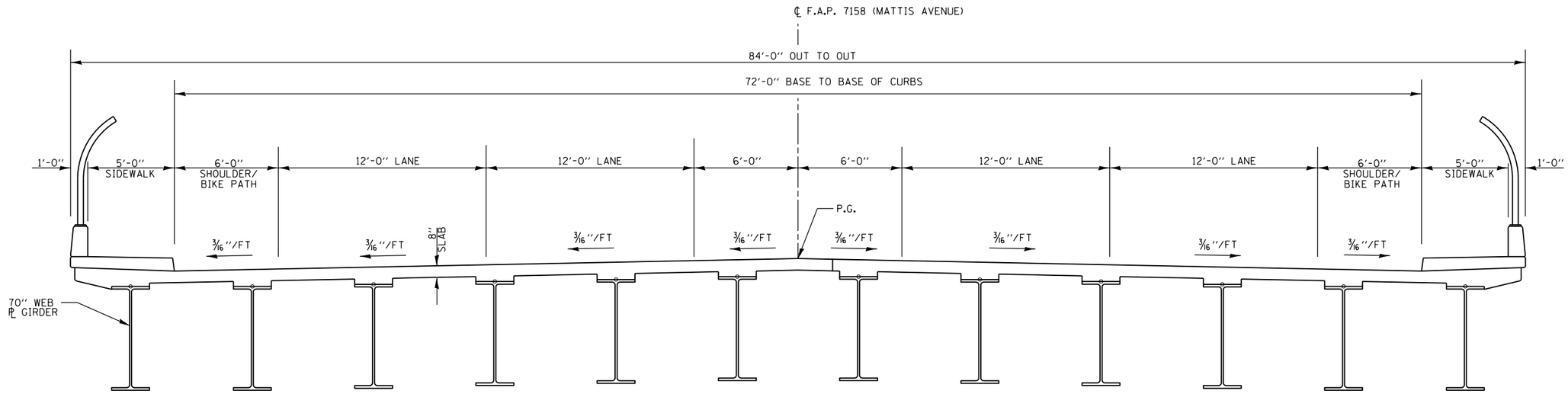
SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




## EXISTING TYPICAL SECTION

(LOOKING NORTH)
SCALE: NTS




## PROPOSED TYPICAL SECTION

(LOOKING NORTH)
SCALE: NTS

# EXHIBIT 8

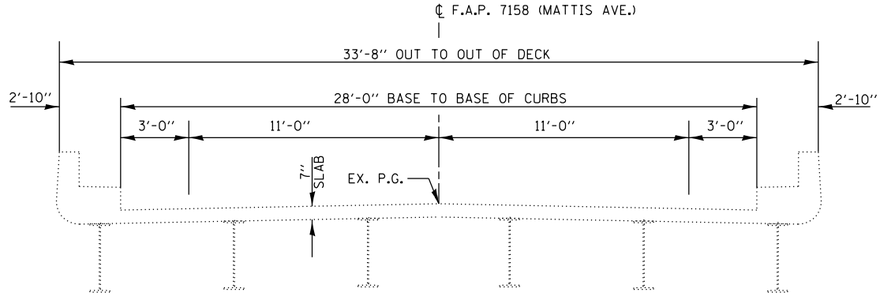
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| | PLOT DATE = 4/22/2015 - 8:43:49 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**NORTH MATTIS AVENUE OVER I-74**

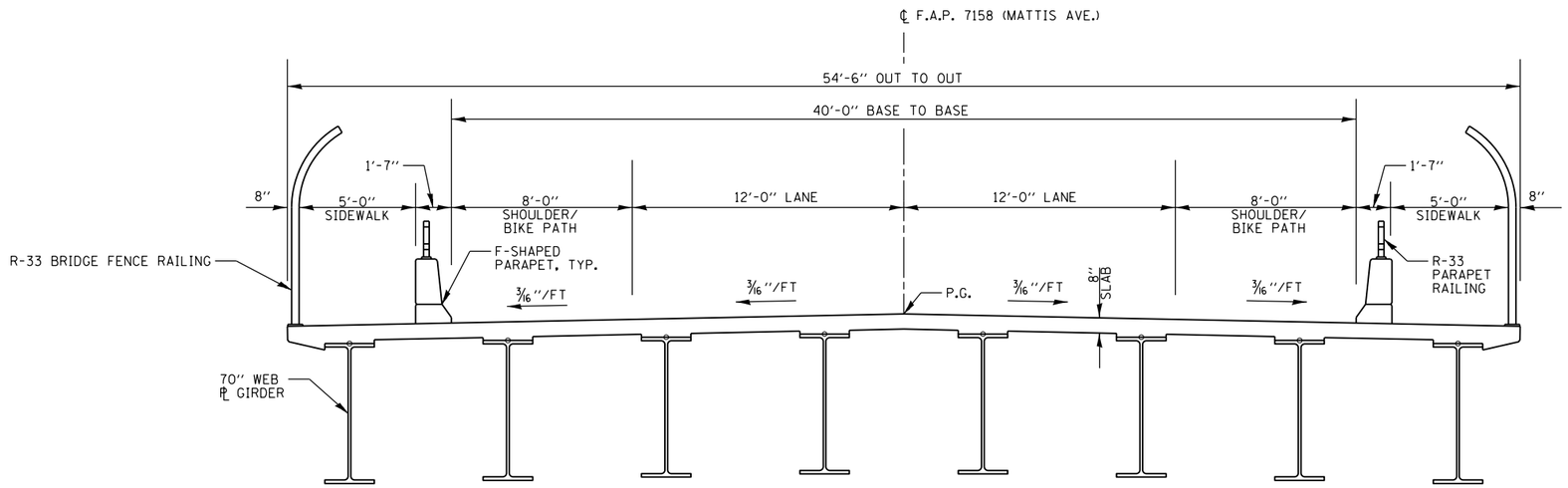
SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




## EXISTING TYPICAL SECTION

(LOOKING NORTH)
SCALE: NTS




## PROPOSED TYPICAL SECTION

(LOOKING NORTH)
SCALE: NTS

# EXHIBIT 9

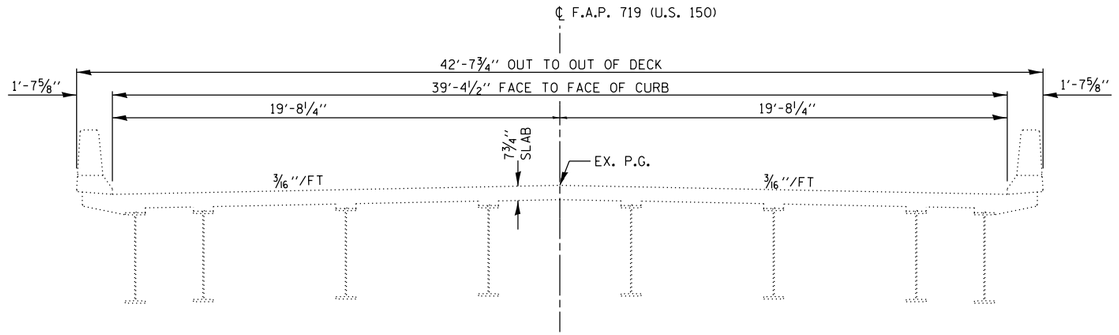
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = 4/22/2015 - 8:43:49 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**NORTH MATTIS AVENUE OVER I-57**

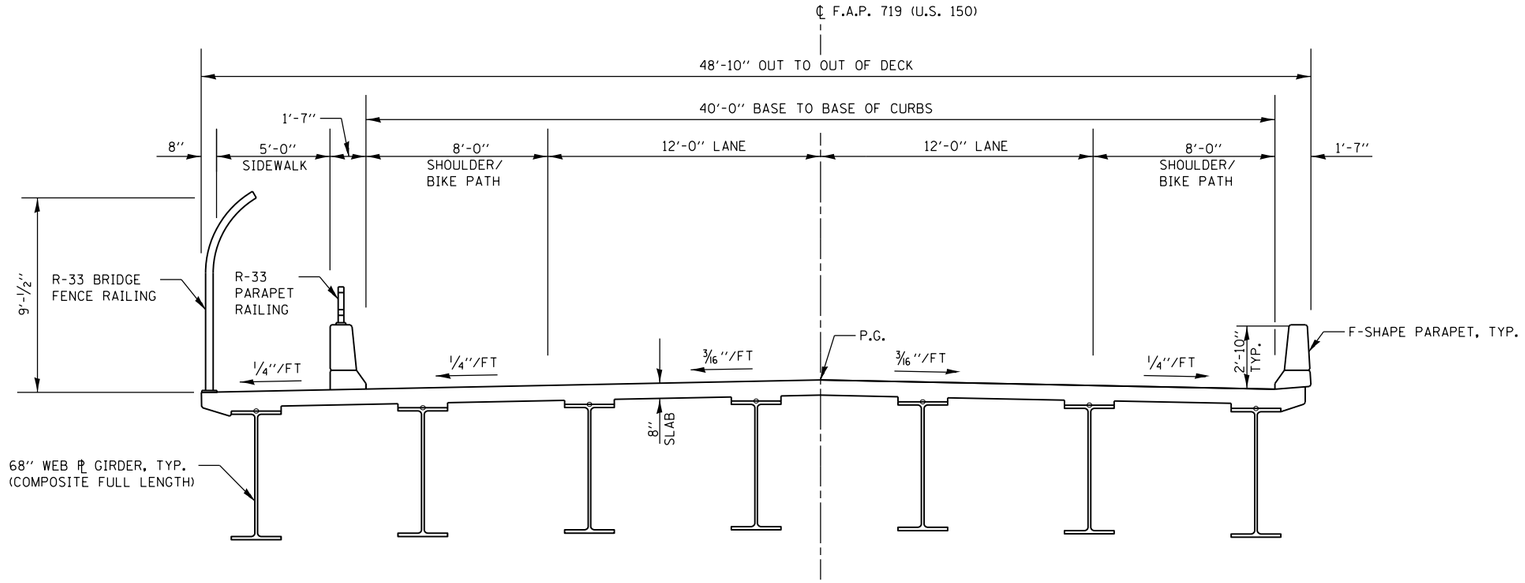
SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**EXISTING TYPICAL SECTION**

(LOOKING EAST)
SCALE: NTS




**PROPOSED TYPICAL SECTION**

(LOOKING EAST)
SCALE: NTS

# EXHIBIT 10

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FILE NAME = L:\IDOT\1106602\Draw\CADD_Sheets\TMP\.. Default | USER NAME = Brad Downen | DESIGNED - | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | TYPICAL SECTIONS U.S. 150 (W. BLOOMINGTON ROAD) OVER I-57 | F.A. RTE. | SECTION: 10(5-1-RS-1, 14-1, 6)R |
| | | DRAWN - | REVISED - | | | | COUNTY: CHAMPAIGN |
| | PLOT SCALE = 20.0000 '/ in. | CHECKED - | REVISED - | | | | TOTAL SHEETS: |
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| | | | | | | | ILLINOIS FED. AID PROJECT |




**EXHIBIT 1**
**I-57 / I-74 Interchange Improvements**
**Potential Noise Wall Locations**

## LEGEND

**NOISE WALL - NORTH**

- 10 foot section
- 12 foot section
- 3.5 foot section

**NOISE WALL - SOUTH**

- 12 foot section
- Project Alignment

N

0 250 500 Feet

**EXHIBIT 2**
**I-57 / I-74 Interchange Improvements**
**Potential Noise Wall Locations**

# Public Hearing

**DATE:** May 14, 2015, 3:00 P.M. – 6:00 P.M.

**PROJECT:** Phase I
FAI 57 (I-57) and FAI 74 (I-74)
Interchange Reconstruction

**LOCATION:** Parkland College – Building T, Champaign, IL

**ATTENDANCE:** See attached sign-in sheet

The public hearing for the I-57 & I-74 Interchange Reconstruction was held May 14, 2015 at Parkland College – Building T in Champaign, IL. The meeting was an open house format with voice recording capabilities and a formal session offered at 5:00 PM to allow public speaking. IDOT staff members and the consultant team of BFW and CMT were present at the meeting and available for discussion.

At this meeting, the overall project study area, general project information, and proposed improvement exhibits were displayed for public viewing through an open house format, with exhibit boards set up throughout the meeting room. Exhibits included a site map, existing aerial image map, proposed aerial image map, existing and proposed renderings, noise wall exhibits, project purpose and need statements, environmental features, typical sections, the approved Interchange Design Study, the signed draft Environmental Assessment, and the Access Justification report (with conceptual approval). A handout with a project summary sheet and exhibit displaying the proposed interchange configuration were provided to attendees. A station was setup in the back of the room to allow for verbal statements to be recorded. A formal session was scheduled for 5:00 PM with sign-up forms available at the room entrance. No attendees provided verbal statements or signed up to address to the public.

Public input was encouraged and comment forms were available for all attendees. The public comment period extended to June 5, 2015. No comment forms have been received to date.

The general consensus of the attendees at the meeting was that this interchange reconstruction project is necessary. The land owner in the southeast quadrant of the interchange was pleased with the selection of the proposed alternate, since it required less land acquisition and minimized impacts to his property than the other alternates presented at the previous public meetings.

# Appendix B3
# Stakeholder Meetings

**I-57 & I-74 Interchange**

**Champaign, Champaign County, Illinois**

**August 20, 2013**

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PRESENTATION NOTES

A meeting was conducted on August 20th, 2013 to review the current project underway to consider proposed interchange reconstruction alternatives for the I-57 and I-74 interchange in Champaign, IL. Attached is the list of attendees, the presentation outline, and the presentation Power Point slides.

A question and answer session was held following the presentation and the following is a list of the items of most concern to the meeting participants:

- It was acknowledged that the existing I-57 & I-74 interchange is in need of improvement and reconstruction to alleviate safety concerns
- The four alternatives currently being considered have been identified through a selection process with IDOT and will be presented to FWHA for comment and further consideration in the interchange type studies
- There is potential for development in all four quadrants
- A school is being considered in the northeast quadrant
- Minimizing impacts to adjacent properties is preferred
- Any site plans or potential areas to be developed should be coordinated with IDOT to consider any possible adjustments to the interchange alternative geometry
- A public meeting will be held as part of the planning process for the interchange and all participants of this meeting will be invited to attend

I-57 & I-74 Interchange Reconstruction

Champaign, Champaign County, Illinois

August 20, 2013

SIGN-IN SHEET

| Name | Organization | Email | Address | Phone |
|---|---|---|---|---|
| AL Kurtz | Champaign County Bd Chair | AKurtz@co.champaign.il.us | | 217 356 0011 |
| David Marxmiller | Teamsters Local 26 | Dmarxmiller@teamsters26.org | 908 N. Neil St Champ | 217.352.2236 |
| Brad Downen | Crawford, Murphy & Tilly | bdownen@cmtengr.com | 2750 W. Washington St. Spfld | 217-787-8050 |
| Kevin Crider | BFW Engineering | kcrider@bfwengineers.net | 500 South 17th St. Paducah | 270-443-1995 |
| Mark Workman | " | mworkman@bfwengineers.net | " | " |
| Bruce Knight | City of Champaign | bruce.knight@ci.champaign.il.us | 102 N. Neil St. Champ 61820 | 217.403.8800 |
| Jason Stults | IDOT D5 | jason.stults@illinois.gov | 13473 IL Hwy 133 Paris, IL | 217.466.7364 |
| Scott Neihart | IDOT D5 | Scott.Neihart@illinois.gov | " " " | 217-466-7516 |
| Dan McCall | East Central IL B.T. | bac8il@egix.net | P.O. Box 6569 Champaign IL | 217-356-0419 |
| Mark Dixon | The Atkins Group | mark@atkinsgroup.com | 2805 S. Boulder, Urbana IL | 217-693-5616 |
| Rusty Davenport | Laborers Local 703 | rusty703@att.net | 108 E Anthony Dr Urbana IL | (217) 367-0703 |
| Chris Butler | OPCMIA #143 | LOCAL143OFFICE@OPCMIA143.ORG | 3301 N BOARDWALK CHAMPAIGN, IL | (217) 356-9313 |
| Blake Emery | BFW Engineering | bemery@bfwengineers.com | 403 N. Court St. Marion, IL 62959 | (618) 993-6700 |

**I-57 & I-74 Interchange Reconstruction**
**Champaign, Champaign County, Illinois**
**August 20, 2013**

**SIGN-IN SHEET**

| Name | Organization | Email | Address | Phone |
|---|---|---|---|---|
| Chapin Rose | State Sen.- | LSCchapinrose.net | | 607-1853 |
| CRAIG EMBERTON | IDOT. D-5 | | | |
| David Speicher | IDOT D5 | david.speicher@illinois.gov | DAVIS | 217/466-7234 |
| Matt Foster | Unit 4 Schools | fosterma@champaignschools.org | | 351/3825 |
| Kevin Sage | UA Plumbers & Pipefitters Local 149 | ksage@ualocal149.com | | 359-5201 |
| Joe Crowe | IDOT | joseph.crowe@illinois.gov | | 309-671-3333 |
| Rustin Keys | IDOT | rustin.keys@illinois.gov | | 217-466-7225 |
| Stan Hansen | Crawford, Murphy & Tilly | SHANSEN@CMTENGR.COM | 2750 W. Washington, SPFLD, IL | 217-787-8050 |
| Dave Clark | City of Champaign | DAVE.CLARK@CI.CHAMPAIGN.IL.US | 702 Edgebrook Dr, Champaign, IL | 217-403-4710 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**I-57 & I-74 Interchange**

**Champaign, Champaign County, Illinois**

**August 20, 2013**

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PRESENTATION OUTLINE

I. Introduction
   a. Agenda
   b. Existing Facility
   c. Project Description

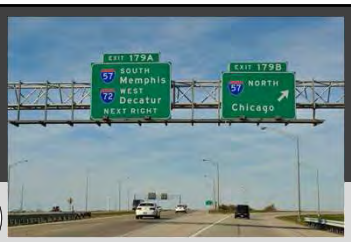
II. Purpose and Need
   a. Operational and Geometric Deficiencies
   b. Safety Deficiencies
   c. Capacity Deficiencies

III. Roadway Improvements
   a. Interstate 57
   b. Interstate 74
   c. North Mattis Avenue
   d. Bloomington Road

IV. Interchange Type Alternatives
   a. Alternate 1: Full Directional
   b. Alternate 2: Semi Directional with Directional Flyovers and Two Loops
   c. Alternate 3: Semi Directional with Semi Directional Flyovers and Two Loops
   d. Alternate 4: Semi Directional with No Loops

V. Adjacent Properties
   a. Existing Features and Land Use
   b. Future Development
   c. Right-of-Way Identification

VI. Questions & Open Discussion




# I-57 and I-74 Interchange Reconstruction

**Champaign, Champaign County, Illinois**

**August 20, 2013**

BFW | Illinois Department of Transportation | CMT

## Introduction

**I-57 and I-74 Interchange Reconstruction**

Agenda:

- Existing Facility
- Project Description
- Purpose and Need
- Roadway Improvements
- Interchange Type Alternatives
- Adjacent Properties
- Questions and Open Discussion

## Existing Facility

- Existing Full Cloverleaf Type Interchange
- Project Limits
  - North: Olympian Drive
  - East: Prospect Avenue
  - South: Norfolk Southern Railroad
  - West: Duncan Road



## Project Description

- Proposed improvements being considered:
  - New interchange type
  - Adding lanes for I-57 and I-74
  - Ramp and access improvements
  - Reconstruction of cross roadways and structures
- Phase I: Preliminary Engineering
  - Interchange Type Study
  - Access Justification Report
  - Location Drainage Studies
  - Environmental Analysis
  - Interchange Design Study
  - Public Involvement Activities
  - Combined Design Report

## Purpose and Need

**Purpose of the Proposed Action**

The purpose of the proposed interchange reconstruction improvement is to provide safer transportation between Interstate 57 and Interstate 74, improve travel efficiency, and increase the traffic capacity of the interstates.

**Need for the Proposed Action**

The need for the proposed improvement is to address operational, safety, and capacity deficiencies.

## Need:

**Operational and Geometric Deficiencies**

- Deficient ramp speeds
- Deficient weave distances
- Existing warning signs and driver confusion

## Need:

### Safety Deficiencies

- 2006-2010 Crash Data:
  - 335 Total crashes
  - 2 Fatalities
  - 22 incapacitating injuries
- 5% Segment along I-74
  - 39 Total crashes
  - 1 Fatality
  - 4 incapacitating injuries
- Majority of Crash Types:
  - Fixed object
  - Overturned
  - Rear end
  - Sideswipe

## Need:

### Capacity Deficiencies

- Design year 2040 Forecast Traffic Volumes
- "No-Build" analysis of existing cloverleaf interchange results in:
  - Deficient Levels of Service
  - Deficient speed differentials
  - Deficient ramp capacities

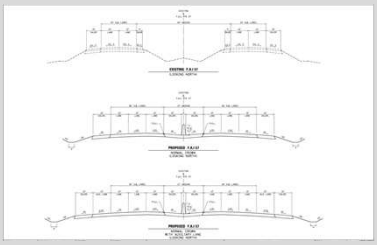
## Roadway Improvements

- Design Year 2040
- 2040 Traffic Volume Projections
- Average Daily Traffic
  - Interstate 57: 49,900 vehicles
  - Interstate 74: 59,900 vehicles
  - North Mattis Avenue: 18,700 vehicles
  - Bloomington Road: 12,100 vehicles

## Interstate 57

**Existing**
- Four lane facility with two lanes in each direction
- Open grass median

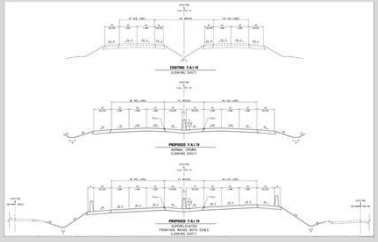
**Proposed**
- Six lane facility with three lanes in each direction plus auxiliary lane from I-57 to Olympian Drive
- Closed median with concrete barrier wall



## Interstate 74

**Existing**
- Four lane facility with two lanes in each direction
- Open grass median

**Proposed**
- Six lane facility with three lanes in each direction
- Closed median with concrete barrier wall

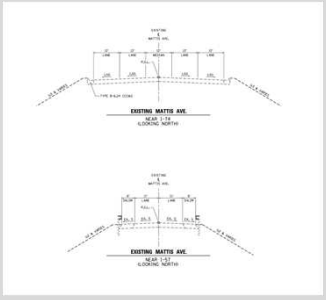


## North Mattis Avenue

**Existing Near I-74**
- Five lane facility with two lanes in each direction
- Flush striped median
- Curb and gutter along outside edges

**Existing Near I-57**
- Two lane facility with one lane in each direction
- Paved shoulders

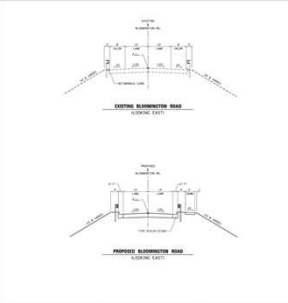
**Proposed**
- Coordination to be completed with the City of Champaign



## Bloomington Road

**Existing**
- Two lane facility with one lane in each direction
- Paved shoulders with curbing

**Proposed**
- Two lane facility with one lane in each direction
- Curb and gutter along outside edges
- Bike and pedestrian accommodations to be coordinated with the City of Champaign



## Interchange Type Alternatives

Process for developing alternatives:
- Conventional interchange types and variations
- Provide policy geometrics
- Increased design speeds on ramps
- Identification of constraints

## Alternate 1

**Full Directional**

- Minimizes access points off interstates
- Eliminates mainline weave and all loops
- Increased design speed on all ramps (50 mph)
- Minimizes right-of-way acquisition in all quadrants




## Alternate 2

**Semi Directional with Directional Flyovers and Two Loops**

- Reduces access points off Interstates
- Eliminates mainline weave
- Increased design speed on all ramps (40 mph loops, 50 mph all others)




## Alternate 3

**Semi Directional with Semi Directional Flyovers and Two Loops**

- Reduces access points off Interstates
- Eliminates mainline weave
- Increased design speed on all ramps (40 mph loops, 50 mph all others)




## Alternate 4

**Semi Directional with No Loops**

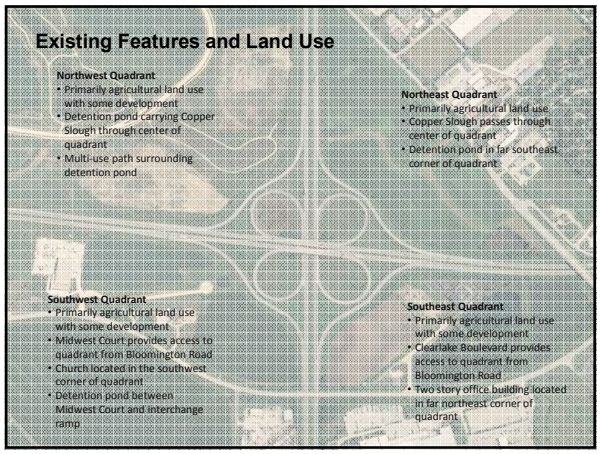
- Minimizes access points off Interstates
- Eliminates mainline weave and all loops
- Increased design speed on all ramps (50 mph)



## Adjacent Properties

- Existing features and land use
- Future development
- Right-of-way identification

## Existing Features and Land Use




## Future Development

- Site plans being considered
- Expansions of existing development
- Planned infrastructure in surrounding area

## Right-of-Way Identification

Areas to be identified during development of interchange types:

- New interchange
- Cross roads
- Drainage
- Access

## Questions and Open Discussion

**Elected Public Officials Meeting**

**I-57 & I-74 Interchange**

**Champaign, Champaign County, Illinois**

**January 21, 2014**

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PRESENTATION NOTES

A meeting was conducted on January 21, 2014 to review the current project underway to consider proposed interchange reconstruction alternatives for the I-57 and I-74 interchange in Champaign, IL. Attached is the list of attendees, the presentation outline, the presentation Power Point slides, and a copy of the handout given to each attendee.

A question and answer session was held following the presentation and the following is a list of the items of most concern to the meeting participants:

- Minimizing impacts to adjacent properties is preferred
- One of the property owners off of Midwest Court in the southwest quadrant (Midwest Underground Technology Inc.) is planning to expand to the east
- Any additional potential future development could be coordinated with IDOT to consider any possible adjustments to the interchange alternative geometry
- Funding for the project would be 90% federal and 10% state, but the state has to completely fund the project up front until all construction and documentation is complete
- If construction funds are appropriated, the interchange construction could be completed in five to six years:
    - Design approval could be granted in 2015
    - Design of the construction plans will probably take one to two years
    - Construction of the interchange will probably take two to three years
- A public meeting will be held on February 5th as part of the planning process for the interchange and all participants of this meeting are invited to attend

I-57 & I-74 Interchange Reconstruction
Champaign, Champaign County, Illinois
January 21, 2013

SIGN-IN SHEET

| Name | Organization | Email | Address | Phone |
|---|---|---|---|---|
| Brad Downen | Crawford, Murphy, & Tilly | bdownenecmtengr.com | 2750 W Washington St, Spfld, IL | 217-787-8050 |
| KEVIN CRIDER | BACON FARMER WORKMAN | kcrider@bfweng ineers.com | | 618-997-9190 |
| Joe Crowe | IDOT | joseph.crowe@comcast.net | | 217-465-4181 |
| Adam Brown | State House- 103rd | staterepbrown@gmail.com | | 217-607-5104 |
| Linden Steiger | St. Sen. Chapin Rose | LS@chapinrose.net | 510 S. Stalcup Champaign, IL Ste. D | 217-607-1853 |
| Laure | St. Senator Michael Frerichs | laure@mikefrerichs.com | | 49-5510 |
| Chapin Rose | St Sen. | | — | 607-1853 |
| CRAIG EMBERTON | IDOT | CRAIG.EMBERTON@ILLINOIS.GOV | | |
| RUSTIN KEYS | IDOT | rustin.keys@illinois.gov | PARIS | 217-465-4181 |
| SCOTT NEIHART | IDOT | Scott.Neihart@illinois.gov | PARIS | 217-465-4181 |
| Jason Stults | IDOT | Jason.stults@illinois.gov | Paris | 217-465-4161 |
| Naomi Jakobsson | St. Rep | naomi@naomijakobsson.com | | 217-373-0000 |
| STAN HANSEN | CMT | SHANSEN@CMTENG.COM | SPRINGFIELD | 217-787-8050 |

**Elected Public Officials Meeting**

**I-57 & I-74 Interchange**

**Champaign, Champaign County, Illinois**

**January 21, 2014**

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PRESENTATION OUTLINE

I. Introduction
   a. Agenda
   b. Existing Facility
   c. Project Description
   d. Project Schedule

II. Purpose and Need

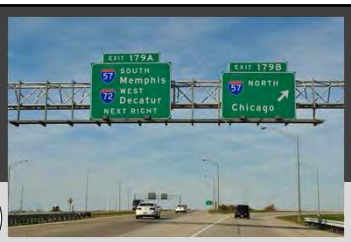
III. Roadway Improvements
   a. Interstate 57
   b. Interstate 74
   c. North Mattis Avenue
   d. Bloomington Road

IV. Interchange Type Alternatives
   a. Alternate 1: Full Directional
   b. Alternate 2: Semi Directional with Directional Flyovers and Two Loops
   c. Alternate 3: Semi Directional with Semi Directional Flyovers and Two Loops
   d. Alternate 4: Semi Directional with No Loops
   e. Alternate 5: Full Directional

V. Preliminary Cost Estimates

VI. Existing Features and Future Land Use

VII. Questions & Open Discussion




# I-57 and I-74 Interchange Reconstruction

**Champaign, Champaign County, Illinois**

**January 21, 2014**

BFW  Illinois Department of Transportation  CMT

## Introduction

**I-57 and I-74 Interchange Reconstruction**

Agenda:

- Existing Facility
- Project Description
- Purpose and Need
- Roadway Improvements
- Interchange Type Alternatives
- Existing Features and Future Land Use
- Questions and Open Discussion

## Existing Facility

- Existing Full Cloverleaf Type Interchange
- Study Limits
  - North
    Olympian Drive
  - East
    Prospect Avenue
  - South
    Norfolk Southern Railroad
  - West
    Duncan Road



## Project Description

- Proposed improvements being considered:
  - New interchange type
  - Adding lanes for I-57 and I-74
  - Ramp and access improvements
  - Reconstruction of cross roadways and structures
- Phase I: Preliminary Engineering
  - Interchange Type Study
  - Access Justification Report
  - Location Drainage Studies
  - Environmental Analysis
  - Interchange Design Study
  - Public Involvement Activities
  - Combined Design Report

## Project Schedule




## Purpose and Need

**Purpose of the Proposed Action**

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the Interstate 57 (I-57) and Interstate 74 (I-74) interchange by eliminating deficient geometric features and reducing points of access in order to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps.

**Need for the Proposed Action**

The need for the proposed improvement is to address operational, geometric, safety, and capacity deficiencies.

**Concurrence**

The Purpose and Need is scheduled to be presented at the February 11, 2014 coordination meeting for FHWA and IDOT Central Office concurrence.

## Roadway Improvements

- Design Year 2040
- 2040 Traffic Volume Projections
- Average Daily Traffic
  - Interstate 57: 49,900 vehicles
  - Interstate 74: 59,900 vehicles
  - North Mattis Avenue: 18,700 vehicles
  - Bloomington Road: 12,100 vehicles

## Interstate 57

**Existing**
- Four lane facility with two lanes in each direction
- Open grass median

**Proposed**
- Six lane facility with three lanes in each direction plus auxiliary lane from I-57 to Olympian Drive
- Closed median with concrete barrier wall

## Interstate 74

**Existing**
- Four lane facility with two lanes in each direction
- Open grass median

**Proposed**
- Six lane facility with three lanes in each direction
- Closed median with concrete barrier wall

## North Mattis Avenue

**Existing Near I-74**
- Five lane facility with two lanes in each direction
- Flush striped median
- Curb and gutter along outside edges

**Existing Near I-57**
- Two lane facility with one lane in each direction
- Paved shoulders

**Proposed**
- Coordination to be completed with the City of Champaign

## Bloomington Road

**Existing**
- Two lane facility with one lane in each direction
- Paved Shoulders with curbing

**Proposed**
- Two lane facility with one lane in each direction
- Curb and gutter along outside edges
- Bike and pedestrian accommodations to be coordinated with the City of Champaign

## Interchange Type Alternatives

**Process for developing alternatives:**

- Conventional interchange types and variations
- Provide policy geometrics
- Eliminate mainline weave
- Reduce access points
- Increased design speeds on ramps
- Increased capacity along interstates
- Identification of constraints

## Alternate 1

**Full Directional**

- Minimizes access points off interstates
- Eliminates mainline weave and all loops
- Increased design speed on all ramps (50 mph)
- Minimizes right-of-way acquisition in all quadrants




## Alternate 2

**Semi Directional with Directional Flyovers and Two Loops**

- Reduces access points off Interstates
- Eliminates mainline weave
- Increased design speed on all ramps (40 mph loops, 50 mph all others)



## Alternate 3

**Semi Directional with Semi Directional Flyovers and Two Loops**

- Reduces access points off Interstates
- Eliminates mainline weave
- Increased design speed on all ramps (40 mph loops, 50 mph all others)




## Alternate 4

**Semi Directional with No Loops**

- Minimizes access points off Interstates
- Eliminates mainline weave and all loops
- Increased design speed on all ramps (50 mph)




## Alternate 5

**Full Directional**

- Minimizes access points off interstates
- Eliminates mainline weave and all loops
- Increased design speed on all ramps (50 mph)




## Preliminary Cost Estimates

| | |
|---|---|
| **Construction** | $100 to $125 Million |
| **Land Acquisition** | $3 to $6 Million |
| **Utilities** | $2 to $4 Million |
| **Total** | $105 to $135 Million |

## Existing Features and Future Land Use

**Northwest Quadrant**
- Primarily agricultural land use with some development
- Detention pond carrying Copper Slough through center of quadrant
- Multi-use path surrounding detention pond

**Northeast Quadrant**
- Primarily agricultural land use
- Copper Slough passes through center of quadrant
- Detention pond in far southeast corner of quadrant

**Southwest Quadrant**
- Primarily agricultural land use with some development
- Midwest Court provides access to quadrant from Bloomington Road
- Church located in the southwest corner of quadrant
- Detention pond between Midwest Court and interchange ramp

**Southeast Quadrant**
- Primarily agricultural land use with some development
- Clearlake Boulevard provides access to quadrant from Bloomington Road
- Two story office building located in far northeast corner of quadrant

## Questions and Open Discussion

Illinois Department of Transportation

# PROPOSED RECONSTRUCTION OF THE INTERSTATE 57 / INTERSTATE 74 INTERCHANGE CHAMPAIGN COUNTY

## CONTACT INFORMATION

Craig A. Emberton
Program Development Engineer
Illinois Department of Transportation
Region 3 / District 5
13473 IL Hwy 133, Paris, IL 61944
Phone: (217) 465.4181
Fax: (217) 465.3101
TDD: (217) 463.2279

## PURPOSE OF MEETING

- **PRESENT PROPOSED ALTERNATIVES**
- **OBTAIN PUBLIC COMMENTS & INPUT**
- **ANSWER QUESTIONS**

## Project Description

This project is located on the northwest side of the City of Champaign, Illinois. The approximate project limits are the Olympian Drive / I.57 interchange to the north, North Prospect Avenue / I.74 interchange to the east, the Norfolk Southern Railroad over I.57 to the south, and North Duncan Road over I. 74 to the west (see Site Map on backside).

## Purpose of the Project

The purpose of the proposed interchange reconstruction im. provement is to provide safer and more efficient transportation at the Interstate 57 (I.57) and Interstate 74 (I.74) interchange by eliminating deficient geometric features in order to reduce crashes and improve travel efficiency and traffic capacity of the roadways on both the mainline interstates and ramps.

## Existing Facility

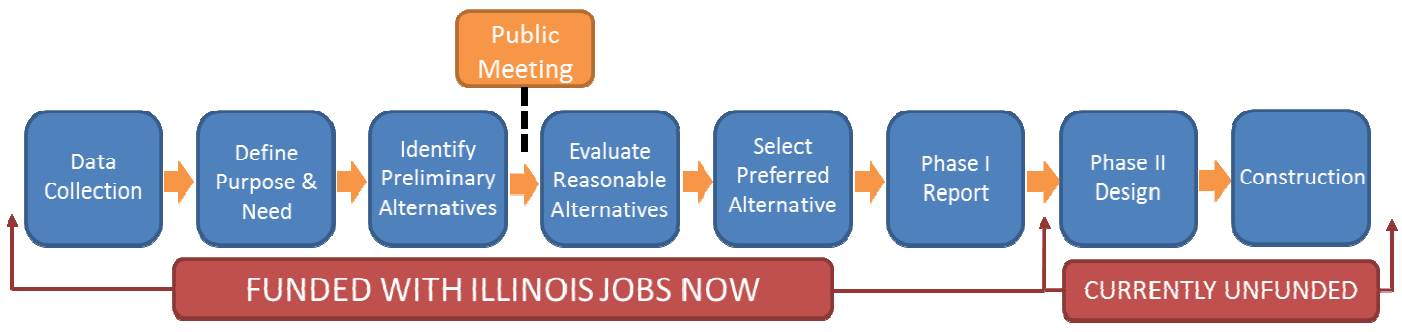
The existing facility was originally constructed in 1965 and is a full conventional cloverleaf interchange connecting I.57 and I.74. Each interstate consists of four lanes (two lanes in each direction) of concrete pavement with multiple over. lays. Both interstates have open grass medians which are 64 feet and 40 feet. The section of I.74 between Mattis Avenue and Prospect Avenue consists of a 26 foot paved median with concrete barrier.

I.57 and I.74 are full access controlled facilities that serves local, regional, and interstate traffic. I.57 is a Class I truck route carrying an average of 33,600 vehicles per day with approximately 28 percent truck volume (9,400 trucks per day average) within the project limits. I.74 is also a Class I truck route carrying an average of 38,400 vehicles per day with approximately 22 percent truck volume (8,500 trucks per day average) within the project limits.

Two 5% Segments have been identified along I.74 within the project limits. The 2011 5% Segment along I.74 begins west of I.57 and extends 2000 feet to the east through the loop ramp weaving areas and I.57 outer ramp terminals. The 2012 5% Segment along I.74 begins 3000 feet west of Prospect Avenue and continues east through the Prospect Avenue ramp terminals to the Prospect Avenue cross roadway structure. (See map on backside for locations)

The project study, started in May 2012 and funded with the Illinois Jobs Now program, is anticipated to be completed in 2015. The project design, land acquisition, utility relocation, and construction are currently not funded. Once com. pleted, the project is anticipated to cost between $105 million to $135 million.

## PROJECT SCHEDULE






BFW CMT

INTERCHANGE TYPE STUDY

**EXISTING INTERCHANGE LOCATION MAP**

CHAMPAIGN COUNTY rpc REGIONAL PLANNING COMMISSION

CUUATS
CHAMPAIGN URBANA URBANIZED AREA
TRANSPORTATION STUDY
1776 E Washington Street
Urbana, IL 61802

# Champaign-Urbana Urbanized Area Transportation Study (CUUATS) Policy Committee

MINUTES – APPROVED AS DISTRIBUTED

**DATE:** Wednesday, February 19, 2014
**TIME:** 10:30 a.m.
**PLACE:** Champaign County Highway Department Conference Room
1605 E. Main Street
Urbana, IL 61802

**Policy Voting Members**

| Agency | Present | Absent |
|---|---|---|
| **Champaign County** | **Alan Kurtz** | |
| **Champaign** | **Dave Clark (Vice Chair) (Proxy)** | **Don Gerard** |
| **Urbana** | **Laurel Prussing** | |
| **Savoy** | **Robert McCleary** | |
| **CCRPC** | | **Cameron Moore** |
| **UIUC** | **Allan Stratman** | |
| **CUMTD** | **Donald Uchtmann (Chair)** | |
| **IDOT Dist. 5** | **Craig Emberton** | |

**Others Present:** Bill Gray (Urbana), Jeff Blue (Champaign County), Karl Gnadt (C-U MTD), Pam Voitik (U of I), Tom Caldwell (IDOT Central), Cynthia Hoyle (C-U MTD), Landon Stenger (Legislative Aide at Representative Chapin Rose)
**CUUATS Staff:** Rita Black, Udit Molakatalla, Ashlee McLaughlin
**Recording secretary:** Pam Schroeder

**MINUTES**

**I. Call to Order**
Mr. Uchtmann called the meeting to order at 10:32 a.m.

**II. Roll Call**
The roll was taken by written record and a quorum was declared present.

**III. Audience Participation**
None.

**IV. Approval of Agenda**
**Ms. Prussing made a motion to include an additional agenda item, "Windsor Road Improvements." Mr. Kurtz seconded. There being no further discussion, the motion to accept the Agenda with edits was unanimously carried.**

**Mr. Uchtmann stated "Windsor Road Improvements" will be added as item D, with the item, "Interstate 74/57 Interchange" as item E.**

**V. Approval of Minutes**

**A. CUUATS Policy Committee Meeting of December 11, 2013**

**Mr. McCleary made a motion to approve the CUUATS Policy Committee Meeting Minutes of December 11, 2013. Mr. Emberton seconded. Upon vote, the motion to approve the minutes was unanimously carried.**

**VI. New Business**

**1. Approval of Transportation Improvement Program (TIP) FY2014-2017 Amendments – Ashlee McLaughlin**

**BACKGROUND:** The City of Urbana has submitted five proposed amendments to Table 9: City of Urbana Local Projects FY14; Table 10: City of Urbana Local Projects FY15; Table 11: City of Urbana Local Projects FY16; Table 6: City of Champaign Local Projects FY15; Table 22: Champaign County Local Projects FY15; Table 23: Champaign County Local Projects FY16; Table 34: Multi-Agency Projects FY15; and Table 35: Multi-Agency Projects FY16.

The following describes the proposed amendments:

UR-14-13
This is a new project for the Phase 1 study of the reconstruction of Windsor Road from Race Street to Philo Road, including the concrete approaches from each direction to the intersections. The state allocates $250,000 covering 100% of the cost for this project in FY14.

UR-14-14
This is a new project for the intersection of Goodwin Avenue and Green Street, with a total project length of 763 feet. This project includes improvements to the roadway, traffic signal, and lighting as well as curb extensions, curb ramps, sidewalks, pavement patching, and pavement milling & resurfacing. $148,853 (20% of the total project cost) of local MFT funds will be used for the local cost share and $595,413 (80% of the total project cost) of Transportation, Community, and System Preservation Program (TCSP) funds will be used for the federal participation. This project is listed in FY14.

UR-15-04
This project was already in the TIP to reconstruct Airport Road to a three-lane concrete cross section pavement with curb & gutter, storm sewers, and intersection upgrades. The local funding for this project increased from $850,000 to $1,628,654 and the state funding decreased for this project from $1,412,000 to $1,305,902. The total project cost changed from $2,262,000 to $2,934,556 which is a 30% increase. This is an amendment because the difference in project cost was above the 15% threshold for projects between $1 million and $2.999 million.

UR-15-05
CH15-10
CC-15-01
This is an existing project to extend Olympian Drive to the west and connect it to the east side of Duncan Road. Olympian Drive will consist of two 12 foot lanes of concrete pavement, 10 foot shoulders and a 10 foot shared use path. The intersection of Olympian Drive and Duncan Road will be concrete pavement, and Duncan Road will be overlaid with HMA paving. This project is moving from FY14 to FY15 and the state share of the budget has increased. The state participation is $1,675,000 (69% of the total project cost) of Illinois Jobs Now (IJN) funds and the federal participation is $750,000 (31% of the total project cost) of Surface Transportation-Urban (STU) funds. This project is listed in FY15.

UR-16-05
CC-16-01
This is a new project to extend North Lincoln Avenue to the north to connect with Olympian Drive. North Lincoln Avenue will consist of two 12 foot lanes of pavement, a 6 foot shoulder on the further median side and curb and gutter on the outside. The local participation is $2,200,000 (61% of the total project cost) of local MFT funds and the federal participation is $1,400,000 (39% of the total project cost) of STU funds. This project is listed in FY16.

Mr. Helton asked for a clarification of the UR-14-13 Phase 1 study of the reconstruction of Windsor Road from Race Street to Philo Road, including the concrete approaches from each direction to the intersections. Mr. Gray stated this project is a 4-lane concrete replacement from Philo Road in the east to Race Street on the west.

Ms. Prussing made a motion to approve the **Transportation Improvement Program (TIP) FY2014-2017 Amendments. Mr. Kurtz seconded. There being no further discussion, the motion was approved unanimously.**

**FY 2014-2017 Transportation Improvement Program Modifications**

**BACKGROUND:** The Illinois Department of Transportation (IDOT) and the City of Urbana have submitted administrative modifications to Table 1: State HIP Projects FY14; Table 5: City of Champaign Local Projects FY14; Table 9: City of Urbana Local Projects FY14; Table 21: Champaign County Local Projects FY14; and Table 33: Multi-Agency Projects FY14. The following describes the modification:

I002
UR-14-08
This project is for resurfacing, new shoulders, culvert replacement and utility adjustments for IL 130/High Cross Road from US 150 to Windsor Road. The City of Urbana is contracting directly with CMT to provide some construction engineering (CE) services ($50,000) to augment the CE efforts by IDOT staff. This is an administrative modification because the total project cost remains the same.

HSIP 2014-1
This project consists of concrete patching, skid proofing, and speed indicators for I-74 ramps on I-57. This project is currently in Advanced Construction due to one of the following conditions:

- At this time, the Illinois Department of Transportation considers specific apportionment or state contract ceiling insufficient to meet project specifications.
- The project has been inactive for at least 12 months, and cannot be kept current in accordance with 23 CFR 630.106.

UR-14-09
CH-14-06
CC-14-01
This project is for the design and construction of the Olympian Drive extension between Apollo Drive and Lincoln Avenue. The state funding has increased from $9,625,320 to $9,689,100 on this project. The total project cost changed from $12,902,320 to $12,939,100 which is a 0.3% increase. This is an administrative modification because the difference in project cost was below the 10% threshold for projects over $3 million.

**B. Draft LRTP Report Card 2013, LRTP 2035 – Ashlee McLaughlin**

Ms. McLaughlin presented the Draft LRTP Report Card 2013.

BACKGROUND: The Long Range Transportation Plan 2035: Choices Annual Report Card is in the process of being updated for 2013. The Report Card includes information about changes in demographics, land use, and transportation within the urbanized area since the plan's base year of 2009. This data corresponds to the Measures of Effectiveness (MOE) established for each goal and objective within the LRTP 2035.

Ms. McLaughlin announced a portion of the 25 measures have been updated. Some data will be received in March 2014, and some data is received every other year. Ms. McLaughlin directed the committee to a PowerPoint presentation and provided a brief explanation of the MOEs updated so far (which is included and made part of these minutes.) Ms. McLaughlin reminded the committee the LRTP Report Card 2013 summary of MOEs was available for anyone who wished to review.

Mr. Uchtmann stated there is much data contained in the report and it serves as a reminder how many components there are in transportation within the community. Mr. Uchtmann went on to say there are many different grades within the document and asked Ms. McLaughlin to provide an average report card grade. Ms. McLaughlin stated the Measures of Effectiveness that were set in the LRTP 2035 contained smart objectives that allowed quantifying goal achievement specifically. This process has been extremely helpful in measuring progress over the last five years. The same method will be utilized for the LRTP 2040, which is currently in progress. The final report card will assist in formulating the baseline for the next set of Measures of Effectiveness for the LRTP 2040. Ms. McLaughlin stated the average grade for this report card is very good. Mr. Uchtmann congratulated all the agencies that received very good grades on different aspects of transportation. Mr. Uchtmann also congratulated the entire transportation system for having a good passing grade on this interim report card.

**C. Approval of Selected Crash Intersection Locations (SCIL) Report 2007-2011 – Udit Molakatalla**

Ms. Black stated the Selected Crash Intersection Locations (SCIL) Report 2007-2011 **(**SCIL) report was presented at the December 4, 2013, CUUATS Technical Meeting where the committee requested time to review the report prior to approval. Mr. Kurtz requested a brief summary of the SCIL Report. Mr. Molakatalla presented the Selected Crash Intersection Locations (SCIL) Report 2007-2011 (attached and made a part of these minutes) summary to the committee.

Mr. Kurtz asked to what the reduction in bicycle crashes might be attributed. Mr. Molakatalla stated a great focus on education and law enforcement was a key factor in the vast reduction of bicycle crashes.

**Mr. McCleary made a motion to approve the Selected Crash Intersection Locations (SCIL) Report 2007-2011. Mr. Emberton seconded. The motion carried unanimously.**

**D. Windsor Road Improvements – Bill Gray**

The Windsor Road concrete pavement is suffering from an alkali silica reaction (ASR) between Philo Road on the east and Race Street on the west. The harsh winter has greatly accelerated the deterioration of the pavement condition. There is an informative section, "frequently asked questions" on the City of Urbana website that answers questions concerning the Windsor Road condition. The problem was first identified in 2006. Current cost projections are a soft six million dollar reconstruction between the one-mile stretch of pavement. Many options to attack the problem have been considered. A road diet was once considered only as a cost savings measure. In meetings with IDOT, preliminary engineering study funding in the amount of $250,000 has been secured. Some patching and interim mandate improvements have been made in the past; however, the pavement must be permanently reconstructed as a four lane road, which is the current design, including the turn lanes at the intersections.

Hanson Engineering is currently working on the assessment and it is anticipated they will provide a more firm project estimate by April 1, 2014. Hanson Engineering will also investigate various reconstruction options.

A Project Priority Working Group meeting, whose members were comprised of each agency's staff members, was held a few weeks ago to discuss how the federal funding will be assigned. Mr. Gray stated he was happy to report the next four projects in the queue in the next four fiscal years are to be funded at the appropriate amounts. Those projects are: Olympian Drive (between Apollo Drive and Lincoln Avenue), Olympian Drive (west side near Duncan Road), Lincoln Avenue (a new alignment up to Olympian Drive), and Prospect Avenue (between Windsor Road and Curtis Road). It was discovered during these discussions that it is possible to utilize the federal fund allocations to fit another $3 million dollars to help pay a 50% portion of this $6 million dollar Windsor Road problem. Mr. Gray stated we will know within the next few weeks if our MPO can receive the $3 million dollars funds now versus later to fit appropriately within the cash flow of the other projects to be used for Windsor Road. Mr. Gray stated the CUUATS Policy Committee will be asked to formally consider the proposal as a TIP amendment, as an improvement to be added for urban STP(U) funds for surface transportation.

Mr. Gray announced all respective agency staff have been alerted to the situation and queried as to if there are other projects within the agencies that may have priority requests for some portion of the $3 million dollars within the next four fiscal years. There is general support. Mr. Gray asked the Policy Committee if they have any questions. There may be a formal vote at the next CUUATS Technical Committee meeting in April, if the STP(U) funding is granted. If the design is completed quickly, a June letting is possible, perhaps allowing 50% of the project to be completed this year.

Meanwhile, work will continue with the City of Urbana Council to search for funding for the balance remaining.

Mr. Uchtmann stated it appears the Windsor Road situation is an obvious priority.

Mr. McCleary stated he traveled Windsor Road in the last week and agreed the road is in dire need of repair. Mr. McCleary mentioned the Curtis Road Phase III project. Curtis Road will be connected with the South Research Park. Mr. McCleary reminded the Policy Committee of the project timetable in either 2017 or 2018.

Mr. Kurtz thanked IDOT and everyone. Mr. Kurtz stated everyone understands the goals, which are the safety of the traffic and public, our families and our children. Mr. Kurtz offered his respect and admiration for all the hard work that goes into these projects, especially considering the diminishing funds that continue to plague our communities. The Windsor Road issue is a serious one. The entire county has gotten behind it. Mr. Kurtz received a letter from the Douglas County chairman in District 5, reiterating the support of the Metropolitan Developmental Council, the Champaign County Chamber of Commerce, and the five district chairs, who have offered their support for more community funding. Mr. Kurtz also thanked everyone for their efforts and response to his letters requesting new safety signs on the interchange and the promise to resurface the clover leaf extensions, exits, and entrances to the interchange, which will provide an added safety component.

**E. Interstate 74/Interstate 57 Interchange Alternatives' Presentation**

Mr. Brad Downen, Mr. Kevin Crider, and Mr. Stan Hansen, with Crawford, Murphy & Tilly, Inc., presented the Interstate 74/Interstate 57 Interchange Alternatives to the Policy Committee. (A copy of the presentation is made a part of these minutes.)

Ms. Prussing asked if elevating and stacking the interchanges would present a safety hazard due to freezing during the winter. Mr. Crider stated there could be freezing on the interchanges. Ms. Prussing

asked how the interchanges would be affected during an earthquake. Mr. Crider answered the spans are designed with earthquakes in mind.

Mr. Kurtz stated Florida interchanges are stacked for safety reasons and he has heard no concerns.

Mr. Gray asked how CUUATS could assist Crawford, Murphy, and Tilly help IDOT with respect to the selection process. Mr. Crider stated all agencies are welcome to submit input. After the public comment activity, a formal interchange type study will be completed which will evaluate all the alternatives presented today. The study will be sent to the IDOT Central Office and Federal Highway. As part of the process, Crawford, Murphy and Tilly will also include the public involvement input as part of the selection process. Any comments will be considered including those that are reached by group consensus or as an individual agency. After the draft type study is reviewed by all the agencies, some of the alternatives may be refined, some may be removed or added, but the goal is to identify the preferred interchange type as defined in a general consensus. At that point, the process will proceed to an interchange design study in more detail.

Mr. Gray felt it would be helpful to possibly meet at the April or subsequent meeting to discuss this study and take into account what the city's option may be and communicate that information. Each alternative has a significant impact on Champaign/Urbana.

Mr. Uchtmann asked for a timeline of this process. Mr. Crider stated the process is currently somewhere in the middle of Phase I. In general terms, it is hoped the engineering and Phase I studies to be completed by the end of the year. Development of the Phase I final design report would hopefully be approved early next calendar year.

Ms. Hoyle asked about the impacts on the existing roadway system, when considering crash reports. We know which corridors are high crash corridors. Ms. Hoyle believed it would be important to understand the corridor and intersection impacts. Ms. Hoyle asked if this information was taken into consideration. Mr. Crider stated there is a crash and safety analysis within the study for the interchange that is being conducted both in the analyses of the existing conditions and historic crash data, along with the projections of what may be anticipated for future crashes for each of these alternatives. Beyond the study limits, this project will not evaluate or analyze any of the local network intersections that were presented. Ms. Hoyle asked if the Mattis Avenue corridor would be considered. Within the study limits of the interchange, the corridor would be considered.

Mr. Kurtz stated this study will result in approximate $1.5 million expenditure. It will be unacceptable if this study is placed on a shelf because funding is unavailable to continue planning and/or construction. Mr. Kurtz asked if funds are available. Mr. Kurtz asked why this study was started if the project cannot be completed.

Mr. Gray offered the Olympian Drive project as an example. The problems, options, and solutions must be defined. Mr. Gray stated it is important to stay engaged with all entities involved as the process continues to ensure the project is completed. Mr. Gray suggested everyone continue to rally around this project because Champaign County will benefit greatly from it.

Mr. McCleary asked if the new bridges will be wider for another lane of traffic or the same width as they are now at the point where they cross. Mr. Hansen stated both I-57 and I-74 will be expanded with expanded structures within the project.

**VII. Old Business**

**A. Committees and Working Groups**

1. **Olympian Drive – Bill Gray**
   Mr. Gray stated on Thursday, February 20, 2014, the Illinois Commerce Commission (ICC) will be responding to an order for this project. It is hoped the order states the design has been approved and funding for the bridge has been approved. One last right-of-way acquisition is being finalized and should fit within the timeline, assuming there is a positive response from the ICC. A utility relocation agreement is also in the development stage. An April 2014 letting is possible if there are positive outcomes on all three issues. Funding is in place and groundbreaking could begin summer of 2014.
2. **miPLAN – Bill Volk**
   No Update
3. **Champaign County Rural Transit Advisory Group (RTAG) – Rita Black**
   Ms. Black reported last week the county board agreed to initiate conversations with C-U MTD to take over the Champaign County transportation services for rural areas, given the fact that CRIS expressed they do not wish to continue providing rural transit service.
4. **Long Range Transportation Plan 2040: Sustainable Choices – Rita Black**
   Ms. Black stated work is continuing and contacts have been made concerning the various scenarios and projects that each agency would like to see included. CUUATS is currently working on developing the new objectives and performance measures for the LRTP 2040.

**B. Agency Reports**

1. **City of Champaign – Dave Clark**
   - Market Street Design – Ongoing. Hoping to complete the process and put it out for letting.
   - Market Street – Phase II - (North of Olympian Drive up to Ford Harris Road) Determining the best approach; either heavy patching project or rubblization project. Letting is projected late spring/early summer 2014.
   - Anthony Drive (Mattis Avenue to Marketview Drive) – Part of the annualized overlay project.
   - Kenyon Drive (Bloomington Road to Market Street) - Part of the annualized overlay project.
   - Fourth Street - Continue PCC patching work north of the railroad tracks up to Bradley Avenue, in addition to neighborhood work.
   - Windsor Road/I-57 bridge approach (ITEP grant) – IDOT held the January 17, 2014, letting, with work to possibly commence on April 1, 2014. The low bidder was Star Excavating at $2.56 million. IDOT is in the process of awarding the bid. Windsor Road will be closed for construction on both sides of the approaches and connect with the bridge that IDOT constructed last fall. Windsor Road will have the same cross-section as the bridge with two bike lanes, two shoulders and sidewalks on both sides of the approaches. The approaches will be equipped with street lights and spill over light is anticipated to light the structure for the pedestrians. The bridge touchdown points are Eagle Ridge Road and Briar Hill Drive. Currently projected to reopen Windsor Road in mid-August 2014.
   - Fourth Street Phase I – This extension project to Windsor Road is complete.
   - Fourth Street Phase II - It will finish the extension of Gerty Drive, Hazelwood Drive over to the old Fourth Street, as well as an eight foot wide sidewalk and multi-use path along the east side of First Street.
   - Green Street Phase III – Fourth Street to Neil Street – Green Street reconstruction will include streetscape. Mr. Clark stated, 2014 will primarily be a study phase and public outreach by meeting with business owners. An SSA will be considered and will meet with City Council concerning a buy-in on proposed concepts. The design phase will take place in 2015 with construction to commence in 2016. The first open house will take place on March 12, 2014, at the Champaign Public Library to solicit input and gain feedback on initial design concepts.

- Mr. Clark commented that concerning the Interchange options for I-57/I-74: as indicated, the City of Champaign would very much appreciate the opportunity to have a discussion at the CUUATS Technical Committee meeting to review the interchange options and impacts associated with each alternative.

**2. City of Urbana – Bill Gray**

- Finalizing plans for reconstruction in 2014: Portions of Country Club Road, Willow Springs Road, Willow Road, and Maple Street. Bids are out.
- Resurfacing projects are also being finalized and will begin the bidding process in spring of 2014.
- Lincoln Avenue – Between Saline Court and Olympian Drive – The updated project design report was submitted to IDOT for review and approval.
- Airport Road – East of US 45 – Reconstruction of a ¾ mile stretch. The project has been awarded and the contractor will be poised to begin construction in the Spring of 2014, once the weather improves.
- Airport Road – West of US 45 to Willow Road – The construction design process will begin early in 2014.
- High Cross Road – Between University Avenue and Florida Avenue - Finalizing plans and specifications and coordinating with IDOT for improvements related to the possibility of a new Menards store being built in Urbana. A possible February 2014 letting is being planned.
- Goodwin Avenue and Green Street Intersection – Project has been let and awarded. Contractor is poised to begin construction in May 2014. Project will include street lighting, resurfacing, and traffic signals. Pedestrian scramble consideration will be given to this intersection.
- Florida Avenue and Philo Road – Contract has been let and awarded for new traffic signals.
- Urbana Bicycle Master Plan – The project is well underway, with the CUUATS staff's assistance. Currently seeking public input. Three public meetings are to be held this week, with one held last week. The Thursday, February 20, 2014, meeting will be held in Spanish to reach out to the Latino community at Leal School.
- North Cunningham Avenue – Design will be completed this winter. Construction anticipated commencing spring of 2014. Project will include sidewalks on both sides of Cunningham Avenue between Country Club Road and Kenyon Road.
- Race Street – As soon as the weather improves, the work will be completed near the University Avenue intersection. Traffic signal component not yet finalized.
- Windsor Road - Preliminary engineering has commenced.

**3. Village of Savoy – Brent Maue**

- Currently finalizing FY15 projects. Most projects appear to be maintenance issues. A few smaller bicycle type projects may be addressed. More information will be provided once available.
- Anticipating ITEP grant approval
- Construction of the new public works facility commenced in August 2013. Cold weather has slowed progress. Currently placing brick on the outside of the building. Anticipated move in date may go beyond February of 2014.

**4. C-U MTD – Cynthia Hoyle**

- Year to date ridership has continued to increase.
- MTD submitted a Safe Routes to School non-infrastructure grant in partnership with the Urbana School District to continue a portion of that programming. No schedule is available for future announcements.
- Approximately 1,200 solar panels (solar arrays) are currently being constructed on the maintenance building.

- Work will commence before the end of December 2013, to replace the chiller at Illinois Terminal.
- Work continues with the University of Illinois on various locations on campus, including shelter upgrades, as well as locating kiosks.
- Lavender service is now approved by the CU-MTD Board. Service will begin on December 22, 2013.
- C-U MTD, along with the University of Illinois, received the Governor's Sustainability Award in November.
- A Unit 4 meeting was held concerning their locations for the new Central High School. The main issue is obtaining at least a minimum of 30 acres for athletic fields and other structures concerning the relocation of Central High School. Transportation was not considered a major issue when selecting the sites for relocating the high school.

- Mr. Uchtmann added that the board will be meeting next week. Staff was requested to make recommendations concerning future annexations. The general policy is to keep the boundaries of C-U MTD with the boundaries of the three villages and cities that are served.

**5. Champaign County – Alan Kurtz**

No report.

**6. University of Illinois at Urbana-Champaign – Pam Voitik**

University Reconstruction Projects –

- Stadium Drive – Neil Street to Oak Street – Resurfacing and lane reconfiguration to commence mid-May of 2014. Contractors have assured at least one lane will be open during this time. Both lanes to be closed only at off peak times, if necessary.
- Sixth Street – ITEP funding approval has not yet been received. The application was submitted on August 20, 2013 to provide funds for a complete street from Gregory Drive to Pennsylvania Avenue on Sixth Street.
- St. Mary's Road – Approval not yet received for the $6.5 million reallocation

Three projects need to be coordinated together for Summer of 2014:

- Sixth Street – Sixth Street from Armory Avenue to Gregory Drive – Issued for construction to begin mid-May of 2014. Projected completion Summer of 2014
- Fourth Street – Fourth Street from Armory Avenue to Kirby Avenue – Partial resurfacing;
- Peabody Street - Partial reconstruction and new signals and bike lanes for a complete street. To commence May of 2014. Projected completion Summer of 2014. Contractors have assured at least one lane will be open during this time. Both lanes to be closed only at off peak times, if necessary.
- Ikenberry Commons Construction – First Street between Gregory Drive and Peabody Drive. Utility work has commenced, but due to weather, there have been delays. An April 18, 2014, completion date is anticipated.
- E-14 – Lighting upgrade after the Freedom Celebration (4th of July)

Mr. Stratman expressed thatit might be helpful for this committee to take time at a future meeting to learn how IDOT and FHWA prioritize major capital projects, such as the I-57 and I-74 Interchange Reconstruction, and the procedure to gain congressional approval and how this body's input feeds into the process.

Mr. Kurtz stated Congressman Davis is holding a transportation meeting in Springfield with groups from this area to discuss this same topic as a congressional committee that Mr. Stratman brought up.

**7. CC Regional Planning Commission – Cameron Moore**

In the absence of Mr. Moore, Ms. Black reported on behalf of CCRPC.

- HSIP Grants are open for application (90/10 match). Applications are due April 18, 2014. Ms. Black sent an email to Champaign County, City of Champaign, and City of Urbana concerning possible locations for application. At this time, it is Ms. Black's understanding no agencies will apply for funding.
- Safe Routes to School Plan for Prairie School commenced this week.

**8. IDOT District 5 – Bob Nelson/Scott Lackey**

Mr. Emberton reported:

- Emergency contract awarded on Tuesday, February 18, 2014 for I-74 spot locations to mill and fill the bad areas on Mattis Avenue from Church Street to Bradley Avenue, and on Springfield Avenue, east of Prospect Avenue closer to Neil Street.
- 1-74 overhead sign replacement – limited evening closures.
- I-57 and I-74 study– Study is ongoing. There is a planned public information meeting in February of 2014.
- County Highway 50 Bridge – Bridge over I-74 at Mahomet is nearing completion.

**9. IDOT Central Office – Tom Caldwell**

No report.

**10. FHWA – Betsy Tracy**

No Report

**C. Announcements**

Ms. Black announced an upcoming Urbana Master Bicycle Plan Public Meeting and Urbana Trails Plan on Wednesday, February 19, 2014 at Prairie School and Thursday, February 20, 2014, at Leal School. The public meeting at Leal School will be entirely in Spanish.

Ms. Black announced she will be attending an AASHTO Domestic Scan the last week in March 2014. Ms. Black will be traveling with engineers through various communities across the United States regarding safety.

Ms. Hoyle announced the Illinois Bike Summit will be held in Champaign/Urbana on April 15, 2014 at the iHotel. The Secretary of the Department of Transportation, Ann Schneider, will be available to speak concerning the state of Illinois' bike plan.

Mr. Landon Stenger (Legislative Aide at Representative Chapin Rose office) announced his presence. Mr. Stenger responded on behalf of Senator Rose to Mr. Kurtz that Mr. Rose is on board with the I-57 and I-74 Interchange reconstruction. Mr. Stenger went on to say that virtually all the area legislators are on board, as well.

Mr. Kurtz stated C-U MTD is doing a phenomenal job, especially when facing the on-going terrible weather conditions that east central Illinois has faced this winter. As Secretary of the Champaign/Urbana Public Health District Board, Mr. Kurtz thanked Mr. Volk and Mr. Costello for allowing negotiations for a bus stop at C-U Public Health District (C-U PHD) facility. The bus stop was on I-74 at the Neil Street crossing on the north side. This made it extremely difficult for riders, who had to walk across I-74 for 2/10 of a mile with their children to use the C-U PHD facility.

Mr. Lackey, the acting local roads engineer, followed up on the $6.5 million reallocation issue that Ms. Voitik spoke of. Mr. Lackey stated the IL Secretary of Transportation has received the letter from the University of Illinois Chancellor. It is hoped that the issue will be resolved in the near future.

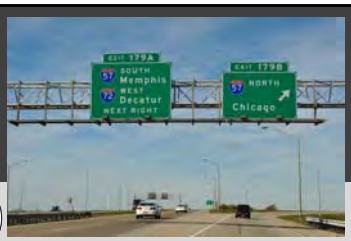
**VIII. Audience Participation**

None.

Mr. Uchtmann thanked the County Highway Department for hosting the meeting on such short notice.

**IX. Adjournment**

**Mr. Uchtmann announced the meeting adjourned at 11:58 a.m.**




# I-57 and I-74 Interchange Reconstruction

**Champaign, Champaign County, Illinois**

**February 19, 2014**

BFW · Illinois Department of Transportation · CMT

## Project Schedule




## Existing Facility

- Existing Full Cloverleaf Type Interchange
- Study Limits
  - North: Olympian Drive
  - East: Prospect Avenue
  - South: Norfolk Southern Railroad
  - West: Duncan Road



## Alternate 1

**Full Directional**

- Minimizes access points off interstates
- Eliminates mainline weave and all loops
- Increased design speed on all ramps (50 mph)
- Minimizes right-of-way acquisition in all quadrants



## Alternate 2

**Semi Directional with Directional Flyovers and Two Loops**

- Reduces access points off Interstates
- Eliminates mainline weave
- Increased design speed on all ramps (40 mph loops, 50 mph all others)



## Alternate 3

**Semi Directional with Semi Directional Flyovers and Two Loops**

- Reduces access points off Interstates
- Eliminates mainline weave
- Increased design speed on all ramps (40 mph loops, 50 mph all others)



## Alternate 4

**Semi Directional with No Loops**

- Minimizes access points off Interstates
- Eliminates mainline weave and all loops
- Increased design speed on all ramps (50 mph)



## Alternate 5

**Full Directional**

- Minimizes access points off interstates
- Eliminates mainline weave and all loops
- Increased design speed on all ramps (50 mph)



## Roadway Improvements

**North Mattis Avenue**

**Existing Near I-74**
- Five lane facility with two lanes in each direction
- Flush striped median
- Curb and gutter along outside edges

**Existing Near I-57**
- Two lane facility with one lane in each direction
- Paved shoulders

**Proposed**
- Coordination to be completed with the City of Champaign

**Bloomington Road**

**Existing**
- Two lane facility with one lane in each direction
- Paved Shoulders with curbing

**Proposed**
- Two lane facility with one lane in each direction
- Curb and gutter along outside edges
- Bike and pedestrian accommodations to be coordinated with the City of Champaign

**Duncan Road**

**Existing**
- Two lane facility with one lane in each direction
- Aggregate Shoulders

**Proposed (Alts. 1, 4, 5 only)**
- Coordination to be completed with the City of Champaign

## Preliminary Cost Estimates

| | |
|---|---|
| **Construction** | $100 to $125 Million |
| **Land Acquisition** | $3 to $6 Million |
| **Utilities** | $2 to $4 Million |
| **Total** | $105 to $135 Million |

## CUUATS Coordination

- Transportation Projects from Transportation Improvements Plan (TIP)
- Long range transportation plan
- Develop Opportunities and Constraints for Project Area

## Questions and Open Discussion

# MEETING NOTES

**DATE:** April 7, 2014, 10:00 A.M.

**PROJECT:** I-57/74 Interchange Reconstruction

**LOCATION:** MUTI Conference Room, Champaign, IL

**ATTENDANCE:**

Jason Stults ..... District 5 – Project Engineer
Scott Neihart ..... District 5 – Geometrics Engineer
Brian Trygg ..... District 5 – Acting Land Acquisition Engineer
David Arney ..... District 5 – Acting Land Acquisition Manager
Scott Kisting ..... MUTI – Senior Vice President
Stephanie Brewer ..... MUTI – Compliance Coordinator
Kevin Crider ..... Bacon Farmer Workman Engineering & Testing, Inc.
Brad Downen ..... Crawford, Murphy & Tilly, Inc.

A meeting was conducted with staff from MUTI (Midwest Underground Technology, Inc.) to review the current proposed project improvements and interchange reconstruction alternatives for the I-57 and I-74 cloverleaf interchange in Champaign, IL.

The following items were discussed:

- Scott Kisting gave an overview of MUTI and explained ongoing and future plans to expand. Future expansions include additional buildings to the east and west and additional parking/storage to the east. Site plans have been developed and will be made available to IDOT for consideration during development of the interchange design studies.
- Scott Neihart stated that the current preferred alternate as a result of the Interchange Type Study (and pending FHWA review) is Alternate 1, followed by Alternate 2.
- There is currently no funding for the reconstruction of the interchange.
- Exhibits of the proposed interchange alternatives were reviewed and Scott Kistling preferred Alternate 2 over Alternate 1. Alternate 1 encroaches further into the potential MUTI future development than Alternate 2. Kevin and Brad explained that the right-of-way lines on the exhibits were preliminary and subject to change during further study. Additional considerations, including the plan view geometry, profiles, drainage, and use of retaining walls will determine the final limits of right-of-way. The right-of-way lines for Alternate 1 are our further than Alternate 2 primarily because of the profile of the ramps.
- Scott Kistling said that he was in favor of the project and understands that it is needed, but would prefer to have minimal impacts to the MUTI property and future expansions.
- Scott Niehart said that the intent is to minimize the impacts to adjacent properties and that the proposed site plans will be useful for further development of the interchange alternatives.

# Appendix B4
# Newspaper Articles

http://www.news-gazette.com/news/local/2014-01-22/no-sign-quick-fix-74-57-interchange.html

# No sign of quick fix for 74-57 interchange

Wed, 01/22/2014 - 7:00am | Tom Kacich




**Photo by: Rick Danzl/The News-Gazette**
Exit sign for Interstate 57 from I-74 in Champaign.

URBANA — State and local leaders stepped up the pressure on Illinois Department of Transportation representatives to expedite the renovation of the nearly 50-year-old Interstate 57-Interstate 74 interchange west of Champaign.

But the response they got Tuesday hasn't changed: without a new state construction program, a special federal appropriation or both, the project — with a total cost of more than $100 million — is many years away.

"I would love to have in the next year or so the actual appropriation for the actual work, for the construction in that area," said Champaign County Board Chairman Alan Kurtz, who has been pushing for the capital funding. "It's only going to get worse and we don't want to see any more fatalities or critical injuries."

IDOT officials have scheduled a hearing for Feb. 5 at the Champaign County Highway Department, where members of the public can review four or five design ideas for the conventional cloverleaf interchange that was built in 1965. It is now considered obsolete.

In the last five years there have been 335 accidents within a one-mile radius in each direction of the interchange.

IDOT officials say that I-57 carries an average of 33,600 vehicles per day — about 9,400 of which are trucks — within the project area. I-74 carries an average of 38,400 vehicles a day in the project area, 8,500 of which are trucks.

Local elected officials said the interchange is unsafe and needs to be rebuilt.

"Regardless of what legislative district that interchange is in, I literally say a little silent prayer every time I navigate that on my way to Springfield," said Rep. Chad Hays, R-Catlin. "It is poorly designed, way before everyone in this room's time. It is a major, major intersection in East Central Illinois. And the data that I've looked at indicates that it is very serious in terms of the number of accidents and fatalities.

"Getting on and off of that at a very high speed is nothing short of a death trap."

Kurtz said the newly increased speed limit on the two interstates makes the interchange even more dangerous.

"We just upped the speed limit to 70 and now we're going to have trucks and cars, where the volume is increasing year after year ... and you're getting off of 57 to go onto 74 to go into Champaign and it is probably the most nerve-wracking thing," he said.

State Rep. Naomi Jakobsson, D-Urbana, said she'd "like to see the project moved forward. But as was discussed, it's nothing to be done tomorrow. Where are the funds going to come from? It's complicated."

A new state capital construction bill could provide funding, Jakobsson acknowledged, but she said the topic could get caught up in other budget issues this year.

"I know many of us believe that capital bills bring jobs, and jobs are important," she said. "On the other hand, we're looking at other things with the budget so I don't know if there's going to be a capital bill or not, but it certainly has to be talked up."

Sen. Chapin Rose, R-Mahomet, called the project "a huge priority" in East Central Illinois.

"It is one of the most unsafe interchanges in the state, maybe in the entire Midwest," Rose said. "Every time you get an ice storm, somebody is off in a ditch."

But he said state taxpayers shouldn't have to pay the entire cost of the repairs. Rose suggested seeking federal funding for the project that Joseph Crowe, the IDOT engineer for District 5 in Paris, called a "megaproject" because of its cost.

In past years members of Congress could "earmark" money for such projects, but that practice was ended in 2010.

Andrew Flach, a spokesman for U.S. Rep. Rodney Davis, R-Taylorville, noted that the omnibus appropriations bill signed into law last week provided for an additional $600 million in federal

TIGER grant funds — traditionally large grants awarded on a competitive basis for projects that will have a "significant impact on the nation, a metropolitan area or a region."

Rose said he was encouraged that some progress was being made on the project, although construction funding may be years away.

"Before you go start trying to find the funding mechanism you've got to have the plan and the engineering," he said. "That first step is exactly what is happening now, which is the engineering, looking at different designs. Then you start filing in the gaps with how you pay for that. I'm fully supportive of that concept."

Rose also urged IDOT to work with the city of Champaign to rehabilitate Mattis Avenue north of Springfield Avenue.

"It's torn to ... well, fill in the blank," he said of the roadway, which is a state route.

**Your turn**

The Illinois Department of Transportation has scheduled a hearing for the public to review four or five design ideas for the Interstate 57-Interstate 74 interchange west of Champaign.

When: 3 p.m. on Feb. 5.

Where: Champaign County Highway Department, 1605 E. Main St., C.

http://jg-tc.com/news/champaign-accident-leaves-paris-teen-dead/article_bad7913b-edb8-500d-88a5-44a3705e6df9.html

# Champaign accident leaves Paris teen dead

CHAMPAIGN — A single vehicle accident at 11:57 a.m. Saturday on the Interstate 74 westbound ramp to Interstate 57 northbound in Champaign resulted in the death of a passenger.

A vehicle driven by Alexander J. Morton, 20, of Harrisburg, Penn., was entering onto the I-57 northbound ramp from I-74, traveling at a high rate of speed, which led him to lose control of his car as he traveled over ice, according to a press release by the Illinois State Police at District 10.

Once Morton lost control of his vehicle he traveled sideways until coming to rest against a utility pole, the press release said.

Both Morton and his passenger, Mikela K. Washburn, 18, of Paris, were transported to Carle Foundation Hospital in Champaign. Washburn and Morton were wearing their seat belts during the time of the crash and had to be extricated from the vehicle, state police reported.

Washburn was pronounced dead due to injuries sustained in the accident and Morton was cited for driving too fast for conditions, according to ISP.

http://www.news-gazette.com/news/local/2014-02-03/i-5774-interchange-10-things-know.html

# I-57/74 interchange: 10 things to know

Mon, 02/03/2014 - 7:00am | Michael Howie




**Photo by: Rick Danzl/The News-Gazette**
A truck passes a warning sign on the ramp from eastbound Interstate 74 to southbound Interstate 57 on Friday west of Champaign.

## Other Related Content

- Interstate reconstruction synopsis
- No sign of quick fix for 74-57 interchange

Years from now — maybe after a new Champaign high school is up and running, a whole different president or two from now — the interchange between interstates 57 and 74 might be rebuilt.

There will be road closings and detours and tens of millions of dollars spent — the range right now is $105 million to $135 million.

If you want to see what it might look like, go to the Champaign County Highway Department, 1605 E. Main St., U, at 3 p.m. Wednesday. There, the Illinois Department of Transportation has scheduled a hearing for the public to review four or five design ideas for the interchange just west of Champaign. (Click here for a summary of the project from IDOT.)

Here are 10 things to know about the project:

### Accident-prone

In the six years from 2007 through 2012, 249 accidents happened at the I-57/I-74 interchange. That's the most of the six I-74 interchanges in Champaign-Urbana and 50 percent higher than the next-highest, the Prospect Avenue interchange.

### Fatalities and injuries

Between 2007 and 2012, five people died in traffic crashes at the interstate interchanges in Champaign-Urbana. Two of those deaths happened at the 57-74 interchange. Two happened at the Lincoln Avenue interchange. One happened at the Cunningham Avenue interchange. (Another fatal accident happened at the 57-74 interchange happened on Saturday.)

In that same span, 68 people were injured at I-57/I-74. The next-highest injury total was at the Lincoln Avenue interchange, where 59 injuries were recorded.

**Busy roads**

The accident figures don't tell the whole story. Traffic volume makes the risk for an individual driver relatively low. In 2012, there were 33 crashes on the 57/74 interchange. There were also about 11 million vehicles passing through that interchange that year.

**Blame the design**

"The size of the cloverleaf is what causes the problem at 57-74," said Craig Emberton, program development engineer for the state transportation department. "If the radiuses aren't so tight, it makes it a lot better."

"The embankment of the interchange will flip a truck," said state Sen. Chapin Rose, R-Mahomet. "I hear complaints about this all the time."

**That was then, this is now**

The interchange dates to 1965.

Construction "standards have increased," said Emberton. "Cars are faster."

**Passing through**

The 57-74 interchange is just that, an interchange. It's not an exit.

"Let's say (the exit at) Lincoln Avenue," Emberton said. "You've got to slow down and stop" at the end of the ramp. That ramp "lends itself to people slowing down and stopping, because they know they have to at the end."

**Passing through II**

Emberton thinks that many of the drivers passing through the 57-74 interchange aren't from here. He thinks they're probably "out of county, out of state — cross-country travelers who haven't been through there before." That lack of familiarity with the area may contribute to crashes.

**"Sign clutter"**

There's no shortage of signs warning drivers as they approach the interchange.

But "sometimes, when you put signs out, people ignore them," Emberton said. "It's called 'sign clutter.' One sign is going to stick out," but numerous signs may not.

**Years in the making**

The reconstruction at this point is a gleam in a contractor's eye. Several steps occur in a years-long process before construction ever begins.

The normal process:

— Year 1: A feasibility study develops a purpose and need for the project, and estimates its initial cost.

Because this interchange would be a reconstruction, there's no feasibility study needed, Emberton said.

— Years 2-3: "Phase 1 engineering." Public and private entities can speak up about alternatives, impact and other issues. Studies and inspections, including impact studies, can involve as many as a dozen state, federal and other organizations. Public hearings are held. (This is where things are now; this project study began in May 2012.) Emberton expects this to be completed late this year or in 2015.

— Year 4: Start work on construction contracts, land acquisition as needed, utility locations and local agreements.

— Year 5: Solicit bids, sign contracts, put traffic-control measures in place and begin construction. Construction could take two to four years, Emberton said, depending on the final design.

For a detailed look at the state construction process, see this page on the transportation department's website: http://bit.ly/mondayng.

**Where's the money?**

The biggest single problem: There isn't any.

The work leading up to now is covered, paid for with Illinois Jobs Now money. But no money exists for final design, let alone construction. And no source of money has been committed to the project.

A capital bill in Illinois — legislation authorizing funding for public works projects like highway construction — could provide the money, but there isn't a capital bill right now.

Some federal programs pay 90 percent of the cost of highway projects if they enhance safety, Rose noted. The state would have to prove that the reconstruction would improve safety, and the funding is in the form of reimbursement after the fact.

"I don't think this is Illinois taxpayers' burden to bear" alone, Rose said.

---

**Number of crashes within I-74 interchanges in Champaign-Urbana, 2007-12:**

| Interchange | Accidents | Injuries | Fatalities |
|---|---|---|---|
| I-57 | 249 | 68 | 2 |
| Prospect | 166 | 39 | 0 |
| Neil | 141 | 38 | 0 |
| Lincoln | 144 | 59 | 2 |
| Cunningham | 149 | 42 | 1 |
| University | 87 | 23 | 0 |

** For 2007 and 2008, these are crashes with at least $500 in damage; the threshhold rose to $1,500 beginning in 2009. Source: Illinois Department of Transportation.*

# APPENDIX C
# Purpose & Need

# Purpose and Need

December 2013

# I-57 and I-74 Interchange Reconstruction

Champaign County
Champaign, IL



Illinois Department of Transportation

**Region 3 – District 5**

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## I. Purpose of the Proposed Action

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the Interstate 57 (I-57) and Interstate 74 (I-74) interchange by eliminating deficient geometric features and reducing points of access in order to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps.

## II. Description of Project Area

This project is located on the northwest side of the City of Champaign, Illinois. The approximate project limits are the Olympian Drive over I-57 diamond interchange to the north, North Prospect Avenue over I-74 diamond interchange to the east, the Norfolk Southern Railroad over I-57 to the south, and North Duncan Road over I-74 to the west (see **Exhibit 1: Site Map**).

The existing facility was originally constructed in 1965 and is a full conventional cloverleaf interchange connecting I-57 and I-74. Each interstate consists of four lanes (two lanes in each direction) of concrete pavement with multiple overlays. Both I-57 and I-74 have open grass medians which are typically 64 feet and 40 feet in width, respectively. The adjacent section of I-74 to the east beginning between Mattis Avenue and Prospect Avenue consists of a 26 foot paved median with concrete barrier.

I-57 is a full access controlled north-south facility that serves local, regional, and interstate traffic. It originates in Southeastern Missouri and crosses numerous other interstates before terminating in Chicago in northern Illinois. I-57 serves as a vital link in the transportation network between northern and southern Illinois and is a Class I truck route carrying an average of 33,600 vehicles per day with approximately 28 percent truck volume (9,400 trucks per day average) within the project limits.

I-74 is a full access controlled east-west facility that serves local, regional, and interstate traffic. It crosses numerous other north-south and east-west interstates as it passes through Iowa, Illinois, Indiana, and Ohio. I-74 serves as a vital link in the transportation network between the Quad Cities on the Iowa-Illinois border and Cincinnati, Ohio and is a Class I truck route carrying an average of 38,400 vehicles per day with approximately 22 percent truck volume (8,500 trucks per day average) within the project limits.

## III. Need for the Proposed Action

The need for the proposed improvement is to address operational, geometric, safety, and capacity deficiencies as outlined below:

### A. Operational and Geometric Deficiencies

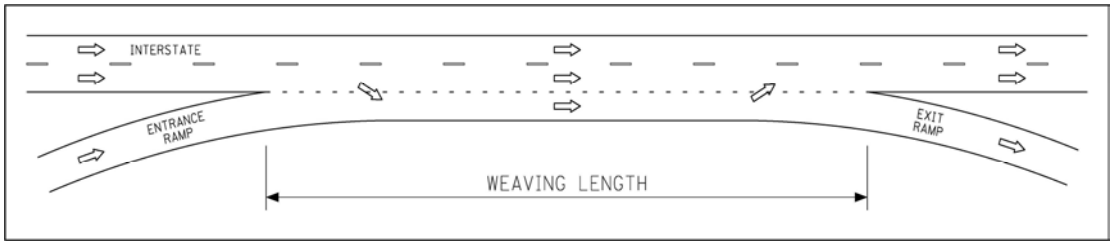
The existing cloverleaf interchange, including the mainline interstates and all eight ramps connecting the interstates, contains several deficiencies. A deficiency is an element or characteristic of a roadway that does not meet current Federal Highway Administration (FHWA) or Illinois Department of Transportation (IDOT) policies. The existing interchange deficiencies include the ramp design speeds, ramp weaving distances, mainline interstate shoulder widths, and I-74 median width. These deficiencies lead to poor operational and safety performance of the interchange and need to be improved.

**Exhibit 2** illustrates the ramp design speeds and policy speeds, which are both determined based on the radii of the ramp curves and the cross slope of the roadway. The ramp design speed is the speed that the ramp as originally constructed currently accommodates, and the ramp policy speed is the speed that the ramps should accommodate according to current FHWA and IDOT policies. These policies set minimum speeds based on the type of facility in order to provide adequate geometry for vehicles navigating the roadways. Interstates have high policy speeds in order to move large volumes of traffic efficiently. Therefore, ramps connecting the interstates also need to have high policy speeds in order to safely accommodate travel between the high speed interstates. A deficiency occurs when the ramp design speed is less than the policy speed, because the speed of the ramp cannot safely accommodate vehicles travelling from one high speed facility to another. All of the ramp speeds for the current cloverleaf interchange configuration are deficient. As shown on **Exhibit 2**, six of the eight ramps are deficient by 10 miles per hour, and two of the eight ramps are deficient by 15 miles per hour. These deficient ramp design speeds are contributing to the crashes (see **Section III.B**) along the ramps at the existing interchange and need to be improved.

The posted speeds for I-57 and I-74 through the interchange are 65 miles per hour. A combination of different warning signs are used to alert motorists to reduce speed along the interchange ramps and approaches due to the deficiencies of each ramp. Signs include advisory exit and reduced ramp speeds, truck rollover warnings, chevrons, and large arrows. These signs add to the confusion of motorists trying to navigate from one interstate to another, and despite the implementation of these countermeasures, crashes are still occurring due to deficiencies of the ramp geometry. Ramp improvements are needed to reduce the number of crashes

occurring due to the deficient ramp geometry and confusion caused by the warning signs.

A weave in an interchange is the length of roadway where an additional lane is added to allow for vehicles to increase speed to enter and reduce speed to exit the mainline interstate lanes from adjoining ramps:




The existing cloverleaf interchange has four weave locations connecting the ramps between I-57 and I-74. The actual length provided for each weave at the existing interchange is less than the IDOT policy length (see **Exhibit 2**), so all four weave lengths are deficient:

| **Table 1: Weave Deficiencies** | | | | |
|---|---|---|---|---|
| Weave location | I-57 NB | I-57 SB | I-74 EB | I-74 WB |
| Deficient by | 104 ft | 131 ft | 104 ft | 95 ft |

These deficient weave lengths create high speed differentials between the mainline vehicles and vehicles trying to enter or exit the ramps. The speed differential and merging of vehicles onto mainline without sufficient acceleration or deceleration length contribute to the concentrated crashes (see **Section III.B**) at the weave areas for the existing interchange and need to be improved or removed.

Access points along interstates are the locations where vehicles are allowed to enter and exit the freeway. The existing cloverleaf interchange configuration has a total of 16 access points, including four along each direction of travel (northbound, southbound, eastbound, and westbound). Each access point along an interstate introduces a conflict point, where drivers are forced to make decisions with vehicles entering and exiting the mainline. At the existing access points for this interchange, the deficient weave lengths and ramp curves that motorists use to access the interstate contribute to the crashes presented in **Section III.B**. A reduction in the number of access points is needed to reduce the number of crashes at this interchange.

Paved shoulders along interstates can provide an area for vehicles that leave the mainline pavement to recover and return back to the mainline lanes prior to running off onto the grass embankments on either side of the roadway. The existing paved shoulders for I-57 are 4 feet on the inside (or left edge of travel) and 10 feet on the outside (or right edge of travel), and I-74 shoulders are 6 feet and 10 feet, respectively. The current policy for both interstates is 12 foot shoulders on both the inside and outside. Since the existing shoulders are not as wide as the current policy, the shoulder widths are deficient. The deficient shoulder widths are a contributing factor to vehicles that strike fixed objects or overturn after running off of the pavement (see **Section III.B**) and need to be improved.

The current policy open grass median width for both interstates within the project limits is 60 feet. A 40 foot open grass median is provided for I-74 in the existing configuration, so it does not meet current policy and is deficient. This deficiency is a contributing factor to the fatality on I-74 (see **Section III.B**), where a vehicle entered the median and was not able to recover prior to entering into oncoming traffic and colliding head on with another vehicle.

## B. Safety Deficiencies

A history of crash data and resulting injuries within the project limits were reviewed for the time period between 2008 and 2012 for I-57, I-74, and the interchange ramps. Injury types are defined as follows: Type A-Injuries are incapacitating injuries that prevent a person from walking, driving, or normally continuing activities the person was capable of performing prior to the injury; Type B-Injuries are non-incapacitating injuries that were evident to observers at the scene of the crash; Type C-Injuries are any other injuries that are reported but not evident; Crashes that do not result in injury are Property Damage Only (PDO).

Between 2008 and 2012, 22 percent of the 325 total crashes within the project limits resulted in injury. Each crash is classified by the maximum injury sustained, and some crashes involve multiple injuries:

**Table 2: Total Crashes and Injuries within Project Limits (2008-2012)**

| | Fatality | A-Injury | B-Injury | C-Injury | PDO | Total |
|---|---|---|---|---|---|---|
| **Crash Type** | 1 | 21 | 37 | 12 | 254 | 325 |
| **Total Injuries** | 1 | 27 | 48 | 15 | 0 | 91 |

**Interstate 57:**

A total of 85 crashes occurred between 2008 and 2012 along I-57 within the project limits. These crashes resulted in 14 injury crashes, including one Type A-Injury crash, 10 Type B-Injury crashes, and 3 Type C-Injury crashes. 71 crashes resulted in Property Damage Only (PDO). See **Exhibits 3 and 4** for diagrams of the crashes along I-57 and **Table 3** below for a summary of crashes along I-57:

**Table 3: Interstate 57 Crashes (2008-2012)**

| Crash Type | Total | Frequency | Total Injury | Injury Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Fatality | A-Injury | B-Injury | C-Injury | PDO |
| **Animal** | 9 | 11% | | | | | | 9 |
| **Fixed Object** | 21 | 25% | 3 | | | 2 | 1 | 18 |
| **Other Non-Collision** | 1 | 1% | | | | | | 1 |
| **Other Object** | 2 | 2% | | | | | | 2 |
| **Overturned** | 11 | 13% | 5 | | 1 | 4 | | 6 |
| **Parked Motor Vehicle** | 1 | 1% | | | | | | 1 |
| **Rear End** | 12 | 14% | 3 | | | 3 | | 9 |
| **Sideswipe Same Direction** | 28 | 33% | 3 | | | 1 | 2 | 25 |
| **Subtotal** | **85** | **100%** | **14** | **0** | **1** | **10** | **3** | **71** |

**Interstate 74:**

A total of 168 crashes occurred between 2008 and 2012 along I-74 within the project limits. These crashes resulted in 45 injury crashes, including one fatality, 17 Type A-Injury crashes, 21 Type B-Injury crashes, and 6 Type C-Injury crashes. 123 crashes resulted in Property Damage Only (PDO). See **Exhibits 5 and 6** for diagrams of the crashes along I-74 and **Table 4** below for a summary of crashes along I-74:

**Table 4: Interstate 74 Crashes (2008-2012)**

| Crash Type | Total | Frequency | Total Injury | Injury Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Fatality | A-Injury | B-Injury | C-Injury | PDO |
| **Angle** | 4 | 2% | 2 | | 2 | | | 2 |
| **Animal** | 16 | 10% | 2 | | 1 | | 1 | 14 |
| **Fixed Object** | 63 | 38% | 15 | | 7 | 8 | | 48 |
| **Head On** | 1 | 1% | 1 | 1 | | | | |
| **Other Non-Collision** | 6 | 4% | 1 | | | 1 | | 5 |
| **Overturned** | 6 | 4% | 6 | | 2 | 4 | | |
| **Parked Motor Vehicle** | 3 | 2% | 2 | | 1 | 1 | | 1 |
| **Rear End** | 26 | 15% | 8 | | 3 | 3 | 2 | 18 |
| **Sideswipe Same Direction** | 38 | 23% | 6 | | 1 | 2 | 3 | 32 |
| **Turning** | 5 | 3% | 2 | | | 2 | | 3 |
| **Subtotal** | **168** | **100%** | **45** | **1** | **17** | **21** | **6** | **123** |

**Interstate I-57 and I-74 Summary:**
Fixed object and sideswipe same direction crashes account for 150 of the crashes, which is over half (58% on I-57 and 61% on I-74) of the crashes on the interstates within the project limits. The deficient weaving lengths explained in **Section III.A** are contributing to these types of crashes and need to be improved or removed. Review of the crash reports indicate that a contributing factor for these crashes is vehicles attempting to negotiate the weaving sections and ramp terminals for the deficient ramps entering and exiting I-57 and I-74. Fixed object crashes are occurring when vehicles either speed up too fast to enter the mainline, losing control and going off the roadway, or fail to slow down enough to stay on the pavement around the ramp curves, going off the roadway. Deficient shoulders along the interstates also contribute to fixed object crashes, since there is less recovery area for vehicles that begin to go off the roadway. Sideswipe crashes are occurring when vehicles are forced to enter the mainline lanes in a short distance and are unable to find an appropriate gap in traffic to pull out into the mainline lanes.

Two 5% Segments have been identified along I-74 within the project limits. 5% Segments are identified in yearly reports by the IDOT Bureau of Safety Engineering and represent the top 5% of roadway segments within the State with the highest potential for safety improvements.

The 2011 5% Segment along I-74 begins west of I-57 and extends 2000 feet to the east through the loop ramp weaving areas and I-57 outer ramp terminals (see **Exhibit 9**). A total of 72 crashes occurred between 2008 and 2012 within this 5% Segment, resulting in 15 injury crashes, including one fatality, 4 Type-A crashes, 9 Type-B crashes, and one Type-C crash. Review of the crash reports indicate that the deficient ramp design speeds and deficient weave distances discussed in **Section III.A** contribute to these crashes and improvement to these features is needed.

The 2012 5% Segment along I-74 begins 3000 feet west of Prospect Avenue and continues east through the Prospect Avenue ramp terminals to the Prospect Avenue cross roadway structure (see **Exhibit 9**). A total of 37 crashes occurred between 2008 and 2012 within this 5% Segment, resulting in 14 injury crashes, including 8 Type-A crashes, 5 Type-B crashes, and one Type-C crash. Review of the crash reports indicate that limited capacity of the interstate along this segment contributes to these crashes, so improvement is needed to provide additional capacity.

**Interchange Ramps:**

A total of 72 crashes occurred between 2008 and 2012 along the interchange ramps within the project limits. These crashes resulted in 12 injury crashes, including 3 Type A-Injury crashes, 6 Type B-Injury crashes, and 3 Type C-Injury crashes. 60 crashes resulted in Property Damage Only (PDO). **Exhibits 7 and 8** show diagrams of the crashes along the interchange ramps and illustrate the concentration of crashes along the deficient low speed ramp curves. See **Table 5** below for a summary of crashes along the ramps:

**Table 5: Interchange Ramp Crashes (2008-2012)**

| Crash Type | Total | Frequency | Total Injury | Injury Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Fatality | A-Injury | B-Injury | C-Injury | PDO |
| **Angle** | 1 | 1% | | | | | | 1 |
| **Fixed Object** | 55 | 76% | 6 | | 1 | 3 | 2 | 49 |
| **Other Non-Collision** | 2 | 3% | | | | | | 2 |
| **Overturned** | 11 | 15% | 6 | | 2 | 3 | 1 | 5 |
| **Parked Motor Vehicle** | 1 | 1% | | | | | | 1 |
| **Sideswipe Same Direction** | 2 | 3% | | | | | | 2 |
| **Subtotal** | **72** | **100%** | **12** | **0** | **3** | **6** | **3** | **60** |

**Interchange Ramp Summary:**

The predominant crash types for the interchange ramps are fixed object (76%) and overturned (15%), which both occur when vehicles leave the ramp pavement. These crash types account for 66 of the 72 total crashes for the interchange ramps. Review of the crash reports for the interchange ramps indicates that the primary cause for these crashes is excessive speed for the ramp curves and configuration. Motorists are unable to slow their vehicles in order to negotiate the deficient ramp curves and design speeds explained in **Section III.A**. The vehicles go off the pavement and either strike fixed objects or overturn. The interchange ramps need to be improved to proper design speeds to reduce the number of crashes that are occurring due to the deficient ramp curves and design speeds.

## C. Capacity Deficiencies

The design year for this project is 2040. Traffic volumes on all roadways within the project limits are expected to increase over time. **Table 6** below illustrates the forecasted increase in traffic volumes (provided by IDOT) for the design year of 2040:

| **Table 6: Average Daily Traffic (ADT)** | | | |
|---|---|---|---|
| | **2011 ADT** | **2040 ADT** | **% Increase** |
| **Interstate 57** | | | |
| South of I-74 | 33,600 | 49,900 | 49% |
| North of I-74 | 23,000 | 33,400 | 45% |
| **Interstate 74** | | | |
| West of I-57 | 27,800 | 41,800 | 50% |
| East of I-57 | 38,400 | 59,900 | 56% |
| **Interchange ramps** | | | |
| I-57 NB to I-74 EB | 5,700 | 8,800 | 54% |
| I-74 EB to I-57 SB | 3,500 | 4,550 | 30% |
| I-57 SB to I-74 EB | 1,950 | 2,650 | 36% |
| I-74 EB to I-57 NB | 600 | 1,000 | 67% |
| I-74 WB to I-57 SB | 5,900 | 9,900 | 68% |
| I-57 NB to I-74 WB | 3,600 | 4,950 | 38% |
| I-74 WB to I-57 NB | 2,000 | 2,650 | 33% |
| I- 57 SB to I-74 WB | 700 | 1,200 | 71% |

The operation of the existing I-57 and I-74 interchange has been evaluated for the increased traffic in the 2040 future conditions and several other criteria including Level of Service, speed differential, and ramp capacity.

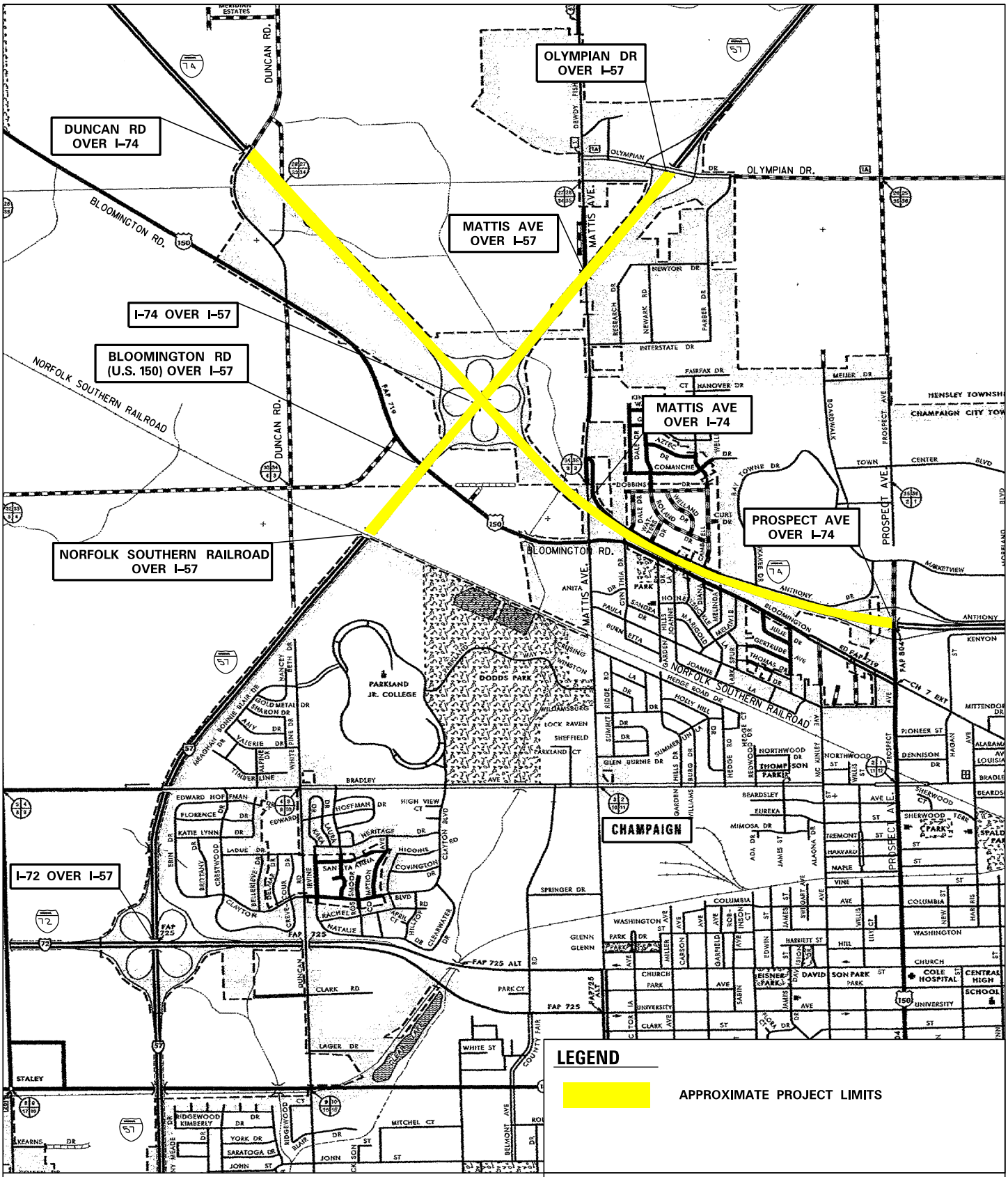
Level of Service is a measure of the quality of traffic flow for a specific section of roadway. Levels of Service characterize the operating conditions of a roadway, which include speed, travel time, and freedom to maneuver. Levels of Service values can range from LOS A, which is the least congested or free flow, to LOS F, which is the most congested or breakdown of flow. According to The Bureau of Design and Environment Manual, Figure 44-5.A, acceptable Levels of Service for I-57 and I-74 are LOS C or better.

The Highway Capacity Manual (HCM) was used to determine the 2011 and 2040 Levels of Service for the existing I-57 and I-74 cloverleaf interchange (see **Table 7** below). These Levels of Service represent the existing geometric characteristics or "no-build" scenario and do not account for adding lanes to the freeways or reconfiguring the interchange ramps. For the design year of 2040, I-74 will have a Levels of Service D eastbound on both sides of I-57 and westbound on the east side of I-57. These Levels of Service do not meet the minimum design criteria of LOS C, so they are deficient. Improvement is needed to provide additional capacity.

**Table 7: Levels of Service - Existing Cloverleaf Interchange (HCM)**

| | 2011 | | 2040 | |
|---|---|---|---|---|
| | **AM** | **PM** | **AM** | **PM** |
| **Northbound Interstate 57** | | | | |
| South of I-74 | B | B | B | B |
| North of I-74 | A | B | A | B |
| **Southbound Interstate 57** | | | | |
| South of I-74 | B | B | B | C |
| North of I-74 | B | B | B | B |
| **Eastbound Interstate 74** | | | | |
| West of I-57 | C | B | **D** | B |
| East of I-57 | C | B | **D** | C |
| **Westbound Interstate 74** | | | | |
| West of I-57 | B | B | B | C |
| East of I-57 | B | C | C | **D** |

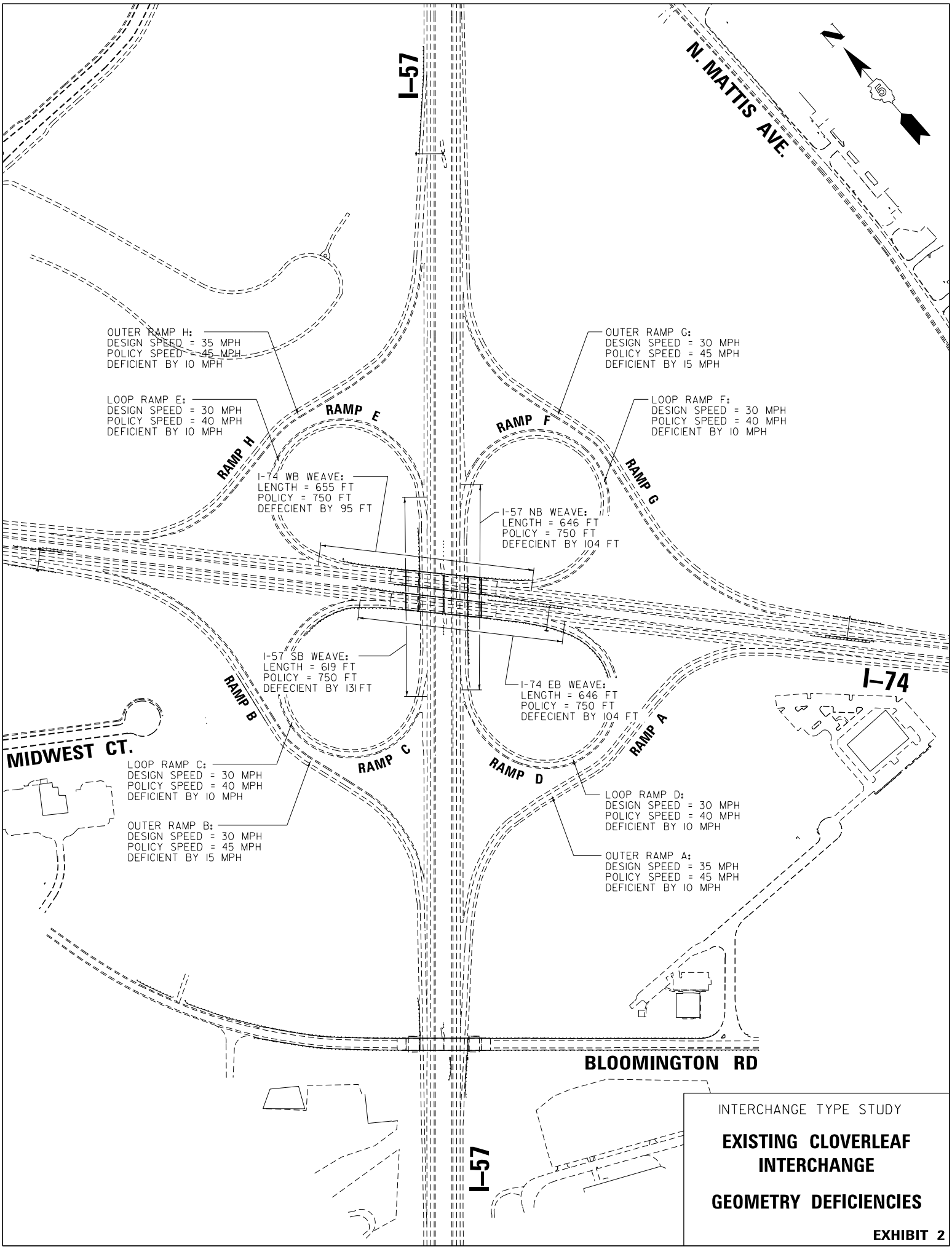
The loop ramps for the existing cloverleaf interchange have limited traffic capacity of approximately 800 vehicles per hour due to the low design speed of the ramp curves. The 2040 projected traffic volume for Ramp E (westbound I-74 to southbound I-57) is 1025 vehicles per hour, exceeding this capacity value of 800 vehicles per hour by more than 25%. If the traffic demand for a ramp exceeds the capacity, traffic will back up onto the interstate. Improvements are needed to prevent traffic from backing up onto the interstate.




# SITE MAP

**I–57 & I–74 INTERCHANGE**
**IDOT – DISTRICT 5**
**CHAMPAIGN COUNTY**
**CHAMPAIGN, IL**

**EXHIBIT 1**



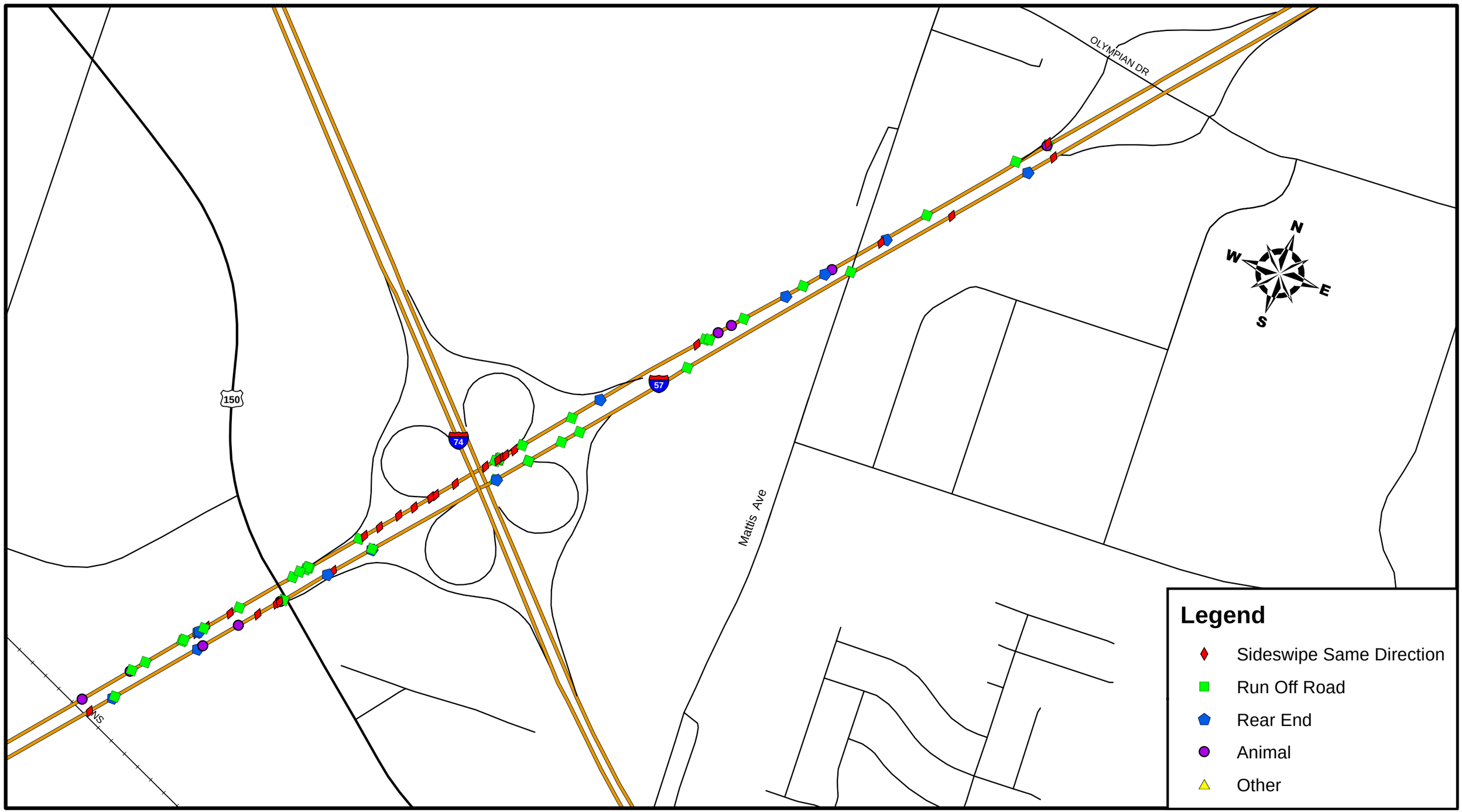

INTERCHANGE TYPE STUDY

## EXISTING CLOVERLEAF INTERCHANGE

## GEOMETRY DEFICIENCIES

**EXHIBIT 2**

# Interchange Reconstruction Project
# I-57 Crashes from 2008 to 2012




Note: Run Off Road crashes include fixed object, other object, overturned, and parked motor vehicle crashes

Exhibit 3

# Interchange Reconstruction Project
# I-57 Crashes from 2008 to 2012

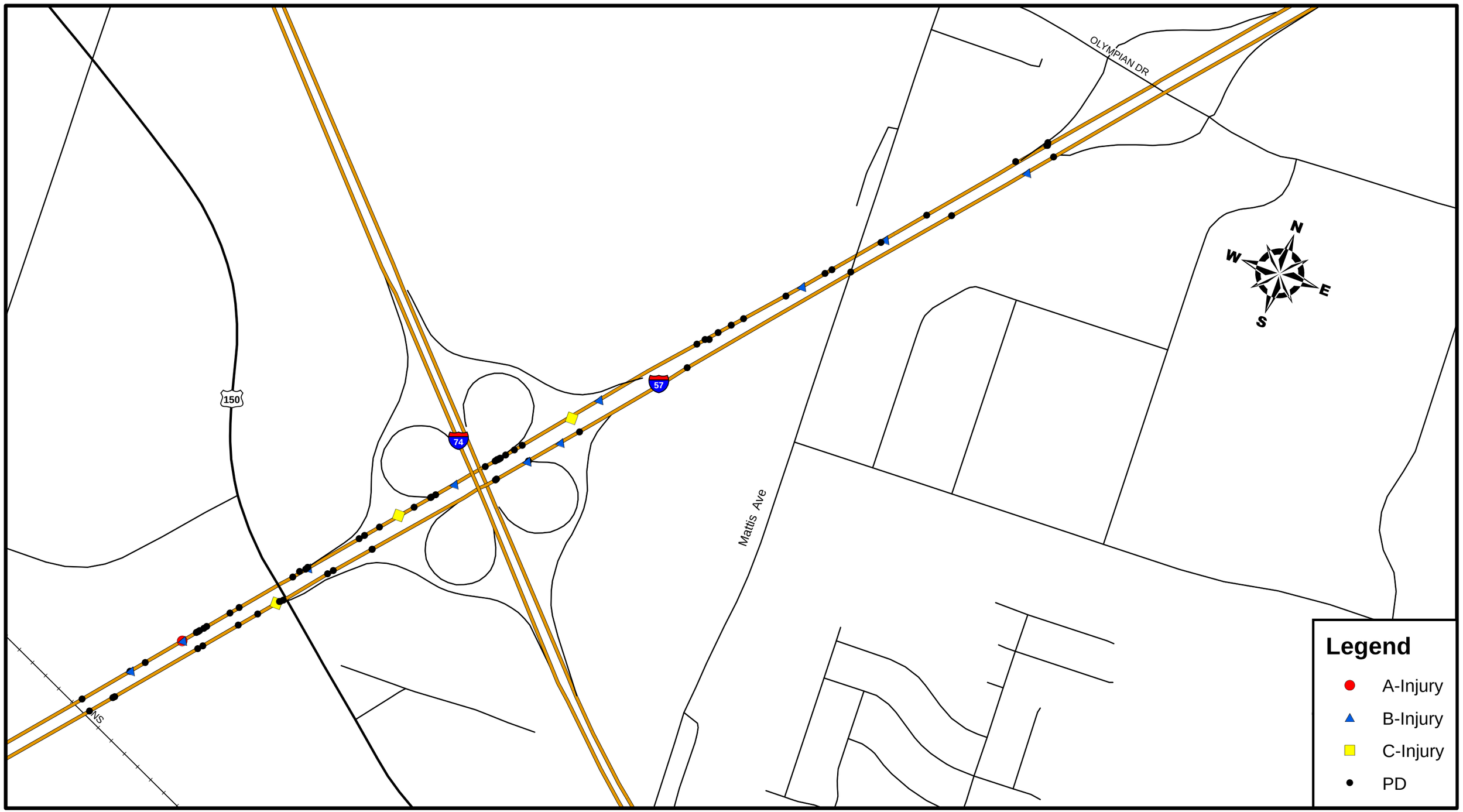
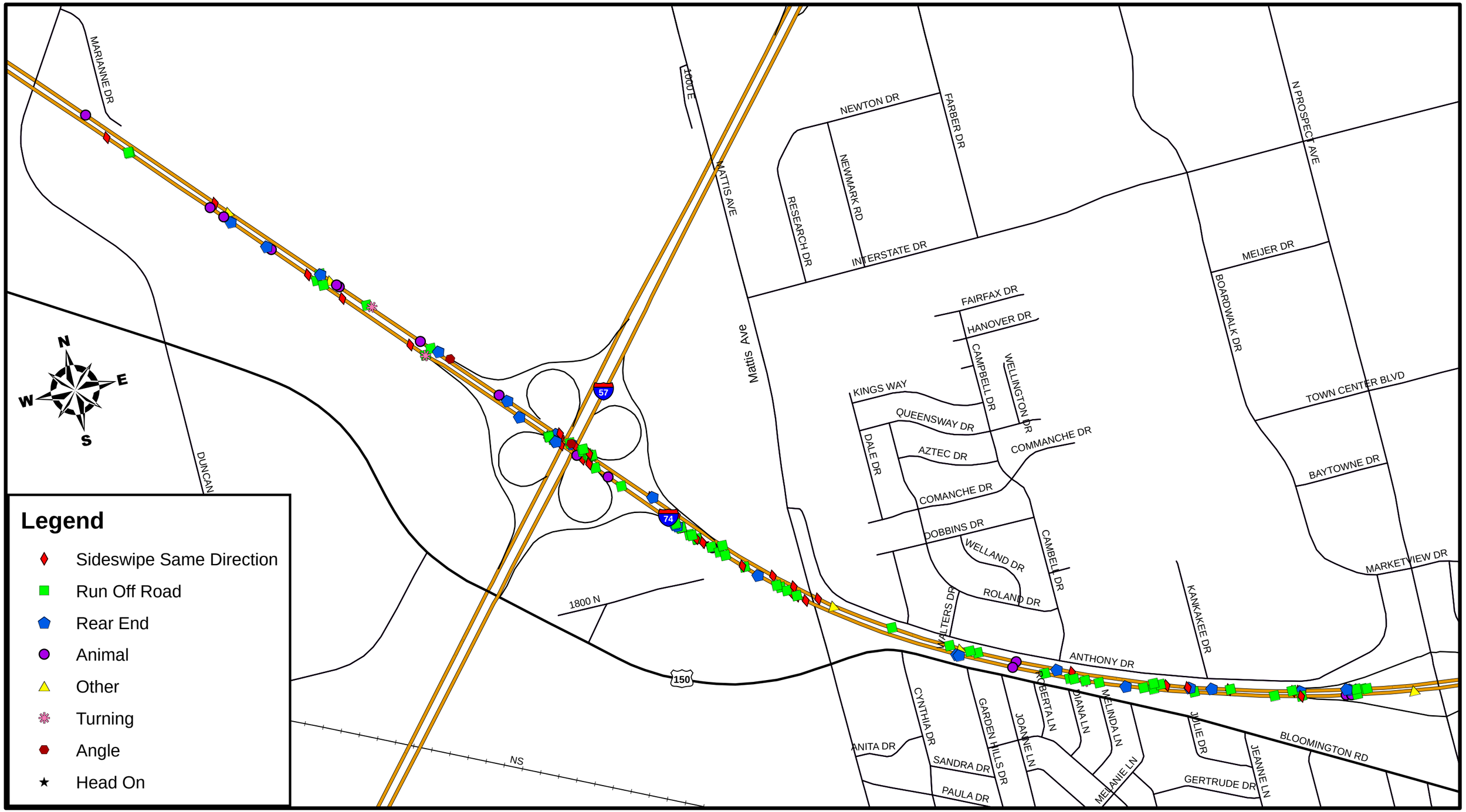



Exhibit 4

# Interchange Reconstruction Project
# I-74 Crashes from 2008 to 2012




Note: Run Off Road crashes include fixed object, other object, overturned, and parked motor vehicle crashes

Exhibit 5

# Interchange Reconstruction Project
# I-74 Crashes from 2008 to 2012

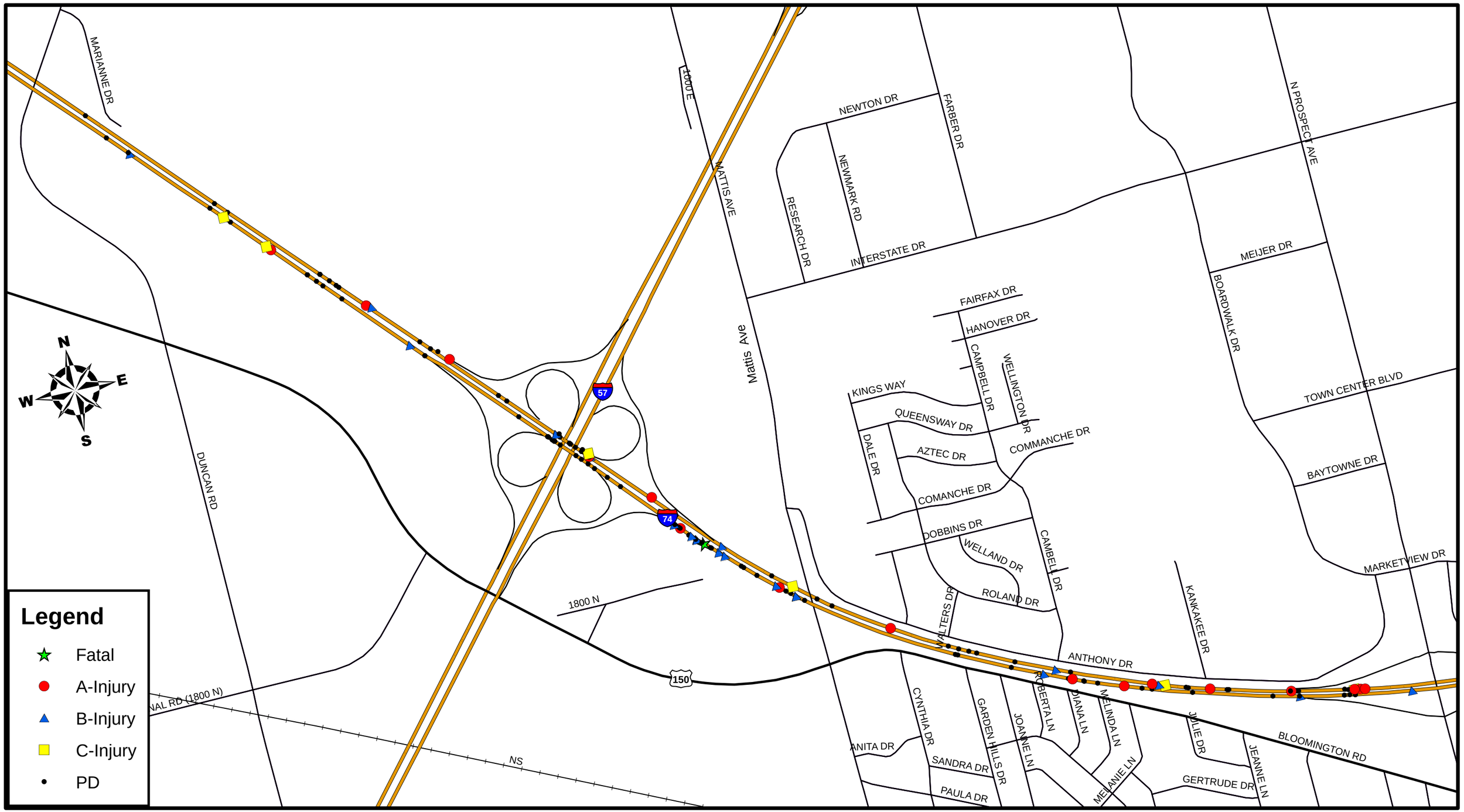
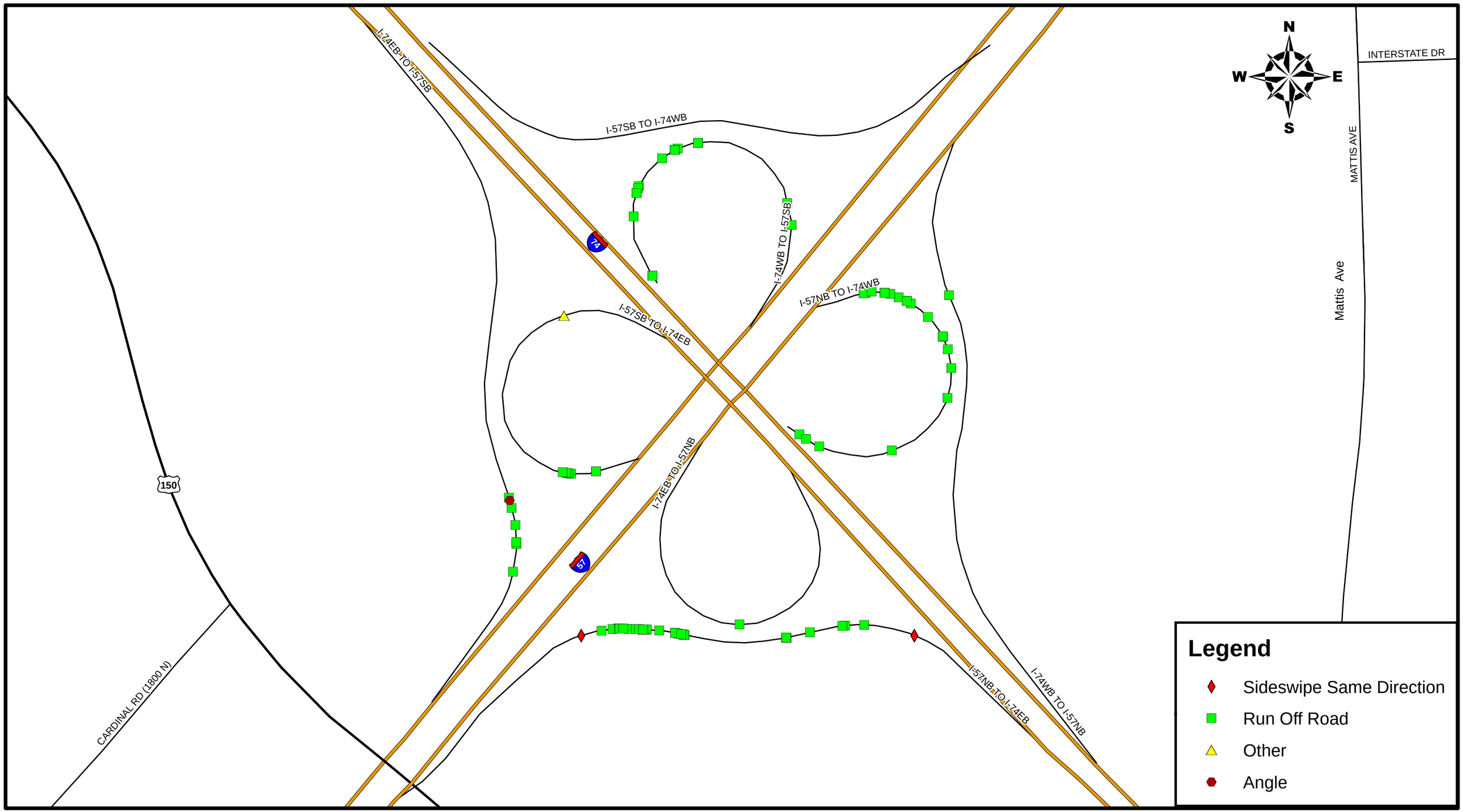



Exhibit 6

# Interchange Reconstruction Project
# Ramp Crashes from 2008 to 2012




Note: Run Off Road crashes include fixed object, other object, overturned, and parked motor vehicle crashes

Exhibit 7

# Interchange Reconstruction Project
# Ramp Crashes from 2008 to 2012

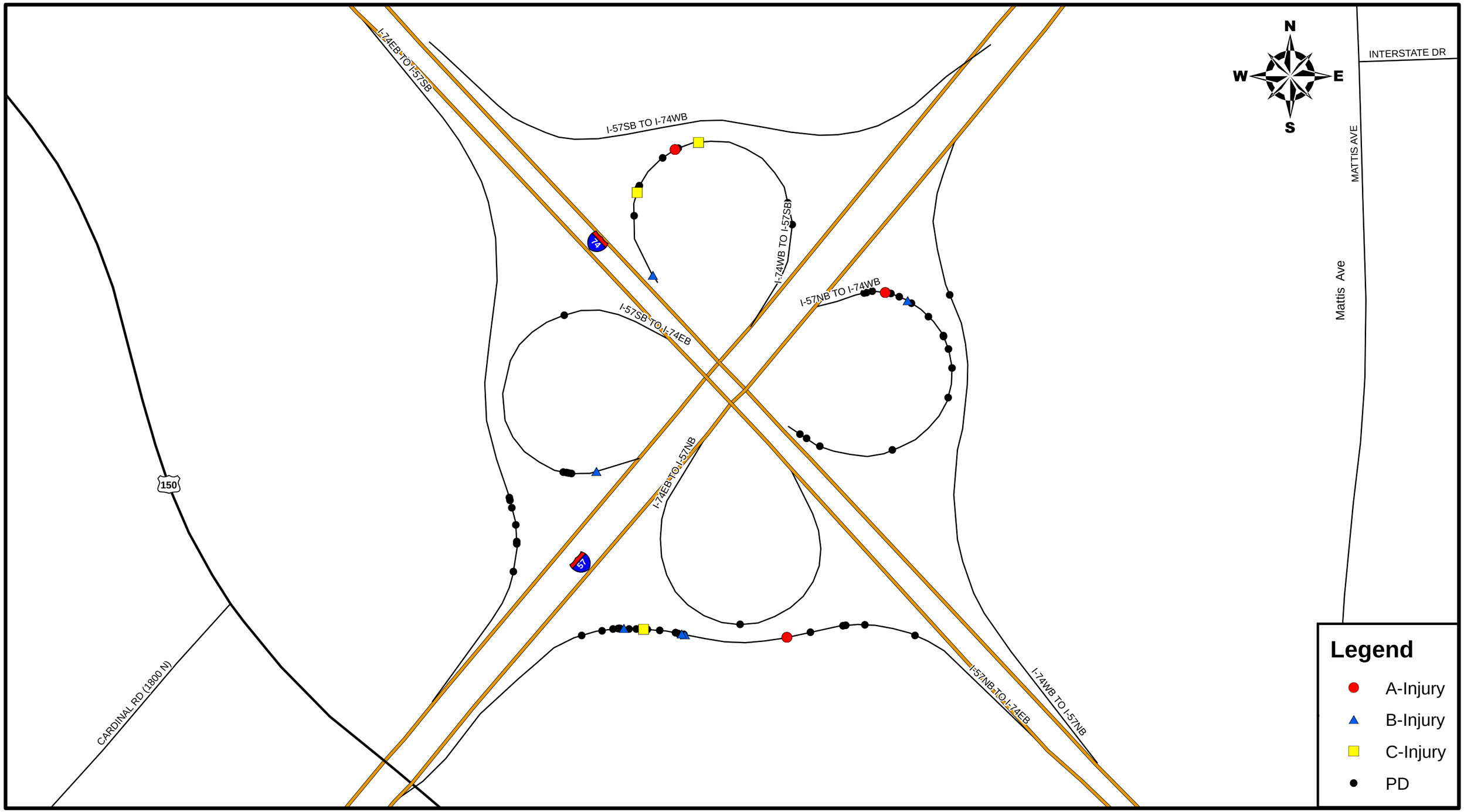



Exhibit 8

# Interchange Reconstruction Project
# 5% Report Locations for years 2011 and 2012

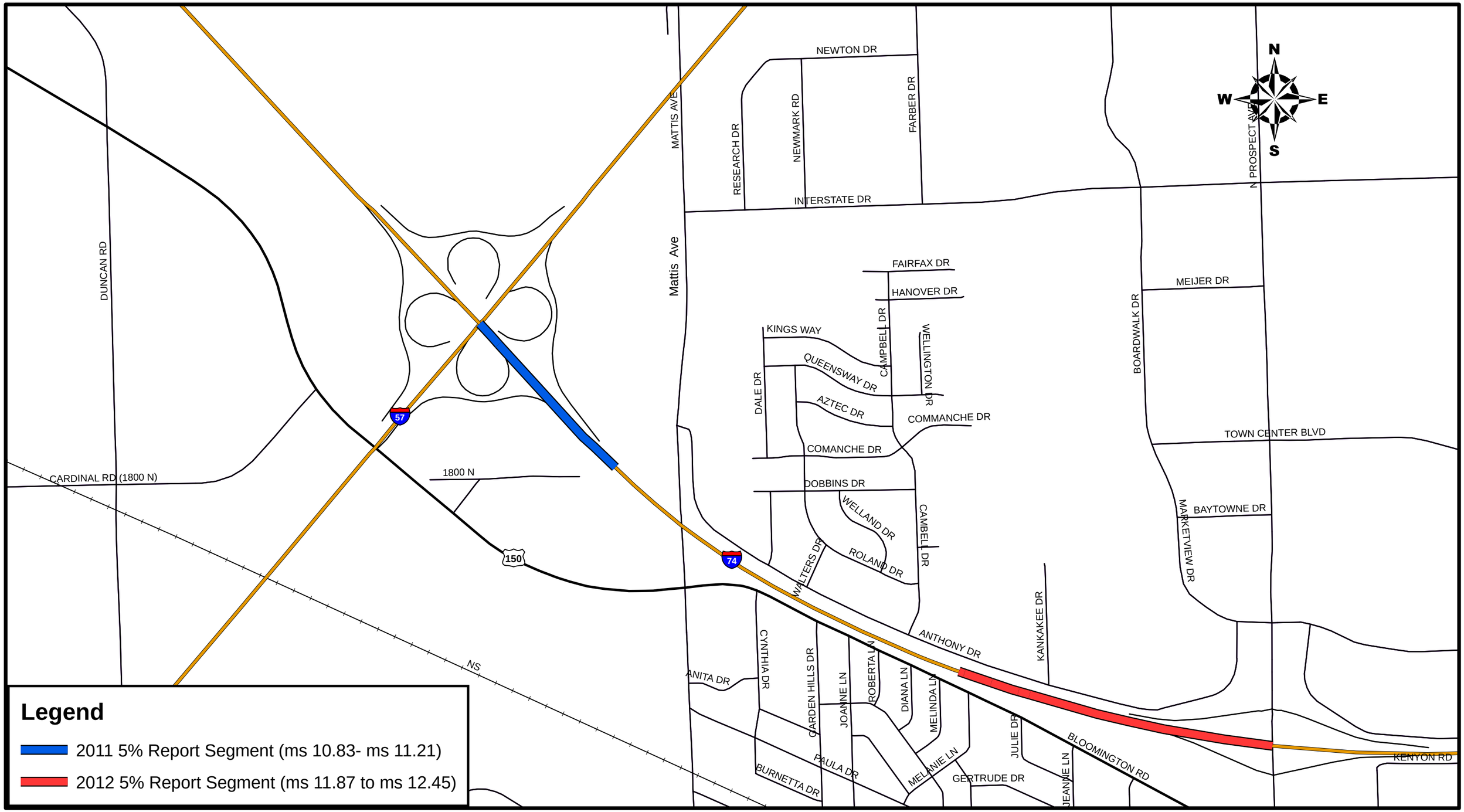



Exhibit 9

# APPENDIX D

# Environmental Studies & Coordination

D1 - Environmental Assessment

D2 - Traffic Noise Analysis

D3 - EA Errata

D4 - FONSI

# Appendix D1
# Environmental
# Assessment

Illinois Department of Transportation

**Abbreviated EA**

**Interstate 57 and Interstate 74 Interchange, Champaign, Champaign County, Illinois**

ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to 42 USC 4332 (2)(c)
by the

U. S. Department of Transportation
Federal Highway Administration

and

Illinois Department of Transportation

April 23, 2015
Date of Approval

For IDOT

April 23, 2015
Date of Approval

For FHWA

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**ABSTRACT:** This EA assesses the applicable issues and potential impact areas of the project that includes reconstructing the existing full conventional cloverleaf interchange and approaches at I-57 and I-74, northwest of Champaign, with improved interchange geometry and operations, enhanced safety conditions, and increased capacity for growing traffic volumes.

Construction of the proposed action would require approximately 46.7 acres of right-of-way from 15 parcels with 7 separate owners. One parcel would require removing approximately 0.66 acres of a parking/storage lot, but the acquisitions would not displace any residences or businesses. Five special waste sites are located in the acquisition area and may be affected. Based on the traffic noise analysis and noise abatement evaluation conducted, including the viewpoints of the benefited receptors, highway traffic noise abatement measures are likely to be implemented based on preliminary design. The project also would require fill within the 100-year floodplain and reconstruction of approximately 1,500 feet of Copper Slough.

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# SECTION I: INTRODUCTION & PURPOSE AND NEED

## 1. Introduction

The proposed project is located on the northwest side of the City of Champaign, Illinois. The approximate project limits are the Olympian Drive over I-57 diamond interchange to the north, North Prospect Avenue over I-74 diamond interchange to the east, the Norfolk Southern Railroad over I-57 to the south, and North Duncan Road over I-74 to the west. (Exhibit 1)

The existing facility was originally constructed in 1965 and is a full conventional cloverleaf interchange connecting I-57 and I-74. Each interstate consists of four lanes (two lanes in each direction) of concrete pavement with multiple overlays. Both I-57 and I-74 have open grass medians that are typically 64 feet and 40 feet in width, respectively. The adjacent section of I-74 to the east beginning between Mattis Avenue and Prospect Avenue consists of a 26 foot paved median with concrete barrier.

I-57 is a full access controlled north-south facility that serves local, regional, and interstate traffic. It originates in Southeastern Missouri and crosses numerous other interstates before terminating in Chicago in northern Illinois. I-57 serves as a vital link in the transportation network between northern and southern Illinois and is a Class I truck route carrying an average of 32,400 vehicles per day in 2013 with approximately 29 percent truck volume (9,450 trucks per day average) within the project limits.

I-74 is a full access controlled east-west facility that serves local, regional, and interstate traffic. It crosses numerous other north-south and east-west interstates as it passes through Iowa, Illinois, Indiana, and Ohio. I-74 serves as a vital link in the transportation network between the Quad Cities on the Iowa-Illinois border and Cincinnati, Ohio and is a Class I truck route carrying an average of 38,900 vehicles per day in 2013 with approximately 19 percent truck volume (7,350 trucks per day average) within the project limits.

## 2. Purpose and Need

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the I-57 and I-74 interchange by eliminating deficient geometric features and reducing points of access to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps.

The need for the proposed improvement is to address operational, geometric, safety, and capacity deficiencies.

### A. Operational and Geometric Deficiencies

The existing cloverleaf interchange, including the mainline interstates and all eight ramps connecting the interstates, contains several deficiencies. A deficiency is an element or characteristic of a roadway that does not meet current Federal Highway Administration (FHWA)

or Illinois Department of Transportation (IDOT) policies. The existing interchange deficiencies include the ramp design speeds, mainline weaving distances, mainline interstate shoulder widths, and I-74 median width. These deficiencies lead to poor operational and safety performance of the interchange and need to be improved.

Exhibit 2 and Table 1 below illustrate the ramp design speeds and policy speeds, which are both determined based on the radii of the ramp curves and the cross slope of the roadway. The ramp design speed is the speed that the ramp currently accommodates, and the ramp policy speed is the speed that the ramps should accommodate according to current FHWA and IDOT policies. These policies set minimum speeds based on the type of facility to provide adequate geometry for vehicles navigating the roadways. Interstates have high policy speeds to move large volumes of traffic efficiently. Therefore, ramps connecting the interstates also need to have high policy speeds to safely accommodate travel between the high speed interstates. When the ramp design speed is less than the policy speed, i.e., deficient, the ramp cannot safely accommodate vehicles travelling from one high speed facility to another.

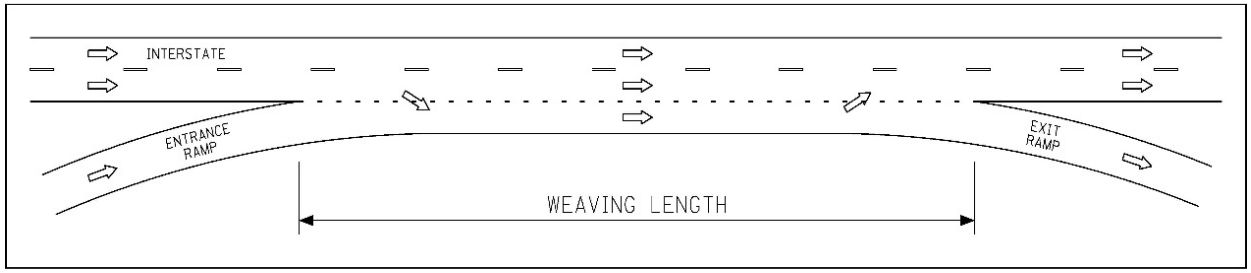
**Table 1: Ramp Speed Deficiencies – mph (See Exhibit 2)**

| Ramp | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| Policy Speed: | 45 | 45 | 40 | 40 | 40 | 40 | 45 | 45 |
| Design Speed: | 35 | 30 | 30 | 30 | 30 | 30 | 30 | 35 |
| Deficient By: | 10 | 15 | 10 | 10 | 10 | 10 | 15 | 10 |

All of the ramp speeds for the current cloverleaf interchange configuration are deficient. As shown in the table above, six of the eight ramps are deficient by 10 miles per hour (mph), and two of the eight ramps are deficient by 15 mph. These deficient ramp design speeds are contributing to the crashes (see Section 2.B.) along the ramps at the existing interchange and need to be improved.

The posted speeds for I-57 and I-74 through the interchange are 70 mph. A combination of different warning signs is used to alert motorists to reduce speed along the interchange ramps and approaches due to the deficiencies of each ramp. Signs include advisory exit and reduced ramp speeds, truck rollover warnings, chevrons, large arrows, flashing lights, and radar detected speed signs. Despite these countermeasures, crashes are still occurring due to deficiencies of the ramp geometry. Ramp improvements are needed to reduce the number of crashes occurring due to the deficient ramp geometry.

A weave in an interchange is the length of roadway where an additional lane is added to allow for vehicles to increase speed to enter and reduce speed to exit the mainline interstate lanes from adjoining ramps:



The existing cloverleaf interchange has four weave locations connecting the ramps between I-57 and I-74. The actual length provided for each weave at the existing interchange is less than the IDOT policy length (see Exhibit 2), so all four weave lengths are deficient:

| Table 2: Weave Deficiencies (See Exhibit 2) | | | | |
|---|---|---|---|---|
| Weave Location | I-57 NB | I-57 SB | I-74 EB | I-74 WB |
| Policy Length: | 750 ft. | 750 ft. | 750 ft. | 750 ft. |
| Actual Length: | 646 ft. | 619 ft. | 646 ft. | 655 ft. |
| Deficient By: | 104 ft. | 131 ft. | 104 ft. | 95ft. |

These deficient weave lengths create high speed differentials between the mainline vehicles and vehicles trying to enter or exit the ramps. The speed differential and merging of vehicles onto the mainline without sufficient acceleration or deceleration length contribute to the concentrated crashes (see Section 2.B.) at the weave areas for the existing interchange and need to be improved or removed.

Access points along interstates are the locations where vehicles are allowed to enter and exit the freeway. The existing cloverleaf interchange configuration has a total of 16 access points, including four along each direction of travel (northbound, southbound, eastbound, and westbound). Each access point along an interstate introduces a conflict point, where drivers are forced to make decisions with vehicles entering and exiting the mainline. At the existing access points for this interchange, the deficient weave lengths and ramp curves that motorists use to access the interstate contribute to the crashes presented in Section 2.B. A reduction in the number of access points is needed to reduce the number of crashes at this interchange.

Paved shoulders along interstates can provide an area for vehicles that leave the mainline pavement to recover and return back to the mainline lanes of the roadway. The existing paved shoulders for I-57 are 10 feet on the right edge of travel (outside) and 4 feet on the left edge of travel (inside), and I-74 shoulders are 10 feet and 6 feet, respectively. The current policy is 12 foot right shoulders for I-57 and I-74, 6 foot left shoulders for I-57, and 12 foot left shoulders for I-74.

| Table 3: Paved Shoulder Deficiencies | | | | |
|---|---|---|---|---|
| Location | I-57 Right | I-57 Left | I-74 Right | I-74 Left |
| Policy Width: | 12 ft. | 6 ft. | 12 ft. | 12 ft. |
| Actual Width: | 10 ft. | 4 ft. | 10 ft. | 6 ft. |
| Deficient By: | 2 ft. | 2 ft. | 2 ft. | 6 ft. |

Since the existing shoulders are not as wide as the current policy, the shoulder widths are deficient. The deficient shoulder widths are a contributing factor to vehicles that strike fixed objects or overturn after running off of the pavement (see Section 2.B.) and need to be improved.

The current open grass median policy width for both interstates within the study limits is 60 feet. A 40 foot open grass median is provided for I-74 in the existing configuration; therefore it does not meet current policy and is deficient.

| Table 4: Open Median Deficiencies | | |
|---|---|---|
| Location | I-57 | I-74 |
| Policy Width: | 60 ft. | 60 ft. |
| Actual Width: | 64 ft. | 40 ft. |
| Deficient By: | N/A | 20 ft. |

This deficiency is a contributing factor to the fatal crash on I-74 (see Section 2.B.), where a vehicle entered the median and was not able to recover prior to entering into oncoming traffic and collided head on with another vehicle.

**B. Safety Deficiencies**

The history of crash data and resulting injuries within the study limits were reviewed for the period between 2008 and 2012 for I-57, I-74, and the interchange ramps. Injury types are defined as follows: Type A-Injuries are incapacitating injuries that prevent a person from walking, driving, or normally continuing activities the person was capable of performing prior to the injury; Type B-Injuries are non-incapacitating injuries that were evident to observers at the scene of the crash; Type C-Injuries are any other injuries that are reported but not evident; Crashes that do not result in injury are Property Damage Only (PDO).

Between 2008 and 2012, 22 percent of the 325 total crashes within the study limits resulted in injury. Each crash is classified by the maximum injury sustained, and some crashes involve multiple injuries:

| Table 5: Total Crashes and Injuries within Project Limits (2008-2012) | | | | | | |
|---|---|---|---|---|---|---|
| | **Fatal** | **A-Injury** | **B-Injury** | **C-Injury** | **PDO** | **Total** |
| **Crash Type** | 1 | 21 | 37 | 12 | 254 | 325 |
| **Total Injuries** | 1 | 27 | 48 | 15 | 0 | 91 |

### 1. Interstate 57

A total of 85 crashes occurred between 2008 and 2012 along I-57 within the study limits. These crashes resulted in 14 injury crashes, including one Type A-Injury crash, 10 Type B-Injury crashes, and 3 Type C-Injury crashes; 71 crashes resulted in PDO. See Exhibits 3 and 4 for diagrams of the crashes along I-57 and Table 6 below for a summary of crashes along I-57:

**Table 6: Interstate 57 Crashes (2008-2012)**

| Crash Type | Total | Frequency | Total Injury Crashes | Injury Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Fatal | A-Injury | B-Injury | C-Injury | PDO |
| **Animal** | 9 | 11% | | | | | | 9 |
| **Fixed Object** | 21 | 25% | 3 | | | 2 | 1 | 18 |
| **Other Non-Collision** | 1 | 1% | | | | | | 1 |
| **Other Object** | 2 | 2% | | | | | | 2 |
| **Overturned** | 11 | 13% | 5 | | 1 | 4 | | 6 |
| **Parked Motor Vehicle** | 1 | 1% | | | | | | 1 |
| **Rear End** | 12 | 14% | 3 | | | 3 | | 9 |
| **Sideswipe Same Direction** | 28 | 33% | 3 | | | 1 | 2 | 25 |
| **Subtotal** | **85** | **100%** | **14** | **0** | **1** | **10** | **3** | **71** |

## 2. Interstate 74

A total of 168 crashes occurred between 2008 and 2012 along I-74 within the study limits. These crashes resulted in 45 injury crashes, including one fatality, 17 Type A-Injury crashes, 21 Type B-Injury crashes, and 6 Type C-Injury crashes; 123 crashes resulted in PDO. See Exhibits 5 and 6 for diagrams of the crashes along I-74 and Table 7 below for a summary of crashes along I-74:

**Table 7: Interstate 74 Crashes (2008-2012)**

| Crash Type | Total | Frequency | Total Injury Crashes | Injury Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Fatal | A-Injury | B-Injury | C-Injury | PDO |
| **Angle** | 4 | 2% | 2 | | 2 | | | 2 |
| **Animal** | 16 | 9% | 2 | | 1 | | 1 | 14 |
| **Fixed Object** | 63 | 37% | 15 | | 7 | 8 | | 48 |
| **Head On** | 1 | 1% | 1 | 1 | | | | |
| **Other Non-Collision** | 6 | 4% | 1 | | | 1 | | 5 |
| **Overturned** | 6 | 4% | 6 | | 2 | 4 | | |
| **Parked Motor Vehicle** | 3 | 2% | 2 | | 1 | 1 | | 1 |
| **Rear End** | 26 | 15% | 8 | | 3 | 3 | 2 | 18 |
| **Sideswipe Same Direction** | 38 | 23% | 6 | | 1 | 2 | 3 | 32 |
| **Turning** | 5 | 3% | 2 | | | 2 | | 3 |
| **Subtotal** | **168** | **100%** | **45** | **1** | **17** | **21** | **6** | **123** |

## 3. I-57 and I-74 Summary

Fixed object and sideswipe same direction crashes account for 150 of the crashes, which is more than half (58% on I-57 and 61% on I-74) of the crashes on the interstates within the study limits. The deficient weaving lengths explained in Section 2.A are contributing to these types of crashes and need to be improved or removed. Review of the crash reports indicate that a contributing factor for these crashes is vehicles attempting to negotiate the weaving sections and ramp terminals for the deficient ramps entering and exiting I-57 and I-74. Fixed object crashes are occurring when vehicles either speed up too fast to enter the mainline, losing control and going off the roadway, or fail to slow down enough to stay on the pavement around the ramp curves, going off the roadway. Deficient shoulders along the interstates also contribute to fixed object crashes, since there is less recovery area for vehicles that begin to go off the roadway. Sideswipe crashes are occurring when vehicles are forced to enter the mainline lanes in a short distance and are unable to find an appropriate gap in traffic to pull out into the mainline lanes.

Five percent segments have been identified along I-74 within the study limits. Two segments have been identified in yearly reports by the IDOT Bureau of Safety Engineering and represent the top 5% of roadway segments within the State with the highest potential for safety improvements.

The 2011 5% Segment along I-74 begins west of I-57 and extends 2,000 feet to the east through the loop ramp weaving areas and I-57 outer ramp terminals (Exhibit 9). A total of 72 crashes occurred between 2008 and 2012 within this 5% Segment, resulting in 15 injury crashes, including one fatality, 4 Type-A crashes, 9 Type-B crashes, and one Type-C crash. Review of the crash reports indicate that the deficient ramp design speeds and deficient weave distances discussed in Section 2.A contribute to these crashes and improvement to these features is needed.

The 2012 5% Segment along I-74 begins 3,000 feet west of Prospect Avenue and continues east through the Prospect Avenue ramp terminals to the Prospect Avenue cross roadway structure (Exhibit 9). A total of 37 crashes occurred between 2008 and 2012 within this 5% Segment, resulting in 14 injury crashes, including 8 Type-A crashes, 5 Type-B crashes, and one Type-C crash. Reviews of the crash reports indicate that limited capacity of the interstate along this segment contributes to these crashes, so additional lanes are needed to provide additional capacity.

**4. Interchange Ramps**

A total of 72 crashes occurred between 2008 and 2012 along the interchange ramps within the study limits. These crashes resulted in 12 injury crashes, including 3 Type A-Injury crashes, 6 Type B-Injury crashes, and 3 Type C-Injury crashes; 60 crashes resulted in PDO. Exhibits 7 and 8 show diagrams of the crashes along the interchange ramps and illustrate the concentration of crashes along the deficient low speed ramp curves. See Table 8 below for a summary of crashes along the ramps:

**Table 8: Interchange Ramp Crashes (2008-2012)**

| Crash Type | Total | Frequency | Total Injury Crashes | Injury Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Fatal | A-Injury | B-Injury | C-Injury | PDO |
| **Angle** | 1 | 1% | | | | | | 1 |
| **Fixed Object** | 55 | 77% | 6 | | 1 | 3 | 2 | 49 |
| **Other Non-Collision** | 2 | 3% | | | | | | 2 |
| **Overturned** | 11 | 15% | 6 | | 2 | 3 | 1 | 5 |
| **Parked Motor Vehicle** | 1 | 1% | | | | | | 1 |
| **Sideswipe Same Direction** | 2 | 3% | | | | | | 2 |
| **Subtotal** | **72** | **100%** | **12** | **0** | **3** | **6** | **3** | **60** |

### 5. Interchange Ramp Summary

The predominant crash types for the interchange ramps are fixed object (76%) and overturned (15%), which both occur when vehicles leave the ramp pavement. These crash types account for 66 of the 72 total crashes for the interchange ramps. Review of the crash reports for the interchange ramps indicates that the primary cause for these crashes is excessive speed for the ramp curves and configuration. Motorists are unable to slow their vehicles to negotiate the deficient ramp curves as explained in Section 2.A. The vehicles go off the pavement and either strike fixed objects or overturn. The interchange ramps need to be improved to reduce the number of crashes that are occurring due to the deficient ramp curves and design speeds. A high friction surface treatment was placed on the interchange ramps in 2014 in an attempt to reduce the crash frequency.

## C. Capacity Deficiencies

The design year for this project is 2040. Traffic volumes on all roadways within the study limits are expected to increase over time. Table 9 illustrates the forecasted increase in traffic volumes (provided by IDOT) for the design year of 2040:

**Table 9: Average Daily Traffic (ADT)**

| | 2013 ADT | 2040 ADT | % Increase |
|---|---|---|---|
| **Interstate 57** | | | |
| South of I-74 | 32,400 | 49,900 | 54% |
| North of I-74 | 22,200 | 33,400 | 50% |
| **Interstate 74** | | | |
| West of I-57 | 32,900 | 41,800 | 27% |
| East of I-57 | 38,900 | 59,900 | 54% |
| **Interchange ramps** | | | |
| I-57 NB to I-74 EB | 5,600 | 8,800 | 57% |
| I-74 EB to I-57 SB | 2,800 | 4,550 | 62% |
| I-57 SB to I-74 EB | 2,100 | 2,650 | 26% |
| I-74 EB to I-57 NB | 500 | 1,000 | 100% |
| I-74 WB to I-57 SB | 5,700 | 9,900 | 74% |
| I-57 NB to I-74 WB | 3,300 | 4,950 | 50% |
| I-74 WB to I-57 NB | 2,100 | 2,650 | 26% |
| I- 57 SB to I-74 WB | 650 | 1,200 | 85% |

The operation of the existing I-57 and I-74 interchange has been evaluated for the increased traffic in the 2040 future conditions and several other criteria including Level of Service, speed differential, and ramp capacity.

Level of Service is a measure of the quality of traffic flow for a specific section of roadway. Level of Service characterizes the operating conditions of a roadway, which include speed, travel time, and freedom to maneuver. Levels of Service values can range from LOS A, which is the least congested or free flow, to LOS F, which is the most congested or breakdown of flow. According

to The Bureau of Design and Environment Manual, Figure 44-5.A, acceptable Levels of Service for I-57 and I-74 are LOS C or better.

The Highway Capacity Manual (HCM) was used to determine the 2013 and 2040 Levels of Service for the existing I-57 and I-74 cloverleaf interchange (see Table 10). These Levels of Service represent the existing geometric characteristics or "no-build" scenario and do not account for adding lanes to the freeways or reconfiguring the interchange ramps. For the design year of 2040, I-74 will have a Levels of Service D eastbound on both sides of I-57 and westbound on the east side of I-57. These Levels of Service do not meet the minimum design criteria of LOS C, so they are deficient. Improvement is needed to provide additional capacity.

**Table 10: Levels of Service - Existing Cloverleaf Interchange (HCM)**

| | 2013 | | 2040 | |
|---|---|---|---|---|
| | **AM** | **PM** | **AM** | **PM** |
| **Northbound Interstate 57** | | | | |
| South of I-74 | B | B | B | B |
| North of I-74 | A | B | A | B |
| **Southbound Interstate 57** | | | | |
| South of I-74 | B | B | B | C |
| North of I-74 | B | B | B | B |
| **Eastbound Interstate 74** | | | | |
| West of I-57 | C | B | **D** | B |
| East of I-57 | C | B | **D** | C |
| **Westbound Interstate 74** | | | | |
| West of I-57 | B | B | B | C |
| East of I-57 | B | C | C | **D** |

The loop ramps for the existing cloverleaf interchange have limited traffic capacity of approximately 800 vehicles per hour due to the low design speed of the ramp curves. The 2040 projected traffic volume for Ramp E (westbound I-74 to southbound I-57) is 1025 vehicles per hour, exceeding this capacity value of 800 vehicles per hour by more than 25%. If the traffic demand for a ramp exceeds the capacity, traffic will back up onto the interstate. Improvements are needed to prevent traffic from backing up onto the interstate.

## D. Summary

The need for the proposed interchange improvements include:

1. Increased ramp design speeds to reduce crashes
2. Elimination of the mainline weaves to reduce crashes
3. Reduced access points along the interstates to reduce the number of conflict points
4. Increased mainline shoulder widths to reduce the number of vehicles running off the pavement
5. Increased median width on I-74 to allow more recovery area for vehicles that runoff pavement before going into opposing lanes of traffic
6. Increased capacity on I-74 to improve travel efficiency

## SECTION II: AFFECTED ENVIRONMENT TABLE

(See BDE Chapter 26)

| Environmental Resources/Conditions | Resource/Condition Present? | | |
|---|---|---|---|
| | Yes | No | Present But Not Affected |
| **I. Social/Economic** | | | |
| 1. Community Cohesion | | | X |
| 2. Environmental Justice and Title VI | | | X |
| 3. Public Facilities and Services | | | X |
| 4. Changes in Travel Patterns and Access | | X | |
| 5. Relocations (Business and Residential) | | X | |
| 6. Economic Impacts | | X | |
| 7. Land Use | | | X |
| 8. Growth and Economic Development | | X | |
| 9. Pedestrian and Bicycle Facilities | | X | |
| **II. Agricultural** | | | |
| 1. Farms and Farmland Conversion | X | | |
| 2. Prime and Important Soils | X | | |
| 3. Severed/Landlocked Parcels | | X | |
| 4. Adverse Travel | | X | |
| **III. Cultural Resources (Historic Properties)** | | | |
| 1. Archeological Sites | | | X |
| 2. Historic Bridges | | X | |
| 3. Historic Districts | | X | |
| 4. Historic Buildings | | X | |
| **IV. Air Quality** | | | |
| 1. Microscale Analysis | | | |
| a. Does project add through lanes or auxiliary turning lanes? | X | | |
| b. Has COSIM 4.0 been used? | | X | |
| 2. Air Quality Conformity | | | |
| a. Is project in a non-attainment or maintenance area? | | X | |
| 3. Is project located in a PM 2.5 or PM 10 non-attainment or maintenance area | | X | |
| 4. Construction-Related Particulate Matter | | X | |
| 5. Mobile Source Air Toxics | | X | |

| Environmental Resources/Conditions | Resource/Condition Present? | | |
|---|---|---|---|
| | Yes | No | Present But Not Affected |
| **V. Noise** | | | |
| 1. Is this a Type I project? | X | | |
| a. Noise impacts | X | | |
| b. Does abatement meet feasibility and reasonableness criteria? | X | | |
| 2. Is this a Type III project? | | X | |
| **VI. Natural Resources** | | | |
| 1. Upland Plant Communities | | | |
| a. Does the project impact wooded areas (Trees)? | | X | |
| b. Does the project impact Prairie? | | X | |
| c. Does the project occur within an Illinois Department of Agriculture quarantine area for an invasive species? | X | | |
| 2. Wildlife Resources | | | |
| a. Does the project area contain Wildlife Habitat? | X | | |
| b. Does the project area contain breeding habitat for neotropical migrant species of birds? | | X | |
| c. Does the project area contain nesting Bald Eagles? | | X | |
| 3. Threatened and Endangered Species | | | |
| a. Does habitat exist for Federally listed species in the project area? | | X | |
| b. Did the EcoCAT response from IDNR indicate the presence of State-Listed Species in the project area? | | X | |

| Environmental Resources/Conditions | Resource/Condition Present? | | |
|---|---|---|---|
| | Yes | No | Present But Not Affected |
| **VII. Water Quality/Resources/Aquatic Habitats** | | | |
| 1. Does the project involve a waterbody? | X | | |
| 2. Does the project affect the physical features of a stream? | X | | |
| 3. Does the project affect the fish and/or mussels within the stream? | | X | |
| 4. Does the project affect either the narrative or numeric water quality standards? | | X | |
| 5 Does the project occur within an area listed as a navigable stream, nationwide river inventory, ADID stream, or have a rating under the Biological Stream rating system? | | X | |
| 6. Is the stream listed by IEPA as impaired and is it subject to TMDLs? | X | | |
| 7. Do the project impacts require mitigation? | | X | |
| **VIII. Groundwater Resources** | | | |
| 1. Is groundwater the primary source of potable water in the area? | X | | |
| 2. Does the project occur within an area of karst topography? | | X | |
| 3. Does the project occur within a watershed that has been designated by the IEPA as vital for a particularly sensitive ecological system? | | X | |
| 4. Does the project impact a Wellhead Protection Area? | X | | |
| 5. Does the project occur within an area where potable water supply wells are present? | X | | |
| 6. Does the project contribute to degradation of the areas Groundwater Quality? | | X | |
| 7. Does the project occur within an area designated as a special resources groundwater? | | X | |

| Environmental Resources/Conditions | Resource/Condition Present? | | |
|---|---|---|---|
| | Yes | No | Present But Not Affected |
| **IX. Floodplains** | | | |
| 1. Does the project occur within a 100-year floodplain? | X | | |
| 2. Does the project occur within the Regulated Floodway? | | X | |
| 3. Is a Floodplain Finding required? | | X | |
| **X. Wetlands** | | | |
| 1. Does the project impact Wetlands? | X | | |
| 2. Do the wetlands have an FQI of 20 or greater? | | X | |
| 3. Are the wetlands listed as an ADID Site? | | X | |
| 4. Attach the Wetland Impact Evaluation Form to the document | X | | |
| 5. Wetlands Finding | | X | |
| **XI. Special Waste** | | | |
| 1. Did project pass Level I screening? | | X | |
| 2. Did project pass Level II screening? | | X | |
| 3. Was a Preliminary Environmental Site Assessment (PESA) required? | X | | |
| a. Is All Appropriate Inquiry (AAI) required? | | X | |
| b. Were REC(s) identified in the PESA? | X | | |
| 4. Was a Preliminary Site Investigation (PSI) required? | X | | |
| **XII. Special Lands** | | | |
| 1. Section 4(f) | | | |
| a. DeMinimis, Programmatic, or Individual | | X | |
| 2. Section 6(f) | | X | |
| 3. Open Space Lands Acquisition and Development (OSLAD) Act Lands | | X | |
| 4. INAI Sites | | X | |
| 5. Nature Preserves | | X | |
| 6. Land & Water Reserves | | X | |
| **XIII. Indirect and Cumulative Impacts** | | | |
| 1. Indirect Impacts | X | | |
| 2. Cumulative Impacts | X | | |

| Additional Information | Yes | No |
|---|---|---|
| **XIV. Environmental Commitments Permits/Certifications Required** | | |
| 1. Does the project require Section 404 Permit(s)? | | X |
| a. Is an individual, nationwide, or regional permit anticipated? | | X |
| 2. Will an individual Water Quality Certification from IEPA be required? | | X |
| 3. Will a Coast Guard Bridge Permit be required? | | X |
| **XV. Public Involvement** | X | |
| **XVI. Agency Coordination** | X | |

# SECTION III: ALTERNATIVES

[BDE Section 24-3.02(d)] *Identify preliminary alternatives, methods for screening and reasons for eliminating, alternatives to avoid certain resources, support preferred alternative selection)*

## 1. No Build/Do Nothing Concept

While the No-build (Do Nothing) Alternative would not require additional right-of-way (ROW) acquisition or relocations, no additional environmental impacts, and no additional cost, the project's purpose to provide safer and more efficient transportation would not be met. Also, the need for the proposed improvement to address the operational, geometric, safety, and capacity deficiencies of the existing interchange would not be met. All of these deficiencies could be mitigated by adding capacity and reconstructing the interchange to meet current design criteria. The No-build (Do Nothing) Alternative is not recommended as the Preferred Alternative because it does not correct any of these deficiencies and does not fulfill any of the needs of the project.

## 2. Mainline Improvements

The forecasted traffic demands for I-57 do not warrant three lanes in each direction for the design year (and well into the future 50+ years), so the proposed improvements only provide two lanes in each direction and shoulders to meet current policy. Since only two lanes will be provided in each direction, the proposed median for I-57 will match the existing, which consists of a 64' open grass median. Accommodations will be provided to allow for future widening (towards the inside) of I-57 to three lanes in each direction. The anticipated limits of improvements along I-57 for both alternatives are just south of the Norfolk Southern Railroad on the south end and Olympian Drive on the north end.

The proposed typical section for I-74 will consist of three lanes in each direction, a 60' open grass median, and shoulders to meet current policy. A concrete barrier wall is anticipated along portions of the inside shoulder to protect vehicles from the ramp flyover substructure units. A closed median with concrete barrier wall will be provided on the east end of I-74 between Mattis Avenue and Prospect Avenue. This closed median matches the median for existing I-74 through Champaign-Urbana. Anticipated limits of improvements along I-74 for both alternatives are Duncan Road on the west end of I-74 and Prospect Avenue on the east end of I-74.

## 3. Development of Proposed Interchange Type Concepts

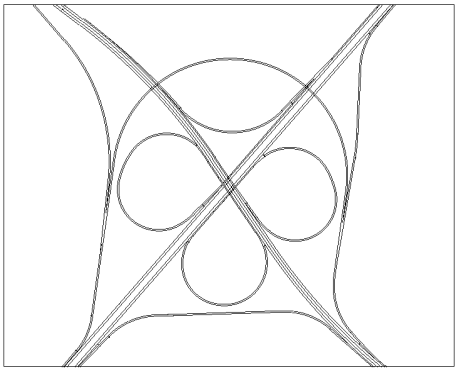
Initial coordination of the interchange type concepts included identifying the project needs and preferred components and characteristics of the proposed interchange. Items identified in the project need include increasing the ramp design speeds, eliminating the mainline weave, reducing the number of access points along the interstates, increasing the mainline shoulder widths, increasing the I-74 median width, and increasing the capacity on I-74. Selection variables also included reducing impacts to the surrounding land environmental features.

The proposed interchange type concepts include the use of flyover ramps, minor convergences, and minor divergences. The term flyover ramp is used for ramps that cross numerous roadways with long, continuous bridge structures that carry the ramp over the roadways underneath. Minor convergences are where two ramps converge to form a single ramp. Minor divergences are where a ramp splits into two separate ramps.

A meeting was conducted at the IDOT District 5 office in November 2012 to review the alternatives studied to date and identify which alternatives or their variations to consider for further studies. These initial interchange type alternatives included:

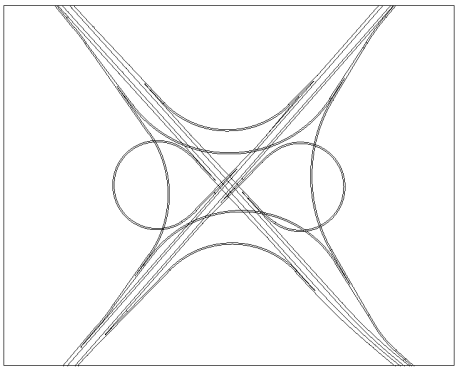
Alternative A: Semi-Directional Interchange Type with Three Loops

- Consists of four outer ramps, three loops, and one semi-directional flyover ramp.
- Four sub-alternatives were considered with loop ramp speeds varying from 30 to 45 mph.
- Includes two weaves, one along I-57 and one along I-74.
- These concepts were not selected for further studies because they did not eliminate the mainline weave and had more impacts on the adjacent properties and environmental features compared to other alternatives.



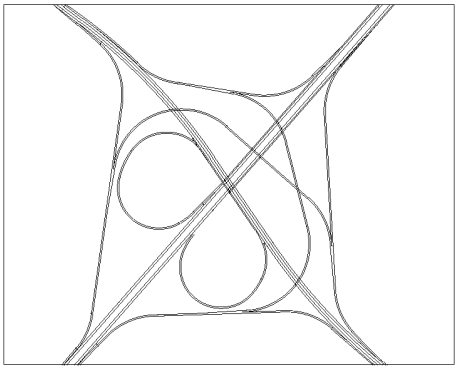
Alternative B: Semi-Directional Interchange Type with Two Diagonal Loops

- Consists of four outer ramps, two diagonal loops, and two flyover ramps (with use of both directional and semi-directional types).
- Six sub-alternatives were considered with loop ramp speeds varying from 35 to 40 mph, variable semi-directional ramp radii, use of transposed ramps, and flyover ramps crossing over loop ramps.
- Eliminates the mainline weave.
- Two of these concepts were identified to be studied further. These were selected because they eliminated the mainline weave and had less impact on the adjacent properties and environmental features compared to other alternatives.



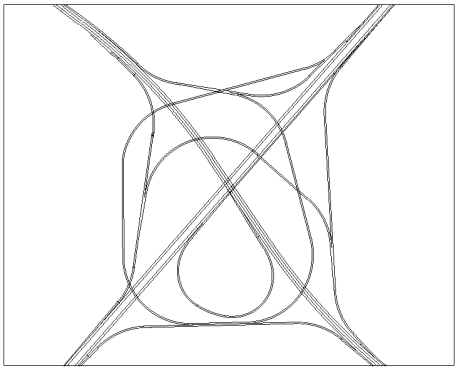
Alternative C: Semi-Directional Interchange Type with Two Adjacent Loops

- Consists of four outer ramps, two adjacent loops, and two semi-directional flyover ramps.
- Four sub-alternatives were considered with loop ramp speeds varying from 30 to 45 mph.
- Includes one weave along I-74.
- These concepts were not selected for further studies because they did not eliminate the mainline weave and had more impacts on the adjacent properties and environmental features compared to other alternatives.



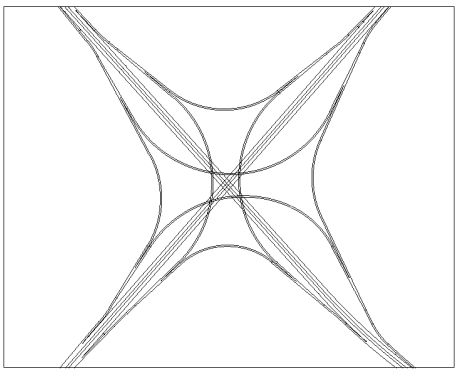
Alternative D: Semi-Directional Interchange Type with One Loop

- Consists of four outer ramps, one loop, and three semi-directional flyover ramps.
- Four sub-alternatives were considered with loop ramp speeds varying from 30 to 45 mph.
- Eliminates the mainline weave.
- These concepts were not selected for further studies because they had more impacts on the adjacent properties and environmental features compared to other alternatives.



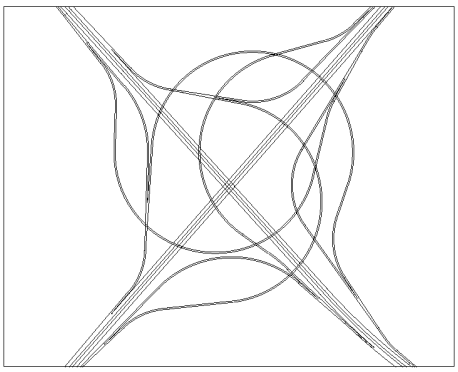
Alternative E: Full Directional Interchange Type

- Consists of four outer ramps and four directional flyover ramps.
- Three sub-alternatives were considered with varying flyover ramp geometry.
- Eliminates the mainline weave.
- Two of these concepts were identified to be studied further. These concepts were selected because they eliminated the mainline weave and all loop ramps and had less impact on the adjacent properties and environmental features compared to other alternatives.



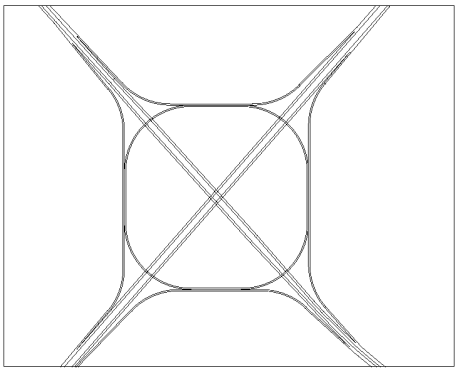
Alternative F: Semi-Directional Interchange Type with No Loops

- Consists of four outer ramps and four semi-directional flyover ramps.
- Two sub-alternatives were considered with varying flyover ramp geometry.
- Eliminates the mainline weave.
- One of these concepts was identified to be studied further. This concept was selected because it eliminated the mainline weave.



Alternative G: Circle Interchange

- Consists of an outer ring from which all ramp traffic merges and diverges to reach their desired direction of travel.
- Eliminates the mainline weave.
- This concept was not selected for further studies because of the curves and weaving movements on the ramps.



The addition of through lanes along the interstates for the existing cloverleaf interchange configuration was considered, but due to the numerous deficiencies of the interchange ramps detailed in this study, it was not further considered because it does not address the project Purpose and Need. A proposed full cloverleaf type interchange (either with collector-distributor roadways or expanded loop ramps and weaving sections) was also discussed as an alternative for the replacement of the existing full cloverleaf interchange. However, even with collector distributor roadways or the addition of a third lane along the interstate, this interchange type concept still has four weaves to navigate between interstates and was therefore not further considered as a desirable alternative. The expanded full cloverleaf also has substantially more environmental and right-of-way impacts than the other alternatives due to the large loop ramps to accommodate higher design speeds in each quadrant.

## 4. Interchange Type Alternatives Selected for Further Study

After review of the seven interchange type concepts described in the previous section, five interchange type alternatives were selected for further studies and investigation in the Interchange Type Study (available upon request). Each interchange type alternative meets or exceeds current design criteria and no deficiencies or design exceptions are anticipated.

Alternative 1: Full Directional

This full directional interchange type alternative does not include any inner loop ramps and eliminates the mainline weaving movements within the interchange. The proposed design consists of eight access points off of the interstates, which is half of the access points for the existing cloverleaf interchange. The use of minor convergences and divergences along the ramps reduces the number of entrance and exit terminals from four in each direction of travel to two. All ramps in the full directional interchange type alternative are designed for a 50 mph design speed. This alternative consists of compact ramp flyovers centered around the intersection of I-57 and I-74.

Alternative 2: Semi-Directional with Directional Flyovers and Two Loops

This interchange type alternative is a semi-directional interchange with directional flyovers and two loops. The loop ramps are placed in diagonal quadrants in order to eliminate any mainline weaving movements within the interchange. The proposed design consists of twelve access points off of the interstates, compared to sixteen for the existing cloverleaf interchange. The use of minor convergences and divergences in the northeast and southwest quadrants reduces the number of entrance and exit terminals from four in each direction for the existing cloverleaf to three for the proposed alternative. Loop ramps are designed for a 40 mph design speed, while all other ramps are designed for a 50 mph design speed.

Alternative 3: Semi-Directional with Semi-Directional Flyovers and Two Loops

The third interchange type alternative is a semi-directional interchange with semi-directional flyovers and two loops. Similar to Alternative 2, the loop ramps are placed in diagonal quadrants to eliminate any mainline weaving movements within the interchange. The proposed design consists of twelve access points off of the interstates, compared to sixteen for the existing cloverleaf interchange. The use of minor convergences and divergences in the northeast and southwest quadrants reduces the number of entrance and exit terminals from four in each direction for the existing cloverleaf to three for the proposed alternative. Loop ramps are designed for a 40 mph design speed, while all other ramps are designed for a 50 mph design speed.

Alternative 4: Semi-Directional with No Loops

Similar to Alternative 1, the proposed semi-directional interchange type alternative with no loops does not include any inner loop ramps and eliminates the mainline weaving movements within the interchange. The proposed design consists of eight access points off of the interstates, which is half of the access points for the existing cloverleaf interchange. The use of minor convergences and divergences along the ramps reduces the number of entrance and exit terminals from four in each direction of travel to two. All ramps in the semi-directional interchange type alternative are designed for a 50 mph design speed.

Alternative 5: Full Directional with Two Convex Ramps

The proposed full directional interchange type alternative does not include any inner loop ramps and eliminates the mainline weaving movements within the interchange. The proposed design consists of eight access points off of the interstates, which is half of the access points for the existing cloverleaf interchange. The use of minor convergences and divergences along the ramps reduces the number of entrance and exit terminals from four in each direction of travel to two. All ramps in the full directional interchange type alternative are designed for a 50 mph design speed. This alternative consists of ramp flyovers that cross over each other and are spread further out over the center of the I-57 and I-74 intersection than Alternative 1.

## 5. Evaluation of Interchange Type Alternatives

Evaluation of these five interchange type alternatives is based on the following primary objectives:

- Accommodation of future peak hour traffic volume
- Efficiency of the Interchange (Ramp Travel Times)
- Safety of vehicles entering and exiting the interstates
- Impacts to environmental resources
- Construction cost
- Design exceptions
- Public input

Based on the objectives above Alternatives 1 and 2 (see Exhibits 10 and 11) provide the best solution to achieve the project purpose and need while minimizing the environmental impacts.

## 6. Alternative 1 and 2 Evaluation

After the five interchange type alternatives were evaluated in the Interchange Type Study, IDOT BDE Procedure Memorandum 14-02 was issued (on February 21, 2014), which changed the mainline interstate design speed from 70 mph to 75 mph and ramp design speeds from 50 mph to 55 mph (with the exception of the loop ramps, which may remain at 40 mph). Alternatives 1 and 2 were revised and evaluated based on the primary objectives described in the previous section. A final comparison of the potential environmental impacts, ROW acquisition, and cost for Alternatives 1 and 2 is provided below to assist in determining the preferred concept:

**Table 11: Alternative 1 and 2 Evaluation**

| | Feature | Alternative 1 | Alternative 2 |
|---|---|---|---|
| **Potential Environmental Impacts** | Wetlands # (acres) | 6 (3.52) | 6 (3.52) |
| | Detention Ponds # (acres) | 1 (1.47) | 1 (1.47) |
| | Streams – Copper Slough (ft) | 2,520 | 1,500 |
| | Floodplains | Yes | Yes |
| | T&E Species/Habitat/Natural Areas | None | None |
| | Special Waste Sites (RECs) | 5 | 5 |
| | Potential Archaeological Resources | 1 | 0 |
| | Impacts to Existing Developments | 2 | 1 |
| **ROW** | Estimated ROW Acquisition | 63 | 46 |
| **Cost** | Estimated Construction Cost | $164,702,000 | $134,926,500 |

Both Alternatives 1 and 2 impact a temporary aggregate parking/storage site that has been constructed on the east side of the existing Midwest Underground Technology, Inc. (MUTI) building in the southwest quadrant of the interchange. Alternative 1 would impact a potential archaeological site and a portion of the office building parking lot in the southeast quadrant. Alternative 1 requires 17 more acres of ROW acquisition than Alternative 2 (63 vs. 46,

respectively) and the construction cost of Alternative 1 is estimated to be $29,775,500 more than Alternative 2 ($164,702,000 vs. $134,926,500, respectively). Based on this comparison and evaluation of the objectives presented herein, Alternative 1 has been eliminated from further consideration.

## 7. Recommended Alternative

The recommended I-57 and I-74 interchange alternative is Alternative 2, the semi-directional interchange type with two directional ramps and two loops. As summarized in Table 11, Alternative 2 provides the least amount of potential environmental impacts, least amount of ROW acquisition, and least amount of cost to construct. Alternative 2 best satisfies the project purpose and need to address operational, geometric, safety, and capacity deficiencies while minimizing the impacts to environmental resources and surrounding land and providing a cost effective solution.

# SECTION IV: IMPACTS, DOCUMENTATION AND MITIGATION

The project area was inventoried for environmental resources. The original Environmental Survey Request (ESR) Form for the project was submitted on September 18, 2012. The project limits were adjusted as the preliminary design progressed, resulting in subsequent ESR Addendums dated March 25, 2013 (Addendum A), December 19, 2013 (Addendum B) and August 8, 2014 (Addendum C). The results of the environmental surveys were reviewed and applicable agency reviews and signoffs are referenced in this Environmental Assessment.

The Preferred Alternative Exhibit (Exhibit 11) identifies all sensitive, natural, physical, and socio-economic resources, and special waste sites in the study area. Resources potentially impacted by the proposed action or that require discussion pursuant to applicable laws and regulations are addressed in this Section.

## Part I. Socio-economic

### 1. Community Cohesion

**Description**
This project is located in the Hensley and Champaign City Townships in the central portion of Champaign County and in the northwest side of the City of Champaign. The nearest residential neighborhoods are located approximately one-third of a mile east of the interchange on the north and south sides of I-74.

Demographics:
Table 12 presents demographic characteristics for the City of Champaign, Champaign County, and the Project Study Area. For this analysis, the Project Study Area is largely based on a 500 foot buffer area from the limits of the proposed roadway improvements because this is the general boundary where noise levels may have an impact on adjacent noise sensitive land uses.

Using U.S. Census Bureau Data,[1] an analysis was conducted of the census blocks and census tracts that encompass noise sensitive land uses (e.g., residential areas, schools, parks, etc.) within the 500 foot buffer area. Population, race and ethnicity, age and housing occupancy information is available at the census block level (the smallest geographical area available in the census data). Income, poverty, and median housing values only are available at the census tract level using the American Community Survey 5-Year estimates; therefore this data represents a larger geographical area than the defined study area.

[1] U.S. Census, 2010 Decennial Census and U.S. Census, American Community Survey, 2008-2012 5-Year Period Estimate.

| Table 12: Demographic Data | | | | | | |
|---|---|---|---|---|---|---|
| Characteristic | General Project Area | | City of Champaign | | Champaign County | |
| | 2010 Census | | 2010 Census | | 2010 Census | |
| | No. | % | No. | % | No. | % |
| **Total Population** | 1,119 | 100 | 81,055 | 100 | 201,081 | 100 |
| **Race and Ethnicity** | | | | | | |
| White | 533 | 47.6 | 54,918 | 67.8 | 147,600 | 73.4 |
| Asian | 59 | 5.3 | 8,566 | 10.6 | 17,969 | 8.9 |
| Native Hawaiian and Other Pac. Islander | 6 | <0.1 | 58 | <0.1 | 134 | <0.1 |
| Black or African American | 365 | 32.6 | 12,680 | 15.6 | 21,946 | 12.4 |
| American Indian/ Native Alaskan | 1 | <0.1 | 205 | 0.3 | 549 | 0.3 |
| Bi-Racial | 144 | 12.9 | 2,425 | 3.0 | 5,522 | 2.7 |
| **Hispanic Origin:** | | | | | | |
| Hispanic Origin (of any race) | 247 | 22.1 | 5,111 | 6.3 | 10,607 | 5.3 |
| **Age:** | | | | | | |
| Median Age | 33.5 | NA | 25.7 | NA | 28.9 | NA |
| 18 Years and Older | 691 | 61.8 | 67,020 | 84.6 | 162,002 | 82.8 |
| 65 Years and Older | 99 | 8.8 | 6,154 | 7.6 | 20,066 | 10.0 |
| **Income *(2008-2012 American Community Survey)**: | | | | | | |
| Median Household Income | $39,743 | NA | $41,403 | NA | $45,088 | NA |
| Per Capita Income | $18,736 | NA | $24,855 | NA | $25,455 | NA |
| Persons Below Poverty Line | 338 | 30.2 | 21,317 | 26.3 | 44,439 | 22.1 |
| **Housing Characteristics** | | | | | | |
| **Occupied Housing Units:** | 432 | 100 | 32,207 | 100 | 80,665 | 100 |
| Owner-Occupied | 185 | 42.8 | 14,722 | 45.7 | 43,419 | 53.8 |
| Renter-Occupied | 247 | 57.2 | 17,241 | 54.3 | 37,246 | 46.2 |
| **Median House Values*** | $105,775 | NA | $151,300 | NA | $149,000 | NA |

*Source: U.S. Census Bureau, 2010 Decennial Census and *2008-2012 American Community Survey,*

No changes in land use and no displacements or changes in access to businesses and residences are anticipated as a result of the proposed project.

The project would not adversely impact community cohesion because it will not divide any communities or change access to the properties within the project limits. No existing bicycle or pedestrian facilities are provided within the project limits, including Mattis Avenue and U.S. 150 (Bloomington Road) over the interstates. The proposed reconstruction improvements for Mattis Avenue and U.S. 150 include sidewalks and on-street bicycle lanes.

There will be some temporary community inconvenience associated with the construction, such as the use of detours, temporary utility interruptions, construction noise, and fugitive dust from construction activities.

## 2. Title VI and Environmental Justice

**Title VI**
Groups of ethnic, religious, elderly or handicapped people ☑ **are /** ☐ **are not** present within the project area. No groups or individuals have been, or will be, excluded from participation in public involvement activities, denied the benefit of the project, or subjected to discrimination in any way on the basis of race, color, age, sex, national origin or religion.

**Environmental Justice**
Environmental Justice addresses environmental impacts that disproportionately affect low-income and minority populations, as defined in Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.* Additionally, Title VI of the Civil Rights Act of 1964 and related statutes assure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination on the basis of race, age, color, national origin, sex, disability, or religion as part of any federally-funded program.

The project area was evaluated to determine if there is a potential for disproportionate and adverse impacts to low-income or minority populations. The 2010 Census indicates that residents of the project area are 47.6% white, 32.6% black, 5.3% Asian, 12.9% Bi-racial, and less than 0.1% are American Indian/Native Alaskan or Native Hawaiian/Other Pacific Islander. The 2010 Census indicates that approximately 22% of the population in the project area is Hispanic (of any race).

The median family income for the project area is $39,743. Approximately 30% of the residents within the project area have an income below the poverty level, and approximately 26% of the residents in the city of Champaign have an income below the poverty level. Since the poverty level in the project area is less than 10% greater than the city's poverty level, it is not considered a low-income population of concern in the context of Environmental Justice. The Health and Human Services 2014 Poverty Guidelines for a family of four is $23,850.

The demographic analysis within the project study area focused primarily on the single- and multi-family residential neighborhoods located on the north and south sides of I-74, east of the interchange. The remaining land uses in the project study area include commercial, industrial, institutional, parkland, agricultural, and a few scattered rural residential properties. Figure 1 depicts the percentage of the population, by Census tract, in the project area that was below the poverty level based on the 2010 U.S. Census data. Figure 2 depicts the percent minority population, by Census block group, based on the 2010 U.S. Census data.

While the project study area includes minority and low income populations, impacts on these environmental justice populations are not disproportionate. The proposed improvements in proximity of the residential neighborhoods include widening I-74 to three lanes in each direction within the existing ROW. There are noise impacts within these residential areas, but these impacts are not isolated to low income or minority populations. Measures to minimize the noise impacts will be incorporated into the proposed project, including potential construction of noise barrier walls. Further information regarding the detailed noise analysis conducted for this project is included in Part V. Noise.



Figure 1: Percent Below Poverty

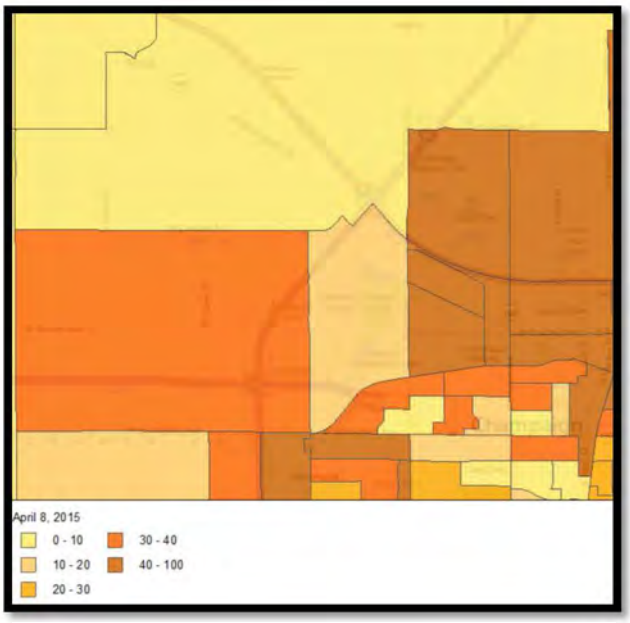


Figure 2: Percent Minority

Based on this demographic information and field observations of the project area, the project ☐ **will** / ☑ **will not** result in disproportionately adverse impacts to minority or low-income populations because (a) the project is a reconstruction of an existing transportation facility; (b) there are no residential or commercial displacements; (c) vehicular mobility and access will improve; (d) the project will generate temporary direct construction jobs; (e) there is no historical significance tied to the project area in regards to minorities; and (f) there are no anticipated impacts to visual resources.

### 3. Public Facilities and Services

**Description**

The following public facilities are located near the interchange and are identified on Exhibits 10 and 11: one elementary school, one high school, one college, one library, one fire station, one surgery center, four parks and four places of worship. Approximately 0.3 acres of open space would be acquired from the Kingdom Hall of Jehovah's Witnesses located in the southwest quadrant. All existing local roads will remain in the same location; therefore, no changes to community access to these facilities would be anticipated.

Exhibit 11 (Alternative 2) depicts the public facilities in the project area.

### 4. Changes in Travel Pattern and Access

**Description**

Construction would need to be completed while maintaining traffic at all times on I-57 and I-74. Use of temporary pavement will be minimized, although required for some temporary ramp connections and tie-ins. Short-term duration closures could be considered for completion of portions of ramp construction items in lieu of temporary pavement or detour routes.

The proposed project would not provide any new access or eliminate access to any areas. In addition, all existing roads will remain in the same location; therefore, no changes in travel patterns and access in the project area would be anticipated.

## 5. Relocations (Business and Residential)

**Estimation and Description**
No relocations are anticipated with the preferred alternative.

Construction of the preferred alternative will require approximately 46.7 acres of ROW from 15 parcels with 7 separate owners. The proposed ROW is needed for the construction of the new interchange ramps and is adjacent to the existing ROW. All property acquisition will be conducted under the provisions of the *Uniform Relocation Assistance and Real Property Acquisition* Policies *Act of 1970*,[2] as amended, and the *IDOT Land Acquisition Policies and Procedures Manual*.[3]

## 6. Economic Impacts

**Description**
The southeast quadrant is mostly agricultural land use with some office development. There is a two story office building located in the far northeast corner of the quadrant; however, there is no impact to this facility by the proposed project. The southwest quadrant also is primarily agricultural land use with some commercial and light industrial development. There is a church located in the southwest corner of the quadrant and two businesses located farther west along I-74. The preferred alternative would require acquisition of a portion of the storage lot for MUTI.

The areas north and south side of I-74 between Mattis Avenue and Prospect Avenue are developed with businesses. No economic impacts to these businesses, or other area businesses, are anticipated.

No businesses will be relocated. There will be no business or residential access changes as a result of the proposed project; however, as part of the approximately 46.7 acres of proposed ROW, approximately 0.66 acres of the MUTI storage lot would be acquired. MUTI has been informed of this project (see meeting notes in Section V) and is aware that a portion of the property and storage lot will be acquired. During development of the Interchange Design Study, the proposed six-lane expansion to I-74 was shifted north of the existing facility to reduce impacts and encroachment onto MUTI. During the stakeholder meeting with MUTI, their representatives indicated a preference for the alternative ultimately selected and IDOT land acquisition staff in attendance at the meeting explained the process for mitigation of potential impacts. Compensation or mitigation for the acquisition of the land and lot will be negotiated during ROW acquisition. All property acquisition will be conducted under the provisions of the *Uniform Relocation Assistance and Real Property Acquisition* Policies *Act of 1970*[2], as amended, and the *IDOT Land Acquisition Policies and Procedures Manual*[3].

A new and improved interchange is anticipated to have a positive impact on business in general, in terms of increased transportation efficiency. The proposed improvements will provide

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[2] 91st Congress, S. 1, Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, January 2, 1971.
[3] IDOT - Bureau of Land Acquisition, Land Acquisition Policies and Procedures Manual, October 2013. http://www.dot.il.gov/landacq/lamanual/land%20acquisition%20manual.pdf

congestion relief and reduce travel times through the interchange. Improved travel efficiency may encourage new construction and redevelopment of land uses and buildings. In turn, this may attract new land uses, commercial developments and employment opportunities.

## 7. Land Use

**Description**
The northeast quadrant of the I-57 and I-74 interchange is primarily agricultural land use. Copper Slough passes through the center of the quadrant and there is a detention pond in the far southeast corner of the quadrant. The southeast quadrant is mostly agricultural land use with some office development. Clearlake Boulevard provides access to the quadrant from Bloomington Road. There is a two story office building located in the far northeast corner of the quadrant. The southwest quadrant also is primarily agricultural land use with some commercial and light industrial development. Midwest Court provides access to the quadrant from Bloomington Road. There also is a church located in the southwest corner of the quadrant and a detention pond between Midwest Court and the interchange ramp. The northwest quadrant is mainly agricultural land use with a roadway for future potential development. There is a detention pond carrying Copper Slough through the center of the quadrant and there is a multi-use path surrounding the detention pond.

The City of Champaign's Future Land Use Map indicates all four interchange quadrants have the potential for development as employment centers.

The preferred alternative would be consistent with local/regional land use plans. It is not anticipated that any appreciable land use changes in the project area would be experienced as the proposed project is primarily a replacement project.

## 8. Growth and Economic Development

**Description**
Three of the four interchange quadrants show potential for economic growth with existing developments. As depicted on the City of Champaign's Future Land Use Map, all four interchange quadrants have the potential for development as employment centers.

No specific growth is expected as a result of the proposed project, but the preferred alternative could enhance the area's economic stability by providing safer and more efficient transportation at the I-57 and I-74 interchange and increasing the traffic capacity of the roadways.

## 9. Pedestrian and Bicycle Facilities

☐ Project will cause disruption or permanent changes in pedestrian or bicycle acess

☑ Project will not cause disruption or permanent changes in pedestrian or bicycle acess

**Description**
No existing bicycle or pedestrian facilities are provided along the existing Mattis Avenue or U.S. 150 (Bloomington Road) corridors near the grade separations over the interstates. The proposed reconstruction improvements for the roadways and bridges at these locations will include sidewalks and on-street bicycle lanes.

There is an existing multi-use path surrounding the detention pond located in the northwest quadrant of the interchange; however, no impacts are anticipated to the path or the detention pond as no land acquisition is proposed in this area.

## Part II. Agricultural

### 1. Farms and Farmland Conversion

**Identify total amount of farmland**
Approximately 46.7 acres of ROW are proposed for acquisition. Of the total acquisition, approximately 38.1 acres are currently farmed. Nearly all of the 38.1 acres are currently owned by a commercial development company, with the remaining land area platted as a corporate park center.

### 2. Prime and Important Soils

The project did not meet any of the six criteria, listed in the IDOT, Bureau of Design and Environment Manual for exemption from coordination with the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). Additionally, the project did not meet any of the three criteria, listed in the IDOT, Bureau of Design and Environment Manual for exemption from coordination with the Illinois Department of Agriculture (IDOA). Accordingly, the proposed project description and the Form AD-1006, which is the primary means of coordination with NRCS and IDOA, were submitted to the NRCS and IDOA for their review and comments.

The proposed project will result in the conversion of approximately 44.3 acres of Prime farmland soils to a non-agricultural use. As indicated on the completed Form AD-1006 (in Exhibit 16), the project received a total of 205 points. Sites or alternatives receiving total scores of 175 or fewer points require only minimal consideration for protection from conversion, and no additional sites/alternatives need be evaluated. Those alternatives receiving 176 to 225 points are in the moderate range for protection. In most cases, alternatives exceeding the 225 point level should be retained for agricultural use, and an alternative site should be utilized for the intended project.

IDOA stated that “[b]ecause the interchange improvements are adjacent to existing Interstate right-of-way and the agricultural impacts have been mitigated to the greatest extent possible, the IDOA has determined that the project complies with IDOT's Agricultural Land Preservation Policy and Illinois' Farmland Preservation Act.” A copy of the completed Form AD-1006 and IDOA November 10, 2014 signoff letter is available upon request.

According to IDOA’s *Agricultural Areas Annual Report 2013* there are no protected agricultural lands in Champaign County.

Erodible soils are defined as soils with greater than 4 percent slope. They are very common in hilly areas and areas surrounding streams. Based on NRCS soil survey maps, erodible soils compose 0.1% of the soils in the existing and proposed highway Right-of-Way within the project limits. All erodible soils within the project corridor are classified Wyanet silt loam, 5 to 10 percent slopes, eroded. Refer to Exhibit 12 for the locations and limits of impacted farmlands and soil types

Erosion Control Blankets made of sod, straw mats, or synthetic materials will be placed over areas containing soils susceptible to erosion during construction as a temporary erosion control method.

Seeding will be completed in these areas after construction to promote vegetation growth to prevent future erosion.

A Stormwater Pollution Prevention Plan is required and will be developed during the Phase II design stage of the project.

### 3. Severed/Landlocked Parcels

**Identify**
The preferred alternative will not create any uneconomic remnants of farmland that are too small to be economically tilled, nor will it land lock or sever any existing crop fields.

### 4. Adverse Travel

**Describe how project may impact farm equipment travel**
As the proposed project mainly entails replacing the existing interchange with a new interchange in the same location, no change in farm equipment travel would occur.

## Part III. Cultural Resources

☑ No Historic Properties Affected - See letter from SHPO

☐ Historic Properties Affected - See below

### 1. Archeological Properties

☑ Project will not affect Archeological Properties

☐ Project will affect Archeological Properties

**Impacts**
Preliminary project investigations conducted by Illinois State Archaeological Survey (ISAS) personnel identified an ancient American Indian archaeological habitation site as requiring test excavations to evaluate its National Register eligibility (IDOT Memo dated February 20, 2014); however, access to the site has been denied by the landowner. Therefore, test excavations by ISAS must be undertaken when IDOT has control of the site area that could be potentially impacted by the project. It is anticipated that the preferred Alternative 2 could avoid the archaeological site.

A Memorandum of Agreement (MOA) has been developed and ratified (IDOT Memo dated July 09, 2014) with the following stipulations (if the site would be impacted by the preferred alternative): (1) archaeological test excavations must be conducted before construction, and (2) if National Register eligible cultural resources are identified, data-recovery excavations (mitigation) must be completed prior to any construction activities in the vicinity of the site. If the resource is determined eligible for the NRHP, and adverse impacts by the project cannot be avoided, IDOT, in coordination with the SHPO, will ensure that data-recovery excavations (mitigation) are completed.

**Mitigation**
While it is anticipated that the archaeological site could be avoided, if it is determined during the design phase that the site cannot be avoided, the stipulations in the above referenced MOA will

be undertaken to mitigate any adverse effects. IDOT will ensure that data-recovery excavations are completed by the ISAS in accordance with the attached data-recovery plan (included in the MOA), which is consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties, the Secretary of the Interior's Standards and Guidelines for Archaeological and Historic Preservation, and the Advisory Council on Historic Preservation's Treatment of Archaeological Properties: A Handbook. IDOT will ensure that no construction activities will be undertaken in the vicinity of the site prior to the conclusion of data-recovery excavations.

**2. Historic Bridges**

☑ Project will not affect a bridge listed in the Illinois Historic Bridge Survey

☑ Project will affect a bridge listed in the Illinois Historic Bridge Survey

**Documentation**
According to IDOT's Historic Bridges of Illinois list (http://www.isas.illinois.edu/transportation_research/idot_historic_bridges/counties/champaign.html), accessed on October 29, 2014, no historic bridges are located in the proposed project area. As such, coordination for compliance with Section 106 on historic bridges is not required.

**3. Historic District**

☑ Project will not affect a Historic District

☐ Project will affect a Historic District

**Impacts**
According to the Illinois Historic Preservation Agency's Historic Architecture and Archaeological Geographic Information System (HAARGIS) **(**http://gis.hpa.state.il.us/hargis/), accessed on October 29, 2014, no historic districts are located in the proposed project area.

**Proposed Mitigation**
No mitigation required.

**4. Historic Buildings**

☑ Project will not affect any Historic Buildings

☐ Project will affect Historic Buildings

**Impacts**
According to the Illinois Historic Preservation Agency's Historic Architecture and Archaeological Geographic Information System (HAARGIS) (http://gis.hpa.state.il.us/hargis/), accessed on October 29, 2014, no historic buildings are located in the proposed project area. Additionally, IDOT determined that "No Historic Properties Affected" in a memo dated January 13, 2014.

**Mitigation**
No mitigation required.

## Part IV. Air Quality

### 1. CO Microscale Analysis

**Project Type:**

- ☐ Project does not add Through Lanes or Auxillary Turning Lanes
- ☑ Project does not involve any sensitive receptors and is not suitable for using COSIM 4.0
- ☐ Project is subject to COSIM Pre-screen
- ☐ Project is subject COSIM screening analysis

**NEPA compliance language**
The proposed project has no "sensitive" receptors within 1,000 ft. of an intersection with added through lanes and it does not fit the assumptions for use of the COSIM model as the proposed project does not include changes to an intersection.

### 2. Air Quality Conformity

**Project Type:**

- ☑ Project is outside of Nonattainment or Maintenance Area
- ☐ Exempt Project in Nonattainment or Maintenance Area
- ☐ Project is within a portion of a Nonattainment or Maintenance Area where CMAP is the MPO
- ☐ Project is within a Nonattainment or Maintenance area served by an MPO other than CMAP
- ☐ Project is within a Nonattainment or Maintenance area not served by an MPO
- ☐ Regionally Significant Non-Federal project within a Nonattainment or Maintenance Area.

**NEPA Compliance Language**
No portion of the proposed project is within a designated nonattainment or maintenance area for any of the air pollutants for which the USEPA has established standards. Accordingly, a conformity determination under 40 CFR Part 93 ("Determining Conformity of Federal Actions to State or Federal Implementation Plans") is not required.

### 3. PM2.5 and PM10 Nonattainment and Maintenance Areas

**Project-Type**

- ☑ Exempt Project
- ☐ Nonexempt project that is not an Air Quality Concern
- ☐ Nonexempt project that is an Air Quality Concern

**NEPA Compliance Language/PM Analysis Summary**
No portion of the proposed project is within a designated nonattainment or maintenance area for particulate matter for which the USEPA has established standards. Accordingly, a conformity determination under 40 CFR Part 93 ("Determining Conformity of Federal Actions to State or Federal Implementation Plans") is not required.

### 4. Construction Related Particulate-Matter

Demolition and construction activities can result in short-term increases in fugitive dust and equipment-related particulate emissions in and around the project area. (Equipment-related particulate emissions can be minimized if the equipment is well maintained.) The potential air quality impacts will be short-term, occurring only while demolition and construction work is in progress and local conditions are appropriate.

The potential for fugitive dust emissions typically is associated with building demolition, ground clearing, site preparation, grading, stockpiling of materials, on-site movement of equipment, and transportation of materials. The potential is greatest during dry periods, periods of intense construction activity, and during high wind conditions.

IDOT's Standard Specifications for Road and Bridge Construction include provisions on dust control. Under these provisions, dust and airborne dirt generated by construction activities will be controlled through dust control procedures or a specific dust control plan, when warranted. The contractor and the Department will meet to review the nature and extent of dust-generating activities and will cooperatively develop specific types of control techniques appropriate to the specific situation. Techniques that may warrant consideration include measures such as minimizing track-out of soil onto nearby publicly-traveled roads, reducing speed on unpaved roads, covering haul vehicles, and applying chemical dust suppressants or water to exposed surfaces, particularly those on which construction vehicles travel. With the application of appropriate measures to limit dust emissions during construction, this project will not cause any significant, short-term particulate matter air quality impacts.

### 5. Mobile Source Air Toxics (MSAT)

**Project-Type**

- ☐ Project is exempt
- ☑ Project has no meaningful potential MSAT effects
- ☐ Project has low meaning potential MSAT effects and is one of the following types below:
  - ☐ A minor widening project
  - ☐ A new interchange connecting an existing roadway with a new roadway
  - ☐ A new interchange connecting new roadways
  - ☐ Minor improvements or expansions to intermodal centers or other projects that affect truck traffic
- ☐ Project has high potential MSAT effects

**NEPA Compliance Language**
This project has been determined to generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special Mobile Source Air Toxic (MSAT) concerns. As such, this project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the non-build alternative.

Moreover, USEPA regulations for vehicle engines and fuels will cause overall MSATs emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with USEPA's MOBILE6.2 model forecasts a combined reduction of 72 percent in the total annual emission rate for the priority MSAT from 1999 to 2050 while vehicle-miles of travels are projected to increase by 145 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

## Part V. Noise

☑ Type I Project

☐ Type III Project

The proposed I-57 and I-74 interchange improvement project is classified as a Type I project, as it includes the addition of through traffic lanes and the relocation of interchange lanes or ramps. Therefore, a traffic noise analysis is required as part of this project. The purpose of the analysis is to evaluate potential noise impacts from the proposed roadway improvements and to consider abatement measures where impacts are identified. Following is a summary of the noise analysis. A copy of the complete Traffic Noise Analysis report is available upon request.

The FHWA regulations (23 CFR 772) establish Noise Abatement Criteria (NAC) activity categories based on land use to assess potential traffic noise impacts. The FHWA NAC and description of activity categories are shown in Table 13.

| Table 13: FHWA Noise Abatement Criteria Hourly "A-Weighted" Sound Level – Decibels (dB(A)) | | |
|---|---|---|
| **Activity Category** | **Noise Abatement Criteria dB(A)** | **Description of Activity Category** |
| **A** | 57 (Exterior) | Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. |
| **B[1]** | 67 (Exterior) | Residential. |
| **C[1]** | 67 (Exterior) | Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings. |
| **D** | 52 (Interior) | Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio stations, recording studios, schools, and television studios. |
| **E[1]** | 72 (Exterior) | Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D. |
| **F** | --- | Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing. |
| **G** | --- | Undeveloped lands that are not permitted. |
| [1]Includes undeveloped lands permitted for this activity category.<br>Source: FHWA, 23 CFR, Part 772 | | |

### Highway Noise Policy

According to the Code of Federal Regulations (23 CFR 772), traffic noise impacts occur when predicted noise levels approach (defined in Illinois as within 1 dB(A) of), meet or exceed the FHWA Noise Abatement Criteria (NAC) or when predicted noise levels substantially exceed (defined in Illinois as greater than 14 dB(A)) existing noise levels. The NAC are noise impact thresholds that, if approached, met or exceeded, require the consideration of noise abatement.

### Description of Noise Receptors

IDOT defines a receptor as a discrete or representative location of a common noise environment (CNE) for any of the activities listed in Table 13. Primary consideration should be given to exterior areas where frequent human use occurs for activity categories A, B, C, and E. Consideration should be given to activity category D land uses only if no exterior uses are identified.

Sensitive noise receptors with similar characteristics such as land use, topography, and roadway geometrics can be grouped into CNEs. One receptor within the CNE can be considered representative of the area as a whole. Typical CNE groupings include residential subdivisions, commercial areas, recreational lands, churches, and schools. Land uses within 500 feet of the edges of the project area were reviewed. A total of 14 CNEs (labeled 1 through 14 in Table 14), and 14 receptors, were chosen to represent the study area.

| Table 14: Noise Receptor Descriptions | | | | |
|---|---|---|---|---|
| **CNE ID** | **Representative Receptor Description** | **Activity Category** | **IDOT Approach Criterion dB(A)** | **No. of Receptors in CNE** |
| 1 | SFR – Backyard | B | 66 | 3 |
| 2 | SFR – Backyard | B | 66 | 12 |
| 3 | SFR – Backyard | B | 66 | 16 |
| 4 | MFR[1] – Balcony | B | 66 | 14 |
| 5 | Church – Outside gathering area in front of church | B | 66 | 1 |
| 6 | MFR[2] – Balcony | B | 66 | 48 |
| 7 | MFR[3] – Common green space | B | 66 | 82 |
| 8 | SFR – Backyard | B | 66 | 9 |
| 9 | Park – Playground, picnic area, baseball field, and soccer field | C | 66 | 4 |
| 10 | Church – Playground on east side of building | C | 66 | 1 |
| 11 | SFR – Backyard | B | 66 | 10 |
| 12 | SFR – Backyard | B | 66 | 64 |
| 13 | SFR – Backyard | B | 66 | 19 |
| 14 | Church – Patio in back of building | B | 66 | 1 |

*SFR=Single Family Residence; MFR= Multi-Family Residence*
*[1] Two 4-unit apartments and one 6-unit apartment.*
*[2] Six 8-unit apartments.*
*[3] Two 8-unit apartments, four 16-unit apartments, and two common areas.*

### Impacts

Table 15 summarizes the modeled noise levels for the Existing, No-Build, and Build scenarios. Existing scenario traffic noise levels range from 59 dB(A) at CNE 14 to 75 dB(A) at CNEs 10 and 12. No-Build scenario traffic noise levels range from 61 dB(A) at CNE 14 to 76 dB(A) at CNEs 4, 5, 6, 7, 10, and 12.

The Build scenario traffic noise levels range from 59 dB(A) at CNE 14 to 77 dB(A) at CNE 12. CNEs 1 through 13 (representing 133 single family residential receptors, 144 multi-family residential receptors, a park with 4 receptors, and two churches) approach or exceed the NAC, and are therefore considered impacted under this scenario. None of the receptors will experience a substantial increase of 14 dB(A) or greater.

**Table 15: Noise Impact Summary**

| CNE ID | Description of Receptor | IDOT Approach Criterion dB(A) | No. of Receptors Represented | Existing | | No-Build Alternative | Build Alternative | | | Impact (Yes/No)[2] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Dist. To I-74 Nearest Edge of Pavement (ft) | Noise Level dB(A) | Noise Level dB(A) | Dist. To I-74 Nearest Edge of Pavement (ft) | Noise Level dB(A) | Increase Over Existing dB(A)[1] | |
| 1 | SFR | 66 | 3 | 260 | 67 | 69 | 236 | 73 | 6 | Yes |
| 2 | SFR | 66 | 12 | 247 | 71 | 72 | 233 | 73 | 3 | Yes |
| 3 | SFR | 66 | 16 | 365 | 68 | 69 | 365 | 70 | 2 | Yes |
| 4 | MFR | 66 | 14 | 178 | 74 | 76 | 170 | 76 | 2 | Yes |
| 5 | Church | 66 | 1 | 185 | 74 | 76 | 185 | 76 | 2 | Yes |
| 6 | MFR | 66 | 48 | 181 | 74 | 76 | 181 | 76 | 2 | Yes |
| 7 | MFR | 66 | 82 | 185 | 74 | 76 | 178 | 76 | 2 | Yes |
| 8 | SFR | 66 | 9 | 206 | 73 | 75 | 199 | 76 | 2 | Yes |
| 9 | Park | 66 | 4 | 509 | 64 | 66 | 501 | 66 | 2 | Yes |
| 10 | Church | 66 | 1 | 168 | 75 | 76 | 160 | 77 | 2 | Yes |
| 11 | SFR | 66 | 10 | 403 | 67 | 69 | 395 | 70 | 3 | Yes |
| 12 | SFR | 66 | 64 | 168 | 75 | 76 | 160 | 77 | 2 | Yes |
| 13 | SFR | 66 | 19 | 430 | 69 | 71 | 419 | 71 | 2 | Yes |
| 14 | Church | 66 | 1 | 733 | 59 | 61 | 314[3] | 59 | 0 | No |

*[1] Calculated noise levels have been rounded to the nearest whole numbers. The values in the "Increase Over Existing dB(A)" column were computed based on the calculated raw noise levels and then rounded to the nearest whole number. Therefore, some values in this column may not appear add correctly.*

*2 Noise Level under Build Alternative meets or exceeds approach criterion of 66 dB(A).*

*[3] Distance to I-57 SB/I-74 EB interchange ramp nearest edge of pavement.*

*SFR=Single Family Residential, MFR=Multi-Family Residential*

**Abatement Evaluation for Feasibility and Reasonableness**

Feasibility

Feasibility generally addresses the engineering aspects of implementing a noise barrier such as consideration for safety, drainage, and utilities. If these factors cannot be accommodated in providing the minimum noise reduction, noise abatement will be deemed not feasible. In order to be considered acoustically feasible, a noise abatement measure also must achieve the traffic noise reduction feasibility criterion of at least 5 dB(A) for at least one impacted receptor.

Reasonableness

The following three reasonableness evaluation criteria must be met in order for noise abatement to be considered reasonable:

1) Noise Reduction Design Goal – Noise abatement measures must achieve at least an 8 dB(A) traffic noise reduction for at least one benefited receptor. In order to be considered benefited, a receptor must have a noise reduction of at least 5 dB(A). Both impacted and non-impacted receptors can be considered benefited.

2) Economic Reasonability – The overall cost of the noise barrier must not exceed the allowable cost per benefited receptor comparison. The base value for the allowable noise abatement cost is $24,000 per benefitted receptor.

   Other reasonableness factors may be considered to potentially adjust the allowable noise abatement base value cost of $24,000 per benefited receptor (Table 16). These factors include:
   - The absolute noise level of the benefited receptors in the design year build scenario before noise abatement,
   - The incremental increase in noise level between the existing noise level at the benefited receptor and the predicted build noise level before noise abatement, and
   - The date of development compared to the construction date of the highway.

   Consideration of the three reasonableness adjustment factors result in a potential maximum allowable noise abatement cost of $26,000 per benefited receptor. This determination is based upon an adjustment factor of $2,000 added to the base value cost per benefited receptor because some of the receptor locations have predicted noise levels between 75 and 79 dB(A) before noise abatement. If the estimated build cost of noise abatement per benefited receptor is less than the adjusted allowable noise abatement cost per benefited receptor, then the noise abatement measure achieves the cost-effective reasonableness criterion.

| Table 16: Factors for Adjusting the Allowable Noise Abatement Cost per Benefited Receptor Base Value of $24,000 | |
|---|---|
| **Absolute Noise Level Consideration** | |
| **Predicted Build Noise Level Before Noise Abatement** | **Dollars Added to Base Value Cost per Benefited Receptor** |
| Less than 70 dB(A) | $0 |
| 70 to 74 dB(A) | $1,000 |
| 75 to 79 dB(A) | $2,000 |
| 80 dB(A) or greater | $4,000 |
| **Increase in Noise Level Consideration** | |
| **Incremental Increase in Noise Level Between the Existing Noise Level and the Predicted Build Noise Level Before Noise Abatement** | **Dollars Added to Base Value Cost per Benefited Receptor** |
| Less than 5 dB(A) | $0 |
| 5 top 9 dB(A) | $1,000 |
| 10 to 14 dB(A) | $2,000 |
| 15 dB(A) or greater | $4,000 |
| **New Alignment / Construction Date Consideration** | |
| **Project is on New Alignment OR the Receptor Existed Prior to the Original Construction of the Highway** | **Dollars Added to Base Value Cost per Benefited Receptor** |
| No for both | $0 |
| Yes for either | $5,000 |

3) Viewpoints of Benefited Receptors – Viewpoints of benefited receptors must be considered for noise abatement measures that are determined to be feasible and achieve the first two reasonableness factors. For noise abatement to be considered reasonable, more than 50 percent of the responses (weighted totals) must be in favor of the noise abatement measure. A response from first row benefited receptors (receptors sharing a property line with the highway right-of-way) will be counted and weighted as two responses. Benefited receptors not in the first row will count as one response. In the case of rental properties, the tenant shall always count as one response and the owner shall always count as one response per benefited unit.

   Based on the IDOT Noise Policy, the goal is to obtain responses from at least one-third (33%) of the benefited receptors for each noise abatement measure. (i.e., for each noise barrier being considered). If responses from one-third of the benefited receptors are not received after the first attempt, a second attempt shall be made. If after the second attempt there are still less than one-third of the responses received, the tally can be conducted based on the responses received.

### Barrier Assessments

TNM 2.5 was used to perform the noise wall feasibility and reasonability analysis for impacted locations along the project corridor. The feasibility and reasonableness of potential noise walls were evaluated using the base cost effectiveness value of $26,000 per benefited receptor and a unit noise wall construction cost of $25 per square foot. Additionally, impacted and non-impacted

receptors with a reduction of at least 5 dB(A) were considered benefited receptors and were counted when evaluating cost per benefited receptor. The results of the three barrier assessments are summarized in Tables 17 and 18.

**Table 17: Benefited Receptors by CNE**

| Noise Wall ID | CNE | Description of Receptors | Benefited Receptors (Reduced by at Least 5 dB(A)) | Total Receptors |
|---|---|---|---|---|
| 1 | 1 | SFR | 0 | 3 |
| 2 | 2 | SFR | 9 | 12 |
| | 3 | SFR | 15 | 16 |
| | 4 | MFR | 10 | 14 |
| | 5 | Church | 1 | 1 |
| | 6 | MFR | 48 | 48 |
| 3 | 7 | MFR | 28 | 82 |
| | 8 | SFR | 9 | 9 |
| | 9 | Park | 3 | 4 |
| | 10 | Church | 1 | 1 |
| | 11 | SFR | 10 | 10 |
| | 12 | SFR | 64 | 64 |
| | 13 | SFR | 7 | 19 |

*Note: Wall 1 is not feasible because there are no impacted receptors that are reduced by at least 5 dB(A).*

**Table 18: Barrier Analysis**

| Noise Wall ID | CNE | Wall Height (ft) | Wall Length (ft) | Noise Reduction $L_{eq}$ (dB(A)) | Cost [1] | Benefited Receptors | Cost per Benefited Receptor | Adjusted Allowable Cost per Benefited Receptor | Likely to Implement (Yes/No)[2] |
|---|---|---|---|---|---|---|---|---|---|
| 2 | CNEs 2, 3, 4, 5, and 6 | 10 | 124 | 5 – 9 | $781,000 | 83 | $9,410 | $26,000 | Yes |
| | | 12 | 2,500 | | | | | | |
| 3 | CNEs 7, 8, 9, 10, 11, 12 and 13 | 12 | 4,634 | 5 – 8 | $1,390,100 | 122 | $11,394 | $26,000 | Yes |

[1] *Noise wall cost based on $25 per square foot construction cost.*

Noise walls 2 and 3 met the feasibility evaluation and achieved the first two reasonableness factors. Therefore, the last factor that was considered for reasonableness included soliciting the viewpoints of the benefited receptors for the potential abatement measures. Because the first survey of benefited receptors resulted in less than 33% of responses received, a second survey request was sent to the benefited receptors via certified mail. Table 19 presents the results of the viewpoints of benefited receptors for each noise wall evaluated. Based on the survey results, 83.6% are in favor of the north wall and 76.7% are in favor of the south wall.

| Table 19: Viewpoints of Benefited Receptors | | | | | | |
|---|---|---|---|---|---|---|
| **Noise Wall ID** | **Total Surveys Sent to Benefited Receptors[1]** | **Number of Responses Received from Both Surveys** | **% Responses Received** | **Responses in Favor of Noise Wall[2]** | **Responses Not in Favor of Noise Wall[2]** | **% in Favor of Noise Wall** |
| 2 (North Wall) | 97 | 44 | 45.4% | 61 | 12 | 83.6% |
| 3 (South Wall) | 290 | 77 | 26.6% | 66 | 20 | 76.7% |

[1] *Surveys were sent to the property owners and tenants; therefore, the number of surveys do not equal the total number of benefitted receptor properties.*

**Likelihood Statement**

Based on the traffic noise analysis and noise abatement evaluation conducted, highway traffic noise abatement measures are likely to be implemented based on preliminary design. The noise barriers determined to meet the feasible and reasonable criteria are identified in Table 18. If it subsequently develops during final design that constraints not foreseen in the preliminary design occur, or public input substantially changes reasonableness, the abatement measure may need to be modified or removed from the project plans. A final decision on the installation of abatement measure(s) will be made upon completion of project's final design and the public involvement process.

**Coordination with Local Government Officials**

FHWA and IDOT policies require that noise levels under future build conditions be predicted on undeveloped properties that have not received a building permit by the date of NEPA document approval, so that local communities can protect future land development from becoming incompatible with highway traffic noise levels. There are no active building permits within the study corridor. However, undeveloped land in the study corridor is zoned for future commercial land uses. Noise contours were developed for undeveloped lands along the project corridor. A map depicting the noise contours will be provided to the appropriate planning/zoning official for their use.

**Construction Noise**

Trucks and machinery used for construction produce noise that may affect some land uses and activities during the construction period. Residents along the alignment will, at some time, experience perceptible construction noise from the project. To minimize or eliminate the effect of construction noise on these receptors, mitigation measures have been incorporated into the IDOT Standard Specifications for Road and Bridge Construction as Article 107.35.

## Part VI. Natural Resources

### 1. Upland Plant Communities

**Impacts**
According to the Wetland Delineation Report, dated June 2013, the common upland plants found in the area, in addition to grasses, are alfalfa, wheat, common dandelion, thistle, Canada goldenrod, common ragweed, tall fescue, clover, fleabane, English plantain and Queen Anne's lace.

Table 20 depicts the typical ground cover in the proposed ROW area.

| Table 20: Ground Cover Types | |
|---|---|
| **Type** | **Acres** |
| Cropland | 38.1 |
| Grass | 3.8 |
| Water | 2.6 |
| Trees | 1.8 |
| Paved | 0.4 |

The total area of tree removal could be minimized during detailed design.

**Proposed Mitigation**
The proposed project consists of an interchange reconfiguration, and portions of adjacent existing farmland will be acquired and converted to grass roadway embankments, ditches, and infield areas. Therefore, there will be an increase in vegetative ground cover within the ROW and no mitigation would be necessary. Any removal of trees would follow the IDOT – Bureau of Design and Environment's (BDE) Preservation and Replacement of Trees policy.[4]

### 2. Wildlife Resources

**Impacts**
The area of the project located north and south of I-74 and west of I-57 is more rural than urban in nature; the part of the project located east of I-57 is more urban in nature. The proposed project area, including existing and future ROW, primarily consists of cropland and grassland. It is likely that the proposed project area supports wildlife species adapted to urban and rural environments, such as; coyote, fox, rodents, skunk, opossum, raccoon, and various raptor and song birds.

**Proposed Mitigation**
The proposed project primarily consists of an interchange reconfiguration with an increase in vegetative ground cover within the ROW. No mitigation would be necessary.

[4] IDOT - Bureau of Design and Environment, Preservation and Replacement of Trees policy, September 6, 2002. http://www.dot.il.gov/desenv/depolicy.pdf

## 3. Threatened and Endangered Species

### A. Federally-listed Species/Habitat

According to the Wetland Delineation Report, dated June 2013, no species listed as threatened or endangered federally or in Illinois were found during the wetland survey within the project corridor. Also, no natural communities of special interest were noted.

The U.S. Fish and Wildlife Service (USFWS), Region 3 list of threatened or endangered species in Illinois lists the Indiana bat, Eastern prairie fringed orchid and Prairie bush clover as occurring Champaign County, Illinois. The USFWS published a notice in the *Federal Register* on April 2, 2015, that the Northern Long-Eared Bat will be listed as threatened effective May 4, 2015.

As stated in IDOT memos dated June 27, 2013, January 7, 2014 and November 13, 2014, the Bureau of Design and Environment determined that there would be no effect to any of these species. These memos documented compliance with Section 7 of the Endangered Species Act.

**Impacts**

☑ No Effect

☐ May Effect

☐ Informal Consultation

☐ Formal Consultation

### B. State-Listed Species

According to the Wetland Delineation Report, dated June 2013, no species listed as threatened or endangered federally or in Illinois were found during our wetland survey within the project corridor. Also, no natural communities of special interest were noted.

As stated in IDOT memos, dated June 27, 2013, January 7, 2014 and November 13, 2014, the Bureau of Design and Environment stated that the Illinois Department of Natural Resources (IDNR) had no records of listed species, natural areas or nature preserves within the project corridor. In accordance with the 2013 Memorandum of Understanding by and between IDNR and IDOT,[5] consultation is terminated.

**IDNR Consultation results**

☑ Closed

Date (11-13-14)

☐ Open

Incidental Take Authorization

☐ Yes

Species – [list here]

☑ No

[5] Illinois Department Of Natural Resources and Illinois Department Of Transportation, Memorandum Of Understanding By And Between The Illinois Department Of Natural Resources And The Illinois Department Of Transportation, January 10, 2013.

## Part VII. Water Quality/Resources/Aquatic Habitats

### Impacts

Copper Slough flows south through the proposed project site, crossing under I-57, through the northeast quadrant crossing under I-74, then turns and flows southwest towards West Bloomington Road. The Wetland Delineation Report indicated that the stream is not a permanent body of water and that the watershed area is 1.12 square miles. The stream is described as excavated and converted into ponds north of I-57 and is essentially a grassed waterway with no discernible bed or bank south of I-57. Based on the roadway geometry in the approved Interchange Design Study, approximately 1,020 lineal feet of the existing Copper Slough between I-57 and I-74 can remain undisturbed. An estimated 1,500 lineal feet of the slough will be reconstructed with a configuration to provide a flow path of approximately the same distance as the existing alignment. Reconstruction of the slough will be limited to locations where the proposed roadway embankment and grading limits prohibit the existing alignment to remain in place. Efforts to minimize impacts to Copper Slough will be taken into consideration during the design phase of the project, including measures as outlined in the Proposed Mitigation section below.

According to the Illinois Environmental Protection Agency's (IEPA) 2014 303(d) List,[6] Copper Slough is impaired by Endrin. Endrin is an insecticide that was used mainly on field crops such as cotton, maize, sugarcane, rice, cereals, ornamentals, and other crops. Once widely used in the U.S., most uses were cancelled in 1980. Total Maximum Daily Loads (TMDL) have not yet been developed for this stream. According to the IEPA's 2014 stream assessment, Copper Slough is not supporting of aquatic life caused by alteration in stream-side or littoral vegetative covers, Endrin, and other flow regime alterations. The sources of these impairments are channelization and contaminated sediments. The contaminated sediments are not types of impairment that are historically attributed to roadways. Cooper Slough is rated D for Diversity under the Biological Stream C. http://www.dnr.illinois.gov/conservation/BiologicalStreamratings/Pages /default.aspx

The Wetland Delineation Report indicated that no Mussel shell material was observed during the site visit. Additionally, no federal or state species listed as threatened or endangered were found during the wetland survey within the project corridor. Also, no natural communities of special interest were noted.

There are no other specially designated streams in the project area including: navigable waters, nationwide rivers inventory, Illinois natural areas, Advanced Identification of Water Resources (ADID) and Biologically Significant Streams.

### Proposed Mitigation

Best Management Practices (BMPs) will reduce or eliminate temporary impacts to water quality during construction. The selected construction site BMPs would be consistent with practices to comply with requirements of the State of Illinois National Pollutant Discharge Elimination System (NPDES) permit.

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[6] Illinois Environmental Protection Agency, Illinois Integrated Water Quality Report And Section 303(D) List, Volume I: Surface Water, Appendix A-2, March 24, 2014.

To minimize surface water impacts, appropriate erosion and sediment control practices will be implemented in accordance with local, state, and federal regulations. These specifications also prohibit contractors from discharging any contaminant that may affect water quality. In the event of accidental spills, the contractor is required to immediately notify all appropriate local, state, and federal agencies and to take immediate action to contain and remove the contaminant.

With proper implementation of BMP measures and compliance with the NPDES construction permit, short-term construction-related water quality impacts will be avoided or minimized.

## Part VIII. Groundwater Resources

### Impacts

The proposed project lies on the edge of the Upper Kaskaskia Watershed and the edge of the Mahomet Aquifer. The Mahomet Aquifer, a sand and gravel aquifer, is the public water supply for Champaign and is a designated Sole Source Aquifer. A public water supply well is located north of West Bloomington Road, between I-57 and Clearlake Boulevard. As such, this project crosses a wellhead protection recharge area for one public well for the community of Champaign. The wellhead protection area is crossed by I-57 approximately from 500 to 2,200 feet south of I-74. According to the Illinois Integrated Water Quality Report and Section 303(d) List – 2012, Volume II: Groundwater,[7] the quality of the public water supply well is categorized as good/full support.

According to the Illinois Pollution Control Board there are no Class III Special Resource Groundwater areas in Champaign County.

This project will not create any new potential "routes" for groundwater pollution or any new potential "sources" of groundwater pollution as defined in the Illinois Environmental Protection Act (415 ILCS 5/3, et seq.).[8] Accordingly, the project is not subject to compliance with the minimum setback requirements for community water supply wells or other potable water supply wells as set forth in 415 ILCS 5/14, et seq.

### Proposed Mitigation

BMPs will reduce or eliminate temporary impacts to groundwater quality during construction. The selected construction site BMPs would be consistent with practices to comply with requirements of the State of Illinois NPDES permit.

To minimize groundwater impacts, appropriate erosion and sediment control practices would be implemented in accordance with local, state, and federal regulations. These specifications also prohibit contractors from discharging any contaminant that may affect water quality. In the event of accidental spills, the contractor is required to immediately notify all appropriate local, state, and federal agencies and to take immediate action to contain and remove the contaminant.

With proper implementation of BMP measures and compliance with the NPDES construction permit, short-term construction-related water quality impacts would be avoided or minimized.

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[7] Illinois Environmental Protection Agency, Illinois Integrated Water Quality Report And Section 303(D) List – 2012, Volume II: Groundwater, December 20, 2012

[8] Illinois Environmental Protection Agency, Illinois Environmental Protection Act (415 ILCS 5/3, et seq.), January 1, 2014.

On March 11, 2015 the U.S. Environmental Protection Agency (USEPA) designated a portion of the Mahomet Aquifer system as a sole source aquifer (SSA) under Section 1424(e) of the Safe Drinking Water Act, as shown in the attached map. The Safe Drinking Water Act gives USEPA authority to designate all or part of an aquifer as a "sole source" if contamination of the aquifer would create a significant hazard to public health and there are no physically available or economically feasible alternative sources of drinking water to serve the population that relies on the aquifer. The designation authorizes EPA review of projects that receive Federal financial assistance to assess potential for contamination of the aquifer system that would create a significant hazard to public health.

This project is within the review area of the Mahomet SSA. Once FHWA Region 5 and U.S. EPA Region 5 update their memorandum of understanding, the agencies will follow the agreed upon review procedures to ensure compliance with the requirements of Section 1424(e) of the Safe Drinking Water Act.

## Part IX. Floodplains

**Identify**
As delineated on the Federal Emergency Management Agency floodplain maps from 2013[9] (see Exhibits 13 & 14), there is a 100-year floodplain, with no base flood elevations determined, in the proposed project area. The floodplain is associated with the Copper Slough, which runs through the northwest, northeast, and southeast quadrants of the interchange (see Exhibits 10 & 11). Currently, the slough is meandering in nature and passes through culverts under I-57 and I-74. The crossing of the 100-year floodplain is both transverse and longitudinal, due to the geometry of the slough, the interstates, and the interchange ramps. As previously noted, an estimated 1,500 lineal feet of Copper Slough will be reconstructed with the proposed improvements, and the proposed slough configuration will provide a flow path of approximately the same distance as the existing. The proposed improvements will include accommodations for the slough; proposed pavements will be designed above the 100-year floodplain, and policy freeboard will be provided.

**Floodplain Finding if significant encroachment**

☑ No

☐ Yes

**Required Statement** (See Chapter 26 Section 7.05(d))
There will be no significant encroachment within the floodplain or regulatory floodway. The roadway does not have significant potential for interruption of emergency vehicles, providing a sole route of emergency evacuation, increasing the risk of flooding or having significant risk or significant adverse impact on natural or beneficial floodplain values.

Compensatory flood storage volume would be provided to compensate for any floodplain storage losses resulting from the project. Additionally, a floodplain development permit would likely be required from the IDNR Office of Water Resources.

[9] Federal Emergency Management Agency, Flood Insurance Rate Maps – Map Numbers 17019C0293D and 17019C0294D, October 2, 2013.

## Part X. Wetlands

### Identify

A wetland survey was conducted by the Wetland Science Program of the Illinois Natural History Survey (INHS) on June 13-14, 2013 (available upon request). All potential wetlands within the specified project area were examined. INHS determined that 16 sites met the three criteria of a wetland established in the Corps of Engineers Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0).

Table 21 provides a summary of the potential wetland impacts for the preferred alternative. The estimated impact areas were calculated based on the proposed ROW limits. The wetland areas are shown in proximity to the preferred alternative on Exhibit 11.

| Table 21: Wetland Impacts | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Wetland Site Number** | **NWI Code** | **Community Type** | **Approximate Area Within Project Corridor (acres)** | **Anticipated Impact Area (acres)** | **Dominant Plant Species** | **Soil Type** | **FQI*** |
| 1 | U | Marsh | 0.27 | 0.00 | squirrel-tail grass<br>soft-stem bulrush<br>narrow-leaved cattail | Drummer silty clay loam | 7.9<br>poor |
| 2 | U | Marsh | 0.38 | 0.005 | red-rooted spike rush<br>rice cut grass<br>common reed<br>narrow-leaved cattail<br>broad-leaved cattail | Drummer silty clay loam | 9.5<br>poor |
| 3 | U | Wet shrubland | 0.83 | 0.00 | bristly cattail sedge<br>common reed<br>sandbar willow | Drummer silty clay loam | 8.5<br>poor |
| 4 | U | Wetland pond | 4.29 | 0.19 | tall waterhemp<br>reed canary grass<br>American pondweed<br>sandbar willow | NRCS mapped as Drummer SICL; revised to Aquent | 11.7<br>moderate |
| 5 | U | Wet shrubland | 0.42 | 0.00 | sandbar willow<br>narrow-leaved cattail | NRCS mapped as Drummer SICL; revised to Aquent | 10.0<br>moderate |
| 6 | U | Marsh | 0.24 | 0.00 | late boneset<br>narrow-leaved cattail | NRCS mapped as Drummer SICL; revised to Aquent | 7.3<br>poor |
| 7 | U | Marsh | 0.15 | 0.00 | narrow-leaved cattail | NRCS mapped as Dana SIL; revised to Aquent | 7.2<br>poor |
| 9 | PEMAx | Wet meadow | 2.36 | 2.36 | fat-hen saltbush<br>late boneset<br>squirrel-tail grass<br>sharp-fruited rush<br>prairie switch grass<br>rough dropseed | NRCS mapped as Orthents, loamy, undulating; revised to Aquent | 9.0<br>poor |

| Table 21: Wetland Impacts | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Wetland Site Number** | **NWI Code** | **Community Type** | **Approximate Area Within Project Corridor (acres)** | **Anticipated Impact Area (acres)** | **Dominant Plant Species** | **Soil Type** | **FQI*** |
| 10 | U | Marsh | 0.36 | 0.36 | fat-hen saltbush<br>squirrel-tail grass<br>sharp-fruited rush<br>prairie switch grass<br>rough dropseed<br>narrow-leaved cattail | NRCS mapped as Orthents, loamy, undulating; revised to Aquent | 8.3<br>poor |
| 11 | U | Wetland pond | 0.40 | 0.40 | rice cut grass<br>comb pondweed | Drummer silty clay loam | 9.9<br>poor |
| 12 | PEMAx | Marsh | 0.04 | 0.04 | tall waterhemp<br>common ragweed | NRCS mapped as Orthents, loamy, undulating; revised to Aquent | 5.3<br>poor |
| 13 | U | Marsh | 0.24 | 0.09 | rice cut grass<br>curly dock<br>narrow-leaved cattail | Drummer silty clay loam | 10.4<br>moderate |
| 14 | PSS1Cx | Marsh | 0.17 | 0.17 | sharp-fruited<br>reed canary grass<br>narrow-leaved cattail | NRCS mapped as Orthents, loamy, undulating; revised to Aquent | 6.7<br>poor |
| 15 | U | Marsh | 0.24 | 0.08 | narrow-leaved cattail | Drummer silty clay loam | 10.3<br>moderate |
| 17 | U | Marsh | 0.02 | 0.00 | rice cut grass<br>narrow-leaved cattail | NRCS mapped as Flanagan SIL; revised to Aquent | 8.6<br>poor |
| 18 | U | Marsh | 0.16 | 0.00 | red-rooted spike rush | NRCS mapped as Flanagan SIL; revised to Aquent | 4.5<br>poor |
| **Total Acreages** | | | **10.57** | **3.695** | | | |

*Source: Wetland Delineation Report, I-74/I-57 (FAI 74/57), Champaign County, Illinois, June 2013.*

** FQI is a measure of the wetland's natural quality. 0-9.9 are considered to be poor quality, 10-19.9 are considered to be moderate quality, and 20+ are considered to be high quality.*

A copy of the INHS wetland survey was submitted to IDNR and the U.S. Army Corps of Engineers (ACOE) for review to determine if these areas would be considered jurisdictional wetlands, thus requiring review in accordance with the Interagency Wetland Policy Act and the Clean Water Act. Coordination with IDNR on November 5, 2014, IDNR stated "the wetland areas described within the interchange area and maintained ROW are not considered State jurisdictional wetlands and are not subject to review under IPWA." In a letter received from the ACOE, dated December 4, 2014, they also determined that the project would not impact jurisdictional waters of the U.S. or wetlands; therefore, a Department of the Army (Section 404) permit is not required for the proposed work. Copies of the INHS wetland survey and agency coordination letters, including the Wetland Impact Evaluation Form, are available upon request.

**Proposed Mitigation**

☐ On-site

☐ Off-site

☐ Wetland Bank

**Description**

Based on correspondence from IDNR and the ACOE, no mitigation for the above-referenced wetland impacts would be required for this project because the delineated areas were determined to be non-jurisdictional.

## Part XI. Special Waste

The Level I screening determined that special waste investigations were necessary due to the proposed project meeting the following two criteria (#1 and #3) of the three criteria listed in BDE Manual Section 27-3.02(a) Level I Screening:

- Criteria #1-involving acquisition of additional right-of-way or easements (temporary or permanent);
- Criteria #3-involving excavation (see definition of excavation) or subsurface utility relocation.

Projects that don't pass Level I screening due to situations #1 and #3 above should be further screened to determine if a Preliminary Environmental Site Assessment (PESA) will be necessary. A Level II screening was accomplished and identified that further assessment of the project for special wastes or other regulated substance contamination was required. As such, a PESA was accomplished for the proposed project and is available upon request.

An initial PESA was completed on March 13, 2013 for the proposed project area. The report indicated five recognized environmental conditions (RECs) on properties that would be proposed for acquisition or construction with the preferred alternative. RECs are conditions that may be indicative of releases or potential releases of hazardous substances on, at, in, or to the site.

The RECs include:

- IDOT ROW – evidence of chemical use, impacted soil, and spills
- Copper Slough – non-attainment of water quality
- Rockwell Automation – above-ground storage tank (AST), evidence of chemical use
- MUTI – ASTs

- Mixed-use Building – AST, evidence of chemical use; former underground storage tank (UST), and presence of leaking underground storage tank (LUST) and Illinois Emergency Management Agency (IEMA) lists

The buildings on these properties would be avoided, but vacant land and a portion of an existing parking/storage site at MUTI would be acquired for proposed ROW.

A PESA Addendum A was completed on September 5, 2013 for an expanded proposed project area not previously assessed. The addendum did not reveal any additional RECs in the preferred alternative's area. A second PESA Addendum B was completed on May 20, 2014 for additional expansion of the proposed project area not previously assessed. The addendum did not reveal any additional RECs in the preferred alternative's area. The Special Waste Assessment Screen/Survey Request Forms and the survey reports are available upon request.

A Preliminary Site Investigation (PSI) will likely be necessary to determine the nature and extent of contamination within existing/proposed ROW. It would be determined during the Phase II design if any of the sites or ROW will be impacted with the proposed work. Groundwater, soil and sediment test results would be compared to the clean-up objectives within Illinois' Tiered Approach to Correction Action Objectives (TACO).

## Part XII. Special Lands

### 1. Section 4(f)

☐ DeMinimis

☐ Programmatic

☐ Individual

**Description**
Highway development projects can create adverse impacts on Section 4(f) lands through: acquisition of all or a portion of Section 4(f) land; temporary use for project construction-related activities; or constructive use such as increased noise impacts or increased surface traffic impacts that are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired.

The preferred alternative would not require permanent acquisition or temporary construction easements from any Section 4(f) lands. However, there is one park located within the limits of the noise impact area as determined through the detailed noise analysis conducted for the proposed project. Garden Hills Park, owned and operated by the Champaign Park District, is a five acre park located in the City of Champaign, southeast of the I-57 and I-74 Interchange and south of I-74 and Bloomington Road.

Garden Hills Park has a picnic area, a playground, an unlighted baseball field and a soccer field. There would be no direct impacts to these facilities as a result of the proposed project. In addition, the projected noise level increase attributable to the project would be minimal (approximately 2

dB(A))[10] and would not substantially interfere with the use and enjoyment of the park. There are no noise-sensitive facilities located within the park limits such as: an outdoor amphitheater; sleeping area of a campground; historic site where a quiet setting is a generally recognized feature or attribute of the site's significance; or area of the park where serenity and quiet are significant attributes; or wildlife and waterfowl refuge intended for wildlife viewing.[11]

As noted in Section V. Noise, based on the traffic noise analysis and noise abatement evaluation conducted, highway traffic noise abatement measures are likely to be implemented based on preliminary design. The noise abatement measures could include a potential noise wall between the park and the eastbound lanes of I-74, which would provide some reduction to noise levels within Garden Hills Park.

### 2. Section 6(f)

**Description**
According to the U.S. Department of the Interior - National Park Service, no Land and Water Conservation Funded (LAWCON/Section 6(f)) lands are present in the proposed project area.

### 3. Open Space Lands Acquisition and Development (OSLAD) Act Lands

**Description**
According to IDNR, Division of Grant Administration, no OSLAD lands are present in the proposed project area.

### 4. Illinois Natural Area (INAI) Sites

**Description**
There are no records of listed species, natural areas or nature preserves within the project corridor. In accordance with the 2013 Memorandum of Understanding by and between IDNR and IDOT, consultation is terminated.

### 5. Nature preserves

**Description**
There are no records of listed species, natural areas or nature preserves within the project corridor. In accordance with the 2013 Memorandum of Understanding by and between IDNR and IDOT, consultation is terminated.

### 6. Land & Water Reserves

**Description**
According to the Illinois Nature Preserves Commission, no land and water reserves are located in the project area.

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[10] The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB.
[11] CFR Sec. 771.135 (p)(4)(i)

## XIII. Indirect and Cumulative Impacts

### Indirect Impacts

According to 40 CFR 1508.8, Indirect Impacts are defined as "caused by an action and are later in time or further removed in distance but still reasonably foreseeable."

An improved I-57 and I-74 Interchange is anticipated to have a positive impact on local and regional economics and businesses in general, in terms of increased transportation safety and efficiency. The proposed improvements will improve interchange geometry and operations, enhance safety conditions, and increase capacity for growing traffic volumes. The proposed project could have an indirect effect on land use in the area with the generation of new development that would complement the current and proposed development in the area, and may accelerate the rate in which development would occur. However, this effect corresponds with the City of Champaign's land use plan; therefore, no mitigation would be considered.

### Cumulative Impacts

The Council on Environmental Quality (CEQ 1997) defines a cumulative impact as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). CEQ further defines cumulative effects as "caused by an action and are later in time or further removed in distance but still reasonably foreseeable" (40 CFR 1508.8). The cumulative impact analysis evaluates the effects of past, present, and future actions and recognizes while many actions may have individually small impacts, the accumulated effect of these actions needs to be assessed.

Based on the local, state, and federal regulations in place for protection of resources, there could be minimal cumulative impacts to water quality, streams, floodplains, land use, cultural resources, and potentially hazardous material sites.

A Watershed Master Plan[12] was prepared for the Copper Slough watershed, which is the largest urbanized watershed in the City of Champaign. This watershed area encompasses the I-57 and I-74 project study area. While most of the recommended projects in the Copper Slough Watershed Master Plan are located south of the I-57 and I-74 Interchange, outside of the project limits, some of the projects and recommendations could have a positive cumulative effect of reducing flooding and improving water quality in the project area. Further, the projects included in the Watershed Master Plan would not be impacted by the proposed I-57 and I-74 Interchange improvements. Therefore, the proposed I-57 and I-74 improvements would be compatible with the basic assumptions and objectives of the Copper Slough Watershed Plan.

There also could be a cumulative impact to agricultural land in the area due to the conversion of undeveloped lands to light industrial and office uses. Over time, agricultural land has been reduced in this area, and this trend will continue due to the expected future development, as most of the open space in the interchange area is owned by land developers. Coordination with IDOT District 5 and the City of Champaign indicated there are no active building permits within the study corridor. However, undeveloped land in the study corridor is zoned for future commercial land uses.

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[12] Copper Slough Watershed Master Plan – Final Report, Prepared for the City of Champaign, Clark Deitz, Inc., March 2007.

The proposed project would not have any significant impacts to environmental resources to cumulatively add or assess in comparison to the past, the present, or the reasonably foreseeable future.

## XIV. Environmental Commitments

- Compensatory flood storage volume will be provided to compensate for any floodplain storage losses resulting from the project. The volumes required will be computed during the final design phase.

- During the final design phase of the project, attempts will be made to avoid and minimize impacts to wooded areas and individual trees. The impacted trees will be replaced in accordance with IDOT policy "D&E-18 Preservation and Replacement of Trees."

- A Preliminary Site Investigation (PSI), if required, will be performed for the affected REC sites during the final design phase. The PESA will be re-validated before conducting the PSI. The PSI would determine the type and extent of any contamination that may be encountered during construction. Any special waste encountered during construction will be disposed of following the IDOT's specifications and IEPA guidelines.

- A Stormwater Pollution Prevention Plan will be developed during the final design stage of the project.

- Dust and airborne dirt generated by construction activities will be controlled through dust control procedures outlined in IDOT's Standard Specifications for Road and Bridge Construction.

- Based on the traffic noise analysis and noise abatement evaluation conducted, highway traffic noise abatement measures are likely to be implemented based on preliminary design. The noise barriers determined to meet the feasible and reasonable criteria are along the north and south side of I-74 between Mattis Avenue and Prospect Avenue. If it subsequently develops during final design that constraints not foreseen in the preliminary design occur, or public input substantially changes reasonableness, the abatement measure may need to be modified or removed from the project plans. A final decision on the installation of abatement measure(s) will be made upon completion of project's final design and the public involvement process.

- A Section 106 Memorandum of Agreement (MOA) was executed in 2014 between FHWA, IDOT, and the Illinois SHPO. FHWA and IDOT shall ensure that the stipulations of the MOA are implemented if an archaeological site near the project area cannot be avoided.

## XV. Permits/Certifications Required

- A Floodplain Development Permit would likely be required from the IDNR Office of Water Resources prior to the construction letting of the project.

- A Clean Water Act Section 402 NPDES Construction Permit will be obtained from the IEPA prior to the construction letting of the project.

All applicable permits will be obtained during the final design.

# SECTION V. COORDINATION AND COMMENTS

## 1. Public Involvement

Various stakeholder coordination meetings have taken place and are summarized below:

08/20/2013: Illinois State Senator Chapin Rose Presentation

A local stakeholder coordination meeting was held to discuss the proposed interchange type alternatives currently being considered. Future development adjacent to the interchange was discussed and any site plans being considered were requested for consideration during development of the proposed interchange types. The City of Champaign's Future Land Use Map indicates all four interchange quadrants have the potential for development as employment centers.

01/21/2014: Elected Public Officials Presentation

A meeting was conducted with Champaign city officials to review the current proposed project improvements and interchange reconstruction alternatives. Items discussed included: minimizing the impacts to adjacent properties to allow for future development around the interchange; project funding and construction timing.

01/29/2014: City of Champaign Presentation

A meeting was conducted with Champaign city officials to review the current proposed project improvements and interchange reconstruction alternatives. Items discussed included: coordinating with the city for the proposed typical sections for Mattis Avenue and Bloomington Road; minimizing the impacts to adjacent properties to allow for future development around the interchange; and drainage impacts and embankment sources for the potential future construction of the interchange.

02/19/2014: Champaign Urbana Urbanized Area Transportation Study (CUUATS) Presentation

The proposed project improvements and interchange type alternatives were presented to the local planning organization. As the project is not currently funded for design or construction, funding options are being investigated. CUUATS and the individual entities represented were encouraged to formally submit a letter to IDOT with their preference on the interchange type alternative for consideration in selection of an alternative.

02/19/2014: Public Information Meeting #1

An open house format Public Information Meeting was held at Champaign County Highway Department, Champaign, IL, with exhibit boards set up throughout the meeting room and handouts available for participants. Public input was encouraged and comment forms were available for all attendees. The general consensus of the attendees at the meeting was that this interchange reconstruction project is necessary.

Public Comments

Several attendees, including members of the public, County Board and local developers, expressed that Alternatives 1 and 2 were their preferred concepts. Additional discussions indicated that Alternative 1 was preferred by the local agencies, because it does not have any proposed loop ramps; and that Alternative 2 was preferred by local landowners and developers, because it had the least amount of additional ROW acquisition and disturbance to developable land.

A total of 24 comment forms/letters were received, all with the exception of one are in favor of the proposed interchange reconstruction project. One of the comment forms suggested that Alternative 1 is their preferred concept, while ten preferred Alternative 2.

04/07/2014: Midwest Underground Technology, Inc. (MUTI)
MUTI are property owners in the southwest quadrant of the interchange. The purpose of the meeting was to review the current proposed project improvements and interchange reconstruction alternatives. MUTI explained ongoing and future plans to expand, including additional buildings to the east and west and additional parking/storage to the east. A temporary aggregate parking/storage site has been constructed on the east side of the existing building since the latest field surveys and aerial photography images have been collected. This site is anticipated to be impacted by Alternatives 1 and 2 (see Exhibits 10 and 11) and has been included as a potential social resource impact in the Evaluation Matrix (Section III.2.B.). Site plans have been developed and were made available to IDOT for consideration during development of the interchange design studies.

Various newspaper articles have been published regarding the interchange and are summarized below:

01/22/2014: The News-Gazette
The article discussed the proposed project and the time and expense involved for the new interchange. Additionally, the article listed the information for the public meeting ultimately held on February 19, 2014.

02/01/2014: The News-Gazette
The article reported a fatal accident on the I-74 westbound ramp to I-57 northbound.

02/03/2014: The News-Gazette
The article discussed the proposed project and the reasons why a new interchange is needed.

**2. Agency Coordination**
Ongoing agency coordination is summarized below:

06/27/2013: Illinois Department of Transportation Memorandum
This biological resources review for the original and first addendum (A) determined that there will be no effect to any listed threatened and endangered species and concludes consultation with the IDNR and USFWS. The memo further states that the IDNR Natural Heritage Database has no records of listed species, natural areas or nature preserves with in the project corridor and that consultation is terminated with IDNR. Additionally, the memo discusses the wetlands surveyed as a part of the INHS wetland delineation report.

01/07/2014: Illinois Department of Transportation Memorandum
This natural resources review for the second addendum (B) area determined that the Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the project location and therefore; consultation is terminated. The memo further terminates wetland review. Additionally, IDOT determined that listed endangered, threatened, proposed and candidate species and critical habitat are not present in the area.

01/13/2014: Illinois Department of Transportation Memorandum
The memo transmits the No Historic Properties Affected – cultural resources clearance for the environmental survey area B.

02/20/2014: Illinois Department of Transportation Memorandum
The memo discusses the proposed projects potential to cause an Adverse Effect to an ancient American Indian archaeological habitation site. Additionally, this memo includes the concurrence, from the Illinois State Historic Preservation Officer (SHPO), with IDOT's determination of a "Preliminary Adverse Effect".

02/27/2014: NEPA-404 Merger Meeting
The interchange reconstruction project was presented at this meeting to review the project purpose and need, the current alternatives being studied, the environmental impacts, and the project complexity and suitability for the merger process. It was determined by the agencies represented that this project is not complex enough to go through the merger process and the individual agencies that have jurisdiction over the resources impacted will be coordinated with during the planning process.
Agencies in attendance:

- Federal Highway Administration (FHWA)
- U.S. Army Corps of Engineers (USACE)
- U.S. Environmental Protection Agency (USEPA)
- U.S. Fish and Wildlife Service (USFWS)
- Illinois Department of Transportation (IDOT)
- Illinois Environmental Protection Agency (IEPA)
- Illinois Department of Agriculture (IDOA)
- Illinois Department of Natural Resources (IDNR)
- Illinois Historic Preservation Agency (IHPA)

07/09/2014: Illinois Department of Transportation Memorandum
The memo transmits the ratified MOA to the local IDOT district office.

07/31/2014: Federal Highway Administration
The letter submits the MOA to the Advisory Council On Historic Preservation ACHP.

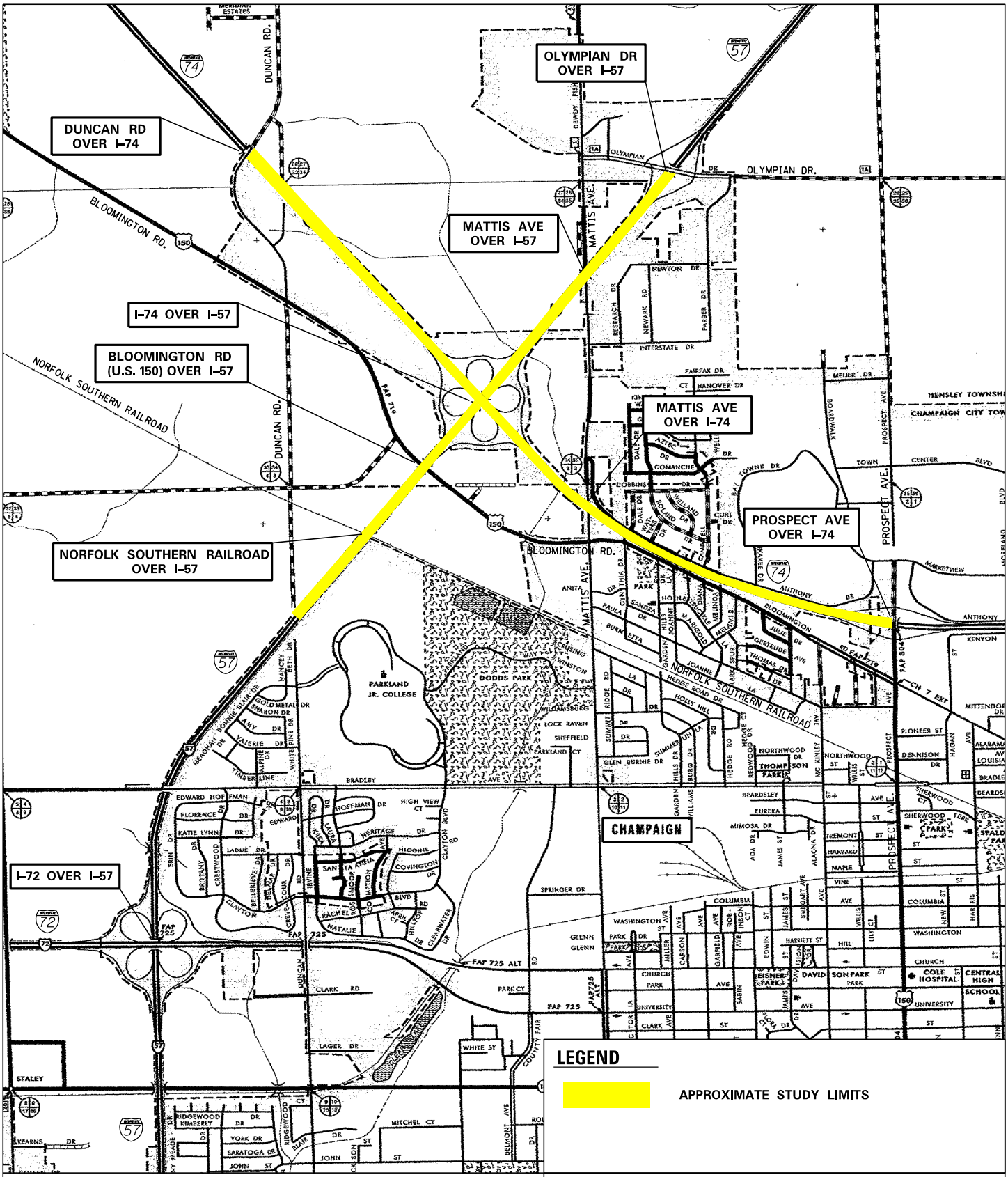
08/19/2014: Advisory Council On Historic Preservation (ACHP)
The letter from ACHP acknowledged receipt of the MOA, which completes the requirements of Section 106 of the National Historic Preservation Act.

10/21/2014: NRCS
The AD-1006 with associated attachments was submitted to the NRCS for their coordination and completion.

10/30/2014: IDOA
At the request of IDOA, project information was submitted to the IDOA office for their project review.

11/10/2014: IDOA
The letter from IDOA indicates that the project complies with IDOT's Agricultural Land Preservation Policy and Illinois' Farmland Preservation Act.

11/13/2014: Illinois Department of Transportation Memorandum
This natural resources review for the third addendum (C) area determined that the Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the project location and therefore; consultation is terminated. The National Wetlands Inventory shows wetlands in the vicinity of the project location. All potential sites were examined and 10 were determined to be wetlands. The project sponsor will consider location and design alternatives to avoid and minimize adverse wetland impacts to the extent practical. Additionally, IDOT determined that listed endangered, threatened, proposed and candidate species and critical habitat are not present in the area.



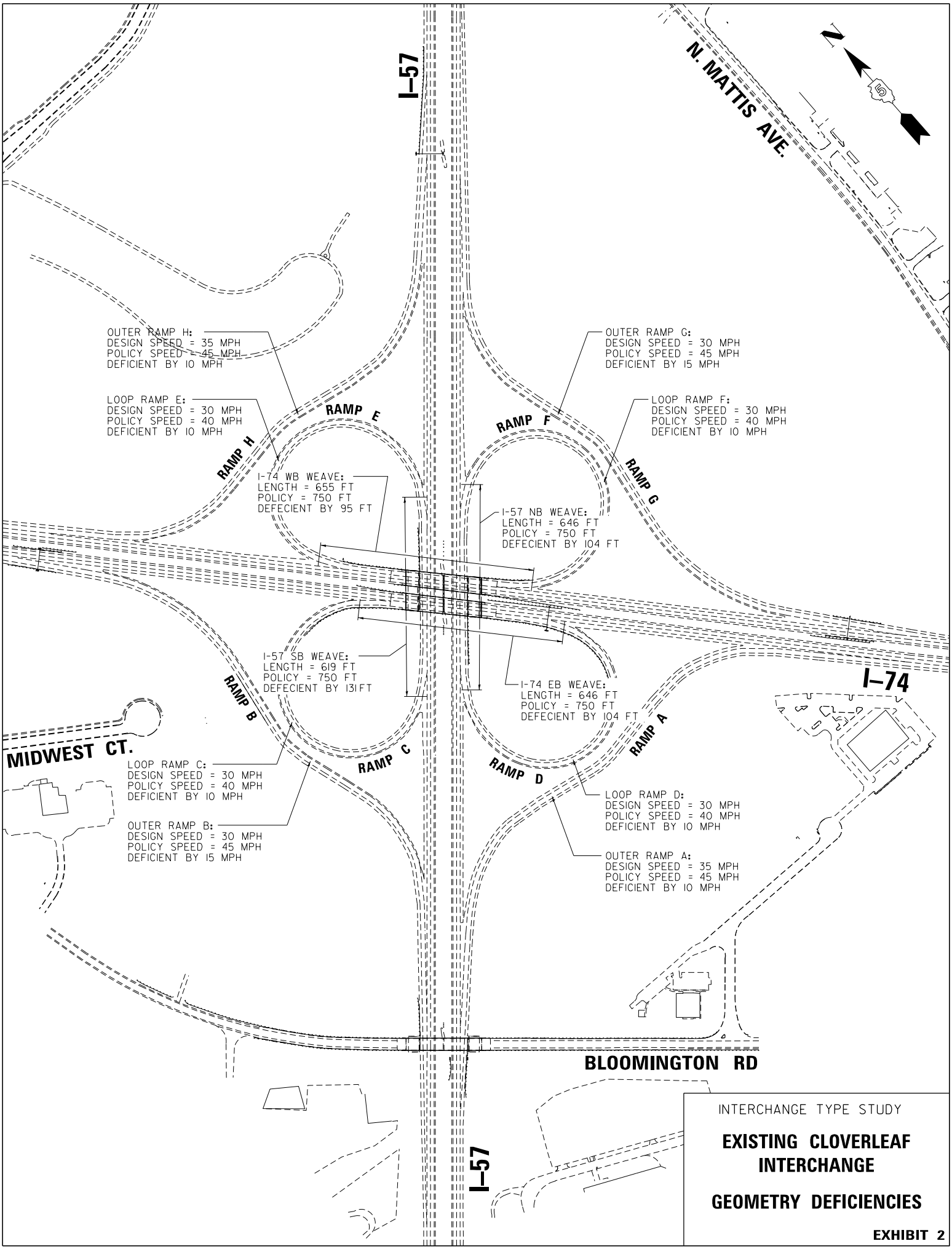

N

SCALE: 1" = 2,400'

# SITE MAP

**I–57 & I–74 INTERCHANGE**
**IDOT – DISTRICT 5**
**CHAMPAIGN COUNTY**
**CHAMPAIGN, IL**

**EXHIBIT 1**



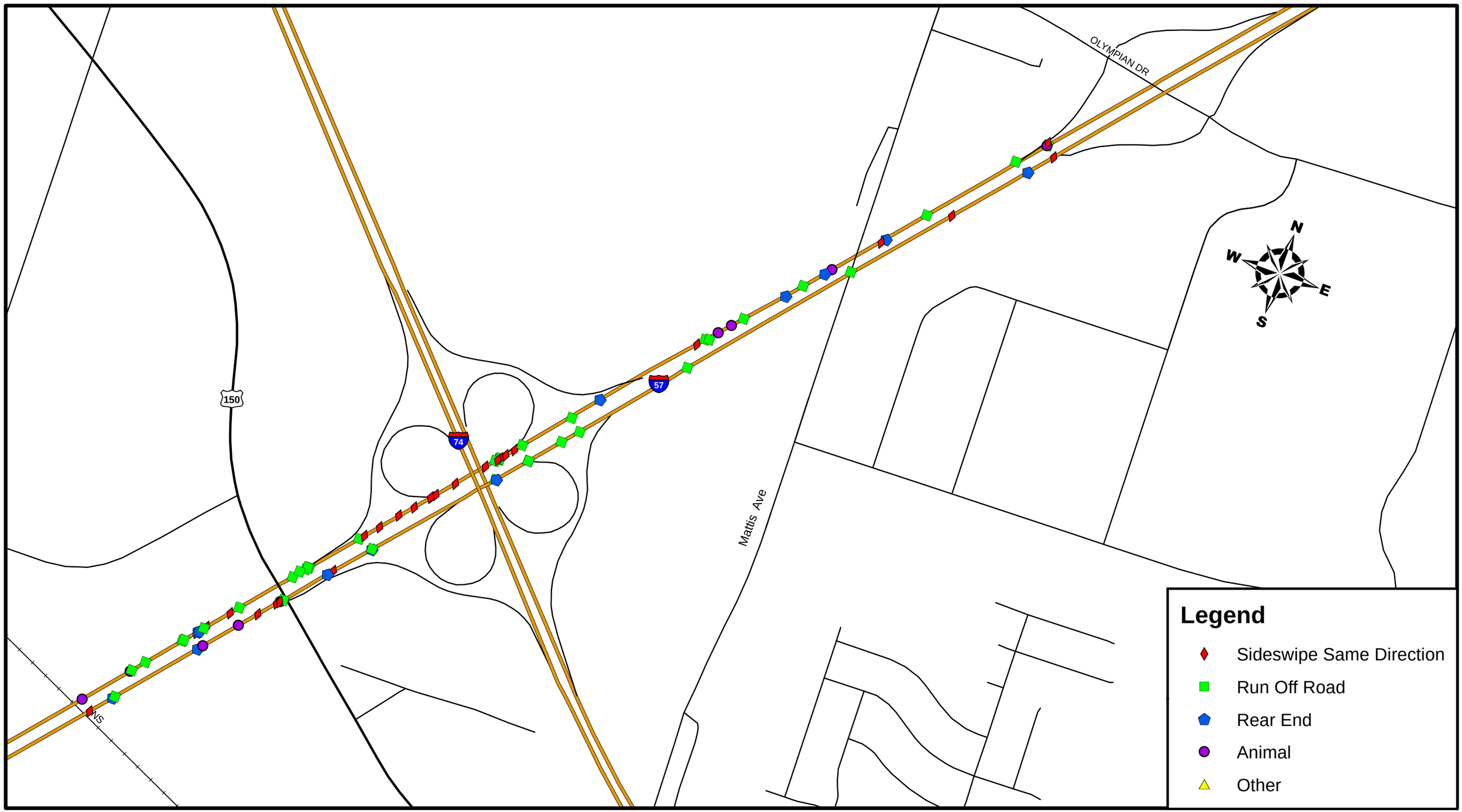

INTERCHANGE TYPE STUDY

## EXISTING CLOVERLEAF INTERCHANGE

## GEOMETRY DEFICIENCIES

**EXHIBIT 2**

# Interchange Reconstruction Project
# I-57 Crashes from 2008 to 2012




Note: Run Off Road crashes include fixed object, other object, overturned, and parked motor vehicle crashes

Exhibit 3

# Interchange Reconstruction Project
# I-57 Crashes from 2008 to 2012

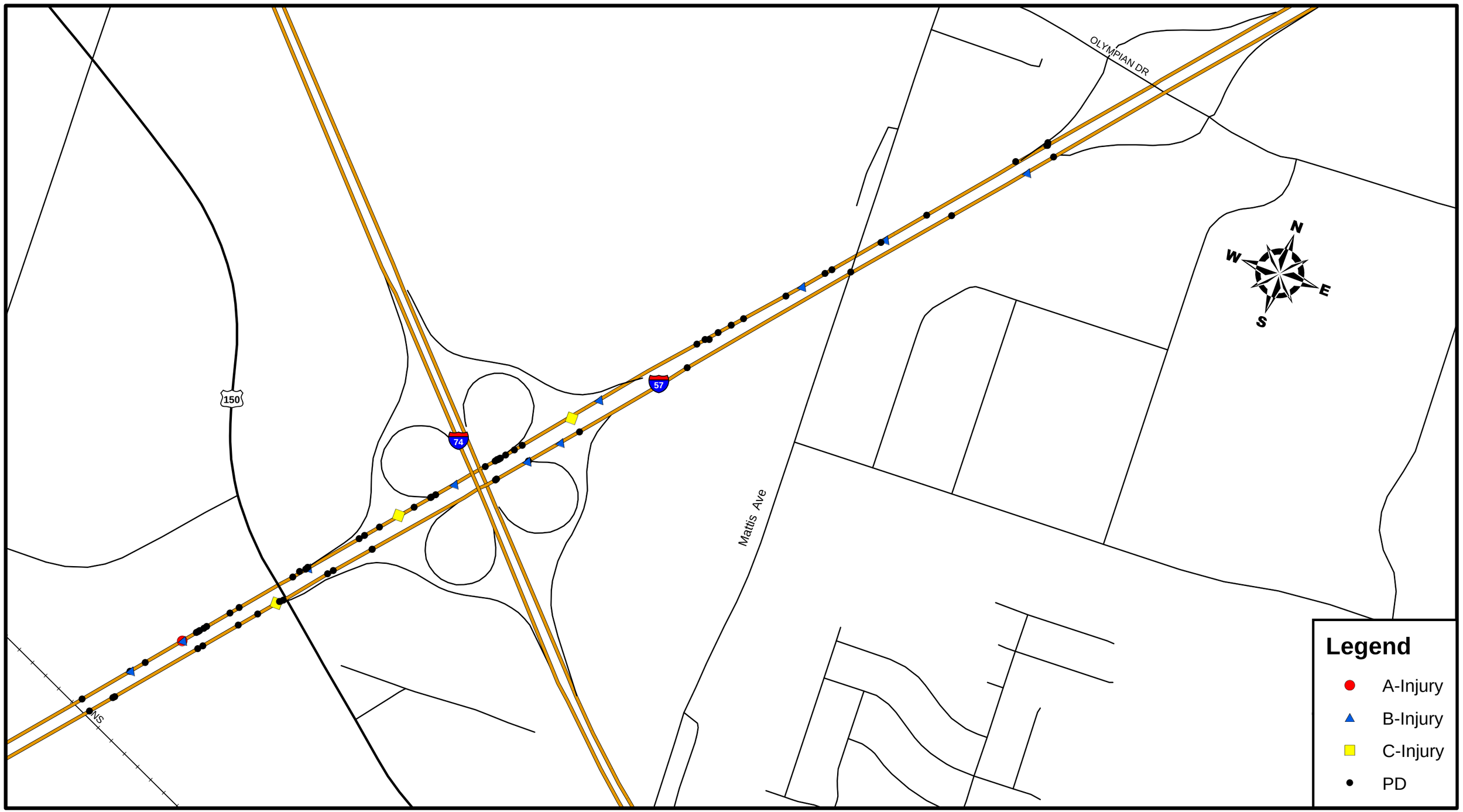
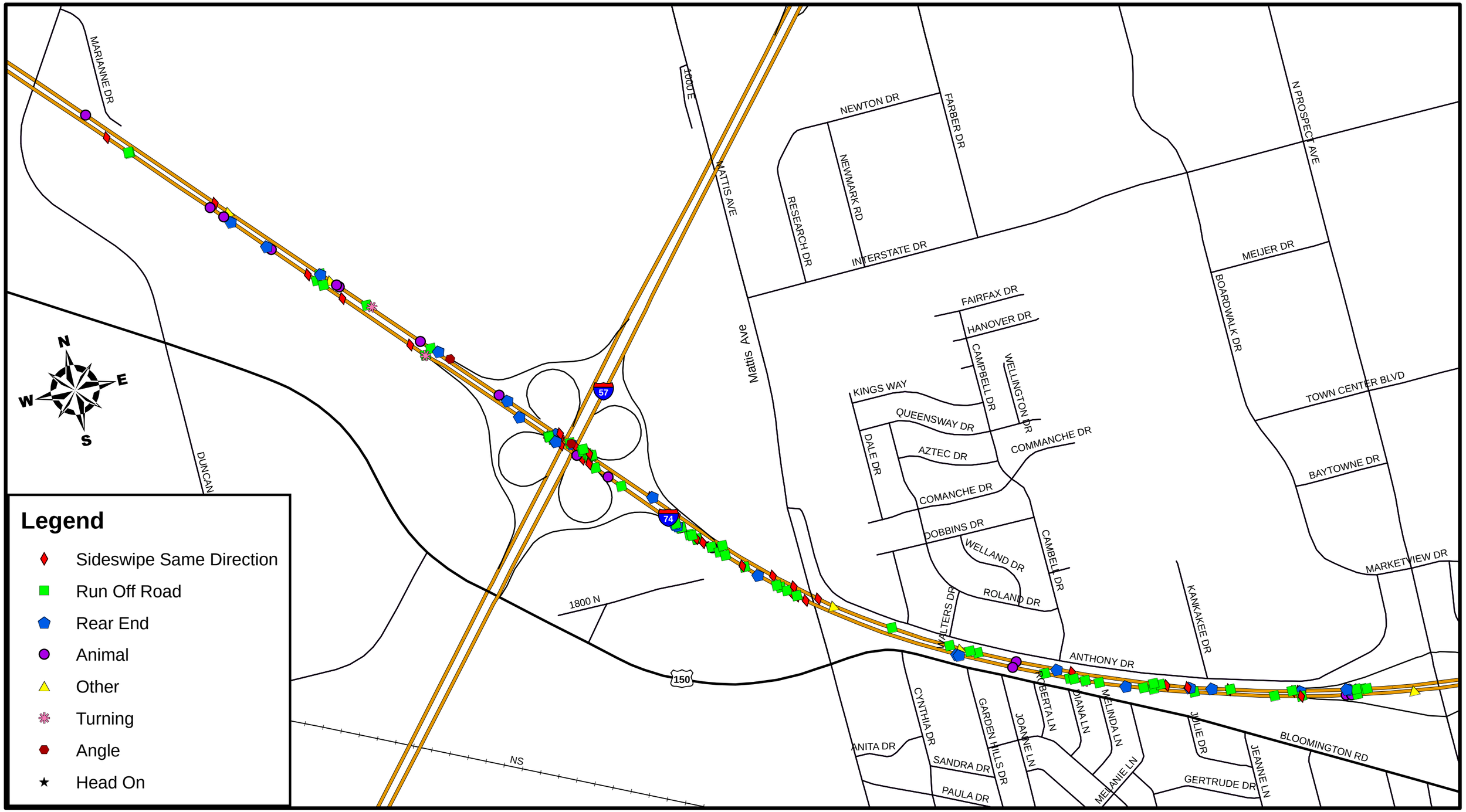



Exhibit 4

# Interchange Reconstruction Project
# I-74 Crashes from 2008 to 2012




Note: Run Off Road crashes include fixed object, other object, overturned, and parked motor vehicle crashes

Exhibit 5

# Interchange Reconstruction Project
# I-74 Crashes from 2008 to 2012

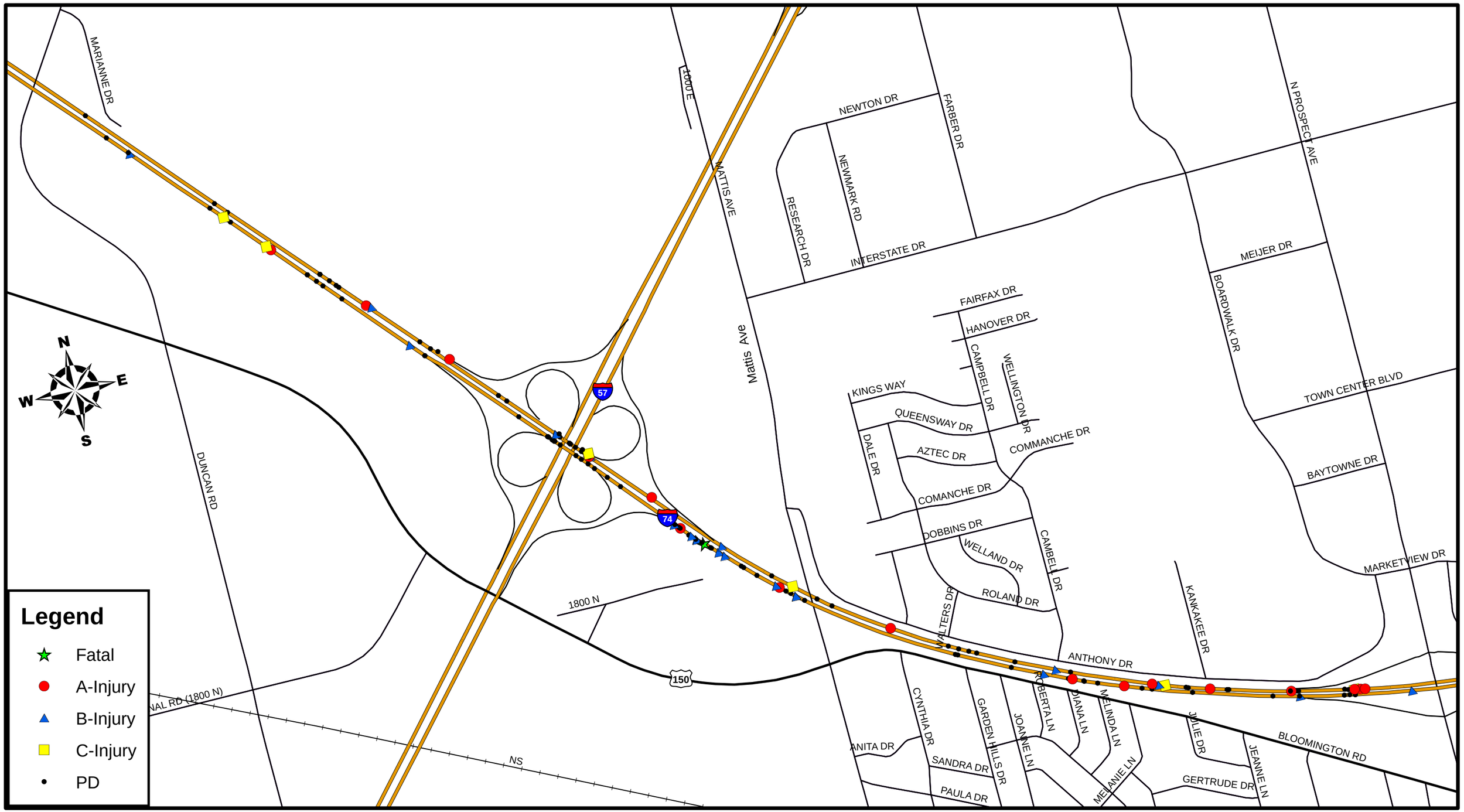
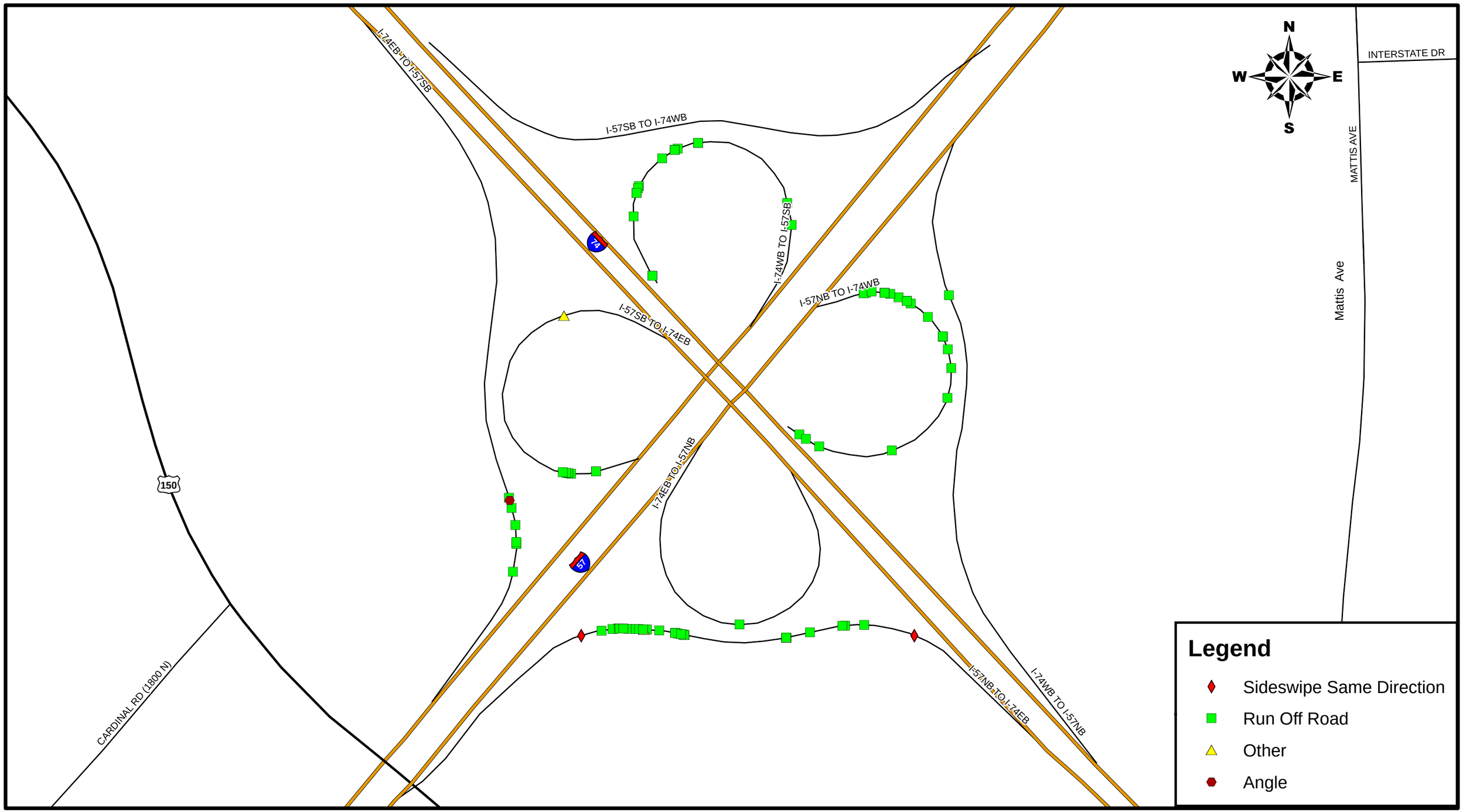



Exhibit 6

# Interchange Reconstruction Project
# Ramp Crashes from 2008 to 2012




Note: Run Off Road crashes include fixed object, other object, overturned, and parked motor vehicle crashes

Exhibit 7

# Interchange Reconstruction Project
# Ramp Crashes from 2008 to 2012

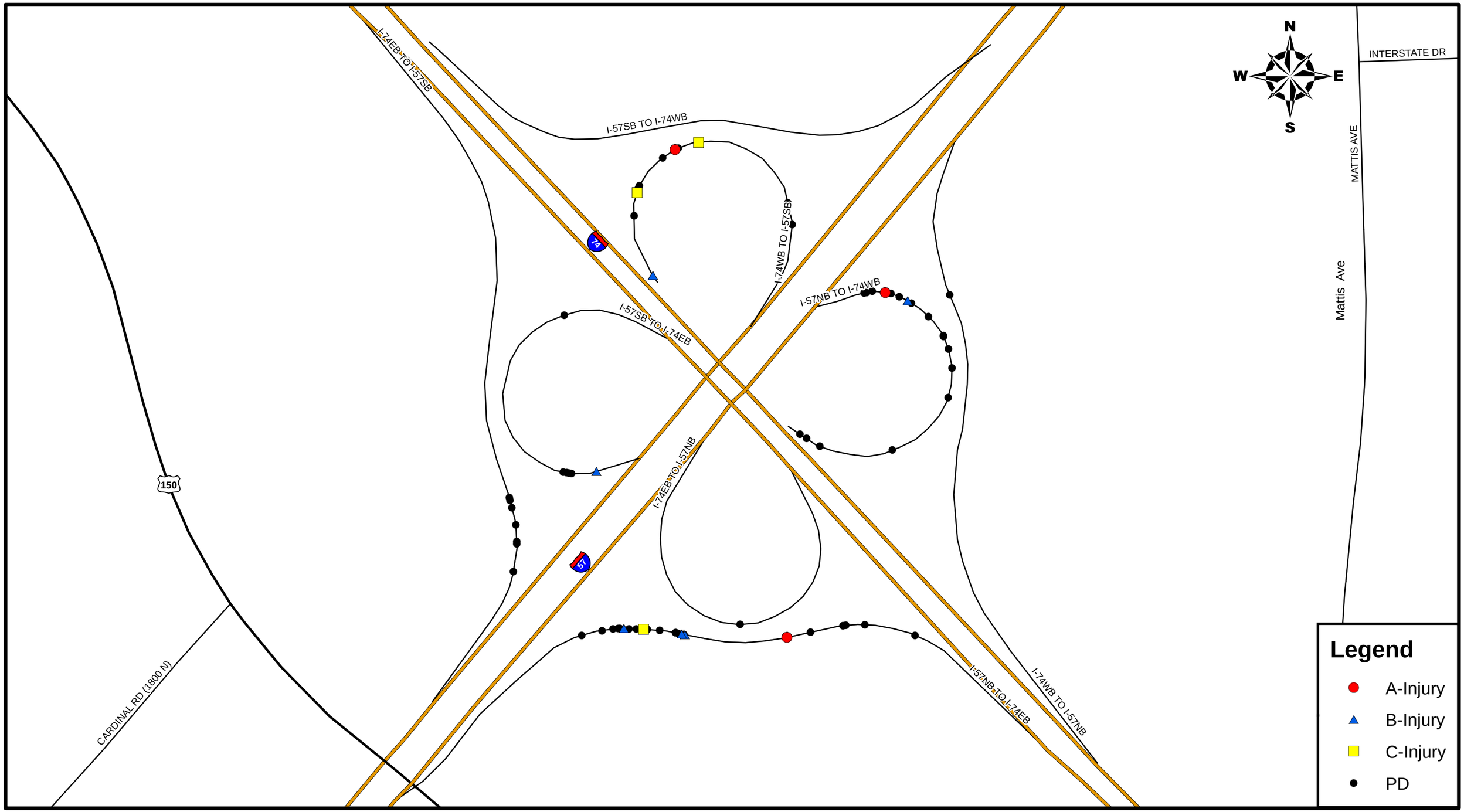



Exhibit 8

# Interchange Reconstruction Project
# 5% Report Locations for years 2011 and 2012

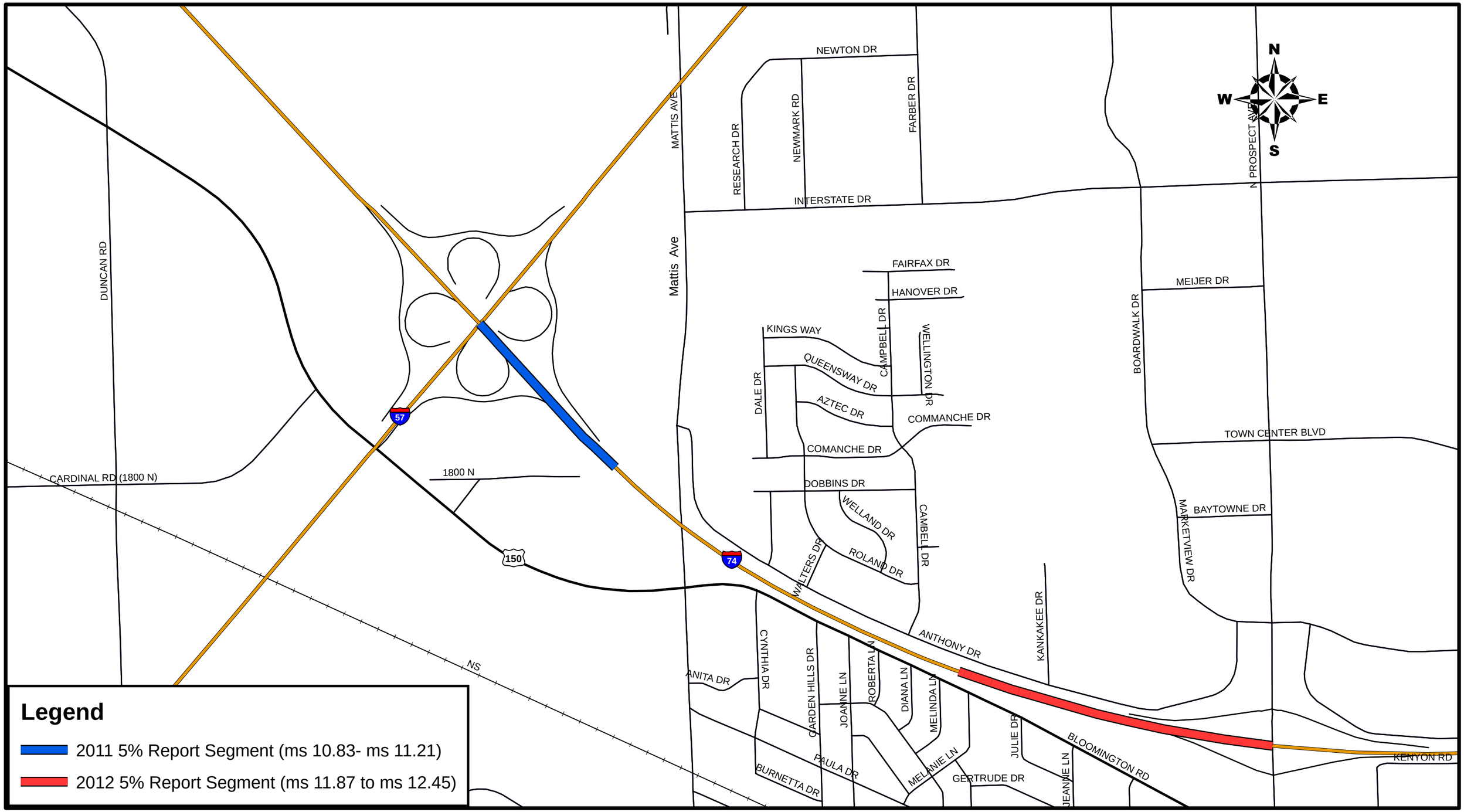



Exhibit 9

N

400' 0 400' 800'
SCALE: 1" = 400'

SCHOOL

W. OLYMPIAN DR.

SURGERY CENTER

N. DUNCAN RD.

I–57 ROW (REC)

MULTI–USE PATH

MATTIS AVE

LIBRARY

N. PROSPECT AVE.

I–74 ROW (REC)

FLOODPLAIN

COPPER SLOUGH (REC)

POND #1

PLACE OF WORSHIP

I–74

W. ANTHONY DR.

MIDWEST CT.

CORPORATE PARK CENTRE

POND #2

GARDEN HILLS PARK

PLACE OF WORSHIP

PLACE OF WORSHIP

CLEARLAKE BOULEVARD

W. BLOOMINGTON RD.

SCHOOL

PARK

ROCKWELL AUTOMATION (REC)

MIDWEST UNDERGROUND TECHNOLOGY, INC. (MUTI) (REC)

MEADOWS ANIMAL HOSPITAL

KINGDOM HALL OF JEHOVAH'S WITNESS

FIRE STATION

I–57

PARK

MIXED USE PROPERTY (REC)

NORFOLK SOUTHERN R.R.

CARDINAL RD

PARK

PARKLAND COLLEGE

LEGEND

| AFFECTED | UNAFFECTED |
|---|---|

## WATER BODIES

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| POND #1 | 1.47 |
| POND #2 | 0.00 |
| SITE ID # | LENGTH |
| COPPER SLOUGH | 2520' |

## WETLANDS

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| 2 | 0.005 |
| 4 | 0.19 |
| 9 | 2.36 |
| 10 | 0.36 |
| 11 | 0.40 |
| 12 | 0.04 |
| 13 | 0.09 |
| 14 | 0.17 |
| 15 | 0.08 |
| Total | 3.695 |

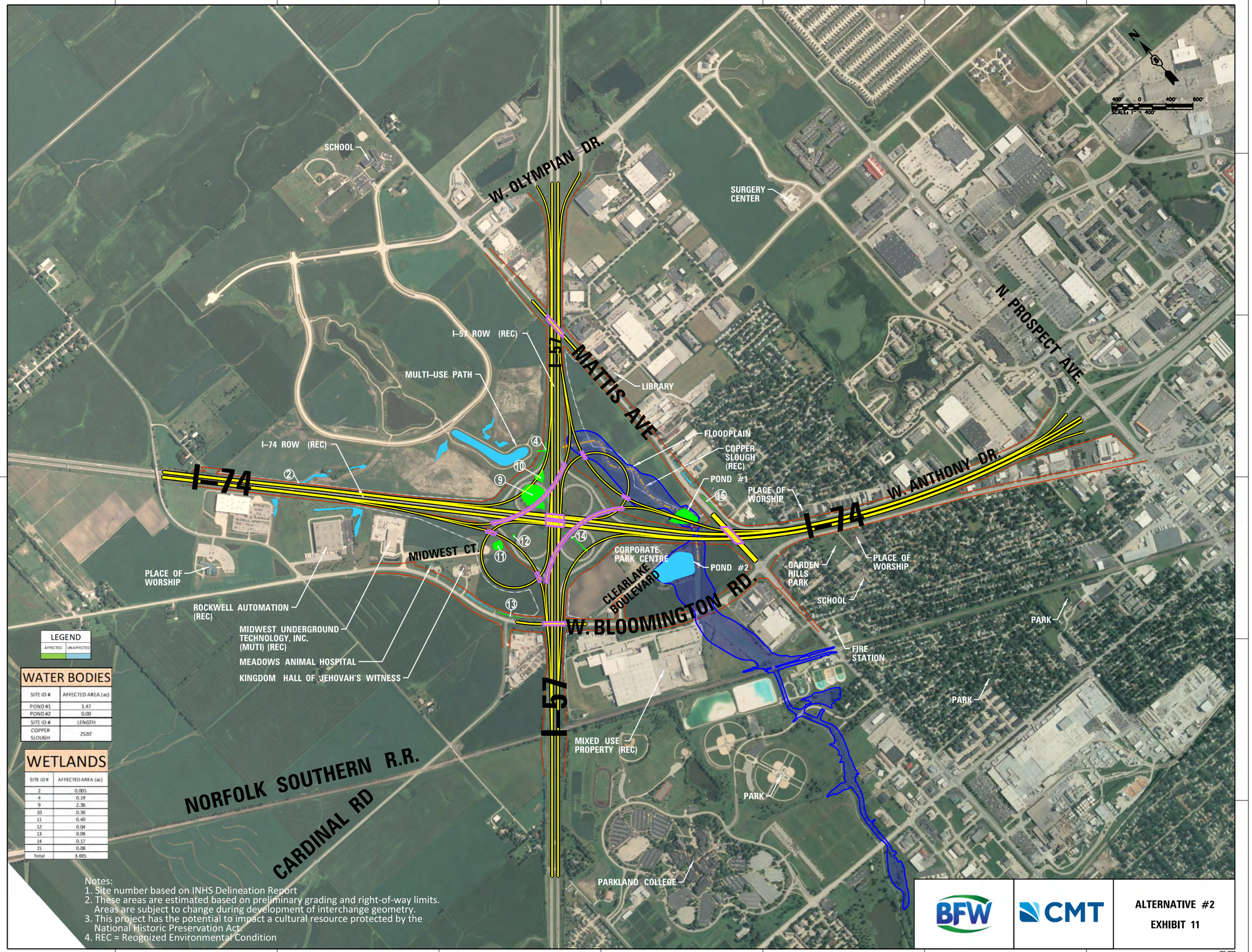
Notes:
1. Site number based on INHS Delineation Report
2. These areas are estimated based on preliminary grading and right-of-way limits. Areas are subject to change during development of interchange geometry.
3. This project has the potential to impact a cultural resource protected by the National Historic Preservation Act.
4. REC = Reognized Environmental Condition

BFW | CMT

ALTERNATIVE #1

EXHIBIT 10

BDE-9908




| WATER BODIES | |
|---|---|
| SITE ID # | AFFECTED AREA (ac) |
| POND #1 | 1.47 |
| POND #2 | 0.00 |
| SITE ID # | LENGTH |
| COPPER SLOUGH | 2520' |

| WETLANDS | |
|---|---|
| SITE ID # | AFFECTED AREA (ac) |
| 2 | 0.005 |
| 4 | 0.19 |
| 9 | 2.36 |
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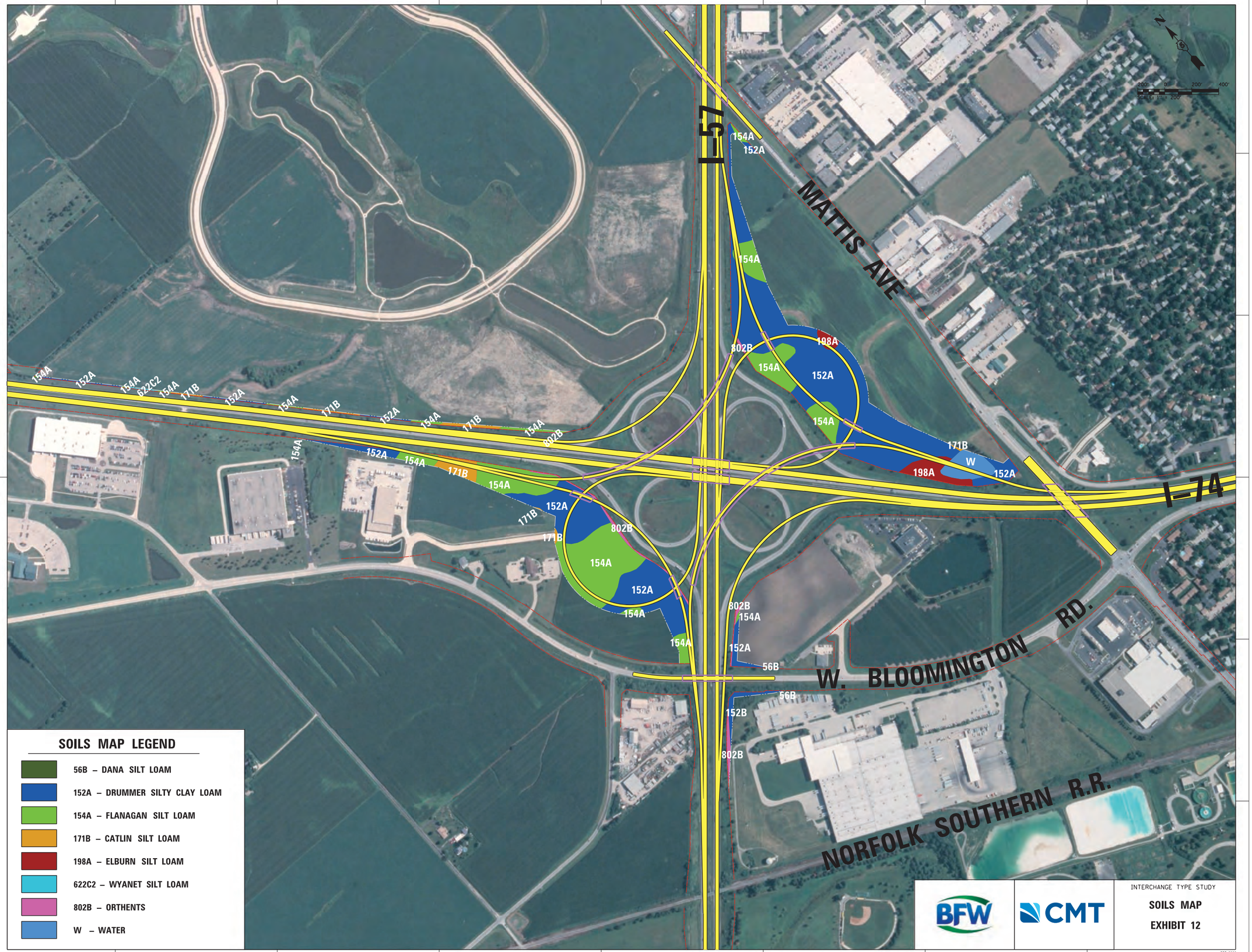
Notes:
1. Site number based on INHS Delineation Report
2. These areas are estimated based on preliminary grading and right-of-way limits. Areas are subject to change during development of interchange geometry.
3. This project has the potential to impact a cultural resource protected by the National Historic Preservation Act.
4. REC = Reognized Environmental Condition

BFW | CMT

**ALTERNATIVE #2**

**EXHIBIT 11**

BDE-9908


I-57
MATTIS AVE
I-74
W. BLOOMINGTON RD.
NORFOLK SOUTHERN R.R.
N
200' 0 200' 400'
SCALE: 1" = 200'
154A
152A
622C2
171B
802B
198A
W
56B
152B
SOILS MAP LEGEND
56B – DANA SILT LOAM
152A – DRUMMER SILTY CLAY LOAM
154A – FLANAGAN SILT LOAM
171B – CATLIN SILT LOAM
198A – ELBURN SILT LOAM
622C2 – WYANET SILT LOAM
802B – ORTHENTS
W – WATER
BFW
CMT
INTERCHANGE TYPE STUDY
SOILS MAP
EXHIBIT 12
BDE-9908

## NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

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Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

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NGS Information Services, NOAA, N/NGS12
National Geodetic Survey SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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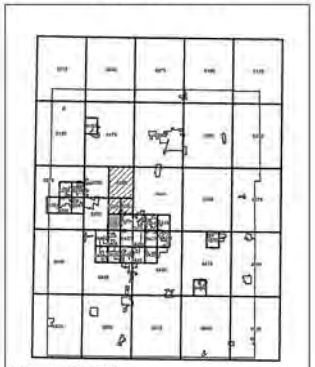
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For information on available products associated with this FIRM visit the Map Service Center (MSC) website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

## PANEL INDEX



Panel Not Printed




## LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INFLUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- **ZONE A** — No Base Flood Elevations determined.
- **ZONE AE** — Base Flood Elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 65° 02' 08", 93° 02' 12" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4,927,000 FT N — 1000-meter Universal Transverse Mercator grid values, zone 16
- 1565000 FT — 5000-foot grid ticks: Illinois State Plane East Coordinate System, 2776 zone (FIPS ZONE 1301) Transverse Mercator
- DX510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
OCTOBER 2, 2013

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0293D

# FIRM

FLOOD INSURANCE RATE MAP

CHAMPAIGN COUNTY, ILLINOIS

AND INCORPORATED AREAS

PANEL 293 OF 625

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| CHAMPAIGN COUNTY | 170894 | 0293 | D |
| CHAMPAIGN, CITY OF | 170026 | 0293 | D |

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
17019C0293D

EFFECTIVE DATE
OCTOBER 2, 2013

Federal Emergency Management Agency

EXHIBIT 13

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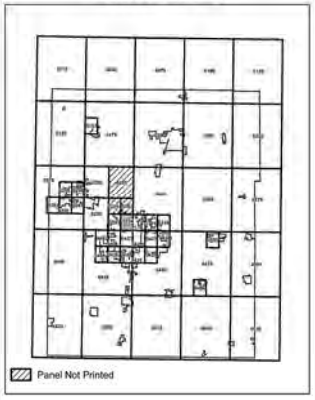
**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

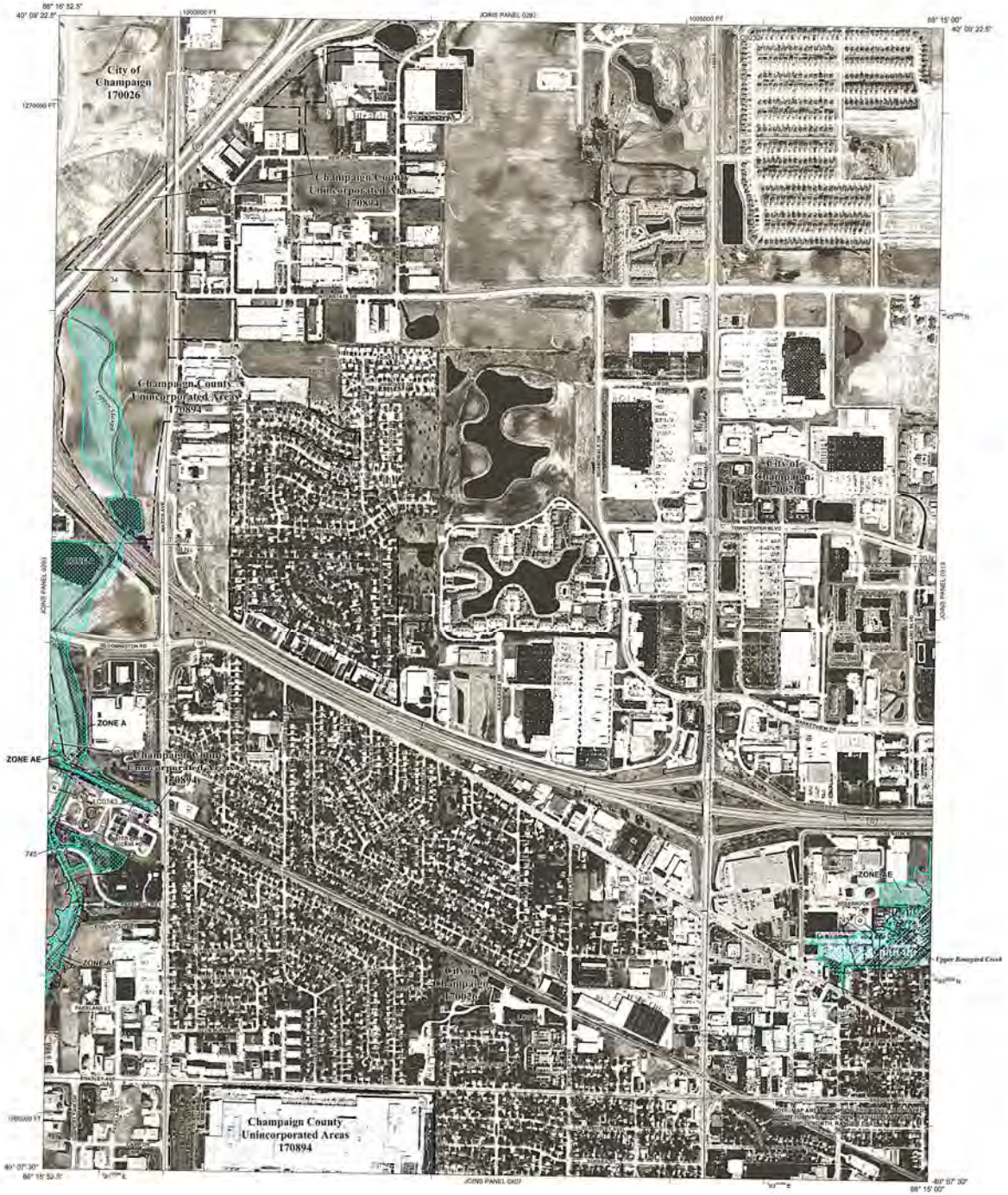
For information on available products associated with this FIRM visit the Map Service Center (MSC) website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

## PANEL INDEX



Panel Not Printed




## LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- **ZONE A** — No Base Flood Elevations determined.
- **ZONE AE** — Base Flood Elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** — Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 87°02'45", 32°02'30" — Geographic coordinate referenced to the North American Datum of 1983 (NAD 83)
- 5000-meter Universal Transverse Mercator grid values, zone 16
- 1000-foot grid ticks: Illinois State Plane East Coordinate System, 2776 zone (FIPSZONE 1201) Transverse Mercator
- 5000-foot grid ticks: Illinois State Plane East Coordinate System, 2776 zone (FIPSZONE 1201) Transverse Mercator
- Bench mark (see explanation in scope and applicability section of user manual)
- River Mile

MAP REPOSITORIES
*Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
OCTOBER 2, 2013

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For communities/areas outside Illinois/Wisconsin mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0294D

# FIRM

## FLOOD INSURANCE RATE MAP

## CHAMPAIGN COUNTY, ILLINOIS

AND INCORPORATED AREAS

**PANEL 294 OF 625**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| CHAMPAIGN COUNTY | 170894 | 0294 | D |
| CHAMPAIGN, CITY OF | 170026 | 0294 | D |

Notice to User: The Map Number shown below should be used when ordering maps or flood insurance. For communities/areas outside Illinois/Wisconsin, consult Community Map History table located in the Flood Insurance Study report for this jurisdiction.

**MAP NUMBER**
**17019C0294D**

**EFFECTIVE DATE**
**OCTOBER 2, 2013**

Federal Emergency Management Agency

EXHIBIT 14

# Mahomet Sole Source Aquifer Project Review Area

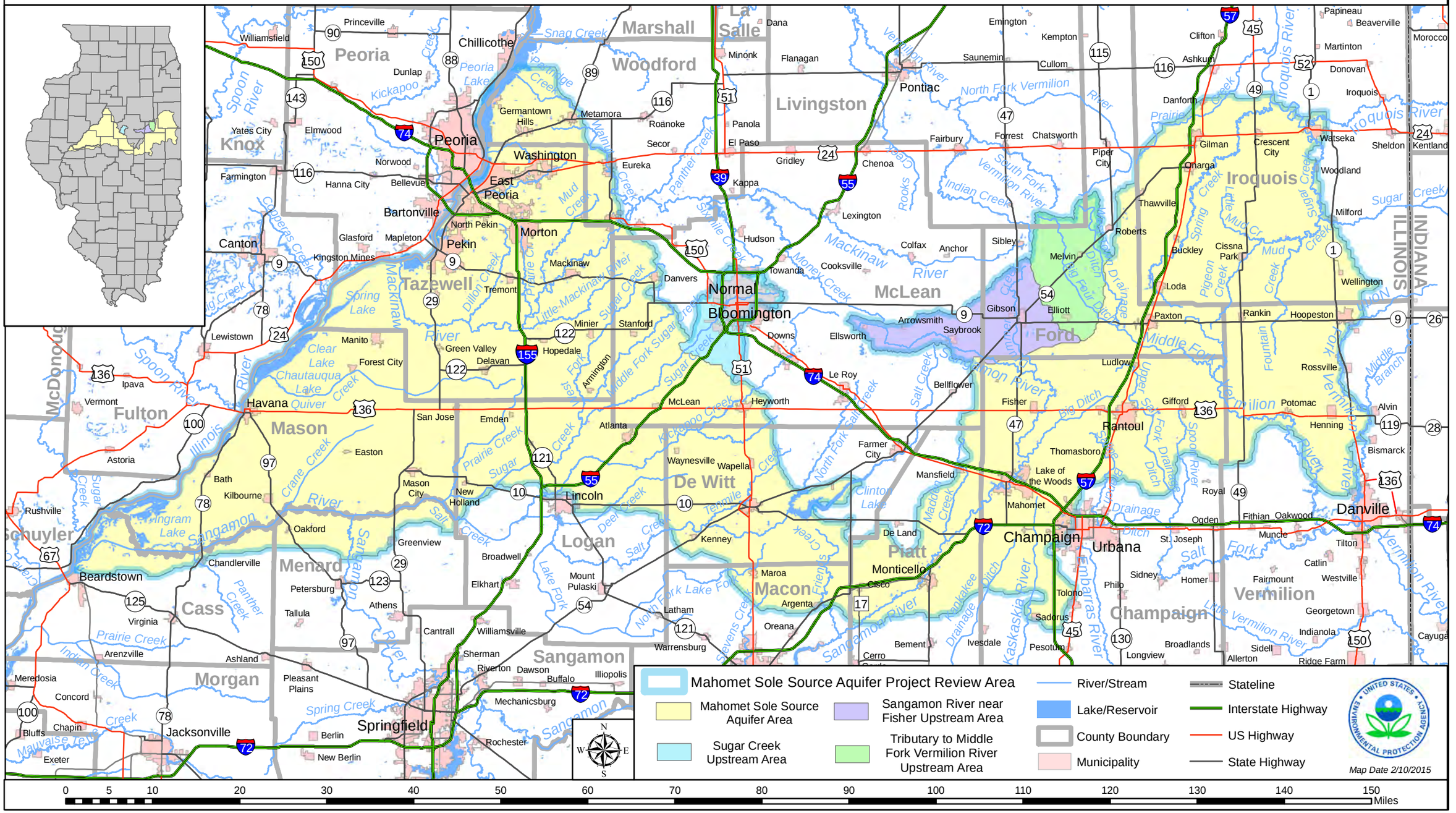



**EXHIBIT 15**

# Illinois Department of Transportation

## Memorandum

| | | | |
|---|---|---|---|
| To: | Joseph E. Crowe | Attn: | Dennis L. Markwell |
| From: | John D. Baranzelli | By: | Thomas C. Brooks Thomas C Brooks |
| Subject: | Biological Resources Review | | |
| Date: | June 27, 2013 | | |

FAI 74/57
I-74 Sta 1150+00 (E end) Sta 1840+00 (W end) & I-57 Sta 540+00 (S end) Sta 655+00 (N end)
Job No.: C-95-030-11
BDE Seq. No.: 17502 & 17502A
Champaign County

The proposed project involves interchange reconstruction of I-74 and I-57. An undetermined amount of new ROW is required.

A preliminary review was performed of the project area for the potential impact on threatened or endangered species pursuant to Section 7 of the Endangered Species Act as amended. The U.S. Fish and Wildlife Service Region 3 list of threatened or endangered species in Illinois (http://www.fws.gov/midwest/endangered/lists/illinois-cty.html) lists Indiana bat (*Myotis sodalis*), Eastern prairie fringed orchid (*Platanthera leucophaea*) and Prairie bush clover (*Lespedeza leptostachya*) as occurring in Champaign County.

Appendix 2 of the Indiana bat (*Myotis sodalis*) Draft Recovery Plan: First Revision lists no records for the Indiana bat in Champaign County. Also, there are no caves, mines (hibernacula); small stream corridors with well developed riparian woods or upland forests (foraging) in the project area. We conclude no effect to the Indiana bat in the project area.

The federally threatened and Illinois endangered Eastern prairie fringed orchid is a plant of open-canopied mesic to wet prairies and high quality wetlands. There is no prairie or high quality wetlands within the project area. Therefore, we conclude absence of the Eastern prairie fringed orchid in the project area.

Prairie bush clover requires dry to mesic prairies with gravelly soils. There is no such habitat in the project corridor. Therefore, we conclude absence of Prairie bush clover in the project area.

This office has determined that there will be no effect to the species listed for Champaign County, Illinois as described above. Please keep this memorandum in your project files as it documents and concludes consultation with the IDNR and USFWS.

**EXHIBIT 16**

The IDNR Natural Heritage Database has no records of listed species, natural areas or nature preserves within the project corridor (NRRT/DIRT report dated September 17, 2012 for the original project and May 25, 2013 for Addendum A). In accordance with the 2013 Memorandum of Understanding by and between IDNR and IDOT, consultation is terminated.

The National Wetland Inventory Map (Rising Quadrangle) depicts wetlands in the project area. The project was sent for field survey. The INHS wetland delineation report and GIS data are posted on the shared drive. The results of the survey indicate the presence of 16 jurisdictional wetlands within the project area (Sites 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 17 and 18).

In accordance with IDOT BDE Manual Section 26-8, wetland impacts are to be avoided, minimized and then mitigated. Section 26-8.05(c)4 states that for all projects that are surveyed for wetlands and determined to have wetlands within the study area, a Wetland Impact Evaluation (WIE) form must be completed and submitted to the BDE, even if there are no wetland impacts. Further information on completing and processing of WIEs is contained in IDOT BDE Manual Section 26-8.

The Natural Resources Unit has reviewed this project. The project, as described on the Environmental Survey Request Form, does not require biological surveys. By agreement, no coordination with the Illinois Department of Natural Resources and the U.S. Fish and Wildlife Service is necessary.

JMV

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Paul A. Loete | Attn: Dennis L. Markwell |
| From: | John D. Baranzelli | By: Thomas C. Brooks |
| Subject: | Natural Resources Review | Thomas C. Brooks |
| Date: | January 7, 2014 | |

I-74/I-57
T20N/R8E/S34
Seq #17502B
Champaign County

The proposed project involves reconstruction of I-74/I-57 interchange.

The amount of land acquisition and tree removal is undetermined at this time. There will not be in-stream work. Land cover in the vicinity of the proposed improvement is primarily residential and agriculture land.

**Review for Illinois Endangered Species Protection and Illinois Natural Areas Preservation – Part 1075**

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location. **Therefore, consultation under Part 1075 is terminated**.

**This review for compliance with 17 Ill. Adm. Code Part 1075 is valid for two years unless new information becomes available that was not previously considered; the proposed improvement is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the proposed improvement has not been implemented within two years of the date of this memorandum, or any of the above listed conditions develop, a new review will be necessary.**

**Review for Illinois Interagency Wetland Policy Act – Part 1090**

The National Wetlands Inventory does not show wetlands in the vicinity of the project location. **Therefore, the wetland review under Part 1090 is terminated**.

**EXHIBIT 16**

**Review for Endangered Species Act - Section 7**

See the attached US Fish and Wildlife Service list of endangered, threatened, proposed and candidate species and proposed and designated critical habitat that may be present within the county in which the proposed project is located. We cross-referenced the preferred habitat of each listed species with our knowledge of the project area and determined that listed species and critical habitat are not present.

Should the proposed improvement be modified or new information indicate listed or proposed species may be affected, consultation or additional coordination should be initiated.

Attachment—USFWS species county list

VH

**EXHIBIT 16**

# Illinois County Distribution

## Federally Endangered, Threatened, and Candidate Species

**List Revised October 2013**

| County | Species | Status | Habitat |
|---|---|---|---|
| **Champaign**<br>**Field Office to Contact:**<br>U.S. Fish and Wildlife Service<br>Marion Illinois Sub-Office<br>8588 Route 148<br>Marion, Illinois 62959<br>Phone: (618) 997-3344, ext. 340<br>FAX: (618) 997-8961<br>e:mail Marion@fws.gov+A49 | Indiana bat *(Myotis sodalis)* | Endangered | Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging) |
| | Northern long-eared bat *Myotis septentrionalis* | Proposed as Endangered | Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests and woods. |
| | Eastern prairie fringed orchid *(Platanthera leucophaea )* | Threatened | Mesic to wet prairies |
| | Prairie bush clover *(Lespedeza leptostachya)* | Threatened | Dry to mesic prairies with gravelly soil |

**EXHIBIT 16**

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Joseph Crowe | Attn: Bart Sherer |
| From: | John Baranzelli | By: Brad Koldehoff |
| Subject: | Cultural Resource Clearance | |
| Date: | January 13, 2014 | |

**Champaign County**
**FAI 74/57, I-74/I-57**
**Sec. 10(5-1-RS-1,14-1-6)R**
**Job No. P-95-030-11**
**Seq. #17502B**

Attached is a copy of the Environmental Survey Request Form submitted for the above project. The professional staff of the Cultural Resources Unit has made the following determination: "No Historic Properties Affected." This determination follows the stipulations of the joint Programmatic Agreement for the Delegation of Authority for Minor Projects ratified by the Advisory Council on Historic Preservation, FHWA, SHPO, and IDOT on June 14, 2011.

The stamped request form attached documents that no further coordination is required for cultural resources.

Brad Koldehoff

Attachment

BK:km

**EXHIBIT 16**

Attention: Central Office BD&E
Environment Section
Room 330

# Environmental Survey Request Addendum

**A. Project Information** ☑ Bio ☑ Cultural ☐ Wetlands ☑ Special Waste

Submittal Date: 12/19/2013 Sequence No: 17502 B

District: 5 Requesting Agency: DOH Project No:

Contract #: 70897 Job No.: C- 95-030-11

Counties: Champaign

Route: FAI 74/57 Marked: I-74/I-57

Street: Section: 10(5-1-RS-1,14-1,6)R

Municipality(ies): City of Champaign (see additional info) Project Length: 8.0467 km 5 miles

FromTo (At): I-74 Sta 1150+00 (E end)-Sta 1840+00 (W end) I-57 Sta 540+00 (S end) Sta 655+00 (N end)

Quadrangle: Rising Quadrangle Township-Range-Section: Sec 34 T20N R8E (see additional info)

Survey Target Date: 06/19/2014 Anticipated Design Approval: 06/19/2014

**B. Reason for Submittal: (Check all that apply)**

☐ Acquisition of additional ROW or easement Addendum: acres Total Project: acres

☐ In-Stream Work Stream Name:

☑ Other: ESR Limits were expanded

☐ Field Sign Off (Bio & Cultural Only)

**C.** Addendum Description: An addendum was required due to a change in the ESR limits from what was originally submitted.

**D.** Tree Removal?: Don't Know Number?: ha/ acres

| | | | |
|---|---|---|---|
| Existing Bridge(s) Structure Number: | 010-1071 | On Historic Bridge List: | No |
| Existing Bridge(s) Structure Number: | 010-0169 | On Historic Bridge List: | No |

Wetland delineation performed by: BDE End. Species Consultation performed by: BDE

**E.**

| | | | |
|---|---|---|---|
| Contact Person: | Bart Sherer | Local Contact Person: | |
| Telephone #: | (217) 465-4181 ext. 317 | Telephone #: | |
| Env.Contact: | | E-Mail: | |
| Telephone #: | | Title/Company: | |

**F.** ☐ Update Entire Project

☐ Addendum Only

☐ Field Sign Off (Bio & Cultural Only) ☐ Received in CO

**CULTURAL RESOURCES:**
NO SURVEY OR FURTHER COORDINATION REQUIRED

Brad Koldehoff 1/13/14
SIGNED DATE

**EXHIBIT 16**

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Joseph E. Crowe | Attn: Bart L. Sherer |
| From: | John D. Baranzelli | By: Brad H. Koldehoff |
| Subject: | Cultural Resources – Adverse Effect | |
| Date: | February 20, 2014 | |

**Champaign County**
**FAI-57/74, I-57/74**
**Champaign**
**Intersection Reconstruction**
**IDOT Sequence #17502, 17502A**
**ISAS Log #12197, 13044**

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the above referenced project has the potential to cause an Adverse Effect to an ancient American Indian archaeological habitation site (11CH608). Preliminary investigations conducted by Illinois State Archaeological Survey (ISAS) personnel have identified the site as requiring test excavations to evaluate its National Register eligibility. However, access to the site has been denied by the landowner. Therefore, test excavations by ISAS must be undertaken when IDOT has control of the site area that will be potentially impacted by the project.

The Illinois State Historic Preservation Officer (SHPO) has concurred with IDOT's determination of a "Preliminary Adverse Effect," see attached letter. Therefore, a Memorandum of Agreement (MOA) will be developed that stipulates, (1) archaeological test excavations must be conducted prior to construction, and (2) if National Register eligible cultural resources are identified, data-recovery excavations (mitigation) must be completed prior to any construction activities in the vicinity of the site. When the MOA has been ratified, the project will be clear for design approval.

Brad H. Koldehoff, RPA
Cultural Resources Unit
Bureau of Design and Environment

**EXHIBIT 16**

Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

**Champaign County**
**FAI-57/74, I-57/74**
**Champaign**
**Intersection Reconstruction**
**IDOT Sequence #17502, 17502A**
**ISAS Log #12197, 13044**

**January 10, 2014**

RECEIVED
JAN 10 2014
PRESERVATION SERVICES

***Federal Section 106 – Preliminary Adverse Effect***

Ms. Anne Haaker
Deputy State Historic Preservation Officer
Illinois Historic Preservation Agency
Springfield, Illinois 62701

Dear Ms. Haaker:

Enclosed are copies of the Phase I Survey Report completed by Illinois State Archaeological Survey (ISAS) personnel concerning archaeological and historical resources potentially impacted by the above referenced project. Survey of the 579-acre project area resulted in the identification of nine archaeological sites within or adjacent to the project limits: 11CH290, 11CH603-609, and 11CH611. No architectural resources eligible for National Register consideration were identified by IDOT's cultural resources staff.

One archaeological site, 11CH608, may hold new information about the prehistory of the region, while the remaining sites appear to lack integrity and information potential. To evaluate the National Register eligibility of site 11CH608, test excavations are recommended. However, access to the site has been denied by the landowner. Therefore, a draft MOA will be developed in coordination with FHWA and submit to your office for review and comment. The MOA will stipulate that (1) site 11CH608 will be evaluated once IDOT controls the portion of the site to be impacted, and (2) data-recovery excavations will be conducted, if warranted.

In accordance with the established procedure for coordination of IDOT projects, we request the concurrence of the State Historic Preservation Officer in our preliminary determination that the proposed project may cause an adverse to an historic property subject to protection under Section 106 of the National Historic Preservation Act of 1966, as amended.

Very truly yours,

Brad H. Koldehoff
Cultural Resources Unit
Bureau of Design & Environment

CONCUR
By: Anne E. Haaker
Deputy State Historic Preservation Officer
Date: 1-10-14

**EXHIBIT 16**

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Joseph E. Crowe | Attn: Bart L. Sherer |
| From: | John D. Baranzelli | By: Brad H. Koldehoff |
| Subject: | Cultural Resources – Adverse Effect, Ratified MOA | |
| Date: | July 9, 2014 | |

**Champaign County**
**FAI-57/74, I-57/74**
**Champaign**
**Interchange Reconstruction**
**IDOT Sequence #17502, 17502A, 17502B**
**ISAS Log #12197, 13044**

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the above referenced project has the potential to cause an Adverse Effect to an ancient American Indian archaeological habitation site (11CH608). Preliminary investigations conducted by Illinois State Archaeological Survey (ISAS) personnel have identified the site as requiring test excavations to evaluate its National Register eligibility. However, access to the site has been denied by the landowner. Therefore, test excavations by ISAS must be undertaken when IDOT has control of the site area that will be potentially impacted by the project.

A Memorandum of Agreement (MOA) has been developed and ratified (see attached) with the following stipulations: (1) archaeological test excavations must be conducted prior to construction, and (2) if National Register eligible cultural resources are identified, data-recovery excavations (mitigation) must be completed prior to any construction activities in the vicinity of the site.

***The project is cleared for design approval provided District 5 ensures the above stipulations are completed in coordination with my office and ISAS personnel prior to any construction activities in the vicinity of the site.***

Brad H. Koldehoff, RPA
Cultural Resources Unit
Bureau of Design and Environment

**EXHIBIT 16**

**MEMORANDUM OF AGREEMENT**
**AMONG**
**THE FEDERAL HIGHWAY ADMINISTRATION,**
**ILLINOIS DEPARTMENT OF TRANSPORTATION,**
**AND**
**ILLINOIS STATE HISTORIC PRESERVATION OFFICER,**
**REGARDING**
**RECONSTRUCTION OF I-57/I-74 INTERCHANGE**
**CHAMPAIGN, CHAMPAIGN COUNTY, ILLINOIS**

**WHEREAS**, the Illinois Department of Transportation (IDOT) plans to reconstruct the interchange of I-57 and I-74 in Champaign, Champaign County, Illinois (Project), IDOT Sequence #17502, 17502A, 17502B; and

**WHEREAS,** the Federal Highway Administration (FHWA) may fund the Project thereby making the Project an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. Section 470f, and its implementing regulations, 36 C.F.R. Part 800; and

**WHEREAS**, the FHWA has defined the undertaking's area of potential effect (APE) as the proposed project area (as shown in Exhibit A); and

**WHEREAS**, the FHWA in consultation with the Illinois State Historic Preservation Officer (SHPO) has determined that no standing structures that are eligible for listing on the National Register of Historic Places will be adversely effected by the Project (Exhibit B); and

**WHEREAS**, the FHWA invited the following Tribes to enter consultation: the Kickapoo, Miami, and Peoria, and no Tribe expressed an interest in consultation; and

**WHEREAS**, the FHWA has invited the IDOT to participate in consultation and to become a signatory to this Memorandum of Agreement (MOA); and

**WHEREAS**, the FHWA and IDOT, in consultation with the SHPO, have identified an ancient American Indian habitation area (Site) that has the potential to yield important information about the prehistory of region (11CH608), thus, making the Site eligible for the National Register of Historic Places (NRHP) under Criterion D, and the Site may be adversely effected by the Project; and

**WHEREAS**, the Site has no affiliation with historic Indian Tribes and is important for the scientific data it likely contains; therefore, it does not require preservation in place; and

**WHEREAS**, in accordance with 36 CFR Part 800, the FHWA acknowledges and accepts the advice and conditions outlined in the Council's "Recommended Approach for Consultation on the Recovery of Significant Information from Archaeological Sites," published in the Federal Register on June 17, 1999; and



**EXHIBIT 16**

**WHEREAS**, the FHWA notified the Advisory Council on Historic Preservation (ACHP) of the preparation of this MOA in a letter dated April 8, 2014 and the ACHP has declined to participate in consultation; and

**WHEREAS**, execution and implementation of this MOA evidences that the FHWA has satisfied its Section 106 responsibilities for the Project; and

**NOW, THEREFORE**, the FHWA, IDOT, and SHPO agree that the Project shall be implemented in accordance with the following stipulations to ensure that potential effects on historic properties are taken into account.

## STIPULATIONS

The FHWA, IDOT, and SHPO agree that the following steps will be undertaken for the Project:

### I. ARCHAEOLOGICAL TESTING (PHASE II)

**A.** When the IDOT has secured access to the Site (11CH608), the Illinois State Archaeological Survey (ISAS) on behalf of the IDOT will conduct test excavations within the project limits to identify and evaluate archaeological resources. The IDOT will seek SHPO concurrence in determining the NRHP eligibility of the archaeological resources.

B. If the resources are determined eligible for the NRHP, and adverse impacts by the Project cannot be avoided, the IDOT, in coordination with the SHPO, will ensure that data-recovery excavations (mitigation) are completed.

### II. ARCHAEOLOGICAL MITIGATION (PHASE III)

**A.** To mitigate the adverse effect, the IDOT will ensure that data-recovery excavations are completed by the ISAS in accordance with the attached data-recovery plan (Exhibit C), which is consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties, the Secretary of the Interior's Standards and Guidelines for Archaeological and Historic Preservation, and the Advisory Council on Historic Preservation's Treatment of Archaeological Properties: A Handbook. The IDOT will ensure that no construction activities will be undertaken in the vicinity of the Site prior to the conclusion of data-recovery excavations.

**B.** Human remains are not expected to be found during the investigations covered by this MOA. However, if encountered, required notifications of the discovery will be made to the county coroner and the SHPO, then after authorization under Illinois Human Skeletal Remains Protection Act (20 ILCS 3440, 17 IAC 4170) and its rules (the Act), the remains along with

any associated artifacts will be removed following procedures for recording and reporting established under the Act. No excavation of human remains will be performed except under the direction of a Certified Skeletal Analyst (17 IAC 4170.300(f)). Disposition of the remains and associated artifacts will be accomplished as determined under the Act.

## III. PROFESSIONAL STANDARDS

For the purpose of implementing this MOA, the IDOT shall continue to employ departmental staff with qualifications that meet the requirements of 36 CFR Part 61, Appendix A. At a minimum, the professional staff required to carry out the terms of this MOA shall consist of one permanent, full time, archaeologist. In the event of a prolonged absence of the IDOT archaeologist, IDOT will, in consultation with the FHWA and SHPO, appoint an archaeologist that meets the requirements of 36 CFR Part 61, Appendix A.

## IV. DURATION

This MOA will be null and void if its stipulations are not carried out within ten years from the date of its execution. In such an event, the FHWA shall so notify the parties to this MOA and, if it chooses to continue with the Project, then it shall reinitiate review of the Project in accordance with 36 CFR Part 800.

## V. POST REVIEW DISCOVERIES

**A.** *Procedures for an Unanticipated Discovery of Human Remains and Burials:* In the case of an unanticipated discovery of human remains or burials on state land, the IDOT will comply with 20 Illinois Compiled Statutes 3440/0.01, et seq. (Human Skeletal Remains Protection Act) and follow these procedures:

(a) Upon encountering human remains or an unmarked human burial during ground disturbing construction activities, the IDOT will ensure that the construction contractor immediately stops work within a one-hundred-fifty (150) foot radius from the point of discovery. The IDOT will ensure that the construction contractor implements interim measures to protect the discovery from vandalism and looting, but must not remove or otherwise disturb any human remains or other items in the immediate vicinity of the discovery.

(b) Immediately following receipt of such notification, the IDOT will ensure that construction activities have halted within a one-hundred-fifty (150) foot radius from the point of discovery and assume responsibility for implementing additional measures, as appropriate, to protect the discovery



**EXHIBIT 16**

from looting and vandalism until the requirements of state law have been completed.

(c) The IDOT will determine if the skeletal remains are human, the degree to which they were disturbed, and, if possible, assess their potential age and cultural affiliation without any further disturbance.

(d) The IDOT will notify the county coroner, Illinois Historic Preservation Agency (IHPA) and SHPO, and other interested parties within forty-eight (48) hours of the discovery.

(e) Within seventy-two (72) hours after notification the county coroner will determine jurisdiction. If the remains are older than 100 years, the county coroner will notify the IHPA and SHPO.

(f) The IHPA is responsible for notifying FHWA, IDOT, and other interested parties within twenty-four (24) hours of its findings.

(g) If it is determined that intact or fragmented human remains are present the IDOT will consult with the IHPA, SHPO, FHWA, and other interested parties regarding additional measures to avoid and protect or mitigate the adverse effect of the Project on the human remains and burial site. These measures may include:

i. formal archaeological evaluation of the site;
ii. if the remains are determined to be Native American, consultation with appropriate Tribes will be required;
iii. visits to the site by the SHPO and other interested parties;
iv. exploration of potential alternatives to avoid the human remains or burial;
v. for Native American remains, implementation of a mitigation plan by the IDOT in consultation with appropriate Tribes, including procedures for disinterment and re-interment;
vi. implementation of the mitigation plan; and
vii. FHWA approval to resume construction following completion of the fieldwork component of the mitigation plan.

**B.** *Procedures for an Unanticipated Discovery of Historic Properties:* In the event of an unanticipated discovery of historic properties during IDOT construction activities, IDOT will follow these procedures:

(a) The construction contractor must immediately stop all construction activity within a three-hundred (300) foot radius of the discovery, notify IDOT of the discovery and implement interim



**EXHIBIT 16**

measures to protect the discovery from looting and vandalism. Within forty-eight (48) hours of receipt of this notification of the discovery, the IDOT shall:

i. inspect the work site to determine the extent of the discovery and ensure that construction activities have halted;
ii. clearly mark the area of the discovery;
iii. implement additional measures, as appropriate, to protect the discovery from looting and vandalism; and
iv. notify the FHWA, the SHPO, and other interested parties of the discovery.

(b) IDOT/FHWA will have seven (7) business days following notification to determine the National Register eligibility of the discovery after considering the filed comments of the SHPO and other interested parties. IDOT/FHWA may assume the newly discovered property to be eligible for the National Register for the purposes of Section 106 pursuant to 36 CFR§ 800.13(c)

(c) If the find is determined to be potentially significant the IDOT will consult with the SHPO and other interested parties regarding appropriate measures for site treatment. For properties determined eligible for the National Register, IDOT/FHWA will notify the SHPO and other interested parties, of those actions for which it proposes to resolve adverse effects. The SHPO and other interested parties will have seven (7) business days to provide their views on the proposed actions to resolve adverse effects. These measures may include:

i. formal archaeological evaluation of the site;
ii. visits to the site by the SHPO and other interested parties;
iii. exploration of potential alternatives to avoid the site;
iv. preparation of a mitigation plan by the IDOT in consultation with other interested parties for approval by the SHPO;
v. implementation of a mitigation plan; and
vi. FHWA approval to resume construction following completion of the fieldwork component of the mitigation plan.

(d) If the find is determined to be either isolated or completely disturbed by construction activities, the IDOT will consult with the SHPO and other interested parties prior to resuming construction.



**EXHIBIT 16**

Execution of this MOA by the FHWA, SHPO, and IDOT and implementation of its terms evidence that FHWA has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment

FEDERAL HIGHWAY ADMINISTRATION

By: _____ Date: July 3, 2014

ILLINOIS STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: July 3, 2014

**INVITED SIGNATORY**

ILLINOIS DEPARTMENT OF TRANSPORTATION

By: Kensil A. Garnett COR Date: 6-25-14



**EXHIBIT 16**

**From:** Malone, Pat
**Sent:** Wednesday, November 05, 2014 11:22 AM
**To:** Sherer, Bart L
**Cc:** Hamer, Steve; Brooks, Thomas C
**Subject:** RE: 17502 70897 I-74-57 interchange Champaign Wetlands

Hi Bart,

The areas described within the interchange and maintained ROW are not considered State jurisdictional wetlands and are not subject to review under IPWA.

Pat

**From:** Sherer, Bart L
**Sent:** Wednesday, October 29, 2014 8:29 AM
**To:** 'gregory.a.mckay@usace.army.mil'; Malone, Pat; Hamer, Steve
**Cc:** Neihart, Scott W; Stults, Jason W; Keys, Rustin B; Brooks, Thomas C; 'Wiesbrook, Scott M'
**Subject:** 17502 70897 I-74-57 interchange Champaign Wetlands

Gentlemen,

IDOT District 5 is in the process of conducting an Environmental Assessment (EA) for the reconstruction of the I-74/I-57 interchange in Champaign, IL.

A wetland survey of the project area has been performed; several wetlands were delineated within the project corridor. The District is currently pursuing a preferred alternative; with a preferred alternative being chosen we can better identify the wetlands that may be affected by the project.

The District is interested in meeting with you to discuss the following items:

- Of the wetlands delineated, which wetlands would the USACE take jurisdiction of requiring mitigation
- Wetland mitigation options

Attached above is a location map, preferred alternative wetland impact exhibit and wetland delineation report for your information.

The District would like to ask if you are available to meet at the project site on Thursday November 13th, 2014 at 10:30 AM to discuss the project.

If you should have any questions or need additional information, feel free to contact me.

**Bart L Sherer**
**Environmental Coordinator**
**IDOT Region 3/District 5**
**Office 217-466-7305**
**Fax 217-465-3101**
**bart.sherer@illinois.gov**

**EXHIBIT 16**

Illinois Department of Agriculture

Pat Quinn, Governor
Robert F. Flider, Director

**Bureau of Land and Water Resources**
State Fairgrounds • P.O. Box 19281 • Springfield, IL 62794-9281 • 217/782-6297 • TDD 217/524-6858 • Fax 217/557-0993

November 10, 2014

Ms. Lana Sumner
Crawford, Murphy & Tilly, Inc.
2750 W. Washington Street
Springfield, Illinois 62702-3497

Re: Interstate 57 and Interstate 74 Interchange Reconstruction
Abbreviated Environmental Assessment – 46.7 acres
Champaign County, Illinois
Federal Highway Administration Funds
USDA NRCS Form AD-1006

Dear Ms. Sumner:

The Illinois Department of Agriculture (IDOA) has completed its review of the agricultural impacts associated with proposed interchange improvements in Champaign County, Illinois. The project was examined for its compliance with IDOT's Agricultural Land Preservation Policy as well as the Illinois Farmland Preservation Act (505 ILCS 75/1 et seq.).

The existing conventional full cloverleaf interchange facility connecting I-57 and I-74 was constructed in 1965. The purpose of the proposed interchange reconstruction is to provide safer and more efficient transportation at the interchange. Its construction ultimately results in the conversion of 44.3 acres of Prime farmland soils to a non-agricultural use.

Because the interchange improvements are adjacent to existing Interstate right-of-way and the agricultural impacts have been mitigated to the greatest extent possible, the IDOA has determined that the project complies with IDOT's Agricultural Land Preservation Policy and Illinois' Farmland Preservation Act.

Enclosed are two copies of the USDA NRCS form AD-1006. One copy must be included in the project's environmental assessment; the other is for your files. Should you have any questions or comments, please contact Terry Savko of my staff at 217-785-4458.

Sincerely,

Steven D. Chard, Acting Chief
Bureau of Land and Water Resources

SDC:TS

Enclosures-2
cc: Jonathon Manuel, Champaign Co SWCD
Agency project file

**EXHIBIT 16**

U.S. Department of Agriculture

# FARMLAND CONVERSION IMPACT RATING

| | |
|---|---|
| **PART I** *(To be completed by Federal Agency)* | Date Of Land Evaluation Request 10/21/2014 |
| Name of Project I-57 & I-74 Interchange Improvements | Federal Agency Involved Federal Highway Administration |
| Proposed Land Use Transportation | County and State Champaign, Illinois |
| **PART II** *(To be completed by NRCS)* | Date Request Received By NRCS 10/21/14 / Person Completing Form: Tim Prescott |

| Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)* | YES | NO | Acres Irrigated | Average Farm Size |
|---|---|---|---|---|
| | ☑ | ☐ | N/A | 372 |

| Major Crop(s) | Farmable Land In Govt. Jurisdiction | Amount of Farmland As Defined in FPPA |
|---|---|---|
| Corn, Soybeans, Wheat, Hay | Acres: 29,633 % 97 | Acres: 27,69 % 91 |

| Name of Land Evaluation System Used | Name of State or Local Site Assessment System | Date Land Evaluation Returned by NRCS |
|---|---|---|
| Illinois | Statewide | 11/5/14 |

| **PART III** *(To be completed by Federal Agency)* | Alternative Site Rating | | | |
|---|---|---|---|---|
| | Site A | Site B | Site C | Site D |
| A. Total Acres To Be Converted Directly | 46.7 | | | |
| B. Total Acres To Be Converted Indirectly | 0 | | | |
| C. Total Acres In Site | 46.7 | | | |
| **PART IV** *(To be completed by NRCS)* Land Evaluation Information | | | | |
| A. Total Acres Prime And Unique Farmland | 44.3 | | | |
| B. Total Acres Statewide Important or Local Important Farmland | 0 | | | |
| C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted | 0.00000 | | | |
| D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value | | | | |
| **PART V** (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points) | 140 | | | |

| **PART VI** *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)* | Maximum Points | Site A | Site B | Site C | Site D |
|---|---|---|---|---|---|
| 1. Area In Non-urban Use | (15) | | | | |
| 2. Perimeter In Non-urban Use | (10) | | | | |
| 3. Percent Of Site Being Farmed | (20) | | | | |
| 4. Protection Provided By State and Local Government | | | | | |
| 5. Distance From Urban Built-up Area | | | | | |
| 6. Distance To Urban Support Services | | | | | |
| 7. Size Of Present Farm Unit Compared To Average | | | | | |
| 8. Creation Of Non-farmable Farmland | | | | | |
| 9. Availability Of Farm Support Services | | | | | |
| 10. On-Farm Investments | (20) | | | | |
| 11. Effects Of Conversion On Farm Support Services | (10) | | | | |
| 12. Compatibility With Existing Agricultural Use | (10) | | | | |
| TOTAL SITE ASSESSMENT POINTS | 160 | 0 | 0 | 0 | 0 |
| **PART VII** *(To be completed by Federal Agency)* | | | | | |
| Relative Value Of Farmland *(From Part V)* | 100 | 140 | 0 | 0 | 0 |
| Total Site Assessment *(From Part VI above or local site assessment)* | 160 | 65 | 0 | 0 | 0 |
| **TOTAL POINTS** *(Total of above 2 lines)* | 260 | 205 | 0 | 0 | 0 |

**See the attached Illinois LESA Site Assessment *CORRIDOR* Factors**

| Site Selected: | Date Of Selection | Was A Local Site Assessment Used? YES ☐ NO ☑ |
|---|---|---|

Reason For Selection: Illinois LESA Corridor

*** When utilizing the Illinois State Site Assessment Corridor factors, 150 points are assigned to the Land Evaluation portion, and 150 points are assigned to the Site Assessment portion of the LESA System for a maximum score of 300 points.

Name of Federal agency representative completing this form: Lana Sumner, AICP (consultant) | Date: 10/21/2014

*(See Instructions on reverse side)* Form AD-1006 (03-02)

**EXHIBIT 16**

# I-57 and I-74 Interchange Improvements
# Champaign County, Illinois
# Federal Highway Administration Funds

| **PART VI-B**<br>**Illinois Site Assessment *CORRIDOR* Factors** | **Maximum Points** | **Site A** |
|---|---|---|
| 1. Amount of agricultural land required | 30 | 30 |
| 2. Location of the proposed alignment | 30 | 20 |
| 3. Acres of off-site agricultural land required for borrow materials | 15 | 15 |
| 4. Acres of Prime and Important farmland required for mitigation | 15 | 0 |
| 5. Creation of severed farm parcels | 10 | 0 |
| 6. Creation of uneconomical remnants | 10 | 0 |
| 7. Creation of landlocked parcels | 10 | 0 |
| 8. Creation of adverse travel | 10 | 0 |
| 9. Relocations of rural residences and farm buildings | 10 | 0 |
| 10. Utilization of minimum design standards | 10 | 0 |
| **TOTAL SITE ASSESSMENT *CORRIDOR* POINTS** | **150** | **65** |

| **PART VII** | | |
|---|---|---|
| Relative Value of Farmland | 150 | 140 |
| Total Site Assessment ***CORRIDOR*** Factors | 150 | 65 |
| **TOTAL ILLINOIS LESA POINTS** | **300** | **205** |

111014
TS

* *The Illinois LESA System applies the **225 point cutoff** when evaluating state and federally funded projects. Site or Corridor alternatives receiving **175 or fewer points** have a **low rating** for protection, and it is not necessary to evaluate additional alternatives. Those alternatives receiving **176 to 225 points** are in the **moderate range** for protection. In most cases, alternatives **exceeding the 225 point level should be retained for agricultural use**, and an alternate site should be utilized for the intended project. Selecting the alternative with the lowest total points will usually protect the best farmland located in the most agriculturally viable areas. LESA also serves to maintain and promote the agricultural industry in Illinois.*

**EXHIBIT 16**

# Illinois Department of Transportation

## Memorandum

| | | |
|---|---|---|
| To: | Kensil A. Garnett | Attn: Craig Emberton |
| From: | John D. Baranzelli | By: Thomas C. Brooks |
| Subject: | Natural Resources Review | |
| Date: | November 13, 2014 | Thomas C. Brooks |

I-74/ I-57
T20N/R8E/S26
Champaign County
Seq. #17502 B & C

The proposed project involves reconstruction of the I-74/ I-57 interchange; Addendum C calls for an expansion of the ESR limits.

There will be an unknown amount of land acquisition. There will be in-stream work. There will be an unknown amount of tree removal. Land cover in the vicinity of the proposed improvement is agriculture as well as maintained right-of-way of the existing interchange, and adjacent residential subdivisons.

**Review for Illinois Endangered Species Protection and Illinois Natural Areas Preservation – Part 1075**

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location. **Therefore, consultation under Part 1075 is terminated.**

**This review for compliance with 17 Ill. Adm. Code Part 1075 is valid for two years unless new information becomes available that was not previously considered; the proposed improvement is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the proposed improvement has not been implemented within two years of the date of this memorandum, or any of the above listed conditions develop, a new review will be necessary.**

**Review for Illinois Interagency Wetland Policy Act – Part 1090**

The National Wetlands Inventory shows wetlands in the vicinity of the project location. Addendum B had been previously cleared for wetlands under NRR dated 01/07/2014. However, after further review, a survey for wetlands was conducted within the Environmental Survey Request limits for the proposed

**EXHIBIT 16**

improvements for Addenda B and C. All potential sites were examined and 10 were determined to be wetlands. The Wetland Delineation Report and spatial information (ArcGIS shapefile) are saved in the project folder.

The project sponsor will consider location and design alternatives to avoid and minimize adverse wetland impacts to the extent practical. After the extent of impacts is determined, a Wetland Impact Evaluation (WIE) form will be completed and submitted to the IDOT Bureau of Design and Environment. Unavoidable adverse wetland impacts are subject to the applicable ratios specified in 17 Ill. Adm. Code Part 1090.50 (c)(8). If the project will avoid adverse wetland impacts, the WIE should reflect the determination that adverse wetland impacts will not occur. The WIE form and instructions for its completion can be accessed at http://www.dot.il.gov/environment/wetlands.asp.

**Review for Endangered Species Act - Section 7**

See the attached US Fish and Wildlife Service list of endangered, threatened, proposed and candidate species and proposed and designated critical habitat that may be present within the county in which the proposed project is located. We cross-referenced the preferred habitat of each listed species with our knowledge of the project area and determined that listed species and critical habitat are not present.

Should the proposed improvement be modified or new information indicate listed or proposed species may be affected, consultation or additional coordination should be initiated.

Attachment—USFWS species county list

VH

# Illinois County Distribution

## Federally Endangered, Threatened, and Candidate Species

**List Revised October 2013**

| County | Species | Status | Habitat |
|---|---|---|---|
| **Champaign**<br>**Field Office to Contact:**<br>U.S. Fish and Wildlife Service<br>Marion Illinois Sub-Office<br>8588 Route 148<br>Marion, Illinois 62959<br>Phone: (618) 997-3344, ext. 340<br>FAX: (618) 997-8961<br>e:mail Marion@fws.gov+A49 | Indiana bat *(Myotis sodalis)* | Endangered | Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging) |
| | Northern long-eared bat *Myotis septentrionalis* | Proposed as Endangered | Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests and woods. |
| | Eastern prairie fringed orchid *(Platanthera leucophaea )* | Threatened | Mesic to wet prairies |
| | Prairie bush clover *(Lespedeza leptostachya)* | Threatened | Dry to mesic prairies with gravelly soil |

**EXHIBIT 16**

DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT CORPS OF ENGINEERS
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

REPLY TO
ATTENTION OF:

December 4, 2014

Regulatory Branch
File Number: MVS-2014-760

Bart L. Sherer
Illinois Department of Transportation
District 5
Paris, Illinois 61944-0610

Dear Mr. Sherer:

We have reviewed your application in regard to the reconstruction of the I-74/I-57 interchange in Champaign, Champaign County, Illinois. Based upon a review of the U.S. Geological Survey 7.5-minute topographical map, the National Wetland Inventory maps, USDA's Web Soil Survey, aerial photos and the application; we have determined that the project will not impact jurisdictional waters or wetlands. Since the project will not be completed within waters of the U.S., a Department of the Army permit is **not** required for the proposed work. If work may infringe on areas believed to be jurisdictional, you are instructed to contact the Corps of Engineers Regulatory Branch for guidance prior to completing any work.

This determination is applicable only to the permit program administered by the Corps of Engineers Regulatory Branch. It does not eliminate the need to obtain other federal, state or local approvals before beginning work. You are reminded that although your proposal does not need a Section 404 permit, based on your submitted plans, any revisions to your proposal may be subject to Section 404 and require subsequent authorization from this office.

The jurisdictional determination for this project is considered a Preliminary jurisdictional determination in accordance with Corps regulations at 33 CFR Part 331. A preliminary jurisdictional determination is not appealable. If you wish, you may request an Approved Jurisdictional Determination (which may be appealed) by contacting our office for further instruction.

If you have any questions, please contact me at (314) 331-8584. Please refer to file number **MVS-2014-760**. The St. Louis District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment

**EXHIBIT 16**

to go to our Customer Service Survey found on our web site at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

Keith A McMullen

Keith McMullen
Illinois Section Chief
Regulatory Branch

CC:

Heacock, IEPA
Diedrichsen, IDNR-OWR

# Appendix D2
# Traffic Noise Analysis

# TRAFFIC NOISE ANALYSIS

## Interstate 74 and Interstate 57 Interchange Project

## Champaign, Illinois

**SECTION 10(5-1-RS-1, 14-1, 6)R**
**CHAMPAIGN COUNTY, ILLINOIS**
**JOB NO. P-95-030-11**
**KEG NO. 11-1044.00**


***Authored By:***
**Virginia Flynn**
**Kaskaskia Engineering Group, LLC**
**208 East Main Street, Suite 100**
**Belleville, IL 62220**


***Prepared for:***
**Crawford, Murphy & Tilly, Inc.**
**2750 West Washington**
**Springfield, IL 62702**

**July 2, 2015**

Kaskaskia
Engineering Group, LLC

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Exhibit A – Location Map
Exhibit B – Land Use Map
Exhibit C – Noise Analysis Elements
Exhibit D – Model Validation Data and TNM 2.5 Model Output
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Table 2.1 - FHWA Noise Criteria Hourly “A-Weighted” Sound Level – Decibels (dB(A))
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# GLOSSARY OF ACRONYMS

| | |
|---|---|
| ADT | Average Daily Traffic |
| BNSF | Burlington Northern and Santa Fe |
| CFR | Code of Federal Regulations |
| CNE | Common Noise Environment |
| dB | Decibel |
| dB(A) | Decibels, A-Weighted |
| DHV | Design Hourly Volume |
| FHWA | Federal Highway Administration |
| GIS | Geographic Information System |
| IDOT | Illinois Department of Transportation |
| mph | Miles per Hour |
| NAC | Noise Abatement Criteria |
| NSA | Noise Sensitive Area |
| TNM | Traffic Noise Model |
| TNM 2.5 | FHWA Traffic Noise Model Version 2.5 |

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## 1.0 Introduction

A traffic noise analysis was completed for the proposed improvements in the area of the Interstate 57 and Interstate 74 (I-57 / I-74) interchange reconstruction project. This project is located in the central portion of Champaign County on the northwest side of the City of Champaign. The approximate study limits are Olympian Drive to the north, North Prospect Avenue to the east, the Norfolk Southern Railroad to the south, and North Duncan Road to the west (See Exhibit A – Location Map).

The proposed project is the reconstruction of the I-57 / I-74 interchange from a full conventional cloverleaf interchange to a semi-directional interchange with two directional ramps and two loops. The proposed typical section for I-57 will match the existing, which consists of a 64-foot open grass median. The proposed typical section for I-74 will consist of three lanes in each direction, and the median has been adjusted to include a 60-foot open grass median through the interchange. The total project length is approximately 3.4 miles. The design year for the proposed project is 2040.

The purpose of this report is to document the selection of sensitive noise receptors, the noise monitoring methodology, the traffic noise impact analysis, and the traffic noise abatement evaluation.

### 1.1 Existing Land Use

The land use adjacent to the proposed project improvements consists of mixed uses typical of suburban growth (See Exhibit B – Land Use Map). Land uses in the study corridor primarily include residential (both single and multi–family uses), commercial uses, light industrial uses, and agriculture. Other land uses in and adjacent to the study area include parks, schools, and churches.

### 1.2 Zoning and Comprehensive Land Use Plan Designations

The area along the project corridor is primarily located within the incorporated areas of the City of Champaign. The vacant land located adjacent to the project corridor in the north quadrant of the interchange is zoned as interstate office park. Some unincorporated areas adjacent to the project corridor are identified as ‘Annexation Agreement’. Areas designated as ‘Annexation Agreement’ are those parcels that depend on agreements between the landowner and the City to establish standards by which property is bought within the boundaries of the community. Once developed, these areas annex to Champaign. There are no development permits for these areas [1].

## 2.0 Noise Background and Regulations

### 2.1 Noise Background

Noise is generally defined as unwanted sound. Its loudness is measured in terms of sound pressure level expressed in decibels (dB) and is composed of different frequencies. The human ear is less sensitive to higher and lower frequencies than mid-range frequencies. To compensate for low-end and high-end frequency insensitivity and render noise levels readings more meaningful, an "A-weighting" scale is used to approximate the response of the human ear. The A-weighted decibel (dB(A)) unit measures perceptible sound energy and factors out the fringe frequencies.

Noise levels decrease with distance from a noise source. The noise level from a line source, such as moving traffic on a road will decrease between 3 and 4.5 dB(A) with every doubling of distance. Research has indicated that a difference of 10 dB(A) is perceived half as loud, or twice as loud, to an average listener. Typically, an observer can barely perceive a 3 dB(A) change in loudness.

The Federal Highway Administration's (FHWA) Traffic Noise Model Version 2.5 (TNM 2.5) represents noise levels as $L_{eq(h)}$. $L_{eq}$ is defined as the equivalent steady-state sound level which, in a stated period, contains the same acoustic energy as the time-varying sound level during the same period. $L_{eq(h)}$ is the hourly value of $L_{eq}$ measured in dB(A). Noise levels referred to in this report are stated as hourly-equivalent sound pressure levels $L_{eq(h)}$ in terms of dB(A).

## 2.2 Federal Regulations

The Federal Aid Highway Act of 1970 required the FHWA to develop noise standards and abatement requirements for highway traffic noise. These standards are contained in Title 23, Code of Federal Regulations (CFR), Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* [2]. This regulation applies to highway construction projects where a state department of transportation has requested Federal funding for participation in the project. FHWA has developed three "project types" to assess noise analysis applicability. Federal regulations only apply to Type I and Type II projects. The proposed I-57 / I-74 interchange improvement project is classified as a Type I project, as it includes the addition of through traffic lanes and the relocation of interchange lanes or ramps. Therefore, a traffic noise analysis is required for the full project limits.

The FHWA regulations establish Noise Abatement Criteria (NAC) activity categories based on land use to assess potential traffic noise impacts as defined in 23 CFR 772. The FHWA NAC and description of activity categories are shown in Table 2.1. Traffic noise impacts occur when predicted design year noise levels under the build scenario approach, meet or exceed the NAC, or if there are substantial increases in traffic noise over existing conditions, independent of the NAC.

The FHWA NAC are used to identify locations where traffic noise impacts occur. The NAC are not used as goals for noise attenuation design criteria or design targets.

**Table 2.1 FHWA Noise Criteria Hourly "A-Weighted" Sound Level - Decibels (dB(A))**

| Activity Category | Noise Abatement Criteria db(A) | Description of Activity Category |
|---|---|---|
| **A** | 57 (Exterior) | Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. |
| **B**[1] | 67 (Exterior) | Residential. |
| **C**[1] | 67 (Exterior) | Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings. |
| **D** | 52 (Interior) | Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio stations, recording studios, schools, and television studios. |
| **E**[1] | 72 (Exterior) | Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D. |
| **F** | --- | Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing. |
| **G** | --- | Undeveloped lands that are not permitted. |

*[1]Includes undeveloped lands permitted for this activity category.*
*Source: FHWA, 23 CFR, Part 772[2]*

## 2.3 State Policy

FHWA has deferred to the State agencies to define the noise level that "approaches" the NAC and to define a substantial increase in traffic noise levels. IDOT is the agency responsible for implementing the FHWA traffic noise regulation in Illinois and has developed a policy on highway noise [3]. IDOT defines noise impacts as follows:

- Design-year (typically 20 years into the future) traffic noise levels are predicted to approach, meet, or exceed the NAC, with approach defined as 1 dB(A) less than the NAC; or
- Design-year traffic noise levels are predicted to substantially increase (greater than 14 dB(A)) over the existing traffic generated noise levels.

Based on the approach definition determined by IDOT, Table 2.2 provides the noise levels at which a traffic noise impact would occur and would require consideration of traffic noise abatement for the design year.

**Table 2.2 IDOT Noise Criteria Hourly "A-Weighted" Abatement Evaluation**

| Activity Category | IDOT Approach Criteria dB(A) | Description of Activity Category |
|---|---|---|
| **A** | 56 (Exterior) | Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. |
| **B** | 66 (Exterior) | Residential. |
| **C** | 66 (Exterior) | Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings. |
| **D** | 51 (Interior) | Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio stations, recording studios, schools, and television studios. |
| **E** | 71 (Exterior) | Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D. |
| **F** | --- | Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing. |
| **G** | --- | Undeveloped lands that are not permitted. |

*Source: IDOT Highway Traffic Noise Assessment Manual*[3]

## 3.0 Noise Receptor Selection

IDOT defines a receptor as a discrete or representative location of a common noise environment (CNE) for any of the activities listed in Table 2.2. Primary consideration should be given to exterior areas where frequent human use occurs for activity categories A, B, C, and E. Consideration should be given to activity category D land uses only if no exterior uses are identified.

Sensitive noise receptors with similar characteristics such as land use, topography, and roadway geometrics can be grouped into CNEs. One receptor within the CNE can be considered representative of the area as a whole. Typical CNE groupings include residential subdivisions, commercial areas, recreational lands, churches, and schools.

This traffic noise study evaluates the study area using CNEs. Within each of the CNEs, the receptor closest to the project was selected to represent the CNE; thereby, representing the worst-case traffic noise condition. The represented receptors within the CNEs are assumed to have similar traffic noise levels as the selected representative receptor.

Existing land uses within the study corridor are generally described in Section 1.1. Land uses within 500 feet of the edges of the project area were reviewed. A total of 14 CNEs (labeled 1 through 14 in Table 3.1), and 14 receptors, were chosen to represent the study area. The location of CNEs and selected individual representative receptor sites are shown on Exhibits C-1 and C-2. Table 3.1 lists the CNE, a description of the representative receptor, the activity category, the IDOT approach criterion associated with the receptor, and the total number or receptors in each CNE.

**Table 3.1 Noise Receptor Descriptions**

| CNE ID | Representative Receptor Description | Activity Category | IDOT Approach Criterion dB(A) | No. of Receptors in CNE |
|---|---|---|---|---|
| 1 | SFR - Backyard | B | 66 | 3 |
| 2 | SFR - Backyard | B | 66 | 12 |
| 3 | SFR - Backyard | B | 66 | 16 |
| 4 | MFR[1] - Balcony | B | 66 | 14 |
| 5 | Church - Outside gathering area in front of church | B | 66 | 1 |
| 6 | MFR[2] - Balcony | B | 66 | 48 |
| 7 | MFR[3] - Common green space | B | 66 | 82 |
| 8 | SFR - Backyard | B | 66 | 9 |
| 9 | Park – Playground, picnic area, baseball field, and soccer field | C | 66 | 4 |
| 10 | Church - Playground on east side of building | C | 66 | 1 |
| 11 | SFR - Backyard | B | 66 | 10 |
| 12 | SFR - Backyard | B | 66 | 64 |
| 13 | SFR - Backyard | B | 66 | 19 |
| 14 | Church - Patio in back of building | B | 66 | 1 |

*SFR=Single Family Residence; MFR= Multi-Family Residence*
*[1] Two 4-unit apartments and one 6-unit apartment.*
*[2] Six 8-unit apartments.*
*[3] Two 8-unit apartments, four 16-unit apartments, and two common areas.*

## 4.0 Noise Monitoring and Model Comparison

### 4.1 Purpose

The assessment of traffic noise impacts requires the use of predictive models to quantify the likely noise levels for a variety of scenarios. To use numerical modeling to predict traffic noise levels, it must first be demonstrated that the use of approved noise prediction methods satisfactorily estimate the noise levels. This is accomplished by comparing field measured values to predicted values. The

measure of satisfactory comparison is if the measured and predicted values differ by no more than 3 dB(A). A favorable comparison indicates the noise source is predominantly from highways (at least at the time of the measurements), and the model results represent valid predictions suitable for use in assessing impacts. This section describes the field monitoring and model validation conducted for the project.

## 4.2 Field Noise Measurement Methodology

Existing noise levels were monitored at six locations along the study corridor using a Quest SoundPro DL Type 2 noise meter (1/1 and 1/3 octave RTA). These locations are shown on Exhibit C-1 and C-2 (letters a-f). Noise monitoring was conducted on May 6 and 7, 2014 between the hours of 8 am to 12 pm and 1 pm to 6 pm in an attempt to monitor the peak-hour noise conditions.

The $L_{eq(h)}$ levels were recorded for 15-minute intervals at each location. During each noise measurement, the noise meter was tripod-mounted and the microphone was located approximately five feet above the ground surface. The meter was calibrated with the manufacturer-supplied standard noise calibrator before use, and also was checked before each sound level measurement session. No adjustments to the calibration were required during any of the monitoring. A foam windscreen (supplied by the manufacturer) was used during all sound measurements.

In addition to noise monitoring, traffic volumes, and compositions during each monitoring period were recorded based on field observation. Noise sources other than traffic noise also were noted. All weather parameters were within acceptable ranges for conducting noise measurements.

## 4.3 Model Validation Results

Measured and predicted noise levels are shown in Table 4.1. The difference in the measured and predicted value noise levels fell within 3 dB(A). TNM model output files for model validation are presented in Exhibit D. Based on these comparisons, the TNM 2.5 model is a valid method for predicting highway traffic noise within the acceptable +/- 3 dB(A) range. While monitoring locations should typically represent the modeled receptor locations, some of the measurement locations were used for model validation purposes only due to access issues.

**Table 4.1 Model Validation Summary**

| Location[1] | CNE/ Receptors | Distance from Existing Edge of Pavement (Feet) | General Propagation Path Characteristics | 2014 Measured Sound Levels / 2014 TNM 2.5 Model Validation Sound Level (dB(A)) | Variation (dB(A)) |
|---|---|---|---|---|---|
| a | CNE 10 / Church | 119 | No Obstructions, Grass/Pavement | 69 / 72 | 3 |
| b | CNE 12 / Single Family Residential | 200 | No Obstructions, Grass/Pavement | 69 / 71 | 2 |
| c | NA[2] / Single Family Residential | 95 | No Obstructions, Grass/Pavement | 72 / 74 | 2 |
| d | CNE 12 / Single Family Residential | 200 | No Obstructions, Grass/Pavement | 70 / 71 | 1 |
| e | CNE 5 / Church | 95 | No Obstructions, Grass/Pavement | 71 / 73 | 2 |
| f | CNE 1 / Single Family Residential | 60 | No Obstructions, Grass/Pavement | 72 / 74 | 2 |

*[1]See Exhibits C-1 and C-2 for model validation locations.*
*[2] Not within a CNE. Interchange design plans changed after validation point measured.*

## 5.0 Noise Analysis Methodology

Traffic noise levels were predicted using FHWA's TNM 2.5, the current approved model for predicting and analyzing traffic noise. Three scenarios, Existing Condition, No-Build Alternative, and the Build Alternative were analyzed. The Existing Condition was defined as the current roadway geometry with 2011 traffic characteristics and the No-Build scenario uses current roadway geometry with forecasted (2040) traffic characteristics. The final scenario is the prediction of traffic noise levels if the proposed action is constructed with projected traffic volumes (2040). Data inputs into TNM 2.5 include roadway geometry, physical features (ground elevation, tree zones, water, buildings etc.), traffic data and traffic control (stop signs, traffic lights, etc.), and receptor location and elevation. Traffic data was obtained from IDOT.

## 5.1 Roadway Geometry and Physical Features

Roadway geometry (existing and proposed) was obtained from project geometric plans. Ground zones, building location, and elevation data were obtained from project specific mapping, aerial photography, and field reconnaissance.

## 5.2 Traffic Volume, Composition, and Speeds

Existing and forecasted traffic volumes, speeds, and vehicle classifications (automobile, medium truck, and heavy truck) were obtained from forecasts developed for the proposed project, as provided by IDOT. Available traffic counts were used to represent existing traffic conditions. Vehicle mix was based on percentages provided by IDOT and field reconnaissance. Traffic control devices generally consist of signalization, stop signals, speed limits, etc. Traffic speed was the speed limit posted at various points throughout the study corridor.

The IDOT Highway Traffic Noise Assessment Manual states "the objective of the traffic noise analysis is to predict the worst hour traffic noise conditions". This is typically represented by design hourly volume (DHV). Table 5.1 illustrates the DHV and the composition (cars, medium trucks, and heavy trucks) calculated from the ADT and used in the TNM 2.5 noise model.

The roadways used in the TNM model include:

- I-74,
- I-57,
- Interchange ramps between I-74 and I-57,
- N. Mattis Avenue,
- W. Anthony Drive, and
- Bloomington Road.

**Table 5.1 Traffic Design Hourly Volume, Composition, and Speed Limit**

| Roadway Segment / Vehicle Type | Existing (2011) DHV | | Existing Speed Limit (mph) | Projected (2040) DHV | | Future Speed Limit (mph) |
|---|---|---|---|---|---|---|
| **I-57 (North of I-74)** | S Bound | N Bound | | S Bound | N Bound | |
| Auto | 616 | 595 | 70 | 889 | 724 | 70 |
| Medium Truck | 38 | 36 | 70 | 54 | 44 | 70 |
| Heavy Truck | 204 | 197 | 70 | 295 | 240 | 70 |
| **I-57 (South of I-74)** | S Bound | N Bound | | S Bound | N Bound | |
| Auto | 1030 | 881 | 70 | 1513 | 1176 | 70 |
| Medium Truck | 56 | 48 | 70 | 82 | 64 | 70 |
| Heavy Truck | 352 | 301 | 70 | 518 | 403 | 70 |
| **I-74 (West of I-57)** | W Bound | E Bound | | W Bound | E Bound | |
| Auto | 1174 | 1117 | 70 | 1745 | 1941 | 70 |
| Medium Truck | 56 | 53 | 70 | 83 | 93 | 70 |
| Heavy Truck | 329 | 313 | 70 | 489 | 544 | 70 |
| **I-74 (East of I-57)** | W Bound | E Bound | | W Bound | E Bound | |
| Auto | 1536 | 1784 | 70 | 2281 | 2431 | 70 |
| Medium Truck | 66 | 76 | 70 | 98 | 104 | 70 |
| Heavy Truck | 390 | 454 | 70 | 580 | 618 | 70 |
| **Ramp A (NB I-57 to EB I-74)** | | | | | | |
| Auto | 421 | | 30 | 650 | | 55 |
| Medium Truck | 27 | | 30 | 41 | | 55 |
| Heavy Truck | 83 | | 30 | 129 | | 55 |

| Roadway Segment / Vehicle Type | Existing (2011) DHV | Existing Speed Limit (mph) | Projected (2040) DHV | Future Speed Limit (mph) |
|---|---|---|---|---|
| **Ramp B (EB I-74 to SB I-57)** | | | | |
| Auto | 176 | 30 | 229 | 55 |
| Medium Truck | 25 | 30 | 33 | 55 |
| Heavy Truck | 45 | 30 | 58 | 55 |
| **Ramp C (SB I-57 to EB I-74)** | | | | |
| Auto | 130 | 25 | 177 | 40 |
| Medium Truck | 13 | 25 | 18 | 40 |
| Heavy Truck | 15 | 25 | 20 | 40 |
| **Ramp D (EB I-74 to NB I-57)** | | | | |
| Auto | 67 | 25 | 113 | 55 |
| Medium Truck | 7 | 25 | 12 | 55 |
| Heavy Truck | 9 | 25 | 15 | 55 |
| **Ramp E (WB I-74 to SB I-57)** | | | | |
| Auto | 433 | 25 | 727 | 55 |
| Medium Truck | 50 | 25 | 84 | 55 |
| Heavy Truck | 65 | 25 | 109 | 55 |
| **Ramp F (NB I-57 to WB I-74)** | | | | |
| Auto | 192 | 25 | 262 | 40 |
| Medium Truck | 29 | 25 | 40 | 40 |
| Heavy Truck | 43 | 25 | 58 | 40 |
| **Ramp G (WB I74 to NB I57)** | | | | |
| Auto | 146 | 30 | 194 | 55 |
| Medium Truck | 8 | 30 | 11 | 55 |
| Heavy Truck | 22 | 30 | 30 | 55 |
| **Ramp H (SB I57 to WB I74)** | | | | |
| Auto | 75 | 30 | 128 | 55 |
| Medium Truck | 7 | 30 | 11 | 55 |
| Heavy Truck | 9 | 30 | 15 | 55 |
| **N. Mattis Ave. (North of Interstate Dr.)** | Both Directions | | Both Directions | |
| Auto | 539 | 45 | 629 | 45 |
| Medium Truck | 25 | 45 | 29 | 45 |
| Heavy Truck | 37 | 45 | 43 | 45 |
| **N. Mattis Ave. (North of W. Anthony Dr.)** | Both Directions | | Both Directions | |
| Auto | 895 | 45 | 1046 | 45 |
| Medium Truck | 51 | 45 | 60 | 45 |
| Heavy Truck | 37 | 45 | 44 | 45 |
| **N. Mattis Ave. (North of Bloomington Rd.)** | Both Directions | | Both Directions | |
| Auto | 1460 | 40 | 1633 | 40 |
| Medium Truck | 64 | 40 | 72 | 40 |
| Heavy Truck | 49 | 40 | 55 | 40 |
| **N. Mattis Ave. (South of Bloomington Rd.)** | Both Directions | | Both Directions | |
| Auto | 1751 | 40 | 2046 | 40 |
| Medium Truck | 113 | 40 | 132 | 40 |
| Heavy Truck | 44 | 40 | 51 | 40 |

| Roadway Segment / Vehicle Type | Existing (2011) DHV | Existing Speed Limit (mph) | Projected (2040) DHV | Future Speed Limit (mph) |
|---|---|---|---|---|
| **W. Anthony Dr.** | Both Directions | | Both Directions | |
| Auto | 597 | 35 | 795 | 35 |
| Medium Truck | 24 | 35 | 32 | 35 |
| Heavy Truck | 8 | 35 | 11 | 35 |
| **Bloomington Rd. (East of N. Mattis Ave.)** | Both Directions | | Both Directions | |
| Auto | 836 | 40 | 1249 | 40 |
| Medium Truck | 32 | 40 | 47 | 40 |
| Heavy Truck | 33 | 40 | 50 | 40 |
| **Bloomington Rd. (West of N. Mattis Ave.)** | Both Directions | | Both Directions | |
| Auto | 725 | 50 | 953 | 50 |
| Medium Truck | 42 | 50 | 55 | 50 |
| Heavy Truck | 25 | 50 | 32 | 50 |
| **Bloomington Rd. (NW of Cardinal Rd.)** | Both Directions | | Both Directions | |
| Auto | 380 | 50 | 568 | 50 |
| Medium Truck | 22 | 50 | 33 | 50 |
| Heavy Truck | 13 | 50 | 19 | 50 |

### 5.3 Receptors

As discussed in Section 3.0, 14 CNEs were chosen to represent the study area. Receptors in the CNEs range from one church receptor to up to 82 receptors in multi-family residences. Receptor locations were based on review of aerial photography, topographic mapping, and field reconnaissance. In order to generate conservative values and be more protective of the noise sensitive receptors, receptor locations at two-story multi-family dwelling units were placed on second floor balconies, ground floor patios, and in outdoor gathering spaces where most outdoor activity is assumed to occur.

Receptor position is defined by coordinates. The coordinates used in the model were obtained from the plan sheets for the project; thus, assuring the coordinate values used in the noise modeling are consistent with other project uses. Receptors are shown on Exhibits C-1 and C-2 and are listed on Tables 3.1 and 6.1.

### 5.4 Receptor Distances and Elevation

The CNEs and individual noise receptors at most locations along I-74 and the surrounding roadways were at-grade with the existing and proposed roadway elevations, ranging from 753 to 814 feet above sea level. Elevations for individual noise receptors for multi-family apartments with a second story balcony were 10 feet above ground elevation. Table 6.1 includes the distances of each CNE and individual noise sensitive receptor from the roadway edge-of-pavement for each scenario. CNEs and individual noise sensitive receptors for the Existing and No-Build scenarios range from 168 to 733 feet from the existing modeled roadway's edge-of-pavement. For the Build Alternative scenario, CNEs and individual noise sensitive receptors

were located at distances ranging from 160 to 501 feet from the proposed modeled roadway's edge-of-pavement.

## 6.0 Noise Model Results

Table 6.1 summarizes the modeled noise levels for the Existing, No-Build, and Build scenarios. Existing scenario traffic noise levels range from 59 dB(A) at CNE 14 to 75 dB(A) at CNEs 10 and 12. No-Build scenario traffic noise levels range from 61 dB(A) at CNE 14 to 76 dB(A) at CNEs 4, 5, 6, 7, 10, and 12. The No-Build scenario traffic noise levels increase between 1 and 2 dB(A) due to the projected increase in traffic between the years 2011 and 2040. As previously described, existing noise levels for sensitive receptors were determined by modeling. These values were used for comparison to models of proposed changes, to determine if predicted noise levels created by the Build Alternative would approach, meet, or exceed the NAC. The TNM 2.5 model output data tables showing results from each of the TNM models are included in Exhibit D.

The Build scenario traffic noise levels range from 59 dB(A) at CNE 14 to 77 dB(A) at CNE 12. CNEs 1 through 13 (representing 133 single family residential receptors, 144 multi-family residential receptors, a park with 4 receptors, and two churches) approach or exceed the NAC, and are therefore considered impacted under this scenario. None of the receptors will experience a substantial increase of 14 dB(A) or greater.

**Table 6.1 Noise Impact Summary**

| CNE ID | Description of Receptor | IDOT Approach Criterion dB(A) | No. of Receptors Represented | Existing | | No-Build Alternative | Build Alternative | | | Impact (Yes/No)[2] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Dist. To I-74 Nearest Edge of Pavement (ft) | Noise Level dB(A) | Noise Level dB(A) | Dist. to I-74 Nearest Edge of Pavement (ft) | Noise Level dB(A) | Increase Over Existing[1] | |
| 1 | SFR | 66 | 3 | 260 | 67 | 69 | 236 | 73 | 6 | Yes |
| 2 | SFR | 66 | 12 | 247 | 71 | 72 | 233 | 73 | 3 | Yes |
| 3 | SFR | 66 | 16 | 365 | 68 | 69 | 365 | 70 | 2 | Yes |
| 4 | MFR | 66 | 14 | 178 | 74 | 76 | 170 | 76 | 2 | Yes |
| 5 | Church | 66 | 1 | 185 | 74 | 76 | 185 | 76 | 2 | Yes |
| 6 | MFR | 66 | 48 | 181 | 74 | 76 | 181 | 76 | 2 | Yes |
| 7 | MFR | 66 | 82 | 185 | 74 | 76 | 178 | 76 | 2 | Yes |
| 8 | SFR | 66 | 9 | 206 | 73 | 75 | 199 | 76 | 2 | Yes |
| 9 | Park | 66 | 4 | 509 | 64 | 66 | 501 | 66 | 2 | Yes |
| 10 | Church | 66 | 1 | 168 | 75 | 76 | 160 | 77 | 2 | Yes |
| 11 | SFR | 66 | 10 | 403 | 67 | 69 | 395 | 70 | 3 | Yes |
| 12 | SFR | 66 | 64 | 168 | 75 | 76 | 160 | 77 | 2 | Yes |
| 13 | SFR | 66 | 19 | 430 | 69 | 71 | 419 | 71 | 2 | Yes |
| 14 | Church | 66 | 1 | 733 | 59 | 61 | 314[3] | 59 | 0 | No |

*[1] Calculated noise levels have been rounded to the nearest whole numbers. The values in the "Increase Over Existing dB(A)" column were computed based on the calculated raw noise levels and then rounded to the nearest whole number. Therefore, some values in this column may not appear to be calculated correctly.*

*[2] Noise Level under Build Alternative meets or exceeds approach criterion of 66 dB(A).*

*[3] Distance to I-57 SB / I-74 EB interchange ramp nearest edge of pavement.*

*SFR=Single Family Residential, MFR=Multi-Family Residential*

## 7.0 Noise Abatement Evaluation

As shown in Exhibits C-1 and C-2 and on Table 6.1, potential traffic noise impacts were identified for 13 CNEs based on the Build scenario developed using TNM Version 2.5.

Per IDOT Noise Policy [4], noise abatement must be considered when traffic noise impacts are identified. In addition, any noise abatement measure must be determined to be both feasible and reasonable for implementation. Potential noise abatement measures include the following:

- Traffic management measures,
- Alteration of horizontal and vertical alignments,
- Acquisition of property rights for construction of noise barriers,
- Acquisition of undeveloped land for buffer zones,
- Noise insulation (only for Activity Category D), or
- Construction of noise barriers.

Construction of noise barriers is the most commonly used noise abatement measure. Due to the project conditions along the corridor, noise barriers are the most viable option.

Noise barriers are usually either noise walls or earth berms. Landscaped berms are the preferred abatement solution because of the relatively low cost and aesthetic nature of berms; however, available right-of-way along the study area precludes the use of berms for noise abatement.

Noise walls placed adjacent to the roadway will attenuate traffic-related noise and are the most practical and commonly used measure to abate noise impacts. To be effective, a noise barrier must break the line of sight between the highest point of a noise source and a receiver. It also must be long enough to prevent sounds from passing around the ends, having no openings such as driveways, and be dense enough so the noise would not be transmitted through it.

### 7.1 Noise Reduction Design Goal Reasonability and Feasibility

Feasibility

Feasibility generally addresses the engineering aspects of implementing a noise barrier such as consideration for safety, drainage, and utilities. If these factors cannot be accommodated in providing the minimum noise reduction, noise abatement will be deemed not feasible. In order to be considered acoustically feasible, a noise abatement measure also must achieve the traffic noise reduction feasibility criterion of at least 5 dB(A) for at least one impacted receptor.

Reasonableness

The following three reasonableness evaluation criteria must be met in order for noise abatement to be considered reasonable:

1) Noise Reduction Design Goal – Noise abatement measures must achieve at least an 8 dB(A) traffic noise reduction for at least one benefited receptor. In order to be considered benefited, a receptor must have a noise reduction of at least 5 dB(A). Both impacted and non-impacted receptors can be considered benefited.

2) Economic Reasonability – The overall cost of the noise barrier must not exceed the allowable cost per benefited receptor comparison. The base value for the allowable noise abatement cost is $24,000 per benefitted receptor.

Other reasonableness factors may be considered to potentially adjust the allowable noise abatement base value cost of $24,000 per benefited receptor (Table 7.1). These factors include:

- The absolute noise level of the benefited receptors in the design year build scenario before noise abatement,
- The incremental increase in noise level between the existing noise level at the benefited receptor and the predicted build noise level before noise abatement, and
- The date of development compared to the construction date of the highway.

Consideration of the three reasonableness adjustment factors result in a potential maximum allowable noise abatement cost of $26,000 per benefited receptor. This determination is based upon an adjustment factor of $2,000 added to the base value cost per benefited receptor because some of the receptor locations have predicted noise levels between 75 and 79 dB(A) before noise abatement. If the estimated build cost of noise abatement per benefited receptor is less than the adjusted allowable noise abatement cost per benefited receptor, then the noise abatement measure achieves the cost-effective reasonableness criterion.

**Table 7.1 Factors for Adjusting the Allowable Noise Abatement Cost per Benefited Receptor Base Value of $24,000**

| **Absolute Noise Level Consideration** | |
|---|---|
| **Predicted Build Noise Level Before Noise Abatement** | **Dollars Added to Base Value Cost per Benefited Receptor** |
| Less than 70 dB(A) | $0 |
| 70 to 74 dB(A) | $1,000 |
| 75 to 79 dB(A) | $2,000 |
| 80 dB(A) or greater | $4,000 |
| **Increase in Noise Level Consideration** | |
| **Incremental Increase in Noise Level Between the Existing Noise Level and the Predicted Build Noise Level Before Noise Abatement** | **Dollars Added to Base Value Cost per Benefited Receptor** |
| Less than 5 dB(A) | $0 |
| 5 top 9 dB(A) | $1,000 |
| 10 to 14 dB(A) | $2,000 |
| 15 dB(A) or greater | $4,000 |
| **New Alignment / Construction Date Consideration** | |
| **Project is on New Alignment OR the Receptor Existed Prior to the Original Construction of the Highway** | **Dollars Added to Base Value Cost per Benefited Receptor** |
| No for both | $0 |
| Yes for either | $5,000 |

3) Viewpoints of Benefited Receptors – Viewpoints of benefited receptors must be considered for noise abatement measures that are determined to be feasible and achieve the first two reasonableness factors. For noise abatement to be considered reasonable, more than 50 percent of the responses (weighted totals) must be in favor of the noise abatement measure. A response from first row benefited receptors (receptors sharing a property line with the highway right-of-way) will be counted and weighted as two responses. Benefited receptors not in the first row will count as one response.

   Based on the IDOT Noise Policy, the goal is to obtain responses from at least one-third (33%) of the benefited receptors for each noise abatement measure. (i.e., for each noise barrier being considered). If responses from one-third of the benefited receptors are not received after the first attempt, a second attempt shall be made. If after the second attempt there are still less than one-third of the responses received, the tally can be conducted based on the responses received.

## 7.2 Barrier Assessments

TNM 2.5 was used to perform the noise wall feasibility and reasonability analysis for impacted locations along the project corridor. The feasibility and reasonableness of potential noise walls was evaluated using the base cost effectiveness value of $26,000 per benefited receptor and a unit noise wall construction cost of $25 per square foot. Non-impacted and impacted receptors with a reduction of at least 5 dB(A) were considered benefited receptors and were counted when evaluating cost per benefited receptor. The results of the three barrier assessments are discussed below and summarized in Table 7.2 and 7.3. The locations of the potential barriers are shown in Exhibits C-1 and C-2. The TNM output for the barrier analysis is in Exhibit D.

**Noise Wall 1**

A TNM 2.5 barrier analysis (identified as Noise Wall 1 on Exhibit C-1) was performed at CNE 1. This CNE is located northwest of the I-57 / I-74 interchange along the west bound traffic lanes of I-74 and consists of 3 single family homes.

*Feasible:* No, none of the impacted receptors are reduced by at least 5 dB(A).

*Likely to be Implemented:* No

**Noise Wall 2**

A TNM 2.5 barrier analysis (identified as Noise Wall 2 on Exhibit C-2) was performed at CNEs 2, 3, 4, 5, and 6. These CNEs are located southeast of the I-57 / I-74 interchange along the west bound traffic lanes of I-74 and consist of 28 single family homes, 9 multi-family buildings (62 receptors), and one church.

*Feasible:* Yes, 82 impacted receptors reduced by at least 5 dB(A).

*Reasonable:*
- Noise Reduction Design Goal Achieved: Yes, 46 benefited receptors reduced by at least 8 dB(A).
- Economic Reasonableness Achieved: Yes, cost per benefitted receptor <= $26,000
- Viewpoints of Benefited Receptors: 83.6% of benefited receptors in favor of Noise Wall 2.

*Likely to be Implemented:* Yes.

**Noise Wall 3**

A TNM 2.5 barrier analysis (identified as Noise Wall 3 on Exhibit C-2) was performed at CNEs 7, 8, 9, 10, 11, 12, and 13. These CNEs are located southeast of the I-57 / I-74 interchange along the east bound traffic lanes of I-74 and consist of 102 single family homes, 6 multi-family buildings and two common areas (82 receptors), one park (4 receptors), and one church.

*Feasible:* Yes, 109 impacted receptors reduced by at least 5 dB(A).

*Reasonable:*
- Noise Reduction Design Goal Achieved: Yes, 11 benefited receptors reduced by at least 8 dB(A).
- Economic Reasonableness Achieved: Yes, cost per benefitted receptor <=$26,000.
- Viewpoints of Benefited Receptors: 76.7% of benefited receptors in favor of Noise Wall 3.

*Likely to be Implemented:* Yes.

**Table 7.2 Benefited Receptors by CNE**

| Noise Wall ID | CNE | Description of Receptors | Benefited Receptors (Impacted and non-impacted receptors reduced by at Least 5 dB(A)) | Total Receptors |
|---|---|---|---|---|
| 1 | 1 | SFR | 0 | 3 |
| 2 | 2 | SFR | 9 | 12 |
| | 3 | SFR | 15 | 16 |
| | 4 | MFR | 10 | 14 |
| | 5 | Church | 1 | 1 |
| | 6 | MFR | 48 | 48 |
| 3 | 7 | MFR | 28 | 82 |
| | 8 | SFR | 9 | 9 |
| | 9 | Park | 3 | 4 |
| | 10 | Church | 1 | 1 |
| | 11 | SFR | 10 | 10 |
| | 12 | SFR | 64 | 64 |
| | 13 | SFR | 7 | 19 |

**Table 7.3 Barrier Analysis**

| Noise Wall ID | Receptor(s) | Wall Height (ft) | Wall Length (ft) | Noise Reduction $L_{eq}$ (dB(A)) | Cost[1] | Benefited Receptors | Cost per Benefited Receptor | Adjusted Allowable Cost per Benefited Receptor | Likely to be Implemented (Yes/No) |
|---|---|---|---|---|---|---|---|---|---|
| 2 | CNEs 2, 3, 4, 5, and 6 | 10<br>12 | 124<br>2,500 | 5-9 | $781,000 | 83 | $9,410 | $26,000 | Yes |
| 3 | CNEs 7, 8, 9, 10, 11, 12 and 13 | 12 | 4,634 | 5-8 | $1,390,100 | 122 | $11,394 | $26,000 | Yes |

[1] *Noise wall cost based on $25 per square foot construction cost.*

Noise walls 2 and 3 met the feasibility evaluation and achieved the first two reasonableness factors. Therefore, the last factor that was considered for reasonableness included soliciting the viewpoints of the benefited receptors for the potential abatement measures. Because the first survey of benefited receptors resulted in less than 33% of responses received, a second survey request was sent to the benefited receptors via certified mail. Table 7.4 presents the results of the viewpoints of benefited receptors for each noise wall evaluated. Based on the survey results, 85.1% are in favor of Noise Wall 2 and 76.3% are in favor of Noise Wall 3.

**Table 7.4 Viewpoints of Benefited Receptors**

| Noise Wall ID | Total Surveys Sent to Benefited Receptors[1] | Number of Responses Received from Both Surveys | % Responses Received | Responses in Favor of Noise Wall | Responses Not in Favor of Noise Wall | % in Favor of Noise Wall |
|---|---|---|---|---|---|---|
| 2 | 97 | 44 | 45.4% | 74 | 13 | 85.1% |
| 3 | 290 | 81 | 26.6% | 71 | 22 | 76.3% |

[1] *Surveys were sent to the property owners and tenants; therefore, the number of surveys do not equal the total number of benefitted receptor properties.*

## 7.3 Parallel Barrier Analysis

Parallel barriers are two barriers that face each other on opposite sides of a roadway. Sound reflected between reflective parallel barriers may cause degradations in each barrier's performance due to multiple reflections that diffract over the individual barriers. These degradations may be from 2 to as much as 6 dB(A). That is, a single barrier with an insertion loss of 10 dB(A) may only realize an effective reduction of 4 to 8 dB(A) if another barrier is placed parallel to it on the opposite side of the highway[6].

According to FHWA, at least a 10:1 width-to-height (w/h) ratio will result in an imperceptible

degradation in performance for parallel barriers. In recent studies, it was determined that as the w/h ratio increases, the insertion loss degradation decreases. This decrease can be attributed to: (1) the decrease in the number of reflections between the barriers; and (2) the weakening of the reflections due to geometrical spreading and atmospheric absorption. Table 7.5 provides a guideline of three general w/h ratio ranges and the corresponding barrier insertion-loss degradation that can be expected.

**Table 7.5 Guideline for Categorizing Parallel Barrier Sites Based on Width / Height Ratio.**

| Width / Height Ratio | Maximum Insertion Loss dB(A) | Recommendation |
|---|---|---|
| Less than 10:1 | 3 or greater | Action required to minimize degradation. |
| 10:1 to 20:1 | 0 to 3 | At most, degradation barely perceptible; no action required in most instances. |
| Greater than 20:1 | No measurable degradation | No action required. |

*Source: FHWA, 2000* [6]

For this project, the minimum distance between parallel barrier walls recommended for implementation is 130 feet, and the average wall height is 11 feet. Therefore, the width to height ratio is 11.8. Since degradation would be barely perceptible, no action is required.

## 8.0 Construction Noise

Trucks, heavy machinery, and other equipment used during construction will produce noise that may affect some land uses and activities. Specifications in Article 107.35 of the IDOT Standard Specifications for Road and Bridge Construction [5] require all construction machinery to be equipped with adequate, properly maintained mufflers in constant use, and limit all construction within 1,000 feet (300 meters) of an occupied residence, motel, hospital, or similar receptor to the period between 7:00 a.m. and 10:00 p.m. These provisions should be implemented during construction.

## 9.0 Coordination with Local Government Officials

There are no active building permits within the study corridor. However, as identified in Section 1.3, undeveloped land in the study corridor is zoned for future commercial land uses. Noise contours were developed for undeveloped lands along the project corridor. A map depicting the noise contours will be provided to the appropriate planning/zoning official for their use. A copy of the documentation available for local officials is included in Exhibit E.

## 10.0 Summary

This traffic noise analysis has been conducted to evaluate potential traffic noise impacts for the proposed improvements to the I-57 / I-74 interchange in Champaign County, Illinois. Traffic noise was evaluated at a total of 14 modeled locations in the project area. These locations consist of 14 individual noise sensitive receptors and 14 CNEs. Traffic noise levels were evaluated for the existing and projected (2040) traffic volumes for the No-Build and Build

Alternatives.
CNEs 1 through 13 (representing 133 single-family residential receptors, 144 multi-family residential receptors, one park with 4 receptors, and two church receptors) approach or exceed the NAC and are therefore considered impacted due to an increase in traffic volumes. None of the receptors will experience a substantial increase of 14 dB(A) or greater. A barrier analysis was conducted for the impacted receptors.

Based on the traffic noise analysis and noise abatement evaluation conducted, highway traffic noise abatement measures are likely to be implemented based on preliminary design. The noise barriers determined to meet the feasible and reasonable criteria are identified in Table 7.3. If it subsequently develops during final design that constraints not foreseen in the preliminary design or public input substantially change, the abatement measures may need to be modified or removed from the project plans. A final decision of the installation of the abatement measure(s) will be made upon completion of the project's final design and the public involvement process.

## 11.0 References


[1] Personal Communication (e-mail) between Brad Downen (CMT) and Rustin Keys (IDOT District 5) and the City of Champaign, November 20, 2014.

[2] Procedures for Abatement of Highway Traffic and Construction Noise, 23 CFR 772. Federal Highway Administration, July 13, 2010.

[3] Highway Traffic Noise Assessment Manual, Illinois Department of Transportation, June, 2011.

[4] IDOT Bureau of Design and Environment Manual, “Noise Policy, “Chapter 26-6.

[5] Standard Specifications for Road and Bridge Construction, Illinois Department of Transportation, 2006.

[6] Noise Barrier Design Handbook. Federal Highway Administration, August 2, 2000.

# EXHIBIT A

# PROJECT LOCATION

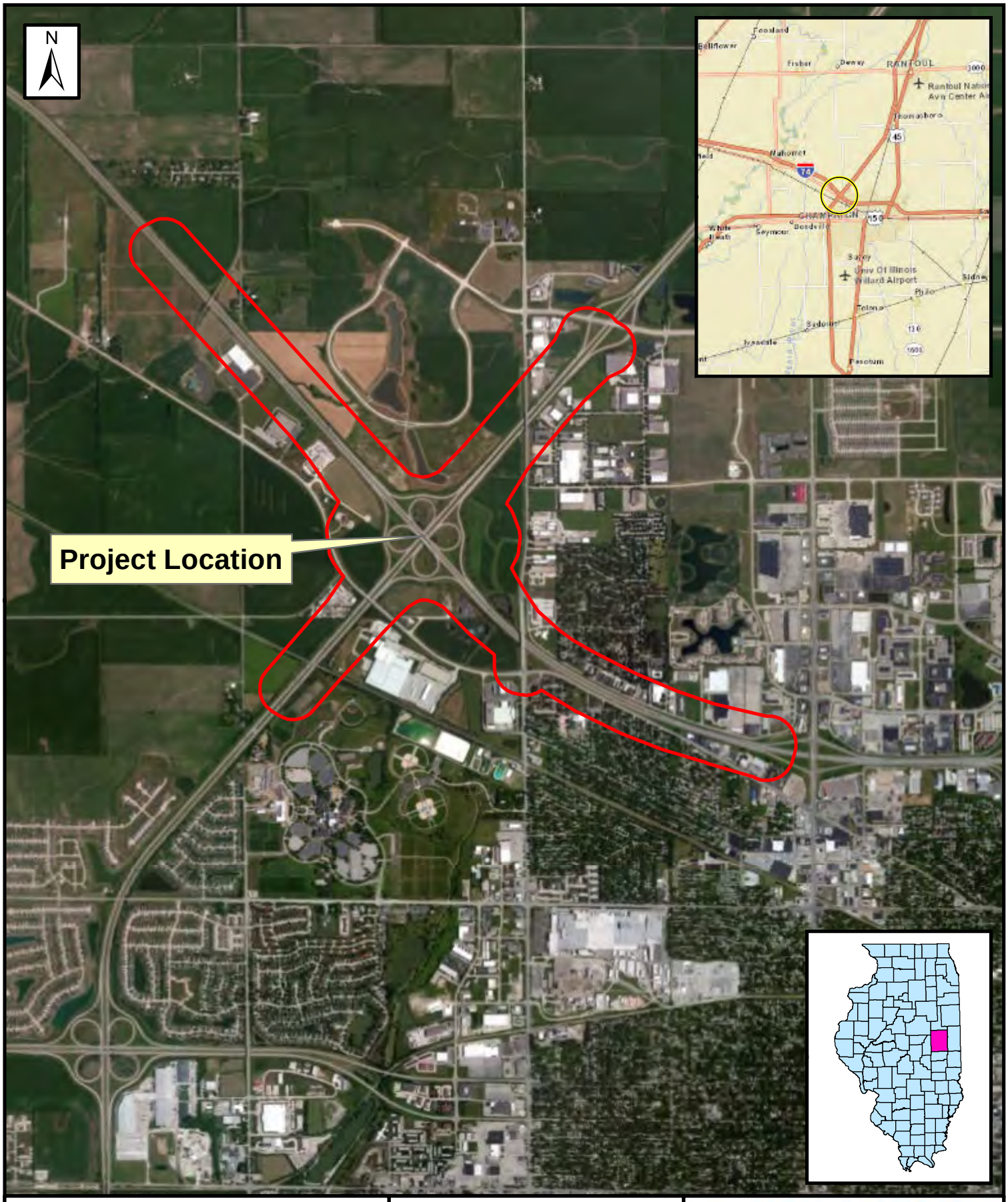



**Exhibit A**
**Location Map**
**Noise Analysis**
**I-57 / I-74 Interchange Improvements**

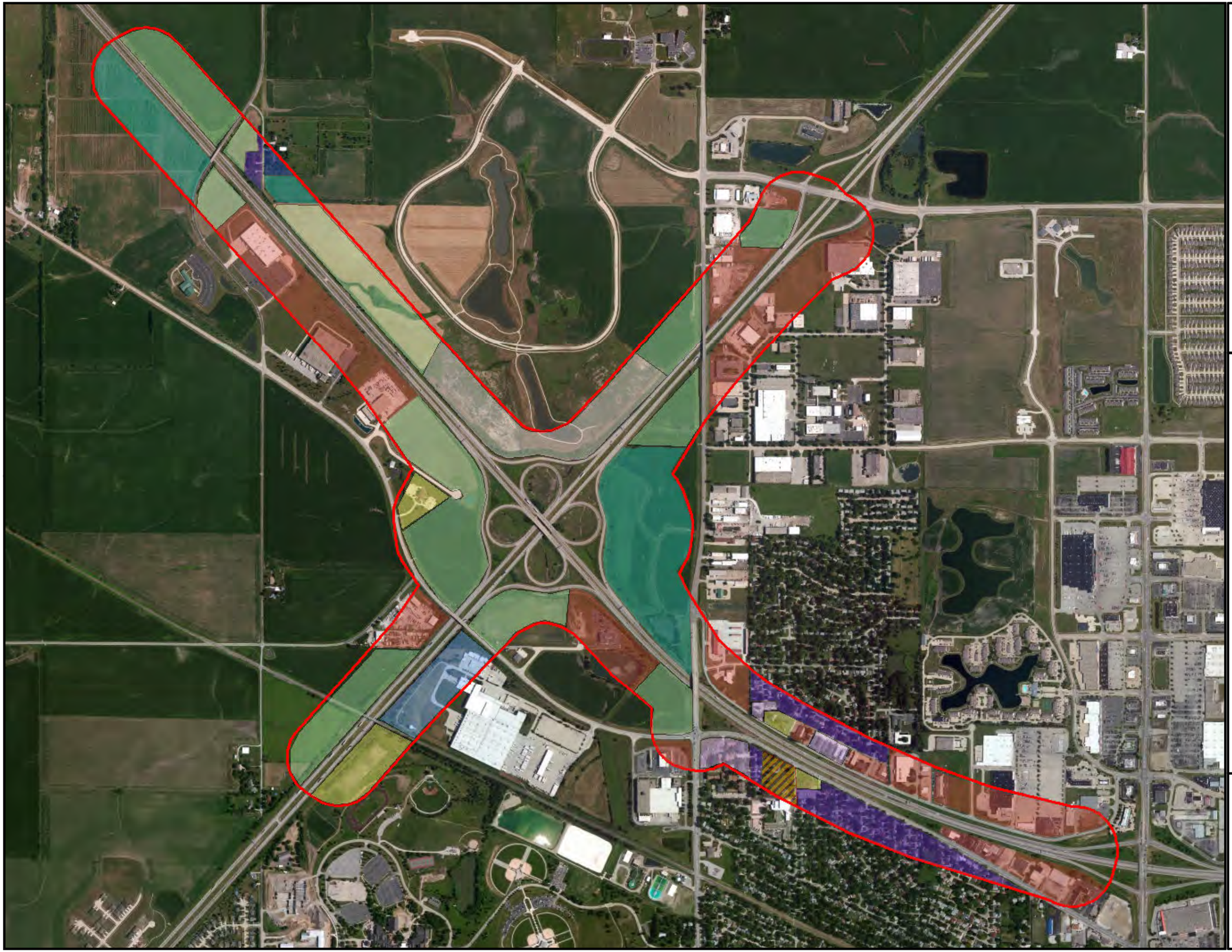
0 0.25 0.5
Miles

Kaskaskia Engineering Group, LLC
208 East Main Street, Suite 100
Belleville, Illinois 62220
618.233.5877 *phone*
618.233.5977 *fax*
www.kaskaskiaeng.com

**Path:** *Y:\Projects\11-1044 I-74 at I-57\Exhibit A - Location Map.mxd* **Date:** *11/7/2014*

# EXHIBIT B

# LAND USE MAP



## LEGEND

**Land Use**

- Agricultural
- Agricultural - Annexation Agreement
- Commercial
- Industrial
- Institutional
- Multi-family Residential
- Park
- Single Family Residence - Annexation Agreement
- Single Family Residential
- Undeveloped
- 500-ft Traffic Noise Study Buffer

*Source: City of Champaign 2008; Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community*

# EXHIBIT B
# I-57 / I-74 Interchange Improvements
# Land Use Adjacent to the Study Area

N

0 1,000 2,000 Feet

Kaskaskia Engineering Group, LLC
208 East Main Street, Suite 100
Belleville, Illinois 62220
618.233.5877 *phone*
618.233.5977 *fax*
www.kaskaskiaeng.com

# EXHIBIT C

# NOISE ANALYSIS ELEMENTS

## LEGEND

- Representative Receptors
- Noise Wall - 1
- Noise Wall - 2
- Noise Wall - 3
- Validation Points
- Project Alignment
- CNE

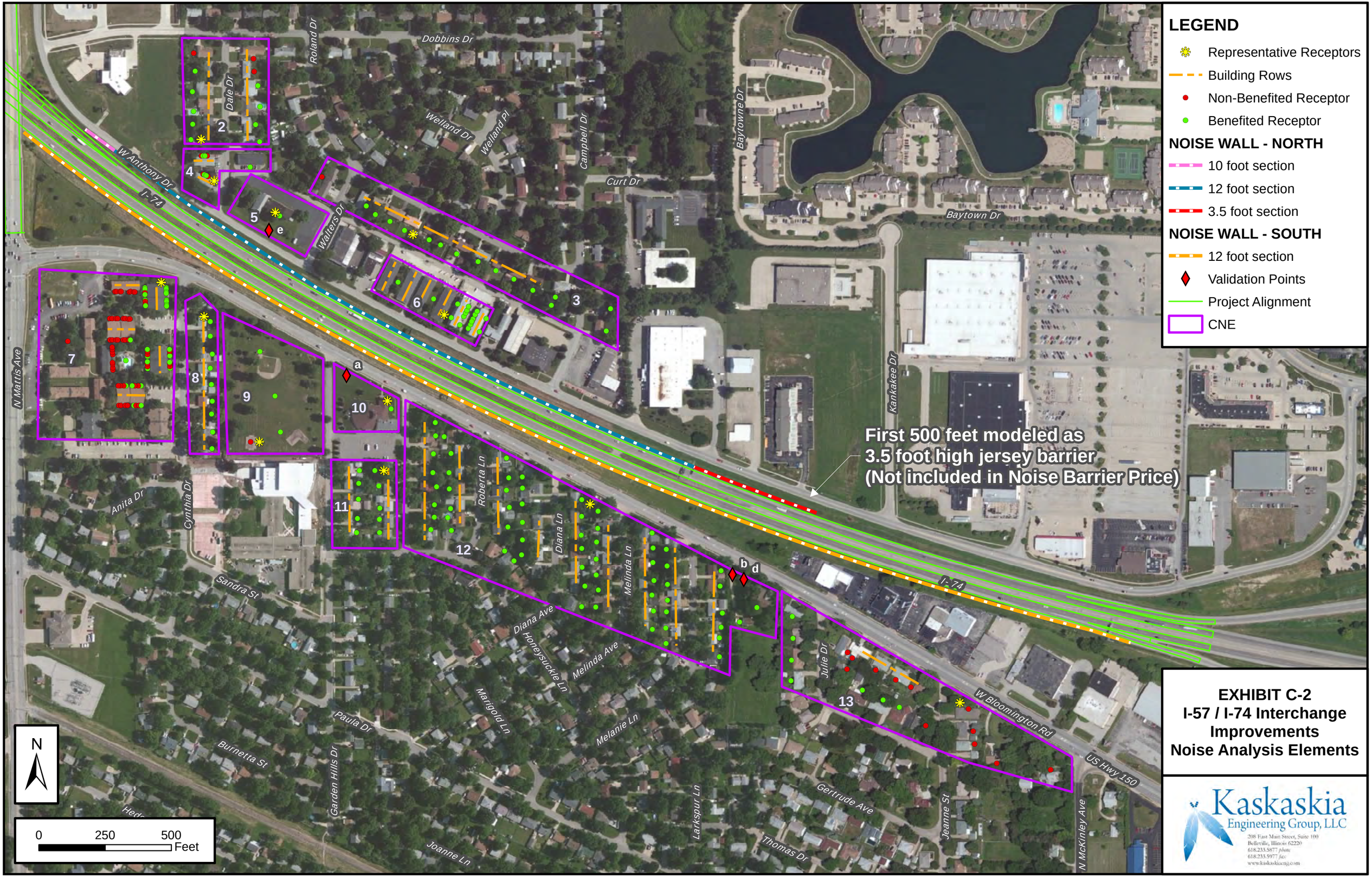
Exhibit C-2

**EXHIBIT C-1**
**I-57 / I-74 Interchange Improvements**
**Noise Analysis Elements**

Kaskaskia Engineering Group, LLC
208 East Main Street, Suite 100
Belleville, Illinois 62220
618.233.5877 phone
618.233.5977 fax
www.kaskaskiaeng.com

N

0 800 1,600 Feet


LEGEND
Representative Receptors
Building Rows
Non-Benefited Receptor
Benefited Receptor
NOISE WALL - NORTH
10 foot section
12 foot section
3.5 foot section
NOISE WALL - SOUTH
12 foot section
Validation Points
Project Alignment
CNE
First 500 feet modeled as
3.5 foot high jersey barrier
(Not included in Noise Barrier Price)
EXHIBIT C-2
I-57 / I-74 Interchange
Improvements
Noise Analysis Elements
Kaskaskia
Engineering Group, LLC
208 East Main Street, Suite 100
Belleville, Illinois 62220
618.233.5877 phone
618.233.5977 fax
www.kaskaskiaeng.com
N
0
250
500
Feet
W Anthony Dr
I- 74
Dobbins Dr
Roland Dr
Dale Dr
Welland Dr
Welland Pl
Campbell Dr
Curt Dr
Baytowne Dr
Baytown Dr
Kankakee Dr
Walters Dr
N Mattis Ave
Anita Dr
Cynthia Dr
Sandra St
Roberta Ln
Diana Ln
Melinda Ln
Diana Ave
Honeysuckle Ln
Melinda Ave
Marigold Ln
Melanie Ln
Paula Dr
Burnetta St
Garden Hills Dr
Joanne Ln
Larkspur Ln
Julie Dr
W Bloomington Rd
US Hwy 150
Gertrude Ave
Jeanne St
Thomas Dr
N McKinley Ave
1
2
3
4
5
6
7
8
9
10
11
12
13
a
b
d
e

# EXHIBIT D

# TNM 2.5 MODEL DATA

# Existing Conditions

IDOT 22 October 2014
KEG TNM 2.5
Calculated with TNM 2.5
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-57 and I-74
RUN: Existing - Northwest Quad
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH
Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Crit'n Sub'l Inc | Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Goal | Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| A3 | 24 | 1 | 0.0 | 66.8 | 66 | 66.8 | 10 | Snd Lvl | 66.8 | 0.0 | 8 | -8.0 |

| Dwelling Units | # DUs | Noise Reduction Min | Avg | Max |
|---|---|---|---|---|
| | | dB | dB | dB |
| All Selected | 1 | 0.0 | 0.0 | 0.0 |
| All Impacted | 1 | 0.0 | 0.0 | 0.0 |
| All that meet NR Goal | 0 | 0.0 | 0.0 | 0.0 |

IDOT 14 November 2014
KEG TNM 2.5
Calculated with TNM 2.5
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-57 and I-74
RUN: Existing - Southeast Quad
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Crit'n Sub'l Inc | With Barrier Type Impact | Calculated LAeq1h | Noise Reduction Calculated | Noise Reduction Goal | Noise Reduction Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| B7 | 163 | 1 | 0.0 | 70.8 | 66 | 70.8 | 10 | Snd Lvl | 70.8 | 0.0 | 8 | -8.0 |
| C5 | 164 | 1 | 0.0 | 67.7 | 66 | 67.7 | 10 | Snd Lvl | 67.7 | 0.0 | 8 | -8.0 |
| D2 | 165 | 1 | 0.0 | 74.3 | 66 | 74.3 | 10 | Snd Lvl | 74.3 | 0.0 | 8 | -8.0 |
| E1 | 166 | 1 | 0.0 | 73.9 | 66 | 73.9 | 10 | Snd Lvl | 73.9 | 0.0 | 8 | -8.0 |
| F3 | 167 | 1 | 0.0 | 73.9 | 66 | 73.9 | 10 | Snd Lvl | 73.9 | 0.0 | 8 | -8.0 |
| G17 | 168 | 1 | 0.0 | 74.3 | 66 | 74.3 | 10 | Snd Lvl | 74.3 | 0.0 | 8 | -8.0 |
| H1 | 169 | 1 | 0.0 | 73.4 | 66 | 73.4 | 10 | Snd Lvl | 73.4 | 0.0 | 8 | -8.0 |
| I1 | 170 | 1 | 0.0 | 64.3 | 66 | 64.3 | 10 | ---- | 64.3 | 0.0 | 8 | -8.0 |
| J1 | 171 | 1 | 0.0 | 74.9 | 66 | 74.9 | 10 | Snd Lvl | 74.9 | 0.0 | 8 | -8.0 |
| K2 | 172 | 1 | 0.0 | 67.0 | 66 | 67.0 | 10 | Snd Lvl | 67.0 | 0.0 | 8 | -8.0 |
| L35 | 173 | 1 | 0.0 | 74.6 | 66 | 74.6 | 10 | Snd Lvl | 74.6 | 0.0 | 8 | -8.0 |
| M17 | 174 | 1 | 0.0 | 69.3 | 66 | 69.3 | 10 | Snd Lvl | 69.3 | 0.0 | 8 | -8.0 |

| Dwelling Units | # DUs | Noise Reduction Min | Noise Reduction Avg | Noise Reduction Max |
|---|---|---|---|---|
| | | dB | dB | dB |
| All Selected | 12 | 0.0 | 0.0 | 0.0 |
| All Impacted | 11 | 0.0 | 0.0 | 0.0 |
| All that meet NR Goal | 0 | 0.0 | 0.0 | 0.0 |

IDOT 22 October 2014
KEG TNM 2.5
Calculated with TNM 2.5
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-57 and I-74
RUN: Existing_West
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH
Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Increase over existing Crit'n Sub'l Inc | Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Noise Reduction Goal | Noise Reduction Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| N1 | 1 | 1 | 0.0 | 58.9 | 66 | 58.9 | 10 | ---- | 58.9 | 0.0 | 8 | -8.0 |

| Dwelling Units | # DUs | Noise Reduction Min | Avg | Max |
|---|---|---|---|---|
| | | dB | dB | dB |
| All Selected | 1 | 0.0 | 0.0 | 0.0 |
| All Impacted | 0 | 0.0 | 0.0 | 0.0 |
| All that meet NR Goal | 0 | 0.0 | 0.0 | 0.0 |

# No Build Alternative

IDOT 22 October 2014
KEG TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-57 and I-74
RUN: No Build - Northwest Quad
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h | | Increase over existing | | Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Goal | Calculated minus Goal |
| | | | | Calculated | Crit'n | Calculated | Crit'n Sub'l Inc | | | | | |
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| A3 | 24 | 1 | 66.8 | 68.9 | 66 | 2.1 | 10 | Snd Lvl | 68.9 | 0.0 | 8 | -8.0 |

| Dwelling Units | # DUs | Noise Reduction | | |
|---|---|---|---|---|
| | | Min | Avg | Max |
| | | dB | dB | dB |
| All Selected | 1 | 0.0 | 0.0 | 0.0 |
| All Impacted | 1 | 0.0 | 0.0 | 0.0 |
| All that meet NR Goal | 0 | 0.0 | 0.0 | 0.0 |

IDOT
KEG
14 November 2014
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-57 and I-74
RUN: No Build - Southeast Quad
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Crit'n Sub'l Inc | With Barrier Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Noise Reduction Goal | Noise Reduction Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| B7 | 163 | 1 | 70.8 | 72.3 | 66 | 1.5 | 10 | Snd Lvl | 72.3 | 0.0 | 8 | -8.0 |
| C5 | 164 | 1 | 67.7 | 69.2 | 66 | 1.5 | 10 | Snd Lvl | 69.2 | 0.0 | 8 | -8.0 |
| D2 | 165 | 1 | 74.3 | 75.9 | 66 | 1.6 | 10 | Snd Lvl | 75.9 | 0.0 | 8 | -8.0 |
| E1 | 166 | 1 | 73.9 | 75.5 | 66 | 1.6 | 10 | Snd Lvl | 75.5 | 0.0 | 8 | -8.0 |
| F3 | 167 | 1 | 73.9 | 75.5 | 66 | 1.6 | 10 | Snd Lvl | 75.5 | 0.0 | 8 | -8.0 |
| G17 | 168 | 1 | 74.3 | 75.8 | 66 | 1.5 | 10 | Snd Lvl | 75.8 | 0.0 | 8 | -8.0 |
| H1 | 169 | 1 | 73.4 | 74.8 | 66 | 1.4 | 10 | Snd Lvl | 74.8 | 0.0 | 8 | -8.0 |
| I1 | 170 | 1 | 64.3 | 65.8 | 66 | 1.5 | 10 | ---- | 65.8 | 0.0 | 8 | -8.0 |
| J1 | 171 | 1 | 74.9 | 76.4 | 66 | 1.5 | 10 | Snd Lvl | 76.4 | 0.0 | 8 | -8.0 |
| K2 | 172 | 1 | 67.0 | 68.5 | 66 | 1.5 | 10 | Snd Lvl | 68.5 | 0.0 | 8 | -8.0 |
| L35 | 173 | 1 | 74.6 | 76.1 | 66 | 1.5 | 10 | Snd Lvl | 76.1 | 0.0 | 8 | -8.0 |
| M17 | 174 | 1 | 69.3 | 71.0 | 66 | 1.7 | 10 | Snd Lvl | 71.0 | 0.0 | 8 | -8.0 |

| Dwelling Units | # DUs | Noise Reduction Min | Noise Reduction Avg | Noise Reduction Max |
|---|---|---|---|---|
| | | dB | dB | dB |
| All Selected | 12 | 0.0 | 0.0 | 0.0 |
| All Impacted | 11 | 0.0 | 0.0 | 0.0 |
| All that meet NR Goal | 0 | 0.0 | 0.0 | 0.0 |

IDOT 22 October 2014
KEG TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-57 and I-74
RUN: No_Build_West
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Increase over existing Crit'n Sub'l Inc | Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Noise Reduction Goal | Noise Reduction Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| N1 | 1 | 1 | 58.9 | 60.8 | 66 | 1.9 | 10 | ---- | 60.8 | 0.0 | 8 | -8.0 |

| Dwelling Units | # DUs | Noise Reduction Min | Avg | Max |
|---|---|---|---|---|
| | | dB | dB | dB |
| All Selected | 1 | 0.0 | 0.0 | 0.0 |
| All Impacted | 0 | 0.0 | 0.0 | 0.0 |
| All that meet NR Goal | 0 | 0.0 | 0.0 | 0.0 |

# Build Alternative with Barrier Wall Analysis

IDOT 6 November 2014
KEG TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-57 and I-74
RUN: Build - Northwest Quad
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Increase over existing Crit'n Sub'l Inc | With Barrier Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Noise Reduction Goal | Noise Reduction Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| A3 | 24 | 1 | 66.8 | 73.1 | 66 | 6.3 | 10 | Snd Lvl | 73.1 | 0.0 | 8 | -8.0 |

| Dwelling Units | # DUs | Noise Reduction Min | Noise Reduction Avg | Noise Reduction Max |
|---|---|---|---|---|
| | | dB | dB | dB |
| All Selected | 1 | 0.0 | 0.0 | 0.0 |
| All Impacted | 1 | 0.0 | 0.0 | 0.0 |
| All that meet NR Goal | 0 | 0.0 | 0.0 | 0.0 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **IDOT** | | | | **6 November 2014** | | | | | | |
| **KEG** | | | | **TNM 2.5** | | | | | | |
| | | | | | | | | | | |
| **RESULTS: BARRIER DESCRIPTIONS** | | | | | | | | | | |
| **PROJECT/CONTRACT:** | **I-57 and I-74** | | | | | | | | | |
| **RUN:** | **Build - Northwest Quad** | | | | | | | | | |
| **BARRIER DESIGN:** | **NW_QUAD** | | | | | | | | | |
| **Barriers** | | | | | | | | | | |
| **Name** | **Type** | **Heights along Barrier** | | | **Length** | **If Wall** | **If Berm** | | | **Cost** |
| | | **Min** | **Avg** | **Max** | | **Area** | **Volume** | **Top Width** | **Run:Rise** | |
| | | ft | ft | ft | ft | sq ft | cu yd | ft | ft:ft | $ |
| Barrier1 | W | 8.00 | 8.00 | 8.00 | 1020 | 8159 | | | | 203978 |
| | | | | | | | | | Total Cost: | 203978 |

IDOT 6 November 2014
KEG TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-57 and I-74
RUN: Build - Northwest Quad
BARRIER DESIGN: NW_QUAD
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Increase over existing Crit'n Sub'l Inc | Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Noise Reduction Goal | Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| A3 | 24 | 1 | 66.8 | 73.1 | 66 | 6.3 | 10 | Snd Lvl | 72.3 | 0.8 | 8 | -7.2 |
| A2 | 163 | 1 | 0.0 | 67.9 | 66 | 67.9 | 10 | Snd Lvl | 68.0 | -0.1 | 8 | -8.1 |
| A1 | 164 | 1 | 0.0 | 63.9 | 66 | 63.9 | 10 | ---- | 64.3 | -0.4 | 8 | -8.4 |

| Dwelling Units | # DUs | Noise Reduction Min | Avg | Max |
|---|---|---|---|---|
| | | dB | dB | dB |
| All Selected | 3 | -0.4 | 0.1 | 0.8 |
| All Impacted | 2 | -0.1 | 0.3 | 0.8 |
| All that meet NR Goal | 0 | 0.0 | 0.0 | 0.0 |

IDOT 22 October 2014
KEG TNM 2.5
Calculated with TNM 2.5
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-57 and I-74
RUN: Build_SE_Quad
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Crit'n Sub'l Inc | With Barrier Type Impact | Calculated LAeq1h | Noise Reduction Calculated | Noise Reduction Goal | Noise Reduction Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| B7 | 163 | 1 | 70.8 | 73.4 | 66 | 2.6 | 10 | Snd Lvl | 73.4 | 0.0 | 8 | -8.0 |
| C5 | 164 | 1 | 67.7 | 70.1 | 66 | 2.4 | 10 | Snd Lvl | 70.1 | 0.0 | 8 | -8.0 |
| D2 | 165 | 1 | 74.3 | 76.1 | 66 | 1.8 | 10 | Snd Lvl | 76.1 | 0.0 | 8 | -8.0 |
| E1 | 166 | 1 | 73.9 | 76.0 | 66 | 2.1 | 10 | Snd Lvl | 76.0 | 0.0 | 8 | -8.0 |
| F3 | 167 | 1 | 73.9 | 76.3 | 66 | 2.4 | 10 | Snd Lvl | 76.3 | 0.0 | 8 | -8.0 |
| G1 | 168 | 1 | 69.2 | 71.7 | 66 | 2.5 | 10 | Snd Lvl | 71.7 | 0.0 | 8 | -8.0 |
| H1 | 169 | 1 | 73.4 | 75.6 | 66 | 2.2 | 10 | Snd Lvl | 75.6 | 0.0 | 8 | -8.0 |
| I1 | 170 | 1 | 64.3 | 66.2 | 66 | 1.9 | 10 | Snd Lvl | 66.2 | 0.0 | 8 | -8.0 |
| J1 | 171 | 1 | 74.9 | 76.8 | 66 | 1.9 | 10 | Snd Lvl | 76.8 | 0.0 | 8 | -8.0 |
| K2 | 172 | 1 | 67.0 | 69.9 | 66 | 2.9 | 10 | Snd Lvl | 69.9 | 0.0 | 8 | -8.0 |
| L35 | 173 | 1 | 74.6 | 76.6 | 66 | 2.0 | 10 | Snd Lvl | 76.6 | 0.0 | 8 | -8.0 |
| M17 | 174 | 1 | 69.3 | 71.4 | 66 | 2.1 | 10 | Snd Lvl | 71.4 | 0.0 | 8 | -8.0 |

| Dwelling Units | # DUs | Noise Reduction Min | Noise Reduction Avg | Noise Reduction Max |
|---|---|---|---|---|
| | | dB | dB | dB |
| All Selected | 12 | 0.0 | 0.0 | 0.0 |
| All Impacted | 12 | 0.0 | 0.0 | 0.0 |
| All that meet NR Goal | 0 | 0.0 | 0.0 | 0.0 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **IDOT** | | | | **4 November 2014** | | | | | | |
| **KEG** | | | | **TNM 2.5** | | | | | | |
| | | | | | | | | | | |
| **RESULTS: BARRIER DESCRIPTIONS** | | | | | | | | | | |
| **PROJECT/CONTRACT:** | **I-57 and I-74** | | | | | | | | | |
| **RUN:** | **Build_SE_Quad** | | | | | | | | | |
| **BARRIER DESIGN:** | **NB_74_FINAL** | | | | | | | | | |
| **Barriers** | | | | | | | | | | |
| **Name** | **Type** | **Heights along Barrier** | | | **Length** | **If Wall** | **If Berm** | | | **Cost** |
| | | **Min** | **Avg** | **Max** | | **Area** | **Volume** | **Top Width** | **Run:Rise** | |
| | | ft | ft | ft | ft | sq ft | cu yd | ft | ft:ft | $ |
| NWB 74 Wall | W | 10.00 | 11.91 | 12.00 | 2624 | 31240 | | | | 781003 |
| | | | | | | | | | Total Cost: | 781003 |

IDOT 18 November 2014
KEG TNM 2.5
Calculated with TNM 2.5
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-57 and I-74
RUN: Build_SE_Quad
BARRIER DESIGN: NB_74_APT_FINAL
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h | | Increase over existing | | Type Impact | With Barrier Calculated LAeq1h | Noise Reduction | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Calculated | Crit'n | Calculated | Crit'n Sub'l Inc | | | Calculated | Goal | Calculated minus Goal |
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| SE-E1 | 163 | 1 | 0.0 | 76.0 | 66 | 76.0 | 10 | Snd Lvl | 67.9 | 8.1 | 8 | 0.1 |
| SE-B1 | 164 | 1 | 0.0 | 62.9 | 66 | 62.9 | 10 | ---- | 59.0 | 3.9 | 8 | -4.1 |
| SE-B2 | 165 | 1 | 0.0 | 63.7 | 66 | 63.7 | 10 | ---- | 59.3 | 4.4 | 8 | -3.6 |
| SE-B3 | 166 | 1 | 0.0 | 65.2 | 66 | 65.2 | 10 | ---- | 60.4 | 4.8 | 8 | -3.2 |
| SE-B4 | 167 | 1 | 0.0 | 66.0 | 66 | 66.0 | 10 | Snd Lvl | 61.2 | 4.8 | 8 | -3.2 |
| SE-B5 | 168 | 1 | 0.0 | 67.6 | 66 | 67.6 | 10 | Snd Lvl | 62.5 | 5.1 | 8 | -2.9 |
| SE-B6 | 169 | 1 | 0.0 | 69.4 | 66 | 69.4 | 10 | Snd Lvl | 63.8 | 5.6 | 8 | -2.4 |
| SE-B7 | 170 | 1 | 0.0 | 72.1 | 66 | 72.1 | 10 | Snd Lvl | 64.5 | 7.6 | 8 | -0.4 |
| SE-B8 | 171 | 1 | 0.0 | 70.0 | 66 | 70.0 | 10 | Snd Lvl | 64.4 | 5.6 | 8 | -2.4 |
| SE-B9 | 172 | 1 | 0.0 | 71.0 | 66 | 71.0 | 10 | Snd Lvl | 64.6 | 6.4 | 8 | -1.6 |
| SE-B10 | 173 | 1 | 0.0 | 68.9 | 66 | 68.9 | 10 | Snd Lvl | 63.7 | 5.2 | 8 | -2.8 |
| SE-B11 | 370 | 1 | 0.0 | 67.7 | 66 | 67.7 | 10 | Snd Lvl | 63.0 | 4.7 | 8 | -3.3 |
| SE-B12 | 313 | 1 | 0.0 | 66.7 | 66 | 66.7 | 10 | Snd Lvl | 62.3 | 4.4 | 8 | -3.6 |
| SE-D1 | 314 | 6 | 0.0 | 72.4 | 66 | 72.4 | 10 | Snd Lvl | 65.7 | 6.7 | 8 | -1.3 |
| SE-C2 | 316 | 1 | 0.0 | 68.8 | 66 | 68.8 | 10 | Snd Lvl | 64.0 | 4.8 | 8 | -3.2 |
| SE-C3 | 317 | 1 | 0.0 | 68.9 | 66 | 68.9 | 10 | Snd Lvl | 63.9 | 5.0 | 8 | -3.0 |
| SE-C4 | 318 | 1 | 0.0 | 69.1 | 66 | 69.1 | 10 | Snd Lvl | 63.6 | 5.5 | 8 | -2.5 |
| SE-C5 | 319 | 1 | 0.0 | 69.1 | 66 | 69.1 | 10 | Snd Lvl | 63.5 | 5.6 | 8 | -2.4 |
| SE-C6 | 320 | 1 | 0.0 | 68.1 | 66 | 68.1 | 10 | Snd Lvl | 62.9 | 5.2 | 8 | -2.8 |
| SE-C7 | 321 | 1 | 0.0 | 68.4 | 66 | 68.4 | 10 | Snd Lvl | 62.8 | 5.6 | 8 | -2.4 |
| SE-C8 | 322 | 1 | 0.0 | 67.5 | 66 | 67.5 | 10 | Snd Lvl | 62.2 | 5.3 | 8 | -2.7 |
| SE-C9 | 323 | 1 | 0.0 | 68.7 | 66 | 68.7 | 10 | Snd Lvl | 62.6 | 6.1 | 8 | -1.9 |
| SE-C10 | 324 | 1 | 0.0 | 69.0 | 66 | 69.0 | 10 | Snd Lvl | 62.7 | 6.3 | 8 | -1.7 |
| SE-C11 | 325 | 1 | 0.0 | 69.1 | 66 | 69.1 | 10 | Snd Lvl | 63.6 | 5.5 | 8 | -2.5 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SE-C12 | 326 | 1 | 0.0 | 69.6 | 66 | 69.6 | 10 | Snd Lvl | 63.4 | 6.2 | 8 | -1.8 |
| SE-C13 | 327 | 1 | 0.0 | 69.7 | 66 | 69.7 | 10 | Snd Lvl | 63.9 | 5.8 | 8 | -2.2 |
| SE-C14 | 328 | 1 | 0.0 | 70.5 | 66 | 70.5 | 10 | Snd Lvl | 64.6 | 5.9 | 8 | -2.1 |
| SE-C15 | 329 | 1 | 0.0 | 71.1 | 66 | 71.1 | 10 | Snd Lvl | 65.5 | 5.6 | 8 | -2.4 |
| SE-C16 | 330 | 1 | 0.0 | 69.2 | 66 | 69.2 | 10 | Snd Lvl | 64.2 | 5.0 | 8 | -3.0 |
| SE-F1 | 331 | 16 | 0.0 | 73.8 | 66 | 73.8 | 10 | Snd Lvl | 64.5 | 9.3 | 8 | 1.3 |
| SE-F2 | 332 | 16 | 0.0 | 73.0 | 66 | 73.0 | 10 | Snd Lvl | 63.9 | 9.1 | 8 | 1.1 |
| SE-F3 | 333 | 1 | 0.0 | 73.4 | 66 | 73.4 | 10 | Snd Lvl | 68.9 | 4.5 | 8 | -3.5 |
| SE-F4 | 334 | 1 | 0.0 | 76.7 | 66 | 76.7 | 10 | Snd Lvl | 71.2 | 5.5 | 8 | -2.5 |
| SE-F5 | 413 | 1 | 0.0 | 76.6 | 66 | 76.6 | 10 | Snd Lvl | 71.2 | 5.4 | 8 | -2.6 |
| SE-F6 | 414 | 1 | 0.0 | 74.0 | 66 | 74.0 | 10 | Snd Lvl | 68.8 | 5.2 | 8 | -2.8 |
| SE-F7 | 415 | 1 | 0.0 | 76.8 | 66 | 76.8 | 10 | Snd Lvl | 67.1 | 9.7 | 8 | 1.7 |
| SE-F8 | 416 | 1 | 0.0 | 75.1 | 66 | 75.1 | 10 | Snd Lvl | 65.4 | 9.7 | 8 | 1.7 |
| SE-F9 | 417 | 1 | 0.0 | 73.1 | 66 | 73.1 | 10 | Snd Lvl | 63.5 | 9.6 | 8 | 1.6 |
| SE-F10 | 418 | 1 | 0.0 | 71.8 | 66 | 71.8 | 10 | Snd Lvl | 62.3 | 9.5 | 8 | 1.5 |
| SE-F11 | 419 | 1 | 0.0 | 70.8 | 66 | 70.8 | 10 | Snd Lvl | 61.6 | 9.2 | 8 | 1.2 |
| SE-F12 | 420 | 1 | 0.0 | 73.9 | 66 | 73.9 | 10 | Snd Lvl | 64.3 | 9.6 | 8 | 1.6 |
| SE-F13 | 421 | 1 | 0.0 | 76.9 | 66 | 76.9 | 10 | Snd Lvl | 67.2 | 9.7 | 8 | 1.7 |
| SE-F14 | 422 | 1 | 0.0 | 74.7 | 66 | 74.7 | 10 | Snd Lvl | 64.9 | 9.8 | 8 | 1.8 |
| SE-F15 | 423 | 1 | 0.0 | 73.4 | 66 | 73.4 | 10 | Snd Lvl | 63.7 | 9.7 | 8 | 1.7 |
| SE-F16 | 424 | 1 | 0.0 | 72.3 | 66 | 72.3 | 10 | Snd Lvl | 62.7 | 9.6 | 8 | 1.6 |
| SE-F17 | 425 | 1 | 0.0 | 71.5 | 66 | 71.5 | 10 | Snd Lvl | 62.0 | 9.5 | 8 | 1.5 |
| SE-F18 | 426 | 1 | 0.0 | 70.5 | 66 | 70.5 | 10 | Snd Lvl | 61.3 | 9.2 | 8 | 1.2 |
| SE-D1 | 427 | 1 | 0.0 | 70.3 | 66 | 70.3 | 10 | Snd Lvl | 66.5 | 3.8 | 8 | -4.2 |
| SE-D2 | 428 | 1 | 0.0 | 68.5 | 66 | 68.5 | 10 | Snd Lvl | 65.2 | 3.3 | 8 | -4.7 |
| SE-D3 | 429 | 1 | 0.0 | 70.3 | 66 | 70.3 | 10 | Snd Lvl | 66.8 | 3.5 | 8 | -4.5 |
| SE-D4 | 430 | 1 | 0.0 | 70.2 | 66 | 70.2 | 10 | Snd Lvl | 66.8 | 3.4 | 8 | -4.6 |
| SE-D5 | 431 | 1 | 0.0 | 68.6 | 66 | 68.6 | 10 | Snd Lvl | 62.8 | 5.8 | 8 | -2.2 |
| SE-D6 | 432 | 1 | 0.0 | 68.4 | 66 | 68.4 | 10 | Snd Lvl | 62.9 | 5.5 | 8 | -2.5 |
| SE-D7 | 433 | 1 | 0.0 | 68.8 | 66 | 68.8 | 10 | Snd Lvl | 62.7 | 6.1 | 8 | -1.9 |
| SE-D8 | 434 | 1 | 0.0 | 68.1 | 66 | 68.1 | 10 | Snd Lvl | 61.9 | 6.2 | 8 | -1.8 |
| SE-C1 | 315 | 1 | 0.0 | 68.6 | 66 | 68.6 | 10 | Snd Lvl | 64.3 | 4.3 | 8 | -3.7 |

| **Dwelling Units** | **# DUs** | **Noise Reduction** | | |
|---|---|---|---|---|
| | | **Min** | **Avg** | **Max** |
| | | **dB** | **dB** | **dB** |
| All Selected | 91 | 3.3 | 6.4 | 9.8 |
| All Impacted | 88 | 3.3 | 6.5 | 9.8 |
| All that meet NR Goal | 45 | 8.1 | 9.4 | 9.8 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **IDOT** | | | | **4 November 2014** | | | | | | |
| **KEG** | | | | **TNM 2.5** | | | | | | |
| | | | | | | | | | | |
| **RESULTS: BARRIER DESCRIPTIONS** | | | | | | | | | | |
| **PROJECT/CONTRACT:** | **I-57 and I-74** | | | | | | | | | |
| **RUN:** | **Build_SE_Quad** | | | | | | | | | |
| **BARRIER DESIGN:** | **SB_74_FINAL** | | | | | | | | | |
| **Barriers** | | | | | | | | | | |
| **Name** | **Type** | **Heights along Barrier** | | | **Length** | **If Wall** | **If Berm** | | | **Cost** |
| | | **Min** | **Avg** | **Max** | | **Area** | **Volume** | **Top Width** | **Run:Rise** | |
| | | ft | ft | ft | ft | sq ft | cu yd | ft | ft:ft | $ |
| SEB 74 Wall | W | 12.00 | 12.00 | 12.00 | 4634 | 55604 | | | | 1390096 |
| | | | | | | | | | Total Cost: | 1390096 |

IDOT 11 February 2015
KEG TNM 2.5
Calculated with TNM 2.5
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-57 and I-74
RUN: Build_SE_Quad
BARRIER DESIGN: 12FootWall
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Crit'n Sub'l Inc | Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Goal | Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| SE-M1 | 163 | 1 | 0.0 | 68.9 | 66 | 68.9 | 10 | Snd Lvl | 63.9 | 5.0 | 8 | -3.0 |
| SE-M2 | 164 | 1 | 0.0 | 68.8 | 66 | 68.8 | 10 | Snd Lvl | 64.0 | 4.8 | 8 | -3.2 |
| SE-M3 | 165 | 1 | 0.0 | 69.0 | 66 | 69.0 | 10 | Snd Lvl | 64.4 | 4.6 | 8 | -3.4 |
| SE-M4 | 166 | 1 | 0.0 | 68.4 | 66 | 68.4 | 10 | Snd Lvl | 64.0 | 4.4 | 8 | -3.6 |
| SE-M5 | 167 | 1 | 0.0 | 68.7 | 66 | 68.7 | 10 | Snd Lvl | 65.3 | 3.4 | 8 | -4.6 |
| SE-M6 | 168 | 1 | 0.0 | 68.7 | 66 | 68.7 | 10 | Snd Lvl | 65.0 | 3.7 | 8 | -4.3 |
| SE-M7 | 169 | 1 | 0.0 | 69.4 | 66 | 69.4 | 10 | Snd Lvl | 65.4 | 4.0 | 8 | -4.0 |
| SE-M8 | 170 | 1 | 0.0 | 71.0 | 66 | 71.0 | 10 | Snd Lvl | 66.8 | 4.2 | 8 | -3.8 |
| SE-M9 | 171 | 1 | 0.0 | 71.6 | 66 | 71.6 | 10 | Snd Lvl | 67.7 | 3.9 | 8 | -4.1 |
| SE-M10 | 172 | 1 | 0.0 | 69.7 | 66 | 69.7 | 10 | Snd Lvl | 65.3 | 4.4 | 8 | -3.6 |
| SE-M11 | 173 | 1 | 0.0 | 73.2 | 66 | 73.2 | 10 | Snd Lvl | 68.4 | 4.8 | 8 | -3.2 |
| SE-M12 | 370 | 1 | 0.0 | 71.2 | 66 | 71.2 | 10 | Snd Lvl | 66.2 | 5.0 | 8 | -3.0 |
| SE-M13 | 313 | 1 | 0.0 | 69.7 | 66 | 69.7 | 10 | Snd Lvl | 64.7 | 5.0 | 8 | -3.0 |
| SE-M14 | 314 | 1 | 0.0 | 68.2 | 66 | 68.2 | 10 | Snd Lvl | 63.4 | 4.8 | 8 | -3.2 |
| SE-M15 | 315 | 1 | 0.0 | 68.2 | 66 | 68.2 | 10 | Snd Lvl | 64.2 | 4.0 | 8 | -4.0 |
| SE-M16 | 316 | 1 | 0.0 | 69.2 | 66 | 69.2 | 10 | Snd Lvl | 65.8 | 3.4 | 8 | -4.6 |
| SE-M17 | 317 | 1 | 0.0 | 71.1 | 66 | 71.1 | 10 | Snd Lvl | 68.2 | 2.9 | 8 | -5.1 |
| SE-M18 | 318 | 1 | 0.0 | 67.2 | 66 | 67.2 | 10 | Snd Lvl | 63.3 | 3.9 | 8 | -4.1 |
| SE-M19 | 319 | 1 | 0.0 | 68.4 | 66 | 68.4 | 10 | Snd Lvl | 66.2 | 2.2 | 8 | -5.8 |
| SE-G1 | 320 | 1 | 0.0 | 64.4 | 66 | 64.4 | 10 | ---- | 59.3 | 5.1 | 8 | -2.9 |
| SE-G2 | 321 | 1 | 0.0 | 65.6 | 66 | 65.6 | 10 | ---- | 63.2 | 2.4 | 8 | -5.6 |
| SE-H1 | 322 | 1 | 0.0 | 75.7 | 66 | 75.7 | 10 | Snd Lvl | 67.9 | 7.8 | 8 | -0.2 |
| SE-H2 | 323 | 1 | 0.0 | 74.0 | 66 | 74.0 | 10 | Snd Lvl | 66.8 | 7.2 | 8 | -0.8 |
| SE-H3 | 324 | 1 | 0.0 | 72.4 | 66 | 72.4 | 10 | Snd Lvl | 65.9 | 6.5 | 8 | -1.5 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SE-H4 | 325 | 1 | 0.0 | 71.1 | 66 | 71.1 | 10 | Snd Lvl | 65.0 | 6.1 | 8 | -1.9 |
| SE-H5 | 326 | 1 | 0.0 | 70.0 | 66 | 70.0 | 10 | Snd Lvl | 64.1 | 5.9 | 8 | -2.1 |
| SE-H6 | 327 | 1 | 0.0 | 69.0 | 66 | 69.0 | 10 | Snd Lvl | 63.2 | 5.8 | 8 | -2.2 |
| SE-H7 | 328 | 1 | 0.0 | 68.2 | 66 | 68.2 | 10 | Snd Lvl | 62.4 | 5.8 | 8 | -2.2 |
| SE-H8 | 329 | 1 | 0.0 | 67.3 | 66 | 67.3 | 10 | Snd Lvl | 61.6 | 5.7 | 8 | -2.3 |
| SE-H9 | 330 | 1 | 0.0 | 66.5 | 66 | 66.5 | 10 | Snd Lvl | 60.6 | 5.9 | 8 | -2.1 |
| SE-I1 | 331 | 1 | 0.0 | 65.9 | 66 | 65.9 | 10 | ---- | 61.9 | 4.0 | 8 | -4.0 |
| SE-J1 | 332 | 1 | 0.0 | 76.9 | 66 | 76.9 | 10 | Snd Lvl | 68.6 | 8.3 | 8 | 0.3 |
| SE-K1 | 333 | 1 | 0.0 | 69.1 | 66 | 69.1 | 10 | Snd Lvl | 63.6 | 5.5 | 8 | -2.5 |
| SE-K2 | 334 | 1 | 0.0 | 69.9 | 66 | 69.9 | 10 | Snd Lvl | 64.0 | 5.9 | 8 | -2.1 |
| SE-K3 | 335 | 1 | 0.0 | 68.1 | 66 | 68.1 | 10 | Snd Lvl | 62.8 | 5.3 | 8 | -2.7 |
| SE-K4 | 336 | 1 | 0.0 | 68.0 | 66 | 68.0 | 10 | Snd Lvl | 62.5 | 5.5 | 8 | -2.5 |
| SE-K5 | 337 | 1 | 0.0 | 66.9 | 66 | 66.9 | 10 | Snd Lvl | 61.5 | 5.4 | 8 | -2.6 |
| SE-K6 | 338 | 1 | 0.0 | 66.5 | 66 | 66.5 | 10 | Snd Lvl | 60.7 | 5.8 | 8 | -2.2 |
| SE-K7 | 339 | 1 | 0.0 | 65.6 | 66 | 65.6 | 10 | ---- | 60.0 | 5.6 | 8 | -2.4 |
| SE-K8 | 340 | 1 | 0.0 | 66.0 | 66 | 66.0 | 10 | Snd Lvl | 60.1 | 5.9 | 8 | -2.1 |
| SE-K9 | 341 | 1 | 0.0 | 65.3 | 66 | 65.3 | 10 | ---- | 59.2 | 6.1 | 8 | -1.9 |
| SE-K10 | 342 | 1 | 0.0 | 65.3 | 66 | 65.3 | 10 | ---- | 59.4 | 5.9 | 8 | -2.1 |
| SE-L1 | 343 | 1 | 0.0 | 67.7 | 66 | 67.7 | 10 | Snd Lvl | 62.1 | 5.6 | 8 | -2.4 |
| SE-L2 | 344 | 1 | 0.0 | 67.5 | 66 | 67.5 | 10 | Snd Lvl | 61.8 | 5.7 | 8 | -2.3 |
| SE-L3 | 345 | 1 | 0.0 | 68.7 | 66 | 68.7 | 10 | Snd Lvl | 62.8 | 5.9 | 8 | -2.1 |
| SE-L4 | 346 | 1 | 0.0 | 68.6 | 66 | 68.6 | 10 | Snd Lvl | 62.8 | 5.8 | 8 | -2.2 |
| SE-L5 | 347 | 1 | 0.0 | 69.0 | 66 | 69.0 | 10 | Snd Lvl | 63.2 | 5.8 | 8 | -2.2 |
| SE-L6 | 348 | 1 | 0.0 | 69.4 | 66 | 69.4 | 10 | Snd Lvl | 63.5 | 5.9 | 8 | -2.1 |
| SE-L7 | 349 | 1 | 0.0 | 71.1 | 66 | 71.1 | 10 | Snd Lvl | 64.9 | 6.2 | 8 | -1.8 |
| SE-L8 | 350 | 1 | 0.0 | 70.7 | 66 | 70.7 | 10 | Snd Lvl | 64.4 | 6.3 | 8 | -1.7 |
| SE-L9 | 351 | 1 | 0.0 | 72.0 | 66 | 72.0 | 10 | Snd Lvl | 63.8 | 8.2 | 8 | 0.2 |
| SE-L10 | 352 | 1 | 0.0 | 72.2 | 66 | 72.2 | 10 | Snd Lvl | 64.8 | 7.4 | 8 | -0.6 |
| SE-L11 | 353 | 1 | 0.0 | 74.1 | 66 | 74.1 | 10 | Snd Lvl | 65.7 | 8.4 | 8 | 0.4 |
| SE-L12 | 354 | 1 | 0.0 | 74.5 | 66 | 74.5 | 10 | Snd Lvl | 66.2 | 8.3 | 8 | 0.3 |
| SE-L13 | 355 | 1 | 0.0 | 76.4 | 66 | 76.4 | 10 | Snd Lvl | 68.1 | 8.3 | 8 | 0.3 |
| SE-L14 | 356 | 1 | 0.0 | 77.0 | 66 | 77.0 | 10 | Snd Lvl | 68.7 | 8.3 | 8 | 0.3 |
| SE-L15 | 357 | 1 | 0.0 | 78.1 | 66 | 78.1 | 10 | Snd Lvl | 69.8 | 8.3 | 8 | 0.3 |
| SE-L16 | 358 | 1 | 0.0 | 77.9 | 66 | 77.9 | 10 | Snd Lvl | 69.9 | 8.0 | 8 | 0.0 |
| SE-L17 | 359 | 1 | 0.0 | 75.3 | 66 | 75.3 | 10 | Snd Lvl | 67.8 | 7.5 | 8 | -0.5 |
| SE-L18 | 360 | 1 | 0.0 | 73.5 | 66 | 73.5 | 10 | Snd Lvl | 66.4 | 7.1 | 8 | -0.9 |
| SE-L19 | 361 | 1 | 0.0 | 71.9 | 66 | 71.9 | 10 | Snd Lvl | 65.7 | 6.2 | 8 | -1.8 |
| SE-L20 | 362 | 1 | 0.0 | 69.7 | 66 | 69.7 | 10 | Snd Lvl | 64.2 | 5.5 | 8 | -2.5 |
| SE-L21 | 363 | 1 | 0.0 | 67.8 | 66 | 67.8 | 10 | Snd Lvl | 62.4 | 5.4 | 8 | -2.6 |
| SE-L22 | 364 | 1 | 0.0 | 67.2 | 66 | 67.2 | 10 | Snd Lvl | 61.6 | 5.6 | 8 | -2.4 |
| SE-L23 | 365 | 1 | 0.0 | 67.5 | 66 | 67.5 | 10 | Snd Lvl | 61.9 | 5.6 | 8 | -2.4 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SE-L24 | 366 | 1 | 0.0 | 69.0 | 66 | 69.0 | 10 | Snd Lvl | 63.3 | 5.7 | 8 | -2.3 |
| SE-L25 | 367 | 1 | 0.0 | 70.8 | 66 | 70.8 | 10 | Snd Lvl | 65.1 | 5.7 | 8 | -2.3 |
| SE-L26 | 368 | 1 | 0.0 | 72.9 | 66 | 72.9 | 10 | Snd Lvl | 66.2 | 6.7 | 8 | -1.3 |
| SE-L27 | 369 | 1 | 0.0 | 74.9 | 66 | 74.9 | 10 | Snd Lvl | 67.7 | 7.2 | 8 | -0.8 |
| SE-L28 | 371 | 1 | 0.0 | 76.5 | 66 | 76.5 | 10 | Snd Lvl | 68.9 | 7.6 | 8 | -0.4 |
| SE-L29 | 372 | 1 | 0.0 | 65.8 | 66 | 65.8 | 10 | ---- | 60.0 | 5.8 | 8 | -2.2 |
| SE-L30 | 373 | 1 | 0.0 | 67.5 | 66 | 67.5 | 10 | Snd Lvl | 61.4 | 6.1 | 8 | -1.9 |
| SE-L31 | 374 | 1 | 0.0 | 69.3 | 66 | 69.3 | 10 | Snd Lvl | 63.0 | 6.3 | 8 | -1.7 |
| SE-L32 | 375 | 1 | 0.0 | 70.5 | 66 | 70.5 | 10 | Snd Lvl | 64.3 | 6.2 | 8 | -1.8 |
| SE-L33 | 376 | 1 | 0.0 | 71.5 | 66 | 71.5 | 10 | Snd Lvl | 65.7 | 5.8 | 8 | -2.2 |
| SE-L34 | 377 | 1 | 0.0 | 74.3 | 66 | 74.3 | 10 | Snd Lvl | 68.2 | 6.1 | 8 | -1.9 |
| SE-L35 | 378 | 1 | 0.0 | 76.7 | 66 | 76.7 | 10 | Snd Lvl | 69.5 | 7.2 | 8 | -0.8 |
| SE-L36 | 379 | 1 | 0.0 | 65.9 | 66 | 65.9 | 10 | ---- | 60.0 | 5.9 | 8 | -2.1 |
| SE-L37 | 380 | 1 | 0.0 | 67.5 | 66 | 67.5 | 10 | Snd Lvl | 61.3 | 6.2 | 8 | -1.8 |
| SE-L38 | 381 | 1 | 0.0 | 68.6 | 66 | 68.6 | 10 | Snd Lvl | 62.4 | 6.2 | 8 | -1.8 |
| SE-L39 | 382 | 1 | 0.0 | 70.2 | 66 | 70.2 | 10 | Snd Lvl | 63.9 | 6.3 | 8 | -1.7 |
| SE-L40 | 383 | 1 | 0.0 | 72.0 | 66 | 72.0 | 10 | Snd Lvl | 65.6 | 6.4 | 8 | -1.6 |
| SE-L41 | 384 | 1 | 0.0 | 74.0 | 66 | 74.0 | 10 | Snd Lvl | 67.8 | 6.2 | 8 | -1.8 |
| SE-L42 | 385 | 1 | 0.0 | 76.4 | 66 | 76.4 | 10 | Snd Lvl | 69.8 | 6.6 | 8 | -1.4 |
| SE-L43 | 386 | 1 | 0.0 | 76.7 | 66 | 76.7 | 10 | Snd Lvl | 69.8 | 6.9 | 8 | -1.1 |
| SE-L44 | 387 | 1 | 0.0 | 74.4 | 66 | 74.4 | 10 | Snd Lvl | 67.7 | 6.7 | 8 | -1.3 |
| SE-L45 | 388 | 1 | 0.0 | 72.7 | 66 | 72.7 | 10 | Snd Lvl | 65.9 | 6.8 | 8 | -1.2 |
| SE-L46 | 389 | 1 | 0.0 | 70.9 | 66 | 70.9 | 10 | Snd Lvl | 64.0 | 6.9 | 8 | -1.1 |
| SE-L47 | 390 | 1 | 0.0 | 69.3 | 66 | 69.3 | 10 | Snd Lvl | 62.6 | 6.7 | 8 | -1.3 |
| SE-L48 | 391 | 1 | 0.0 | 68.1 | 66 | 68.1 | 10 | Snd Lvl | 61.8 | 6.3 | 8 | -1.7 |
| SE-L49 | 392 | 1 | 0.0 | 66.8 | 66 | 66.8 | 10 | Snd Lvl | 60.7 | 6.1 | 8 | -1.9 |
| SE-L50 | 392 | 1 | 0.0 | 66.0 | 66 | 66.0 | 10 | Snd Lvl | 60.0 | 6.0 | 8 | -2.0 |
| SE-L51 | 393 | 1 | 0.0 | 66.8 | 66 | 66.8 | 10 | Snd Lvl | 60.7 | 6.1 | 8 | -1.9 |
| SE-L52 | 394 | 1 | 0.0 | 67.7 | 66 | 67.7 | 10 | Snd Lvl | 61.5 | 6.2 | 8 | -1.8 |
| SE-L53 | 395 | 1 | 0.0 | 68.5 | 66 | 68.5 | 10 | Snd Lvl | 62.2 | 6.3 | 8 | -1.7 |
| SE-L54 | 396 | 1 | 0.0 | 70.3 | 66 | 70.3 | 10 | Snd Lvl | 63.7 | 6.6 | 8 | -1.4 |
| SE-L55 | 397 | 1 | 0.0 | 71.8 | 66 | 71.8 | 10 | Snd Lvl | 65.2 | 6.6 | 8 | -1.4 |
| SE-L56 | 398 | 1 | 0.0 | 74.7 | 66 | 74.7 | 10 | Snd Lvl | 67.8 | 6.9 | 8 | -1.1 |
| SE-L57 | 399 | 1 | 0.0 | 74.9 | 66 | 74.9 | 10 | Snd Lvl | 68.8 | 6.1 | 8 | -1.9 |
| SE-L58 | 400 | 1 | 0.0 | 73.0 | 66 | 73.0 | 10 | Snd Lvl | 67.2 | 5.8 | 8 | -2.2 |
| SE-L59 | 401 | 1 | 0.0 | 70.7 | 66 | 70.7 | 10 | Snd Lvl | 65.1 | 5.6 | 8 | -2.4 |
| SE-L60 | 402 | 1 | 0.0 | 69.4 | 66 | 69.4 | 10 | Snd Lvl | 64.2 | 5.2 | 8 | -2.8 |
| SE-L61 | 403 | 1 | 0.0 | 68.5 | 66 | 68.5 | 10 | Snd Lvl | 63.5 | 5.0 | 8 | -3.0 |
| SE-L62 | 404 | 1 | 0.0 | 67.7 | 66 | 67.7 | 10 | Snd Lvl | 62.7 | 5.0 | 8 | -3.0 |
| SE-L63 | 405 | 1 | 0.0 | 70.5 | 66 | 70.5 | 10 | Snd Lvl | 65.2 | 5.3 | 8 | -2.7 |
| SE-L64 | 406 | 1 | 0.0 | 73.0 | 66 | 73.0 | 10 | Snd Lvl | 67.7 | 5.3 | 8 | -2.7 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SE-G3 | 407 | 1 | 0.0 | 64.6 | 66 | 64.6 | 10 | ---- | 62.2 | 2.4 | 8 | -5.6 |
| SE-G4 | 408 | 1 | 0.0 | 64.8 | 66 | 64.8 | 10 | ---- | 62.8 | 2.0 | 8 | -6.0 |
| SE-G5 | 409 | 1 | 0.0 | 64.4 | 66 | 64.4 | 10 | ---- | 61.5 | 2.9 | 8 | -5.1 |
| SE-G6 | 413 | 1 | 0.0 | 63.2 | 66 | 63.2 | 10 | ---- | 60.0 | 3.2 | 8 | -4.8 |
| SE-G7 | 414 | 1 | 0.0 | 65.8 | 66 | 65.8 | 10 | ---- | 61.8 | 4.0 | 8 | -4.0 |
| SE-G8 | 415 | 1 | 0.0 | 67.3 | 66 | 67.3 | 10 | Snd Lvl | 63.6 | 3.7 | 8 | -4.3 |
| SE-G9 | 416 | 1 | 0.0 | 68.9 | 66 | 68.9 | 10 | Snd Lvl | 64.8 | 4.1 | 8 | -3.9 |
| SE-G10 | 417 | 1 | 0.0 | 68.3 | 66 | 68.3 | 10 | Snd Lvl | 64.0 | 4.3 | 8 | -3.7 |
| SE-G11 | 418 | 1 | 0.0 | 73.3 | 66 | 73.3 | 10 | Snd Lvl | 68.6 | 4.7 | 8 | -3.3 |
| SE-G12 | 419 | 1 | 0.0 | 74.3 | 66 | 74.3 | 10 | Snd Lvl | 69.8 | 4.5 | 8 | -3.5 |
| SE-G13 | 420 | 1 | 0.0 | 69.1 | 66 | 69.1 | 10 | Snd Lvl | 64.4 | 4.7 | 8 | -3.3 |
| SE-G14 | 421 | 1 | 0.0 | 70.0 | 66 | 70.0 | 10 | Snd Lvl | 65.9 | 4.1 | 8 | -3.9 |
| SE-G15 | 422 | 1 | 0.0 | 69.4 | 66 | 69.4 | 10 | Snd Lvl | 65.2 | 4.2 | 8 | -3.8 |
| SE-G16 | 423 | 1 | 0.0 | 67.5 | 66 | 67.5 | 10 | Snd Lvl | 62.9 | 4.6 | 8 | -3.4 |
| SE-G17 | 424 | 1 | 0.0 | 76.3 | 66 | 76.3 | 10 | Snd Lvl | 70.2 | 6.1 | 8 | -1.9 |
| SE-G18 | 425 | 1 | 0.0 | 76.9 | 66 | 76.9 | 10 | Snd Lvl | 72.1 | 4.8 | 8 | -3.2 |
| SE-G19 | 426 | 1 | 0.0 | 76.6 | 66 | 76.6 | 10 | Snd Lvl | 71.8 | 4.8 | 8 | -3.2 |
| SE-G20 | 427 | 1 | 0.0 | 75.5 | 66 | 75.5 | 10 | Snd Lvl | 69.5 | 6.0 | 8 | -2.0 |
| SE-G21 | 428 | 1 | 0.0 | 74.7 | 66 | 74.7 | 10 | Snd Lvl | 68.8 | 5.9 | 8 | -2.1 |
| SE-G22 | 429 | 1 | 0.0 | 75.5 | 66 | 75.5 | 10 | Snd Lvl | 70.7 | 4.8 | 8 | -3.2 |
| SE-G23 | 430 | 1 | 0.0 | 75.1 | 66 | 75.1 | 10 | Snd Lvl | 70.4 | 4.7 | 8 | -3.3 |
| SE-G24 | 431 | 1 | 0.0 | 74.1 | 66 | 74.1 | 10 | Snd Lvl | 68.2 | 5.9 | 8 | -2.1 |
| SE-G25 | 432 | 1 | 0.0 | 67.3 | 66 | 67.3 | 10 | Snd Lvl | 63.1 | 4.2 | 8 | -3.8 |
| SE-G26 | 433 | 1 | 0.0 | 68.5 | 66 | 68.5 | 10 | Snd Lvl | 64.9 | 3.6 | 8 | -4.4 |
| SE-G27 | 434 | 1 | 0.0 | 68.5 | 66 | 68.5 | 10 | Snd Lvl | 64.8 | 3.7 | 8 | -4.3 |
| SE-G28 | 435 | 1 | 0.0 | 67.4 | 66 | 67.4 | 10 | Snd Lvl | 63.1 | 4.3 | 8 | -3.7 |
| SE-G29 | 436 | 1 | 0.0 | 67.7 | 66 | 67.7 | 10 | Snd Lvl | 63.3 | 4.4 | 8 | -3.6 |
| SE-G30 | 437 | 1 | 0.0 | 68.8 | 66 | 68.8 | 10 | Snd Lvl | 65.1 | 3.7 | 8 | -4.3 |
| SE-G31 | 438 | 1 | 0.0 | 69.1 | 66 | 69.1 | 10 | Snd Lvl | 65.2 | 3.9 | 8 | -4.1 |
| SE-G32 | 439 | 1 | 0.0 | 68.1 | 66 | 68.1 | 10 | Snd Lvl | 63.7 | 4.4 | 8 | -3.6 |
| SE-G33 | 440 | 1 | 0.0 | 64.7 | 66 | 64.7 | 10 | ---- | 61.1 | 3.6 | 8 | -4.4 |
| SE-G34 | 441 | 1 | 0.0 | 65.4 | 66 | 65.4 | 10 | ---- | 62.2 | 3.2 | 8 | -4.8 |
| SE-G35 | 442 | 1 | 0.0 | 65.8 | 66 | 65.8 | 10 | ---- | 62.2 | 3.6 | 8 | -4.4 |
| SE-G36 | 443 | 1 | 0.0 | 65.1 | 66 | 65.1 | 10 | ---- | 61.0 | 4.1 | 8 | -3.9 |
| SE-G37 | 444 | 1 | 0.0 | 66.2 | 66 | 66.2 | 10 | Snd Lvl | 61.8 | 4.4 | 8 | -3.6 |
| SE-G38 | 445 | 1 | 0.0 | 67.2 | 66 | 67.2 | 10 | Snd Lvl | 63.4 | 3.8 | 8 | -4.2 |
| SE-G39 | 446 | 1 | 0.0 | 67.7 | 66 | 67.7 | 10 | Snd Lvl | 63.8 | 3.9 | 8 | -4.1 |
| SE-G40 | 447 | 1 | 0.0 | 67.4 | 66 | 67.4 | 10 | Snd Lvl | 62.7 | 4.7 | 8 | -3.3 |
| SE-G41 | 448 | 1 | 0.0 | 63.8 | 66 | 63.8 | 10 | ---- | 60.1 | 3.7 | 8 | -4.3 |
| SE-G42 | 449 | 1 | 0.0 | 65.0 | 66 | 65.0 | 10 | ---- | 61.5 | 3.5 | 8 | -4.5 |
| SE-G43 | 450 | 1 | 0.0 | 65.1 | 66 | 65.1 | 10 | ---- | 61.6 | 3.5 | 8 | -4.5 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SE-G44 | 451 | 1 | 0.0 | 63.9 | 66 | 63.9 | 10 | ---- | 60.4 | 3.5 | 8 | -4.5 |
| SE-G45 | 452 | 1 | 0.0 | 64.5 | 66 | 64.5 | 10 | ---- | 60.8 | 3.7 | 8 | -4.3 |
| SE-G46 | 453 | 1 | 0.0 | 65.6 | 66 | 65.6 | 10 | ---- | 62.7 | 2.9 | 8 | -5.1 |
| SE-G47 | 454 | 1 | 0.0 | 65.8 | 66 | 65.8 | 10 | ---- | 62.5 | 3.3 | 8 | -4.7 |
| SE-G48 | 455 | 1 | 0.0 | 64.9 | 66 | 64.9 | 10 | ---- | 61.2 | 3.7 | 8 | -4.3 |
| SE-G49 | 456 | 1 | 0.0 | 62.3 | 66 | 62.3 | 10 | ---- | 57.6 | 4.7 | 8 | -3.3 |
| SE-G50 | 457 | 1 | 0.0 | 64.0 | 66 | 64.0 | 10 | ---- | 60.2 | 3.8 | 8 | -4.2 |
| SE-G51 | 458 | 1 | 0.0 | 64.5 | 66 | 64.5 | 10 | ---- | 60.7 | 3.8 | 8 | -4.2 |
| SE-G52 | 459 | 1 | 0.0 | 63.8 | 66 | 63.8 | 10 | ---- | 58.5 | 5.3 | 8 | -2.7 |
| SE-G53 | 460 | 1 | 0.0 | 68.8 | 66 | 68.8 | 10 | Snd Lvl | 62.5 | 6.3 | 8 | -1.7 |
| SE-G54 | 461 | 1 | 0.0 | 70.4 | 66 | 70.4 | 10 | Snd Lvl | 66.0 | 4.4 | 8 | -3.6 |
| SE-G55 | 462 | 1 | 0.0 | 70.5 | 66 | 70.5 | 10 | Snd Lvl | 66.2 | 4.3 | 8 | -3.7 |
| SE-G56 | 463 | 1 | 0.0 | 69.2 | 66 | 69.2 | 10 | Snd Lvl | 62.8 | 6.4 | 8 | -1.6 |
| SE-G57 | 464 | 1 | 0.0 | 71.1 | 66 | 71.1 | 10 | Snd Lvl | 66.7 | 4.4 | 8 | -3.6 |
| SE-G58 | 465 | 1 | 0.0 | 69.6 | 66 | 69.6 | 10 | Snd Lvl | 63.2 | 6.4 | 8 | -1.6 |
| SE-G59 | 466 | 1 | 0.0 | 71.4 | 66 | 71.4 | 10 | Snd Lvl | 67.0 | 4.4 | 8 | -3.6 |
| SE-G60 | 467 | 1 | 0.0 | 70.1 | 66 | 70.1 | 10 | Snd Lvl | 63.8 | 6.3 | 8 | -1.7 |
| SE-G61 | 468 | 1 | 0.0 | 65.1 | 66 | 65.1 | 10 | ---- | 59.6 | 5.5 | 8 | -2.5 |
| SE-G62 | 469 | 1 | 0.0 | 66.8 | 66 | 66.8 | 10 | Snd Lvl | 62.8 | 4.0 | 8 | -4.0 |
| SE-G63 | 470 | 1 | 0.0 | 67.8 | 66 | 67.8 | 10 | Snd Lvl | 63.8 | 4.0 | 8 | -4.0 |
| SE-G64 | 471 | 1 | 0.0 | 67.5 | 66 | 67.5 | 10 | Snd Lvl | 61.9 | 5.6 | 8 | -2.4 |
| SE-G65 | 472 | 1 | 0.0 | 61.3 | 66 | 61.3 | 10 | ---- | 58.0 | 3.3 | 8 | -4.7 |
| SE-G66 | 473 | 1 | 0.0 | 62.6 | 66 | 62.6 | 10 | ---- | 59.5 | 3.1 | 8 | -4.9 |
| SE-G67 | 474 | 1 | 0.0 | 62.9 | 66 | 62.9 | 10 | ---- | 59.5 | 3.4 | 8 | -4.6 |
| SE-G68 | 475 | 1 | 0.0 | 61.9 | 66 | 61.9 | 10 | ---- | 57.7 | 4.2 | 8 | -3.8 |
| SE-G69 | 476 | 1 | 0.0 | 63.2 | 66 | 63.2 | 10 | ---- | 58.4 | 4.8 | 8 | -3.2 |
| SE-G70 | 477 | 1 | 0.0 | 65.0 | 66 | 65.0 | 10 | ---- | 61.2 | 3.8 | 8 | -4.2 |
| SE-G71 | 478 | 1 | 0.0 | 65.6 | 66 | 65.6 | 10 | ---- | 61.7 | 3.9 | 8 | -4.1 |
| SE-G72 | 479 | 1 | 0.0 | 64.7 | 66 | 64.7 | 10 | ---- | 59.6 | 5.1 | 8 | -2.9 |
| SE-G73 | 480 | 1 | 0.0 | 65.0 | 66 | 65.0 | 10 | ---- | 59.6 | 5.4 | 8 | -2.6 |
| SE-G74 | 481 | 1 | 0.0 | 66.1 | 66 | 66.1 | 10 | Snd Lvl | 62.2 | 3.9 | 8 | -4.1 |
| SE-G75 | 482 | 1 | 0.0 | 65.8 | 66 | 65.8 | 10 | ---- | 62.0 | 3.8 | 8 | -4.2 |
| SE-G76 | 483 | 1 | 0.0 | 64.4 | 66 | 64.4 | 10 | ---- | 59.5 | 4.9 | 8 | -3.1 |
| SE-G77 | 484 | 1 | 0.0 | 64.3 | 66 | 64.3 | 10 | ---- | 59.8 | 4.5 | 8 | -3.5 |
| SE-G78 | 485 | 1 | 0.0 | 65.3 | 66 | 65.3 | 10 | ---- | 61.6 | 3.7 | 8 | -4.3 |
| SE-G79 | 486 | 1 | 0.0 | 65.1 | 66 | 65.1 | 10 | ---- | 61.5 | 3.6 | 8 | -4.4 |
| SE-G80 | 487 | 1 | 0.0 | 64.0 | 66 | 64.0 | 10 | ---- | 59.9 | 4.1 | 8 | -3.9 |
| SE-G81 | 488 | 1 | 0.0 | 73.0 | 66 | 73.0 | 10 | Snd Lvl | 68.6 | 4.4 | 8 | -3.6 |
| SE-G82 | 489 | 1 | 0.0 | 70.7 | 66 | 70.7 | 10 | Snd Lvl | 66.2 | 4.5 | 8 | -3.5 |
| SE-I02 | 495 | 1 | 0.0 | 67.3 | 66 | 67.3 | 10 | Snd Lvl | 62.1 | 5.2 | 8 | -2.8 |
| SE-I03 | 496 | 1 | 0.0 | 69.9 | 66 | 69.9 | 10 | Snd Lvl | 63.6 | 6.3 | 8 | -1.7 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SE-I04 | 497 | 1 | 0.0 | 73.9 | 66 | 73.9 | 10 | Snd Lvl | 66.9 | 7.0 | 8 | -1.0 |

| **Dwelling Units** | | **# DUs** | **Noise Reduction** | | |
|---|---|---|---|---|---|
| | | | **Min** | **Avg** | **Max** |
| | | | **dB** | **dB** | **dB** |
| All Selected | | 189 | 2.0 | 5.2 | 8.4 |
| All Impacted | | 144 | 2.2 | 5.6 | 8.4 |
| All that meet NR Goal | | 8 | 8.0 | 8.3 | 8.4 |

# EXHIBIT E

# COORDINATION WITH LOCAL OFFICIALS




**EXHIBIT E**
**I-57 / I-74 Interchange Improvements**
**Noise Contours for Public Officials**

Kaskaskia Engineering Group, LLC
208 East Main Street, Suite 100
Belleville, Illinois 62220
618.233.5877 phone
618.233.5977 fax
www.kaskaskiaeng.com

# Appendix D3
# EA Errata

# Errata to Environmental Assessment

**Interstate 57 and Interstate 74 Interchange,**
**Champaign**
**Champaign County, Illinois**

Submitted Pursuant to 42 USC 4332 (2)(c)
by the

U. S. Department of Transportation
Federal Highway Administration

and

Illinois Department of Transportation

July 2015

# Errata

This Erratum includes corrections, revisions and/or additions to the Abbreviated Environmental Assessment (EA) for the proposed reconstruction of the **Interstate 57 and Interstate 74 Interchange** in Champaign County, subsequent to its signed approval by the Illinois Department of Transportation (IDOT) and the Federal Highway Administration (FHWA) on April 23, 2015. This erratum incorporates and addresses comments from the IDOT Legal Sufficiency Review by the Office of Legal Counsel, additional responses received from the noise barrier survey and a summary of the public hearing held on May 14, 2015.

## TABLE OF CONTENTS

In Section V. Coordination and Comments, added subsection "2. Newspaper Articles" and changed subsection "2. Agency Coordination" to subsection "3. Agency Coordination"

## SECTION I: INTRODUCTION & PURPOSE AND NEED

**Page 1, Paragraph 1**, add the following sentences "These project limits for the proposed I-57 & 74 reconstruction represent logical termini to satisfy the project purpose and need. The proposed project has independent utility, since no additional transportation improvements are needed to satisfy the purpose and need. Accommodations for future transportation improvements were considered when evaluating the proposed improvements and alternatives, and the proposed project will not restrict future expansion. See Section III for additional discussion on the development of the project improvements and alternatives."

## SECTION IV: IMPACTS, DOCUMENTATION AND MITIGATION

**Part I. Socio-economic, 8. Growth and Economic Development, Page 28, Paragraph 2,** modify the paragraph as follows: "As with the existing interchange, the proposed alternative would provide infrastructure that supports the projected economic development and growth in the area. While no specific growth is expected as a result of the proposed project, the preferred alternative could enhance the area's economic stability by providing safer and more efficient transportation at the I-57 and I-74 interchange and increasing the traffic capacity of the roadways.

**Part III. Cultural Resources, 1. Archaeological Properties, Page 30,** add a checked box that states: Project could affect Archaeological Properties (See discussion below.)

**Part V. Noise, Barrier Assessments, Page 40, Last Paragraph**, modify the last sentence to update the percentages in favor of the north and south walls as follows based on receipt of additional noise surveys: "Based on the survey results, 85.1% are in favor of the north wall and 76.3% are in favor of the south wall." Also in this same section, update **Table 19** on **Page 41** as follows:

**Table 19: Viewpoints of Benefited Receptors**

| Noise Wall ID | Total Surveys Sent to Benefited Receptors[1] | Number of Responses Received from Both Surveys | % Responses Received | Responses in Favor of Noise Wall | Responses Not in Favor of Noise Wall | % in Favor of Noise Wall |
|---|---|---|---|---|---|---|
| 2 (North Wall) | 97 | 44 | 45.4% | 74 | 13 | 85.1% |
| 3 (South Wall) | 290 | 81 | 26.6% | 71 | 22 | 76.3% |

**Part VIII. Groundwater Resources, Page 46, Paragraph 2,** delete "District 5" after FHWA.

**Part XII. Special Lands, 1. Section 4(f), Page 52, Paragraph 2,** change the first sentence as follows to reference the correct Section and Part: "As noted in Part V. Noise, of Section IV: Impacts, Documentation and Mitigation, based on the traffic noise analysis and noise abatement evaluation conducted, highway traffic noise abatement measures are likely to be implemented based on preliminary design."

**Part XII. Special Lands, 6. Land & Water Resources, Page 52, Paragraph 1,** modify the paragraph as follows to note that the Illinois Nature Preserves Commission is hosted by IDNR: **"**According to the Illinois Nature Preserves Commission (hosted by the Illinois Department of Natural Resources), no land and water reserves are located in the project area."

**XIII. Indirect and Cumulative Impacts, Cumulative Impacts, Page 54, Paragraph 1,** revise the sentence as follows: "The proposed project would not have any significant impacts to environmental resources."

## SECTION V. COORDINATION AND COMMENTS

**1. Public Involvement, Page 56, add an entry to discuss the Public Hearing as follows:**
05/14/2015: Public Hearing
The public hearing for the I-57 & I-74 Interchange Reconstruction was held May 14, 2015 at Parkland College – Building T in Champaign, IL. The meeting was an open house format with voice recording capabilities and a formal session offered at 5:00 PM to allow public speaking. IDOT staff members and the consultant team of BFW and CMT were present at the meeting and available for discussion.

At this meeting, the overall project study area, general project information, and proposed improvement exhibits were displayed for public viewing through an open house format, with exhibit boards set up throughout the meeting room. Exhibits included a site map, existing aerial image map, proposed aerial image map, existing and proposed renderings, noise wall exhibits, project purpose and need statements, environmental features, typical sections, the approved Interchange Design Study, the signed draft Environmental Assessment, and the Access Justification report (with conceptual approval). A handout with a project summary sheet and exhibit displaying the proposed interchange configuration were provided to attendees. A station was setup in the back of the room to allow for verbal statements to be recorded. A formal session was scheduled for 5:00 PM with sign-up forms available at the room entrance. No attendees provided verbal statements or signed up to address to the public.

> Public Comments
> Public input was encouraged and comment forms were available for all attendees. The public comment period extended to June 5, 2015. No comment forms have been received to date. The general consensus of the attendees at the meeting was that this interchange reconstruction project is necessary. The land owner in the southeast quadrant of the interchange was pleased with the selection of the proposed alternate, since it required less land acquisition and minimized impacts to his property than the other alternates presented at the previous public meetings.

Also in **SECTION V. COORDINATION AND COMMENTS,** add a subsection "2. Newspaper Articles" after the Public Hearing entry and change subsection "2. Agency Coordination" to subsection "3. Agency Coordination".

# Appendix D4
# FONSI

**FEDERAL HIGHWAY ADMINISTRATION**
**FINDING OF NO SIGNIFICANT IMPACT**

**Interstate 57 (F.A.I. 57) and Interstate 74 (F.A.I. 74) Interchange**
**Section 10 (5-1-RS, 14-1, 6) R**
**City of Champaign, Champaign County, Illinois**

The Federal Highway Administration (FHWA) and Illinois Department of Transportation (IDOT) propose to reconstruct the existing full conventional cloverleaf interchange and approaches at Interstate 57 and Interstate 74, northwest of Champaign, Illinois.

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the I-57 and I-74 interchange by eliminating deficient geometric features and reducing points of access to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps. The need for the proposed improvement is to address operational, geometric, safety, and capacity deficiencies.

The preferred interchange alternative is Alternative 2, the semi-directional interchange type with two directional ramps and two loops, which best satisfies the project purpose and need to address operational, geometric, safety, and capacity deficiencies while minimizing the impacts to environmental resources and surrounding land and providing a cost effective solution.

Construction of the proposed action would require approximately 46.7 acres of right-of-way from 15 parcels with 7 separate owners. All property acquisition will be conducted under the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 2, as amended, and the IDOT Land Acquisition Policies and Procedures Manual. One parcel would require removing approximately 0.66 acres of a parking/storage lot, but the acquisitions would not displace any residences or businesses. Any trees that cannot be avoided will be replaced in accordance with IDOT policy "D&E-18 Preservation and Replacement of Trees."

Five special waste sites are located in the acquisition area and may be affected. The Preliminary Environmental Site Assessment (PESA) will be re-validated to determine if a Preliminary Site Investigation (PSI) will be required.

One archaeological site was identified that requires additional testing to determine its eligibility for the National Register of Historic Places (NRHP). In the case that it cannot be avoided, a Memorandum of Agreement (MOA) has been developed and ratified, which stipulates that (1) archaeological test excavations must be conducted before construction, and (2) if the site is eligible for the NRHP, data-recovery excavations (mitigation) must be completed prior to any construction activities in the vicinity of the site.

Based on the traffic noise analysis and noise abatement evaluation conducted, including the viewpoints of the benefited receptors, Noise Walls 2 and 3 are likely to be implemented based on preliminary design. Noise Wall 2 is located southeast of the I-57 / I-74 interchange along the westbound traffic lanes of I-74 and provides abatement for 28 single family homes, 9 multi-

family buildings (62 receptors), and one church. Noise Wall 3 is located southeast of the I-57 / I-74 interchange along the eastbound traffic lanes of I-74 and consists of 102 single family homes, 6 multi-family buildings and two common areas (82 receptors), one park (4 receptors), and one church.

The project will require fill within the 100-year floodplain and reconstruction of approximately 1,500 feet of Copper Slough. Compensatory flood storage volume will be provided to compensate for any floodplain storage losses resulting from the project. Best Management Practices (BMPs) will reduce or eliminate temporary impacts to water quality during construction. The selected construction site BMPs would be consistent with practices to comply with requirements of the State of Illinois National Pollutant Discharge Elimination System (NPDES) permit.

On March 11, 2015 the U.S. Environmental Protection Agency (USEPA) designated a portion of the Mahomet Aquifer system as a sole source aquifer (SSA) under Section 1424(e) of the Safe Drinking Water Act. This project is within the review area of the Mahomet SSA. Once FHWA and U.S. EPA Region 5 update their memorandum of understanding, the agencies will follow the agreed upon review procedures to ensure compliance with the requirements of Section 1424(e) of the Safe Drinking Water Act.

Various stakeholder coordination meetings have taken place, as well as a public hearing on May 14, 2015. The general consensus of the attendees at the meeting was that this interchange reconstruction project is necessary.

The FHWA has determined that the proposed action, identified as Alternative 2 in the Environmental Assessment, will not have any significant impact on the human environment. This Finding of No Significant Impact is based on the attached Environmental Assessment and the Environmental Assessment Errata, which have been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. The FHWA takes full responsibility for the accuracy, scope, and content of the Environmental Assessment and the Environmental Assessment Errata.

July 9, 2015
**Date**

**FHWA**

# APPENDIX E
# Interchange Type Study

# Interchange Type Study

## Interstate 57 and Interstate 74

Section 10(5-1-RS-1, 14-1, 6)R
Job No. P-95-030-11

Champaign, IL
Champaign County

**August 2014**

Prepared For:

Illinois Department of Transportation

**Region 3 – District 5**

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## I. Executive Summary

The purpose of this Interchange Type Study is to evaluate and compare different interchange types as a basis for the selection of a preferred interchange configuration to improve the existing Interstate 57 (I-57) and Interstate 74 (I-74) cloverleaf interchange in Champaign, Illinois. An interchange type study is being prepared to obtain jurisdictional agency approval of an interchange type and access alternative. The alternatives have been developed to provide improved interchange geometry and operations, enhanced safety conditions, and increased capacity for growing traffic volumes.

These alternatives for the interchange reconstruction were evaluated and compared by the procedures described in this type study, which included review of crash studies, traffic modeling, geometric planning, interstate signing, environmental impacts, public input, construction cost estimates, and additional land acquisition needs. Initial screening of the proposed interchange concepts narrowed the study down to five alternates. After evaluation and comparison of these five alternates, the top two were selected for further study to determine the recommended interchange configuration.

From these studies and analyses, summarized herein, this report concludes that the recommended interchange configuration at I-57 and I-74 is a semi-directional interchange type with two directional flyovers and two loops.

## II. Introduction

### A. Description of Project Area

This project is located in the central portion of Champaign County on the northwest side of the City of Champaign. The approximate study limits are Olympian Drive to the north, North Prospect Avenue to the east, the Norfolk Southern Railroad to the south, and North Duncan Road to the west (see **Exhibit 1: Site Map**).

The existing facility was originally constructed in 1965 and is a full conventional cloverleaf interchange connecting I-57 and I-74. Each interstate consists of four lanes (two lanes in each direction) of concrete pavement with multiple overlays. Both I-57 and I-74 have open grass medians which are typically 64 feet and 40 feet in width, respectively. The adjacent section of I-74 to the east beginning between Mattis Avenue and Prospect Avenue consists of a 26 foot paved median with concrete barrier.

I-57 is a full access controlled north-south facility that serves local, regional, and interstate traffic. It originates in Southeastern Missouri and crosses numerous other interstates before terminating in Chicago in northern Illinois. I-57 serves as a vital link in the transportation network between northern and southern Illinois and is a

Class I truck route carrying an average of 33,600 vehicles per day with approximately 28 percent truck volume (9,400 trucks per day average) within the study limits.

I-74 is a full access controlled east-west facility that serves local, regional, and interstate traffic. It crosses numerous other north-south and east-west interstates as it passes through Iowa, Illinois, Indiana, and Ohio. I-74 serves as a vital link in the transportation network between the Quad Cities on the Iowa-Illinois border and Cincinnati, Ohio and is a Class I truck route carrying an average of 38,400 vehicles per day with approximately 22 percent truck volume (8,500 trucks per day average) within the study limits.

Immediately adjacent interchanges include: Olympian Drive, an east-west other principal arterial with a grade separation structure and diamond type interchange at I-57, approximately one mile north of I-74; Prospect Avenue, a north-south minor arterial north of I-74 and other principal arterial south of I-74 with a grade separation structure and diamond type interchange at I-74, approximately one and a half miles east of I-57; I-72, a full access controlled east-west interstate facility with grade separation structures and a conventional cloverleaf type interchange at I-57, approximately two miles south of I-74; and South Prairieview Road, a north-south major collector north of I-74 and minor arterial south of I-74 with a grade separation structure and diamond type interchange with I-74, approximately five miles west of I-57.

Other adjacent cross roadways or grade separations within the study limits include: Mattis Avenue, a north-south minor arterial with a grade separation structure over I-57, approximately one half mile north of I-74, and a grade separation structure over I-74, approximately one half mile east of I-57; Bloomington Road (US 150), an east-west other principal arterial with grade separation structure over I-57 approximately one quarter mile south of I-74; the Norfolk Southern Railroad, an east-west railroad with a grade separation structure over I-57, approximately one half mile south of I-74; and Duncan Road, a north-south other principal arterial with grade separation structure over I-74, approximately one mile west of I-57.

## B. Land Use

The northeast quadrant of the I-57/I-74 interchange is primarily agricultural land use. Copper Slough passes through the center of the quadrant and there is a detention pond in the far southeast corner of the quadrant. The southeast quadrant is mostly agricultural land use with some development. Clearlake Boulevard provides access to the quadrant from Bloomington Road. There is a two story office building located in the far northeast corner of the quadrant. The southwest quadrant is also primarily agricultural land use with some development. Midwest Court provides access to the quadrant from Bloomington Road. There is a church located in the southwest corner of the quadrant and a detention pond between

Midwest Court and the interchange ramp. The northwest quadrant is mainly agricultural land use with some development. There is a detention pond carrying Copper Slough through the center of the quadrant and there is a multi-use path surrounding the detention pond.

## C. Project History

Review of record plans for the I-57 and I-74 interchange indicate that the Interchange Design Study for the existing full conventional cloverleaf interchange was completed in 1958. Construction plans for the interchange were developed in 1963, and the interchange construction was completed in 1965. The initial construction included four lanes of pavement, two in each direction, consisting of 12 foot wide lanes constructed with 10 inches of portland cement concrete pavement. The two directions of travel were separated by a 40 feet open grass median on I-74 and a 64 feet open grass median on I-57. Interchange lighting was added in 1969 to all four quadrants of the interchange. In 1990, the structures carrying I-74 over I-57 were rehabilitated, and the improvements included the complete removal and replacement of the existing superstructure. Several hot-mix asphalt overlays have been constructed on both I-57 and I-74 throughout the lifetime of the interchange.

## D. Stakeholder Coordination

Various stakeholder coordination meetings have taken place and are summarized below:

***08/20/2013: Illinois State Senator Chapin Rose***

A local stakeholder coordination meeting was held to discuss the proposed interchange type alternatives currently being considered. Future development adjacent to the interchange was discussed and any site plans being considered were requested for consideration during development of the proposed interchange types. The City of Champaign's Future Land Use Map indicates all four interchange quadrants have the potential for development as employment centers.

***01/29/2014: City of Champaign***

A meeting was conducted with Champaign city officials to review the current proposed project improvements and interchange reconstruction alternatives. Items discussed included: coordinating with the city for the proposed typical sections for Mattis Avenue and Bloomington Road; minimizing the impacts to adjacent properties in order to allow for future development around the interchange; and drainage impacts and embankment sources for the potential future construction of the interchange.

***02/19/2014: Champaign Urbana Urbanized Area Transportation Study (CUUATS)***

The proposed project improvements and interchange type alternatives were presented to the local planning organization. The project is not currently funded for design or construction, so funding options are being investigated. CUUATS and the individual entities represented were encouraged to formally submit a letter to IDOT with their preference on the interchange type alternative for consideration in selection of an alternative.

***02/19/2014: Public Information Meeting #1***

A Public Information Meeting was held through an open house format, with exhibit boards set up throughout the meeting room and handouts available for participants. Public input was encouraged and comment forms were available for all attendees. The general consensus of the attendees at the meeting was that this interchange reconstruction project is necessary. Several attendees, including members of the public, County Board and local developers, expressed that Alternates 1 and 2 were their preferred concepts. Additional discussions indicated that Alternate 1 was preferred by the local agencies, because it does not have any proposed loop ramps; and that Alternate 2 was preferred by local landowners and developers, because it had the least amount of additional right-of-way acquisition and disturbance to developable land.

***02/27/2014: NEPA-404 Merger***

The interchange reconstruction project was presented at this meeting to review the project purpose and need, the current alternatives being studied, the environmental impacts, and the project complexity and suitability for the merger process. It was determined by the agencies represented that the complexity of the anticipated project impacts were not of the magnitude to require the merger process and the agencies that have jurisdiction over the resources impacted will be coordinated with individually during the planning process.

## III. Purpose and Need

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the I-57 and I-74 interchange by eliminating deficient geometric features and reducing points of access in order to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps.

The need for the proposed improvement is to address operational, geometric, safety, and capacity deficiencies as outlined below:

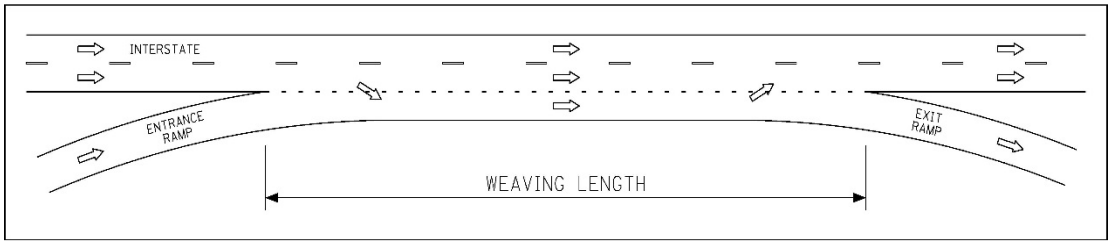
## A. Operational and Geometric Deficiencies

The existing cloverleaf interchange, including the mainline interstates and all eight ramps connecting the interstates, contains several deficiencies. A deficiency is an element or characteristic of a roadway that does not meet current Federal Highway Administration (FHWA) or Illinois Department of Transportation (IDOT) policies. The existing interchange deficiencies include the ramp design speeds, ramp weaving distances, mainline interstate shoulder widths, and I-74 median width. These deficiencies lead to poor operational and safety performance of the interchange and need to be improved.

**Exhibit 2** illustrates the ramp design speeds and policy speeds, which are both determined based on the radii of the ramp curves and the cross slope of the roadway. The ramp design speed is the speed that the ramp as originally constructed currently accommodates, and the ramp policy speed is the speed that the ramps should accommodate according to current FHWA and IDOT policies. These policies set minimum speeds based on the type of facility in order to provide adequate geometry for vehicles navigating the roadways. Interstates have high policy speeds in order to move large volumes of traffic efficiently. Therefore, ramps connecting the interstates also need to have high policy speeds in order to safely accommodate travel between the high speed interstates. When the ramp design speed is less than the policy speed, i.e. deficient, the ramp cannot safely accommodate vehicles travelling from one high speed facility to another. All of the ramp speeds for the current cloverleaf interchange configuration are deficient. As shown on **Exhibit 2**, six of the eight ramps are deficient by 10 miles per hour, and two of the eight ramps are deficient by 15 miles per hour. These deficient ramp design speeds are contributing to the crashes (see **Section III.B**) along the ramps at the existing interchange and need to be improved.

The posted speeds for I-57 and I-74 through the interchange are 70 miles per hour. A combination of different warning signs are used to alert motorists to reduce speed along the interchange ramps and approaches due to the deficiencies of each ramp. Signs include advisory exit and reduced ramp speeds, truck rollover warnings, chevrons, and large arrows. These signs add to the confusion of motorists trying to navigate from one interstate to another, and despite the implementation of these countermeasures, crashes are still occurring due to deficiencies of the ramp geometry. Ramp improvements are needed to reduce the number of crashes occurring due to the deficient ramp geometry and confusion caused by the warning signs.

A weave in an interchange is the length of roadway where an additional lane is added to allow for vehicles to increase speed to enter and reduce speed to exit the mainline interstate lanes from adjoining ramps:




The existing cloverleaf interchange has four weave locations connecting the ramps between I-57 and I-74. The actual length provided for each weave at the existing interchange is less than the IDOT policy length (see **Exhibit 2**), so all four weave lengths are deficient:

| **Table 1: Weave Deficiencies** | | | | |
|---|---|---|---|---|
| Weave location | I-57 NB | I-57 SB | I-74 EB | I-74 WB |
| Deficient by | 104 ft | 131 ft | 104 ft | 95 ft |

These deficient weave lengths create high speed differentials between the mainline vehicles and vehicles trying to enter or exit the ramps. The speed differential and merging of vehicles onto mainline without sufficient acceleration or deceleration length contribute to the concentrated crashes (see **Section III.B**) at the weave areas for the existing interchange and need to be improved or removed.

Access points along interstates are the locations where vehicles are allowed to enter and exit the freeway. The existing cloverleaf interchange configuration has a total of 16 access points, including four along each direction of travel (northbound, southbound, eastbound, and westbound). Each access point along an interstate introduces a conflict point, where drivers are forced to make decisions with vehicles entering and exiting the mainline. At the existing access points for this interchange, the deficient weave lengths and ramp curves that motorists use to access the interstate contribute to the crashes presented in **Section III.B**. A reduction in the number of access points is needed to reduce the number of crashes at this interchange.

Paved shoulders along interstates can provide an area for vehicles that leave the mainline pavement to recover and return back to the mainline lanes prior to running off onto the grass embankments on either side of the roadway. The existing paved shoulders for I-57 are 4 feet on the inside (or left edge of travel) and 10 feet on the

outside (or right edge of travel), and I-74 shoulders are 6 feet and 10 feet, respectively. The current policy for both interstates is 12 foot shoulders on both the inside and outside. Since the existing shoulders are not as wide as the current policy, the shoulder widths are deficient. The deficient shoulder widths are a contributing factor to vehicles that strike fixed objects or overturn after running off of the pavement (see **Section III.B**) and need to be improved.

The current open grass median policy width for both interstates within the study limits is 60 feet. A 40 foot open grass median is provided for I-74 in the existing configuration, therefore it does not meet current policy and is deficient. This deficiency is a contributing factor to the fatality on I-74 (see **Section III.B**), where a vehicle entered the median and was not able to recover prior to entering into oncoming traffic and collided head on with another vehicle.

## B. Safety Deficiencies

A history of crash data and resulting injuries within the study limits were reviewed for the time period between 2008 and 2012 for I-57, I-74, and the interchange ramps. Injury types are defined as follows: Type A-Injuries are incapacitating injuries that prevent a person from walking, driving, or normally continuing activities the person was capable of performing prior to the injury; Type B-Injuries are non-incapacitating injuries that were evident to observers at the scene of the crash; Type C-Injuries are any other injuries that are reported but not evident; Crashes that do not result in injury are Property Damage Only (PDO).

Between 2008 and 2012, 22 percent of the 325 total crashes within the study limits resulted in injury. Each crash is classified by the maximum injury sustained, and some crashes involve multiple injuries:

**Table 2: Total Crashes and Injuries within Project Limits (2008-2012)**

| | Fatality | A-Injury | B-Injury | C-Injury | PDO | Total |
|---|---|---|---|---|---|---|
| **Crash Type** | 1 | 21 | 37 | 12 | 254 | 325 |
| **Total Injuries** | 1 | 27 | 48 | 15 | 0 | 91 |

**Interstate 57:**

A total of 85 crashes occurred between 2008 and 2012 along I-57 within the study limits. These crashes resulted in 14 injury crashes, including one Type A-Injury crash, 10 Type B-Injury crashes, and 3 Type C-Injury crashes. 71 crashes resulted in Property Damage Only (PDO). See **Exhibits 3 and 4** for diagrams of the crashes along I-57 and **Table 3** below for a summary of crashes along I-57:

**Table 3: Interstate 57 Crashes (2008-2012)**

| Crash Type | Total | Frequency | Total Injury | Injury Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Fatality | A-Injury | B-Injury | C-Injury | PDO |
| **Animal** | 9 | 11% | | | | | | 9 |
| **Fixed Object** | 21 | 25% | 3 | | | 2 | 1 | 18 |
| **Other Non-Collision** | 1 | 1% | | | | | | 1 |
| **Other Object** | 2 | 2% | | | | | | 2 |
| **Overturned** | 11 | 13% | 5 | | 1 | 4 | | 6 |
| **Parked Motor Vehicle** | 1 | 1% | | | | | | 1 |
| **Rear End** | 12 | 14% | 3 | | | 3 | | 9 |
| **Sideswipe Same Direction** | 28 | 33% | 3 | | | 1 | 2 | 25 |
| **Subtotal** | **85** | **100%** | **14** | **0** | **1** | **10** | **3** | **71** |

**Interstate 74:**

A total of 168 crashes occurred between 2008 and 2012 along I-74 within the study limits. These crashes resulted in 45 injury crashes, including one fatality, 17 Type A-Injury crashes, 21 Type B-Injury crashes, and 6 Type C-Injury crashes. 123 crashes resulted in Property Damage Only (PDO). See **Exhibits 5 and 6** for diagrams of the crashes along I-74 and **Table 4** below for a summary of crashes along I-74:

**Table 4: Interstate 74 Crashes (2008-2012)**

| Crash Type | Total | Frequency | Total Injury | Injury Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Fatality | A-Injury | B-Injury | C-Injury | PDO |
| **Angle** | 4 | 2% | 2 | | 2 | | | 2 |
| **Animal** | 16 | 10% | 2 | | 1 | | 1 | 14 |
| **Fixed Object** | 63 | 38% | 15 | | 7 | 8 | | 48 |
| **Head On** | 1 | 1% | 1 | 1 | | | | |
| **Other Non-Collision** | 6 | 4% | 1 | | | 1 | | 5 |
| **Overturned** | 6 | 4% | 6 | | 2 | 4 | | |
| **Parked Motor Vehicle** | 3 | 2% | 2 | | 1 | 1 | | 1 |
| **Rear End** | 26 | 15% | 8 | | 3 | 3 | 2 | 18 |
| **Sideswipe Same Direction** | 38 | 23% | 6 | | 1 | 2 | 3 | 32 |
| **Turning** | 5 | 3% | 2 | | | 2 | | 3 |
| **Subtotal** | **168** | **100%** | **45** | **1** | **17** | **21** | **6** | **123** |

**Interstate I-57 and I-74 Summary:**
Fixed object and sideswipe same direction crashes account for 150 of the crashes, which is over half (58% on I-57 and 61% on I-74) of the crashes on the interstates within the study limits. The deficient weaving lengths explained in **Section III.A** are contributing to these types of crashes and need to be improved or removed. Review of the crash reports indicate that a contributing factor for these crashes is vehicles attempting to negotiate the weaving sections and ramp terminals for the deficient ramps entering and exiting I-57 and I-74. Fixed object crashes are occurring when vehicles either speed up too fast to enter the mainline, losing control and going off the roadway, or fail to slow down enough to stay on the pavement around the ramp curves, going off the roadway. Deficient shoulders along the interstates also contribute to fixed object crashes, since there is less recovery area for vehicles that begin to go off the roadway. Sideswipe crashes are occurring when vehicles are forced to enter the mainline lanes in a short distance and are unable to find an appropriate gap in traffic to pull out into the mainline lanes.

Two 5% Segments have been identified along I-74 within the study limits. 5% Segments are identified in yearly reports by the IDOT Bureau of Safety Engineering and represent the top 5% of roadway segments within the State with the highest potential for safety improvements.

The 2011 5% Segment along I-74 begins west of I-57 and extends 2000 feet to the east through the loop ramp weaving areas and I-57 outer ramp terminals (see **Exhibit 9**). A total of 72 crashes occurred between 2008 and 2012 within this 5% Segment, resulting in 15 injury crashes, including one fatality, 4 Type-A crashes, 9 Type-B crashes, and one Type-C crash. Review of the crash reports indicate that the deficient ramp design speeds and deficient weave distances discussed in **Section III.A** contribute to these crashes and improvement to these features is needed.

The 2012 5% Segment along I-74 begins 3000 feet west of Prospect Avenue and continues east through the Prospect Avenue ramp terminals to the Prospect Avenue cross roadway structure (see **Exhibit 9**). A total of 37 crashes occurred between 2008 and 2012 within this 5% Segment, resulting in 14 injury crashes, including 8 Type-A crashes, 5 Type-B crashes, and one Type-C crash. Review of the crash reports indicate that limited capacity of the interstate along this segment contributes to these crashes, so additional lanes are needed to provide additional capacity.

**Interchange Ramps:**

A total of 72 crashes occurred between 2008 and 2012 along the interchange ramps within the study limits. These crashes resulted in 12 injury crashes, including 3 Type A-Injury crashes, 6 Type B-Injury crashes, and 3 Type C-Injury crashes. 60 crashes resulted in Property Damage Only (PDO). **Exhibits 7 and 8** show diagrams of the crashes along the interchange ramps and illustrate the concentration of crashes along the deficient low speed ramp curves. See **Table 5** below for a summary of crashes along the ramps:

**Table 5: Interchange Ramp Crashes (2008-2012)**

| Crash Type | Total | Frequency | Total Injury | Injury Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Fatality | A-Injury | B-Injury | C-Injury | PDO |
| **Angle** | 1 | 1% | | | | | | 1 |
| **Fixed Object** | 55 | 76% | 6 | | 1 | 3 | 2 | 49 |
| **Other Non-Collision** | 2 | 3% | | | | | | 2 |
| **Overturned** | 11 | 15% | 6 | | 2 | 3 | 1 | 5 |
| **Parked Motor Vehicle** | 1 | 1% | | | | | | 1 |
| **Sideswipe Same Direction** | 2 | 3% | | | | | | 2 |
| **Subtotal** | **72** | **100%** | **12** | **0** | **3** | **6** | **3** | **60** |

**Interchange Ramp Summary:**

The predominant crash types for the interchange ramps are fixed object (76%) and overturned (15%), which both occur when vehicles leave the ramp pavement. These crash types account for 66 of the 72 total crashes for the interchange ramps. Review of the crash reports for the interchange ramps indicates that the primary cause for these crashes is excessive speed for the ramp curves and configuration. Motorists are unable to slow their vehicles in order to negotiate the deficient ramp curves as explained in **Section III.A**. The vehicles go off the pavement and either strike fixed objects or overturn. The interchange ramps need to be improved to reduce the number of crashes that are occurring due to the deficient ramp curves and design speeds.

## C. Capacity Deficiencies

The design year for this project is 2040. Traffic volumes on all roadways within the study limits are expected to increase over time. **Table 6** illustrates the forecasted increase in traffic volumes (provided by IDOT) for the design year of 2040:

| **Table 6: Average Daily Traffic (ADT)** | | | |
|---|---|---|---|
| | **2011 ADT** | **2040 ADT** | **% Increase** |
| **Interstate 57** | | | |
| South of I-74 | 33,600 | 49,900 | 49% |
| North of I-74 | 23,000 | 33,400 | 45% |
| **Interstate 74** | | | |
| West of I-57 | 27,800 | 41,800 | 50% |
| East of I-57 | 38,400 | 59,900 | 56% |
| **Interchange ramps** | | | |
| I-57 NB to I-74 EB | 5,700 | 8,800 | 54% |
| I-74 EB to I-57 SB | 3,500 | 4,550 | 30% |
| I-57 SB to I-74 EB | 1,950 | 2,650 | 36% |
| I-74 EB to I-57 NB | 600 | 1,000 | 67% |
| I-74 WB to I-57 SB | 5,900 | 9,900 | 68% |
| I-57 NB to I-74 WB | 3,600 | 4,950 | 38% |
| I-74 WB to I-57 NB | 2,000 | 2,650 | 33% |
| I- 57 SB to I-74 WB | 700 | 1,200 | 71% |

The operation of the existing I-57 and I-74 interchange has been evaluated for the increased traffic in the 2040 future conditions and several other criteria including Level of Service, speed differential, and ramp capacity.

Level of Service is a measure of the quality of traffic flow for a specific section of roadway. Levels of Service characterize the operating conditions of a roadway, which include speed, travel time, and freedom to maneuver. Levels of Service values can range from LOS A, which is the least congested or free flow, to LOS F, which is the most congested or breakdown of flow. According to The Bureau of Design and Environment Manual, Figure 44-5.A, acceptable Levels of Service for I-57 and I-74 are LOS C or better.

The Highway Capacity Manual (HCM) was used to determine the 2011 and 2040 Levels of Service for the existing I-57 and I-74 cloverleaf interchange (see **Table 7**). These Levels of Service represent the existing geometric characteristics or "no-build" scenario and do not account for adding lanes to the freeways or reconfiguring the

interchange ramps. For the design year of 2040, I-74 will have a Levels of Service D eastbound on both sides of I-57 and westbound on the east side of I-57. These Levels of Service do not meet the minimum design criteria of LOS C, so they are deficient. Improvement is needed to provide additional capacity.

| Table 7: Levels of Service - Existing Cloverleaf Interchange (HCM) | | | | |
|---|---|---|---|---|
| | 2011 | | 2040 | |
| | AM | PM | AM | PM |
| **Northbound Interstate 57** | | | | |
| South of I-74 | B | B | B | B |
| North of I-74 | A | B | A | B |
| **Southbound Interstate 57** | | | | |
| South of I-74 | B | B | B | C |
| North of I-74 | B | B | B | B |
| **Eastbound Interstate 74** | | | | |
| West of I-57 | C | B | **D** | B |
| East of I-57 | C | B | **D** | C |
| **Westbound Interstate 74** | | | | |
| West of I-57 | B | B | B | C |
| East of I-57 | B | C | C | **D** |

The loop ramps for the existing cloverleaf interchange have limited traffic capacity of approximately 800 vehicles per hour due to the low design speed of the ramp curves. The 2040 projected traffic volume for Ramp E (westbound I-74 to southbound I-57) is 1025 vehicles per hour, exceeding this capacity value of 800 vehicles per hour by more than 25%. If the traffic demand for a ramp exceeds the capacity, traffic will back up onto the interstate. Improvements are needed to prevent traffic from backing up onto the interstate.

## IV. Interchange Type Concepts

### A. No-Build Concept

The existing full conventional cloverleaf interchange consists of four loop ramps, four wrap around outer ramps, four mainline weaving segments, and sixteen points of access off of the interstates. See **Exhibit 10** for an aerial image of the existing interchange and **Exhibit 11** for the existing interchange ramp radii. As stated previously in **Section III**, the existing interchange without improvement has several deficiencies including operations, geometrics, safety, and capacity. All of these deficiencies could be mitigated by adding lanes to the interstates and reconstructing

the interchange to meet current design criteria. Therefore, the No-Build Concept is not considered adequate to be further considered as a proposed interchange type.

**B. Development of Proposed Interchange Type Concepts**

Initial coordination of the interchange type concepts included identifying preferred components and characteristics of the proposed interchange. AASHTO's "A Policy on Geometric Design of Highways and Streets" and the Institute of Transportation Engineer's "Freeway and Interchange Geometric Design Handbook" were referenced for the various types of interchanges to be considered. The design criteria used for all roadways within the anticipated limits of reconstruction for this interchange are shown in **Exhibit 12**.

For the purpose of the initial interchange type screening in this report, the mainline design speed is 70 mph. IDOT BDE Manual Update - Procedure Memorandum 14-02 has recently been issued and changes the mainline design speed to 75 mph. It was agreed in the March 18, 2014 Bi-Monthly Coordination Meeting that the ITS will be completed with a 70 mph mainline design speed. Subsequently at the June 6, 2014 District coordination meeting, it was agreed to further study and evaluate the top two alternatives from the initial screening utilizing the increased mainline design speed (see **Section VII**). The increased mainline design speed of 75 mph and subsequent ramp design speed changes will also be implemented in following documents after selection of a preferred alternative.

Selection variables for proposed interchange consideration included increased ramp design speeds, use of loop ramps, elimination of mainline weaves, number of access points off of the interstates, number, length, and area of proposed structures, and impacts to the surrounding land. Standard entrance and exit terminals are utilized for all proposed interchange access points with the exception of the terminals on the north leg of I-57 between I-74 and Olympian Drive and the terminals on the west side of Prospect Avenue along I-74, which use standard entrance and exit terminals with an auxiliary lane.

A meeting was conducted at the IDOT District 5 office in November of 2012 to review the alternatives studied to date and identify which alternatives or their variations to consider for further studies. These alternatives included:

Alternate A: Semi-Directional Interchange Type with Three Loops

- Consists of four outer ramps, three loops, and one semi-directional flyover ramp.
- Four sub-alternatives were considered with loop ramp speeds varying from 30 to 45 mph.
- Includes two weaves, one along I-57 and one along I-74.

- These concepts were not selected for further studies because they did not eliminate the mainline weave.

Alternate B: Semi-Directional Interchange Type with Two Diagonal Loops

- Consists of four outer ramps, two diagonal loops, and two flyover ramps (with use of both directional and semi-directional types).
- Six sub-alternatives were considered with loop ramp speeds varying from 35 to 40 mph, variable semi-directional ramp radii, use of transposed ramps, and flyover ramps crossing over loop ramps.
- Eliminates the mainline weave.
- Two of these concepts were identified to be studied further, and they were later named Alternate 2 and Alternate 3. These were selected because they eliminated the mainline weave and had less impact on the adjacent properties compared to other alternatives.

Alternate C: Semi-Directional Interchange Type with Two Adjacent Loops

- Consists of four outer ramps, two adjacent loops, and two semi-directional flyover ramps.
- Four sub-alternatives were considered with loop ramp speeds varying from 30 to 45 mph.
- Includes one weave along I-74.
- These concepts were not selected for further studies because they did not eliminate the mainline weave.

Alternate D: Semi-Directional Interchange Type with One Loop

- Consists of four outer ramps, one loop, and three semi-directional flyover ramps.
- Four sub-alternatives were considered with loop ramp speeds varying from 30 to 45 mph.
- Eliminates the mainline weave.
- These concepts were not selected for further studies because leaving only one loop ramp was not desirable.

Alternate E: Full Directional Interchange Type

- Consists of four outer ramps and four directional flyover ramps.
- Three sub-alternatives were considered with varying flyover ramp geometry.
- Eliminates the mainline weave.
- Two of these concepts were identified to be studied further, and they were later named Alternate 1 and Alternate 5. These concepts were selected because they eliminated the mainline weave and all loop ramps.

Alternate F: Semi-Directional Interchange Type with No Loops

- Consists of four outer ramps and four semi-directional flyover ramps.
- Two sub-alternatives were considered with varying flyover ramp geometry.
- Eliminates the mainline weave.
- One of these concepts was identified to be studied further, and it was later named Alternate 4. This concept was selected because it eliminated the mainline weave and all loop ramps.

Alternate G: Circle Interchange

- Consists of an outer ring from which all ramp traffic merges and diverges to reach their desired direction of travel.
- Eliminates the mainline weave.
- These concepts were not selected for further studies because of the weaving movements on the ramps and cross slope break over between ramps.

The addition of through lanes along the interstates for the existing interchange configuration was considered, but due to the numerous deficiencies of the interchange ramps detailed in this study, it was not further considered as a proposed alternate to address the project Purpose and Need. A proposed full cloverleaf type interchange was also discussed as an alternative for the replacement of the existing full cloverleaf interchange. However, even with collector distributor roadways or the addition of a third lane along the interstate, this interchange type concept still has four weaves to navigate between interstates and was therefore not further considered as a desirable alternative. The full cloverleaf also has substantial right-of-way impacts due to the large loop ramps to accommodate higher design speeds in each quadrant.

After review of all alternatives, five concepts were selected for further investigation and initiation of this Interchange Type Study.

## C. Selected Interchange Type Concepts

### 1. Alternate 1: Full Directional

This proposed full directional interchange type concept is illustrated in **Exhibit 13**. This interchange type concept does not include any inner loop ramps and eliminates the mainline weaving movements within the interchange. The proposed design consists of eight access points off of the interstates, which is half of the points for the existing cloverleaf interchange. The use of minor convergences and divergences along the ramps reduces the number of entrance and exit terminals from four in each direction of travel to two. All ramps in the full directional interchange type are designed for a 50 mph design speed. This alternate consists of compact ramp flyovers

centered around the intersection of I-57 and I-74. Flyover Ramps D and E are carried over flyover Ramps C and F, which cross over I-57 and I-74.

2. **Alternate 2: Semi-Directional with Directional Flyovers and Two Loops**
   This interchange type concept is a semi-directional interchange with directional flyovers and two loops as illustrated in **Exhibit 14**. The loop ramps are placed diagonally in order to eliminate any mainline weaving movements within the interchange. The proposed design consists of twelve access points off of the interstates, compared to sixteen for the existing cloverleaf interchange. The use of minor convergences and divergences in the northeast and southwest quadrants reduces the number of entrance and exit terminals from four in each direction for the existing cloverleaf to three for the proposed concept. Loop ramps are designed for a 40 mph design speed, while all other ramps are designed for a 50 mph design speed. Outer Ramps B and G cross over loop Ramps C and F; and flyover Ramps D and E are carried over I-57, I-74, and loop Ramps C and F.

3. **Alternate 3: Semi-Directional with Semi-Directional Flyovers and Two Loops**
   The third interchange type concept is a semi-directional interchange with semi-directional flyovers and two loops as illustrated in **Exhibit 15**. Similar to Alternate 2, the loop ramps are placed diagonally in order to eliminate any mainline weaving movements within the interchange. The proposed design consists of twelve access points off of the interstates, compared to sixteen for the existing cloverleaf interchange. The use of minor convergences and divergences in the northeast and southwest quadrants reduces the number of entrance and exit terminals from four in each direction for the existing cloverleaf to three for the proposed concept. Loop ramps are designed for a 40 mph design speed, while all other ramps are designed for a 50 mph design speed. Outer Ramp B crosses over loop Ramp C; flyover Ramp D carries over outer Ramp B, I-57, and I-74; and flyover Ramp E crosses over flyover Ramp D, I-57, outer Ramp H, I-74, and loop Ramp C.

4. **Alternate 4: Semi-Directional with No Loops**
   The proposed semi-directional interchange concept with no loops is illustrated in **Exhibit 16.** Similar to Alternate 1, this interchange type concept does not include any inner loop ramps and eliminates the mainline weaving movements within the interchange. The proposed design consists of eight access points off of the interstates, which is half of the points for the existing cloverleaf interchange. The use of minor convergences and divergences along the ramps reduces the number of entrance and exit terminals from four in each direction of travel to two. All ramps in the semi-directional interchange type are designed for a 50 mph design speed. Flyover Ramp C crosses over outer Ramp H, I-74, and I-57; flyover Ramp D carries over outer Ramp B, I-57, flyover Ramp C, I-74, and outer Ramp G; flyover Ramp E

crosses over outer Ramp G, I-57, outer Ramp H, flyover Ramp C, and I-74; and flyover Ramp F crosses over outer Ramp A, flyover Ramp C, I-74, outer Ramp G, flyover Ramp D, and I-57.

5. **Alternate 5: Full Directional with Two Convex Ramps**
   The proposed full directional interchange type concept is illustrated in **Exhibit 17**. This interchange type concept does not include any inner loop ramps and eliminates the mainline weaving movements within the interchange. The proposed design consists of eight access points off of the interstates, which is half of the points for the existing cloverleaf interchange. The use of minor convergences and divergences along the ramps reduces the number of entrance and exit terminals from four in each direction of travel to two. All ramps in the full directional interchange type are designed for a 50 mph design speed. This alternate consists of ramp flyovers that cross over each other and are spread further out over the center of the I-57 and I-74 intersection than Alternate 1. Flyover Ramp C crosses over flyover Ramps F and D, I-74, I-57, and flyover Ramp E; flyover Ramp D crosses over I-74, I-57, and flyover Ramp F; flyover Ramp E crosses over I-74 and I-57; flyover Ramp F crosses over flyover Ramp C, I-74, flyover Ramp E, and I-57.

All concepts include widening mainline I-57 and I-74 to three lanes in each direction and providing a closed median with barrier wall. In order to open three lanes through the interchange and provide policy lane adds/drops and spacing from ramp terminals, the mainline interstate improvements are anticipated to extend approximately a quarter mile west of Duncan Road on I-74 for Alternates 1, 4, and 5, to Duncan Road on I-74 for Alternates 2 and 3, two thirds of a mile south of the Norfolk Southern Railroad on I-57 for all alternates, to the Prospect Avenue west leg ramp terminals on I-74 for all alternates, and one mile north of Olympian Drive on I-57 for all alternates. These anticipated construction limits have been included in the cost estimates for each alternative.

Mainline I-57 and I-74 remain on the existing horizontal alignments, while a grade raise of approximately 3 feet is anticipated on I-74 to meet clearance requirements for the proposed structures over reconstructed I-57, which will remain at approximately the same profile as existing. Reconstruction of adjacent cross roadways and structures along Bloomington Road, Mattis Avenue, and Duncan Road (Alternates 1, 4, and 5 only) is also anticipated as a result of the mainline widening and ramp reconstruction and to meet policy clearances. Proposed typical sections for roadway reconstruction can be seen in **Exhibits 18-24**. A coordination meeting was conducted with the City of Champaign and the Hensley Township on July 17, 2014 to review these typical sections, and coordination will continue as the project progresses.

## V. Evaluation of Proposed Interchange Alternatives

### A. Traffic and Operational Analysis

The proposed interchange type concepts were analyzed using CORridor SIMulation (CORSIM), a microscopic simulation model that represents movements of individual vehicles and includes the influence of driver behavior. CORSIM allows for a detailed comparison between alternatives in order to quantify and differentiate the traffic operations of the proposed interchange systems.

CORSIM is also used to compare the safety differences between the interchange alternatives by quantifying the number of conflicts within each simulation, where a conflict is defined as a moment when the time-to-collision between two simulated vehicles is less than or equal to 2.0 seconds. The number of conflicts is not an estimation of the number of collisions that are likely to occur, but rather a surrogate for the potential exposure to conflicts.

The 2040 Design Hourly Volumes (DHV's) for the I-57 and I-74 interchange were provided by IDOT. Trucks account for approximately 28% of the volume on I-57, 22% on I-74, and 21% on the ramps. The existing peak hour directional splits for I-57 and I-74 were determined from IDOT's Traffic Count Database System (http://www.ms2soft.com/tcds/tsearch.asp?loc=Idot&mod=). Determining the directional distribution for the interstate included averaging on both sides of the interchange to achieve balanced volumes. See **Exhibit 25** for the 2040 DHV's for the existing cloverleaf interchange.

Adjacent interchange ramp volumes at Prospect Avenue, Prairieview Road, Olympian Drive, and I-72 were calculated from the 2011 ADT's from IDOT's Traffic Counts (http://www.gettingaroundillinois.com). The 2040 ADT for each ramp was projected from the 2011 ADT's and based on the average growth rate of the mainline provided by IDOT. The 2040 ramp DHV was then estimated based on the percentage of mainline DHV versus ADT.

In addition to the following traffic and operational analysis provided for each alternative below, see **Table 9**: 2040 Peak Hour Analysis, **Table 10**: Ramp Travel Times, and **Table 11**: CORSIM Conflict Analysis in **Section VI.A**.

***Existing Cloverleaf***

The existing cloverleaf interchange was analyzed for the projected 2040 design hourly traffic. See **Exhibit 25** for the projected traffic volumes and Levels of Service for the different components of the interchange. Without construction of a third thru lane on I-74, eastbound traffic between the I-57 ramps and Prospect Avenue operates at a LOS D. This does not meet the minimum design criteria of LOS C for an urban interstate. In addition, the projected 2040 DHV is 3,153 for I-74 eastbound

and 2,958 for I-74 westbound, and the design criteria warrants a third thru lane for DHV's exceeding 2,800. See **Table 11** for a comparison of the potential conflict points for the existing cloverleaf and the proposed alternatives.

***Alternate 1: Full Directional***

The full directional interchange type concept was analyzed for the projected 2040 design hourly traffic. **Exhibit 26** illustrates the projected traffic volumes and Levels of Service for the different components of the interchange. With the lane additions on I-57 and I-74 and increased ramp design speed of 50 mph resulting from larger ramp radii and elimination of the loop ramps, the full directional alternative offers increased capacity over the existing cloverleaf.

The overall travel time through the full directional interchange is less than the existing cloverleaf, and the overall travel time is the shortest of any of the proposed alternatives. All of the proposed ramps are directional with a design speed of 50 mph and the total of all the ramp lengths is approximately 6.2 miles. The total travel time through all of the ramps in the interchange from a common point on the interstate compared to other alternatives is estimated to be 11 minutes and 56 seconds.

Due to the reduction of access points off the interstate and elimination of the short weaving sections, the full directional interchange has fewer potential conflicts than the existing cloverleaf interchange. The conflict analysis for the full directional interchange predicts a 56% reduction in the total number of conflicts from the no-build alternative.

***Alternate 2: Semi-Directional with Directional Flyovers and Two Loops***

The projected 2040 design hourly traffic was used to analyze the semi-directional interchange type concept with directional flyovers and two loops. **Exhibit 27** illustrates the projected traffic volumes and Levels of Service for the different components of the interchange. With the lane additions on I-57 and I-74 and increased design speed of 40 mph for the loop ramps and 50 mph for all other ramps, this alternative offers increased capacity over the existing cloverleaf.

The overall travel time through the semi-directional interchange concept with directional flyovers and two loops is less than the existing cloverleaf, and the overall travel time is the third shortest of any of the proposed alternatives. All of the proposed ramps have design speeds higher than the existing cloverleaf, and the total of all the ramp lengths is approximately 5.9 miles. The total travel time through all of the ramps in the interchange from a common point on the interstate compared to other alternatives is estimated to be 13 minutes and 1 second.

Due to the reduction of access points off the interstate and elimination of the short weaving sections, the semi-directional interchange concept with directional flyovers

and two loops has fewer potential conflicts than the existing cloverleaf interchange. The conflict analysis for this interchange concept predicts a 52% reduction in the total number of conflicts from the no-build alternative.

***Alternate 3: Semi-Directional with Semi-Directional Flyovers and Two Loops***

The semi-directional interchange type concept with semi-directional flyovers and two loops was analyzed for the projected 2040 design hourly traffic. **Exhibit 28** illustrates the projected traffic volumes and Levels of Service for the different components of the interchange. With the lane additions on I-57 and I-74 and increased design speed of 40 mph for the loop ramps and 50 mph for all other ramps, this alternative offers increased capacity over the existing cloverleaf.

The overall travel time through the semi-directional interchange concept with semi-directional flyovers and two loops is less than the existing cloverleaf, and the overall travel time is the longest of any of the proposed alternatives. All of the proposed ramps have design speeds higher than the existing cloverleaf, and the total of all the ramp lengths is approximately 7.0 miles. The total travel time through all of the ramps in the interchange from a common point on the interstate compared to other alternatives is estimated to be 14 minutes and 3 seconds.

Due to the reduction of access points off the interstate and elimination of the short weaving sections, the semi-directional interchange concept with semi-directional flyovers and two loops has fewer potential conflicts than the existing cloverleaf interchange. The conflict analysis for this interchange concept predicts a 52% reduction in the total number of conflicts from the no-build alternative.

***Alternate 4: Semi-Directional with No Loops***

The projected 2040 design hourly traffic was used to analyze the semi-directional interchange type concept with no loops. **Exhibit 29** illustrates the projected traffic volumes and Levels of Service for the different components of the interchange. With the lane additions on I-57 and I-74 and increased ramp design speed of 50 mph resulting from larger ramp radii and elimination of the loop ramps, the semi-directional alternative with no loops offers increased capacity over the existing cloverleaf.

The overall travel time through the semi-directional interchange with no loops is less than the existing cloverleaf, and the overall travel time is the second longest of any of the proposed alternatives. All of the proposed ramps have a design speed of 50 mph and the total of all the ramp lengths is approximately 8.2 miles. The total travel time through all of the ramps in the interchange from a common point on the interstate compared to other alternatives is estimated to be 13 minutes and 36 seconds.

Due to the reduction of access points off the interstate and elimination of the short weaving sections, the semi-directional interchange with no loops has fewer potential conflicts than the existing cloverleaf interchange. The conflict analysis for this interchange concept predicts a 33% reduction in the total number of conflicts from the no-build alternative.

***Alternate 5: Full Directional with Two Convex Ramps***

The full directional interchange type concept with two convex ramps was analyzed for the projected 2040 design hourly traffic. **Exhibit 30** illustrates the projected traffic volumes and Levels of Service for the different components of the interchange. With the lane additions on I-57 and I-74 and increased ramp design speed of 50 mph resulting from larger ramp radii and elimination of the loop ramps, the full directional alternative with two convex ramps offers increased capacity over the existing cloverleaf.

The overall travel time through the full directional interchange concept with two convex ramps is less than the existing cloverleaf, and the overall travel time is the second shortest of any of the proposed alternatives. All of the proposed ramps are directional with a design speed of 50 mph and the total of all the ramp lengths is approximately 7.0 miles. The total travel time through all of the ramps in the interchange from a common point on the interstate compared to other alternatives is estimated to be 12 minutes and 16 seconds.

Due to the reduction of access points off the interstate and elimination of the short weaving sections, the full directional interchange concept with two convex ramps has fewer potential conflicts than the existing cloverleaf interchange. The conflict analysis for this interchange type predicts a 41% reduction in the total number of conflicts from the no-build alternative.

## B. Operational Safety Analysis

An Operational Safety Analysis was conducted for the existing interchange and the proposed alternatives for a study period of 2011-2031 and is included as **Attachment 1**. The analysis consisted of two primary components: a Road Safety Audit and a Safety Analysis. The Road Safety Audit identified deficiencies of the existing cloverleaf interchange and provided recommendations for safety improvements. Each of the proposed alternatives will address the deficiencies identified and improve the safety of the interchange. The Safety Analysis included use of the Enhanced Interchange Safety Analysis Tool (ISATe) to predict future crash rates for the existing cloverleaf interchange and all proposed alternatives. The ISATe is to be included in a future edition of the Highway Safety Manual and is not yet an officially published document, although the IDOT Bureau of Safety Engineering has reviewed the software implementation and provided comments. Those comments are incorporated in the latest iteration of the analysis and the following results:

***Existing: Cloverleaf***
741 predicted crashes for the study period, including 118 predicted KAB crashes.
1195 expected crashes for the study period, including 144 expected KAB crashes.

***Alternate 1: Full Directional***
802 predicted crashes for the study period, including 117 predicted KAB crashes.

***Alternate 2: Semi-Directional with Directional Flyovers and Two Loops***
791 predicted crashes for the study period, including 114 predicted KAB crashes.

***Alternate 3: Semi-Directional with Semi-Directional Flyovers and Two Loops***
814 predicted crashes for the study period, including 121 predicted KAB crashes.

***Alternate 4: Semi-Directional with No Loops***
840 predicted crashes for the study period, including 124 predicted KAB crashes.

***Alternate 5: Full Directional with Two Convex Ramps***
825 predicted crashes for the study period, including 121 predicted KAB crashes.

## C. Guide Signing

***Alternate 1: Full Directional***
A preliminary layout of the proposed interstate guide signing along I-57 and I-74 for Alternate 1 (Full Directional Interchange Type) is illustrated on **Exhibit 31**. With the elimination of the loop ramps and reduction in access points off of the interstates, the proposed guide signs change significantly from the existing cloverleaf. The two "A" and "B" exits for each leg are no longer required, and only one exit sign off the interstate needs to be provided for each leg. Once vehicles exit the interstate, additional directional information is provided along the ramp for the divergence of traffic to the two directions. Advance guide signs are also revised to display the new configuration without the use of "A" and "B" exits. Additional information including the route shield and cardinal direction has been added to the supplemental guide signs to indicate the direction of travel after the single exit. "Exit Only" signs have also been added for I-57 northbound and southbound between I-57 and Olympian Drive, and I-74 eastbound between I-57 and Prospect Avenue. In the proposed configuration, these lanes are considered auxiliary lanes and drop off at the adjacent ramp terminals. As a result of eliminating the loop ramps and reducing the number of mainline access points, the guide signing plan for Alternate 1 is simplified compared to existing, and the total number of exit signs along the interstate is reduced.

***Alternate 2: Semi-Directional with Directional Flyovers and Two Loops***

A preliminary layout of the proposed interstate guide signing along I-57 and I-74 for Alternate 2 (Semi-Directional Interchange Type with Loops) is illustrated on **Exhibit 32.** This signing concept is similar to Alternate 1, except that the "A" and "B" exit signing is still required along I-57 due to the use of the loop ramps.

***Alternate 3: Semi-Directional with Semi-Directional Flyovers and Two Loops***

A preliminary layout of the proposed interstate guide signing along I-57 and I-74 for Alternate 3 (Semi Directional Interchange Type with Loops) is illustrated on **Exhibit 33**. This signing concept is similar to Alternate 2, except that in order to keep the geometry of this interchange type alternative compressed and minimize right-of-way impacts, the directional split on the I-74 eastbound ramp after the exit terminal is transposed. Vehicles that want to ultimately go right (south) choose the left split in the ramp and vehicles that want to go left (north) choose the right split in the ramp.

***Alternate 4: Semi-Directional with No Loops***

A preliminary layout of the proposed interstate guide signing along I-57 and I-74 for Alternate 4 (Semi Directional Interchange Type) is illustrated on **Exhibit 34**. This signing concept is similar to Alternate 1, except that in order to keep the geometry of this interchange type alternative compressed and minimize right-of-way impacts, each of the directional splits on the ramps after the exit terminal is transposed. Vehicles that want to ultimately go right choose the left split in the ramp and vehicles that want to go left choose the right split in the ramp.

***Alternate 5: Full Directional with Two Convex Ramps***

A preliminary layout of the proposed interstate guide signing along I-57 and I-74 for Alternate 5 (Full Directional Interchange Type with Two Convex Ramps) is illustrated on **Exhibit 35**. This signing concept is similar to Alternate 1.

## D. Proposed Structures

It is anticipated that all interchange type concepts will require the removal and replacement of the structures carrying I-74 over I-57, Bloomington Road over I-57, Mattis Avenue over I-74, and Mattis Avenue over I-57. Alternates 1, 4 and 5 will require the removal and replacement of the structure carrying Duncan Road over I-74. Reconstruction of these structures is anticipated in order to accommodate the proposed roadway typical sections on the bridge deck, provide the clear opening underneath the structure for the proposed under passing roadway and ramp terminals, and to provide the design vertical clearance of 16'-9".

Proposed ramp structures are also anticipated at new locations for each interchange type concept where the ramps cross over the interstates or other ramps. Variable widths for the inside shoulder on the ramp structures are anticipated in order to

provide adequate sight distance along the inside of curves where the 42" parapet wall could restrict visibility.

The proposed structure lengths and number of spans vary based on the interchange type concept. The construction of these structures has been considered in the cost estimate for each alternative. Proposed typical sections for these structures can be seen on **Exhibits 36-39** and the structure limits are depicted in plan view on **Exhibits 13-17**.

## E. Maintenance of Traffic

The maintenance of traffic during staged construction of the I-57 and I-74 interchange and associated improvements is a critical component of the proposed project. Construction will need to be completed while maintaining traffic at all times on I-57 and I-74 regardless of the recommended alternative. Use of temporary pavement will be minimized, but will be required for some temporary ramp connections and tie-ins. Short-term duration closures could be considered for completion of portions of ramp construction items in lieu of temporary pavement or detour routes.

Each alternative generally follows the same sequencing for staging of construction to maintain traffic. See **Exhibits 40-44** for preliminary construction staging and maintenance of traffic concepts for each of the proposed alternatives. The cross roadways are constructed first in order to provide the necessary opening below for the proposed interstate reconstruction and any associated ramp terminals. Outer ramps or portions thereof that do not interfere with the existing ramp configuration are constructed next. After traffic is placed onto the proposed outer ramps, the proposed flyover and loop ramps can be constructed. Proposed ramp geometry, location of proposed substructure units, and staging of individual ramps will be evaluated in order to maintain traffic on the existing loops with minimal disturbance and limited use of temporary pavement. Upon completion of the proposed ramp construction, placement of traffic on the proposed ramps, and closure of the existing loop ramps, the mainline I-57 and I-74 pavement and I-74 structure can be constructed. Proposed interstate staging will allow for two lanes of travel in each direction, which will require temporary widening of one existing structure to maintain traffic during construction of the first proposed structure. Temporary connections to the proposed ramps will also be provided during the mainline construction. Specific staging requirements unique to each individual interchange type alternate are described below.

### *Alternate 1: Full Directional*

After completing construction of the cross roadways and structures, all of outer ramps G and H, portions of outer ramps A and B, and portions of all flyover ramps are constructed. Next, temporary connections for outer ramps A and B will be

constructed. Traffic will remain in the existing configuration until completion of this construction, upon which the proposed outer ramps will be opened to traffic while maintaining traffic on the existing loop ramps. Flyover ramps C, D, E, and F are completed next, allowing for closure of the existing loop ramps, placement of traffic on all proposed ramps, and construction of the proposed mainline pavement and I-74 structure.

***Alternate 2: Semi-Directional with Directional Flyovers and Two Loops***

Temporary connections for existing outer ramp B and loop ramp G are constructed along with the cross roadways and structures. Traffic is shifted to the temporary ramp B and G configuration, allowing for construction of all of outer ramps B and G and portions of flyover ramps D and E. Loop ramps C and F are then constructed after shifting traffic to the proposed outer ramps B and G. After the existing loop ramps C and F are closed and traffic is placed onto the two proposed loop ramps, flyover ramps D and E can be constructed (temporary connections will be required for the loops along I-74 due to the proposed grade raise). Traffic can then be shifted to the proposed flyover ramps D and E, allowing for closure of the existing loops ramps D and E and construction of the mainline pavement, I-74 structure, and outer ramps A and H.

***Alternate 3: Semi-Directional with Semi-Directional Flyovers and Two Loops***

All of outer ramps B and G and flyover ramps D and E are constructed after completion of the cross roadways and structures and while traffic is maintained in the existing configuration. After placement of traffic on the proposed ramps previously constructed and closure of the existing outer ramps B and G and existing loop ramps D and E, the proposed outer ramps A and H and loop ramps C and F can be constructed. After traffic is placed on the proposed loop ramps (temporary connections will be required for the loops along I-74 due to the proposed grade raise) and all existing loop ramps are closed, the mainline roadways and I-74 structure can be constructed.

***Alternate 4: Semi-Directional with No Loops***

While maintaining traffic in the existing configuration, all of outer ramps B and H, portions of outer ramps A and G, and a temporary connection for ramp A are all constructed after completion of the cross roadways and structures. Traffic is shifted to the proposed outer ramps A, B, and C, and the flyover ramps D, E, and F are constructed along with the completion of proposed permanent ramp A. After opening flyover ramps D, E, and F to traffic, the existing loops D, E, and F can be closed and flyover ramp C can be constructed. Traffic is then placed onto the proposed flyover ramp C, and a temporary connection for the existing ramp G is constructed to allow for completion of the proposed ramp G. After all existing loop ramps are closed to traffic, construction can be completed on the mainline roadways and I-74 structure.

***Alternate 5: Full Directional with Two Convex Ramps***

After completing construction of the cross roadways and structures, all of outer ramps A, G, and H, portions of outer ramp B, and portions of all flyover ramps are constructed. Next, a temporary connection for outer ramp B will be constructed. Traffic will remain in the existing configuration until completion of this construction, upon which the proposed outer ramps will be opened to traffic while maintaining traffic on the existing loop ramps. Flyover ramps C, D, E, and F are completed next, allowing for closure of the existing loop ramps, placement of traffic on all proposed ramps, and construction of the proposed mainline pavement and I-74 structure.

## F. Environmental Impacts

**Wetlands**

A wetland survey was conducted by the Wetland Science Program of the Illinois Natural History Survey on June 13-14, 2013. All potential wetlands within the specified study area were examined. Sixteen sites met the three criteria of a wetland established in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* [U.S. Army Corps of Engineers (USACE) 2010] and were, therefore, determined to be wetlands.

The following is a summary of the potential wetland impacts for each of the five alternates. The estimated impact areas were calculated based on the preliminary right-of-way limits for each alternate. Exhibits depicting the wetland areas in proximity to each of the project alternates are included in **Exhibits 45-49**. The estimated wetland impacts are assumed to be a conservative estimate since the impact areas are based only on the preliminary right-of-way limits. Measures to avoid and minimize potential impacts will be taken into consideration in accordance with IDOT BDE Manual Section 26-8. Therefore, the actual wetland impact areas could be less and would be determined during the design phase of the project once further details, including grading limits, have been identified.

***Alternate 1: Full Directional***

Based on the limits of the preliminary right-of-way for this alternate, six (6) wetlands would likely be impacted, one of which would only be partially impacted. The estimated total area of wetland impacts would be approximately 4.02 acres.

***Alternate 2: Semi-Directional with Directional Flyovers and Two Loops***

Based on the limits of the preliminary right-of-way for this alternate, six (6) wetlands would likely be impacted, one of which would only be partially impacted. The estimated total area of wetland impacts would be approximately 3.52 acres.

***Alternate 3: Semi-Directional with Semi-Directional Flyovers and Two Loops***
Based on the limits of the preliminary right-of-way for this alternate, six (6) wetlands would likely be impacted, one of which would only be partially impacted. The estimated total area of wetland impacts would be approximately 4.72 acres.

***Alternate 4: Semi-Directional with No Loops***
Based on the limits of the preliminary right-of-way for this alternate, eight (8) wetlands would likely be impacted, one of which would only be partially impacted. The estimated total area of wetland impacts would be approximately 7.00 acres.

***Alternate 5: Full Directional with Two Convex Ramps***
Based on the limits of the preliminary right-of-way for this alternate, seven (7) wetlands would likely be impacted, one of which would only be partially impacted. The estimated total area of wetland impacts would be approximately 5.75 acres.

**Streams and Other Water Bodies**
Copper Slough is a southeast flowing creek located within the project limits. The slough enters the project limits in the northwest quadrant and crosses under I-57. It then bisects the northeast quadrant before flowing into a detention pond in the far southeast corner of the northeast quadrant. The slough crosses under I-74 and continues south away from the project area. The slough is not a permanent water body. According to the Illinois Water Quality Report (2012), this stretch of Copper Slough has been assessed as "not supporting" for aquatic life, likely caused by channelization and contaminated sediments. According to the wetland report, the slough is now essentially a grassed waterway with no discernible bed or bank.

There are two detention ponds located within the project area: a detention pond in the southeast corner of the northeast quadrant carrying Copper Slough; and a detention pond in the northeast corner of the southeast quadrant, near the two story office building.

The following is a summary of the potential impacts to streams and other water bodies for each of the five alternates. Similar to the wetlands, the estimated impact areas were calculated based on the preliminary estimated right-of-way limits for each alternate. Exhibits depicting the streams and other water bodies for each of the project alternates are included in **Exhibits 45-49**.

***Alternate 1: Full Directional***
Based on the limits of the preliminary right-of-way for this alternate, 1.47 acres from one (1) pond would likely be impacted, and 1,970 feet of Copper Slough would be likely be impacted.

***Alternate 2: Semi-Directional with Directional Flyovers and Two Loops***
Based on the limits of the preliminary right-of-way for this alternate, 1.47 acres from one (1) pond would likely be impacted, and 814 feet of Copper Slough would be likely be impacted.

***Alternate 3: Semi-Directional with Semi-Directional Flyovers and Two Loops***
Based on the limits of the preliminary right-of-way for this alternate, 1.47 acres from one (1) pond would likely be impacted, and 2,082 feet of Copper Slough would be likely be impacted.

***Alternate 4: Semi-Directional with No Loops***
Based on the limits of the preliminary right-of-way for this alternate, 1.47 acres from one (1) pond would likely be impacted, and 2,013 feet of Copper Slough would be likely be impacted.

***Alternate 5: Full Directional with Two Convex Ramps***
Based on the limits of the proposed right-of-way for this alternate, 1.80 acres from two (2) ponds would likely be impacted, and 707 feet of Copper Slough would be likely be impacted.

**Floodplains**
Regulatory floodplains are those with a designated 100-year floodplain that are mapped on National Flood Insurance Rate Maps by the Federal Emergency Management Agency (FEMA). The 100-year floodplain limits in the project area are delineated on the effective FIRM Nos. 17019C0293D and 17019C0294D, dated October 2, 2013. The floodplain located in the project area is associated with the Copper Slough. As such, all five alternates would impact this floodplain.

**Threatened/Endangered Species and Natural Communities of Special Interest**
In a Biological Resources Review by IDOT dated June 27, 2013, a preliminary review, pursuant to Section 7 of the Endangered Species Act, was performed of the project area for the potential impact on threatened or endangered species. Based on this analysis, it was determined that there will be no effect to the species listed for Champaign County, Illinois. Further, no species listed as threatened or endangered, federally or in Illinois, were identified within the project corridor. Also, no natural communities of special interest were noted. Due to expanded project limits, a subsequent Natural Resources Review was conducted by IDOT on January 7, 2014 and determined that listed species and critical habitat are not present in the study area.

**Special Waste Sites (Recognized Environmental Conditions)**
A Preliminary Environmental Site Assessment (PESA) - Final Report, dated March 13, 2013, was prepared by the Illinois State Geological Survey (ISGS). Subsequently, two addendums have been prepared to include additional areas not previously assessed.

The addendums are dated September 5, 2013 and May 20, 2014. Several sites along were determined to contain recognized environmental conditions (RECs) within the proposed project area. For purposes of the reports, RECs are conditions that may be indicative of releases or potential releases of hazardous substances on, at, in, or to the site.

***Alternate 1: Full Directional***

Five (5) sites are indicated in the reports for which RECs are located on a property that is within the preliminary right-of-way for this concept. These sites include the existing IDOT right-of-way, Copper Slough, and three (3) additional adjacent properties with buildings/structures that could likely be avoided.

***Alternate 2: Semi-Directional with Directional Flyovers and Two Loops***

Five (5) sites are indicated in the reports for which RECs are located on a property that is within the preliminary right-of-way for this concept. These sites include the existing IDOT right-of-way, Copper Slough, and three (3) additional adjacent properties with buildings/structures that could likely be avoided.

***Alternate 3: Semi-Directional with Semi-Directional Flyovers and Two Loops***

Four (4) sites are indicated in the reports for which RECs are located on a property that is within the preliminary right-of-way for this concept. These sites include the existing IDOT right-of-way, Copper Slough, and two (2) additional adjacent properties with buildings/structures that could likely be avoided.

***Alternate 4: Semi-Directional with No Loops***

Six (6) sites are indicated in the reports for which RECs are located on a property that is within the preliminary right-of-way for this concept. These sites include the existing IDOT right-of-way, Copper Slough, an existing municipal well, and three (3) additional adjacent properties with buildings/structures that could likely be avoided.

***Alternate 5: Full Directional with Two Convex Ramps***

Six (6) sites are indicated in the reports for which RECs are located on a property that is within the preliminary right-of-way for this concept. These sites include the existing IDOT right-of-way, Copper Slough, an existing municipal well, and three (3) additional adjacent properties with buildings/structures that could likely be avoided.

**Historical, Architectural, Archaeological, and Cultural Resources**

Preliminary investigations conducted by Illinois State Archaeological Survey (ISAS) personnel have identified a potential archaeological site requiring test excavations to evaluate its National Register eligibility. However, access to the site has been denied by the landowner.

As stated in a February 20, 2014 letter from IDOT, the Illinois State Historic Preservation Officer (SHPO) has concurred with IDOT's determination of a

"Preliminary Adverse Effect. Therefore, a Memorandum of Agreement (MOA) has been developed that stipulates, (1) archaeological test excavations must be conducted prior to construction, and (2) if National Register eligible cultural resources are identified, data recovery excavations (mitigation) must be completed prior to any construction activities in the vicinity of the site". The fully ratified MOA was signed on July 3, 2014.

***Alternate 1: Full Directional***
The potential archaeological site could be impacted by this alternate.

***Alternate 2: Semi-Directional with Directional Flyovers and Two Loops***
Based on the preliminary site investigation, it appears that the potential archaeological site could be avoided by this alternate.

***Alternate 3: Semi-Directional with Semi-Directional Flyovers and Two Loops***
The potential archaeological site could be impacted by this alternate.

***Alternate 4: Semi-Directional with No Loops***
The potential archaeological site could be impacted by this alternate.

***Alternate 5: Full Directional with Two Convex Ramps***
The potential archaeological site could be impacted by this alternate.

**Social Impacts**
There are two buildings with parking lots located close to the interchange that could be impacted by the anticipated proposed construction limits for the various concepts. A church, the Kingdom Hall of Jehovah's Witnesses, is located in the southwest quadrant. It is located just south of Midwest Court and access is provided off Bloomington Road. A two-story office building is located in the southeast quadrant. It is located just south of I-74 and access is provided from Clearlake Boulevard off of Bloomington Road.

***Alternate 1: Full Directional***
A portion of the office building parking lot in the southeast quadrant could be impacted by this alternate.

***Alternate 2: Semi-Directional with Directional Flyovers and Two Loops***
No impacts are anticipated to either building or parking lot for this concept.

***Alternate 3: Semi-Directional with Semi-Directional Flyovers and Two Loops***
A portion of the church parking lot in the southwest quadrant and a portion of the office building parking lot in the southeast quadrant could be impacted by this alternate.

***Alternate 4: Semi-Directional with No Loops***
A portion of the church parking lot in the southwest quadrant and a portion of the office building parking lot in the southeast quadrant could be impacted by this alternate.

***Alternate 5: Full Directional with Two Convex Ramps***
The two-story office building and parking lot located in the southeast quadrant would likely be impacted by this alternate.

## G. Preliminary Estimated Construction Cost

Preliminary construction costs were estimated for all five proposed interchange alternatives. The estimates include: mainline I-57 and I-74 reconstruction and widening; reconstruction of the structure carrying I-74 over I-57; proposed ramp pavement, embankment, and structures; cross roadway reconstruction and structure replacement for Bloomington Road over I-57, Mattis Avenue over I-74, Mattis Avenue over I-57, Duncan Road over I-74 (Alternates 1, 4, and 5 only); and other items associated with the construction of these facilities. All costs include reasonable contingency.

***Alternate 1: Full Directional***
$106,200,000

***Alternate 2: Semi-Directional with Directional Flyovers and Two Loops***
$102,500,000

***Alternate 3: Semi-Directional with Semi-Directional Flyovers and Two Loops***
$91,800,000

***Alternate 4: Semi-Directional with No Loops***
$123,600,000

***Alternate 5: Full Directional with Two Convex Ramps***
$121,900,000

## H. Design Exceptions

The alternatives were reviewed for their adherence to IDOT's interchange design criteria. The design criteria used for all roadways within the study limits for this interchange are shown in **Exhibit 12**. The following table was developed from BDE Form 3108 for the Level Two Design Criteria checklist for interchanges, and no other Level One or Level Two design exceptions are currently anticipated. The initial designs of all alternatives were prepared to avoid any proposed design exceptions. As the alternative development continues and constraints are identified, potential

design exceptions could be coordinated with IDOT and FHWA and justifications discussed at bi-monthly coordination meetings.

**Table 8: Design Criteria**

| INTERCHANGE DESIGN CRITERIA | | | Do the Alternatives comply with the Design Criteria? | | | | |
|---|---|---|---|---|---|---|---|
| | | | **Alt 1** | **Alt 2** | **Alt 3** | **Alt 4** | **Alt 5** |
| a. | Exit Terminal | Standard Type | YES | YES | YES | YES | YES |
| | | Design speed of first curve | YES | YES | YES | YES | YES |
| | | Are any exit terminals located on mainline horizontal curve? | YES | YES | YES | YES | YES |
| b. | Entrance Terminal | Standard Type | YES | YES | YES | YES | YES |
| | | Length of tangent after the entering curve | YES | YES | YES | YES | YES |
| | | Design speed of entering curve | YES | YES | YES | YES | YES |
| c. | Design speed of ramp proper: 50 mph (40 mph loops) | | YES | YES | YES | YES | YES |
| d. | Design speed of crossroad: 70 mph | | YES | YES | YES | YES | YES |
| e. | Maximum ramp grades | Exit ramp: +4% to -6% | YES | YES | YES | YES | YES |
| | | Entrance ramp: +4% to -6% | YES | YES | YES | YES | YES |
| f. | Ramp pavement width = 16ft | | YES | YES | YES | YES | YES |
| g. | Ramp shoulder widths | Left = 4 ft paved | YES | YES | YES | YES | YES |
| | | Right = 6 ft paved | YES | YES | YES | YES | YES |
| h. | Horizontal ramp curvature in conjunction with selected design speeds | | YES | YES | YES | YES | YES |
| i. | Superelevation development on ramps | Superelevation Rate | YES | YES | YES | YES | YES |
| | | Transition Length | YES | YES | YES | YES | YES |
| | | Distribution Between Tangent & Curve | YES | YES | YES | YES | YES |
| j. | Vertical curvature compliance with selected design speed on ramp? | | YES | YES | YES | YES | YES |
| k. | Length of access control at crossroad | | YES | YES | YES | YES | YES |
| l. | Type of traffic control at crossroad | Stop signs | N/A | N/A | N/A | N/A | N/A |
| | | Traffic Signals | N/A | N/A | N/A | N/A | N/A |
| | | Free Flow | YES | YES | YES | YES | YES |
| m. | Is length of crest vertical curve used on crossroad > or = that required by the selected design speed of crossroad? | | YES | YES | YES | YES | YES |
| n. | Are crossroad approach grades through ramp terminal intersections < or = 2% | | YES | YES | YES | YES | YES |
| o. | Are ramp terminal intersections located on a tangent section of crossroad alignment? | | N/A | N/A | N/A | N/A | N/A |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| p. | Is decision sight distance available in advance of exit gore? | | | YES* | YES* | YES* | YES* | YES* |
| q. | Is clear recovery area available beyond gore nose? | | | YES | YES | YES | YES | YES |
| r. | Level of Service "C" or better | Exit terminal | | YES | YES | YES | YES | YES |
| | | Entrance terminal | | YES | YES | YES | YES | YES |
| | | Ramp proper | | YES | YES | YES | YES | YES |
| | | Weaving area | | YES | YES | YES | YES | YES |
| | | Ramp/crossroad intersection | | YES | YES | YES | YES | YES |
| s. | Freeway lane drops | Location | Upgrade | YES | YES | YES | YES | YES |
| | | | Downgrade | YES | YES | YES | YES | YES |
| | | | Inside Lane | YES | YES | YES | YES | YES |
| | | | Outside Lane | YES | YES | YES | YES | YES |
| | | | At Exit Terminal | YES | YES | YES | YES | YES |
| | | | Beyond Exit Terminal | YES | YES | YES | YES | YES |
| | | Taper Length | | YES | YES | YES | YES | YES |

* Sight distance provided in advance of exit gores in accordance with BDE Section 37-6.01(b)

## VI. Comparison of Interchange Alternatives

### A. Comparison Features

Evaluation of the I-57/I-74 interchange alternates was based on the following primary objectives:

- Accommodation of future peak hour traffic volume
- Efficiency of the Interchange (Ramp Travel Times)
- Safety of vehicles entering and exiting the interstates
- Impacts to environmental resources
- Preliminary estimated construction cost
- Design Exceptions
- Public Input

Additional interchange features studied for the alternates are included in the evaluation matrix table (**Table 14**), which is presented later in this section of the report.

***Accommodation of Future Peak Hour Traffic Volume***

Accommodation of future traffic volumes for each alternative can be evaluated by reviewing the Level of Service (LOS) at different locations within the project. The LOS for the five interchange alternates and the No-Build alternate are shown in the following table.

**Table 9: 2040 Peak Hour Analysis – Speed, Density, and LOS**

| Road Segment | | | Alternate 1 | | Alternate 2 | | Alternate 3 | | Alternate 4 | | Alternate 5 | | No-Build | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| **I-57 Mainline Between I-57/I-74 Ramps and I-57/I-72 Interchange** | NB | Speed | 65.5 | 65.5 | 65.9 | 65.6 | 66.0 | 65.8 | 65.4 | 65.7 | 65.4 | 65.5 | 65.9 | 65.8 |
| | | Density | 10.3 | 12.0 | 9.9 | 12.1 | 9.9 | 11.5 | 10.4 | 11.2 | 10.2 | 12.0 | 11.3 | 13.4 |
| | | LOS | A | B | A | B | A | B | A | B | A | B | B | B |
| | SB | Speed | 65.6 | 64.2 | 65.4 | 63.8 | 65.2 | 63.5 | 64.7 | 63.6 | 65.5 | 64.1 | 64.6 | 63.5 |
| | | Density | 12.2 | 15.2 | 12.3 | 15.3 | 12.5 | 15.2 | 12.6 | 14.7 | 12.2 | 15.5 | 14.3 | 17.6 |
| | | LOS | B | B | B | B | B | B | B | B | B | B | B | B |
| **I-57 Mainline Between Interchange Ramps** | NB | Speed | 69.2 | 68.7 | 65.0 | 65.8 | 65.0 | 65.9 | 68.7 | 68.9 | 69.1 | 68.8 | 54.7 | 62.9 |
| | | Density | 1.3 | 3.6 | 3.2 | 6.1 | 3.2 | 5.8 | 1.3 | 3.5 | 1.4 | 3.6 | 4.8 | 6.5 |
| | | LOS | A | A | A | A | A | A | A | A | A | A | A | A |
| | SB | Speed | 68.9 | 69.0 | 67.4 | 67.5 | 67.7 | 67.6 | 68.6 | 68.8 | 68.8 | 68.9 | 51.0 | 46.6 |
| | | Density | 4.7 | 4.7 | 6.0 | 5.7 | 6.0 | 5.8 | 4.8 | 4.4 | 4.6 | 4.7 | 11.6 | 15.8 |
| | | LOS | A | A | A | A | A | A | A | A | A | A | B | B |
| **I-57 Mainline Between Olympian Dr. and I-57/I-74 Ramps** | NB | Speed | 63.7 | 65.4 | 63.1 | 65.4 | 62.9 | 65.1 | 63.4 | 65.4 | 63.4 | 65.3 | 64.8 | 65.4 |
| | | Density | 2.3 | 4.1 | 2.4 | 4.2 | 2.3 | 4.1 | 2.3 | 3.9 | 2.3 | 4.0 | 4.2 | 7.4 |
| | | LOS | A | A | A | A | A | A | A | A | A | A | A | A |
| | SB | Speed | 66.5 | 66.0 | 67.6 | 67.5 | 67.6 | 67.1 | 65.1 | 65.0 | 65.4 | 65.1 | 65.6 | 65.3 |
| | | Density | 4.8 | 5.1 | 4.7 | 5.0 | 4.7 | 5.0 | 5.0 | 4.8 | 4.9 | 5.2 | 8.9 | 9.5 |
| | | LOS | A | A | A | A | A | A | A | A | A | A | A | A |
| **I-74 Mainline Between Prairieview Rd. and I-57/I-74 Ramps (3 lane section only)** | EB | Speed | 64.4 | 65.6 | 63.8 | 65.9 | 63.9 | 65.6 | 63.5 | 65.8 | 64.0 | 65.7 | 64.3 | 66.2 |
| | | Density | 14.2 | 8.5 | 14.4 | 8.4 | 14.0 | 8.5 | 14.4 | 8.0 | 14.3 | 8.5 | 21.4 | 12.7 |
| | | LOS | B | A | B | A | B | A | B | A | B | A | C | B |
| | WB | Speed | 66.4 | 64.2 | 67.1 | 64.6 | 67.2 | 63.8 | 66.1 | 64.3 | 66.6 | 64.2 | 66.2 | 64.7 |
| | | Density | 7.0 | 12.1 | 8.2 | 14.2 | 8.4 | 14.7 | 7.9 | 12.4 | 8.3 | 14.2 | 11.0 | 18.4 |
| | | LOS | A | B | A | B | A | B | A | B | A | B | A | C |
| **I-74 Mainline Between Interchange Ramps** | EB | Speed | 67.1 | 68.1 | 65.5 | 66.4 | 65.3 | 66.0 | 66.8 | 68.0 | 66.9 | 68.1 | 62.3 | 65.0 |
| | | Density | 11.2 | 6.3 | 11.6 | 6.8 | 11.4 | 7.0 | 11.2 | 6.0 | 11.3 | 6.1 | 19.8 | 11.3 |
| | | LOS | B | A | B | A | B | A | B | A | B | A | C | B |
| | WB | Speed | 69.0 | 67.9 | 65.9 | 65.5 | 66.0 | 65.1 | 68.8 | 67.9 | 68.8 | 68.0 | 56.0 | 53.7 |
| | | Density | 5.3 | 9.5 | 6.8 | 11.0 | 7.0 | 11.4 | 5.4 | 8.8 | 5.3 | 9.5 | 12.1 | 20.9 |
| | | LOS | A | A | A | B | A | B | A | A | A | A | B | C |
| **I-74 Mainline Between I-57/I-74 Ramps and Prospect Ave.** | EB | Speed | 61.2 | 64.7 | 62.1 | 65.3 | 62.3 | 65.1 | 59.0 | 63.3 | 58.8 | 63.3 | 53.1 | 62.0 |
| | | Density | 17.8 | 10.4 | 17.5 | 10.6 | 17.2 | 10.5 | 18.5 | 10.3 | 18.4 | 10.7 | 30.0 | 16.2 |
| | | LOS | B | A | B | A | B | A | C | A | C | A | D | B |
| | WB | Speed | 66.5 | 64.8 | 66.4 | 64.7 | 66.7 | 65.1 | 66.6 | 65.5 | 66.4 | 65.0 | 66.0 | 63.0 |
| | | Density | 9.3 | 16.6 | 9.4 | 16.7 | 9.4 | 16.7 | 9.2 | 15.1 | 9.3 | 16.5 | 13.6 | 24.7 |
| | | LOS | A | B | A | B | A | B | A | B | A | B | B | C |

The No-Build option does not provide acceptable LOS on I-74 EB between the interchange ramps and Propsect Avenue, and since one of the main objectives of the proposed interchange reconstruction is to provide increased capacity for future traffic, it should not be given further consideration. Each of the proposed interchange alternatives provides improved LOS compared to the existing cloverleaf interchange, although there are not many differences between the five build alternatives and the LOS provided. Alternates 1, 4, and 5 provide LOS A for the 2040 PM peak hour for I-74 mainline between the interchange ramps, whereas Alternates 2 and 3 provide LOS B. Alternates 1, 2, and 3 provide LOS B for the 2040 AM peak hour for I-74 mainline between the interchange ramps and Prospect Avenue, while Alternate 4 and 5 provide LOS C. At all other locations, the level of service is the same for each of the five build alternatives.

***Ramp Travel Times***

Each interchange alternate was evaluated for its travel efficiency, which is measured as the free-flow travel times through the interchange. Travel efficiency usually decreases with the addition of access points. Providing free flow conditions is preferred in order to maximize travel efficiency. Each of the alternates has different travel times due to the loop ramp design speeds and varying ramp lengths. The calculation of travel time encompasses both of these factors into a single comparable value. The ramp travel times were calculated from common beginning and ending points along the interstates for the five interchange alternatives and are shown in **Table 10** below.

**Table 10: Ramp Travel Time**

| Ramp Movement | Ramp Free-Flow Travel Time (minutes) | | | | | |
|---|---|---|---|---|---|---|
| | Alternate 1 | Alternate 2 | Alternate 3 | Alternate 4 | Alternate 5 | No-Build |
| **Ramp A** | 1.44 | 1.35 | 1.35 | 1.38 | 1.39 | 1.66 |
| **Ramp B** | 1.43 | 1.43 | 1.41 | 1.42 | 1.45 | 1.84 |
| **Ramp C** | 1.56 | 2.19 | 2.19 | 1.70 | 1.78 | 2.08 |
| **Ramp D** | 1.57 | 1.56 | 2.18 | 1.96 | 1.53 | 1.78 |
| **Ramp E** | 1.68 | 1.66 | 2.13 | 2.36 | 1.61 | 1.90 |
| **Ramp F** | 1.60 | 2.21 | 2.21 | 2.09 | 1.88 | 1.87 |
| **Ramp G** | 1.35 | 1.37 | 1.31 | 1.37 | 1.36 | 1.73 |
| **Ramp H** | 1.30 | 1.24 | 1.27 | 1.31 | 1.28 | 1.67 |
| **TOTAL TIME** | **11.93** | **13.01** | **14.05** | **13.59** | **12.27** | **14.53** |

Each of the proposed interchange alternatives provide a total ramp travel time savings to the users of the interchange compared to the no-build option. Alternate 1 has the most efficient ramp configuration of the interchanges studied with a total ramp travel time of more than one minute less than Alternates 2, 3, and 4, and 20 seconds less than Alternate 5. Alternative 5 is the second most efficient alternative, followed by Alternatives 2, 4, and 3. The No-Build cloverleaf has the highest travel time of all interchange types.

***Safety of Vehicles Entering and Exiting the Interstates***

A study comparing projected vehicle-to-vehicle conflicts of the five proposed interchange alternatives and the No-Build alternate was performed using CORSIM. The purpose of this inquiry was to provide comparative data of the alternatives, not to correlate data with historic crash rates. The estimated number of conflicts for the four interchange alternatives and the No-Build alternate are shown in **Table 11**.

**Table 11: CORSIM Conflict Analysis**

| | Estimated number of conflicts | | | | | |
|---|---|---|---|---|---|---|
| | **No-Build** | **Alternate 1** | **Alternate 2** | **Alternate 3** | **Alternate 4** | **Alternate 5** |
| **2040 AM** | 534 | 219 | 220 | 238 | 348 | 309 |
| **2040 PM** | 96 | 60 | 81 | 66 | 74 | 61 |
| **TOTAL** | 630 | 279 | 301 | 304 | 422 | 370 |
| **Difference from No-Build** | **N/A** | **-56%** | **-52%** | **-52%** | **-33%** | **-41%** |

Each of the build alternatives has significantly fewer potential conflicts than the existing interchange geometry as a result of eliminating conflict points associated with the number of access locations off of the interstates and eliminating the mainline weaving movements. Alternate 1 has the fewest number of projected conflicts of all five proposed alternatives. Alternates 2 and 3 have the second fewest projected conflicts, followed by Alternates 5 and 4.

An Operational Safety Analysis was conducted utilizing the Enhanced Interchange Safety Analysis Tool (ISATe) to predict future crash rates for the existing cloverleaf interchange and all proposed alternatives. The results of this analysis are presented in the following table.

**Table 12: ISATe Analysis Summary**

| Study Period: 2011-2031 | | Existing (predicted) | Existing (expected*) | Alternative 1 (predicted) | Alternative 2 (predicted) | Alternative 3 (predicted) | Alternative 4 (predicted) | Alternative 5 (predicted) |
|---|---|---|---|---|---|---|---|---|
| Total Number of Crashes | | 741 | 1195 | 802 | 791 | 814 | 840 | 825 |
| Total Number of Crashes per Type | K | 7 | 9 | 7 | 6 | 7 | 7 | 7 |
| | A | 18 | 22 | 17 | 17 | 18 | 18 | 18 |
| | B | 93 | 113 | 93 | 91 | 96 | 99 | 96 |
| | C | 130 | 157 | 145 | 143 | 150 | 155 | 149 |
| | PDO | 496 | 897 | 542 | 534 | 545 | 563 | 557 |
| | KAB | 118 | 144 | 117 | 114 | 121 | 124 | 121 |

*Using the EB method combined with the predictive method

Alternate 2 has the least amount of predicted total crashes and KAB crashes, followed by Alternate 1. However, the difference in predicted crashes between the five alternates is minimal, and it is not recommended that these results be used as the controlling factor to eliminate or solely select a preferred alternate.

***Impacts to Environmental Resources***

The environmental impacts and disturbance to adjacent properties for each proposed interchange alternative are also considered when selecting a preferred concept. Wetlands, detention ponds, streams, flood plains, T&E species/habitat/natural areas, special waste sites (RECs), potential archaeological resources, and social resources have all been identified as having potential impacts associated with the construction of the proposed interchange alternatives. Alternates 2 has the least number of potential impacts to the environmental resources. Alternate 1 has the second least amount of potential impacts, followed by Alternate 3, 5, and 4.

***Preliminary Estimated Construction Cost***

The total preliminary estimated cost for each alternative, shown in **Table 13**, includes the construction cost and additional costs associated with land acquisition and utility relocations.

**Table 13: Summary of Preliminary Estimated Costs**

| | Alternate 1 | Alternate 2 | Alternate 3 | Alternate 4 | Alternate 5 |
|---|---|---|---|---|---|
| **Construction Cost** | $106,200,000 | $102,500,000 | $91,800,000 | $123,600,000 | $121,900,000 |
| **R.O.W. / Land Acquisition** | $4,200,000 | $ 2,500,000 | $5,700,000 | $6,400,000 | $5,300,000 |
| **Utilities** | $1,800,000 | $1,800,000 | $2,800,000 | $2,800,000 | $2,800,000 |
| **Total** | **$112,200,000** | **$106,800,000** | **$100,300,000** | **$132,800,000** | **$130,000,000** |

***Design Exceptions***

Compliance with design criteria and potential proposed design exceptions are also a factor in selecting the recommended interchange alternative. At this time no proposed design exceptions have been identified, but as the alternative development continues and constraints are identified, potential design exceptions could be considered to select a preferred alternate.

***Public Input***

Input received from the public and project stakeholders at the various meetings conducted to date has indicated a preference for Alternates 1 and 2. This has been considered in determining the recommendation for the preferred interchange alternative concept.

## B. Evaluation Matrix

The following evaluation matrix table was developed to present a side-by-side comparison of the five interchange alternatives. A ranking system was developed for each category, where 1 is the best alternate and 5 is the worst. All of the individual rankings were then added up to determine the overall ranking, where 1 is the best alternate and 5 is the worst.

**Table 14: Evaluation Matrix**

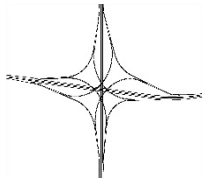
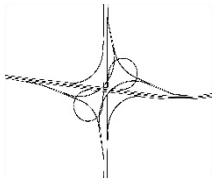
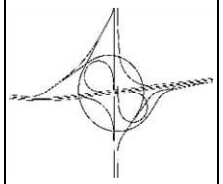
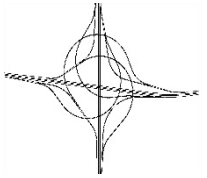
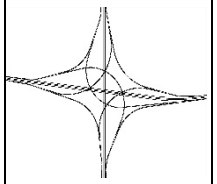
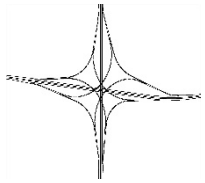
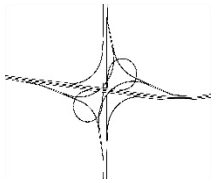
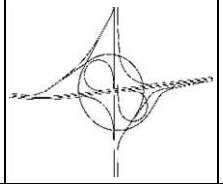
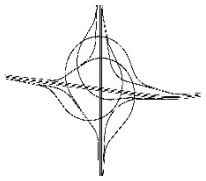
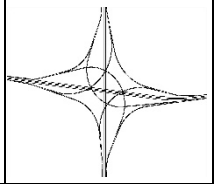
| Category | Comparison Features | Alternate 1 | Alternate 2 | Alternate 3 | Alternate 4 | Alternate 5 |
|---|---|---|---|---|---|---|
| | |  |  |  |  |  |
| Geometrics | Number of Loop Ramps | 0 | 2 | 2 | 0 | 0 |
| | Number of Mainline Access Points | 8 | 12 | 12 | 8 | 8 |
| | Number of Transposed Ramps | 0 | 0 | 2 | 8 | 0 |
| | Number of Ramp Structures | 4 | 6 | 7 | 8 | 6 |
| | Total Length of Ramp Structures (ft) | 3,665 | 4,535 | 2,370 | 5,815 | 4,600 |
| | Total Length of Ramps (ft) | 32,700 | 31,400 | 37,100 | 43,300 | 37,100 |
| | Fully Directional | YES | NO | NO | NO | YES |
| | Number of Design Exceptions | 0 | 0 | 0 | 0 | 0 |
| | **Ranking** | **1** | **2 T** | **5** | **4** | **2 T** |
| Traffic | Capacity – Level of Service: I-57 NB | B | B | B | B | B |
| | Capacity – Level of Service: I-57 SB | B | B | B | B | B |
| | Capacity – Level of Service: I-74 EB | B | B | B | C | C |
| | Capacity – Level of Service: I-74 WB | B | B | B | B | B |
| | Total Ramp Travel Time (minutes) | 11.93 | 13.01 | 14.05 | 13.59 | 12.27 |
| | **Ranking** | **1** | **2** | **3** | **5** | **4** |
| Safety | CORSIM Conflict Analysis (potential conflicts in peak hour) | 279 | 301 | 304 | 422 | 370 |
| | ISATe Analysis: Predicted Total Crashes | 802 | 791 | 814 | 840 | 825 |
| | ISATe Analysis: Predicted KAB Crashes | 117 | 114 | 121 | 124 | 121 |
| | **Ranking** | **1 T** | **1 T** | **3** | **5** | **4** |

**Table 14: Evaluation Matrix (Continued)**

| Category | Comparison Features | Alternate 1 | Alternate 2 | Alternate 3 | Alternate 4 | Alternate 5 |
|---|---|---|---|---|---|---|
| | |  |  |  |  |  |
| **Potential Environmental Impacts** | Wetlands # (acres) | 6 (4.02) | 6 (3.52) | 6 (4.72) | 8 (7.00) | 7 (5.75) |
| | Detention Ponds # (acres) | 1 (1.47) | 1 (1.47) | 1 (1.47) | 1 (1.47) | 2 (1.80) |
| | Streams – Copper Slough (ft) | 1,970 | 814 | 2,082 | 2,013 | 707 |
| | Floodplains | Yes | Yes | Yes | Yes | Yes |
| | T&E Species/Habitat/Natural Areas | None | None | None | None | None |
| | Special Waste Sites (RECs) | 5 | 5 | 4 | 6 | 6 |
| | Potential Archaeological Resources | 1 | 0 | 1 | 1 | 1 |
| | Social Resources | 1 | 0 | 2 | 2 | 1 |
| | **Ranking** | **2** | **1** | **3** | **5** | **4** |
| **Implementation** | Construction Cost | $106,200,000 | $102,500,000 | $91,800,000 | $123,600,000 | $121,900,000 |
| | Right-of-Way Acquisition Cost (acres) | $4,200,000 (66) | $2,500,000 (37) | $5,700,000 (89) | $6,400,000 (106) | $5,300,000 (78) |
| | Utility Relocation Cost | $1,800,000 | $1,800,000 | $2,800,000 | $2,800,000 | $2,800,000 |
| | Total Cost | $112,200,000 | $106,800,000 | $100,300,000 | $132,800,000 | $130,000,000 |
| | **Ranking** | **3** | **2** | **1** | **5** | **4** |
| | **Overall Ranking** | **1 T** | **1 T** | **3** | **5** | **4** |

### C. Recommendation for Further Studies

After initial evaluation of the proposed I-57 and I-74 interchange concepts, Alternates 1 and 2 ranked the highest overall compared to the other concepts. As summarized in **Table 14**, Alternates 1 and 2 rank best in geometrics, traffic, safety, and minimizing the potential environmental impacts, while providing cost-effective solutions.

Following the preparation of the Preliminary Interchange Type Study, BDE Procedure Memorandum 14-02 was issued and included the change of mainline interstate design speed from 70 mph to 75 mph and directional ramps from 50 mph to 55 mph. Although it was initially agreed that the ITS would be completed with the 70 mph mainline and 50 mph ramp design speeds, it was determined that the increase in design speeds could significantly affect the key comparison features in the alternative evaluation, and thus the selection of a preferred alternate. Since Alternates 1 and 2 were the top ranked concepts after the preliminary evaluation, it was agreed that these two alternates would be further studied and an additional evaluation conducted based on the new policy design speeds.

## VII. Further Study of Alternates 1 & 2

### A. Development of Alternatives

The design criteria for the interstates and ramps have been updated for Alternates 1 and 2 based on the revised design speeds and are included in **Exhibit 50**. The ramp design is affected more than the mainline by these changes, since both interstates are proposed to remain on the existing alignment. Some of the key changes to the ramp design criteria include: increased minimum radius from 760 ft to 960 ft; increased stopping sight distance from 425 ft to 495 ft; and flatter rates of vertical curvature (K values) from 84 to 114 for crest curves and 96 to 115 for sag curves.

The forecasted traffic demands for I-57 do not warrant three lanes in each direction for the design year (and well into the future 50+ years), so the proposed improvements have been adjusted to only provide two lanes in each direction. Since only two lanes will be provided in each direction, the proposed typical section for I-57 will match the existing, which consists of a 64’ open grass median (see **Exhibit 51**). Accommodations will be provided to allow for future widening (towards the inside) of I-57 to three lanes in each direction. This change in the typical section for I-57 has eliminated the need for providing lane add/drops and reduced the overall limits of improvements to just south of the Norfolk Southern Railroad on the south end of I-57 and Olympian Drive on the north end of I-57 for both alternates.

The proposed typical section for I-74 will still consist of three lanes in each direction, but the median has been adjusted to include a 60’ open grass median through the

interchange (see **Exhibits 52-53**). After review of the ramp flyover sub-structure units, profile gradients, roadway clearances, and coordination with the Bridge Office, it was determined that further separation of the inside edges of pavement along I-74 would best accommodate desirable geometry and structural elements for the interchange. Concrete barrier wall is anticipated along portions of the inside shoulder to protect vehicles from the ramp flyover substructure units. Adjustment to the I-74 typical section, revision to the add/drop lane tapers, and adjustment to the taper rates for the increased design speed have required the reconstruction of the Duncan Road overpass for Alternates 1 and 2 to meet current design policy. Anticipated limits of improvements along I-74 for both alternates are just west of Duncan Road on the west end of I-74 and the Prospect Avenue west leg ramp terminals on the east end of I-74.

The proposed ramp structure sketches (see **Exhibit 54**) have been developed to accommodate the updated design speed for the outer and directional ramps. Variable inside shoulder widths along the ramp structures are anticipated in order to provide adequate sight distance along the inside of curves where the 42" parapet wall could restrict visibility. The proposed ramp structure lengths and number of spans have been updated based on the revised geometry, additional structure studies, and coordination with the Bridge Office.

Based on the new design speeds and typical sections for I-57 and I-74, revisions have been made to Alternatives 1 and 2, and they are shown on **Exhibits 55-56**. Some of the items that were reviewed and adjusted based on the new criteria include: the location of the entrance and exit ramp terminals; the radii along each ramp; maximum span lengths where the ramps cross over the interstates; the length of ramps to achieve policy vertical gradients, curvature, and clearances; and increased inside shoulder widths along the ramp structures to provide sight distance. The flyover ramps for Alternate 2 were also adjusted to reduce the overall structure lengths.

A coordination meeting was conducted on April 7, 2014 with Midwest Underground Technology, Inc. (MUTI), property owners in the southwest quadrant of the interchange. The purpose of the meeting was to review the current proposed project improvements and interchange reconstruction alternatives. MUTI explained ongoing and future plans to expand, including additional buildings to the east and west and additional parking/storage to the east. A temporary aggregate parking/storage site has been constructed on the east side of the existing building since the latest field surveys and aerial photography images have been collected. This site is anticipated to be impacted by Alternate 1 and 2 (see **Exhibits 57-58**) and has been included as a potential social resource impact in the Evaluation Matrix (**Section VII.B.**). Site plans have been developed and were made available to IDOT for consideration during development of the interchange design studies.

## B. Evaluation Matrix

The following evaluation matrix has been prepared to include values from the revised Alternates 1 and 2 described above.

| Priority | | | Difference Significance | | | Rating Points | | |
|---|---|---|---|---|---|---|---|---|
| 1 | - | 5 | 1 | - | 5 | 1 | - | 2 |
| Low | | High | Low | | High | Low | | High |

**Weighted Score** = Priority x Difference Significance x Rating Points

**Table 15: Revised Evaluation Matrix**

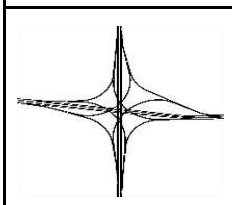
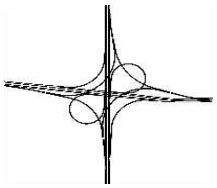
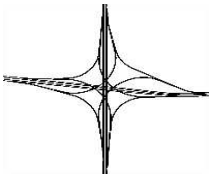
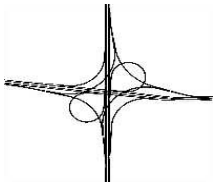
| Category | Comparison Features | Priority | Difference Significance | Alternate 1 | | | Alternate 2 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | |  | Rating Points | Weighted Score |  | Rating Points | Weighted Score |
| Geometrics | Number of Loop Ramps | 3 | 3 | 0 | 2 | 18 | 2 | 1 | 9 |
| | Number of Mainline Access Points | 3 | 2 | 8 | 2 | 12 | 12 | 1 | 6 |
| | Number of Ramp Structures | 2 | 2 | 4 | 2 | 8 | 6 | 1 | 4 |
| | Total Length of Ramp Structures (ft) | 4 | 3 | 5230 | 1 | 12 | 3860 | 2 | 24 |
| | Total Area of Ramp Structures (sq ft) | 5 | 3 | 213,215 | 1 | 15 | 154,230 | 2 | 30 |
| | Total Length of Ramps (ft) | 4 | 1 | 33,705 | 2 | 8 | 33,730 | 1 | 4 |
| | Use of Maximum Policy Gradients | 5 | 5 | YES | 1 | 25 | NO | 2 | 50 |
| | Fully Directional | 3 | 5 | YES | 2 | 30 | NO | 1 | 15 |
| | Number of Anticipated Design Exceptions | 5 | 1 | 0 | 2 | 10 | 0 | 2 | 10 |
| | **Ranking** | | | | **2** | **138** | | **1** | **152** |
| Traffic | Capacity – Level of Service: I-57 NB | 3 | 1 | B | 2 | 6 | B | 2 | 6 |
| | Capacity – Level of Service: I-57 SB | 3 | 1 | B | 2 | 6 | B | 2 | 6 |
| | Capacity – Level of Service: I-74 EB | 3 | 1 | B | 2 | 6 | B | 2 | 6 |
| | Capacity – Level of Service: I-74 WB | 3 | 1 | B | 2 | 6 | B | 2 | 6 |
| | Total Ramp Travel Time (minutes) | 3 | 2 | 11.84 | 2 | 12 | 12.90 | 1 | 6 |
| | **Ranking** | | | | **1** | **36** | | **2** | **30** |
| Safety | Potential Conflicts in Peak Hour (CORSIM) | 5 | 1 | 330 | 2 | 10 | 367 | 1 | 5 |
| | ISATe Analysis (predicted crashes) | 5 | 1 | 772 | 1 | 5 | 714 | 2 | 10 |
| | Total KAB's | 5 | 1 | 116 | 1 | 5 | 108 | 2 | 10 |
| | **Ranking** | | | | **2** | **20** | | **1** | **25** |

**Table 15: Revised Evaluation Matrix (Continued)**

| Category | Comparison Features | Priority | Difference Significance | Alternate 1 | | | Alternate 2 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | |  | Rating Points | Weighted Score |  | Rating Points | Weighted Score |
| Potential Environmental Impacts | Wetlands # (acres) | 5 | 1 | 6 (3.52) | 2 | 10 | 6 (3.52) | 2 | 10 |
| | Detention Ponds # (acres) | 5 | 1 | 1 (1.47) | 2 | 10 | 1 (1.47) | 2 | 10 |
| | Streams – Copper Slough (ft) | 5 | 1 | 2,520 | 2 | 10 | 2,520 | 2 | 10 |
| | Floodplains | 5 | 1 | Yes | 2 | 10 | Yes | 2 | 10 |
| | T&E Species/Habitat/Natural Areas | 5 | 1 | None | 2 | 10 | None | 2 | 10 |
| | Special Waste Sites (RECs) | 5 | 1 | 5 | 2 | 10 | 5 | 2 | 10 |
| | Potential Archaeological Resources | 5 | 5 | 1 | 1 | 25 | 0 | 2 | 50 |
| | Social Resources | 5 | 3 | 2 | 1 | 15 | 1 | 2 | 30 |
| | **Ranking** | | | | **2** | **100** | | **1** | **140** |
| Preliminary Implementation Costs | Construction Cost | 5 | 4 | $164,702,000 | 1 | 20 | $134,926,500 | 2 | 40 |
| | Right-of-Way Acquisition Cost (acres) | 5 | 3 | $3,786,000 (63) | 1 | 15 | $2,887,500 (46) | 2 | 30 |
| | Utility Relocation Cost | 5 | 1 | $1,800,000 | 2 | 10 | $1,800,000 | 2 | 10 |
| | Total Cost | 5 | 3 | $170,288,000 | 1 | 15 | $139,614,000 | 2 | 30 |
| | **Ranking** | | | | **2** | **60** | | **1** | **110** |

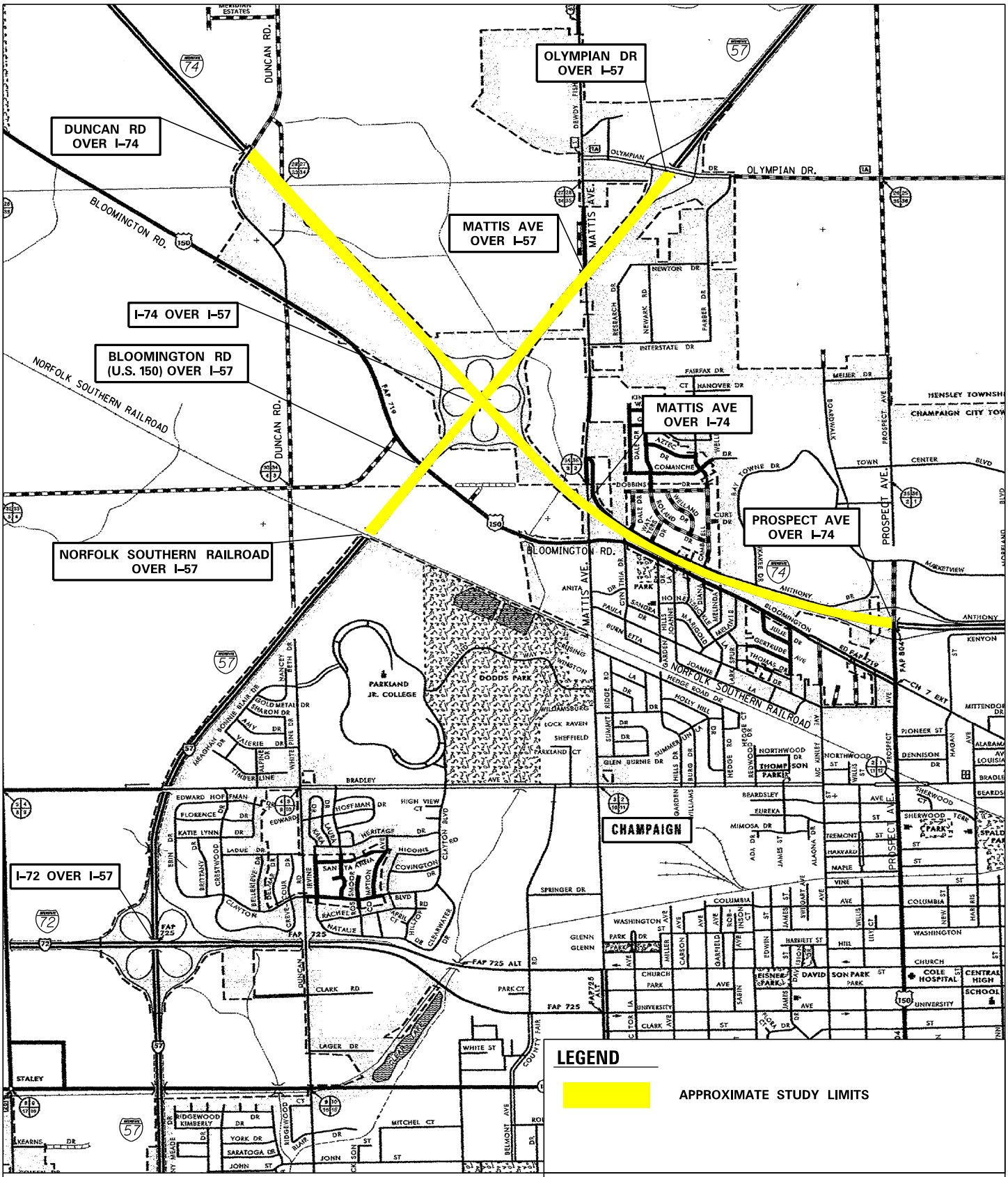
| Category | Category Priority | Alternate 1 | | Alternate 2 | |
|---|---|---|---|---|---|
| | | Average Feature Score | Weighted Score | Average Feature Score | Weighted Score |
| **Geometrics** | 3 | 16 | 48 | 17 | 51 |
| **Traffic** | 3 | 8 | 24 | 6 | 18 |
| **Safety** | 5 | 7 | 35 | 9 | 45 |
| **Potential Environmental Impacts** | 5 | 13 | 65 | 18 | 90 |
| **Preliminary Implementation Costs** | 5 | 15 | 75 | 28 | 140 |
| **Total Score** | | | 247 | | 344 |
| **Overall Ranking** | | | **2** | | **1** |

### B. Recommended Alternate

The recommended I-57 & I-74 interchange alternative is Alternate 2, the semi-directional interchange type with two directional ramps and two loops. As summarized in **Table 15**, Alternative 2 provides the highest ranking based on the evaluation results. Alternative 2 ranks best in the geometry, safety, environmental, and cost categories. Advantages of this alternate include increasing the ramp design speeds, eliminating the mainline weaves, reducing the number of access points off the interstates, increasing the mainline and ramp capacities, reducing travel time through the interchange, improving safety, minimizing the impacts to environmental resources and surrounding land, and providing a cost effective solution.

## VIII. Conclusion

Five alternatives for the existing I-57 & I-74 interchange are presented and evaluated in this report. Each alternate was evaluated based on the proposed roadway geometrics, accommodation of future peak hour traffic volumes, safety of the vehicles travelling through the interchange, impacts to environmental resources and adjacent land, and the construction costs. The initial evaluation indicated that Alternates 1 and 2 ranked highest. These two alternates were further studied and an additional evaluation was conducted based on new policy design speeds. Alternate 2 ranks highest based on the key objectives outlined in this report and overall purpose of the proposed improvement, and it satisfies the need to address operational, geometric, safety, and capacity deficiencies. Therefore, Alternate 2, the proposed semi-directional interchange type with two directional flyovers and two loops, is recommended for further study and presentation in an Access Justification Report for concept approval.



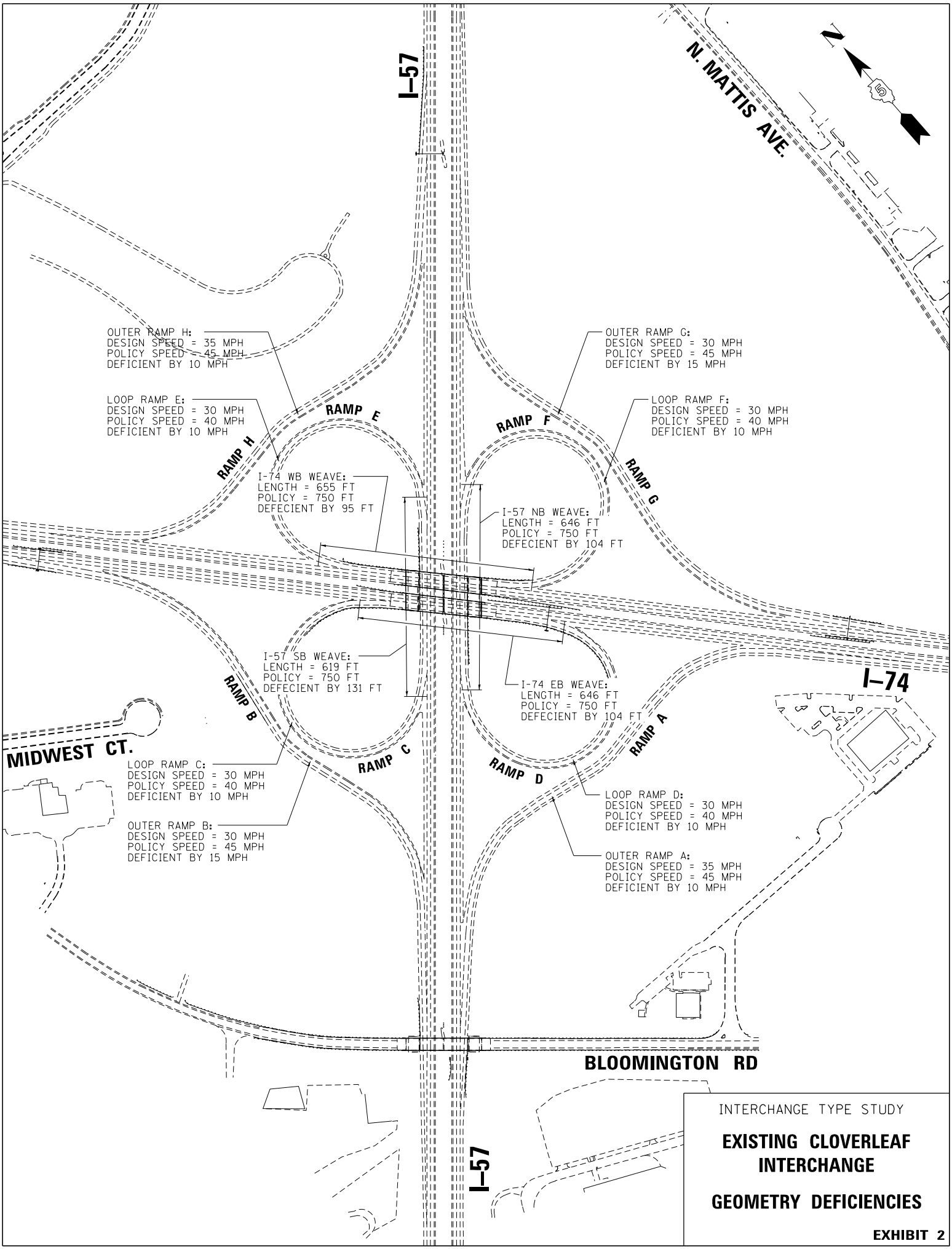

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SCALE: 1" = 2,400'

# SITE MAP

I–57 & I–74 INTERCHANGE
IDOT – DISTRICT 5
CHAMPAIGN COUNTY
CHAMPAIGN, IL

EXHIBIT 1




INTERCHANGE TYPE STUDY

## EXISTING CLOVERLEAF INTERCHANGE

## GEOMETRY DEFICIENCIES

**EXHIBIT 2**

# Interchange Reconstruction Project
# I-57 Crashes from 2008 to 2012

Note: Run Off Road crashes include fixed object, overturned, and parked motor vehicles.
Animal crashes are not shown on this exhibit.

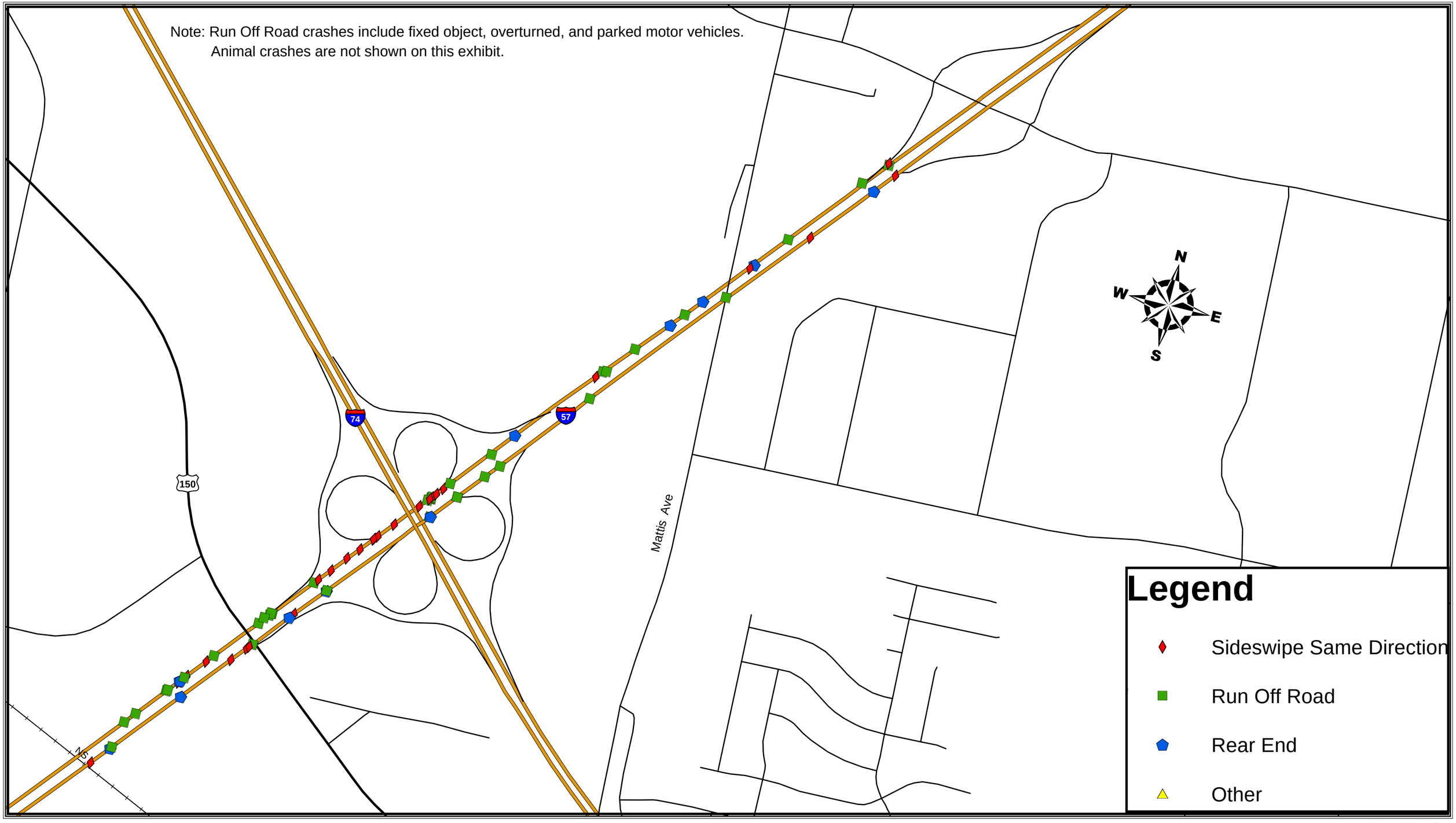



EXHIBIT 3

# Interchange Reconstruction Project
# I-57 Crashes from 2008 to 2012

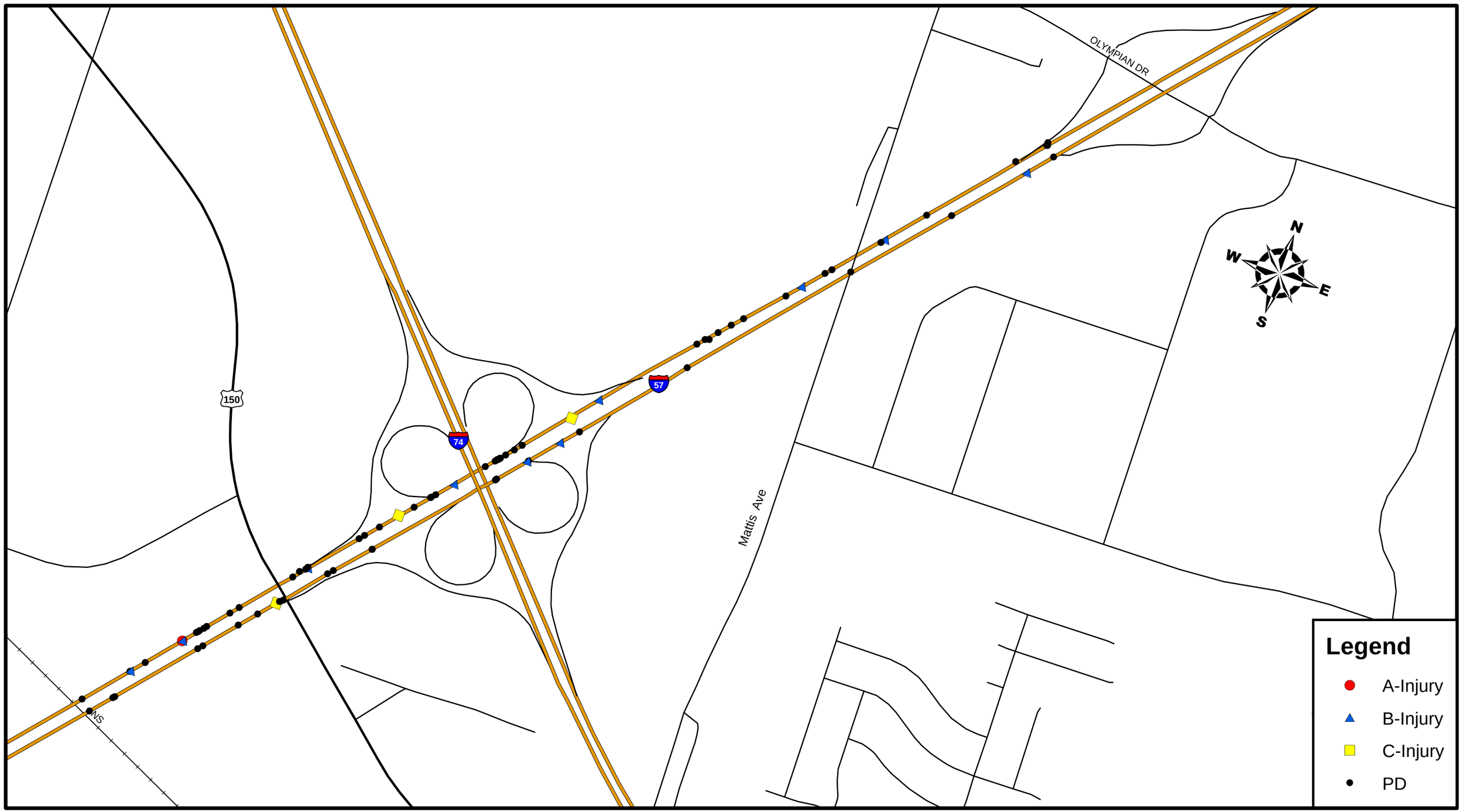
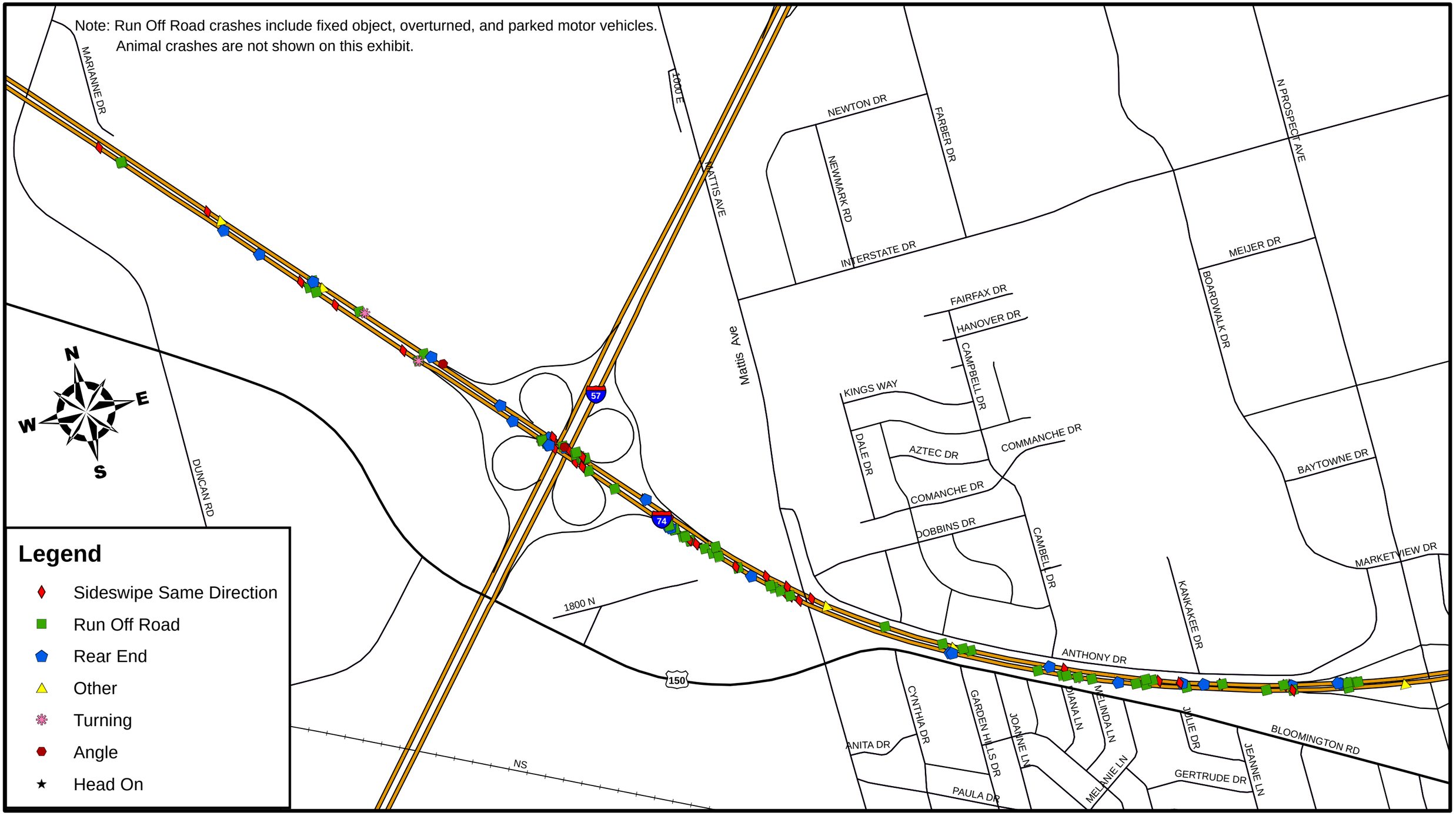



Exhibit 4

# Interchange Reconstruction Project
# I-74 Crashes from 2008 to 2012

Note: Run Off Road crashes include fixed object, overturned, and parked motor vehicles.
Animal crashes are not shown on this exhibit.




## Legend

- Sideswipe Same Direction
- Run Off Road
- Rear End
- Other
- Turning
- Angle
- Head On

EXHIBIT 5

# Interchange Reconstruction Project
# I-74 Crashes from 2008 to 2012

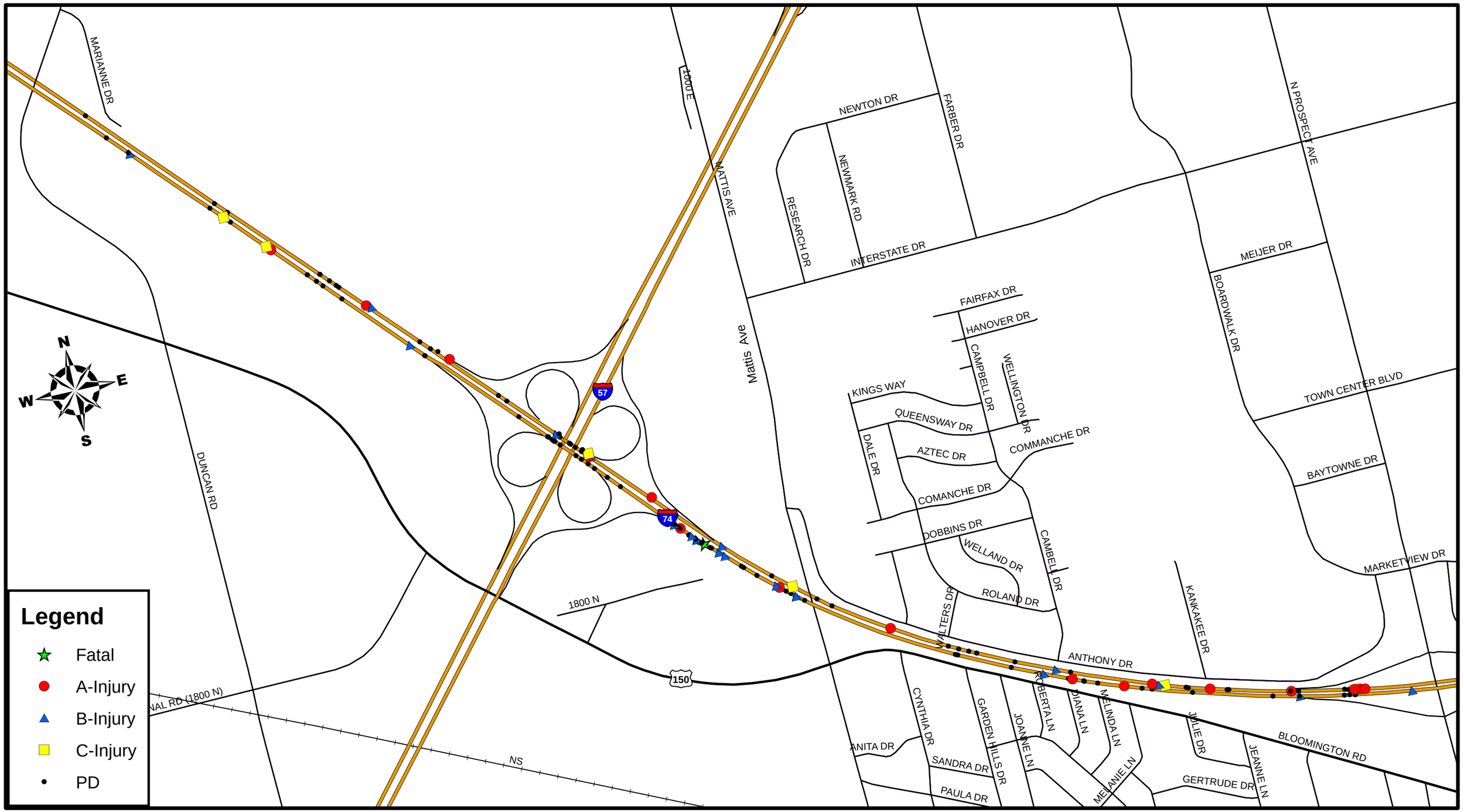
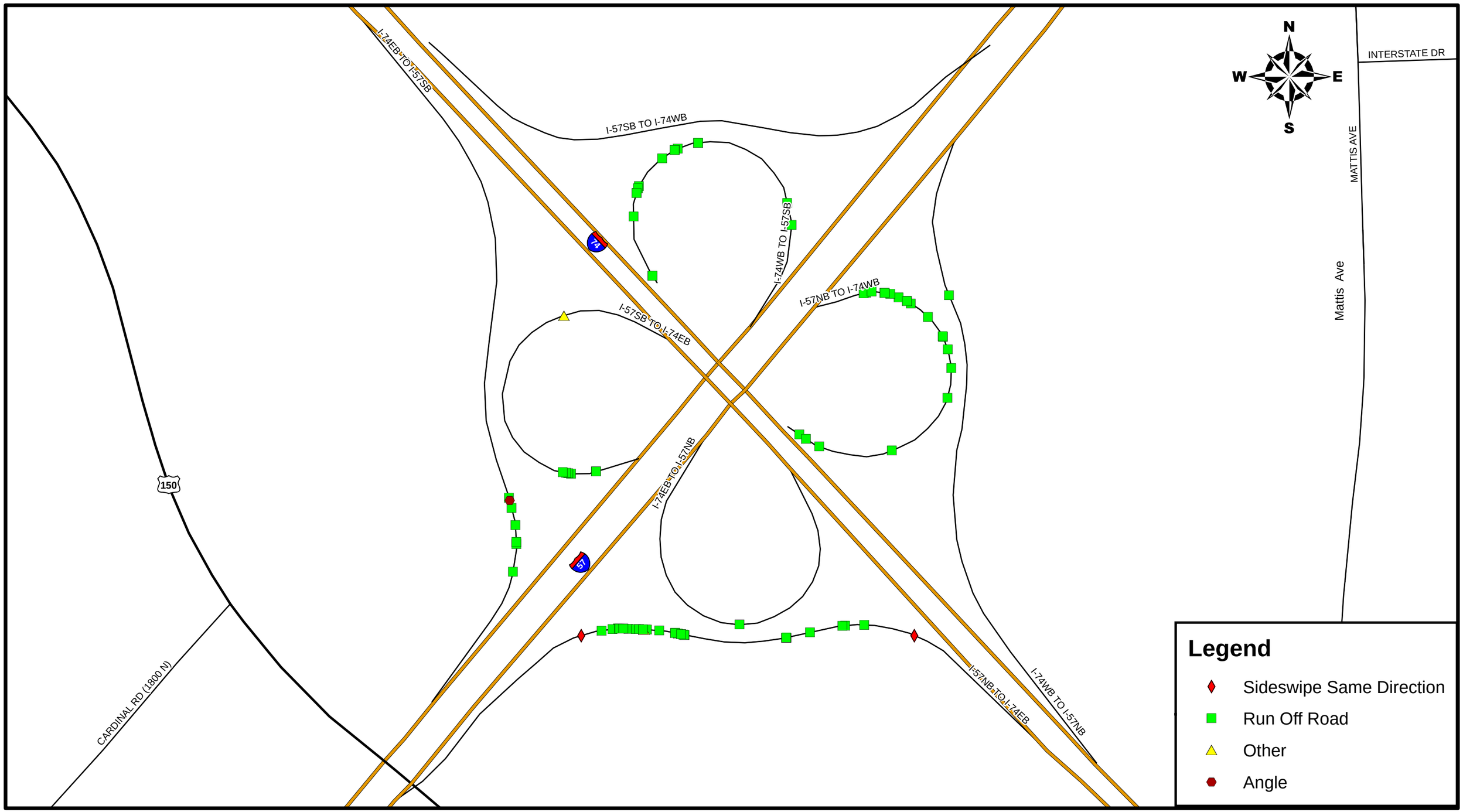



Exhibit 6

# Interchange Reconstruction Project
# Ramp Crashes from 2008 to 2012




Note: Run Off Road crashes include fixed object, other object, overturned, and parked motor vehicle crashes

Exhibit 7

# Interchange Reconstruction Project
# Ramp Crashes from 2008 to 2012

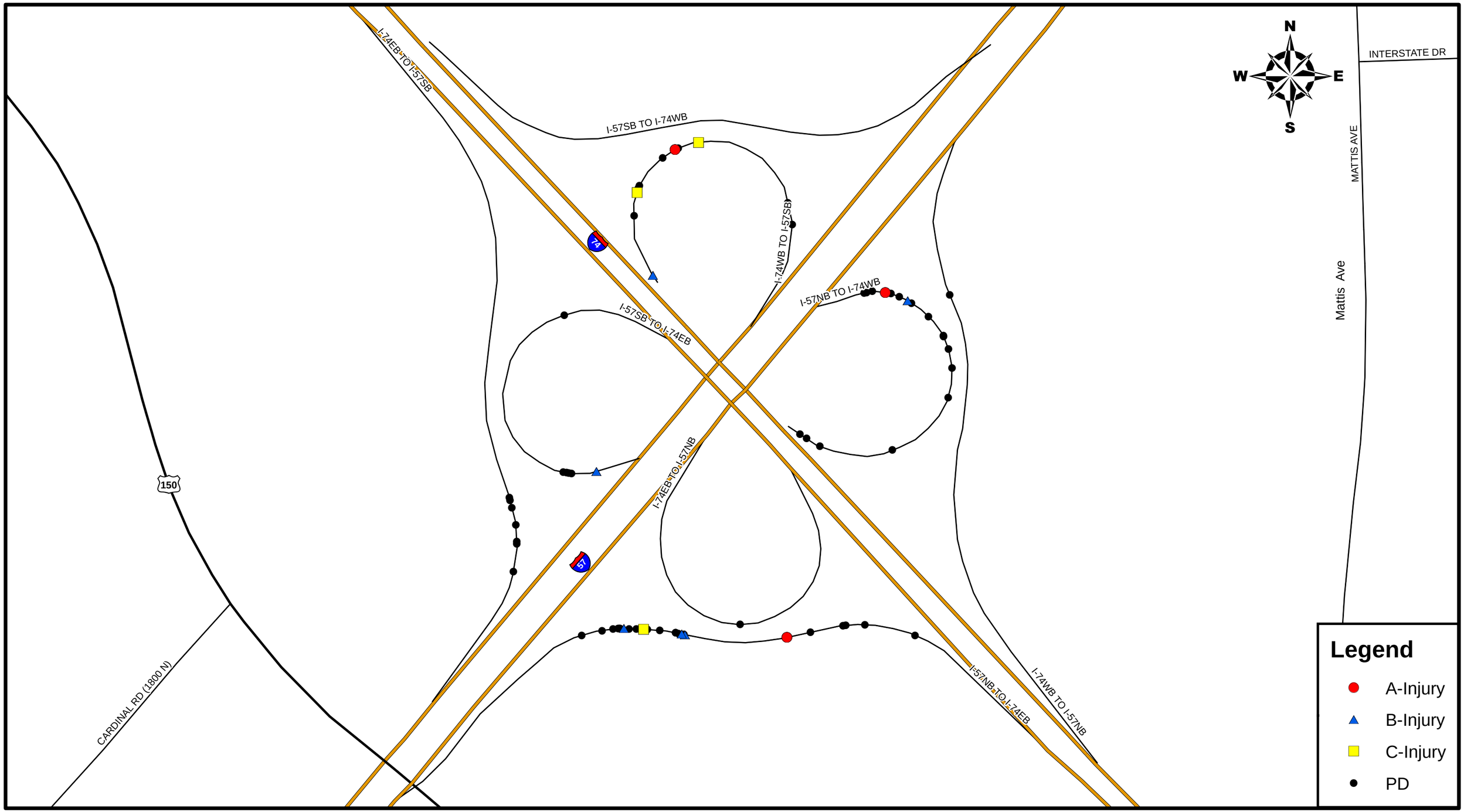



Exhibit 8

# Interchange Reconstruction Project
# 5% Report Locations for years 2011 and 2012

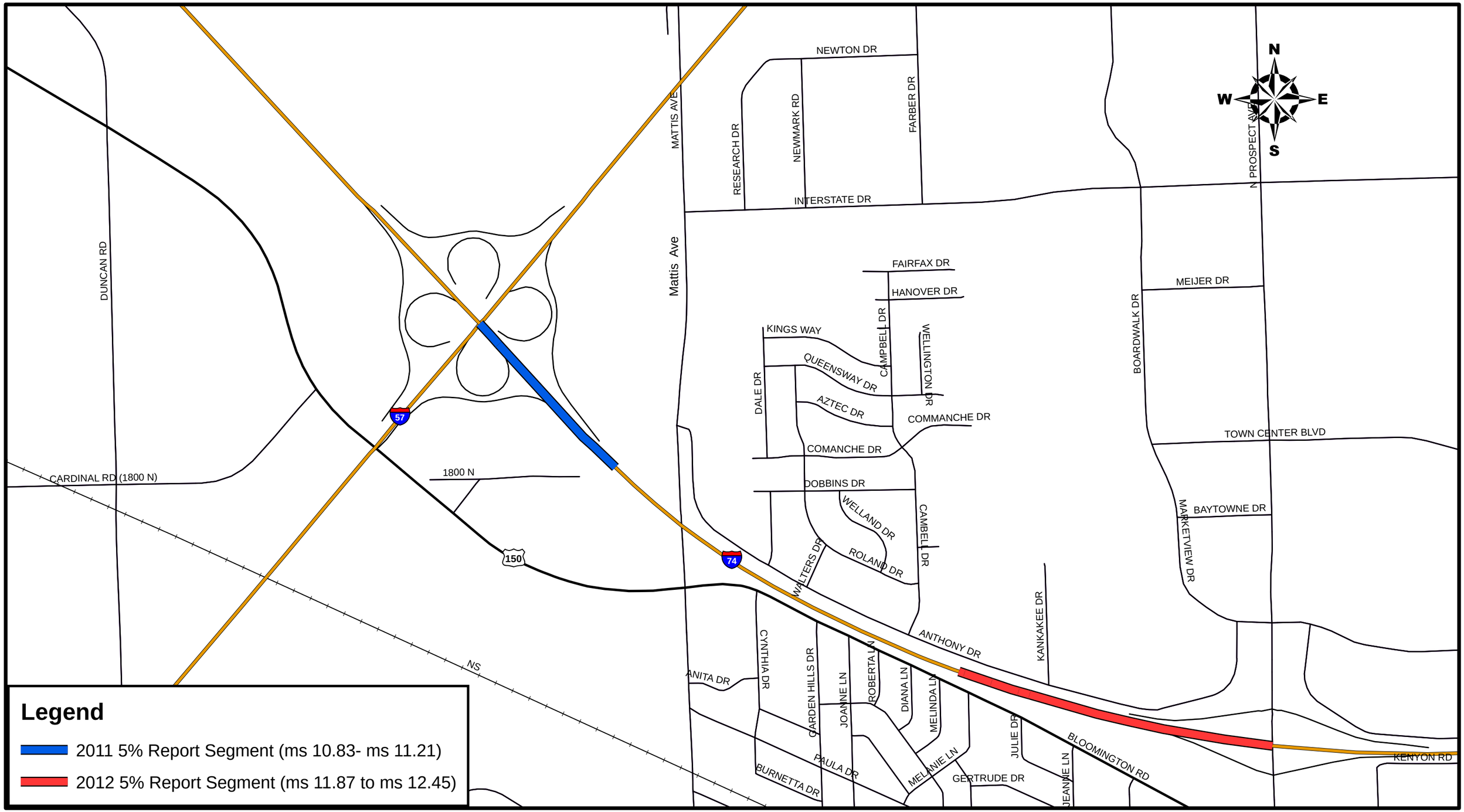



Exhibit 9

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N

300' 0 300' 600'
SCALE: 1" = 300'

I–57

N. MATTIS AVE.

I–74

W. ANTHONY DR.

BLOOMINGTON RD.

MIDWEST CT.

BLOOMINGTON RD.

BLOOMINGTON RD.

N. MATTIS AVE.

I–57

INTERCHANGE TYPE STUDY

**EXISTING CLOVERLEAF INTERCHANGE WITH AERIAL IMAGE**

**EXHIBIT 10**

BDE-9908

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R = 430′
R = 310′
R = 229.62′
R = 690′
R = 690′
R = 310′
R = 230′
R = 270′
R = 690′
R = 302′
R = 690′
R = 310′
R = 270′
R = 230′
R = 229.62′
R = 302′
R = 430′
R = 311.62′
R = 430′
R = 430′

I-57
I-74
1050
1060
1070
600
590

N

200′ 0 200′ 400′
SCALE: 1" = 200′

INTERCHANGE TYPE STUDY

**EXISTING INTERCHANGE RAMP RADII**

**EXHIBIT 11**

# Design and Geometric Criteria

## Interstate 57 and Interstate 74

Section 10(5-1-RS-1, 14-1, 6)R
Job No. P-95-030-11

Champaign, IL
Champaign County

**EXHIBIT 12**

# F.A.I. 57 (I-57) – Urban Principal Arterial (Interstate)
# F.A.I. 74 (I-74) – Urban Principal Arterial (Interstate)

| Topic | Criteria | Source |
|---|---|---|
| **Design Speed** | 70 mph | District 5 Meeting 9-6-2012 |
| **Level of Service** | LOS C | BDE, Figure 44-5A |
| **Horizontal Alignment** | | |
| Superelevation Rate ($e_{max}$) | 6 % | BDE, Figure 44-5D |
| Minimum Radius Curve | 1330 ft | BDE, Figure 44-5D |
| Minimum Curve Length | Varies with deflection angle | BDE, Section 32-2.05 |
| Design Vehicle | WB-65 | BDE, Figure 36-1R |
| **Vertical Alignment** | | |
| Maximum Grade | | |
| Level | 3% | BDE, Figure 44-5D |
| Minimum Grade | | |
| Desirable | 0.5% | BDE, Figure 44-5D |
| With Curb and Gutter | 0.3% | BDE, Figure 44-5D |
| Rate of Vertical Curvature, K (Stopping Sight Dist.) | | |
| Crest Vertical Curve | | |
| Passenger Cars – Level Grade | 151 | BDE, Figure 33-4A |
| Sag Vertical Curve | | |
| Passenger Cars – Level Grade | 136 | BDE, Figure 33-4E |
| Minimum Length of Curve | 5 x Design Speed | |
| Crest | 350 ft | BDE, Sec. 33-4.01(a) |
| Sag | 350 ft | BDE, Sec. 33-4.02(a) |
| **Sight Distance** | | |
| Stopping Sight Distance (Passenger Car) | | |
| Minimum | 570 ft | BDE, Figure 31-3A, Figure 44-5D |
| **Bridges** | | |
| Vertical Clearance (Freeway Under) | | |
| New and Replaced Overpassing Bridges | 16’-9” | BDE, Figure 44-5A |
| Overhead Signs/Pedestrian Bridges | 17’-3” (New) | BDE, Figure 44-5A |

# F.A.I. 57 (I-57) – Urban Principal Arterial (Interstate)
# F.A.I. 74 (I-74) – Urban Principal Arterial (Interstate)
# (Continued)

| Topic | Criteria | Source |
|---|---|---|
| **Cross Section Elements** | | |
| Median Width (Depressed) | 60 ft | BDE, Figure 44-5A |
| Median Width (Flush – Concrete Barrier) | 22 ft | BDE, Figure 44-5A |
| Traveled Way Width | 2 @ 36 ft | BDE, Figure 44-5A |
| Shoulder Width | | |
| Left | 12 ft | BDE, Figure 44-5A |
| Right | 12 ft | BDE, Figure 44-5A |
| Paved Shoulder Width | | |
| Left | 12 ft | BDE, Figure 44-5A |
| Right | 12 ft | BDE, Figure 44-5A |
| Auxiliary Lanes | | |
| Lane Width | 12 ft | BDE, Figure 44-5A |
| Left Shoulder | 8 ft (minimum) | BDE, Figure 44-5A |
| Right Shoulder | 10 ft | BDE, Figure 44-5A |
| Cross Section Slopes | | |
| Travel Lanes | 1.5% | BDE, Figure 44-5A |
| Auxiliary Lanes | 2% | BDE, Sec. 34-2.03 |
| Shoulders | 4% | BDE, Figure 44-5A |
| Maximum Shoulder Rollover | 8% | BDE, Sec. 32-3.04 |
| Clear Zone, from E.O.P. | 30 ft (1:6 Foreslope) | BDE, Figure 38-3A |
| Earth Slopes | | |
| Fill | | |
| Foreslope | | |
| Behind Guardrail | 1:2 Max. | BDE, Figure 44-5A |
| Without Guardrail | | |
| Within Clear Zone | 1:6 | BDE, Figure 44-5A |
| Beyond Clear Zone | 1:3 Max. | BDE, Figure 44-5A |
| Cut | | |
| Foreslope | | |
| Within Clear Zone | 1:6 | BDE, Figure 44-5A |
| Beyond Clear Zone | 1:3 Max. | BDE, Figure 44-5A |
| Backslope | | |
| Within Clear Zone | 1:3 | BDE, Figure 44-5A |
| Beyond Clear Zone | 1:3 | BDE, Figure 44-5A |
| Median Slopes | 1:6 | BDE, Figure 44-5A |
| Ditch Bottom Width | 4 ft | BDE, Figure 44-5A |

# Interchange Ramps - Outer Connector, Directional, Semi-Directional

| Topic | Criteria | Source |
|---|---|---|
| **Design Speed** | 50 mph | BDE, Sec. 37-4.04 |
| **Stopping Sight Distance** | | |
| Stopping Sight Distance (Passenger Car) | | |
| Minimum | 425 ft | BDE, Figure 37-4F |
| **Horizontal Alignment** | | |
| Minimum Radius Curve | | |
| 50 mph (45 mph min) | 760 ft | BDE, Figure 37-4F |
| Maximum Superelevation Rate | 8% | BDE, Sec. 37-4.07(b) #2, Figure 37-4F |
| Minimum Curve Length | Varies with deflection angle | BDE, Section 32-2.05 |
| **Vertical Alignment** | | |
| Maximum Upgrade | +4% | BDE, Section 37-4.08(a), Figure 37-4F |
| Maximum Downgrade | -6% | BDE, Section 37-4.08(a), Figure 37-4F |
| Rate of Vertical Curvature, k | | |
| Crest Vertical Curve | | |
| Minimum | 84 | BDE, Figure 37-4F |
| Sag Vertical Curve | | |
| Minimum | 96 | BDE, Figure 37-4F |
| **Cross Section Elements** | | |
| Clear Zone | 12-14 ft Ramp D, H<br>16-18 ft Ramp B, C, F, G<br>18-20 ft Ramp A, E | BDE, Figure 38-3A |
| Cross Section Widths | | |
| 1-Lane Ramp | | |
| Traveled Way Width | 16 ft | BDE, Section 37-4.06 |
| Shoulder Width | | |
| Left | 6 ft | BDE, Section 37-4.06 |
| Right | 8 ft | BDE, Section 37-4.06 |
| Paved Shoulder Width | | |
| Left | 4 ft | BDE, Section 37-4.06 |
| Right | 6 ft | BDE, Section 37-4.06 |
| Cross Section Slopes | | |
| Travel Lane | 1.5% Min. (Toward Rt. Shoulder) | BDE, Section 37-4.06 |
| Shoulders | 4% | BDE, Section 37-4.06 |
| Sideslopes | 1:4 (Maximum) | BDE, Section 37-4.06 |
| **Entrance and Exit Ramp Terminals** | | |
| Minimum Acceleration/Deceleration Lengths | | See BDE, Sec. 37-6 and IDOT Highway Standards 406001 & 406101 |

# Interchange Ramps - Loop

| Topic | Criteria | Source |
|---|---|---|
| **Design Speed** | 40 mph | District 5 Meeting 9-6-2012 |
| **Stopping Sight Distance** | | |
| Stopping Sight Distance (Passenger Car) | | |
| Minimum | 305 ft | BDE, Figure 37-4F |
| **Horizontal Alignment** | | |
| Minimum Radius Curve | | |
| 40 mph | 445 ft | BDE, Figure 37-4F |
| Maximum Superelevation Rate | 8% | BDE, Sec. 37-4.07(b) #2, Figure 37-4F |
| Minimum Curve Length | Varies with deflection angle | BDE, Section 32-2.05 |
| **Vertical Alignment** | | |
| Maximum Upgrade | +4% | BDE, Section 37-4.08(a), Figure 37-4F |
| Maximum Downgrade | -6% | BDE, Section 37-4.08(a), Figure 37-4F |
| Rate of Vertical Curvature, k | | |
| Crest Vertical Curve | | |
| Minimum | 44 | BDE, Figure 37-4F |
| Sag Vertical Curve | | |
| Minimum | 64 | BDE, Figure 37-4F |
| **Cross Section Elements** | | |
| Clear Zone | 14-16 ft Ramp C, F | BDE, Figure 38-3A |
| Cross Section Widths | | |
| 1-Lane Ramp | | |
| Traveled Way Width | 16 ft | BDE, Section 37-4.06 |
| Shoulder Width | | |
| Left | 6 ft | BDE, Section 37-4.06 |
| Right | 8 ft | BDE, Section 37-4.06 |
| Paved Shoulder Width | | |
| Left | 4 ft | BDE, Section 37-4.06 |
| Right | 6 ft | BDE, Section 37-4.06 |
| Cross Section Slopes | | |
| Travel Lane | 1.5% Min. (Toward Rt. Shoulder) | BDE, Section 37-4.06 |
| Shoulders | 4% | BDE, Section 37-4.06 |
| Sideslopes | 1:4 (Maximum) | BDE, Section 37-4.06 |
| **Entrance and Exit Ramp Terminals** | | |
| Minimum Acceleration/Deceleration Lengths | | See BDE, Sec. 37-6 and IDOT Highway Standards 406001 & 406101 |

# F.A.P. 719 (Bloomington Rd./US 150) – Urban Principal Arterial (Other)

| Topic | Criteria | Source |
|---|---|---|
| **Design Speed** | 50 mph | BDE, Figure 48-6A |
| **Level of Service** | LOS C | BDE, Figure 48-6A |
| **Horizontal Alignment** | | |
| Superelevation Rate ($e_{max}$ ) | 4 % | BDE, Figure 48-6C |
| Minimum Radius Curve (Low Speed Urban Street) | 930 ft | BDE, Figure 32-2F<br>Figure 48-6C |
| Minimum Curve Length | Varies with deflection angle | BDE, Section 32-2.05 |
| Design Vehicle | WB-65 | BDE, Figure 36-1R |
| **Vertical Alignment** | | |
| Maximum Grade | | |
| Level | 4% | BDE, Figure 48-6C |
| Minimum Grade | | |
| Desirable | 0.5% | BDE, Figure 48-6C |
| With Curb & Gutter | 0.3% | BDE, Figure 48-6C |
| Rate of Vertical Curvature, K (Stopping Sight Dist.) | | |
| Crest Vertical Curve | | |
| Minimum | 84 | BDE, Figure 48-6C |
| Sag Vertical Curve | | |
| Minimum | 96 | BDE, Figure 48-6C |
| Minimum Length of Curve (3 x Design Speed) | | |
| Crest | 150 ft | BDE, Sec. 33-4.01(a) |
| Sag | 150 ft | BDE, Sec. 33-4.02(a) |
| **Sight Distance** | | |
| Stopping Sight Distance (Passenger Car) | | |
| Minimum | 425 ft | BDE, Figure 31-3A,<br>Figure 48-6C |
| **Cross Section Elements** | | |
| Median Width (Raised Curb) | n/a | BDE, Figure 48-6A |
| Traveled Way Width (Without Parking) | 30 ft f-f | BDE, Figure 48-6A |
| Auxiliary Lanes | | |
| Lane | Single Left or Right 12 ft | BDE, Figure 48-6A |
| | Dual Lefts 24 ft, Min: 22 ft | BDE, Figure 48-6A |
| Cross Section Slopes | | |
| Travel Lanes | 1.50% for Lanes Adjacent to Crown | BDE, Figure 48-6A |
| Maximum Shoulder Rollover | 8% | BDE, Sec. 32-3.04 |

# N. Mattis Ave/F.A.U. 7158/CR 1000E – Suburban Minor Arterial

| Topic | Criteria | Source |
|---|---|---|
| **Design Speed** | 45 mph | BLR, Figure 32-2C |
| **Level of Service** | LOS C | BLR, Figure 32-2C |
| **Horizontal Alignment** | | |
| Superelevation Rate ($e_{max}$) | 4 % | BLR, Sec. 29-4.03(b) |
| Minimum Radius Curve (Low Speed Urban Street) | 665 ft | BLR, Figure 29-4A |
| Minimum Curve Length | Varies with deflection angle | BLR, Section 29-2.06 |
| **Vertical Alignment** | | |
| Maximum Grade | | |
| Level | 6% | BLR, Figure 32-3B |
| Minimum Grade | | |
| Desirable | 0.5% | BLR, Figure 32-3B |
| With Curb & Gutter | 0.3% | BLR, Figure 32-3B |
| Rate of Vertical Curvature, K (Stopping Sight Dist.) | | |
| Crest Vertical Curve | | |
| Minimum | 61 | BLR, Figure 32-3B |
| Sag Vertical Curve | | |
| Minimum | 79 | BLR, Figure 32-3B |
| Minimum Length of Curve (3 x Design Speed) | | |
| Crest | 135 ft | BLR, Figure 30-2A |
| Sag | 135 ft | BLR, Figure 30-2D |
| **Sight Distance** | | |
| Stopping Sight Distance (Passenger Car) | | |
| Minimum | 360 ft | BLR, Figure 32-3B |
| **Cross Section Elements** | | |
| Median Width (Raised Curb) | 18 ft | BLR, Figure 32-2C |
| Surface Width | 4 lanes @ 12 ft | BLR, Figure 32-2C |
| Auxiliary Lanes | | |
| Lane | Single Left or Right 12 ft | BLR, Figure 32-2C |
| | Dual Lefts 24 ft | BLR, Figure 32-2C |
| Cross Section Slopes | | |
| Travel Lanes | 1.5%-2% | BLR, Figure 32-2C |
| Auxiliary Lanes | 2% | BLR, Figure 32-2C |

# Duncan Road – TENTATIVE

| Topic | Criteria | Source |
|---|---|---|
| **Design Speed** | 45 mph (40–50 mph) | BLR, Figure 32-2C |
| **Level of Service** | LOS C | BLR, Figure 32-2C |
| **Horizontal Alignment** | | |
| Superelevation Rate ($e_{max}$ ) | 4 % | BLR, Sec. 29-4.03(b) |
| Minimum Radius Curve (open suburban) | 730 ft | BLR, Figure 32-3B |
| Minimum Curve Length | Varies with deflection angle | BLR, Sec. 29-2.06 |
| **Vertical Alignment** | | |
| Maximum Grade | | |
| Level | 6% | BLR, Figure 32-3B |
| Minimum Grade | | |
| Desirable | 0.5% | BLR, Figure 32-3B |
| With Curb & Gutter | 0.3% | BLR, Figure 32-3B |
| Rate of Vertical Curvature, K (Stopping Sight Dist.) | | |
| Crest Vertical Curve | | |
| Minimum | 61 | BLR, Figure 32-3B |
| Sag Vertical Curve | | |
| Minimum | 79 | BLR, Figure 32-3B |
| Minimum Length of Curve (3 x Design Speed) | | |
| Crest | 135 ft | BLR, Figure 30-2A |
| Sag | 135 ft | BLR, Figure 30-2D |
| **Sight Distance** | | |
| Stopping Sight Distance (Passenger Car) | | |
| Minimum | 360 ft | BLR, Figure 32-3B |
| **Cross Section Elements** | | |
| Median Width (Raised Curb) | 18 ft | BLR, Figure 32-2C |
| Surface Width | 4 lanes @ 12 ft | BLR, Figure 32-2C |
| Auxiliary Lanes | | |
| Lane | Single Left or Right 12 ft | BLR, Figure 32-2C |
| | Dual Lefts 24 ft, | BLR, Figure 32-2C |
| Cross Section Slopes | | |
| Travel Lanes | 1.5%-2% | BLR, Figure 32-2C |
| Auxiliary Lanes | 2% | BLR, Figure 32-2C |

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# ALTERNATE 1:
# FULL DIRECTIONAL INTERCHANGE TYPE

N

300′ 0 300′ 600′
SCALE: 1″ = 300′

MATCHLINE I–57 NORTH
I–57 (3 LANES AND AUXILIARY LANE)
1862′ WEAVE (BDE FIG. 37-2.C)
1600′ WEAVE (BDE FIG. 37-2.C)
ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.L)
EXIT RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.B)
OLYMPIAN DR.
I–57 (3 LANES)
R=1000′ (e=7.6%)
R=2000′ (e=5.0%)
MINOR DIVERGENCE (BDE FIG. 37-6.R)
MINOR CONVERGENCE (BDE FIG. 37-6.T)
N. MATTIS AVE.
R=1000′ (e=6.0%)
R=1500′ (e=6.2%)
STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)
I–74 (3 LANES)
R=960′ (e=7.6%)
RAMP H
RAMP G
RAMP F
RAMP E
R=1250′ (e=6.8%)
R=1000′ (e=7.6%)
MINOR DIVERGENCE (BDE FIG. 37-6.R)
R=760′ (e=8.0%)
R=7041′ (e=2.8%)
R=12278′ (e=1.7%)
R=12227′ (e=1.7%)
STANDARD EXIT RAMP TERMINAL (BDE FIG. 37-6.A)
W. ANTHONY DR.
I–74 (3 LANES)
MATCHLINE I–74 EAST
BLOOMINGTON RD.
STANDARD EXIT RAMP TERMINAL (BDE FIG. 37-6.A)
R=1200′ (e=7.0%)
MINOR DIVERGENCE (BDE FIG. 37-6.R)
MIDWEST CT.
RAMP D
RAMP C
RAMP B
RAMP A
MINOR CONVERGENCE (BDE FIG. 37-6.T)
STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)
R=15000′ (e=N.C.)
N. MATTIS AVE.
R=1000′ (e=7.6%)
R=760′ (e=8.0%)
BLOOMINGTON RD.
I–57 (3 LANES)
MINOR CONVERGENCE (BDE FIG. 37-6.T)
MINOR DIVERGENCE (BDE FIG. 37-6.R)
R=5000′ (e=2.4%)
R=1500′ (e=6.2%)
STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)
STANDARD EXIT RAMP TERMINAL (BDE FIG. 37-6.A)
MATCHLINE I–57 SOUTH
MATCHLINE I–57 SOUTH
STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)
NORFOLK SOUTHERN RAILROAD
I–57 (3 LANES)
I–74 (2 LANES)
PROSPECT AVE.
ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.L)
EXIT RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.B)
MATCHLINE I–74 EAST
W. ANTHONY DR.
BLOOMINGTON RD.
R=12278′ (e=1.7%)

INTERCHANGE TYPE STUDY

**ALTERNATE 1:**
**FULL DIRECTIONAL INTERCHANGE TYPE**

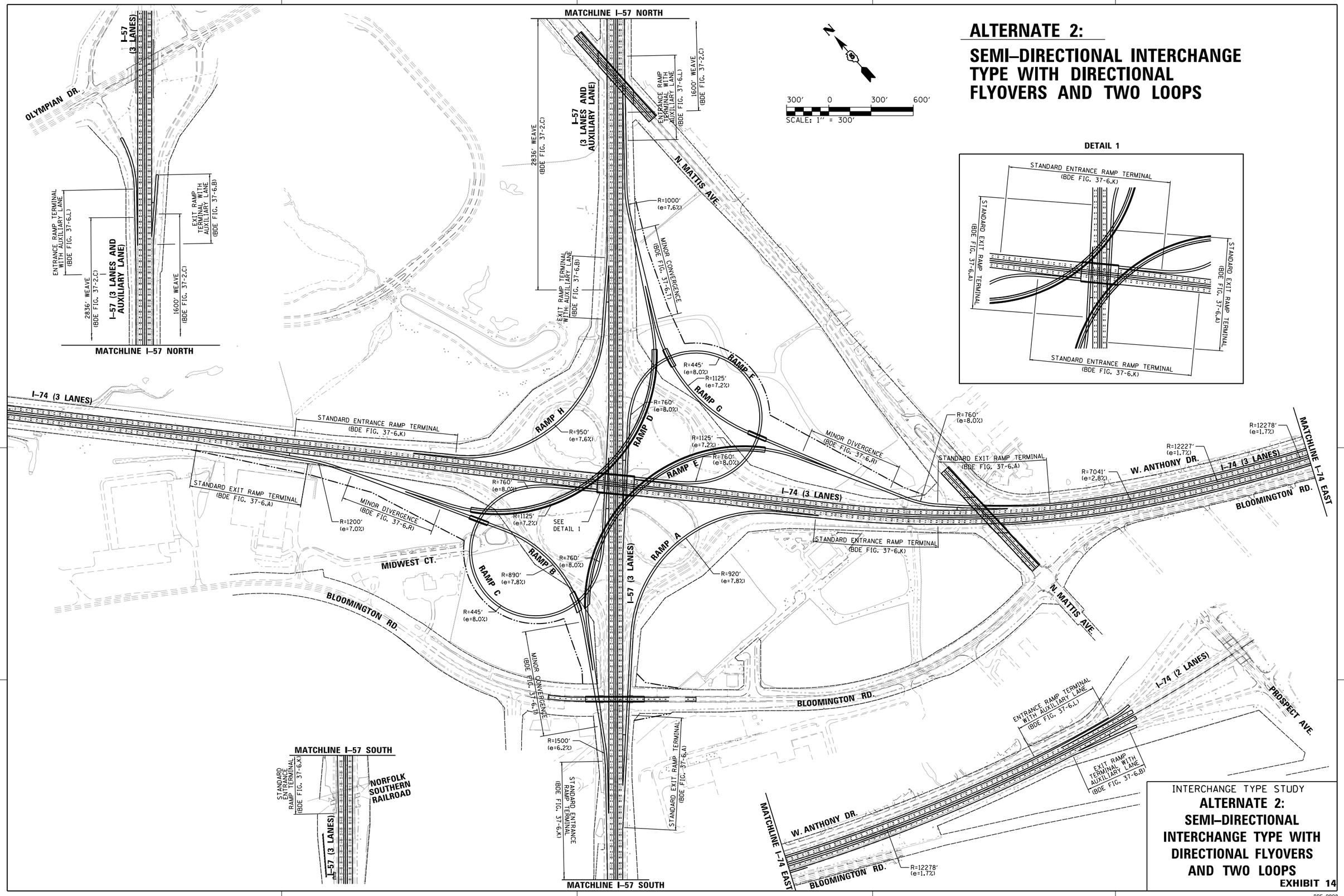
**EXHIBIT 13**

BDE-9908

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# ALTERNATE 2:

## SEMI–DIRECTIONAL INTERCHANGE TYPE WITH DIRECTIONAL FLYOVERS AND TWO LOOPS




**DETAIL 1**




INTERCHANGE TYPE STUDY

**ALTERNATE 2: SEMI–DIRECTIONAL INTERCHANGE TYPE WITH DIRECTIONAL FLYOVERS AND TWO LOOPS**

**EXHIBIT 14**

BDE-9908

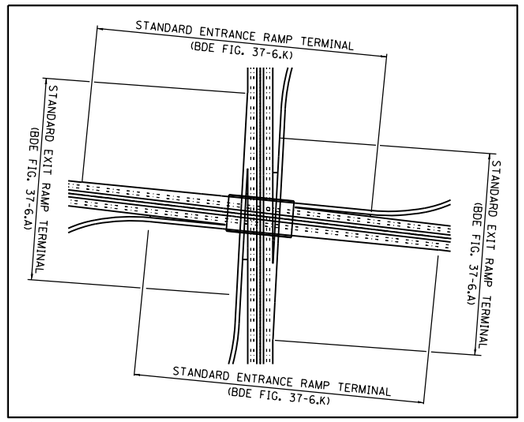
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# ALTERNATE 3:

## SEMI–DIRECTIONAL INTERCHANGE TYPE WITH SEMI–DIRECTIONAL FLYOVERS AND TWO LOOPS

300′ 0 300′ 600′
SCALE: 1″ = 300′

**DETAIL 1**




MATCHLINE I–57 NORTH

OLYMPIAN DR.

I–57 (3 LANES)

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.L)

2422′ WEAVE (BDE FIG. 37-2.C)

I–57 (3 LANES AND AUXILIARY LANE)

1458′ WEAVE (BDE FIG. 37-2.C)

EXIT RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.B)

MATCHLINE I–57 NORTH

I–74 (3 LANES)

STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)

STANDARD EXIT RAMP TERMINAL (BDE FIG. 37-6.A)

MINOR DIVERGENCE (BDE FIG. 37-6.R)

R=760′ (e=8.0%)

RAMP B

RAMP C

MIDWEST CT.

BLOOMINGTON RD.

SEE DETAIL 1

R=760′ (e=8.0%)

R=445′ (e=8.0%)

MINOR CONVERGENCE (BDE FIG. 37-6.T)

R=1270′ (e=6.8%)

R=1125′ (e=7.6%)

RAMP H

R=950′ (e=7.6%)

R=760′ (e=8.0%)

R=760′ (e=8.0%)

2422′ WEAVE (BDE FIG. 37-2.C)

I–57 (3 LANES AND AUXILIARY LANE)

1458′ WEAVE (BDE FIG. 37-2.C)

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.L)

EXIT RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.B)

R=760′ (e=8.0%)

N. MATTIS AVE.

MINOR CONVERGENCE (BDE FIG. 37-6.T)

R=3647′ (e=3.2%)

RAMP E

RAMP G

RAMP F

R=445′ (e=8.0%)

R=760′ (e=8.0%)

R=1270′ (e=6.8%)

MINOR DIVERGENCE (BDE FIG. 37-6.R)

R=760′ (e=8.0%)

STANDARD EXIT RAMP TERMINAL (BDE FIG. 37-6.A)

R=12227′ (e=1.7%)

R=12278′ (e=1.7%)

MATCHLINE I–74 EAST

W. ANTHONY DR.

I–74 (3 LANES)

R=7041′ (e=2.8%)

BLOOMINGTON RD.

I–74 (3 LANES)

RAMP A

RAMP D

R=920′ (e=7.8%)

STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)

N. MATTIS AVE.

R=1270′ (e=6.8%)

BLOOMINGTON RD.

R=760′ (e=8.0%)

I–57 (3 LANES)

STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)

STANDARD EXIT RAMP TERMINAL (BDE FIG. 37-6.A)

MATCHLINE I–57 SOUTH

MATCHLINE I–57 SOUTH

STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)

I–57 (3 LANES)

NORFOLK SOUTHERN RAILROAD

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.L)

I–74 (2 LANES)

PROSPECT AVE.

EXIT RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.B)

MATCHLINE I–74 EAST

W. ANTHONY DR.

BLOOMINGTON RD.

R=12278′ (e=1.7%)

INTERCHANGE TYPE STUDY

**ALTERNATE 3:**
**SEMI–DIRECTIONAL INTERCHANGE TYPE WITH SEMI–DIRECTIONAL FLYOVERS AND TWO LOOPS**

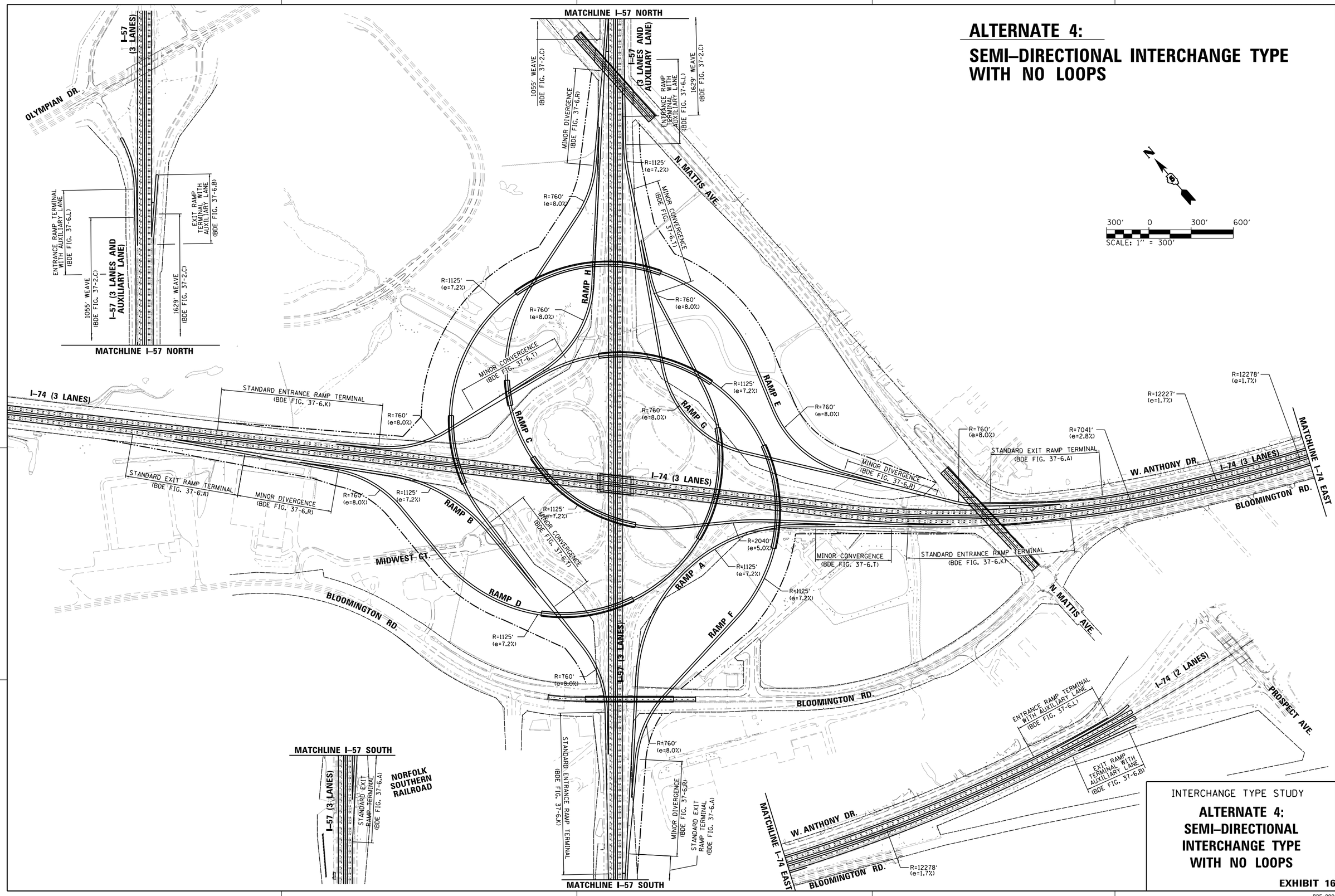
**EXHIBIT 15**

BDE-9908

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USER NAME = Brad Downen

# ALTERNATE 4:

## SEMI–DIRECTIONAL INTERCHANGE TYPE WITH NO LOOPS




INTERCHANGE TYPE STUDY

**ALTERNATE 4: SEMI–DIRECTIONAL INTERCHANGE TYPE WITH NO LOOPS**

**EXHIBIT 16**

BDE-9908

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# ALTERNATE 5:

## FULL DIRECTIONAL INTERCHANGE TYPE WITH TWO CONVEX RAMPS

N

300′ 0 300′ 600′

SCALE: 1″ = 300′

MATCHLINE I–57 NORTH

I–57 (3 LANES)

OLYMPIAN DR.

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.L)

1547′ WEAVE (BDE FIG. 37-2.C)

I–57 (3 LANES AND AUXILIARY LANE)

1451′ WEAVE (BDE FIG. 37-2.C)

EXIT RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.B)

MATCHLINE I–57 NORTH

I–57 (3 LANES AND AUXILIARY LANE)

1547′ WEAVE (BDE FIG. 37-2.C)

EXIT RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.B)

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.L)

1451′ WEAVE (BDE FIG. 37-2.C)

R=1125′ (e=7.2%)

N. MATTIS AVE.

MINOR CONVERGENCE (BDE FIG. 37-6.T)

MINOR DIVERGENCE (BDE FIG. 37-6.R)

R=1125′ (e=7.2%)

RAMP H

STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)

R=1500′ (e=6.2%)

MINOR CONVERGENCE (BDE FIG. 37-6.T)

I–74 (3 LANES)

RAMP F

RAMP G

R=1450′ (e=6.3%)

R=1450′ (e=6.3%)

MINOR DIVERGENCE (BDE FIG. 37-6.R)

R=1125′ (e=7.2%)

R=1125′ (e=7.2%)

RAMP D

R=1450′ (e=6.3%)

R=1125′ (e=7.2%)

STANDARD EXIT RAMP TERMINAL (BDE FIG. 37-6.A)

R=7041′ (e=2.8%)

R=12227′ (e=1.7%)

R=12278′ (e=1.7%)

MATCHLINE I–74 EAST

W. ANTHONY DR.

I–74 (3 LANES)

BLOOMINGTON RD.

STANDARD EXIT RAMP TERMINAL (BDE FIG. 37-6.A)

R=1200′ (e=7.0%)

MINOR DIVERGENCE (BDE FIG. 37-6.R)

RAMP C

RAMP E

R=1125′ (e=7.2%)

MIDWEST CT.

RAMP B

R=1125′ (e=7.2%)

STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)

MINOR CONVERGENCE (BDE FIG. 37-6.T)

N. MATTIS AVE.

RAMP A

R=1125′ (e=7.2%)

BLOOMINGTON RD.

I–57 (3 LANES)

MINOR CONVERGENCE (BDE FIG. 37-6.T)

MINOR DIVERGENCE (BDE FIG. 37-6.R)

I–74 (2 LANES)

PROSPECT AVE.

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.L)

EXIT RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.B)

R=1125′ (e=7.2%)

R=1500′ (e=6.2%)

STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)

STANDARD EXIT RAMP TERMINAL (BDE FIG. 37-6.A)

MATCHLINE I–57 SOUTH

MATCHLINE I–57 SOUTH

STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)

NORFOLK SOUTHERN RAILROAD

I–57 (3 LANES)

MATCHLINE I–74 EAST

W. ANTHONY DR.

BLOOMINGTON RD.

R=12278′ (e=1.7%)

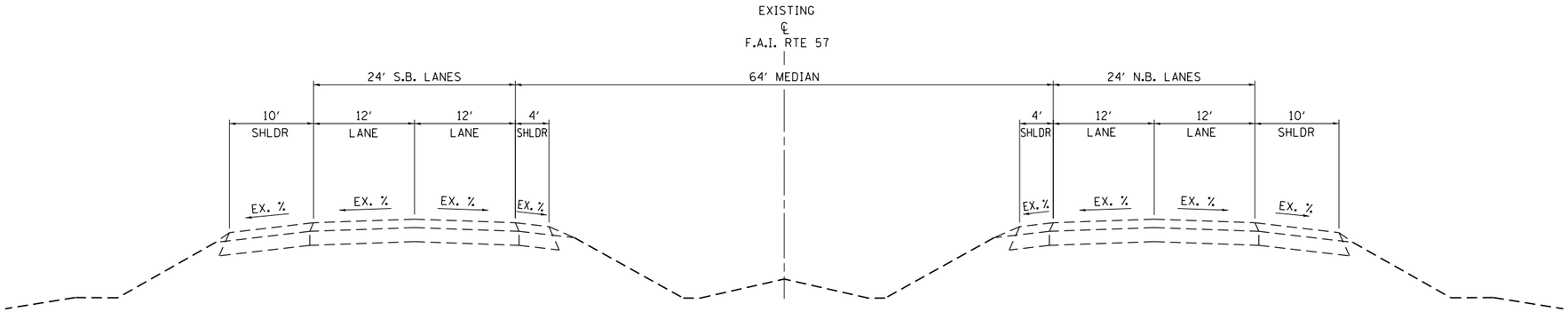
INTERCHANGE TYPE STUDY

**ALTERNATE 5:**
**FULL DIRECTIONAL INTERCHANGE TYPE WITH TWO CONVEX RAMPS**

**EXHIBIT 17**

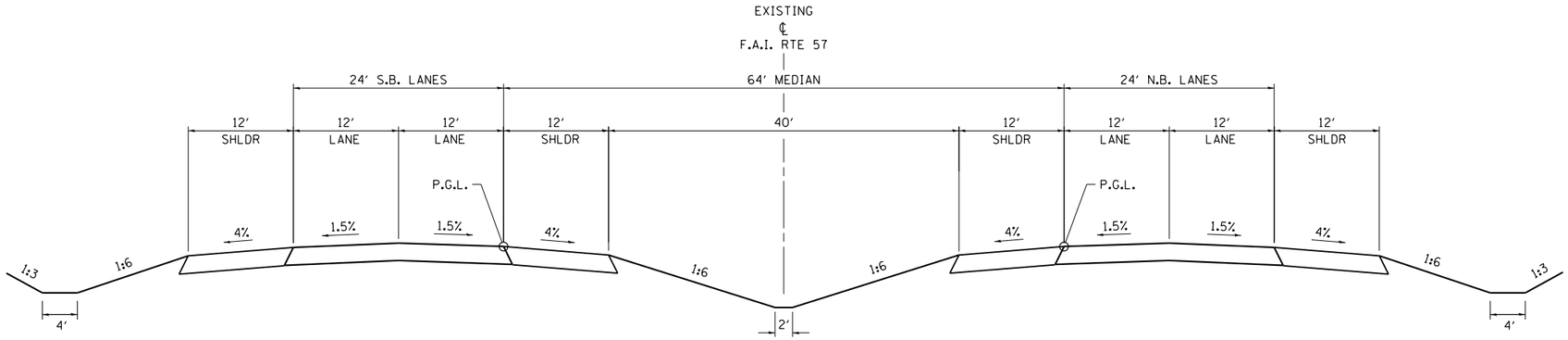
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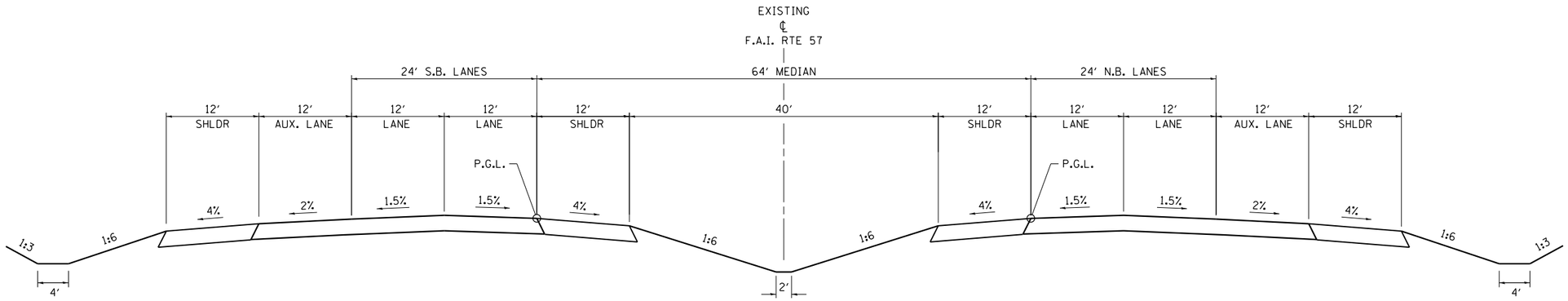

**EXISTING F.A.I 57**

(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
WITH AUXILIARY LANE
(LOOKING NORTH)

**INTERCHANGE TYPE STUDY**

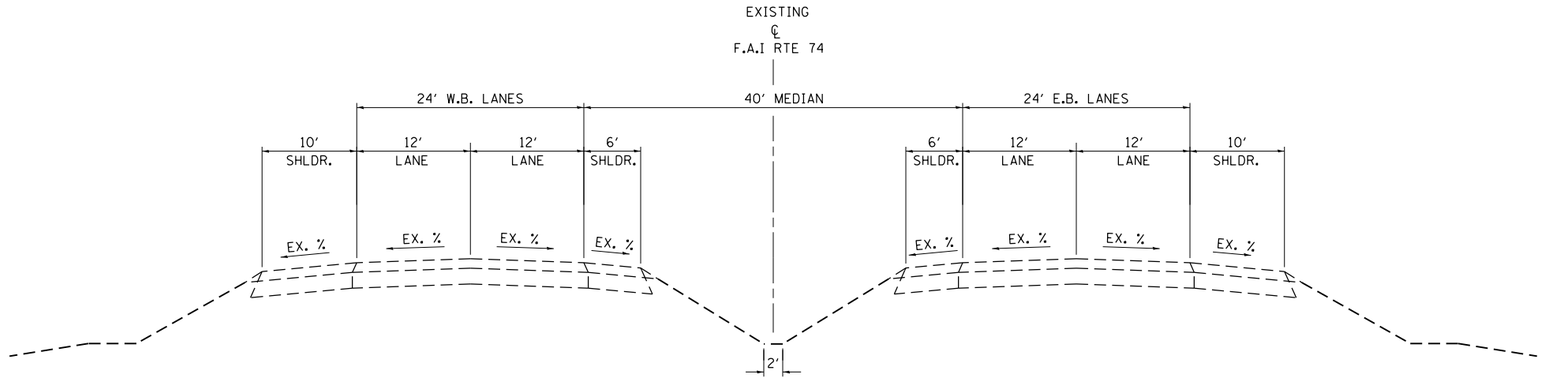
**EXISTING & PROPOSED TYPICAL SECTIONS**

**INTERSTATE 57**

**EXHIBIT 18**

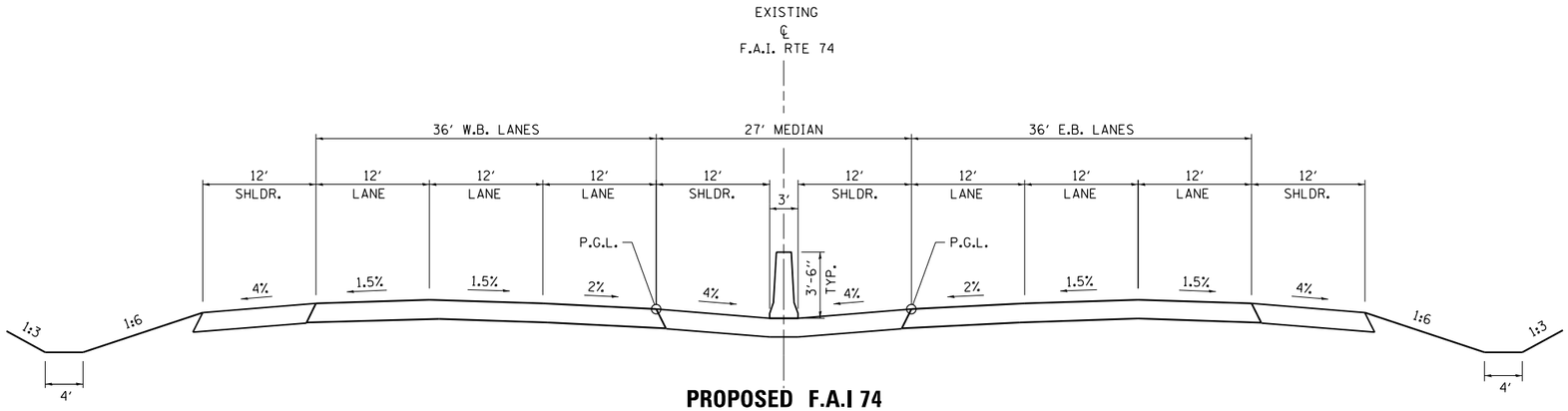
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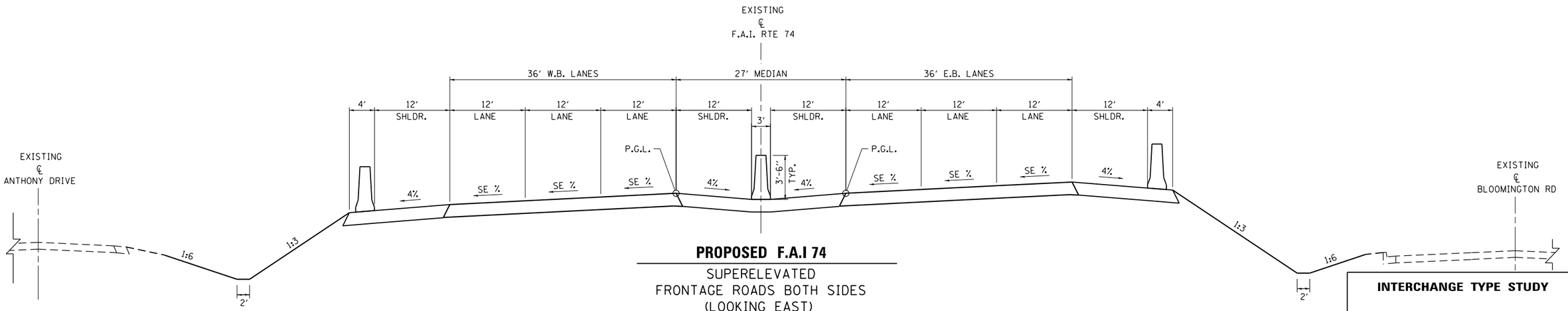

**EXISTING F.A.I 74**

(LOOKING EAST)




**PROPOSED F.A.I 74**

NORMAL CROWN
(LOOKING EAST)




**PROPOSED F.A.I 74**

SUPERELEVATED
FRONTAGE ROADS BOTH SIDES
(LOOKING EAST)

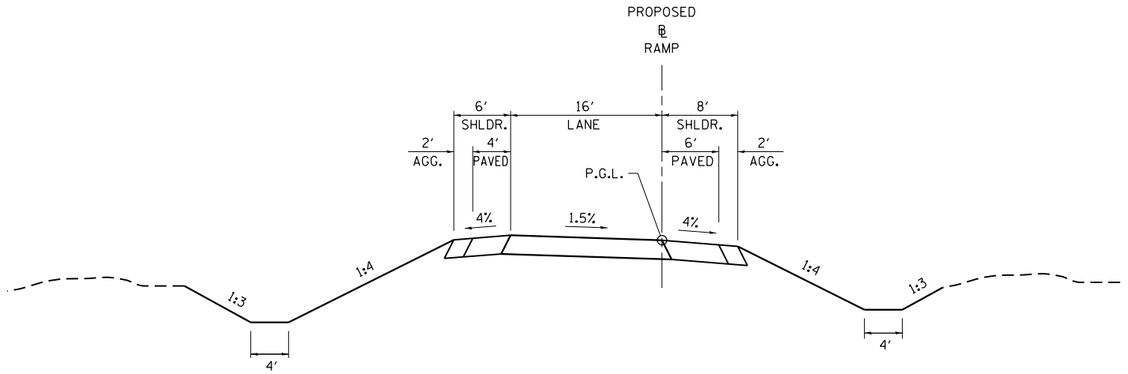
**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**INTERSTATE 74**

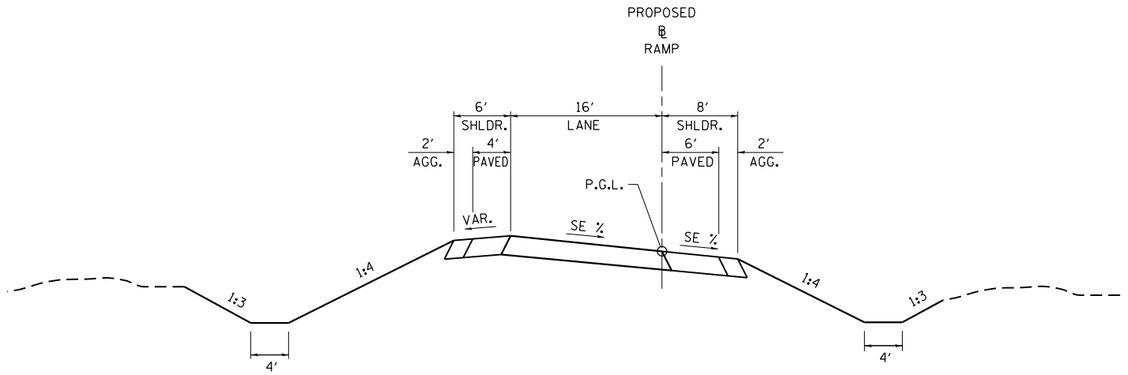
**EXHIBIT 19**

BDE-9908




**PROPOSED RAMP**

NORMAL CROWN




**PROPOSED RAMP**

SUPERELEVATED

**INTERCHANGE TYPE STUDY**

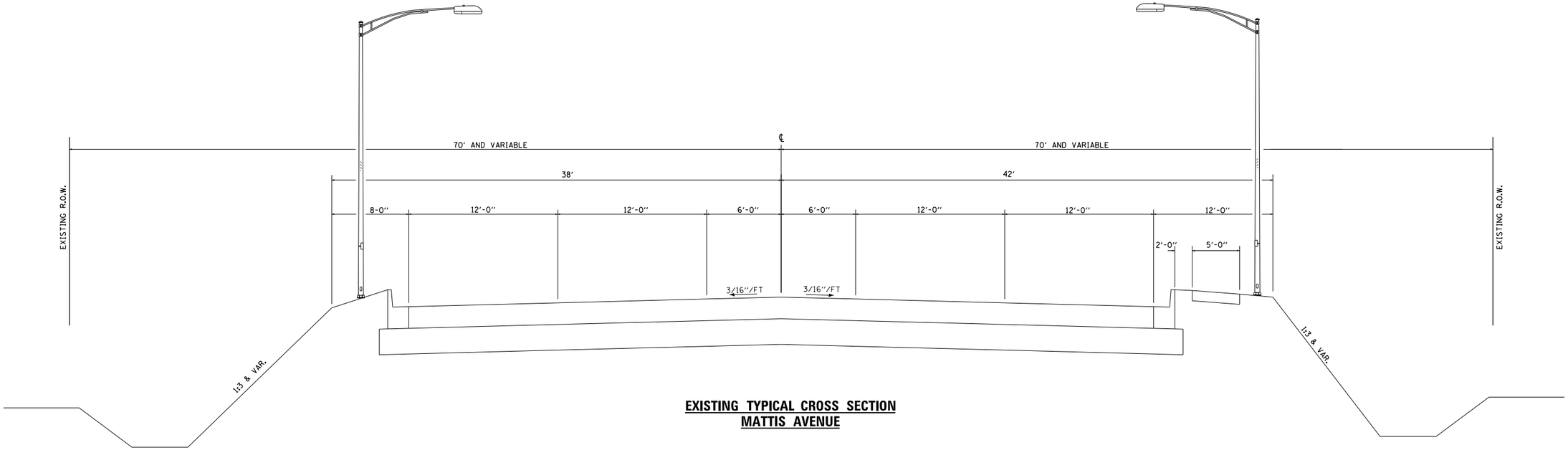
**EXISTING & PROPOSED TYPICAL SECTIONS**

**RAMPS**

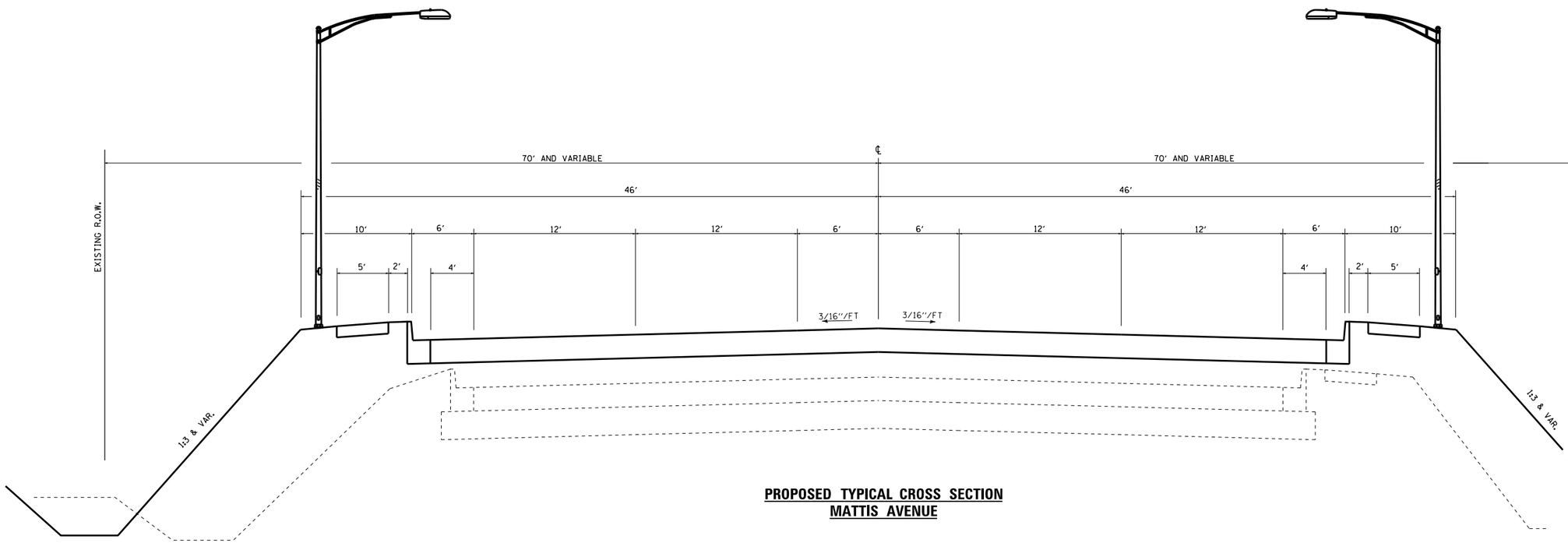
**EXHIBIT 20**

BDE-9908

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USER NAME = Brad Downen




**EXISTING TYPICAL CROSS SECTION**
**MATTIS AVENUE**




**PROPOSED TYPICAL CROSS SECTION**
**MATTIS AVENUE**

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

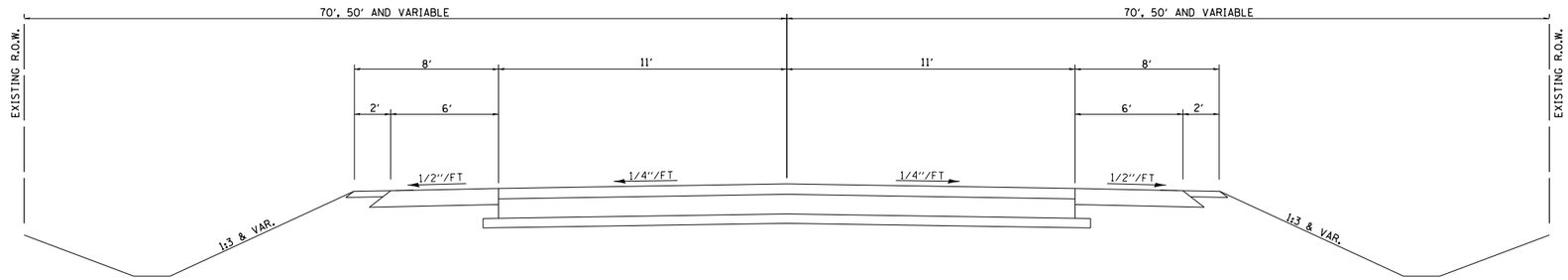
**MATTIS AVENUE (NEAR I–74)**

**EXHIBIT 21**

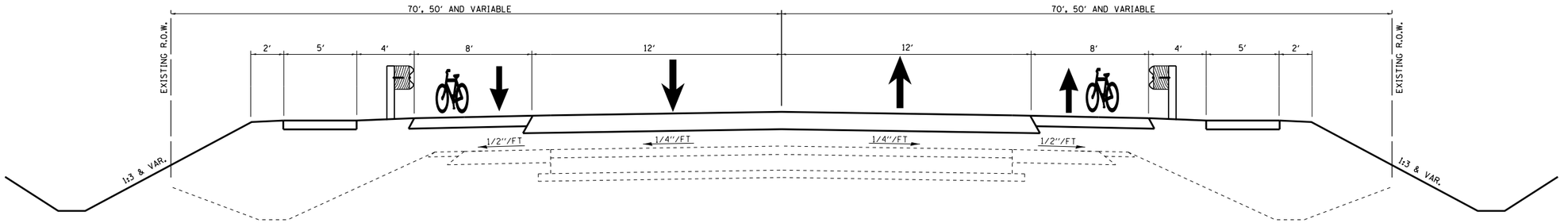
BDE-9908

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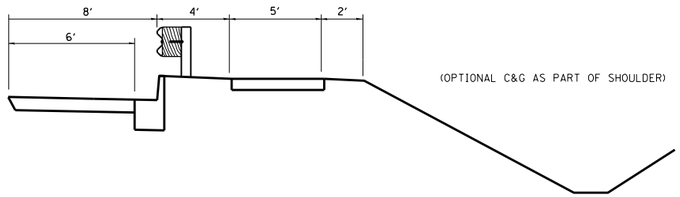
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PLOT SCALE = 16.0000 ' / in.
USER NAME = Brad Downen




**EXISTING TYPICAL CROSS SECTION**
**MATTIS AVENUE**




**PROPOSED TYPICAL CROSS SECTION**
**MATTIS AVENUE**



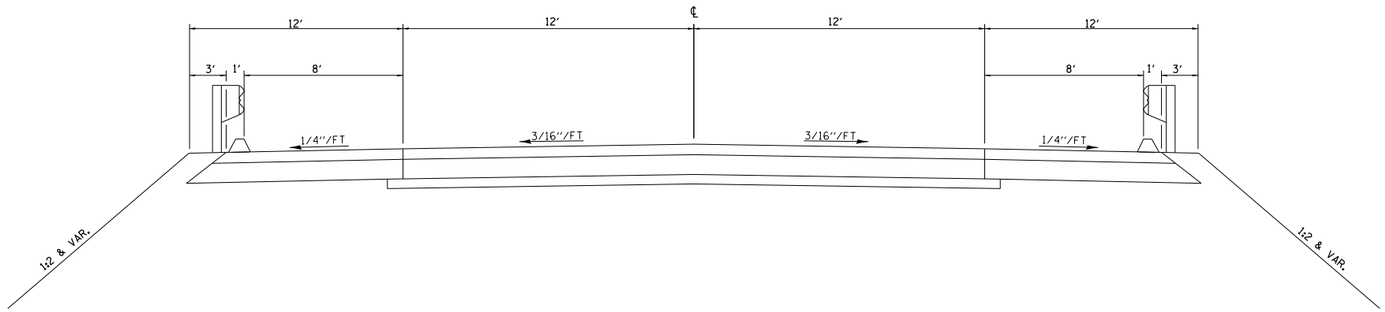

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

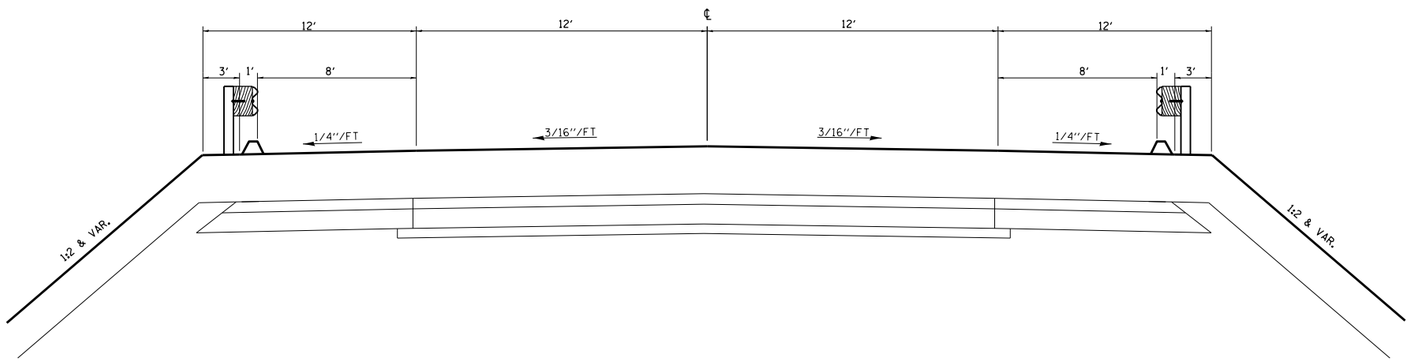
**MATTIS AVENUE (NEAR I–57)**

**EXHIBIT 22**

PLOT DATE = 8/5/2014 - 3:14:58 PM
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PLOT SCALE = 16.0000 ' / in.
USER NAME = Brad Downen




**EXISTING TYPICAL CROSS SECTION**
**U.S. 150**

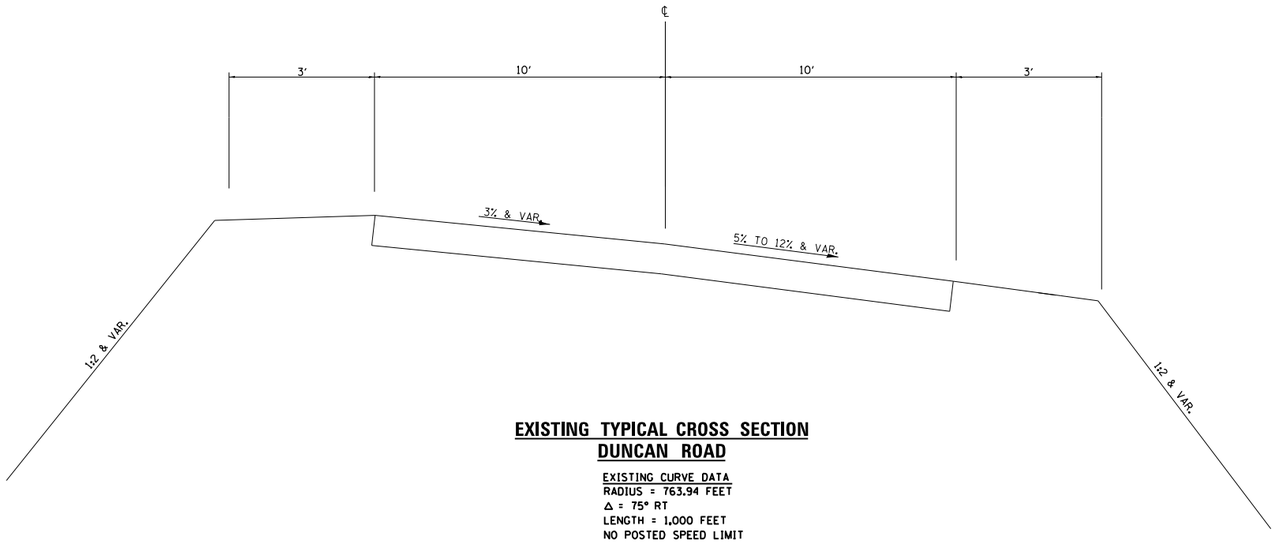



**PROPOSED TYPICAL CROSS SECTION**
**U.S. 150**

**INTERCHANGE TYPE STUDY**

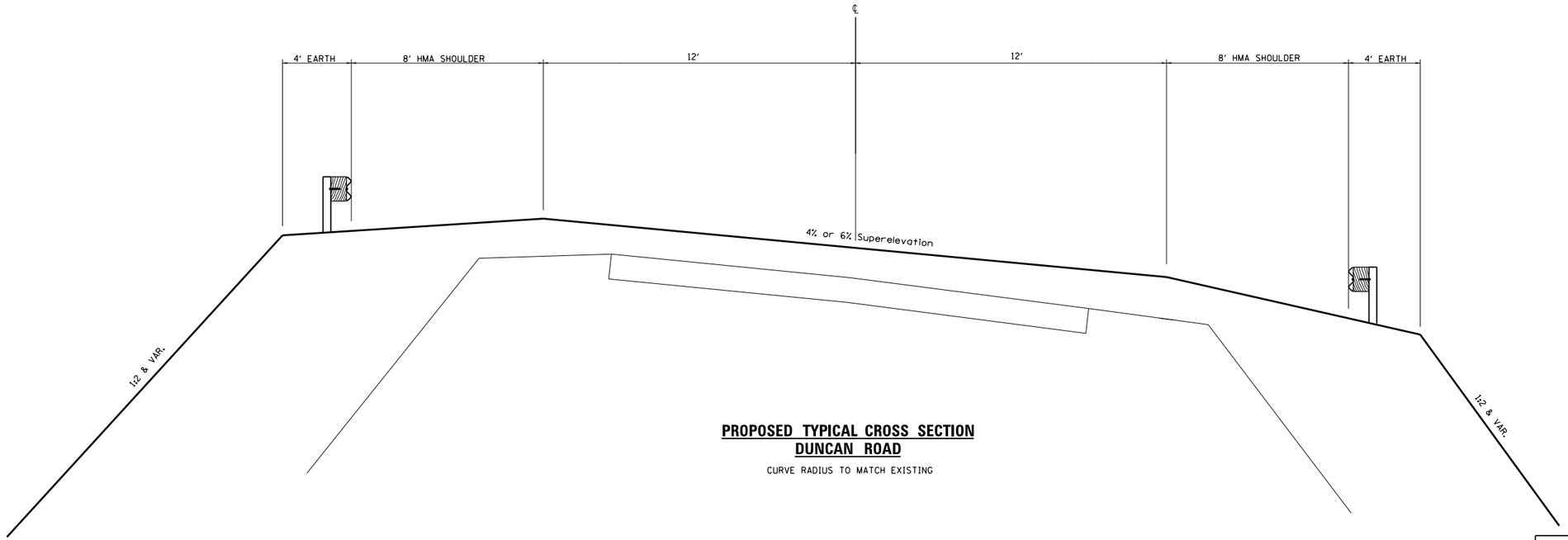
**EXISTING & PROPOSED TYPICAL SECTIONS**

**U.S. 150**
**(BLOOMINGTON AVENUE)**
**EXHIBIT 23**




**EXISTING TYPICAL CROSS SECTION**
**DUNCAN ROAD**

EXISTING CURVE DATA
RADIUS = 763.94 FEET
Δ = 75° RT
LENGTH = 1,000 FEET
NO POSTED SPEED LIMIT




**PROPOSED TYPICAL CROSS SECTION**
**DUNCAN ROAD**

CURVE RADIUS TO MATCH EXISTING

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**DUNCAN ROAD**

**EXHIBIT 24**

BDE-9908

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PLOT DATE = 8/5/2014 - 3:15:34 PM
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PLOT SCALE = 800.0000 ' / in.
USER NAME = Brad Downen

## TRAFFIC DATA

| MOVEMENT | YEAR 2040 AM DESIGN HOURLY VOLUME | YEAR 2040 PM DESIGN HOURLY VOLUME |
|---|---|---|
| AB | 260 | 703 |
| AC | 320 | 360 |
| AD | 820 | 580 |
| BA | 897 | 893 |
| BC | 60 | 155 |
| BD | 215 | 190 |
| CA | 320 | 300 |
| CB | 140 | 70 |
| CD | 2118 | 1202 |
| DA | 505 | 920 |
| DB | 155 | 235 |
| DC | 1038 | 1803 |
| TOTAL A | 3122 | 3756 |
| TOTAL B | 1727 | 2246 |
| TOTAL C | 3996 | 3890 |
| TOTAL D | 4851 | 4930 |

OLYMPIAN DRIVE
B
I-57
A/A
A/A
1172 / 1238
555 / 1008
N. MATTIS AVENUE
A/A
A/A
A/C
B/C
RAMP H
60 / 155
A/A
RAMP G
B/C
I-74
1418 / 2318
2578 / 1572
C
505 / 320
RAMP E
320 / 360
RAMP F
155 / 235
B/C
B/C
1698 / 2958
3153 / 1972
C/B
C/A
320 / 300
RAMP C
215 / 190
RAMP D
140 / 70
C/B
D/B
RAMP B
RAMP A
B/A
B/B
B/B
820 / 580
A/A
BLOOMINGTON ROAD
B/B
B/B
I-57
1722 / 2113
1400 / 1643
A
N. MATTIS AVENUE
W. ANTHONY DRIVE
I-74
D
BLOOMINGTON ROAD
PROSPECT AVENUE

### LEGEND

(B/B) LEVEL OF SERVICE (AM/PM)

2040 DHV - AM / 2040 DHV - PM

[A] MOVEMENT LOCATION

N

**INTERCHANGE TYPE STUDY**

**NO–BUILD**
**EXISTING CLOVERLEAF INTERCHANGE**

**PROPOSED DESIGN TRAFFIC & LEVEL OF SERVICE**
**EXHIBIT 25**

BDE-9908

PLOT DATE = 8/5/2014 - 3:15:50 PM
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USER NAME = Brad Downen

## TRAFFIC DATA

| MOVEMENT | YEAR 2040 AM DESIGN HOURLY VOLUME | YEAR 2040 PM DESIGN HOURLY VOLUME |
|---|---|---|
| AB | 260 | 703 |
| AC | 320 | 360 |
| AD | 820 | 580 |
| BA | 897 | 893 |
| BC | 60 | 155 |
| BD | 215 | 190 |
| CA | 320 | 300 |
| CB | 140 | 70 |
| CD | 2118 | 1202 |
| DA | 505 | 920 |
| DB | 155 | 235 |
| DC | 1038 | 1803 |
| TOTAL A | 3122 | 3756 |
| TOTAL B | 1727 | 2246 |
| TOTAL C | 3996 | 3890 |
| TOTAL D | 4851 | 4930 |

OLYMPIAN DRIVE
B
A/A
A/A
I-57
555 / 1008
1172 / 1238
N. MATTIS AVENUE
275 / 345
265 / 305
A/A
A/A
RAMP H 60 / 155
RAMP G 155 / 235
A/B
I-74 1418 / 2318
380 / 515
RAMP F
RAMP C
RAMP E 505 / 920
C
2578 / 1572
460 / 370
B/A
B/A
660 / 1155
1698 / 2958
A/B
W. ANTHONY DRIVE
I-74
D
PROSPECT AVENUE
BLOOMINGTON ROAD
140 / 70 RAMP D
215 / 190
320 / 300
RAMP B
320 / 360
RAMP A
1035 / 770
3153 / 1972
B/A
820 / 580
1140 / 940
825 / 1220
BLOOMINGTON ROAD
N. MATTIS AVENUE
B/B
1722 / 2113
I-57
A/B
1400 / 1643
A

### LEGEND

B/B LEVEL OF SERVICE (AM/PM)

2040 DHV - AM / 2040 DHV - PM

A MOVEMENT LOCATION

N

**INTERCHANGE TYPE STUDY**

**ALTERNATE 1:**
**FULL DIRECTIONAL**

**PROPOSED DESIGN TRAFFIC & LEVEL OF SERVICE**
**EXHIBIT 26**

BDE-9908

PLOT DATE = 8/5/2014 - 3:16:04 PM
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PLOT SCALE = 800.0000 ' / in.
USER NAME = Brad Downen

## TRAFFIC DATA

| MOVEMENT | YEAR 2040 AM DESIGN HOURLY VOLUME | YEAR 2040 PM DESIGN HOURLY VOLUME |
|---|---|---|
| AB | 260 | 703 |
| AC | 320 | 360 |
| AD | 820 | 580 |
| BA | 897 | 893 |
| BC | 60 | 155 |
| BD | 215 | 190 |
| CA | 320 | 300 |
| CB | 140 | 70 |
| CD | 2118 | 1202 |
| DA | 505 | 920 |
| DB | 155 | 235 |
| DC | 1038 | 1803 |
| TOTAL A | 3122 | 3756 |
| TOTAL B | 1727 | 2246 |
| TOTAL C | 3996 | 3890 |
| TOTAL D | 4851 | 4930 |

OLYMPIAN DRIVE
I-57
N. MATTIS AVENUE
I-74
W. ANTHONY DRIVE
PROSPECT AVENUE
BLOOMINGTON ROAD
RAMP A
RAMP B
RAMP C
RAMP D
RAMP E
RAMP F
RAMP G
RAMP H
A
B
C
D
555/1008
1172/1238
295/305
320/360
60/155
155/235
505/920
1418/2318
2578/1572
460/370
140/70
320/300
215/190
825/1220
660/1155
1698/2958
3153/1972
820/580
1722/2113
1400/1643

LEGEND

B/B LEVEL OF SERVICE (AM/PM)

2040 DHV - AM / 2040 DHV - PM

A MOVEMENT LOCATION

**INTERCHANGE TYPE STUDY**
**ALTERNATE 2:**
**SEMI-DIRECTIONAL WITH DIRECTIONAL FLYOVERS AND TWO LOOPS**
**PROPOSED DESIGN TRAFFIC & LEVEL OF SERVICE**
**EXHIBIT 27**

BDE-9908

PLOT DATE = 8/5/2014 - 3:16:18 PM
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USER NAME = Brad Downen

## TRAFFIC DATA

| MOVEMENT | YEAR 2040 AM DESIGN HOURLY VOLUME | YEAR 2040 PM DESIGN HOURLY VOLUME |
|---|---|---|
| AB | 260 | 703 |
| AC | 320 | 360 |
| AD | 820 | 580 |
| BA | 897 | 893 |
| BC | 60 | 155 |
| BD | 215 | 190 |
| CA | 320 | 300 |
| CB | 140 | 70 |
| CD | 2118 | 1202 |
| DA | 505 | 920 |
| DB | 155 | 235 |
| DC | 1038 | 1803 |
| TOTAL A | 3122 | 3756 |
| TOTAL B | 1727 | 2246 |
| TOTAL C | 3996 | 3890 |
| TOTAL D | 4851 | 4930 |

OLYMPIAN DRIVE
I-57
N. MATTIS AVENUE
RAMP E
RAMP F
RAMP G
RAMP H
RAMP A
RAMP B
RAMP C
RAMP D
I-74
W. ANTHONY DRIVE
PROSPECT AVENUE
BLOOMINGTON ROAD
A
B
C
D

LEGEND

(B/B) LEVEL OF SERVICE (AM/PM)

2040 DHV - AM / 2040 DHV - PM

[A] MOVEMENT LOCATION

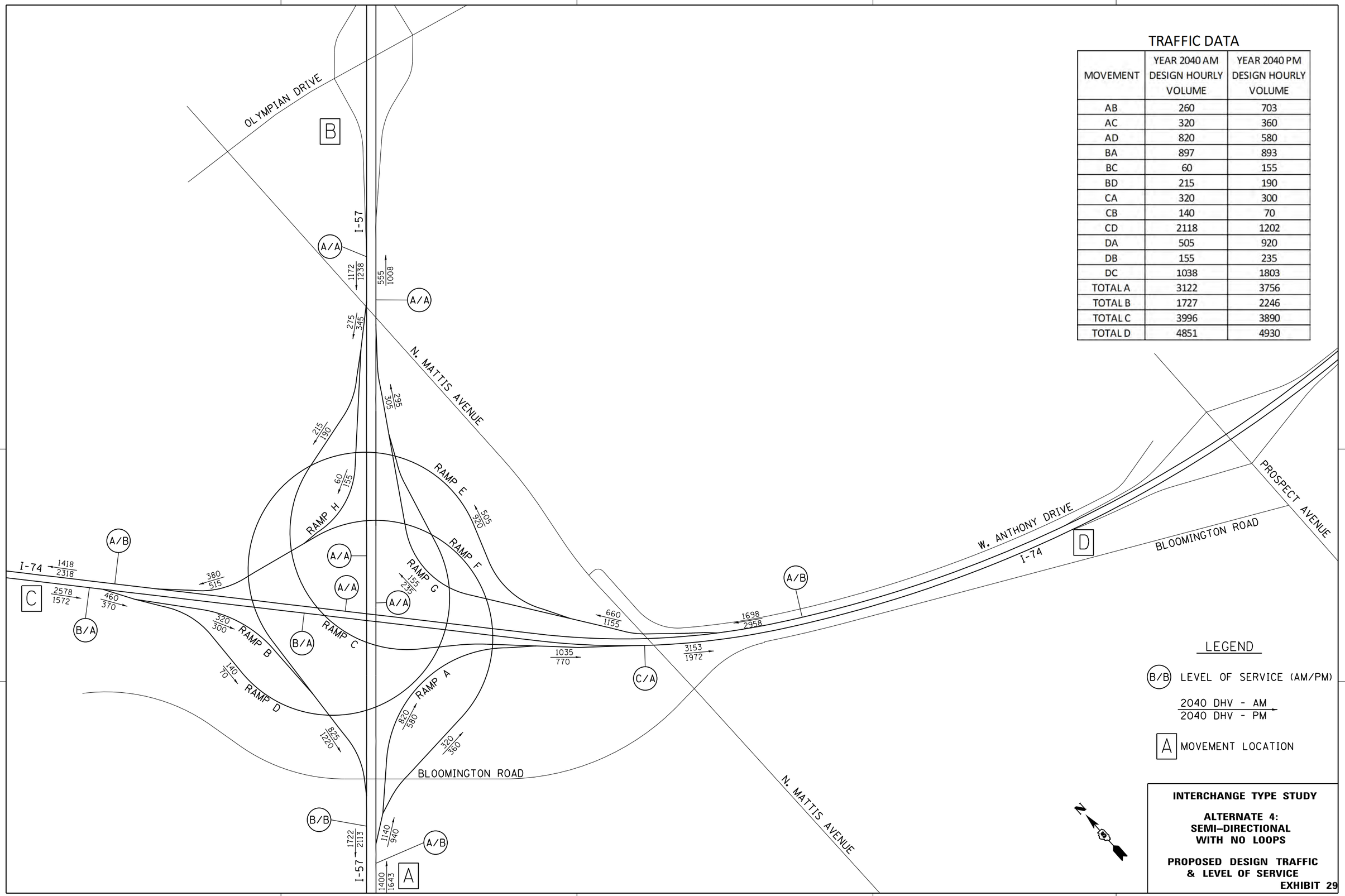
**INTERCHANGE TYPE STUDY**
**ALTERNATE 3:**
**SEMI–DIRECTIONAL WITH SEMI–DIRECTIONAL FLYOVERS AND TWO LOOPS**
**PROPOSED DESIGN TRAFFIC & LEVEL OF SERVICE**
**EXHIBIT 28**

BDE-9908

PLOT DATE = 8/5/2014 - 3:16:36 PM
FILE NAME = L:\IDOT\1106002\Draw\Exhibits\ITS\..
PLOT SCALE = 800.0000 ' / in.
USER NAME = Brad Downen

## TRAFFIC DATA

| MOVEMENT | YEAR 2040 AM DESIGN HOURLY VOLUME | YEAR 2040 PM DESIGN HOURLY VOLUME |
|---|---|---|
| AB | 260 | 703 |
| AC | 320 | 360 |
| AD | 820 | 580 |
| BA | 897 | 893 |
| BC | 60 | 155 |
| BD | 215 | 190 |
| CA | 320 | 300 |
| CB | 140 | 70 |
| CD | 2118 | 1202 |
| DA | 505 | 920 |
| DB | 155 | 235 |
| DC | 1038 | 1803 |
| TOTAL A | 3122 | 3756 |
| TOTAL B | 1727 | 2246 |
| TOTAL C | 3996 | 3890 |
| TOTAL D | 4851 | 4930 |




LEGEND

B/B LEVEL OF SERVICE (AM/PM)

2040 DHV - AM
2040 DHV - PM

A MOVEMENT LOCATION

**INTERCHANGE TYPE STUDY**

**ALTERNATE 4:**
**SEMI–DIRECTIONAL**
**WITH NO LOOPS**

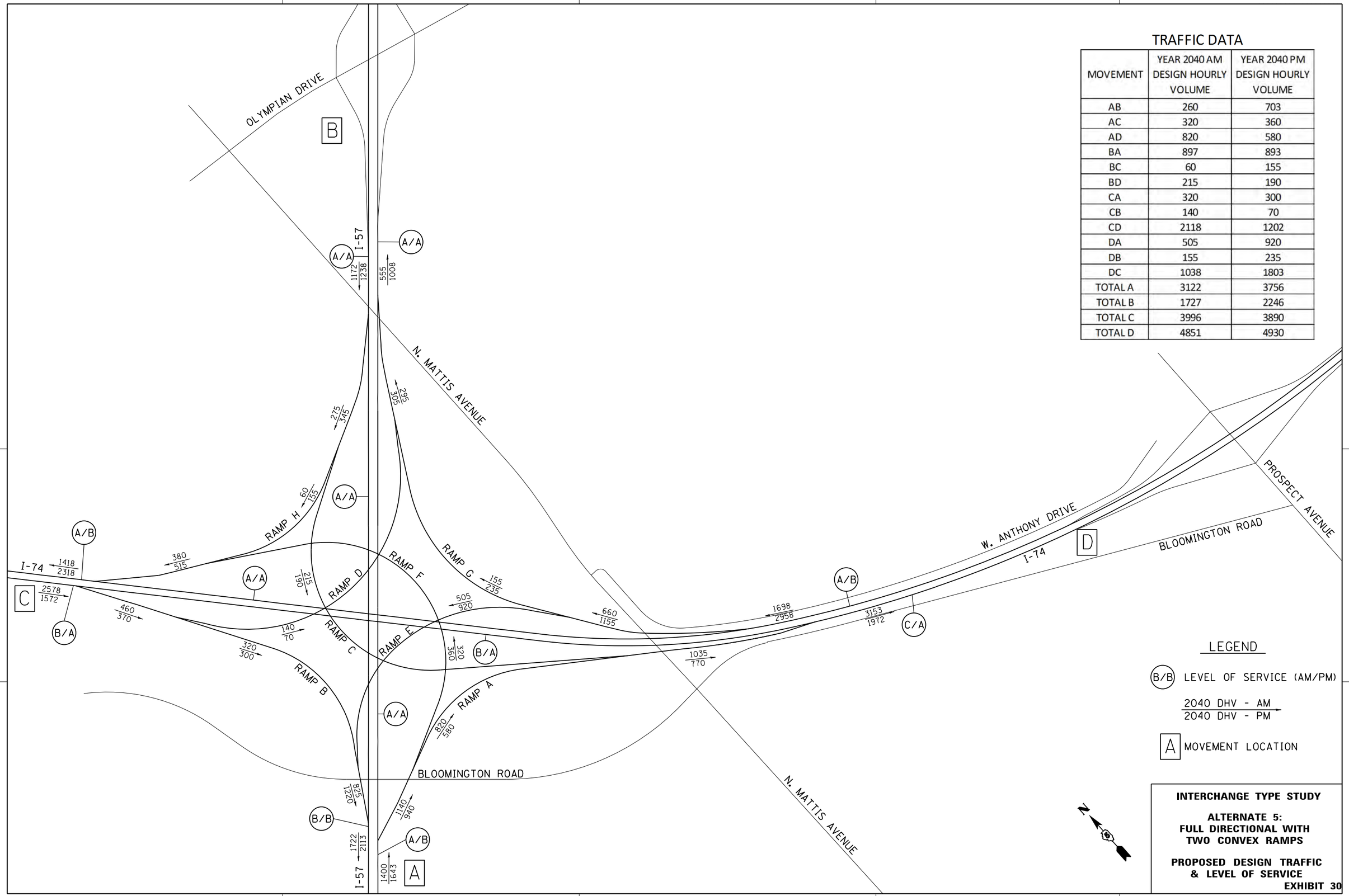
**PROPOSED DESIGN TRAFFIC**
**& LEVEL OF SERVICE**
**EXHIBIT 29**

BDE-9908

PLOT DATE = 8/5/2014 - 3:16:52 PM
FILE NAME = L:\IDOT\1106002\Draw\Exhibits\ITS\..
PLOT SCALE = 800.0000 ' / in.
USER NAME = Brad Downen

## TRAFFIC DATA

| MOVEMENT | YEAR 2040 AM DESIGN HOURLY VOLUME | YEAR 2040 PM DESIGN HOURLY VOLUME |
|---|---|---|
| AB | 260 | 703 |
| AC | 320 | 360 |
| AD | 820 | 580 |
| BA | 897 | 893 |
| BC | 60 | 155 |
| BD | 215 | 190 |
| CA | 320 | 300 |
| CB | 140 | 70 |
| CD | 2118 | 1202 |
| DA | 505 | 920 |
| DB | 155 | 235 |
| DC | 1038 | 1803 |
| TOTAL A | 3122 | 3756 |
| TOTAL B | 1727 | 2246 |
| TOTAL C | 3996 | 3890 |
| TOTAL D | 4851 | 4930 |




LEGEND

(B/B) LEVEL OF SERVICE (AM/PM)

2040 DHV - AM / 2040 DHV - PM

[A] MOVEMENT LOCATION

**INTERCHANGE TYPE STUDY**

**ALTERNATE 5:**
**FULL DIRECTIONAL WITH TWO CONVEX RAMPS**

**PROPOSED DESIGN TRAFFIC & LEVEL OF SERVICE**
**EXHIBIT 30**

BDE-9908

PLOT DATE = 8/5/2014
FILE NAME = L:\IDOT\108602\Drawn\Exhibits\ITS\ITS Exhibit 31 Sign Exhibit EIB.dgn
PLOT SCALE = 1600.0000 ' / in.
USER NAME = Brad Downen

800′ 0 800′ 1600′
SCALE: 1″ = 800′

N

I–57

I–74

OLYMPIAN DR.

N MATTIS RD.

BLOOMINGTON RD.

EXIT 238
Olympian Drive
EXIT ONLY

EXIT 237
74 EAST
To Urbana
EXIT 237

EXIT 237
74
Indianapolis
Peoria
1 MILE

EXIT 238
Olympian Drive

EXITS 235 A-B
72
Decatur
University Ave
2 MILES

EXIT 237
74
Indianapolis
Peoria
1/2 MILE

74 EAST
University of Illinois
Campus
EXIT 237

57 SOUTH
University of Illinois
Sports Complex
EXIT 235A

EXIT 237
74
Indianapolis
Peoria
EXIT ONLY

EXIT 237

74 EAST
Indianapolis

74 WEST
Peoria

EAST 74 WEST

EXIT 238
Olympian Drive
1/2 MILE
EXIT ONLY

57 SOUTH
Memphis

57 NORTH
Chicago

SOUTH 57 NORTH

EXIT 179
57
Memphis
Chicago
1/2 MILE

EXIT 179
57
Memphis
Chicago

EXIT 179
57 SOUTH
TO 72 WEST
Decatur
Springfield
EXIT 179

EXIT 179
57
Memphis
Chicago
1 MILE

EXIT 179

EXIT 181

EXIT 182
Neil
Street
3/4 MILE

EXIT 181
Prospect
Avenue
EXIT ONLY

EXIT 181
Prospect
Avenue
1/2 MILE
EXIT ONLY

EXIT 238
Olympian
Drive
1 MILE

EXIT 181
Prospect
Avenue
1 MILE
EXIT ONLY

WEST 74 EAST

74 WEST
Peoria

74 EAST
Indianapolis

EXIT 237

EXIT 237
74
Peoria
Indianapolis

EXIT 237
74
Peoria
Indianapolis
1/2 MILE

74 EAST
To Urbana
EXIT 237

EXIT 237
74
Peoria
Indianapolis
1 MILE

EXIT 179
57
Chicago
Memphis
2 MILES

Champaign Exits
Prospect Ave 2
Neil St 3

EXIT 179
57
Chicago
Memphis
1 MILE

EXIT 179
57
Chicago
Memphis
1/2 MILE

EXIT 179
57
Chicago
Memphis

EXIT 179

57 SOUTH
University of Illinois
Sports Complex
EXIT 179

74 EAST
University of Illinois
Campus
EXIT 183

57 NORTH
Chicago

57 SOUTH
Memphis

NORTH 57 SOUTH

INTERCHANGE TYPE STUDY

# ALTERNATE: 1

## FULL DIRECTIONAL PRELIMINARY GUIDE SIGNING PLAN

EXHIBIT 31

BDE-9908

PLOT DATE = 8/5/2014
FILE NAME = L:\IDOT\1106802\Drawn\Exhibits\ITS\ITS Exhibit 32 Sign Exhibit B3.dgn
PLOT SCALE = 1600.0000 ' / in.
USER NAME = Brad Downen

800' 0 800' 1600'
SCALE: 1" = 800'

N

I-57

I-74

OLYMPIAN DR.

N MATTIS RD.

BLOOMINGTON RD.

EXIT 238
Olympian Drive
EXIT ONLY

EXITS 237 A-B
EAST
To Urbana
EXIT 237 A

EXITS 237 A-B
EAST
Indianapolis
Peoria
1 MILE

EXIT 238
Olympian Drive

EXITS 235 A-B
Decatur
University Ave
2 MILES

EXIT 237 A
EAST
Indianapolis
1 MILE

EXIT 237 B
WEST
Peoria
1/2 MILE

EAST
University of Illinois
Campus
EXIT 237A

SOUTH
University of Illinois
Sports Complex
EXIT 235A

EXIT 237 A
EAST
Indianapolis
1/4 MILE

EXIT 237 B
WEST
Peoria
EXIT ONLY

EXIT 238
Olympian Drive
1/2 MILE
EXIT ONLY

EXIT 179
Memphis
Chicago
1/2 MILE

SOUTH
Memphis

NORTH
Chicago

SOUTH
TO WEST
Decatur
Springfield
EXIT 179

EXIT 179
Memphis
Chicago
1 MILE

EXIT 237 A
EAST
Indianapolis

EXIT 179
Memphis
Chicago

EXIT 237 A

EXIT 179

EXIT 181

EXIT 179
Chicago
Memphis
2 MILES

Champaign Exits
Prospect Ave 2
Neil St 3

EXIT 179
Chicago
Memphis
1 MILE

EXIT 179
Chicago
Memphis
1/2 MILE

EXIT 181
Prospect Avenue
1/2 MILE
EXIT ONLY

EXIT 182
Neil Street
3/4 MILE

EXIT 181
Prospect Avenue
EXIT ONLY

EXIT 237 B

EXIT 179
Chicago
Memphis

EXIT 179

EXIT 238
Olympian Drive
1 MILE

EXIT 181
Prospect Avenue
1 MILE
EXIT ONLY

SOUTH
University of Illinois
Sports Complex
EXIT 179

EAST
University of Illinois
Campus
EXIT 183

NORTH
Chicago

SOUTH
Memphis

EXIT 237 B
WEST
Peoria

EXIT 237 A

EXIT 237 A
EAST
Indianapolis

EXITS 237 A-B
Peoria
Indianapolis
1/2 MILE

EAST
To Urbana
EXIT 237 A

EXITS 237 A-B
Peoria
Indianapolis
1 MILE

INTERCHANGE TYPE STUDY

# ALTERNATE: 2

## SEMI–DIRECTIONAL WITH LOOPS PRELIMINARY GUIDE SIGNING PLAN

EXHIBIT 32

BDE-9908

PLOT DATE = 8/5/2014
FILE NAME = L:\IDOT\1186802\Drawn\Exhibits\ITS\ITS Exhibit 33 Sign Exhibit B2.dgn
PLOT SCALE = 1600.0000 ' / in.
USER NAME = Brad Downen

800' 0 800' 1600'
SCALE: 1" = 800'

N

I–57

I–74

OLYMPIAN DR.

N MATTIS RD.

BLOOMINGTON RD.

EXIT 238
Olympian Drive
EXIT ONLY

EXITS 237 A-B
EAST
Indianapolis
Peoria
1 MILE

EXIT 238
Olympian Drive

EXITS 235 A-B
Decatur
University Ave
2 MILES

EXIT 237 A
EAST
Indianapolis
1 MILE

EXIT 237 B
WEST
Peoria
1/2 MILE

EAST
University of Illinois Campus
EXIT 237A

SOUTH
University of Illinois Sports Complex
EXIT 235A

EXIT 237 A
EAST
Indianapolis
1/4 MILE

EXIT 237 B
WEST
Peoria
EXIT ONLY

EXIT 237 B

EXIT 237 A
EAST
Indianapolis

EXIT 238
Olympian Drive
1/2 MILE
EXIT ONLY

SOUTH
Memphis

NORTH
Chicago

EXIT 179
Memphis
Chicago
1/2 MILE

SOUTH
TO WEST
Decatur
Springfield
EXIT 179

EXIT 179
Memphis
Chicago
1 MILE

SOUTH NORTH

EXIT 179
Memphis
Chicago

EXIT 237 A

EXIT 179

EXIT 181

EXIT 179
Chicago
Memphis
2 MILES

Champaign Exits
Prospect Ave 2
Neil St 3

EXIT 179
Chicago
Memphis
1 MILE

EXIT 179
Chicago
Memphis
1/2 MILE

EXIT 179
Chicago
Memphis

EXIT 179

EXIT 181
Prospect Avenue
1/2 MILE
EXIT ONLY

EXIT 182
Neil Street
3/4 MILE

EXIT 181
Prospect Avenue
EXIT ONLY

EXIT 238
Olympian Drive
1 MILE

EXIT 181
Prospect Avenue
1 MILE
EXIT ONLY

EXIT 237 B
WEST
Peoria

EXIT 237 A

EXIT 237 A
EAST
Indianapolis

EXITS 237 A-B
Peoria
Indianapolis
1/2 MILE

EAST
To Urbana
EXIT 237 A

EXITS 237 A-B
Peoria
Indianapolis
1 MILE

SOUTH
University of Illinois Sports Complex
EXIT 179

EAST
University of Illinois Campus
EXIT 183

SOUTH
Memphis

NORTH
Chicago

SOUTH NORTH

EAST
To Urbana
EXIT 237 A

EXITS 237 A-B
EAST
Indianapolis
Peoria
1 MILE

INTERCHANGE TYPE STUDY

# ALTERNATE: 3

## SEMI–DIRECTIONAL WITH LOOPS PRELIMINARY GUIDE SIGNING PLAN

EXHIBIT 33

BDE-9908

PLOT DATE = 8/5/2014
FILE NAME = L:\IDOT\1106802\Drawn\Exhibits\ITS\ITS Exhibit 34 Sign Exhibit E2.dgn
PLOT SCALE = 1600.0000 ' / in.
USER NAME = Brad Downen

800' 0 800' 1600'
SCALE: 1" = 800'

N

I-74

I-57

OLYMPIAN DR.

N MATTIS RD.

BLOOMINGTON RD.

EXIT 179
Chicago Memphis
2 MILES

Champaign Exits
Prospect Ave 2
Neil St 3

EXIT 179
Chicago Memphis
1 MILE

EXIT 179
Chicago Memphis
1/2 MILE

EXIT 179
Chicago Memphis

EXIT 179

SOUTH
University of Illinois Sports Complex
EXIT 179

EAST
University of Illinois Campus
EXIT 183

SOUTH Memphis

NORTH Chicago

SOUTH NORTH

EXIT 237
EAST To Urbana
EXIT 237

EXIT 237
Indianapolis Peoria
1 MILE

EXIT 238
Olympian Drive

EXITS 235 A-B
Decatur University Ave
2 MILES

EXIT 237
Indianapolis Peoria
1/2 MILE

EAST
University of Illinois Campus
EXIT 237

SOUTH
University of Illinois Sports Complex
EXIT 235A

EXIT 237
Indianapolis Peoria
EXIT ONLY

EXIT 237

WEST Peoria

EAST Indianapolis

WEST EAST

EXIT 238

EXIT 238
Olympian Drive
EXIT ONLY

EXIT 238
Olympian Drive
1/2 MILE
EXIT ONLY

EXIT 238
Olympian Drive
1 MILE

EXIT 179
Memphis Chicago
1/2 MILE

NORTH Chicago

SOUTH Memphis

EXIT 179
Memphis Chicago

EXIT 179

NORTH SOUTH

EAST WEST

EAST Indianapolis

WEST Peoria

EXIT 237

EXIT 237
Peoria Indianapolis

EXIT 237
Peoria Indianapolis
1/2 MILE

EAST
To Urbana
EXIT 237

EXIT 237
Peoria Indianapolis
1 MILE

SOUTH TO WEST
Decatur Springfield
EXIT 179

EXIT 179
Memphis Chicago
1 MILE

EXIT 181

EXIT 182
Neil Street
3/4 MILE

EXIT 181
Prospect Avenue
EXIT ONLY

EXIT 181
Prospect Avenue
1/2 MILE
EXIT ONLY

EXIT 181
Prospect Avenue
1 MILE
EXIT ONLY

INTERCHANGE TYPE STUDY

# ALTERNATE: 4

## SEMI-DIRECTIONAL PRELIMINARY GUIDE SIGNING PLAN

EXHIBIT 34

BDE-9908

PLOT DATE = 8/5/2014
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PLOT SCALE = 1600.0000 ' / in.
USER NAME = Brad Downen

800′ 0 800′ 1600′
SCALE: 1″ = 800′

N

I–74

I–57

OLYMPIAN DR.

N MATTIS RD.

BLOOMINGTON RD.

EXIT 179
Chicago Memphis
2 MILES

Champaign Exits
Prospect Ave 2
Neil St 3

EXIT 179
Chicago Memphis
1 MILE

EXIT 179
Chicago Memphis
1/2 MILE

EXIT 179
Chicago Memphis

EXIT 179

SOUTH
University of Illinois Sports Complex
EXIT 179

EAST
University of Illinois Campus
EXIT 183

NORTH SOUTH

NORTH
Chicago

SOUTH
Memphis

EXITS 235 A-B
Decatur University Ave
2 MILES

EXIT 237
Indianapolis Peoria
1/2 MILE

EAST
University of Illinois Campus
EXIT 237

SOUTH
University of Illinois Sports Complex
EXIT 235A

EXIT 237
Indianapolis Peoria
EXIT ONLY

EXIT 237

EAST
Indianapolis

WEST
Peoria

EAST WEST

EXIT 237
EAST
To Urbana
EXIT 237

EXIT 237
Indianapolis Peoria
1 MILE

EXIT 237
Olympian Drive

EXIT 238

EXIT 238
Olympian Drive
EXIT ONLY

EXIT 238
Olympian Drive
1/2 MILE
EXIT ONLY

EXIT 238
Olympian Drive
1 MILE

WEST EAST

SOUTH
Memphis

NORTH
Chicago

SOUTH NORTH

EXIT 179
Memphis Chicago
1/2 MILE

EXIT 179
Memphis Chicago

EXIT 179

EXIT 179
Memphis Chicago
1 MILE

SOUTH
TO WEST
Decatur Springfield
EXIT 179

EXIT 181
Prospect Avenue
1/2 MILE
EXIT ONLY

EXIT 181
Prospect Avenue
1 MILE
EXIT ONLY

EXIT 181

EXIT 182
Neil Street
3/4 MILE

EXIT 181
Prospect Avenue
EXIT ONLY

WEST
Peoria

EAST
Indianapolis

EXIT 237
Peoria Indianapolis

EXIT 237
Peoria Indianapolis
1/2 MILE

EXIT 237
EAST
To Urbana
EXIT 237

EXIT 237
Peoria Indianapolis
1 MILE

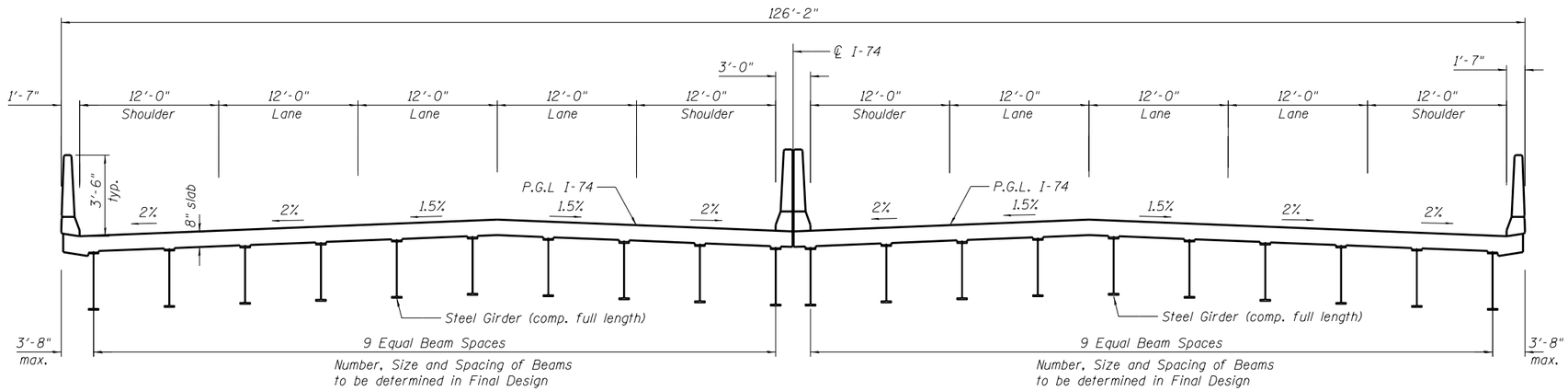
INTERCHANGE TYPE STUDY

# ALTERNATE: 5

## FULL DIRECTIONAL PRELIMINARY GUIDE SIGNING PLAN

EXHIBIT 35

BDE-9908




## I-74 OVER I-57 BRIDGE CROSS SECTION

(Looking Upstation)

**INTERCHANGE TYPE STUDY**

**STRUCTURE TYPICAL SECTIONS**

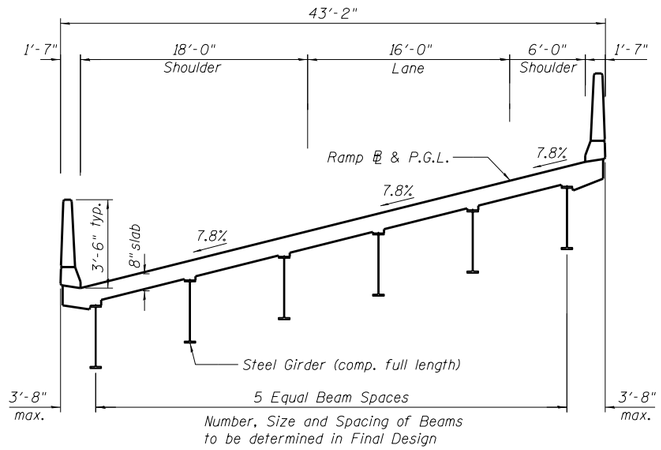
**I–74, BLOOMINGTON ROAD, MATTIS AVENUE**

**EXHIBIT 36**

BDE-9908

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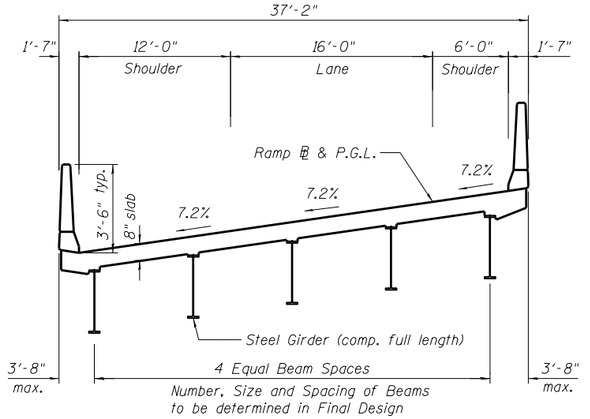
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PLOT SCALE = 12.0000 ' / in.
USER NAME = Brad Downen




## TYPICAL RAMP BRIDGE (890' RADIUS)

(Looking Upstation)

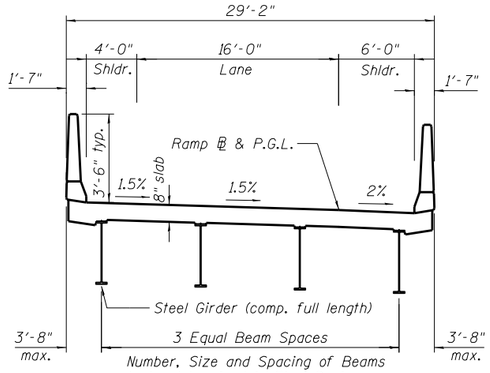
**ALTERNATE 2 - RAMP B**




## TYPICAL RAMP BRIDGE (1125' RADIUS)

(Looking Upstation)

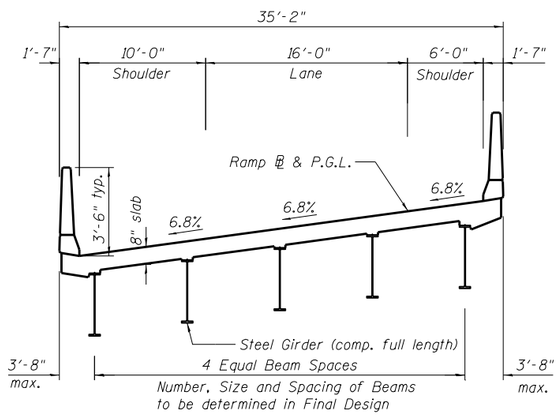
**ALTERNATE 2 - RAMPS D. E. G**
**ALTERNATE 3 - RAMP E**
**ALTERNATE 4 - RAMPS C. D. E. F**
**ALTERNATE 5 - RAMPS C. E. F**




## TYPICAL RAMP BRIDGE (ON TANGENT)

(Looking Upstation)

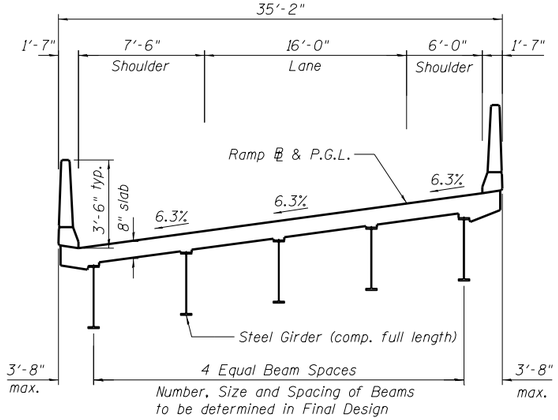
**ALTERNATE 2 - RAMPS B & G**
**ALTERNATE 3 - RAMPS B & E**




## TYPICAL RAMP BRIDGE (1250' & 1270' RADIUS)

(Looking Upstation)

**ALTERNATE 1 - RAMPS C. D. E. F**
**ALTERNATE 3 - RAMP D**




## TYPICAL RAMP BRIDGE (1450' RADIUS)

(Looking Upstation)

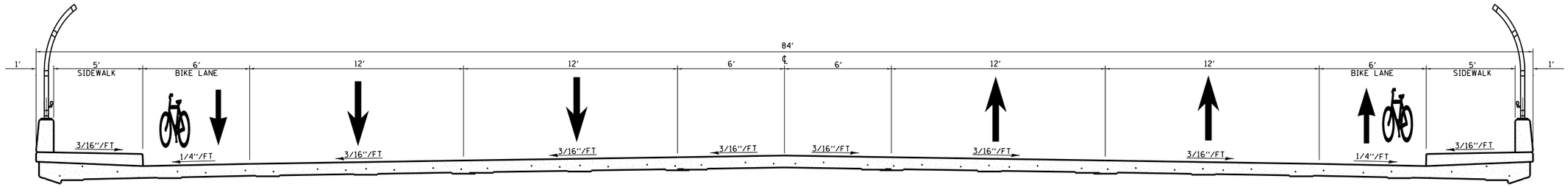
**ALTERNATE 5 - RAMP D. E**

**INTERCHANGE TYPE STUDY**

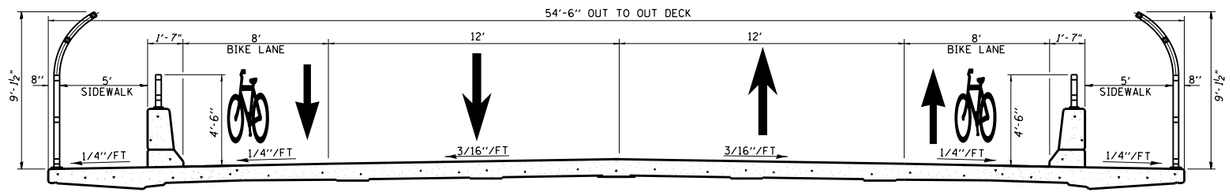
**STRUCTURE**
**TYPICAL SECTIONS**

**RAMPS**

**EXHIBIT 37**




**PROPOSED MATTIS AVENUE OVER I–74**




**PROPOSED MATTIS AVENUE OVER I–57**

**INTERCHANGE TYPE STUDY**

**STRUCTURE TYPICAL SECTIONS**

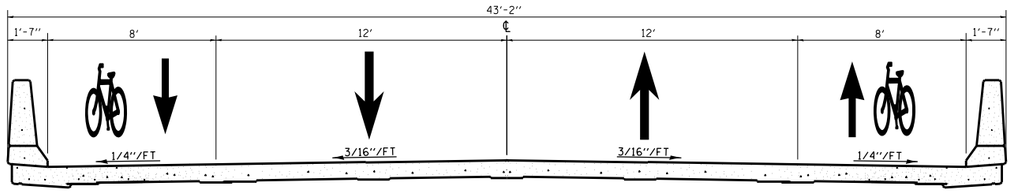
**MATTIS AVENUE**

**EXHIBIT 38**

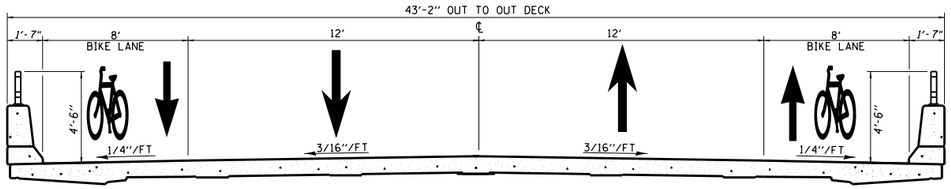
BDE-9908

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PLOT SCALE = 16.0000 ' / in.
USER NAME = Brad Downen

PLOT DATE = 8/5/2014 - 3:22:12 PM
FILE NAME = L:\IDOT\110600\Draw\Exhibits\TS\..
PLOT SCALE = 16.0000 ' / in.
USER NAME = Brad Downen




**PROPOSED U.S. 150 OVER I–57**




**PROPOSED DUNCAN ROAD OVER I–74**

**INTERCHANGE TYPE STUDY**

**STRUCTURE TYPICAL SECTIONS**

**U.S. 150 & DUNCAN ROAD**

**EXHIBIT 39**

PLOT DATE = 8/5/2014
FILE NAME = L:\IDOT\108602\Draw\Exhibits\ITS\ITS Exhibit 40 Alt 1 MOT.dgn
PLOT SCALE = 600.0000 ' / in.
USER NAME = bdowmen

**LEGEND:**

- **STAGE 1:** CONSTRUCT CROSS ROADWAY PAVEMENT AND STRUCTURES
- **STAGE 2:** CONSTRUCT ALL OF OUTER RAMPS G & H, PORTIONS OF OUTER RAMPS A & B, AND PORTIONS OF ALL FLYOVER RAMPS
- **STAGE 3:** CONSTRUCT TEMPORARY CONNECTION FOR OUTER RAMPS A & B
- **STAGE 4:** CONSTRUCT STRUCTURES AND REMAINING PORTIONS OF ALL FLYOVER RAMPS
- **STAGE 5:** CONSTRUCT MAINLINE STRUCTURE AND ROADWAYS AND COMPLETE REMAINING PORTIONS OF OUTER RAMPS A & B

I–74

I–57

N. MATTIS AVE.

RAMP H

RAMP G

RAMP F

RAMP E

RAMP D

RAMP C

RAMP B

RAMP A

MIDWEST CT.

BLOOMINGTON RD.

W. ANTHONY DR.

I–74

BLOOMINGTON RD.

N. MATTIS AVE.

I–57

N

300′ 0 300′ 600′

SCALE: 1″ = 300′

INTERCHANGE TYPE STUDY

**MAINTENANCE OF TRAFFIC: ALTERNATE 1**

**EXHIBIT 40**

BDE-9908

PLOT DATE = 8/5/2014
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PLOT SCALE = 600.0000 ' / in.
USER NAME = bdowmen

**LEGEND:**

- **STAGE 1:** CONSTRUCT CROSS ROADWAY PAVEMENT AND STRUCTURES AND TEMPORARY CONNECTORS FOR EXISTING RAMPS B & C
- **STAGE 2:** CONSTRUCT ALL OF OUTER RAMPS B & G AND PORTIONS OF FLOVER RAMPS D & E
- **STAGE 3:** CONSTRUCT LOOP RAMPS C & F
- **STAGE 4:** COMPLETE CONSTRUCTION OF FLYOVER RAMPS D & E
- **STAGE 5:** CONSTRUCT MAINLINE STRUCTURE AND ROADWAYS AND OUTER RAMPS A & H

I–57

N. MATTIS AVE.

I–74

RAMP F

RAMP G

RAMP H

RAMP E

RAMP D

RAMP B

RAMP C

RAMP A

MIDWEST CT.

BLOOMINGTON RD.

W. ANTHONY DR.

I–74

BLOOMINGTON RD.

N. MATTIS AVE.

I–57

N

300′ 0 300′ 600′

SCALE: 1″ = 300′

INTERCHANGE TYPE STUDY

# MAINTENANCE OF TRAFFIC: ALTERNATE 2

**EXHIBIT 41**

BDE-9908

PLOT DATE = 8/5/2014
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USER NAME = bdowman

**LEGEND:**

- **STAGE 1:** CONSTRUCT CROSS ROADWAY PAVEMENT AND STRUCTURES
- **STAGE 2:** CONSTRUCT ALL OF OUTER RAMPS B & G AND ALL OF FLOVER RAMPS D & E
- **STAGE 3:** CONSTRUCT OUTER RAMPS A & H AND LOOP RAMPS C & F
- **STAGE 4:** CONSTRUCT MAINLINE STRUCTURE AND ROADWAYS

I–57

I–74

N. MATTIS AVE.

RAMP E

RAMP H

RAMP G

RAMP F

RAMP B

MIDWEST CT.

RAMP C

RAMP A

RAMP D

BLOOMINGTON RD.

W. ANTHONY DR.

I–74

BLOOMINGTON RD.

N. MATTIS AVE.

I–57

N

300′ 0 300′ 600′

SCALE: 1″ = 300′

INTERCHANGE TYPE STUDY

# MAINTENANCE OF TRAFFIC: ALTERNATE 3

**EXHIBIT 42**

BDE-9908

PLOT DATE = 8/5/2014 - 3:37:24 PM
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PLOT SCALE = 600.0000 ' / in.
USER NAME = Brad Dawson

**LEGEND:**

| | | |
|---|---|---|
| | STAGE 1: | CONSTRUCT CROSS ROADWAY PAVEMENT AND STRUCTURES |
| | STAGE 2: | CONSTRUCT ALL OF OUTER RAMPS B & H, PORTIONS OF OUTER RAMPS A & G, AND TEMPORARY CONNECTOR FOR OUTER RAMP A |
| | STAGE 3: | CONSTRUCT ALL OF FLYOVER RAMPS D, E, & F AND COMPLETE CONSTRUCTION OF OUTER RAMP A |
| | STAGE 4: | CONSTRUCT ALL OF FLYOVER RAMP C AND TEMPORARY CONNECTOR FOR EXISTING OUTER RAMP G |
| | STAGE 5: | CONSTRUCT MAINLINE STRUCTURE AND ROADWAYS AND COMPLETE CONSTRUCTION OF OUTER RAMP G |

I–57

N. MATTIS AVE.

RAMP E

RAMP H

RAMP G

RAMP F

I–74

RAMP B

RAMP C

MIDWEST CT.

RAMP D

RAMP A

BLOOMINGTON RD.

W. ANTHONY DR.

I–74

BLOOMINGTON RD.

N. MATTIS AVE.

I–57

N

300′ 0 300′ 600′

SCALE: 1″ = 300′

INTERCHANGE TYPE STUDY

**MAINTENANCE OF TRAFFIC: ALTERNATE 4**

**EXHIBIT 43**

BDE-9908

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USER NAME = Brad Dawson

**LEGEND:**

- **STAGE 1:** CONSTRUCT CROSS ROADWAY PAVEMENT AND STRUCTURES
- **STAGE 2:** CONSTRUCT ALL OF OUTER RAMPS A, G, & H, PORTIONS OF OUTER RAMP B, AND PORTIONS OF ALL FLYOVER RAMPS
- **STAGE 3:** CONSTRUCT TEMPORARY CONNECTION FOR OUTER RAMP B
- **STAGE 4:** CONSTRUCT STRUCTURES AND REMAINING PORTIONS OF ALL FLYOVER RAMPS
- **STAGE 5:** CONSTRUCT MAINLINE STRUCTURE AND ROADWAYS AND COMPLETE REMAINING PORTION OF OUTER RAMP B

I–57

I–74

N. MATTIS AVE.

RAMP H

RAMP G

RAMP F

RAMP E

RAMP D

RAMP C

RAMP B

RAMP A

W. ANTHONY DR.

BLOOMINGTON RD.

MIDWEST CT.

BLOOMINGTON RD.

N. MATTIS AVE.

I–74

I–57

N

300′ 0 300′ 600′

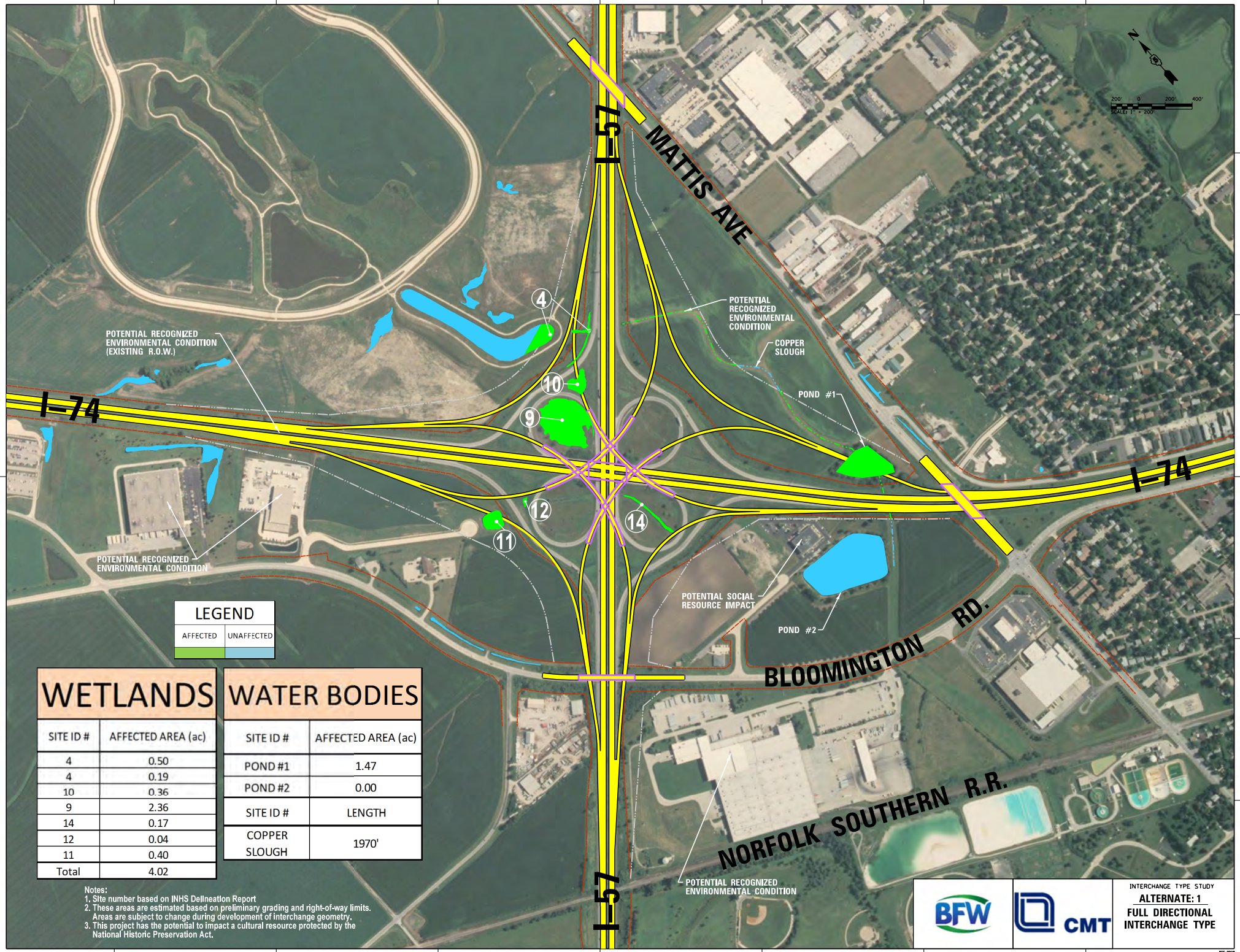
SCALE: 1″ = 300′

INTERCHANGE TYPE STUDY

# MAINTENANCE OF TRAFFIC: ALTERNATE 5

**EXHIBIT 44**

BDE-9908




## WETLANDS

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| 4 | 0.50 |
| 4 | 0.19 |
| 10 | 0.36 |
| 9 | 2.36 |
| 14 | 0.17 |
| 12 | 0.04 |
| 11 | 0.40 |
| Total | 4.02 |

## WATER BODIES

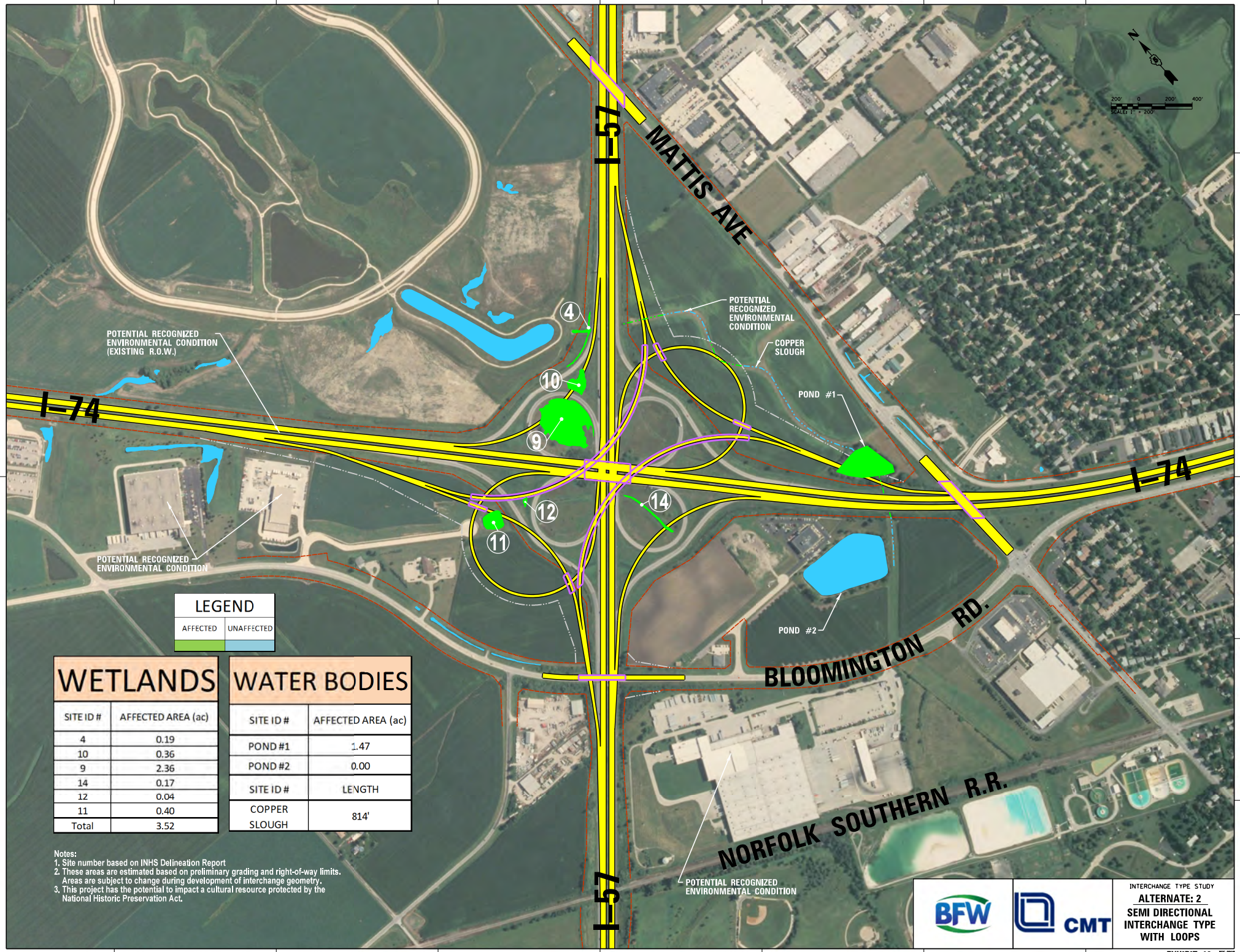
| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| POND #1 | 1.47 |
| POND #2 | 0.00 |
| SITE ID # | LENGTH |
| COPPER SLOUGH | 1970' |

Notes:
1. Site number based on INHS Delineation Report
2. These areas are estimated based on preliminary grading and right-of-way limits. Areas are subject to change during development of interchange geometry.
3. This project has the potential to impact a cultural resource protected by the National Historic Preservation Act.

BFW CMT

INTERCHANGE TYPE STUDY
ALTERNATE: 1
FULL DIRECTIONAL INTERCHANGE TYPE

EXHIBIT 45




LEGEND

| AFFECTED | UNAFFECTED |
|---|---|

## WETLANDS

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| 4 | 0.19 |
| 10 | 0.36 |
| 9 | 2.36 |
| 14 | 0.17 |
| 12 | 0.04 |
| 11 | 0.40 |
| Total | 3.52 |

## WATER BODIES

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| POND #1 | 1.47 |
| POND #2 | 0.00 |
| SITE ID # | LENGTH |
| COPPER SLOUGH | 814' |

Notes:
1. Site number based on INHS Delineation Report
2. These areas are estimated based on preliminary grading and right-of-way limits. Areas are subject to change during development of interchange geometry.
3. This project has the potential to impact a cultural resource protected by the National Historic Preservation Act.

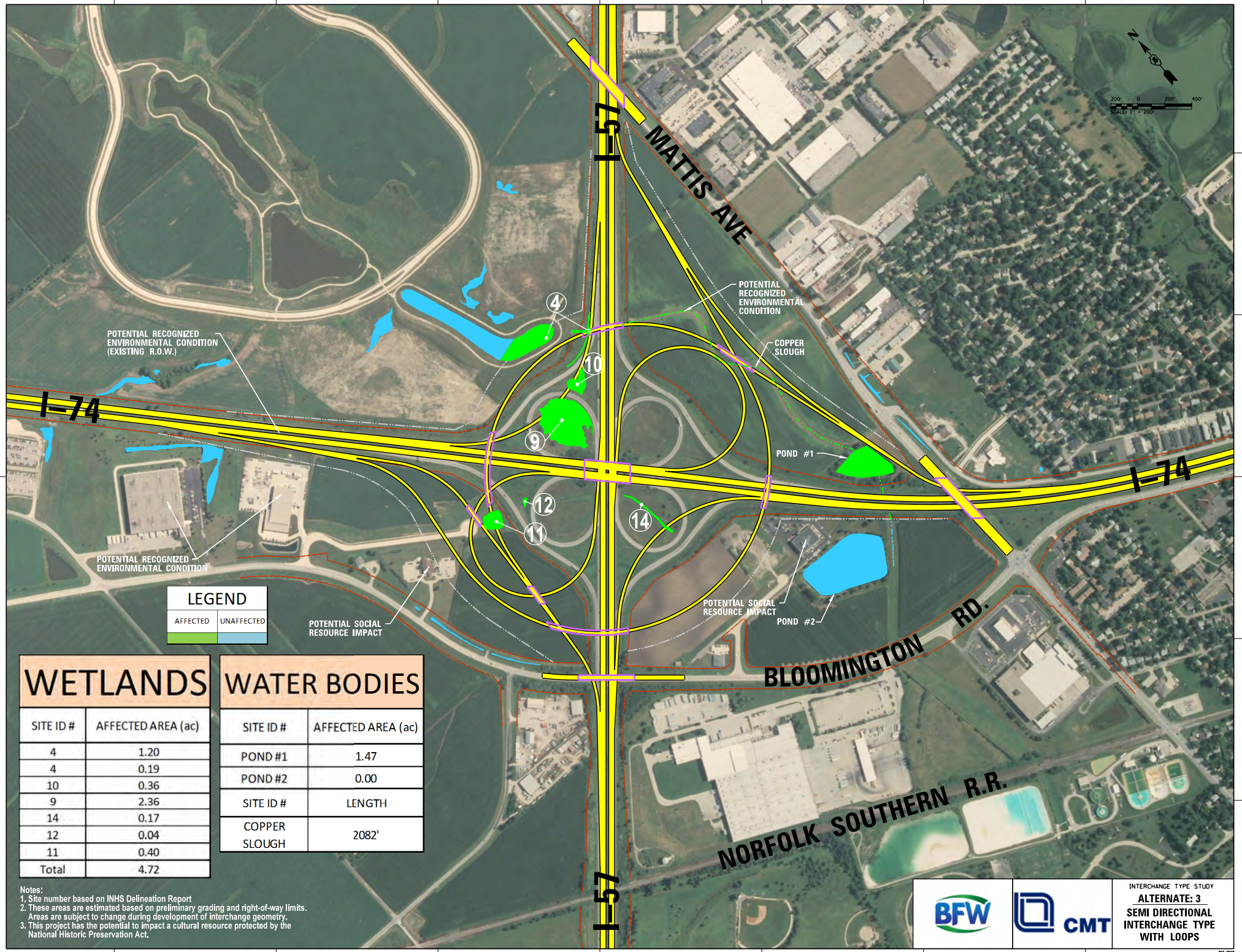
BFW CMT

INTERCHANGE TYPE STUDY

**ALTERNATE: 2**

**SEMI DIRECTIONAL INTERCHANGE TYPE WITH LOOPS**

EXHIBIT 46




## WETLANDS

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| 4 | 1.20 |
| 4 | 0.19 |
| 10 | 0.36 |
| 9 | 2.36 |
| 14 | 0.17 |
| 12 | 0.04 |
| 11 | 0.40 |
| Total | 4.72 |

## WATER BODIES

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| POND #1 | 1.47 |
| POND #2 | 0.00 |
| SITE ID # | LENGTH |
| COPPER SLOUGH | 2082' |

Notes:
1. Site number based on INHS Delineation Report
2. These areas are estimated based on preliminary grading and right-of-way limits. Areas are subject to change during development of interchange geometry.
3. This project has the potential to impact a cultural resource protected by the National Historic Preservation Act.

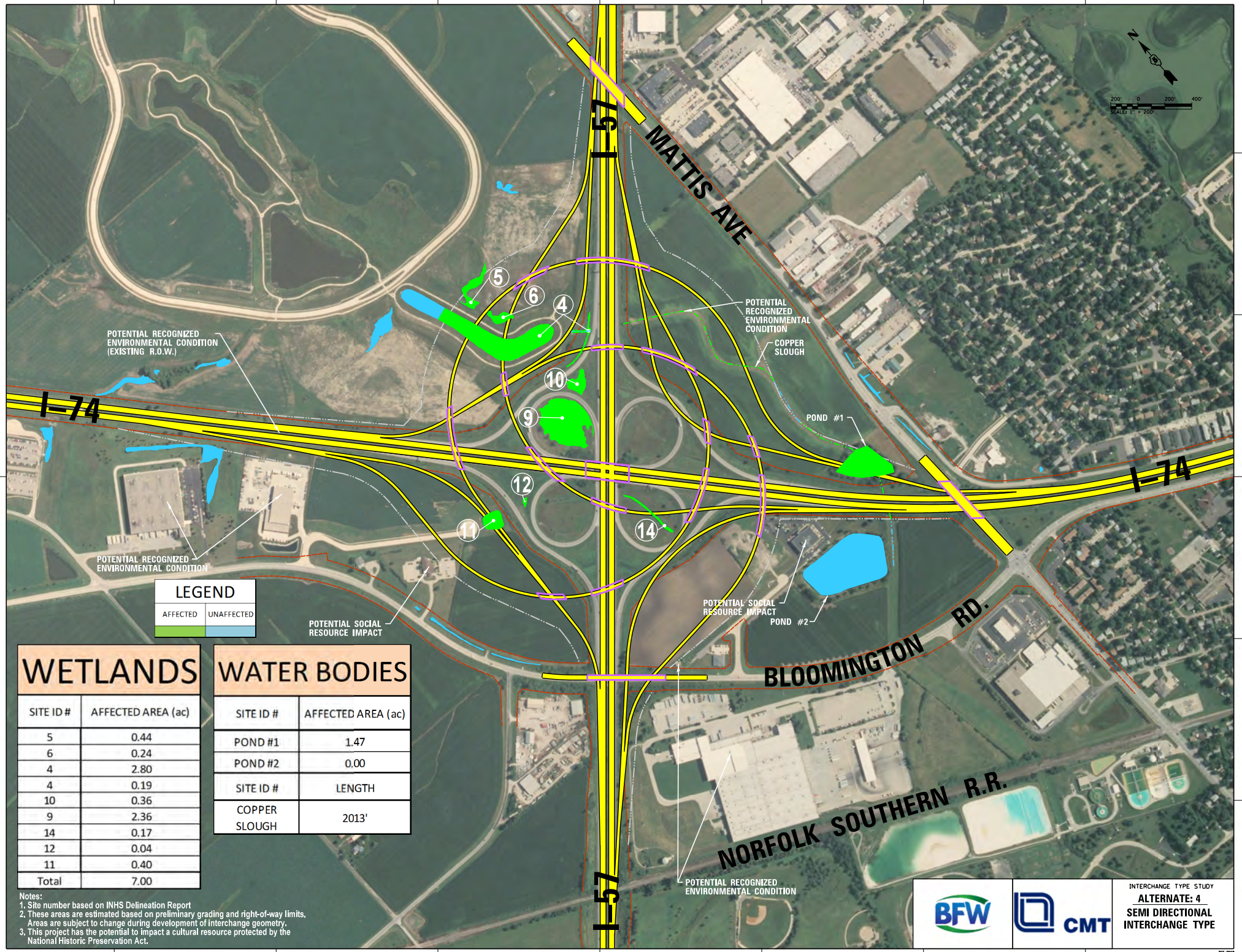
BFW CMT

INTERCHANGE TYPE STUDY

**ALTERNATE: 3**

**SEMI DIRECTIONAL INTERCHANGE TYPE WITH LOOPS**

EXHIBIT 47




LEGEND

| AFFECTED | UNAFFECTED |
|---|---|

## WETLANDS

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| 5 | 0.44 |
| 6 | 0.24 |
| 4 | 2.80 |
| 4 | 0.19 |
| 10 | 0.36 |
| 9 | 2.36 |
| 14 | 0.17 |
| 12 | 0.04 |
| 11 | 0.40 |
| Total | 7.00 |

## WATER BODIES

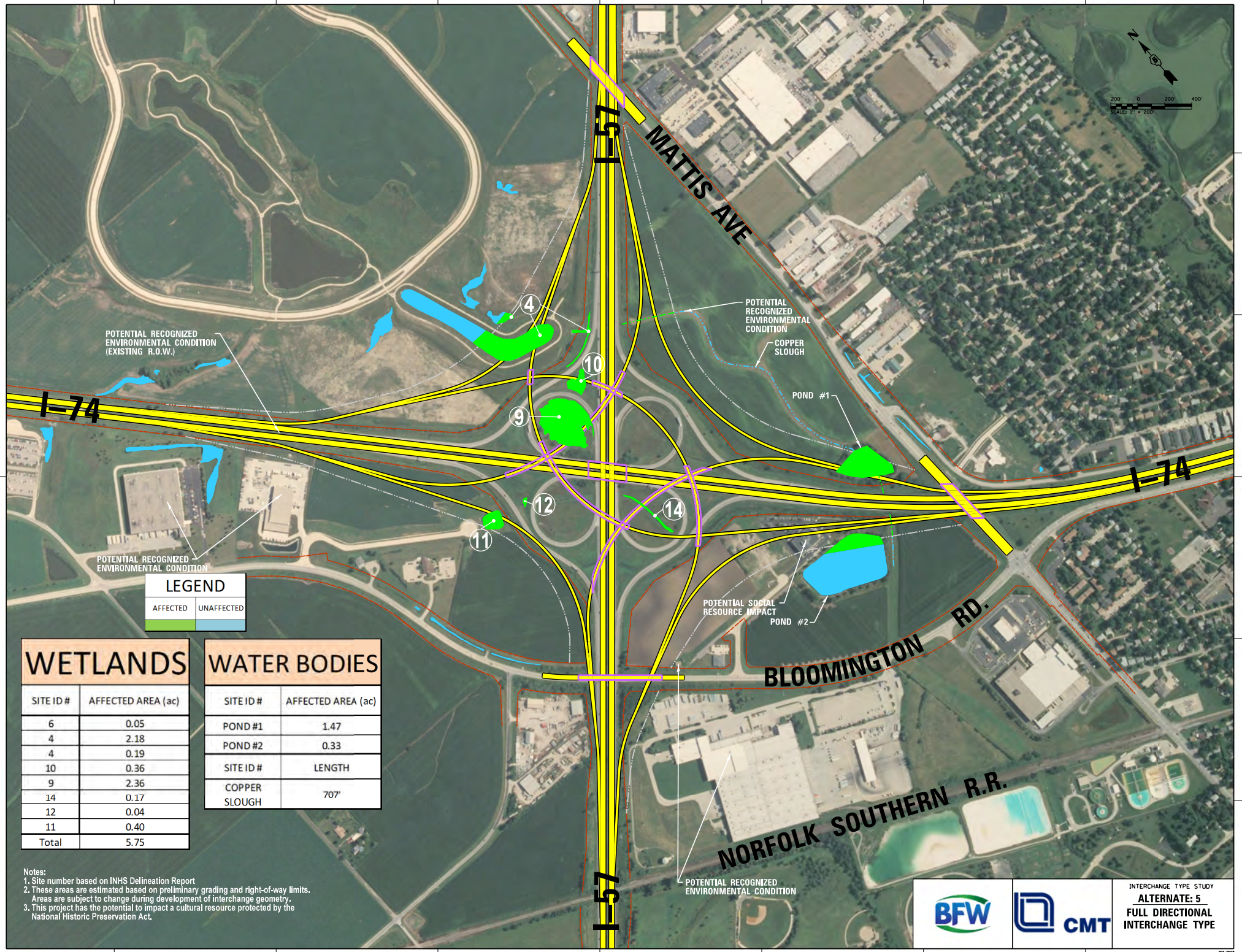
| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| POND #1 | 1.47 |
| POND #2 | 0.00 |
| SITE ID # | LENGTH |
| COPPER SLOUGH | 2013' |

Notes:
1. Site number based on INHS Delineation Report
2. These areas are estimated based on preliminary grading and right-of-way limits. Areas are subject to change during development of interchange geometry.
3. This project has the potential to impact a cultural resource protected by the National Historic Preservation Act.

BFW CMT

INTERCHANGE TYPE STUDY
ALTERNATE: 4
SEMI DIRECTIONAL INTERCHANGE TYPE

EXHIBIT 48




LEGEND

| AFFECTED | UNAFFECTED |
|---|---|
| | |

## WETLANDS

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| 6 | 0.05 |
| 4 | 2.18 |
| 4 | 0.19 |
| 10 | 0.36 |
| 9 | 2.36 |
| 14 | 0.17 |
| 12 | 0.04 |
| 11 | 0.40 |
| Total | 5.75 |

## WATER BODIES

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| POND #1 | 1.47 |
| POND #2 | 0.33 |
| SITE ID # | LENGTH |
| COPPER SLOUGH | 707' |

Notes:
1. Site number based on INHS Delineation Report
2. These areas are estimated based on preliminary grading and right-of-way limits. Areas are subject to change during development of interchange geometry.
3. This project has the potential to impact a cultural resource protected by the National Historic Preservation Act.

BFW CMT

INTERCHANGE TYPE STUDY
ALTERNATE: 5
FULL DIRECTIONAL INTERCHANGE TYPE

EXHIBIT 49

# Design and Geometric Criteria Revised

## Interstate 57 and Interstate 74

Section 10(5-1-RS-1, 14-1, 6)R
Job No. P-95-030-11

Champaign, IL
Champaign County

**EXHIBIT 50**

# F.A.I. 57 (I-57) – Urban Principal Arterial (Interstate)
# F.A.I. 74 (I-74) – Urban Principal Arterial (Interstate)

| Topic | Criteria | Source |
|---|---|---|
| **Design Speed** | 75 mph | District 5 Meeting 9-6-2012 |
| **Level of Service** | LOS C | BDE, Figure 44-5A |
| **Horizontal Alignment** | | |
| Superelevation Rate ($e_{max}$) | 6 % | BDE, Figure 44-5D |
| Minimum Radius Curve | 2500 ft | BDE, Figure 44-5D |
| Minimum Curve Length | Varies with deflection angle | BDE, Section 32-2.05 |
| Design Vehicle | WB-65 | BDE, Figure 36-1R |
| **Vertical Alignment** | | |
| Maximum Grade | | |
| Level | 3% | BDE, Figure 44-5D |
| Minimum Grade | | |
| Desirable | 0.5% | BDE, Figure 44-5D |
| With Curb and Gutter | 0.3% | BDE, Figure 44-5D |
| Rate of Vertical Curvature, K (Stopping Sight Dist.) | | |
| Crest Vertical Curve | | |
| Passenger Cars – Level Grade | 312 | BDE, Figure 33-4A |
| Sag Vertical Curve | | |
| Passenger Cars – Level Grade | 206 | BDE, Figure 33-4E |
| Minimum Length of Curve | 5 x Design Speed | |
| Crest | 375 ft | BDE, Sec. 33-4.01(a) |
| Sag | 375 ft | BDE, Sec. 33-4.02(a) |
| **Sight Distance** | | |
| Stopping Sight Distance (Passenger Car) | | |
| Minimum | 820 ft | BDE, Figure 31-3A, Figure 44-5D |
| **Bridges** | | |
| Vertical Clearance (Freeway Under) | | |
| New and Replaced Overpassing Bridges | 16’-9” | BDE, Figure 44-5A |
| Overhead Signs/Pedestrian Bridges | 17’-3” (New) | BDE, Figure 44-5A |

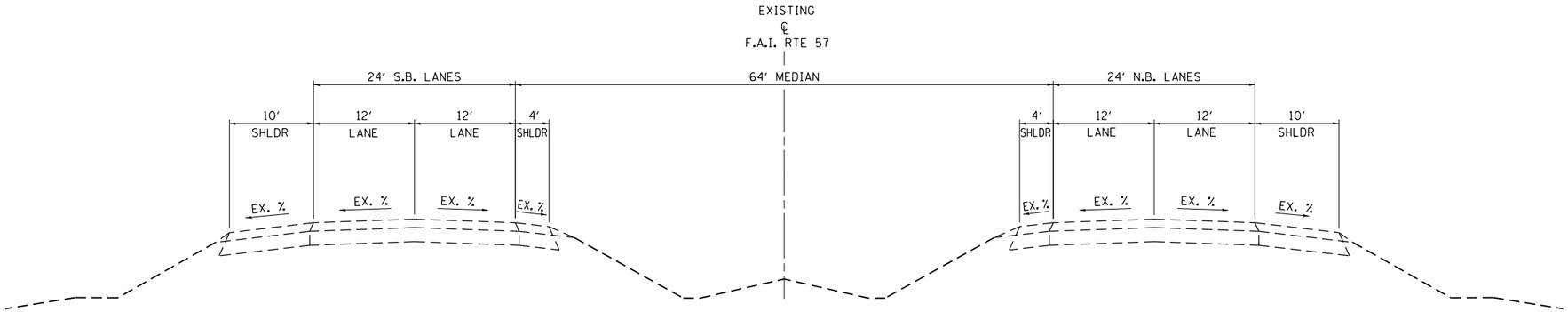
# F.A.I. 57 (I-57) – Urban Principal Arterial (Interstate)
# F.A.I. 74 (I-74) – Urban Principal Arterial (Interstate)
# (Continued)

| Topic | Criteria | Source |
|---|---|---|
| **Cross Section Elements** | | |
| Median Width (Depressed) | 60 ft | BDE, Figure 44-5A |
| Median Width (Flush – Concrete Barrier) | 23 ft | BDE, Figure 44-5A |
| Traveled Way Width | 2 @ 36 ft | BDE, Figure 44-5A |
| Shoulder Width | | |
| Left | 12 ft | BDE, Figure 44-5A |
| Right | 12 ft | BDE, Figure 44-5A |
| Paved Shoulder Width | | |
| Left | 12 ft | BDE, Figure 44-5A |
| Right | 12 ft | BDE, Figure 44-5A |
| Auxiliary Lanes | | |
| Lane Width | 12 ft | BDE, Figure 44-5A |
| Left Shoulder | 8 ft (minimum) | BDE, Figure 44-5A |
| Right Shoulder | 10 ft | BDE, Figure 44-5A |
| Cross Section Slopes | | |
| Travel Lanes | 1.5% | BDE, Figure 44-5A |
| Auxiliary Lanes | 2% | BDE, Sec. 34-2.03 |
| Shoulders | 4% | BDE, Figure 44-5A |
| Maximum Shoulder Rollover | 8% | BDE, Sec. 32-3.04 |
| Clear Zone, from E.O.P. | 30 ft (1:6 Foreslope) | BDE, Figure 38-3A |
| Earth Slopes | | |
| Fill | | |
| Foreslope | | |
| Behind Guardrail | 1:2 Max. | BDE, Figure 44-5A |
| Without Guardrail | | |
| Within Clear Zone | 1:6 | BDE, Figure 44-5A |
| Beyond Clear Zone | 1:3 Max. | BDE, Figure 44-5A |
| Cut | | |
| Foreslope | | |
| Within Clear Zone | 1:6 | BDE, Figure 44-5A |
| Beyond Clear Zone | 1:3 Max. | BDE, Figure 44-5A |
| Backslope | | |
| Within Clear Zone | 1:3 | BDE, Figure 44-5A |
| Beyond Clear Zone | 1:3 | BDE, Figure 44-5A |
| Median Slopes | 1:6 | BDE, Figure 44-5A |
| Ditch Bottom Width | 4 ft | BDE, Figure 44-5A |

# Interchange Ramps - Outer Connector, Directional, Semi-Directional

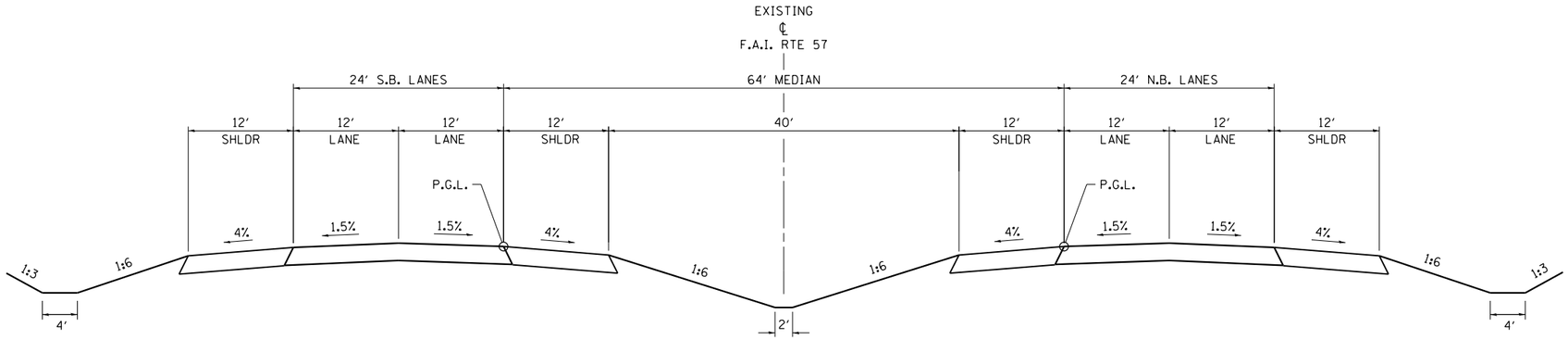
| Topic | Criteria | Source |
|---|---|---|
| **Design Speed** | 55 mph | BDE, Sec. 37-4.04 |
| **Stopping Sight Distance** | | |
| Stopping Sight Distance (Passenger Car) | | |
| Minimum | 495 ft | BDE, Figure 37-4F |
| **Horizontal Alignment** | | |
| Minimum Radius Curve | | |
| 55 mph | 960 ft | BDE, Figure 37-4F |
| Maximum Superelevation Rate | 8% | BDE, Sec. 37-4.07(b) #2, Figure 37-4F |
| Minimum Curve Length | Varies with deflection angle | BDE, Section 32-2.05 |
| **Vertical Alignment** | | |
| Maximum Upgrade | +4% | BDE, Section 37-4.08(a), Figure 37-4F |
| Maximum Downgrade | -6% | BDE, Section 37-4.08(a), Figure 37-4F |
| Rate of Vertical Curvature, k | | |
| Crest Vertical Curve | | |
| Minimum | 114 | BDE, Figure 37-4F |
| Sag Vertical Curve | | |
| Minimum | 115 | BDE, Figure 37-4F |
| **Cross Section Elements** | | |
| Clear Zone | 16-18 ft Ramp D, H<br>20-22 ft Ramp B, C, F, G<br>22-24 ft Ramp A, E | BDE, Figure 38-3A |
| Cross Section Widths | | |
| 1-Lane Ramp | | |
| Traveled Way Width | 16 ft | BDE, Section 37-4.06 |
| Shoulder Width | | |
| Left | 6 ft | BDE, Section 37-4.06 |
| Right | 8 ft | BDE, Section 37-4.06 |
| Paved Shoulder Width | | |
| Left | 4 ft | BDE, Section 37-4.06 |
| Right | 6 ft | BDE, Section 37-4.06 |
| Cross Section Slopes | | |
| Travel Lane | 1.5% Min. (Toward Rt. Shoulder) | BDE, Section 37-4.06 |
| Shoulders | 4% | BDE, Section 37-4.06 |
| Sideslopes | 1:4 (Maximum) | BDE, Section 37-4.06 |
| **Entrance and Exit Ramp Terminals** | | |
| Minimum Acceleration/Deceleration Lengths | | See BDE, Sec. 37-6 and IDOT Highway Standards 406001 & 406101 |

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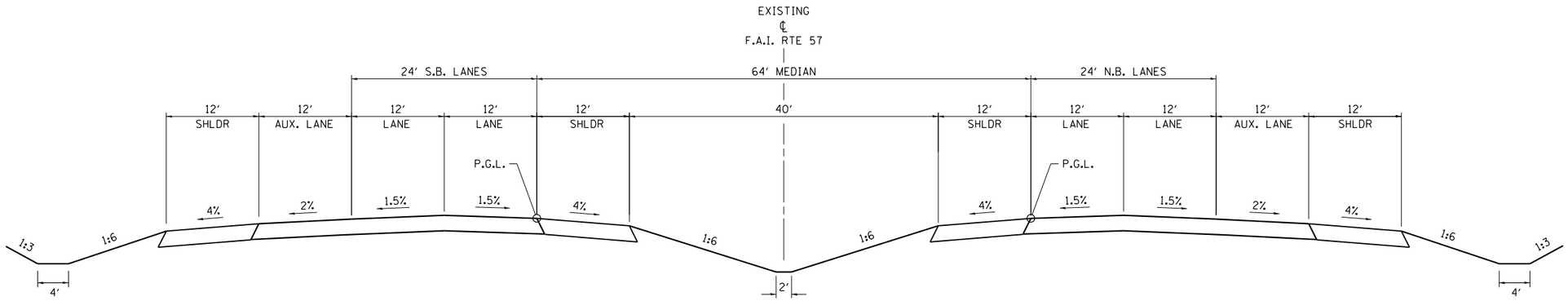

**EXISTING F.A.I 57**

(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
WITH AUXILIARY LANE
(LOOKING NORTH)

**INTERCHANGE TYPE STUDY**

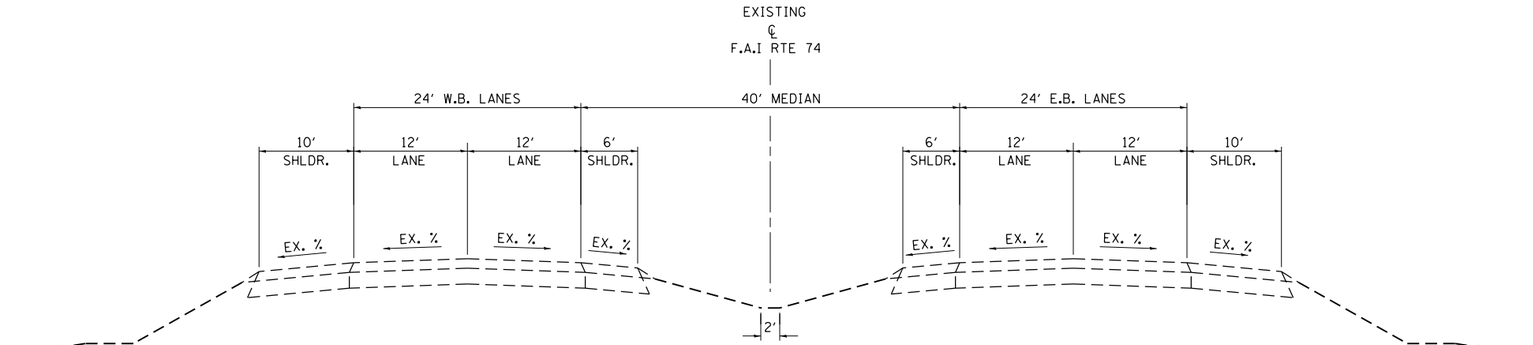
**EXISTING & PROPOSED TYPICAL SECTIONS**

**INTERSTATE 57**

**EXHIBIT 51**

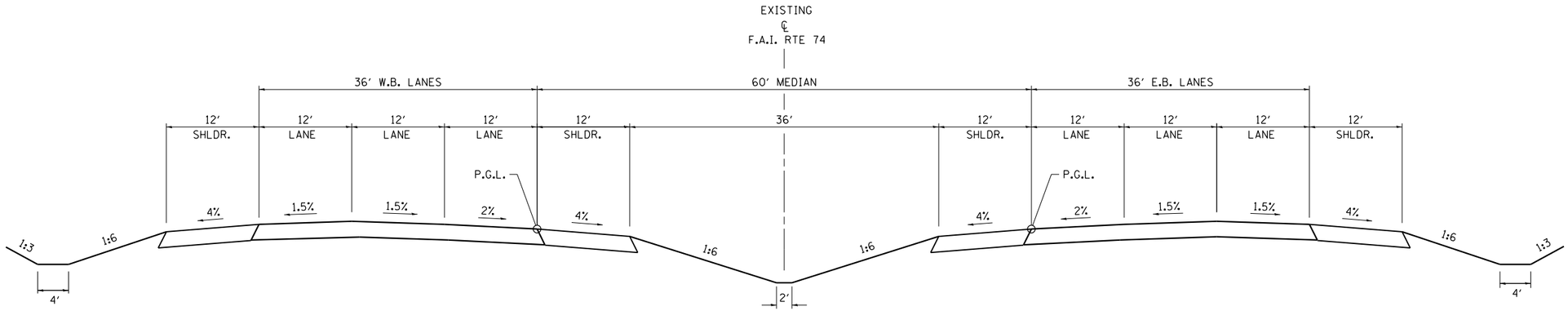
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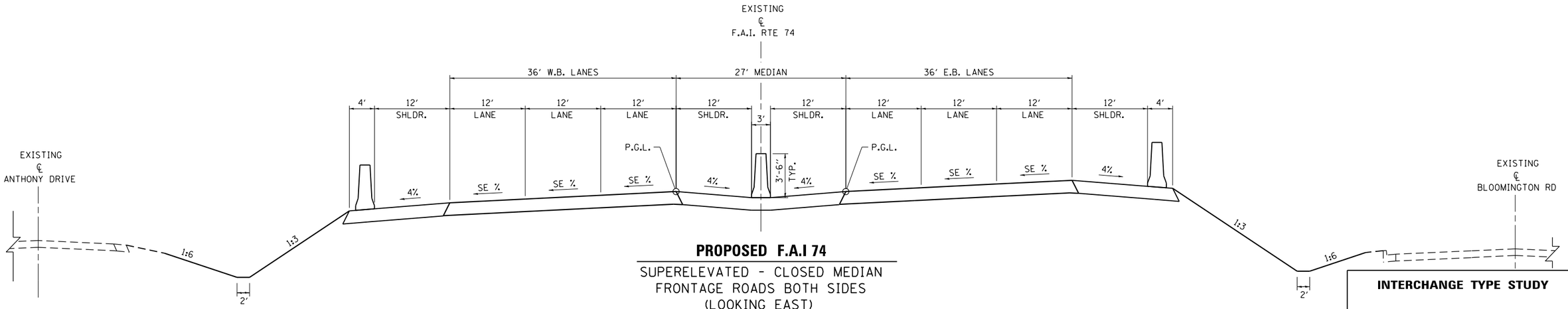

**EXISTING F.A.I 74**

(LOOKING EAST)




**PROPOSED F.A.I 74**

NORMAL CROWN - OPEN MEDIAN
(LOOKING EAST)




**PROPOSED F.A.I 74**

SUPERELEVATED - CLOSED MEDIAN
FRONTAGE ROADS BOTH SIDES
(LOOKING EAST)

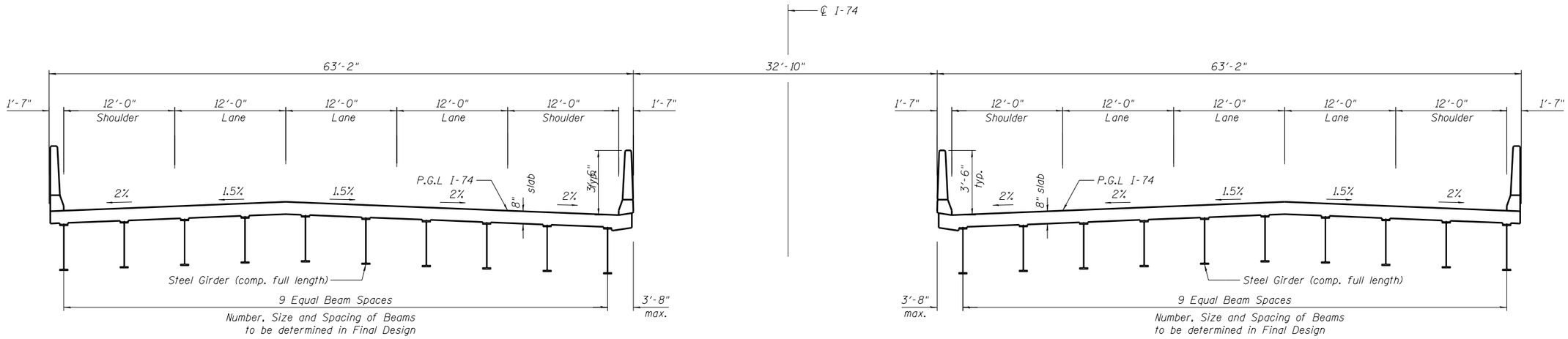
**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**INTERSTATE 74**

**EXHIBIT 52**

BDE-9908




## I-74 OVER I-57 BRIDGE CROSS SECTION

*(Looking Upstation)*

**INTERCHANGE TYPE STUDY**

**STRUCTURE TYPICAL SECTIONS**

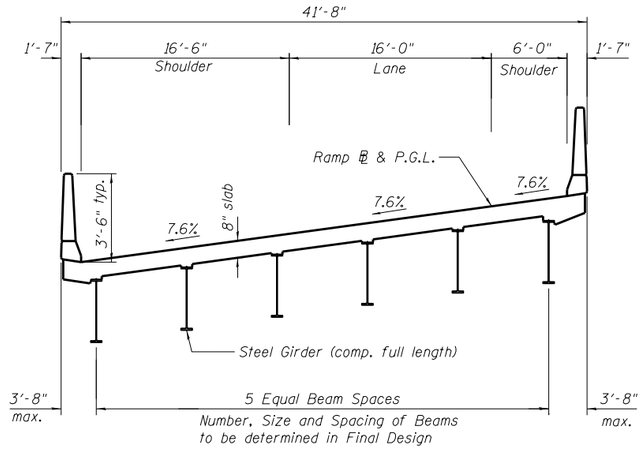
**I–74 OVER I–57**

**EXHIBIT 53**

BDE-9908

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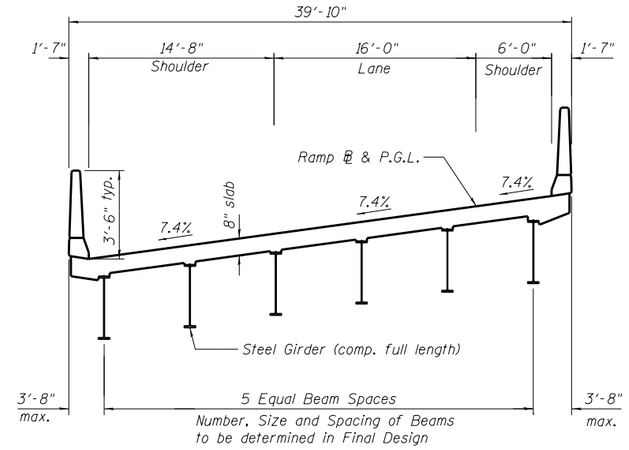
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## TYPICAL RAMP BRIDGE (1250' RADIUS)

(Looking Upstation)

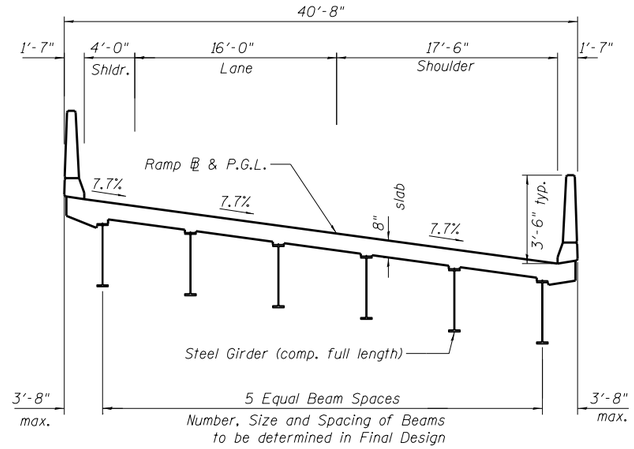
**ALTERNATE 1 - RAMP C & D**
**ALTERNATE 2 - RAMP E**




## TYPICAL RAMP BRIDGE (1350' RADIUS)

(Looking Upstation)

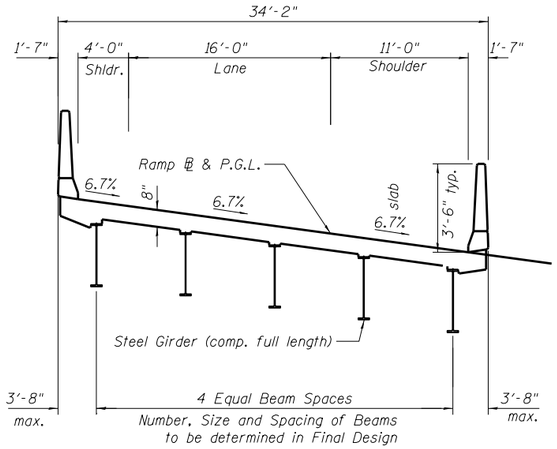
**ALTERNATE 1 - RAMP E & F**
**ALTERNATE 2 - RAMP D**




## TYPICAL RAMP BRIDGE (1200' RADIUS)

(Looking Upstation)

**ALTERNATE 2 - RAMP B**




## TYPICAL RAMP BRIDGE (1600' RADIUS)

(Looking Upstation)

**ALTERNATE 2 - RAMP G**

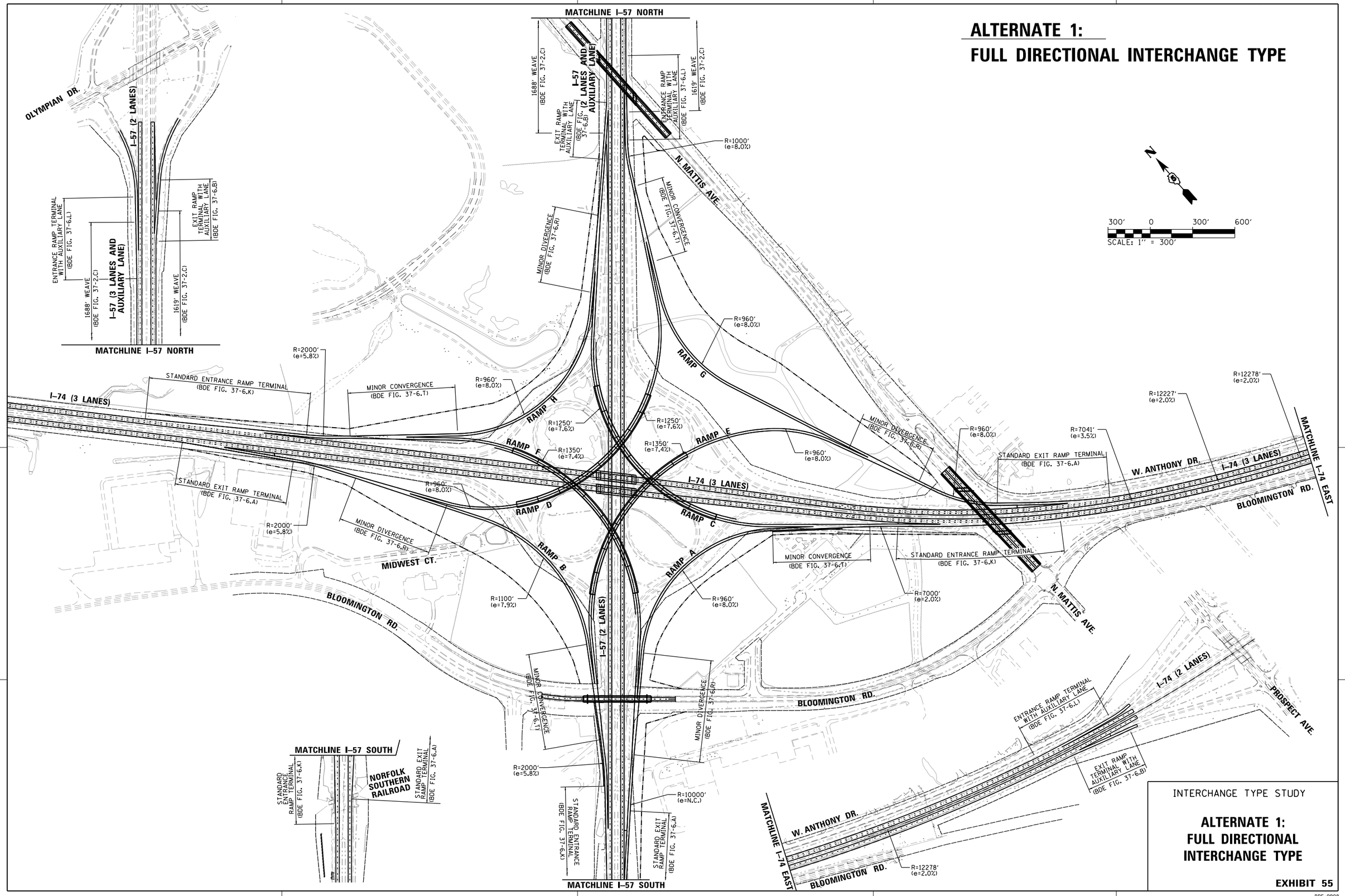
**INTERCHANGE TYPE STUDY**

**STRUCTURE TYPICAL SECTIONS**

**RAMPS**

**EXHIBIT 54**

# ALTERNATE 1:
# FULL DIRECTIONAL INTERCHANGE TYPE




INTERCHANGE TYPE STUDY

**ALTERNATE 1:**
**FULL DIRECTIONAL INTERCHANGE TYPE**

**EXHIBIT 55**

BDE-9908

PLOT DATE = 8/12/2014 - 10:17:17 AM
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USER NAME = Brad Downen

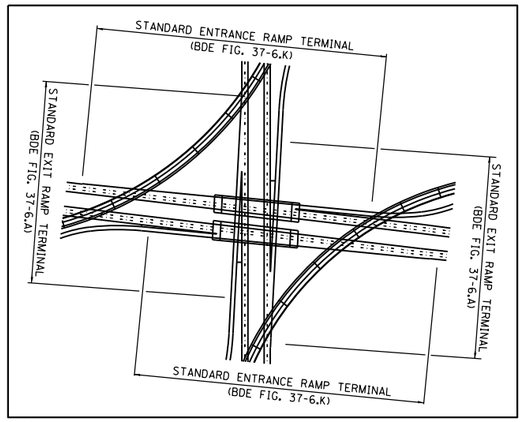
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# ALTERNATE 2:

## SEMI–DIRECTIONAL INTERCHANGE TYPE WITH DIRECTIONAL FLYOVERS AND TWO LOOPS

SCALE: 1" = 300'

**DETAIL 1**





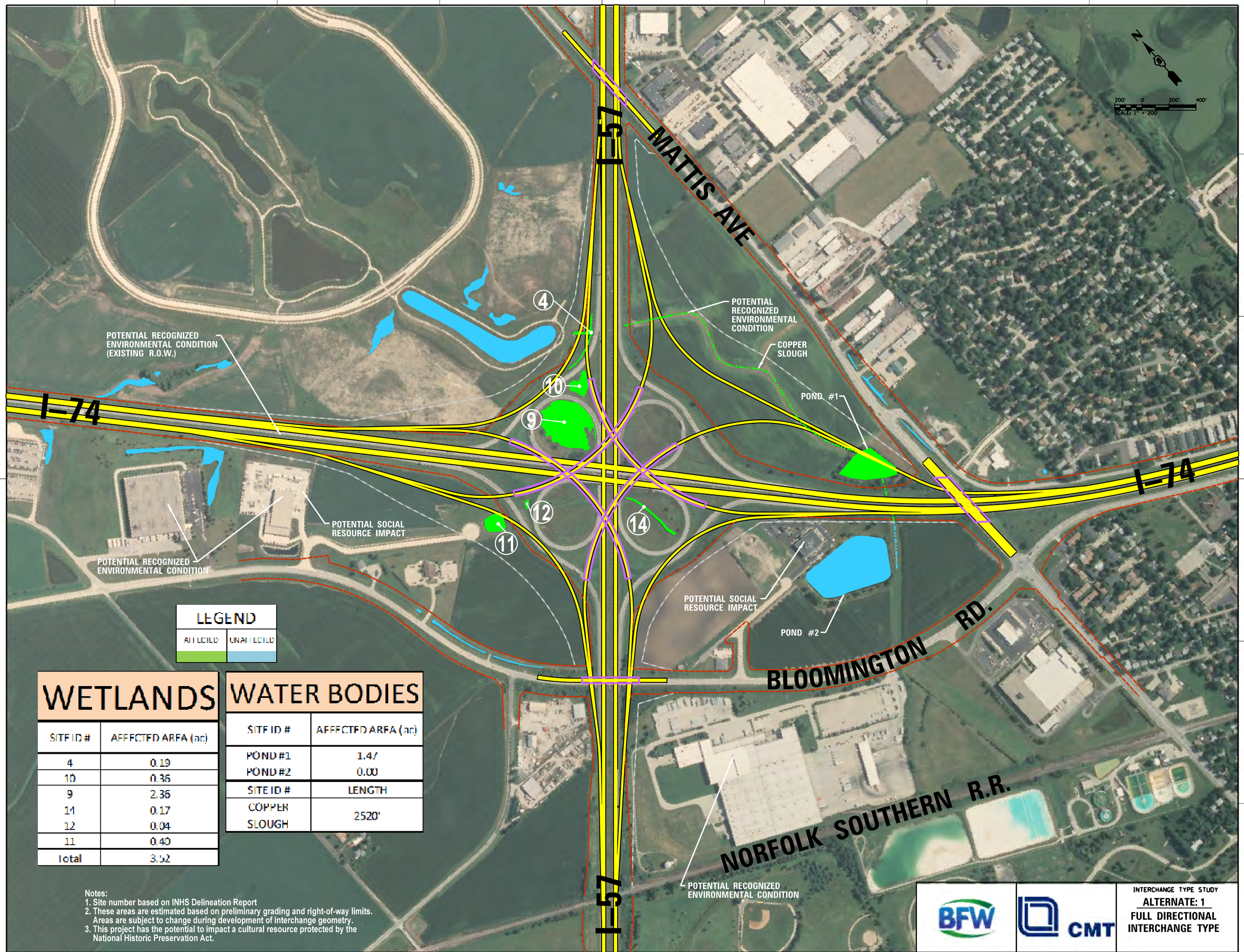

INTERCHANGE TYPE STUDY

**ALTERNATE 2: SEMI–DIRECTIONAL INTERCHANGE TYPE WITH DIRECTIONAL FLYOVERS AND TWO LOOPS**

**EXHIBIT 56**

BDE-9908

PLOT DATE : 8/5/2014 10:20:29 AM
FILE NAME : c:\projects\1354 I-74 Interchange\CIVIL\GDD Sheets\Addendum - 115 Exhibit 57 Alt 1 - Wetlands-Hydrology.dgn
PLOT SCALE : 1.0000 '/ in.
USER NAME : mbrown




| LEGEND | |
|---|---|
| AFFECTED | UNAFFECTED |

## WETLANDS

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| 4 | 0.19 |
| 10 | 0.36 |
| 9 | 2.36 |
| 11 | 0.17 |
| 12 | 0.04 |
| 11 | 0.40 |
| Total | 3.52 |

## WATER BODIES

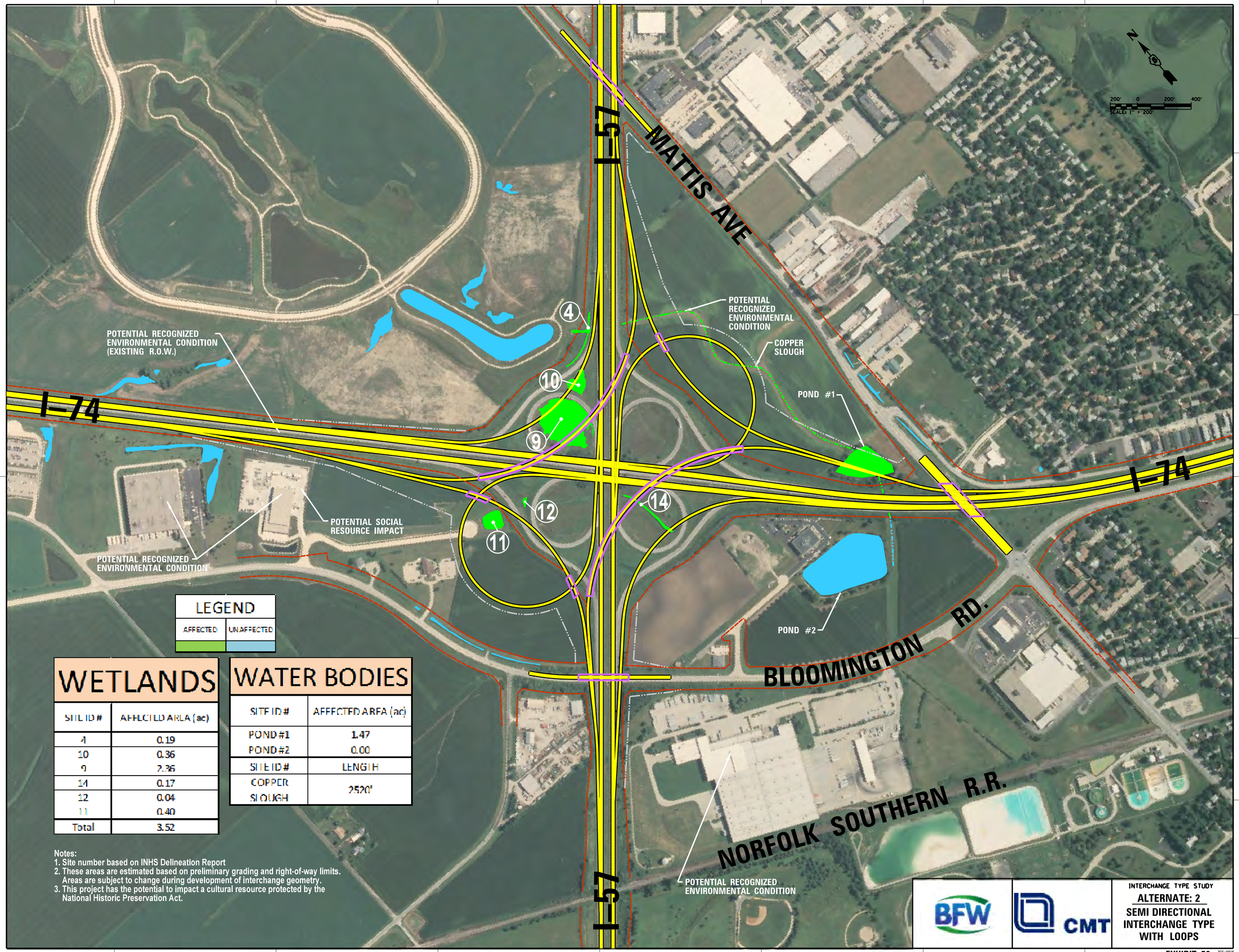
| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| POND #1 | 1.47 |
| POND #2 | 0.00 |
| SITE ID # | LENGTH |
| COPPER SLOUGH | 2520' |

Notes:
1. Site number based on INHS Delineation Report
2. These areas are estimated based on preliminary grading and right-of-way limits. Areas are subject to change during development of interchange geometry.
3. This project has the potential to impact a cultural resource protected by the National Historic Preservation Act.

BFW | CMT

INTERCHANGE TYPE STUDY
ALTERNATE: 1
FULL DIRECTIONAL INTERCHANGE TYPE

EXHIBIT 57 BDE-9908




| LEGEND | |
|---|---|
| AFFECTED | UNAFFECTED |
| | |

## WETLANDS

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| 4 | 0.19 |
| 10 | 0.36 |
| 9 | 2.36 |
| 14 | 0.17 |
| 12 | 0.04 |
| 11 | 0.40 |
| Total | 3.52 |

## WATER BODIES

| SITE ID # | AFFECTED AREA (ac) |
|---|---|
| POND #1 | 1.47 |
| POND #2 | 0.00 |
| SITE ID # | LENGTH |
| COPPER SLOUGH | 2520' |

Notes:
1. Site number based on INHS Delineation Report
2. These areas are estimated based on preliminary grading and right-of-way limits. Areas are subject to change during development of interchange geometry.
3. This project has the potential to impact a cultural resource protected by the National Historic Preservation Act.

BFW CMT

INTERCHANGE TYPE STUDY
ALTERNATE: 2
SEMI DIRECTIONAL INTERCHANGE TYPE WITH LOOPS

EXHIBIT 58 BDE-9908

PLOT DATE : 8/6/2014 9:37:09 AM
PLOT BY : Brian Hall
PLOT SCALE : 1.0000 '/ in.
USER NAME : =
I:\Projects\11354 IDOT I-74 Interchange\CIVIL\DGN Sheets\Addendum - 115 Exhibit 58 Alt 2 - Wetlands-Archeo.

# Attachment 1:

# Operational Safety Analysis

Illinois Department of Transportation

# Operational Safety Analysis

For

FAI Route 57 (I-57) & FAI Route 74 (I-74)
Section 10(5-1-RS-1,14-1,6)R
Job No. P-95-030-11
Champaign County

Interchange Reconstruction

Prepared For:
Illinois Department of Transportation
Program Development
District 5

Prepared By:

Quigg Engineering, Inc.
2351 South Dirksen Parkway
Springfield, IL 62703

QUIGG ENGINEERING INC

On behalf of a Joint Venture between:

Bacon Farmer Workman,
Engineering & Testing, Inc.
500 South 17th Street
P.O. Box 120
Paducah, KY 42002-120

BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC.

&

Crawford, Murphy & Tilly, Inc.
2750 West Washington Street
Springfield, IL 62702

CMT

June 2014

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**Exhibits**

Exhibit A: Location Map
Exhibit B: Aerial Map
Exhibit C – H: Segments for ISATe Analysis
Exhibit I: ISATe Output Summaries

## Section 1 – Introduction

### 1.1 Project Description

This project involves complete reconstruction of the interchange at I-57 and I-74 northwest of Champaign, Illinois in Champaign County. See the Location Map and Aerial Map attached as Exhibit A and Exhibit B, respectively. The project also involves the addition of a third through lane in each direction on both I-74 and I-57 through the interchange area.

### 1.2 Purpose of Operational Safety Analysis

The Operational Safety Analysis consists of a Road Safety Audit for the existing facility and a Safety Analysis for the existing interchange as well as several proposed design alternatives utilizing the Enhanced Interchange Safety Analysis Tool (ISATe).

## Section 2 – Road Safety Audit

### 2.1 Road Safety Audit Process

The FHWA defines a Road Safety Audit (RSA) as a formal safety performance examination of an existing or future road or intersection by an independent audit team. Its purpose is to report on potential road safety issues and to identify opportunities for improvements in safety for all road users. The RSA consists of reviewing as-built plans and crash history reports as well as performing field reviews. Conducting an RSA early in a road project's lifecycle during the preliminary design phase results in lower implementation costs than if it were done during the detailed design process or construction.

The limits of the RSA included I-57 from I-72 to West Olympian Drive and I-74 from Prairie View Road to North Prospect Avenue as well as the interchanges of I-57/I-72, I-57/I-74, I-57/West Olympian Drive. I-74/Prairie View Road, and I-74/North Prospect Avenue.

The RSA team was comprised of Michael Vail, Lindsay Sagorski and Mike Matzke of Quigg Engineering Inc.

### 2.2 Existing Geometrics

I-57 is a four-lane interstate with a 65 foot wide grass median and a posted speed limit of 70 mph. I-57 was resurfaced in 2013 from south of West Olympian Drive to north of the study limits. In late May to early June 2014, the interchange ramps were patched and resurfaced with a High-Friction Surface Treatment to address skidding issues that frequently resulted in crashes.

I-74 is a four-lane interstate with a posted speed limit of 70 mph. The grass median width varies from 70 feet east of Prairie View Road to 40 feet west of I-57, to 28 feet with a continuous concrete barrier west of North Prospect Avenue.

The I-57/I-74 interchange design is a full cloverleaf with I-74 passing over I-57. Posted advisory speeds for the ramps vary from 25 mph to 30 mph.

The I-57/I-72 interchange design is a full cloverleaf with I-72 passing over I-57. Posted advisory speeds for the ramps is 30 mph.

West Olympian Drive is a four-lane County Highway (FAP 813) with a concrete barrier median at the interchange of I-57. The existing interchange is a diamond type with the exit ramps located on the right-side of the freeway, terminating with one-way stop control at West Olympian Drive. The northbound and southbound exit ramps have an advisory speed of 40 mph. The northbound and southbound entrance ramps have a dedicated left-turn lane on West Olympian Drive. Both entrance ramps are located on the right-side of the freeway.

Prairie View Road is a two-lane County Highway (FAP 719) with a concrete barrier median at the interchange of I-74. The existing interchange is a diamond type with the exit ramps located on the right-side of the freeway, terminating with one-way stop control at Prairie View Road. The westbound exit ramp has an advisory speed of 35 mph and the eastbound exit ramp has no advisory speed posted. The eastbound and westbound entrance ramps have a dedicated left-turn lane on Prairie View Road. The westbound entrance ramp has a dedicated right-turn lane. Both entrance ramps are located on the right side of the freeway.

North Prospect Avenue is a four-lane County Highway (FAP 802) with a concrete median at the interchange of I-74. The existing interchange is a diamond type, with the eastbound exit ramp located on the right-side of the freeway, with a posted advisory speed of 35 mph, terminating at a signalized intersection on North Prospect Avenue with one left-turn lane and one right-turn lane. The westbound exit ramp is an exit only auxiliary lane initiated at the westbound entrance ramp at Neil Street. This ramp is located on the right side of the freeway with no posted advisory speed. This ramp terminates at a signalized intersection on North Prospect Avenue with dual left-turn lanes and dual right-turn lanes. Dual left-turn lanes on North Prospect Avenue are provided for the westbound and eastbound entrance ramps and enter I-74 on the right side.

## 2.3 Road Safety Audit Observations

Field reviews were conducted on November 19, 2013 during morning and afternoon hours and on December 5, 2013 during afternoon and evening hours. A summary of the issues identified during the field review and subsequent review of existing plans is provided as follows:

- Horizontal Alignment – The weaving section lengths and ramp radii of the existing cloverleaf interchanges at I-57/I-74 and I-57/I-72 do not meet the current standards in the IDOT BDE manual. The posted advisory speeds on the I-57/I-74 interchange ramps are between 25 and 30 mph, and 30 mph on the I-57/I-72 interchange ramps. IDOT requires a design speed of 40 mph for cloverleaf loop ramps between freeways and 45 mph for the outer connector ramps. (Section 37-4.04 BDE Manual).

  The I-57/I-74 and I-57/I-72 cloverleaf interchanges include four weaving sections each between the loop ramps. The weaving lengths at the existing interchanges do not meet the IDOT required minimum 650 foot weaving length for a design speed of 70 mph (Section 37-3.06(b) BDE Manual). The deficient weave lengths do not allow vehicles enough space to increase or reduce their speed in order to safely merge onto the freeway or access the exit ramp, causing high speed differentials.

During the field review, the RSA team witnessed several vehicles entering the mainline roadway, slowing down and braking in order to merge with the mainline traffic due to the sub-standard weaving lengths. The RSA team also experienced having to quickly slow down on the mainline in order to reach a safe speed to enter the exit ramps. It is dangerous to have significant speed differentials or stop conditions on the freeway causing backups on the mainline, creating a high potential for rear-end and side-swipe crashes.

- Access Points to Mainline - The I-57/I-74 interchange currently has 16 access points including 4 weaving sections. Each access point is a potential conflict point in that they require the driver to make a decision. For example, in the weaving sections there are vehicles entering the freeway and increasing speed, as well as vehicles exiting the freeway and decreasing speed. The more decisions a driver has to make the greater the potential for a crash.

- Exposed Pier in Median - A bridge pier at the overpass of North Mattis Avenue and I-74 does not have sufficient barrier guardrail coverage or impact attenuators present to prevent a fixed object crash by a vehicle leaving the roadway in either direction (see Figure 1). Based on the existing geometry of I-74 at the overpass, the IDOT BDE Manual requires a total length of need for guardrail, including upstream and downstream run out lengths, of 310' for both eastbound and westbound directions. Existing guardrail is 141' traveling eastbound and 166' traveling westbound. Guardrail lengths should be extended and/or impact attenuators should be installed at this location.



**Figure 1: Exposed Bridge Pier at N Mattis Avenue Overpass on I-74**

- Roadside Barrier End Treatment - Several of the guardrail end treatments within the study area do not meet current IDOT standards and need to be updated.

- Damaged Roadside Barrier - Guardrail on I-57 NB south of I-74 needs replacement. It has been hit and is permanently deflected (see Figure 2). Several Guardrail delineators are missing throughout the project limits.

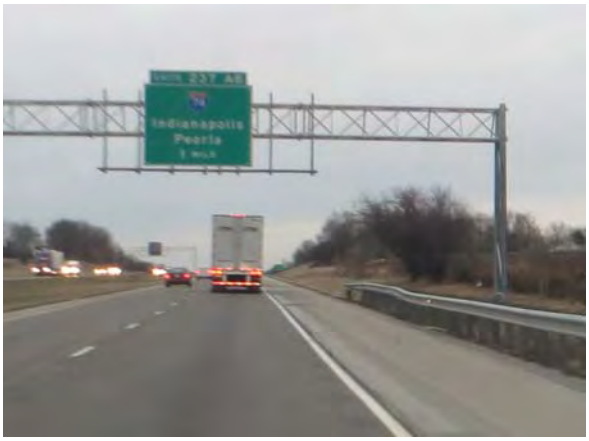



**Figure 2: I-57 NB south of I-74 Damaged Guardrail**

- Exit Ramp Signage – It was noted during the field visits that exit ramp signage is inconsistent (see Figure 3). Inconsistent and deficient ramp signage may cause drivers to make a hasty lane change or to enter the ramp at an unsafe speed. Table 2C-5 of the MUTCD 2009 lists the recommended horizontal alignment signs based on the difference between the mainline speed limit and the ramp advisory speed. With a posted speed limit of 70 mph along both I-74 and I-57, any exit ramp advisory speed of 45 or less would require the following signs. See Figure 4 for an example of exit ramp signage.

    - Turn (W1-1), Curve (W1-2), Reverse Turn (W1-3), Reverse Curve (W1-4),Winding Road (W1-5), and Combination Horizontal Alignment/Intersection (W10-1)
    - Advisory Speed Plaque (W13-1P)
    - Chevrons (W1-8) and/or One Direction Large Arrow (W1-6)
    - Exit Speed (W13-2) and Ramp Speed (W13-3) on exit ramps




**Figure 3: Exit Ramp Signage**

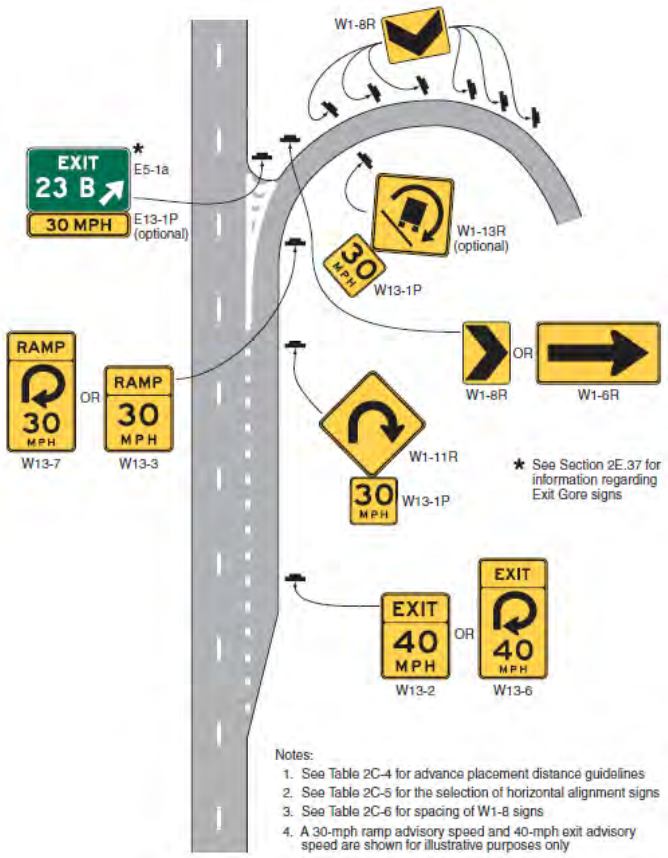



**Figure 4: Example of Advisory Speed Signing for an Exit Ramp (MUTCD 2009)**

- Narrow Median – The median along I-74 from west of I-57 to west of North Prospect Ave is 40 feet wide measured from inside edge of the traveled way including a 4 foot HMA shoulder in each direction. The slope of the median ditch is 1V:3H which is considered unrecoverable (see Figure 5). Traffic volumes, truck volumes, median crossover history, crash incidents, vertical and horizontal alignment and median-terrain configurations are all factors taken into consideration when determining the need for a median barrier. Continuous guardrail is not present at this location. According to the IDOT BDE Manual, a median barrier is recommended based on the existing traffic volumes and median width (see Figure 6). However, it is recommended that with a slope of 1V:3H, a roadside barrier should be provided along each shoulder instead of a barrier at the center of the median (see Figure 7). Historical crash data shows 5 cross-over crashes in the five year study period, one resulting in a fatality. The Average Daily Traffic (ADT) for this location is 27,000 and trucks account for approximately 22% of the volume based on 2011 counts from IDOT's Traffic Count Database System (http://www.gettingaroundillinois.com/gai.htm?mt=aadt). Based on traffic volumes, median width and terrain, crash history, and truck volumes we recommend the installation of a roadside barrier at this location. It should be noted that the installation of a roadside barrier could increase the number of crashes in the area given there is less area for a vehicle to recover but would eliminate crossover, head-on type crashes.



**Figure 5: I-74 Narrow Median without Barrier**

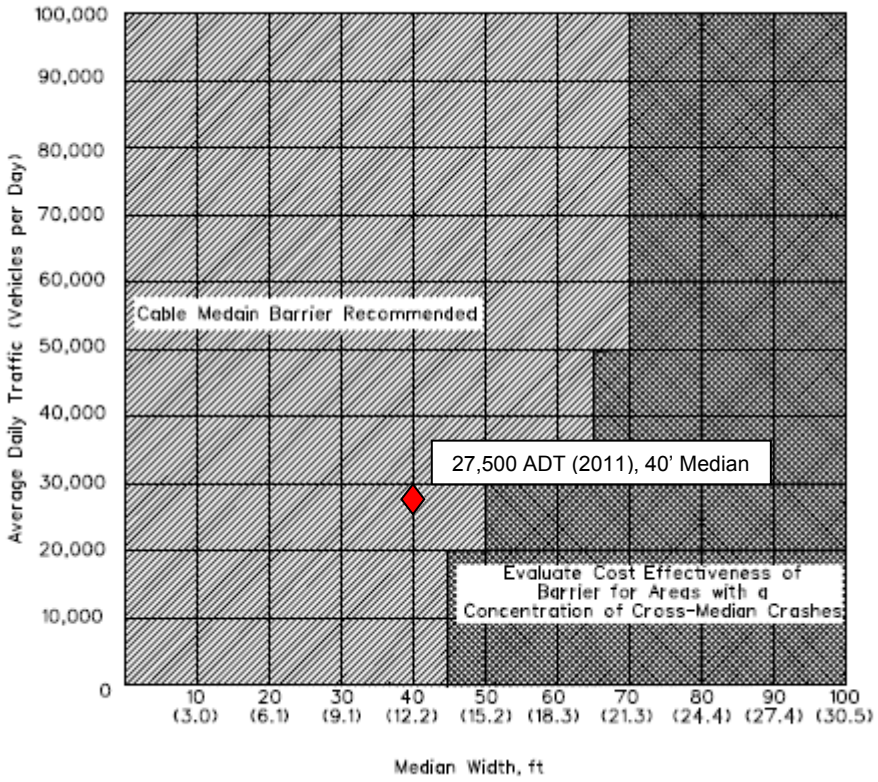
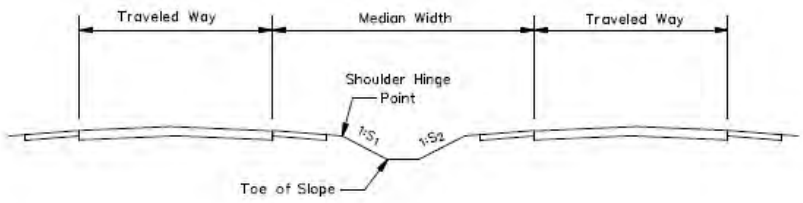



**Figure 6: Warrants for Median Barriers on Freeways (IDOT BDE Manual)**




| Median Conditions | | Recommended Median Barrier Type | Recommended Placement |
|---|---|---|---|
| Width | Slopes | | |
| W < 25 ft (7.6 m) | $S_1$ and $S_2 \geq 10$ | Rigid or Semi-Rigid | Near center of median |
| | $S_1$ or $S_2 < 10$ and $S_1$ and $S_2 \geq 8$ | Semi-Rigid | Near center of median |
| | $S_1$ or $S_2 < 8$ | N/A – Consider a roadside barrier along each shoulder. | |
| W ≥ 25 ft (7.6 m) | $S_1$ and $S_2 \geq 10$ | Rigid, Semi-Rigid, or Flexible | Near center of median |
| | $S_1$ or $S_2 < 10$ and $S_1$ and $S_2 \geq 8$ | Semi-Rigid or Flexible | Near center of median |
| | $S_1$ or $S_2 < 8$ and $S_1$ and $S_2 \geq 6$ | Flexible | 2 ft (600 mm) or more from shoulder hinge point and more than 8 ft (2.4 m) from the ditch line bottom |
| | $S_1$ or $S_2 < 6$ and $S_1$ and $S_2 \geq 4$ | Flexible | Within 4 ft (1.2 m) of shoulder hinge point and more than 10 ft (3 m) from the ditch line bottom |
| | $S_1$ or $S_2 < 4$ | N/A – Consider a roadside barrier along each shoulder. | |
| Other median conditions (e.g., stepped, bermed) | | Contact the Bureau of Safety Engineering. | |

**Figure 7: Guidelines for Median Barrier Selection/Placement (IDOT BDE Manual)**

- Lighting Supports in Clear Zone – Highway safety light poles and supports are located 16’ away from the edge of travel way at the I-57/I-74 interchange. Thirteen percent (13%) of the fixed object crashes in the study area involved a light pole support. The light poles are designed with a breakaway foundation, however, the light poles could be relocated beyond the clear zone.

- Pavement Markings, Raised Reflective Pavement Markers and Delineators – The pavement markings, including center skip dash and edge lines along the mainline and ramps, in several areas are faded and lack reflectivity. Several lane line raised pavement reflectors are missing on I-57 between I-72 and I-74 and several delineators along the roadway are damaged or missing. These pavement markings, reflectors and delineators help guide the motorist along the traveled way and to help prevent vehicles from deviating from their travel lane and running off the road. Broken or loose raised reflective pavement markers can also become a hazard. The missing reflectors and delineators should be replaced and the pavement should be restriped.

- Pavement Condition - The existing pavement is in poor condition at South Prairie View Road and the I-74 exit and entrance ramps for both the eastbound and westbound

directions (see Figure 8). Throughout the study area, especially on ramps, deteriorating pavement near the edge of the travel way has caused deterioration of the edge line pavement markings making them hard to see.



**Figure 8: I-74 at Prarie View Rd Exit and Entrance Ramps**

### 2.4 Road Safety Audit Summary

The following is a list of noted deficiencies within the study corridor based on the RSA. The findings in the purpose and need study support these observations.

- Interchange design does not meet current design guidelines
- Large number of access points at the cloverleaf interchange
- Guardrail and impact attenuators are absent at bridge pier along I-74 east of I-57
- Narrow median without median barrier
- Ramp signage needs updating
- Some guardrail, delineators, and raised median reflectors are damaged and need replacement
- Pavement markings are damaged and need maintenance

## Section 3 – Safety Analysis

### 3.1 ISATe Analysis

The purpose of this Safety Analysis is to determine the proposed reduction to the future predicted crash rates for the interstate and ramp improvements and to compare between the proposed interchange type alternatives. The ISATe Excel based program was used to analyze the predicted future crash rates for the no-build alternative and for the proposed design alternatives for a study period from 2011 to 2031 (the ISATe software limits the study period to no later than 2031, 20 years beyond the latest crash data).

The project limits of the Safety Analysis include a section on I-57 from the Norfolk Southern Railroad (south) to West Olympian Drive (north) and a section on I-74 from North Duncan Road (west) to North Prospect Avenue (east). The project is broken down into individual segments, based on the geometry, for analysis with the ISATe software. Each segment is evaluated independently. See Exhibits C – H for project and segment limits.

The ISATe is a tool that is used to evaluate freeway and interchange safety. According to the ISATe User Manual, the ISATe provides information about the relationship between roadway geometric design features and safety. It is based on research that quantified the relationship between various design elements or design components and expected average crash frequency. Each design element is assigned a Crash Modification Factor (CMF) that is used to predict the number of crashes. The ISATe was developed as a predictive method to be included in a future edition of the Highway Safety Manual (HSM) and is not an officially published document. It incorporates CMFs that are not discussed in the current version of the HSM. This analysis has been coordinated with the IDOT Bureau of Safety for review of the software implementation and the results presented herein.

The HSM defines crash severity as the level of injury or property damage due to a crash and refers to the most severe injury caused by a crash. Crash severity is divided into five crash severity levels. The definitions of the five severity levels are as follows. K – fatal injury: an injury that results in death, A – incapacitating injury: an injury, other than a fatal injury, that prevents the injured person from walking, driving, or normally continuing the activities the person was capable of performing before the injury occurred, B – non-incapacitating evident injury: any injury, other than fatal or incapacitating injury, that is evident to observers at the scene of the crash in which the injury occurred, C – Possible Injury: any injury reported or claimed that is not a fatal injury, incapacitating, or non-incapacitating evident injury and includes claim of injuries not evident, and PDO – no injury/property damage only.

If crash data is available, the Empirical Bayes (EB) method, described in Appendix B of the ISATe User Manual, can be used to combine the existing crash data with the predictive method. This method gives an estimate that is more consistent with the expected average crash frequency. For this analysis, the existing interchange was analyzed using the predictive method only and the predictive method combined with the EB method. The results showed that more crashes were predicted using the EB method than without, showing that the predictive method alone may not be accurate in predicting the number of crashes (See Table 1). Based on the results obtained by combining the predictive and EB methods, it can be assumed that the conditions at the existing interchange are actually worse than what would be expected based on the results of using the predictive method alone. The proposed alternatives were analyzed using the predictive method only, without factoring in crash data, since the entire interchange will be reconfigured with significant changes to the alignment of the interchange ramps. Using existing interchange crash data would not accurately represent the crash experience that is likely to occur with any of the proposed alternatives.

**Table 1: ISATe Analysis for Existing Interchange**

| Study Period: 2011-2031 | Number of Crashes | | | | | |
|---|---|---|---|---|---|---|
| | Total | K | A | B | C | PDO |
| Existing (predicted) | 741 | 7 | 18 | 93 | 130 | 496 |
| Existing (expected*) | 1195 | 9 | 22 | 113 | 157 | 897 |

*Using the EB method combined with the predictive method

As can be seen in Table 1, the predictive model was more consistent with the expected model in predicting the high-severity K, A, and B type crashes than PDO crashes. Therefore, special attention was given to the total number of K, A, and B type crashes predicted over the study period. The proposed alternatives were analyzed using the predictive method only, without

reference to historical crash data. The proposed alternatives reconfigure the interchange to the point that using existing crash data would not accurately represent the crash experience that is likely to occur. The results are summarized in Table 2 (see Exhibit I for the ISATe Output Summaries).

The ISATe User Manual suggests that a calibration factor be used when using the predicted method. A calibration factor has not been developed for this area at the time of the study.

### 3.2 No Build: Existing Cloverleaf Interchange

The existing I-57/I-74 cloverleaf interchange (Exhibit C) was analyzed using the ISATe software, applying the predictive method only and the EB method combined with the predictive method. The predicted total number of type K, A and B crashes for the study period based on the two methods of analysis are 118 and 144, respectively, for the existing cloverleaf interchange.

### 3.3 Alternative 1: Full Directional

The full directional interchange type concept (Exhibit D) was analyzed using the ISATe software applying the predictive method. The predicted total number of type K, A, and B crashes for the study period is 117 which is the second least of the five proposed alternatives.

### 3.4 Alternative 2: Semi-Directional with Directional Flyovers and Two Loops

The semi-directional type concept (Exhibit E) with directional flyovers and two loops was analyzed using the ISATe software applying the predictive method. The predicted total number of type K, A, and B crashes for the study period is 114, which is the least of the five proposed alternatives.

### 3.5 Alternative 3: Semi-Directional with Semi-Directional Flyovers and Two Loops

The semi-directional type concept with semi-directional flyovers and two loops (Exhibit F) was analyzed using the ISATe software applying the predictive method. The predicted total number of type K, A, and B crashes for the study period is 121, which is the second worst of the five proposed alternatives.

### 3.6 Alternative 4: Semi-Directional with No Loops

The semi-directional type concept with no loops (Exhibit G) was analyzed using the ISATe software applying the predictive method. The predicted total number of type K, A, and B crashes for the study period is 124 which is the worst of the five proposed alternatives.

### 3.7 Alternative 5: Full Directional with Two Convex Ramps

The full directional interchange type concept (Exhibit H) was analyzed using the ISATe software applying the predictive method. The predicted total number of type K, A, and B crashes for the study period is 121, which is the second worst of the five proposed alternatives.

**Table 2: ISATe Analysis Summary**

| Study Period: 2011-2031 | | Existing (predicted) | Existing (expected*) | Alternative 1 (predicted) | Alternative 2 (predicted) | Alternative 3 (predicted) | Alternative 4 (predicted) | Alternative 5 (predicted) |
|---|---|---|---|---|---|---|---|---|
| Total Number of Crashes | | 741 | 1195 | 802 | 791 | 814 | 840 | 825 |
| Total Number of Crashes per Type | K | 7 | 9 | 7 | 6 | 7 | 7 | 7 |
| | A | 18 | 22 | 17 | 17 | 18 | 18 | 18 |
| | B | 93 | 113 | 93 | 91 | 96 | 99 | 96 |
| | C | 130 | 157 | 145 | 143 | 150 | 155 | 149 |
| | PDO | 496 | 897 | 542 | 534 | 545 | 563 | 557 |
| | KAB | 118 | 144 | 117 | 114 | 121 | 124 | 121 |

*Using the EB method combined with the predictive method

## Section 4 – Conclusion

Using the ISATe analysis to compare the proposed five alternatives, Alternative 2 predicts the least amount of total crashes and K, A and B type crashes over the study period (see Table 2). However, the differences predicted among the five alternatives are minimal (+/- 10 crashes over a 20 year study period) and it is not recommend that the results be used as the controlling factor to eliminate or solely select a proposed preferred alternative.

Since the existing predicted ISATe analysis does not take into account all of the existing deficient interchange features, the EB method and historical crash data are used to predict the expected crashes for the existing interchange. When the predicted crashes for the proposed alternatives are compared to the existing expected crashes for the existing interchange, each proposed alternative provides a safety improvement over the existing interchange configuration.

**Exhibit A**
Location Map

EXHIBIT A: LOCATION MAP

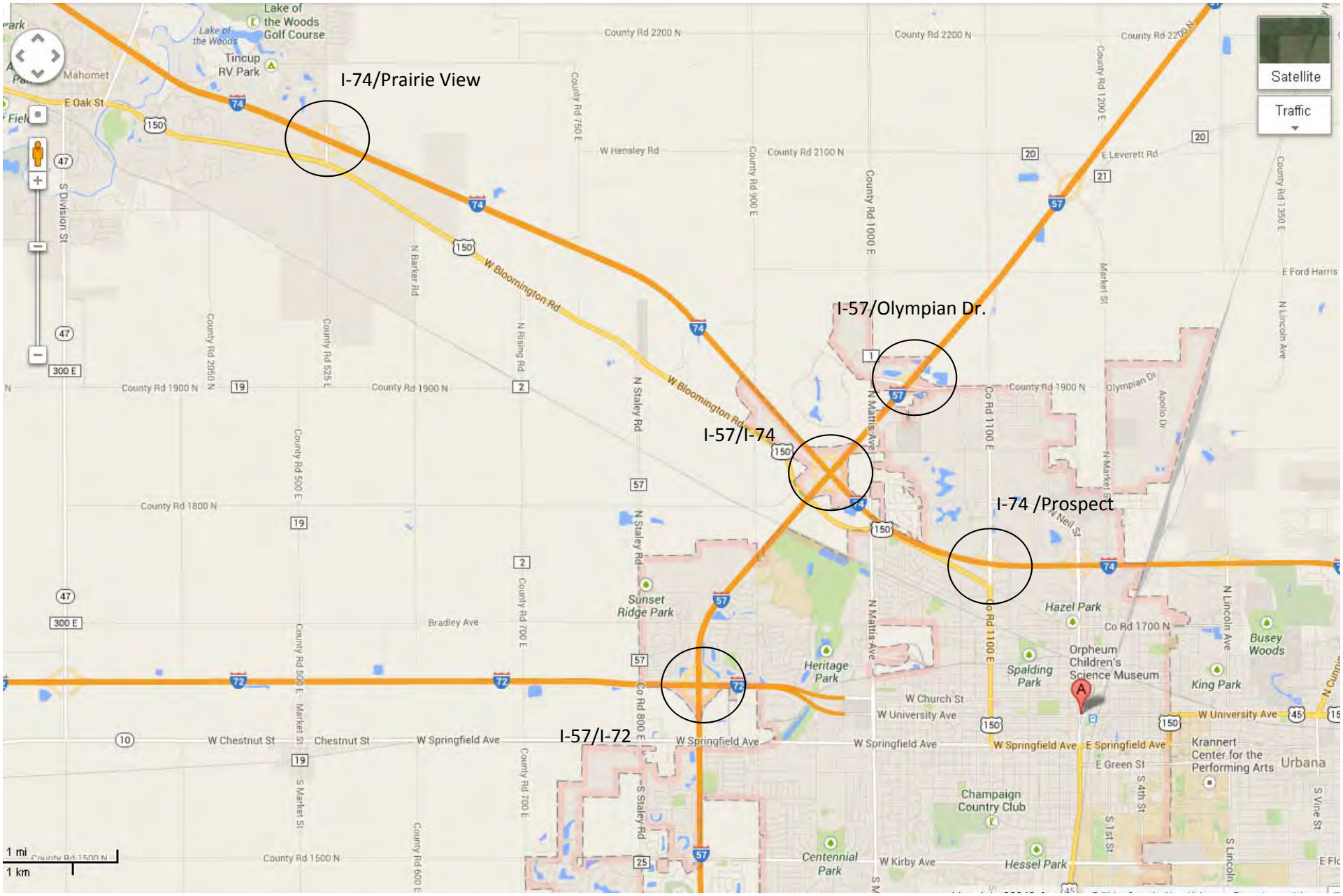
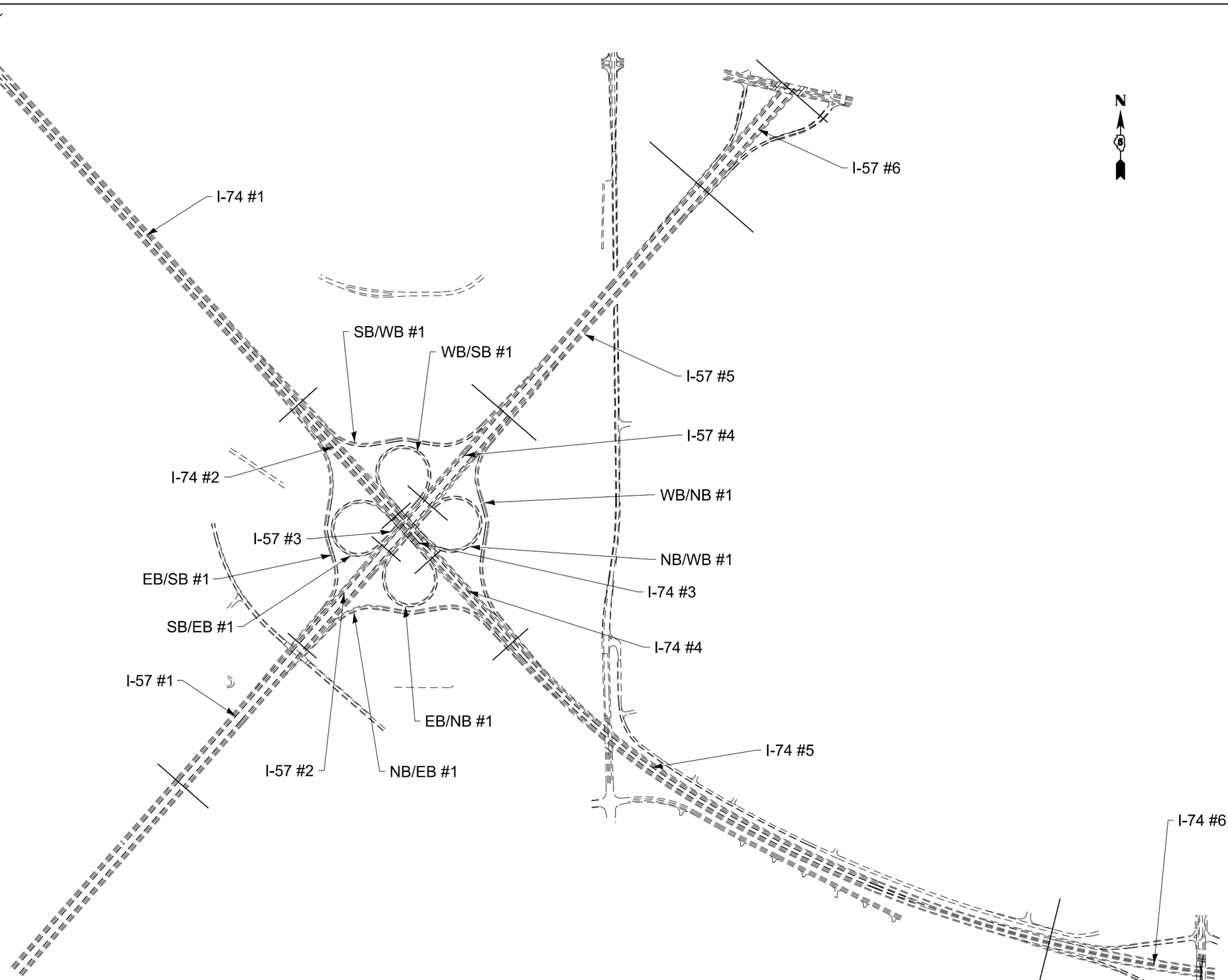


**Exhibit B**
Aerial Map

EXHIBIT B: AERIAL MAP



**Exhibit C-H**
Segments for ISATe Analysis




FILE NAME = S:\Projects\2011 JOBS\11-68 BFW-CMT PTB 161 Item 28 I-74 at I-57\CADD\Safety Analysis Alternatives\Figure-topo.dgn
MODEL = Default
PLOT DRIVER = IDOT.PDF.plotcfg

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| | |
|---|---|
| USER NAME = lsagorski | DESIGNED - |
| FILE NAME = Figure-topo.dgn | DRAWN - |
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| PLOT DATE = 2/18/2014 | DATE - |

| REVISIONS | DATE | BY | DESCRIPTION |
|---|---|---|---|
| | | | |

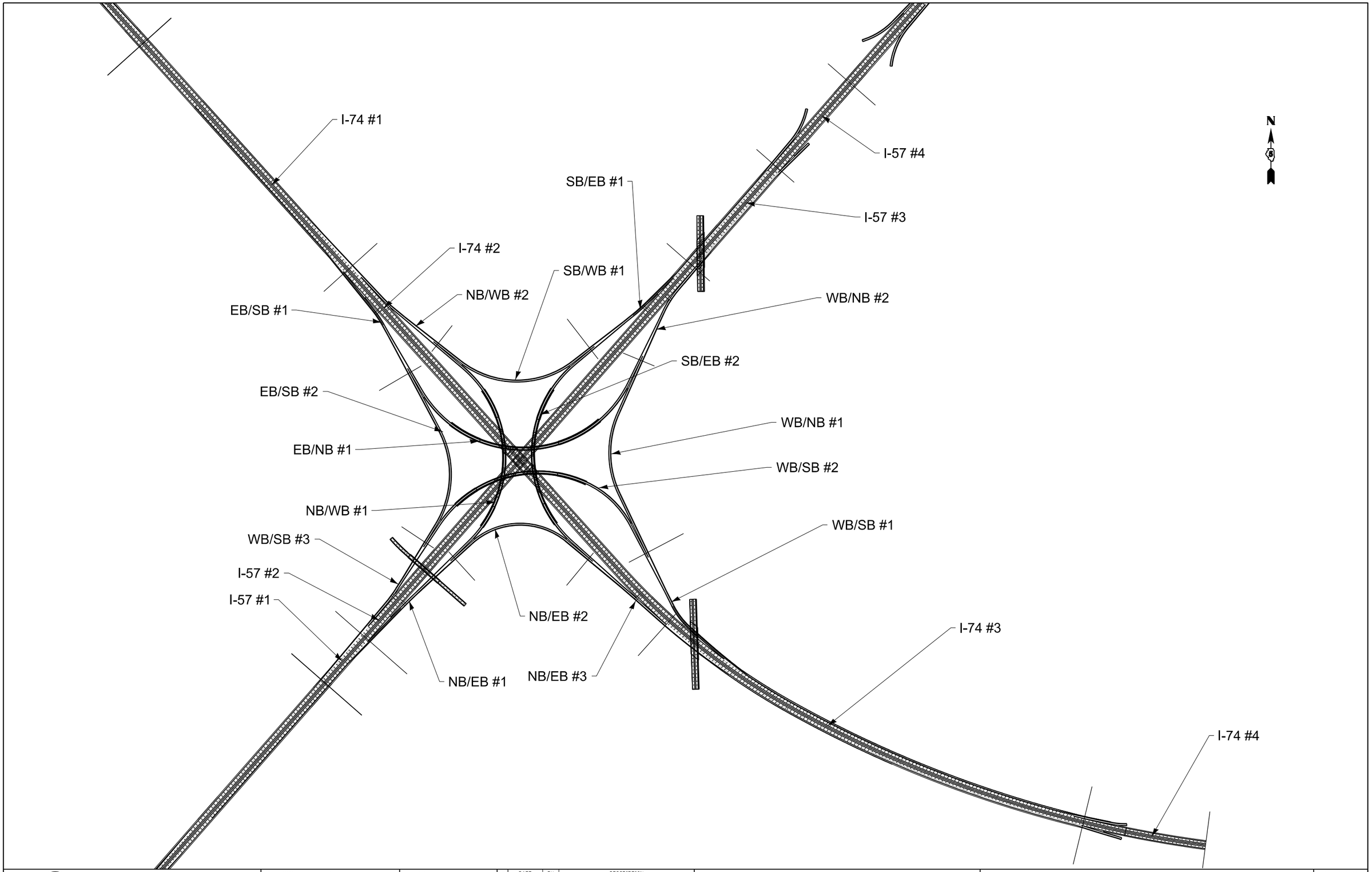
**I-57/I-74 INTERCHANGE**
**SEGMENTS FOR ANALYSIS WITH ISATe**

**EXHIBIT C: NO-BUILD**
**EXISTING CLOVERLEAF INTERCHANGE**

SCALE: NTS | SHEET NO. OF SHEETS | STA. TO STA.

PROJECT NO.

| TOTAL SHEETS | SHEET NO. |
|---|---|
| | |




FILE NAME = S:\Projects\2011 JOBS\11-68 BFW-CMT PTB 161 Item 28 I-74 at I-57\CADD\Safety Analysis Alternatives\Figure-designE1B.dgn
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PLOT DRIVER = IDOT_PDF.plotcfg

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|---|---|
| USER NAME = lsagorski | DESIGNED - |
| FILE NAME = Figure-designE1B.dgn | DRAWN - |
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| REVISIONS | DATE | BY | DESCRIPTION |
|---|---|---|---|
| | | | |

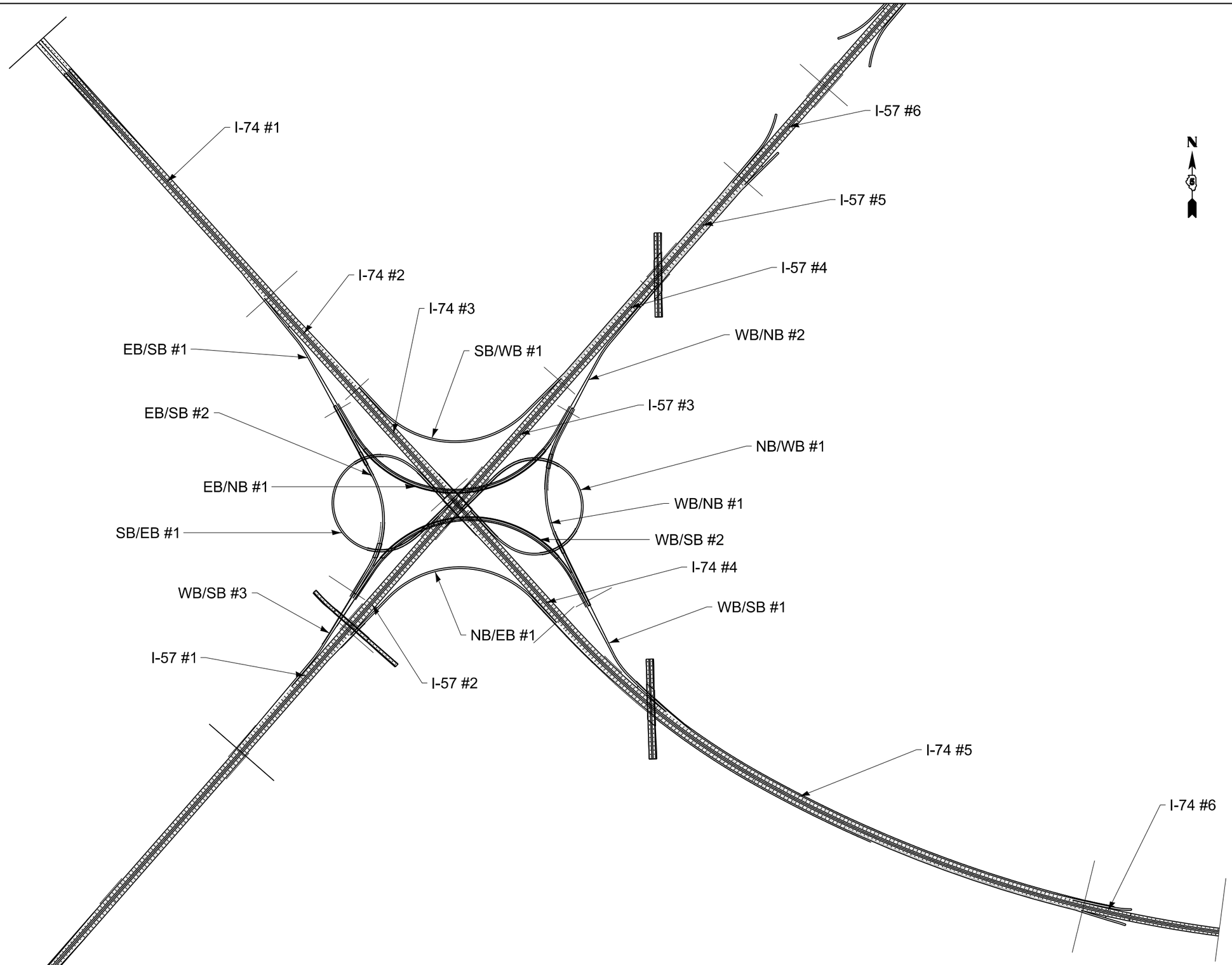
**I-57/I-74 INTERCHANGE**
**SEGMENTS FOR ANALYSIS WITH ISATe**

**EXHIBIT D: ALTERNATIVE 1 (E1B)**
**FULL DIRECTIONAL INTERCHANGE**

SCALE: NTS | SHEET NO. OF SHEETS | STA. TO STA.

PROJECT NO.

TOTAL SHEETS | SHEET NO.




FILE NAME = S:\Projects\2011 JOBS\11-68 BFW-CMT PTB 161 Item 28 I-74 at I-57\CADD\Safety Analysis Alternatives\FIGURE-design-B3.dgn
MODEL = Default
PLOT DRIVER = IDOT-PDF-plt.cfg

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| | |
|---|---|
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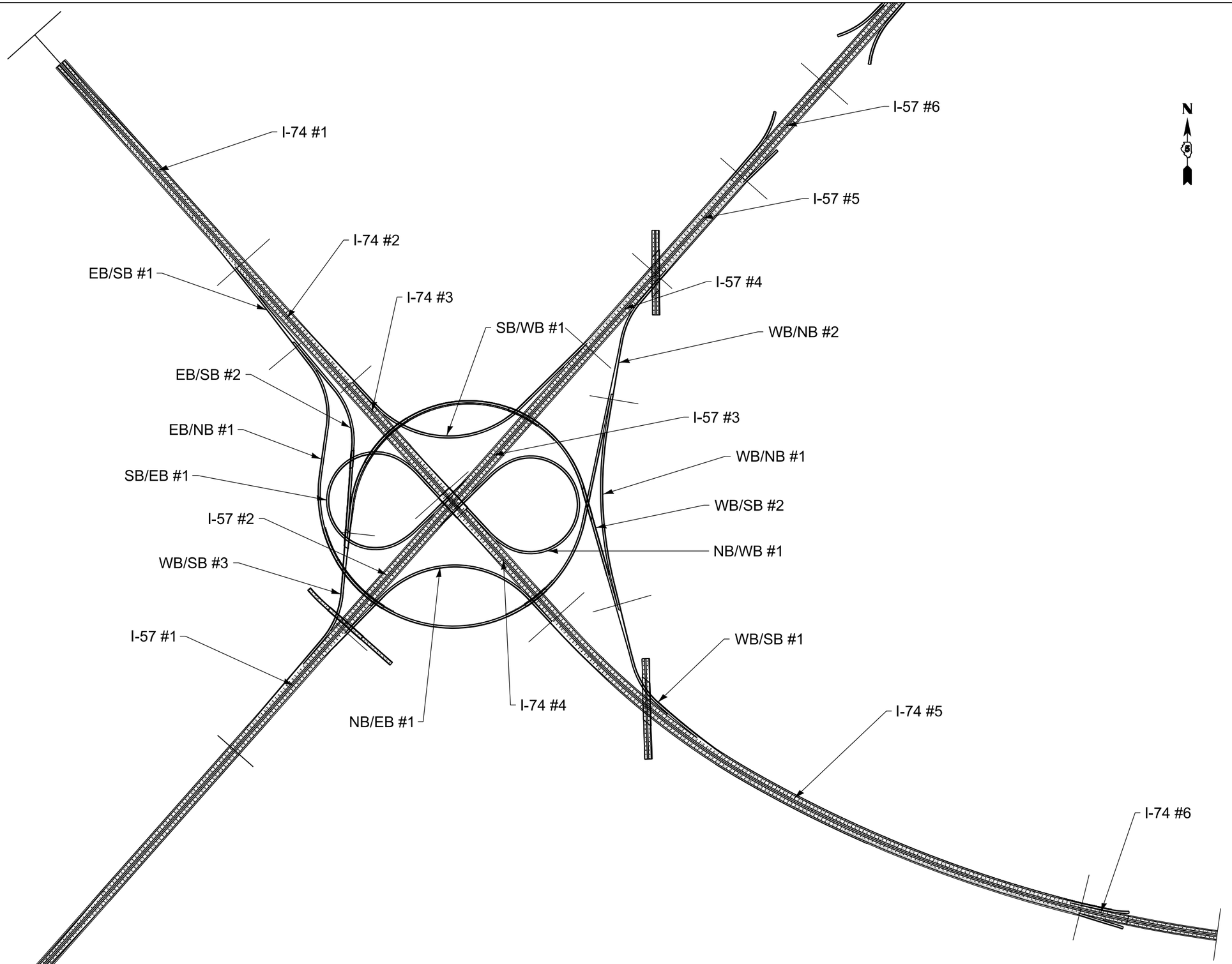
| REVISIONS | DATE | BY | DESCRIPTION |
|---|---|---|---|
| | | | |

**I–57/I–74 INTERCHANGE**
**SEGMENTS FOR ANALYSIS WITH ISATe**

**EXHIBIT E: ALTERNATIVE 2 (B3)**
**SEMI–DIRECTIONAL INTERCHANGE WITH LOOP RAMPS**

SCALE: NTS | SHEET NO. OF SHEETS | STA. TO STA.

PROJECT NO.
TOTAL SHEETS | SHEET NO.




FILE NAME = SLVProjects\2011 JOBS\11-68 BFW-CMT PTB 161 Item 28 I-74 at I-57\CADD\Safety Analysis Alternatives\Figure-design_B2.dgn
MODEL = Default
PLOT DRIVER = IDOT_PDF.pltcfg

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| | |
|---|---|
| USER NAME = lsagorski | DESIGNED - |
| FILE NAME = Figure-design_B2.dgn | DRAWN - |
| PLOT SCALE = 913.7500 ' / in. | CHECKED - |
| PLOT DATE = 2/18/2014 | DATE - |

| REVISIONS | DATE | BY | DESCRIPTION |
|---|---|---|---|
| | | | |

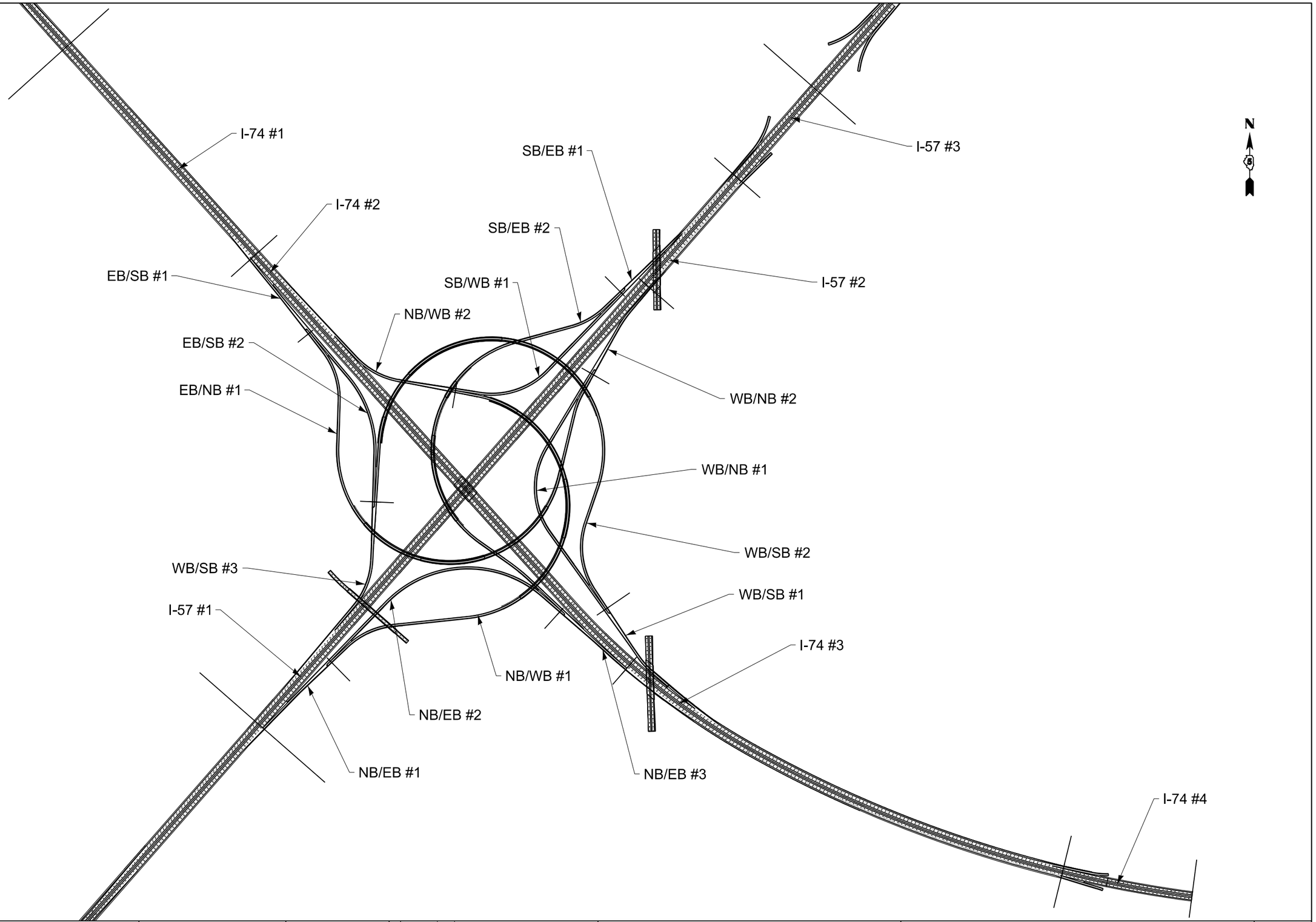
**I-57/I-74 INTERCHANGE**
**SEGMENTS FOR ANALYSIS WITH ISATe**

**EXHIBIT F: ALTERNATIVE 3 (B2)**
**SEMI-DIRECTIONAL INTERCHANGE WITH LOOP RAMPS**

SCALE: NTS | SHEET NO. OF SHEETS | STA. TO STA.

PROJECT NO.

TOTAL SHEETS | SHEET NO.




FILE NAME = S:\Projects\2011 JOBS\11-68 BFW-CMT PTB 161 Item 28 I-74 at I-57\CADD\Safety Analysis Alternatives\Figure-design_E2.dgn
MODEL = Default
PLOT DRIVER = IDOT_PDF.plotcfg

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|---|---|
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| REVISIONS | DATE | BY | DESCRIPTION |
|---|---|---|---|
| | | | |

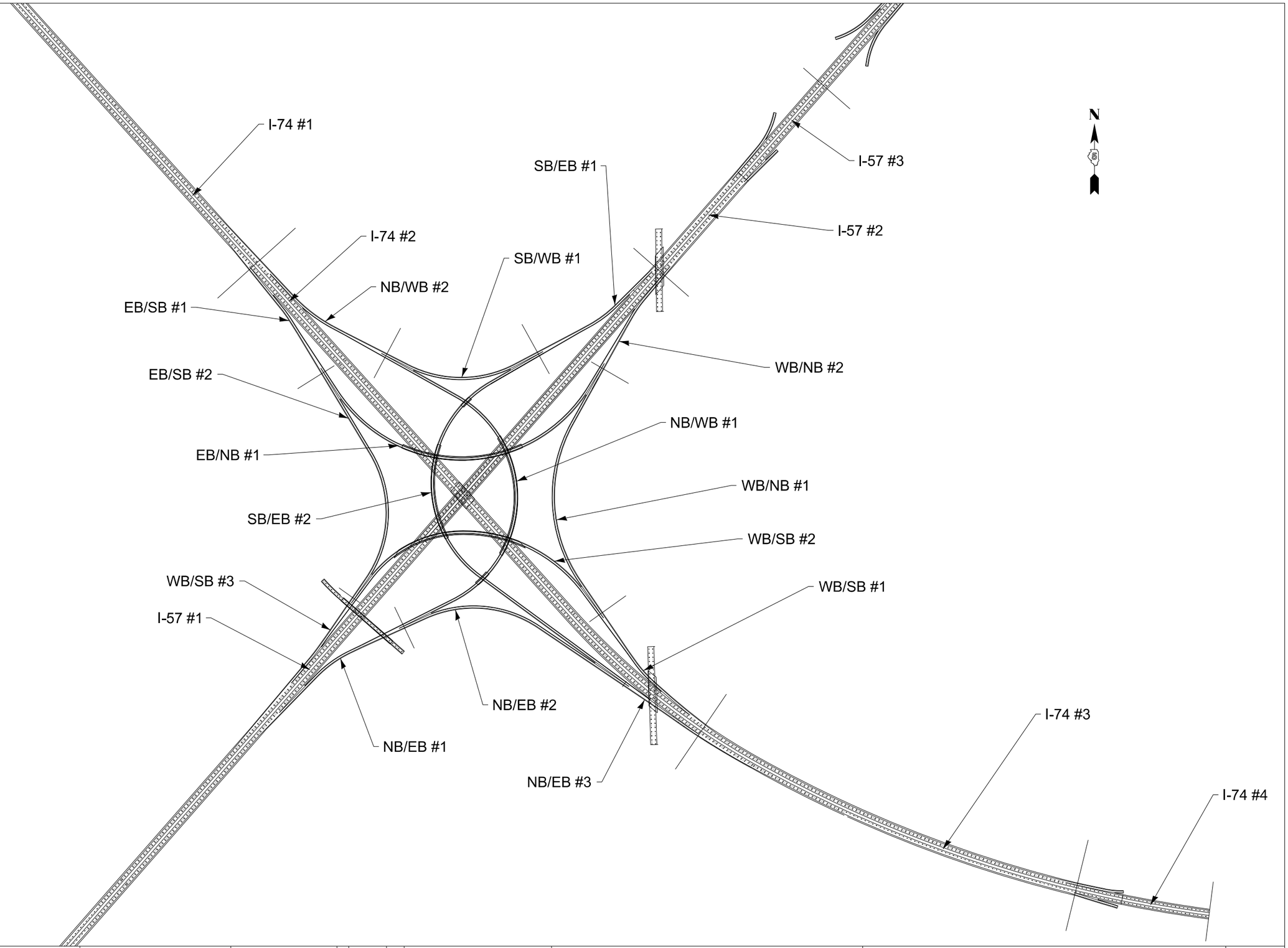
**I-57/I-74 INTERCHANGE**
**SEGMENTS FOR ANALYSIS WITH ISATe**

**EXHIBIT G: ALTERNATIVE 4 (E2)**
**SEMI-DIRECTIONAL INTERCHANGE**

SCALE: NTS | SHEET NO. OF SHEETS | STA. TO STA.

PROJECT NO.

| TOTAL SHEETS | SHEET NO. |
|---|---|
| | |




FILE NAME = S:\Projects\2011 JOBS\11-88 BFW-CMT PTB 161 Item 28 I-74 at I-57\QEI Submittal A\Figure-design_F1.dgn
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| | |
|---|---|
| USER NAME = lsagorski | DESIGNED - |
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| PLOT DATE = 6/19/2014 | DATE - |

| REVISIONS | DATE | BY | DESCRIPTION |
|---|---|---|---|
| | | | |

**I-57/I-74 INTERCHANGE**
**SEGMENTS FOR ANALYSIS WITH ISATe**

**EXHIBIT H: ALTERNATIVE 5 (F1)**
**FULL DIRECTIONAL WITH CONVEX RAMPS**

SCALE: NTS | SHEET NO. OF SHEETS | STA. TO STA.

PROJECT NO.

| TOTAL SHEETS | SHEET NO. |
|---|---|
| | |

**Exhibit I**
ISATe Output Summaries

## Output Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Existing Interchange I57/I-74 - without EB method (predictive method only) | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

### Crash Data Description

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

### Estimated Crash Statistics

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 741.0 | 6.7 | 17.4 | 92.3 | 129.5 | 495.1 |
| Estimated average crash freq. during Study Period, crashes/yr: | 35.3 | 0.3 | 0.8 | 4.4 | 6.2 | 23.6 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 12 | 667.4 | 6.1 | 15.5 | 80.6 | 114.9 | 450.3 |
| Ramp segments, crashes: | 8 | 73.6 | 0.6 | 1.8 | 11.8 | 14.6 | 44.8 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 31.5 | 0.3 | 0.7 | 4.0 | 5.6 | 20.9 |
| | 2012 | 31.7 | 0.3 | 0.8 | 4.0 | 5.6 | 21.1 |
| | 2013 | 32.0 | 0.3 | 0.8 | 4.0 | 5.6 | 21.3 |
| | 2014 | 32.2 | 0.3 | 0.8 | 4.1 | 5.7 | 21.4 |
| | 2015 | 32.5 | 0.3 | 0.8 | 4.1 | 5.7 | 21.6 |
| | 2016 | 32.8 | 0.3 | 0.8 | 4.1 | 5.8 | 21.8 |
| | 2017 | 33.0 | 0.3 | 0.8 | 4.2 | 5.8 | 22.0 |
| | 2018 | 33.3 | 0.3 | 0.8 | 4.2 | 5.9 | 22.2 |
| | 2019 | 33.6 | 0.3 | 0.8 | 4.2 | 5.9 | 22.4 |
| | 2020 | 33.9 | 0.3 | 0.8 | 4.2 | 6.0 | 22.6 |
| | 2021 | 34.5 | 0.3 | 0.8 | 4.3 | 6.1 | 23.0 |
| | 2022 | 35.1 | 0.3 | 0.8 | 4.4 | 6.2 | 23.5 |
| | 2023 | 35.8 | 0.3 | 0.8 | 4.5 | 6.2 | 23.9 |
| | 2024 | 36.4 | 0.3 | 0.9 | 4.5 | 6.3 | 24.4 |
| | 2025 | 37.1 | 0.3 | 0.9 | 4.6 | 6.4 | 24.8 |
| | 2026 | 37.7 | 0.3 | 0.9 | 4.7 | 6.5 | 25.3 |
| | 2027 | 38.4 | 0.3 | 0.9 | 4.7 | 6.6 | 25.8 |
| | 2028 | 39.0 | 0.3 | 0.9 | 4.8 | 6.7 | 26.2 |
| | 2029 | 39.7 | 0.4 | 0.9 | 4.9 | 6.8 | 26.7 |
| | 2030 | 40.4 | 0.4 | 0.9 | 5.0 | 7.0 | 27.2 |
| | 2031 | 40.4 | 0.4 | 0.9 | 5.0 | 7.0 | 27.2 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

### Distribution of Crashes for Entire Facility

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 1.6 | 0.0 | 0.1 | 0.4 | 0.5 | 0.5 |
| | Right-angle crashes: | 7.5 | 0.1 | 0.2 | 1.3 | 1.8 | 4.0 |
| | Rear-end crashes: | 248.6 | 2.6 | 6.6 | 34.9 | 49.3 | 155.1 |
| | Sideswipe crashes: | 84.6 | 0.6 | 1.6 | 8.3 | 11.8 | 62.2 |
| | Other multiple-vehicle crashes: | 11.0 | 0.1 | 0.3 | 1.8 | 2.5 | 6.3 |
| | Total multiple-vehicle crashes: | 353.2 | 3.4 | 8.9 | 46.7 | 66.0 | 228.2 |
| Single vehicle | Crashes with animal: | 5.7 | 0.0 | 0.0 | 0.2 | 0.2 | 5.3 |
| | Crashes with fixed object: | 281.9 | 2.3 | 6.1 | 32.8 | 45.7 | 194.9 |
| | Crashes with other object: | 39.5 | 0.2 | 0.4 | 2.1 | 3.0 | 33.9 |
| | Crashes with parked vehicle: | 5.8 | 0.0 | 0.1 | 0.6 | 0.9 | 4.1 |
| | Other single-vehicle crashes | 55.0 | 0.7 | 1.8 | 9.9 | 13.7 | 28.8 |
| | Total single-vehicle crashes: | 387.8 | 3.3 | 8.5 | 45.6 | 63.6 | 266.9 |
| | Total crashes: | 741.0 | 6.7 | 17.4 | 92.3 | 129.5 | 495.1 |

## Evaluation Site Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Existing Interchange I57/I-74 - without EB method (predictive method only) | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | 4.332 | | |
| Last year of analysis: | 2031 | | | | |

### Site Description

#### Freeway Segments

| Number | Lanes | Study Period Length (mi) | Study Period Description |
|---|---|---|---|
| 1 | 4 | 0.321 | I-57 #1 |
| 2 | 4 | 0.220 | I-57 #2 |
| 3 | 4 | 0.106 | I-57 #3 |
| 4 | 4 | 0.203 | I-57 #4 |
| 5 | 4 | 0.517 | I-57 #5 |
| 6 | 4 | 0.227 | I-57 #6 |
| 7 | 4 | 0.858 | I-74 #1 |
| 8 | 4 | 0.240 | I-74 #2 |
| 9 | 4 | 0.096 | I-74 #3 |
| 10 | 4 | 0.201 | I-74 #4 |
| 11 | 4 | 1.077 | I-74 #5 |
| 12 | 4 | 0.267 | I-74 #6 |
| 13 | 0 | 0.000 | 0 |
| 14 | 0 | 0.000 | 0 |
| 15 | 0 | 0.000 | 0 |
| 16 | 0 | 0.000 | 0 |
| 17 | 0 | 0.000 | 0 |
| 18 | 0 | 0.000 | 0 |
| 19 | 0 | 0.000 | 0 |
| 20 | 0 | 0.000 | 0 |

#### Ramp Segments

| Number | Study Period Description | Number | Study Period Description |
|---|---|---|---|
| 1 | WB to SB #1 | 21 | 0 |
| 2 | NB to EB #1 | 22 | 0 |
| 3 | NB to WB #1 | 23 | 0 |
| 4 | EB to SB #1 | 24 | 0 |
| 5 | WB to NB #1 | 25 | 0 |
| 6 | SB to EB #1 | 26 | 0 |
| 7 | SB to WB #1 | 27 | 0 |
| 8 | EB to NB #1 | 28 | 0 |
| 9 | 0 | 29 | 0 |
| 10 | 0 | 30 | 0 |
| 11 | 0 | 31 | 0 |
| 12 | 0 | 32 | 0 |
| 13 | 0 | 33 | 0 |
| 14 | 0 | 34 | 0 |
| 15 | 0 | 35 | 0 |
| 16 | 0 | 36 | 0 |
| 17 | 0 | 37 | 0 |
| 18 | 0 | 38 | 0 |
| 19 | 0 | 39 | 0 |
| 20 | 0 | 40 | 0 |

#### Crossroad Ramp Terminals

| Number | Config. | Control | Study Period Description |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |

## Output Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Existing Interchange I57/I-74 - with EB Method | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

### Crash Data Description

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | Yes | First year of crash data: | 2008 |
| | Project-level crash data available? | Yes | Last year of crash data: | 2012 |
| Ramp segments | Segment crash data available? | Yes | First year of crash data: | 2008 |
| | Project-level crash data available? | No | Last year of crash data: | 2012 |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

### Estimated Crash Statistics

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 1194.2 | 8.2 | 21.2 | 112.3 | 156.4 | 896.1 |
| Estimated average crash freq. during Study Period, crashes/yr: | 56.9 | 0.4 | 1.0 | 5.3 | 7.4 | 42.7 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 12 | 1051.5 | 7.4 | 18.8 | 97.2 | 137.7 | 790.4 |
| Ramp segments, crashes: | 8 | 142.7 | 0.8 | 2.4 | 15.1 | 18.7 | 105.7 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 50.4 | 0.3 | 0.9 | 4.8 | 6.7 | 37.7 |
| | 2012 | 50.9 | 0.4 | 0.9 | 4.8 | 6.7 | 38.0 |
| | 2013 | 51.3 | 0.4 | 0.9 | 4.9 | 6.8 | 38.4 |
| | 2014 | 51.8 | 0.4 | 0.9 | 4.9 | 6.9 | 38.7 |
| | 2015 | 52.3 | 0.4 | 0.9 | 5.0 | 6.9 | 39.1 |
| | 2016 | 52.7 | 0.4 | 0.9 | 5.0 | 7.0 | 39.5 |
| | 2017 | 53.2 | 0.4 | 0.9 | 5.0 | 7.0 | 39.8 |
| | 2018 | 53.7 | 0.4 | 1.0 | 5.1 | 7.1 | 40.2 |
| | 2019 | 54.2 | 0.4 | 1.0 | 5.1 | 7.1 | 40.6 |
| | 2020 | 54.7 | 0.4 | 1.0 | 5.2 | 7.2 | 40.9 |
| | 2021 | 55.7 | 0.4 | 1.0 | 5.3 | 7.3 | 41.7 |
| | 2022 | 56.7 | 0.4 | 1.0 | 5.3 | 7.4 | 42.5 |
| | 2023 | 57.8 | 0.4 | 1.0 | 5.4 | 7.6 | 43.3 |
| | 2024 | 58.8 | 0.4 | 1.0 | 5.5 | 7.7 | 44.2 |
| | 2025 | 59.8 | 0.4 | 1.1 | 5.6 | 7.8 | 45.0 |
| | 2026 | 60.9 | 0.4 | 1.1 | 5.7 | 7.9 | 45.8 |
| | 2027 | 61.9 | 0.4 | 1.1 | 5.8 | 8.0 | 46.6 |
| | 2028 | 63.0 | 0.4 | 1.1 | 5.9 | 8.2 | 47.5 |
| | 2029 | 64.1 | 0.4 | 1.1 | 5.9 | 8.3 | 48.3 |
| | 2030 | 65.2 | 0.4 | 1.1 | 6.0 | 8.4 | 49.1 |
| | 2031 | 65.2 | 0.4 | 1.1 | 6.0 | 8.4 | 49.1 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

### Distribution of Crashes for Entire Facility

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 2.0 | 0.0 | 0.1 | 0.4 | 0.6 | 0.8 |
| | Right-angle crashes: | 11.1 | 0.1 | 0.3 | 1.6 | 2.2 | 6.9 |
| | Rear-end crashes: | 378.0 | 3.1 | 7.9 | 41.5 | 58.4 | 267.1 |
| | Sideswipe crashes: | 132.5 | 0.7 | 1.9 | 10.0 | 14.0 | 105.9 |
| | Other multiple-vehicle crashes: | 15.4 | 0.1 | 0.4 | 2.0 | 2.8 | 10.0 |
| | Total multiple-vehicle crashes: | 539.0 | 4.1 | 10.6 | 55.5 | 78.0 | 390.8 |
| Single vehicle | Crashes with animal: | 9.9 | 0.0 | 0.0 | 0.2 | 0.3 | 9.4 |
| | Crashes with fixed object: | 480.7 | 2.9 | 7.6 | 40.9 | 56.4 | 372.9 |
| | Crashes with other object: | 67.0 | 0.2 | 0.5 | 2.5 | 3.6 | 60.2 |
| | Crashes with parked vehicle: | 9.7 | 0.1 | 0.1 | 0.8 | 1.1 | 7.6 |
| | Other single-vehicle crashes | 87.8 | 0.9 | 2.3 | 12.4 | 17.0 | 55.3 |
| | Total single-vehicle crashes: | 655.2 | 4.0 | 10.6 | 56.8 | 78.4 | 505.4 |
| | Total crashes: | 1194.2 | 8.2 | 21.2 | 112.3 | 156.4 | 896.1 |

## Evaluation Site Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Existing Interchange I57/I-74 - with EB Method | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | | 4.332 | |
| Last year of analysis: | 2031 | | | | |

### Site Description

#### Freeway Segments

| Number | Lanes | Study Period Length (mi) | Crash Period Description | Study Period Description |
|---|---|---|---|---|
| 1 | 4 | 0.321 | I-57 #1 | 0 |
| 2 | 4 | 0.220 | I-57 #2 | 0 |
| 3 | 4 | 0.106 | I-57 #3 | 0 |
| 4 | 4 | 0.203 | I-57 #4 | 0 |
| 5 | 4 | 0.517 | I-57 #5 | 0 |
| 6 | 4 | 0.227 | I-57 #6 | 0 |
| 7 | 4 | 0.858 | I-74 #1 | 0 |
| 8 | 4 | 0.240 | I-74 #2 | 0 |
| 9 | 4 | 0.096 | I-74 #3 | 0 |
| 10 | 4 | 0.201 | I-74 #4 | 0 |
| 11 | 4 | 1.077 | I-74 #5 | 0 |
| 12 | 4 | 0.267 | I-74 #6 | 0 |
| 13 | 0 | 0.000 | 0 | 0 |
| 14 | 0 | 0.000 | 0 | 0 |
| 15 | 0 | 0.000 | 0 | 0 |
| 16 | 0 | 0.000 | 0 | 0 |
| 17 | 0 | 0.000 | 0 | 0 |
| 18 | 0 | 0.000 | 0 | 0 |
| 19 | 0 | 0.000 | 0 | 0 |
| 20 | 0 | 0.000 | 0 | 0 |

#### Ramp Segments

| Number | Crash Period Description | Study Period Description | Number | Crash Period Description | Study Period Description |
|---|---|---|---|---|---|
| 1 | WB to SB #1 | 0 | 21 | 0 | 0 |
| 2 | NB to EB #1 | 0 | 22 | 0 | 0 |
| 3 | NB to WB #1 | 0 | 23 | 0 | 0 |
| 4 | EB to SB #1 | 0 | 24 | 0 | 0 |
| 5 | WB to NB #1 | 0 | 25 | 0 | 0 |
| 6 | SB to EB #1 | 0 | 26 | 0 | 0 |
| 7 | SB to WB #1 | 0 | 27 | 0 | 0 |
| 8 | EB to NB #1 | 0 | 28 | 0 | 0 |
| 9 | 0 | 0 | 29 | 0 | 0 |
| 10 | 0 | 0 | 30 | 0 | 0 |
| 11 | 0 | 0 | 31 | 0 | 0 |
| 12 | 0 | 0 | 32 | 0 | 0 |
| 13 | 0 | 0 | 33 | 0 | 0 |
| 14 | 0 | 0 | 34 | 0 | 0 |
| 15 | 0 | 0 | 35 | 0 | 0 |
| 16 | 0 | 0 | 36 | 0 | 0 |
| 17 | 0 | 0 | 37 | 0 | 0 |
| 18 | 0 | 0 | 38 | 0 | 0 |
| 19 | 0 | 0 | 39 | 0 | 0 |
| 20 | 0 | 0 | 40 | 0 | 0 |

#### Crossroad Ramp Terminals

| Number | Config. | Control | Study Period Description | |
|---|---|---|---|---|
| 1 | 0 | 0 | 0 | |
| 2 | 0 | 0 | 0 | |
| 3 | 0 | 0 | 0 | |
| 4 | 0 | 0 | 0 | |
| 5 | 0 | 0 | 0 | |
| 6 | 0 | 0 | 0 | |

## Output Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 1 (E1b) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

### Crash Data Description

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

### Estimated Crash Statistics

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 801.5 | 6.3 | 16.9 | 92.5 | 144.5 | 541.4 |
| Estimated average crash freq. during Study Period, crashes/yr: | 38.2 | 0.3 | 0.8 | 4.4 | 6.9 | 25.8 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 8 | 685.0 | 5.3 | 14.0 | 73.9 | 118.3 | 473.4 |
| Ramp segments, crashes: | 16 | 116.5 | 0.9 | 2.9 | 18.5 | 26.2 | 67.9 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 31.8 | 0.3 | 0.7 | 3.7 | 5.8 | 21.3 |
| | 2012 | 32.4 | 0.3 | 0.7 | 3.8 | 5.9 | 21.7 |
| | 2013 | 33.0 | 0.3 | 0.7 | 3.9 | 6.0 | 22.1 |
| | 2014 | 33.6 | 0.3 | 0.7 | 3.9 | 6.1 | 22.6 |
| | 2015 | 34.2 | 0.3 | 0.7 | 4.0 | 6.2 | 23.0 |
| | 2016 | 34.8 | 0.3 | 0.7 | 4.1 | 6.3 | 23.4 |
| | 2017 | 35.5 | 0.3 | 0.8 | 4.1 | 6.4 | 23.9 |
| | 2018 | 36.1 | 0.3 | 0.8 | 4.2 | 6.5 | 24.3 |
| | 2019 | 36.7 | 0.3 | 0.8 | 4.3 | 6.6 | 24.7 |
| | 2020 | 37.3 | 0.3 | 0.8 | 4.3 | 6.8 | 25.2 |
| | 2021 | 38.0 | 0.3 | 0.8 | 4.4 | 6.9 | 25.7 |
| | 2022 | 38.7 | 0.3 | 0.8 | 4.5 | 7.0 | 26.2 |
| | 2023 | 39.4 | 0.3 | 0.8 | 4.5 | 7.1 | 26.7 |
| | 2024 | 40.1 | 0.3 | 0.8 | 4.6 | 7.2 | 27.1 |
| | 2025 | 40.8 | 0.3 | 0.9 | 4.7 | 7.3 | 27.6 |
| | 2026 | 41.5 | 0.3 | 0.9 | 4.7 | 7.4 | 28.1 |
| | 2027 | 42.2 | 0.3 | 0.9 | 4.8 | 7.5 | 28.7 |
| | 2028 | 42.9 | 0.3 | 0.9 | 4.9 | 7.6 | 29.2 |
| | 2029 | 43.6 | 0.3 | 0.9 | 5.0 | 7.8 | 29.7 |
| | 2030 | 44.4 | 0.3 | 0.9 | 5.0 | 7.9 | 30.2 |
| | 2031 | 44.4 | 0.3 | 0.9 | 5.0 | 7.9 | 30.2 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

### Distribution of Crashes for Entire Facility

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 1.9 | 0.0 | 0.1 | 0.4 | 0.7 | 0.7 |
| | Right-angle crashes: | 7.0 | 0.1 | 0.2 | 1.2 | 1.9 | 3.5 |
| | Rear-end crashes: | 245.4 | 2.4 | 6.4 | 34.8 | 54.5 | 147.3 |
| | Sideswipe crashes: | 84.4 | 0.6 | 1.5 | 8.0 | 12.7 | 61.6 |
| | Other multiple-vehicle crashes: | 14.7 | 0.1 | 0.4 | 2.4 | 3.6 | 8.1 |
| | Total multiple-vehicle crashes: | 353.3 | 3.2 | 8.6 | 46.9 | 73.4 | 221.2 |
| Single vehicle | Crashes with animal: | 7.0 | 0.0 | 0.0 | 0.2 | 0.3 | 6.5 |
| | Crashes with fixed object: | 325.1 | 2.2 | 6.0 | 32.8 | 51.2 | 232.9 |
| | Crashes with other object: | 46.9 | 0.1 | 0.4 | 2.0 | 3.2 | 41.2 |
| | Crashes with parked vehicle: | 6.8 | 0.0 | 0.1 | 0.6 | 1.0 | 4.9 |
| | Other single-vehicle crashes | 62.4 | 0.7 | 1.8 | 9.9 | 15.4 | 34.7 |
| | Total single-vehicle crashes: | 448.2 | 3.1 | 8.3 | 45.5 | 71.1 | 320.2 |
| | Total crashes: | 801.5 | 6.3 | 16.9 | 92.5 | 144.5 | 541.4 |

## Evaluation Site Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 1 (E1b) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | | 4.332 | |
| Last year of analysis: | 2031 | | | | |

### Site Description

#### Freeway Segments

| Number | Lanes | Study Period Length (mi) | Study Period Description |
|---|---|---|---|
| 1 | 6 | 0.122 | I-57 #1 |
| 2 | 6 | 0.989 | I-57 #2 |
| 3 | 6 | 0.259 | I-57 #3 |
| 4 | 6 | 0.223 | I-57 #4 |
| 5 | 6 | 0.610 | I-74 #1 |
| 6 | 6 | 0.952 | I-74 #2 |
| 7 | 6 | 0.928 | I-74 #3 |
| 8 | 4 | 0.249 | I-74 #4 |
| 9 | 0 | 0.000 | 0 |
| 10 | 0 | 0.000 | 0 |
| 11 | 0 | 0.000 | 0 |
| 12 | 0 | 0.000 | 0 |
| 13 | 0 | 0.000 | 0 |
| 14 | 0 | 0.000 | 0 |
| 15 | 0 | 0.000 | 0 |
| 16 | 0 | 0.000 | 0 |
| 17 | 0 | 0.000 | 0 |
| 18 | 0 | 0.000 | 0 |
| 19 | 0 | 0.000 | 0 |
| 20 | 0 | 0.000 | 0 |

#### Ramp Segments

| Number | Study Period Description | Number | Study Period Description |
|---|---|---|---|
| 1 | WB to SB #1 | 21 | 0 |
| 2 | WB to SB #2 | 22 | 0 |
| 3 | WB to SB #3 | 23 | 0 |
| 4 | NB to EB #1 | 24 | 0 |
| 5 | NB to EB #2 | 25 | 0 |
| 6 | NB to EB #3 | 26 | 0 |
| 7 | NB to WB #1 | 27 | 0 |
| 8 | NB to WB #2 | 28 | 0 |
| 9 | EB to SB #1 | 29 | 0 |
| 10 | EB to SB #2 | 30 | 0 |
| 11 | WB to NB #1 | 31 | 0 |
| 12 | Wb to NB #2 | 32 | 0 |
| 13 | SB to EB #1 | 33 | 0 |
| 14 | SB to EB #2 | 34 | 0 |
| 15 | SB to WB #1 | 35 | 0 |
| 16 | EB to NB #1 | 36 | 0 |
| 17 | 0 | 37 | 0 |
| 18 | 0 | 38 | 0 |
| 19 | 0 | 39 | 0 |
| 20 | 0 | 40 | 0 |

#### Crossroad Ramp Terminals

| Number | Config. | Control | Study Period Description |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |

## Output Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 2 (B3) - Interchange I57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

### Crash Data Description

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

### Estimated Crash Statistics

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 789.5 | 6.1 | 16.5 | 90.9 | 143.0 | 532.9 |
| Estimated average crash freq. during Study Period, crashes/yr: | 37.6 | 0.3 | 0.8 | 4.3 | 6.8 | 25.4 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 12 | 676.1 | 5.2 | 13.8 | 73.2 | 116.9 | 467.0 |
| Ramp segments, crashes: | 12 | 113.4 | 0.9 | 2.7 | 17.8 | 26.1 | 65.9 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 31.3 | 0.2 | 0.7 | 3.7 | 5.8 | 20.9 |
| | 2012 | 31.9 | 0.3 | 0.7 | 3.7 | 5.9 | 21.4 |
| | 2013 | 32.5 | 0.3 | 0.7 | 3.8 | 6.0 | 21.8 |
| | 2014 | 33.1 | 0.3 | 0.7 | 3.9 | 6.1 | 22.2 |
| | 2015 | 33.7 | 0.3 | 0.7 | 3.9 | 6.2 | 22.6 |
| | 2016 | 34.3 | 0.3 | 0.7 | 4.0 | 6.3 | 23.1 |
| | 2017 | 34.9 | 0.3 | 0.7 | 4.1 | 6.4 | 23.5 |
| | 2018 | 35.5 | 0.3 | 0.7 | 4.1 | 6.5 | 23.9 |
| | 2019 | 36.2 | 0.3 | 0.8 | 4.2 | 6.6 | 24.4 |
| | 2020 | 36.8 | 0.3 | 0.8 | 4.2 | 6.7 | 24.8 |
| | 2021 | 37.5 | 0.3 | 0.8 | 4.3 | 6.8 | 25.3 |
| | 2022 | 38.1 | 0.3 | 0.8 | 4.4 | 6.9 | 25.8 |
| | 2023 | 38.8 | 0.3 | 0.8 | 4.5 | 7.0 | 26.2 |
| | 2024 | 39.5 | 0.3 | 0.8 | 4.5 | 7.1 | 26.7 |
| | 2025 | 40.2 | 0.3 | 0.8 | 4.6 | 7.2 | 27.2 |
| | 2026 | 40.9 | 0.3 | 0.8 | 4.7 | 7.3 | 27.7 |
| | 2027 | 41.6 | 0.3 | 0.9 | 4.7 | 7.5 | 28.2 |
| | 2028 | 42.3 | 0.3 | 0.9 | 4.8 | 7.6 | 28.7 |
| | 2029 | 43.0 | 0.3 | 0.9 | 4.9 | 7.7 | 29.2 |
| | 2030 | 43.7 | 0.3 | 0.9 | 5.0 | 7.8 | 29.7 |
| | 2031 | 43.7 | 0.3 | 0.9 | 5.0 | 7.8 | 29.7 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

### Distribution of Crashes for Entire Facility

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 1.8 | 0.0 | 0.1 | 0.4 | 0.6 | 0.7 |
| | Right-angle crashes: | 7.3 | 0.1 | 0.2 | 1.2 | 2.0 | 3.8 |
| | Rear-end crashes: | 252.4 | 2.4 | 6.4 | 34.8 | 54.9 | 153.8 |
| | Sideswipe crashes: | 87.1 | 0.6 | 1.5 | 8.1 | 12.9 | 64.1 |
| | Other multiple-vehicle crashes: | 13.9 | 0.1 | 0.4 | 2.2 | 3.4 | 7.7 |
| | Total multiple-vehicle crashes: | 362.5 | 3.2 | 8.5 | 46.9 | 73.9 | 230.1 |
| Single vehicle | Crashes with animal: | 6.4 | 0.0 | 0.0 | 0.2 | 0.2 | 6.0 |
| | Crashes with fixed object: | 310.3 | 2.1 | 5.7 | 31.7 | 49.7 | 220.9 |
| | Crashes with other object: | 44.0 | 0.1 | 0.4 | 1.9 | 3.1 | 38.5 |
| | Crashes with parked vehicle: | 6.4 | 0.0 | 0.1 | 0.6 | 1.0 | 4.6 |
| | Other single-vehicle crashes | 59.9 | 0.6 | 1.7 | 9.6 | 15.1 | 32.8 |
| | Total single-vehicle crashes: | 427.0 | 3.0 | 8.0 | 44.1 | 69.1 | 302.9 |
| | Total crashes: | 789.5 | 6.1 | 16.5 | 90.9 | 143.0 | 532.9 |

## Evaluation Site Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 2 (B3) - Interchange I57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | | 4.332 | |
| Last year of analysis: | 2031 | | | | |

### Site Description

#### Freeway Segments

| Number | Lanes | Study Period Length (mi) | Study Period Description |
|---|---|---|---|
| 1 | 6 | 0.291 | I-57 #1 |
| 2 | 6 | 0.300 | I-57 #2 |
| 3 | 6 | 0.289 | I-57 #3 |
| 4 | 6 | 0.231 | I-57 #4 |
| 5 | 6 | 0.259 | I-57 #5 |
| 6 | 6 | 0.223 | I-57 #6 |
| 7 | 6 | 0.618 | I-74 #1 |
| 8 | 6 | 0.230 | I-74 #2 |
| 9 | 6 | 0.252 | I-74 #3 |
| 10 | 6 | 0.299 | I-74 #4 |
| 11 | 6 | 1.092 | I-74 #5 |
| 12 | 4 | 0.249 | I-74 #6 |
| 13 | 0 | 0.000 | 0 |
| 14 | 0 | 0.000 | 0 |
| 15 | 0 | 0.000 | 0 |
| 16 | 0 | 0.000 | 0 |
| 17 | 0 | 0.000 | 0 |
| 18 | 0 | 0.000 | 0 |
| 19 | 0 | 0.000 | 0 |
| 20 | 0 | 0.000 | 0 |

#### Ramp Segments

| Number | Study Period Description | Number | Study Period Description |
|---|---|---|---|
| 1 | WB to SB #1 | 21 | 0 |
| 2 | WB to SB #2 | 22 | 0 |
| 3 | WB to SB#3 | 23 | 0 |
| 4 | NB to EB #1 | 24 | 0 |
| 5 | NB to WB #1 | 25 | 0 |
| 6 | EB to SB #1 | 26 | 0 |
| 7 | EB to SB #2 | 27 | 0 |
| 8 | WB to NB #1 | 28 | 0 |
| 9 | WB to NB #2 | 29 | 0 |
| 10 | SB to EB #1 | 30 | 0 |
| 11 | SB to WB #1 | 31 | 0 |
| 12 | EB to NB #1 | 32 | 0 |
| 13 | 0 | 33 | 0 |
| 14 | 0 | 34 | 0 |
| 15 | 0 | 35 | 0 |
| 16 | 0 | 36 | 0 |
| 17 | 0 | 37 | 0 |
| 18 | 0 | 38 | 0 |
| 19 | 0 | 39 | 0 |
| 20 | 0 | 40 | 0 |

#### Crossroad Ramp Terminals

| Number | Config. | Control | Study Period Description |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |

## Output Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 3 (B2) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

### Crash Data Description

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

### Estimated Crash Statistics

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 813.4 | 6.4 | 17.2 | 95.5 | 149.8 | 544.6 |
| Estimated average crash freq. during Study Period, crashes/yr: | 38.7 | 0.3 | 0.8 | 4.5 | 7.1 | 25.9 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 12 | 681.4 | 5.3 | 14.0 | 74.6 | 119.9 | 467.6 |
| Ramp segments, crashes: | 12 | 132.0 | 1.1 | 3.2 | 20.9 | 29.9 | 77.0 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 32.3 | 0.3 | 0.7 | 3.9 | 6.1 | 21.4 |
| | 2012 | 32.9 | 0.3 | 0.7 | 3.9 | 6.2 | 21.8 |
| | 2013 | 33.5 | 0.3 | 0.7 | 4.0 | 6.3 | 22.3 |
| | 2014 | 34.1 | 0.3 | 0.7 | 4.1 | 6.4 | 22.7 |
| | 2015 | 34.7 | 0.3 | 0.7 | 4.1 | 6.5 | 23.1 |
| | 2016 | 35.4 | 0.3 | 0.8 | 4.2 | 6.6 | 23.6 |
| | 2017 | 36.0 | 0.3 | 0.8 | 4.3 | 6.7 | 24.0 |
| | 2018 | 36.6 | 0.3 | 0.8 | 4.3 | 6.8 | 24.4 |
| | 2019 | 37.3 | 0.3 | 0.8 | 4.4 | 6.9 | 24.9 |
| | 2020 | 37.9 | 0.3 | 0.8 | 4.5 | 7.0 | 25.3 |
| | 2021 | 38.6 | 0.3 | 0.8 | 4.5 | 7.1 | 25.8 |
| | 2022 | 39.3 | 0.3 | 0.8 | 4.6 | 7.2 | 26.3 |
| | 2023 | 40.0 | 0.3 | 0.8 | 4.7 | 7.3 | 26.8 |
| | 2024 | 40.7 | 0.3 | 0.9 | 4.8 | 7.5 | 27.3 |
| | 2025 | 41.4 | 0.3 | 0.9 | 4.8 | 7.6 | 27.8 |
| | 2026 | 42.1 | 0.3 | 0.9 | 4.9 | 7.7 | 28.3 |
| | 2027 | 42.8 | 0.3 | 0.9 | 5.0 | 7.8 | 28.8 |
| | 2028 | 43.6 | 0.3 | 0.9 | 5.1 | 7.9 | 29.3 |
| | 2029 | 44.3 | 0.3 | 0.9 | 5.1 | 8.0 | 29.8 |
| | 2030 | 45.0 | 0.3 | 0.9 | 5.2 | 8.2 | 30.4 |
| | 2031 | 45.0 | 0.3 | 0.9 | 5.2 | 8.2 | 30.4 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

### Distribution of Crashes for Entire Facility

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 1.9 | 0.0 | 0.1 | 0.4 | 0.7 | 0.7 |
| | Right-angle crashes: | 7.3 | 0.1 | 0.2 | 1.2 | 2.0 | 3.8 |
| | Rear-end crashes: | 258.9 | 2.4 | 6.5 | 35.8 | 56.5 | 157.6 |
| | Sideswipe crashes: | 89.9 | 0.6 | 1.5 | 8.3 | 13.2 | 66.3 |
| | Other multiple-vehicle crashes: | 15.1 | 0.1 | 0.4 | 2.5 | 3.7 | 8.4 |
| | Total multiple-vehicle crashes: | 373.1 | 3.2 | 8.7 | 48.3 | 76.1 | 236.8 |
| Single vehicle | Crashes with animal: | 6.5 | 0.0 | 0.0 | 0.2 | 0.3 | 6.0 |
| | Crashes with fixed object: | 320.4 | 2.2 | 6.1 | 34.0 | 53.0 | 225.1 |
| | Crashes with other object: | 44.5 | 0.1 | 0.4 | 2.0 | 3.2 | 38.7 |
| | Crashes with parked vehicle: | 6.5 | 0.0 | 0.1 | 0.7 | 1.0 | 4.7 |
| | Other single-vehicle crashes | 62.4 | 0.7 | 1.8 | 10.4 | 16.1 | 33.4 |
| | Total single-vehicle crashes: | 440.3 | 3.1 | 8.5 | 47.2 | 73.7 | 307.9 |
| | Total crashes: | 813.4 | 6.4 | 17.2 | 95.5 | 149.8 | 544.6 |

## Evaluation Site Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 3 (B2) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | | 4.332 | |
| Last year of analysis: | 2031 | | | | |

### Site Description

#### Freeway Segments

| Number | Lanes | Study Period Length (mi) | Study Period Description |
|---|---|---|---|
| 1 | 6 | 0.291 | I-57 #1 |
| 2 | 6 | 0.300 | I-57 #2 |
| 3 | 6 | 0.367 | I-57 #3 |
| 4 | 6 | 0.179 | I-57 #4 |
| 5 | 6 | 0.233 | I-57 #5 |
| 6 | 6 | 0.223 | I-57 #6 |
| 7 | 6 | 0.552 | I-74 #1 |
| 8 | 6 | 0.290 | I-74 #2 |
| 9 | 6 | 0.257 | I-74 #3 |
| 10 | 6 | 0.299 | I-74 #4 |
| 11 | 6 | 1.092 | I-74 #5 |
| 12 | 4 | 0.248 | I-74 #6 |
| 13 | 0 | 0.000 | 0 |
| 14 | 0 | 0.000 | 0 |
| 15 | 0 | 0.000 | 0 |
| 16 | 0 | 0.000 | 0 |
| 17 | 0 | 0.000 | 0 |
| 18 | 0 | 0.000 | 0 |
| 19 | 0 | 0.000 | 0 |
| 20 | 0 | 0.000 | 0 |

#### Ramp Segments

| Number | Study Period Description | Number | Study Period Description |
|---|---|---|---|
| 1 | WB to SB #1 | 21 | 0 |
| 2 | WB to SB #2 | 22 | 0 |
| 3 | WB to SB #3 | 23 | 0 |
| 4 | NB to EB #1 | 24 | 0 |
| 5 | NB to WB #1 | 25 | 0 |
| 6 | EB to SB #1 | 26 | 0 |
| 7 | EB to SB #2 | 27 | 0 |
| 8 | WB to NB #1 | 28 | 0 |
| 9 | WB to NB #2 | 29 | 0 |
| 10 | SB to EB #1 | 30 | 0 |
| 11 | SB to WB #1 | 31 | 0 |
| 12 | EB to NB #1 | 32 | 0 |
| 13 | 0 | 33 | 0 |
| 14 | 0 | 34 | 0 |
| 15 | 0 | 35 | 0 |
| 16 | 0 | 36 | 0 |
| 17 | 0 | 37 | 0 |
| 18 | 0 | 38 | 0 |
| 19 | 0 | 39 | 0 |
| 20 | 0 | 40 | 0 |

#### Crossroad Ramp Terminals

| Number | Config. | Control | Study Period Description |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |

## Output Summary

**General Information**

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 4 (E2) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

**Crash Data Description**

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

**Estimated Crash Statistics**

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 839.5 | 6.5 | 17.7 | 98.5 | 154.3 | 562.6 |
| Estimated average crash freq. during Study Period, crashes/yr: | 40.0 | 0.3 | 0.8 | 4.7 | 7.3 | 26.8 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 7 | 673.3 | 5.2 | 13.6 | 72.2 | 116.6 | 465.7 |
| Ramp segments, crashes: | 16 | 166.2 | 1.3 | 4.1 | 26.3 | 37.6 | 96.8 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 33.4 | 0.3 | 0.7 | 4.0 | 6.3 | 22.1 |
| | 2012 | 34.0 | 0.3 | 0.7 | 4.1 | 6.4 | 22.6 |
| | 2013 | 34.6 | 0.3 | 0.7 | 4.1 | 6.5 | 23.0 |
| | 2014 | 35.3 | 0.3 | 0.8 | 4.2 | 6.6 | 23.5 |
| | 2015 | 35.9 | 0.3 | 0.8 | 4.3 | 6.7 | 23.9 |
| | 2016 | 36.5 | 0.3 | 0.8 | 4.3 | 6.8 | 24.4 |
| | 2017 | 37.2 | 0.3 | 0.8 | 4.4 | 6.9 | 24.8 |
| | 2018 | 37.8 | 0.3 | 0.8 | 4.5 | 7.0 | 25.3 |
| | 2019 | 38.5 | 0.3 | 0.8 | 4.5 | 7.1 | 25.7 |
| | 2020 | 39.1 | 0.3 | 0.8 | 4.6 | 7.2 | 26.2 |
| | 2021 | 39.8 | 0.3 | 0.8 | 4.7 | 7.3 | 26.7 |
| | 2022 | 40.5 | 0.3 | 0.9 | 4.8 | 7.4 | 27.2 |
| | 2023 | 41.3 | 0.3 | 0.9 | 4.8 | 7.6 | 27.7 |
| | 2024 | 42.0 | 0.3 | 0.9 | 4.9 | 7.7 | 28.2 |
| | 2025 | 42.7 | 0.3 | 0.9 | 5.0 | 7.8 | 28.7 |
| | 2026 | 43.4 | 0.3 | 0.9 | 5.1 | 7.9 | 29.2 |
| | 2027 | 44.2 | 0.3 | 0.9 | 5.1 | 8.0 | 29.7 |
| | 2028 | 44.9 | 0.3 | 0.9 | 5.2 | 8.2 | 30.3 |
| | 2029 | 45.6 | 0.3 | 0.9 | 5.3 | 8.3 | 30.8 |
| | 2030 | 46.4 | 0.4 | 1.0 | 5.4 | 8.4 | 31.3 |
| | 2031 | 46.4 | 0.4 | 1.0 | 5.4 | 8.4 | 31.3 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

**Distribution of Crashes for Entire Facility**

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 2.1 | 0.0 | 0.1 | 0.5 | 0.7 | 0.8 |
| | Right-angle crashes: | 7.0 | 0.1 | 0.2 | 1.2 | 2.0 | 3.5 |
| | Rear-end crashes: | 253.4 | 2.4 | 6.6 | 36.4 | 57.1 | 150.9 |
| | Sideswipe crashes: | 88.6 | 0.6 | 1.5 | 8.3 | 13.1 | 65.2 |
| | Other multiple-vehicle crashes: | 17.1 | 0.2 | 0.5 | 2.8 | 4.3 | 9.4 |
| | Total multiple-vehicle crashes: | 368.2 | 3.3 | 8.9 | 49.3 | 77.1 | 229.7 |
| Single vehicle | Crashes with animal: | 7.0 | 0.0 | 0.0 | 0.2 | 0.3 | 6.5 |
| | Crashes with fixed object: | 343.4 | 2.3 | 6.3 | 35.5 | 55.6 | 243.7 |
| | Crashes with other object: | 47.1 | 0.1 | 0.4 | 2.0 | 3.3 | 41.3 |
| | Crashes with parked vehicle: | 7.1 | 0.0 | 0.1 | 0.7 | 1.1 | 5.1 |
| | Other single-vehicle crashes | 66.8 | 0.7 | 1.9 | 10.9 | 17.0 | 36.3 |
| | Total single-vehicle crashes: | 471.3 | 3.2 | 8.8 | 49.3 | 77.2 | 332.9 |
| Total crashes: | | 839.5 | 6.5 | 17.7 | 98.5 | 154.3 | 562.6 |

## Evaluation Site Summary

**General Information**

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 4 (E2) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | 4.332 | | |
| Last year of analysis: | 2031 | | | | |

**Site Description**

**Freeway Segments**

| Number | Lanes | Study Period Length (mi) | Study Period Description |
|---|---|---|---|
| 1 | 6 | 1.105 | I-57 #1 |
| 2 | 6 | 0.265 | I-57 #2 |
| 3 | 6 | 0.223 | I-57 #3 |
| 4 | 6 | 0.530 | I-74 #1 |
| 5 | 6 | 1.047 | I-74 #2 |
| 6 | 6 | 0.914 | I-74 #3 |
| 7 | 4 | 0.249 | I-74 #4 |
| 8 | 0 | 0.000 | 0 |
| 9 | 0 | 0.000 | 0 |
| 10 | 0 | 0.000 | 0 |
| 11 | 0 | 0.000 | 0 |
| 12 | 0 | 0.000 | 0 |
| 13 | 0 | 0.000 | 0 |
| 14 | 0 | 0.000 | 0 |
| 15 | 0 | 0.000 | 0 |
| 16 | 0 | 0.000 | 0 |
| 17 | 0 | 0.000 | 0 |
| 18 | 0 | 0.000 | 0 |
| 19 | 0 | 0.000 | 0 |
| 20 | 0 | 0.000 | 0 |

**Ramp Segments**

| Number | Study Period Description | Number | Study Period Description |
|---|---|---|---|
| 1 | WB to SB #1 | 21 | 0 |
| 2 | WB to SB #2 | 22 | 0 |
| 3 | WB to SB #3 | 23 | 0 |
| 4 | NB to EB #1 | 24 | 0 |
| 5 | NB to EB #2 | 25 | 0 |
| 6 | NB to EB #3 | 26 | 0 |
| 7 | NB to WB #1 | 27 | 0 |
| 8 | NB to WB #2 | 28 | 0 |
| 9 | EB to SB #1 | 29 | 0 |
| 10 | EB to SB #2 | 30 | 0 |
| 11 | WB to NB #1 | 31 | 0 |
| 12 | WB to NB #2 | 32 | 0 |
| 13 | SB to EB #1 | 33 | 0 |
| 14 | SB to EB #2 | 34 | 0 |
| 15 | SB to WB #1 | 35 | 0 |
| 16 | EB to NB #1 | 36 | 0 |
| 17 | 0 | 37 | 0 |
| 18 | 0 | 38 | 0 |
| 19 | 0 | 39 | 0 |
| 20 | 0 | 40 | 0 |

**Crossroad Ramp Terminals**

| Number | Config. | Control | Study Period Description |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |

## Output Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 5 (F1) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

### Crash Data Description

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

### Estimated Crash Statistics

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 824.1 | 6.4 | 17.3 | 95.5 | 148.3 | 556.5 |
| Estimated average crash freq. during Study Period, crashes/yr: | 39.2 | 0.3 | 0.8 | 4.5 | 7.1 | 26.5 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 7 | 699.3 | 5.4 | 14.2 | 75.3 | 120.4 | 483.9 |
| Ramp segments, crashes: | 16 | 124.9 | 1.0 | 3.1 | 20.2 | 27.9 | 72.6 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 32.7 | 0.3 | 0.7 | 3.9 | 6.0 | 21.9 |
| | 2012 | 33.4 | 0.3 | 0.7 | 3.9 | 6.1 | 22.3 |
| | 2013 | 34.0 | 0.3 | 0.7 | 4.0 | 6.2 | 22.8 |
| | 2014 | 34.6 | 0.3 | 0.7 | 4.1 | 6.3 | 23.2 |
| | 2015 | 35.2 | 0.3 | 0.8 | 4.1 | 6.4 | 23.7 |
| | 2016 | 35.9 | 0.3 | 0.8 | 4.2 | 6.5 | 24.1 |
| | 2017 | 36.5 | 0.3 | 0.8 | 4.3 | 6.6 | 24.6 |
| | 2018 | 37.2 | 0.3 | 0.8 | 4.3 | 6.7 | 25.0 |
| | 2019 | 37.8 | 0.3 | 0.8 | 4.4 | 6.8 | 25.5 |
| | 2020 | 38.5 | 0.3 | 0.8 | 4.5 | 6.9 | 25.9 |
| | 2021 | 39.1 | 0.3 | 0.8 | 4.5 | 7.1 | 26.4 |
| | 2022 | 39.8 | 0.3 | 0.8 | 4.6 | 7.2 | 26.9 |
| | 2023 | 40.5 | 0.3 | 0.9 | 4.7 | 7.3 | 27.4 |
| | 2024 | 41.2 | 0.3 | 0.9 | 4.8 | 7.4 | 27.9 |
| | 2025 | 41.9 | 0.3 | 0.9 | 4.8 | 7.5 | 28.4 |
| | 2026 | 42.6 | 0.3 | 0.9 | 4.9 | 7.6 | 28.9 |
| | 2027 | 43.3 | 0.3 | 0.9 | 5.0 | 7.7 | 29.4 |
| | 2028 | 44.1 | 0.3 | 0.9 | 5.0 | 7.8 | 29.9 |
| | 2029 | 44.8 | 0.3 | 0.9 | 5.1 | 7.9 | 30.4 |
| | 2030 | 45.5 | 0.4 | 0.9 | 5.2 | 8.1 | 31.0 |
| | 2031 | 45.5 | 0.4 | 0.9 | 5.2 | 8.1 | 31.0 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

### Distribution of Crashes for Entire Facility

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 2.0 | 0.0 | 0.1 | 0.5 | 0.7 | 0.7 |
| | Right-angle crashes: | 7.3 | 0.1 | 0.2 | 1.3 | 2.0 | 3.7 |
| | Rear-end crashes: | 256.8 | 2.5 | 6.7 | 36.7 | 57.1 | 153.9 |
| | Sideswipe crashes: | 88.2 | 0.6 | 1.6 | 8.5 | 13.2 | 64.4 |
| | Other multiple-vehicle crashes: | 15.5 | 0.2 | 0.4 | 2.6 | 3.8 | 8.5 |
| | Total multiple-vehicle crashes: | 369.8 | 3.3 | 9.0 | 49.4 | 76.9 | 231.2 |
| Single vehicle | Crashes with animal: | 7.0 | 0.0 | 0.0 | 0.2 | 0.3 | 6.6 |
| | Crashes with fixed object: | 329.8 | 2.2 | 6.0 | 33.2 | 51.5 | 236.9 |
| | Crashes with other object: | 47.3 | 0.1 | 0.4 | 2.0 | 3.2 | 41.6 |
| | Crashes with parked vehicle: | 6.9 | 0.0 | 0.1 | 0.7 | 1.0 | 5.0 |
| | Other single-vehicle crashes | 63.3 | 0.7 | 1.8 | 10.1 | 15.5 | 35.3 |
| | Total single-vehicle crashes: | 454.3 | 3.1 | 8.3 | 46.1 | 71.4 | 325.3 |
| | Total crashes: | 824.1 | 6.4 | 17.3 | 95.5 | 148.3 | 556.5 |

## Evaluation Site Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 5 (F1) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | | 4.332 | |
| Last year of analysis: | 2031 | | | | |

### Site Description

#### Freeway Segments

| Number | Lanes | Study Period Length (mi) | Study Period Description |
|---|---|---|---|
| 1 | 6 | 1.139 | I-57 #1 |
| 2 | 6 | 0.231 | I-57 #2 |
| 3 | 6 | 0.223 | I-57 #3 |
| 4 | 6 | 0.553 | #REF! |
| 5 | 6 | 1.187 | I-74 #1 |
| 6 | 6 | 0.751 | I-74 #2 |
| 7 | 4 | 0.249 | I-74 #3 |
| 8 | 0 | 0.000 | I-74 #4 |
| 9 | 0 | 0.000 | 0 |
| 10 | 0 | 0.000 | 0 |
| 11 | 0 | 0.000 | 0 |
| 12 | 0 | 0.000 | 0 |
| 13 | 0 | 0.000 | 0 |
| 14 | 0 | 0.000 | 0 |
| 15 | 0 | 0.000 | 0 |
| 16 | 0 | 0.000 | 0 |
| 17 | 0 | 0.000 | 0 |
| 18 | 0 | 0.000 | 0 |
| 19 | 0 | 0.000 | 0 |
| 20 | 0 | 0.000 | 0 |

#### Ramp Segments

| Number | Study Period Description | | Number | Study Period Description |
|---|---|---|---|---|
| 1 | WB to SB #1 | | 21 | 0 |
| 2 | WB to SB#2 | | 22 | 0 |
| 3 | WB to SB #3 | | 23 | 0 |
| 4 | NB to EB #1 | | 24 | 0 |
| 5 | NB to EB #2 | | 25 | 0 |
| 6 | Nb to EB #3 | | 26 | 0 |
| 7 | NB to WB #1 | | 27 | 0 |
| 8 | NB to WB #2 | | 28 | 0 |
| 9 | EB to SB #1 | | 29 | 0 |
| 10 | EB to SB #2 | | 30 | 0 |
| 11 | WB to NB #1 | | 31 | 0 |
| 12 | WB to NB #2 | | 32 | 0 |
| 13 | SB to EB #1 | | 33 | 0 |
| 14 | SB to EB #2 | | 34 | 0 |
| 15 | SB to WB #1 | | 35 | 0 |
| 16 | EB to NB #1 | | 36 | 0 |
| 17 | 0 | | 37 | 0 |
| 18 | 0 | | 38 | 0 |
| 19 | 0 | | 39 | 0 |
| 20 | 0 | | 40 | 0 |

#### Crossroad Ramp Terminals

| Number | Config. | Control | Study Period Description |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |

# Combined Design Report

VOLUME 2 OF 3

## Interstate 57 and Interstate 74

Section 10(5-1-RS-1, 14-1, 6)R
Job No. P-95-030-11

Champaign, IL
Champaign County



**September 2015**

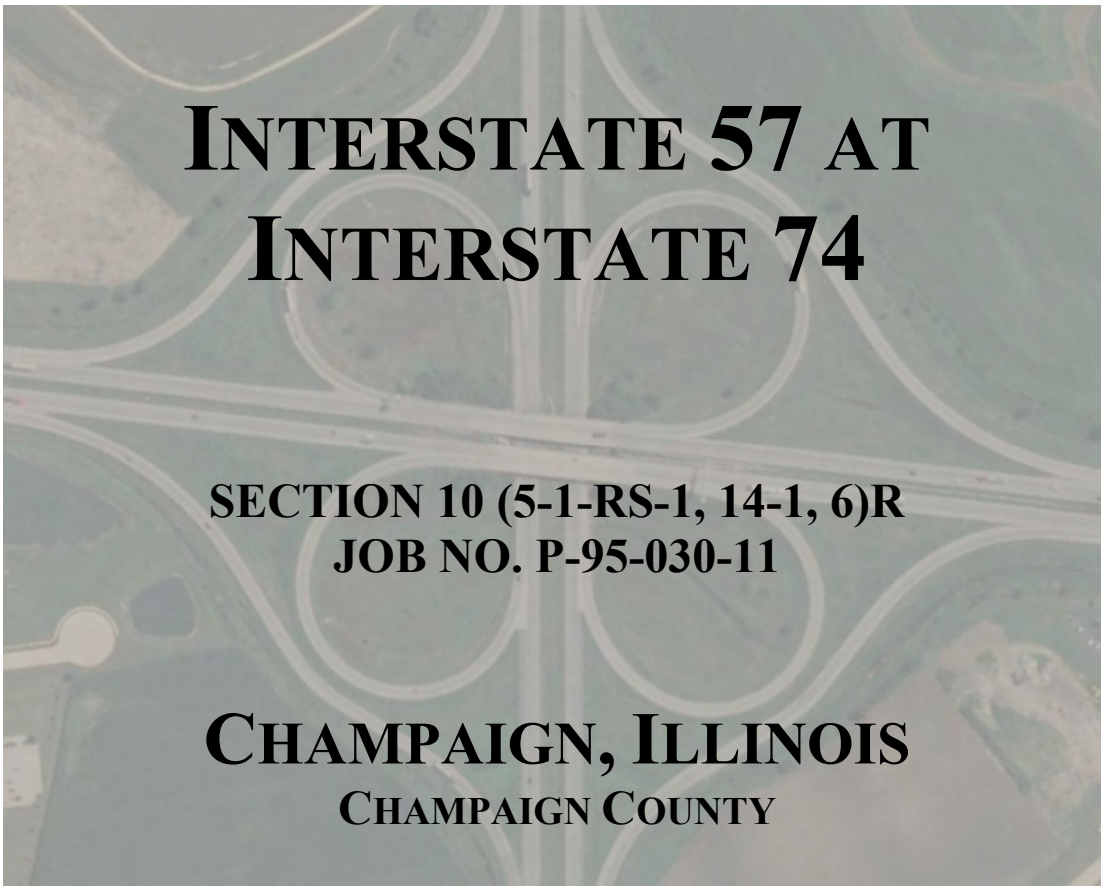
Prepared For:

Illinois Department of Transportation

**Region 3 – District 5**

# APPENDIX F
# Access Justification Report

# ACCESS JUSTIFICATION REPORT



## INTERSTATE 57 AT INTERSTATE 74

**SECTION 10 (5-1-RS-1, 14-1, 6)R**
**JOB NO. P-95-030-11**

## CHAMPAIGN, ILLINOIS
**CHAMPAIGN COUNTY**

**September 2015**

**PREPARED FOR:**

Illinois Department of Transportation

**Region 3 – District 5**

## Executive Summary

Revised access for the interchange of Interstate 57 and Interstate 74 is requested for reconstruction of the existing I-57 and I-74 cloverleaf interchange. The proposed improvements to the I-57 and I-74 interchange are intended to improve safety, increase traffic capacity and travel efficiency, and improve access movements between the two interstates. An Interchange Type Study (ITS) was completed for this project, which included an initial screening that considered seven interchange types, each with various sub-alternates that resulted in five alternatives for further study. The secondary screening process narrowed these five alternatives down to two build alternatives. The preferred interchange alternative identified in the ITS is a semi-directional interchange with two directional flyovers and two loops.

The existing interchange has several deficiencies including operations, geometrics, safety, and capacity. All of these deficiencies cannot be mitigated without adding lanes to I-74 and reconstructing the interchange to meet current design criteria. All reasonable alternatives to the proposed improvement were considered including no-build, roadway system improvements, interchange access and configuration alternatives and transportation demand strategies. The result of the operational analysis shows that the proposed interchange reconfiguration enhances safety and operations of both interstates. The operational analysis includes HCM analysis of the freeway and ramp facilities. Additionally, a microscopic simulation confirms that the proposed alternative enhances the traffic operations of the entire roadway system within the study area.

A crash analysis of the existing cloverleaf interchange reveals that a contributing factor for the reported crashes is vehicles attempting to negotiate the deficient weaving sections and ramp terminals for ramps entering and exiting I-57 and I-74. Fixed object crashes are occurring when vehicles either speed up too fast to enter the mainline, losing control and going off the roadway, or fail to slow down enough to stay on the pavement around the ramp curves, going off the roadway. The Enhanced Interchange Safety Analysis Tool (ISATe) and CORSIM were used to predict future crash rates for the existing cloverleaf interchange and the proposed alternative. The proposed alternative reduces potential conflicts compared to the existing interchange geometry as a result of eliminating conflict points associated with the number of access points and eliminating the mainline interstate weaving movements.

The project has been classified as an Environmental Assessment (EA). The EA was approved by IDOT BDE and FHWA on April 23rd, 2015. A Public Hearing was held on May 14th, 2015. EA Errata were prepared and a FONSI issued by FHWA on July 9th, 2015.

Advantages of the proposed alternative compared to the no-build include increasing the ramp design speeds, eliminating the mainline weaves, reducing the number of access points, increasing the mainline I-74 and ramp capacities, reducing travel time through the interchange, and improving safety.

FHWA accepted conceptual approval of the revised access on May 4th, 2015. Since the Environmental Assessment has been completed, it is recommended that IDOT request FHWA final approval of the proposed interchange build alternative for revising access to the I-57 and I-74 interchange.

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## 1.0 Introduction

This Access Justification Report (AJR) provides justification for the modification to the existing Interstate 57 (I-57) and Interstate 74 (I-74) interchange in Champaign, Illinois. Various alternatives for improving the I-57 and I-74 interchange were analyzed as reported within the project's Interchange Type Study (ITS). The preferred interchange alternative and proposed improvements to the I-57 and I-74 interchange will improve safety, increase traffic capacity and travel efficiency, and improve access movements between the two interstates.

### *1.1 Description of Project Area*

This project is located in the central portion of Champaign County on the northwest side of the City of Champaign (See **Exhibit 1: Site Map**). The study limits for the AJR extend to the adjacent interchanges on each side of the I-57 and I-74 interchange. The approximate study limits along Interstate 57 are the I-57 and I-72 interchange 2 miles to the south and the I-57 and Olympian Drive interchange 1 mile to the north. The approximate study limits along Interstate 74 are the I-74 and South Prairieview Road interchange 5 miles to the west and the I-74 and Prospect Avenue interchange 1.5 miles to the east, as shown in **Figure 1.**




**Figure 1 – Project Area**

The existing facility was originally constructed in 1965 and is a full conventional cloverleaf interchange connecting I-57 and I-74. Each interstate consists of four lanes (two lanes in each direction) of concrete pavement with multiple overlays. Both I-57 and I-74 have open grass medians which are typically 64 feet and 40 feet in width, respectively. The section of I-74 between Mattis Avenue and Prospect Avenue has a 26 foot paved median with concrete barrier.

I-57 is a full access controlled north-south facility that serves local, regional, and interstate traffic. It originates in Southeastern Missouri and crosses numerous other interstates before terminating in Chicago in northern Illinois. I-57 serves as a vital link in the transportation network between northern and southern Illinois and is a Class I truck route carrying an average of 32,400 vehicles per day in 2013 with approximately 23 percent truck volume (9,450 trucks per day average) within the study limits.

I-74 is a full access controlled east-west facility that serves local, regional, and interstate traffic. It crosses numerous other north-south and east-west interstates as it passes through Iowa, Illinois, Indiana, and Ohio. I-74 serves as a vital link in the transportation network between the Quad Cities on the Iowa-Illinois border and Cincinnati, Ohio and is a Class I truck route carrying an average of 38,900 vehicles per day in 2013 with approximately 22 percent truck volume (7,350 trucks per day average) within the study limits.

Immediately adjacent interchanges include: Olympian Drive, an east-west other principal arterial with a grade separation structure and diamond type interchange at I-57, approximately one mile north of I-74; Prospect Avenue, a north-south minor arterial north of I-74 and other principal arterial south of I-74 with a grade separation structure and diamond type interchange at I-74, approximately one and a half miles east of I-57; I-72, a full access controlled east-west interstate facility with grade separation structures and a conventional cloverleaf type interchange at I-57, approximately two miles south of I-74; and South Prairieview Road, a north-south major collector north of I-74 and minor arterial south of I-74 with a grade separation structure and diamond type interchange with I-74, approximately five miles west of I-57.

Other adjacent cross roadways or grade separations within the study limits include: Mattis Avenue, a north-south minor arterial with a grade separation structure over I-57, approximately one half mile north of I-74, and a grade separation structure over I-74, approximately one half mile east of I-57; Bloomington Road (US 150), an east-west other principal arterial with grade separation structure over I-57 approximately one quarter mile south of I-74; the Norfolk Southern Railroad, an east-west railroad with a grade separation structure over I-57, approximately one-half mile south of I-74; and Duncan Road, a north-south other principal arterial with grade separation structure over I-74, approximately one mile west of I-57.

## *1.2 Project History*

Review of record plans for the I-57 and I-74 interchange indicate that the Interchange Design Study for the existing full conventional cloverleaf interchange was completed in 1958. Construction plans for the interchange were developed in 1963, and the interchange construction was completed in 1965. The initial construction included four lanes of pavement, two in each direction, consisting of 12 foot wide lanes constructed with 10 inches of portland cement concrete pavement. The two directions of travel were separated by a 40 feet open grass median on I-74 and a 64 feet open grass median on I-57. Interchange lighting was added in 1969 to all four quadrants of the interchange. In 1990, the structures carrying I-74 over I-57 were rehabilitated, and the improvements included the complete removal and replacement of the existing superstructure. Several hot-mix asphalt overlays have been constructed on both I-57 and I-74 throughout the lifetime of the interchange.

## *1.3 Studied Alternatives*

The Interchange Type Study (ITS) developed for this interchange details the process used to determine the proposed alternative considered for this Access Justification Report (AJR). The initial screening considered seven interchange types, each with various sub-alternates that resulted in five alternatives for further study. The secondary screening process narrowed these five alternatives to a single preferred build alternative, a semi-directional with two directional flyovers and two loops. This AJR demonstrates operational and safety improvements to the interstate system for the proposed build alternative over the existing/no-build configuration.

### 1.3.1 Proposed Alternative

The proposed alternative is a semi-directional interchange with two directional flyovers and two loops. The loop ramps are placed diagonally in order to eliminate any mainline weaving movements within the interchange. The proposed design consists of twelve interchange access points, compared to sixteen for the existing cloverleaf interchange. The use of minor convergences and divergences in the northeast and southwest quadrants reduces the number of entrance and exit terminals from four in each direction for the existing cloverleaf to three for the proposed concept. Loop ramps are designed for a 40 mph design speed, while all other ramps are designed for a 55 mph design speed. Outer Ramps B and G cross over loop Ramps C and F; flyover Ramp D is carried over I-57 and I-74; and flyover Ramp E is carried over I-57, I-74 and Loop Ramp F. **Figure 2** shows a schematic of the proposed semi-directional interchange configuration. In addition to the reconfiguration of the ramps at the interchange, I-74 is proposed to be widened to six lanes from west of the I-57 interchange to Prospect Avenue. I-57 remains a four lane interstate. Details of the proposed alternative are shown in **Exhibit 2.** An Interchange Design Study (IDS) was developed for this alternative and is available in **Appendix A.** The IDS contains further geometric and capacity details of the proposed alternative.

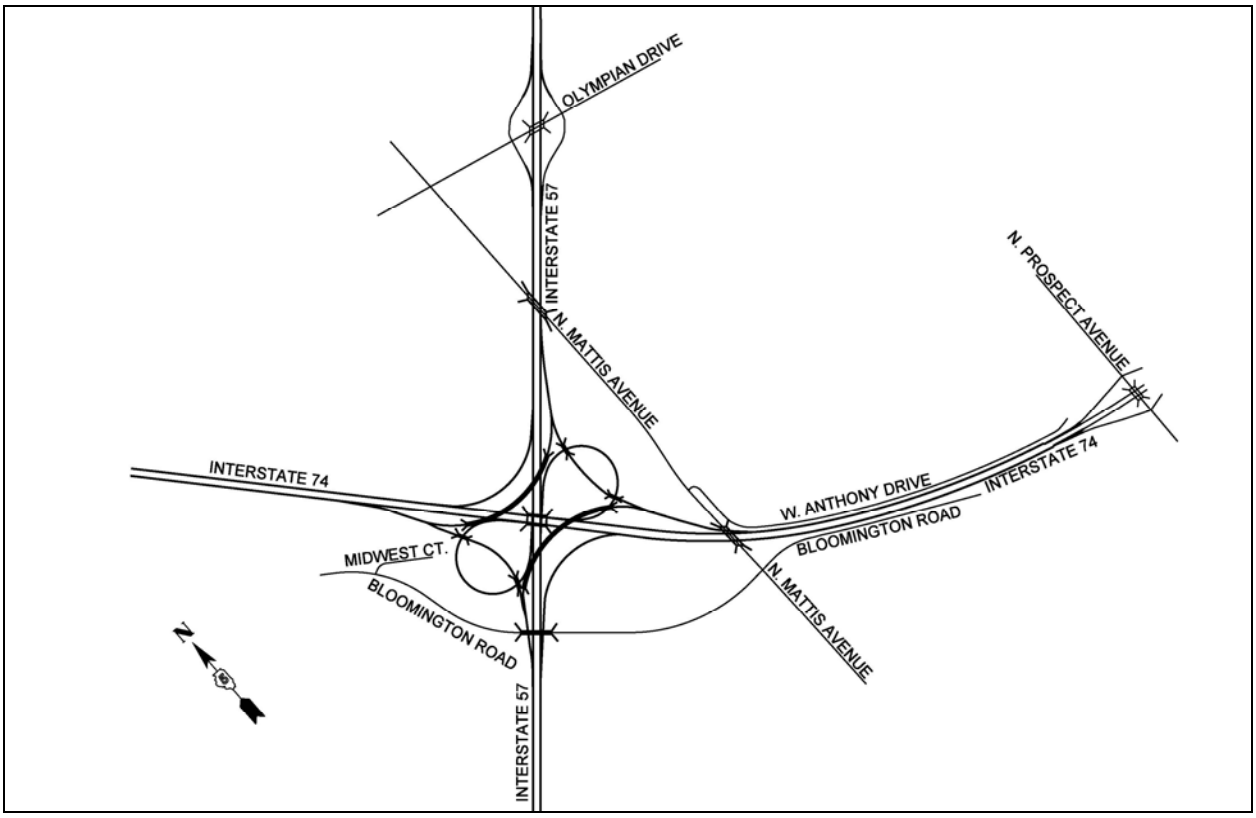



**Figure 2 – Proposed Semi-Directional with Directional Flyovers and Two Loops**

### 1.3.2 No-Build Alternative

The existing full conventional cloverleaf interchange consists of four loop ramps, four wrap around outer ramps, four mainline weaving segments, and sixteen interchange access points. **Figure 3** shows an aerial of the existing interchange. Further detail of the existing interchange is shown in **Exhibit 3**, including the existing interchange ramp radii. The Purpose and Need (**Section 2)** states that the existing interchange without improvement has operational, geometric, safety, and capacity deficiencies. All of these deficiencies could be mitigated by adding capacity and reconstructing the interchange to meet current design criteria. The analysis of the no-build alternative does not include the correction of these deficiencies.




**Figure 3 – No-Build Alternative**

## 2.0 Purpose and Need

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the Interstate 57 (I-57) and Interstate 74 (I-74) interchange by eliminating deficient geometric features and reducing points of access in order to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps.

The need for the proposed improvement is to address operational, geometric, safety, and capacity deficiencies as outlined below:

### *2.1 Geometric Deficiencies*

The existing cloverleaf interchange, including the mainline interstates and all eight ramps connecting the interstates, contains several deficiencies. A deficiency is an element or characteristic of a roadway that does not meet current Federal Highway Administration (FHWA) or Illinois Department of Transportation (IDOT) policies. The existing interchange deficiencies include the ramp design speeds, ramp weaving distances, mainline interstate shoulder widths, and I-74 median width. This section provides details of the existing geometric deficiencies that cause poor operational and safety performance of the interchange and need to be improved.

**Exhibit 3** illustrates the ramp design speeds and policy speeds, which are both determined based on the radii of the ramp curves and the cross slope of the roadway. The ramp design speed is the speed that the ramp as originally constructed currently accommodates, and the ramp policy speed is the speed that the ramp should accommodate according to current FHWA and IDOT policies. These policies set minimum speeds based on the type of facility in order to provide adequate geometry for vehicles navigating the roadways. Interstates have high policy speeds in order to move large volumes of traffic efficiently. Therefore, ramps connecting the interstates also need to have high policy speeds in order to safely accommodate travel between the high speed interstates. A deficiency occurs when the ramp design speed is less than the policy speed, because the speed of the ramp cannot safely accommodate vehicles travelling from one high speed facility to another. All of the ramp speeds for the current cloverleaf interchange configuration are deficient. As shown on **Exhibit 3**, six of the eight ramps are deficient by 10 miles per hour, and two of the eight ramps are deficient by 15 miles per hour. These deficient ramp design speeds are contributing to the crashes (see **Section 2.2**) along the ramps at the existing interchange and need to be improved. The proposed interchange improvements include ramp design speeds that are 40 mph for the two loop ramps and 55 mph for the remaining ramps, which meet FHWA and IDOT policies.

The posted speeds for I-57 and I-74 through the interchange are 70 miles per hour. A combination of different warning signs are used to alert motorists to reduce speed along the interchange ramps and approaches due to the deficiencies of each ramp. Signs include advisory

exit and reduced ramp speeds, truck rollover warnings, chevrons, and large arrows. These signs add to the confusion of motorists trying to navigate from one interstate to another, and despite the implementation of these countermeasures, crashes are still occurring due to deficiencies of the ramp geometry. Ramp improvements are needed to reduce the number of crashes occurring due to the deficient ramp geometry and confusion caused by the warning signs. The proposed interchange meets ramp design speed policy and would require fewer signs than the existing cloverleaf.

A weave in an interchange is the length of roadway where an additional lane is added to allow for vehicles to increase speed to enter and reduce speed to exit the mainline interstate lanes from adjoining ramps, as shown in **Figure 4**:

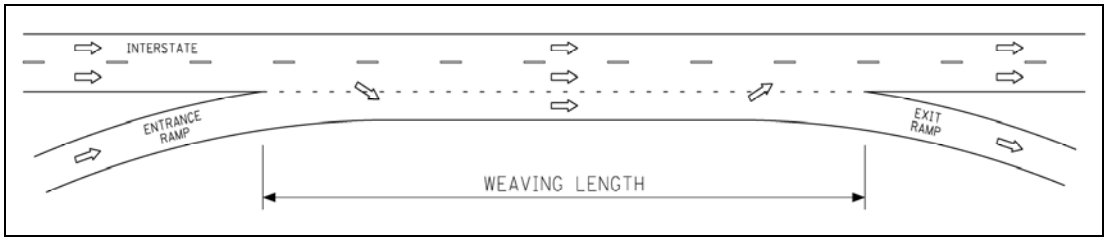



**Figure 4 – Example Weaving Section**

The existing cloverleaf interchange has four weave locations connecting the ramps between I-57 and I-74. The actual length provided for each weave at the existing interchange is less than the IDOT policy length (see **Exhibit 3**), so all four weave lengths are deficient, as shown in **Table 1**.

**Table 1 – Weave Deficiencies**

| Weave location | I-57 NB | I-57 SB | I-74 EB | I-74 WB |
|---|---|---|---|---|
| Deficient by | 104 ft | 131 ft | 104 ft | 95 ft |

These deficient weave lengths create high speed differentials between the mainline vehicles and vehicles trying to enter or exit the ramps. The speed differential and merging of vehicles onto mainline without sufficient acceleration or deceleration length contribute to the concentrated crashes (see **Section 2.2**) at the weave areas for the existing interchange and need to be improved or removed. The configuration of the proposed interchange alternative removes these deficient weaving segments within the interchange.

Access points along interstates are the locations where vehicles are allowed to enter and exit the freeway. The existing cloverleaf interchange configuration has a total of 16 access points, including four along each direction of travel (northbound, southbound, eastbound, and westbound). Each access point along an interstate introduces a conflict point, where drivers are forced to make decisions with vehicles entering and exiting the mainline. At the existing access points for this interchange, the deficient weave lengths and ramp curves that motorists use to access the interstate contribute to the crashes presented in **Section 2.2**. A reduction in the number of access points is needed to reduce the number of crashes at this interchange. The proposed interchange reduces the number of access points from 16 to 12.

Paved shoulders along interstates can provide an area for vehicles that leave the mainline pavement to recover and return back to the mainline lanes prior to running off onto the grass embankments on either side of the roadway. The existing paved shoulders for I-57 are 4 feet on the inside (or left edge of travel) and 10 feet on the outside (or right edge of travel), and I-74 shoulders are 6 feet and 10 feet, respectively. The current policy for both interstates is 12 foot shoulders on both the inside and outside. Since the existing shoulders are not as wide as the current policy, the shoulder widths are deficient. Wider shoulders provide a safer area for vehicles needing to stop and maintenance and emergency vehicles. The deficient shoulder widths are a contributing factor to vehicles that strike fixed objects or overturn after running off of the pavement (see **Section 2.2**) and need to be improved. The proposed interchange alternative includes widening the shoulders on I-57 and I-74 to 12 feet wide on both the inside and outside of the interstate.

The current policy open grass median width for both interstates within the project limits is 60 feet. A 40 foot open grass median is provided for I-74 in the existing configuration, so it does not meet current policy and is deficient. This deficiency is a contributing factor to the fatality on I-74 (see **Section 2.2**), where a vehicle entered the median and was not able to recover prior to entering into oncoming traffic and colliding head on with another vehicle. For the proposed interchange configuration the medians will be open grass medians, with the exception the east end of I-74 where a concrete median barriers separates the two sides of the freeway. The west portion of I-74 with has a 60 foot open grass median. I-57 has a 64 foot open grass median for the entire length of the project.

### *2.2 Safety Deficiencies*

A history of crash data and resulting injuries within the project limits were reviewed for the time period between 2008 and 2012 for I-57, I-74, and the interchange ramps. Injury types are defined as follows: Type A-Injuries are incapacitating injuries that prevent a person from walking, driving, or normally continuing activities the person was capable of performing prior to the injury; Type B-Injuries are non-incapacitating injuries that were evident to observers at the scene of the crash; Type C-Injuries are any other injuries that are reported but not evident; Crashes that do not result in injury are Property Damage Only (PDO). As shown in **Table 2**, between 2008 and 2012, 91 of the 325 total crashes (22 percent) within the project limits resulted in injury. Each crash is classified by the maximum injury sustained, and some crashes involve multiple injuries.

**Table 2 – Total Crashes and Injuries within Project Limits (2008-2012)**

| | Fatality | A-Injury | B-Injury | C-Injury | PDO | Total |
|---|---|---|---|---|---|---|
| Crash Type | 1 | 21 | 37 | 12 | 254 | 325 |
| Total Injuries | 1 | 27 | 48 | 15 | 0 | 91 |

**Interstate 57:**

A total of 85 crashes occurred between 2008 and 2012 along I-57 within the project limits. These crashes resulted in 14 injury crashes, including one Type A-Injury crash, 10 Type B-Injury crashes, and 3 Type C-Injury crashes. 71 crashes resulted in Property Damage Only (PDO). See **Exhibits 4 and 5** for diagrams of the crashes along I-57 and the following **Table 3** for a summary of crashes along I-57:

**Table 3 – Interstate 57 Crashes (2008-2012)**

| Crash Type | Total | Frequency | Total Injury | Injury Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Fatality | A-Injury | B-Injury | C-Injury | PDO |
| Animal | 9 | 11% | | | | | | 9 |
| Fixed Object | 21 | 25% | 3 | | | 2 | 1 | 18 |
| Other Non-Collision | 1 | 1% | | | | | | 1 |
| Other Object | 2 | 2% | | | | | | 2 |
| Overturned | 11 | 13% | 5 | | 1 | 4 | | 6 |
| Parked Motor Vehicle | 1 | 1% | | | | | | 1 |
| Rear End | 12 | 14% | 3 | | | 3 | | 9 |
| Sideswipe Same Direction | 28 | 33% | 3 | | | 1 | 2 | 25 |
| **Subtotal** | **85** | **100%** | **14** | **0** | **1** | **10** | **3** | **71** |

**Interstate 74:**

A total of 168 crashes occurred between 2008 and 2012 along I-74 within the project limits. These crashes resulted in 45 injury crashes, including one fatality, 17 Type A-Injury crashes, 21 Type B-Injury crashes, and 6 Type C-Injury crashes. 123 crashes resulted in Property Damage Only (PDO). See **Exhibits 6 and 7** for diagrams of the crashes along I-74 and **Table 4** below for a summary of crashes along I-74:

**Table 4 – Interstate 74 Crashes (2008-2012)**

| Crash Type | Total | Frequency | Total Injury | Injury Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Fatality | A-Injury | B-Injury | C-Injury | PDO |
| Angle | 4 | 2% | 2 | | 2 | | | 2 |
| Animal | 16 | 10% | 2 | | 1 | | 1 | 14 |
| Fixed Object | 63 | 38% | 15 | | 7 | 8 | | 48 |
| Head On | 1 | 1% | 1 | 1 | | | | |
| Other Non-Collision | 6 | 4% | 1 | | | 1 | | 5 |
| Overturned | 6 | 4% | 6 | | 2 | 4 | | |
| Parked Motor Vehicle | 3 | 2% | 2 | | 1 | 1 | | 1 |
| Rear End | 26 | 15% | 8 | | 3 | 3 | 2 | 18 |
| Sideswipe Same Direction | 38 | 23% | 6 | | 1 | 2 | 3 | 32 |
| Turning | 5 | 3% | 2 | | | 2 | | 3 |
| **Subtotal** | **168** | **100%** | **45** | **1** | **17** | **21** | **6** | **123** |

**Interstate I-57 and I-74 Summary:**

Fixed object and sideswipe same direction crashes account for 150 of the crashes, which is over half (58% on I-57 and 61% on I-74) of the crashes on the interstates within the project limits. The deficient weaving lengths explained in **Section 2.1** are contributing to these types of crashes and need to be improved or removed. Review of the crash reports indicate that a contributing factor for these crashes is vehicles attempting to negotiate the weaving sections and ramp terminals for the deficient ramps entering and exiting I-57 and I-74. Fixed object crashes are occurring when vehicles either speed up too fast to enter the mainline, losing control and going off the roadway, or fail to slow down enough to stay on the pavement around the ramp curves, going off the roadway. Deficient shoulders along the interstates also contribute to fixed object crashes, since there is less recovery area for vehicles that begin to go off the roadway. Sideswipe crashes are occurring when vehicles are forced to enter the mainline lanes in a short distance and are unable to find an appropriate gap in traffic to pull out into the mainline lanes. The proposed alternative eliminates the deficient weaving sections and provides 12-foot wide shoulders, thus eliminating the existing deficiencies that are contributing to these crashes.

Two 5% Segments have been identified along I-74 within the project limits. 5% Segments are identified in yearly reports by the IDOT Bureau of Safety Engineering and represent the top 5% of roadway segments within the State with the highest potential for safety improvements.

The 2011 5% Segment along I-74 begins west of I-57 and extends 2000 feet to the east through the loop ramp weaving areas and I-57 outer ramp terminals (see **Exhibit 8**). A total of 72 crashes occurred between 2008 and 2012 within this 5% Segment, resulting in 15 injury crashes, including one fatality, 4 Type-A crashes, 9 Type-B crashes, and one Type-C crash. Review of the crash reports indicate that the deficient ramp design speeds and deficient weave distances discussed in **Section 2.1** contribute to these crashes and improvement to these features is needed. The proposed interchange provides improvement over the existing deficiencies within the 5% Segment including eliminating the weaving segments, improved ramp design speed, the addition of thru lanes on I-74, and mainline shoulder widening.

The 2012 5% Segment along I-74 begins 3000 feet west of Prospect Avenue and continues east through the Prospect Avenue ramp terminals to the Prospect Avenue cross roadway structure (see **Exhibit 8**). This 5% Segment is one mile east of the I-57 and I-74 interchange outer ramps. A total of 37 crashes occurred between 2008 and 2012 within this 5% Segment, resulting in 14 injury crashes, including 8 Type-A crashes, 5 Type-B crashes, and one Type-C crash. Review of the crash reports indicate that limited capacity of the interstate along this segment contributes to these crashes, so improvement is needed to provide additional capacity. The proposed interchange improvements include providing additional capacity along I-74 by widening I-74 to six lanes from west of the I-57 interchange to the Prospect Avenue ramps.

**Interchange Ramps:**

A total of 72 crashes occurred between 2008 and 2012 along the interchange ramps within the project limits. These crashes resulted in 12 injury crashes, including 3 Type A-Injury crashes, 6 Type B-Injury crashes, and 3 Type C-Injury crashes. 60 crashes resulted in Property Damage Only (PDO). **Exhibits 9 and 10** show diagrams of the crashes along the interchange ramps and illustrate the concentration of crashes along the deficient low speed ramp curves. See the following **Table 5** for a summary of crashes along the ramps:

**Table 5 – Interchange Ramp Crashes (2008-2012)**

| Crash Type | Total | Frequency | Total Injury | Injury Type | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Fatality | A-Injury | B-Injury | C-Injury | PDO |
| Angle | 1 | 1% | | | | | | 1 |
| Fixed Object | 55 | 76% | 6 | | 1 | 3 | 2 | 49 |
| Other Non-Collision | 2 | 3% | | | | | | 2 |
| Overturned | 11 | 15% | 6 | | 2 | 3 | 1 | 5 |
| Parked Motor Vehicle | 1 | 1% | | | | | | 1 |
| Sideswipe Same Direction | 2 | 3% | | | | | | 2 |
| **Subtotal** | **72** | **100%** | **12** | **0** | **3** | **6** | **3** | **60** |

**Interchange Ramp Summary:**

The predominant crash types for the interchange ramps are fixed object (76%) and overturned (15%), which both occur when vehicles leave the ramp pavement. These crash types account for 66 of the 72 total crashes for the interchange ramps. Review of the crash reports for the interchange ramps indicates that the primary cause for these crashes is excessive speed for the ramp curves and configuration. Motorists are unable to slow their vehicles in order to negotiate the deficient ramp curves and design speeds explained in **Section 2.1**. The vehicles go off the pavement and either strike fixed objects or overturn. The interchange ramps need to be improved to proper design speeds to reduce the number of crashes that are occurring due to the deficient ramp curves and design speeds. The proposed alternative provides ramps with design speeds that meet IDOT and FHWA policy and limit the amount of speed reduction needed to travel on the ramps.

## *2.3 Capacity Deficiencies*

The design year for this project is 2040. Traffic volumes on all roadways within the project limits are expected to increase over time. **Table 6** illustrates the forecasted increase in traffic volumes (provided by IDOT) for the design year of 2040:

**Table 6 – Average Daily Traffic (ADT)**

| | 2013 ADT | 2040 ADT | % Increase |
|---|---|---|---|
| **Interstate 57** | | | |
| South of I-74 | 32,400 | 49,900 | 54% |
| North of I-74 | 22,200 | 33,400 | 50% |
| **Interstate 74** | | | |
| West of I-57 | 32,900 | 41,800 | 27% |
| East of I-57 | 38,900 | 59,900 | 54% |
| **Interchange ramps** | | | |
| I-57 NB to I-74 EB | 5,600 | 8,800 | 57% |
| I-74 EB to I-57 SB | 2,800 | 4,550 | 63% |
| I-57 SB to I-74 EB | 2,100 | 2,650 | 26% |
| I-74 EB to I-57 NB | 500 | 1,000 | 100% |
| I-74 WB to I-57 SB | 5,700 | 9,900 | 74% |
| I-57 NB to I-74 WB | 3,300 | 4,950 | 50% |
| I-74 WB to I-57 NB | 2,100 | 2,650 | 26% |
| I- 57 SB to I-74 WB | 650 | 1,200 | 85% |

The operation of the existing I-57 and I-74 interchange has been evaluated for the increased traffic in the 2040 future conditions and several other criteria including Level of Service, speed differential, and ramp capacity.

Level of Service is a measure of the quality of traffic flow for a specific section of roadway. Levels of Service characterize the operating conditions of a roadway, which include speed, travel time, and freedom to maneuver. Levels of Service values can range from LOS A, which is the least congested or free flow, to LOS F, which is the most congested or breakdown of flow. According to The Bureau of Design and Environment Manual, Figure 44-5.A, acceptable Levels of Service for I-57 and I-74 are LOS C or better.

The Highway Capacity Manual (HCM) was used to determine the 2013 and 2040 Levels of Service for the existing I-57 and I-74 cloverleaf interchange (see **Table 7**). These Levels of Service represent the existing geometric characteristics or "no-build" scenario and do not account for adding lanes to the freeways or reconfiguring the interchange ramps. For the design year of 2040, I-74 will have a Levels of Service D eastbound on both sides of I-57 and westbound on the east side of I-57. These Levels of Service do not meet the minimum design criteria of LOS C, so they are deficient. Improvement is needed to provide additional capacity. The proposed project includes widening I-74 to 6 lanes to provide additional capacity needed along I-74.

**Table 7 – Levels of Service – Existing Cloverleaf Interchange (HCM)**

| | 2013 | | 2040 | |
|---|---|---|---|---|
| | AM | PM | AM | PM |
| **Northbound Interstate 57** | | | | |
| South of I-74 | B | B | B | B |
| North of I-74 | A | B | A | B |
| **Southbound Interstate 57** | | | | |
| South of I-74 | B | B | B | C |
| North of I-74 | B | B | B | B |
| **Eastbound Interstate 74** | | | | |
| West of I-57 | C | B | **D** | B |
| East of I-57 | C | B | **D** | C |
| **Westbound Interstate 74** | | | | |
| West of I-57 | B | B | B | C |
| East of I-57 | B | C | C | **D** |

The loop ramps for the existing cloverleaf interchange have limited traffic capacity of approximately 800 vehicles per hour due to the low design speed of the ramp curves. The 2040 projected traffic volume for Ramp E (westbound I-74 to southbound I-57) is 1025 vehicles per hour, exceeding this capacity value of 800 vehicles per hour by more than 25%. If the traffic demand for a ramp exceeds the capacity, traffic will back up onto the interstate. The congestion caused by the ramps being over capacity would further decrease the Levels of Service shown in **Table 7** above. Improvements are needed to prevent traffic from backing up onto the interstate. The loop ramps for the proposed interchange have increased design speeds, which provide additional ramp capacity for the 2040 projected traffic volumes.

## 3.0 Cost and Funding

While safety, traffic, and geometric factors are the primary evaluation measures, it is also important to review the financial factor(s) being considered in the evaluation of revised access.

### *3.1 Construction Cost Estimate*

Preliminary construction costs were estimated for the proposed alternative and include: mainline I-57 and I-74 reconstruction; constructing additional lanes on Interstate 74; reconstruction of the structure carrying I-74 over I-57; proposed ramp pavement, embankment, and structures; cross roadway reconstruction and structure replacement for Bloomington Road over I-57, Mattis Avenue over I-74, and Mattis Avenue over I-57; and other items associated with the construction of these facilities. All costs include reasonable contingency. The preliminary estimated costs for the proposed interchange alternative is shown in **Table 8**.

**Table 8 – Summary of Preliminary Estimated Costs**

| | **Proposed Alternative (Semi-Directional with Directional Flyovers and Two Loops)** | **No-Build Alternative (Existing Cloverleaf)** |
|---|---|---|
| **Construction Cost** | $140 M | $0 M |
| **R.O.W. / Land Acquisition** | $4.5 M | $0 M |
| **Utility Relocation** | $2 M | $0 M |
| **Total** | **$146.5 M** | **$0 M** |

### *3.2 Project Funding*

Design engineering of the interchange is included in the Multi-Year Highway Improvement Program for FY 2015. The FY 2016-2021 Highway Improvement Program includes $28,625,000 for bridge replacements, land acquisition, utility adjustments, and construction engineering for the grade separations of Mattis over I-57, Mattis over I-74, and U.S. 150 over I-57. These projects have been approved for Illinois Major Bridge Program funding.

## 4.0 Background Information

The I-57 and I-74 interchange project is being led by IDOT, with close coordination with City of Champaign and Champaign County officials. The proposed improvements to the I-74 & I-57 interchange support both the Comprehensive Plan and the Long Range Transportation Plan.

These plans are discussed further in **Sections 14-16**. Both Interstate 57 and Interstate 74 will be improved as part of this project. Since I-57 and I-74 provide freeway access around the west and north side of the Champaign-Urbana area, the system interchange between the two facilities is an important component of the roadway network in Champaign County.

### *4.1 Project Schedule*

This project is currently in the preliminary design (PE Phase I) phase, which is planned to be completed in 2015. Design for the interchange (PE Phase II) is funded to begin in the fall of 2015. The need for the project is immediate and the schedule for construction is expected to be phased and dependent upon funding.

### *4.2 Land Use*

**Exhibit 11** shows an aerial map with the existing interchange, adjacent land use and local roads. The northeast quadrant of the I-57/I-74 interchange is primarily agricultural land use. Copper Slough passes through the center of the quadrant and there is a detention pond in the far southeast corner of the quadrant. The southeast quadrant is mostly agricultural land use with some development. Clearlake Boulevard provides access to the southeast quadrant from Bloomington Road. There is a two story office building located in the far northeast corner of this quadrant. The southwest quadrant is also primarily agricultural land use with some development. Midwest Court provides access to the southwest quadrant from Bloomington Road. There is a church located in the southwest corner of the quadrant and a detention pond between Midwest Court and the interchange ramp. The northwest quadrant is mainly agricultural land use with some development. There is a detention pond carrying Copper Slough through the center of the quadrant and there is a multi-use path surrounding the detention pond.

The existing zoning map for the City of Champaign is provided in **Appendix E**. It shows that the northwest and southeast quadrants are primarily zoned for Interstate Office Park and the southwest quadrant is zoned Interstate Business Park. The northeast quadrant is currently unincorporated, but is planned for Multifamily High Density development. The Future Land Use Map (provided in **Appendix E**) shows that the area surrounding the interchange is designated as a "Tier One" Employment Center Development Area. The largest potential development is the Clearview development in the northwest quadrant of the I-57 & I-74 interchange. More information on the Clearview development and the future land use plan is provided in **Section 14.0**.

Land in all four quadrants of the interchange is owned by potential developers, but currently there are no development plans in the permitting and/or approval process.

### *4.3 Public Input*

Public involvement activities have been conducted for the I-57 and I-74 interchange. This public coordination has included one public informational meeting and other meetings with key

stakeholders. A second public information meeting is planned prior to preparing the final project report.

***02/19/2014: Public Information Meeting***

A Public Information Meeting was held through an open house format, with exhibit boards set up throughout the meeting room and handouts available for participants. Five alternates were presented at this meeting. Public input was encouraged and comment forms were available for all attendees. The general consensus of the attendees at the meeting was that this interchange reconstruction project is necessary. Several attendees, including members of the public, County Board and local developers, expressed that Alternates 1 and 2 were their preferred concepts. Additional discussions indicated that Alternate 1 (Full Directional) was preferred by the local agencies, because it does not have any proposed loop ramps; and that Alternate 2 (Semi-Directional) was preferred by local landowners and developers, because it had the least amount of additional right-of-way acquisition and disturbance to developable land.

***05/14/2015: Public Hearing***

A Public Hearing was held through an open house format with voice recording capabilities and a formal session offered to allow public speaking. The overall project study area, general project information, and proposed improvement exhibits were displayed for public viewing with exhibit boards setup throughout the meeting room. A handout with a project summary sheet and exhibit displaying the proposed interchange configuration were provided to attendees. A station was setup in the back of the room to allow for verbal statements to be recorded, and a formal session was scheduled with sign-up forms available at the room entrance. No attendees provided verbal statements or signed up to address the public. Public input was encouraged and comment forms were available for all attendees. The general consensus of the attendees at the meeting was that this interchange reconstruction project is necessary. The land owner in the southeast quadrant of the interchange was pleased with the selection of the proposed alternate, since it requires less land acquisition and minimizes impacts to his property compared to the other alternates previously presented.

**Stakeholder Coordination**

Various stakeholder coordination meetings have taken place and are summarized below:

***08/20/2013: Illinois State Senator Chapin Rose***

A local stakeholder coordination meeting was held to discuss the proposed interchange type alternatives currently being considered. Future development adjacent to the interchange was discussed and any site plans being considered were requested for consideration during development of the proposed interchange types. The City of Champaign's Future Land Use Map indicates all four interchange quadrants have the potential for development as employment centers.

***01/21/2014: Elected Public Officials Presentation***

A meeting was conducted with Champaign city officials to review the current proposed project improvements and interchange reconstruction alternatives. Items discussed included: minimizing the impacts to adjacent properties in order to allow for future development around the interchange; project funding and construction timing.

***01/29/2014: City of Champaign***
A meeting was conducted with Champaign city officials to review the current proposed project improvements and interchange reconstruction alternatives. Items discussed included: coordinating with the city for the proposed typical sections for Mattis Avenue and Bloomington Road; minimizing the impacts to adjacent properties in order to allow for future development around the interchange; and drainage impacts and embankment sources for the potential future construction of the interchange.

***02/19/2014: Champaign Urbana Urbanized Area Transportation Study (CUUATS)***
The proposed project improvements and interchange type alternatives were presented to the local planning organization. The project was not funded for design or construction at the time of the meeting, so funding options were investigated. Subsequently IDOT has funded design of the interchange, but construction of the interchange is not currently funded. CUUATS and the individual entities represented were encouraged to formally submit a letter to IDOT with their preference on the interchange type alternative for consideration in selection of an alternative.

***02/27/2014: NEPA-404 Merger***
The interchange reconstruction project was presented at this meeting to review the project purpose and need, the current alternatives being studied, the environmental impacts, and the project complexity and suitability for the merger process. It was determined by the agencies represented that the complexity of the anticipated project impacts were not of the magnitude to require the merger process and the agencies that have jurisdiction over the resources impacted will be coordinated with individually during the planning process. It was agreed by all agencies that this project will not go through the NEPA-404 Merger process due to the project complexity and discussion during this meeting.

***04/07/2014: Midwest Underground Technology, Inc. (MUTI)***
MUTI are property owners in the southwest quadrant of the interchange. The purpose of the meeting was to review the current proposed project improvements and interchange reconstruction alternatives. MUTI explained ongoing and future plans to expand, including additional buildings to the east and west and additional parking/storage to the east. A temporary aggregate parking/storage site has been constructed on the east side of the existing building since the latest field surveys and aerial photography images have been collected. Site plans have been developed and were made available to IDOT for consideration during development of the interchange design studies.

***07/17/2014: City of Champaign***
A coordination meeting was conducted with the City of Champaign and the Hensley Township to review the proposed improvements to the local and urban state routes affected by the interchange reconstruction project as well as outline the local participation requirements. The City and Township were given preliminary plan and profile sheets for North Mattis over I-74, North Mattis over I-57, US 150 over I-57, and Duncan Road over I-74. Timely coordination will be necessary to meet the project schedule.

### *4.4 NEPA Status*

The proposed improvements and impacts associated with the reconstruction of the I-57 and I-74 interchange were discussed at the February 27, 2014 NEPA meeting. The Environmental Assessment for the proposed project was approved by IDOT BDE and FHWA on April 23rd, 2015. A Public Hearing was held on May 14th, 2015. An EA Errata was prepared, and FONSI was issued by FHWA on July 9th, 2015. This work is ongoing as part of the Preliminary Engineering (PE Phase I) contract. The draft AJR was developed concurrently with the draft EA and received conceptual approval by FHWA on May 4th, 2015 for the proposed interchange modification.

## 5.0 Concerns

The following project concerns were considered during the development of the interchange configurations evaluated within the Interchange Type Study and the proposed alternative presented in this Access Justification Report.

### *5.1 Safety of Interstate*

A major purpose of the interchange reconfiguration is to improve the safety and operations of I-57 and I-74. The proposed interchange configuration increases the capacity, improves operations and corrects the safety concerns of the I-57 and I-74 interchange by changing the number and type of access points. The crash analysis conducted in **Section 18.4** was used in selecting the proposed interchange alternative.

### *5.2 Acceptable Level of Service*

The proposed interstate and interchange configuration will need to have sufficient capacity to accommodate the anticipated traffic demands for the area. The potential for increased traffic and developments in the area could result in significant demands on the interchange. The improvements associated with this project must be able to accommodate these demands.

### *5.3 Operational and Geometric Deficiencies*

The existing cloverleaf interchange, including the mainline interstates and all eight ramps connecting the interstates, contains several deficiencies. The existing interchange deficiencies include the ramp design speeds, ramp weaving distances, mainline interstate shoulder widths, and I-74 median width. These deficiencies lead to poor operational and safety performance of the interchange and need to be improved.

### *5.4 Coordination between Developer, City, and State*

The potential for future proposed development exists in all four quadrants of the interchange. Coordination with developers is ongoing and required for the completion of this project. Several stakeholder meetings have occurred and will continue throughout the Phase 1 process.

### *5.5 Adequate Signing*

Revised interchange access will require modifications to the highway signing along Interstate 57 and Interstate 74 in order to provide proper guidance and way-finding for the traveling public. Changes to access and/or combining access on ramps will require highway signing along I-57 and I-74 to be evaluated to ensure that clear guidance and way-finding will be provided.

### *5.6 Additional Land Acquisition*

In order to complete the project within a timely manner, the ability to acquire additional Right-of-Way beyond existing limits is essential. The amount of additional land acquisition required for the proposed alternative was considered during the selection process.

### *5.7 Environmental*

Wetlands, streams, water bodies, and other environmental resources could potentially be impacted within the project limits. Based upon the addition of through lanes and relocated ramps, a traffic noise analysis will be conducted as a part of the Environmental Analysis. The potential environmental impacts for the proposed alternate is a part of the decision making process for selecting the preferred alternate.

## 6.0 Communities

The project is located within Champaign, Illinois in Champaign County. As shown in **Figure 5**, Champaign is located 135 miles south of Chicago, Illinois, 125 miles west of Indianapolis, Indiana, and 180 miles northeast of St. Louis, Missouri. Champaign is the eleventh-most populous city in Illinois with a population of 81,055 (2010 Census) and the fourth-most populous city in the state outside of the Chicago Metropolitan Area. Urbana is Champaign's twin city and has a population of 41,250. Champaign is surrounded by farm communities; however, it is notable for being home to the University of Illinois at Urbana-Champaign and Parkland College. The city also features a large technology and software industry. According to the 2010 census, Champaign County has a population of 201,081, which is an increase of 11.9% from 179,669 in 2000.

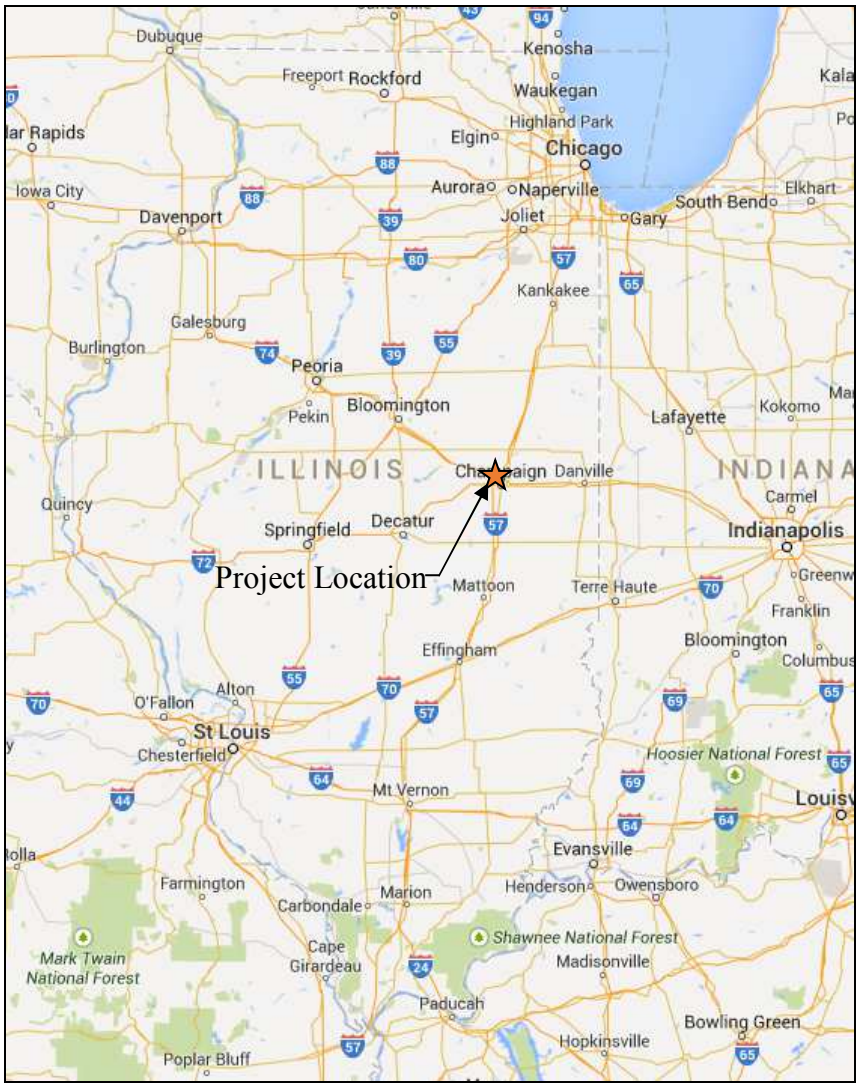



**Figure 5 – Project Location Map**

Interstate 57 is a major north-south highway within Illinois. It goes from Sikeston, Missouri to Chicago, Illinois. Several communities lie along the I-57 corridor near Champaign. Mattoon, Illinois is 47 miles to the south with a population of 18,555 and Rantoul, Illinois is 13 miles to the north with a population of 12,941. Smaller communities between Mattoon and Champaign include Arcola and Tuscola.

Interstate 74 is located in the Midwestern United States. Its eastern end is at an intersection with Interstate 75 in Cincinnati, Ohio and its western terminus is at an intersection with Interstate 80 in Davenport, Iowa. Bloomington, Illinois is 45 miles west of Champaign and has a population of 76,610. Danville, Illinois is 35 miles east of Champaign and has a population of 33,027. Several smaller communities are located between Bloomington and Champaign. They include Le Roy, Farmer City, and Mahomet. The community of St. Joseph is located between Champaign and Danville.

## 7.0 Connections

The Interstate 57 and Interstate 74 interchange is one of three interchanges that serve the City of Champaign on the I-57 Route and one of three interchanges that serve the City of Champaign on the I-74 Route. The interchange of I-57 and I-72 is a full cloverleaf interchange approximately 2.2 miles to the south. The other interchange on I-57 that serves Champaign is the diamond interchange at I-57 and Olympian Drive. The interchanges of I-74 and Prospect Avenue and I-74 and Neil Street are diamond interchanges approximately 1.6 miles and 2.4 miles to the east, respectively. **Figure 6** shows the locations of the interchanges within the Champaign and Urbana area.

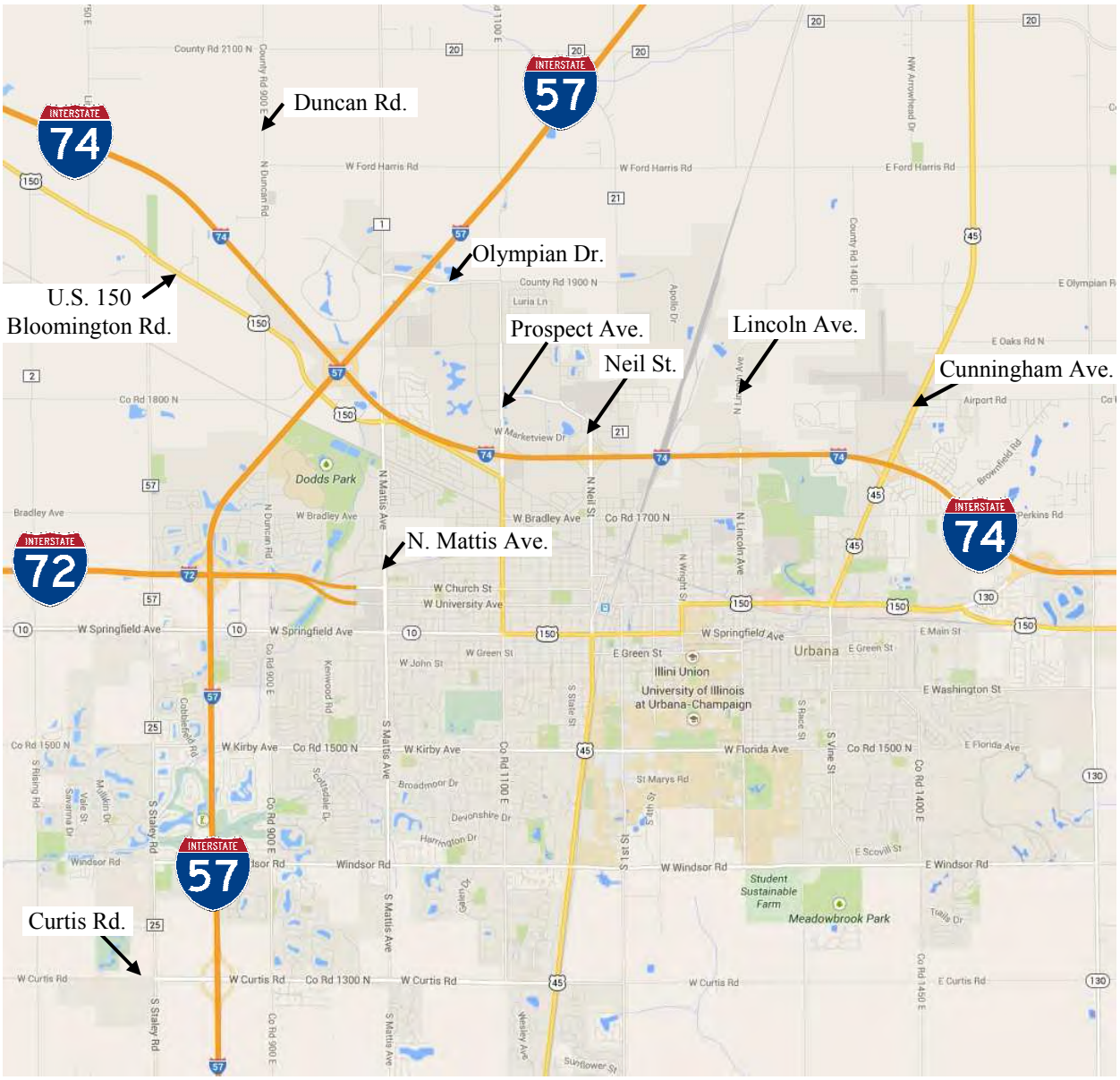



**Figure 6 – Champaign and Urbana Roadway Map**

Further to the east lie the I-74 and N. Lincoln Avenue interchange, I-74 and N. Cunningham Avenue interchange, and I-74 and IL150/IL130 interchange, approximately 3.9 miles, 5.2 miles, and 6.8 miles, respectively, from I-57. The above mentioned interchanges provide access to the City of Urbana as well as the University of Illinois at Urbana-Champaign. To the north lies the I-57 and Market Street interchange, approximately 3.2 miles from I-74. To the south lies the I-57 and W. Curtis Road interchange, approximately 5.7 miles from I-74. Further to the west lie the I-74 and IL 47 intersection and the I-74 and S. Prairie View Road intersection and, approximately 7.2 miles and 5.3 miles from I-57, respectively. The I-74 and IL 47 interchange serves the community of Mahomet.

The proposed alternative consists of twelve access points along the interstates, compared to sixteen for the existing cloverleaf interchange. The elimination of two loop ramps from the cloverleaf interchange removes the deficient and problematic weaving segments directly adjacent to the I-57 mainline for both northbound and southbound I-57 traffic and eastbound and westbound I-74 traffic. The use of minor convergences/divergences and flyover ramps, which replace two of the existing loop ramps, reduce the number of entrance and exit terminal access points from four in each direction of travel to three.

The proposed weaving sections between I-57 and Olympian Drive meet minimum length requirements prescribed by the HCM. Both of the proposed weaving segments are estimated to operate at Level of Service A in 2040.

## 8.0 Design Exceptions

The proposed alternative was reviewed for adherence with IDOT design criteria. The following table was developed from the Level Two Interchange Design Criteria checklist, and no Level One design exceptions have been identified. A Level Two design criteria exception was identified during development of the proposed roadway and structure improvements associated with US 150 (Bloomington Road) required to accommodate the preferred interchange configuration. This design exception consisted of a deficient superelevation transition distribution between the tangent and horizontal curve. The design element policy value required a maximum 50% of superelevation runoff length on the horizontal curve and the proposed design element value was for 55% of superelevation runoff length to be placed on curve (3.9’ further into curve). The location of this design exception was on the horizontal curve immediately west of the US 150 (Bloomington Road) bridge over I-57 and was proposed to prevent any superelevation runoff transition from being located within the limits of the new structure. This design exception was presented and discussed at the District Bi-Monthly Coordination Meeting on May 20, 2015 and was concurred upon and granted approval by IDOT’s Bureau of Design and Environment and FHWA at this meeting.

## Table 9 – Design Criteria

| INTERCHANGE DESIGN CRITERIA | | | | Does the Proposed Alternative comply with the Design Criteria? |
|---|---|---|---|---|
| a. | Exit Terminal | Standard Type | | YES |
| | | Design speed of first curve | | YES |
| | | Are any exit terminals located on mainline horizontal curve? | | YES |
| b. | Entrance Terminal | Standard Type | | YES |
| | | Length of tangent after the entering curve | | YES |
| | | Design speed of entering curve | | YES |
| c. | Design speed of ramp proper: 55 mph (40 mph loops) | | | YES |
| d. | Design speed of crossroad: 70 mph | | | YES |
| e. | Maximum ramp grades | Exit ramp: +4% to -6% | | YES |
| | | Entrance ramp: +4% to -6% | | YES |
| f. | Ramp pavement width = 16ft | | | YES |
| g. | Ramp shoulder widths | Left = 4 ft paved | | YES |
| | | Right = 6 ft paved | | YES |
| h. | Horizontal ramp curvature in conjunction with selected design speeds | | | YES |
| i. | Superelevation development on ramps | Superelevation Rate | | YES |
| | | Transition Length | | YES |
| | | Distribution Between Tangent & Curve | | YES |
| j. | Vertical curvature compliance with selected design speed on ramp? | | | YES |
| k. | Length of access control at crossroad | | | YES |
| l. | Type of traffic control at crossroad | Stop signs | | N/A |
| | | Traffic Signals | | N/A |
| | | Free Flow | | YES |
| m. | Is length of crest vertical curve used on crossroad > or = that required by the selected design speed of crossroad? | | | YES |
| n. | Are crossroad approach grades through ramp terminal intersections < or = 2% | | | YES |
| o. | Are ramp terminal intersections located on a tangent section of crossroad alignment? | | | N/A |
| p. | Is decision sight distance available in advance of exit gore? | | | YES* |
| q. | Is clear recovery area available beyond gore nose? | | | YES |
| r. | Level of Service "C" or better | Exit terminal | | YES |
| | | Entrance terminal | | YES |
| | | Ramp proper | | YES |
| | | Weaving area | | YES |
| | | Ramp/crossroad intersection | | YES |
| s. | Freeway lane drops | Location | Upgrade | YES |
| | | | Downgrade | YES |
| | | | Inside Lane | YES |
| | | | Outside Lane | YES |
| | | | At Exit Terminal | YES |
| | | | Beyond Exit Terminal | YES |
| | | Taper Length | | YES |

* Sight distance provided in advance of exit gores in accordance with BDE Section 37-6.01(b)

## 9.0 Traffic Signals / Signing

The I-57 and I-74 interchange is a system type interchange between two freeways and does not have a signalized intersection, but the adjacent interchange of I-74 and Prospect Avenue has signalized ramp terminals. The remaining adjacent interchanges within the study area do not include signalized intersections. The intersection at the I-74 and Prospect Avenue interchange will not be impacted by this project, thus there are no new or modified signalized intersections associated with this project.

A preliminary layout of the proposed interstate guide signing along I-57 and I-74 for the proposed alternative is illustrated on **Exhibit 12**. With the elimination of two loop ramps and reduction in access points along the interstates, the proposed guide signs differ from the existing cloverleaf. The "A" and "B" exit signing along I-74 are no longer required, so only one exit sign from the interstate needs to be provided for these legs. Once vehicles exit the interstate, additional directional information is provided along the ramp for the divergence of traffic to the two directions. Advance guide signs are also revised to display the new configuration along I-74 without the use of "A" and "B" exits. Additional information including the route shield and cardinal direction has been added to the supplemental guide signs to indicate the direction of travel after the single exit. The "A" and "B" exit signing is still required along I-57 due to the use of the loop ramps. "Exit Only" signs have also been added for I-57 northbound and southbound between I-57 and Olympian Drive, and I-74 eastbound between I-57 and Prospect Avenue. In the proposed configuration, these lanes are considered auxiliary lanes and drop off at the adjacent entrance/exit ramp terminals. As a result of eliminating two of the loop ramps and reducing the number of mainline access points, the guide signing plan for the proposed interchange is simplified compared to existing, and the total number of exit signs along the interstate is reduced.

## 10.0 Lane Balance

Interstate 57 and Interstate 74 are both currently four-lane interstates within the project area. Interstate 74 will be widened to a six-lane interstate from west of the I-57 interchange to the Prospect Avenue interchange. The additional lanes will be added just east of the Duncan Road grade separation. I-57 will remain a four-lane interstate. The proposed number of interstate lanes is based on traffic volume warrants for the design year.

The proposed configuration of the interchange meets all basic principles for lane balance and number of lanes set forth by AASHTO and the IDOT BDE Manual.

## 11.0 Existing Facilities (FHWA Policy #1)

> *The need being addressed by the request cannot be adequately satisfied by existing interchanges to the Interstate, and/or local roads and streets in the corridor can neither provide the desired access, nor can they be reasonably improved (such as access control along surface streets, improving traffic control,*

*modifying ramp terminals and intersections, adding turn bays or lengthening storage) to satisfactorily accommodate the design-year traffic demands (23 CFR 625.2(a)).*

The existing cloverleaf interchange at I-57 and I-74 has operational, geometric and safety deficiencies with the existing and projected future traffic volumes. A complete analysis of the operations of the existing roadway network is discussed in **Section 18** and a summary of this analysis is shown in **Table 10**. The analysis of I-57 and I-74 include dividing the interstate into different segments based upon the presence of ramps and weaving areas. These segments were analyzed individually and then combined to calculate the average performance of each interstate. The analysis shows operational deficiencies occur on I-74, especially in the eastbound direction. By 2040 the average AM LOS on eastbound I-74 is LOS C with some segments operating near capacity with a LOS E. **Table 10** shows the average speed, density and LOS for each direction of I-57 and I-74. The table also provides the lowest segment LOS, which is the critical point and potential bottleneck along each direction of I-57 and I-74. The proposed interchange modification improvements reduce the number of access points and add lanes to I-74 to improve the operation and address safety issues with the existing interchange.

**Table 10 – Existing I-57 and I-74**
**Average Speed (mph), Average Density (vpmpl), LOS & Lowest Segment LOS**

| | | I-57 | | I-74 | |
|---|---|---|---|---|---|
| | | Northbound | Southbound | Westbound | Eastbound |
| 2013 | AM | 65.3<br>7.5-A<br>Low–B | 65.4<br>9.4-A<br>Low–B | 67.6<br>7.6-A<br>Low–B | 67.6<br>18.1-B<br>Low–C |
| | PM | 65.3<br>9.9-A<br>Low–B | 65.3<br>10.7-A<br>Low–B | 67.4<br>15.7-B<br>Low–C | 67.7<br>9.5-A<br>Low–B |
| 2020 | AM | 65.3<br>7.7-A<br>Low–B | 65.3<br>10.9-A<br>Low–B | 67.6<br>10.4-A<br>Low–B | 67.5<br>17.9-B<br>Low–C |
| | PM | 65.3<br>10.2-A<br>Low–B | 65.1<br>12.6-B<br>Low–B | 67.3<br>17.1-B<br>Low–C | 67.7<br>11.1-B<br>Low–B |
| 2040 | AM | 65.1<br>9.8-A<br>Low–B | 65.1<br>13.8-B<br>Low–C | 67.4<br>13.7-B<br>Low–C | 65.9<br>24.4-C<br>**Low–E** |
| | PM | 65.3<br>12.6-B<br>Low–B | 64.8<br>16.1-B<br>Low–C | 66.2<br>22.8-C<br>**Low–D** | 67.6<br>14.6-B<br>Low–C |

The existing cloverleaf interchange, including the mainline interstates and all eight ramps, contains several geometric and capacity deficiencies. The existing interchange deficiencies include the ramp design speeds, ramp weaving distances, mainline interstate shoulder widths,

and I-74 median width. These deficiencies lead to poor operational and safety performance of the interchange and need to be improved. Future traffic volumes are expected to increase, which will make the operational and safety performance of the interchange worsen over time. These deficiencies have resulted in high crash locations within the interchange area, including two 5% Segments previously identified along I-74 within the study limits. Details of all deficiencies were provided in **Section 2.**

Modifying the existing cloverleaf configuration to comply with current standards and policies would require longer weaving lengths, larger loop ramps, and modified outer ramps. A cloverleaf interchange with policy ramp radii would have a much larger footprint than either the existing interchange or the proposed alternative. This large footprint would cause numerous additional environmental impacts and property impacts to existing and potential future developments over and above the build alternative being considered. The necessary improvements required to provide a policy conforming cloverleaf interchange would prohibit implementation of the desired land use and Long Range Plan for the area. Additionally, this existing configuration type will not address the identified needs.

## 12.0 Transportation System Management (FHWA Policy #2)

> *The need being addressed by the request cannot be adequately satisfied by reasonable transportation system management (such as ramp metering, mass transit, and HOV facilities), geometric design, and alternative improvements to the Interstate without the proposed change(s) in access (23 CFR 625.2(a)).*

This policy requires that all other reasonable alternatives for design options were considered in order to accommodate existing and any increase in traffic volumes generated by normal traffic growth and any future development. The alternatives reviewed within the Interchange Type Study (ITS) and this AJR included a "no build" option, ramp metering, mass transit, HOV facilities, and the various interchange configurations that would reconstruct the I-57 and I-74 interchange. The review found that, with the exception of the proposed interchange alternative, these alternatives do not adequately address the Purpose and Need of the project. Each of these alternatives can be summarized as follows:

### *12.1 No Build*

As discussed in the previous sections, the existing interchange and adjacent interstates contain several deficiencies that result in operational and safety concerns. The analysis within this AJR shows that the existing system is not sufficient to accommodate the future traffic volumes and the existing interchange contains several geometric deficiencies.

### *12.2 Expansion of Mass Transit*

The Champaign-Urban Mass Transit District provides bus service in the region. Service does not include any routes on I-57 or I-74 near the interchange. Expansion of mass transit in this area would not have a significant impact on the interstate traffic at this interchange and would not correct the existing deficiencies.

### *12.3 Ramp Metering*

Ramp metering is defined as the use of a traffic signal, typically consisting of a green light and a red light, which allows vehicles to enter the freeway at controlled intervals. Ramp metering is typically implemented on service interchanges and is not a viable option for this system interchange.

### *12.4 Addition of HOV Lanes*

HOV lanes are most effective when implemented to decrease vehicular volumes in areas with heavy commuter traffic. However, HOV lanes are only effective in 6-lane or larger freeways. I-57 remains only 4 lanes wide. I-74 will be widened to 6 lanes for only the portion included within this project, from just west of I-57 to Prospect Avenue. HOV lanes may be considered in the future through the Champaign-Urbana area if the I-74 widening is extended further east. Therefore, adding HOV lanes is not a viable option for this project.

### *12.5 Proposed Interchange Alternative*

Several alternatives to reconstruct the I-57 and I-74 interchange were considered within the Interchange Type Study. This analysis showed that the proposed interchange was the preferred option identified to accommodate the project's Purpose and Need.

## 13.0 Access Connections and Design (FHWA Policy #4)

> *The proposed access connects to a public road only and will provide for all traffic movements. Less than `full interchanges" may be considered on a case-by-case basis for applications requiring special access for managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d))*

The current configuration is a full cloverleaf interchange at I-57 and I-74. The proposed semi-directional interchange alternative continues to provide for all traffic movements and meets or exceeds current policy standards in order to enhance the way each of these movements are provided at the interchange.

## 14.0 Transportation Land Use Plans (FHWA Policy #5)

> *The proposal considers and is consistent with local and regional land use and transportation plans. Prior to receiving final approval, all requests for new or revised access must be included in an adopted Metropolitan Transportation Plan, in the adopted Statewide or Metropolitan Transportation Improvement Program (STIP or TIP), and the Congestion Management Process within transportation management areas, as appropriate, and as specified in 23 CFR part 450, and the transportation conformity requirements of 40 CFR parts 51 and 93.*

This project has been closely coordinated with the City of Champaign and the Champaign Urbana Urbanized Area Transportation Study (CUUATS). The City of Champaign's 2011 Comprehensive Plan (Provided in **Appendix E**) includes future land use maps for the area, including land surrounding the I-57 & I-74 interchange. This area was identified as one of the "Growth Areas" in the CUUATS planning area. The growth area is driven by the existing Clearview development in the northwest quadrant of the I-57 & I-74 interchange. The comprehensive plan identified the following opportunities and challenges for this growth area.

> ***Opportunities and Challenges:***
> The Clearview development presents a growth opportunity for the City. It will contain a mix of land uses, with offices, commercial space and residential neighborhoods. This property has been improved with trails, area wide detention and infrastructure in place. Visibility and access to Interstates 74 and 57 benefits business and employment potential here, although limited access points to the greater community may be a challenge. Implementation of the Landfill Re-use Master Plan will result in a community park featuring radio-controlled air facilities, bmx biking and disc golf, providing unique recreation uses for the community. In the long-term, the western extension of Olympian Drive and interchange at I-74 will provide additional access to the northern part of the City. This will become part of a network of principal arterial roads, linking Champaign and Urbana. A new interchange at I-74 and Olympian Drive should continue to be studied for future construction.

In the immediate vicinity of the I-57 & I-74 interchange the future land use identified within the 2011 Comprehensive Plan is identified to be an Employment Center with Light Industrial and Office developments within 20 years. Further to the north, along Olympian Drive the expected land use is planned to be Community Commercial developments and residential developments.

**Exhibit 11** shows an aerial map of the existing interchange, adjacent land use and local roads. Currently the northeast quadrant of the I-57/I-74 interchange is primarily agricultural land use. Copper Slough passes through the center of the quadrant and there is a detention pond in the far southeast corner of the quadrant. The southeast quadrant is mostly agricultural land use with some development. Clearlake Boulevard provides access to the quadrant from Bloomington Road. There is a two story office building located in the far northeast corner of the quadrant. The southwest quadrant is also primarily agricultural land use with some development. Midwest Court provides access to the quadrant from Bloomington Road. There is a church located in the southwest corner of the quadrant and a detention pond between Midwest Court and the interchange ramp. The northwest quadrant is mainly agricultural land use with some development. There is a detention pond carrying Copper Slough through the center of the quadrant and there is a multi-use path surrounding the detention pond.

The Champaign Urbana Urbanized Area Transportation Study (CUUATS) Long Range Transportation Plan (LRTP) was last adopted in December 2009[1]. Excerpts from the LRTP are provided in **Appendix E.** The LRTP developed a vision for the urbanized area for the year 2035. The vision within the LRTP looks at broad concepts such as "compact and sustainable growth, multimodal transportation facilities, increasing mode share in the urbanized area, expanding connectivity for all transportation network users, and improving the efficiency of the current transportation network." The *Regional Roadway Network Vision for 2035* includes several projects related to or adjacent to the I-74 & I-57 interchange. **Exhibit 13** is a figure from the LRTP that shows the following projects within the study area:

1. Possible interchange location with I-74 (West Champaign) - This project would provide funding for the completion of an Interchange Justification Study along I-74, west of the existing I-74/I-57 interchange. No funding has been secured for this study.
2. West Olympian Drive (east of Duncan Road to Rising Road) - This project is the western segment of the recently constructed Olympian Drive improvements between Apollo Drive and just east of Duncan Road. This extension will continue Olympian Drive west over I-74 and connect it with Rising Road in northwest Champaign.
3. I-74 widening from Prospect Avenue to IL-47 - Money from the 2010-2015 State Capital Bill was allocated for the widening of I-74 from two lanes to three lanes in each direction. This project would reduce congestion along this section of I-74 and increase capacity along the entire section of the interstate. Funding was removed from subsequent state multi-year programs.

The proposed improvements to the I-74 & I-57 interchange support both the Comprehensive Plan and the Long Range Transportation Plan. The reconstructed ramps of the improved interchange will enhance safety and increase capacity supporting the anticipated development and traffic growth in the area. The project also includes widening of I-74 which was included in the LRTP's Regional Roadway Network Vision.

## 15.0 Comprehensive Interstate Network Study (FHWA Policy #6)

> *In corridors where the potential exists for future multiple interchange additions, a comprehensive corridor or network study must accompany all requests for new or revised access with recommendations that address all of the proposed and desired access changes within the context of a longer-range system or network plan (23 U.S.C. 109(d), 23 CFR 625.2(a), 655.603(d), and 771.111).*

There are no funded projects or studies to add additional interchanges to the Interstate 57 or Interstate 74 corridors in the vicinity of the subject interchange other than the improvements proposed by this project. The extension of Olympian Drive to the west and a connection to Rising Road is included in the proposed roadway network of the 2011 City of Champaign Comprehensive Plan and the Long Range Transportation Plan, as shown in **Exhibit 13**. The LRTP plan also envisions a study of a possible interchange with I-74 in this area, but this study

[1] http://cuuats.org/lrtp/documents/lrtp-2035

has not been funded. This interchange could be in the proximity of the existing Duncan Avenue overpass. An interchange at this location would be approximately 1 mile west of the I-57 & I-74 interchange. This interchange spacing is consistent with the interchange spacing to the north and east of the I-57 & I-74 interchange.

The LRTP includes the widening of I-74 from IL 47 in Mahoment, IL to Prospect Ave in Champaign. The proposed interchange project includes widening I-74 as the eastern portion of this LRTP project by widening I-74 from west of the I-57 interchange to Prospect Avenue.

## 16.0 Coordination with Transportation System Improvements (FHWA Policy #7)

> *When a new or revised access point is due to a new, expanded, or substantial change in current or planned future development or land use, requests must demonstrate appropriate coordination has occurred between the development and any proposed transportation system improvements (23 CFR 625.2(a) and 655.603(d)). The request must describe the commitments agreed upon to assure adequate collection and dispersion of the traffic resulting from the development with the adjoining local street network and Interstate access point (23 CFR 625.2(a) and 655.603(d)).*

The primary reasons for reconfiguring the I-57 & I-74 interchange are related to improving existing geometric and operational deficiencies. The projected design year traffic volumes for this analysis include growth of traffic in the study area, but this growth is not entirely contributed to a particular future development, but rather a traffic volume increases due to a general growth area. Additionally, local developer coordination has occurred in public involvement activities and individual stakeholder meetings to ensure future development site plans are considered in conjunction with the proposed build alternative.

The City of Champaign Comprehensive Plan and the Long Range Transportation Plan both anticipate additional development in the vicinity of the interchange, but currently there are no development plans in the permitting and/or approval process. The proposed alternative minimizes property acquisition from these potential developments and the operational and safety benefits derived from the proposed interchange modification should benefit the area.

## 17.0 Status of Planning and NEPA (FHWA Policy #8)

> *The proposal can be expected to be included as an alternative in the required environmental evaluation, review and processing. The proposal should include supporting information and current status of the environmental processing (23 CFR 771.111).*

As previously mentioned in **Section 4.4,** the project is being processed as an Environmental Assessment (EA). The EA has been prepared concurrently with the AJR as part of the Preliminary Engineering (PE Phase I) stage of the project.

Various environmental surveys were conducted in the project area and the impacts of the proposed build alternate are summarized in **Table 11** and explained below:

**Table 11 – Environmental Impact Summary**

| Environmental Impacts | Proposed Alternate |
|---|---|
| Wetlands # (acres) | 9 (3.695) |
| Detention Ponds # (acres) | 1 (1.47) |
| Streams – Copper Slough (ft) | 1,500 |
| Floodplains | Yes |
| T&E Species/Habitat/Natural Areas | None |
| Special Waste Sites (RECs) | 5 |
| Potential Archaeological Resources | 0 |
| Social Resources | 1 |

## Wetlands

A wetland survey was conducted by the Wetland Science Program of the Illinois Natural History Survey on June 13-14, 2013. All potential wetlands within the specified study area were examined. Sixteen sites met the three criteria of a wetland established in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* [U.S. Army Corps of Engineers (USACE) 2010].

Based on the limits of the preliminary right-of-way for this alternate, nine (9) wetlands would likely be impacted, one of which would only be partially impacted. The estimated total area of wetland impacts is 3.695 acres, which was calculated based on the preliminary right-of-way limits.

A copy of the INHS wetlands survey was submitted to IDNR and the U.S. Army Corps of Engineers (ACOE) for review to determine if these areas would be considered jurisdictional wetlands, thus requiring review in accordance with the Interagency Wetland Policy Act and the Clean Water Act. Coordination with IDNR on November 5, 2014, IDNR stated "the wetland areas described within the interchange area and maintained ROW are not considered State jurisdictional wetlands and are not subject to review under IPWA". In a letter received from ACOE, dated December 4, 2014, they also determined that the project would not impact jurisdictional waters of the U.S. or wetlands; therefore, a Department of the Army (Section 404) permit is not required for the proposed work.

## Streams and Other Water Bodies

Copper Slough is a southeast flowing creek located within the project limits. The slough enters the project limits in the northwest quadrant and crosses under I-57. It then bisects the northeast quadrant before flowing into a detention pond in the far southeast corner of the northeast

quadrant. The slough crosses under I-74 and continues south away from the project area. The slough is not a permanent water body. According to the Illinois Water Quality Report (2012), this stretch of Copper Slough has been assessed as "not supporting" for aquatic life, likely caused by channelization and contaminated sediments. According to the wetland report, the slough is now essentially a grassed waterway with no discernible bed or bank.

Based on the preliminary right-of-way limits for the build alternate, 1.47 acres from a detention pond in the southeast corner of the northeast quadrant that intersects Copper Slough would likely be impacted, and 1,500 feet of Copper Slough would be likely be impacted. Similar to the wetlands, the estimated impact area was calculated based on the preliminary estimated right-of-way limits. An exhibit depicting the streams and other water bodies for the proposed alternate is included in **Exhibit 14**.

**Floodplains**

Regulatory floodplains are those with a designated 100-year floodplain that are mapped on National Flood Insurance Rate Maps by the Federal Emergency Management Agency (FEMA). The 100-year floodplain limits in the project area are delineated on the effective FIRM Nos. 17019C0293D and 17019C0294D, dated October 2, 2013. The floodplain located in the project area is associated with the Copper Slough. As such, the proposed alternate would impact this floodplain, but is not considered a significant encroachment. The proposed alternate will include accommodations for Cooper Slough, compensatory flood storage and the proposed pavement designed above the 100-year floodplain and minimum freeboard above the headwater level at culverts.

**Threatened/Endangered Species and Natural Communities of Special Interest**

In a Biological Resources Review by IDOT dated June 27, 2013, a preliminary review, pursuant to Section 7 of the Endangered Species Act, was performed of the project area for the potential impact on threatened or endangered species. Based on this analysis, it was determined that there will be no effect to the species listed for Champaign County, Illinois. Further, no species listed as threatened or endangered, federally or in Illinois, were found during the wetland survey within the project corridor. Also, no natural communities of special interest were noted. When a larger study area was considered through the development of alternatives, a subsequent Natural Resources Review was conducted by IDOT on January 7, 2014 and determined that listed species and critical habitat are not present in the study area.

**Special Waste Sites (Recognized Environmental Conditions)**

A Preliminary Environmental Site Assessment (PESA) - Final Report, dated March 13, 2013, was prepared by the Illinois State Geological Survey (ISGS). Subsequently, three addendums have been prepared to include additional areas not previously assessed. The addendums are dated September 5, 2013, May 20, 2014, and January 5, 2015. Several sites with recognized environmental conditions (RECs) were located in the proposed project area. For purposes of the reports, RECs are conditions that may be indicative of releases or potential releases of hazardous substances on, at, in, or to the site. Five (5) sites are indicated in the reports for which RECs are located on a property that is within the preliminary right-of-way for the build alternate. These

sites include the existing IDOT right-of-way, Copper Slough, and three (3) additional adjacent properties with buildings/structures that could likely be avoided.

**Historical, Architectural, Archaeological, and Cultural Resources**

Preliminary project investigations conducted by Illinois State Archaeological Survey (ISAS) personnel identified an ancient American Indian archaeological habitation site in the northeast quadrant of the interchange as requiring test excavations to evaluate its National Register eligibility. However, access to the site has been denied by the landowner. Therefore, test excavations by ISAS must be undertaken when IDOT has control of the site area that could be potentially impacted by the project. It is anticipated that the proposed alternative could avoid the archaeological site.

A Memorandum of Agreement (MOA) has been developed and ratified with the following stipulations (if the site would be impacted by the preferred alternative): (1) archaeological test excavations must be conducted prior to construction, and (2) if National Register eligible cultural resources are identified, data-recovery excavations (mitigation) must be completed prior to any construction activities in the vicinity of the site. If the resource is determined eligible for the NRHP, and adverse impacts by the project cannot be avoided, IDOT, in coordination with the SHPO, will ensure that data-recovery excavations (mitigation) are completed.

While it is anticipated that the archaeological site could be avoided, if it is determined during the design phase that the site cannot be avoided, the stipulations in the MOA will be undertaken to mitigate any adverse effects.

**Social Impacts**

Midwest Underground Technology, Inc. (MUTI) owns a building in the southwest quadrant of the interchange. It is located between I-74 and Bloomington Road and access is provided off Midwest Court. A portion of a temporary aggregate parking/storage site on the MUTI property could be impacted by the proposed alternate.

## 18.0 Operational Analysis (FHWA Policy #3)

> *An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access must*

*include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request must also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).*

This section details the operational improvements to Interstate 57 and Interstate 74 for the proposed interchange alternative. The modified interchange improves the operations of the interstates over the no-build condition and also results in improved safety performance over the existing cloverleaf interchange.

The 2040 Design Hourly Volumes (DHV's) for the I-57 and I-74 interchange were provided by IDOT. Trucks account for approximately 28% of the volume on I-57, 22% on I-74, and 21% on the ramps. The existing peak hour directional splits for I-57 and I-74 were determined from IDOT's Traffic Count Database System[2]. Determining the directional distribution for the interstate included averaging on both sides of the interchange to achieve balanced volumes. See **Exhibit 15** for the 2040 DHV's for the existing cloverleaf interchange.

Adjacent interchange ramp volumes at Prospect Avenue, Prairieview Road, Olympian Drive, and I-72 were calculated from the 2013 ADT's from IDOT's Traffic Counts[3]. The 2040 ADT for each ramp was projected from the 2013 ADT's and based on the average growth rate of the mainline provided by IDOT. The 2040 ramp DHV was then estimated based on the percentage of mainline DHV versus ADT.

The operational analysis associated with this report includes separate macroscopic analysis for the freeway and intersection components and a microscopic approach to the system in total. Scenarios were analyzed with respect to potential improvements in the study area. They include the following:

- Existing conditions, no build, 2013, AM and PM peak – This scenario includes the existing conditions with no modifications to the roadway network.

- Existing conditions, no build, 2020, AM and PM peak – This scenario includes the existing conditions with no modifications to the roadway network and the construction year traffic.

- Build Alternate, 2020, AM and PM peak – This scenario is for the proposed interchange alternate and the construction year traffic.

- Existing conditions, no build, 2040, AM and PM peak – This scenario includes the existing conditions with no modifications to the roadway network and the design year traffic.

[2] IDOT's Traffic Count Database System http://www.ms2soft.com/tcds/tsearch.asp?loc=Idot&mod=
[3] http://www.gettingaroundillinois.com

- Build Alternate, 2040, AM and PM peak – This scenarios is for the proposed interchange alternate and the design year traffic.

## *18.1 Freeway Analysis*

This section details the operation of Interstate 57 and Interstate 74. The interstates were divided into basic, on-ramp, off-ramp and weaving section analyses for each scenario. The division of the freeway was performed in accordance to the Highway Capacity Manual 2010 (HCM 2010) segment definitions. The freeway facilities module contained within the Highway Capacity Software (HCS) was used to analyze the operation of Interstate 57 and Interstate 74 for both the AM and PM peak hour volume. HCS runs can be found in **Appendix B**.

The primary performance measure used by the HCM to provide a Level of Service (LOS) for freeway segments is average traffic density. Although speed is a major indicator of the quality of service to drivers, freedom to maneuver within the traffic stream and proximity to other vehicles are equally noticeable concerns. Both are related to the density of the traffic stream. The ranges of density used to define the LOS are shown in **Table 12**.

**Table 12 – Freeway LOS Criteria**

| LOS | Basic Freeway Segment Density Range (pc/mi/ln) | Merge and Diverge Areas Density Range (pc/mi/ln) | Freeway Weaving Segment Density Range (pc/mi/ln) |
|---|---|---|---|
| A | 0-11 | 0-10 | 0-10 |
| B | >11-18 | >10-20 | >10-20 |
| C | >18-26 | <20-28 | >20-28 |
| D | >26-35 | >28-35 | >28-35 |
| E | >35-45 | >35 | >35-43 |
| F | >45 | Demand Exceeds Capacity | >43 |

### 18.1.1 Analysis of Existing Conditions

The following summary tables make reference to segment numbers. Please refer to **Table 13** and **Table 14** for a description of the segments for the existing I-57 and I-74 cloverleaf interchange. **Figure 7** and **Figure 8** provide a diagram of segment locations on I-57 and I-74.

**Table 13 – Interstate 57 Freeway Operations Analysis, Existing / No-Build Conditions – Segment Description**

| Northbound | | | Southbound | | |
|---|---|---|---|---|---|
| **Segment Number** | **Segment Type** | **Description** | **Segment Number** | **Segment Type** | **Description** |
| 1 | Basic | 2 Lanes | 1 | Basic | 2 Lanes |
| 2 | Off-Ramp | To EB I-72 | 2 | Off-Ramp | To Olympian |
| 3 | Basic | 2 Lanes | 3 | Basic | 2 Lanes |
| 4 | Weaving | From EB I-72 to WB I-72 | 4 | On-Ramp | From Olympian |
| 5 | Basic | 2 Lanes | 5 | Basic | 2 Lanes |
| 6 | On-Ramp | From WB I-72 | 6 | Off-Ramp | To WB I-74 |
| 7 | Basic | 2 Lanes | 7 | Basic | 2 Lanes |
| 8 | Off-Ramp | To EB I-74 | 8 | Weaving | From WB I-74 to EB I-74 |
| 9 | Basic | 2 Lanes | 9 | Basic | 2 Lanes |
| 10 | Weaving | From EB I-74 to WB I-74 | 10 | On-Ramp | From EB I-74 |
| 11 | Basic | 2 Lanes | 11 | Basic | 2 Lanes |
| 12 | On-Ramp | From WB I-74 | 12 | Off-Ramp | To WB I-72 |
| 13 | Basic | 2 Lanes | 13 | Basic | 2 Lanes |
| 14 | Off-Ramp | To Olympian | 14 | Weaving | From WB I-72 to EB I-72 |
| 15 | Basic | 2 Lanes | 15 | Basic | 2 Lanes |
| 16 | On-Ramp | From Olympian | 16 | On-Ramp | From EB I-72 |
| 17 | Basic | 2 Lanes | 17 | Basic | 2 Lanes |

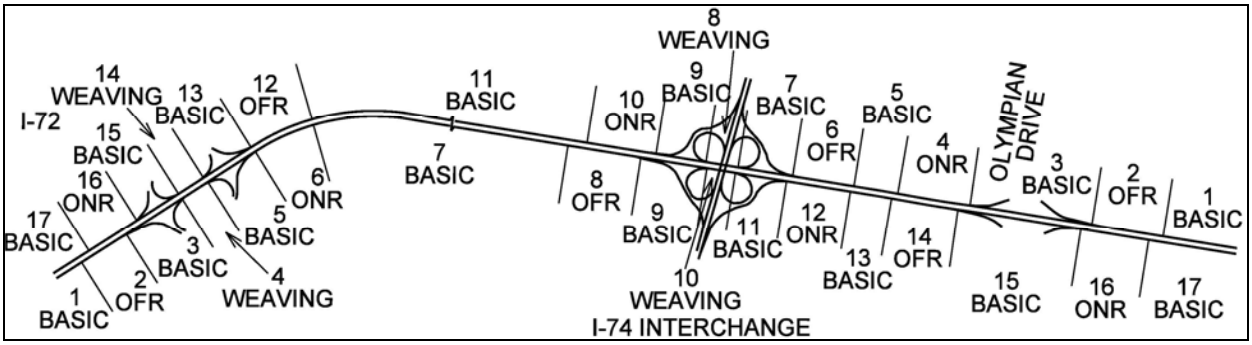



**Figure 7 – No-Build Alternative I-57 Segment Locations**

**Table 14 – Interstate 74 Freeway Operations Analysis, Existing / No-Build Conditions – Segment Description**

| Westbound | | | Eastbound | | |
|---|---|---|---|---|---|
| **Segment Number** | **Segment Type** | **Description** | **Segment Number** | **Segment Type** | **Description** |
| 1 | Off-Ramp | To Prospect | 1 | Basic | 2 Lanes |
| 2 | Basic | 2 Lanes | 2 | Off-Ramp | To Prairieview |
| 3 | On-Ramp | From Prospect | 3 | Basic | 2 Lanes |
| 4 | Basic | 2 Lanes | 4 | On-Ramp | From Prairieview |
| 5 | Off-Ramp | To NB I-57 | 5 | Basic | 2 Lanes |
| 6 | Basic | 2 Lanes | 6 | Off-Ramp | To SB I-57 |
| 7 | Weaving | From NB I-57 to SB I-57 | 7 | Basic | 2 Lanes |
| 8 | Basic | 2 Lanes | 8 | Weaving | From SB I-57 to NB I-57 |
| 9 | On-Ramp | From SB I-57 | 9 | Basic | 2 Lanes |
| 10 | Basic | 2 Lanes | 10 | On-Ramp | From NB I-57 |
| 11 | Off-Ramp | To Prairieview | 11 | Basic | 2 Lanes |
| 12 | Basic | 2 Lanes | 12 | Off-Ramp | To Prospect |
| 13 | On-Ramp | From Prairieview | 13 | Basic | 2 Lanes |
| 14 | Basic | 2 Lanes | 14 | On-Ramp | From Prospect |

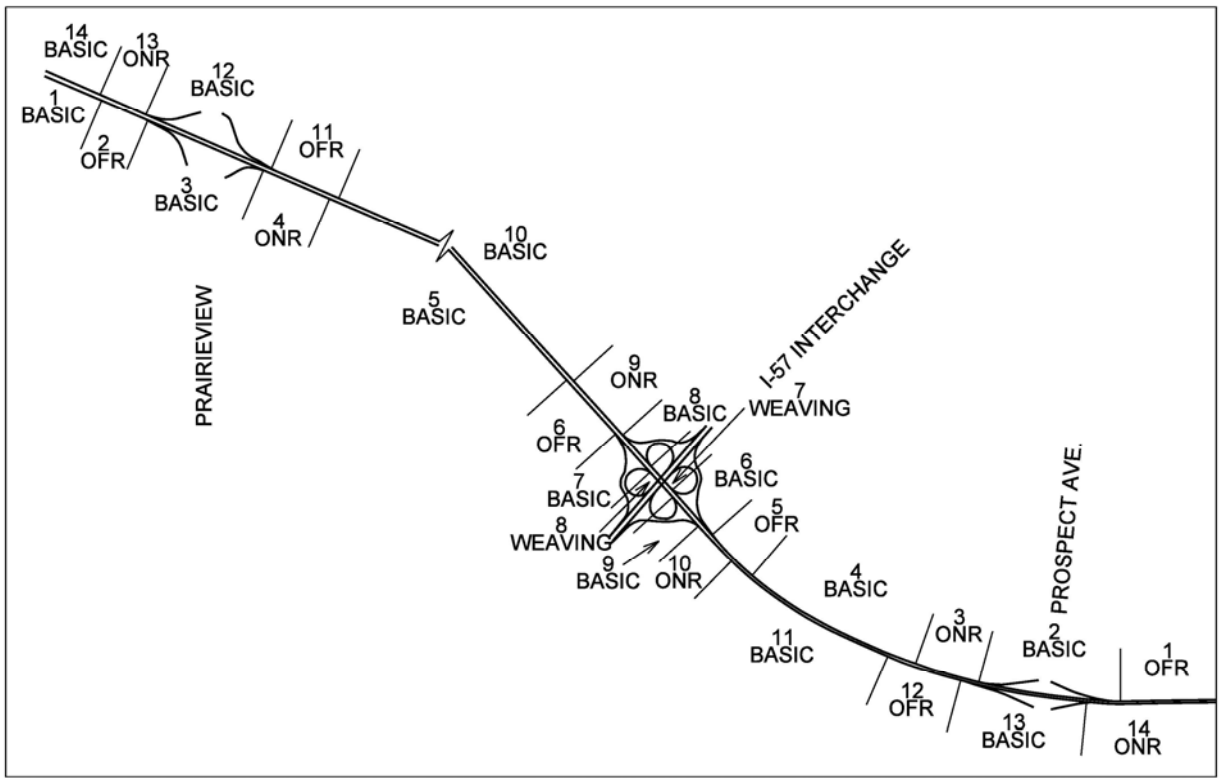



**Figure 8 – No-Build Alternative I-74 Segment Locations**

**Table 15** summarizes freeway operations for Interstate 57 for existing conditions during the morning and evening peak hours for 2013, 2020 and 2040. This tables show the average speed and density for each segment of Interstate 57 for the peak 15 minute time periods during both the morning and evening peak hours. **Table 16** provides the same information for I-74.

**Table 15 – Interstate 57 Freeway HCM Operations Analysis,**
**Existing/No-Build Conditions**
***NORTHBOUND***

| Segment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seg. Type | B | OFR | B | W | B | ONR | B | OFR | B | W | B | ONR | R | OFR | B | ONR | B | |
| Length (ft) | 500 | 1,500 | 1,230 | 540 | 960 | 1,500 | 5,770 | 1,500 | 1,315 | 495 | 1,260 | 1,030 | 470 | 1,030 | 2,240 | 1,500 | 500 | 4.42 mi |
| ***AVERAGE SEGMENT SPEED (mi/hr)*** | | | | | | | | | | | | | | | | | | |
| *2013 AM* | 70.0 | 57.8 | 68.7 | 65.2 | 68.6 | 61.2 | 70.0 | 56.4 | 68.6 | 64.8 | 68.7 | 61.5 | 61.0 | 61.0 | 69.4 | 61.6 | 68.3 | 65.3 |
| *2013 PM* | 70.0 | 57.8 | 68.7 | 65.0 | 68.5 | 61.3 | 70.0 | 56.8 | 68.6 | 64.2 | 68.6 | 61.5 | 61.3 | 61.3 | 69.4 | 61.6 | 68.3 | 65.3 |
| *2020 AM* | 70.0 | 57.8 | 68.7 | 65.4 | 68.6 | 61.4 | 70.0 | 56.2 | 68.6 | 64.0 | 68.5 | 61.6 | 61.3 | 61.3 | 69.4 | 61.7 | 68.4 | 65.3 |
| *2020 PM* | 70.0 | 57.7 | 68.7 | 64.5 | 68.4 | 61.3 | 70.0 | 56.7 | 68.6 | 63.8 | 68.5 | 61.5 | 61.2 | 61.2 | 69.4 | 61.6 | 68.3 | 65.3 |
| *2040 AM* | 70.0 | 57.7 | 68.7 | 64.1 | 68.2 | 61.2 | 70.0 | 55.5 | 68.5 | 62.1 | 68.1 | 61.6 | 61.2 | 61.2 | 69.4 | 61.7 | 68.3 | 65.1 |
| *2040 PM* | 70.0 | 57.7 | 68.6 | 63.0 | 67.9 | 61.0 | 70.0 | 56.3 | 68.6 | 62.4 | 68.2 | 61.4 | 61.2 | 61.2 | 69.4 | 61.5 | 68.3 | 65.1 |
| ***AVERAGE SEGMENT DENSITY (veh/mi/ln) & LOS*** | | | | | | | | | | | | | | | | | | |
| *2013 AM* | 10.1 A | 14.2 B | 9.8 A | 7.9 A | 11.2 B | 16.2 B | 12.2 B | 16.7 B | 7.7 A | 5.7 A | 6.4 A | 10.9 B | 10.9 B | 10.8 B | 5.4 A | 10.0 A | 6.4 A | 10.7 A |
| *2013 PM* | 8.0 A | 11.6 B | 7.4 A | 6.5 A | 9.2 A | 14.3 B | 10.5 A | 14.6 B | 7.1 A | 5.2 A | 4.8 A | 9.8 A | 9.8 A | 9.7 A | 5.3 A | 10.9 B | 7.2 A | 9.4 A |
| *2020 AM* | 7.1 A | 10.6 B | 6.6 A | 5.8 A | 8.3 A | 13.2 B | 9.5 A | 13.4 B | 4.3 A | 3.5 A | 2.8 A | 7.1 A | 7.1 A | 6.6 A | 2.9 A | 7.7 A | 4.3 A | 7.7 A |
| *2020 PM* | 8.5 A | 12.2 B | 7.9 A | 7.1 A | 9.9 A | 15.2 B | 11.3 B | 15.7 B | 7.8 A | 5.8 A | 5.6 A | 10.7 B | 10.7 B | 10.6 B | 6.0 A | 11.4 B | 7.7 A | 10.2 A |
| *2040 AM* | 9.3 A | 13.2 B | 8.6 A | 7.7 A | 10.8 A | 16.3 B | 12.3 B | 16.8 B | 5.4 A | 4.7 A | 3.8 A | 8.3 A | 8.3 A | 8.0 A | 3.8 A | 9.1 A | 5.5 A | 9.8 A |
| *2040 PM* | 10.7 A | 14.9 B | 9.9 A | 9.2 A | 12.7 B | 18.6 B | 14.4 B | 19.3 B | 9.6 A | 7.4 A | 7.1 A | 12.6 B | 12.7 B | 12.7 B | 7.6 A | 13.4 B | 9.6 A | 12.6 B |

**Table 15 (Continued)**

***SOUTHBOUND***

| Segment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seg. Type | B | OFR | B | ONR | R | OFR | B | W | B | ONR | B | OFR | B | W | B | ONR | B | |
| Length (ft) | 500 | 1,500 | 2,180 | 1,300 | 200 | 1,300 | 1,240 | 530 | 1,135 | 1,500 | 5,800 | 1,500 | 1,265 | 525 | 930 | 1,500 | 500 | 4.43 mi |
| ***AVERAGE SEGMENT SPEED (mi/hr)*** | | | | | | | | | | | | | | | | | | |
| *2013 AM* | 70.0 | 61.2 | 69.6 | 62.0 | 57.9 | 57.9 | 68.5 | 62.4 | 68.0 | 61.6 | 70.0 | 57.3 | 68.6 | 67.0 | 69.1 | 61.8 | 68.4 | 65.4 |
| *2013 PM* | 70.0 | 61.3 | 69.6 | 62.0 | 57.8 | 57.8 | 68.4 | 58.3 | 67.0 | 61.3 | 70.0 | 57.2 | 68.6 | 66.0 | 68.8 | 61.6 | 68.3 | 65.2 |
| *2020 AM* | 70.0 | 61.2 | 69.6 | 61.9 | 57.9 | 57.9 | 68.5 | 61.0 | 67.7 | 61.4 | 70.0 | 57.2 | 68.6 | 66.2 | 68.8 | 61.7 | 68.4 | 65.3 |
| *2020 PM* | 70.0 | 61.2 | 69.6 | 61.9 | 57.7 | 57.7 | 68.4 | 57.5 | 66.7 | 61.2 | 70.0 | 57.1 | 68.6 | 65.5 | 68.6 | 61.6 | 68.3 | 65.1 |
| *2040 AM* | 70.0 | 61.1 | 69.5 | 61.8 | 57.8 | 57.8 | 68.4 | 58.5 | 67.0 | 61.1 | 70.0 | 56.9 | 68.6 | 65.1 | 68.5 | 61.5 | 68.3 | 65.1 |
| *2040 PM* | 70.0 | 61.1 | 69.5 | 61.8 | 57.6 | 57.6 | 68.4 | 54.2 | 65.9 | 60.5 | 69.9 | 56.8 | 68.6 | 64.2 | 68.2 | 61.3 | 68.3 | 64.8 |
| ***AVERAGE SEGMENT DENSITY (veh/mi/ln) & LOS*** | | | | | | | | | | | | | | | | | | |
| *2013 AM* | 6.5 A | 9.9 A | 5.3 A | 9.7 A | 10.3 B | 10.3 B | 6.6 A | 6.5 A | 7.6 A | 12.4 B | 9.3 A | 13.2 B | 7.4 A | 5.2 A | 6.8 A | 9.6 A | 7.1 A | 8.8 A |
| *2013 PM* | 6.4 A | 9.7 A | 5.5 A | 10.6 B | 11.2 B | 11.2 B | 7.1 A | 9.5 A | 11.3 B | 16.1 B | 12.7 B | 17.3 B | 10.6 A | 7.6 A | 10.1 A | 13.1 B | 10.4 A | 11.2 B |
| *2020 AM* | 8.1 A | 11.8 B | 7.0 A | 11.2 B | 11.8 B | 11.8 B | 8.0 A | 8.2 A | 9.8 A | 15.1 B | 11.8 B | 16.2 B | 9.6 A | 6.8 A | 9.0 A | 12.0 B | 9.3 A | 10.9 A |
| *2020 PM* | 8.6 A | 12.3 B | 7.3 A | 11.6 B | 12.4 B | 12.4 B | 7.9 A | 10.5 B | 12.5 B | 17.7 B | 14.2 B | 19.0 B | 11.7 B | 8.4 A | 11.1 B | 14.2 B | 11.4 B | 12.6 B |
| *2040 AM* | 10.4 A | 14.5 B | 8.9 A | 13.6 B | 14.5 B | 14.5 B | 10.1 A | 11.1 B | 12.9 B | 18.7 B | 15.1 B | 20.2 C | 12.3 B | 8.9 A | 11.6 B | 14.7 B | 12.0 B | 13.8 B |
| *2040 PM* | 11.0 A | 15.2 B | 9.3 A | 14.2 B | 15.2 B | 15.2 B | 9.9 A | 14.7 B | 16.9 B | 22.3 C | 18.5 C | 24.2 C | 15.3 B | 11.2 B | 14.6 B | 17.9 B | 14.9 B | 16.1 B |

**Table 16 – *Interstate 74 Freeway HCM Operations Analysis, Existing/No-Build Conditions***
***WESTBOUND***

| Segment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seg. Type | OFR | B | ONR | B | OFR | B | W | B | ONR | B | OFR | B | ONR | B | |
| Length (ft) | 1,500 | 2,800 | 1,500 | 2,530 | 1,500 | 1,400 | 525 | 1,250 | 1,500 | 21,945 | 1,500 | 2,620 | 1,500 | 500 | 8.06 mi |
| ***AVERAGE SEGMENT SPEED (mi/hr)*** | | | | | | | | | | | | | | | |
| *2013 AM* | 70.0 | 70.0 | 61.5 | 69.7 | 55.8 | 68.6 | 61.9 | 68.1 | 61.3 | 70.0 | 61.1 | 69.7 | 61.5 | 68.3 | 67.7 |
| *2013 PM* | 70.0 | 70.0 | 60.7 | 69.6 | 55.6 | 68.6 | 56.3 | 66.7 | 60.9 | 70.0 | 61.1 | 69.7 | 61.1 | 68.2 | 67.4 |
| *2020 AM* | 70.0 | 70.0 | 61.4 | 69.7 | 55.8 | 68.6 | 59.9 | 67.6 | 61.2 | 70.0 | 61.1 | 69.7 | 61.4 | 68.3 | 67.6 |
| *2020 PM* | 70.0 | 70.0 | 60.2 | 69.6 | 55.6 | 68.6 | 55.4 | 66.5 | 60.6 | 70.0 | 61.0 | 69.7 | 60.9 | 68.2 | 67.3 |
| *2040 AM* | 70.0 | 70.0 | 61.0 | 69.7 | 55.7 | 68.6 | 57.2 | 67.0 | 60.9 | 70.0 | 60.9 | 69.7 | 61.2 | 68.3 | 67.4 |
| *2040 PM* | 69.4 | 68.9 | 57.6 | 65.4 | 55.5 | 67.2 | 51.6 | 65.6 | 59.6 | 69.2 | 60.8 | 69.7 | 60.0 | 68.0 | 66.2 |
| ***AVERAGE SEGMENT DENSITY (veh/mi/ln) & LOS*** | | | | | | | | | | | | | | | |
| *2013 AM* | 8.0 A | 6.7 A | 12.4 B | 8.5 A | 12.1 B | 7.5 A | 6.7 A | 7.0 A | 11.1 B | 7.2 A | 10.7 B | 5.7 A | 10.9 B | 6.9 A | 7.9 A |
| *2013 PM* | 12.9 B | 12.7 B | 21.7 C | 17.2 B | 22.6 C | 15.8 B | 14.6 B | 13.6 B | 18.1 B | 13.6 B | 18.4 B | 12.1 B | 17.9 B | 13.5 B | 14.8 B |
| *2020 AM* | 9.6 A | 8.1 A | 15.4 B | 11.3 B | 15.6 B | 10.4 A | 9.5 A | 9.7 A | 13.8 B | 9.7 A | 13.6 B | 8.0 A | 13.5 B | 9.4 A | 10.4 A |
| *2020 PM* | 15.3 B | 16.0 B | 24.4 C | 19.6 C | 25.5 C | 18.2 C | 16.9 B | 15.6 B | 20.4 C | 15.8 B | 21.0 C | 13.9 B | 20.1 C | 15.6 B | 17.1 B |
| *2040 AM* | 12.8 B | 10.9 A | 19.5 B | 15.2 B | 20.2 C | 14.1 B | 13.2 B | 12.9 B | 17.2 B | 12.8 B | 17.4 B | 10.6 A | 16.7 B | 12.4 B | 13.7 B |
| *2040 PM* | 20.6 C | 21.9 C | 31.5 D | 28.0 D | 33.5 D | 25.2 C | 24.2 C | 20.8 C | 25.9 C | 21.0 C | 27.1 C | 18.4 C | 25.4 C | 20.6 C | 22.8 C |

**Table 16 (Continued)**

***EASTBOUND***

| Segment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seg. Type | B | OFR | B | ONR | B | OFR | B | W | B | ONR | B | OFR | B | ONR | |
| Length (ft) | 500 | 1,500 | 2,640 | 1,500 | 21,925 | 1,500 | 1,425 | 470 | 1,225 | 1,500 | 2,500 | 1,500 | 2,755 | 1,500 | 8.04 mi |
| ***AVERAGE SEGMENT SPEED (mi/hr)*** | | | | | | | | | | | | | | | |
| *2013 AM* | 70.0 | 61.3 | 69.7 | 60.8 | 70.0 | 55.5 | 68.6 | 64.3 | 68.6 | 60.0 | 69.6 | 60.5 | 69.7 | 70.0 | 67.6 |
| *2013 PM* | 70.0 | 61.3 | 69.7 | 61.2 | 70.0 | 55.5 | 68.6 | 66.0 | 69.0 | 60.8 | 69.6 | 60.6 | 69.7 | 70.0 | 67.7 |
| *2020 AM* | 70.0 | 61.3 | 69.7 | 60.5 | 70.0 | 55.4 | 68.6 | 63.5 | 68.4 | 59.5 | 69.4 | 60.6 | 69.7 | 70.0 | 67.5 |
| *2020 PM* | 70.0 | 61.2 | 69.7 | 61.2 | 70.0 | 55.4 | 68.6 | 65.8 | 68.9 | 60.9 | 69.6 | 60.5 | 69.7 | 70.0 | 67.7 |
| *2040 AM* | 69.0 | 61.2 | 69.6 | 59.1 | 68.4 | 55.2 | 68.6 | 61.4 | 67.8 | 56.4 | 64.0 | 60.3 | 67.7 | 69.0 | 65.9 |
| *2040 PM* | 70.0 | 61.1 | 69.7 | 60.9 | 70.0 | 55.3 | 68.6 | 64.4 | 68.6 | 60.3 | 69.6 | 60.1 | 69.7 | 70.0 | 67.6 |
| ***AVERAGE SEGMENT DENSITY (veh/mi/ln) & LOS*** | | | | | | | | | | | | | | | |
| *2013 AM* | 14.1 B | 18.9 B | 13.2 B | 20.0 B | 14.8 B | 20.3 C | 13.2 B | 10.4 B | 14.2 B | 23.8 C | 18.6 C | 25.2 C | 15.3 B | 13.5 B | 15.9 B |
| *2013 PM* | 9.5 A | 13.4 B | 8.5 A | 15.1 B | 10.3 A | 14.9 B | 8.5 A | 6.7 A | 9.4 A | 17.7 B | 12.9 B | 18.3 B | 9.9 A | 9.3 A | 11.1 B |
| *2020 AM* | 15.9 B | 21.1 C | 14.9 B | 22.1 C | 16.8 B | 22.7 C | 14.8 B | 11.6 B | 15.5 B | 25.9 C | 20.6 C | 27.5 C | 17.5 B | 15.9 B | 17.9 B |
| *2020 PM* | 9.3 A | 13.2 B | 8.2 A | 15.0 B | 10.3 A | 14.9 B | 8.3 A | 6.6 A | 9.1 A | 17.6 B | 12.8 B | 18.2 B | 9.5 A | 11.0 A | 11.1 B |
| *2040 AM* | 21.6 C | 27.7 C | 20.0 C | 28.3 D | 23.1 C | 29.6 D | 20.1 C | 16.3 B | 21.0 C | 33.4 D | 30.0 D | 35.9 E | 24.3 C | 21.6 C | 24.4 C |
| *2040 PM* | 12.4 B | 16.9 B | 10.9 A | 18.7 B | 13.7 B | 18.9 B | 11.3 B | 9.1 A | 12.3 B | 22.2 C | 17.2 B | 23.4 C | 12.8 B | 14.7 B | 14.6 B |

**Table 15** shows that all segments on I-57 operate reasonably well during all peak hours, with a LOS C or better on all segments, and an average LOS of B or better for the entire stretch of freeway within the study area. Moderately high densities with a LOS C are expected along southbound I-57 in 2040 in the vicinity of the I-74 interchange.

The operations of Interstate 74 is reported in **Table 16** and shows higher densities and a greater directional variation than I-57. Densities and LOS are higher in the westbound direction during the PM peak hour and higher in the eastbound direction during the AM peak hour. This suggests a moderate commuting pattern into the Champaign-Urbana area during the morning peak hour and away from the urban area during the evening peak hour. By 2040 some segments of I-74 will operate at LOS D or E during the peak hours, which is in violation of the design criteria to have the Level of Service at C or better.

In addition to some high density segments, the analysis of the existing interstate system shows some segments with low estimated speeds. These segments are ramp and weaving segments where the merging and diverging traffic streams cause some decrease in the average speeds. The greatest speed decrease is along westbound I-74 within the weaving segment for the I-57 interchange. The average speed is 47 mph during the 2040 evening peak hour on Interstate 74 within the I-57 cloverleaf weaving segments. This 13 mph decrease in average speed from adjacent segments could cause an increase in accidents along Interstate 74. AASHTO's A Policy on Geometric Design of Highways and Streets (Green Book) states that a speed difference of 5 mph is generally accepted as being tolerable within weaving segments. Thus, the no-build alternative does not meet minimum design capacity requirements.

### 18.1.2 Analysis of the Proposed Interchange Alternative

The proposed interchange alternative configuration was analyzed for the 2020 & 2040 peak hours. The results are presented in **Table 19** and **Table 20** for I-57 and I-74. The summary table makes reference to segment numbers. Please refer to **Table 17**, **Table 18**, **Figure 9** and **Figure 10** for a description of the segments for the proposed interchange alternative scenario.

**Table 17 – Interstate 57 Freeway Operations Analysis,**
**Proposed Alternative – Segment Description**

| Northbound | | | Southbound | | |
|---|---|---|---|---|---|
| **Segment Number** | **Segment Type** | **Description** | **Segment Number** | **Segment Type** | **Description** |
| 1 | Basic | 2 Lanes | 1 | Basic | 2 Lanes |
| 2 | Off-Ramp | To EB I-72 | 2 | Off-Ramp | To Olympian |
| 3 | Basic | 2 Lanes | 3 | Basic | 2 Lanes |
| 4 | Weaving | From EB I-72 to WB I-72 | 4 | Weaving | From Olympian to WB I-74 |
| 5 | Basic | 2 Lanes | 5 | Off-Ramp | To EB I-74 |
| 6 | On-Ramp | From WB I-72 | 6 | Basic | 2 Lanes |
| 7 | Basic | 2 Lanes | 7 | On-Ramp | From I-74 |
| 8 | Off-Ramp | To EB I-74 | 8 | Basic | 2 Lanes |
| 9 | Basic | 2 Lanes | 9 | Off-Ramp | To WB I-72 |
| 10 | Off-Ramp | To WB I-74 | 10 | Basic | 2 Lanes |
| 11 | Basic | 2 Lanes | 11 | Weaving | From WB I-72 to EB I-72 |
| 12 | Weaving | From I-74 to Olympian | 12 | Basic | 2 Lanes |
| 13 | Basic | 2 Lanes | 13 | On-Ramp | From EB I-72 |
| 14 | On-Ramp | From Olympian | 14 | Basic | 2 Lanes |
| 15 | Basic | 2 Lanes | | | |

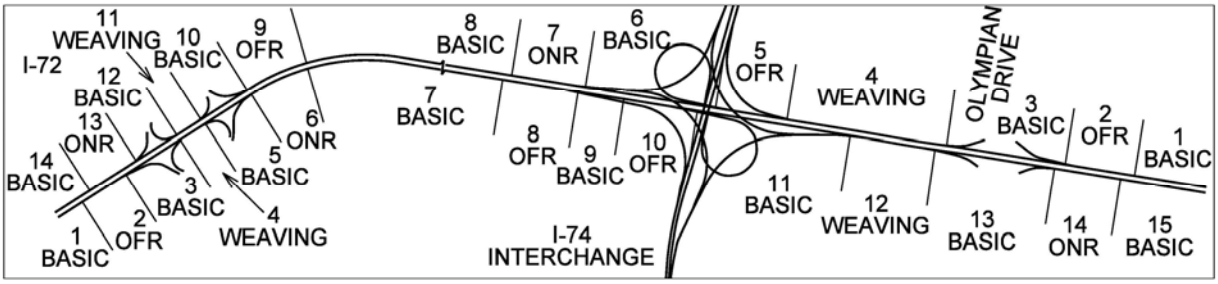



**Figure 9 – Proposed Alternative - I-57 Segment Locations**

**Table 18 – Interstate 74 Freeway Operations Analysis,**
**Proposed Alternative – Segment Description**

| Westbound | | | Eastbound | | |
|---|---|---|---|---|---|
| **Segment Number** | **Segment Type** | **Description** | **Segment Number** | **Segment Type** | **Description** |
| 1 | Off-Ramp | To Prospect | 1 | Basic | 2 Lanes |
| 2 | Basic | 2 Lanes | 2 | Off-Ramp | To Prairieview |
| 3 | On-Ramp | From Prospect | 3 | Basic | 2 Lanes |
| 4 | Basic | 3 Lanes | 4 | On-Ramp | From Prairieview |
| 5 | Off-Ramp | To I-57 | 5 | Basic | 2 Lanes |
| 6 | Basic | 3 Lanes | 6 | Basic | 3 Lanes |
| 7 | On-Ramp | From NB I-57 | 7 | Off-Ramp | To I-57 |
| 8 | On-Ramp | From SB I-57 | 8 | Basic | 3 Lanes |
| 9 | Basic | 3 Lanes | 9 | On-Ramp | From SB I-57 |
| 10 | Basic | 2 Lanes | 10 | On-Ramp | From NB I-57 |
| 11 | Off-Ramp | To Prairieview | 11 | Basic | 3 Lanes |
| 12 | Basic | 2 Lanes | 12 | Off-Ramp | To Prospect |
| 13 | On-Ramp | From Prairieview | 13 | Basic | 2 Lanes |
| 14 | Basic | 2 Lanes | 14 | On-Ramp | From Prospect |

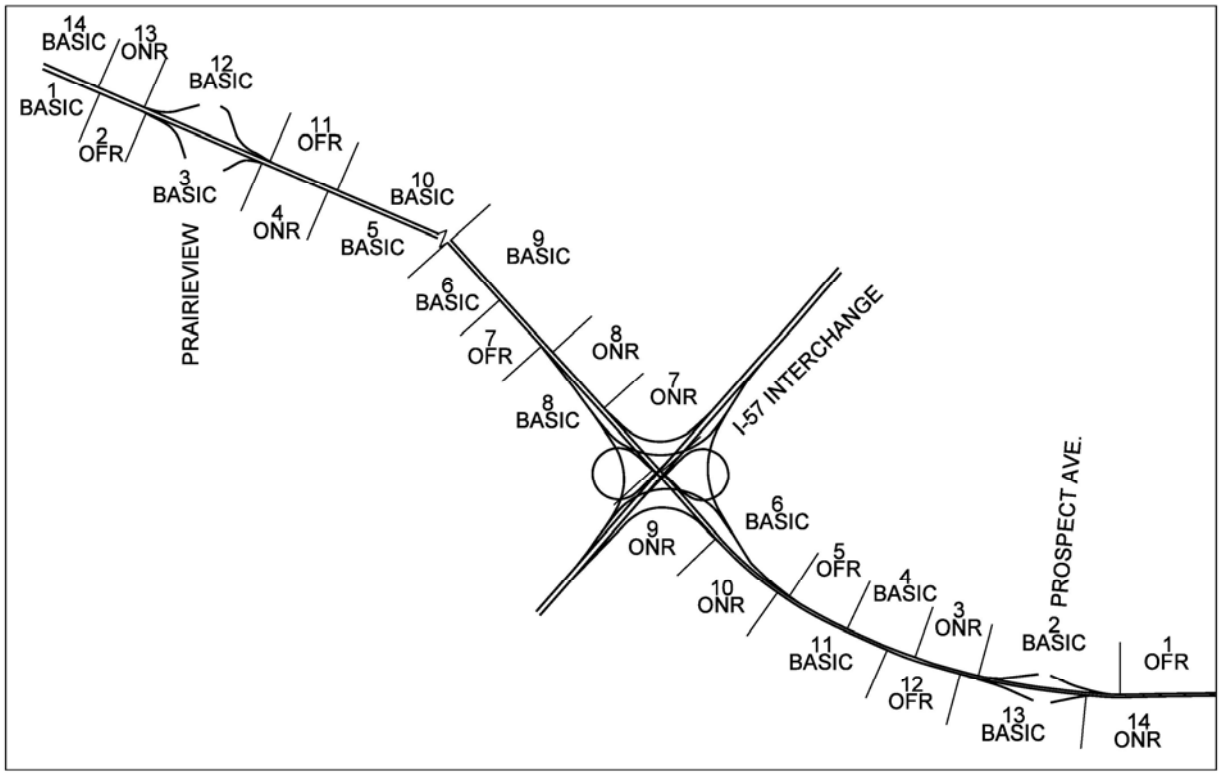



**Figure 10 – Proposed Alternative - I-74 Segment Locations**

**Table 19 – Interstate 57 Freeway HCM Operations Analysis,**
**Proposed Alternative**

***NORTHBOUND***

| Segment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seg. Type | B | OFR | B | W | B | ONR | B | OFR | B | OFR | B | W | B | ONR | B | |
| Length (ft) | 500 | 1,500 | 1,230 | 540 | 960 | 1,500 | 5,145 | 1,500 | 440 | 1,500 | 2,430 | 1,550 | 2,240 | 1,500 | 500 | 4.36 mi |
| ***AVERAGE SEGMENT SPEED (mi/hr)*** | | | | | | | | | | | | | | | | |
| *2020 AM* | 70.0 | 57.8 | 68.7 | 65.6 | 68.7 | 61.4 | 70.0 | 63.5 | 68.6 | 59.1 | 69.5 | 65.1 | 69.8 | 61.7 | 68.4 | 65.9 |
| *2020 PM* | 70.0 | 57.7 | 68.7 | 64.6 | 68.4 | 61.3 | 70.0 | 64.0 | 68.8 | 59.0 | 69.5 | 64.5 | 69.7 | 61.6 | 68.3 | 65.9 |
| *2040 AM* | 70.0 | 57.7 | 68.7 | 64.3 | 68.3 | 61.2 | 70.0 | 62.9 | 68.5 | 58.9 | 69.5 | 64.5 | 69.7 | 61.7 | 68.3 | 65.8 |
| *2040 PM* | 70.0 | 57.7 | 68.6 | 63.2 | 68.0 | 61.0 | 70.0 | 63.6 | 68.7 | 58.8 | 69.5 | 63.7 | 69.7 | 61.5 | 68.3 | 65.7 |
| ***AVERAGE SEGMENT DENSITY (veh/mi/ln) & LOS*** | | | | | | | | | | | | | | | | |
| *2020 AM* | 7.1-A | 10.6-B | 6.6-A | 5.8-A | 8.3-A | 13.2-B | 9.5-A | 12.1-B | 4.4-A | 5.8-A | 2.1-A | 2.7-A | 3-A | 7.9-A | 4.4-A | 7.0-A |
| *2020 PM* | 8.5-A | 12.2-B | 7.9-A | 7.1-A | 9.9-A | 15.2-B | 11.4-B | 14.3-B | 7.8-A | 9.9-A | 5.2-A | 5.1-A | 6.1-A | 11.5-B | 7.8-A | 9.5-A |
| *2040 AM* | 9.3-A | 13.2-B | 8.6-A | 7.7-A | 10.8-A | 16.3-B | 12.3-B | 15.4-B | 5.5-A | 7.1-A | 2.7-A | 3.5-A | 3.9-A | 9.2-A | 5.7-A | 9.0-A |
| *2040 PM* | 10.7-A | 14.9-B | 9.9-A | 9.1-A | 12.6-B | 18.6-B | 14.4-B | 18-B | 9.7-A | 12.1-B | 6.5-A | 6.4-A | 7.7-A | 13.5-B | 9.7-A | 11.8-B |

***SOUTHBOUND***

| Segment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seg. Type | B | OFR | B | W | OFR | B | ONR | B | OFR | B | W | B | ONR | B | |
| Length (ft) | 500 | 1,500 | 2,180 | 2,750 | 1,300 | 2,440 | 1,500 | 5,015 | 1,500 | 1,265 | 525 | 930 | 1,500 | 500 | 4.43 mi |
| ***AVERAGE SEGMENT SPEED (mi/hr)*** | | | | | | | | | | | | | | | |
| *2020 AM* | 70.0 | 61.2 | 69.6 | 66.0 | 59.3 | 69.5 | 63.1 | 70.0 | 57.2 | 68.6 | 66.4 | 68.9 | 61.7 | 68.4 | 65.9 |
| *2020 PM* | 70.0 | 61.2 | 69.6 | 65.2 | 59.4 | 69.5 | 62.8 | 70.0 | 57.1 | 68.6 | 65.7 | 68.7 | 61.6 | 68.3 | 65.7 |
| *2040 AM* | 70.0 | 61.1 | 69.5 | 65.1 | 59.2 | 69.5 | 62.7 | 70.0 | 56.9 | 68.6 | 65.3 | 68.5 | 61.5 | 68.3 | 65.6 |
| *2040 PM* | 70.0 | 61.1 | 69.5 | 64.2 | 59.3 | 69.5 | 62.2 | 69.9 | 56.8 | 68.6 | 64.4 | 68.3 | 61.3 | 68.3 | 65.4 |
| ***AVERAGE SEGMENT DENSITY (veh/mi/ln) & LOS*** | | | | | | | | | | | | | | | |
| *2020 AM* | 8.1-A | 11.8-B | 7.0-A | 5.7-A | 10.1-B | 6.4-A | 12.6-B | 11.7-B | 16.1-B | 9.5-A | 6.8-A | 8.9-A | 11.9-B | 9.3-A | 9.5-A |
| *2020 PM* | 8.6-A | 12.3-B | 7.3-A | 6.0-A | 9.9-A | 6.4-A | 15.0-B | 14.1-B | 19.0-B | 11.7-B | 8.3-A | 11.0-A | 14.1-B | 11.3-B | 10.9-A |
| *2040 AM* | 10.4-A | 14.5-B | 8.9-A | 7.3-A | 12.6-B | 8.1-A | 16.1-B | 15.1-B | 20.1-C | 12.2-B | 8.8-A | 11.5-B | 14.7-B | 11.9-B | 12.1-B |
| *2040 PM* | 11.0-A | 15.2-B | 9.3-A | 7.8-A | 12.3-B | 8.2-A | 19.6-B | 18.4-C | 24.2-C | 15.3-B | 11.1-B | 14.5-B | 17.8-B | 14.9-B | 14.0-B |

**Table 20 – Interstate 74 Freeway HCM Operations Analysis,**
**Proposed Alternative**

***WESTBOUND***

| Segment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seg. Type | OFR | B | ONR | B | OFR | B | ONR | ONR | B | B | OFR | B | ONR | B | |
| Length (ft) | 1,500 | 2,800 | 1,500 | 950 | 1,500 | 3,550 | 1,500 | 1,500 | 2,750 | 18,900 | 1,500 | 2,620 | 1,500 | 500 | 8.06 mi |
| ***AVERAGE SEGMENT SPEED (mi/hr)*** | | | | | | | | | | | | | | | |
| *2020 AM* | 70.0 | 70.0 | 70.0 | 70.0 | 66.0 | 69.9 | 64.7 | 65.8 | 69.9 | 70.0 | 61.1 | 69.7 | 61.4 | 68.3 | 68.7 |
| *2020 PM* | 70.0 | 70.0 | 70.0 | 70.0 | 65.4 | 69.9 | 64.6 | 65.2 | 69.8 | 70.0 | 61.0 | 69.7 | 60.9 | 68.2 | 68.7 |
| *2040 AM* | 70.0 | 70.0 | 70.0 | 70.0 | 65.7 | 69.9 | 64.7 | 65.5 | 69.9 | 70.0 | 60.9 | 69.7 | 61.2 | 68.3 | 68.7 |
| *2040 PM* | 69.4 | 68.9 | 70.0 | 70.0 | 65.0 | 69.9 | 64.2 | 64.7 | 69.8 | 69.3 | 60.8 | 69.7 | 60.0 | 68.0 | 68.2 |
| ***AVERAGE SEGMENT DENSITY (veh/mi/ln) & LOS*** | | | | | | | | | | | | | | | |
| *2020 AM* | 9.6-A | 8.1-A | 7.5-A | 7.5-A | 12.5-B | 4.7-A | 7.1-A | 6.6-A | 6.4-A | 9.6-A | 13.6-B | 7.9-A | 13.5-B | 9.3-A | 8.4-A |
| *2020 PM* | 15.3-B | 16.0-B | 13.0-B | 13.0-B | 19.8-B | 8.2-A | 10.8-B | 10.8-B | 10.5-A | 15.7-B | 20.9-C | 13.9-B | 20.0-B | 15.5-B | 14.0-B |
| *2040 AM* | 12.8-B | 10.9-A | 10.1-A | 10.1-A | 16.0-B | 6.4-A | 9.2-A | 8.7-A | 8.5-A | 12.8-B | 17.4-B | 10.5-A | 16.7-B | 12.4-B | 11.1-B |
| *2040 PM* | 20.7-C | 21.9-C | 17.4-B | 17.4-B | 25.3-C | 10.9-A | 14-B | 14.3-B | 13.9-B | 21-C | 27-C | 18.3-C | 25.3-C | 20.6-C | 18.6-C |

***EASTBOUND***

| Segment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seg. Type | B | OFR | B | ONR | B | B | OFR | B | ONR | ONR | B | OFR | B | ONR | |
| Length (ft) | 500 | 1,500 | 2,640 | 1,500 | 19,045 | 1,700 | 1,500 | 2,450 | 1,500 | 1,500 | 2,850 | 1,500 | 2,755 | 1,500 | 8.04 mi |
| ***AVERAGE SEGMENT SPEED (mi/hr)*** | | | | | | | | | | | | | | | |
| *2020 AM* | 70.0 | 61.3 | 69.7 | 60.5 | 70.0 | 70.0 | 67.1 | 69.9 | 64.7 | 64.5 | 69.8 | 70.0 | 70.0 | 70.0 | 68.7 |
| *2020 PM* | 70.0 | 61.2 | 69.7 | 61.2 | 70.0 | 70.0 | 66.8 | 69.9 | 65.0 | 65.0 | 69.9 | 70.0 | 70.0 | 70.0 | 68.8 |
| *2040 AM* | 69.1 | 61.2 | 69.6 | 59.1 | 68.4 | 70.0 | 67.1 | 69.9 | 64.2 | 63.6 | 69.8 | 69.9 | 67.8 | 69.0 | 67.7 |
| *2040 PM* | 70.0 | 61.1 | 69.7 | 60.9 | 70.0 | 70.0 | 66.8 | 69.9 | 64.9 | 64.7 | 69.8 | 70.0 | 70.0 | 70.0 | 68.8 |
| ***AVERAGE SEGMENT DENSITY (veh/mi/ln) & LOS*** | | | | | | | | | | | | | | | |
| *2020 AM* | 15.8-B | 21.1-C | 14.8-B | 22.1-C | 16.7-B | 11.2-B | 16.5-B | 9.1-A | 10.6-B | 15.4-B | 13.6-B | 13.5-B | 17.3-B | 15.9-B | 15.1-B |
| *2020 PM* | 9.3-A | 13.2-B | 8.2-A | 15.0-B | 10.3-A | 6.9-A | 11.2-B | 5.2-A | 6.6-A | 9.8-A | 8.5-A | 8.5-A | 9.4-A | 11.0-A | 9.2-A |
| *2040 AM* | 21.5-C | 27.5-C | 19.9-C | 28.2-D | 22.9-C | 14.9-B | 20.9-C | 12.4-B | 14.2-B | 20.6-C | 18.2-C | 18.2-C | 24.1-C | 21.5-C | 20.4-C |
| *2040 PM* | 12.3-B | 16.8-B | 10.8-A | 18.6-B | 13.6-B | 9.1-A | 14.1-B | 7.0-A | 8.7-A | 13.1-B | 11.4-B | 11.3-B | 12.7-B | 14.7-B | 12.2-B |

The proposed interchange alternative slightly improves the average speed (0.4-2.0 mph) along both directions on Interstate 57 and Interstate 74. The biggest improvements are along I-74 where each of the LOS D & E segments have been eliminated in the immediate vicinity of the I-57 and I-74 interchange. This operational improvement is a result of the additional lane on Interstate 74 and the elimination of the weaving segments within the existing cloverleaf interchange. All segments of I-57 and I-74 within the interchange area operate at a LOS C or better for the 2020 and 2040 peak hours. The remaining LOS D is along eastbound I-74 during the morning peak hour at the Prairieview interchange, which is outside of the interchange area and the limits of improvement for this project.

### 18.1.3 Operational Analysis Summary

The proposed interchange reconfiguration and addition of a third lane on Interstate 74 improves the operation of both interstates and provides extra capacity within the project area. A comparison between the build alternative and the existing geometry reveals that the build alternative provides higher average speeds and lower average densities. **Table 21** and **Table 22** compares the average speed, average density and LOS, and lowest segment LOS on I-57 and I-74 for the no build and proposed alternates. The average speed and density values are the average along the interstate for the entire length of the study area, including the interchanges on either side of I-57 and I-74. The lowest segment LOS shows how the interstate operates at its critical point within the study area.

**Table 21 – Interstate 57**
**Average Speed (mph), Average Density (vpmpl), LOS and Lowest Segment LOS**

| | | Northbound I-57 | | Southbound I-57 | |
|---|---|---|---|---|---|
| | | Proposed Alternative | Existing / No-Build | Proposed Alternative | Existing / No-Build |
| 2013 | AM | | 65.3<br>7.5-A<br>Low–B | | 65.4<br>9.4-A<br>Low–B |
| | PM | | 65.3<br>9.9-A<br>Low–B | | 65.3<br>10.7-A<br>Low–B |
| 2020 | AM | 65.9<br>7.0-A<br>Low–B | 65.3<br>7.7-A<br>Low–B | 65.9<br>9.5-A<br>Low–B | 65.3<br>10.9-A<br>Low–B |
| | PM | 65.9<br>9.5-A<br>Low–B | 65.3<br>10.2-A<br>Low–B | 65.7<br>10.9-A<br>Low–B | 65.1<br>12.6-B<br>Low–B |
| 2040 | AM | 65.8<br>9.0-A<br>Low–B | 65.1<br>9.8-A<br>Low–B | 65.6<br>12.1-B<br>Low–C | 65.1<br>13.8-B<br>Low–C |
| | PM | 65.7<br>11.3-B<br>Low–B | 65.3<br>12.6-B<br>Low–B | 65.4<br>14.0-B<br>Low–C | 64.8<br>16.1-B<br>Low–C |

**Table 22 – Interstate 74**
**Average Speed (mph), Average Density (vpmpl), LOS and Lowest Segment LOS**

| | | Westbound I-74 | | Eastbound I-74 | |
|---|---|---|---|---|---|
| | | Proposed Alternative | Existing / No-Build | Proposed Alternative | Existing / No-Build |
| 2013 | AM | | 67.6<br>7.6-A<br>Low–B | | 67.6<br>18.1-B<br>Low–C |
| | PM | | 67.4<br>15.7-B<br>Low–C | | 67.7<br>9.5-A<br>Low–B |
| 2020 | AM | 68.7<br>8.4-A<br>Low–B | 67.6<br>10.4-A<br>Low–B | 68.7<br>15.1-B<br>Low–B | 67.5<br>17.9-B<br>Low–C |
| | PM | 68.7<br>14.0-B<br>Low–B | 67.3<br>17.1-B<br>Low–C | 68.8<br>9.2-A<br>Low–B | 67.7<br>11.1-B<br>Low–B |
| 2040 | AM | 68.7<br>11.1-B<br>Low–B | 67.4<br>13.7-B<br>Low–C | 67.7<br>20.4-C<br>**Low–D** | 65.9<br>24.4-C<br>**Low–E** |
| | PM | 68.2<br>18.6-C<br>Low–C | 66.2<br>22.8-C<br>**Low–D** | 68.8<br>12.2-B<br>Low–B | 67.6<br>14.6-B<br>Low–C |

Based on the above analysis, the proposed interchange alternative has operational improvements over the existing cloverleaf interchange. The proposed improvements are in the vicinity of the I-57 & I-74 interchange. The average speed and density are reported over the entire length of the study area. The impacts of the interchange improvements are diluted by the length of interstate within the study area that is not changed. The improved lowest segment LOS shows the improvements within the interchange area. There are only minor operational differences on I-57 and I-74 between the other four adjacent interchanges.

### *18.2 Microsimulation Analysis*

An additional analysis of the operations of Interstate 57 and Interstate 74 was performed using microsimulation. This additional analysis was conducted to verify the results of the HCM analyses and to quantify the impacts of the improvements on the entire roadway system. The proposed interchange type concepts were analyzed using CORridor SIMulation (CORSIM), a microscopic simulation model that represents movements of individual vehicles and includes the influence of driver behavior. CORSIM allows for a detailed comparison between the build and no-build alternatives in order to quantify and differentiate the traffic operations of the proposed

interchange system. The complete CORSIM results are provided in **Appendix C**. **Table 23** shows the 2040 peak hour results of the CORSIM analysis for the interchange area.

***Existing Cloverleaf***

The existing cloverleaf interchange was analyzed for the projected 2040 design hourly traffic. See **Exhibit 15** for the projected traffic volumes and Levels of Service for the different components of the interchange. Without construction of a third thru lane on I-74, eastbound traffic between the I-57 ramps and Prospect Avenue operates at a LOS D. This does not meet the minimum design criteria of LOS C for an urban interstate. In addition, the projected 2040 DHV is 3,153 for I-74 eastbound and 2,958 for I-74 westbound, and the IDOT design criteria warrants a third thru lane for DHV's exceeding 2,800.

***Proposed Semi-Directional with Directional Flyovers and Two Loops***

The projected 2040 design hourly traffic was used to analyze the proposed semi-directional interchange. **Exhibit 16** illustrates the projected traffic volumes and Levels of Service for the different components of the interchange. With the lane additions on I-74 and increased design speed of 40 mph for the loop ramps and 55 mph for all other ramps, this alternative offers increased capacity over the existing cloverleaf.

**Table 23 – 2040 Peak Hour Analysis – Speed, Density, and LOS**

| Road Segment | | | Proposed Alternate | | No-Build | |
|---|---|---|---|---|---|---|
| | | | AM | PM | AM | PM |
| **I-57 Mainline Between I-57/I-74 Ramps and I-57/I-72 Interchange** | NB | Speed<br>Density<br>LOS | 65.9<br>9.9<br>A | 65.6<br>12.1<br>B | 65.9<br>11.3<br>B | 65.8<br>13.4<br>B |
| | SB | Speed<br>Density<br>LOS | 65.4<br>12.3<br>B | 63.8<br>15.3<br>B | 64.6<br>14.3<br>B | 63.5<br>17.6<br>B |
| **I-57 Mainline Between I-74 Interchange Ramps** | NB | Speed<br>Density<br>LOS | 65.0<br>3.2<br>A | 65.8<br>6.1<br>A | 54.7<br>4.8<br>A | 62.9<br>6.5<br>A |
| | SB | Speed<br>Density<br>LOS | 67.4<br>6.0<br>A | 67.5<br>5.7<br>A | 51.0<br>11.6<br>B | 46.6<br>15.8<br>B |
| **I-57 Mainline Between Olympian Dr. and I-57/I-74 Ramps** | NB | Speed<br>Density<br>LOS | 63.1<br>2.4<br>A | 65.4<br>4.2<br>A | 64.8<br>4.2<br>A | 65.4<br>7.4<br>A |
| | SB | Speed<br>Density<br>LOS | 67.6<br>4.7<br>A | 67.5<br>5.0<br>A | 65.6<br>8.9<br>A | 65.3<br>9.5<br>A |
| **I-74 Mainline Between Prairieview Rd. and I-57/I-74 Ramps (3 lane section only)** | EB | Speed<br>Density<br>LOS | 63.8<br>14.4<br>B | 65.9<br>8.4<br>A | 64.3<br>21.4<br>C | 66.2<br>12.7<br>B |
| | WB | Speed<br>Density<br>LOS | 67.1<br>8.2<br>A | 64.6<br>14.2<br>B | 66.2<br>11.0<br>A | 64.7<br>18.4<br>C |
| **I-74 Mainline Between I-57 Interchange Ramps** | EB | Speed<br>Density<br>LOS | 65.5<br>11.6<br>B | 66.4<br>6.8<br>A | 62.3<br>19.8<br>C | 65.0<br>11.3<br>B |
| | WB | Speed<br>Density<br>LOS | 65.9<br>6.8<br>A | 65.5<br>11.0<br>B | 56.0<br>12.1<br>B | 53.7<br>20.9<br>C |
| **I-74 Mainline Between I-57/I-74 Ramps and Prospect Ave.** | EB | Speed<br>Density<br>LOS | 62.1<br>17.5<br>B | 65.3<br>10.6<br>A | 53.1<br>30.0<br>**D** | 62.0<br>16.2<br>B |
| | WB | Speed<br>Density<br>LOS | 66.4<br>9.4<br>A | 64.7<br>16.7<br>B | 66.0<br>13.6<br>B | 63.0<br>24.7<br>C |

The No-Build option does not provide acceptable LOS on I-74 EB between the I-57 interchange ramps and Prospect Avenue. This does not satisfy one of the objectives of the project purpose and need to provide increased capacity for future traffic. The expected LOS D with the no-build option represents a congested freeway, which may lead to degradation of the safety of the interstate given the existing weaving configuration. A more detailed safety analysis of the future traffic conditions is provided in **Section 18.4**. The proposed interchange alternative provides improved LOS (A or B) compared to the existing cloverleaf interchange.

The microsimulation analysis is consistent with the HCS analysis of I-57 and I-74 in that the existing interchange will have operational deficiencies within the design year timeframe. The build alternate corrects these deficiencies and provides adequate capacity for the design year.

### *18.3 Ramp Analysis*

The existing loop ramps in the no-build alternate do not have sufficient capacity to accommodate the anticipated design traffic volumes. IDOT policy states that the design capacity for these ramps is 800 vph. The maximum amount of ramp traffic for the design year within the weaving section is 1000 vph[4]. The westbound I-74 to southbound I-57 movement is anticipated to exceed the loop ramp design volume (920 vph) and result in weaving volumes that exceed IDOT policy on both I-57 and I-74 (1,110 vph on southbound I-57 and 1,280 vph on westbound I-74). Based upon this IDOT policy both the westbound I-74 to southbound I-57 loop ramp and the westbound I-74 and southbound I-57 weaving sections of the no-build alternate are deficient.

The increased design speed for the ramps in the build alternative results in ramp capacity values that can accommodate the projected ramp demands. The capacity for a 55 mph ramp is 1,768 vph and 40 mph ramp has a capacity of 1,607 vph[5]. The highest design volumes for any of the ramps is 1,220 vehicles per hour. The design of the proposed alternate does not include weaving sections within the interchange, thus correcting the weaving capacity deficiency of the no-build alternate.

The proposed interchange and existing cloverleaf were evaluated for the efficiency of the ramps, which is measured as the free-flow travel times through the interchange. The proposed alternate has different ramp travel times than the existing cloverleaf due to the ramp design speeds and varying ramp lengths. The calculation of travel time encompasses both of these factors into a single comparable value. The ramp travel times were calculated from common beginning and ending points along the interstates for the proposed and no-build alternates and are shown in **Table 24**.

[4] IDOT Bureau of Design & Environment Manual. Section 37-3.06(b)
[5] HCM capacity values were converted from passenger cars per hour to vehicles per hour for comparison purposes.

**Table 24 – Ramp Travel Time**

| Ramp Movement | Ramp Free-Flow Travel Time (minutes) | |
|---|---|---|
| | Proposed Alternate | No-Build |
| **Ramp A** | 1.38 | 1.66 |
| **Ramp B** | 2.17 | 1.84 |
| **Ramp C** | 2.14 | 2.08 |
| **Ramp D** | 1.23 | 1.78 |
| **Ramp E** | 1.50 | 1.90 |
| **Ramp F** | 1.46 | 1.87 |
| **Ramp G** | 1.38 | 1.73 |
| **Ramp H** | 1.63 | 1.67 |
| **TOTAL TIME** | **12.90** | **14.53** |

The proposed interchange alternative provides a total ramp travel time savings to the users of the interchange compared to the no-build option. This comparative difference would be higher during the peak hours when the expected congestion from the weaving segments cause travel times to be longer in the no build scenario. The build alternate minimizes this congestion resulting in decreased ramp travel time for the proposed alternate compared to the no-build existing cloverleaf interchange.

### *18.4 Crash Analysis*

A detailed analysis of crash history was presented in **Section 2.2** of this AJR. This analysis shows that fixed object and sideswipe same direction crashes account for over half of the crashes on the interstates; the predominant crash types for the interchange ramps are fixed object and overturned vehicles. The deficient weaving lengths are contributing to the interstate crashes and the primary cause for the ramp crashes is excessive speed for the deficient ramp curves and configuration. The proposed interchange alternative eliminates these geometric deficiencies that are contributing factors to the existing crashes. A crash reduction safety benefit is expected as a result of the improved interchange geometry.

Two separate safety analyses were conducted in order to quantify the anticipated safety benefits of the proposed interchange alternative over the existing cloverleaf interchange. The first analysis used the Enhanced Interchange Safety Analysis Tool (ISATe) from the Highway Safety Manual (HSM) to predict future crash rates. The second analysis used the existing CORSIM model to compare projected vehicle-to-vehicle conflicts as a way to estimate the relative safety of the existing the proposed interchange configurations.

An Operational Safety Analysis was conducted for the existing interchange and the proposed alternative and is included in **Appendix D**. The analysis consisted of two primary components: a Road Safety Audit and a Safety Analysis. The Road Safety Audit identified deficiencies of the

existing cloverleaf interchange and provided recommendations for safety improvements. The proposed alternative addresses the deficiencies identified in the review of the existing crash history and Road Safety Audit in order to improve the safety of the interchange. The Safety Analysis also included use of the Enhanced Interchange Safety Analysis Tool (ISATe) to predict future crash rates for the existing cloverleaf interchange and the proposed alternative. The ISATe was recently included in the latest edition of the Highway Safety Manual. The safety analysis of the existing cloverleaf and proposed alternative was closely coordinated with the IDOT Bureau of Safety for review of the software implementation and the results are presented in **Table 25**.

The predicted crash frequency is a function of roadway geometry, roadside obstacles, and traffic volumes. The expected crash frequency (Empirical Bayes (EB) method) combines predicted and observed crash frequency to obtain a more reliable estimate of crash frequency for the existing conditions. The ISATe program limits the analysis period to 2031 for the analysis of the existing interchange when using the EB Method to include observed historical crash data[6]. In order to maintain consistency, all subsequent analyses were limited to the same study period ending in 2031.

**Table 25 – ISATe Analysis Summary**

| **Study Period: 2011-2031** | | **Existing (predicted)** | **Existing (expected*)** | **Proposed Alternative (predicted)** |
|---|---|---|---|---|
| Total Number of Crashes | | 741 | 1195 | 714 |
| Total Number of Crashes per Type | K | 7 | 9 | 6 |
| | A | 18 | 22 | 16 |
| | B | 93 | 113 | 86 |
| | C | 130 | 157 | 129 |
| | PDO | 496 | 897 | 478 |
| | KAB | 118 | 144 | 108 |

*Using the EB method combined with the predictive method

The data presented in **Table 25** differs slightly from the results shown in Appendix D. The proposed alternative was modified since the ISATe analysis detailed in Appendix D. The results of the modified ISATe analysis are shown in **Table 25** and are consistent with the geometry of the current design.

The proposed alternate has fewer predicted total crashes and KAB crashes than the existing (predicted). Since the existing predicted ISATe analysis does not take into account all of the existing deficient interchange features, the EB method and historical crash data are used to determine the expected crashes for the existing interchange. When the predicted crashes for the proposed alternative are compared to the expected crashes for the existing interchange, the safety

[6] The EB Method is a statistical regression model that compensates for the potential bias of using historical crash data that may be above or below the mean for the site.

benefits of the proposed interchange alternative over the existing interchange configuration are much greater.

In addition to the ISATe analysis, a study comparing projected vehicle-to-vehicle conflicts of the proposed interchange alternative and the no build alternate was performed using CORSIM[7]. The purpose of this inquiry was to provide comparative data of the alternatives, not to correlate data with historic crash rates. The conflicts reported by CORSIM are used as a surrogate measure to quantify the potential for a crash based upon the modeled geometry and traffic volumes. The estimated number of conflicts for the no-build and proposed alternative are shown in **Table 26**.

**Table 26 – CORSIM Conflict Analysis**

| | **Estimated number of conflicts** | |
|---|---|---|
| | **No-Build** | **Proposed Alternate** |
| **2040 AM** | 270 | 534 |
| **2040 PM** | 97 | 96 |
| **TOTAL** | 367 | 630 |
| **Difference from No-Build** | **-42%** | **N/A** |

The proposed alternative has significantly fewer potential conflicts than the existing no-build interchange geometry for the AM peak hour as a result of reducing the number of access points, reducing congestion, and eliminating the mainline weaving movements. The CORSIM model does not generate as much congestion in the PM peak hour for the no-build condition, thus the operational and resulting safety benefits are limited during this peak hour analysis. The CORSIM and ISATe analyses both show that the build alternative improves the safety for the interchange area.

The proposed interchange is expected to provide a safety benefit based upon both quantitative and qualitative measures. A review of the existing crash data shows that a majority of the existing crash types have contributing factors that relate to geometric deficiencies of the existing cloverleaf interchange, namely deficient weaving lengths and ramp design speeds. The proposed interchange removes the existing weaving segments and provides increased ramp design speeds that meet current standards. Both the ISATe and CORSIM analysis were able to quantifiably show an expected safety benefit of the proposed interchange alternative for the design year traffic conditions compared to the no-build existing cloverleaf.

[7] Conflict data generated by CORSIM is defined as occurring whenever the time-to-collision between a follower and its leader is less than or equal to 2.0 seconds

## *18.5 Overall Operational Analysis Summary*

For this operational analysis to comply with the current FHWA Illinois Division Administrator's requirements for AJR's the following summary is provided.

> *A brief discussion of the anticipated safety implications of the proposed access point on mainline Interstate traffic given the existing analysis of projected changes in traffic flow and level of service.*

A detailed analysis of crash history was presented in **Section 2.2** of this AJR. This analysis shows a relationship between the observed crash types and existing deficiencies of the interchange. The operational safety analysis predicts that the number of crashes will increase as traffic volume volumes grow over the analysis period.

> *A brief discussion of the anticipated safety implications of the proposed access point on mainline Interstate traffic given the existing analysis of the geometrics of existing nearby interchanges, the geometrics associated with the proposal, and shifts in nearby traffic patterns.*

Safety analyses were conducted using HSM methods and microsimulation in order to quantify the anticipated safety benefits of the proposed interchange alternative over the existing cloverleaf interchange. These analyses show that the proposed improvements will result in a decrease in the anticipated number of crashes over the no-build existing cloverleaf interchange.

> *A brief summary of the crash history of the affected Interstate segment, a comparison of this history with statewide averages for comparable facilities, and the identification of any Five Percent Report Locations on the affected Interstate segment.*

A detailed analysis of crash history was presented in **Section 2.2** of this AJR.

> *A brief concluding statement summarizing the level of impact the proposed access point change is expected to have on safety performance of the mainline Interstate facility.*

The proposed interchange is expected to provide a safety benefit based upon both quantitative and qualitative measures. A review of the existing crash data shows that a majority of the existing crash types have contributing factors that relate to geometric deficiencies of the existing cloverleaf interchange, namely deficient weaving lengths and ramp design speeds. The proposed interchange removes the existing weaving segments and provides increased ramp design speeds that meet current standards. Both the ISATe and CORSIM analysis were able to quantifiably show an expected safety benefit of the proposed interchange alternative for the design year traffic conditions compared to the no-build existing cloverleaf.

*A brief concluding statement summarizing the level of impact the proposed access point change is expected to have on traffic flow performance of the mainline Interstate facility.*

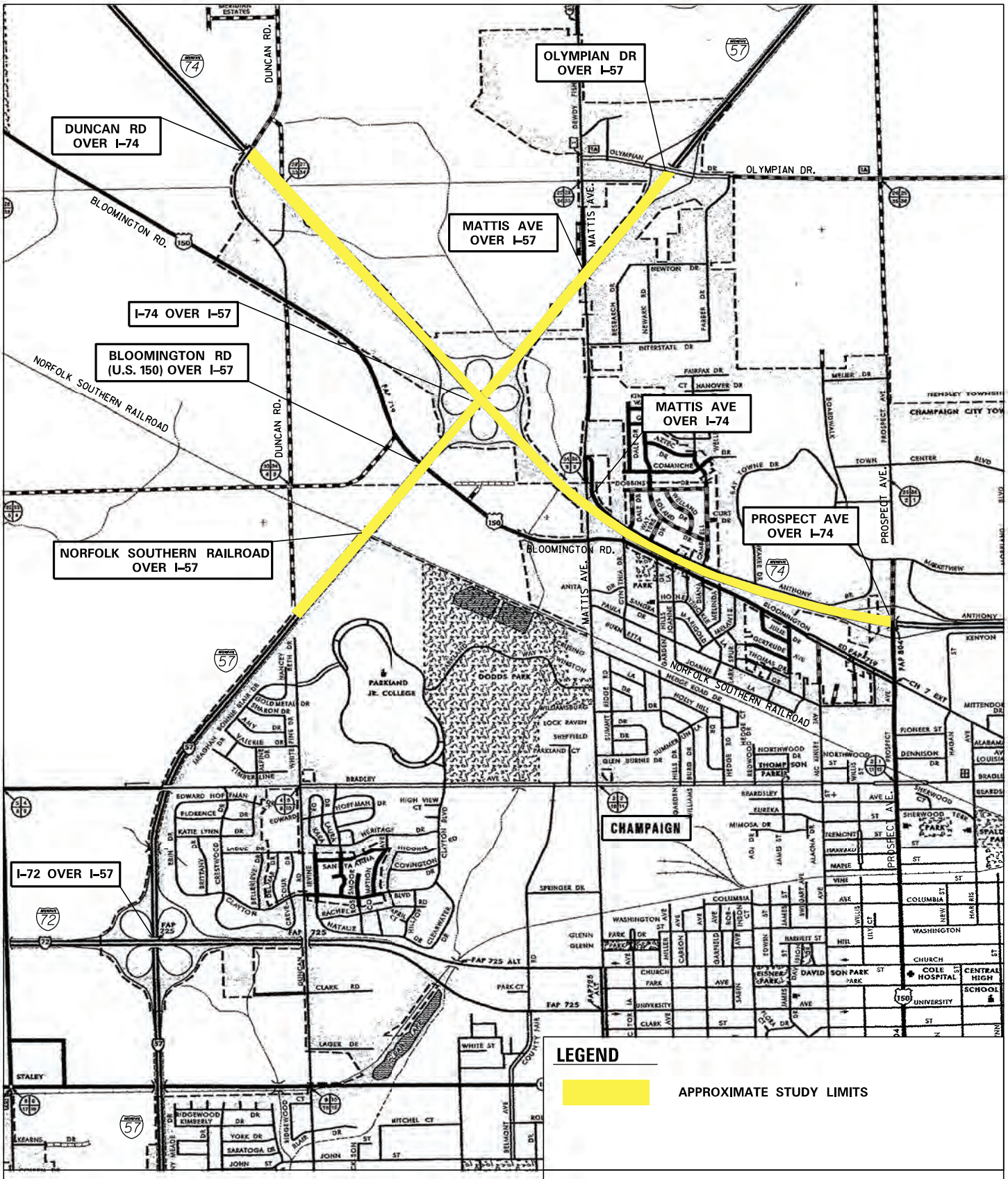
The proposed interchange alternative has operational improvements over the existing cloverleaf interchange. The proposed interchange reconfiguration and addition of a third lane on Interstate 74 improves the operation of both interstates and provides extra capacity within the project area. A comparison between the build alternative and the existing geometry reveals that the build alternative provides higher average speeds and lower average densities. There are only minor operational differences on I-57 and I-74 between the other four adjacent interchanges.

## 19.0 Conclusions and Recommendation

Advantages of the proposed interchange alternate include increasing the ramp design speeds, eliminating the mainline weaves, reducing the number of access points along the interstates, increasing the mainline I-74 and ramp capacities, reducing travel time through the interchange, and improving safety.

The improvements associated with the proposed interchange modifications will improve operational performance along both Interstate 57 and Interstate 74 by increasing the average speed and reducing the number of predicted accidents. The project also improves upon the no-build alternative by constructing a third lane in both directions along Interstate 74.

Therefore, it is recommended that IDOT request FHWA final approval of the proposed interchange build alternative for revising access to the I-57 and I-74 interchange.




# SITE MAP

**I–57 & I–74 INTERCHANGE**
**IDOT – DISTRICT 5**
**CHAMPAIGN COUNTY**
**CHAMPAIGN, IL**

**EXHIBIT 1**

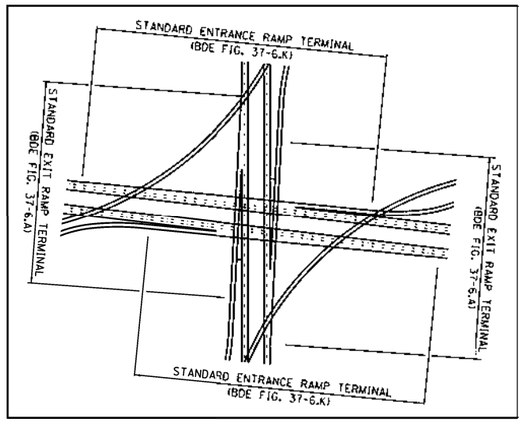
PLOT DATE = 9/8/2015 - 11:35:28 AM
FILE NAME = L:\IDOT\118586B2\Draw\Exhibits\AJR...
PLOT SCALE = 600.0000 ' / in.
USER NAME = Brad Dorman

# ALTERNATE 2:

## SEMI–DIRECTIONAL INTERCHANGE TYPE WITH DIRECTIONAL FLYOVERS AND TWO LOOPS

300' 0 300' 600'
SCALE: 1" = 300'

DETAIL 1




MATCHLINE I–57 NORTH

I–57 (3 LANES)

OLYMPIAN DR.

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.L)

2682' WEAVE (BDE FIG. 37-2.C)

I–57 (2 LANES AND AUXILIARY LANE)

1477' WEAVE (BDE FIG. 37-2.C)

EXIT RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.B)

MATCHLINE I–57 NORTH

I–57 (2 LANES AND AUXILIARY LANE)

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.L)

1477' WEAVE (BDE FIG. 37-2.C)

2682' WEAVE (BDE FIG. 37-2.C)

R=2500' (e=5.0%)

N MATTIS AVE.

MINOR CONVERGENCE (BDE FIG. 37-6.T)

EXIT RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.B)

I–74 (3 LANES)

STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)

RAMP H

R=960' (e=8.0%)

R=960' (e=8.0%)

RAMP G

R=480' (e=8.0%)

R=1635' (e=6.7%)

RAMP F

R=1250' (e=7.6%)

R=1350' (e=7.4%)

RAMP D

R=960' (e=8.0%)

RAMP E

MINOR DIVERGENCE (BDE FIG. 37-6.R)

STANDARD EXIT RAMP TERMINAL (BDE FIG. 37-6.A)

R=12227' (e=2.0%)

R=12278' (e=2.0%)

W. ANTHONY DR.

I–74 (3 LANES)

BLOOMINGTON RD.

MATCHLINE I–74 EAST

STANDARD EXIT RAMP TERMINAL (BDE FIG. 37-6.A)

R=4010' (e=3.4%)

MINOR DIVERGENCE (BDE FIG. 37-6.R)

R=960' (e=8.0%)

SEE DETAIL 1

RAMP B

MIDWEST CT.

R=960' (e=8.0%)

R=1160' (e=7.8%)

RAMP C

RAMP A

R=960' (e=8.0%)

STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)

R=7041' (e=3.4%)

BLOOMINGTON RD.

N. MATTIS AVE.

R=480' (e=8.0%)

MINOR CONVERGENCE (BDE FIG. 37-6.T)

I–57 (2 LANES)

BLOOMINGTON RD.

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.L)

I–74 (2 LANES)

PROSPECT AVE.

EXIT RAMP TERMINAL WITH AUXILIARY LANE (BDE FIG. 37-6.B)

MATCHLINE I–57 SOUTH

STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)

NORFOLK SOUTHERN RAILROAD

I–57 (2 LANES)

MATCHLINE I–57 SOUTH

STANDARD ENTRANCE RAMP TERMINAL (BDE FIG. 37-6.K)

STANDARD EXIT RAMP TERMINAL (BDE FIG. 37-6.A)

MATCHLINE I–74 EAST

W. ANTHONY DR.

BLOOMINGTON RD.

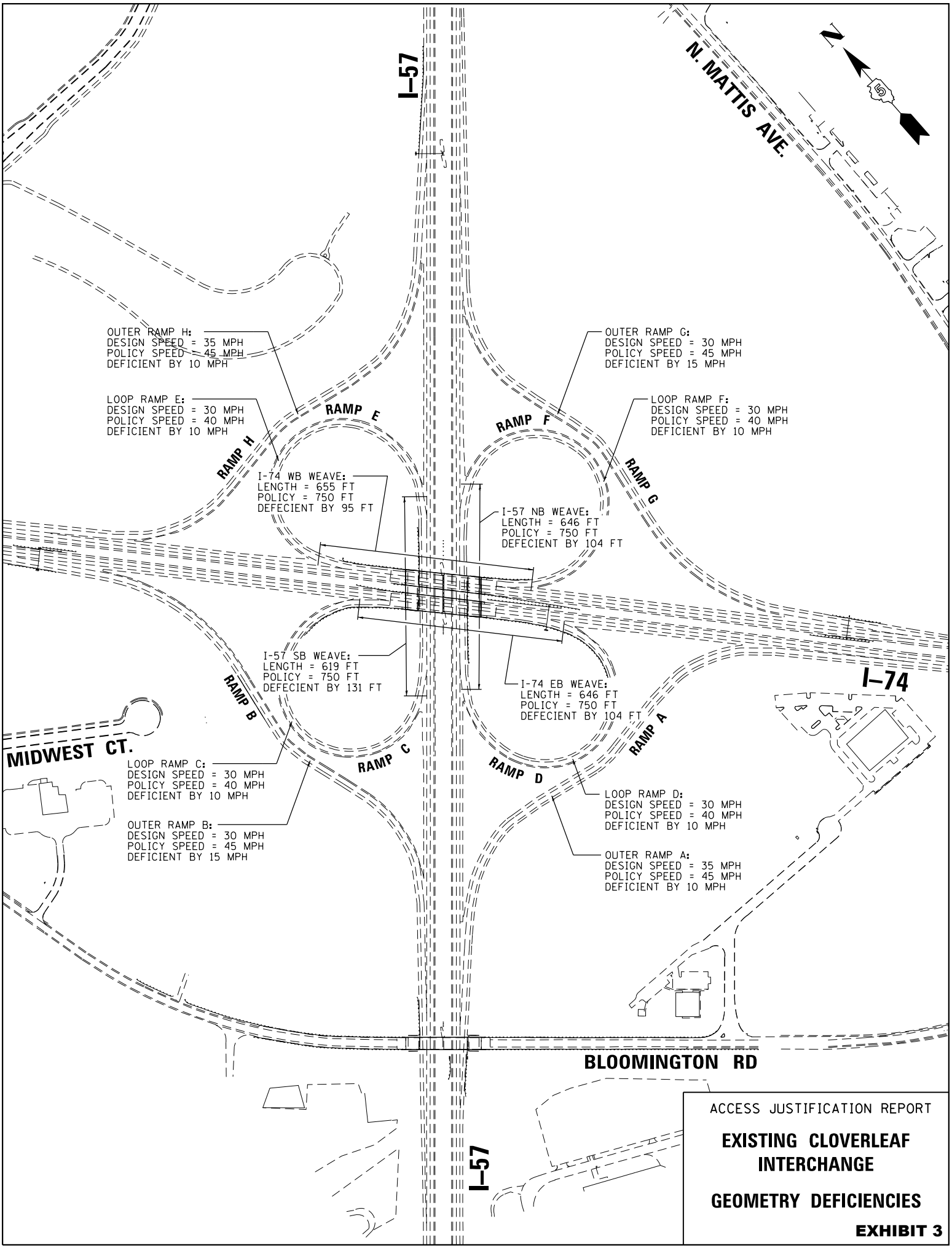
R=12278' (e=2.0%)

ACCESS JUSTIFICATION REPORT

**ALTERNATE 2:**
**SEMI–DIRECTIONAL INTERCHANGE TYPE WITH DIRECTIONAL FLYOVERS AND TWO LOOPS**

**EXHIBIT 2**

BDE-9908




ACCESS JUSTIFICATION REPORT

## EXISTING CLOVERLEAF INTERCHANGE

## GEOMETRY DEFICIENCIES

**EXHIBIT 3**

# Interchange Reconstruction Project
# I-57 Crashes from 2008 to 2012

Note: Run Off Road crashes include fixed object, overturned, and parked motor vehicles.
Animal crashes are not shown on this exhibit.

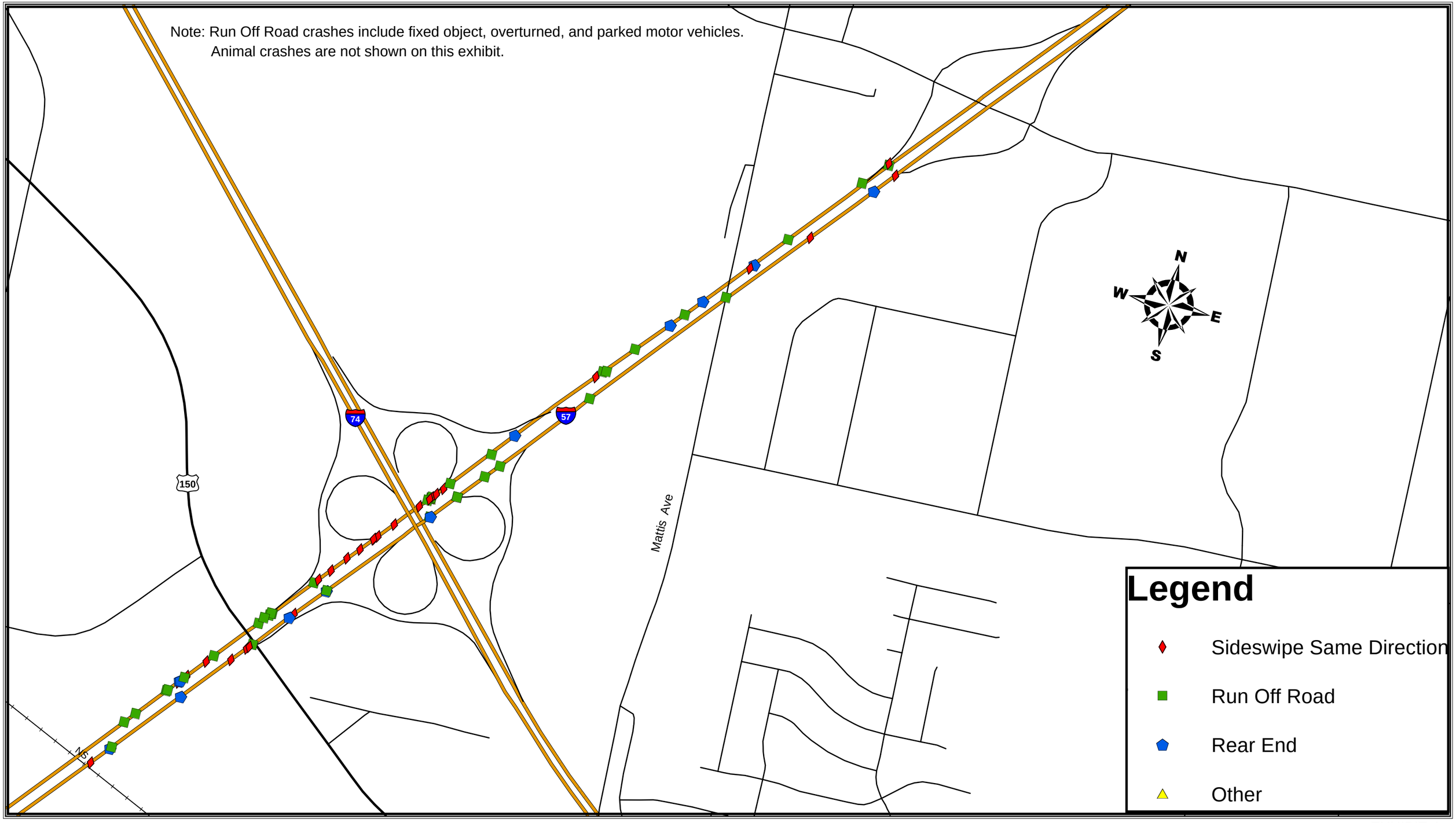



EXHIBIT 4

# Interchange Reconstruction Project
# I-57 Crashes from 2008 to 2012

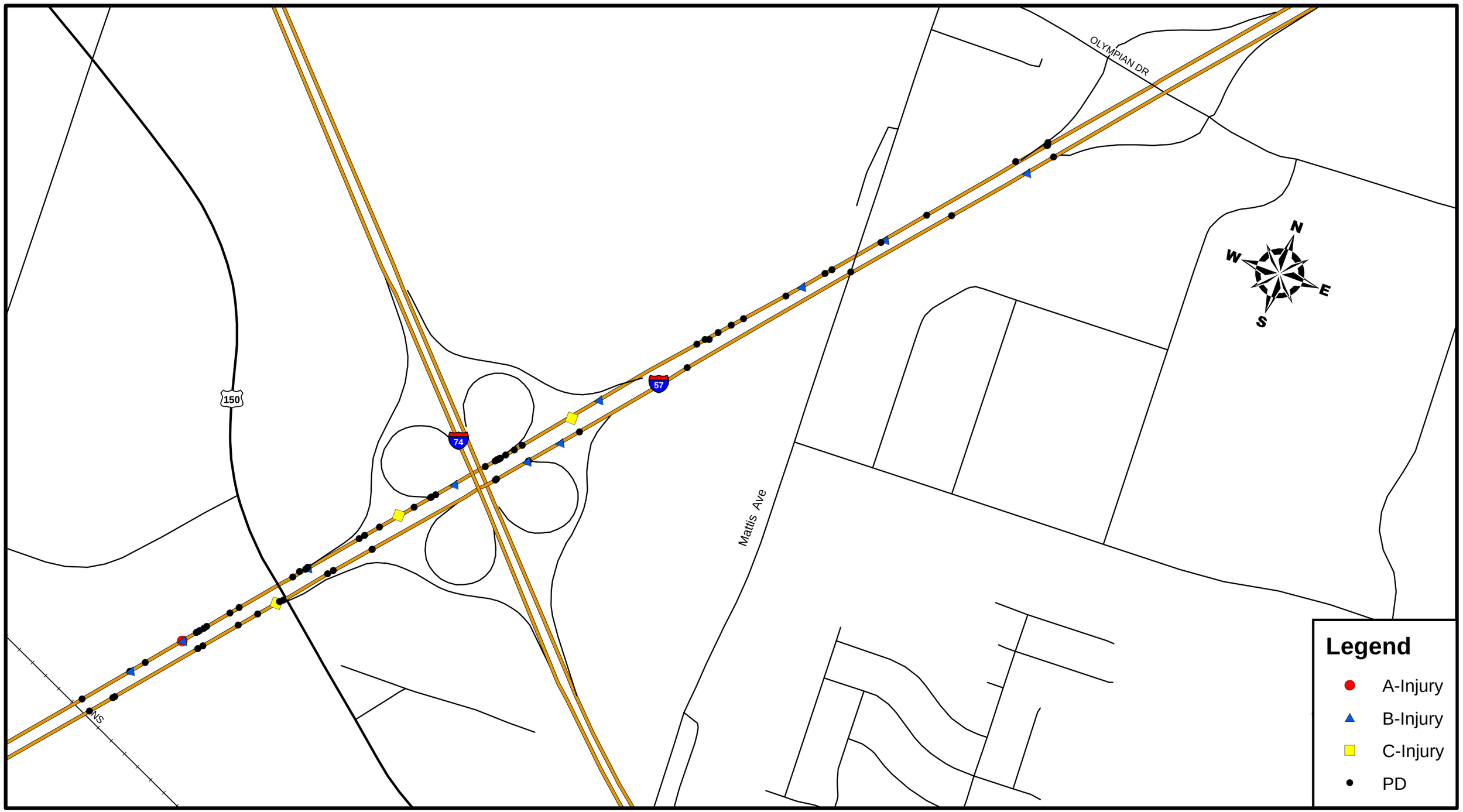
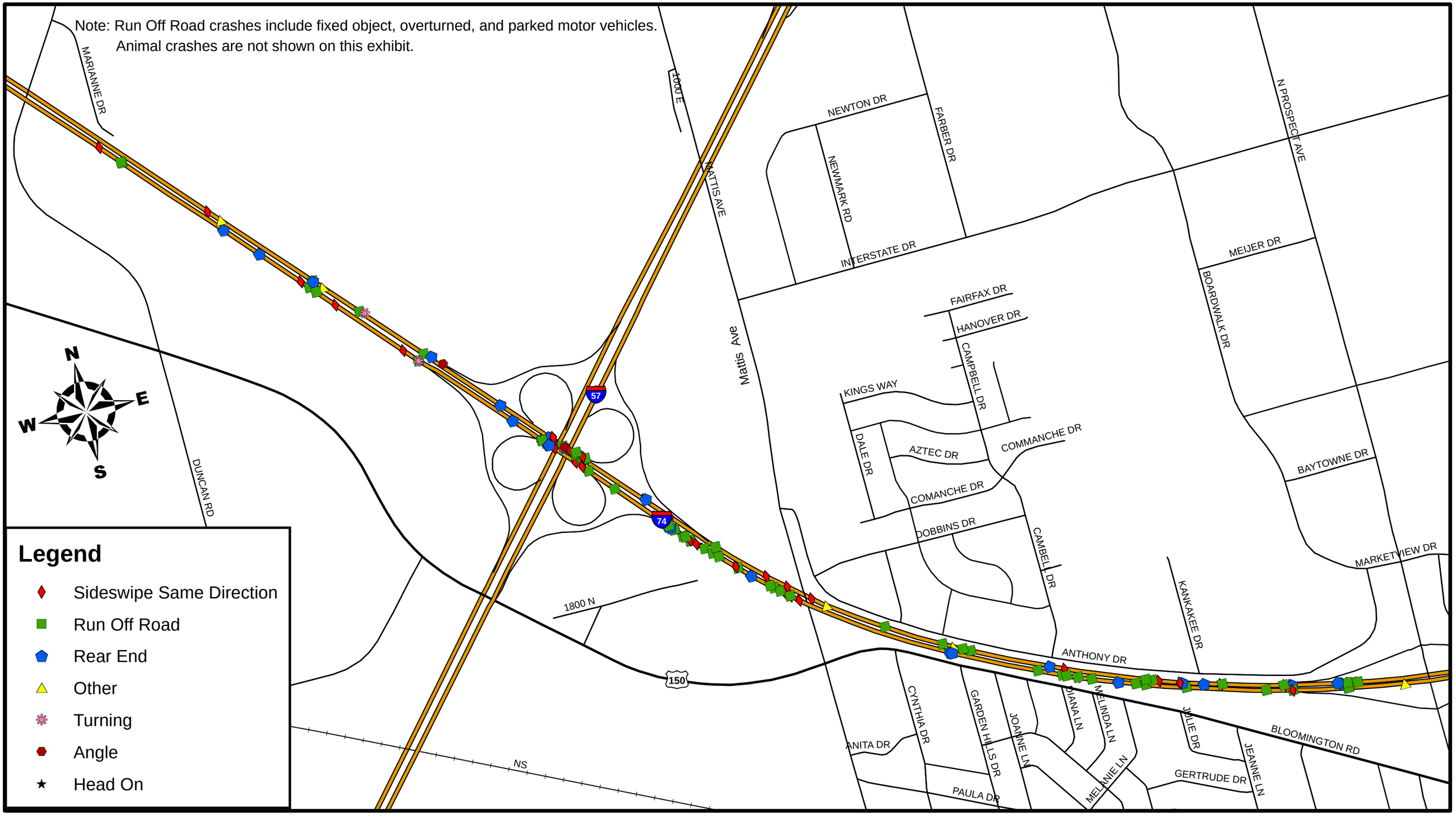



Exhibit 5

# Interchange Reconstruction Project
# I-74 Crashes from 2008 to 2012

Note: Run Off Road crashes include fixed object, overturned, and parked motor vehicles.
Animal crashes are not shown on this exhibit.




## Legend

- Sideswipe Same Direction
- Run Off Road
- Rear End
- Other
- Turning
- Angle
- Head On

EXHIBIT 6

# Interchange Reconstruction Project
# I-74 Crashes from 2008 to 2012

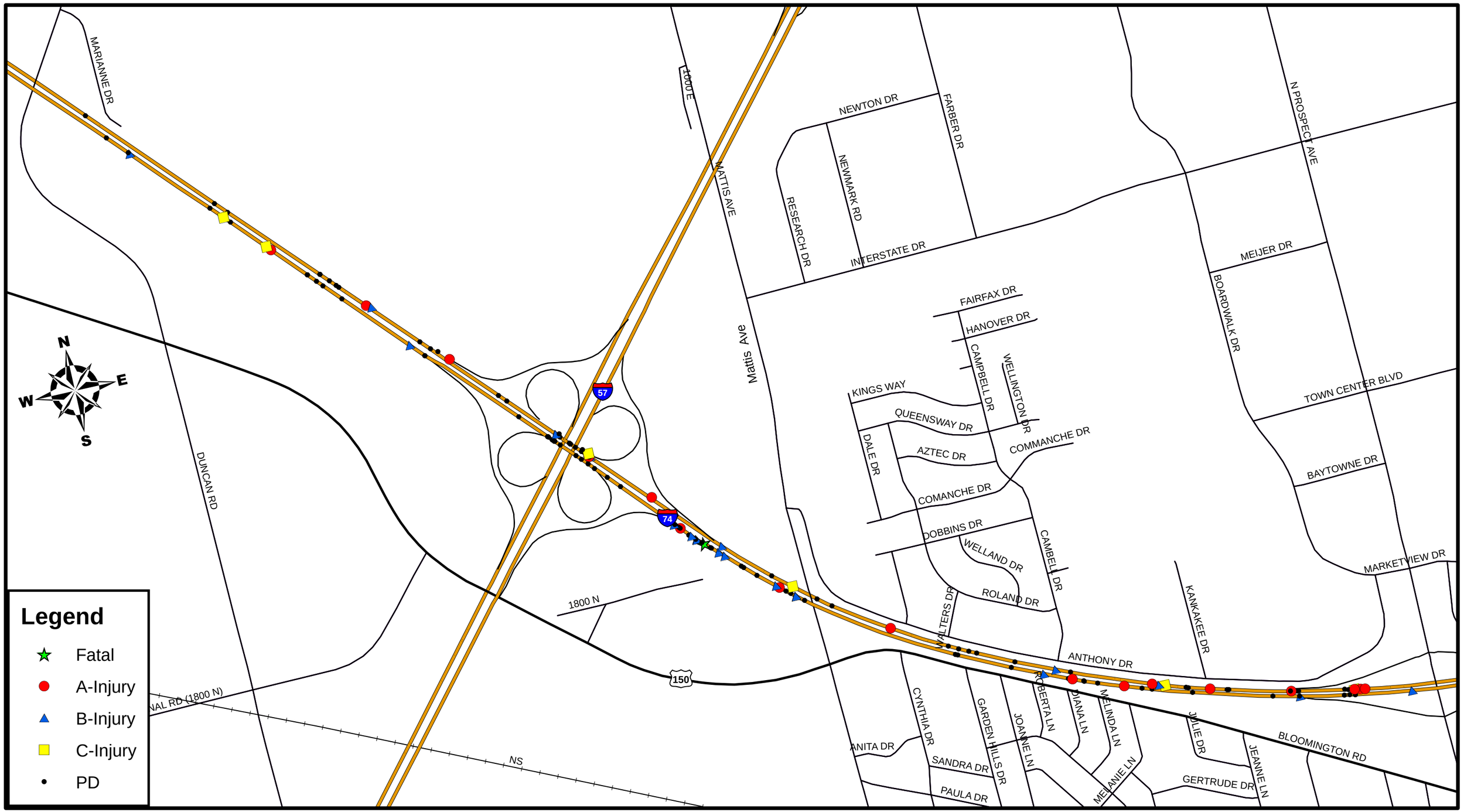



Exhibit 7

# Interchange Reconstruction Project
# 5% Report Locations for years 2011 and 2012

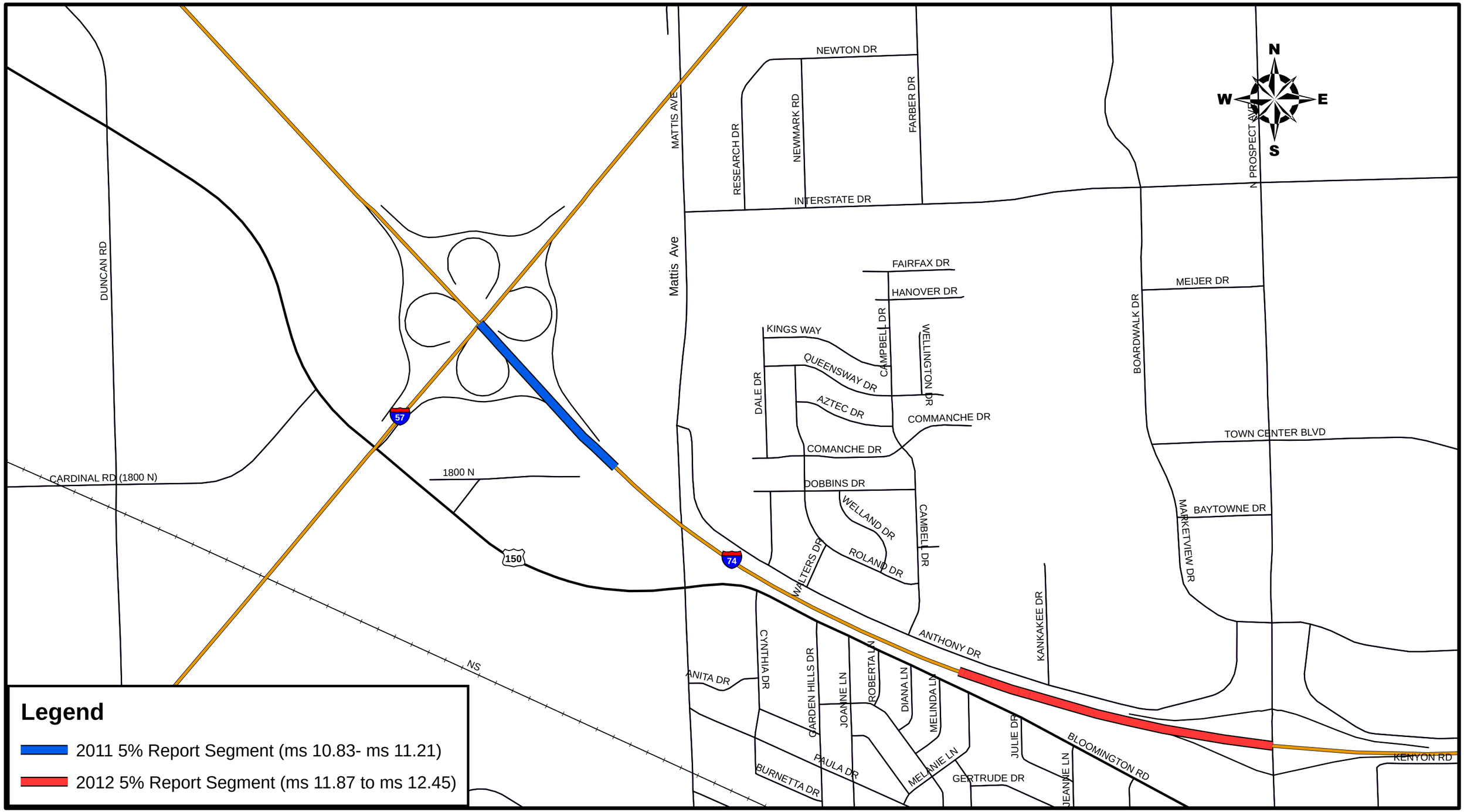
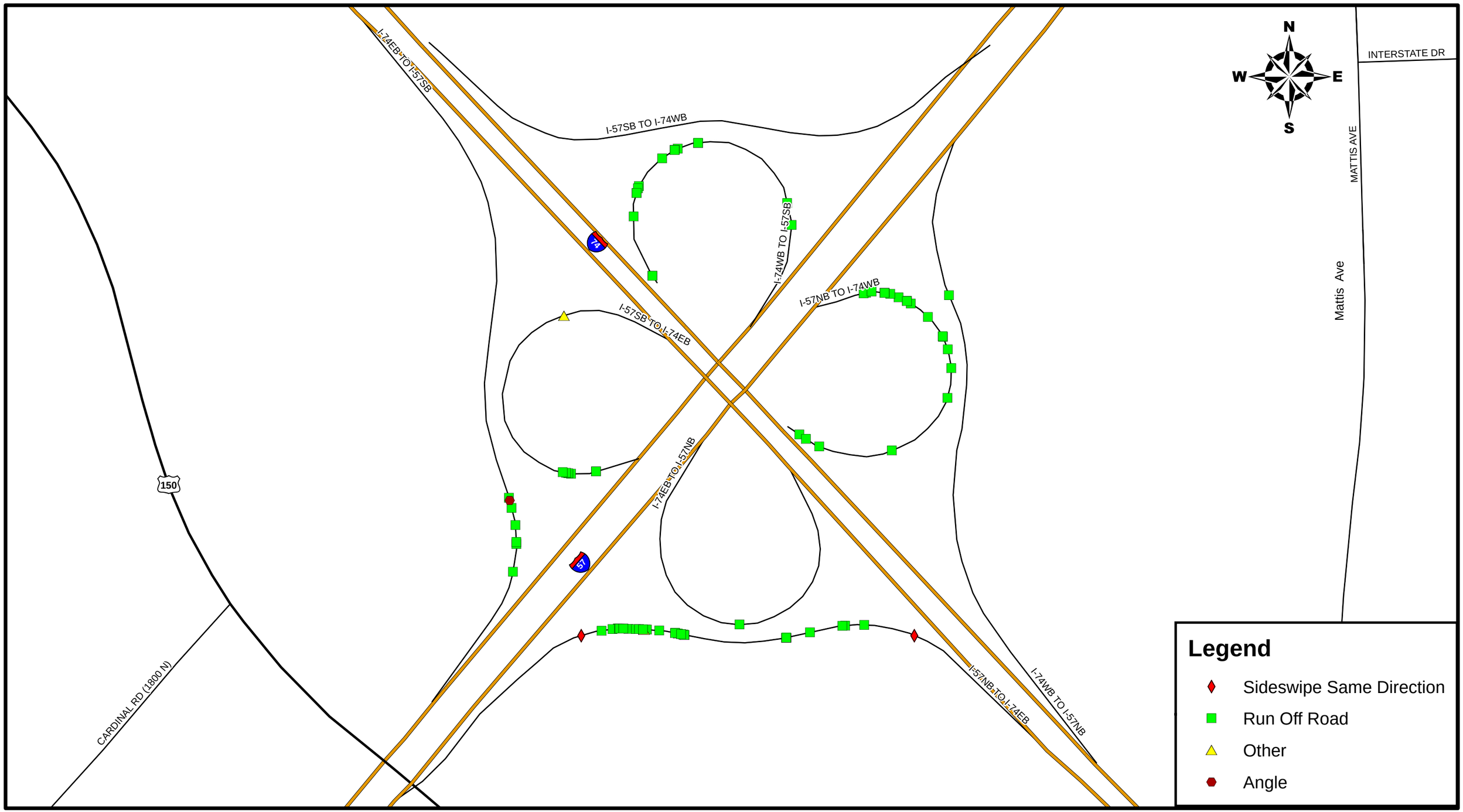



Exhibit 8

# Interchange Reconstruction Project
# Ramp Crashes from 2008 to 2012




Note: Run Off Road crashes include fixed object, other object, overturned, and parked motor vehicle crashes

Exhibit 9

# Interchange Reconstruction Project
# Ramp Crashes from 2008 to 2012

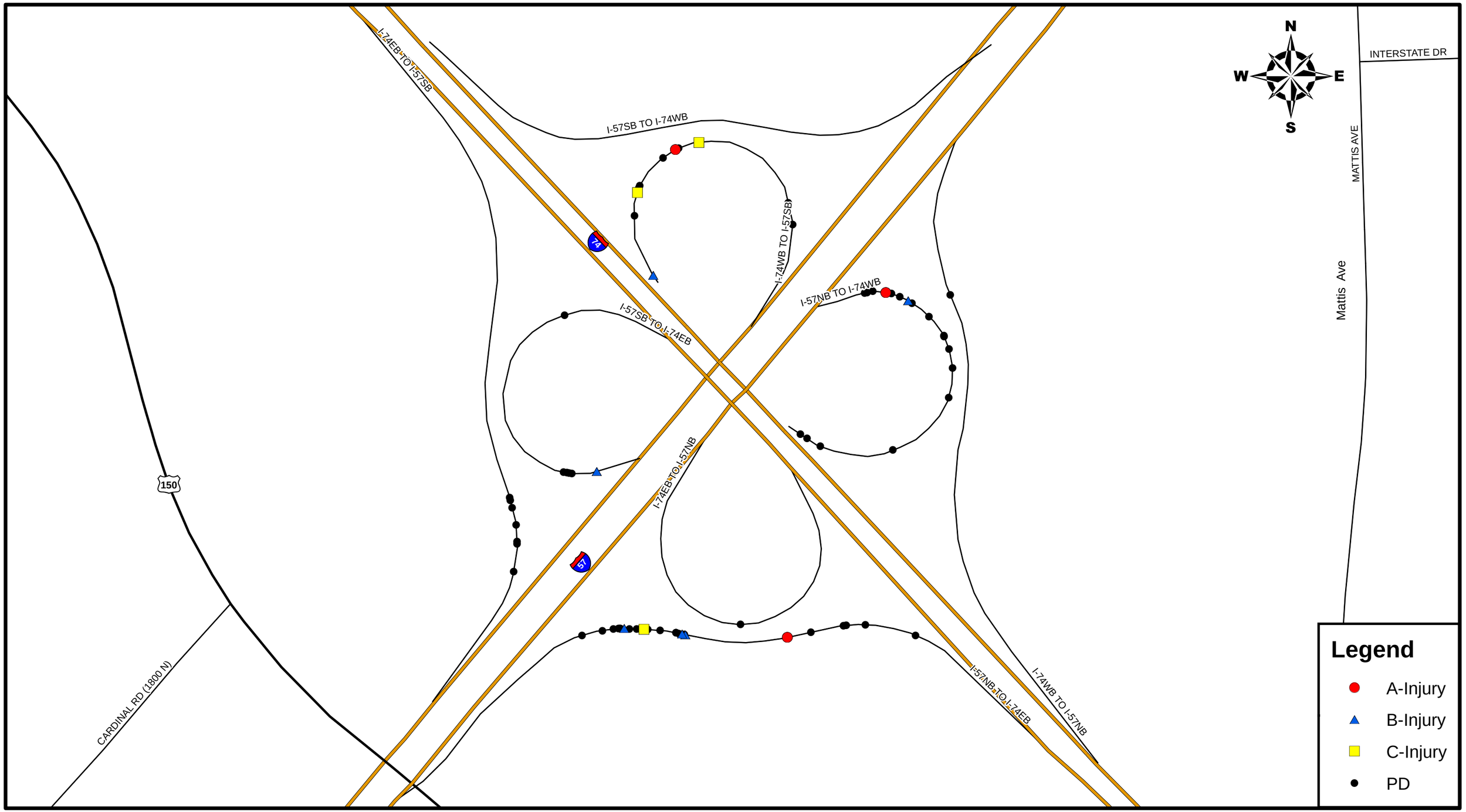
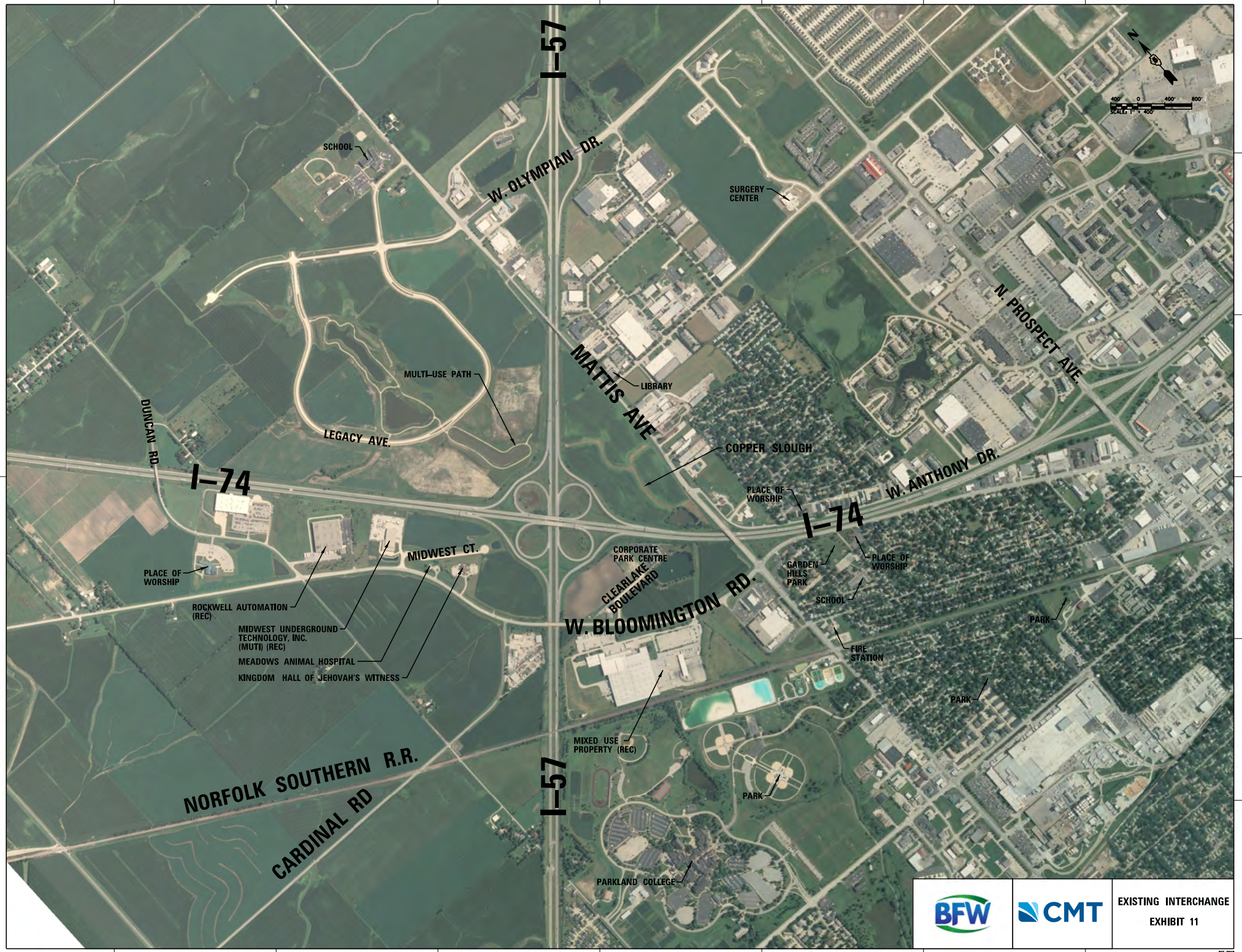



Exhibit 10




BFW | CMT

EXISTING INTERCHANGE

EXHIBIT 11

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USER NAME : Brad Doerman

800' 0 800' 1600'
SCALE: 1" = 800'

N

I-74

I-57

OLYMPIAN DR.

N MATTIS RD.

BLOOMINGTON RD.

EXIT 179
Chicago Memphis
2 MILES

Champaign Exits
Prospect Ave 2
Neil St 3

EXIT 179
Chicago Memphis
1 MILE

EXIT 179
Chicago Memphis
1/2 MILE

EXIT 179
Chicago Memphis

SOUTH
University of Illinois Sports Complex
EXIT 179

EAST
University of Illinois Campus
EXIT 183

EAST
University of Illinois Campus
EXIT 237A

SOUTH
University of Illinois Sports Complex
EXIT 235A

EXITS 237 A-B
EAST
To Urbana
EXIT 237 A

EXITS 237 A-B
Indianapolis Peoria
1 MILE

EXIT 238
Olympian Drive

EXITS 235 A-B
Decatur University Ave
2 MILES

EXIT 237 A
EAST
Indianapolis
1 MILE

EXIT 237 B
WEST
Peoria
1/2 MILE

EXIT 238
Olympian Drive
EXIT ONLY

EXIT 237 A
EAST
Indianapolis
1/4 MILE

EXIT 237 B
WEST
Peoria
EXIT ONLY

EXIT 238
Olympian Drive
1/2 MILE
EXIT ONLY

EXIT 237 B

EXIT 237 A
EAST
Indianapolis

SOUTH
Memphis

NORTH
Chicago

EXIT 179
Memphis Chicago
1/2 MILE

SOUTH
TO WEST
Decatur Springfield
EXIT 179

EXIT 179
Memphis Chicago
1 MILE

EXIT 179
Memphis Chicago

SOUTH NORTH

EXIT 179

EXIT 237 A

EXIT 237 B

EXIT 181

EXIT 181
Prospect Avenue
1/2 MILE
EXIT ONLY

EXIT 182
Neil Street
3/4 MILE

EXIT 181
Prospect Avenue
EXIT ONLY

EXIT 238
Olympian Drive
1 MILE

EXIT 181
Prospect Avenue
1 MILE
EXIT ONLY

EXIT 237 B
WEST
Peoria

EXIT 237 A

EXIT 237 A
EAST
Indianapolis

EXITS 237 A-B
Peoria Indianapolis
1/2 MILE

EAST
To Urbana
EXIT 237 A

EXITS 237 A-B
Peoria Indianapolis
1 MILE

SOUTH
Memphis

NORTH
Chicago

NORTH SOUTH

ACCESS JUSTIFICATION REPORT

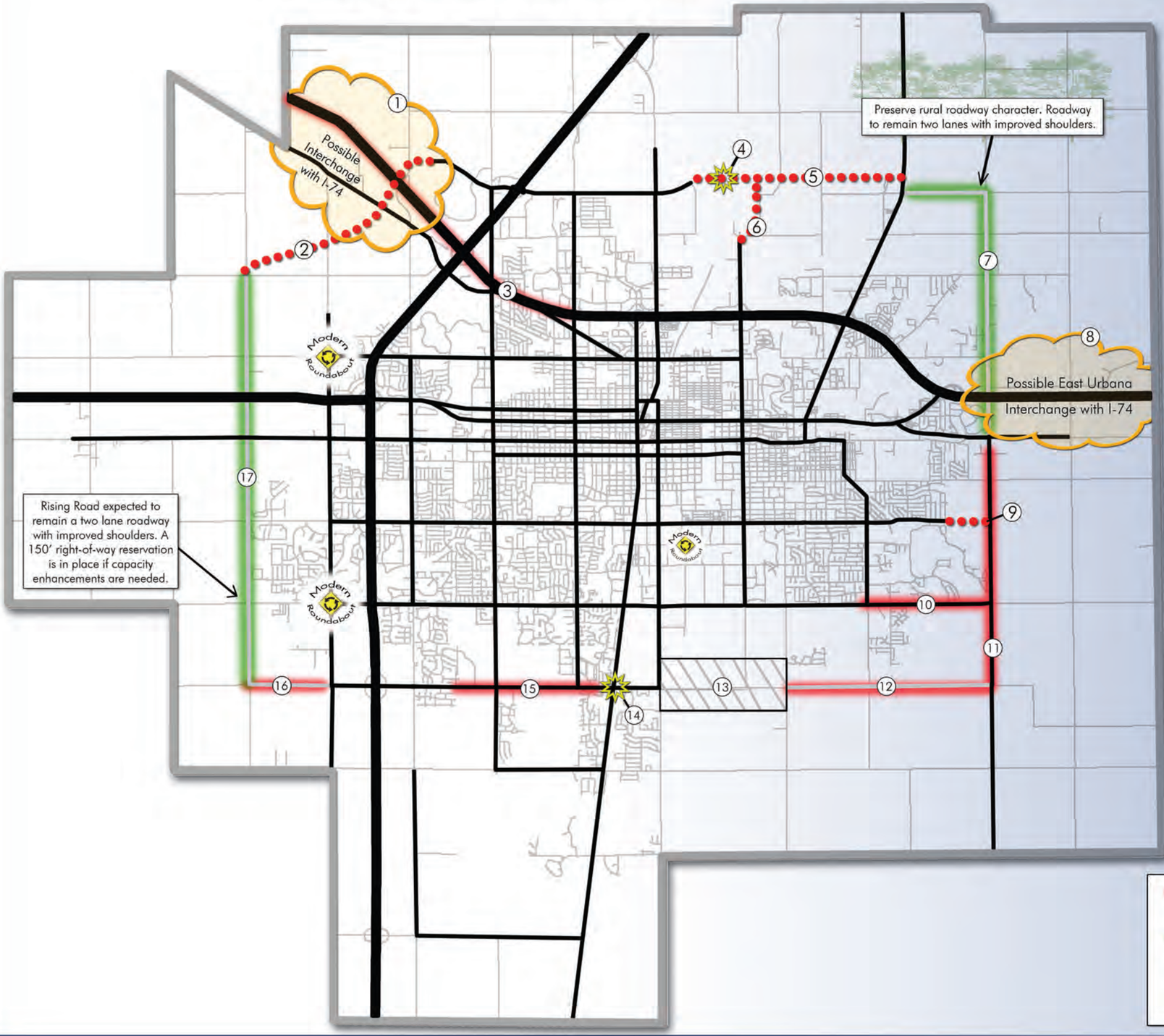
**ALTERNATE: 2**

**SEMI-DIRECTIONAL WITH LOOPS PRELIMINARY GUIDE SIGNING PLAN**

EXHIBIT 12

BDE-9908

# Figure 8.2 LRTP 2035: Roadway Vision for the Future




## LRTP 2035 Vision for the Future

The LRTP Regional Roadway Vision for the Future is based on the Preferred Alternative developed during the 2004 LRTP as well as completed corridor studies, the urbanized area's Transportation Improvement Program, and the State Highway Improvement Program. The vision identifies projects having regional significance as well as the ability to reduce congestion and expand accessibility within the metropolitan planning area. Projects, both fiscally constrained and illustrative, are shown.

## LRTP 2035 Vision Project List

① Possible interchange location along I-74 in west Champaign; interchange justification study not yet funded
② Olympian Drive extension east of Duncan Road to Rising Road
③ I-74 widening from Prospect Ave to IL-47 in Mahomet
④ Olympian Drive grade separation at CN tracks
⑤ Olympian Drive extension from Apollo Drive to US 45
⑥ Lincoln Avenue northern extension to Olympian Drive
⑦ Preserve rural character of northeast Urbana roadways
⑧ Possible interchange location along I-74 in east Urbana; interchange justification study funded but not yet completed
⑨ Florida Avenue extension to IL-130
⑩ Windsor Road reconstruction between Philo Road and IL-130
⑪ IL-130 widening with medians from University Ave. to Curtis Road
⑫ Curtis Road improvements between IL-130 and Race Street
⑬ Curtis Road letter of understanding completed, issues unresolved
⑭ Curtis Road grade separation at CN tracks
⑮ Curtis Road improvements between Wesley Avenue and Wynstone Drive
⑯ Curtis Road improvements between Staley Road and Rising Road
⑰ Rising Road: resurface, stripe, and add 6' shoulders

Regional Arterial Improvements
New Regional Roadway Construction
Preservation Corridors
Areas for Possible Interchanges
Rail Crossing Improvement Projects
Planned Modern Roundabout
Existing Interstates
Existing Arterials
Existing Collector/Local Road
Metropolitan Planning Area

*Projects 12 and 16 are currently collectors/local roads, but will be improved to arterials following reconstruction.

EXHIBIT 13

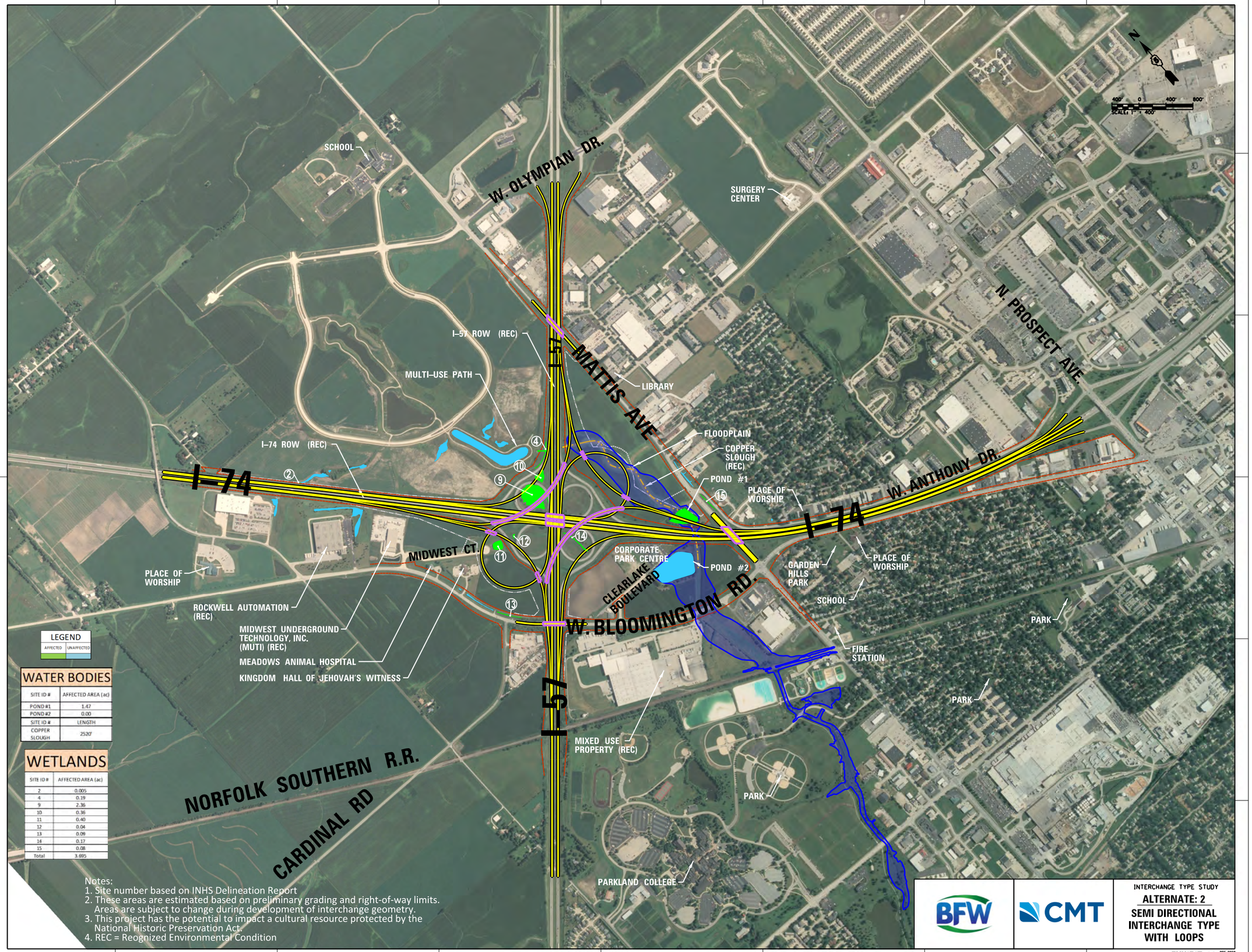



EXHIBIT 14 BDE-9908

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USER NAME = Brian Eads

## TRAFFIC DATA

| MOVEMENT | YEAR 2040 AM DESIGN HOURLY VOLUME | YEAR 2040 PM DESIGN HOURLY VOLUME |
|---|---|---|
| AB | 260 | 703 |
| AC | 320 | 360 |
| AD | 820 | 580 |
| BA | 897 | 893 |
| BC | 60 | 155 |
| BD | 215 | 190 |
| CA | 320 | 300 |
| CB | 140 | 70 |
| CD | 2118 | 1202 |
| DA | 505 | 920 |
| DB | 155 | 235 |
| DC | 1038 | 1803 |
| TOTAL A | 3122 | 3756 |
| TOTAL B | 1727 | 2246 |
| TOTAL C | 3996 | 3890 |
| TOTAL D | 4851 | 4930 |

OLYMPIAN DRIVE
B
I-57
A/A
A/A
1172 / 1238
555 / 1008
N. MATTIS AVENUE
A/A
A/A
A/C
60 / 155
RAMP H
A/A
B/C
RAMP G
B/C
I-74
1418 / 2318
2578 / 1572
C
B/C
RAMP M
505 / 320
RAMP F
320 / 360
155 / 235
B/C
1698 / 2958
3153 / 1972
C/A
320 / 300
RAMP C
215 / 190
RAMP D
140 / 70
C/B
D/B
RAMP B
RAMP A
B/A
B/B
B/B
820 / 580
A/A
BLOOMINGTON ROAD
B/B
B/B
I-57
1722 / 2113
1400 / 1643
A
N. MATTIS AVENUE
W. ANTHONY DRIVE
I-74
D
BLOOMINGTON ROAD
PROSPECT AVENUE

### LEGEND

(B/B) LEVEL OF SERVICE (AM/PM)

2040 DHV - AM / 2040 DHV - PM

[A] MOVEMENT LOCATION

N

**ACCESS JUSTIFICATION REPORT**

**NO–BUILD**
**EXISTING CLOVERLEAF INTERCHANGE**

**PROPOSED DESIGN TRAFFIC & LEVEL OF SERVICE**

**EXHIBIT 15**

BDE-9908

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## TRAFFIC DATA

| MOVEMENT | YEAR 2040 AM DESIGN HOURLY VOLUME | YEAR 2040 PM DESIGN HOURLY VOLUME |
|---|---|---|
| AB | 260 | 703 |
| AC | 320 | 360 |
| AD | 820 | 580 |
| BA | 897 | 893 |
| BC | 60 | 155 |
| BD | 215 | 190 |
| CA | 320 | 300 |
| CB | 140 | 70 |
| CD | 2118 | 1202 |
| DA | 505 | 920 |
| DB | 155 | 235 |
| DC | 1038 | 1803 |
| TOTAL A | 3122 | 3756 |
| TOTAL B | 1727 | 2246 |
| TOTAL C | 3996 | 3890 |
| TOTAL D | 4851 | 4930 |

OLYMPIAN DRIVE
I-57
N. MATTIS AVENUE
I-74
W. ANTHONY DRIVE
PROSPECT AVENUE
BLOOMINGTON ROAD
RAMP A
RAMP B
RAMP C
RAMP D
RAMP E
RAMP F
RAMP G
RAMP H
555/1008
1172/1238
295/305
320/360
60/155
155/235
505/920
1418/2318
2578/1572
460/370
140/70
320/300
215/190
825/1220
660/1155
1698/2958
3153/1972
820/580
1722/2113
1400/1643

LEGEND

B/B LEVEL OF SERVICE (AM/PM)

2040 DHV - AM / 2040 DHV - PM

A MOVEMENT LOCATION

**ACCESS JUSTIFICATION REPORT**

**SEMI–DIRECTIONAL WITH DIRECTIONAL FLYOVERS AND TWO LOOPS**

**PROPOSED DESIGN TRAFFIC & LEVEL OF SERVICE**

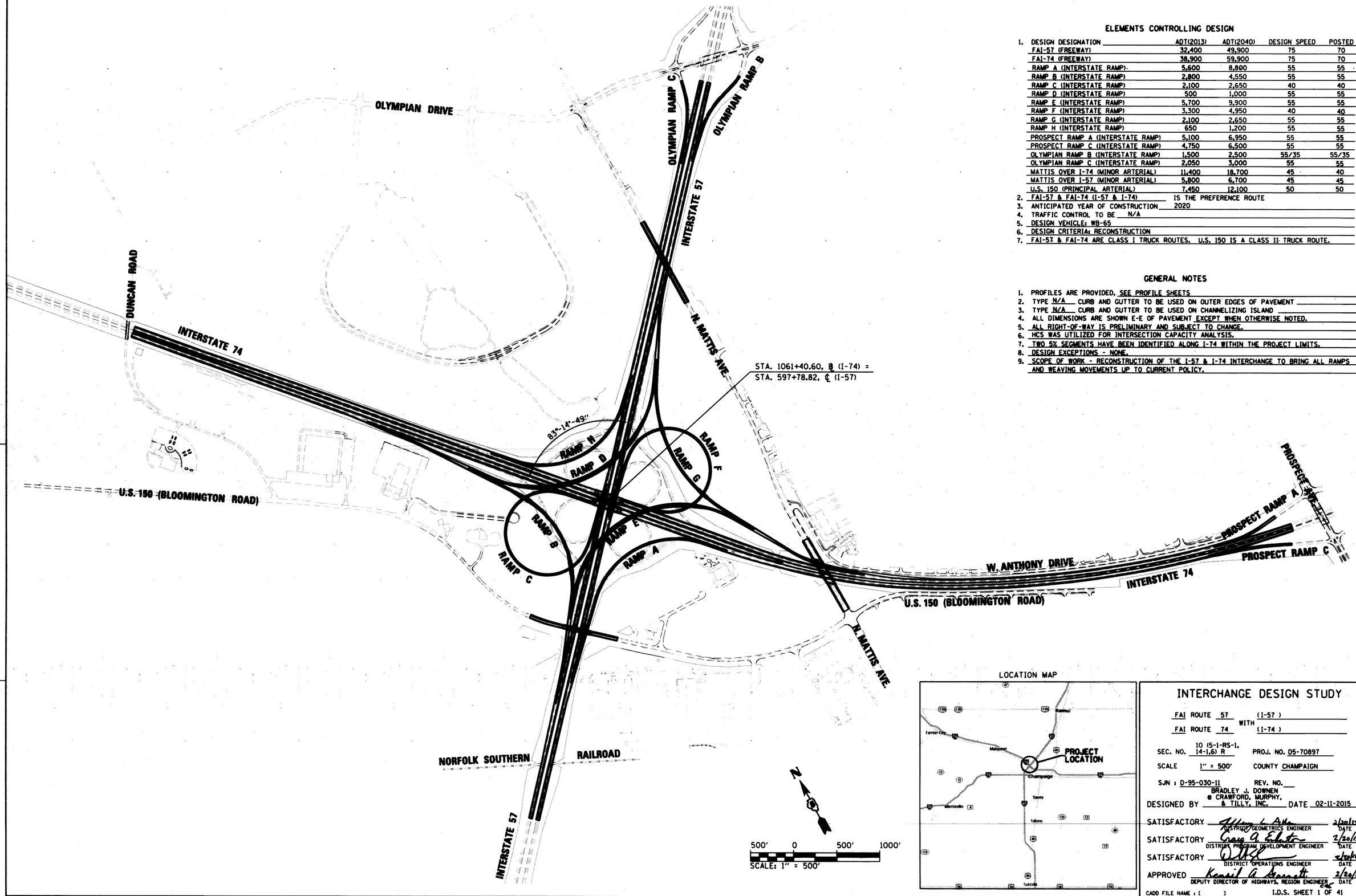
**EXHIBIT 16**

BDE-9908

# APPENDIX A

## Interchange Design Study

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## ELEMENTS CONTROLLING DESIGN

| 1. DESIGN DESIGNATION | ADT(2013) | ADT(2040) | DESIGN SPEED | POSTED |
|---|---|---|---|---|
| FAI-57 (FREEWAY) | 32,400 | 49,900 | 75 | 70 |
| FAI-74 (FREEWAY) | 38,900 | 59,900 | 75 | 70 |
| RAMP A (INTERSTATE RAMP) | 5,600 | 8,800 | 55 | 55 |
| RAMP B (INTERSTATE RAMP) | 2,800 | 4,550 | 55 | 55 |
| RAMP C (INTERSTATE RAMP) | 2,100 | 2,650 | 40 | 40 |
| RAMP D (INTERSTATE RAMP) | 500 | 1,000 | 55 | 55 |
| RAMP E (INTERSTATE RAMP) | 5,700 | 9,900 | 55 | 55 |
| RAMP F (INTERSTATE RAMP) | 3,300 | 4,950 | 40 | 40 |
| RAMP G (INTERSTATE RAMP) | 2,100 | 2,650 | 55 | 55 |
| RAMP H (INTERSTATE RAMP) | 650 | 1,200 | 55 | 55 |
| PROSPECT RAMP A (INTERSTATE RAMP) | 5,100 | 6,950 | 55 | 55 |
| PROSPECT RAMP C (INTERSTATE RAMP) | 4,750 | 6,500 | 55 | 55 |
| OLYMPIAN RAMP B (INTERSTATE RAMP) | 1,500 | 2,500 | 55/35 | 55/35 |
| OLYMPIAN RAMP C (INTERSTATE RAMP) | 2,050 | 3,000 | 55 | 55 |
| MATTIS OVER I-74 (MINOR ARTERIAL) | 11,400 | 18,700 | 45 | 40 |
| MATTIS OVER I-57 (MINOR ARTERIAL) | 5,800 | 6,700 | 45 | 45 |
| U.S. 150 (PRINCIPAL ARTERIAL) | 7,450 | 12,100 | 50 | 50 |

2. FAI-57 & FAI-74 (I-57 & I-74) IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2020
4. TRAFFIC CONTROL TO BE N/A
5. DESIGN VEHICLE: WB-65
6. DESIGN CRITERIA: RECONSTRUCTION
7. FAI-57 & FAI-74 ARE CLASS I TRUCK ROUTES. U.S. 150 IS A CLASS II TRUCK ROUTE.

## GENERAL NOTES

1. PROFILES ARE PROVIDED, SEE PROFILE SHEETS
2. TYPE N/A CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE N/A CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHEN OTHERWISE NOTED.
5. ALL RIGHT-OF-WAY IS PRELIMINARY AND SUBJECT TO CHANGE.
6. HCS WAS UTILIZED FOR INTERSECTION CAPACITY ANALYSIS.
7. TWO 5% SEGMENTS HAVE BEEN IDENTIFIED ALONG I-74 WITHIN THE PROJECT LIMITS.
8. DESIGN EXCEPTIONS - NONE.
9. SCOPE OF WORK - RECONSTRUCTION OF THE I-57 & I-74 INTERCHANGE TO BRING ALL RAMPS AND WEAVING MOVEMENTS UP TO CURRENT POLICY.

LOCATION MAP




# INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57)
WITH
FAI ROUTE 74 (I-74)

SEC. NO. 10 (5-I-RS-1, 14-1,6) R PROJ. NO. D5-70897

SCALE 1" = 500' COUNTY CHAMPAIGN

SJN : D-95-030-11 REV. NO.

DESIGNED BY BRADLEY J. DOWNEN @ CRAWFORD, MURPHY, & TILLY, INC. DATE 02-11-2015

SATISFACTORY — DISTRICT GEOMETRICS ENGINEER — DATE 2/20/15

SATISFACTORY — DISTRICT PROGRAM DEVELOPMENT ENGINEER — DATE 2/20/15

SATISFACTORY — DISTRICT OPERATIONS ENGINEER — DATE 2/20/15

APPROVED — DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER — DATE 2/20/15

CADD FILE NAME : [ ] I.D.S. SHEET 1 OF 41

BDE-9908

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## I-74

PROP. MEDIAN TRANS. (E.B. LANES)
R = 8,000.00' (INSIDE E.O.P.)
e = 3.1%
T.R. = 120'
S.E. RUN = 245'
P.C. STA. = 1076+01.60
P.C.C. STA. = 1085+38.19
ATTAIN S.E.;
STA. 1073+18.27 (-1.5% N.C.)
STA. 1074+38.27 (0% T.R.)
STA. 1076+83.27 (+3.1% S.E.)

PROP. MEDIAN TRANS. (W.B. LANES)
R = 5,950.00' (INSIDE E.O.P.)
e = 4.0%
T.R. = 125'
S.E. RUN = 250'
P.C. STA. = 1079+51.02
P.C.C. STA. = 1092+77.27
ATTAIN S.E.;
STA. 1076+59.35 (+2.0% N.C.)
STA. 1077+84.35 (0% T.R.)
STA. 1080+34.35 (-4.0% S.E.)

EXIST. CURVE 74-1
PI STA. = 1088+67.30
Δ = 18° 37' 57" (LT)
D = 0° 48' 50"
R = 7,040.65'
T = 1,155.00'
L = 2,289.60'
E = 94.11'
e = 3.4%
T.R. = N/A
S.E. RUN = 215'
P.C. STA. = 1077+12.30
P.C.C. STA. = 1100+01.90
ATTAIN S.E. (E.B. LANES);
STA. 1085+38.19 (+3.1% S.E.)
STA. 1085+57.16 (+3.4% S.E.)
ATTAIN S.E. (W.B. LANES);
STA. 1092+39.33 (-4.0% S.E.)
STA. 1092+77.27 (-3.4% S.E.)

EXIST. CURVE 74-2
PI STA. = 1105+01.96
Δ = 4° 41' 02" (LT)
D = 0° 28' 07"
R = 12,227.02'
T = 500.06'
L = 999.55'
E = 10.22'
e = 2.0%
T.R. = N/A
S.E. RUN = 125'
P.C.C. STA. = 1100+01.90
P.C.C. STA. = 1110+01.46
ATTAIN S.E.;
STA. 1099+30.23 (3.4% S.E.)
STA. 1100+17.73 (2.0% S.E.)

EXIST. CURVE 74-3
PI STA. = 1137+79.12
Δ = 25° 29' 45" (LT)
D = 0° 28' 00"
R = 12,277.57'
T = 2,777.66'
L = 5,463.35'
E = 310.29'
e = 2.0%
T.R. = N/A
S.E. RUN = 125'
P.C.C. STA. = 1110+01.46
P.T. STA. = 1164+64.81

## RAMP A

PROP. CURVE RAMPA-1
PI STA. = 123+19.95
Δ = 92° 33' 00" (RT)
D = 5° 58' 06"
R = 960.00'
T = 1,003.70'
L = 1,550.69'
E = 428.89'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C. STA = 113+16.25
P.T. STA = 128+66.94
ATTAIN S.E. (EXIT TERMINAL);
STA. 112+01.67 (+2.0 N.C.)
STA. 114+07.92 (+8.0% S.E. @ D-D)
REMOVE S.E. (ENTR. TERMINAL);
STA. 127+36.94 (+8.0% S.E. @ A-A)
STA. 128+66.94 (+5.61% @ B-B)
STA. 130+66.98 (+1.87% @ C-C)
STA. 131+67.04 (0% @ D-D)
STA. 134+12.04 (-3.1% MATCH M.L.)

## RAMP B

PROP. CURVE RAMPB-1
PI STA. = 209+00.11
Δ = 2° 51' 28" (RT)
D = 1° 25' 44"
R = 4,010.00'
T = 100.02'
L = 200.00'
E = 1.25'
e = 3.4%
T.R. = N/A
S.E. RUN = 115'
P.C. STA = 208+00.09
P.T. STA = 210+00.09
ATTAIN S.E. (EXIT TERMINAL);
STA. 207+91.07 (+2.0 N.C.)
STA. 208+38.42 (+3.4% S.E. @ D-D)
REMOVE S.E.;
STA. 209+61.76 (+3.4% S.E.)
STA. 210+26.02 (+1.5% N.C.)

PROP. CURVE RAMPB-2
PI STA. = 230+56.25
Δ = 70° 10' 53" (RT)
D = 4° 56' 21"
R = 1,160.00'
T = 814.98'
L = 1,420.88'
E = 257.67'
e = 7.8%
T.R. = N/A
S.E. RUN = 265'
P.C. STA = 222+41.27
P.T. STA = 236+62.15
ATTAIN S.E.;
STA. 220+27.23 (+1.5 N.C.)
STA. 222+41.27 (+7.8% S.E.)
REMOVE S.E.;
STA. 236+05.00 (+7.8% S.E.)
STA. 238+19.04 (+1.5% N.C.)

PROP. CURVE RAMPB-3
PI STA. = 245+08.57
Δ = 3° 42' 54" (RT)
D = 1° 25' 44"
R = 4,010.00'
T = 130.05'
L = 260.00'
E = 2.11'
e = 3.4%
T.R. = N/A
S.E. RUN = 115'
P.C. STA = 243+78.53
P.T. STA = 246+38.53
ATTAIN S.E.;
STA. 243+52.60 (+1.5 N.C.)
STA. 244+16.86 (+3.4% S.E.)
REMOVE S.E. (ENTR. TERMINAL);
STA. 246+38.53 (+3.4% S.E. @ B-B)
STA. 248+38.57 (+3.26% @ C-C)
STA. 249+38.59 (+2.24% @ D-D)
STA. 249+62.12 (+2.0% N.C.)

## RAMP C

PROP. CURVE RAMPC-1
PI STA. = 310+42.66
Δ = 11° 56' 12" (RT)
D = 5° 58' 06"
R = 960.00'
T = 100.36'
L = 200.00'
E = 5.23'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C. STA = 309+42.29
P.T. STA = 311+42.29
ATTAIN S.E. (EXIT TERMINAL);
STA. 308+27.71 (+2.0 N.C.)
STA. 310+33.96 (+8.0% S.E. @ D-D)

PROP. CURVE RAMPC-2
PI STA. = 320+51.51
Δ = 124° 20' 18" (RT)
D = 11° 56' 12"
R = 480.00'
T = 909.21'
L = 1,041.65'
E = 548.14'
e = 8.0%
T.R. = N/A
S.E. RUN = N/A
P.C. STA = 311+42.29
P.C.C. STA = 321+83.95

PROP. CURVE RAMPC-3
PI STA. = 330+93.16
Δ = 124° 20' 18" (RT)
D = 11° 56' 12"
R = 480.00'
T = 909.21'
L = 1,041.65'
E = 548.14'
e = 8.0%
T.R. = N/A
S.E. RUN = N/A
P.C.C. STA = 321+83.95
P.C.C. STA = 332+25.60

PROP. CURVE RAMPC-4
PI STA. = 333+25.97
Δ = 11° 56' 12" (RT)
D = 5° 58' 06"
R = 960.00'
T = 100.36'
L = 200.00'
E = 5.23'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C.C. STA = 332+25.60
P.T. STA = 334+25.60
REMOVE S.E. (ENTR. TERMINAL);
STA. 332+95.60 (+8.0% S.E. @ A-A)
STA. 334+25.60 (+5.81% @ B-B)
STA. 336+25.64 (+3.26% @ C-C)
STA. 337+25.66 (+2.24% @ D-D)
STA. 337+35.66 (+2.0% N.C.)

## RAMP D

PROP. CURVE RAMPD-1
PI STA. = 421+90.36
Δ = 109° 32' 31" (LT)
D = 4° 14' 39"
R = 1,350.00'
T = 1,911.69'
L = 2,581.02'
E = 990.32'
e = 7.4%
T.R. = N/A
S.E. RUN = 250'
P.C. STA = 402+78.67
P.T. STA = 428+59.69
ATTAIN S.E.;
STA. 401+62.68 (+1.5 N.C.)
STA. 403+62.00 (+7.4% S.E.)
REMOVE S.E.;
STA. 427+76.36 (+7.4% S.E.)
STA. 429+75.68 (+1.5% N.C.)

## RAMP E

PROP. CURVE RAMPE-1
PI STA. = 520+74.57
Δ = 110° 15' 02" (LT)
D = 4° 35' 01"
R = 1,250.00'
T = 1,793.52'
L = 2,405.30'
E = 936.14'
e = 7.6%
T.R. = N/A
S.E. RUN = 260'
P.C. STA = 502+81.04
P.T. STA = 526+86.34
ATTAIN S.E.;
STA. 501+59.03 (+1.5 N.C.)
STA. 503+67.71 (+7.6% S.E.)
REMOVE S.E.;
STA. 525+99.67 (+7.6% S.E.)
STA. 528+08.35 (+1.5% N.C.)

## RAMP F

PROP. CURVE RAMPF-1
PI STA. = 610+42.66
Δ = 11° 56' 12" (RT)
D = 5° 58' 06"
R = 960.00'
T = 100.36'
L = 200.00'
E = 5.23'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C. STA = 609+42.29
P.T. STA = 611+42.29
ATTAIN S.E. (EXIT TERMINAL);
STA. 608+27.71 (+2.0 N.C.)
STA. 610+33.96 (+8.0% S.E. @ D-D)

PROP. CURVE RAMPF-2
PI STA. = 620+51.51
Δ = 124° 20' 18" (RT)
D = 11° 56' 12"
R = 480.00'
T = 909.21'
L = 1,041.65'
E = 548.14'
e = 8.0%
T.R. = N/A
S.E. RUN = N/A
P.C. STA = 611+42.29
P.C.C. STA = 621+83.95

PROP. CURVE RAMPF-3
PI STA. = 630+93.16
Δ = 124° 20' 18" (RT)
D = 11° 56' 12"
R = 480.00'
T = 909.21'
L = 1,041.65'
E = 548.14'
e = 8.0%
T.R. = N/A
S.E. RUN = N/A
P.C.C. STA = 621+83.95
P.C.C. STA = 632+25.60

PROP. CURVE RAMPF-4
PI STA. = 633+25.97
Δ = 11° 56' 12" (RT)
D = 5° 58' 06"
R = 960.00'
T = 100.36'
L = 200.00'
E = 5.23'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C.C. STA = 632+25.60
P.T. STA = 634+25.60
REMOVE S.E. (ENTR. TERMINAL);
STA. 632+95.60 (+8.0% S.E. @ A-A)
STA. 634+25.60 (+5.81% @ B-B)
STA. 636+25.64 (+3.26% @ C-C)
STA. 637+25.66 (+2.24% @ D-D)
STA. 637+35.66 (+2.0% N.C.)

## RAMP G

PROP. CURVE RAMPG-1
PI STA. = 709+83.61
Δ = 16° 53' 10" (RT)
D = 4° 35' 01"
R = 1,250.00'
T = 185.54'
L = 368.40'
E = 13.70'
e = 7.6%
T.R. = N/A
S.E. RUN = 260'
P.C. STA = 707+98.07
P.T. STA = 711+66.47
ATTAIN S.E. (EXIT TERMINAL);
STA. 707+44.91 (+4.0% MATCH M.L.)
STA. 708+68.07 (+7.6% S.E. @ D-D)
REMOVE S.E.;
STA. 710+79.80 (+7.6% S.E.)
STA. 712+88.48 (+1.5% N.C.)

PROP. CURVE RAMPG-2
PI STA. = 730+86.74
Δ = 60° 51' 35" (RT)
D = 3° 30' 16"
R = 1,635.00'
T = 960.40'
L = 1,736.70'
E = 261.20'
e = 6.7%
T.R. = N/A
S.E. RUN = 230'
P.C. STA = 721+26.34
P.T. STA = 738+63.05
ATTAIN S.E.;
STA. 720+24.50 (+1.5% N.C.)
STA. 722+03.01 (+6.7% S.E.)
REMOVE S.E.;
STA. 737+86.38 (+6.7% S.E.)
STA. 739+64.89 (+1.5% N.C.)

PROP. CURVE RAMPG-3
PI STA. = 747+79.90
Δ = 8° 01' 17" (RT)
D = 2° 17' 31"
R = 2,500.00'
T = 175.29'
L = 350.00'
E = 6.14'
e = 5.0%
T.R. = N/A
S.E. RUN = 170'
P.C. STA = 746+04.61
P.T. STA = 749+54.61
ATTAIN S.E.;
STA. 746+61.28 (+1.5 N.C.)
STA. 747+80.28 (+5.0% S.E.)
REMOVE S.E. (ENTR. TERMINAL);
STA. 749+54.57 (+5.0% @ B-B)
STA. 751+54.61 (+3.26% @ C-C)
STA. 753+54.65 (+2.0% N.C. @ D-D)

## RAMP H

PROP. CURVE RAMPH-1
PI STA. = 814+42.14
Δ = 91° 36' 27" (RT)
D = 5° 58' 06"
R = 960.00'
T = 987.32'
L = 1,534.90'
E = 417.10'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C. STA = 804+54.82
P.T. STA = 819+89.72
ATTAIN S.E. (EXIT TERMINAL);
STA. 803+14.82 (+2.0 N.C. @ C-C)
STA. 805+24.82 (+8.0% S.E. @ D-D)
REMOVE S.E. (ENTR. TERMINAL);
STA. 818+59.72 (+8.0% S.E. @ A-A)
STA. 819+89.72 (+5.81% @ B-B)
STA. 821+89.76 (+3.26% @ C-C)
STA. 822+89.78 (+2.24% @ D-D)
STA. 823+13.31 (+2.0 N.C.)

## PROSPECT RAMP A

PROP. CURVE PROSPECT RAMPA-1
PI STA. = 18+54.42
Δ = 18° 36' 23" (RT)
D = 4° 13' 42"
R = 1,355.00'
T = 221.97'
L = 440.03'
E = 18.06'
e = 7.4%
T.R. = N/A
S.E. RUN = 250'
P.C. STA = 16+32.45
P.T. STA = 20+72.48
ATTAIN S.E.;
STA. 15+16.46 (+1.5% N.C.)
STA. 17+15.78 (+7.4% S.E.)
REMOVE S.E. (ENTR. TERMINAL);
STA. 19+42.48 (+7.4% S.E. @ A-A)
STA. 20+72.48 (+5.81% @ B-B)
STA. 22+72.16 (+3.26% @ C-C)
STA. 24+71.93 (+2.0% @ D-D)

## PROSPECT RAMP C

PROP. CURVE PROSPECT RAMPC-1
PI STA. = 31+64.59
Δ = 8° 00' 37" (RT)
D = 1° 32' 32"
R = 3,715.00'
T = 260.11'
L = 519.38'
E = 9.10'
e = 3.6%
T.R. = N/A
S.E. RUN = 125'
P.C. STA = 29+04.48
P.T. STA = 34+23.86
ATTAIN S.E. (EXIT TERMINAL);
STA. 25+20.27 (-2.0% MATCH M.L. @ B-B)
STA. 27+64.48 (+2.0% N.C. @ C-C)
STA. 29+74.48 (+3.6% S.E. @ D-D)
REMOVE S.E.;
STA. 33+82.19 (+3.6% S.E.)
STA. 34+55.11 (+1.5 N.C.)

## OLYMPIAN RAMP B

PROP. CURVE OLYMPIAN RAMPB-1
PI STA. = 16+43.25
Δ = 25° 36' 11" (RT)
D = 5° 58' 06"
R = 960.00'
T = 218.13'
L = 428.98'
E = 24.47'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C. STA = 14+25.12
P.T. STA = 18+54.10
ATTAIN S.E. (EXIT TERMINAL);
STA. 12+85.12 (+2.0% N.C. @ C-C)
STA. 14+95.12 (+8.0% S.E. @ D-D)
REMOVE S.E.;
STA. 17+16.60 (+8.0% S.E.)
STA. 19+91.60 (0% T.R.)

PROP. CURVE OLYMPIAN RAMPB-2
PI STA. = 21+88.76
Δ = 28° 41' 07" (LT)
D = 15° 04' 42"
R = 379.99'
T = 97.16'
L = 190.24'
E = 12.22'
e = 7.8%
T.R. = N/A
S.E. RUN = 200'
P.C. STA = 20+91.60
P.T. STA = 22+81.84
ATTAIN S.E.;
STA. 19+91.60 (0% T.R.)
STA. 21+91.60 (-8.0% MATCH EXIST.)

## OLYMPIAN RAMP C

PROP. CURVE OLYMPIAN RAMPC-1
PI STA. = 14+15.02
Δ = 17° 37' 10" (RT)
D = 5° 58' 06"
R = 960.00'
T = 148.78'
L = 295.21'
E = 11.46'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C. STA = 12+66.24
P.C.C. STA = 15+61.45
ATTAIN S.E.;
STA. 11+51.66 (+2.0% MATCH EXIST.)
STA. 13+57.91 (+8.0% S.E.)

PROP. CURVE OLYMPIAN RAMPC-2
PI STA. = 17+41.85
Δ = 10° 13' 54" (RT)
D = 2° 50' 36"
R = 2,015.00'
T = 180.40'
L = 359.83'
E = 8.06'
e = 5.8%
T.R. = N/A
S.E. RUN = 200'
P.C.C. STA = 15+61.45
P.T. STA = 19+21.28
ATTAIN S.E.;
STA. 15+61.45 (+8.0% S.E.)
STA. 16+37.31 (+5.8% S.E.)
REMOVE S.E. (ENTR. TERMINAL);
STA. 19+21.28 (+5.8% @ B-B)
STA. 21+21.28 (+3.26% @ C-C)
STA. 23+21.32 (+2.0% @ D-D)

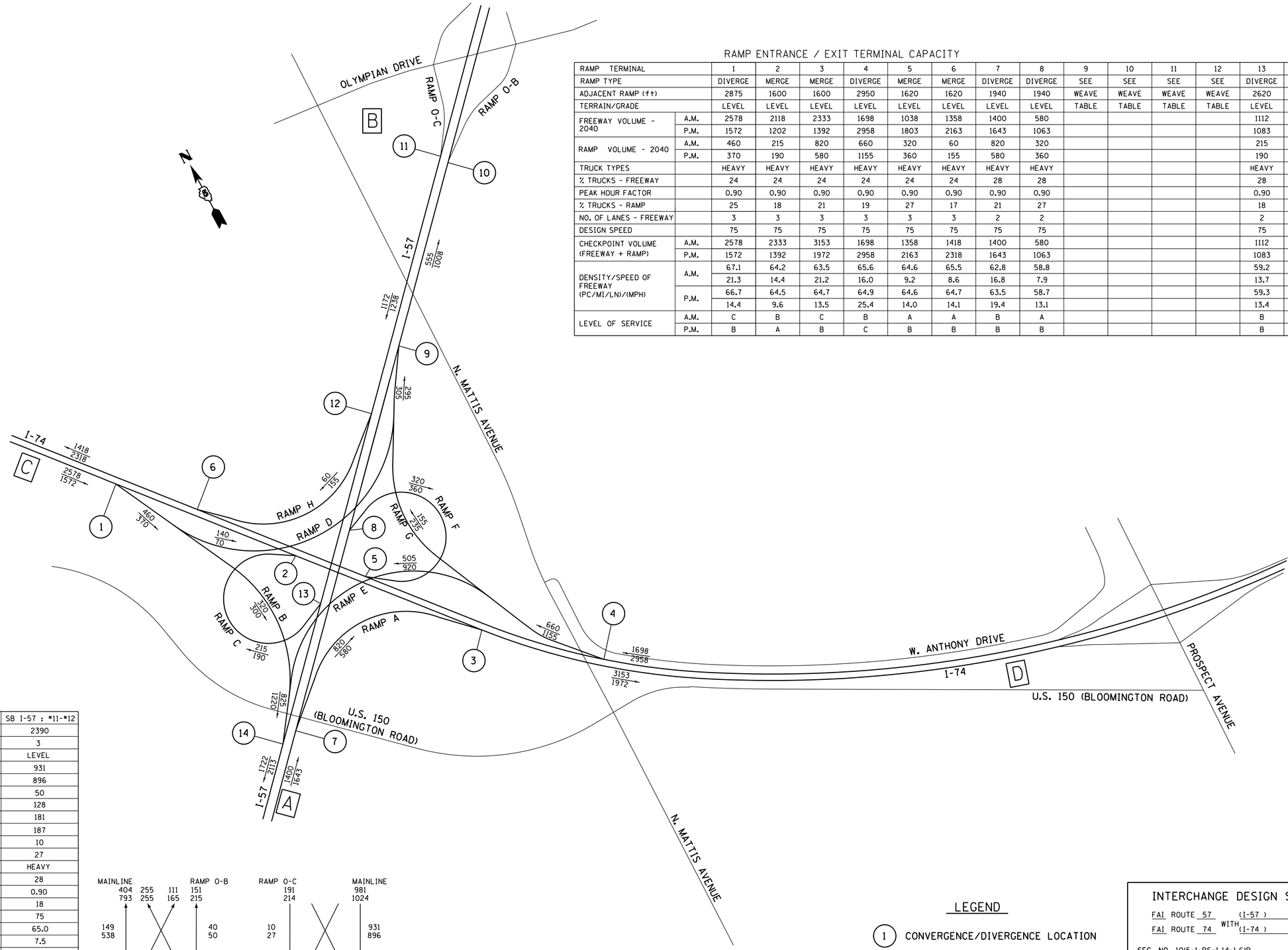
INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE N.T.S. COUNTY CHAMPAIGN
SJN : PROJ. NO.
I.D.S. SHEET 2 OF 41

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## TRAFFIC DATA

| MOVEMENT | YEAR 2040 AM DESIGN HOURLY VOLUME | YEAR 2040 PM DESIGN HOURLY VOLUME |
|---|---|---|
| AB | 260 | 703 |
| AC | 320 | 360 |
| AD | 820 | 580 |
| BA | 897 | 893 |
| BC | 60 | 155 |
| BD | 215 | 190 |
| CA | 320 | 300 |
| CB | 140 | 70 |
| CD | 2118 | 1202 |
| DA | 505 | 920 |
| DB | 155 | 235 |
| DC | 1038 | 1803 |
| TOTAL A | 3122 | 3756 |
| TOTAL B | 1727 | 2246 |
| TOTAL C | 3996 | 3890 |
| TOTAL D | 4851 | 4930 |

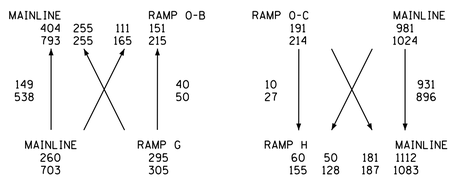



## RAMP ENTRANCE / EXIT TERMINAL CAPACITY

| RAMP TERMINAL | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RAMP TYPE | | DIVERGE | MERGE | MERGE | DIVERGE | MERGE | MERGE | DIVERGE | DIVERGE | SEE | SEE | SEE | SEE | DIVERGE | MERGE |
| ADJACENT RAMP (ft) | | 2875 | 1600 | 1600 | 2950 | 1620 | 1620 | 1940 | 1940 | WEAVE | WEAVE | WEAVE | WEAVE | 2620 | 2620 |
| TERRAIN/GRADE | | LEVEL | LEVEL | LEVEL | LEVEL | LEVEL | LEVEL | LEVEL | LEVEL | TABLE | TABLE | TABLE | TABLE | LEVEL | LEVEL |
| FREEWAY VOLUME - 2040 | A.M. | 2578 | 2118 | 2333 | 1698 | 1038 | 1358 | 1400 | 580 | | | | | 1112 | 897 |
| | P.M. | 1572 | 1202 | 1392 | 2958 | 1803 | 2163 | 1643 | 1063 | | | | | 1083 | 893 |
| RAMP VOLUME - 2040 | A.M. | 460 | 215 | 820 | 660 | 320 | 60 | 820 | 320 | | | | | 215 | 825 |
| | P.M. | 370 | 190 | 580 | 1155 | 360 | 155 | 580 | 360 | | | | | 190 | 1220 |
| TRUCK TYPES | | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY | | | | | HEAVY | HEAVY |
| % TRUCKS - FREEWAY | | 24 | 24 | 24 | 24 | 24 | 24 | 28 | 28 | | | | | 28 | 28 |
| PEAK HOUR FACTOR | | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | | | | | 0.90 | 0.90 |
| % TRUCKS - RAMP | | 25 | 18 | 21 | 19 | 27 | 17 | 21 | 27 | | | | | 18 | 24 |
| NO. OF LANES - FREEWAY | | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | | | | | 2 | 2 |
| DESIGN SPEED | | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | | | | | 75 | 75 |
| CHECKPOINT VOLUME (FREEWAY + RAMP) | A.M. | 2578 | 2333 | 3153 | 1698 | 1358 | 1418 | 1400 | 580 | | | | | 1112 | 1722 |
| | P.M. | 1572 | 1392 | 1972 | 2958 | 2163 | 2318 | 1643 | 1063 | | | | | 1083 | 2113 |
| DENSITY/SPEED OF FREEWAY (PC/MI/LN)/(MPH) | A.M. | 67.1 | 64.2 | 63.5 | 65.6 | 64.6 | 65.5 | 62.8 | 58.8 | | | | | 59.2 | 62.7 |
| | | 21.3 | 14.4 | 21.2 | 16.0 | 9.2 | 8.6 | 16.8 | 7.9 | | | | | 13.7 | 16.5 |
| | P.M. | 66.7 | 64.5 | 64.7 | 64.9 | 64.6 | 64.7 | 63.5 | 58.7 | | | | | 59.3 | 62.1 |
| | | 14.4 | 9.6 | 13.5 | 25.4 | 14.0 | 14.1 | 19.4 | 13.1 | | | | | 13.4 | 20.1 |
| LEVEL OF SERVICE | A.M. | C | B | C | B | A | A | B | A | | | | | B | B |
| | P.M. | B | A | B | C | B | B | B | B | | | | | B | C |

## WEAVING ANALYSIS

| WEAVING SECTION | | NB I-57 : #9-#10 | SB I-57 : #11-#12 |
|---|---|---|---|
| WEAVING LENGTH (Ls) | | 1140 | 2390 |
| NUMBER OF TOTAL LANES | | 3 | 3 |
| TERRAIN/GRADE | | LEVEL | LEVEL |
| VOLUME 1 - 2040 (THROUGH VOLUME) | A.M. | 149 | 931 |
| | P.M. | 538 | 896 |
| VOLUME 2 - 2040 (EXIT WEAVE) | A.M. | 111 | 50 |
| | P.M. | 165 | 128 |
| VOLUME 3 - 2040 (ENTRANCE WEAVE) | A.M. | 255 | 181 |
| | P.M. | 255 | 187 |
| VOLUME 4 - 2040 (RAMP-RAMP) | A.M. | 40 | 10 |
| | P.M. | 50 | 27 |
| TRUCK TYPES | | HEAVY | HEAVY |
| % TRUCKS - FREEWAY | | 28 | 28 |
| PEAK HOUR FACTOR | | 0.90 | 0.90 |
| % TRUCK - RAMP | | 18 | 18 |
| DESIGN SPEED | | 75 | 75 |
| DENSITY/SPEED OF FREEWAY (PC/MI/LN)/(MPH) | A.M. | 63.8 | 65.0 |
| | | 3.5 | 7.5 |
| | P.M. | 63.3 | 64.2 |
| | | 6.6 | 8.0 |
| LEVEL OF SERVICE | A.M. | A | A |
| | P.M. | A | A |




WEAVE #9-#10




WEAVE #11-#12

## LEGEND

(1) CONVERGENCE/DIVERGENCE LOCATION

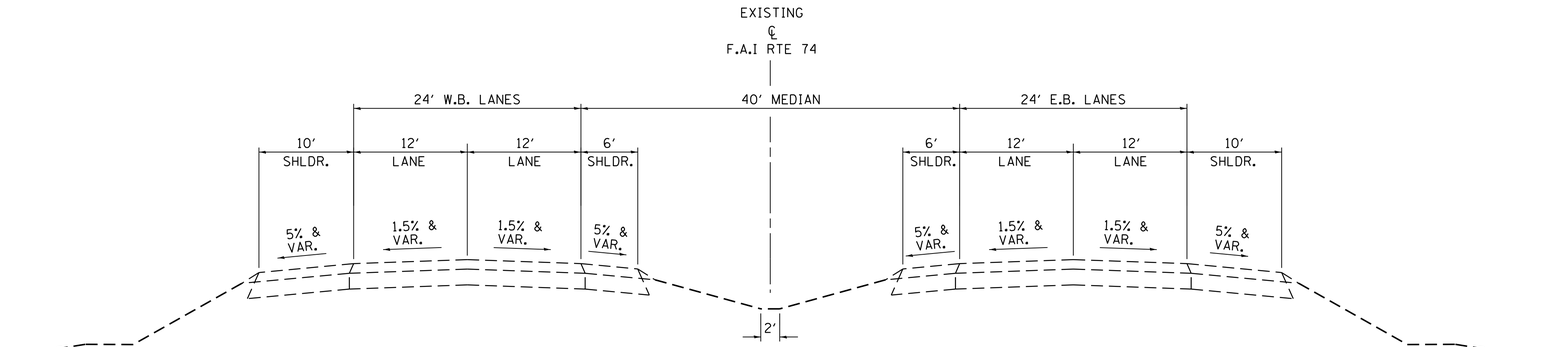
0000 → AM DHV (2040)
0000 PM DHV (2040)

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57)
FAI ROUTE 74 WITH (I-74)
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE N.T.S. COUNTY CHAMPAIGN
SJN : PROJ. NO.
I.D.S. SHEET 3 OF 41

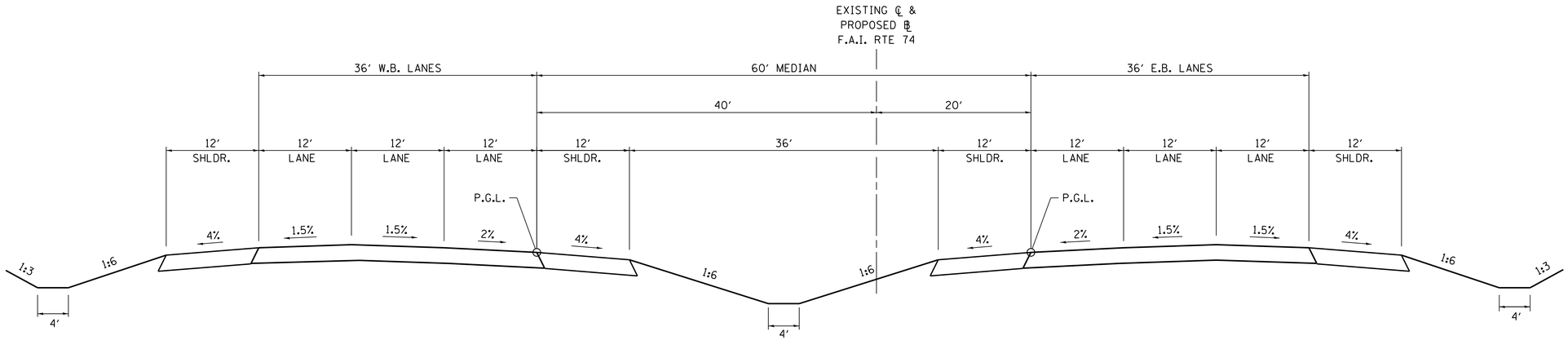
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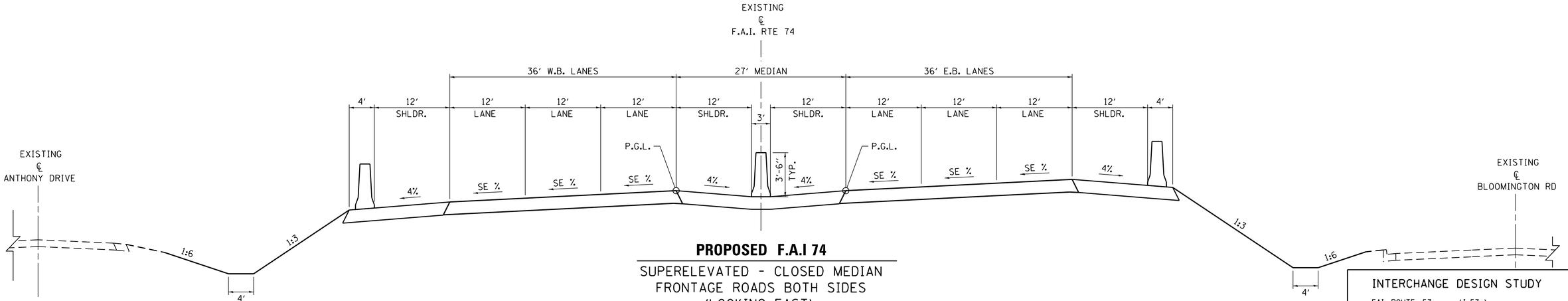

**EXISTING F.A.I 74**

(LOOKING EAST)




**PROPOSED F.A.I 74**

NORMAL CROWN - OPEN MEDIAN
(LOOKING EAST)




**PROPOSED F.A.I 74**

SUPERELEVATED - CLOSED MEDIAN
FRONTAGE ROADS BOTH SIDES
(LOOKING EAST)

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

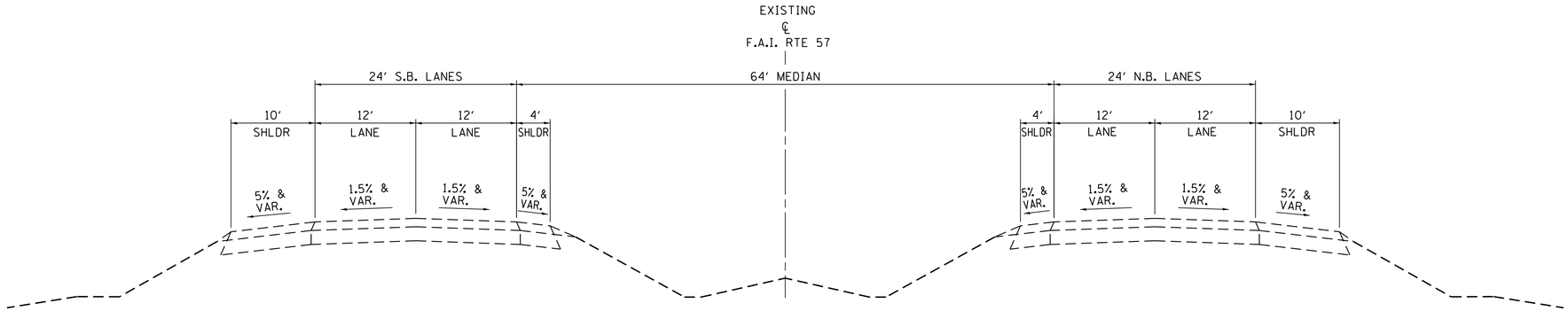
SCALE N.T.S. COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 4 OF 41

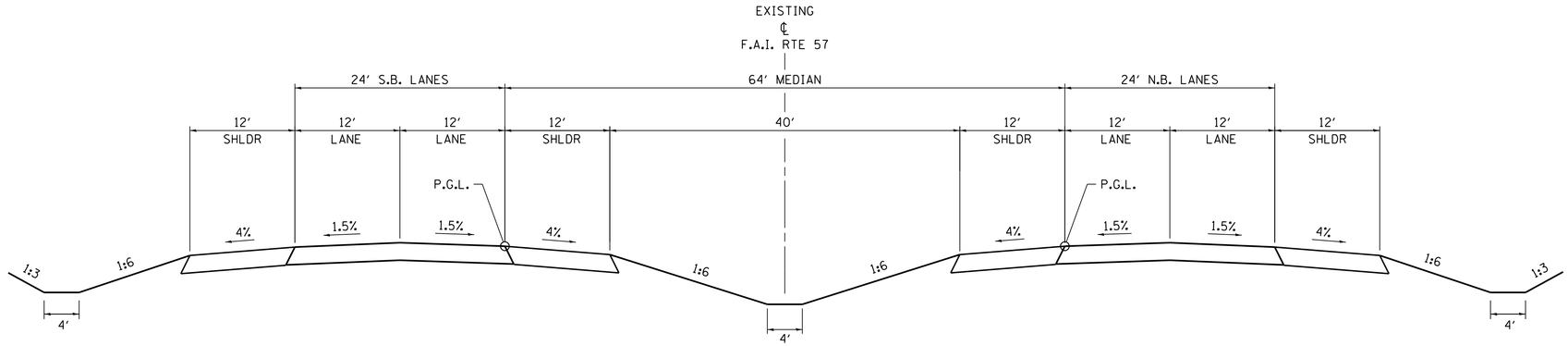
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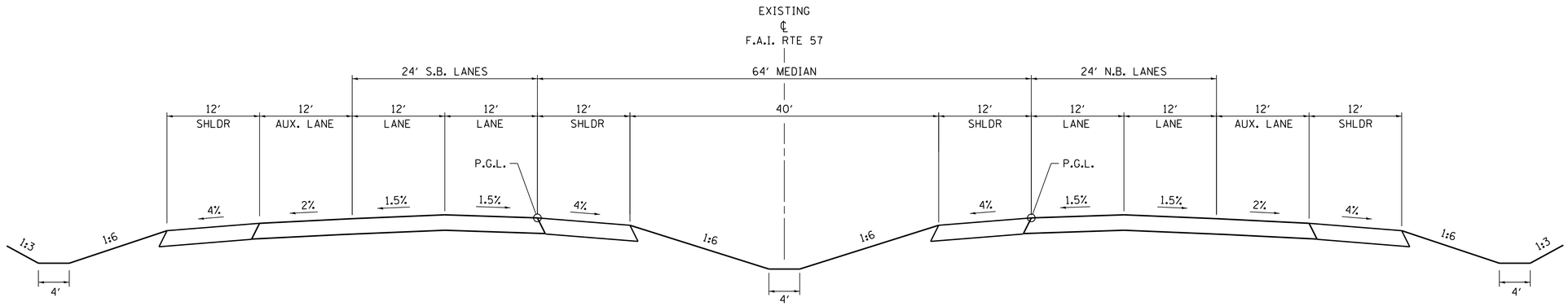

**EXISTING F.A.I 57**

(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
WITH AUXILIARY LANE
(LOOKING NORTH)

INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE N.T.S. COUNTY CHAMPAIGN

SJN : PROJ. NO.

I.D.S. SHEET 5 OF 41

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PRIVATE RESIDENCE
AGRICULTURE LAND
AGRICULTURE LAND
AGRICULTURE LAND
PRIVATE RESIDENCE

I-95

900' LANE DROP TAPER (75:1)
1500' LANE SHIFT (75:1)

STA. 1845+92.22 BK =
POT STA. 1845+93.65 AH

EXIST. R.O.W. & A/C
PROPOSED R.O.W. & A/C
EXISTING R.O.W. & A/C

+00.00
2 @ 12' LANES
13 @ 12' LANES
+01.43
3 @ 12' (LANES)
3 @ 12' LANES
+00.00

6' SHLDR
2 @ 12' LANES
10' SHLDR
12' SHLDR
12' SHLDR
12' SHLDR
12' SHLDR
12' SHLDR
12' SHLDR

20'
20'
20'
20'
VAR.
20'

1830
1835
1840
1845
1850
1855

PT Sta 1845+95.31
180°-00'-43"

600' LANE ADDITION TAPER (50:1)

BEGIN IMPROVEMENTS
STA. 1838+00.00, ℄ (I-74)

EXISTING ℄ I-74

EXISTING ℄ DUNCAN ROAD

I-85
I-80
I-75
I-70

AGRICULTURE LAND
AGRICULTURE LAND
PATTERSON CO., INC.
ROCKWELL AUTOMATION

N

100' 0 100' 200'
SCALE: 1" = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1" = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 6 OF 41

BDE-9908

PLOT DATE = 2/11/2015 - 2:21:38 PM
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PLOT SCALE = 100.0000 ' / in.
USER NAME = Brad Downen

VACANT LAND

AGRICULTURAL LAND

1500' LANE SHIFT (75:1)

12' SHLDR | 12' SHLDR | 3 @ 12' (LANES) | +01.43

STA. 1038+19.84, 77.00' LT. (I-74) =
STA. 831+39.63, ℄ (RAMP H)

STA. 1870+24.62 BK =
POT STA. 1035+05.17 AH

EXISTING ℄ I-74

+39.63 RAMP H

STANDARD ENTRANCE RAMP TERMINAL
BDE FIG. 37-6.K

VACANT LAND

PROPOSED ℄ RAMP H

+59.72 RAMP H

PT STa 819+89.72

EXISTING R.O.W. & A/C

PROPOSED R.O.W. & A/C

EXISTING R.O.W. & A/C

12' SHLDR | 4' SHLDR | 16' LANE | 6' SHLDR

12' SHLDR | 3 @ 12' LANES

C-RAMPH-1

1860 | 1865 | 1870 | 1040 | 1045 | 1050

40' | 20'

180°-00'-07"

PC STa 402+78.67

PROPOSED ℄ RAMP D

200 | 205 | 210 | 400 | 405

C-RAMPB-1

PC STa 208+00.09

PT STa 210+00.09

PI STa 212+00.09

PC STa 402+78.67

PI STa 404+78.75

PT STa 407+78.83

12' SHLDR | 3 @ 12' LANES | 12' SHLDR

4' SHLDR | 16' LANE | 6' SHLDR | 12' SHLDR

C-RAMPD-1

550

EXIST. R.O.W. & A/C

C-RAMPB-2

225

PC STa 222+41.22

C-RAMPC-1

525

STA. 1864+08.97, 57.00' RT. (I-74) =
STA. 200+00.00, ℄ (RAMP B)

+00.00 RAMP B

STANDARD EXIT RAMP TERMINAL
BDE FIG. 37-6.A

+38.42 RAMP B

6' SHLDR | 16' LANE | 4' SHLDR

PROPOSED ℄ RAMP B

+50.77 RAMP D

8' SHLDR | 16' LANE | 4' SHLDR

MINOR DIVERGENCE TYPE B
BDE FIG. 37-6.R

STA. 216+00.01, 16.00' LT. (RAMP B) =
STA. 400+00.00, ℄ (RAMP D)

AGRICULTURAL LAND

6' SHLDR | 16' LANE | 4' SHLDR

AGRICULTURAL LAND

MUTI

AGRICULTURAL LAND

ROCKWELL AUTOMATION

PROPOSED ℄ RAMP C

AGRICULTURAL LAND

EXISTING ℄ U.S. 150 (BLOOMINGTON ROAD)

EXISTING R.O.W.

MEADOWS ANIMAL HOSPITAL

KINGDOM HALL OF JEHOVAH'S WITNESS

130 | 135 | 140 | 955

EXISTING R.O.W.

N

100' 0 100' 200'
SCALE: 1" = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1" = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 7 OF 41

BDE-9908

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PLOT SCALE = 100.0000 ' / in.
USER NAME = Brad Downen

STA. 602+87.80, 57.00' LT. (I-57) =
STA. 300+00.00, ℄ (RAMP C)

PROPOSED ℄ RAMP H

VACANT LAND

EXIST. R.O.W. & A/C

STA. 1054+37.61, 77.00' LT. (I-74) =
STA. 645+75.67, ℄ (RAMP E)

PROPOSED ℄ RAMP D

EXISTING ℄ I-74

STANDARD ENTRANCE RAMP TERMINAL
BDE FIG. 37-6.K

PROPOSED ℄ RAMP F

PROPOSED R.O.W. & A/C

PROPOSED ℄ RAMP G

AGRICULTURAL LAND

PROPOSED ℄ RAMP E

MODIFIED STANDARD EXIT RAMP TERMINAL
BDE FIG. 37-6.A

STA. 1061+40.60, ℄ (I-74) =
STA. 597+78.82, ℄ (I-57)

STA. 1068+41.21, 57.00' RT. (I-57) =
STA. 345+75.67, ℄ (RAMP C)

CORPORATE PARK CENTRE

PROPOSED ℄ RAMP A

EXISTING ℄ I-57

STA. 592+89.97, 57.00' RT. (I-57) =
STA. 600+00.00, ℄ (RAMP F)

VACANT LAND

PROPOSED ℄ RAMP B

EXISTING R.O.W. & A/C

AGRICULTURAL LAND

PROPOSED ℄ RAMP C

PROPOSED R.O.W. & A/C

AGRICULTURAL LAND

N

100' 0 100' 200'
SCALE: 1'' = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1.6)R

SCALE 1'' = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 8 OF 41

BDE-9908

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USER NAME = Brad Downen

AGRICULTURAL LAND
INTERSTATE BATTERY
ALEXANDER LUMBER CO.
EXISTING R.O.W.
EXISTING ℄ WEST ANTHONY DRIVE
6' SHLDR
16' LANE
4' SHLDR
8' SHLDR
C-RAMP F-1
PROPOSED ℄ RAMP F
PROPOSED ℄ RAMP G
PROPOSED R.O.W. & A/C
PC Sta 721+26.34
+50.83 RAMP E
MINOR DIVERGENCE TYPE B BDE FIG. 37-6.R
STA. 500+00.00, ℄ (RAMP E) =
STA. 716+91.39, 16.00' LT. (RAMP G)
C-RAMP C-2
C-RAMP F-1
PROPOSED ℄ RAMP E
VACANT LAND
ADAMS OUTDOOR ADVERTISING
VACANT
PRIVATE RESIDENCES
NORTHSIDE CHURCH OF CHRIST
STA. 1095+56.85, 50.50' LT. (I-74) =
STA. 700+00.00, ℄ (RAMP G)
STANDARD EXIT RAMP TERMINAL BDE FIG. 37-6.A
12' SHLDR
3 @ 12' LANES
12' SHLDR
EXIST. R.O.W. & A/C
PC Sta 502+81.04
PC Sta 1077+42.30
PC Sta 711+91.47
PT Sta 711+66.47
P.C. +51.02
R=5,950'
+68.07 RAMP G
Sta 707+98.07
P.C.C. +77.27
+00.00 RAMP G
EXISTING R.O.W.
PCC Sta 1100+01.90
3 @ 12' LANES VAR.
SHLDR
C-RAMP A-1
P.T. Sta 128+66.94
P.C. +01.60
EXISTING R.O.W. & A/C
R=8,000'
+36.94 RAMP A
+18.03 RAMP A
P.C.C. +38.19
STANDARD ENTRANCE RAMP TERMINAL BDE FIG. 37-6.K
PROPOSED ℄ RAMP A
EXISTING ℄ I-74
STA. 1084+81.97, 50.53' RT. (I-74) =
STA. 140+18.03, ℄ (RAMP A)
GARDEN HILLS PARK
EXISTING R.O.W.
EXISTING ℄ U.S. 150 (BLOOMINGTON ROAD)
GARDEN VILLAGE APARTMENTS
VACANT
CORPORATE PARK CENTRE
EXISTING ℄ NORTH MATTIS AVENUE
AGRICULTURAL LAND
COPPER SLOUGH
AGRICULTURAL LAND
GARDEN VILLAGE APARTMENTS
EXISTING R.O.W.
EXISTING R.O.W.
AGRICULTURAL LAND
USPS - VECHILE MAINTENANCE FACILITY

N

100' 0 100' 200'
SCALE: 1" = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1" = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 9 OF 41

BDE-9908

PLOT DATE = 2/11/2015 - 2:21:40 PM
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PLOT SCALE = 100.0000 ' / in.
USER NAME = Brad Dawson

PRIVATE RESIDENCES
NORTHSIDE CHURCH OF CHRIST
SALT & LIGHT
CHAMPAIGN COUNTY MOBILITY
C-U NAPRAPATHIC AND RESIDENCE
INTERNATIONAL SOCIETY OF ARBORICULTURE
KEMPER INDUSTRIAL EQUIPMENT/ MIDWEST POTTYHOUSE
PEPSI BOTTLING CO.
ROTO ROOTER
VALUE PLACE
VACANT LAND
RURAL KING
EXISTING ℄ I-74
EXISTING ℄ WEST ANTHONY DRIVE
Sta 1100+01.90
Sta 1110+01.46
PCC
3 @ 12' LANES
12' SHLDR
EXISTING R.O.W.
C-74-2
C-74-3
13.5'
EXISTING R.O.W. & A/C
BEAUMONT TIRE & AUTO REPAIR
BOB SIMPSON AUTO SALES
COLLISON REVISION
STA. 1106+36.25
BEGIN DOTTED STRIPING
PER MUTCD FIG. 3B-10
JERICHO MISSIONARY CHURCH
GARDEN HILLS PARK
PRIVATE RESIDENCES
EXISTING ℄ U.S. 150 (BLOOMINGTON ROAD)

N

100′ 0 100′ 200′
SCALE: 1″ = 100′

# INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1″ = 100′ COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 10 OF 41

BDE-9908

PLOT DATE = 2/11/2015 - 2:21:41 PM
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USER NAME = Brad Downen

RURAL KING

THE FLOORING DEPOT

GOODWILL

DRURY INN & SUITES

EXISTING ℄ PROSPECT AVENUE

END IMPROVEMENTS
STA. 14+75.00, ℄ (RAMP P-A)

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE
BDE FIG. 37-6.L

SAMUEL MUSIC
MSCUBA.COM
LOVELY NAILS
CASUAL MALE XL

RYAN'S

PROPOSED ℄ PROSPECT RAMP A

STA. 1129+60.15, 49.50' LT. (I-74) =
STA. 26+71.58, ℄ (RAMP P-A)

EXISTING ℄ WEST ANTHONY DRIVE

EXISTING R.O.W.

PROSPECT RAMP B

END IMPROVEMENTS
STA. 1143+00.00, ℄ (I-74)

EXISTING ℄ I-74

C-PROSRAMPA-1

C-74-3

TRANSITION MEDIAN 27' TO 26'

EXISTING R.O.W. & A/C

CHEMICAL MAINTENANCE
CAKE ARTIST'S STUDIO
CREATIVE HOMES
TERMINIX

BUNDY BUSINESS SYSTEM

EXIT RAMP TERMINAL WITH AUXILIARY LANE
BDE FIG. 37-6.B

PREMIER PRINT GROUP

PROPOSED ℄ PROSPECT RAMP C

ECONOMY HOTEL

CARPET ONE
HUNTER'S HAVEN
SLOT & WING HOBBY

END IMPROVEMENTS
STA. 35+00.00, ℄ (RAMP P-C)

PRIVATE RESIDENCES

STA. 1132+04.41, 49.50' RT. (I-74) =
STA. 24+49.07, ℄ (RAMP P-C)

U.S. 150 (BLOOMINGTON ROAD)

EXISTING R.O.W.

THARA THAI

VACANT

McDONALDS

PHILLIPS 66

HOME DEPOT

PROSPECT RAMP D

N

100' 0 100' 200'
SCALE: 1" = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1" = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 11 OF 41

BDE-9908

PLOT DATE = 2/11/2015 - 2:21:42 PM
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PLOT SCALE = 100.0000 ' / in.
USER NAME = Brad Downen

AGRICULTURAL LAND

EXISTING ℄ U.S. 150 (BLOOMINGTON ROAD)

AGRICULTURAL LAND

MILLER ENTERPRISES

MIDWEST POTTYHOUSE
PENHALL CO.
VARSITY STRIPING & CONSTRUCTION CO.

EXISTING R.O.W.

PROPOSED ℄ RAMP C

EXISTING R.O.W.

AGRICULTURAL LAND

4' SHLDR
16' LANE
6' SHLDR

AGRICULTURAL LAND

PROPOSED ℄ RAMP B

PROPOSED ℄ RAMP E

STA. 239+38.61, 16.00' LT. (RAMP B) =
STA. 529+83.39, ℄ (RAMP E)

MINOR CONVERGENCE TYPE B
BDE FIG. 37-6.T

STA. 565+09.73, 57.00' LT. (I-57) =
STA. 257+88.60, ℄ (RAMP B)

STANDARD ENTRANCE RAMP TERMINAL
BDE FIG. 37-6.K

EXISTING R.O.W. & A/C

+88.60
RAMP B

PROP. R.O.W. & A/C

+44.23
RAMP E

Sta 236+42.15 PT

C-RAMP E-1

C-RAMP B-2

C-RAMP B-3

Sta 246+38.53 PT

+08.53
RAMP B

Sta 243+78.53 PC

Sta 243+38.53 PT

EXISTING R.O.W. & A/C

10' SHLDR
2 @ 12' LANES
4' SHLDR

10' SHLDR
2 @ 12' LANES
12' SHLDR

16' LANE
8' SHLDR

4' SHLDR

12' SHLDR
16' LANE
6' SHLDR
12' SHLDR
2 @ 12' LANES

4' SHLDR
2 @ 12' LANES
10' SHLDR

12' SHLDR
2 @ 12' LANES
10' SHLDR

BEGIN IMPROVEMENTS
STA. 560+00.00, ℄ (I-57)

EXISTING R.O.W. & A/C

EXISTING ℄ I-57

STA. 573+40.00, 57.00' RT. (I-57) =
STA. 100+00.00, ℄ (RAMP A)

+00.00
RAMP A

PROPOSED R.O.W. & A/C

MODIFIED STANDARD EXIT RAMP TERMINAL
BDE FIG. 37-6.A

PROPOSED
R.O.W. & A/C

4' SHLDR
6' SHLDR
16' LANE

PC Sta 113+16.25

+07.92
RAMP A

EXIST. R.O.W. & A/C

C-RAMP A-1

PROPOSED ℄ RAMP A

NORFOLK SOUTHERN RAILROAD

EXISTING R.O.W.

MUNICIPAL WELL

VACANT

VACANT

EXISTING R.O.W.

NHRMA MUTUAL
MPIC

PARKLAND COLLEGE

ROCKWELL AUTOMATION
PLASTIPAK PACKAGING, INC.

100' 0 100' 200'
SCALE: 1'' = 100'

# INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1'' = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 12 OF 41

BDE-9908

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VACANT

AGRICULTURAL LAND

AGRICULTURAL LAND

AGRICULTURAL LAND

EXISTING R.O.W.

EXISTING R.O.W.

PROPOSED ℄ RAMP H

EXIT RAMP TERMINAL WITH AUXILIARY LANE
BDE FIG. 37-6.B

+00.00 RAMP H

2682' WEAVING DISTANCE

+24.82 RAMP H

+28.61 I-57

STA. 613+57.98, 68.00' LT. (I-57) =
STA. 800+00.00, ℄ (RAMP H)

EXISTING ℄ I-57

CENTRAL ILLINOIS TILE CO.

VACANT

EXISTING R.O.W. & A/C

EXISTING R.O.W. & A/C

EXIST. R.O.W. & A/C

PC Sta 804+54.82

C-RAMP-H

12' SHLDR
2 @ 12' LANES
12' SHLDR

4' SHLDR
16' LANE
6' SHLDR

12' SHLDR
3 @ 12' LANES
12' SHLDR

PROPOSED ℄ RAMP D

EXIST. R.O.W. & A/C

PC Sta 609+42.29

PCC Sta 611+42.29

C-RAMP-J

PC Sta 428+59.69

PT Sta 738+63.05

+98.58 RAMP D

C-RAMP-I3

PT Sta 745+39.61

PC Sta 746+04.61

+24.57 RAMP G

PT Sta 749+54.61

+42.22 I-57

PROPOSED R.O.W. & A/C

1477' WEAVING DISTANCE

DEAN'S GRAPHIC DIVISION

STA. 629+42.38, 68.00' RT. (I-57) =
STA. 755+54.53, ℄ (RAMP G)

DOBBINS, FRAKER, TENNANT, JOY, AND PERLSTEIN, PC
F.E. MORAN FIRE PROTECTION
RAMJET, INC.
DODDS CO.
O.C.C.

CAPITAL GROUP

MINOR CONVERGENCE TYPE B
BDE FIG. 37-6.T

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE
BDE FIG. 37-6.L

PROPOSED ℄ RAMP G

STA. 431+35.26, ℄ (RAMP D) =
STA. 741+39.69, 16.00' LT. (RAMP G)

C-RAMP-J2

50
8' SHLDR
16' LANE
4' SHLDR

PROPOSED R.O.W. & A/C

AGRICULTURAL LAND

ILLINOIS HEARTLAND LIBRARY SYSTEM

UNITED MODEL HOBBICO R&D

EXISTING ℄ NORTH MATTIS AVENUE

C-RAMP-J1

PCC Sta 621+83.95

6' SHLDR
16' LANE
4' SHLDR

PROPOSED ℄ RAMP F

EXISTING R.O.W.

EXISTING R.O.W.

VACANT

100' 0 100' 200'
SCALE: 1" = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1" = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 13 OF 41

BDE-9908

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PLOT SCALE = 100.0000 ' / in.
USER NAME = Brad Dawson

HUDSON TECHNOLOGIES
GEM CITY TIRE
EXPEDITED FREIGHT SYSTEM, INC.
VACANT
CHAMBANA SALES
AGRICULTURAL LAND
CUSTOM SERVICE CRANE
POND
CENTRAL ILLINOIS TILE CO.
ILLINOIS CROP IMPROVEMENT, INC.
ISS, INC.
SILGAN WHITE CAP
PRARIELAND COUNCIL BOY SCOUT OFFICE

EXISTING ℄ OLYMPIAN DRIVE
EXISTING ℄ I-57

END IMPROVEMENTS
STA. 11+50.00, ℄ (RAMP O-C)

PROPOSED ℄ OLYMPIAN RAMP C

STA. 634+11.21, 68.00' LT. (I-57) =
STA. 25+21.20 ℄ (RAMP O-C)

+21.20 RAMP O-C

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE
BDE FIG. 37-6.L

2682' WEAVING DISTANCE

+11.37 I-57

+91.28 RAMP O-C

PCC Sta 15+61.45

PC Sta 12+46.24

OLYMPIAN RAMP D

EXISTING R.O.W. & A/C

C-OLYMRAMPC-1

12' SHLDR | 3 @ 12' LANES | 12' SHLDR

6' SHLDR | 16' LANE | 4' SHLDR | 10

12' SHLDR | 2 @ 12' LANES | 12' SHLDR | 10' SHLDR

2 @ 12' LANES | 4' SHLDR

PT Sta 19+21.28

635 | 640 | 645 | 650 | 655 | 660

32' | 32' | 12' | 32' | 32' | 120

EXIST. R.O.W. & A/C

C-OLYMRAMPB-1

PC Sta 14+23.12

+70.29 RAMP O-B

+19.24 I-57

+95.12 RAMP O-B

12' SHLDR | 3 @ 12' LANES | 12' SHLDR

12' SHLDR | 3 @ 12' LANES | 12' SHLDR

4' SHLDR | 2 @ 12' LANES | 10' SHLDR

4' SHLDR

END IMPROVEMENTS
STA. 648+00.00, ℄ (I-57)

OLYMPIAN RAMP A

STA. 638+11.69
68.00' RT. (I-57) =
STA. 9+70.29 ℄ (RAMP O-B)

1477' WEAVING DISTANCE

EXIT RAMP TERMINAL WITH AUXILIARY LANE
BDE FIG. 37-6.B

PROPOSED ℄ OLYMPIAN RAMP B

PT Sta 18+54.10

6' SHLDR | 16' LANE

C-OLYMRAMPB-2

PC Sta 20+16.60

PT Sta 22+81.84

END IMPROVEMENTS
STA. 21+91.60, ℄ (RAMP O-B)

N

100' 0 100' 200'
SCALE: 1" = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

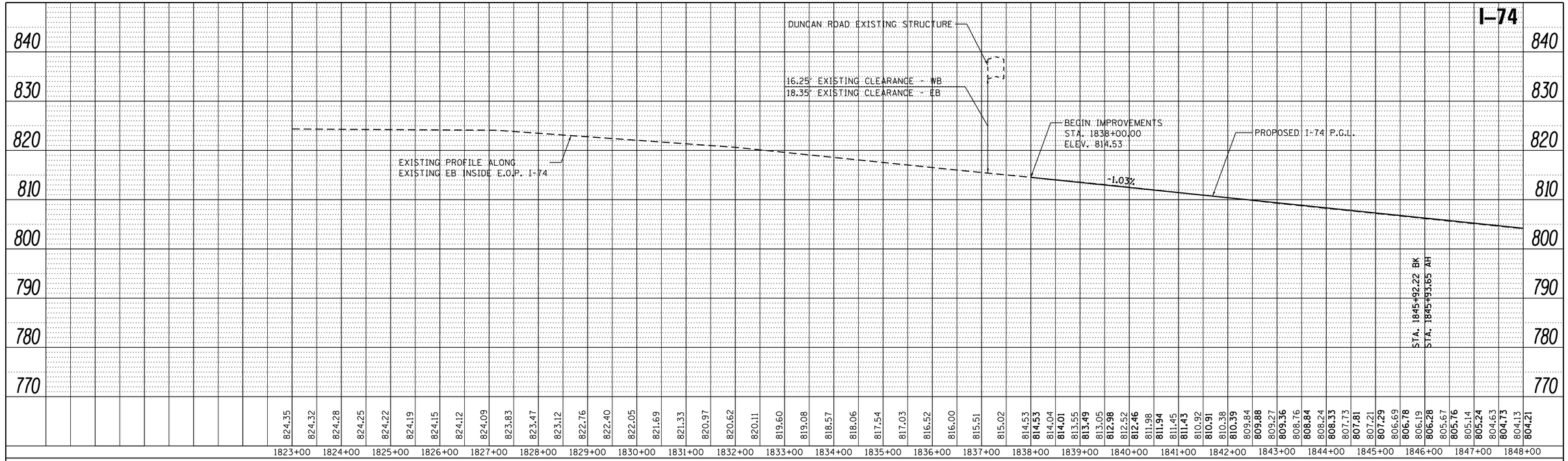
SCALE 1" = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

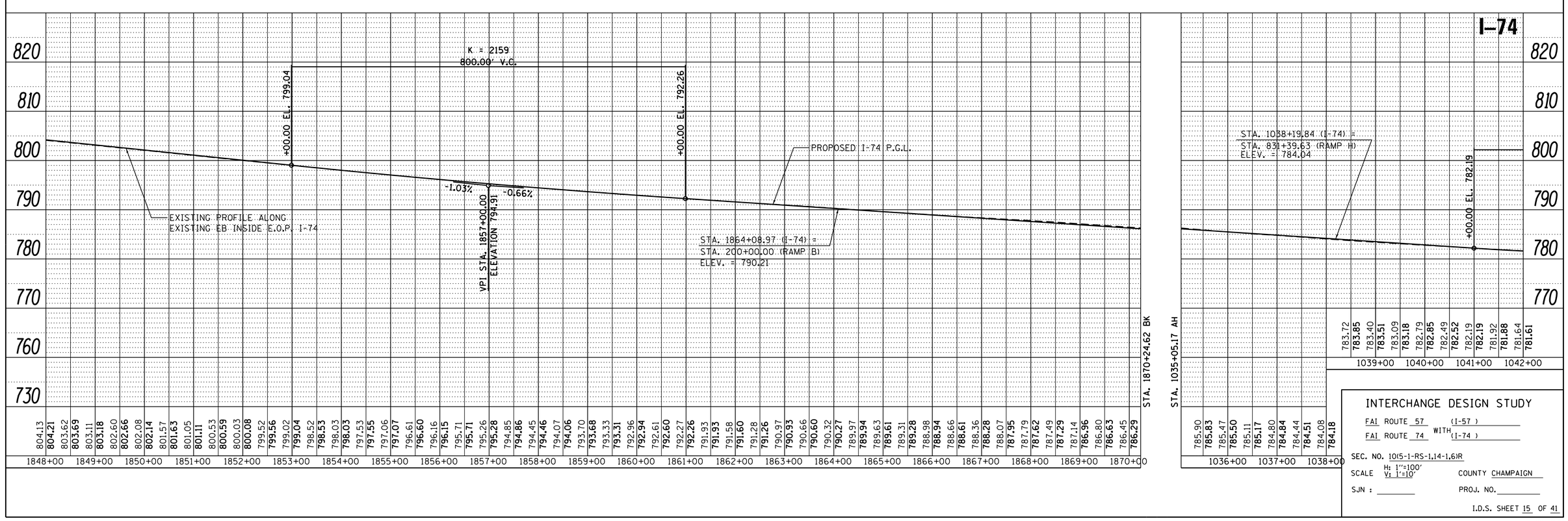
I.D.S. SHEET 14 OF 41

BDE-9908

PLAN
SURVEYED BY
PLOTTED DATE
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.




PROFILE
SURVEYED BY
PLOTTED DATE
CROSS SECTIONS CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.




INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

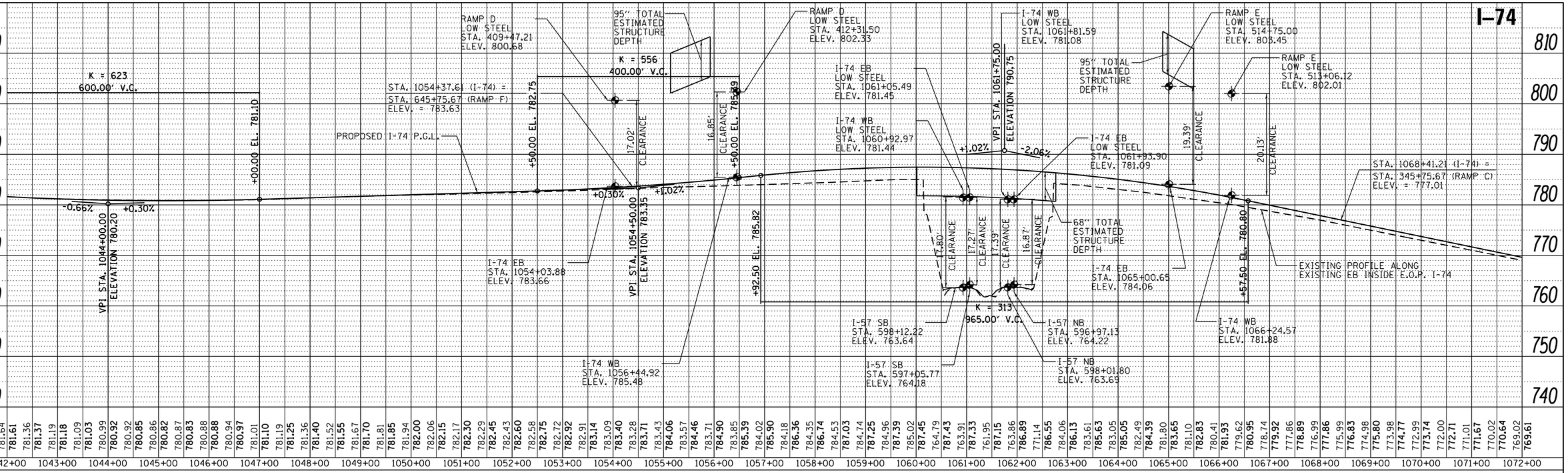
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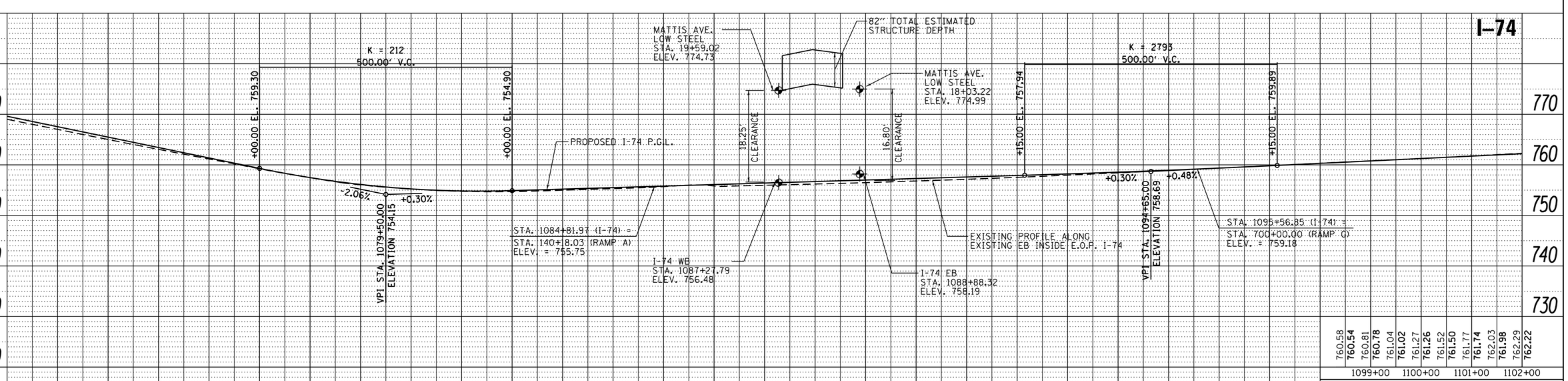
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I.D.S. SHEET 15 OF 41

BDE-9908

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NOTE BOOK
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STRUCTURE NOTATNS CHKD
NOTE BOOK
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## INTERCHANGE DESIGN STUDY

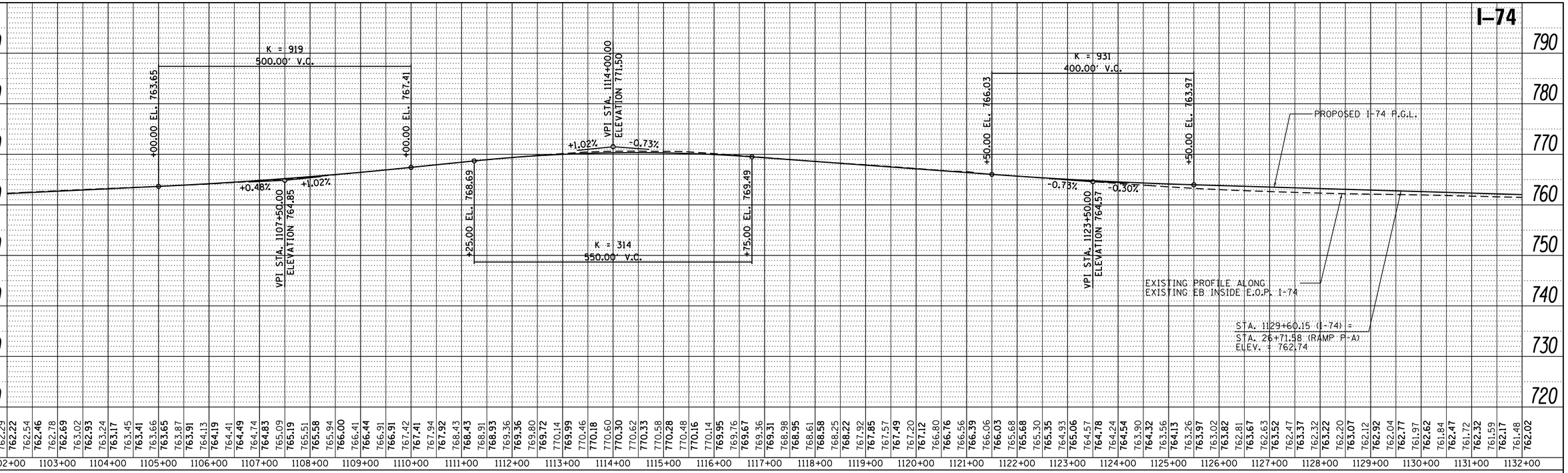
FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE H: 1"=100'
V: 1'=10'
COUNTY CHAMPAIGN
SJN : _____
PROJ. NO. _____

I.D.S. SHEET 16 OF 41

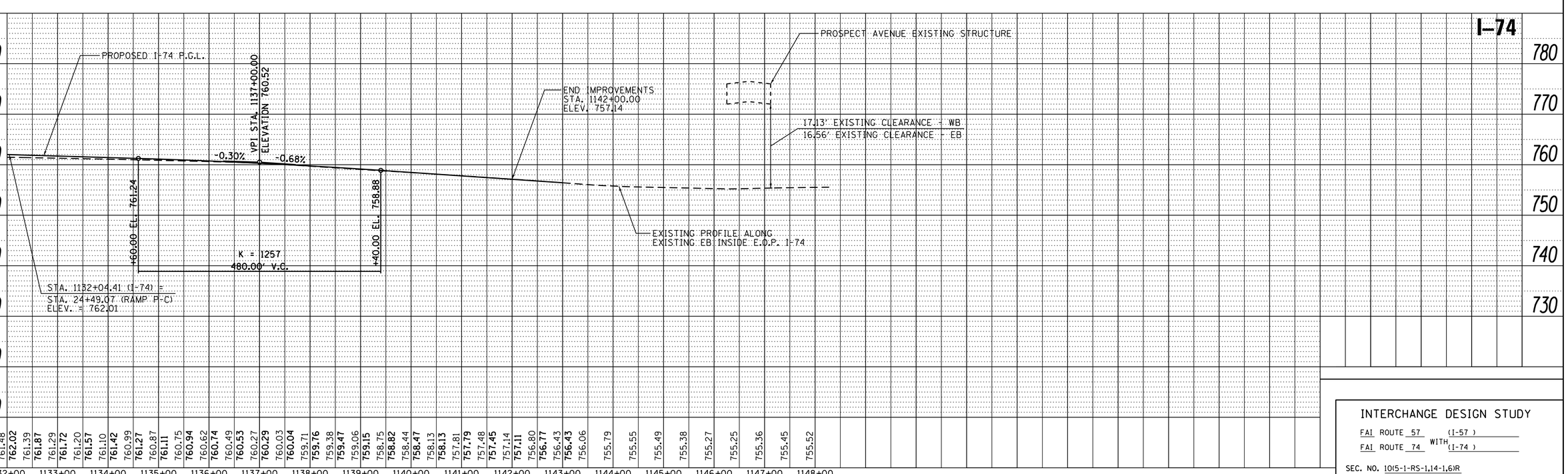
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NOTE BOOK
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PROFILE
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ALIGNMENT CHECKED
RT. OF WAY CHKD
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE




## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE H: 1"=100'
V: 1'=10'
COUNTY CHAMPAIGN
SJN : _____
PROJ. NO. _____

I.D.S. SHEET 17 OF 41

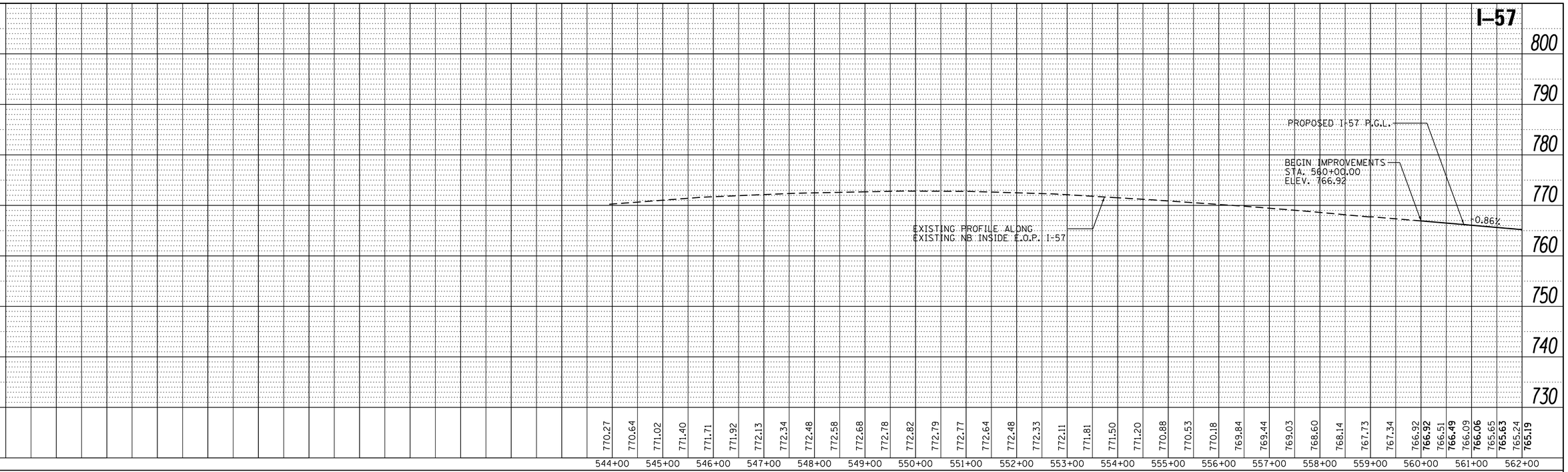
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PLAN

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| RT. OF WAY CHECKED | |
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| NOTE BOOK | |
| NO. | |

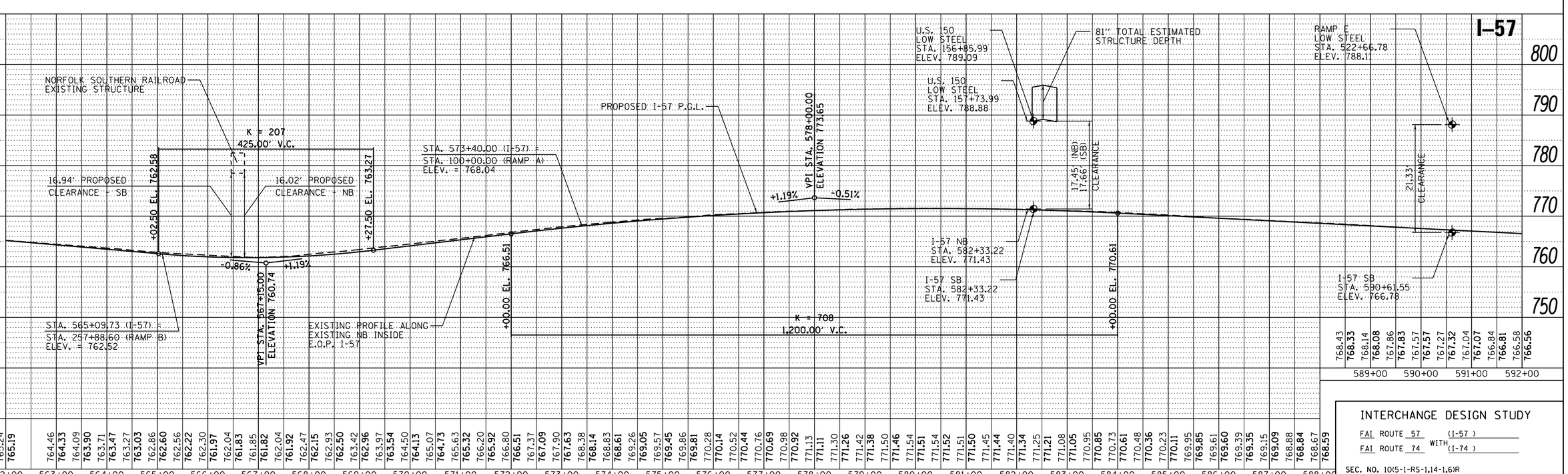
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PROFILE

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| STRUCTURE NOTATNS CHKD | |
| NOTE BOOK | |
| NO. | |

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## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57)

FAI ROUTE 74 WITH (I-74)

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

SJN : _____

PROJ. NO. _____

I.D.S. SHEET 18 OF 41

BDE-9908

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I-57

95" TOTAL ESTIMATED STRUCTURE DEPTH
RAMP E LOW STEEL STA. 520+16.99 ELEV. 796.48
I-74 EB LOW STEEL STA. 1061+05.99 ELEV. 781.45
I-74 EB LOW STEEL STA. 1061+93.90 ELEV. 781.09
68" TOTAL ESTIMATED STRUCTURE DEPTH
I-74 WB LOW STEEL STA. 1061+81.59 ELEV. 781.08
I-74 WB LOW STEEL STA. 1060+92.97 ELEV. 781.44
68" TOTAL ESTIMATED STRUCTURAL DEPTH
RAMP D LOW STEEL STA. 418+60.29 ELEV. 790.98
95" TOTAL ESTIMATED STRUCTURAL DEPTH
RAMP D LOW STEEL STA. 420+64.79 ELEV. 786.89
K = 620
500.00' V.C.
30.84' CLEARANCE
16.87' CLEARANCE
17.27' CLEARANCE
17.39' CLEARANCE
17.80' CLEARANCE
28.29' CLEARANCE
24.17' CLEARANCE
+50.00 EL. 763.27
+50.00 EL. 762.75
+10.00 EL. 766.03
PROPOSED I-57 P.G.L.
STA. 613+57.90 (I-57) = STA. 800+00.00 (RAMP H) ELEV. = 765.78
STA. 592+89.97 (I-57) = STA. 600+00.00 (RAMP F) ELEV. = 766.11
-0.51%
+0.30%
VPI STA. 601+00.00 ELEVATION 762.00
I-57 SB STA. 598+12.22 ELEV. 763.64
I-57 NB STA. 596+97.13 ELEV. 764.22
I-57 SB STA. 597+05.77 ELEV. 764.18
I-57 NB STA. 598+01.80 ELEV. 763.69
I-57 NB STA. 605+00.07 ELEV. 762.72
I-57 SB STA. 603+27.24 ELEV. 764.69
EXISTING PROFILE ALONG EXISTING NB INSIDE E.O.P. I-57
I-57 NB STA. 592+87.95 ELEV. 765.64
STA. 602+87.80 (I-57) = STA. 300+00.00 (RAMP C) ELEV. = 762.60

766.58 766.56 766.31 766.09 766.06 765.85 765.80 765.59 765.55 765.33 765.30 765.08 765.04 764.78 764.79 764.49 764.54 764.27 764.28 764.06 764.03 763.79 763.78 763.55 763.52 763.33 763.27 763.08 763.04 762.88 762.84 762.70 762.69 762.54 762.58 762.45 762.51 762.43 762.48 762.46 762.49 762.48 762.54 762.56 762.62 762.61 762.75 762.71 762.90 762.82 763.05 762.92 763.20 763.05 763.35 763.18 763.50 763.28 763.65 763.39 763.80 763.51 763.95 763.61 764.10 763.71 764.25 763.81 764.40 763.92 764.55 764.02 764.70 764.12 764.85 764.22 765.00 764.33 765.15 764.44 765.30 764.55 765.45 764.67 765.60 764.79 765.75 764.92 765.90 765.05 766.05 765.14 766.20 765.23 766.35 765.32 766.50 765.47 766.65 765.63 766.80 765.74 766.95 765.89 767.10 766.06 767.25 766.27 767.40 766.48 767.55 766.74 767.70 767.03 767.85 767.33 768.00 767.63 768.16 767.93 768.34

592+00 593+00 594+00 595+00 596+00 597+00 598+00 599+00 600+00 601+00 602+00 603+00 604+00 605+00 606+00 607+00 608+00 609+00 610+00 611+00 612+00 613+00 614+00 615+00 616+00 617+00 618+00 619+00 620+00 621+00 622+00

PLAN — SURVEYED; PLOTTED; ALIGNMENT CHECKED; RT. OF WAY CHECKED; CADD FILE NAME; NOTE BOOK; NO. ____ — BY; DATE

I-57

MATTIS AVE. LOW STEEL STA. 23+79.55 ELEV. 787.32
87" TOTAL ESTIMATED STRUCTURE DEPTH
MATTIS AVE. LOW STEEL STA. 26+19.59 ELEV. 788.39
K = 1208
400.00' V.C.
+10.00 EL. 769.90
17.05' CLEARANCE
16.79' CLEARANCE
STA. 629+42.38 (I-57) = STA. 755+54.53 (RAMP G) ELEV. = 772.62
VPI STA. 632+70.00 ELEVATION 774.69
STA. 634+11.21 (I-57) = STA. 25+21.20 (RAMP O-C) ELEV. = 774.07
PROPOSED I-57 P.G.L.
STA. 637+89.87 (I-57) = STA. 9+70.29 (RAMP O-B) ELEV. = 773.13
+0.50%
+0.63%
+0.63%
-0.30%
VPI STA. 623+10.00 ELEVATION 768.63
I-57 NB STA. 625+67.70 ELEV. 770.27
+70.00 EL. 772.80
+70.00 EL. 773.79
K = 645
600.00' V.C.
I-57 SB STA. 627+78.30 ELEV. 771.60
EXISTING PROFILE ALONG EXISTING NB INSIDE E.O.P. I-57
K = 4371
400.00' V.C.
+00.00 EL. 771.30
+00.00 EL. 770.29
OLYMPIAN DRIVE EXISTING STRUCTURE
END IMPROVEMENTS STA. 648+00.00 ELEV. 770.29
-0.30%
-0.21%
VPI STA. 646+00.00 ELEVATION 770.70
16.25' EXISTING CLEARANCE - SB
16.33' EXISTING CLEARANCE - NB

767.93 768.34 768.24 768.54 768.53 768.75 768.89 768.99 769.29 769.25 769.59 769.53 769.79 769.83 770.12 770.15 770.44 770.46 770.73 770.78 771.03 771.10 771.37 771.41 771.74 771.73 772.08 772.04 772.37 772.36 772.59 772.67 772.78 772.98 772.93 773.25 773.05 773.49 773.15 773.68 773.21 773.84 773.25 773.96 773.23 774.04 773.19 774.08 773.11 774.08 773.03 774.04 772.95 773.96 772.85 773.85 772.75 773.70 772.65 773.55 772.55 773.40 772.44 773.25 772.33 773.10 772.21 772.95 772.13 772.80 772.04 772.65 771.96 772.50 771.84 772.35 771.72 772.20 771.60 772.05 771.52 771.90 771.43 771.75 771.35 771.60 771.24 771.45 771.13 771.30 771.01 771.16 770.89 771.02 770.77 770.88 770.64 770.75 770.56 770.63 770.47 770.51 770.39 770.39 770.29 770.29 770.19 770.03 769.86 769.74 769.64 769.54

622+00 623+00 624+00 625+00 626+00 627+00 628+00 629+00 630+00 631+00 632+00 633+00 634+00 635+00 636+00 637+00 638+00 639+00 640+00 641+00 642+00 643+00 644+00 645+00 646+00 647+00 648+00 649+00 650+00 651+00

PROFILE — SURVEYED; PLOTTED; ALIGNMENT CHECKED; R/W, B.M. NOTED; STRUCTURE NOTATNS CHKD; NOTE BOOK; NO. ____ — BY; DATE

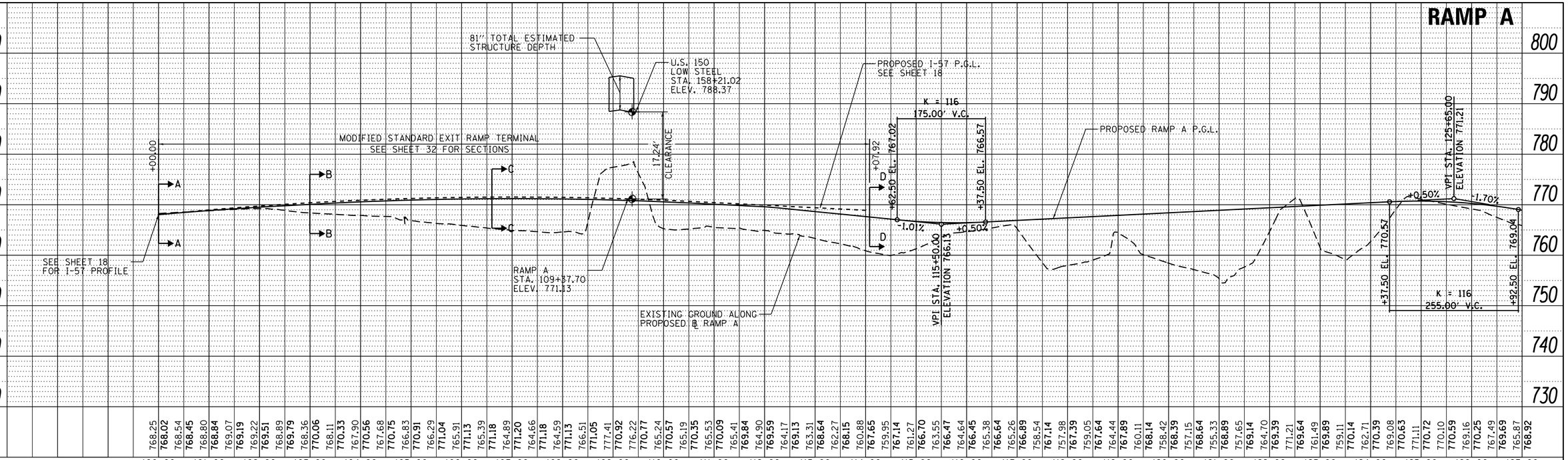
INTERCHANGE DESIGN STUDY

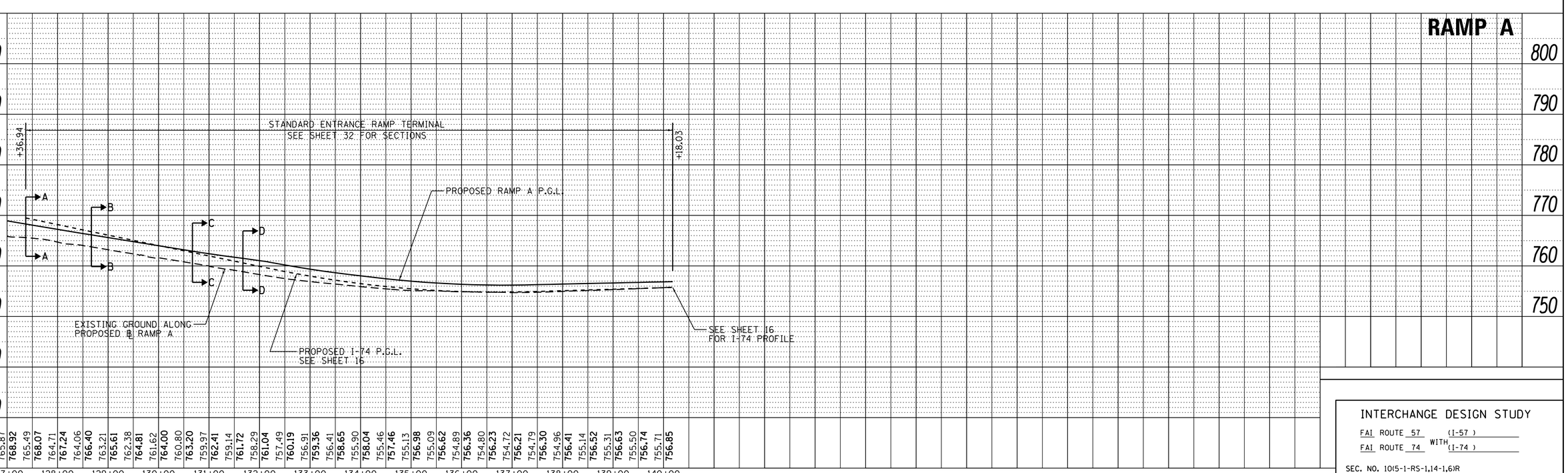
FAI ROUTE 57 (I-57)
FAI ROUTE 74 WITH (I-74)
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE H: 1"=100' V: 1"=10'
COUNTY CHAMPAIGN
SJN : _____
PROJ. NO. _____
I.D.S. SHEET 19 OF 41

BDE-9908

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# RAMP A




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GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
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INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

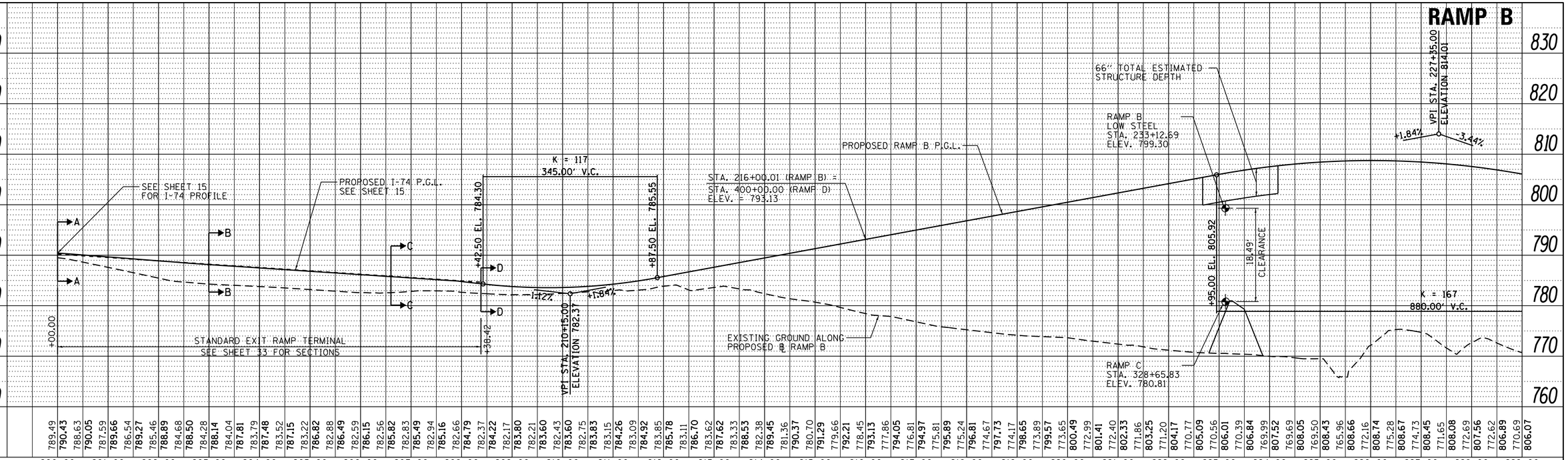
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE H: 1"=100'
V: 1'=10'
COUNTY CHAMPAIGN
SJN : _____
PROJ. NO. _____

I.D.S. SHEET 20 OF 41

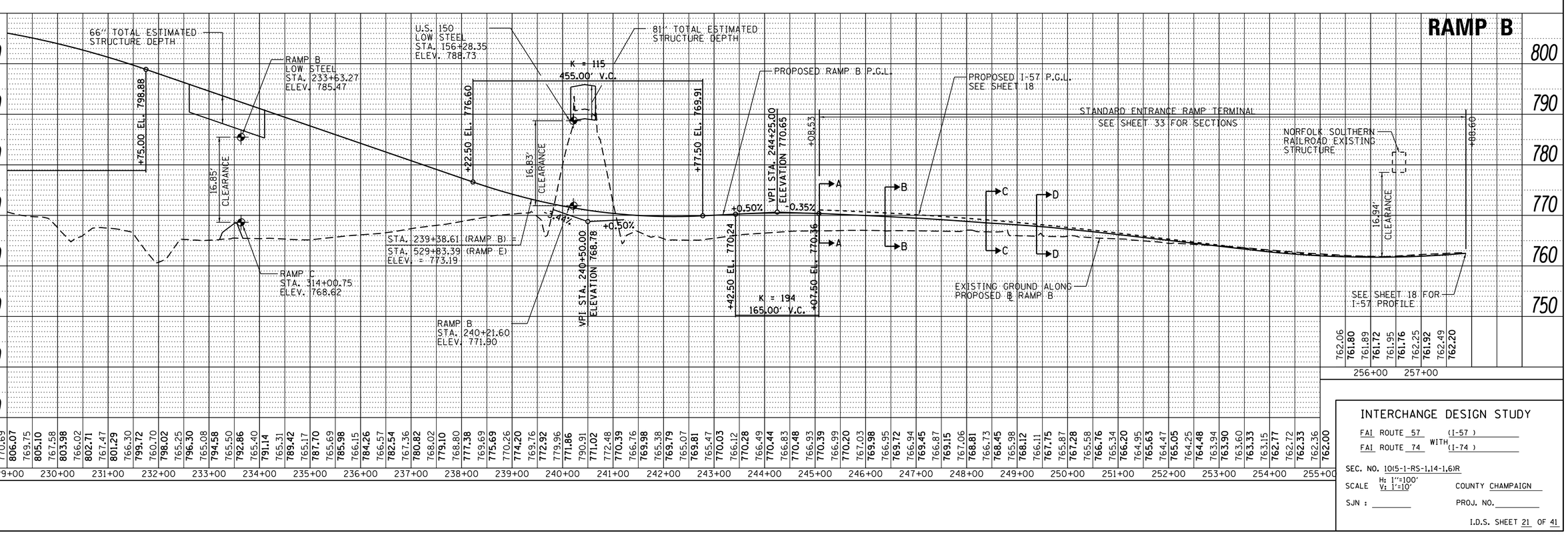
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# RAMP B




# RAMP B




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CADD FILE NAME
NOTE BOOK
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PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

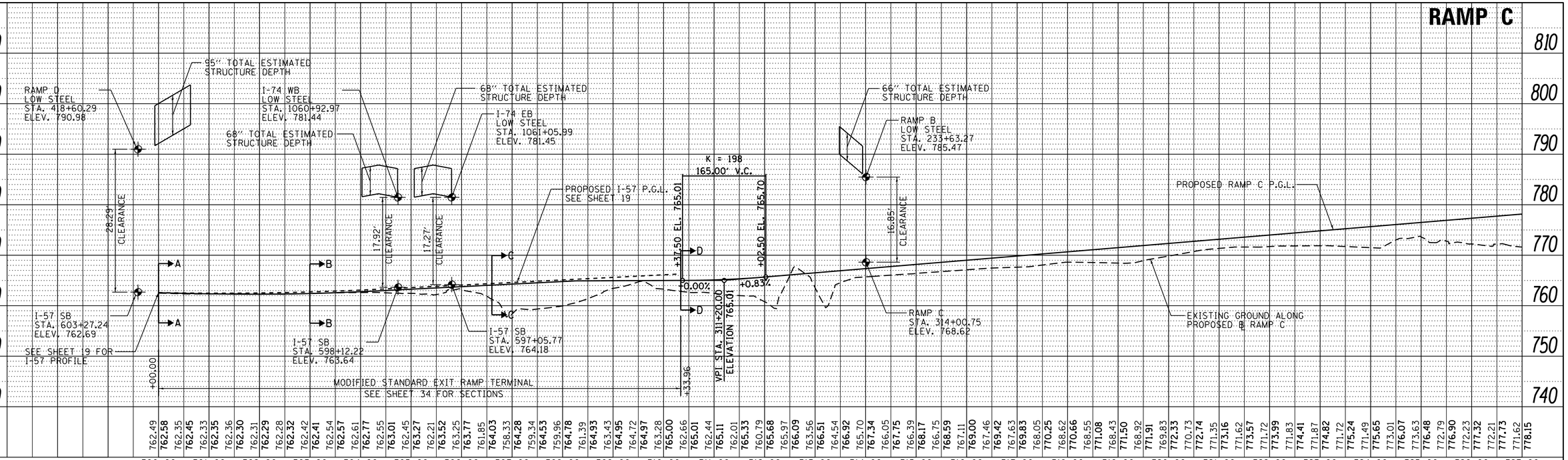
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SCALE H: 1"=100'
V: 1'=10'
COUNTY CHAMPAIGN
SJN :
PROJ. NO.

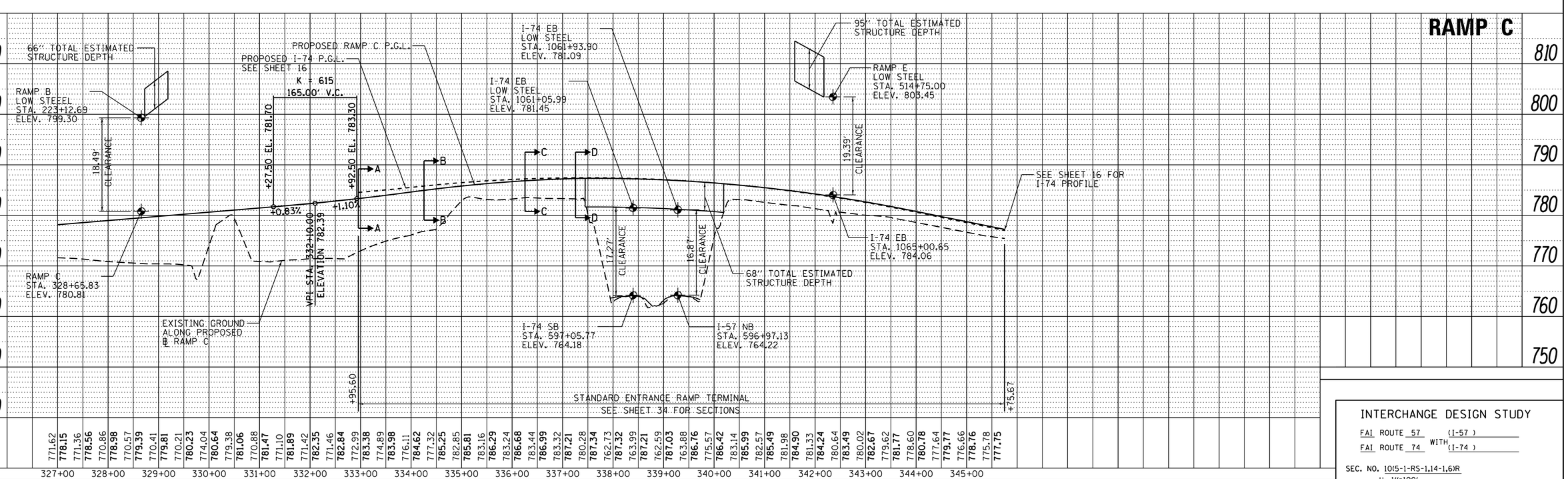
I.D.S. SHEET 21 OF 41

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# RAMP C




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CADD FILE NAME
NOTE BOOK
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BY
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PROFILE
SURVEYED
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CROSS SECTIONS CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
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INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

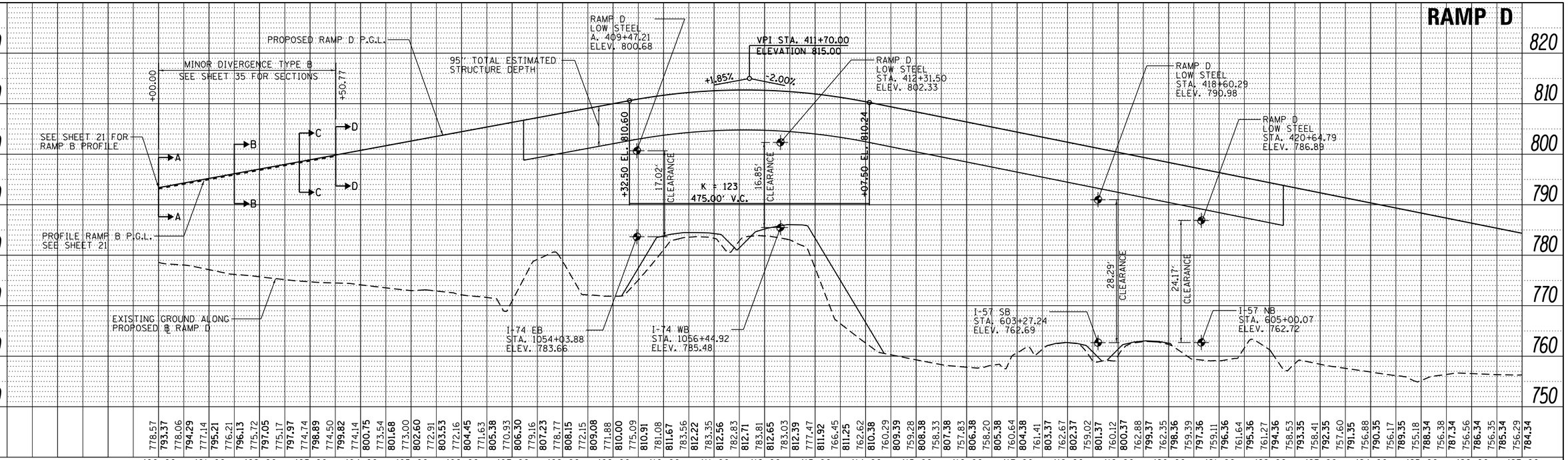
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE H: 1"=100'
V: 1'=10'
COUNTY CHAMPAIGN
SJN : _____ PROJ. NO. _____

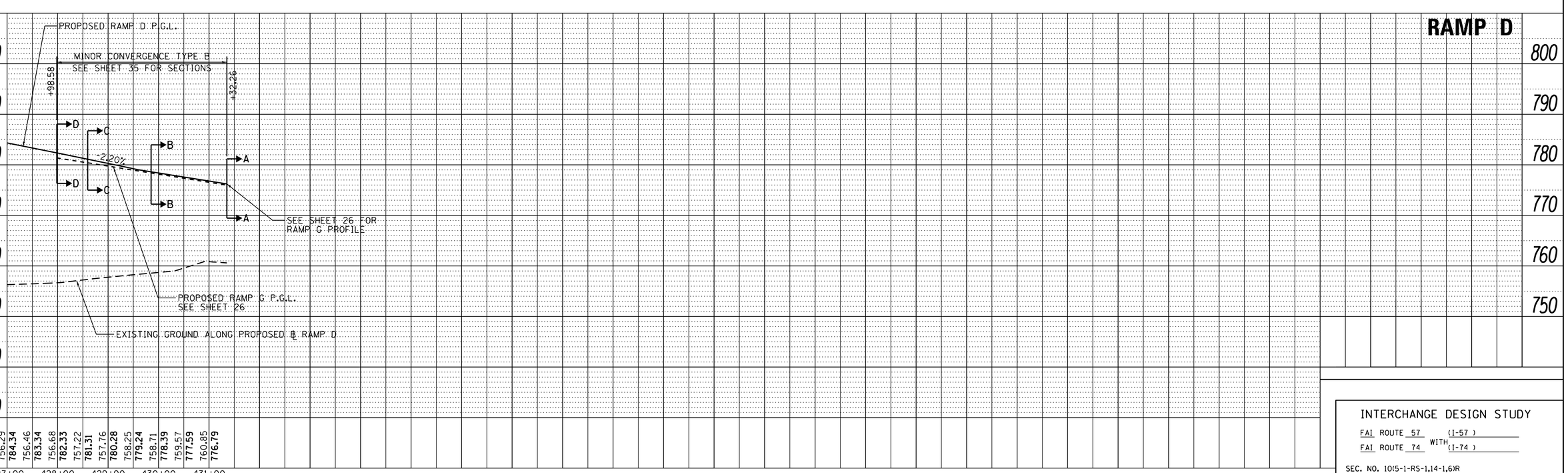
I.D.S. SHEET 22 OF 41

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# RAMP D




# RAMP D

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

SJN : _____

PROJ. NO. _____

I.D.S. SHEET 23 OF 41

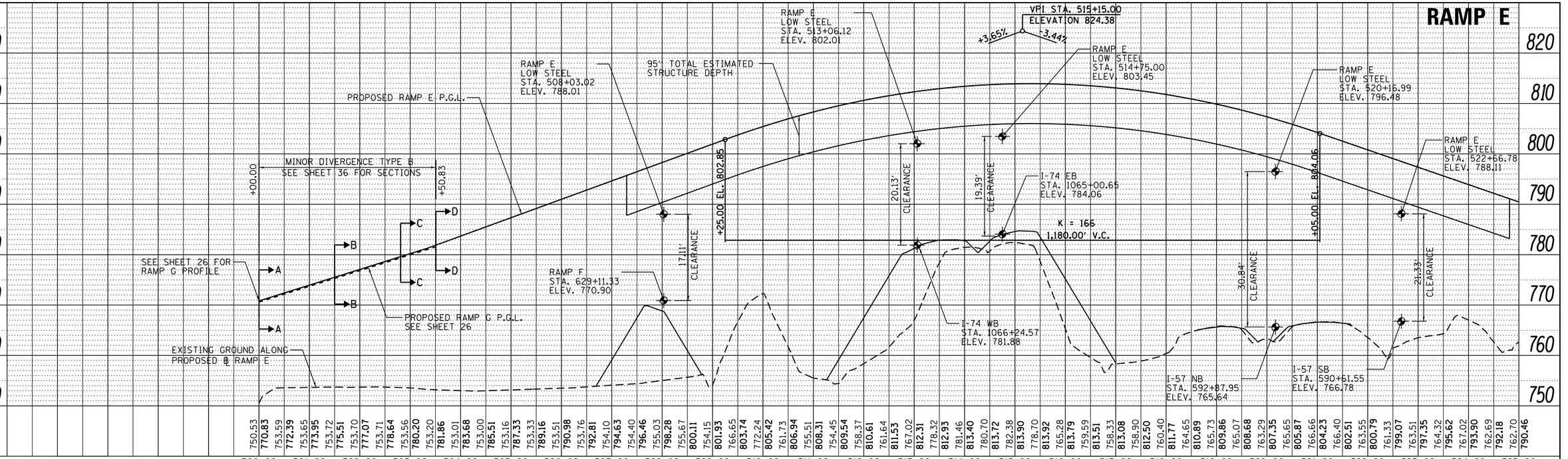
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CROSS CHECKED
R/T. OF WAY CHECKED
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NOTE BOOK
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BY
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SURVEYED
PLOTTED
CROSS CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO. ____
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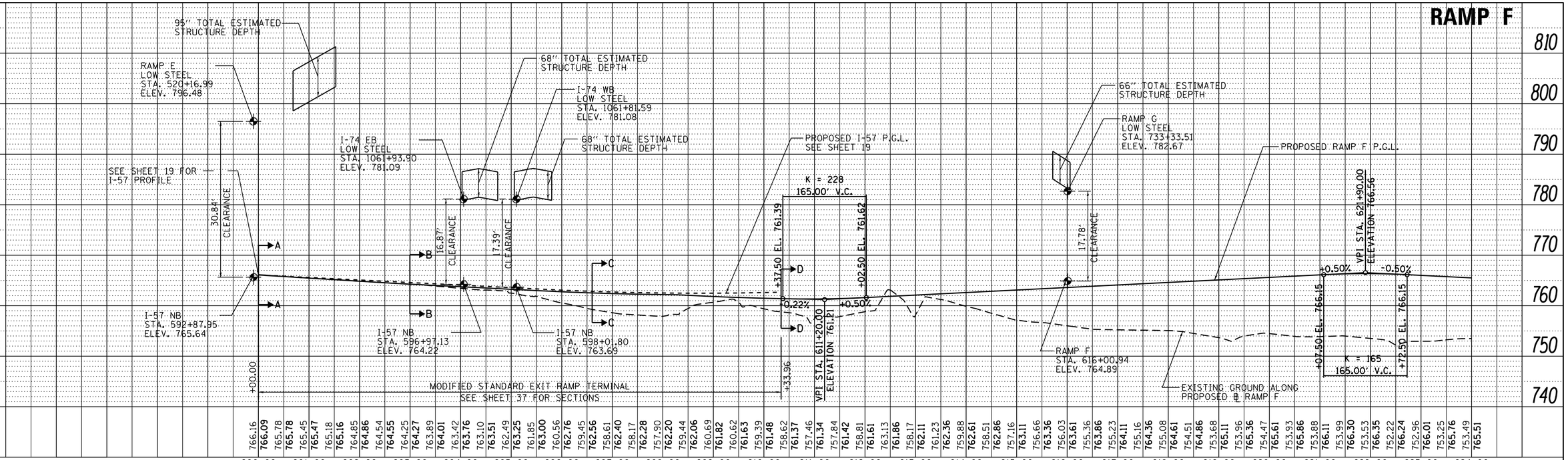
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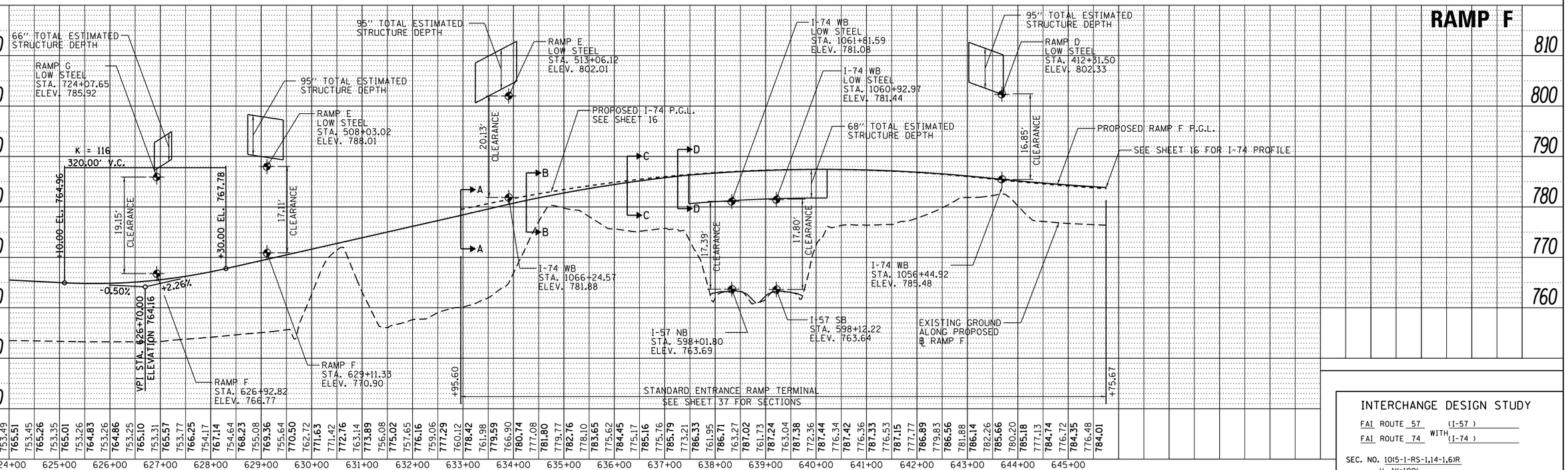
# RAMP E


820
810
800
790
780
770
760
750
RAMP E
LOW STEEL
STA. 513+06.12
ELEV. 802.01
VPI STA. 515+15.00
ELEVATION 824.38
+3.65%
-3.44%
RAMP E
LOW STEEL
STA. 514+75.00
ELEV. 803.45
RAMP E
LOW STEEL
STA. 520+16.99
ELEV. 796.48
RAMP E
LOW STEEL
STA. 522+66.78
ELEV. 788.11
RAMP E
LOW STEEL
STA. 508+03.02
ELEV. 788.01
95" TOTAL ESTIMATED
STRUCTURE DEPTH
PROPOSED RAMP E P.G.L.
MINOR DIVERGENCE TYPE B
SEE SHEET 36 FOR SECTIONS
+00.00
+50.83
+25.00 EL. 802.85
+05.00 EL. 804.06
20.13'
CLEARANCE
19.39'
CLEARANCE
17.11'
CLEARANCE
30.84'
CLEARANCE
21.33'
CLEARANCE
I-74 EB
STA. 1065+00.65
ELEV. 784.06
K = 166
1,180.00' V.C.
SEE SHEET 26 FOR
RAMP G PROFILE
RAMP F
STA. 629+11.33
ELEV. 770.90
PROPOSED RAMP G P.G.L.
SEE SHEET 26
I-74 WB
STA. 1066+24.57
ELEV. 781.88
I-57 NB
STA. 592+87.95
ELEV. 765.64
I-57 SB
STA. 590+61.55
ELEV. 766.78
EXISTING GROUND ALONG
PROPOSED ℄ RAMP E
A
B
C
D
500+00 501+00 502+00 503+00 504+00 505+00 506+00 507+00 508+00 509+00 510+00 511+00 512+00 513+00 514+00 515+00 516+00 517+00 518+00 519+00 520+00 521+00 522+00 523+00 524+00 525+00

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# RAMP F




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SURVEYED
PLOTTED
CROSS SECTIONS CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

SJN : _____

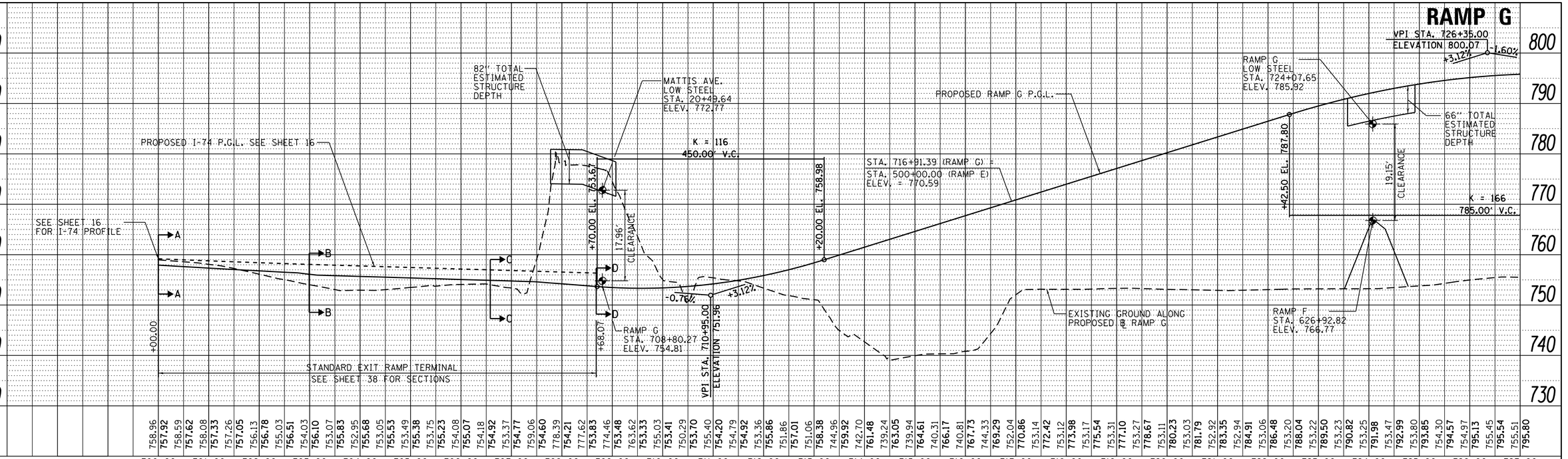
PROJ. NO. _____

I.D.S. SHEET 25 OF 41

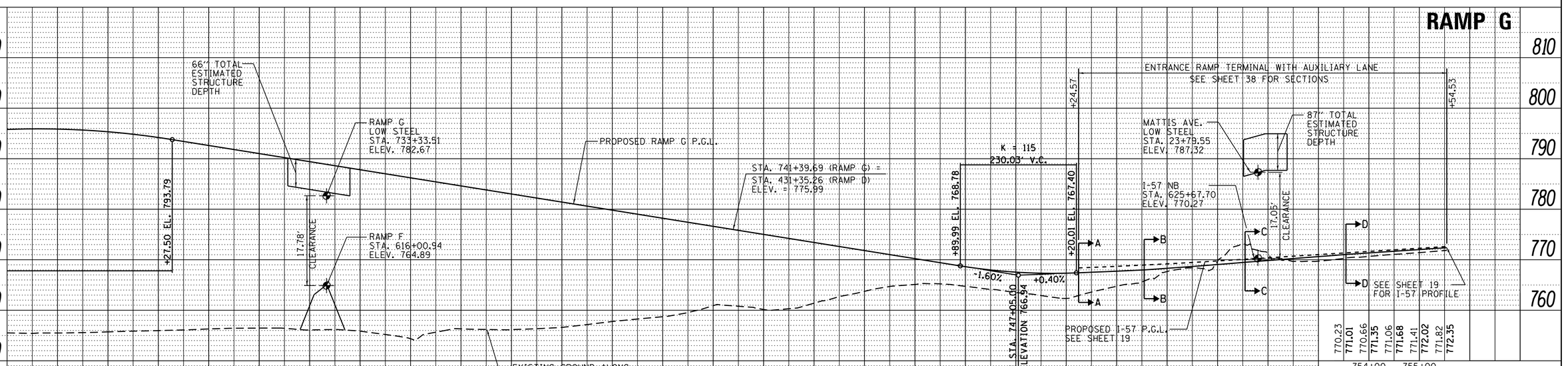
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# RAMP G




# RAMP G




## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

SJN : _____

PROJ. NO. _____

I.D.S. SHEET 26 OF 41

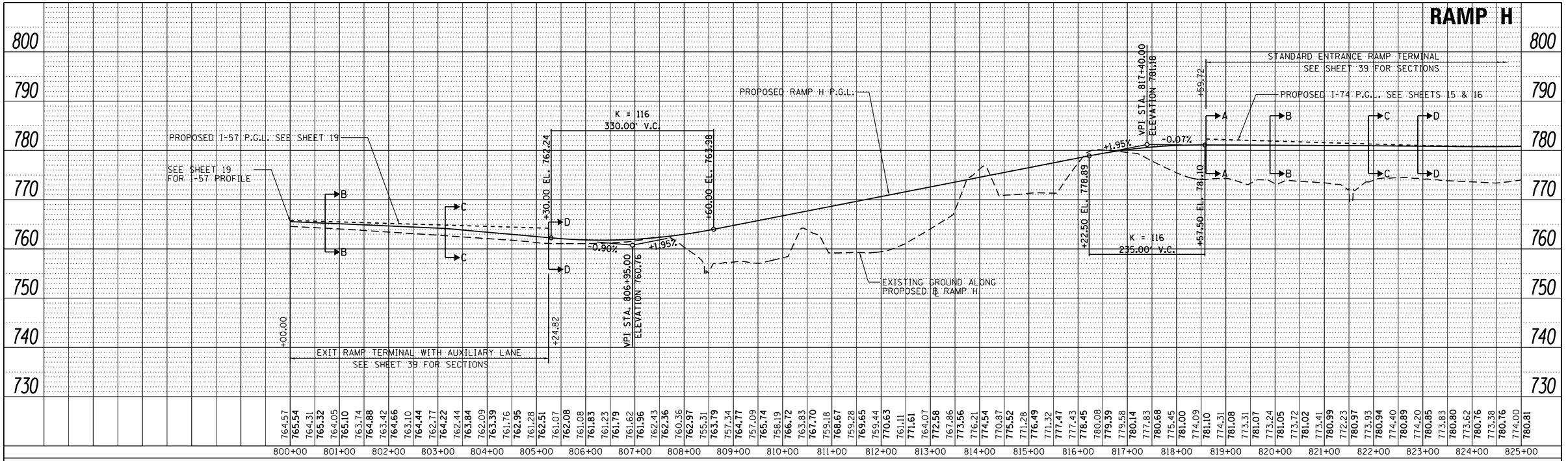
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PROFILE: SURVEYED | PLOTTED | GRADES CHECKED | B.M. NOTED | STRUCTURE NOTATNS CHKD | NOTE BOOK | NO. | BY | DATE

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BDE-9908

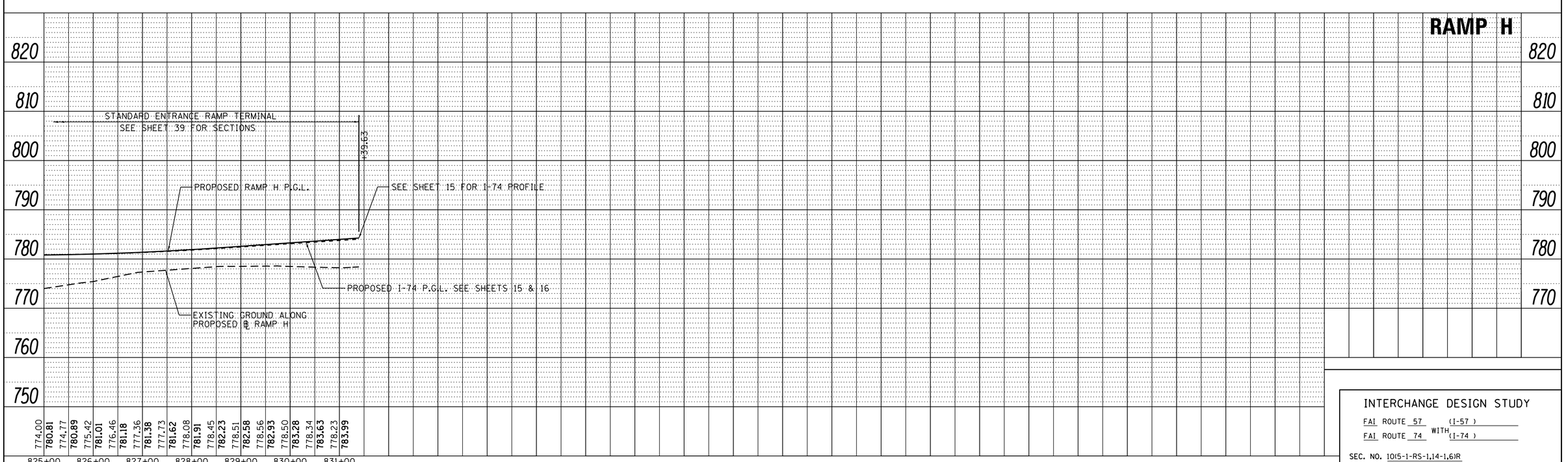
# RAMP H




764.57 765.54 764.31 765.32 764.05 765.10 763.74 764.88 763.42 764.66 763.10 764.44 762.77 764.22 762.44 763.84 762.09 763.39 761.76 762.95 761.28 762.51 761.07 762.08 761.08 761.83 761.23 761.79 761.62 761.96 762.43 762.36 760.36 762.97 755.31 763.79 757.34 764.77 757.09 765.74 758.19 766.72 763.83 767.70 759.18 768.67 759.28 769.65 759.44 770.63 761.11 771.61 764.07 772.58 767.86 773.56 776.21 774.54 770.87 775.52 771.28 776.49 771.32 771.47 777.43 778.45 780.08 779.39 779.58 780.14 777.83 780.68 775.45 781.00 774.09 781.10 774.31 781.08 773.31 781.07 773.24 781.05 773.72 781.02 773.41 780.99 772.23 780.97 773.93 780.94 774.40 780.89 774.20 780.85 773.83 780.80 773.62 780.76 773.38 780.76 774.00 780.81

800+00 801+00 802+00 803+00 804+00 805+00 806+00 807+00 808+00 809+00 810+00 811+00 812+00 813+00 814+00 815+00 816+00 817+00 818+00 819+00 820+00 821+00 822+00 823+00 824+00 825+00

# RAMP H




774.00 780.81 774.77 780.89 775.42 781.01 776.46 781.18 777.36 781.38 777.73 781.62 778.08 781.91 778.45 782.23 778.51 782.58 778.56 782.93 778.50 783.28 778.34 783.63 778.23 783.99

825+00 826+00 827+00 828+00 829+00 830+00 831+00

PLAN — SURVEYED — PLOTTED — CROSS CHECKED — NOTE BOOK — NO. — BY — DATE — ALIGNMENT CHECKED — RT. OF WAY CHECKED — CADD FILE NAME

PROFILE — SURVEYED — PLOTTED — CROSS CHECKED — NOTE BOOK — NO. — BY — DATE — B.M. NOTED — STRUCTURE NOTATNS CHKD

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100' V: 1"=10' COUNTY CHAMPAIGN

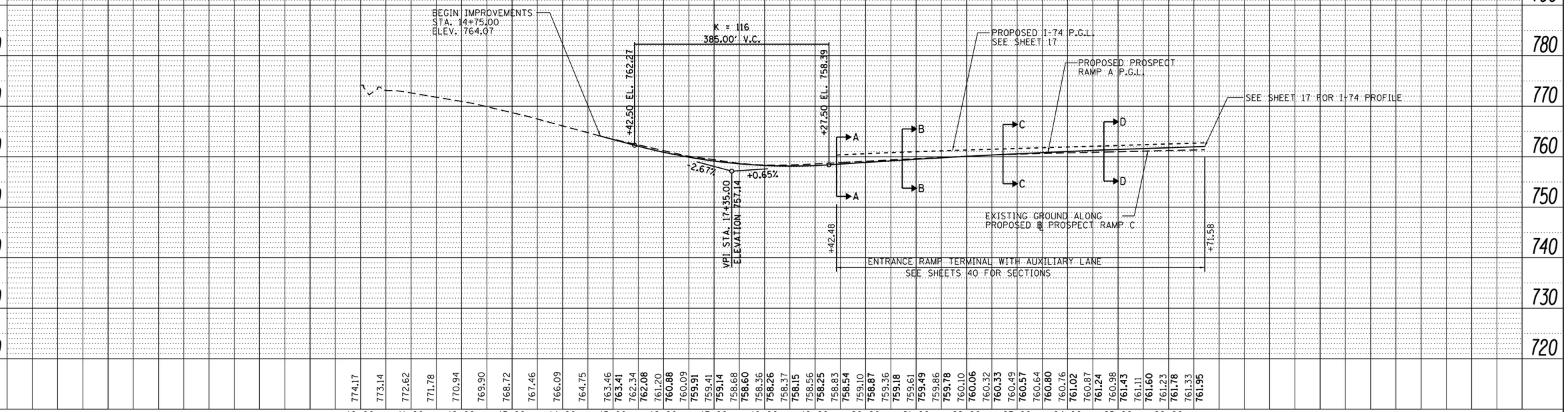
SJN : _____ PROJ. NO. _____

I.D.S. SHEET 27 OF 41

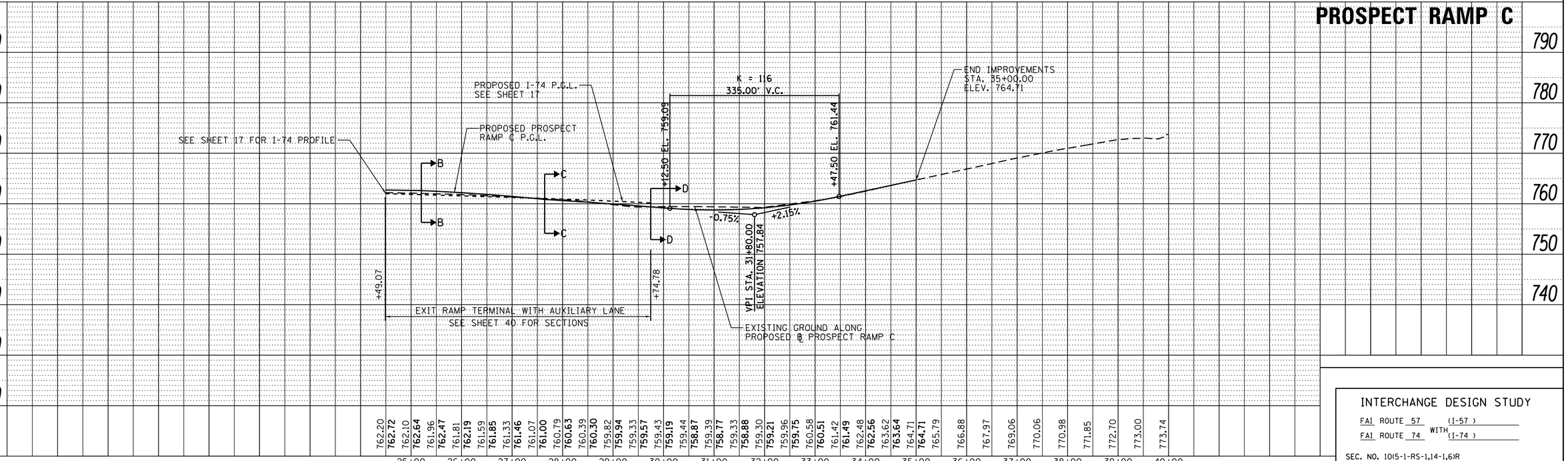
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# PROSPECT RAMP A




# PROSPECT RAMP C




PLAN
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ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
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CROSS SECT. CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE H: 1"=100'
V: 1'=10'
COUNTY CHAMPAIGN
SJN : _____
PROJ. NO. _____

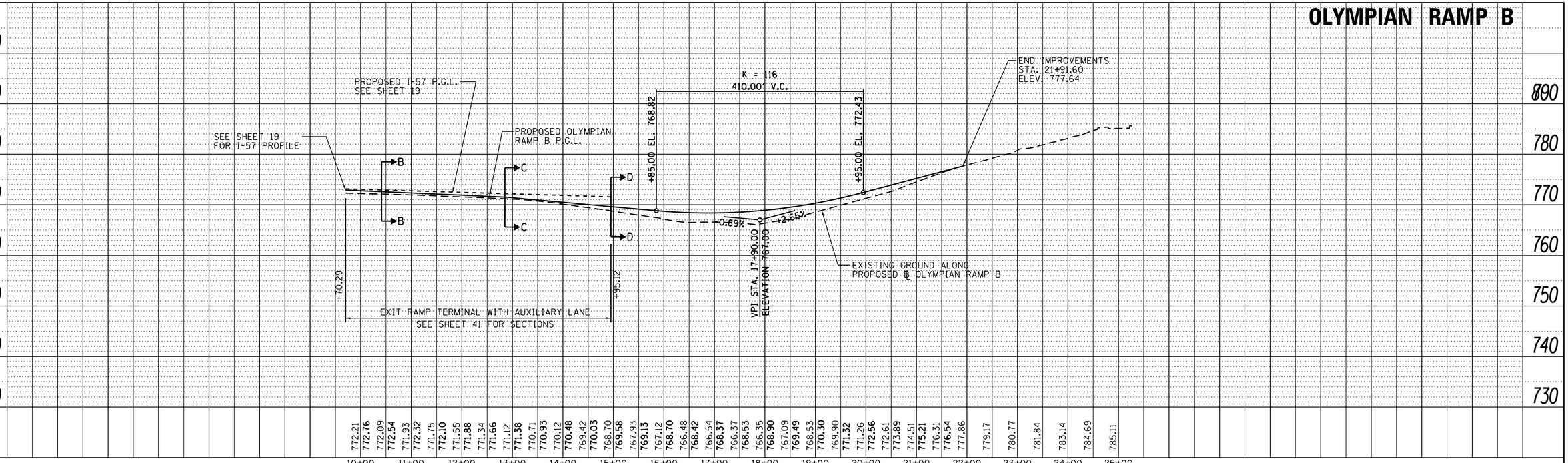
I.D.S. SHEET 28 OF 41

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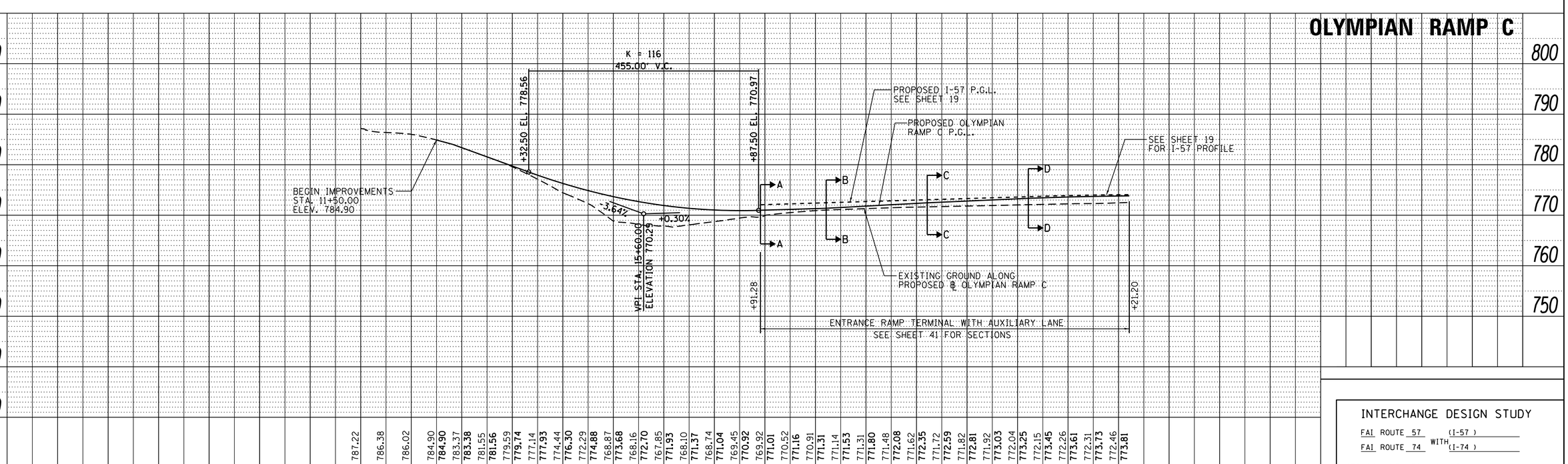
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ALIGNMENT CHECKED
RT. OF WAY CHECKED
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NOTE BOOK
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BY
DATE

# OLYMPIAN RAMP B




PROFILE
SURVEYED
PLOTTED
CROSS SECTIONS CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

# OLYMPIAN RAMP C




INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

SJN : _____

PROJ. NO. _____

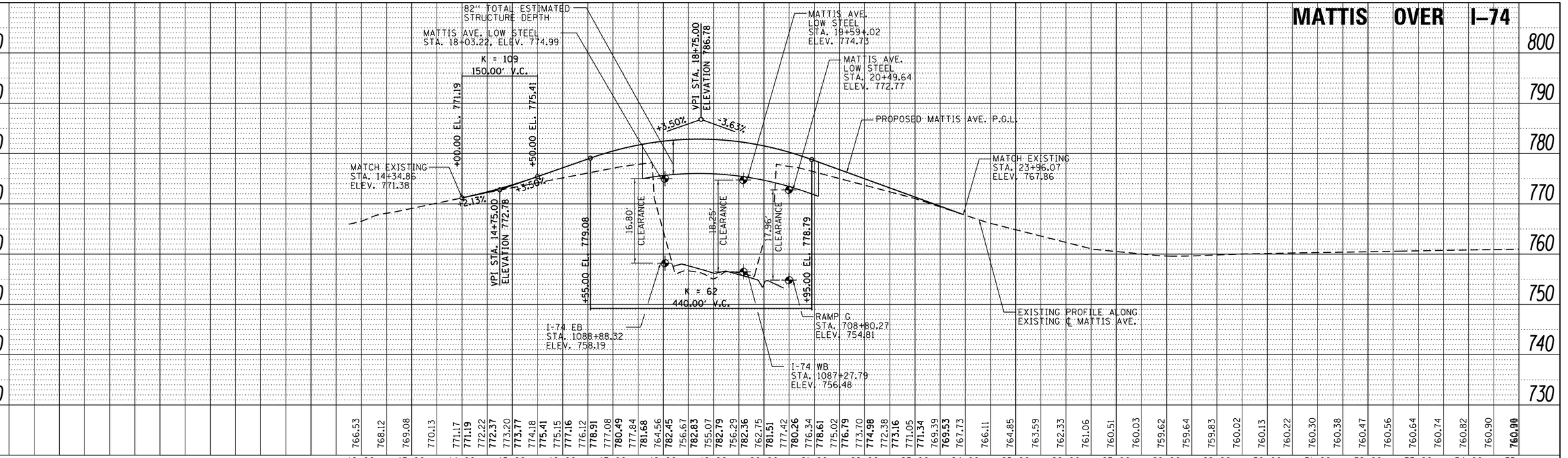
I.D.S. SHEET 29 OF 41

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PLAN
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RT. OF WAY CHECKED
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NOTE BOOK
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DATE

# MATTIS OVER I-74

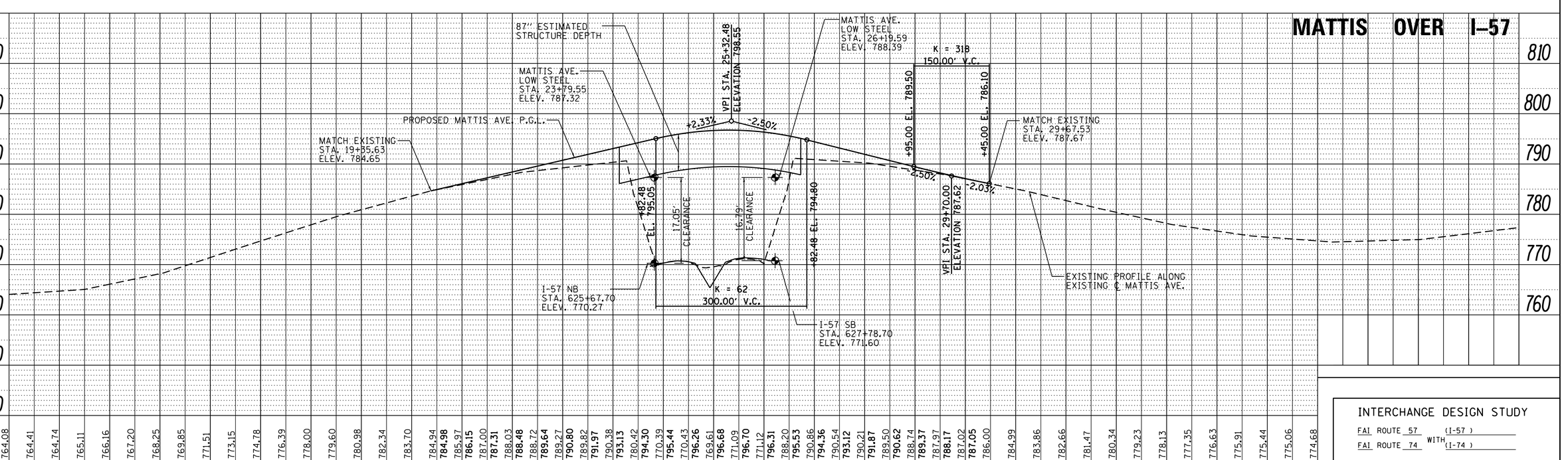



766.53 768.12 769.08 770.13 771.17 **771.19** 772.22 **772.37** 773.20 **773.77** 774.18 **775.41** 775.15 **777.16** 776.12 **778.91** 777.08 **780.49** 777.84 **781.68** 764.56 **782.45** 756.67 **782.83** 755.07 **782.79** 756.29 **782.36** 762.75 **781.51** 777.42 **780.26** 776.34 **778.61** 775.02 **776.79** 773.70 **774.98** 772.38 **773.16** 771.05 **771.34** 769.39 **769.53** 767.73 766.11 764.85 763.59 762.33 761.06 760.51 760.03 759.62 759.64 759.83 760.02 760.13 760.22 760.30 760.38 760.47 760.56 760.64 760.74 760.82 760.90 **760.98**

12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+

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PLOTTED
CROSS SECTIONS CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

# MATTIS OVER I-57




764.08 764.41 764.74 765.11 766.16 767.20 768.25 769.85 771.51 773.15 774.78 776.39 778.00 779.60 780.98 782.34 783.70 784.94 **784.98** 785.97 **786.15** 787.00 **787.31** 788.03 **788.48** 788.72 **789.64** 789.27 **790.80** 789.82 **791.97** 790.38 **793.13** 790.42 **794.30** 790.39 **795.44** 790.43 **796.26** 789.61 **796.68** 771.09 **796.70** 771.12 **796.31** 788.20 **795.53** 790.86 **794.36** 790.54 **793.12** 790.21 **791.87** 789.50 **790.62** 788.74 **789.37** 787.97 **788.17** 787.02 **787.05** 786.00 784.99 783.86 782.66 781.47 780.34 779.23 778.13 777.35 776.63 775.91 775.44 775.06 774.68

11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

SJN : _____

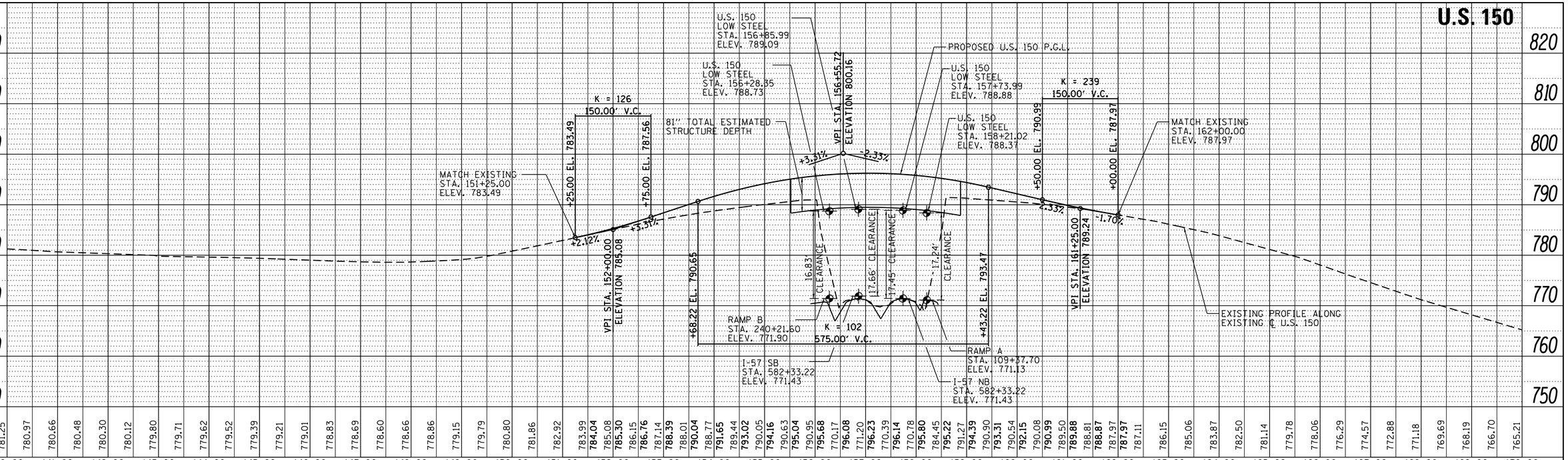
PROJ. NO. _____

I.D.S. SHEET 30 OF 41

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| PLOTTED | | |
| ALIGNMENT CHECKED | | |
| RT. OF WAY CHECKED | | |
| CADD FILE NAME | | |
| NOTE BOOK | | |
| NO. | | |

PROFILE

| | BY | DATE |
|---|---|---|
| SURVEYED | | |
| PLOTTED | | |
| CROSS SECTIONS CHECKED | | |
| B.M. NOTED | | |
| STRUCTURE NOTATNS CHKD | | |
| NOTE BOOK | | |
| NO. | | |

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )

FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

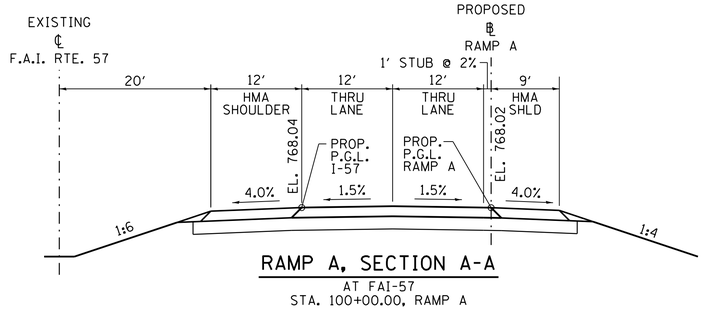
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PROJ. NO. _____

I.D.S. SHEET 31 OF 41

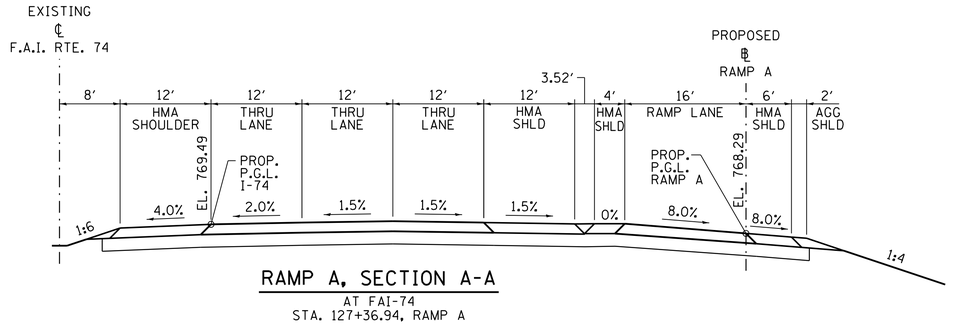
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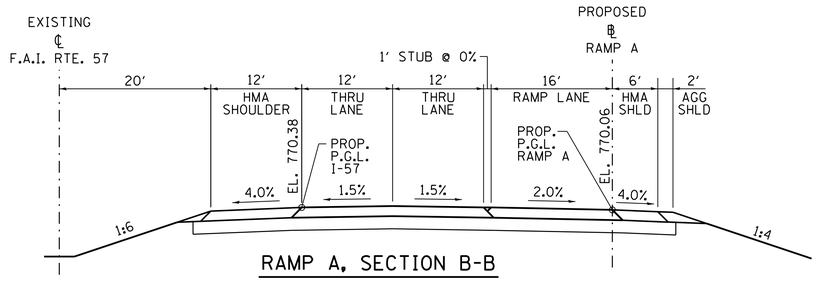

## RAMP A, SECTION A-A

AT FAI-57
STA. 100+00.00, RAMP A



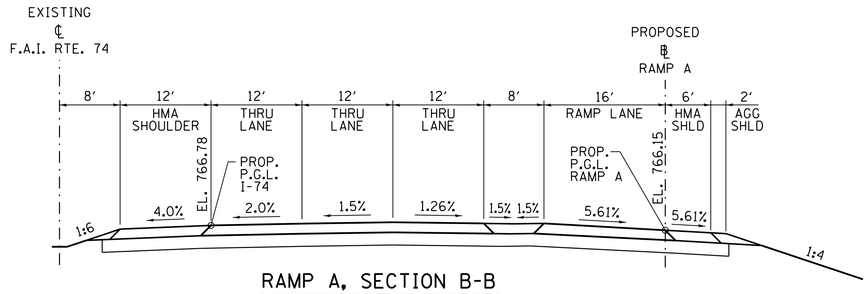

## RAMP A, SECTION A-A

AT FAI-74
STA. 127+36.94, RAMP A



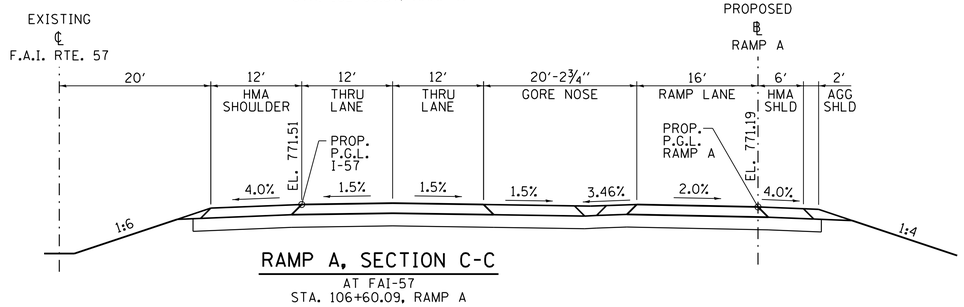

## RAMP A, SECTION B-B

AT FAI-57
STA. 102+99.57, RAMP A



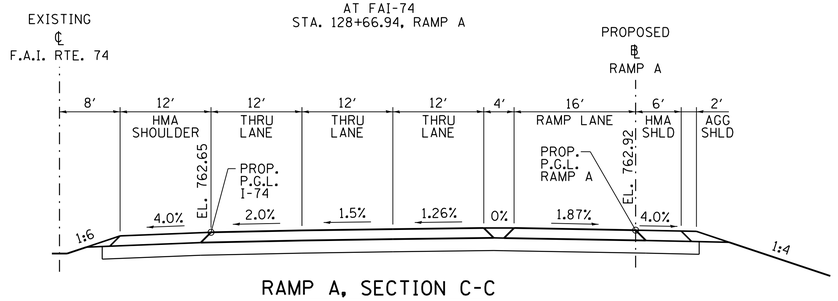

## RAMP A, SECTION B-B

AT FAI-74
STA. 128+66.94, RAMP A



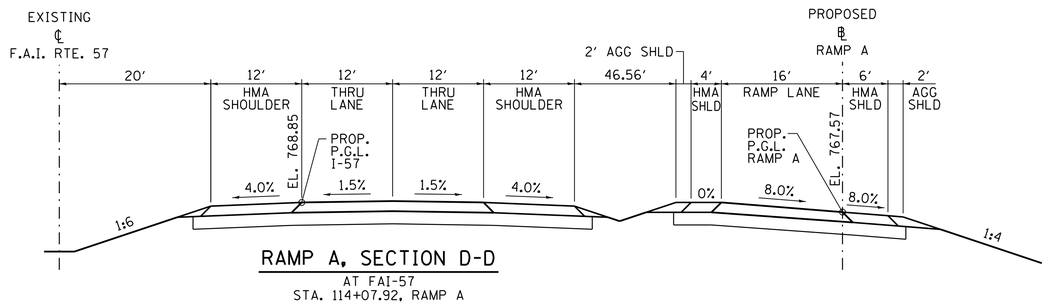

## RAMP A, SECTION C-C

AT FAI-57
STA. 106+60.09, RAMP A



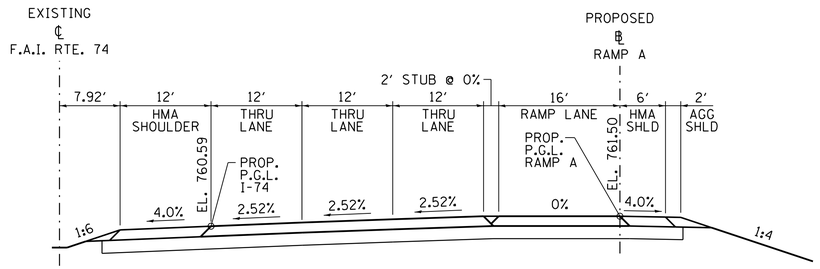

## RAMP A, SECTION C-C

AT FAI-74
STA. 130+66.98, RAMP A




## RAMP A, SECTION D-D

AT FAI-57
STA. 114+07.92, RAMP A




## RAMP A, SECTION D-D

AT FAI-74
STA. 131+67.04, RAMP A

## MODIFIED STANDARD EXIT RAMP TERMINAL

## STANDARD ENTRANCE RAMP TERMINAL

### INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

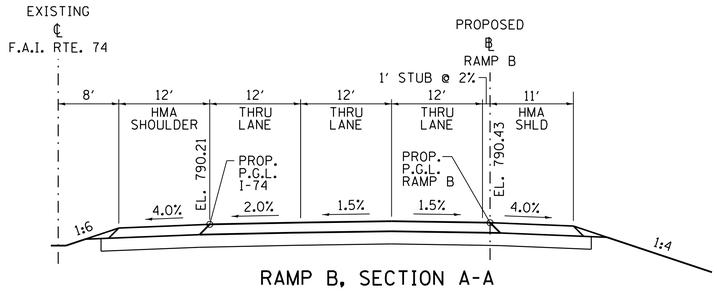
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE N.T.S. COUNTY CHAMPAIGN
SJN : PROJ. NO.

I.D.S. SHEET 32 OF 41

BDE-9908

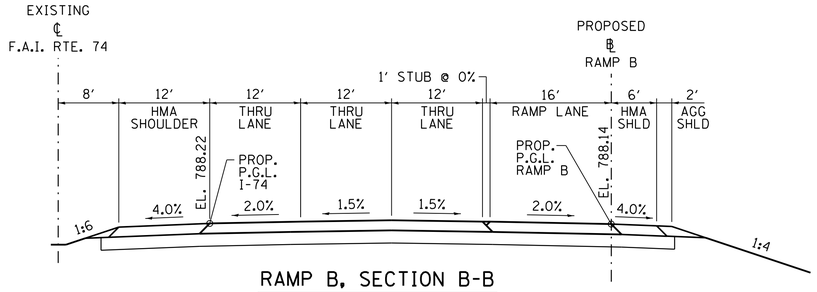
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PLOT SCALE = 10.0000 ' / in.
USER NAME = Brad Downen

PLOT DATE = 2/11/2015 - 2:21:57 PM
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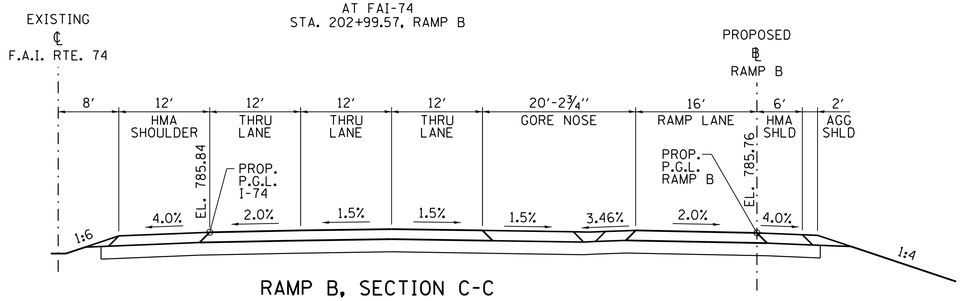

## RAMP B, SECTION A-A

AT FAI-74
STA. 200+00.00, RAMP B



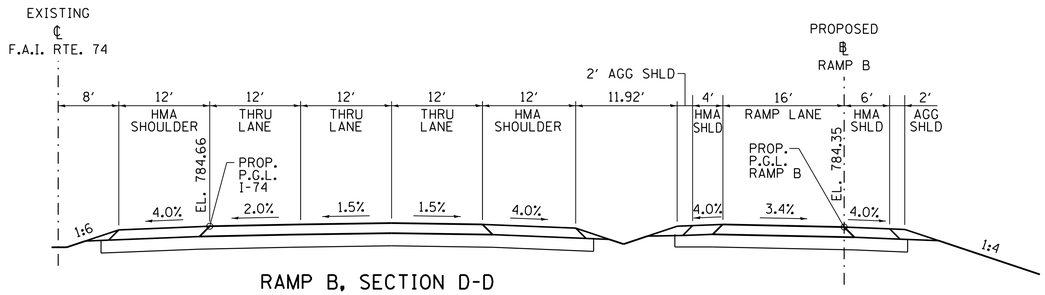

## RAMP B, SECTION B-B

AT FAI-74
STA. 202+99.57, RAMP B




## RAMP B, SECTION C-C

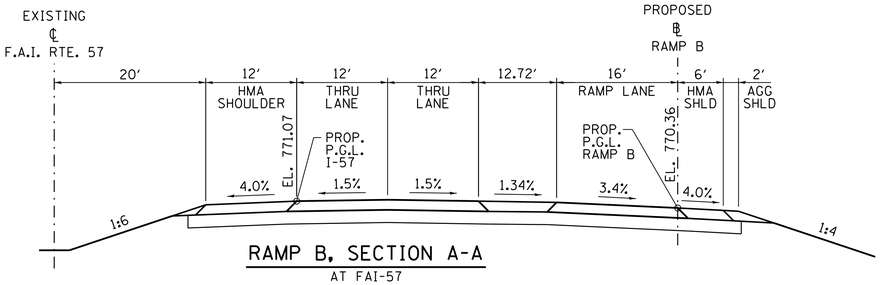
AT FAI-74
STA. 206+60.09, RAMP B




## RAMP B, SECTION D-D

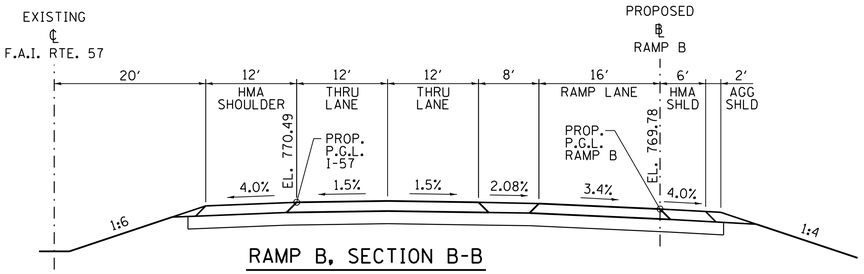
AT FAI-74
STA. 208+38.42, RAMP B

## STANDARD EXIT RAMP TERMINAL



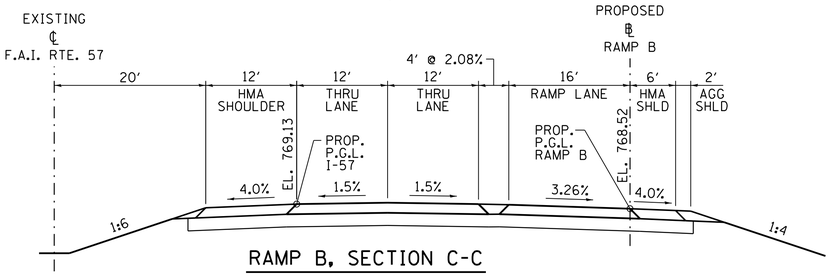

## RAMP B, SECTION A-A

AT FAI-57
STA. 245+08.53, RAMP B



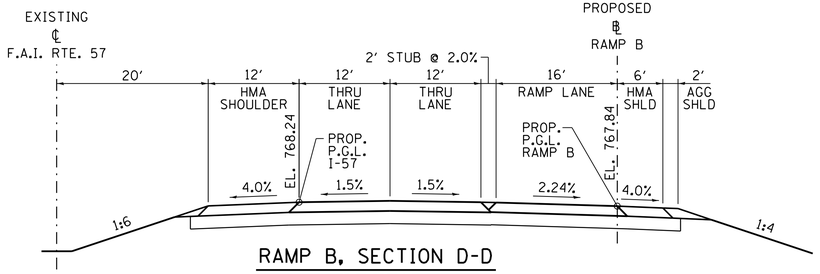

## RAMP B, SECTION B-B

AT FAI-57
STA. 246+38.53, RAMP B




## RAMP B, SECTION C-C

AT FAI-57
STA. 248+38.57, RAMP B




## RAMP B, SECTION D-D

AT FAI-57
STA. 249+38.59, RAMP B

## STANDARD ENTRANCE RAMP TERMINAL

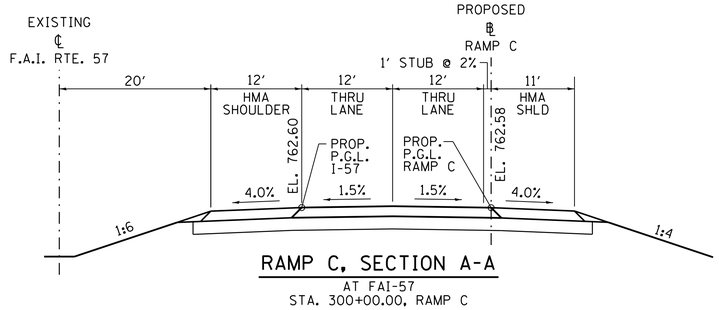
INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

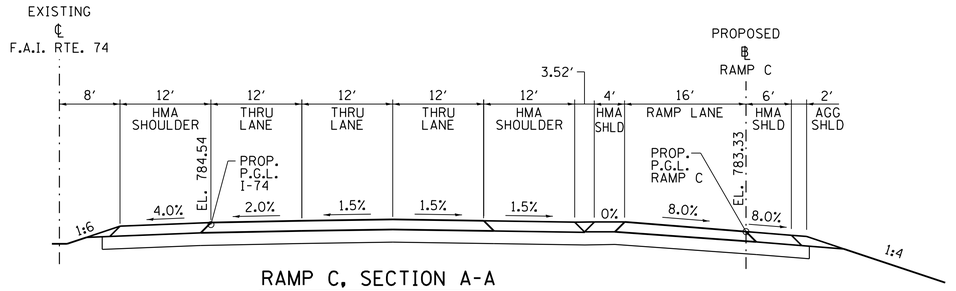
SCALE N.T.S. COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____



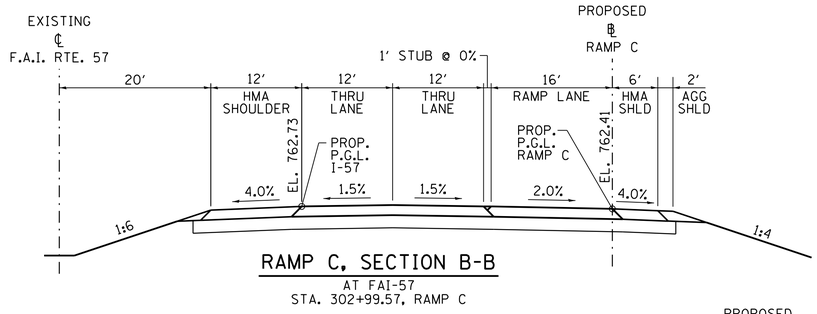

## RAMP C, SECTION A-A

AT FAI-57
STA. 300+00.00, RAMP C



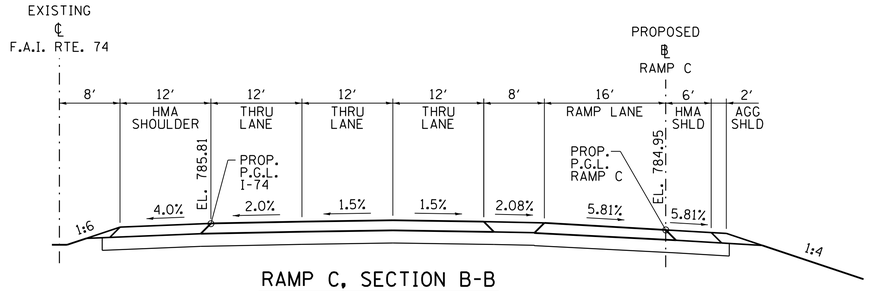

## RAMP C, SECTION A-A

AT FAI-74
STA. 332+95.60, RAMP C



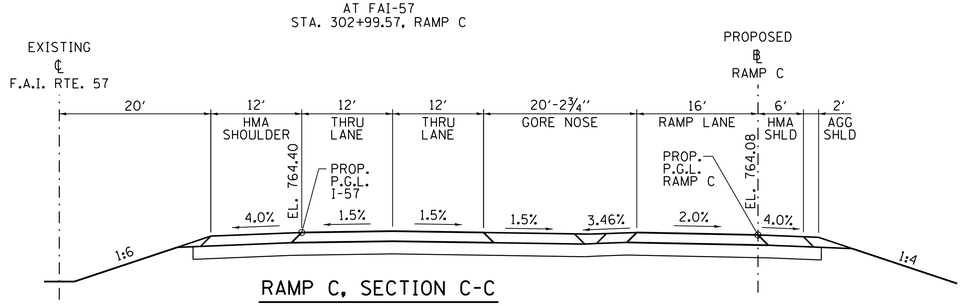

## RAMP C, SECTION B-B

AT FAI-57
STA. 302+99.57, RAMP C



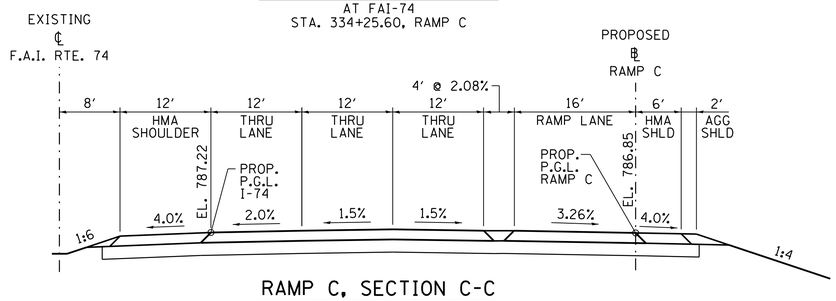

## RAMP C, SECTION B-B

AT FAI-74
STA. 334+25.60, RAMP C



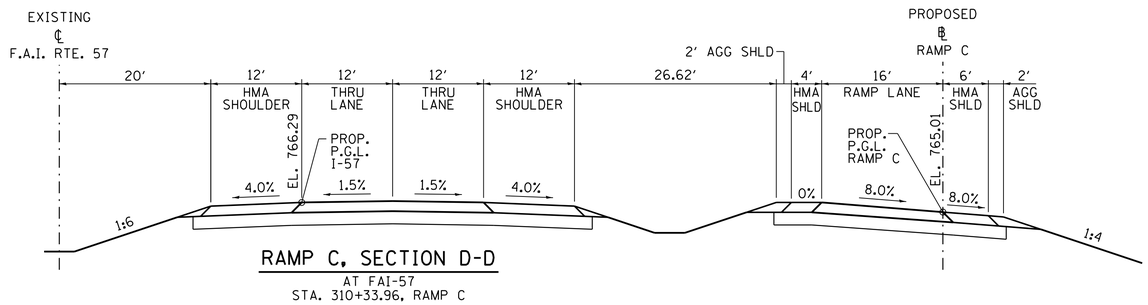

## RAMP C, SECTION C-C

AT FAI-57
STA. 306+60.09, RAMP C



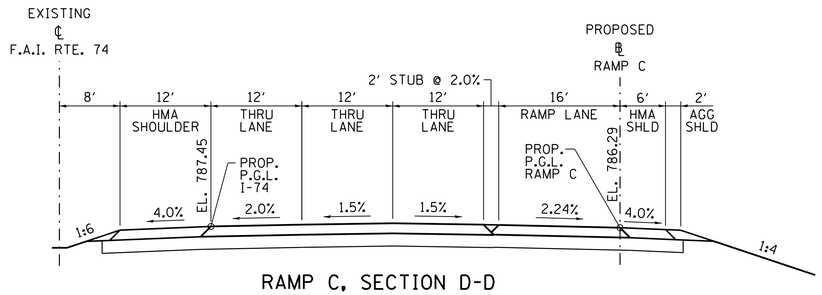

## RAMP C, SECTION C-C

AT FAI-74
STA. 336+25.64, RAMP C




## RAMP C, SECTION D-D

AT FAI-57
STA. 310+33.96, RAMP C




## RAMP C, SECTION D-D

AT FAI-74
STA. 337+25.66, RAMP C

## MODIFIED STANDARD EXIT RAMP TERMINAL

## STANDARD ENTRANCE RAMP TERMINAL

### INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

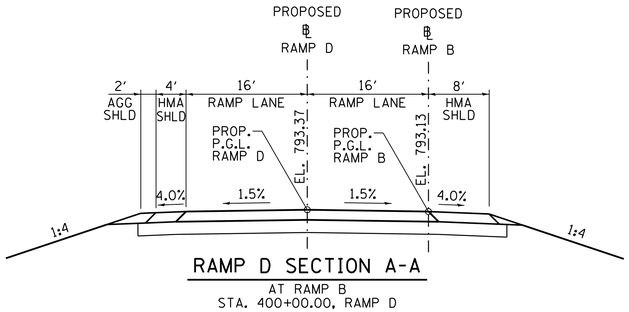
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE N.T.S. COUNTY CHAMPAIGN
SJN : PROJ. NO.

I.D.S. SHEET 34 OF 41

BDE-9908

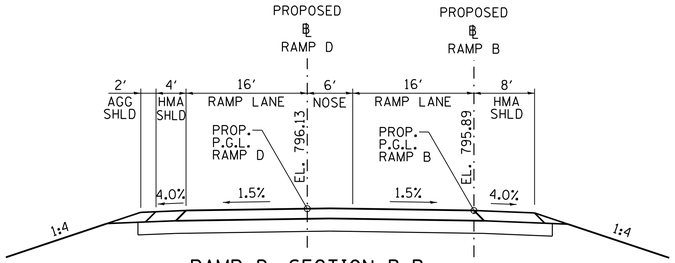
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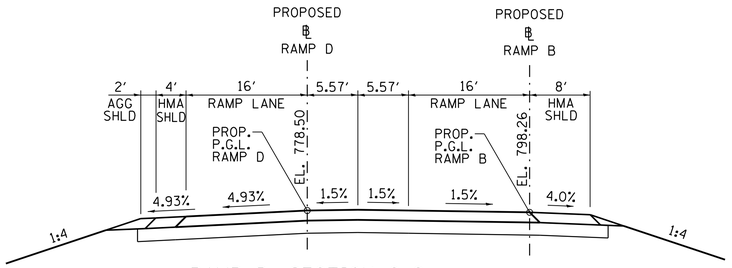

## RAMP D SECTION A-A

AT RAMP B
STA. 400+00.00, RAMP D



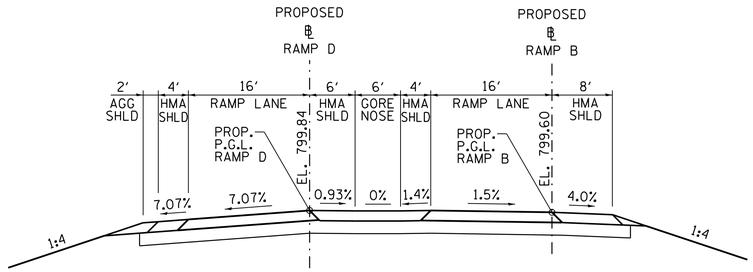

## RAMP D, SECTION B-B

AT RAMP B
STA. 401+50.03, RAMP D




## RAMP D, SECTION C-C

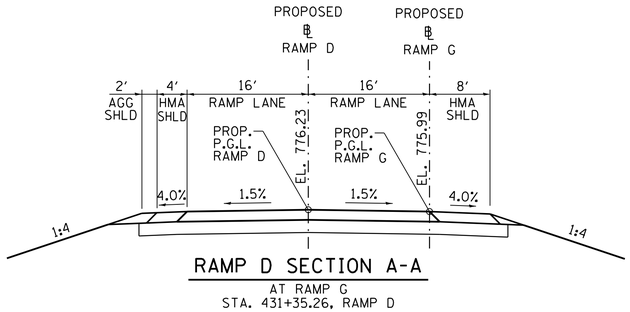
AT RAMP B
STA. 402+78.67, RAMP D




## RAMP D, SECTION D-D

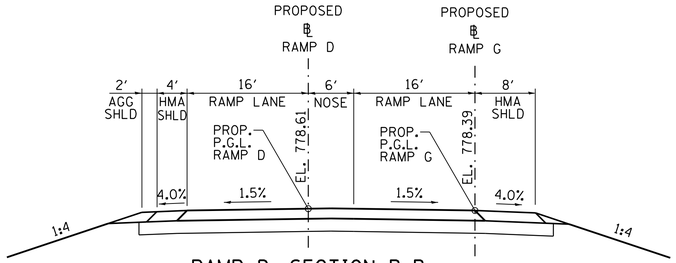
AT RAMP B
STA. 403+50.77, RAMP D

## MINOR DIVERGENCE TYPE B



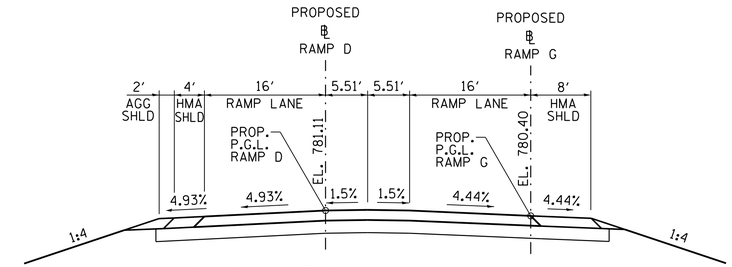

## RAMP D SECTION A-A

AT RAMP G
STA. 431+35.26, RAMP D



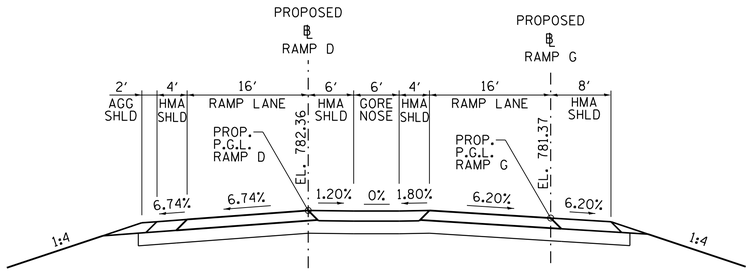

## RAMP D, SECTION B-B

AT RAMP G
STA. 429+85.23, RAMP D




## RAMP D, SECTION C-C

AT RAMP G
STA. 428+59.69, RAMP D




## RAMP D, SECTION D-D

AT RAMP G
STA. 427+98.58, RAMP D

## MINOR CONVERGENCE TYPE B

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

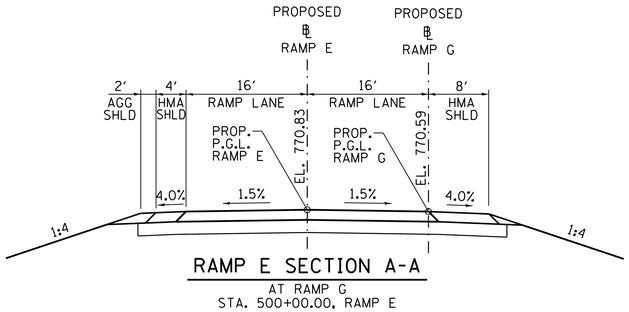
SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE N.T.S. COUNTY CHAMPAIGN

SJN : PROJ. NO.

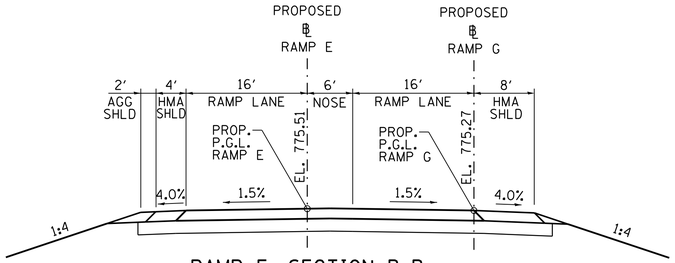
I.D.S. SHEET 35 OF 41

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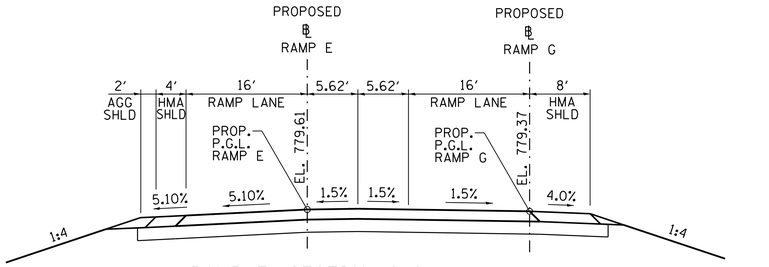

## RAMP E SECTION A-A

AT RAMP G
STA. 500+00.00, RAMP E



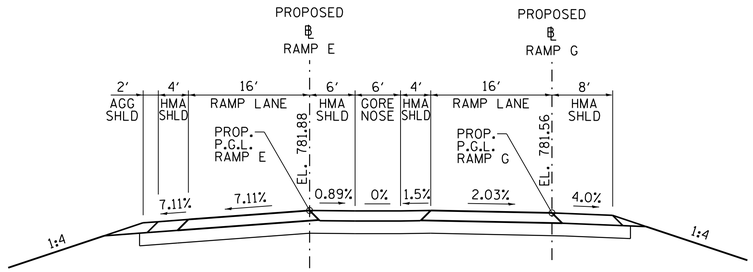

## RAMP E, SECTION B-B

AT RAMP G
STA. 501+50.03, RAMP E




## RAMP E, SECTION C-C

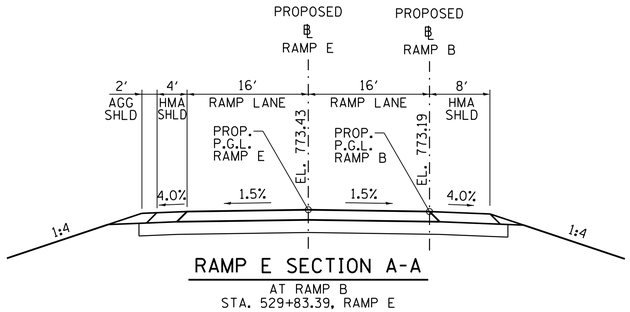
AT RAMP G
STA. 502+81.04, RAMP E




## RAMP E, SECTION D-D

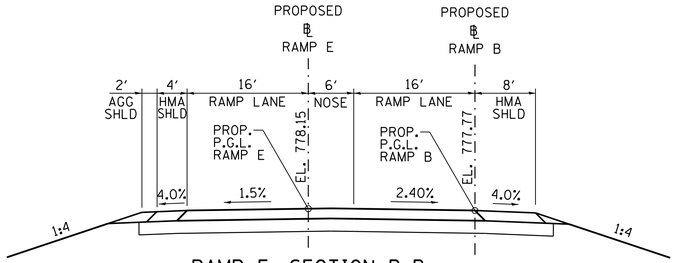
AT RAMP G
STA. 503+50.83, RAMP E

## MINOR DIVERGENCE TYPE B



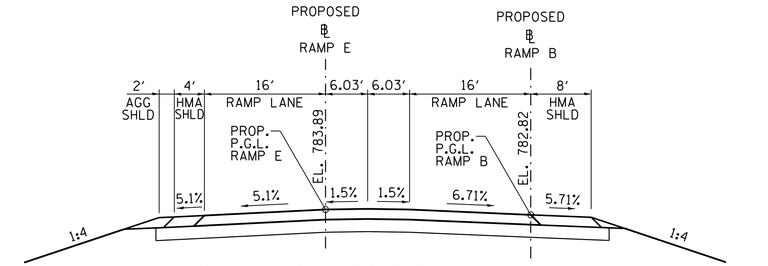

## RAMP E SECTION A-A

AT RAMP B
STA. 529+83.39, RAMP E



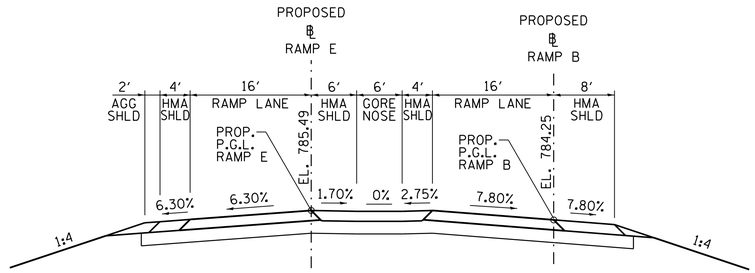

## RAMP E, SECTION B-B

AT RAMP B
STA. 528+33.36, RAMP E




## RAMP E, SECTION C-C

AT RAMP B
STA. 526+86.34, RAMP E




## RAMP E, SECTION D-D

AT RAMP B
STA. 526+44.23, RAMP E

## MINOR CONVERGENCE TYPE B

INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

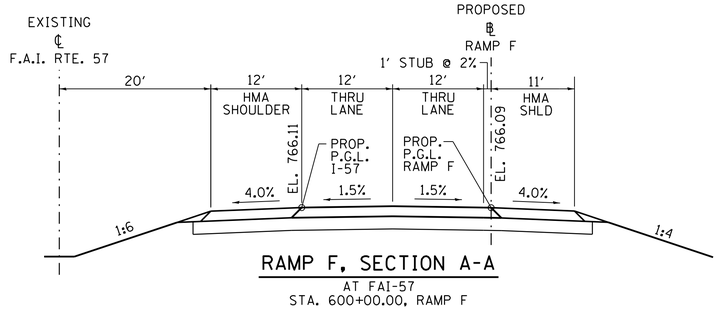
SCALE N.T.S. COUNTY CHAMPAIGN

SJN : PROJ. NO.

I.D.S. SHEET 36 OF 41

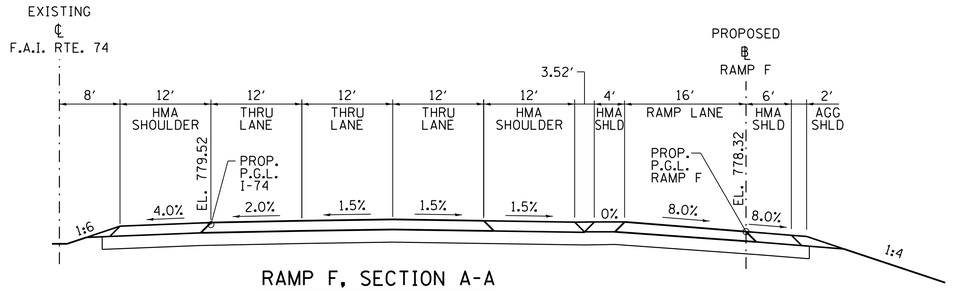
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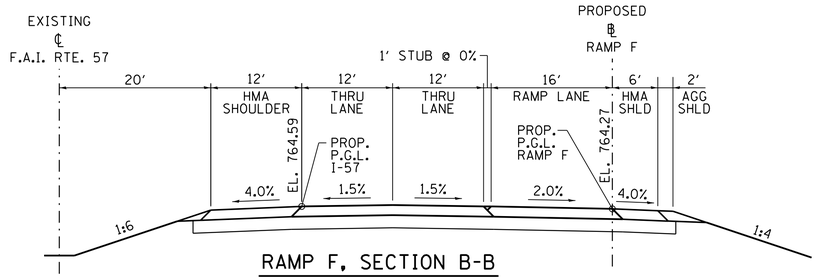

## RAMP F, SECTION A-A

AT FAI-57
STA. 600+00.00, RAMP F



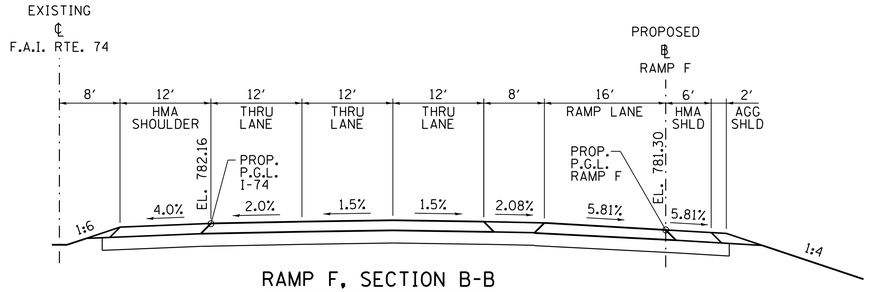

## RAMP F, SECTION A-A

AT FAI-74
STA. 632+95.60, RAMP F



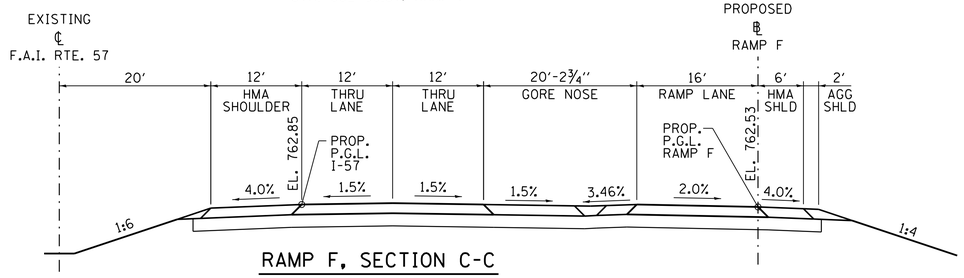

## RAMP F, SECTION B-B

AT FAI-57
STA. 602+99.57, RAMP F



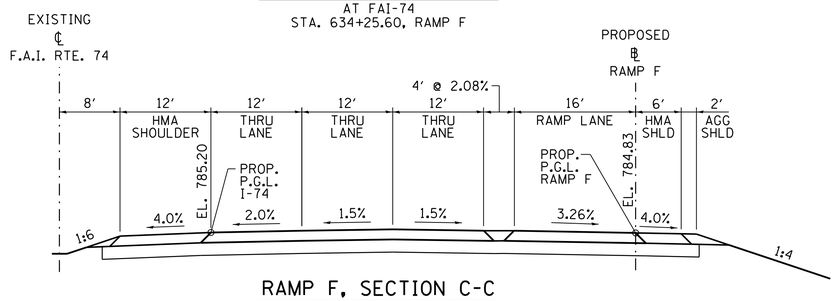

## RAMP F, SECTION B-B

AT FAI-74
STA. 634+25.60, RAMP F



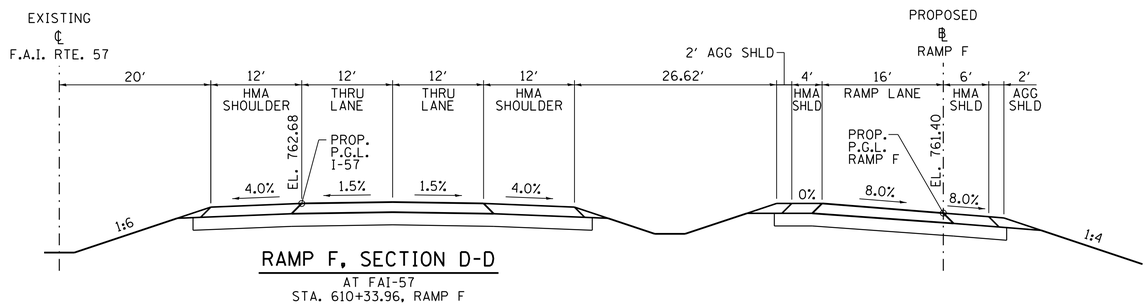

## RAMP F, SECTION C-C

AT FAI-57
STA. 606+60.09, RAMP F



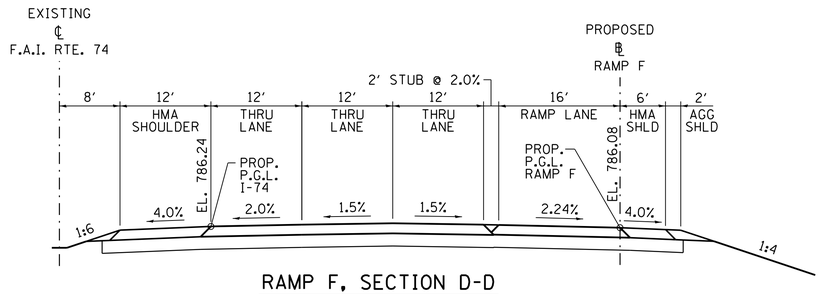

## RAMP F, SECTION C-C

AT FAI-74
STA. 636+25.64, RAMP F




## RAMP F, SECTION D-D

AT FAI-57
STA. 610+33.96, RAMP F




## RAMP F, SECTION D-D

AT FAI-74
STA. 637+25.66, RAMP F

## MODIFIED STANDARD EXIT RAMP TERMINAL

## STANDARD ENTRANCE RAMP TERMINAL

### INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

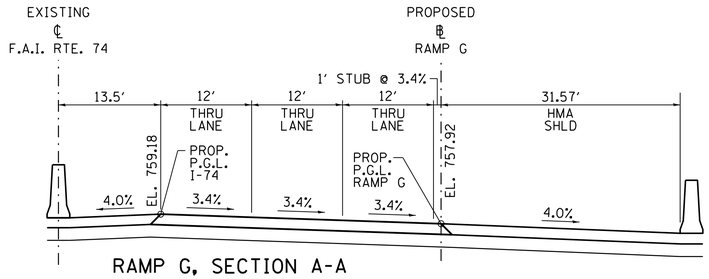
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I.D.S. SHEET 37 OF 41

BDE-9908

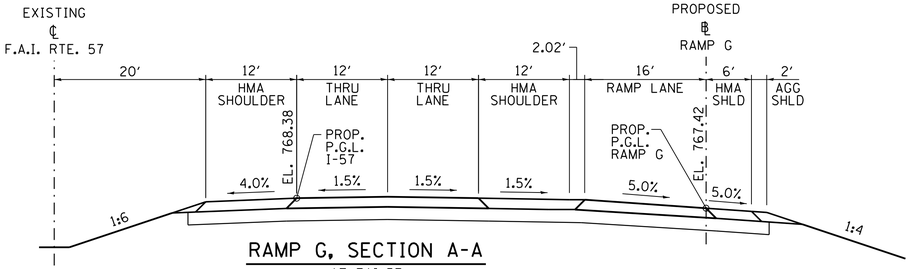
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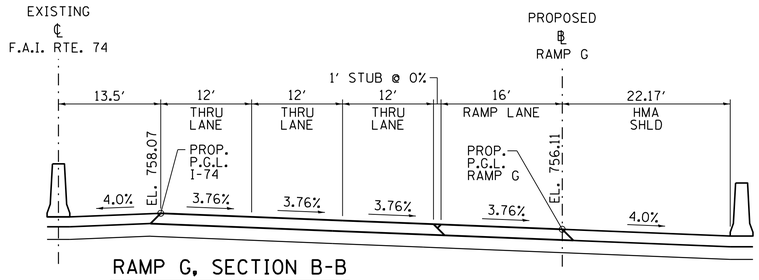

## RAMP G, SECTION A-A

AT FAI-74
STA. 700+00.00, RAMP G



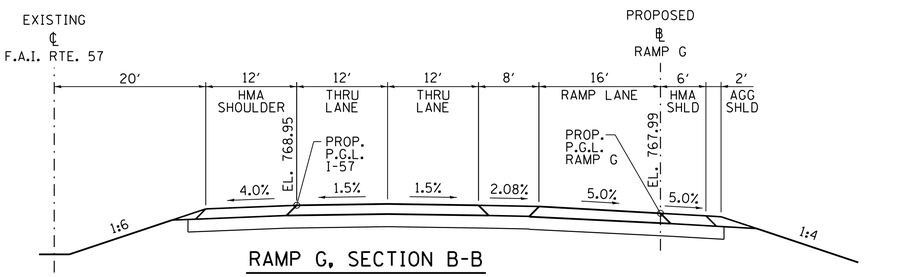

## RAMP G, SECTION A-A

AT FAI-57
STA. 748+24.57, RAMP G



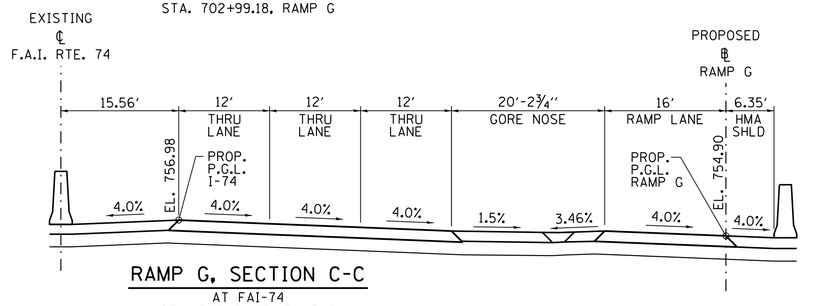

## RAMP G, SECTION B-B

AT FAI-74
STA. 702+99.18, RAMP G



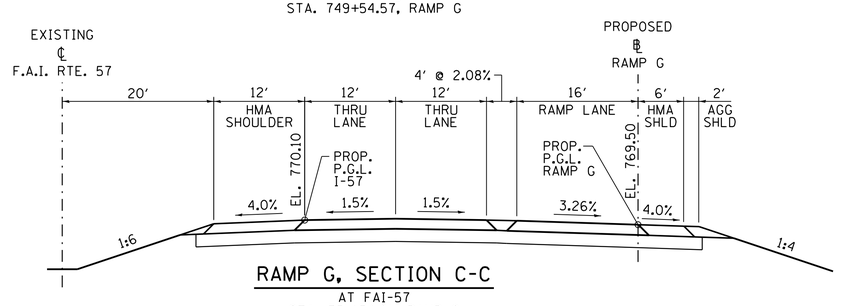

## RAMP G, SECTION B-B

AT FAI-57
STA. 749+54.57, RAMP G



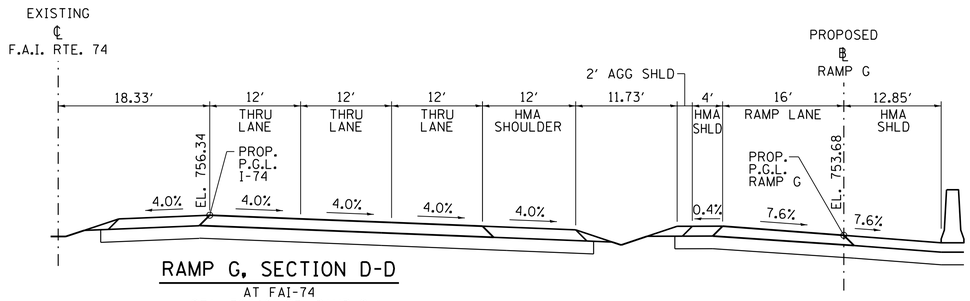

## RAMP G, SECTION C-C

AT FAI-74
STA. 706+58.07, RAMP G



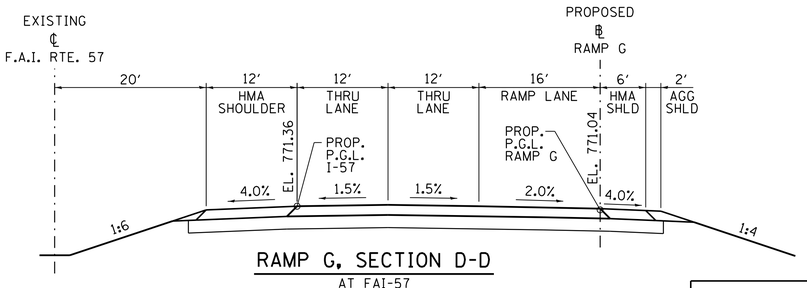

## RAMP G, SECTION C-C

AT FAI-57
STA. 751+54.61, RAMP G




## RAMP G, SECTION D-D

AT FAI-74
STA. 708+68.07, RAMP G




## RAMP G, SECTION D-D

AT FAI-57
STA. 753+54.65, RAMP G

## STANDARD EXIT RAMP TERMINAL

## ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE

### INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

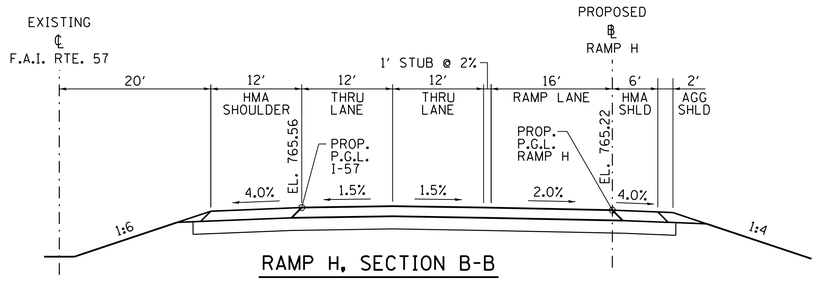
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BDE-9908

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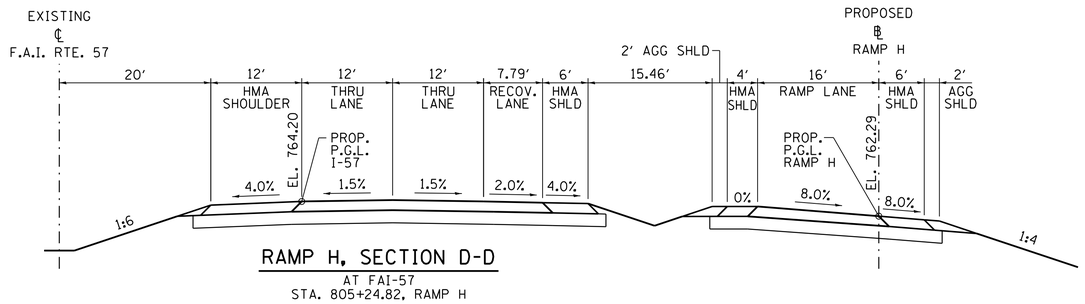

## RAMP H, SECTION B-B

AT FAI-57
STA. 800+71.12, RAMP H




## RAMP H, SECTION C-C

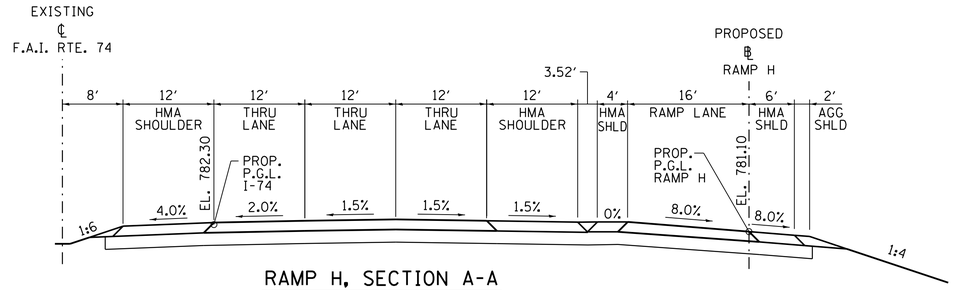
AT FAI-57
STA. 803+14.82, RAMP H




## RAMP H, SECTION D-D

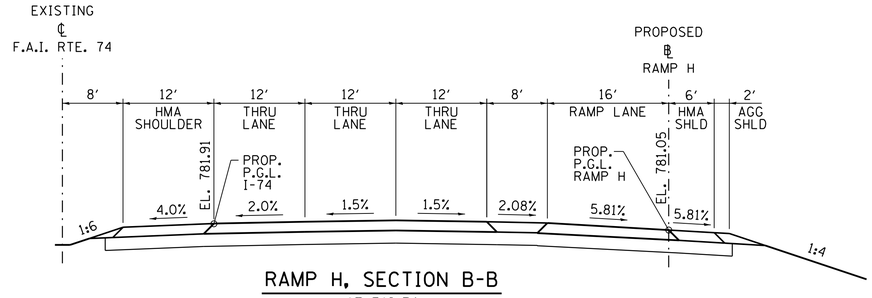
AT FAI-57
STA. 805+24.82, RAMP H

## EXIT RAMP TERMINAL WITH AUXILIARY LANE



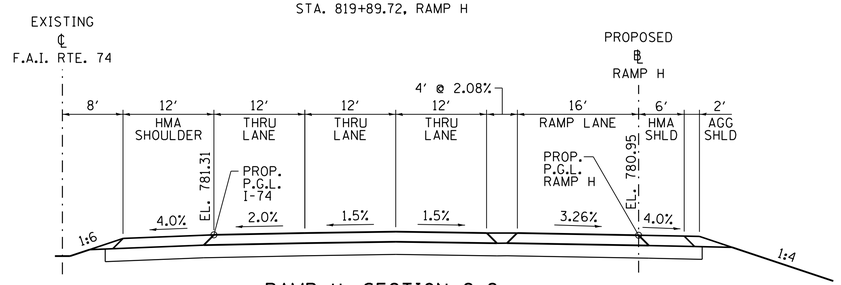

## RAMP H, SECTION A-A

AT FAI-74
STA. 818+59.72, RAMP H



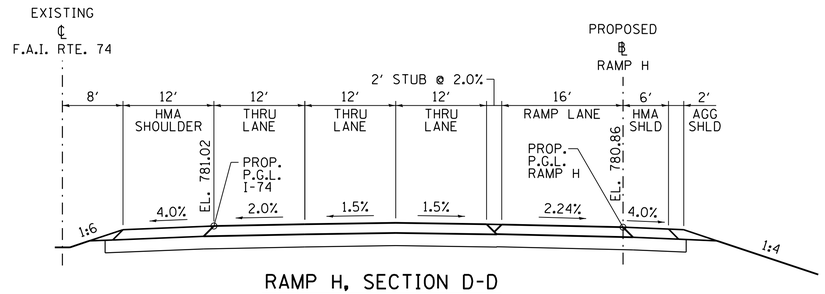

## RAMP H, SECTION B-B

AT FAI-74
STA. 819+89.72, RAMP H




## RAMP H, SECTION C-C

AT FAI-74
STA. 821+89.76, RAMP H




## RAMP H, SECTION D-D

AT FAI-74
STA. 822+89.78, RAMP H

## STANDARD ENTRANCE RAMP TERMINAL

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

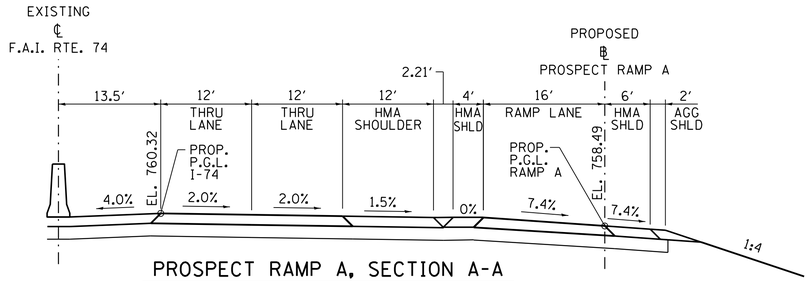
SCALE N.T.S. COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 39 OF 41

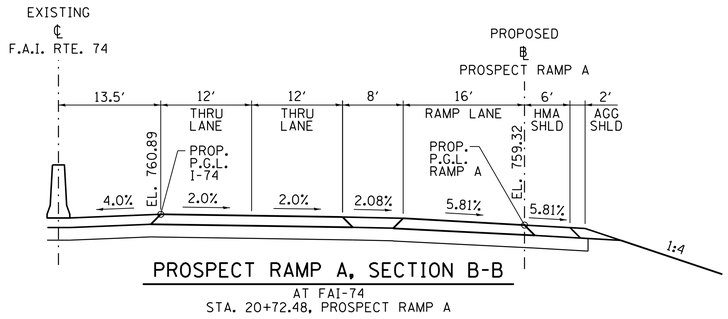
BDE-9908

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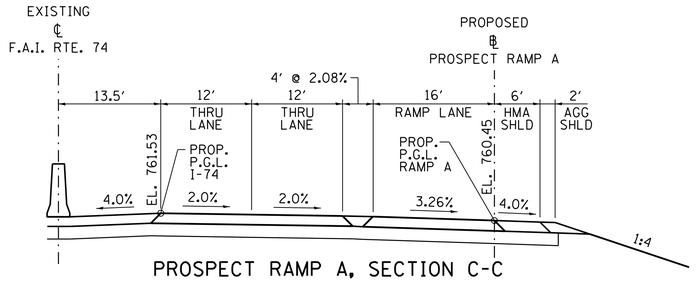

## PROSPECT RAMP A, SECTION A-A

AT FAI-74
STA. 19+42.48, PROSPECT RAMP A



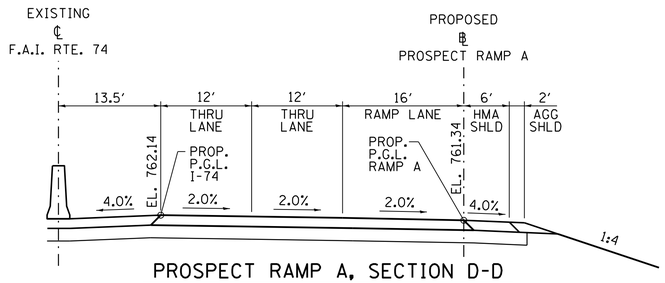

## PROSPECT RAMP A, SECTION B-B

AT FAI-74
STA. 20+72.48, PROSPECT RAMP A




## PROSPECT RAMP A, SECTION C-C

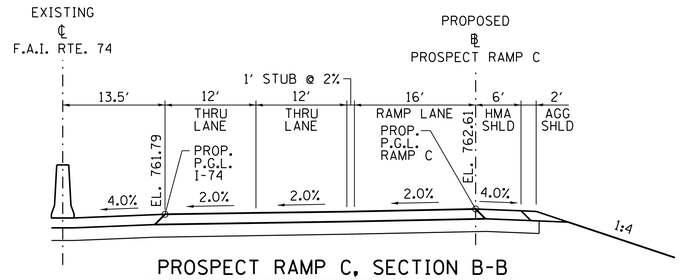
AT FAI-74
STA. 22+72.16, PROSPECT RAMP A




## PROSPECT RAMP A, SECTION D-D

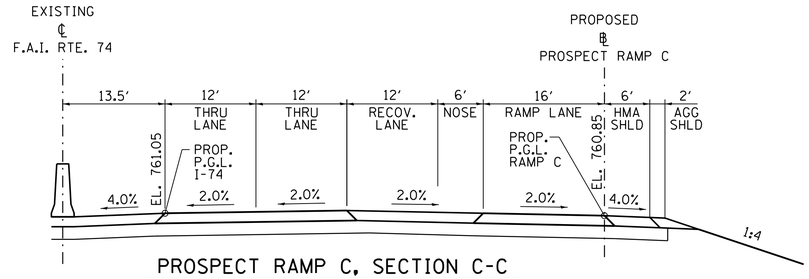
AT FAI-74
STA. 24+71.93, PROSPECT RAMP A

## ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE



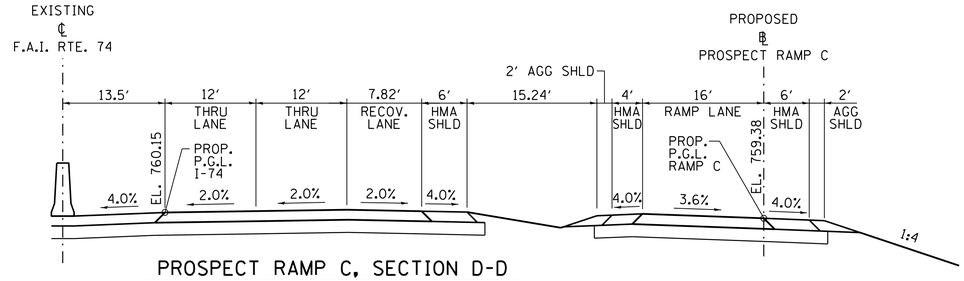

## PROSPECT RAMP C, SECTION B-B

AT FAI-74
STA. 25+20.27, PROSPECT RAMP C




## PROSPECT RAMP C, SECTION C-C

AT FAI-74
STA. 27+64.48, PROSPECT RAMP C




## PROSPECT RAMP C, SECTION D-D

AT FAI-74
STA. 29+74.48, PROSPECT RAMP C

## EXIT RAMP TERMINAL WITH AUXILIARY LANE

### INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

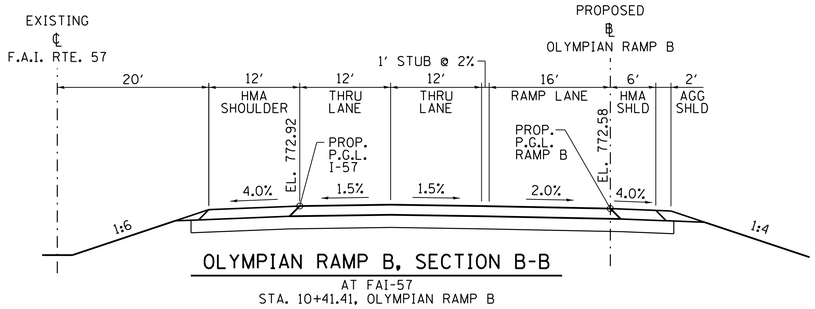
SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE N.T.S. COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 40 OF 41

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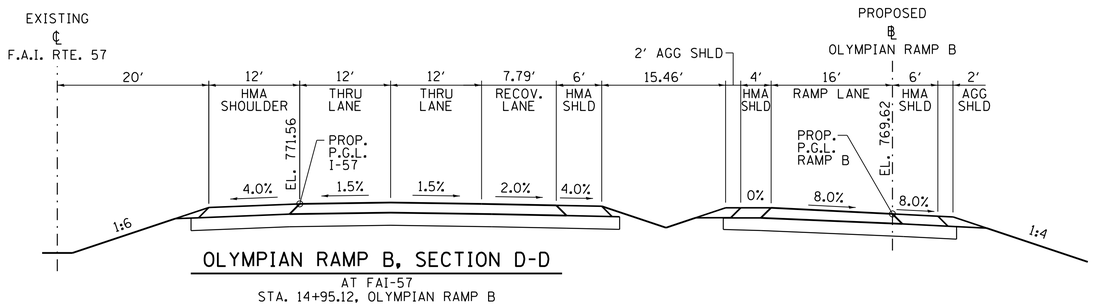

## OLYMPIAN RAMP B, SECTION B-B

AT FAI-57
STA. 10+41.41, OLYMPIAN RAMP B




## OLYMPIAN RAMP B, SECTION C-C

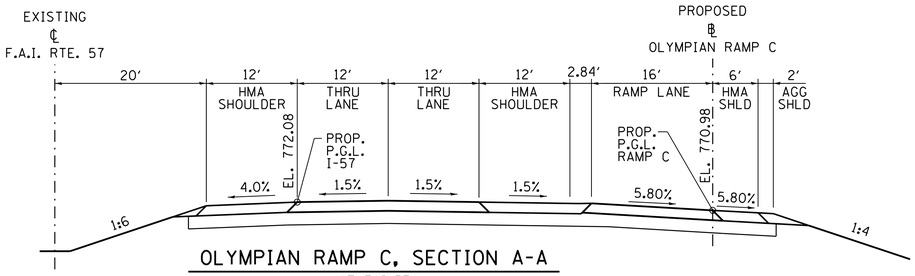
AT FAI-57
STA. 12+85.12, OLYMPIAN RAMP B




## OLYMPIAN RAMP B, SECTION D-D

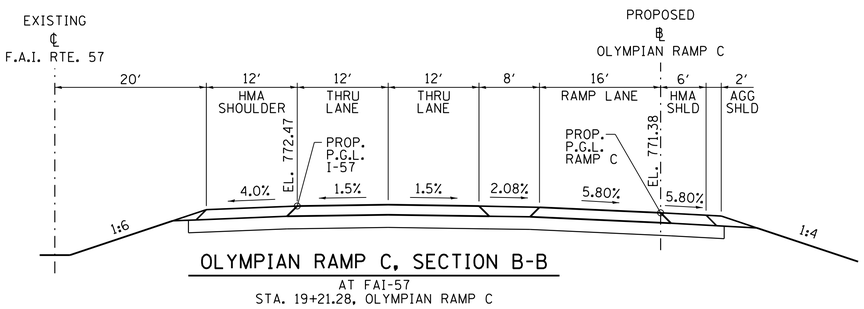
AT FAI-57
STA. 14+95.12, OLYMPIAN RAMP B

## EXIT RAMP TERMINAL WITH AUXILIARY LANE



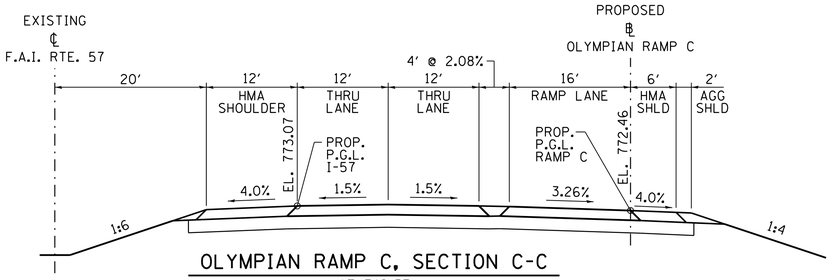

## OLYMPIAN RAMP C, SECTION A-A

AT FAI-57
STA. 17+91.28, OLYMPIAN RAMP C



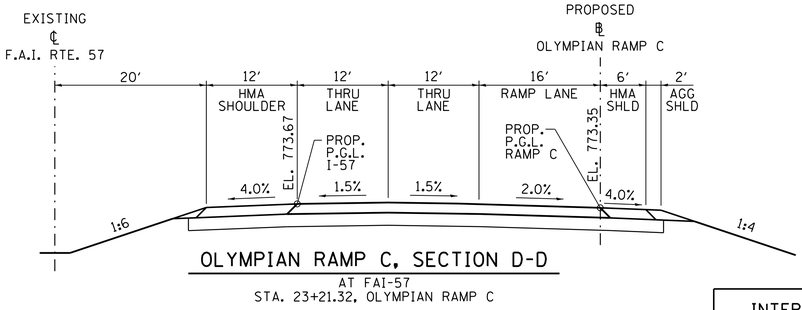

## OLYMPIAN RAMP C, SECTION B-B

AT FAI-57
STA. 19+21.28, OLYMPIAN RAMP C




## OLYMPIAN RAMP C, SECTION C-C

AT FAI-57
STA. 21+21.28, OLYMPIAN RAMP C




## OLYMPIAN RAMP C, SECTION D-D

AT FAI-57
STA. 23+21.32, OLYMPIAN RAMP C

## ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE

### INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE N.T.S. COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 41 OF 41

BDE-9908

# APPENDIX B

## HCS Freeway Analysis

| Input Worksheet - Directional Freeway Facility | Release June 25, 2011 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FREEWAY SYSTEM TITLE: | I-57 Northbound 2013 AM | | | | | | | | | | | | | | | | | | |
| SEGMENT NUMBER : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | | |
| SEGMENT LABEL : | | I-72 | | I-72 | | I-72 | | I-74 | | I-74 | | I-74 | | Olympia | | Olympia | S17 | | |
| Input or estimated segment type (B,W, ONR,OFR,R) | B | OFR | B | W | B | ONR | B | OFR | B | W | B | ONR | R | OFR | B | ONR | B | | |
| Segment Length (ft) | 500 | 1,500 | 1,230 | 540 | 960 | 1,500 | 5,770 | 1,500 | 1,315 | 495 | 1,260 | 1,030 | 470 | 1,030 | 2,240 | 1,500 | 500 | 4.42 | miles |
| Number of lanes | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| Free flow speed (mph) | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| Space mean speed (mph) | 70.0 | 57.8 | 68.7 | 65.2 | 68.6 | 61.2 | 70.0 | 56.4 | 68.6 | 64.8 | 68.7 | 61.5 | 61.5 | 61.0 | 69.4 | 61.6 | 68.3 | | |
| Segment density (veh/mi/lane) | 9.0 | 12.6 | 8.6 | 7.1 | 10.0 | 14.6 | 11.0 | 15.0 | 6.8 | 5.1 | 5.6 | 9.7 | 9.7 | 9.6 | 4.6 | 8.7 | 5.5 | 9.5 | veh/mi/ln |
| Segment capacity (vph) | 4,267 | 4,267 | 4,249 | 5,713 | 4,290 | 4,318 | 4,318 | 4,318 | 4,240 | 5,358 | 4,209 | 4,253 | 4,253 | 4,253 | 4,093 | 4,174 | 4,174 | | |
| Segment demand (vph) | 1,261 | 1,261 | 1,187 | 1,396 | 1,376 | 1,533 | 1,533 | 1,533 | 933 | 1,006 | 767 | 911 | 911 | 911 | 639 | 756 | 756 | | |
| Segment volume served (vph) | 1,261 | 1,261 | 1,187 | 1,396 | 1,376 | 1,533 | 1,533 | 1,533 | 933 | 1,006 | 767 | 911 | 911 | 911 | 639 | 756 | 756 | | |
| d/c ratio | 0.30 | 0.30 | 0.28 | 0.24 | 0.32 | 0.36 | 0.36 | 0.36 | 0.22 | 0.19 | 0.18 | 0.21 | 0.21 | 0.21 | 0.16 | 0.18 | 0.18 | | |
| On-Ramp demand (vph) | 0 | 0 | 0 | 209 | 0 | 158 | 0 | 0 | 0 | 72 | 0 | 144 | 0 | 0 | 0 | 117 | 0 | | |
| On-Ramp capacity (vph) | | | | 1,900 | | 2,000 | | | | 1,900 | | 2,000 | | | | 2,100 | | | |
| Off- Ramp demand (vph) | 0 | 74 | 0 | 20 | 0 | 0 | 0 | 600 | 0 | 239 | 0 | 0 | 0 | 272 | 0 | 0 | 0 | | |
| Off-Ramp capacity (vph) | | 2,000 | | 1,900 | | | | 2,000 | | 1,900 | | | | 2,100 | | | | | |
| Ramp-to-Ramp demand (vph) | | | | | | | | | | | | | | | | | | | |
| Travel time per vehicle (min) | 0.08 | 0.29 | 0.20 | 0.09 | 0.16 | 0.28 | 0.94 | 0.30 | 0.22 | 0.09 | 0.21 | 0.19 | 0.09 | 0.19 | 0.37 | 0.28 | 0.08 | 4.06 | min |
| Free-flow travel time (min) | 0.08 | 0.24 | 0.20 | 0.09 | 0.16 | 0.24 | 0.94 | 0.24 | 0.21 | 0.08 | 0.20 | 0.17 | 0.08 | 0.17 | 0.36 | 0.24 | 0.08 | 3.79 | min |
| Freeway mainline delay (min) | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.04 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | 0.02 | 0.01 | 0.02 | 0.00 | 0.03 | 0.00 | 0.27 | min |
| System delay-- includes on-ramps (min) | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.04 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | 0.02 | 0.01 | 0.02 | 0.00 | 0.03 | 0.00 | 0.27 | min |
| VMTD Veh-miles / interval (Demand) | 29.9 | 89.6 | 69.1 | 35.7 | 62.5 | 108.9 | 418.9 | 108.9 | 58.1 | 23.6 | 45.7 | 44.4 | 20.3 | 44.4 | 67.8 | 53.7 | 17.9 | 1,299 | veh-mi |
| VMTV Veh-miles / interval (Volume served) | 29.9 | 89.6 | 69.1 | 35.7 | 62.5 | 108.9 | 418.9 | 108.9 | 58.1 | 23.6 | 45.7 | 44.4 | 20.3 | 44.4 | 67.8 | 53.7 | 17.9 | 1,299 | veh-mi |
| VHT travel / interval (hrs) | 0.43 | 1.55 | 1.01 | 0.55 | 0.91 | 1.78 | 5.99 | 1.93 | 0.85 | 0.36 | 0.67 | 0.72 | 0.33 | 0.73 | 0.98 | 0.87 | 0.26 | 19.91 | hrs |
| VHD delay /interval (hrs) | 0.00 | 0.27 | 0.02 | 0.04 | 0.02 | 0.22 | 0.00 | 0.38 | 0.02 | 0.03 | 0.01 | 0.09 | 0.04 | 0.09 | 0.01 | 0.10 | 0.01 | 1.35 | hrs |
| Space mean speed = VMTV / VHT (mph) | 70.0 | 57.8 | 68.7 | 65.2 | 68.6 | 61.2 | 70.0 | 56.4 | 68.6 | 64.8 | 68.7 | 61.5 | 61.0 | 61.0 | 69.4 | 61.6 | 68.3 | 65.3 | mph |
| Segment density (pc/mi/lane)* | 10.1 | 14.2 | 9.8 | 7.9 | 11.2 | 16.2 | 12.2 | 16.7 | 7.7 | 5.7 | 6.4 | 10.9 | 10.9 | 10.8 | 5.4 | 10.0 | 6.4 | 10.7 | pc/mi/ln |
| Density-based LOS on segment | A | B | A | A | B | B | B | B | A | A | A | B | B | B | A | A | A | A | |
| Demand-based LOS on segment | 10.1-A | 14.2-B | 9.8-A | 7.9-A | 11.2-B | 16.2-B | 12.2-B | 16.7-B | 7.7-A | 5.7-A | 6.4-A | 10.9-B | 10.9-B | 10.8-B | 5.4-A | 10-A | 6.4-A | 10.7-A | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

| Input Worksheet - Directional Freeway Facility | Release June 25, 2011 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FREEWAY SYSTEM TITLE: | I-57 Northbound 2013 PM | | | | | | | | | | | | | | | | | | |
| SEGMENT NUMBER : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | | |
| SEGMENT LABEL : | | I-72 | | I-72 | | I-72 | | I-74 | | I-74 | | I-74 | | Olympia | | Olympia | S17 | | |
| Input or estimated segment type (B,W, ONR,OFR,R) | B | OFR | B | W | B | ONR | B | OFR | B | W | B | ONR | R | OFR | B | ONR | B | | |
| Segment Length (ft) | 500 | 1,500 | 1,230 | 540 | 960 | 1,500 | 5,770 | 1,500 | 1,315 | 495 | 1,260 | 1,030 | 470 | 1,030 | 2,240 | 1,500 | 500 | 4.42 | miles |
| Number of lanes | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| Free flow speed (mph) | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| Space mean speed (mph) | 70.0 | 57.8 | 68.7 | 65.0 | 68.5 | 61.3 | 70.0 | 56.8 | 68.6 | 64.2 | 68.6 | 61.5 | 61.5 | 61.3 | 69.4 | 61.6 | 68.3 | | |
| Segment density (veh/mi/lane) | 7.1 | 10.3 | 6.6 | 5.8 | 8.2 | 12.9 | 9.4 | 13.2 | 6.3 | 4.6 | 4.2 | 8.8 | 8.8 | 8.7 | 4.7 | 9.8 | 6.5 | 8.4 | veh/mi/ln |
| Segment capacity (vph) | 4,267 | 4,267 | 4,238 | 5,574 | 4,302 | 4,339 | 4,339 | 4,339 | 4,286 | 5,184 | 4,219 | 4,295 | 4,295 | 4,295 | 4,214 | 4,331 | 4,331 | | |
| Segment demand (vph) | 990 | 990 | 900 | 1,154 | 1,130 | 1,322 | 1,322 | 1,322 | 867 | 906 | 578 | 800 | 800 | 800 | 650 | 889 | 889 | | |
| Segment volume served (vph) | 990 | 990 | 900 | 1,154 | 1,130 | 1,322 | 1,322 | 1,322 | 867 | 906 | 578 | 800 | 800 | 800 | 650 | 889 | 889 | | |
| d/c ratio | 0.23 | 0.23 | 0.21 | 0.21 | 0.26 | 0.30 | 0.30 | 0.30 | 0.20 | 0.17 | 0.14 | 0.19 | 0.19 | 0.19 | 0.15 | 0.21 | 0.21 | | |
| On-Ramp demand (vph) | 0 | 0 | 0 | 254 | 0 | 192 | 0 | 0 | 0 | 39 | 0 | 222 | 0 | 0 | 0 | 239 | 0 | | |
| On-Ramp capacity (vph) | | | | 1,900 | | 2,000 | | | | 1,900 | | 2,000 | | | | 2,100 | | | |
| Off- Ramp demand (vph) | 0 | 90 | 0 | 24 | 0 | 0 | 0 | 456 | 0 | 328 | 0 | 0 | 0 | 150 | 0 | 0 | 0 | | |
| Off-Ramp capacity (vph) | | 2,000 | | 1,900 | | | | 2,000 | | 1,900 | | | | 2,100 | | | | | |
| Ramp-to-Ramp demand (vph) | | | | | | | | | | | | | | | | | | | |
| Travel time per vehicle (min) | 0.08 | 0.30 | 0.20 | 0.09 | 0.16 | 0.28 | 0.94 | 0.30 | 0.22 | 0.09 | 0.21 | 0.19 | 0.09 | 0.19 | 0.37 | 0.28 | 0.08 | 4.06 | min |
| Free-flow travel time (min) | 0.08 | 0.24 | 0.20 | 0.09 | 0.16 | 0.24 | 0.94 | 0.24 | 0.21 | 0.08 | 0.20 | 0.17 | 0.08 | 0.17 | 0.36 | 0.24 | 0.08 | 3.79 | min |
| Freeway mainline delay (min) | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | 0.02 | 0.01 | 0.02 | 0.00 | 0.03 | 0.00 | 0.27 | min |
| System delay-- includes on-ramps (min) | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | 0.02 | 0.01 | 0.02 | 0.00 | 0.03 | 0.00 | 0.27 | min |
| VMTD Veh-miles / interval (Demand) | 23.4 | 70.3 | 52.4 | 29.5 | 51.4 | 93.9 | 361.2 | 93.9 | 54.0 | 21.2 | 34.5 | 39.0 | 17.8 | 39.0 | 68.9 | 63.1 | 21.0 | 1,135 | veh-mi |
| VMTV Veh-miles / interval (Volume served) | 23.4 | 70.3 | 52.4 | 29.5 | 51.4 | 93.9 | 361.2 | 93.9 | 54.0 | 21.2 | 34.5 | 39.0 | 17.8 | 39.0 | 68.9 | 63.1 | 21.0 | 1,135 | veh-mi |
| VHT travel / interval (hrs) | 0.33 | 1.22 | 0.76 | 0.45 | 0.75 | 1.53 | 5.16 | 1.65 | 0.79 | 0.33 | 0.50 | 0.63 | 0.29 | 0.64 | 0.99 | 1.02 | 0.31 | 17.37 | hrs |
| VHD delay /interval (hrs) | 0.00 | 0.21 | 0.01 | 0.03 | 0.02 | 0.19 | 0.00 | 0.31 | 0.02 | 0.03 | 0.01 | 0.08 | 0.04 | 0.08 | 0.01 | 0.12 | 0.01 | 1.16 | hrs |
| Space mean speed = VMTV / VHT (mph) | 70.0 | 57.8 | 68.7 | 65.0 | 68.5 | 61.3 | 70.0 | 56.8 | 68.6 | 64.2 | 68.6 | 61.5 | 61.3 | 61.3 | 69.4 | 61.6 | 68.3 | 65.3 | mph |
| Segment density (pc/mi/lane)* | 8.0 | 11.6 | 7.4 | 6.5 | 9.2 | 14.3 | 10.5 | 14.6 | 7.1 | 5.2 | 4.8 | 9.8 | 9.8 | 9.7 | 5.3 | 10.9 | 7.2 | 9.4 | pc/mi/ln |
| Density-based LOS on segment | A | B | A | A | A | B | A | B | A | A | A | A | A | A | A | B | A | A | |
| Demand-based LOS on segment | 8-A | 11.6-B | 7.4-A | 6.5-A | 9.2-A | 14.3-B | 10.5-A | 14.6-B | 7.1-A | 5.2-A | 4.8-A | 9.8-A | 9.8-A | 9.7-A | 5.3-A | 10.9-B | 7.2-A | 9.4-A | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** I-57 Southbound 2013 AM

| SEGMENT NUMBER : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEGMENT LABEL : | | Olympia | | Olympia | | I-74 | | I-74 | | I-74 | | I-72 | | I-72 | | I-72 | | | |
| Input or estimated segment type (B,W, ONR,OFR,R) | B | OFR | B | ONR | R | OFR | B | W | B | ONR | B | OFR | B | W | B | ONR | B | | |
| Segment Length (ft) | 500 | 1,500 | 2,180 | 1,300 | 200 | 1,300 | 1,240 | 530 | 1,135 | 1,500 | 5,800 | 1,500 | 1,265 | 525 | 930 | 1,500 | 500 | 4.43 | miles |
| Number of lanes | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | | |
| Free flow speed (mph) | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| Space mean speed (mph) | 70.0 | 61.2 | 69.6 | 62.0 | 62.0 | 57.9 | 68.5 | 62.4 | 68.0 | 61.6 | 70.0 | 57.3 | 68.6 | 67.0 | 69.1 | 61.8 | 68.4 | | |
| Segment density (veh/mi/lane) | 5.8 | 8.8 | 4.6 | 8.7 | 9.4 | 9.2 | 5.9 | 5.9 | 6.9 | 11.1 | 8.4 | 11.9 | 6.5 | 4.6 | 6.0 | 8.5 | 6.3 | 7.8 | veh/mi/ln |
| Segment capacity (vph) | 4,286 | 4,286 | 4,191 | 4,305 | 4,305 | 4,305 | 4,289 | 5,167 | 4,311 | 4,330 | 4,330 | 4,330 | 4,261 | 5,708 | 4,239 | 4,249 | 4,249 | | |
| Segment demand (vph) | 817 | 817 | 644 | 861 | 861 | 861 | 811 | 1,122 | 933 | 1,172 | 1,172 | 1,172 | 899 | 938 | 834 | 861 | 861 | | |
| Segment volume served (vph) | 817 | 817 | 644 | 861 | 861 | 861 | 811 | 1,122 | 933 | 1,172 | 1,172 | 1,172 | 899 | 938 | 834 | 861 | 861 | | |
| d/c ratio | 0.19 | 0.19 | 0.15 | 0.20 | 0.20 | 0.20 | 0.19 | 0.22 | 0.22 | 0.27 | 0.27 | 0.27 | 0.21 | 0.16 | 0.20 | 0.20 | 0.20 | | |
| On-Ramp demand (vph) | 0 | 0 | 0 | 217 | 0 | 0 | 0 | 311 | 0 | 239 | 0 | 0 | 0 | 39 | 0 | 27 | 0 | | |
| On-Ramp capacity (vph) | | | | 2,100 | | | | 1,900 | | 2,000 | | | | 1,900 | | 2,000 | | | |
| Off- Ramp demand (vph) | 0 | 172 | 0 | 0 | 0 | 50 | 0 | 189 | 0 | 0 | 0 | 273 | 0 | 103 | 0 | 0 | 0 | | |
| Off-Ramp capacity (vph) | | 2,100 | | | | 2,000 | | 1,900 | | | | 2,000 | | 1,900 | | | | | |
| Ramp-to-Ramp demand (vph) | | | | | | | | | | | | | | | | | | | |
| Travel time per vehicle (min) | 0.08 | 0.28 | 0.36 | 0.24 | 0.04 | 0.26 | 0.21 | 0.10 | 0.19 | 0.28 | 0.94 | 0.30 | 0.21 | 0.09 | 0.15 | 0.28 | 0.08 | 4.07 | min |
| Free-flow travel time (min) | 0.08 | 0.24 | 0.35 | 0.21 | 0.03 | 0.21 | 0.20 | 0.09 | 0.18 | 0.24 | 0.94 | 0.24 | 0.21 | 0.09 | 0.15 | 0.24 | 0.08 | 3.80 | min |
| Freeway mainline delay (min) | 0.00 | 0.03 | 0.00 | 0.03 | 0.01 | 0.04 | 0.00 | 0.01 | 0.01 | 0.03 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.27 | min |
| System delay-- includes on-ramps (min) | 0.00 | 0.03 | 0.00 | 0.03 | 0.01 | 0.04 | 0.00 | 0.01 | 0.01 | 0.03 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.27 | min |
| VMTD Veh-miles / interval (Demand) | 19.3 | 58.0 | 66.5 | 53.0 | 8.2 | 53.0 | 47.6 | 28.2 | 50.2 | 83.3 | 321.9 | 83.3 | 53.8 | 23.3 | 36.7 | 61.2 | 20.4 | 1,068 | veh-mi |
| VMTV Veh-miles / interval (Volume served) | 19.3 | 58.0 | 66.5 | 53.0 | 8.2 | 53.0 | 47.6 | 28.2 | 50.2 | 83.3 | 321.9 | 83.3 | 53.8 | 23.3 | 36.7 | 61.2 | 20.4 | 1,068 | veh-mi |
| VHT travel / interval (hrs) | 0.28 | 0.95 | 0.96 | 0.86 | 0.14 | 0.92 | 0.70 | 0.45 | 0.74 | 1.35 | 4.60 | 1.45 | 0.78 | 0.35 | 0.53 | 0.99 | 0.30 | 16.33 | hrs |
| VHD delay /interval (hrs) | 0.00 | 0.12 | 0.01 | 0.10 | 0.02 | 0.16 | 0.02 | 0.05 | 0.02 | 0.16 | 0.00 | 0.26 | 0.02 | 0.02 | 0.01 | 0.12 | 0.01 | 1.08 | hrs |
| Space mean speed = VMTV / VHT (mph) | 70.0 | 61.2 | 69.6 | 62.0 | 57.9 | 57.9 | 68.5 | 62.4 | 68.0 | 61.6 | 70.0 | 57.3 | 68.6 | 67.0 | 69.1 | 61.8 | 68.4 | 65.4 | mph |
| Segment density (pc/mi/lane)* | 6.5 | 9.9 | 5.3 | 9.7 | 10.3 | 10.3 | 6.6 | 6.5 | 7.6 | 12.4 | 9.3 | 13.2 | 7.4 | 5.2 | 6.8 | 9.6 | 7.1 | 8.8 | pc/mi/ln |
| Density-based LOS on segment | A | A | A | A | B | B | A | A | A | B | A | B | A | A | A | A | A | A | |
| Demand-based LOS on segment | | | | | | | | | | | | | | | | | | | |
| | **6.5-A** | **9.9-A** | **5.3-A** | **9.7-A** | **10.3-B** | **10.3-B** | **6.6-A** | **6.5-A** | **7.6-A** | **12.4-B** | **9.3-A** | **13.2-B** | **7.4-A** | **5.2-A** | **6.8-A** | **9.6-A** | **7.1-A** | **8.8-A** | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

| Input Worksheet - Directional Freeway Facility | Release June 25, 2011 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FREEWAY SYSTEM TITLE: | I-57 Southbound 2013 PM | | | | | | | | | | | | | | | | | | |
| SEGMENT NUMBER : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | | |
| SEGMENT LABEL : | | Olympia | | Olympia | | I-74 | | I-74 | | I-74 | | I-72 | | I-72 | | I-72 | | | |
| Input or estimated segment type (B,W, ONR,OFR,R) | B | OFR | B | ONR | R | OFR | B | W | B | ONR | B | OFR | B | W | B | ONR | B | | |
| Segment Length (ft) | 500 | 1,500 | 2,180 | 1,300 | 200 | 1,300 | 1,240 | 530 | 1,135 | 1,500 | 5,800 | 1,500 | 1,265 | 525 | 930 | 1,500 | 500 | 4.43 | miles |
| Number of lanes | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | | |
| Free flow speed (mph) | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| Space mean speed (mph) | 70.0 | 61.3 | 69.6 | 62.0 | 62.0 | 57.8 | 68.4 | 58.3 | 67.0 | 61.3 | 70.0 | 57.2 | 68.6 | 66.0 | 68.8 | 61.6 | 68.3 | | |
| Segment density (veh/mi/lane) | 5.7 | 8.7 | 4.8 | 9.6 | 9.7 | 10.2 | 6.4 | 8.7 | 10.3 | 14.8 | 11.7 | 15.9 | 9.7 | 6.9 | 9.1 | 11.8 | 9.4 | 10.1 | veh/mi/ln |
| Segment capacity (vph) | 4,286 | 4,286 | 4,214 | 4,351 | 4,351 | 4,351 | 4,329 | 5,008 | 4,395 | 4,396 | 4,396 | 4,396 | 4,357 | 5,892 | 4,346 | 4,351 | 4,351 | | |
| Segment demand (vph) | 800 | 800 | 667 | 972 | 972 | 972 | 878 | 1,544 | 1,383 | 1,633 | 1,633 | 1,633 | 1,326 | 1,370 | 1,254 | 1,284 | 1,284 | | |
| Segment volume served (vph) | 800 | 800 | 667 | 972 | 972 | 972 | 878 | 1,544 | 1,383 | 1,633 | 1,633 | 1,633 | 1,326 | 1,370 | 1,254 | 1,284 | 1,284 | | |
| d/c ratio | 0.19 | 0.19 | 0.16 | 0.22 | 0.22 | 0.22 | 0.20 | 0.31 | 0.31 | 0.37 | 0.37 | 0.37 | 0.30 | 0.23 | 0.29 | 0.30 | 0.30 | | |
| On-Ramp demand (vph) | 0 | 0 | 0 | 306 | 0 | 0 | 0 | 667 | 0 | 250 | 0 | 0 | 0 | 44 | 0 | 30 | 0 | | |
| On-Ramp capacity (vph) | | | | 2,100 | | | | 1,900 | | 2,000 | | | | 1,900 | | 2,000 | | | |
| Off- Ramp demand (vph) | 0 | 133 | 0 | 0 | 0 | 94 | 0 | 161 | 0 | 0 | 0 | 308 | 0 | 116 | 0 | 0 | 0 | | |
| Off-Ramp capacity (vph) | | 2,100 | | | | 2,000 | | 1,900 | | | | 2,000 | | 1,900 | | | | | |
| Ramp-to-Ramp demand (vph) | | | | | | | | | | | | | | | | | | | |
| Travel time per vehicle (min) | 0.08 | 0.28 | 0.36 | 0.24 | 0.04 | 0.26 | 0.21 | 0.10 | 0.19 | 0.28 | 0.94 | 0.30 | 0.21 | 0.09 | 0.15 | 0.28 | 0.08 | 4.08 | min |
| Free-flow travel time (min) | 0.08 | 0.24 | 0.35 | 0.21 | 0.03 | 0.21 | 0.20 | 0.09 | 0.18 | 0.24 | 0.94 | 0.24 | 0.21 | 0.09 | 0.15 | 0.24 | 0.08 | 3.80 | min |
| Freeway mainline delay (min) | 0.00 | 0.03 | 0.00 | 0.03 | 0.01 | 0.04 | 0.00 | 0.02 | 0.01 | 0.03 | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.28 | min |
| System delay-- includes on-ramps (min) | 0.00 | 0.03 | 0.00 | 0.03 | 0.01 | 0.04 | 0.00 | 0.02 | 0.01 | 0.03 | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.28 | min |
| VMTD Veh-miles / interval (Demand) | 18.9 | 56.8 | 68.8 | 59.8 | 9.2 | 59.8 | 51.5 | 38.8 | 74.3 | 116.0 | 448.5 | 116.0 | 79.4 | 34.1 | 55.2 | 91.2 | 30.4 | 1,409 | veh-mi |
| VMTV Veh-miles / interval (Volume served) | 18.9 | 56.8 | 68.8 | 59.8 | 9.2 | 59.8 | 51.5 | 38.8 | 74.3 | 116.0 | 448.5 | 116.0 | 79.4 | 34.1 | 55.2 | 91.2 | 30.4 | 1,409 | veh-mi |
| VHT travel / interval (hrs) | 0.27 | 0.93 | 0.99 | 0.97 | 0.16 | 1.04 | 0.75 | 0.66 | 1.11 | 1.89 | 6.41 | 2.03 | 1.16 | 0.52 | 0.80 | 1.48 | 0.44 | 21.61 | hrs |
| VHD delay /interval (hrs) | 0.00 | 0.12 | 0.01 | 0.11 | 0.03 | 0.18 | 0.02 | 0.11 | 0.05 | 0.23 | 0.00 | 0.37 | 0.02 | 0.03 | 0.01 | 0.18 | 0.01 | 1.48 | hrs |
| Space mean speed = VMTV / VHT (mph) | 70.0 | 61.3 | 69.6 | 62.0 | 57.8 | 57.8 | 68.4 | 58.3 | 67.0 | 61.3 | 70.0 | 57.2 | 68.6 | 66.0 | 68.8 | 61.6 | 68.3 | 65.2 | mph |
| Segment density (pc/mi/lane)* | 6.4 | 9.7 | 5.5 | 10.6 | 11.2 | 11.2 | 7.1 | 9.5 | 11.3 | 16.1 | 12.7 | 17.3 | 10.6 | 7.6 | 10.1 | 13.1 | 10.4 | 11.2 | pc/mi/ln |
| Density-based LOS on segment | A | A | A | B | B | B | A | A | B | B | B | B | A | A | A | B | A | B | |
| Demand-based LOS on segment | 6.4-A | 9.7-A | 5.5-A | 10.6-B | 11.2-B | 11.2-B | 7.1-A | 9.5-A | 11.3-B | 16.1-B | 12.7-B | 17.3-B | 10.6-A | 7.6-A | 10.1-A | 13.1-B | 10.4-A | 11.2-B | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** **I-74 Westbound-2013 AM**

| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEGMENT LABEL :** | Prospect | | Prospect | | I-57 | | I-57 | | I-57 | | Prairie | | Prairie | | | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | OFR-B | B | ONR | B | OFR | B | W | B | ONR | B | OFR | B | ONR | B | | |
| **Segment Length (ft)** | 1,500 | 2,800 | 1,500 | 2,530 | 1,500 | 1,400 | 525 | 1,250 | 1,500 | 21,945 | 1,500 | 2,620 | 1,500 | 500 | 8.06 | miles |
| **Number of lanes** | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| **Space mean speed (mph)** | 70.0 | 70.0 | 61.5 | 69.7 | 55.8 | 68.6 | 61.9 | 68.1 | 61.3 | 70.0 | 61.1 | 69.7 | 61.5 | 68.3 | | |
| **Segment density (veh/mi/lane)** | 7.3 | 5.8 | 10.9 | 7.5 | 10.7 | 6.5 | 5.9 | 6.0 | 9.6 | 6.2 | 9.2 | 4.8 | 9.3 | 5.9 | 6.9 | veh/mi/ln |
| **Segment capacity (vph)** | 6,545 | 4,110 | 4,226 | 4,226 | 4,226 | 4,184 | 4,945 | 4,136 | 4,159 | 4,159 | 4,159 | 4,022 | 4,123 | 4,123 | | |
| **Segment demand (vph)** | 1,533 | 806 | 1,039 | 1,039 | 1,039 | 894 | 1,133 | 822 | 872 | 872 | 872 | 669 | 810 | 810 | | |
| **Segment volume served (vph)** | 1,533 | 806 | 1,039 | 1,039 | 1,039 | 894 | 1,133 | 822 | 872 | 872 | 872 | 669 | 810 | 810 | | |
| **d/c ratio** | 0.23 | 0.20 | 0.25 | 0.25 | 0.25 | 0.21 | 0.23 | 0.20 | 0.21 | 0.21 | 0.21 | 0.17 | 0.20 | 0.20 | | |
| **On-Ramp demand (vph)** | 0 | 0 | 233 | 0 | 0 | 0 | 239 | 0 | 50 | 0 | 0 | 0 | 141 | 0 | | |
| **On-Ramp capacity (vph)** | | | 2,100 | | | | 1,900 | | 1,900 | | | | 2,100 | | | |
| **Off- Ramp demand (vph)** | 728 | 0 | 0 | 0 | 144 | 0 | 311 | 0 | 0 | 0 | 203 | 0 | 0 | 0 | | |
| **Off-Ramp capacity (vph)** | 2,100 | | | | 1,900 | | 1,900 | | | | 2,100 | | | | | |
| **Ramp-to-Ramp demand (vph)** | | | | | | | | | | | | | | | | |
| **Travel time per vehicle (min)** | 0.24 | 0.45 | 0.28 | 0.41 | 0.31 | 0.23 | 0.10 | 0.21 | 0.28 | 3.56 | 0.28 | 0.43 | 0.28 | 0.08 | 7.14 | min |
| **Free-flow travel time (min)** | 0.24 | 0.45 | 0.24 | 0.41 | 0.24 | 0.23 | 0.09 | 0.20 | 0.24 | 3.56 | 0.24 | 0.43 | 0.24 | 0.08 | 6.91 | min |
| **Freeway mainline delay (min)** | 0.00 | 0.00 | 0.03 | 0.00 | 0.06 | 0.00 | 0.01 | 0.01 | 0.03 | 0.00 | 0.04 | 0.00 | 0.03 | 0.00 | 0.23 | min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.00 | 0.03 | 0.00 | 0.06 | 0.00 | 0.01 | 0.01 | 0.03 | 0.00 | 0.04 | 0.00 | 0.03 | 0.00 | 0.23 | min |
| **VMTD Veh-miles / interval (Demand)** | 108.9 | 106.8 | 73.8 | 124.5 | 73.8 | 59.3 | 28.2 | 48.7 | 61.9 | 906.3 | 61.9 | 83.0 | 57.5 | 19.2 | 1,814 | veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 108.9 | 106.8 | 73.8 | 124.5 | 73.8 | 59.3 | 28.2 | 48.7 | 61.9 | 906.3 | 61.9 | 83.0 | 57.5 | 19.2 | 1,814 | veh-mi |
| **VHT travel / interval (hrs)** | 1.56 | 1.53 | 1.20 | 1.79 | 1.32 | 0.86 | 0.46 | 0.71 | 1.01 | 12.95 | 1.01 | 1.19 | 0.94 | 0.28 | 26.80 | hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.00 | 0.14 | 0.01 | 0.27 | 0.02 | 0.05 | 0.02 | 0.13 | 0.00 | 0.13 | 0.01 | 0.11 | 0.01 | 0.89 | hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 70.0 | 61.5 | 69.7 | 55.8 | 68.6 | 61.9 | 68.1 | 61.3 | 70.0 | 61.1 | 69.7 | 61.5 | 68.3 | 67.7 | mph |
| **Segment density (pc/mi/lane)*** | 8.0 | 6.7 | 12.4 | 8.5 | 12.1 | 7.5 | 6.7 | 7.0 | 11.1 | 7.2 | 10.7 | 5.7 | 10.9 | 6.9 | 7.9 | pc/mi/ln |
| **Density-based LOS on segment** | A | A | B | A | B | A | A | A | B | A | B | A | B | A | A | |
| **Demand-based LOS on segment** | **8-A** | **6.7-A** | **12.4-B** | **8.5-A** | **12.1-B** | **7.5-A** | **6.7-A** | **7-A** | **11.1-B** | **7.2-A** | **10.7-B** | **5.7-A** | **10.9-B** | **6.9-A** | **7.9-A** | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

B-5

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** **I-74 Westbound - 2013 PM**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEGMENT NUMBER :** | | | | | | | | | | | | | | | | |
| **SEGMENT LABEL :** | Prospect | | Prospect | | I-57 | | I-57 | | I-57 | | Prairie | | Prairie | | | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | OFR-B | B | ONR | B | OFR | B | W | B | ONR | B | OFR | B | ONR | B | | |
| **Segment Length (ft)** | 1,500 | 2,800 | 1,500 | 2,530 | 1,500 | 1,400 | 525 | 1,250 | 1,500 | 21,945 | 1,500 | 2,620 | 1,500 | 500 | 8.06 | miles |
| **Number of lanes** | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| **Space mean speed (mph)** | 70.0 | 70.0 | 60.7 | 69.6 | 55.6 | 68.6 | 56.3 | 66.7 | 60.9 | 70.0 | 61.1 | 69.7 | 61.1 | 68.2 | | |
| **Segment density (veh/mi/lane)** | 11.7 | 11.1 | 19.6 | 15.5 | 20.4 | 14.1 | 13.2 | 12.0 | 16.1 | 12.1 | 16.3 | 10.5 | 15.8 | 11.9 | 13.2 | veh/mi/ln |
| **Segment capacity (vph)** | 6,545 | 4,195 | 4,323 | 4,323 | 4,323 | 4,303 | 5,144 | 4,242 | 4,259 | 4,259 | 4,259 | 4,201 | 4,243 | 4,243 | | |
| **Segment demand (vph)** | 2,461 | 1,550 | 2,161 | 2,161 | 2,161 | 1,939 | 2,267 | 1,600 | 1,694 | 1,694 | 1,694 | 1,470 | 1,626 | 1,626 | | |
| **Segment volume served (vph)** | 2,461 | 1,550 | 2,161 | 2,161 | 2,161 | 1,939 | 2,267 | 1,600 | 1,694 | 1,694 | 1,694 | 1,470 | 1,626 | 1,626 | | |
| **d/c ratio** | 0.38 | 0.37 | 0.50 | 0.50 | 0.50 | 0.45 | 0.44 | 0.38 | 0.40 | 0.40 | 0.40 | 0.35 | 0.38 | 0.38 | | |
| **On-Ramp demand (vph)** | 0 | 0 | 611 | 0 | 0 | 0 | 328 | 0 | 94 | 0 | 0 | 0 | 156 | 0 | | |
| **On-Ramp capacity (vph)** | | | 2,100 | | | | 1,900 | | 1,900 | | | | 2,100 | | | |
| **Off- Ramp demand (vph)** | 911 | 0 | 0 | 0 | 222 | 0 | 667 | 0 | 0 | 0 | 224 | 0 | 0 | 0 | | |
| **Off-Ramp capacity (vph)** | 2,100 | | | | 1,900 | | 1,900 | | | | 2,100 | | | | | |
| **Ramp-to-Ramp demand (vph)** | | | | | | | | | | | | | | | | |
| **Travel time per vehicle (min)** | 0.24 | 0.45 | 0.28 | 0.41 | 0.31 | 0.23 | 0.11 | 0.21 | 0.28 | 3.56 | 0.28 | 0.43 | 0.28 | 0.08 | 7.16 | min |
| **Free-flow travel time (min)** | 0.24 | 0.45 | 0.24 | 0.41 | 0.24 | 0.23 | 0.09 | 0.20 | 0.24 | 3.56 | 0.24 | 0.43 | 0.24 | 0.08 | 6.91 | min |
| **Freeway mainline delay (min)** | 0.00 | 0.00 | 0.04 | 0.00 | 0.06 | 0.00 | 0.02 | 0.01 | 0.04 | 0.00 | 0.04 | 0.00 | 0.04 | 0.00 | 0.25 | min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.00 | 0.04 | 0.00 | 0.06 | 0.00 | 0.02 | 0.01 | 0.04 | 0.00 | 0.04 | 0.00 | 0.04 | 0.00 | 0.25 | min |
| **VMTD Veh-miles / interval (Demand)** | 174.8 | 205.5 | 153.5 | 258.9 | 153.5 | 128.5 | 56.3 | 94.7 | 120.3 | 1,760.6 | 120.3 | 182.4 | 115.5 | 38.5 | 3,563 | veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 174.8 | 205.5 | 153.5 | 258.9 | 153.5 | 128.5 | 56.3 | 94.7 | 120.3 | 1760.6 | 120.3 | 182.4 | 115.5 | 38.5 | 3,563 | veh-mi |
| **VHT travel / interval (hrs)** | 2.50 | 2.94 | 2.53 | 3.72 | 2.76 | 1.87 | 1.00 | 1.42 | 1.98 | 25.15 | 1.97 | 2.62 | 1.89 | 0.56 | 52.90 | hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.00 | 0.34 | 0.02 | 0.57 | 0.04 | 0.20 | 0.07 | 0.26 | 0.00 | 0.25 | 0.01 | 0.24 | 0.01 | 2.00 | hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 70.0 | 60.7 | 69.6 | 55.6 | 68.6 | 56.3 | 66.7 | 60.9 | 70.0 | 61.1 | 69.7 | 61.1 | 68.2 | 67.4 | mph |
| **Segment density (pc/mi/lane)*** | 12.9 | 12.7 | 21.7 | 17.2 | 22.6 | 15.8 | 14.6 | 13.6 | 18.1 | 13.6 | 18.4 | 12.1 | 17.9 | 13.5 | 14.8 | pc/mi/ln |
| **Density-based LOS on segment** | B | B | C | B | C | B | B | B | B | B | B | B | B | B | B | |
| **Demand-based LOS on segment** | | | | | | | | | | | | | | | | |
| | **12.9-B** | **12.7-B** | **21.7-C** | **17.2-B** | **22.6-C** | **15.8-B** | **14.6-B** | **13.6-B** | **18.1-B** | **13.6-B** | **18.4-B** | **12.1-B** | **17.9-B** | **13.5-B** | **14.8-B** | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** **I-74 Eastbound - 2013 AM**

| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEGMENT LABEL :** | | Prairie View | | Prairie View | | I-57 | | I-57 | | I-57 | | Prospect | | Prospect | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | B | OFR | B | ONR | B | OFR | B | W | B | ONR | B | OFR | B | ONR-B | |
| **Segment Length (ft)** | 500 | 1,500 | 2,640 | 1,500 | 21,925 | 1,500 | 1,425 | 470 | 1,225 | 1,500 | 2,500 | 1,500 | 2,755 | 1,500 | 8.04 miles |
| **Number of lanes** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | |
| **Space mean speed (mph)** | 70.0 | 61.3 | 69.7 | 60.8 | 70.0 | 55.5 | 68.6 | 64.3 | 68.6 | 60.0 | 69.6 | 60.5 | 69.7 | 70.0 | |
| **Segment density (veh/mi/lane)** | 12.7 | 17.1 | 11.9 | 18.2 | 13.5 | 18.5 | 12.0 | 9.5 | 12.9 | 21.8 | 17.0 | 23.0 | 13.8 | 12.4 | 14.5 veh/mi/ln |
| **Segment capacity (vph)** | 4,344 | 4,344 | 4,320 | 4,362 | 4,362 | 4,362 | 4,356 | 5,848 | 4,370 | 4,388 | 4,388 | 4,388 | 4,325 | 6,620 | |
| **Segment demand (vph)** | 1,781 | 1,781 | 1,657 | 1,889 | 1,889 | 1,889 | 1,650 | 1,839 | 1,767 | 2,367 | 2,367 | 2,367 | 1,922 | 2,600 | |
| **Segment volume served (vph)** | 1,781 | 1,781 | 1,657 | 1,889 | 1,889 | 1,889 | 1,650 | 1,839 | 1,767 | 2,367 | 2,367 | 2,367 | 1,922 | 2,600 | |
| **d/c ratio** | 0.41 | 0.41 | 0.38 | 0.43 | 0.43 | 0.43 | 0.38 | 0.31 | 0.40 | 0.54 | 0.54 | 0.54 | 0.44 | 0.39 | |
| **On-Ramp demand (vph)** | 0 | 0 | 0 | 232 | 0 | 0 | 0 | 189 | 0 | 600 | 0 | 0 | 0 | 678 | |
| **On-Ramp capacity (vph)** | | | | 2,100 | | | | 1,900 | | 1,900 | | | | 2,100 | |
| **Off- Ramp demand (vph)** | 0 | 124 | 0 | 0 | 0 | 239 | 0 | 72 | 0 | 0 | 0 | 444 | 0 | 0 | |
| **Off-Ramp capacity (vph)** | | 2,100 | | | | 1,900 | | 1,900 | | | | 2,100 | | | |
| **Ramp-to-Ramp demand (vph)** | | | | | | | | | | | | | | | |
| **Travel time per vehicle (min)** | 0.08 | 0.28 | 0.43 | 0.28 | 3.56 | 0.31 | 0.24 | 0.08 | 0.20 | 0.28 | 0.41 | 0.28 | 0.45 | 0.24 | 7.12 min |
| **Free-flow travel time (min)** | 0.08 | 0.24 | 0.43 | 0.24 | 3.56 | 0.24 | 0.23 | 0.08 | 0.20 | 0.24 | 0.41 | 0.24 | 0.45 | 0.24 | 6.89 min |
| **Freeway mainline delay (min)** | 0.00 | 0.03 | 0.00 | 0.04 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | 0.04 | 0.00 | 0.04 | 0.00 | 0.00 | 0.24 min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.03 | 0.00 | 0.04 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | 0.04 | 0.00 | 0.04 | 0.00 | 0.00 | 0.24 min |
| **VMTD Veh-miles / interval (Demand)** | 42.2 | 126.5 | 207.1 | 134.2 | 1,960.9 | 134.2 | 111.3 | 40.9 | 102.5 | 168.1 | 280.1 | 168.1 | 250.7 | 184.7 | 3,911 veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 42.2 | 126.5 | 207.1 | 134.2 | 1960.9 | 134.2 | 111.3 | 40.9 | 102.5 | 168.1 | 280.1 | 168.1 | 250.7 | 184.7 | 3,911 veh-mi |
| **VHT travel / interval (hrs)** | 0.60 | 2.06 | 2.97 | 2.21 | 28.01 | 2.42 | 1.62 | 0.64 | 1.49 | 2.80 | 4.02 | 2.78 | 3.60 | 2.64 | 57.87 hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.26 | 0.01 | 0.29 | 0.00 | 0.50 | 0.03 | 0.05 | 0.03 | 0.40 | 0.02 | 0.38 | 0.02 | 0.00 | 1.99 hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 61.3 | 69.7 | 60.8 | 70.0 | 55.5 | 68.6 | 64.3 | 68.6 | 60.0 | 69.6 | 60.5 | 69.7 | 70.0 | 67.6 mph |
| **Segment density (pc/mi/lane)*** | 14.1 | 18.9 | 13.2 | 20.0 | 14.8 | 20.3 | 13.2 | 10.4 | 14.2 | 23.8 | 18.6 | 25.2 | 15.3 | 13.5 | 15.9 pc/mi/ln |
| **Density-based LOS on segment** | B | B | B | B | B | C | B | B | B | C | C | C | B | B | B |
| **Demand-based LOS on segment** | **14.1-B** | **18.9-B** | **13.2-B** | **20-B** | **14.8-B** | **20.3-C** | **13.2-B** | **10.4-B** | **14.2-B** | **23.8-C** | **18.6-C** | **25.2-C** | **15.3-B** | **13.5-B** | **15.9-B** |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

| Input Worksheet - Directional Freeway Facility | Release June 25, 2011 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FREEWAY SYSTEM TITLE: | I-74 Eastbound 2013 PM | | | | | | | | | | | | | | | |
| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | | |
| **SEGMENT LABEL :** | | Prairie View | | Prairie View | | I-57 | | I-57 | | I-57 | | Prospect | | Prospect | | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | B | OFR | B | ONR | B | OFR | B | W | B | ONR | B | OFR | B | ONR-B | | |
| **Segment Length (ft)** | 500 | 1,500 | 2,640 | 1,500 | 21,925 | 1,500 | 1,425 | 470 | 1,225 | 1,500 | 2,500 | 1,500 | 2,755 | 1,500 | 8.04 | miles |
| **Number of lanes** | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| **Space mean speed (mph)** | 70.0 | 61.3 | 69.7 | 61.2 | 70.0 | 55.5 | 68.6 | 66.0 | 69.0 | 60.8 | 69.6 | 60.6 | 69.7 | 70.0 | | |
| **Segment density (veh/mi/lane)** | 8.6 | 12.1 | 7.6 | 13.7 | 9.4 | 13.6 | 7.8 | 6.2 | 8.6 | 16.2 | 11.8 | 16.8 | 8.9 | 8.5 | 10.1 | veh/mi/ln |
| **Segment capacity (vph)** | 4,344 | 4,344 | 4,304 | 4,372 | 4,372 | 4,372 | 4,365 | 5,823 | 4,386 | 4,402 | 4,402 | 4,402 | 4,317 | 6,636 | | |
| **Segment demand (vph)** | 1,198 | 1,198 | 1,061 | 1,317 | 1,317 | 1,317 | 1,067 | 1,228 | 1,189 | 1,644 | 1,644 | 1,644 | 1,239 | 1,794 | | |
| **Segment volume served (vph)** | 1,198 | 1,198 | 1,061 | 1,317 | 1,317 | 1,317 | 1,067 | 1,228 | 1,189 | 1,644 | 1,644 | 1,644 | 1,239 | 1,794 | | |
| **d/c ratio** | 0.28 | 0.28 | 0.25 | 0.30 | 0.30 | 0.30 | 0.24 | 0.21 | 0.27 | 0.37 | 0.37 | 0.37 | 0.29 | 0.27 | | |
| **On-Ramp demand (vph)** | 0 | 0 | 0 | 256 | 0 | 0 | 0 | 161 | 0 | 456 | 0 | 0 | 0 | 556 | | |
| **On-Ramp capacity (vph)** | | | | 2,100 | | | | 1,900 | | 1,900 | | | | 2,100 | | |
| **Off- Ramp demand (vph)** | 0 | 137 | 0 | 0 | 0 | 250 | 0 | 39 | 0 | 0 | 0 | 406 | 0 | 0 | | |
| **Off-Ramp capacity (vph)** | | 2,100 | | | | 1,900 | | 1,900 | | | | 2,100 | | | | |
| **Ramp-to-Ramp demand (vph)** | | | | | | | | | | | | | | | | |
| **Travel time per vehicle (min)** | 0.08 | 0.28 | 0.43 | 0.28 | 3.56 | 0.31 | 0.24 | 0.08 | 0.20 | 0.28 | 0.41 | 0.28 | 0.45 | 0.24 | 7.12 | min |
| **Free-flow travel time (min)** | 0.08 | 0.24 | 0.43 | 0.24 | 3.56 | 0.24 | 0.23 | 0.08 | 0.20 | 0.24 | 0.41 | 0.24 | 0.45 | 0.24 | 6.89 | min |
| **Freeway mainline delay (min)** | 0.00 | 0.03 | 0.00 | 0.04 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.04 | 0.00 | 0.00 | 0.23 | min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.03 | 0.00 | 0.04 | 0.00 | 0.06 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.04 | 0.00 | 0.00 | 0.23 | min |
| **VMTD Veh-miles / interval (Demand)** | 28.4 | 85.1 | 132.6 | 93.5 | 1,366.9 | 93.5 | 72.0 | 27.3 | 69.0 | 116.8 | 194.7 | 116.8 | 161.6 | 127.4 | 2,685 | veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 28.4 | 85.1 | 132.6 | 93.5 | 1366.9 | 93.5 | 72.0 | 27.3 | 69.0 | 116.8 | 194.7 | 116.8 | 161.6 | 127.4 | 2,685 | veh-mi |
| **VHT travel / interval (hrs)** | 0.41 | 1.39 | 1.90 | 1.53 | 19.53 | 1.68 | 1.05 | 0.41 | 1.00 | 1.92 | 2.80 | 1.93 | 2.32 | 1.82 | 39.68 | hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.17 | 0.01 | 0.19 | 0.00 | 0.35 | 0.02 | 0.02 | 0.01 | 0.25 | 0.01 | 0.26 | 0.01 | 0.00 | 1.32 | hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 61.3 | 69.7 | 61.2 | 70.0 | 55.5 | 68.6 | 66.0 | 69.0 | 60.8 | 69.6 | 60.6 | 69.7 | 70.0 | 67.7 | mph |
| **Segment density (pc/mi/lane)*** | 9.5 | 13.4 | 8.5 | 15.1 | 10.3 | 14.9 | 8.5 | 6.7 | 9.4 | 17.7 | 12.9 | 18.3 | 9.9 | 9.3 | 11.1 | pc/mi/ln |
| **Density-based LOS on segment** | A | B | A | B | A | B | A | A | A | B | B | B | A | A | B | |
| **Demand-based LOS on segment** | **9.5-A** | **13.4-B** | **8.5-A** | **15.1-B** | **10.3-A** | **14.9-B** | **8.5-A** | **6.7-A** | **9.4-A** | **17.7-B** | **12.9-B** | **18.3-B** | **9.9-A** | **9.3-A** | **11.1-B** | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** **NB I-57 - Alternate 2 - 2020 AM**

| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEGMENT LABEL :** | | I-72 | | I-72 | | I-72 | | I-74 | | I-74 | | 74/Olym | | Olympia | | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | B | OFR | B | W | B | ONR | B | OFR | B | OFR | B | W | B | ONR | B | |
| **Segment Length (ft)** | 500 | 1,500 | 1,230 | 540 | 960 | 1,500 | 5,145 | 1,500 | 440 | 1,500 | 2,430 | 1,550 | 2,240 | 1,500 | 500 | 4.36 miles |
| **Number of lanes** | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | |
| **Space mean speed (mph)** | 70.0 | 57.8 | 68.7 | 65.6 | 68.7 | 61.4 | 70.0 | 63.5 | 68.6 | 59.1 | 69.5 | 65.1 | 69.8 | 61.7 | 68.4 | |
| **Segment density (veh/mi/lane)** | 6.4 | 9.4 | 5.9 | 5.2 | 7.4 | 12.0 | 8.6 | 10.9 | 3.8 | 5.0 | 1.6 | 2.3 | 2.5 | 6.8 | 3.8 | 6.2 veh/mi/ln |
| **Segment capacity (vph)** | 4,267 | 4,267 | 4,237 | 5,578 | 4,303 | 4,341 | 4,341 | 4,341 | 4,140 | 4,140 | 3,751 | 4,942 | 3,933 | 4,154 | 4,154 | |
| **Segment demand (vph)** | 889 | 889 | 805 | 1,042 | 1,019 | 1,199 | 1,199 | 1,199 | 516 | 516 | 227 | 477 | 347 | 519 | 519 | |
| **Segment volume served (vph)** | 889 | 889 | 805 | 1,042 | 1,019 | 1,199 | 1,199 | 1,199 | 516 | 516 | 227 | 477 | 347 | 519 | 519 | |
| **d/c ratio** | 0.21 | 0.21 | 0.19 | 0.19 | 0.24 | 0.28 | 0.28 | 0.28 | 0.12 | 0.12 | 0.06 | 0.10 | 0.09 | 0.12 | 0.12 | |
| **On-Ramp demand (vph)** | 0 | 0 | 0 | 237 | 0 | 180 | 0 | 0 | 0 | 0 | 0 | 250 | 0 | 172 | 0 | |
| **On-Ramp capacity (vph)** | | | | 1,900 | | 2,000 | | | | | | 2,200 | | 2,100 | | |
| **Off- Ramp demand (vph)** | 0 | 84 | 0 | 23 | 0 | 0 | 0 | 683 | 0 | 289 | 0 | 130 | 0 | 0 | 0 | |
| **Off-Ramp capacity (vph)** | | 2,000 | | 1,900 | | | | 2,200 | | 2,000 | | 2,200 | | | | |
| **Ramp-to-Ramp demand (vph)** | | | | 5 | | | | | | | | 68 | | | | |
| **Travel time per vehicle (min)** | 0.08 | 0.29 | 0.20 | 0.09 | 0.16 | 0.28 | 0.84 | 0.27 | 0.07 | 0.29 | 0.40 | 0.27 | 0.36 | 0.28 | 0.08 | 3.97 min |
| **Free-flow travel time (min)** | 0.08 | 0.24 | 0.20 | 0.09 | 0.16 | 0.24 | 0.84 | 0.24 | 0.07 | 0.24 | 0.39 | 0.25 | 0.36 | 0.24 | 0.08 | 3.74 min |
| **Freeway mainline delay (min)** | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.03 | 0.00 | 0.05 | 0.00 | 0.02 | 0.00 | 0.03 | 0.00 | 0.23 min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.03 | 0.00 | 0.05 | 0.00 | 0.02 | 0.00 | 0.03 | 0.00 | 0.23 min |
| **VMTD Veh-miles / interval (Demand)** | 21.0 | 63.1 | 46.9 | 26.6 | 46.3 | 85.2 | 292.1 | 85.2 | 10.8 | 36.6 | 26.1 | 35.0 | 36.8 | 36.9 | 12.3 | 861 veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 21.0 | 63.1 | 46.9 | 26.6 | 46.3 | 85.2 | 292.1 | 85.2 | 10.8 | 36.6 | 26.1 | 35.0 | 36.8 | 36.9 | 12.3 | 861 veh-mi |
| **VHT travel / interval (hrs)** | 0.30 | 1.09 | 0.68 | 0.41 | 0.67 | 1.39 | 4.18 | 1.34 | 0.16 | 0.62 | 0.38 | 0.54 | 0.53 | 0.60 | 0.18 | 13.06 hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.19 | 0.01 | 0.03 | 0.01 | 0.17 | 0.00 | 0.13 | 0.00 | 0.10 | 0.00 | 0.04 | 0.00 | 0.07 | 0.00 | 0.76 hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 57.8 | 68.7 | 65.6 | 68.7 | 61.4 | 70.0 | 63.5 | 68.6 | 59.1 | 69.5 | 65.1 | 69.8 | 61.7 | 68.4 | 65.9 mph |
| **Segment density (pc/mi/lane)*** | 7.1 | 10.6 | 6.6 | 5.8 | 8.3 | 13.2 | 9.5 | 12.1 | 4.4 | 5.8 | 2.1 | 2.7 | 3.0 | 7.9 | 4.4 | 7.0 pc/mi/ln |
| **Density-based LOS on segment** | A | B | A | A | A | B | A | B | A | A | A | A | A | A | A | A |
| **Demand-based LOS on segment** | **7.1-A** | **10.6-B** | **6.6-A** | **5.8-A** | **8.3-A** | **13.2-B** | **9.5-A** | **12.1-B** | **4.4-A** | **5.8-A** | **2.1-A** | **2.7-A** | **3-A** | **7.9-A** | **4.4-A** | **7-A** |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

| Input Worksheet - Directional Freeway Facility | Release June 25, 2011 | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FREEWAY SYSTEM TITLE: | NB I-57 - Alternate 2 - 2020 PM | | | | | | | | | | | | | | | | |
| SEGMENT NUMBER : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | | |
| SEGMENT LABEL : | | I-72 | | I-72 | | I-72 | | I-74 | | I-74 | | 74/Olym | | Olympia | | | |
| Input or estimated segment type (B,W, ONR,OFR,R) | B | OFR | B | W | B | ONR | B | OFR | B | OFR | B | W | B | ONR | B | | |
| Segment Length (ft) | 500 | 1,500 | 1,230 | 540 | 960 | 1,500 | 5,145 | 1,500 | 440 | 1,500 | 2,430 | 1,550 | 2,240 | 1,500 | 500 | 4.36 | miles |
| Number of lanes | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | | |
| Free flow speed (mph) | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| Space mean speed (mph) | 70.0 | 57.7 | 68.7 | 64.6 | 68.4 | 61.3 | 70.0 | 64.0 | 68.8 | 59.0 | 69.5 | 64.5 | 69.7 | 61.6 | 68.3 | | |
| Segment density (veh/mi/lane) | 7.6 | 10.9 | 7.0 | 6.3 | 8.9 | 13.8 | 10.3 | 12.9 | 6.9 | 8.8 | 4.5 | 4.5 | 5.3 | 10.2 | 6.9 | 8.5 | veh/mi/ln |
| Segment capacity (vph) | 4,267 | 4,267 | 4,237 | 5,569 | 4,304 | 4,343 | 4,343 | 4,343 | 4,264 | 4,264 | 4,147 | 5,426 | 4,168 | 4,271 | 4,271 | | |
| Segment demand (vph) | 1,059 | 1,059 | 957 | 1,246 | 1,218 | 1,437 | 1,437 | 1,437 | 954 | 954 | 626 | 899 | 741 | 949 | 949 | | |
| Segment volume served (vph) | 1,059 | 1,059 | 957 | 1,246 | 1,218 | 1,437 | 1,437 | 1,437 | 954 | 954 | 626 | 899 | 741 | 949 | 949 | | |
| d/c ratio | 0.25 | 0.25 | 0.23 | 0.22 | 0.28 | 0.33 | 0.33 | 0.33 | 0.22 | 0.22 | 0.15 | 0.17 | 0.18 | 0.22 | 0.22 | | |
| On-Ramp demand (vph) | 0 | 0 | 0 | 289 | 0 | 219 | 0 | 0 | 0 | 0 | 0 | 273 | 0 | 208 | 0 | | |
| On-Ramp capacity (vph) | | | | 1,900 | | 2,000 | | | | | | 2,200 | | 2,100 | | | |
| Off- Ramp demand (vph) | 0 | 102 | 0 | 28 | 0 | 0 | 0 | 483 | 0 | 328 | 0 | 158 | 0 | 0 | 0 | | |
| Off-Ramp capacity (vph) | | 2,000 | | 1,900 | | | | 2,200 | | 2,000 | | 2,200 | | | | | |
| Ramp-to-Ramp demand (vph) | | | | 6 | | | | | | | | 48 | | | | | |
| Travel time per vehicle (min) | 0.08 | 0.30 | 0.20 | 0.09 | 0.16 | 0.28 | 0.84 | 0.27 | 0.07 | 0.29 | 0.40 | 0.27 | 0.36 | 0.28 | 0.08 | 3.97 | min |
| Free-flow travel time (min) | 0.08 | 0.24 | 0.20 | 0.09 | 0.16 | 0.24 | 0.84 | 0.24 | 0.07 | 0.24 | 0.39 | 0.25 | 0.36 | 0.24 | 0.08 | 3.74 | min |
| Freeway mainline delay (min) | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.02 | 0.00 | 0.05 | 0.00 | 0.02 | 0.00 | 0.03 | 0.00 | 0.23 | min |
| System delay-- includes on-ramps (min) | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.02 | 0.00 | 0.05 | 0.00 | 0.02 | 0.00 | 0.03 | 0.00 | 0.23 | min |
| VMTD Veh-miles / interval (Demand) | 25.1 | 75.2 | 55.7 | 31.9 | 55.4 | 102.1 | 350.1 | 102.1 | 19.9 | 67.8 | 72.0 | 66.0 | 78.6 | 67.4 | 22.5 | 1,192 | veh-mi |
| VMTV Veh-miles / interval (Volume served) | 25.1 | 75.2 | 55.7 | 31.9 | 55.4 | 102.1 | 350.1 | 102.1 | 19.9 | 67.8 | 72.0 | 66.0 | 78.6 | 67.4 | 22.5 | 1,192 | veh-mi |
| VHT travel / interval (hrs) | 0.36 | 1.30 | 0.81 | 0.49 | 0.81 | 1.67 | 5.00 | 1.59 | 0.29 | 1.15 | 1.04 | 1.02 | 1.13 | 1.09 | 0.33 | 18.09 | hrs |
| VHD delay /interval (hrs) | 0.00 | 0.23 | 0.02 | 0.04 | 0.02 | 0.21 | 0.00 | 0.14 | 0.01 | 0.18 | 0.01 | 0.08 | 0.00 | 0.13 | 0.01 | 1.06 | hrs |
| Space mean speed = VMTV / VHT (mph) | 70.0 | 57.7 | 68.7 | 64.6 | 68.4 | 61.3 | 70.0 | 64.0 | 68.8 | 59.0 | 69.5 | 64.5 | 69.7 | 61.6 | 68.3 | 65.9 | mph |
| Segment density (pc/mi/lane)* | 8.5 | 12.2 | 7.9 | 7.1 | 9.9 | 15.2 | 11.4 | 14.3 | 7.8 | 9.9 | 5.2 | 5.1 | 6.1 | 11.5 | 7.8 | 9.5 | pc/mi/ln |
| Density-based LOS on segment | A | B | A | A | A | B | B | B | A | A | A | A | A | B | A | A | |
| Demand-based LOS on segment | 8.5-A | 12.2-B | 7.9-A | 7.1-A | 9.9-A | 15.2-B | 11.4-B | 14.3-B | 7.8-A | 9.9-A | 5.2-A | 5.1-A | 6.1-A | 11.5-B | 7.8-A | 9.5-A | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

| Input Worksheet - Directional Freeway Facility | Release June 25, 2011 | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FREEWAY SYSTEM TITLE: | NB I-57 - Alternate 2 - 2040 AM | | | | | | | | | | | | | | | | |
| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | | |
| **SEGMENT LABEL :** | | I-72 | | I-72 | | I-72 | | I-74 | | I-74 | | 74/Olym | | Olympia | | | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | B | OFR | B | W | B | ONR | B | OFR | B | OFR | B | W | B | ONR | B | | |
| **Segment Length (ft)** | 500 | 1,500 | 1,230 | 540 | 960 | 1,500 | 5,145 | 1,500 | 440 | 1,500 | 2,430 | 1,550 | 2,240 | 1,500 | 500 | 4.36 | miles |
| **Number of lanes** | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| **Space mean speed (mph)** | 70.0 | 57.7 | 68.7 | 64.3 | 68.3 | 61.2 | 70.0 | 62.9 | 68.5 | 58.9 | 69.5 | 64.5 | 69.7 | 61.7 | 68.3 | | |
| **Segment density (veh/mi/lane)** | 8.3 | 11.7 | 7.6 | 6.9 | 9.7 | 14.7 | 11.1 | 14.0 | 4.7 | 6.1 | 2.1 | 3.0 | 3.2 | 8.0 | 4.9 | 7.9 | veh/mi/ln |
| **Segment capacity (vph)** | 4,267 | 4,267 | 4,237 | 5,580 | 4,303 | 4,341 | 4,341 | 4,341 | 4,126 | 4,126 | 3,738 | 4,930 | 3,931 | 4,152 | 4,152 | | |
| **Segment demand (vph)** | 1,156 | 1,156 | 1,047 | 1,354 | 1,324 | 1,556 | 1,556 | 1,556 | 645 | 645 | 289 | 617 | 449 | 671 | 671 | | |
| **Segment volume served (vph)** | 1,156 | 1,156 | 1,047 | 1,354 | 1,324 | 1,556 | 1,556 | 1,556 | 645 | 645 | 289 | 617 | 449 | 671 | 671 | | |
| **d/c ratio** | 0.27 | 0.27 | 0.25 | 0.24 | 0.31 | 0.36 | 0.36 | 0.36 | 0.16 | 0.16 | 0.08 | 0.13 | 0.11 | 0.16 | 0.16 | | |
| **On-Ramp demand (vph)** | 0 | 0 | 0 | 307 | 0 | 232 | 0 | 0 | 0 | 0 | 0 | 328 | 0 | 222 | 0 | | |
| **On-Ramp capacity (vph)** | | | | 1,900 | | 2,000 | | | | | | 2,100 | | 2,100 | | | |
| **Off- Ramp demand (vph)** | 0 | 109 | 0 | 30 | 0 | 0 | 0 | 911 | 0 | 356 | 0 | 168 | 0 | 0 | 0 | | |
| **Off-Ramp capacity (vph)** | | 2,000 | | 1,900 | | | | 2,200 | | 2,000 | | 2,100 | | | | | |
| **Ramp-to-Ramp demand (vph)** | | | | 7 | | | | | | | | 89 | | | | | |
| **Travel time per vehicle (min)** | 0.08 | 0.30 | 0.20 | 0.10 | 0.16 | 0.28 | 0.84 | 0.27 | 0.07 | 0.29 | 0.40 | 0.27 | 0.36 | 0.28 | 0.08 | 3.98 | min |
| **Free-flow travel time (min)** | 0.08 | 0.24 | 0.20 | 0.09 | 0.16 | 0.24 | 0.84 | 0.24 | 0.07 | 0.24 | 0.39 | 0.25 | 0.36 | 0.24 | 0.08 | 3.74 | min |
| **Freeway mainline delay (min)** | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.04 | 0.00 | 0.03 | 0.00 | 0.05 | 0.00 | 0.02 | 0.00 | 0.03 | 0.00 | 0.24 | min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.04 | 0.00 | 0.03 | 0.00 | 0.05 | 0.00 | 0.02 | 0.00 | 0.03 | 0.00 | 0.24 | min |
| **VMTD Veh-miles / interval (Demand)** | 27.4 | 82.1 | 61.0 | 34.6 | 60.2 | 110.5 | 379.1 | 110.5 | 13.4 | 45.8 | 33.3 | 45.3 | 47.6 | 47.7 | 15.9 | 1,114 | veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 27.4 | 82.1 | 61.0 | 34.6 | 60.2 | 110.5 | 379.1 | 110.5 | 13.4 | 45.8 | 33.3 | 45.3 | 47.6 | 47.7 | 15.9 | 1,114 | veh-mi |
| **VHT travel / interval (hrs)** | 0.39 | 1.42 | 0.89 | 0.54 | 0.88 | 1.81 | 5.42 | 1.76 | 0.20 | 0.78 | 0.48 | 0.70 | 0.68 | 0.77 | 0.23 | 16.95 | hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.25 | 0.02 | 0.04 | 0.02 | 0.23 | 0.00 | 0.18 | 0.00 | 0.12 | 0.00 | 0.06 | 0.00 | 0.09 | 0.01 | 1.03 | hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 57.7 | 68.7 | 64.3 | 68.3 | 61.2 | 70.0 | 62.9 | 68.5 | 58.9 | 69.5 | 64.5 | 69.7 | 61.7 | 68.3 | 65.8 | mph |
| **Segment density (pc/mi/lane)*** | 9.3 | 13.2 | 8.6 | 7.7 | 10.8 | 16.3 | 12.3 | 15.4 | 5.5 | 7.1 | 2.7 | 3.5 | 3.9 | 9.2 | 5.7 | 9.0 | pc/mi/ln |
| **Density-based LOS on segment** | A | B | A | A | A | B | B | B | A | A | A | A | A | A | A | A | |
| **Demand-based LOS on segment** | | | | | | | | | | | | | | | | | |
| | **9.3-A** | **13.2-B** | **8.6-A** | **7.7-A** | **10.8-A** | **16.3-B** | **12.3-B** | **15.4-B** | **5.5-A** | **7.1-A** | **2.7-A** | **3.5-A** | **3.9-A** | **9.2-A** | **5.7-A** | **9-A** | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** NB I-57 - Alternate 2 - 2040 PM

| SEGMENT NUMBER : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEGMENT LABEL : | | I-72 | | I-72 | | I-72 | | I-74 | | I-74 | | 74/Olym | | Olympia | | | |
| Input or estimated segment type (B,W, ONR,OFR,R) | B | OFR | B | W | B | ONR | B | OFR | B | OFR | B | W | B | ONR | B | | |
| Segment Length (ft) | 500 | 1,500 | 1,230 | 540 | 960 | 1,500 | 5,145 | 1,500 | 440 | 1,500 | 2,430 | 1,550 | 2,240 | 1,500 | 500 | 4.36 | miles |
| Number of lanes | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | | |
| Free flow speed (mph) | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| Space mean speed (mph) | 70.0 | 57.7 | 68.6 | 63.2 | 68.0 | 61.0 | 70.0 | 63.6 | 68.7 | 58.8 | 69.5 | 63.7 | 69.7 | 61.5 | 68.3 | | |
| Segment density (veh/mi/lane) | 9.5 | 13.3 | 8.8 | 8.2 | 11.3 | 16.8 | 13.0 | 16.3 | 8.6 | 10.7 | 5.6 | 5.7 | 6.7 | 12.0 | 8.6 | 10.5 | veh/mi/ln |
| Segment capacity (vph) | 4,267 | 4,267 | 4,236 | 5,561 | 4,305 | 4,344 | 4,344 | 4,344 | 4,260 | 4,260 | 4,144 | 5,434 | 4,172 | 4,268 | 4,268 | | |
| Segment demand (vph) | 1,337 | 1,337 | 1,205 | 1,579 | 1,542 | 1,825 | 1,825 | 1,825 | 1,181 | 1,181 | 781 | 1,120 | 937 | 1,180 | 1,180 | | |
| Segment volume served (vph) | 1,337 | 1,337 | 1,205 | 1,579 | 1,542 | 1,825 | 1,825 | 1,825 | 1,181 | 1,181 | 781 | 1,120 | 937 | 1,180 | 1,180 | | |
| d/c ratio | 0.31 | 0.31 | 0.28 | 0.28 | 0.36 | 0.42 | 0.42 | 0.42 | 0.28 | 0.28 | 0.19 | 0.21 | 0.22 | 0.28 | 0.28 | | |
| On-Ramp demand (vph) | 0 | 0 | 0 | 374 | 0 | 283 | 0 | 0 | 0 | 0 | 0 | 339 | 0 | 243 | 0 | | |
| On-Ramp capacity (vph) | | | | 1,900 | | 2,000 | | | | | | 2,200 | | 2,100 | | | |
| Off- Ramp demand (vph) | 0 | 132 | 0 | 37 | 0 | 0 | 0 | 644 | 0 | 400 | 0 | 183 | 0 | 0 | 0 | | |
| Off-Ramp capacity (vph) | | 2,000 | | 1,900 | | | | 2,200 | | 2,000 | | 2,200 | | | | | |
| Ramp-to-Ramp demand (vph) | | | | 9 | | | | | | | | 55 | | | | | |
| Travel time per vehicle (min) | 0.08 | 0.30 | 0.20 | 0.10 | 0.16 | 0.28 | 0.84 | 0.27 | 0.07 | 0.29 | 0.40 | 0.28 | 0.37 | 0.28 | 0.08 | 3.98 | min |
| Free-flow travel time (min) | 0.08 | 0.24 | 0.20 | 0.09 | 0.16 | 0.24 | 0.84 | 0.24 | 0.07 | 0.24 | 0.39 | 0.25 | 0.36 | 0.24 | 0.08 | 3.74 | min |
| Freeway mainline delay (min) | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.04 | 0.00 | 0.02 | 0.00 | 0.05 | 0.00 | 0.02 | 0.00 | 0.03 | 0.00 | 0.24 | min |
| System delay-- includes on-ramps (min) | 0.00 | 0.05 | 0.00 | 0.01 | 0.00 | 0.04 | 0.00 | 0.02 | 0.00 | 0.05 | 0.00 | 0.02 | 0.00 | 0.03 | 0.00 | 0.24 | min |
| VMTD Veh-miles / interval (Demand) | 31.7 | 95.0 | 70.2 | 40.4 | 70.1 | 129.6 | 444.6 | 129.6 | 24.6 | 83.9 | 89.9 | 82.2 | 99.4 | 83.8 | 27.9 | 1,503 | veh-mi |
| VMTV Veh-miles / interval (Volume served) | 31.7 | 95.0 | 70.2 | 40.4 | 70.1 | 129.6 | 444.6 | 129.6 | 24.6 | 83.9 | 89.9 | 82.2 | 99.4 | 83.8 | 27.9 | 1,503 | veh-mi |
| VHT travel / interval (hrs) | 0.45 | 1.65 | 1.02 | 0.64 | 1.03 | 2.13 | 6.35 | 2.04 | 0.36 | 1.43 | 1.29 | 1.29 | 1.43 | 1.36 | 0.41 | 22.88 | hrs |
| VHD delay /interval (hrs) | 0.00 | 0.29 | 0.02 | 0.06 | 0.03 | 0.27 | 0.00 | 0.19 | 0.01 | 0.23 | 0.01 | 0.12 | 0.01 | 0.17 | 0.01 | 1.41 | hrs |
| Space mean speed = VMTV / VHT (mph) | 70.0 | 57.7 | 68.6 | 63.2 | 68.0 | 61.0 | 70.0 | 63.6 | 68.7 | 58.8 | 69.5 | 63.7 | 69.7 | 61.5 | 68.3 | 65.7 | mph |
| Segment density (pc/mi/lane)* | 10.7 | 14.9 | 9.9 | 9.1 | 12.6 | 18.6 | 14.4 | 18.0 | 9.7 | 12.1 | 6.5 | 6.4 | 7.7 | 13.5 | 9.7 | 11.8 | pc/mi/ln |
| Density-based LOS on segment | A | B | A | A | B | B | B | B | A | B | A | A | A | B | A | B | |
| Demand-based LOS on segment | **10.7-A** | **14.9-B** | **9.9-A** | **9.1-A** | **12.6-B** | **18.6-B** | **14.4-B** | **18-B** | **9.7-A** | **12.1-B** | **6.5-A** | **6.4-A** | **7.7-A** | **13.5-B** | **9.7-A** | **11.8-B** | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** SB I-57 - Alternate 2 - 2020 AM

| SEGMENT NUMBER : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEGMENT LABEL : | | Olympia | | Oly/74 | I-74 | | I-74 | | I-72 | | I-72 | | I-72 | | | |
| Input or estimated segment type (B,W, ONR,OFR,R) | B | OFR | B | W | OFR | B | ONR | B | OFR | B | W | B | ONR | B | | |
| Segment Length (ft) | 500 | 1,500 | 2,180 | 2,750 | 1,300 | 2,440 | 1,500 | 5,015 | 1,500 | 1,265 | 525 | 930 | 1,500 | 500 | 4.43 | miles |
| Number of lanes | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | | |
| Free flow speed (mph) | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| Space mean speed (mph) | 70.0 | 61.2 | 69.6 | 66.0 | 59.3 | 69.5 | 63.1 | 70.0 | 57.2 | 68.6 | 66.4 | 68.9 | 61.7 | 68.4 | | |
| Segment density (veh/mi/lane) | 7.2 | 10.5 | 6.1 | 5.1 | 9.0 | 5.6 | 11.4 | 10.6 | 14.6 | 8.6 | 6.1 | 8.0 | 10.6 | 8.3 | 8.6 | veh/mi/ln |
| Segment capacity (vph) | 4,286 | 4,286 | 4,219 | 6,117 | 4,278 | 4,225 | 4,354 | 4,354 | 4,354 | 4,300 | 5,802 | 4,283 | 4,290 | 4,290 | | |
| Segment demand (vph) | 1,013 | 1,013 | 854 | 1,017 | 976 | 782 | 1,488 | 1,488 | 1,488 | 1,174 | 1,218 | 1,100 | 1,131 | 1,131 | | |
| Segment volume served (vph) | 1,013 | 1,013 | 854 | 1,017 | 976 | 782 | 1,488 | 1,488 | 1,488 | 1,174 | 1,218 | 1,100 | 1,131 | 1,131 | | |
| d/c ratio | 0.24 | 0.24 | 0.20 | 0.17 | 0.23 | 0.19 | 0.34 | 0.34 | 0.34 | 0.27 | 0.21 | 0.26 | 0.26 | 0.26 | | |
| On-Ramp demand (vph) | 0 | 0 | 0 | 163 | 0 | 0 | 706 | 0 | 0 | 0 | 44 | 0 | 31 | 0 | | |
| On-Ramp capacity (vph) | | | | 2,200 | | | 2,200 | | | | 1,900 | | 2,000 | | | |
| Off- Ramp demand (vph) | 0 | 159 | 0 | 41 | 194 | 0 | 0 | 0 | 314 | 0 | 118 | 0 | 0 | 0 | | |
| Off-Ramp capacity (vph) | | 2,100 | | 2,200 | 2,000 | | | | 2,000 | | 1,900 | | | | | |
| Ramp-to-Ramp demand (vph) | | | | 7 | | | | | | | 4 | | | | | |
| Travel time per vehicle (min) | 0.08 | 0.28 | 0.36 | 0.47 | 0.25 | 0.40 | 0.27 | 0.81 | 0.30 | 0.21 | 0.09 | 0.15 | 0.28 | 0.08 | 4.03 | min |
| Free-flow travel time (min) | 0.08 | 0.24 | 0.35 | 0.45 | 0.21 | 0.40 | 0.24 | 0.81 | 0.24 | 0.21 | 0.09 | 0.15 | 0.24 | 0.08 | 3.80 | min |
| Freeway mainline delay (min) | 0.00 | 0.03 | 0.00 | 0.03 | 0.04 | 0.00 | 0.03 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.23 | min |
| System delay-- includes on-ramps (min) | 0.00 | 0.03 | 0.00 | 0.03 | 0.04 | 0.00 | 0.03 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.23 | min |
| VMTD Veh-miles / interval (Demand) | 24.0 | 71.9 | 88.1 | 132.4 | 60.1 | 90.3 | 105.7 | 353.3 | 105.7 | 70.3 | 30.3 | 48.4 | 80.3 | 26.8 | 1,288 | veh-mi |
| VMTV Veh-miles / interval (Volume served) | 24.0 | 71.9 | 88.1 | 132.4 | 60.1 | 90.3 | 105.7 | 353.3 | 105.7 | 70.3 | 30.3 | 48.4 | 80.3 | 26.8 | 1,288 | veh-mi |
| VHT travel / interval (hrs) | 0.34 | 1.17 | 1.27 | 2.01 | 1.01 | 1.30 | 1.68 | 5.05 | 1.85 | 1.02 | 0.46 | 0.70 | 1.30 | 0.39 | 19.56 | hrs |
| VHD delay /interval (hrs) | 0.00 | 0.15 | 0.01 | 0.11 | 0.15 | 0.01 | 0.17 | 0.00 | 0.34 | 0.02 | 0.02 | 0.01 | 0.15 | 0.01 | 1.16 | hrs |
| Space mean speed = VMTV / VHT (mph) | 70.0 | 61.2 | 69.6 | 66.0 | 59.3 | 69.5 | 63.1 | 70.0 | 57.2 | 68.6 | 66.4 | 68.9 | 61.7 | 68.4 | 65.9 | mph |
| Segment density (pc/mi/lane)* | 8.1 | 11.8 | 7.0 | 5.7 | 10.1 | 6.4 | 12.6 | 11.7 | 16.1 | 9.5 | 6.8 | 8.9 | 11.9 | 9.3 | 9.5 | pc/mi/ln |
| Density-based LOS on segment | A | B | A | A | B | A | B | B | B | A | A | A | B | A | A | |
| Demand-based LOS on segment | 8.1-A | 11.8-B | 7-A | 5.7-A | 10.1-B | 6.4-A | 12.6-B | 11.7-B | 16.1-B | 9.5-A | 6.8-A | 8.9-A | 11.9-B | 9.3-A | 9.5-A | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** **SB I-57 - Alternate 2 - 2020 PM**

| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEGMENT LABEL :** | | Olympia | | Oly/74 | I-74 | | I-74 | | I-72 | | I-72 | | I-72 | | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | B | OFR | B | W | OFR | B | ONR | B | OFR | B | W | B | ONR | B | |
| **Segment Length (ft)** | 500 | 1,500 | 2,180 | 2,750 | 1,300 | 2,440 | 1,500 | 5,015 | 1,500 | 1,265 | 525 | 930 | 1,500 | 500 | 4.43 miles |
| **Number of lanes** | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | |
| **Space mean speed (mph)** | 70.0 | 61.2 | 69.6 | 65.2 | 59.4 | 69.5 | 62.8 | 70.0 | 57.1 | 68.6 | 65.7 | 68.7 | 61.6 | 68.3 | |
| **Segment density (veh/mi/lane)** | 7.6 | 11.0 | 6.4 | 5.4 | 8.8 | 5.6 | 13.7 | 12.8 | 17.3 | 10.5 | 7.5 | 9.9 | 12.7 | 10.2 | 9.8 veh/mi/ln |
| **Segment capacity (vph)** | 4,286 | 4,286 | 4,214 | 5,997 | 4,260 | 4,210 | 4,373 | 4,373 | 4,373 | 4,327 | 5,853 | 4,313 | 4,319 | 4,319 | |
| **Segment demand (vph)** | 1,071 | 1,071 | 892 | 1,075 | 953 | 781 | 1,797 | 1,797 | 1,797 | 1,444 | 1,494 | 1,361 | 1,395 | 1,395 | |
| **Segment volume served (vph)** | 1,071 | 1,071 | 892 | 1,075 | 953 | 781 | 1,797 | 1,797 | 1,797 | 1,444 | 1,494 | 1,361 | 1,395 | 1,395 | |
| **d/c ratio** | 0.25 | 0.25 | 0.21 | 0.18 | 0.22 | 0.19 | 0.41 | 0.41 | 0.41 | 0.33 | 0.26 | 0.32 | 0.32 | 0.32 | |
| **On-Ramp demand (vph)** | 0 | 0 | 0 | 183 | 0 | 0 | 1,016 | 0 | 0 | 0 | 50 | 0 | 34 | 0 | |
| **On-Ramp capacity (vph)** | | | | 2,200 | | | 2,200 | | | | 1,900 | | 2,000 | | |
| **Off- Ramp demand (vph)** | 0 | 179 | 0 | 122 | 172 | 0 | 0 | 0 | 353 | 0 | 133 | 0 | 0 | 0 | |
| **Off-Ramp capacity (vph)** | | 2,100 | | 2,200 | 2,000 | | | | 2,000 | | 1,900 | | | | |
| **Ramp-to-Ramp demand (vph)** | | | | 21 | | | | | | | 4 | | | | |
| **Travel time per vehicle (min)** | 0.08 | 0.28 | 0.36 | 0.48 | 0.25 | 0.40 | 0.27 | 0.81 | 0.30 | 0.21 | 0.09 | 0.15 | 0.28 | 0.08 | 4.04 min |
| **Free-flow travel time (min)** | 0.08 | 0.24 | 0.35 | 0.45 | 0.21 | 0.40 | 0.24 | 0.81 | 0.24 | 0.21 | 0.09 | 0.15 | 0.24 | 0.08 | 3.80 min |
| **Freeway mainline delay (min)** | 0.00 | 0.04 | 0.00 | 0.03 | 0.04 | 0.00 | 0.03 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.24 min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.04 | 0.00 | 0.03 | 0.04 | 0.00 | 0.03 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.24 min |
| **VMTD Veh-miles / interval (Demand)** | 25.4 | 76.1 | 92.1 | 140.0 | 58.7 | 90.2 | 127.6 | 426.7 | 127.6 | 86.5 | 37.1 | 59.9 | 99.1 | 33.0 | 1,480 veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 25.4 | 76.1 | 92.1 | 140.0 | 58.7 | 90.2 | 127.6 | 426.7 | 127.6 | 86.5 | 37.1 | 59.9 | 99.1 | 33.0 | 1,480 veh-mi |
| **VHT travel / interval (hrs)** | 0.36 | 1.24 | 1.32 | 2.15 | 0.99 | 1.30 | 2.03 | 6.10 | 2.24 | 1.26 | 0.57 | 0.87 | 1.61 | 0.48 | 22.52 hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.16 | 0.01 | 0.15 | 0.15 | 0.01 | 0.21 | 0.00 | 0.41 | 0.02 | 0.04 | 0.02 | 0.19 | 0.01 | 1.38 hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 61.2 | 69.6 | 65.2 | 59.4 | 69.5 | 62.8 | 70.0 | 57.1 | 68.6 | 65.7 | 68.7 | 61.6 | 68.3 | 65.7 mph |
| **Segment density (pc/mi/lane)*** | 8.6 | 12.3 | 7.3 | 6.0 | 9.9 | 6.4 | 15.0 | 14.1 | 19.0 | 11.7 | 8.3 | 11.0 | 14.1 | 11.3 | 10.9 pc/mi/ln |
| **Density-based LOS on segment** | A | B | A | A | A | A | B | B | B | B | A | A | B | B | A |
| **Demand-based LOS on segment** | **8.6-A** | **12.3-B** | **7.3-A** | **6-A** | **9.9-A** | **6.4-A** | **15-B** | **14.1-B** | **19-B** | **11.7-B** | **8.3-A** | **11-A** | **14.1-B** | **11.3-B** | **10.9-A** |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** **SB I-57 - Alternate 2 - 2040 AM**

| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEGMENT LABEL :** | | Olympia | | Oly/74 | I-74 | | I-74 | | I-72 | | I-72 | | I-72 | | | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | B | OFR | B | W | OFR | B | ONR | B | OFR | B | W | B | ONR | B | | |
| **Segment Length (ft)** | 500 | 1,500 | 2,180 | 2,750 | 1,300 | 2,440 | 1,500 | 5,015 | 1,500 | 1,265 | 525 | 930 | 1,500 | 500 | 4.43 | miles |
| **Number of lanes** | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| **Space mean speed (mph)** | 70.0 | 61.1 | 69.5 | 65.1 | 59.2 | 69.5 | 62.7 | 70.0 | 56.9 | 68.6 | 65.3 | 68.5 | 61.5 | 68.3 | | |
| **Segment density (veh/mi/lane)** | 9.3 | 12.9 | 7.8 | 6.6 | 11.2 | 7.2 | 14.6 | 13.7 | 18.3 | 11.0 | 7.9 | 10.3 | 13.1 | 10.6 | 10.9 | veh/mi/ln |
| **Segment capacity (vph)** | 4,286 | 4,286 | 4,218 | 6,095 | 4,276 | 4,224 | 4,355 | 4,355 | 4,355 | 4,300 | 5,799 | 4,283 | 4,290 | 4,290 | | |
| **Segment demand (vph)** | 1,297 | 1,297 | 1,090 | 1,302 | 1,235 | 996 | 1,913 | 1,913 | 1,913 | 1,504 | 1,563 | 1,410 | 1,450 | 1,450 | | |
| **Segment volume served (vph)** | 1,297 | 1,297 | 1,090 | 1,302 | 1,235 | 996 | 1,913 | 1,913 | 1,913 | 1,504 | 1,563 | 1,410 | 1,450 | 1,450 | | |
| **d/c ratio** | 0.30 | 0.30 | 0.26 | 0.21 | 0.29 | 0.24 | 0.44 | 0.44 | 0.44 | 0.35 | 0.27 | 0.33 | 0.34 | 0.34 | | |
| **On-Ramp demand (vph)** | 0 | 0 | 0 | 212 | 0 | 0 | 917 | 0 | 0 | 0 | 59 | 0 | 40 | 0 | | |
| **On-Ramp capacity (vph)** | | | | 2,200 | | | 2,200 | | | | 1,900 | | 2,000 | | | |
| **Off- Ramp demand (vph)** | 0 | 207 | 0 | 67 | 239 | 0 | 0 | 0 | 409 | 0 | 153 | 0 | 0 | 0 | | |
| **Off-Ramp capacity (vph)** | | 2,100 | | 2,200 | 2,000 | | | | 2,000 | | 1,900 | | | | | |
| **Ramp-to-Ramp demand (vph)** | | | | 11 | | | | | | | 6 | | | | | |
| **Travel time per vehicle (min)** | 0.08 | 0.28 | 0.36 | 0.48 | 0.25 | 0.40 | 0.27 | 0.81 | 0.30 | 0.21 | 0.09 | 0.15 | 0.28 | 0.08 | 4.05 | min |
| **Free-flow travel time (min)** | 0.08 | 0.24 | 0.35 | 0.45 | 0.21 | 0.40 | 0.24 | 0.81 | 0.24 | 0.21 | 0.09 | 0.15 | 0.24 | 0.08 | 3.80 | min |
| **Freeway mainline delay (min)** | 0.00 | 0.04 | 0.00 | 0.03 | 0.04 | 0.00 | 0.03 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.25 | min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.04 | 0.00 | 0.03 | 0.04 | 0.00 | 0.03 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.25 | min |
| **VMTD Veh-miles / interval (Demand)** | 30.7 | 92.1 | 112.5 | 169.5 | 76.0 | 115.1 | 135.9 | 454.2 | 135.9 | 90.1 | 38.9 | 62.1 | 103.0 | 34.3 | 1,650 | veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 30.7 | 92.1 | 112.5 | 169.5 | 76.0 | 115.1 | 135.9 | 454.2 | 135.9 | 90.1 | 38.9 | 62.1 | 103.0 | 34.3 | 1,650 | veh-mi |
| **VHT travel / interval (hrs)** | 0.44 | 1.51 | 1.62 | 2.60 | 1.28 | 1.66 | 2.17 | 6.49 | 2.39 | 1.31 | 0.60 | 0.91 | 1.67 | 0.50 | 25.14 | hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.19 | 0.01 | 0.18 | 0.20 | 0.01 | 0.22 | 0.00 | 0.45 | 0.03 | 0.04 | 0.02 | 0.20 | 0.01 | 1.57 | hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 61.1 | 69.5 | 65.1 | 59.2 | 69.5 | 62.7 | 70.0 | 56.9 | 68.6 | 65.3 | 68.5 | 61.5 | 68.3 | 65.6 | mph |
| **Segment density (pc/mi/lane)*** | 10.4 | 14.5 | 8.9 | 7.3 | 12.6 | 8.1 | 16.1 | 15.1 | 20.1 | 12.2 | 8.8 | 11.5 | 14.7 | 11.9 | 12.1 | pc/mi/ln |
| **Density-based LOS on segment** | A | B | A | A | B | A | B | B | C | B | A | B | B | B | B | |
| **Demand-based LOS on segment** | **10.4-A** | **14.5-B** | **8.9-A** | **7.3-A** | **12.6-B** | **8.1-A** | **16.1-B** | **15.1-B** | **20.1-C** | **12.2-B** | **8.8-A** | **11.5-B** | **14.7-B** | **11.9-B** | **12.1-B** | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

| Input Worksheet - Directional Freeway Facility | Release June 25, 2011 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FREEWAY SYSTEM TITLE: | SB I-57 - Alternate 2 - 2040 PM | | | | | | | | | | | | | | | |
| SEGMENT NUMBER : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | |
| SEGMENT LABEL : | | Olympia | | Oly/74 | I-74 | | I-74 | | I-72 | | I-72 | | I-72 | | | |
| Input or estimated segment type (B,W, ONR,OFR,R) | B | OFR | B | W | OFR | B | ONR | B | OFR | B | W | B | ONR | B | | |
| Segment Length (ft) | 500 | 1,500 | 2,180 | 2,750 | 1,300 | 2,440 | 1,500 | 5,015 | 1,500 | 1,265 | 525 | 930 | 1,500 | 500 | 4.43 | miles |
| Number of lanes | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | | |
| Free flow speed (mph) | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| Space mean speed (mph) | 70.0 | 61.1 | 69.5 | 64.2 | 59.3 | 69.5 | 62.2 | 69.9 | 56.8 | 68.6 | 64.4 | 68.3 | 61.3 | 68.3 | | |
| Segment density (veh/mi/lane) | 9.8 | 13.6 | 8.2 | 7.0 | 10.9 | 7.1 | 17.8 | 16.8 | 22.0 | 13.8 | 10.1 | 13.1 | 16.1 | 13.4 | 12.6 | veh/mi/ln |
| Segment capacity (vph) | 4,286 | 4,286 | 4,213 | 5,977 | 4,258 | 4,208 | 4,376 | 4,376 | 4,376 | 4,331 | 5,861 | 4,317 | 4,323 | 4,323 | | |
| Segment demand (vph) | 1,370 | 1,370 | 1,138 | 1,376 | 1,204 | 993 | 2,348 | 2,348 | 2,348 | 1,889 | 1,955 | 1,783 | 1,827 | 1,827 | | |
| Segment volume served (vph) | 1,370 | 1,370 | 1,138 | 1,376 | 1,204 | 993 | 2,348 | 2,348 | 2,348 | 1,889 | 1,955 | 1,783 | 1,827 | 1,827 | | |
| d/c ratio | 0.32 | 0.32 | 0.27 | 0.23 | 0.28 | 0.24 | 0.54 | 0.54 | 0.54 | 0.44 | 0.33 | 0.41 | 0.42 | 0.42 | | |
| On-Ramp demand (vph) | 0 | 0 | 0 | 238 | 0 | 0 | 1,355 | 0 | 0 | 0 | 66 | 0 | 44 | 0 | | |
| On-Ramp capacity (vph) | | | | 2,200 | | | 2,200 | | | | 1,900 | | 2,000 | | | |
| Off- Ramp demand (vph) | 0 | 232 | 0 | 172 | 211 | 0 | 0 | 0 | 459 | 0 | 172 | 0 | 0 | 0 | | |
| Off-Ramp capacity (vph) | | 2,100 | | 2,200 | 2,000 | | | | 2,000 | | 1,900 | | | | | |
| Ramp-to-Ramp demand (vph) | | | | 30 | | | | | | | 6 | | | | | |
| Travel time per vehicle (min) | 0.08 | 0.28 | 0.36 | 0.49 | 0.25 | 0.40 | 0.27 | 0.82 | 0.30 | 0.21 | 0.09 | 0.15 | 0.28 | 0.08 | 4.06 | min |
| Free-flow travel time (min) | 0.08 | 0.24 | 0.35 | 0.45 | 0.21 | 0.40 | 0.24 | 0.81 | 0.24 | 0.21 | 0.09 | 0.15 | 0.24 | 0.08 | 3.80 | min |
| Freeway mainline delay (min) | 0.00 | 0.04 | 0.00 | 0.04 | 0.04 | 0.00 | 0.03 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.26 | min |
| System delay-- includes on-ramps (min) | 0.00 | 0.04 | 0.00 | 0.04 | 0.04 | 0.00 | 0.03 | 0.00 | 0.06 | 0.00 | 0.01 | 0.00 | 0.03 | 0.00 | 0.26 | min |
| VMTD Veh-miles / interval (Demand) | 32.4 | 97.3 | 117.5 | 179.2 | 74.1 | 114.7 | 166.8 | 557.5 | 166.8 | 113.1 | 48.6 | 78.5 | 129.8 | 43.3 | 1,920 | veh-mi |
| VMTV Veh-miles / interval (Volume served) | 32.4 | 97.3 | 117.5 | 179.2 | 74.1 | 114.7 | 166.8 | 557.5 | 166.8 | 113.1 | 48.6 | 78.5 | 129.8 | 43.3 | 1,920 | veh-mi |
| VHT travel / interval (hrs) | 0.46 | 1.59 | 1.69 | 2.79 | 1.25 | 1.65 | 2.68 | 7.98 | 2.94 | 1.65 | 0.76 | 1.15 | 2.12 | 0.63 | 29.34 | hrs |
| VHD delay /interval (hrs) | 0.00 | 0.20 | 0.01 | 0.23 | 0.19 | 0.01 | 0.30 | 0.01 | 0.55 | 0.03 | 0.06 | 0.03 | 0.26 | 0.02 | 1.91 | hrs |
| Space mean speed = VMTV / VHT (mph) | 70.0 | 61.1 | 69.5 | 64.2 | 59.3 | 69.5 | 62.2 | 69.9 | 56.8 | 68.6 | 64.4 | 68.3 | 61.3 | 68.3 | 65.4 | mph |
| Segment density (pc/mi/lane)* | 11.0 | 15.2 | 9.3 | 7.8 | 12.3 | 8.2 | 19.6 | 18.4 | 24.2 | 15.3 | 11.1 | 14.5 | 17.8 | 14.9 | 14.0 | pc/mi/ln |
| Density-based LOS on segment | A | B | A | A | B | A | B | C | C | B | B | B | B | B | B | |
| Demand-based LOS on segment | 11-A | 15.2-B | 9.3-A | 7.8-A | 12.3-B | 8.2-A | 19.6-B | 18.4-C | 24.2-C | 15.3-B | 11.1-B | 14.5-B | 17.8-B | 14.9-B | 14-B | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

| Input Worksheet - Directional Freeway Facility | Release June 25, 2011 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FREEWAY SYSTEM TITLE: | WB I-74 - Alternate 2 - 2020 AM | | | | | | | | | | | | | | | |
| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | | |
| **SEGMENT LABEL :** | Prospect | | Prospect | | I-57 | | I-57 | I-57 | | | Prairie | | Prairie | | | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | OFR-B | B | ONR-B | B | OFR | B | ONR | ONR | B | B | OFR | B | ONR | B | | |
| **Segment Length (ft)** | 1,500 | 2,800 | 1,500 | 950 | 1,500 | 3,550 | 1,500 | 1,500 | 2,750 | 18,900 | 1,500 | 2,620 | 1,500 | 500 | 8.06 | miles |
| **Number of lanes** | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| **Space mean speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 66.0 | 69.9 | 64.7 | 65.8 | 69.9 | 70.0 | 61.1 | 69.7 | 61.4 | 68.3 | | |
| **Segment density (veh/mi/lane)** | 8.7 | 6.9 | 6.7 | 6.7 | 7.1 | 4.1 | 5.9 | 6.0 | 5.7 | 8.5 | 12.0 | 6.9 | 11.8 | 8.2 | 7.4 | veh/mi/ln |
| **Segment capacity (vph)** | 6,545 | 4,114 | 6,413 | 6,413 | 6,413 | 6,208 | 6,339 | 6,353 | 6,353 | 4,236 | 4,236 | 4,139 | 4,210 | 4,210 | | |
| **Segment demand (vph)** | 1,832 | 970 | 1,406 | 1,406 | 1,406 | 856 | 1,145 | 1,189 | 1,189 | 1,189 | 1,189 | 955 | 1,118 | 1,118 | | |
| **Segment volume served (vph)** | 1,832 | 970 | 1,406 | 1,406 | 1,406 | 856 | 1,145 | 1,189 | 1,189 | 1,189 | 1,189 | 955 | 1,118 | 1,118 | | |
| **d/c ratio** | 0.28 | 0.24 | 0.22 | 0.22 | 0.22 | 0.14 | 0.18 | 0.19 | 0.19 | 0.28 | 0.28 | 0.23 | 0.27 | 0.27 | | |
| **On-Ramp demand (vph)** | 0 | 0 | 436 | 0 | 0 | 0 | 289 | 44 | 0 | 0 | 0 | 0 | 163 | 0 | | |
| **On-Ramp capacity (vph)** | | | 2,100 | | | | 2,000 | 2,200 | | | | | 2,100 | | | |
| **Off- Ramp demand (vph)** | 862 | 0 | 0 | 0 | 550 | 0 | 0 | 0 | 0 | 0 | 234 | 0 | 0 | 0 | | |
| **Off-Ramp capacity (vph)** | 2,100 | | | | 2,200 | | | | | | 2,100 | | | | | |
| **Ramp-to-Ramp demand (vph)** | | | | | | | | | | | | | | | | |
| **Travel time per vehicle (min)** | 0.24 | 0.45 | 0.24 | 0.15 | 0.26 | 0.58 | 0.26 | 0.26 | 0.45 | 3.07 | 0.28 | 0.43 | 0.28 | 0.08 | 7.04 | min |
| **Free-flow travel time (min)** | 0.24 | 0.45 | 0.24 | 0.15 | 0.24 | 0.58 | 0.24 | 0.24 | 0.45 | 3.07 | 0.24 | 0.43 | 0.24 | 0.08 | 6.91 | min |
| **Freeway mainline delay (min)** | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.04 | 0.00 | 0.03 | 0.00 | 0.13 | min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.04 | 0.00 | 0.03 | 0.00 | 0.13 | min |
| **VMTD Veh-miles / interval (Demand)** | 130.1 | 128.6 | 99.9 | 63.2 | 99.9 | 143.9 | 81.3 | 84.4 | 154.8 | 1,064.0 | 84.4 | 118.5 | 79.4 | 26.5 | 2,359 | veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 130.1 | 128.6 | 99.9 | 63.2 | 99.9 | 143.9 | 81.3 | 84.4 | 154.8 | 1064.0 | 84.4 | 118.5 | 79.4 | 26.5 | 2,359 | veh-mi |
| **VHT travel / interval (hrs)** | 1.86 | 1.84 | 1.43 | 0.90 | 1.51 | 2.06 | 1.26 | 1.28 | 2.22 | 15.20 | 1.38 | 1.70 | 1.29 | 0.39 | 34.32 | hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.00 | 0.00 | 0.00 | 0.09 | 0.00 | 0.09 | 0.08 | 0.00 | 0.00 | 0.18 | 0.01 | 0.16 | 0.01 | 0.62 | hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 66.0 | 69.9 | 64.7 | 65.8 | 69.9 | 70.0 | 61.1 | 69.7 | 61.4 | 68.3 | 68.7 | mph |
| **Segment density (pc/mi/lane)*** | 9.6 | 8.1 | 7.5 | 7.5 | 12.5 | 4.7 | 7.1 | 6.6 | 6.4 | 9.6 | 13.6 | 7.9 | 13.5 | 9.3 | 8.4 | pc/mi/ln |
| **Density-based LOS on segment** | A | A | A | A | B | A | A | A | A | A | B | A | B | A | A | |
| **Demand-based LOS on segment** | **9.6-A** | **8.1-A** | **7.5-A** | **7.5-A** | **12.5-B** | **4.7-A** | **7.1-A** | **6.6-A** | **6.4-A** | **9.6-A** | **13.6-B** | **7.9-A** | **13.5-B** | **9.3-A** | **8.4-A** | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** **WB I-74 - Alternate 2 - 2020 PM**

| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEGMENT LABEL :** | Prospect | | Prospect | | I-57 | | I-57 | I-57 | | | Prairie | | Prairie | | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | OFR-B | B | ONR-B | B | OFR | B | ONR | ONR | B | B | OFR | B | ONR | B | |
| **Segment Length (ft)** | 1,500 | 2,800 | 1,500 | 950 | 1,500 | 3,550 | 1,500 | 1,500 | 2,750 | 18,900 | 1,500 | 2,620 | 1,500 | 500 | 8.06 miles |
| **Number of lanes** | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | |
| **Space mean speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 65.4 | 69.9 | 64.6 | 65.2 | 69.8 | 70.0 | 61.0 | 69.7 | 60.9 | 68.2 | |
| **Segment density (veh/mi/lane)** | 13.9 | 14.1 | 11.7 | 11.7 | 12.5 | 7.2 | 9.4 | 10.0 | 9.3 | 14.0 | 18.6 | 12.2 | 17.7 | 13.7 | 12.4 veh/mi/ln |
| **Segment capacity (vph)** | 6,545 | 4,225 | 6,461 | 6,461 | 6,461 | 6,285 | 6,365 | 6,389 | 6,389 | 4,259 | 4,259 | 4,201 | 4,243 | 4,243 | |
| **Segment demand (vph)** | 2,923 | 1,973 | 2,453 | 2,453 | 2,453 | 1,503 | 1,831 | 1,953 | 1,953 | 1,953 | 1,953 | 1,694 | 1,873 | 1,873 | |
| **Segment volume served (vph)** | 2,923 | 1,973 | 2,453 | 2,453 | 2,453 | 1,503 | 1,831 | 1,953 | 1,953 | 1,953 | 1,953 | 1,694 | 1,873 | 1,873 | |
| **d/c ratio** | 0.45 | 0.47 | 0.38 | 0.38 | 0.38 | 0.24 | 0.29 | 0.31 | 0.31 | 0.46 | 0.46 | 0.40 | 0.44 | 0.44 | |
| **On-Ramp demand (vph)** | 0 | 0 | 480 | 0 | 0 | 0 | 328 | 122 | 0 | 0 | 0 | 0 | 179 | 0 | |
| **On-Ramp capacity (vph)** | | | 2,100 | | | | 2,000 | 2,200 | | | | | 2,100 | | |
| **Off- Ramp demand (vph)** | 950 | 0 | 0 | 0 | 950 | 0 | 0 | 0 | 0 | 0 | 259 | 0 | 0 | 0 | |
| **Off-Ramp capacity (vph)** | 2,100 | | | | 2,200 | | | | | | 2,100 | | | | |
| **Ramp-to-Ramp demand (vph)** | | | | | | | | | | | | | | | |
| **Travel time per vehicle (min)** | 0.24 | 0.45 | 0.24 | 0.15 | 0.26 | 0.58 | 0.26 | 0.26 | 0.45 | 3.07 | 0.28 | 0.43 | 0.28 | 0.08 | 7.04 min |
| **Free-flow travel time (min)** | 0.24 | 0.45 | 0.24 | 0.15 | 0.24 | 0.58 | 0.24 | 0.24 | 0.45 | 3.07 | 0.24 | 0.43 | 0.24 | 0.08 | 6.91 min |
| **Freeway mainline delay (min)** | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.04 | 0.00 | 0.04 | 0.00 | 0.13 min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.04 | 0.00 | 0.04 | 0.00 | 0.13 min |
| **VMTD Veh-miles / interval (Demand)** | 207.6 | 261.6 | 174.2 | 110.3 | 174.2 | 252.6 | 130.0 | 138.7 | 254.3 | 1,747.7 | 138.7 | 210.1 | 133.0 | 44.3 | 3,978 veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 207.6 | 261.6 | 174.2 | 110.3 | 174.2 | 252.6 | 130.0 | 138.7 | 254.3 | 1747.7 | 138.7 | 210.1 | 133.0 | 44.3 | 3,978 veh-mi |
| **VHT travel / interval (hrs)** | 2.97 | 3.74 | 2.49 | 1.58 | 2.66 | 3.61 | 2.01 | 2.13 | 3.64 | 24.97 | 2.27 | 3.02 | 2.19 | 0.65 | 57.92 hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.00 | 0.00 | 0.00 | 0.17 | 0.00 | 0.16 | 0.15 | 0.01 | 0.00 | 0.29 | 0.01 | 0.29 | 0.02 | 1.10 hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 65.4 | 69.9 | 64.6 | 65.2 | 69.8 | 70.0 | 61.0 | 69.7 | 60.9 | 68.2 | 68.7 mph |
| **Segment density (pc/mi/lane)*** | 15.3 | 16.0 | 13.0 | 13.0 | 19.8 | 8.2 | 10.8 | 10.8 | 10.5 | 15.7 | 20.9 | 13.9 | 20.0 | 15.5 | 14.0 pc/mi/ln |
| **Density-based LOS on segment** | B | B | B | B | B | A | B | B | A | B | C | B | B | B | B |
| **Demand-based LOS on segment** | | | | | | | | | | | | | | | |
| | **15.3-B** | **16-B** | **13-B** | **13-B** | **19.8-B** | **8.2-A** | **10.8-B** | **10.8-B** | **10.5-A** | **15.7-B** | **20.9-C** | **13.9-B** | **20-B** | **15.5-B** | **14-B** |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** **WB I-74 - Alternate 2 - 2040 AM**

| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEGMENT LABEL :** | Prospect | | Prospect | | I-57 | | I-57 | I-57 | | | Prairie | | Prairie | | | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | OFR-B | B | ONR-B | B | OFR | B | ONR | ONR | B | B | OFR | B | ONR | B | | |
| **Segment Length (ft)** | 1,500 | 2,800 | 1,500 | 950 | 1,500 | 3,550 | 1,500 | 1,500 | 2,750 | 18,900 | 1,500 | 2,620 | 1,500 | 500 | 8.06 | miles |
| **Number of lanes** | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| **Space mean speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 65.7 | 69.9 | 64.7 | 65.5 | 69.9 | 70.0 | 60.9 | 69.7 | 61.2 | 68.3 | | |
| **Segment density (veh/mi/lane)** | 11.7 | 9.4 | 9.0 | 9.0 | 9.6 | 5.5 | 7.8 | 8.0 | 7.5 | 11.3 | 15.3 | 9.1 | 14.6 | 10.8 | 9.8 | veh/mi/ln |
| **Segment capacity (vph)** | 6,545 | 4,120 | 6,415 | 6,415 | 6,415 | 6,214 | 6,334 | 6,351 | 6,351 | 4,234 | 4,234 | 4,137 | 4,208 | 4,208 | | |
| **Segment demand (vph)** | 2,449 | 1,311 | 1,887 | 1,887 | 1,887 | 1,154 | 1,510 | 1,577 | 1,577 | 1,577 | 1,577 | 1,267 | 1,481 | 1,481 | | |
| **Segment volume served (vph)** | 2,449 | 1,311 | 1,887 | 1,887 | 1,887 | 1,154 | 1,510 | 1,577 | 1,577 | 1,577 | 1,577 | 1,267 | 1,481 | 1,481 | | |
| **d/c ratio** | 0.37 | 0.32 | 0.29 | 0.29 | 0.29 | 0.19 | 0.24 | 0.25 | 0.25 | 0.37 | 0.37 | 0.31 | 0.35 | 0.35 | | |
| **On-Ramp demand (vph)** | 0 | 0 | 576 | 0 | 0 | 0 | 356 | 67 | 0 | 0 | 0 | 0 | 214 | 0 | | |
| **On-Ramp capacity (vph)** | | | 2,100 | | | | 2,000 | 2,200 | | | | | 2,100 | | | |
| **Off- Ramp demand (vph)** | 1,138 | 0 | 0 | 0 | 733 | 0 | 0 | 0 | 0 | 0 | 310 | 0 | 0 | 0 | | |
| **Off-Ramp capacity (vph)** | 2,100 | | | | 2,200 | | | | | | 2,100 | | | | | |
| **Ramp-to-Ramp demand (vph)** | | | | | | | | | | | | | | | | |
| **Travel time per vehicle (min)** | 0.24 | 0.45 | 0.24 | 0.15 | 0.26 | 0.58 | 0.26 | 0.26 | 0.45 | 3.07 | 0.28 | 0.43 | 0.28 | 0.08 | 7.04 | min |
| **Free-flow travel time (min)** | 0.24 | 0.45 | 0.24 | 0.15 | 0.24 | 0.58 | 0.24 | 0.24 | 0.45 | 3.07 | 0.24 | 0.43 | 0.24 | 0.08 | 6.91 | min |
| **Freeway mainline delay (min)** | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.04 | 0.00 | 0.04 | 0.00 | 0.13 | min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.04 | 0.00 | 0.04 | 0.00 | 0.13 | min |
| **VMTD Veh-miles / interval (Demand)** | 173.9 | 173.8 | 134.0 | 84.9 | 134.0 | 194.0 | 107.2 | 112.0 | 205.3 | 1,411.2 | 112.0 | 157.2 | 105.2 | 35.1 | 3,140 | veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 173.9 | 173.8 | 134.0 | 84.9 | 134.0 | 194.0 | 107.2 | 112.0 | 205.3 | 1411.2 | 112.0 | 157.2 | 105.2 | 35.1 | 3,140 | veh-mi |
| **VHT travel / interval (hrs)** | 2.48 | 2.48 | 1.91 | 1.21 | 2.04 | 2.77 | 1.66 | 1.71 | 2.94 | 20.16 | 1.84 | 2.26 | 1.72 | 0.51 | 45.71 | hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.13 | 0.11 | 0.01 | 0.00 | 0.24 | 0.01 | 0.22 | 0.01 | 0.85 | hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 65.7 | 69.9 | 64.7 | 65.5 | 69.9 | 70.0 | 60.9 | 69.7 | 61.2 | 68.3 | 68.7 | mph |
| **Segment density (pc/mi/lane)*** | 12.8 | 10.9 | 10.1 | 10.1 | 16.0 | 6.4 | 9.2 | 8.7 | 8.5 | 12.8 | 17.4 | 10.5 | 16.7 | 12.4 | 11.1 | pc/mi/ln |
| **Density-based LOS on segment** | B | A | A | A | B | A | A | A | A | B | B | A | B | B | B | |
| **Demand-based LOS on segment** | **12.8-B** | **10.9-A** | **10.1-A** | **10.1-A** | **16-B** | **6.4-A** | **9.2-A** | **8.7-A** | **8.5-A** | **12.8-B** | **17.4-B** | **10.5-A** | **16.7-B** | **12.4-B** | **11.1-B** | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

| Input Worksheet - Directional Freeway Facility | Release June 25, 2011 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FREEWAY SYSTEM TITLE: | WB I-74 - Alternate 2 - 2040 PM | | | | | | | | | | | | | | | |
| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | | |
| **SEGMENT LABEL :** | Prospect | | Prospect | | I-57 | | I-57 | I-57 | | | Prairie | | Prairie | | | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | OFR-B | B | ONR-B | B | OFR | B | ONR | ONR | B | B | OFR | B | ONR | B | | |
| **Segment Length (ft)** | 1,500 | 2,800 | 1,500 | 950 | 1,500 | 3,550 | 1,500 | 1,500 | 2,750 | 18,900 | 1,500 | 2,620 | 1,500 | 500 | 8.06 | miles |
| **Number of lanes** | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| **Space mean speed (mph)** | 69.4 | 68.9 | 70.0 | 70.0 | 65.0 | 69.9 | 64.2 | 64.7 | 69.8 | 69.3 | 60.8 | 69.7 | 60.0 | 68.0 | | |
| **Segment density (veh/mi/lane)** | 18.8 | 19.3 | 15.7 | 15.7 | 16.9 | 9.6 | 12.5 | 13.3 | 12.3 | 18.6 | 23.9 | 16.0 | 22.4 | 18.2 | 16.5 | veh/mi/ln |
| **Segment capacity (vph)** | 6,545 | 4,228 | 6,462 | 6,462 | 6,462 | 6,285 | 6,359 | 6,385 | 6,385 | 4,256 | 4,256 | 4,198 | 4,240 | 4,240 | | |
| **Segment demand (vph)** | 3,907 | 2,654 | 3,287 | 3,287 | 3,287 | 2,004 | 2,404 | 2,576 | 2,576 | 2,576 | 2,576 | 2,235 | 2,472 | 2,472 | | |
| **Segment volume served (vph)** | 3,907 | 2,654 | 3,287 | 3,287 | 3,287 | 2,004 | 2,404 | 2,576 | 2,576 | 2,576 | 2,576 | 2,235 | 2,472 | 2,472 | | |
| **d/c ratio** | 0.60 | 0.63 | 0.51 | 0.51 | 0.51 | 0.32 | 0.38 | 0.40 | 0.40 | 0.61 | 0.61 | 0.53 | 0.58 | 0.58 | | |
| **On-Ramp demand (vph)** | 0 | 0 | 633 | 0 | 0 | 0 | 400 | 172 | 0 | 0 | 0 | 0 | 237 | 0 | | |
| **On-Ramp capacity (vph)** | | | 2,100 | | | | 2,000 | 2,200 | | | | | 2,100 | | | |
| **Off- Ramp demand (vph)** | 1,253 | 0 | 0 | 0 | 1,283 | 0 | 0 | 0 | 0 | 0 | 341 | 0 | 0 | 0 | | |
| **Off-Ramp capacity (vph)** | 2,100 | | | | 2,200 | | | | | | 2,100 | | | | | |
| **Ramp-to-Ramp demand (vph)** | | | | | | | | | | | | | | | | |
| **Travel time per vehicle (min)** | 0.25 | 0.46 | 0.24 | 0.15 | 0.26 | 0.58 | 0.27 | 0.26 | 0.45 | 3.10 | 0.28 | 0.43 | 0.28 | 0.08 | 7.10 | min |
| **Free-flow travel time (min)** | 0.24 | 0.45 | 0.24 | 0.15 | 0.24 | 0.58 | 0.24 | 0.24 | 0.45 | 3.07 | 0.24 | 0.43 | 0.24 | 0.08 | 6.91 | min |
| **Freeway mainline delay (min)** | 0.00 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.02 | 0.00 | 0.03 | 0.04 | 0.00 | 0.04 | 0.00 | 0.19 | min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.02 | 0.00 | 0.03 | 0.04 | 0.00 | 0.04 | 0.00 | 0.19 | min |
| **VMTD Veh-miles / interval (Demand)** | 277.5 | 351.9 | 233.5 | 147.9 | 233.5 | 336.8 | 170.7 | 183.0 | 335.4 | 2,305.2 | 183.0 | 277.3 | 175.6 | 58.5 | 5,270 | veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 277.5 | 351.9 | 233.5 | 147.9 | 233.5 | 336.8 | 170.7 | 183.0 | 335.4 | 2305.2 | 183.0 | 277.3 | 175.6 | 58.5 | 5,270 | veh-mi |
| **VHT travel / interval (hrs)** | 4.00 | 5.11 | 3.34 | 2.11 | 3.59 | 4.82 | 2.66 | 2.83 | 4.80 | 33.28 | 3.01 | 3.98 | 2.93 | 0.86 | 77.32 | hrs |
| **VHD delay /interval (hrs)** | 0.04 | 0.08 | 0.00 | 0.00 | 0.26 | 0.01 | 0.22 | 0.21 | 0.01 | 0.35 | 0.40 | 0.02 | 0.42 | 0.02 | 2.04 | hrs |
| **Space mean speed = VMTV / VHT (mph)** | 69.4 | 68.9 | 70.0 | 70.0 | 65.0 | 69.9 | 64.2 | 64.7 | 69.8 | 69.3 | 60.8 | 69.7 | 60.0 | 68.0 | 68.2 | mph |
| **Segment density (pc/mi/lane)*** | 20.7 | 21.9 | 17.4 | 17.4 | 25.3 | 10.9 | 14.0 | 14.3 | 13.9 | 21.0 | 27.0 | 18.3 | 25.3 | 20.6 | 18.6 | pc/mi/ln |
| **Density-based LOS on segment** | C | C | B | B | C | A | B | B | B | C | C | C | C | C | C | |
| **Demand-based LOS on segment** | **20.7-C** | **21.9-C** | **17.4-B** | **17.4-B** | **25.3-C** | **10.9-A** | **14-B** | **14.3-B** | **13.9-B** | **21-C** | **27-C** | **18.3-C** | **25.3-C** | **20.6-C** | **18.6-C** | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** **EB I-74 - Alternate 2 - 2020 AM**

| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEGMENT LABEL :** | | Prairie | | Prairie | | | I-57 | | I-57 | I-57 | | Prospect | | Prospect | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | B | OFR | B | ONR | B | B | OFR | B | ONR | ONR | B | OFR-B | B | ONR-B | |
| **Segment Length (ft)** | 500 | 1,500 | 2,640 | 1,500 | 19,045 | 1,700 | 1,500 | 2,450 | 1,500 | 1,500 | 2,850 | 1,500 | 2,755 | 1,500 | 8.04 miles |
| **Number of lanes** | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | |
| **Space mean speed (mph)** | 70.0 | 61.3 | 69.7 | 60.5 | 70.0 | 70.0 | 67.1 | 69.9 | 64.7 | 64.5 | 69.8 | 70.0 | 70.0 | 70.0 | |
| **Segment density (veh/mi/lane)** | 14.4 | 19.1 | 13.4 | 20.1 | 15.3 | 10.2 | 10.6 | 8.3 | 9.9 | 13.5 | 12.5 | 12.4 | 15.7 | 14.7 | 13.7 veh/mi/ln |
| **Segment capacity (vph)** | 4,364 | 4,364 | 4,341 | 4,381 | 4,381 | 6,572 | 6,572 | 6,529 | 6,551 | 6,605 | 6,605 | 6,605 | 4,355 | 6,666 | |
| **Segment demand (vph)** | 2,014 | 2,014 | 1,871 | 2,139 | 2,139 | 2,139 | 2,139 | 1,733 | 1,927 | 2,610 | 2,610 | 2,610 | 2,203 | 3,084 | |
| **Segment volume served (vph)** | 2,014 | 2,014 | 1,871 | 2,139 | 2,139 | 2,139 | 2,139 | 1,733 | 1,927 | 2,610 | 2,610 | 2,610 | 2,203 | 3,084 | |
| **d/c ratio** | 0.46 | 0.46 | 0.43 | 0.49 | 0.49 | 0.33 | 0.33 | 0.27 | 0.29 | 0.40 | 0.40 | 0.40 | 0.51 | 0.46 | |
| **On-Ramp demand (vph)** | 0 | 0 | 0 | 268 | 0 | 0 | 0 | 0 | 194 | 683 | 0 | 0 | 0 | 881 | |
| **On-Ramp capacity (vph)** | | | | 2,100 | | | | | 2,000 | 2,200 | | | | 2,100 | |
| **Off- Ramp demand (vph)** | 0 | 143 | 0 | 0 | 0 | 0 | 406 | 0 | 0 | 0 | 0 | 407 | 0 | 0 | |
| **Off-Ramp capacity (vph)** | | 2,100 | | | | | 2,200 | | | | | 2,100 | | | |
| **Ramp-to-Ramp demand (vph)** | | | | | | | | | | | | | | | |
| **Travel time per vehicle (min)** | 0.08 | 0.28 | 0.43 | 0.28 | 3.09 | 0.28 | 0.25 | 0.40 | 0.26 | 0.26 | 0.46 | 0.24 | 0.45 | 0.24 | 7.02 min |
| **Free-flow travel time (min)** | 0.08 | 0.24 | 0.43 | 0.24 | 3.09 | 0.28 | 0.24 | 0.40 | 0.24 | 0.24 | 0.46 | 0.24 | 0.45 | 0.24 | 6.89 min |
| **Freeway mainline delay (min)** | 0.00 | 0.03 | 0.00 | 0.04 | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.13 min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.03 | 0.00 | 0.04 | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.13 min |
| **VMTD Veh-miles / interval (Demand)** | 47.7 | 143.0 | 233.9 | 151.9 | 1,928.8 | 172.2 | 151.9 | 201.0 | 136.9 | 185.4 | 352.2 | 185.4 | 287.4 | 219.0 | 4,397 veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 47.7 | 143.0 | 233.9 | 151.9 | 1928.8 | 172.2 | 151.9 | 201.0 | 136.9 | 185.4 | 352.2 | 185.4 | 287.4 | 219.0 | 4,397 veh-mi |
| **VHT travel / interval (hrs)** | 0.68 | 2.33 | 3.36 | 2.51 | 27.55 | 2.46 | 2.27 | 2.88 | 2.12 | 2.88 | 5.04 | 2.65 | 4.11 | 3.13 | 63.95 hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.29 | 0.01 | 0.34 | 0.00 | 0.00 | 0.10 | 0.00 | 0.16 | 0.23 | 0.01 | 0.00 | 0.00 | 0.00 | 1.14 hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 61.3 | 69.7 | 60.5 | 70.0 | 70.0 | 67.1 | 69.9 | 64.7 | 64.5 | 69.8 | 70.0 | 70.0 | 70.0 | 68.7 mph |
| **Segment density (pc/mi/lane)*** | 15.8 | 21.1 | 14.8 | 22.1 | 16.7 | 11.2 | 16.5 | 9.1 | 10.6 | 15.4 | 13.6 | 13.5 | 17.3 | 15.9 | 15.1 pc/mi/ln |
| **Density-based LOS on segment** | B | C | B | C | B | B | B | A | B | B | B | B | B | B | B |
| **Demand-based LOS on segment** | **15.8-B** | **21.1-C** | **14.8-B** | **22.1-C** | **16.7-B** | **11.2-B** | **16.5-B** | **9.1-A** | **10.6-B** | **15.4-B** | **13.6-B** | **13.5-B** | **17.3-B** | **15.9-B** | **15.1-B** |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

| Input Worksheet - Directional Freeway Facility | Release June 25, 2011 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FREEWAY SYSTEM TITLE: | EB I-74 - Alternate 2 - 2020 PM | | | | | | | | | | | | | | | |
| SEGMENT NUMBER : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | | |
| SEGMENT LABEL : | | Prairie | | Prairie | | | I-57 | | I-57 | I-57 | | Prospect | | Prospect | | |
| Input or estimated segment type (B,W, ONR,OFR,R) | B | OFR | B | ONR | B | B | OFR | B | ONR | ONR | B | OFR-B | B | ONR-B | | |
| Segment Length (ft) | 500 | 1,500 | 2,640 | 1,500 | 19,045 | 1,700 | 1,500 | 2,450 | 1,500 | 1,500 | 2,850 | 1,500 | 2,755 | 1,500 | 8.04 | miles |
| Number of lanes | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | | |
| Free flow speed (mph) | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | | |
| Space mean speed (mph) | 70.0 | 61.2 | 69.7 | 61.2 | 70.0 | 70.0 | 66.8 | 69.9 | 65.0 | 65.0 | 69.9 | 70.0 | 70.0 | 70.0 | | |
| Segment density (veh/mi/lane) | 8.4 | 12.0 | 7.3 | 13.7 | 9.4 | 6.3 | 6.6 | 4.7 | 5.9 | 8.4 | 7.8 | 7.8 | 8.5 | 10.3 | 8.4 | veh/mi/ln |
| Segment capacity (vph) | 4,364 | 4,364 | 4,318 | 4,395 | 4,395 | 6,592 | 6,592 | 6,536 | 6,569 | 6,624 | 6,624 | 6,624 | 4,323 | 6,717 | | |
| Segment demand (vph) | 1,181 | 1,181 | 1,023 | 1,319 | 1,319 | 1,319 | 1,319 | 980 | 1,152 | 1,635 | 1,635 | 1,635 | 1,186 | 2,157 | | |
| Segment volume served (vph) | 1,181 | 1,181 | 1,023 | 1,319 | 1,319 | 1,319 | 1,319 | 980 | 1,152 | 1,635 | 1,635 | 1,635 | 1,186 | 2,157 | | |
| d/c ratio | 0.27 | 0.27 | 0.24 | 0.30 | 0.30 | 0.20 | 0.20 | 0.15 | 0.18 | 0.25 | 0.25 | 0.25 | 0.27 | 0.32 | | |
| On-Ramp demand (vph) | 0 | 0 | 0 | 296 | 0 | 0 | 0 | 0 | 172 | 483 | 0 | 0 | 0 | 971 | | |
| On-Ramp capacity (vph) | | | | 2,100 | | | | | 2,000 | 2,200 | | | | 2,100 | | |
| Off- Ramp demand (vph) | 0 | 158 | 0 | 0 | 0 | 0 | 339 | 0 | 0 | 0 | 0 | 449 | 0 | 0 | | |
| Off-Ramp capacity (vph) | | 2,100 | | | | | 2,200 | | | | | 2,100 | | | | |
| Ramp-to-Ramp demand (vph) | | | | | | | | | | | | | | | | |
| Travel time per vehicle (min) | 0.08 | 0.28 | 0.43 | 0.28 | 3.09 | 0.28 | 0.26 | 0.40 | 0.26 | 0.26 | 0.46 | 0.24 | 0.45 | 0.24 | 7.01 | min |
| Free-flow travel time (min) | 0.08 | 0.24 | 0.43 | 0.24 | 3.09 | 0.28 | 0.24 | 0.40 | 0.24 | 0.24 | 0.46 | 0.24 | 0.45 | 0.24 | 6.89 | min |
| Freeway mainline delay (min) | 0.00 | 0.03 | 0.00 | 0.04 | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | min |
| System delay-- includes on-ramps (min) | 0.00 | 0.03 | 0.00 | 0.04 | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | min |
| VMTD Veh-miles / interval (Demand) | 28.0 | 83.9 | 127.9 | 93.7 | 1,189.4 | 106.2 | 93.7 | 113.7 | 81.8 | 116.1 | 220.6 | 116.1 | 154.7 | 153.2 | 2,679 | veh-mi |
| VMTV Veh-miles / interval (Volume served) | 28.0 | 83.9 | 127.9 | 93.7 | 1189.4 | 106.2 | 93.7 | 113.7 | 81.8 | 116.1 | 220.6 | 116.1 | 154.7 | 153.2 | 2,679 | veh-mi |
| VHT travel / interval (hrs) | 0.40 | 1.37 | 1.83 | 1.53 | 16.99 | 1.52 | 1.40 | 1.63 | 1.26 | 1.79 | 3.16 | 1.66 | 2.21 | 2.19 | 38.93 | hrs |
| VHD delay /interval (hrs) | 0.00 | 0.17 | 0.01 | 0.19 | 0.00 | 0.00 | 0.07 | 0.00 | 0.09 | 0.13 | 0.01 | 0.00 | 0.00 | 0.00 | 0.66 | hrs |
| Space mean speed = VMTV / VHT (mph) | 70.0 | 61.2 | 69.7 | 61.2 | 70.0 | 70.0 | 66.8 | 69.9 | 65.0 | 65.0 | 69.9 | 70.0 | 70.0 | 70.0 | 68.8 | mph |
| Segment density (pc/mi/lane)* | 9.3 | 13.2 | 8.2 | 15.0 | 10.3 | 6.9 | 11.2 | 5.2 | 6.6 | 9.8 | 8.5 | 8.5 | 9.4 | 11.0 | 9.2 | pc/mi/ln |
| Density-based LOS on segment | A | B | A | B | A | A | B | A | A | A | A | A | A | A | A | |
| Demand-based LOS on segment | | | | | | | | | | | | | | | | |
| | 9.3-A | 13.2-B | 8.2-A | 15-B | 10.3-A | 6.9-A | 11.2-B | 5.2-A | 6.6-A | 9.8-A | 8.5-A | 8.5-A | 9.4-A | 11-A | 9.2-A | |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** **EB I-74 - Alternate 2 - 2040 AM**

| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEGMENT LABEL :** | | Prairie | | Prairie | | | I-57 | | I-57 | I-57 | | Prospect | | Prospect | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | B | OFR | B | ONR | B | B | OFR | B | ONR | ONR | B | OFR-B | B | ONR-B | |
| **Segment Length (ft)** | 500 | 1,500 | 2,640 | 1,500 | 19,045 | 1,700 | 1,500 | 2,450 | 1,500 | 1,500 | 2,850 | 1,500 | 2,755 | 1,500 | 8.04 miles |
| **Number of lanes** | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | |
| **Space mean speed (mph)** | 69.1 | 61.2 | 69.6 | 59.1 | 68.4 | 70.0 | 67.1 | 69.9 | 64.2 | 63.6 | 69.8 | 69.9 | 67.8 | 69.0 | |
| **Segment density (veh/mi/lane)** | 19.5 | 25.0 | 18.0 | 25.8 | 20.9 | 13.6 | 14.2 | 11.2 | 13.4 | 18.3 | 16.7 | 16.7 | 21.9 | 19.9 | 18.6 veh/mi/ln |
| **Segment capacity (vph)** | 4,364 | 4,364 | 4,341 | 4,381 | 4,381 | 6,571 | 6,571 | 6,531 | 6,552 | 6,605 | 6,605 | 6,605 | 4,356 | 6,665 | |
| **Segment demand (vph)** | 2,700 | 2,700 | 2,510 | 2,864 | 2,864 | 2,864 | 2,864 | 2,352 | 2,591 | 3,502 | 3,502 | 3,502 | 2,965 | 4,128 | |
| **Segment volume served (vph)** | 2,700 | 2,700 | 2,510 | 2,864 | 2,864 | 2,864 | 2,864 | 2,352 | 2,591 | 3,502 | 3,502 | 3,502 | 2,965 | 4,128 | |
| **d/c ratio** | 0.62 | 0.62 | 0.58 | 0.65 | 0.65 | 0.44 | 0.44 | 0.36 | 0.40 | 0.53 | 0.53 | 0.53 | 0.68 | 0.62 | |
| **On-Ramp demand (vph)** | 0 | 0 | 0 | 354 | 0 | 0 | 0 | 0 | 239 | 911 | 0 | 0 | 0 | 1,163 | |
| **On-Ramp capacity (vph)** | | | | 2,100 | | | | | 2,000 | 2,200 | | | | 2,100 | |
| **Off- Ramp demand (vph)** | 0 | 190 | 0 | 0 | 0 | 0 | 512 | 0 | 0 | 0 | 0 | 537 | 0 | 0 | |
| **Off-Ramp capacity (vph)** | | 2,100 | | | | | 2,200 | | | | | 2,100 | | | |
| **Ramp-to-Ramp demand (vph)** | | | | | | | | | | | | | | | |
| **Travel time per vehicle (min)** | 0.08 | 0.28 | 0.43 | 0.29 | 3.16 | 0.28 | 0.25 | 0.40 | 0.27 | 0.27 | 0.46 | 0.24 | 0.46 | 0.25 | 7.12 min |
| **Free-flow travel time (min)** | 0.08 | 0.24 | 0.43 | 0.24 | 3.09 | 0.28 | 0.24 | 0.40 | 0.24 | 0.24 | 0.46 | 0.24 | 0.45 | 0.24 | 6.89 min |
| **Freeway mainline delay (min)** | 0.00 | 0.04 | 0.00 | 0.04 | 0.07 | 0.00 | 0.01 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 | 0.23 min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.04 | 0.00 | 0.04 | 0.07 | 0.00 | 0.01 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 | 0.23 min |
| **VMTD Veh-miles / interval (Demand)** | 63.9 | 191.8 | 313.8 | 203.4 | 2,582.6 | 230.5 | 203.4 | 272.8 | 184.0 | 248.7 | 472.6 | 248.7 | 386.8 | 293.2 | 5,896 veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 63.9 | 191.8 | 313.8 | 203.4 | 2582.6 | 230.5 | 203.4 | 272.8 | 184.0 | 248.7 | 472.6 | 248.7 | 386.8 | 293.2 | 5,896 veh-mi |
| **VHT travel / interval (hrs)** | 0.93 | 3.14 | 4.51 | 3.44 | 37.75 | 3.29 | 3.03 | 3.90 | 2.86 | 3.91 | 6.77 | 3.56 | 5.70 | 4.25 | 87.03 hrs |
| **VHD delay /interval (hrs)** | 0.01 | 0.40 | 0.03 | 0.53 | 0.85 | 0.00 | 0.12 | 0.01 | 0.24 | 0.36 | 0.02 | 0.00 | 0.18 | 0.06 | 2.80 hrs |
| **Space mean speed = VMTV / VHT (mph)** | 69.1 | 61.2 | 69.6 | 59.1 | 68.4 | 70.0 | 67.1 | 69.9 | 64.2 | 63.6 | 69.8 | 69.9 | 67.8 | 69.0 | 67.7 mph |
| **Segment density (pc/mi/lane)*** | 21.5 | 27.5 | 19.9 | 28.2 | 22.9 | 14.9 | 20.9 | 12.4 | 14.2 | 20.6 | 18.2 | 18.2 | 24.1 | 21.5 | 20.4 pc/mi/ln |
| **Density-based LOS on segment** | C | C | C | D | C | B | C | B | B | C | C | C | C | C | C |
| **Demand-based LOS on segment** | | | | | | | | | | | | | | | |
| | **21.5-C** | **27.5-C** | **19.9-C** | **28.2-D** | **22.9-C** | **14.9-B** | **20.9-C** | **12.4-B** | **14.2-B** | **20.6-C** | **18.2-C** | **18.2-C** | **24.1-C** | **21.5-C** | **20.4-C** |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

**Input Worksheet - Directional Freeway Facility** **Release June 25, 2011**

**FREEWAY SYSTEM TITLE:** **EB I-74 - Alternate 2 - 2040 PM**

| **SEGMENT NUMBER :** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SEGMENT LABEL :** | | Prairie | | Prairie | | | I-57 | | I-57 | I-57 | | Prospect | | Prospect | |
| **Input or estimated segment type (B,W, ONR,OFR,R)** | B | OFR | B | ONR | B | B | OFR | B | ONR | ONR | B | OFR-B | B | ONR-B | |
| **Segment Length (ft)** | 500 | 1,500 | 2,640 | 1,500 | 19,045 | 1,700 | 1,500 | 2,450 | 1,500 | 1,500 | 2,850 | 1,500 | 2,755 | 1,500 | 8.04 miles |
| **Number of lanes** | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | |
| **Free flow speed (mph)** | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | |
| **Space mean speed (mph)** | 70.0 | 61.1 | 69.7 | 60.9 | 70.0 | 70.0 | 66.8 | 69.9 | 64.9 | 64.7 | 69.8 | 70.0 | 70.0 | 70.0 | |
| **Segment density (veh/mi/lane)** | 11.2 | 15.3 | 9.7 | 17.0 | 12.5 | 8.3 | 8.7 | 6.4 | 7.9 | 11.3 | 10.5 | 10.4 | 11.4 | 13.7 | 11.2 veh/mi/ln |
| **Segment capacity (vph)** | 4,364 | 4,364 | 4,318 | 4,395 | 4,395 | 6,592 | 6,592 | 6,542 | 6,571 | 6,625 | 6,625 | 6,625 | 4,326 | 6,717 | |
| **Segment demand (vph)** | 1,566 | 1,566 | 1,357 | 1,747 | 1,747 | 1,747 | 1,747 | 1,336 | 1,547 | 2,191 | 2,191 | 2,191 | 1,600 | 2,881 | |
| **Segment volume served (vph)** | 1,566 | 1,566 | 1,357 | 1,747 | 1,747 | 1,747 | 1,747 | 1,336 | 1,547 | 2,191 | 2,191 | 2,191 | 1,600 | 2,881 | |
| **d/c ratio** | 0.36 | 0.36 | 0.31 | 0.40 | 0.40 | 0.27 | 0.27 | 0.20 | 0.24 | 0.33 | 0.33 | 0.33 | 0.37 | 0.43 | |
| **On-Ramp demand (vph)** | 0 | 0 | 0 | 390 | 0 | 0 | 0 | 0 | 211 | 644 | 0 | 0 | 0 | 1,281 | |
| **On-Ramp capacity (vph)** | | | | 2,100 | | | | | 2,000 | 2,200 | | | | 2,100 | |
| **Off- Ramp demand (vph)** | 0 | 209 | 0 | 0 | 0 | 0 | 411 | 0 | 0 | 0 | 0 | 591 | 0 | 0 | |
| **Off-Ramp capacity (vph)** | | 2,100 | | | | | 2,200 | | | | | 2,100 | | | |
| **Ramp-to-Ramp demand (vph)** | | | | | | | | | | | | | | | |
| **Travel time per vehicle (min)** | 0.08 | 0.28 | 0.43 | 0.28 | 3.09 | 0.28 | 0.26 | 0.40 | 0.26 | 0.26 | 0.46 | 0.24 | 0.45 | 0.24 | 7.02 min |
| **Free-flow travel time (min)** | 0.08 | 0.24 | 0.43 | 0.24 | 3.09 | 0.28 | 0.24 | 0.40 | 0.24 | 0.24 | 0.46 | 0.24 | 0.45 | 0.24 | 6.89 min |
| **Freeway mainline delay (min)** | 0.00 | 0.04 | 0.00 | 0.04 | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.13 min |
| **System delay-- includes on-ramps (min)** | 0.00 | 0.04 | 0.00 | 0.04 | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.13 min |
| **VMTD Veh-miles / interval (Demand)** | 37.1 | 111.2 | 169.6 | 124.1 | 1,575.4 | 140.6 | 124.1 | 155.0 | 109.9 | 155.6 | 295.7 | 155.6 | 208.7 | 204.6 | 3,567 veh-mi |
| **VMTV Veh-miles / interval (Volume served)** | 37.1 | 111.2 | 169.6 | 124.1 | 1575.4 | 140.6 | 124.1 | 155.0 | 109.9 | 155.6 | 295.7 | 155.6 | 208.7 | 204.6 | 3,567 veh-mi |
| **VHT travel / interval (hrs)** | 0.53 | 1.82 | 2.43 | 2.04 | 22.51 | 2.01 | 1.86 | 2.22 | 1.69 | 2.40 | 4.23 | 2.22 | 2.98 | 2.92 | 51.87 hrs |
| **VHD delay /interval (hrs)** | 0.00 | 0.23 | 0.01 | 0.26 | 0.00 | 0.00 | 0.09 | 0.00 | 0.12 | 0.18 | 0.01 | 0.00 | 0.00 | 0.00 | 0.91 hrs |
| **Space mean speed = VMTV / VHT (mph)** | 70.0 | 61.1 | 69.7 | 60.9 | 70.0 | 70.0 | 66.8 | 69.9 | 64.9 | 64.7 | 69.8 | 70.0 | 70.0 | 70.0 | 68.8 mph |
| **Segment density (pc/mi/lane)*** | 12.3 | 16.8 | 10.8 | 18.6 | 13.6 | 9.1 | 14.1 | 7.0 | 8.7 | 13.1 | 11.4 | 11.3 | 12.7 | 14.7 | 12.2 pc/mi/ln |
| **Density-based LOS on segment** | B | B | A | B | B | A | B | A | A | B | B | B | B | B | B |
| **Demand-based LOS on segment** | **12.3-B** | **16.8-B** | **10.8-A** | **18.6-B** | **13.6-B** | **9.1-A** | **14.1-B** | **7-A** | **8.7-A** | **13.1-B** | **11.4-B** | **11.3-B** | **12.7-B** | **14.7-B** | **12.2-B** |

* For Merge and Diverge Segments this Density is only for Ramp Influence Area!

# APPENDIX C

## CORSIM Freeway Analysis

Alternate 1 - 2020 AM

| **NB I-57** | Avg.Speed | Density | | Max.Speed | Max Density | |
|---|---|---|---|---|---|---|
| South of EB I-72 Off Ramp | 70.0 | 5.7 | A | 69.8 | 6.3 | A |
| EB I-72 Off to EB I-72 On | 69.3 | 5.2 | A | 69.2 | 5.7 | A |
| EB I-72 On to WB I-72 Off | 57.5 | 5.4 | A | 57.3 | 6.0 | A |
| WB I-72 Off to WB I-72 On | 66.6 | 6.9 | A | 66.3 | 7.5 | A |
| WB I-72 On to EB & WB I-74 Off | 66.6 | 7.1 | A | 66.3 | 7.7 | A |
| EB & WB I-74 Off to EB & WB I-74 On | 69.2 | 1.3 | A | 69.0 | 1.4 | A |
| EB & WB I-74 On to Olympian Off | 64.1 | 1.9 | A | 63.8 | 2.2 | A |
| Olympian Off to Olympian On | 68.6 | 1.8 | A | 68.5 | 2.0 | A |
| North of Olympian On | 62.5 | 3.7 | A | 62.3 | 4.0 | A |
| TOTAL | 67.0 | 5.5 | A | 66.7 | 6.1 | A |

| **SB I-57** | | | | | | |
|---|---|---|---|---|---|---|
| North of Olympian Off | 69.6 | 6.6 | A | 69.5 | 7.2 | A |
| Olympian Off to Olympian On | 69.3 | 3.7 | A | 69.3 | 4.1 | A |
| Olympian On to EB & WB I-74 Off | 66.4 | 3.4 | A | 66.4 | 3.8 | A |
| EB & WB I-74 Off to EB & WB I-74 On | 68.9 | 3.4 | A | 68.8 | 3.7 | A |
| EB & WB I-74 On to WB I-72 Off | 66.4 | 8.7 | A | 66.2 | 9.3 | A |
| WB I-72 Off to WB I-72 On | 67.6 | 7.8 | A | 67.6 | 8.3 | A |
| WB I-72 On to EB I-72 Off | 65.5 | 5.6 | A | 65.3 | 6.0 | A |
| EB I-72 Off to EB I-72 On | 67.7 | 7.3 | A | 67.6 | 7.8 | A |
| South of EB I-72 On Ramp | 67.7 | 6.4 | A | 67.4 | 6.8 | A |
| TOTAL | 67.6 | 6.7 | A | 67.5 | 7.1 | A |

| **EB I-74** | | | | | | |
|---|---|---|---|---|---|---|
| West of Prairie Off | 69.2 | 13.2 | B | 69.1 | 14.5 | B |
| Prairie Off to Prairie On | 64.1 | 13.1 | B | 64.0 | 14.4 | B |
| Prairie On to NB & SB I-57 Off | 66.1 | 14.1 | B | 65.9 | 15.2 | B |
| NB & SB I-57 Off to NB & SB I-57 On | 67.8 | 7.7 | A | 67.8 | 8.2 | A |
| NB & SB I-57 On to Prospect Off | 64.7 | 11.6 | B | 64.5 | 12.2 | B |
| Prospect Off to Prospect On | 66.5 | 14.7 | B | 66.5 | 15.3 | B |
| East of Prospect On | 59.3 | 20.6 | C | 58.3 | 22.2 | C |
| TOTAL | 65.8 | 13.4 | B | 65.6 | 14.4 | B |

| **WB I-74** | | | | | | |
|---|---|---|---|---|---|---|
| East of Prospect Off | 68.2 | 12.2 | B | 67.9 | 13.4 | B |
| Prospect Off to Prospect On | 68.9 | 6.3 | A | 68.8 | 6.8 | A |
| Prospect On to NB & SB I-57 Off | 67.1 | 6.3 | A | 67.1 | 6.8 | A |
| NB & SB I-57 Off to NB & SB I-57 On | 69.1 | 3.7 | A | 69.0 | 4.0 | A |
| NB & SB I-57 On to Prairie Off | 67.8 | 7.5 | A | 67.7 | 7.9 | A |
| Prairie Off to Prairie On | 68.1 | 6.4 | A | 68.0 | 6.6 | A |
| West of Prairie On | 61.9 | 6.1 | A | 61.8 | 6.3 | A |
| TOTAL | 67.9 | 7.4 | A | 67.8 | 7.8 | A |

Alternate 1 - 2020 PM

| **NB I-57** | Avg.Speed | Density | | Max.Speed | Max Density | |
|---|---|---|---|---|---|---|
| South of EB I-72 Off Ramp | 69.8 | 6.9 | A | 69.7 | 7.5 | A |
| EB I-72 Off to EB I-72 On | 69.2 | 6.2 | A | 69.1 | 6.8 | A |
| EB I-72 On to WB I-72 Off | 57.3 | 6.5 | A | 57.2 | 7.1 | A |
| WB I-72 Off to WB I-72 On | 66.3 | 8.2 | A | 66.2 | 9.0 | A |
| WB I-72 On to EB & WB I-74 Off | 66.5 | 8.5 | A | 66.1 | 9.3 | A |
| EB & WB I-74 Off to EB & WB I-74 On | 69.0 | 2.7 | A | 69.1 | 2.9 | A |
| EB & WB I-74 On to Olympian Off | 65.6 | 3.1 | A | 65.6 | 3.3 | A |
| Olympian Off to Olympian On | 68.8 | 3.2 | A | 68.7 | 3.4 | A |
| North of Olympian On | 62.8 | 5.9 | A | 62.8 | 6.4 | A |
| TOTAL | 67.0 | 6.5 | A | 66.8 | 7.1 | A |
| | | | | | | |
| **SB I-57** | | | | | | |
| North of Olympian Off | 69.6 | 6.9 | A | 69.5 | 7.6 | A |
| Olympian Off to Olympian On | 69.4 | 3.8 | A | 69.2 | 4.2 | A |
| Olympian On to EB & WB I-74 Off | 66.3 | 3.6 | A | 66.2 | 4.0 | A |
| EB & WB I-74 Off to EB & WB I-74 On | 69.0 | 3.3 | A | 68.9 | 3.7 | A |
| EB & WB I-74 On to WB I-72 Off | 65.7 | 10.6 | A | 65.4 | 11.2 | B |
| WB I-72 Off to WB I-72 On | 67.3 | 9.6 | A | 67.1 | 10.1 | A |
| WB I-72 On to EB I-72 Off | 65.4 | 6.8 | A | 65.3 | 7.2 | A |
| EB I-72 Off to EB I-72 On | 67.5 | 9.1 | A | 67.4 | 9.6 | A |
| South of EB I-72 On Ramp | 67.4 | 7.9 | A | 67.4 | 8.4 | A |
| TOTAL | 67.2 | 8.0 | A | 67.0 | 8.5 | A |
| | | | | | | |
| **EB I-74** | | | | | | |
| West of Prairie Off | 69.9 | 7.7 | A | 69.6 | 8.5 | A |
| Prairie Off to Prairie On | 65.1 | 7.1 | A | 64.8 | 7.9 | A |
| Prairie On to NB & SB I-57 Off | 67.5 | 8.6 | A | 67.2 | 9.2 | A |
| NB & SB I-57 Off to NB & SB I-57 On | 68.5 | 4.4 | A | 68.5 | 4.6 | A |
| NB & SB I-57 On to Prospect Off | 65.8 | 7.3 | A | 65.5 | 7.9 | A |
| Prospect Off to Prospect On | 67.9 | 7.9 | A | 67.9 | 8.4 | A |
| East of Prospect On | 61.1 | 14.2 | B | 60.7 | 15.3 | B |
| TOTAL | 67.0 | 8.1 | A | 66.8 | 8.8 | A |
| | | | | | | |
| **WB I-74** | | | | | | |
| East of Prospect Off | 67.4 | 19.7 | C | 66.9 | 21.8 | C |
| Prospect Off to Prospect On | 67.7 | 13.3 | B | 67.3 | 14.7 | B |
| Prospect On to NB & SB I-57 Off | 66.6 | 11.2 | B | 66.3 | 12.3 | B |
| NB & SB I-57 Off to NB & SB I-57 On | 68.6 | 6.7 | A | 68.5 | 7.3 | A |
| NB & SB I-57 On to Prairie Off | 66.6 | 12.9 | B | 66.4 | 13.6 | B |
| Prairie Off to Prairie On | 66.7 | 11.6 | B | 66.6 | 12.2 | B |
| West of Prairie On | 61.0 | 10.4 | A | 60.6 | 10.9 | A |
| TOTAL | 66.9 | 12.7 | B | 66.7 | 13.6 | B |

Alternate 1 - 2040 AM

| **NB I-57** | Avg.Speed | Density | | Max.Speed | Max Density | |
|---|---|---|---|---|---|---|
| South of EB I-72 Off Ramp | 69.7 | 7.5 | A | 69.6 | 8.3 | A |
| EB I-72 Off to EB I-72 On | 69.0 | 6.8 | A | 68.9 | 7.5 | A |
| EB I-72 On to WB I-72 Off | 57.5 | 7.1 | A | 57.5 | 7.7 | A |
| WB I-72 Off to WB I-72 On | 66.2 | 9.0 | A | 66.1 | 9.8 | A |
| WB I-72 On to EB & WB I-74 Off | 65.9 | 10.2 | A | 65.7 | 11.1 | B |
| EB & WB I-74 Off to EB & WB I-74 On | 69.0 | 1.9 | A | 69.0 | 2.1 | A |
| EB & WB I-74 On to Olympian Off | 63.6 | 2.9 | A | 63.7 | 3.1 | A |
| Olympian Off to Olympian On | 68.3 | 2.9 | A | 68.4 | 3.2 | A |
| North of Olympian On | 62.2 | 4.5 | A | 62.1 | 5.0 | A |
| TOTAL | 66.5 | 7.9 | A | 66.4 | 8.6 | A |

| **SB I-57** | | | | | | |
|---|---|---|---|---|---|---|
| North of Olympian Off | 69.4 | 8.5 | A | 69.3 | 9.3 | A |
| Olympian Off to Olympian On | 69.0 | 7.1 | A | 68.8 | 7.8 | A |
| Olympian On to EB & WB I-74 Off | 66.1 | 5.9 | A | 66.0 | 6.5 | A |
| EB & WB I-74 Off to EB & WB I-74 On | 68.5 | 6.5 | A | 68.4 | 7.1 | A |
| EB & WB I-74 On to WB I-72 Off | 65.5 | 12.6 | B | 65.1 | 13.6 | B |
| WB I-72 Off to WB I-72 On | 67.0 | 10.1 | A | 66.7 | 10.8 | A |
| WB I-72 On to EB I-72 Off | 64.9 | 7.2 | A | 64.5 | 7.8 | A |
| EB I-72 Off to EB I-72 On | 67.2 | 9.5 | A | 66.9 | 10.1 | A |
| South of EB I-72 On Ramp | 67.2 | 8.3 | A | 66.9 | 8.8 | A |
| TOTAL | 67.0 | 9.7 | A | 66.8 | 10.5 | A |

| **EB I-74** | | | | | | |
|---|---|---|---|---|---|---|
| West of Prairie Off | 68.4 | 17.9 | B | 68.1 | 19.7 | C |
| Prairie Off to Prairie On | 63.1 | 17.9 | B | 62.9 | 19.6 | C |
| Prairie On to NB & SB I-57 Off | 64.6 | 19.3 | C | 64.3 | 20.7 | C |
| NB & SB I-57 Off to NB & SB I-57 On | 67.1 | 10.7 | A | 67.0 | 11.3 | B |
| NB & SB I-57 On to Prospect Off | 62.0 | 16.6 | B | 61.1 | 17.8 | B |
| Prospect Off to Prospect On | 63.0 | 21.5 | C | 60.5 | 23.5 | C |
| East of Prospect On | 46.9 | 35.2 | E | 41.4 | 41.5 | E |
| TOTAL | 63.4 | 18.9 | C | 62.3 | 20.5 | C |

| **WB I-74** | | | | | | |
|---|---|---|---|---|---|---|
| East of Prospect Off | 67.5 | 16.4 | B | 67.2 | 18.1 | C |
| Prospect Off to Prospect On | 68.4 | 8.6 | A | 68.1 | 9.5 | A |
| Prospect On to NB & SB I-57 Off | 66.7 | 8.5 | A | 66.5 | 9.3 | A |
| NB & SB I-57 Off to NB & SB I-57 On | 68.9 | 5.0 | A | 68.8 | 5.3 | A |
| NB & SB I-57 On to Prairie Off | 66.6 | 6.5 | A | 66.4 | 7.0 | A |
| Prairie Off to Prairie On | 67.6 | 8.5 | A | 67.4 | 8.8 | A |
| West of Prairie On | 60.9 | 8.1 | A | 60.7 | 8.5 | A |
| TOTAL | 67.5 | 9.3 | A | 67.3 | 10.1 | A |

Alternate 1 - 2040 PM

| **NB I-57** | Avg.Speed | Density | | Max.Speed | Max Density | |
|---|---|---|---|---|---|---|
| South of EB I-72 Off Ramp | 69.5 | 8.7 | A | 69.5 | 9.5 | A |
| EB I-72 Off to EB I-72 On | 68.8 | 7.9 | A | 68.8 | 8.6 | A |
| EB I-72 On to WB I-72 Off | 56.9 | 8.3 | A | 56.8 | 9.1 | A |
| WB I-72 Off to WB I-72 On | 65.8 | 10.5 | A | 65.6 | 11.5 | B |
| WB I-72 On to EB & WB I-74 Off | 65.7 | 12.0 | B | 65.5 | 13.0 | B |
| EB & WB I-74 Off to EB & WB I-74 On | 68.5 | 5.1 | A | 68.5 | 5.5 | A |
| EB & WB I-74 On to Olympian Off | 65.3 | 5.1 | A | 65.3 | 5.5 | A |
| Olympian Off to Olympian On | 68.1 | 6.2 | A | 68.1 | 6.7 | A |
| North of Olympian On | 62.5 | 8.0 | A | 62.4 | 8.6 | A |
| TOTAL | 66.4 | 9.2 | A | 66.3 | 10.0 | A |

| **SB I-57** | | | | | | |
|---|---|---|---|---|---|---|
| North of Olympian Off | 69.3 | 8.9 | A | 69.2 | 9.8 | A |
| Olympian Off to Olympian On | 68.9 | 7.4 | A | 68.7 | 8.2 | A |
| Olympian On to EB & WB I-74 Off | 65.8 | 6.3 | A | 65.6 | 6.9 | A |
| EB & WB I-74 Off to EB & WB I-74 On | 68.4 | 6.5 | A | 68.3 | 7.2 | A |
| EB & WB I-74 On to WB I-72 Off | 64.0 | 16.0 | B | 63.5 | 17.3 | B |
| WB I-72 Off to WB I-72 On | 66.2 | 12.9 | B | 65.7 | 13.9 | B |
| WB I-72 On to EB I-72 Off | 64.6 | 9.1 | A | 64.2 | 9.8 | A |
| EB I-72 Off to EB I-72 On | 66.6 | 12.2 | B | 66.3 | 13.0 | B |
| South of EB I-72 On Ramp | 66.5 | 10.6 | A | 66.1 | 11.4 | B |
| TOTAL | 66.0 | 12.0 | B | 65.7 | 12.9 | B |

| **EB I-74** | | | | | | |
|---|---|---|---|---|---|---|
| West of Prairie Off | 69.4 | 10.2 | A | 69.3 | 11.2 | B |
| Prairie Off to Prairie On | 64.7 | 9.5 | A | 64.5 | 10.4 | A |
| Prairie On to NB & SB I-57 Off | 66.7 | 11.4 | B | 66.4 | 12.4 | B |
| NB & SB I-57 Off to NB & SB I-57 On | 68.2 | 5.9 | A | 68.1 | 6.3 | A |
| NB & SB I-57 On to Prospect Off | 65.2 | 9.8 | A | 64.9 | 10.4 | A |
| Prospect Off to Prospect On | 67.4 | 10.7 | A | 67.2 | 11.3 | B |
| East of Prospect On | 58.5 | 19.7 | C | 57.8 | 21.3 | C |
| TOTAL | 66.2 | 10.9 | A | 66.0 | 11.8 | B |

| **WB I-74** | | | | | | |
|---|---|---|---|---|---|---|
| East of Prospect Off | 65.5 | 27.1 | D | 64.6 | 30.1 | D |
| Prospect Off to Prospect On | 66.0 | 18.1 | C | 65.3 | 20.0 | C |
| Prospect On to NB & SB I-57 Off | 65.3 | 15.1 | B | 64.8 | 16.6 | B |
| NB & SB I-57 Off to NB & SB I-57 On | 68.0 | 8.8 | A | 67.9 | 9.5 | A |
| NB & SB I-57 On to Prairie Off | 65.1 | 11.0 | A | 64.7 | 11.8 | B |
| Prairie Off to Prairie On | 65.7 | 15.4 | B | 65.6 | 16.1 | B |
| West of Prairie On | 58.8 | 14.1 | B | 58.4 | 14.9 | B |
| TOTAL | 65.9 | 16.2 | B | 65.4 | 17.8 | B |

Alternate 2 - 2020 AM

| **NB I-57** | Avg.Speed | Density | | Max.Speed | Max Density | |
|---|---|---|---|---|---|---|
| South of EB I-72 Off Ramp | 70.0 | 5.7 | A | 69.9 | 6.3 | A |
| EB I-72 Off to EB I-72 On | 69.3 | 5.3 | A | 69.3 | 5.8 | A |
| EB I-72 On to WB I-72 Off | 57.6 | 5.4 | A | 57.6 | 6.0 | A |
| WB I-72 Off to WB I-72 On | 66.6 | 6.9 | A | 66.6 | 7.5 | A |
| WB I-72 On to EB I-74 Off | 67.1 | 6.9 | A | 66.8 | 7.5 | A |
| EB I-74 Off to WB I-74 Off | 65.7 | 2.4 | A | 65.3 | 2.6 | A |
| WB I-74 Off to EB & WB I-74 On | 69.2 | 1.0 | A | 69.6 | 1.0 | A |
| EB & WB I-74 On to Olympian Off | 63.4 | 1.7 | A | 62.9 | 1.8 | A |
| Olympian Off to Olympian On | 68.4 | 1.6 | A | 68.5 | 1.6 | A |
| North of Olympian On | 62.3 | 3.3 | A | 61.9 | 3.5 | A |
| TOTAL | 67.0 | 5.6 | A | 66.8 | 6.1 | A |

| **SB I-57** | | | | | | |
|---|---|---|---|---|---|---|
| North of Olympian Off | 69.6 | 6.6 | A | 69.5 | 7.2 | A |
| Olympian Off to Olympian On | 69.3 | 3.7 | A | 69.3 | 4.0 | A |
| Olympian On to WB I-74 Off | 67.7 | 3.3 | A | 67.7 | 3.7 | A |
| WB I-74 Off to EB I-74 Off | 67.4 | 4.3 | A | 67.4 | 4.7 | A |
| EB I-74 Off to EB & WB I-74 On | 69.0 | 3.3 | A | 69.0 | 3.6 | A |
| EB & WB I-74 On to WB I-72 Off | 66.2 | 8.8 | A | 66.1 | 9.3 | A |
| WB I-72 Off to WB I-72 On | 67.6 | 7.8 | A | 67.6 | 8.2 | A |
| WB I-72 On to EB I-72 Off | 65.5 | 5.6 | A | 65.3 | 5.9 | A |
| EB I-72 Off to EB I-72 On | 67.8 | 7.3 | A | 67.7 | 7.8 | A |
| South of EB I-72 On Ramp | 67.8 | 6.3 | A | 67.7 | 6.7 | A |
| TOTAL | 67.5 | 6.7 | A | 67.5 | 7.1 | A |

| **EB I-74** | | | | | | |
|---|---|---|---|---|---|---|
| West of Prairie Off | 69.2 | 13.2 | B | 69.1 | 14.5 | B |
| Prairie Off to Prairie On | 64.2 | 13.2 | B | 64.0 | 14.5 | B |
| Prairie On to NB & SB I-57 Off | 66.1 | 14.1 | B | 65.8 | 15.2 | B |
| NB & SB I-57 Off to SB I-57 On | 67.6 | 7.7 | A | 67.6 | 8.2 | A |
| SB I-57 On to NB I-57 On | 66.2 | 8.1 | A | 66.1 | 8.6 | A |
| NB I-57 On to Prospect Off | 64.9 | 11.9 | B | 64.6 | 12.7 | B |
| Prospect Off to Prospect On | 66.4 | 14.9 | B | 66.2 | 15.7 | B |
| East of Prospect On | 59.2 | 20.8 | C | 58.4 | 22.4 | C |
| TOTAL | 65.7 | 13.5 | B | 65.5 | 14.6 | B |

| **WB I-74** | | | | | | |
|---|---|---|---|---|---|---|
| East of Prospect Off | 68.2 | 12.2 | B | 68.1 | 13.4 | B |
| Prospect Off to Prospect On | 68.9 | 6.4 | A | 68.8 | 6.9 | A |
| Prospect On to NB & SB I-57 Off | 66.8 | 6.3 | A | 66.7 | 6.9 | A |
| NB & SB I-57 Off to NB I-57 On | 69.0 | 3.6 | A | 69.1 | 4.0 | A |
| NB I-57 On to SB I-57 On | 66.1 | 4.7 | A | 66.1 | 5.1 | A |
| SB I-57 On to Prairie Off | 68.0 | 7.5 | A | 68.0 | 8.0 | A |
| Prairie Off to Prairie On | 68.4 | 6.3 | A | 68.4 | 6.6 | A |
| West of Prairie On | 61.9 | 6.0 | A | 61.3 | 6.4 | A |
| TOTAL | 67.9 | 7.4 | A | 67.8 | 8.0 | A |

Alternate 2 - 2020 PM

| **NB I-57** | Avg.Speed | Density | | Max.Speed | Max Density | |
|---|---|---|---|---|---|---|
| South of EB I-72 Off Ramp | 69.9 | 6.9 | A | 69.8 | 7.5 | A |
| EB I-72 Off to EB I-72 On | 69.2 | 6.2 | A | 69.2 | 6.8 | A |
| EB I-72 On to WB I-72 Off | 57.2 | 6.5 | A | 57.1 | 7.2 | A |
| WB I-72 Off to WB I-72 On | 66.2 | 8.2 | A | 66.1 | 9.0 | A |
| WB I-72 On to EB I-74 Off | 66.9 | 8.3 | A | 66.8 | 9.0 | A |
| EB I-74 Off to WB I-74 Off | 66.6 | 4.3 | A | 66.5 | 4.7 | A |
| WB I-74 Off to EB & WB I-74 On | 68.9 | 2.7 | A | 69.1 | 2.9 | A |
| EB & WB I-74 On to Olympian Off | 65.5 | 3.1 | A | 65.8 | 3.3 | A |
| Olympian Off to Olympian On | 68.5 | 3.2 | A | 68.8 | 3.4 | A |
| North of Olympian On | 62.7 | 5.9 | A | 62.6 | 6.4 | A |
| TOTAL | 66.9 | 6.6 | A | 66.9 | 7.2 | A |

| **SB I-57** | | | | | | |
|---|---|---|---|---|---|---|
| North of Olympian Off | 69.6 | 7.0 | A | 69.4 | 7.6 | A |
| Olympian Off to Olympian On | 69.4 | 3.8 | A | 69.3 | 4.2 | A |
| Olympian On to WB I-74 Off | 67.5 | 3.6 | A | 67.6 | 3.9 | A |
| WB I-74 Off to EB I-74 Off | 67.7 | 4.2 | A | 67.8 | 4.6 | A |
| EB I-74 Off to EB & WB I-74 On | 68.9 | 3.4 | A | 69.0 | 3.7 | A |
| EB & WB I-74 On to WB I-72 Off | 65.4 | 10.7 | A | 65.1 | 11.6 | B |
| WB I-72 Off to WB I-72 On | 67.2 | 9.7 | A | 66.9 | 10.5 | A |
| WB I-72 On to EB I-72 Off | 65.3 | 6.9 | A | 65.0 | 7.4 | A |
| EB I-72 Off to EB I-72 On | 67.3 | 9.1 | A | 67.0 | 9.9 | A |
| South of EB I-72 On Ramp | 67.3 | 8.0 | A | 67.1 | 8.6 | A |
| TOTAL | 67.0 | 8.0 | A | 66.8 | 8.7 | A |

| **EB I-74** | | | | | | |
|---|---|---|---|---|---|---|
| West of Prairie Off | 69.8 | 7.7 | A | 69.8 | 8.4 | A |
| Prairie Off to Prairie On | 65.1 | 7.1 | A | 65.0 | 7.7 | A |
| Prairie On to NB & SB I-57 Off | 67.6 | 8.5 | A | 67.5 | 9.1 | A |
| NB & SB I-57 Off to SB I-57 On | 68.5 | 4.3 | A | 68.6 | 4.6 | A |
| SB I-57 On to NB I-57 On | 66.8 | 4.8 | A | 66.9 | 5.1 | A |
| NB I-57 On to Prospect Off | 66.1 | 7.3 | A | 66.1 | 7.7 | A |
| Prospect Off to Prospect On | 68.1 | 7.9 | A | 68.0 | 8.3 | A |
| East of Prospect On | 61.2 | 14.2 | B | 60.1 | 15.4 | B |
| TOTAL | 67.0 | 8.1 | A | 66.9 | 8.7 | A |

| **WB I-74** | | | | | | |
|---|---|---|---|---|---|---|
| East of Prospect Off | 67.3 | 19.7 | C | 66.9 | 21.8 | C |
| Prospect Off to Prospect On | 67.6 | 13.0 | B | 67.3 | 14.3 | B |
| Prospect On to NB & SB I-57 Off | 66.2 | 11.1 | B | 66.1 | 12.0 | B |
| NB & SB I-57 Off to NB I-57 On | 68.4 | 6.5 | A | 68.3 | 7.2 | A |
| NB I-57 On to SB I-57 On | 66.1 | 7.6 | A | 65.9 | 8.3 | A |
| SB I-57 On to Prairie Off | 66.6 | 12.6 | B | 66.4 | 13.4 | B |
| Prairie Off to Prairie On | 66.7 | 11.4 | B | 66.7 | 12.0 | B |
| West of Prairie On | 60.9 | 10.2 | A | 60.9 | 10.8 | A |
| TOTAL | 66.7 | 12.6 | B | 66.5 | 13.6 | B |

**Alternate 2 - 2040 AM**

| **NB I-57** | Avg.Speed | Density | | Max.Speed | Max Density | |
|---|---|---|---|---|---|---|
| South of EB I-72 Off Ramp | 69.8 | 7.5 | A | 69.6 | 8.3 | A |
| EB I-72 Off to EB I-72 On | 69.1 | 6.8 | A | 68.9 | 7.5 | A |
| EB I-72 On to WB I-72 Off | 57.5 | 7.1 | A | 57.4 | 7.7 | A |
| WB I-72 Off to WB I-72 On | 66.2 | 9.0 | A | 66.0 | 9.8 | A |
| WB I-72 On to EB I-74 Off | 66.4 | 10.2 | A | 66.1 | 11.1 | B |
| EB I-74 Off to WB I-74 Off | 66.0 | 4.0 | A | 65.8 | 4.3 | A |
| WB I-74 Off to EB & WB I-74 On | 69.2 | 1.8 | A | 69.1 | 2.0 | A |
| EB & WB I-74 On to Olympian Off | 63.2 | 2.9 | A | 63.0 | 3.0 | A |
| Olympian Off to Olympian On | 68.2 | 2.9 | A | 68.2 | 3.1 | A |
| North of Olympian On | 62.2 | 4.5 | A | 62.0 | 4.8 | A |
| TOTAL | 66.6 | 8.0 | A | 66.4 | 8.8 | A |

| **SB I-57** | | | | | | |
|---|---|---|---|---|---|---|
| North of Olympian Off | 69.5 | 8.2 | A | 69.4 | 9.0 | A |
| Olympian Off to Olympian On | 69.2 | 7.1 | A | 69.0 | 7.8 | A |
| Olympian On to WB I-74 Off | 67.5 | 5.8 | A | 67.5 | 6.3 | A |
| WB I-74 Off to EB I-74 Off | 67.3 | 7.5 | A | 67.2 | 8.2 | A |
| EB I-74 Off to EB & WB I-74 On | 68.4 | 6.6 | A | 68.5 | 7.2 | A |
| EB & WB I-74 On to WB I-72 Off | 65.3 | 12.8 | B | 65.1 | 13.7 | B |
| WB I-72 Off to WB I-72 On | 67.0 | 10.2 | A | 66.9 | 10.9 | A |
| WB I-72 On to EB I-72 Off | 64.9 | 7.3 | A | 64.8 | 7.8 | A |
| EB I-72 Off to EB I-72 On | 67.3 | 9.6 | A | 67.2 | 10.1 | A |
| South of EB I-72 On Ramp | 67.2 | 8.3 | A | 67.1 | 8.9 | A |
| TOTAL | 67.0 | 9.7 | A | 66.9 | 10.5 | A |

| **EB I-74** | | | | | | |
|---|---|---|---|---|---|---|
| West of Prairie Off | 68.5 | 17.9 | B | 68.1 | 19.7 | C |
| Prairie Off to Prairie On | 63.2 | 17.9 | B | 62.9 | 19.6 | C |
| Prairie On to NB & SB I-57 Off | 64.6 | 19.3 | C | 64.2 | 20.8 | C |
| NB & SB I-57 Off to SB I-57 On | 66.8 | 10.7 | A | 66.8 | 11.3 | B |
| SB I-57 On to NB I-57 On | 65.4 | 11.1 | B | 65.2 | 11.8 | B |
| NB I-57 On to Prospect Off | 62.8 | 16.6 | B | 61.7 | 17.8 | B |
| Prospect Off to Prospect On | 63.8 | 21.2 | C | 62.1 | 22.8 | C |
| East of Prospect On | 47.1 | 35.1 | E | 42.2 | 40.7 | E |
| TOTAL | 63.4 | 18.9 | C | 62.4 | 20.5 | C |

| **WB I-74** | | | | | | |
|---|---|---|---|---|---|---|
| East of Prospect Off | 67.5 | 16.4 | B | 67.3 | 18.1 | C |
| Prospect Off to Prospect On | 68.4 | 8.5 | A | 68.1 | 9.4 | A |
| Prospect On to NB & SB I-57 Off | 66.4 | 8.4 | A | 66.2 | 9.3 | A |
| NB & SB I-57 Off to NB I-57 On | 68.8 | 4.9 | A | 68.6 | 5.4 | A |
| NB I-57 On to SB I-57 On | 66.1 | 6.2 | A | 66.0 | 6.7 | A |
| SB I-57 On to Prairie Off | 67.4 | 7.5 | A | 67.1 | 8.1 | A |
| Prairie Off to Prairie On | 67.6 | 8.4 | A | 67.4 | 8.8 | A |
| West of Prairie On | 61.0 | 8.1 | A | 60.7 | 8.5 | A |
| TOTAL | 67.3 | 9.5 | A | 67.0 | 10.4 | A |

Alternate 2 - 2040 PM

| **NB I-57** | | Avg.Speed | Density | | Max.Speed | Max Density | |
|---|---|---|---|---|---|---|---|
| South of EB I-72 Off Ramp | | 69.5 | 8.7 | A | 69.3 | 9.6 | A |
| EB I-72 Off to EB I-72 On | | 68.8 | 7.9 | A | 68.6 | 8.6 | A |
| EB I-72 On to WB I-72 Off | | 56.9 | 8.3 | A | 56.6 | 9.1 | A |
| WB I-72 Off to WB I-72 On | | 65.7 | 10.5 | A | 65.4 | 11.5 | B |
| WB I-72 On to EB I-74 Off | | 65.9 | 12.6 | B | 65.6 | 13.7 | B |
| EB I-74 Off to WB I-74 Off | | 66.2 | 7.7 | A | 66.0 | 8.3 | A |
| WB I-74 Off to EB & WB I-74 On | | 68.4 | 5.4 | A | 68.3 | 5.9 | A |
| EB & WB I-74 On to Olympian Off | | 65.2 | 5.4 | A | 65.0 | 5.8 | A |
| Olympian Off to Olympian On | | 68.0 | 6.5 | A | 67.8 | 7.0 | A |
| North of Olympian On | | 62.5 | 8.3 | A | 62.1 | 8.9 | A |
| | TOTAL | 66.3 | 9.8 | A | 66.0 | 10.7 | A |
| **SB I-57** | | | | | | | |
| North of Olympian Off | | 69.3 | 8.6 | A | 69.2 | 9.5 | A |
| Olympian Off to Olympian On | | 69.0 | 7.4 | A | 68.8 | 8.2 | A |
| Olympian On to WB I-74 Off | | 67.1 | 6.2 | A | 66.9 | 6.8 | A |
| WB I-74 Off to EB I-74 Off | | 67.3 | 7.3 | A | 67.1 | 8.0 | A |
| EB I-74 Off to EB & WB I-74 On | | 68.4 | 6.5 | A | 68.2 | 7.2 | A |
| EB & WB I-74 On to WB I-72 Off | | 63.3 | 16.2 | B | 62.9 | 17.5 | B |
| WB I-72 Off to WB I-72 On | | 66.1 | 13.0 | B | 65.9 | 14.0 | B |
| WB I-72 On to EB I-72 Off | | 64.4 | 9.2 | A | 64.1 | 9.9 | A |
| EB I-72 Off to EB I-72 On | | 66.5 | 12.2 | B | 66.2 | 13.1 | B |
| South of EB I-72 On Ramp | | 66.4 | 10.7 | A | 66.2 | 11.4 | B |
| | TOTAL | 65.8 | 12.0 | B | 65.5 | 12.9 | B |
| **EB I-74** | | | | | | | |
| West of Prairie Off | | 69.4 | 10.2 | A | 69.4 | 11.2 | B |
| Prairie Off to Prairie On | | 64.7 | 9.5 | A | 64.6 | 10.4 | A |
| Prairie On to NB & SB I-57 Off | | 66.7 | 11.4 | B | 66.4 | 12.4 | B |
| NB & SB I-57 Off to SB I-57 On | | 68.0 | 5.9 | A | 67.8 | 6.3 | A |
| SB I-57 On to NB I-57 On | | 66.6 | 6.5 | A | 66.4 | 6.9 | A |
| NB I-57 On to Prospect Off | | 65.6 | 10.0 | A | 65.3 | 10.6 | A |
| Prospect Off to Prospect On | | 67.5 | 10.9 | A | 67.2 | 11.5 | B |
| East of Prospect On | | 58.6 | 19.8 | C | 57.2 | 21.7 | C |
| | TOTAL | 66.2 | 11.0 | B | 65.8 | 11.9 | B |
| **WB I-74** | | | | | | | |
| East of Prospect Off | | 65.3 | 27.1 | D | 63.9 | 30.5 | D |
| Prospect Off to Prospect On | | 66.0 | 18.2 | C | 65.1 | 20.2 | C |
| Prospect On to NB & SB I-57 Off | | 65.0 | 15.2 | B | 64.6 | 16.7 | B |
| NB & SB I-57 Off to NB I-57 On | | 67.8 | 8.8 | A | 67.5 | 9.6 | A |
| NB I-57 On to SB I-57 On | | 65.7 | 10.2 | A | 65.5 | 10.9 | A |
| SB I-57 On to Prairie Off | | 65.3 | 12.9 | B | 64.8 | 13.9 | B |
| Prairie Off to Prairie On | | 65.7 | 15.5 | B | 65.4 | 16.4 | B |
| West of Prairie On | | 58.8 | 14.1 | B | 58.2 | 15.1 | B |
| | TOTAL | 65.5 | 16.6 | B | 64.9 | 18.3 | C |

# APPENDIX D

Safety Analysis

Illinois Department of Transportation

# Operational Safety Analysis

For

FAI Route 57 (I-57) & FAI Route 74 (I-74)
Section 10(5-1-RS-1,14-1,6)R
Job No. P-95-030-11
Champaign County

Interchange Reconstruction

Prepared For:
Illinois Department of Transportation
Program Development
District 5

Prepared By:

Quigg Engineering, Inc.
2351 South Dirksen Parkway
Springfield, IL 62703

QUIGG ENGINEERING INC

On behalf of a Joint Venture between:

Bacon Farmer Workman,
Engineering & Testing, Inc.
500 South 17th Street
P.O. Box 120
Paducah, KY 42002-120

BFW BACON | FARMER | WORKMAN ENGINEERING & TESTING, INC.

&

Crawford, Murphy & Tilly, Inc.
2750 West Washington Street
Springfield, IL 62702

CMT

June 2014

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Exhibit B: Aerial Map
Exhibit C – H: Segments for ISATe Analysis
Exhibit I: ISATe Output Summaries

## Section 1 – Introduction

### 1.1 Project Description

This project involves complete reconstruction of the interchange at I-57 and I-74 northwest of Champaign, Illinois in Champaign County. See the Location Map and Aerial Map attached as Exhibit A and Exhibit B, respectively. The project also involves the addition of a third through lane in each direction on both I-74 and I-57 through the interchange area.

### 1.2 Purpose of Operational Safety Analysis

The Operational Safety Analysis consists of a Road Safety Audit for the existing facility and a Safety Analysis for the existing interchange as well as several proposed design alternatives utilizing the Enhanced Interchange Safety Analysis Tool (ISATe).

## Section 2 – Road Safety Audit

### 2.1 Road Safety Audit Process

The FHWA defines a Road Safety Audit (RSA) as a formal safety performance examination of an existing or future road or intersection by an independent audit team. Its purpose is to report on potential road safety issues and to identify opportunities for improvements in safety for all road users. The RSA consists of reviewing as-built plans and crash history reports as well as performing field reviews. Conducting an RSA early in a road project's lifecycle during the preliminary design phase results in lower implementation costs than if it were done during the detailed design process or construction.

The limits of the RSA included I-57 from I-72 to West Olympian Drive and I-74 from Prairie View Road to North Prospect Avenue as well as the interchanges of I-57/I-72, I-57/I-74, I-57/West Olympian Drive. I-74/Prairie View Road, and I-74/North Prospect Avenue.

The RSA team was comprised of Michael Vail, Lindsay Sagorski and Mike Matzke of Quigg Engineering Inc.

### 2.2 Existing Geometrics

I-57 is a four-lane interstate with a 65 foot wide grass median and a posted speed limit of 70 mph. I-57 was resurfaced in 2013 from south of West Olympian Drive to north of the study limits. In late May to early June 2014, the interchange ramps were patched and resurfaced with a High-Friction Surface Treatment to address skidding issues that frequently resulted in crashes.

I-74 is a four-lane interstate with a posted speed limit of 70 mph. The grass median width varies from 70 feet east of Prairie View Road to 40 feet west of I-57, to 28 feet with a continuous concrete barrier west of North Prospect Avenue.

The I-57/I-74 interchange design is a full cloverleaf with I-74 passing over I-57. Posted advisory speeds for the ramps vary from 25 mph to 30 mph.

The I-57/I-72 interchange design is a full cloverleaf with I-72 passing over I-57. Posted advisory speeds for the ramps is 30 mph.

West Olympian Drive is a four-lane County Highway (FAP 813) with a concrete barrier median at the interchange of I-57. The existing interchange is a diamond type with the exit ramps located on the right-side of the freeway, terminating with one-way stop control at West Olympian Drive. The northbound and southbound exit ramps have an advisory speed of 40 mph. The northbound and southbound entrance ramps have a dedicated left-turn lane on West Olympian Drive. Both entrance ramps are located on the right-side of the freeway.

Prairie View Road is a two-lane County Highway (FAP 719) with a concrete barrier median at the interchange of I-74. The existing interchange is a diamond type with the exit ramps located on the right-side of the freeway, terminating with one-way stop control at Prairie View Road. The westbound exit ramp has an advisory speed of 35 mph and the eastbound exit ramp has no advisory speed posted. The eastbound and westbound entrance ramps have a dedicated left-turn lane on Prairie View Road. The westbound entrance ramp has a dedicated right-turn lane. Both entrance ramps are located on the right side of the freeway.

North Prospect Avenue is a four-lane County Highway (FAP 802) with a concrete median at the interchange of I-74. The existing interchange is a diamond type, with the eastbound exit ramp located on the right-side of the freeway, with a posted advisory speed of 35 mph, terminating at a signalized intersection on North Prospect Avenue with one left-turn lane and one right-turn lane. The westbound exit ramp is an exit only auxiliary lane initiated at the westbound entrance ramp at Neil Street. This ramp is located on the right side of the freeway with no posted advisory speed. This ramp terminates at a signalized intersection on North Prospect Avenue with dual left-turn lanes and dual right-turn lanes. Dual left-turn lanes on North Prospect Avenue are provided for the westbound and eastbound entrance ramps and enter I-74 on the right side.

## 2.3 Road Safety Audit Observations

Field reviews were conducted on November 19, 2013 during morning and afternoon hours and on December 5, 2013 during afternoon and evening hours. A summary of the issues identified during the field review and subsequent review of existing plans is provided as follows:

- Horizontal Alignment – The weaving section lengths and ramp radii of the existing cloverleaf interchanges at I-57/I-74 and I-57/I-72 do not meet the current standards in the IDOT BDE manual. The posted advisory speeds on the I-57/I-74 interchange ramps are between 25 and 30 mph, and 30 mph on the I-57/I-72 interchange ramps. IDOT requires a design speed of 40 mph for cloverleaf loop ramps between freeways and 45 mph for the outer connector ramps. (Section 37-4.04 BDE Manual).

  The I-57/I-74 and I-57/I-72 cloverleaf interchanges include four weaving sections each between the loop ramps. The weaving lengths at the existing interchanges do not meet the IDOT required minimum 650 foot weaving length for a design speed of 70 mph (Section 37-3.06(b) BDE Manual). The deficient weave lengths do not allow vehicles enough space to increase or reduce their speed in order to safely merge onto the freeway or access the exit ramp, causing high speed differentials.

During the field review, the RSA team witnessed several vehicles entering the mainline roadway, slowing down and braking in order to merge with the mainline traffic due to the sub-standard weaving lengths. The RSA team also experienced having to quickly slow down on the mainline in order to reach a safe speed to enter the exit ramps. It is dangerous to have significant speed differentials or stop conditions on the freeway causing backups on the mainline, creating a high potential for rear-end and side-swipe crashes.

- Access Points to Mainline - The I-57/I-74 interchange currently has 16 access points including 4 weaving sections. Each access point is a potential conflict point in that they require the driver to make a decision. For example, in the weaving sections there are vehicles entering the freeway and increasing speed, as well as vehicles exiting the freeway and decreasing speed. The more decisions a driver has to make the greater the potential for a crash.

- Exposed Pier in Median - A bridge pier at the overpass of North Mattis Avenue and I-74 does not have sufficient barrier guardrail coverage or impact attenuators present to prevent a fixed object crash by a vehicle leaving the roadway in either direction (see Figure 1). Based on the existing geometry of I-74 at the overpass, the IDOT BDE Manual requires a total length of need for guardrail, including upstream and downstream run out lengths, of 310' for both eastbound and westbound directions. Existing guardrail is 141' traveling eastbound and 166' traveling westbound. Guardrail lengths should be extended and/or impact attenuators should be installed at this location.



**Figure 1: Exposed Bridge Pier at N Mattis Avenue Overpass on I-74**

- Roadside Barrier End Treatment - Several of the guardrail end treatments within the study area do not meet current IDOT standards and need to be updated.

- Damaged Roadside Barrier - Guardrail on I-57 NB south of I-74 needs replacement. It has been hit and is permanently deflected (see Figure 2). Several Guardrail delineators are missing throughout the project limits.

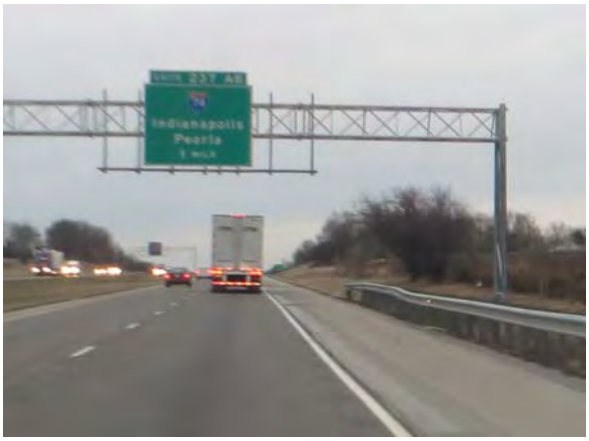



**Figure 2: I-57 NB south of I-74 Damaged Guardrail**

- Exit Ramp Signage – It was noted during the field visits that exit ramp signage is inconsistent (see Figure 3). Inconsistent and deficient ramp signage may cause drivers to make a hasty lane change or to enter the ramp at an unsafe speed. Table 2C-5 of the MUTCD 2009 lists the recommended horizontal alignment signs based on the difference between the mainline speed limit and the ramp advisory speed. With a posted speed limit of 70 mph along both I-74 and I-57, any exit ramp advisory speed of 45 or less would require the following signs. See Figure 4 for an example of exit ramp signage.

    - Turn (W1-1), Curve (W1-2), Reverse Turn (W1-3), Reverse Curve (W1-4),Winding Road (W1-5), and Combination Horizontal Alignment/Intersection (W10-1)
    - Advisory Speed Plaque (W13-1P)
    - Chevrons (W1-8) and/or One Direction Large Arrow (W1-6)
    - Exit Speed (W13-2) and Ramp Speed (W13-3) on exit ramps




**Figure 3: Exit Ramp Signage**

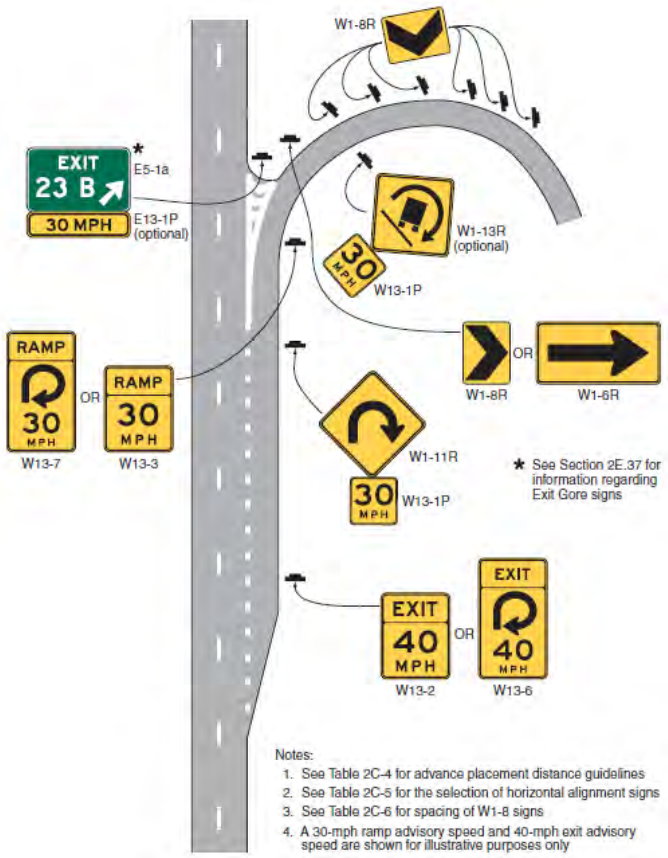



**Figure 4: Example of Advisory Speed Signing for an Exit Ramp (MUTCD 2009)**

- Narrow Median – The median along I-74 from west of I-57 to west of North Prospect Ave is 40 feet wide measured from inside edge of the traveled way including a 4 foot HMA shoulder in each direction. The slope of the median ditch is 1V:3H which is considered unrecoverable (see Figure 5). Traffic volumes, truck volumes, median crossover history, crash incidents, vertical and horizontal alignment and median-terrain configurations are all factors taken into consideration when determining the need for a median barrier. Continuous guardrail is not present at this location. According to the IDOT BDE Manual, a median barrier is recommended based on the existing traffic volumes and median width (see Figure 6). However, it is recommended that with a slope of 1V:3H, a roadside barrier should be provided along each shoulder instead of a barrier at the center of the median (see Figure 7). Historical crash data shows 5 cross-over crashes in the five year study period, one resulting in a fatality. The Average Daily Traffic (ADT) for this location is 27,000 and trucks account for approximately 22% of the volume based on 2011 counts from IDOT's Traffic Count Database System (http://www.gettingaroundillinois.com/gai.htm?mt=aadt). Based on traffic volumes, median width and terrain, crash history, and truck volumes we recommend the installation of a roadside barrier at this location. It should be noted that the installation of a roadside barrier could increase the number of crashes in the area given there is less area for a vehicle to recover but would eliminate crossover, head-on type crashes.



**Figure 5: I-74 Narrow Median without Barrier**

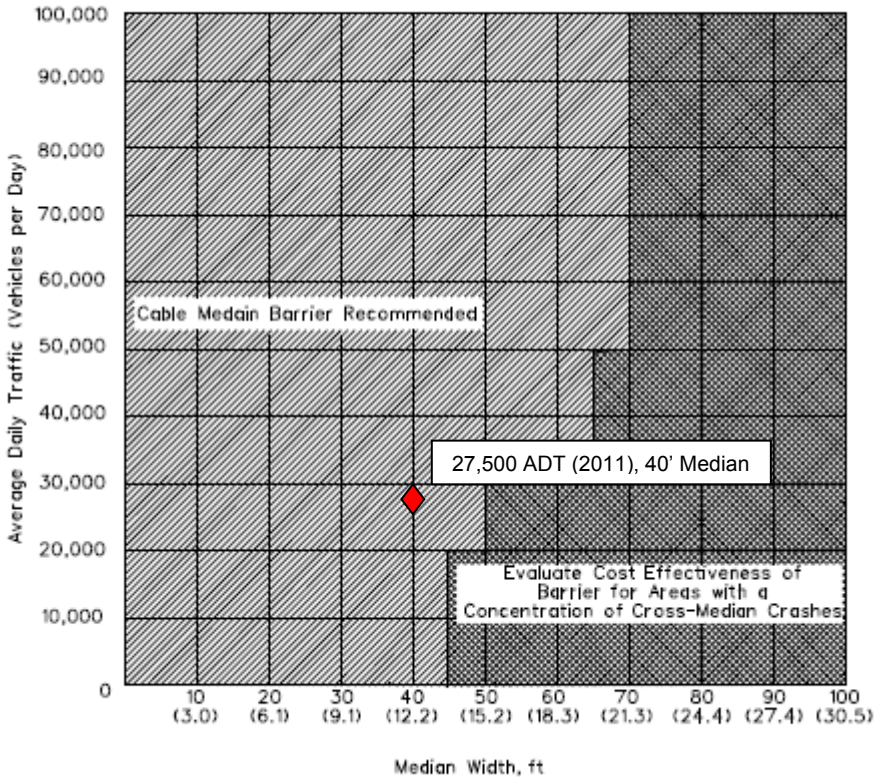
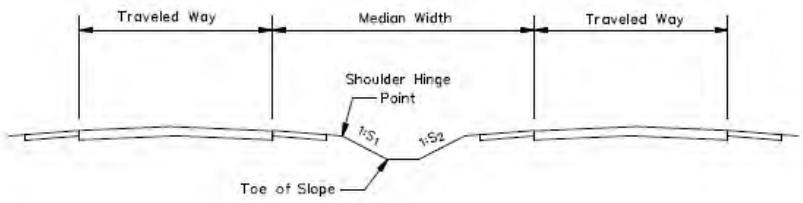



**Figure 6: Warrants for Median Barriers on Freeways (IDOT BDE Manual)**




| Median Conditions | | Recommended Median Barrier Type | Recommended Placement |
|---|---|---|---|
| Width | Slopes | | |
| W < 25 ft (7.6 m) | $S_1$ and $S_2 \geq 10$ | Rigid or Semi-Rigid | Near center of median |
| | $S_1$ or $S_2 < 10$ and $S_1$ and $S_2 \geq 8$ | Semi-Rigid | Near center of median |
| | $S_1$ or $S_2 < 8$ | N/A – Consider a roadside barrier along each shoulder. | |
| W ≥ 25 ft (7.6 m) | $S_1$ and $S_2 \geq 10$ | Rigid, Semi-Rigid, or Flexible | Near center of median |
| | $S_1$ or $S_2 < 10$ and $S_1$ and $S_2 \geq 8$ | Semi-Rigid or Flexible | Near center of median |
| | $S_1$ or $S_2 < 8$ and $S_1$ and $S_2 \geq 6$ | Flexible | 2 ft (600 mm) or more from shoulder hinge point and more than 8 ft (2.4 m) from the ditch line bottom |
| | $S_1$ or $S_2 < 6$ and $S_1$ and $S_2 \geq 4$ | Flexible | Within 4 ft (1.2 m) of shoulder hinge point and more than 10 ft (3 m) from the ditch line bottom |
| | $S_1$ or $S_2 < 4$ | N/A – Consider a roadside barrier along each shoulder. | |
| Other median conditions (e.g., stepped, bermed) | | Contact the Bureau of Safety Engineering. | |

**Figure 7: Guidelines for Median Barrier Selection/Placement (IDOT BDE Manual)**

- Lighting Supports in Clear Zone – Highway safety light poles and supports are located 16’ away from the edge of travel way at the I-57/I-74 interchange. Thirteen percent (13%) of the fixed object crashes in the study area involved a light pole support. The light poles are designed with a breakaway foundation, however, the light poles could be relocated beyond the clear zone.

- Pavement Markings, Raised Reflective Pavement Markers and Delineators – The pavement markings, including center skip dash and edge lines along the mainline and ramps, in several areas are faded and lack reflectivity. Several lane line raised pavement reflectors are missing on I-57 between I-72 and I-74 and several delineators along the roadway are damaged or missing. These pavement markings, reflectors and delineators help guide the motorist along the traveled way and to help prevent vehicles from deviating from their travel lane and running off the road. Broken or loose raised reflective pavement markers can also become a hazard. The missing reflectors and delineators should be replaced and the pavement should be restriped.

- Pavement Condition - The existing pavement is in poor condition at South Prairie View Road and the I-74 exit and entrance ramps for both the eastbound and westbound

directions (see Figure 8). Throughout the study area, especially on ramps, deteriorating pavement near the edge of the travel way has caused deterioration of the edge line pavement markings making them hard to see.



**Figure 8: I-74 at Prarie View Rd Exit and Entrance Ramps**

### 2.4 Road Safety Audit Summary

The following is a list of noted deficiencies within the study corridor based on the RSA. The findings in the purpose and need study support these observations.

- Interchange design does not meet current design guidelines
- Large number of access points at the cloverleaf interchange
- Guardrail and impact attenuators are absent at bridge pier along I-74 east of I-57
- Narrow median without median barrier
- Ramp signage needs updating
- Some guardrail, delineators, and raised median reflectors are damaged and need replacement
- Pavement markings are damaged and need maintenance

## Section 3 – Safety Analysis

### 3.1 ISATe Analysis

The purpose of this Safety Analysis is to determine the proposed reduction to the future predicted crash rates for the interstate and ramp improvements and to compare between the proposed interchange type alternatives. The ISATe Excel based program was used to analyze the predicted future crash rates for the no-build alternative and for the proposed design alternatives for a study period from 2011 to 2031 (the ISATe software limits the study period to no later than 2031, 20 years beyond the latest crash data).

The project limits of the Safety Analysis include a section on I-57 from the Norfolk Southern Railroad (south) to West Olympian Drive (north) and a section on I-74 from North Duncan Road (west) to North Prospect Avenue (east). The project is broken down into individual segments, based on the geometry, for analysis with the ISATe software. Each segment is evaluated independently. See Exhibits C – H for project and segment limits.

The ISATe is a tool that is used to evaluate freeway and interchange safety. According to the ISATe User Manual, the ISATe provides information about the relationship between roadway geometric design features and safety. It is based on research that quantified the relationship between various design elements or design components and expected average crash frequency. Each design element is assigned a Crash Modification Factor (CMF) that is used to predict the number of crashes. The ISATe was developed as a predictive method to be included in a future edition of the Highway Safety Manual (HSM) and is not an officially published document. It incorporates CMFs that are not discussed in the current version of the HSM. This analysis has been coordinated with the IDOT Bureau of Safety for review of the software implementation and the results presented herein.

The HSM defines crash severity as the level of injury or property damage due to a crash and refers to the most severe injury caused by a crash. Crash severity is divided into five crash severity levels. The definitions of the five severity levels are as follows. K – fatal injury: an injury that results in death, A – incapacitating injury: an injury, other than a fatal injury, that prevents the injured person from walking, driving, or normally continuing the activities the person was capable of performing before the injury occurred, B – non-incapacitating evident injury: any injury, other than fatal or incapacitating injury, that is evident to observers at the scene of the crash in which the injury occurred, C – Possible Injury: any injury reported or claimed that is not a fatal injury, incapacitating, or non-incapacitating evident injury and includes claim of injuries not evident, and PDO – no injury/property damage only.

If crash data is available, the Empirical Bayes (EB) method, described in Appendix B of the ISATe User Manual, can be used to combine the existing crash data with the predictive method. This method gives an estimate that is more consistent with the expected average crash frequency. For this analysis, the existing interchange was analyzed using the predictive method only and the predictive method combined with the EB method. The results showed that more crashes were predicted using the EB method than without, showing that the predictive method alone may not be accurate in predicting the number of crashes (See Table 1). Based on the results obtained by combining the predictive and EB methods, it can be assumed that the conditions at the existing interchange are actually worse than what would be expected based on the results of using the predictive method alone. The proposed alternatives were analyzed using the predictive method only, without factoring in crash data, since the entire interchange will be reconfigured with significant changes to the alignment of the interchange ramps. Using existing interchange crash data would not accurately represent the crash experience that is likely to occur with any of the proposed alternatives.

**Table 1: ISATe Analysis for Existing Interchange**

| Study Period: 2011-2031 | Number of Crashes | | | | | |
|---|---|---|---|---|---|---|
| | Total | K | A | B | C | PDO |
| Existing (predicted) | 741 | 7 | 18 | 93 | 130 | 496 |
| Existing (expected*) | 1195 | 9 | 22 | 113 | 157 | 897 |

*Using the EB method combined with the predictive method

As can be seen in Table 1, the predictive model was more consistent with the expected model in predicting the high-severity K, A, and B type crashes than PDO crashes. Therefore, special attention was given to the total number of K, A, and B type crashes predicted over the study period. The proposed alternatives were analyzed using the predictive method only, without

reference to historical crash data. The proposed alternatives reconfigure the interchange to the point that using existing crash data would not accurately represent the crash experience that is likely to occur. The results are summarized in Table 2 (see Exhibit I for the ISATe Output Summaries).

The ISATe User Manual suggests that a calibration factor be used when using the predicted method. A calibration factor has not been developed for this area at the time of the study.

### 3.2 No Build: Existing Cloverleaf Interchange

The existing I-57/I-74 cloverleaf interchange (Exhibit C) was analyzed using the ISATe software, applying the predictive method only and the EB method combined with the predictive method. The predicted total number of type K, A and B crashes for the study period based on the two methods of analysis are 118 and 144, respectively, for the existing cloverleaf interchange.

### 3.3 Alternative 1: Full Directional

The full directional interchange type concept (Exhibit D) was analyzed using the ISATe software applying the predictive method. The predicted total number of type K, A, and B crashes for the study period is 117 which is the second least of the five proposed alternatives.

### 3.4 Alternative 2: Semi-Directional with Directional Flyovers and Two Loops

The semi-directional type concept (Exhibit E) with directional flyovers and two loops was analyzed using the ISATe software applying the predictive method. The predicted total number of type K, A, and B crashes for the study period is 114, which is the least of the five proposed alternatives.

### 3.5 Alternative 3: Semi-Directional with Semi-Directional Flyovers and Two Loops

The semi-directional type concept with semi-directional flyovers and two loops (Exhibit F) was analyzed using the ISATe software applying the predictive method. The predicted total number of type K, A, and B crashes for the study period is 121, which is the second worst of the five proposed alternatives.

### 3.6 Alternative 4: Semi-Directional with No Loops

The semi-directional type concept with no loops (Exhibit G) was analyzed using the ISATe software applying the predictive method. The predicted total number of type K, A, and B crashes for the study period is 124 which is the worst of the five proposed alternatives.

### 3.7 Alternative 5: Full Directional with Two Convex Ramps

The full directional interchange type concept (Exhibit H) was analyzed using the ISATe software applying the predictive method. The predicted total number of type K, A, and B crashes for the study period is 121, which is the second worst of the five proposed alternatives.

**Table 2: ISATe Analysis Summary**

| Study Period: 2011-2031 | | Existing (predicted) | Existing (expected*) | Alternative 1 (predicted) | Alternative 2 (predicted) | Alternative 3 (predicted) | Alternative 4 (predicted) | Alternative 5 (predicted) |
|---|---|---|---|---|---|---|---|---|
| Total Number of Crashes | | 741 | 1195 | 802 | 791 | 814 | 840 | 825 |
| Total Number of Crashes per Type | K | 7 | 9 | 7 | 6 | 7 | 7 | 7 |
| | A | 18 | 22 | 17 | 17 | 18 | 18 | 18 |
| | B | 93 | 113 | 93 | 91 | 96 | 99 | 96 |
| | C | 130 | 157 | 145 | 143 | 150 | 155 | 149 |
| | PDO | 496 | 897 | 542 | 534 | 545 | 563 | 557 |
| | KAB | 118 | 144 | 117 | 114 | 121 | 124 | 121 |

*Using the EB method combined with the predictive method

## Section 4 – Conclusion

Using the ISATe analysis to compare the proposed five alternatives, Alternative 2 predicts the least amount of total crashes and K, A and B type crashes over the study period (see Table 2). However, the differences predicted among the five alternatives are minimal (+/- 10 crashes over a 20 year study period) and it is not recommend that the results be used as the controlling factor to eliminate or solely select a proposed preferred alternative.

Since the existing predicted ISATe analysis does not take into account all of the existing deficient interchange features, the EB method and historical crash data are used to predict the expected crashes for the existing interchange. When the predicted crashes for the proposed alternatives are compared to the existing expected crashes for the existing interchange, each proposed alternative provides a safety improvement over the existing interchange configuration.

**Exhibit A**
Location Map

EXHIBIT A: LOCATION MAP

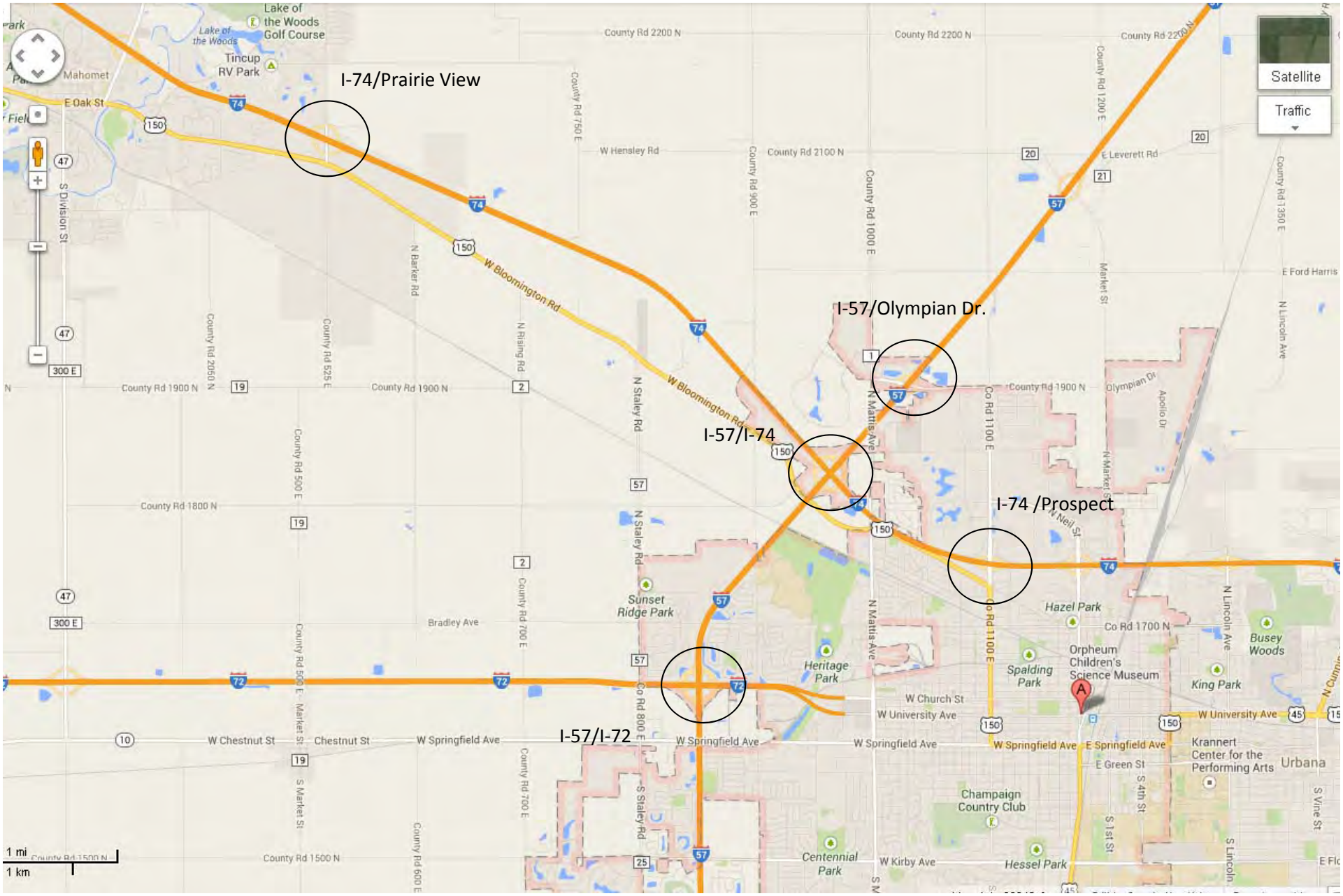
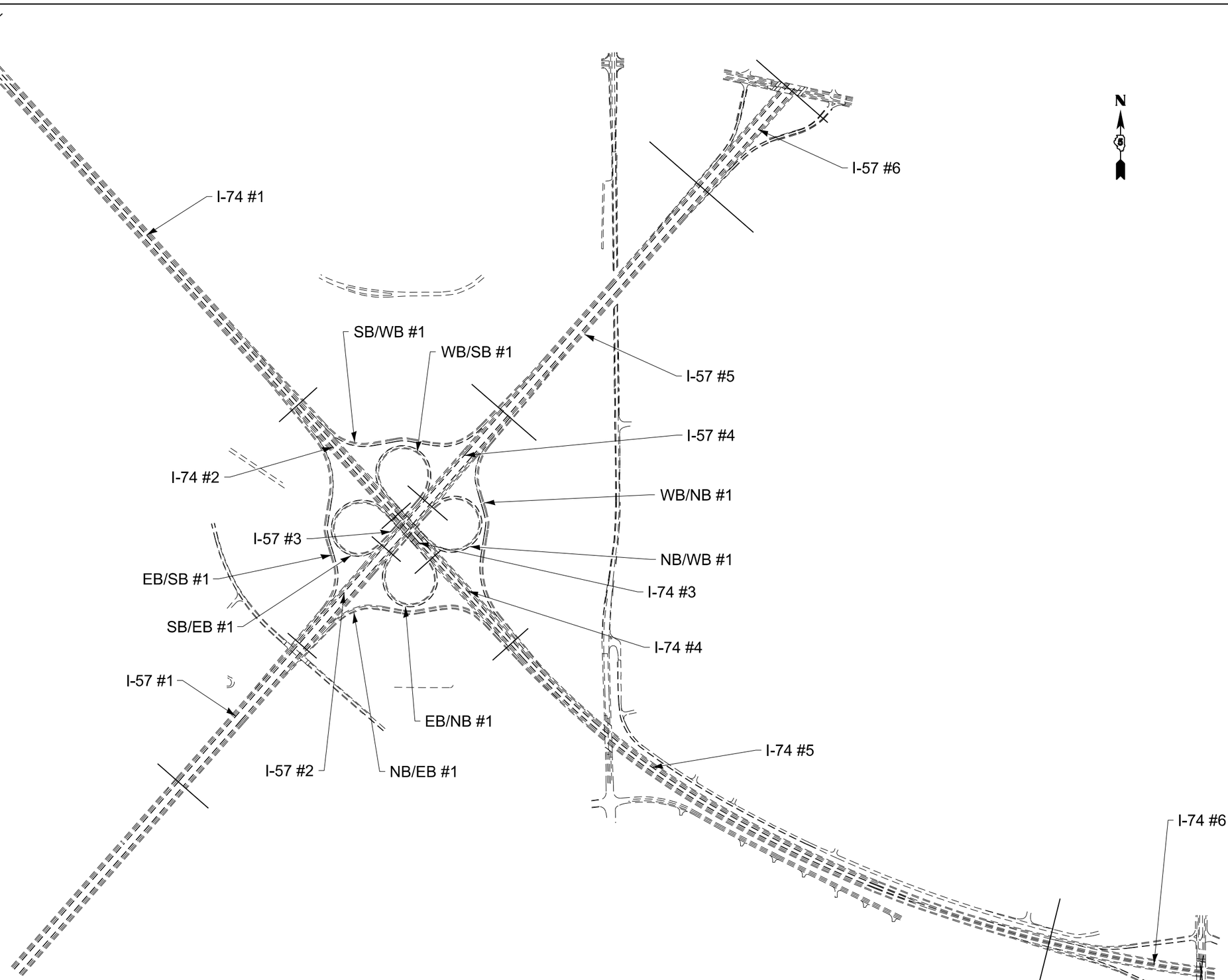


**Exhibit B**
Aerial Map

EXHIBIT B: AERIAL MAP



**Exhibit C-H**
Segments for ISATe Analysis




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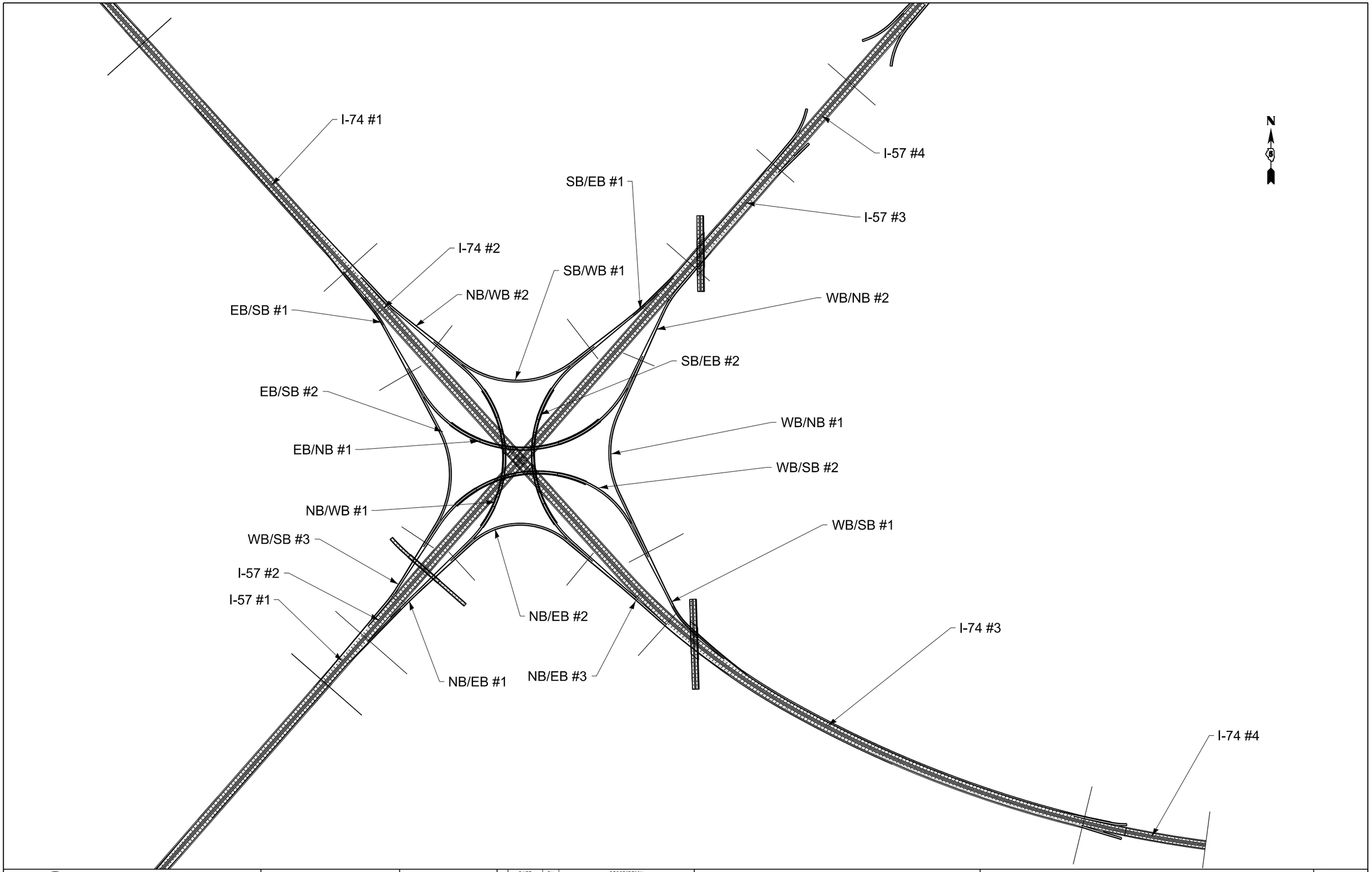
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**SEGMENTS FOR ANALYSIS WITH ISATe**

**EXHIBIT C: NO-BUILD**
**EXISTING CLOVERLEAF INTERCHANGE**

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PROJECT NO.

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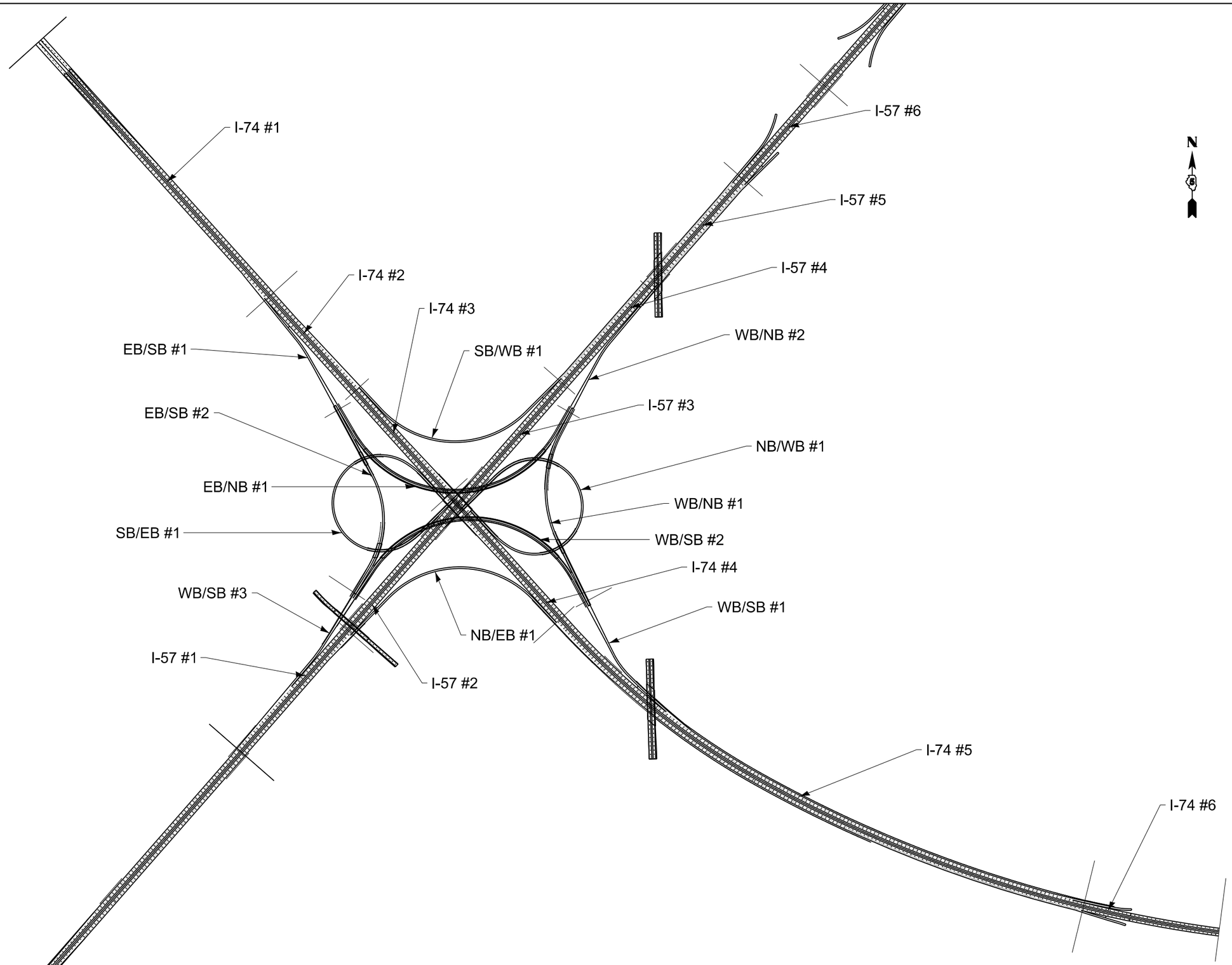
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**SEGMENTS FOR ANALYSIS WITH ISATe**

**EXHIBIT D: ALTERNATIVE 1 (E1B)**
**FULL DIRECTIONAL INTERCHANGE**

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PROJECT NO.

TOTAL SHEETS | SHEET NO.




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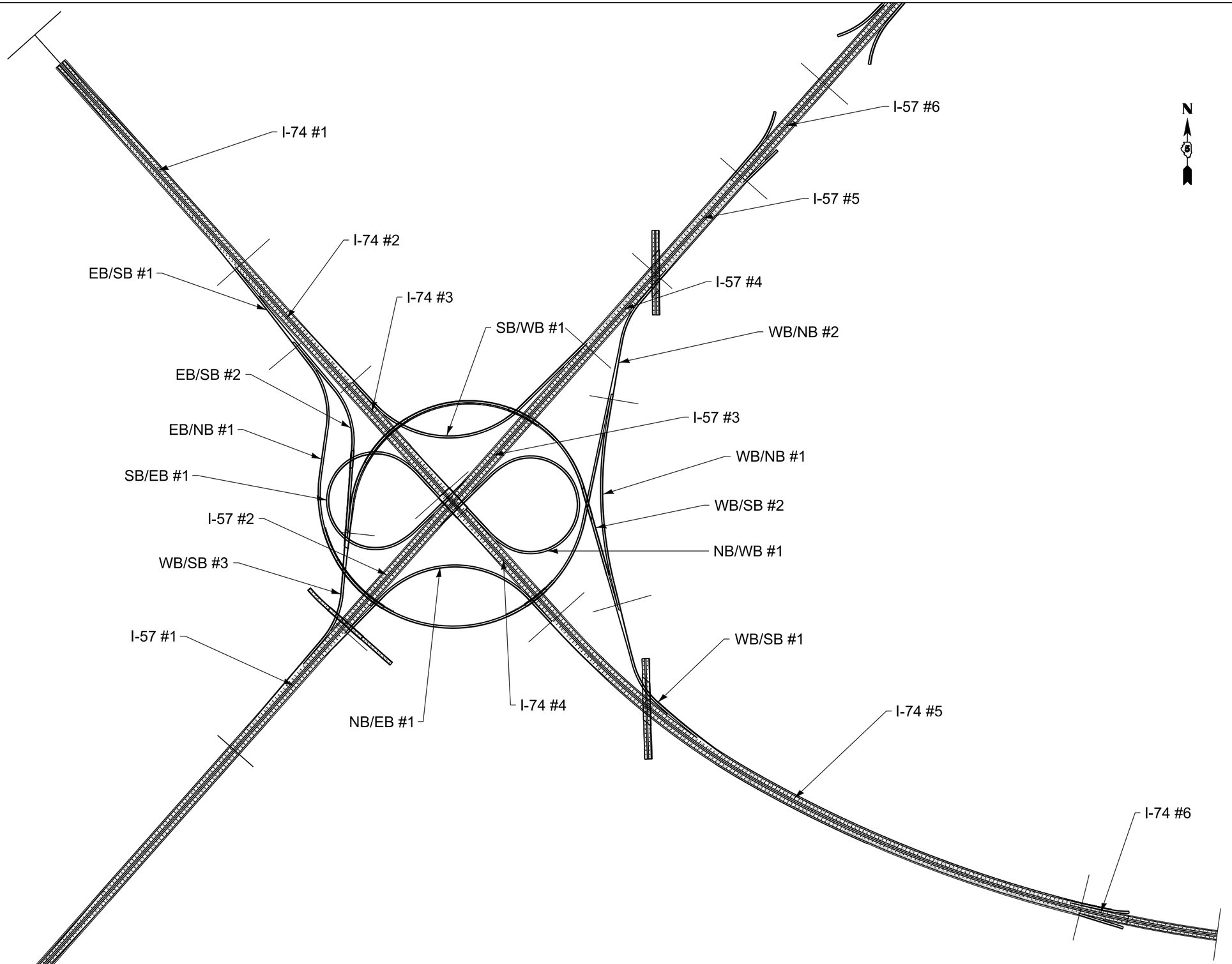
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**SEGMENTS FOR ANALYSIS WITH ISATe**

**EXHIBIT E: ALTERNATIVE 2 (B3)**
**SEMI–DIRECTIONAL INTERCHANGE WITH LOOP RAMPS**

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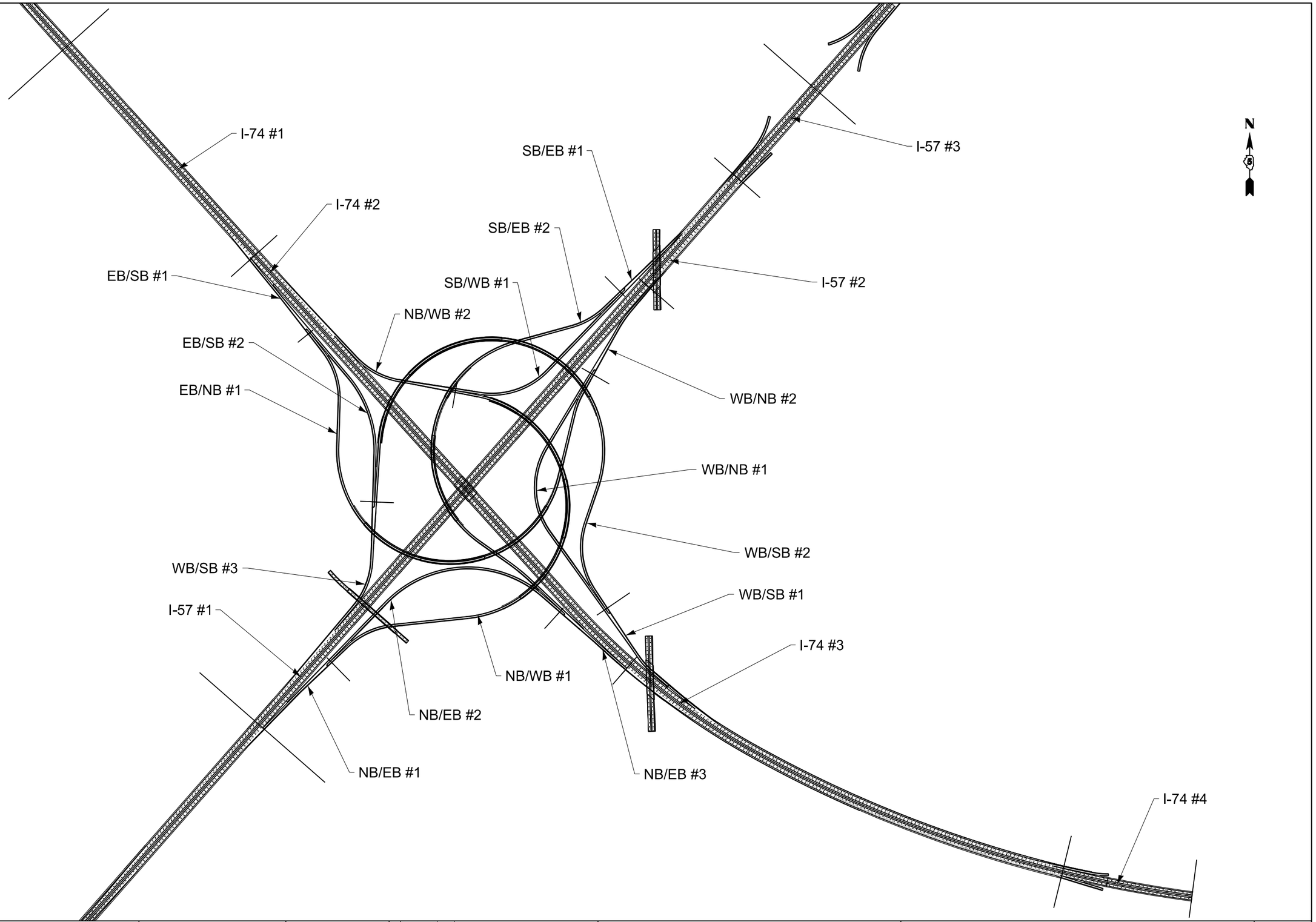
**I-57/I-74 INTERCHANGE**
**SEGMENTS FOR ANALYSIS WITH ISATe**

**EXHIBIT F: ALTERNATIVE 3 (B2)**
**SEMI-DIRECTIONAL INTERCHANGE WITH LOOP RAMPS**

SCALE: NTS | SHEET NO. OF SHEETS | STA. TO STA.

PROJECT NO.

TOTAL SHEETS | SHEET NO.




FILE NAME = S:\Projects\2011 JOBS\11-68 BFW-CMT PTB 161 Item 28 I-74 at I-57\CADD\Safety Analysis Alternatives\Figure-design_E2.dgn
MODEL = Default
PLOT DRIVER = IDOT_PDF.plotcfg

QUIGG ENGINEERING INC

2351 SOUTH DIRKSEN PARKWAY
SPRINGFIELD, ILLINOIS 62703
217-670-0563 (P) / 217-679-2204 (F)
www.quiggengineering.com

| | |
|---|---|
| USER NAME = lsagorski | DESIGNED - |
| FILE NAME = Figure-design_E2.dgn | DRAWN - |
| PLOT SCALE = 913.7500 ' / in. | CHECKED - |
| PLOT DATE = 2/18/2014 | DATE - |

| REVISIONS | DATE | BY | DESCRIPTION |
|---|---|---|---|
| | | | |

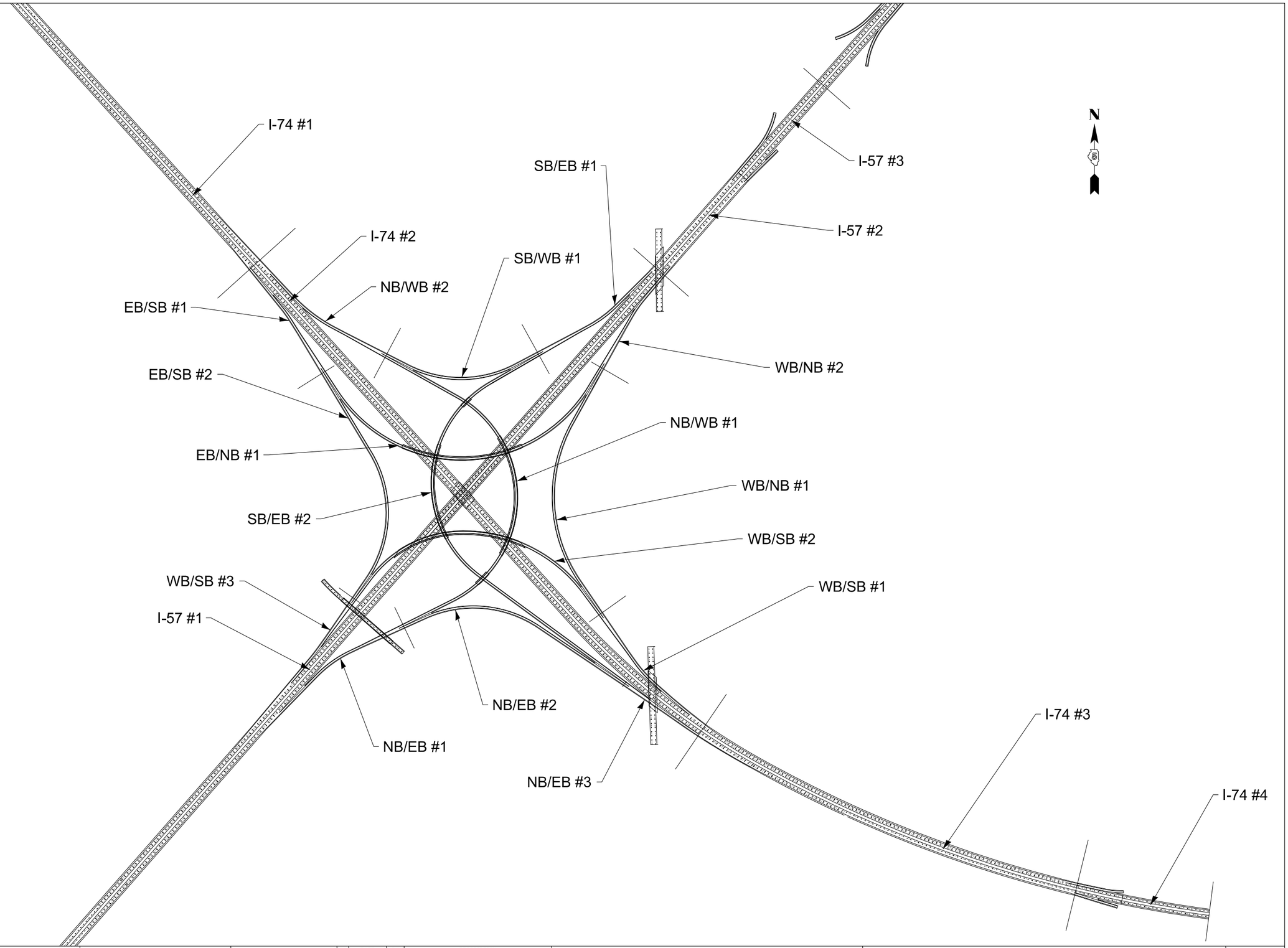
**I-57/I-74 INTERCHANGE**
**SEGMENTS FOR ANALYSIS WITH ISATe**

**EXHIBIT G: ALTERNATIVE 4 (E2)**
**SEMI-DIRECTIONAL INTERCHANGE**

SCALE: NTS | SHEET NO. OF SHEETS | STA. TO STA.

PROJECT NO.

| TOTAL SHEETS | SHEET NO. |
|---|---|
| | |




FILE NAME = S:\Projects\2011 JOBS\11-88 BFW-CMT PTB 161 Item 28 I-74 at I-57\QEI Submittal A\Figure-design_F1.dgn
MODEL = Default
PLOT DRIVER = IDOT-PDF.plotcfg

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www.quiggengineering.com

| | |
|---|---|
| USER NAME = lsagorski | DESIGNED - |
| FILE NAME = Figure-design_F1.dgn | DRAWN - |
| PLOT SCALE = 913.7500 ' / in. | CHECKED - |
| PLOT DATE = 6/19/2014 | DATE - |

| REVISIONS | DATE | BY | DESCRIPTION |
|---|---|---|---|
| | | | |

**I-57/I-74 INTERCHANGE**
**SEGMENTS FOR ANALYSIS WITH ISATe**

**EXHIBIT H: ALTERNATIVE 5 (F1)**
**FULL DIRECTIONAL WITH CONVEX RAMPS**

SCALE: NTS | SHEET NO. OF SHEETS | STA. TO STA.

PROJECT NO.

| TOTAL SHEETS | SHEET NO. |
|---|---|
| | |

**Exhibit I**
ISATe Output Summaries

## Output Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Existing Interchange I57/I-74 - without EB method (predictive method only) | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

### Crash Data Description

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

### Estimated Crash Statistics

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 741.0 | 6.7 | 17.4 | 92.3 | 129.5 | 495.1 |
| Estimated average crash freq. during Study Period, crashes/yr: | 35.3 | 0.3 | 0.8 | 4.4 | 6.2 | 23.6 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 12 | 667.4 | 6.1 | 15.5 | 80.6 | 114.9 | 450.3 |
| Ramp segments, crashes: | 8 | 73.6 | 0.6 | 1.8 | 11.8 | 14.6 | 44.8 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 31.5 | 0.3 | 0.7 | 4.0 | 5.6 | 20.9 |
| | 2012 | 31.7 | 0.3 | 0.8 | 4.0 | 5.6 | 21.1 |
| | 2013 | 32.0 | 0.3 | 0.8 | 4.0 | 5.6 | 21.3 |
| | 2014 | 32.2 | 0.3 | 0.8 | 4.1 | 5.7 | 21.4 |
| | 2015 | 32.5 | 0.3 | 0.8 | 4.1 | 5.7 | 21.6 |
| | 2016 | 32.8 | 0.3 | 0.8 | 4.1 | 5.8 | 21.8 |
| | 2017 | 33.0 | 0.3 | 0.8 | 4.2 | 5.8 | 22.0 |
| | 2018 | 33.3 | 0.3 | 0.8 | 4.2 | 5.9 | 22.2 |
| | 2019 | 33.6 | 0.3 | 0.8 | 4.2 | 5.9 | 22.4 |
| | 2020 | 33.9 | 0.3 | 0.8 | 4.2 | 6.0 | 22.6 |
| | 2021 | 34.5 | 0.3 | 0.8 | 4.3 | 6.1 | 23.0 |
| | 2022 | 35.1 | 0.3 | 0.8 | 4.4 | 6.2 | 23.5 |
| | 2023 | 35.8 | 0.3 | 0.8 | 4.5 | 6.2 | 23.9 |
| | 2024 | 36.4 | 0.3 | 0.9 | 4.5 | 6.3 | 24.4 |
| | 2025 | 37.1 | 0.3 | 0.9 | 4.6 | 6.4 | 24.8 |
| | 2026 | 37.7 | 0.3 | 0.9 | 4.7 | 6.5 | 25.3 |
| | 2027 | 38.4 | 0.3 | 0.9 | 4.7 | 6.6 | 25.8 |
| | 2028 | 39.0 | 0.3 | 0.9 | 4.8 | 6.7 | 26.2 |
| | 2029 | 39.7 | 0.4 | 0.9 | 4.9 | 6.8 | 26.7 |
| | 2030 | 40.4 | 0.4 | 0.9 | 5.0 | 7.0 | 27.2 |
| | 2031 | 40.4 | 0.4 | 0.9 | 5.0 | 7.0 | 27.2 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

### Distribution of Crashes for Entire Facility

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 1.6 | 0.0 | 0.1 | 0.4 | 0.5 | 0.5 |
| | Right-angle crashes: | 7.5 | 0.1 | 0.2 | 1.3 | 1.8 | 4.0 |
| | Rear-end crashes: | 248.6 | 2.6 | 6.6 | 34.9 | 49.3 | 155.1 |
| | Sideswipe crashes: | 84.6 | 0.6 | 1.6 | 8.3 | 11.8 | 62.2 |
| | Other multiple-vehicle crashes: | 11.0 | 0.1 | 0.3 | 1.8 | 2.5 | 6.3 |
| | Total multiple-vehicle crashes: | 353.2 | 3.4 | 8.9 | 46.7 | 66.0 | 228.2 |
| Single vehicle | Crashes with animal: | 5.7 | 0.0 | 0.0 | 0.2 | 0.2 | 5.3 |
| | Crashes with fixed object: | 281.9 | 2.3 | 6.1 | 32.8 | 45.7 | 194.9 |
| | Crashes with other object: | 39.5 | 0.2 | 0.4 | 2.1 | 3.0 | 33.9 |
| | Crashes with parked vehicle: | 5.8 | 0.0 | 0.1 | 0.6 | 0.9 | 4.1 |
| | Other single-vehicle crashes | 55.0 | 0.7 | 1.8 | 9.9 | 13.7 | 28.8 |
| | Total single-vehicle crashes: | 387.8 | 3.3 | 8.5 | 45.6 | 63.6 | 266.9 |
| | Total crashes: | 741.0 | 6.7 | 17.4 | 92.3 | 129.5 | 495.1 |

## Evaluation Site Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Existing Interchange I57/I-74 - without EB method (predictive method only) | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | 4.332 | | |
| Last year of analysis: | 2031 | | | | |

### Site Description

#### Freeway Segments

| Number | Lanes | Study Period Length (mi) | Study Period Description |
|---|---|---|---|
| 1 | 4 | 0.321 | I-57 #1 |
| 2 | 4 | 0.220 | I-57 #2 |
| 3 | 4 | 0.106 | I-57 #3 |
| 4 | 4 | 0.203 | I-57 #4 |
| 5 | 4 | 0.517 | I-57 #5 |
| 6 | 4 | 0.227 | I-57 #6 |
| 7 | 4 | 0.858 | I-74 #1 |
| 8 | 4 | 0.240 | I-74 #2 |
| 9 | 4 | 0.096 | I-74 #3 |
| 10 | 4 | 0.201 | I-74 #4 |
| 11 | 4 | 1.077 | I-74 #5 |
| 12 | 4 | 0.267 | I-74 #6 |
| 13 | 0 | 0.000 | 0 |
| 14 | 0 | 0.000 | 0 |
| 15 | 0 | 0.000 | 0 |
| 16 | 0 | 0.000 | 0 |
| 17 | 0 | 0.000 | 0 |
| 18 | 0 | 0.000 | 0 |
| 19 | 0 | 0.000 | 0 |
| 20 | 0 | 0.000 | 0 |

#### Ramp Segments

| Number | Study Period Description | Number | Study Period Description |
|---|---|---|---|
| 1 | WB to SB #1 | 21 | 0 |
| 2 | NB to EB #1 | 22 | 0 |
| 3 | NB to WB #1 | 23 | 0 |
| 4 | EB to SB #1 | 24 | 0 |
| 5 | WB to NB #1 | 25 | 0 |
| 6 | SB to EB #1 | 26 | 0 |
| 7 | SB to WB #1 | 27 | 0 |
| 8 | EB to NB #1 | 28 | 0 |
| 9 | 0 | 29 | 0 |
| 10 | 0 | 30 | 0 |
| 11 | 0 | 31 | 0 |
| 12 | 0 | 32 | 0 |
| 13 | 0 | 33 | 0 |
| 14 | 0 | 34 | 0 |
| 15 | 0 | 35 | 0 |
| 16 | 0 | 36 | 0 |
| 17 | 0 | 37 | 0 |
| 18 | 0 | 38 | 0 |
| 19 | 0 | 39 | 0 |
| 20 | 0 | 40 | 0 |

#### Crossroad Ramp Terminals

| Number | Config. | Control | Study Period Description |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |

## Output Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Existing Interchange I57/I-74 - with EB Method | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

### Crash Data Description

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | Yes | First year of crash data: | 2008 |
| | Project-level crash data available? | Yes | Last year of crash data: | 2012 |
| Ramp segments | Segment crash data available? | Yes | First year of crash data: | 2008 |
| | Project-level crash data available? | No | Last year of crash data: | 2012 |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

### Estimated Crash Statistics

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 1194.2 | 8.2 | 21.2 | 112.3 | 156.4 | 896.1 |
| Estimated average crash freq. during Study Period, crashes/yr: | 56.9 | 0.4 | 1.0 | 5.3 | 7.4 | 42.7 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 12 | 1051.5 | 7.4 | 18.8 | 97.2 | 137.7 | 790.4 |
| Ramp segments, crashes: | 8 | 142.7 | 0.8 | 2.4 | 15.1 | 18.7 | 105.7 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 50.4 | 0.3 | 0.9 | 4.8 | 6.7 | 37.7 |
| | 2012 | 50.9 | 0.4 | 0.9 | 4.8 | 6.7 | 38.0 |
| | 2013 | 51.3 | 0.4 | 0.9 | 4.9 | 6.8 | 38.4 |
| | 2014 | 51.8 | 0.4 | 0.9 | 4.9 | 6.9 | 38.7 |
| | 2015 | 52.3 | 0.4 | 0.9 | 5.0 | 6.9 | 39.1 |
| | 2016 | 52.7 | 0.4 | 0.9 | 5.0 | 7.0 | 39.5 |
| | 2017 | 53.2 | 0.4 | 0.9 | 5.0 | 7.0 | 39.8 |
| | 2018 | 53.7 | 0.4 | 1.0 | 5.1 | 7.1 | 40.2 |
| | 2019 | 54.2 | 0.4 | 1.0 | 5.1 | 7.1 | 40.6 |
| | 2020 | 54.7 | 0.4 | 1.0 | 5.2 | 7.2 | 40.9 |
| | 2021 | 55.7 | 0.4 | 1.0 | 5.3 | 7.3 | 41.7 |
| | 2022 | 56.7 | 0.4 | 1.0 | 5.3 | 7.4 | 42.5 |
| | 2023 | 57.8 | 0.4 | 1.0 | 5.4 | 7.6 | 43.3 |
| | 2024 | 58.8 | 0.4 | 1.0 | 5.5 | 7.7 | 44.2 |
| | 2025 | 59.8 | 0.4 | 1.1 | 5.6 | 7.8 | 45.0 |
| | 2026 | 60.9 | 0.4 | 1.1 | 5.7 | 7.9 | 45.8 |
| | 2027 | 61.9 | 0.4 | 1.1 | 5.8 | 8.0 | 46.6 |
| | 2028 | 63.0 | 0.4 | 1.1 | 5.9 | 8.2 | 47.5 |
| | 2029 | 64.1 | 0.4 | 1.1 | 5.9 | 8.3 | 48.3 |
| | 2030 | 65.2 | 0.4 | 1.1 | 6.0 | 8.4 | 49.1 |
| | 2031 | 65.2 | 0.4 | 1.1 | 6.0 | 8.4 | 49.1 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

### Distribution of Crashes for Entire Facility

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 2.0 | 0.0 | 0.1 | 0.4 | 0.6 | 0.8 |
| | Right-angle crashes: | 11.1 | 0.1 | 0.3 | 1.6 | 2.2 | 6.9 |
| | Rear-end crashes: | 378.0 | 3.1 | 7.9 | 41.5 | 58.4 | 267.1 |
| | Sideswipe crashes: | 132.5 | 0.7 | 1.9 | 10.0 | 14.0 | 105.9 |
| | Other multiple-vehicle crashes: | 15.4 | 0.1 | 0.4 | 2.0 | 2.8 | 10.0 |
| | Total multiple-vehicle crashes: | 539.0 | 4.1 | 10.6 | 55.5 | 78.0 | 390.8 |
| Single vehicle | Crashes with animal: | 9.9 | 0.0 | 0.0 | 0.2 | 0.3 | 9.4 |
| | Crashes with fixed object: | 480.7 | 2.9 | 7.6 | 40.9 | 56.4 | 372.9 |
| | Crashes with other object: | 67.0 | 0.2 | 0.5 | 2.5 | 3.6 | 60.2 |
| | Crashes with parked vehicle: | 9.7 | 0.1 | 0.1 | 0.8 | 1.1 | 7.6 |
| | Other single-vehicle crashes | 87.8 | 0.9 | 2.3 | 12.4 | 17.0 | 55.3 |
| | Total single-vehicle crashes: | 655.2 | 4.0 | 10.6 | 56.8 | 78.4 | 505.4 |
| | Total crashes: | 1194.2 | 8.2 | 21.2 | 112.3 | 156.4 | 896.1 |

## Evaluation Site Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Existing Interchange I57/I-74 - with EB Method | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | | 4.332 | |
| Last year of analysis: | 2031 | | | | |

### Site Description

#### Freeway Segments

| Number | Lanes | Study Period Length (mi) | Crash Period Description | Study Period Description |
|---|---|---|---|---|
| 1 | 4 | 0.321 | I-57 #1 | 0 |
| 2 | 4 | 0.220 | I-57 #2 | 0 |
| 3 | 4 | 0.106 | I-57 #3 | 0 |
| 4 | 4 | 0.203 | I-57 #4 | 0 |
| 5 | 4 | 0.517 | I-57 #5 | 0 |
| 6 | 4 | 0.227 | I-57 #6 | 0 |
| 7 | 4 | 0.858 | I-74 #1 | 0 |
| 8 | 4 | 0.240 | I-74 #2 | 0 |
| 9 | 4 | 0.096 | I-74 #3 | 0 |
| 10 | 4 | 0.201 | I-74 #4 | 0 |
| 11 | 4 | 1.077 | I-74 #5 | 0 |
| 12 | 4 | 0.267 | I-74 #6 | 0 |
| 13 | 0 | 0.000 | 0 | 0 |
| 14 | 0 | 0.000 | 0 | 0 |
| 15 | 0 | 0.000 | 0 | 0 |
| 16 | 0 | 0.000 | 0 | 0 |
| 17 | 0 | 0.000 | 0 | 0 |
| 18 | 0 | 0.000 | 0 | 0 |
| 19 | 0 | 0.000 | 0 | 0 |
| 20 | 0 | 0.000 | 0 | 0 |

#### Ramp Segments

| Number | Crash Period Description | Study Period Description | Number | Crash Period Description | Study Period Description |
|---|---|---|---|---|---|
| 1 | WB to SB #1 | 0 | 21 | 0 | 0 |
| 2 | NB to EB #1 | 0 | 22 | 0 | 0 |
| 3 | NB to WB #1 | 0 | 23 | 0 | 0 |
| 4 | EB to SB #1 | 0 | 24 | 0 | 0 |
| 5 | WB to NB #1 | 0 | 25 | 0 | 0 |
| 6 | SB to EB #1 | 0 | 26 | 0 | 0 |
| 7 | SB to WB #1 | 0 | 27 | 0 | 0 |
| 8 | EB to NB #1 | 0 | 28 | 0 | 0 |
| 9 | 0 | 0 | 29 | 0 | 0 |
| 10 | 0 | 0 | 30 | 0 | 0 |
| 11 | 0 | 0 | 31 | 0 | 0 |
| 12 | 0 | 0 | 32 | 0 | 0 |
| 13 | 0 | 0 | 33 | 0 | 0 |
| 14 | 0 | 0 | 34 | 0 | 0 |
| 15 | 0 | 0 | 35 | 0 | 0 |
| 16 | 0 | 0 | 36 | 0 | 0 |
| 17 | 0 | 0 | 37 | 0 | 0 |
| 18 | 0 | 0 | 38 | 0 | 0 |
| 19 | 0 | 0 | 39 | 0 | 0 |
| 20 | 0 | 0 | 40 | 0 | 0 |

#### Crossroad Ramp Terminals

| Number | Config. | Control | Study Period Description | |
|---|---|---|---|---|
| 1 | 0 | 0 | 0 | |
| 2 | 0 | 0 | 0 | |
| 3 | 0 | 0 | 0 | |
| 4 | 0 | 0 | 0 | |
| 5 | 0 | 0 | 0 | |
| 6 | 0 | 0 | 0 | |

## Output Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 1 (E1b) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

### Crash Data Description

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

### Estimated Crash Statistics

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 801.5 | 6.3 | 16.9 | 92.5 | 144.5 | 541.4 |
| Estimated average crash freq. during Study Period, crashes/yr: | 38.2 | 0.3 | 0.8 | 4.4 | 6.9 | 25.8 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 8 | 685.0 | 5.3 | 14.0 | 73.9 | 118.3 | 473.4 |
| Ramp segments, crashes: | 16 | 116.5 | 0.9 | 2.9 | 18.5 | 26.2 | 67.9 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 31.8 | 0.3 | 0.7 | 3.7 | 5.8 | 21.3 |
| | 2012 | 32.4 | 0.3 | 0.7 | 3.8 | 5.9 | 21.7 |
| | 2013 | 33.0 | 0.3 | 0.7 | 3.9 | 6.0 | 22.1 |
| | 2014 | 33.6 | 0.3 | 0.7 | 3.9 | 6.1 | 22.6 |
| | 2015 | 34.2 | 0.3 | 0.7 | 4.0 | 6.2 | 23.0 |
| | 2016 | 34.8 | 0.3 | 0.7 | 4.1 | 6.3 | 23.4 |
| | 2017 | 35.5 | 0.3 | 0.8 | 4.1 | 6.4 | 23.9 |
| | 2018 | 36.1 | 0.3 | 0.8 | 4.2 | 6.5 | 24.3 |
| | 2019 | 36.7 | 0.3 | 0.8 | 4.3 | 6.6 | 24.7 |
| | 2020 | 37.3 | 0.3 | 0.8 | 4.3 | 6.8 | 25.2 |
| | 2021 | 38.0 | 0.3 | 0.8 | 4.4 | 6.9 | 25.7 |
| | 2022 | 38.7 | 0.3 | 0.8 | 4.5 | 7.0 | 26.2 |
| | 2023 | 39.4 | 0.3 | 0.8 | 4.5 | 7.1 | 26.7 |
| | 2024 | 40.1 | 0.3 | 0.8 | 4.6 | 7.2 | 27.1 |
| | 2025 | 40.8 | 0.3 | 0.9 | 4.7 | 7.3 | 27.6 |
| | 2026 | 41.5 | 0.3 | 0.9 | 4.7 | 7.4 | 28.1 |
| | 2027 | 42.2 | 0.3 | 0.9 | 4.8 | 7.5 | 28.7 |
| | 2028 | 42.9 | 0.3 | 0.9 | 4.9 | 7.6 | 29.2 |
| | 2029 | 43.6 | 0.3 | 0.9 | 5.0 | 7.8 | 29.7 |
| | 2030 | 44.4 | 0.3 | 0.9 | 5.0 | 7.9 | 30.2 |
| | 2031 | 44.4 | 0.3 | 0.9 | 5.0 | 7.9 | 30.2 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

### Distribution of Crashes for Entire Facility

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 1.9 | 0.0 | 0.1 | 0.4 | 0.7 | 0.7 |
| | Right-angle crashes: | 7.0 | 0.1 | 0.2 | 1.2 | 1.9 | 3.5 |
| | Rear-end crashes: | 245.4 | 2.4 | 6.4 | 34.8 | 54.5 | 147.3 |
| | Sideswipe crashes: | 84.4 | 0.6 | 1.5 | 8.0 | 12.7 | 61.6 |
| | Other multiple-vehicle crashes: | 14.7 | 0.1 | 0.4 | 2.4 | 3.6 | 8.1 |
| | Total multiple-vehicle crashes: | 353.3 | 3.2 | 8.6 | 46.9 | 73.4 | 221.2 |
| Single vehicle | Crashes with animal: | 7.0 | 0.0 | 0.0 | 0.2 | 0.3 | 6.5 |
| | Crashes with fixed object: | 325.1 | 2.2 | 6.0 | 32.8 | 51.2 | 232.9 |
| | Crashes with other object: | 46.9 | 0.1 | 0.4 | 2.0 | 3.2 | 41.2 |
| | Crashes with parked vehicle: | 6.8 | 0.0 | 0.1 | 0.6 | 1.0 | 4.9 |
| | Other single-vehicle crashes | 62.4 | 0.7 | 1.8 | 9.9 | 15.4 | 34.7 |
| | Total single-vehicle crashes: | 448.2 | 3.1 | 8.3 | 45.5 | 71.1 | 320.2 |
| | Total crashes: | 801.5 | 6.3 | 16.9 | 92.5 | 144.5 | 541.4 |

## Evaluation Site Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 1 (E1b) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | | 4.332 | |
| Last year of analysis: | 2031 | | | | |

### Site Description

#### Freeway Segments

| Number | Lanes | Study Period Length (mi) | Study Period Description |
|---|---|---|---|
| 1 | 6 | 0.122 | I-57 #1 |
| 2 | 6 | 0.989 | I-57 #2 |
| 3 | 6 | 0.259 | I-57 #3 |
| 4 | 6 | 0.223 | I-57 #4 |
| 5 | 6 | 0.610 | I-74 #1 |
| 6 | 6 | 0.952 | I-74 #2 |
| 7 | 6 | 0.928 | I-74 #3 |
| 8 | 4 | 0.249 | I-74 #4 |
| 9 | 0 | 0.000 | 0 |
| 10 | 0 | 0.000 | 0 |
| 11 | 0 | 0.000 | 0 |
| 12 | 0 | 0.000 | 0 |
| 13 | 0 | 0.000 | 0 |
| 14 | 0 | 0.000 | 0 |
| 15 | 0 | 0.000 | 0 |
| 16 | 0 | 0.000 | 0 |
| 17 | 0 | 0.000 | 0 |
| 18 | 0 | 0.000 | 0 |
| 19 | 0 | 0.000 | 0 |
| 20 | 0 | 0.000 | 0 |

#### Ramp Segments

| Number | Study Period Description | Number | Study Period Description |
|---|---|---|---|
| 1 | WB to SB #1 | 21 | 0 |
| 2 | WB to SB #2 | 22 | 0 |
| 3 | WB to SB #3 | 23 | 0 |
| 4 | NB to EB #1 | 24 | 0 |
| 5 | NB to EB #2 | 25 | 0 |
| 6 | NB to EB #3 | 26 | 0 |
| 7 | NB to WB #1 | 27 | 0 |
| 8 | NB to WB #2 | 28 | 0 |
| 9 | EB to SB #1 | 29 | 0 |
| 10 | EB to SB #2 | 30 | 0 |
| 11 | WB to NB #1 | 31 | 0 |
| 12 | Wb to NB #2 | 32 | 0 |
| 13 | SB to EB #1 | 33 | 0 |
| 14 | SB to EB #2 | 34 | 0 |
| 15 | SB to WB #1 | 35 | 0 |
| 16 | EB to NB #1 | 36 | 0 |
| 17 | 0 | 37 | 0 |
| 18 | 0 | 38 | 0 |
| 19 | 0 | 39 | 0 |
| 20 | 0 | 40 | 0 |

#### Crossroad Ramp Terminals

| Number | Config. | Control | Study Period Description |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |

## Output Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 2 (B3) - Interchange I57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

### Crash Data Description

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

### Estimated Crash Statistics

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 789.5 | 6.1 | 16.5 | 90.9 | 143.0 | 532.9 |
| Estimated average crash freq. during Study Period, crashes/yr: | 37.6 | 0.3 | 0.8 | 4.3 | 6.8 | 25.4 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 12 | 676.1 | 5.2 | 13.8 | 73.2 | 116.9 | 467.0 |
| Ramp segments, crashes: | 12 | 113.4 | 0.9 | 2.7 | 17.8 | 26.1 | 65.9 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 31.3 | 0.2 | 0.7 | 3.7 | 5.8 | 20.9 |
| | 2012 | 31.9 | 0.3 | 0.7 | 3.7 | 5.9 | 21.4 |
| | 2013 | 32.5 | 0.3 | 0.7 | 3.8 | 6.0 | 21.8 |
| | 2014 | 33.1 | 0.3 | 0.7 | 3.9 | 6.1 | 22.2 |
| | 2015 | 33.7 | 0.3 | 0.7 | 3.9 | 6.2 | 22.6 |
| | 2016 | 34.3 | 0.3 | 0.7 | 4.0 | 6.3 | 23.1 |
| | 2017 | 34.9 | 0.3 | 0.7 | 4.1 | 6.4 | 23.5 |
| | 2018 | 35.5 | 0.3 | 0.7 | 4.1 | 6.5 | 23.9 |
| | 2019 | 36.2 | 0.3 | 0.8 | 4.2 | 6.6 | 24.4 |
| | 2020 | 36.8 | 0.3 | 0.8 | 4.2 | 6.7 | 24.8 |
| | 2021 | 37.5 | 0.3 | 0.8 | 4.3 | 6.8 | 25.3 |
| | 2022 | 38.1 | 0.3 | 0.8 | 4.4 | 6.9 | 25.8 |
| | 2023 | 38.8 | 0.3 | 0.8 | 4.5 | 7.0 | 26.2 |
| | 2024 | 39.5 | 0.3 | 0.8 | 4.5 | 7.1 | 26.7 |
| | 2025 | 40.2 | 0.3 | 0.8 | 4.6 | 7.2 | 27.2 |
| | 2026 | 40.9 | 0.3 | 0.8 | 4.7 | 7.3 | 27.7 |
| | 2027 | 41.6 | 0.3 | 0.9 | 4.7 | 7.5 | 28.2 |
| | 2028 | 42.3 | 0.3 | 0.9 | 4.8 | 7.6 | 28.7 |
| | 2029 | 43.0 | 0.3 | 0.9 | 4.9 | 7.7 | 29.2 |
| | 2030 | 43.7 | 0.3 | 0.9 | 5.0 | 7.8 | 29.7 |
| | 2031 | 43.7 | 0.3 | 0.9 | 5.0 | 7.8 | 29.7 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

### Distribution of Crashes for Entire Facility

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 1.8 | 0.0 | 0.1 | 0.4 | 0.6 | 0.7 |
| | Right-angle crashes: | 7.3 | 0.1 | 0.2 | 1.2 | 2.0 | 3.8 |
| | Rear-end crashes: | 252.4 | 2.4 | 6.4 | 34.8 | 54.9 | 153.8 |
| | Sideswipe crashes: | 87.1 | 0.6 | 1.5 | 8.1 | 12.9 | 64.1 |
| | Other multiple-vehicle crashes: | 13.9 | 0.1 | 0.4 | 2.2 | 3.4 | 7.7 |
| | Total multiple-vehicle crashes: | 362.5 | 3.2 | 8.5 | 46.9 | 73.9 | 230.1 |
| Single vehicle | Crashes with animal: | 6.4 | 0.0 | 0.0 | 0.2 | 0.2 | 6.0 |
| | Crashes with fixed object: | 310.3 | 2.1 | 5.7 | 31.7 | 49.7 | 220.9 |
| | Crashes with other object: | 44.0 | 0.1 | 0.4 | 1.9 | 3.1 | 38.5 |
| | Crashes with parked vehicle: | 6.4 | 0.0 | 0.1 | 0.6 | 1.0 | 4.6 |
| | Other single-vehicle crashes | 59.9 | 0.6 | 1.7 | 9.6 | 15.1 | 32.8 |
| | Total single-vehicle crashes: | 427.0 | 3.0 | 8.0 | 44.1 | 69.1 | 302.9 |
| | Total crashes: | 789.5 | 6.1 | 16.5 | 90.9 | 143.0 | 532.9 |

## Evaluation Site Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 2 (B3) - Interchange I57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | | 4.332 | |
| Last year of analysis: | 2031 | | | | |

### Site Description

#### Freeway Segments

| Number | Lanes | Study Period Length (mi) | Study Period Description |
|---|---|---|---|
| 1 | 6 | 0.291 | I-57 #1 |
| 2 | 6 | 0.300 | I-57 #2 |
| 3 | 6 | 0.289 | I-57 #3 |
| 4 | 6 | 0.231 | I-57 #4 |
| 5 | 6 | 0.259 | I-57 #5 |
| 6 | 6 | 0.223 | I-57 #6 |
| 7 | 6 | 0.618 | I-74 #1 |
| 8 | 6 | 0.230 | I-74 #2 |
| 9 | 6 | 0.252 | I-74 #3 |
| 10 | 6 | 0.299 | I-74 #4 |
| 11 | 6 | 1.092 | I-74 #5 |
| 12 | 4 | 0.249 | I-74 #6 |
| 13 | 0 | 0.000 | 0 |
| 14 | 0 | 0.000 | 0 |
| 15 | 0 | 0.000 | 0 |
| 16 | 0 | 0.000 | 0 |
| 17 | 0 | 0.000 | 0 |
| 18 | 0 | 0.000 | 0 |
| 19 | 0 | 0.000 | 0 |
| 20 | 0 | 0.000 | 0 |

#### Ramp Segments

| Number | Study Period Description | Number | Study Period Description |
|---|---|---|---|
| 1 | WB to SB #1 | 21 | 0 |
| 2 | WB to SB #2 | 22 | 0 |
| 3 | WB to SB#3 | 23 | 0 |
| 4 | NB to EB #1 | 24 | 0 |
| 5 | NB to WB #1 | 25 | 0 |
| 6 | EB to SB #1 | 26 | 0 |
| 7 | EB to SB #2 | 27 | 0 |
| 8 | WB to NB #1 | 28 | 0 |
| 9 | WB to NB #2 | 29 | 0 |
| 10 | SB to EB #1 | 30 | 0 |
| 11 | SB to WB #1 | 31 | 0 |
| 12 | EB to NB #1 | 32 | 0 |
| 13 | 0 | 33 | 0 |
| 14 | 0 | 34 | 0 |
| 15 | 0 | 35 | 0 |
| 16 | 0 | 36 | 0 |
| 17 | 0 | 37 | 0 |
| 18 | 0 | 38 | 0 |
| 19 | 0 | 39 | 0 |
| 20 | 0 | 40 | 0 |

#### Crossroad Ramp Terminals

| Number | Config. | Control | Study Period Description |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |

## Output Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 3 (B2) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

### Crash Data Description

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

### Estimated Crash Statistics

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 813.4 | 6.4 | 17.2 | 95.5 | 149.8 | 544.6 |
| Estimated average crash freq. during Study Period, crashes/yr: | 38.7 | 0.3 | 0.8 | 4.5 | 7.1 | 25.9 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 12 | 681.4 | 5.3 | 14.0 | 74.6 | 119.9 | 467.6 |
| Ramp segments, crashes: | 12 | 132.0 | 1.1 | 3.2 | 20.9 | 29.9 | 77.0 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 32.3 | 0.3 | 0.7 | 3.9 | 6.1 | 21.4 |
| | 2012 | 32.9 | 0.3 | 0.7 | 3.9 | 6.2 | 21.8 |
| | 2013 | 33.5 | 0.3 | 0.7 | 4.0 | 6.3 | 22.3 |
| | 2014 | 34.1 | 0.3 | 0.7 | 4.1 | 6.4 | 22.7 |
| | 2015 | 34.7 | 0.3 | 0.7 | 4.1 | 6.5 | 23.1 |
| | 2016 | 35.4 | 0.3 | 0.8 | 4.2 | 6.6 | 23.6 |
| | 2017 | 36.0 | 0.3 | 0.8 | 4.3 | 6.7 | 24.0 |
| | 2018 | 36.6 | 0.3 | 0.8 | 4.3 | 6.8 | 24.4 |
| | 2019 | 37.3 | 0.3 | 0.8 | 4.4 | 6.9 | 24.9 |
| | 2020 | 37.9 | 0.3 | 0.8 | 4.5 | 7.0 | 25.3 |
| | 2021 | 38.6 | 0.3 | 0.8 | 4.5 | 7.1 | 25.8 |
| | 2022 | 39.3 | 0.3 | 0.8 | 4.6 | 7.2 | 26.3 |
| | 2023 | 40.0 | 0.3 | 0.8 | 4.7 | 7.3 | 26.8 |
| | 2024 | 40.7 | 0.3 | 0.9 | 4.8 | 7.5 | 27.3 |
| | 2025 | 41.4 | 0.3 | 0.9 | 4.8 | 7.6 | 27.8 |
| | 2026 | 42.1 | 0.3 | 0.9 | 4.9 | 7.7 | 28.3 |
| | 2027 | 42.8 | 0.3 | 0.9 | 5.0 | 7.8 | 28.8 |
| | 2028 | 43.6 | 0.3 | 0.9 | 5.1 | 7.9 | 29.3 |
| | 2029 | 44.3 | 0.3 | 0.9 | 5.1 | 8.0 | 29.8 |
| | 2030 | 45.0 | 0.3 | 0.9 | 5.2 | 8.2 | 30.4 |
| | 2031 | 45.0 | 0.3 | 0.9 | 5.2 | 8.2 | 30.4 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

### Distribution of Crashes for Entire Facility

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 1.9 | 0.0 | 0.1 | 0.4 | 0.7 | 0.7 |
| | Right-angle crashes: | 7.3 | 0.1 | 0.2 | 1.2 | 2.0 | 3.8 |
| | Rear-end crashes: | 258.9 | 2.4 | 6.5 | 35.8 | 56.5 | 157.6 |
| | Sideswipe crashes: | 89.9 | 0.6 | 1.5 | 8.3 | 13.2 | 66.3 |
| | Other multiple-vehicle crashes: | 15.1 | 0.1 | 0.4 | 2.5 | 3.7 | 8.4 |
| | Total multiple-vehicle crashes: | 373.1 | 3.2 | 8.7 | 48.3 | 76.1 | 236.8 |
| Single vehicle | Crashes with animal: | 6.5 | 0.0 | 0.0 | 0.2 | 0.3 | 6.0 |
| | Crashes with fixed object: | 320.4 | 2.2 | 6.1 | 34.0 | 53.0 | 225.1 |
| | Crashes with other object: | 44.5 | 0.1 | 0.4 | 2.0 | 3.2 | 38.7 |
| | Crashes with parked vehicle: | 6.5 | 0.0 | 0.1 | 0.7 | 1.0 | 4.7 |
| | Other single-vehicle crashes | 62.4 | 0.7 | 1.8 | 10.4 | 16.1 | 33.4 |
| | Total single-vehicle crashes: | 440.3 | 3.1 | 8.5 | 47.2 | 73.7 | 307.9 |
| | Total crashes: | 813.4 | 6.4 | 17.2 | 95.5 | 149.8 | 544.6 |

## Evaluation Site Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 3 (B2) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | | 4.332 | |
| Last year of analysis: | 2031 | | | | |

### Site Description

#### Freeway Segments

| Number | Lanes | Study Period Length (mi) | Study Period Description |
|---|---|---|---|
| 1 | 6 | 0.291 | I-57 #1 |
| 2 | 6 | 0.300 | I-57 #2 |
| 3 | 6 | 0.367 | I-57 #3 |
| 4 | 6 | 0.179 | I-57 #4 |
| 5 | 6 | 0.233 | I-57 #5 |
| 6 | 6 | 0.223 | I-57 #6 |
| 7 | 6 | 0.552 | I-74 #1 |
| 8 | 6 | 0.290 | I-74 #2 |
| 9 | 6 | 0.257 | I-74 #3 |
| 10 | 6 | 0.299 | I-74 #4 |
| 11 | 6 | 1.092 | I-74 #5 |
| 12 | 4 | 0.248 | I-74 #6 |
| 13 | 0 | 0.000 | 0 |
| 14 | 0 | 0.000 | 0 |
| 15 | 0 | 0.000 | 0 |
| 16 | 0 | 0.000 | 0 |
| 17 | 0 | 0.000 | 0 |
| 18 | 0 | 0.000 | 0 |
| 19 | 0 | 0.000 | 0 |
| 20 | 0 | 0.000 | 0 |

#### Ramp Segments

| Number | Study Period Description | Number | Study Period Description |
|---|---|---|---|
| 1 | WB to SB #1 | 21 | 0 |
| 2 | WB to SB #2 | 22 | 0 |
| 3 | WB to SB #3 | 23 | 0 |
| 4 | NB to EB #1 | 24 | 0 |
| 5 | NB to WB #1 | 25 | 0 |
| 6 | EB to SB #1 | 26 | 0 |
| 7 | EB to SB #2 | 27 | 0 |
| 8 | WB to NB #1 | 28 | 0 |
| 9 | WB to NB #2 | 29 | 0 |
| 10 | SB to EB #1 | 30 | 0 |
| 11 | SB to WB #1 | 31 | 0 |
| 12 | EB to NB #1 | 32 | 0 |
| 13 | 0 | 33 | 0 |
| 14 | 0 | 34 | 0 |
| 15 | 0 | 35 | 0 |
| 16 | 0 | 36 | 0 |
| 17 | 0 | 37 | 0 |
| 18 | 0 | 38 | 0 |
| 19 | 0 | 39 | 0 |
| 20 | 0 | 40 | 0 |

#### Crossroad Ramp Terminals

| Number | Config. | Control | Study Period Description |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |

## Output Summary

**General Information**

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 4 (E2) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

**Crash Data Description**

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

**Estimated Crash Statistics**

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 839.5 | 6.5 | 17.7 | 98.5 | 154.3 | 562.6 |
| Estimated average crash freq. during Study Period, crashes/yr: | 40.0 | 0.3 | 0.8 | 4.7 | 7.3 | 26.8 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 7 | 673.3 | 5.2 | 13.6 | 72.2 | 116.6 | 465.7 |
| Ramp segments, crashes: | 16 | 166.2 | 1.3 | 4.1 | 26.3 | 37.6 | 96.8 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 33.4 | 0.3 | 0.7 | 4.0 | 6.3 | 22.1 |
| | 2012 | 34.0 | 0.3 | 0.7 | 4.1 | 6.4 | 22.6 |
| | 2013 | 34.6 | 0.3 | 0.7 | 4.1 | 6.5 | 23.0 |
| | 2014 | 35.3 | 0.3 | 0.8 | 4.2 | 6.6 | 23.5 |
| | 2015 | 35.9 | 0.3 | 0.8 | 4.3 | 6.7 | 23.9 |
| | 2016 | 36.5 | 0.3 | 0.8 | 4.3 | 6.8 | 24.4 |
| | 2017 | 37.2 | 0.3 | 0.8 | 4.4 | 6.9 | 24.8 |
| | 2018 | 37.8 | 0.3 | 0.8 | 4.5 | 7.0 | 25.3 |
| | 2019 | 38.5 | 0.3 | 0.8 | 4.5 | 7.1 | 25.7 |
| | 2020 | 39.1 | 0.3 | 0.8 | 4.6 | 7.2 | 26.2 |
| | 2021 | 39.8 | 0.3 | 0.8 | 4.7 | 7.3 | 26.7 |
| | 2022 | 40.5 | 0.3 | 0.9 | 4.8 | 7.4 | 27.2 |
| | 2023 | 41.3 | 0.3 | 0.9 | 4.8 | 7.6 | 27.7 |
| | 2024 | 42.0 | 0.3 | 0.9 | 4.9 | 7.7 | 28.2 |
| | 2025 | 42.7 | 0.3 | 0.9 | 5.0 | 7.8 | 28.7 |
| | 2026 | 43.4 | 0.3 | 0.9 | 5.1 | 7.9 | 29.2 |
| | 2027 | 44.2 | 0.3 | 0.9 | 5.1 | 8.0 | 29.7 |
| | 2028 | 44.9 | 0.3 | 0.9 | 5.2 | 8.2 | 30.3 |
| | 2029 | 45.6 | 0.3 | 0.9 | 5.3 | 8.3 | 30.8 |
| | 2030 | 46.4 | 0.4 | 1.0 | 5.4 | 8.4 | 31.3 |
| | 2031 | 46.4 | 0.4 | 1.0 | 5.4 | 8.4 | 31.3 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

**Distribution of Crashes for Entire Facility**

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 2.1 | 0.0 | 0.1 | 0.5 | 0.7 | 0.8 |
| | Right-angle crashes: | 7.0 | 0.1 | 0.2 | 1.2 | 2.0 | 3.5 |
| | Rear-end crashes: | 253.4 | 2.4 | 6.6 | 36.4 | 57.1 | 150.9 |
| | Sideswipe crashes: | 88.6 | 0.6 | 1.5 | 8.3 | 13.1 | 65.2 |
| | Other multiple-vehicle crashes: | 17.1 | 0.2 | 0.5 | 2.8 | 4.3 | 9.4 |
| | Total multiple-vehicle crashes: | 368.2 | 3.3 | 8.9 | 49.3 | 77.1 | 229.7 |
| Single vehicle | Crashes with animal: | 7.0 | 0.0 | 0.0 | 0.2 | 0.3 | 6.5 |
| | Crashes with fixed object: | 343.4 | 2.3 | 6.3 | 35.5 | 55.6 | 243.7 |
| | Crashes with other object: | 47.1 | 0.1 | 0.4 | 2.0 | 3.3 | 41.3 |
| | Crashes with parked vehicle: | 7.1 | 0.0 | 0.1 | 0.7 | 1.1 | 5.1 |
| | Other single-vehicle crashes | 66.8 | 0.7 | 1.9 | 10.9 | 17.0 | 36.3 |
| | Total single-vehicle crashes: | 471.3 | 3.2 | 8.8 | 49.3 | 77.2 | 332.9 |
| Total crashes: | | 839.5 | 6.5 | 17.7 | 98.5 | 154.3 | 562.6 |

## Evaluation Site Summary

**General Information**

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 4 (E2) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | 4.332 | | |
| Last year of analysis: | 2031 | | | | |

**Site Description**

**Freeway Segments**

| Number | Lanes | Study Period Length (mi) | Study Period Description |
|---|---|---|---|
| 1 | 6 | 1.105 | I-57 #1 |
| 2 | 6 | 0.265 | I-57 #2 |
| 3 | 6 | 0.223 | I-57 #3 |
| 4 | 6 | 0.530 | I-74 #1 |
| 5 | 6 | 1.047 | I-74 #2 |
| 6 | 6 | 0.914 | I-74 #3 |
| 7 | 4 | 0.249 | I-74 #4 |
| 8 | 0 | 0.000 | 0 |
| 9 | 0 | 0.000 | 0 |
| 10 | 0 | 0.000 | 0 |
| 11 | 0 | 0.000 | 0 |
| 12 | 0 | 0.000 | 0 |
| 13 | 0 | 0.000 | 0 |
| 14 | 0 | 0.000 | 0 |
| 15 | 0 | 0.000 | 0 |
| 16 | 0 | 0.000 | 0 |
| 17 | 0 | 0.000 | 0 |
| 18 | 0 | 0.000 | 0 |
| 19 | 0 | 0.000 | 0 |
| 20 | 0 | 0.000 | 0 |

**Ramp Segments**

| Number | Study Period Description | Number | Study Period Description |
|---|---|---|---|
| 1 | WB to SB #1 | 21 | 0 |
| 2 | WB to SB #2 | 22 | 0 |
| 3 | WB to SB #3 | 23 | 0 |
| 4 | NB to EB #1 | 24 | 0 |
| 5 | NB to EB #2 | 25 | 0 |
| 6 | NB to EB #3 | 26 | 0 |
| 7 | NB to WB #1 | 27 | 0 |
| 8 | NB to WB #2 | 28 | 0 |
| 9 | EB to SB #1 | 29 | 0 |
| 10 | EB to SB #2 | 30 | 0 |
| 11 | WB to NB #1 | 31 | 0 |
| 12 | WB to NB #2 | 32 | 0 |
| 13 | SB to EB #1 | 33 | 0 |
| 14 | SB to EB #2 | 34 | 0 |
| 15 | SB to WB #1 | 35 | 0 |
| 16 | EB to NB #1 | 36 | 0 |
| 17 | 0 | 37 | 0 |
| 18 | 0 | 38 | 0 |
| 19 | 0 | 39 | 0 |
| 20 | 0 | 40 | 0 |

**Crossroad Ramp Terminals**

| Number | Config. | Control | Study Period Description |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |

## Output Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 5 (F1) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | | | | |
| Last year of analysis: | 2031 | | | | |

### Crash Data Description

| | | | | |
|---|---|---|---|---|
| Freeway segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp segments | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |
| Ramp terminals | Segment crash data available? | No | First year of crash data: | |
| | Project-level crash data available? | No | Last year of crash data: | |

### Estimated Crash Statistics

| Crashes for Entire Facility | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|
| Estimated number of crashes during Study Period, crashes: | 824.1 | 6.4 | 17.3 | 95.5 | 148.3 | 556.5 |
| Estimated average crash freq. during Study Period, crashes/yr: | 39.2 | 0.3 | 0.8 | 4.5 | 7.1 | 26.5 |

| Crashes by Facility Component | Nbr. Sites | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Freeway segments, crashes: | 7 | 699.3 | 5.4 | 14.2 | 75.3 | 120.4 | 483.9 |
| Ramp segments, crashes: | 16 | 124.9 | 1.0 | 3.1 | 20.2 | 27.9 | 72.6 |
| Crossroad ramp terminals, crashes: | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| Crashes for Entire Facility by Year | Year | Total | K | A | B | C | PDO |
|---|---|---|---|---|---|---|---|
| Estimated number of crashes during the Study Period, crashes: | 2011 | 32.7 | 0.3 | 0.7 | 3.9 | 6.0 | 21.9 |
| | 2012 | 33.4 | 0.3 | 0.7 | 3.9 | 6.1 | 22.3 |
| | 2013 | 34.0 | 0.3 | 0.7 | 4.0 | 6.2 | 22.8 |
| | 2014 | 34.6 | 0.3 | 0.7 | 4.1 | 6.3 | 23.2 |
| | 2015 | 35.2 | 0.3 | 0.8 | 4.1 | 6.4 | 23.7 |
| | 2016 | 35.9 | 0.3 | 0.8 | 4.2 | 6.5 | 24.1 |
| | 2017 | 36.5 | 0.3 | 0.8 | 4.3 | 6.6 | 24.6 |
| | 2018 | 37.2 | 0.3 | 0.8 | 4.3 | 6.7 | 25.0 |
| | 2019 | 37.8 | 0.3 | 0.8 | 4.4 | 6.8 | 25.5 |
| | 2020 | 38.5 | 0.3 | 0.8 | 4.5 | 6.9 | 25.9 |
| | 2021 | 39.1 | 0.3 | 0.8 | 4.5 | 7.1 | 26.4 |
| | 2022 | 39.8 | 0.3 | 0.8 | 4.6 | 7.2 | 26.9 |
| | 2023 | 40.5 | 0.3 | 0.9 | 4.7 | 7.3 | 27.4 |
| | 2024 | 41.2 | 0.3 | 0.9 | 4.8 | 7.4 | 27.9 |
| | 2025 | 41.9 | 0.3 | 0.9 | 4.8 | 7.5 | 28.4 |
| | 2026 | 42.6 | 0.3 | 0.9 | 4.9 | 7.6 | 28.9 |
| | 2027 | 43.3 | 0.3 | 0.9 | 5.0 | 7.7 | 29.4 |
| | 2028 | 44.1 | 0.3 | 0.9 | 5.0 | 7.8 | 29.9 |
| | 2029 | 44.8 | 0.3 | 0.9 | 5.1 | 7.9 | 30.4 |
| | 2030 | 45.5 | 0.4 | 0.9 | 5.2 | 8.1 | 31.0 |
| | 2031 | 45.5 | 0.4 | 0.9 | 5.2 | 8.1 | 31.0 |
| | 2032 | | | | | | |
| | 2033 | | | | | | |
| | 2034 | | | | | | |

### Distribution of Crashes for Entire Facility

| Crash Type | Crash Type Category | Estimated Number of Crashes During the Study Period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Total | K | A | B | C | PDO |
| Multiple vehicle | Head-on crashes: | 2.0 | 0.0 | 0.1 | 0.5 | 0.7 | 0.7 |
| | Right-angle crashes: | 7.3 | 0.1 | 0.2 | 1.3 | 2.0 | 3.7 |
| | Rear-end crashes: | 256.8 | 2.5 | 6.7 | 36.7 | 57.1 | 153.9 |
| | Sideswipe crashes: | 88.2 | 0.6 | 1.6 | 8.5 | 13.2 | 64.4 |
| | Other multiple-vehicle crashes: | 15.5 | 0.2 | 0.4 | 2.6 | 3.8 | 8.5 |
| | Total multiple-vehicle crashes: | 369.8 | 3.3 | 9.0 | 49.4 | 76.9 | 231.2 |
| Single vehicle | Crashes with animal: | 7.0 | 0.0 | 0.0 | 0.2 | 0.3 | 6.6 |
| | Crashes with fixed object: | 329.8 | 2.2 | 6.0 | 33.2 | 51.5 | 236.9 |
| | Crashes with other object: | 47.3 | 0.1 | 0.4 | 2.0 | 3.2 | 41.6 |
| | Crashes with parked vehicle: | 6.9 | 0.0 | 0.1 | 0.7 | 1.0 | 5.0 |
| | Other single-vehicle crashes | 63.3 | 0.7 | 1.8 | 10.1 | 15.5 | 35.3 |
| | Total single-vehicle crashes: | 454.3 | 3.1 | 8.3 | 46.1 | 71.4 | 325.3 |
| | Total crashes: | 824.1 | 6.4 | 17.3 | 95.5 | 148.3 | 556.5 |

## Evaluation Site Summary

### General Information

| | | | | | |
|---|---|---|---|---|---|
| Project description: | Alternative 5 (F1) - Interchange I-57/I-74 | | | | |
| Analyst: | LMS | Date: | 6/19/2014 | Area type: | Urban |
| First year of analysis: | 2011 | Total length of freeway segments for Study Period (mi): | | 4.332 | |
| Last year of analysis: | 2031 | | | | |

### Site Description

#### Freeway Segments

| Number | Lanes | Study Period Length (mi) | Study Period Description |
|---|---|---|---|
| 1 | 6 | 1.139 | I-57 #1 |
| 2 | 6 | 0.231 | I-57 #2 |
| 3 | 6 | 0.223 | I-57 #3 |
| 4 | 6 | 0.553 | #REF! |
| 5 | 6 | 1.187 | I-74 #1 |
| 6 | 6 | 0.751 | I-74 #2 |
| 7 | 4 | 0.249 | I-74 #3 |
| 8 | 0 | 0.000 | I-74 #4 |
| 9 | 0 | 0.000 | 0 |
| 10 | 0 | 0.000 | 0 |
| 11 | 0 | 0.000 | 0 |
| 12 | 0 | 0.000 | 0 |
| 13 | 0 | 0.000 | 0 |
| 14 | 0 | 0.000 | 0 |
| 15 | 0 | 0.000 | 0 |
| 16 | 0 | 0.000 | 0 |
| 17 | 0 | 0.000 | 0 |
| 18 | 0 | 0.000 | 0 |
| 19 | 0 | 0.000 | 0 |
| 20 | 0 | 0.000 | 0 |

#### Ramp Segments

| Number | Study Period Description | | Number | Study Period Description |
|---|---|---|---|---|
| 1 | WB to SB #1 | | 21 | 0 |
| 2 | WB to SB#2 | | 22 | 0 |
| 3 | WB to SB #3 | | 23 | 0 |
| 4 | NB to EB #1 | | 24 | 0 |
| 5 | NB to EB #2 | | 25 | 0 |
| 6 | Nb to EB #3 | | 26 | 0 |
| 7 | NB to WB #1 | | 27 | 0 |
| 8 | NB to WB #2 | | 28 | 0 |
| 9 | EB to SB #1 | | 29 | 0 |
| 10 | EB to SB #2 | | 30 | 0 |
| 11 | WB to NB #1 | | 31 | 0 |
| 12 | WB to NB #2 | | 32 | 0 |
| 13 | SB to EB #1 | | 33 | 0 |
| 14 | SB to EB #2 | | 34 | 0 |
| 15 | SB to WB #1 | | 35 | 0 |
| 16 | EB to NB #1 | | 36 | 0 |
| 17 | 0 | | 37 | 0 |
| 18 | 0 | | 38 | 0 |
| 19 | 0 | | 39 | 0 |
| 20 | 0 | | 40 | 0 |

#### Crossroad Ramp Terminals

| Number | Config. | Control | Study Period Description |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |

# APPENDIX E

## Interchange Type Study Approval

# Illinois Department of Transportation

| | | |
|---|---|---|
| To: | Kensil Garnett | Attn: District Five |
| From: | John D. Baranzelli | |
| Subject: | Interchange Type Study | |
| Date: | September 16, 2014 | |

Interchange Type Study
FAI 57 (I-57) and FAI 74 (I-74) Interchange
Section 10 (5-1-RS-1, 14-1, 6)R
Champaign County

We have completed our review of the subject Interchange Type Study. We concur with the preferred interchange alternate as presented in the above report and do not have any additional comments.

If you have any questions, please contact Paul Niedernhofer at (217) 524-1651.

# APPENDIX F

## FONSI & Environmental Assessment Approval

**FEDERAL HIGHWAY ADMINISTRATION**
**FINDING OF NO SIGNIFICANT IMPACT**

**Interstate 57 (F.A.I. 57) and Interstate 74 (F.A.I. 74) Interchange**
**Section 10 (5-1-RS, 14-1, 6) R**
**City of Champaign, Champaign County, Illinois**

The Federal Highway Administration (FHWA) and Illinois Department of Transportation (IDOT) propose to reconstruct the existing full conventional cloverleaf interchange and approaches at Interstate 57 and Interstate 74, northwest of Champaign, Illinois.

The purpose of the proposed interchange reconstruction improvement is to provide safer and more efficient transportation at the I-57 and I-74 interchange by eliminating deficient geometric features and reducing points of access to reduce crash frequency and severity, improve travel efficiency and increase the traffic capacity of the roadways by implementing policy design speed and cross sectional elements on both the mainline interstates and ramps. The need for the proposed improvement is to address operational, geometric, safety, and capacity deficiencies.

The preferred interchange alternative is Alternative 2, the semi-directional interchange type with two directional ramps and two loops, which best satisfies the project purpose and need to address operational, geometric, safety, and capacity deficiencies while minimizing the impacts to environmental resources and surrounding land and providing a cost effective solution.

Construction of the proposed action would require approximately 46.7 acres of right-of-way from 15 parcels with 7 separate owners. All property acquisition will be conducted under the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 2, as amended, and the IDOT Land Acquisition Policies and Procedures Manual. One parcel would require removing approximately 0.66 acres of a parking/storage lot, but the acquisitions would not displace any residences or businesses. Any trees that cannot be avoided will be replaced in accordance with IDOT policy "D&E-18 Preservation and Replacement of Trees."

Five special waste sites are located in the acquisition area and may be affected. The Preliminary Environmental Site Assessment (PESA) will be re-validated to determine if a Preliminary Site Investigation (PSI) will be required.

One archaeological site was identified that requires additional testing to determine its eligibility for the National Register of Historic Places (NRHP). In the case that it cannot be avoided, a Memorandum of Agreement (MOA) has been developed and ratified, which stipulates that (1) archaeological test excavations must be conducted before construction, and (2) if the site is eligible for the NRHP, data-recovery excavations (mitigation) must be completed prior to any construction activities in the vicinity of the site.

Based on the traffic noise analysis and noise abatement evaluation conducted, including the viewpoints of the benefited receptors, Noise Walls 2 and 3 are likely to be implemented based on preliminary design. Noise Wall 2 is located southeast of the I-57 / I-74 interchange along the westbound traffic lanes of I-74 and provides abatement for 28 single family homes, 9 multi-

family buildings (62 receptors), and one church. Noise Wall 3 is located southeast of the I-57 / I-74 interchange along the eastbound traffic lanes of I-74 and consists of 102 single family homes, 6 multi-family buildings and two common areas (82 receptors), one park (4 receptors), and one church.

The project will require fill within the 100-year floodplain and reconstruction of approximately 1,500 feet of Copper Slough. Compensatory flood storage volume will be provided to compensate for any floodplain storage losses resulting from the project. Best Management Practices (BMPs) will reduce or eliminate temporary impacts to water quality during construction. The selected construction site BMPs would be consistent with practices to comply with requirements of the State of Illinois National Pollutant Discharge Elimination System (NPDES) permit.

On March 11, 2015 the U.S. Environmental Protection Agency (USEPA) designated a portion of the Mahomet Aquifer system as a sole source aquifer (SSA) under Section 1424(e) of the Safe Drinking Water Act. This project is within the review area of the Mahomet SSA. Once FHWA and U.S. EPA Region 5 update their memorandum of understanding, the agencies will follow the agreed upon review procedures to ensure compliance with the requirements of Section 1424(e) of the Safe Drinking Water Act.

Various stakeholder coordination meetings have taken place, as well as a public hearing on May 14, 2015. The general consensus of the attendees at the meeting was that this interchange reconstruction project is necessary.

The FHWA has determined that the proposed action, identified as Alternative 2 in the Environmental Assessment, will not have any significant impact on the human environment. This Finding of No Significant Impact is based on the attached Environmental Assessment and the Environmental Assessment Errata, which have been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. The FHWA takes full responsibility for the accuracy, scope, and content of the Environmental Assessment and the Environmental Assessment Errata.

July 9, 2015
**Date**

**FHWA**

Illinois Department of Transportation

**Abbreviated EA**

**Interstate 57 and Interstate 74 Interchange, Champaign, Champaign County, Illinois**

ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to 42 USC 4332 (2)(c)
by the

U. S. Department of Transportation
Federal Highway Administration

and

Illinois Department of Transportation

April 23, 2015
Date of Approval

For IDOT

April 23, 2015
Date of Approval

For FHWA

The following persons may be contacted for additional information concerning this document:


Catherine (Kay) Batey
Division Administrator
Federal Highway Administration
3250 Executive Park Drive
Springfield, Illinois 62703
Telephone: (217)492-4640

Kensil Garnett
Deputy Director, Region 3 Engineer
Illinois Department of Transportation
13473 IL Hwy. 133, P.O. Box 610
Paris, Illinois 61944-0610
Telephone: (217)465-4181



**ABSTRACT:** This EA assesses the applicable issues and potential impact areas of the project that includes reconstructing the existing full conventional cloverleaf interchange and approaches at I-57 and I-74, northwest of Champaign, with improved interchange geometry and operations, enhanced safety conditions, and increased capacity for growing traffic volumes.

Construction of the proposed action would require approximately 46.7 acres of right-of-way from 15 parcels with 7 separate owners. One parcel would require removing approximately 0.66 acres of a parking/storage lot, but the acquisitions would not displace any residences or businesses. Five special waste sites are located in the acquisition area and may be affected. Based on the traffic noise analysis and noise abatement evaluation conducted, including the viewpoints of the benefited receptors, highway traffic noise abatement measures are likely to be implemented based on preliminary design. The project also would require fill within the 100-year floodplain and reconstruction of approximately 1,500 feet of Copper Slough.

# APPENDIX G

## Access Justification Report Conceptual Approval

U.S. Department of Transportation
**Federal Highway Administration**

# Memorandum

Subject: **ACTION:** Illinois, Access Justification Report, I-57 at I-74, Champaign County

Date: May 4, 2015

From: Jeffrey F. Paniati
Executive Director

In Reply Refer To: HIPA-20

To: Catherine Batey
Division Administrator
Springfield, Illinois

We reviewed the Access Justification Report (AJR) submitted on March 15 to reconstruct the system interchange on I-57 at I-74 in Champaign. The project will include reconstruction of the existing cloverleaf interchange to a semi-directional interchange. The proposed reconstruction will improve the safety and flow of traffic on I-57 and I-74.

Based on a review of the AJR, the proposed interchange reconstruction is acceptable. An Environmental Assessment is being conducted for this project and is expected to be completed in June. Final approval may be given provided that the scope and design of this project is consistent with the design that was included in the March 15 AJR and the approved environmental document. This approval is subject to reevaluation if significant changes occur in the final design or if the construction is delayed (as specified in 23 CFR 771.129).

Should you have any questions, please contact Michael Matzke at (202) 366-4658.

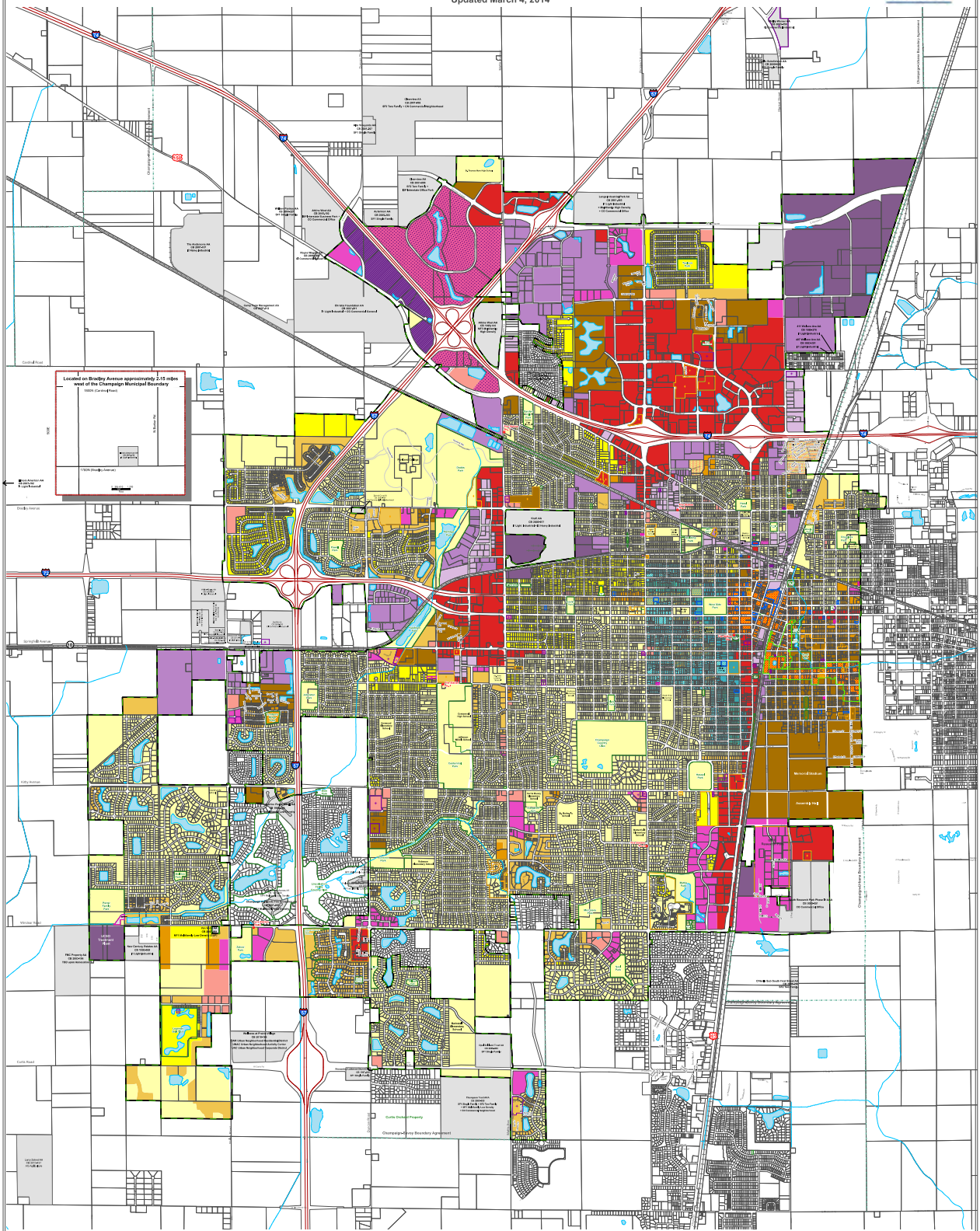
# APPENDIX H

## Supporting Documentation

Existing Land Use Map
Future Land Use Map
Excerpts form 2011 Comprehensive Plan

# Official Zoning Map 2014

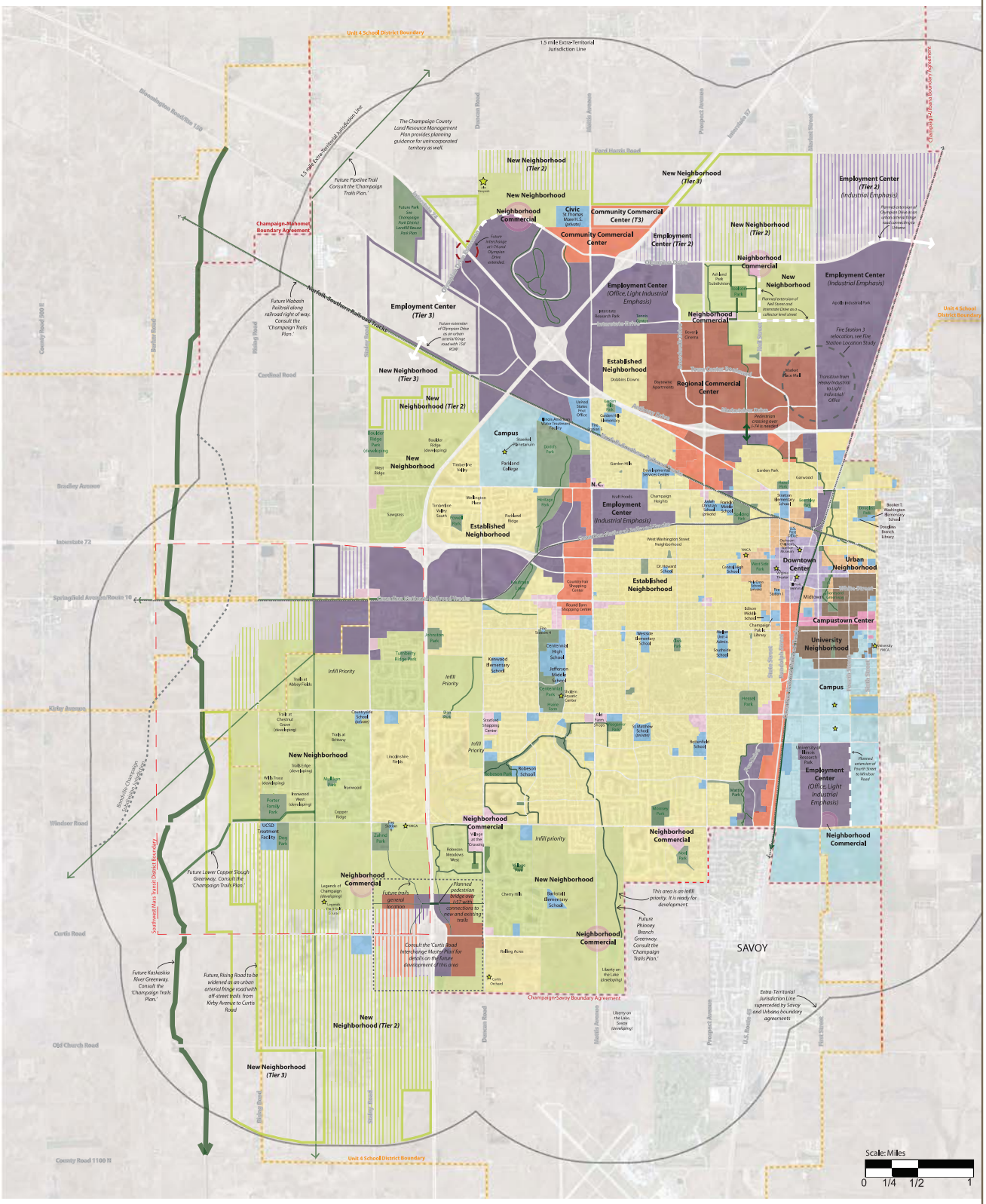
Updated March 4, 2014




Prepared By: City of Champaign Planning Department, March 2014

*Champaign Tomorrow*

# FUTURE LAND USE MAP




## KEY

**Development Areas - Tier One:**
See chart at right for an explanation of the growth area criteria. Areas designated Tier One have infrastructure in place and are ready for development.

Neighborhoods:
- New
- Established
- Urban
- University
- Neighborhood Commercial
- Parks and Trails
- Neighborhood Commercial, general location
- Community Attraction

Centers:
- Regional Commercial
- Community Commercial
- Campustown
- Downtown
- Employment

Community Destinations:
- Campus
- Civic

**Growth Areas:**
See chart at right for an explanation of the growth area criteria.

Tier Two: May be appropriate for growth, but service extensions are required
- New Neighborhood - T2
- Employment Center - T2
- Regional Commercial Center - T2

Tier Three: Not ready for growth but will be reevaluated during Comprehensive Plan updates
- New Neighborhood - T3
- Employment Center - T3
- Community Commercial Center - T3

**Other:**
- Kaskaskia River Greenway
- Trail *(consult Champaign Trails Plan for more information)*
- Railroad Tracks

**Growth Area Criteria**

| | Tier One: *Ready for growth* | Tier Two: *Service extensions required* | Tier Three: *Not ready for growth at this time* |
|---|---|---|---|
| **Sanitary Sewers** | Capacity and interceptors available. | Existing service can be extended | Cannot be served at this time. |
| **City Services** | Can be served with existing city services. | Can be served w/o significant cost increases. | Service extensions not practical at this time. |
| **Roadway** | Does not contribute to backlog of arterial road improvement needs. | Development will include plans for arterial road improvements. | Arterial streets in this area need upgrading and are not identified on the backlog list. |
| **Transit** | Within CUMTD boundaries. | Will be annexed into CUMTD boundaries and can be served reasonably. | Outside acceptable range for inclusion in CUMTD service and boundary. |

**For more information, see the detailed Growth Area Criteria Table, over.*








# CHAMPAIGN TOMORROW

## 2011 Comprehensive Plan

CHAMPAIGN TOMORROW
COMPREHENSIVE PLAN UPDATE

150 YEARS
CHAMPAIGN, ILLINOIS
1860-2010

## COMPLETE NEIGHBORHOODS

A complete neighborhood is one that includes a variety of housing choices, transit access and urban design features that withstand the test of time. Proximity to schools, parks, shops and services ensures that residents can meet their daily needs with ease. Logical street, sidewalk and trail connections provide convenient access to these amenities from homes, reducing the amount of time spent traveling.

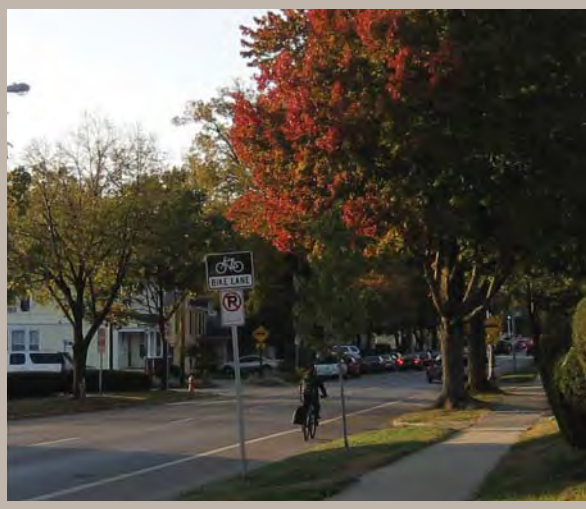


**Elements of a Complete Neighborhood:**

- Variety of housing types, styles and sizes
- Access to transit
- Time-tested urban design
- Proximity to parks schools, shops and services
- Connected to amenities by streets, sidewalks and trails

## COMPLETE STREETS

Complete streets provide safe travel facilities for all users including drivers, pedestrians, transit riders and bicyclists. Not all complete streets are the same, design standards are tailored to the traffic volumes of each street. For example, a low-traffic street may accommodate all users without special treatment, while a high-traffic street may need special markings, such as bike lanes, to keep all users safe.




**Elements of Complete Streets:**

- Auto lanes that fit traffic demand.
- Pedestrian facilities such as sidewalks and crosswalks
- Bicycle facilities including bike lanes, lane sharing with 'sharrows,' or multi-use trails
- Public transit stops

## COMPLETE PUBLIC FACILITIES

Public facilities are essential to the function of a community. They include the physical infrastructure needed to make a community operate. These include public safety facilities such as fire and police stations, schools, utilities, parks and transit. When public facilities are not sufficient, the City cannot grow safely and quality of life diminishes.



**Elements of Complete Public Facilities:**

- Police and Fire stations and equipment located to maintain adequate response times
- Schools
- Parks and recreation facilities
- Water, sewer and power facilities and infrastructure
- Public transit

# Vision & Guiding Principles



*The purpose of the Vision & Guiding Principles is to broadly describe what the community desires to be like in the future.*

The Vision and Guiding Principles are key components to the Comprehensive Plan. The purpose of the Vision and Guiding Principles is to broadly describe what the community desires to be like in the future. The Vision is a series of statements that describe what Champaign should be like in 20 years, if the Comprehensive Plan is implemented. Each vision statement has three to five associated Guiding Principles. The Guiding Principles provide focused goals associated with each vision statement. They will be used as a guide when reviewing development proposals and creating policies related to growth.

There are six vision statements that address topics important to the City's growth. They are, Growing City, Sustainable City, Complete Neighborhoods, Community Identity, Healthy City and Complete Public Facilities. Each Vision chapter includes issues that were considered when creating the Vision statements and Guiding Principles as well as measurables that can be used to track progress and actions that should be completed to implement the vision.

The Future Land Use Map and Action items provide more specific details on how to achieve the Vision and utilize the Guiding Principles.



## Assembling the Vision and Guiding Principles:

The Vision and Guiding Principles of the Comprehensive Plan reflect the concerns and wishes of the residents of Champaign. Staff gathered input through the online PLACES survey, direct e-mail, the project website, conversations with citizens and feedback from Plan Commission and City Council. The response rate was considered very good, with over 650 responses to the PLACES survey alone. This information was used to generate the draft Vision and Guiding Principles statements. The draft statements were then reviewed through an online public survey.

# Vision and Guiding Principles Summary:

### *Vision 1. Growing City*

"Champaign will grow to accommodate new residents of all ages, visitors and employees while maintaining the community's quality of life. Economic stability, coupled with fiscally sustainable growth and reinvestment in the City's center result in a prosperous community. "

***Guiding Principles***

- Fiscally Sustainable Growth
- Foster a Knowledge Based Economy focusing on:
    - *Higher education*
    - *Research and technology*
    - *Healthcare*
    - *Creative and applied arts*
- Strong Employment Centers
- Regional Destination for Commerce
- Local Decisions With Regional Benefit

### *Vision 2. Sustainable City*

"Champaign is a sustainable city that limits its impact on natural resources and on the local, regional and global environment."

***Guiding Principles***

- Reduced consumption and impact
- Reuse of materials
- Reduced emissions
- Thoughtful site design
- Low-energy building design
- Renewable energy generation and consumption

### *Vision 3. Complete Neighborhoods*

"Champaign's neighborhoods are structured to ensure residents can attend school, shop, live and play within a short distance of their homes. The majority of convenience services and recreation can be found within neighborhood boundaries."

***Guiding Principles***

- Well-planned mix of uses
- Well-designed density
- Range of housing types
- Connectivity
- Presence of neighborhood nlements



# Vision and Guiding Principles Summary:

### *Vision 4. Community Identity*

"Champaign is known for embracing diversity and is attractive with well-planned spaces, streets and buildings."

***Guiding Principles***

- High quality urban design
- Preservation of special places
- Neighborhood pride
- Beautification of urban areas
- "Center City"
- University town
- Community culture

### *Vision 5. Healthy Community*

"Champaign fosters a healthy lifestyle for its residents."

***Guiding Principles***

- Walking community
- Alternative transportation
- Community health facilities
- Healthy youth
- Local food systems

### *Vision 6. Complete Public Facilities*

"As the City continues to grow, public facilities will be "complete" throughout the City to achieve a high quality of life for all residents."

***Guiding Principles***

- Complete infrastructure
- Sufficient services
- Presence of community facilities
- Accessibility to transit service

# Street Classification Descriptions and Maps:

**1. Principal Arterials**

In urban areas, principal arterials are the highest classification of streets after interstates. They provide the highest level of mobility at the highest speeds for the longest distances. They also serve the major traffic movements and transit lines, connecting central business districts, residential areas, major intercity communities, and major suburban centers. Access on these streets is highly controlled with a limited number of intersections, infrequent openings and very limited or no direct access to parcels, depending on use and geographic setting. Principal arterials are typically at least 4 lanes in width and are designed for traffic volume ranging roughly between 15,000 and 25,000 vehicles (ADT).

**2. Minor Arterials**

Minor arterials interconnect and supplement the urban principal arterial system. When compared to the principal arterial system, minor arterials may provide lower travel speeds and accommodate shorter trip lengths and lower traffic volumes, but provide more access to property. They serve major traffic generators and link collector streets with the principal arterials. They may also carry local bus routes and provide intra-community continuity, but will usually not penetrate neighborhoods. The City's arterial street system typically occurs on a one-mile grid. The width of minor arterials may vary between 3 to 5 lanes including turn lanes and the traffic volume ranges roughly from 10,000 to 15,000 vehicles (ADT).

**3. Major Collectors**

The collector street system serves as the intermediate link between the arterial system and local streets, collecting and distributing trips to and from the arterial system. Collectors provide a lower level of mobility than arterials at lower speeds and serve shorter trip lengths. Major collector streets provide access to property and traffic circulation within residential, commercial and industrial areas. These streets typically occur at the one-quarter mile to serve local development. Typically, they have greater right-of-way than minor collectors, accommodating up to 3 lanes including a continuous left turn. Traffic volumes on major collectors roughly range between 5,000 and 10,000 vehicles (ADT).

**4. Minor Collectors**

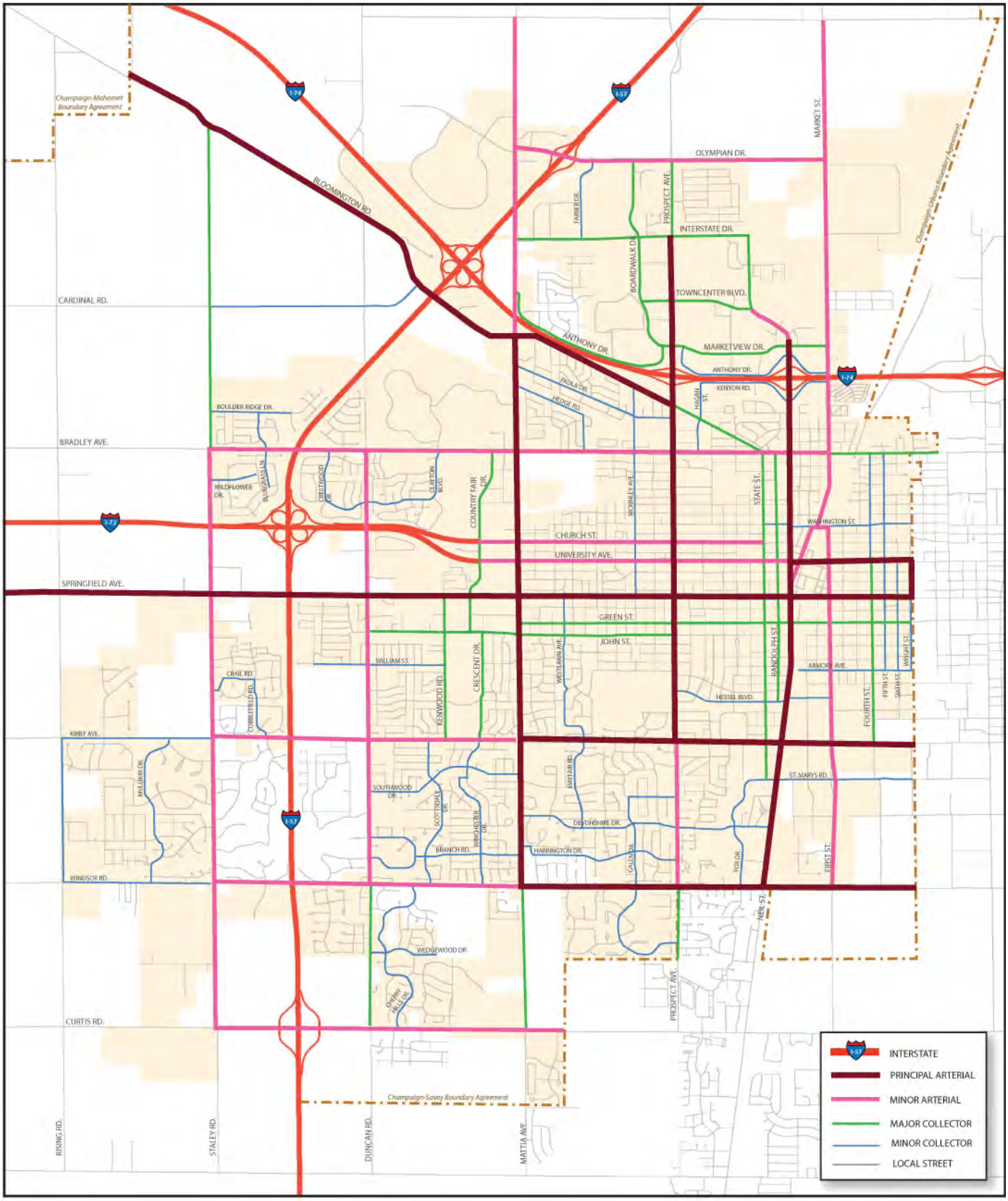
Minor collectors, also known as neighborhood collectors, are primarily found in residential neighborhoods. This set of collectors provides a higher degree of access to individual properties than major collectors. The typical capacity of such streets is 2 lanes. Minor collectors may also be designed as boulevards in some cases. Traffic volume on these streets usually ranges between 1,000 and 5,000 vehicles (ADT).

**5. Local Streets**

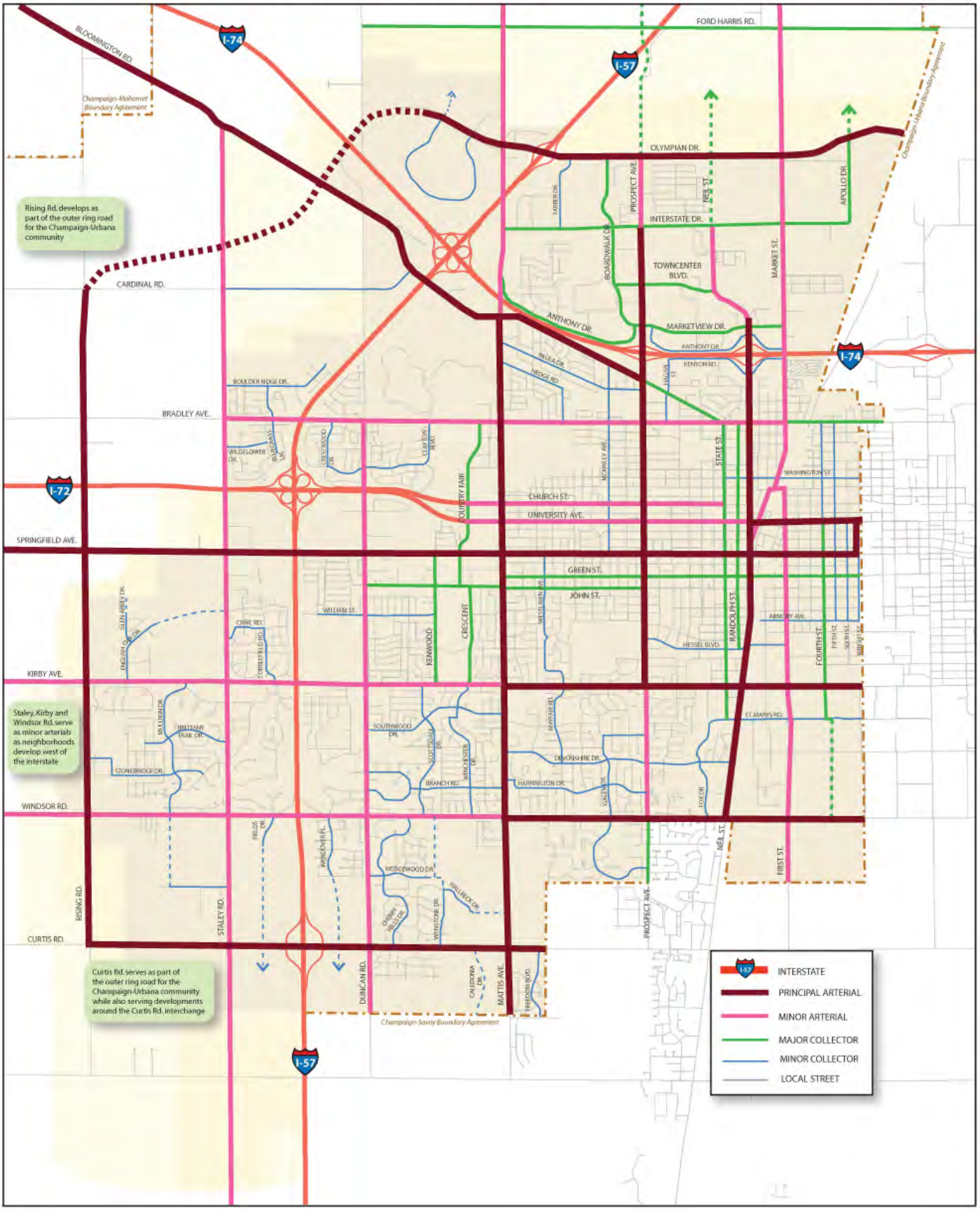
This is the lowest classification of streets. Local streets provide a high level of access to abutting land but limited mobility. They function primarily to serve local traffic circulation and land access. They also customarily accommodate shorter trips and have lower traffic volumes and lower speeds than collectors and arterials. Local streets are designed to discourage through traffic movements and are usually 2 lanes in width. As with minor collectors these streets may also be designed as boulevards in some cases. Traffic volume on local streets is usually less than 1,000 vehicles (ADT).

# FUNCTIONAL STREET CLASSIFICATION - Existing

City of CHAMPAIGN



# FUNCTIONAL STREET CLASSIFICATION - Proposed



# Future Land Use Maps:

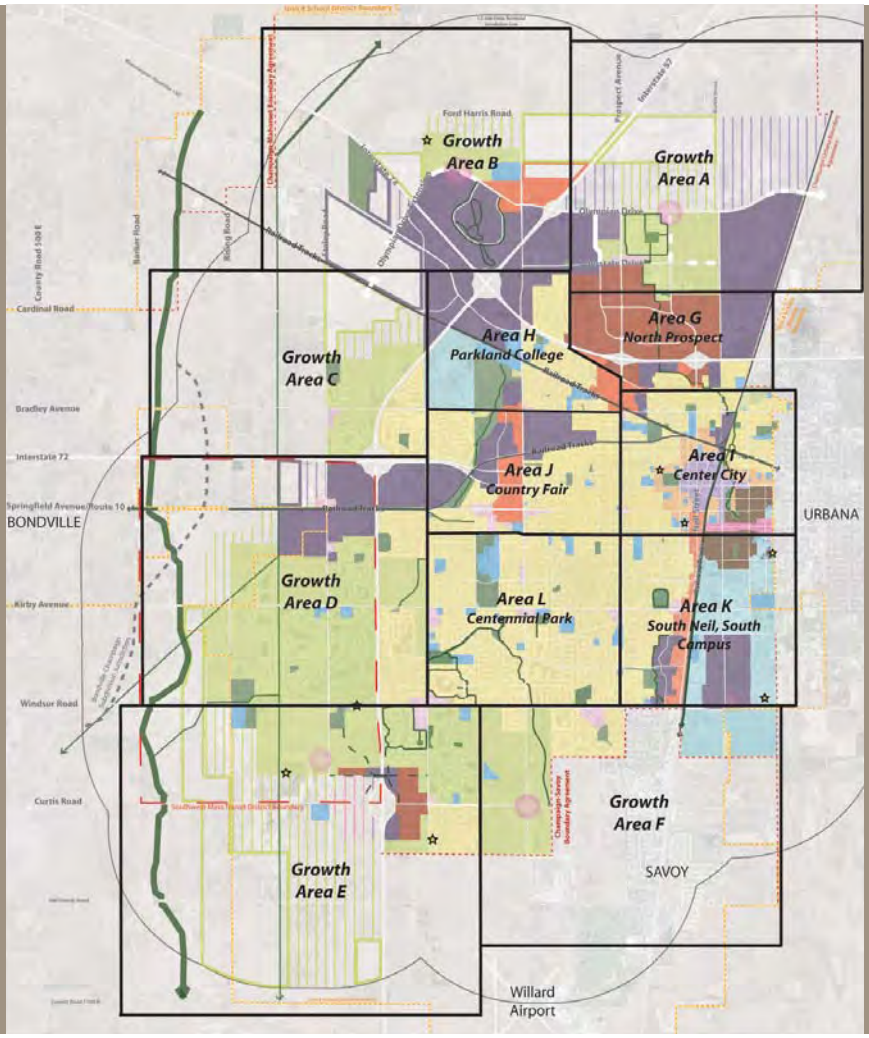
The Future Land Use Map is an essential part of the Comprehensive Plan. The map shows how all parts of the City and the one and one-half mile extra-territorial jurisdiction should grow and develop over time. Each land use, described previously, is assigned a representative color.

The map displays those colors to identify what land uses are appropriate and where they should be located. The growth area criteria is also displayed on the map. All parts of the map are considered Tier One unless otherwise noted. In the growth areas (Maps A-F), areas that are designated Tier Two are shown in a stripe pattern of the land use color. Areas designated Tier Three are shown with a bold outline of the future land use color. In established areas of the City (Maps G-L), the current land use is often the appropriate future land use.

The Future Land Use Map and categories should not be confused with the Zoning Map or zoning categories. In short, the Future Land Use Map and categories describe what is desired in the future, while the Zoning Map and categories describe what is allowed currently. The Future Land Use Map and categories are not regulatory. They are a precursor to the City's zoning ordinance, and inform development related policies concerning annexation, the timing and investment in infrastructure improvements and provision of public services.

### *How to use the Future Land Use Maps:*

Find the area of the City in question on the inset map. Turn to page 95 and fold out the map key. There are 12 detailed maps including six growth area maps, A - F and six established area maps, G-L.



# Growth Area B
## West Olympian Drive

### *Opportunities and Challenges:*

The Clearview development presents a growth opportunity for the City. It will contain a mix of land uses, with offices, commercial space and residential neighborhoods. This property has been improved with trails, area wide detention and infrastructure in place. Visibility and access to Interstates 74 and 57 benefits business and employment potential here, although limited access points to the greater community may be a challenge. Implementation of the Landfill Re-use Master Plan will result in a community park featuring radio-controlled air facilities, bmx biking and disc golf, providing unique recreation uses for the community.

In the long-term, the western extension of Olympian Drive and interchange at I-74 will provide additional access to the northern part of the City. This will become part of a network of principal arterial roads, linking Champaign and Urbana. A new interchange at I-74 and Olympian Drive should continue to be studied for future construction.

### *Infrastructure and Public Services*

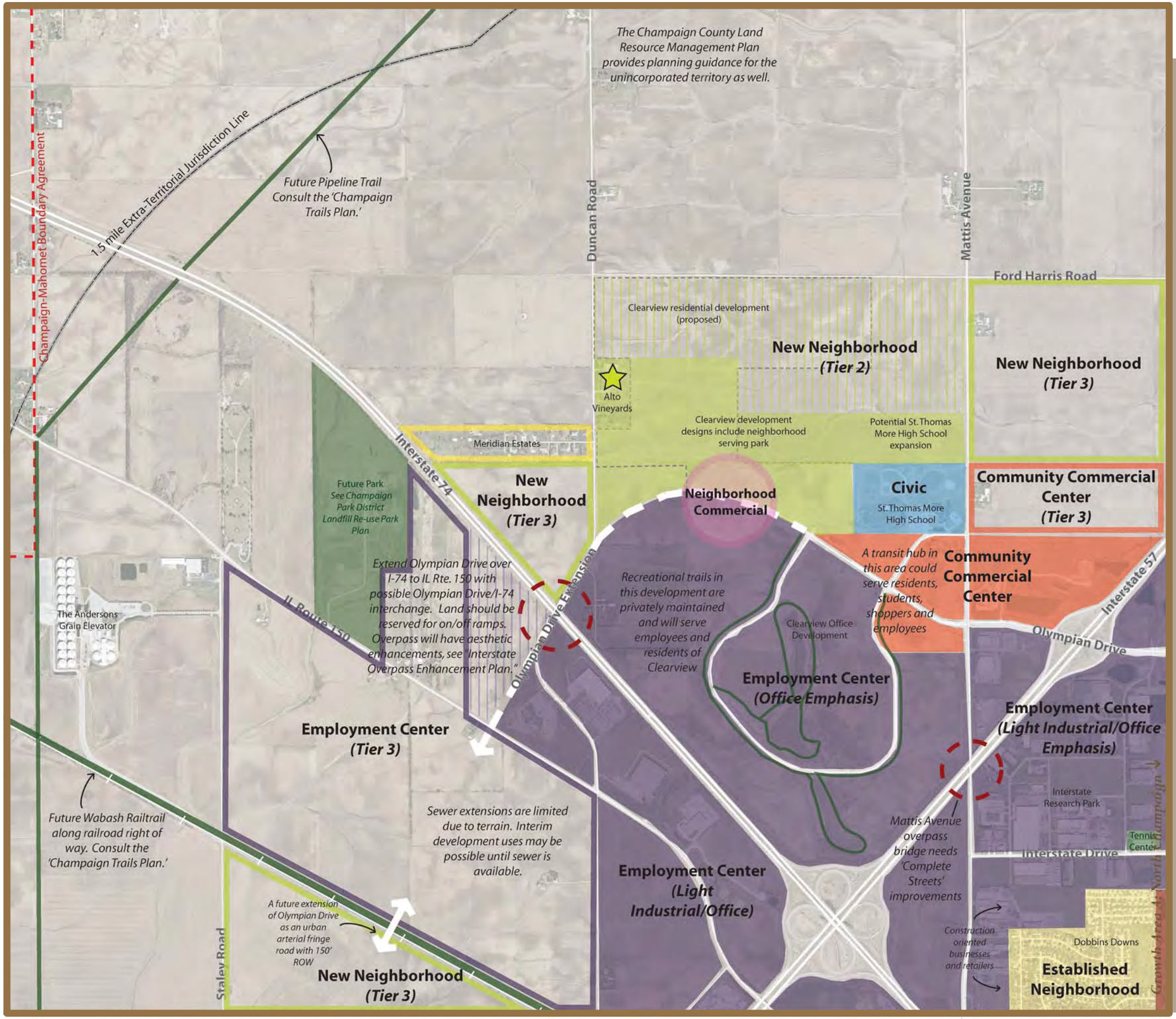
*Sanitary Sewers:*
Because of topography issues, this area becomes very difficult and expensive to sewer outside the designated growth areas. Areas designated Tier 2 need sewer extensions prior to development, but can be served by gravity. Extending sewer service into areas designated Tier 3 is not feasible at this time. Land south of I-74 is very difficult to sewer because it slopes away from the sewer treatment facility. Interim uses or agri-based industries that do not require sewers may be appropriate in these locations.

*Roads:*
Over 4.5 lane miles of road improvements along Mattis Avenue, Olympian Drive and Duncan Road are needed. The I-74/Olympian Drive interchange needs additional study. All arterial road upgrades will be built to 'Complete Streets' standards. In high traffic areas, bicycle facilities will be provided adjacent to the roadway rather than on-street bicycle lanes.

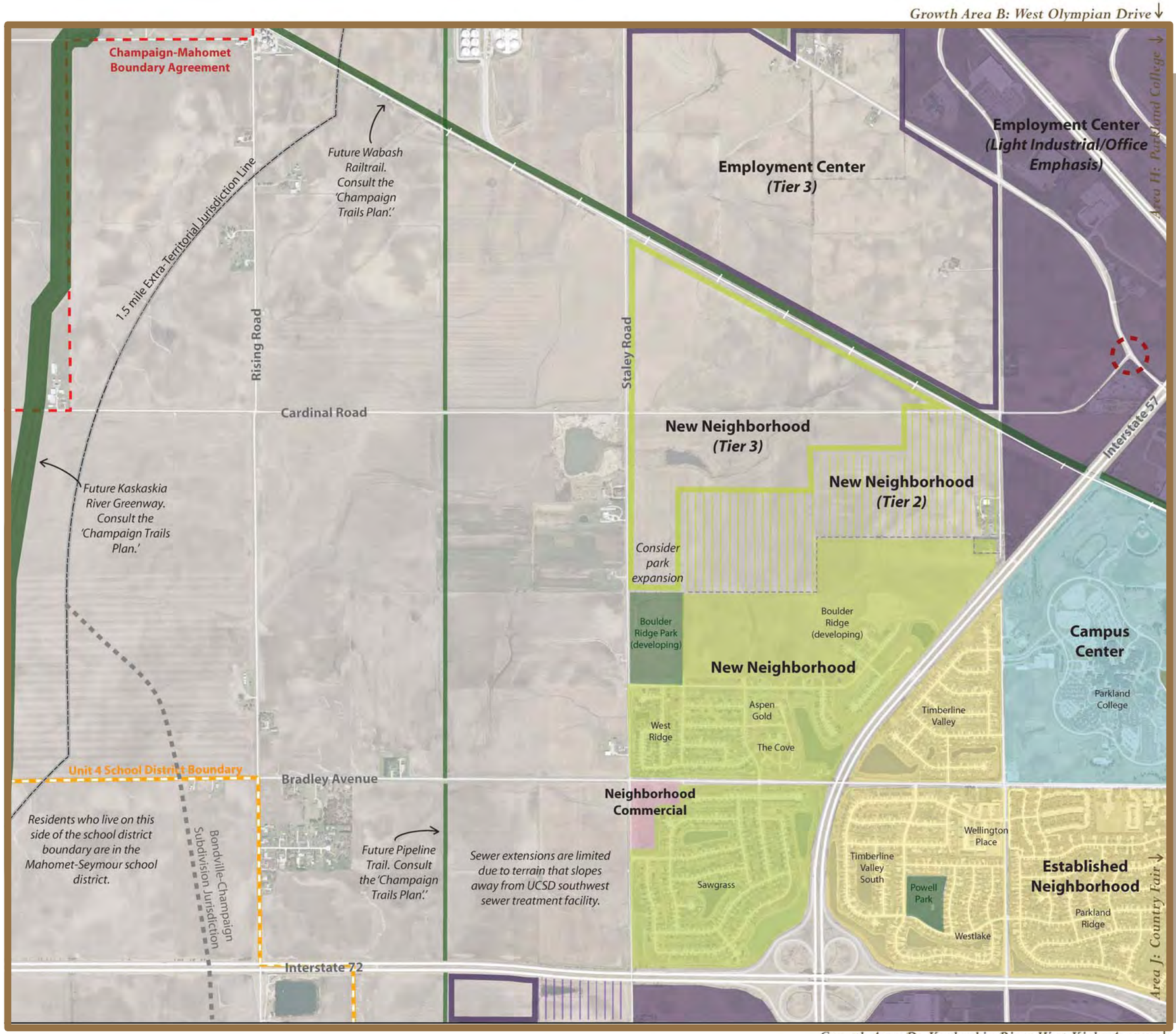
*Transit:*
Limited weekday transit service along Route 150 is provided by the CUMTD Lavender line. A transit hub located in the Community Commercial Center on Olympian should be built to serve the area.

*Fire Protection:*
Fire Station 5 and a relocated Fire Station 3 in Growth Area A can provide coverage of this area.

*Parks and Trails:*
A 10 acre neighborhood park is planned in the Clearview residential development. The Landfill Re-use Park serves regional users, but is hard to access from area neighborhoods because of I-74. The Clearview office development includes a trail system and park-like amenities for employees. Two planned future trails, the Pipeline Trail and Wabash Railtrail, will connect into a planned regional trail system.




0 0.125 0.25 0.5 mile




# Growth Area C
## West Olympian Drive

### *Opportunities and Challenges*

Residents of this area are located near Parkland College and Dodds and Heritage Parks east of the Area C boundaries. In the long-term, construction of the Wabash Railtrail will further enhance recreation activities in this area.

Interstates 57 and 72 impact transportation in this area. The key crossing over I-57 at Bradley Avenue does not safely accommodate cyclists and pedestrians and is in need of improvement. Another key intersection at Route 150 and Cardinal Road is in need of safety improvements. As these improvements are completed, residents west of I-57 will be able to take better advantage of proximity to Parkland College and other amenities east of I-57.

Further development to the west is limited by terrain which prevents sanitary sewer extension. The neighborhood commercial development at Bradley Avenue and Staley Road will likely not be practical until development on the west side of Staley Road occurs. Agricultural industries that do not require sanitary sewer connections may be appropriate. Growth potential exists in other areas, mitigating the impact of development limitations here.

### *Infrastructure and Public Services*

*Sanitary Sewers:*
Tier 2 areas need sewer extensions in order to develop. Land area south of I-74 west of I-57 is very difficult and expensive to sewer because it slopes away from the sewer treatment facility. Extending service into Tier 3 areas is not feasible at this time.

*Roads:*
Over 3 miles of arterial road improvements to Bradley Avenue, Staley Road and Duncan Road are needed. The I-57 overpass at Bradley Avenue is narrow. Widening of the bridge and of Bradley Avenue leading up to the bridge is needed to safely accommodate bicyclists and pedestrians.

*Transit:*
Limited weekday transit service along Bradley Avenue to the Sawgrass neighborhood is provided by the CUMTD Brown line as of 2010.

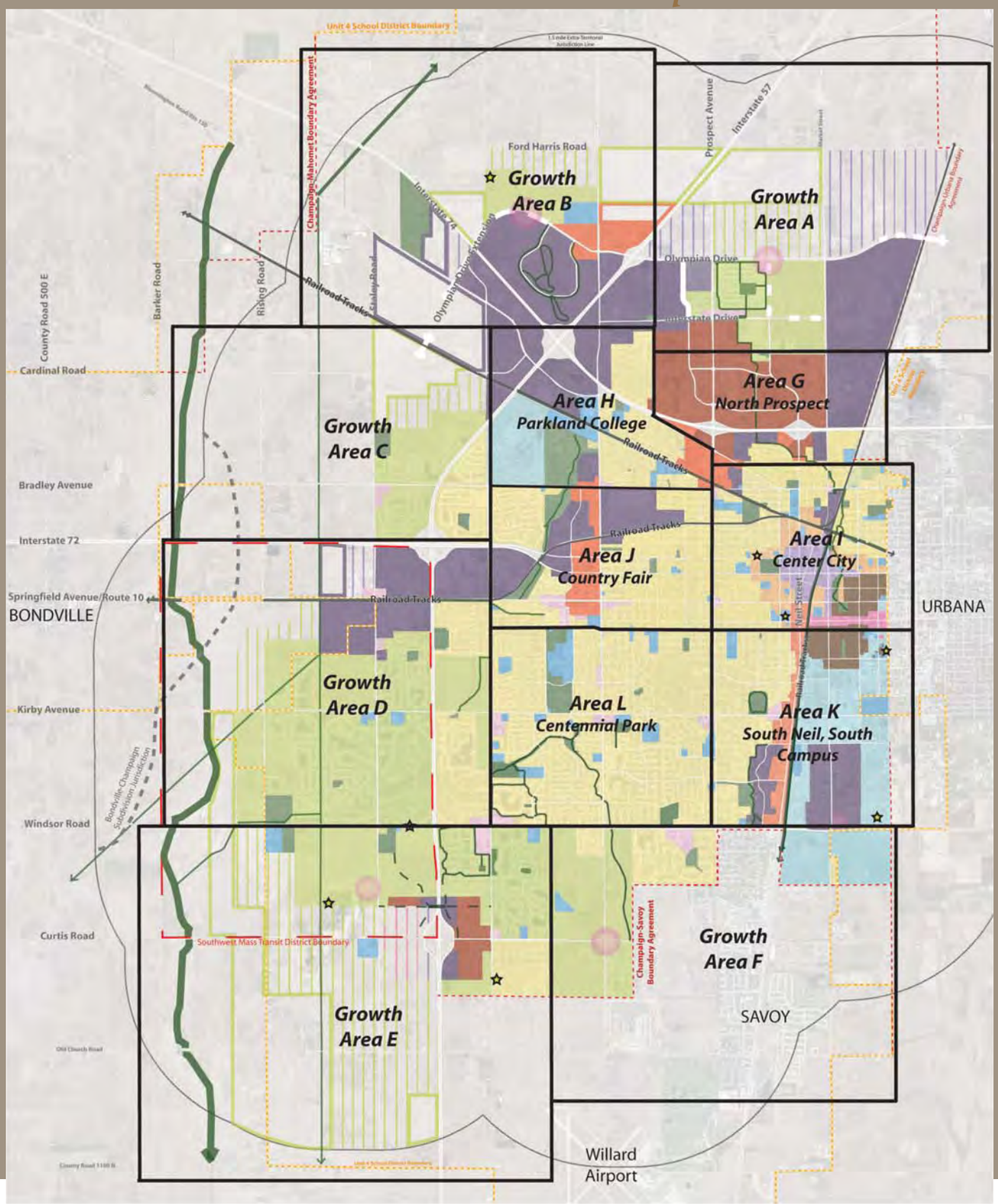
*Fire Protection:*
Fire Station 5 provides coverage of this area, but cannot adequately serve beyond existing development according to the Fire Station Location Study.

*Parks and Trails:*
The area east of I-57 is adequately served by both neighborhood and community parks. On the west side of I-57, there is not enough park land to adequately serve current and future residents. The 18 acre Boulder Ridge Park is not yet developed. Expansion of Boulder Ridge Park into a community park should be considered. The future Wabash Railtrail, Pipeline Trail and Kaskaskia Greenway will link this area into the future regional trail system.

0 0.125 0.25 0.5 mile

# City of Champaign

## Future Land Use Map




## KEY

Miles: 0 0.375 0.75 1.5 2.25 3

**Neighborhoods:**
- New
- Established
- Urban
- University
- Neighborhood Commercial
- Parks and Trails
- Neighborhood Commercial, general location

**Centers:**
- Regional Commercial
- Community Commercial
- Campustown
- Downtown
- Employment

**Community Destinations:**
- Campus
- Civic
- Community Attraction

**Growth Areas:**

Tier Two - May be appropriate for growth, but service extensions are required
- New Neighborhood - T2
- Employment Center - T2

Tier Three - Not ready for growth but will be reevaluated during Comprehensive Plan updates
- New Neighborhood - T3
- Employment Center - T3
- Community Commercial Center - T3
- Established Neighborhood - T3

**Other:**
- Kaskaskia River Greenway
- Trail
- Railroad Tracks

# 2035 CHOICES

## Champaign-Urbana Urbanized Area Transportation Study

# Long Range Transportation Plan








December 2009

Champaign Urbana Urbanized Area Transportation Study
Champaign County Regional Planning Commission
1776 East Washington Street
Urbana, IL 61802

# Executive Summary

## Plan Purpose and Scope

The Long Range Transportation Plan (LRTP) is a federally mandated document that is updated every five years, and details how the urbanized area transportation system will evolve over the next 25 years. The LRTP covers the Champaign-Urbana-Savoy-Bondville urbanized area as delineated by the 2000 U.S. Census, and looks at a 25 year metropolitan planning area which encompasses land outside the urbanized area which is likely to be included in the urbanized area between the years 2009 and 2035. The LRTP looks at the projected evolution of automobile, bicycle, pedestrian, bus transit, rail, and air travel over the next 25 years. This plan has a regional scope and is not meant to take the place of local transportation plans and comprehensive land use plans. Its main purpose is to identify major regionally beneficial transportation projects which can be targeted for federal funding. While smaller localized transportation projects were reviewed and taken into consideration during the planning process, the LRTP lends itself to a broader regional focus, which attempts to bring multiple jurisdictions together under one common vision. The LRTP focuses on increasing the mobility of area residents and the connectivity of the entire transportation system in order to create a more efficient travel network.

## LRTP Mission

To provide a safe, efficient, and economical transportation system that makes the best use of existing infrastructure, optimizes mobility, promotes environmental sensitivity, sustainability, accessibility, economic development, and enhances quality of life for all users.

A detailed existing conditions analysis was completed for the urbanized area and metropolitan planning area during the winter and spring of 2009. The existing conditions analysis looked at current land use and development patterns, environmental conditions, and the current status of the transportation network as it relates to motorists, bicyclists, pedestrians, transit users, rail, and air travelers. Overall, the transportation network within the urbanized area is performing well in 2009, and has made positive progress since the last LRTP update in 2004.

## Existing Conditions Findings

- Land development patterns between 2004 and 2009 have shown lower densities and expanding land areas.
- The urbanized area continues to meet attainment status.
- Water quality in rivers and streams has declined in the urbanized area.
- The total number of crashes in the urbanized area decreased between 2004 and 2007.
- The total mileage of bicycle facilities rose by over 40% in the urbanized area.
- CU-MTD operates over 48 weekday and weeknight routes in 2009 compared to only 27 in 2004.
- Amtrak ridership from Illinois Terminal rose by over 98% between 2004 and 2008.

Goals, objectives, strategies, and measures of effectiveness (MOEs) were created to direct the vision of the LRTP and the plan's implementation process. The goals provide a general statement about the end state of the LRTP. Objectives refer to sub-goals necessary for the completion of the broader goals. Strategies are specific action items that can be taken to complete each objective. Finally, measurements of effectiveness are data sets and tracking measures to see how the urbanized area performs over the five year periods between plan updates. The measurements are based on real data collected during the LRTP update process.

During this update of the LRTP, the vision for the urbanized area was reflected in three regional vision maps: one for roadway projects, one for bicycle and pedestrian projects, and one for transit, rail and air travel. The regional vision is meant to convey large over-arching ideas that will be complemented in more detail by local plans such as municipal comprehensive plans or municipal transportation plans. The vision looks at broad concepts such as compact and sustainable growth, multi-modal transportation facilities, increasing mode share in the urbanized area, expanding connectivity for all transportation network users, and improving the efficiency of the current transportation network. A complementary future conditions chapter is included in this plan to discuss in more detail the projected evolution of the transportation network and how each mode may function in the year 2035. The future conditions chapter also touches on linking land use decisions to the transportation network, and analyzing multi-modal options for new development.

Vision Concepts

**Land Use Vision**
- Sustainable and Compact Development
- Multi-Modal Transportation Connections
- Green Infrastructure

**Roadway Vision**
- Reduce Vehicle Miles Traveled
- Reduce Greenhouse Gas Emissions
- Increase Efficiency, Connectivity and Mobility

**Bicycle/Pedestrian Vision**
- Increase Number of Bicycle Facilities
- Continue Constructing Pedestrian Facilities in New Development
- Continue Safety and Education Programs

**Transit, Rail and Air Vision**
- Increase Transit Ridership and Frequency
- Increase Amtrak Ridership and Frequency
- Increase Enplanements and Carriers at Willard Airport

In order to comply with federal mandates for the LRTP, projects which are "fiscally constrained" have been noted separate from the overall vision for the future. The term fiscally constrained refers to regionally significant projects which are fully funded or have a reasonably guaranteed source of funding for future implementation. The projects considered fiscally constrained as part of this LRTP update are as follows:

- I-74 widening from IL-47 to Prospect Avenue
- Olympian Drive extension from Apollo Drive to US 45
- Olympian Drive extension from east of Duncan Road to I-74
- Olympian Drive grade separation over CN railroad tracks
- IL-130 widening with medians from University Avenue to Windsor Road
- Florida Avenue extension to IL-130
- Windsor Road reconstruction from Philo Road to IL-130
- Curtis Road improvements between Wesley Avenue and Wynstone Drive
- High Capacity Transit Network

Funding projections were completed for transportation projects using federal, state and local funding sources. Due to the expiration of the current federal transportation bill (SAFETEA-LU), future federal funding sources are difficult to predict. Therefore, an average was used to project federal and state funding based on the amount of transportation funding between fiscal years 2005 and 2009. Local funding projections were completed with help from local agencies including the City of Champaign, City of Urbana, Village of Savoy, and CU-MTD. Funding projections for Champaign County and the University of Illinois were completed using the current 2010-2013 Transportation Improvement Program for the urbanized area.

The regional vision and implementation of the LRTP is dependent on strong coordination between all local agencies in the urbanized area. The successful implementation of the LRTP will result in a well connected, efficient and safe transportation network for all users. The need for *"Choices"* in transportation is more important than ever with transportation costs increasing and the affordability of personal vehicles becoming out of reach for more and more urbanized area residents. This plan provides a regional vision for offering more travel choices to residents.

# 5 Existing Conditions - Transportation

The Long Range Transportation Plan's main purpose is to analyze and assess the existing and future transportation infrastructure for the urbanized area. Without an efficient and user-friendly transportation system, congestion, delay and additional crashes would result. The metropolitan planning area's transportation system can be characterized by a grid pattern of major corridors spaced at roughly one mile intervals over its 140 square mile area.

- Interstates 57, 72, and 74 provide eleven interchanges on the west and north sides of the urbanized area.
- Local transit service, provided by the Champaign-Urbana Mass Transit District, serves the majority of urbanized area residents within a short distance from their homes and places of employment.
- Numerous bicycle and pedestrian facilities connect activity centers and neighborhoods in the urbanized area.
- Three rail lines crisscross north of the downtown Champaign area, providing freight and Amtrak passenger service.
- Willard Airport, located on the southern edge of Savoy, offers daily flights to Chicago, Dallas/Fort Worth and Detroit.

Figure 5.1 shows the current urbanized area transportation network including streets, signalized intersections, bus routes, and rail lines. A map detailing the existing bicycle facilities can be found in the Bicycle and Pedestrian Chapter.

## 5.1 Personal Vehicles

Since the end of World War II, the development of land and transportation networks revolved around separating land uses that are considered "incompatible" and providing roadway connections to all uses virtually assuring that travelers will utilize their automobiles to get from one place to another. This development approach has led us down the road of reliance on a non-renewable source of energy which powers the vast majority of vehicles. The roadway network in the urbanized area, while still geared toward the movement of automobiles, is being retrofitted to include right-of-way for other modes of transportation like buses, bicycles and pedestrians. The Illinois Department of Transportation recently adopted a "Complete Streets" policy, followed shortly by the City of Champaign. The City Council for Urbana has a council goal related to Complete Streets as well. This policy adoption by these agencies is an important first step in providing additional right-of-way on or off street for other modes of transportation besides the automobile.

> "Complete streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street. "
> -CompleteStreets.org

For traveling to work, going shopping, making social calls, and even going to exercise, the car is the predominant transportation mode in the urbanized area. According to the 2000 Census, the 123,938 residents in the urban area had 49,692 vehicles available for use, or one vehicle per 2.49 persons. At the time of the Census, 75% of working residents aged 16 or older in the urban area traveled by car; 86% of those traveled alone. With so many travelers using personal vehicles on the metropolitan planning area's transportation network, it is important that the network not only be efficient, but also safe. This Census data should be tracked to understand how commuting patterns and mode shift change over time.

## Roadway Functional Classification

IDOT classifies the roadways throughout the state to help describe levels of mobility and accessibility within each roadway category. The roadway classes listed in Table 5.1 have an inverse relationship of mobility and accessibility. **Interstates** are roadways that have the highest level of mobility and the lowest level of accessibility. **Interstates and other principal arterials** serve trips through urban areas and long distance trips between traffic generators within an urban area. **Minor arterials** serve shorter trips between traffic generators within urban areas; they have more access but a lower level of mobility than interstates and other principal arterials. **Collectors** provide both mobility and access by gathering trips from localized areas and feeding them onto the arterial network. **Local roads** are lower volume roadways that provide direct land access but are not designed to serve through-traffic needs. The majority of traffic movement occurs on the interstates and other principal arterials, which have higher speed limits due to less accessibility and conflict points with cross streets and driveways. Table 5.1 shows the functional classification of the roadways in the urban area and the total mileage of the roadway network in 2009.

Figure 5.1 Movement and Access

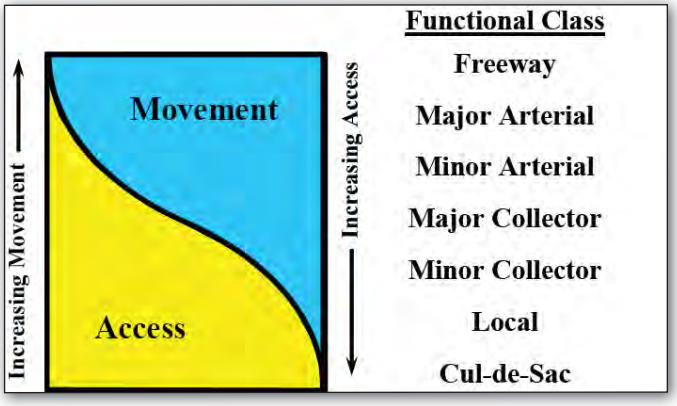



Table 5.1 Urban Area Functional Classification Mileage

| Functional Classification | 2004 Miles | 2009 Miles |
|---|---|---|
| Other Principal Arterial | N/A by Category | 64.18 |
| Minor Arterial | | 81.96 |
| Urban Collector | | 82.84 |
| Local Streets | | 660.02 |
| Total | 788.0 | 889.0 |

## Roadway Average Daily Traffic (ADT)

IDOT provides average daily traffic data for interstates and selected major arterials and collectors in the metropolitan planning area. Figure 5.4 shows the 2006 ADT ranges for the selected roadways in the metro area. The most heavily traveled roadway segments and critical travel paths in the metro area were chosen. As expected, the interstates have the highest ADT followed by major arterials like Neil Street, University Avenue, Mattis Avenue, and Cunningham Avenue. Smaller segments of Springfield Avenue, Bradley Avenue and Prospect Avenue also have high ADT volumes.

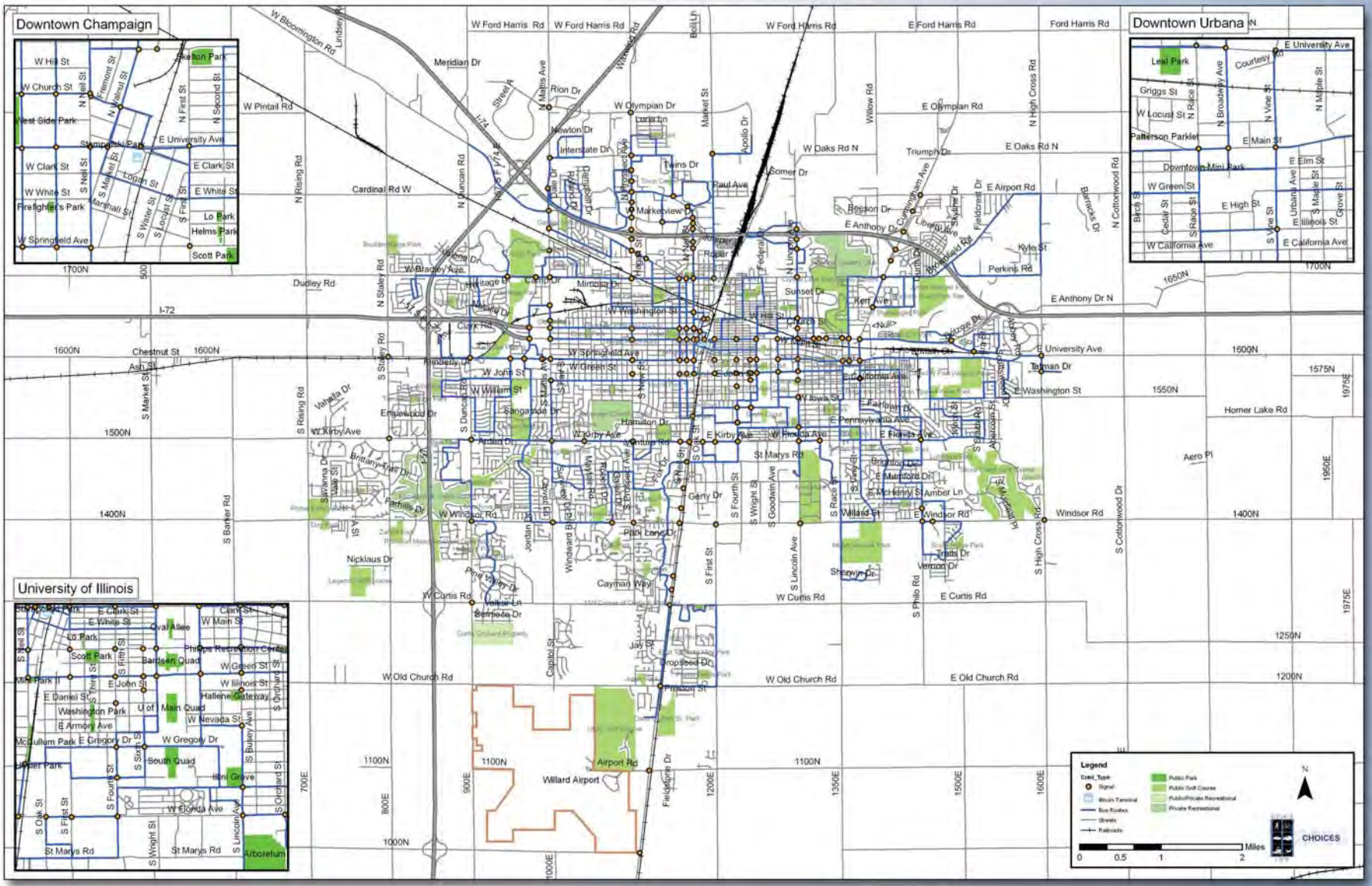
## Intersection Average Daily Traffic

Within the metropolitan planning area there are many busy intersections. Data provided by the City of Champaign, City of Urbana and CUUATS were analyzed, and the top ten busiest intersections are shown in Table 5.2. Many of these intersections act as key passageways and gateways in and out of our community, lead to interstate access points or serve key commercial corridors.

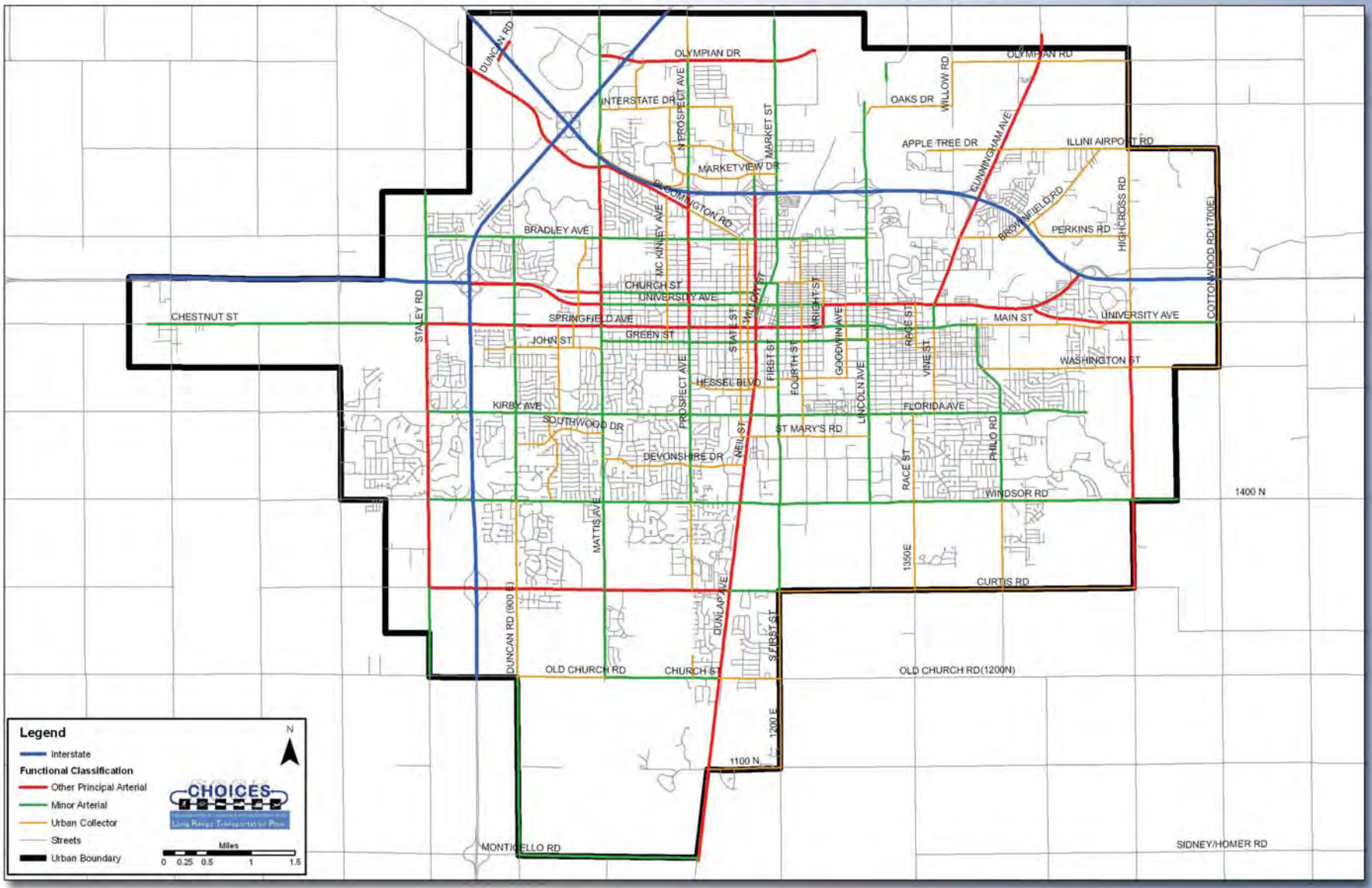
Table 5.2 Top 10 Busiest Intersections (2007)

| Municipality | Intersection | Daily Entering Traffic |
|---|---|---|
| Urbana | Lincoln Ave/University Ave | 41,612 |
| Champaign | Mattis Ave/Springfield Ave | 39,693 |
| Urbana | Cunningham Ave/University Ave | 39,453 |
| Champaign | Prospect Ave/Bloomington Rd | 38,986 |
| Champaign | Neil St/Kirby Ave | 38,734 |
| Champaign | Prospect Ave/Bradley Ave | 38,734 |
| Champaign | Mattis Ave/Bradley Ave | 38,128 |
| Champaign | Prospect Ave/Marketview Dr | 37,471 |
| Champaign | Neil St/Springfield Ave | 36,250 |
| Champaign | Neil St/Windsor Rd | 35,653 |

# Figure 5.2 Existing Transportation System



# Figure 5.3 Functional Classification of Urban Area Roadways



# 6 Goals & Objectives

## 6.1 Purpose

The formulation of goals and objectives determines what direction planning efforts should take, independent of time frame and individual projects.

A goal is defined as an end state that will be brought about by implementing the LRTP. Objectives are sub-goals that help organize the implementation of the plan into measurable and manageable parts. This LRTP update includes specific strategies which will help agencies reach the stated goals and objectives, and also includes specific measurables (MOEs) to track progress toward the completion of each goal and objective over time.

Goals: End state brought about by the implementation of the LRTP. → Objectives: Sub-goals that help organize the implementation into management parts. → Strategies: Specific action items to achieve objectives. → Measures of Effectiveness: Data used to evaluate progress toward goals and objectives.

## 6.2 Methodology

CUUATS staff, in conjunction with the LRTP Steering Committee, developed twelve principal goals that will lead local agencies in the implementation of the plan. These goals are grouped according to the eight SAFETEA-LU planning factors outlined by the federal government for transportation projects:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and freight;
- Protect the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system.

The goals and objectives were formulated based on a combination of the SAFETEA-LU factors, local knowledge, current local planning efforts, and input received during the initial LRTP public workshop. Additionally, some of the goals and objectives included in this update were revised from those listed in the LRTP from 2004. Agencies are listed under each set of strategies to delineate jurisdiction and/or responsibilities. The goals, objectives, and strategies generally represent concepts by which projects should be identified, designed, and constructed.

Finally, specific Measures of Effectiveness were developed to help local agencies track the progress of each objective during the five year period between LRTP updates. Each MOE is listed underneath its specific objective in the proceeding tables. Each table shows the goals, objectives, MOEs, strategies, and the parties responsible for implementation.

## SAFETEA-LU Planning Factor #1

Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency

| Planning Process Level | Description | | |
|---|---|---|---|
| Goal | 1. Non-single occupancy vehicle travel will be a principal consideration of the transportation planning process to make the urbanized area more sustainable, efficient, and provide a higher quality of life for residents | | |
| Objectives | Increase the miles of dedicated bicycle facilities and signed bike routes in the metropolitan planning area by 15% by 2014 | Provide transit service within a 1/4 mile for 90% of residential development (new or existing) within the CU-MTD transit service area by 2014 | By 2014, ensure that 100% of new development within the municipal boundaries or land annexed into a municipality provides sidewalks along roadway frontages through construction or a reservation of land and funds for construction, unless an acceptable alternative pathway is provided. Sidewalk connectivity must be analyzed with each new development proposal. |
| Measures of Effectiveness | Miles of Dedicated Bike Facilities | 1/4 Mile Coverage Analysis | Miles of New Sidewalk Constructed |
| | Miles of Signed Bike Routes | Number of Transit Routes | |
| Strategies | Construct new and maintain existing bicycle facilities, sign bike routes and make provisions for future connectivity | Encourage new residential development to locate within 1/4 mile of a transit line | Continue enforcing zoning and subdivision ordinances requiring new development to construct pedestrian facilities |
| | Implement recommendations for bicycle facilities found in the Urbana Bicycle Master Plan and Champaign Transportation Master Plan | Continue the expansion of the transit service area to be coterminous with the urbanized area boundary | Encourage redevelopment and infill within the existing municipal boundaries where pedestrian facilities already exist |
| | Revisit plan recommendations every five years to ensure recommendations are consistent with current transportation network conditions | Encourage redevelopment and infill development within the existing municipal boundaries | |
| Responsible Parties | Cities and Villages, Developers, CUUATS Staff | Cities and Villages, CU-MTD | Cities and Villages, Developers |

## SAFETEA-LU Planning Factor #1 (cont.)

Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency

| Planning Process Level | Description | |
|---|---|---|
| Goal | 2. Compact development and mixed-use forms should be principal considerations for new development and redevelopment in the urbanized area to create a more walkable, sustainable, and efficient development pattern | |
| Objectives | Increase gross densities in urban residential areas by 2025 | Increase the number of mixed-use projects in the urbanized area by 2014 |
| Measures of Effectiveness | Changes in Land Use | Database of Mixed-Use Buildings |
| | Change in Gross Density | |
| Strategies | Develop new zoning and subdivision standards which encourage compact development | Work with municipalities to provide standards for identifying mixed-use projects and other measures to encourage increased density |
| | Encourage new development to achieve higher gross densities | Track the number of existing and new mixed-use buildings in the urbanized area |
| | Encourage redevelopment and infill development within the existing municipal boundaries | Encourage new development and redevelopment to pursue mixed-use options where appropriate |
| Responsible Parties | Cities and Villages, Developers | CUUATS Staff, Cities and Villages |

## SAFETEA-LU Planning Factor #2

Increase the safety of the transportation system for motorized and non-motorized users

| Planning Process Level | Description | | |
|---|---|---|---|
| Goal | 3. Transportation modes and facilities in the urbanized area will be safe for all users | | |
| Objectives | Reduce the total number of crashes in Champaign-Urbana by 5% by 2014 | Reduce the total number of fatalities and severe injuries in Champaign-Urbana by 25% between 2009 and 2014 | Reduce the total number of crashes involving bicyclists and pedestrians in Champaign-Urbana by 15% by 2014 |
| Measures of Effectiveness | Total Crashes per 100M VMT | Total Fatalities per 100M VMT<br>Total Severe Injuries per 100M VMT | Total Pedestrian Crashes<br>Total Bicycle Crashes |
| Strategies | CUUATS will produce the Selected Crash Intersection Locations (SCIL) report every two years | CUUATS will produce the Selected Crash Intersection Locations (SCIL) report every two years | Close gaps in sidewalk and bicycle networks along roadways and in existing neighborhoods |
| | Evaluate intersections that have problematic or crash-inducing patterns and identify solutions | Evaluate intersections that have problematic or crash-inducing patterns and identify solutions | Continue to enforce codes requiring new development to provide sidewalks along roadway frontages and safe crossings at intersections |
| | Improve visibility for all roadway users through improved lighting, striping, signage, visibility triangles, and access control | Improve visibility for all roadway users through improved lighting, striping, signage, visibility triangles, and access control | Retrofit existing ramps and crosswalk entrances to meet ADA standards |
| | Continue educational programs for CUUATS member agencies as well as law enforcement officers about safety issues in the urbanized area | Continue educational programs for CUUATS member agencies as well as law enforcement officers about safety issues in the urbanized area | Install APS systems at intersections with high traffic volumes and/or high pedestrian crossing volumes |
| | Continue educational programs for grades K-12 including driver's education and safety programs such as Operation Cool | Continue educational programs for grades K-12 including driver's education and safety programs such as Operation Cool | Revise, complete and distribute Safe Walking Route Maps for public elementary and middle schools in Champaign-Urbana every two years and continue the Safe Routes to School program. |
| | Continue educational safety programs for the community including drivers, bicyclists and pedestrians | Continue educational safety programs for the community including drivers, bicyclists and pedestrians | Utilize Complete Streets concept to provide safe and adequate facilities for all modes of transportation within the roadway right-of-way |
| Responsible Parties | CUUATS Staff, Cities and Villages, Law Enforcement, CU-MTD, CU-SRTS | CUUATS Staff, Cities and Villages, Law Enforcement, CU-MTD, CU-SRTS | CUUATS Staff, Cities and Villages, Developers, CU-SRTS |

## SAFETEA-LU Planning Factor #3

Increase the security of the transportation system for motorized and non-motorized users

| Planning Process Level | Description | | |
|---|---|---|---|
| Goal | 4. The urbanized area transportation system will be secure from human and natural hazards | | |
| Objectives | Implement at least two projects listed in the ITS Architecture Plan which benefit the security of the people, buildings, and infrastructure in the urbanized area by 2014 | Create a plan detailing evacuation and emergency routes in the event of a human-made or natural disaster by 2014 | Create a plan for the urbanized area that details transport routes for hazardous materials by 2019 |
| Measures of Effectiveness | Number of ITS Projects Implemented | Creation of an Evacuation Plan | Creation of a Hazardous Materials Route Plan |
| Strategies | Continue the implementation of projects identified in the ITS architecture | Utilize travel demand modeling capabilities to determine the safest and most efficient evacuation routes | Consult with all necessary agencies to determine best routes for transporting hazardous materials in the urbanized area |
| | Consult with all necessary agencies to determine if projects need to be added or removed from the ITS project listing | Determine what changes need to be made to the current transportation system to implement evacuation and emergency routes | Determine what changes need to be made to the current transportation system to implement transport routes for hazardous materials |
| Responsible Parties | IDOT, CUUATS Staff, CUUATS Member Agencies, Emergency Responders | IDOT, CUUATS Staff, CUUATS Member Agencies, Emergency Responders | IDOT, CUUATS Staff, CUUATS Member Agencies, Emergency Responders |

## SAFETEA-LU Planning Factor #4

Increase the accessibility and mobility of people and freight

| Planning Process Level | Description | | | |
|---|---|---|---|---|
| Goal | 5. All transportation system users will have convenient, multi-modal access to all parts of the urbanized area and will travel with increased mobility during peak traffic hours | | | |
| Objectives | Improve average vehicular travel time by at least 1.5 minutes during peak hour periods on major traffic corridors by 2035 | Improve access for persons with disabilities to all parts of the urbanized area by 2035 | Improve truck freight movements in the urbanized area and reduce their effect on mobility and accessibility for other transportation modes by developing and implementing a truck route plan by 2035 | Improve the mobility of all transportation system users by applying the CUUATS Access Management Guidelines to selected major corridors by 2035 |
| Measures of Effectiveness | Level of Service<br>Travel Time Studies<br>Congestion | Number of APS Systems Installed<br>Number of ADA Accessible Sidewalk Ramps Constructed | Truck ADT Volumes on Selected Major Corridors | Number of Corridors with Managed Access |
| Strategies | Continue signal upgrades, periodic re-timing, and coordination of all new and existing signalized intersections | Install APS systems at intersections with high traffic volumes and/ or high pedestrian crossing volumes | Prepare a comprehensive truck route analysis to determine the safest and most efficient routes for trucks in the urbanized area | Revise Access Management Guidelines every five years |
| | Educate residents about the monetary, health and environmental benefits of mode shift. Encourage the use of other modes of transportation in place of personal vehicle use | Retrofit existing ramps and crosswalk entrances to meet ADA standards | Identify congested intersections resulting from increased truck volumes and recommend solutions | Evaluate access point locations and traffic circulation patterns for all new development as part of the plan review process |
| | Utilize car sharing programs and park and ride facilities to remove vehicle trips from the roadway network | Fill in gaps which exist in the current sidewalk network | Set delivery times for businesses in high traffic areas, particularly on campus and in the two downtowns | Work with property owners and developers to eliminate unnecessary access points along major corridors to improve mobility and safety |
| | Continue adding connected pedestrian, bicycle and transit facilities to the existing transportation network making these travel modes more efficient | Fix sidewalks that are in disrepair to make them more accessible and easier to use for disabled persons and all other users | Evaluate loading areas in the urbanized area to determine proper space, timing and roadway geometry | |
| Responsible Parties | IDOT, CUUATS Staff, Cities and Villages, CU-MTD | IDOT, Cities and Villages, CU-MTD | IDOT, CUUATS Staff, Cities and Villages | IDOT, CUUATS Staff, Cities and Villages, Developers, Property Owners |

## SAFETEA-LU Planning Factor #5

Protect the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns

| Planning Process Level | Description | | | |
|---|---|---|---|---|
| Goal | 6. To provide facilities for non-auto modes of transportation in order to improve mobility and decrease the number of vehicles on our roadways | | | |
| Objectives | Construct a comparable amount of facilities for active modes of transportation during new roadway construction, major reconstruction or lane reconfigurations by 2014 | Increase local transit ridership by at least 5% by 2014 | Increase the number of enplanements at Willard Airport by at least 10% by 2014 | Increase the number of Amtrak boardings at Illinois Terminal by at least 15% by 2014 |
| Measures of Effectiveness | Miles of New Roadway Constructed | Annual Transit Ridership | Annual Enplanements | Frequency of Trains per Day |
| | Miles of New Sidewalk Constructed | Number of Transit Routes | Number of Flights | Annual Ridership at Illinois Terminal |
| | Miles of Bicycle Facilities Constructed | Residential Acreage within 1/4 Mile of Transit Routes | | |
| Strategies | Utilize Complete Street design where applicable for all newly constructed roadways | Continue the expansion of the transit service area to be coterminous with the urbanized area boundary | Improve airport safety with construction of second Instrument Landing System (ILS) | Increase the frequency of passenger rail service utilizing Illinois Terminal as a stop |
| | Install striping of on-street bicycle lanes where consistent with existing bicycle plans during roadway resurfacing projects | Utilize park and ride facilities to help eliminate vehicle trips from the roadway network | Enact marketing program to increase enplanements and use of local airport | Pursue funding to complete a feasibility study for a high speed rail line using Illinois Terminal as one destination point |
| | Continue enforcing regulations requiring sidewalk construction for new development | Expand current and develop new transit lines to cover residential development not currently within 1/4 mile of existing transit service | Improve airport safety by collaborating with local governments to enact runway protection zoning measures | Market Illinois Terminal as a regional hub for rail travel in the region |
| | Continue the implementation of projects detailed in the Greenways and Trails Plan | Create direct service routes that connect areas of new residential development to major employment and activity centers | Establish, in conjunction with EDC, a local airport committee to study appropriate forms of airport governance | Improve public information for Amtrak passengers about transit connections from Illinois Terminal |
| Responsible Parties | IDOT, CUUATS Staff, Cities and Villages, Developers | Cities and Villages, CU-MTD, University of Illinois | Cities and Villages, County, EDC, University of Illinois | CU-MTD, Amtrak, IDOT |

## SAFETEA-LU Planning Factor #5 (cont.)

Protect the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns

| Planning Process Level | Description | | |
|---|---|---|---|
| Goal | 7. Utilize a sustainable approach to transportation planning and engineering which promotes environmental stewardship and energy conservation | | |
| Objectives | Continue to maintain attainment status for air quality through the year 2035 and remain below State ozone standards through 2014 | Increase the support level for 2 of the 7 non-life supporting segments for monitored rivers and streams in the metropolitan planning area by 2014 | Increase the amount of land preserved for existing natural areas, forested areas, parks, and prime agricultural land in the metropolitan planning area |
| Measures of Effectiveness | IEPA Air Quality Reports | IEPA Water Quality Reports<br>Acres of Wetlands<br>Acres of Floodplain | Agricultural Land Developed<br>Acres of Greenways |
| Strategies | Continue to construct infrastructure which makes walking, biking and riding transit safer, accessible and more efficient | Limit development and transportation projects which disturb or alter floodplain areas in the metropolitan planning area | Limit the fragmentation of natural habitats by new development and/or the construction or expansion of the transportation network |
| | Continue to replace buses running on fossil fuels with hybrid buses | Limit development and transportation projects which disturb or alter wetland habitats in the metropolitan planning area | Maintain existing and add new parks and forest preserves to the regional network of open space |
| | Promote park and ride facilities, car sharing and bike sharing programs in the urbanized area | Reduce and mitigate non-point source pollution caused by oil, fuel, and salt runoff from the roadway network | Preserve prime farmland through farmland preservation programs, transfer of development rights programs, and the establishment of growth boundaries within the metropolitan planning area |
| | Reduce idle time for motorized vehicles by coordinating signalized intersections and using roundabouts at appropriate locations | Reduce and mitigate point source pollution caused by farming operations, lawn fertilizing, and industrial waste | |
| Responsible Parties | IDOT, CUUATS Staff, CUUATS Member Agencies, CU-MTD | IDOT, Cities and Villages | IDOT, Cities and Villages, CUUATS Staff, Park Districts, Forest Preserve District |

## SAFETEA-LU Planning Factor #5 (cont.)

Protect the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns

| Planning Process Level | Description | | |
|---|---|---|---|
| Goal | 8. Provide a user-friendly, integrated regional transportation system that supports accessibility and promotes positive social benefits | | |
| Objectives | Consider issues of social justice in all transportation planning and service provisions | Require transit, bicycle, and pedestrian accessible site design, particularly in large-scale developments | Consider and mitigate environmental impacts in roadway widening, reconstruction, and new construction projects |
| Measures of Effectiveness | Not Yet Determined | Not Yet Determined | Not Yet Determined |
| Strategies | Complete Title VI Civil Rights reviews to protect against discrimination on the basis of race, color or religion | Create incentives/regulations for developers to incorporate transit-oriented designs and amenities | Minimize habitat destruction when improving and constructing transportation infrastructure |
| | Introduce visual and verbal language assistance aids in public involvement practices | Continue to mandate bike parking requirements for multi-family and commercial developments | Minimize noise and light pollution when constructing transportation infrastructure |
| | Seek and consider input from all residents, including low income and minority individuals, during the planning process | Retrofit existing developments and areas of high transit/ bike/ped traffic to incorporate facilities for those modes of transportation | Provide facilities to accommodate walking, biking and transit ridership where feasible to reduce greenhouse gas emissions |
| Responsible Parties | CUUATS Staff, Cities and Villages | Cities and Villages, CU-MTD, Developers, Property Owners | CUUATS Member Agencies |

## SAFETEA-LU Planning Factor #6

Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight

| Planning Process Level | Description | | | |
|---|---|---|---|---|
| Goal | 9. All transportation system users in the urbanized area will have access to a network of transportation modes and infrastructure that maximizes connectivity between origins and destinations and promotes the use of both motorized and non-motorized modes to travel between them | | | |
| Objectives | Increase the miles of dedicated bicycle facilities and signed bike routes in the metropolitan planning area by at least 15% by 2014 | By 2035, travel delay will not exceed 5.5 hours per person per year on urbanized area roadways due to the completion of an enhanced arterial fringe road system around the urbanized area | By 2014, ensure that 100% of new development within the municipal boundaries or land annexed into a municipality provides sidewalks along roadway frontages through construction or a reservation of land and funds for construction, unless an acceptable alternative pathway is provided. Sidewalk connectivity must be analyzed with each new development proposal. | Provide transit service within a 1/4 mile for 90% of residential development (new or existing) within the CU-MTD transit service area by 2014 |
| Measures of Effectiveness | Miles of Dedicated Bicycle Facilities | Hours of Delay per Person per Year | Miles of New Sidewalk Constructed | 1/4 Mile Coverage Analysis |
| | Miles of Signed Bike Routes | Miles of Fringe Road System Completed | | Miles of Transit Routes |
| Strategies | Promote Complete Streets policy implementation where feasible for new roadway construction | Work with CUUATS member agencies to secure funding to complete the enhanced arterial fringe road system | Continue enforcing zoning and subdivision ordinances requiring new development to construct pedestrian and bicycle facilities | Encourage new residential development to locate within 1/4 mile of a transit line |
| | Construct new and maintain existing bicycle facilities and signed bike routes | Evaluate and prioritize the repair, renovation, and/or construction of the fringe road system to improve the movement of traffic around the urbanized area | Encourage redevelopment and infill within the existing municipal boundaries where pedestrian facilities already exist | Continue the expansion of the transit service area to be coterminous with the urbanized area boundary |
| | Implement recommendations for bicycle facilities found in the Urbana Bicycle Master Plan and Champaign Transportation Master Plan | Construct remaining segments of the arterial/collector system for the urbanized area with sensitivity toward environmental and land use issues so as to not induce sprawl | | Encourage redevelopment and infill development within the existing municipal boundaries |
| Responsible Parties | IDOT, Cities and Villages, CUUATS Staff, CU-MTD | IDOT, CUUATS Staff, Cities and Villages | Cities and Villages, Developers | Cities and Villages, CU-MTD |

## SAFETEA-LU Planning Factor #7
Promote efficient system management and operation

| Planning Process Level | Description | | |
|---|---|---|---|
| Goal | 10. To the greatest extent possible, the existing capacity of the urbanized area transportation system will be maximized through innovative transportation system management approaches | | |
| Objectives | Maintain the number of vehicle miles traveled in 2005 through 2010 | Decrease Volume-to-Capacity (V/C) ratio to be representative of level of service "D" or better by 2035 | Increase the percentage of persons aged 16 and older using transit in their journey to work from 6.5% to 9% of the urbanized area by 2014 |
| Measures of Effectiveness | Vehicle Miles Traveled per Year | Volume to Capacity Ratio | American Community Survey Journey to Work Data<br>CU-MTD Annual Ridership Data |
| Strategies | Promote Complete Streets concept to provide facilities for all modes of transportation during new construction and reconstruction of roadways | Utilize access management guidelines and traffic signal coordination to optimize traffic flow | Establish new transit express and direct fixed route service from areas of new development to job and activity centers |
| | Continue the expansion of the transit service area to be coterminous with the urbanized area boundary | Promote Complete Streets concept to provide facilities for all modes of transportation during new construction and reconstruction of roadways | New developments should use a roadway design that allows for direct and convenient access for transit service and provides pedestrian and bicycle access to transit |
| | Utilize car sharing, bike sharing and park and ride facilities to remove vehicle trips from the roadway network | Continue the expansion of the transit service area to be coterminous with the urbanized area boundary | Promote the implementation and coordination recommendations listed in the Human Services Transportation Plan for the Urbanized Area, especially Job Access and Reverse Commute funding for the creation of new transit services to key locations in and around the urbanized area |
| Responsible Parties | IDOT, CUUATS Staff, Cities and Villages, CU-MTD | CUUATS Staff, IDOT, Cities and Villages, CU-MTD | CUUATS Staff, Cities and Villages, CU-MTD, Other Transportation Providers |

## SAFETEA-LU Planning Factor #7 (cont.)
Promote efficient system management and operation

| Planning Process Level | Description | |
|---|---|---|
| Goal | 11. Interagency coordination will be emphasized in all phases of the transportation planning and implementation process | |
| Objectives | Improve coordination and communication between transportation providers, funding agencies, and other agencies that are stakeholders in transportation projects | Ensure that individual projects are consistent with long-range transportation, land use, and other plans created by CUUATS member agencies |
| Measures of Effectiveness | Not Yet Determined | Not Yet Determined |
| Strategies | Continue to discuss transportation projects and plans as public forums at CUUATS Technical and Policy Committee meetings | Continue to discuss transportation projects and plans as public forums at CUUATS Technical and Policy Committee meetings |
| | Implement and continue coordination efforts established in the urbanized area and rural area Human Services Transportation Plans | Consult existing plans and policies prior to taking action on transportation and land use decisions |
| | | CUUATS staff will create and maintain a database of transportation and land use data as well as a listing of new transportation projects in the urbanized area |
| Responsible Parties | CUUATS Staff, CUUATS Member Agencies, Other Transportation Providers | CUUATS Staff and CUUATS Member Agencies |

## SAFETEA-LU Planning Factor #8

Emphasize the preservation of the existing transportation system

| Planning Process Level | Description |
|---|---|
| Goal | 12. To the greatest extent possible, improvements will be made to the existing roadway network to preserve or improve upon its current condition and to add pedestrian, bicycle and transit facilities where needed |
| Objectives | Ensure that no more than 50% of all roadway improvements or construction projects, between 2009 and 2014, fall outside the 2009 municipal boundaries of Champaign, Urbana, Savoy, and Bondville |
| Measures of Effectiveness | Miles of New Roadway Constructed or Improved Inside 2009 Municipal Boundaries |
| | Miles of New Roadway Constructed or Improved Outside 2009 Municipal Boundaries |
| Strategies | Focus new growth and development along the existing transportation network where capacity is sufficient to minimize the construction and maintenance of new roadways |
| | Utilize innovative transportation solutions, such as access management or signal coordination, to reduce congestion and the need for new roadways and added capacity |
| Responsible Parties | CUUATS Staff, CUUATS Member Agencies |

# 8 Regional Vision: Transportation Network in 2035

Land use patterns, employment and population, environmental concerns, and trends in travel patterns are all likely to create different demands on the region's transportation system. The LRTP's vision for the future attempts to take these projected changes into consideration and create a general vision for the region's transportation network. The vision presented in this chapter is based on the principles and ideas discussed in the Future Conditions Chapter. The vision is also broken into two categories to make clear which transportation projects are illustrative and which are fiscally constrained. The CUUATS travel demand model was utilized to help determine how different transportation factors will affect the urbanized area system over the next 25 years. The model provides quantitative comparisons for different alternatives in terms of future traffic volumes, levels of congestion, vehicular travel times and speeds, and transit usage. The model also helps identify "problem areas" in the transportation system that could benefit from future improvements.

## 8.1 Travel Demand Model Inputs

The CUUATS Travel Demand Model requires numerous inputs to create the most accurate simulation of the existing transportation system:

- Year 2000 population data was collected from the US Census Bureau for the urbanized area
- Year 2000 employment data was collected from the Champaign County Chamber of Commerce, Illinois Employment Security offices, University of Illinois, and local school districts
- Origin-destination surveys were completed to determine travel patterns in and around the urbanized area
- Household travel surveys were completed in 2002 to determine travel patterns by urbanized area households over a 24-hour time period
- On-board transit surveys were completed to determine the purpose, location and time of transit trips in the University District
- 24-hour traffic counts were conducted in hundreds of locations in the urbanized area in 2001, and some have been updated as corridor studies and traffic counts were requested by member agencies
- Turning movement counts were completed at approximately 150 locations within the urbanized area to help determine travel patterns during AM and PM peak hours and the off-peak (midday) hours. Turning movement counts have also been updated for some intersections in the urbanized area during corridor studies, intersection studies, and signal warrant studies
- Intersection and roadway segment characteristics (i.e. number of lanes, posted speed limits, traffic signal and sign locations, roadway widths, etc.) were collected for principal corridors in the urbanized area in order to establish a baseline condition for roadway capacity. These were all updated as part of this LRTP update
- Local public transit routes and ridership information were compiled from the Champaign-Urbana Mass Transit District

The model also requires several inputs to forecast baseline future conditions (2035):

- Population projections through the year 2035 were completed for the modeling area based on residential developments local planners anticipate will occur over the next 25 years. Population projections for the CUUATS modeling area resulted in an increase of 66,025 residents or 50.3%, as can be seen in Table 8.1.

Table 8.1 - Population Projections

| **Year** | 2000 | 2005 | 2015 | 2025 | 2035 |
|---|---|---|---|---|---|
| **Population** | 131,230 | 135,481 | 166,298 | 183,061 | 197,255 |

- Employment projections were completed through the year 2035 for the modeling area based on commercial, industrial, service, and educational employment sector growth that local planners anticipate will occur over the next 25 years. Employment projections for the CUUATS modeling area resulted in an increase of 55,314 employees or 77%, as can be seen in Table 8.2.

Table 8.2 - Employment Projections

| **Year** | 2000 | 2005 | 2015 | 2025 | 2035 |
|---|---|---|---|---|---|
| **Employment** | 71,558 | 77,138 | 89,418 | 110,808 | 126,872 |

- Transportation projects that have a reasonable expectation of occurring in the next 25 years were integrated into the model. These include, but are not limited to, the extension of Olympian Drive from Apollo Drive to US 45, the extension of Florida Avenue east to Illinois Route 130, the expansion of I-74 between Prospect Avenue and IL-47 in Mahomet, and additional improvements to segments of Curtis Road.

For more information on the CUUATS Transportation Model, please refer to the CUUATS Transportation Model Appendix.

## 8.2 Developing the Vision for 2035

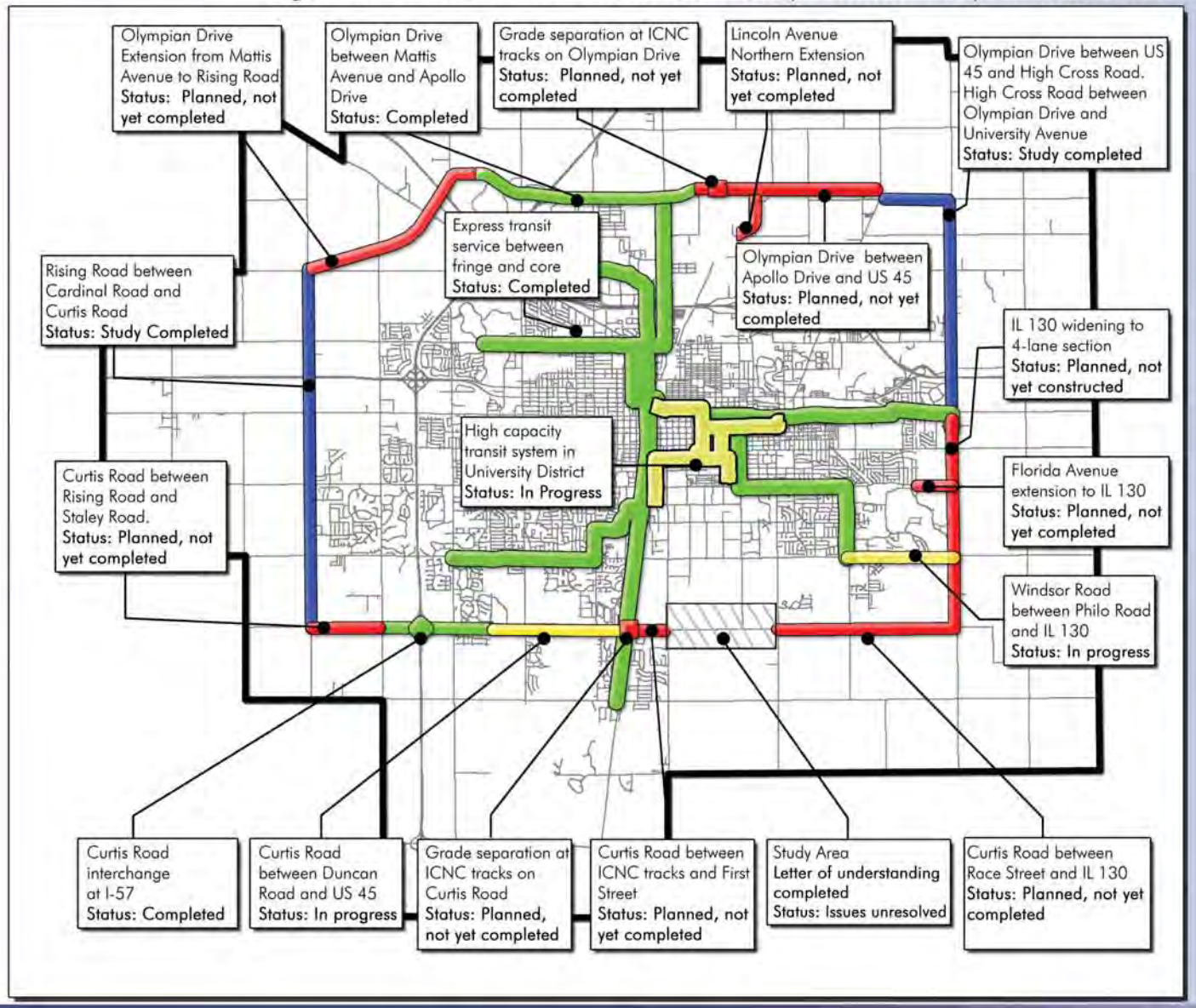
During this update of the LRTP, two separate concepts were developed. The first is the vision for the future, which is based on the principles and concepts found in the Future Conditions Chapter. Vision maps were created for roadway improvements, bicycle and pedestrian facilities, and public transit, rail and air projects that will provide a regional benefit to the transportation network. The projects highlighted in the roadway vision map are regionally significant projects that are likely to seek federal funding in the future. The projects and ideas that make up the visions for 2035 combine both fiscally constrained projects, as well as illustrative projects for which funding has not yet been identified. These two types of projects were combined on the vision maps to show how both sets of projects connect to each other to form a cohesive, complete transportation network. The visions also show how a multi-modal network that focuses on mode shift, from automobiles to active modes of transportation, can create more accessible and affordable choices for travelers in the urbanized area. The implementation of these projects will result in a more mobile and interconnected transportation network by the year 2035.

Some of the projects shown in the vision maps and the fiscally constrained map are similar to those shown in the preferred alternative from the 2004 LRTP. In 2004, after an iterative modeling process, CUUATS staff created a preferred alternative detailing 17 regionally significant transportation projects within the metropolitan planning boundary. These projects were mostly focused around the creation of an enhanced arterial fringe road system which would loop the urbanized area, providing a more efficient route for traveling between municipalities and around the urbanized area, as opposed to traveling through the core of the community. The preferred alternative also proposed two projects to expand the local transit system, as well as noting areas which needed to be studied further to determine necessary transportation improvements.

During this update of the LRTP, CUUATS staff, in conjunction with the LRTP Steering Committee, used an updated version of the 2004 preferred alternative as a base for creating the vision and the fiscally constrained project maps. Since many of the regionally significant projects from 2004 have not been funded or constructed as of 2009, and are still high priority projects, they remained part of the vision for 2035. The selected projects shown in each vision map were the result of discussions between CUUATS staff, the LRTP Steering Committee, and members of the CUUATS Technical and Policy Committees.

State and local agencies have made significant progress on the completion of the 2004 preferred alternative. Figure 8.1 shows the 2004 preferred alternative with a status update on each project as of 2009. The remaining projects have been added to the roadway vision for 2035. Projects which have guaranteed funding were added to the fiscally constrained projects map.

# Figure 8.1 2004 LRTP Preferred Transportation Project Status in 2009




## 2004 LRTP Preferred Transportation Project Status in 2009

This map displays the current status of the projects identified in the 2004 LRTP Preferred Alternative Plan. Each project is marked by a green, yellow or red coloring indicating its status. Green indicates a completed project, yellow indicates a project currently in progress and red indicates a project planned for completion by the year 2025.

**Legend**

- Completed Projects
- Projects in progress
- Projects planned for completion by 2025
- Study Completed (2 lane roadway w/ shoulders)
- Streets

## Regional Roadway Network Vision for 2035

The roadway vision for 2035 accounts for most of the overlap in projects from the 2004 LRTP to this 2009 update. It is important to look at the entire vision to understand how the proposed improvements come together to form a well connected and efficient network. Currently, there are arterial roadways in and around the urbanized area that provide incomplete connections. There are also unimproved arterials and collector streets that need to be improved to urban arterial standards for the safety of all roadway users. The implementation of the roadway vision for 2035 will ensure better connectivity and more efficient travel in and around the urbanized area for the future. The roadway vision combines both projects with funding and those that are not yet funded. Proceeding the regional vision map are two additional maps. The first (Figure 8.3) identifies regionally significant fiscally constrained projects and the second (Figure 8.4) identifies locally funded projects. It is important to look at Figures 8.2-8.4 as one complete vision for the future improvement of our roadway network. The three maps not only highlight the big picture roadway projects, but also look at the locally funded improvements which are focused primarily on the operation and maintenance of the existing transportation network.

The following information details the various projects, as shown in Figure 8.2, that comprise the regional roadway vision for 2035 *(projects are not listed in order of priority)*:

1. Possible interchange location with I-74 (West Champaign) - This project would provide funding for the completion of an Interchange Justification Study along I-74, west of the existing I-74/I-57 interchange. No funding has been secured for this study.

2. West Olympian Drive (east of Duncan Road to Rising Road) - This project is the western segment of the recently constructed Olympian Drive improvements between Apollo Drive and just east of Duncan Road. This extension will continue Olympian Drive west over I-74 and connect it with Rising Road in northwest Champaign.

3. I-74 widening from Prospect Avenue to IL-47 - Money from the 2010-2015 State Capital Bill has been allocated for the widening of I-74 from two lanes to three lanes in each direction. This project will reduce congestion along this section of I-74 and increase capacity along the entire section of the interstate.

4. Olympian Drive grade separation over CN railroad tracks - This project provides a grade separation over the CN railroad tracks for the extension of Olympian Drive between Apollo Drive and US 45.

5. Olympian Drive extension from Apollo Drive east to US 45 - Olympian Drive, between Apollo Drive and US 45, is proposed as an arterial roadway and would also include off-street bike and pedestrian facilities. This project has already received some federal and state funding to help with engineering costs and construction.

6. Lincoln Avenue extension to Olympian Drive - Lincoln Avenue is a heavily traveled north/south arterial providing access to I-74 and the University of Illinois campus. With the planned extension of Olympian Drive from Apollo Drive to US 45, extending Lincoln Avenue north to Olympian Drive will provide improved access to Lincoln Avenue.

7. High Cross Road preservation of rural roadway character - During the IL-130/High Cross Road Corridor Study, recommendations were made for the portion of High Cross Road between University Avenue north to Olympian Road as well as for Olympian Road between High Cross Road and US 45. The resulting recommendations suggested minor improvements to both sections of roadway to include repaving the existing surface and adding wider paved shoulders which could accommodate bicyclists. These minor improvements will help with safety concerns and add shoulders for bicyclists while still preserving the rural character of the area.

8. Possible interchange location with I-74 (East Urbana) - Funding has been allocated through the 2010-2015 State Capital Bill to complete an Interchange Justification Study in the east Urbana area of I-74. The study will determine the proper location, if any, for a new interchange in east Urbana connecting to I-74.

9. Florida Avenue extension to IL-130 - Currently, Florida Avenue ends just east of Abercorn Street in east Urbana. Florida Avenue does not intersect with IL-130, forcing traffic to use other east/west roadways such as Washington Street or Windsor Road for access to IL-130. The extension will also include an extension of the existing sidepath on

the south side of Florida Avenue. Extending Florida Avenue will provide access to IL-130 and create a more efficient travel path for all modes of transportation.

10. Windsor Road reconstruction from Philo Road to IL-130 - This project will reconstruct Windsor Road between Philo Road and IL-130 as a four-lane section with medians, and extensions east and west of the existing sidepaths on the north and south side for bicyclists and pedestrians. This project will increase capacity on Windsor Road and ease current and future congestion. The reconstruction of Windsor Road is currently underway but not yet completed.

11. IL-130 widening with medians from University Avenue to Curtis Road - This project widens and improves the segment of IL-130 between University Avenue and Curtis Road from the current two-lane section to a four-lane section with medians. The segment of IL-130 between University Avenue and Windsor Road received a funding allocation for engineering and construction through the 2010-2015 State Capital Bill. The segment between University Avenue and Windsor Road will also have a sidepath on the west side of IL-130.

12. Curtis Road improvements between IL-130 and Race Street - This segment of Curtis Road is proposed to be constructed as a four-lane section to match the current improvements on Curtis Road from Staley Road to Wesley Avenue. This project will include off-street facilities for pedestrians and bicyclists.

13. Curtis Road, between First Street and Race Street, letter of understanding completed, issues unresolved - *Improvements to this area are pending further discussion with the University of Illinois, City of Urbana, Champaign County, Village of Savoy, and Urbana Township*.

14. Curtis Road grade separation at CN tracks - This grade separation just east of the Curtis Road and US 45 intersection will provide a safer crossing of the railroad tracks than the current at-grade crossing. This grade separation will also help create a more efficient travel route when coupled with the existing and proposed Curtis Road improvements.

15. Curtis Road improvements between Wesley Avenue and Wynstone Drive - This project improves Curtis Road, from Wesley Avenue to Wynstone Drive, to a four-lane roadway section with sidepaths on the north and south sides of the roadway. This improvement matches the segment of Curtis Road from the new I-57 interchange east to Wynstone Drive. This project is currently under construction.

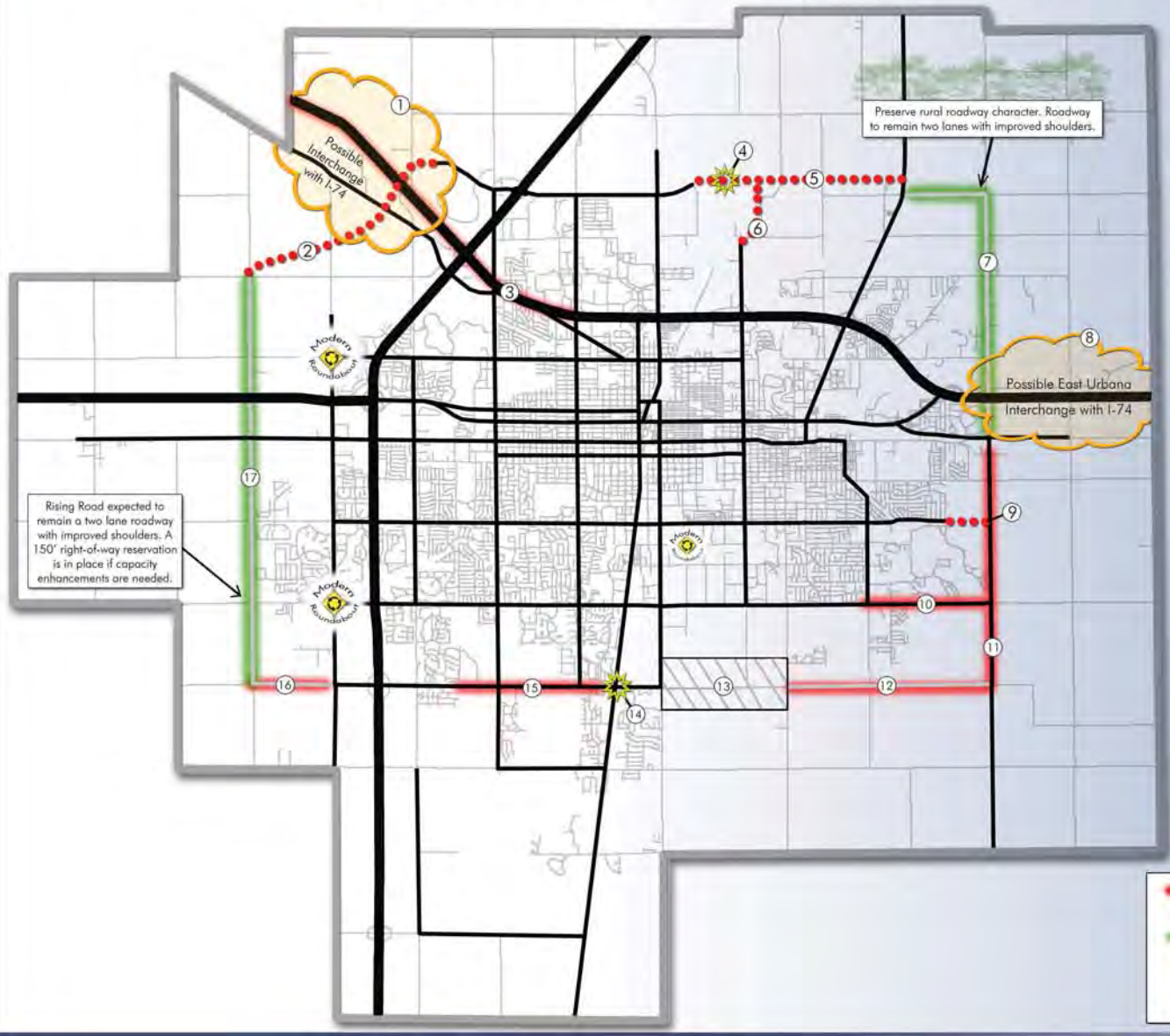
16. Curtis Road improvements between Staley Road and Rising Road - The remaining section of Curtis Road, between Staley Road and Rising Road, is proposed to be improved to a four-lane section with ten-foot multi-use trails on the north and south sides of the roadway.

17. Rising Road improvements from Cardinal Road to Curtis Road - The results of the Staley/Rising Corridor Study stated that if development patterns follow what is proposed in the study, Rising Road could remain a two-lane collector with improved six foot shoulders without experiencing large amounts of congestion. However, if fringe development continues as it is now, Rising Road may need to be improved to a four-lane arterial with off-street pedestrian and bicycle facilities. In anticipation of possible future improvement needs, the City of Champaign and CUUATS' Technical and Policy Committees approved a right-of-way reservation resolution reserving 150 feet of right-of-way along Rising Road.

Also shown on in Figure 8.2 are three possible intersection locations for the implementation of modern roundabouts: St. Mary's Road and Fourth Street, Windsor Road and Staley Road and Bradley Avenue and Staley Road. As discussed in the previous chapter, modern roundabouts can be safer and handle more traffic than traditional methods like stop signs and signals. Modern roundabouts can also be more environmentally friendly by reducing idling time and greenhouse gas emissions.

If the proposed roadway projects are implemented by the year 2035, travelers in the urbanized area will experience better connectivity, leading to reductions in travel time, travel delay and the total amount of vehicle hours traveled per year per person. The regional roadway vision for 2035 can be seen in Figure 8.2.

# Figure 8.2 LRTP 2035: Roadway Vision for the Future




## LRTP 2035 Vision for the Future

The LRTP Regional Roadway Vision for the Future is based on the Preferred Alternative developed during the 2004 LRTP as well as completed corridor studies, the urbanized area's Transportation Improvement Program, and the State Highway Improvement Program. The vision identifies projects having regional significance as well as the ability to reduce congestion and expand accessibility within the metropolitan planning area. Projects, both fiscally constrained and illustrative, are shown.

## LRTP 2035 Vision Project List

① Possible interchange location along I-74 in west Champaign; interchange justification study not yet funded
② Olympian Drive extension east of Duncan Road to Rising Road
③ I-74 widening from Prospect Ave to IL-47 in Mahomet
④ Olympian Drive grade separation at CN tracks
⑤ Olympian Drive extension from Apollo Drive to US 45
⑥ Lincoln Avenue northern extension to Olympian Drive
⑦ Preserve rural character of northeast Urbana roadways
⑧ Possible interchange location along I-74 in east Urbana; interchange justification study funded but not yet completed
⑨ Florida Avenue extension to IL-130
⑩ Windsor Road reconstruction between Philo Road and IL-130
⑪ IL-130 widening with medians from University Ave. to Curtis Road
⑫ Curtis Road improvements between IL-130 and Race Street
⑬ Curtis Road letter of understanding completed, issues unresolved
⑭ Curtis Road grade separation at CN tracks
⑮ Curtis Road improvements between Wesley Avenue and Wynstone Drive
⑯ Curtis Road improvements between Staley Road and Rising Road
⑰ Rising Road: resurface, stripe, and add 6' shoulders

Regional Arterial Improvements
New Regional Roadway Construction
Preservation Corridors
Areas for Possible Interchanges
Rail Crossing Improvement Projects
Planned Modern Roundabout
Existing Interstates
Existing Arterials
Existing Collector/Local Road
Metropolitan Planning Area

*Projects 12 and 16 are currently collectors/local roads, but will be improved to arterials following reconstruction.

## Fiscally Constrained Projects for 2035

The second map that makes up the roadway vision for 2035 is the identification of fiscally constrained projects. As part of the LRTP, the Federal Highway Administration requires a listing of the fiscally constrained projects that are part of the overall vision for the urbanized area. The fiscally constrained projects are those that have either guaranteed or reasonably guaranteed funding secured for the completion of the project. Fiscally constrained projects are required to be identified separately from the overall vision map to provide additional transparency to the public regarding funded transportation projects in the urbanized area. Within the urbanized area, there are nine regionally significant projects which are fiscally constrained:

1. I-74 widening from IL-47 to Prospect Avenue - This project widens and improves the segment of I-74 between IL-47 and Prospect Avenue from two lanes in each direction to three lanes in each direction. The added capacity will help reduce current congestion and deal with future demands on this section of the interstate. This project received funding through the 2010-2015 State Capital Bill.

2. Olympian Drive extension from east of Duncan Road to I-74 - This segment of Olympian Drive from east of Duncan Road to I-74 is proposed as an arterial with off-street bicycle and pedestrian facilities. This project has already received some federal and state funding to help with engineering and construction.

3. Olympian Drive extension from Apollo Drive to US 45 - Olympian Drive, between Apollo Drive and US 45, is proposed as an arterial and would also include off-street bike and pedestrian facilities. This project has already received some federal and state funding to help with engineering costs and construction.

4. Olympian Drive grade separation over CN railroad tracks - This project provides a grade separation over the CN railroad tracks for the extension of Olympian Drive between Apollo Drive and US 45.

5. IL-130 widening with medians from University Avenue to Windsor Road - This project widens and improves the segment of IL-130 between University Avenue and Windsor Road from the current two-lane section to a four-lane section with medians. This project will include a sidepath on the west side of IL-130. The project received a funding allocation for engineering and construction through the 2010-2015 State Capital Bill.

6. Florida Avenue extension to IL-130 - Currently, Florida Avenue ends just east of Abercorn Street in east Urbana. Florida Avenue does not intersect with IL-130, forcing traffic to use other east/west roadways such as Washington Street or Windsor Road for access to IL-130. The extension will also include an extension to the existing sidepath on the south side of Florida Avenue. Extending Florida Avenue will provide access to IL-130 and create a more efficient travel path for all modes of transportation. This project received local funding through the City of Urbana in the 2010-2013 TIP.

7. Windsor Road reconstruction from Philo Road to IL-130 - This project will reconstruct Windsor Road between Philo Road and IL-130 as a four-lane section with medians, and extensions east and west of the existing sidepath on the north side for bicyclists and pedestrians. This project will increase capacity on Windsor Road and ease current and future congestion. The reconstruction of Windsor Road is currently under construction but not yet completed.

8. Curtis Road improvements between Wesley Avenue and Wynstone Drive - This project improves Curtis Road, from Wesley Avenue to Wynstone Drive, to a four-lane roadway section with a sidepath on the north and south sides of the roadway. This improvement matches the segment of Curtis Road from the new I-57 interchange east to Wynstone Drive. This project is currently under construction.

9. High Capacity Transit Network - In the fall of 2009, CU-MTD instituted new high capacity transit routes to serve the core of the urbanized area where greater transit frequency was needed and warranted. These routes are currently being implemented. While not directly a roadway improvement project, it is a fiscally constrained transportation project that does promote mode shift and reduces automobile trips.

A map of the fiscally constrained projects is shown in Figure 8.3.

## Locally Funded Projects (FY 2010 - FY 2019)

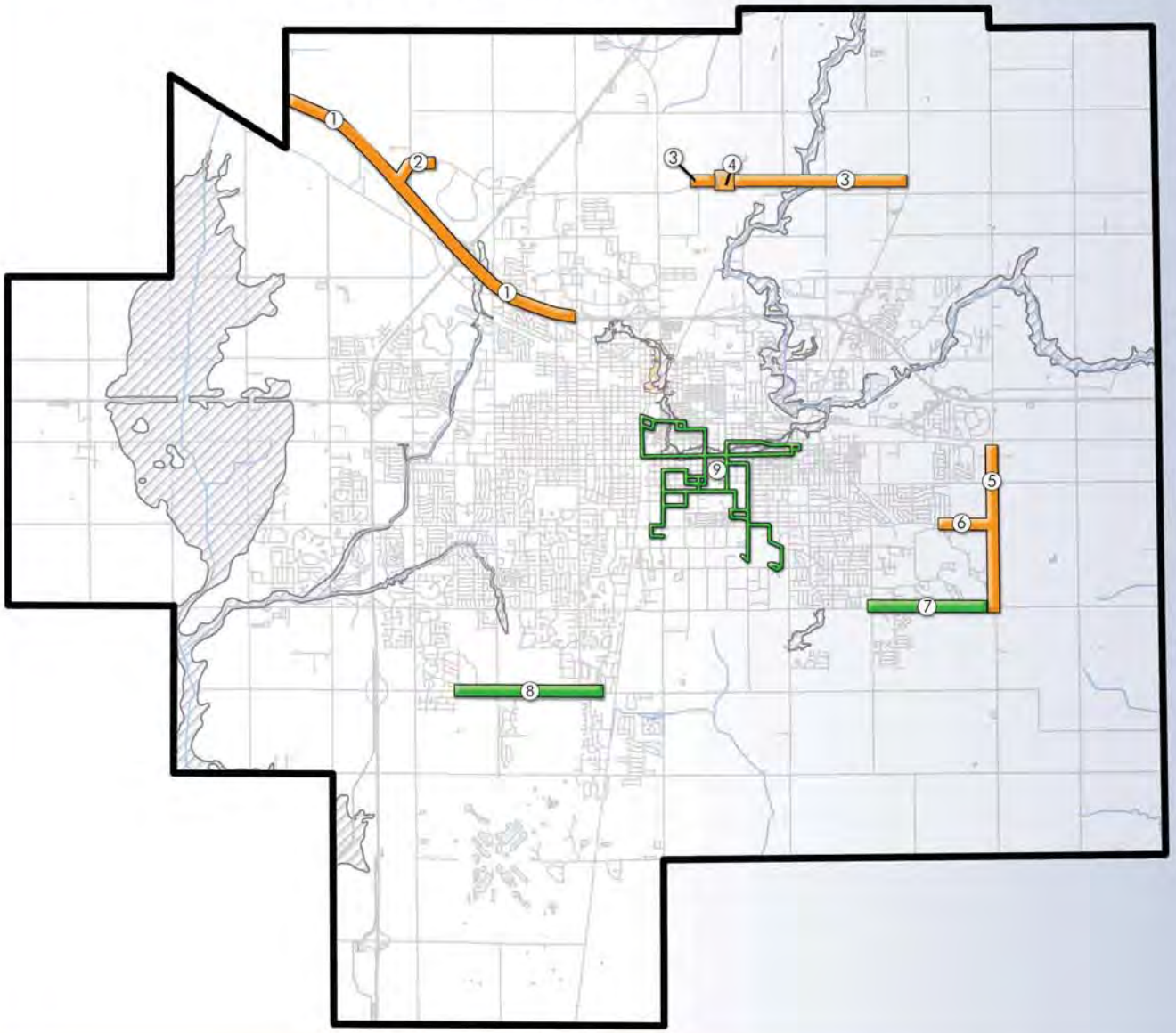
The third and final map which makes up the roadway vision for 2035 is one which identifies locally funded projects. While the LRTP is only responsible for identifying regionally significant transportation projects that could be targeted for federal funding, it is important to identify locally funded projects that are focused primarily on the operation and maintenance of the existing transportation network. The operation and maintenance of the existing transportation system currently utilizes a majority of local budgets that are dedicated to improving and maintaining transportation facilities. Over a multi-year period, system expansion, both in the form of capacity improvements and new roadway construction, utilizes a smaller portion of transportation budgets than the on-going operation and maintenance of the existing transportation system. The funding tables for each municipality's Capital Improvement Program and the urbanized area's Transportation Improvement Program can be seen in Chapter 9. The majority of the projects listed in the locally funded project tables are those involving existing system maintenance and operations.

Figure 8.4 identifies the location of all roadway and intersection projects that involve local transportation funding. The projects shown in Figure 8.4 were taken from the following sources:

- 2010-2013 Transportation Improvement Program for the urbanized area
- 2010-2019 Capital Improvement Program for the City of Champaign
- 2010-2019 Capital Improvement Program for the City of Urbana

Detailed information for each project shown in Figure 8.4 can be seen in the local funding tables in Chapter 9.

# Figure 8.3 Fiscally Constrained Projects: 2010-2035




## LRTP 2035 Fiscally Constrained Projects

This map shows all the regionally significant projects in the urbanized area that have either guaranteed or reasonably guaranteed funding for the completion of each improvement. Projects are separated into those that are currently being implemented and those that have funding but have not yet begun. The projects listed below are based on the 2004 LRTP Preferred Alternative and are currently listed in the 2010-2013 TIP, 2010-2015 State Highway Improvement Program, or have been identified by MTD as a project currently in progress.

## LRTP 2035 Fiscally Constrained Projects List

① I-74 widening from Prospect Ave to IL-47 in Mahomet
② Olympian Drive extension east of Duncan Road to I-74
③ Olympian Drive extension from Apollo Drive to US 45
④ Olympian Drive grade separation at CN tracks
⑤ IL-130 widening with medians from University Ave. to Windsor Road
⑥ Florida Avenue extension to IL-130
⑦ Windsor Road reconstruction between Philo Road and IL-130
⑧ Curtis Road improvements between Wesley Avenue and Wynstone Drive
⑨ High capacity transit network

## Legend

- Projects in Progress
- Regional Projects Not Yet Completed
- Streets
- Floodplain
- Water Course
- Wetland

# Figure 8.4 Local Transportation Projects from TIP FY10-13 and CIP FY10-19

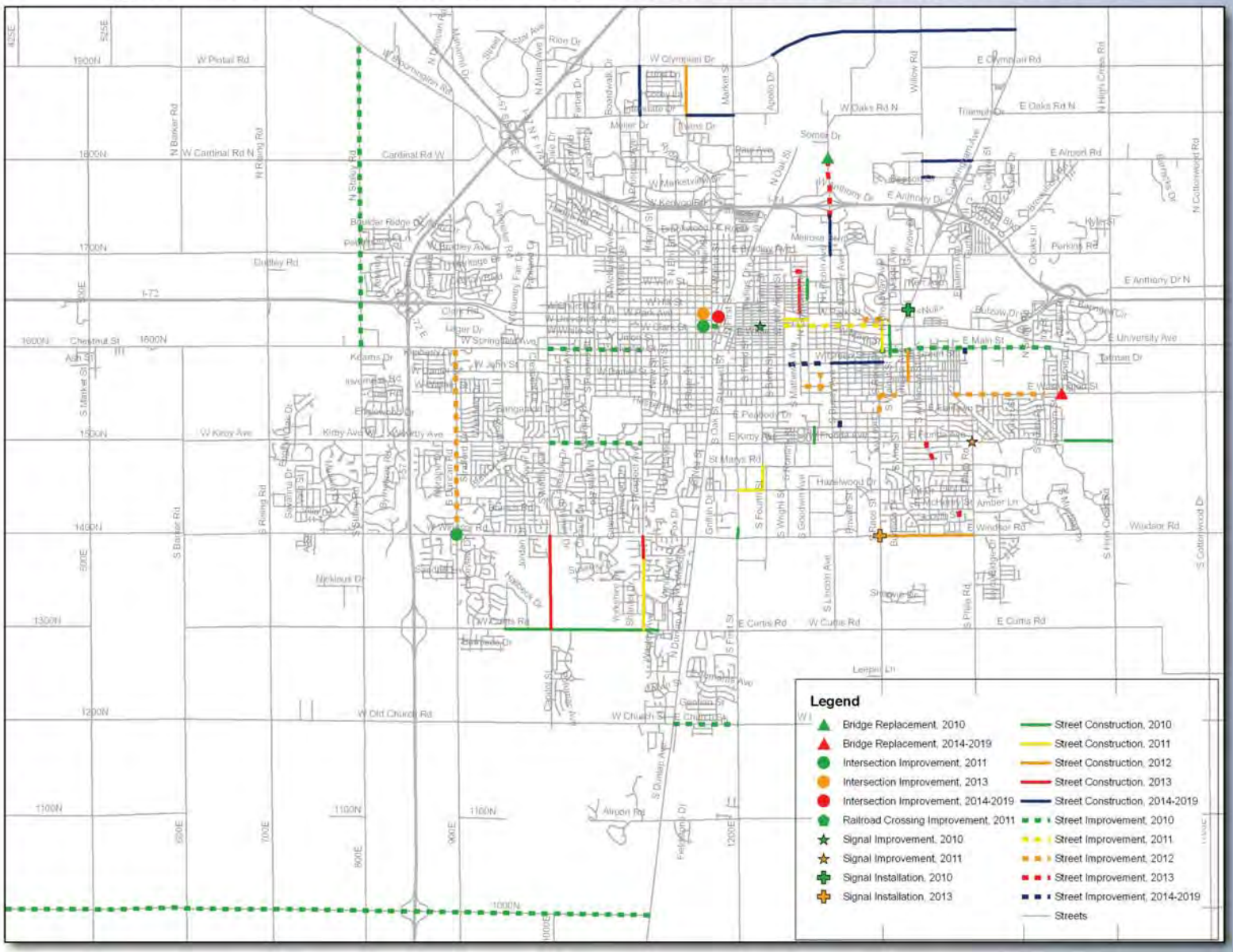


Table 8.3 - Model Results

| Statistic | Scenario | | |
|---|---|---|---|
| | 2005 Base Year | 2035 No Improvements | 2035 Full Improvements |
| Total Number of Households | 53,844 | 79,471 | |
| Total Population | 133,285 | 197,255 | |
| Total Vehicle Miles Traveled | 1,993,121 | 3,291,578 | 3,659,213 |
| Vehicle Miles Traveled per Household | 37.0 | 41.4 | 46.0 |
| Vehicle Miles Traveled per Person | 15.0 | 16.7 | 18.6 |
| Vehicle Hours Traveled | 50,282 | 104,649 | 99,280 |
| Vehicle Hours Traveled per Household | 0.9 | 1.3 | 1.2 |
| Vehicle Hours Traveled per Person | 0.4 | 0.5 | 0.5 |
| Total Auto Trips | 395,767 | 563,074 | 498,635 |
| Total Transit Trips | 36,050 | 48,698 | 54,950 |

## Congested and Nearly Congested Corridors

The model also provides data on corridors and roadway segments that will be fully congested or nearly congested under each scenario for the year 2035. Congestion is determined by analyzing the traffic volume on any given roadway in the network compared to the capacity that the roadway is built to handle. Volume refers to the amount of automobile traffic, and capacity refers to the amount of traffic a given roadway is able to handle. The ratio of volume over capacity is used to calculate congestion, and shown as follows:

$$\text{Fully Congested Corridor: } (\text{Volume/Capacity Ratio}) \geq 1.0$$

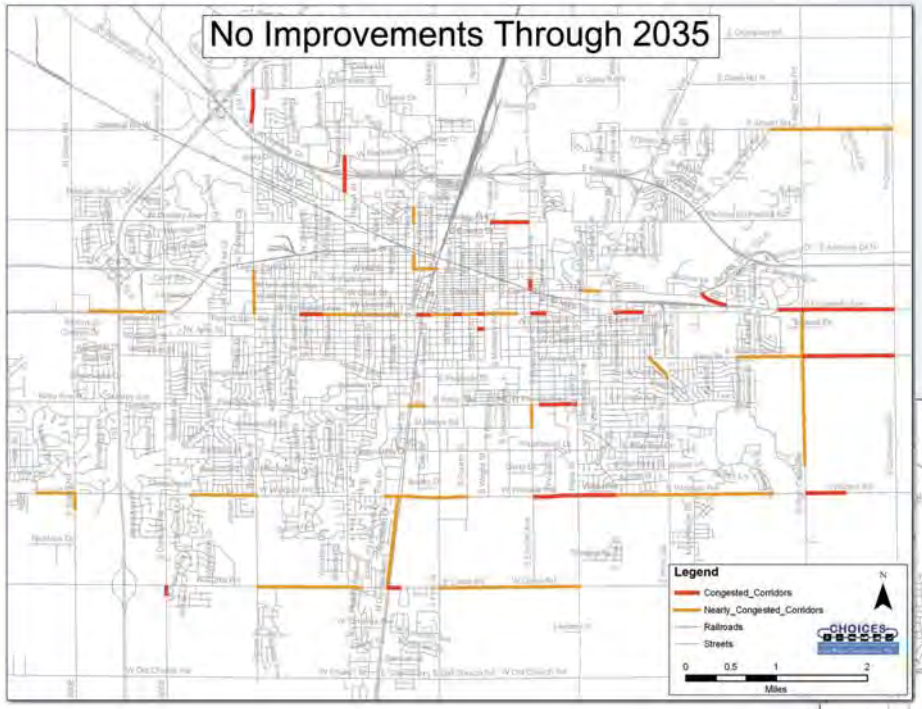
$$\text{Nearly Congested Corridor: } 1.0 > (\text{Volume/Capacity Ratio}) \geq 0.9$$

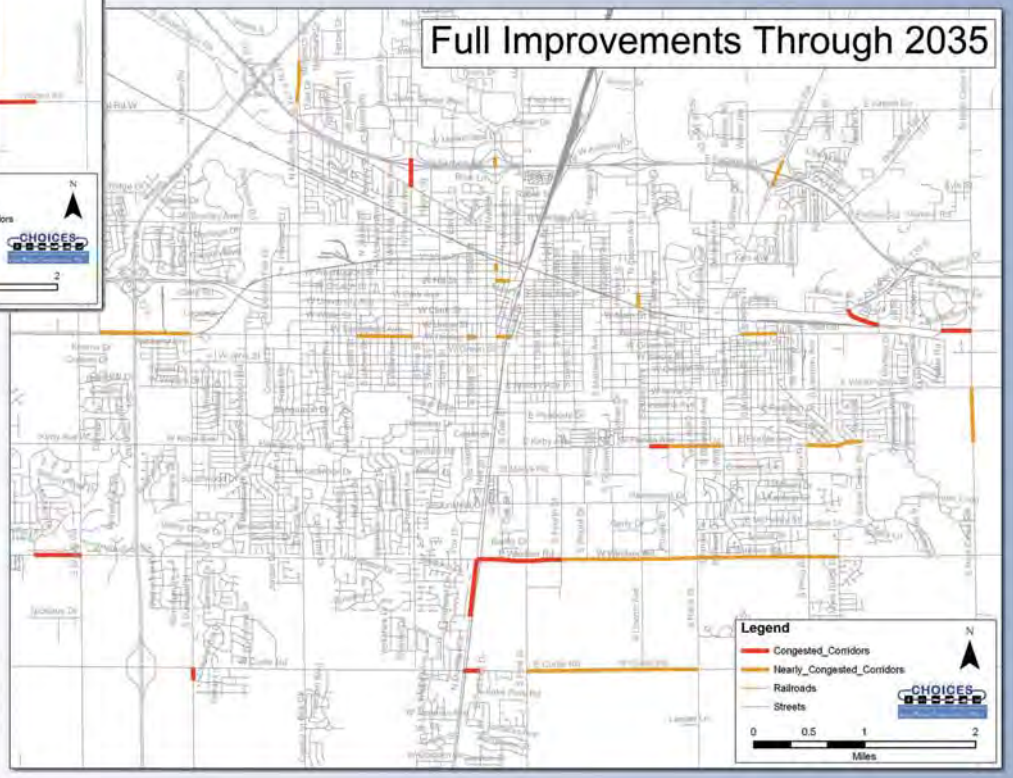
Figure 8.7 shows a congestion map for the year 2035 with No Improvements and 2035 with Full Improvements. The red lines represent corridors experiencing full congestion and significant travel delays. The orange lines represent corridors that are nearly congested. These corridors have not reached full capacity yet, but are still experiencing congestion and travel delay at undesirable levels. As is shown in Figure 8.6, the amount of congestion under the "No Improvement" scenario is far more than that experienced under the Full Improvement scenario. This is to be expected given the significant number of roadway improvement projects proposed through the year 2035. The amount of congestion under both scenarios is expected to decrease further once an accurate estimate of bike, pedestrian and transit trips is available through the mode choice model component.

## Conclusion

This chapter sets forth a vision for each mode of transportation in the urbanized area through the year 2035. This vision is meant to be general and looked at from a regional perspective. The vision is not meant to address detailed local projects such as a missing sidewalk link or the need for an additional bus shelter. The vision's purpose is to create a common set of regional transportation improvement projects that will improve efficiency, mobility and connectivity for residents and travelers within the urbanized area through the year 2035. The vision is also meant to help define the larger land use and transportation principles that are keys to growing a more compact and sustainable urbanized area.

# Figure 8.7 LRTP 2035: Congested and Nearly Congested Corridors



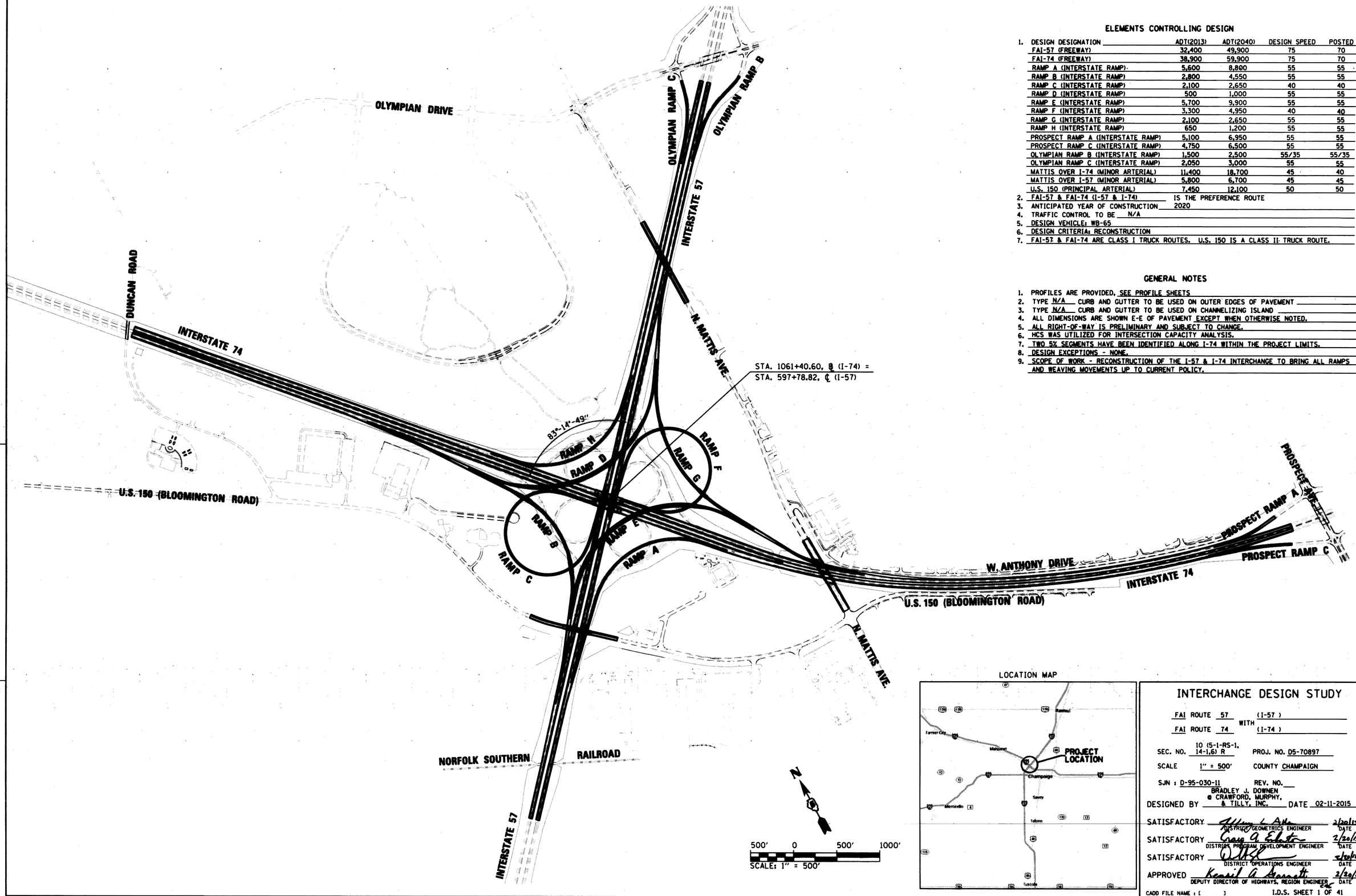

The two maps show the congested and nearly congested corridors as projected by the CUUATS Travel Demand Model for the year 2035.

The first map shows congestion for corridors in the urbanized area if no transportation improvements are made to the existing network through 2035.

The second map shows congestion for corridors if all transportation projects expected to occur by 2035 are completed.

# APPENDIX G
# Interchange Design Study

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USER NAME = Brad Downen




## ELEMENTS CONTROLLING DESIGN

| 1. DESIGN DESIGNATION | ADT(2013) | ADT(2040) | DESIGN SPEED | POSTED |
|---|---|---|---|---|
| FAI-57 (FREEWAY) | 32,400 | 49,900 | 75 | 70 |
| FAI-74 (FREEWAY) | 38,900 | 59,900 | 75 | 70 |
| RAMP A (INTERSTATE RAMP) | 5,600 | 8,800 | 55 | 55 |
| RAMP B (INTERSTATE RAMP) | 2,800 | 4,550 | 55 | 55 |
| RAMP C (INTERSTATE RAMP) | 2,100 | 2,650 | 40 | 40 |
| RAMP D (INTERSTATE RAMP) | 500 | 1,000 | 55 | 55 |
| RAMP E (INTERSTATE RAMP) | 5,700 | 9,900 | 55 | 55 |
| RAMP F (INTERSTATE RAMP) | 3,300 | 4,950 | 40 | 40 |
| RAMP G (INTERSTATE RAMP) | 2,100 | 2,650 | 55 | 55 |
| RAMP H (INTERSTATE RAMP) | 650 | 1,200 | 55 | 55 |
| PROSPECT RAMP A (INTERSTATE RAMP) | 5,100 | 6,950 | 55 | 55 |
| PROSPECT RAMP C (INTERSTATE RAMP) | 4,750 | 6,500 | 55 | 55 |
| OLYMPIAN RAMP B (INTERSTATE RAMP) | 1,500 | 2,500 | 55/35 | 55/35 |
| OLYMPIAN RAMP C (INTERSTATE RAMP) | 2,050 | 3,000 | 55 | 55 |
| MATTIS OVER I-74 (MINOR ARTERIAL) | 11,400 | 18,700 | 45 | 40 |
| MATTIS OVER I-57 (MINOR ARTERIAL) | 5,800 | 6,700 | 45 | 45 |
| U.S. 150 (PRINCIPAL ARTERIAL) | 7,450 | 12,100 | 50 | 50 |

2. FAI-57 & FAI-74 (I-57 & I-74) IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2020
4. TRAFFIC CONTROL TO BE N/A
5. DESIGN VEHICLE: WB-65
6. DESIGN CRITERIA: RECONSTRUCTION
7. FAI-57 & FAI-74 ARE CLASS I TRUCK ROUTES. U.S. 150 IS A CLASS II TRUCK ROUTE.

## GENERAL NOTES

1. PROFILES ARE PROVIDED, SEE PROFILE SHEETS
2. TYPE N/A CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE N/A CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT EXCEPT WHEN OTHERWISE NOTED.
5. ALL RIGHT-OF-WAY IS PRELIMINARY AND SUBJECT TO CHANGE.
6. HCS WAS UTILIZED FOR INTERSECTION CAPACITY ANALYSIS.
7. TWO 5% SEGMENTS HAVE BEEN IDENTIFIED ALONG I-74 WITHIN THE PROJECT LIMITS.
8. DESIGN EXCEPTIONS - NONE.
9. SCOPE OF WORK - RECONSTRUCTION OF THE I-57 & I-74 INTERCHANGE TO BRING ALL RAMPS AND WEAVING MOVEMENTS UP TO CURRENT POLICY.

LOCATION MAP




# INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57)
WITH
FAI ROUTE 74 (I-74)

SEC. NO. 10 (5-I-RS-1, 14-1,6) R PROJ. NO. D5-70897

SCALE 1" = 500' COUNTY CHAMPAIGN

SJN : D-95-030-11 REV. NO.

DESIGNED BY BRADLEY J. DOWNEN @ CRAWFORD, MURPHY, & TILLY, INC. DATE 02-11-2015

SATISFACTORY — DISTRICT GEOMETRICS ENGINEER — DATE 2/20/15

SATISFACTORY — DISTRICT PROGRAM DEVELOPMENT ENGINEER — DATE 2/20/15

SATISFACTORY — DISTRICT OPERATIONS ENGINEER — DATE 2/20/15

APPROVED — DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER — DATE 2/20/15

CADD FILE NAME : [ ] I.D.S. SHEET 1 OF 41

BDE-9908

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USER NAME = Brad Downen

## I-74

PROP. MEDIAN TRANS. (E.B. LANES)
R = 8,000.00' (INSIDE E.O.P.)
e = 3.1%
T.R. = 120'
S.E. RUN = 245'
P.C. STA. = 1076+01.60
P.C.C. STA. = 1085+38.19
ATTAIN S.E.;
STA. 1073+18.27 (-1.5% N.C.)
STA. 1074+38.27 (0% T.R.)
STA. 1076+83.27 (+3.1% S.E.)

PROP. MEDIAN TRANS. (W.B. LANES)
R = 5,950.00' (INSIDE E.O.P.)
e = 4.0%
T.R. = 125'
S.E. RUN = 250'
P.C. STA. = 1079+51.02
P.C.C. STA. = 1092+77.27
ATTAIN S.E.;
STA. 1076+59.35 (+2.0% N.C.)
STA. 1077+84.35 (0% T.R.)
STA. 1080+34.35 (-4.0% S.E.)

EXIST. CURVE 74-1
PI STA. = 1088+67.30
Δ = 18° 37' 57" (LT)
D = 0° 48' 50"
R = 7,040.65'
T = 1,155.00'
L = 2,289.60'
E = 94.11'
e = 3.4%
T.R. = N/A
S.E. RUN = 215'
P.C. STA. = 1077+12.30
P.C.C. STA. = 1100+01.90
ATTAIN S.E. (E.B. LANES);
STA. 1085+38.19 (+3.1% S.E.)
STA. 1085+57.16 (+3.4% S.E.)
ATTAIN S.E. (W.B. LANES);
STA. 1092+39.33 (-4.0% S.E.)
STA. 1092+77.27 (-3.4% S.E.)

EXIST. CURVE 74-2
PI STA. = 1105+01.96
Δ = 4° 41' 02" (LT)
D = 0° 28' 07"
R = 12,227.02'
T = 500.06'
L = 999.55'
E = 10.22'
e = 2.0%
T.R. = N/A
S.E. RUN = 125'
P.C.C. STA. = 1100+01.90
P.C.C. STA. = 1110+01.46
ATTAIN S.E.;
STA. 1099+30.23 (3.4% S.E.)
STA. 1100+17.73 (2.0% S.E.)

EXIST. CURVE 74-3
PI STA. = 1137+79.12
Δ = 25° 29' 45" (LT)
D = 0° 28' 00"
R = 12,277.57'
T = 2,777.66'
L = 5,463.35'
E = 310.29'
e = 2.0%
T.R. = N/A
S.E. RUN = 125'
P.C.C. STA. = 1110+01.46
P.T. STA. = 1164+64.81

## RAMP A

PROP. CURVE RAMPA-1
PI STA. = 123+19.95
Δ = 92° 33' 00" (RT)
D = 5° 58' 06"
R = 960.00'
T = 1,003.70'
L = 1,550.69'
E = 428.89'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C. STA = 113+16.25
P.T. STA = 128+66.94
ATTAIN S.E. (EXIT TERMINAL);
STA. 112+01.67 (+2.0 N.C.)
STA. 114+07.92 (+8.0% S.E. @ D-D)
REMOVE S.E. (ENTR. TERMINAL);
STA. 127+36.94 (+8.0% S.E. @ A-A)
STA. 128+66.94 (+5.61% @ B-B)
STA. 130+66.98 (+1.87% @ C-C)
STA. 131+67.04 (0% @ D-D)
STA. 134+12.04 (-3.1% MATCH M.L.)

## RAMP B

PROP. CURVE RAMPB-1
PI STA. = 209+00.11
Δ = 2° 51' 28" (RT)
D = 1° 25' 44"
R = 4,010.00'
T = 100.02'
L = 200.00'
E = 1.25'
e = 3.4%
T.R. = N/A
S.E. RUN = 115'
P.C. STA = 208+00.09
P.T. STA = 210+00.09
ATTAIN S.E. (EXIT TERMINAL);
STA. 207+91.07 (+2.0 N.C.)
STA. 208+38.42 (+3.4% S.E. @ D-D)
REMOVE S.E.;
STA. 209+61.76 (+3.4% S.E.)
STA. 210+26.02 (+1.5% N.C.)

PROP. CURVE RAMPB-2
PI STA. = 230+56.25
Δ = 70° 10' 53" (RT)
D = 4° 56' 21"
R = 1,160.00'
T = 814.98'
L = 1,420.88'
E = 257.67'
e = 7.8%
T.R. = N/A
S.E. RUN = 265'
P.C. STA = 222+41.27
P.T. STA = 236+62.15
ATTAIN S.E.;
STA. 220+27.23 (+1.5 N.C.)
STA. 222+41.27 (+7.8% S.E.)
REMOVE S.E.;
STA. 236+05.00 (+7.8% S.E.)
STA. 238+19.04 (+1.5% N.C.)

PROP. CURVE RAMPB-3
PI STA. = 245+08.57
Δ = 3° 42' 54" (RT)
D = 1° 25' 44"
R = 4,010.00'
T = 130.05'
L = 260.00'
E = 2.11'
e = 3.4%
T.R. = N/A
S.E. RUN = 115'
P.C. STA = 243+78.53
P.T. STA = 246+38.53
ATTAIN S.E.;
STA. 243+52.60 (+1.5 N.C.)
STA. 244+16.86 (+3.4% S.E.)
REMOVE S.E. (ENTR. TERMINAL);
STA. 246+38.53 (+3.4% S.E. @ B-B)
STA. 248+38.57 (+3.26% @ C-C)
STA. 249+38.59 (+2.24% @ D-D)
STA. 249+62.12 (+2.0% N.C.)

## RAMP C

PROP. CURVE RAMPC-1
PI STA. = 310+42.66
Δ = 11° 56' 12" (RT)
D = 5° 58' 06"
R = 960.00'
T = 100.36'
L = 200.00'
E = 5.23'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C. STA = 309+42.29
P.T. STA = 311+42.29
ATTAIN S.E. (EXIT TERMINAL);
STA. 308+27.71 (+2.0 N.C.)
STA. 310+33.96 (+8.0% S.E. @ D-D)

PROP. CURVE RAMPC-2
PI STA. = 320+51.51
Δ = 124° 20' 18" (RT)
D = 11° 56' 12"
R = 480.00'
T = 909.21'
L = 1,041.65'
E = 548.14'
e = 8.0%
T.R. = N/A
S.E. RUN = N/A
P.C. STA = 311+42.29
P.C.C. STA = 321+83.95

PROP. CURVE RAMPC-3
PI STA. = 330+93.16
Δ = 124° 20' 18" (RT)
D = 11° 56' 12"
R = 480.00'
T = 909.21'
L = 1,041.65'
E = 548.14'
e = 8.0%
T.R. = N/A
S.E. RUN = N/A
P.C.C. STA = 321+83.95
P.C.C. STA = 332+25.60

PROP. CURVE RAMPC-4
PI STA. = 333+25.97
Δ = 11° 56' 12" (RT)
D = 5° 58' 06"
R = 960.00'
T = 100.36'
L = 200.00'
E = 5.23'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C.C. STA = 332+25.60
P.T. STA = 334+25.60
REMOVE S.E. (ENTR. TERMINAL);
STA. 332+95.60 (+8.0% S.E. @ A-A)
STA. 334+25.60 (+5.81% @ B-B)
STA. 336+25.64 (+3.26% @ C-C)
STA. 337+25.66 (+2.24% @ D-D)
STA. 337+35.66 (+2.0% N.C.)

## RAMP D

PROP. CURVE RAMPD-1
PI STA. = 421+90.36
Δ = 109° 32' 31" (LT)
D = 4° 14' 39"
R = 1,350.00'
T = 1,911.69'
L = 2,581.02'
E = 990.32'
e = 7.4%
T.R. = N/A
S.E. RUN = 250'
P.C. STA = 402+78.67
P.T. STA = 428+59.69
ATTAIN S.E.;
STA. 401+62.68 (+1.5 N.C.)
STA. 403+62.00 (+7.4% S.E.)
REMOVE S.E.;
STA. 427+76.36 (+7.4% S.E.)
STA. 429+75.68 (+1.5% N.C.)

## RAMP E

PROP. CURVE RAMPE-1
PI STA. = 520+74.57
Δ = 110° 15' 02" (LT)
D = 4° 35' 01"
R = 1,250.00'
T = 1,793.52'
L = 2,405.30'
E = 936.14'
e = 7.6%
T.R. = N/A
S.E. RUN = 260'
P.C. STA = 502+81.04
P.T. STA = 526+86.34
ATTAIN S.E.;
STA. 501+59.03 (+1.5 N.C.)
STA. 503+67.71 (+7.6% S.E.)
REMOVE S.E.;
STA. 525+99.67 (+7.6% S.E.)
STA. 528+08.35 (+1.5% N.C.)

## RAMP F

PROP. CURVE RAMPF-1
PI STA. = 610+42.66
Δ = 11° 56' 12" (RT)
D = 5° 58' 06"
R = 960.00'
T = 100.36'
L = 200.00'
E = 5.23'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C. STA = 609+42.29
P.T. STA = 611+42.29
ATTAIN S.E. (EXIT TERMINAL);
STA. 608+27.71 (+2.0 N.C.)
STA. 610+33.96 (+8.0% S.E. @ D-D)

PROP. CURVE RAMPF-2
PI STA. = 620+51.51
Δ = 124° 20' 18" (RT)
D = 11° 56' 12"
R = 480.00'
T = 909.21'
L = 1,041.65'
E = 548.14'
e = 8.0%
T.R. = N/A
S.E. RUN = N/A
P.C. STA = 611+42.29
P.C.C. STA = 621+83.95

PROP. CURVE RAMPF-3
PI STA. = 630+93.16
Δ = 124° 20' 18" (RT)
D = 11° 56' 12"
R = 480.00'
T = 909.21'
L = 1,041.65'
E = 548.14'
e = 8.0%
T.R. = N/A
S.E. RUN = N/A
P.C.C. STA = 621+83.95
P.C.C. STA = 632+25.60

PROP. CURVE RAMPF-4
PI STA. = 633+25.97
Δ = 11° 56' 12" (RT)
D = 5° 58' 06"
R = 960.00'
T = 100.36'
L = 200.00'
E = 5.23'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C.C. STA = 632+25.60
P.T. STA = 634+25.60
REMOVE S.E. (ENTR. TERMINAL);
STA. 632+95.60 (+8.0% S.E. @ A-A)
STA. 634+25.60 (+5.81% @ B-B)
STA. 636+25.64 (+3.26% @ C-C)
STA. 637+25.66 (+2.24% @ D-D)
STA. 637+35.66 (+2.0% N.C.)

## RAMP G

PROP. CURVE RAMPG-1
PI STA. = 709+83.61
Δ = 16° 53' 10" (RT)
D = 4° 35' 01"
R = 1,250.00'
T = 185.54'
L = 368.40'
E = 13.70'
e = 7.6%
T.R. = N/A
S.E. RUN = 260'
P.C. STA = 707+98.07
P.T. STA = 711+66.47
ATTAIN S.E. (EXIT TERMINAL);
STA. 707+44.91 (+4.0% MATCH M.L.)
STA. 708+68.07 (+7.6% S.E. @ D-D)
REMOVE S.E.;
STA. 710+79.80 (+7.6% S.E.)
STA. 712+88.48 (+1.5% N.C.)

PROP. CURVE RAMPG-2
PI STA. = 730+86.74
Δ = 60° 51' 35" (RT)
D = 3° 30' 16"
R = 1,635.00'
T = 960.40'
L = 1,736.70'
E = 261.20'
e = 6.7%
T.R. = N/A
S.E. RUN = 230'
P.C. STA = 721+26.34
P.T. STA = 738+63.05
ATTAIN S.E.;
STA. 720+24.50 (+1.5% N.C.)
STA. 722+03.01 (+6.7% S.E.)
REMOVE S.E.;
STA. 737+86.38 (+6.7% S.E.)
STA. 739+64.89 (+1.5% N.C.)

PROP. CURVE RAMPG-3
PI STA. = 747+79.90
Δ = 8° 01' 17" (RT)
D = 2° 17' 31"
R = 2,500.00'
T = 175.29'
L = 350.00'
E = 6.14'
e = 5.0%
T.R. = N/A
S.E. RUN = 170'
P.C. STA = 746+04.61
P.T. STA = 749+54.61
ATTAIN S.E.;
STA. 746+61.28 (+1.5 N.C.)
STA. 747+80.28 (+5.0% S.E.)
REMOVE S.E. (ENTR. TERMINAL);
STA. 749+54.57 (+5.0% @ B-B)
STA. 751+54.61 (+3.26% @ C-C)
STA. 753+54.65 (+2.0% N.C. @ D-D)

## RAMP H

PROP. CURVE RAMPH-1
PI STA. = 814+42.14
Δ = 91° 36' 27" (RT)
D = 5° 58' 06"
R = 960.00'
T = 987.32'
L = 1,534.90'
E = 417.10'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C. STA = 804+54.82
P.T. STA = 819+89.72
ATTAIN S.E. (EXIT TERMINAL);
STA. 803+14.82 (+2.0 N.C. @ C-C)
STA. 805+24.82 (+8.0% S.E. @ D-D)
REMOVE S.E. (ENTR. TERMINAL);
STA. 818+59.72 (+8.0% S.E. @ A-A)
STA. 819+89.72 (+5.81% @ B-B)
STA. 821+89.76 (+3.26% @ C-C)
STA. 822+89.78 (+2.24% @ D-D)
STA. 823+13.31 (+2.0 N.C.)

## PROSPECT RAMP A

PROP. CURVE PROSPECT RAMPA-1
PI STA. = 18+54.42
Δ = 18° 36' 23" (RT)
D = 4° 13' 42"
R = 1,355.00'
T = 221.97'
L = 440.03'
E = 18.06'
e = 7.4%
T.R. = N/A
S.E. RUN = 250'
P.C. STA = 16+32.45
P.T. STA = 20+72.48
ATTAIN S.E.;
STA. 15+16.46 (+1.5% N.C.)
STA. 17+15.78 (+7.4% S.E.)
REMOVE S.E. (ENTR. TERMINAL);
STA. 19+42.48 (+7.4% S.E. @ A-A)
STA. 20+72.48 (+5.81% @ B-B)
STA. 22+72.16 (+3.26% @ C-C)
STA. 24+71.93 (+2.0% @ D-D)

## PROSPECT RAMP C

PROP. CURVE PROSPECT RAMPC-1
PI STA. = 31+64.59
Δ = 8° 00' 37" (RT)
D = 1° 32' 32"
R = 3,715.00'
T = 260.11'
L = 519.38'
E = 9.10'
e = 3.6%
T.R. = N/A
S.E. RUN = 125'
P.C. STA = 29+04.48
P.T. STA = 34+23.86
ATTAIN S.E. (EXIT TERMINAL);
STA. 25+20.27 (-2.0% MATCH M.L. @ B-B)
STA. 27+64.48 (+2.0% N.C. @ C-C)
STA. 29+74.48 (+3.6% S.E. @ D-D)
REMOVE S.E.;
STA. 33+82.19 (+3.6% S.E.)
STA. 34+55.11 (+1.5 N.C.)

## OLYMPIAN RAMP B

PROP. CURVE OLYMPIAN RAMPB-1
PI STA. = 16+43.25
Δ = 25° 36' 11" (RT)
D = 5° 58' 06"
R = 960.00'
T = 218.13'
L = 428.98'
E = 24.47'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C. STA = 14+25.12
P.T. STA = 18+54.10
ATTAIN S.E. (EXIT TERMINAL);
STA. 12+85.12 (+2.0% N.C. @ C-C)
STA. 14+95.12 (+8.0% S.E. @ D-D)
REMOVE S.E.;
STA. 17+16.60 (+8.0% S.E.)
STA. 19+91.60 (0% T.R.)

PROP. CURVE OLYMPIAN RAMPB-2
PI STA. = 21+88.76
Δ = 28° 41' 07" (LT)
D = 15° 04' 42"
R = 379.99'
T = 97.16'
L = 190.24'
E = 12.22'
e = 7.8%
T.R. = N/A
S.E. RUN = 200'
P.C. STA = 20+91.60
P.T. STA = 22+81.84
ATTAIN S.E.;
STA. 19+91.60 (0% T.R.)
STA. 21+91.60 (-8.0% MATCH EXIST.)

## OLYMPIAN RAMP C

PROP. CURVE OLYMPIAN RAMPC-1
PI STA. = 14+15.02
Δ = 17° 37' 10" (RT)
D = 5° 58' 06"
R = 960.00'
T = 148.78'
L = 295.21'
E = 11.46'
e = 8.0%
T.R. = N/A
S.E. RUN = 275'
P.C. STA = 12+66.24
P.C.C. STA = 15+61.45
ATTAIN S.E.;
STA. 11+51.66 (+2.0% MATCH EXIST.)
STA. 13+57.91 (+8.0% S.E.)

PROP. CURVE OLYMPIAN RAMPC-2
PI STA. = 17+41.85
Δ = 10° 13' 54" (RT)
D = 2° 50' 36"
R = 2,015.00'
T = 180.40'
L = 359.83'
E = 8.06'
e = 5.8%
T.R. = N/A
S.E. RUN = 200'
P.C.C. STA = 15+61.45
P.T. STA = 19+21.28
ATTAIN S.E.;
STA. 15+61.45 (+8.0% S.E.)
STA. 16+37.31 (+5.8% S.E.)
REMOVE S.E. (ENTR. TERMINAL);
STA. 19+21.28 (+5.8% @ B-B)
STA. 21+21.28 (+3.26% @ C-C)
STA. 23+21.32 (+2.0% @ D-D)

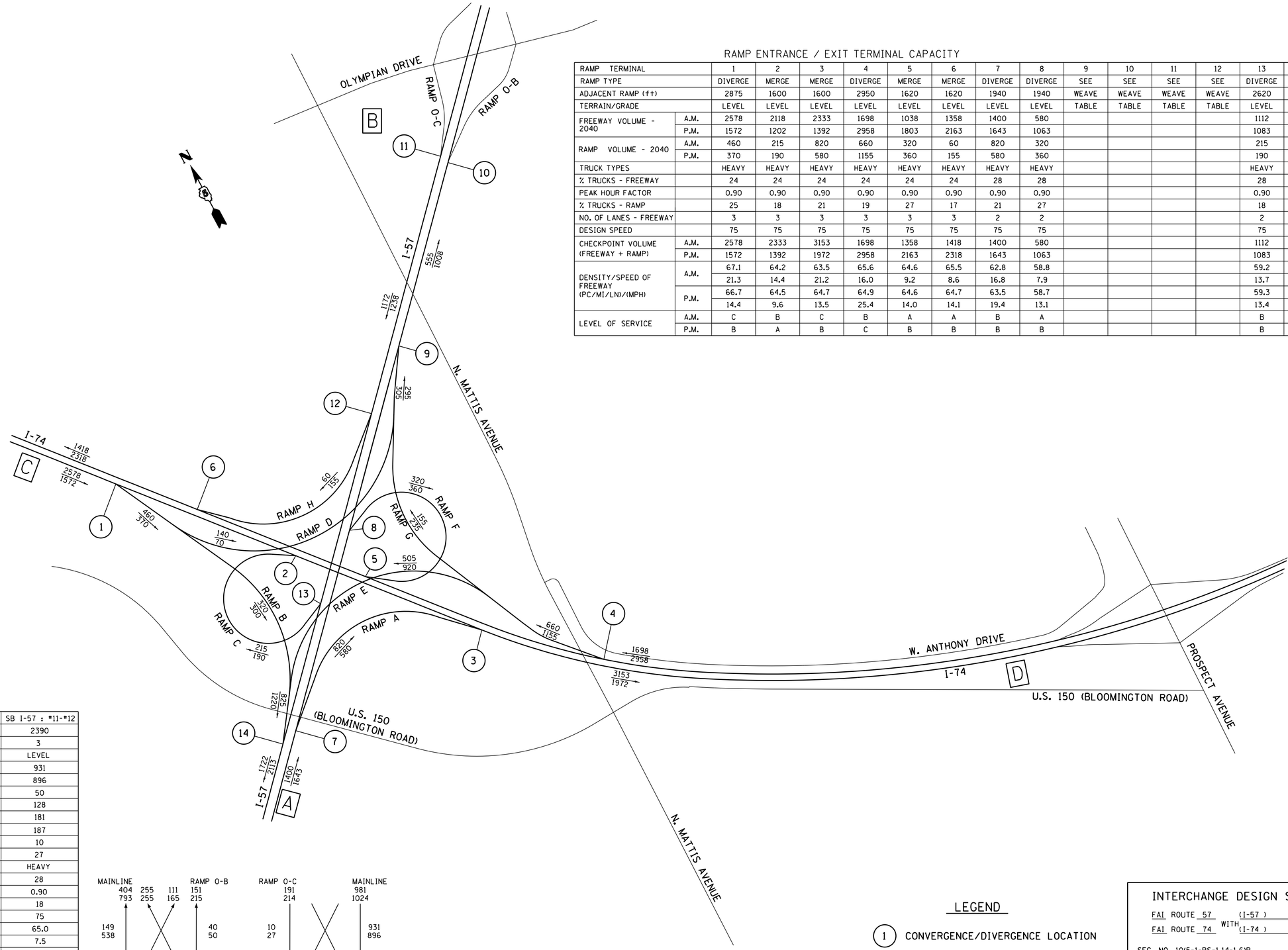
INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE N.T.S. COUNTY CHAMPAIGN
SJN : PROJ. NO.
I.D.S. SHEET 2 OF 41

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## TRAFFIC DATA

| MOVEMENT | YEAR 2040 AM DESIGN HOURLY VOLUME | YEAR 2040 PM DESIGN HOURLY VOLUME |
|---|---|---|
| AB | 260 | 703 |
| AC | 320 | 360 |
| AD | 820 | 580 |
| BA | 897 | 893 |
| BC | 60 | 155 |
| BD | 215 | 190 |
| CA | 320 | 300 |
| CB | 140 | 70 |
| CD | 2118 | 1202 |
| DA | 505 | 920 |
| DB | 155 | 235 |
| DC | 1038 | 1803 |
| TOTAL A | 3122 | 3756 |
| TOTAL B | 1727 | 2246 |
| TOTAL C | 3996 | 3890 |
| TOTAL D | 4851 | 4930 |

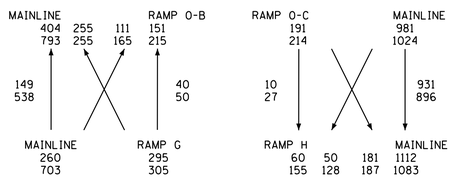



## RAMP ENTRANCE / EXIT TERMINAL CAPACITY

| RAMP TERMINAL | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RAMP TYPE | | DIVERGE | MERGE | MERGE | DIVERGE | MERGE | MERGE | DIVERGE | DIVERGE | SEE | SEE | SEE | SEE | DIVERGE | MERGE |
| ADJACENT RAMP (ft) | | 2875 | 1600 | 1600 | 2950 | 1620 | 1620 | 1940 | 1940 | WEAVE | WEAVE | WEAVE | WEAVE | 2620 | 2620 |
| TERRAIN/GRADE | | LEVEL | LEVEL | LEVEL | LEVEL | LEVEL | LEVEL | LEVEL | LEVEL | TABLE | TABLE | TABLE | TABLE | LEVEL | LEVEL |
| FREEWAY VOLUME - 2040 | A.M. | 2578 | 2118 | 2333 | 1698 | 1038 | 1358 | 1400 | 580 | | | | | 1112 | 897 |
| | P.M. | 1572 | 1202 | 1392 | 2958 | 1803 | 2163 | 1643 | 1063 | | | | | 1083 | 893 |
| RAMP VOLUME - 2040 | A.M. | 460 | 215 | 820 | 660 | 320 | 60 | 820 | 320 | | | | | 215 | 825 |
| | P.M. | 370 | 190 | 580 | 1155 | 360 | 155 | 580 | 360 | | | | | 190 | 1220 |
| TRUCK TYPES | | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY | | | | | HEAVY | HEAVY |
| % TRUCKS - FREEWAY | | 24 | 24 | 24 | 24 | 24 | 24 | 28 | 28 | | | | | 28 | 28 |
| PEAK HOUR FACTOR | | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | | | | | 0.90 | 0.90 |
| % TRUCKS - RAMP | | 25 | 18 | 21 | 19 | 27 | 17 | 21 | 27 | | | | | 18 | 24 |
| NO. OF LANES - FREEWAY | | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | | | | | 2 | 2 |
| DESIGN SPEED | | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | | | | | 75 | 75 |
| CHECKPOINT VOLUME (FREEWAY + RAMP) | A.M. | 2578 | 2333 | 3153 | 1698 | 1358 | 1418 | 1400 | 580 | | | | | 1112 | 1722 |
| | P.M. | 1572 | 1392 | 1972 | 2958 | 2163 | 2318 | 1643 | 1063 | | | | | 1083 | 2113 |
| DENSITY/SPEED OF FREEWAY (PC/MI/LN)/(MPH) | A.M. | 67.1 | 64.2 | 63.5 | 65.6 | 64.6 | 65.5 | 62.8 | 58.8 | | | | | 59.2 | 62.7 |
| | | 21.3 | 14.4 | 21.2 | 16.0 | 9.2 | 8.6 | 16.8 | 7.9 | | | | | 13.7 | 16.5 |
| | P.M. | 66.7 | 64.5 | 64.7 | 64.9 | 64.6 | 64.7 | 63.5 | 58.7 | | | | | 59.3 | 62.1 |
| | | 14.4 | 9.6 | 13.5 | 25.4 | 14.0 | 14.1 | 19.4 | 13.1 | | | | | 13.4 | 20.1 |
| LEVEL OF SERVICE | A.M. | C | B | C | B | A | A | B | A | | | | | B | B |
| | P.M. | B | A | B | C | B | B | B | B | | | | | B | C |

## WEAVING ANALYSIS

| WEAVING SECTION | | NB I-57 : #9-#10 | SB I-57 : #11-#12 |
|---|---|---|---|
| WEAVING LENGTH (Ls) | | 1140 | 2390 |
| NUMBER OF TOTAL LANES | | 3 | 3 |
| TERRAIN/GRADE | | LEVEL | LEVEL |
| VOLUME 1 - 2040 (THROUGH VOLUME) | A.M. | 149 | 931 |
| | P.M. | 538 | 896 |
| VOLUME 2 - 2040 (EXIT WEAVE) | A.M. | 111 | 50 |
| | P.M. | 165 | 128 |
| VOLUME 3 - 2040 (ENTRANCE WEAVE) | A.M. | 255 | 181 |
| | P.M. | 255 | 187 |
| VOLUME 4 - 2040 (RAMP-RAMP) | A.M. | 40 | 10 |
| | P.M. | 50 | 27 |
| TRUCK TYPES | | HEAVY | HEAVY |
| % TRUCKS - FREEWAY | | 28 | 28 |
| PEAK HOUR FACTOR | | 0.90 | 0.90 |
| % TRUCK - RAMP | | 18 | 18 |
| DESIGN SPEED | | 75 | 75 |
| DENSITY/SPEED OF FREEWAY (PC/MI/LN)/(MPH) | A.M. | 63.8 | 65.0 |
| | | 3.5 | 7.5 |
| | P.M. | 63.3 | 64.2 |
| | | 6.6 | 8.0 |
| LEVEL OF SERVICE | A.M. | A | A |
| | P.M. | A | A |




WEAVE #9-#10




WEAVE #11-#12

## LEGEND

(1) CONVERGENCE/DIVERGENCE LOCATION

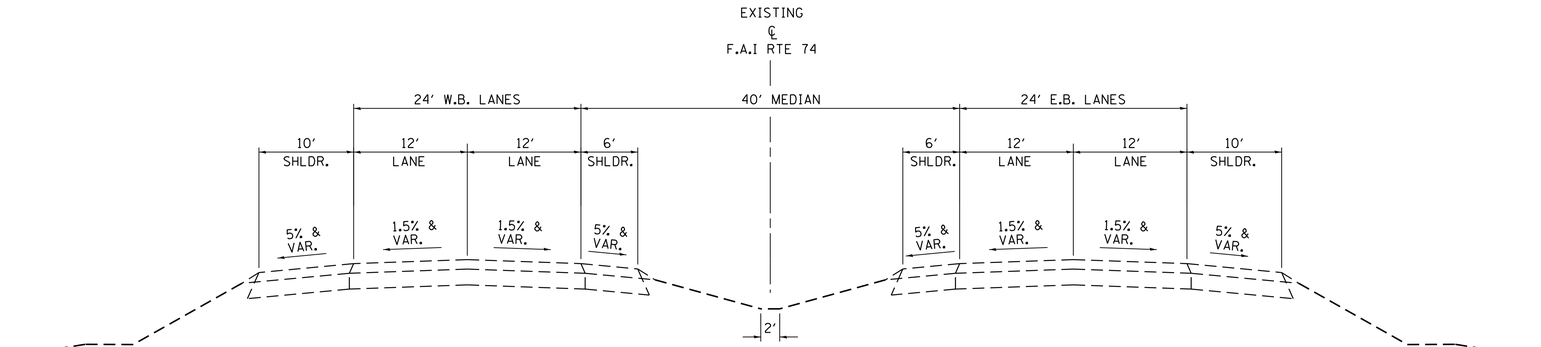
0000 → AM DHV (2040)
0000 PM DHV (2040)

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57)
FAI ROUTE 74 WITH (I-74)
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE N.T.S. COUNTY CHAMPAIGN
SJN : PROJ. NO.
I.D.S. SHEET 3 OF 41

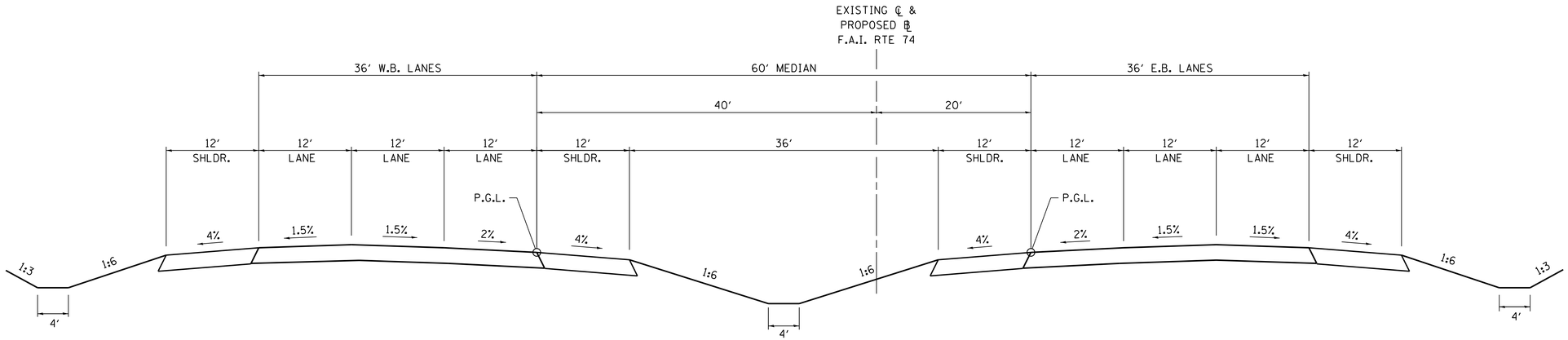
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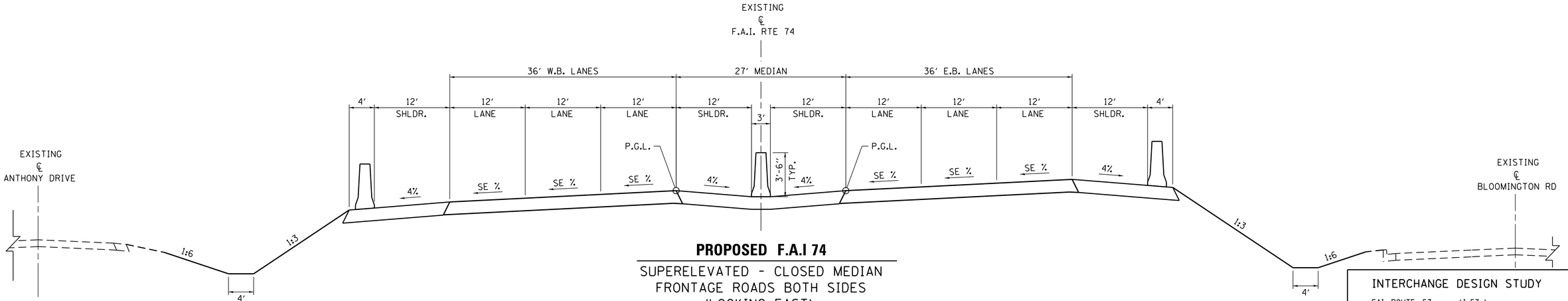

**EXISTING F.A.I 74**

(LOOKING EAST)




**PROPOSED F.A.I 74**

NORMAL CROWN - OPEN MEDIAN
(LOOKING EAST)




**PROPOSED F.A.I 74**

SUPERELEVATED - CLOSED MEDIAN
FRONTAGE ROADS BOTH SIDES
(LOOKING EAST)

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

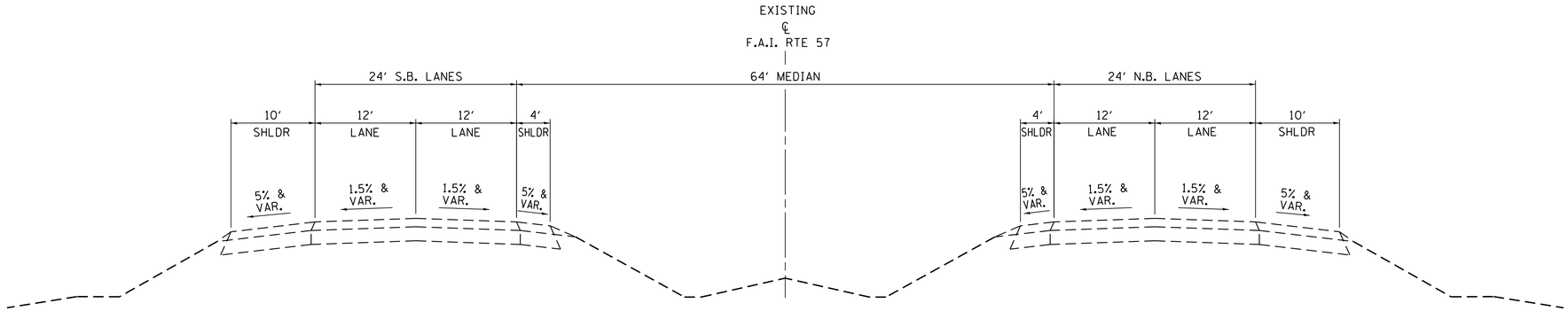
SCALE N.T.S. COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 4 OF 41

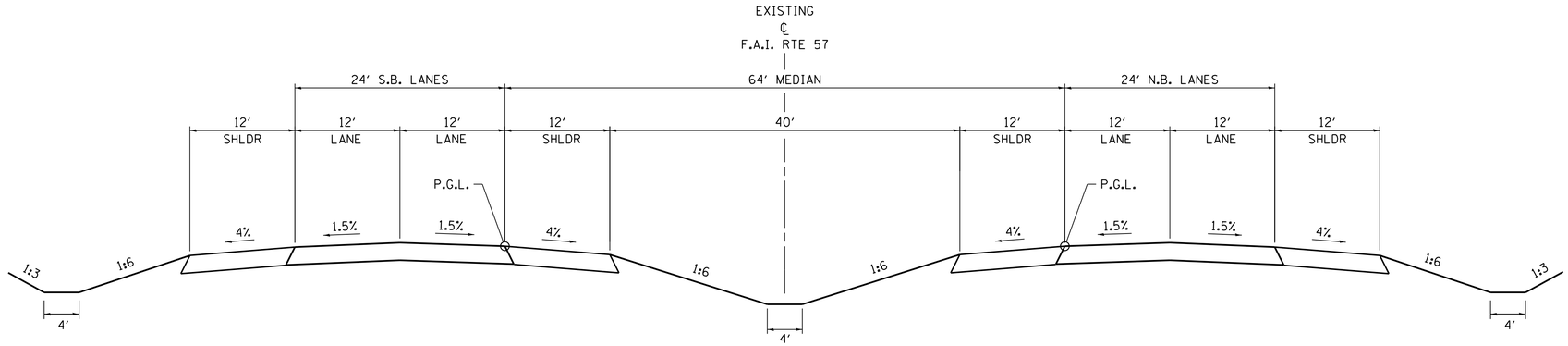
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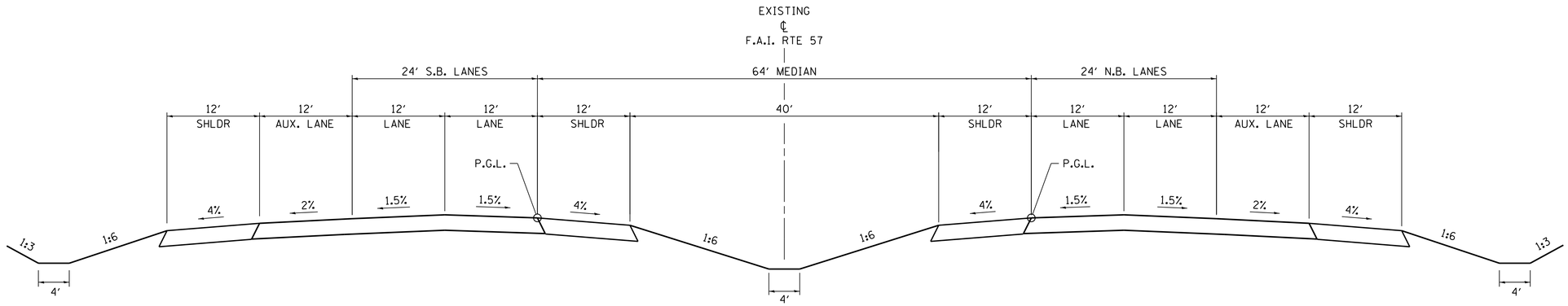

**EXISTING F.A.I 57**

(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
WITH AUXILIARY LANE
(LOOKING NORTH)

INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE N.T.S. COUNTY CHAMPAIGN

SJN : PROJ. NO.

I.D.S. SHEET 5 OF 41

BDE-9908

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PRIVATE RESIDENCE
AGRICULTURE LAND
AGRICULTURE LAND
AGRICULTURE LAND
PRIVATE RESIDENCE

I-95

900' LANE DROP TAPER (75:1)
1500' LANE SHIFT (75:1)

STA. 1845+92.22 BK =
POT STA. 1845+93.65 AH

EXIST. R.O.W. & A/C
PROPOSED R.O.W. & A/C
EXISTING R.O.W. & A/C

+00.00
2 @ 12' LANES
13 @ 12' LANES
+01.43
3 @ 12' (LANES)
3 @ 12' LANES
+00.00

6' SHLDR
2 @ 12' LANES
10' SHLDR
12' SHLDR
12' SHLDR
12' SHLDR
12' SHLDR
12' SHLDR
12' SHLDR

20'
20'
20'
20'
VAR.
20'

1830
1835
1840
1845
1850
1855

PT Sta 1845+95.31
180°-00'-43"

600' LANE ADDITION TAPER (50:1)

BEGIN IMPROVEMENTS
STA. 1838+00.00, ℄ (I-74)

EXISTING ℄ I-74

EXISTING ℄ DUNCAN ROAD

I-85
I-80
I-75
I-70

AGRICULTURE LAND
AGRICULTURE LAND
PATTERSON CO., INC.
ROCKWELL AUTOMATION

N

100' 0 100' 200'
SCALE: 1" = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1" = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 6 OF 41

BDE-9908

PLOT DATE = 2/11/2015 - 2:21:38 PM
FILE NAME = L:\IDOT\I186602\Drawings\CADD_Sheets\IDS Sheets\...
PLOT SCALE = 100.0000 ' / in.
USER NAME = Brad Downen

VACANT LAND

AGRICULTURAL LAND

1500' LANE SHIFT (75:1)

12' SHLDR | 12' SHLDR | 3 @ 12' (LANES) | +01.43

STA. 1038+19.84, 77.00' LT. (I-74) =
STA. 831+39.63, ℄ (RAMP H)

STA. 1870+24.62 BK =
POT STA. 1035+05.17 AH

EXISTING ℄ I-74

+39.63 RAMP H

STANDARD ENTRANCE RAMP TERMINAL
BDE FIG. 37-6.K

VACANT LAND

PROPOSED ℄ RAMP H

+59.72 RAMP H

PT STa 819+89.72

EXISTING R.O.W. & A/C

PROPOSED R.O.W. & A/C

EXISTING R.O.W. & A/C

12' SHLDR | 4' SHLDR | 16' LANE | 6' SHLDR

12' SHLDR | 3 @ 12' LANES

C-RAMPH-1

1860 | 1865 | 1870 | 1040 | 1045 | 1050

40' | 20'

180°-00'-07"

PC STa 402+78.67

PROPOSED ℄ RAMP D

200 | 205 | 210 | 400 | 405

C-RAMPB-1

PC STa 208+00.09

PT STa 210+00.09

PI STa 212+00.09

PC STa 402+78.67

PI STa 404+78.75

PT STa 407+78.83

12' SHLDR | 3 @ 12' LANES | 12' SHLDR

4' SHLDR | 16' LANE | 6' SHLDR | 12' SHLDR

C-RAMPD-1

550

EXIST. R.O.W. & A/C

C-RAMPB-2

225

PC STa 222+41.22

C-RAMPC-1

525

STA. 1864+08.97, 57.00' RT. (I-74) =
STA. 200+00.00, ℄ (RAMP B)

+00.00 RAMP B

STANDARD EXIT RAMP TERMINAL
BDE FIG. 37-6.A

+38.42 RAMP B

6' SHLDR | 16' LANE | 4' SHLDR

PROPOSED ℄ RAMP B

+50.77 RAMP D

8' SHLDR | 16' LANE | 4' SHLDR

MINOR DIVERGENCE TYPE B
BDE FIG. 37-6.R

STA. 216+00.01, 16.00' LT. (RAMP B) =
STA. 400+00.00, ℄ (RAMP D)

AGRICULTURAL LAND

6' SHLDR | 16' LANE | 4' SHLDR

AGRICULTURAL LAND

MUTI

AGRICULTURAL LAND

ROCKWELL AUTOMATION

PROPOSED ℄ RAMP C

AGRICULTURAL LAND

EXISTING ℄ U.S. 150 (BLOOMINGTON ROAD)

EXISTING R.O.W.

MEADOWS ANIMAL HOSPITAL

KINGDOM HALL OF JEHOVAH'S WITNESS

130 | 135 | 140 | 955

EXISTING R.O.W.

N

100' 0 100' 200'
SCALE: 1" = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1" = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 7 OF 41

BDE-9908

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FILE NAME = L:\IDOT\1186602\Drawings\CADD_Sheets\IDS Sheets\...
PLOT SCALE = 100.0000 ' / in.
USER NAME = Brad Downen

STA. 602+87.80, 57.00' LT. (I-57) =
STA. 300+00.00, ℄ (RAMP C)

PROPOSED ℄ RAMP H

VACANT LAND

EXIST. R.O.W. & A/C

STA. 1054+37.61, 77.00' LT. (I-74) =
STA. 645+75.67, ℄ (RAMP E)

PROPOSED ℄ RAMP D

EXISTING ℄ I-74

STANDARD ENTRANCE RAMP TERMINAL
BDE FIG. 37-6.K

PROPOSED ℄ RAMP F

PROPOSED R.O.W. & A/C

PROPOSED ℄ RAMP G

AGRICULTURAL LAND

PROPOSED ℄ RAMP E

MODIFIED STANDARD EXIT RAMP TERMINAL
BDE FIG. 37-6.A

STA. 1061+40.60, ℄ (I-74) =
STA. 597+78.82, ℄ (I-57)

STA. 1068+41.21, 57.00' RT. (I-57) =
STA. 345+75.67, ℄ (RAMP C)

CORPORATE PARK CENTRE

PROPOSED ℄ RAMP A

EXISTING ℄ I-57

STA. 592+89.97, 57.00' RT. (I-57) =
STA. 600+00.00, ℄ (RAMP F)

VACANT LAND

PROPOSED ℄ RAMP B

EXISTING R.O.W. & A/C

AGRICULTURAL LAND

PROPOSED ℄ RAMP C

PROPOSED R.O.W. & A/C

AGRICULTURAL LAND

N

100' 0 100' 200'
SCALE: 1'' = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1.6)R

SCALE 1'' = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 8 OF 41

BDE-9908

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USER NAME = Brad Downen

AGRICULTURAL LAND
INTERSTATE BATTERY
ALEXANDER LUMBER CO.
EXISTING R.O.W.
EXISTING ℄ WEST ANTHONY DRIVE
6' SHLDR
16' LANE
4' SHLDR
8' SHLDR
C-RAMP F-1
PROPOSED ℄ RAMP F
PROPOSED ℄ RAMP G
PROPOSED R.O.W. & A/C
PC Sta 721+26.34
+50.83 RAMP E
MINOR DIVERGENCE TYPE B BDE FIG. 37-6.R
STA. 500+00.00, ℄ (RAMP E) =
STA. 716+91.39, 16.00' LT. (RAMP G)
C-RAMP C-2
C-RAMP F-1
PROPOSED ℄ RAMP E
VACANT LAND
ADAMS OUTDOOR ADVERTISING
VACANT
PRIVATE RESIDENCES
NORTHSIDE CHURCH OF CHRIST
STA. 1095+56.85, 50.50' LT. (I-74) =
STA. 700+00.00, ℄ (RAMP G)
STANDARD EXIT RAMP TERMINAL BDE FIG. 37-6.A
12' SHLDR
3 @ 12' LANES
12' SHLDR
EXIST. R.O.W. & A/C
PC Sta 502+81.04
PC Sta 1077+42.30
PC Sta 711+91.47
PT Sta 711+66.47
P.C. +51.02
R=5,950'
+68.07 RAMP G
Sta 707+98.07
P.C.C. +77.27
+00.00 RAMP G
EXISTING R.O.W.
PCC Sta 1100+01.90
3 @ 12' LANES VAR.
SHLDR
C-RAMP A-1
P.T. Sta 128+66.94
P.C. +01.60
EXISTING R.O.W. & A/C
R=8,000'
+36.94 RAMP A
+18.03 RAMP A
P.C.C. +38.19
STANDARD ENTRANCE RAMP TERMINAL BDE FIG. 37-6.K
PROPOSED ℄ RAMP A
EXISTING ℄ I-74
STA. 1084+81.97, 50.53' RT. (I-74) =
STA. 140+18.03, ℄ (RAMP A)
GARDEN HILLS PARK
EXISTING R.O.W.
EXISTING ℄ U.S. 150 (BLOOMINGTON ROAD)
GARDEN VILLAGE APARTMENTS
VACANT
CORPORATE PARK CENTRE
EXISTING ℄ NORTH MATTIS AVENUE
AGRICULTURAL LAND
COPPER SLOUGH
AGRICULTURAL LAND
GARDEN VILLAGE APARTMENTS
EXISTING R.O.W.
EXISTING R.O.W.
AGRICULTURAL LAND
USPS - VECHILE MAINTENANCE FACILITY

N

100' 0 100' 200'
SCALE: 1" = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1" = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 9 OF 41

BDE-9908

PLOT DATE = 2/11/2015 - 2:21:40 PM
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PLOT SCALE = 100.0000 ' / in.
USER NAME = Brad Dawson

PRIVATE RESIDENCES
NORTHSIDE CHURCH OF CHRIST
SALT & LIGHT
CHAMPAIGN COUNTY MOBILITY
C-U NAPRAPATHIC AND RESIDENCE
INTERNATIONAL SOCIETY OF ARBORICULTURE
KEMPER INDUSTRIAL EQUIPMENT/ MIDWEST POTTYHOUSE
PEPSI BOTTLING CO.
ROTO ROOTER
VALUE PLACE
VACANT LAND
RURAL KING
EXISTING ℄ I-74
EXISTING ℄ WEST ANTHONY DRIVE
Sta 1100+01.90
Sta 1110+01.46
PCC
3 @ 12' LANES
12' SHLDR
EXISTING R.O.W.
C-74-2
C-74-3
13.5'
EXISTING R.O.W. & A/C
BEAUMONT TIRE & AUTO REPAIR
BOB SIMPSON AUTO SALES
COLLISON REVISION
STA. 1106+36.25
BEGIN DOTTED STRIPING
PER MUTCD FIG. 3B-10
JERICHO MISSIONARY CHURCH
GARDEN HILLS PARK
PRIVATE RESIDENCES
EXISTING ℄ U.S. 150 (BLOOMINGTON ROAD)

N

100′ 0 100′ 200′
SCALE: 1″ = 100′

# INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1″ = 100′ COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 10 OF 41

BDE-9908

PLOT DATE = 2/11/2015 - 2:21:41 PM
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PLOT SCALE = 100.0000 ' / in.
USER NAME = Brad Downen

RURAL KING

THE FLOORING DEPOT

GOODWILL

DRURY INN & SUITES

EXISTING ℄ PROSPECT AVENUE

END IMPROVEMENTS
STA. 14+75.00, ℄ (RAMP P-A)

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE
BDE FIG. 37-6.L

SAMUEL MUSIC
MSCUBA.COM
LOVELY NAILS
CASUAL MALE XL

RYAN'S

PROPOSED ℄ PROSPECT RAMP A

STA. 1129+60.15, 49.50' LT. (I-74) =
STA. 26+71.58, ℄ (RAMP P-A)

EXISTING ℄ WEST ANTHONY DRIVE

EXISTING R.O.W.

PROSPECT RAMP B

END IMPROVEMENTS
STA. 1143+00.00, ℄ (I-74)

EXISTING ℄ I-74

C-PROSRAMPA-1

C-74-3

TRANSITION MEDIAN 27' TO 26'

EXISTING R.O.W. & A/C

CHEMICAL MAINTENANCE
CAKE ARTIST'S STUDIO
CREATIVE HOMES
TERMINIX

BUNDY BUSINESS SYSTEM

EXIT RAMP TERMINAL WITH AUXILIARY LANE
BDE FIG. 37-6.B

PREMIER PRINT GROUP

PROPOSED ℄ PROSPECT RAMP C

ECONOMY HOTEL

CARPET ONE
HUNTER'S HAVEN
SLOT & WING HOBBY

END IMPROVEMENTS
STA. 35+00.00, ℄ (RAMP P-C)

PRIVATE RESIDENCES

STA. 1132+04.41, 49.50' RT. (I-74) =
STA. 24+49.07, ℄ (RAMP P-C)

U.S. 150 (BLOOMINGTON ROAD)

EXISTING R.O.W.

THARA THAI

VACANT

McDONALDS

PHILLIPS 66

HOME DEPOT

PROSPECT RAMP D

N

100' 0 100' 200'
SCALE: 1" = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1" = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 11 OF 41

BDE-9908

PLOT DATE = 2/11/2015 - 2:21:42 PM
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PLOT SCALE = 100.0000 ' / in.
USER NAME = Brad Downen

AGRICULTURAL LAND

EXISTING ℄ U.S. 150 (BLOOMINGTON ROAD)

AGRICULTURAL LAND

MILLER ENTERPRISES

MIDWEST POTTYHOUSE
PENHALL CO.
VARSITY STRIPING & CONSTRUCTION CO.

EXISTING R.O.W.

PROPOSED ℄ RAMP C

EXISTING R.O.W.

AGRICULTURAL LAND

4' SHLDR
16' LANE
6' SHLDR

AGRICULTURAL LAND

PROPOSED ℄ RAMP B

PROPOSED ℄ RAMP E

STA. 239+38.61, 16.00' LT. (RAMP B) =
STA. 529+83.39, ℄ (RAMP E)

MINOR CONVERGENCE TYPE B
BDE FIG. 37-6.T

STA. 565+09.73, 57.00' LT. (I-57) =
STA. 257+88.60, ℄ (RAMP B)

STANDARD ENTRANCE RAMP TERMINAL
BDE FIG. 37-6.K

EXISTING R.O.W. & A/C

+88.60
RAMP B

PROP. R.O.W. & A/C

+44.23
RAMP E

Sta 236+42.15 PT

C-RAMP E-1

C-RAMP B-2

C-RAMP B-3

Sta 246+38.53 PT

+08.53
RAMP B

Sta 243+78.53 PC

Sta 243+38.53 PT

EXISTING R.O.W. & A/C

10' SHLDR
2 @ 12' LANES
4' SHLDR

10' SHLDR
2 @ 12' LANES
12' SHLDR

16' LANE
8' SHLDR

4' SHLDR

12' SHLDR
16' LANE
6' SHLDR
12' SHLDR
2 @ 12' LANES

4' SHLDR
2 @ 12' LANES
10' SHLDR

12' SHLDR
2 @ 12' LANES
10' SHLDR

BEGIN IMPROVEMENTS
STA. 560+00.00, ℄ (I-57)

EXISTING R.O.W. & A/C

EXISTING ℄ I-57

STA. 573+40.00, 57.00' RT. (I-57) =
STA. 100+00.00, ℄ (RAMP A)

+00.00
RAMP A

PROPOSED R.O.W. & A/C

MODIFIED STANDARD EXIT RAMP TERMINAL
BDE FIG. 37-6.A

PROPOSED
R.O.W. & A/C

4' SHLDR
6' SHLDR
16' LANE

PC Sta 113+16.25

+07.92
RAMP A

EXIST. R.O.W. & A/C

C-RAMP A-1

PROPOSED ℄ RAMP A

NORFOLK SOUTHERN RAILROAD

EXISTING R.O.W.

MUNICIPAL WELL

VACANT

VACANT

EXISTING R.O.W.

NHRMA MUTUAL
MPIC

PARKLAND COLLEGE

ROCKWELL AUTOMATION
PLASTIPAK PACKAGING, INC.

100' 0 100' 200'
SCALE: 1'' = 100'

# INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1'' = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 12 OF 41

BDE-9908

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USER NAME = Brad Downen

VACANT

AGRICULTURAL LAND

AGRICULTURAL LAND

AGRICULTURAL LAND

EXISTING R.O.W.

EXISTING R.O.W.

PROPOSED ℄ RAMP H

EXIT RAMP TERMINAL WITH AUXILIARY LANE
BDE FIG. 37-6.B

+00.00 RAMP H

2682' WEAVING DISTANCE

+24.82 RAMP H

+28.61 I-57

STA. 613+57.98, 68.00' LT. (I-57) =
STA. 800+00.00, ℄ (RAMP H)

EXISTING ℄ I-57

CENTRAL ILLINOIS TILE CO.

VACANT

EXISTING R.O.W. & A/C

EXISTING R.O.W. & A/C

EXIST. R.O.W. & A/C

PC Sta 804+54.82

C-RAMP-H

12' SHLDR
2 @ 12' LANES
12' SHLDR

4' SHLDR
16' LANE
6' SHLDR

12' SHLDR
3 @ 12' LANES
12' SHLDR

PROPOSED ℄ RAMP D

EXIST. R.O.W. & A/C

PC Sta 609+42.29

PCC Sta 611+42.29

C-RAMP-J

PC Sta 428+59.69

PT Sta 738+63.05

+98.58 RAMP D

C-RAMP-I3

PT Sta 745+39.61

PC Sta 746+04.61

+24.57 RAMP G

PT Sta 749+54.61

+42.22 I-57

PROPOSED R.O.W. & A/C

1477' WEAVING DISTANCE

DEAN'S GRAPHIC DIVISION

STA. 629+42.38, 68.00' RT. (I-57) =
STA. 755+54.53, ℄ (RAMP G)

DOBBINS, FRAKER, TENNANT, JOY, AND PERLSTEIN, PC
F.E. MORAN FIRE PROTECTION
RAMJET, INC.
DODDS CO.
O.C.C.

CAPITAL GROUP

MINOR CONVERGENCE TYPE B
BDE FIG. 37-6.T

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE
BDE FIG. 37-6.L

PROPOSED ℄ RAMP G

STA. 431+35.26, ℄ (RAMP D) =
STA. 741+39.69, 16.00' LT. (RAMP G)

C-RAMP-J2

50
8' SHLDR
16' LANE
4' SHLDR

PROPOSED R.O.W. & A/C

AGRICULTURAL LAND

ILLINOIS HEARTLAND LIBRARY SYSTEM

UNITED MODEL HOBBICO R&D

EXISTING ℄ NORTH MATTIS AVENUE

C-RAMP-J1

PCC Sta 621+83.95

6' SHLDR
16' LANE
4' SHLDR

PROPOSED ℄ RAMP F

EXISTING R.O.W.

EXISTING R.O.W.

VACANT

100' 0 100' 200'
SCALE: 1" = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE 1" = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 13 OF 41

BDE-9908

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USER NAME = Brad Dawson

HUDSON TECHNOLOGIES
GEM CITY TIRE
EXPEDITED FREIGHT SYSTEM, INC.
VACANT
CHAMBANA SALES
AGRICULTURAL LAND
CUSTOM SERVICE CRANE
POND
CENTRAL ILLINOIS TILE CO.
ILLINOIS CROP IMPROVEMENT, INC.
ISS, INC.
SILGAN WHITE CAP
PRARIELAND COUNCIL BOY SCOUT OFFICE

EXISTING ℄ OLYMPIAN DRIVE
EXISTING ℄ I-57

END IMPROVEMENTS
STA. 11+50.00, ℄ (RAMP O-C)

PROPOSED ℄ OLYMPIAN RAMP C

STA. 634+11.21, 68.00' LT. (I-57) =
STA. 25+21.20 ℄ (RAMP O-C)

+21.20 RAMP O-C

ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE
BDE FIG. 37-6.L

2682' WEAVING DISTANCE

+11.37 I-57

+91.28 RAMP O-C

PCC Sta 15+61.45

PC Sta 12+46.24

OLYMPIAN RAMP D

EXISTING R.O.W. & A/C

C-OLYMRAMPC-1

12' SHLDR | 3 @ 12' LANES | 12' SHLDR

6' SHLDR | 16' LANE | 4' SHLDR | 10

12' SHLDR | 2 @ 12' LANES | 12' SHLDR | 10' SHLDR

2 @ 12' LANES | 4' SHLDR

PT Sta 19+21.28

635 | 640 | 645 | 650 | 655 | 660

32' | 32' | 12' | 32' | 32' | 120

EXIST. R.O.W. & A/C

C-OLYMRAMPB-1

PC Sta 14+23.12

+70.29 RAMP O-B

+19.24 I-57

+95.12 RAMP O-B

12' SHLDR | 3 @ 12' LANES | 12' SHLDR

12' SHLDR | 3 @ 12' LANES | 12' SHLDR

4' SHLDR | 2 @ 12' LANES | 10' SHLDR

4' SHLDR

END IMPROVEMENTS
STA. 648+00.00, ℄ (I-57)

OLYMPIAN RAMP A

STA. 638+11.69
68.00' RT. (I-57) =
STA. 9+70.29 ℄ (RAMP O-B)

1477' WEAVING DISTANCE

EXIT RAMP TERMINAL WITH AUXILIARY LANE
BDE FIG. 37-6.B

PROPOSED ℄ OLYMPIAN RAMP B

PT Sta 18+54.10

6' SHLDR | 16' LANE

C-OLYMRAMPB-2

PC Sta 20+16.60

PT Sta 22+81.84

END IMPROVEMENTS
STA. 21+91.60, ℄ (RAMP O-B)

N

100' 0 100' 200'
SCALE: 1" = 100'

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

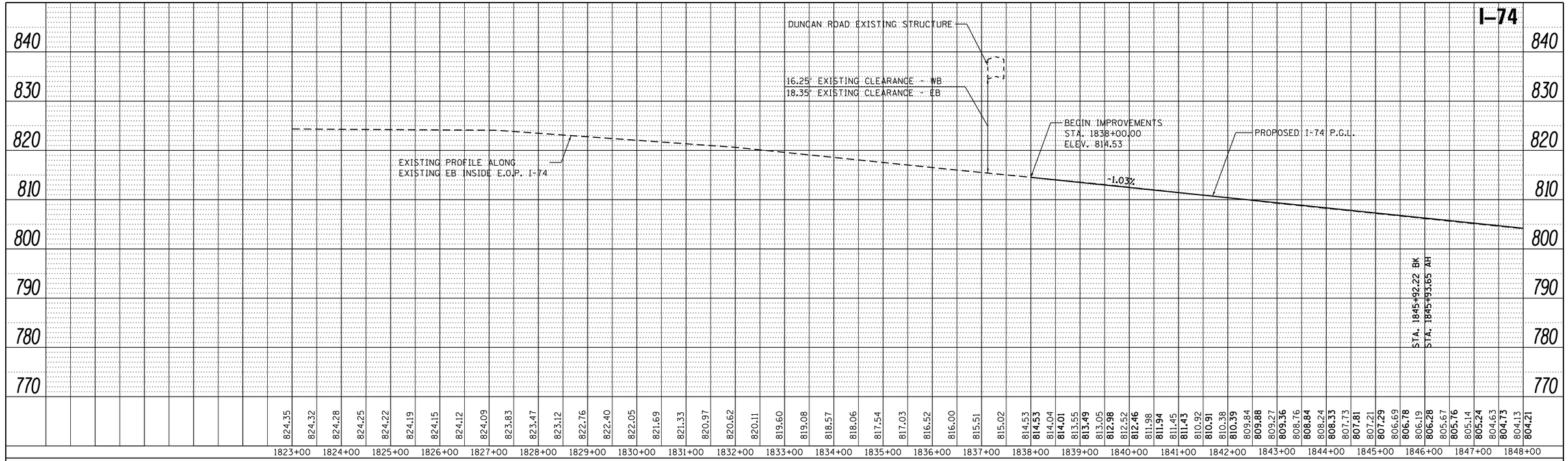
SCALE 1" = 100' COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

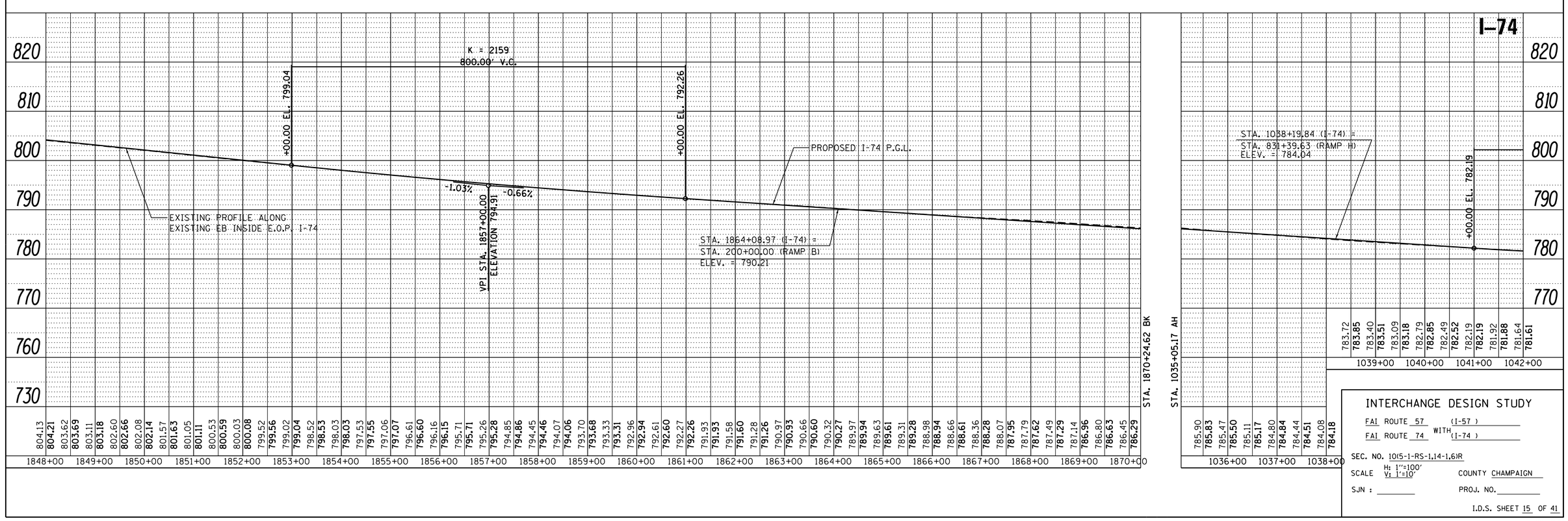
I.D.S. SHEET 14 OF 41

BDE-9908

PLAN
SURVEYED BY
PLOTTED DATE
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.




PROFILE
SURVEYED BY
PLOTTED DATE
CROSS SECTIONS CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.




INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

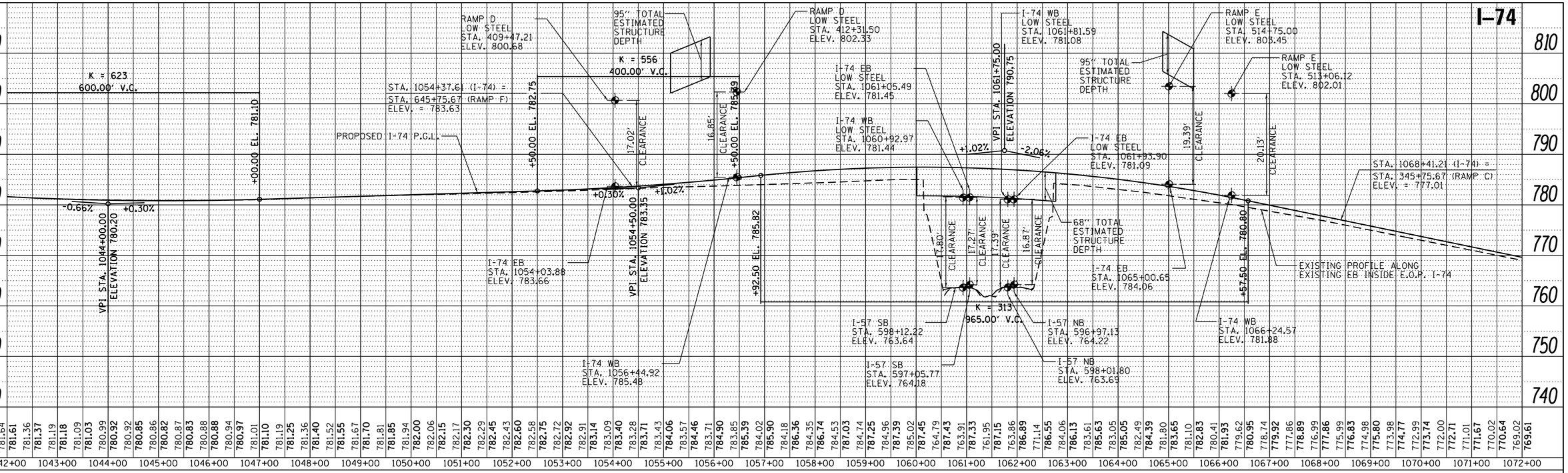
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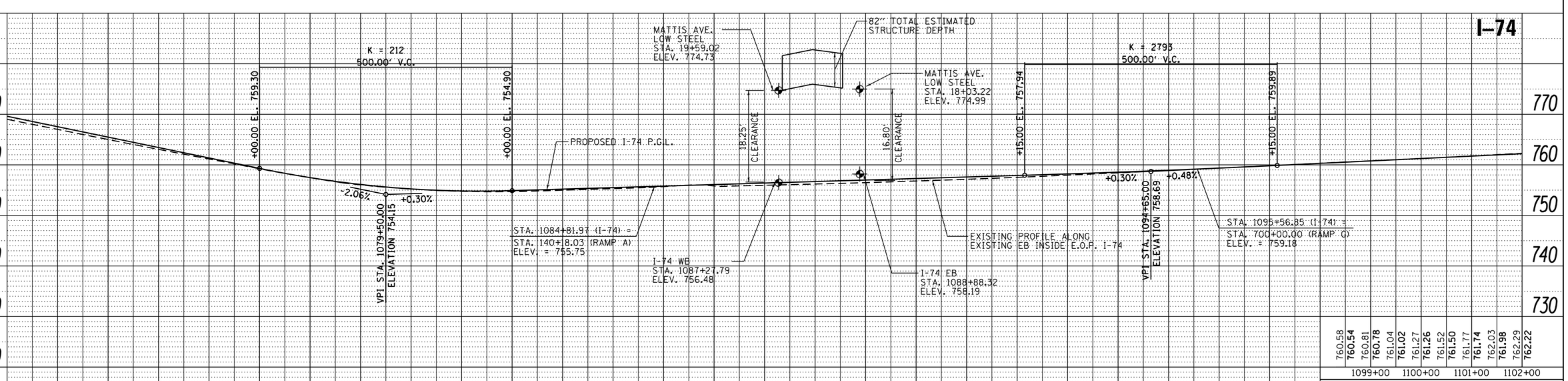
PROJ. NO. _____

I.D.S. SHEET 15 OF 41

BDE-9908

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STRUCTURE NOTATNS CHKD
NOTE BOOK
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DATE

## INTERCHANGE DESIGN STUDY

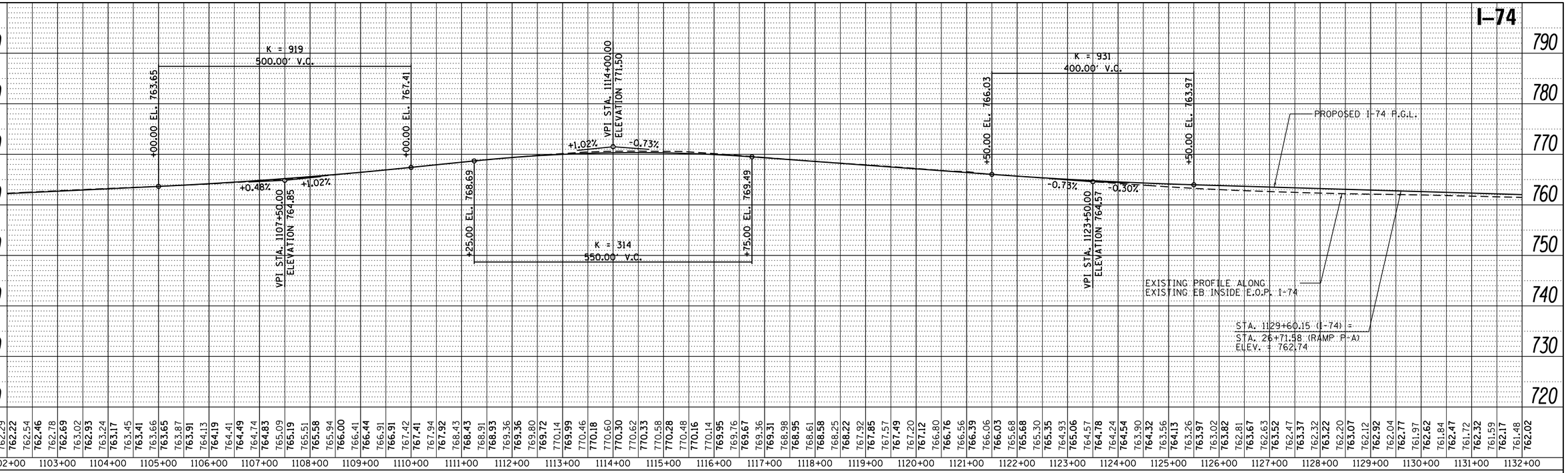
FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE H: 1"=100'
V: 1'=10'
COUNTY CHAMPAIGN
SJN : _____
PROJ. NO. _____

I.D.S. SHEET 16 OF 41

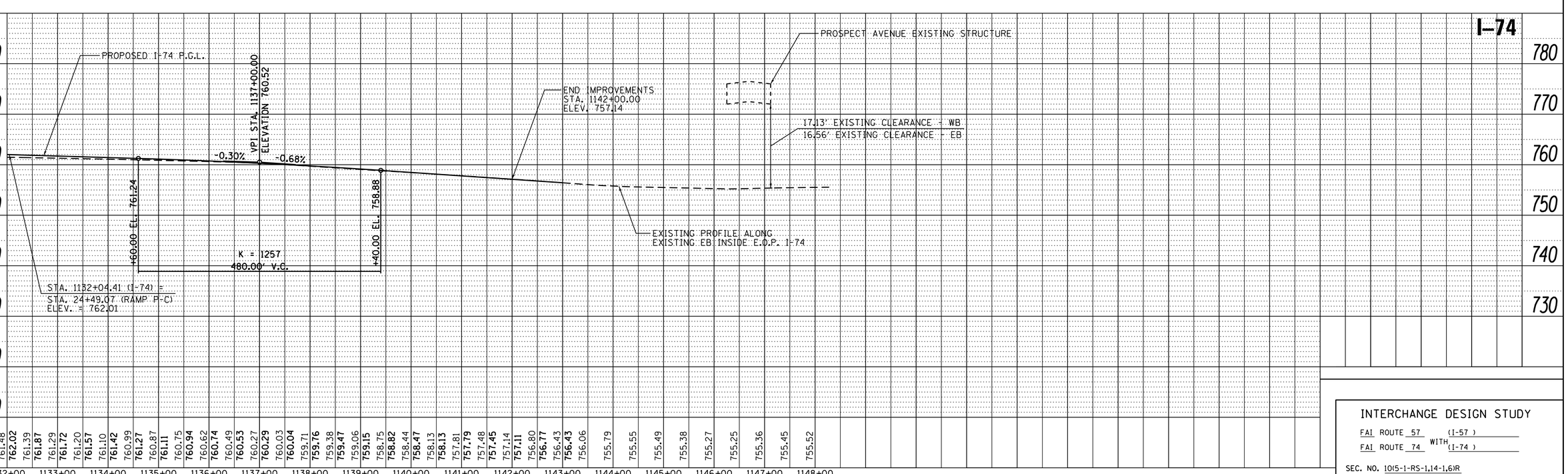
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NOTE BOOK
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PROFILE
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ALIGNMENT CHECKED
RT. OF WAY CHKD
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE




## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE H: 1"=100'
V: 1'=10'
COUNTY CHAMPAIGN
SJN : _____
PROJ. NO. _____

I.D.S. SHEET 17 OF 41

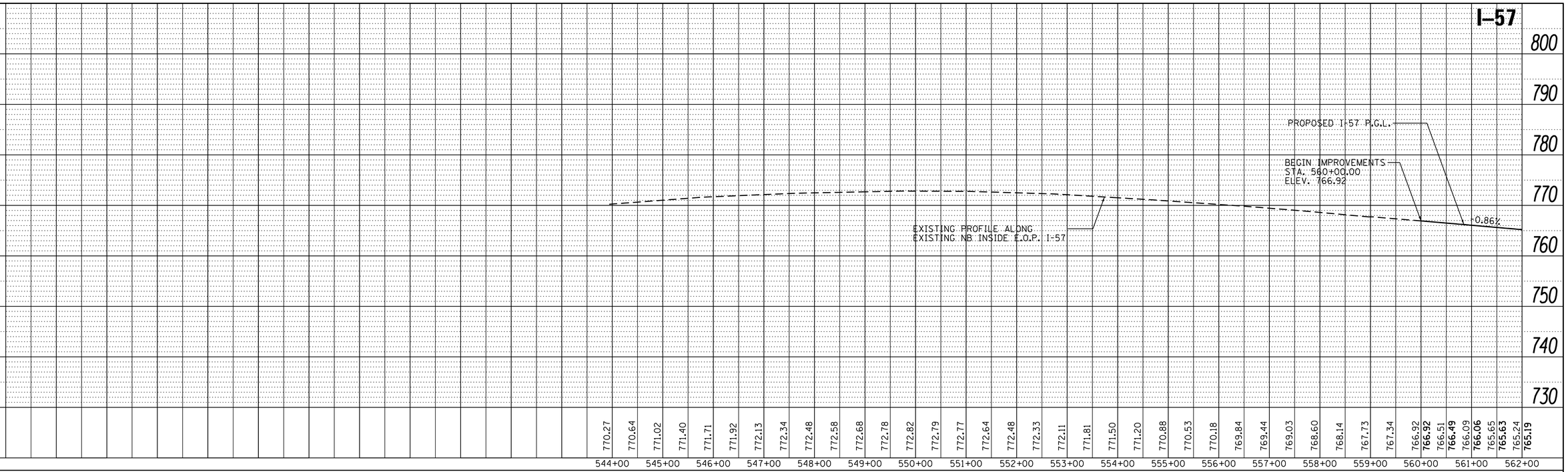
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PLAN

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| CADD FILE NAME | |
| NOTE BOOK | |
| NO. | |

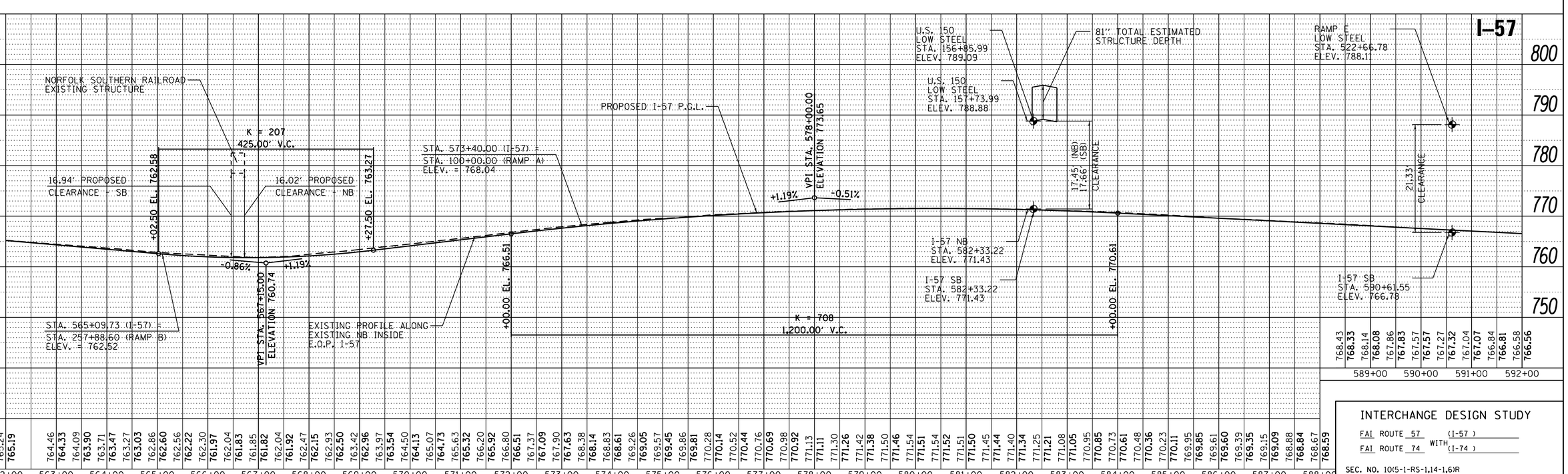
BY




PROFILE

| | DATE |
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| PLOTTED | |
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| B.M. NOTED | |
| STRUCTURE NOTATNS CHKD | |
| NOTE BOOK | |
| NO. | |

BY




## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57)

FAI ROUTE 74 WITH (I-74)

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

SJN : _____

PROJ. NO. _____

I.D.S. SHEET 18 OF 41

BDE-9908

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I-57

95" TOTAL ESTIMATED STRUCTURE DEPTH
RAMP E LOW STEEL STA. 520+16.99 ELEV. 796.48
I-74 EB LOW STEEL STA. 1061+05.99 ELEV. 781.45
I-74 EB LOW STEEL STA. 1061+93.90 ELEV. 781.09
68" TOTAL ESTIMATED STRUCTURE DEPTH
I-74 WB LOW STEEL STA. 1061+81.59 ELEV. 781.08
I-74 WB LOW STEEL STA. 1060+92.97 ELEV. 781.44
68" TOTAL ESTIMATED STRUCTURAL DEPTH
RAMP D LOW STEEL STA. 418+60.29 ELEV. 790.98
95" TOTAL ESTIMATED STRUCTURAL DEPTH
RAMP D LOW STEEL STA. 420+64.79 ELEV. 786.89
K = 620
500.00' V.C.
30.84' CLEARANCE
16.87' CLEARANCE
17.27' CLEARANCE
17.39' CLEARANCE
17.80' CLEARANCE
28.29' CLEARANCE
24.17' CLEARANCE
+50.00 EL. 763.27
+50.00 EL. 762.75
+10.00 EL. 766.03
PROPOSED I-57 P.G.L.
STA. 613+57.90 (I-57) = STA. 800+00.00 (RAMP H) ELEV. = 765.78
STA. 592+89.97 (I-57) = STA. 600+00.00 (RAMP F) ELEV. = 766.11
-0.51%
+0.30%
VPI STA. 601+00.00 ELEVATION 762.00
I-57 SB STA. 598+12.22 ELEV. 763.64
I-57 NB STA. 596+97.13 ELEV. 764.22
I-57 SB STA. 597+05.77 ELEV. 764.18
I-57 NB STA. 598+01.80 ELEV. 763.69
I-57 NB STA. 605+00.07 ELEV. 762.72
I-57 SB STA. 603+27.24 ELEV. 764.69
EXISTING PROFILE ALONG EXISTING NB INSIDE E.O.P. I-57
I-57 NB STA. 592+87.95 ELEV. 765.64
STA. 602+87.80 (I-57) = STA. 300+00.00 (RAMP C) ELEV. = 762.60

766.58 766.56 766.31 766.09 766.06 765.85 765.80 765.59 765.55 765.33 765.30 765.08 765.04 764.78 764.79 764.49 764.54 764.27 764.28 764.06 764.03 763.79 763.78 763.55 763.52 763.33 763.27 763.08 763.04 762.88 762.84 762.70 762.69 762.54 762.58 762.45 762.51 762.43 762.48 762.46 762.49 762.48 762.54 762.56 762.62 762.61 762.75 762.71 762.90 762.82 763.05 762.92 763.20 763.05 763.35 763.18 763.50 763.28 763.65 763.39 763.80 763.51 763.95 763.61 764.10 763.71 764.25 763.81 764.40 763.92 764.55 764.02 764.70 764.12 764.85 764.22 765.00 764.33 765.15 764.44 765.30 764.55 765.45 764.67 765.60 764.79 765.75 764.92 765.90 765.05 766.05 765.14 766.20 765.23 766.35 765.32 766.50 765.47 766.65 765.63 766.80 765.74 766.95 765.89 767.10 766.06 767.25 766.27 767.40 766.48 767.55 766.74 767.70 767.03 767.85 767.33 768.00 767.63 768.16 767.93 768.34

592+00 593+00 594+00 595+00 596+00 597+00 598+00 599+00 600+00 601+00 602+00 603+00 604+00 605+00 606+00 607+00 608+00 609+00 610+00 611+00 612+00 613+00 614+00 615+00 616+00 617+00 618+00 619+00 620+00 621+00 622+00

PLAN — SURVEYED; PLOTTED; ALIGNMENT CHECKED; RT. OF WAY CHECKED; CADD FILE NAME; NOTE BOOK; NO. ____ — BY; DATE

I-57

MATTIS AVE. LOW STEEL STA. 23+79.55 ELEV. 787.32
87" TOTAL ESTIMATED STRUCTURE DEPTH
MATTIS AVE. LOW STEEL STA. 26+19.59 ELEV. 788.39
K = 1208
400.00' V.C.
+10.00 EL. 769.90
17.05' CLEARANCE
16.79' CLEARANCE
STA. 629+42.38 (I-57) = STA. 755+54.53 (RAMP G) ELEV. = 772.62
VPI STA. 632+70.00 ELEVATION 774.69
STA. 634+11.21 (I-57) = STA. 25+21.20 (RAMP O-C) ELEV. = 774.07
PROPOSED I-57 P.G.L.
STA. 637+89.87 (I-57) = STA. 9+70.29 (RAMP O-B) ELEV. = 773.13
+0.50%
+0.63%
+0.63%
-0.30%
VPI STA. 623+10.00 ELEVATION 768.63
I-57 NB STA. 625+67.70 ELEV. 770.27
+70.00 EL. 772.80
+70.00 EL. 773.79
K = 645
600.00' V.C.
I-57 SB STA. 627+78.30 ELEV. 771.60
EXISTING PROFILE ALONG EXISTING NB INSIDE E.O.P. I-57
K = 4371
400.00' V.C.
+00.00 EL. 771.30
+00.00 EL. 770.29
OLYMPIAN DRIVE EXISTING STRUCTURE
END IMPROVEMENTS STA. 648+00.00 ELEV. 770.29
-0.30%
-0.21%
VPI STA. 646+00.00 ELEVATION 770.70
16.25' EXISTING CLEARANCE - SB
16.33' EXISTING CLEARANCE - NB

767.93 768.34 768.24 768.54 768.53 768.75 768.89 768.99 769.29 769.25 769.59 769.53 769.79 769.83 770.12 770.15 770.44 770.46 770.73 770.78 771.03 771.10 771.37 771.41 771.74 771.73 772.08 772.04 772.37 772.36 772.59 772.67 772.78 772.98 772.93 773.25 773.05 773.49 773.15 773.68 773.21 773.84 773.25 773.96 773.23 774.04 773.19 774.08 773.11 774.08 773.03 774.04 772.95 773.96 772.85 773.85 772.75 773.70 772.65 773.55 772.55 773.40 772.44 773.25 772.33 773.10 772.21 772.95 772.13 772.80 772.04 772.65 771.96 772.50 771.84 772.35 771.72 772.20 771.60 772.05 771.52 771.90 771.43 771.75 771.35 771.60 771.24 771.45 771.13 771.30 771.01 771.16 770.89 771.02 770.77 770.88 770.64 770.75 770.56 770.63 770.47 770.51 770.39 770.39 770.29 770.29 770.19 770.03 769.86 769.74 769.64 769.54

622+00 623+00 624+00 625+00 626+00 627+00 628+00 629+00 630+00 631+00 632+00 633+00 634+00 635+00 636+00 637+00 638+00 639+00 640+00 641+00 642+00 643+00 644+00 645+00 646+00 647+00 648+00 649+00 650+00 651+00

PROFILE — SURVEYED; PLOTTED; ALIGNMENT CHECKED; R/W, B.M. NOTED; STRUCTURE NOTATNS CHKD; NOTE BOOK; NO. ____ — BY; DATE

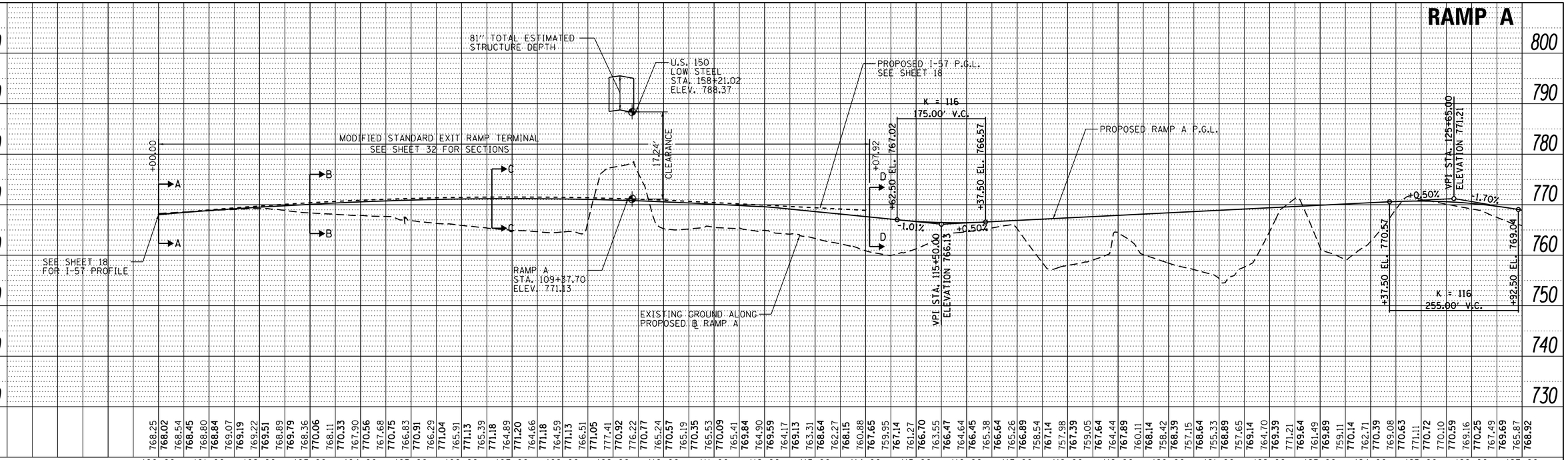
INTERCHANGE DESIGN STUDY

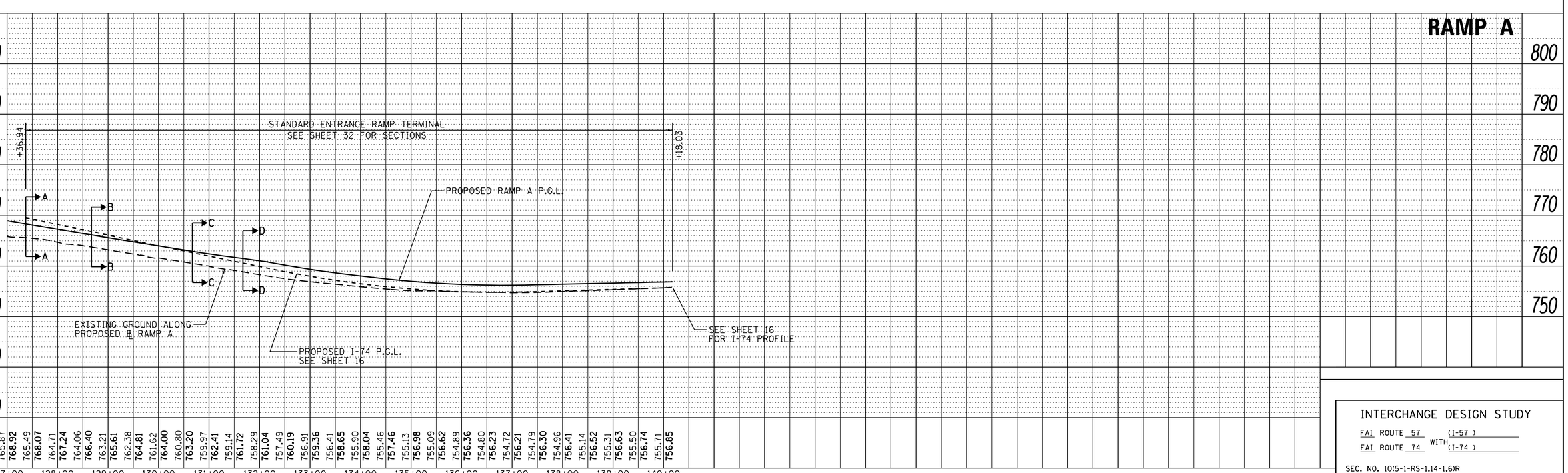
FAI ROUTE 57 (I-57)
FAI ROUTE 74 WITH (I-74)
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE H: 1"=100' V: 1"=10'
COUNTY CHAMPAIGN
SJN : _____
PROJ. NO. _____
I.D.S. SHEET 19 OF 41

BDE-9908

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# RAMP A




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NOTE BOOK
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DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

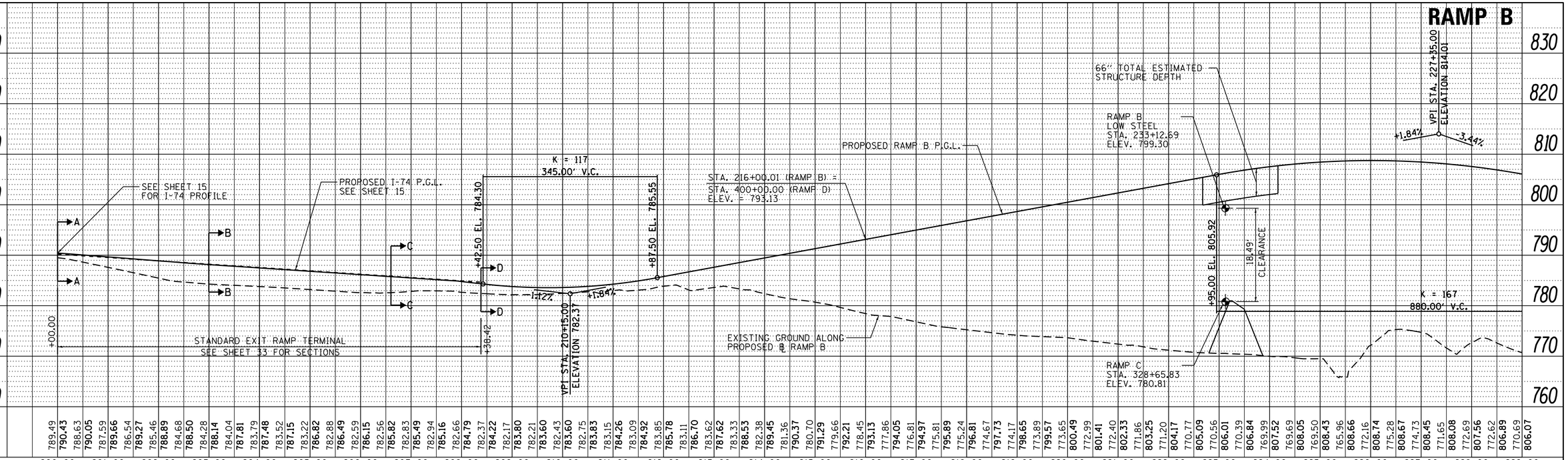
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE H: 1"=100'
V: 1'=10'
COUNTY CHAMPAIGN
SJN : _____
PROJ. NO. _____

I.D.S. SHEET 20 OF 41

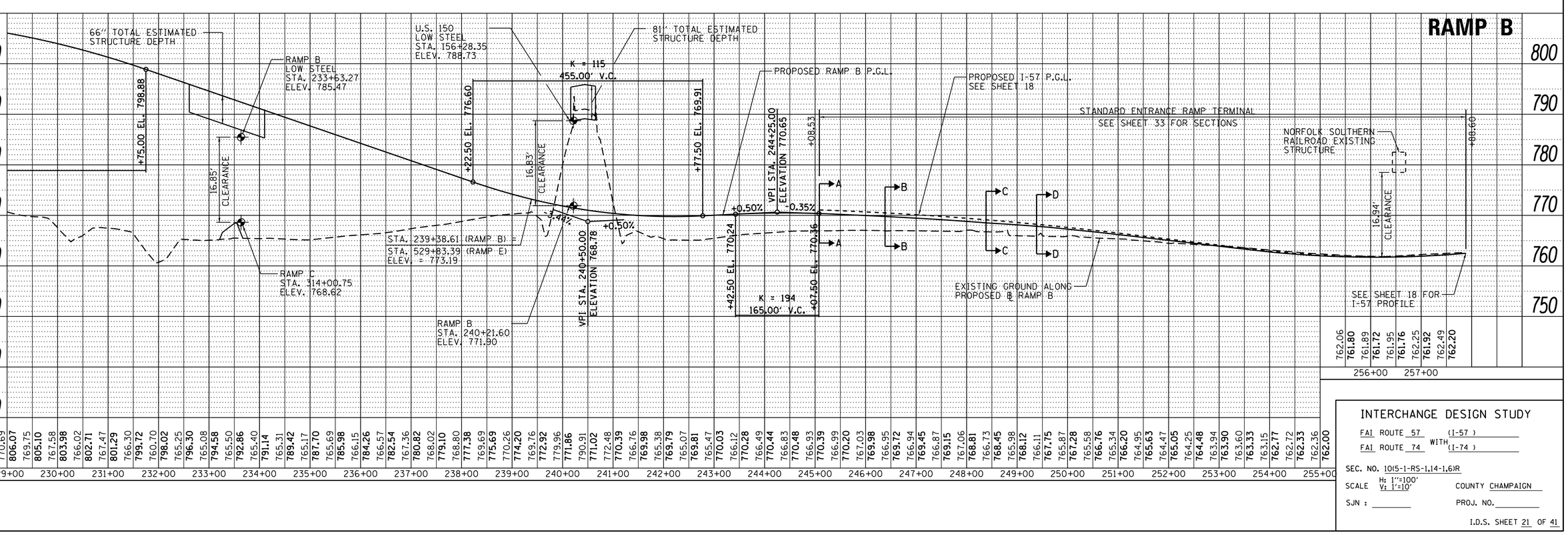
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# RAMP B




# RAMP B




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ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

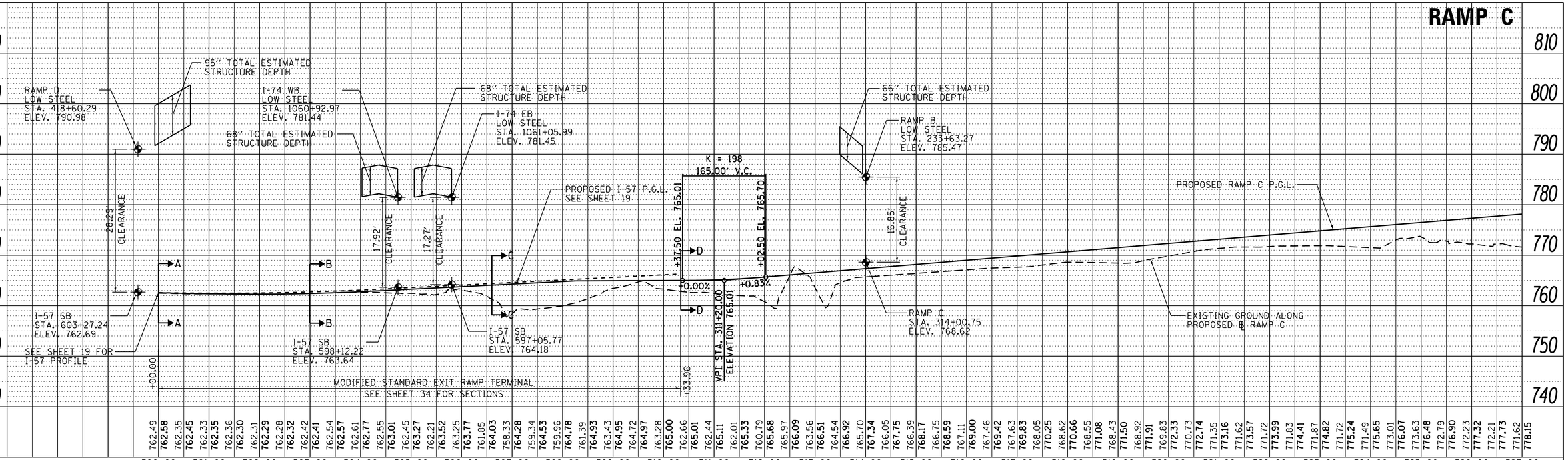
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SCALE H: 1"=100'
V: 1'=10'
COUNTY CHAMPAIGN
SJN :
PROJ. NO.

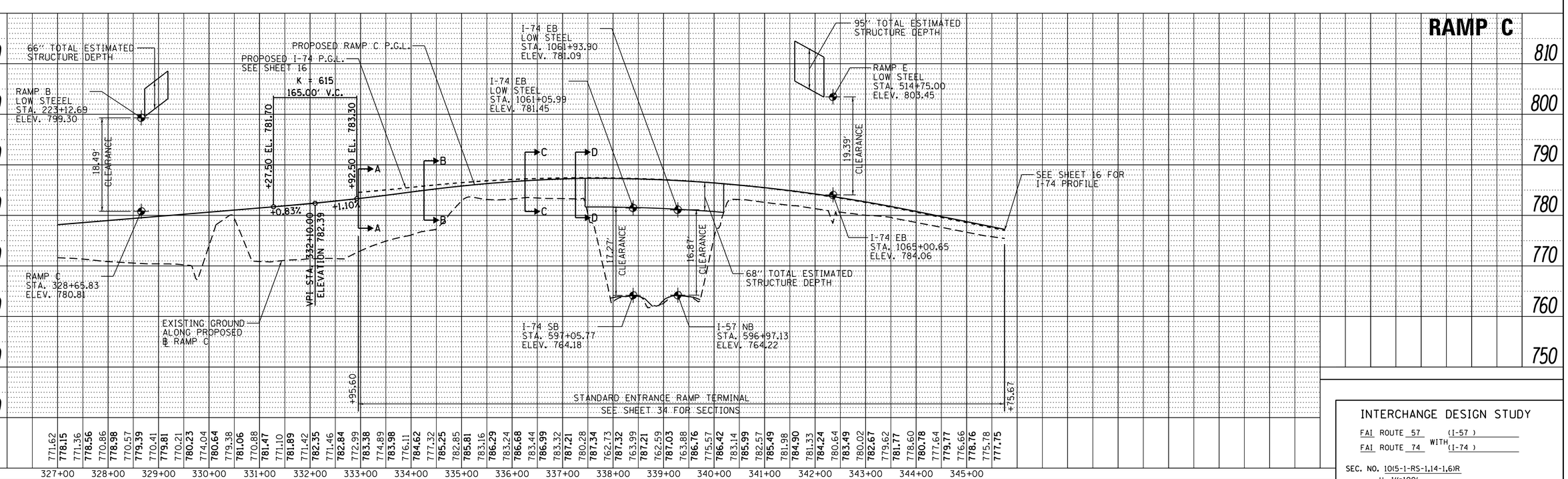
I.D.S. SHEET 21 OF 41

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# RAMP C




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ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
CROSS SECTIONS CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
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BY
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INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

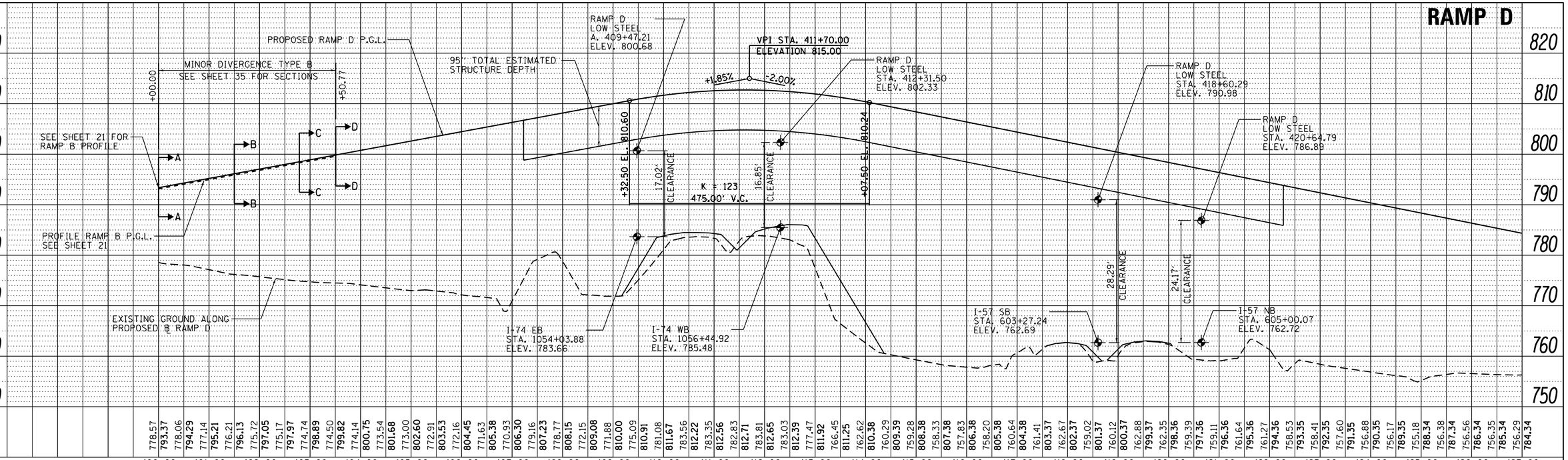
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE H: 1"=100'
V: 1'=10'
COUNTY CHAMPAIGN
SJN : _____ PROJ. NO. _____

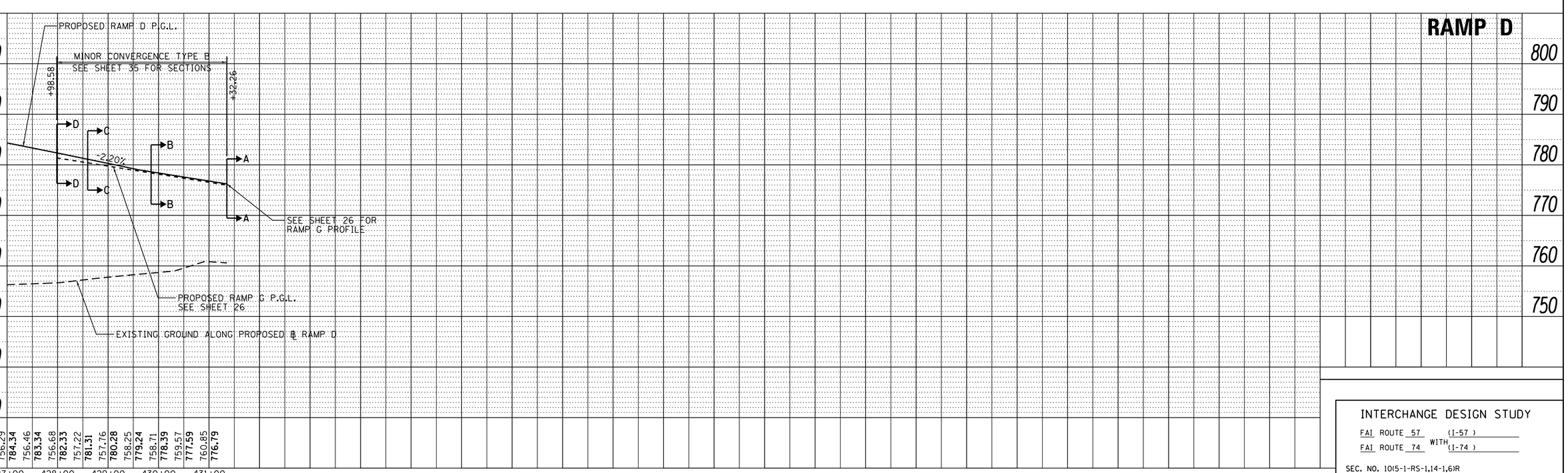
I.D.S. SHEET 22 OF 41

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# RAMP D




# RAMP D

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

SJN : _____

PROJ. NO. _____

I.D.S. SHEET 23 OF 41

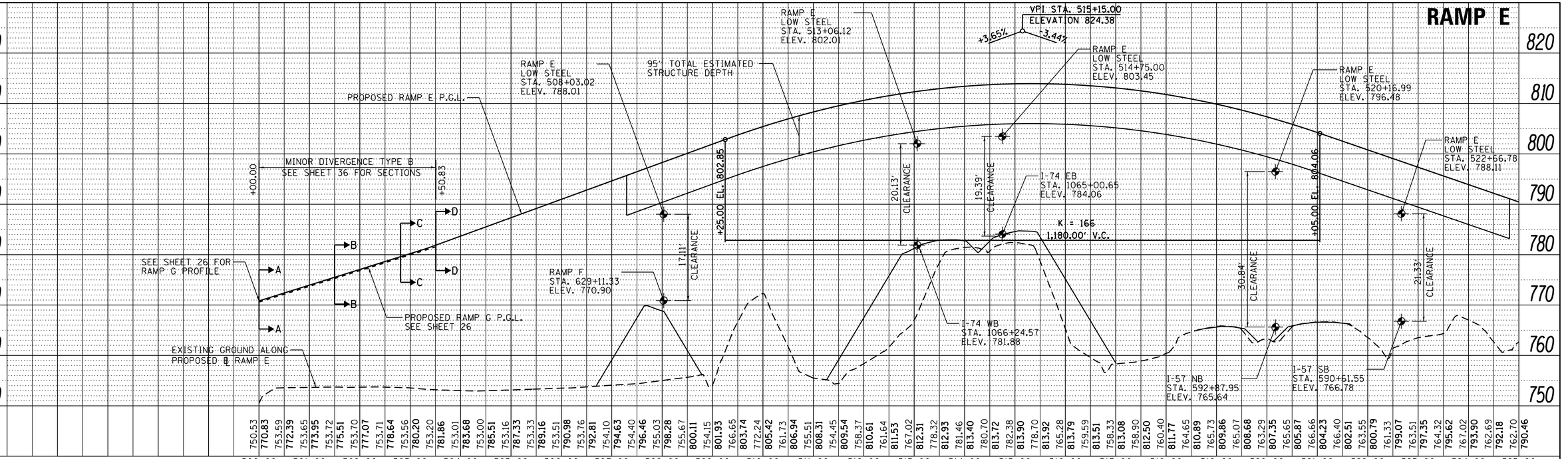
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CROSS CHECKED
R/T. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO. ____
BY
DATE

PROFILE
SURVEYED
PLOTTED
CROSS CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO. ____
BY
DATE

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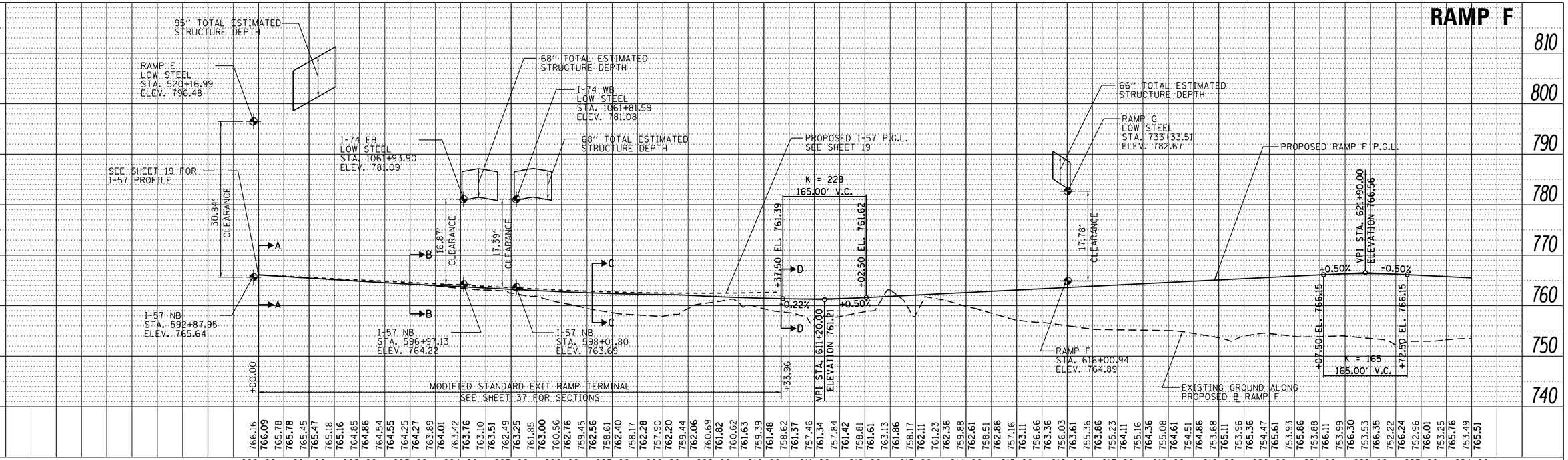
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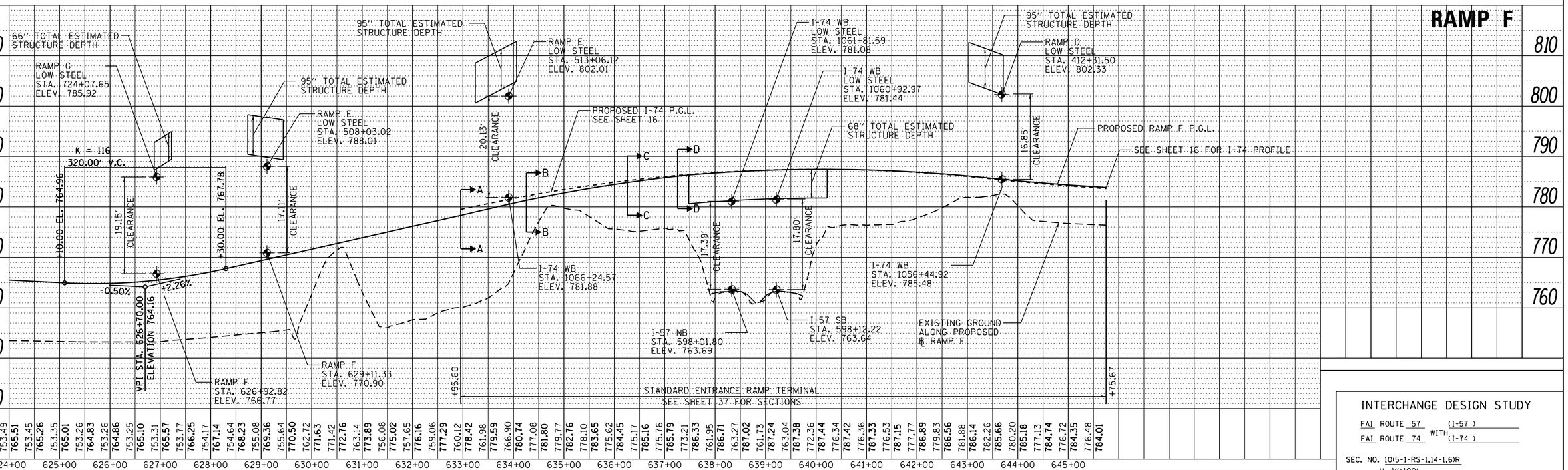
# RAMP E


820
810
800
790
780
770
760
750
RAMP E
LOW STEEL
STA. 513+06.12
ELEV. 802.01
VPI STA. 515+15.00
ELEVATION 824.38
+3.65%
-3.44%
RAMP E
LOW STEEL
STA. 514+75.00
ELEV. 803.45
RAMP E
LOW STEEL
STA. 520+16.99
ELEV. 796.48
RAMP E
LOW STEEL
STA. 522+66.78
ELEV. 788.11
RAMP E
LOW STEEL
STA. 508+03.02
ELEV. 788.01
95" TOTAL ESTIMATED
STRUCTURE DEPTH
PROPOSED RAMP E P.G.L.
MINOR DIVERGENCE TYPE B
SEE SHEET 36 FOR SECTIONS
+00.00
+50.83
+25.00 EL. 802.85
+05.00 EL. 804.06
20.13'
CLEARANCE
19.39'
CLEARANCE
17.11'
CLEARANCE
30.84'
CLEARANCE
21.33'
CLEARANCE
I-74 EB
STA. 1065+00.65
ELEV. 784.06
K = 166
1,180.00' V.C.
SEE SHEET 26 FOR
RAMP G PROFILE
RAMP F
STA. 629+11.33
ELEV. 770.90
PROPOSED RAMP G P.G.L.
SEE SHEET 26
I-74 WB
STA. 1066+24.57
ELEV. 781.88
I-57 NB
STA. 592+87.95
ELEV. 765.64
I-57 SB
STA. 590+61.55
ELEV. 766.78
EXISTING GROUND ALONG
PROPOSED ℄ RAMP E
A
B
C
D
500+00 501+00 502+00 503+00 504+00 505+00 506+00 507+00 508+00 509+00 510+00 511+00 512+00 513+00 514+00 515+00 516+00 517+00 518+00 519+00 520+00 521+00 522+00 523+00 524+00 525+00

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# RAMP F




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ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
CROSS SECTIONS CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

SJN : _____

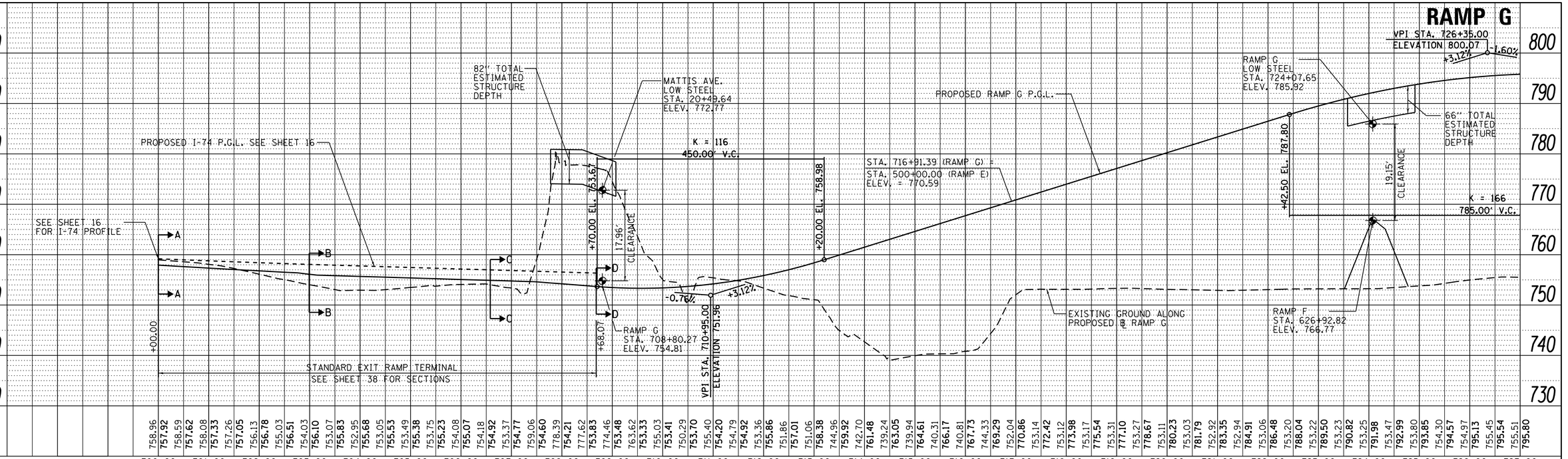
PROJ. NO. _____

I.D.S. SHEET 25 OF 41

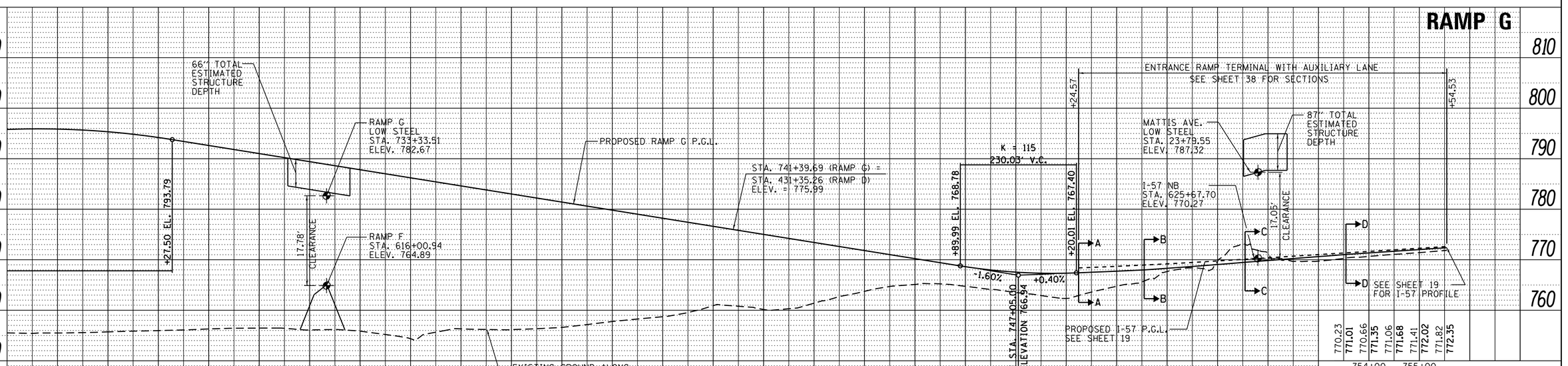
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# RAMP G




# RAMP G




## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

SJN : _____

PROJ. NO. _____

I.D.S. SHEET 26 OF 41

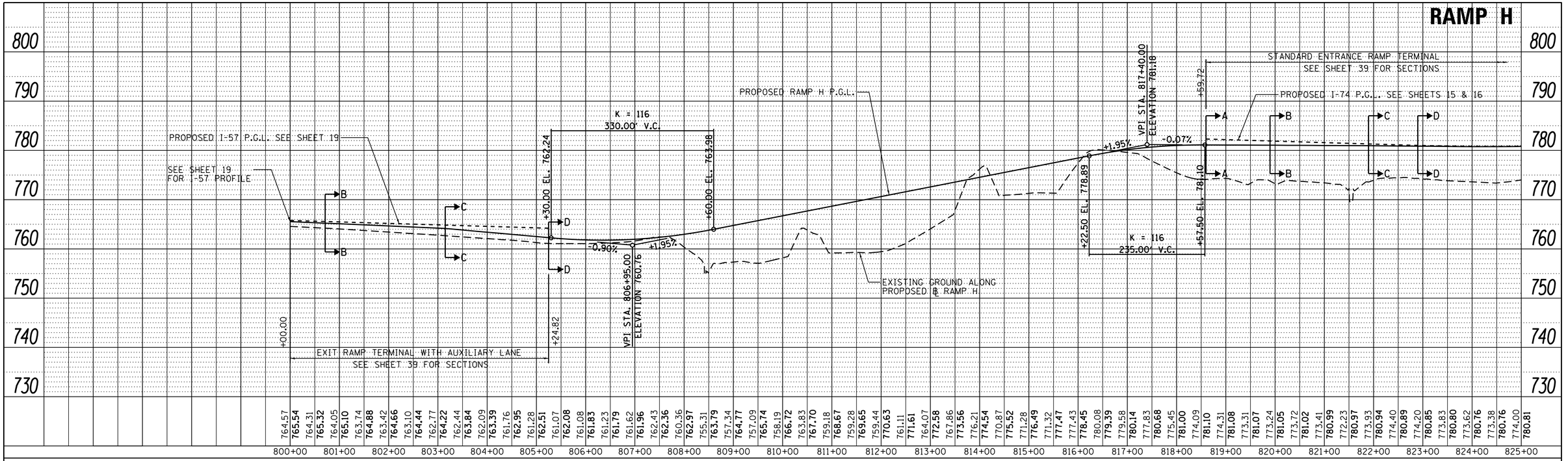
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PROFILE: SURVEYED | PLOTTED | GRADES CHECKED | B.M. NOTED | STRUCTURE NOTATNS CHKD | NOTE BOOK | NO. | BY | DATE

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BDE-9908

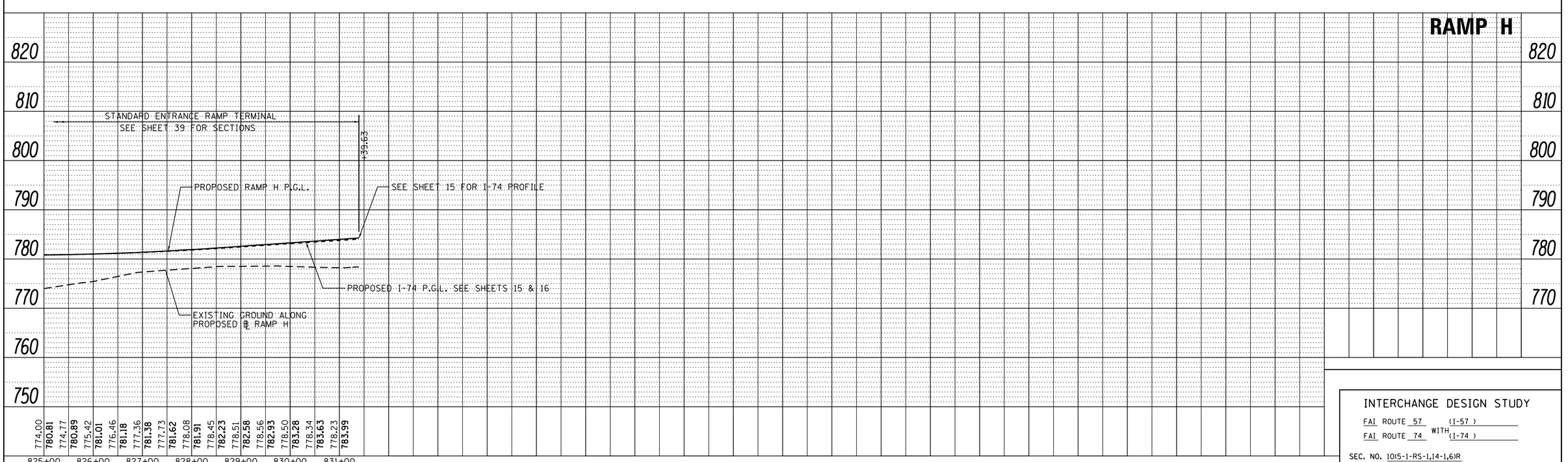
# RAMP H




764.57 765.54 764.31 765.32 764.05 765.10 763.74 764.88 763.42 764.66 763.10 764.44 762.77 764.22 762.44 763.84 762.09 763.39 761.76 762.95 761.28 762.51 761.07 762.08 761.08 761.83 761.23 761.79 761.62 761.96 762.43 762.36 760.36 762.97 755.31 763.79 757.34 764.77 757.09 765.74 758.19 766.72 763.83 767.70 759.18 768.67 759.28 769.65 759.44 770.63 761.11 771.61 764.07 772.58 767.86 773.56 776.21 774.54 770.87 775.52 771.28 776.49 771.32 771.47 777.43 778.45 780.08 779.39 779.58 780.14 777.83 780.68 775.45 781.00 774.09 781.10 774.31 781.08 773.31 781.07 773.24 781.05 773.72 781.02 773.41 780.99 772.23 780.97 773.93 780.94 774.40 780.89 774.20 780.85 773.83 780.80 773.62 780.76 773.38 780.76 774.00 780.81

800+00 801+00 802+00 803+00 804+00 805+00 806+00 807+00 808+00 809+00 810+00 811+00 812+00 813+00 814+00 815+00 816+00 817+00 818+00 819+00 820+00 821+00 822+00 823+00 824+00 825+00

# RAMP H




774.00 780.81 774.77 780.89 775.42 781.01 776.46 781.18 777.36 781.38 777.73 781.62 778.08 781.91 778.45 782.23 778.51 782.58 778.56 782.93 778.50 783.28 778.34 783.63 778.23 783.99

825+00 826+00 827+00 828+00 829+00 830+00 831+00

PLAN — SURVEYED — PLOTTED — CROSS CHECKED — NOTE BOOK — NO. — BY — DATE — ALIGNMENT CHECKED — RT. OF WAY CHECKED — CADD FILE NAME

PROFILE — SURVEYED — PLOTTED — CROSS CHECKED — NOTE BOOK — NO. — BY — DATE — B.M. NOTED — STRUCTURE NOTATNS CHKD

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100' V: 1"=10' COUNTY CHAMPAIGN

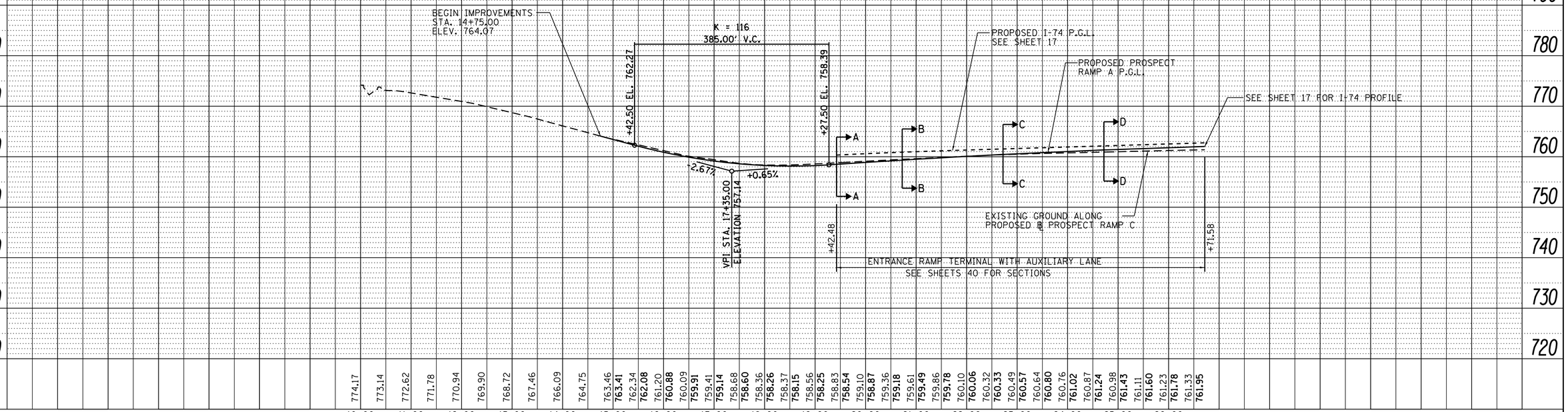
SJN : _____ PROJ. NO. _____

I.D.S. SHEET 27 OF 41

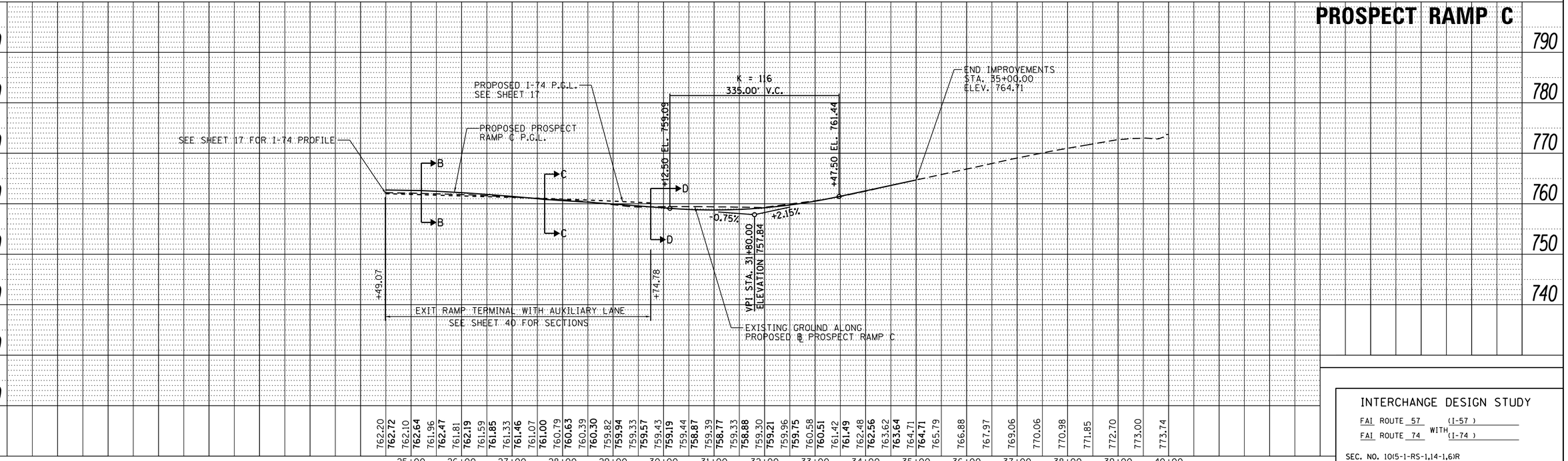
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# PROSPECT RAMP A




# PROSPECT RAMP C




PLAN
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RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
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BY
DATE

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PLOTTED
CROSS SECT. CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE H: 1"=100'
V: 1'=10'
COUNTY CHAMPAIGN
SJN : _____
PROJ. NO. _____

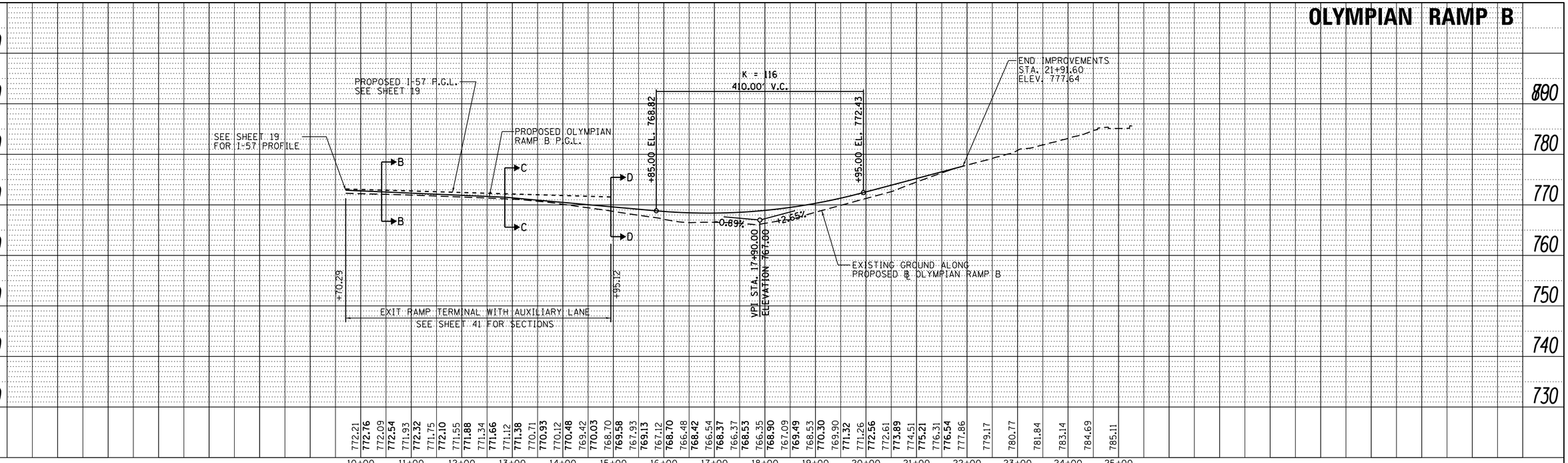
I.D.S. SHEET 28 OF 41

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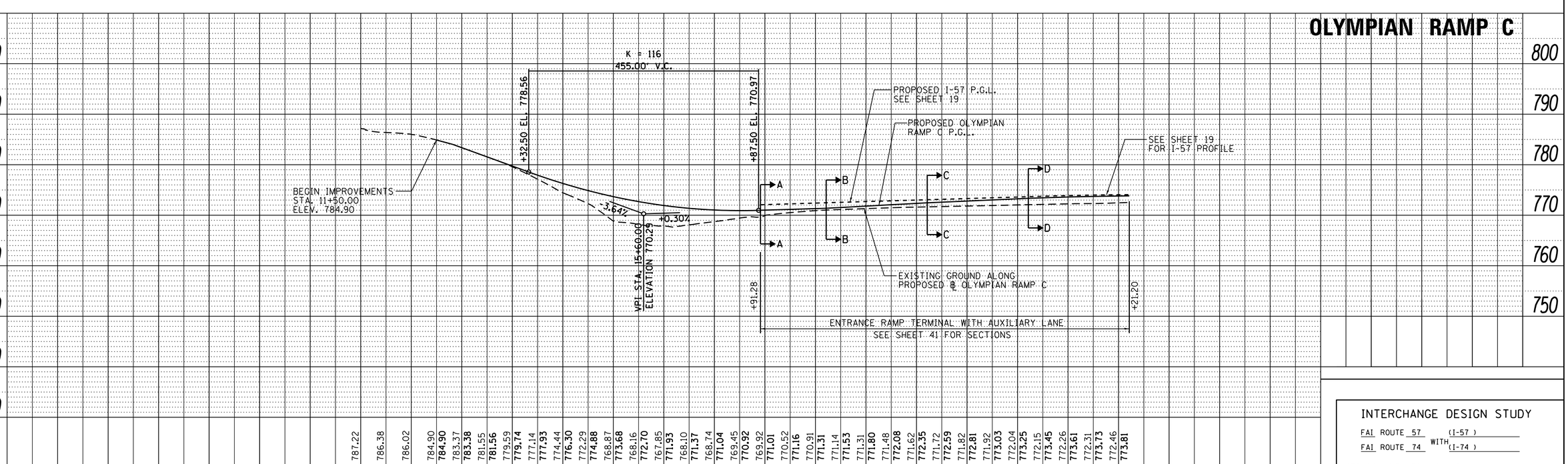
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RT. OF WAY CHECKED
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NOTE BOOK
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DATE

# OLYMPIAN RAMP B




PROFILE
SURVEYED
PLOTTED
CROSS SECTIONS CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

# OLYMPIAN RAMP C




INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

SJN : _____

PROJ. NO. _____

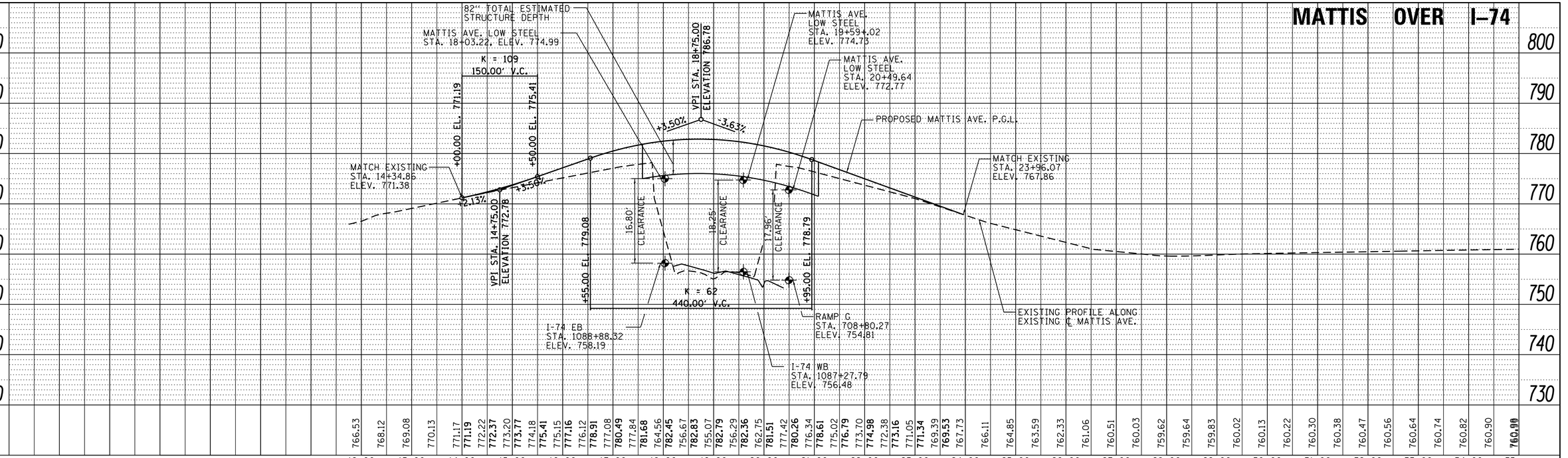
I.D.S. SHEET 29 OF 41

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PLAN
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ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
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BY
DATE

# MATTIS OVER I-74

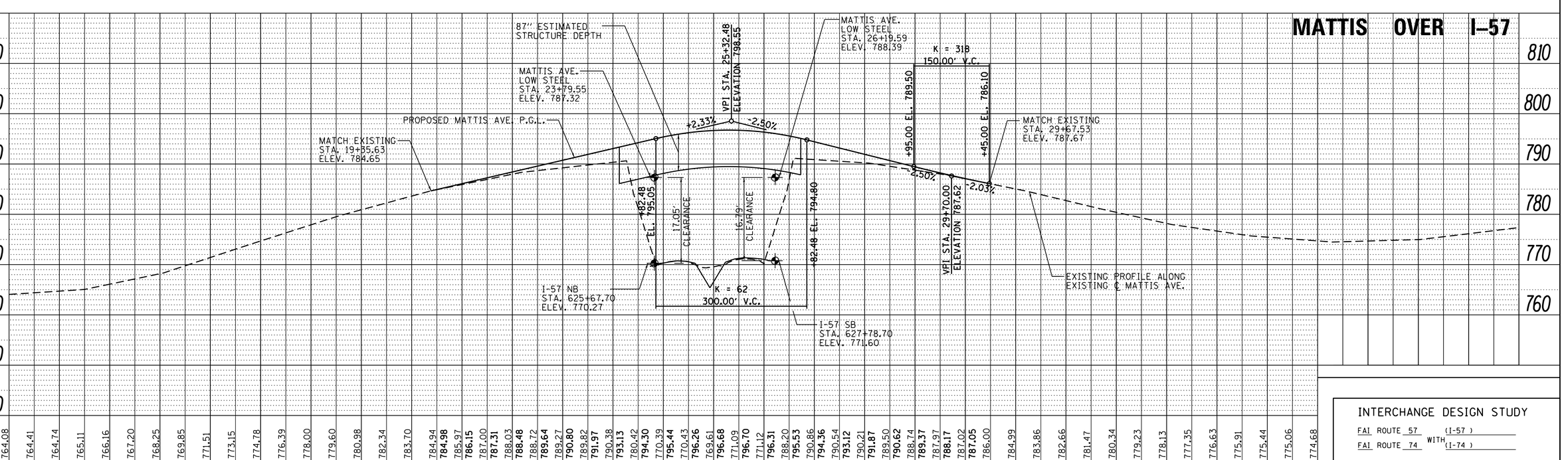



766.53 768.12 769.08 770.13 771.17 **771.19** 772.22 **772.37** 773.20 **773.77** 774.18 **775.41** 775.15 **777.16** 776.12 **778.91** 777.08 **780.49** 777.84 **781.68** 764.56 **782.45** 756.67 **782.83** 755.07 **782.79** 756.29 **782.36** 762.75 **781.51** 777.42 **780.26** 776.34 **778.61** 775.02 **776.79** 773.70 **774.98** 772.38 **773.16** 771.05 **771.34** 769.39 **769.53** 767.73 766.11 764.85 763.59 762.33 761.06 760.51 760.03 759.62 759.64 759.83 760.02 760.13 760.22 760.30 760.38 760.47 760.56 760.64 760.74 760.82 760.90 **760.98**

12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+

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PLOTTED
CROSS SECTIONS CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

# MATTIS OVER I-57




764.08 764.41 764.74 765.11 766.16 767.20 768.25 769.85 771.51 773.15 774.78 776.39 778.00 779.60 780.98 782.34 783.70 784.94 **784.98** 785.97 **786.15** 787.00 **787.31** 788.03 **788.48** 788.72 **789.64** 789.27 **790.80** 789.82 **791.97** 790.38 **793.13** 790.42 **794.30** 790.39 **795.44** 790.43 **796.26** 789.61 **796.68** 771.09 **796.70** 771.12 **796.31** 788.20 **795.53** 790.86 **794.36** 790.54 **793.12** 790.21 **791.87** 789.50 **790.62** 788.74 **789.37** 787.97 **788.17** 787.02 **787.05** 786.00 784.99 783.86 782.66 781.47 780.34 779.23 778.13 777.35 776.63 775.91 775.44 775.06 774.68

11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

SJN : _____

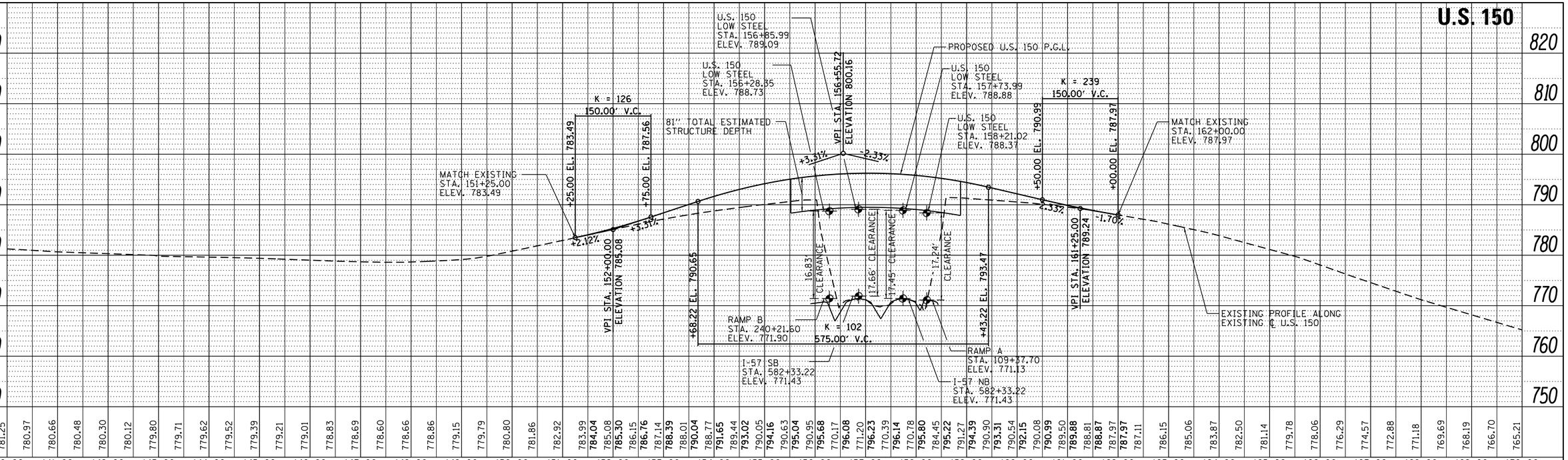
PROJ. NO. _____

I.D.S. SHEET 30 OF 41

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PLAN

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| PLOTTED | | |
| ALIGNMENT CHECKED | | |
| RT. OF WAY CHECKED | | |
| CADD FILE NAME | | |
| NOTE BOOK | | |
| NO. | | |

PROFILE

| | BY | DATE |
|---|---|---|
| SURVEYED | | |
| PLOTTED | | |
| CROSS SECTIONS CHECKED | | |
| B.M. NOTED | | |
| STRUCTURE NOTATNS CHKD | | |
| NOTE BOOK | | |
| NO. | | |

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )

FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE H: 1"=100'
V: 1'=10'

COUNTY CHAMPAIGN

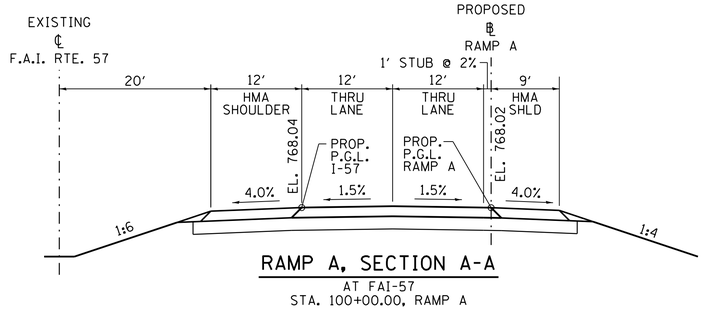
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PROJ. NO. _____

I.D.S. SHEET 31 OF 41

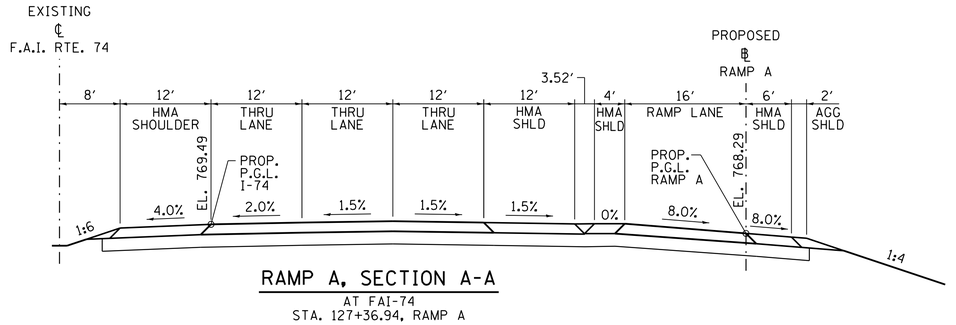
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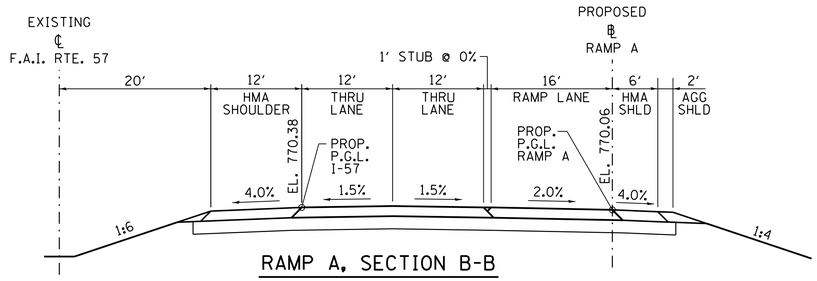

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AT FAI-57
STA. 100+00.00, RAMP A



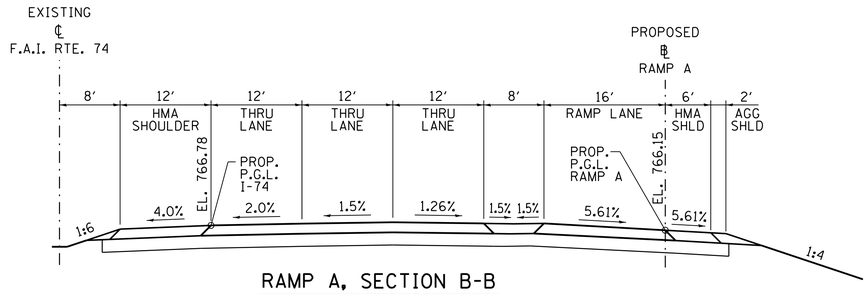

## RAMP A, SECTION A-A

AT FAI-74
STA. 127+36.94, RAMP A



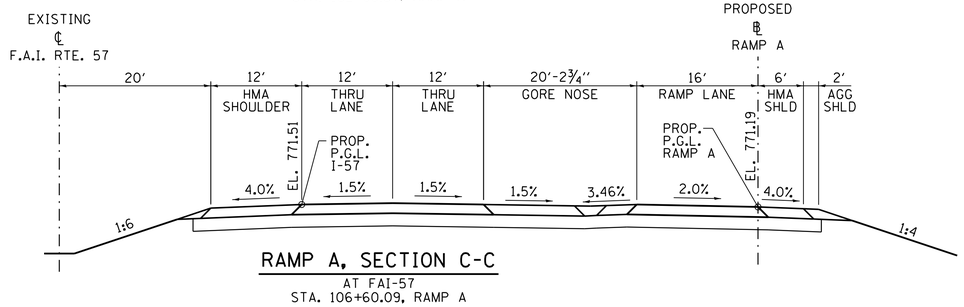

## RAMP A, SECTION B-B

AT FAI-57
STA. 102+99.57, RAMP A



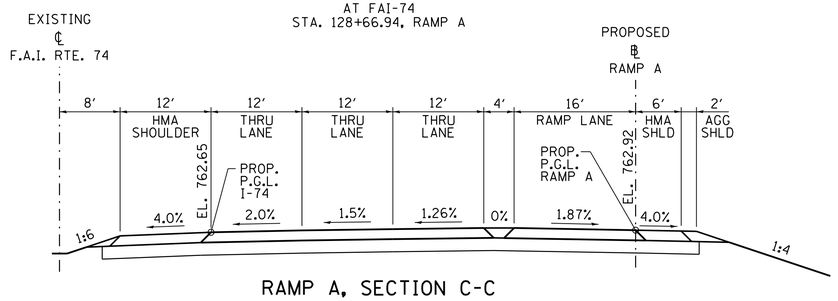

## RAMP A, SECTION B-B

AT FAI-74
STA. 128+66.94, RAMP A



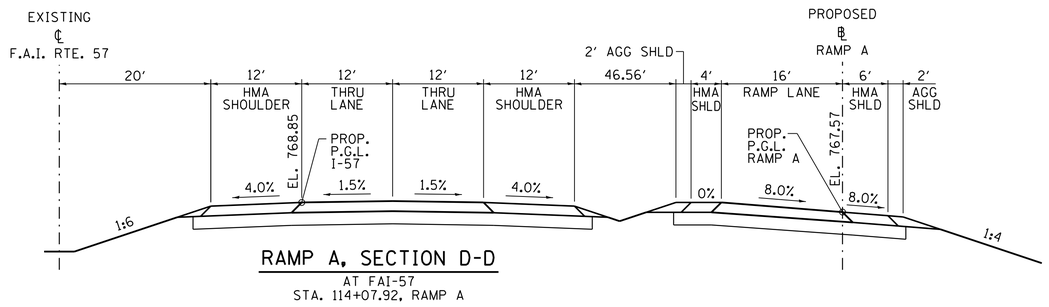

## RAMP A, SECTION C-C

AT FAI-57
STA. 106+60.09, RAMP A



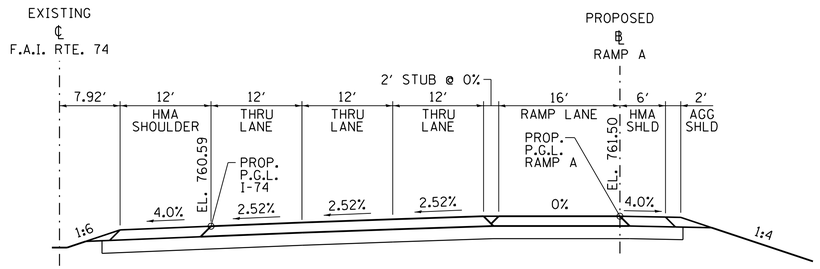

## RAMP A, SECTION C-C

AT FAI-74
STA. 130+66.98, RAMP A




## RAMP A, SECTION D-D

AT FAI-57
STA. 114+07.92, RAMP A




## RAMP A, SECTION D-D

AT FAI-74
STA. 131+67.04, RAMP A

## MODIFIED STANDARD EXIT RAMP TERMINAL

## STANDARD ENTRANCE RAMP TERMINAL

### INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

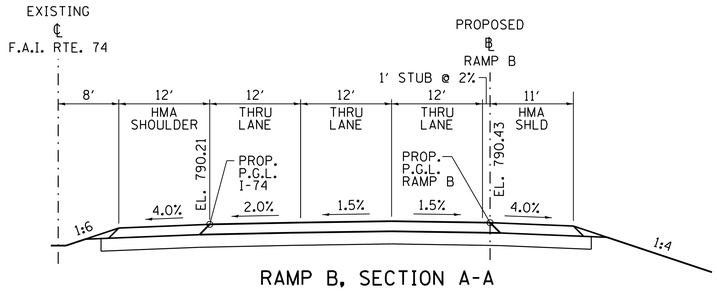
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE N.T.S. COUNTY CHAMPAIGN
SJN : PROJ. NO.

I.D.S. SHEET 32 OF 41

BDE-9908

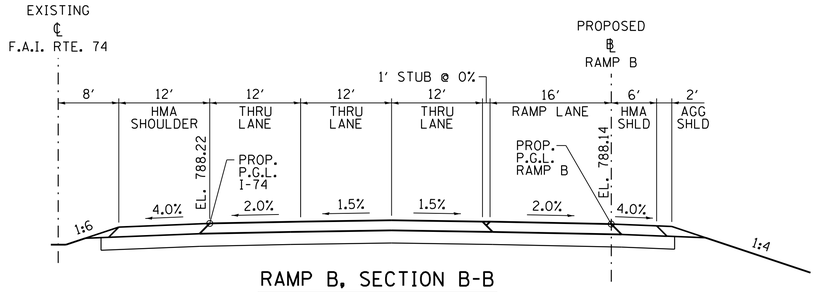
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USER NAME = Brad Downen

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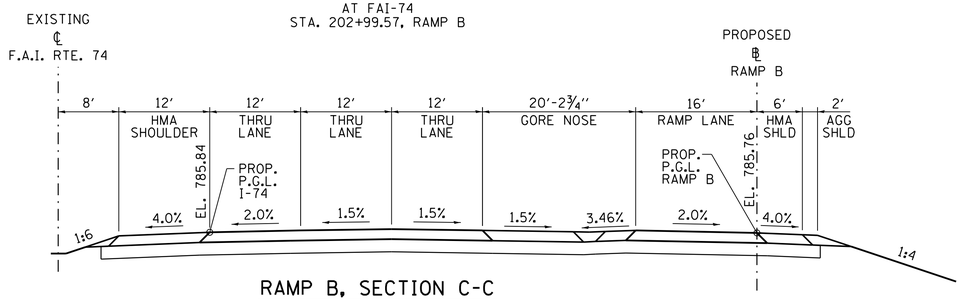

## RAMP B, SECTION A-A

AT FAI-74
STA. 200+00.00, RAMP B



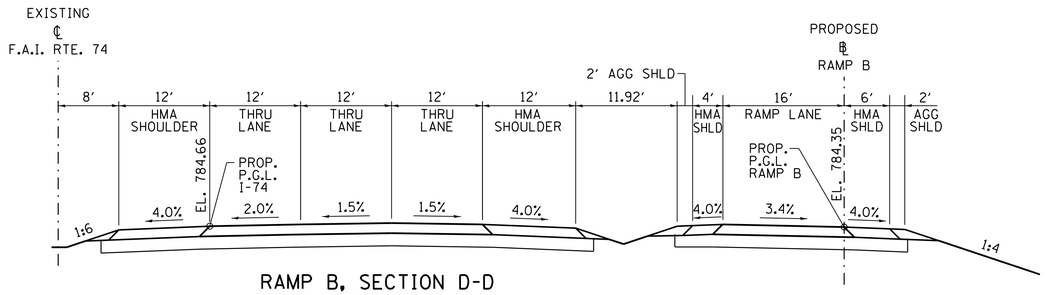

## RAMP B, SECTION B-B

AT FAI-74
STA. 202+99.57, RAMP B




## RAMP B, SECTION C-C

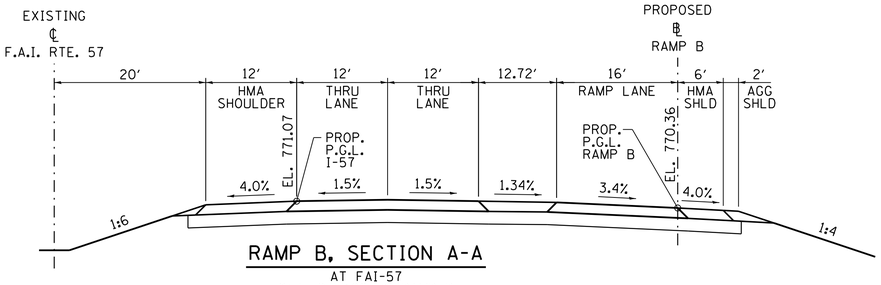
AT FAI-74
STA. 206+60.09, RAMP B




## RAMP B, SECTION D-D

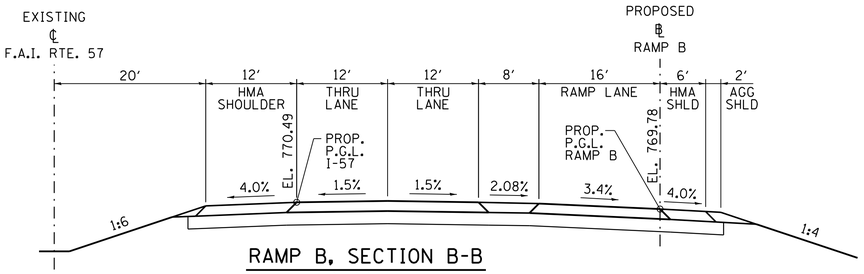
AT FAI-74
STA. 208+38.42, RAMP B

## STANDARD EXIT RAMP TERMINAL



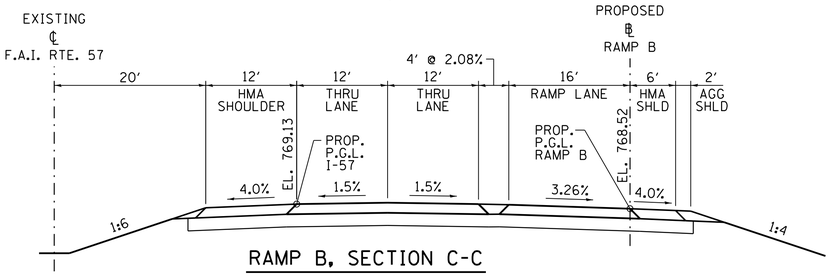

## RAMP B, SECTION A-A

AT FAI-57
STA. 245+08.53, RAMP B



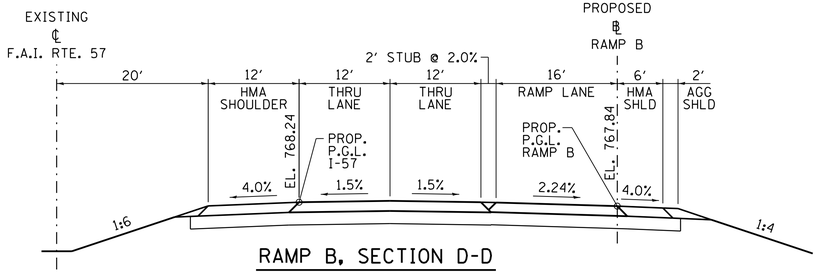

## RAMP B, SECTION B-B

AT FAI-57
STA. 246+38.53, RAMP B




## RAMP B, SECTION C-C

AT FAI-57
STA. 248+38.57, RAMP B




## RAMP B, SECTION D-D

AT FAI-57
STA. 249+38.59, RAMP B

## STANDARD ENTRANCE RAMP TERMINAL

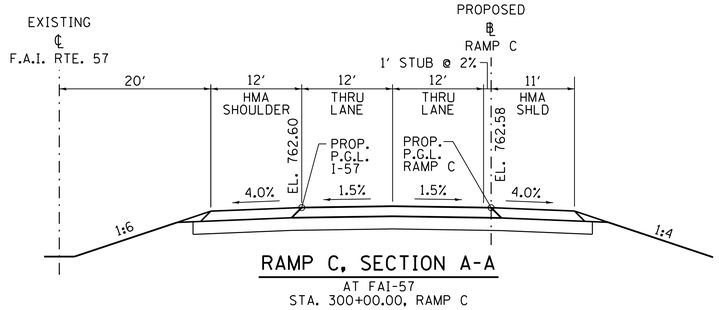
INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

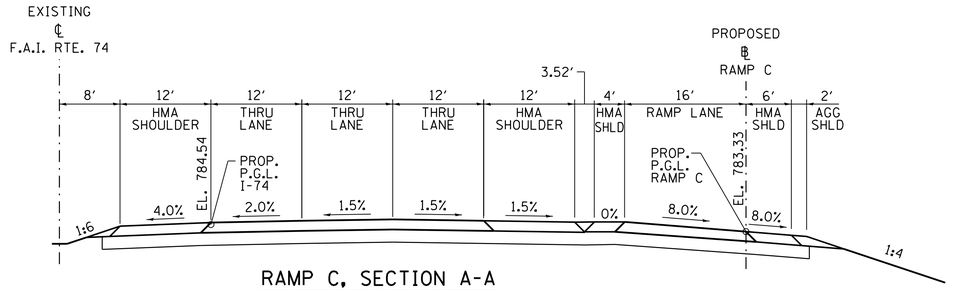
SCALE N.T.S. COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____



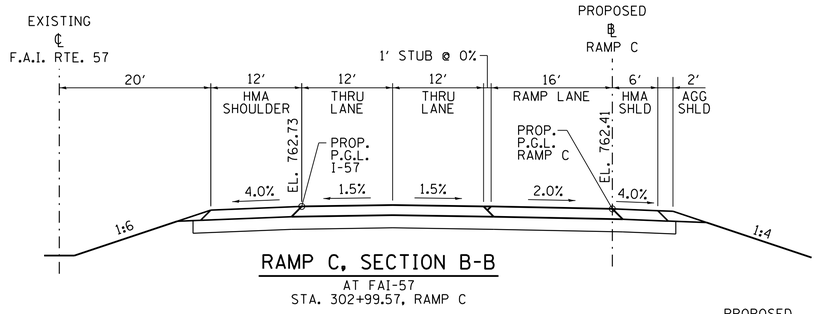

## RAMP C, SECTION A-A

AT FAI-57
STA. 300+00.00, RAMP C



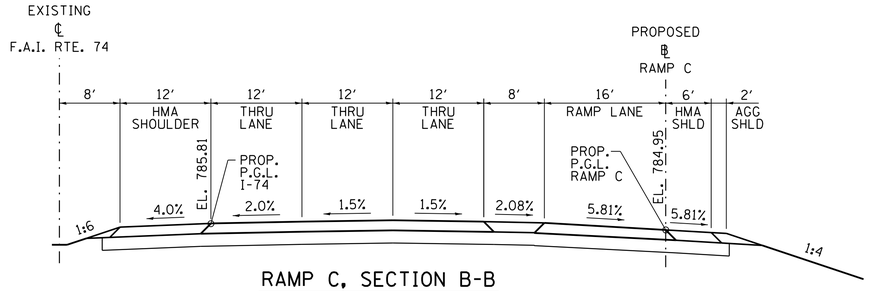

## RAMP C, SECTION A-A

AT FAI-74
STA. 332+95.60, RAMP C



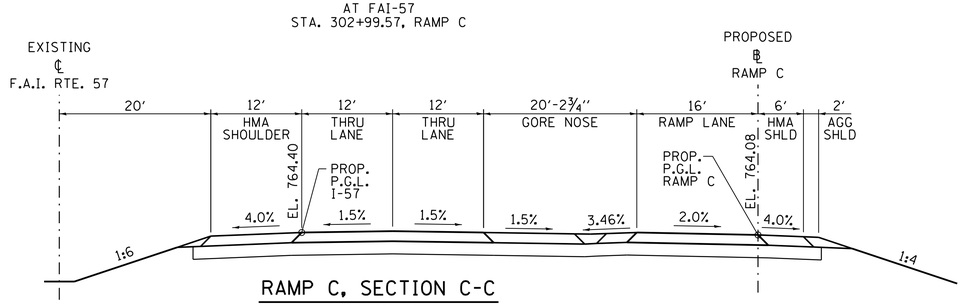

## RAMP C, SECTION B-B

AT FAI-57
STA. 302+99.57, RAMP C



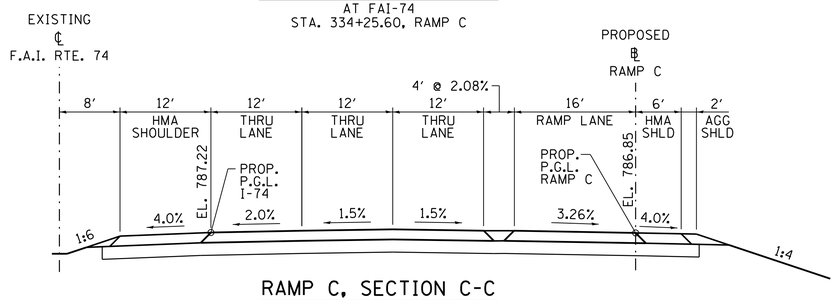

## RAMP C, SECTION B-B

AT FAI-74
STA. 334+25.60, RAMP C



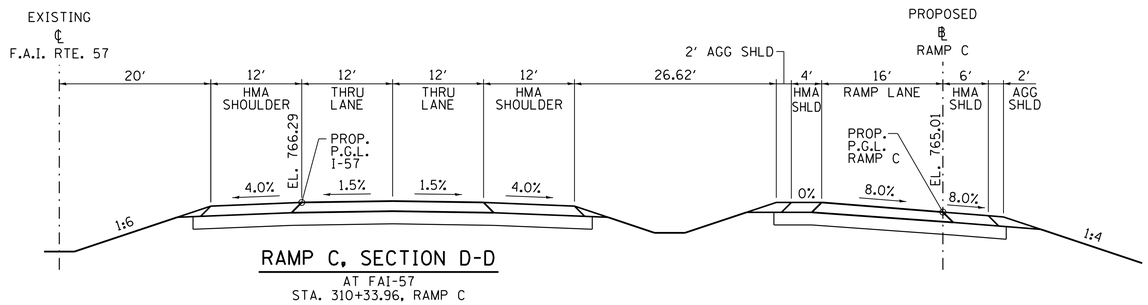

## RAMP C, SECTION C-C

AT FAI-57
STA. 306+60.09, RAMP C



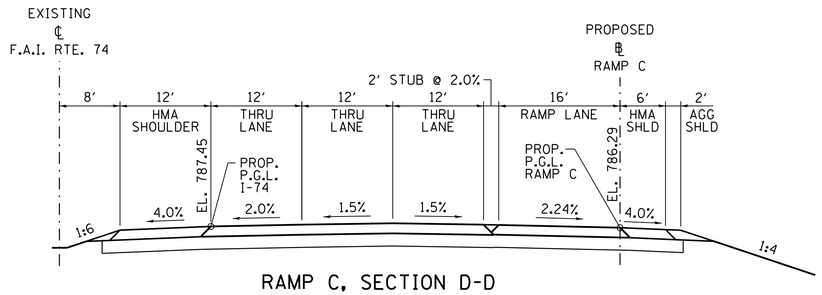

## RAMP C, SECTION C-C

AT FAI-74
STA. 336+25.64, RAMP C




## RAMP C, SECTION D-D

AT FAI-57
STA. 310+33.96, RAMP C




## RAMP C, SECTION D-D

AT FAI-74
STA. 337+25.66, RAMP C

## MODIFIED STANDARD EXIT RAMP TERMINAL

## STANDARD ENTRANCE RAMP TERMINAL

### INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

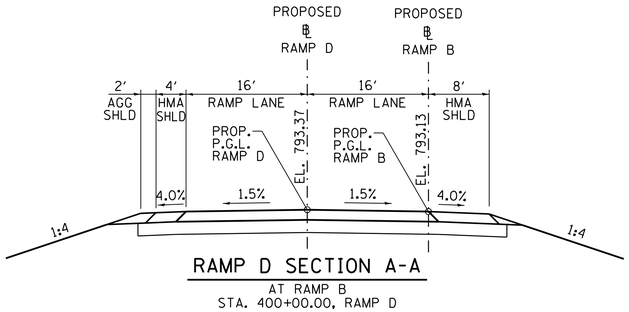
SEC. NO. 10(5-1-RS-1,14-1,6)R
SCALE N.T.S. COUNTY CHAMPAIGN
SJN : PROJ. NO.

I.D.S. SHEET 34 OF 41

BDE-9908

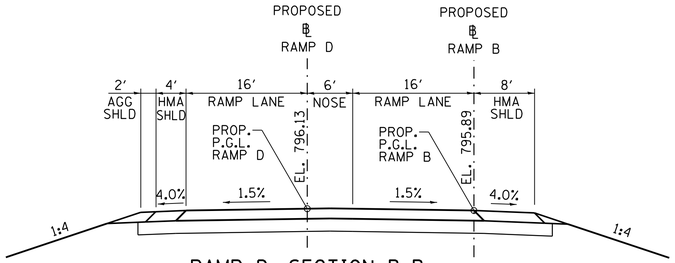
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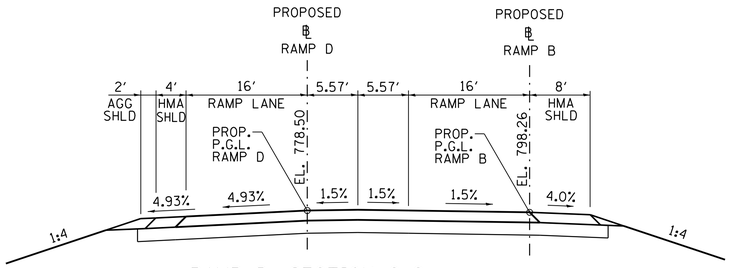

## RAMP D SECTION A-A

AT RAMP B
STA. 400+00.00, RAMP D



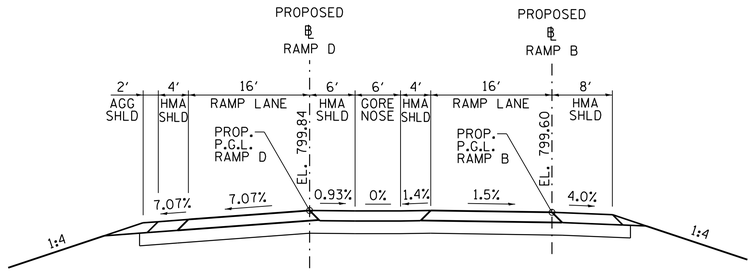

## RAMP D, SECTION B-B

AT RAMP B
STA. 401+50.03, RAMP D




## RAMP D, SECTION C-C

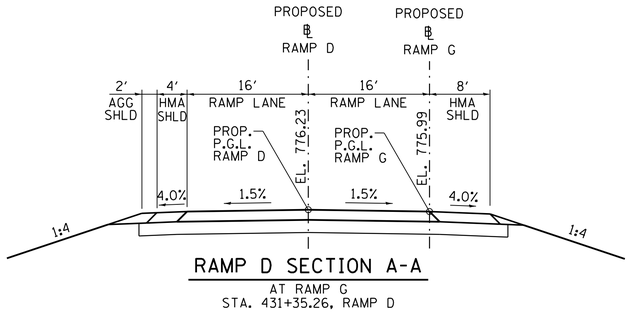
AT RAMP B
STA. 402+78.67, RAMP D




## RAMP D, SECTION D-D

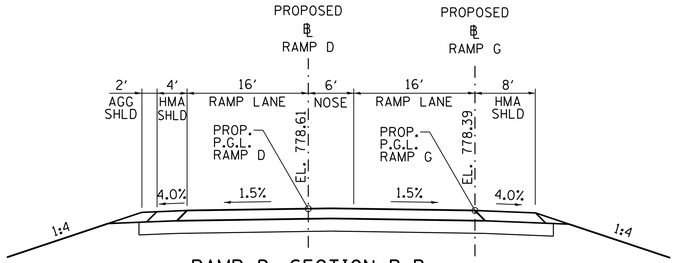
AT RAMP B
STA. 403+50.77, RAMP D

## MINOR DIVERGENCE TYPE B



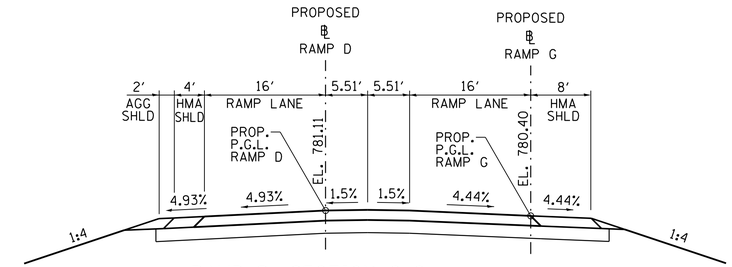

## RAMP D SECTION A-A

AT RAMP G
STA. 431+35.26, RAMP D



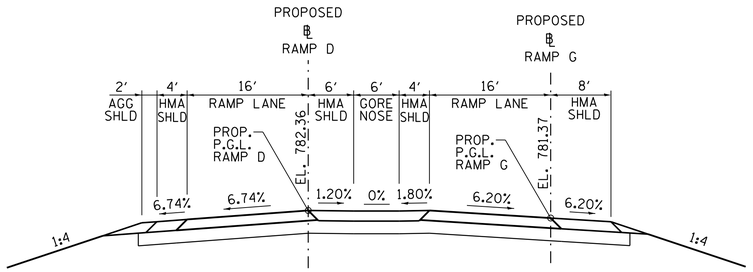

## RAMP D, SECTION B-B

AT RAMP G
STA. 429+85.23, RAMP D




## RAMP D, SECTION C-C

AT RAMP G
STA. 428+59.69, RAMP D




## RAMP D, SECTION D-D

AT RAMP G
STA. 427+98.58, RAMP D

## MINOR CONVERGENCE TYPE B

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

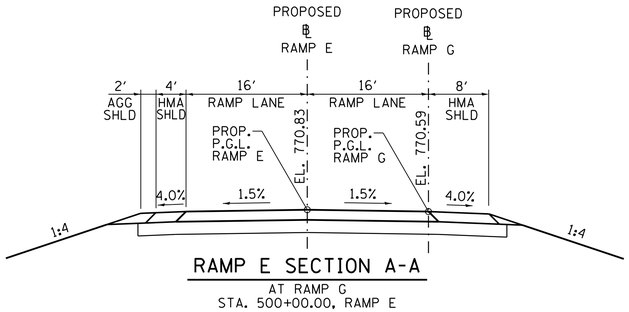
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SCALE N.T.S. COUNTY CHAMPAIGN

SJN : PROJ. NO.

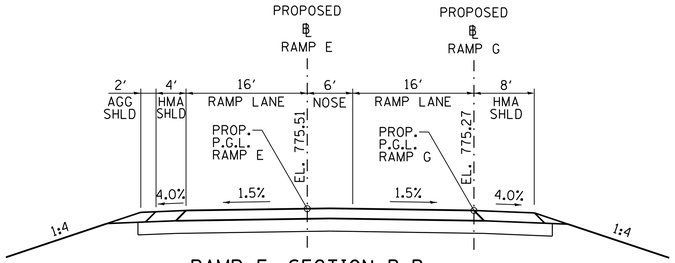
I.D.S. SHEET 35 OF 41

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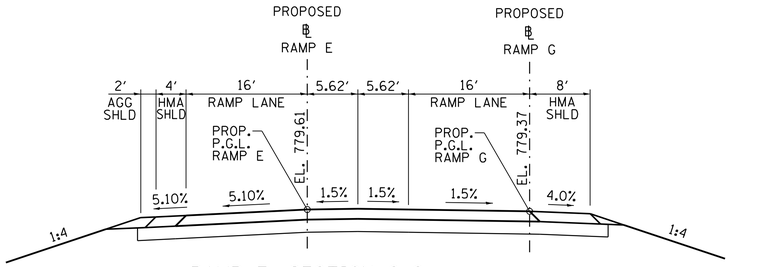

## RAMP E SECTION A-A

AT RAMP G
STA. 500+00.00, RAMP E



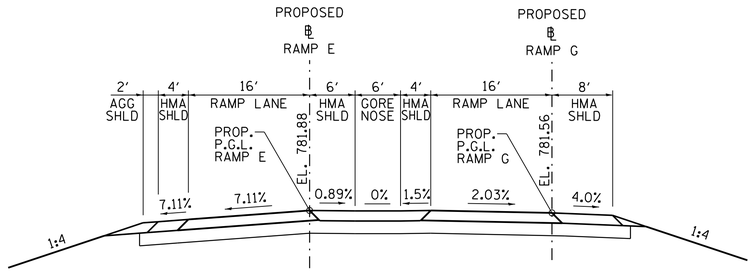

## RAMP E, SECTION B-B

AT RAMP G
STA. 501+50.03, RAMP E




## RAMP E, SECTION C-C

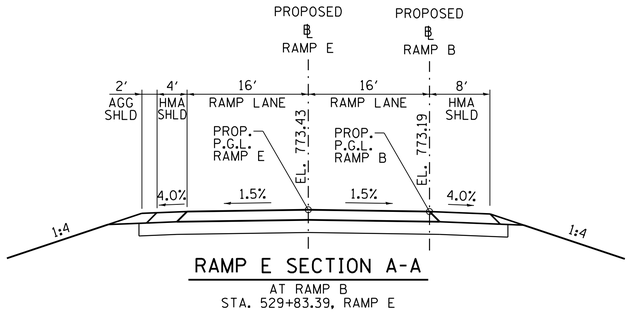
AT RAMP G
STA. 502+81.04, RAMP E




## RAMP E, SECTION D-D

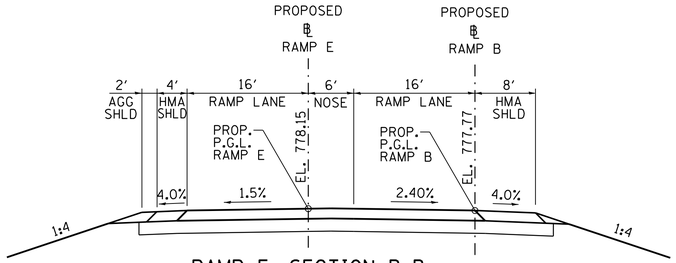
AT RAMP G
STA. 503+50.83, RAMP E

## MINOR DIVERGENCE TYPE B



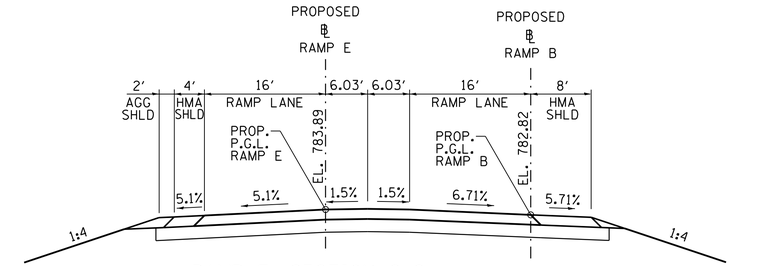

## RAMP E SECTION A-A

AT RAMP B
STA. 529+83.39, RAMP E



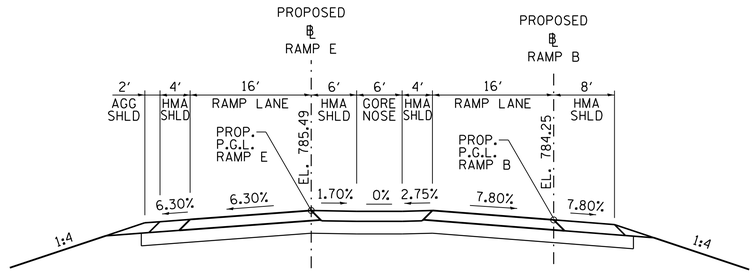

## RAMP E, SECTION B-B

AT RAMP B
STA. 528+33.36, RAMP E




## RAMP E, SECTION C-C

AT RAMP B
STA. 526+86.34, RAMP E




## RAMP E, SECTION D-D

AT RAMP B
STA. 526+44.23, RAMP E

## MINOR CONVERGENCE TYPE B

INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

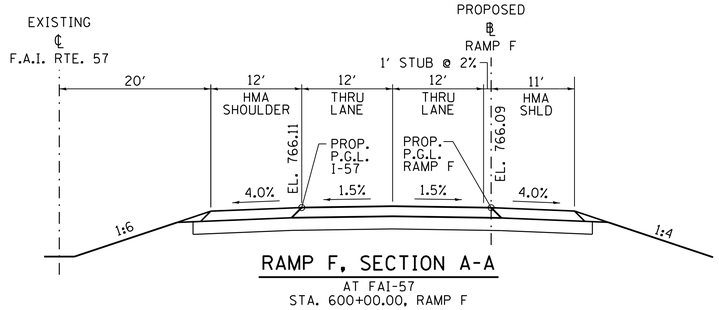
SCALE N.T.S. COUNTY CHAMPAIGN

SJN : PROJ. NO.

I.D.S. SHEET 36 OF 41

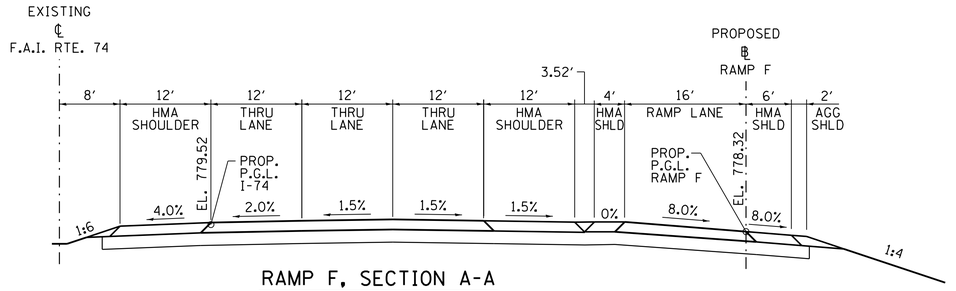
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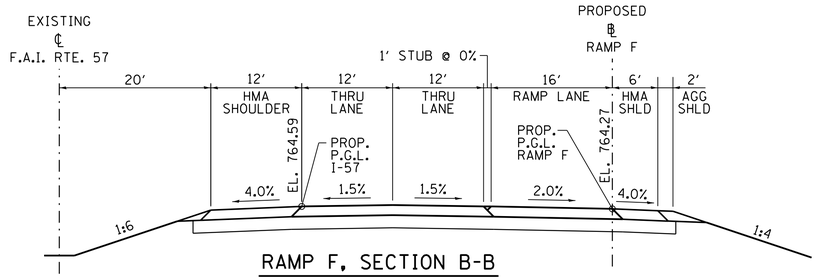

## RAMP F, SECTION A-A

AT FAI-57
STA. 600+00.00, RAMP F



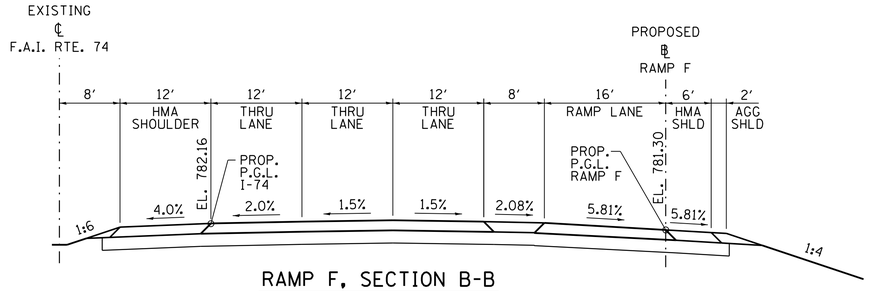

## RAMP F, SECTION A-A

AT FAI-74
STA. 632+95.60, RAMP F



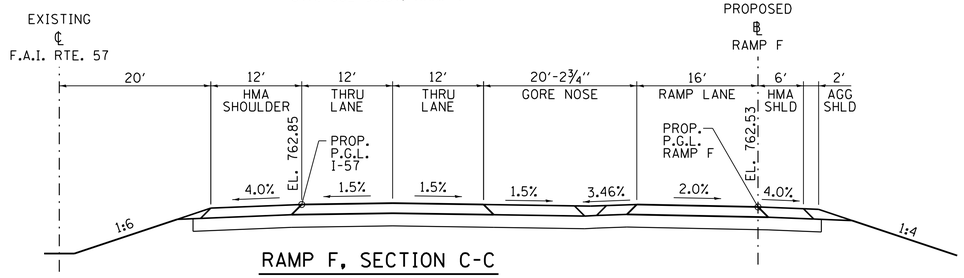

## RAMP F, SECTION B-B

AT FAI-57
STA. 602+99.57, RAMP F



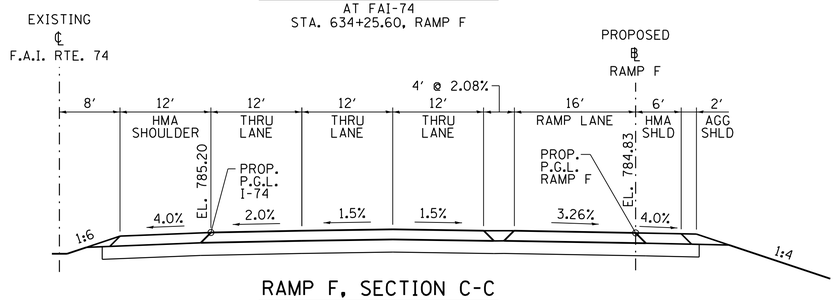

## RAMP F, SECTION B-B

AT FAI-74
STA. 634+25.60, RAMP F



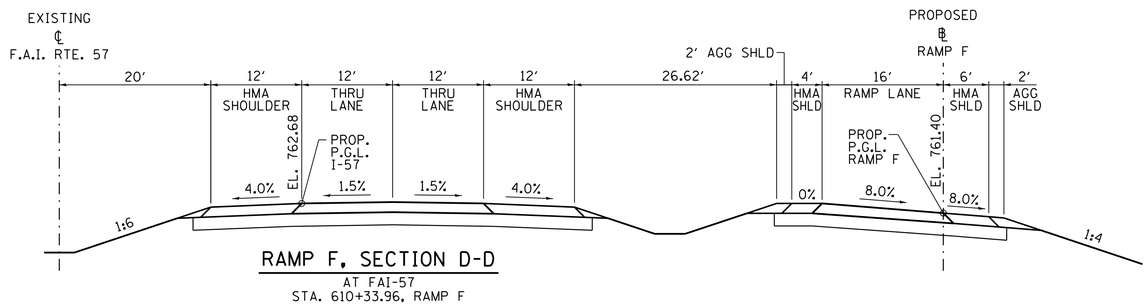

## RAMP F, SECTION C-C

AT FAI-57
STA. 606+60.09, RAMP F



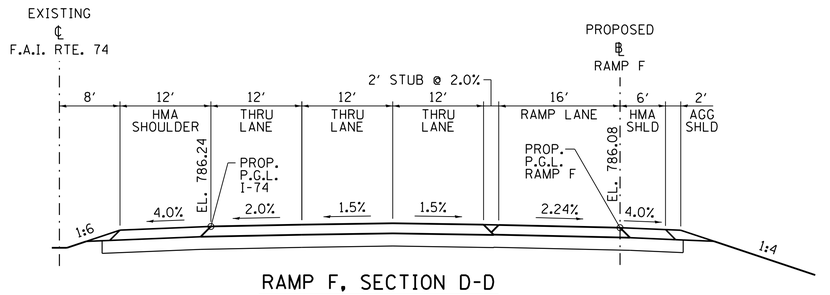

## RAMP F, SECTION C-C

AT FAI-74
STA. 636+25.64, RAMP F




## RAMP F, SECTION D-D

AT FAI-57
STA. 610+33.96, RAMP F




## RAMP F, SECTION D-D

AT FAI-74
STA. 637+25.66, RAMP F

## MODIFIED STANDARD EXIT RAMP TERMINAL

## STANDARD ENTRANCE RAMP TERMINAL

### INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

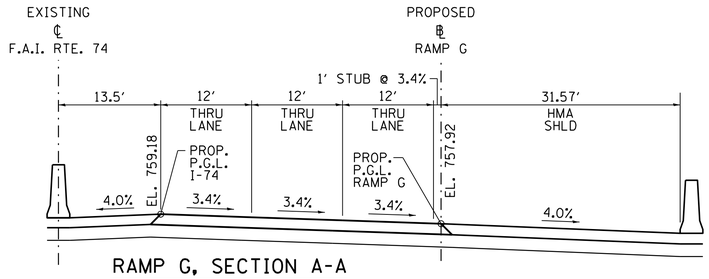
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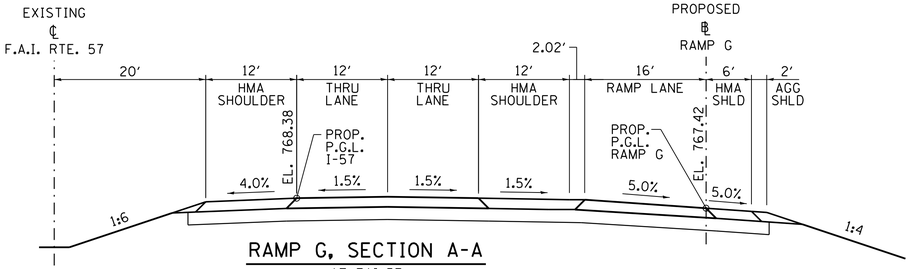
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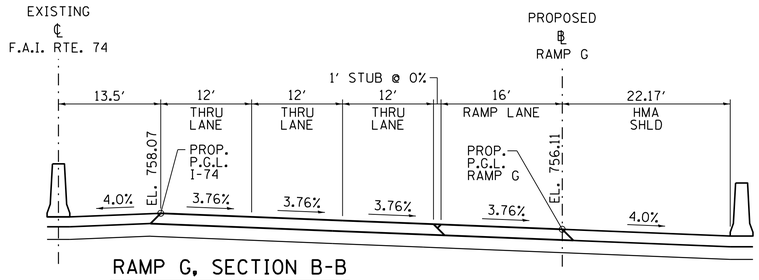

## RAMP G, SECTION A-A

AT FAI-74
STA. 700+00.00, RAMP G



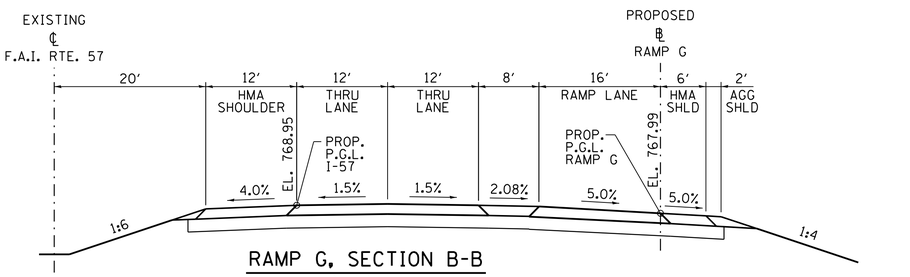

## RAMP G, SECTION A-A

AT FAI-57
STA. 748+24.57, RAMP G



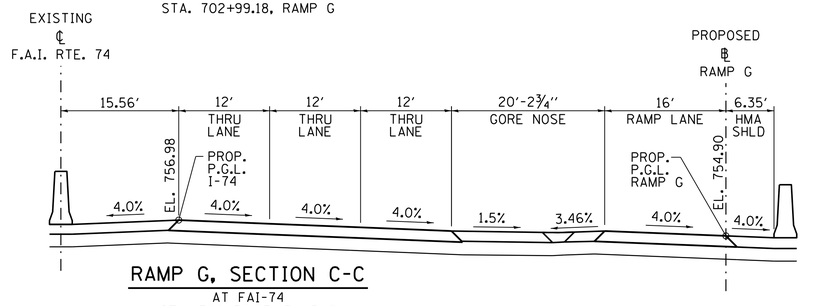

## RAMP G, SECTION B-B

AT FAI-74
STA. 702+99.18, RAMP G



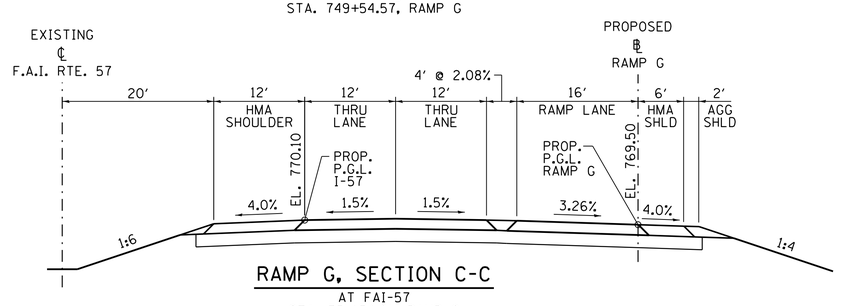

## RAMP G, SECTION B-B

AT FAI-57
STA. 749+54.57, RAMP G



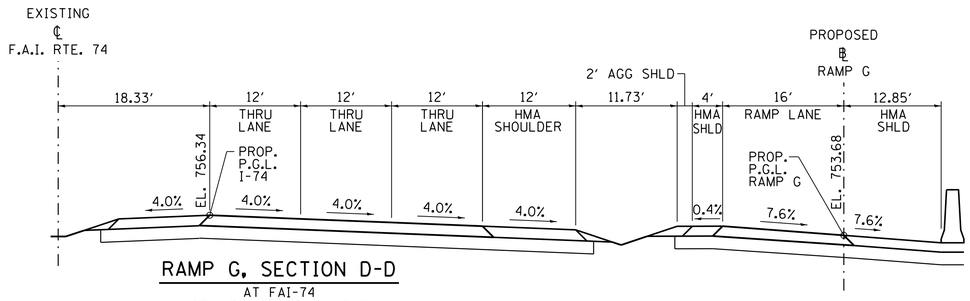

## RAMP G, SECTION C-C

AT FAI-74
STA. 706+58.07, RAMP G



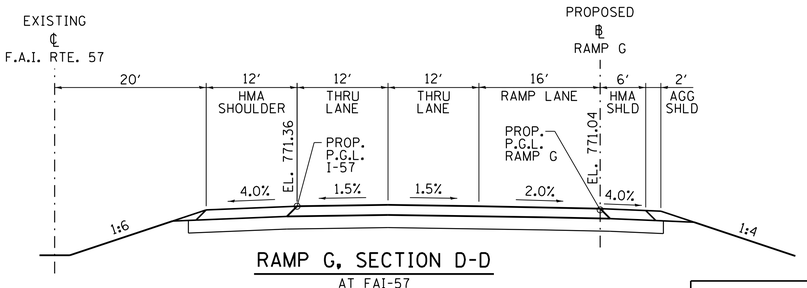

## RAMP G, SECTION C-C

AT FAI-57
STA. 751+54.61, RAMP G




## RAMP G, SECTION D-D

AT FAI-74
STA. 708+68.07, RAMP G




## RAMP G, SECTION D-D

AT FAI-57
STA. 753+54.65, RAMP G

## STANDARD EXIT RAMP TERMINAL

## ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE

### INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

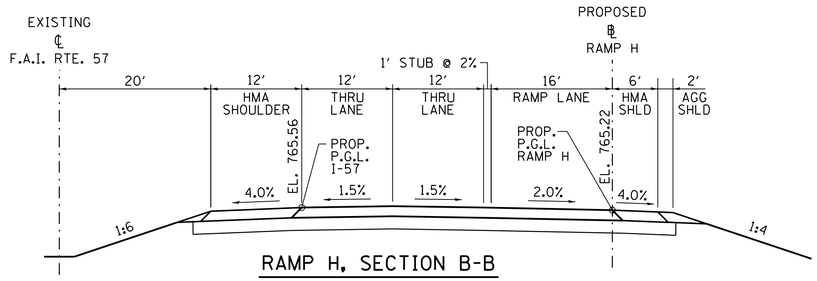
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I.D.S. SHEET 38 OF 41

BDE-9908

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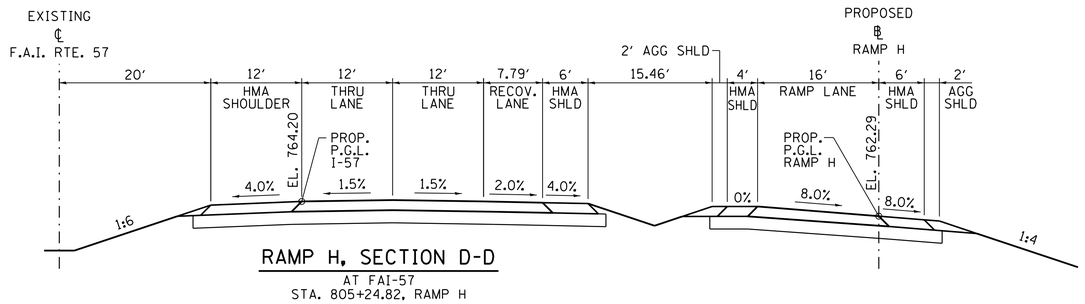

## RAMP H, SECTION B-B

AT FAI-57
STA. 800+71.12, RAMP H




## RAMP H, SECTION C-C

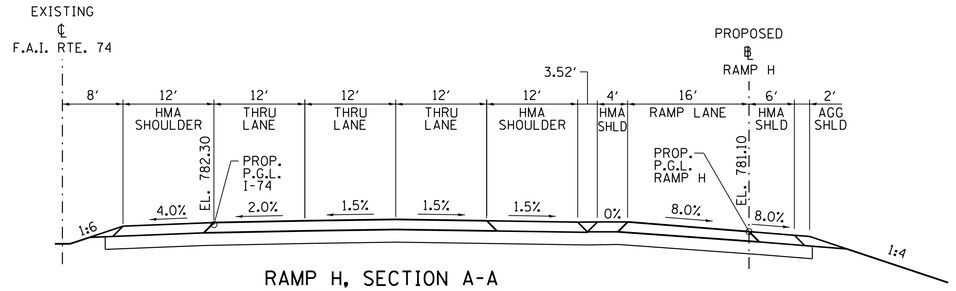
AT FAI-57
STA. 803+14.82, RAMP H




## RAMP H, SECTION D-D

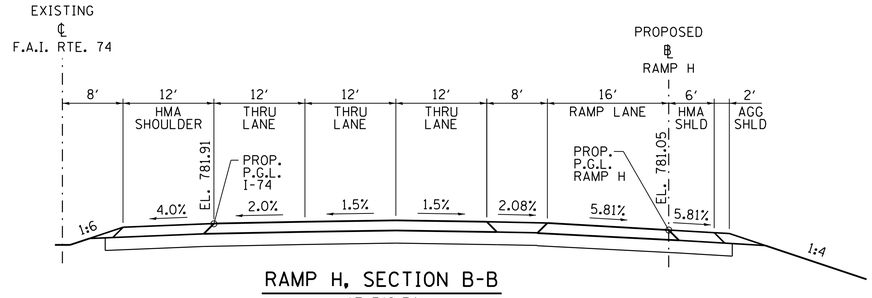
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STA. 805+24.82, RAMP H

## EXIT RAMP TERMINAL WITH AUXILIARY LANE



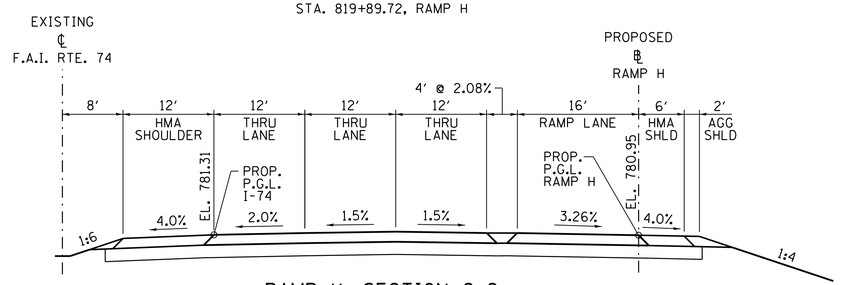

## RAMP H, SECTION A-A

AT FAI-74
STA. 818+59.72, RAMP H



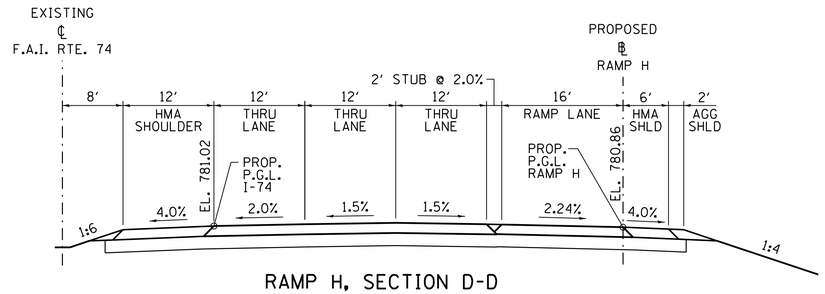

## RAMP H, SECTION B-B

AT FAI-74
STA. 819+89.72, RAMP H




## RAMP H, SECTION C-C

AT FAI-74
STA. 821+89.76, RAMP H




## RAMP H, SECTION D-D

AT FAI-74
STA. 822+89.78, RAMP H

## STANDARD ENTRANCE RAMP TERMINAL

## INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

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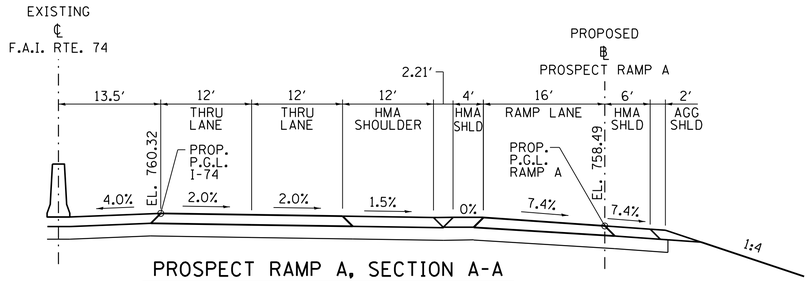
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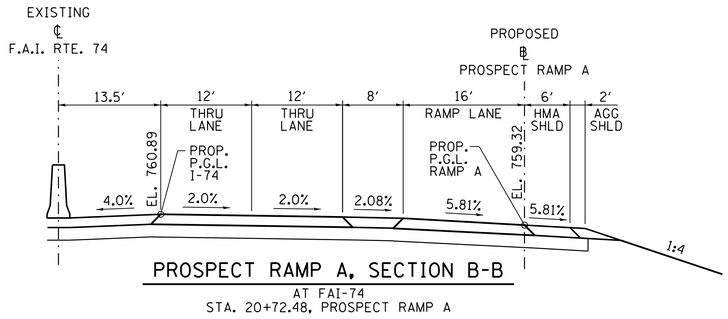
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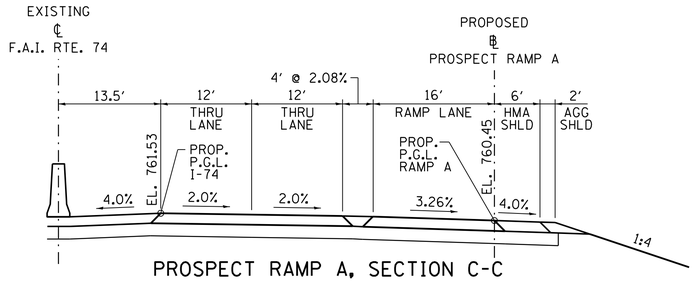

## PROSPECT RAMP A, SECTION A-A

AT FAI-74
STA. 19+42.48, PROSPECT RAMP A



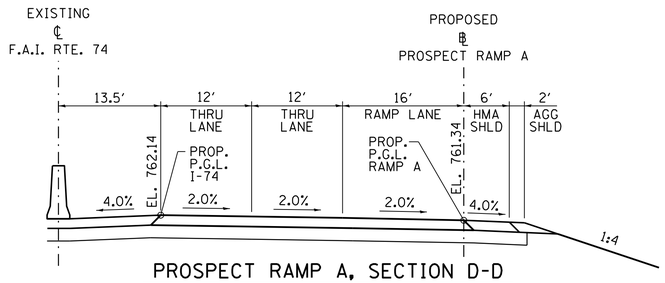

## PROSPECT RAMP A, SECTION B-B

AT FAI-74
STA. 20+72.48, PROSPECT RAMP A




## PROSPECT RAMP A, SECTION C-C

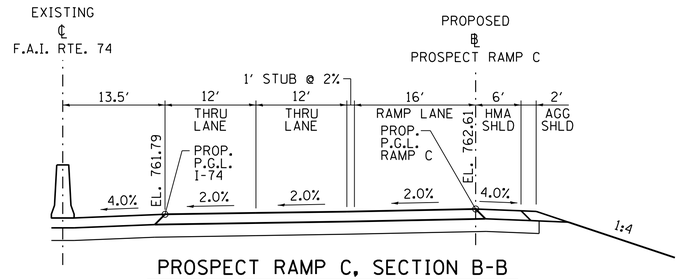
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STA. 22+72.16, PROSPECT RAMP A




## PROSPECT RAMP A, SECTION D-D

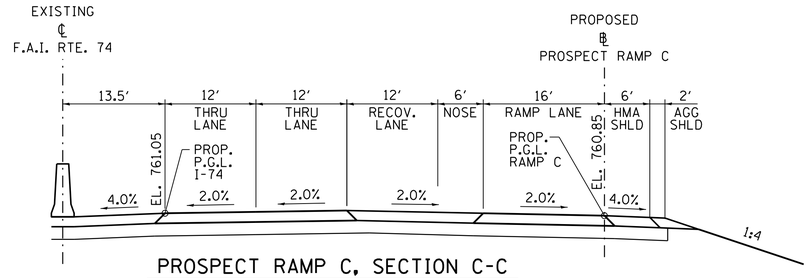
AT FAI-74
STA. 24+71.93, PROSPECT RAMP A

## ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE



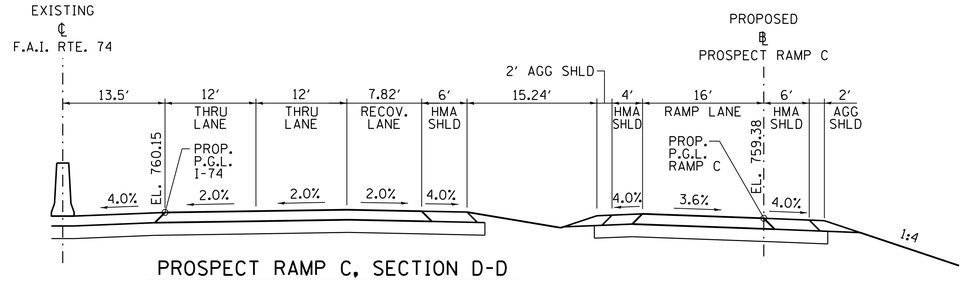

## PROSPECT RAMP C, SECTION B-B

AT FAI-74
STA. 25+20.27, PROSPECT RAMP C




## PROSPECT RAMP C, SECTION C-C

AT FAI-74
STA. 27+64.48, PROSPECT RAMP C




## PROSPECT RAMP C, SECTION D-D

AT FAI-74
STA. 29+74.48, PROSPECT RAMP C

## EXIT RAMP TERMINAL WITH AUXILIARY LANE

### INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

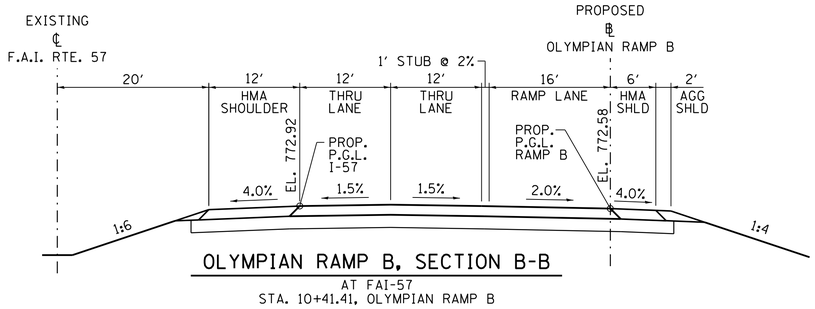
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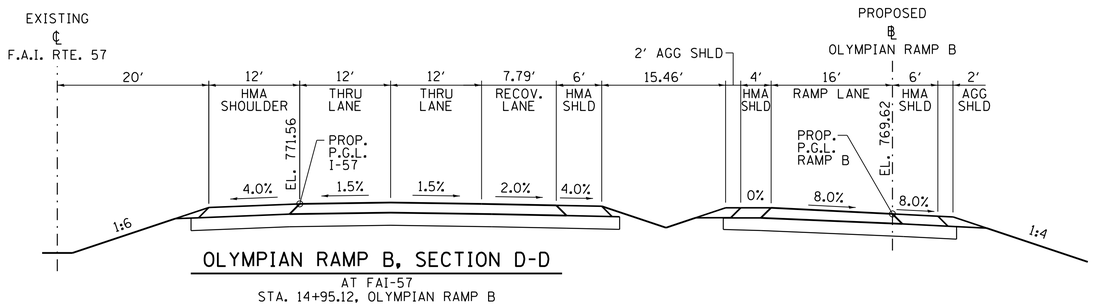

## OLYMPIAN RAMP B, SECTION B-B

AT FAI-57
STA. 10+41.41, OLYMPIAN RAMP B




## OLYMPIAN RAMP B, SECTION C-C

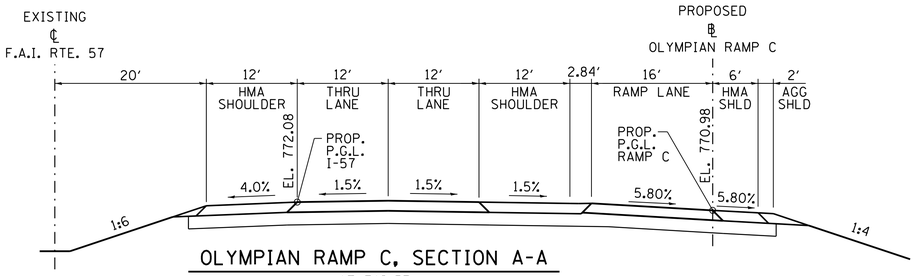
AT FAI-57
STA. 12+85.12, OLYMPIAN RAMP B




## OLYMPIAN RAMP B, SECTION D-D

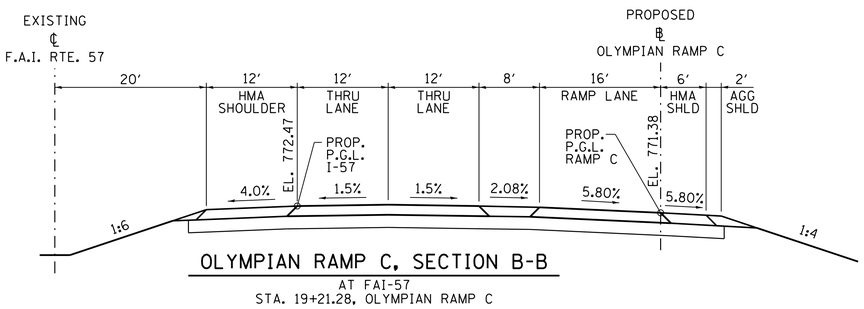
AT FAI-57
STA. 14+95.12, OLYMPIAN RAMP B

## EXIT RAMP TERMINAL WITH AUXILIARY LANE



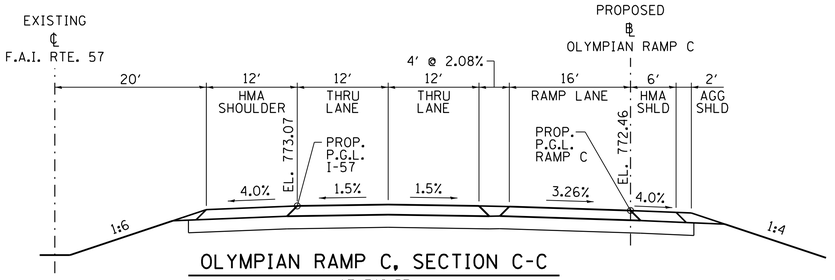

## OLYMPIAN RAMP C, SECTION A-A

AT FAI-57
STA. 17+91.28, OLYMPIAN RAMP C



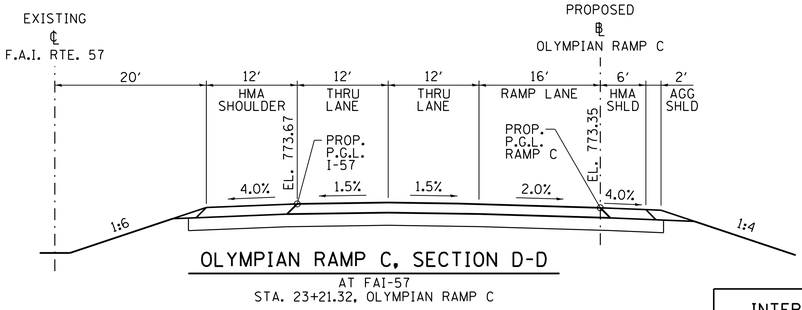

## OLYMPIAN RAMP C, SECTION B-B

AT FAI-57
STA. 19+21.28, OLYMPIAN RAMP C




## OLYMPIAN RAMP C, SECTION C-C

AT FAI-57
STA. 21+21.28, OLYMPIAN RAMP C




## OLYMPIAN RAMP C, SECTION D-D

AT FAI-57
STA. 23+21.32, OLYMPIAN RAMP C

## ENTRANCE RAMP TERMINAL WITH AUXILIARY LANE

### INTERCHANGE DESIGN STUDY

FAI ROUTE 57 (I-57 )
FAI ROUTE 74 WITH (I-74 )

SEC. NO. 10(5-1-RS-1,14-1,6)R

SCALE N.T.S. COUNTY CHAMPAIGN

SJN : _____ PROJ. NO. _____

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BDE-9908

# APPENDIX H
# Transportation Management Plan

# Transportation Management Plan

## Interstate 57 and Interstate 74

Section 10(5-1-RS-1, 14-1, 6)R
Job No. P-95-030-11

Champaign, IL
Champaign County



**September 2015**

Prepared For:

Illinois Department of Transportation

**Region 3 – District 5**

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## 1. Introduction

The purpose of the Transportation Management Plan (TMP) is to develop and assess alternatives for accommodating traffic during construction of the Interstate 57 and Interstate 74 (I-57 & I-74) Interchange reconstruction project and recommend a preferred implementation alternative. The goal is to eliminate or reduce the number of work zone crashes and injuries, reduce road-user delay, and reduce adverse impacts on area mobility.

## 2. Project Summary

This report addresses traffic management alternatives for the improvement of the I-57 & I-74 interchange on the northwest side of the City of Champaign, located in the central portion of Champaign County. The project consists of the reconstruction of an existing cloverleaf interchange, the replacement of three adjacent grade separation structures, and all other associated approach, roadway and ramp improvements. The project is currently in the preliminary planning phase (Phase I) and this phase is anticipated to be completed in 2015. Design for the interchange (Phase II) is funded in the current multi-year program and is anticipated to begin in the fall of 2015. The funding and schedule for construction has not been determined yet and is expected to be phased.

The approximate project study limits for the I-57 & I-74 interchange improvements are Olympian Drive to the north, North Prospect Avenue to the east, the Norfolk Southern Railroad to the south, and Duncan Road to the west. See **Exhibit 1** for a project location map. The existing cloverleaf interchange is proposed to be completely removed and replaced with a semi-directional interchange with two directional flyover ramps, two loop ramps, and four outer ramps. The existing and proposed interchange configurations are shown on **Exhibits 2 & 3**.

## 3. Existing Traffic Conditions

I-57 is a four-lane full access controlled north-south interstate that is functionally classified as an Urban Principal Arterial (Interstate). I-74 is a four-lane full access controlled east-west interstate that is also functionally classified as an Urban Principal Arterial (Interstate). Both interstates are classified as Class I truck routes. The posted speed limit is 70 mph on both I-57 and I-74. See **Exhibit 4** for proposed design year traffic and levels of service.

The existing I-57 & I-74 interchange consists of a conventional cloverleaf with free flowing connecting movements in all directions between the two interstates. There are a total of eight ramps that allow traffic to flow without stopping in all directions. Four loop ramps, with a posted speed limit of 25 mph, along with four wrap-around outer ramps, with a posted speed of 30 mph, are used to facilitate these movements.

The 2013 ADT (total traffic) and ADTT (truck traffic) of roadways and ramps within the interchange and surrounding roadways are summarized in the following table:

| Roadway Element | 2013 ADT (vpd) | 2013 ADTT (vpd) | Direction |
|---|---|---|---|
| **I-57 (North of I-74)** | 22,200 | 5,775 | N/S |
| **I-57 (South of I-74)** | 32,400 | 9,450 | N/S |
| **I-74 (West of I-57)** | 32,900 | 6,650 | E/W |
| **I-74 (East of I-57)** | 38,900 | 7,350 | E/W |
| **Ramp A** | 5,600 | | NB I-57/EB I-74 |
| **Ramp B** | 2,800 | | EB I-74/SB I-57 |
| **Ramp C** | 2,100 | | SB I-57/EB I-74 |
| **Ramp D** | 500 | | EB I-74/NB I-57 |
| **Ramp E** | 5,700 | | WB I-74/SB I-57 |
| **Ramp F** | 3,300 | | NB I-57/WB I-74 |
| **Ramp G** | 2,100 | | WB I-74/NB I-57 |
| **Ramp H** | 650 | | SB I-57/WB I-74 |
| **Prospect Ramp A** | 5,100 | | WB On-Ramp |
| **Prospect Ramp C** | 4,750 | | EB Off-Ramp |
| **Olympian Ramp B** | 1,500 | | NB Off-Ramp |
| **Olympian Ramp C** | 2,050 | | SB On-Ramp |
| **Mattis over I-74** | 16,000 (2012) | | N/S |
| **Mattis over I-57** | 6,100 (2011) | | N/S |
| **US 150 over I-57** | 7,450 | 825 | E/W |

## 4. Existing Facility Conditions

The existing facility was originally constructed in 1965 and is a full conventional cloverleaf interchange connecting I-57 and I-74. See **Exhibit 2** for the existing interchange configuration. I-57 & I-74 are both four-lane interstates (two lanes in each direction) consisting of concrete pavement with multiple overlays. Both I-57 and I-74 have open grass medians which are typically 64 feet and 40 feet in width, respectively. The adjacent section of I-74 to the east between Mattis Avenue and Prospect Avenue consists of a 26 foot closed paved median with concrete barrier. See **Exhibits 5 & 6** for I-57 and I-74 typical sections.

Adjacent cross roadways with grade separation structures within the project study limits include Mattis Avenue, a north-south minor arterial with a grade separation structure over I-57, approximately one half mile north of I-74, and a grade separation structure over I-74, approximately one half mile east of I-57; U.S. 150 (Bloomington Road), an east-west other principal arterial with grade separation structure over I-57, approximately one quarter mile south of I-74; the Norfolk Southern Railroad, an east-west railroad with a grade separation structure over I-57, approximately one half mile south of I-74; and Duncan

Road, a north-south other principal arterial with grade separation structure over I-74, approximately one mile west of I-57.

The existing dual bridges that carry I-74 over I-57 (SN's 010-0018/0019) were constructed in 1965 as four-span rolled steel beam structures with pin and link systems in the end spans. The abutments are open stub abutments on concrete piles. The four column reinforced concrete piers with crash walls are supported on spread footings. In 1989, the superstructure of each structure was replaced with rolled steel W36 beams composite in the positive moment regions only. The north fascia beam of the north bridge and the south fascia beam of the south bridge are flared to carry the flared deck to accommodate ramp terminals on each structure. The wingwalls were reconstructed, and the seat elevations were adjusted with concrete extensions. **Exhibit 5** includes a typical section for the existing bridge.

The existing bridge that carries Mattis Avenue over I-74 (SN 010-0270) was constructed in 1992 as a two-span 48" web steel plate girder structure, composite in the positive moment regions. The superstructure is supported by open stub abutments on concrete piles and multi-column reinforced piers on spread footings. **Exhibit 8** includes a typical section for the existing bridge.

The existing bridge that carries Mattis Avenue over I-57 (SN 010-0100) was constructed in 1965 as a four-span steel wide flange beam structure, composite in the positive moment regions. The superstructure is supported by open stub abutments on concrete piles and multi-column reinforced concrete piers. Pier 1 is supported on creosoted timber piles. Piers 2 and 3 are supported on spread footings. **Exhibit 9** includes a typical section for the existing bridge.

The existing bridge that carries U.S. 150 (Bloomington Road) over I-57 (SN 010-0050) was originally constructed in 1964 as a four-span rolled steel beam structure with open stub abutments on concrete piles and single hammerhead reinforced concrete piers supported on spread footings. In 2000, the structure was widened, the deck was replaced, and the existing abutments and piers were widened. The area below the existing pier cap overhangs was filled in during the widening, creating a solid wall straight stem type pier. Two new beam lines, which are composite in the positive moment regions, were added, with one on each side of the bridge. The beams were painted, raised approximately 2.5", and steel studs were added in the positive moment regions to make them composite with the new deck. **Exhibit 10** includes a typical section for the existing bridge.

The existing Norfolk Southern Railroad and Duncan Road structures are currently not anticipated to be impacted by the proposed interchange reconstruction improvements.

## 5. Proposed Scope of Work

The proposed scope of work for the I-74 & I-57 Interchange reconstruction includes replacement of the existing full cloverleaf interchange with a semi-directional interchange with two directional flyovers, two loops, and four outer ramps. See **Exhibit 3** for the proposed interchange layout.

The proposed improvements include the reconstruction and lane additions in each direction on I-74 from Duncan Road to North Prospect Avenue and reconstruction of I-57 from the Norfolk Southern Railroad to Olympian Drive with accommodations for future lane additions to the inside. The existing dual structures carrying I-74 over I-57 (SN's 010-0018/0019) will be removed and replaced to

accommodate the proposed roadway typical sections on the bridge deck, provide the clear opening underneath the structure for the proposed under passing roadway, future lane additions on I-57, and ramp terminals, and to provide the design vertical clearance of 16'-9". See **Exhibits 5 & 6** for I-57 and I-74 typical sections.

The proposed ramp improvements include the construction of eight new ramps with six new ramp structures (see **Exhibit 7**) within the interchange where proposed ramps cross over the interstates or other ramps. Additional widths along the inside shoulder on the ramp structures are anticipated in order to provide adequate sight distance along the inside of the curves where the proposed parapet wall could restrict visibility. The anticipated proposed ramp structures based on the approved Interchange Design Study are:

- Ramp B over Loop Ramp C-1 (SN 010-1005)
- Ramp B over Loop Ramp C-2 (SN 010-1006)
- Ramp D Flyover (SN 010-1004)
- Ramp E Flyover (SN 010-1001)
- Ramp G over Loop Ramp F-1 (SN 010-1002)
- Ramp G over Loop Ramp F-2 (SN 010-1003)

The proposed North Mattis improvements include the removal and replacement of the North Mattis Avenue Bridge over I-57 (SN 010-0100) and the North Mattis Avenue Bridge over I-74 (SN 010-0270) to accommodate the proposed roadway typical sections on the bridge deck, provide the clear opening underneath the structures for the proposed under passing roadways, future lane additions on I-57, and ramp terminals, and to provide the design vertical clearance of 16'-9". **Exhibits 8 and 9** include a typical section for the proposed bridges. Both structures include accommodations for bike lanes and pedestrians in both directions.

The proposed U.S. 150 (Bloomington Road) improvements include the removal and replacement of the Bloomington Road Bridge over I-57 (SN 010-0050) to accommodate the proposed roadway typical sections on the bridge deck, to provide an on road bike lane in each direction and sidewalk on the north side, to provide the clear opening underneath the structure for the proposed under passing roadway, future lane additions on I-57, and ramp terminals, and to provide the design vertical clearance of 16'-9". **Exhibit 10** includes a typical section for the proposed bridge.

Temporary short-term closures will be required to remove beams for existing structures and set beams for the proposed structures. The closure durations could vary from 15 minutes for single beam removal/erection to nightly closures with detours for multiple beam removal/erection. If single beam removal/erection is implemented, a 15 minute maximum closure duration will be allowed during off-peak times. Immediately after the beams are safely removed or erected, the interstate will be re-opened to traffic to allow all stopped vehicles to proceed through the interchange prior to the next closure. If multiple beam removal/erection is implemented, nightly closures will be allowed during off-peak times. Detour routes for nightly closures include:

- I-74 Eastbound: I-57 S.B. to University Avenue Loop to I-57 N.B. Loop to I-57 N.B. to I-74 E.B.
- I-74 Westbound: I-57 N.B. to Olympian Drive W.B. to I-57 S.B. to I-74 W.B.
- I-57 Northbound: I-74 E.B. to Prospect Avenue N.B. to I-74 W.B. to I-57 N.B.
- I-57 Southbound: I-74 W.B. to Prairie View Road S.B. to I-74 E.B. to I-57 S.B.

The durations and allowed number of closures for beam removal and erection will be determined during the design phase and included in the Maintenance of Traffic Plans and the Traffic Control and Protection Special Provision.

## 6. Traffic Management Plan Goals

The goal of this TMP is to address within this project the following statewide safety and mobility issues:

Safety:

- Zero worker fatalities for traffic-related work zone crashes.
- Reduce the number of motorist fatalities in traffic-related work zone crashes by 10% each year with the eventual goal of eliminating all of these fatalities.
- Eliminate crashes and resulting fatalities and serious injuries caused by queuing.
- Reduce the number of work zone crashes by 5% from each prior year.

Mobility:

- Delays caused by work zones should not exceed more than five (5) minutes (300 sec) per mile of project length with a maximum of thirty (30) minutes above the normal recurring traffic delay.
- Queues caused by work zones should be no more than 1.5 miles beyond pre-existing queues.

The recommendations in the following sections of this TMP have been selected to meet these goals and comply with IDOT and FHWA policies for staged construction. No exceptions to the goals have been identified.

## 7. Alternative Analysis and Conceptual Staging Plan

This project is currently planned to be completed under three separate construction contracts. Additional contracts could be considered during design to further break the work into smaller contracts as funding becomes available. The current contracts anticipated are:

- Contract 1: Mattis Avenue roadway pavement and grade separation structures
- Contract 2: U.S. 150 (Bloomington Road) roadway pavement and grade separation structure
- Contract 3: I-57 & I-74 roadway and structures, interchange ramp roadways and structures

Based on all of the existing facilities described herein, a well-planned method for maintaining traffic during construction was identified to be critical. Summarized below are the different alternatives and analysis for maintaining traffic at an efficient level while optimizing safety and mobility.

### A. Contract 1

Contract 1 includes the replacement the North Mattis Avenue bridges over I-74 and I-57. The new structures will be longer than the existing structures to allow for the proposed roadway configurations and ramps beneath them. Both proposed structures will be wider than the existing to allow for the addition of an on-road bike lane and sidewalk on each side of the roadway. Each roadway profile grade

of Mattis Avenue over I-74 and I-57 will be raised to provide policy vertical clearance for the proposed structure over the roadway underneath.

**i. North Mattis Avenue over I-74**

**Option 1**

The first option is to close North Mattis Avenue over I-74 to allow for complete structure reconstruction while utilizing a detour route. The following is the detour route (see **Exhibit 32**) for closure of North Mattis Avenue over I-74 (2020 ADT = 16,300):

1. N.B. Traffic: U.S. 150 E.B. to Prospect Ave. N.B. to Olympian Dr. W.B. to Mattis Ave.
   S.B. Traffic: Olympian Dr. E.B. to Prospect Ave. S.B. to U.S. 150 W.B. to Mattis Ave.
   Original Distance = 1.3 miles
   Detour Distance = 3.9 miles
   Adverse Travel Distance = 2.6 miles
   Adverse Travel Time = 5 minutes

**Option 2**

The second option is to utilize staged construction for North Mattis Avenue over I-74 for the reconstruction of the roadway and the bridge (see **Exhibit 11**). The existing and proposed structures are wide enough to allow for 2-lane, 2-way traffic (one lane in each direction) to be maintained during staged construction utilizing IDOT Highway Standard 701611 and temporary concrete barrier wall.

Stage 1

- Shift traffic west and provide two 12’ travel lanes, one in each direction of travel
- Remove 38’-0” of the existing east side of structure, approach pavement, and appurtenances
- Construct 40’-0” of the proposed east side of structure, approach pavement, and appurtenances

Stage 2

- Shift traffic east to provide two 12’ travel lanes, one in each direction of travel
- Remove remaining 33’-7” of the existing west side of structure, approach pavement, and appurtenances
- Construct 41’-0” of the proposed west side of structure, approach pavement, and appurtenances

Stage 3

- Utilize Stage 2 set-up and maintain traffic in two 12’ travel lanes, one in each direction of travel.
- Construct 3’-0” closure pour.

With the reduction of lanes at the I-74 bridge, lane modifications at the Mattis Avenue with Anthony Drive and US 150 intersections will be required.

Modifications at the Mattis Avenue and Anthony Drive intersection include:

- The second southbound Mattis Avenue through lane that begins near the Anthony Drive intersection will be closed
- The second southbound Mattis Avenue left turn lane will be closed

- Northbound Mattis Avenue will be a single lane at the bridge, but will widen to two lanes prior to the Anthony Drive intersection to provide a thru lane and a right turn lane

Modifications at the Mattis Avenue and US 150 intersection include:

- Southbound Mattis Avenue will be a single lane at the bridge and will widen out to three lanes at the US 150 intersection
- The northbound Mattis Avenue right through lane will become a right turn only lane at the US 150 intersection and the existing right turn lane will be closed, which leaves in a left turn lane, thru lane and right turn lane
- No changes will be needed on US 150

The traffic signals will operate with revised timings with these revised lane configurations. Synchro 8 and the projected 2020 construction year traffic were used to estimate the peak hour delays and queues associated with these revisions (see **Exhibit 33**). Based on the analysis presented below, there is adequate capacity for this temporary operation. The northbound queue at Anthony Drive and the southbound queue at US 150 both are shorter than the distance to the I-74 bridge.

**Peak Hour Delays and Queues – Mattis Avenue over I-57**

| Peak Hour | Intersection | Approach | Average Delay (sec/veh) | Volume /Capacity Ratio | Queue Length (ft) | Level of Service |
|---|---|---|---|---|---|---|
| AM Peak | Mattis & Anthony | WB | 33.6 | 0.50 | 101 | C |
| | | NB | 1.2 | 0.30 | 23 | A |
| | | SB | 4.4 | 0.24 | 95 | A |
| | | **OVERALL** | 6.6 | 0.50 | | A |
| | Mattis & US 150 | EB | 32.6 | 0.82 | 249 | C |
| | | WB | 37.9 | 0.66 | 169 | D |
| | | NB | 20.3 | 0.62 | 287 | C |
| | | SB | 21.3 | 0.63 | 310 | C |
| | | **OVERALL** | 27.3 | 0.82 | | C |
| PM Peak | Mattis & Anthony | WB | 23.8 | 0.69 | 153 | C |
| | | NB | 6.0 | 0.58 | 144 | A |
| | | SB | 12.0 | 0.57 | 219 | B |
| | | **OVERALL** | 11.5 | 0.69 | | B |
| | Mattis & US 150 | EB | 39.0 | 0.69 | 193 | D |
| | | WB | 60.3 | 0.88 | 342 | E |
| | | NB | 22.5 | 0.70 | 478 | C |
| | | SB | 19.9 | 0.65 | 373 | B |
| | | **OVERALL** | 32.8 | 0.88 | | C |

**Recommendation**

Based on the adverse travel distance of 2.6 miles, the construction year 2020 ADT, and a detour time of 240 days, the detour for North Mattis Avenue over I-74 would cost $1,251,541. See **Exhibit 30** for a more detailed detour cost estimate.

The additional cost to stage construct North Mattis Avenue over I-74 is $460,000, which includes an increased structure cost to stage construct, temporary concrete barrier wall, and traffic control and protection. See **Exhibit 31** for a more detailed staged construction cost estimate.

Option 2, utilizing stage construction for North Mattis Avenue over I-74, is the recommended option. This option maintains two-way traffic and costs significantly less than the detour in Option 1. Prior to construction, the bridge condition will need to be re-evaluated to verify its capacity for staged construction. If during design a road closure is considered, other bridge and road closures, maintenance, and construction projects that might affect the detour routes should be considered.

**ii. North Mattis Avenue over I-57**

**Option 1**

The first option is to close North Mattis Avenue over I-57 to allow for complete structure reconstruction while utilizing a detour route. The following is the detour route (see **Exhibit 32**) for closure of North Mattis Avenue over I-57 (2020 ADT = 6,176):

1. N.B. Traffic: U.S. 150 E.B. to Prospect Ave. N.B. to Olympian Dr. W.B. to Mattis Ave.
   S.B. Traffic: Olympian Dr. E.B. to Prospect Ave. S.B. to U.S. 150 W.B. to Mattis Ave.
   Original Distance = 1.3 miles
   Detour Distance = 3.9 miles
   Adverse Travel Distance = 2.6 miles
   Adverse Travel Time = 5 minutes

**Option 2**

The second option is to utilize staged construction for removal and reconstruction of the North Mattis Avenue over I-57 structure (see **Exhibit 12**). The existing and proposed structures are only wide enough to allow for 1-lane, 1-way traffic controlled by temporary bridge traffic signals utilizing IDOT Highway Standard 701321. The traffic signals will operate with two phases for each side of the bridge with adequate clearance times to prevent conflicting traffic flows.

Stage 1

- Shift traffic west and provide one 12’ travel lane, utilizing alternating one-way operations according to IDOT standard 701321
- Remove 16’-10” of the existing east side of structure, approach pavement, and appurtenances
- Construct 25’-3” of the proposed east side of structure, approach pavement, and appurtenances

Stage 2

- Shift traffic east and provide one 14’ travel lane utilizing, alternating one-way operations according to IDOT standard 701321
- Remove remaining 16’-10” of the existing west side of structure, approach pavement, and appurtenances
- Construct 26’-3” of the proposed west side of structure, approach pavement, and appurtenances

Stage 3

- Utilize Stage 2 set-up and maintain traffic in 14' travel lane.
- Construct 3'-0" closure pour.

Synchro 8 and the projected 2020 construction year traffic were used to estimate the peak hour delays and queues associate with this travel pattern (see **Exhibit 33**). Based on the analysis presented below, there is adequate capacity for this temporary operation, although there are delays and long queues during the peak hours. The work zone could include portions of the roadway work beyond the bridge limits without queues encroaching into the Interstate Drive intersection or the commercial entrance north of I-57. The remainder of the roadway work near the project limits could be completed utilizing daytime lane closures or the signals could be modified to accommodate the intersecting roadway and entrance, which will need to be detailed during design.

**Peak Hour Delays and Queues – Mattis Avenue over I-57**

| | Average Delay (sec/veh) | Volume/Capacity Ratio | Northbound Queue (ft) | Southbound Queue (ft) | Level of Service |
|---|---|---|---|---|---|
| AM Peak | 49.3 | 0.84 | 367' | 257' | D |
| PM Peak | 40.4 | 0.71 | 265' | 185' | D |

The use of a one-lane bridge with temporary signals can be a constraint to emergency responders due to traffic delays and queues blocking access to the bridge for emergency response vehicles. Limiting construction impacts to response times to the areas north of I-57 on Mattis Avenue is important due to the presence of a high school, residential developments, business parks, and commercial areas. In order to minimize the impacts from the bridge construction, the temporary signals should include a signal preemption system tied to the City's Opticom system. This signal preemption system would allow for signals to give a green indication for the direction the emergency response vehicle is traveling. This should clear any queue that might be present in advance of the signal to allow for expedited travel through the work zone.

**Recommendation**

Based on the adverse travel distance of 2.6 miles, the construction year 2020 ADT, and a detour time of 240 days, the detour for North Mattis Avenue over I-57 would cost $527,171. See **Exhibit 30** for a more detailed detour cost estimate.

The additional cost to stage construct North Mattis Avenue over I-57 is $380,000, which includes an increased structure cost to stage construct, temporary concrete barrier wall, traffic control and protection, and temporary traffic signals. See **Exhibit 31** for a more detailed staged construction cost estimate.

Option 2, utilizing stage construction for North Mattis Avenue over I-57, is the recommended option. This option maintains one-way traffic phased in both directions with signals and costs less than the detour in Option 1. Prior to construction, the bridge condition will need to be re-evaluated to verify its capacity for staged construction. If during design a road closure is considered, other bridge and road closures, maintenance, and construction projects that might affect the detour routes should be considered.

## B. Contract 2

Contract 2 includes the replacement the U.S. 150 (Bloomington Road) bridge over I-57. The new structure will be longer than the existing structure to allow for the proposed roadway configurations and ramps beneath it. The proposed structure will be wider than the existing to allow for the addition of a sidewalk on the north side. The roadway profile grade of U.S. 150 (Bloomington Road) over I-57 will be raised to provide policy vertical clearance for the proposed structure over the roadway underneath.

### i. U.S. 150 (Bloomington Road) over I-57

**Option 1**

The first option is to close U.S. 150 (Bloomington Road) over I-57 to allow for complete structure reconstruction while utilizing a detour route. The following is the detour route (see **Exhibit 32**) for closures of U.S. 150 (Bloomington Road) over I-57 (2020 ADT = 9,300):

1. E.B. Traffic: IL 47 S.B. to IL 10 E.B. to Prospect Ave. N.B. to U.S. 150
   W.B. Traffic: Prospect Ave. S.B. to IL 10 W.B. to IL 47 N.B. to U.S. 150
   Original Distance = 9.2 miles
   Detour Distance = 14.7 miles
   Adverse Travel Distance = 5.5 miles
   Adverse Travel Time = 10 minutes

**Option 2**

The second option is to utilize staged construction for removal and reconstruction of the U.S. 150 (Bloomington Road) over I-57 structure (see **Exhibit 13**). The existing and proposed structures are only wide enough to allow for 1-lane, 1-way traffic controlled by temporary bridge traffic signals utilizing IDOT Highway Standard 701321. The traffic signals will operate with two phases for each side of the bridge with adequate clearance times to prevent conflicting traffic flows.

Stage 1

- Shift traffic north and provide 14’ travel lane from face to face of temporary concrete barrier to accommodate wide load traffic, utilizing alternating one-way operations according to IDOT standard 701321
- Remove 21’-4” of the existing south side of structure, approach pavement, and appurtenances
- Construct 19’-7” of the proposed south side of structure, approach pavement, and appurtenances

Stage 2

- Shift traffic south and provide 14’ travel lane from face to face of temporary concrete barrier utilizing alternating one-way operations according to IDOT standard 701321
- Remove remaining 21’-4” of the existing north side of structure, approach pavement, and appurtenances
- Construct 26’-3” of the proposed north side of structure, approach pavement, and appurtenances

Stage 3

- Utilize Stage 2 set-up and maintain traffic in 14' travel lane.
- Construct 3'-0" closure pour.

Synchro 8 and the projected 2020 construction year traffic were used to estimate the peak hour delays and queues associate with this travel pattern (see **Exhibit 33**). Based on the analysis presented below, there is adequate capacity for this temporary operation, although there are delays and long queues during the peak hours. The work zone to complete the bridge and roadway on the west side of I-57 requires the eastbound temporary traffic signals to be located west of Cardinal Road, so Cardinal road will either require a temporary closure and detour at U.S. 150, or a third dedicated phase will need to be provided. The westbound queue to complete the bridge on the east side of I-57 does not encroach into Clearlake Blvd. The roadway work on the east side of I-57 could be completed utilizing daytime lane closures and/or the signals could be modified to include a one-way exit timed with the two-phase signals or a third dedicated phase, which will need to be detailed during design.

**Peak Hour Delays and Queues – U.S. 150 (Bloomington Road) over I-57**

| | Average Delay (sec/veh) | Volume/Capacity Ratio | Eastbound Queue (ft) | Westbound Queue (ft) | Level of Service |
|---|---|---|---|---|---|
| AM Peak | 43.2 | 0.72 | 264' | 247' | D |
| PM Peak | 63.0 | 0.93 | 354' | 398' | E |

**Recommendation**

Based on the adverse travel distance of 5.5 miles, the construction year 2020 ADT, and a detour time of 240 days, the detour for U.S. 150 over I-57 would cost $1,684,749. See **Exhibit 30** for a more detailed detour cost estimate.

The additional cost to stage construct U.S. 150 over I-57 is $310,000, which includes an increased structure cost to stage construct, temporary concrete barrier wall, traffic control and protection, and temporary traffic signals. See **Exhibit 31** for a more detailed staged construction cost estimate.

Option 2, utilizing stage construction for U.S. 150 (Bloomington Road) over I-57, is the recommended option. This option maintains one-way traffic phased in both directions with signals and costs significantly less than the detour in Option 1. Prior to construction, the bridge condition will need to be re-evaluated to verify its capacity for staged construction. If during design a road closure is considered, other bridge and road closures, maintenance, and construction projects that might affect the detour routes should be considered.

## C. Contract 3

Contract 3 consists of the removal of the existing cloverleaf interchange and reconfiguration to a semi-directional interchange type, the reconstruction of I-74 from Duncan Road to North Prospect Avenue, and the reconstruction of I-57 from south of the Norfolk Southern Railroad to Olympian Drive. The alternatives studied and proposed for construction staging assumed that a flexible pavement structure would be used for mainline and ramp construction. This will be further evaluated during design and the

staging plan adjusted as needed if a rigid pavement structure is selected to be implemented during construction.

General considerations for the interstate construction include maintaining two 12' lanes of traffic in each direction wherever possible. As discussed in the analysis below, short term single lane closures will be required at certain locations to complete construction of the proposed lanes and shoulders. Initially, placing traffic on the existing shoulders was not considered due to their unknown structural capacity. After review of record plans and coordination with District 5 (see **Exhibit 36: Correspondence**), it was determined that the shoulders could be inlayed 6" to place traffic on them for staging construction. The mainline travel lanes will also receive pre-stage patching as needed and a 1.75" surface course inlay. The condition of the existing shoulders and travel lanes will be re-evaluated during the detailed design phase to verify their suitability to sustain traffic. Temporary ramp connections and coordination with the mainline interstate staging are further discussed in the ramp section (**Section iv**).

**i. Interstate 74**

The existing I-74 consists of two lanes in each direction separated by a 40' open grass median. The existing median transitions to a 26' closed median with concrete barrier wall near Station 1117+00. The proposed I-74 consists of three lanes in each direction separated by a 60' open grass median. Based on the approved IDS, the proposed I-74 WB lanes are shifted 20' further north than the existing lanes when an open median is provided, which allows for more proposed work to be completed outside of the existing footprint during staged construction. The proposed median transitions to a 27' closed median with concrete barrier wall near Station 1086+00. See Typical Sections in **Exhibit 5**.

Four options for stage constructing I-74 are presented below. All options include maintaining two lanes of traffic in each direction with temporary short-term single lane closures at various locations. I-74 has been broken into four segments to analyze the staging options:

**Segment 1**
West end from beginning of project at Station 1838+00 to Station 1054+00: Open medians separate both the existing and proposed W.B. and E.B. traffic lanes.

**Segment 2**
Proposed grade raise with bridges over I-57 from Station 1054+00 to Station 1083+00: Open medians separate both the existing and proposed W.B. and E.B. traffic lanes.

**Segment 3**
Station 1083+00 to Station 1117+00: An open median separates the existing W.B. and E.B. traffic lanes and a closed median with concrete barrier wall separates the proposed W.B. and E.B. traffic lanes.

**Segment 4**
Station 1117+00 to Station 1143+00: Closed medians with concrete barrier walls separate the existing and proposed W.B. and E.B. traffic lanes.

The interstate staging could include construction of all segments together or breaking up the work by each segment or portions thereof.

**Option 1**

Option 1 utilizes staged construction to complete the work for proposed W.B. and E.B. lanes without crossing traffic over the median. In general, Option 1 includes construction of the proposed closed median with concrete barrier wall first, then the outside lanes and shoulders next, and the inside lanes and shoulders last. The staging for Option 1 is shown in a plan view schematic in **Exhibit 14** and in typical sections in **Exhibit 15**.

**Segment 1**

Stage 1

**E.B.:** Maintain traffic on the existing E.B. lanes. Remove the existing E.B. outside shoulder and construct the proposed E.B. Lane 3 and outside shoulder utilizing temporary short-term single lane closures.

**W.B.:** Maintain traffic on the existing W.B. lanes. Remove portions of the existing W.B. outside shoulder and construct the proposed W.B. Lane 2, Lane 3, and outside shoulder.

Stage 2

**E.B.:** Place E.B. traffic onto the proposed Lane 3 and outside shoulder. Remove the existing E.B. inside shoulder and both lanes and construct the proposed E.B. inside shoulder, Lane 1 and Lane 2.

**W.B.:** Place W.B. traffic onto the proposed Lane 2, Lane 3, and outside shoulder. Remove the existing W.B. inside shoulder and both lanes and construct the proposed W.B. inside shoulder and Lane 1.

**Segment 2**

Pre-Stage A

**E.B.:** Maintain traffic on the existing E.B. lanes. Remove the existing E.B. inside shoulder and construct temporary pavement widening along the inside shoulder utilizing temporary short-term single lane closures.

**W.B.:** Maintain traffic on the existing W.B. lanes. No work this stage.

Stage 1

**E.B.:** Place traffic onto the inside shoulder temporary pavement and the existing E.B. lanes. Remove the existing E.B. outside shoulder and construct 11’ of the proposed E.B. Lane 3, outside shoulder, and temporary pavement widening.

**W.B.:** Maintain traffic on the existing W.B. lanes. Remove portions of the existing W.B. outside shoulder and construct the proposed W.B. Lane 2, Lane 3, and outside shoulder.

Stage 2

**E.B.:** Place traffic onto the proposed E.B. Lane 3, outside shoulder, and temporary pavement widening. Remove the existing E.B. inside shoulder and both lanes and construct the proposed E.B. inside shoulder, Lane 1, Lane 2, and remaining 1’ of Lane 3.

**W.B.:** Place traffic onto the proposed W.B. Lane 2, Lane 3, and outside shoulder. Remove the existing W.B. inside shoulder, both lanes, and remainder of outside shoulder and construct the proposed W.B. Lane 1 and inside shoulder.

**Bridge**

Stage 1

**E.B.:** Place traffic on the existing E.B. inside shoulder, Lane 1, and Lane 2. Remove the south 22’-8” of the existing E.B. bridge and construct the south 30’-7” of the proposed E.B. bridge.

**W.B.:** Place traffic on the existing W.B. inside shoulder, Lane 1, and Lane 2. Remove the north 19'-8" of the existing W.B. bridge and construct the north 45'-7" of the proposed W.B. bridge.

Stage 2
**E.B.:** Place traffic on the proposed E.B. Lane 3, ramp entrance terminal, and outside shoulder. Remove the remaining 30'-8" of the existing E.B. bridge and construct the remaining 38'-7" of the proposed E.B. bridge.
**W.B.:** Place traffic on the proposed W.B. Lane 2, Lane 3, ramp entrance terminal, and outside shoulder. Remove the remaining 33'-8" of the existing W.B. bridge and construct the remaining 23'-7" of the proposed W.B. bridge.

**Segment 3**
Pre-Stage A
**E.B.:** Maintain traffic on the existing E.B. lanes. Construct the proposed E.B. inside shoulder and concrete barrier wall.
**W.B.:** Maintain traffic on the existing W.B. lanes. Construct the proposed W.B. inside shoulder and concrete barrier wall.

Pre-Stage B
**E.B.:** Maintain traffic on the existing E.B. lanes. Remove the existing E.B. inside shoulder and construct 6'-6" of the proposed E.B. Lane 1 utilizing temporary short-term single lane closures.
**W.B.:** Maintain traffic on the existing W.B. lanes. Remove the existing W.B. inside shoulder and construct 6'-6" of the proposed W.B. Lane 1 utilizing temporary short-term single lane closures.

Stage 1
**E.B.:** Place traffic onto the proposed E.B. inside shoulder, proposed Lane 1, and existing inside lane. Remove the existing E.B. outside lane and outside shoulder and construct 5' of the proposed E.B. Lane 2, Lane 3, outside shoulder, and concrete barrier wall.
**W.B.:** Place traffic onto the proposed W.B. inside shoulder, proposed Lane 1, and existing inside lane. Remove the existing W.B. outside lane and outside shoulder and construct 5' of the proposed W.B. Lane 2, Lane 3, outside shoulder, and concrete barrier wall.

Stage 2
**E.B.:** Place traffic onto the proposed E.B. Lane 2, Lane 3, and outside shoulder. Remove the remainder of the existing E.B. lanes and construct the remaining 5'-6" of proposed E.B. Lane 1 and 7' of proposed E.B. Lane 2.
**W.B.:** Place traffic onto the proposed W.B. Lane 2, Lane 3, and outside shoulder. Remove the remainder of the existing W.B. lanes and construct the remaining 5'-6" of proposed W.B. Lane 1 and 7' of proposed W.B. Lane 2.

**Segment 4**
Pre-Stage A
**E.B.:** Maintain traffic on the existing E.B. lanes. Construct the proposed E.B. inside shoulder and concrete barrier wall utilizing temporary short-term single lane closures.
**W.B.:** Maintain traffic on the existing W.B. lanes. Construct the proposed W.B. inside shoulder and concrete barrier wall utilizing temporary short-term single lane closures.

Stage 1

**E.B.:** Place traffic onto the proposed E.B. inside shoulder and existing lanes. Remove portions of the existing E.B. outside lane and outside shoulder and construct 5' of the proposed E.B. Lane 2, Lane 3, outside shoulder, and concrete barrier wall.

**W.B.:** Place traffic onto the proposed W.B. inside shoulder and existing lanes. Remove portions of the existing W.B. outside lane and outside shoulder and construct 5' of the proposed W.B. Lane 2, Lane 3, outside shoulder, and concrete barrier wall.

Stage 2

**E.B.:** Place traffic onto the proposed E.B. Lane 2, Lane 3, and outside shoulder. Remove the remainder of the existing E.B. lanes and construct Lane 1 and the remaining 7' of proposed E.B. Lane 2.

**W.B.:** Place traffic onto the proposed W.B. Lane 2, Lane 3, and outside shoulder. Remove the remainder of the existing W.B. lanes and construct Lane 1 and the remaining 7' of proposed W.B. Lane 2.

**Option 2**

Option 2 consists of the same staged construction as Option 1 for I-74 W.B., but includes the use of temporary crossovers to construct the I-74 E.B. embankment, pavement, and bridge under a full closure. After the W.B. construction is completed, the E.B. traffic is crossed over the median at each end of the project, and two lanes of E.B. traffic and two lanes W.B. traffic are placed onto the proposed W.B. lanes and shoulders. The staging for Option 2 is shown in a plan view schematic in **Exhibit 16** and in typical sections in **Exhibit 17**.

**Segment 1**

Stage 1

**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.

**W.B.:** Maintain traffic on the existing W.B. lanes. Remove portions of the existing W.B. outside shoulder and construct the proposed W.B. Lane 2, lane 3, and outside shoulder.

Stage 2

**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.

**W.B.:** Place W.B. traffic onto the proposed Lane 2, Lane 3, and outside shoulder. Remove the existing W.B. inside shoulder and both lanes and construct the proposed W.B. inside shoulder and Lane 1.

Stage 3

**E.B.:** Place traffic onto the proposed W.B. inside shoulder, Lane 1, and Lane 2. Remove the existing E.B. inside shoulder, both lanes, and outside shoulder and construct the proposed E.B. inside shoulder, Lane 1, Lane 2, Lane 3, and outside shoulder.

**W.B.:** Place traffic onto the proposed W.B. Lane 2, Lane 3, and outside shoulder. No work this stage.

**Segment 2**

Stage 1

**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.

**W.B.:** Maintain traffic on the existing W.B. lanes. Remove portions of the existing W.B. outside shoulder and construct the proposed W.B. Lane 2, lane 3, and outside shoulder.

Stage 2
**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.
**W.B.:** Place traffic onto the proposed W.B. Lane 2, Lane 3, and outside shoulder. Remove the existing W.B. inside shoulder, both lanes, and remainder of outside shoulder and construct the proposed W.B. Lane 1 and inside shoulder.

Stage 3
**E.B.:** Place traffic onto the proposed W.B. inside shoulder, Lane 1, and Lane 2. Remove the existing E.B. inside shoulder, both lanes, and outside shoulder and construct the proposed E.B. inside shoulder, Lane 1, Lane 2, Lane 3, and outside shoulder.
**W.B.:** Place traffic onto the proposed W.B. Lane 2, Lane 3, and outside shoulder. No work this stage.

**Bridge**
Stage 1
**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.
**W.B.:** Place traffic on the existing W.B. inside shoulder, Lane 1, and Lane 2. Remove the north 19'-8" of the existing W.B. bridge and construct the north 45'-7" of the proposed W.B. bridge.

Stage 2
**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.
**W.B.:** Place traffic on the proposed W.B. Lane 2, Lane 3, ramp entrance terminal, and outside shoulder. Remove the remaining 33'-8" of the existing W.B. bridge and construct the remaining 23'-7" of the proposed W.B. bridge.

Stage 3
**E.B.:** Place traffic onto the proposed W.B. inside shoulder, Lane 1, and Lane 2. Remove the existing E.B. bridge and construct the proposed E.B. bridge.
**W.B.:** Place traffic onto the proposed W.B. Lane 3, ramp entrance terminal, and outside shoulder. No work this stage.

**Segment 3**
Pre-Stage A
**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.
**W.B.:** Maintain traffic on the existing W.B. lanes. Construct the proposed W.B. inside shoulder and concrete barrier wall.

Pre-Stage B
**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.
**W.B.:** Maintain traffic on the existing W.B. lanes. Remove the existing W.B. inside shoulder and construct 6'-6" of the proposed W.B. Lane 1 utilizing temporary short-term single lane closures.

Stage 1
**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.
**W.B.:** Place traffic onto the proposed W.B. inside shoulder, proposed Lane 1, and existing inside lane. Remove the existing W.B. outside lane and outside shoulder and construct 5' of the proposed W.B. Lane 2, Lane 3, outside shoulder, and concrete barrier wall.

Stage 2
**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.
**W.B.:** Place traffic onto the proposed W.B. Lane 2, Lane 3, and outside shoulder. Remove the remainder of the existing W.B. lanes and construct the remaining 5'-6" of proposed W.B. Lane 1 and 7' of proposed W.B. Lane 2.

Stage 3
**E.B.:** Place traffic onto the proposed W.B. inside shoulder, Lane 1, and Lane 2. Remove the existing E.B. inside shoulder, both lanes, and outside shoulder and construct the proposed E.B. inside shoulder, Lane 1, Lane 2, Lane 3, outside shoulder, and concrete barrier wall.
**W.B.:** Place traffic onto the proposed W.B. Lane 2, Lane 3, and outside shoulder. No work this stage.

**Segment 4**
Pre-Stage A
**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.
**W.B.:** Maintain traffic on the existing W.B. lanes. Construct the proposed W.B. inside shoulder and concrete barrier wall utilizing temporary short-term single lane closures.

Stage 1
**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.
**W.B.:** Place traffic onto the proposed W.B. inside shoulder and existing lanes. Remove portions of the existing W.B. outside lane and outside shoulder and construct 5' of the proposed W.B. Lane 2, Lane 3, outside shoulder, and concrete barrier wall.

Stage 2
**E.B.:** Maintain traffic on the existing E.B. lanes. No work this stage.
**W.B.:** Place traffic onto the proposed W.B. Lane 2, Lane 3, and outside shoulder. Remove the remainder of the existing W.B. lanes and construct Lane 1 and the remaining 7' of proposed W.B. Lane 2.

Stage 3
**E.B.:** Place traffic onto the proposed W.B. inside shoulder, Lane 1, and Lane 2. Remove the existing E.B. inside shoulder, both lanes, and outside shoulder and construct the proposed E.B. inside shoulder, Lane 1, Lane 2, Lane 3, outside shoulder, and concrete barrier wall.
**W.B.:** Place traffic onto the proposed W.B. Lane 2, Lane 3, and outside shoulder. No work this stage.

**Development of Options 3 and 4**
On March 1, 2015, near the completion of the preliminary Transportation Management Plan, the Bureau of Safety Engineering (BSE) released Policy Memorandum 4-15: Work Zone Safety and Mobility: Positive Protection of Workers, Drop-offs and Temporary Concrete Barrier. This new policy supersedes the previous work zone drop-off policy that was used to develop Options 1 and 2 and requires further positive protection than the previous policy.

**Option 3**
Option 3 is similar to Option 1 and utilizes staged construction to complete the work for proposed W.B. and E.B. lanes without crossing traffic over the median. In general, Option 3 includes construction of the proposed closed median with concrete barrier wall first, then the outside lanes and shoulders next, and the inside lanes and shoulders last. Option 3 provides positive protection of workers in accordance with

BSE Memorandum 4-15. One goal of this option was to minimize the amount of pinning required for the temporary concrete barrier wall, which requires the use of additional temporary pavement at select locations. The staging for Option 3 is shown in a plan view schematic in **Exhibit 18** and in typical sections in **Exhibit 19**.

**Segment 1**

Pre-Stage A

**E.B.:** Maintain traffic on the existing E.B. lanes. Mill and overlay the existing inside shoulder utilizing temporary short-term single lane closures.

**W.B.:** Maintain traffic on the existing W.B. lanes. No work this stage.

Pre-Stage B

**E.B.:** Maintain traffic on the existing E.B. lanes. Construct 2' of temporary pavement widening next to the existing inside shoulder.

**W.B.:** Maintain traffic on the existing W.B. lanes. No work this stage.

Stage 1

**E.B.:** Place traffic onto the inside shoulder, temporary pavement widening and existing E.B. lanes. Remove the existing E.B. outside shoulder and construct the proposed E.B. Lane 3, outside shoulder and 8' of temporary pavement widening.

**W.B.:** Maintain traffic on the existing W.B. lanes. Remove portions of the existing W.B. outside shoulder and construct the proposed W.B. Lane 2, Lane 3, and outside shoulder.

Stage 2

**E.B.:** Place traffic onto the proposed Lane 3, outside shoulder and temporary pavement widening. Remove the existing E.B. inside shoulder and both lanes and construct the proposed E.B. inside shoulder, Lane 1 and Lane 2.

**W.B.:** Place traffic onto the proposed Lane 2, Lane 3, and outside shoulder. Remove the existing W.B. inside shoulder and both lanes and construct the proposed W.B. inside shoulder and Lane 1.

**Segment 2**

Pre-Stage A

**E.B.:** Maintain traffic on the existing E.B. lanes. Mill and overlay the existing inside shoulder utilizing temporary short-term single lane closures.

**W.B.:** Maintain traffic on the existing W.B. lanes. No work this stage.

Pre-Stage B

**E.B.:** Maintain traffic on the existing E.B. lanes. Construct 4' of temporary pavement widening next to the existing inside shoulder.

**W.B.:** Maintain traffic on the existing W.B. lanes. No work this stage.

Stage 1

**E.B.:** Place traffic onto the existing E.B. inside shoulder, temporary pavement widening and the existing E.B. lanes. Remove the existing E.B. outside shoulder and a porting of lane 2. Construct the proposed E.B. Lane 3, outside shoulder, and 8' of temporary pavement widening.

**W.B.:** Maintain traffic on the existing W.B. lanes. Remove portions of the existing W.B. outside shoulder and construct the proposed W.B. Lane 2, Lane 3, and outside shoulder.

Stage 2

**E.B.:** Place traffic onto the proposed E.B. Lane 3, outside shoulder, and temporary pavement widening. Remove the existing E.B. inside shoulder and both lanes and construct the proposed E.B. inside shoulder, Lane 1 and Lane 2.

**W.B.:** Place traffic onto the proposed W.B. Lane 2, Lane 3, and outside shoulder. Remove the existing W.B. inside shoulder, both lanes, and remainder of outside shoulder and construct the proposed W.B. Lane 1 and inside shoulder.

**Bridge**

Stage 1

**E.B.:** Place traffic on the existing E.B. inside shoulder, Lane 1, and Lane 2. Remove the south 22'-8" of the existing E.B. bridge and construct the south 30'-7" of the proposed E.B. bridge.

**W.B.:** Place traffic on the existing W.B. inside shoulder, Lane 1, and Lane 2. Remove the north 19'-8" of the existing W.B. bridge and construct the north 45'-7" of the proposed W.B. bridge.

Stage 2

**E.B.:** Place traffic on the proposed E.B. Lane 3, ramp entrance terminal, and outside shoulder. Remove the remaining 30'-8" of the existing E.B. bridge and construct the remaining 38'-7" of the proposed E.B. bridge.

**W.B.:** Place traffic on the proposed W.B. Lane 2, Lane 3, ramp entrance terminal, and outside shoulder. Remove the remaining 33'-8" of the existing W.B. bridge and construct the remaining 23'-7" of the proposed W.B. bridge.

**Segment 3**

Pre-Stage A

**E.B.:** Maintain traffic on the existing E.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

**W.B.:** Maintain traffic on the existing W.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

Pre-Stage B

**E.B.:** Place traffic onto the existing E.B. lanes and outside shoulder. Remove the existing E.B. inside shoulder and construct 6'-6" of the proposed E.B. Lane 1, inside shoulder and barrier wall.

**W.B.:** Place traffic onto the existing W.B. lanes and outside shoulder. Remove the existing W.B. inside shoulder and construct 6'-6" of the proposed W.B. Lane 1, inside shoulder and barrier wall.

Stage 1

**E.B.:** Place traffic onto the proposed E.B. inside shoulder, proposed Lane 1, and existing inside lane. Remove the existing E.B. outside lane and outside shoulder and construct 5' of the proposed E.B. Lane 2, Lane 3, outside shoulder, and 3' of temporary pavement widening.

**W.B.:** Place traffic onto the proposed W.B. inside shoulder, proposed Lane 1, and existing inside lane. Remove the existing W.B. outside lane and outside shoulder and construct 5' of the proposed W.B. Lane 2, Lane 3, outside shoulder, and 3' of temporary pavement widening.

Stage 2

**E.B.:** Place traffic onto the proposed E.B. Lane 3 and outside shoulder. Remove the remainder of the existing E.B. lanes and construct the remaining 5'-6" of proposed E.B. Lane 1 and 7' of proposed E.B. Lane 2.

**W.B.:** Place traffic onto the proposed W.B. Lane 3 and outside shoulder. Remove the remainder of the existing W.B. lanes and construct the remaining 5'-6" of proposed W.B. Lane 1 and 7' of proposed W.B. Lane 2.

Stage 3
**E.B.:** Place traffic onto the proposed E.B. Lane 1 and Lane 2. Close E.B. Lane 3 and outside shoulder and construct the outside shoulder barrier wall.
**W.B.:** Place traffic onto the proposed W.B. Lane 1 and Lane 2. Close W.B. Lane 3 and outside shoulder and construct the outside shoulder barrier wall.

**Segment 4**
Pre-Stage A
**E.B.:** Maintain traffic on the existing E.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.
**W.B.:** Maintain traffic on the existing W.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

Pre-Stage B
**E.B.:** Place traffic onto the existing E.B. lanes and outside shoulder. Remove the existing E.B. inside shoulder and construct the inside shoulder and barrier wall.
**W.B.:** Place traffic onto the existing W.B. lanes and outside shoulder. Remove the existing W.B. inside shoulder and construct the inside shoulder and barrier wall.

Stage 1
**E.B.:** Place traffic onto the proposed E.B. inside shoulder and existing inside lane. Remove the existing E.B. outside lane and outside shoulder and construct 5' of the proposed E.B. Lane 2, Lane 3, outside shoulder, and 3' of temporary pavement widening.
**W.B.:** Place traffic onto the proposed W.B. inside shoulder and existing inside lane. Remove the existing W.B. outside lane and outside shoulder and construct 5' of the proposed W.B. Lane 2, Lane 3, outside shoulder, and 3' of temporary pavement widening.

Stage 2
**E.B.:** Place traffic onto the proposed E.B. Lane 3 and outside shoulder. Remove the remainder of the existing E.B. lanes and construct E.B. Lane 1 and the remaining 7' of proposed E.B. Lane 2.
**W.B.:** Place traffic onto the proposed W.B. Lane 3 and outside shoulder. Remove the remainder of the existing W.B. lanes and construct W.B. Lane 1 and the remaining 7' of proposed W.B. Lane 2.

Stage 3
**E.B.:** Place traffic onto the proposed E.B. Lane 1 and Lane 2. Close E.B. Lane 3 and outside shoulder and construct the outside shoulder barrier wall.
**W.B.:** Place traffic onto the proposed W.B. Lane 1 and Lane 2. Close W.B. Lane 3 and outside shoulder and construct the outside shoulder barrier wall.

**Option 4**
Option 4 is similar to option 3 but utilizes pinning of the temporary concrete barrier at select locations to minimize the amount of temporary pavement required. The staging for Option 4 is shown in a plan view schematic in **Exhibit 18** and in typical sections in **Exhibit 20**.

**Segment 1**

Pre-Stage A

**E.B.:** Maintain traffic on the existing E.B. lanes. Mill and overlay the existing inside shoulder utilizing temporary short-term single lane closures.

**W.B.:** Maintain traffic on the existing W.B. lanes. No work this stage.

Pre-Stage B

**E.B.:** Maintain traffic on the existing E.B. lanes. Construct 2' of temporary pavement widening next to the existing inside shoulder.

**W.B.:** Maintain traffic on the existing W.B. lanes. No work this stage.

Stage 1

**E.B.:** Place traffic onto the inside shoulder, temporary pavement widening and existing E.B. lanes. Remove the existing E.B. outside shoulder and construct the proposed E.B. Lane 3, outside shoulder and 6'-6" of temporary pavement widening.

**W.B.:** Maintain traffic on the existing W.B. lanes. Remove portions of the existing W.B. outside shoulder and construct the proposed W.B. Lane 2, Lane 3, and outside shoulder.

Stage 2

**E.B.:** Place traffic onto the proposed Lane 3, outside shoulder and temporary pavement widening. Remove the existing E.B. inside shoulder and both lanes and construct the proposed E.B. inside shoulder, Lane 1 and Lane 2.

**W.B.:** Place traffic onto the proposed Lane 2, Lane 3, and outside shoulder. Remove the existing W.B. inside shoulder and both lanes and construct the proposed W.B. inside shoulder and Lane 1.

**Segment 2**

Pre-Stage A

**E.B.:** Maintain traffic on the existing E.B. lanes. Mill and overlay the existing inside shoulder utilizing temporary short-term single lane closures.

**W.B.:** Maintain traffic on the existing W.B. lanes. No work this stage.

Pre-Stage B

**E.B.:** Maintain traffic on the existing E.B. lanes. Construct 4' of temporary pavement widening next to the existing inside shoulder.

**W.B.:** Maintain traffic on the existing W.B. lanes. No work this stage.

Stage 1

**E.B.:** Place traffic onto the existing E.B. inside shoulder, temporary pavement widening and the existing E.B. lanes. Remove the existing E.B. outside shoulder and a porting of lane 2. Construct the proposed E.B. Lane 3, outside shoulder, and 6'-6" of temporary pavement widening.

**W.B.:** Maintain traffic on the existing W.B. lanes. Remove portions of the existing W.B. outside shoulder and construct the proposed W.B. Lane 2, Lane 3, and outside shoulder.

Stage 2

**E.B.:** Place traffic onto the proposed E.B. Lane 3, outside shoulder, and temporary pavement widening. Remove the existing E.B. inside shoulder and both lanes and construct the proposed E.B. inside shoulder, Lane 1 and Lane 2.

**W.B.:** Place traffic onto the proposed W.B. Lane 2, Lane 3, and outside shoulder. Remove the existing W.B. inside shoulder, both lanes, and remainder of outside shoulder and construct the proposed W.B. Lane 1 and inside shoulder.

**Bridge**

Stage 1

**E.B.:** Place traffic on the existing E.B. inside shoulder, Lane 1, and Lane 2. Remove the south 22'-8" of the existing E.B. bridge and construct the south 30'-7" of the proposed E.B. bridge.

**W.B.:** Place traffic on the existing W.B. inside shoulder, Lane 1, and Lane 2. Remove the north 19'-8" of the existing W.B. bridge and construct the north 45'-7" of the proposed W.B. bridge.

Stage 2

**E.B.:** Place traffic on the proposed E.B. Lane 3, ramp entrance terminal, and outside shoulder. Remove the remaining 30'-8" of the existing E.B. bridge and construct the remaining 38'-7" of the proposed E.B. bridge.

**W.B.:** Place traffic on the proposed W.B. Lane 2, Lane 3, ramp entrance terminal, and outside shoulder. Remove the remaining 33'-8" of the existing W.B. bridge and construct the remaining 23'-7" of the proposed W.B. bridge.

**Segment 3**

Pre-Stage A

**E.B.:** Maintain traffic on the existing E.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

**W.B.:** Maintain traffic on the existing W.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

Pre-Stage B

**E.B.:** Place traffic onto the existing E.B. lanes and outside shoulder. Remove the existing E.B. inside shoulder and construct 6'-6" of the proposed E.B. Lane 1, inside shoulder and barrier wall.

**W.B.:** Place traffic onto the existing W.B. lanes and outside shoulder. Remove the existing W.B. inside shoulder and construct 6'-6" of the proposed W.B. Lane 1, inside shoulder and barrier wall.

Stage 1

**E.B.:** Place traffic onto the proposed E.B. inside shoulder, proposed Lane 1, and existing inside lane. Remove the existing E.B. outside lane and outside shoulder and construct 5' of the proposed E.B. Lane 2, Lane 3 and outside shoulder.

**W.B.:** Place traffic onto the proposed W.B. inside shoulder, proposed Lane 1, and existing inside lane. Remove the existing W.B. outside lane and outside shoulder and construct 5' of the proposed W.B. Lane 2, Lane 3 and outside shoulder.

Stage 2

**E.B.:** Place traffic onto the proposed E.B. Lane 3 and outside shoulder. Remove the remainder of the existing E.B. lanes and construct the remaining 5'-6" of proposed E.B. Lane 1 and 7' of proposed E.B. Lane 2.

**W.B.:** Place traffic onto the proposed W.B. Lane 3 and outside shoulder. Remove the remainder of the existing W.B. lanes and construct the remaining 5'-6" of proposed W.B. Lane 1 and 7' of proposed W.B. Lane 2.

Stage 3

**E.B.:** Place traffic onto the proposed E.B. Lane 1 and Lane 2. Close E.B. Lane 3 and outside shoulder and construct the outside shoulder barrier wall.

**W.B.:** Place traffic onto the proposed W.B. Lane 1 and Lane 2. Close W.B. Lane 3 and outside shoulder and construct the outside shoulder barrier wall.

**Segment 4**

Pre-Stage A

**E.B.:** Maintain traffic on the existing E.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

**W.B.:** Maintain traffic on the existing W.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

Pre-Stage B

**E.B.:** Place traffic onto the existing E.B. lanes and outside shoulder. Remove the existing E.B. inside shoulder and construct the inside shoulder and barrier wall.

**W.B.:** Place traffic onto the existing W.B. lanes and outside shoulder. Remove the existing W.B. inside shoulder and construct the inside shoulder and barrier wall.

Stage 1

**E.B.:** Place traffic onto the proposed E.B. inside shoulder and existing inside lane. Remove the existing E.B. outside lane and outside shoulder and construct 5' of the proposed E.B. Lane 2, Lane 3 and outside shoulder.

**W.B.:** Place traffic onto the proposed W.B. inside shoulder and existing inside lane. Remove the existing W.B. outside lane and outside shoulder and construct 5' of the proposed W.B. Lane 2, Lane 3 and outside shoulder.

Stage 2

**E.B.:** Place traffic onto the proposed E.B. Lane 3 and outside shoulder. Remove the remainder of the existing E.B. lanes and construct E.B. Lane 1 and the remaining 7' of proposed E.B. Lane 2.

**W.B.:** Place traffic onto the proposed W.B. Lane 3 and outside shoulder. Remove the remainder of the existing W.B. lanes and construct W.B. Lane 1 and the remaining 7' of proposed W.B. Lane 2.

Stage 3

**E.B.:** Place traffic onto the proposed E.B. Lane 1 and Lane 2. Close E.B. Lane 3 and outside shoulder and construct the outside shoulder barrier wall.

**W.B.:** Place traffic onto the proposed W.B. Lane 1 and Lane 2. Close W.B. Lane 3 and outside shoulder and construct the outside shoulder barrier wall.

**Recommendation**

The additional comparative costs to stage construct I-74 for Option 1 and Option 2 are shown in **Exhibit 31**. Option 1 costs an additional $380,000, which includes an increased structure cost to stage construct the eastbound structure, an increased roadway cost to stage construct the eastbound embankment and pavement, and a night work premium to construct the eastbound lanes under temporary lane closures. Option 2 costs an additional $735,000, which includes two crossovers, additional concrete barrier wall, and the loss of a construction season since construction of the eastbound lanes cannot begin until the westbound lanes and structure are complete.

Option 1 is more desirable than Option 2 for stage constructing I-74, since it maintains two-lane, two-way traffic with short term single lane closures, does not require the use of crossovers, and costs less than Option 2. However, since Options 1 and 2 were developed prior to the release of IDOT BSE Policy Memorandum 4-15 on March 1, 2015, they do not meet the current design policy and are no longer considered as recommended options for the staged construction of I-74.

Options 3 and 4 have been developed based on the general staging and sequencing concept of Option 1. The additional comparative costs to stage construct I-74 for Options 3 and 4 are shown in **Exhibit 31**. Option 3 costs an additional $420,000, which includes temporary pavement widening to minimize the use of pinning along the temporary concrete barrier wall. Option 4 costs an additional $160,000, which includes the use of pinning to minimize the amount of temporary pavement required.

Option 4 is the recommended option for stage constructing I-74. This option maintains two-lane, two-way traffic with short term single lane closures, does not require the use of crossovers, meets the criteria in BSE Memo. 4-15, and costs less than Option 3.

**ii. Interstate 57**

The existing I-57 consists of two lanes in each direction separated by a 64' open grass median. The proposed I-57 median and lanes are similar to existing, with two lanes in each direction separated by a 64' median, but an auxiliary lane is also added to the outside of the through lanes between the I-74 ramp terminals north of I-74 and the Olympian Drive Ramp terminals. See Typical Sections in **Exhibit 6**.

Four options for stage constructing I-57 are presented below. All options include maintaining two lanes of traffic in each direction with temporary short-term single lane closures at various locations. I-57 has been broken into three segments to analyze the staging options:

**Segment 1**
Station 545+00 to Station 560+00: South end of the project that includes milling and overlaying the existing pavement and shoulders.

**Segment 2**
Station 560+00 to Station 605+00: Two lane section.

**Segment 3**
Station 605+00 to Station 648+00: Three lane section (two through lanes and an auxiliary lane) that also includes variable grade changes along I-57.

The interstate staging could include construction of all segments together or breaking up the work by each segment or portions thereof.

**Option 1**
Option 1 utilizes staged construction to complete the work for proposed N.B. and S.B. lanes. In general, Option 1 includes construction of the inside shoulders first, then the outside lane (Lane 2) and shoulder next, and the inside lane (Lane 1) last. The staging for Option 1 is shown in a plan view schematic in **Exhibit 21** and in typical sections in **Exhibit 22**.

**Segment 1**

Stage 1

**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing N.B. inside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing S.B. inside shoulder utilizing temporary short-term single lane closures.

Stage 2

**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing N.B. Lane 2 and outside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing S.B. Lane 2 and outside shoulder utilizing temporary short-term single lane closures.

Stage 3

**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing N.B. Lane 1 utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing S.B. Lane 1 utilizing temporary short-term single lane closures.

**Segment 2**

Stage 1

**N.B.:** Maintain traffic on the existing N.B. lanes. Remove the existing N.B. inside shoulder and construct the proposed N.B. inside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Remove the existing S.B. inside shoulder and construct the proposed S.B. inside shoulder utilizing temporary short-term single lane closures.

Stage 2

**N.B.:** Place traffic on the proposed N.B. inside shoulder and existing Lane 1. Remove the existing N.B. Lane 2 and outside shoulder and construct the proposed N.B. Lane 2 and outside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Place traffic on the proposed S.B. inside shoulder and existing Lane 1. Remove the existing S.B. Lane 2 and outside shoulder and construct the proposed S.B. Lane 2 and outside shoulder utilizing temporary short-term single lane closures.

Stage 3

**N.B.:** Place traffic on the proposed N.B. Lane 2 and outside shoulder. Remove the existing N.B. Lane 1 and construct the proposed N.B. Lane 1 utilizing temporary short-term single lane closures.

**S.B.:** Place traffic on the proposed S.B. Lane 2 and outside shoulder. Remove the existing S.B. Lane 1 and construct the proposed S.B. Lane 1 utilizing temporary short-term single lane closures.

**Segment 3**

Stage 1

**N.B.:** Maintain traffic on the existing N.B. lanes. Remove the existing N.B. inside shoulder and construct the proposed N.B. inside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Remove the existing S.B. inside shoulder and construct the proposed S.B. inside shoulder utilizing temporary short-term single lane closures.

Stage 2

**N.B.:** Place traffic on the N.B. proposed inside shoulder and existing Lane 1 and Lane 2. Remove portions of the existing N.B. Lane 2 and outside shoulder and construct 6' of the proposed N.B. Lane 2, auxiliary lane, and outside shoulder.

**S.B.:** Place traffic on the S.B. proposed inside shoulder and existing Lane 1 and Lane 2. Remove portions of the existing S.B. Lane 2 and outside shoulder and construct 6' of the proposed S.B. Lane 2, auxiliary lane, and outside shoulder.

Stage 3

**N.B.:** Place traffic on the proposed N.B. Lane 2, auxiliary lane, and outside shoulder. Remove the existing N.B. Lane 1 and portions of Lane 2 and construct the proposed N.B. Lane 1 and the remaining 6' of Lane 2.

**S.B.:** Place traffic on the proposed S.B. Lane 2, auxiliary lane, and outside shoulder. Remove the existing S.B. Lane 1 and portions of Lane 2 and construct the proposed S.B. Lane 1 and the remaining 6' of Lane 2.

**Option 2**

Option 2 consists of the same staged construction as Option 1 for Segment 1 and Segment 3, but includes the use of a temporary concrete barrier wall to construct the proposed outside shoulder and embankment. The staging for Option 2 is shown in a plan view schematic in **Exhibit 23** and in typical sections in **Exhibit 24**.

**Segment 1**

Stage 1

**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing N.B. inside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing S.B. inside shoulder utilizing temporary short-term single lane closures.

Stage 2

**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing N.B. Lane 2 and outside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing S.B. Lane 2 and outside shoulder utilizing temporary short-term single lane closures.

Stage 3

**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing N.B. Lane 1 utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing S.B. Lane 1 utilizing temporary short-term single lane closures.

**Segment 2**

Stage 1

**N.B.:** Maintain traffic on the existing N.B. lanes. Remove the existing N.B. inside shoulder and construct the proposed N.B. inside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Remove the existing S.B. inside shoulder and construct the proposed S.B. inside shoulder utilizing temporary short-term single lane closures.

Stage 2A
**N.B.:** Place traffic on the proposed N.B. inside shoulder and existing Lane 1 and Lane 2. Remove the existing N.B. outside shoulder and construct the proposed N.B. outside shoulder.
**S.B.:** Place traffic on the proposed S.B. inside shoulder and existing Lane 1 and Lane 2. Remove the existing S.B. outside shoulder and construct the proposed S.B. outside shoulder.

Stage 2B
**N.B.:** Place traffic on the proposed N.B. inside shoulder and existing Lane 1. Remove the existing N.B. Lane 2 and construct the proposed N.B. Lane 2 utilizing temporary short-term single lane closures.
**S.B.:** Place traffic on the proposed S.B. inside shoulder and existing Lane 1. Remove the existing S.B. Lane 2 and construct the proposed S.B. Lane 2 utilizing temporary short-term single lane closures.

Stage 3
**N.B.:** Place traffic on the proposed N.B. Lane 2 and outside shoulder. Remove the existing N.B. Lane 1 and construct the proposed N.B. Lane 1 utilizing temporary short-term single lane closures.
**S.B.:** Place traffic on the proposed S.B. Lane 2 and outside shoulder. Remove the existing S.B. Lane 1 and construct the proposed S.B. Lane 1 utilizing temporary short-term single lane closures.

**Segment 3**
Stage 1
**N.B.:** Maintain traffic on the existing N.B. lanes. Remove the existing N.B. inside shoulder and construct the proposed N.B. inside shoulder utilizing temporary short-term single lane closures.
**S.B.:** Maintain traffic on the existing S.B. lanes. Remove the existing S.B. inside shoulder and construct the proposed S.B. inside shoulder utilizing temporary short-term single lane closures.

Stage 2
**N.B.:** Place traffic on the N.B. proposed inside shoulder and existing Lane 1 and Lane 2. Remove portions of the existing N.B. Lane 2 and outside shoulder and construct 6’ of the proposed N.B. Lane 2, auxiliary lane, and outside shoulder.
**S.B.:** Place traffic on the S.B. proposed inside shoulder and existing Lane 1 and Lane 2. Remove portions of the existing S.B. Lane 2 and outside shoulder and construct 6’ of the proposed S.B. Lane 2, auxiliary lane, and outside shoulder.

Stage 3
**N.B.:** Place traffic on the proposed N.B. Lane 2, auxiliary lane, and outside shoulder. Remove the existing N.B. Lane 1 and portions of Lane 2 and construct the proposed N.B. Lane 1 and the remaining 6’ of Lane 2.
**S.B.:** Place traffic on the proposed S.B. Lane 2, auxiliary lane, and outside shoulder. Remove the existing S.B. Lane 1 and portions of Lane 2 and construct the proposed S.B. Lane 1 and the remaining 6’ of Lane 2.

**Development of Options 3 and 4**
Similar to the I-74 staging, on March 1, 2015 near completion of the preliminary Transportation Management Plan, the Bureau of Safety Engineering (BSE) released Policy Memorandum 4-15: Work Zone Safety and Mobility: Positive Protection of Workers, Drop-offs and Temporary Concrete Barrier. This new policy supersedes the previous work zone drop-off policy that was used to develop Options 1 and 2 and requires further positive protection than the previous policy.

**Option 3**

Option 3 is similar to Option 1 and utilizes staged construction to complete the work for proposed N.B. and S.B. lanes. In general, Option 3 includes construction of the inside shoulders first, then the outside lane (Lane 2) and shoulder next, and the inside lane (Lane 1) last. Option 3 provides positive protection of workers in accordance with BSE Memorandum 4-15. One goal of this option was to minimize the amount of pinning required for the temporary concrete barrier wall, which requires the use of additional temporary pavement at select locations. The staging for Option 3 is shown in a plan view schematic in **Exhibit 25** and in typical sections in **Exhibit 26**.

**Segment 1**

Stage 1

**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing N.B. inside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing S.B. inside shoulder utilizing temporary short-term single lane closures.

Stage 2

**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing N.B. Lane 2 and outside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing S.B. Lane 2 and outside shoulder utilizing temporary short-term single lane closures.

Stage 3

**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing N.B. Lane 1 utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing S.B. Lane 1 utilizing temporary short-term single lane closures.

**Segment 2**

Pre-Stage

**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

Stage 1

**N.B.:** Place traffic onto the existing N.B. outside shoulder and lanes. Remove the existing N.B. inside shoulder and construct the proposed N.B. inside shoulder and 8’ of temporary pavement widening.

**S.B.:** Place traffic onto the existing S.B. outside shoulder and lanes. Remove the existing S.B. inside shoulder and construct the proposed S.B. inside shoulder and 8’ of temporary pavement widening.

Stage 2

**N.B.:** Place traffic on the proposed N.B. inside shoulder, temporary pavement widening and existing Lane 1. Remove the existing N.B. Lane 2 and outside shoulder and construct the proposed N.B. Lane 2, outside shoulder and 8’ of temporary pavement widening.

**S.B.:** Place traffic on the proposed S.B. inside shoulder, temporary pavement widening and existing Lane 1. Remove the existing S.B. Lane 2 and outside shoulder and construct the proposed S.B. Lane 2, outside shoulder and 8' of temporary pavement widening.

Stage 3
**N.B.:** Place traffic on the proposed N.B. Lane 2, outside shoulder and temporary pavement widening. Remove the existing N.B. Lane 1 and construct the proposed N.B. Lane 1.
**S.B.:** Place traffic on the proposed S.B. Lane 2, outside shoulder and temporary pavement widening. Remove the existing S.B. Lane 1 and construct the proposed S.B. Lane 1.

**Segment 3**
Pre-Stage
**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.
**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

Stage 1
**N.B.:** Place traffic onto the existing N.B. outside shoulder and lanes. Remove the existing N.B. inside shoulder and construct the proposed N.B. inside shoulder and 2' of temporary pavement widening.
**S.B.:** Place traffic onto the existing S.B. outside shoulder and lanes. Remove the existing S.B. inside shoulder and construct the proposed S.B. inside shoulder and 2' of temporary pavement widening.

Stage 2
**N.B.:** Place traffic on the proposed N.B. inside shoulder, temporary pavement widening and existing Lane 1. Remove the existing outside shoulder and 6' of the existing Lane 2 and construct 6' of the proposed N.B. Lane 2, Lane 3, outside shoulder and 2' of temporary pavement widening.
**S.B.:** Place traffic on the proposed S.B. inside shoulder, temporary pavement widening and existing Lane 1. Remove the existing outside shoulder and 6' of the existing Lane 2 and construct 6' of the proposed S.B. Lane 2, Lane 3, outside shoulder and 2' of temporary pavement widening.

Stage 3
**N.B.:** Place traffic on the proposed N.B. Lane 3, outside shoulder and temporary pavement widening. Remove the existing N.B. Lane 1 and the remaining 6' of Lane 2 and construct the proposed N.B. Lane 1 and remaining 6' of Lane 2.
**S.B.:** Place traffic on the proposed S.B. Lane 3, outside shoulder and temporary pavement widening. Remove the existing S.B. Lane 1 and the remaining 6' of Lane 2 and construct the proposed S.B. Lane 1 and remaining 6' of Lane 2.

**Option 4**
Option 4 is similar to option 3 but utilizes pinning of the temporary concrete barrier at select locations to minimize the amount of temporary pavement required. The staging for Option 4 is shown in a plan view schematic in **Exhibit 25** and in typical sections in **Exhibit 27**.

**Segment 1**
Stage 1
**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing N.B. inside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing S.B. inside shoulder utilizing temporary short-term single lane closures.

Stage 2
**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing N.B. Lane 2 and outside shoulder utilizing temporary short-term single lane closures.
**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing S.B. Lane 2 and outside shoulder utilizing temporary short-term single lane closures.

Stage 3
**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing N.B. Lane 1 utilizing temporary short-term single lane closures.
**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing S.B. Lane 1 utilizing temporary short-term single lane closures.

**Segment 2**
Pre-Stage
**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.
**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

Stage 1
**N.B.:** Place traffic onto the existing N.B. outside shoulder and lanes. Remove the existing N.B. inside shoulder and construct the proposed N.B. inside shoulder and 6'-6" of temporary pavement widening.
**S.B.:** Place traffic onto the existing S.B. outside shoulder and lanes. Remove the existing S.B. inside shoulder and construct the proposed S.B. inside shoulder and 6'-6" of temporary pavement widening.

Stage 2
**N.B.:** Place traffic on the proposed N.B. inside shoulder, temporary pavement widening and existing Lane 1. Remove the existing N.B. Lane 2 and outside shoulder and construct the proposed N.B. Lane 2, outside shoulder and 6'-6" of temporary pavement widening.
**S.B.:** Place traffic on the proposed S.B. inside shoulder, temporary pavement widening and existing Lane 1. Remove the existing S.B. Lane 2 and outside shoulder and construct the proposed S.B. Lane 2, outside shoulder and 6'-6" of temporary pavement widening.

Stage 3
**N.B.:** Place traffic on the proposed N.B. Lane 2, outside shoulder and temporary pavement widening. Remove the existing N.B. Lane 1 and construct the proposed N.B. Lane 1.
**S.B.:** Place traffic on the proposed S.B. Lane 2, outside shoulder and temporary pavement widening. Remove the existing S.B. Lane 1 and construct the proposed S.B. Lane 1.

**Segment 3**
Pre-Stage
**N.B.:** Maintain traffic on the existing N.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

**S.B.:** Maintain traffic on the existing S.B. lanes. Mill and overlay the existing outside shoulder utilizing temporary short-term single lane closures.

Stage 1
**N.B.:** Place traffic onto the existing N.B. outside shoulder and lanes. Remove the existing N.B. inside shoulder and construct the proposed N.B. inside shoulder and 6" of temporary pavement widening.
**S.B.:** Place traffic onto the existing S.B. outside shoulder and lanes. Remove the existing S.B. inside shoulder and construct the proposed S.B. inside shoulder and 6" of temporary pavement widening.

Stage 2
**N.B.:** Place traffic on the proposed N.B. inside shoulder, temporary pavement widening and existing Lane 1. Remove the existing outside shoulder and 6' of the existing Lane 2 and construct 6' of the proposed N.B. Lane 2, Lane 3, outside shoulder and 6" of temporary pavement widening.
**S.B.:** Place traffic on the proposed S.B. inside shoulder, temporary pavement widening and existing Lane 1. Remove the existing outside shoulder and 6' of the existing Lane 2 and construct 6' of the proposed S.B. Lane 2, Lane 3, outside shoulder and 6" of temporary pavement widening.

Stage 3
**N.B.:** Place traffic on the proposed N.B. Lane 3, outside shoulder and temporary pavement widening. Remove the existing N.B. Lane 1 and the remaining 6' of Lane 2 and construct the proposed N.B. Lane 1 and remaining 6' of Lane 2.
**S.B.:** Place traffic on the proposed S.B. Lane 3, outside shoulder and temporary pavement widening. Remove the existing S.B. Lane 1 and the remaining 6' of Lane 2 and construct the proposed S.B. Lane 1 and remaining 6' of Lane 2.

**Recommendation**

The additional comparative costs to stage construct I-57 for Option 1 and Option 2 are shown in **Exhibit 31**. Option 1 costs an additional $80,000, which includes a night work premium to construct the outside shoulders under temporary lane closures. Option 2 costs an additional $70,000, which includes additional concrete barrier wall.

Option 2 is more desirable than Option 1 for stage constructing I-57, since it maintains two-lane, two-way traffic with short term single lane closures, provides concrete barrier wall protection to the work zone for construction of the outside shoulders, and costs less than Option 2. However, since Options 1 and 2 were developed prior to the release of IDOT BSE Policy Memorandum 4-15 on March 1, 2015, they do not meet the current design policy and are no longer considered as recommended options for the staged construction of I-57.

Options 3 and 4 have been developed based on IDOT BSE Memo. 4-15. The additional comparative costs to stage construct I-57 for Options 3 and 4 are shown in **Exhibit 31**. Option 3 costs an additional $430,000, which includes temporary pavement widening to minimize the use of pinning along the temporary concrete barrier wall. Option 4 costs an additional $130,000, which includes the use of pining to minimize the amount of temporary concrete barrier wall required.

Option 4 is the recommended option for stage constructing I-57. This option maintains two-lane, two-way traffic with short term single lane closures, meets the criteria in BSE Memo. 4-15, and costs less than Option 3.

After review of the mainline I-74 typical sections, the District noted that a recent project had been completed to install high tension median cable barrier on I-74. The location of the cable from the contract drawings has been reviewed and incorporated into revised typical sections for Option 4 in **Exhibit 37**. In Segment 2, when the cable is on the right side of the median, removal and replacement will be required to provide an adequate side slope and accommodate the temporary widening. Otherwise, the cable can be left in-place to provide protection from opposing traffic. I-57 was also reviewed for separation of opposing traffic during staged construction. Temporary widening to the inside of the travel lanes places opposing traffic closer than the existing condition. While the separation is greater than the clear zone, the District preferred to install protection from head-on collisions. Since installation of a high tension median cable barrier is more cost effective than additional pavement widening and temporary concrete barrier, a cable has been added to revised typical sections for I-57 Option 4 in **Exhibit 38**. The cost for the removal and replacement of the cable on I-74 and the installation of cable on I-57 is included in the TMP Costs in **Section 12**.

**iii. I-74 & I-57 Lane Closure Analysis**

Since safety, travel delays, and costs are closely tied to vehicular mobility through the work zone, capacity analyses were performed on the anticipated maintenance of traffic lane closure configurations to estimate vehicular delay and queue lengths during construction. The impacts of lane closures during construction were analyzed using the program WorkZoneQ Version1.72 developed by the University of Illinois. WorkZoneQ determines the capacity and computes queue length, delay, and congestion duration. In oversaturated conditions, demand is greater than capacity of the road section and vehicles experience queuing and delay. Three types of queuing conditions are considered ("Queue and Users' Costs in Highway Work Zones," published September 2010):

> **1-Stopped queue**: Vehicles in queue are stopped or their speed is so low that they can be assumed as practically stopped.
>
> **2-Moving queue**: Vehicles in queue are moving at considerable speed. For the purpose of modeling, it is assumed that the vehicles in queue are moving at constant speed.
>
> **3-Combination of stopped and moving queue**: Traffic stops for a certain time period and then moves. An example of this condition is a work zone where traffic is intermittently stopped to allow construction vehicles to get in and out of the work space.

WorkZoneQ uses IDOT's definition for severe and moderate queues, where a severe queue occurs when the average speed drops below 20 mph when the speed limit is 45 mph or the average speed drops below 25 mph when the speed limit is 55 mph. A moderate queue occurs when the average speed is between 20-35 mph when the speed limit is 45 mph or the average speed is between 25-40 mph when the speed limit is 55 mph.

WorkZoneQ was used to determine if lane closures would cause queuing, to what severity and during what times of the day. Hourly traffic volumes collected by IDOT from 2013 were available on the Transportation Data Management System webpage (http://idot.ms2soft.com/tcds/tsearch.asp?loc=Idot&mod=). 2020 construction year traffic volumes were estimated assuming a 1.0% annual growth rate.

The 2020 construction year traffic resulting from a 24 hour lane closure for each stage that includes the closure of a lane is shown in the WorkZoneQ results in **Exhibit 34**. The 24-hour lane closure analysis resulted in delays and queues that exceed IDOT's policy. The duration and time period of queuing estimated from the 24 hour analysis were used to determine the allowable lane closure times.

Implementation of the allowable lane closure times was tested in a subsequent analysis through WorkZoneQ, where lane closures were limited to the allowable lane closure times. **Exhibit 35** shows the results of this WorkZoneQ analysis. By limiting lane closures to off-peak periods, the estimated delays and queues all meet IDOT's mobility goals.

Several input variables are required to describe the construction process in WorkZoneQ. For the initial patching and inlay operations to be performed a "W" was input to show that there will be either crew members or construction equipment closer than 9 feet to the edge of the travel lane. An "F" was input to show that a flagger will be present. "45" was input to show that the speed limit will be reduced lower than 55 mph. An "O" was input to show that channeling devices other than concrete barrier will be used. An "M" was input to show that the work will be of moderate intensity. No speed control technique was selected and an "N" was input to show that traffic will not be asked to stop temporarily during any interval.

For the reconstruction of I-74 and I-57 and "N" was input to show that there will be neither crew members nor construction equipment closer than 9 feet to the edge of the travel lane. An "F" was input to show that a flagger will be present. "45" was input to show that the speed limit will be reduced lower than 55 mph. No speed control technique was selected and an "N" was input to show that traffic will not be asked to stop temporarily during any interval.

**I-74**

IDOT Mobility Criteria limits the delays caused by work zones to not exceed more than 5 minutes per mile of project length and the queues caused by work zones to not be more than 1.5 miles. The following table illustrates the allowable I-74 lane closure times that meet the IDOT Mobility Criteria for the recommended I-74 staging configuration:

| | Segment | Stage | Lane Closed | Allowable Lane Closure Times |
|---|---|---|---|---|
| 74 EB | Segment 1 | Patch & Inlay | LT | 6 PM – 6 AM |
| | Segment 1 | Patch & Inlay | RT | 6 PM – 6 AM |
| | Segment 1 | Pre-Stage A | LT | 5 PM - 7 AM |
| | Segment 2 | Patch & Inlay | LT | 6 PM – 6 AM |
| | Segment 2 | Patch & Inlay | RT | 6 PM – 6 AM |
| | Segment 2 | Pre-Stage A | LT | 5 PM - 7 AM |
| | Segment 3 | Patch & Inlay | LT | 7 PM – 6 AM |
| | Segment 3 | Patch & Inlay | RT | 7 PM – 6 AM |
| | Segment 3 | Pre-Stage A | RT | 7 PM - 6 AM |
| | Segment 4 | Patch & Inlay | LT | 7 PM – 6 AM |
| | Segment 4 | Patch & Inlay | RT | 7 PM – 6 AM |
| | Segment 4 | Pre-Stage A | RT | 7 PM - 6 AM |
| 74 WB | Segment 1 | Patch & Inlay | LT | 7 PM – 11 AM |
| | Segment 1 | Patch & Inlay | RT | 7 PM – 10 AM |
| | Segment 2 | Patch & Inlay | LT | 7 PM – 11 AM |
| | Segment 2 | Patch & Inlay | RT | 7 PM – 10 AM |
| | Segment 3 | Patch & Inlay | LT | 7 PM – 8 AM |
| | Segment 3 | Patch & Inlay | RT | 7 PM – 8 AM |
| | Segment 3 | Pre-Stage A | RT | 7 PM - 11 AM |
| | Segment 4 | Patch & Inlay | LT | 7 PM – 8 AM |
| | Segment 4 | Patch & Inlay | RT | 7 PM – 7 AM |
| | Segment 4 | Pre-Stage A | RT | 7 PM - 10 AM |

The overall allowable lane closure times for the patching and inlay of I-74 are 7 PM to 6 AM for eastbound lanes and 7 PM to 7 AM for westbound lanes. The overall allowable lane closure times for the reconstruction of I-74 are 7 PM to 6 AM for eastbound lanes and 7 PM to 10 AM for westbound lanes. The allowable I-74 lane closure times shall be confirmed during detailed staging design with the anticipated construction year traffic.

**I-57**

Similar to I-74, the I-57 2020 construction year traffic resulting from a 24 hour lane closure for each stage that includes the closure of a lane is shown in the WorkZoneQ results in **Exhibit 34**. The following table illustrates the allowable I-57 lane closure times that meet the IDOT Mobility Criteria for the recommended I-57 staging configuration:

| | Segment | Stage | Lane Closed | Allowable Lane Closure Times |
|---|---|---|---|---|
| 57 NB | Segment 1 | Stage 1 | LT | 6 PM - 7 AM |
| | Segment 1 | Stage 2 | RT | 6 PM - 7 AM |
| | Segment 1 | Stage 3 | LT | 6 PM - 7 AM |
| | Segment 2 | Patch & Inlay | LT | 6 PM - 7 AM |
| | Segment 2 | Patch & Inlay | RT | 6 PM - 7 AM |
| | Segment 2 | Pre-Stage | RT | 6 PM - 7 AM |
| | Segment 3 | Patch & Inlay | LT | 12 AM - 12 AM |
| | Segment 3 | Patch & Inlay | RT | 6 PM – 4 PM |
| | Segment 3 | Pre-Stage | RT | 12 AM - 12 AM |
| 57 SB | Segment 1 | Stage 1 | LT | 6 PM - 1 PM |
| | Segment 1 | Stage 2 | RT | 6 PM - 1 PM |
| | Segment 1 | Stage 3 | LT | 6 PM - 1 PM |
| | Segment 2 | Patch & Inlay | LT | 7 PM – 7 AM |
| | Segment 2 | Patch & Inlay | RT | 7 PM – 7 AM |
| | Segment 2 | Pre-Stage | RT | 7 PM - 1 PM |
| | Segment 3 | Patch & Inlay | LT | 12 AM - 12 AM |
| | Segment 3 | Patch & Inlay | RT | 12 AM - 12 AM |
| | Segment 3 | Pre-Stage | RT | 12 AM - 12 AM |

The overall allowable lane closure times for the patching and inlay of I-57 are 6 PM to 7 AM for northbound lanes and 7 PM to 7 AM for southbound lanes. The overall allowable lane closure times for the reconstruction of I-57 are 6 PM to 7 AM for northbound lanes and 7 PM to 1 PM for southbound lanes. The allowable I-57 lane closure times shall be confirmed during detailed staging design with the anticipated construction year traffic.

**Summary**

The WorkZoneQ analysis estimates that work conducted within the allowable lane closure times will typically allow for construction without regular queues along the interstate. The times reported in the WorkZoneQ analysis are the maximum allowable lane closure times. During implementation of the project it is possible that more restrictive times could be utilized to provide further protection from potential queuing, while still providing an adequate time period for the Contractor to work on a daily basis.

While excessive queues are not anticipated, the work zone activity and lane closure will result in the slowing of traffic. Proper work zone signing will be necessary to adequately inform drivers of the upcoming work zone and related impacts on traffic operations. The use of Portable Changeable Message Signs (PCMS's) are a valuable tool to inform the drivers to work zone and traffic conditions. PCMS's can also be used as part of a queue detection and queue warning system in case traffic fluctuations or other conditions result in unanticipated queuing along I-57 or I-74.

**iv. Ramps**

**Ramp A: I-57 N.B. to I-74 E.B.**

The existing Ramp A is a wrap-around (two reverse curves) outer ramp that provides a connection from northbound I-57 to eastbound I-74 in the southeast quadrant of the interchange. Standard exit and entrance terminals connect the existing ramp to the interstates at each end. The proposed Ramp A consists of an outer ramp with a single curve connecting northbound I-57 to eastbound I-74 in the southeast quadrant of the interchange. Standard exit and entrance terminals connect the proposed ramp to the interstates at each end (see **Exhibit 3**). The profile for the proposed Ramp A is similar to the existing Ramp A, so there is no significant grade change for the proposed Ramp A.

The proposed Ramp A crosses over the existing Ramp A near the exit and entrance terminals on each side. Temporary connections utilizing short-term full or partial ramp closures could be constructed at these locations to tie the proposed ramp to the existing ramp terminals. The proposed exit terminal and tangent section before the curve is located outside the footprint of the existing exit terminal and could be constructed while maintaining traffic on the existing ramp terminal. Since the proposed I-57 lane configuration matches the existing, the proposed exit terminal could be constructed before mainline improvements and connected to the existing pavement, or it could be constructed with or after the mainline improvements and connected to the proposed pavement. The proposed entrance terminal has some overlap with the existing entrance terminal. Since the proposed I-74 lane configuration differs from the existing, this entrance terminal should be constructed with the mainline improvements utilizing temporary connections and short term full or partial ramp closures.

The proposed Ramp A also crosses over the existing loop Ramp D. In order to maintain traffic on Ramp D, the proposed Ramp A should not be constructed until after the proposed flyover Ramp D is constructed and opened to traffic. This would not require any additional temporary connections or delay in schedule, so a long-term closure of Ramp D is not considered as a feasible alternative for constructing and placing traffic on proposed Ramp A.

The following are potential detour routes (see **Exhibit 32**) for closures of Ramp A (2020 ADT = 6,600):

1. Market St. N.B. to I-57 S.B. to I-74 E.B.
   Original Distance = 0.5 miles
   Detour Distance = 7.5 miles
   Adverse Travel Distance = 7.0 miles
   Adverse Travel Time = 8 minutes

2. Market St. S.B. to Leverett Rd E.B. to U.S. 45 S.B. to I-74 E.B.
   Original Distance = 5.3 miles
   Detour Distance = 11.6 miles
   Adverse Travel Distance = 6.3 miles
   Adverse Travel Time = 10 minutes

3. I-74 W.B. to Prairie View Rd. S.B. to I-74 E.B.
   Original Distance = 0.5 miles
   Detour Distance = 11.8 miles
   Adverse Travel Distance = 11.3 miles
   Adverse Travel Time = 11 minutes

4. U.S. 36 E.B. to IL 49 N.B. to I-74 E.B.
   Original Distance = 43.5 miles
   Detour Distance = 41.4 miles
   Adverse Travel Distance = -2.1 miles (shorter)
   Adverse Travel Time = 10 minutes

Option 1 (Market St. N.B. to I-57 S.B. to I-74 E.B.) is the recommended detour route for closure of Ramp A. Option 2 is not recommended, because it requires more adverse travel time that Option 1 and the roadways are not sufficient for the detour traffic. Option 3 is not recommended, since it requires more adverse travel distance and time than Option 1. Option 4 is not recommended, because it requires more adverse travel time than Option 1 and interstate traffic is routed through several communities with residential neighborhoods, churches, schools, and businesses. Option 1 requires the least amount of adverse travel time, provides for local interchange access near the I-57 & I-74 interchange, minimizes the number of signs and turning movements required to navigate the detour, and primarily utilizes the interstate for the adverse travel.

**Ramp B: I-74 E.B. to I-57 S.B.**

The existing Ramp B is a wrap-around (two reverse curves) outer ramp that provides a connection from eastbound I-74 to southbound I-57 in the southwest quadrant of the interchange. Standard exit and entrance terminals connect the existing ramp to the interstates at each end. The proposed Ramp B connects eastbound I-74 to southbound I-57 in the southwest quadrant of the interchange with an outer ramp containing curves at each ramp terminal, two tangent sections, and a central curve. Two bridges are located in the central curve where proposed Ramp B crosses over proposed Ramp C. Standard exit and entrance terminals connect the proposed ramp to the interstates at each end. The tangent section near the I-74 exit terminal includes a minor divergence, where Ramp D splits from Ramp B and heads north. The tangent section near the I-57 entrance terminal includes a minor convergence, where Ramp E joins Ramp B from the north (see **Exhibit 3**). The profile for proposed Ramp B is as much as 35 feet higher than the existing Ramp B to provide clearance at the bridges over Ramp C. The profile is also partially controlled by the divergence of Ramp D for clearance over I-74 and the convergence of Ramp E for clearance over I-57.

The proposed exit terminal, curve, and tangent section are located outside the footprint of the existing ramp and could be constructed while maintaining traffic on the existing ramp. The exit ramp terminal could be constructed with the mainline pavement or a temporary connection could be constructed to tie the proposed ramp terminal to the existing pavement. The proposed entrance terminal, curve, and tangent section are also located outside the footprint of the existing ramp and could be constructed while maintaining traffic on the existing ramp. Since the proposed I-57 lane configuration matches the existing, the proposed entrance terminal could be constructed before mainline improvements and connected to the existing pavement, or it could be constructed with the mainline improvements and connected to the proposed pavement.

The proposed Ramp B crosses over the existing Ramps B and C in the center of the southwest quadrant. There are three options for constructing Ramp B at this location:

1. *Utilize temporary pavement to maintain traffic on Ramps B and C*
   Reconfigure existing loop Ramp C with tighter radii to reduce the footprint of the ramp, then reconfigure existing outer wrap-around Ramp B outside the proposed grading limits of proposed

Ramp B with tangents and a single curve between I-57 and I-74. Separate the reconfigured Ramps B and C with a temporary concrete barrier wall. After existing Ramps B and C have been reconfigured, proposed Ramp B could be constructed to the proposed grade while maintaining traffic on the reconfigured Ramps B and C. See **Exhibit 28** for an exhibit showing this temporary configuration. The additional cost to stage construct Ramp B for this option is $400,000, which includes the construction and removal of the temporary ramps and temporary concrete barrier wall. See **Exhibit 31** for a detailed staged construction cost estimate.

2. *Utilize temporary pavement to maintain traffic on Ramp B and close Ramp C:*
   Detour Ramp C traffic for a long-term closure of Ramp C. Reconfigure the existing outer Ramp B outside the proposed grading limits of proposed Ramp B with tangents and a single curve between I-57 and I-74 to reduce the ramp footprint. After existing Ramps B has been reconfigured, proposed Ramp B could be constructed to the proposed grade while maintaining traffic on the reconfigured Ramps B. See **Exhibit 28** for an exhibit showing this temporary configuration. Based on an adverse travel distance of 10.4 miles, the construction year 2020 ADT, and a detour time of 240 days, the detour for Ramp C would cost $946,171. See **Exhibit 30** for the Ramp C detour cost estimate. The additional cost to stage construct Ramp B for this option is $220,000, which includes the construction and removal of the temporary ramp. See **Exhibit 31** for a detailed staged construction cost estimate. The total additional cost to stage construct Ramp B for this option is $1,166,171.

3. *Close both Ramps B and C:*
   Detour Ramp B and C traffic to build the proposed Ramp B under temporary long-term closures. Based on an adverse travel distance of 7.0 miles, the construction year 2020 ADT, and a detour time of 240 days, the detour for Ramp B would cost $1,427,664. Based on an adverse travel distance of 10.4 miles, the construction year 2020 ADT, and a detour time of 240 days, the detour for Ramp C would cost $946,171. See **Exhibit 30** for the Ramp B and C detour cost estimates. The total additional cost to stage construct Ramp B for this option is $2,373,835.

The following are potential detour routes (see **Exhibit 32**) for closures of Ramp B (2020 ADT = 3,850):

1. I-57 N.B. to Market St. N.B. to I-57 S.B.
   Original Distance = 0.5 miles
   Detour Distance = 7.5 miles
   Adverse Travel Distance = 7.0 miles
   Adverse Travel Time = 8 minutes

2. Neil St. N.B. to I-74 W.B. to I-57 S.B.
   Original Distance = 0.5 miles
   Detour Distance = 5.9 miles
   Adverse Travel Distance = 5.4 miles
   Adverse Travel Time = 6 minutes

3. IL 47 S.B. to I-72 E.B. to I-57 S.B.
   Original Distance = 9.8 miles
   Detour Distance = 11.7 miles
   Adverse Travel Distance = 1.9 miles
   Adverse Travel Time = 7 minutes

Option 1 (I-57 N.B. to Market St. N.B. to I-57 S.B.) is the recommended detour route for closure of Ramp B. Option 2 is not recommended, because it requires two left turns on Neil St., which is a heavily traveled commercial corridor. Option 3 is not recommended, because it requires the interstate traffic to be routed through Mahomet, including residential neighborhoods and commercial corridors. Option 1 provides a similar adverse travel time to the other options, minimizes the number of signs and turning movements required to navigate the detour, and primarily utilizes the interstate for the adverse travel.

Recommendation

Option 2, which utilizes temporary pavement to maintain traffic on Ramp B and includes closure of Ramp C with a detour, is the recommended option for construction of Ramp B. While option 1 allows both Ramps B and C to remain open to traffic throughout the construction of Ramp B and costs less than Options 2, it introduces ramp radii that are tighter than the existing, which creates a safety concern for a ramp that already experiences crashes due to the low design speed of the ramp curvature. Option 2 allows Ramp B to remain open to traffic throughout the construction of Ramp B (with the exception of potential short term ramp closures), provides safe geometry for maintaining traffic during staged construction, and costs significantly less than Option 3.

**Ramp C: I-57 S.B. to I-74 E.B.**

The existing Ramp C is a loop ramp that provides a connection from southbound I-57 to eastbound I-74 in the southwest quadrant of the interchange. Weaving sections connect the existing ramp to the interstates at each end. The proposed Ramp C is also a loop ramp connecting southbound I-57 to eastbound I-74 in the southwest quadrant of the interchange. Standard exit and entrance terminals connect the proposed ramp to the interstates at each end (see **Exhibit 3**). The profile for the proposed Ramp C is similar to the existing Ramp C except at the I-74 entrance, where there is a grade raise of approximately 2.5 feet.

A large portion of the proposed Ramp C loop is located outside the footprint of the existing ramps in the southwest quadrant and could be constructed at any time. At the two locations where the proposed Ramp C cross over the existing Ramp B, see the Ramp B discussion above for options to stage construct Ramp C.

Temporary connections utilizing short-term full or partial ramp closures could be constructed to tie the proposed ramp to the existing ramp weave terminals. Since the proposed I-57 lane configuration matches the existing, the proposed exit terminal could be constructed before mainline improvements and connected to the existing pavement, or it could be constructed with or after the mainline improvements and connected to the proposed pavement. Due to the proposed adjustment of the I-74 lane configuration, the proposed entrance ramp terminal should be constructed with the mainline improvements utilizing temporary connections and short term full or partial ramp closures.

The following are potential detour routes (see **Exhibit 32**) for closures of Ramp C (2020 ADT = 2,150):

1. Curtis Rd. E.B. to I-57 N.B. to I-74 E.B.
   Original Distance = 0.6 miles
   Detour Distance = 11.8 miles
   Adverse Travel Distance = 11.2 miles
   Adverse Travel Time = 11 minutes

2. Market St. S.B. to Leverett Rd. E.B. to U.S. 45 S.B. to I-74 E.B.
   Original Distance = 9.0 miles
   Detour Distance = 8.6 miles
   Adverse Travel Distance = -0.4 miles (shorter)
   Adverse Travel Time = 4 minutes

3. I-74 W.B. to Prairie View Rd. S.B. to I-74 E.B.
   Original Distance = 0.6 miles
   Detour Distance = 11.0 miles
   Adverse Travel Distance = 10.4 miles
   Adverse Travel Time = 10 minutes

4. U.S. 136 E.B. to U.S. 45 S.B. to I-74 E.B.
   Original Distance = 18.7 miles
   Detour Distance = 15.0 miles
   Adverse Travel Distance = -3.7 miles (shorter)
   Adverse Travel Time = 3 minutes

5. U.S. 136 E.B. to IL 49 S.B. to I-74 E.B.
   Original Distance = 34.6 miles
   Detour Distance = 30.2 miles
   Adverse Travel Distance = -4.4 miles (shorter)
   Adverse Travel Time = 7 minutes

Option 1 (Curtis Rd. E.B. to I-57 N.B. to I-74 E.B.) is the recommended detour route for closure of Ramp C. Option 2 is not recommended because the roadways are not sufficient for the detour traffic. Option 3 is not recommended due to the potential for increased congestion at the I-74 & Prairie View Road interchange, which was experienced in 2014 during the I-74 overhead structure replacement project in Mahomet. Options 4 and 5 are not recommended, because they both require the interstate traffic to be routed through Rantoul, including residential neighborhoods and commercial corridors. Option 1 provides for local interchange access near the I-57 & I-74 interchange, minimizes the number of signs and turning movements required to navigate the detour, and primarily utilizes the interstate for the adverse travel.

As discussed in the Ramp B Recommendation above, the existing Ramp C will be closed with a temporary traffic detour while constructing the proposed Ramp B and C.

**Ramp D: I-74 E.B. to I-57 N.B.**

The existing Ramp D is a loop ramp that provides a connection from eastbound I-74 to northbound I-57 in the southeast quadrant of the interchange. Weaving sections connect the existing ramp to the interstates at each end. The proposed Ramp D is a curved flyover ramp connecting eastbound I-74 to northbound I-57. The proposed Ramp D departs Ramp B with a minor divergence in the southwest quadrant, crosses through the northwest quadrant, and connects to Ramp G with a minor convergence in the northeast quadrant. A curved bridge spans the proposed Ramp D over I-74 and I-57 (see **Exhibit 3**). Due to the new configuration of the proposed Ramp D, a grade raise is required to provide clearance over the interstates.

A majority of the proposed embankment and pavement for the proposed Ramp D is located outside the footprint of the existing roadways and could be constructed while maintaining traffic in the existing configuration. The bridge abutments, embankment, and pavement on either end of the bridge are located where the proposed Ramp D crosses over the existing Ramps B and G. The proposed Ramp D at these locations should be constructed after the proposed Ramps B and G have been opened to traffic, and the existing Ramps B and G have been closed. The bridge piers and superstructure for proposed Ramp D can be stage constructed to minimize disruptions to traffic. Two piers (in the I-74 median and near the loop Ramp E entrance to I-57 SB) conflict with the existing roadways. Use of temporary pavement widening along the outside (north) I-74 WB lanes could allow for construction of the pier in the I-74 median. If the proposed Ramp E is constructed and opened to traffic, the existing Ramp E closed to traffic, and the mainline proposed I-74 WB lanes completed, this pier could be constructed without the use of temporary pavement. Near the existing loop Ramp E entrance to I-57 SB, the loop ramp and entrance terminal could be modified with the use of temporary pavement to allow for construction of the pier.

The following are potential detour routes (see **Exhibit 32**) for closures of Ramp D (2020 ADT = 700):

1. I-57 S.B. to Curtis Rd. E.B. to I-57 N.B.
   Original Distance = 0.6 miles
   Detour Distance = 11.9 miles
   Adverse Travel Distance = 11.3 miles
   Adverse Travel Time = 11 minutes

2. Neil St. N.B. to I-74 W.B. to I-57 N.B.
   Original Distance = 0.6 miles
   Detour Distance = 5.1 miles
   Adverse Travel Distance = 4.5 miles
   Adverse Travel Time = 5 minutes

3. U.S. 45 N.B. to U.S. 136 W.B. to I-57 N.B.
   Original Distance = 13.4 miles
   Detour Distance = 19.3 miles
   Adverse Travel Distance = 5.9 miles
   Adverse Travel Time = 11 minutes

4. IL 47 N.B. to U.S. 136 E.B. to I-57 N.B.
   Original Distance = 20.6 miles
   Detour Distance = 19.5 miles
   Adverse Travel Distance = -1.1 miles (shorter)
   Adverse Travel Time = 6 minutes

Option 1 (I-57 S.B. to Curtis Rd. E.B. to I-57 N.B.) is the recommended detour route for closure of Ramp D. Option 2 is not recommended, because it requires two left turns on Neil St., which is a heavily traveled commercial corridor. Options 3 and 4 are not recommended routes, because they require the interstate traffic to be routed through towns with residential neighborhoods and either commercial corridors or various schools, churches, and businesses. Option 1 minimizes the number of signs and turning movements required to navigate the detour and primarily utilizes the interstate for the adverse travel.

**Ramp E: I-74 W.B. to I-57 S.B.**

The existing Ramp E is a loop ramp that provides a connection from westbound I-74 to southbound I-57 in the northwest quadrant of the interchange. Weaving sections connect the existing ramp to the interstates at each end. The proposed Ramp E is a curved flyover ramp connecting westbound I-74 to southbound I-57. The proposed Ramp E departs Ramp G with a minor divergence in the northeast quadrant, crosses through the southeast quadrant, and connects to Ramp B with a minor convergence in the southwest quadrant. A curved bridge spans the proposed Ramp E over proposed loop Ramp F, I-74, and I-57 (see **Exhibit 3**). Due to the new configuration of the proposed Ramp E, a grade raise is required to provide clearance over the proposed loop ramp and interstates.

A majority of the proposed embankment and pavement for the proposed Ramp E is located outside the footprint of the existing roadways and could be constructed while maintaining traffic in the existing configuration. The bridge abutment, embankment, and pavement on the south end of the bridge is located where the proposed Ramp E crosses over the existing Ramp B. The proposed Ramp E at this location should be constructed after the proposed Ramp B has been opened to traffic, and the existing Ramps B has been closed. The bridge piers and superstructure for proposed Ramp E can be stage constructed to minimize disruptions to traffic. Only one pier (in the I-74 median) conflicts with the existing roadways. Use of temporary pavement widening along the outside (north) I-74 WB lanes is required to construct the pier in the I-74 median.

The following are potential detour routes (see **Exhibit 32**) for closures of Ramp E (2020 ADT = 7,100):

1. I-57 N.B. to Market St. N.B. to I-57 S.B.
   Original Distance = 0.6 miles
   Detour Distance = 6.7 miles
   Adverse Travel Distance = 6.1 miles
   Adverse Travel Time = 7 minutes

2. IL 47 S.B. to I-72 E.B. to I-57 S.B.
   Original Distance = 2.8 miles
   Detour Distance = 18.7 miles
   Adverse Travel Distance = 15.9 miles
   Adverse Travel Time = 18 minutes

3. IL 49 S.B. to U.S. 36 W.B. to I-57 S.B.
   Original Distance = 44.4 miles
   Detour Distance = 41.9 miles
   Adverse Travel Distance = -2.5 miles (shorter)
   Adverse Travel Time = 10 minutes

Option 1 (I-57 N.B. to Market St. N.B. to I-57 S.B.) is the recommended detour route for closure of Ramp E. Options 2 and 3 are not recommended routes, because they require the interstate traffic to be routed through towns with residential neighborhoods and either commercial corridors or various schools, churches, and businesses. Option 1 requires the least amount of adverse travel time, provides for local interchange access near the I-57 & I-74 interchange, minimizes the number of signs and turning movements required to navigate the detour, and primarily utilizes the interstate for the adverse travel.

**Ramp F: I-57 N.B. to I-74 W.B.**

The existing Ramp F is a loop ramp that provides a connection from northbound I-57 to westbound I-74 in the northeast quadrant of the interchange. Weaving sections connect the existing ramp to the interstates at each end. The proposed Ramp F is also a loop ramp connecting northbound I-57 to westbound I-74 in the northeast quadrant of the interchange. Standard exit and entrance terminals connect the proposed ramp to the interstates at each end (see **Exhibit 3**). The profile for the proposed Ramp F is similar to the existing Ramp F except at the I-74 entrance, where there is a grade raise of approximately 2.5 feet.

A large portion of the proposed Ramp F loop is located outside the footprint of the existing ramps in the northeast quadrant and could be constructed at any time. At the two locations where the proposed Ramp F cross over the existing Ramp G, the proposed Ramp G will need to be in service and the existing Ramp G closed to traffic.

Temporary connections utilizing short-term full or partial ramp closures could be constructed to tie the proposed ramp to the existing ramp weave terminals. Since the proposed I-57 lane configuration matches the existing, the proposed exit terminal could be constructed before mainline improvements and connected to the existing pavement, or it could be constructed with or after the mainline improvements and connected to the proposed pavement. Due to the proposed adjustment of the I-74 lane configuration, the proposed entrance ramp terminal should be constructed with the mainline improvements utilizing temporary connections and short term full or partial ramp closures.

The following are potential detour routes (see **Exhibit 32**) for closures of Ramp F (2020 ADT = 4,000):

1. Market St. N.B. to I-57 S.B. to I-74 W.B.
   Original Distance = 0.6 miles
   Detour Distance = 6.7 miles
   Adverse Travel Distance = 6.1 miles
   Adverse Travel Time = 7 minutes

2. I-74 E.B. to Neil St. N.B. to I-74 W.B.
   Original Distance = 0.6 miles
   Detour Distance = 5.1 miles
   Adverse Travel Distance = 4.5 miles
   Adverse Travel Time = 5 minutes
3. I-72 W.B. to IL 47 N.B. to I-74 W.B.
   Original Distance = 9.9 miles
   Detour Distance = 11.8 miles
   Adverse Travel Distance = 1.9 miles
   Adverse Travel Time = 7 minutes

Option 1 (Market St. N.B. to I-57 S.B. to I-74 W.B.) is the recommended detour route for closure of Ramp F. Option 2 is not recommended, because it requires two left turns on Neil St., which is a heavily traveled commercial corridor. Option 3 is not recommended, because it requires the interstate traffic to be routed through Mahomet, including residential neighborhoods and commercial corridors. Option 1 provides similar adverse travel times to the other options, minimizes the number of signs and turning movements required to navigate the detour, and primarily utilizes the interstate for the adverse travel.

**Ramp G: I-74 W.B. to I-57 N.B.**

The existing Ramp G is a wrap-around (two reverse curves) outer ramp that provides a connection from westbound I-74 to northbound I-57 in the northeast quadrant of the interchange. Standard exit and entrance terminals connect the existing ramp to the interstates at each end. The proposed Ramp G connects westbound I-74 to northbound I-57 in the northeast quadrant of the interchange with an outer ramp containing curves at each ramp terminal, two tangent sections, and a central curve. Two bridges are located in the central curve where proposed Ramp G crosses over proposed Ramp F. A standard exit terminal and standard entrance terminal with auxiliary lane connect the proposed ramp to the interstates at each end. The tangent section near the I-74 exit terminal includes a minor divergence, where Ramp E splits from Ramp G and heads south. The tangent section near the I-57 entrance terminal includes a minor convergence, where Ramp D joins Ramp G from the south (see **Exhibit 3**). The profile for proposed Ramp G is as much as 30 feet higher than the existing Ramp G to provide clearance at the bridges over Ramp F. The profile is also partially controlled by the divergence of Ramp E for clearance over I-74 and the convergence of Ramp D for clearance over I-57.

The proposed ramp is located outside the footprint of the existing ramp and could be constructed while maintaining traffic on the existing ramp. The exit ramp terminal could be constructed with the mainline pavement or a temporary connection could be constructed to tie the proposed ramp terminal to the existing pavement. The proposed entrance terminal and northbound I-57 auxiliary lane should be constructed with Ramp G to provide the proposed geometry for the weaving section between Ramp G and Olympian Ramp B.

The following are potential detour routes (see **Exhibit 32**) for closures of Ramp G (2020 ADT = 2,200):

1. I-57 S.B. to Curtis Rd. E.B. to I-57 N.B.
   Original Distance = 0.5 miles
   Detour Distance = 12.7 miles
   Adverse Travel Distance = 12.2 miles
   Adverse Travel Time = 12 minutes

2. U.S. 45 N.B. to U.S. 136 W.B. to I-57 N.B.
   Original Distance = 18.2 miles
   Detour Distance = 14.5 miles
   Adverse Travel Distance = -3.7 miles (shorter)
   Adverse Travel Time = 2 minutes
3. IL 47 N.B. to U.S. 136 E.B. to I-57 N.B.
   Original Distance = 13.0 miles
   Detour Distance = 26.5 miles
   Adverse Travel Distance = 13.5 miles
   Adverse Travel Time = 18 minutes

4. IL 49 N.B. to U.S. 136 W.B. to I-57 N.B.
   Original Distance = 34.0 miles
   Detour Distance = 29.5 miles
   Adverse Travel Distance = -4.5 miles (shorter)
   Adverse Travel Time = 7 minutes

Option 1 (I-57 S.B. to Curtis Rd. E.B. to I-57 N.B.) is the recommended detour route for closure of Ramp G. Options 2, 3, and 4 are not recommended routes, because they require the interstate traffic to be routed through towns with residential neighborhoods and either commercial corridors or various schools, churches, and businesses. Option 1 minimizes the number signs and turning movements required to navigate the detour and primarily utilizes the interstate for the adverse travel.

**Ramp H: I-57 S.B. to I-74 W.B.**

The existing Ramp H is a wrap-around (two reverse curves) outer ramp that provides a connection from southbound I-57 to westbound I-74 in the northwest quadrant of the interchange. Standard exit and entrance terminals connect the existing ramp to the interstates at each end. The proposed Ramp H consists of an outer ramp with a single curve connecting southbound I-57 to westbound I-74 in the northwest quadrant of the interchange. A standard exit terminal with auxiliary lane and standard entrance terminal connect the proposed ramp to the interstates at each end (see **Exhibit 3**). The profile for the proposed Ramp H is similar to the existing Ramp H, so there is no significant grade change for the proposed Ramp H.

The proposed Ramp H crosses over the existing Ramp H near the exit and entrance terminals on each side. Temporary connections utilizing short-term full or partial ramp closures could be constructed at these locations to tie the proposed ramp to the existing ramp terminals. The proposed exit terminal could be constructed before mainline improvements and connected to the existing pavement, or it could be constructed with or after the mainline improvements and connected to the proposed pavement. The proposed entrance terminal has some overlap with the existing entrance terminal. Since the proposed I-74 lane configuration differs from the existing, this entrance terminal should be constructed with the mainline improvements utilizing temporary connections and short term full or partial ramp closures.

The proposed Ramp H also crosses over the existing loop Ramp E. In order to maintain traffic on Ramp E, the proposed Ramp H should not be constructed until after the proposed flyover Ramp E is constructed and opened to traffic. This would not require any additional temporary connections or delay in schedule, so a long-term closure of Ramp E is not considered as a feasible alternative for constructing and placing traffic on proposed Ramp H.

The following are potential detour routes (see **Exhibit 32**) for closures of Ramp H (2020 ADT = 850):

1. Curtis Rd. E.B. to I-57 N.B. to I-74 W.B.
   Original Distance = 0.5 miles
   Detour Distance = 12.7 miles
   Adverse Travel Distance = 12.2 miles
   Adverse Travel Time = 12 minutes

2. I-74 E.B. to Neil St. N.B. to I-74 W.B.
   Original Distance = 0.5 miles
   Detour Distance = 5.9 miles
   Adverse Travel Distance = 5.4 miles
   Adverse Travel Time = 6 minutes

3. I-72 W.B. to IL 47 N.B. to I-74 W.B.
   Original Distance = 7.6 miles
   Detour Distance = 13.9 miles
   Adverse Travel Distance = 6.3 miles
   Adverse Travel Time = 10 minutes

4. U.S. 136 W.B. to IL 47 S.B. to I-74 W.B.
   Original Distance = 20.5 miles
   Detour Distance = 19.0 miles
   Adverse Travel Distance = -1.5 miles (shorter)
   Adverse Travel Time = 6 minutes

Option 1 (Curtis Rd. E.B. to I-57 N.B. to I-74 W.B.) is the recommended detour route for closure of Ramp H. Option 2 is not recommended, because it requires two left turns on Neil St., which is a heavily traveled commercial corridor. Options 3 and 4 are not recommended routes, because they require the interstate traffic to be routed through towns with residential neighborhoods and either commercial corridors or various schools, churches, and businesses. Option 1 minimizes the number signs and turning movements required to navigate the detour and primarily utilizes the interstate for the adverse travel.

**Prospect Avenue Ramp A to W.B. I-74**

The existing I-74 and Prospect Avenue interchange is a diamond type interchange with diagonal ramps in each quadrant. The existing Prospect Avenue Ramp A provides a connection from Prospect Avenue to westbound I-74 in the northwest quadrant of the interchange. The proposed Prospect Avenue Ramp A is similar in configuration to the existing. An entrance terminal with auxiliary lane connects the proposed ramp to I-74 (see **Exhibit 3**). The profile for the proposed ramp is similar to the existing ramp, so there is no significant grade change for the proposed ramp.

The proposed entrance ramp and terminal overlap the existing ramp, and the proposed I-74 lane configuration includes a new, outside third lane that is added at this ramp entrance. This entrance ramp and terminal should be constructed with the mainline I-74 improvements utilizing short term full or partial ramp closures.

The following are potential detour routes (see **Exhibit 32**) for closures of Prospect Avenue Ramp A (2020 ADT = 5,249):

1. Prospect Ave. S.B. to Bradley Ave. E.B. to Neil St. N.B. to I-74 W.B.
   Original Distance = 0.3 miles
   Detour Distance = 3.0 miles
   Adverse Travel Distance = 2.7 miles
   Adverse Travel Time = 5 minutes

2. Prospect Ave. N.B. to Marketview Dr. E.B. to Neil St. S.B. to I-74 W.B.
   Original Distance = 0.3 miles
   Detour Distance = 2.1 miles
   Adverse Travel Distance = 1.8 miles
   Adverse Travel Time = 3 minutes

3. Prospect Ave S.B. to I-74 E.B. to Neil St. N.B. to I-74 W.B.
   Original Distance = 0.3 miles
   Detour Distance = 2.1 miles
   Adverse Travel Distance = 1.8 miles
   Adverse Travel Time = 3 minutes

Option 3 (Prospect Ave S.B. to I-74 E.B. to Neil St. N.B. to I-74 W.B.) is the recommended detour route for closure of Prospect Avenue Ramp A. Option 3 requires the least amount of adverse travel distance and time and primarily utilizes the interstates for the detour traffic.

**Prospect Avenue Ramp C from E.B. I-74**

The existing Prospect Avenue Ramp C provides a connection from eastbound I-74 to Prospect Avenue in the southwest quadrant of the interchange. The proposed Prospect Avenue Ramp C is similar in configuration to the existing. An exit terminal with auxiliary lane connects the proposed ramp to I-74 (see **Exhibit 3**). The profile for the proposed ramp is similar to the existing ramp, so there is no significant grade change for the proposed ramp.

The proposed exit ramp and terminal overlap the existing ramp, and the proposed I-74 lane configuration includes a new, outside third lane that is dropped at this ramp exit. This exit ramp and terminal should be constructed with the mainline I-74 improvements utilizing short term full or partial ramp closures.

The following are potential detour routes (see **Exhibit 32**) for closures of Prospect Avenue Ramp C (2020 ADT = 4,903):

1. I-74 E.B. to Neil St. S.B. to Bradley Ave. W.B. to Prospect Ave.
   Original Distance = 0.3 miles
   Detour Distance = 2.8 miles
   Adverse Travel Distance = 2.5 miles
   Adverse Travel Time = 5 minutes

2. I-74 E.B. to Neil St. N.B. to Marketview Rd. W.B. to Prospect Ave.
   Original Distance = 0.3 miles
   Detour Distance = 2.4 miles
   Adverse Travel Distance = 2.1 miles
   Adverse Travel Time = 5 minutes

3. I-74 E.B. to Neil St. N.B. to I-74 W.B. to Prospect Ave.
   Original Distance = 0.3 miles
   Detour Distance = 2.1 miles
   Adverse Travel Distance = 1.8 miles
   Adverse Travel Time = 4 minutes

Option 3 (I-74 E.B. to Neil St. N.B. to I-74 W.B. to Prospect Ave.) is the recommended detour route for closure of Prospect Avenue Ramp C. Option 3 requires the least amount of adverse travel distance and time and primarily utilizes the interstates for the detour traffic.

**Olympian Drive Ramp B from N.B. I-57**

The existing I-57 and Olympian Drive interchange is a diamond type interchange with diagonal ramps in each quadrant. The existing Olympian Drive Ramp B provides a connection from northbound I-57 to Olympian Drive in the southeast quadrant of the interchange. The proposed Olympian Drive Ramp B is similar in configuration to the existing. An exit terminal with auxiliary lane connects the proposed ramp to I-57 (see **Exhibit 3**). The profile for the proposed ramp is similar to the existing ramp, so there is no significant grade change for the proposed ramp.

The proposed exit ramp and terminal overlap the existing ramp, and the proposed I-57 lane configuration includes a new, outside third lane that is dropped at this ramp exit. This exit ramp and terminal should be constructed with the mainline I-57 improvements utilizing short term full or partial ramp closures.

The following are potential detour routes (see **Exhibit 32**) for closures of Olympian Drive Ramp B (2020 ADT = 1,930):

1. I-57 N.B. to Market St. S.B. to Olympian Dr.
   Original Distance = 0.3 miles
   Detour Distance = 5.8 miles
   Adverse Travel Distance = 5.5 miles
   Adverse Travel Time = 7 minutes

2. I-57 N.B. to Market St. N.B. to Hensley Rd. W.B. to Mattis Ave. S.B. to Olympian Dr.
   Original Distance = 0.3 miles
   Detour Distance = 6.7 miles
   Adverse Travel Distance = 6.4 miles
   Adverse Travel Time = 9 minutes

3. I-57 N.B. to Market St. N.B. to I-57 S.B. to Olympian Dr.
   Original Distance = 0.3 miles
   Detour Distance = 5.0 miles
   Adverse Travel Distance = 4.7 miles
   Adverse Travel Time = 6 minutes

Option 3 (I-57 N.B. to Market St. N.B. to I-57 S.B. to Olympian Dr.) is the recommended detour route for closure of Olympian Drive Ramp B. Option 3 requires the least amount of adverse travel distance and time and primarily utilizes the interstates for the detour traffic.

**Olympian Drive Ramp C to S.B. I-57**

The existing Olympian Drive Ramp C provides a connection from Olympian Drive to southbound I-57 in the southwest quadrant of the interchange. The proposed Olympian Drive Ramp C is similar in configuration to the existing. An entrance terminal with auxiliary lane connects the proposed ramp to I-57 (see **Exhibit 3**). The profile for the proposed ramp is similar to the existing ramp, so there is no significant grade change for the proposed ramp.

The proposed entrance ramp and terminal overlap the existing ramp, and the proposed I-57 lane configuration includes a new, outside third lane that is added at this ramp entrance. This entrance ramp

and terminal should be constructed with the mainline I-57 improvements utilizing short term full or partial ramp closures.

The following are potential detour routes (see **Exhibit 32**) for closures of Olympian Drive Ramp C (2020 ADT = 2,294):

1. Olympian Dr. E.B. to Market St. N.B. to I-57 S.B.
   Original Distance = 0.2 miles
   Detour Distance = 6.1 miles
   Adverse Travel Distance = 5.9 miles
   Adverse Travel Time = 8 minutes

2. Olympian Dr. W.B. to Mattis Ave. N.B. to Hensley Rd. E.B. to Market St. S.B. to I-57 S.B.
   Original Distance = 0.2 miles
   Detour Distance = 6.4 miles
   Adverse Travel Distance = 6.2 miles
   Adverse Travel Time = 8 minutes

3. Olympian Dr. E.B. to I-57 N.B. to Market St. N.B. to I-57 S.B.
   Original Distance = 0.2 miles
   Detour Distance = 4.9 miles
   Adverse Travel Distance = 4.7 miles
   Adverse Travel Time = 5 minutes

Option 3 (Olympian Dr. E.B. to I-57 N.B. to Market St. N.B. to I-57 S.B.) is the recommended detour route for closure of Olympian Drive Ramp C. Option 1 requires less adverse travel distance than Option 2. Option 3 requires the least amount of adverse travel distance and time and primarily utilizes the interstates for the detour traffic.

**D. Staging Summary**

The staged construction of the I-57 & I-74 interchange will include three construction contracts that include multiple construction stages to maintain traffic during construction. Additional contracts could be identified during design or as funding is available. The first two contracts, identified as Contract 1 and Contract 2, include the reconstruction of adjacent grade separation structures over the interstates. These must be constructed prior to Contract 3, the proposed interstates and ramps, to provide the necessary horizontal and vertical clearances for the proposed roadways below them. **Exhibit 29** depicts the overall staging concept.

Contract 1 includes the reconstruction of the North Mattis Avenue structures over I-74 and I-57 and the adjacent roadway approaches. Mattis over I-74 will be staged to allow for two travel lanes, one in each direction, during construction, while Mattis over I-57 will be staged to allow for one travel lane, one-way operations, controlled by temporary signals during construction.

Contract 2 includes the reconstruction of the U.S. 150 (Bloomington Road) structure over I-57 and the adjacent roadway approaches. U.S. 150 over I-57 will be staged to allow for one travel lane, one-way operations, controlled by temporary signals during construction.

Contract 3 includes the reconstruction of I-57, I-74, the I-57 & I-74 ramps, the Prospect Ave. ramps, and the Olympian Dr. ramps. Two lanes of traffic in each direction will be maintained on the interstates with the exception of certain locations where short term single lane closures are required to construct the proposed lanes and shoulders. Traffic will be maintained at all times on the existing, proposed, or temporary ramps except for temporary Ramp C closure and short term full or partial closures required to complete ramp connections. The controlling item for the interchange reconstruction is the removal of the mainline weave on I-74 to allow for staged construction of the I-74 structures over I-57. To accomplish this, the overall staging sequence includes: temporary closure of Ramp C, Pre-Stage work to modify existing Ramp B to allow for construction of proposed Ramp B; Stage 1 work to construct all of outer Ramps B and G and portions of flyover Ramps D and E; Stage 2 work to construct loop ramps C and F and complete construction of flyover Ramps D and E; and Stage 3 work to construct the interstates, I-74 structures, Ramps A and H, Prospect Ramps A and C, and Olympian Ramps B and C. The Stage 3 mainline work could occur concurrently with all other stages of construction in Contract 3 with the exception of the I-74 roadway grade raise and structure replacement over I-57.

The primary recommended detour routes for ramp closures include the use of the Market Street and Curtis Road interchanges along I-57, which are unsignalized diamond interchanges. The need for temporary traffic signals at these interchanges is anticipated and should be considered during the design phase to prevent traffic queues on the exit ramps from extending onto the mainline interstate. The use of the immediately adjacent interchanges along I-74 and I-57 (I-72, Neil Street, Olympian Drive, and Prairie View Road) for the primary ramp detour routes is not recommended due to the close proximity to the work zone, potential presence of backup/queues from the interstate construction at these interchanges, and recent issues noted by District 5 personnel with traffic backups when utilizing some of these interchanges as detour routes for other projects. These interchanges are, however, recommended for potential short-term, off-peak (nightly) closure of the interstates for beam removal and erection. Since these detours will be limited to only off-peak times when the traffic volumes are low, traffic backups are not anticipated.

Each detour route meets the minimum travelled way and roadway width as prescribed by the Bureau of Design and Environment Manual Figure 55-3.D. The condition of each existing facility should be evaluated during design to determine if any roadway pavement patches or surface courses should be applied before or after the route is used as a detour. All recommendations in this TMP have been selected to meet the statewide safety and mobility goals and to comply with IDTO and FHWA policies for staged construction.

## 8. Traffic Control Plan

Eff. 09-11-1990 Rev. 01-01-2014

Traffic control shall be in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, the applicable guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, these Special Provisions, and any other special details and highway standards contained herein and in the plans.

Special attention is called to Articles 107.09 and 107.14 of the Standard Specifications, the following Highway Standards relating to Traffic Control, and the listed Supplemental Specifications and Recurring Special Provisions.

Highway Standards:

701001, 701006, 701011, 701101, 701106, 701201, 701206, 701301, 701306, 701311, 701321, 701326, 701400, 701401, 701402, 701406, 701411, 701416, 701421, 701422, 701423, 701426, 701427, 701428, 701446, 701451, 701456, 701611, 701901, D5-70103710, D5-X7011005

Supplemental Specifications and Recurring Special Provisions:

- Work Zone Traffic Control and Protection
- Impact Attenuators, Temporary
- Movable Traffic Barrier
- Work Zone Traffic Control Devices
- Temporary Portable Bridge Traffic Signals
- Work Zone Public Information Signs
- Night Time Inspection of Roadway Lighting

Special Provisions:

- Traffic Control – Additional Signage on Entrance Ramps
- Traffic Control and Protection (Special)
- Changeable Message Sign
- Cooperation between Contractors
- Sequence of Operations
- Speed Display Trailer (BDE)
- Temporary Traffic Control Device Deployment and Removal
- Traffic Control Removal
- Uneven Lanes
- Edge of Pavement Drop-Off
- Equipment Parking and Storage
- Ramp Rental
- Lane Rental I-74 & I-57

Plan Details:

- Construction Staging and Maintenance of Traffic Plans

Limits of Construction: The Contractor shall coordinate the items of work in order to keep hazards and traffic inconveniences to a minimum, as specified below.

1. The Contractor shall provide, erect, and maintain all the necessary barricades, cones, drums, flags, and lights for the warning and protection of traffic, as required by Sections 107 and 701 through 703 of the Standard Specifications.

2. Work shall not be performed that will reduce the existing vertical clearances on I-57 or I-74.

3. “TRUCKS ENTERING AND LEAVING ROAD” signs shall be displayed as directed by the Engineer during periods when material or equipment is being hauled to or from the project site. This work shall be included in the cost for Traffic Control and Protection (Special).

4. Dual display “ROAD CONSTRUCTION AHEAD” signs and “BE PREPARED TO STOP” signs shall be placed along the eastbound and westbound I-74 lanes and northbound and southbound I-57 lanes approaching the work zone as directed by the Engineer and shall be included in the cost for Traffic Control and Protection (Special).

5. In addition to the flaggers required by the various standards, additional flaggers shall be provided, if required by the Engineer, and they will be paid in accordance with Article 109.04 of the Standard Specifications.

6. The Contractor shall have responsibility for all Traffic Control Devices throughout the entire project. Any additional work or material shall be considered included in the contract unit price for Traffic Control and Protection (Special).

7. Any inconvenience or delays caused by the Contractor in complying with this Special Provision will be considered as included in the contract unit price for Traffic Control and Protection (Special) and no additional compensation will be allowed.

8. At any particular location, the Contractor shall work on only one side of the pavement at a time and shall keep all equipment, materials, and vehicles off the pavement, the shoulder, and right-of-way on the side of the pavement open to traffic.

Traffic: It is the intention of the Department that FAI 74 and FAI 57 be kept open to traffic at all times during the construction of this section. FAI 74 and FAI 57 shall have all lanes of traffic open with the exception of temporary lane closures at certain locations, which shall be permitted as specified herein:

Patching and Inlay:

- I-74 EB: 7 PM – 6 AM
- I-74 WB: 7 PM – 7 AM
- I-57 NB: 6 PM – 7 AM
- I-57 SB: 7 PM – 7 AM

Interstate Reconstruction:

- I-74 EB: 7 PM – 6 AM
- I-74 WB: 7 PM – 10 AM
- I-57 NB: 6 PM – 7 AM
- I-57 SB: 7 PM – 1 PM

Should the Contractor fail to comply with the time restrictions, the Contractor shall be liable to the Department for the amount of $1,000, not as a penalty, but as liquidated and ascertained damages for each and every 15 minute interval, or a portion thereof, that a lane is blocked outside the allowable time limits. Such damages may be deducted by the Department from any monies due to the Contractor. These damages shall apply during the contract time and during any extensions of the contract time.

In fixing the damages as set out herein, the desire is to establish a certain mode of calculation for the work because the Department’s actual loss, in the event of delay, cannot be predetermined, would be difficult of ascertainment, and a matter of argument and

unprofitable ligation. This mode is an equitable rule for measurement of the Department's actual loss and fairly takes into account the loss of use of the roadway if the work is delayed in completion. The Department shall not be required to provide any actual loss to recover these liquidated damages provided herein. Furthermore, no provision of this clause shall be construed as a penalty, as such is not the intention of the parties.

The following traffic control standards shall be utilized during, but not limited to, the listed construction operations:

TRAFFIC CONTROL AND PROTECTION, STANDARD 701001
Traffic Control and Protection, Standard 701001 shall be used for work on Mattis Avenue and Bloomington Road for work which is performed beyond 15' from the edge of the traffic lane.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701006
Traffic Control and Protection, Standard 701006 shall be used for work on Mattis Avenue and Bloomington Road for work which is performed within 15', but not closer than 2' to the edge of the traffic lane.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701011
Traffic Control and Protection, Standard 701011 shall be used for off-road moving operations work which is performed at the edge of the traffic lane of Mattis Avenue and Bloomington Road.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701101
Traffic Control and Protection, Standard 701101 shall be used for work on I-74, I-57 and all ramps that are 2' to 15' away from the edge of pavement. This work may include but not necessarily be limited to guardrail work, delineator work, earthwork, riprap, and seeding.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701106
Traffic Control and Protection, Standard 701106 shall be used for work on I-74, I-57 and all ramps that are more than 15' away from the edge of pavement. This work may include but not necessarily be limited to earthwork and seeding.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701201
Traffic Control and Protection, Standard 701201 shall be used for a daytime only lane closure along Mattis Avenue and Bloomington Road when patching or underground pipe work is completed.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701206
Traffic Control and Protection, Standard 701206 shall be used for a night time only lane closure along Mattis Avenue and Bloomington Road when patching or underground pipe work is completed.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701301
Traffic Control and Protection, Standard 701301 shall be used along Mattis Avenue and Bloomington Road when short time work operations are being performed. Typical operations are hot mix density testing, application of temporary pavement marking, marking patches, and miscellaneous survey operations.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701306

Traffic Control and Protection, Standard 701306 shall be used along Mattis Avenue and Bloomington Road when a daytime only lane closure is required for milling, resurfacing or when shoulder work is being completed.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701311

Traffic Control and Protection, Standard 701311 shall be used when moving operations (daytime only) are being performed. Typical operations are landscaping, application of pavement marking and miscellaneous utility operations.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701321

Traffic Control and Protection, Standard 701321 shall be used along Mattis Avenue and Bloomington Road for a lane closure with a temporary traffic signal to accommodate staged construction of the proposed bridge replacements.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701326

Traffic Control and Protection, Standard 701326 shall be used along Mattis Avenue and Bloomington Road when conducting pavement widening operations.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701400

Traffic Control and Protection, Standard 701400 shall be used for work on I-74 and I-57 for approaches to work zones requiring a lane closure on I-74 or I-57.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701401

Traffic Control and Protection, Standard 701401 shall be used on I-74 and I-57 for work areas requiring a lane closure on I-74 or I-57. These operations shall include, but not necessarily limited to, pavement patching, HMA surface removal, HMA resurfacing, and HMA shoulders. This standard shall always be used in conjunction with Traffic Control and Protection, Standard 701400.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701402

Traffic Control and Protection, Standard 701402 shall be used on I-74 and I-57 for work areas requiring a lane closures using temporary concrete barrier.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701406

Traffic Control and Protection, Standard 701406 shall be used on I-74 and I-57 for daylight operations only for work which encroaches on the lane adjacent to a shoulder or on the shoulder within 2’ of the edge of pavement.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701411

Traffic Control and Protection, Standard 701411 shall be used on I-74 and I-57 for operations requiring lane closures on I-74 or I-57 in close proximity to the entrance and exit ramps at the interchanges. These operations may include, but not necessarily be limited to, shoulder patching, pavement patching, HMA resurfacing, and HMA shoulders. The interchange ramps, shall, at all times, be kept open to traffic. The yield signs required by Standard 701411 shall be placed as directed by the Engineer. Additional drums or cones shall be required 200 feet prior to the ramp opening on the mainline. The devices shall be placed at 50 foot centers to help delineate the location of the ramp opening. Dual display BE PREPARED TO STOP signs shall be placed at all ramp locations within the project limits. No additional compensation will be allowed for complying with these requirements.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701416

Traffic Control and Protection, Standard 701416 shall be used on I-74 and I-57 for operations requiring lane closures on I-74 or I-57 with a crossover and barrier wall.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701421

Traffic Control and Protection, Standard 701421 shall be used along Mattis Avenue and Bloomington Road for work which requires a lane closure.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701422

Traffic Control and Protection, Standard 701422 shall be used along Mattis Avenue and Bloomington Road for work which encroaches on the lane adjacent to a shoulder or on the shoulder within 2' of the edge of pavement.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701423

Traffic Control and Protection, Standard 701423 shall be on I-74, I-57, Mattis Avenue, and Bloomington Road for work with a temporary lane closure when no median barrier wall is required.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701426

Traffic Control and Protection, Standard 701426 shall be used for moving or intermittent operations on I-74 and I-57. This work may include, but not necessarily be limited to, pavement marking operations.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701427

Traffic Control and Protection, Standard 701427 shall be used for moving or intermittent operations on a multilane facility. This work may include, but not necessarily be limited to, landscaping, pavement marking and utility operations.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701428

Traffic Control and Protection, Standard 701428 shall be used for setup and removal of lane closures on freeways/expressways having ADT greater than 25,000.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701446

Traffic Control and Protection, Standard 701446 shall be used on I-74 and should only be used if a two-lane closure on I-74 would be necessary after completion of the third lane in each direction.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701451

Traffic Control and Protection, Standard 701451 shall be used for the temporary closure of any ramp adjacent to I-74 or I-57 when connections require the full closure of a ramp.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701456

Traffic Control and Protection, Standard 701456 shall be used for work on exit ramps adjacent to I-74 or I-57 when a partial ramp closure encroaches on a lane of traffic.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701611

Traffic Control and Protection, Standard 701611 shall be used for the work on Mattis Avenue near I-74 where traffic will be reduced from 2 lanes each way to one lane each way.

TRAFFIC CONTROL AND PROTECTION, STANDARD 701901
This standard includes the traffic control device details.

TRAFFIC CONTROL AND PROTECTION, STANDARD D5-70103710
Traffic Control and Protection, Standard D5-70103710 shall be used for work that requires either a daytime partial ramp closure or a full ramp closure.

TRAFFIC CONTROL AND PROTECTION, STANDARD D5-X7011005
Traffic Control and Protection, Standard D5-X7011005 shall be used for work requiring an interstate closure with detours using entrance and exit ramps.

TRAFFIC CONTROL – ADDITIONAL SIGNING ON ENTRANCE RAMPS
The Contractor shall install Dual Displayed "Road Construction Ahead" & "Be Prepared to Stop" signs at all entrance ramps located within the project limits.

These signs shall be in place and in operation continuously from the first closure, until no further lane closures are needed.

This work will not be measured for payment separately, but shall be considered as included in the cost of TRAFFIC CONTROL AND PROTECTION (SPECIAL) with no additional compensation allowed.

TRAFFIC CONTROL AND PROTECTION (SPECIAL)
This item of work shall include furnishing, installing, maintaining, replacing, relocating, and removing all traffic control devices used for the purpose of regulating, warning, or directing traffic during the construction or maintenance of improvements on FAI 74, FAI 57, Mattis Avenue, Bloomington Road and all interchange ramps.

Traffic Control and Protection (Special) shall be provided as called for in the Plans, these Special Provisions, applicable Highway Standards, applicable sections of the Standard Specifications, or as directed by the Engineer.

All traffic control devices used on this project shall conform to the Plans, Special Provisions, Traffic Control Standards, "Illinois Supplement to the National Manual on Uniform Traffic Control Devices", and "Manual on Uniform Traffic Control Devices." No modification of these requirements will be allowed without prior written approval of the Engineer.

Traffic Control Devices include signs and their supports, signals, barricades with sand bags, channelizing devices, warning lights, arrow boards, flaggers, or any other device used for the purpose of regulating, detouring, warning, or guiding traffic through or around the construction zone. Special attention shall be given to advance warning signs during construction operations in order to keep lane assignment consistent with barricade placement at all times. The Contractor shall immediately remove, cover, or turn from the view of the motorists, all traffic control devices which are inconsistent with detour or lane assignment patterns and conflicting conditions during the transition from one construction stage to another. When the Contractor elects to cover conflicting or inappropriate signing, materials used shall cover the entire sign. The method used for covering the signing shall meet the approval of the Engineer.

The Contractor shall coordinate all traffic control work on this project with adjoining or overlapping projects, including barricade placement necessary to provide a uniform traffic detour pattern. Lane

closures shall only be left in place as long as they are needed. At all other times, traffic control shall be removed unless directed by the Engineer. Failure to restore lanes to full width will result in a traffic control deficiency as specified in Article 105.03.

Items not included in the standards, details, or specifications including but not limited to Temporary Pavement Markings, Changeable Message Signs, and Temporary Concrete Barrier Wall will be measured for payment and paid for separately as outlined in the Standard Specifications for Road and Bridge Construction or in these Special Provisions.

All traffic control and protection standard items described and listed in the Traffic Control Plan included herein shall not be measured and paid for separately but instead shall be considered as included in the cost of Traffic Control and Protection (Special). All of this work will be measured for payment on a lump sum basis and paid for at the contract lump sum price for TRAFFIC CONTROL and PROTECTION (SPECIAL) with no additional compensation allowed.

CHANGEABLE MESSAGE SIGN

Eff. 03-23-2004 Rev. 01-01-2014

This work shall consist of furnishing, placing, and maintaining changeable message sign(s) at the location(s) shown on the plans or as directed by the Engineer.

The sign(s) shall be trailer mounted. The message panel shall be at least 7 ft (2.1 m) above the pavement, present a level appearance, and be capable of displaying up to eight characters in each of three lines at a time. Character height shall be 18 inches (450 mm).

The message panel shall be of either a bulb matrix or disc matrix design controlled by an onboard computer capable of storing a minimum of 99 programmed messages for instant recall. The computer shall be capable of being programmed to accept messages created by the operator via an alpha-numeric keyboard and able to flash and six message sequence. The message panel shall also be capable of being controlled by a computer from a remote location via a cellular linkage. The Contractor shall supply the modem, the cellular phone, and the necessary software to run the sign from a remote computer at a location designed by the Engineer. The Contractor shall promptly program and/or reprogram the computer to provide the messages as directed by the Engineer.

The message panel shall be visible from 1/4 mile (400 m) under both day and night conditions. The letters shall be legible from 750 ft (250 m).

The sign shall include automatic dimming for nighttime operation and a power supply capable of providing 24 hours of uninterrupted service.

The Contractor shall provide all preventative maintenance efforts she/he deems necessary to achieve uninterrupted service. If service is interrupted for any cause and not restored within 24 hours, the Engineer will cause such work to be performed as may be necessary to provide this service. The cost of such work shall be borne by the Contractor or deducted from current or future compensation due to the Contractor.

When the sign(s) are displaying messages, they shall be considered a traffic control device. At all times when no message is displayed, they shall be considered equipment.

Basis of Payment: When portable changeable message signs are shown on the Standard, this work will not be paid for separately, but shall be considered as included in the cost of the Standard.

For all other portable changeable message signs, this work will be paid for at the contract unit price per CALENDAR DAY for CHANGEABLE MESSAGE SIGN. Any portion of one calendar day during which the sign is operated as directed by the Engineer shall be paid as one full calendar day.

COOPERATION BETWEEN CONTRACTORS

There is a possibility that other Contractor operations may be ongoing within the proposed project limit at the same time as the work included in this contract is being performed. The Contractor for this section shall cooperate with any other Contractors performing work adjacent to this project in accordance with Article 105.08 of the Standard Specifications. Any inconveniences or delays caused the Contractor in complying with this requirement shall be considered incidental to the contract and no additional compensation will be allowed.

SEQUENCE OF OPERATIONS

The contractor shall provide a staging plan to the District's Project Implementation Engineer within 10 days of the award of the contract. The plan should detail the sequence of construction for all of the work shown in the plans. Special attention should be given to the work required to implement the proposed lane shifts and the work needed to remove the lane shifts. The plan will indicate any lane closures and the location of traffic with each stage (day and night). Work shall not begin until the plan is approved in writing by the Engineer. The stages in the plans are recommendations by the designer. The Contractor may use these suggestions or develop their own plan as approved by the Engineer. Detailed information for traffic control for each construction stage is noted on the Construction Staging and Maintenance of Traffic sheets located in the plans.

SPEED DISPLAY TRAILER (BDE)

Effective: April 2, 2014

Add the following to Article 701.15(I) of the Standard Specifications:

"(I) Speed Display Trailer. A speed display trailer shall be utilized on freeways and expressways as part of the Highway Standard 701400. The trailer shall be placed on the right hand side of the roadway adjacent to, or within 100 ft (30 m) beyond, the first work zone speed limit sign.

Whenever the speed display trailer is not in use, it shall be considered non-operating equipment and shall be stored according to Article 701.11."

Add the following to Article 701.20 of the Standard Specifications:

"(k) Speed Display Trailer will be paid for at the contract unit price per calendar month or fraction thereof for each trailer as SPEED DISPLAY TRAILER."

Add the following to Article 1106.02 of the Standard Specifications:

"(o) Speed Display Trailer. The speed display trailer shall consist of a LED speed indicator display with self-contained, one-direction radar mounted on an orange see-through trailer. The height of the display and radar shall be such that it will function and be visible when located behind concrete barrier.

The speed measurement shall be by radar and provide a minimum detection distance of 1000 ft (300 m). The radar shall have an accuracy of ±1 mile per hour.

The speed indicator display shall face approaching traffic and shall have a sign legend of "YOUR SPEED" immediately above or below the speed display. The digital speed display shall show two digits (00 to 99) in mph. The color of the changeable message legend shall be a yellow legend on a black background. The minimum height of the numerals shall be 18 in. (450 mm), and the nominal legibility distance shall be at least 750 ft (250 m).

The speed indicator display shall be equipped with a violation alert that flashes the displayed detected speed when the posted limit is exceeded. The speed indicator shall have a maximum speed cutoff. The display shall include automatic dimming for nighttime operation.

The speed indicator measurement and display functions shall be equipped with the power supply capable of providing 24 hours of uninterrupted service."

TEMPORARY TRAFFIC CONTROL DEVICE DEPLOYMENT AND REMOVAL
Eff. 01-01-2014

If the contractor's operations require them to have lane closures in either the driving or passing lane, the Contractor shall deploy and pick up their traffic control devices (drums, barricades, etc.) from the closed lane side. Dragging devices across the open lane of traffic will not be allowed. Failure to comply with this Special Provision will result in a traffic control deficiency deduction being assessed as specified in Article 105.03(b) of the Standard Specifications

TRAFFIC CONTROL REMOVAL
Effective: 10/13/2011
Per the requirements of Article 701 of the Standard Specification:

All lanes shall be open to traffic and all lane closure traffic control shall be removed during non-work hours, unless required by the Contractor's operation or authorized by the Engineer. Failure to open all lanes to traffic during non-work hours will result in a traffic control deficiency, per Article 105.03 of the Standard Specifications

UNEVEN LANES

Eff. 12/11/2009 Rev. 01/01/2014

Where construction operations result in a temporary drop-off between two traffic lanes open to traffic, "UNEVEN LANES" (W8-11(0)48) signs shall be used. The Contractor shall place the signs at the beginning of the drop-off area, major intersections, and at as such other locations within the drop-off area as the Engineer may direct. The signs shall be placed just prior to the work that will result in the drop-off and shall remain in place until the drop-off is eliminated. This work shall be considered as included in the contract unit prices for the construction items involved and no additional compensation will be allowed.

EDGE OF PAVEMENT DROP-OFF

At locations where construction operations result in a differential in elevation between the edge of pavement or edge of shoulder within 8 feet of the edge of the pavement and the earth or aggregate shoulders, the posted speed and the channelizing devices shall be as specified in the Maintenance of Traffic Plans. The channelizing devices along the drop-off shall be Type II barricades. The cost of these requirements shall be included in the cost of the various traffic control pay items.

EQUIPMENT PARKING AND STORAGE

Revise the first paragraph of Article 701.11 to read: During working hours, all vehicles and/or non-operating equipment which are parked, 2 hours or less, shall be parked at least 8 feet from the open traffic lane. For other periods of time during working or non-working hours, all vehicles, materials, and equipment shall be parked or stored in a protected area, if the protected area is within a distance of 1,000 feet of the work operation. If there is no protected area within the 1,000 feet, the Contractor may park the equipment 30 feet from the edge of the open lane providing there is no part of the equipment within the 30 feet. The 30 feet is acceptable for 4:1 slopes and flatter. For slopes steeper than 4:1 the clear zone distances as shown on the Typical Section sheets, shall be maintained. If the distance to a protected area or clear zone region requires the equipment to be moved more than the 1,000 feet, then the Contractor shall load and transport the equipment to the protected area or clear zone region. A protected area is defined as behind temporary concrete barrier, temporary bridge rail, or other man-made or natural barriers.

## 9. Public Information Plan

Prior to the start of construction operations, a press release will be used to inform the media, area businesses, the general public, and public officials about the upcoming project. Information on current road construction projects will also be available on the IDOT website. Press releases could be sent daily through a mass media email to keep people informed of the status of the project and traffic patterns.

In addition to informed media releases, this project will include furnishing, installing, relocating, operating, servicing, maintaining, and removing various components of an automated, portable, real-time work zone Smart Traffic Monitoring (STM) system. The STM system shall monitor the project's work zone and disseminate real-time information to the Department's Bureau of Operations and the traveling public. It is anticipated that traffic conditions will deteriorate due to queuing caused by high traffic volumes, work zone vehicle interference, weather, grade changes, temporary lane closures, etc. The STM system shall notify the Department's Bureau of Operations once the speed through the work zone decreases below 45 MPH or traffic delays exceed 15 minutes. The system will be capable of transferring real time data in a file format compatible with Oracle. In addition, any number of Department employees shall be notified via e-mail, text messaging or by pager of these speed changes.

A minimum of eleven (11) Changeable Message Signs will be required for seven days each prior to the beginning of construction operations to inform the traveling public of the upcoming delays that may be caused by the project. The signs will be located as follows:

1. One sign on I-74 EB at the beginning of the project.
2. One sign on I-74 WB at the beginning of the project.
3. One sign at the N Prospect Avenue to I-74 WB entrance ramp.
4. One sign on I-57 NB at the beginning of the project.
5. One sign on I-57 SB at the beginning of the project.
6. One sign at the I-72 to I-57 NB entrance ramp.
7. One sign at the Olympian Drive to I-57 SB entrance ramp.
8. One sign on U.S. 150 (Bloomington Road) just west of the Mattis Avenue intersection.
9. One sign on U.S. 150 (Bloomington Road) just east of the Duncan Road (County Road 900E) intersection.
10. One sign on NB Mattis Avenue just north of the U.S. 150 (Bloomington Road) intersection.
11. One sign on SB Mattis Avenue just south of the Olympian Drive (County Rd 1900) intersection.

An additional twelve (12) Changeable Message Signs will be required throughout the duration of construction operations. These signs will be located as follows:

1. Dual display signs on I-74 EB at the beginning of the project.
2. Dual display signs on I-74 WB at the beginning of the project.
3. Dual display signs on I-57 NB at the beginning of the project.
4. Dual display signs on I-57 SB at the beginning of the project.
5. Dual display signs on Bloomington Road
6. Dual display signs on Mattis Avenue

## 10. Transportation Operations Plan

The Contractor shall notify the Department's Bureau of Operations and the individuals and organizations listed below at least ten days prior to the start of the project.

| | |
|---|---|
| David Speicher | IDOT D5 Operations Engineers |
| Gary Sims | IDOT D5 Traffic Operations Engineers |
| Carl Phillips | IDOT D5 Operations Field Engineer |
| Jeff Blue | Champaign County Engineer |
| Dave Clark | Champaign City Engineer |
| | Champaign County Sheriff |
| | Champaign County 911 Coordinator |
| | IL State Police (Dist. 10) |
| | Ambulance Services |
| | Champaign Fire Department |
| | Champaign Urbana Mass Transit District |

These agencies, organizations, and individuals shall also be notified when the project is complete.

Cooperative police enforcement from the State Police Headquarters will encourage drivers to obey posted speed limits within the work zone and provide a quick response to incidents or emergencies.

Photo enforcement of the work zone speed limits and the presence of two radar speed trailers will improve traffic safety and help protect workers and the traveling public. Traffic signs will be posted to warn drivers of the increased penalties of work zone speed limit violations.

Timely traffic control inspections will be conducted to ensure that all work zone traffic control devices are in the correct location and operating properly. Deficiencies in work zone traffic control device operation and/or placement shall be corrected promptly.

## 11. TMP Monitoring

The management strategies within the TMP shall be continuously monitored throughout the project to determine if they meet safety and mobility goals. If the safety and mobility conditions are unfavorable, adjustments shall be implemented. Details of the successes and failures of the TMP, as well as implemented changes, will be included in the Work Zone TMP Summary reports to be submitted by the Resident Engineer/Technician at regular intervals and at the conclusion of the project.

If the Contractor fails to carry out the TMP Strategies as shown in the plans and contract documents, Traffic Control Deficiency Deductions will be administered according to Article 105.03(b) of the Standard Specifications for Road and Bridge Construction.

## 12. TMP Implementation Costs

**Traffic Control and Protection (Special) (X7010216):** All Traffic Control and Protection Standards to be used for each of the construction operations in accordance with the Standard Specifications, Highway Standards, and Plan Details. The estimated cost for Traffic Control and Protection (Special) is $2,750,000.

**Traffic Control Surveillance (70103815):** Includes inspection and maintenance of temporary traffic control devices and assistance in directing traffic as needed during hours when the Contractor is not engaged in construction operations. The estimated cost for Traffic Control Surveillance is $365,000.

**Temporary Bridge Traffic Signals (70106500):** Temporary bridge traffic signals will be required on Mattis Avenue over I-57 and U.S. 150 over I-57. The estimated cost for temporary bridge traffic signals is $100,000.

**Temporary Traffic Signal Installation (89000100):** Temporary traffic signals will be required on Curtis Road over I-57 and Market Street over I-57. The estimated cost for temporary bridge traffic signals is $200,000.

**Changeable Message Signs (70106800):** Twenty Three CMS boards will be needed to direct the traveling public and inform them of upcoming delays that may be caused by the project. The estimated cost for the CMS boards is $1,400,000.

**Nighttime Work Zone Lighting (70200100):** Certain work items will need to be completed at night due to the high traffic volumes and need to reduce delays and queues. This will require nighttime work zone lighting. The estimated cost for nighttime work zone lighting is $100,000.

**Temporary Pavement Marking (70300220 & 70301000):** Temporary pavement markings are required to delineate temporary lane configurations throughout construction. The estimated cost for temporary pavement markings is $350,000.

**Temporary Concrete Barrier:** Temporary concrete barrier, relocating temporary concrete barrier, and pinning temporary concrete barrier will be required in various locations throughout the project. The estimated cost for temporary concrete barrier, relocating temporary concrete barrier, and pinning temporary concrete barrier is $2,400,000.

**High Tension Median Cable Barrier:** Cable barrier installation and removal/replacement will be required on I-74 and I-57 to separate opposing traffic during staged construction. The estimated cost to install the cable is $160,000.

**Temporary Pavement:** Temporary pavement will be required for interstate staging and various ramps throughout the project to connect proposed ramps to existing ramp terminals/interstates or to connect existing ramps to proposed interstates. A temporary ramp configuration is also required for Ramp B. The estimated cost for the embankment, base, pavement, and removal is $2,100,000.

**Milling and Overlaying Existing Shoulders:** Milling and Overlaying of existing shoulders will be required for stage constructing the interstates. The estimated cost for the milling and overlaying is $2,000,000.

**Milling and Overlaying Existing I-74 & I-57 Travel Lanes:** Milling and Overlaying of existing lanes will be required for stage constructing the interstates. The estimated cost for the milling and overlaying is $1,250,000.

**Patching Existing I-74 & I-57 Travel Lanes:** Patching of existing lanes will be required for stage constructing the interstates. The estimated cost for the patching is $175,000.

**Temporary Lighting (X8410102):** Temporary interchange lighting will be included for temporary roadway configurations during construction. The estimated cost for temporary lighting is $100,000.

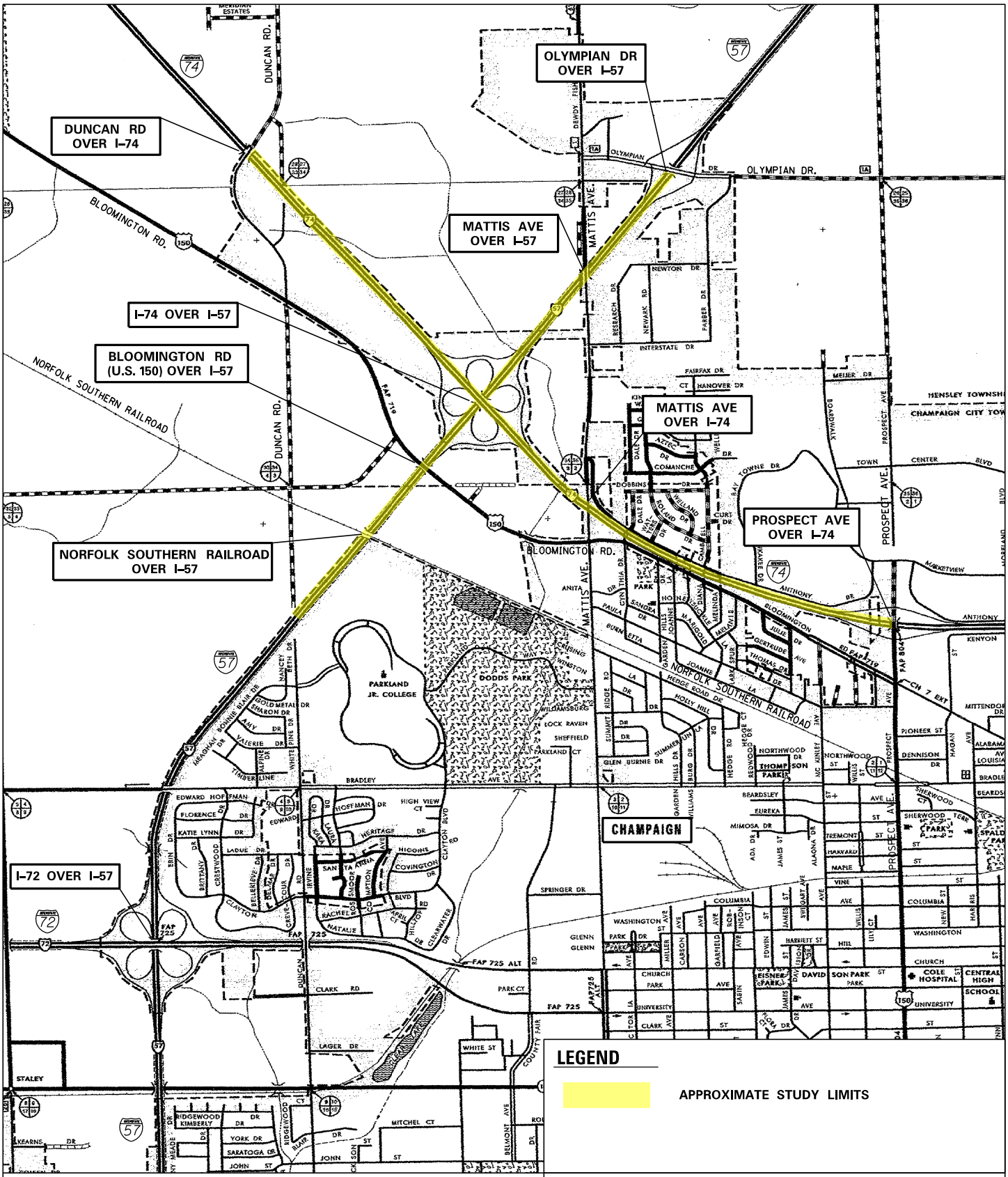
**Smart Traffic Monitoring System (X8570000):** The system will monitor the interstate work zones and send real-time information to the Bureau of Operations and the traveling public. The estimated cost for the Smart Traffic Monitoring System is $400,000.

**Media News Release:** The approximate cost of the initial press release is $5,000.

**Cooperative Police Enforcement:** The estimated cost for the hire back program and photo enforcement of the speed limit is $500,000.

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**Total TMP Implementation Cost:** The total estimated cost to implement the Transportation management Plan is $14,355,000.




# LOCATION MAP

**I–57 & I–74 INTERCHANGE**
**IDOT – DISTRICT 5**
**CHAMPAIGN COUNTY**
**CHAMPAIGN, IL**

**EXHIBIT 1**

OLYMPIAN DRIVE

OLYMPIAN RAMP C

OLYMPIAN RAMP B

INTERSTATE 57

N. MATTIS AVE

DUNCAN ROAD

INTERSTATE 74

RAMP H

RAMP F

RAMP E

RAMP G

U.S. 150 (BLOOMINGTON ROAD)

RAMP C

RAMP D

RAMP B

RAMP A

PROSPECT AVE.

PROSPECT RAMP A

PROSPECT RAMP C

W. ANTHONY DRIVE

INTERSTATE 74

U.S. 150 (BLOOMINGTON ROAD)

N. MATTIS AVE.

NORFOLK SOUTHERN RAILROAD

INTERSTATE 57

500′ 0 500′ 1000′

SCALE: 1″ = 500′

LOCATION MAP




# EXHIBIT 2

| | | | |
|---|---|---|---|
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| Default | PLOT DATE = 4/22/2015 - 8:41:56 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**EXISTING INTERCHANGE LAYOUT**

SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 3

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| | PLOT DATE = 4/22/2015 - 8:41:58 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**PROPOSED INTERCHANGE LAYOUT**

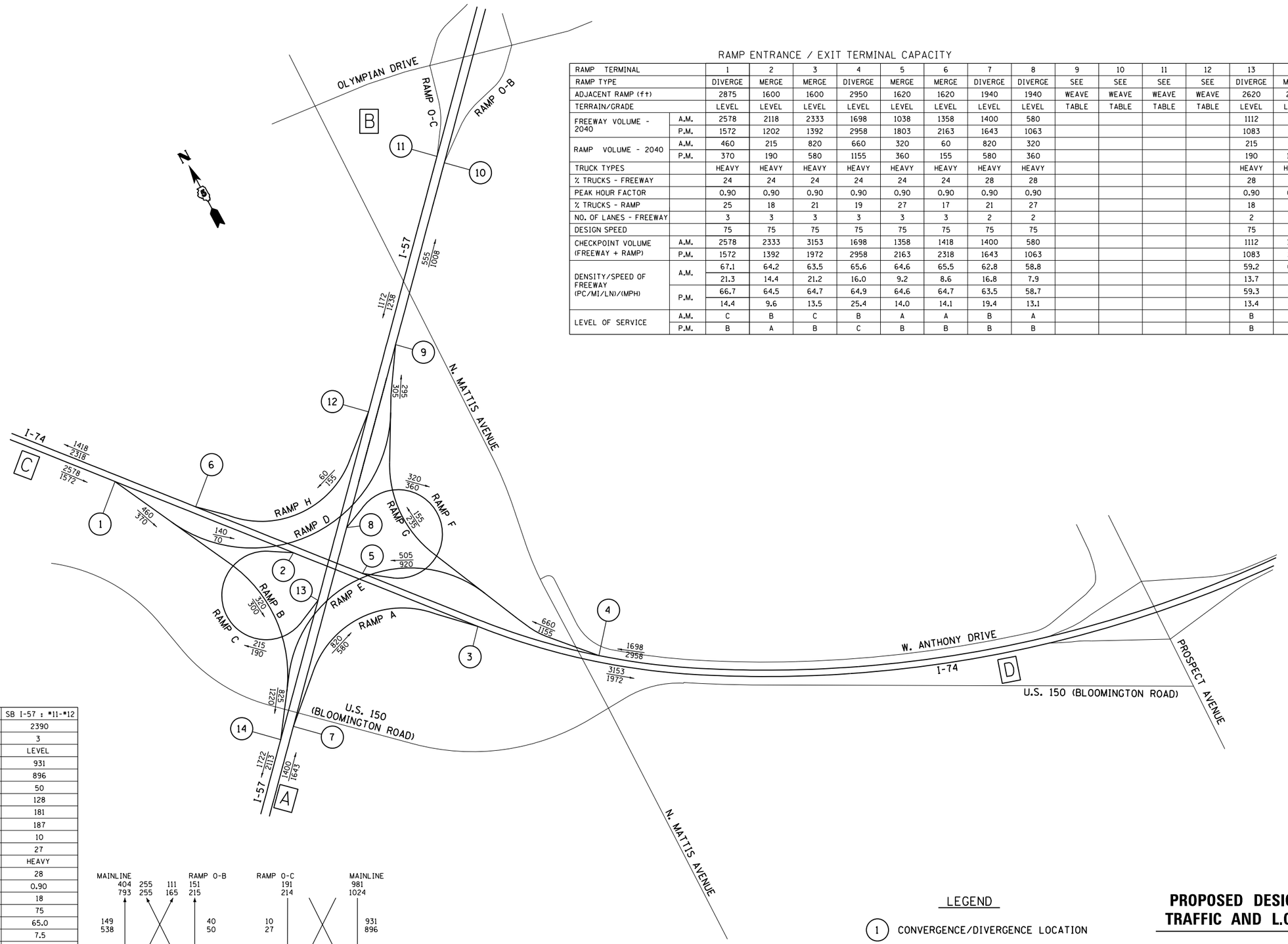
SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

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USER NAME = Brad Downen

## TRAFFIC DATA

| MOVEMENT | YEAR 2040 AM DESIGN HOURLY VOLUME | YEAR 2040 PM DESIGN HOURLY VOLUME |
|---|---|---|
| AB | 260 | 703 |
| AC | 320 | 360 |
| AD | 820 | 580 |
| BA | 897 | 893 |
| BC | 60 | 155 |
| BD | 215 | 190 |
| CA | 320 | 300 |
| CB | 140 | 70 |
| CD | 2118 | 1202 |
| DA | 505 | 920 |
| DB | 155 | 235 |
| DC | 1038 | 1803 |
| TOTAL A | 3122 | 3756 |
| TOTAL B | 1727 | 2246 |
| TOTAL C | 3996 | 3890 |
| TOTAL D | 4851 | 4930 |

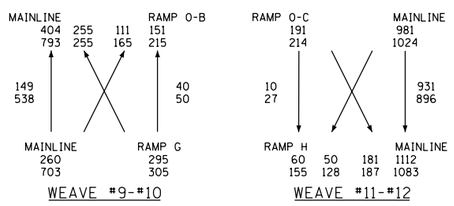



## RAMP ENTRANCE / EXIT TERMINAL CAPACITY

| RAMP TERMINAL | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RAMP TYPE | | DIVERGE | MERGE | MERGE | DIVERGE | MERGE | MERGE | DIVERGE | DIVERGE | SEE | SEE | SEE | SEE | DIVERGE | MERGE |
| ADJACENT RAMP (ft) | | 2875 | 1600 | 1600 | 2950 | 1620 | 1620 | 1940 | 1940 | WEAVE | WEAVE | WEAVE | WEAVE | 2620 | 2620 |
| TERRAIN/GRADE | | LEVEL | LEVEL | LEVEL | LEVEL | LEVEL | LEVEL | LEVEL | LEVEL | TABLE | TABLE | TABLE | TABLE | LEVEL | LEVEL |
| FREEWAY VOLUME - 2040 | A.M. | 2578 | 2118 | 2333 | 1698 | 1038 | 1358 | 1400 | 580 | | | | | 1112 | 897 |
| | P.M. | 1572 | 1202 | 1392 | 2958 | 1803 | 2163 | 1643 | 1063 | | | | | 1083 | 893 |
| RAMP VOLUME - 2040 | A.M. | 460 | 215 | 820 | 660 | 320 | 60 | 820 | 320 | | | | | 215 | 825 |
| | P.M. | 370 | 190 | 580 | 1155 | 360 | 155 | 580 | 360 | | | | | 190 | 1220 |
| TRUCK TYPES | | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY | | | | | HEAVY | HEAVY |
| % TRUCKS - FREEWAY | | 24 | 24 | 24 | 24 | 24 | 24 | 28 | 28 | | | | | 28 | 28 |
| PEAK HOUR FACTOR | | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | | | | | 0.90 | 0.90 |
| % TRUCKS - RAMP | | 25 | 18 | 21 | 19 | 27 | 17 | 21 | 27 | | | | | 18 | 24 |
| NO. OF LANES - FREEWAY | | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | | | | | 2 | 2 |
| DESIGN SPEED | | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | | | | | 75 | 75 |
| CHECKPOINT VOLUME (FREEWAY + RAMP) | A.M. | 2578 | 2333 | 3153 | 1698 | 1358 | 1418 | 1400 | 580 | | | | | 1112 | 1722 |
| | P.M. | 1572 | 1392 | 1972 | 2958 | 2163 | 2318 | 1643 | 1063 | | | | | 1083 | 2113 |
| DENSITY/SPEED OF FREEWAY (PC/MI/LN)/(MPH) | A.M. | 67.1 | 64.2 | 63.5 | 65.6 | 64.6 | 65.5 | 62.8 | 58.8 | | | | | 59.2 | 62.7 |
| | | 21.3 | 14.4 | 21.2 | 16.0 | 9.2 | 8.6 | 16.8 | 7.9 | | | | | 13.7 | 16.5 |
| | P.M. | 66.7 | 64.5 | 64.7 | 64.9 | 64.6 | 64.7 | 63.5 | 58.7 | | | | | 59.3 | 62.1 |
| | | 14.4 | 9.6 | 13.5 | 25.4 | 14.0 | 14.1 | 19.4 | 13.1 | | | | | 13.4 | 20.1 |
| LEVEL OF SERVICE | A.M. | C | B | C | B | A | A | B | A | | | | | B | B |
| | P.M. | B | A | B | C | B | B | B | B | | | | | B | C |

## WEAVING ANALYSIS

| WEAVING SECTION | | NB I-57 : #9-#10 | SB I-57 : #11-#12 |
|---|---|---|---|
| WEAVING LENGTH (Ls) | | 1140 | 2390 |
| NUMBER OF TOTAL LANES | | 3 | 3 |
| TERRAIN/GRADE | | LEVEL | LEVEL |
| VOLUME 1 - 2040 (THROUGH VOLUME) | A.M. | 149 | 931 |
| | P.M. | 538 | 896 |
| VOLUME 2 - 2040 (EXIT WEAVE) | A.M. | 111 | 50 |
| | P.M. | 165 | 128 |
| VOLUME 3 - 2040 (ENTRANCE WEAVE) | A.M. | 255 | 181 |
| | P.M. | 255 | 187 |
| VOLUME 4 - 2040 (RAMP-RAMP) | A.M. | 40 | 10 |
| | P.M. | 50 | 27 |
| TRUCK TYPES | | HEAVY | HEAVY |
| % TRUCKS - FREEWAY | | 28 | 28 |
| PEAK HOUR FACTOR | | 0.90 | 0.90 |
| % TRUCK - RAMP | | 18 | 18 |
| DESIGN SPEED | | 75 | 75 |
| DENSITY/SPEED OF FREEWAY (PC/MI/LN)/(MPH) | A.M. | 63.8 | 65.0 |
| | | 3.5 | 7.5 |
| | P.M. | 63.3 | 64.2 |
| | | 6.6 | 8.0 |
| LEVEL OF SERVICE | A.M. | A | A |
| | P.M. | A | A |




WEAVE #9-#10




WEAVE #11-#12

LEGEND

(1) CONVERGENCE/DIVERGENCE LOCATION

0000 AM DHV (2040)
0000 PM DHV (2040)

**PROPOSED DESIGN TRAFFIC AND L.O.S.**

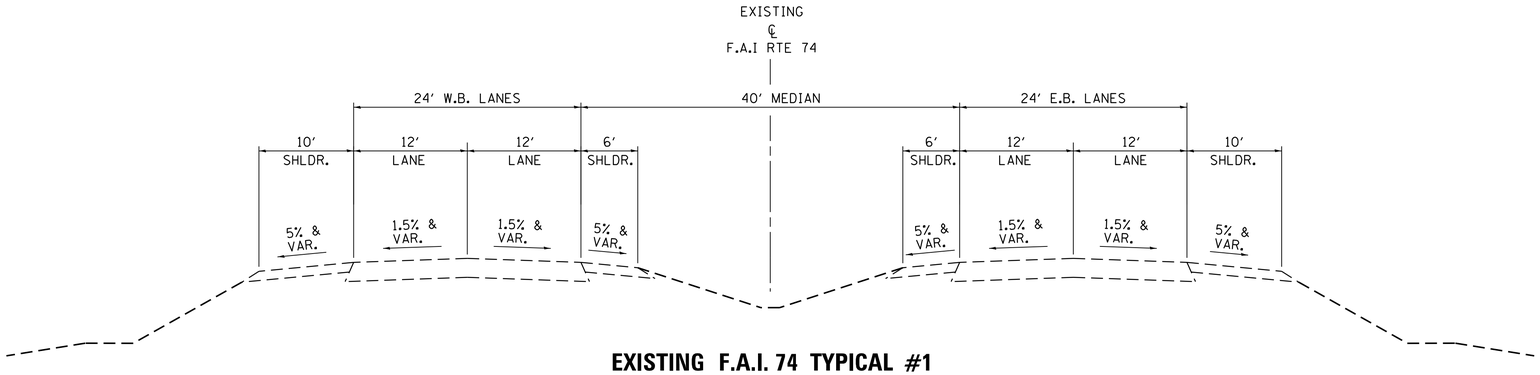
# EXHIBIT 4

**Proposed Design Traffic**

| Roadway Element | 2013 ADT (vpd) | 2013 ADTT (vpd) | SU% Projected | MU % Projected | 2020 ADT (vpd) | 2020 ADTT (vpd) | 2040 ADT (vpd) | 2040 ADTT (vpd) | Direction |
|---|---|---|---|---|---|---|---|---|---|
| **Source** | **(1)** | **(1)** | **(2)** | **(2)** | **(2)** | **(2)** | **(2)** | **(2)** | |
| **I-57 (North of I-74)** | 22,200 | 5,775 | 4.4% | 23.8% | 26,100 | 7,360 | 33,400 | 9,419 | N/S |
| **I-57 (South of I-74)** | 32,400 | 9,450 | 3.9% | 24.5% | 38,400 | 10,906 | 49,900 | 14,172 | N/S |
| **I-74 (West of I-57)** | 32,900 | 6,650 | 3.6% | 21.1% | 31,700 | 7,830 | 41,800 | 10,325 | E/W |
| **I-74 (East of I-57)** | 38,900 | 7,350 | 3.3% | 19.6% | 44,700 | 10,236 | 52,300 | 11,977 | E/W |
| **Ramp A** | 5,600 | | 5.0% | 15.7% | 6,600 | 1,366 | 8,800 | 1,822 | NB I-57/EB I-74 |
| **Ramp B** | 2,800 | | 10.3% | 18.1% | 3,850 | 1,093 | 4,550 | 1,292 | EB I-74/SB I-57 |
| **Ramp C** | 2,100 | | 8.4% | 9.5% | 2,150 | 385 | 2,650 | 474 | SB I-57/EB I-74 |
| **Ramp D** | 500 | | 8.6% | 10.4% | 700 | 133 | 1,000 | 190 | EB I-74/NB I-57 |
| **Ramp E** | 5,700 | | 9.1% | 11.9% | 7,100 | 1,491 | 9,900 | 2,079 | WB I-74/SB I-57 |
| **Ramp F** | 3,300 | | 11.1% | 16.2% | 4,000 | 1,092 | 4,950 | 1,351 | NB I-57/WB I-74 |
| **Ramp G** | 2,100 | | 4.7% | 12.7% | 2,200 | 383 | 2,650 | 461 | WB I-74/NB I-57 |
| **Ramp H** | 650 | | 7.3% | 9.9% | 850 | 146 | 1,200 | 206 | SB I-57/WB I-74 |
| **Prospect Ramp A** | 5,100 | | 4% (4) | 4.4% (4) | 5,249 (3) | 441 | 6,926 (3) | 582 | WB On-Ramp |
| **Prospect Ramp C** | 4,750 | | 4% (4) | 4.4% (4) | 4,903 (3) | 412 | 6,470 (3) | 543 | EB Off-Ramp |
| **Olympian Ramp B** | 1,500 | | 4% (4) | 4.4% (4) | 1,930 (3) | 162 | 2,501 (3) | 210 | NB Off-Ramp |
| **Olympian Ramp C** | 2,050 | | 4% (4) | 4.4% (4) | 2,294 (3) | 193 | 2,983 (3) | 251 | SB On-Ramp |
| **Mattis over I-74** | 16,000 (2012) | | 4.2% | 0.8% | 16,300 | 815 | 18,700 | 935 | N/S |
| **Mattis over I-57** | 6,100 (2011) | | 4.3% | 3.8% | 6176 (3) | 500 | 7023 (3) | 569 | N/S |
| **US 150 over I-57** | 7,450 | 825 | 5.3% | 3.1% | 9,300 | 781 | 12,100 | 1,016 | E/W |

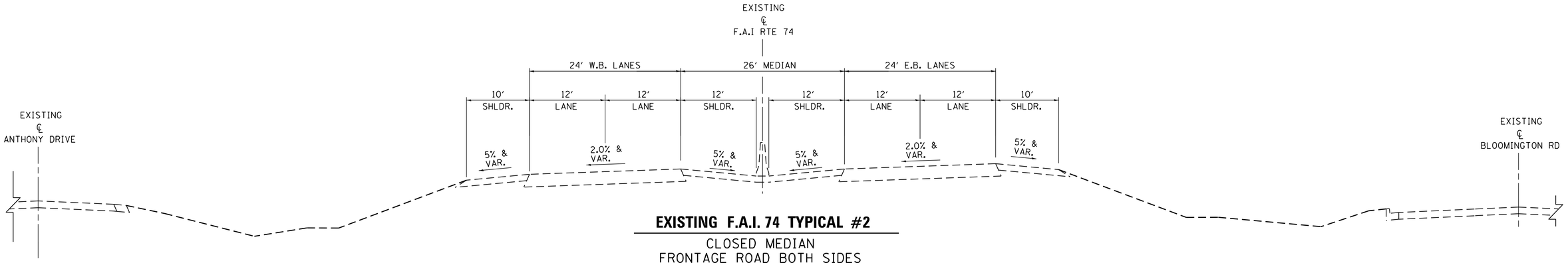
Sources: (1) - GettingAroundIllinois.com website
(2) - Data Provided by IDOT Planning
(3) - Projected Volumes by CMT
(4) - Estimated from Local Surface Street Counts

**EXHIBIT 4**




## EXISTING F.A.I. 74 TYPICAL #1

OPEN MEDIAN
(LOOKING EAST)
STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1117+00




## EXISTING F.A.I. 74 TYPICAL #2

CLOSED MEDIAN
FRONTAGE ROAD BOTH SIDES
(LOOKING EAST)
STA. 1117+00 TO STA. 1143+00

# EXHIBIT 5

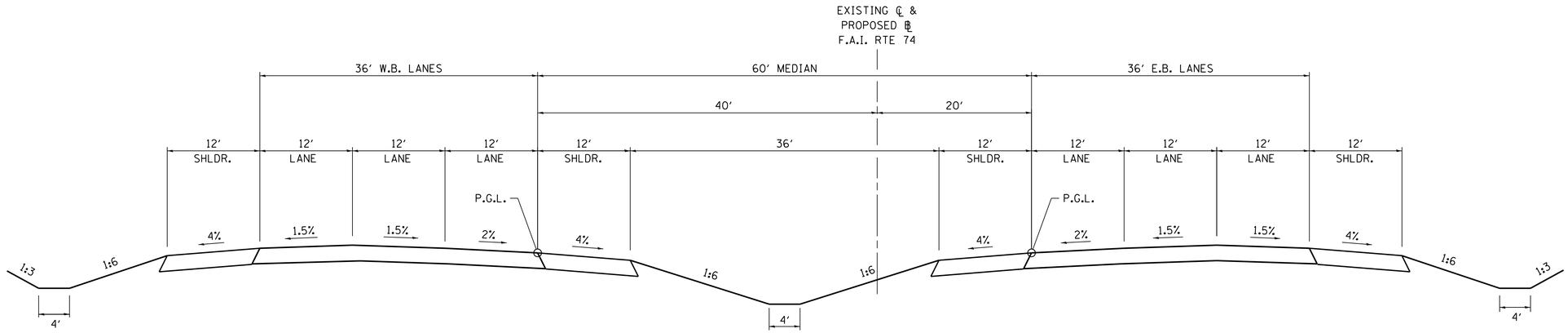
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| | | DRAWN - | REVISED - |
| | PLOT SCALE = 8.0000 ' / in. | CHECKED - | REVISED - |
| Default | PLOT DATE = 8/19/2015 11:12:44 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**I-74**

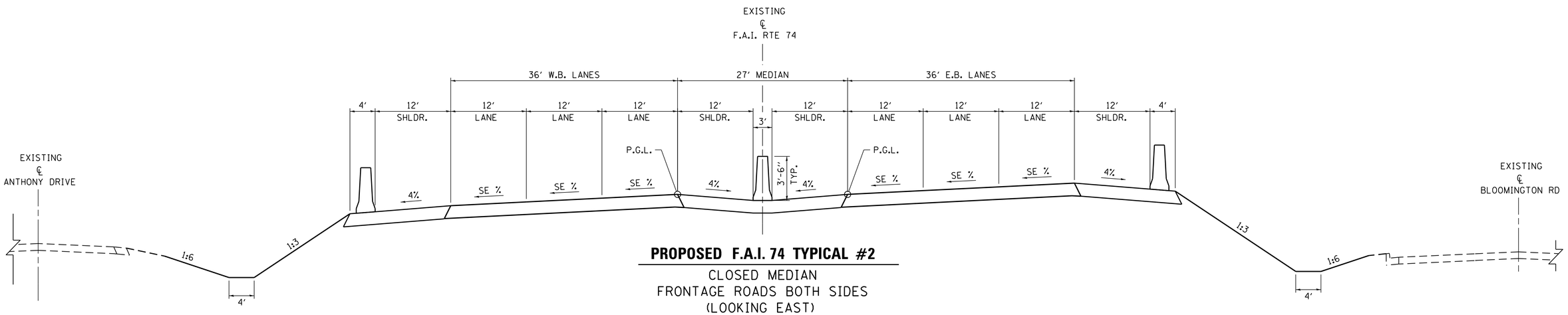
SHEET 1 OF 3 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




## PROPOSED F.A.I. 74 TYPICAL #1

OPEN MEDIAN
(LOOKING EAST)
STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1083+00




## PROPOSED F.A.I. 74 TYPICAL #2

CLOSED MEDIAN
FRONTAGE ROADS BOTH SIDES
(LOOKING EAST)
STA. 1083+00 TO STA. 1143+00

**EXHIBIT 5**

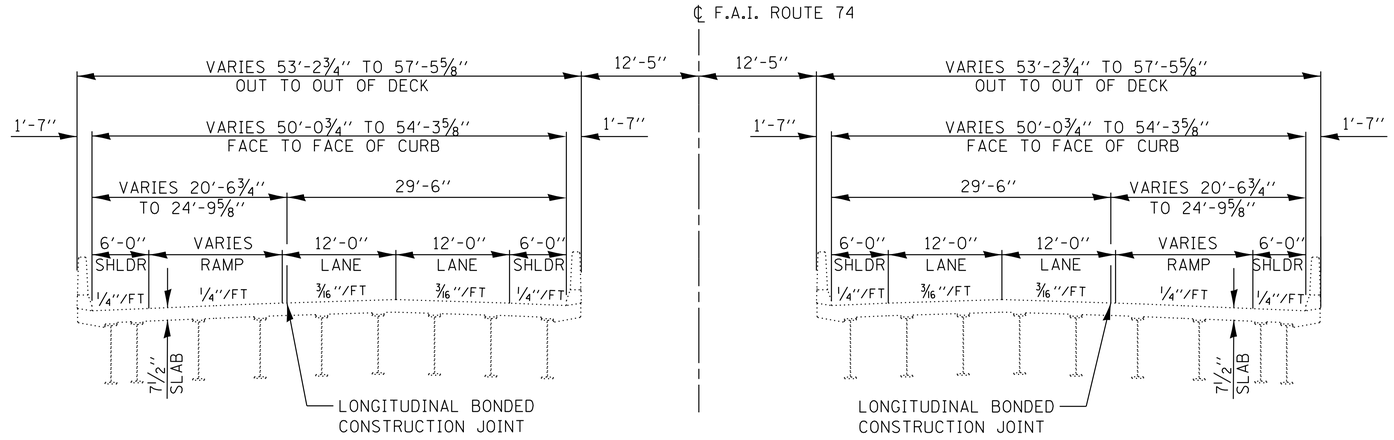
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| Default | PLOT DATE = 8/19/2015 11:12:44 AM | CHECKED - | REVISED - |
| | | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**I-74**

SHEET 2 OF 3 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS | FED. AID PROJECT | | |

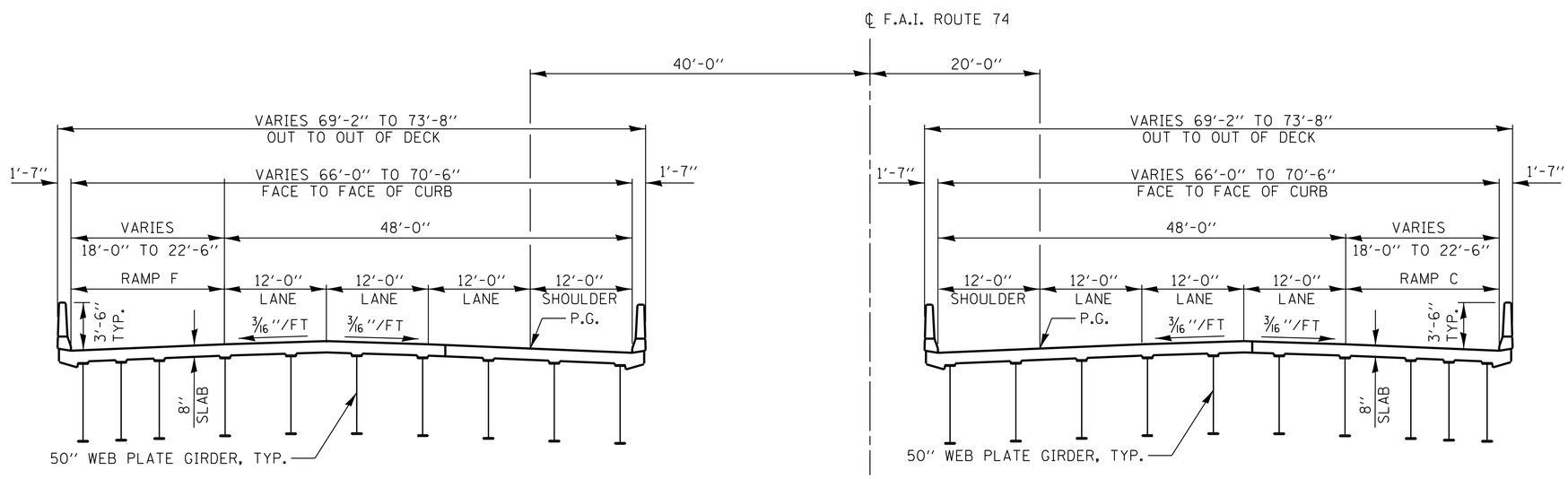



**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## EXISTING TYPICAL SECTION

BRIDGE
(LOOKING EAST)




**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## PROPOSED TYPICAL SECTION

BRIDGE
(LOOKING EAST)

**EXHIBIT 5**

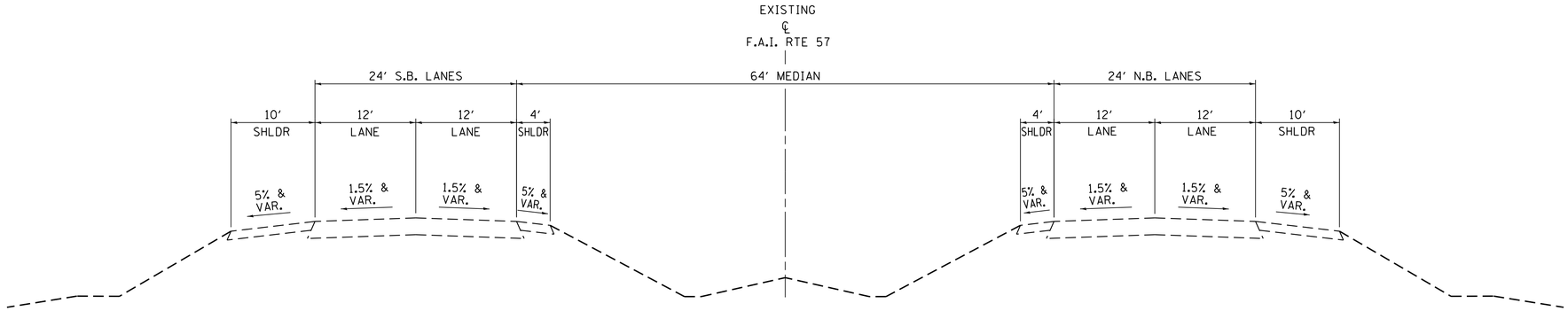
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**I–74**

SHEET 3 OF 3 SHEETS STA. TO STA.

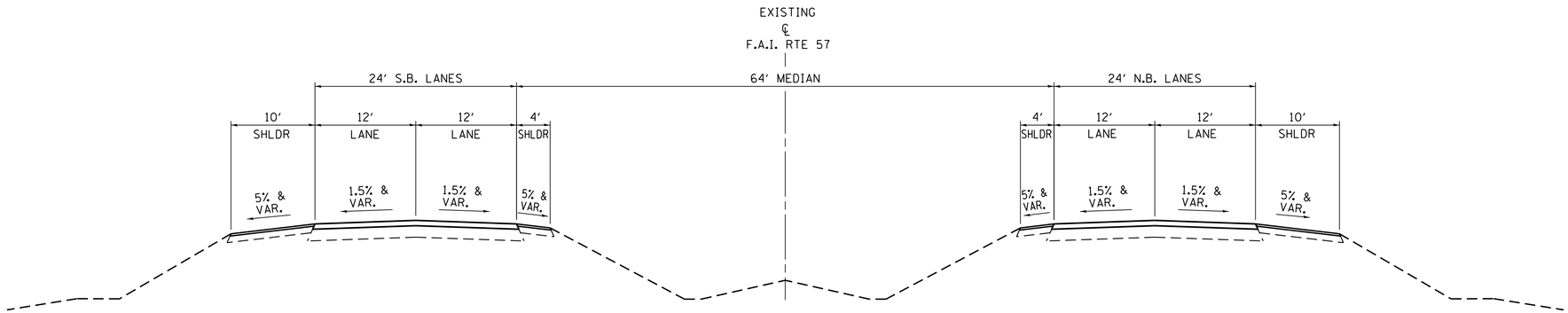
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS | FED. AID PROJECT | | |




**EXISTING F.A.I 57**

(LOOKING NORTH)

STA. 545+00 TO STA. 648+00




**PROPOSED F.A.I 57 TYPICAL #1**

MILL & OVERLAY

(LOOKING NORTH)

STA. 545+00 TO STA. 560+00

**EXHIBIT 6**

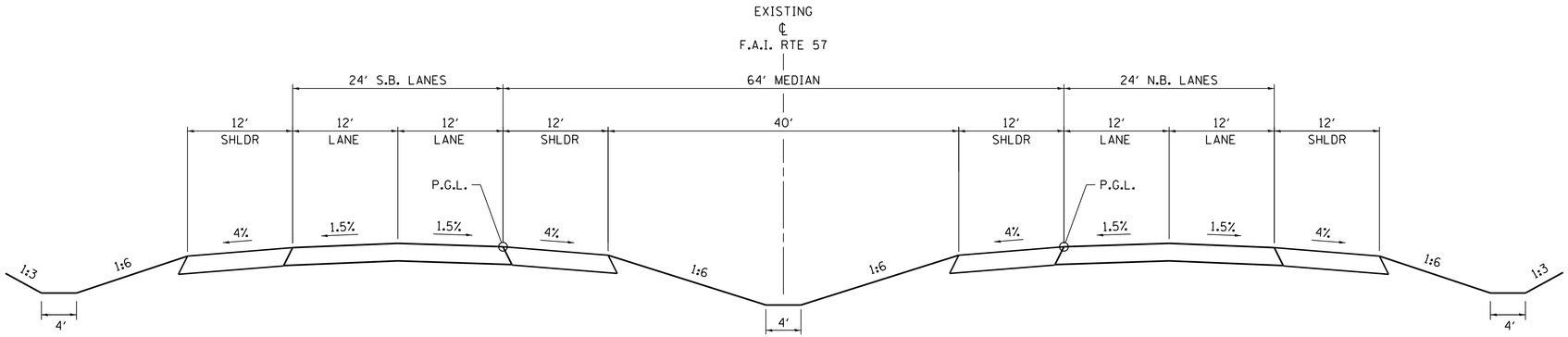
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**I–57**

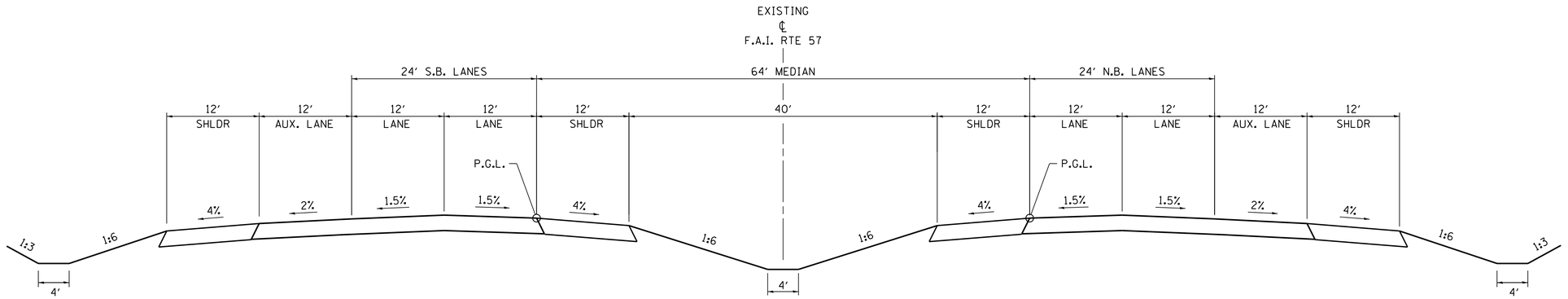
SHEET 1 OF 2 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**PROPOSED F.A.I 57 TYPICAL #2**

TWO LANES
(LOOKING NORTH)
STA. 560+00 TO STA. 615+00




**PROPOSED F.A.I 57 TYPICAL #3**

THREE LANES
(LOOKING NORTH)
STA. 615+00 TO STA. 648+00

**EXHIBIT 6**

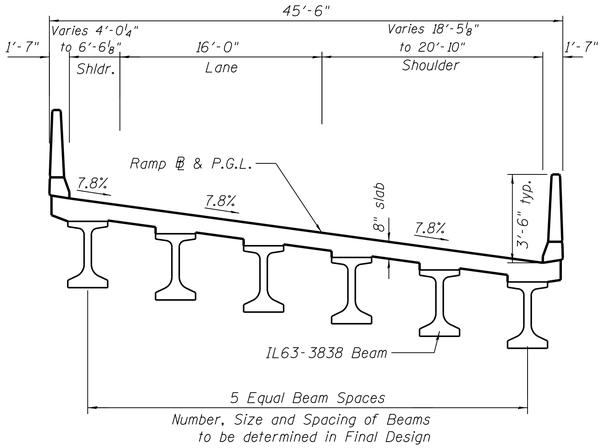
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| | PLOT DATE = 8/19/2015 11:13:10 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**I-57**

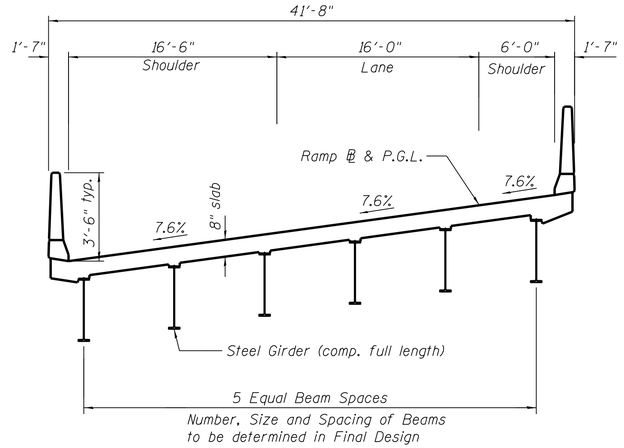
SHEET 2 OF 2 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |



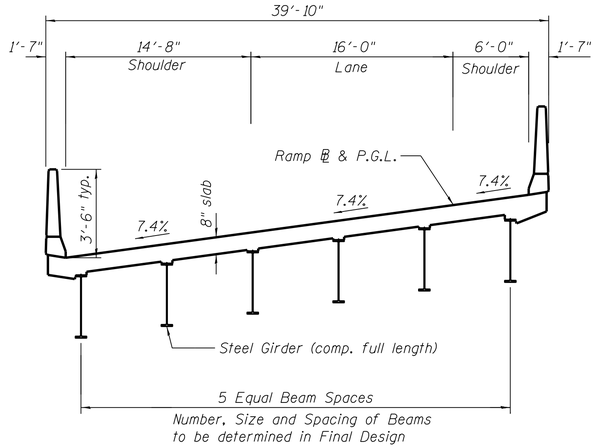

## PROPOSED RAMP B BRIDGE (1160' RADIUS)

(Looking Upstation)



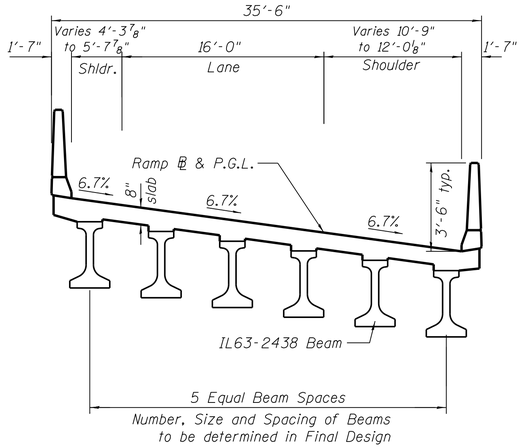

## PROPOSED RAMP E BRIDGE (1250' RADIUS)

(Looking Upstation)




## PROPOSED RAMP D BRIDGE (1350' RADIUS)

(Looking Upstation)




## PROPOSED RAMP G BRIDGE (1635' RADIUS)

(Looking Upstation)

**EXHIBIT 7**

| | | | |
|---|---|---|---|
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| | | DRAWN - | REVISED - |
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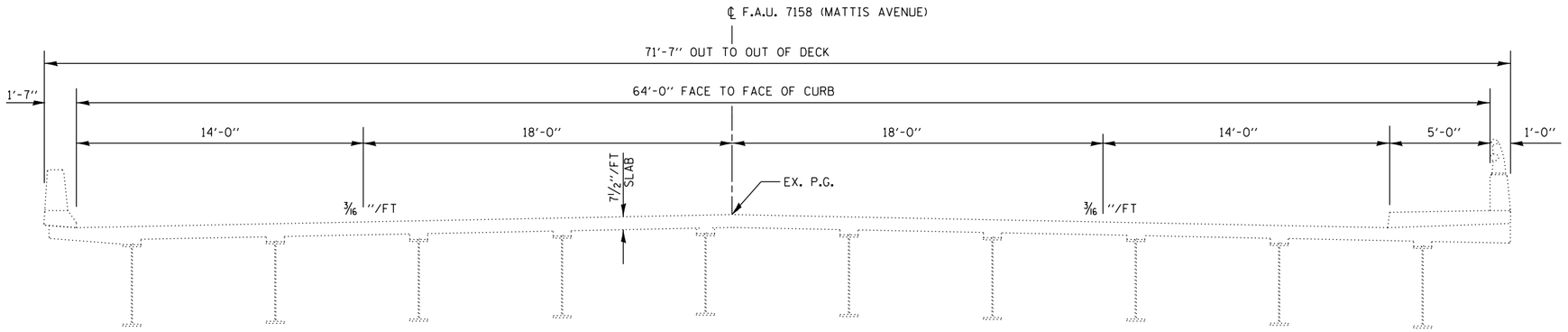
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**RAMP STRUCTURES**

SHEET 1 OF 1 SHEETS STA. TO STA.

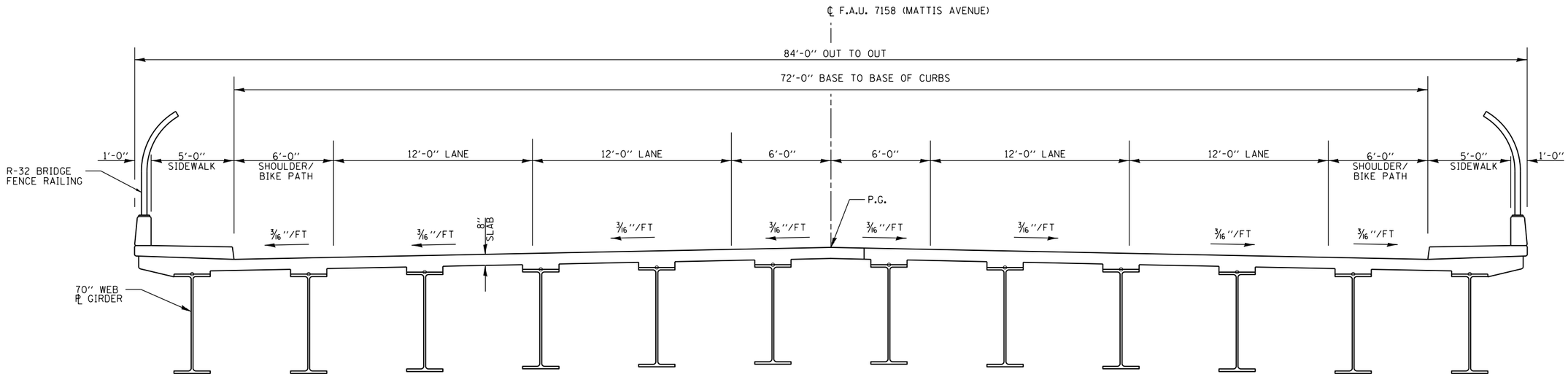
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

N.T.S.




## EXISTING TYPICAL SECTION

(LOOKING NORTH)
SCALE: NTS




## PROPOSED TYPICAL SECTION

(LOOKING NORTH)
SCALE: NTS

# EXHIBIT 8

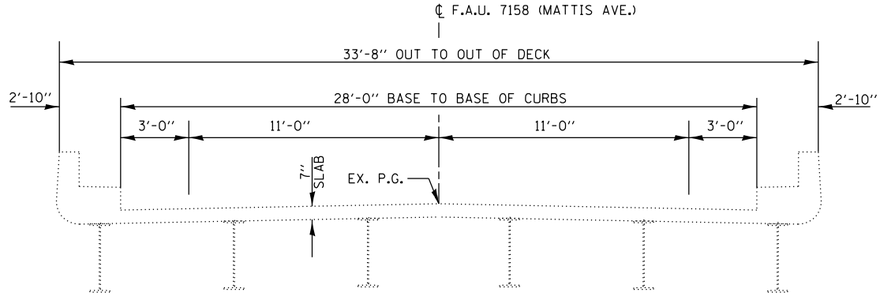
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| | PLOT DATE = 8/19/2015 - 11:32:24 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**NORTH MATTIS AVENUE OVER I-74**

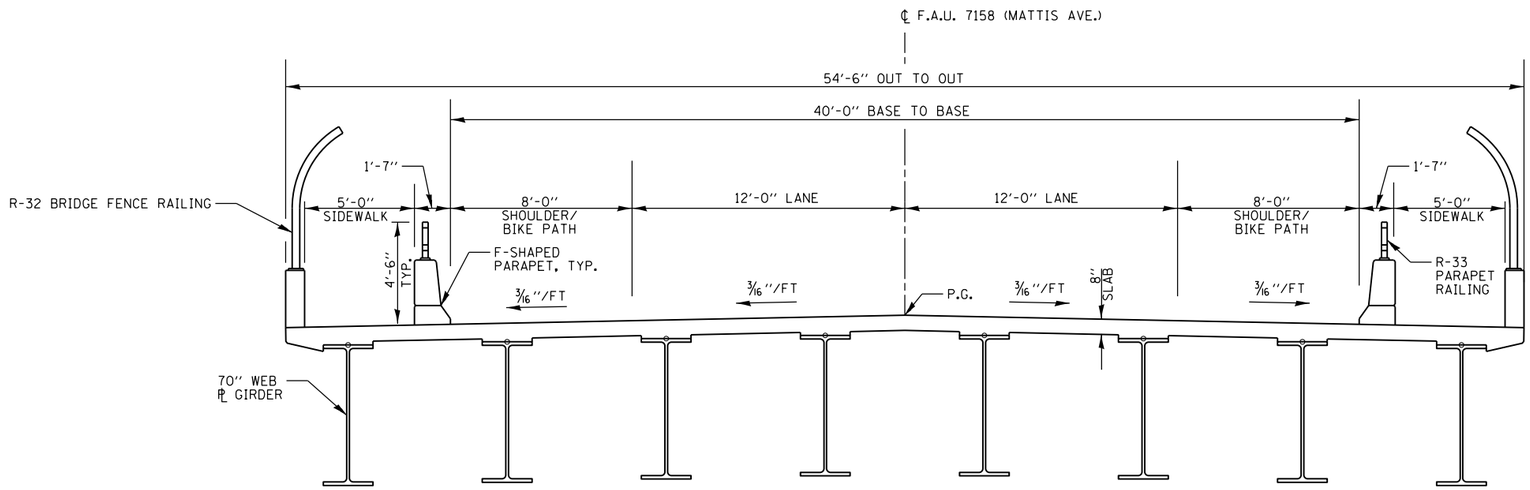
SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




## EXISTING TYPICAL SECTION

(LOOKING NORTH)
SCALE: NTS




## PROPOSED TYPICAL SECTION

(LOOKING NORTH)
SCALE: NTS

# EXHIBIT 9

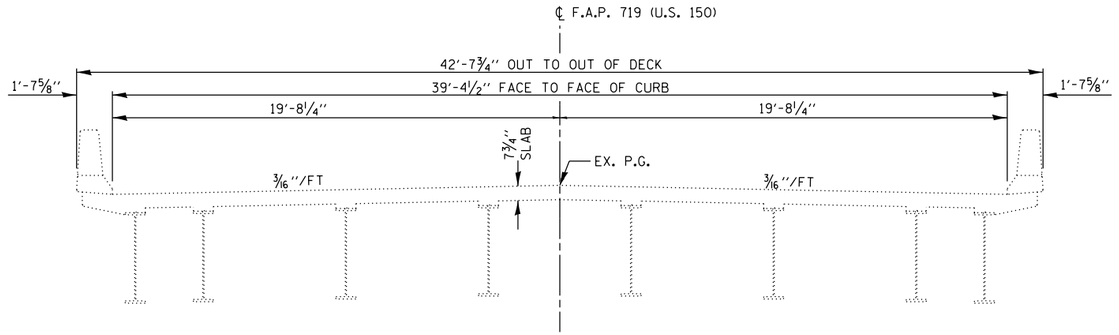
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| FILE NAME = L:\IDOT\1106602\Draw\CADD_Sheets\TMP\.. Default | USER NAME = Brad Downen | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 20.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 11:32:24 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**NORTH MATTIS AVENUE OVER I-57**

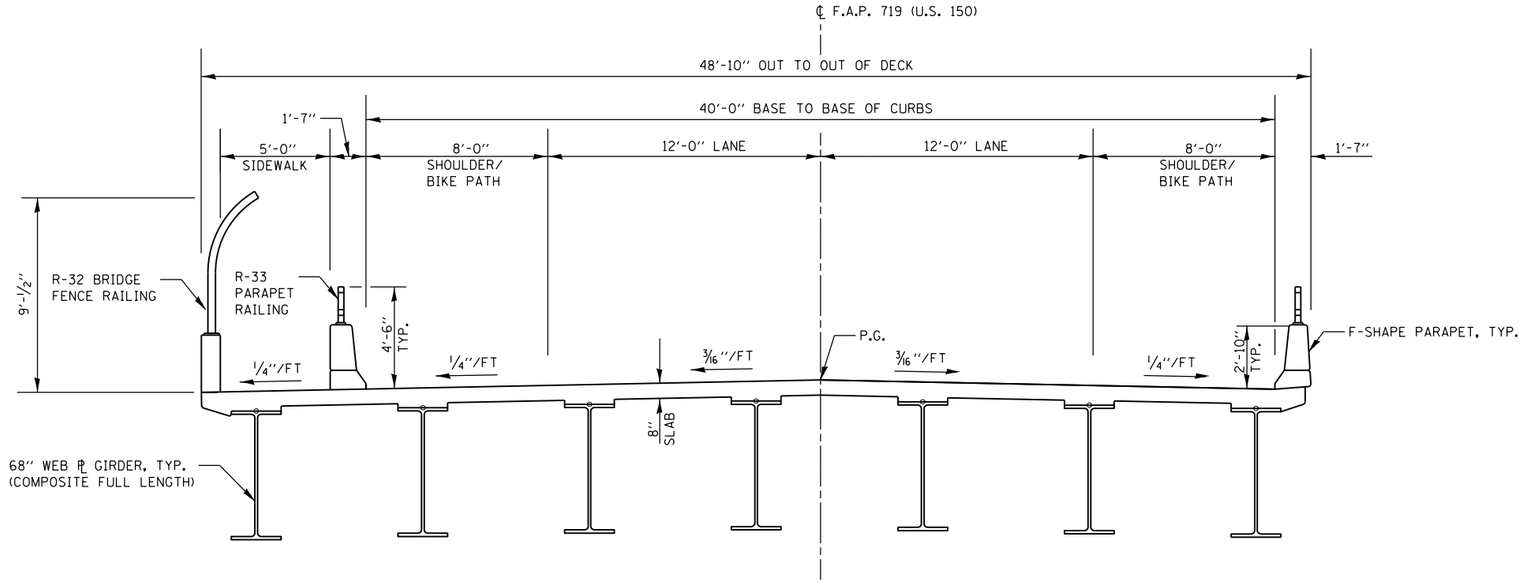
SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**EXISTING TYPICAL SECTION**

(LOOKING EAST)
SCALE: NTS




**PROPOSED TYPICAL SECTION**

(LOOKING EAST)
SCALE: NTS

# EXHIBIT 10

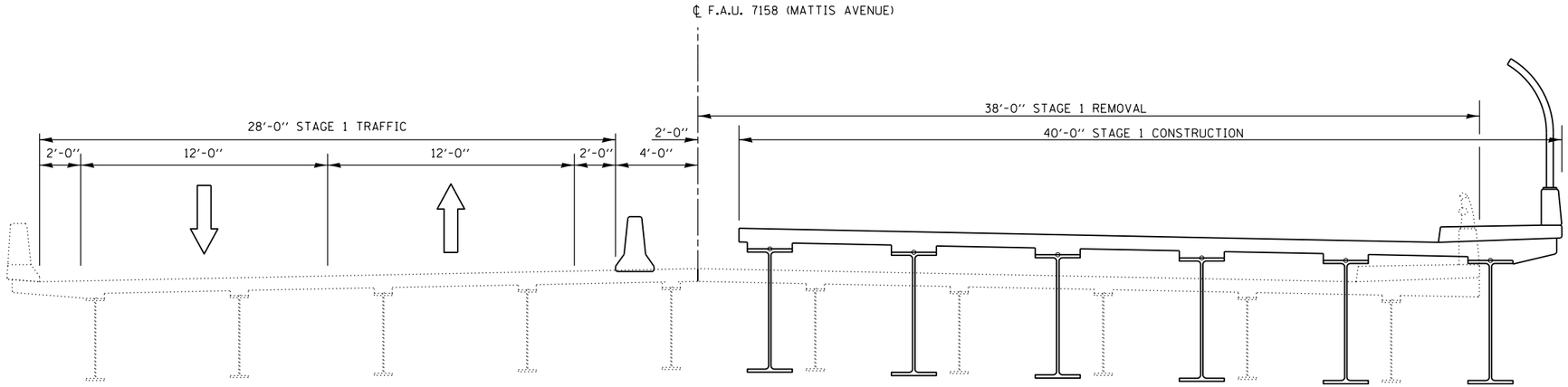
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|---|---|---|---|
| FILE NAME = L:\IDOT\1106602\Draw\CADD_Sheets\TMP\.. Default | USER NAME = Brad Downen | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 20.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 11:33:21 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**
**U.S. 150 (W. BLOOMINGTON ROAD) OVER I-57**

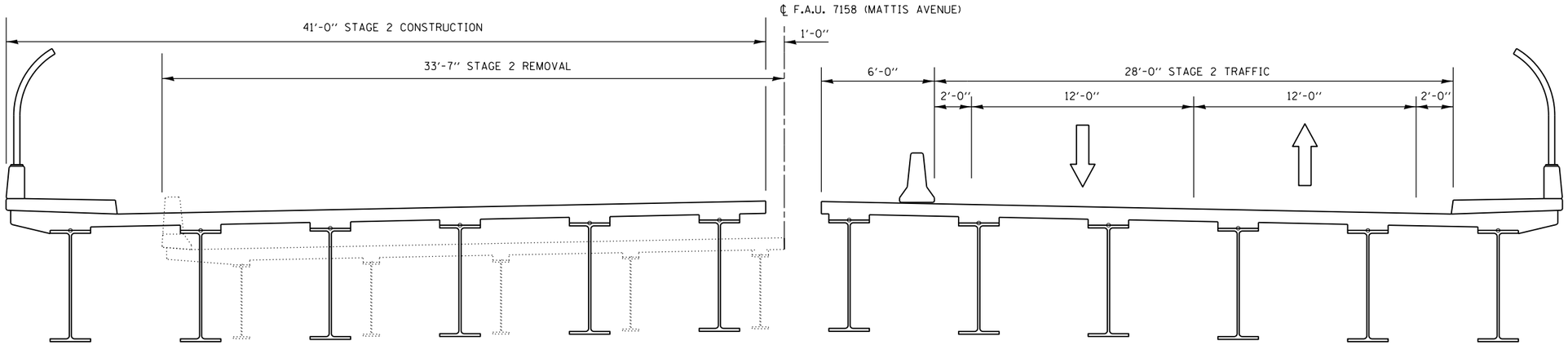
SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |



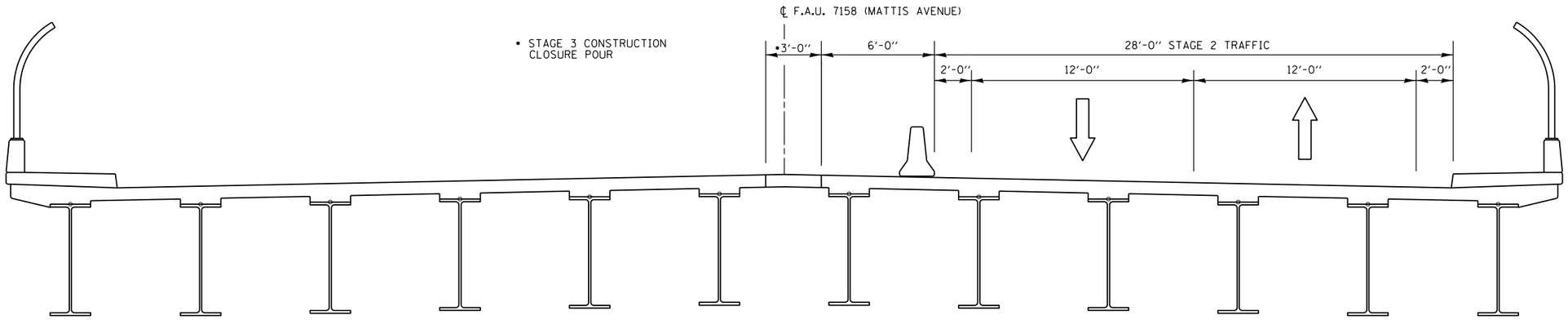

**STAGE 1 TYPICAL SECTION**

(LOOKING NORTH)
SCALE: NTS




**STAGE 2 TYPICAL SECTION**

(LOOKING NORTH)
SCALE: NTS




**STAGE 3 TYPICAL SECTION**

(LOOKING NORTH)
SCALE: NTS

# EXHIBIT 11

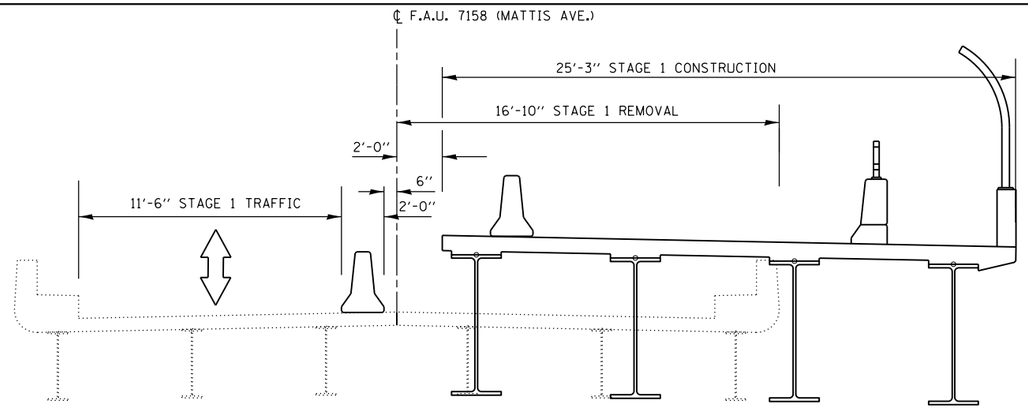
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|---|---|---|---|
| FILE NAME = L:\IDOT\1106602\Draw\CADD_Sheets\TMP\.. Default | USER NAME = Brad Downen | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 20.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 11:32:23 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**NORTH MATTIS AVENUE OVER I-74 – OPTION 2**

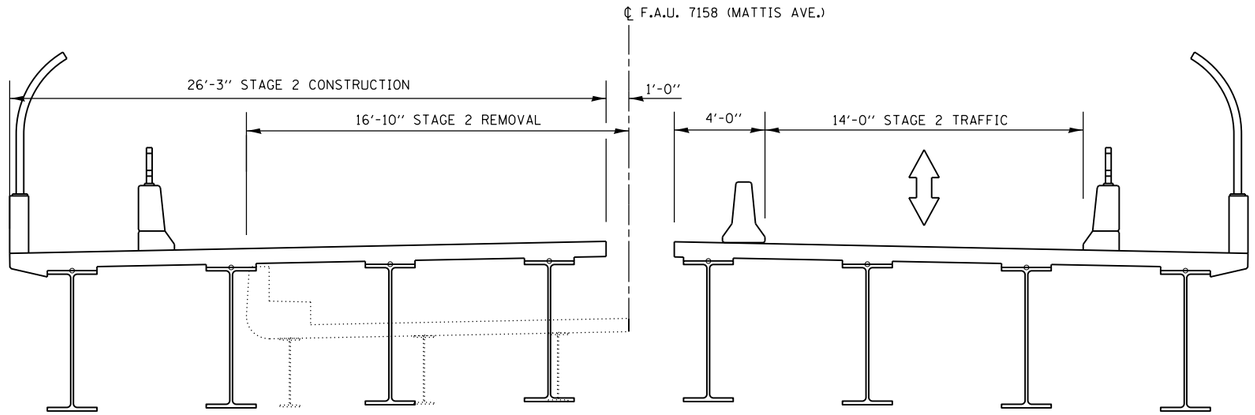
SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS | FED. AID PROJECT | | |



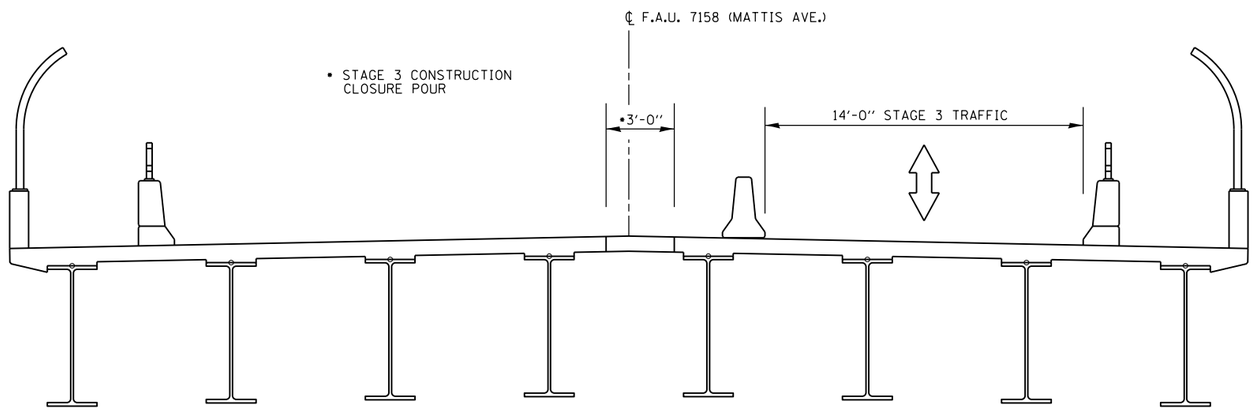

**STAGE 1 TYPICAL SECTION**

(LOOKING NORTH)
SCALE: NTS




**STAGE 2 TYPICAL SECTION**

(LOOKING NORTH)
SCALE: NTS




**STAGE 3 TYPICAL SECTION**

(LOOKING NORTH)
SCALE: NTS

**EXHIBIT 12**

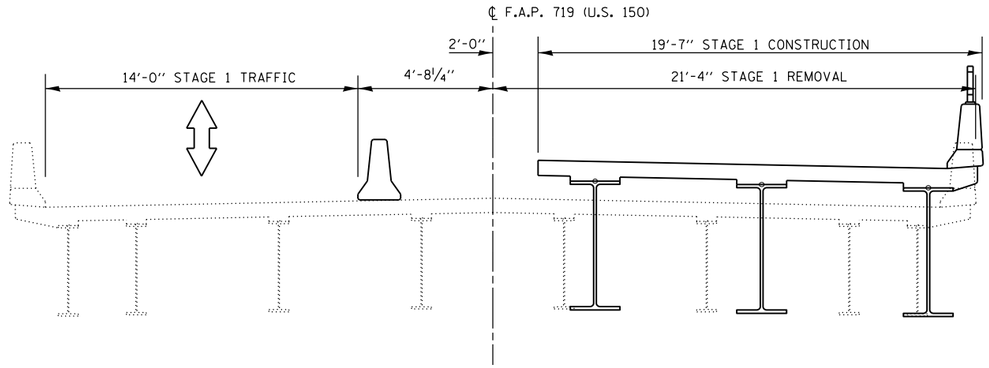
| | | | |
|---|---|---|---|
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| | | DRAWN - | REVISED - |
| | PLOT SCALE = 20.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 11:32:23 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**NORTH MATTIS AVENUE OVER I-57 – OPTION 2**

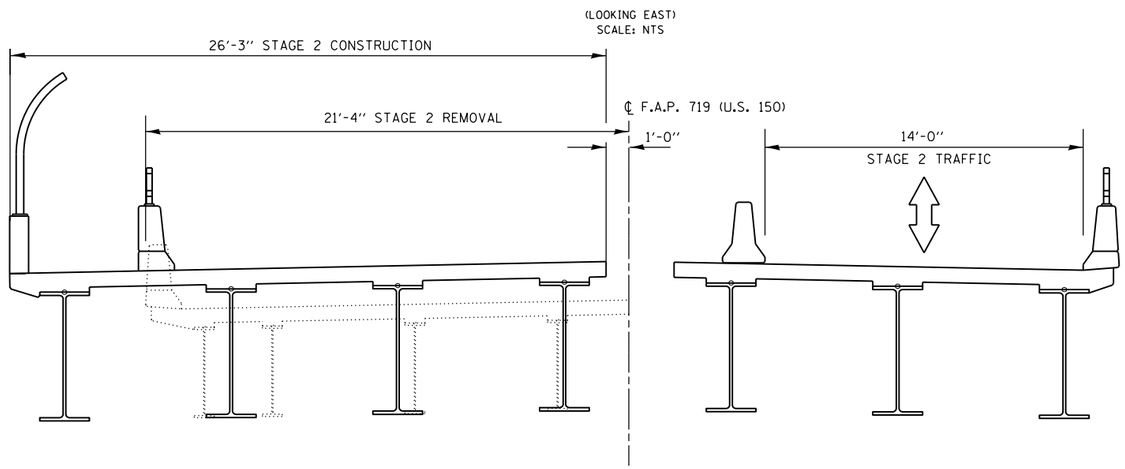
SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS | FED. AID PROJECT | | |



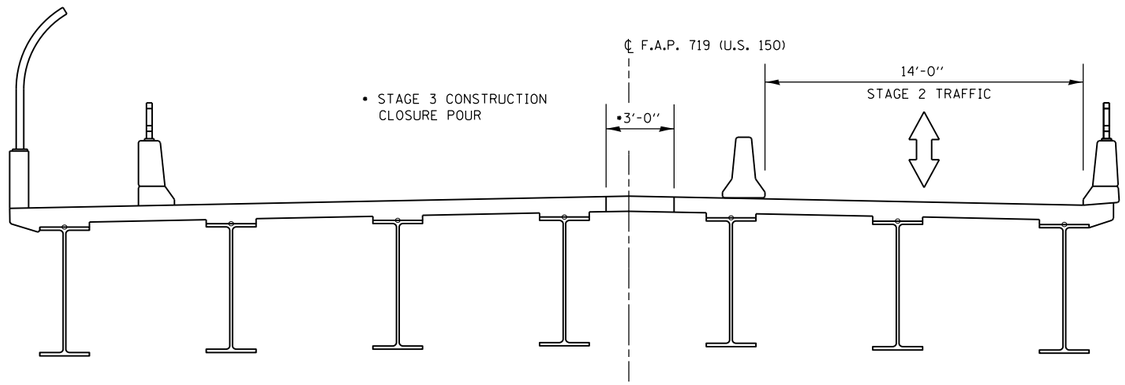

**STAGE 1 TYPICAL SECTION**

(LOOKING EAST)
SCALE: NTS




**STAGE 2 TYPICAL SECTION**

(LOOKING EAST)
SCALE: NTS




**STAGE 3 TYPICAL SECTION**

(LOOKING EAST)
SCALE: NTS

# EXHIBIT 13

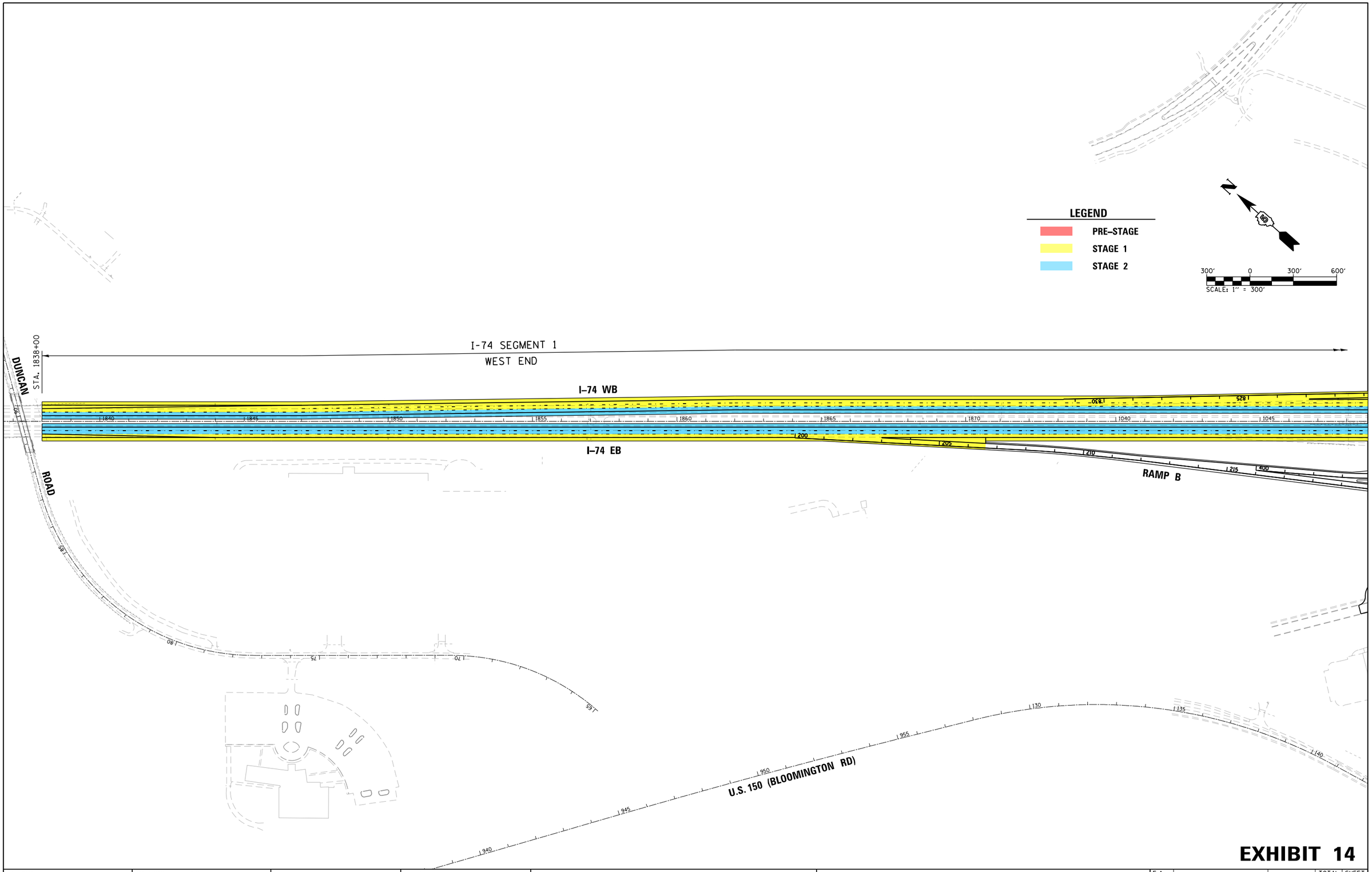
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| | | DRAWN - | REVISED - |
| | PLOT SCALE = 20.0000 ' / in. | CHECKED - | REVISED - |
| Default | PLOT DATE = 8/19/2015 - 11:33:21 AM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**U.S. 150 (W. BLOOMINGTON ROAD) OVER I-57 – OPTION 2**

SHEET 1 OF 1 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 14

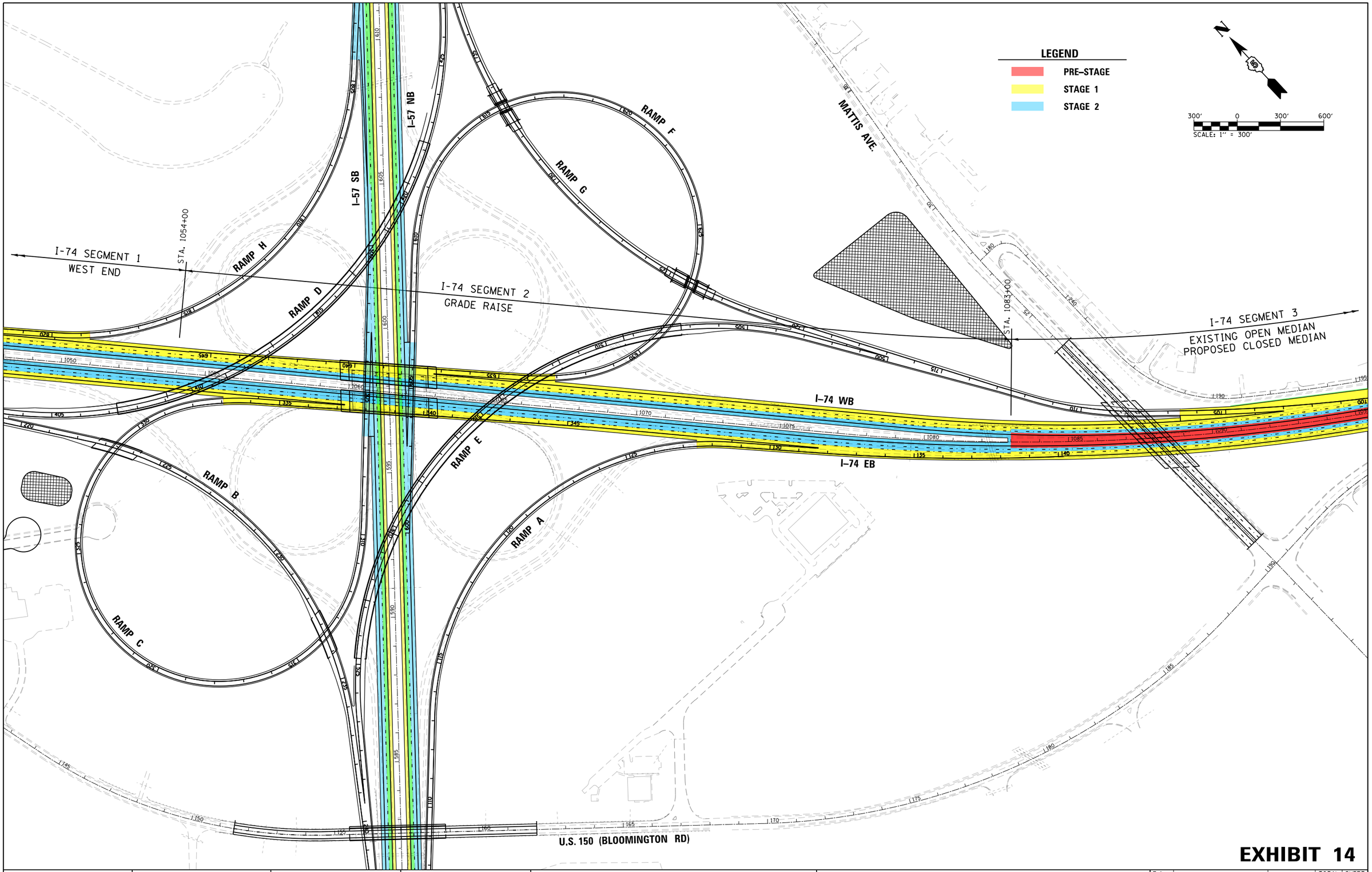
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|---|---|---|---|
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| | | DRAWN - | REVISED - |
| | PLOT SCALE = 300.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 1:13:56 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I-74 – OPTION 1**

SCALE: | SHEET 1 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 14

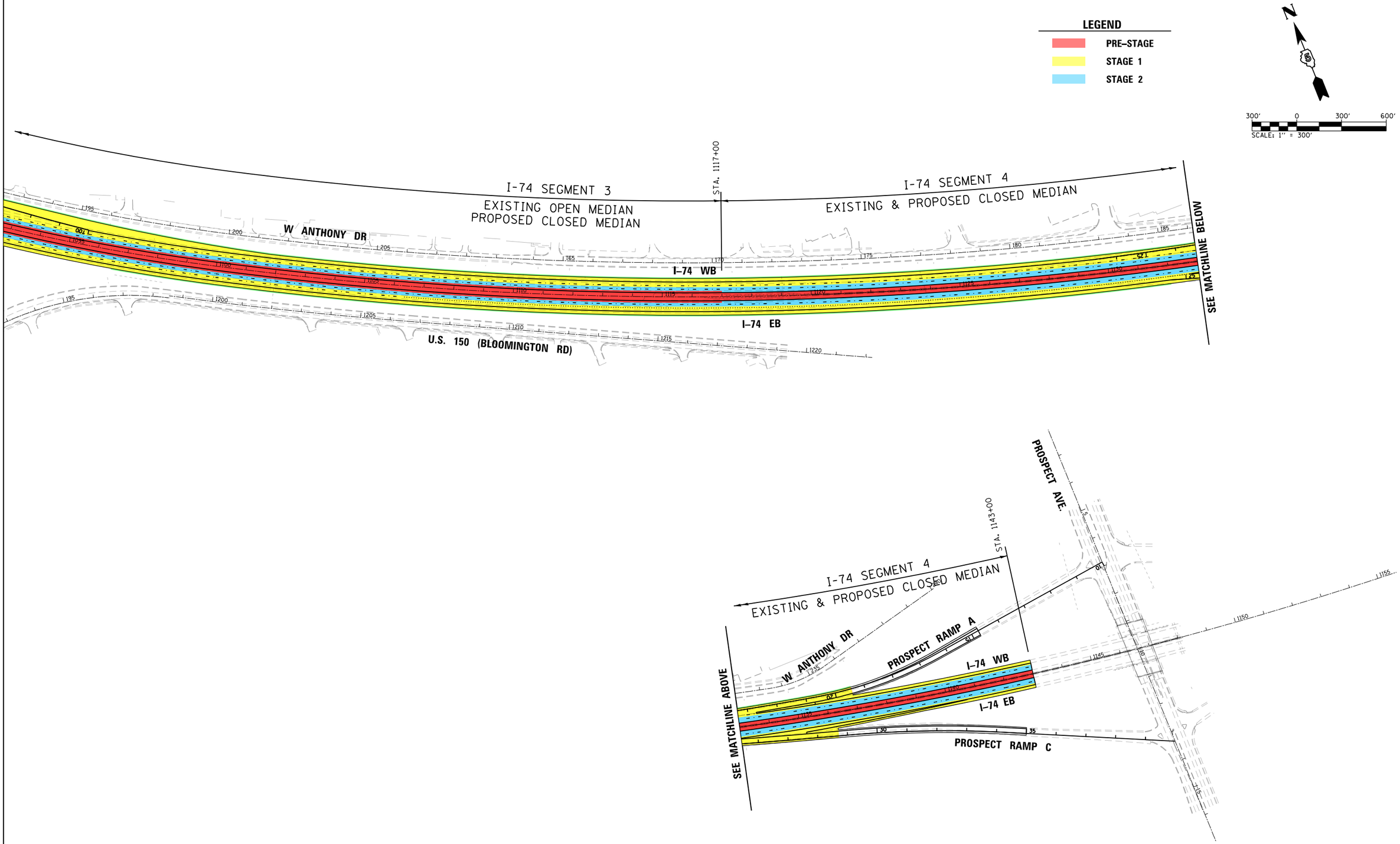
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|---|---|---|---|
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| | | DRAWN - | REVISED - |
| | PLOT SCALE = 300.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 1:13:57 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I–74 – OPTION 1**

SCALE: | SHEET 2 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 14

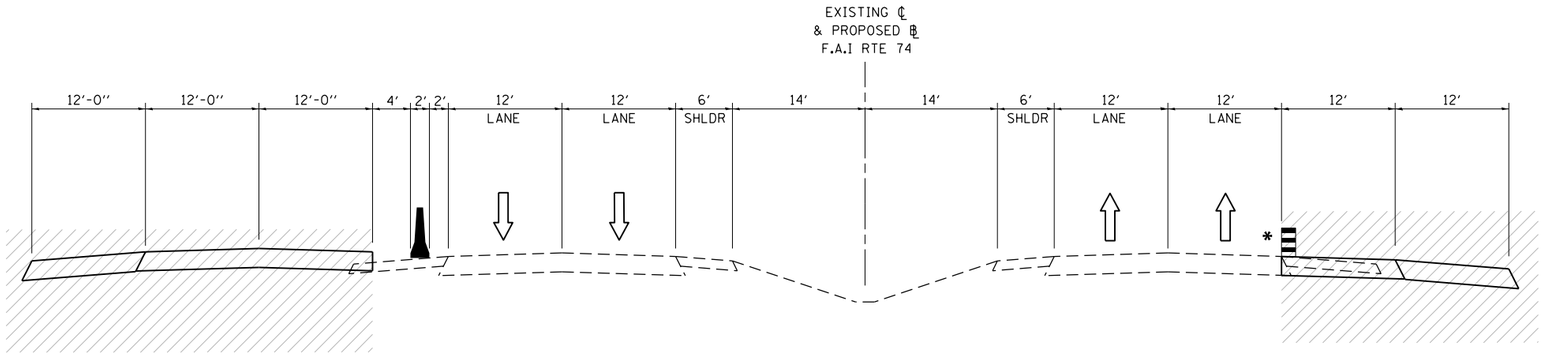
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I-74 – OPTION 1**

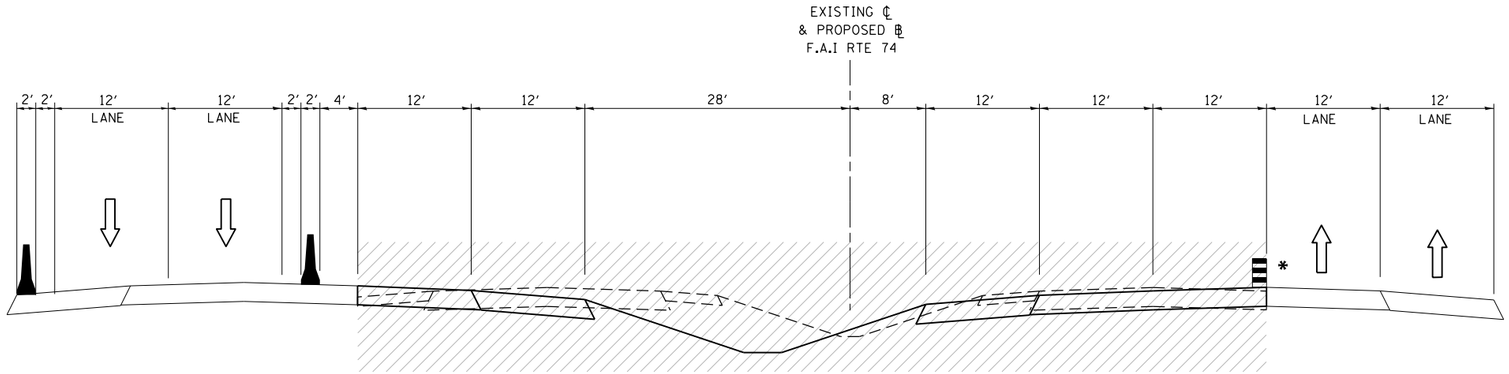
SCALE: | SHEET 3 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 1**
**STAGE 1 – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00




**TYPICAL SECTION – SEGMENT 1**
**STAGE 2 – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 15

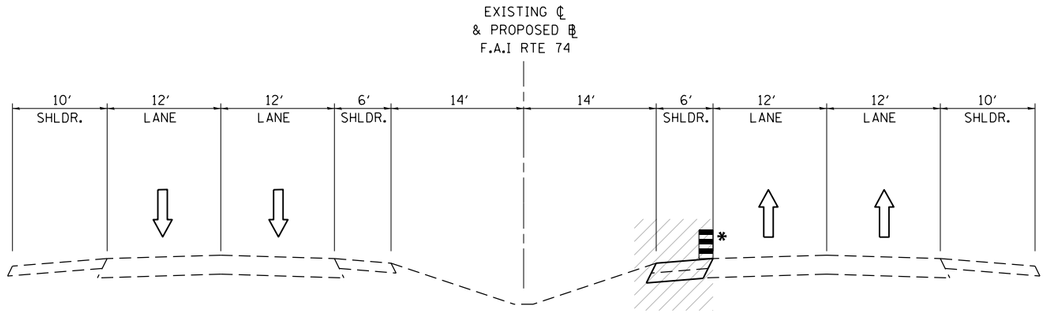
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 1**

SHEET 1 OF 8 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 2
## PRE-STAGE A – GRADE RAISE
STA. 1054+00 TO STA. 1083+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 15**

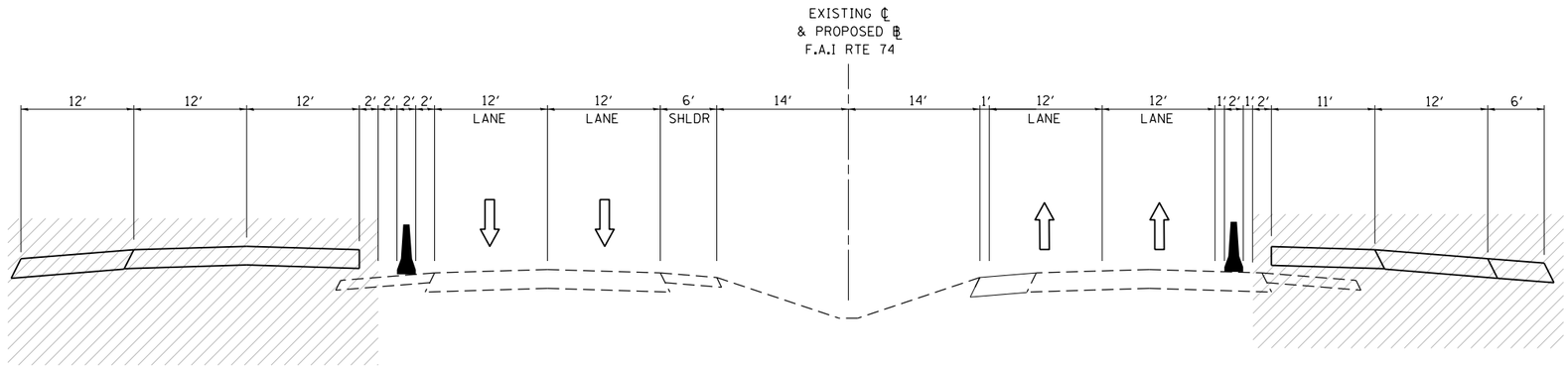
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|---|---|---|---|
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

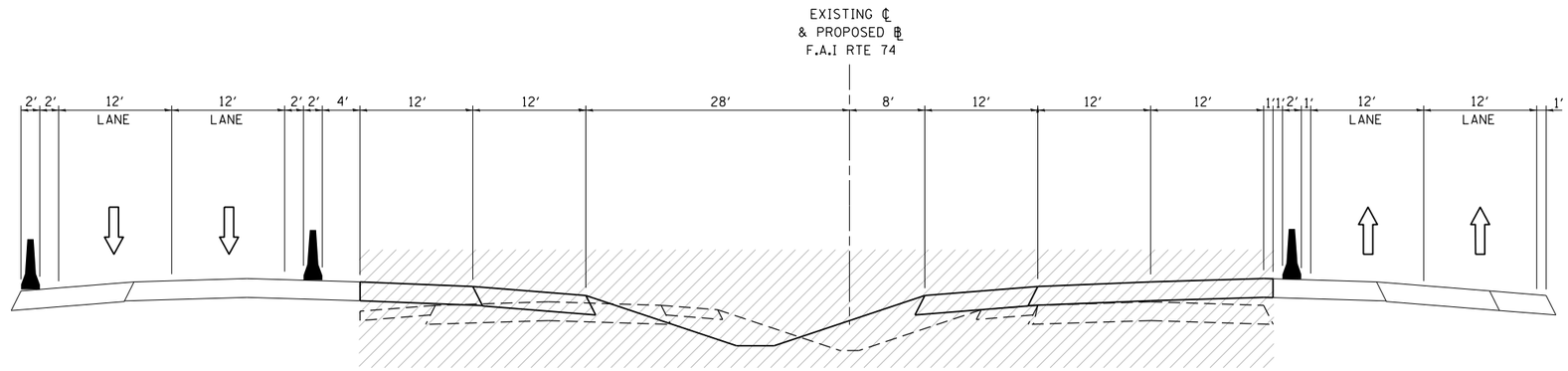
**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 1**

SHEET 2 OF 8 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 2**
**STAGE 1 – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00




**TYPICAL SECTION – SEGMENT 2**
**STAGE 2 – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

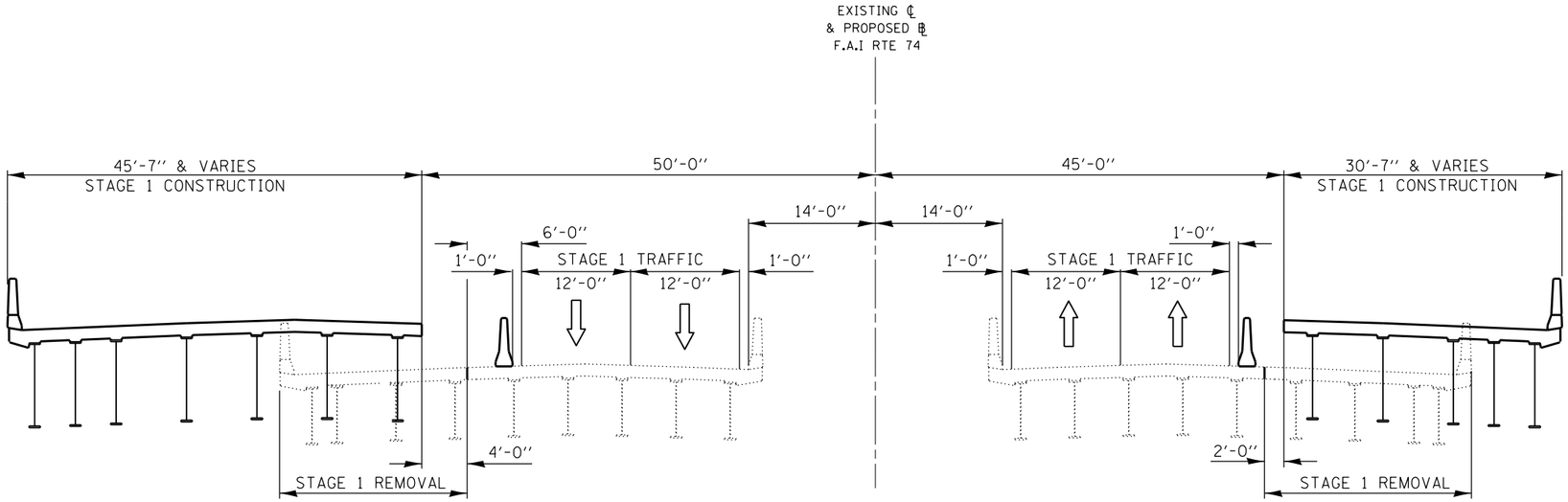
# EXHIBIT 15

| | | | |
|---|---|---|---|
| FILE NAME = $FILEL$ | USER NAME = $USER$ | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 1**
SHEET 3 OF 8 SHEETS STA. TO STA.

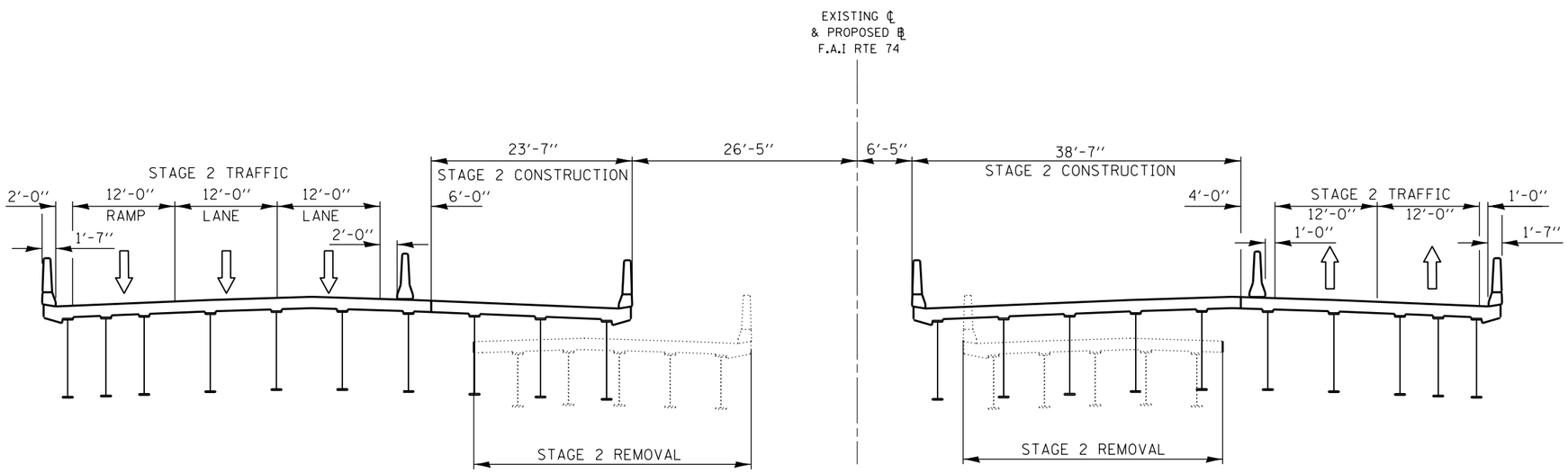
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## TYPICAL SECTION – SEGMENT 2
## STAGE 1 – BRIDGE




**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## TYPICAL SECTION – SEGMENT 2
## STAGE 2 – BRIDGE

**EXHIBIT 15**

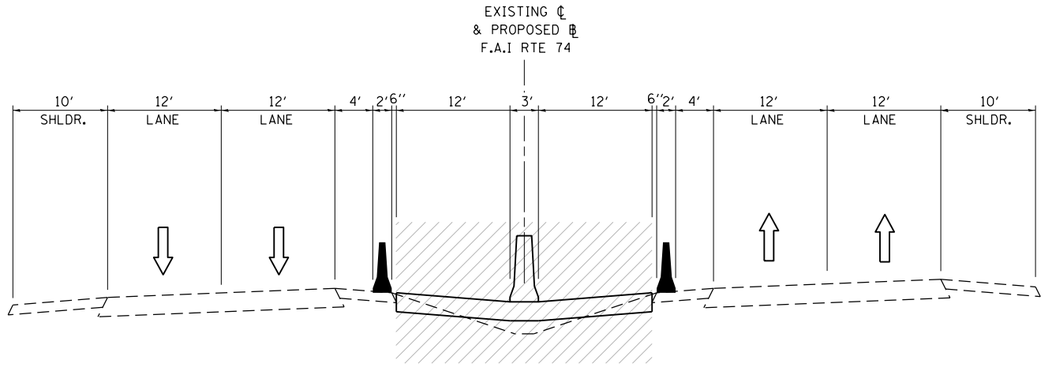
| | | | |
|---|---|---|---|
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| $FILEL$ | | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 1**

SHEET 4 OF 8 SHEETS STA. TO STA.

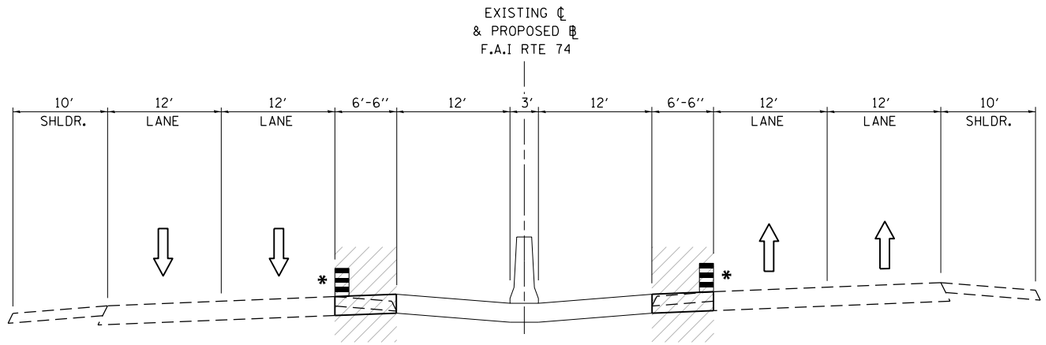
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 3**

**PRE–STAGE A – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN**

STA. 1083+00 TO STA. 1117+00




**TYPICAL SECTION – SEGMENT 3**

**PRE–STAGE B – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN**

STA. 1083+00 TO STA. 1117+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 15**

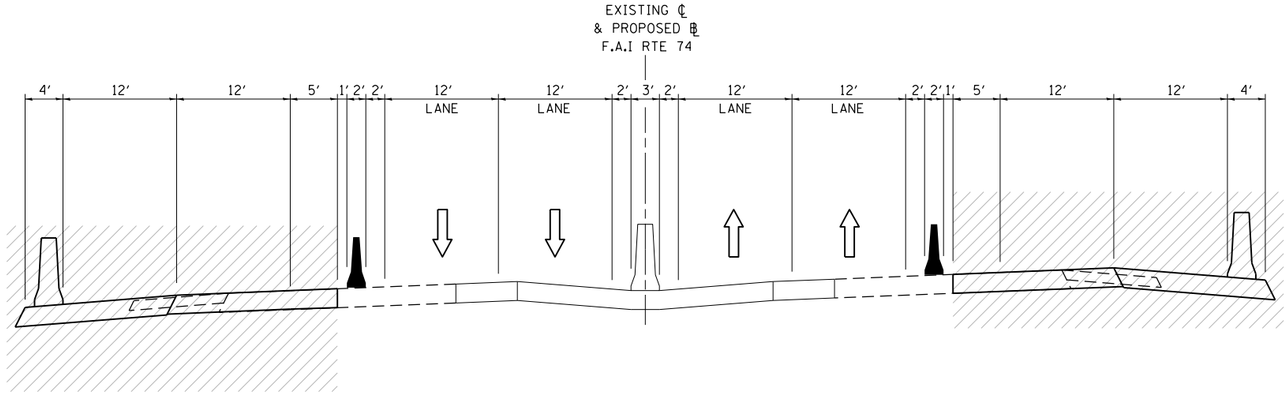
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

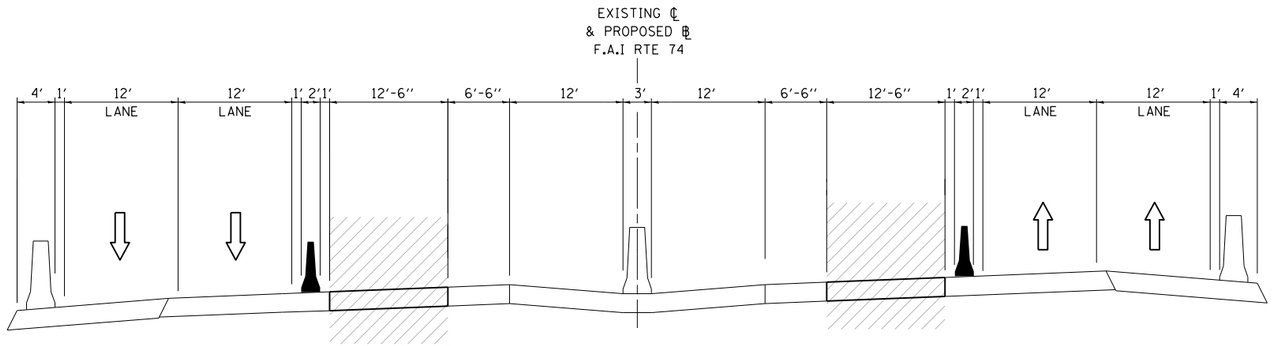
**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 1**

SHEET 5 OF 8 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 3**
**STAGE 1 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN**
STA. 1083+00 TO STA. 1117+00




**TYPICAL SECTION – SEGMENT 3**
**STAGE 2 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN**
STA. 1083+00 TO STA. 1117+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 15

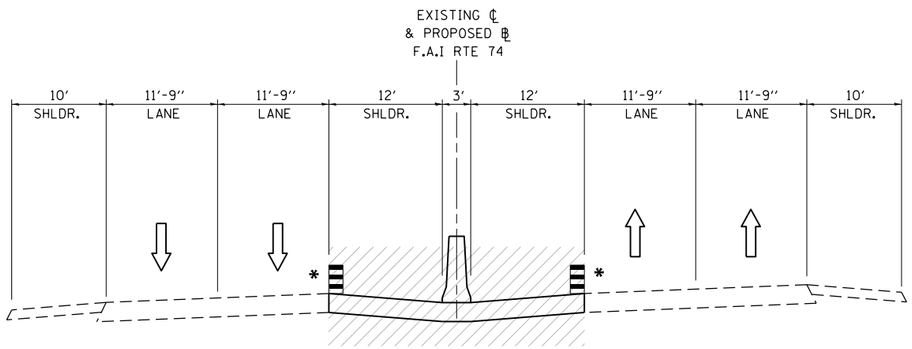
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| | | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 1**

SHEET 6 OF 8 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 4
## PRE-STAGE A – EXISTING & PROPOSED CLOSED MEDIAN
STA. 1117+00 TO STA. 1143+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 15

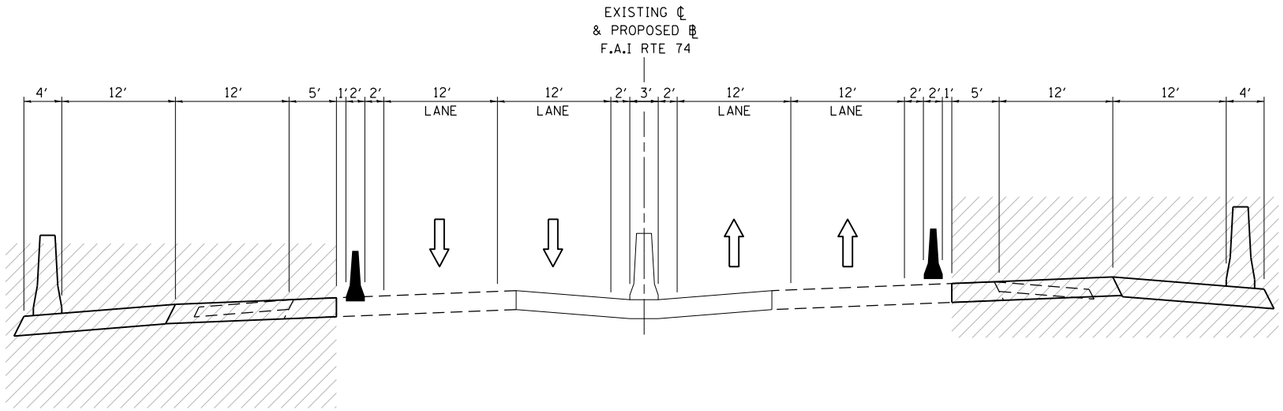
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| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

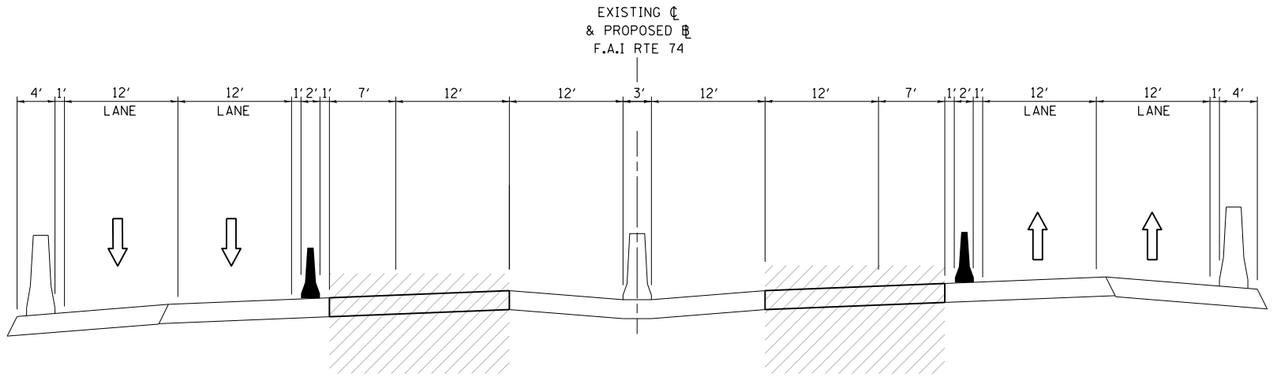
**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 1**

SHEET 7 OF 8 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 4**
**STAGE 1 – EXISTING & PROPOSED CLOSED MEDIAN**
STA. 1117+00 TO STA. 1143+00




**TYPICAL SECTION – SEGMENT 4**
**STAGE 2 – EXISTING & PROPOSED CLOSED MEDIAN**
STA. 1117+00 TO STA. 1143+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 15**

| | | | |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 1**
SHEET 8 OF 8 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 16

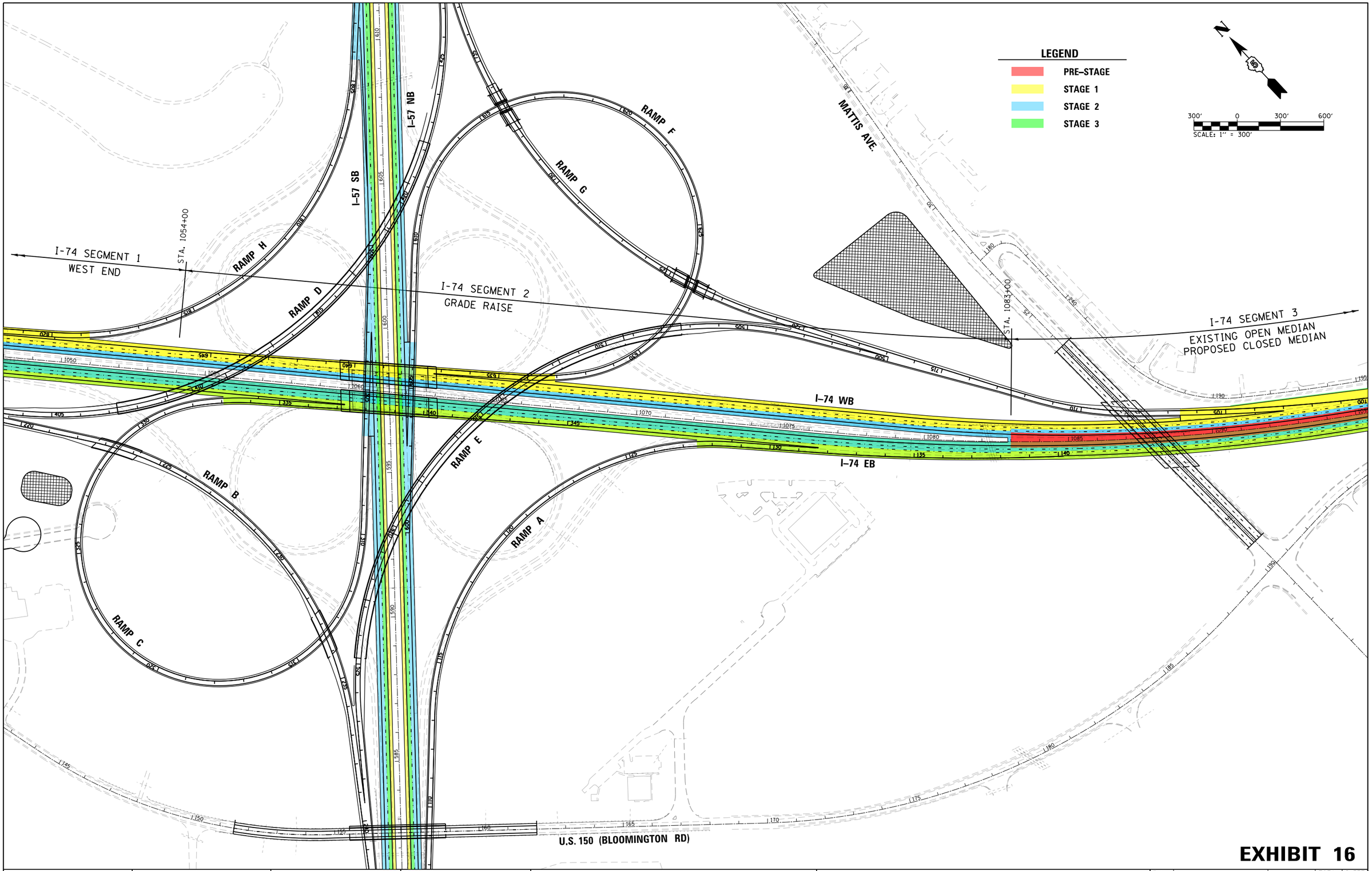
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| Default | PLOT DATE = 8/19/2015 - 1:14:34 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I-74 – OPTION 2**

SCALE: | SHEET 1 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 16

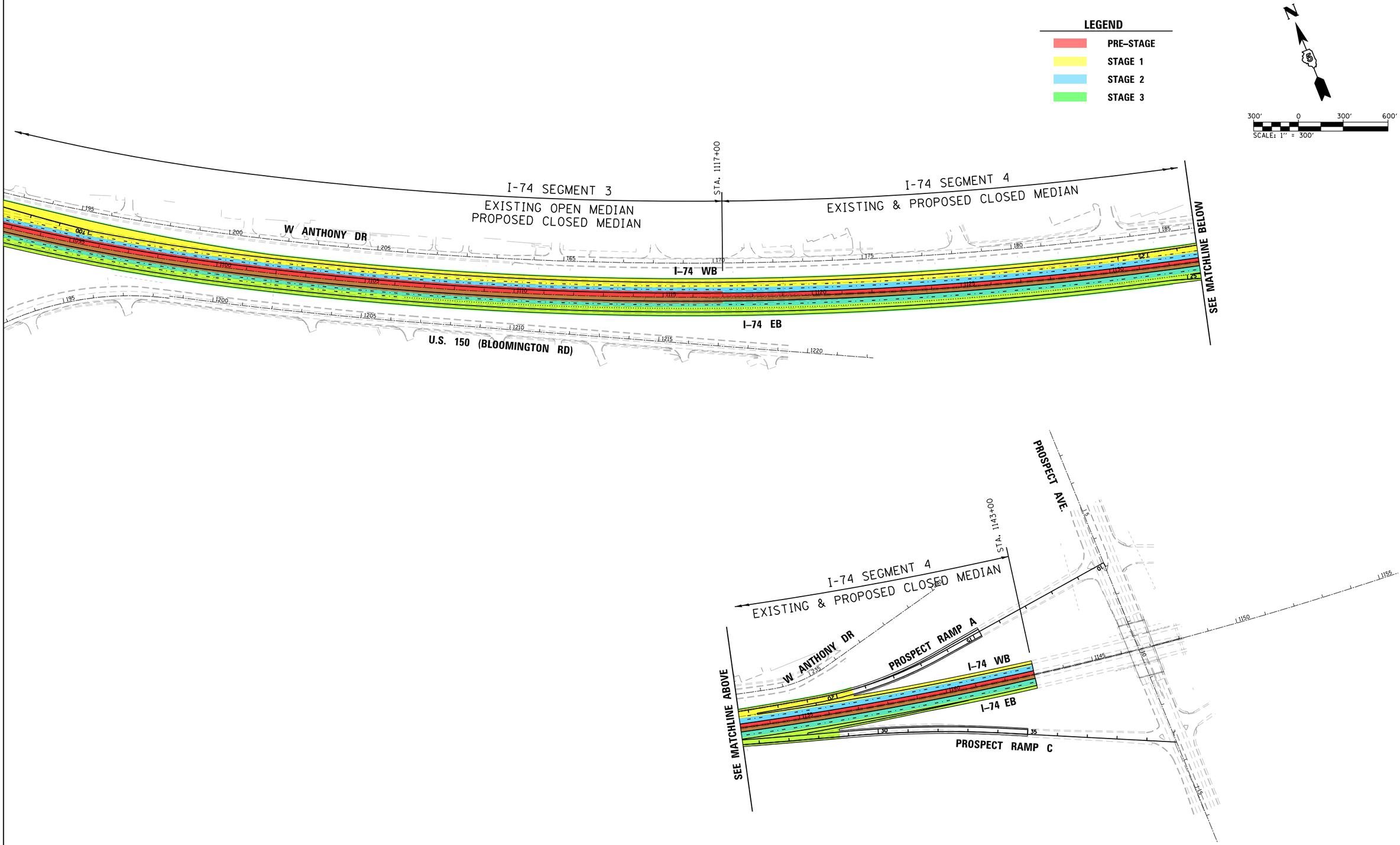
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = 8/19/2015 - 1:14:34 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I–74 – OPTION 2**

SCALE: | SHEET 2 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 16

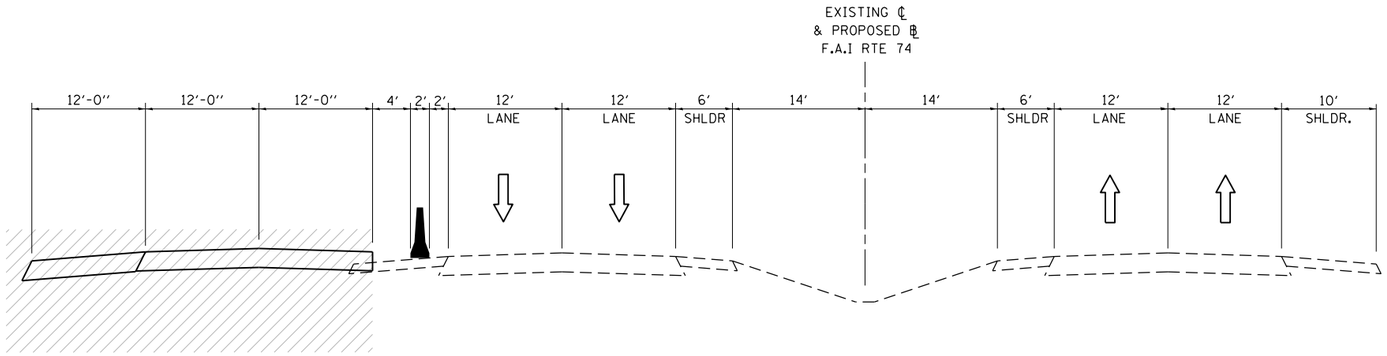
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I-74 – OPTION 2**

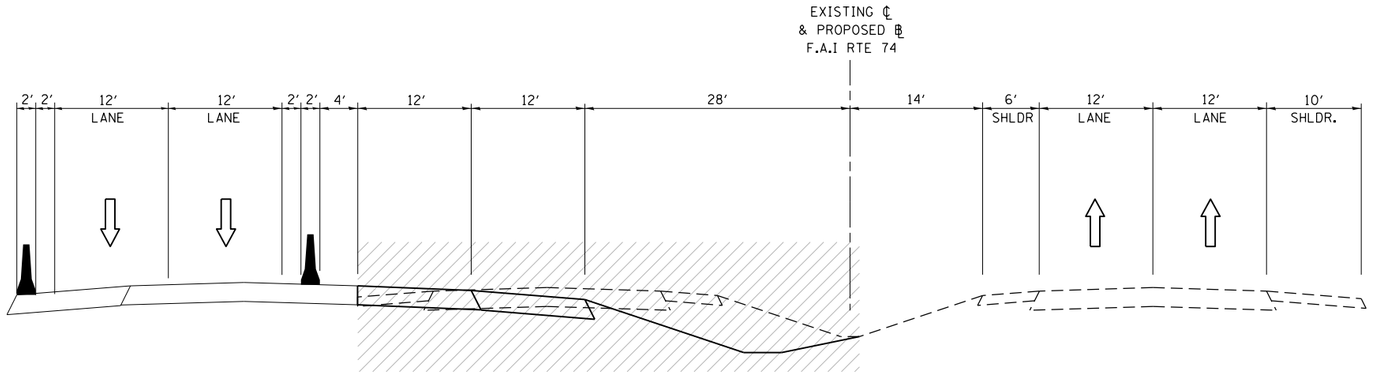
SCALE: | SHEET 3 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 1**
**STAGE 1 – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00




**TYPICAL SECTION – SEGMENT 1**
**STAGE 2 – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 17

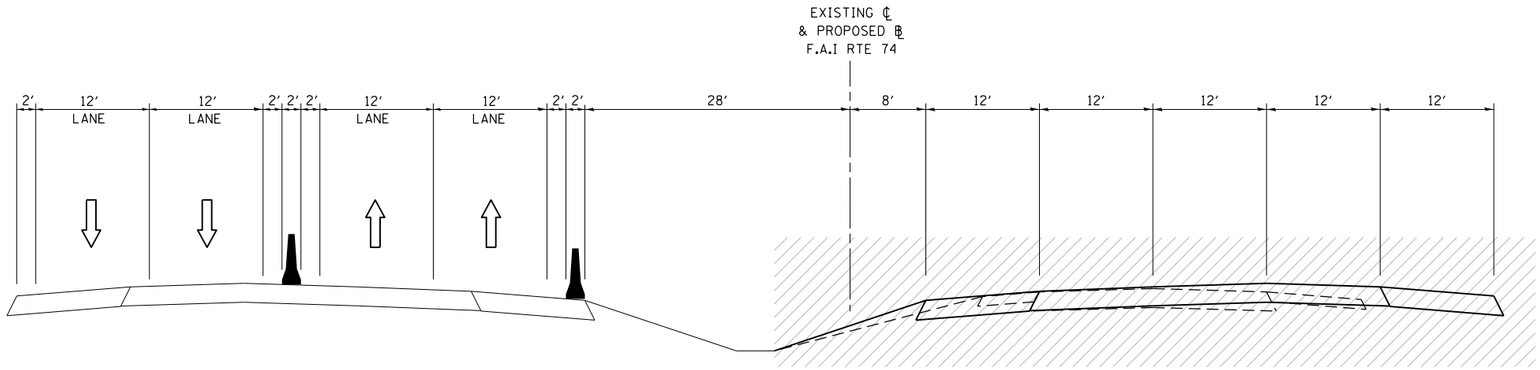
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 2**

SHEET 1 OF 11 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS | FED. AID PROJECT | | |




**TYPICAL SECTION – SEGMENT 1**
**STAGE 3 – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 17**

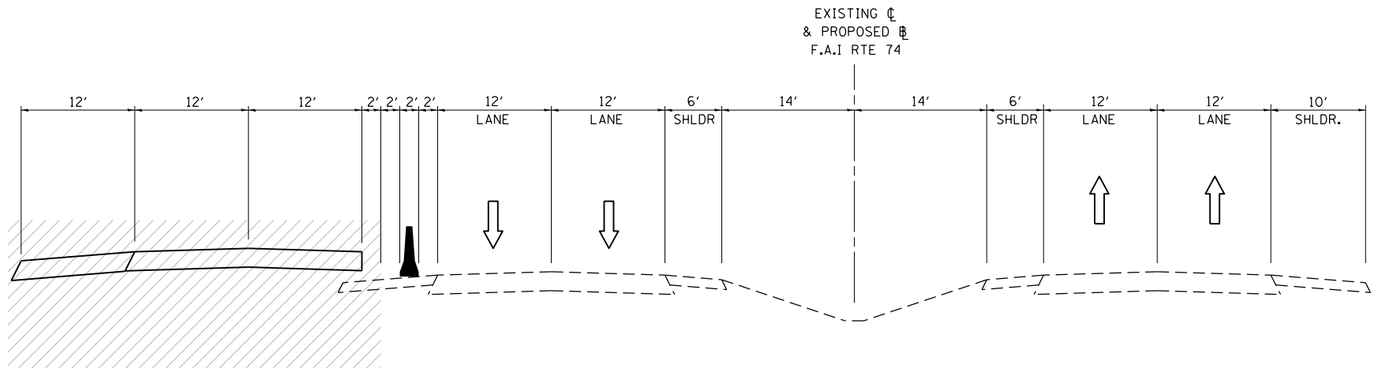
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

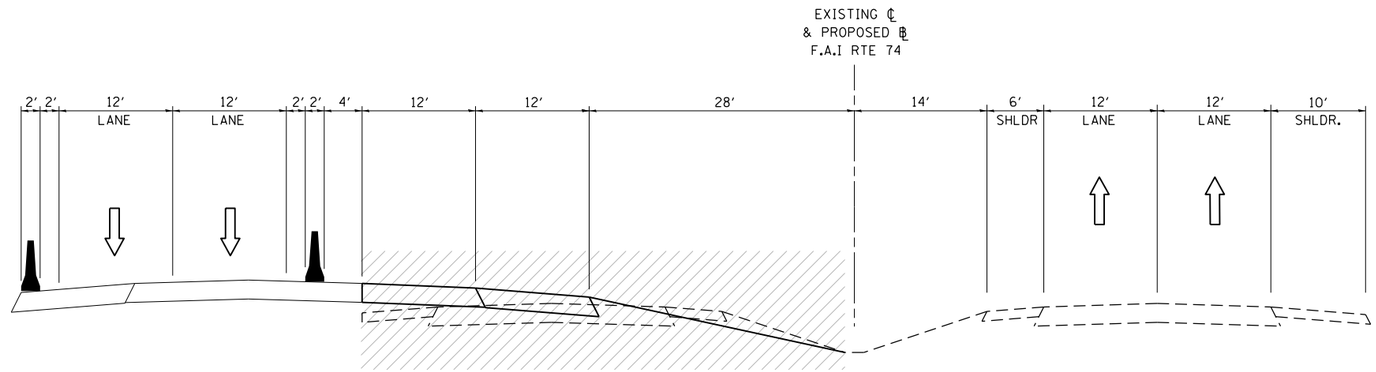
**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 2**

SHEET 2 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 2**
**STAGE 1 – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00




**TYPICAL SECTION – SEGMENT 2**
**STAGE 2 – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 17**

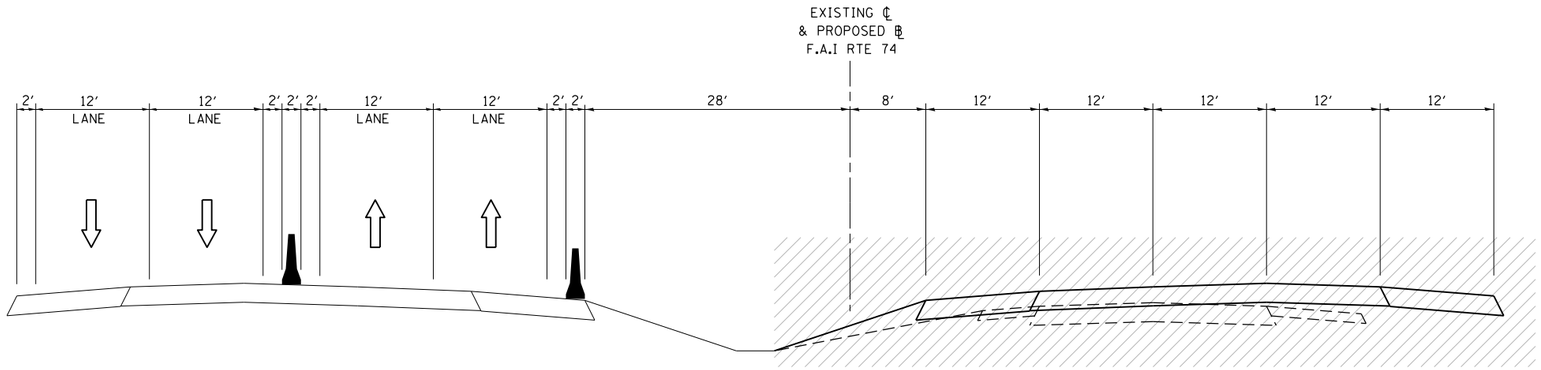
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 2**

SHEET 3 OF 11 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 2**
**STAGE 3 – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 17

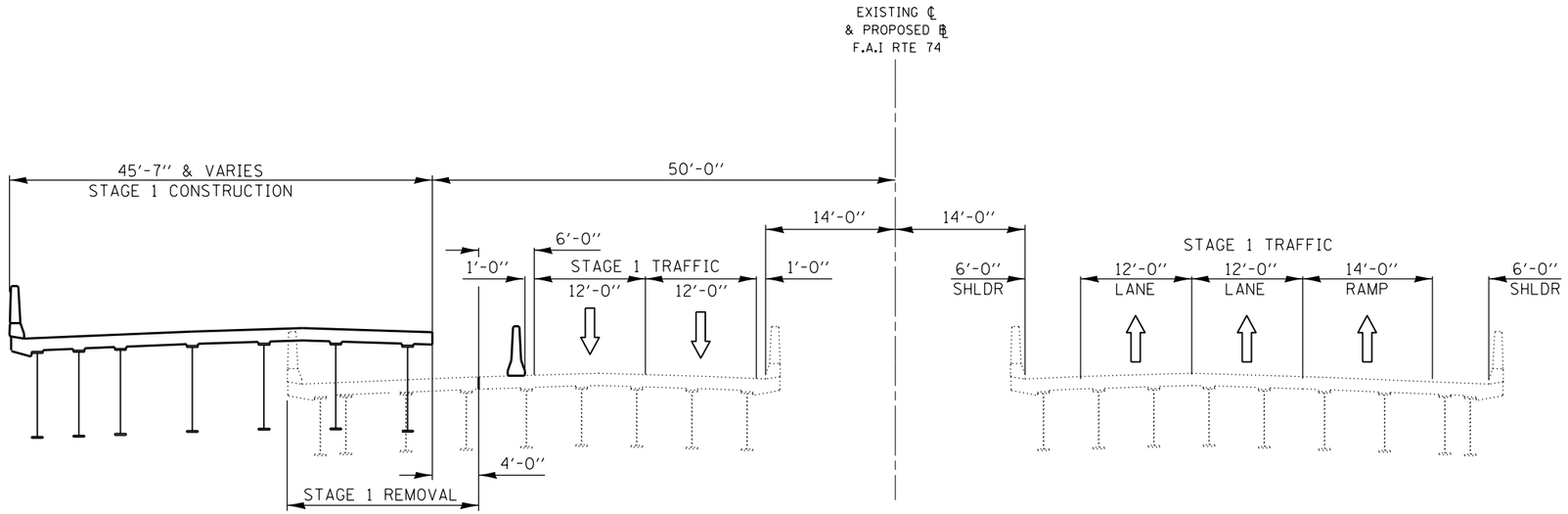
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 2**

SHEET 4 OF 11 SHEETS STA. TO STA.

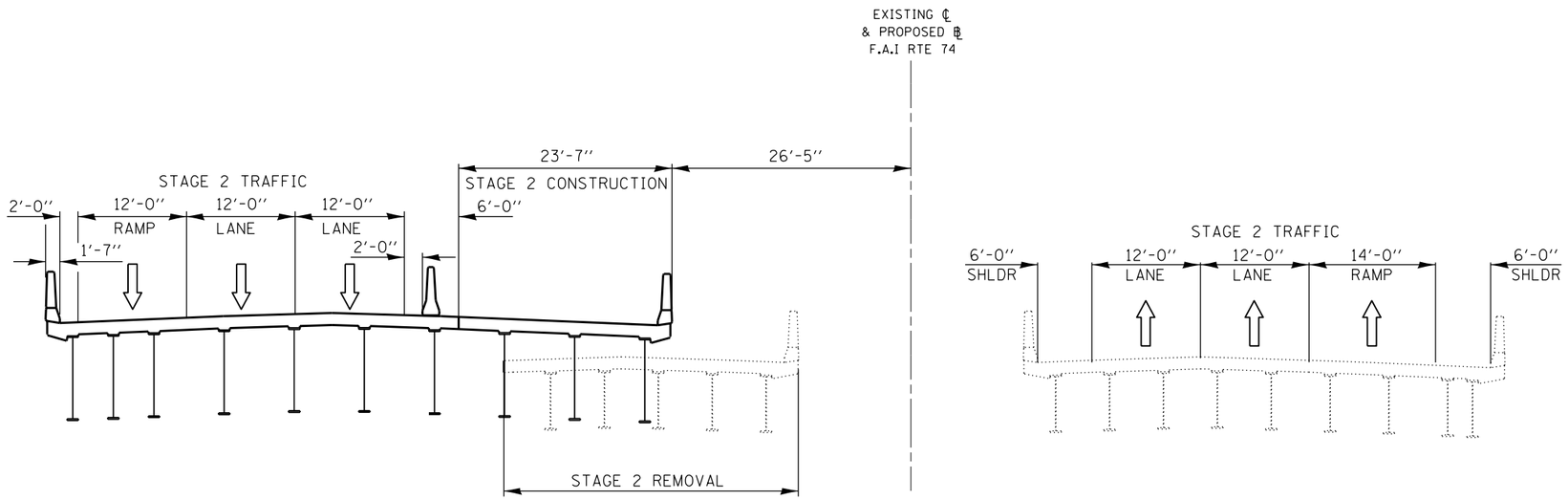
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## TYPICAL SECTION – SEGMENT 2
## STAGE 1 – BRIDGE




**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## TYPICAL SECTION – SEGMENT 2
## STAGE 2 – BRIDGE

**EXHIBIT 17**

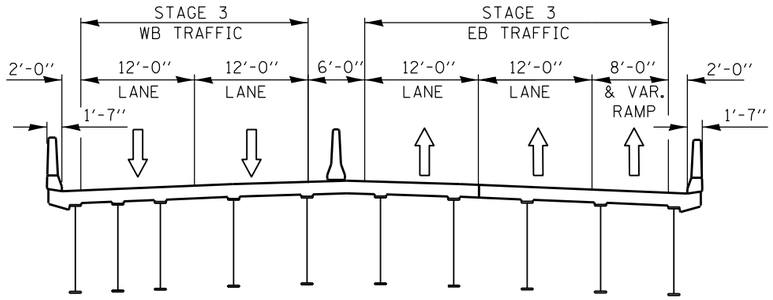
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| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

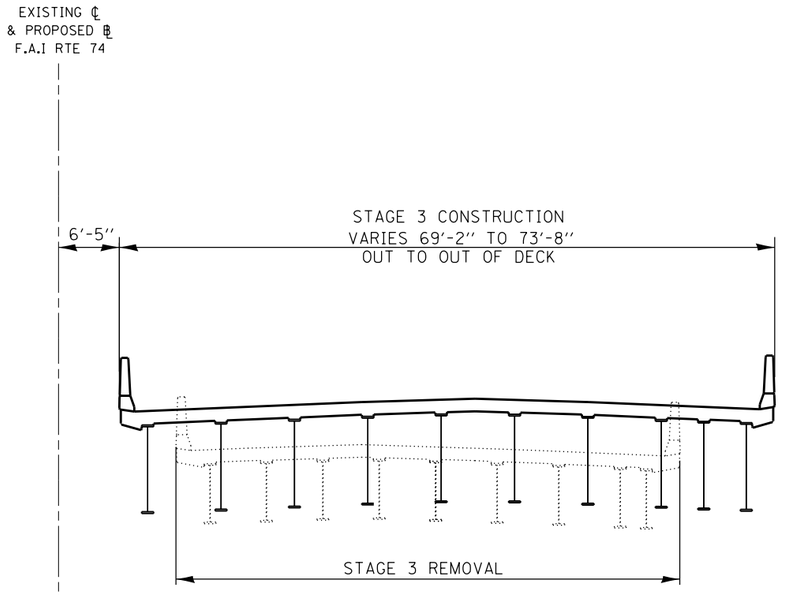
**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 2**

SHEET 5 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**I–74 OVER I–57**
**WESTBOUND BRIDGE**




**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## TYPICAL SECTION – SEGMENT 2
## STAGE 3 – BRIDGE

**EXHIBIT 17**

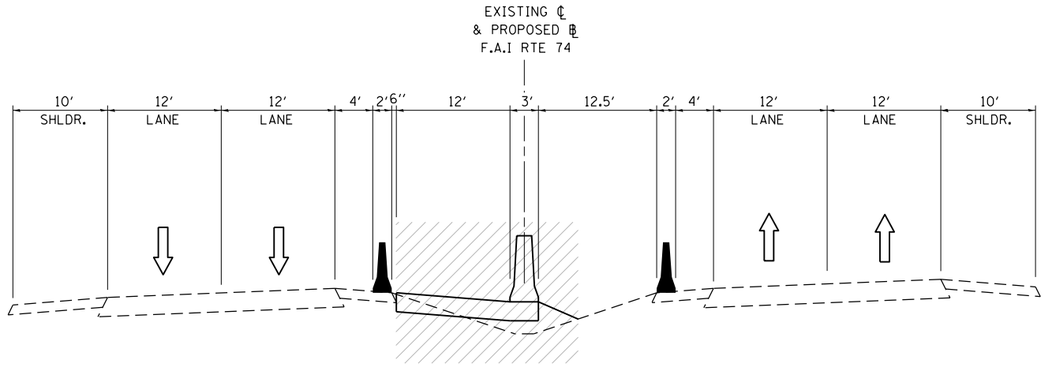
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 2**

SHEET 6 OF 11 SHEETS | STA. | TO STA.

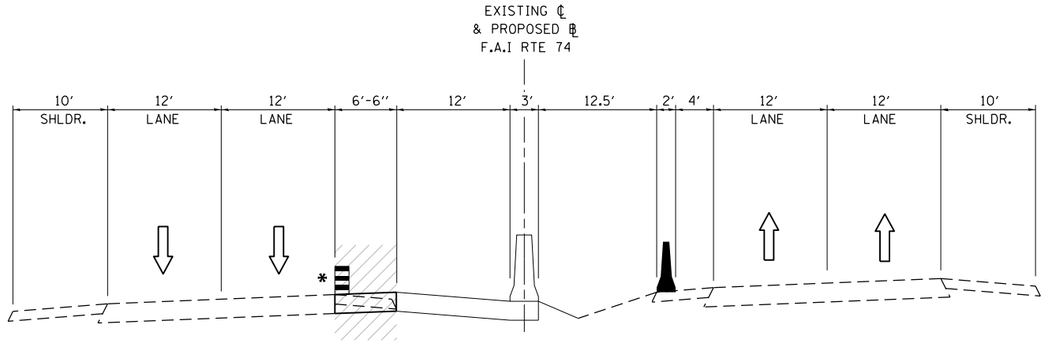
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 3**

**PRE–STAGE A – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN**

STA. 1083+00 TO STA. 1117+00




**TYPICAL SECTION – SEGMENT 3**

**PRE–STAGE B – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN**

STA. 1083+00 TO STA. 1117+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 17**

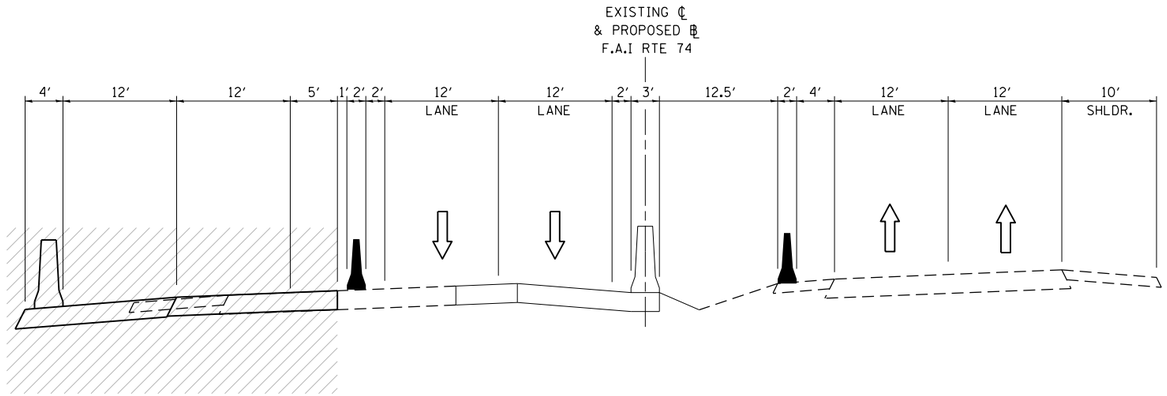
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| | | DRAWN - | REVISED - |
| $MODELNAME$ | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 2**

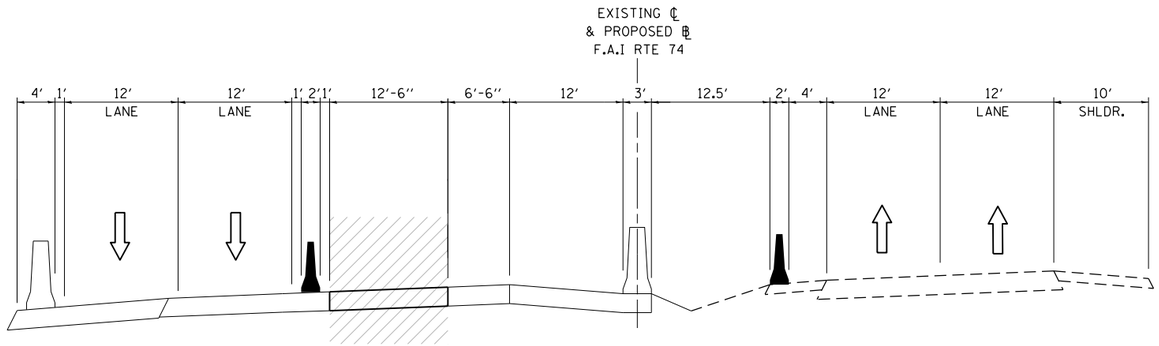
SHEET 7 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS | FED. AID PROJECT | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 1 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 2 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 17

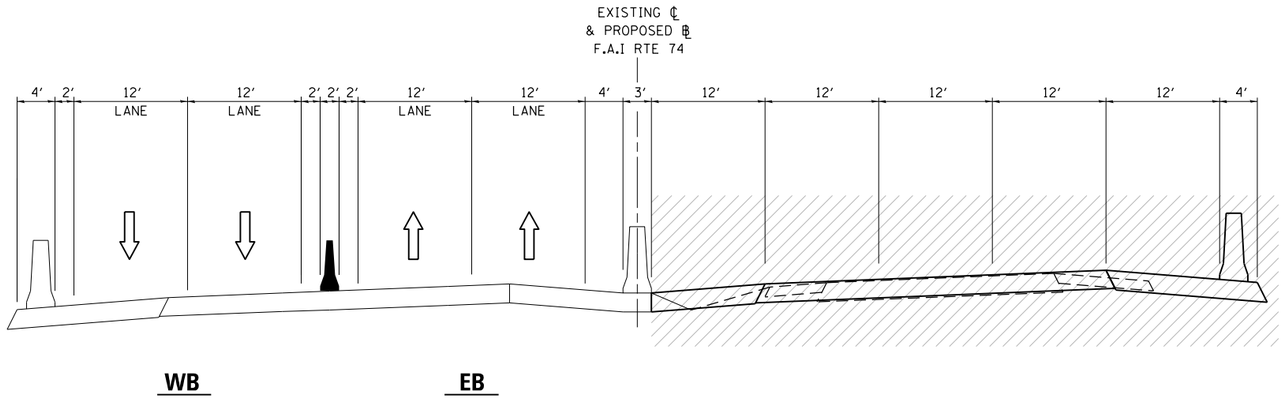
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 2**

SHEET 8 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 3**

**STAGE 3 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN**

STA. 1083+00 TO STA. 1117+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 17

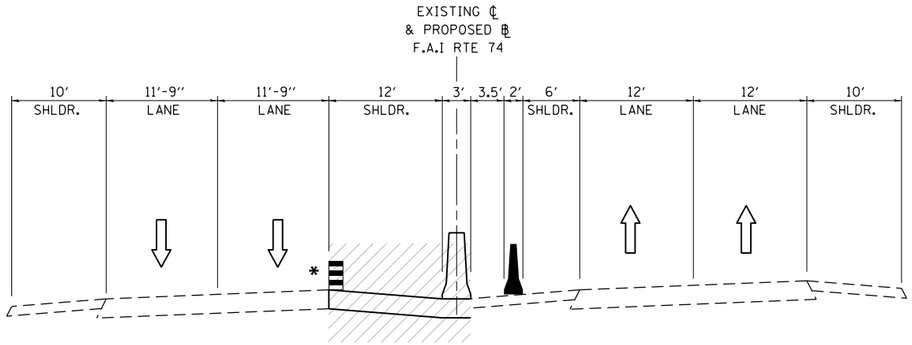
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| | | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

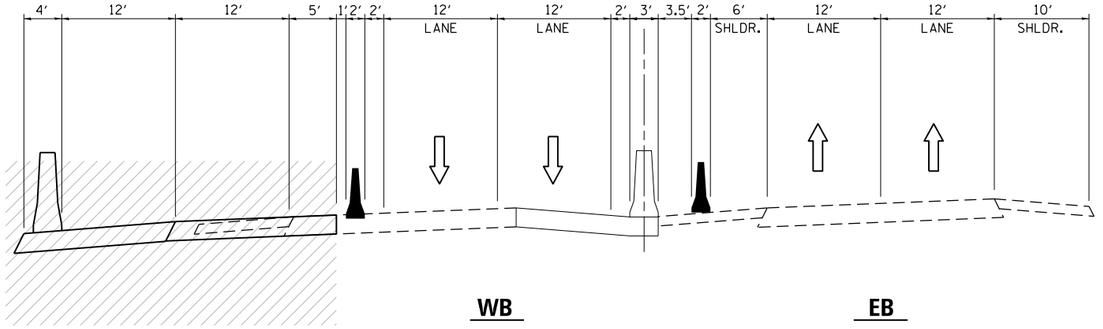
**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 2**

SHEET 9 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 4**
**PRE–STAGE A – EXISTING & PROPOSED CLOSED MEDIAN**
STA. 1117+00 TO STA. 1143+00




**TYPICAL SECTION – SEGMENT 4**
**STAGE 1 – EXISTING & PROPOSED CLOSED MEDIAN**
STA. 1117+00 TO STA. 1143+00

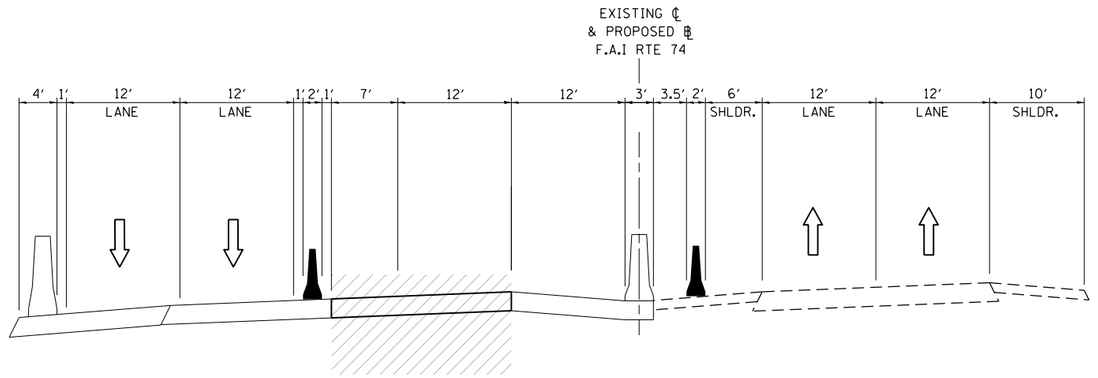
**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 17**

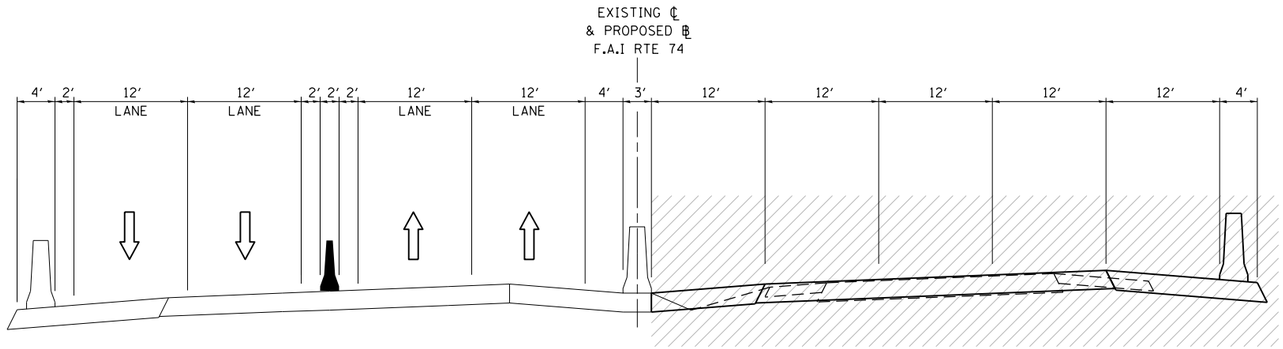
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| | | DRAWN - | REVISED - | | | | CONTRACT NO. 70897 |
| $MODELNAME$ | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - | | SHEET 10 OF 11 SHEETS STA. TO STA. | | ILLINOIS FED. AID PROJECT |
| | PLOT DATE = $DATE$ | DATE - | REVISED - | | | | |




**TYPICAL SECTION – SEGMENT 4**

**STAGE 2 – EXISTING & PROPOSED CLOSED MEDIAN**

STA. 1117+00 TO STA. 1143+00




**TYPICAL SECTION – SEGMENT 4**

**STAGE 3 – EXISTING & PROPOSED CLOSED MEDIAN**

STA. 1117+00 TO STA. 1143+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 17

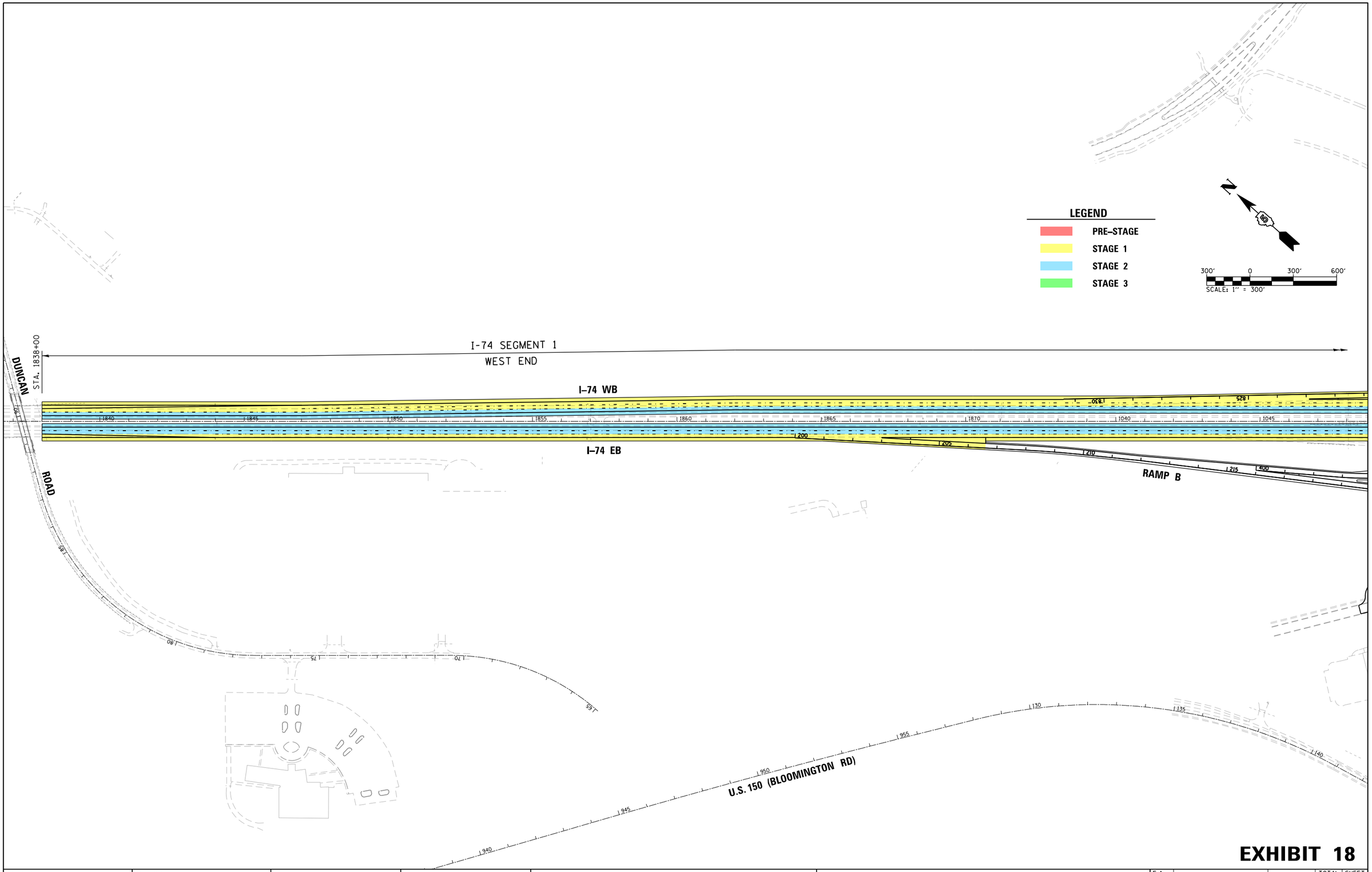
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 2**

SHEET 11 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 18

| | | | |
|---|---|---|---|
| FILE NAME = L:\IDOT\110602\Draw\CADD_Sheets\TMP\.. Default | USER NAME = Brad Downen | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
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| | PLOT DATE = 8/19/2015 - 1:15:08 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I–74 – OPTION 3 & 4**

SCALE: | SHEET 1 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |

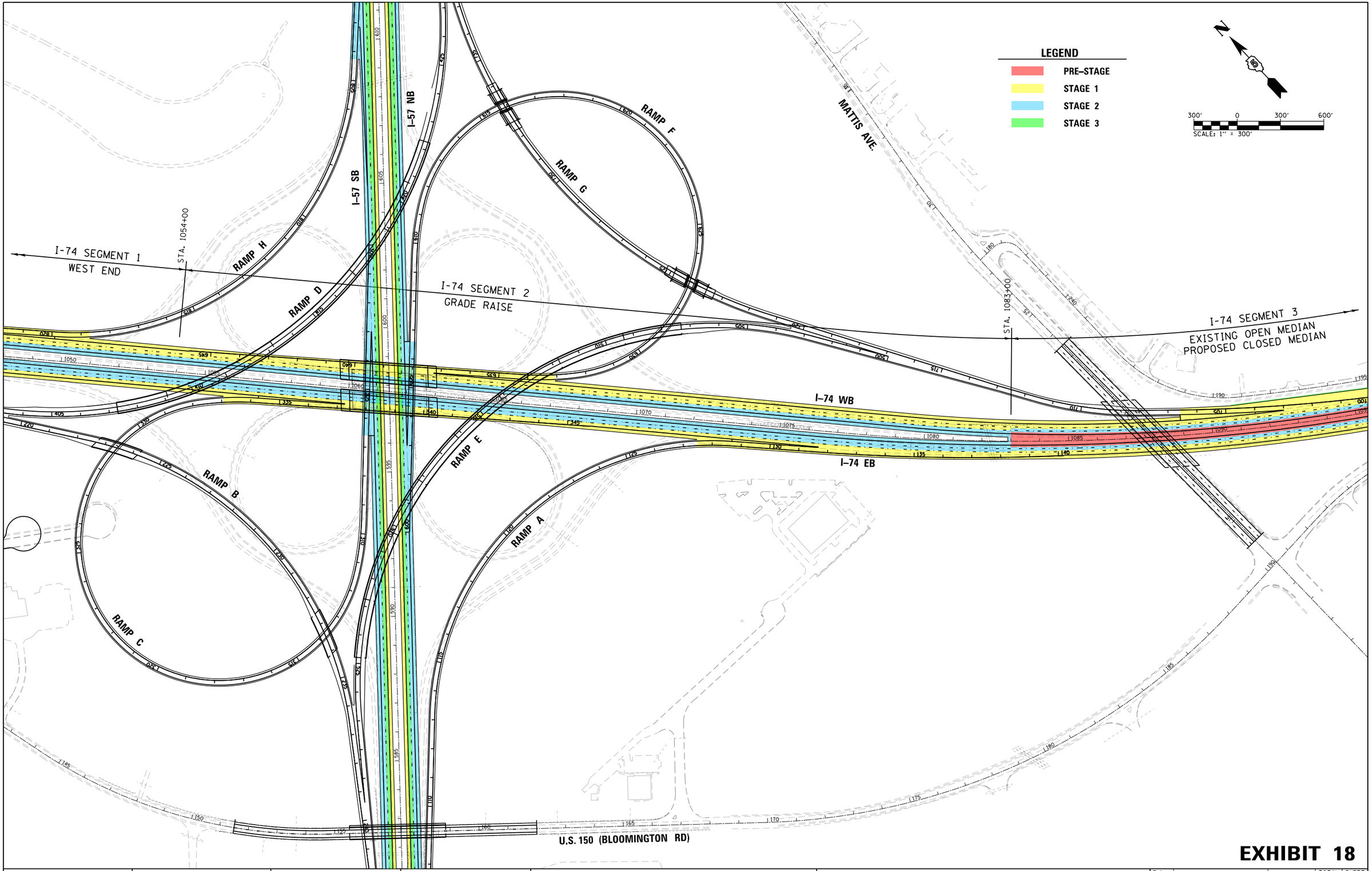



**EXHIBIT 18**

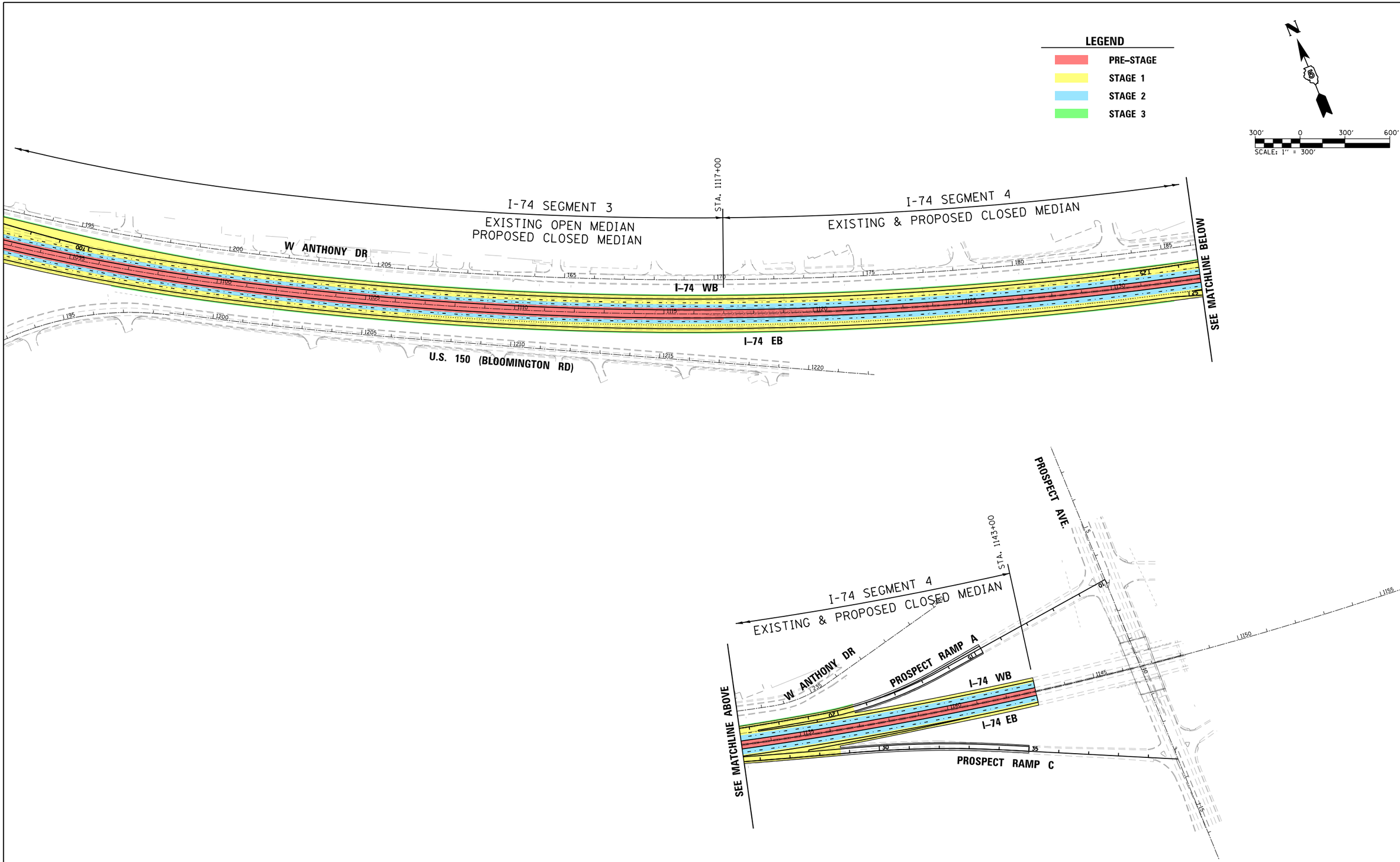
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = 8/19/2015 - 1:15:09 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I–74 – OPTION 3 & 4**

SCALE: | SHEET 2 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 18

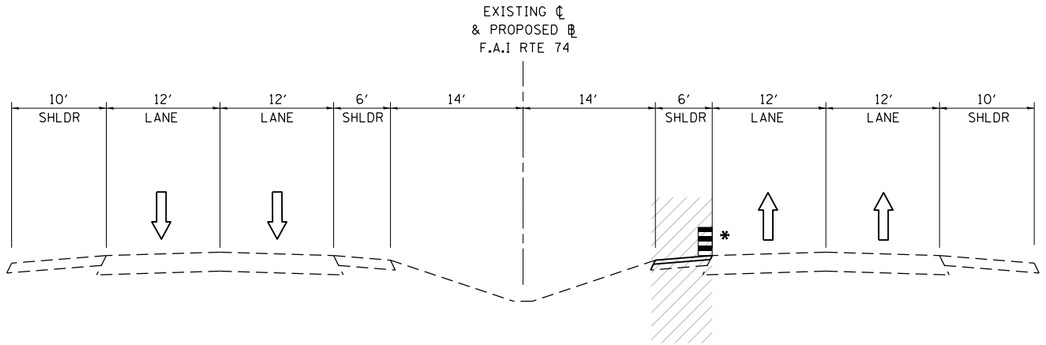
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| | PLOT DATE = 8/19/2015 - 1:15:10 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I-74 – OPTION 3 & 4**

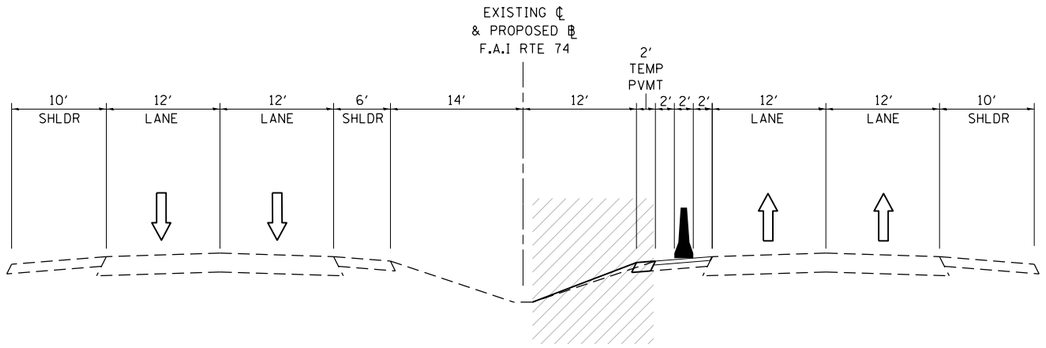
SCALE: | SHEET 3 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 1**
**PRE–STAGE A – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00




**TYPICAL SECTION – SEGMENT 1**
**PRE–STAGE B – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 19

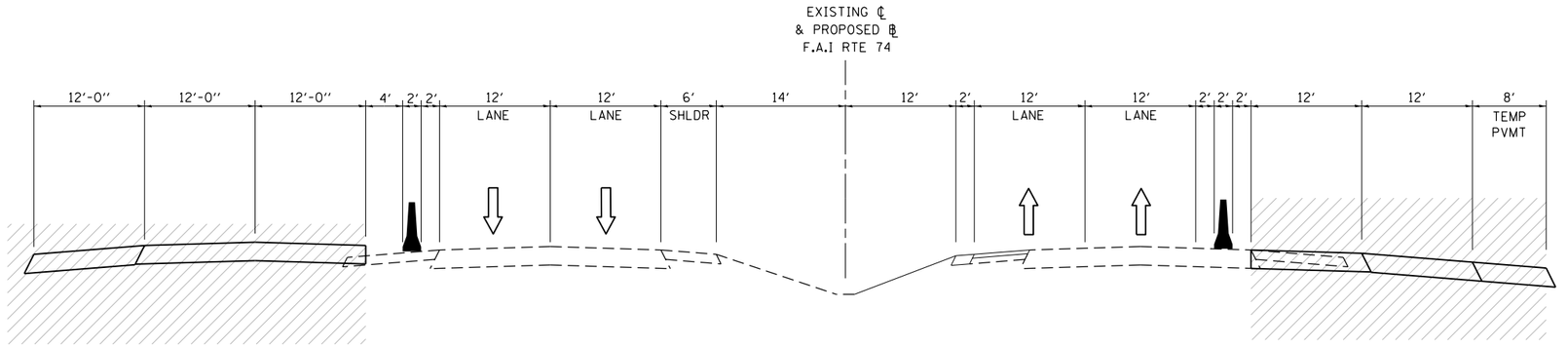
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 3**

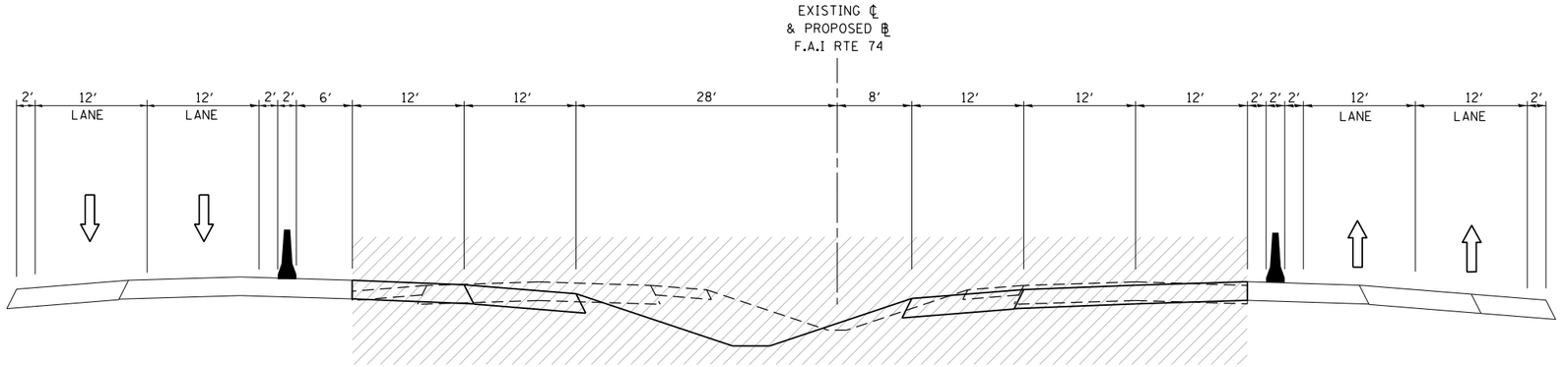
SHEET 1 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS | FED. AID PROJECT | | |




**TYPICAL SECTION – SEGMENT 1**
**STAGE 1 – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00




**TYPICAL SECTION – SEGMENT 1**
**STAGE 2 – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 19

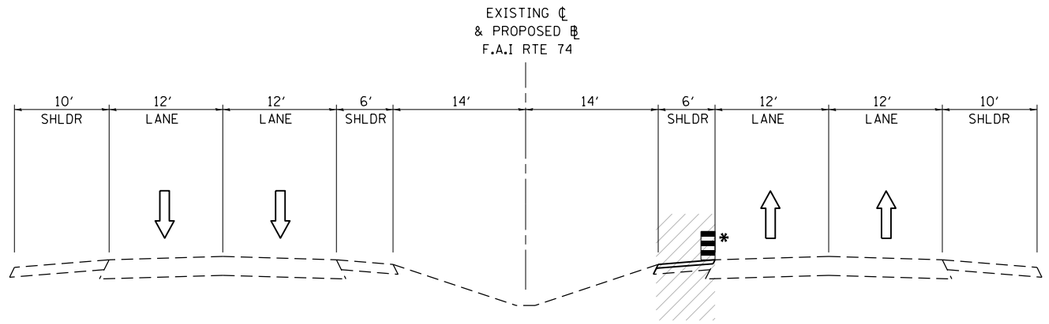
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| | | DRAWN - | REVISED - |
| $MODELNAME$ | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

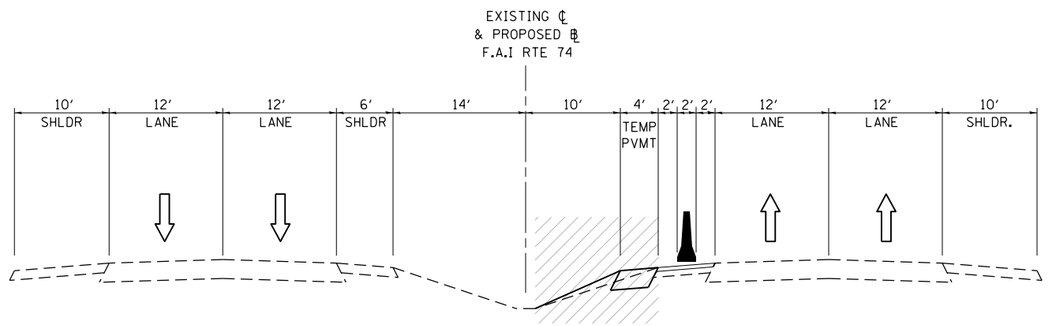
**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 3**

SHEET 2 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 2**
**PRE–STAGE A – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00




**TYPICAL SECTION – SEGMENT 2**
**PRE–STAGE B – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 19**

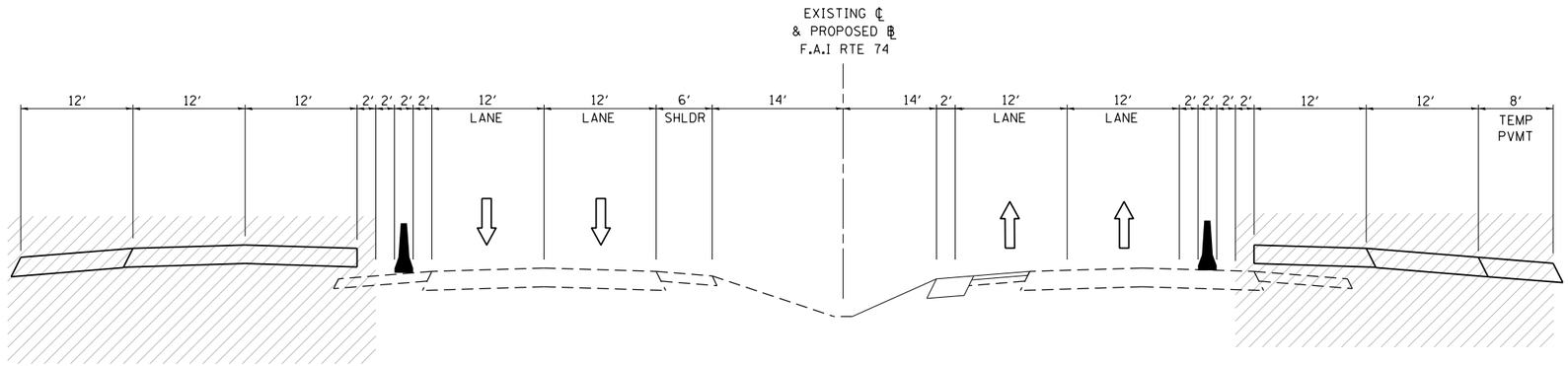
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| | | DRAWN - | REVISED - |
| $MODELNAME$ | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 3**

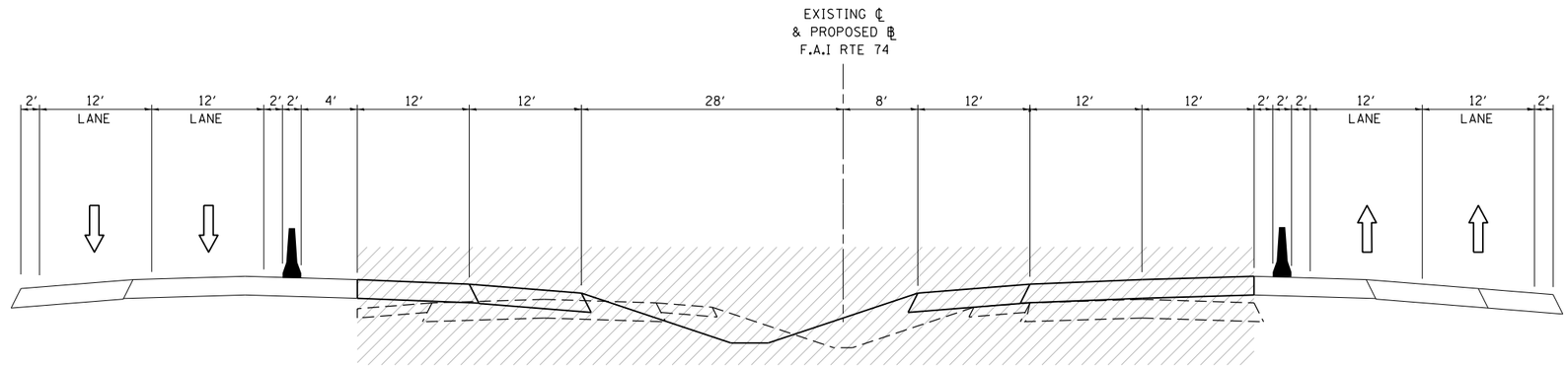
SHEET 3 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

**TYPICAL SECTION – SEGMENT 2**
**STAGE 1 – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00




**WB** **EB**

**TYPICAL SECTION – SEGMENT 2**
**STAGE 2 – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 19**

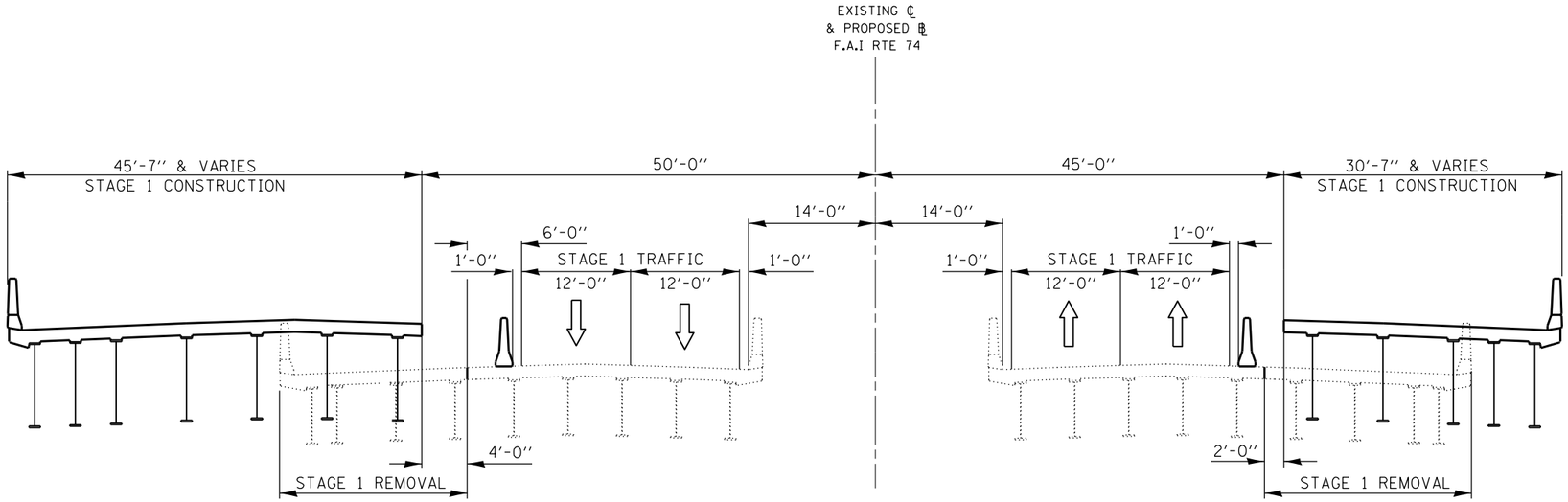
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 3**

SHEET 4 OF 11 SHEETS STA. TO STA.

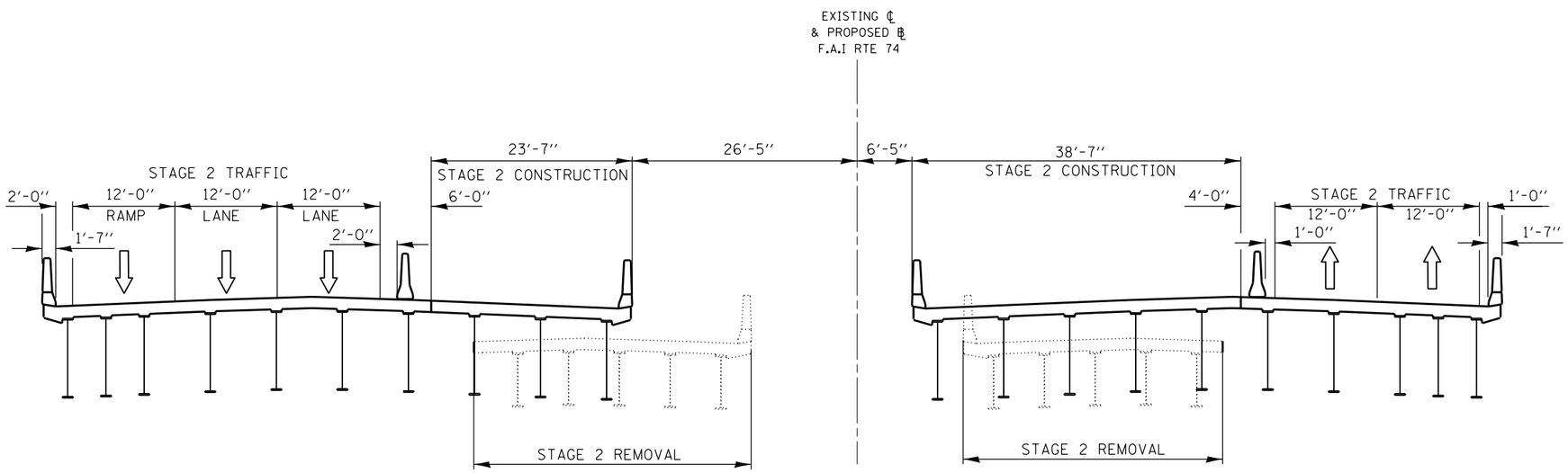
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## TYPICAL SECTION – SEGMENT 2
## STAGE 1 – BRIDGE




**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## TYPICAL SECTION – SEGMENT 2
## STAGE 2 – BRIDGE

**EXHIBIT 19**

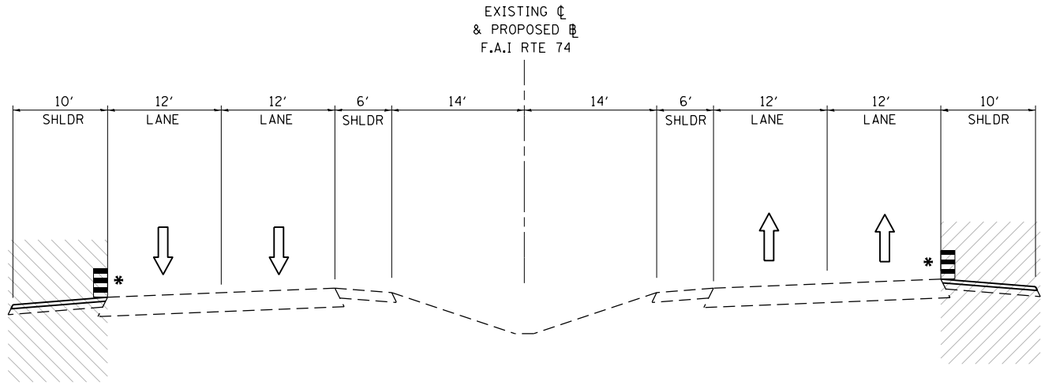
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| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 3**

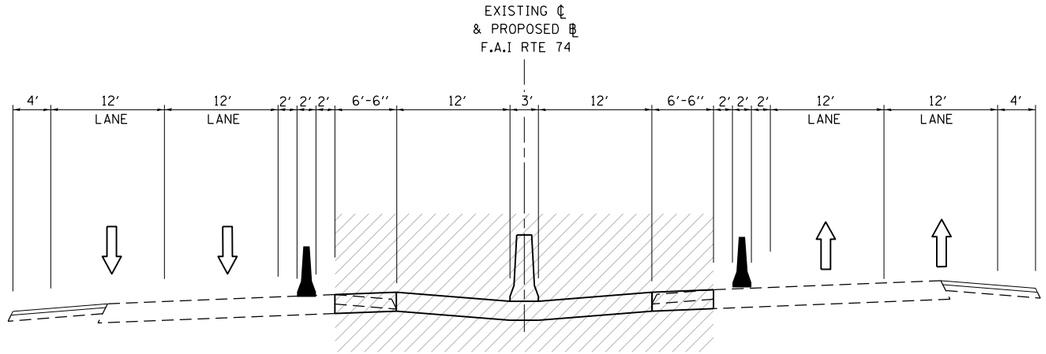
SHEET 5 OF 11 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## PRE–STAGE A – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## PRE–STAGE B – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 19**

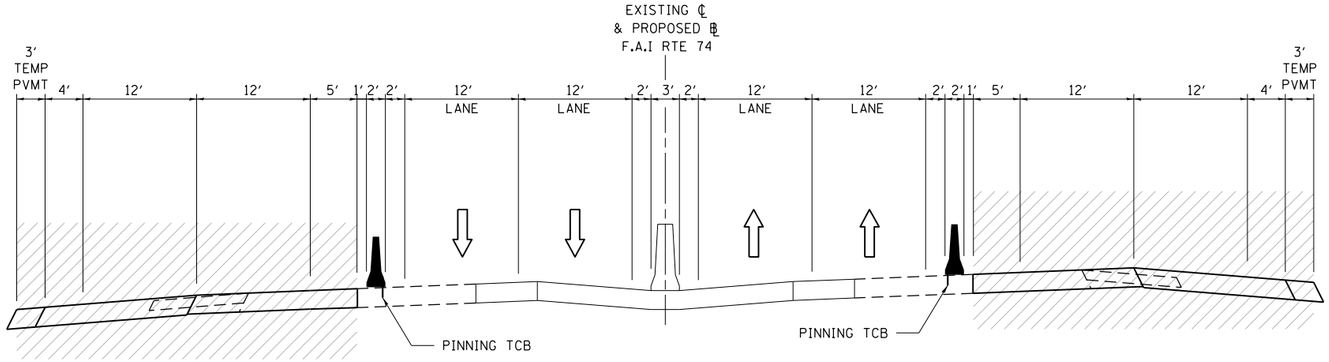
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 3**

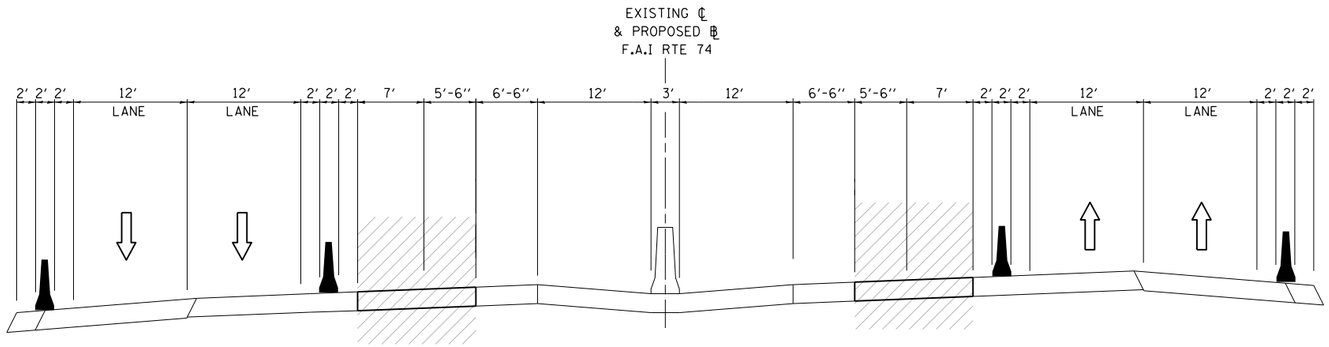
SHEET 6 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 1 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 2 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 19

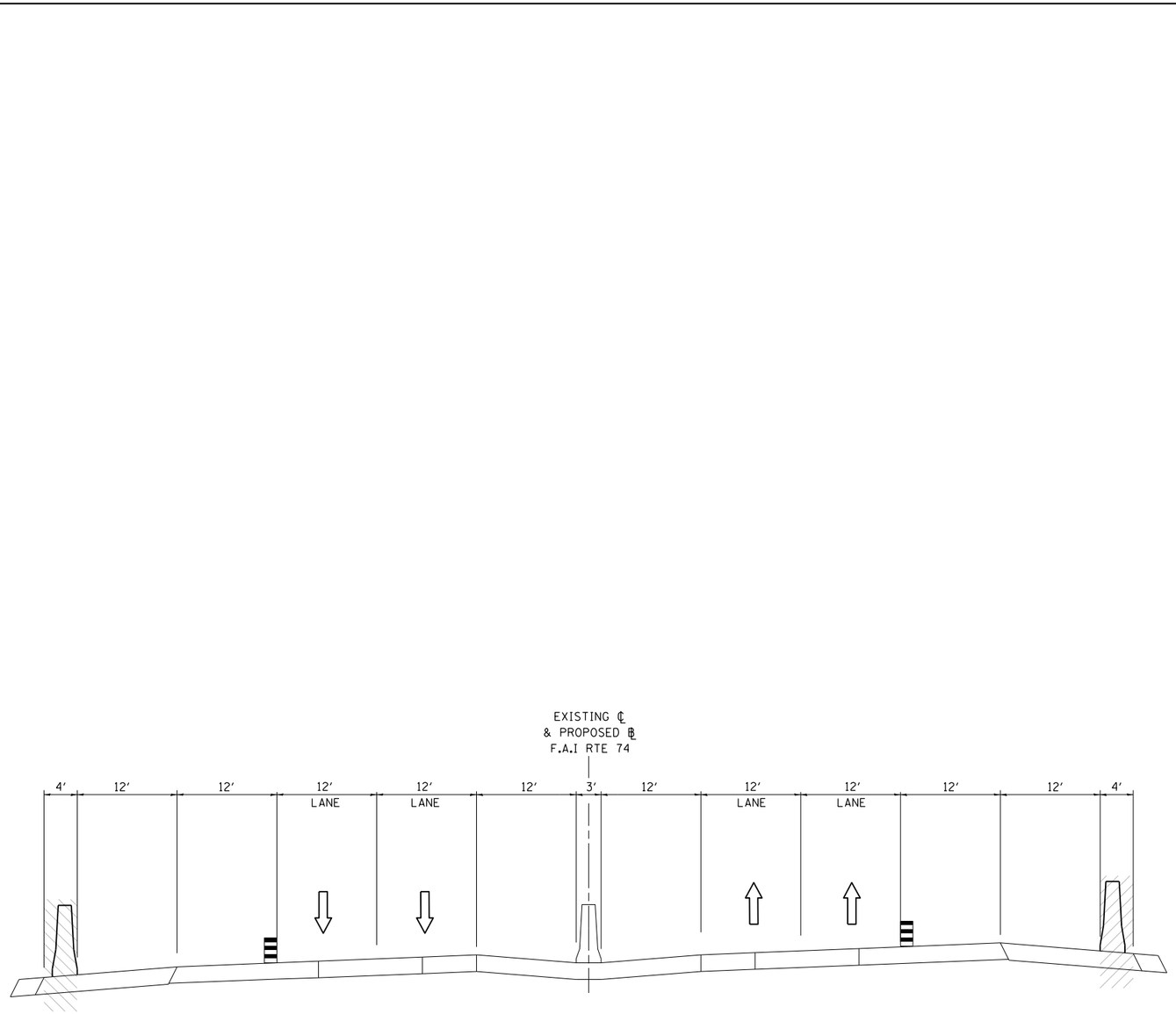
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| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 3**

SHEET 7 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 3 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 19

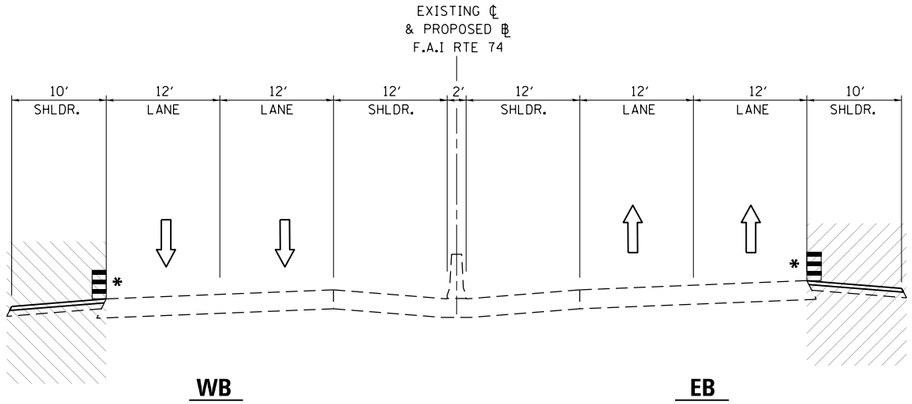
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

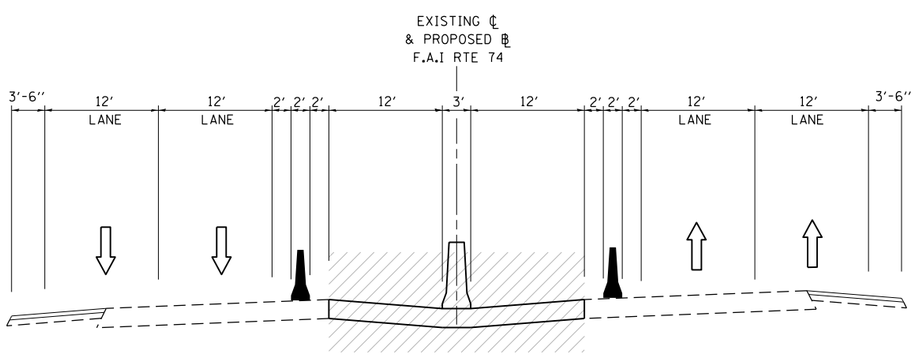
**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 3**

SHEET 8 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 4**
**PRE–STAGE A – EXISTING & PROPOSED CLOSED MEDIAN**
STA. 1117+00 TO STA. 1143+00




**TYPICAL SECTION – SEGMENT 4**
**PRE–STAGE B – EXISTING & PROPOSED CLOSED MEDIAN**
STA. 1117+00 TO STA. 1143+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 19**

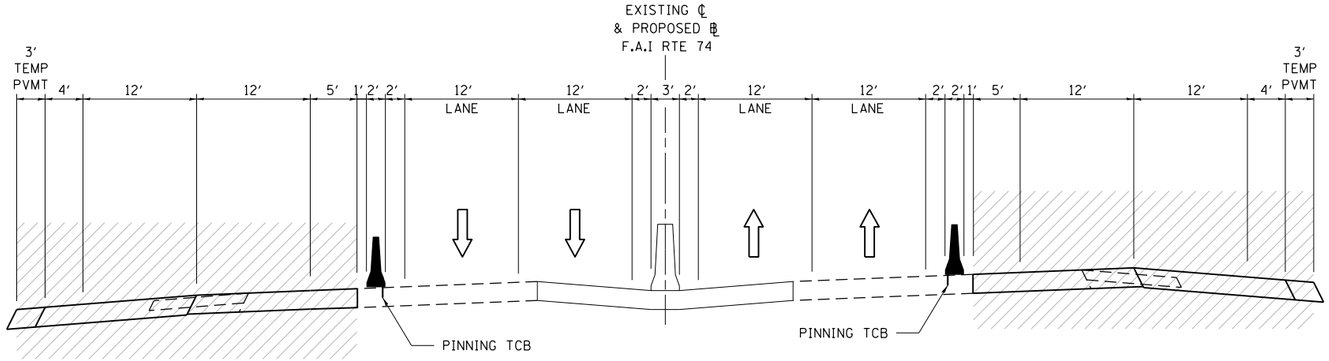
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| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 3**

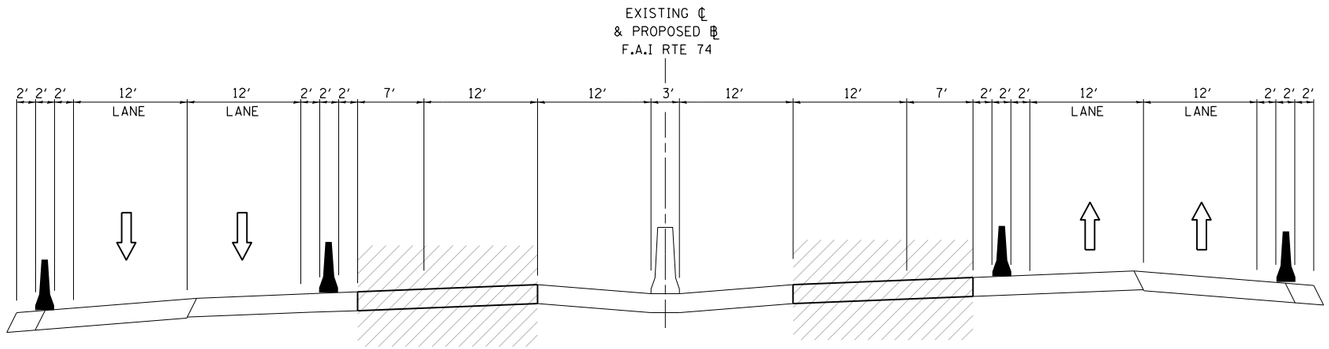
SHEET 9 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 4
## STAGE 1 – EXISTING & PROPOSED CLOSED MEDIAN
STA. 1117+00 TO STA. 1143+00




**WB** **EB**

## TYPICAL SECTION – SEGMENT 4
## STAGE 2 – EXISTING & PROPOSED CLOSED MEDIAN
STA. 1117+00 TO STA. 1143+00

### LEGEND

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 19

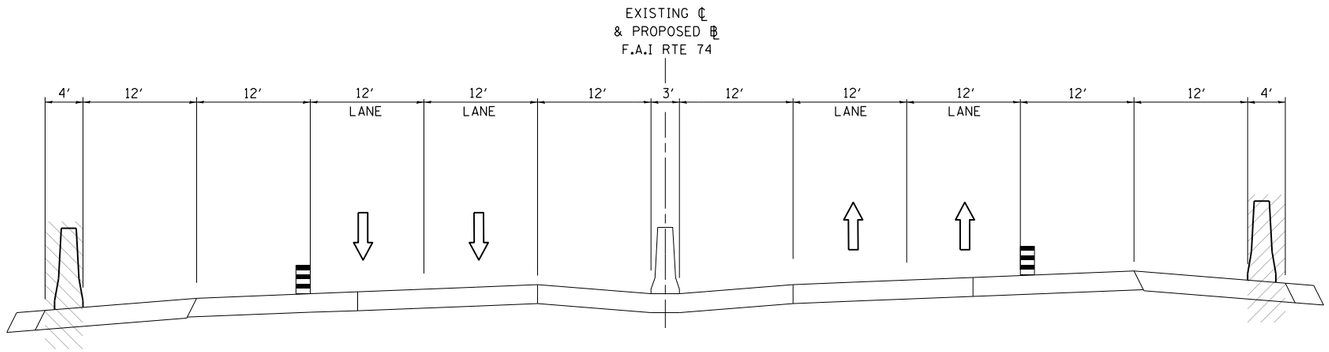
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 3**

SHEET 10 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 4
## STAGE 3 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1117+00 TO STA. 1143+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 19

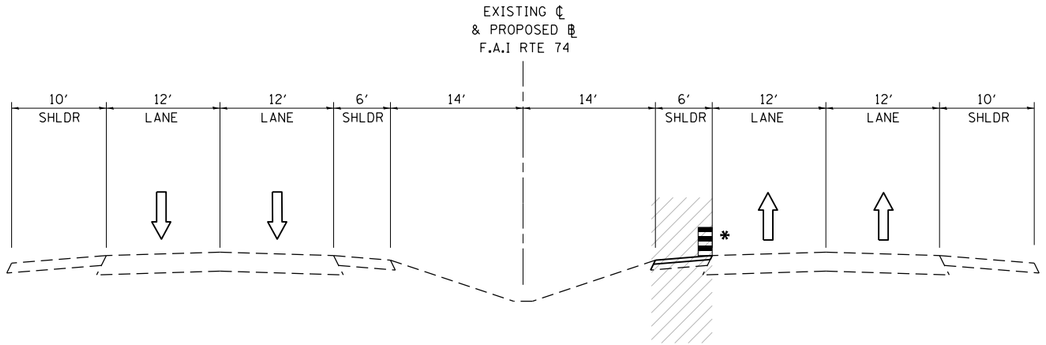
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| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 3**

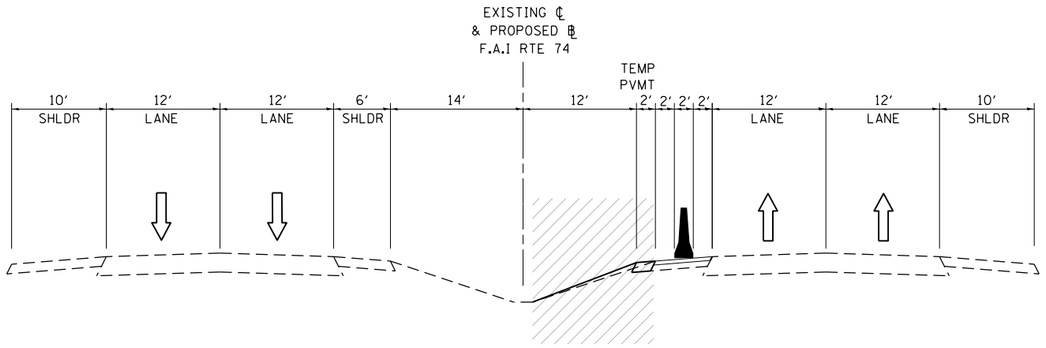
SHEET 11 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 1**
**PRE–STAGE A – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00




**TYPICAL SECTION – SEGMENT 1**
**PRE–STAGE B – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 20**

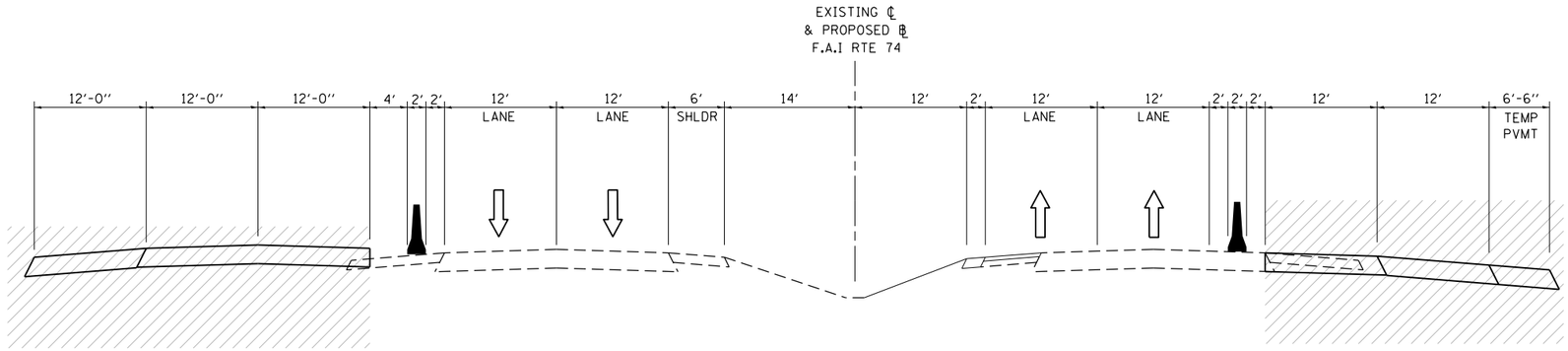
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| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 4**

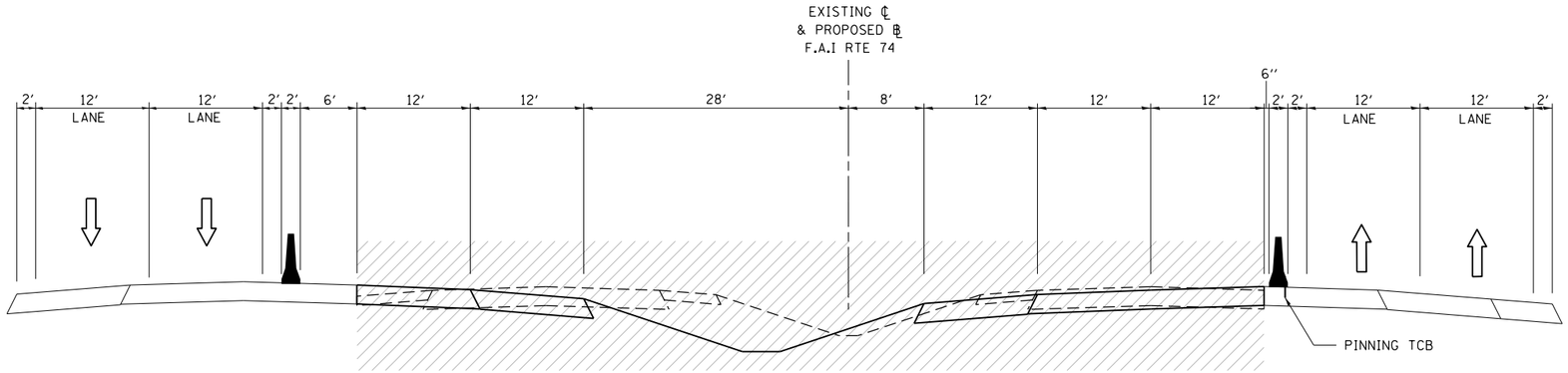
SHEET 1 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 1**
**STAGE 1 – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00




**TYPICAL SECTION – SEGMENT 1**
**STAGE 2 – WEST END**

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 20

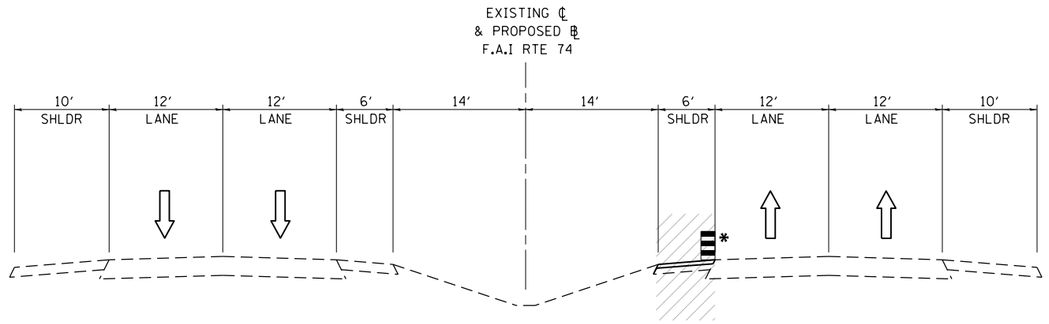
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

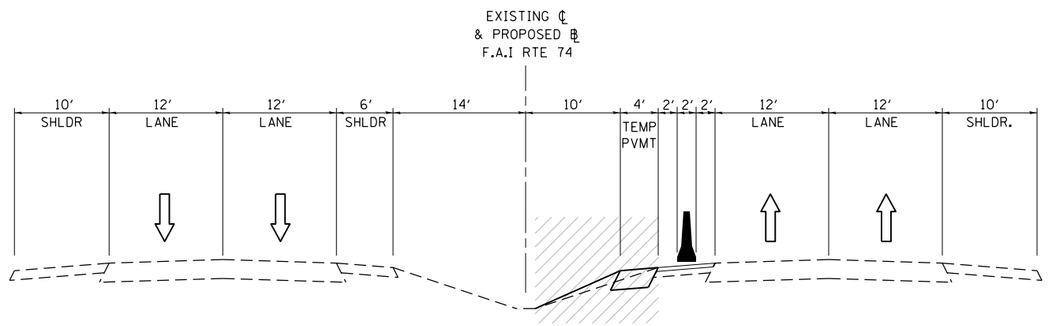
**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 4**

SHEET 2 OF 11 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS | FED. AID PROJECT | | |




**TYPICAL SECTION – SEGMENT 2**
**PRE–STAGE A – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00




**TYPICAL SECTION – SEGMENT 2**
**PRE–STAGE B – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 20**

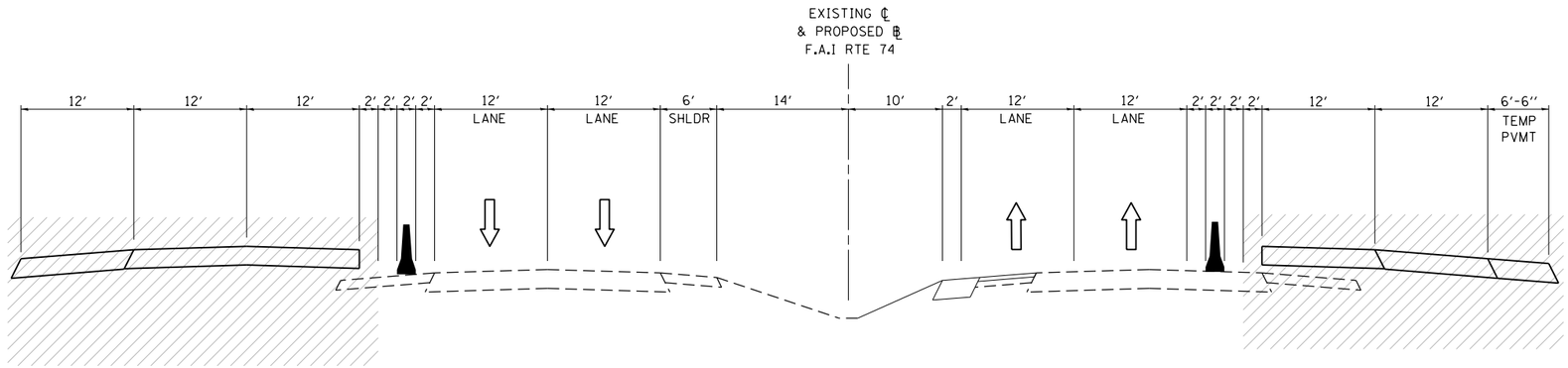
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 4**

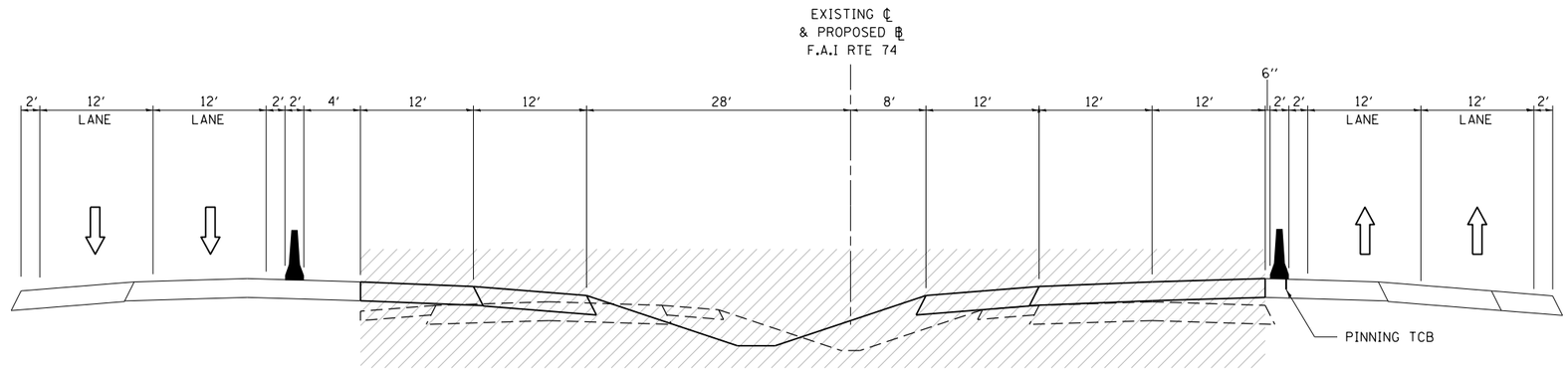
SHEET 3 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

**TYPICAL SECTION – SEGMENT 2**
**STAGE 1 – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00




**WB** **EB**

**TYPICAL SECTION – SEGMENT 2**
**STAGE 2 – GRADE RAISE**
STA. 1054+00 TO STA. 1083+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

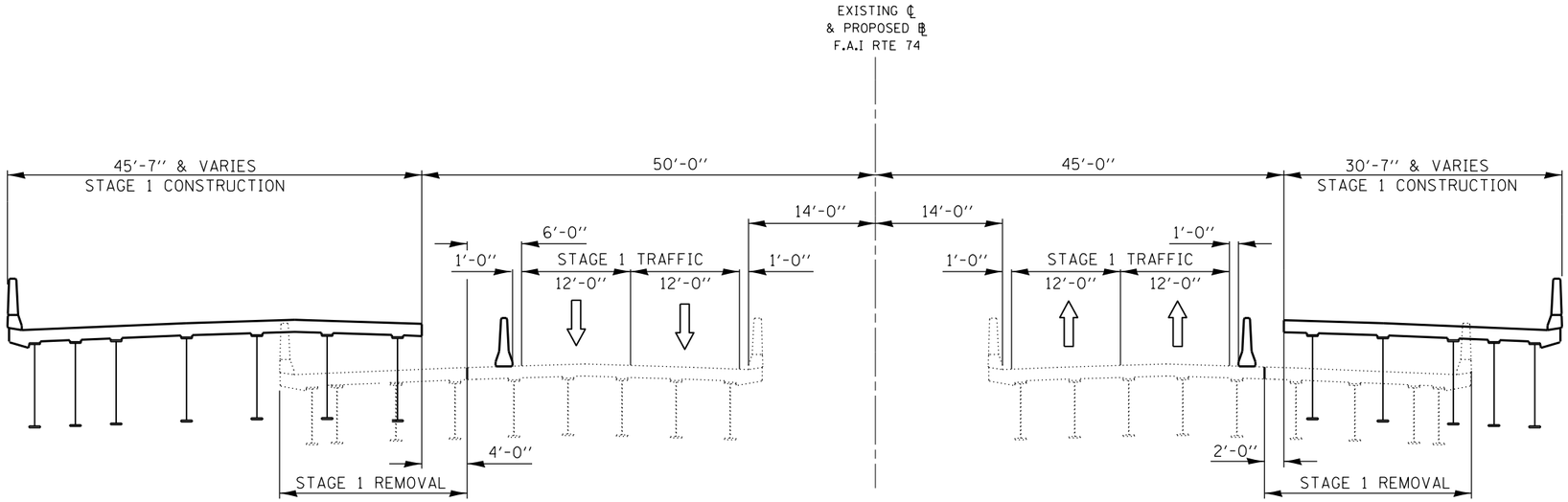
**EXHIBIT 20**

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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 4**
SHEET 4 OF 11 SHEETS STA. TO STA.

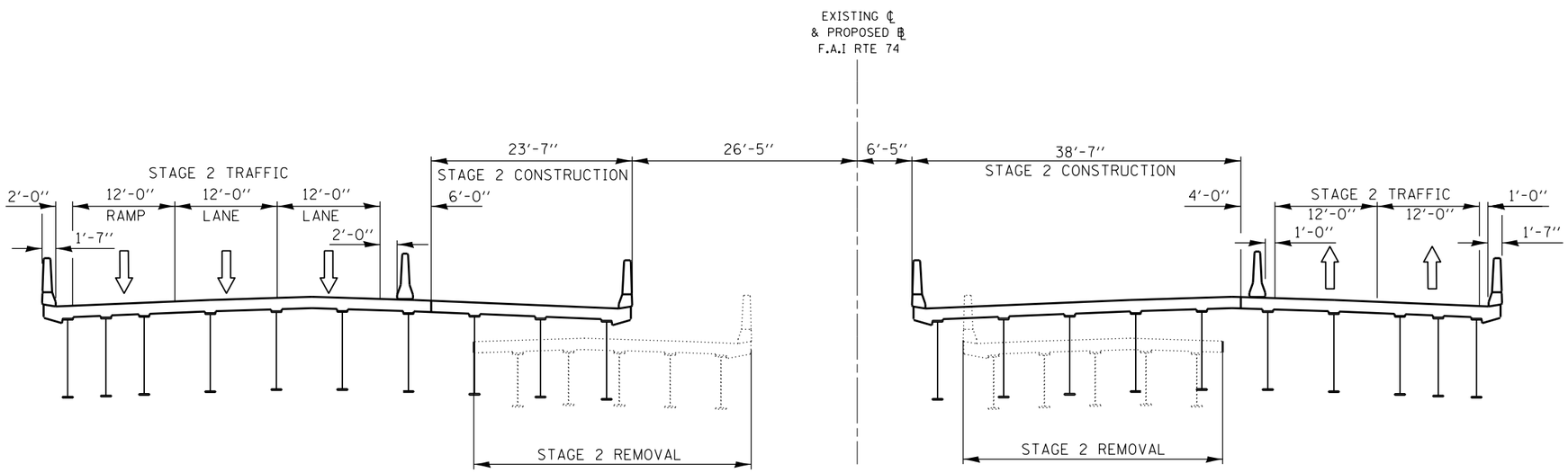
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## TYPICAL SECTION – SEGMENT 2
## STAGE 1 – BRIDGE




**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## TYPICAL SECTION – SEGMENT 2
## STAGE 2 – BRIDGE

# EXHIBIT 20

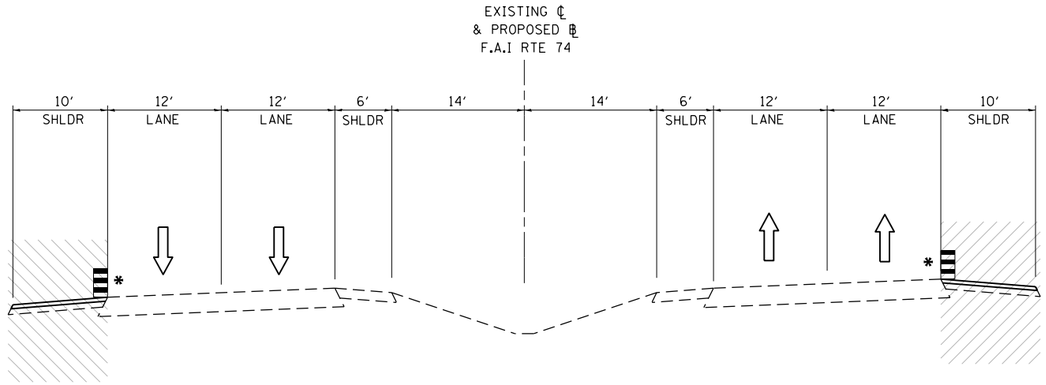
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| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 4**

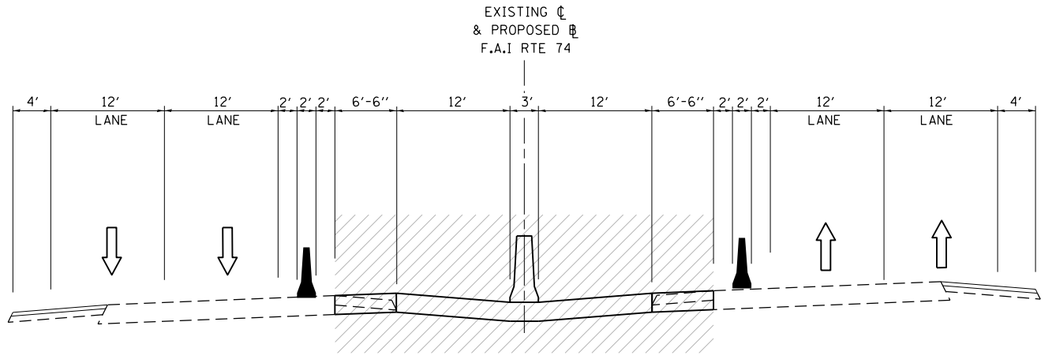
SHEET 5 OF 11 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## PRE–STAGE A – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## PRE–STAGE B – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 20

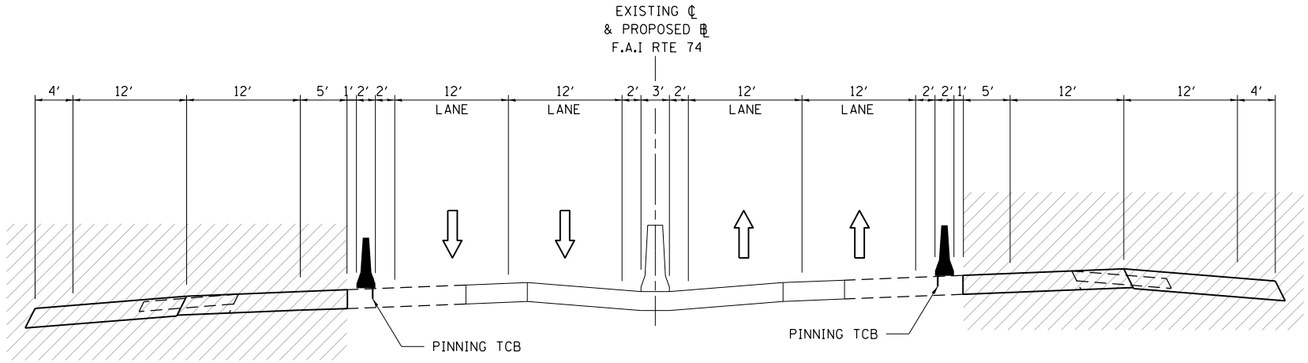
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 4**

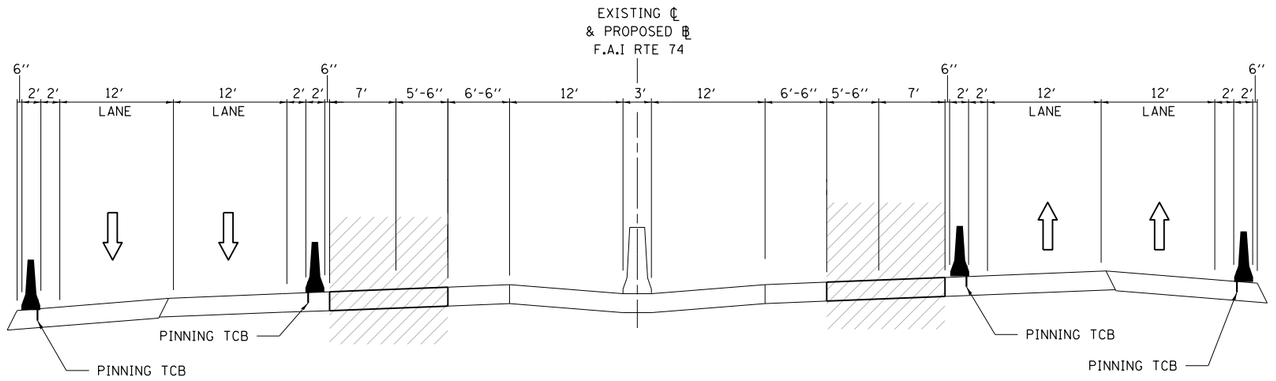
SHEET 6 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 1 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 2 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00

### LEGEND

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 20

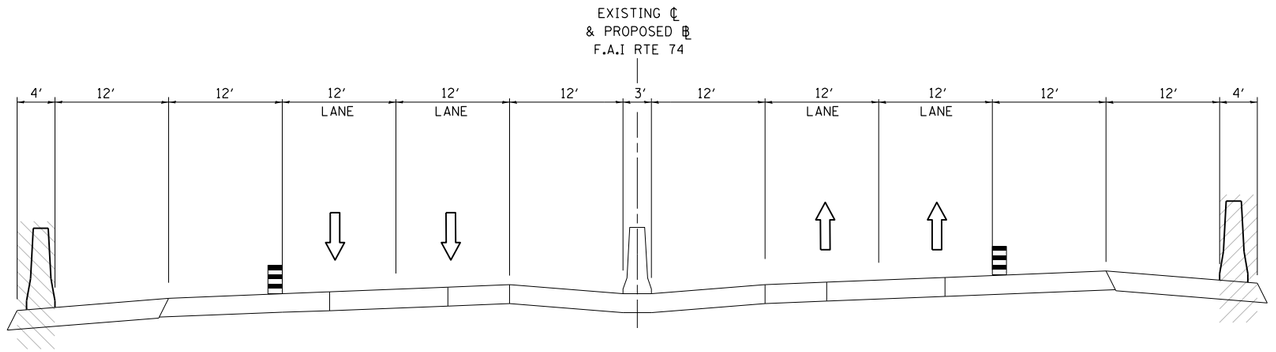
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 4**

SHEET 7 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 3 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 20

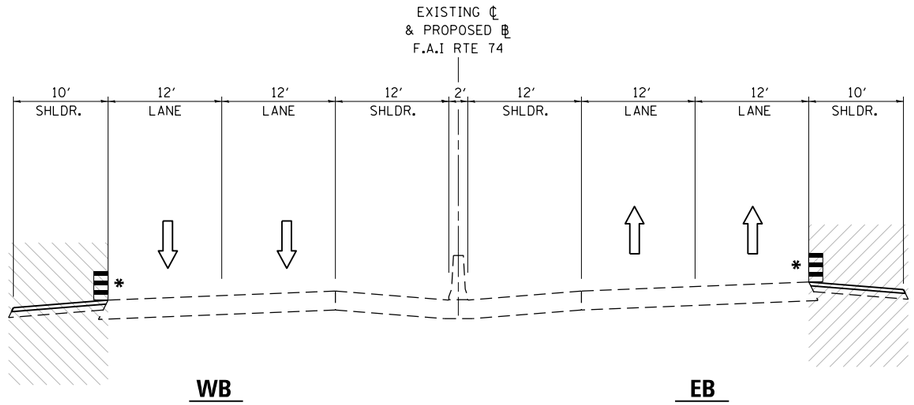
| | | | |
|---|---|---|---|
| FILE NAME = $FILEL$ | USER NAME = $USER$ | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| $MODELNAME$ | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

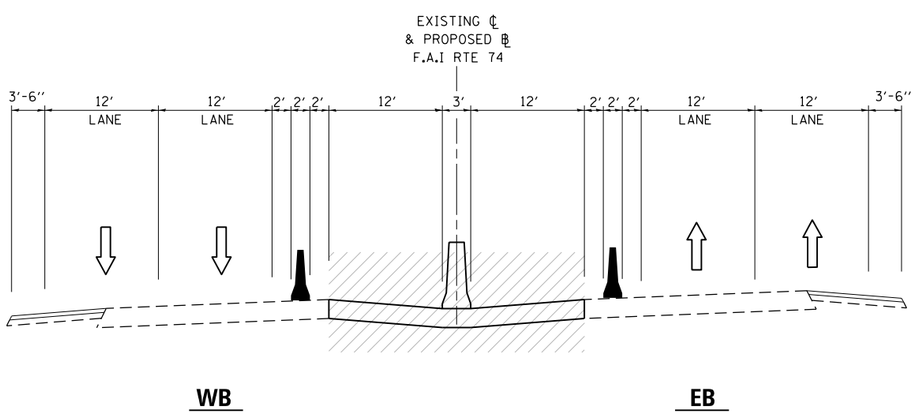
**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 4**

SHEET 8 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 4**
**PRE–STAGE A – EXISTING & PROPOSED CLOSED MEDIAN**
STA. 1117+00 TO STA. 1143+00




**TYPICAL SECTION – SEGMENT 4**
**PRE–STAGE B – EXISTING & PROPOSED CLOSED MEDIAN**
STA. 1117+00 TO STA. 1143+00

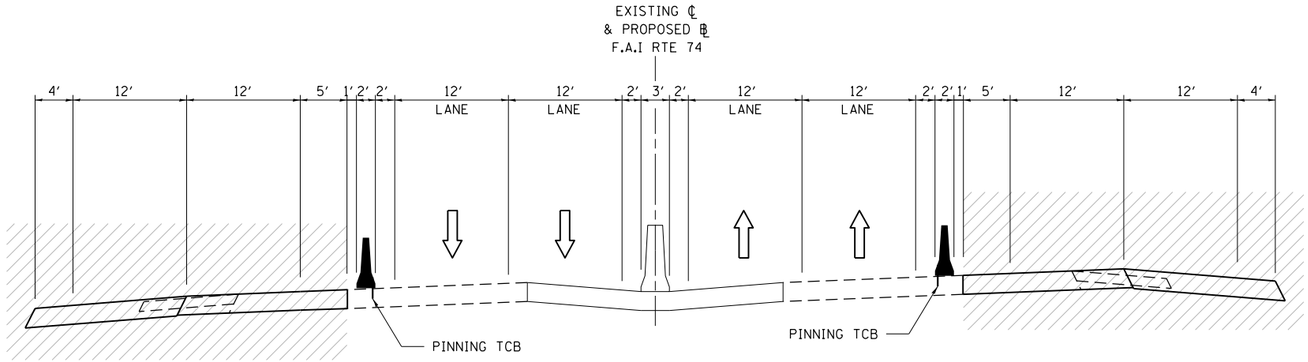
**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

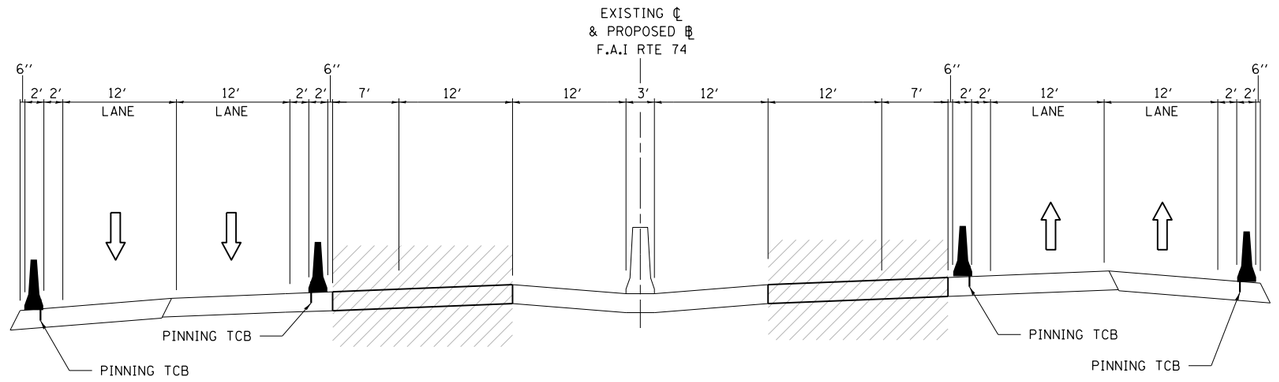
**EXHIBIT 20**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FILE NAME = $FILEL$ | USER NAME = $USER$ | DESIGNED – | REVISED – | **STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION** | **STAGING TYPICAL SECTIONS I–74 – OPTION 4** | F.A. RTE. | SECTION / COUNTY / TOTAL SHEETS / SHEET NO. |
| | | DRAWN – | REVISED – | | | | 10(5-1-RS-1, 14-1, 6)R / CHAMPAIGN / / |
| $MODELNAME$ | PLOT SCALE = $SCALE$ | CHECKED – | REVISED – | | | | CONTRACT NO. 70897 |
| | PLOT DATE = $DATE$ | DATE – | REVISED – | | SHEET 9 OF 11 SHEETS STA. TO STA. | | ILLINOIS FED. AID PROJECT |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 4
## STAGE 1 – EXISTING & PROPOSED CLOSED MEDIAN
STA. 1117+00 TO STA. 1143+00




**WB** **EB**

## TYPICAL SECTION – SEGMENT 4
## STAGE 2 – EXISTING & PROPOSED CLOSED MEDIAN
STA. 1117+00 TO STA. 1143+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 20

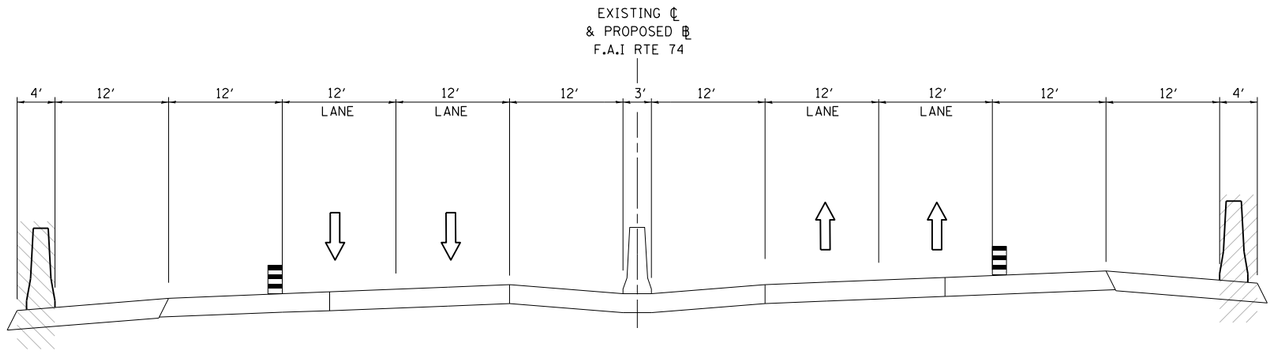
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|---|---|---|---|
| FILE NAME = $FILEL$ | USER NAME = $USER$ | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 4**

SHEET 10 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 4
## STAGE 3 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1117+00 TO STA. 1143+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 20

| | | | |
|---|---|---|---|
| FILE NAME = $FILEL$ | USER NAME = $USER$ | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| $MODELNAME$ | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 4**

SHEET 11 OF 11 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

**LEGEND**

- STAGE 1
- STAGE 2
- STAGE 3

N

300′ 0 300′ 600′

SCALE: 1″ = 300′

STA. 545+00

I-57 SEGMENT 1
MILL & OVERLAY

STA. 560+00

I-57 SEGMENT 2
TWO LANES

I–57 SB

I–57 NB

535 540 545 550 555 560 565 570 575 580

252 252 249

100 105

RAMP B

RAMP A

# EXHIBIT 21

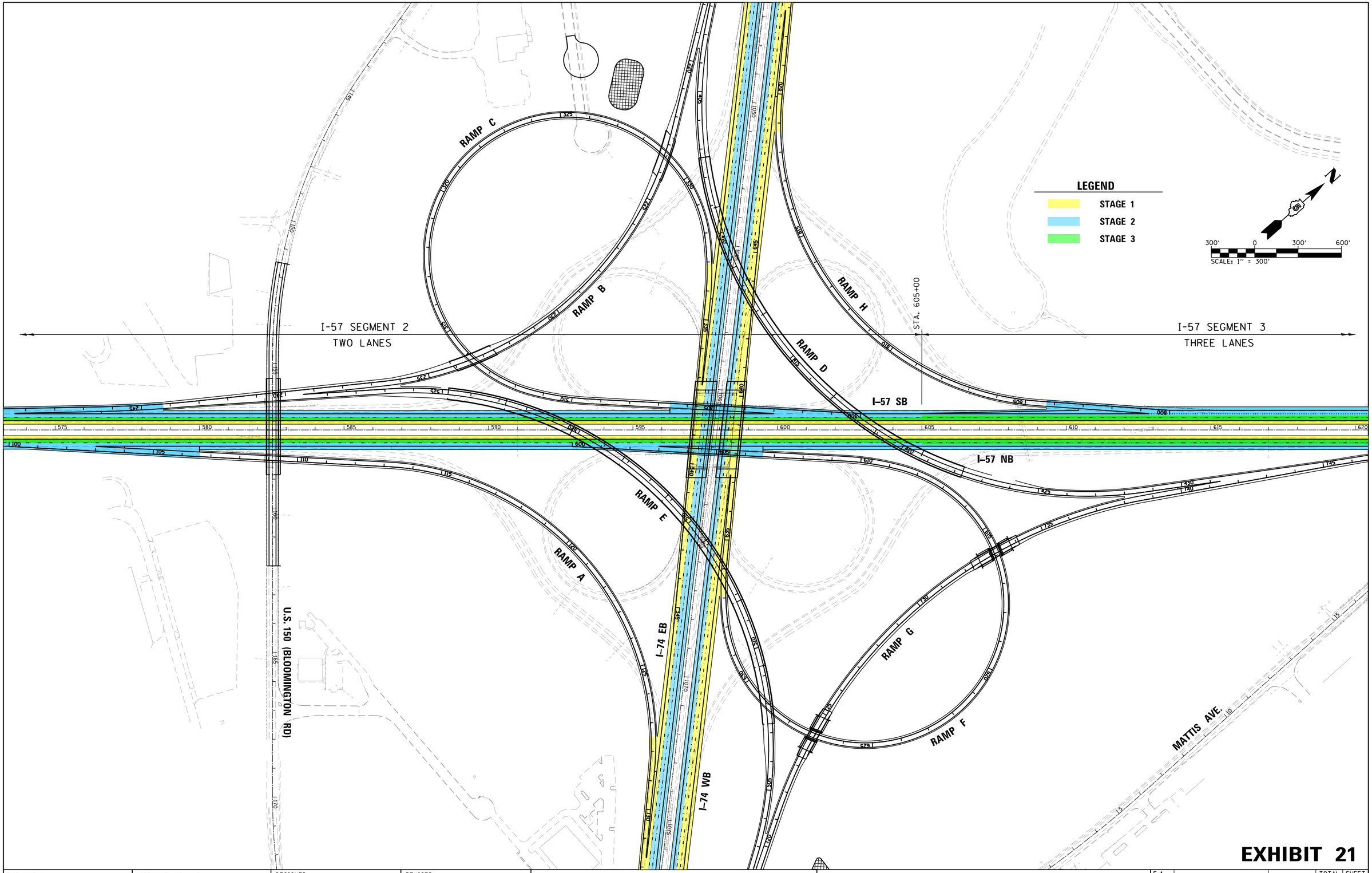
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| FILE NAME = L:\IDOT\116602\Draw\CADD_Sheets\TMP\.. Default | USER NAME = Brad Downen | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 300.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 1:15:41 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I–57 – OPTION 1**

SCALE: | SHEET 1 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 101(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 21

| | | | |
|---|---|---|---|
| FILE NAME = L:\IDOT\1106602\Draw\CADD_Sheets\TMP\.. Default | USER NAME = Brad Downen | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 300.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 1:15:41 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I-57 – OPTION 1**

SCALE: | SHEET 2 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |

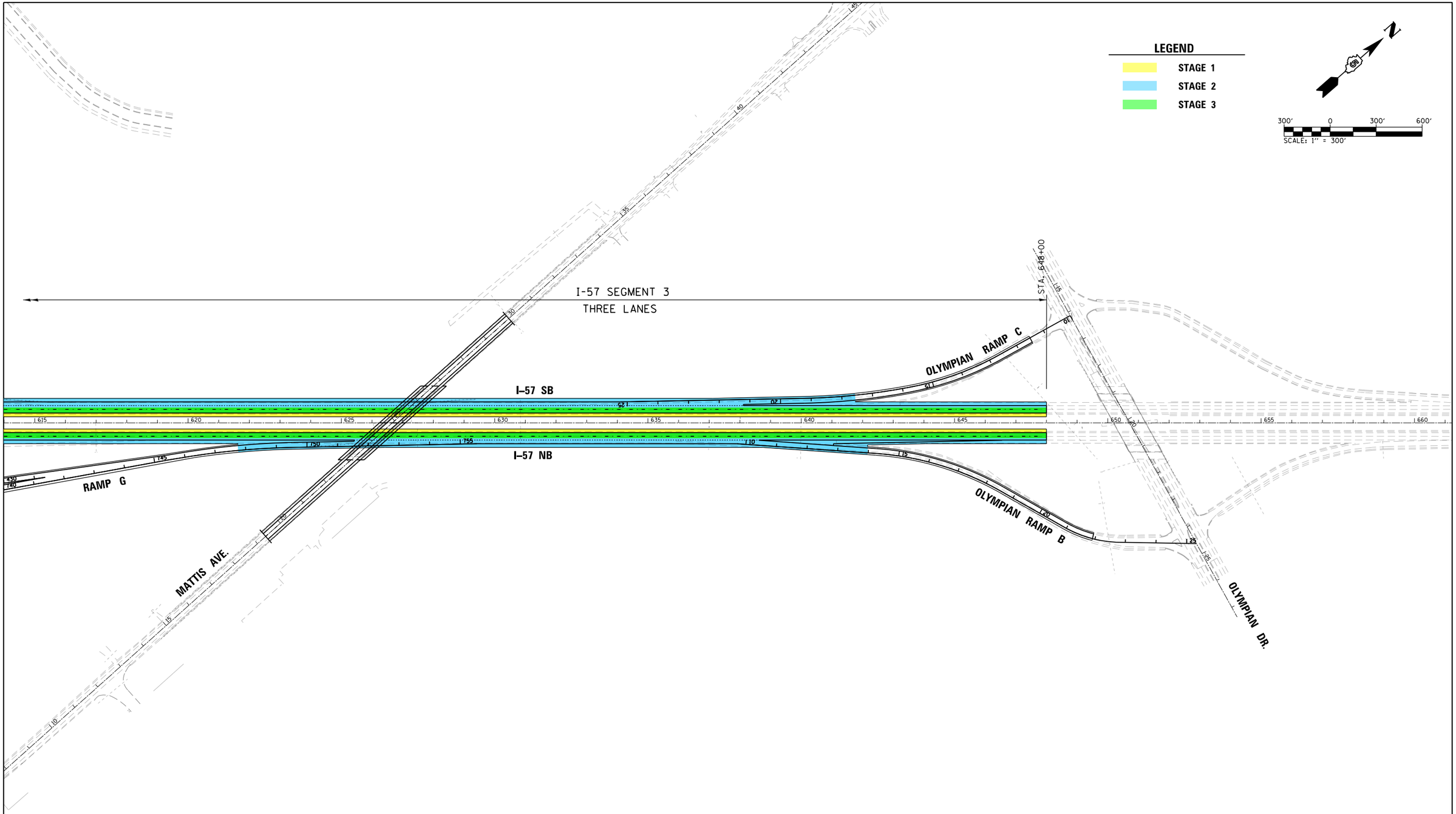



**EXHIBIT 21**

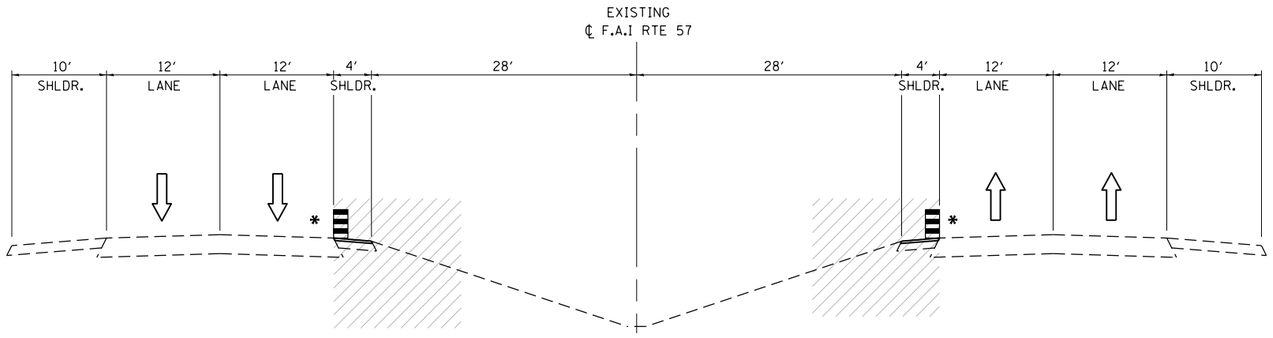
| | | | |
|---|---|---|---|
| FILE NAME = L:\IDOT\110602\Draw\CADD_Sheets\TMP\.. Default | USER NAME = Brad Downen | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 300.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 1:15:42 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

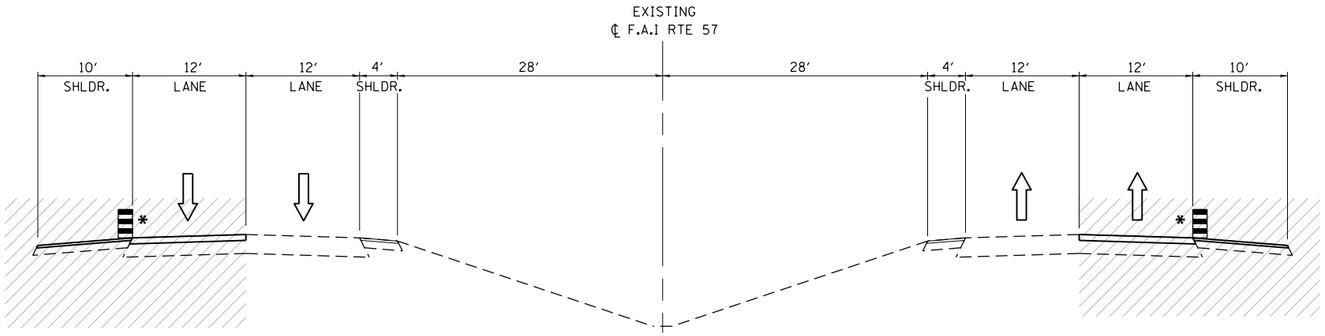
**STAGING PLAN**
**I–57 – OPTION 1**

SCALE: | SHEET 3 OF 3 SHEETS | STA. | TO STA.

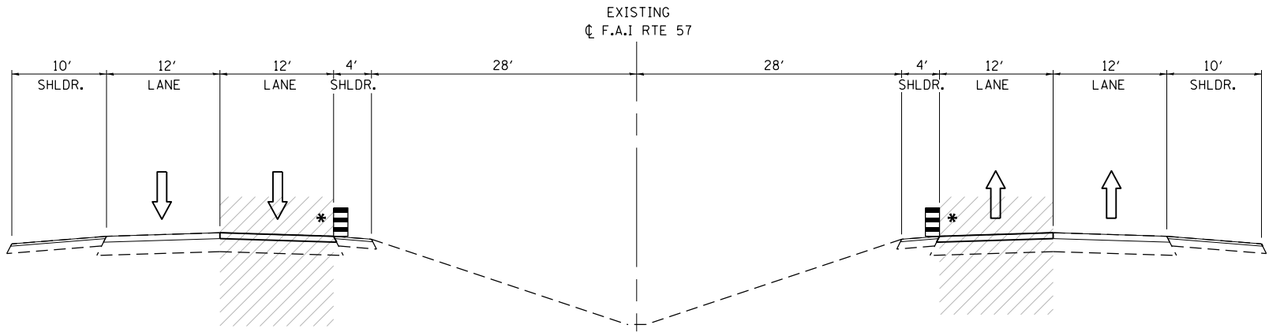
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 1**
**STAGE 1 – MILL & OVERLAY**
STA. 545+00 TO STA. 560+00




**TYPICAL SECTION – SEGMENT 1**
**STAGE 2 – MILL & OVERLAY**
STA. 545+00 TO STA. 560+00




**TYPICAL SECTION – SEGMENT 1**
**STAGE 3 – MILL & OVERLAY**
STA. 545+00 TO STA. 560+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 22

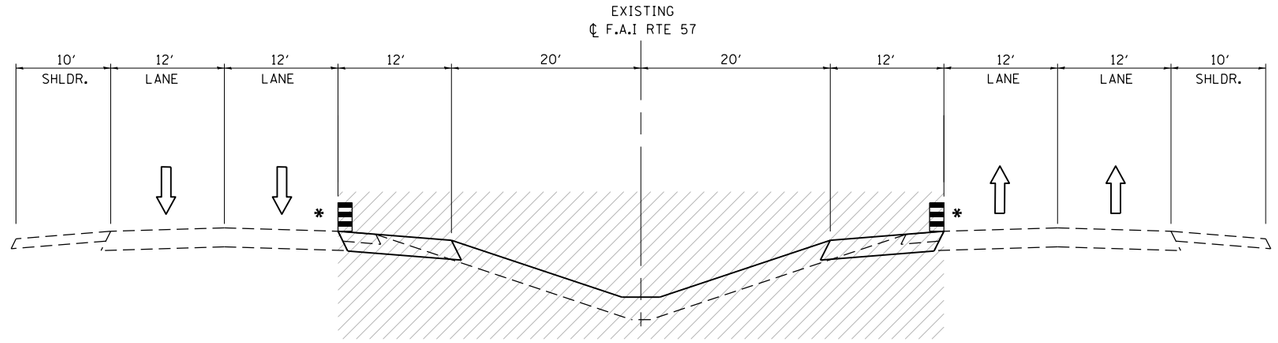
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| FILE NAME = $FILEL$ | USER NAME = $USER$ | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

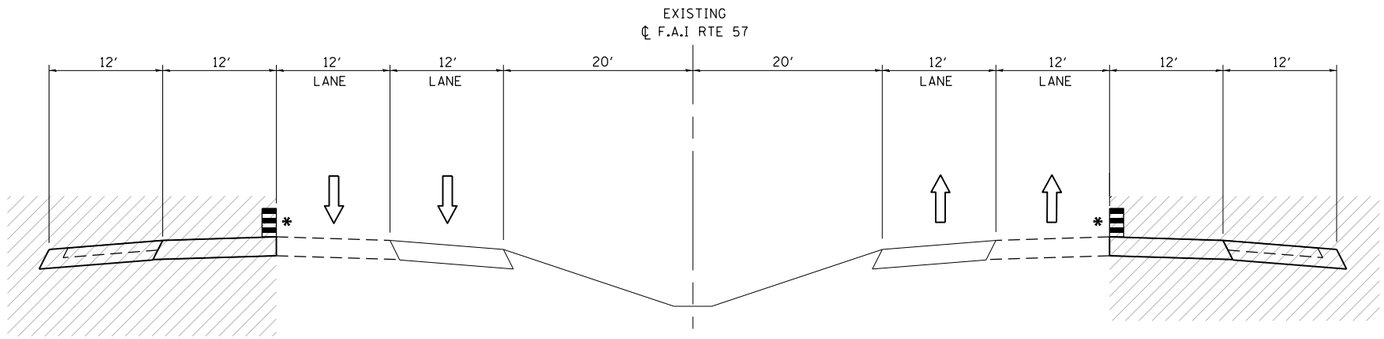
**STAGING TYPICAL SECTIONS**
**I–57 – OPTION 1**

SHEET 1 OF 3 SHEETS STA. TO STA.

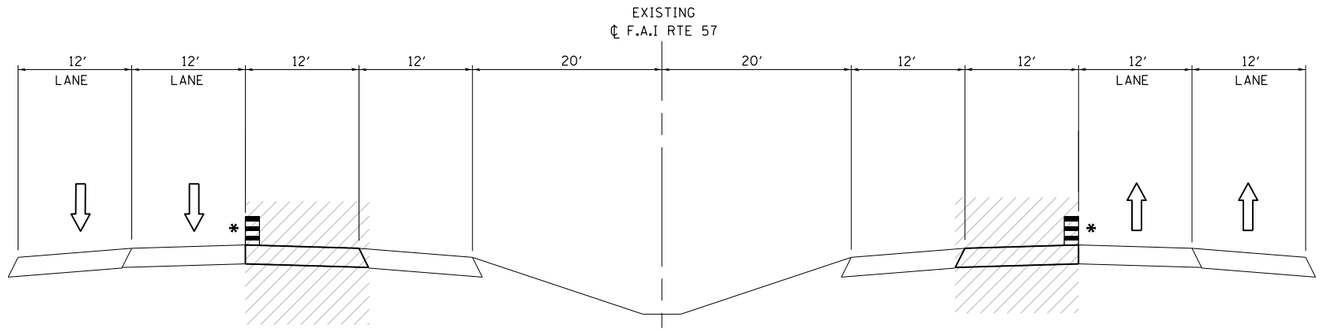
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 2**
**STAGE 1 – TWO LANES**
STA. 560+00 TO STA. 605+00




**TYPICAL SECTION – SEGMENT 2**
**STAGE 2 – TWO LANES**
STA. 560+00 TO STA. 605+00




**TYPICAL SECTION – SEGMENT 2**
**STAGE 3 – TWO LANES**
STA. 560+00 TO STA. 605+00

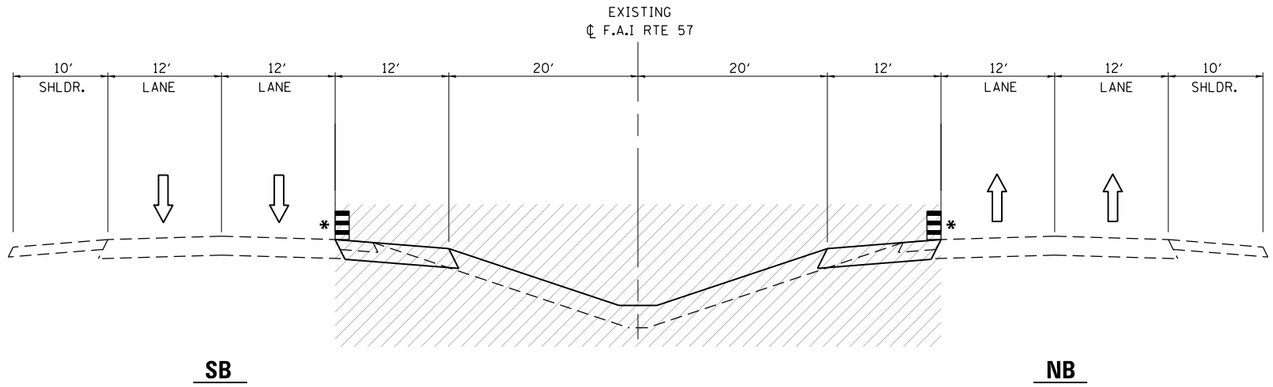
**LEGEND**

WORK ZONE

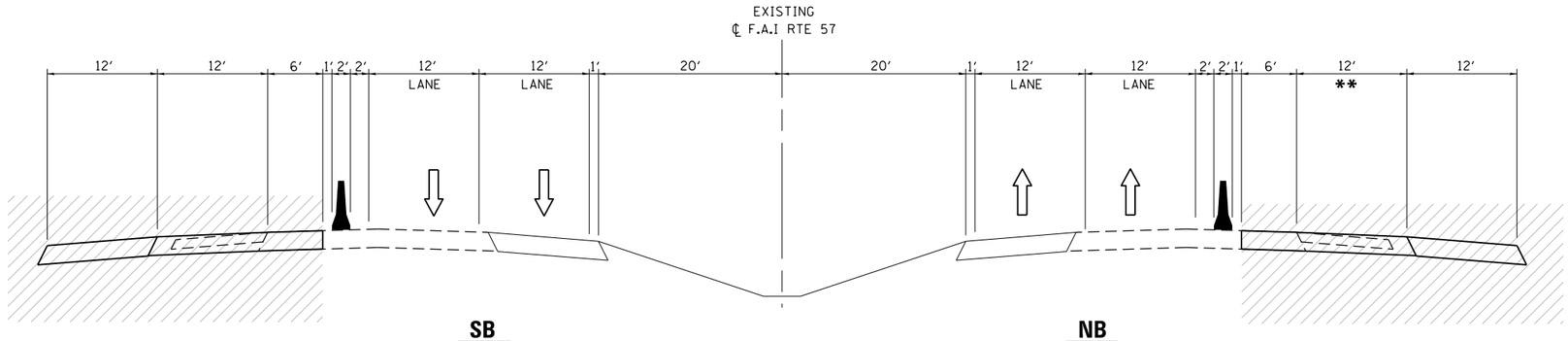
*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 22**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| FILE NAME = $FILEL$ | USER NAME = $USER$ | DESIGNED - | REVISED - | **STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION** | **STAGING TYPICAL SECTIONS I–57 – OPTION 1** | F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| | | DRAWN - | REVISED - | | | | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - | | | | | CONTRACT NO. 70897 | | |
| $MODELNAME$ | PLOT DATE = $DATE$ | DATE - | REVISED - | | SHEET 2 OF 3 SHEETS STA. TO STA. | | ILLINOIS | FED. AID PROJECT | | |

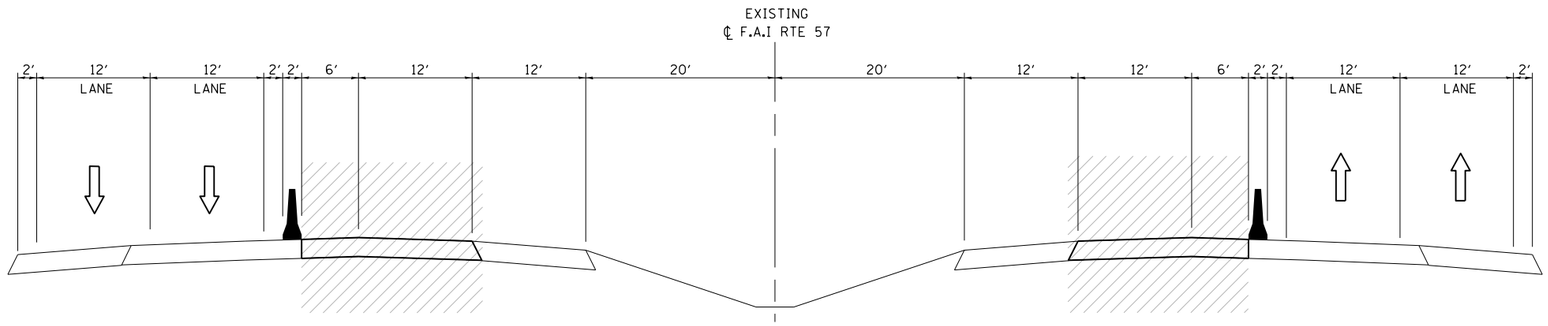



**TYPICAL SECTION – SEGMENT 3**
**STAGE 1 – THREE LANES**
STA. 605+00 TO STA. 648+00




**TYPICAL SECTION – SEGMENT 3**
**STAGE 2 – THREE LANES**
STA. 605+00 TO STA. 648+00

**AUXILIARY LANE TO BE COMPLETED WITH CONSTRUCTION OF RAMP G




**TYPICAL SECTION – SEGMENT 3**
**STAGE 3 – THREE LANES**
STA. 605+00 TO STA. 648+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 22**

| | | | |
|---|---|---|---|
| FILE NAME = $FILEL$ | USER NAME = $USER$ | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| $MODELNAME$ | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–57 – OPTION 1**

SHEET 3 OF 3 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

**LEGEND**

- STAGE 1
- STAGE 2A
- STAGE 2B
- STAGE 3

N

300′ 0 300′ 600′

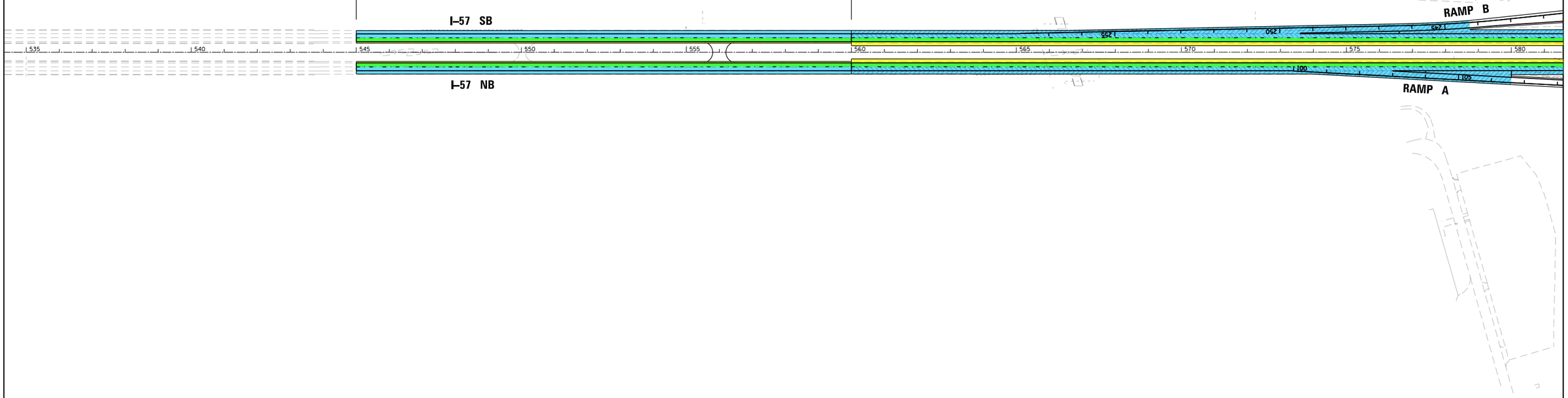
SCALE: 1″ = 300′

STA. 545+00

I-57 SEGMENT 1
MILL & OVERLAY

STA. 560+00

I-57 SEGMENT 2
TWO LANES




# EXHIBIT 23

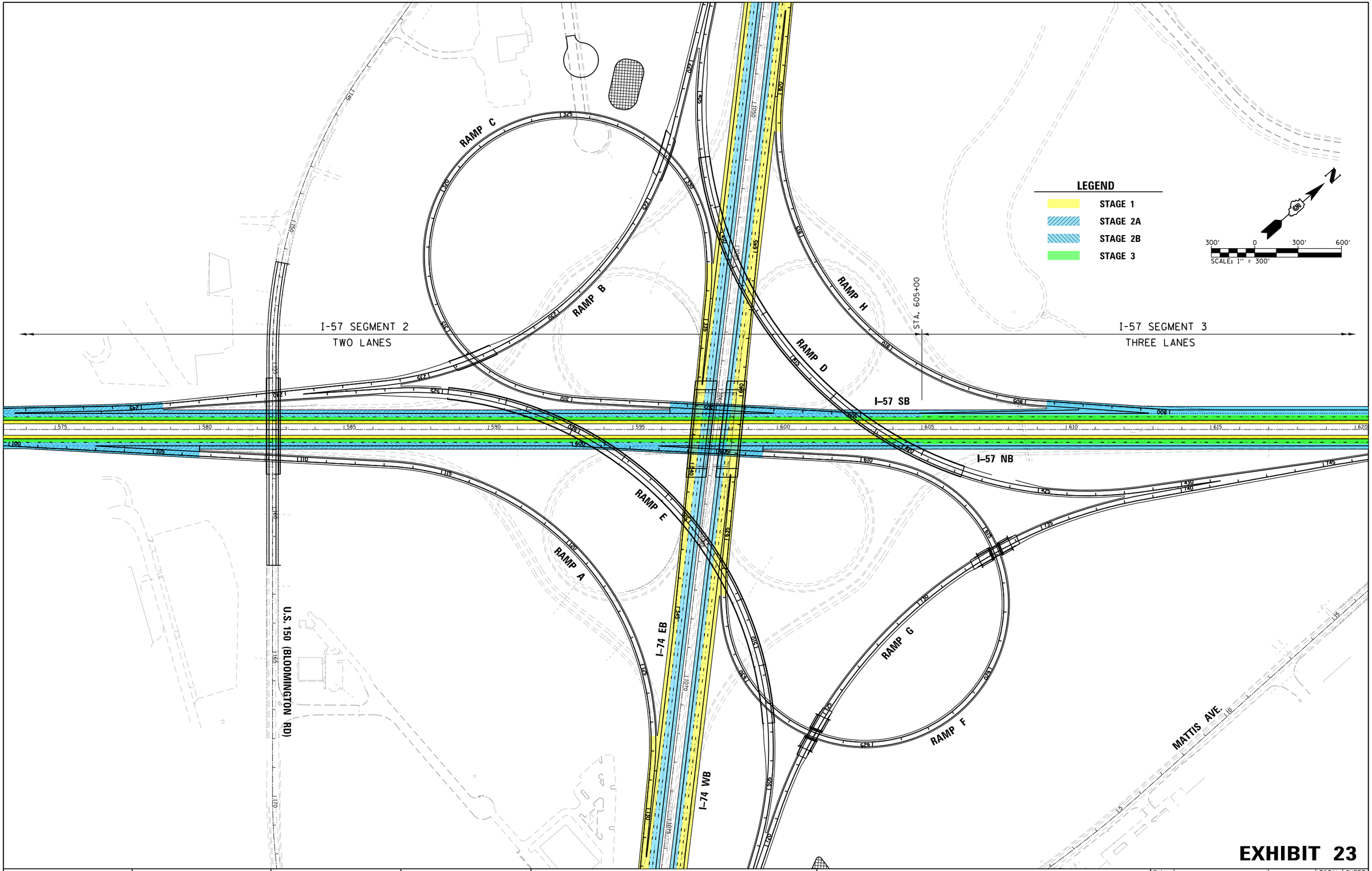
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| FILE NAME = L:\IDOT\1106602\Draw\CADD_Sheets\TMP\.. Default | USER NAME = Brad Downen | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 300.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 1:16:00 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I-57 – OPTION 2**

SCALE: | SHEET 1 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS | FED. AID PROJECT | | |




# EXHIBIT 23

| | | | |
|---|---|---|---|
| FILE NAME = L:\IDOT\1106602\Draw\CADD_Sheets\TMP\.. Default | USER NAME = Brad Downen | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 300.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 1:16:00 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I-57 – OPTION 2**

SCALE: | SHEET 2 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |

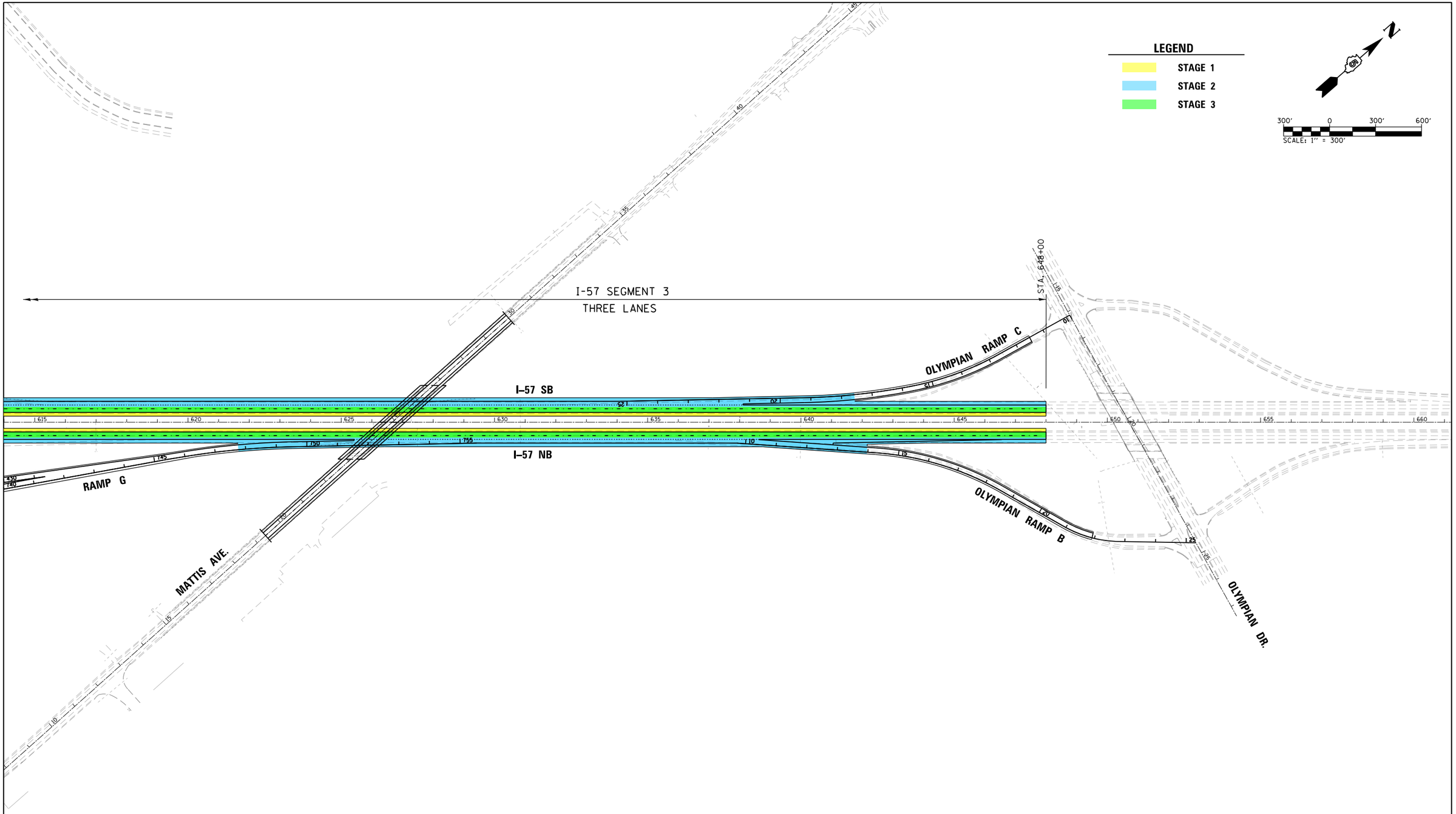



**EXHIBIT 23**

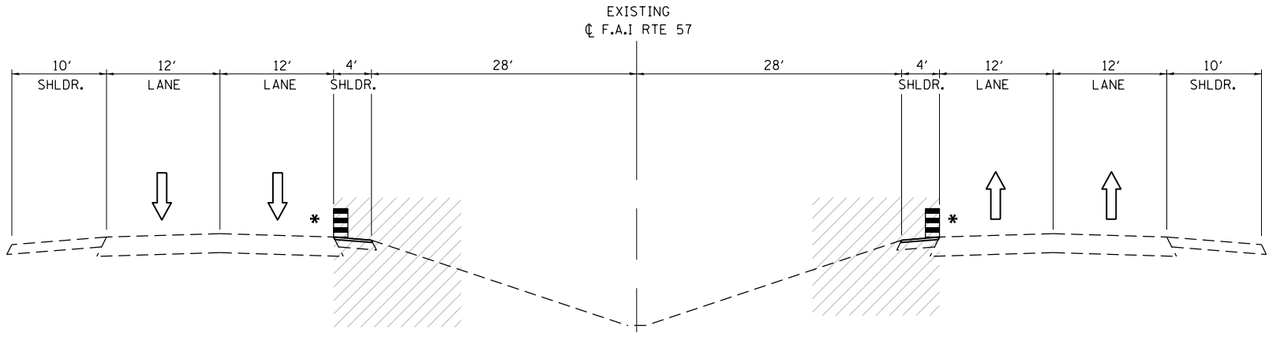
| | | | |
|---|---|---|---|
| FILE NAME = L:\IDOT\110602\Draw\CADD_Sheets\TMP\.. | USER NAME = Brad Downen | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| Default | PLOT SCALE = 300.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 1:16:01 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I–57 – OPTION 2**

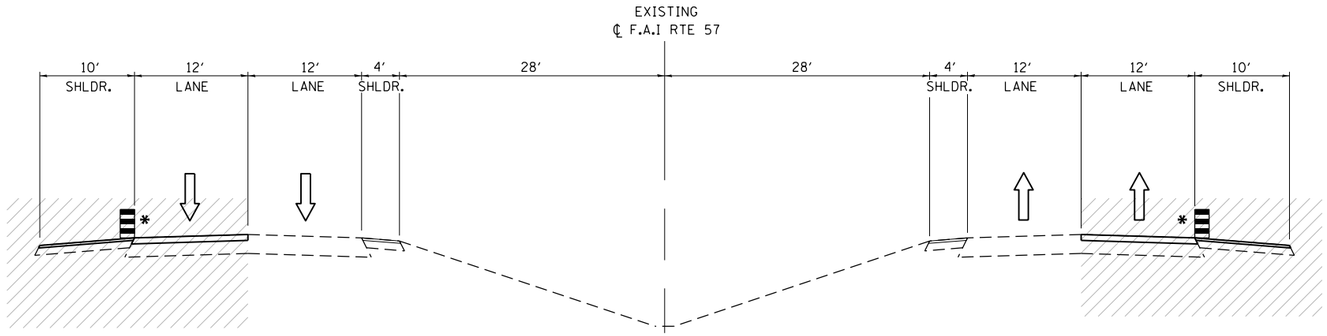
SCALE: | SHEET 3 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |



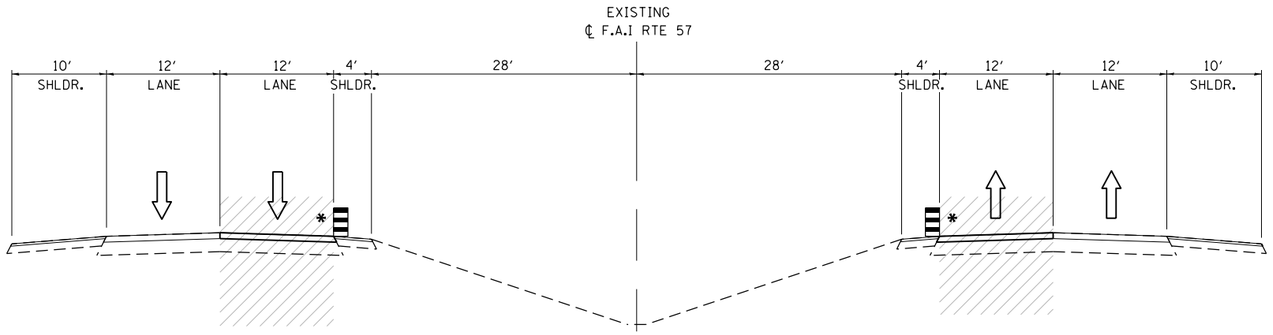

**SB** **NB**

## TYPICAL SECTION – SEGMENT 1
## STAGE 1 – MILL & OVERLAY
STA. 545+00 TO STA. 560+00




**SB** **NB**

## TYPICAL SECTION – SEGMENT 1
## STAGE 2 – MILL & OVERLAY
STA. 545+00 TO STA. 560+00




**SB** **NB**

## TYPICAL SECTION – SEGMENT 1
## STAGE 3 – MILL & OVERLAY
STA. 545+00 TO STA. 560+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 24

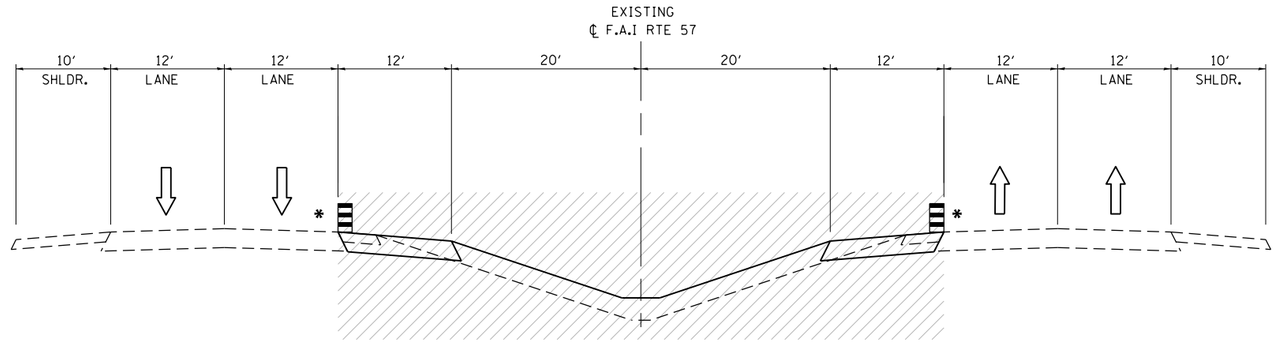
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| | | DRAWN - | REVISED - |
| $MODELNAME$ | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

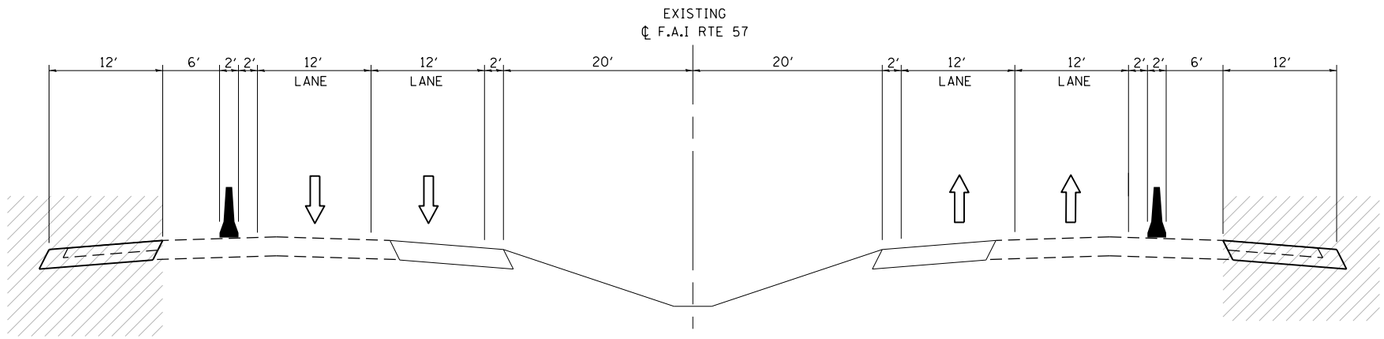
**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 2**

SHEET 1 OF 4 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 2**
**STAGE 1 – TWO LANES**
STA. 560+00 TO STA. 605+00




**TYPICAL SECTION – SEGMENT 2**
**STAGE 2A – TWO LANES**
STA. 560+00 TO STA. 605+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 24**

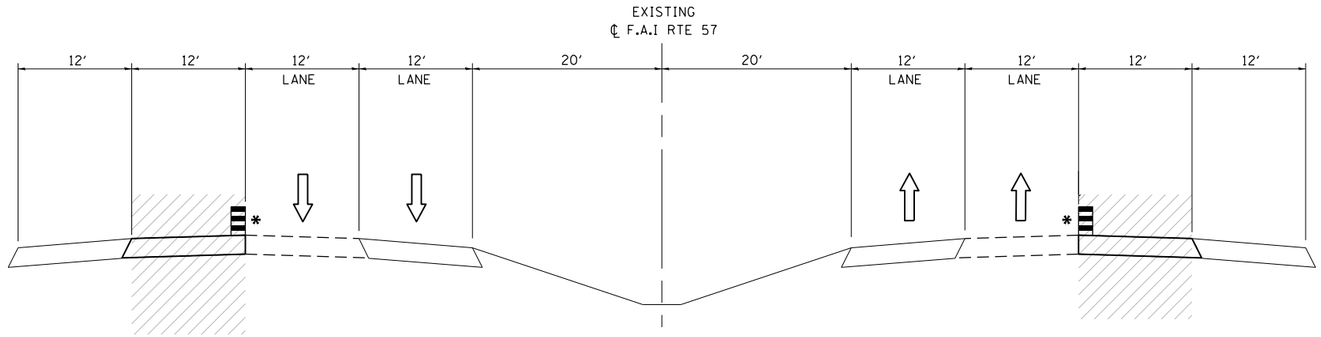
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

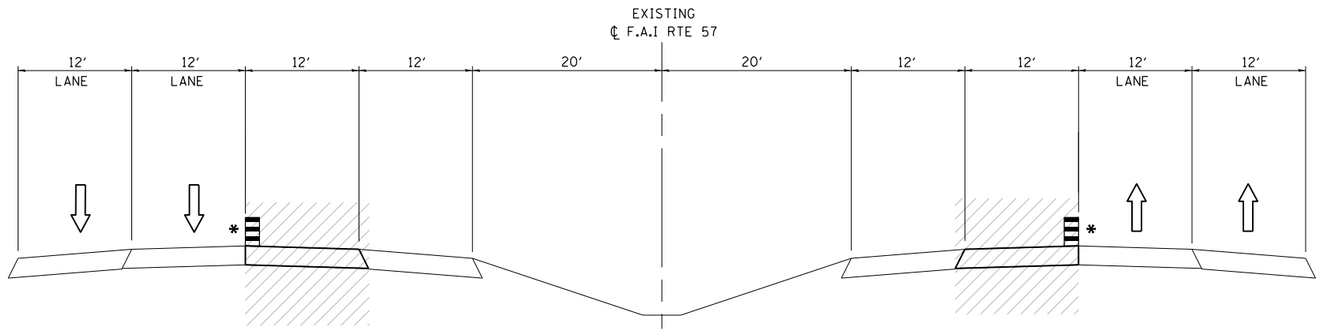
**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 2**

SHEET 2 OF 4 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 2**
**STAGE 2B – TWO LANES**
STA. 560+00 TO STA. 605+00




**TYPICAL SECTION – SEGMENT 2**
**STAGE 3 – TWO LANES**
STA. 560+00 TO STA. 605+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 24**

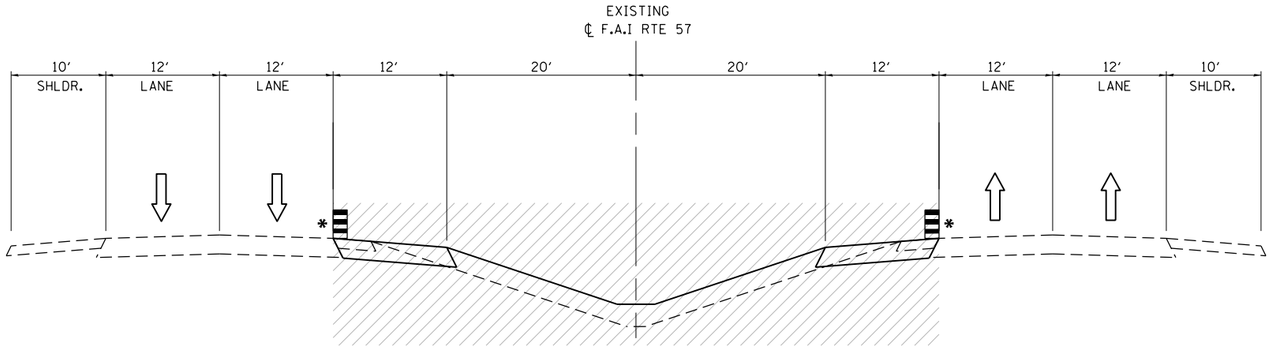
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

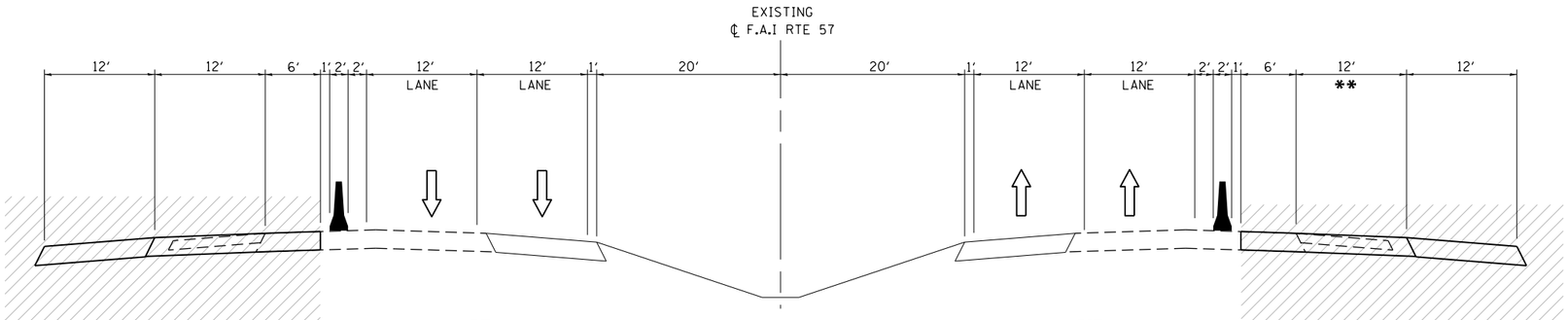
**STAGING TYPICAL SECTIONS**
**I–57 – OPTION 2**

SHEET 3 OF 4 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

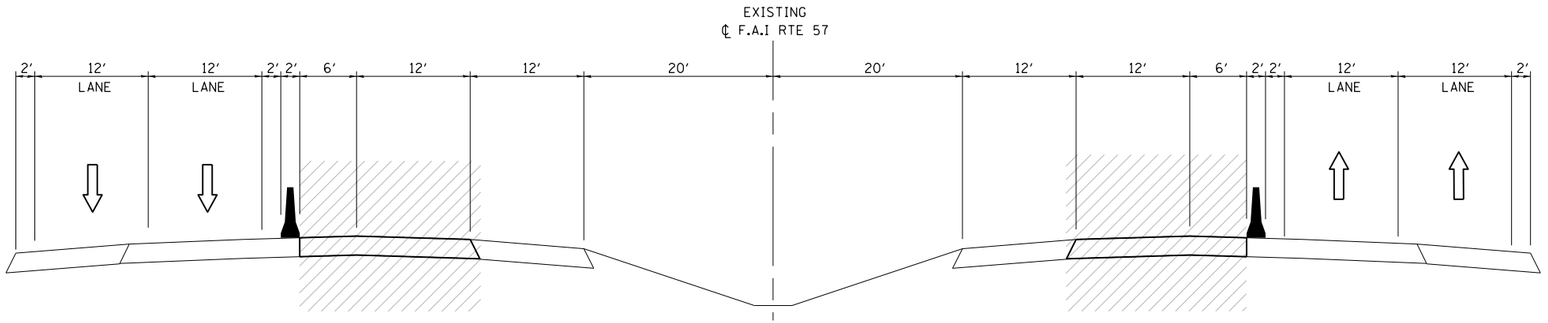



**TYPICAL SECTION – SEGMENT 3**
**STAGE 1 – THREE LANES**
STA. 605+00 TO STA. 648+00




**TYPICAL SECTION – SEGMENT 3**
**STAGE 2 – THREE LANES**
STA. 605+00 TO STA. 648+00

**AUXILIARY LANE TO BE COMPLETED WITH CONSTRUCTION OF RAMP G




**TYPICAL SECTION – SEGMENT 3**
**STAGE 3 – THREE LANES**
STA. 605+00 TO STA. 648+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 24**

| | | | |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–57 – OPTION 2**

SHEET 4 OF 4 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS | FED. AID PROJECT | | |

**LEGEND**

- STAGE 1
- STAGE 2
- STAGE 3

N

300′ 0 300′ 600′

SCALE: 1″ = 300′

STA. 545+00

I-57 SEGMENT 1
MILL & OVERLAY

STA. 560+00

I-57 SEGMENT 2
TWO LANES

I–57 SB

I–57 NB

RAMP B

RAMP A

535 540 545 550 555 560 565 570 575 580

252 252 249

100 105

# EXHIBIT 25

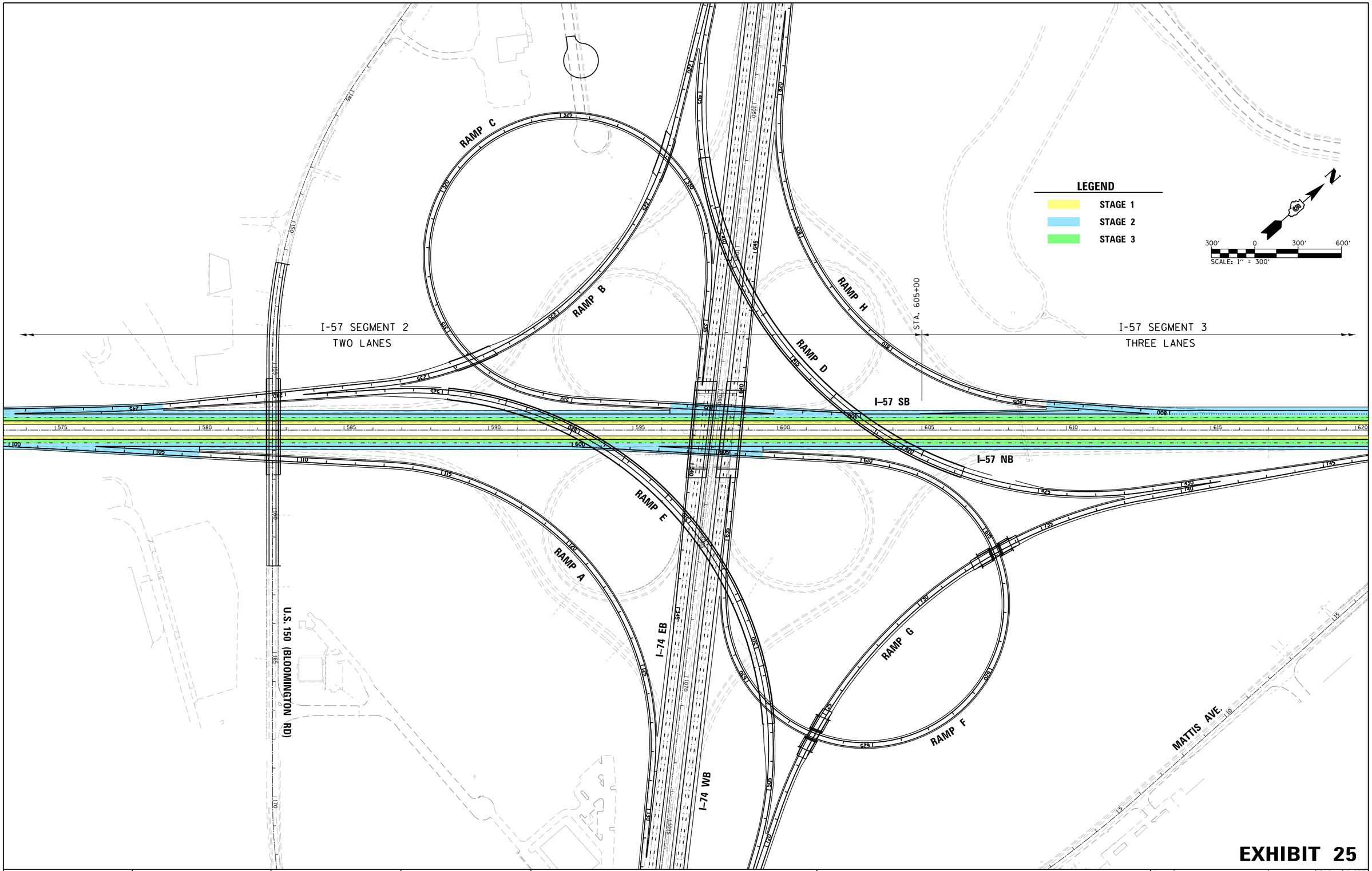
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I–57 – OPTION 3 & 4**

SCALE: | SHEET 1 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS | FED. AID PROJECT | | |




# EXHIBIT 25

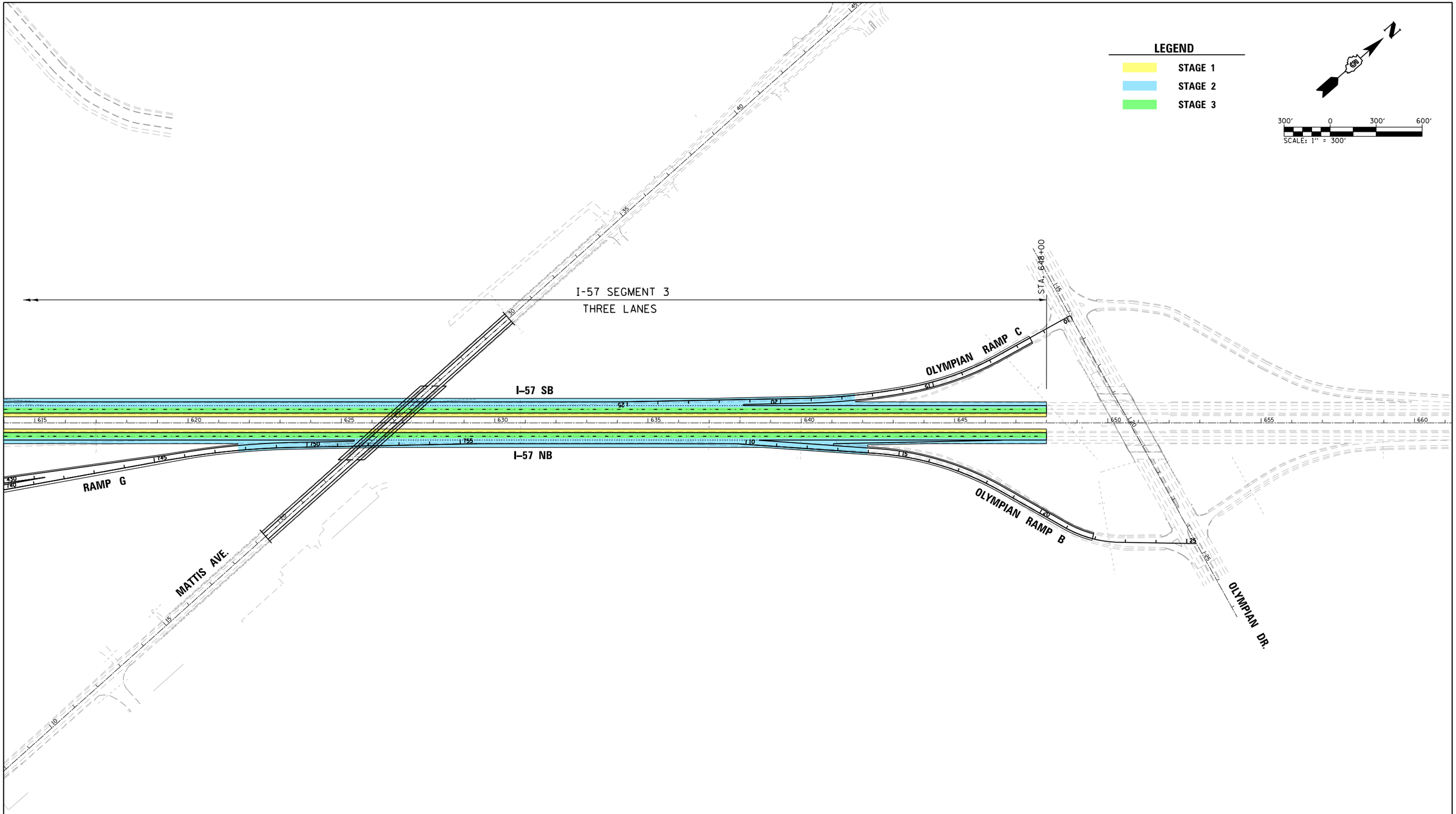
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| | PLOT DATE = 8/19/2015 - 1:16:22 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**I–57 – OPTION 3 & 4**

SCALE: | SHEET 2 OF 3 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 25

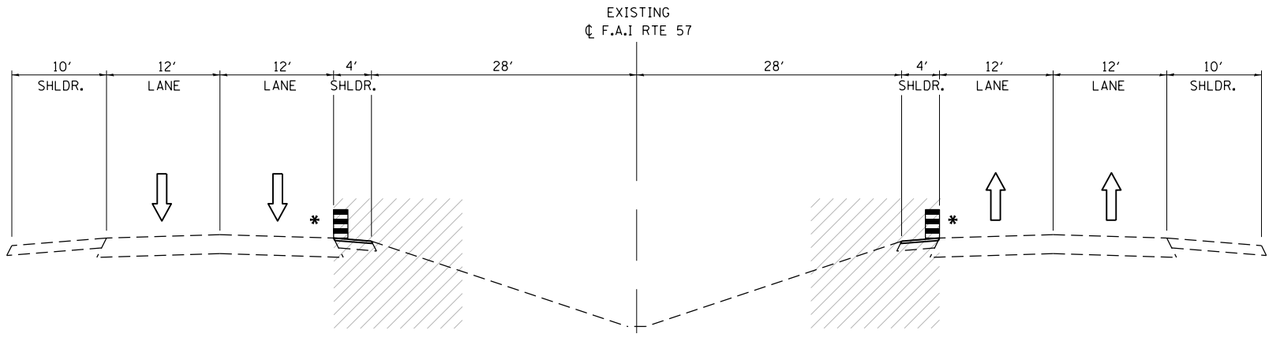
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

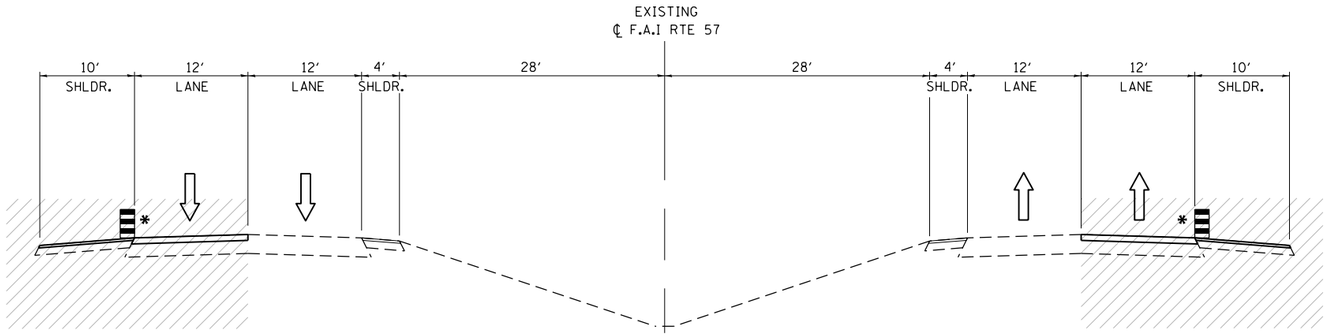
**STAGING PLAN**
**I–57 – OPTION 3 & 4**

SCALE: | SHEET 3 OF 3 SHEETS | STA. | TO STA.

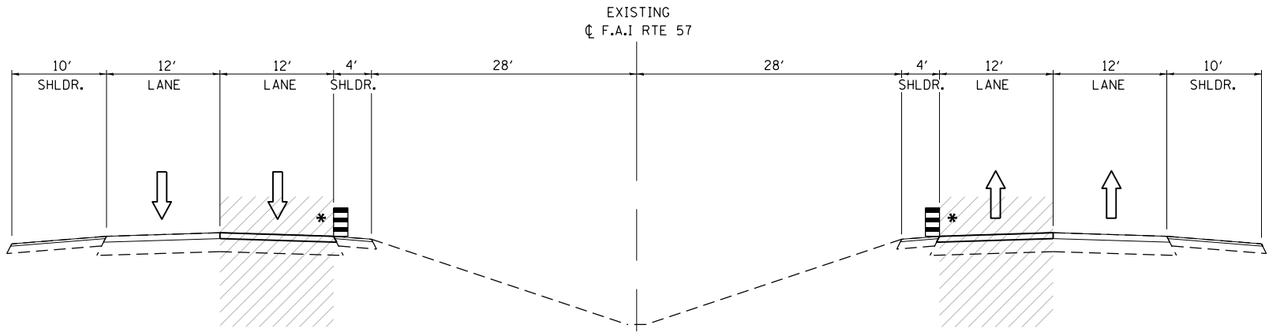
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 1**
**STAGE 1 – MILL & OVERLAY**
STA. 545+00 TO STA. 560+00




**TYPICAL SECTION – SEGMENT 1**
**STAGE 2 – MILL & OVERLAY**
STA. 545+00 TO STA. 560+00




**TYPICAL SECTION – SEGMENT 1**
**STAGE 3 – MILL & OVERLAY**
STA. 545+00 TO STA. 560+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 26**

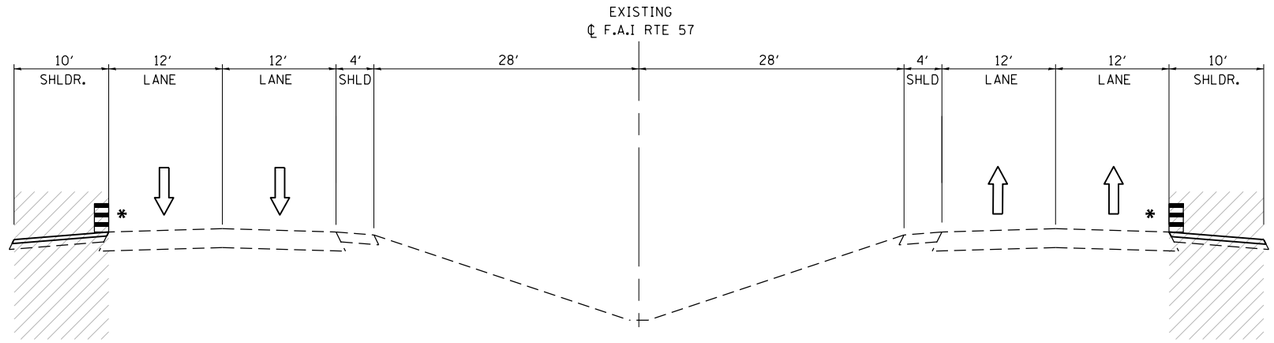
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

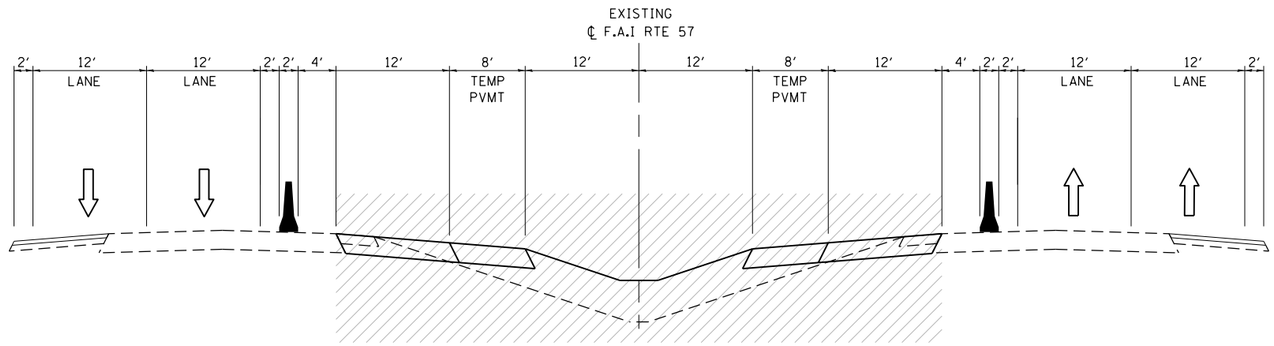
**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 3**

SHEET 1 OF 5 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 2**
**PRE-STAGE – TWO LANES**
STA. 560+00 TO STA. 605+00




**TYPICAL SECTION – SEGMENT 2**
**STAGE 1 – TWO LANES**
STA. 560+00 TO STA. 605+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 26**

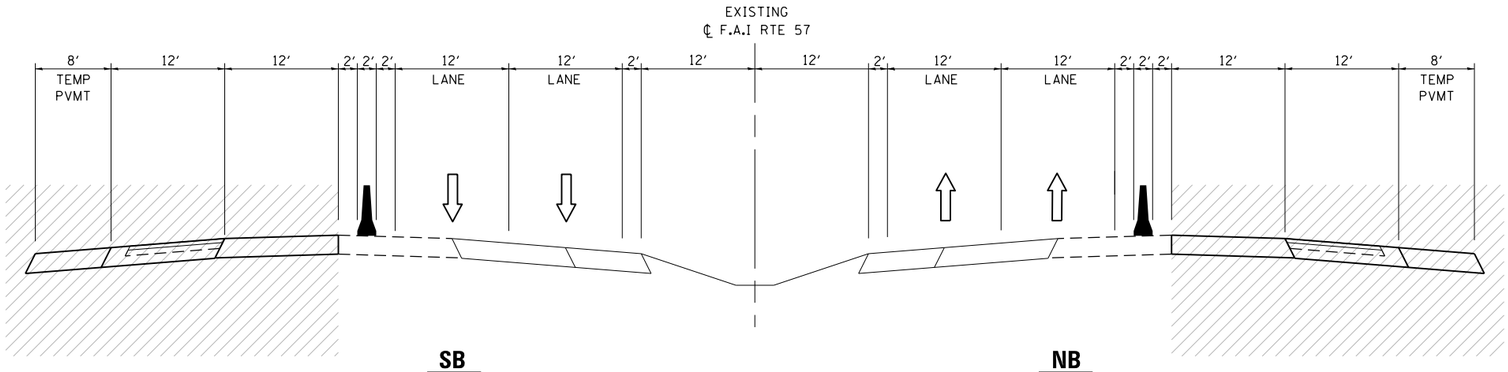
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

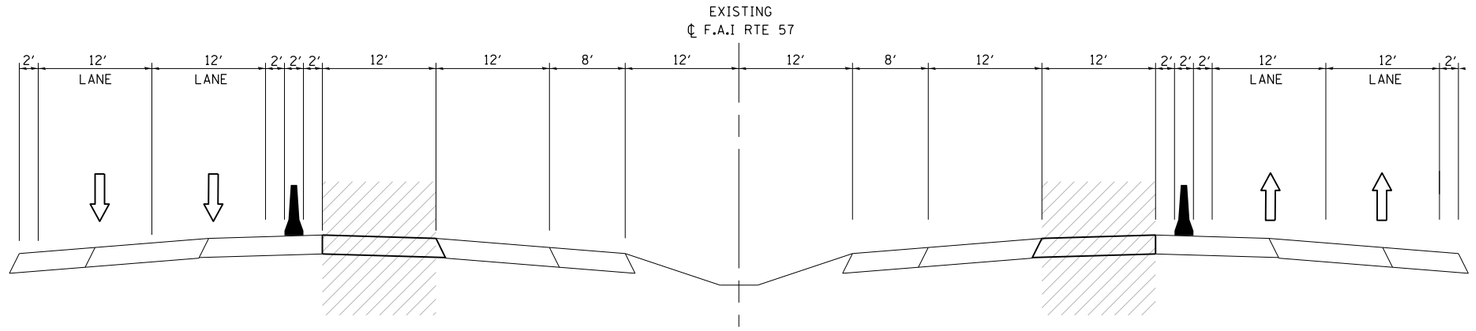
**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 3**

SHEET 2 OF 5 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 2**
**STAGE 2 – TWO LANES**
STA. 560+00 TO STA. 605+00




**TYPICAL SECTION – SEGMENT 2**
**STAGE 3 – TWO LANES**
STA. 560+00 TO STA. 605+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 26**

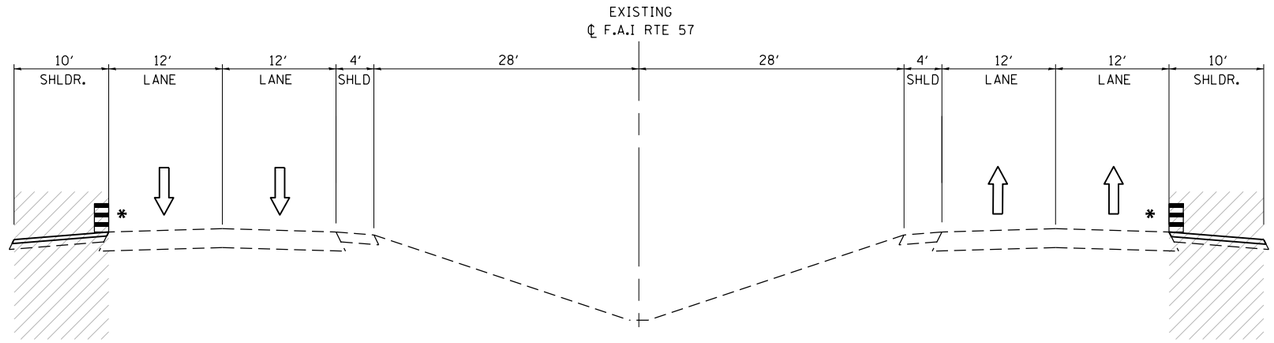
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

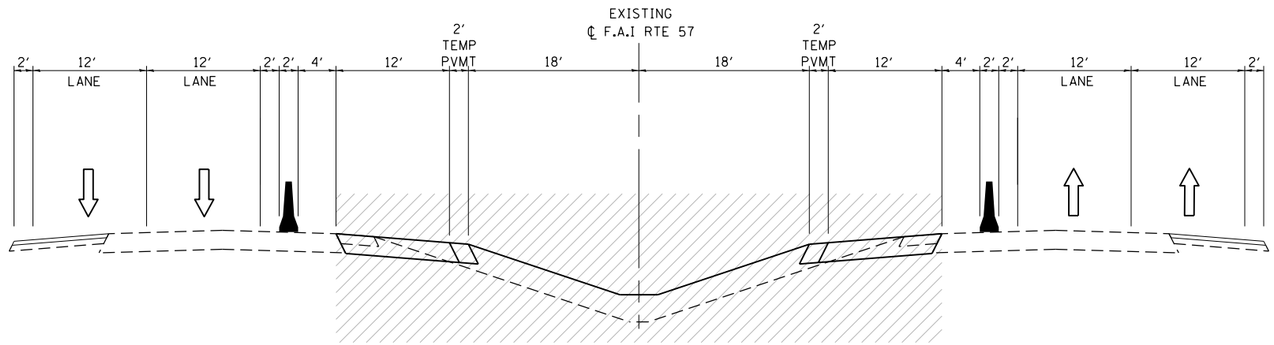
**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 3**

SHEET 3 OF 5 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 3**
**PRE–STAGE – THREE LANES**
STA. 605+00 TO STA. 648+00




**TYPICAL SECTION – SEGMENT 3**
**STAGE 1 – THREE LANES**
STA. 605+00 TO STA. 648+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 26**

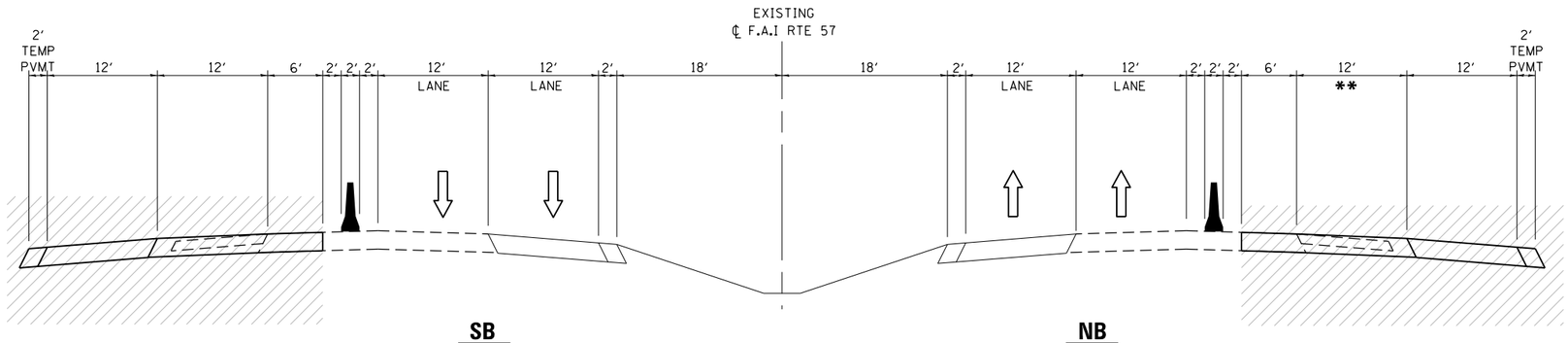
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–57 – OPTION 3**

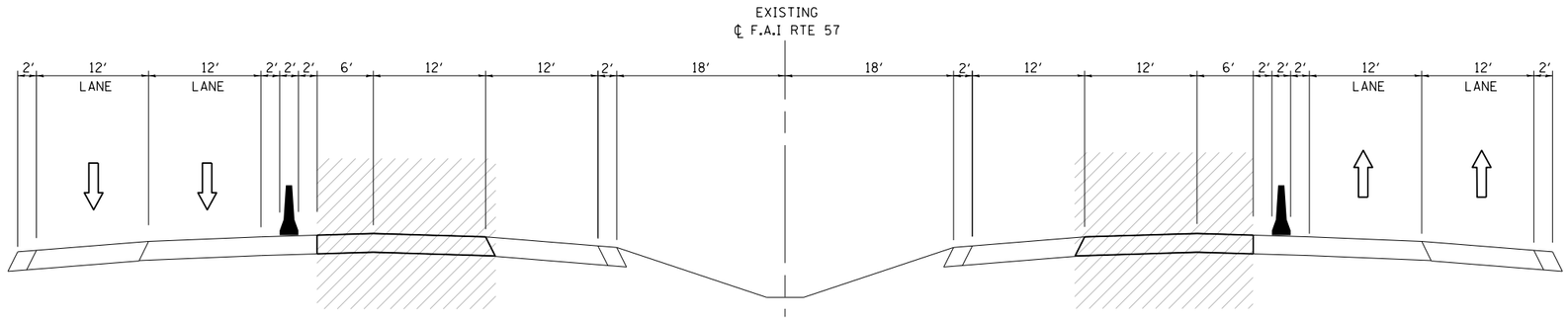
SHEET 4 OF 5 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 3**
**STAGE 2 – THREE LANES**
STA. 605+00 TO STA. 648+00

**AUXILIARY LANE TO BE COMPLETED WITH CONSTRUCTION OF RAMP G




**TYPICAL SECTION – SEGMENT 3**
**STAGE 3 – THREE LANES**
STA. 605+00 TO STA. 648+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 26

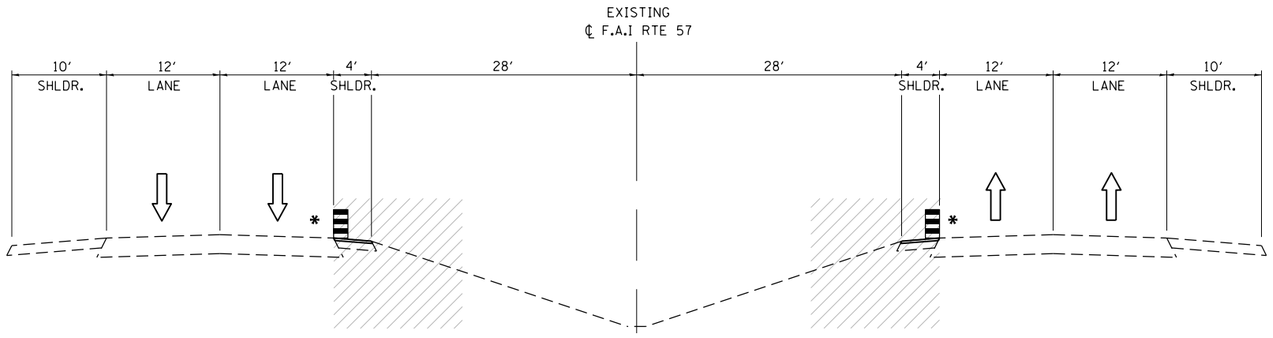
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

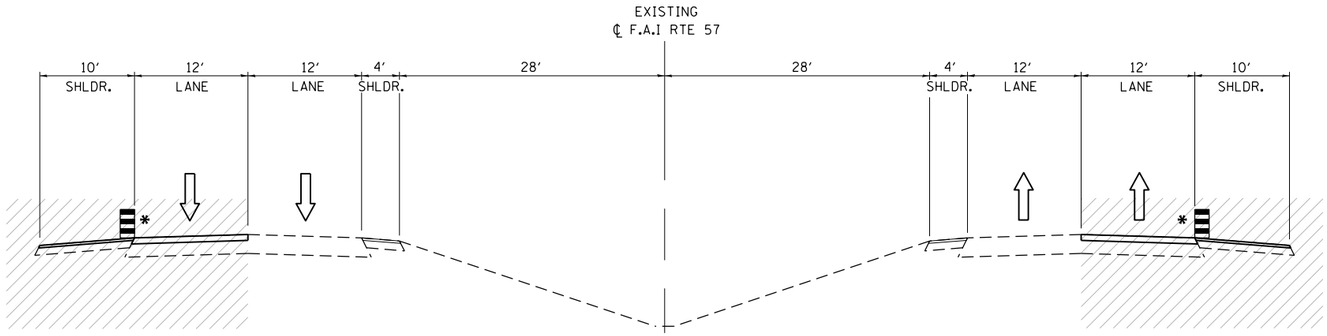
**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 3**

SHEET 5 OF 5 SHEETS | STA. | TO STA.

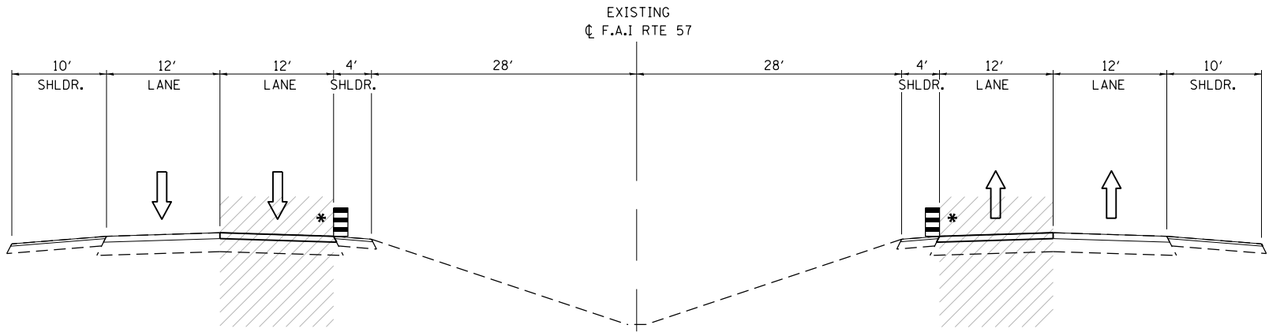
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 1**
**STAGE 1 – MILL & OVERLAY**
STA. 545+00 TO STA. 560+00




**TYPICAL SECTION – SEGMENT 1**
**STAGE 2 – MILL & OVERLAY**
STA. 545+00 TO STA. 560+00




**TYPICAL SECTION – SEGMENT 1**
**STAGE 3 – MILL & OVERLAY**
STA. 545+00 TO STA. 560+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 27**

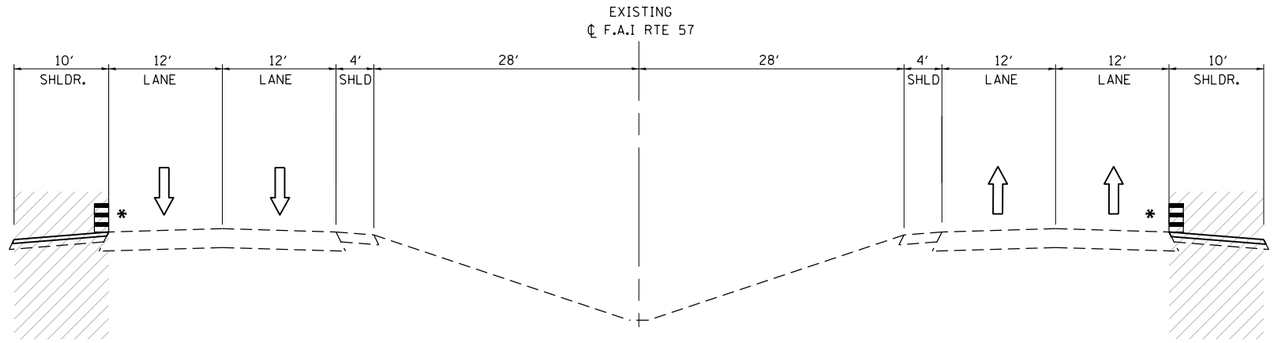
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

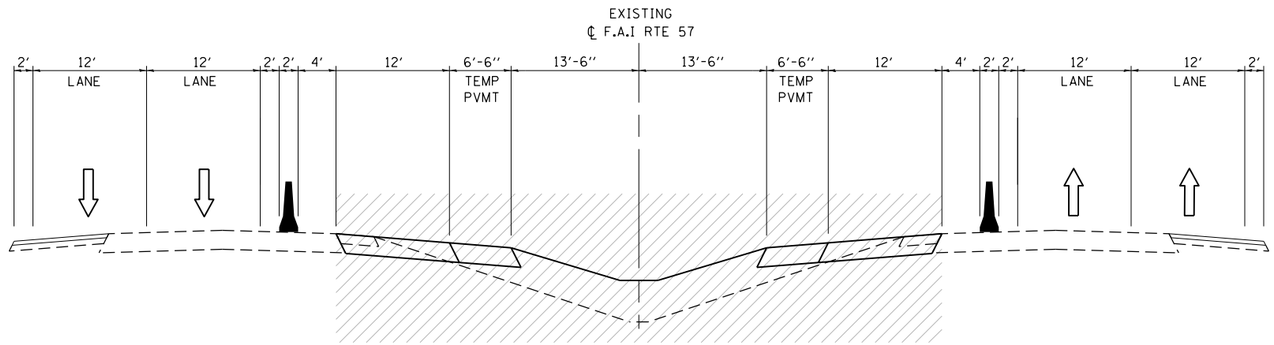
**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 4**

SHEET 1 OF 5 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 2**
**PRE-STAGE – TWO LANES**
STA. 560+00 TO STA. 605+00




**TYPICAL SECTION – SEGMENT 2**
**STAGE 1 – TWO LANES**
STA. 560+00 TO STA. 605+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

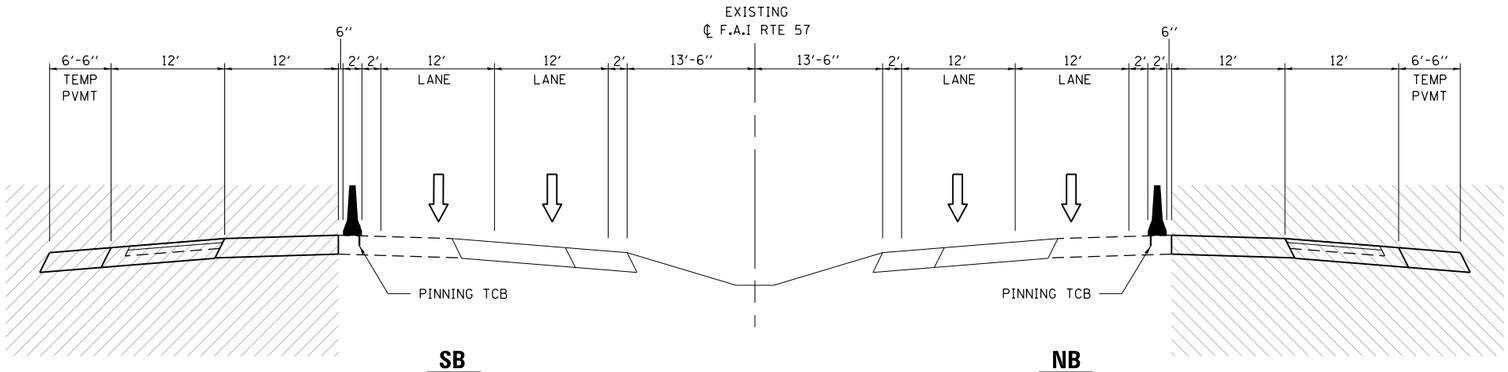
**EXHIBIT 27**

| | | | |
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| | | DRAWN - | REVISED - |
| $MODELNAME$ | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

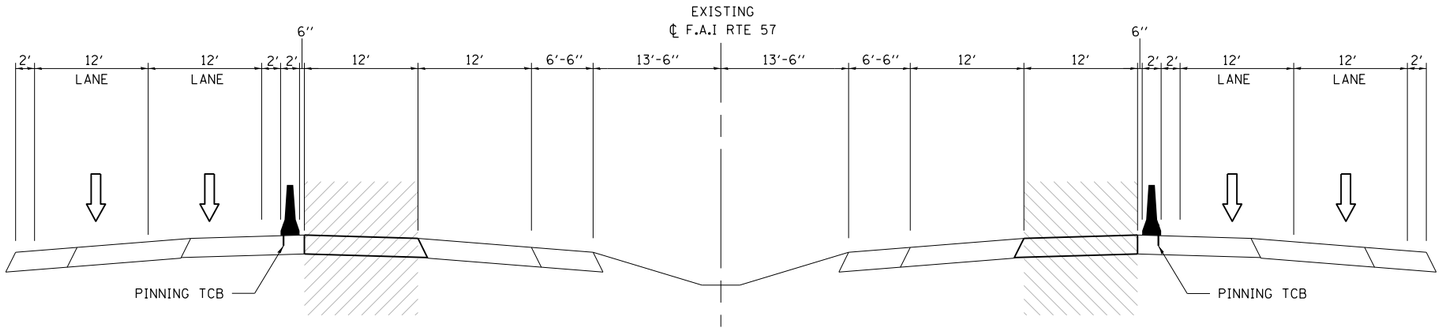
**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 4**
SHEET 2 OF 5 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**SB** **NB**

## TYPICAL SECTION – SEGMENT 2
## STAGE 2 – TWO LANES
STA. 560+00 TO STA. 605+00




**SB** **NB**

## TYPICAL SECTION – SEGMENT 2
## STAGE 3 – TWO LANES
STA. 560+00 TO STA. 605+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 27

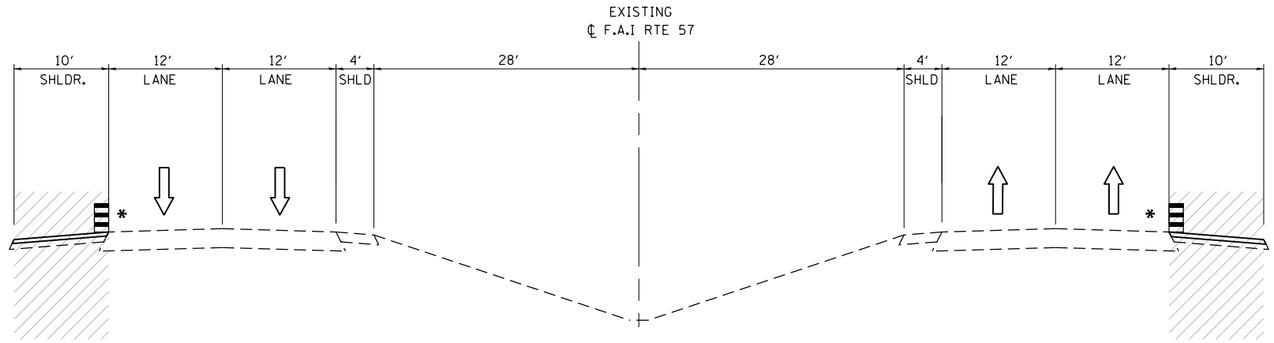
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

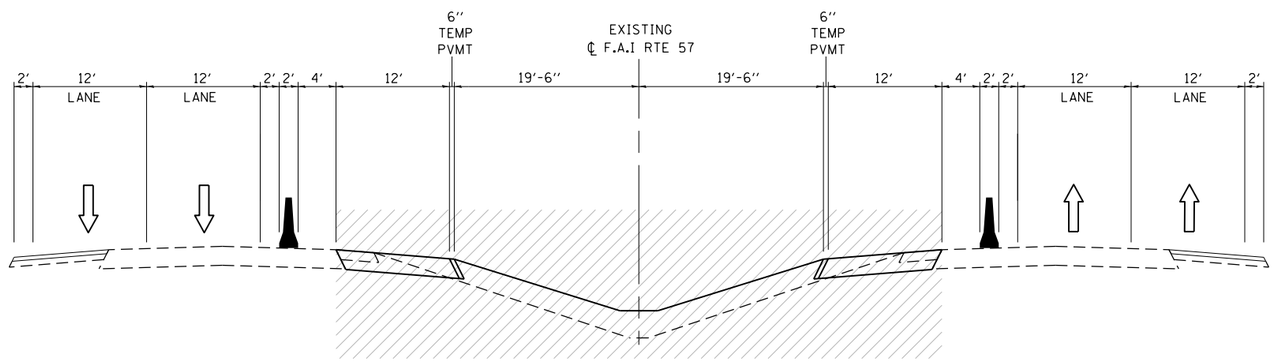
**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 4**

SHEET 3 OF 5 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 3**
**PRE–STAGE – THREE LANES**
STA. 605+00 TO STA. 648+00




**TYPICAL SECTION – SEGMENT 3**
**STAGE 1 – THREE LANES**
STA. 605+00 TO STA. 648+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 27**

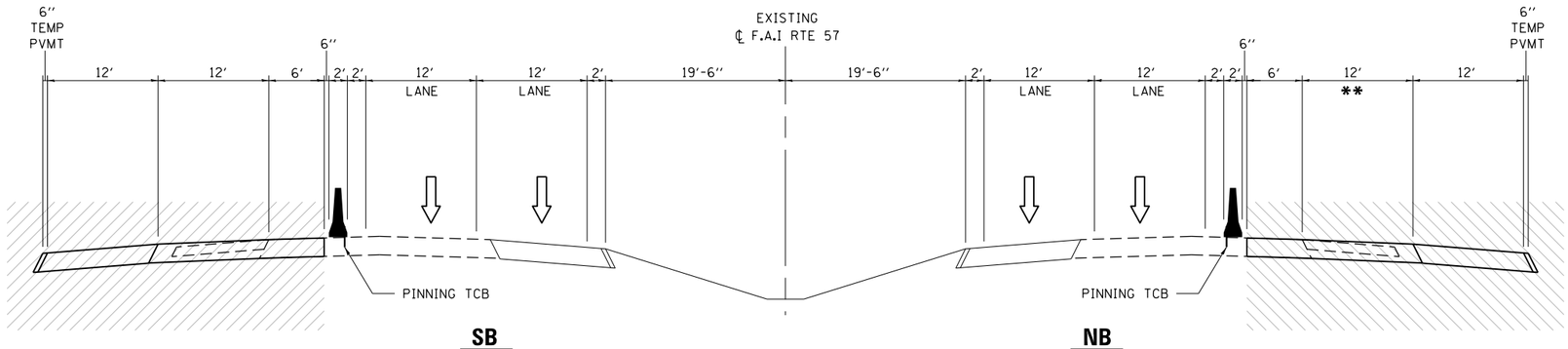
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–57 – OPTION 4**

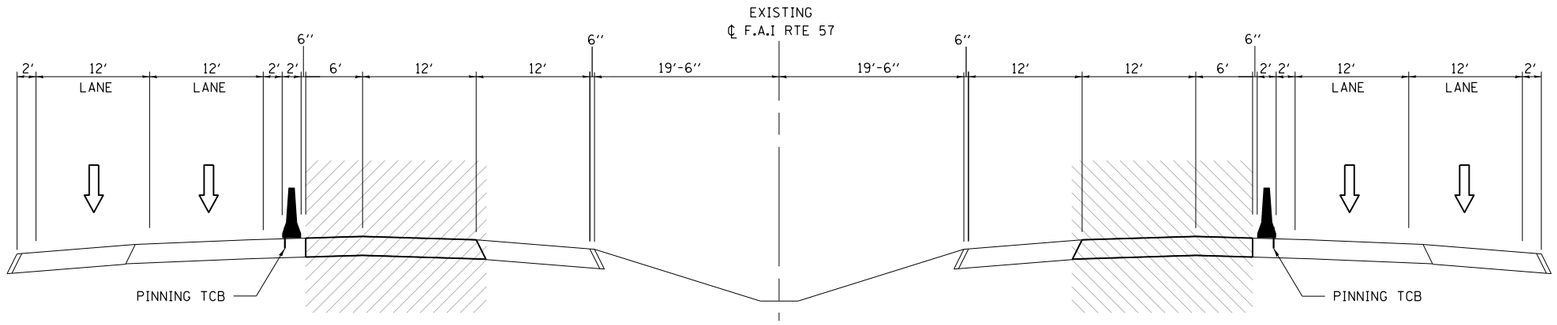
SHEET 4 OF 5 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 3**
**STAGE 2 – THREE LANES**
STA. 605+00 TO STA. 648+00

**AUXILIARY LANE TO BE COMPLETED WITH CONSTRUCTION OF RAMP G




**TYPICAL SECTION – SEGMENT 3**
**STAGE 3 – THREE LANES**
STA. 605+00 TO STA. 648+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 27

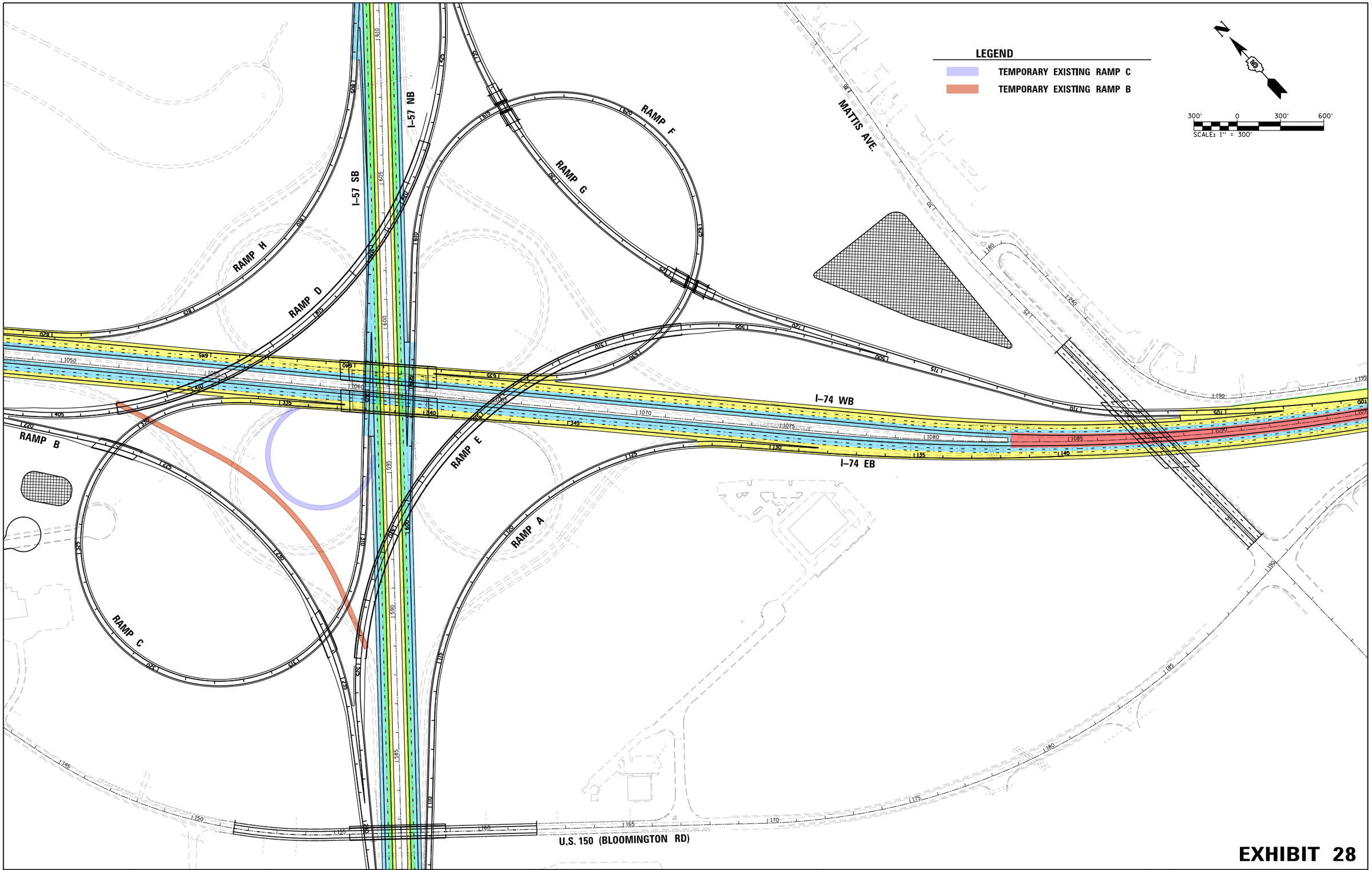
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 4**

SHEET 5 OF 5 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 28

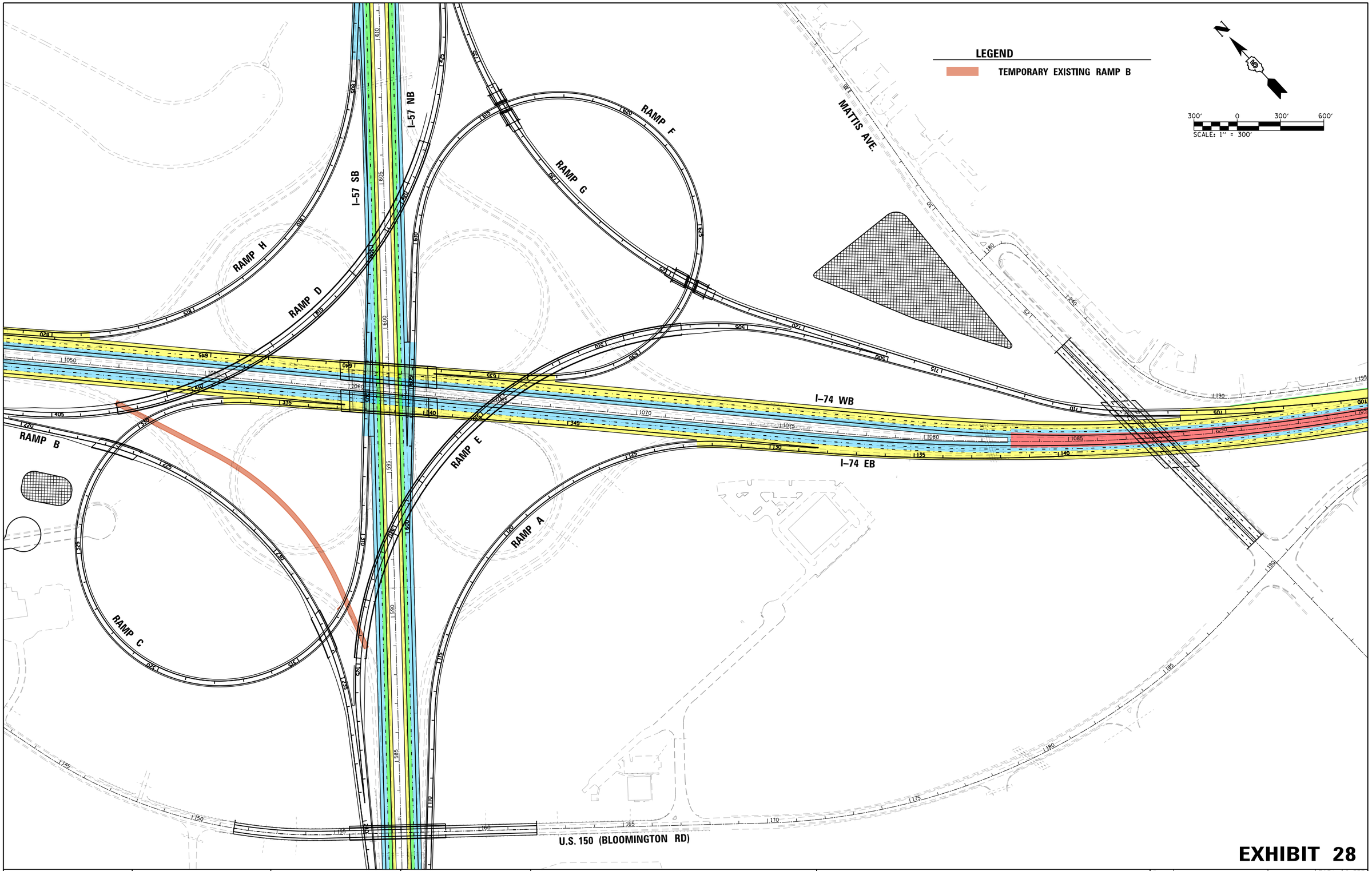
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| | | DRAWN - | REVISED - |
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| | PLOT DATE = 8/19/2015 - 1:17:16 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**RAMP B – OPTION 1**

SCALE: | SHEET 1 OF 2 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




# EXHIBIT 28

| | | | |
|---|---|---|---|
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| | | DRAWN - | REVISED - |
| | PLOT SCALE = 300.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 8/19/2015 - 1:17:16 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING PLAN**
**RAMP B – OPTION 2**

SCALE: | SHEET 2 OF 2 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |

## LEGEND:

**CONTRACT 1**

CONSTRUCT MATTIS AVE. ROADWAY PAVEMENT AND STRUCTURES

**CONTRACT 2**

CONSTRUCT U.S. 150 ROADWAY PAVEMENT AND STRUCTURES

**CONTRACT 3**

PRE–STAGE: CONSTRUCT TEMPORARY RAMP B; CLOSE RAMP C

STAGE 1: CONSTRUCT ALL OF OUTER RAMP B & G AND PORTIONS OF FLOVER RAMPS D & E

STAGE 2: CONSTRUCT LOOP RAMP C & F AND COMPLETE CONSTRUCTION OF FLYOVER RAMPS D & E

STAGE 3: CONSTRUCT MAINLINE STRUCTURE AND ROADWAYS AND OUTER RAMPS A & H

I–57

N. MATTIS AVE.

I–74

RAMP H

RAMP D

RAMP F

RAMP G

RAMP E

RAMP A

RAMP B

RAMP C

MIDWEST CT.

BLOOMINGTON RD.

W. ANTHONY DR.

I–74

BLOOMINGTON RD.

N. MATTIS AVE.

I–57

N

300′ 0 300′ 600′

SCALE: 1″ = 300′

**EXHIBIT 29**

| | | | |
|---|---|---|---|
| FILE NAME = L:\IDOT\110602\Draw\CADD_Sheets\TMP\.. Default | USER NAME = Brad Downen | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
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| | PLOT DATE = 8/19/2015 - 1:12:23 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**I–74 /I–57 INTERCHANGE**
**STAGING CONCEPT PLAN**

SHEET OF SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

**Detour Costs**

| Route | Adverse Travel Distance (Miles) | Total 2020 ADT | Daily Adverse Travel Costs | | | | | | | Detour Time (Days) | Total Adverse Travel Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Passenger Cars | | SU Trucks | | MU Trucks | | Total Daily Cost | | |
| | | | 2020 ADT | $0.105 Per Mile Per ADT | 2020 ADT | $0.45 Per Mile Per ADT | 2020 ADT | $0.55 Per Mile Per ADT | | | |
| **Ramp B** | 7.0 | 3,850 | 2,760 | $2,029 | 395 | $1,244 | 695 | $2,676 | $5,949 | 240 | **$1,427,664** |
| **Ramp C** | 10.4 | 2,150 | 1,765 | $1,927 | 180 | $842 | 205 | $1,173 | $3,942 | 240 | **$946,171** |
| **Mattis over I-74** | 2.6 | 16,300 | 15,485 | $4,227 | 685 | $801 | 130 | $186 | $5,215 | 240 | **$1,251,541** |
| **Mattis over I-57** | 2.6 | 6,176 | 5,675 | $1,549 | 266 | $311 | 235 | $336 | $2,197 | 240 | **$527,171** |
| **U.S. 150 over I-57** | 5.5 | 9,300 | 8,515 | $4,917 | 495 | $1,225 | 290 | $877 | $7,020 | 240 | **$1,684,749** |

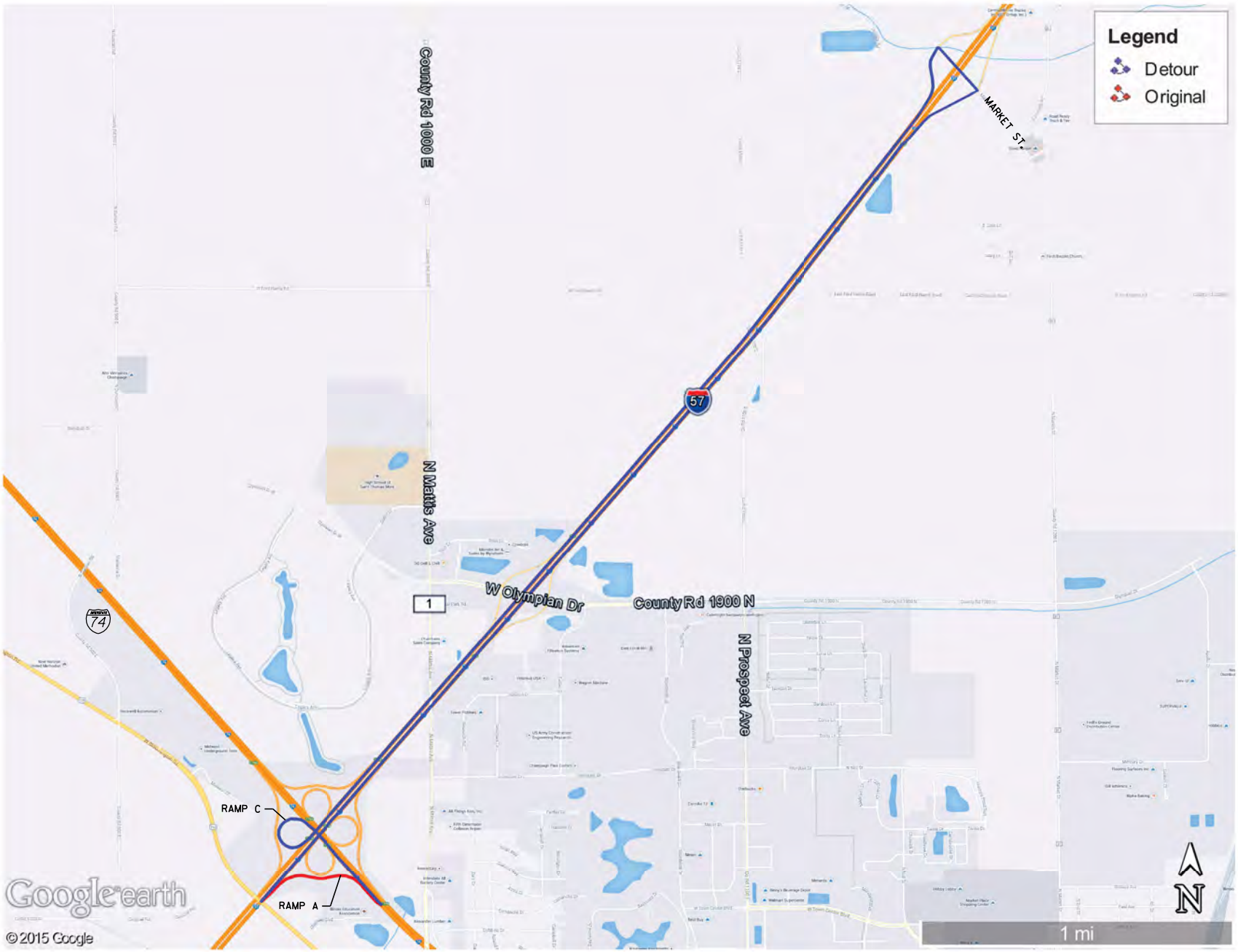
Per BDE 13-6.02c: Multiply adverse travel costs by 0.5 to compare to other alternatives
Passenger Car = $0.21 x 0.5 = $0.105
SU = $0.90 x 0.5 = $0.45
MU = $1.10 x 0.5 = $0.55

# EXHIBIT 30

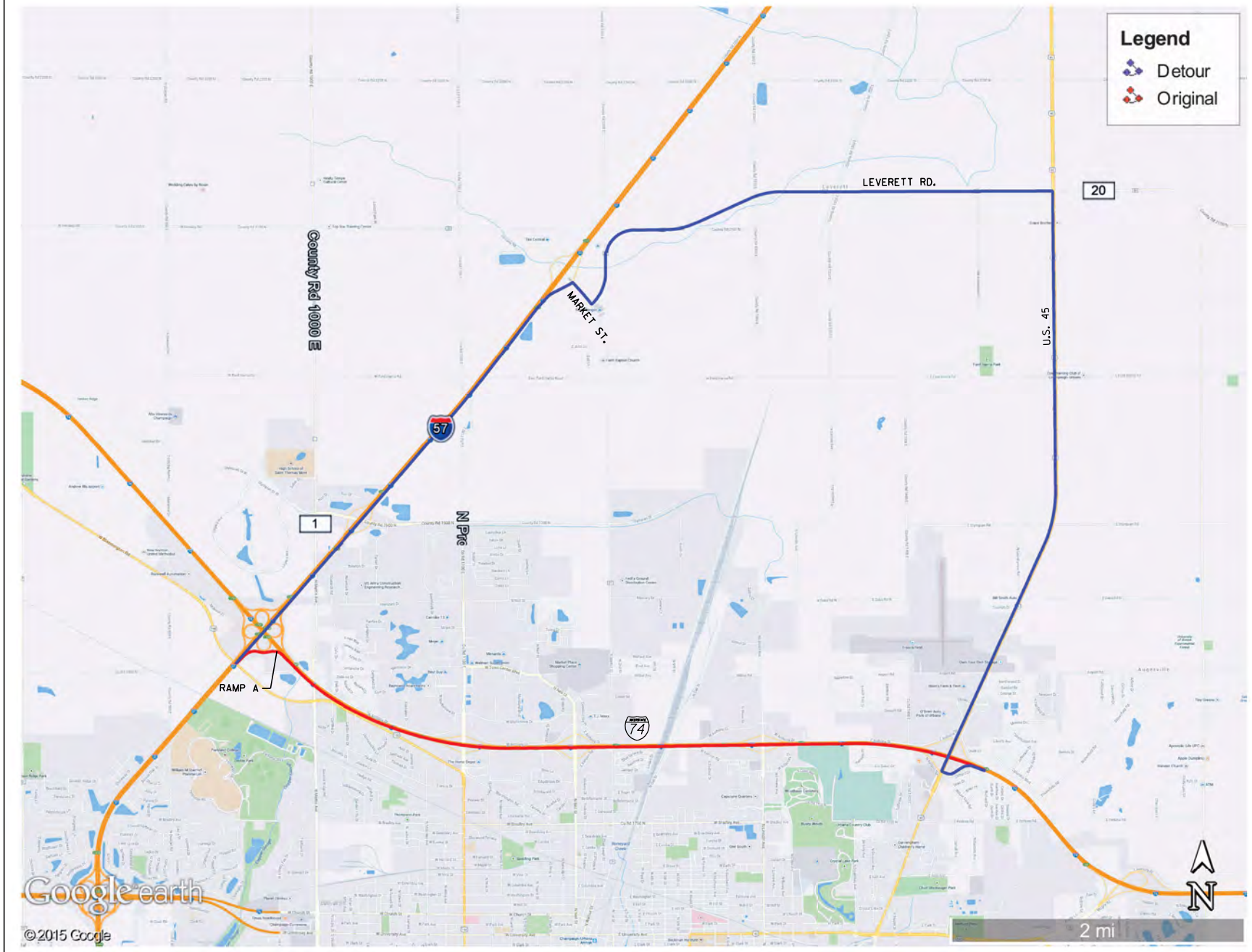
**Staging Costs**

| | Earth Excavation | Temporary Aggregate Base | Temporary Pavement | Pavement Removal | Increased Structure Cost | Increased Roadway Cost | Concrete Barrier Wall | Pinning Concrete Barrier Wall | Night Work Premium | Traffic Control and Protection | Temporary Signals | Loss of Construction Season (Inflation) | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **I-74 Option 1 & 2 Comparison** | | | | | | | | | | | | | |
| I-74 Option 1 | | | | | $80,000 | $150,000 | | | $150,000 | | | | **$380,000** |
| I-74 Option 2 | $10,000 | $35,000 | $160,000 | | | | $240,000 | | | | | $290,000 | **$735,000** |
| **I-74 Option 3 & 4 Comparison** | | | | | | | | | | | | | |
| I-74 Option 3 | $30,000 | $55,000 | $270,000 | $40,000 | | | | $25,000 | | | | | **$420,000** |
| I-74 Option 4 | | | | | | | | $160,000 | | | | | **$160,000** |
| **I-57 Option 1 & 2 Comparison** | | | | | | | | | | | | | |
| I-57 Option 1 | | | | | | | | | $80,000 | | | | **$80,000** |
| I-57 Option 2 | | | | | | | $70,000 | | | | | | **$70,000** |
| **I-57 Option 3 & 4 Comparison** | | | | | | | | | | | | | |
| I-57 Option 3 | $30,000 | $60,000 | $295,000 | $45,000 | | | | | | | | | **$430,000** |
| I-57 Option 4 | | | | | | | | $130,000 | | | | | **$130,000** |
| **Ramp B Comparison** | | | | | | | | | | | | | |
| Ramp B Option 1 | $55,000 | $50,000 | $245,000 | $35,000 | | | $15,000 | | | | | | **$400,000** |
| Ramp B Option 2 | $30,000 | $30,000 | $140,000 | $20,000 | | | | | | | | | **$220,000** |
| **Cross Roadway Estimates** | | | | | | | | | | | | | |
| Mattis over I-74 Option 2 | | | | | $120,000 | | $40,000 | | | $300,000 | | | **$460,000** |
| Mattis over I-57 Option 2 | | | | | $85,000 | | $35,000 | | | $210,000 | $50,000 | | **$380,000** |
| U.S. 150 over I-57 Option 2 | | | | | $65,000 | | $35,000 | | | $160,000 | $50,000 | | **$310,000** |

**EXHIBIT 31**



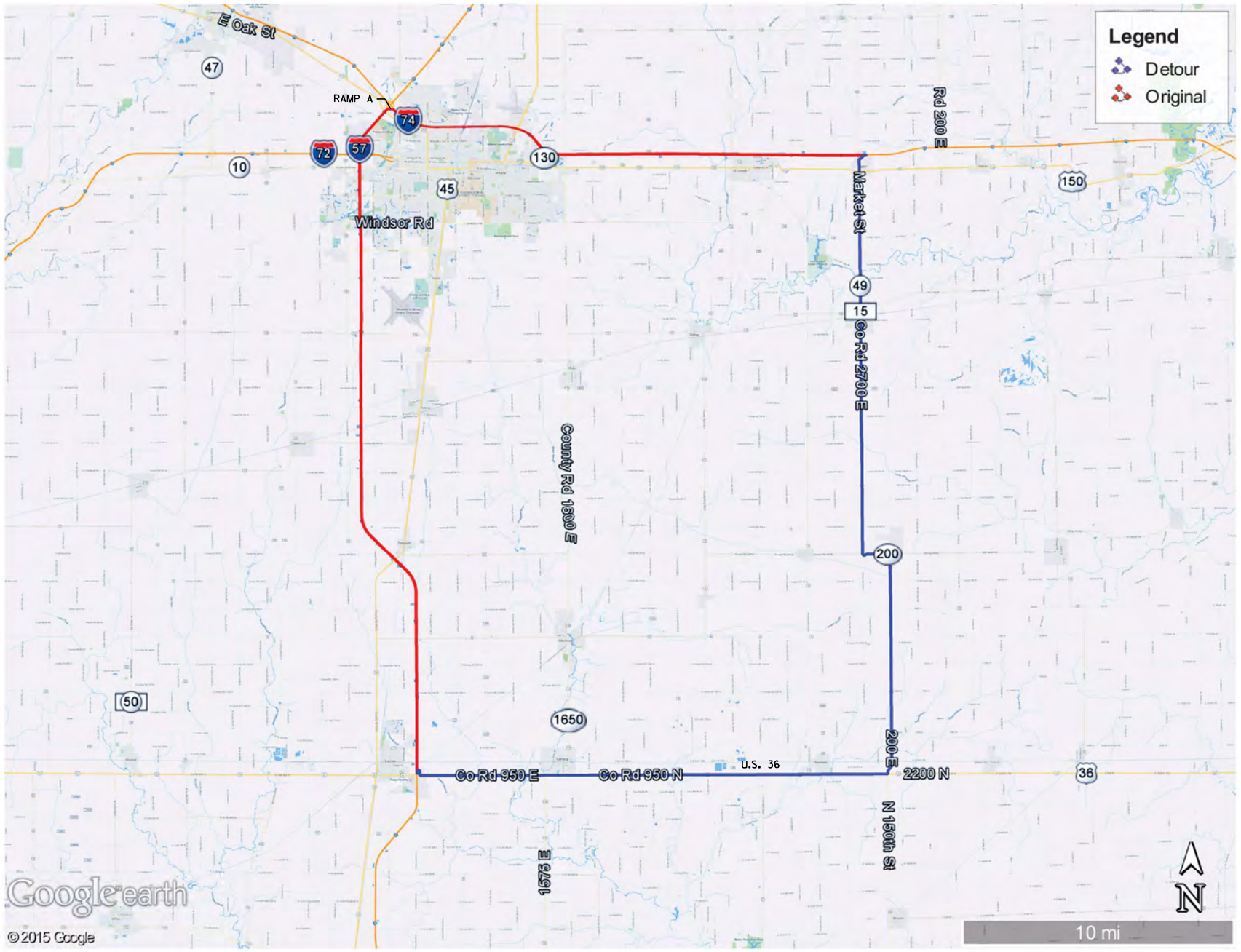

| | | |
|---|---|---|
| I–57 & I–74 INTERCHANGE | RAMP A (I–57 N.B. TO I–74 E.B.)<br>OPTION 1 | EXHIBIT 32<br>DETOUR ROUTES |



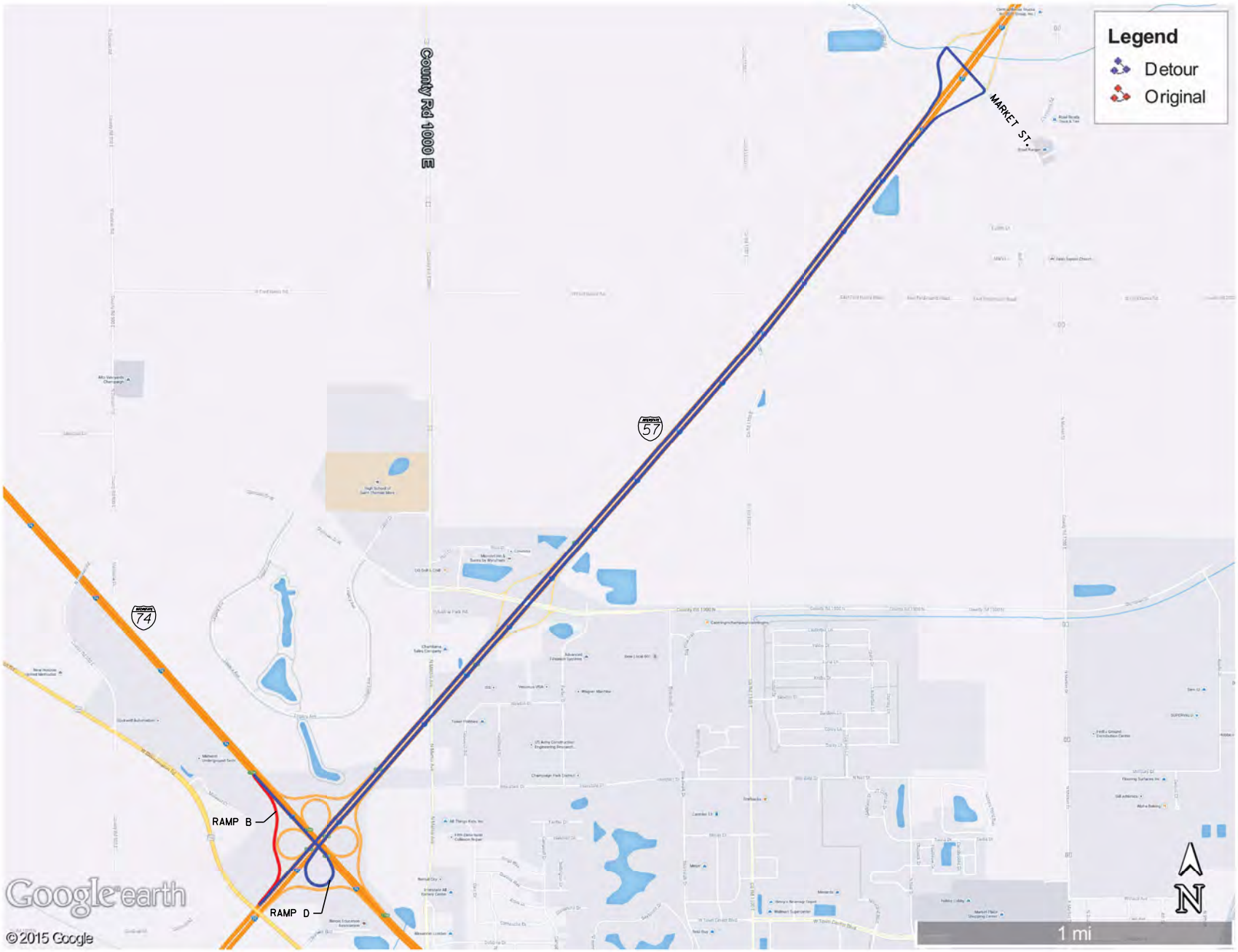

| | | |
|---|---|---|
| I–57 & I–74 INTERCHANGE | RAMP A (I–57 N.B. TO I–74 E.B.)<br>OPTION 2 | EXHIBIT 32<br>DETOUR ROUTES |



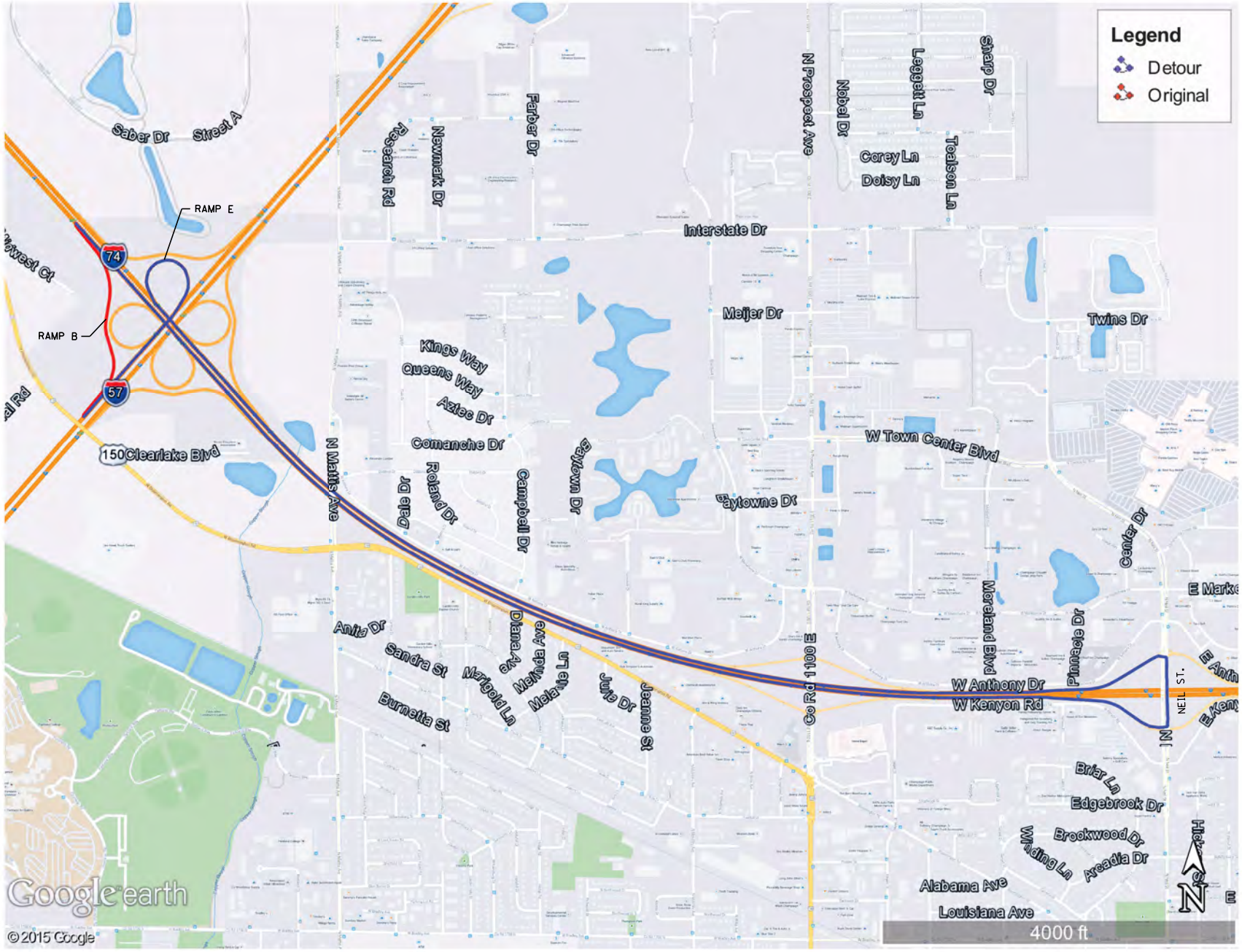

| I–57 & I–74 INTERCHANGE | RAMP A (I–57 N.B. TO I–74 E.B.)<br>OPTION 3 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



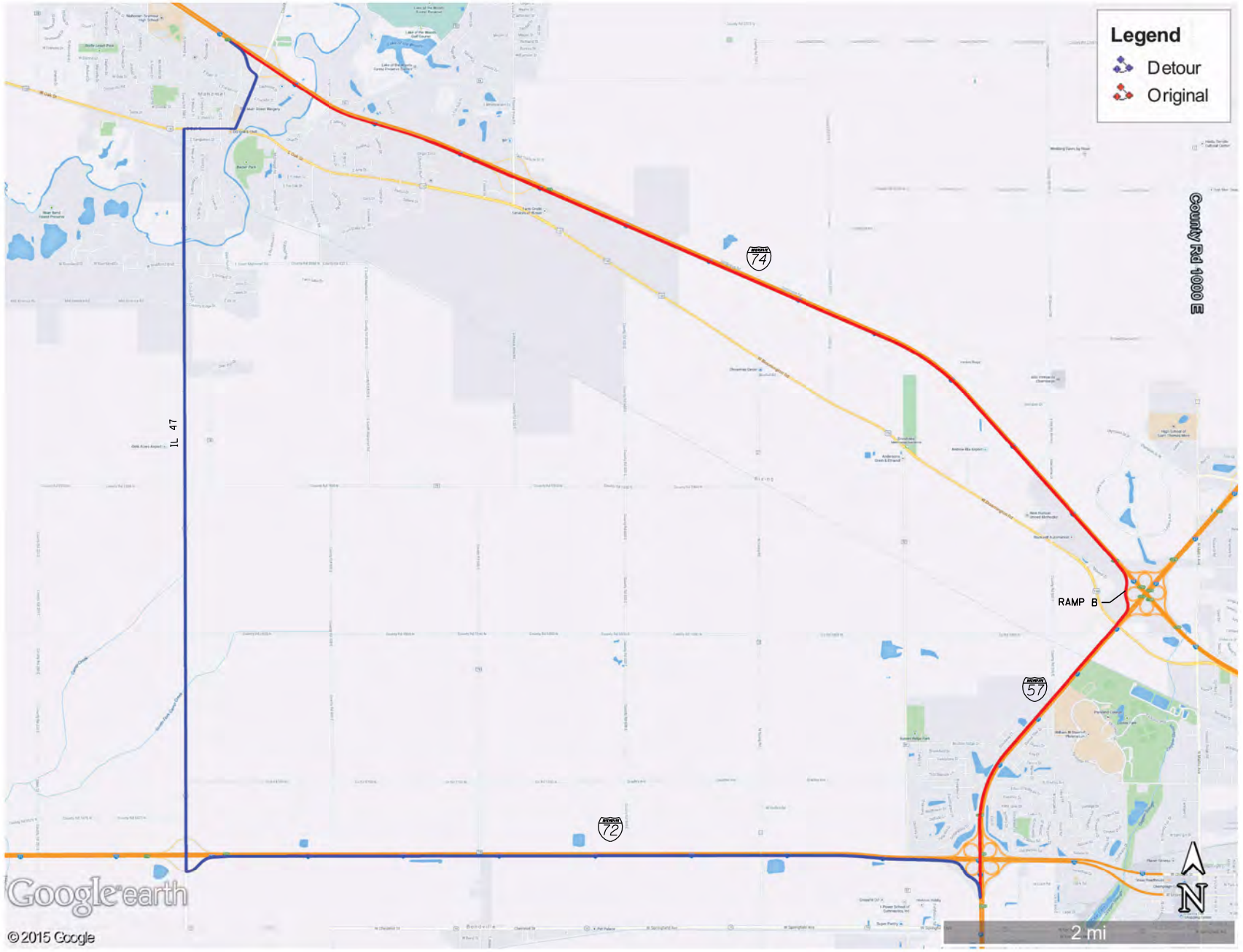

| | | |
|---|---|---|
| I–57 & I–74 INTERCHANGE | RAMP A (I–57 N.B. TO I–74 E.B.)<br>OPTION 4 | EXHIBIT 32<br>DETOUR ROUTES |



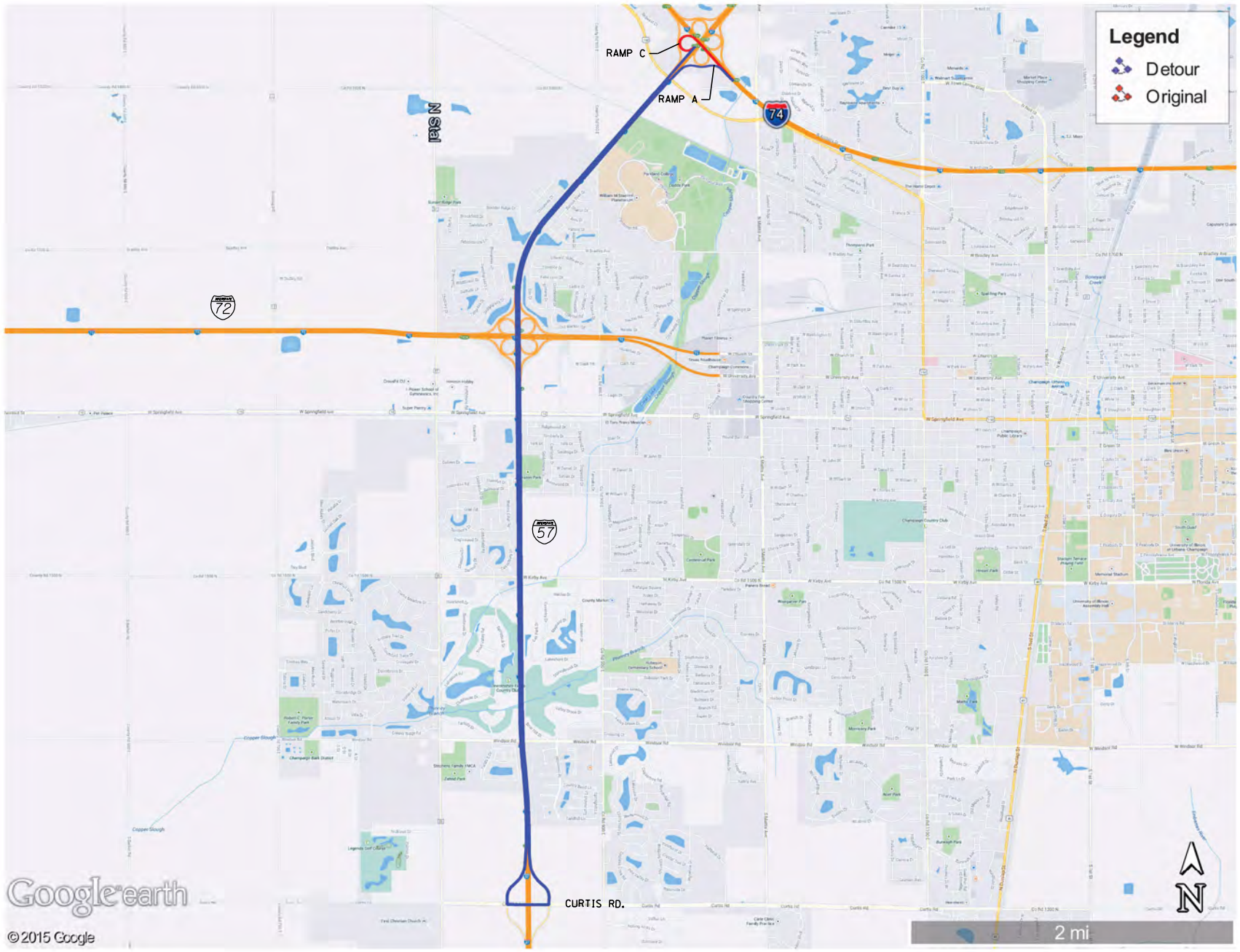

| | | |
|---|---|---|
| I–57 & I–74 INTERCHANGE | RAMP B (I–74 E.B. TO I–57 S.B.)<br>OPTION 1 | EXHIBIT 32<br>DETOUR ROUTES |



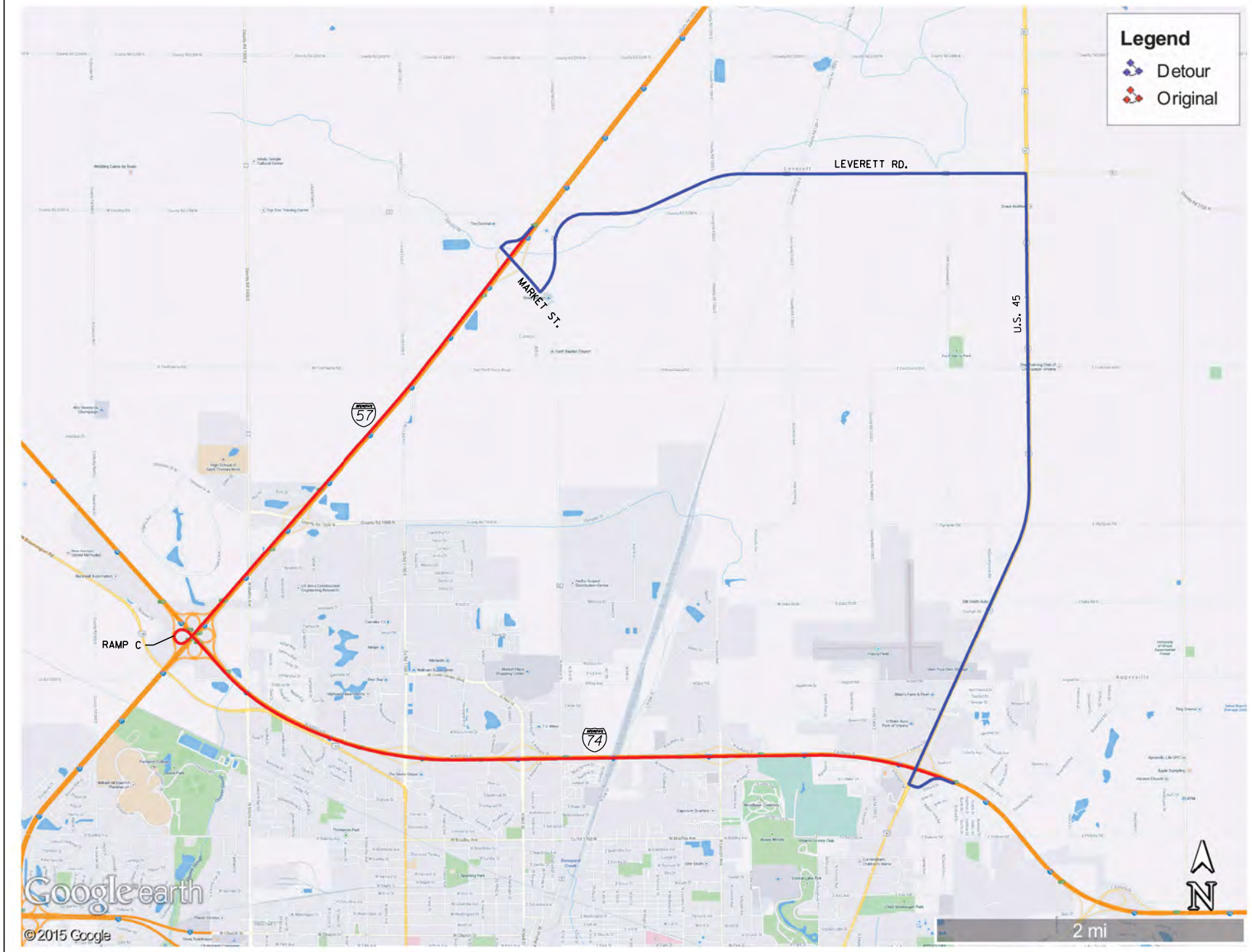

| I–57 & I–74 INTERCHANGE | RAMP B (I–74 E.B. TO I–57 S.B.)<br>OPTION 2 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|




| I–57 & I–74 INTERCHANGE | RAMP B (I–74 E.B. TO I–57 S.B.)<br>OPTION 3 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



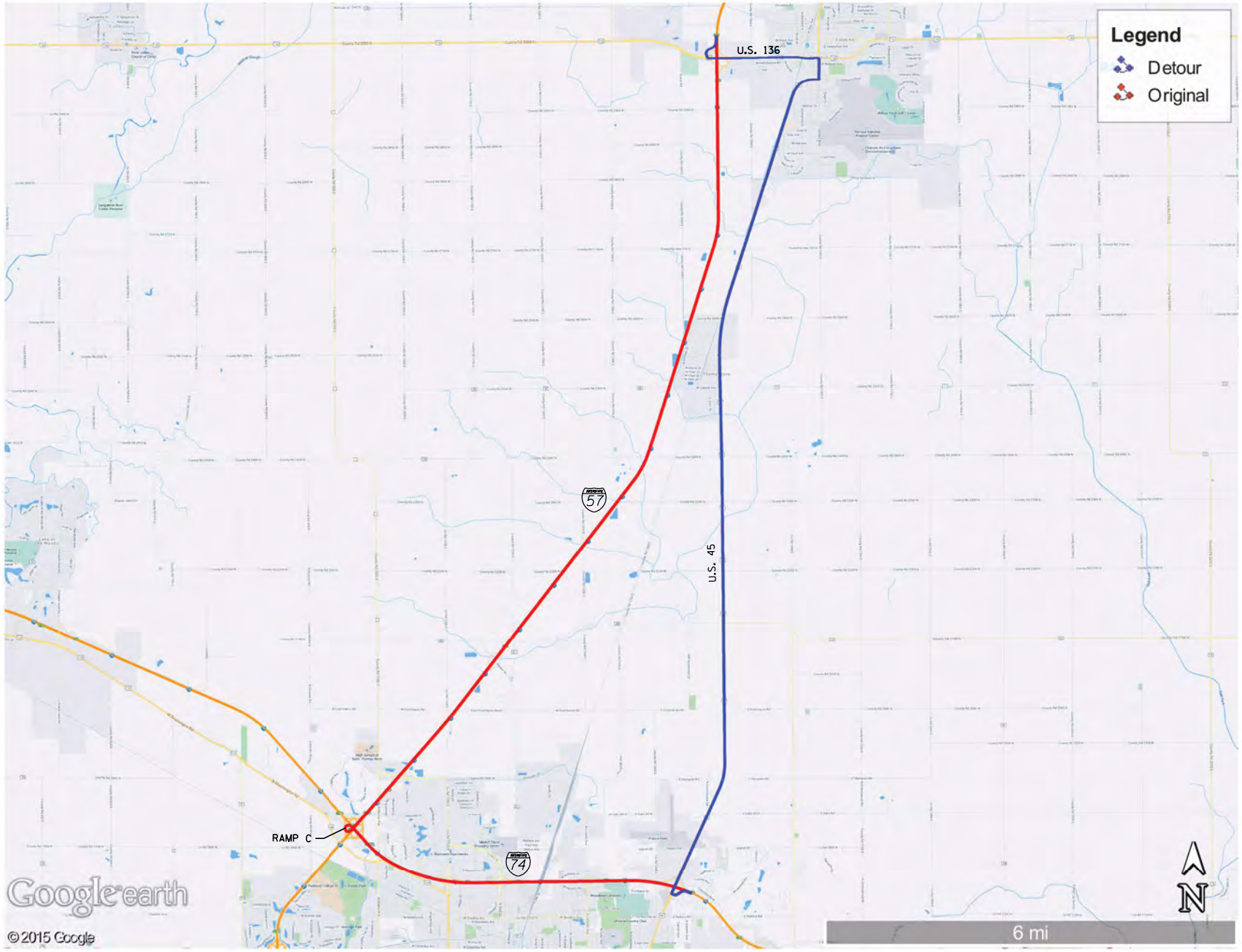

| I–57 & I–74 INTERCHANGE | RAMP C (I–57 S.B. TO I–74 E.B.)<br>OPTION 1 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



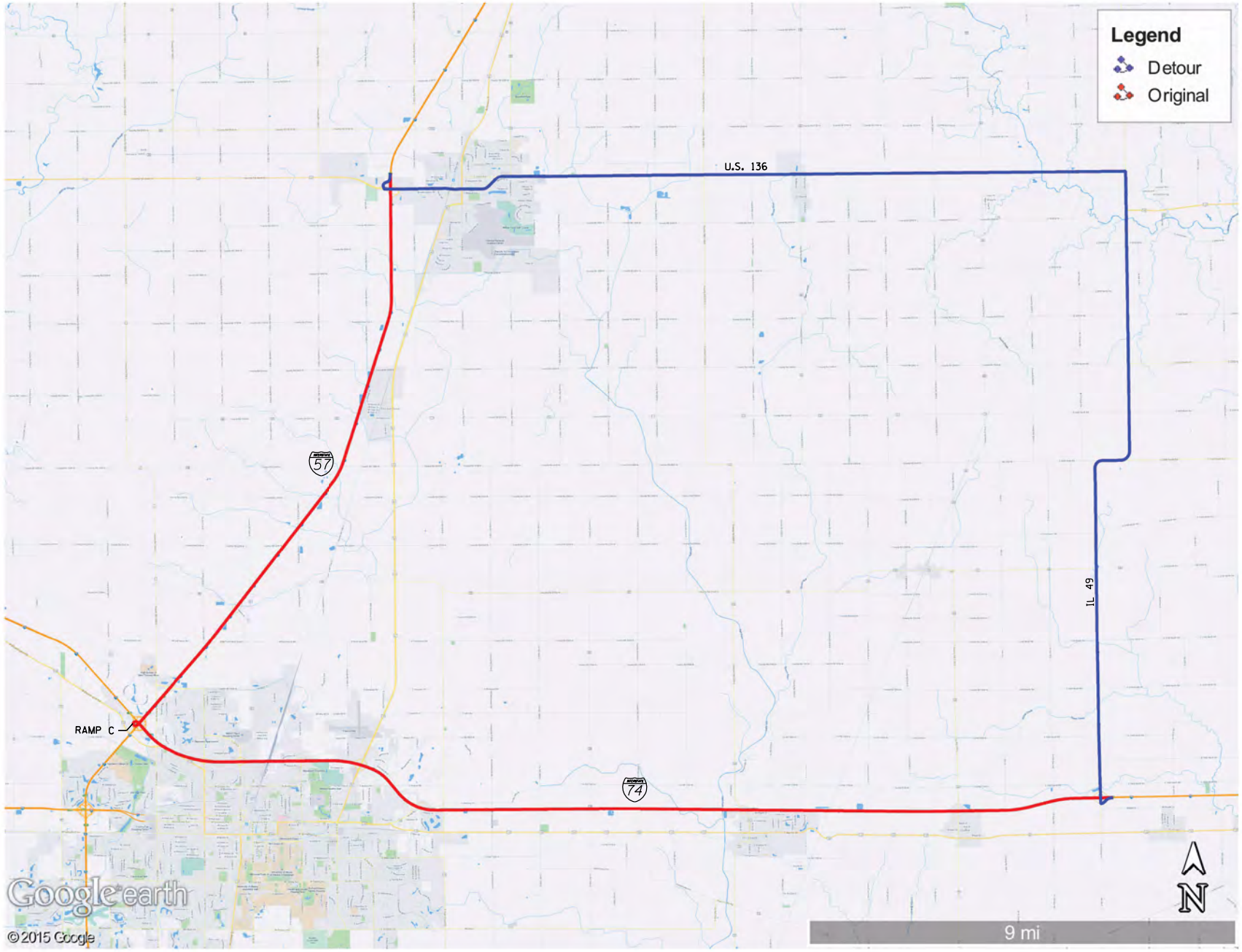

| I–57 & I–74 INTERCHANGE | RAMP C (I–57 S.B. TO I–74 E.B.)<br>OPTION 2 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



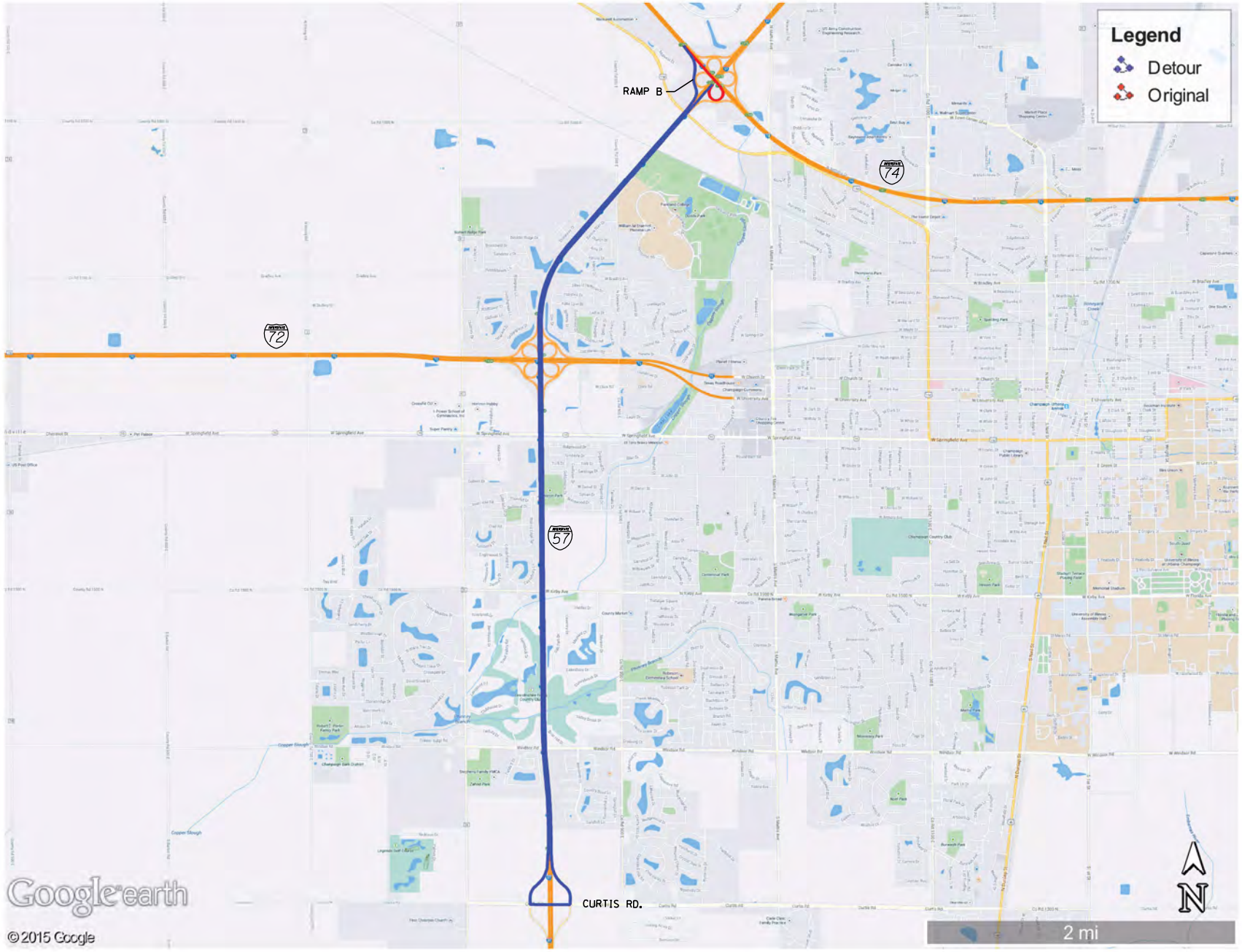

| I–57 & I–74 INTERCHANGE | RAMP C (I–57 S.B. TO I–74 E.B.)<br>OPTION 3 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



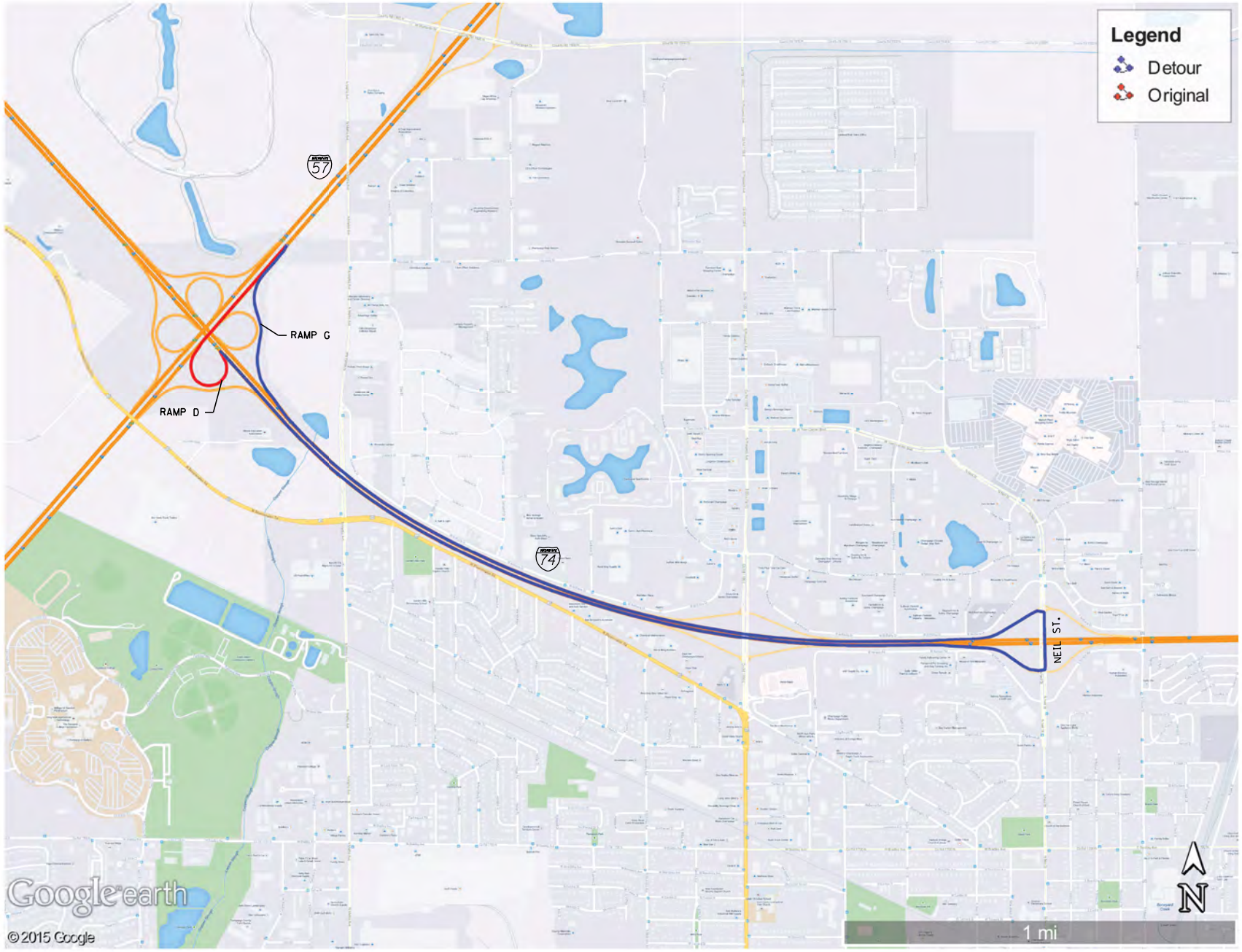

| I–57 & I–74 INTERCHANGE | RAMP C (I–57 S.B. TO I–74 E.B.)<br>OPTION 4 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



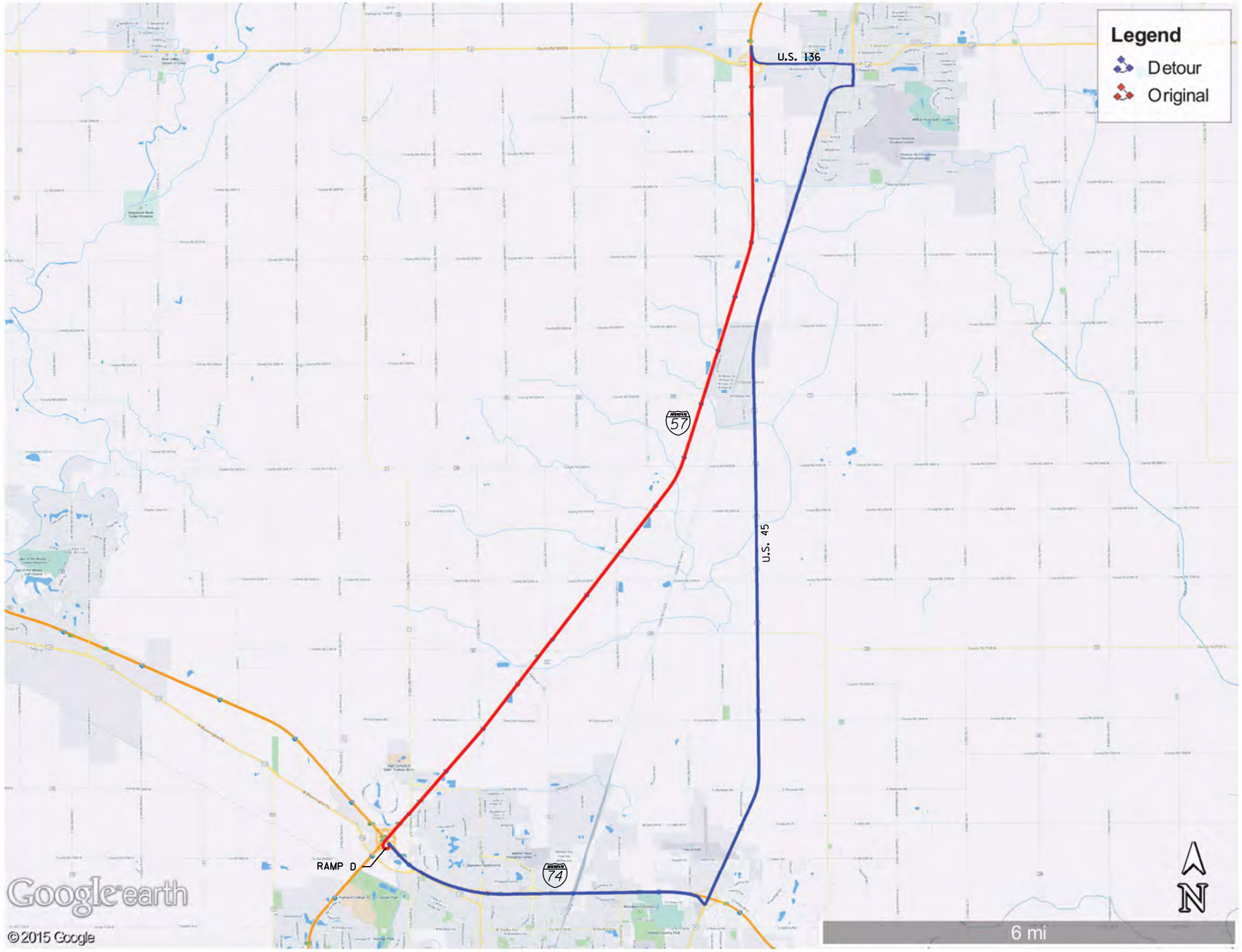

| I–57 & I–74 INTERCHANGE | RAMP C (I–57 S.B. TO I–74 E.B.)<br>OPTION 5 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



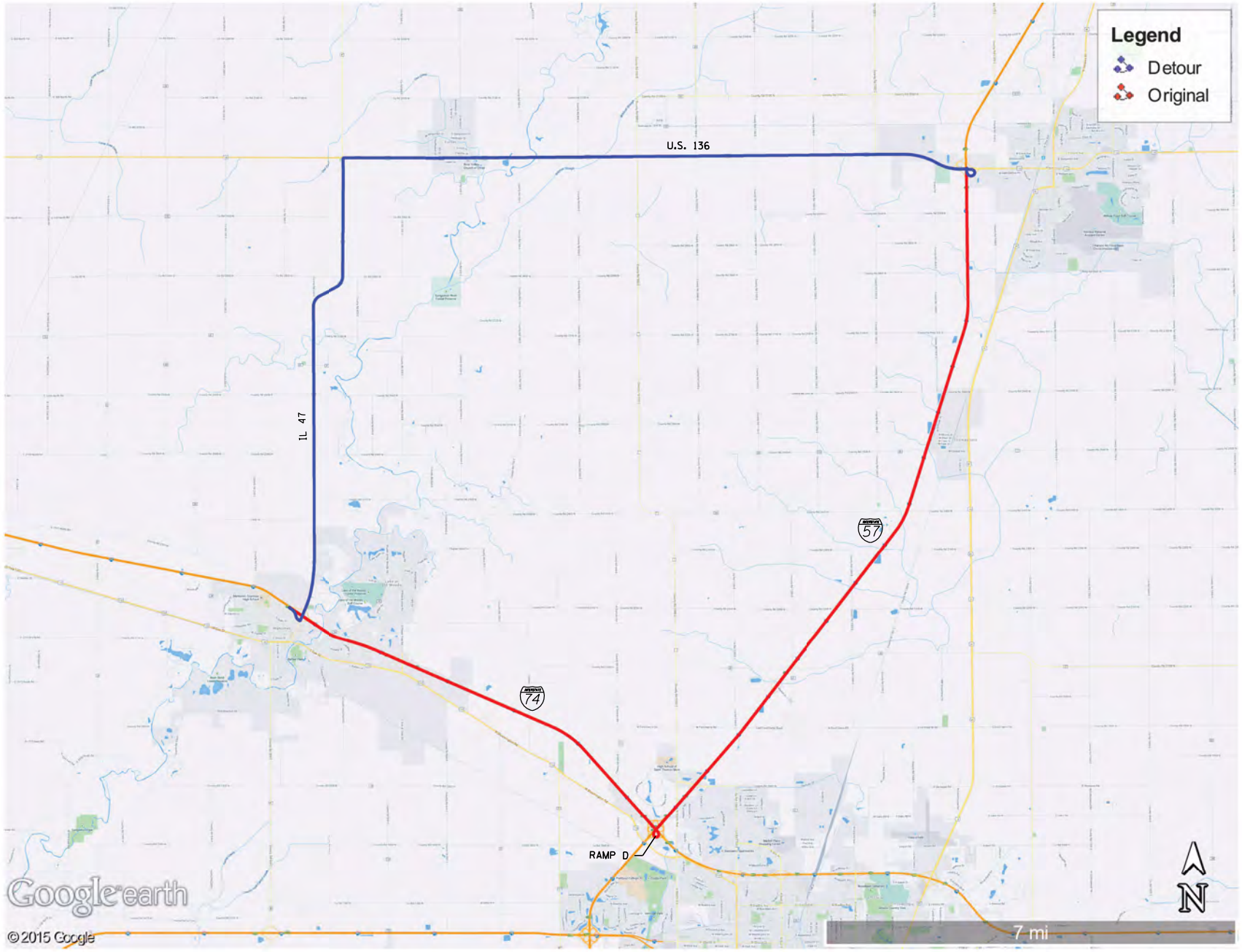

| I–57 & I–74 INTERCHANGE | RAMP D (I–74 E.B. TO I–57 N.B.)<br>OPTION 1 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



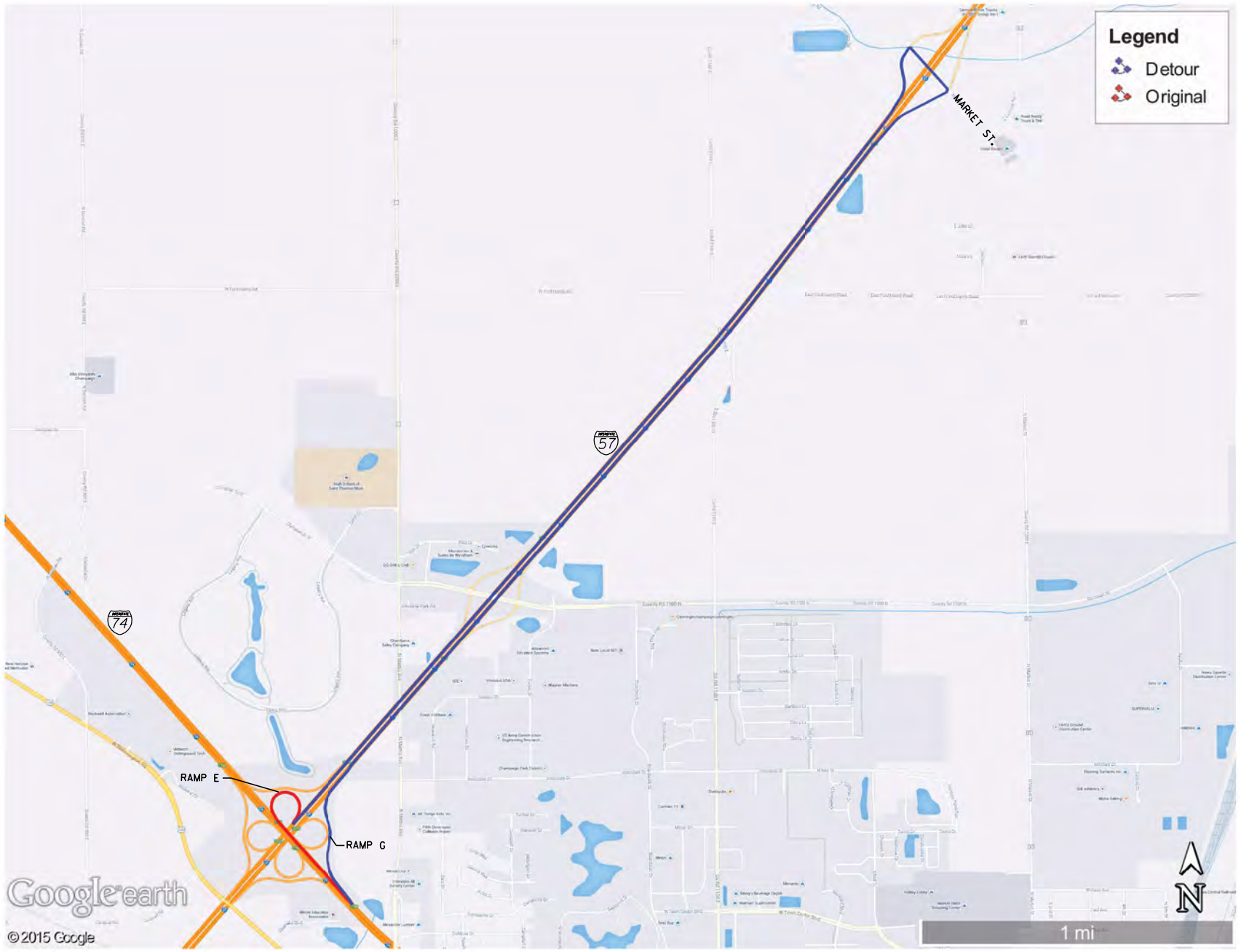

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| I–57 & I–74 INTERCHANGE | RAMP D (I–74 E.B. TO I–57 N.B.)<br>OPTION 2 | EXHIBIT 32<br>DETOUR ROUTES |



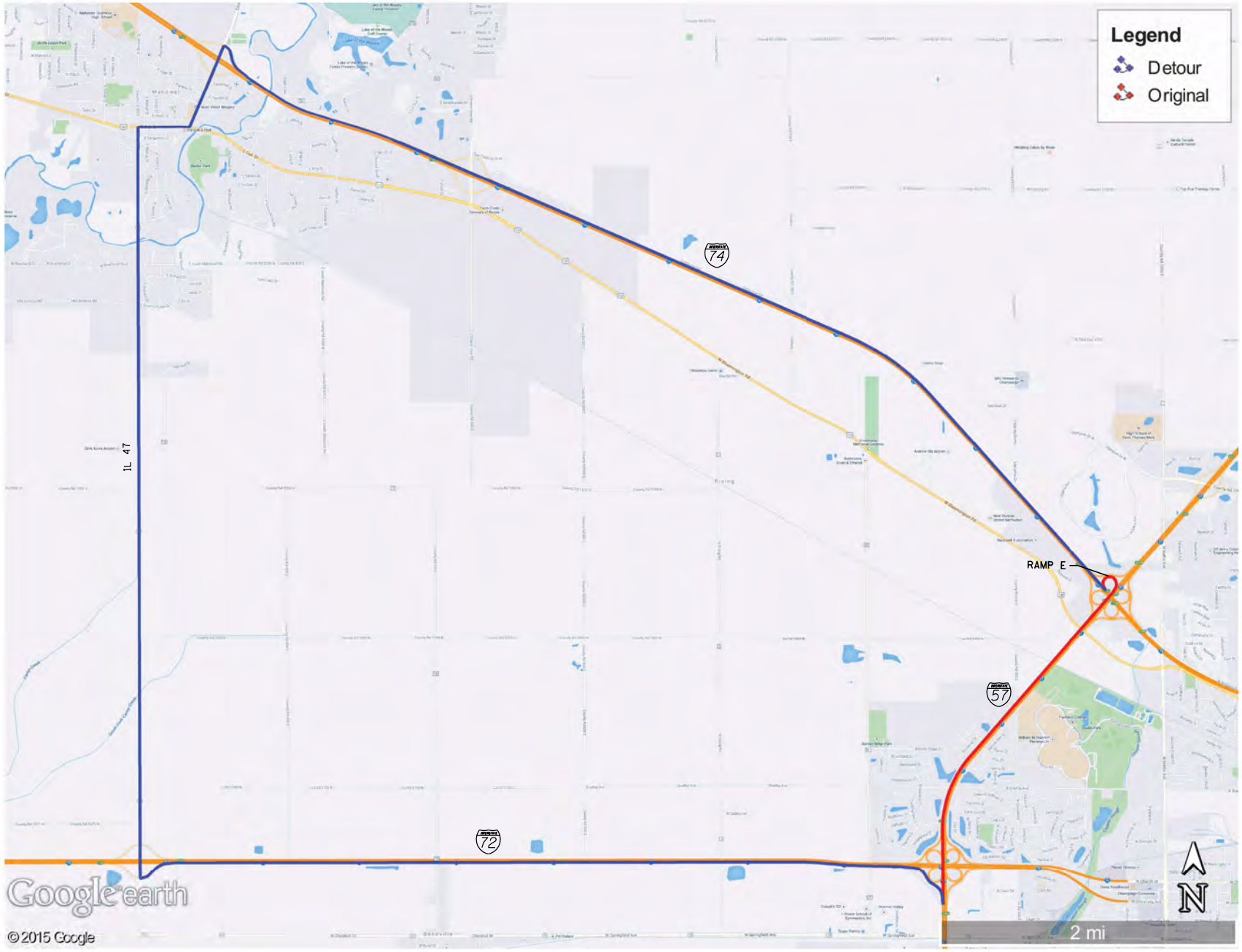

| I–57 & I–74 INTERCHANGE | RAMP D (I–74 E.B. TO I–57 N.B.)<br>OPTION 3 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



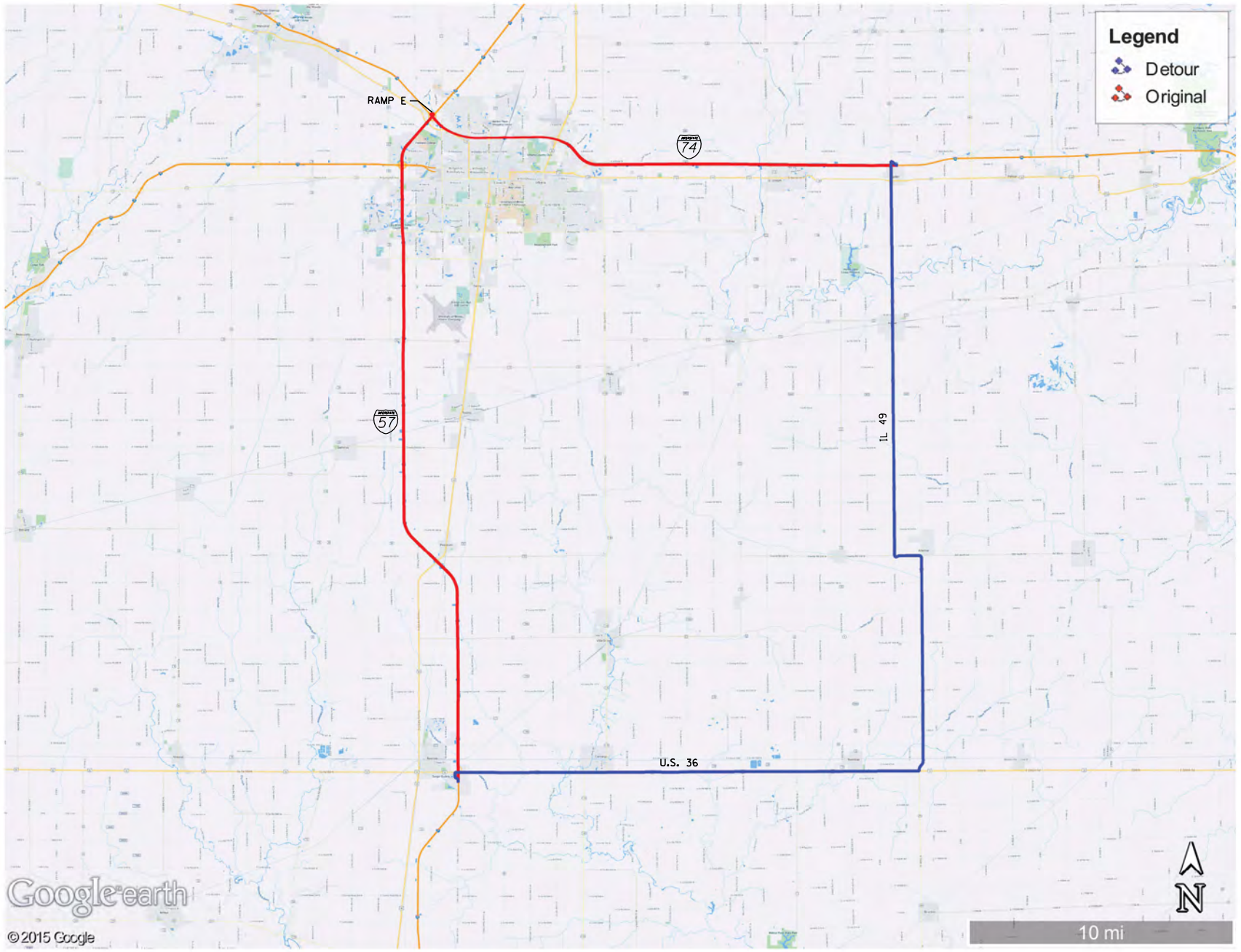

| I–57 & I–74 INTERCHANGE | RAMP D (I–74 E.B. TO I–57 N.B.)<br>OPTION 4 | EXHIBIT 32<br>DETOUR ROUTES |
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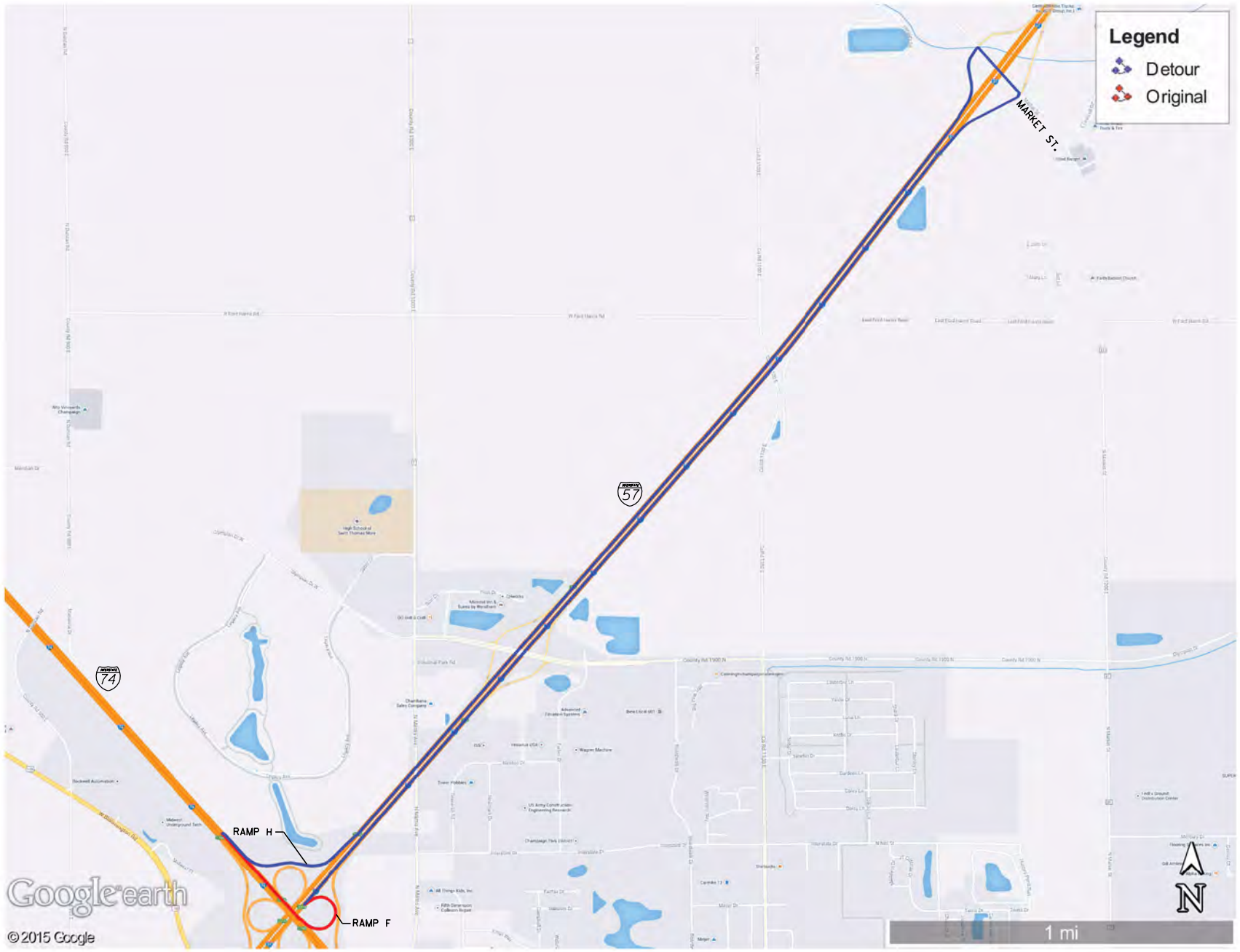

| I–57 & I–74 INTERCHANGE | RAMP E (I–74 W.B. TO I–57 S.B.)<br>OPTION 1 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



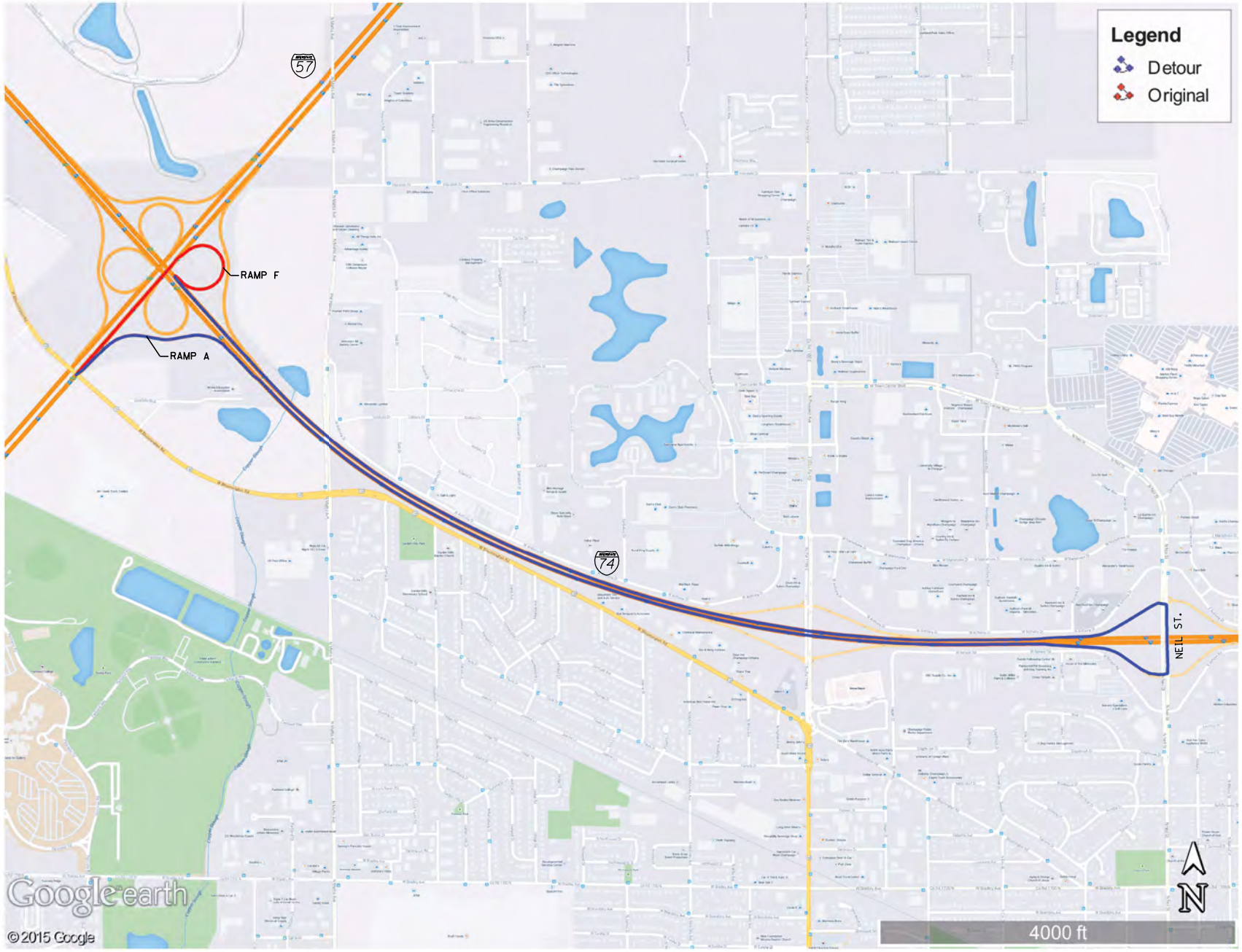

| I–57 & I–74 INTERCHANGE | RAMP E (I–74 W.B. TO I–57 S.B.)<br>OPTION 2 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



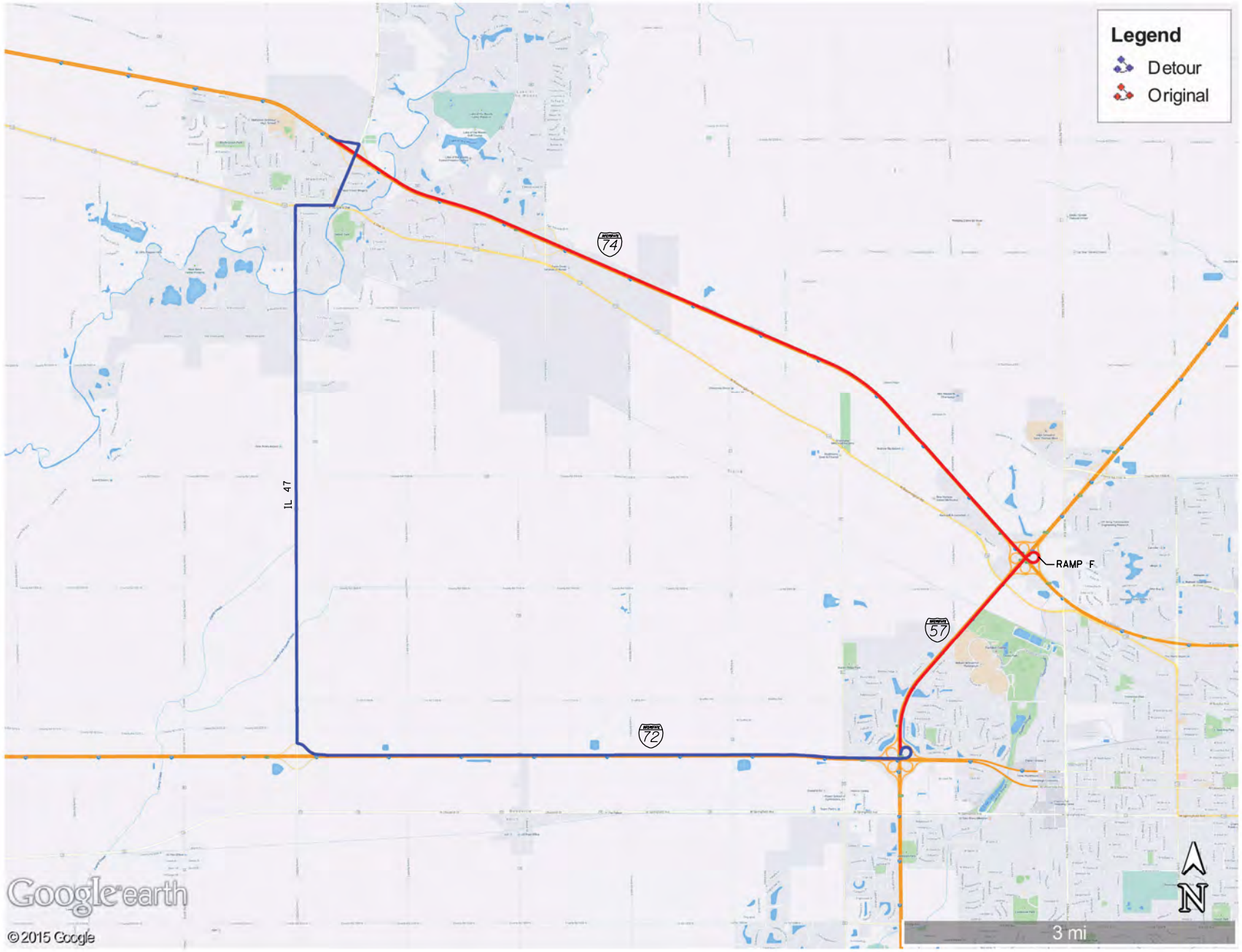

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| I–57 & I–74 INTERCHANGE | RAMP E (I–74 W.B. TO I–57 S.B.)<br>OPTION 3 | EXHIBIT 32<br>DETOUR ROUTES |



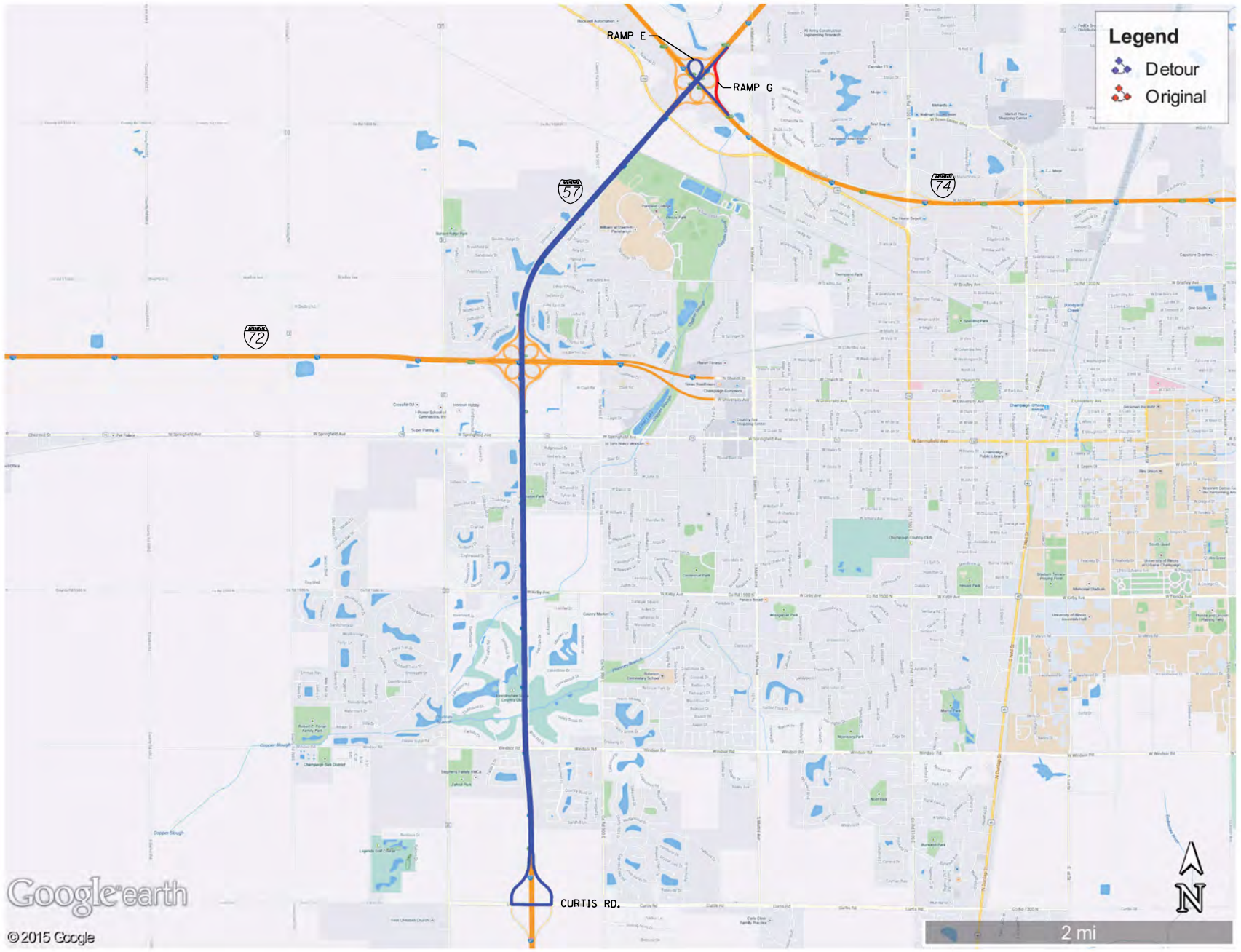

| I–57 & I–74 INTERCHANGE | RAMP F (I–57 N.B. TO I–74 W.B.) OPTION 1 | EXHIBIT 32 DETOUR ROUTES |
|---|---|---|



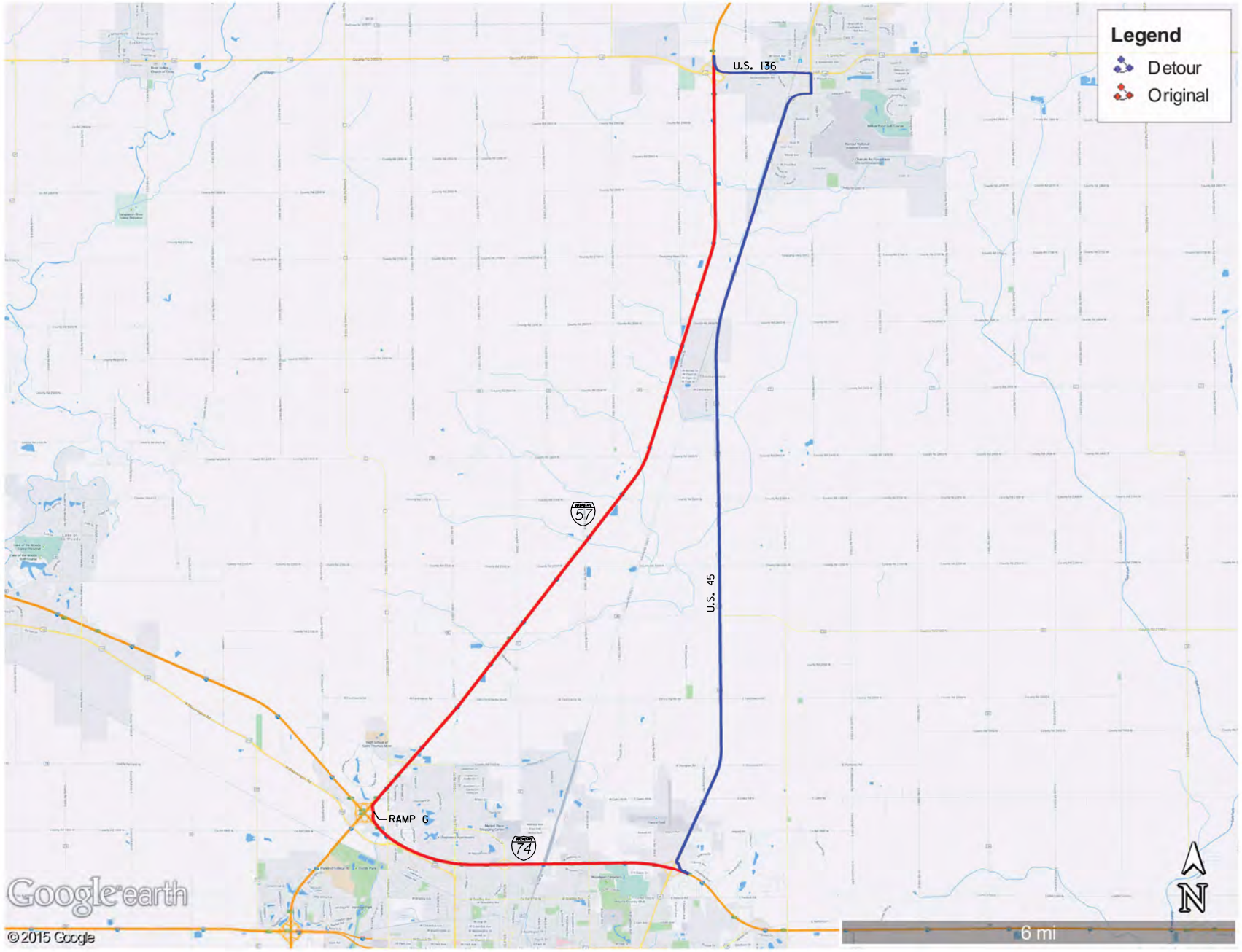

| I–57 & I–74 INTERCHANGE | RAMP F (I–57 N.B. TO I–74 W.B.) OPTION 2 | EXHIBIT 32 DETOUR ROUTES |
|---|---|---|



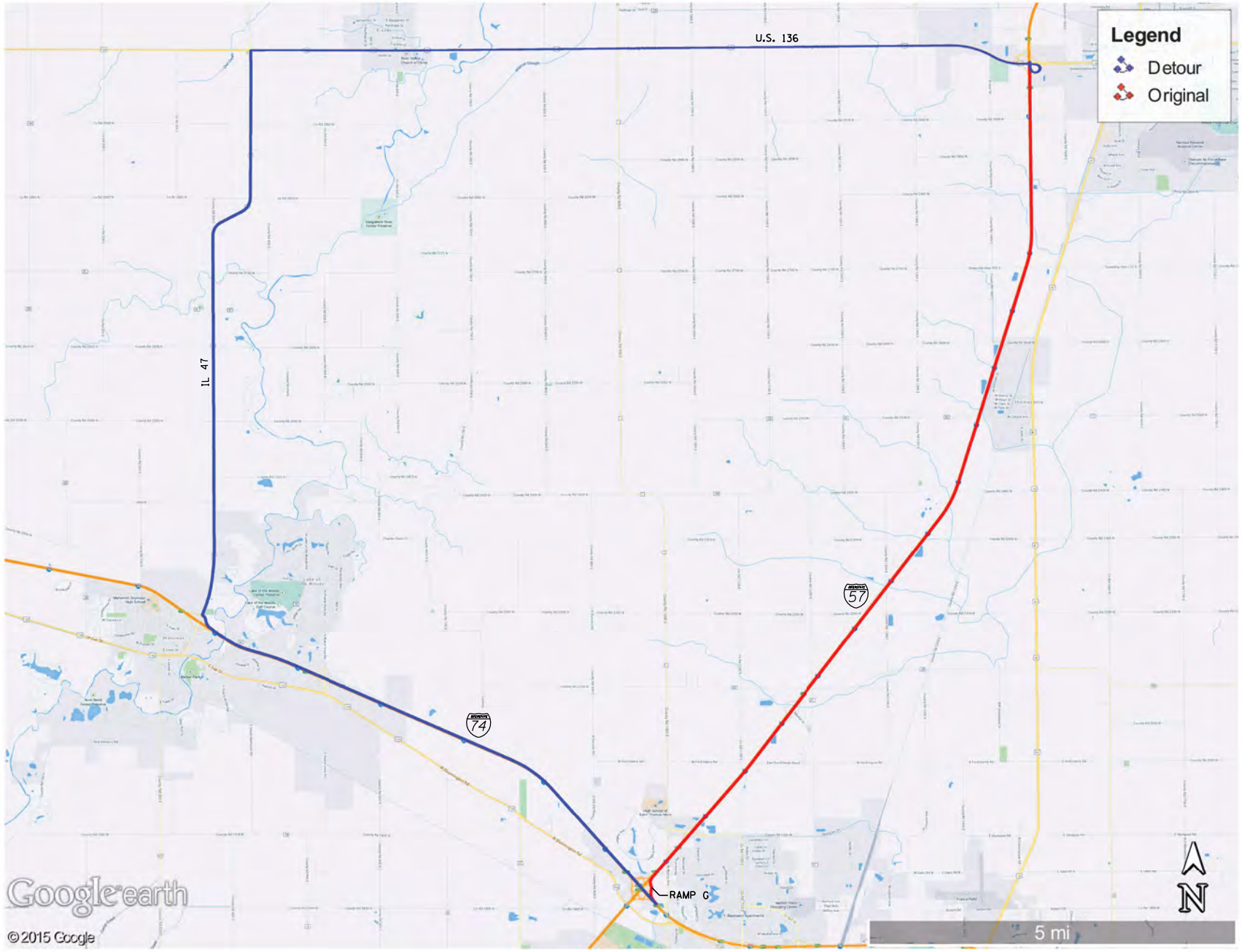

| I–57 & I–74 INTERCHANGE | RAMP F (I–57 N.B. TO I–74 W.B.)<br>OPTION 3 | EXHIBIT 32<br>DETOUR ROUTES |
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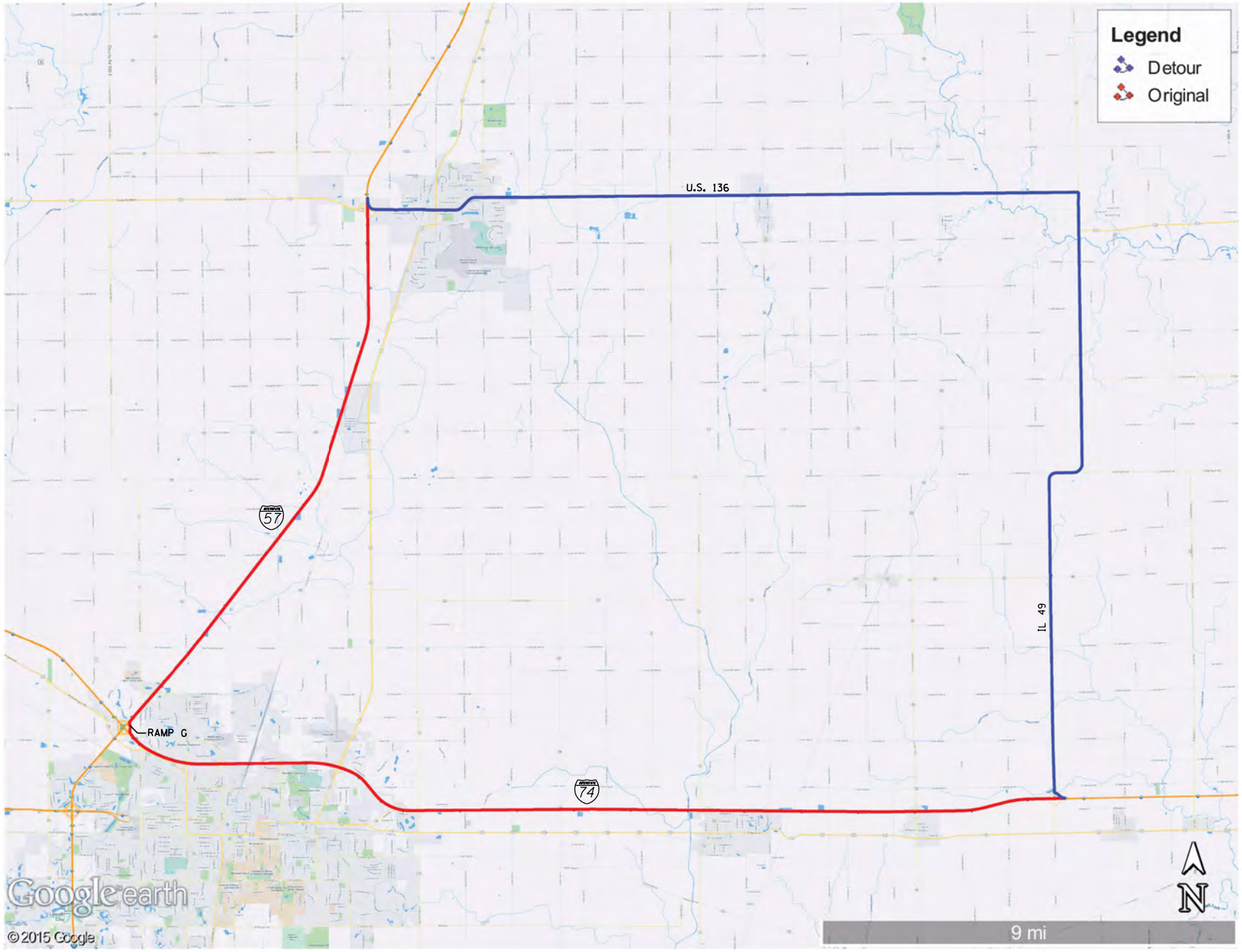

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| I–57 & I–74 INTERCHANGE | RAMP G (I–74 W.B. TO I–57 N.B.)<br>OPTION 1 | EXHIBIT 32<br>DETOUR ROUTES |



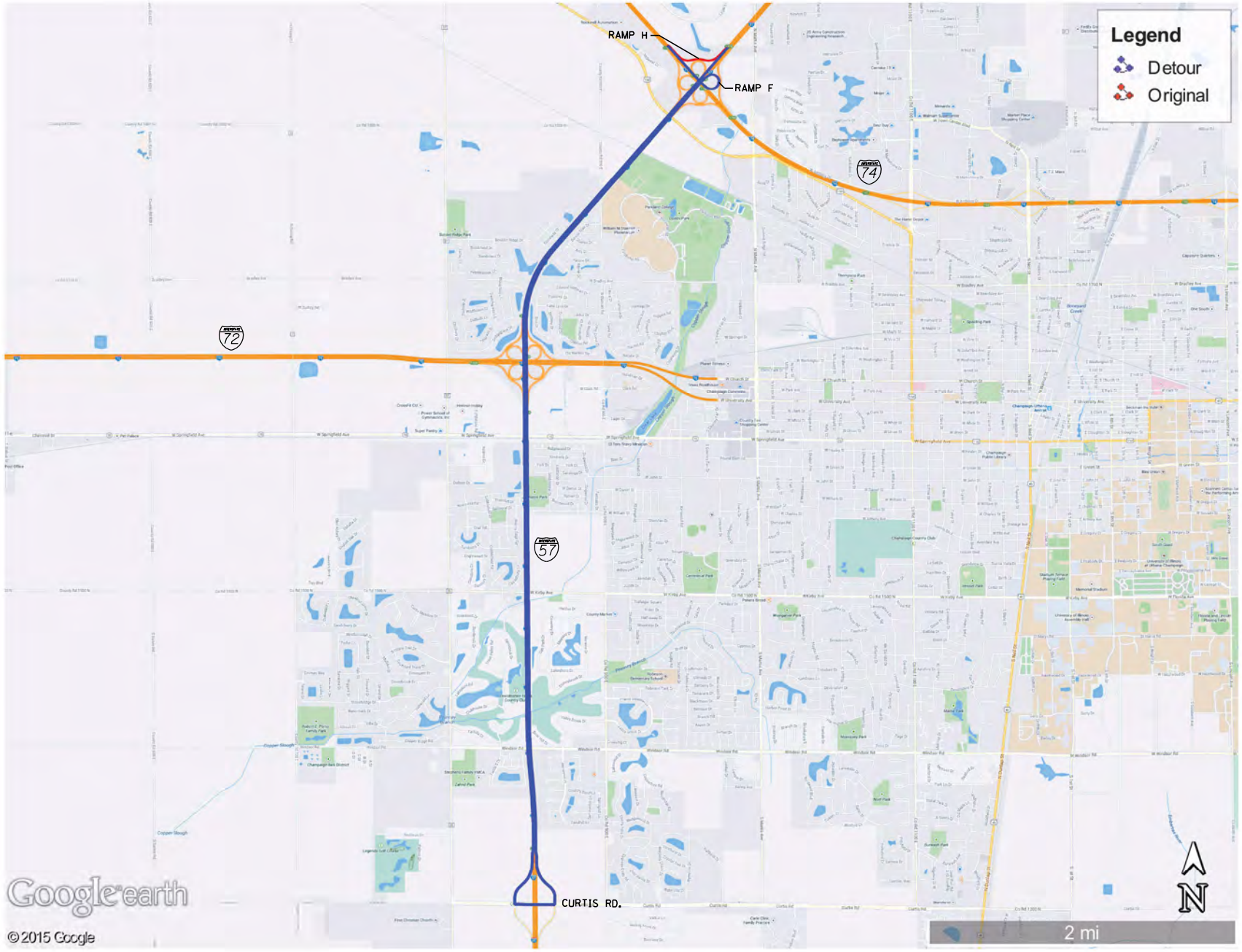

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| I–57 & I–74 INTERCHANGE | RAMP G (I–74 W.B. TO I–57 N.B.)<br>OPTION 2 | EXHIBIT 32<br>DETOUR ROUTES |



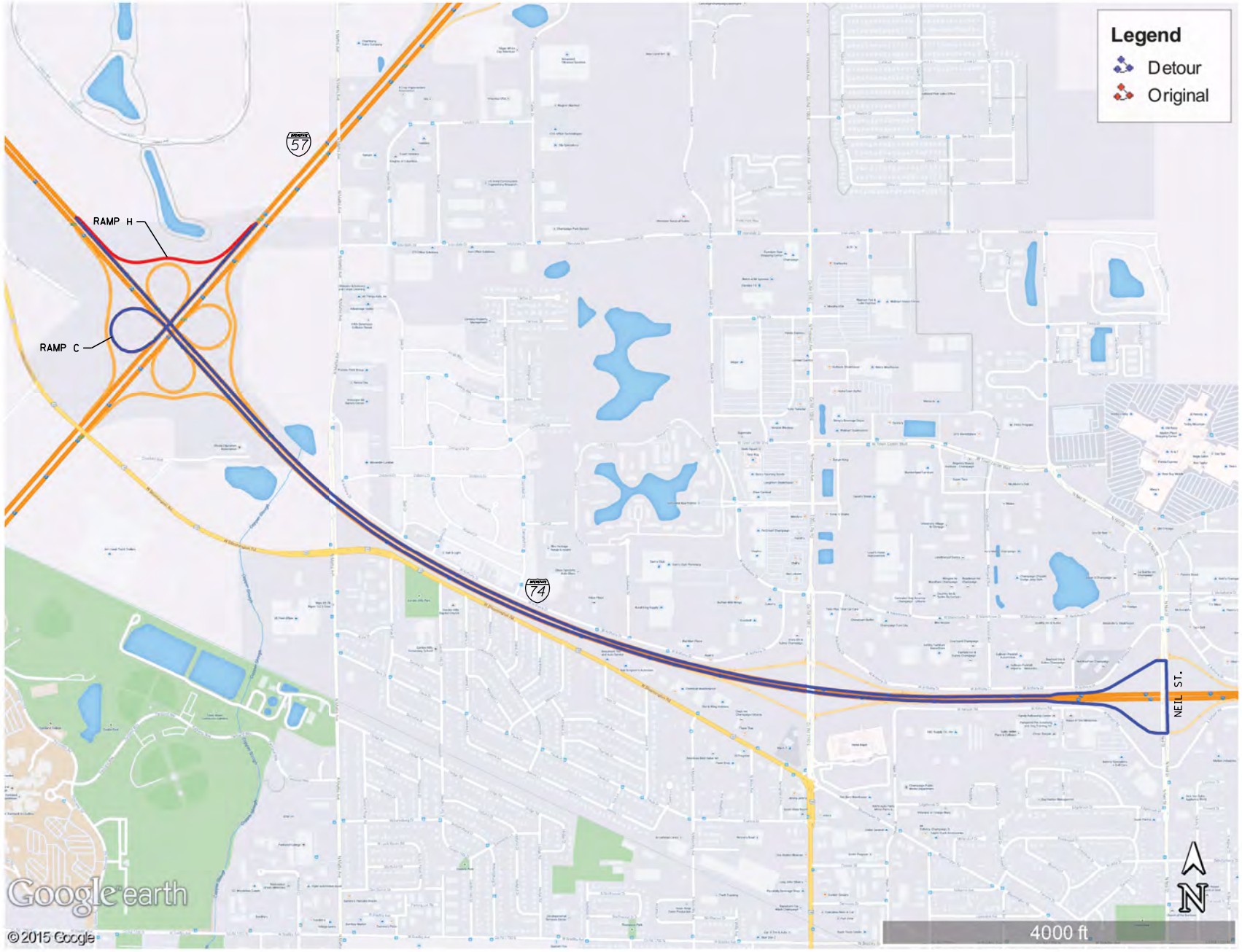

| I–57 & I–74 INTERCHANGE | RAMP G (I–74 W.B. TO I–57 N.B.)<br>OPTION 3 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



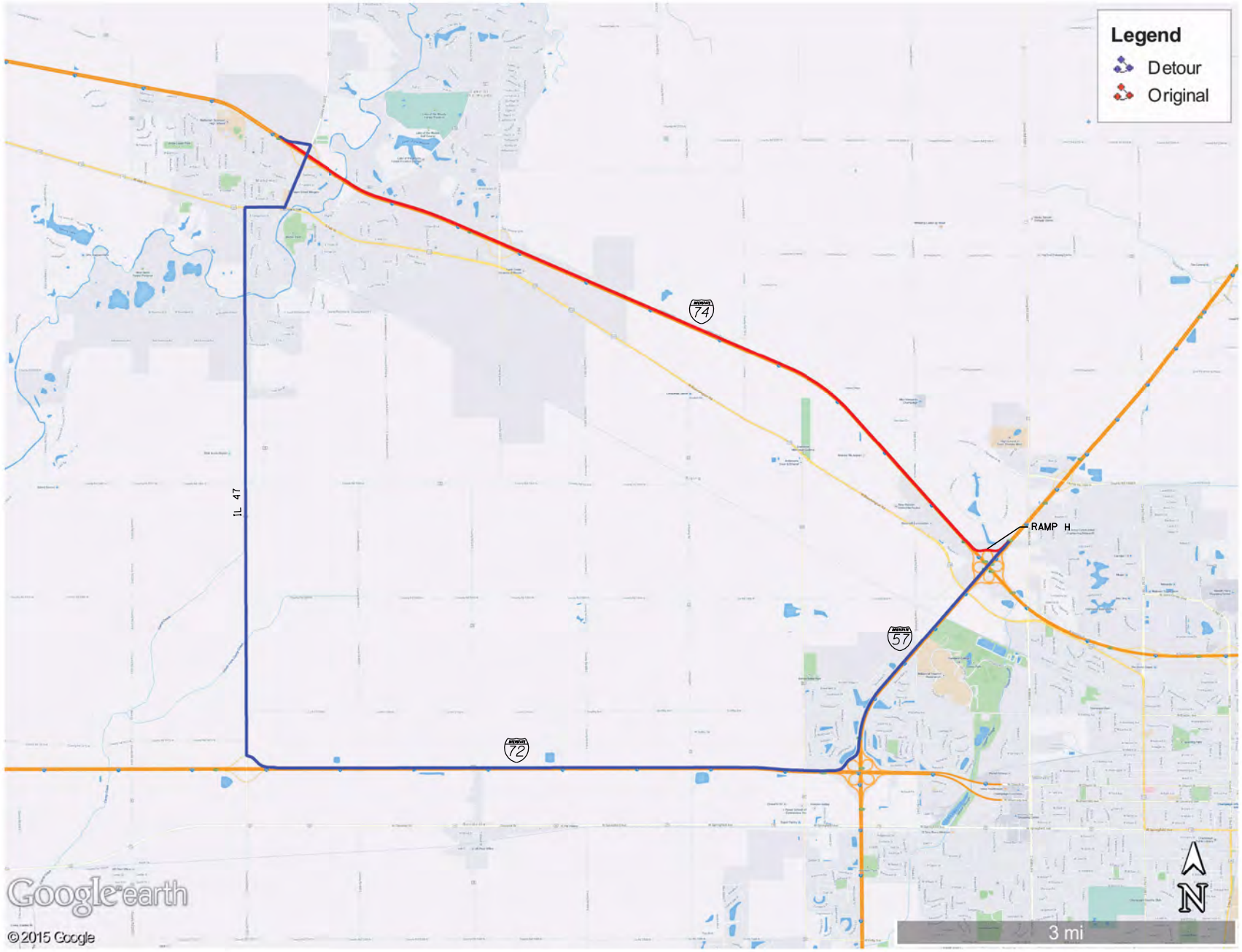

| I–57 & I–74 INTERCHANGE | RAMP G (I–74 W.B. TO I–57 N.B.)<br>OPTION 4 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



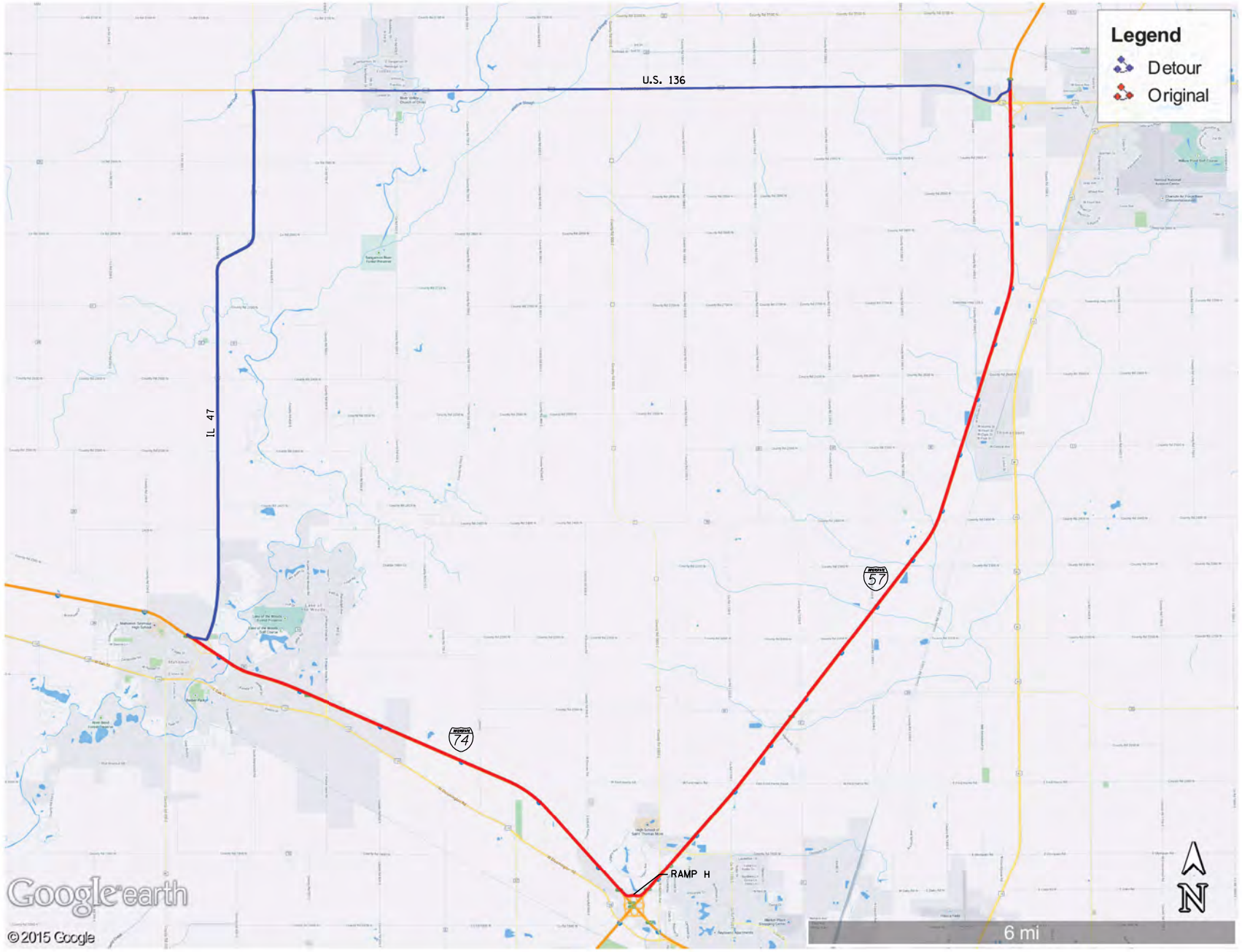

| I–57 & I–74 INTERCHANGE | RAMP H (I–57 S.B. TO I–74 W.B.) OPTION 1 | EXHIBIT 32 DETOUR ROUTES |
|---|---|---|



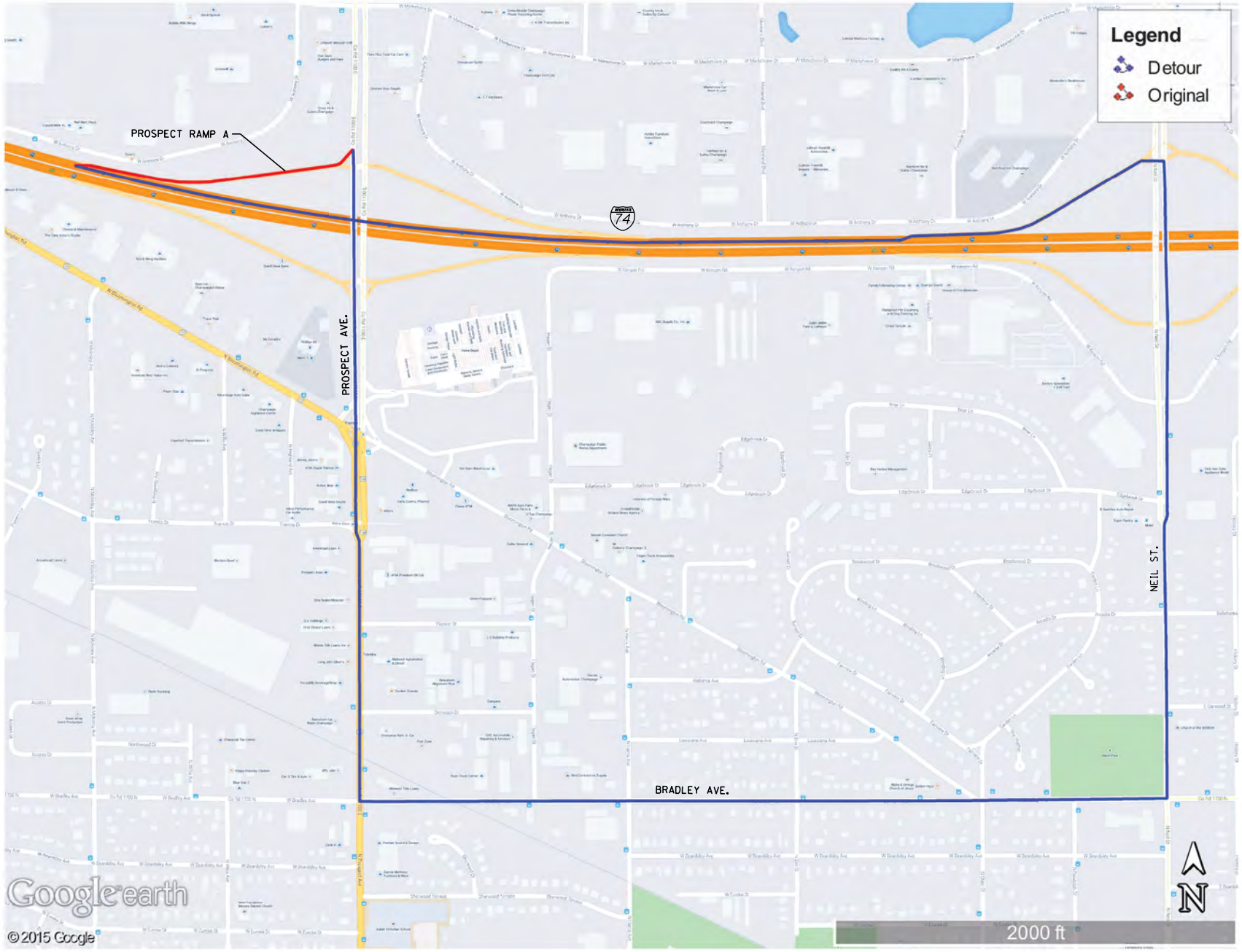

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| I–57 & I–74 INTERCHANGE | RAMP H (I–57 S.B. TO I–74 W.B.)<br>OPTION 2 | EXHIBIT 32<br>DETOUR ROUTES |



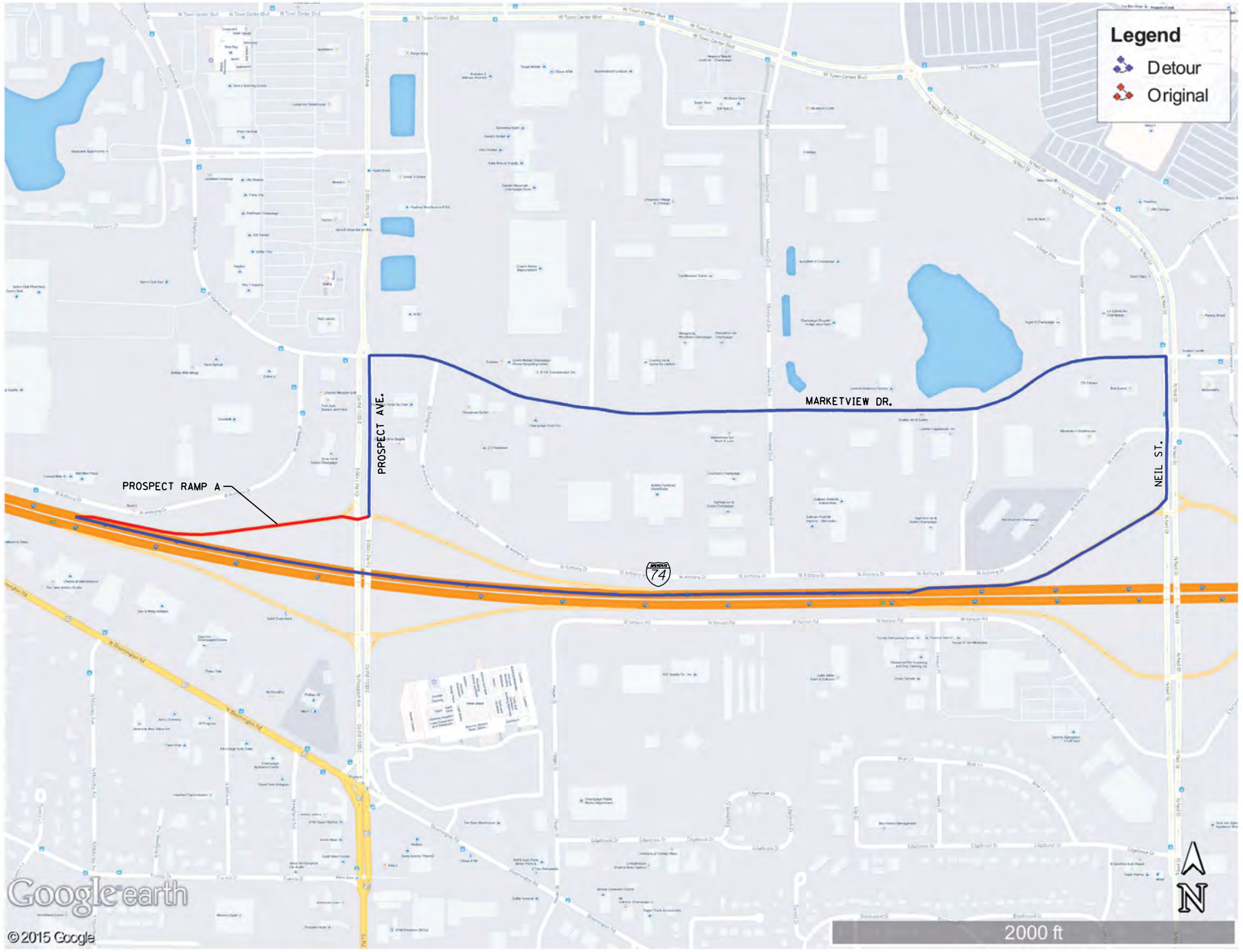

| I–57 & I–74 INTERCHANGE | RAMP H (I–57 S.B. TO I–74 W.B.)<br>OPTION 3 | EXHIBIT 32<br>DETOUR ROUTES |
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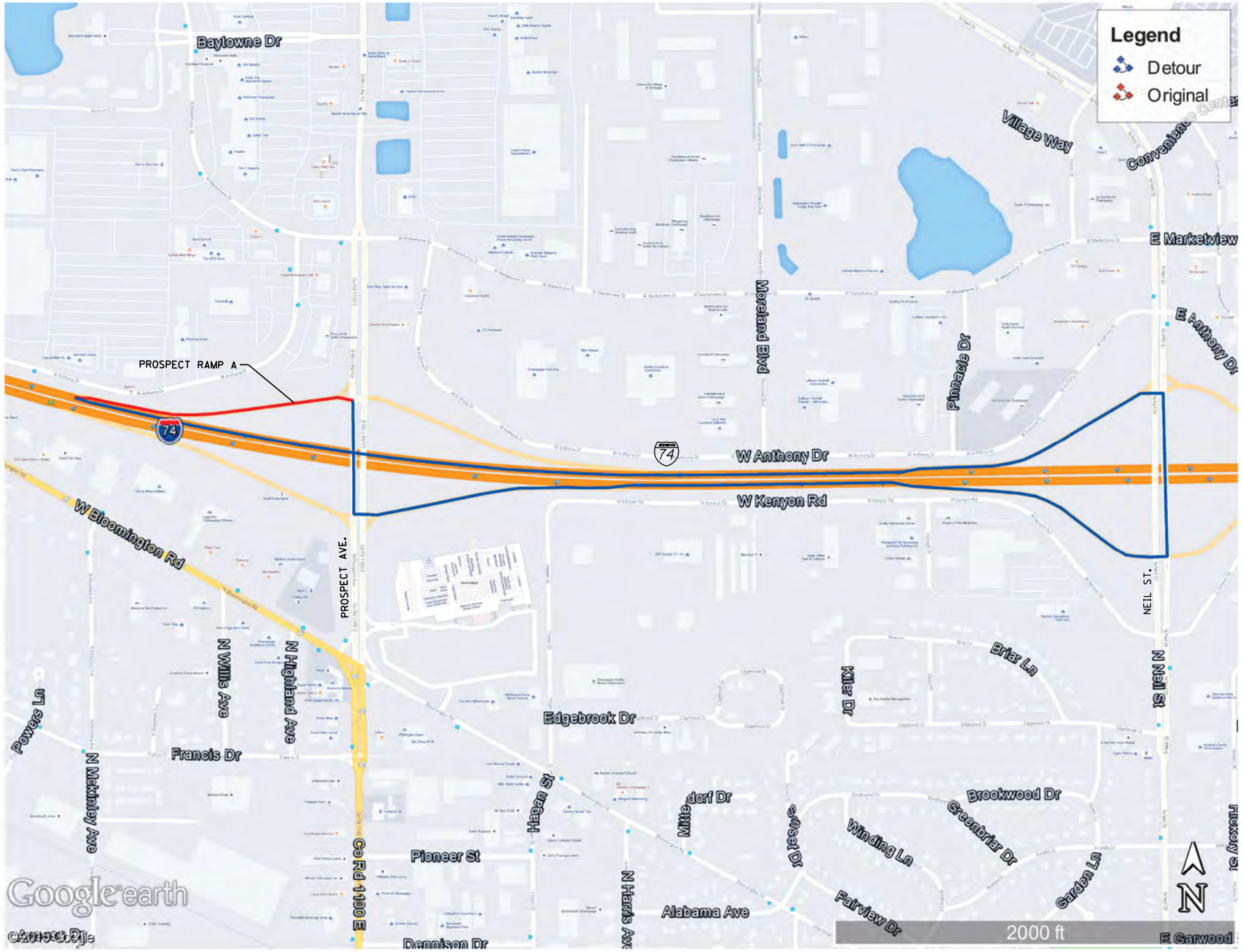

| I–57 & I–74 INTERCHANGE | RAMP H (I–57 S.B. TO I–74 W.B.)<br>OPTION 4 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



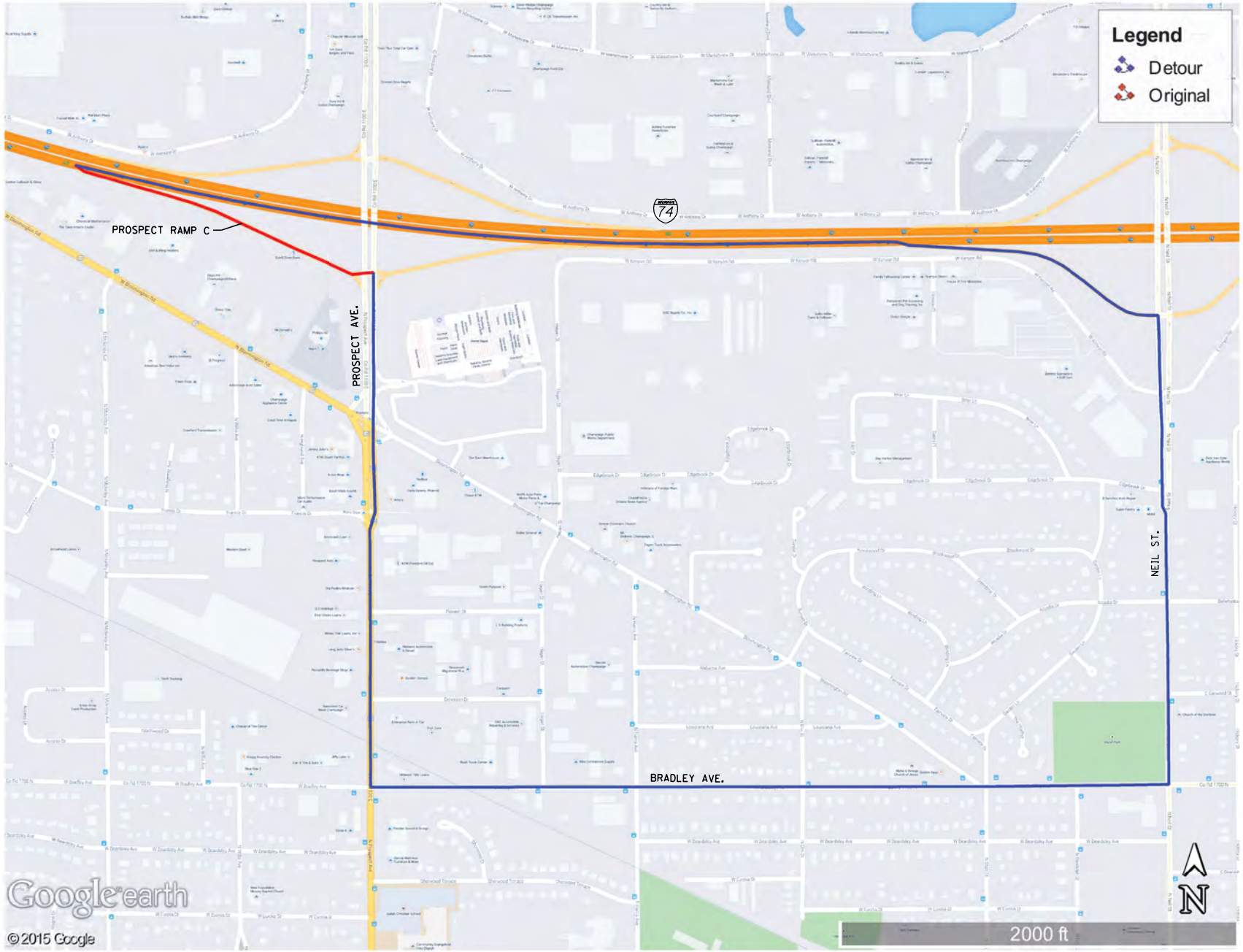

| I–57 & I–74 INTERCHANGE | PROSPECT RAMP A<br>OPTION 1 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



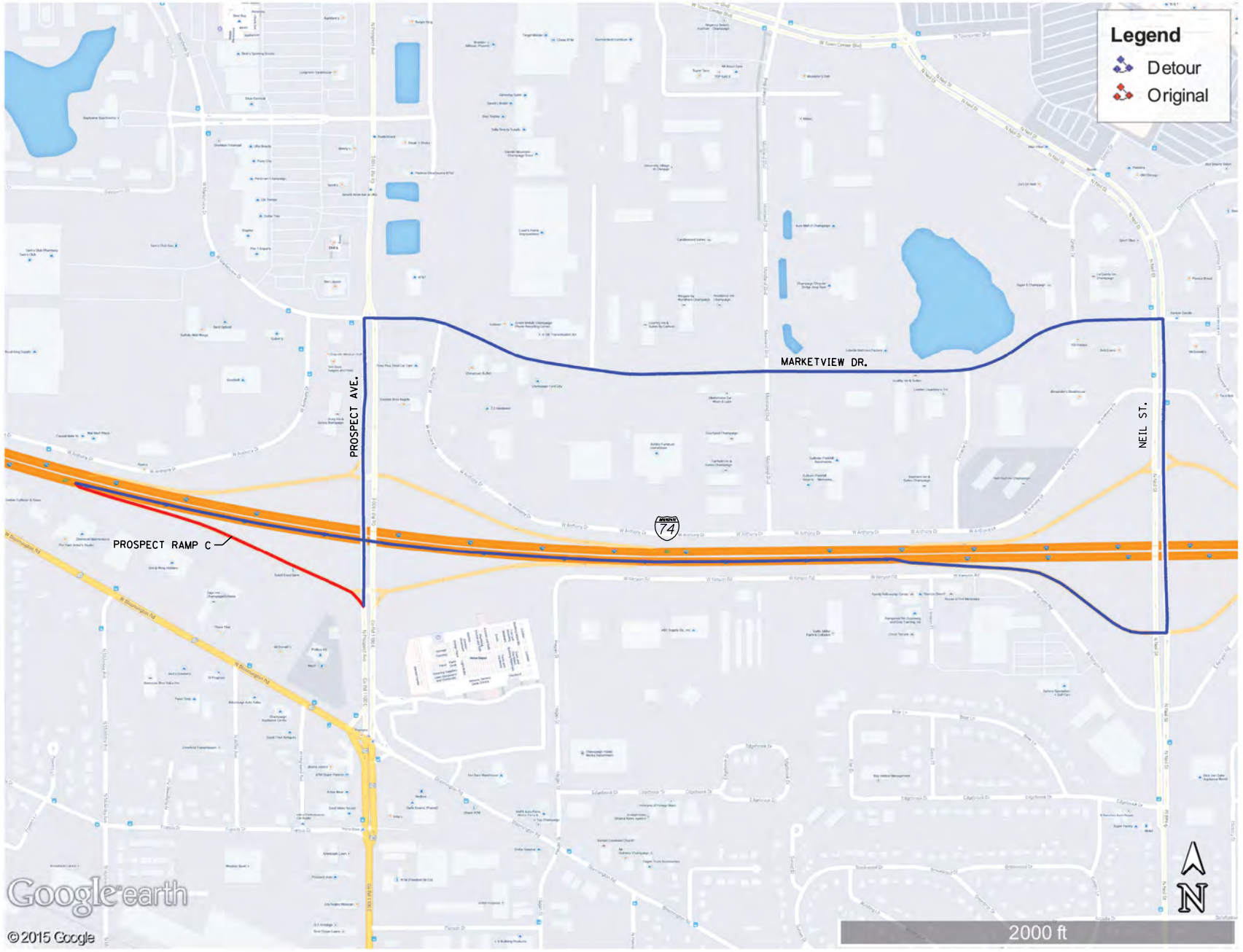

| I–57 & I–74 INTERCHANGE | PROSPECT RAMP A<br>OPTION 2 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



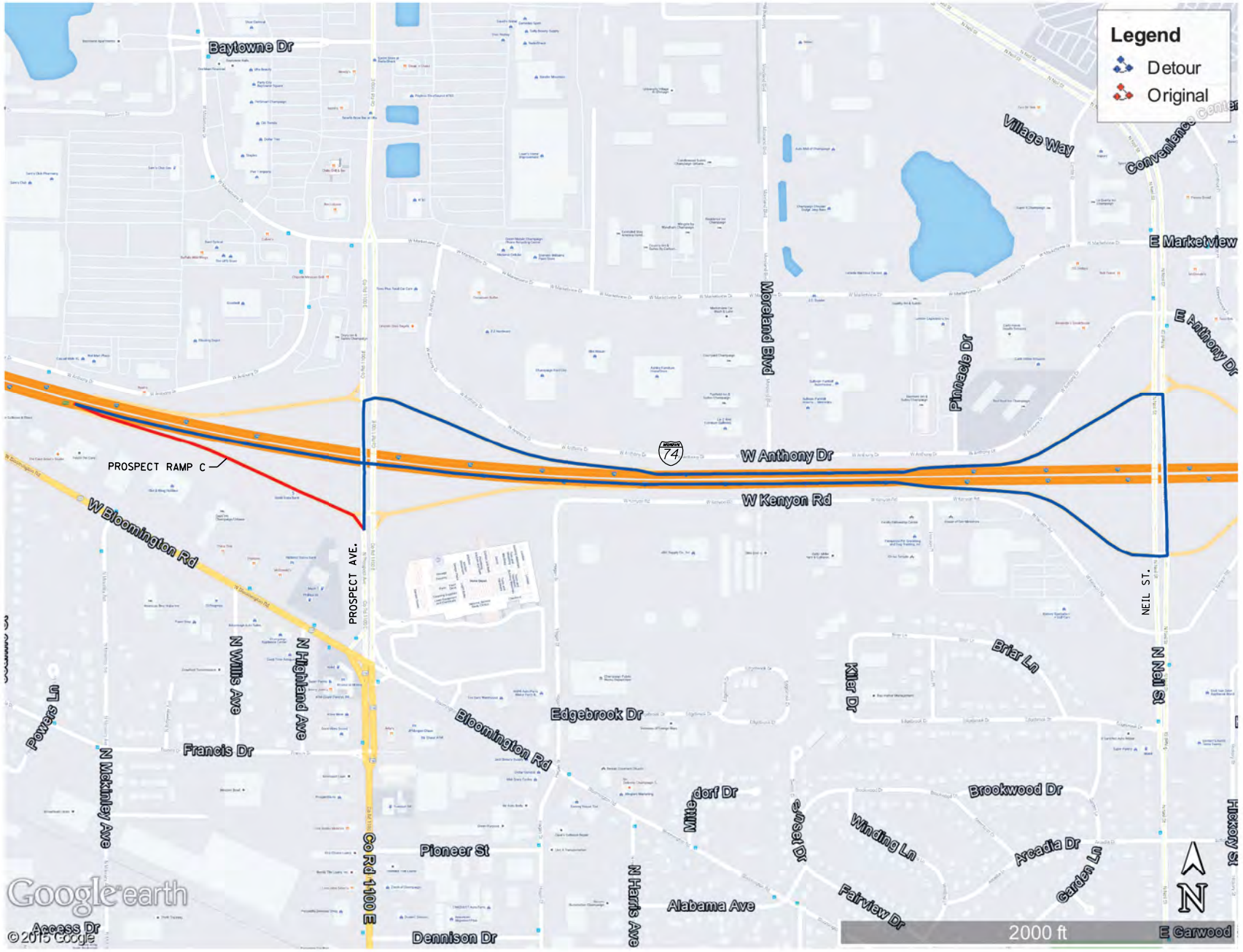

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| I–57 & I–74 INTERCHANGE | PROSPECT RAMP A<br>OPTION 3 | EXHIBIT 32<br>DETOUR ROUTES |



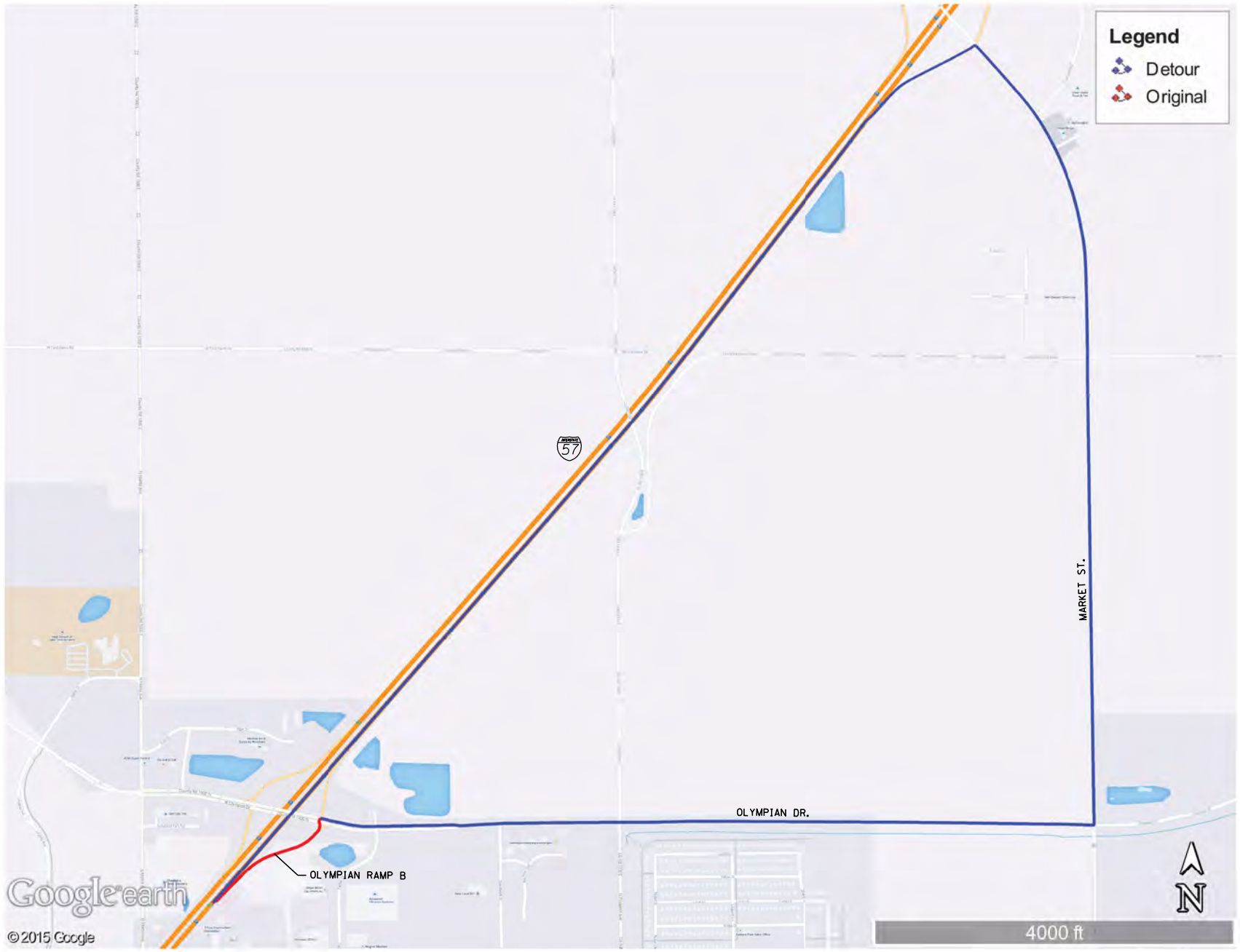

| I–57 & I–74 INTERCHANGE | PROSPECT RAMP C<br>OPTION 1 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



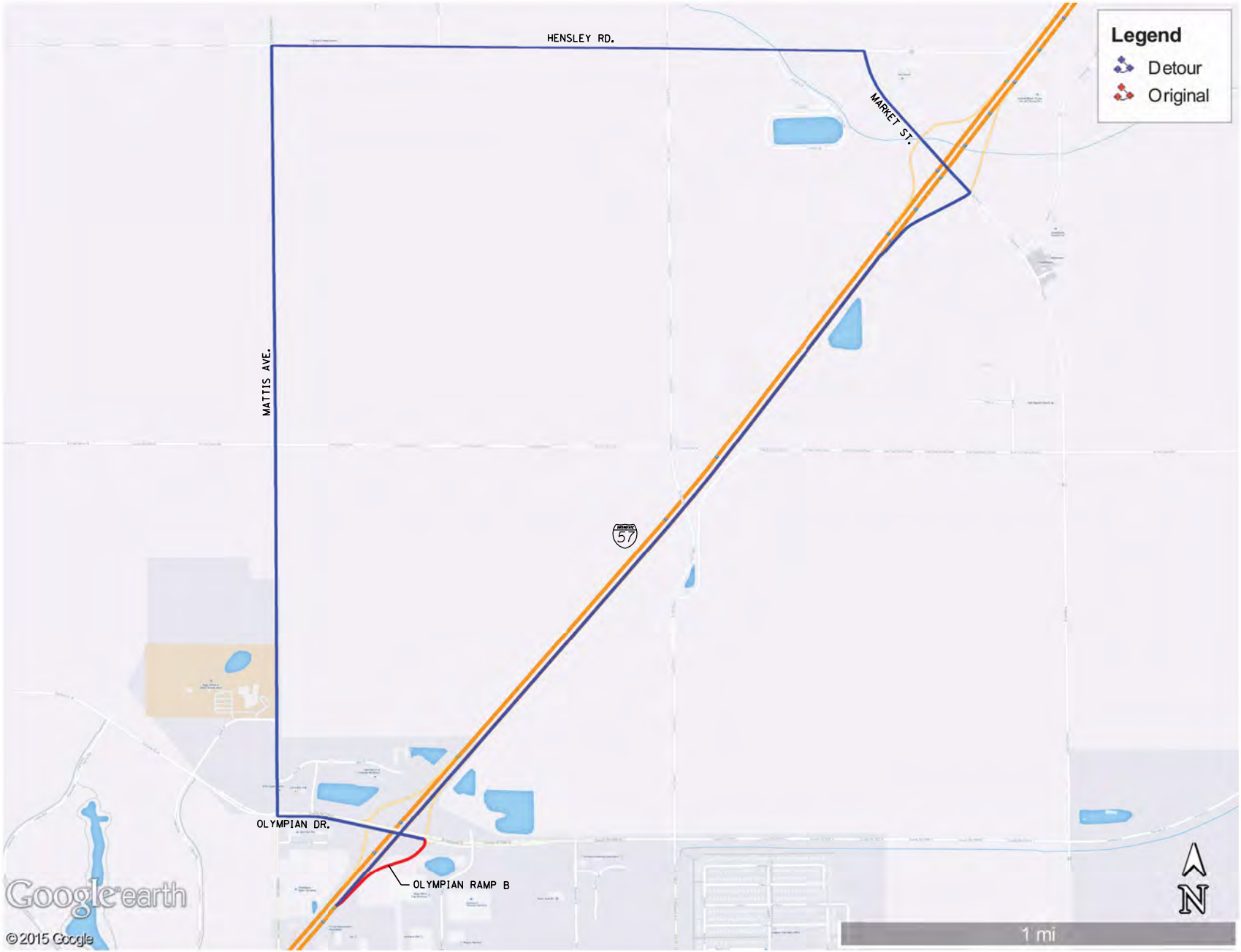

| I–57 & I–74 INTERCHANGE | PROSPECT RAMP C<br>OPTION 2 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



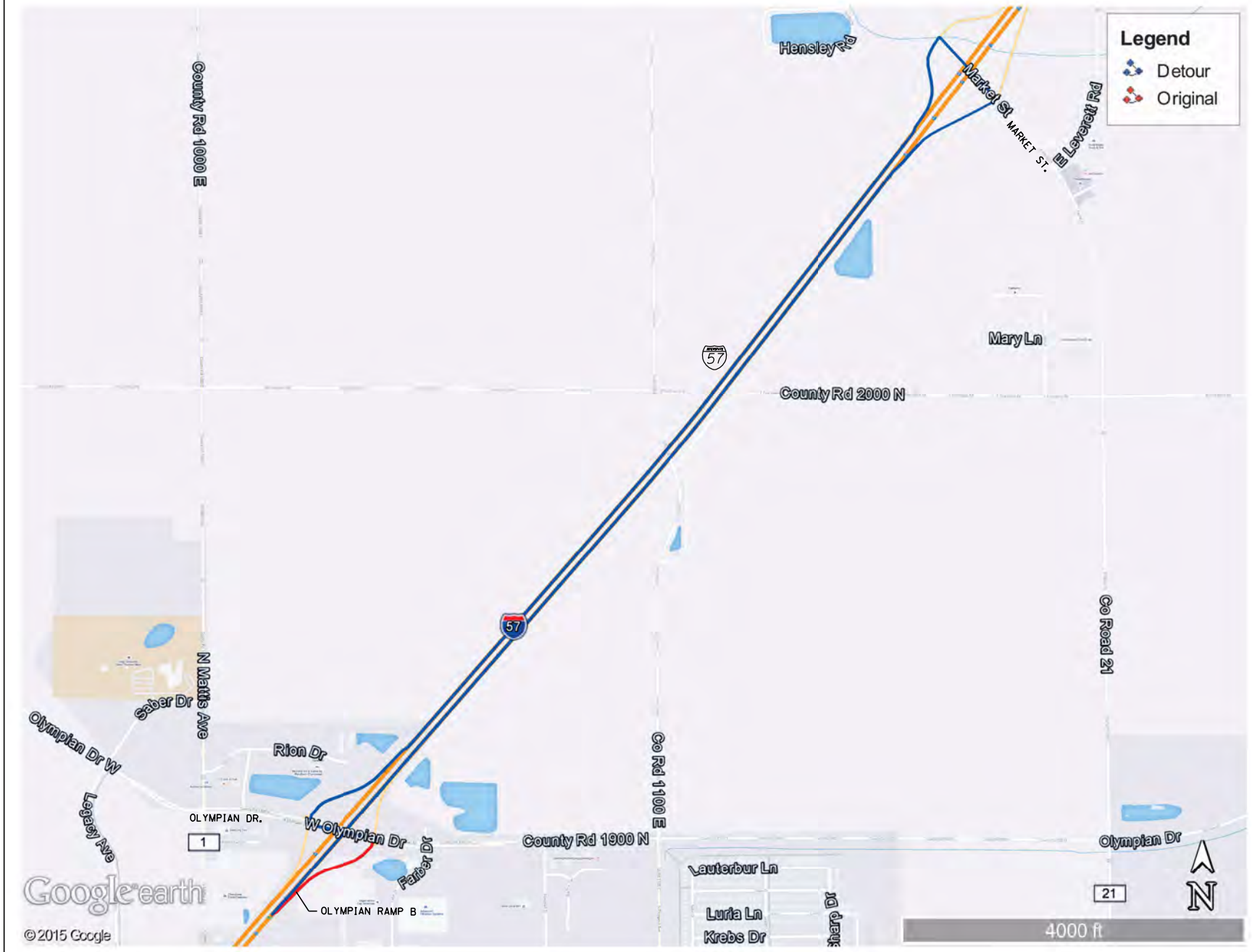

| I–57 & I–74 INTERCHANGE | PROSPECT RAMP C<br>OPTION 3 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



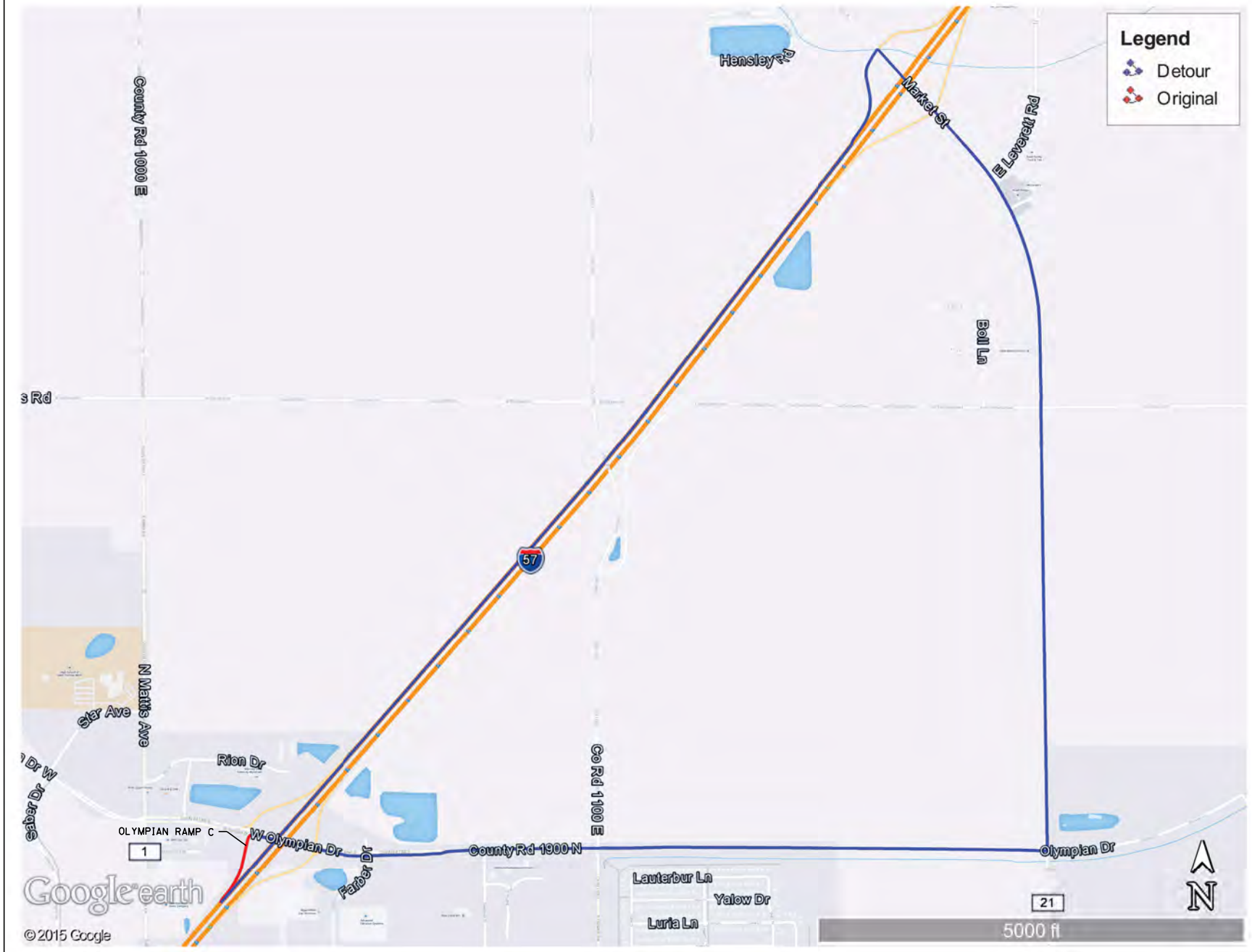

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| I–57 & I–74 INTERCHANGE | OLYMPIAN RAMP B<br>OPTION 1 | EXHIBIT 32<br>DETOUR ROUTES |




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| I–57 & I–74 INTERCHANGE | OLYMPIAN RAMP B<br>OPTION 2 | EXHIBIT 32<br>DETOUR ROUTES |



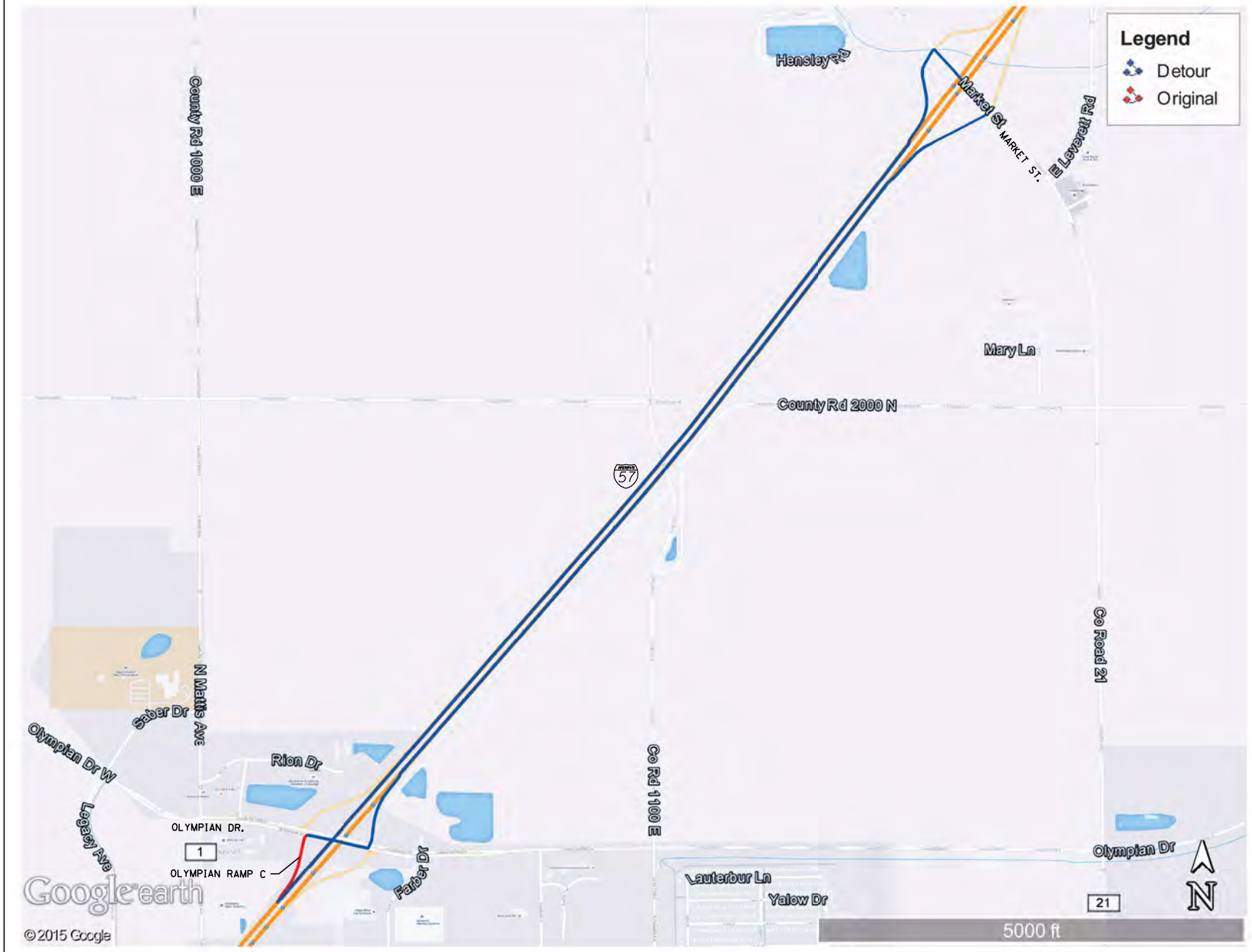

| I–57 & I–74 INTERCHANGE | OLYMPIAN RAMP B<br>OPTION 3 | EXHIBIT 32<br>DETOUR ROUTES |
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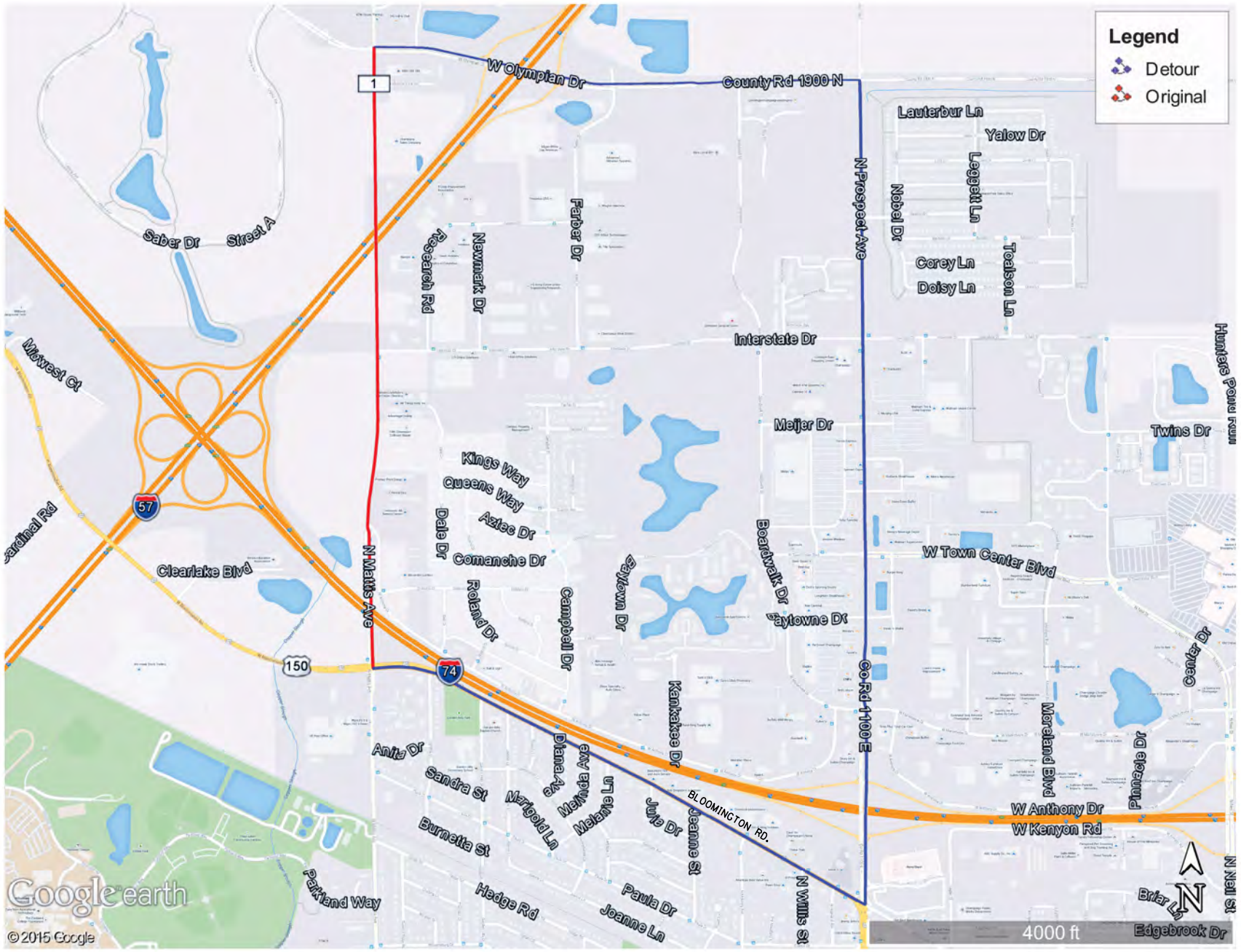

| I–57 & I–74 INTERCHANGE | OLYMPIAN RAMP C<br>OPTION 1 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|



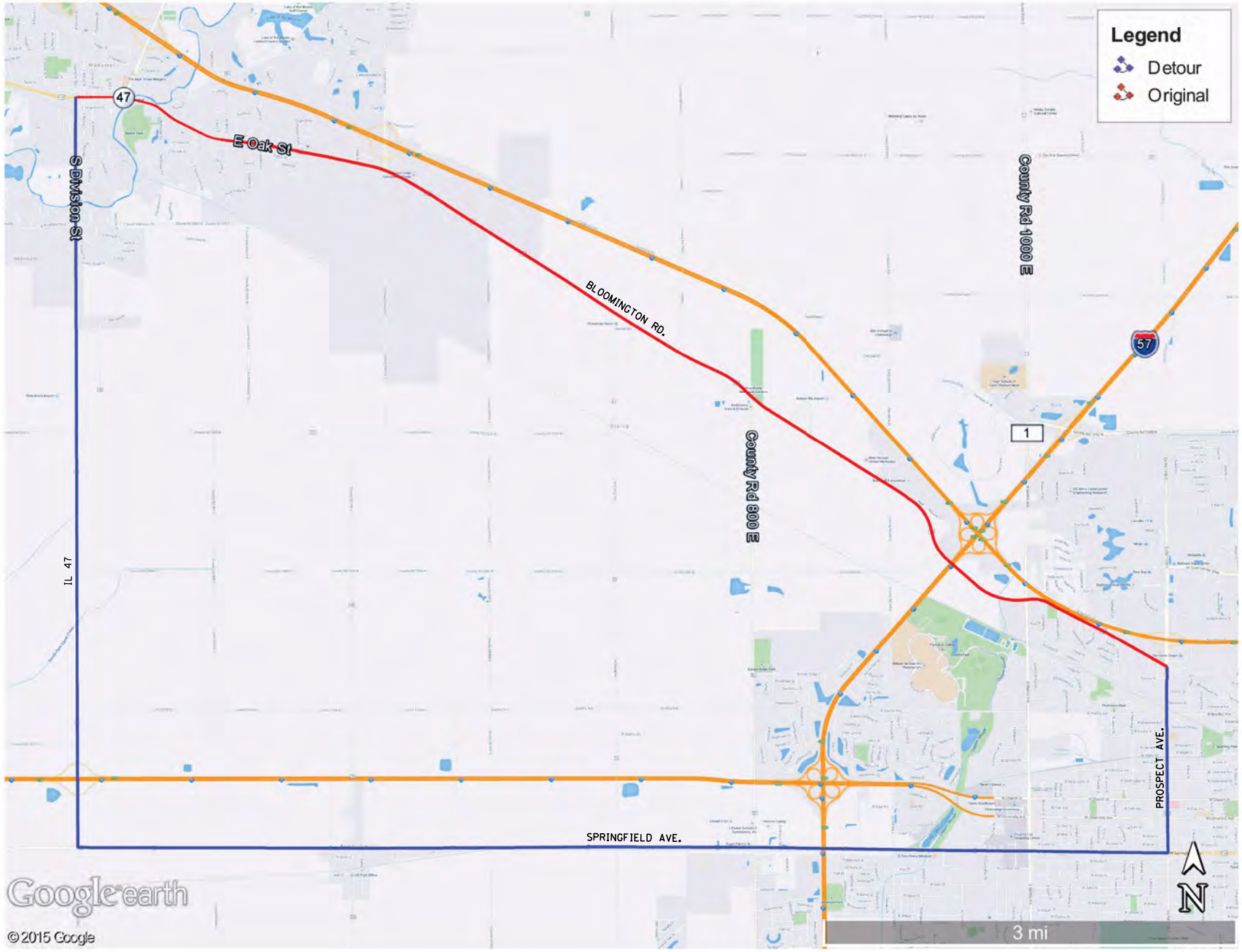

| I–57 & I–74 INTERCHANGE | OLYMPIAN RAMP C<br>OPTION 2 | EXHIBIT 32<br>DETOUR ROUTES |
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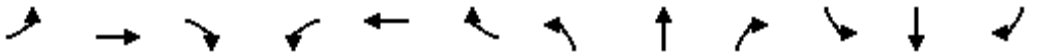

| I–57 & I–74 INTERCHANGE | OLYMPIAN RAMP C<br>OPTION 3 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|




| I–57 & I–74 INTERCHANGE | MATTIS AVENUE<br>OPTION 1 | EXHIBIT 32<br>DETOUR ROUTES |
|---|---|---|




| | | |
|---|---|---|
| I–57 & I–74 INTERCHANGE | U.S. 150 (BLOOMINGTON ROAD)<br>OPTION 1 | EXHIBIT 32<br>DETOUR ROUTES |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 168 | 249 | 94 | 207 | 138 | 67 | 77 | 339 | 148 | 91 | 345 | 87 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 120 | | 140 | 350 | | 0 | 125 | | 0 | 180 | | 250 |
| Storage Lanes | 1 | | 1 | 2 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.951 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1863 | 1583 | 3433 | 1771 | 0 | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.482 | | | 0.950 | | | 0.344 | | | 0.349 | | |
| Satd. Flow (perm) | 898 | 1863 | 1583 | 3433 | 1771 | 0 | 641 | 1863 | 1583 | 650 | 1863 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 113 | | 27 | | | | 171 | | | 191 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 544 | | | 794 | | | 451 | | | 1474 | |
| Travel Time (s) | | 12.4 | | | 18.0 | | | 10.3 | | | 33.5 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Growth Factor | 106% | 106% | 106% | 106% | 106% | 106% | 106% | 106% | 106% | 106% | 106% | 106% |
| Adj. Flow (vph) | 194 | 287 | 108 | 238 | 159 | 77 | 89 | 391 | 171 | 105 | 398 | 100 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 194 | 287 | 108 | 238 | 236 | 0 | 89 | 391 | 171 | 105 | 398 | 100 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | pm+ov | Prot | NA | | pm+pt | NA | pm+ov | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | | 5 | 2 | 3 | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | | 2 | | 2 | 6 | | 6 |



EXHIBIT 33

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 7 | 4 | 5 | 3 | 8 | | 5 | 2 | 3 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 14.0 | 7.0 | 7.0 | 14.0 | 14.0 |
| Minimum Split (s) | 13.0 | 19.0 | 13.0 | 15.0 | 19.0 | | 13.0 | 27.0 | 15.0 | 13.0 | 27.0 | 27.0 |
| Total Split (s) | 15.0 | 23.0 | 13.0 | 15.0 | 23.0 | | 13.0 | 29.0 | 15.0 | 13.0 | 29.0 | 29.0 |
| Total Split (%) | 18.8% | 28.8% | 16.3% | 18.8% | 28.8% | | 16.3% | 36.3% | 18.8% | 16.3% | 36.3% | 36.3% |
| Maximum Green (s) | 9.8 | 16.4 | 7.8 | 9.8 | 16.4 | | 7.8 | 22.9 | 9.8 | 7.8 | 22.9 | 22.9 |
| Yellow Time (s) | 3.2 | 3.9 | 3.2 | 3.2 | 3.9 | | 3.2 | 3.9 | 3.2 | 3.2 | 3.9 | 3.9 |
| All-Red Time (s) | 2.0 | 2.7 | 2.0 | 2.0 | 2.7 | | 2.0 | 2.2 | 2.0 | 2.0 | 2.2 | 2.2 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.2 | 6.6 | 5.2 | 5.2 | 6.6 | | 5.2 | 6.1 | 5.2 | 5.2 | 6.1 | 6.1 |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | | Lead | Lag | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.5 | 1.5 | 3.5 | 3.5 | 1.5 | | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | C-Max |
| Act Effct Green (s) | 26.0 | 15.1 | 29.2 | 9.5 | 15.1 | | 34.2 | 27.2 | 42.8 | 34.3 | 27.2 | 27.2 |
| Actuated g/C Ratio | 0.32 | 0.19 | 0.36 | 0.12 | 0.19 | | 0.43 | 0.34 | 0.54 | 0.43 | 0.34 | 0.34 |
| v/c Ratio | 0.49 | 0.82 | 0.17 | 0.58 | 0.66 | | 0.23 | 0.62 | 0.18 | 0.27 | 0.63 | 0.15 |
| Control Delay | 21.2 | 51.0 | 4.0 | 39.6 | 36.2 | | 14.0 | 29.5 | 2.5 | 12.8 | 28.6 | 1.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.2 | 51.0 | 4.0 | 39.6 | 36.2 | | 14.0 | 29.5 | 2.5 | 12.8 | 28.6 | 1.6 |
| LOS | C | D | A | D | D | | B | C | A | B | C | A |
| Approach Delay | | 32.6 | | | 37.9 | | | 20.3 | | | 21.3 | |
| Approach LOS | | C | | | D | | | C | | | C | |

**Intersection Summary**

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 32 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 27.3 Intersection LOS: C
Intersection Capacity Utilization 66.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: US 150 & Mattis Ave

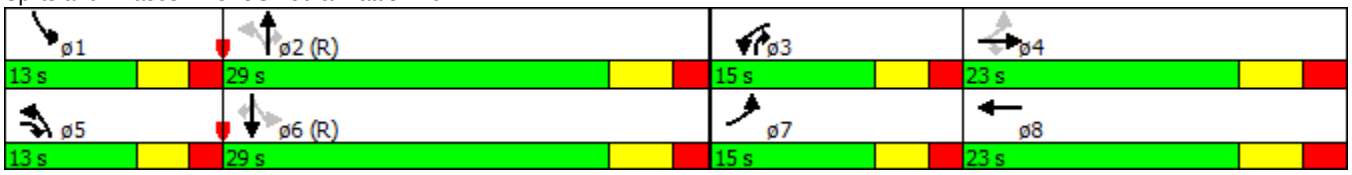





EXHIBIT 33



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 103 | 25 | 375 | 134 | 14 | 300 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 250 | 125 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.850 | | 0.850 | | |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1770 | 1583 | 1863 | 1583 | 1770 | 1863 |
| Flt Permitted | 0.950 | | | | 0.507 | |
| Satd. Flow (perm) | 1770 | 1583 | 1863 | 1583 | 944 | 1863 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 29 | | 154 | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 285 | | 1474 | | | 359 |
| Travel Time (s) | 6.5 | | 33.5 | | | 8.2 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Growth Factor | 106% | 106% | 106% | 106% | 106% | 106% |
| Adj. Flow (vph) | 119 | 29 | 432 | 154 | 16 | 346 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 119 | 29 | 432 | 154 | 16 | 346 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 12 | | 12 | | | 12 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Number of Detectors | 1 | 1 | 2 | 1 | 1 | 2 |
| Detector Template | Left | Right | Thru | Right | Left | Thru |
| Leading Detector (ft) | 20 | 20 | 100 | 20 | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 20 | 6 | 20 | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | 94 | | | 94 |
| Detector 2 Size(ft) | | | 6 | | | 6 |
| Detector 2 Type | | | Cl+Ex | | | Cl+Ex |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | 0.0 | | | 0.0 |
| Turn Type | Prot | Perm | NA | Perm | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |



EXHIBIT 33

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Detector Phase | 8 | 8 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 21.2 | 21.2 | 22.1 | 22.1 | 22.1 | 22.1 |
| Total Split (s) | 28.0 | 28.0 | 52.0 | 52.0 | 52.0 | 52.0 |
| Total Split (%) | 35.0% | 35.0% | 65.0% | 65.0% | 65.0% | 65.0% |
| Maximum Green (s) | 22.8 | 22.8 | 45.9 | 45.9 | 45.9 | 45.9 |
| Yellow Time (s) | 3.2 | 3.2 | 3.9 | 3.9 | 3.9 | 3.9 |
| All-Red Time (s) | 2.0 | 2.0 | 2.2 | 2.2 | 2.2 | 2.2 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.2 | 5.2 | 6.1 | 6.1 | 6.1 | 6.1 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | C-Max | C-Max | C-Max | C-Max |
| Walk Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 10.7 | 10.7 | 61.6 | 61.6 | 61.6 | 61.6 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.77 | 0.77 | 0.77 | 0.77 |
| v/c Ratio | 0.50 | 0.12 | 0.30 | 0.12 | 0.02 | 0.24 |
| Control Delay | 38.9 | 12.2 | 1.5 | 0.4 | 4.0 | 4.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 38.9 | 12.2 | 1.5 | 0.4 | 4.0 | 4.4 |
| LOS | D | B | A | A | A | A |
| Approach Delay | 33.6 | | 1.2 | | | 4.4 |
| Approach LOS | C | | A | | | A |

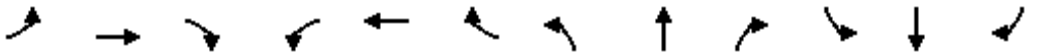
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 80 | | | |
| Actuated Cycle Length: 80 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green | | | |
| Natural Cycle: 45 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.50 | | | |
| Intersection Signal Delay: 6.6 | | Intersection LOS: A | |
| Intersection Capacity Utilization 36.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 6: Mattis Ave & Anthony






EXHIBIT 33



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 132 | 159 | 95 | 278 | 208 | 85 | 116 | 495 | 184 | 129 | 454 | 194 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 120 | | 140 | 350 | | 0 | 125 | | 0 | 180 | | 250 |
| Storage Lanes | 1 | | 1 | 2 | | 0 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.957 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1863 | 1583 | 3433 | 1783 | 0 | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.312 | | | 0.950 | | | 0.276 | | | 0.238 | | |
| Satd. Flow (perm) | 581 | 1863 | 1583 | 3433 | 1783 | 0 | 514 | 1863 | 1583 | 443 | 1863 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 134 | | 18 | | | | 212 | | | 224 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 544 | | | 794 | | | 451 | | | 1474 | |
| Travel Time (s) | | 12.4 | | | 18.0 | | | 10.3 | | | 33.5 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Growth Factor | 106% | 106% | 106% | 106% | 106% | 106% | 106% | 106% | 106% | 106% | 106% | 106% |
| Adj. Flow (vph) | 152 | 183 | 109 | 320 | 240 | 98 | 134 | 570 | 212 | 149 | 523 | 224 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 152 | 183 | 109 | 320 | 338 | 0 | 134 | 570 | 212 | 149 | 523 | 224 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (ft) | 20 | 100 | 20 | 20 | 100 | | 20 | 100 | 20 | 20 | 100 | 20 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 6 | 20 | 20 | 6 | | 20 | 6 | 20 | 20 | 6 | 20 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | pm+ov | Prot | NA | | pm+pt | NA | pm+ov | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | | 5 | 2 | 3 | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | | 2 | | 2 | 6 | | 6 |



EXHIBIT 33

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 7 | 4 | 5 | 3 | 8 | | 5 | 2 | 3 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | | 7.0 | 14.0 | 7.0 | 7.0 | 14.0 | 14.0 |
| Minimum Split (s) | 13.0 | 19.0 | 13.0 | 15.0 | 19.0 | | 13.0 | 27.0 | 15.0 | 13.0 | 27.0 | 27.0 |
| Total Split (s) | 13.0 | 26.0 | 14.0 | 20.0 | 33.0 | | 14.0 | 51.0 | 20.0 | 13.0 | 50.0 | 50.0 |
| Total Split (%) | 11.8% | 23.6% | 12.7% | 18.2% | 30.0% | | 12.7% | 46.4% | 18.2% | 11.8% | 45.5% | 45.5% |
| Maximum Green (s) | 7.8 | 19.4 | 8.8 | 14.8 | 26.4 | | 8.8 | 44.9 | 14.8 | 7.8 | 43.9 | 43.9 |
| Yellow Time (s) | 3.2 | 3.9 | 3.2 | 3.2 | 3.9 | | 3.2 | 3.9 | 3.2 | 3.2 | 3.9 | 3.9 |
| All-Red Time (s) | 2.0 | 2.7 | 2.0 | 2.0 | 2.7 | | 2.0 | 2.2 | 2.0 | 2.0 | 2.2 | 2.2 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.2 | 6.6 | 5.2 | 5.2 | 6.6 | | 5.2 | 6.1 | 5.2 | 5.2 | 6.1 | 6.1 |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | | Lead | Lag | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.5 | 1.5 | 3.5 | 3.5 | 1.5 | | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Recall Mode | None | None | None | None | None | | None | C-Max | None | None | C-Max | C-Max |
| Act Effct Green (s) | 25.7 | 16.5 | 31.8 | 14.1 | 22.8 | | 57.5 | 47.9 | 68.1 | 56.9 | 47.6 | 47.6 |
| Actuated g/C Ratio | 0.23 | 0.15 | 0.29 | 0.13 | 0.21 | | 0.52 | 0.44 | 0.62 | 0.52 | 0.43 | 0.43 |
| v/c Ratio | 0.69 | 0.66 | 0.20 | 0.73 | 0.88 | | 0.37 | 0.70 | 0.20 | 0.45 | 0.65 | 0.28 |
| Control Delay | 44.8 | 55.2 | 3.6 | 56.4 | 64.1 | | 15.1 | 32.0 | 1.8 | 15.2 | 27.7 | 4.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 44.8 | 55.2 | 3.6 | 56.4 | 64.1 | | 15.1 | 32.0 | 1.8 | 15.2 | 27.7 | 4.9 |
| LOS | D | E | A | E | E | | B | C | A | B | C | A |
| Approach Delay | | 39.0 | | | 60.3 | | | 22.5 | | | 19.9 | |
| Approach LOS | | D | | | E | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 110 | | | |
| Actuated Cycle Length: 110 | | | |
| Offset: 14 (13%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.88 | | | |
| Intersection Signal Delay: 32.8 | | Intersection LOS: C | |
| Intersection Capacity Utilization 79.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 3: US 150 & Mattis Ave.

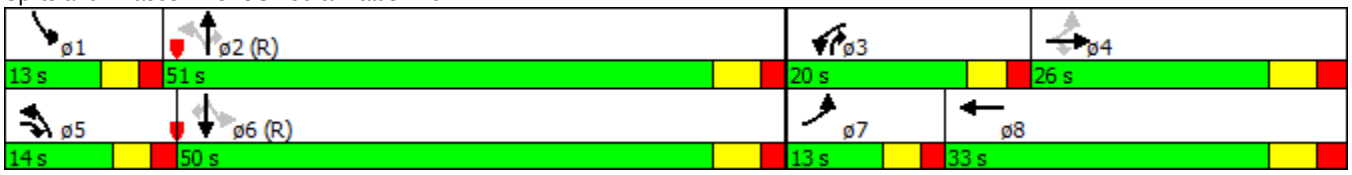





EXHIBIT 33



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 152 | 183 | 109 | 320 | 338 | 134 | 570 | 212 | 149 | 523 | 224 |
| v/c Ratio | 0.69 | 0.66 | 0.20 | 0.73 | 0.88 | 0.37 | 0.70 | 0.20 | 0.45 | 0.65 | 0.28 |
| Control Delay | 44.8 | 55.2 | 3.6 | 56.4 | 64.1 | 15.1 | 32.0 | 1.8 | 15.2 | 27.7 | 4.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 44.8 | 55.2 | 3.6 | 56.4 | 64.1 | 15.1 | 32.0 | 1.8 | 15.2 | 27.7 | 4.9 |
| Queue Length 50th (ft) | 76 | 122 | 0 | 112 | 218 | 43 | 337 | 0 | 52 | 276 | 11 |
| Queue Length 95th (ft) | #127 | 193 | 26 | 160 | #342 | 79 | 478 | 29 | 88 | 373 | 46 |
| Internal Link Dist (ft) | | 464 | | | 714 | | 371 | | | 1394 | |
| Turn Bay Length (ft) | 120 | | 140 | 350 | | 125 | | | 180 | | 250 |
| Base Capacity (vph) | 220 | 328 | 557 | 461 | 441 | 373 | 811 | 1069 | 331 | 806 | 812 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.69 | 0.56 | 0.20 | 0.69 | 0.77 | 0.36 | 0.70 | 0.20 | 0.45 | 0.65 | 0.28 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



EXHIBIT 33



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 271 | 43 | 506 | 250 | 28 | 501 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 150 | 125 | |
| Storage Lanes | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 25 | | | | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.850 | | 0.850 | | |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1770 | 1583 | 1863 | 1583 | 1770 | 1863 |
| Flt Permitted | 0.950 | | | | 0.355 | |
| Satd. Flow (perm) | 1770 | 1583 | 1863 | 1583 | 661 | 1863 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | 50 | | 288 | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 285 | | 1474 | | | 359 |
| Travel Time (s) | 6.5 | | 33.5 | | | 8.2 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Growth Factor | 106% | 106% | 106% | 106% | 106% | 106% |
| Adj. Flow (vph) | 312 | 50 | 583 | 288 | 32 | 577 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 312 | 50 | 583 | 288 | 32 | 577 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 12 | | 12 | | | 12 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Number of Detectors | 1 | 1 | 2 | 1 | 1 | 2 |
| Detector Template | Left | Right | Thru | Right | Left | Thru |
| Leading Detector (ft) | 20 | 20 | 100 | 20 | 20 | 100 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 20 | 20 | 6 | 20 | 20 | 6 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | | 94 | | | 94 |
| Detector 2 Size(ft) | | | 6 | | | 6 |
| Detector 2 Type | | | Cl+Ex | | | Cl+Ex |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | 0.0 | | | 0.0 |
| Turn Type | Prot | Perm | NA | Perm | Perm | NA |
| Protected Phases | 8 | | 2 | | | 6 |
| Permitted Phases | | 8 | | 2 | 6 | |



EXHIBIT 33

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Detector Phase | 8 | 8 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 21.2 | 21.2 | 22.1 | 22.1 | 22.1 | 22.1 |
| Total Split (s) | 22.0 | 22.0 | 33.0 | 33.0 | 33.0 | 33.0 |
| Total Split (%) | 40.0% | 40.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| Maximum Green (s) | 16.8 | 16.8 | 26.9 | 26.9 | 26.9 | 26.9 |
| Yellow Time (s) | 3.2 | 3.2 | 3.9 | 3.9 | 3.9 | 3.9 |
| All-Red Time (s) | 2.0 | 2.0 | 2.2 | 2.2 | 2.2 | 2.2 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.2 | 5.2 | 6.1 | 6.1 | 6.1 | 6.1 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | C-Max | C-Max | C-Max | C-Max |
| Walk Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 14.0 | 14.0 | 29.7 | 29.7 | 29.7 | 29.7 |
| Actuated g/C Ratio | 0.25 | 0.25 | 0.54 | 0.54 | 0.54 | 0.54 |
| v/c Ratio | 0.69 | 0.11 | 0.58 | 0.29 | 0.09 | 0.57 |
| Control Delay | 26.7 | 5.7 | 8.1 | 1.8 | 8.2 | 12.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 26.7 | 5.7 | 8.1 | 1.8 | 8.2 | 12.2 |
| LOS | C | A | A | A | A | B |
| Approach Delay | 23.8 | | 6.0 | | | 12.0 |
| Approach LOS | C | | A | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 55 | | | |
| Actuated Cycle Length: 55 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green | | | |
| Natural Cycle: 55 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.69 | | | |
| Intersection Signal Delay: 11.5 | | Intersection LOS: B | |
| Intersection Capacity Utilization 53.6% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 6: Mattis Ave. & Anthony

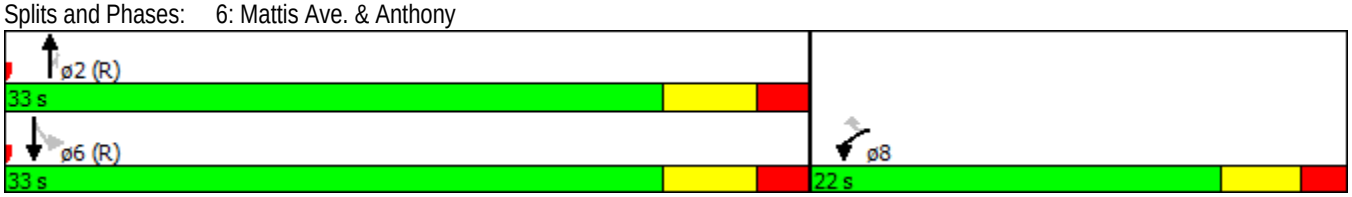
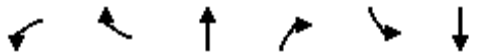





EXHIBIT 33



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 312 | 50 | 583 | 288 | 32 | 577 |
| v/c Ratio | 0.69 | 0.11 | 0.58 | 0.29 | 0.09 | 0.57 |
| Control Delay | 26.7 | 5.7 | 8.1 | 1.8 | 8.2 | 12.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 26.7 | 5.7 | 8.1 | 1.8 | 8.2 | 12.2 |
| Queue Length 50th (ft) | 90 | 0 | 89 | 2 | 5 | 116 |
| Queue Length 95th (ft) | 153 | 19 | 144 | m9 | 17 | 219 |
| Internal Link Dist (ft) | 205 | | 1394 | | | 279 |
| Turn Bay Length (ft) | | | | 150 | 125 | |
| Base Capacity (vph) | 540 | 518 | 1005 | 986 | 356 | 1005 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.58 | 0.10 | 0.58 | 0.29 | 0.09 | 0.57 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



EXHIBIT 33



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 0 | 366 | 0 | 0 | 244 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 1863 | 0 | 0 | 1863 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 1863 | 0 | 0 | 1863 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 1971 | | 1552 | | | 1025 |
| Travel Time (s) | 44.8 | | 35.3 | | | 23.3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 398 | 0 | 0 | 265 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 398 | 0 | 0 | 265 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 0 | | 0 | | | 0 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Turn Type | | | NA | | | NA |
| Protected Phases | | | 4 | | | 6 |
| Permitted Phases | | | | | | |
| Minimum Split (s) | | | 41.0 | | | 41.0 |
| Total Split (s) | | | 48.0 | | | 42.0 |
| Total Split (%) | | | 53.3% | | | 46.7% |
| Maximum Green (s) | | | 23.0 | | | 17.0 |
| Yellow Time (s) | | | 5.0 | | | 5.0 |
| All-Red Time (s) | | | 20.0 | | | 20.0 |
| Lost Time Adjust (s) | | | 0.0 | | | 0.0 |
| Total Lost Time (s) | | | 25.0 | | | 25.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Walk Time (s) | | | 5.0 | | | 5.0 |
| Flash Dont Walk (s) | | | 11.0 | | | 11.0 |
| Pedestrian Calls (#/hr) | | | 0 | | | 0 |
| Act Effct Green (s) | | | 23.0 | | | 17.0 |
| Actuated g/C Ratio | | | 0.26 | | | 0.19 |
| v/c Ratio | | | 0.84 | | | 0.75 |
| Control Delay | | | 48.9 | | | 49.8 |
| Queue Delay | | | 0.0 | | | 0.0 |
| Total Delay | | | 48.9 | | | 49.8 |
| LOS | | | D | | | D |



EXHIBIT 33



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Approach Delay | | | 48.9 | | | 49.8 |
| Approach LOS | | | D | | | D |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 2: and 6:SBT, Start of Green | | | |
| Natural Cycle: 85 | | | |
| Control Type: Pretimed | | | |
| Maximum v/c Ratio: 0.84 | | | |
| Intersection Signal Delay: 49.3 | | Intersection LOS: D | |
| Intersection Capacity Utilization 40.1% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 3: I-57 & Mattis Ave

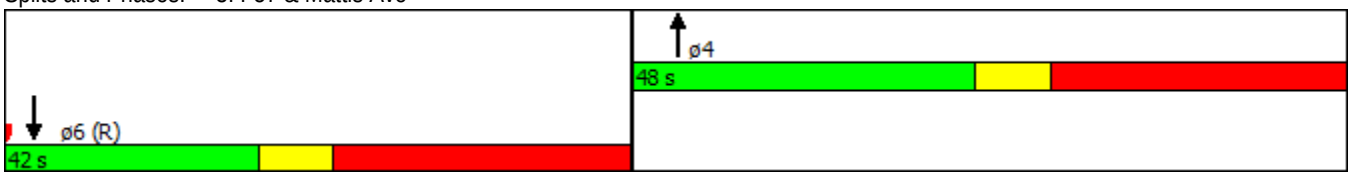





EXHIBIT 33

| Lane Group | NBT | SBT |
|---|---|---|
| Lane Group Flow (vph) | 398 | 265 |
| v/c Ratio | 0.84 | 0.75 |
| Control Delay | 48.9 | 49.8 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 48.9 | 49.8 |
| Queue Length 50th (ft) | 215 | 144 |
| Queue Length 95th (ft) | #367 | #257 |
| Internal Link Dist (ft) | 1472 | 945 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 476 | 351 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.84 | 0.75 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



EXHIBIT 33



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | ↑ | | | ↑ |
| Volume (vph) | 0 | 0 | 297 | 0 | 0 | 198 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 1863 | 0 | 0 | 1863 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 1863 | 0 | 0 | 1863 |
| Right Turn on Red | | Yes | | Yes | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 30 | | 30 | | | 30 |
| Link Distance (ft) | 1971 | | 1552 | | | 1025 |
| Travel Time (s) | 44.8 | | 35.3 | | | 23.3 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 323 | 0 | 0 | 215 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 323 | 0 | 0 | 215 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 0 | | 0 | | | 0 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Turn Type | | | NA | | | NA |
| Protected Phases | | | 4 | | | 6 |
| Permitted Phases | | | | | | |
| Minimum Split (s) | | | 41.0 | | | 41.0 |
| Total Split (s) | | | 47.0 | | | 43.0 |
| Total Split (%) | | | 52.2% | | | 47.8% |
| Maximum Green (s) | | | 22.0 | | | 18.0 |
| Yellow Time (s) | | | 5.0 | | | 5.0 |
| All-Red Time (s) | | | 20.0 | | | 20.0 |
| Lost Time Adjust (s) | | | 0.0 | | | 0.0 |
| Total Lost Time (s) | | | 25.0 | | | 25.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Walk Time (s) | | | 5.0 | | | 5.0 |
| Flash Dont Walk (s) | | | 11.0 | | | 11.0 |
| Pedestrian Calls (#/hr) | | | 0 | | | 0 |
| Act Effct Green (s) | | | 22.0 | | | 18.0 |
| Actuated g/C Ratio | | | 0.24 | | | 0.20 |
| v/c Ratio | | | 0.71 | | | 0.58 |
| Control Delay | | | 41.0 | | | 39.6 |
| Queue Delay | | | 0.0 | | | 0.0 |
| Total Delay | | | 41.0 | | | 39.6 |
| LOS | | | D | | | D |



**EXHIBIT 33**



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Approach Delay | | | 41.0 | | | 39.6 |
| Approach LOS | | | D | | | D |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 2: and 6:SBT, Start of Green | | | |
| Natural Cycle: 85 | | | |
| Control Type: Pretimed | | | |
| Maximum v/c Ratio: 0.71 | | | |
| Intersection Signal Delay: 40.4 | | Intersection LOS: D | |
| Intersection Capacity Utilization 36.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 3: I-57 & Mattis Ave.

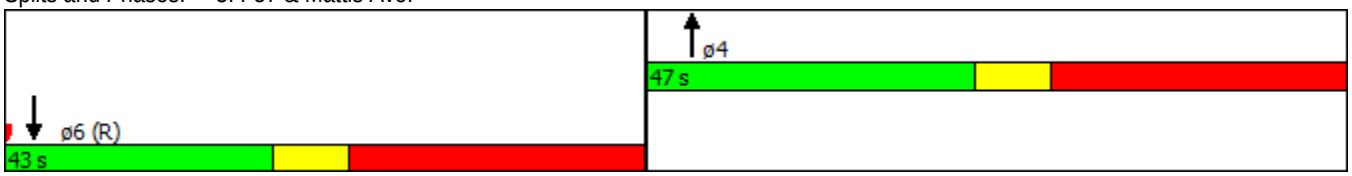





EXHIBIT 33

| Lane Group | NBT | SBT |
|---|---|---|
| Lane Group Flow (vph) | 323 | 215 |
| v/c Ratio | 0.71 | 0.58 |
| Control Delay | 41.0 | 39.6 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 41.0 | 39.6 |
| Queue Length 50th (ft) | 168 | 111 |
| Queue Length 95th (ft) | #265 | 185 |
| Internal Link Dist (ft) | 1472 | 945 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 455 | 372 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.71 | 0.58 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



EXHIBIT 33

| Lane Group | SEL | SET | NWT | NWR | SWL | SWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 0 | 296 | 246 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1863 | 1863 | 0 | 0 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1863 | 1863 | 0 | 0 | 0 |
| Right Turn on Red | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | |
| Link Distance (ft) | | 595 | 589 | | 213 | |
| Travel Time (s) | | 13.5 | 13.4 | | 4.8 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 322 | 267 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 322 | 267 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 0 | 0 | | 0 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Turn Type | | NA | NA | | | |
| Protected Phases | | 6 | 4 | | | |
| Permitted Phases | | | | | | |
| Minimum Split (s) | | 41.0 | 41.0 | | | |
| Total Split (s) | | 47.0 | 43.0 | | | |
| Total Split (%) | | 52.2% | 47.8% | | | |
| Maximum Green (s) | | 22.0 | 18.0 | | | |
| Yellow Time (s) | | 5.0 | 5.0 | | | |
| All-Red Time (s) | | 20.0 | 20.0 | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | |
| Total Lost Time (s) | | 25.0 | 25.0 | | | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Walk Time (s) | | 5.0 | 5.0 | | | |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | |
| Act Effct Green (s) | | 22.0 | 18.0 | | | |
| Actuated g/C Ratio | | 0.24 | 0.20 | | | |
| v/c Ratio | | 0.71 | 0.72 | | | |
| Control Delay | | 40.9 | 45.9 | | | |
| Queue Delay | | 0.0 | 0.0 | | | |
| Total Delay | | 40.9 | 45.9 | | | |
| LOS | | D | D | | | |



EXHIBIT 33

| Lane Group | SEL | SET | NWT | NWR | SWL | SWR |
|---|---|---|---|---|---|---|
| Approach Delay | | 40.9 | 45.9 | | | |
| Approach LOS | | D | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 2: and 6:SET, Start of Green | | | |
| Natural Cycle: 85 | | | |
| Control Type: Pretimed | | | |
| Maximum v/c Ratio: 0.72 | | | |
| Intersection Signal Delay: 43.2 | | Intersection LOS: D | |
| Intersection Capacity Utilization 36.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 8: RTE 150 & I-57

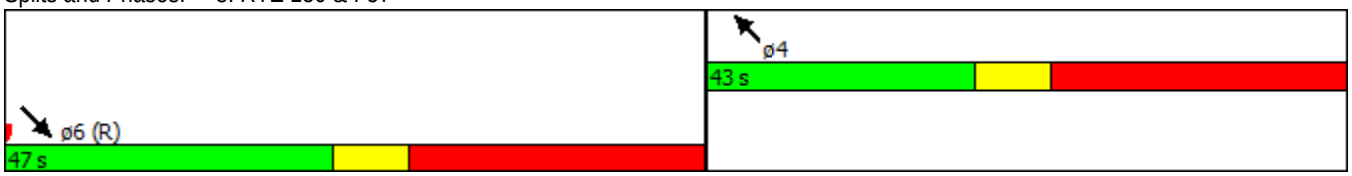





EXHIBIT 33

| Lane Group | SET | NWT |
|---|---|---|
| Lane Group Flow (vph) | 322 | 267 |
| v/c Ratio | 0.71 | 0.72 |
| Control Delay | 40.9 | 45.9 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 40.9 | 45.9 |
| Queue Length 50th (ft) | 168 | 143 |
| Queue Length 95th (ft) | #264 | #247 |
| Internal Link Dist (ft) | 515 | 509 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 455 | 372 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.71 | 0.72 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



EXHIBIT 33



| Lane Group | SEL | SET | NWT | NWR | SWL | SWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↑ | | | |
| Volume (vph) | 0 | 325 | 370 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1863 | 1863 | 0 | 0 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1863 | 1863 | 0 | 0 | 0 |
| Right Turn on Red | | | | Yes | | Yes |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 30 | 30 | | 30 | |
| Link Distance (ft) | | 595 | 589 | | 213 | |
| Travel Time (s) | | 13.5 | 13.4 | | 4.8 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 353 | 402 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 353 | 402 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 0 | 0 | | 0 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Turn Type | | NA | NA | | | |
| Protected Phases | | 6 | 4 | | | |
| Permitted Phases | | | | | | |
| Minimum Split (s) | | 41.0 | 41.0 | | | |
| Total Split (s) | | 44.0 | 46.0 | | | |
| Total Split (%) | | 48.9% | 51.1% | | | |
| Maximum Green (s) | | 19.0 | 21.0 | | | |
| Yellow Time (s) | | 5.0 | 5.0 | | | |
| All-Red Time (s) | | 20.0 | 20.0 | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | | |
| Total Lost Time (s) | | 25.0 | 25.0 | | | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Walk Time (s) | | 5.0 | 5.0 | | | |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | |
| Act Effct Green (s) | | 19.0 | 21.0 | | | |
| Actuated g/C Ratio | | 0.21 | 0.23 | | | |
| v/c Ratio | | 0.90 | 0.93 | | | |
| Control Delay | | 62.1 | 63.7 | | | |
| Queue Delay | | 0.0 | 0.0 | | | |
| Total Delay | | 62.1 | 63.7 | | | |
| LOS | | E | E | | | |



**EXHIBIT 33**

| Lane Group | SEL | SET | NWT | NWR | SWL | SWR |
|---|---|---|---|---|---|---|
| Approach Delay | | 62.1 | 63.7 | | | |
| Approach LOS | | E | E | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 90 | |
| Actuated Cycle Length: 90 | |
| Offset: 0 (0%), Referenced to phase 2: and 6:SET, Start of Green | |
| Natural Cycle: 85 | |
| Control Type: Pretimed | |
| Maximum v/c Ratio: 0.93 | |
| Intersection Signal Delay: 63.0 | Intersection LOS: E |
| Intersection Capacity Utilization 40.3% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 8: RTE 150 & I-57

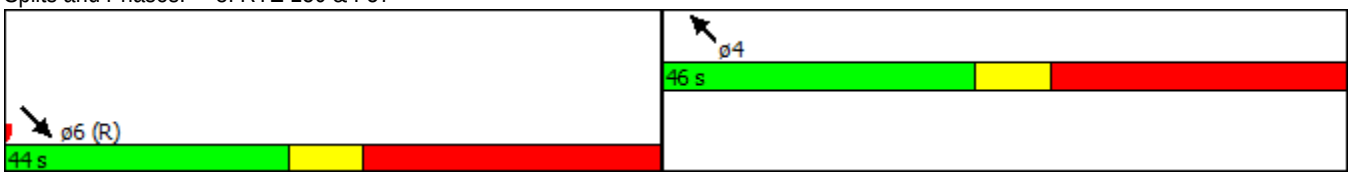





EXHIBIT 33

| Lane Group | SET | NWT |
|---|---|---|
| Lane Group Flow (vph) | 353 | 402 |
| v/c Ratio | 0.90 | 0.93 |
| Control Delay | 62.1 | 63.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 62.1 | 63.7 |
| Queue Length 50th (ft) | 197 | 224 |
| Queue Length 95th (ft) | #354 | #398 |
| Internal Link Dist (ft) | 515 | 509 |
| Turn Bay Length (ft) | | |
| Base Capacity (vph) | 393 | 434 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.90 | 0.93 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



EXHIBIT 33

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 1, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.5 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 1:00 AM | 2:00 AM | 30.6 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 2:00 AM | 3:00 AM | 30.5 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 3:00 AM | 4:00 AM | 30.5 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 4:00 AM | 5:00 AM | 30.3 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 5:00 AM | 6:00 AM | 29.5 | 0.3 | 0.5 | 1.02 | - | 1.02 |
| 6:00 AM | 7:00 AM | 24.0 | 0.9 | 1.1 | 1.56 | - | 1.56 |
| 7:00 AM | 8:00 AM | 24.0 | 8.5 | 8.8 | 7.02 | - | 7.02 |
| 8:00 AM | 9:00 AM | 24.0 | 20.0 | 20.3 | 11.48 | - | 11.48 |
| 9:00 AM | 10:00 AM | 24.0 | 28.2 | 28.5 | 15.56 | - | 15.56 |
| 10:00 AM | 11:00 AM | 24.0 | 35.2 | 35.5 | 18.87 | - | 18.87 |
| 11:00 AM | 12:00 PM | 24.0 | 41.2 | 41.5 | 21.84 | - | 21.84 |
| 12:00 PM | 1:00 PM | 24.0 | 46.5 | 46.8 | 24.43 | - | 24.43 |
| 1:00 PM | 2:00 PM | 24.0 | 51.1 | 51.4 | 26.65 | - | 26.65 |
| 2:00 PM | 3:00 PM | 24.0 | 56.0 | 56.3 | 29.55 | - | 29.55 |
| 3:00 PM | 4:00 PM | 24.0 | 60.8 | 61.1 | 31.69 | - | 31.69 |
| 4:00 PM | 5:00 PM | 24.0 | 65.5 | 65.8 | 34.44 | - | 34.44 |
| 5:00 PM | 6:00 PM | 24.0 | 70.6 | 70.9 | 37.10 | - | 37.10 |
| 6:00 PM | 7:00 PM | 24.0 | 72.6 | 72.9 | 36.48 | - | 36.48 |
| 7:00 PM | 8:00 PM | 24.0 | 69.5 | 69.8 | 33.85 | - | 33.85 |
| 8:00 PM | 9:00 PM | 24.0 | 62.0 | 62.3 | 28.68 | - | 28.68 |
| 9:00 PM | 10:00 PM | 24.0 | 50.9 | 51.2 | 22.18 | - | 22.18 |
| 10:00 PM | 11:00 PM | 24.0 | 37.3 | 37.6 | 14.42 | - | 14.42 |
| 11:00 PM | 12:00 AM | 24.0 | 21.3 | 21.6 | 5.51 | - | 5.51 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 1, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 28.1 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 1:00 AM | 2:00 AM | 28.2 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 2:00 AM | 3:00 AM | 28.1 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 3:00 AM | 4:00 AM | 28.1 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 4:00 AM | 5:00 AM | 27.9 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 5:00 AM | 6:00 AM | 27.1 | 0.5 | 0.7 | 1.19 | - | 1.19 |
| 6:00 AM | 7:00 AM | 21.9 | 1.7 | 1.9 | 2.05 | - | 2.05 |
| 7:00 AM | 8:00 AM | 21.9 | 10.6 | 10.9 | 7.51 | - | 7.51 |
| 8:00 AM | 9:00 AM | 21.9 | 23.8 | 24.1 | 12.29 | - | 12.29 |
| 9:00 AM | 10:00 AM | 21.9 | 33.6 | 33.9 | 16.71 | - | 16.71 |
| 10:00 AM | 11:00 AM | 21.9 | 42.2 | 42.5 | 20.38 | - | 20.38 |
| 11:00 AM | 12:00 PM | 21.9 | 49.7 | 50.0 | 23.73 | - | 23.73 |
| 12:00 PM | 1:00 PM | 21.9 | 56.4 | 56.7 | 26.72 | - | 26.72 |
| 1:00 PM | 2:00 PM | 21.9 | 62.4 | 62.7 | 29.36 | - | 29.36 |
| 2:00 PM | 3:00 PM | 21.9 | 68.7 | 68.9 | 32.64 | - | 32.64 |
| 3:00 PM | 4:00 PM | 21.9 | 74.9 | 75.2 | 35.20 | - | 35.20 |
| 4:00 PM | 5:00 PM | 21.9 | 80.9 | 81.2 | 38.34 | - | 38.34 |
| 5:00 PM | 6:00 PM | 21.9 | 87.5 | 87.8 | 41.39 | - | 41.39 |
| 6:00 PM | 7:00 PM | 21.9 | 90.6 | 90.9 | 41.31 | - | 41.31 |
| 7:00 PM | 8:00 PM | 21.9 | 88.4 | 88.7 | 39.30 | - | 39.30 |
| 8:00 PM | 9:00 PM | 21.9 | 81.6 | 81.9 | 34.86 | - | 34.86 |
| 9:00 PM | 10:00 PM | 21.9 | 70.8 | 71.1 | 29.14 | - | 29.14 |
| 10:00 PM | 11:00 PM | 21.9 | 57.4 | 57.7 | 22.22 | - | 22.22 |
| 11:00 PM | 12:00 AM | 21.9 | 41.5 | 41.8 | 14.20 | - | 14.20 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/22/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 1, Pre-Stage A | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.2 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.2 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.2 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.2 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.2 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.2 | 0.00 | - | 0.00 |
| 6:00 AM | 7:00 AM | - | 0.3 | 0.8 | 3.43 | - | 3.43 |
| 7:00 AM | 8:00 AM | 34.2 | 4.6 | 4.9 | 6.56 | - | 6.56 |
| 8:00 AM | 9:00 AM | 34.2 | 9.5 | 9.8 | 8.67 | - | 8.67 |
| 9:00 AM | 10:00 AM | 34.2 | 11.8 | 12.1 | 10.34 | - | 10.34 |
| 10:00 AM | 11:00 AM | 34.2 | 13.3 | 13.6 | 11.10 | - | 11.10 |
| 11:00 AM | 12:00 PM | 34.2 | 13.9 | 14.2 | 11.47 | - | 11.47 |
| 12:00 PM | 1:00 PM | 34.2 | 14.1 | 14.4 | 11.39 | - | 11.39 |
| 1:00 PM | 2:00 PM | 34.2 | 13.8 | 14.1 | 10.88 | - | 10.88 |
| 2:00 PM | 3:00 PM | 34.2 | 13.6 | 13.9 | 11.17 | - | 11.17 |
| 3:00 PM | 4:00 PM | 34.2 | 13.4 | 13.7 | 10.57 | - | 10.57 |
| 4:00 PM | 5:00 PM | 34.2 | 13.2 | 13.4 | 10.68 | - | 10.68 |
| 5:00 PM | 6:00 PM | 34.2 | 13.2 | 13.5 | 10.68 | - | 10.68 |
| 6:00 PM | 7:00 PM | 34.2 | 10.9 | 11.2 | 6.86 | - | 6.86 |
| 7:00 PM | 8:00 PM | 34.2 | 5.3 | 5.6 | 2.68 | - | 2.68 |
| 8:00 PM | 9:00 PM | 34.2 | 0.9 | 1.2 | 0.00 | - | 0.00 |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.2 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.2 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.2 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## WARNING

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 2, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.5 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 1:00 AM | 2:00 AM | 30.6 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 2:00 AM | 3:00 AM | 30.5 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 3:00 AM | 4:00 AM | 30.5 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 4:00 AM | 5:00 AM | 30.3 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 5:00 AM | 6:00 AM | 29.5 | 0.2 | 0.4 | 0.60 | - | 0.60 |
| 6:00 AM | 7:00 AM | 24.0 | 0.9 | 1.1 | 1.15 | - | 1.15 |
| 7:00 AM | 8:00 AM | 24.0 | 10.3 | 10.7 | 6.60 | - | 6.60 |
| 8:00 AM | 9:00 AM | 24.0 | 24.8 | 25.2 | 11.07 | - | 11.07 |
| 9:00 AM | 10:00 AM | 24.0 | 35.1 | 35.5 | 15.15 | - | 15.15 |
| 10:00 AM | 11:00 AM | 24.0 | 44.0 | 44.4 | 18.45 | - | 18.45 |
| 11:00 AM | 12:00 PM | 24.0 | 51.6 | 51.9 | 21.43 | - | 21.43 |
| 12:00 PM | 1:00 PM | 24.0 | 58.3 | 58.6 | 24.02 | - | 24.02 |
| 1:00 PM | 2:00 PM | 24.0 | 64.1 | 64.4 | 26.23 | - | 26.23 |
| 2:00 PM | 3:00 PM | 24.0 | 70.2 | 70.6 | 29.13 | - | 29.13 |
| 3:00 PM | 4:00 PM | 24.0 | 76.3 | 76.6 | 31.28 | - | 31.28 |
| 4:00 PM | 5:00 PM | 24.0 | 82.2 | 82.5 | 34.03 | - | 34.03 |
| 5:00 PM | 6:00 PM | 24.0 | 88.7 | 89.0 | 36.68 | - | 36.68 |
| 6:00 PM | 7:00 PM | 24.0 | 91.2 | 91.5 | 36.06 | - | 36.06 |
| 7:00 PM | 8:00 PM | 24.0 | 87.2 | 87.6 | 33.43 | - | 33.43 |
| 8:00 PM | 9:00 PM | 24.0 | 77.9 | 78.2 | 28.26 | - | 28.26 |
| 9:00 PM | 10:00 PM | 24.0 | 63.8 | 64.2 | 21.76 | - | 21.76 |
| 10:00 PM | 11:00 PM | 24.0 | 46.6 | 47.0 | 14.00 | - | 14.00 |
| 11:00 PM | 12:00 AM | 24.0 | 26.5 | 26.9 | 5.10 | - | 5.10 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 2, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 28.1 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 1:00 AM | 2:00 AM | 28.2 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 2:00 AM | 3:00 AM | 28.1 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 3:00 AM | 4:00 AM | 28.1 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 4:00 AM | 5:00 AM | 27.9 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 5:00 AM | 6:00 AM | 27.1 | 0.4 | 0.6 | 0.77 | - | 0.77 |
| 6:00 AM | 7:00 AM | 21.9 | 1.7 | 2.0 | 1.64 | - | 1.64 |
| 7:00 AM | 8:00 AM | 21.9 | 12.9 | 13.2 | 7.09 | - | 7.09 |
| 8:00 AM | 9:00 AM | 21.9 | 29.5 | 29.8 | 11.87 | - | 11.87 |
| 9:00 AM | 10:00 AM | 21.9 | 41.8 | 42.2 | 16.29 | - | 16.29 |
| 10:00 AM | 11:00 AM | 21.9 | 52.7 | 53.0 | 19.96 | - | 19.96 |
| 11:00 AM | 12:00 PM | 21.9 | 62.1 | 62.4 | 23.32 | - | 23.32 |
| 12:00 PM | 1:00 PM | 21.9 | 70.6 | 70.9 | 26.31 | - | 26.31 |
| 1:00 PM | 2:00 PM | 21.9 | 78.1 | 78.4 | 28.94 | - | 28.94 |
| 2:00 PM | 3:00 PM | 21.9 | 86.0 | 86.4 | 32.22 | - | 32.22 |
| 3:00 PM | 4:00 PM | 21.9 | 93.8 | 94.2 | 34.79 | - | 34.79 |
| 4:00 PM | 5:00 PM | 21.9 | 101.5 | 101.8 | 37.93 | - | 37.93 |
| 5:00 PM | 6:00 PM | 21.9 | 109.8 | 110.1 | 40.97 | - | 40.97 |
| 6:00 PM | 7:00 PM | 21.9 | 113.7 | 114.1 | 40.89 | - | 40.89 |
| 7:00 PM | 8:00 PM | 21.9 | 110.9 | 111.3 | 38.88 | - | 38.88 |
| 8:00 PM | 9:00 PM | 21.9 | 102.3 | 102.6 | 34.44 | - | 34.44 |
| 9:00 PM | 10:00 PM | 21.9 | 88.7 | 89.0 | 28.73 | - | 28.73 |
| 10:00 PM | 11:00 PM | 21.9 | 71.8 | 72.1 | 21.80 | - | 21.80 |
| 11:00 PM | 12:00 AM | 21.9 | 51.8 | 52.1 | 13.78 | - | 13.78 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/22/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 2, Pre-Stage A | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.2 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.2 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.2 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.2 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.2 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.2 | 0.00 | - | 0.00 |
| 6:00 AM | 7:00 AM | - | 0.4 | 0.9 | 3.02 | - | 3.02 |
| 7:00 AM | 8:00 AM | 34.2 | 5.8 | 6.1 | 6.15 | - | 6.15 |
| 8:00 AM | 9:00 AM | 34.2 | 11.9 | 12.2 | 8.26 | - | 8.26 |
| 9:00 AM | 10:00 AM | 34.2 | 14.8 | 15.2 | 9.92 | - | 9.92 |
| 10:00 AM | 11:00 AM | 34.2 | 16.7 | 17.0 | 10.68 | - | 10.68 |
| 11:00 AM | 12:00 PM | 34.2 | 17.6 | 17.9 | 11.05 | - | 11.05 |
| 12:00 PM | 1:00 PM | 34.2 | 17.8 | 18.1 | 10.97 | - | 10.97 |
| 1:00 PM | 2:00 PM | 34.2 | 17.3 | 17.7 | 10.47 | - | 10.47 |
| 2:00 PM | 3:00 PM | 34.2 | 17.2 | 17.5 | 10.75 | - | 10.75 |
| 3:00 PM | 4:00 PM | 34.2 | 16.9 | 17.3 | 10.16 | - | 10.16 |
| 4:00 PM | 5:00 PM | 34.2 | 16.6 | 16.9 | 10.27 | - | 10.27 |
| 5:00 PM | 6:00 PM | 34.2 | 16.6 | 17.0 | 10.26 | - | 10.26 |
| 6:00 PM | 7:00 PM | 34.2 | 13.7 | 14.0 | 6.45 | - | 6.45 |
| 7:00 PM | 8:00 PM | 34.2 | 6.5 | 6.9 | 2.27 | - | 2.27 |
| 8:00 PM | 9:00 PM | 34.2 | 1.1 | 1.4 | 0.00 | - | 0.00 |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.2 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.2 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.2 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 3, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.2 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 1:00 AM | 2:00 AM | 30.4 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 2:00 AM | 3:00 AM | 30.4 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 3:00 AM | 4:00 AM | 30.4 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 4:00 AM | 5:00 AM | 30.1 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 5:00 AM | 6:00 AM | 29.5 | 0.4 | 0.7 | 1.18 | - | 1.18 |
| 6:00 AM | 7:00 AM | 24.0 | 2.8 | 3.2 | 2.87 | - | 2.87 |
| 7:00 AM | 8:00 AM | 24.0 | 14.4 | 14.7 | 8.33 | - | 8.33 |
| 8:00 AM | 9:00 AM | 24.0 | 31.1 | 31.4 | 13.78 | - | 13.78 |
| 9:00 AM | 10:00 AM | 24.0 | 44.9 | 45.2 | 19.24 | - | 19.24 |
| 10:00 AM | 11:00 AM | 24.0 | 54.9 | 55.2 | 22.33 | - | 22.33 |
| 11:00 AM | 12:00 PM | 24.0 | 62.6 | 63.0 | 26.02 | - | 26.02 |
| 12:00 PM | 1:00 PM | 24.0 | 71.1 | 71.5 | 29.78 | - | 29.78 |
| 1:00 PM | 2:00 PM | 24.0 | 79.4 | 79.8 | 33.27 | - | 33.27 |
| 2:00 PM | 3:00 PM | 24.0 | 86.4 | 86.7 | 35.88 | - | 35.88 |
| 3:00 PM | 4:00 PM | 24.0 | 93.2 | 93.5 | 39.24 | - | 39.24 |
| 4:00 PM | 5:00 PM | 24.0 | 102.0 | 102.3 | 43.58 | - | 43.58 |
| 5:00 PM | 6:00 PM | 24.0 | 113.3 | 113.7 | 49.03 | - | 49.03 |
| 6:00 PM | 7:00 PM | 24.0 | 122.1 | 122.4 | 51.08 | - | 51.08 |
| 7:00 PM | 8:00 PM | 24.0 | 121.6 | 121.9 | 48.60 | - | 48.60 |
| 8:00 PM | 9:00 PM | 24.0 | 114.3 | 114.7 | 44.76 | - | 44.76 |
| 9:00 PM | 10:00 PM | 24.0 | 104.0 | 104.4 | 39.55 | - | 39.55 |
| 10:00 PM | 11:00 PM | 24.0 | 90.6 | 90.9 | 32.99 | - | 32.99 |
| 11:00 PM | 12:00 AM | 24.0 | 74.2 | 74.6 | 25.21 | - | 25.21 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 3, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 27.8 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 1:00 AM | 2:00 AM | 28.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 2:00 AM | 3:00 AM | 28.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 3:00 AM | 4:00 AM | 28.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 4:00 AM | 5:00 AM | 27.7 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 5:00 AM | 6:00 AM | 27.1 | 0.6 | 0.9 | 1.35 | - | 1.35 |
| 6:00 AM | 7:00 AM | 21.9 | 3.8 | 4.2 | 3.29 | - | 3.29 |
| 7:00 AM | 8:00 AM | 21.9 | 17.1 | 17.5 | 8.75 | - | 8.75 |
| 8:00 AM | 9:00 AM | 21.9 | 35.8 | 36.2 | 14.20 | - | 14.20 |
| 9:00 AM | 10:00 AM | 21.9 | 51.5 | 51.8 | 19.66 | - | 19.66 |
| 10:00 AM | 11:00 AM | 21.9 | 63.3 | 63.6 | 23.13 | - | 23.13 |
| 11:00 AM | 12:00 PM | 21.9 | 72.8 | 73.2 | 27.17 | - | 27.17 |
| 12:00 PM | 1:00 PM | 21.9 | 83.2 | 83.5 | 31.27 | - | 31.27 |
| 1:00 PM | 2:00 PM | 21.9 | 93.3 | 93.6 | 35.13 | - | 35.13 |
| 2:00 PM | 3:00 PM | 21.9 | 102.0 | 102.3 | 38.13 | - | 38.13 |
| 3:00 PM | 4:00 PM | 21.9 | 110.5 | 110.8 | 41.86 | - | 41.86 |
| 4:00 PM | 5:00 PM | 21.9 | 121.2 | 121.5 | 46.52 | - | 46.52 |
| 5:00 PM | 6:00 PM | 21.9 | 134.4 | 134.7 | 51.98 | - | 51.98 |
| 6:00 PM | 7:00 PM | 21.9 | 144.8 | 145.2 | 54.45 | - | 54.45 |
| 7:00 PM | 8:00 PM | 21.9 | 145.6 | 145.9 | 52.58 | - | 52.58 |
| 8:00 PM | 9:00 PM | 21.9 | 139.2 | 139.5 | 49.41 | - | 49.41 |
| 9:00 PM | 10:00 PM | 21.9 | 129.5 | 129.8 | 44.93 | - | 44.93 |
| 10:00 PM | 11:00 PM | 21.9 | 116.5 | 116.8 | 39.16 | - | 39.16 |
| 11:00 PM | 12:00 AM | 21.9 | 100.4 | 100.7 | 32.22 | - | 32.22 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/22/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 3, Pre-Stage A | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.2 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.2 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.2 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.2 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.2 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.3 | 0.00 | - | 0.00 |
| 6:00 AM | 7:00 AM | 32.1 | 0.6 | 1.2 | 3.51 | - | 3.51 |
| 7:00 AM | 8:00 AM | 32.1 | 7.0 | 7.3 | 6.24 | - | 6.24 |
| 8:00 AM | 9:00 AM | 32.1 | 16.7 | 17.1 | 11.70 | - | 11.70 |
| 9:00 AM | 10:00 AM | 32.1 | 24.5 | 24.8 | 15.92 | - | 15.92 |
| 10:00 AM | 11:00 AM | 32.1 | 28.7 | 29.0 | 17.03 | - | 17.03 |
| 11:00 AM | 12:00 PM | 32.1 | 31.0 | 31.3 | 18.81 | - | 18.81 |
| 12:00 PM | 1:00 PM | 32.1 | 33.9 | 34.2 | 20.67 | - | 20.67 |
| 1:00 PM | 2:00 PM | 32.1 | 36.6 | 36.9 | 22.23 | - | 22.23 |
| 2:00 PM | 3:00 PM | 32.1 | 38.2 | 38.6 | 22.77 | - | 22.77 |
| 3:00 PM | 4:00 PM | 32.1 | 39.8 | 40.1 | 24.18 | - | 24.18 |
| 4:00 PM | 5:00 PM | 32.1 | 42.9 | 43.2 | 26.71 | - | 26.71 |
| 5:00 PM | 6:00 PM | 32.1 | 48.1 | 48.5 | 30.78 | - | 30.78 |
| 6:00 PM | 7:00 PM | 32.1 | 51.3 | 51.6 | 30.70 | - | 30.70 |
| 7:00 PM | 8:00 PM | 32.1 | 47.1 | 47.4 | 25.45 | - | 25.45 |
| 8:00 PM | 9:00 PM | 32.1 | 37.5 | 37.9 | 18.67 | - | 18.67 |
| 9:00 PM | 10:00 PM | 32.1 | 25.5 | 25.9 | 10.33 | - | 10.33 |
| 10:00 PM | 11:00 PM | 32.1 | 12.2 | 12.5 | 4.26 | - | 4.26 |
| 11:00 PM | 12:00 AM | 32.1 | 2.6 | 3.0 | 0.00 | - | 0.00 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 4, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 29.7 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 1:00 AM | 2:00 AM | 29.9 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 2:00 AM | 3:00 AM | 30.0 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 3:00 AM | 4:00 AM | 30.0 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 4:00 AM | 5:00 AM | 29.7 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 5:00 AM | 6:00 AM | 29.0 | 0.4 | 0.7 | 1.06 | - | 1.06 |
| 6:00 AM | 7:00 AM | 23.6 | 3.2 | 3.5 | 2.81 | - | 2.81 |
| 7:00 AM | 8:00 AM | 23.6 | 16.2 | 16.5 | 8.26 | - | 8.26 |
| 8:00 AM | 9:00 AM | 23.6 | 34.8 | 35.1 | 13.72 | - | 13.72 |
| 9:00 AM | 10:00 AM | 23.6 | 50.2 | 50.5 | 19.17 | - | 19.17 |
| 10:00 AM | 11:00 AM | 23.6 | 61.5 | 61.8 | 22.34 | - | 22.34 |
| 11:00 AM | 12:00 PM | 23.6 | 70.3 | 70.7 | 26.11 | - | 26.11 |
| 12:00 PM | 1:00 PM | 23.6 | 80.0 | 80.3 | 29.94 | - | 29.94 |
| 1:00 PM | 2:00 PM | 23.6 | 89.4 | 89.7 | 33.51 | - | 33.51 |
| 2:00 PM | 3:00 PM | 23.6 | 97.3 | 97.7 | 36.20 | - | 36.20 |
| 3:00 PM | 4:00 PM | 23.6 | 105.1 | 105.4 | 39.64 | - | 39.64 |
| 4:00 PM | 5:00 PM | 23.6 | 115.1 | 115.4 | 44.05 | - | 44.05 |
| 5:00 PM | 6:00 PM | 23.6 | 127.8 | 128.2 | 49.50 | - | 49.50 |
| 6:00 PM | 7:00 PM | 23.6 | 137.7 | 138.1 | 51.64 | - | 51.64 |
| 7:00 PM | 8:00 PM | 23.6 | 137.4 | 137.8 | 49.28 | - | 49.28 |
| 8:00 PM | 9:00 PM | 23.6 | 129.7 | 130.1 | 45.58 | - | 45.58 |
| 9:00 PM | 10:00 PM | 23.6 | 118.6 | 118.9 | 40.51 | - | 40.51 |
| 10:00 PM | 11:00 PM | 23.6 | 104.0 | 104.4 | 34.11 | - | 34.11 |
| 11:00 PM | 12:00 AM | 23.6 | 86.2 | 86.6 | 26.50 | - | 26.50 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 4, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 27.3 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 1:00 AM | 2:00 AM | 27.5 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 2:00 AM | 3:00 AM | 27.6 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 3:00 AM | 4:00 AM | 27.6 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 4:00 AM | 5:00 AM | 27.3 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 5:00 AM | 6:00 AM | 26.6 | 0.6 | 0.9 | 1.23 | - | 1.23 |
| 6:00 AM | 7:00 AM | 21.5 | 4.3 | 4.6 | 3.22 | - | 3.22 |
| 7:00 AM | 8:00 AM | 21.5 | 19.2 | 19.5 | 8.67 | - | 8.67 |
| 8:00 AM | 9:00 AM | 21.5 | 40.1 | 40.4 | 14.13 | - | 14.13 |
| 9:00 AM | 10:00 AM | 21.5 | 57.6 | 57.9 | 19.58 | - | 19.58 |
| 10:00 AM | 11:00 AM | 21.5 | 70.9 | 71.2 | 23.12 | - | 23.12 |
| 11:00 AM | 12:00 PM | 21.5 | 81.7 | 82.0 | 27.22 | - | 27.22 |
| 12:00 PM | 1:00 PM | 21.5 | 93.4 | 93.7 | 31.39 | - | 31.39 |
| 1:00 PM | 2:00 PM | 21.5 | 104.8 | 105.2 | 35.31 | - | 35.31 |
| 2:00 PM | 3:00 PM | 21.5 | 114.7 | 115.1 | 38.38 | - | 38.38 |
| 3:00 PM | 4:00 PM | 21.5 | 124.4 | 124.8 | 42.17 | - | 42.17 |
| 4:00 PM | 5:00 PM | 21.5 | 136.5 | 136.8 | 46.90 | - | 46.90 |
| 5:00 PM | 6:00 PM | 21.5 | 151.3 | 151.7 | 52.35 | - | 52.35 |
| 6:00 PM | 7:00 PM | 21.5 | 163.1 | 163.5 | 54.90 | - | 54.90 |
| 7:00 PM | 8:00 PM | 21.5 | 164.2 | 164.6 | 53.14 | - | 53.14 |
| 8:00 PM | 9:00 PM | 21.5 | 157.5 | 157.8 | 50.11 | - | 50.11 |
| 9:00 PM | 10:00 PM | 21.5 | 147.0 | 147.4 | 45.77 | - | 45.77 |
| 10:00 PM | 11:00 PM | 21.5 | 133.0 | 133.3 | 40.15 | - | 40.15 |
| 11:00 PM | 12:00 AM | 21.5 | 115.4 | 115.7 | 33.37 | - | 33.37 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/22/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 4, Pre-Stage A | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.2 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.2 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.2 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.2 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.2 | 0.00 | - | 0.00 |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.2 | 0.49 | - | 0.49 |
| 6:00 AM | 7:00 AM | 31.7 | 0.2 | 0.4 | 0.65 | - | 0.65 |
| 7:00 AM | 8:00 AM | 31.7 | 7.0 | 7.3 | 6.17 | - | 6.17 |
| 8:00 AM | 9:00 AM | 31.7 | 18.8 | 19.1 | 11.62 | - | 11.62 |
| 9:00 AM | 10:00 AM | 31.7 | 27.5 | 27.8 | 15.95 | - | 15.95 |
| 10:00 AM | 11:00 AM | 31.7 | 32.3 | 32.7 | 17.16 | - | 17.16 |
| 11:00 AM | 12:00 PM | 31.7 | 35.1 | 35.4 | 19.06 | - | 19.06 |
| 12:00 PM | 1:00 PM | 31.7 | 38.5 | 38.8 | 21.02 | - | 21.02 |
| 1:00 PM | 2:00 PM | 31.7 | 41.7 | 42.0 | 22.70 | - | 22.70 |
| 2:00 PM | 3:00 PM | 31.7 | 43.7 | 44.0 | 23.36 | - | 23.36 |
| 3:00 PM | 4:00 PM | 31.7 | 45.6 | 46.0 | 24.88 | - | 24.88 |
| 4:00 PM | 5:00 PM | 31.7 | 49.3 | 49.6 | 27.51 | - | 27.51 |
| 5:00 PM | 6:00 PM | 31.7 | 55.2 | 55.6 | 31.68 | - | 31.68 |
| 6:00 PM | 7:00 PM | 31.7 | 58.9 | 59.3 | 31.72 | - | 31.72 |
| 7:00 PM | 8:00 PM | 31.7 | 54.5 | 54.8 | 26.62 | - | 26.62 |
| 8:00 PM | 9:00 PM | 31.7 | 44.2 | 44.5 | 19.99 | - | 19.99 |
| 9:00 PM | 10:00 PM | 31.7 | 31.2 | 31.5 | 11.80 | - | 11.80 |
| 10:00 PM | 11:00 PM | 31.7 | 15.3 | 15.6 | 2.09 | - | 2.09 |
| 11:00 PM | 12:00 AM | 31.7 | 3.2 | 3.5 | 0.00 | - | 0.00 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## WARNING

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 1, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.3 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 1:00 AM | 2:00 AM | 30.6 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 2:00 AM | 3:00 AM | 30.6 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 3:00 AM | 4:00 AM | 30.5 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 4:00 AM | 5:00 AM | 30.3 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 5:00 AM | 6:00 AM | 30.0 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 6:00 AM | 7:00 AM | 29.1 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 7:00 AM | 8:00 AM | 28.0 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 8:00 AM | 9:00 AM | 27.0 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 9:00 AM | 10:00 AM | 26.7 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 10:00 AM | 11:00 AM | 25.6 | 0.7 | 1.0 | 1.81 | - | 1.81 |
| 11:00 AM | 12:00 PM | 24.0 | 2.2 | 2.5 | 2.65 | - | 2.65 |
| 12:00 PM | 1:00 PM | 24.0 | 5.0 | 5.3 | 4.46 | - | 4.46 |
| 1:00 PM | 2:00 PM | 24.0 | 9.2 | 9.5 | 6.97 | - | 6.97 |
| 2:00 PM | 3:00 PM | 24.0 | 15.3 | 15.6 | 10.87 | - | 10.87 |
| 3:00 PM | 4:00 PM | 24.0 | 25.3 | 25.6 | 16.32 | - | 16.32 |
| 4:00 PM | 5:00 PM | 24.0 | 38.9 | 39.2 | 21.78 | - | 21.78 |
| 5:00 PM | 6:00 PM | 24.0 | 54.5 | 54.8 | 27.23 | - | 27.23 |
| 6:00 PM | 7:00 PM | 24.0 | 64.4 | 64.7 | 28.87 | - | 28.87 |
| 7:00 PM | 8:00 PM | 24.0 | 65.2 | 65.5 | 28.08 | - | 28.08 |
| 8:00 PM | 9:00 PM | 24.0 | 61.3 | 61.6 | 24.77 | - | 24.77 |
| 9:00 PM | 10:00 PM | 24.0 | 53.2 | 53.5 | 19.63 | - | 19.63 |
| 10:00 PM | 11:00 PM | 24.0 | 41.1 | 41.4 | 12.11 | - | 12.11 |
| 11:00 PM | 12:00 AM | 24.0 | 25.6 | 25.9 | 3.84 | - | 3.84 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 1, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 27.9 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 1:00 AM | 2:00 AM | 28.2 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 2:00 AM | 3:00 AM | 28.2 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 3:00 AM | 4:00 AM | 28.1 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 4:00 AM | 5:00 AM | 27.9 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 5:00 AM | 6:00 AM | 27.6 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 6:00 AM | 7:00 AM | 26.7 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 7:00 AM | 8:00 AM | 25.6 | 0.5 | 0.7 | 0.97 | - | 0.97 |
| 8:00 AM | 9:00 AM | 24.3 | 0.5 | 0.7 | 0.97 | - | 0.97 |
| 9:00 AM | 10:00 AM | 23.9 | 0.6 | 0.8 | 1.07 | - | 1.07 |
| 10:00 AM | 11:00 AM | 21.9 | 0.9 | 1.1 | 1.34 | - | 1.34 |
| 11:00 AM | 12:00 PM | 21.9 | 3.1 | 3.4 | 3.32 | - | 3.32 |
| 12:00 PM | 1:00 PM | 21.9 | 7.6 | 7.9 | 5.57 | - | 5.57 |
| 1:00 PM | 2:00 PM | 21.9 | 13.0 | 13.3 | 8.48 | - | 8.48 |
| 2:00 PM | 3:00 PM | 21.9 | 20.6 | 20.9 | 12.72 | - | 12.72 |
| 3:00 PM | 4:00 PM | 21.9 | 32.2 | 32.5 | 18.17 | - | 18.17 |
| 4:00 PM | 5:00 PM | 21.9 | 47.5 | 47.8 | 23.63 | - | 23.63 |
| 5:00 PM | 6:00 PM | 21.9 | 64.9 | 65.2 | 29.08 | - | 29.08 |
| 6:00 PM | 7:00 PM | 21.9 | 76.4 | 76.7 | 31.16 | - | 31.16 |
| 7:00 PM | 8:00 PM | 21.9 | 78.3 | 78.6 | 30.91 | - | 30.91 |
| 8:00 PM | 9:00 PM | 21.9 | 75.2 | 75.5 | 28.25 | - | 28.25 |
| 9:00 PM | 10:00 PM | 21.9 | 67.7 | 68.0 | 23.84 | - | 23.84 |
| 10:00 PM | 11:00 PM | 21.9 | 55.9 | 56.2 | 17.15 | - | 17.15 |
| 11:00 PM | 12:00 AM | 21.9 | 40.5 | 40.8 | 9.42 | - | 9.42 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 2, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.3 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 1:00 AM | 2:00 AM | 30.6 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 2:00 AM | 3:00 AM | 30.6 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 3:00 AM | 4:00 AM | 30.5 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 4:00 AM | 5:00 AM | 30.3 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 5:00 AM | 6:00 AM | 30.0 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 6:00 AM | 7:00 AM | 29.1 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 7:00 AM | 8:00 AM | 28.0 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 8:00 AM | 9:00 AM | 27.0 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 9:00 AM | 10:00 AM | 26.7 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 10:00 AM | 11:00 AM | 25.6 | 0.6 | 0.9 | 1.39 | - | 1.39 |
| 11:00 AM | 12:00 PM | 24.0 | 2.4 | 2.8 | 2.23 | - | 2.23 |
| 12:00 PM | 1:00 PM | 24.0 | 6.0 | 6.4 | 4.05 | - | 4.05 |
| 1:00 PM | 2:00 PM | 24.0 | 11.2 | 11.6 | 6.55 | - | 6.55 |
| 2:00 PM | 3:00 PM | 24.0 | 18.9 | 19.3 | 10.45 | - | 10.45 |
| 3:00 PM | 4:00 PM | 24.0 | 31.5 | 31.9 | 15.91 | - | 15.91 |
| 4:00 PM | 5:00 PM | 24.0 | 48.7 | 49.0 | 21.36 | - | 21.36 |
| 5:00 PM | 6:00 PM | 24.0 | 68.3 | 68.6 | 26.81 | - | 26.81 |
| 6:00 PM | 7:00 PM | 24.0 | 80.7 | 81.0 | 28.46 | - | 28.46 |
| 7:00 PM | 8:00 PM | 24.0 | 81.7 | 82.0 | 27.66 | - | 27.66 |
| 8:00 PM | 9:00 PM | 24.0 | 76.7 | 77.1 | 24.36 | - | 24.36 |
| 9:00 PM | 10:00 PM | 24.0 | 66.6 | 66.9 | 19.21 | - | 19.21 |
| 10:00 PM | 11:00 PM | 24.0 | 51.3 | 51.6 | 11.70 | - | 11.70 |
| 11:00 PM | 12:00 AM | 24.0 | 31.7 | 32.0 | 3.42 | - | 3.42 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 2, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 27.9 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 1:00 AM | 2:00 AM | 28.2 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 2:00 AM | 3:00 AM | 28.2 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 3:00 AM | 4:00 AM | 28.1 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 4:00 AM | 5:00 AM | 27.9 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 5:00 AM | 6:00 AM | 27.6 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 6:00 AM | 7:00 AM | 26.7 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 7:00 AM | 8:00 AM | 25.6 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 8:00 AM | 9:00 AM | 24.3 | 0.4 | 0.5 | 0.55 | - | 0.55 |
| 9:00 AM | 10:00 AM | 23.9 | 0.4 | 0.6 | 0.65 | - | 0.65 |
| 10:00 AM | 11:00 AM | 21.9 | 0.8 | 0.9 | 0.92 | - | 0.92 |
| 11:00 AM | 12:00 PM | 21.9 | 3.5 | 3.8 | 2.90 | - | 2.90 |
| 12:00 PM | 1:00 PM | 21.9 | 9.1 | 9.5 | 5.15 | - | 5.15 |
| 1:00 PM | 2:00 PM | 21.9 | 16.0 | 16.4 | 8.06 | - | 8.06 |
| 2:00 PM | 3:00 PM | 21.9 | 25.6 | 25.9 | 12.30 | - | 12.30 |
| 3:00 PM | 4:00 PM | 21.9 | 40.2 | 40.5 | 17.76 | - | 17.76 |
| 4:00 PM | 5:00 PM | 21.9 | 59.4 | 59.8 | 23.21 | - | 23.21 |
| 5:00 PM | 6:00 PM | 21.9 | 81.2 | 81.6 | 28.66 | - | 28.66 |
| 6:00 PM | 7:00 PM | 21.9 | 95.6 | 95.9 | 30.75 | - | 30.75 |
| 7:00 PM | 8:00 PM | 21.9 | 98.0 | 98.3 | 30.49 | - | 30.49 |
| 8:00 PM | 9:00 PM | 21.9 | 94.1 | 94.5 | 27.84 | - | 27.84 |
| 9:00 PM | 10:00 PM | 21.9 | 84.6 | 85.0 | 23.42 | - | 23.42 |
| 10:00 PM | 11:00 PM | 21.9 | 69.8 | 70.1 | 16.73 | - | 16.73 |
| 11:00 PM | 12:00 AM | 21.9 | 50.4 | 50.7 | 9.00 | - | 9.00 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## WARNING

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 3, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.3 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 1:00 AM | 2:00 AM | 30.4 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 2:00 AM | 3:00 AM | 30.5 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 3:00 AM | 4:00 AM | 30.5 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 4:00 AM | 5:00 AM | 30.4 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 5:00 AM | 6:00 AM | 29.8 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 6:00 AM | 7:00 AM | 28.4 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 7:00 AM | 8:00 AM | 26.1 | 0.4 | 0.7 | 0.96 | - | 0.96 |
| 8:00 AM | 9:00 AM | 24.0 | 1.1 | 1.3 | 1.32 | - | 1.32 |
| 9:00 AM | 10:00 AM | 24.0 | 2.3 | 2.7 | 2.11 | - | 2.11 |
| 10:00 AM | 11:00 AM | 24.0 | 4.5 | 4.9 | 3.27 | - | 3.27 |
| 11:00 AM | 12:00 PM | 24.0 | 8.4 | 8.7 | 5.49 | - | 5.49 |
| 12:00 PM | 1:00 PM | 24.0 | 15.6 | 15.9 | 9.56 | - | 9.56 |
| 1:00 PM | 2:00 PM | 24.0 | 25.8 | 26.2 | 14.50 | - | 14.50 |
| 2:00 PM | 3:00 PM | 24.0 | 37.2 | 37.5 | 19.53 | - | 19.53 |
| 3:00 PM | 4:00 PM | 24.0 | 52.0 | 52.4 | 24.98 | - | 24.98 |
| 4:00 PM | 5:00 PM | 24.0 | 71.7 | 72.1 | 30.44 | - | 30.44 |
| 5:00 PM | 6:00 PM | 24.0 | 91.6 | 92.0 | 35.89 | - | 35.89 |
| 6:00 PM | 7:00 PM | 24.0 | 103.0 | 103.3 | 37.71 | - | 37.71 |
| 7:00 PM | 8:00 PM | 24.0 | 103.5 | 103.8 | 36.32 | - | 36.32 |
| 8:00 PM | 9:00 PM | 24.0 | 100.3 | 100.6 | 34.87 | - | 34.87 |
| 9:00 PM | 10:00 PM | 24.0 | 93.8 | 94.2 | 30.70 | - | 30.70 |
| 10:00 PM | 11:00 PM | 24.0 | 82.1 | 82.5 | 24.62 | - | 24.62 |
| 11:00 PM | 12:00 AM | 24.0 | 65.2 | 65.5 | 15.90 | - | 15.90 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 3, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 27.9 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 1:00 AM | 2:00 AM | 28.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 2:00 AM | 3:00 AM | 28.1 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 3:00 AM | 4:00 AM | 28.1 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 4:00 AM | 5:00 AM | 28.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 5:00 AM | 6:00 AM | 27.4 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 6:00 AM | 7:00 AM | 25.9 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 7:00 AM | 8:00 AM | 21.9 | 0.7 | 1.0 | 1.29 | - | 1.29 |
| 8:00 AM | 9:00 AM | 21.9 | 2.0 | 2.3 | 1.80 | - | 1.80 |
| 9:00 AM | 10:00 AM | 21.9 | 4.5 | 4.8 | 3.07 | - | 3.07 |
| 10:00 AM | 11:00 AM | 21.9 | 8.1 | 8.5 | 4.69 | - | 4.69 |
| 11:00 AM | 12:00 PM | 21.9 | 13.5 | 13.9 | 7.32 | - | 7.32 |
| 12:00 PM | 1:00 PM | 21.9 | 22.4 | 22.8 | 11.73 | - | 11.73 |
| 1:00 PM | 2:00 PM | 21.9 | 34.7 | 35.0 | 16.96 | - | 16.96 |
| 2:00 PM | 3:00 PM | 21.9 | 48.1 | 48.4 | 22.29 | - | 22.29 |
| 3:00 PM | 4:00 PM | 21.9 | 64.9 | 65.3 | 27.74 | - | 27.74 |
| 4:00 PM | 5:00 PM | 21.9 | 86.8 | 87.1 | 33.20 | - | 33.20 |
| 5:00 PM | 6:00 PM | 21.9 | 108.8 | 109.2 | 38.65 | - | 38.65 |
| 6:00 PM | 7:00 PM | 21.9 | 122.0 | 122.4 | 40.90 | - | 40.90 |
| 7:00 PM | 8:00 PM | 21.9 | 123.9 | 124.2 | 40.08 | - | 40.08 |
| 8:00 PM | 9:00 PM | 21.9 | 121.7 | 122.0 | 39.20 | - | 39.20 |
| 9:00 PM | 10:00 PM | 21.9 | 116.1 | 116.5 | 35.72 | - | 35.72 |
| 10:00 PM | 11:00 PM | 21.9 | 105.0 | 105.3 | 30.40 | - | 30.40 |
| 11:00 PM | 12:00 AM | 21.9 | 88.3 | 88.6 | 22.56 | - | 22.56 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/22/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 3, Pre-Stage A | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.2 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.2 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.2 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.2 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.2 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.3 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.3 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.1 | 0.3 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.1 | 0.3 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.1 | 0.3 | 0.00 | - | 0.00 |
| 10:00 AM | 11:00 AM | - | 0.1 | 0.3 | 0.66 | - | 0.66 |
| 11:00 AM | 12:00 PM | 32.1 | 0.2 | 0.5 | 0.87 | - | 0.87 |
| 12:00 PM | 1:00 PM | 32.1 | 1.9 | 2.2 | 3.12 | - | 3.12 |
| 1:00 PM | 2:00 PM | 32.1 | 6.2 | 6.5 | 6.31 | - | 6.31 |
| 2:00 PM | 3:00 PM | 32.1 | 11.3 | 11.7 | 9.62 | - | 9.62 |
| 3:00 PM | 4:00 PM | 32.1 | 19.8 | 20.2 | 15.07 | - | 15.07 |
| 4:00 PM | 5:00 PM | 32.1 | 32.9 | 33.3 | 20.53 | - | 20.53 |
| 5:00 PM | 6:00 PM | 32.1 | 46.2 | 46.5 | 25.98 | - | 25.98 |
| 6:00 PM | 7:00 PM | 32.1 | 52.0 | 52.4 | 25.63 | - | 25.63 |
| 7:00 PM | 8:00 PM | 32.1 | 48.6 | 48.9 | 21.64 | - | 21.64 |
| 8:00 PM | 9:00 PM | 32.1 | 42.2 | 42.5 | 17.57 | - | 17.57 |
| 9:00 PM | 10:00 PM | 32.1 | 33.2 | 33.6 | 10.41 | - | 10.41 |
| 10:00 PM | 11:00 PM | 32.1 | 20.4 | 20.8 | 3.05 | - | 3.05 |
| 11:00 PM | 12:00 AM | 32.1 | 6.8 | 7.1 | 0.89 | - | 0.89 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 4, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 29.8 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 1:00 AM | 2:00 AM | 29.9 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 2:00 AM | 3:00 AM | 30.1 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 3:00 AM | 4:00 AM | 30.0 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 4:00 AM | 5:00 AM | 29.9 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 5:00 AM | 6:00 AM | 29.3 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 6:00 AM | 7:00 AM | 27.9 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 7:00 AM | 8:00 AM | 25.4 | 0.4 | 0.7 | 0.87 | - | 0.87 |
| 8:00 AM | 9:00 AM | 23.6 | 1.2 | 1.5 | 1.26 | - | 1.26 |
| 9:00 AM | 10:00 AM | 23.6 | 2.9 | 3.2 | 2.16 | - | 2.16 |
| 10:00 AM | 11:00 AM | 23.6 | 5.6 | 5.9 | 3.41 | - | 3.41 |
| 11:00 AM | 12:00 PM | 23.6 | 10.1 | 10.4 | 5.72 | - | 5.72 |
| 12:00 PM | 1:00 PM | 23.6 | 18.3 | 18.6 | 9.86 | - | 9.86 |
| 1:00 PM | 2:00 PM | 23.6 | 29.9 | 30.2 | 14.86 | - | 14.86 |
| 2:00 PM | 3:00 PM | 23.6 | 42.7 | 43.0 | 19.95 | - | 19.95 |
| 3:00 PM | 4:00 PM | 23.6 | 59.3 | 59.6 | 25.41 | - | 25.41 |
| 4:00 PM | 5:00 PM | 23.6 | 81.2 | 81.5 | 30.86 | - | 30.86 |
| 5:00 PM | 6:00 PM | 23.6 | 103.4 | 103.7 | 36.32 | - | 36.32 |
| 6:00 PM | 7:00 PM | 23.6 | 116.2 | 116.5 | 38.22 | - | 38.22 |
| 7:00 PM | 8:00 PM | 23.6 | 117.0 | 117.3 | 36.95 | - | 36.95 |
| 8:00 PM | 9:00 PM | 23.6 | 113.7 | 114.0 | 35.61 | - | 35.61 |
| 9:00 PM | 10:00 PM | 23.6 | 106.8 | 107.2 | 31.58 | - | 31.58 |
| 10:00 PM | 11:00 PM | 23.6 | 94.2 | 94.5 | 25.66 | - | 25.66 |
| 11:00 PM | 12:00 AM | 23.6 | 75.8 | 76.1 | 17.12 | - | 17.12 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 4, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 27.4 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 1:00 AM | 2:00 AM | 27.5 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 2:00 AM | 3:00 AM | 27.7 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 3:00 AM | 4:00 AM | 27.6 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 4:00 AM | 5:00 AM | 27.5 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 5:00 AM | 6:00 AM | 26.9 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 6:00 AM | 7:00 AM | 25.5 | 0.3 | 0.5 | 0.50 | - | 0.50 |
| 7:00 AM | 8:00 AM | 21.5 | 0.5 | 0.7 | 0.68 | - | 0.68 |
| 8:00 AM | 9:00 AM | 21.5 | 2.1 | 2.4 | 1.83 | - | 1.83 |
| 9:00 AM | 10:00 AM | 21.5 | 5.5 | 5.8 | 3.20 | - | 3.20 |
| 10:00 AM | 11:00 AM | 21.5 | 9.8 | 10.2 | 4.89 | - | 4.89 |
| 11:00 AM | 12:00 PM | 21.5 | 16.1 | 16.4 | 7.60 | - | 7.60 |
| 12:00 PM | 1:00 PM | 21.5 | 26.2 | 26.5 | 12.07 | - | 12.07 |
| 1:00 PM | 2:00 PM | 21.5 | 40.0 | 40.3 | 17.35 | - | 17.35 |
| 2:00 PM | 3:00 PM | 21.5 | 55.1 | 55.4 | 22.73 | - | 22.73 |
| 3:00 PM | 4:00 PM | 21.5 | 74.0 | 74.3 | 28.18 | - | 28.18 |
| 4:00 PM | 5:00 PM | 21.5 | 98.3 | 98.6 | 33.64 | - | 33.64 |
| 5:00 PM | 6:00 PM | 21.5 | 122.8 | 123.2 | 39.09 | - | 39.09 |
| 6:00 PM | 7:00 PM | 21.5 | 137.7 | 138.0 | 41.42 | - | 41.42 |
| 7:00 PM | 8:00 PM | 21.5 | 140.0 | 140.3 | 40.71 | - | 40.71 |
| 8:00 PM | 9:00 PM | 21.5 | 137.9 | 138.2 | 39.93 | - | 39.93 |
| 9:00 PM | 10:00 PM | 21.5 | 132.0 | 132.3 | 36.58 | - | 36.58 |
| 10:00 PM | 11:00 PM | 21.5 | 120.0 | 120.3 | 31.42 | - | 31.42 |
| 11:00 PM | 12:00 AM | 21.5 | 101.8 | 102.1 | 23.75 | - | 23.75 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/22/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 4, Pre-Stage A | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.2 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.2 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.2 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.2 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.2 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.2 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.2 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.1 | 0.3 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.1 | 0.3 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.1 | 0.3 | 0.00 | - | 0.00 |
| 10:00 AM | 11:00 AM | 34.6 | 0.1 | 0.3 | 0.57 | - | 0.57 |
| 11:00 AM | 12:00 PM | 31.7 | 0.3 | 0.5 | 0.86 | - | 0.86 |
| 12:00 PM | 1:00 PM | 31.7 | 2.4 | 2.7 | 3.19 | - | 3.19 |
| 1:00 PM | 2:00 PM | 31.7 | 7.3 | 7.6 | 6.49 | - | 6.49 |
| 2:00 PM | 3:00 PM | 31.7 | 13.2 | 13.5 | 9.90 | - | 9.90 |
| 3:00 PM | 4:00 PM | 31.7 | 22.8 | 23.1 | 15.35 | - | 15.35 |
| 4:00 PM | 5:00 PM | 31.7 | 37.3 | 37.7 | 20.81 | - | 20.81 |
| 5:00 PM | 6:00 PM | 31.7 | 52.1 | 52.4 | 26.26 | - | 26.26 |
| 6:00 PM | 7:00 PM | 31.7 | 58.7 | 59.0 | 26.03 | - | 26.03 |
| 7:00 PM | 8:00 PM | 31.7 | 55.1 | 55.4 | 22.18 | - | 22.18 |
| 8:00 PM | 9:00 PM | 31.7 | 48.2 | 48.6 | 18.25 | - | 18.25 |
| 9:00 PM | 10:00 PM | 31.7 | 38.6 | 38.9 | 11.24 | - | 11.24 |
| 10:00 PM | 11:00 PM | 31.7 | 24.4 | 24.8 | 3.16 | - | 3.16 |
| 11:00 PM | 12:00 AM | 31.7 | 9.7 | 10.0 | 2.30 | - | 2.30 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 1, Stage 1 | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.1 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.1 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.1 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.1 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.1 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.1 | 0.00 | - | 0.00 |
| 6:00 AM | 7:00 AM | - | 0.2 | 0.5 | 1.51 | - | 1.51 |
| 7:00 AM | 8:00 AM | 34.2 | 3.5 | 3.8 | 3.98 | - | 3.98 |
| 8:00 AM | 9:00 AM | 34.2 | 5.2 | 5.5 | 2.83 | - | 2.83 |
| 9:00 AM | 10:00 AM | 34.2 | 2.0 | 2.3 | 0.00 | - | 0.00 |
| 10:00 AM | 11:00 AM | - | 0.0 | 0.2 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.0 | 0.2 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.0 | 0.2 | - | - | - |
| 1:00 PM | 2:00 PM | - | 0.0 | 0.2 | - | - | - |
| 2:00 PM | 3:00 PM | - | 0.1 | 0.2 | 0.00 | - | 0.00 |
| 3:00 PM | 4:00 PM | - | 0.1 | 0.2 | 0.45 | - | 0.45 |
| 4:00 PM | 5:00 PM | 34.2 | 0.3 | 0.5 | 0.74 | - | 0.74 |
| 5:00 PM | 6:00 PM | 34.2 | 1.1 | 1.4 | 1.48 | - | 1.48 |
| 6:00 PM | 7:00 PM | 34.2 | 0.9 | 1.1 | 0.00 | - | 0.00 |
| 7:00 PM | 8:00 PM | - | 0.0 | 0.1 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.0 | 0.1 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.1 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.1 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.1 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 1, Stage 2 | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.1 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.1 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.1 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.1 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.1 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.2 | 0.00 | - | 0.00 |
| 6:00 AM | 7:00 AM | - | 0.3 | 0.7 | 1.81 | - | 1.81 |
| 7:00 AM | 8:00 AM | 32.1 | 4.4 | 4.7 | 4.50 | - | 4.50 |
| 8:00 AM | 9:00 AM | 32.1 | 7.3 | 7.7 | 3.98 | - | 3.98 |
| 9:00 AM | 10:00 AM | 32.1 | 3.3 | 3.7 | 0.28 | - | 0.28 |
| 10:00 AM | 11:00 AM | - | 0.1 | 0.2 | 0.00 | - | 0.00 |
| 11:00 AM | 12:00 PM | - | 0.1 | 0.2 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.1 | 0.2 | - | - | - |
| 1:00 PM | 2:00 PM | - | 0.1 | 0.2 | 0.00 | - | 0.00 |
| 2:00 PM | 3:00 PM | 34.9 | 0.1 | 0.2 | 0.28 | - | 0.28 |
| 3:00 PM | 4:00 PM | 32.1 | 0.1 | 0.2 | 0.30 | - | 0.30 |
| 4:00 PM | 5:00 PM | 32.1 | 0.9 | 1.1 | 1.35 | - | 1.35 |
| 5:00 PM | 6:00 PM | 32.1 | 3.0 | 3.3 | 2.67 | - | 2.67 |
| 6:00 PM | 7:00 PM | 32.1 | 2.0 | 2.4 | 0.00 | - | 0.00 |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.2 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.0 | 0.2 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.2 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.2 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.1 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 1, Stage 3 | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.1 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.1 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.1 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.1 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.1 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.1 | 0.00 | - | 0.00 |
| 6:00 AM | 7:00 AM | - | 0.2 | 0.5 | 1.51 | - | 1.51 |
| 7:00 AM | 8:00 AM | 34.2 | 3.5 | 3.8 | 3.98 | - | 3.98 |
| 8:00 AM | 9:00 AM | 34.2 | 5.2 | 5.5 | 2.83 | - | 2.83 |
| 9:00 AM | 10:00 AM | 34.2 | 2.0 | 2.3 | 0.00 | - | 0.00 |
| 10:00 AM | 11:00 AM | - | 0.0 | 0.2 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.0 | 0.2 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.0 | 0.2 | - | - | - |
| 1:00 PM | 2:00 PM | - | 0.0 | 0.2 | - | - | - |
| 2:00 PM | 3:00 PM | - | 0.1 | 0.2 | 0.00 | - | 0.00 |
| 3:00 PM | 4:00 PM | - | 0.1 | 0.2 | 0.45 | - | 0.45 |
| 4:00 PM | 5:00 PM | 34.2 | 0.3 | 0.5 | 0.74 | - | 0.74 |
| 5:00 PM | 6:00 PM | 34.2 | 1.1 | 1.4 | 1.48 | - | 1.48 |
| 6:00 PM | 7:00 PM | 34.2 | 0.9 | 1.1 | 0.00 | - | 0.00 |
| 7:00 PM | 8:00 PM | - | 0.0 | 0.1 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.0 | 0.1 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.1 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.1 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.1 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 2, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.5 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 1:00 AM | 2:00 AM | 30.5 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 2:00 AM | 3:00 AM | 30.4 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 3:00 AM | 4:00 AM | 30.5 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 4:00 AM | 5:00 AM | 30.2 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 5:00 AM | 6:00 AM | 29.7 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 6:00 AM | 7:00 AM | 26.8 | 1.1 | 1.6 | 3.45 | - | 3.45 |
| 7:00 AM | 8:00 AM | 24.0 | 7.1 | 7.5 | 6.45 | - | 6.45 |
| 8:00 AM | 9:00 AM | 24.0 | 13.5 | 13.8 | 8.12 | - | 8.12 |
| 9:00 AM | 10:00 AM | 24.0 | 14.1 | 14.5 | 7.08 | - | 7.08 |
| 10:00 AM | 11:00 AM | 24.0 | 12.7 | 13.1 | 6.78 | - | 6.78 |
| 11:00 AM | 12:00 PM | 24.0 | 12.0 | 12.4 | 6.36 | - | 6.36 |
| 12:00 PM | 1:00 PM | 24.0 | 12.5 | 12.9 | 7.30 | - | 7.30 |
| 1:00 PM | 2:00 PM | 24.0 | 13.6 | 14.0 | 7.41 | - | 7.41 |
| 2:00 PM | 3:00 PM | 24.0 | 15.1 | 15.5 | 8.78 | - | 8.78 |
| 3:00 PM | 4:00 PM | 24.0 | 18.7 | 19.1 | 10.91 | - | 10.91 |
| 4:00 PM | 5:00 PM | 24.0 | 23.9 | 24.2 | 13.84 | - | 13.84 |
| 5:00 PM | 6:00 PM | 24.0 | 30.2 | 30.6 | 17.12 | - | 17.12 |
| 6:00 PM | 7:00 PM | 24.0 | 33.2 | 33.5 | 16.71 | - | 16.71 |
| 7:00 PM | 8:00 PM | 24.0 | 29.8 | 30.2 | 13.86 | - | 13.86 |
| 8:00 PM | 9:00 PM | 24.0 | 21.6 | 21.9 | 8.64 | - | 8.64 |
| 9:00 PM | 10:00 PM | 24.0 | 9.6 | 10.0 | 2.22 | - | 2.22 |
| 10:00 PM | 11:00 PM | 24.0 | 1.6 | 1.9 | 0.85 | - | 0.85 |
| 11:00 PM | 12:00 AM | 30.2 | 0.3 | 0.5 | 0.85 | - | 0.85 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 2, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 28.1 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 1:00 AM | 2:00 AM | 28.1 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 2:00 AM | 3:00 AM | 28.0 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 3:00 AM | 4:00 AM | 28.1 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 4:00 AM | 5:00 AM | 27.8 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 5:00 AM | 6:00 AM | 27.2 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 6:00 AM | 7:00 AM | 24.1 | 1.4 | 2.0 | 3.57 | - | 3.57 |
| 7:00 AM | 8:00 AM | 21.9 | 8.2 | 8.6 | 6.45 | - | 6.45 |
| 8:00 AM | 9:00 AM | 21.9 | 15.9 | 16.2 | 8.56 | - | 8.56 |
| 9:00 AM | 10:00 AM | 21.9 | 17.7 | 18.1 | 8.07 | - | 8.07 |
| 10:00 AM | 11:00 AM | 21.9 | 17.4 | 17.8 | 8.30 | - | 8.30 |
| 11:00 AM | 12:00 PM | 21.9 | 17.8 | 18.2 | 8.40 | - | 8.40 |
| 12:00 PM | 1:00 PM | 21.9 | 19.5 | 19.9 | 9.80 | - | 9.80 |
| 1:00 PM | 2:00 PM | 21.9 | 21.8 | 22.2 | 10.42 | - | 10.42 |
| 2:00 PM | 3:00 PM | 21.9 | 24.6 | 24.9 | 12.24 | - | 12.24 |
| 3:00 PM | 4:00 PM | 21.9 | 29.6 | 29.9 | 14.79 | - | 14.79 |
| 4:00 PM | 5:00 PM | 21.9 | 36.2 | 36.6 | 18.10 | - | 18.10 |
| 5:00 PM | 6:00 PM | 21.9 | 44.1 | 44.5 | 21.75 | - | 21.75 |
| 6:00 PM | 7:00 PM | 21.9 | 48.4 | 48.8 | 21.87 | - | 21.87 |
| 7:00 PM | 8:00 PM | 21.9 | 46.0 | 46.4 | 19.65 | - | 19.65 |
| 8:00 PM | 9:00 PM | 21.9 | 38.4 | 38.8 | 15.15 | - | 15.15 |
| 9:00 PM | 10:00 PM | 21.9 | 26.9 | 27.2 | 9.52 | - | 9.52 |
| 10:00 PM | 11:00 PM | 21.9 | 12.5 | 12.8 | 2.50 | - | 2.50 |
| 11:00 PM | 12:00 AM | 21.9 | 2.3 | 2.6 | 0.85 | - | 0.85 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 2, Pre-Stage | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.3 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.3 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.3 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.3 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.3 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.3 | 0.00 | - | 0.00 |
| 6:00 AM | 7:00 AM | - | 0.3 | 0.7 | 2.37 | - | 2.37 |
| 7:00 AM | 8:00 AM | 32.1 | 3.3 | 3.7 | 5.06 | - | 5.06 |
| 8:00 AM | 9:00 AM | 32.1 | 5.4 | 5.8 | 4.55 | - | 4.55 |
| 9:00 AM | 10:00 AM | 32.1 | 2.5 | 2.8 | 0.85 | - | 0.85 |
| 10:00 AM | 11:00 AM | - | 0.1 | 0.3 | 0.00 | - | 0.00 |
| 11:00 AM | 12:00 PM | - | 0.1 | 0.3 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.2 | 0.4 | - | - | - |
| 1:00 PM | 2:00 PM | - | 0.1 | 0.4 | 0.00 | - | 0.00 |
| 2:00 PM | 3:00 PM | 34.9 | 0.2 | 0.4 | 0.85 | - | 0.85 |
| 3:00 PM | 4:00 PM | 32.1 | 0.2 | 0.5 | 0.87 | - | 0.87 |
| 4:00 PM | 5:00 PM | 32.1 | 0.8 | 1.1 | 1.92 | - | 1.92 |
| 5:00 PM | 6:00 PM | 32.1 | 2.3 | 2.6 | 3.24 | - | 3.24 |
| 6:00 PM | 7:00 PM | 32.1 | 1.6 | 1.9 | 0.00 | - | 0.00 |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.3 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.1 | 0.3 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.3 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.1 | 0.3 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.1 | 0.3 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 3, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 1:00 AM | 2:00 AM | 30.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 2:00 AM | 3:00 AM | 30.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 3:00 AM | 4:00 AM | 30.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 4:00 AM | 5:00 AM | 30.1 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 5:00 AM | 6:00 AM | 29.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 6:00 AM | 7:00 AM | 28.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 7:00 AM | 8:00 AM | 26.9 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 8:00 AM | 9:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 9:00 AM | 10:00 AM | 28.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 10:00 AM | 11:00 AM | 28.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 11:00 AM | 12:00 PM | 28.9 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 12:00 PM | 1:00 PM | 28.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 1:00 PM | 2:00 PM | 28.3 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 2:00 PM | 3:00 PM | 28.1 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 3:00 PM | 4:00 PM | 27.9 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 4:00 PM | 5:00 PM | 24.7 | 0.4 | 0.7 | 0.81 | - | 0.81 |
| 5:00 PM | 6:00 PM | 25.7 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 6:00 PM | 7:00 PM | 28.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 7:00 PM | 8:00 PM | 29.1 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 8:00 PM | 9:00 PM | 29.5 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 9:00 PM | 10:00 PM | 29.5 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 10:00 PM | 11:00 PM | 29.9 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 11:00 PM | 12:00 AM | 30.5 | 0.3 | 0.5 | 0.81 | - | 0.81 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 3, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 1:00 AM | 2:00 AM | 28.3 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 2:00 AM | 3:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 3:00 AM | 4:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 4:00 AM | 5:00 AM | 27.7 | 0.3 | 0.6 | 0.81 | - | 0.81 |
| 5:00 AM | 6:00 AM | 27.1 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 6:00 AM | 7:00 AM | 26.2 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 7:00 AM | 8:00 AM | 24.2 | 0.5 | 0.7 | 0.81 | - | 0.81 |
| 8:00 AM | 9:00 AM | 25.8 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 9:00 AM | 10:00 AM | 26.1 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 10:00 AM | 11:00 AM | 26.3 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 11:00 AM | 12:00 PM | 26.5 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 12:00 PM | 1:00 PM | 26.2 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 1:00 PM | 2:00 PM | 25.8 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 2:00 PM | 3:00 PM | 25.6 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 3:00 PM | 4:00 PM | 25.4 | 0.5 | 0.7 | 0.97 | - | 0.97 |
| 4:00 PM | 5:00 PM | 21.9 | 1.2 | 1.4 | 1.45 | - | 1.45 |
| 5:00 PM | 6:00 PM | 21.9 | 1.8 | 2.1 | 1.65 | - | 1.65 |
| 6:00 PM | 7:00 PM | 21.9 | 1.1 | 1.4 | 0.81 | - | 0.81 |
| 7:00 PM | 8:00 PM | 26.7 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 8:00 PM | 9:00 PM | 27.1 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 9:00 PM | 10:00 PM | 27.1 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 10:00 PM | 11:00 PM | 27.5 | 0.3 | 0.6 | 0.81 | - | 0.81 |
| 11:00 PM | 12:00 AM | 28.1 | 0.3 | 0.5 | 0.81 | - | 0.81 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS HIGHLIGHTED IN RED IN COLUMNS E-G INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 3, Pre-Stage | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.3 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.3 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.3 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.3 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.3 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.3 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.3 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.1 | 0.3 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.1 | 0.3 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.1 | 0.3 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.1 | 0.3 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.1 | 0.3 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.1 | 0.3 | - | - | - |
| 1:00 PM | 2:00 PM | - | 0.1 | 0.3 | - | - | - |
| 2:00 PM | 3:00 PM | - | 0.1 | 0.3 | - | - | - |
| 3:00 PM | 4:00 PM | - | 0.1 | 0.3 | - | - | - |
| 4:00 PM | 5:00 PM | - | 0.1 | 0.3 | - | - | - |
| 5:00 PM | 6:00 PM | - | 0.1 | 0.3 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.1 | 0.3 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.3 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.1 | 0.3 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.3 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.1 | 0.3 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.1 | 0.3 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 1, Stage 1 | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.1 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.1 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.1 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.1 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.1 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.1 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.0 | 0.1 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.0 | 0.2 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.0 | 0.2 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.0 | 0.2 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.0 | 0.2 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.0 | 0.2 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.0 | 0.2 | - | - | - |
| 1:00 PM | 2:00 PM | - | 0.1 | 0.2 | 0.00 | - | 0.00 |
| 2:00 PM | 3:00 PM | - | 0.2 | 0.4 | 1.07 | - | 1.07 |
| 3:00 PM | 4:00 PM | 34.2 | 1.7 | 2.0 | 2.23 | - | 2.23 |
| 4:00 PM | 5:00 PM | 34.2 | 7.2 | 7.5 | 6.72 | - | 6.72 |
| 5:00 PM | 6:00 PM | 34.2 | 14.7 | 15.0 | 10.49 | - | 10.49 |
| 6:00 PM | 7:00 PM | 34.2 | 16.1 | 16.5 | 8.32 | - | 8.32 |
| 7:00 PM | 8:00 PM | 34.2 | 8.1 | 8.4 | 1.66 | - | 1.66 |
| 8:00 PM | 9:00 PM | 34.2 | 1.0 | 1.2 | 0.00 | - | 0.00 |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.1 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.1 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.1 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 1, Stage 2 | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.1 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.1 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.1 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.1 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.1 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.2 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.0 | 0.2 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.1 | 0.2 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.1 | 0.2 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.1 | 0.2 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.1 | 0.2 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.1 | 0.2 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.1 | 0.2 | 0.00 | - | 0.00 |
| 1:00 PM | 2:00 PM | 34.5 | 0.1 | 0.2 | 0.28 | - | 0.28 |
| 2:00 PM | 3:00 PM | 34.8 | 0.3 | 0.6 | 1.44 | - | 1.44 |
| 3:00 PM | 4:00 PM | 32.1 | 2.6 | 2.9 | 2.79 | - | 2.79 |
| 4:00 PM | 5:00 PM | 32.1 | 9.4 | 9.7 | 7.78 | - | 7.78 |
| 5:00 PM | 6:00 PM | 32.1 | 18.6 | 18.9 | 12.05 | - | 12.05 |
| 6:00 PM | 7:00 PM | 32.1 | 21.3 | 21.6 | 10.54 | - | 10.54 |
| 7:00 PM | 8:00 PM | 32.1 | 14.0 | 14.3 | 4.65 | - | 4.65 |
| 8:00 PM | 9:00 PM | 32.1 | 4.0 | 4.3 | 0.00 | - | 0.00 |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.2 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.2 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.1 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 1, Stage 3 | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.1 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.1 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.1 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.1 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.1 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.1 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.0 | 0.1 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.0 | 0.2 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.0 | 0.2 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.0 | 0.2 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.0 | 0.2 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.0 | 0.2 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.0 | 0.2 | - | - | - |
| 1:00 PM | 2:00 PM | - | 0.1 | 0.2 | 0.00 | - | 0.00 |
| 2:00 PM | 3:00 PM | - | 0.2 | 0.4 | 1.07 | - | 1.07 |
| 3:00 PM | 4:00 PM | 34.2 | 1.7 | 2.0 | 2.23 | - | 2.23 |
| 4:00 PM | 5:00 PM | 34.2 | 7.2 | 7.5 | 6.72 | - | 6.72 |
| 5:00 PM | 6:00 PM | 34.2 | 14.7 | 15.0 | 10.49 | - | 10.49 |
| 6:00 PM | 7:00 PM | 34.2 | 16.1 | 16.5 | 8.32 | - | 8.32 |
| 7:00 PM | 8:00 PM | 34.2 | 8.1 | 8.4 | 1.66 | - | 1.66 |
| 8:00 PM | 9:00 PM | 34.2 | 1.0 | 1.2 | 0.00 | - | 0.00 |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.1 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.1 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.1 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 2, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.4 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 1:00 AM | 2:00 AM | 30.4 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 2:00 AM | 3:00 AM | 30.5 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 3:00 AM | 4:00 AM | 30.5 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 4:00 AM | 5:00 AM | 30.4 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 5:00 AM | 6:00 AM | 29.9 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 6:00 AM | 7:00 AM | 28.7 | 0.3 | 0.6 | 0.94 | - | 0.94 |
| 7:00 AM | 8:00 AM | 24.0 | 1.0 | 1.2 | 1.51 | - | 1.51 |
| 8:00 AM | 9:00 AM | 24.0 | 2.0 | 2.4 | 2.15 | - | 2.15 |
| 9:00 AM | 10:00 AM | 24.0 | 2.3 | 2.6 | 1.78 | - | 1.78 |
| 10:00 AM | 11:00 AM | 24.0 | 1.7 | 2.0 | 1.57 | - | 1.57 |
| 11:00 AM | 12:00 PM | 24.0 | 1.9 | 2.2 | 1.96 | - | 1.96 |
| 12:00 PM | 1:00 PM | 24.0 | 2.7 | 3.1 | 2.42 | - | 2.42 |
| 1:00 PM | 2:00 PM | 24.0 | 4.9 | 5.2 | 4.04 | - | 4.04 |
| 2:00 PM | 3:00 PM | 24.0 | 8.0 | 8.4 | 5.49 | - | 5.49 |
| 3:00 PM | 4:00 PM | 24.0 | 13.8 | 14.1 | 9.69 | - | 9.69 |
| 4:00 PM | 5:00 PM | 24.0 | 24.3 | 24.7 | 15.15 | - | 15.15 |
| 5:00 PM | 6:00 PM | 24.0 | 36.4 | 36.7 | 20.60 | - | 20.60 |
| 6:00 PM | 7:00 PM | 24.0 | 43.0 | 43.4 | 21.40 | - | 21.40 |
| 7:00 PM | 8:00 PM | 24.0 | 40.7 | 41.1 | 18.34 | - | 18.34 |
| 8:00 PM | 9:00 PM | 24.0 | 33.5 | 33.9 | 14.34 | - | 14.34 |
| 9:00 PM | 10:00 PM | 24.0 | 22.9 | 23.3 | 8.01 | - | 8.01 |
| 10:00 PM | 11:00 PM | 24.0 | 9.1 | 9.4 | 1.67 | - | 1.67 |
| 11:00 PM | 12:00 AM | 24.0 | 0.9 | 1.2 | 0.85 | - | 0.85 |

**The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area*

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 2, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 28.0 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 1:00 AM | 2:00 AM | 28.0 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 2:00 AM | 3:00 AM | 28.1 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 3:00 AM | 4:00 AM | 28.1 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 4:00 AM | 5:00 AM | 28.0 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 5:00 AM | 6:00 AM | 27.5 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 6:00 AM | 7:00 AM | 26.3 | 0.5 | 0.8 | 1.16 | - | 1.16 |
| 7:00 AM | 8:00 AM | 21.9 | 1.8 | 2.1 | 1.99 | - | 1.99 |
| 8:00 AM | 9:00 AM | 21.9 | 3.9 | 4.3 | 3.12 | - | 3.12 |
| 9:00 AM | 10:00 AM | 21.9 | 5.4 | 5.8 | 3.27 | - | 3.27 |
| 10:00 AM | 11:00 AM | 21.9 | 5.9 | 6.3 | 3.58 | - | 3.58 |
| 11:00 AM | 12:00 PM | 21.9 | 7.3 | 7.6 | 4.46 | - | 4.46 |
| 12:00 PM | 1:00 PM | 21.9 | 9.4 | 9.7 | 5.41 | - | 5.41 |
| 1:00 PM | 2:00 PM | 21.9 | 12.8 | 13.1 | 7.47 | - | 7.47 |
| 2:00 PM | 3:00 PM | 21.9 | 17.3 | 17.6 | 9.37 | - | 9.37 |
| 3:00 PM | 4:00 PM | 21.9 | 24.6 | 25.0 | 13.90 | - | 13.90 |
| 4:00 PM | 5:00 PM | 21.9 | 36.8 | 37.2 | 19.35 | - | 19.35 |
| 5:00 PM | 6:00 PM | 21.9 | 50.5 | 50.9 | 24.81 | - | 24.81 |
| 6:00 PM | 7:00 PM | 21.9 | 58.7 | 59.0 | 26.08 | - | 26.08 |
| 7:00 PM | 8:00 PM | 21.9 | 57.4 | 57.7 | 23.66 | - | 23.66 |
| 8:00 PM | 9:00 PM | 21.9 | 50.8 | 51.2 | 20.33 | - | 20.33 |
| 9:00 PM | 10:00 PM | 21.9 | 40.7 | 41.1 | 14.78 | - | 14.78 |
| 10:00 PM | 11:00 PM | 21.9 | 26.4 | 26.8 | 7.80 | - | 7.80 |
| 11:00 PM | 12:00 AM | 21.9 | 10.5 | 10.9 | 1.95 | - | 1.95 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 2, Pre-Stage | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.3 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.3 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.3 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.3 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.3 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.3 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.3 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.1 | 0.4 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.1 | 0.4 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.1 | 0.3 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.1 | 0.3 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.1 | 0.4 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.1 | 0.4 | 0.00 | - | 0.00 |
| 1:00 PM | 2:00 PM | 34.5 | 0.2 | 0.4 | 0.85 | - | 0.85 |
| 2:00 PM | 3:00 PM | 34.8 | 0.3 | 0.7 | 2.01 | - | 2.01 |
| 3:00 PM | 4:00 PM | 32.1 | 2.0 | 2.4 | 3.36 | - | 3.36 |
| 4:00 PM | 5:00 PM | 32.1 | 6.9 | 7.3 | 8.35 | - | 8.35 |
| 5:00 PM | 6:00 PM | 32.1 | 13.5 | 13.9 | 12.62 | - | 12.62 |
| 6:00 PM | 7:00 PM | 32.1 | 15.5 | 15.8 | 11.11 | - | 11.11 |
| 7:00 PM | 8:00 PM | 32.1 | 10.2 | 10.6 | 5.22 | - | 5.22 |
| 8:00 PM | 9:00 PM | 32.1 | 2.9 | 3.3 | 0.00 | - | 0.00 |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.3 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.1 | 0.3 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.1 | 0.3 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**WARNING**

**THE CELLS IN COLUMN D HIGHLIGHTED IN RED INDICATE DELAYS EXCEEDING 5 MIN PER MILE OF PROJECT LENGTH.**

**THE CELLS IN COLUMNS E-G HIGHLIGHTED IN RED INDICATE QUEUES EXCEEDING 1.5 MILES.**

**MODERATE QUEUE**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 3, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 1:00 AM | 2:00 AM | 30.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 2:00 AM | 3:00 AM | 30.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 3:00 AM | 4:00 AM | 30.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 4:00 AM | 5:00 AM | 30.1 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 5:00 AM | 6:00 AM | 29.9 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 6:00 AM | 7:00 AM | 28.8 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 7:00 AM | 8:00 AM | 27.4 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 8:00 AM | 9:00 AM | 28.1 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 9:00 AM | 10:00 AM | 28.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 10:00 AM | 11:00 AM | 28.8 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 11:00 AM | 12:00 PM | 28.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 12:00 PM | 1:00 PM | 28.9 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 1:00 PM | 2:00 PM | 28.5 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 2:00 PM | 3:00 PM | 28.3 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 3:00 PM | 4:00 PM | 27.4 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 4:00 PM | 5:00 PM | 26.3 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 5:00 PM | 6:00 PM | 26.7 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 6:00 PM | 7:00 PM | 28.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 7:00 PM | 8:00 PM | 29.4 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 8:00 PM | 9:00 PM | 29.5 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 9:00 PM | 10:00 PM | 29.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 10:00 PM | 11:00 PM | 29.8 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 11:00 PM | 12:00 AM | 30.0 | 0.3 | 0.5 | 0.81 | - | 0.81 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 3, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 1:00 AM | 2:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 2:00 AM | 3:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 3:00 AM | 4:00 AM | 28.3 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 4:00 AM | 5:00 AM | 27.7 | 0.3 | 0.6 | 0.81 | - | 0.81 |
| 5:00 AM | 6:00 AM | 27.5 | 0.3 | 0.6 | 0.81 | - | 0.81 |
| 6:00 AM | 7:00 AM | 26.4 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 7:00 AM | 8:00 AM | 24.9 | 0.4 | 0.7 | 0.81 | - | 0.81 |
| 8:00 AM | 9:00 AM | 25.6 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 9:00 AM | 10:00 AM | 26.1 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 10:00 AM | 11:00 AM | 26.3 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 11:00 AM | 12:00 PM | 26.3 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 12:00 PM | 1:00 PM | 26.5 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 1:00 PM | 2:00 PM | 26.1 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 2:00 PM | 3:00 PM | 25.8 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 3:00 PM | 4:00 PM | 24.8 | 0.4 | 0.7 | 0.81 | - | 0.81 |
| 4:00 PM | 5:00 PM | 21.9 | 0.6 | 0.8 | 0.81 | - | 0.81 |
| 5:00 PM | 6:00 PM | 23.9 | 0.5 | 0.7 | 0.81 | - | 0.81 |
| 6:00 PM | 7:00 PM | 26.2 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 7:00 PM | 8:00 PM | 27.0 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 8:00 PM | 9:00 PM | 27.0 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 9:00 PM | 10:00 PM | 27.3 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 10:00 PM | 11:00 PM | 27.4 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 11:00 PM | 12:00 AM | 27.6 | 0.3 | 0.6 | 0.81 | - | 0.81 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 3, Pre-Stage | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.3 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.3 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.3 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.3 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.3 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.3 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.3 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.1 | 0.3 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.1 | 0.3 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.1 | 0.3 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.1 | 0.3 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.1 | 0.3 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.1 | 0.3 | - | - | - |
| 1:00 PM | 2:00 PM | - | 0.1 | 0.3 | - | - | - |
| 2:00 PM | 3:00 PM | - | 0.1 | 0.3 | - | - | - |
| 3:00 PM | 4:00 PM | - | 0.1 | 0.3 | - | - | - |
| 4:00 PM | 5:00 PM | - | 0.1 | 0.3 | - | - | - |
| 5:00 PM | 6:00 PM | - | 0.1 | 0.3 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.1 | 0.3 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.3 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.1 | 0.3 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.3 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.1 | 0.3 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.1 | 0.3 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 34**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 1, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.5 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 1:00 AM | 2:00 AM | 30.6 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 2:00 AM | 3:00 AM | 30.5 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 3:00 AM | 4:00 AM | 30.5 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 4:00 AM | 5:00 AM | 30.3 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 5:00 AM | 6:00 AM | 29.5 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 6:00 PM | 7:00 PM | 26.1 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 7:00 PM | 8:00 PM | 27.8 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 8:00 PM | 9:00 PM | 28.9 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 9:00 PM | 10:00 PM | 29.4 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 10:00 PM | 11:00 PM | 29.7 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 11:00 PM | 12:00 AM | 30.1 | 0.3 | 0.5 | 0.97 | - | 0.97 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 1, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 28.1 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 1:00 AM | 2:00 AM | 28.2 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 2:00 AM | 3:00 AM | 28.1 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 3:00 AM | 4:00 AM | 28.1 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 4:00 AM | 5:00 AM | 27.9 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 5:00 AM | 6:00 AM | 27.1 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 6:00 PM | 7:00 PM | 21.9 | 0.6 | 0.8 | 0.97 | - | 0.97 |
| 7:00 PM | 8:00 PM | 25.2 | 0.5 | 0.7 | 0.97 | - | 0.97 |
| 8:00 PM | 9:00 PM | 26.5 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 9:00 PM | 10:00 PM | 26.9 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 10:00 PM | 11:00 PM | 27.3 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 11:00 PM | 12:00 AM | 27.7 | 0.4 | 0.6 | 0.97 | - | 0.97 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/22/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 1, Pre-Stage A | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.2 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.2 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.2 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.2 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.2 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.2 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.3 | - | - | - |
| 5:00 PM | 6:00 PM | - | 0.2 | 0.4 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.1 | 0.3 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.3 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.1 | 0.3 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.2 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.2 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.2 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 2, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.5 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 1:00 AM | 2:00 AM | 30.6 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 2:00 AM | 3:00 AM | 30.5 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 3:00 AM | 4:00 AM | 30.5 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 4:00 AM | 5:00 AM | 30.3 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 5:00 AM | 6:00 AM | 29.5 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 6:00 PM | 7:00 PM | 26.1 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 7:00 PM | 8:00 PM | 27.8 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 8:00 PM | 9:00 PM | 28.9 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 9:00 PM | 10:00 PM | 29.4 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 10:00 PM | 11:00 PM | 29.7 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 11:00 PM | 12:00 AM | 30.1 | 0.2 | 0.4 | 0.55 | - | 0.55 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 2, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 28.1 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 1:00 AM | 2:00 AM | 28.2 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 2:00 AM | 3:00 AM | 28.1 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 3:00 AM | 4:00 AM | 28.1 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 4:00 AM | 5:00 AM | 27.9 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 5:00 AM | 6:00 AM | 27.1 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 6:00 PM | 7:00 PM | 21.9 | 0.4 | 0.6 | 0.55 | - | 0.55 |
| 7:00 PM | 8:00 PM | 25.2 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 8:00 PM | 9:00 PM | 26.5 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 9:00 PM | 10:00 PM | 26.9 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 10:00 PM | 11:00 PM | 27.3 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 11:00 PM | 12:00 AM | 27.7 | 0.3 | 0.4 | 0.55 | - | 0.55 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/22/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 2, Pre-Stage A | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.2 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.2 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.2 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.2 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.2 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.2 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.2 | - | - | - |
| 5:00 PM | 6:00 PM | - | 0.1 | 0.3 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.1 | 0.2 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.2 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.0 | 0.2 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.2 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.2 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.2 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 3, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.2 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 1:00 AM | 2:00 AM | 30.4 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 2:00 AM | 3:00 AM | 30.4 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 3:00 AM | 4:00 AM | 30.4 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 4:00 AM | 5:00 AM | 30.1 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 5:00 AM | 6:00 AM | 29.5 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 7:00 PM | 8:00 PM | 27.7 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 8:00 PM | 9:00 PM | 28.4 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 9:00 PM | 10:00 PM | 28.9 | 0.3 | 0.4 | 0.64 | - | 0.64 |
| 10:00 PM | 11:00 PM | 29.4 | 0.3 | 0.4 | 0.64 | - | 0.64 |
| 11:00 PM | 12:00 AM | 29.8 | 0.2 | 0.4 | 0.64 | - | 0.64 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 3, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 27.8 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 1:00 AM | 2:00 AM | 28.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 2:00 AM | 3:00 AM | 28.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 3:00 AM | 4:00 AM | 28.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 4:00 AM | 5:00 AM | 27.7 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 5:00 AM | 6:00 AM | 27.1 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 7:00 PM | 8:00 PM | 25.2 | 0.4 | 0.6 | 0.64 | - | 0.64 |
| 8:00 PM | 9:00 PM | 25.9 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 9:00 PM | 10:00 PM | 26.5 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 10:00 PM | 11:00 PM | 27.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 11:00 PM | 12:00 AM | 27.4 | 0.3 | 0.5 | 0.64 | - | 0.64 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/22/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 3, Pre-Stage A | **Analyst Name** | Matt Smith |

| **Start of Interval** | **End of Interval** | **Average speed in moderate and severe queue** (mph) | **Delay in min. per mile of project length*** | | **Distance moderate queue reached** (mi) | **Distance severe queue reached** (mi) | **Distance moderate and severe queue reached** (mi) |
|---|---|---|---|---|---|---|---|
| | | | **Based on WZ speed limit** | **Based on speed limit outside of the WZ** | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.2 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.2 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.2 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.2 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.2 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.3 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.3 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.1 | 0.3 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.3 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.1 | 0.3 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.1 | 0.3 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 4, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 29.7 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 1:00 AM | 2:00 AM | 29.9 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 2:00 AM | 3:00 AM | 30.0 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 3:00 AM | 4:00 AM | 30.0 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 4:00 AM | 5:00 AM | 29.7 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 5:00 AM | 6:00 AM | 29.0 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 7:00 PM | 8:00 PM | 27.2 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 8:00 PM | 9:00 PM | 27.9 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 9:00 PM | 10:00 PM | 28.4 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 10:00 PM | 11:00 PM | 28.9 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 11:00 PM | 12:00 AM | 29.3 | 0.2 | 0.4 | 0.49 | - | 0.49 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 4, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 27.3 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 1:00 AM | 2:00 AM | 27.5 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 2:00 AM | 3:00 AM | 27.6 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 3:00 AM | 4:00 AM | 27.6 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 4:00 AM | 5:00 AM | 27.3 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 5:00 AM | 6:00 AM | 26.6 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 7:00 PM | 8:00 PM | 24.6 | 0.3 | 0.5 | 0.49 | - | 0.49 |
| 8:00 PM | 9:00 PM | 25.4 | 0.3 | 0.5 | 0.49 | - | 0.49 |
| 9:00 PM | 10:00 PM | 26.0 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 10:00 PM | 11:00 PM | 26.5 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 11:00 PM | 12:00 AM | 26.9 | 0.3 | 0.4 | 0.49 | - | 0.49 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/22/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | EB I-74 - Segment 4, Pre-Stage A | **Analyst Name** | Matt Smith |

| **Start of Interval** | **End of Interval** | **Average speed in moderate and severe queue** (mph) | **Delay in min. per mile of project length*** | | **Distance moderate queue reached** (mi) | **Distance severe queue reached** (mi) | **Distance moderate and severe queue reached** (mi) |
|---|---|---|---|---|---|---|---|
| | | | **Based on WZ speed limit** | **Based on speed limit outside of the WZ** | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.2 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.2 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.2 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.2 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.2 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.2 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.2 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.1 | 0.2 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.2 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.1 | 0.2 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.1 | 0.2 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 1, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.3 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 1:00 AM | 2:00 AM | 30.6 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 2:00 AM | 3:00 AM | 30.6 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 3:00 AM | 4:00 AM | 30.5 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 4:00 AM | 5:00 AM | 30.3 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 5:00 AM | 6:00 AM | 30.0 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 6:00 AM | 7:00 AM | 29.1 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 7:00 AM | 8:00 AM | 28.0 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 8:00 AM | 9:00 AM | 27.0 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 9:00 AM | 10:00 AM | 26.7 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 10:00 AM | 11:00 AM | 25.6 | 0.5 | 0.7 | 0.97 | - | 0.97 |
| 7:00 PM | 8:00 PM | 26.4 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 8:00 PM | 9:00 PM | 28.1 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 9:00 PM | 10:00 PM | 28.9 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 10:00 PM | 11:00 PM | 29.7 | 0.3 | 0.5 | 0.97 | - | 0.97 |
| 11:00 PM | 12:00 AM | 30.0 | 0.3 | 0.5 | 0.97 | - | 0.97 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 1, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 27.9 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 1:00 AM | 2:00 AM | 28.2 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 2:00 AM | 3:00 AM | 28.2 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 3:00 AM | 4:00 AM | 28.1 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 4:00 AM | 5:00 AM | 27.9 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 5:00 AM | 6:00 AM | 27.6 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 6:00 AM | 7:00 AM | 26.7 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 7:00 AM | 8:00 AM | 25.6 | 0.5 | 0.7 | 0.97 | - | 0.97 |
| 8:00 AM | 9:00 AM | 24.3 | 0.5 | 0.7 | 0.97 | - | 0.97 |
| 9:00 AM | 10:00 AM | 23.9 | 0.5 | 0.7 | 0.97 | - | 0.97 |
| 7:00 PM | 8:00 PM | 21.9 | 0.6 | 0.8 | 0.97 | - | 0.97 |
| 8:00 PM | 9:00 PM | 25.6 | 0.5 | 0.7 | 0.97 | - | 0.97 |
| 9:00 PM | 10:00 PM | 26.5 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 10:00 PM | 11:00 PM | 27.3 | 0.4 | 0.6 | 0.97 | - | 0.97 |
| 11:00 PM | 12:00 AM | 27.6 | 0.4 | 0.6 | 0.97 | - | 0.97 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 2, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.3 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 1:00 AM | 2:00 AM | 30.6 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 2:00 AM | 3:00 AM | 30.6 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 3:00 AM | 4:00 AM | 30.5 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 4:00 AM | 5:00 AM | 30.3 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 5:00 AM | 6:00 AM | 30.0 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 6:00 AM | 7:00 AM | 29.1 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 7:00 AM | 8:00 AM | 28.0 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 8:00 AM | 9:00 AM | 27.0 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 9:00 AM | 10:00 AM | 26.7 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 10:00 AM | 11:00 AM | 25.6 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 7:00 PM | 8:00 PM | 26.4 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 8:00 PM | 9:00 PM | 28.1 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 9:00 PM | 10:00 PM | 28.9 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 10:00 PM | 11:00 PM | 29.7 | 0.2 | 0.4 | 0.55 | - | 0.55 |
| 11:00 PM | 12:00 AM | 30.0 | 0.2 | 0.4 | 0.55 | - | 0.55 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 2, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 27.9 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 1:00 AM | 2:00 AM | 28.2 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 2:00 AM | 3:00 AM | 28.2 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 3:00 AM | 4:00 AM | 28.1 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 4:00 AM | 5:00 AM | 27.9 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 5:00 AM | 6:00 AM | 27.6 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 6:00 AM | 7:00 AM | 26.7 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 7:00 AM | 8:00 AM | 25.6 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 8:00 AM | 9:00 AM | 24.3 | 0.4 | 0.5 | 0.55 | - | 0.55 |
| 9:00 AM | 10:00 AM | 23.9 | 0.4 | 0.5 | 0.55 | - | 0.55 |
| 7:00 PM | 8:00 PM | 21.9 | 0.4 | 0.6 | 0.55 | - | 0.55 |
| 8:00 PM | 9:00 PM | 25.6 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 9:00 PM | 10:00 PM | 26.5 | 0.3 | 0.5 | 0.55 | - | 0.55 |
| 10:00 PM | 11:00 PM | 27.3 | 0.3 | 0.4 | 0.55 | - | 0.55 |
| 11:00 PM | 12:00 AM | 27.6 | 0.3 | 0.4 | 0.55 | - | 0.55 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 3, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.3 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 1:00 AM | 2:00 AM | 30.4 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 2:00 AM | 3:00 AM | 30.5 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 3:00 AM | 4:00 AM | 30.5 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 4:00 AM | 5:00 AM | 30.4 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 5:00 AM | 6:00 AM | 29.8 | 0.2 | 0.4 | 0.64 | - | 0.64 |
| 6:00 AM | 7:00 AM | 28.4 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 7:00 AM | 8:00 AM | 26.1 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 7:00 PM | 8:00 PM | 26.9 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 8:00 PM | 9:00 PM | 27.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 9:00 PM | 10:00 PM | 28.5 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 10:00 PM | 11:00 PM | 29.2 | 0.3 | 0.4 | 0.64 | - | 0.64 |
| 11:00 PM | 12:00 AM | 30.0 | 0.2 | 0.4 | 0.64 | - | 0.64 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 3, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 27.9 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 1:00 AM | 2:00 AM | 28.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 2:00 AM | 3:00 AM | 28.1 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 3:00 AM | 4:00 AM | 28.1 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 4:00 AM | 5:00 AM | 28.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 5:00 AM | 6:00 AM | 27.4 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 6:00 AM | 7:00 AM | 25.9 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 7:00 AM | 8:00 AM | 21.9 | 0.5 | 0.7 | 0.64 | - | 0.64 |
| 7:00 PM | 8:00 PM | 24.3 | 0.4 | 0.6 | 0.64 | - | 0.64 |
| 8:00 PM | 9:00 PM | 24.4 | 0.4 | 0.6 | 0.64 | - | 0.64 |
| 9:00 PM | 10:00 PM | 26.0 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 10:00 PM | 11:00 PM | 26.8 | 0.3 | 0.5 | 0.64 | - | 0.64 |
| 11:00 PM | 12:00 AM | 27.6 | 0.3 | 0.5 | 0.64 | - | 0.64 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/22/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 3, Pre-Stage A | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.2 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.2 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.2 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.2 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.2 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.3 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.3 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.1 | 0.3 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.1 | 0.3 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.1 | 0.3 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.1 | 0.3 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.3 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.1 | 0.3 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.3 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.1 | 0.3 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.1 | 0.2 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 4, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 29.8 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 1:00 AM | 2:00 AM | 29.9 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 2:00 AM | 3:00 AM | 30.1 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 3:00 AM | 4:00 AM | 30.0 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 4:00 AM | 5:00 AM | 29.9 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 5:00 AM | 6:00 AM | 29.3 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 6:00 AM | 7:00 AM | 27.9 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 7:00 AM | 8:00 AM | 25.4 | 0.3 | 0.5 | 0.49 | - | 0.49 |
| 7:00 PM | 8:00 PM | 26.4 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 8:00 PM | 9:00 PM | 26.5 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 9:00 PM | 10:00 PM | 28.0 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 10:00 PM | 11:00 PM | 28.7 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 11:00 PM | 12:00 AM | 29.6 | 0.2 | 0.4 | 0.49 | - | 0.49 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 4, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 27.4 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 1:00 AM | 2:00 AM | 27.5 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 2:00 AM | 3:00 AM | 27.7 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 3:00 AM | 4:00 AM | 27.6 | 0.2 | 0.4 | 0.49 | - | 0.49 |
| 4:00 AM | 5:00 AM | 27.5 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 5:00 AM | 6:00 AM | 26.9 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 6:00 AM | 7:00 AM | 25.5 | 0.3 | 0.5 | 0.49 | - | 0.49 |
| 7:00 PM | 8:00 PM | 23.7 | 0.4 | 0.5 | 0.49 | - | 0.49 |
| 8:00 PM | 9:00 PM | 23.8 | 0.4 | 0.5 | 0.49 | - | 0.49 |
| 9:00 PM | 10:00 PM | 25.6 | 0.3 | 0.5 | 0.49 | - | 0.49 |
| 10:00 PM | 11:00 PM | 26.3 | 0.3 | 0.4 | 0.49 | - | 0.49 |
| 11:00 PM | 12:00 AM | 27.2 | 0.3 | 0.4 | 0.49 | - | 0.49 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/22/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | WB I-74 - Segment 4, Pre-Stage A | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.2 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.2 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.2 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.2 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.2 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.2 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.2 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.1 | 0.3 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.1 | 0.3 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.1 | 0.3 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.3 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.1 | 0.3 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.2 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.1 | 0.2 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.1 | 0.2 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 1, Stage 1 | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.1 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.1 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.1 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.1 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.1 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.1 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.0 | 0.2 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.0 | 0.2 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.0 | 0.1 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.0 | 0.1 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.1 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.1 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.1 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 1, Stage 2 | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.1 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.1 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.1 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.1 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.1 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.2 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.2 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.1 | 0.2 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.2 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.0 | 0.2 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.2 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.2 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.1 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 1, Stage 3 | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.1 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.1 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.1 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.1 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.1 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.1 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.0 | 0.2 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.0 | 0.2 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.0 | 0.1 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.0 | 0.1 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.1 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.1 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.1 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 2, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.5 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 1:00 AM | 2:00 AM | 30.5 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 2:00 AM | 3:00 AM | 30.4 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 3:00 AM | 4:00 AM | 30.5 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 4:00 AM | 5:00 AM | 30.2 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 5:00 AM | 6:00 AM | 29.7 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 6:00 AM | 7:00 AM | 26.8 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 6:00 PM | 7:00 PM | 25.8 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 7:00 PM | 8:00 PM | 27.9 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 8:00 PM | 9:00 PM | 28.9 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 9:00 PM | 10:00 PM | 29.3 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 10:00 PM | 11:00 PM | 29.8 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 11:00 PM | 12:00 AM | 30.2 | 0.3 | 0.5 | 0.85 | - | 0.85 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 2, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 28.1 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 1:00 AM | 2:00 AM | 28.1 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 2:00 AM | 3:00 AM | 28.0 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 3:00 AM | 4:00 AM | 28.1 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 4:00 AM | 5:00 AM | 27.8 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 5:00 AM | 6:00 AM | 27.2 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 6:00 AM | 7:00 AM | 24.1 | 0.5 | 0.7 | 0.85 | - | 0.85 |
| 6:00 PM | 7:00 PM | 21.9 | 0.7 | 0.9 | 1.08 | - | 1.08 |
| 7:00 PM | 8:00 PM | 21.9 | 0.5 | 0.8 | 0.85 | - | 0.85 |
| 8:00 PM | 9:00 PM | 26.5 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 9:00 PM | 10:00 PM | 26.9 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 10:00 PM | 11:00 PM | 27.4 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 11:00 PM | 12:00 AM | 27.8 | 0.3 | 0.6 | 0.85 | - | 0.85 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 2, Pre-Stage | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.3 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.3 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.3 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.3 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.3 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.3 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.3 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.1 | 0.3 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.3 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.1 | 0.3 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.3 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.1 | 0.3 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.1 | 0.3 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 3, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 1:00 AM | 2:00 AM | 30.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 2:00 AM | 3:00 AM | 30.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 3:00 AM | 4:00 AM | 30.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 4:00 AM | 5:00 AM | 30.1 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 5:00 AM | 6:00 AM | 29.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 6:00 AM | 7:00 AM | 28.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 7:00 AM | 8:00 AM | 26.9 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 8:00 AM | 9:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 9:00 AM | 10:00 AM | 28.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 10:00 AM | 11:00 AM | 28.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 11:00 AM | 12:00 PM | 28.9 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 12:00 PM | 1:00 PM | 28.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 1:00 PM | 2:00 PM | 28.3 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 2:00 PM | 3:00 PM | 28.1 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 3:00 PM | 4:00 PM | 27.9 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 4:00 PM | 5:00 PM | 24.7 | 0.4 | 0.7 | 0.81 | - | 0.81 |
| 5:00 PM | 6:00 PM | 25.7 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 6:00 PM | 7:00 PM | 28.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 7:00 PM | 8:00 PM | 29.1 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 8:00 PM | 9:00 PM | 29.5 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 9:00 PM | 10:00 PM | 29.5 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 10:00 PM | 11:00 PM | 29.9 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 11:00 PM | 12:00 AM | 30.5 | 0.3 | 0.5 | 0.81 | - | 0.81 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 3, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 1:00 AM | 2:00 AM | 28.3 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 2:00 AM | 3:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 3:00 AM | 4:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 4:00 AM | 5:00 AM | 27.7 | 0.3 | 0.6 | 0.81 | - | 0.81 |
| 5:00 AM | 6:00 AM | 27.1 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 6:00 AM | 7:00 AM | 26.2 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 7:00 AM | 8:00 AM | 24.2 | 0.5 | 0.7 | 0.81 | - | 0.81 |
| 8:00 AM | 9:00 AM | 25.8 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 9:00 AM | 10:00 AM | 26.1 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 10:00 AM | 11:00 AM | 26.3 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 11:00 AM | 12:00 PM | 26.5 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 12:00 PM | 1:00 PM | 26.2 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 1:00 PM | 2:00 PM | 25.8 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 2:00 PM | 3:00 PM | 25.6 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 3:00 PM | 4:00 PM | 25.4 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 6:00 PM | 7:00 PM | 26.2 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 7:00 PM | 8:00 PM | 26.7 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 8:00 PM | 9:00 PM | 27.1 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 9:00 PM | 10:00 PM | 27.1 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 10:00 PM | 11:00 PM | 27.5 | 0.3 | 0.6 | 0.81 | - | 0.81 |
| 11:00 PM | 12:00 AM | 28.1 | 0.3 | 0.5 | 0.81 | - | 0.81 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | NB I-57 - Segment 3, Pre-Stage | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.3 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.3 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.3 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.3 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.3 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.3 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.3 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.1 | 0.3 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.1 | 0.3 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.1 | 0.3 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.1 | 0.3 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.1 | 0.3 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.1 | 0.3 | - | - | - |
| 1:00 PM | 2:00 PM | - | 0.1 | 0.3 | - | - | - |
| 2:00 PM | 3:00 PM | - | 0.1 | 0.3 | - | - | - |
| 3:00 PM | 4:00 PM | - | 0.1 | 0.3 | - | - | - |
| 4:00 PM | 5:00 PM | - | 0.1 | 0.3 | - | - | - |
| 5:00 PM | 6:00 PM | - | 0.1 | 0.3 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.1 | 0.3 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.3 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.1 | 0.3 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.3 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.1 | 0.3 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.1 | 0.3 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 1, Stage 1 | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.1 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.1 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.1 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.1 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.1 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.1 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.0 | 0.1 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.0 | 0.2 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.0 | 0.2 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.0 | 0.2 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.0 | 0.2 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.0 | 0.2 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.0 | 0.2 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.0 | 0.2 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.0 | 0.1 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.0 | 0.1 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.1 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.1 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.1 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 1, Stage 2 | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.1 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.1 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.1 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.1 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.1 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.2 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.0 | 0.2 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.1 | 0.2 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.1 | 0.2 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.1 | 0.2 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.1 | 0.2 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.1 | 0.2 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.1 | 0.2 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.1 | 0.2 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.0 | 0.2 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.0 | 0.2 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.2 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.2 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.1 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 1, Stage 3 | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.0 | 0.1 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.0 | 0.1 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.0 | 0.1 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.0 | 0.1 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.0 | 0.1 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.0 | 0.1 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.0 | 0.1 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.0 | 0.2 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.0 | 0.2 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.0 | 0.2 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.0 | 0.2 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.0 | 0.2 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.0 | 0.2 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.0 | 0.2 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.0 | 0.1 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.0 | 0.1 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.0 | 0.1 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.0 | 0.1 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.0 | 0.1 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 2, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.4 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 1:00 AM | 2:00 AM | 30.4 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 2:00 AM | 3:00 AM | 30.5 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 3:00 AM | 4:00 AM | 30.5 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 4:00 AM | 5:00 AM | 30.4 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 5:00 AM | 6:00 AM | 29.9 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 6:00 AM | 7:00 AM | 28.7 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 7:00 PM | 8:00 PM | 28.0 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 8:00 PM | 9:00 PM | 28.4 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 9:00 PM | 10:00 PM | 29.3 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 10:00 PM | 11:00 PM | 29.8 | 0.3 | 0.5 | 0.85 | - | 0.85 |
| 11:00 PM | 12:00 AM | 30.0 | 0.3 | 0.5 | 0.85 | - | 0.85 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 2, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 28.0 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 1:00 AM | 2:00 AM | 28.0 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 2:00 AM | 3:00 AM | 28.1 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 3:00 AM | 4:00 AM | 28.1 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 4:00 AM | 5:00 AM | 28.0 | 0.3 | 0.6 | 0.85 | - | 0.85 |
| 5:00 AM | 6:00 AM | 27.5 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 6:00 AM | 7:00 AM | 26.3 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 7:00 PM | 8:00 PM | 25.5 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 8:00 PM | 9:00 PM | 26.0 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 9:00 PM | 10:00 PM | 26.9 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 10:00 PM | 11:00 PM | 27.4 | 0.4 | 0.6 | 0.85 | - | 0.85 |
| 11:00 PM | 12:00 AM | 27.6 | 0.4 | 0.6 | 0.85 | - | 0.85 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 2, Pre-Stage | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.3 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.3 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.3 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.3 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.3 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.3 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.3 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.1 | 0.4 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.1 | 0.4 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.1 | 0.3 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.1 | 0.3 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.1 | 0.4 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.1 | 0.4 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.3 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.1 | 0.3 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.3 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.1 | 0.3 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.1 | 0.3 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 3, Inlay LT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 30.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 1:00 AM | 2:00 AM | 30.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 2:00 AM | 3:00 AM | 30.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 3:00 AM | 4:00 AM | 30.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 4:00 AM | 5:00 AM | 30.1 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 5:00 AM | 6:00 AM | 29.9 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 6:00 AM | 7:00 AM | 28.8 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 7:00 AM | 8:00 AM | 27.4 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 8:00 AM | 9:00 AM | 28.1 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 9:00 AM | 10:00 AM | 28.6 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 10:00 AM | 11:00 AM | 28.8 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 11:00 AM | 12:00 PM | 28.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 12:00 PM | 1:00 PM | 28.9 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 1:00 PM | 2:00 PM | 28.5 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 2:00 PM | 3:00 PM | 28.3 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 3:00 PM | 4:00 PM | 27.4 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 4:00 PM | 5:00 PM | 26.3 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 5:00 PM | 6:00 PM | 26.7 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 6:00 PM | 7:00 PM | 28.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 7:00 PM | 8:00 PM | 29.4 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 8:00 PM | 9:00 PM | 29.5 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 9:00 PM | 10:00 PM | 29.7 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 10:00 PM | 11:00 PM | 29.8 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 11:00 PM | 12:00 AM | 30.0 | 0.3 | 0.5 | 0.81 | - | 0.81 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 9/24/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 3, Inlay RT Lane | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 1:00 AM | 2:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 2:00 AM | 3:00 AM | 28.2 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 3:00 AM | 4:00 AM | 28.3 | 0.3 | 0.5 | 0.81 | - | 0.81 |
| 4:00 AM | 5:00 AM | 27.7 | 0.3 | 0.6 | 0.81 | - | 0.81 |
| 5:00 AM | 6:00 AM | 27.5 | 0.3 | 0.6 | 0.81 | - | 0.81 |
| 6:00 AM | 7:00 AM | 26.4 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 7:00 AM | 8:00 AM | 24.9 | 0.4 | 0.7 | 0.81 | - | 0.81 |
| 8:00 AM | 9:00 AM | 25.6 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 9:00 AM | 10:00 AM | 26.1 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 10:00 AM | 11:00 AM | 26.3 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 11:00 AM | 12:00 PM | 26.3 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 12:00 PM | 1:00 PM | 26.5 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 1:00 PM | 2:00 PM | 26.1 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 2:00 PM | 3:00 PM | 25.8 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 3:00 PM | 4:00 PM | 24.8 | 0.4 | 0.7 | 0.81 | - | 0.81 |
| 4:00 PM | 5:00 PM | 21.9 | 0.6 | 0.8 | 0.81 | - | 0.81 |
| 5:00 PM | 6:00 PM | 23.9 | 0.5 | 0.7 | 0.81 | - | 0.81 |
| 6:00 PM | 7:00 PM | 26.2 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 7:00 PM | 8:00 PM | 27.0 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 8:00 PM | 9:00 PM | 27.0 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 9:00 PM | 10:00 PM | 27.3 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 10:00 PM | 11:00 PM | 27.4 | 0.4 | 0.6 | 0.81 | - | 0.81 |
| 11:00 PM | 12:00 AM | 27.6 | 0.3 | 0.6 | 0.81 | - | 0.81 |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

## MODERATE QUEUE

**AVERAGE SPEED IS BETWEEN 20-35 MPH (SPEED LIMIT=45 MPH) OR 25-40 MPH (SPEED LIMIT=55 MPH).**

**EXHIBIT 35**

| PROJECT INFORMATION | | | |
|---|---|---|---|
| **Project Name** | I-57 & I-74 Interchange | **Date** | 7/23/2015 |
| **Project Number** | 11-066-02 | **Year of Analysis** | 2020 |
| **Site** | SB I-57 - Segment 3, Pre-Stage | **Analyst Name** | Matt Smith |

| Start of Interval | End of Interval | Average speed in moderate and severe queue (mph) | Delay in min. per mile of project length* | | Distance moderate queue reached (mi) | Distance severe queue reached (mi) | Distance moderate and severe queue reached (mi) |
|---|---|---|---|---|---|---|---|
| | | | Based on WZ speed limit | Based on speed limit outside of the WZ | | | |
| 12:00 AM | 1:00 AM | - | 0.1 | 0.3 | - | - | - |
| 1:00 AM | 2:00 AM | - | 0.1 | 0.3 | - | - | - |
| 2:00 AM | 3:00 AM | - | 0.1 | 0.3 | - | - | - |
| 3:00 AM | 4:00 AM | - | 0.1 | 0.3 | - | - | - |
| 4:00 AM | 5:00 AM | - | 0.1 | 0.3 | - | - | - |
| 5:00 AM | 6:00 AM | - | 0.1 | 0.3 | - | - | - |
| 6:00 AM | 7:00 AM | - | 0.1 | 0.3 | - | - | - |
| 7:00 AM | 8:00 AM | - | 0.1 | 0.3 | - | - | - |
| 8:00 AM | 9:00 AM | - | 0.1 | 0.3 | - | - | - |
| 9:00 AM | 10:00 AM | - | 0.1 | 0.3 | - | - | - |
| 10:00 AM | 11:00 AM | - | 0.1 | 0.3 | - | - | - |
| 11:00 AM | 12:00 PM | - | 0.1 | 0.3 | - | - | - |
| 12:00 PM | 1:00 PM | - | 0.1 | 0.3 | - | - | - |
| 1:00 PM | 2:00 PM | - | 0.1 | 0.3 | - | - | - |
| 2:00 PM | 3:00 PM | - | 0.1 | 0.3 | - | - | - |
| 3:00 PM | 4:00 PM | - | 0.1 | 0.3 | - | - | - |
| 4:00 PM | 5:00 PM | - | 0.1 | 0.3 | - | - | - |
| 5:00 PM | 6:00 PM | - | 0.1 | 0.3 | - | - | - |
| 6:00 PM | 7:00 PM | - | 0.1 | 0.3 | - | - | - |
| 7:00 PM | 8:00 PM | - | 0.1 | 0.3 | - | - | - |
| 8:00 PM | 9:00 PM | - | 0.1 | 0.3 | - | - | - |
| 9:00 PM | 10:00 PM | - | 0.1 | 0.3 | - | - | - |
| 10:00 PM | 11:00 PM | - | 0.1 | 0.3 | - | - | - |
| 11:00 PM | 12:00 AM | - | 0.1 | 0.3 | - | - | - |

***The project length starts from the first 55-mph speed limit sign and extends to the end of the termination area***

**EXHIBIT 35**

# Illinois Department of Transportation
## Memorandum

| | |
|---|---|
| To: | All Attendees and Project File |
| From: | Studies and Plans |
| Subject: | Transportation Management Plan Meeting Minutes* |
| Date: | June 22, 2015 |

*FAI 74 & FAI 57 Interchange
Section 10(5-1-RS-1, 14-1, 6)R
Champaign County

A meeting to discuss CMT's preliminary Transportation Management Plan (TMP) was held from 10 a.m. to 12 p.m. on Friday, May 29, 2015 in the District 5 office. The attendees are as follows:

- Stan Hansen, CMT, Project Manager
- Brad Downen, CMT, Project Engineer
- Jeff Allen, Geometrics Engineer
- David Jayme, Design Engineer
- Gary Sims, Traffic Operations Engineer
- Tim Brandenburg, Bridge and Hydraulics Engineer
- Clark Piper, Traffic Control Supervisor
- Mike Carnahan, Construction Field Engineer
- Scott Neihart, Studies and Plans Engineer
- Rustin Keys, Consultant Liaison Engineer

The traffic management options in the preliminary TMP for the reconstruction of the Mattis Avenue structures over I-57 and I-74, the US 150 structure over I-57, I-57, I-74, and the connecting ramps were presented to attendees for discussion. Highlights of the ensuing discussion:

1. ***Mattis and US 150 Structures***
    a. The two options in the TMP for traffic management during construction of each of these structures is road closure and staged construction consisting of 3 stages. Rustin has discussed the feasibility of closing one or both of the Mattis Avenue bridges with City of Champaign Engineer Dave Clark. He stated that he will discuss the concept internally with City staff and respond in the next few weeks.
    b. David Jayme presented markups of the proposed staging cross sections for the Mattis Avenue structures that would allow construction to be completed in two rather than three stages. His intent was to eliminate the third stage in an effort to avoid multiple

**EXHIBIT 36**

construction joints and reduce the construction duration. Brad indicated that a third construction stage is necessary in order to tie together and close the gap between each half of the proposed structures. Since the long girder spans will have a significant amount of deflection and this deflection will be differential between stages, the third stage will consist of a 3' deck pour to unite the two halves of each deck. The US 150 structure will also have three stages for the same reason. Mike noted that he had seen this three stage approach before and that he believed it to be a good idea to avoid a poorly constructed crown in the deck.

**2. *I-74 and I-57 Mainline Staging***

a. Several of the proposed staging typical sections show drums located within the excavated work area with existing driving and passing lanes open to traffic. Brad explained that these typical sections depict the configuration that would be present during peak traffic hours. The contractor would be required to satisfy the FHWA Work Zone Safety and Mobility Rule Subpart K requirements by having any open excavations adjacent to traffic backfilled temporarily to eliminate the presence of a drop-off during peak hours. During off-peak hours, the temporary backfill would be removed, traffic would be reduced to a single lane with drums, and construction would ensue. Brad explained that this strategy was successfully employed on another large interstate project they recently completed and that the Subpart K requirements were written directly into the contract documents. In general, District staff agreed that this approach would be a significant burden to the contractor that would slow the progress of construction and make enforcement of the specified drop-off policies more difficult for the resident engineer. The District prefers to utilize temporary concrete barrier at all areas where an excessive drop-off will exist for a considerable amount of time (i.e. more than a few days). This approach will require temporary widening and/or improvements to the existing HMA shoulders be completed in pre-stages in order to maintain adequate width for the two lanes of traffic in subsequent stages. Since this pre-stage work will require short-term closures that will reduce traffic to a single lane, it should be specified to be completed during off-peak hours. Brad is going to make these revisions to the TMP and modify his Work Zone Q analysis inputs to reevaluate the hours of acceptable queuing and delay. Rustin will discuss the need for cores of the existing shoulders with Materials personnel (Steve Robinson).

b. New temporary concrete barrier pinning and revised Subpart K drop-off requirements in the IDOT Safety Engineering Policy Memorandum 4-15 were also briefly discussed. Brad is going to look closer at the policy to ensure the staging plan meets its requirements and that the temporary concrete barrier can be secured accordingly.

c. Some of the proposed widening needed for staging traffic mentioned in (a.) above will extend beyond the limits of the

proposed HMA shoulders on I-57 and I-74. Brad asked our thoughts on permanently leaving this widening in place. Scott suggested that we discuss this with and receive input from FHWA and BDE at a coordination meeting.

d. Scott also would like to present the next version of the TMP to FHWA and BDE in order to receive their concurrence on the proposed plan. An informational copy of the final TMP will be sent to BSE. Rustin will ask if they want to have the Work Zone Q excel files and he will forward them if they so desire.

***3. <u>Conceptual Interchange Staging Plan and Construction Sequencing</u>***

a. Construction sequencing of the ramps and interstate were discussed. Brad explained that the proposed plan is to construct the outer connecting ramps and ramp structures before beginning staged construction on I-57 and I-74.

b. The TMP proposes a temporary loop ramp be constructed inside the existing S to E loop ramp (ramp C) in order to maintain traffic during the construction of outer ramp B (E to S). The current volume on this loop is about 2,000 vehicles per day. The District agreed that this loop with be a safety issue and prefers to close ramp C and detour traffic rather than construct the temporary loop.

c. The TMP proposes a curved temporary alignment be constructed for existing outer ramp B in order to maintain traffic while proposed outer ramp B is constructed. This alignment will be designed to avoid proposed flyover ramps D & E substructure units. Stan mentioned the possibility of utilizing a portion of proposed loop ramp C to carry ramp B traffic instead of constructing the temporary pavement. Due to the more complicated geometry this option would involve, issues with superelevation transitioning in a reverse curve, and potential safety concerns, the District does not wish to study this possibility further. Tim mentioned that spans could be added to ramps D and E in order to reduce the amount of temporary pavement needed for outer ramp B. He further explained that if the additional spans eliminated the need for the MSE walls, then the additional cost to construct the spans would be minimal. Stan stated that they decided not to increase the number of spans because they didn't believe that adding a span to minimize the amount of temporary pavement balanced well with the long term maintenance costs an additional span would impose on the District.

d. Ramp and mainline sequencing constraints were briefly discussed. These details will be worked out in phase II. A question about whether to include a more detailed construction sequencing plan in the TMP to better outline how planned staging on I-57, I-74, and the ramps fit together was raised by Rustin. Scott decided that this level of detail was not necessary in the TMP.

e. Use of nearby interchanges for detour routes was discussed. Brad indicated that he reviewed nearby District 5 projects which

utilized I-57 interchanges. He determined that the Market and Curtis interchanges were the best options. His intent was to have detoured traffic utilize the interchanges that were further from the subject interchange in order to prevent backups encroaching into the work zone. Temporary signals may be needed at these interchanges to prevent traffic queues on the exit ramps from extending onto the mainline interstate. The use of the I-72 cloverleaf loops as a detour route for various temporary closures was discussed also. The TMP proposed sending traffic further south to Curtis Road in order to avoid potential safety issues with detoured vehicles being exposed to the I-57/I-72 weaving as well as for the aforementioned backup concerns. Clark added that they have recently had issues with traffic backups when using the I-72 interchange as a detour route. He stated that while I-72 will likely be utilized by local traffic, he preferred to utilize the Curtis Road interchange. Based on these concerns, the TMP will not include the utilization of the I-72 interchange as a planned detour. I-72 will still be listed as an option because it could be utilized as a detour route in the case of an emergency.

f. The subject of pavement design and its impact on the staging plan was discussed. The overall consensus was to lean towards a full depth HMA pavement design on I-57 and I-74 based upon ease of staged construction and high availability of HMA material producers in the area. It was noted that there are several bridges that will utilize PCC. Brad reiterated a previous idea that PCC could easily be utilized on the outer, loop and flyover ramps for aesthetic consistency and material use balance. The pavement design and life cycle cost analysis (LCCA) will be completed in Phase II. Rustin relayed BDE's (Paul Niedernhofer) sentiment that the staging considerations are a significant factor in the approval of the pavement design and LCCA.

***4. <u>Miscellaneous</u>***

a. The use of smart traffic monitoring technology was discussed and everyone agreed that it should be implemented on this project. Stan relayed his experience with this technology and indicated that it worked well.

b. A discussion of incentives and disincentives such as lane and ramp rental was briefly discussed. Scott indicated that he would discuss this with the Program Development and Regional Engineers and that a final decision would be made during Phase II design.

These meeting minutes were prepared by Rustin Keys. These minutes should be included in the final TMP correspondence/coordination section.

## Brad Downen

**From:** Keys, Rustin B <Rustin.Keys@illinois.gov>
**Sent:** Monday, July 6, 2015 7:50 AM
**To:** Brad Downen; 'Kevin Crider'
**Subject:** FW: I-57/I-74 Interchange Reconstruction - Mattis Avenue Traffic Control

Brad,

Below is the City's response to closing Mattis Avenue for construction as well as discussion of their desire for a preemption system at the Mattis/57 structure. Please include this email in the correspondence section of the TMP.

Thanks,

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

Please consider the environment before printing this e-mail.

**From:** Ludwig, Gary [mailto:gary.ludwig@ci.champaign.il.us]
**Sent:** Thursday, July 02, 2015 11:37 AM
**To:** Keys, Rustin B
**Cc:** Clark, Dave; Garnett, Kensil A; Emberton, Craig A; Dennis Schmidt; Bruce Knight; Matthew Roeschley; CFDCAPT; CFDChiefOfficers; Chris Sokolowski
**Subject:** Re: I-57/I-74 Interchange Reconstruction - Mattis Avenue Traffic Control

Rustin - I have spoken with Dave at Public Works and we would like to request that a preemption system be in place, tied to our Opticom system so that we proceed across the one lane on the bridge during construction in a safe manner to prevent any head-on collisions or delays because a vehicle may have to back up. Thank you again and if you have any more questions, please feel free to contact us.

**Gary Ludwig**
**Fire Chief**
**Champaign Fire Department**
**307 S Randolph**
**Champaign, IL 61820**
**Office: (217) 403-7200**
**Fax: (217) 403-7213**

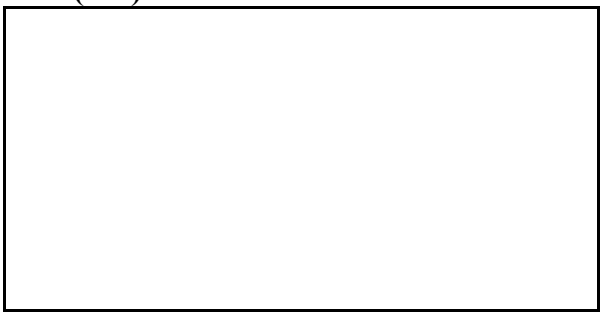




**EXHIBIT 36**

On Mon, Jun 29, 2015 at 1:27 PM, Keys, Rustin B <Rustin.Keys@illinois.gov> wrote:

Hi Gary,

You're assumption is correct. "Staged construction" means that the bridges will be constructed in such a manner to allow traffic to utilize part of the structure during construction. For Mattis over I-74, we should be able to maintain one lane of traffic at all times in each direction during construction. For Mattis over I-57, we should be able to maintain one lane of traffic for both directions at all times; this will require the use of temporary traffic signals, similar to what we did on the Windsor over I-57 structure replacement project a couple years ago. If I recall correctly, you/the City worked with our contractor/construction personnel to allow for preemption of the temporary signals at Windsor. Do you believe that preemption will be necessary for the temporary signals that will be used on the N Mattis over I-57 structure? Please discuss this with Dave and let me know your thoughts. Thanks.

Rustin Keys, P.E.

Design Squad Leader

IDOT Region 3/ District 5

(217)-466-7225

Please consider the environment before printing this e-mail.

**From:** Ludwig, Gary [mailto:gary.ludwig@ci.champaign.il.us]
**Sent:** Monday, June 29, 2015 11:34 AM
**To:** Keys, Rustin B
**Cc:** Clark, Dave; Garnett, Kensil A; Emberton, Craig A; Dennis Schmidt; Bruce Knight; Matthew Roeschley; CFDCAPT; CFDChiefOfficers; Chris Sokolowski
**Subject:** Re: I-57/I-74 Interchange Reconstruction - Mattis Avenue Traffic Control

Rustin - thank you for providing this information. Since it is not my background, I am not familiar with the term "staged construction." Does that mean that the bridges will not be fully shut down during construction?

**Gary Ludwig**



**EXHIBIT 36**

**Fire Chief**

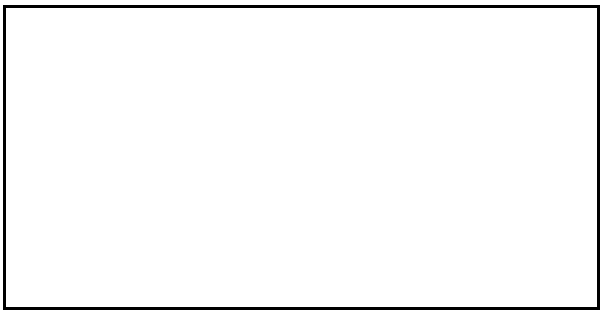
**Champaign Fire Department**

**307 S Randolph**

**Champaign, IL  61820**

**Office: (217) 403-7200**

**Fax: (217) 403-7213**



On Mon, Jun 29, 2015 at 9:49 AM, Keys, Rustin B <Rustin.Keys@illinois.gov> wrote:

Good morning Dave,

Thank you for taking the time to consider this traffic management option.  Based upon your comments and concerns, we will pursue staging the construction of both Mattis Avenue structures.  While not anticipated at this time, if the condition of either structure were to preclude the use of staged construction in the future, we will be sure to discuss this with you.

Rustin Keys, P.E.

Design Squad Leader

IDOT Region 3/ District 5

(217)-466-7225

Please consider the environment before printing this e-mail.



**EXHIBIT 36**

**From:** Clark, Dave [mailto:dave.clark@ci.champaign.il.us]
**Sent:** Friday, June 26, 2015 3:03 PM
**To:** Keys, Rustin B; Garnett, Kensil A; Emberton, Craig A
**Cc:** Dennis Schmidt; Gary Ludwig; Bruce Knight; Matthew Roeschley; CFDCAPT; CFDChiefOfficers; Chris Sokolowski
**Subject:** Re: I-57/I-74 Interchange Reconstruction - Mattis Avenue Traffic Control

Rustin....this is follow-up to your question regarding the traffic control for the Mattis Avenue interstate bridge construction over I-74 and I-57. The City requests that IDOT keep both Mattis Avenue bridges open to traffic (ie. use staged construction) at all times during construction. This is critical to be able to provide emergency services to areas north of Interstate 74. Closing the bridges to all traffic during construction would severely impact fire apparatus response times to areas on north Mattis Avenue, which include a high school, residential developments, business parks, and commercial areas.

We understand that the Mattis&I74 bridge was constructed under full closure back in the early 1990's, however, that was also at a time before the north I-74 development boom took place. With the significant development growth that has taken place on north Mattis Ave. and the area north of Interstate 74 in general, it is critical that emergency services, especially fire, be maintained at all times. I believe IDOT would agree that conditions have changed since the early '90's and would support the City's request to keep the two bridges open to traffic during construction.

Thank you for seeking the City's input on this. If you have any questions, please let me know.

Dave

Dave Clark, P.E.

City Engineer

City of Champaign

(217) 403-4700

dave.clark@ci.champaign.il.us



**EXHIBIT 36**

On Mon, Jun 1, 2015 at 12:30 PM, Keys, Rustin B <Rustin.Keys@illinois.gov> wrote:

Good afternoon Dave,

This is a follow-up email from our phone conversation last week about the acquiring the City's thoughts on closing Mattis Avenue for construction of the structures over I-57 and I-74. I've attached the following for use in your internal discussion:

- the 1991 Mattis over I-74 structure replacement as-built plans (completed under road closure)
- Microstation files showing the preliminary interchange and overhead structure limits. If you have trouble viewing these, let me know and I'll get you something in a different format.
- Preliminary typical sections showing option 2 (staging); (note that option 1 is closure)
- Delay and queuing due to temporary traffic signals for single lane traffic at Mattis over I-57

Hopefully this information will help facilitate the discussion about a Mattis Avenue closure. I'm requesting that our consultant provide some indication of the traffic queues and delays to be expected at the US 150 intersection as a result of the capacity reduction from staging Mattis over I-74. I'll send it your way once I receive it.

If we could get your input about closing Mattis within the next couple of weeks, that would be great. Let me know if you need more information.

Thanks,

Rustin Keys, P.E.

Design Squad Leader

IDOT Region 3/ District 5

(217)-466-7225



**EXHIBIT 36**

Please consider the environment before printing this e-mail.



EXHIBIT 36

## Brad Downen

**From:** Keys, Rustin B <Rustin.Keys@illinois.gov>
**Sent:** Monday, August 3, 2015 1:56 PM
**To:** Brad Downen
**Cc:** Kevin Crider (kcrider@bfwengineers.com); Stults, Jason W
**Subject:** FW: Interchange shoulder cores - TMP/MOT plan
**Attachments:** RE: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Two Questions; RE: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Shoulder Improvement for Staged Traffic; RE: Interchange shoulder cores

Brad,

We've decided to move forward with a 6" inlay of the existing shoulder for maintenance of traffic considerations. Scott N. also mentioned that it would be a good idea to do pre-stage patching and a minor surface course inlay (1.75") of the travelled lanes within the traffic control limits to ensure that they are in good shape since the lanes are likely to deteriorate quite a bit in the next 5-6 years.

Related correspondence between our material's personnel and I is attached for reference.

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

Please consider the environment before printing this e-mail.

---

**From:** Keys, Rustin B
**Sent:** Monday, August 03, 2015 1:16 PM
**To:** Wagoner, Ronald R; Robinson, Stephen A
**Cc:** Stults, Jason W
**Subject:** RE: Interchange shoulder cores

Ok, I appreciate your efforts in obtaining the core/subgrade data and providing input. We'll plan to move forward with a 6" pre-stage inlay on the I-57 and I-74 HMA shoulders for maintenance of traffic.

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

Please consider the environment before printing this e-mail.

---

**From:** Wagoner, Ronald R
**Sent:** Monday, August 03, 2015 12:57 PM
**To:** Keys, Rustin B; Robinson, Stephen A
**Cc:** Stults, Jason W
**Subject:** RE: Interchange shoulder cores

Rustin,
Steve and I feel the 6" inaly is the best economical & conservative approach. The "replacement" approach would provide too many issues to try and construct.



**EXHIBIT 36**

Thanks,
Ron

*Ronald R. Wagoner, P.E.*
Geotechnical Engineer
I.D.O.T. R3/D5
Office: 217-466-7271
Cell: 217-251-5615
Fax: 217-463-3501
E-mail: Ronald.Wagoner@illinois.gov

---

**From:** Keys, Rustin B
**Sent:** Monday, August 03, 2015 12:08 PM
**To:** Wagoner, Ronald R; Robinson, Stephen A
**Cc:** Stults, Jason W
**Subject:** RE: Interchange shoulder cores

Good afternoon,

Considering the additional subgrade and core information obtained from you, the Modified AASHTO pavement design method indicates that we need at least a 4" inlay of the shoulder on I-57 and I-74. As you know, the thickness and makeup of the shoulder cores varies greatly on these 2 routes. There are spot locations where a thicker, say 6" inlay, would be more appropriate to satisfy the design criteria due to thinner cores (locations indicated below). It may be best to just do a 6" inlay everywhere to ensure no failures. While the Modified AASHTO method of pavement design still resides in the BDE manual, BMPR has indicated in the past that it is an "antiquated" method. Without another analysis method, this is the best we have less past experience.

**I-57**

Using a higher than normal coefficient for BAM (slightly less conservative approach), we need at least a 10" existing core thickness (i.e. HMA + BAM thickness) and a 4" inlay to meet the design pavement structural number (SN = 3.4). All areas sampled meet this requirement except for cores 10 & 12.

**I-74**

Using a higher than normal coefficient for BAM (less conservative approach), we need at least a 12" existing core thickness (i.e. HMA + BAM thickness) and a 4" inlay to meet the design pavement structural number (SN = 3.9). Areas with the 12" aggregate subbase would only require a 7" core thickness (i.e. HMA + BAM thickness) with a 4" inlay to meet the pavement design structural number. All areas sampled meet one of these requirements except for cores 22-24.

We should keep in mind that there are areas where we will have to build new temporary pavement adjacent to the shoulders to satisfy width requirements. I don't have those limits yet.

Considering all of this additional information, what direction would you like to see us proceed? Shoulder inlay or shoulder replacement? If inlay, what inlay thickness(es) are you comfortable with?

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225



**EXHIBIT 36**

Please consider the environment before printing this e-mail.

---

**From:** Wagoner, Ronald R
**Sent:** Thursday, July 23, 2015 1:40 PM
**To:** Keys, Rustin B
**Subject:** RE: Interchange shoulder cores

Attached is the updated spreadsheet for the shoulder cores with the subgrade IBV ratings.

*Ronald R. Wagoner, P.E.*
Geotechnical Engineer
I.D.O.T. R3/D5
Office: 217-466-7271
Cell: 217-251-5615
Fax: 217-463-3501
E-mail: Ronald.Wagoner@illinois.gov

---

**From:** Keys, Rustin B
**Sent:** Wednesday, July 22, 2015 7:41 AM
**To:** Wagoner, Ronald R
**Subject:** RE: Interchange shoulder cores

Thursday morning sounds good; around 9 good for you?

---

**From:** Wagoner, Ronald R
**Sent:** Tuesday, July 21, 2015 7:45 AM
**To:** Keys, Rustin B
**Subject:** Interchange shoulder cores

Rustin,
We have the cores in the lab and would like you to come over and discuss the different layers and coefficients for each mix type. I will be off tomorrow. Maybe Thursday sometime?

*Ronald R. Wagoner, P.E.*
Geotechnical Engineer
I.D.O.T. R3/D5
Office: 217-466-7271
Cell: 217-251-5615
Fax: 217-463-3501
E-mail: Ronald.Wagoner@illinois.gov



**EXHIBIT 36**

**Brad Downen**

---

**From:** Wagoner, Ronald R <Ronald.Wagoner@illinois.gov>
**Sent:** Monday, July 13, 2015 11:17 AM
**To:** Keys, Rustin B
**Cc:** Arkenberg, Chad N; Robinson, Stephen A
**Subject:** RE: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Two Questions
**Attachments:** I-74&I-57_Shoulder Cores.pdf

Rustin,
I've attached the shoulder core information you requested.


*Ronald R. Wagoner, P.E.*
Geotechnical Engineer
I.D.O.T. R3/D5
Office: 217-466-7271
Cell: 217-251-5615
Fax: 217-463-3501
E-mail: Ronald.Wagoner@illinois.gov


---

**From:** Keys, Rustin B
**Sent:** Tuesday, June 02, 2015 12:15 PM
**To:** Wagoner, Ronald R
**Subject:** RE: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Two Questions

Ron,

Inside and outside HMA shoulders may be used for stage traffic on both I-57 and I-74 throughout the limits shown in the attached map. I've also attached the as-built typical sections to give you an idea of the existing shoulder thickness and structure throughout the section since it varies. Please let me know if you need anything further.


Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225



Please consider the environment before printing this e-mail.


---

**From:** Wagoner, Ronald R
**Sent:** Tuesday, June 02, 2015 7:56 AM
**To:** Keys, Rustin B
**Subject:** FW: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Two Questions

Rustin,
Could you provide us with limits or a location map for the areas in concern?



**EXHIBIT 36**

Thanks,
Ron

*Ronald R. Wagoner, P.E.*
Geotechnical Engineer
I.D.O.T. R3/D5
Office: 217-466-7271
Cell: 217-251-5615
Fax: 217-463-3501
E-mail: Ronald.Wagoner@illinois.gov

---

**From:** Robinson, Stephen A
**Sent:** Tuesday, June 02, 2015 5:09 AM
**To:** Wagoner, Ronald R
**Cc:** Keys, Rustin B
**Subject:** Fw: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Two Questions

Ron, get with Rustin and get limits of shoulder involved and we can try to get some cores cut.

---

**From**: Keys, Rustin B
**Sent**: Monday, June 01, 2015 05:16 PM
**To**: Robinson, Stephen A
**Subject**: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Two Questions

Hi Steve,

I've attached the staging plan exhibits from the draft TMP for your review in answering my questions below. One traffic control constraint on the mainline interstates is that 2 lanes of traffic be maintained during peak traffic hours. The attached plan accomplishes this by filling in any drop-offs with aggregate during peak traffic hours. We do not prefer this approach and this will be changed to require the use of temporary concrete barrier (TCB). Once the typical sections are redrawn to show the use of TCB, it is clear that the shoulder area will have to be utilized to carry traffic. The existing shoulder thicknesses vary on both interstates per the as-built typical sections, but have minimums of +/-6" of HMA on +/- 8" of BAM. On past interstate sections like the I-57 rubblization just north of the interchange, we milled and filled the shoulder 2" in a pre-stage for use by stage traffic. Of course, that section had much less traffic (just under 22,000 ADT with 24% HCV). This section's traffic counts are attached. The shoulder must hold up for an entire season since there are also bridges will be staged with the staging of the pavement construction.

I'm thinking that since these sections handle a significant amount of traffic (specifically truck traffic) and due to the length of time traffic would need to ride on the shoulder, it is probably wise to just bite the bullet and remove the shoulder and build temporary pavement on this project.

What is your opinion of using the shoulders for stage traffic? What are your thoughts on obtaining cores of the shoulders to verify the structure and perform material testing?

Thanks for your help with this.

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

Please consider the environment before printing this e-mail.



**EXHIBIT 36**

| *Core #* | *Station* | *Route* | *Direction* | *Typical Section* | *o/s from EOP (Feet)* | *HMA Thickness (inches)* | *Comments* |
|---|---|---|---|---|---|---|---|
| 1 | 646+00 | I-57 | SBDS | 5 | 5 | 17 | |
| 2 | 646+00 | I-57 | SBPS | 5 | 3 | 16 | |
| 3 | 646+00 | I-57 | NBPS | 6 | 2 | 17 | |
| 4 | 646+00 | I-57 | NBDS | 6 | 4 | 20 | |
| 5 | 631+50 | I-57 | SBDS | 4 | 4 | 17 | bottom 6" old oxidized mix |
| 6 | 631+50 | I-57 | SBPS | 4 | 2 | 15 | |
| 7 | 631+50 | I-57 | NBPS | 3 | 2 | 18 | |
| 8 | 631+50 | I-57 | NBDS | 3 | 4 | 17 | |
| 9 | 605+00 | I-57 | SBDS | 2 | 4 | 10 | |
| 10 | 605+00 | I-57 | SBPS | 2 | 3 | 9.5 | bottom 2.5" broken up |
| 11 | 605+00 | I-57 | NBPS | 2 | 2 | 10 | |
| 12 | 605+00 | I-57 | NBDS | 2 | 4 | 9 | |
| 13 | 561+00 | I-57 | SBDS | 1 | 5 | 11 | |
| 14 | 561+00 | I-57 | SBPS | 1 | 2 | 11.5 | |
| 15 | 561+00 | I-57 | NBPS | 1 | 2 | 10.5 | |
| 16 | 561+00 | I-57 | NBDS | 1 | 4 | 10 | |
| 17 | 1857+50 | I-74 | EBDS | 7 | 6 | 13 | bottom 6" old oxidized mix |
| 18 | 1857+50 | I-74 | EBPS | 7 | 1 | 12.5 | bottom 6" old oxidized mix |
| 19 | 1857+50 | I-74 | WBPS | 7 | 1 | 9.5 | bottom 2" old oxidized mix |
| 20 | 1857+50 | I-74 | WBDS | 7 | 5 | 15 | bottom 9.5" old oxidized mix |
| 21 | 1097+50 | I-74 | EBDS | 10 | 5 | 8.75 | 6.5" of CAM base |
| 22 | 1097+50 | I-74 | EBPS | 10 | 3 | 9 | |
| 23 | 1097+50 | I-74 | WBPS | 10 | 3 | 9.25 | |
| 24 | 1097+50 | I-74 | WBDS | 10 | 6 | 8.75 | 2.25 CAM base |
| 25 | 1115+00 | I-74 | EBDS | 11 | 6 | 17 | |
| 26 | 1115+00 | I-74 | EBPS | 11 | 3 | 6.5 | bottom 9.5" is PCC PVMT |
| 27 | 1115+00 | I-74 | WBPS | 11 | 3 | 10.5 | bottom 9.5" is PCC PVMT |
| 28 | 1115+00 | I-74 | WBDS | 11 | 6 | 17 | |
| 29 | 1119+50 | I-74 | EBDS | 12 | 6 | 7.25 | |
| 30 | 1119+50 | I-74 | EBPS | 12 | 4 | 9 | |
| 31 | 1119+50 | I-74 | WBPS | 12 | 3 | 8 | |
| 32 | 1119+50 | I-74 | WBDS | 12 | 7 | 8.25 | |
| 33 | 1122+50 | I-74 | EBDS | 13 | 6 | 7.5 | |
| 34 | 1122+50 | I-74 | EBPS | 13 | 6 | 8.25 | |
| 35 | 1122+50 | I-74 | WBPS | 13 | 5 | 8 | |
| 36 | 1122+50 | I-74 | WBDS | 13 | 5 | 9.5 | |
| 37 | 1140+00 | I-74 | EBDS | 14 | 4 | 8.5 | |
| 38 | 1140+00 | I-74 | EBPS | 14 | 6 | 8.75 | |
| 39 | 1140+00 | I-74 | WBPS | 14 | 4 | 8.25 | |
| 40 | 1140+00 | I-74 | WBDS | 14 | 4 | 9.5 | |

**EXHIBIT 36**

## Brad Downen

**From:** Keys, Rustin B <Rustin.Keys@illinois.gov>
**Sent:** Monday, July 13, 2015 5:01 PM
**To:** Wagoner, Ronald R; Robinson, Stephen A
**Cc:** Neihart, Scott W; Stults, Jason W
**Subject:** RE: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Shoulder Improvement for Staged Traffic
**Attachments:** I57-I74 ShoulderTesting.pdf

Thanks Ron. I see that the cored HMA thicknesses are greater than the as-built HMA thicknesses (see attachment). Does the cored HMA thickness include BAM thicknesses? Is there any way to distinguish between the higher type mix thickness and the BAM on each core? Is there any testing that can be done on the cores to determine the adequacy of the underlying layers to handle stage traffic? The only other tool I have to determine shoulder structural adequacy for staged traffic is the modified AASHTO design approach:

MODIFIED AASHTO FLEXIBLE PAVEMENT DESIGN APPROACH:
I calculated that an I-74 design lane will see about 2 million ESALs in a one year period (year 2021). I-57 will see about 1.75 million ESALs in the design lane in the same period. Using the modified AASHTO design procedure and assuming a soil IBR of 2.0 (i.e. poor soil support), the required pavement Structural Numbers on I-74 and I-57 are 5.2 and 5.1, respectively. New HMA surface with 4% voids has a structural coefficient of 0.4. Old HMA and BAM will have reduced structural coefficients. If I propose a 2" surface inlay on the shoulders (has a coefficient of 0.4) and then assume that the existing material beneath has a reduced coefficient of 0.25, then the total HMA thickness of the existing shoulder would need to be at least 19.5" thick on I-74 and 19.25" thick on I-57 to support staged traffic according to this method. It appears that we do not have enough shoulder thickness by this methodology. Assuming a better soil IBR would help with the required structure number, but I believe the existing shoulder would still be considered too thin.

If we decide that the existing shoulder should not be utilized, the mechanistic design approach yields the following:

MECHANISTIC DESIGN APPROACH
This approach yields the options of about 9.75" of HMA and 8.75" of PCC on a 12" improved subgrade on I-74 and I-57.

Perhaps BMPR should be consulted on the inlay thickness if we want to try and utilize existing shoulder structure? Do you guys feel comfortable with just inlaying a certain thickness based on your experience on past projects? I'm thinking that we should construct the temporary pavement per the mechanistic design since most of the existing HMA thickness from the cores is very deficient with respect to the modified AASHTO structure approach.

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

P Please consider the environment before printing this e-mail.

From: Wagoner, Ronald R
Sent: Monday, July 13, 2015 11:17 AM
To: Keys, Rustin B



EXHIBIT 36

Cc: Arkenberg, Chad N; Robinson, Stephen A
Subject: RE: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Two Questions

Rustin,
I've attached the shoulder core information you requested.

Ronald R. Wagoner, P.E.
Geotechnical Engineer
I.D.O.T. R3/D5
Office: 217-466-7271
Cell: 217-251-5615
Fax: 217-463-3501
E-mail: Ronald.Wagoner@illinois.gov<mailto:Ronald.Wagoner@illinois.gov>

From: Keys, Rustin B
Sent: Tuesday, June 02, 2015 12:15 PM
To: Wagoner, Ronald R
Subject: RE: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Two Questions

Ron,

Inside and outside HMA shoulders may be used for stage traffic on both I-57 and I-74 throughout the limits shown in the attached map. I've also attached the as-built typical sections to give you an idea of the existing shoulder thickness and structure throughout the section since it varies. Please let me know if you need anything further.

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

P Please consider the environment before printing this e-mail.

From: Wagoner, Ronald R
Sent: Tuesday, June 02, 2015 7:56 AM
To: Keys, Rustin B
Subject: FW: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Two Questions

Rustin,
Could you provide us with limits or a location map for the areas in concern?

Thanks,
Ron

Ronald R. Wagoner, P.E.
Geotechnical Engineer
I.D.O.T. R3/D5
Office: 217-466-7271
Cell: 217-251-5615
Fax: 217-463-3501
E-mail: Ronald.Wagoner@illinois.gov<mailto:Ronald.Wagoner@illinois.gov>



EXHIBIT 36

From: Robinson, Stephen A
Sent: Tuesday, June 02, 2015 5:09 AM
To: Wagoner, Ronald R
Cc: Keys, Rustin B
Subject: Fw: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Two Questions

Ron, get with Rustin and get limits of shoulder involved and we can try to get some cores cut.

From: Keys, Rustin B
Sent: Monday, June 01, 2015 05:16 PM
To: Robinson, Stephen A
Subject: I-57/I-74 Interchange Reconstruction - Transportation Mangement Plan (TMP) - Two Questions

Hi Steve,

I've attached the staging plan exhibits from the draft TMP for your review in answering my questions below. One traffic control constraint on the mainline interstates is that 2 lanes of traffic be maintained during peak traffic hours. The attached plan accomplishes this by filling in any drop-offs with aggregate during peak traffic hours. We do not prefer this approach and this will be changed to require the use of temporary concrete barrier (TCB). Once the typical sections are redrawn to show the use of TCB, it is clear that the shoulder area will have to be utilized to carry traffic. The existing shoulder thicknesses vary on both interstates per the as-built typical sections, but have minimums of +/-6" of HMA on +/- 8" of BAM. On past interstate sections like the I-57 rubblization just north of the interchange, we milled and filled the shoulder 2" in a pre-stage for use by stage traffic. Of course, that section had much less traffic (just under 22,000 ADT with 24% HCV). This section's traffic counts are attached. The shoulder must hold up for an entire season since there are also bridges will be staged with the staging of the pavement construction.

I'm thinking that since these sections handle a significant amount of traffic (specifically truck traffic) and due to the length of time traffic would need to ride on the shoulder, it is probably wise to just bite the bullet and remove the shoulder and build temporary pavement on this project.

What is your opinion of using the shoulders for stage traffic? What are your thoughts on obtaining cores of the shoulders to verify the structure and perform material testing?

Thanks for your help with this.

Rustin Keys, P.E.
Design Squad Leader
IDOT Region 3/ District 5
(217)-466-7225

P Please consider the environment before printing this e-mail.



EXHIBIT 36


+/- STA. 1827+00
+/- STA. 665+00
+/- STA. 1161+00
+/- STA. 540+00
STA. EQN:
STA. 1870+24.62 (BK) =
STA. 1035+05.17 (AH)
High School of Saint Thomas More
US Army Construction Engineering Research...
Baytowne Apartments
Parkland College
Daddis Park
N Mattis Ave
Co Rd 1100 E
74
57
238
179A
237B
237A
179B
181

**EXHIBIT 36**

7-13-2015 SHOULDER CORE DATA

| LAST RS | Core # | Station | Route | Direction | Typical Section | o/s from EOP (Feet) | HMA Thickness (inches) | Comments | As built HMA thickness NOT INCL. BAM |
|---|---|---|---|---|---|---|---|---|---|
| 2012/2013 | 1 | 646+00 | I-57 | SBDS | 5 | 5 | 17 | | 10.75-9.75 |
| | 2 | 646+00 | I-57 | SBPS | 5 | 3 | 16 | | 10.75-9.75 |
| | 3 | 646+00 | I-57 | NBPS | 6 | 2 | 17 | | 9.75-9.25 |
| | 4 | 646+00 | I-57 | NBDS | 6 | 4 | 20 | | 9.75-9.25 |
| 2007 | 5 | 631+50 | I-57 | SBDS | 4 | 4 | 17 | bottom 6" old oxidized mix | 6.5-5.5 |
| | 6 | 631+50 | I-57 | SBPS | 4 | 2 | 15 | | 6.5-5.5 |
| | 7 | 631+50 | I-57 | NBPS | 3 | 2 | 18 | | 7.75-7.25 |
| | 8 | 631+50 | I-57 | NBDS | 3 | 4 | 17 | | 7.75-7.25 |
| | 9 | 605+00 | I-57 | SBDS | 2 | 4 | 10 | | 6.5-5.5 |
| | 10 | 605+00 | I-57 | SBPS | 2 | 3 | 9.5 | bottom 2.5" broken up | 6.5-5.5 |
| | 11 | 605+00 | I-57 | NBPS | 2 | 2 | 10 | | 6.5-5.5 |
| | 12 | 605+00 | I-57 | NBDS | 2 | 4 | 9 | | 6.5-5.5 |
| | 13 | 561+00 | I-57 | SBDS | 1 | 5 | 11 | | 7.5-7 |
| | 14 | 561+00 | I-57 | SBPS | 1 | 2 | 11.5 | | 7.5-7 |
| | 15 | 561+00 | I-57 | NBPS | 1 | 2 | 10.5 | | 7.5-7 |
| | 16 | 561+00 | I-57 | NBDS | 1 | 4 | 10 | | 7.5-7 |
| 1998 | 17 | 1857+50 | I-74 | EBDS | 7 | 6 | 13 | bottom 6" old oxidized mix | 7.75 |
| | 18 | 1857+50 | I-74 | EBPS | 7 | 1 | 12.5 | bottom 6" old oxidized mix | 7.75 |
| | 19 | 1857+50 | I-74 | WBPS | 7 | 1 | 9.5 | bottom 2" old oxidized mix | 7.75 |
| | 20 | 1857+50 | I-74 | WBDS | 7 | 5 | 15 | bottom 9.5" old oxidized mix | 7.75 |
| 2006 | 21 | 1097+50 | I-74 | EBDS | 10 | 5 | 8.75 | 6.5" of CAM base | 6 |
| | 22 | 1097+50 | I-74 | EBPS | 10 | 3 | 9 | | 8.25 |
| | 23 | 1097+50 | I-74 | WBPS | 10 | 3 | 9.25 | | 8.25 |
| | 24 | 1097+50 | I-74 | WBDS | 10 | 6 | 8.75 | 2.25 CAM base | 6 |
| | 25 | 1115+00 | I-74 | EBDS | 11 | 6 | 17 | | 10.5 |
| | 26 | 1115+00 | I-74 | EBPS | 11 | 3 | 6.5 | bottom 9.5" is PCC PVMT | 8.25 |
| | 27 | 1115+00 | I-74 | WBPS | 11 | 3 | 10.5 | bottom 9.5" is PCC PVMT | 10.5 |
| | 28 | 1115+00 | I-74 | WBDS | 11 | 6 | 17 | | 6 |
| | 29 | 1119+50 | I-74 | EBDS | 12 | 6 | 7.25 | | 8.25 |
| | 30 | 1119+50 | I-74 | EBPS | 12 | 4 | 9 | | 8.25 |
| | 31 | 1119+50 | I-74 | WBPS | 12 | 3 | 8 | | 8.25 |
| | 32 | 1119+50 | I-74 | WBDS | 12 | 7 | 8.25 | | 8.25 |
| | 33 | 1122+50 | I-74 | EBDS | 13 | 6 | 7.5 | | 8.25 |
| | 34 | 1122+50 | I-74 | EBPS | 13 | 6 | 8.25 | | 8.25 |
| | 35 | 1122+50 | I-74 | WBPS | 13 | 5 | 8 | | 8.25 |
| | 36 | 1122+50 | I-74 | WBDS | 13 | 5 | 9.5 | | 8.25 |
| | 37 | 1140+00 | I-74 | EBDS | 14 | 4 | 8.5 | | 8.25 |
| | 38 | 1140+00 | I-74 | EBPS | 14 | 6 | 8.75 | | 8.25 |
| | 39 | 1140+00 | I-74 | WBPS | 14 | 4 | 8.25 | | 8.25 |
| | 40 | 1140+00 | I-74 | WBDS | 14 | 4 | 9.5 | | 8.25 |

**EXHIBIT 36**

BDE 5401 Template (Rev. 09/05/2013)

# IDOT MECHANISTIC PAVEMENT DESIGN

Printed: 07/13/2015

## PROJECT AND TRAFFIC INPUTS

(Enter Data in Gray Shaded Cells)

Route: FAI 74
Section:
County: Champaign
Location: Duncan Rd to Prospect Ave

Comments: ESAL determination

Design Date: 07/13/2015 RBK
Modify Date:

Facility Type: Interstate or Freeway
# of Lanes = 4

Road Class: I

Subgrade Support Rating (SSR): Poor
Construction Year: 2021
Design Period (DP) = 1 years

<-- BY
<-- BY

| | ADT | Year |
|---|---|---|
| Current: | 38,400 | 2011 |
| Future: | 51,500 | 2031 |

| | Minimum ADT | Structural Design Traffic: Actual ADT | Actual %of Total ADT | % of ADT in Design Lane |
|---|---|---|---|---|
| PV = | 0 | 34,909 | 77.1% | P = 32% |
| SU = | 500 | 1,494 | 3.3% | S = 45% |
| MU = | 1500 | 8,874 | 19.6% | M = 45% |
| | | Struct. Design ADT = 45,278 | | (2022) |

### TRAFFIC FACTOR CALCULATION

| FLEXIBLE PAVEMENT | | | RIGID PAVEMENT | | |
|---|---|---|---|---|---|
| Cpv = | 0.15 | | Cpv = | 0.15 | |
| Csu = | 132.5 | | Csu = | 143.81 | |
| Cmu = | 482.53 | for use in Modified AASHTO procedure | Cmu = | 696.42 | |
| TF flexible (Actual) = | 2.02 | (Actual ADT) | TF rigid (Actual) = | 2.88 | (Actual ADT) |
| TF flexible (Min) = | 0.36 | (Min ADT Fig. 54-2.C) | TF rigid (Min) = | 0.50 | (Min ADT Fig. 54-2.C) |

## NEW CONSTRUCTION / RECONSTRUCTION PAVEMENT DESIGN CALCULATIONS

### Full-Depth HMA Pavement

Use TF flexible = 2.02
PG Grade Lower Binder Lifts = PG 64-22 (Fig. 53-4.R)
Goto Map — HMA Mixture Temp. = 77.5 deg. F (Fig. 54-5.C)
Design HMA Mixture Modulus ($E_{HMA}$) = 620 ksi (Fig. 54-5.D)
Design HMA Strain ($\varepsilon_{HMA}$) = 98 (Fig. 54-5.E)
Full Depth HMA Design Thickness = 9.75 in. (Fig. 54-5.F)
Goto Map — Limiting Strain Criterion Thickness = 15.75 in. (Fig. 54-5.I)

**Use Full-Depth HMA Thickness = 9.75 inches**

### JPC Pavement

Use TF rigid = 2.88
Edge Support = Untied Shoulder or C.&G.

**Rigid Pavt Thick. = 8.75 in. (Fig. 54-4.E)**

### CRC Pavement

Use TF rigid = 2.88
IBR value = 3

**CRCP Thickness = 7.50 in. (Fig. 54-4.M)**

TF MUST BE > 60 FOR CRCP

## RECONSTRUCTION ONLY (SUPPLEMENTAL) PAVEMENT DESIGN CALCULATIONS

### HMA Overlay of Rubblized PCC

Use TF flexible = 2.02
Goto Map — HMA Overlay Design Thickness = 6.75 in. (Fig. 54-5.U)
Limiting Strain Criterion Thickness = in. (Fig. 54-5.V)

**Use HMA Overlay Thickness = 999.00 inches**

### Unbonded Concrete Overlay

Review 54-4.03 for limitations and special considerations.

**JPCP Thickness = NA inches**

CONTACT BMPR FOR ASSISTANCE

## DESIGN TABLES FROM BDE MANUAL CHAPTER 54 - PAVEMENT DESIGN

| Class I Roads | Class II Roads | Class III Roads | Class IV Roads |
|---|---|---|---|
| 4 lanes or more<br>Part of a future 4 lanes or more<br>One-way Streets with ADT > 3500 | 2 lanes with ADT > 2000<br>One way Street with ADT <= 3500 | 2 Lanes<br>(ADT 750 -2000) | 2 Lanes<br>(ADT < 750) |

| Facility Type | Min. Str. Design Traffic (Fig 54-2.C) PV | SU | MU |
|---|---|---|---|
| Interstate or Freeway | 0 | 500 | 1500 |
| Other Marked State Route | 0 | 250 | 750 |
| Unmarked State Route | No Min | No Min | No Min |

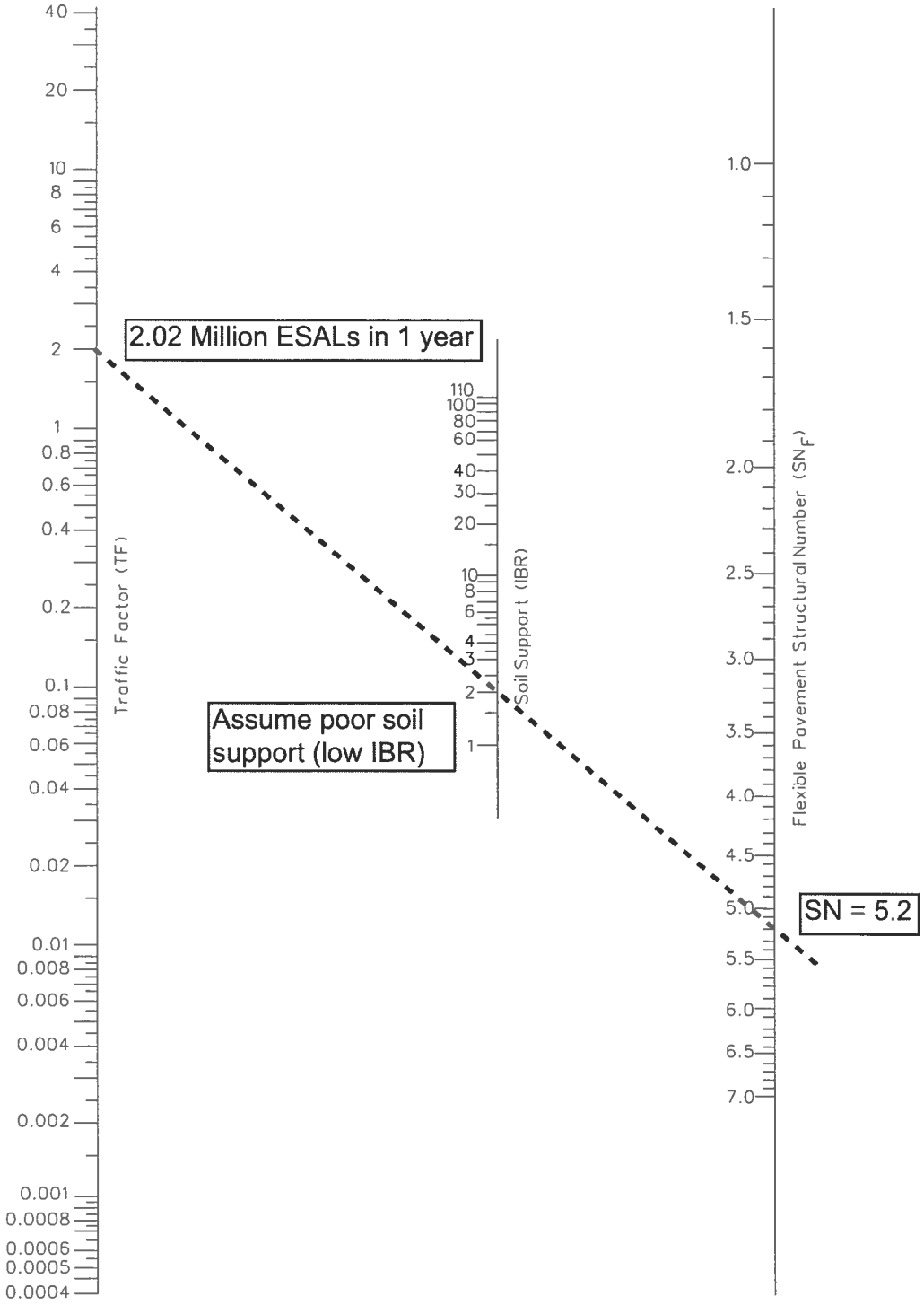
| Class Table for One-Way Streets | |
|---|---|
| ADT | Class |
| 0 - 3500 | II |
| >3501 | I |

| Class | Traffic Factor ESAL Coefficients: Rigid (Fig. 54-4.C) Csu | Cmu | Flexible (Fig. 54-5.B) Csu | Cmu |
|---|---|---|---|---|
| I | 143.81 | 696.42 | 132.50 | 482.53 |
| II | 135.78 | 567.21 | 112.06 | 385.44 |
| III | 129.58 | 562.47 | 109.14 | 384.35 |
| IV | 129.58 | 562.47 | 109.14 | 384.35 |

| Class Table for 2 or 3 lanes (not future 4 lane & not one-way street) | |
|---|---|
| ADT | Class |
| 0 - 749 | IV |
| 750 - 2000 | III |
| >2000 | II |

| Number of Lanes | Design Lane Distribution Factors For Structural Design Traffic (Fig. 54-2.B) Rural P | S | M | Urban P | S | M |
|---|---|---|---|---|---|---|
| 1 Lane Ramp | 100% | 100% | 100% | 100% | 100% | 100% |
| 2 or 3 | 50% | 50% | 50% | 50% | 50% | 50% |
| 4 | 32% | 45% | 45% | 32% | 45% | 45% |
| 6 or more | 20% | 40% | 40% | 8% | 37% | 37% |

EXHIBIT 36




**FLEXIBLE PAVEMENT DESIGN NOMOGRAPH**
**(Modified AASHTO Design: Class I Facilities)**

**Figure 54-5.M**



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**EXHIBIT 36**

BDE 5401 Template (Rev. 09/05/2013)

# IDOT MECHANISTIC PAVEMENT DESIGN

Printed: 07/13/2015

## PROJECT AND TRAFFIC INPUTS

(Enter Data in Gray Shaded Cells)

Route: FAI 57
Section:
County: Champaign
Location: I-72 to Olympian Dr.

Comments: ESAL determination
Design Date: 07/13/2015 RBK <-- BY
Modify Date: <-- BY

| | ADT | Year |
|---|---|---|
| Current: | 33,600 | 2011 |
| Future: | 43,700 | 2031 |

Facility Type: Interstate or Freeway
# of Lanes = 4
Road Class: I
Subgrade Support Rating (SSR): Poor
Construction Year: 2021
Design Period (DP) = 1 years

| | Minimum ADT | Structural Design Traffic: Actual ADT | Actual %of Total ADT | % of ADT in Design Lane |
|---|---|---|---|---|
| PV = | 0 | 29,994 | 77.1% | P = 32% |
| SU = | 500 | 1,284 | 3.3% | S = 45% |
| MU = | 1500 | 7,625 | 19.6% | M = 45% |
| | | Struct. Design ADT = 38,903 | | (2022) |

### TRAFFIC FACTOR CALCULATION

| FLEXIBLE PAVEMENT | | | RIGID PAVEMENT | | |
|---|---|---|---|---|---|
| Cpv = | 0.15 | | Cpv = | 0.15 | |
| Csu = | 132.5 | | Csu = | 143.81 | |
| Cmu = | 482.53 | for use in MoD. AASHTO procedure | Cmu = | 696.42 | |
| TF flexible (Actual) = | 1.73 | (Actual ADT) | TF rigid (Actual) = | 2.47 | (Actual ADT) |
| TF flexible (Min) = | 0.36 | (Min ADT Fig. 54-2.C) | TF rigid (Min) = | 0.50 | (Min ADT Fig. 54-2.C) |

## NEW CONSTRUCTION / RECONSTRUCTION PAVEMENT DESIGN CALCULATIONS

### Full-Depth HMA Pavement

Use TF flexible = 1.73
PG Grade Lower Binder Lifts = PG 64-22 (Fig. 53-4.R)
Goto Map — HMA Mixture Temp. = 77.5 deg. F (Fig. 54-5.C)
Design HMA Mixture Modulus ($E_{HMA}$) = 620 ksi (Fig. 54-5.D)
Design HMA Strain ($\varepsilon_{HMA}$) = 103 (Fig. 54-5.E)
Goto Map — Full Depth HMA Design Thickness = 9.50 in. (Fig. 54-5.F)
Limiting Strain Criterion Thickness = 15.75 in. (Fig. 54-5.I)
**Use Full-Depth HMA Thickness = 9.50 inches**

### JPC Pavement

Use TF rigid = 2.47
Edge Support = Untied Shoulder or C.&G.
**Rigid Pavt Thick. = 8.75 in. (Fig. 54-4.E)**

### CRC Pavement

Use TF rigid = 2.47
IBR value = 3
**CRCP Thickness = 7.25 in. (Fig. 54-4.M)**

TF MUST BE > 60 FOR CRCP

## RECONSTRUCTION ONLY (SUPPLEMENTAL) PAVEMENT DESIGN CALCULATIONS

### HMA Overlay of Rubblized PCC

Use TF flexible = 1.73
Goto Map — HMA Overlay Design Thickness = 6.50 in. (Fig. 54-5.U)
Limiting Strain Criterion Thickness = in. (Fig. 54-5.V)
**Use HMA Overlay Thickness = 999.00 inches**

### Unbonded Concrete Overlay

Review 54-4.03 for limitations and special considerations.

**JPCP Thickness = NA inches**

CONTACT BMPR FOR ASSISTANCE

## DESIGN TABLES FROM BDE MANUAL CHAPTER 54 - PAVEMENT DESIGN

| Class I Roads | Class II Roads | Class III Roads | Class IV Roads |
|---|---|---|---|
| 4 lanes or more<br>Part of a future 4 lanes or more<br>One-way Streets with ADT > 3500 | 2 lanes with ADT > 2000<br>One way Street with ADT <= 3500 | 2 Lanes<br>(ADT 750 -2000) | 2 Lanes<br>(ADT < 750) |

| Facility Type | Min. Str. Design Traffic (Fig 54-2.C) PV | SU | MU |
|---|---|---|---|
| Interstate or Freeway | 0 | 500 | 1500 |
| Other Marked State Route | 0 | 250 | 750 |
| Unmarked State Route | No Min | No Min | No Min |

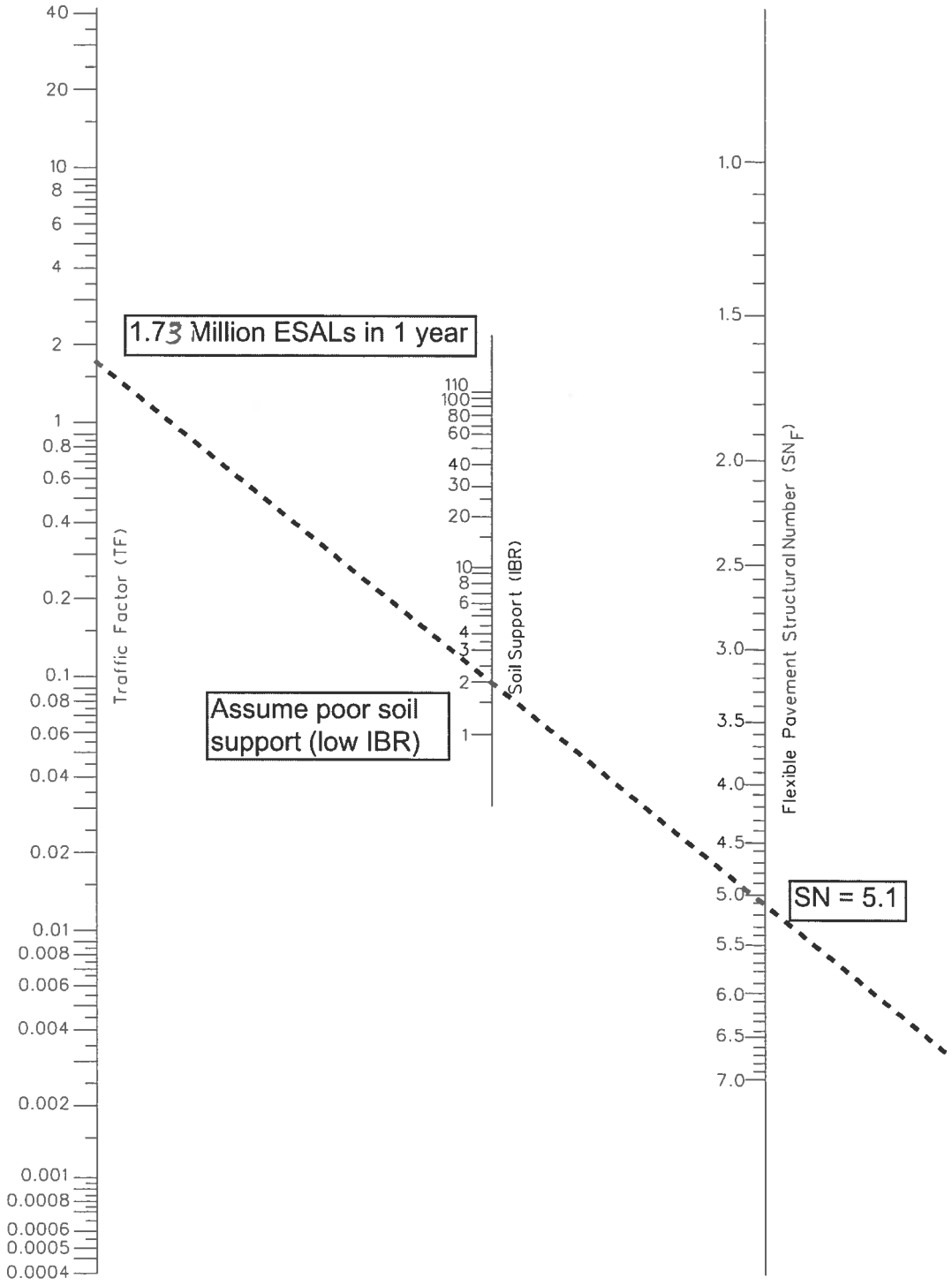
| Class Table for One-Way Streets | |
|---|---|
| ADT | Class |
| 0 - 3500 | II |
| >3501 | I |

| Class | Traffic Factor ESAL Coefficients: Rigid (Fig. 54-4.C) Csu | Cmu | Flexible (Fig. 54-5.B) Csu | Cmu |
|---|---|---|---|---|
| I | 143.81 | 696.42 | 132.50 | 482.53 |
| II | 135.78 | 567.21 | 112.06 | 385.44 |
| III | 129.58 | 562.47 | 109.14 | 384.35 |
| IV | 129.58 | 562.47 | 109.14 | 384.35 |

| Class Table for 2 or 3 lanes (not future 4 lane & not one-way street) | |
|---|---|
| ADT | Class |
| 0 - 749 | IV |
| 750 - 2000 | III |
| >2000 | II |

| Number of Lanes | Design Lane Distribution Factors For Structural Design Traffic (Fig. 54-2.B) Rural P | S | M | Urban P | S | M |
|---|---|---|---|---|---|---|
| 1 Lane Ramp | 100% | 100% | 100% | 100% | 100% | 100% |
| 2 or 3 | 50% | 50% | 50% | 50% | 50% | 50% |
| 4 | 32% | 45% | 45% | 32% | 45% | 45% |
| 6 or more | 20% | 40% | 40% | 8% | 37% | 37% |

EXHIBIT 36




**FLEXIBLE PAVEMENT DESIGN NOMOGRAPH**
**(Modified AASHTO Design: Class I Facilities)**

**Figure 54-5.M**



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**EXHIBIT 36**

| STRUCTURAL MATERIALS | MINIMUM STRENGTH REQUIREMENTS | | | COEFFICIENTS ③ | | |
|---|---|---|---|---|---|---|
| | MS ① | IBR | CS ② | $a_1$ | $a_2$ | $a_3$ |
| **HMA Surface** | | | | | | |
| Road Mix (Class B) | | | | 0.20 | | |
| Plant Mix (Class B) | | | | | | |
| Liquid Asphalt | | | | 0.22 | | |
| Asphalt Binder | 900 | | | 0.30 | | |
| HMA Surface Course (4% voids) | | | | 0.40 | | |
| **Base Course** | | | | | | |
| Aggregate, Type B | | | | | | |
| Uncrushed | | 50 | | | 0.10 | |
| Crushed | | 80 | | | 0.13 | |
| Aggregate, Type A | | 80 | | | 0.13 | |
| Waterbound Macadam | | 110 | | | 0.14 | |
| Bituminous Stabilized Granular Material | 300 | | | | 0.16 | |
| | 400 | | | | 0.18 | |
| | 800 | | | | 0.23 | |
| | 1,000 | | | | 0.25 | |
| | 1,200 | | | | 0.27 | |
| | 1,500 | | | | 0.30 | |
| | 1,700 | | | | 0.33 | |
| HMA Binder Course (4% voids) | | | | | 0.33 | |
| Pozzolanic, Type A | | | 600 | | 0.28 | |
| Lime Stabilized Soil | | | 150 | | 0.11 | |
| Select Soil Stabilized | | | 300 | | 0.15 | |
| with Cement | | | 500 | | 0.20 | |
| Cement Stabilized Granular Material | | | 650 | | 0.23 | |
| | | | 750 | | 0.25 | |
| | | | 1,000 | | 0.28 | |
| **Subbase** | | | | | | |
| Granular Material, Type B | | 30 | | | | 0.11 |
| Granular Material, Type A | | | | | | |
| Uncrushed | | 50 | | | | 0.12 |
| Crushed | | 80 | | | | 0.14 |
| Lime Stabilized Soil | | | 100 | | | 0.12 |

*Notes:*

① *Marshall Stability (MS) index or equivalent.*

② *Compressive strength (CS) in pounds per square inch (psi). For cement stabilized soils and granular materials, use the 7-day compressive strength that can be reasonably expected under field conditions. For lime stabilized soils, use the accelerated curing compressive strength at 120°F for 48 hours. For Pozzolanic, Type A, use the compressive strength after a 14-day curing period at 72°F.*

③ *For materials with strengths other than those shown, the coefficients may be determined from Figures 54-5.P, 54-5.Q, and 54-5.R. Other approved materials of similar strengths may be substituted for those presented in Figure 54-5.O.*

**COEFFICIENTS FOR MATERIALS IN NEW FLEXIBLE PAVEMENT STRUCTURES (Modified AASHTO Design)**

**Figure 54-5.O**



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**EXHIBIT 36**

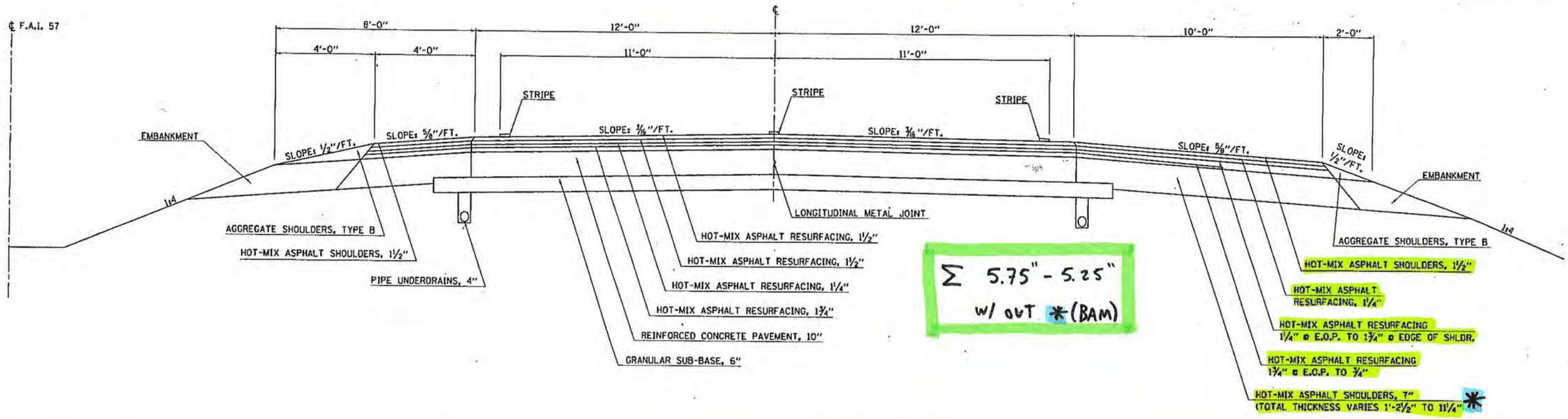
CONTRACT NO. 704

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHT NO |
|---|---|---|---|---|
| 57 | * | CHAMPAIGN | 71 | |
| STA. | | TO STA. | | |
| FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT | | |

* 10(33RS-4,(34-1,35,36,37)RS-2)

# EXISTING TYPICAL CROSS SECTION (LEG 1)

STATION 544+40.00 TO STATION 575+00.00

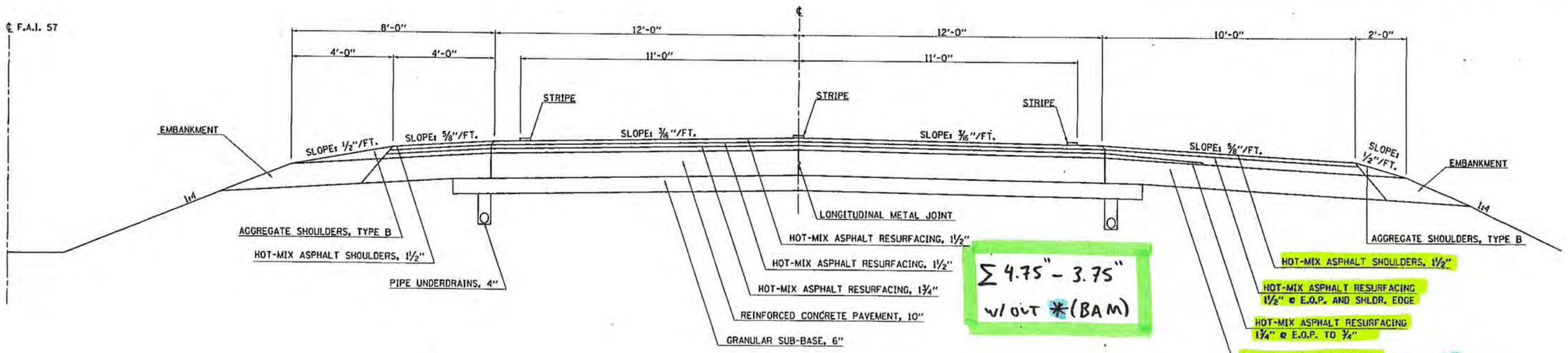



Σ 5.75" - 5.25" w/ out * (BAM)

# EXISTING TYPICAL CROSS SECTION (LEG 1)

STATION 575+00.00 TO STATION 623+36.00

* Shown as: Stabilized Shoulders - 1963
Bituminous Agg. Mixture - 1986




Σ 4.75" - 3.75" w/ out * (BAM)

PLOT DATE = 8/20/2007
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2007-10(33RS-4,(34-1,35,36,37)RS-2) C #70404

EXHIBIT 36

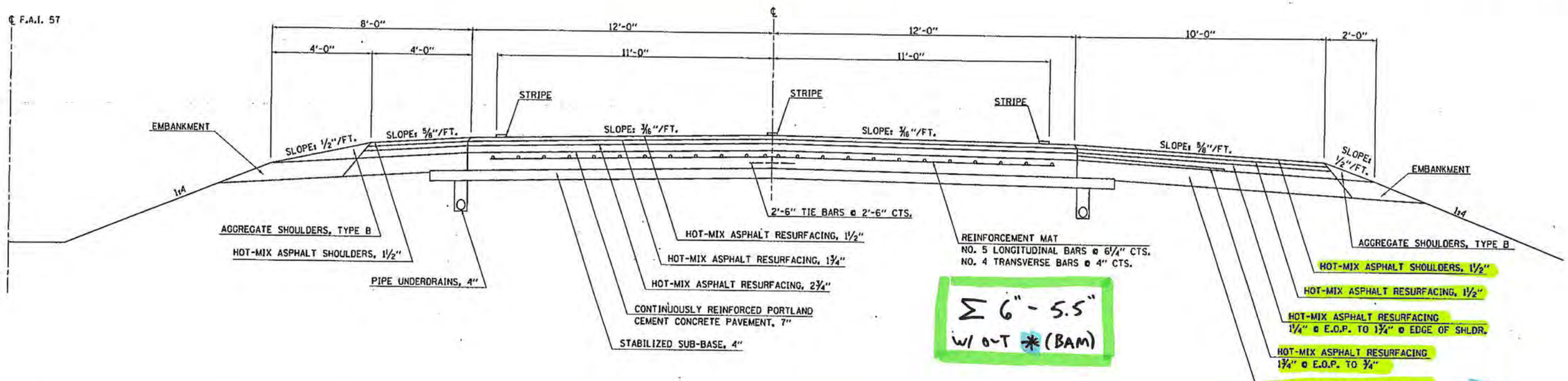
CONTRACT NO. 704

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 57 | * | CHAMPAIGN | 71 | 11 |
| STA. | | TO STA. | | |
| FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT | | |

* 10(33RS-4,(34-1,35,36,37)RS-21

# EXISTING TYPICAL CROSS SECTION (LEG1)

NORTHBOUND LANES
STATION 623+36.00 TO STATION 637+33.00

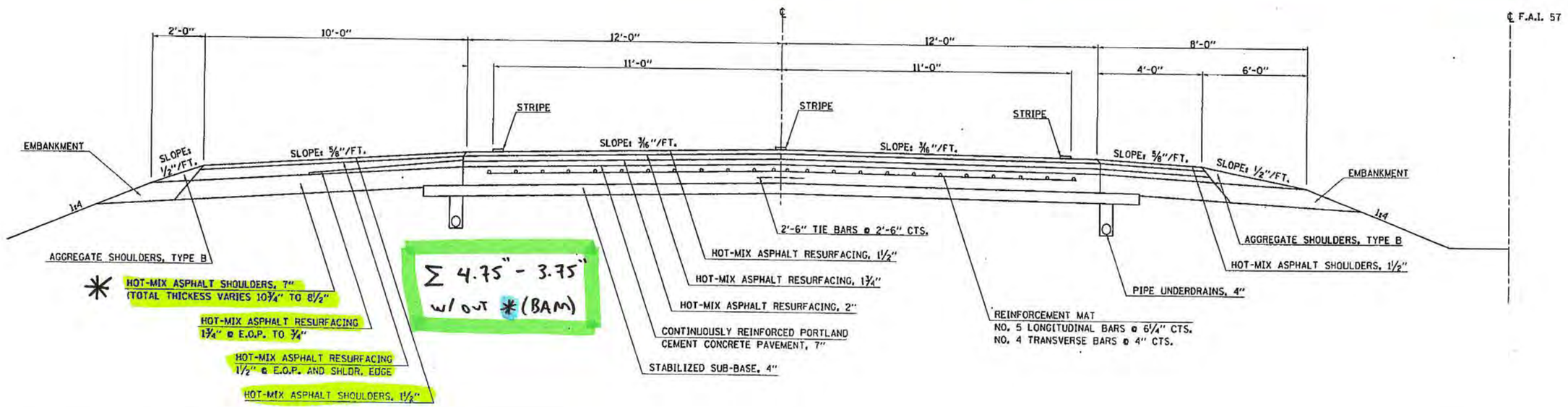



Σ 6" - 5.5"
w/ o-T * (BAM)

# EXISTING TYPICAL CROSS SECTION (LEG1)

SOUTHBOUND LANES
STATION 623+36.00 TO STATION 637+33.00

* Shown as: Stabilized Shoulders - 1963
Bituminous Agg. Mixture - 1986




Σ 4.75" - 3.75"
w/ out * (BAM)

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EXHIBIT 36

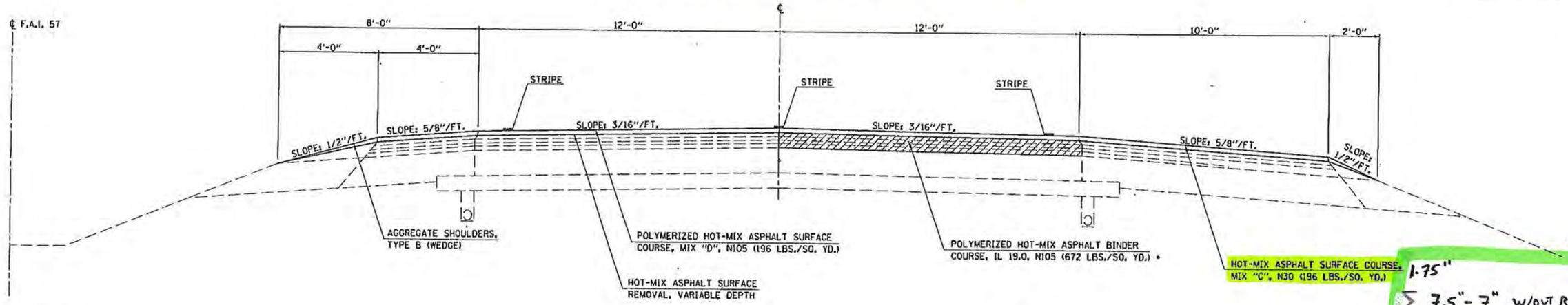
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| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 57 | - | CHAMPAIGN | 71 | 1- |
| STA. | | TO STA. | | |
| FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT | | |

* 10(33RS-4,34-1,35,36,37)RS-2

# PROPOSED TYPICAL CROSS SECTION (LEG 1) ①

(BEGIN LEG 1) STATION 544+40.00 TO STATION 575+00.00 ②




NOTE:
VARIABLE DEPTH HOT-MIX ASPHALT SURFACE REMOVAL IN PASSING LANE
HOT-MIX ASPHALT SURFACE REMOVAL, 6" IN DRIVING LANE

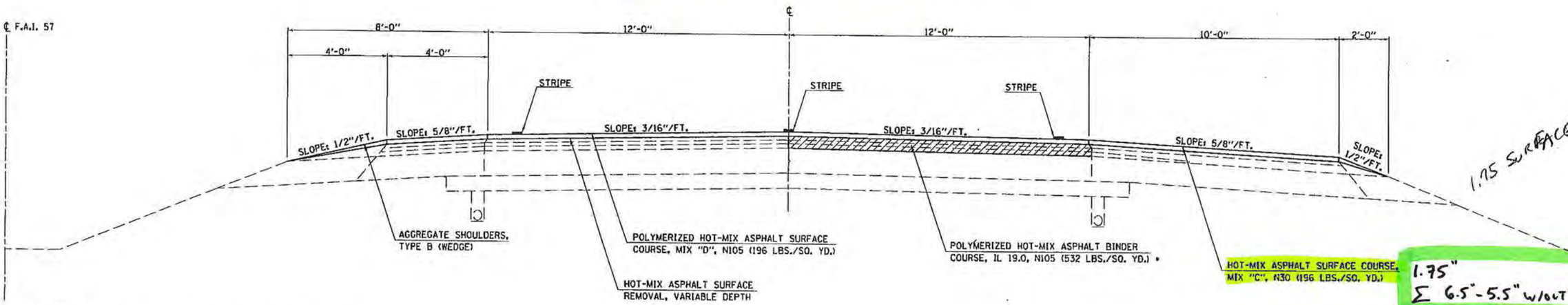
* IL 19.0 BINDER SHALL BE PLACED IN 2 LIFTS WITH THE MINIMUM LIFT THICKNESS BEING 2 1/4"

▨ HOT-MIX ASPHALT SURFACE REMOVAL, 6"

NOTE: OMISSION FROM RESURFACING
③ STATION 565+68.00 TO STATION 567+48.00 ③

# PROPOSED TYPICAL CROSS SECTION (LEG 1) ②

①STATION 575+00.00 TO STATION 623+36.00 ⑦ NB ⑧ SB




NOTE:
VARIABLE DEPTH HOT-MIX ASPHALT SURFACE REMOVAL IN PASSING LANE
HOT-MIX ASPHALT SURFACE REMOVAL, 4 3/4" IN DRIVING LANE

* IL 19.0 BINDER SHALL BE PLACED IN 2 LIFTS WITH THE MINIMUM LIFT THICKNESS BEING 2 1/4"

▨ HOT-MIX ASPHALT SURFACE REMOVAL, 4 3/4"

NOTE: OMISSION FROM RESURFACING
④ STATION 581+60.00 TO STATION 583+40.00 ④
⑤ STATION 596+88.00 TO STATION 598+68.00 ⑤

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**EXHIBIT 36**

CONTRACT NO. 7041

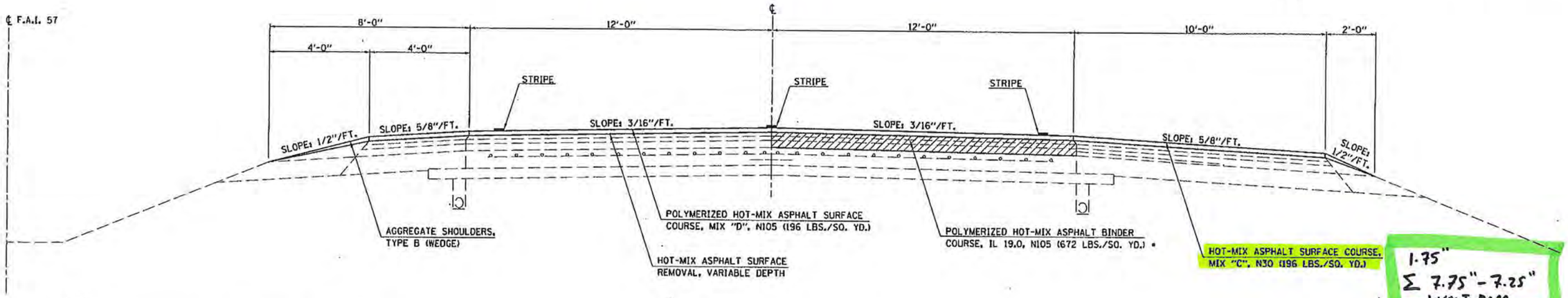
| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 57 | * | CHAMPAIGN | 71 | 17 |
| STA. | | TO STA. | | |
| FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT | | |

* 10E33RS-4,(34-1,35,36,37)RS-2I

# PROPOSED TYPICAL CROSS SECTION (LEG 1) (7)

NORTHBOUND LANES

② STATION 623+36.00 TO STATION 637+33.00 (END LEG 1)




NOTE:

VARIABLE DEPTH HOT-MIX ASPHALT SURFACE REMOVAL IN PASSING LANE
HOT-MIX ASPHALT SURFACE REMOVAL, 6" IN DRIVING LANE

* IL 19.0 BINDER SHALL BE PLACED IN 2 LIFTS WITH THE MINIMUM LIFT THICKNESS BEING 2 1/4"

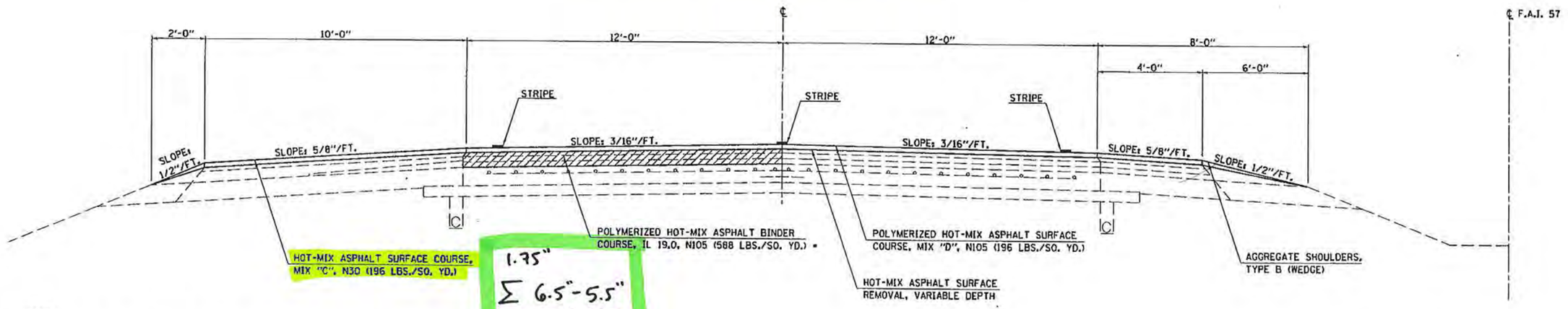
▨ HOT-MIX ASPHALT SURFACE REMOVAL, 6"

NOTE: OMISSION FROM RESURFACING
⑥ STATION 625+76.00 TO STATION 627+56.00 ⑥

# PROPOSED TYPICAL CROSS SECTION (LEG 1) (8)

SOUTHBOUND LANES

② STATION 623+36.00 TO STATION 637+33.00 (END LEG 1)




NOTE:

VARIABLE DEPTH HOT-MIX ASPHALT SURFACE REMOVAL IN PASSING LANE
HOT-MIX ASPHALT SURFACE REMOVAL, 5 1/4" IN DRIVING LANE

* IL 19.0 BINDER SHALL BE PLACED IN 2 LIFTS WITH THE MINIMUM LIFT THICKNESS BEING 2 1/4"

▨ HOT-MIX ASPHALT SURFACE REMOVAL, 5 1/4"

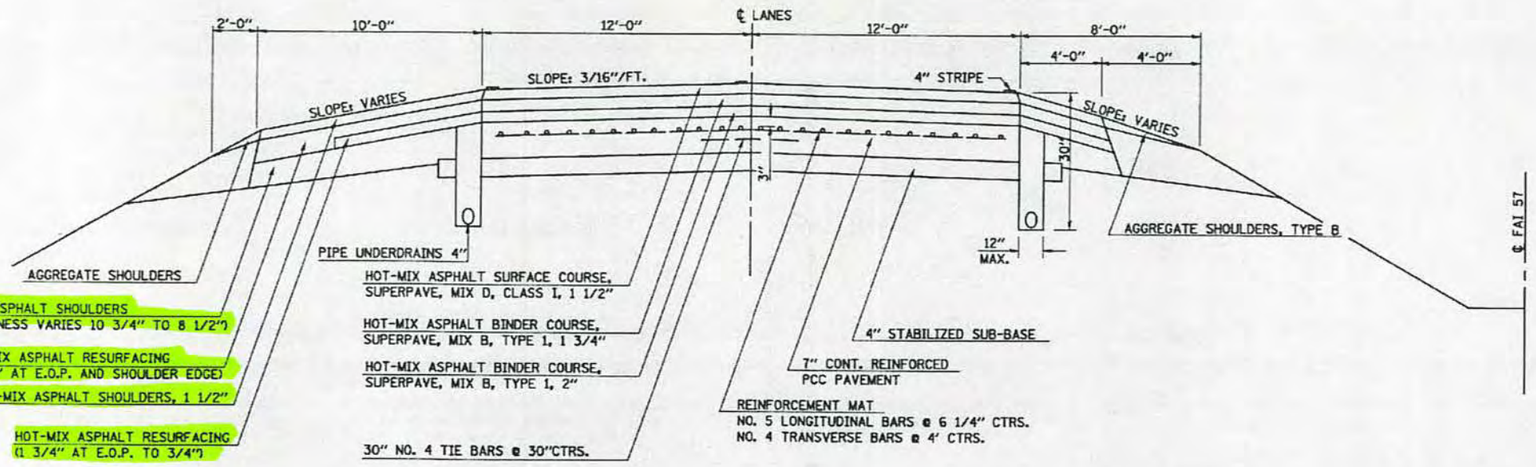
NOTE: OMISSION FROM RESURFACING
⑥ STATION 625+76.00 TO STATION 627+56.00 ⑥

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USER NAME = colliarbw

EXHIBIT 36

# EXISTING TYPICAL CROSS SECTIONS

FAI ROUTE 57
SOUTHBOUND LANES
STATION 637+35 TO STATION 918+57




Σ 4.75" - 3.75" w/ out * (BAM)

* shown as: Stabilized Shoulders - 1963
Bit. Agg. Mixture - 1986

2012 - (10-34, 10-35) RS-2(SB) C# 70923

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FILE NAME = #FILEL# | USER NAME = #USER# | DESIGNED - | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | EXISTING TYPICAL CROSS SECTIONS | F.A.I RTE. | SECTION |
| | | DRAWN - | REVISED - | | | 57 | (10-34, 10-35)RS-2(SB) |
| | PLOT SCALE = #SCALE# | CHECKED - | REVISED - | | | | |
| | PLOT DATE = #DATE# | DATE - | REVISED - | | SCALE: SHEET NO. 1 OF 3 SHEETS STA. TO STA. | | |

| COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|
| CHAMPAIGN | 66 | 8 |
| CONTRACT NO. 70923 | | |
| ILLINOIS FED. AID PROJECT | | |

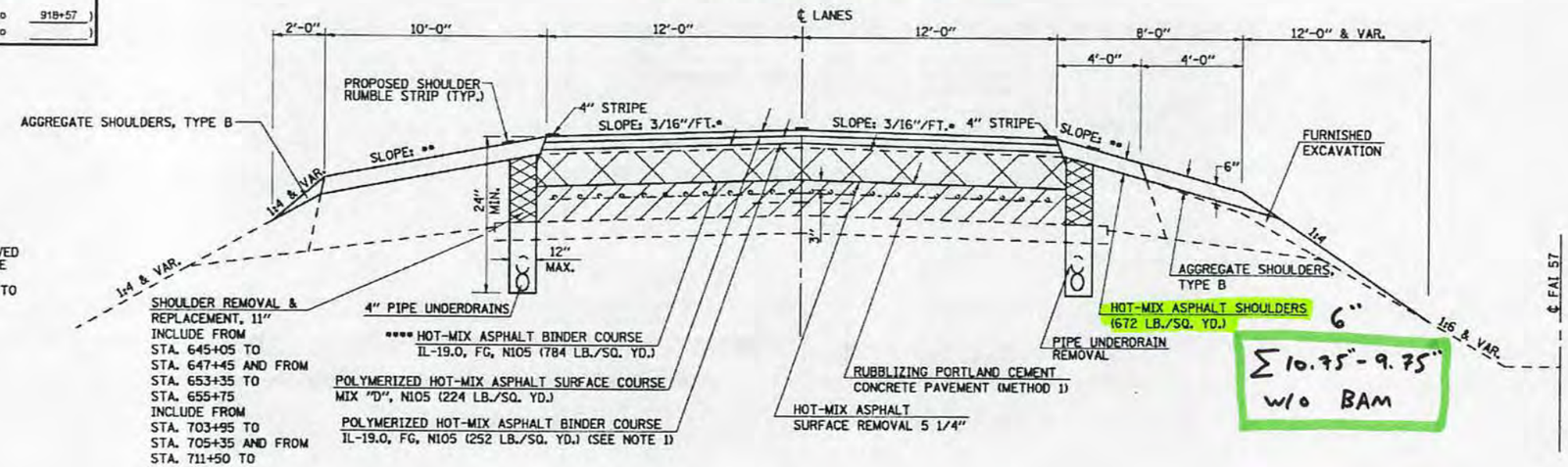
EXHIBIT 36

## STRUCTURAL PAVEMENT DESIGN

STRUCTURAL DESIGN TRAFFIC: Year 2020
PV = 21812 SU = 975 MU = 5876
ROAD/STREET CLASSIFICATION: Class = Interstate
PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE:
P = 32% S = 45% M = 45%
TRAFFIC FACTOR: Actual TF = 26.700 AC Type = 20
Minimum TF = 7.11
PG GRADE: Binder = 64-22 Surface = SBS 70-28
SUBGRADE SUPPORT RATING:
SSR = Poor (Sta. 637+35 to 918+57 )
SSR = _____ (Sta. _____ to _____ )

# PROPOSED TYPICAL CROSS SECTIONS

FAI ROUTE 57
SOUTHBOUND LANES
STATION 637+35 TO STATION 645+05
STATION 655+75 TO STATION 703+95
STATION 713+90 TO STATION 918+57




Σ 10.75" - 9.75" w/o BAM

* 3/16"/FT. CROSS SLOPE TO BE ACHIEVED WITH HOT-MIX ASPHALT BINDER COURSE

** MATCH EXISTING SHOULDER SLOPE UP TO 6% MAX.

*** LIFT THICKNESS - MINIMUM 2 1/4" MAXIMUM 4 1/2"

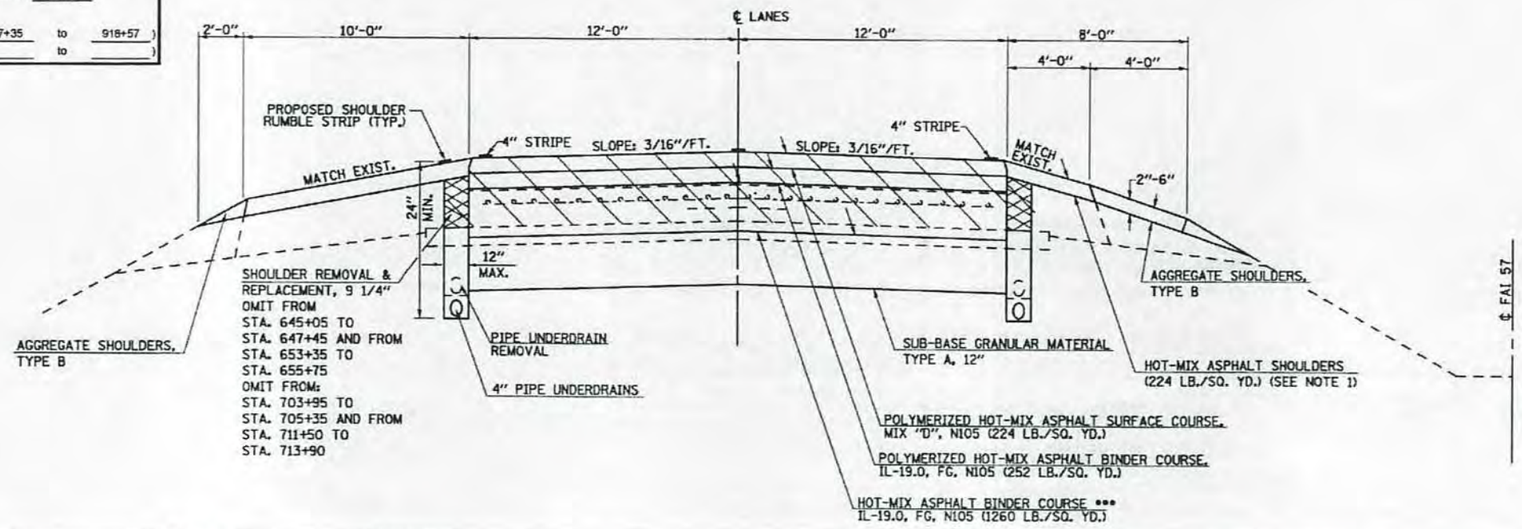
**** (672 LB./SQ YD.) STA. 764+00 TO STA. 767+00 STA. 875+60 TO STA. 878+40


## STRUCTURAL PAVEMENT DESIGN

STRUCTURAL DESIGN TRAFFIC: Year 2020
PV = 21812 SU = 975 MU = 5876
ROAD/STREET CLASSIFICATION: Class = Interstate
PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE:
P = 32% S = 45% M = 45%
TRAFFIC FACTOR: Actual TF = 26.700 AC Type = 20
Minimum TF = 7.11
PG GRADE: Binder = 64-22 Surface = SBS 70-28
SUBGRADE SUPPORT RATING:
SSR = Poor (Sta. 637+35 to 918+57 )
SSR = _____ (Sta. _____ to _____ )


# PROPOSED TYPICAL CROSS SECTIONS

FAI ROUTE 57
SOUTHBOUND LANES
STATION 645+05 TO STATION 655+75 - S.N. 010-0254
STATION 703+95 TO STATION 713+90 - S.N. 010-0171




SHOULDER REMOVAL & REPLACEMENT

PROPOSED RUBBLIZATION OF PORTLAND CEMENT CONCRETE PAVEMENT (METHOD 1)

HOT-MIX ASPHALT SURFACE REMOVAL

PAVEMENT REMOVAL

NOTES:
1. WHEN THE PAVEMENT TRANSITION IS LESS THAN 2" IN THICKNESS MILL EXISTING SHOULDER TO PROVIDE FOR A MINIMUM 2" INLAY.
2. SEE ALSO 'RESURFACING TRANSITION DETAILS'

| | | | |
|---|---|---|---|
| FILE NAME = #FILE1# | USER NAME = #USER# | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = #SCALE# | CHECKED - | REVISED - |
| | PLOT DATE = #DATE# | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

PROPOSED TYPICAL CROSS SECTIONS

SCALE: | SHEET NO. 1 OF 5 SHEETS | STA. | TO STA.

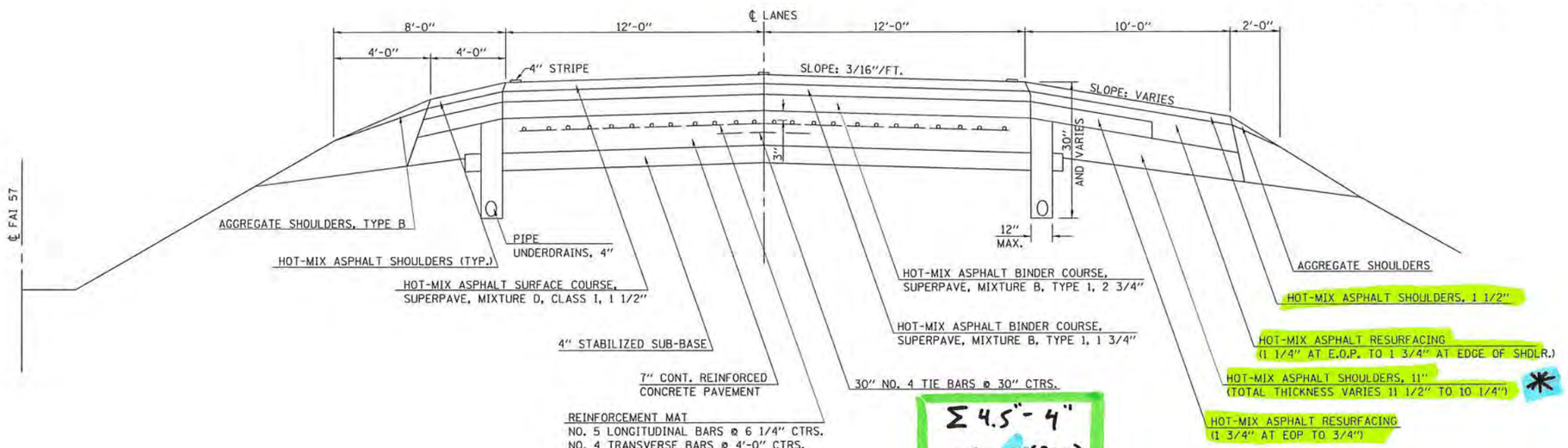
| F.A.I RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 57 | (10-34, 10-35)RS-2(SB) | CHAMPAIGN | 66 | 11 |
| | | CONTRACT NO. 70923 | | |
| | ILLINOIS FED. AID PROJECT | | | |

**EXHIBIT 36**

# EXISTING TYPICAL CROSS SECTIONS

FAI ROUTE 57
NORTHBOUND LANES
STATION 637+35 TO STATION 902+81*

* STATION EQUATION:
STA. 764+96.99 BK =
STA. 765+00.00 AH




Σ 4.5" - 4" w/o * (BAM)

* Shown as: Stabilized Shoulders - 1963
Bit. Aggs. Mixture - 1986

2013 - (10-34, 10-35)RS-2 (NB) C# 70716

| | | | |
|---|---|---|---|
| FILE NAME = c:\pw_work\pwidot\keysrb\d0158448\D5787 | USER NAME = keysrb | DESIGNED - | REVISED - |
| 6-sht-typical.dgn | | DRAWN - | REVISED - |
| | PLOT SCALE = 40.0000 '/ in. | CHECKED - | REVISED - |
| | PLOT DATE = 11/13/2012 | DATE - | REVISED - |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING TYPICAL CROSS SECTIONS

SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

| F.A.I RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 57 | (10-34, 10-35)RS-2(NB) | CHAMPAIGN | 53 | 13 |
| | | CONTRACT NO. 70716 | | |

EXHIBIT 36

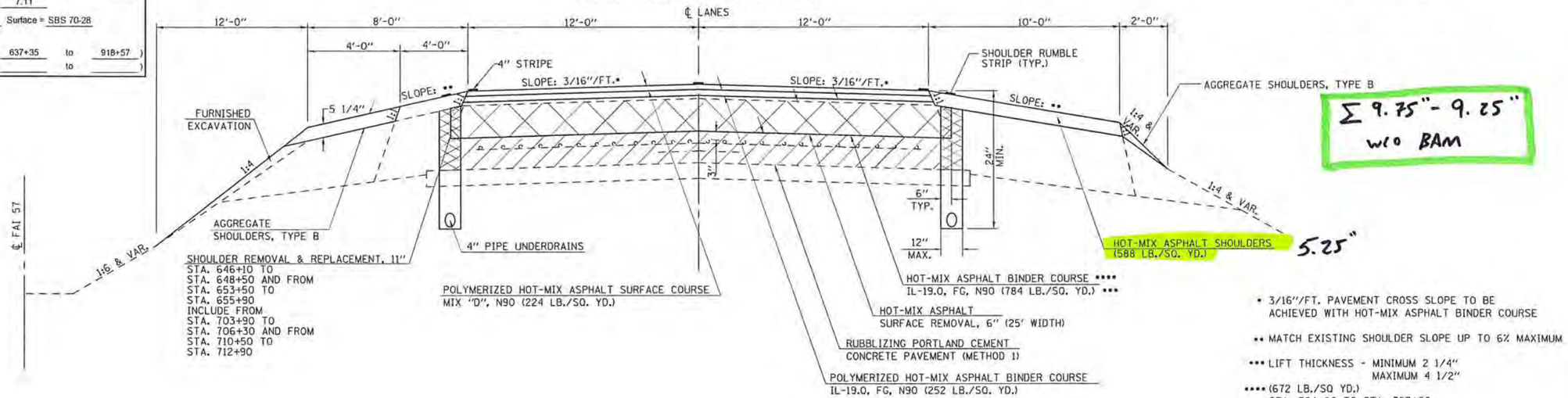
STRUCTURAL PAVEMENT DESIGN

| | | | | | |
|---|---|---|---|---|---|
| STRUCTURAL DESIGN TRAFFIC: | Year 2020 | | | | |
| PV = 21812 | SU = 975 | MU = 5876 | | | |
| ROAD/STREET CLASSIFICATION: | Class = Interstate | | | | |
| PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE: | | | | | |
| P = 32% | S = 45% | M = 45% | | | |
| TRAFFIC FACTOR: | Actual TF = 26.700 | AC Type = 20 | | | |
| | Minimum TF = 7.11 | | | | |
| PG GRADE: | Binder = 64-22 | Surface = SBS 70-28 | | | |
| SUBGRADE SUPPORT RATING: | | | | | |
| SSR = Poor | (Sta. 637+35 | to | 918+57 ) | | |
| SSR = | (Sta. | to | ) | | |

# PROPOSED TYPICAL CROSS SECTIONS

FAI ROUTE 57
NORTHBOUND LANES
STATION 637+35 TO STATION 646+10
STATION 655+90 TO STATION 703+90
STATION 712+90 TO STATION 902+81

STATION EQUATION:
STA. 764+96.99 BK =
STA. 765+00.00 AH




Σ 9.75" - 9.25"
w/o BAM

* 3/16"/FT. PAVEMENT CROSS SLOPE TO BE ACHIEVED WITH HOT-MIX ASPHALT BINDER COURSE

** MATCH EXISTING SHOULDER SLOPE UP TO 6% MAXIMUM

*** LIFT THICKNESS - MINIMUM 2 1/4"
MAXIMUM 4 1/2"

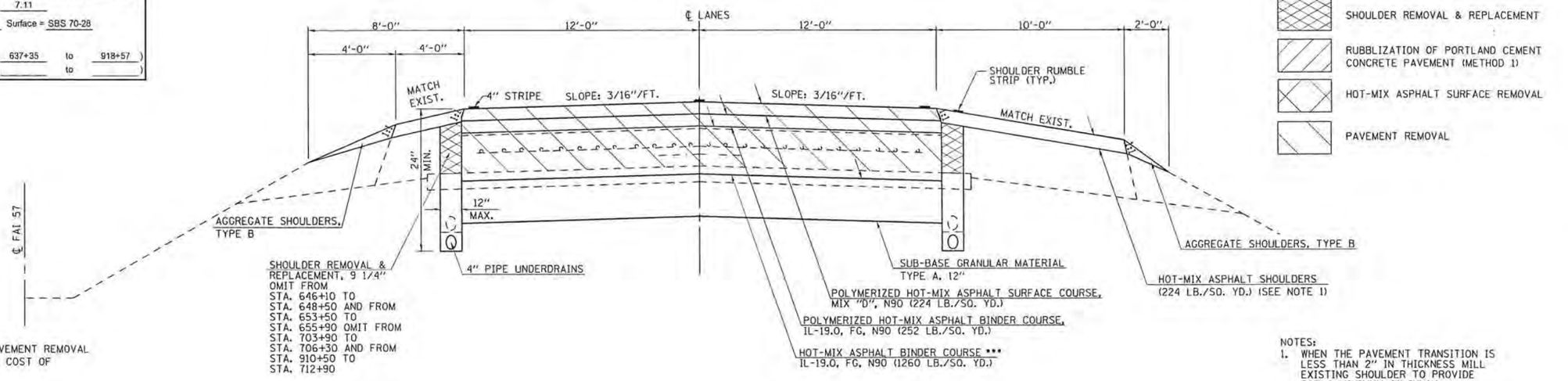
**** (672 LB./SQ YD.)
STA. 764+00 TO STA. 767+00
STA. 875+60 TO STA. 878+40

STRUCTURAL PAVEMENT DESIGN

| | | | | | |
|---|---|---|---|---|---|
| STRUCTURAL DESIGN TRAFFIC: | Year 2020 | | | | |
| PV = 21812 | SU = 975 | MU = 5876 | | | |
| ROAD/STREET CLASSIFICATION: | Class = Interstate | | | | |
| PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE: | | | | | |
| P = 32% | S = 45% | M = 45% | | | |
| TRAFFIC FACTOR: | Actual TF = 26.700 | AC Type = 20 | | | |
| | Minimum TF = 7.11 | | | | |
| PG GRADE: | Binder = 64-22 | Surface = SBS 70-28 | | | |
| SUBGRADE SUPPORT RATING: | | | | | |
| SSR = Poor | (Sta. 637+35 | to | 918+57 ) | | |
| SSR = | (Sta. | to | ) | | |

# PROPOSED TYPICAL CROSS SECTIONS

FAI ROUTE 57
NORTHBOUND LANES
STATION 646+10 TO STATION 655+90 - S.N. 010-0254
STATION 703+90 TO STATION 712+90 - S.N. 010-0171




NOTE:
SAWCUTS REQUIRED FOR PAVEMENT REMOVAL SHALL BE INCLUDED IN THE COST OF PAVEMENT REMOVAL

NOTES:
1. WHEN THE PAVEMENT TRANSITION IS LESS THAN 2" IN THICKNESS MILL EXISTING SHOULDER TO PROVIDE FOR A MINIMUM 2" INLAY.
2. SEE ALSO 'RESURFACING TRANSITION DETAILS'

| | | | |
|---|---|---|---|
| FILE NAME = c:\projects\projects\dawsonkb\d0155448\057071f-sht-typical.dgn | USER NAME = dawsonkb | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 40.0000 ' / in. | CHECKED - | REVISED - |
| | PLOT DATE = 11/15/2012 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

PROPOSED TYPICAL CROSS SECTIONS

SCALE: | SHEET NO. 1 OF 3 SHEETS | STA. | TO STA.

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 57 | (10-34, 10-35)RS-2(NB) | CHAMPAIGN | 53 | 14 |
| | | CONTRACT NO. 70716 | | |

**EXHIBIT 36**

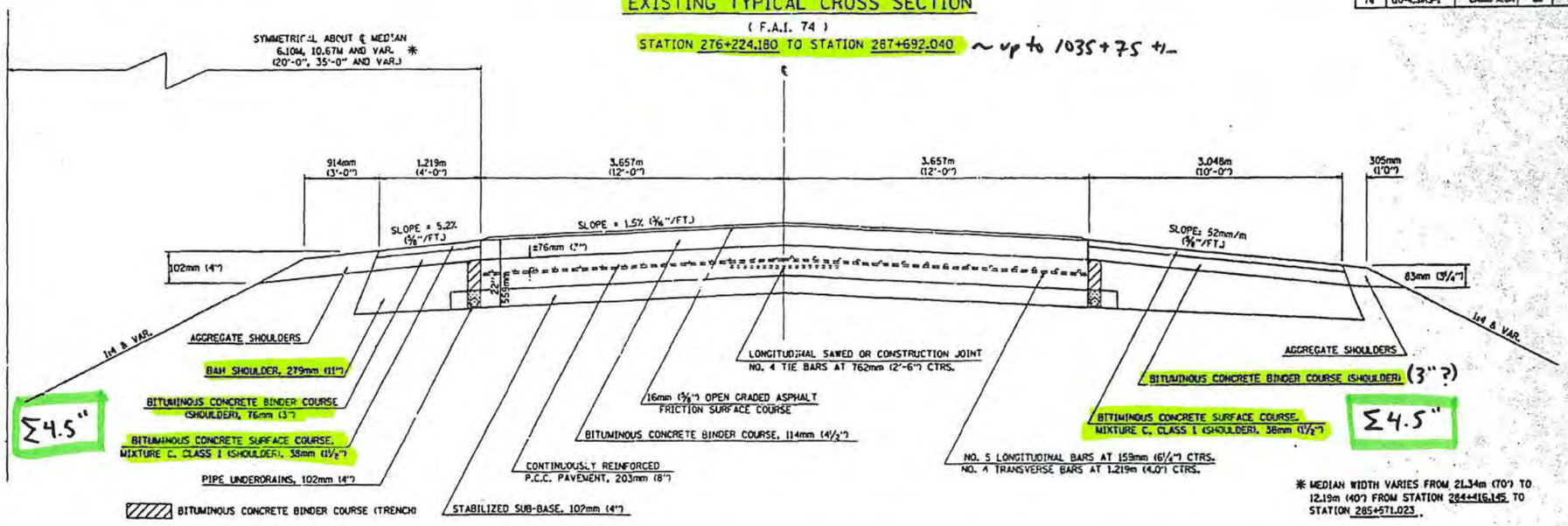
08/19/97

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 74 | (10-4,5)RS-1 | CHAMPAIGN | 66 | 2 |

## EXISTING TYPICAL CROSS SECTION

( F.A.I. 74 )

STATION 276+224.180 TO STATION 287+692.040 ~ up to 1035+75 +/-

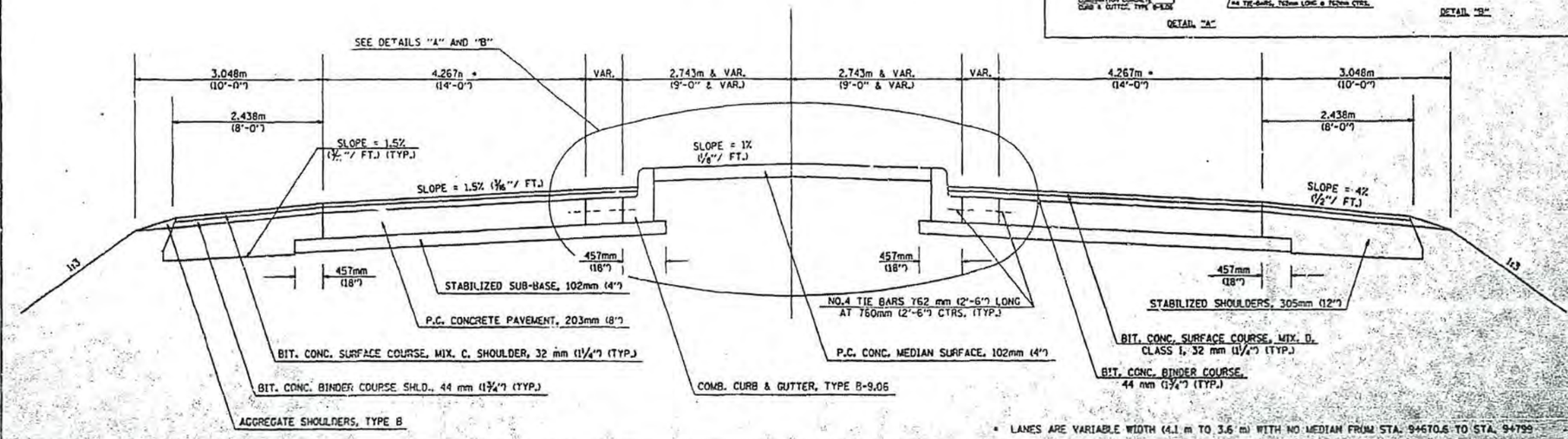



* MEDIAN WIDTH VARIES FROM 21.34m (70') TO 12.19m (40') FROM STATION 284+416.145 TO STATION 285+571.023.

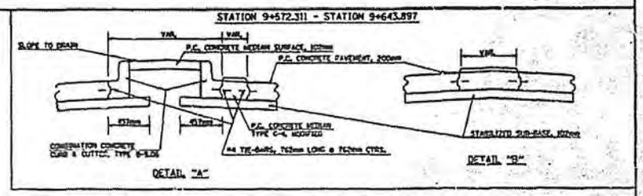
## EXISTING TYPICAL CROSS SECTION

( ILLINOIS ROUTE 47 )

STATION 9+076.5 TO STATION 9+670.6




* LANES ARE VARIABLE WIDTH (4.1 m TO 3.6 m) WITH NO MEDIAN FROM STA. 9+670.6 TO STA. 9+799




1998 - (10-4,5)RS-1 CH 9+675

EXHIBIT 36

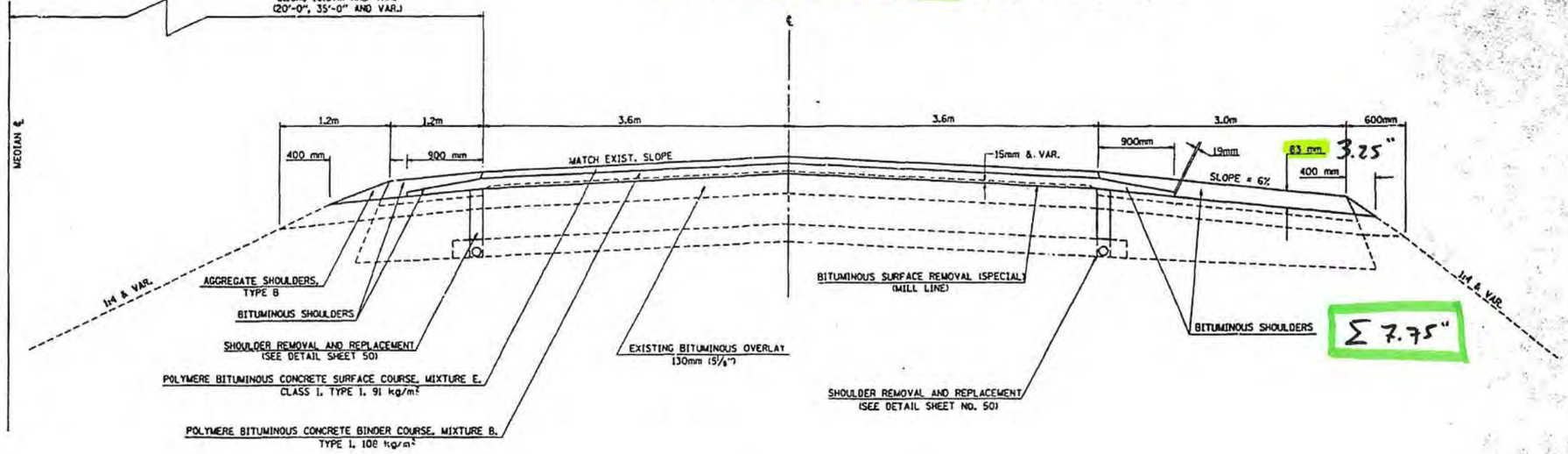
09/11/97

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 74 | (10-4,5)RS-1 | CHAMPAIGN | 66 | 3 |

## PROPOSED TYPICAL CROSS SECTION

( F.A.I. 74 )

STATION 276+224.180 TO STATION 287+692.040 ~ up to 1035+75 +/-




## PROPOSED TYPICAL CROSS SECTION

( ILLINOIS ROUTE 47 )

STATION 9+076.5 TO STATION 9+670.6

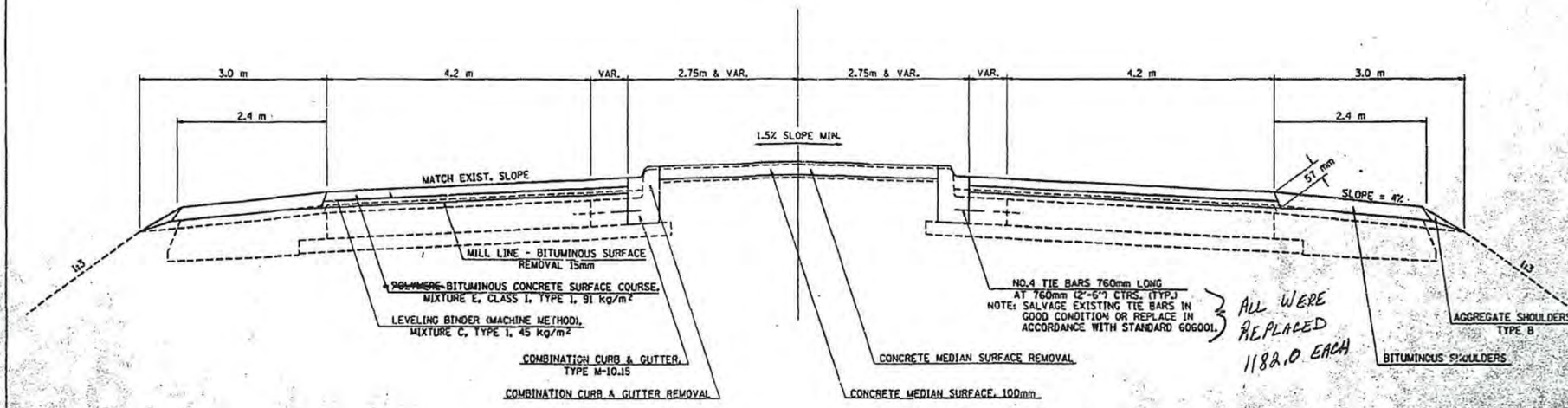



**EXHIBIT 36**

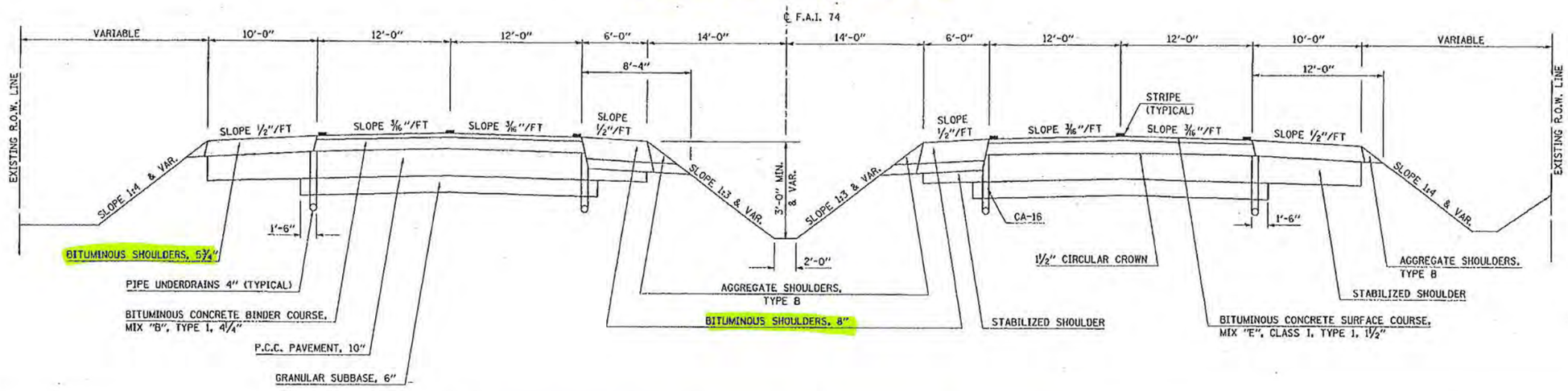
10/25/2005

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 74 | * | CHAMPAIGN | 115 | 10 |

CONTRACT NO. 70141
* 1015-1-RS-1,14-1(RIRS & 6RS-3)

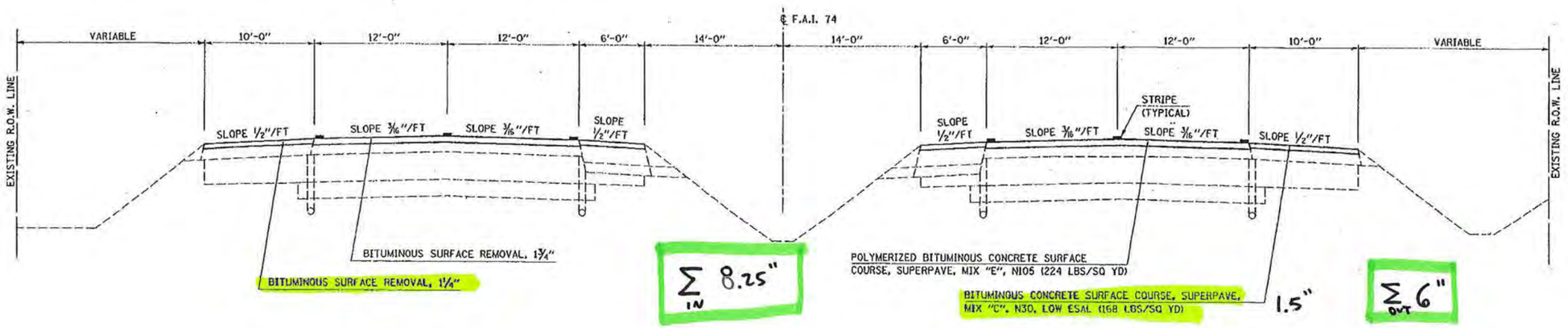
# EXISTING TYPICAL CROSS SECTION

| STATION | TO | STATION |
|---|---|---|
| 1035+75.00 | | 1038+67.40 |
| 1051+15.00 | | 1054+44.50 |
| 1068+34.50 | | 1071+68.00 |




# PROPOSED TYPICAL CROSS SECTION (1)

| STATION | TO | STATION |
|---|---|---|
| 1035+75.00 | | 1038+67.40 (2) |
| (2) 1051+15.00 | | 1054+44.50 (2) |
| (2) 1068+34.50 | | 1071+68.00 (2) |




2006-10(S-1-RS-1,14-1(R)RS & 6RS-3) C 70141

EXHIBIT 36

o:\projects\d507600 (v8i)\typicals.dgn

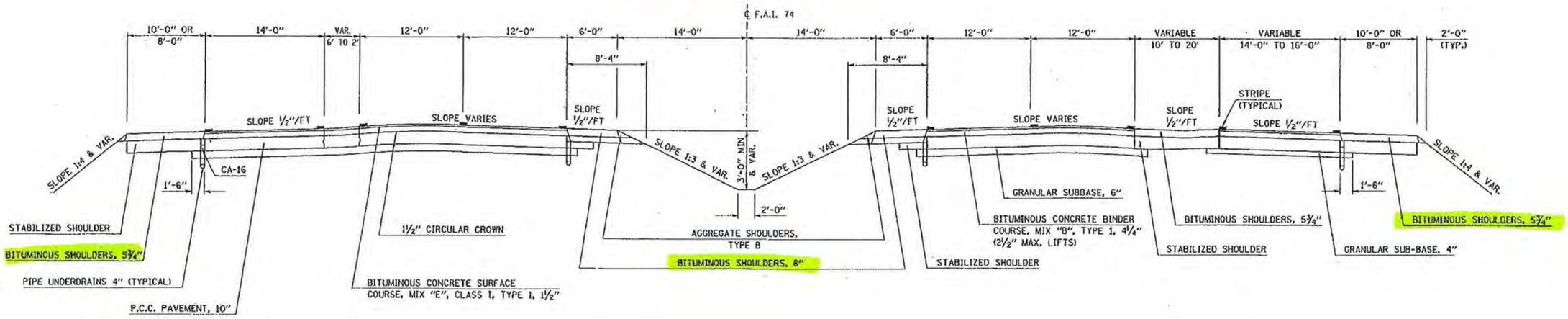
10/23/2005

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 74 | * | CHAMPAIGN | 115 | 11 |

CONTRACT NO. 70141
* 10(5-1-RS-1,14-1(RRS & 6RS-3)

# EXISTING TYPICAL CROSS SECTION

| STATION | TO | STATION |
|---|---|---|
| 1038+67.40 | | 1051+15.00 |
| 1054+44.50 | | 1068+34.50 |
| 1071+68.00 | | 1084+08.00 |




# PROPOSED TYPICAL CROSS SECTION ②

| STATION | | TO | STATION | |
|---|---|---|---|---|
| ① | 1038+67.40 | | 1051+15.00 | ① |
| ① | 1054+44.50 | | 1068+34.50 | ① |
| ① | 1071+68.00 | | 1084+08.00 | ③ |

PAVING OMISSIONS: S.N. 010-0018/19
EB STA 1059+55.66 TO STA 1063+15.83
WB STA 1059+63.67 TO STA 1063+24.84

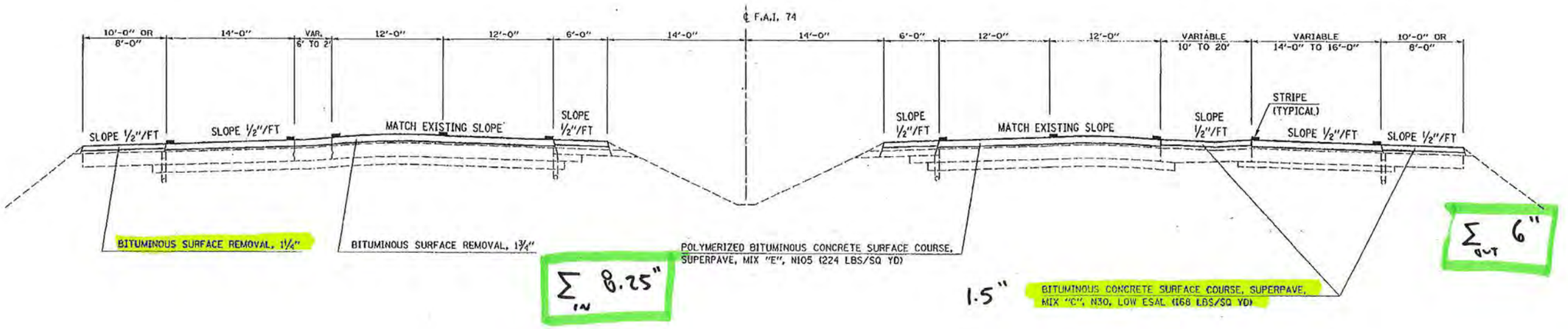



**EXHIBIT 36**

c:\projects\a507000 (w8)\typicals.dgn

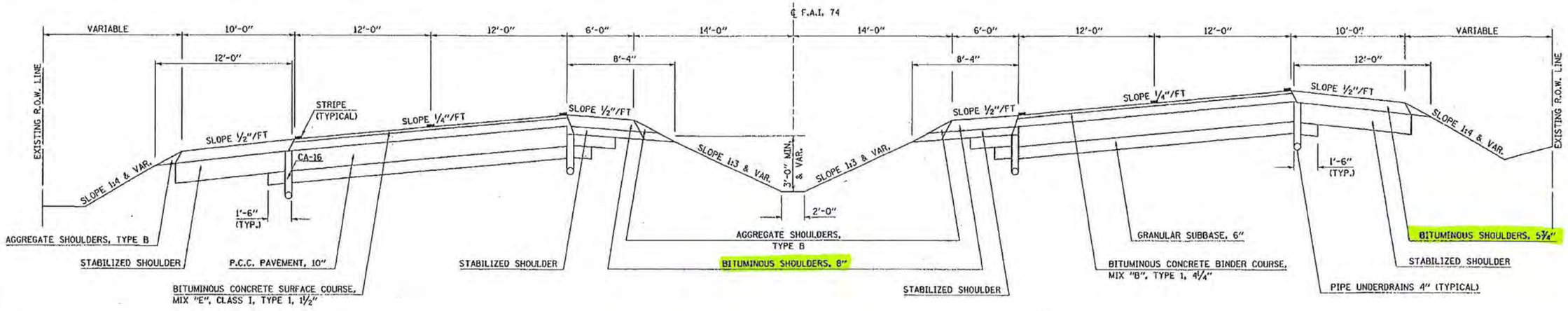
10/23/2005

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 74 | - | CHAMPAIGN | 115 | 12 |

CONTRACT NO. 70141
• 10(5-1-RS-1,14-1RRS & 6RS-3)

# EXISTING TYPICAL CROSS SECTION

STATION 1084+08.00 TO STATION 1099+51.43




# PROPOSED TYPICAL CROSS SECTION ③

STATION ②1084+08.00 TO STATION 1099+51.43 ④

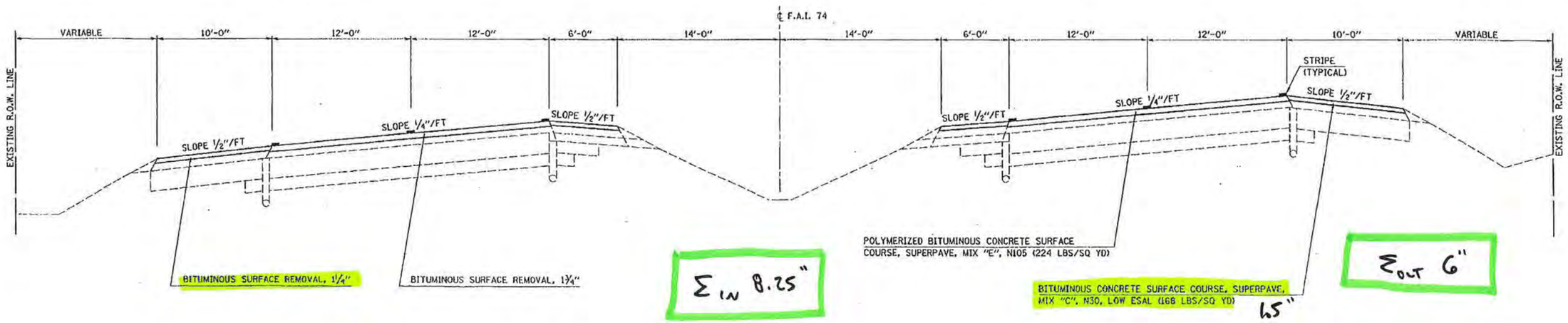



EXHIBIT 36

G:\projects\d507000 (v8)\typicals.dgn

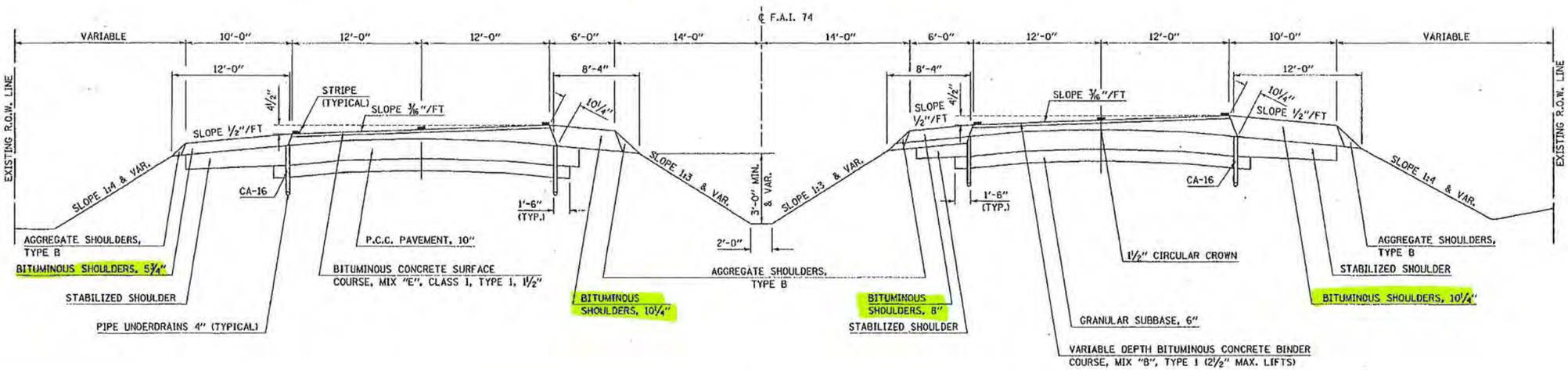
10/29/2009

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 74 | * | CHAMPAIGN | 115 | 13 |

CONTRACT NO. 70141
* 1015-1-RS-1,14-1(R)RS & 6RS-3)

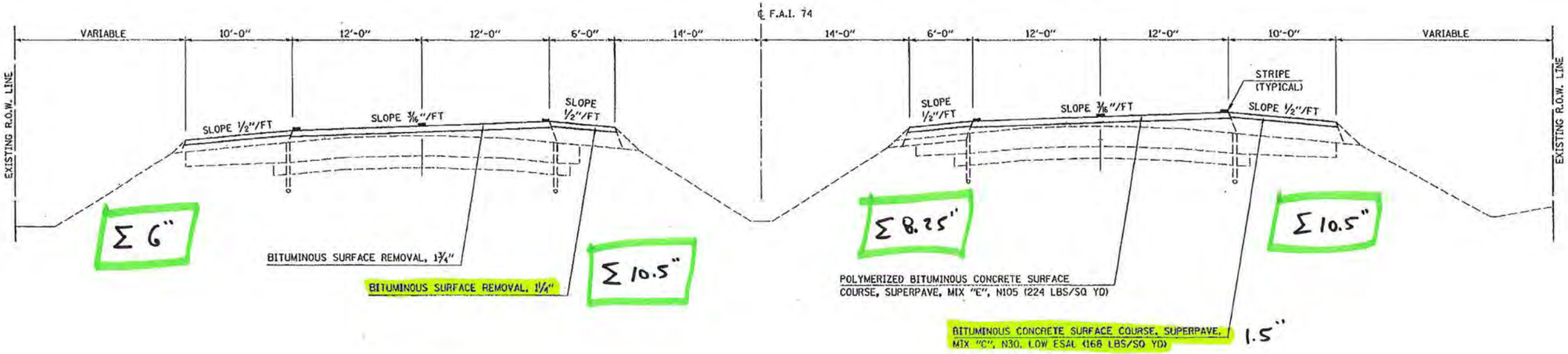
# EXISTING TYPICAL CROSS SECTION

STATION 1099+51.43 TO STATION 1116+50.00




# PROPOSED TYPICAL CROSS SECTION (4)

STATION (3)1099+51.43 TO STATION 1116+50.00 (5)




G:\projects\d507000 (v8)\typicals.dgn

EXHIBIT 36

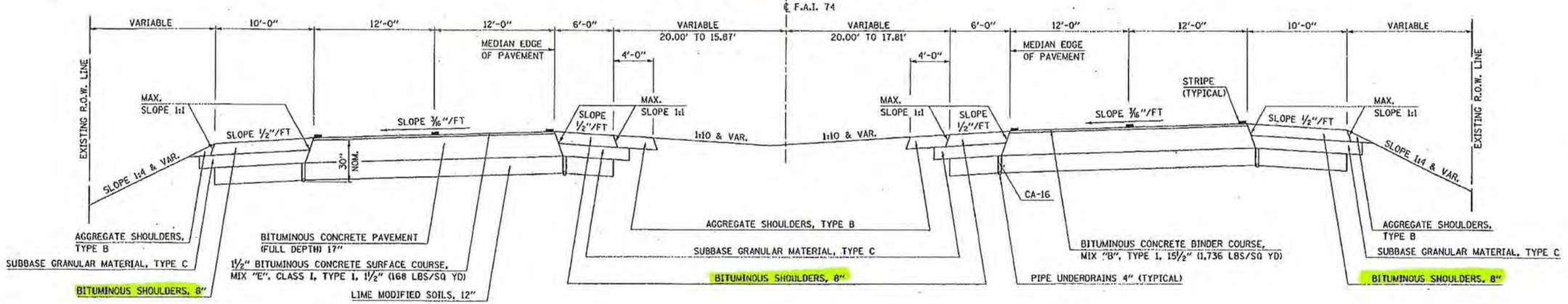
10/29/2005

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 74 | * | CHAMPAIGN | 115 | 14 |

CONTRACT NO. 70141
* 1015-1-RS-1,14-1(RRS & GRS-3)

# EXISTING TYPICAL CROSS SECTION

STATION 1116+50.00 TO STATION 1120+00.00




# PROPOSED TYPICAL CROSS SECTION (5)

STATION (4) 1116+50.00 TO STATION 1120+00.00 (6)

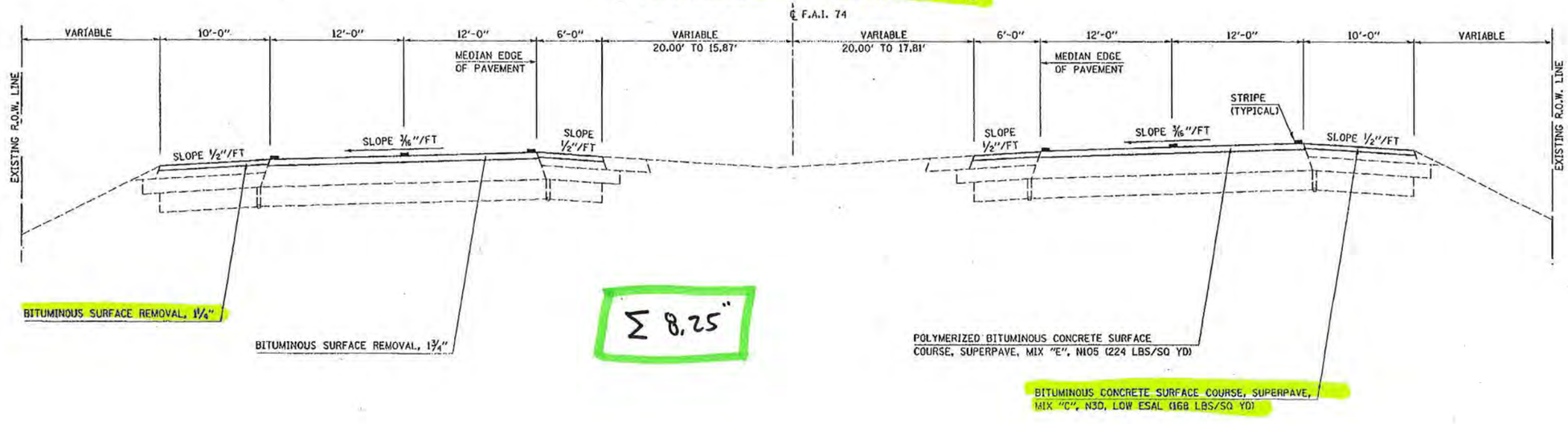



EXHIBIT 36

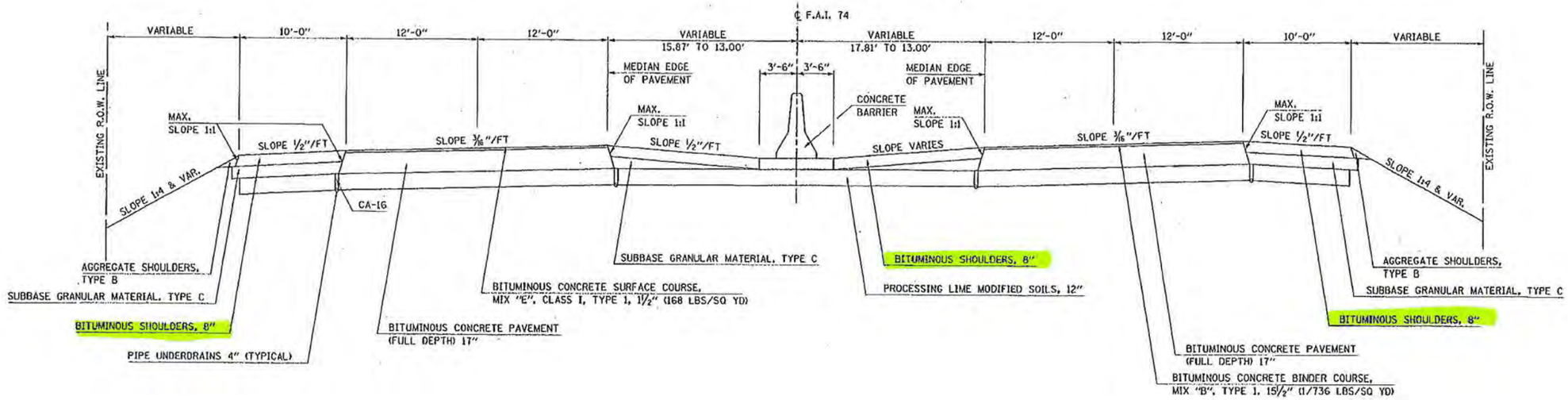
10/23/2009

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 74 | * | CHAMPAIGN | 115 | 15 |

CONTRACT NO. 70141
* 10(5-1-RS-1,14-1(RRRS & 6RS-3)

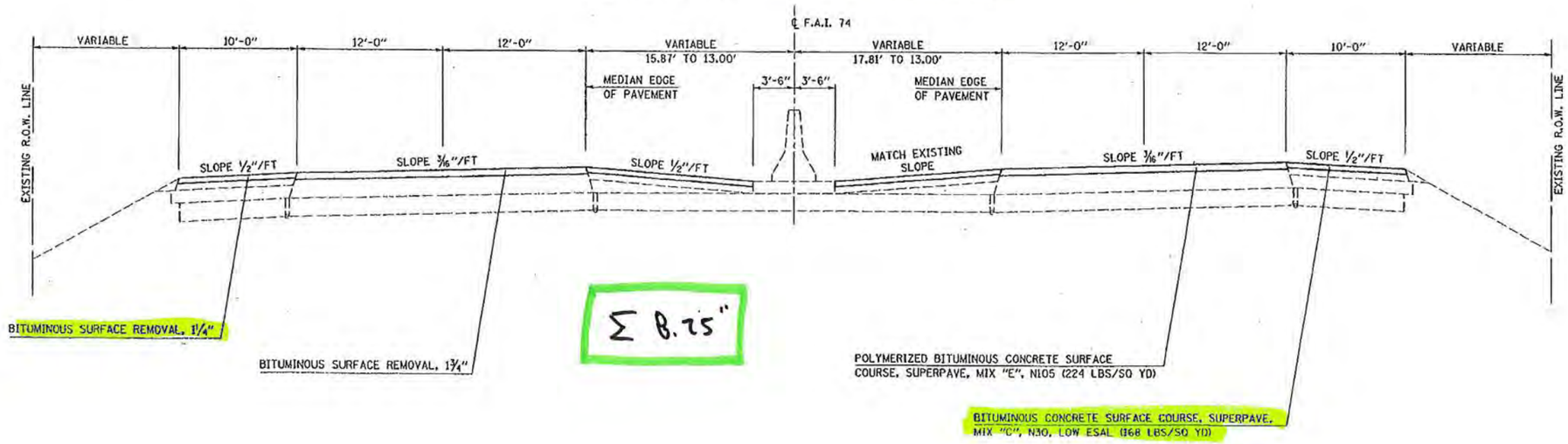
# EXISTING TYPICAL CROSS SECTION

STATION 1120+00.00 TO STATION 1124+00.00




# PROPOSED TYPICAL CROSS SECTION ⑥

STATION ⑤ 1120+00.00 TO STATION 1124+00.00 ⑦




c:\projects\d507000 fv81\typicals.dgn

EXHIBIT 36

10/29/2005

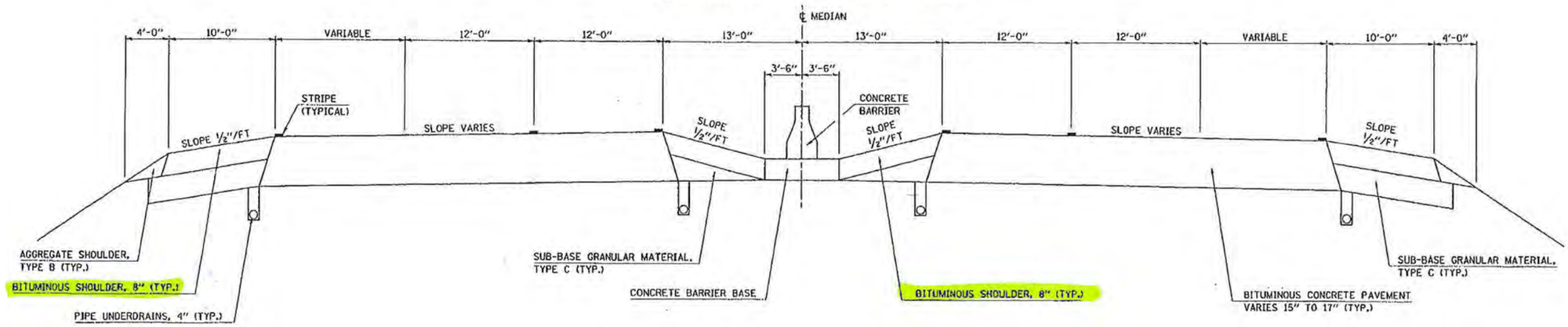
| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 74 | * | CHAMPAIGN | 115 | 16 |

CONTRACT NO. 70141
* 1015-1-RS-1,14-1(RIRS & 6RS-3)

# EXISTING TYPICAL CROSS SECTION

## 2 LANES AT RAMPS AND TRANSITIONS

| STATION | TO | STATION |
|---|---|---|
| 1124+00.00 | | 1161+60.00 |
| 1236+00.00 | | 1272+00.00 |
| 1296+00.00 | | 1350+00.00 |

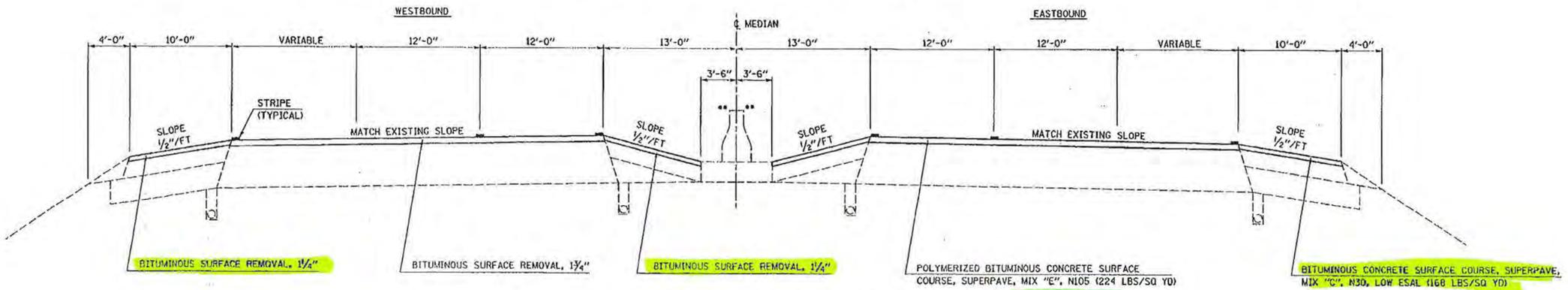



# PROPOSED TYPICAL CROSS SECTION (7)

## 2 LANES AT RAMPS AND TRANSITIONS

| STATION | TO | STATION |
|---|---|---|
| (6) 1124+00.00 | | 1161+60.00 (8) |
| (8) 1236+00.00 | | 1272+00.00 (8) |
| (8) 1296+00.00 | | 1350+00.00 (10) |

PAVING OMISSIONS: S.N. 010-0024
EB STA 1320+35.74 TO STA 1322+80.08
WB STA 1320+43.38 TO STA 1322+86.74




** CONCRETE MEDIAN BARRIER ENDS AT STA. 1345+00.00 & BITUMINOUS SHOULDER TRANSITIONS STA. 1345+00.00 TO STA. 1350+00.00

Σ 8.25"

c:\projects\d507008 fwb\typicals.dgn

EXHIBIT 36

**Brad Downen**

**From:** Wagoner, Ronald R <Ronald.Wagoner@illinois.gov>
**Sent:** Thursday, July 23, 2015 1:40 PM
**To:** Keys, Rustin B
**Subject:** RE: Interchange shoulder cores
**Attachments:** I-74&I-57_Shoulder Cores.xlsx

Attached is the updated spreadsheet for the shoulder cores with the subgrade IBV ratings.

*Ronald R. Wagoner, P.E.*
Geotechnical Engineer
I.D.O.T. R3/D5
Office: 217-466-7271
Cell: 217-251-5615
Fax: 217-463-3501
E-mail: Ronald.Wagoner@illinois.gov

---

**From:** Keys, Rustin B
**Sent:** Wednesday, July 22, 2015 7:41 AM
**To:** Wagoner, Ronald R
**Subject:** RE: Interchange shoulder cores

Thursday morning sounds good; around 9 good for you?

---

**From:** Wagoner, Ronald R
**Sent:** Tuesday, July 21, 2015 7:45 AM
**To:** Keys, Rustin B
**Subject:** Interchange shoulder cores

Rustin,
We have the cores in the lab and would like you to come over and discuss the different layers and coefficients for each mix type. I will be off tomorrow. Maybe Thursday sometime?

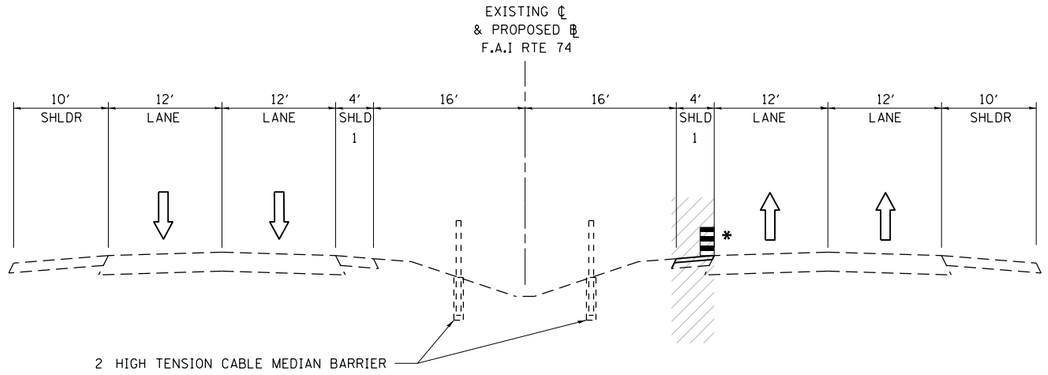
*Ronald R. Wagoner, P.E.*
Geotechnical Engineer
I.D.O.T. R3/D5
Office: 217-466-7271
Cell: 217-251-5615
Fax: 217-463-3501
E-mail: Ronald.Wagoner@illinois.gov



**EXHIBIT 36**

| Core # | Station | Route | Direction | Typical Section | o/s from EOP (Feet) | HMA Thickness (inches) | Subgrade (IBV) | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | 646+00 | I-57 | SBDS | 5 | 5 | 17 | >10 | |
| 2 | 646+00 | I-57 | SBPS | 5 | 3 | 16 | >10 | |
| 3 | 646+00 | I-57 | NBPS | 6 | 2 | 17 | >10 | |
| 4 | 646+00 | I-57 | NBDS | 6 | 4 | 20 | >10 | |
| 5 | 631+50 | I-57 | SBDS | 4 | 4 | 17 | >10 | bottom 6" old oxidized mix |
| 6 | 631+50 | I-57 | SBPS | 4 | 2 | 15 | >10 | |
| 7 | 631+50 | I-57 | NBPS | 3 | 2 | 18 | >10 | |
| 8 | 631+50 | I-57 | NBDS | 3 | 4 | 17 | >10 | |
| 9 | 605+00 | I-57 | SBDS | 2 | 4 | 10 | NA | |
| 10 | 605+00 | I-57 | SBPS | 2 | 3 | 9.5 | NA | bottom 2.5" broken up |
| 11 | 605+00 | I-57 | NBPS | 2 | 2 | 10 | NA | |
| 12 | 605+00 | I-57 | NBDS | 2 | 4 | 9 | NA | |
| 13 | 561+00 | I-57 | SBDS | 1 | 5 | 11 | NA | |
| 14 | 561+00 | I-57 | SBPS | 1 | 2 | 11.5 | NA | |
| 15 | 561+00 | I-57 | NBPS | 1 | 2 | 10.5 | NA | |
| 16 | 561+00 | I-57 | NBDS | 1 | 4 | 10 | NA | |
| 17 | 1857+50 | I-74 | EBDS | 7 | 6 | 13 | 3 | bottom 6" old oxidized mix |
| 18 | 1857+50 | I-74 | EBPS | 7 | 1 | 12.5 | 3 | bottom 6" old oxidized mix |
| 19 | 1857+50 | I-74 | WBPS | 7 | 1 | 9.5 | 3 | bottom 2" old oxidized mix |
| 20 | 1857+50 | I-74 | WBDS | 7 | 5 | 15 | 3 | bottom 9.5" old oxidized mix |
| 21 | 1097+50 | I-74 | EBDS | 10 | 5 | 8.75 | 6 | 6.5" of CAM base |
| 22 | 1097+50 | I-74 | EBPS | 10 | 3 | 9 | 6 | |
| 23 | 1097+50 | I-74 | WBPS | 10 | 3 | 9.25 | 6 | |
| 24 | 1097+50 | I-74 | WBDS | 10 | 6 | 8.75 | 6 | 2.25 CAM base |
| 25 | 1115+00 | I-74 | EBDS | 11 | 6 | 17 | 6 | |
| 26 | 1115+00 | I-74 | EBPS | 11 | 3 | 6.5 | 6 | bottom 9.5" is PCC PVMT |
| 27 | 1115+00 | I-74 | WBPS | 11 | 3 | 10.5 | 6 | bottom 9.5" is PCC PVMT |
| 28 | 1115+00 | I-74 | WBDS | 11 | 6 | 17 | 6 | |
| 29 | 1119+50 | I-74 | EBDS | 12 | 6 | 7.25 | 6 | 12" of Agg base below HMA / subgrade IBV is below Agg |
| 30 | 1119+50 | I-74 | EBPS | 12 | 4 | 9 | 6 | 12" of Agg base below HMA / subgrade IBV is below Agg |
| 31 | 1119+50 | I-74 | WBPS | 12 | 3 | 8 | 6 | 12" of Agg base below HMA / subgrade IBV is below Agg |
| 32 | 1119+50 | I-74 | WBDS | 12 | 7 | 8.25 | 6 | 12" of Agg base below HMA / subgrade IBV is below Agg |
| 33 | 1122+50 | I-74 | EBDS | 13 | 6 | 7.5 | 6 | 12" of Agg base below HMA / subgrade IBV is below Agg |
| 34 | 1122+50 | I-74 | EBPS | 13 | 6 | 8.25 | 6 | 12" of Agg base below HMA / subgrade IBV is below Agg |
| 35 | 1122+50 | I-74 | WBPS | 13 | 5 | 8 | 6 | 12" of Agg base below HMA / subgrade IBV is below Agg |
| 36 | 1122+50 | I-74 | WBDS | 13 | 5 | 9.5 | 6 | 12" of Agg base below HMA / subgrade IBV is below Agg |
| 37 | 1140+00 | I-74 | EBDS | 14 | 4 | 8.5 | 6 | 12" of Agg base below HMA / subgrade IBV is below Agg |
| 38 | 1140+00 | I-74 | EBPS | 14 | 6 | 8.75 | 6 | 12" of Agg base below HMA / subgrade IBV is below Agg |
| 39 | 1140+00 | I-74 | WBPS | 14 | 4 | 8.25 | 6 | 12" of Agg base below HMA / subgrade IBV is below Agg |
| 40 | 1140+00 | I-74 | WBDS | 14 | 4 | 9.5 | 6 | 12" of Agg base below HMA / subgrade IBV is below Agg |

**EXHIBIT 36**




**WB** **EB**

## TYPICAL SECTION – SEGMENT 1
## PRE–STAGE A – WEST END

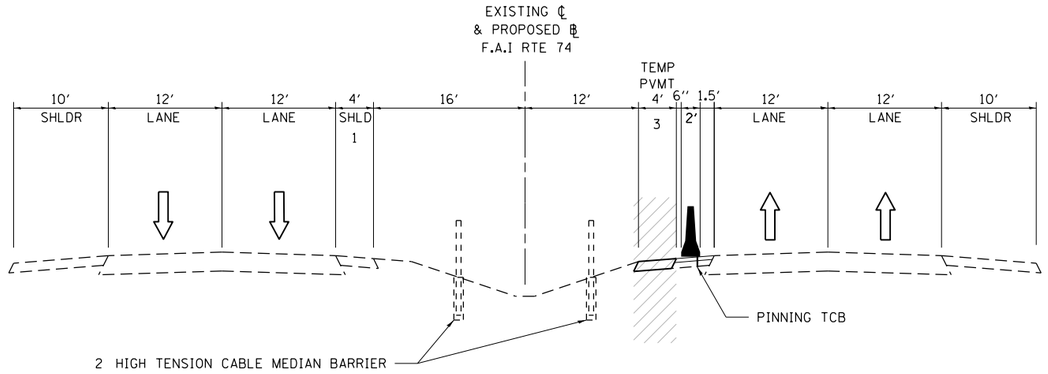
STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00

NOTES:

1 EXISTING INSIDE SHOULDER WIDTH TRANSITIONS FROM 4′ TO 6′ STA. 1035+05.17 TO STA. 1036+75.00

2 EXISTING HIGH TENSION CABLE MEDIAN BARRIER:
RT. STA. 1838+00 TO STA. 1857+00 (TO REMAIN IN PLACE)
LT. STA. 1857+70 TO STA. 1054+00 (TO REMAIN IN PLACE)

3 TEMPORARY PAVEMENT VARIES FROM 4′ TO 2′ STA. 1035+05.17 TO STA. 1036+75.00




**WB** **EB**

## TYPICAL SECTION – SEGMENT 1
## PRE–STAGE B – WEST END

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00

### LEGEND

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 37

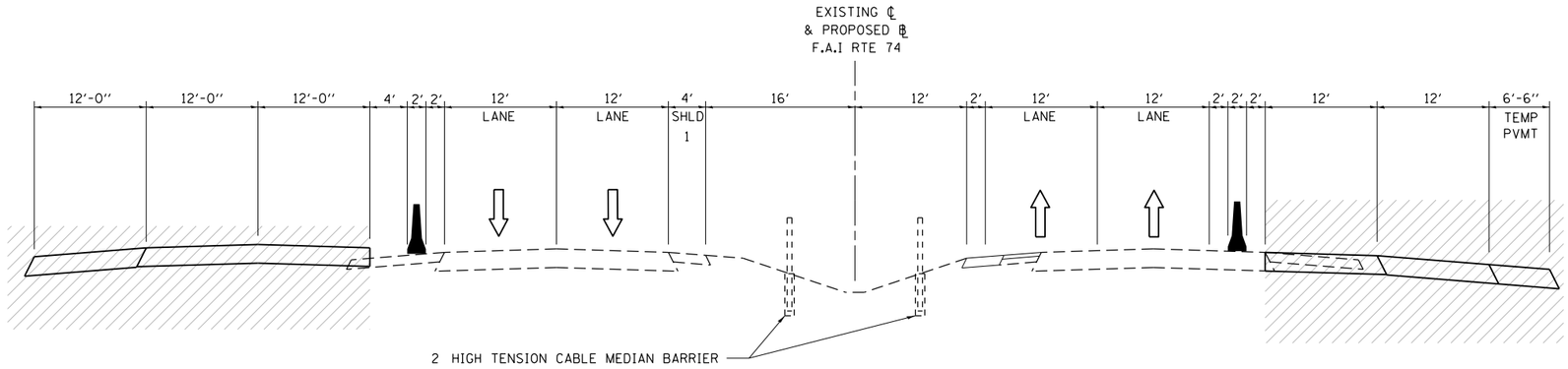
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| Default | PLOT DATE = 9/23/2015 - 2:13:03 PM | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 4 REVISED**

SHEET 1 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |



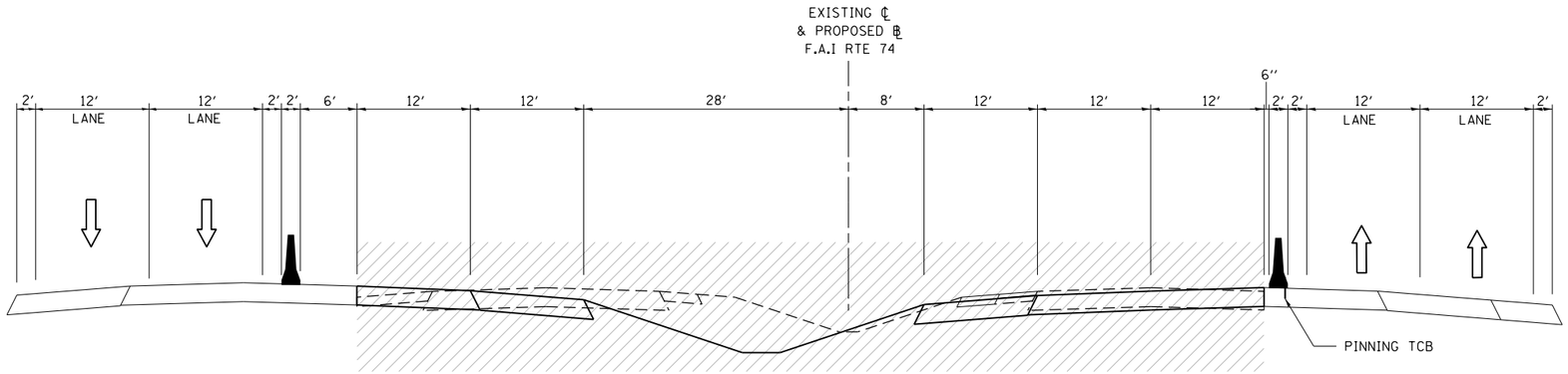

## TYPICAL SECTION – SEGMENT 1
## STAGE 1 – WEST END

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00

NOTES:

1 EXISTING INSIDE SHOULDER WIDTH TRANSITIONS FROM 4′ TO 6′ STA. 1035+05.17 TO STA. 1036+75.00

2 EXISTING HIGH TENSION CABLE MEDIAN BARRIER:
RT. STA. 1838+00 TO STA. 1857+00 (TO REMAIN IN PLACE)
LT. STA. 1857+70 TO STA. 1054+00 (TO REMAIN IN PLACE)




## TYPICAL SECTION – SEGMENT 1
## STAGE 2 – WEST END

STA. 1838+00 TO STA. 1845+92.22 BK.
STA. 1845+93.65 AH. TO STA. 1870+24.62 BK.
STA. 1035+05.17 AH. TO STA. 1054+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 37**

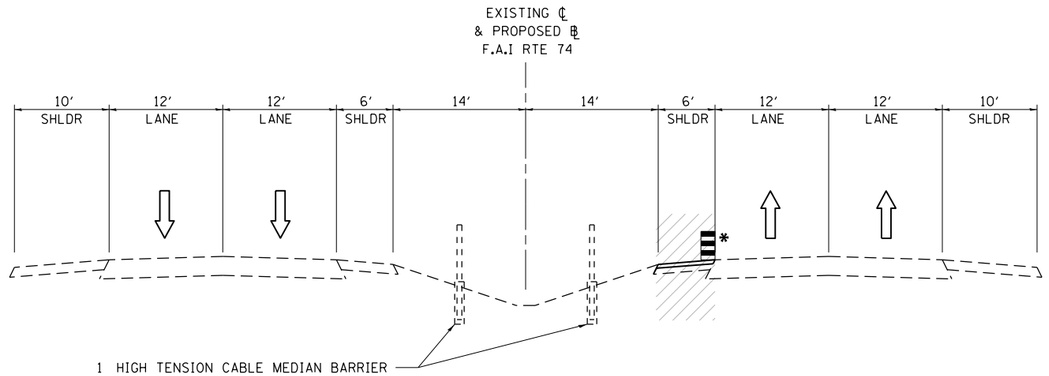
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 4 REVISED**

SHEET 2 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |



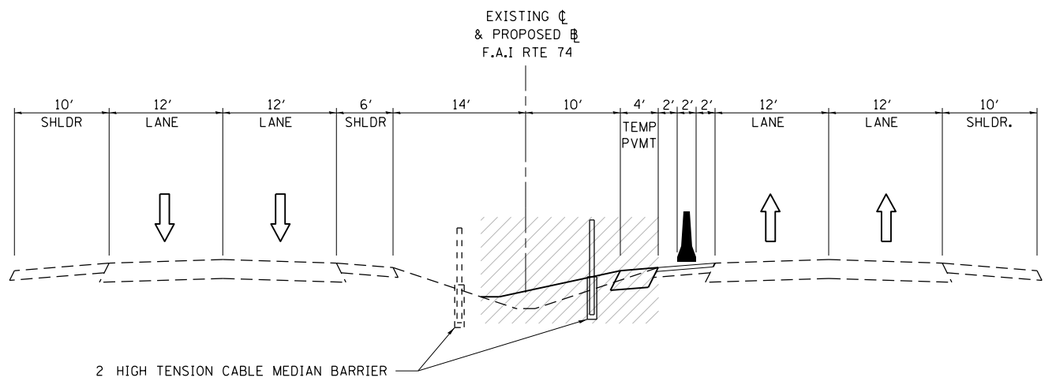

**WB** **EB**

## TYPICAL SECTION – SEGMENT 2
## PRE–STAGE A – GRADE RAISE
STA. 1054+00 TO STA. 1083+00

NOTES:

1 EXISTING HIGH TENSION CABLE MEDIAN BARRIER:
LT. STA. 1054+00 TO STA. 1059+70 (TO REMAIN IN PLACE)
RT. STA. 1062+90 TO STA. 1083+00 (TO REMAIN IN PLACE)

2 EXISTING HIGH TENSION CABLE MEDIAN BARRIER:
LT. STA. 1054+00 TO STA. 1059+70 (TO REMAIN IN PLACE)
RT. STA. 1062+90 TO STA. 1083+00 (TO BE REMOVED AND REPLACED)




**WB** **EB**

## TYPICAL SECTION – SEGMENT 2
## PRE–STAGE B – GRADE RAISE
STA. 1054+00 TO STA. 1083+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 37

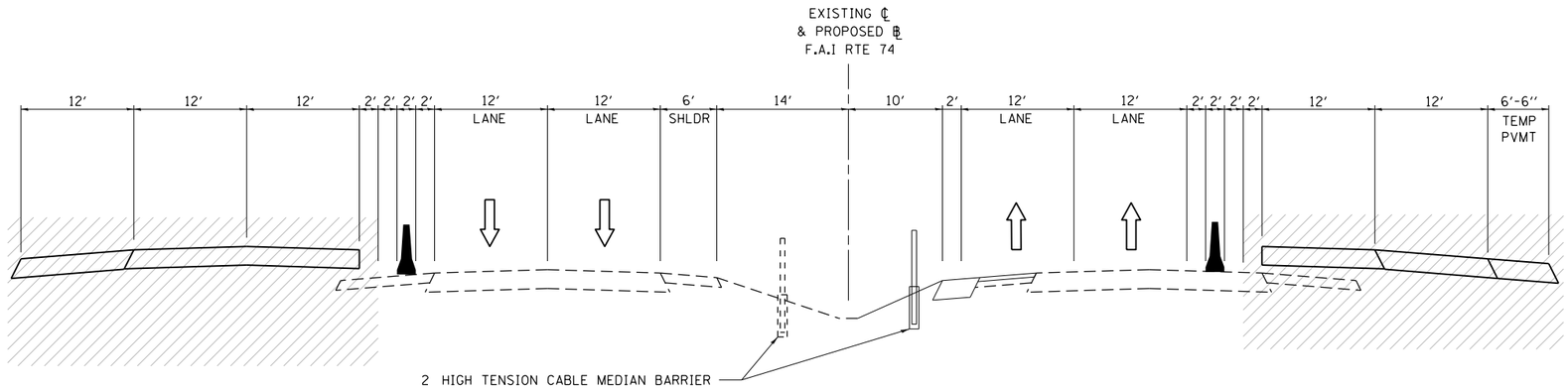
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 4 REVISED**

SHEET 3 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

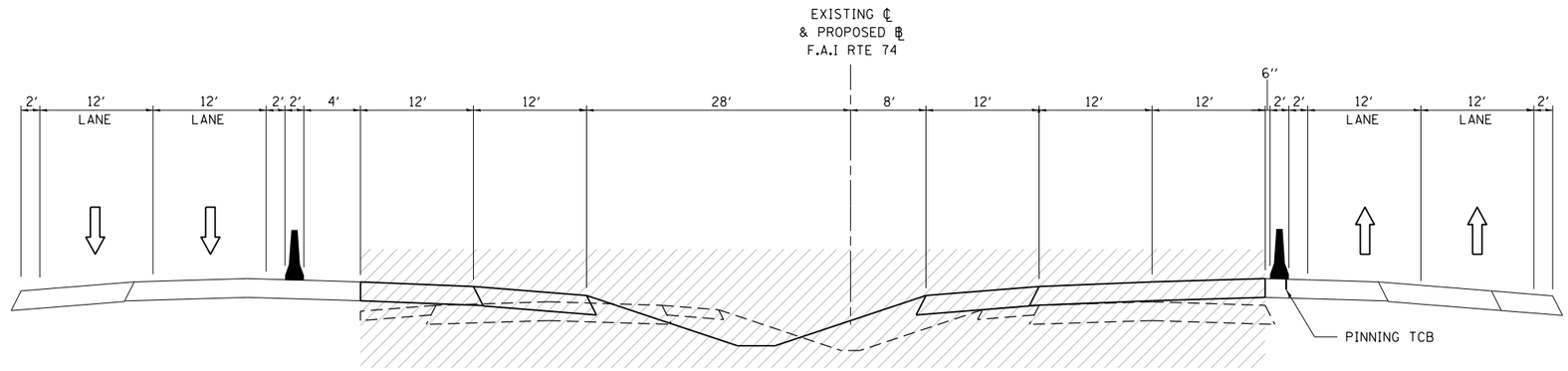



**WB** **EB**

## TYPICAL SECTION – SEGMENT 2
## STAGE 1 – GRADE RAISE
STA. 1054+00 TO STA. 1083+00

NOTES:

1 EXISTING HIGH TENSION CABLE MEDIAN BARRIER:
LT. STA. 1054+00 TO STA. 1059+70 (TO REMAIN IN PLACE)
RT. STA. 1062+90 TO STA. 1083+00 (PREVIOUSLY REMOVED AND REPLACED)




**WB** **EB**

## TYPICAL SECTION – SEGMENT 2
## STAGE 2 – GRADE RAISE
STA. 1054+00 TO STA. 1083+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 37

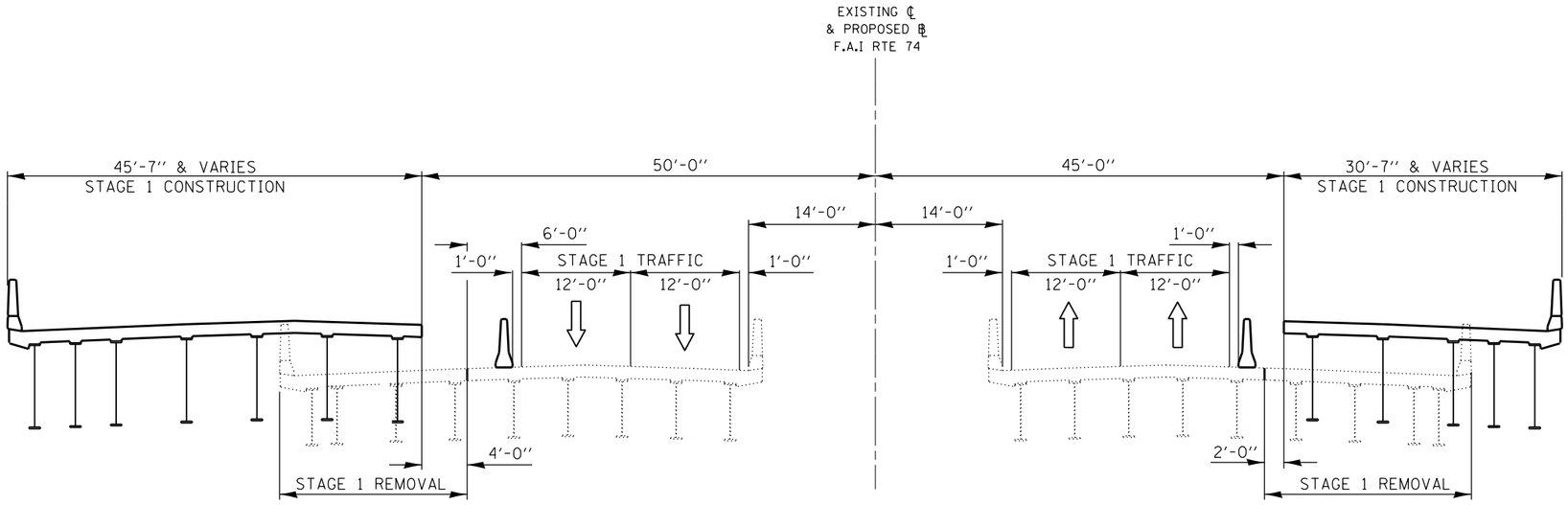
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 4 REVISED**

SHEET 4 OF 11 SHEETS STA. TO STA.

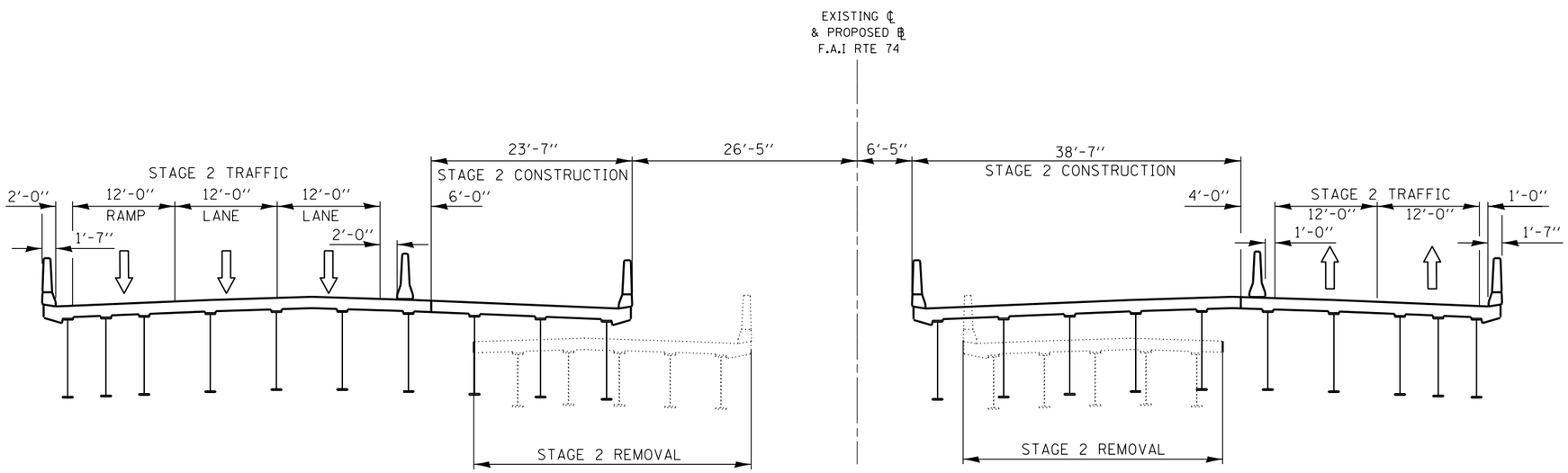
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## TYPICAL SECTION – SEGMENT 2
## STAGE 1 – BRIDGE




**I–74 OVER I–57**
**WESTBOUND BRIDGE**

**I–74 OVER I–57**
**EASTBOUND BRIDGE**

## TYPICAL SECTION – SEGMENT 2
## STAGE 2 – BRIDGE

# EXHIBIT 37

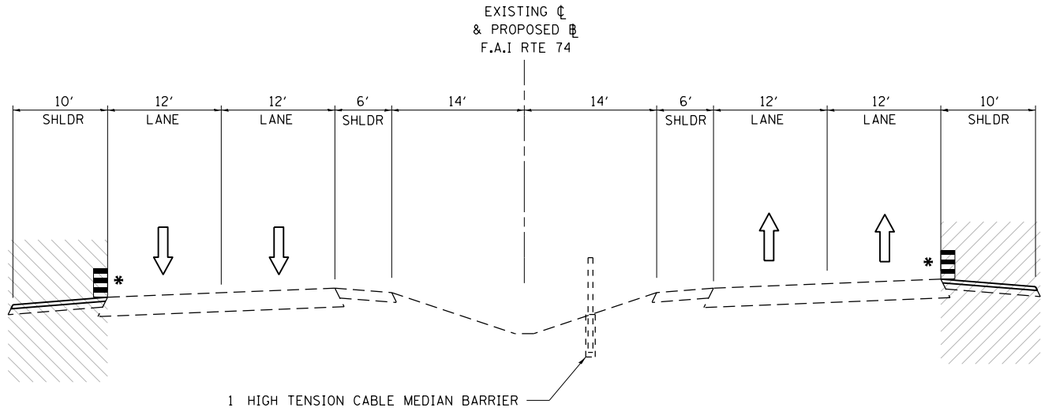
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 4 REVISED**

SHEET 5 OF 11 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

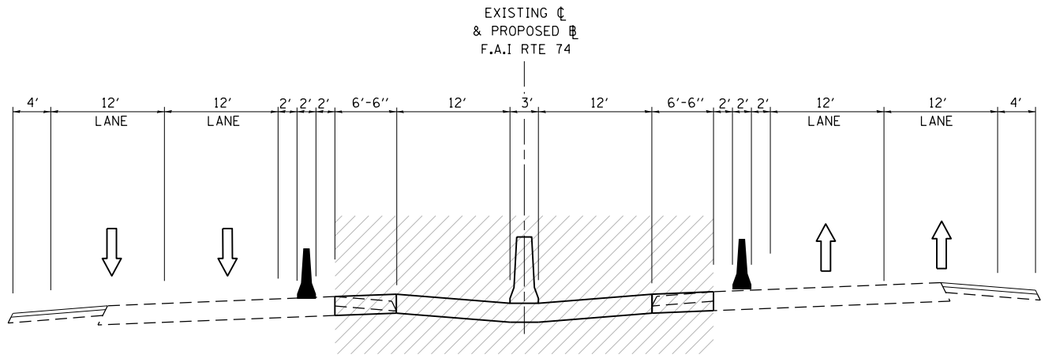



**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## PRE-STAGE A – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00

NOTES:

1 EXISTING HIGH TENSION CABLE MEDIAN BARRIER:
RT. STA. 1083+00 TO STA. 1114+00 (TO REMAIN IN PLACE)




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## PRE-STAGE B – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 37

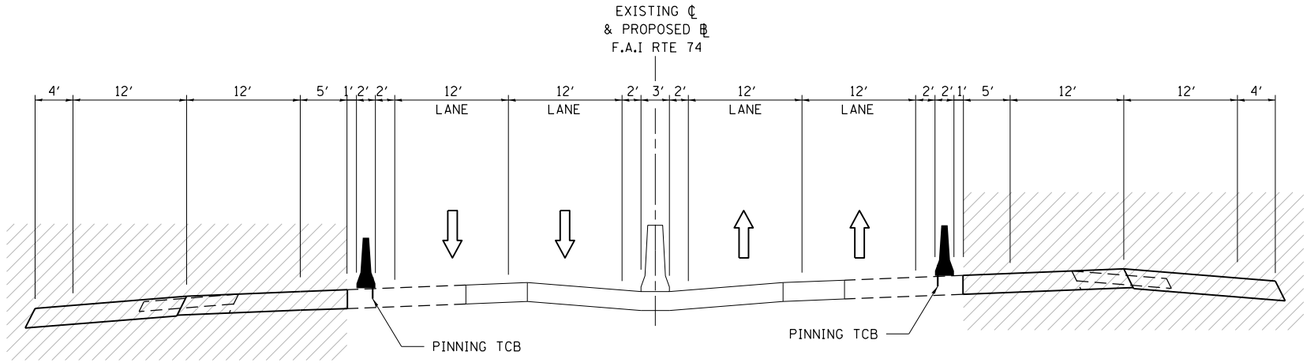
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 4 REVISED**

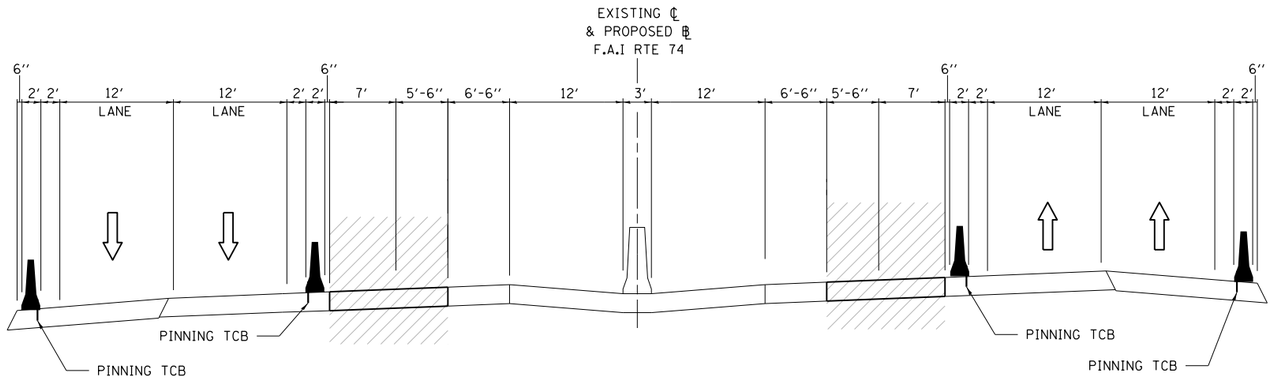
SHEET 6 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 1 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 2 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00

### LEGEND

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 37

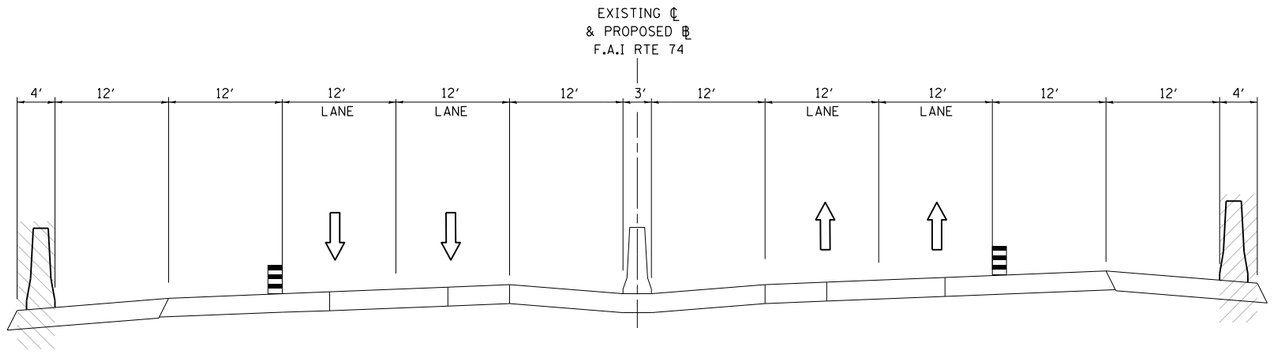
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 4 REVISED**

SHEET 7 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 3 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1083+00 TO STA. 1117+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 37

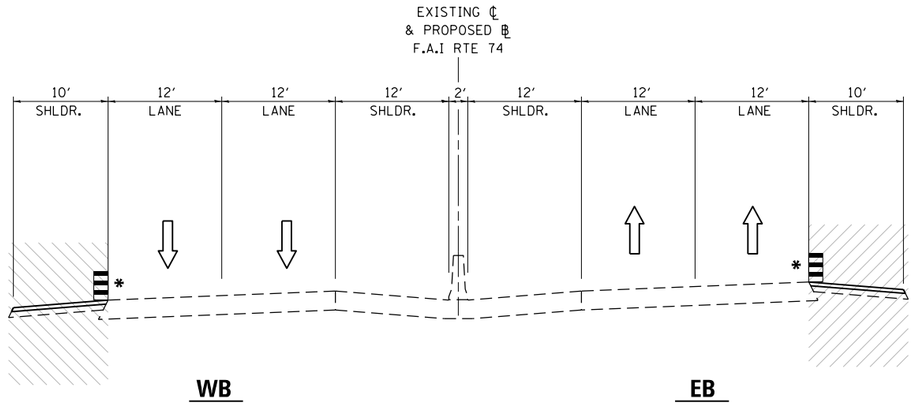
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

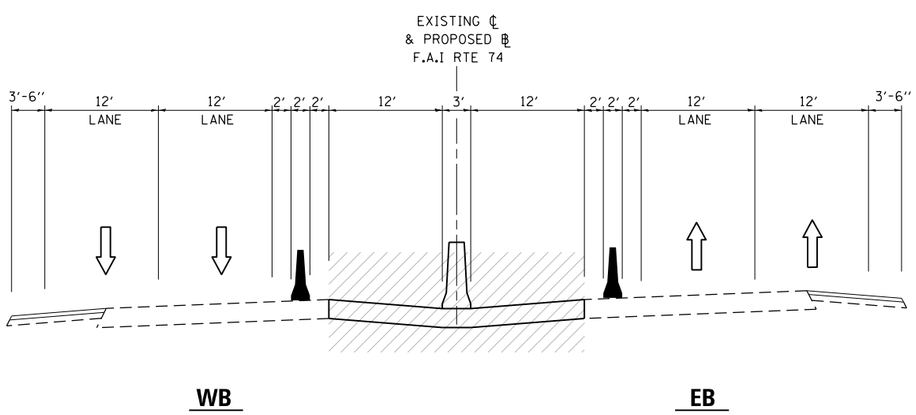
**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 4 REVISED**

SHEET 8 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 4**
**PRE–STAGE A – EXISTING & PROPOSED CLOSED MEDIAN**
STA. 1117+00 TO STA. 1143+00




**TYPICAL SECTION – SEGMENT 4**
**PRE–STAGE B – EXISTING & PROPOSED CLOSED MEDIAN**
STA. 1117+00 TO STA. 1143+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 37**

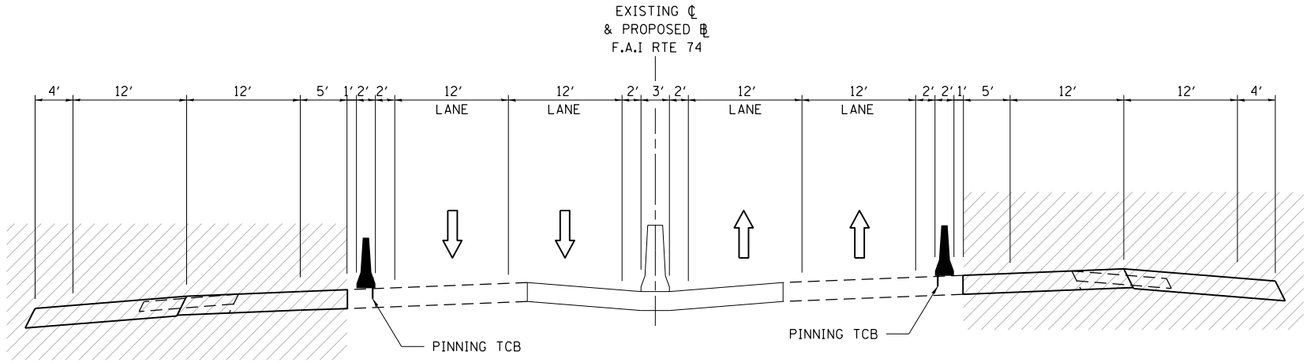
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–74 – OPTION 4 REVISED**

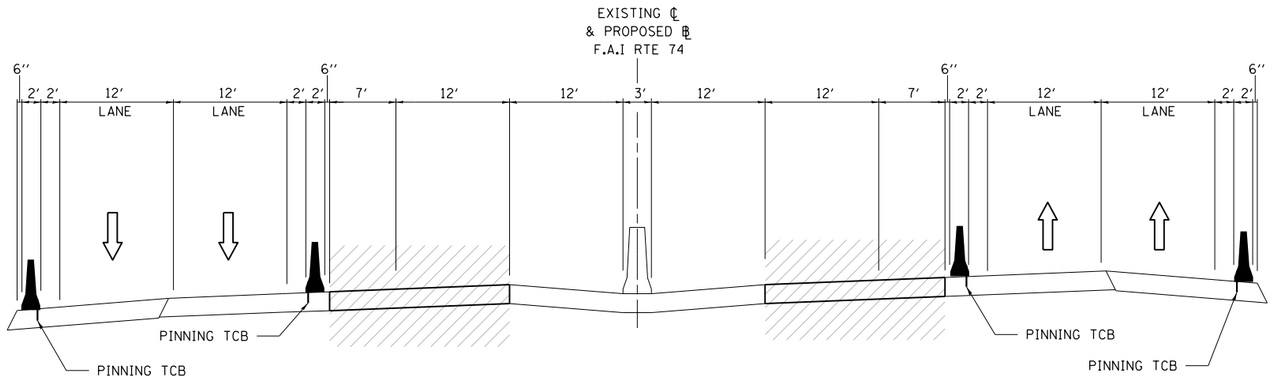
SHEET 9 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS | FED. AID PROJECT | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 4
## STAGE 1 – EXISTING & PROPOSED CLOSED MEDIAN
STA. 1117+00 TO STA. 1143+00




**WB** **EB**

## TYPICAL SECTION – SEGMENT 4
## STAGE 2 – EXISTING & PROPOSED CLOSED MEDIAN
STA. 1117+00 TO STA. 1143+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 37

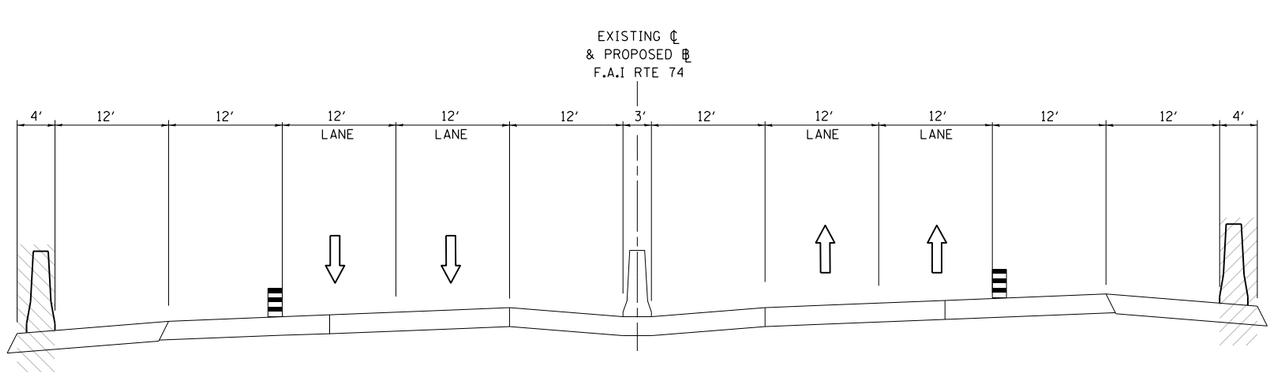
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 4 REVISED**

SHEET 10 OF 11 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**WB** **EB**

## TYPICAL SECTION – SEGMENT 4
## STAGE 3 – EXISTING OPEN MEDIAN / PROPOSED CLOSED MEDIAN
STA. 1117+00 TO STA. 1143+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 37

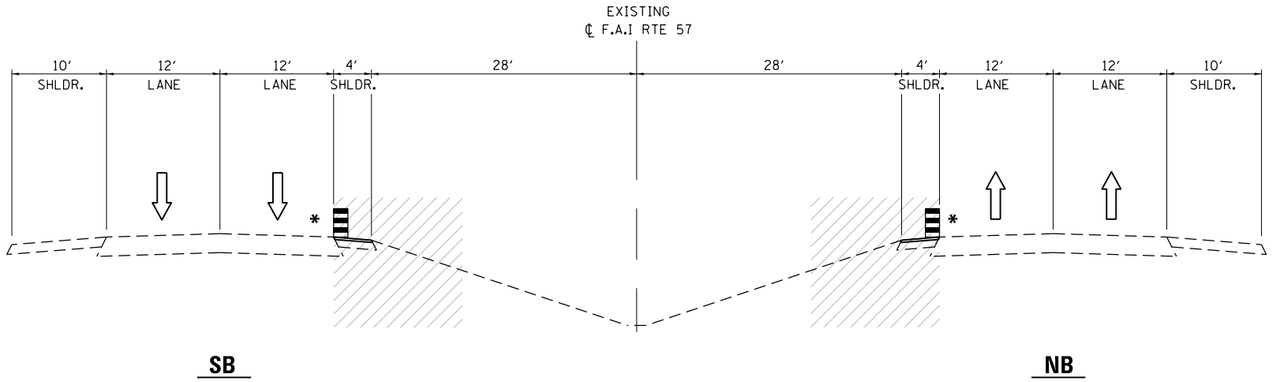
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

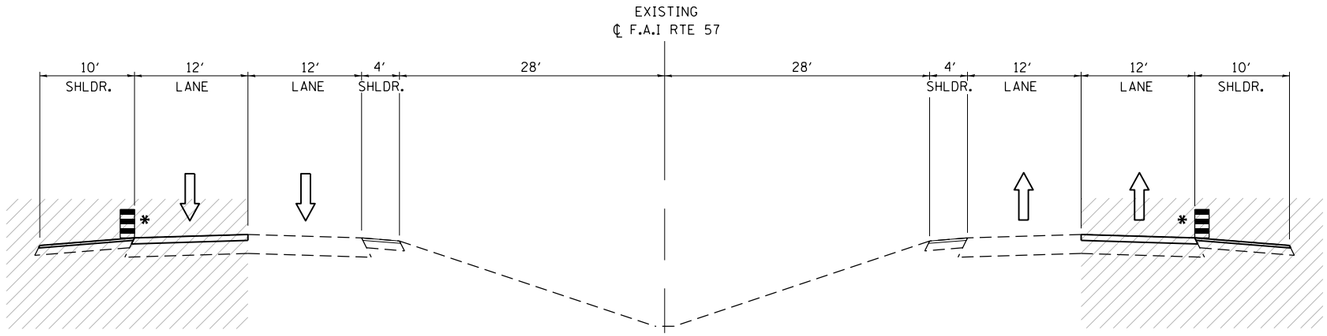
**STAGING TYPICAL SECTIONS**
**I-74 – OPTION 4 REVISED**

SHEET 11 OF 11 SHEETS STA. TO STA.

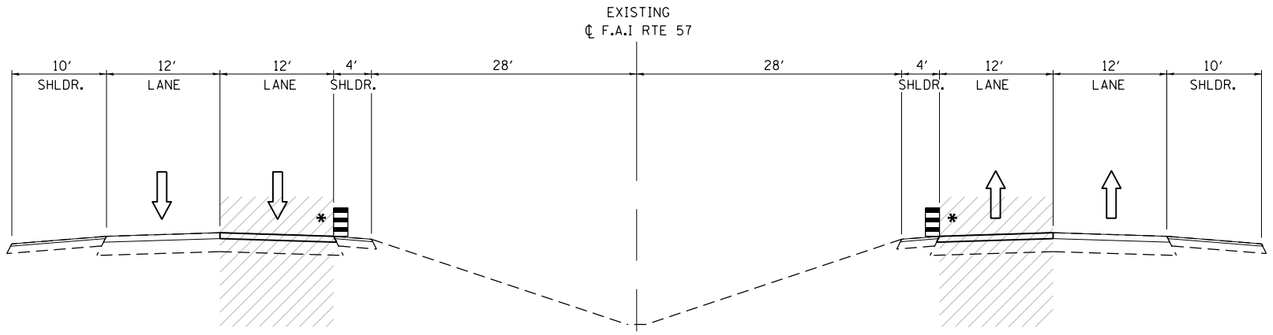
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 1**
**STAGE 1 – MILL & OVERLAY**
STA. 545+00 TO STA. 560+00




**TYPICAL SECTION – SEGMENT 1**
**STAGE 2 – MILL & OVERLAY**
STA. 545+00 TO STA. 560+00




**TYPICAL SECTION – SEGMENT 1**
**STAGE 3 – MILL & OVERLAY**
STA. 545+00 TO STA. 560+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 38**

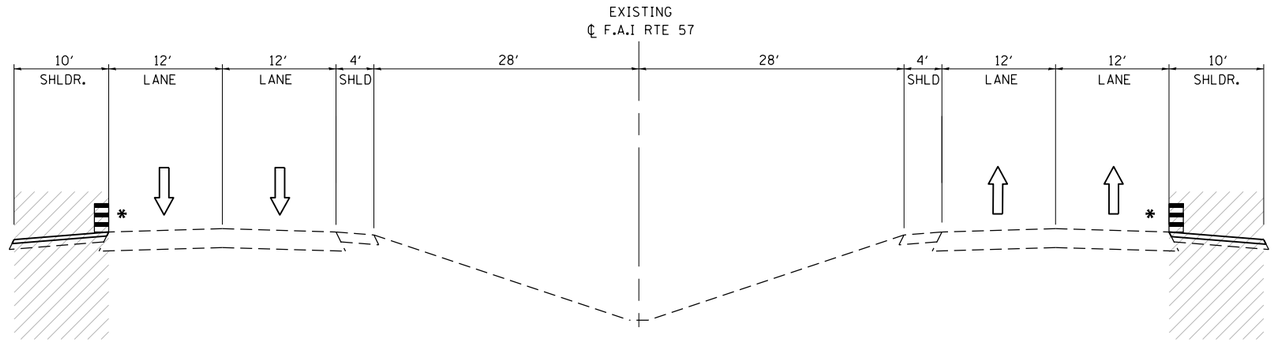
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

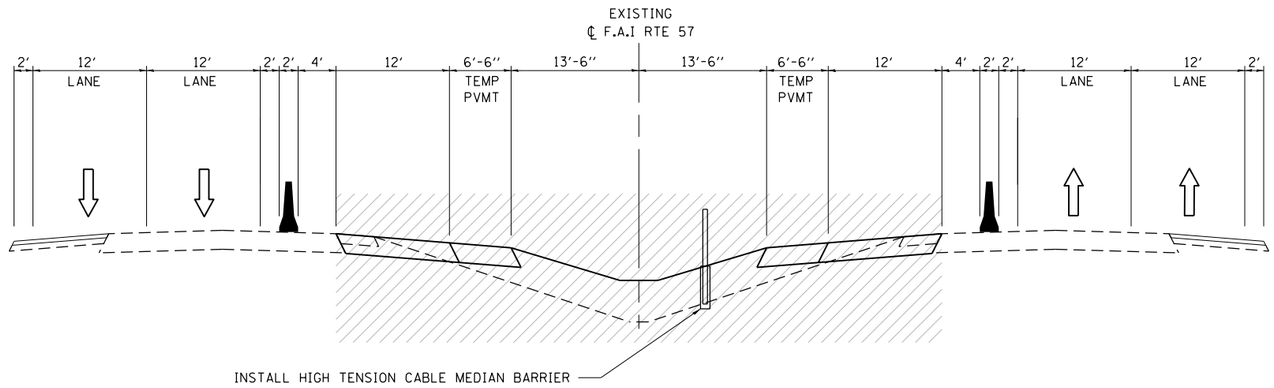
**STAGING TYPICAL SECTIONS**
**I–57 – OPTION 4 REVISED**

SHEET 1 OF 5 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 2**
**PRE-STAGE – TWO LANES**
STA. 560+00 TO STA. 605+00




**TYPICAL SECTION – SEGMENT 2**
**STAGE 1 – TWO LANES**
STA. 560+00 TO STA. 605+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 38

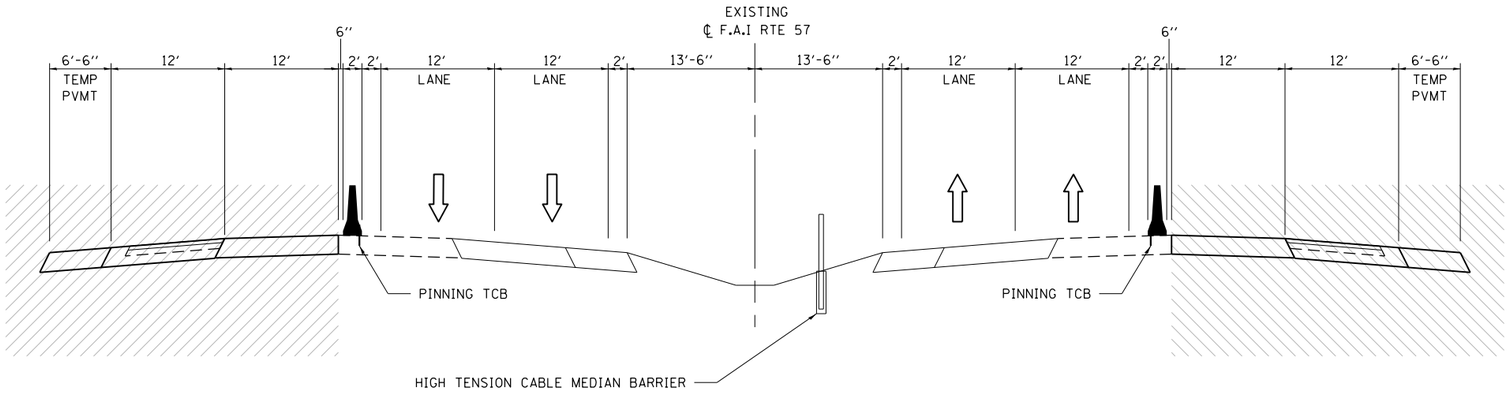
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 4 REVISED**

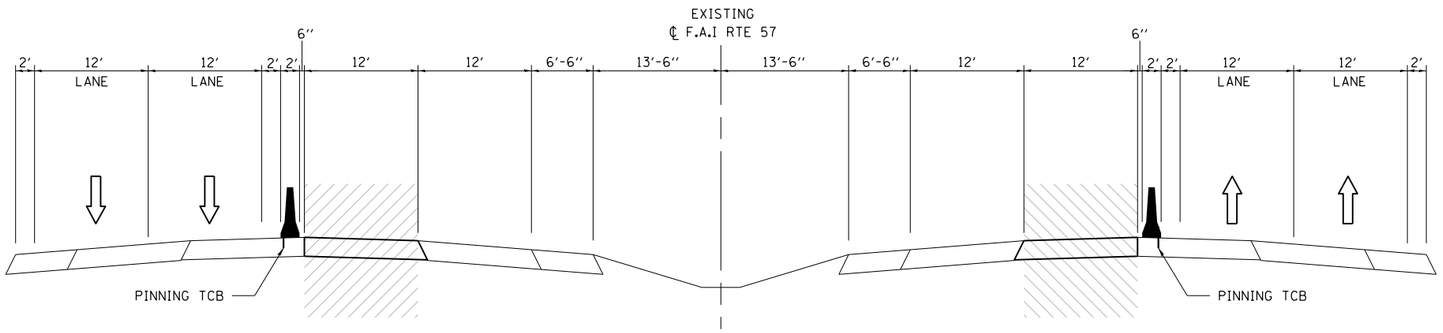
SHEET 2 OF 5 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**SB** **NB**

## TYPICAL SECTION – SEGMENT 2
## STAGE 2 – TWO LANES
STA. 560+00 TO STA. 605+00




**SB** **NB**

## TYPICAL SECTION – SEGMENT 2
## STAGE 3 – TWO LANES
STA. 560+00 TO STA. 605+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

# EXHIBIT 38

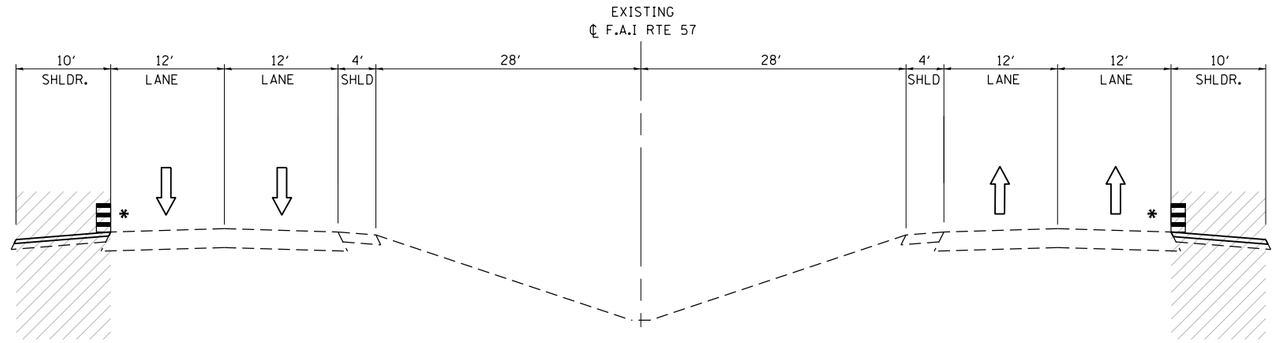
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

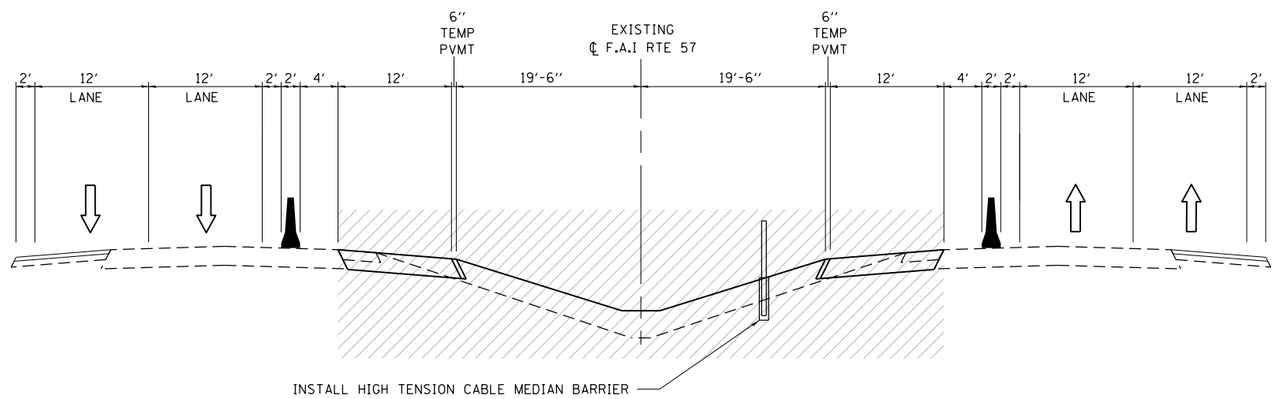
**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 4 REVISED**

SHEET 3 OF 5 SHEETS STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**TYPICAL SECTION – SEGMENT 3**
**PRE–STAGE – THREE LANES**
STA. 605+00 TO STA. 648+00




**TYPICAL SECTION – SEGMENT 3**
**STAGE 1 – THREE LANES**
STA. 605+00 TO STA. 648+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER A TEMPORARY CLOSURE DURING OFF-PEAK PERIODS

**EXHIBIT 38**

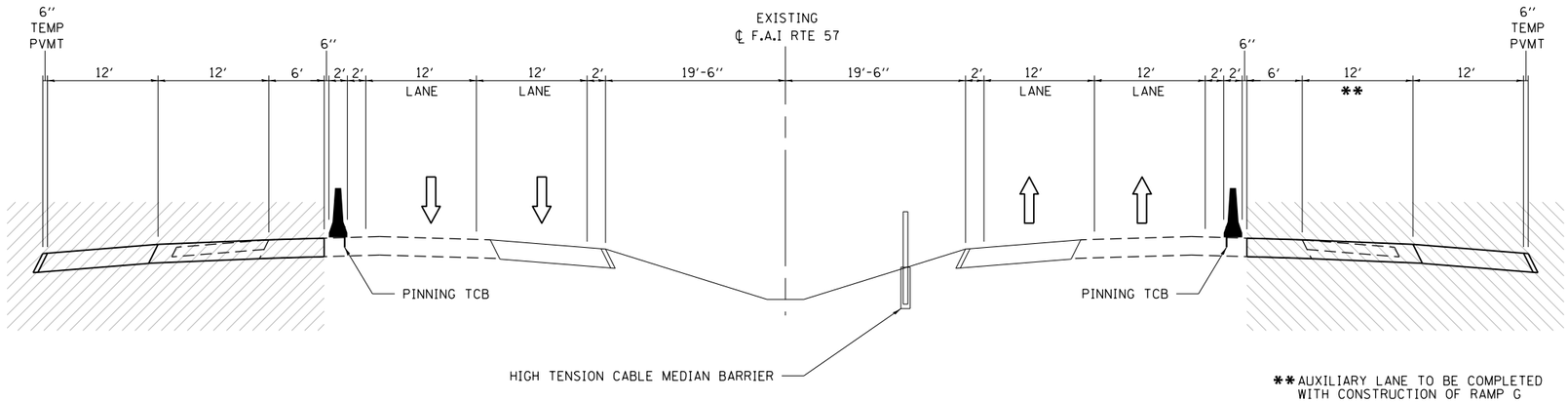
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I–57 – OPTION 4 REVISED**

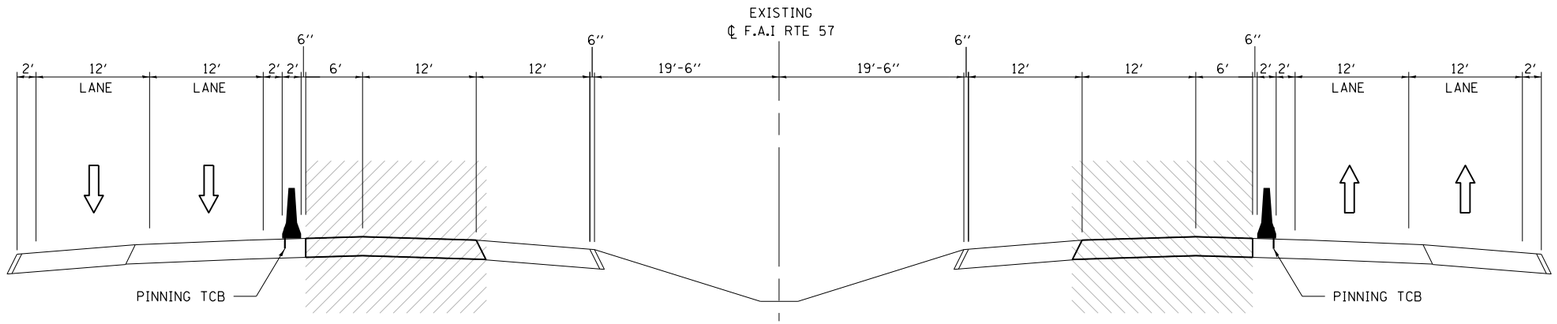
SHEET 4 OF 5 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |




**SB** **NB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 2 – THREE LANES
STA. 605+00 TO STA. 648+00




**SB** **NB**

## TYPICAL SECTION – SEGMENT 3
## STAGE 3 – THREE LANES
STA. 605+00 TO STA. 648+00

**LEGEND**

WORK ZONE

*WORK TO BE COMPLETED UNDER
A TEMPORARY CLOSURE DURING
OFF-PEAK PERIODS

# EXHIBIT 38

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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**STAGING TYPICAL SECTIONS**
**I-57 – OPTION 4 REVISED**

SHEET 5 OF 5 SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | 10(5-1-RS-1, 14-1, 6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

# Combined Design Report

VOLUME 3 OF 3

## Interstate 57 and Interstate 74

Section 10(5-1-RS-1, 14-1, 6)R
Job No. P-95-030-11

Champaign, IL
Champaign County



**September 2015**

Prepared For:

Illinois Department of Transportation

**Region 3 – District 5**

# APPENDIX I
# Bridge Condition Reports

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

**PADUCAH OFFICE:**
500 South 17th Street, P.O. Box 120
Paducah. Kentucky 42002
Phone: (270) 443-1995
Fax: (270) 443-1904

**MURRAY OFFICE:**
1215 Diuguid Drive
Murray, Kentucky 42071
Phone: (270) 753-7307
Fax: (270) 759-4950

**MARION OFFICE:**
403 North Court Street
Marion, Illinois 62959
Phone: (618) 993-6700
Fax: (618) 993-6717

# Transmittal

**TO:** D. Carl Puzey
Attn: T.A. Craven
Illinois Department of Transportation
Bureau of Bridges and Stuctures
2300 S. Dirksen Parkway
Springfield, IL 62764

Phone: (217)524-4848
Fax:
Email:

**DATE:** 10/17/2014
**RE:** BCR
FAI 74 over FAI 57
Section 10-34HB-1
SN 010-0018(19)

**WE ARE FORWARDING THE FOLLOWING:**

☒ ATTACHED
☐ UNDER SEPARATE COVER

| QUANTITY | DESCRIPTION |
|---|---|
| 1 | Electronic copy sent to dot.bbs.planning@illinois.gov for review and approval. File name: *0100018(19)BCR 20140630.pdf* |
| | |
| | |

☐ REVIEWED (AS NOTED ON DWG.)
☐ FURNISH AS CORRECTED
☐ NOT APPROVED
☒ FOR YOUR APPROVAL
☐ AS REQUESTED
☒ FOR YOUR USE

REMARKS:

COPY TO: BFW File #11354
District 5

BY: Brandon W. Poiter, P.E., S.E.

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

# BRIDGE CONDITION REPORT

| | |
|---|---|
| **REGION:** | 3 |
| **DISTRICT:** | 5 |
| **COUNTY:** | Champaign |
| **ROUTE:** | FAI 74 |
| **JOB NUMBER:** | P-95-030-11 |
| **STRUCTURE NUMBER:** | 010-0018(19) |
| **LOCATION:** | I-74 over I-57 |

**PREPARED BY:** Brandon W. Poiter, PE, SE
BFW Engineering & Testing

**DATE INSPECTED:** June 30, 2014

**PROPOSED LETTING DATE:** Unknown

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| III. | Field Inspection & Physical Evaluation | 2-3 |
| IV. | Potential Scope of Work Determination & Analysis | 3 |
| V. | Discussion and Recommended Scope of Work | 3 |

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# I. Geographical & Administrative Data

**Structure Number:** 010-0018(19)
**County:** CHAMPAIGN
**Route Carried:** FAI 74
**Feature Crossed:** FAI 57
**Section:** 10-34HB-1
**Station:** 1061+40.6

**Roadway Classification:** Interstate, FAI
**Design/Posted Speed:** 70 mph/65 mph

| | FAI 74 | FAI 57 |
|---|---|---|
| **ADT (current/design):** | 38,900 (2013)/59,900 (2040) | 32,400 (2013)/49,900 (2040) |
| **ADTT (current/design):** | 7,350 (2013)/13,720 (2040) | 9,450 (2013)/14,170 (2040) |
| **DHV:** | 4,930 (2040) | 3,650 (2040) |

| | SN 010-0018 | SN 010-0019 |
|---|---|---|
| **Inventory Rating HS:** | **27.2** | **27.2** |
| **Operating Rating HS:** | **45.0** | **45.0** |
| **Sufficiency Rating:** | **95.0** | **95.0** |

## Construction/Reconstruction/Repair History:

1965 - Original construction under FAI 74, Section 10-34HB-1
1989 - Superstructure replacement under FAI 74, Section (10-34HB-1)BR

# II. Physical Description of Structure:

The existing structures were originally constructed in 1965 as four-span rolled steel beam structures with pin and link systems in the end spans. The abutments are open stub abutments on concrete piles. The four column reinforced concrete piers with crash walls are supported on spread footings.

In 1989, the superstructure of each structure was replaced with rolled steel W36 beams composite in the positive moment regions only. The north fascia beam of the north bridge and south fascia beam of the south bridge is flared to carry the flared deck on each structure. The wingwalls were reconstructed, and the seat elevations were adjusted with concrete extensions.

| | |
|---|---|
| Length: | 261’-2” Back to Back of Abutments |
| Width: | Varies 53’-3” to 57’-6 ½” out to out |
| Span: | 44’-4” / 84’-5” / 84’-5” / 44’-4” |
| Skew: | 6°-45’-27” Rt. |
| Wearing Surface: | Bare Deck No Overlay |
| Horizontal Alignment: | Tangent |
| Vertical Alignment: | 900’ crest vertical curve with an entry grade of +0.30% and exit grade of -2.00%. |
| Utilities: | None |

## III. Field Inspection & Physical Evaluation:

The bridge was visually inspected by Bacon, Farmer, Workman Engineering and Testing, Inc. on June 30th, 2014.

### Superstructure:

**Deck:** The deck on each structure is in satisfactory condition. Transverse hairline cracks with efflorescence spaced at greater than 5' intervals are present over a majority of the bottom of deck. Efflorescence is also present in the end spans along the longitudinal construction joint at the stage construction line. The parapets on both structures are in good condition. There is no wearing surface on either structure.

**Beams:** The beams are W36 wide flange steel and are in good condition with some rust on the bottom flanges over the traffic lanes and the beam ends. The paint is in good condition.

**Joint:** The preformed joint seal expansion joints at each abutment are in fair condition and are leaking as evidenced by stains on the front face of the abutment backwalls. The joint opening at the west abutment of the westbound structure was 2 ¼" with the joints at the other abutments measuring 2" at a temperature of 85° F.

**Bearings:** The bearings at the piers are in good condition while the elastomeric bearings at the abutments are in fair condition. The abutment bearings have moderate to heavy rust with minor section loss. The bearings appear to functioning properly with no excessive deformation.

### Substructure:

**Abutments:** The abutments are in satisfactory condition. The backwall at each abutment has a moderate amount of leaching vertical cracks. The abutment caps also have a moderate amount of vertical cracks. The south end of the east abutment on the westbound structure is spalled from the edge of the bearing plate to the end of the cap. There is a similar spall at the north end of the cap of the east abutment on the eastbound structure.

**Piers:** The piers are in satisfactory condition. The crash wall on Pier 2 of the eastbound structure has some vertical hairline cracks and a minor spall with exposed tie on the south inner column. The bottom of the cap at pier 3 of the eastbound structure has a spall with an exposed tie adjacent to the inner column. The pier crash walls on the westbound structure have minor vertical cracking. The outer columns on pier 1 of the westbound structure are spalled with reinforcement exposed and minor section loss.

**Slope Protection:** The west slopewall has some minor cracking and small areas of undermining. The east slopewall is cracked and is broken up due to extensive undermining.

**Inspection History (NBIS Ratings).**

| Year | Deck | Superstructure | Substructure |
|---|---|---|---|
| 2012 | 6 | 7 | 6 |
| 2011 | 6 | 7 | 6 |
| 2009 | 7 | 7 | 7 |

**Geometric, Horizontal & Vertical Clearance:**

The face-to-face width of each structure varies from 53'-3" to 57'-6 ½". The location of piers 1 and 3 provides 10' of lateral clearance between the edge of ramp and face of pier. Guardrail is provided to protect the piers 1 and 3 on the approach side. The vertical clearance over I-57 is 16'-6 ⅛".

## IV. Potential Scope of Work Determination & Analysis:

This report is being prepared in conjunction with an interchange type study of two alternates for the reconstruction of the existing interchange. I-74 will be upgraded to a 6 lane urban section with 12' lanes, a 60' median, and 12' inside and outside shoulders. Alternate 1 is a full direction interchange with flyovers. Alternate 2 is semi-directional with directional flyovers and two loops. It is anticipated that these structures will be replaced due to the additional lanes and also to accommodate the proposed ramp geometry for the proposed interchange.

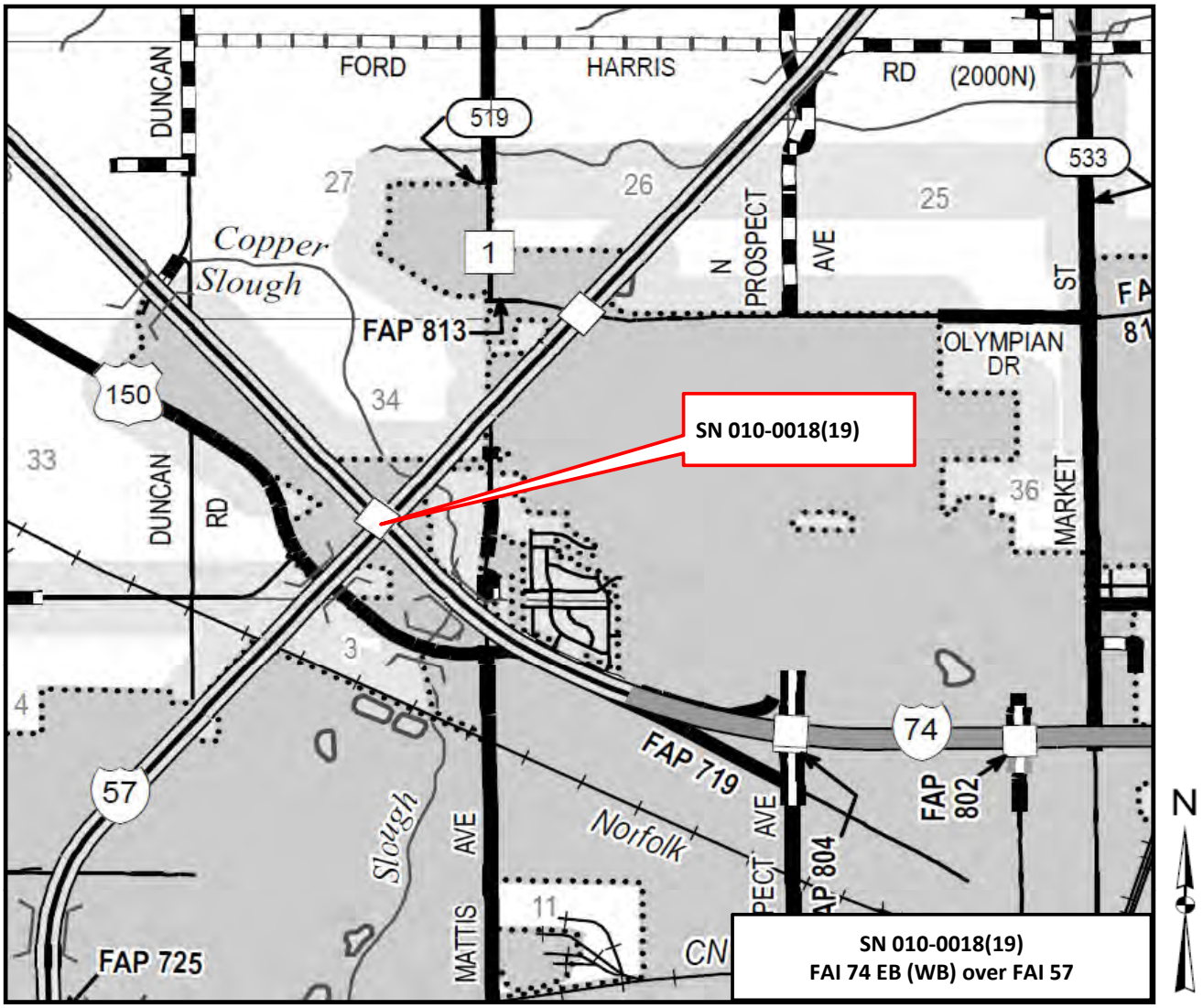
## V. Discussion and Recommended Scope of Work

Based on the need provide for an additional traffic lane on each structure and to span the proposed ramps, the recommended scope of work is to replace the existing structures. At the time this report was prepared, Alternate 2 was the preferred alternate. The proposed structure for Alternate 2 is a two span 50" web plate girder structure, 277' back to back of abutment and a clear width that varies from 66'-1" to 73'-2" due to the entrance and exit ramps near the structures. It is anticipated that the variable width will be accommodated by flaring the outer girders.

The method of construction is to use staging to replace the existing bridges.

# **ATTACHMENT A**

Location Map


DUNCAN
FORD
HARRIS
RD (2000N)
519
533
27
26
25
1
N PROSPECT AVE
ST
Copper Slough
FAP 813
OLYMPIAN DR
150
34
SN 010-0018(19)
33
DUNCAN RD
36
MARKET
3
4
74
57
FAP 719
FAP 802
Slough
MATTIS AVE
Norfolk
PECT AVE
AP 804
11
CN
FAP 725
SN 010-0018(19)
FAI 74 EB (WB) over FAI 57
N

# **ATTACHMENT B**

IDOT Master Structure Report

# Illinois Department of Transportation
# Structures Information Management System
# Structure Summary Report



**Structure Number:** 010-0018 **District:** 5

## Inventory Data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Facility Carried:** | I-74(EB) | **Bridge Name:** | | **Sufficiency Rating:** | 95.0 | **Structure Length:** | 261.2 |
| **Feature Crossed:** | I-57 | **Location:** | NW OF CHAMPAIGN | **HBP Eligible:** | No | **AASHTO Bridge Length:** | 99.9 |
| **Bridge Remarks:** | (02072) OPENED TO TRAFFIC 11/15/90 | | | **Replaced By:** | - | **Length of Long Span:** | 84.4 |
| **Bridge Status:** | 1 OPEN - NO RESTRICT | **Status Date:** | 04/1988 | **Replaces:** | - | **Bridge Roadway Width:** | 50.1 |
| **Status Remarks:** | | | | **Last Update Date:** | 11/13/2013 | **Appr Roadway Width:** | 51.0 |
| **Maint County:** | 010 CHAMPAIGN | **Maint Township:** | 12 HENSLEY | **Parallel Structure:** | Right | **Deck Width:** | 53.2 |
| **Maint Responsibility:** | 01 I.D.O.T. | | | **Multi-Level Structure Nbr:** | | **Sidewalk Width Right:** | 0.0 |
| **Service On/Under:** | 5 SECOND LEVEL INTERCHANGE | 1 / | HIGHWAY | **Skew Direction:** | R Right | **Sidewalk Width Left:** | 0.0 |
| **Reporting Agency:** | 1 I.D.O.T. - BUREAU OF MAINTENANCE | | | **Skew Angle:** | D | **Navigation Control:** | N N/A |
| **Main Span Matl/Type:** | 4 STEEL CONTINUOUS | / | 02 STRINGER/MULTI-BEAM/GIRDER | **Structure Flared:** | Yes | **Navigation Horiz Clear:** | 0 |
| **Nbr Of Main Spans:** | 4 **Nbr Of Approach Spans:** | 0 | | **Historical Significance:** | No | **Navigation Vert Clear:** | 0 |
| *****Approaches***** | | | | **Border Bridge State:** | | **Culvert Fill Depth:** | 0.0 |
| **Near #1 Matl/Type:** | / | | | **Bdr State SN:** | | **Number Culvert Cells:** | 0 |
| **Near #2 Matl/Type:** | / | | | **Bdr State % Responsibility:** | 0 | **Culvert Opening Area:** | 0.0 |
| **Far #1 Matl/Type:** | / | | | **Structural Steel Wt** | 852800 | **Culvert Cell Height:** | 0.00 |
| **Far #2 Matl/Type:** | / | | | **Substructure Material:** | 55 | **Culvert Cell Width:** | 0.00 |
| **Median Width/Type:** | 0 Ft. / 0 None | | | **Rated By:** | 2 IDOT | **Rate Method:** | 6 |
| **Guardrail Type L/R:** | 0None / 0 None | | | **Inventory Rating:** | 1.360(48) | **Load Rating Date:** | 04/17/1991 |
| **Toll Facility Indicator:** | 0 No Toll | | | **Operating Rating:** | 2.250(81) | **Railroad Crossing Info** | |
| **Latitude:** | 40.14625490 **S** | **Longitude:** | 88.28411384 **S** | **Design Load:** | 01 HS20+MOD | **Crossing 1 Nbr:** | |
| **Deck Structure Type:** | A CIP CON NRMLLY FORM | | | **Deck Structure Thickness:** | 7.5 **SD:** N **FO:** N | **Crossing 1 Nbr:** | |
| **Sidewalks Under Structure:** | 0 None | | | | | **RR Lateral Underclear:** | 0.0 |
| | | | | | | **RR Vertical Underclear:** | 0 **Ft** 0 **In** |

## Key Route On Data

| | | | |
|---|---|---|---|
| **Key Route Nbr:** | FEDERAL-AID INTERSTATE 0074 | **Station:** | 10.8200 |
| **Appurtenances** | Main Route 00000 | **Segment:** | |
| **Inventory County:** | 010 CHAMPAIGN | **Linked:** | Y |
| **Township/Road Dist** | 54 CHAMPAIGN CITY | **Natl. Hwy System:** | On NHS |
| **Municipality** | 0990 CHAMPAIGN | **Inventory Direction:** | |
| **Urban Area:** | 0990 0990 | **Curr AADT Yr/Count:** | 2013 / 16450 |
| **Functional Class:** | 1 INTERSTATE | **Est Truck Percentage:** | 16 |
| **** CLEARANCES **** | **South/East** **North/West** | **Number Of Lanes:** | 3 |
| **Max Rdwy Width:** | 50.1 | **One Or Two Way:** | 1 One-Way |
| **Horizontal:** | 51.3 0.0 | **Bypass Length:** | 0 |
| | | **Future AADT Yr/Cnt:** | 2032 / 15510 |
| | | **Designated Truck Rte:** | CLASS I |
| **Lateral:** | | **Special Systems:** | Yes |

## Key Route Under Data

| | | | |
|---|---|---|---|
| FEDERAL-AID INTERSTATE 0057 | | **Station:** | 19.5700 |
| Main Route 00000 | | **Segment:** | |
| 010 | | **Linked:** | Y |
| 54 CHAMPAIGN CITY (CHAMPAIGN) | | **Natl. Hwy System:** | On NHS |
| 0990 CHAMPAIGN | | **Inventory Direction:** | |
| 0990 0990 | | **Curr AADT Yr/Count:** | 2013 / 32400 |
| 1 INTERSTATE | | **Est Truck Percentage:** | 22 |
| **South/East** | **North/West** | **Number Of Lanes:** | 6 |
| 82.0 | | **One Or Two Way:** | 2 Two-Way |
| 82.0 | 82.0 | **Bypass Length:** | 0 |
| | | **Future AADT Yr/Cnt:** | 2032 / 37901 |
| | | **Designated Truck Rte:** | CLASS I |
| | | **Special Systems:** | Yes |

## *** Marked Route On Data ***

| | **Designation** | **Kind** | **Number** |
|---|---|---|---|
| **Route #1:** | 1 Mainline | 1 Interstate Highway | 074 |
| **Route #2:** | 1 Mainline | | |
| **Route #3:** | 1 Mainline | | |

## *** Marked Route Under Data ***

| | **Designation** | **Kind** | **Number** |
|---|---|---|---|
| | 1 Mainline | 1 Interstate Highway | 057 |
| | 1 Mainline | | |
| | 1 Mainline | | |

**Structure Number: 010-0018** **District: 5**

## Data Related to Inspection Information

| *** Inspection Intervals *** | | | | *** Maximum Allowable Posting Limits *** | | | | Bridge Posting Level: | |
|---|---|---|---|---|---|---|---|---|---|
| **Routine NBIS:** | 24 MOS | **Underwater:** | 0 MOS | **One Truck At A Time:** | 0 | **Combination Type 3S-1:** | Tons | 5 | No Posting Required |
| | | **Special:** | N | **Single Unit Vehicles:** | Tons | **Combination Type 3S-2** | Tons | | |

## Inspection/Appraisal Information

**Inspection Date:** 11/05/2012 **Inspection Temperature:** 45Deg. F

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Deck:** | 6 | SATISFACTORY CONDITION - MINOR DETERIORATION | | | | | | **Single Unit Vehicles:** | Tons |
| **Superstructure:** | 7 | GOOD CONDITION - SOME MINOR PROBLEMS | | | | | | **Combination Type 3S-1:** | Tons |
| **Substructure:** | 6 | SATISFACTORY CONDITION - MINOR DETERIORATION | | | | | | **Combination Type 3S-2:** | Tons |
| **Culvert:** | N | NOT APPLICABLE | | | | | | **One Truck At A Time:** | 0 |
| **Channel and Protection:** | N | NOT APPLICABLE | | **Deck Wearing Surf:** | A | BARE DECK NO OVRLAY | | **Last Paint Type:** | G |
| **Structural Evaluation:** | 6 | EQUAL TO PRESENT MINIMUM CRITERIA | | **Deck Membrane:** | F | NONE | | SHP ZINC & VINYL | |
| **Deck Geometry:** | 4 | MINIMUM ADEQUACY TO BE LEFT IN PLACE | | **Deck Protection:** | A | EPOXY COATED REINF | | | |
| **Underclearance-Vert/Lat.:** | 5 | BETTER THAN ADEQUATE TO BE LEFT IN PLACE | | **Total Deck Thick:** | 7.5 | | | | |
| **Waterway Adequacy:** | N | NOT APPLICABLE | | **Last Paint Date:** | 05/1990 | | | | |
| **Approach Roadway Align:** | 8 | EQUAL TO PRESENT DESIRABLE CRITERIA | | | | | | | |
| **Bridge Railing Appraisal:** | 3 | Meets Standards | | | | | | | |
| **Approach Guardrail:** | 333 | Acceptable | Acceptable | Acceptable | | | | | |
| **Pier Navig Protection:** | N | N/A | | | | | | | |

## Underwater Inspection/Appraisal Information

**Inspection Date:**

**Temperature:** **Inspection Method:**

**Appraisal Rating:**

## Scour Critical Information

**Rating:** **Evaluation Method:**

**Analysis Date:**

## Miscellaneous

**Microfilm Data Recorded:** Yes

## Construction Information

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Year:** | 1965 | Original | | 1990 | Reconstructed | | |
| **Route:** | FAI 57 | | **Sta:** 597+78.22 | FAI 74 | | **Sta:** 161+35.97 | |
| **Section Nbr:** | | 10-34HB-1 | | | (10-34HB-1)BR | | |
| **Contract Nbr:** | | 22976 | | | 90017 | | |
| **Fed Aid Pr#:** | | I-57-5(23)235 | | | ACIR-74-5(126) | | |
| **Built By:** | 1 | I.D.O.T. | | 0 | UNKNOWN | | |

# Illinois Department of Transportation
# Structures Information Management System
# Structure Summary Report



**Structure Number:** 010-0019 **District:** 5

## Inventory Data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Facility Carried:** | I-74(WB) | **Bridge Name:** | | **Sufficiency Rating:** | 95.0 | **Structure Length:** | 261.2 |
| **Feature Crossed:** | I-57 | **Location:** | NW OF CHAMPAIGN | **HBP Eligible:** | No | **AASHTO Bridge Length:** | 99.9 |
| **Bridge Remarks:** | (02073) OPENED TO TRAFFIC 11/15/90 | | | **Replaced By:** | - | **Length of Long Span:** | 84.4 |
| **Bridge Status:** | 1 OPEN - NO RESTRICT | **Status Date:** | 04/1988 | **Replaces:** | - | **Bridge Roadway Width:** | 50.1 |
| **Status Remarks:** | | | | **Last Update Date:** | 11/13/2013 | **Appr Roadway Width:** | 51.0 |
| **Maint County:** | 010 CHAMPAIGN | **Maint Township:** | 12 HENSLEY | **Parallel Structure:** | Left | **Deck Width:** | 53.2 |
| **Maint Responsibility:** | 01 I.D.O.T. | | | **Multi-Level Structure Nbr:** | | **Sidewalk Width Right:** | 0.0 |
| **Service On/Under:** | 5 SECOND LEVEL INTERCHANGE | 1 / | HIGHWAY | **Skew Direction:** | R Right | **Sidewalk Width Left:** | 0.0 |
| **Reporting Agency:** | 1 I.D.O.T. - BUREAU OF MAINTENANCE | | | **Skew Angle:** | D | **Navigation Control:** | N N/A |
| **Main Span Matl/Type:** | 4 STEEL CONTINUOUS | / | 02 STRINGER/MULTI-BEAM/GIRDER | **Structure Flared:** | Yes | **Navigation Horiz Clear:** | 0 |
| **Nbr Of Main Spans:** | 4 **Nbr Of Approach Spans:** 0 | | | **Historical Significance:** | No | **Navigation Vert Clear:** | 0 |
| *****Approaches***** | | | | **Border Bridge State:** | | **Culvert Fill Depth:** | 0.0 |
| **Near #1 Matl/Type:** | / | | | **Bdr State SN:** | | **Number Culvert Cells:** | 0 |
| **Near #2 Matl/Type:** | / | | | **Bdr State % Responsibility:** | 0 | **Culvert Opening Area:** | 0.0 |
| **Far #1 Matl/Type:** | / | | | **Structural Steel Wt** | 852800 | **Culvert Cell Height:** | 0.00 |
| **Far #2 Matl/Type:** | / | | | **Substructure Material:** | 55 | **Culvert Cell Width:** | 0.00 |
| **Median Width/Type:** | 0 Ft. / 0 None | | | **Rated By:** 2 IDOT | | **Rate Method:** 6 | |
| **Guardrail Type L/R:** | 0None / 0 None | | | **Inventory Rating:** | 1.360(48) | **Load Rating Date:** | 04/17/1991 | **Railroad Crossing Info** |
| **Toll Facility Indicator:** | 0 No Toll | | | **Operating Rating:** | 2.250(81) | **Crossing 1 Nbr:** | |
| **Latitude:** | 40.14599000 **S** | **Longitude:** | 88.28380000 **S** | **Design Load:** 01 | HS20+MOD | **Crossing 1 Nbr:** | |
| **Deck Structure Type:** | A CIP CON NRMLLY FORM | | | **Deck Structure Thickness:** | 7.5 **SD:** N **FO:** N | **RR Lateral Underclear:** | 0.0 |
| **Sidewalks Under Structure:** | 0 None | | | | | **RR Vertical Underclear:** 0 **Ft** 0 **In** | |

## Key Route On Data

| | | | |
|---|---|---|---|
| **Key Route Nbr:** | FEDERAL-AID INTERSTATE 0074 | **Station:** | 10.8300 |
| **Appurtenances** | Main Route 00000 | **Segment:** | |
| **Inventory County:** | 010 CHAMPAIGN | **Linked:** | Y |
| **Township/Road Dist** | 54 CHAMPAIGN CITY | **Natl. Hwy System:** | On NHS |
| **Municipality** | 0990 CHAMPAIGN | **Inventory Direction:** | |
| **Urban Area:** | 0990 0990 | **Curr AADT Yr/Count:** | 2013 / 19450 |
| **Functional Class:** | 1 INTERSTATE | **Est Truck Percentage:** | 15 |
| **** CLEARANCES **** | **South/East** **North/West** | **Number Of Lanes:** | 3 |
| **Max Rdwy Width:** | 50.1 | **One Or Two Way:** | 1 One-Way |
| **Horizontal:** | 51.3 0.0 | **Bypass Length:** | 0 |
| | | **Future AADT Yr/Cnt:** | 2032 / 21658 |
| | | **Designated Truck Rte:** | CLASS I |
| **Lateral:** | | **Special Systems:** | Yes |

## Key Route Under Data

| | | | |
|---|---|---|---|
| FEDERAL-AID INTERSTATE 0057 | | **Station:** | 19.5900 |
| Main Route 00000 | | **Segment:** | |
| 010 | | **Linked:** | Y |
| 54 CHAMPAIGN CITY (CHAMPAIGN) | | **Natl. Hwy System:** | On NHS |
| 0990 CHAMPAIGN | | **Inventory Direction:** | |
| 0990 0990 | | **Curr AADT Yr/Count:** | 2013 / 22200 |
| 1 INTERSTATE | | **Est Truck Percentage:** | 20 |
| **South/East** **North/West** | | **Number Of Lanes:** | 6 |
| 82.0 | | **One Or Two Way:** | 2 Two-Way |
| 82.0 82.0 | | **Bypass Length:** | 0 |
| | | **Future AADT Yr/Cnt:** | 2032 / 25944 |
| | | **Designated Truck Rte:** | CLASS I |
| | | **Special Systems:** | Yes |

## *** Marked Route On Data ***

| | Designation | Kind | Number |
|---|---|---|---|
| **Route #1:** | 1 Mainline | 1 Interstate Highway | 074 |
| **Route #2:** | 1 Mainline | | |
| **Route #3:** | 1 Mainline | | |

## *** Marked Route Under Data ***

| | Designation | Kind | Number |
|---|---|---|---|
| | 1 Mainline | 1 Interstate Highway | 057 |
| | 1 Mainline | | |
| | 1 Mainline | | |

**Structure Number: 010-0019** **District: 5**

## Data Related to Inspection Information

| *** Inspection Intervals *** | | | | *** Maximum Allowable Posting Limits *** | | | | Bridge Posting Level: | |
|---|---|---|---|---|---|---|---|---|---|
| Routine NBIS: | 24 MOS | Underwater: | 0 MOS | One Truck At A Time: | 0 | Combination Type 3S-1: | Tons | 5 | No Posting Required |
| | | Special: | N | Single Unit Vehicles: | Tons | Combination Type 3S-2 | Tons | | |

## Inspection/Appraisal Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Inspection Date: | 11/05/2012 | Inspection Temperature: | 45Deg. F | | | | | ** Actual Posted Limits ** | |
| Deck: | 6 | SATISFACTORY CONDITION - MINOR DETERIORATION | | | | | | Single Unit Vehicles: | Tons |
| Superstructure: | 7 | GOOD CONDITION - SOME MINOR PROBLEMS | | | | | | Combination Type 3S-1: | Tons |
| Substructure: | 6 | SATISFACTORY CONDITION - MINOR DETERIORATION | | | | | | Combination Type 3S-2: | Tons |
| Culvert: | N | NOT APPLICABLE | | | | | | One Truck At A Time: | 0 |
| Channel and Protection: | N | NOT APPLICABLE | | Deck Wearing Surf: | A | BARE DECK NO OVRLAY | | Last Paint Type: | G |
| Structural Evaluation: | 6 | EQUAL TO PRESENT MINIMUM CRITERIA | | Deck Membrane: | F | NONE | | SHP ZINC & VINYL | |
| Deck Geometry: | 4 | MINIMUM ADEQUACY TO BE LEFT IN PLACE | | Deck Protection: | A | EPOXY COATED REINF | | | |
| Underclearance-Vert/Lat.: | 5 | BETTER THAN ADEQUATE TO BE LEFT IN PLACE | | Total Deck Thick: | 7.5 | | | | |
| Waterway Adequacy: | N | NOT APPLICABLE | | Last Paint Date: | 05/1990 | | | | |
| Approach Roadway Align: | 8 | EQUAL TO PRESENT DESIRABLE CRITERIA | | | | | | | |
| Bridge Railing Appraisal: | 3 | Meets Standards | | | | | | | |
| Approach Guardrail: | 333 | Acceptable | Acceptable | Acceptable | | | | | |
| Pier Navig Protection: | N | N/A | | | | | | | |

## Underwater Inspection/Appraisal Information

**Inspection Date:**
**Temperature:** **Inspection Method:**
**Appraisal Rating:**

## Scour Critical Information

**Rating:** **Evaluation Method:**
**Analysis Date:**

## Miscellaneous

**Microfilm Data Recorded:** Yes

## Construction Information

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Year: | 1965 | Original | | 1990 | Reconstructed | | |
| Route: | FAI 57 | | Sta: 597+78.22 | FAI 74 | | Sta: 161+35.97 | |
| Section Nbr: | | 10-34HB-1 | | | (10-34HB-1)BR | | |
| Contract Nbr: | | 22976 | | | 90017 | | |
| Fed Aid Pr#: | | I-57-5(23)235 | | | ACIR-74-5(126) | | |
| Built By: | 1 | I.D.O.T. | | 0 | UNKNOWN | | |

# **ATTACHMENT C**

Bridge Inspection Report

# Illinois Department of Transportation

## Bridge Inspection Report

Sheet 1 of 4

SN 010-0018 MUNI

Facility Carried

Feature Crossed

Location NW of Champaign

Main Spans

| Mo. | Day | Yr. | Temp. | Inspector |
|---|---|---|---|---|
| 03 | 18 | 04 | 38° | M.Brennan, D.Craddock |
| 02 | 15 | 06 | 40° | D.CRADDOCK, M.BRENNAN |
| 3 | 2 | 07 | 30 | C.Buescher, S. Conklin |
| 2 | 23 | 09 | 28 | M.Brennan, D.Craddock |
| 1 | 14 | 11 | 22 | Buescher, Conklin |

| Year | 04 | 06 | 07 | 09 | 11 |
|---|---|---|---|---|---|

**Remarks**

108A Wearing Surface Type: A
108C Deck Protection: A
108B Type of Membrane: F
108D Total Deck Thickness: 7.5

Some Trans. Cracks (04) (11)
Trans. Leaching Cracks (04)(06) (07)(09) / Trans & longitudinal leaching cracks (11)

Spall & area @ Sign truss Connection (04)(06)

MEAS Opening Joints Leaking (04)(06)(09)

Due to trans. leaching cracks
Due to transverse & longitudinal leaching cracks (11)

| Deck | Element Rating | | | | |
|---|---|---|---|---|---|
| Wearing Surface | 4 | 4 | 4 | 4 | 3 |
| Deck Structural Condition | 4 | 4 | 3 | 3 | 3 |
| Curbs | – | – | – | – | |
| Median | – | – | – | – | |
| Sidewalks | – | – | – | – | |
| Parapet | 4 | 4 | 4 | 4 | 4 |
| Railing | – | – | – | – | |
| Drains | 4 | 4 | 4 | 4 | 4 |
| Light Standards | – | – | – | – | |
| Expansion Joints | 3 | 3 | 3 | 3 | 3 |
| 58 Condition Rating | 8 | 8 | 7 | 7 | 6 |
| Bridge Railing Appraisal | | | | | |
| 36 Condition Rating | 3 3 2 2 | 3 3 2 2 | 3 3 3 3 | 3 3 3 3 | 3 3 3 3 |

| Superstructure | | | | | |
|---|---|---|---|---|---|
| Bearing Devices | 4 | 4 | 3 | 3 | 3 |
| Stringers | – | – | – | – | |
| Girders or Beams | 4 | 4 | 3 | 3 | 3 |
| Diaphragms or Braces | 4 | 4 | 3 | 3 | 3 |
| Crack Leaching | 3 | 3 | 3 | 3 | 3 |
| Joints (Leakage or Cond.) | 4 | 4 | 4 | 4 | 4 |
| 59C Util. 9 N N | 4 | 4 | 4 | 4 | 4 |
| Trusses | – | – | – | – | |
| Portals and Bracing | – | – | – | – | |
| Drainage System | – | – | – | – | |
| Paint | 4 | 4 | 3 | 3 | 3 |
| Color: Facia GREEN Inter GRAY Rail | | | | | |
| Rivets or Bolts | 4 | 4 | 4 | 4 | 4 |
| Weld Cracking | 4 | 4 | 4 | 4 | 4 |
| Rust | 4 | 4 | 3 | 3 | 3 |
| Timber (Decay, Damage) | – | – | – | – | |
| Concrete Cracking | – | – | – | – | |
| Collision Damage | 4 | 4 | 4 | 4 | 4 |
| LL Deflec & Vibration | 4 | 4 | 4 | 4 | 4 |
| Alignment of Members | 4 | 4 | 4 | 4 | 4 |
| 59 Condition Rating | 8 | 8 | 7 | 7 | 7 |

moderate to heavy rust (11)

light rust throughout (02)(09)(11)

59A MO/YR: 05/90 59B Code: 1 G 2 3 H

STARTING TO RUST ON Bottom FLANGE ABOVE LANES (04)(11)

Worst % Loss: %

# Bridge Inspection Report

Sheet 2 of 4

Bridge No. _____

Year | 04 | 06 | 07 | 09 | 11 |

## Substructure

Element Rating

| | | | | |
|---|---|---|---|---|
| Abutments-Wing | 4 | 4 | 3 | 3 | 3 |
| Backwall | 3 | 3 | 3 | 3 | 3 |
| Bearing Seat | 3 | 3 | 3 | 3 | 3 |
| Stem | 3 | 3 | – | – | – |
| Slopes | 3 | 3 | 3 | 3 | 3 |
| Erosion | 3 | 3 | 3 | 3 | 3 |
| Settlement | 4 | 3 | 3 | 3 | 3 |
| Piers or Bents | 4 | 4 | 4 | 4 | 4 |
| Cap | 4 | 4 | 4 | 4 | 3 |
| Column | 4 | 4 | 4 | 4 | 4 |
| Crash Walls | 4 | 4 | 4 | 4 | 4 |
| Scour | – | – | 4 | 4 | 4 |
| Settlement | 4 | 4 | 4 | 4 | 4 |
| Fender Systems | – | – | – | – | |
| Steel Corrosion | – | – | – | – | |
| Timber Decay, etc. | – | – | – | – | |
| Debris on Seat | 4 | 4 | 4 | 4 | 4 |
| Paint | – | – | – | – | |
| Collision Damage | 4 | 4 | 4 | 4 | 4 |

60 Condition Rating | 8 | 7 | 7 | 7 | 6 |

Remarks

Some cracking & spalls (04)(06)(07)(11)
N. End of E. Abut. Spalling & Delam. (04)(06)(07)(09) Loss of bearing (11)
Vert. cracking cracks (04)(06)(09)
East slopewall Breaking up. Severe undermining (04)(06)(07)(09)(11)

Bottom of Cap on P3 has delam's (11)

Due to spalling w/exposed rebar and loss of bearing on bearing seat @ East end (11)

## Channel & Channel Protection

| | | | | | |
|---|---|---|---|---|---|
| Scour of Channel | | | | | |
| Erosion of Banks | | | | | |
| Drift | | | | | |
| Vegetation | | | | | |
| Change in Channel | | | | | |
| Spur Dykes & Jetties | | | | | |
| Rip Rap or Slope Wall | | | | | |

61 Condition Rating | N | N | N | N | N |

## Pier & Abutment Protection

111 Condition Rating | N | N | N | N | N |

## Culverts

| | | | | | |
|---|---|---|---|---|---|
| Wing Walls | | | | | |
| Head Walls | | | | | |
| Top Slab | | | | | |
| Walls | | | | | |
| Floor | | | | | |
| Siltation | | | | | |
| Settlement | | | | | |
| Scour | | | | | |

62 Condition Rating | N | N | N | N | N |

Year | | 06 | 07 | 09 | |

Element Rating

Bridge No. [redacted]

Waterway Adequacy

71 Appraisal Rating | N | N | N | N | |

Approach Roadway Alignment

72 Appraisal Rating | 8 | 8 | 8 | 8 | 8 |

| | | | | | |
|---|---|---|---|---|---|
| 72 A Condition Rating | — | — | — | — | |
| Riding Quality | 4 | 4 | 4 | 4 | 4 |
| Settlement | 4 | 4 | 4 | 4 | 4 |
| Structural Condition | 4 | 4 | 4 | 4 | 4 |
| Relief Joints | — | — | — | — | |

| | | | | | |
|---|---|---|---|---|---|
| Posting Year | 04 | 06 | 07 | 09 | 11 |
| 70A2 Inspectors Rating | | | | | |
| 70B2 Inspectors Rating | | | | | |
| 70C2 Inspectors Rating | | | | | |
| 70D2 Inspectors Rating | 0 | | | | |

70A2 = Single Unit Vehicle
70B2 = Combination Type 3S- 1, 3 or 4 axles
70C2 = Combination Type 3S- 2, 5 or more axles
70D2 = One Truck at a Time

Proposed Maintenance Repair

| Repair Code | Repair Description | Asgd to Code | Priority Code | Quantity | Unit Cost | Date Cmpl |
|---|---|---|---|---|---|---|
| 752 | Repair Severe Undermining of East Slopewall (04) | BC | 1 | ? | | |
| 750 | REPAIR N.E. END OF ABUT CAP (06) | BC | H | 6 SF | | |
| 557 | REPAIR EXP. JNT. WEST END OF DECK (06) | BC | M | 50 FT | | |
| 440 | REMOVE SMALL TREES @ TOP OF N.W. SLOPE WALL (06) 4" DIA. | BC | M | 8 HRS. | | |

AGENCY CODES:
TS - DISTRICT TEAM SECTION
BC - DISTRICT BRIDGE CREW
DL - DAY LABOR
MC - MAINTENANCE CONTRACT
RC - REPAIR FOR REHAB CONTRACT

PRIORITY CODES:
1 - DO THIS YEAR
2 - SHOULD DO THIS YEAR
3 - WHEN CONVENIENT

S.N. ____-_____

# Bridge Inspection Documentation

| | Year | Time Req. (hrs:mins) | Access Equip. | Traffic Cont. |
|---|---|---|---|---|
| 1 | 04 | 01:00 hr | — | (1) |
| 2 | 06 | 01:00 hr | NONE | (1) |
| 3 | 07 | 01:00 | — | 1 |
| 4 | 09 | 01:00 hr. | — | 1 |
| 5 | 11 | 1:00 | — | 1 |

1/19/11

Additional Remarks

Illinois Department of Transportation

# Bridge Inspection Report (MI)

**Structure Number: 010-0019**

| 90 - Insp. Date | 90A - Insp. Team Leader/Qualification | Temp. |
|---|---|---|
| 1/14/2011 | S. Cranklin C. Bussoniar / | 20° |
| / / | / | |
| / / | / | |
| / / | / | |
| / / | / | |

Maintenance County: CHAMPAIGN
Township: HENSLEY
Municipality: CHAMPAIGN
Facility Carried: I-74(WB)
Feature Crossed: I-57
Location: NW OF CHAMPAIGN
Material/Type: STEEL CONTINUOUS/STRINGER/MULTI-BEAM/GI

Bridge Inspection Year: 09 11 Nbr of Spans: 4 Team Sect./Sub-Sect: 544 - 570

| | Appraisals | Comments (All comments must be dated.) |
|---|---|---|
| **Deck** | | |
| **58 - Deck Condition:** | 7 6 | Trans. leaching cracks throughout soffit, many w/intersecting longitudinal cracks (11) |
| Wearing Surface: | 3 | |
| Parapets / Bridge Railings: | 3 | |
| Curbs: | - | |
| Median: | - | |
| Sidewalks: | - | |
| Drain System: | 4 | |
| Light Standards: | - | |
| Expansion Joints: | 2 | Openings (In.): PJS joints leaking at both Abutments (1) |
| **Superstructure** | | |
| **59 - Superstructure Cond:** | 7 7 | |
| Bearing Devices: | 3 | Elastomeric bearing plates are Rusting (1) |
| Girders / Beams / Stringers: | 3 | Rust @ Beam ends (1) |
| Diaphragms / Braces: | 3 | |
| Trusses / Portals / Bracing: | - | |
| Rivets / Bolts: | 3 | |
| Paint: | 3 | |
| **Substructure** | | |
| **60 - Substructure Cond:** | 7 6 | |
| Abutments — Stem / Columns / Piles: | | |
| Abutments — Caps: | 2 | loss of Bearing area on E. Abut, South facia beam (1) |
| Abutments — Bearing Seats: | 2 | " " " " " " |
| Abutments — Backwalls: | 3 | Many Vertical cracks (1) |
| Abutments — Wingwalls: | 3 | |
| Piers — Stem / Columns / Piles: | 3 | large spall - exp rebar w/ sect. loss, N. Column of West pier (1) |
| Piers — Caps: | 4 | |
| Piers — Bearing Seats: | 4 | |
| Piers — Crash Walls: | 3 | |
| Fender Systems: | - | |
| Paint: | - | |

Bridge Inspection Year: 09 11

| | Appraisals | Comments (All comments must be dated.) |
|---|---|---|
| **Culvert** | | |
| **62 - Culvert Condition:** | N | |
| Top Slab / Soffit: | | |
| Side Walls / Arch: | | |
| Bottom: | | |
| Headwalls: | | |
| Wingwalls: | | |
| **Waterway and Channel** | | |
| **61 - Channel Condition:** | N | |
| Streambed: | | |
| Slope Walls & Rip-Rap: | | |
| Stream Banks: | | |
| Spur Dykes & Jetties | | |
| **71 - Waterway Adequacy:** | N | |
| **Approach Roadway** | | |
| **72 - Appr. Rdwy Alignment:** | 8 | |
| Riding Quality: | 3 | |
| Structural Condition: | 3 | |
| Relief Joints: | | |
| **Navigable Waterways** | | |
| **111 - Pier Navig. Protect'n:** | N | |

**Inspection Remarks**

| Year | Item 90B - Inspection Remarks (237 characters maximum.) |
|---|---|
| 20 | Large spall w/exposed Rebar and loss of bearing area under S. fascia beam on East abutment cap. Deck soffit has many transverse leaching cracks with many intersecting leaching longitudinal cracks. Some longitudinal cracks 4'-6' Long. |
| 20 | |
| 20 | |
| 20 | |
| 20 | |

## Additional Inspection Data

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 36A – Bridge Railing Adequacy: | 3 | 3 | Rail Types: | | | | | |
| Approach Guardrail Adequacy: 36B – Transitions: | 3 | 3 | 36C – Guardrail: | 3 | 3 | 36D – Ends: | 3 | 3 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 108A – Wearing Surface Type: | A | A | 108B – Type of Membrane: | F | F | 108C – Deck Protection: | A | A |
| 108D – Total Deck Thickness (In.): | 07.5 | 7.5 | | | | | | |

| | | |
|---|---|---|
| 59A – Paint Date (Mo/Yr): | 05/1990 | / |
| 59B – Paint Systems: | G | |

Color: Fascia – _____; Inter. – _____; Railing – _____.

| | | |
|---|---|---|
| 59C – Utilities Attached: | 9NN | |

## Weight Limit Posting

| | | | | | |
|---|---|---|---|---|---|
| 70A2 – Single Units: | | T. | Comb. Veh: 70B2 – 3 or 4 Axle: | | T. |
| 70C2 – 5 or More Axle: | | T. | 70D2 – One Truck at a Time: | | |

**Inspection Resource Needs**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Time to Inspect (H:M):** | | 01 :00 | **Traffic Control:** | | 1 | | | | |
| **Equipment:** | **Boat –** | | **Waders –** | | **Snooper –** | | **Manlift –** | | |
| | **Ladder – Short** | | **Medium** | | **Tall** | | **Other –** | | |

93C – Special Inspection Date: / / / / / / / / / /

## Signature Block

| | Signature | Date | Unit Supervisor Init. & Date |
|---|---|---|---|
| Inspection Team Leader | Shawn O. Cadl | 1-14-11 | 1/19/11 |
| | | | |
| | | | |
| | | | |
| | | | |

Additional Comments:

(Continue comments on page 4)

Additional Comments:

*(Continue comments on additional pages as needed)*

Illinois Department of Transportation

## Work Inspector Candidates

| Repair Codes | Repair Description | Assign To | Priority | Quantity | Date Completed |
|---|---|---|---|---|---|
| 468 | Replace cracked and broken sign | | | | |
| | Clip nuts on Bridge mounted Sign | | | | |
| | truss. (11) | BC | H | 2 Hrs | |

Printed 9/29/2008



D5 OP0205

## Work Inspector Candidates

as of September 1, 2005

| Repair Code | Repair Description | Unit of Measure | Unit Cost |
|---|---|---|---|
| 241 | Highway Lighting Maintenance | EA | $100.00 |
| 411 | Partial Depth Patches (Bituminous) | SY | $45.00 |
| 413 | Bituminous Overlay | SY | $3.50 |
| 416 | Crack & Joint Seal HD Pout | GAL | $4.50 |
| 418 | Mudjacking | CY | $150.00 |
| 420 | Patch & Repair Shoulders | TONS | $140.00 |
| 421 | Add & Spread Aggregate – Hand | TONS | $32.00 |
| 422 | Add & Spread Aggregate – Machine | TONS | $15.00 |
| 424 | Cut High Shoulder | CY | $10.00 |
| 430 | Repair Earth Slopes | CY | $10.00 |
| 431 | Ditches – Hand | LF | $4.10 |
| 432 | Ditches – Machine | CY | $9.00 |
| 433 | Inlet & Basin Cleaning | EA | $28.00 |
| 434 | Inlet & Basin Repair | EA | $500.00 |
| 440 | Tree & Brush Removal | HRS | $25.00 |
| 443 | Mowing – Machine | AC | $32.00 |
| 444 | ROW Vegetation Spraying | GAL | $1.70 |
| 453 | Moveable Span Bridges and Ferries | HRS | $23.00 |
| 454 | Bridge Inspection | EA | $150.00 |
| 455 | Bridge Sealing | LF | $10.00 |
| 460 | Guardrail Maintenance | LF | $10.00 |
| 461 | Fence Maintenance | LF | $4.00 |
| 463 | Attenuator Maintenance | EA | $300.00 |
| 467 | Delineator Maintenance | EA | $10.00 |
| 468 | Sign Maintenance & Traffic Activities | HRS | $26.00 |
| 516 | Crack & Joint Routing | LF | $0.39 |
| 550 | Bridge Cleaning (Deck, Super, Sub) | LF | $0.50 |
| 551 | Partial Depth Bridge Deck Patching | SY | $75.00 |
| 552 | Full Depth Bridge Deck Patching | SY | $275.00 |
| 553 | Deck Drain Cleaning | EA DRAIN | $15.00 |
| 554 | Deck Drain Repair | EA DRAIN | $45.00 |
| 555 | Joint Protection Shielding | LF | $25.00 |
| 557 | Expansion Joint Repair | LF | $45.00 |
| 558 | Roadway Joint Maintenance | LF | $19.00 |
| 559 | Handrail Repair / Maintenance | LF | $15.00 |
| 617 | Bridge Deck Wearing Surface Remove & Replacement | SY | $45.00 |
| 618 | Protective Shielding | SY | $35.00 |
| 619 | Overhead Concrete Removal | HRS | $25.00 |
| 620 | Drain Extension | EA | $300.00 |
| 621 | Approach Slab Patching | SF | $20.00 |
| 622 | Pier Protection Maintenance | HRS | $25.00 |
| 650 | Mobilization | LS | $5,000.00 |
| 652 | Bridge Bearing Maint. (Exc. Act 6.) | EA BRG | $30.00 |
| 655 | Structural Steel Repair | LBS | $22.00 |
| 656 | Cleaning & Painting | SF | $12.50 |
| 657 | Pin & Link Inspection & Maintenance | EA | $75.00 |
| 658 | Graffiti Removal | SF | $8.00 |
| 750 | Bridge Concrete Repair | SF | $75.00 |
| 751 | Bridge Epoxy Injection | LF | $10.00 |
| 752 | Slopewall Repair | SY | $35.00 |
| 753 | Collection System Cleaning | LF | $1.30 |
| 754 | Collection System Repair | LF | $35.00 |
| 755 | Rip-Rap Placement | TONS | $25.00 |
| 756 | Channel Maintenance | HRS | $34.00 |
| 959 | Other Bridge Maintenance | HRS | $25.00 |

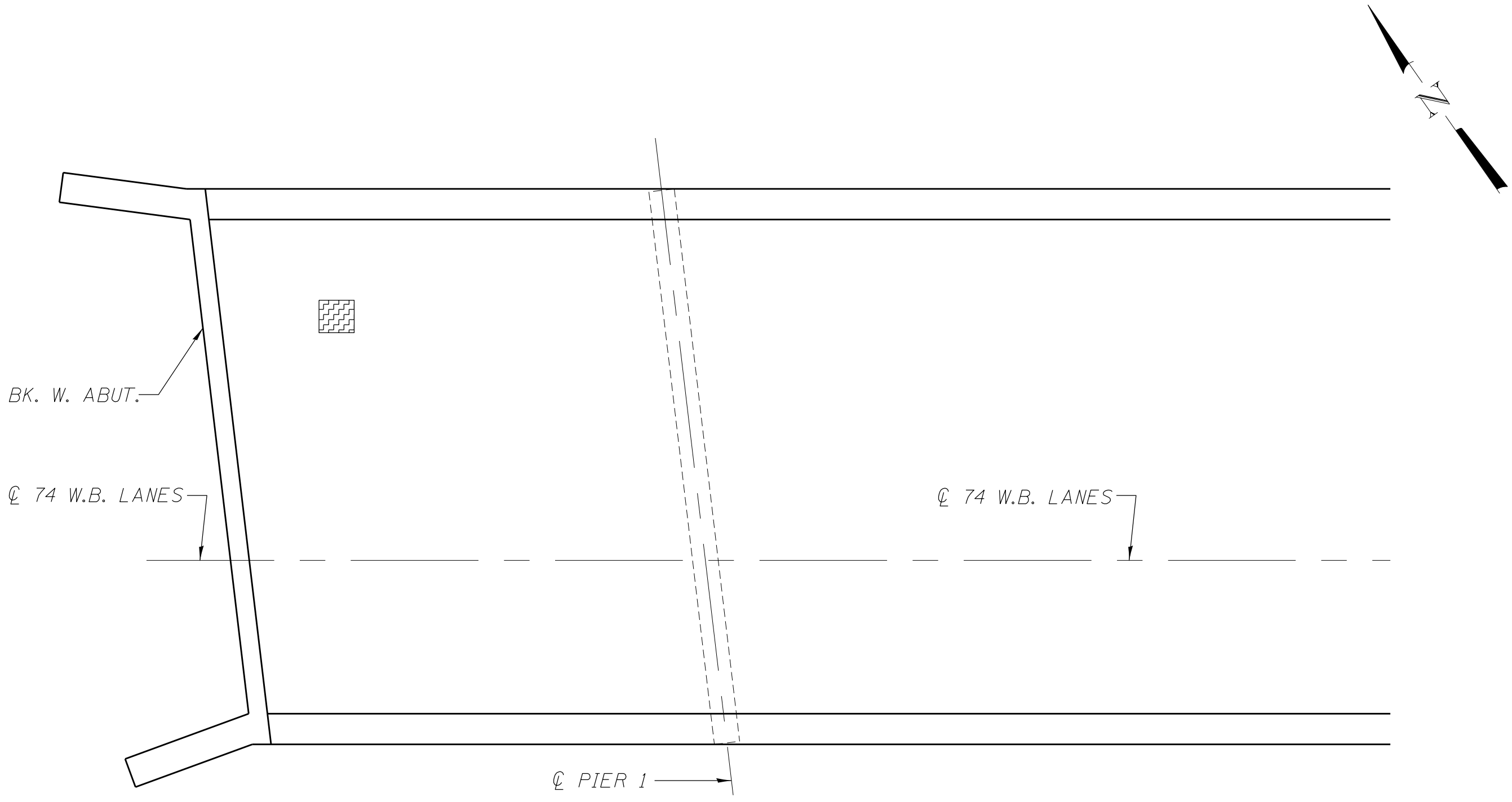
# ATTACHMENT D

Top and Bottom of Deck Condition Survey

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

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LEGEND

Spalling

ROUTE 74 OVER I-57
NORTH BRIDGE
WEST BOUND LANES

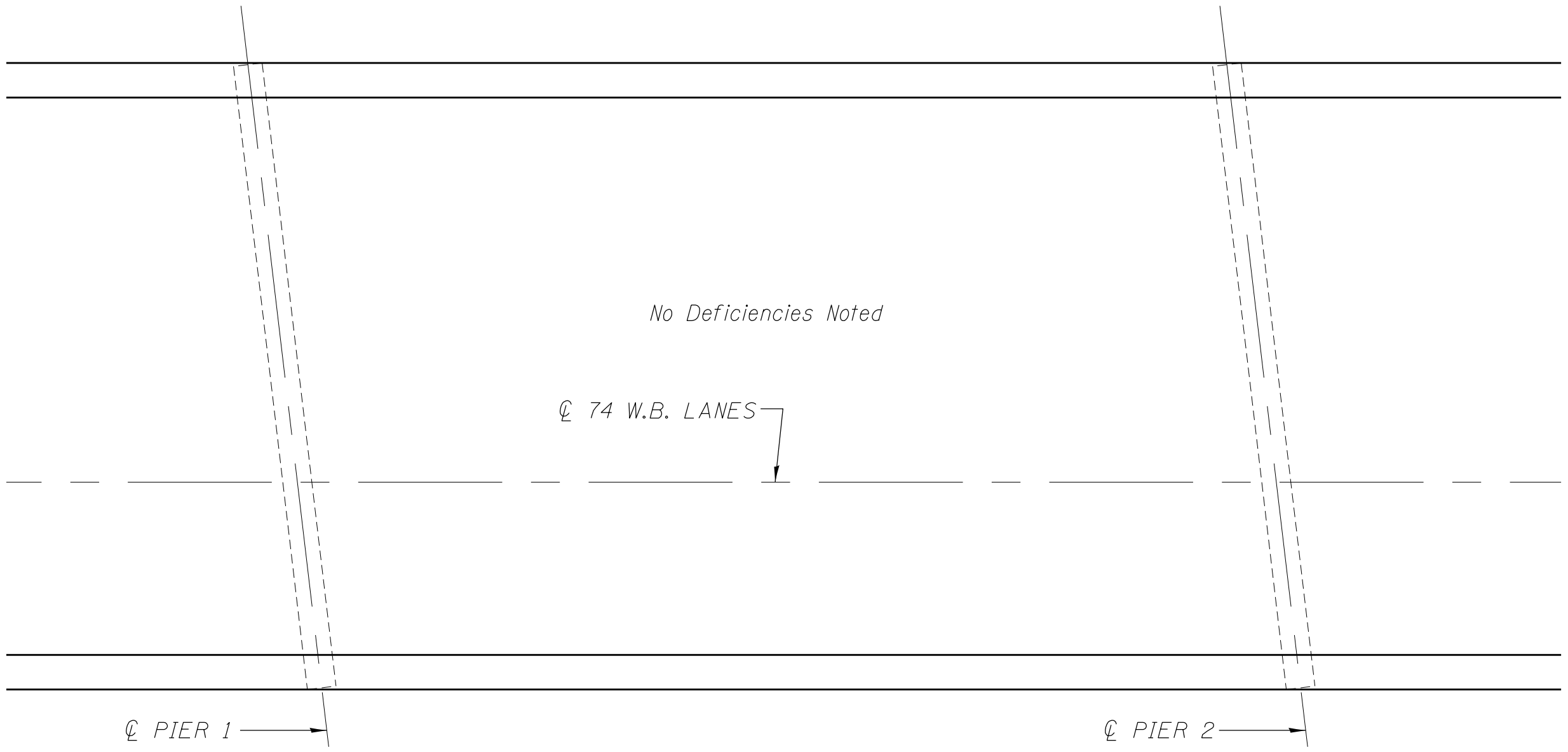
# TOP OF DECK CONDITION SURVEY, SPAN 1

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




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ROUTE 74 OVER I-57
NORTH BRIDGE
WEST BOUND LANES

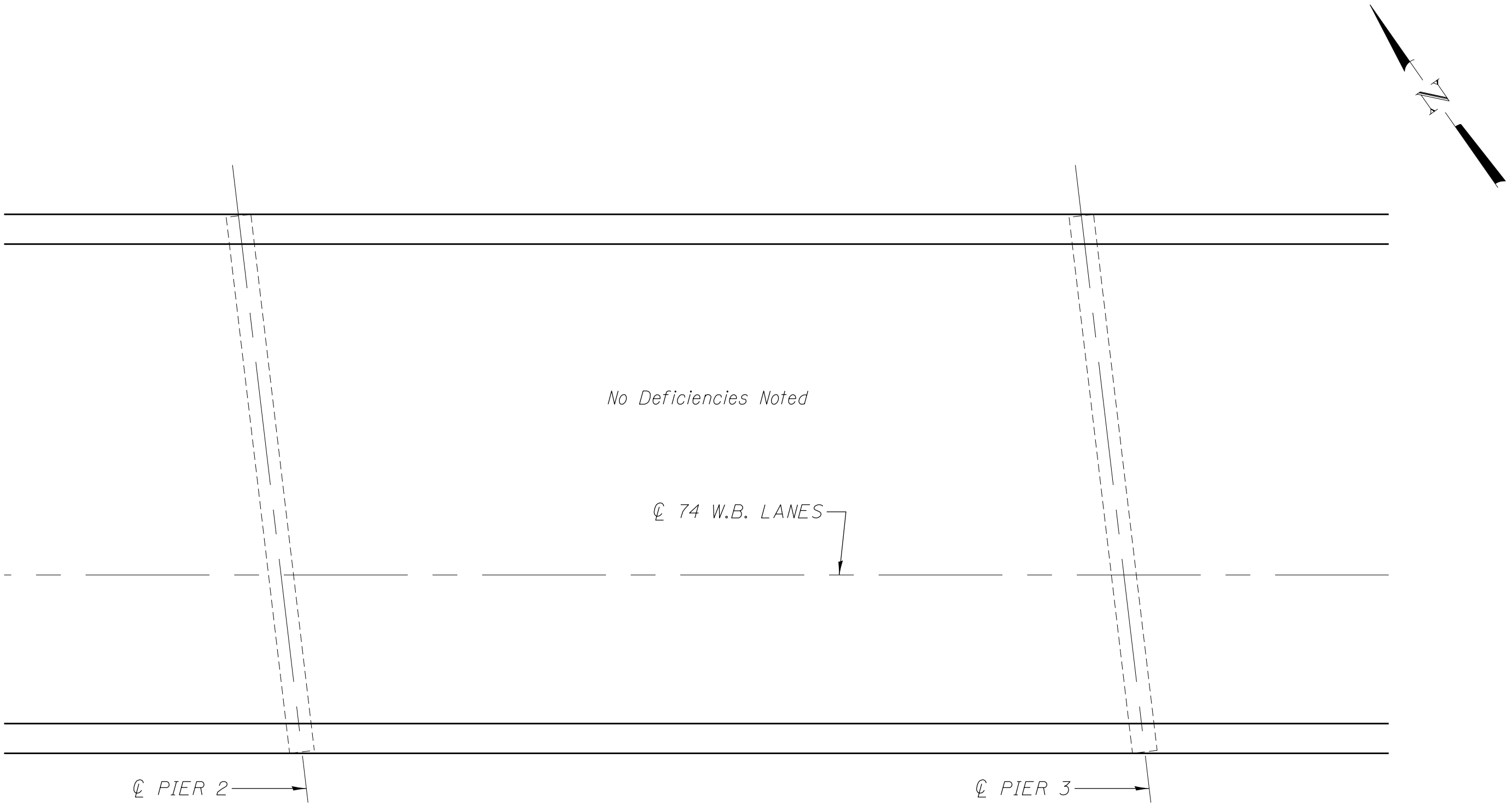
# TOP OF DECK CONDITION SURVEY, SPAN 2

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70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

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70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

ROUTE 74 OVER I-57
NORTH BRIDGE
WEST BOUND LANES

# TOP OF DECK CONDITION SURVEY, SPAN 3

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

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N

No Deficiencies Noted

BK. E. ABUT.

℄ 74 W.B. LANES

℄ 74 W.B. LANES

105

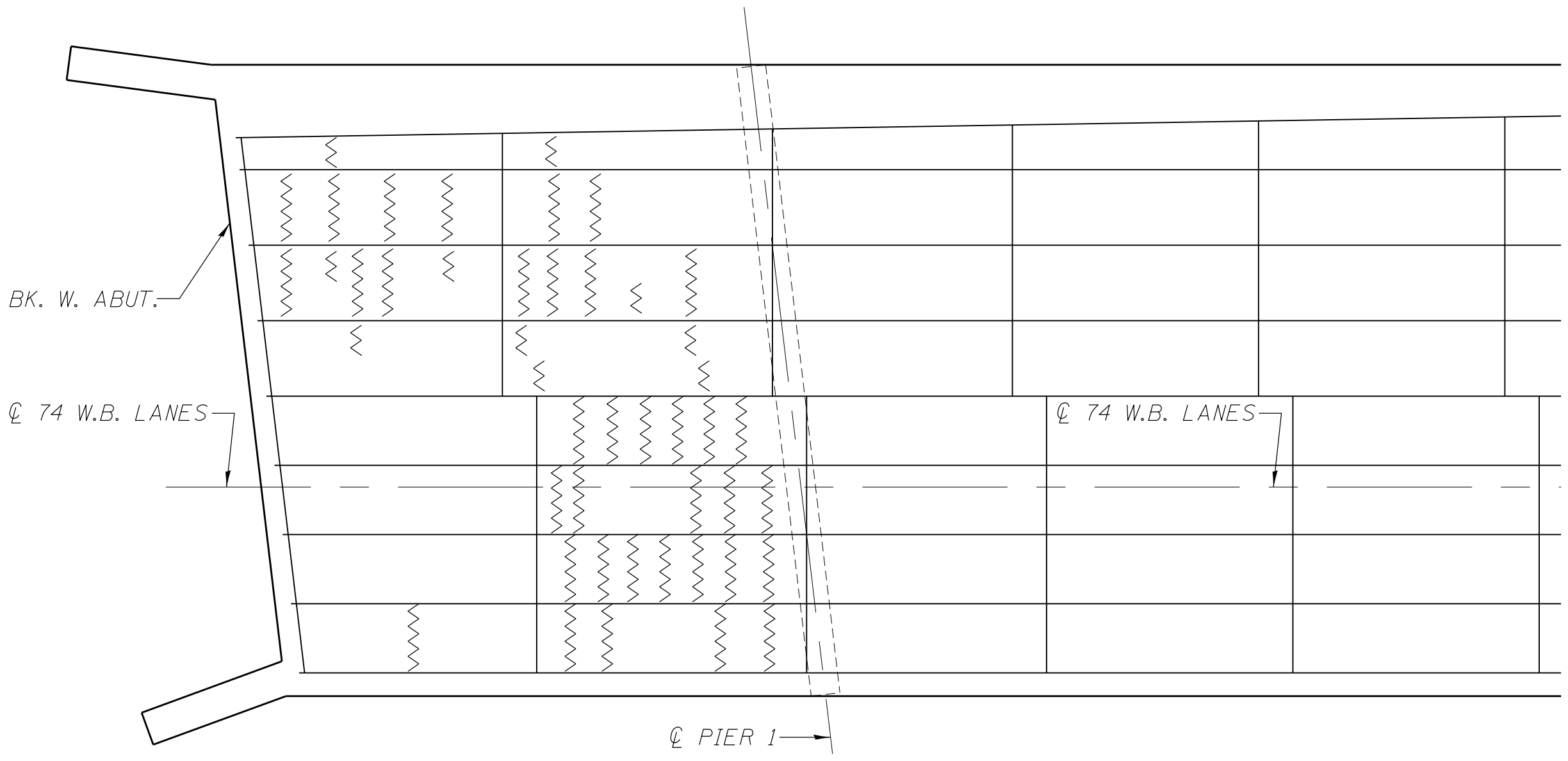
℄ PIER 3

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ROUTE 74 OVER I-57
NORTH BRIDGE
WEST BOUND LANES

# TOP OF DECK CONDITION SURVEY, SPAN 4

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

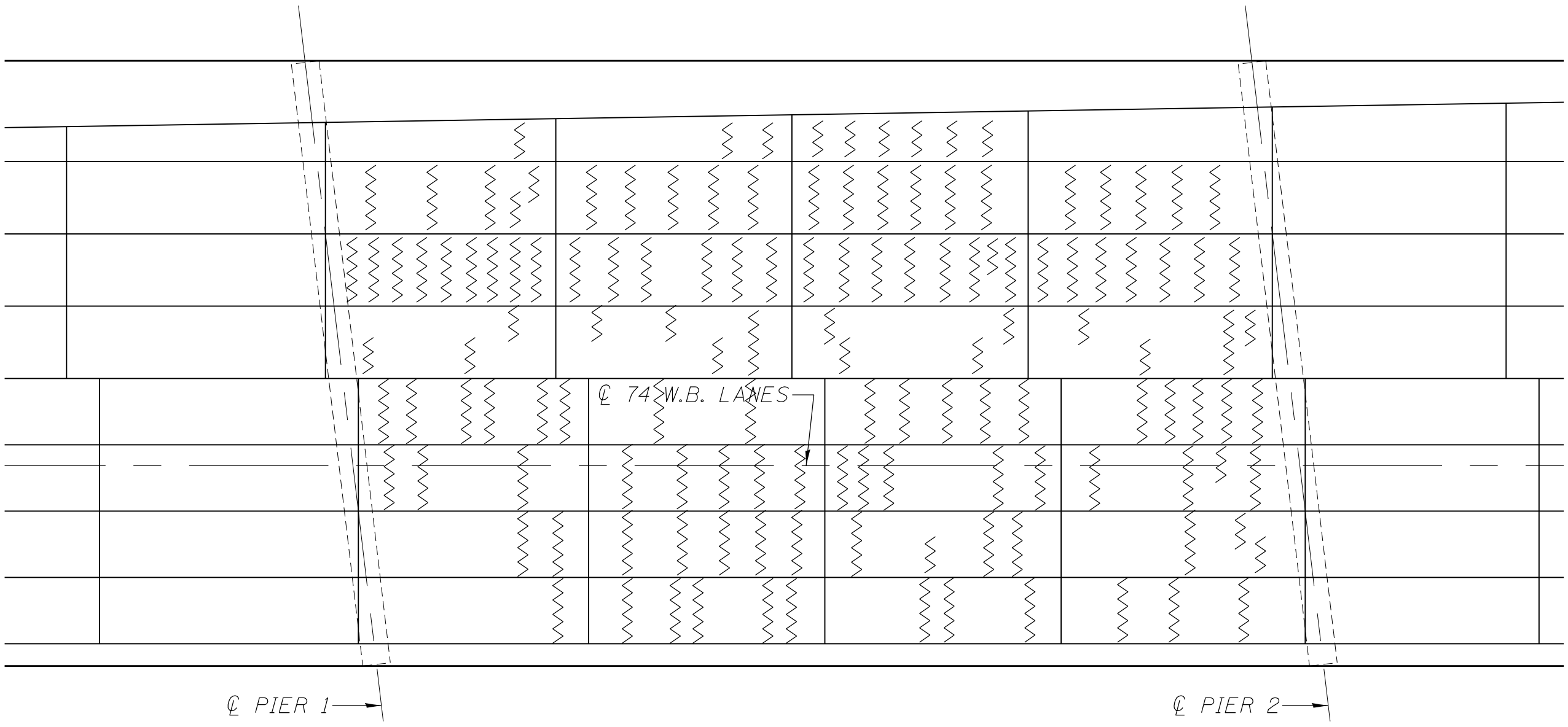



LEGEND

Cracking

ROUTE 74 OVER I-57
NORTH BRIDGE
WEST BOUND LANES

# BOTTOM OF DECK CONDITION SURVEY, SPAN 1

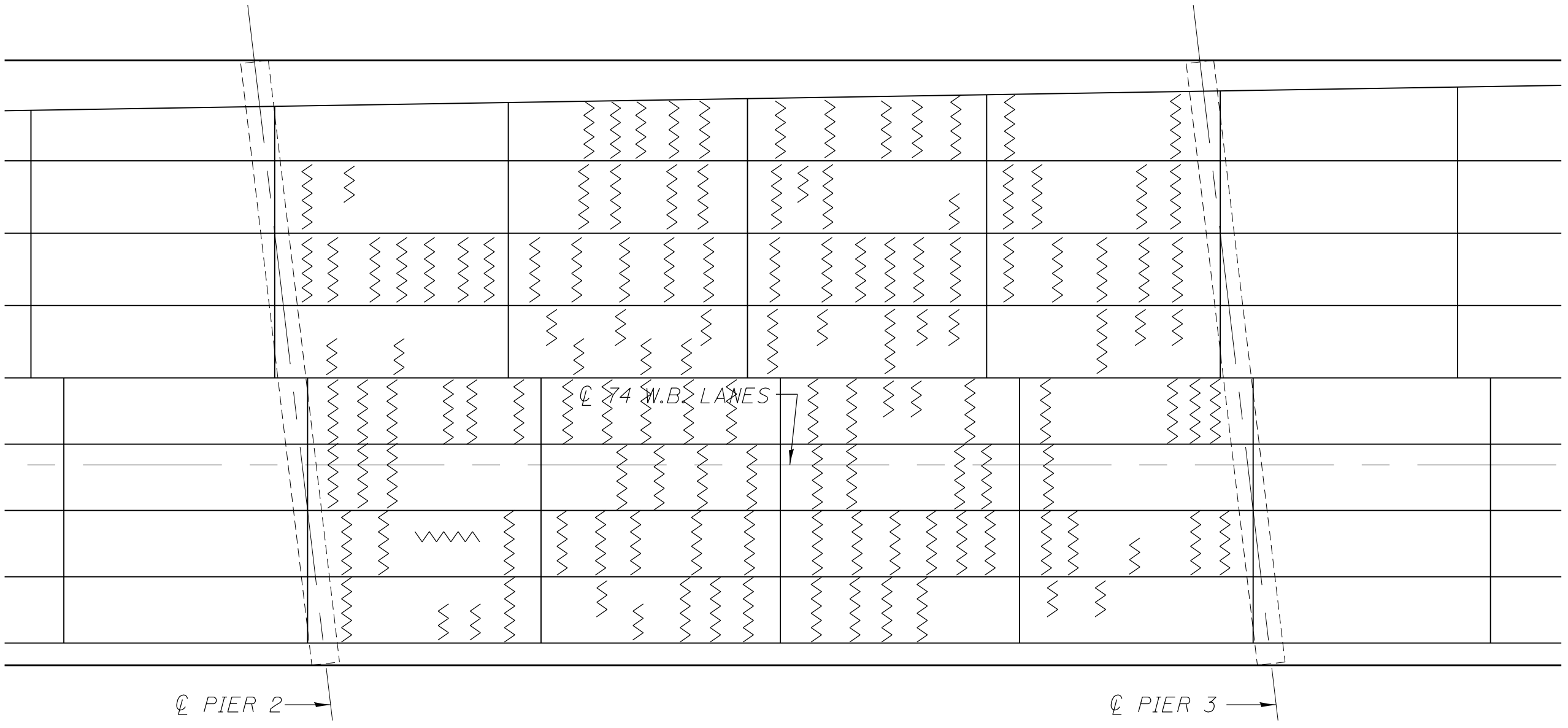



LEGEND

Cracking

ROUTE 74 OVER I-57
NORTH BRIDGE
WEST BOUND LANES

# BOTTOM OF DECK CONDITION SURVEY, SPAN 2

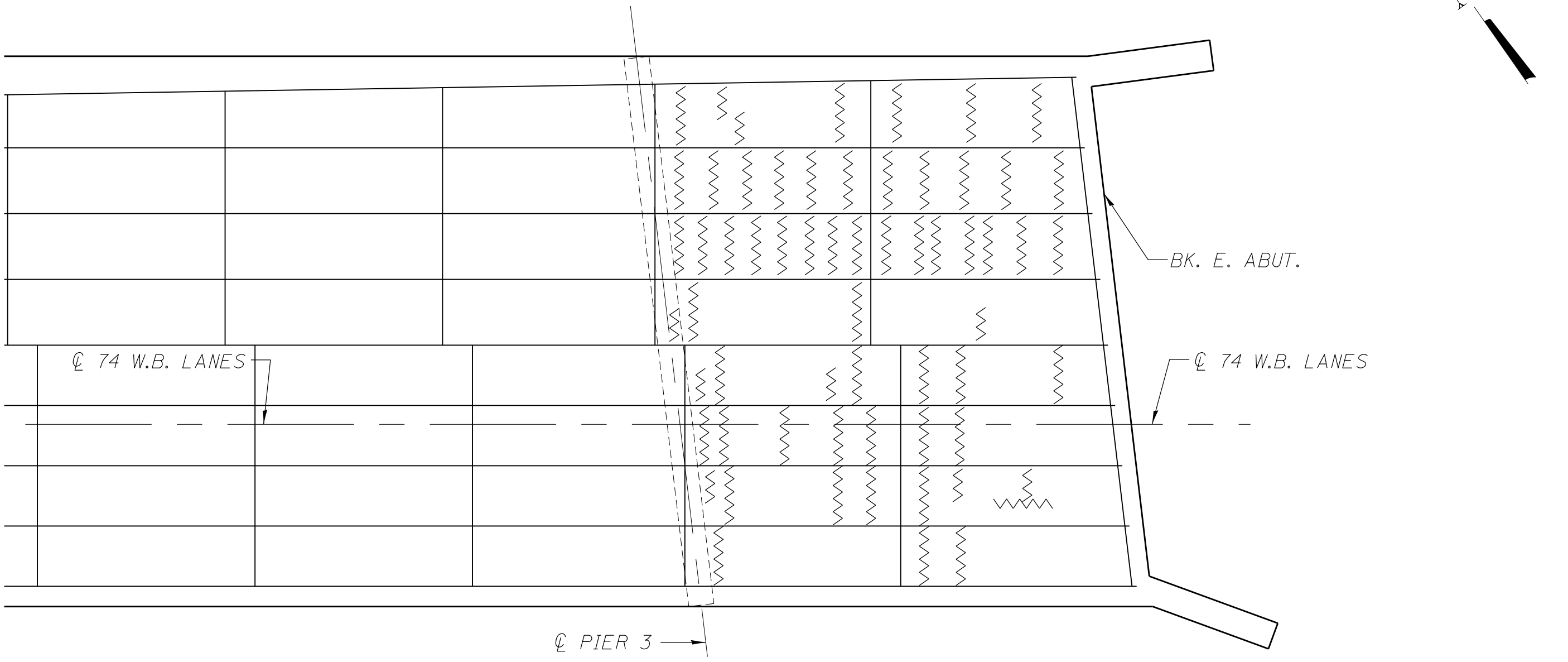



LEGEND

Cracking

ROUTE 74 OVER I-57
NORTH BRIDGE
WEST BOUND LANES

# BOTTOM OF DECK CONDITION SURVEY, SPAN 3




LEGEND

Cracking

ROUTE 74 OVER I-57
NORTH BRIDGE
WEST BOUND LANES

# BOTTOM OF DECK CONDITION SURVEY, SPAN 4

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100

℄ 74 E.B. LANES

℄ 74 E.B. LANES

N

No Deficiencies Noted

BK. W. ABUT.

105

℄ PIER 1

100

ROUTE 74 OVER I-57
SOUTH BRIDGE
EAST BOUND LANES

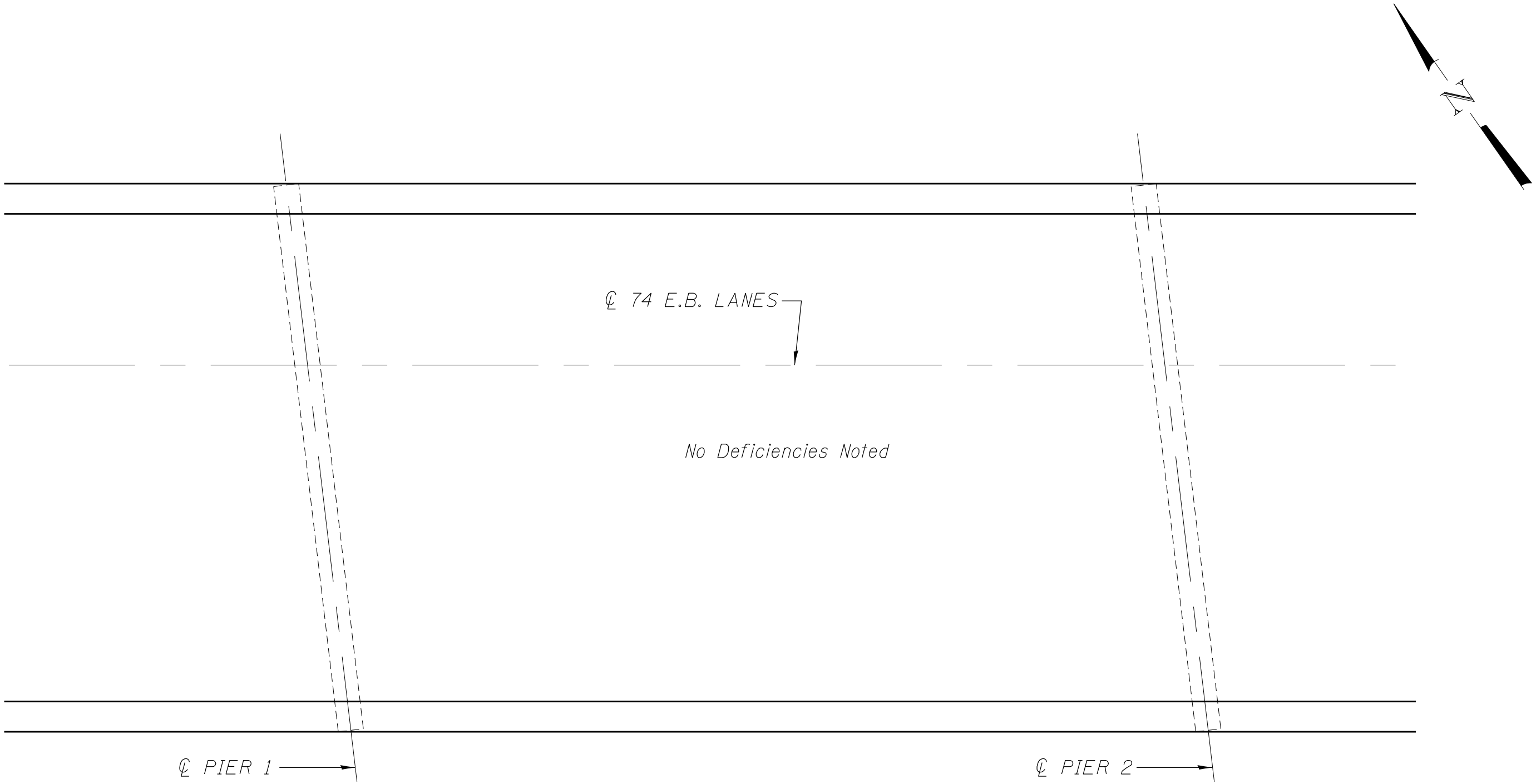
# TOP OF DECK CONDITION SURVEY, SPAN 1

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70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

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70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

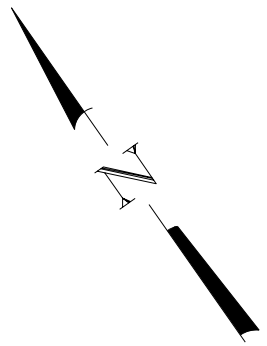
ROUTE 74 OVER I-57
SOUTH BRIDGE
EAST BOUND LANES

# TOP OF DECK CONDITION SURVEY, SPAN 2

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




℄ 74 E.B. LANES

No Deficiencies Noted

105

℄ PIER 2

℄ PIER 3

100

ROUTE 74 OVER I-57
SOUTH BRIDGE
EAST BOUND LANES

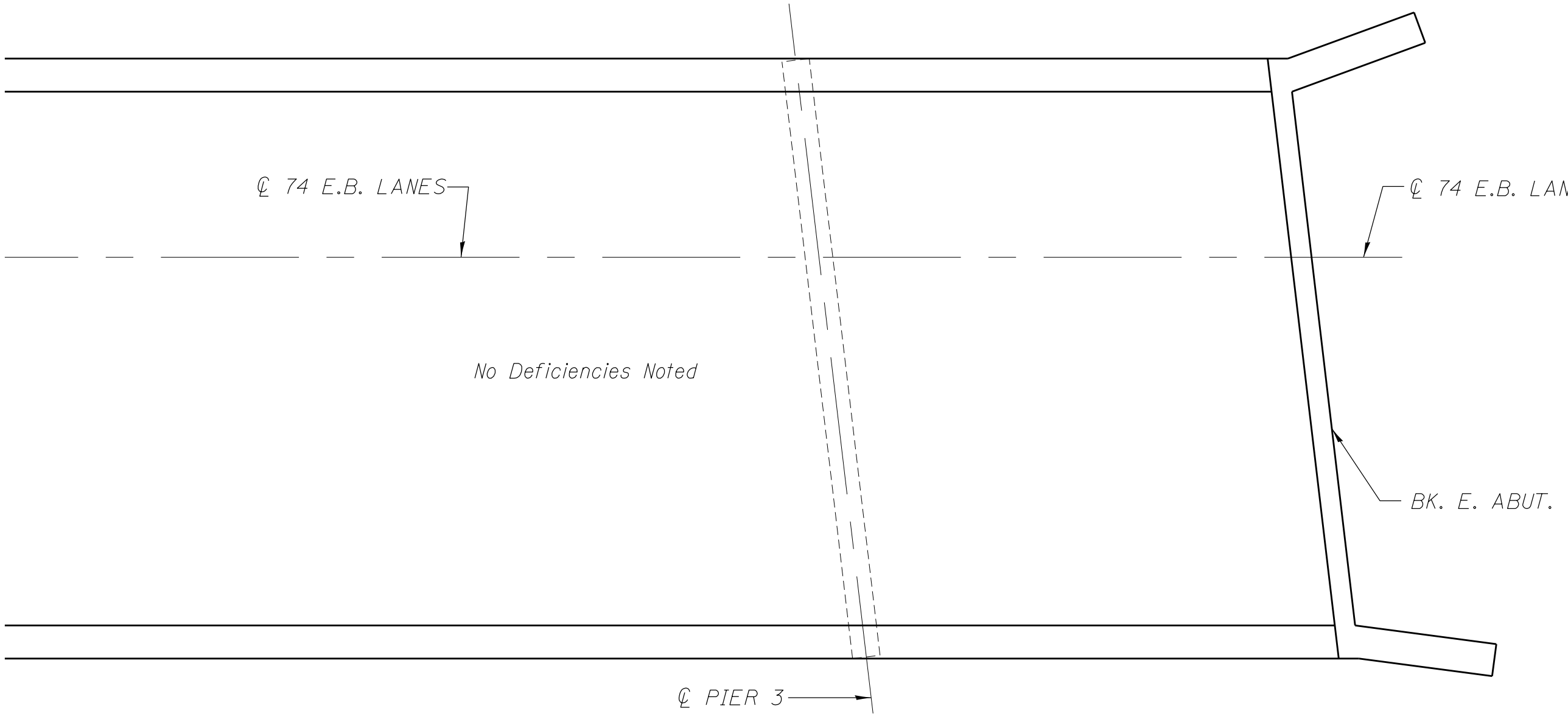
# TOP OF DECK CONDITION SURVEY, SPAN 3

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70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

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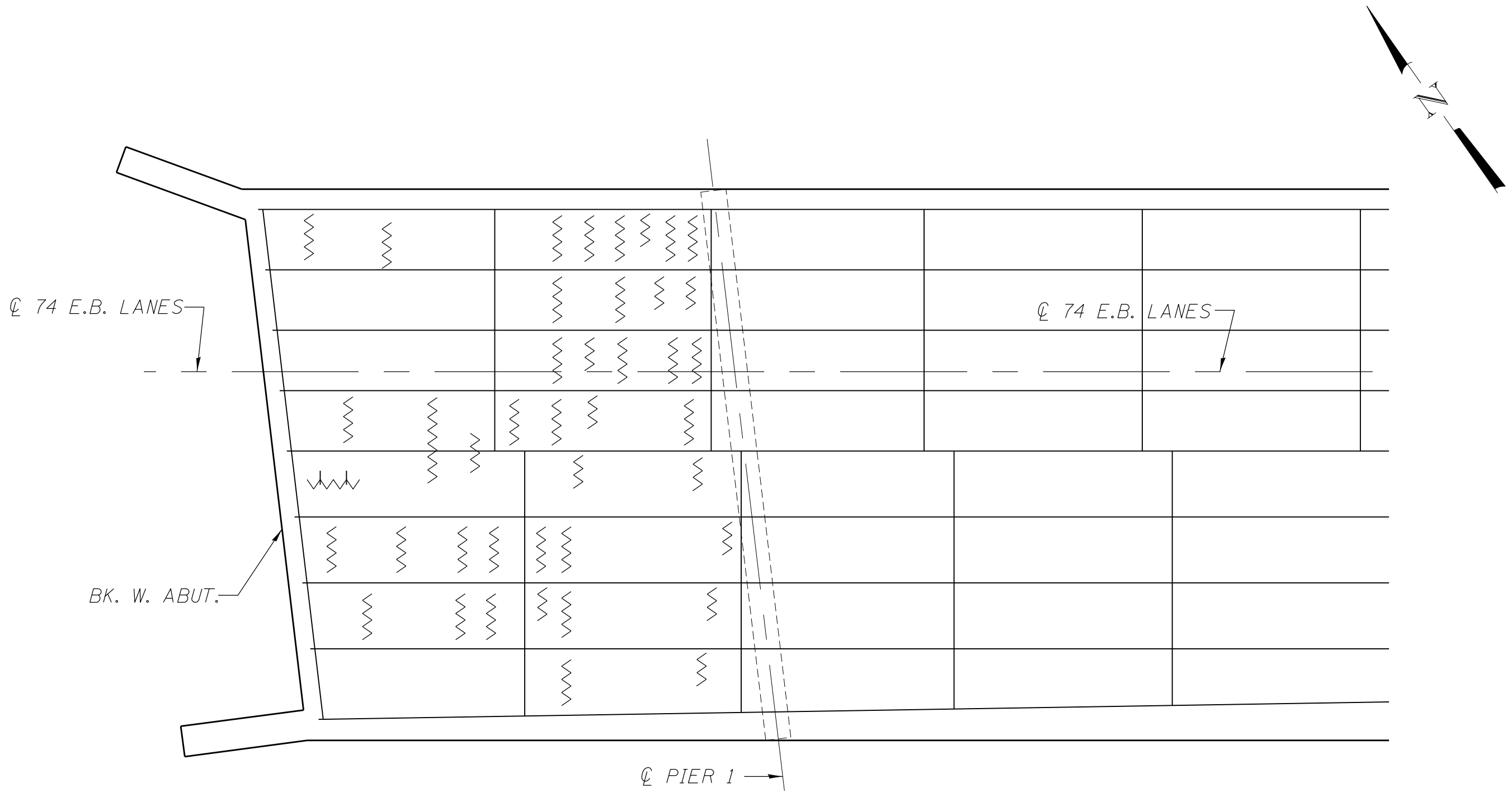

105

100

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

# TOP OF DECK CONDITION SURVEY, SPAN 4

ROUTE 74 OVER I-57
SOUTH BRIDGE
EAST BOUND LANES



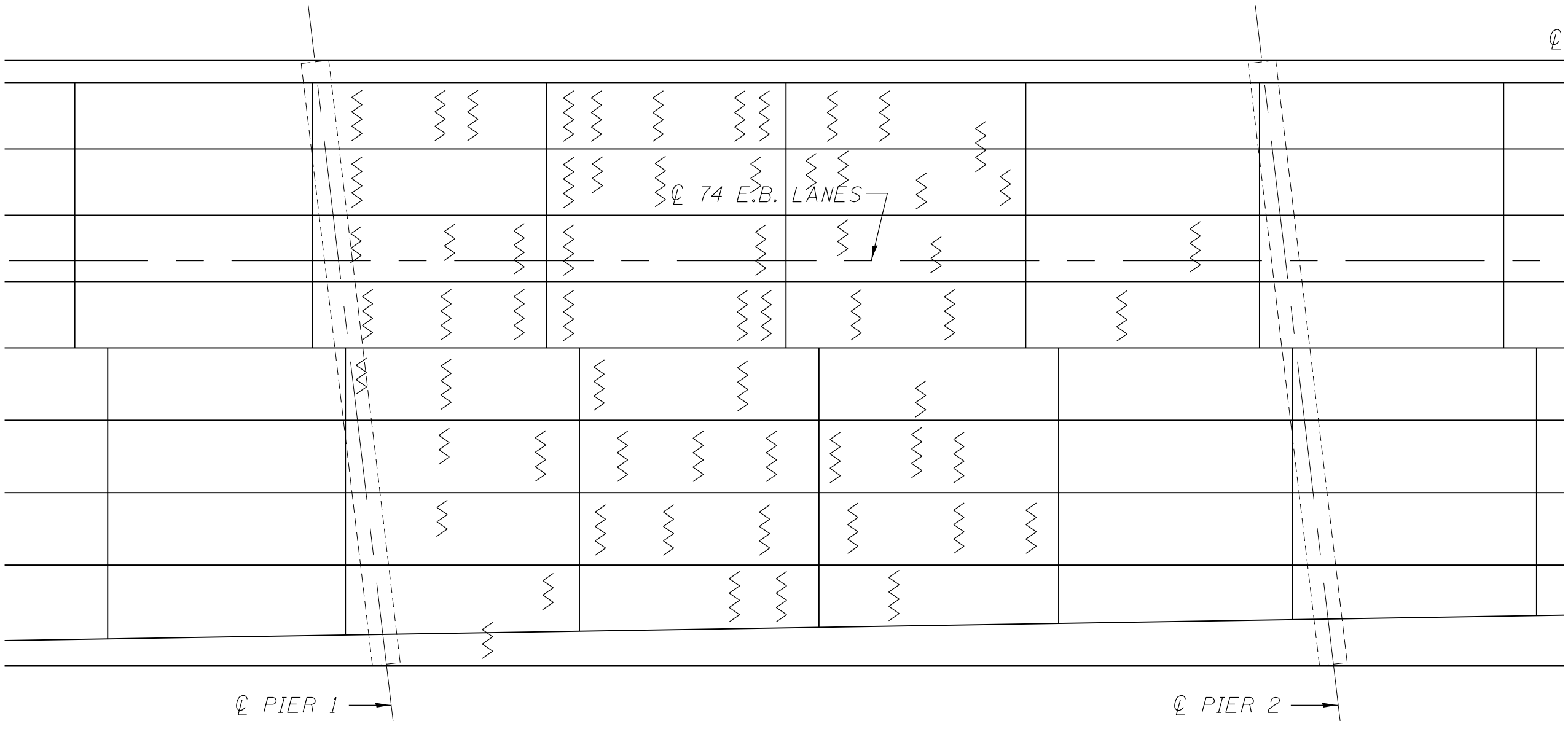

## LEGEND

Cracking

Cracking w/ Efflorescence

ROUTE 74 OVER I-57
SOUTH BRIDGE
EAST BOUND LANES

# BOTTOM OF DECK CONDITION SURVEY, SPAN 1

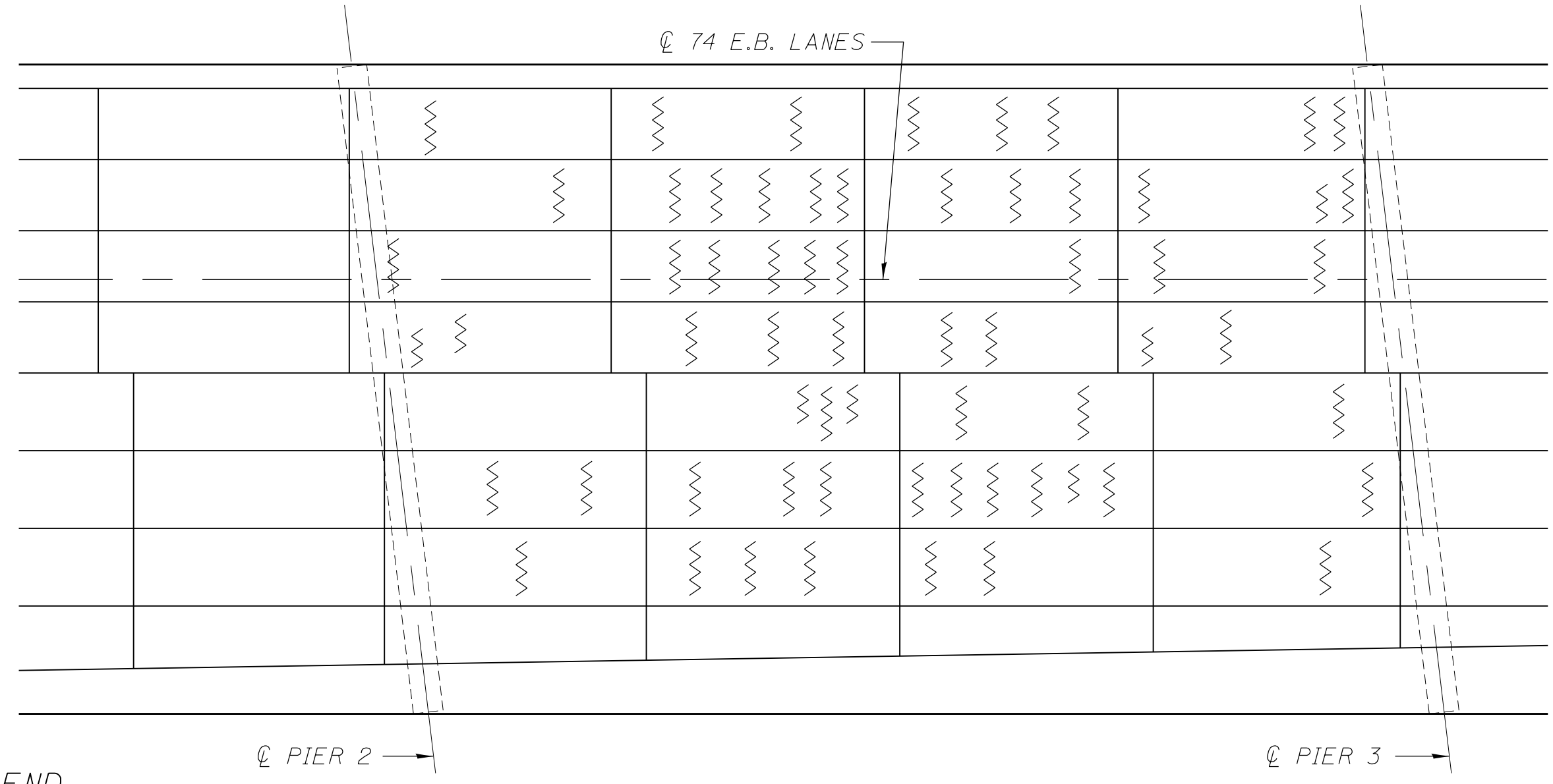



LEGEND

Cracking

ROUTE 74 OVER I-57
SOUTH BRIDGE
EAST BOUND LANES

# BOTTOM OF DECK CONDITION SURVEY, SPAN 2



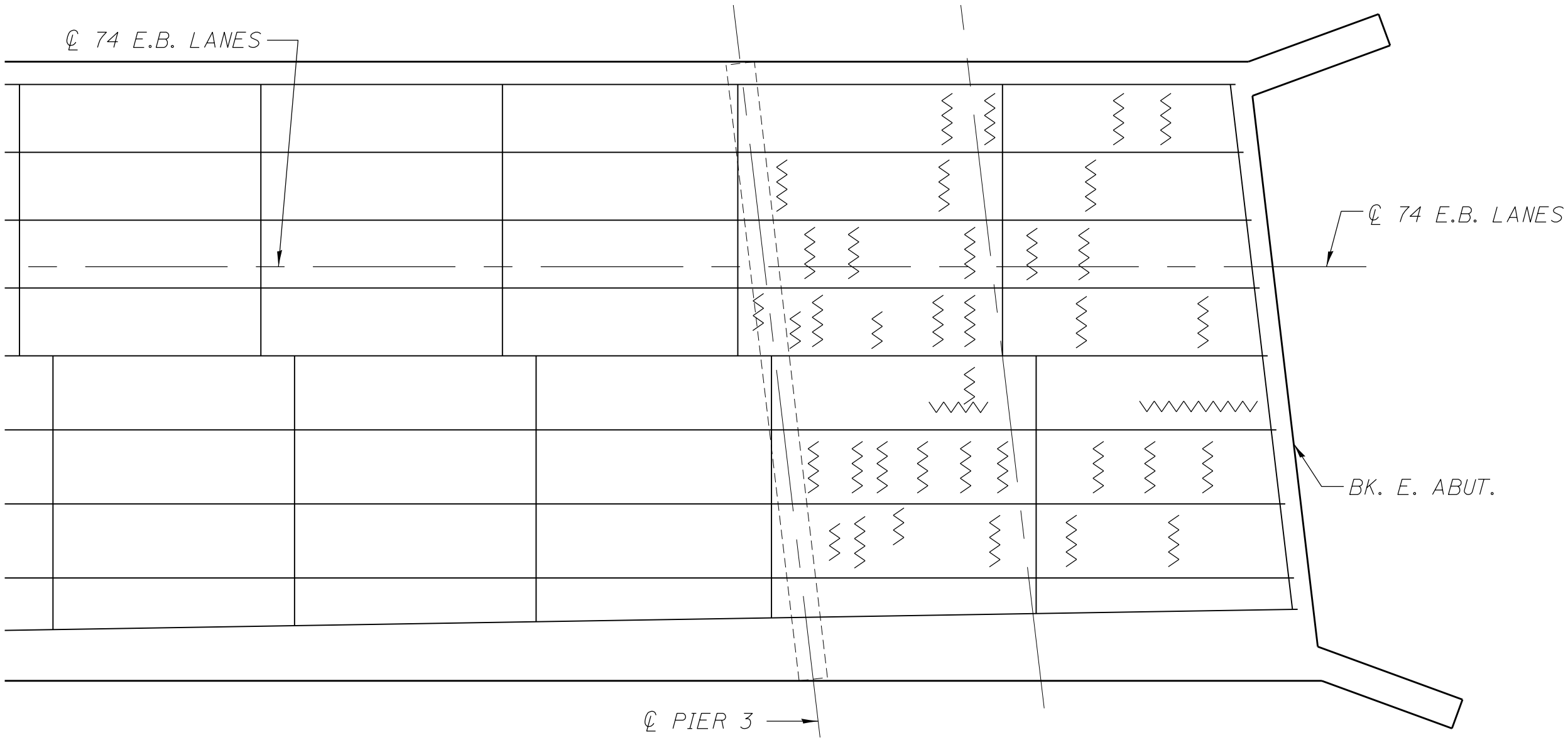

N

LEGEND

Cracking

ROUTE 74 OVER I-57
SOUTH BRIDGE
EAST BOUND LANES

# BOTTOM OF DECK CONDITION SURVEY, SPAN 3




LEGEND

Cracking

ROUTE 74 OVER I-57
SOUTH BRIDGE
EAST BOUND LANES

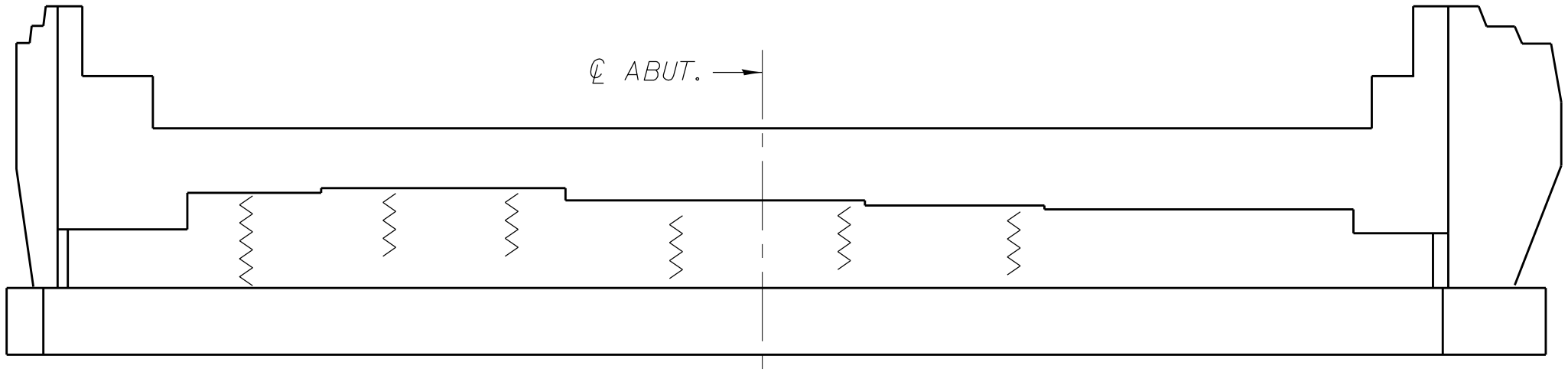
# BOTTOM OF DECK CONDITION SURVEY, SPAN 4

# **ATTACHMENT E**

Substructure Condition Surveys

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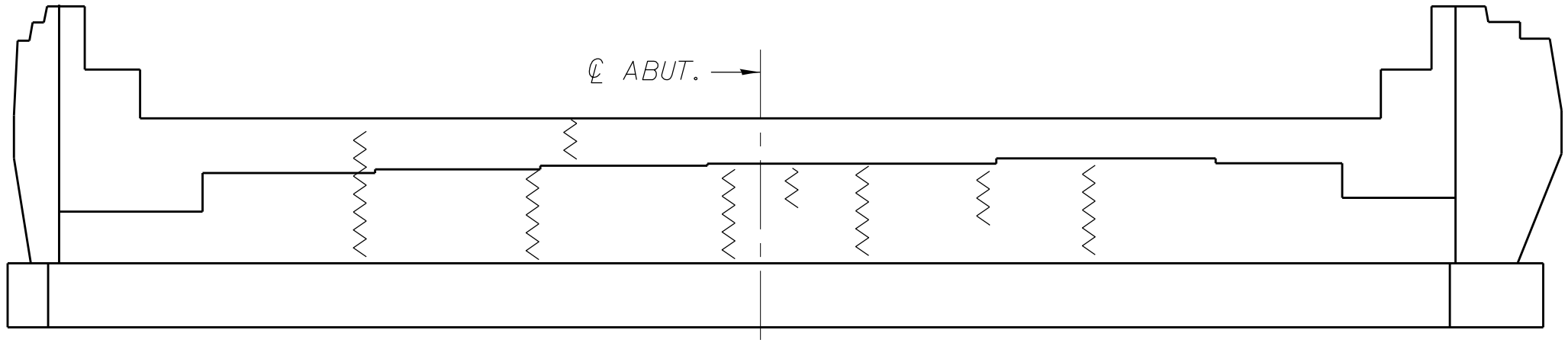
105




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WEST ABUTMENT

105




EAST ABUTMENT

LEGEND

Cracking

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ROUTE 74 OVER I-57
NORTH BRIDGE
WEST BOUND LANES

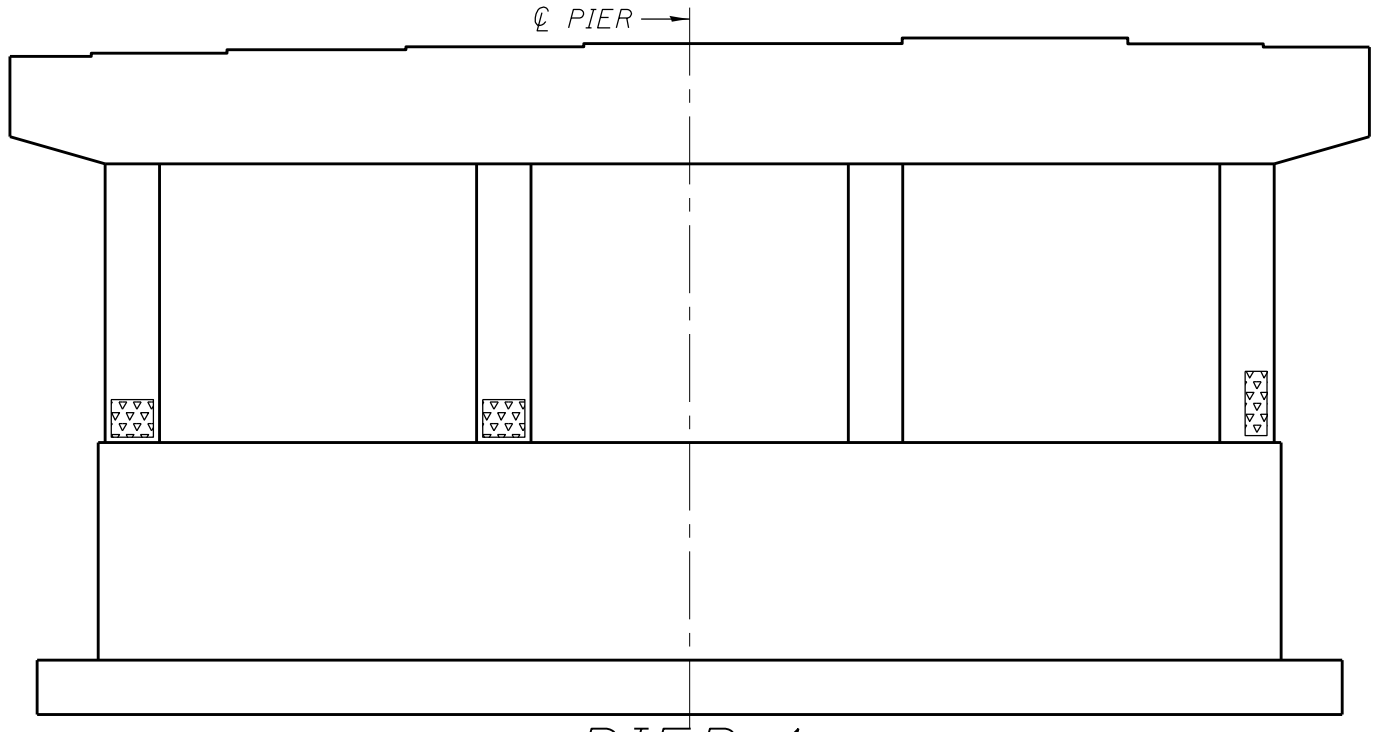
# ABUTMENT CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

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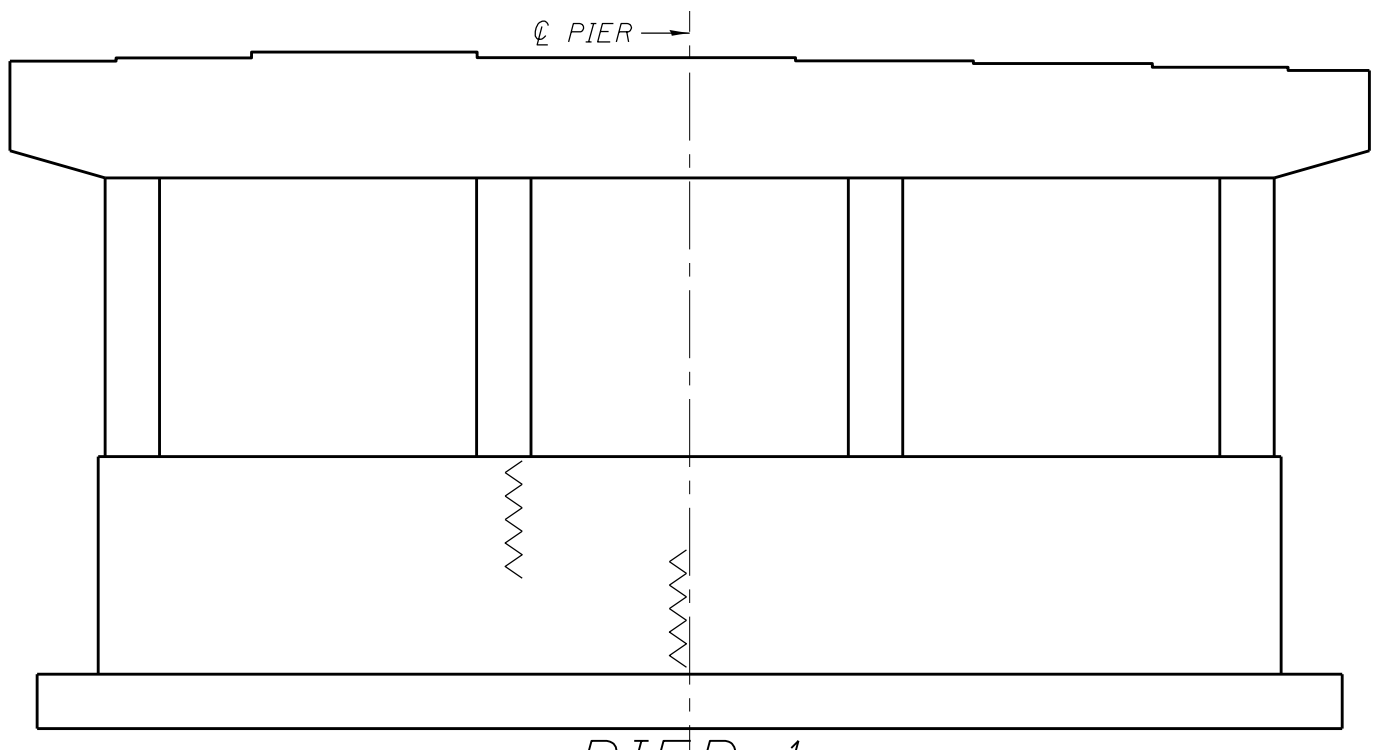
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PIER 1
(LOOKING EAST)

105

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PIER 1
(LOOKING WEST)

LEGEND

Exposed Rebar

Cracking

# PIER CONDITION SURVEY

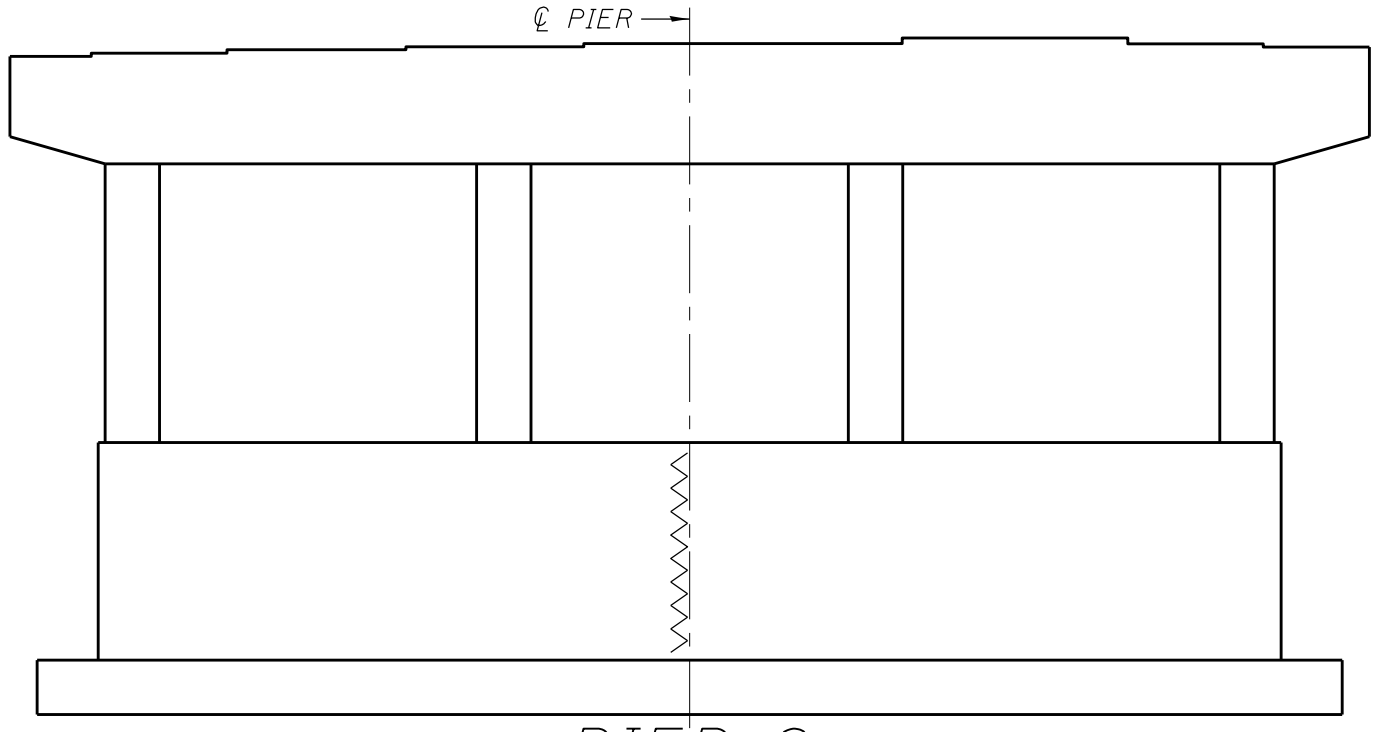
ROUTE 74 OVER I-57
NORTH BRIDGE
WEST BOUND LANES

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

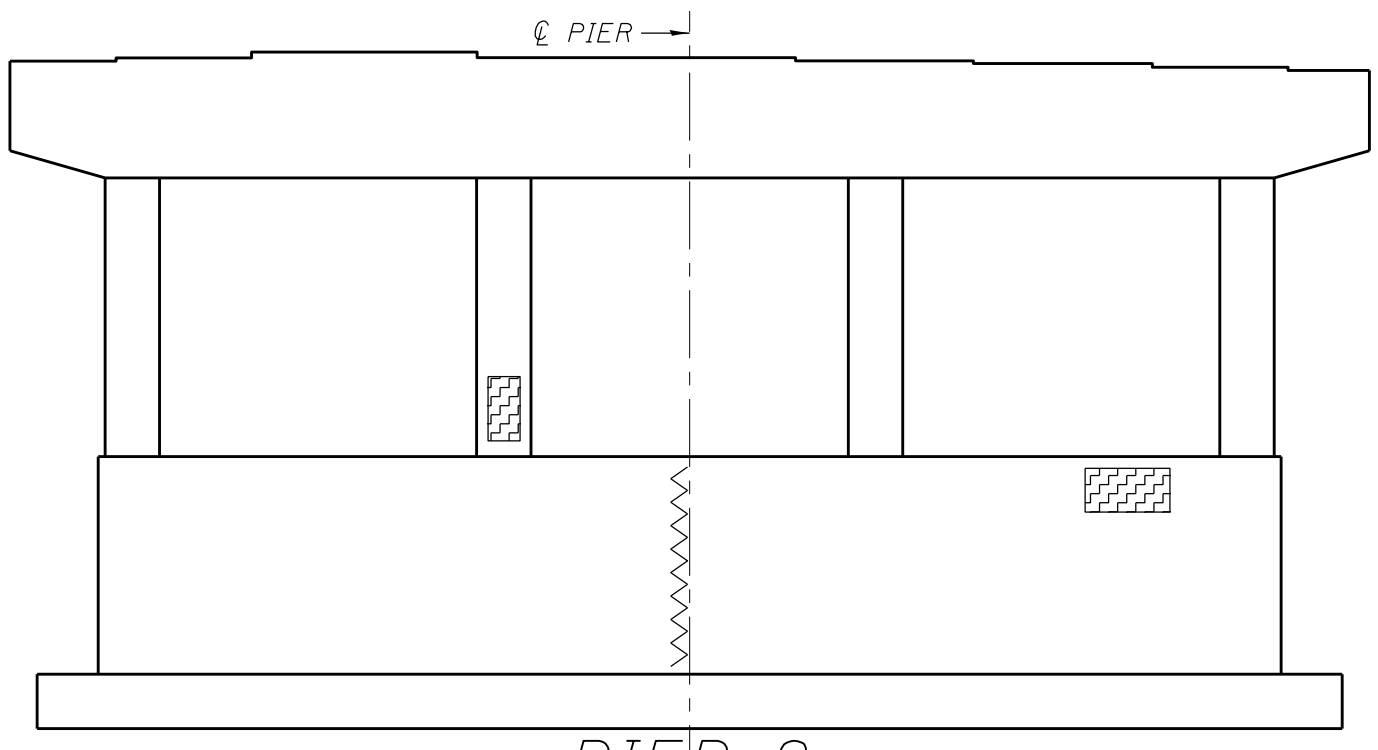
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




PIER 2
(LOOKING EAST)




PIER 2
(LOOKING WEST)

LEGEND

Spalling

Cracking

# PIER CONDITION SURVEY

ROUTE 74 OVER I-57
NORTH BRIDGE
WEST BOUND LANES

105

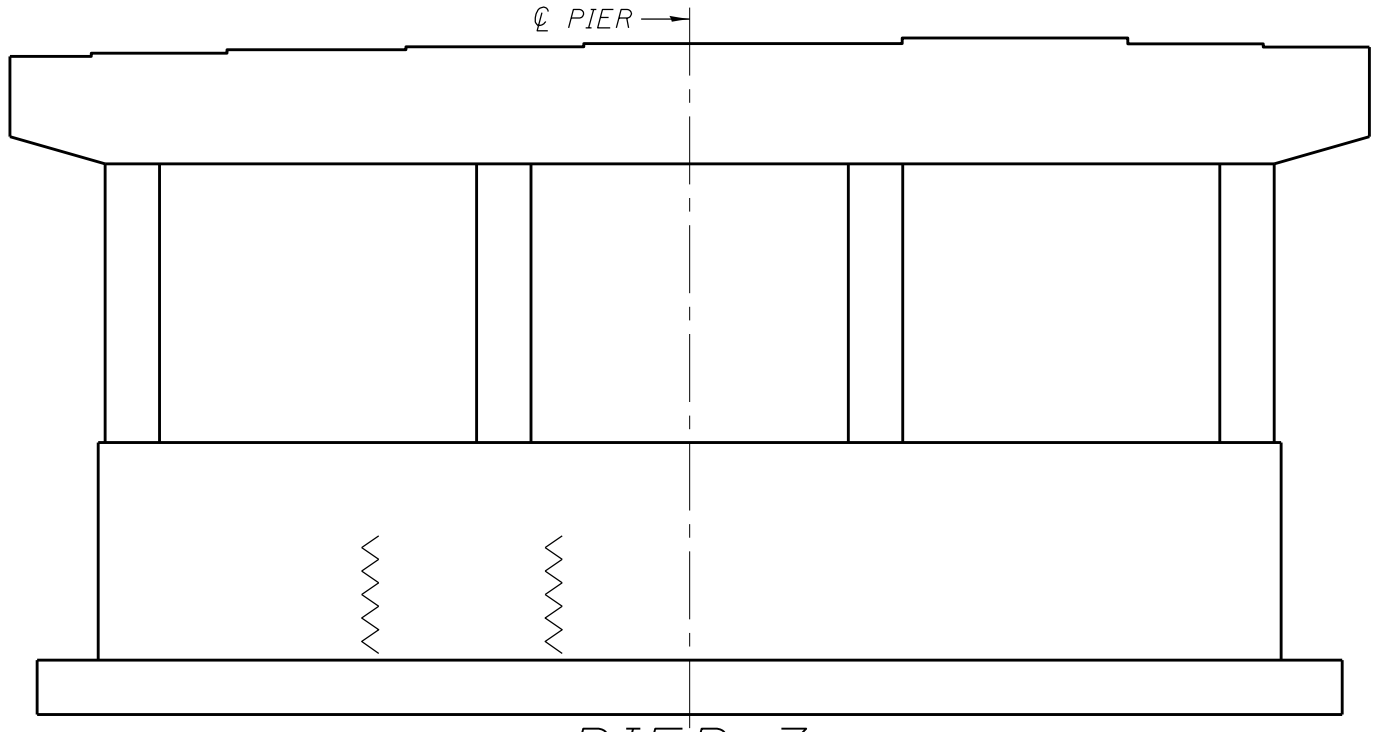
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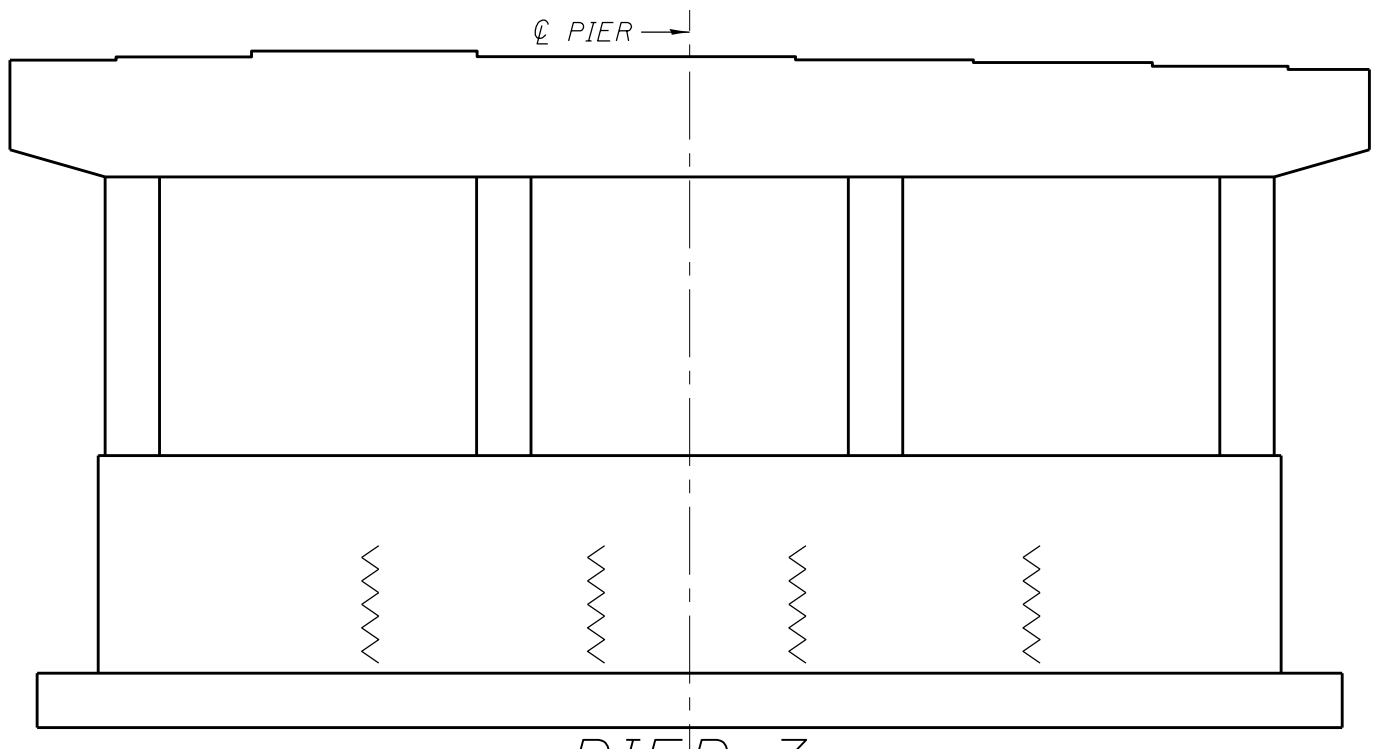
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




PIER 3
(LOOKING EAST)




PIER 3
(LOOKING WEST)

105

100

LEGEND

Cracking

ROUTE 74 OVER I-57
NORTH BRIDGE
WEST BOUND LANES

# PIER CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100

℄ 74 E.B. LANES

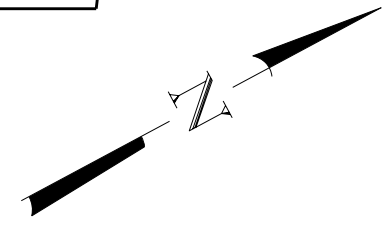
BK. W. ABUT.

℄ 74 W.B. LANES

BK. W. ABUT.

105

100




LEGEND

Cracking

Hole

# WEST SLOPEWALL

ROUTE 74 OVER I-57
NORTH BRIDGE

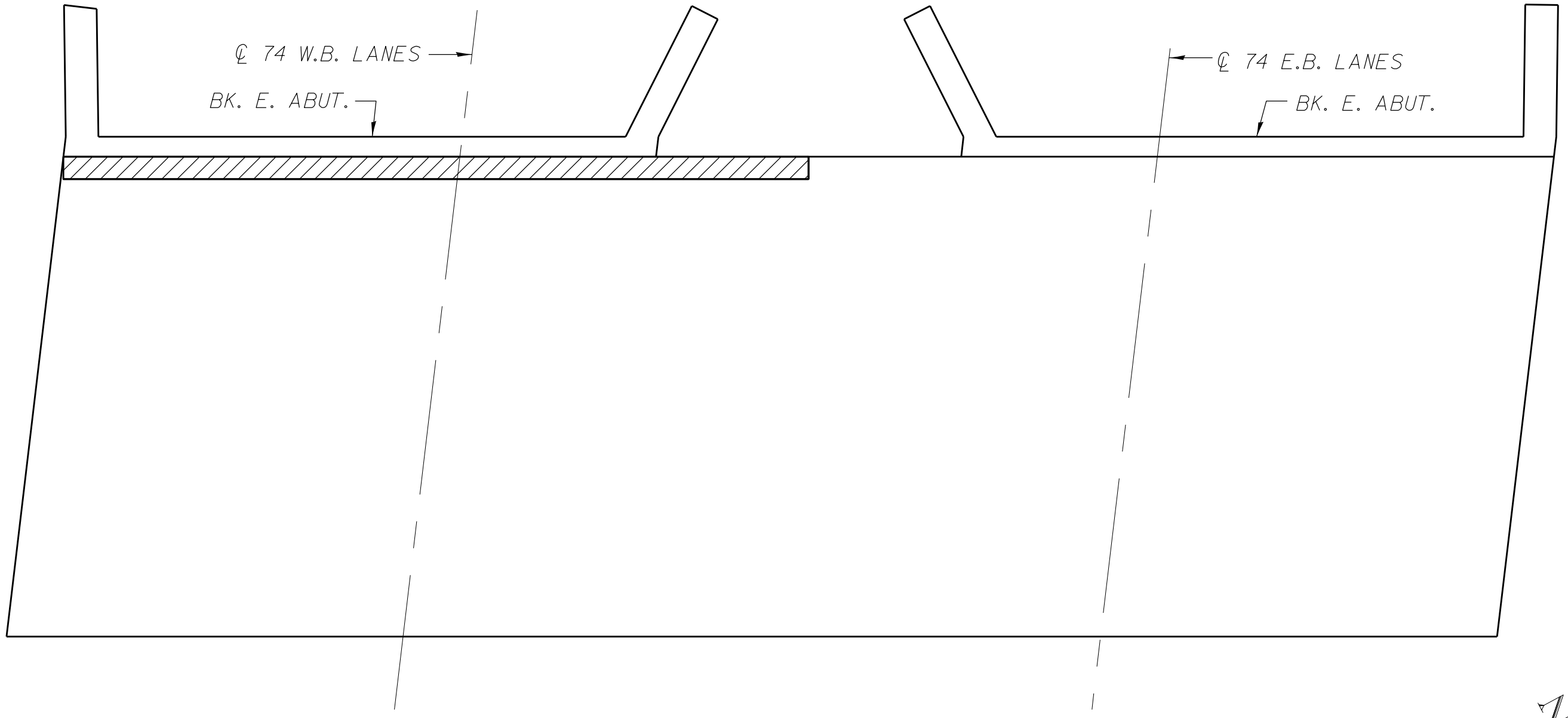
## SLOPEWALL CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

100

LEGEND

Open Joint

EAST SLOPEWALL

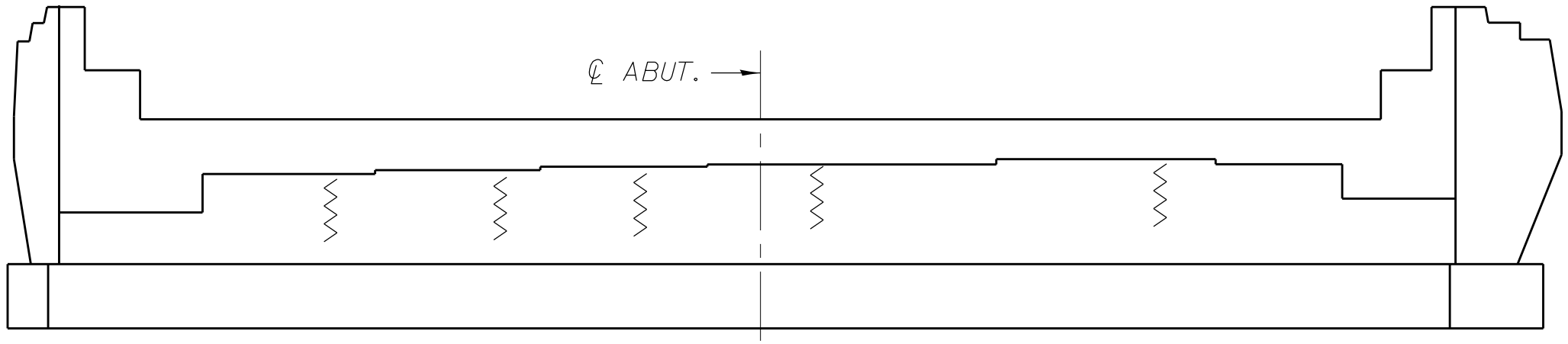
ROUTE 74 OVER I-57
NORTH BRIDGE

# SLOPEWALL CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

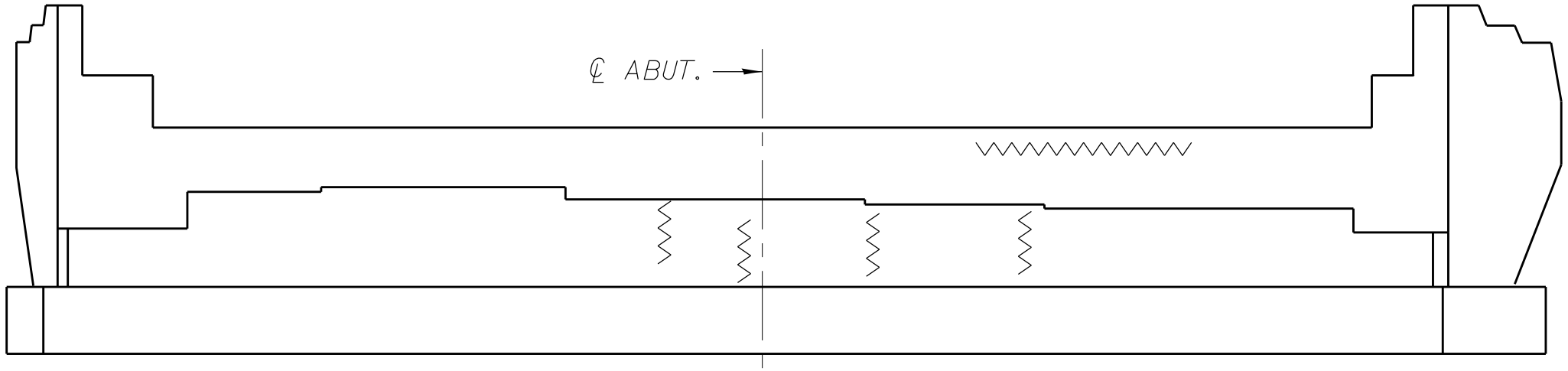
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105




100

WEST ABUTMENT




105

EAST ABUTMENT

LEGEND

Cracking

100

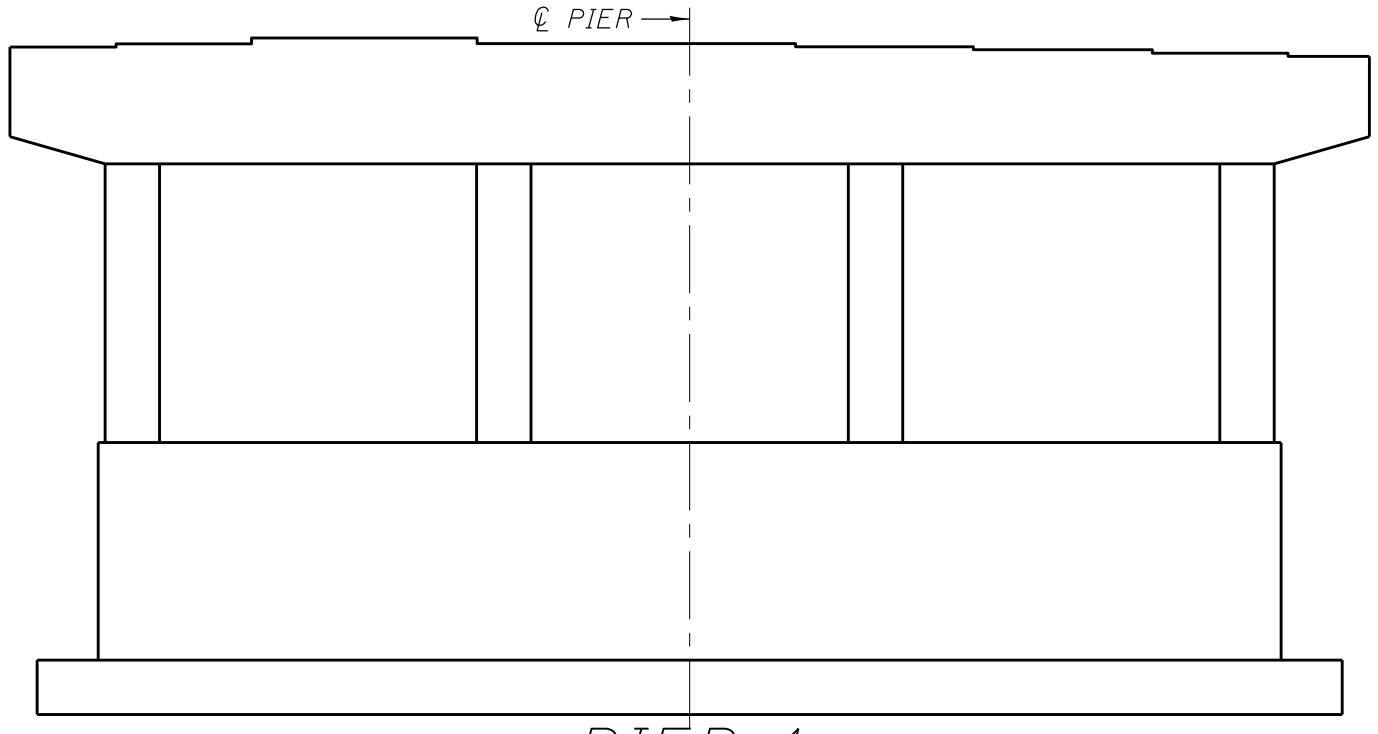
ROUTE 74 OVER I-57
SOUTH BRIDGE
EAST BOUND LANES

# ABUTMENT CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

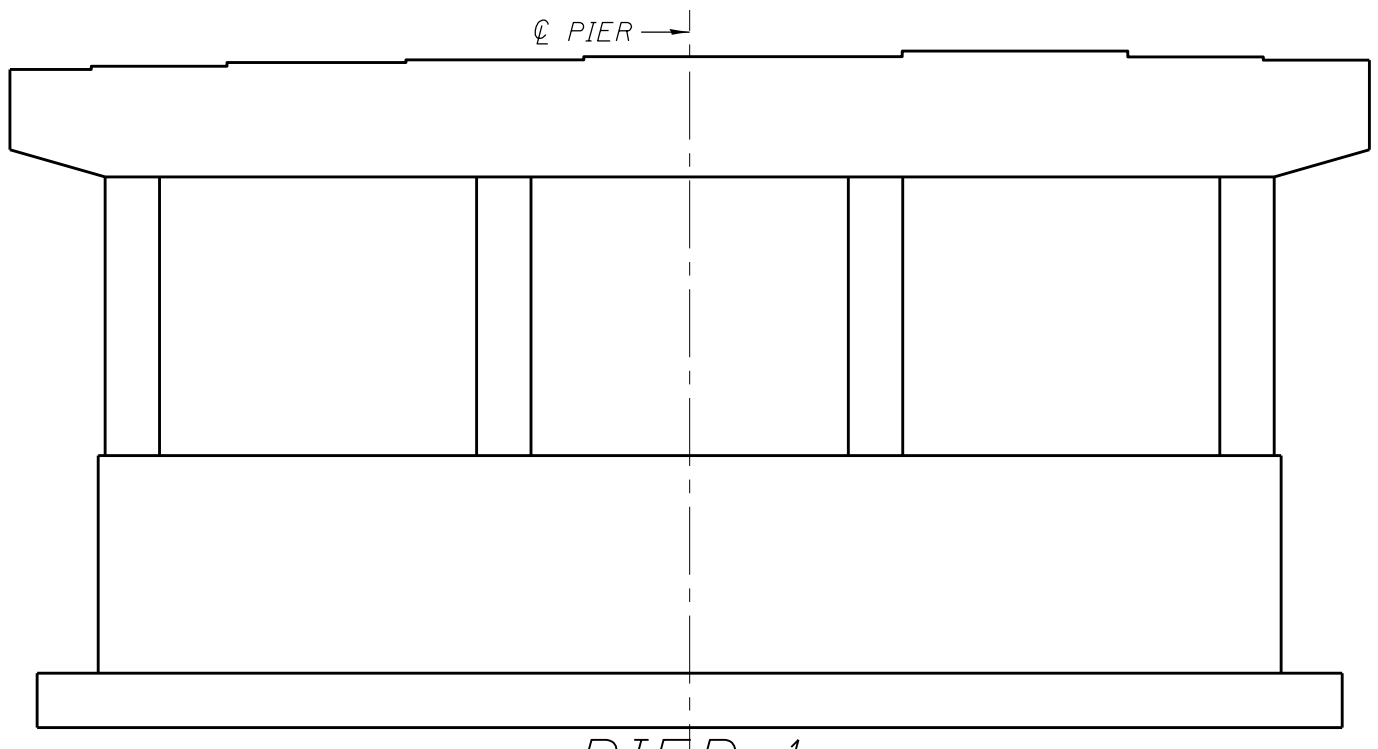



No Deficiencies Noted

100

PIER 1
(LOOKING EAST)

105




No Deficiencies Noted

PIER 1
(LOOKING WEST)

100

# PIER CONDITION SURVEY

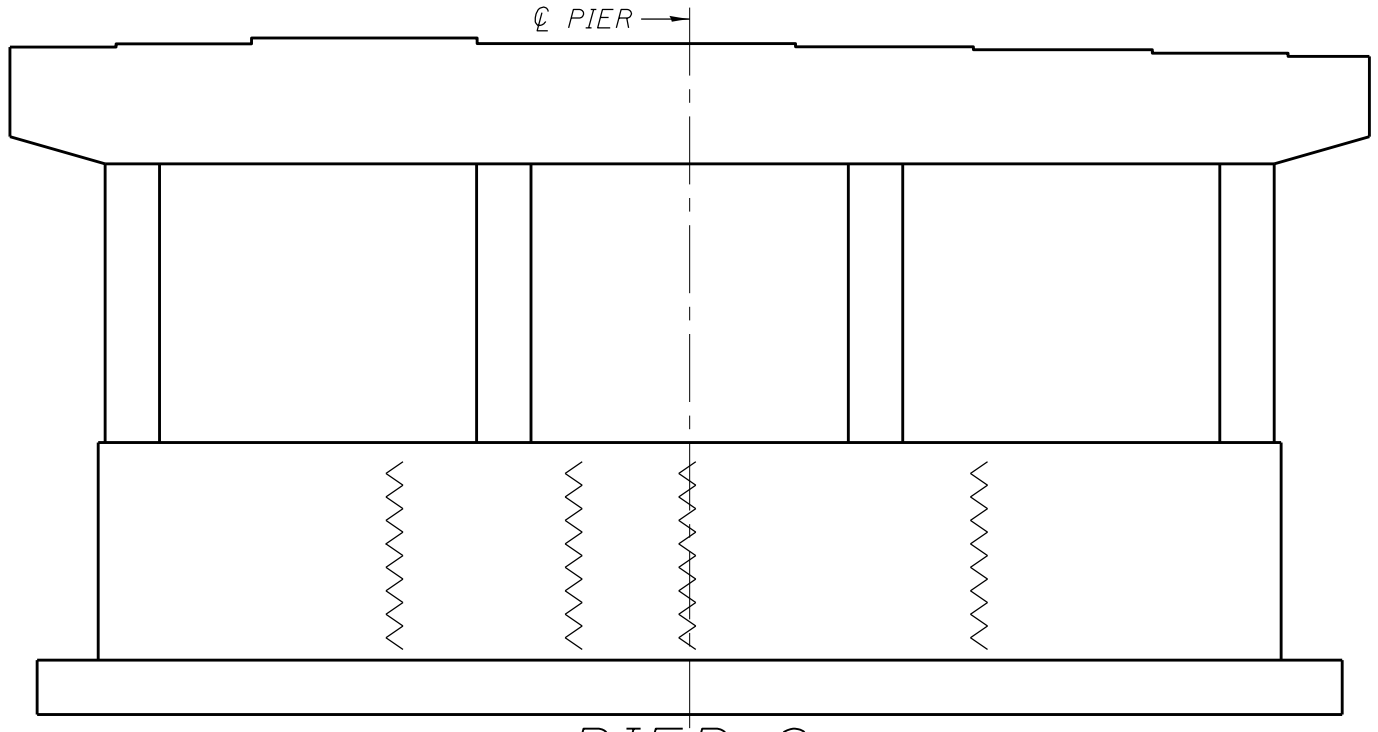
ROUTE 74 OVER I-57
SOUTH BRIDGE
EAST BOUND LANES

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

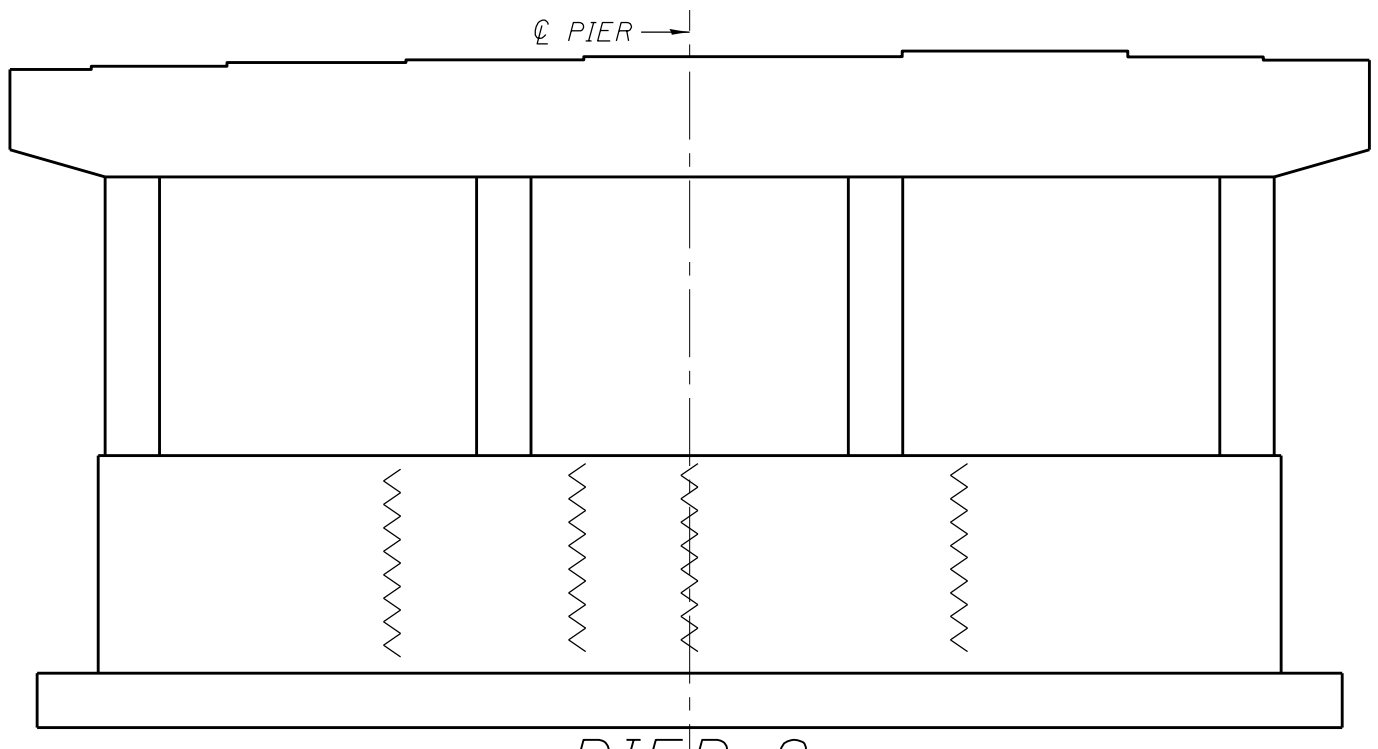
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




PIER 2
(LOOKING EAST)




PIER 2
(LOOKING WEST)

LEGEND

Cracking

ROUTE 74 OVER I-57
SOUTH BRIDGE
EAST BOUND LANES

# PIER CONDITION SURVEY

105

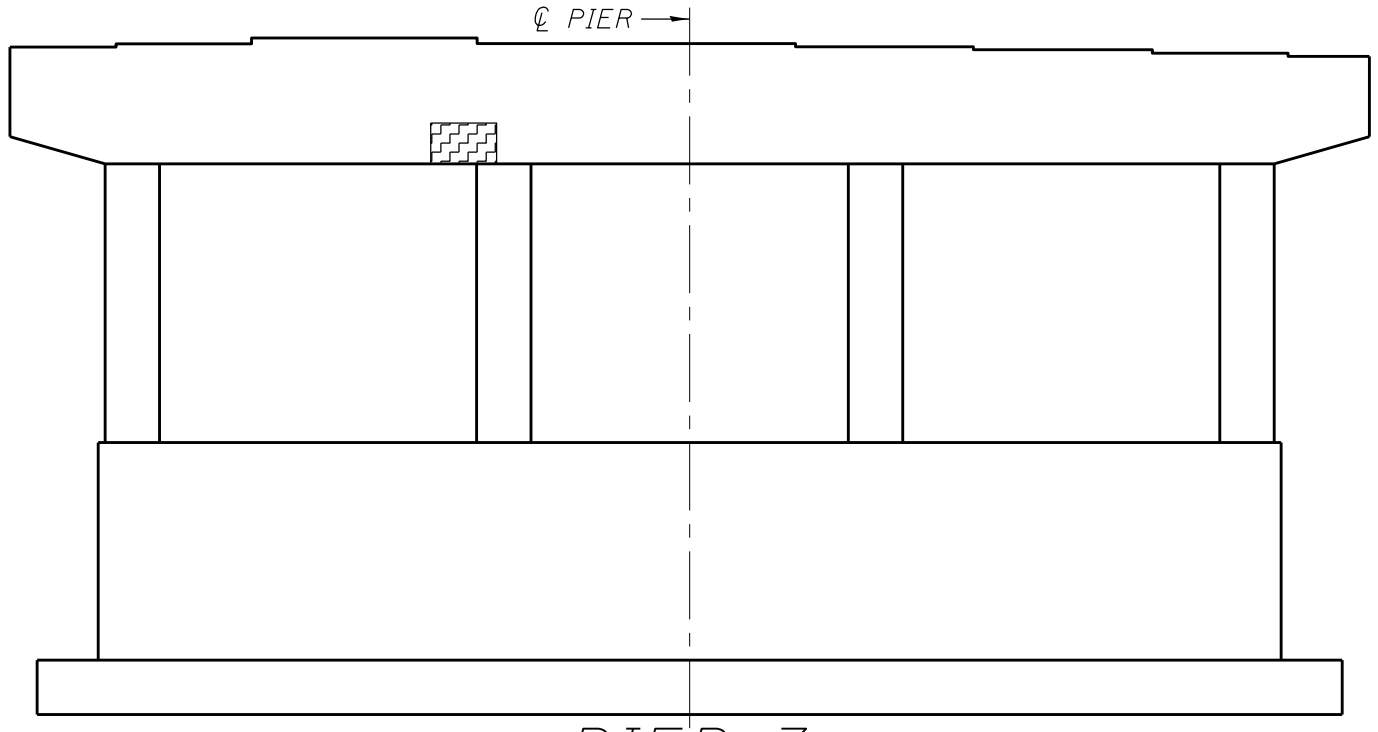
100

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

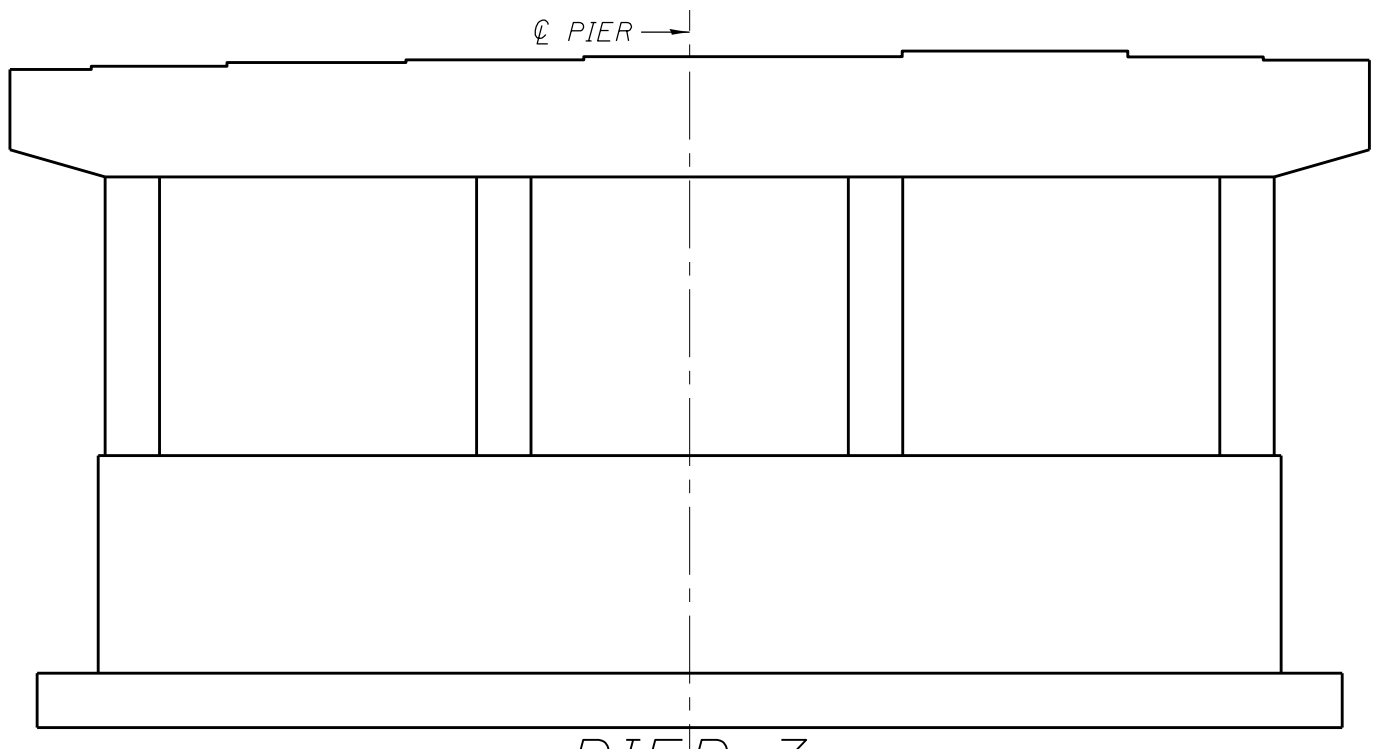
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




PIER 3
(LOOKING EAST)




PIER 3
(LOOKING WEST)

105

100

No Deficiencies Noted

LEGEND

Spalling

# PIER CONDITION SURVEY

ROUTE 74 OVER I-57
SOUTH BRIDGE
EAST BOUND LANES

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

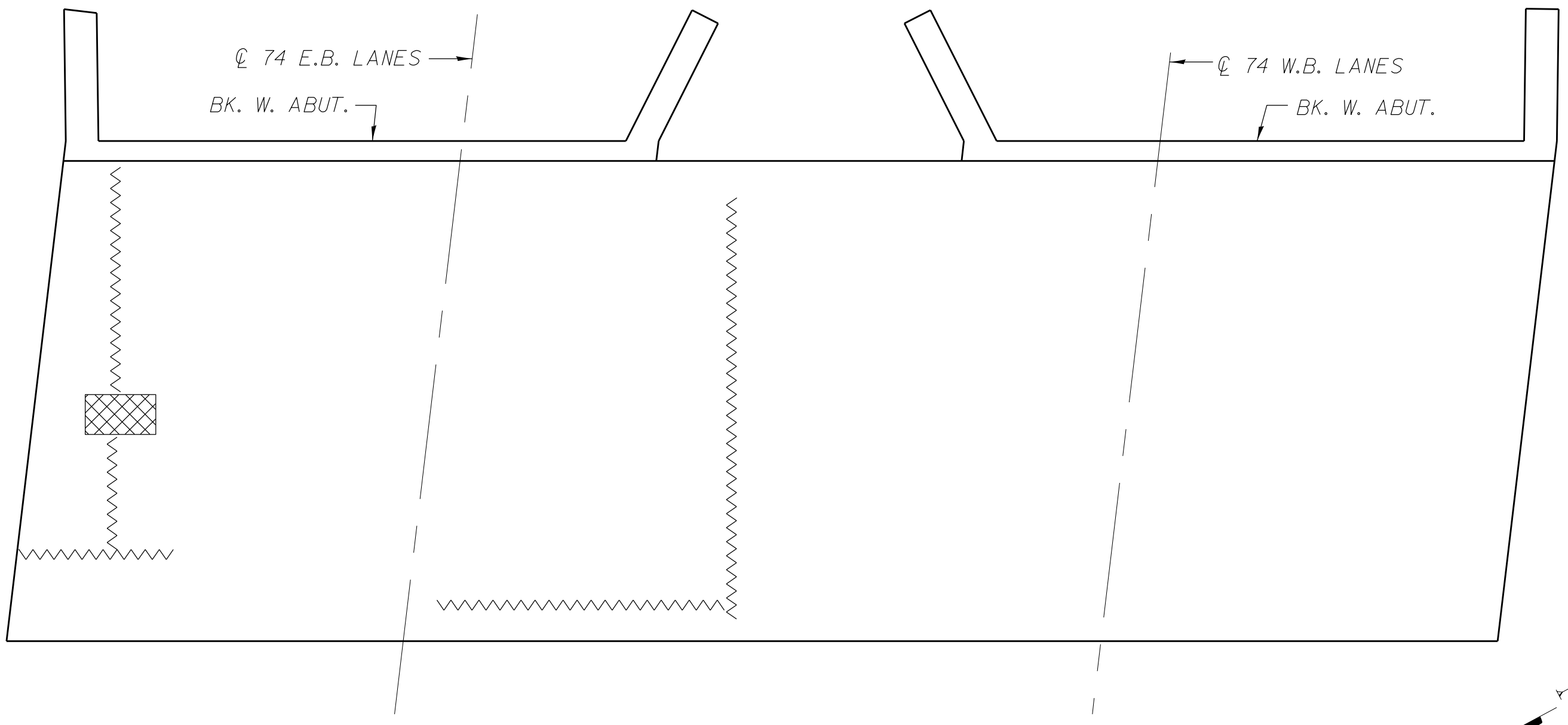
100

℄ 74 E.B. LANES

BK. W. ABUT.

℄ 74 W.B. LANES

BK. W. ABUT.



105

N

LEGEND

Cracking

Hole

100

# WEST SLOPEWALL

ROUTE 74 OVER I-57
SOUTH BRIDGE

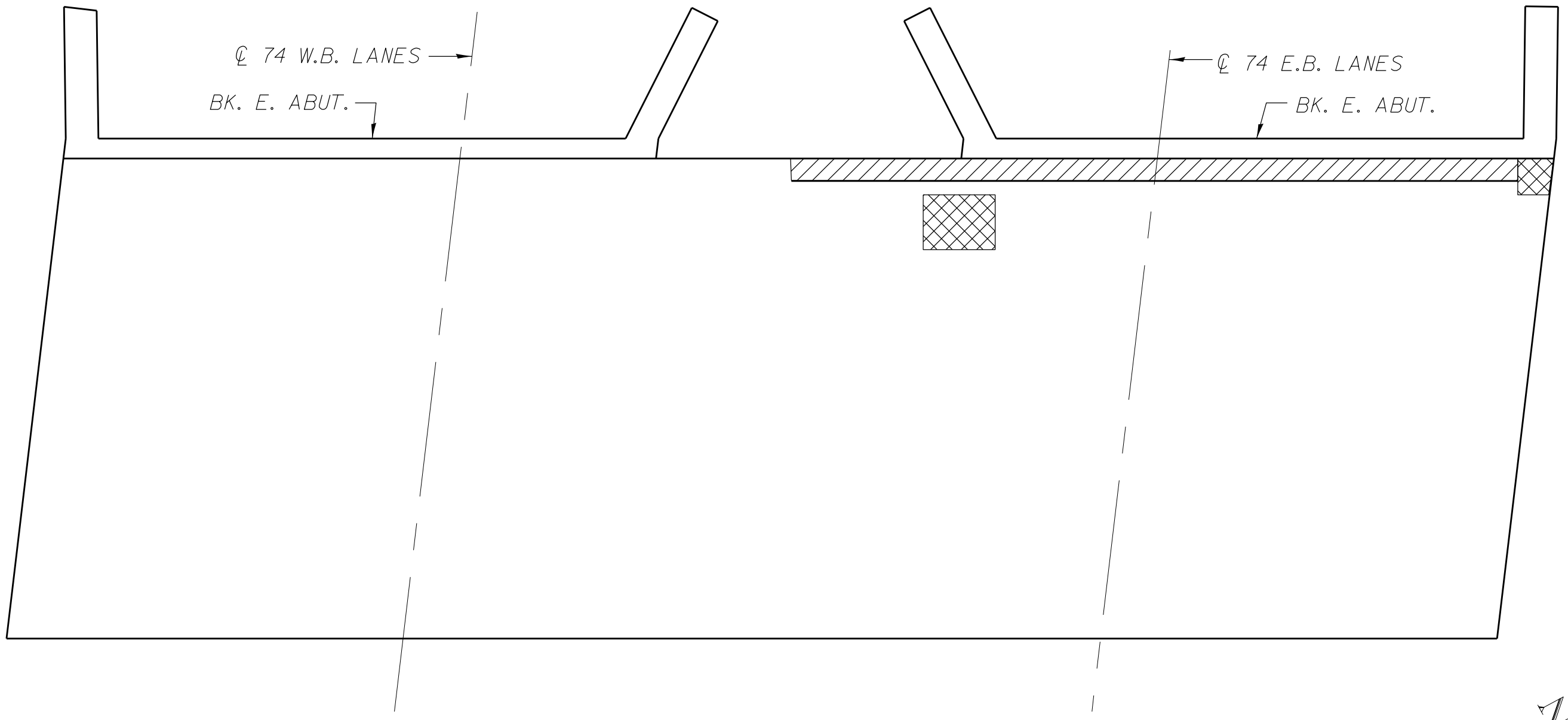
# SLOPEWALL CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

100

LEGEND

Open Joint

Hole

# EAST SLOPEWALL

ROUTE 74 OVER I-57
SOUTH BRIDGE

# SLOPEWALL CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

# **ATTACHMENT F**

Cost Estimates

FAI 74 over FAI 57
Section 10-34HB-1
SN 010-0018(19)

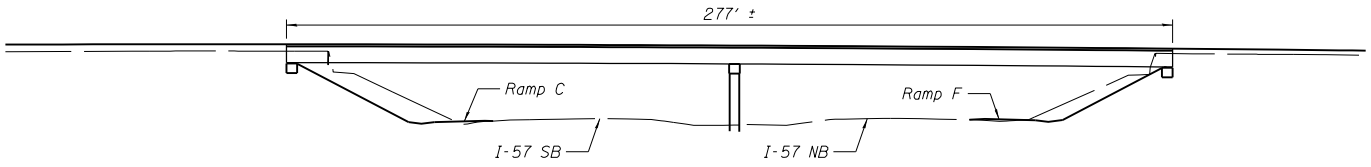
Preliminary Cost Estimate
Complete Replacement (One Structure)

| CODE | PAY ITEM | UNIT | QUANTITY | | | UNIT COST | ITEM COST |
|---|---|---|---|---|---|---|---|
| | | | SUPER | SUB | TOTAL | | |
| 50100100 | REMOVAL OF EXISTING STRUCTURES | EACH | | | **1** | $125,000.00 | $125,000.00 |
| 50200100 | STRUCTURE EXCAVATION | CU YD | | 655 | **655** | $24.00 | $15,720.00 |
| 50300225 | CONCRETE STRUCTURES | CU YD | | 265 | **265** | $600.00 | $159,000.00 |
| 50300255 | CONCRETE SUPERSTRUCTURE | CU YD | 655 | | **655** | $750.00 | $491,250.00 |
| 50300260 | BRIDGE DECK GROOVING | SQ YD | 2072 | | **2072** | $6.00 | $12,432.00 |
| 50300300 | PROTECTIVE COAT | SQ YD | 2380 | | **2380** | $2.50 | $5,950.00 |
| 50500105 | FURNISHING AND ERECTING STRUCTURAL STEEL | L SUM | | | **1** | $1,370,000 | $1,370,000.00 |
| 50500505 | STUD SHEAR CONNECTORS | EACH | 10000 | | **10000** | $3.25 | $32,500.00 |
| 50800205 | REINFORCEMENT BARS, EPOXY COATED | POUND | 131030 | 52850 | **183880** | $1.20 | $220,656.00 |
| 51100100 | SLOPE WALL 4 INCH | SQ YD | | 608 | **608** | $90.00 | $54,720.00 |
| 51201600 | FURNISHING STEEL PILES HP12X53 | FOOT | | 1000 | **1000** | $42.00 | $42,000.00 |
| 51202305 | DRIVING PILES | FOOT | | 1000 | **1000** | $0.65 | $650.00 |
| 51500100 | NAME PLATES | EACH | 1 | | **1** | $420.00 | $420.00 |
| 52100520 | ANCHOR BOLTS, 1" | EACH | | 60 | **60** | $77.00 | $4,620.00 |
| 59100100 | GEOCOMPOSITE WALL DRAIN | SQ YD | | 144 | **144** | $20.00 | $2,880.00 |
| X5860110 | GRANULAR BACKFILL FOR STRUCTURES | CU YD | | 320 | **320** | $40.00 | $12,800.00 |
| Z0046304 | PIPE UNDERDRAINS FOR STRUCTURES 4" | FOOT | | 150 | **150** | $18.75 | $2,812.50 |

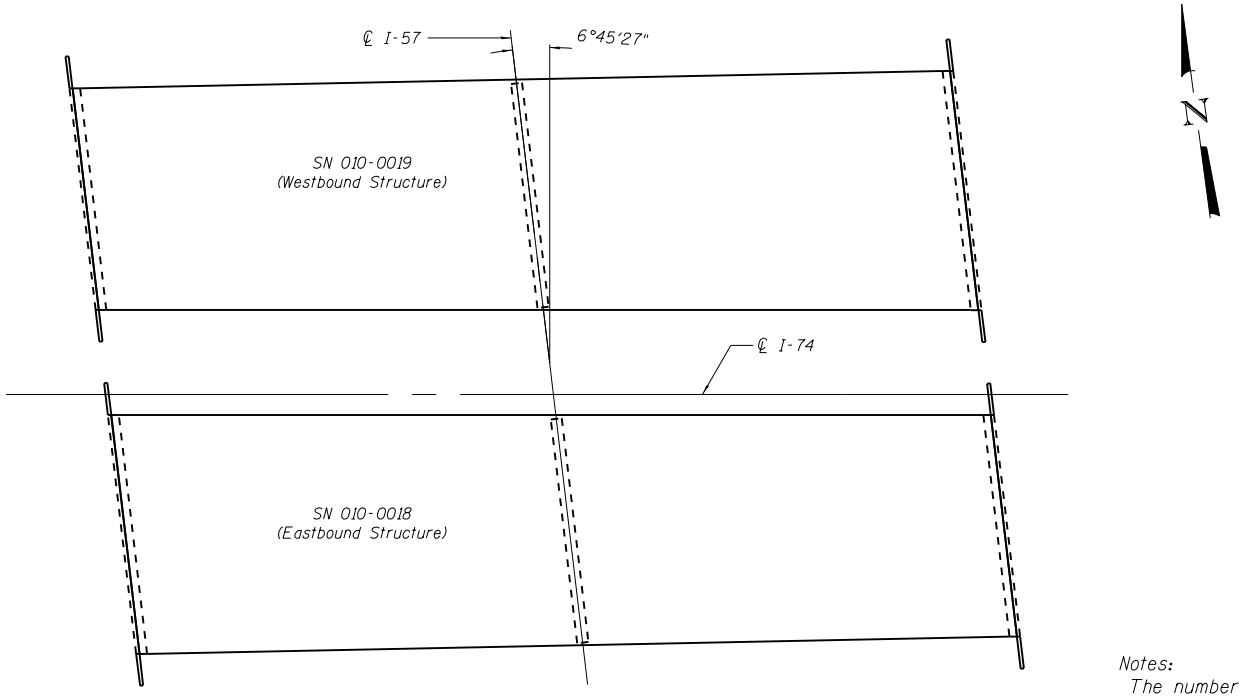
| | | |
|---|---|---|
| | Subtotal = | $2,553,410.50 |
| 15% | Contingency = | $383,011.58 |
| | Total = | **$2,936,420** |
| | | x 2 Each |
| | **Total (Two Structures) =** | **$5,872,840** |

# **ATTACHMENT G**

Proposed Structure

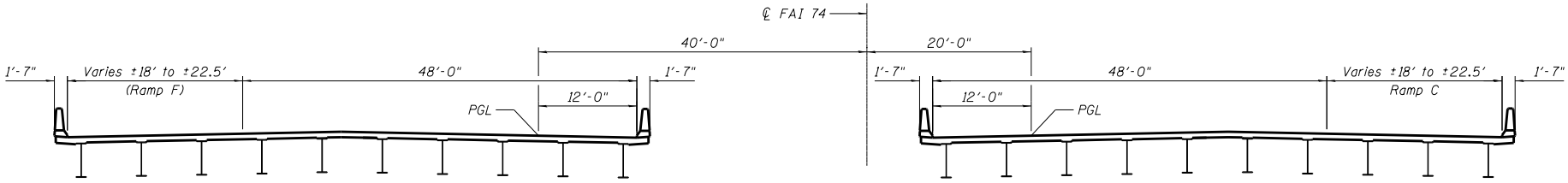



## ELEVATION



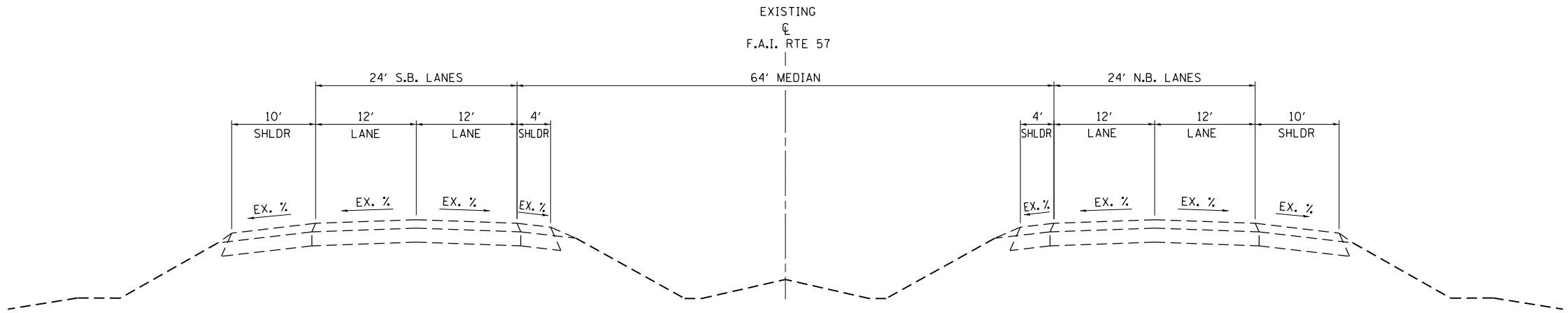

## PLAN PROPOSED STRUCTURE

*Notes:*
*The number and location of piers, the profile grade and bridge length are subject to refinement in the TSL phase.*
*Superstructure type, beam spacing and rail type to be determined during the TSL phase.*



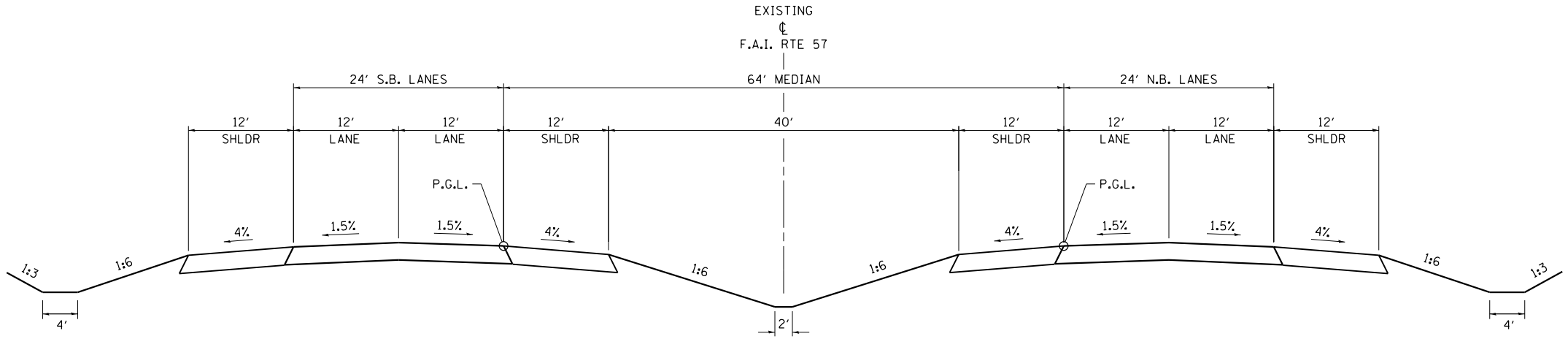

## PROPOSED STRUCTURE WIDTH

**PROPOSED STRUCTURE SKETCH**
**SN 010-0018 (EB)**
**SN 010-0019 (WB)**



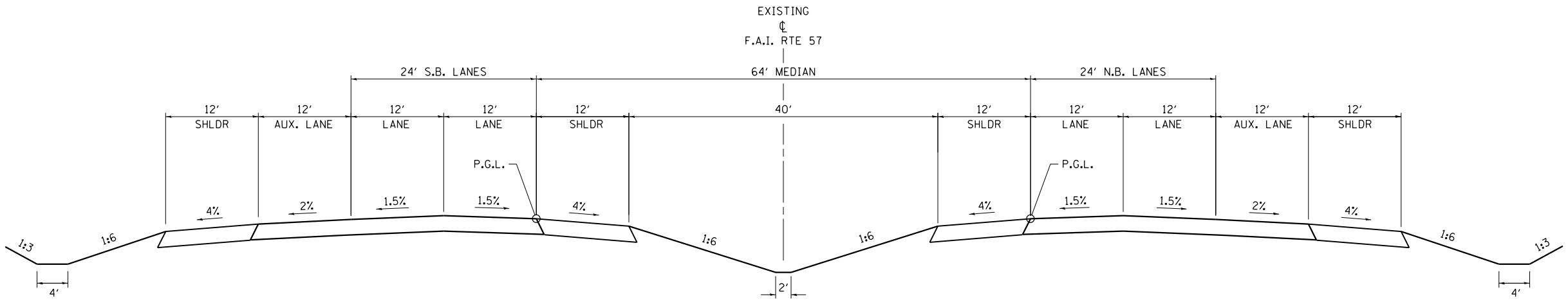

**EXISTING F.A.I 57**

(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
WITH AUXILIARY LANE
(LOOKING NORTH)

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**INTERSTATE 57**

**EXHIBIT 51**



BDE-9908

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USER NAME = Brad Downen

# ATTACHMENT H

Structure Photos



**Looking up-station (East) through I-74(EB)**



**Looking up-station (East) through I-74(WB)**



**Looking down-station (West) through I-74(EB)**



**Looking down-station (West) through I-74(WB)**



**Looking down-station of I-57 from structure**



**Looking up-station of I-57 from structure**



**South wingwall of East Abutment of Eastbound Structure (Looking East)**



**North wingwall of East Abutment of Eastbound Structure (Looking East)**



**South wingwall of East Abutment of Westbound Structure (Looking East)**



**North wingwall of East Abutment of Westbound Structure (Looking East)**



**South wingwall of West Abutment of Eastbound Structure (Looking West)**



**North wingwall of West Abutment of Eastbound Structure (Looking West)**



**South wingwall of West Abutment of Westbound Structure (Looking West)**




**North wingwall of West Abutment of Westbound Structure (Looking West)**



**West abutment expansion joint of Eastbound Structure (Looking South)**




**East abutment expansion joint of Eastbound Structure (Looking South)**



**West abutment expansion joint of Westbound Structure (Looking South)**



**East abutment expansion joint of Westbound Structure (Looking South)**



**Eastbound Structure Bridge Rail (Looking West)**



**Westbound Structure Bridge Rail (Looking West)**



**General condition of underside of superstructure Span 1 of Eastbound Structure**



**General condition of underside of superstructure Span 2 of Eastbound Structure**



**General condition of underside of superstructure Span 3 of Eastbound Structure**



**General condition of underside of superstructure Span 4 of Eastbound Structure**



**General condition of underside of superstructure Span 1 of Westbound Structure**



**General condition of underside of superstructure Span 2 of Westbound Structure**



**General condition of underside of superstructure Span 3 of Westbound Structure**



**General condition of underside of superstructure Span 4 of Westbound Structure**



**West abutment of Eastbound Structure**



**East abutment of Eastbound Structure**



**West abutment of Westbound Structure**



**East abutment of Westbound Structure**



**West face of Pier 1 of Eastbound Structure**



**East face of Pier 1 of Eastbound Structure**



**West face of Pier 2 of Eastbound Structure**



**East face of Pier 2 of Eastbound Structure**



**West face of Pier 3 of Eastbound Structure**



**East face of Pier 3 of Eastbound Structure**



**West face of Pier 1 of Westbound Structure**



**East face of Pier 1 of Westbound Structure**



**West face of Pier 2 of Westbound Structure**



**East face of Pier 2 of Westbound Structure**



**West face of Pier 3 of Westbound Structure**



**East face of Pier 3 of Westbound Structure**



**Undermining and slope wall damage at East Abutment of Eastbound Structure**



**East Slopewall Damage**



**Spall on bottom of cap of Pier 3 of Eastbound Structure**



**Spall on bottom of the North column of Pier 1 of Westbound Structure**



**Spall on bottom of the South column of Pier 1 of Westbound Structure**



**General condition of elastomeric bearings at abutment**



**General condition of abutments (E. Abutment of WB Structure shown)**



**Spall/loss of bearing at the south end of east abutment of WB Structure**



**Spall/loss of bearing at the north end of east abutment of EB Structure**

# **ATTACHMENT J**

Proposed Plan & Profile

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
DATE
BY

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
BM. NOTED
STRUCTURE NOTATIONS CHKD
NOTE BOOK
NO.
DATE
BY

RAMP D
I-57
RAMP F
RAMP C
RAMP C
RAMP F
RAMP E
FAI 74
1055
1060
1065
645
640
635
605
595
410
335
340
345
415
K = 560
00.00' V.C.
VPI STA. 1054+50.00
ELEVATION 783.35
+50.00 EL. 785.38
+65.00 EL. 785.53
+1.01%
VPI STA. 1061+40.00
ELEVATION 790.35
+1.01%
-2.00%
50" WEB PL. GIRDER
+15.00 EL. 780.85
950.00' V.C.
K = 315
840
835
830
825
820
815
810
805
800

| | | | |
|---|---|---|---|
| FILE NAME = P:\Projects\2011 Projects\11354 - IDOT I-74 Interchange\ST\BCR\D570897-sht_ plnprof_ALT2.dgn $MODELNAME$ | USER NAME = $USER$ | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| | PLOT DATE = 10/13/2014 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ALTERNATE #2, FAI 74**
**PLAN AND PROFILE**

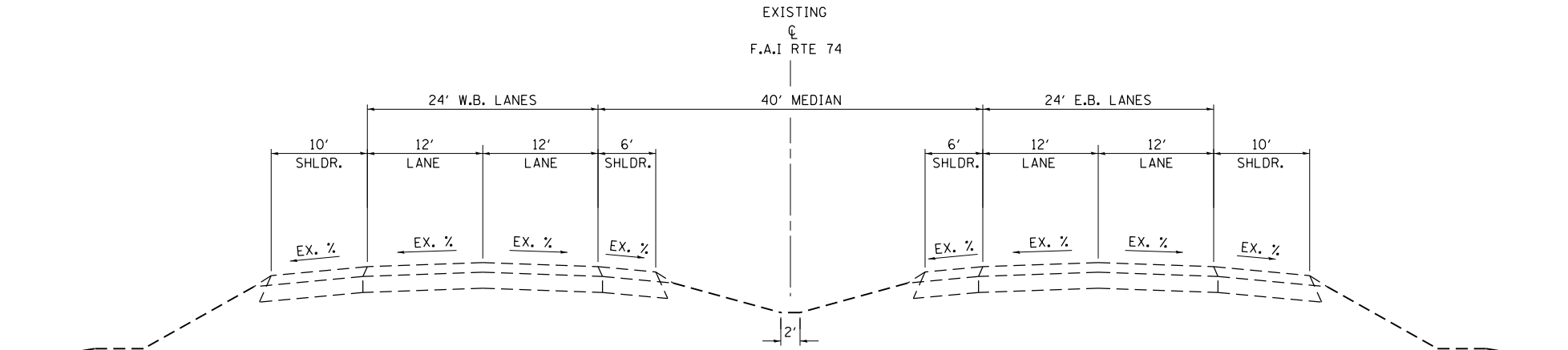
SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |

98

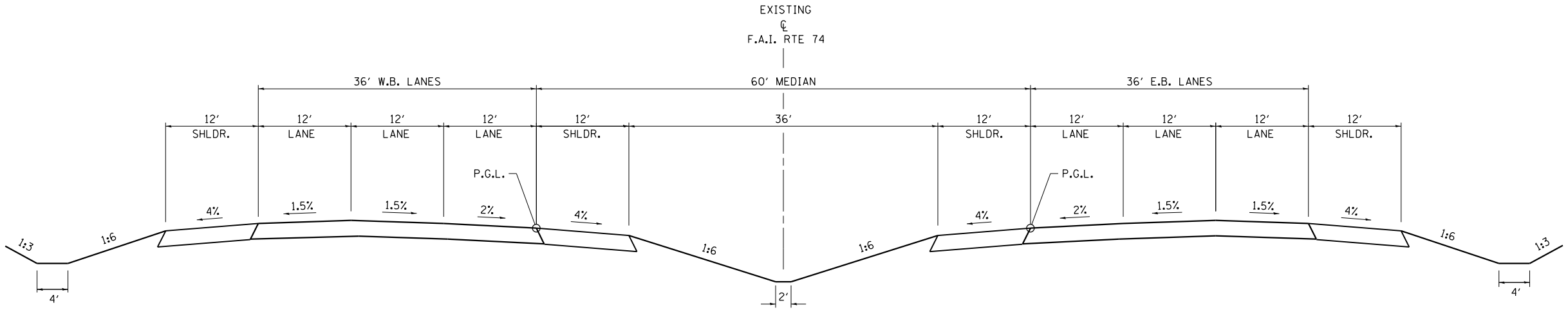
# ATTACHMENT K

Existing and Proposed Roadway Cross Sections



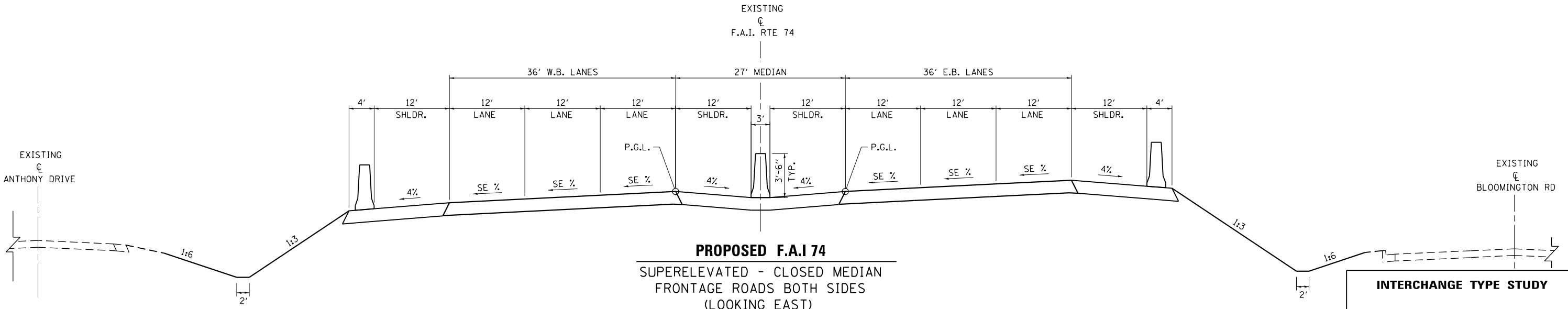

**EXISTING F.A.I 74**

(LOOKING EAST)




**PROPOSED F.A.I 74**

NORMAL CROWN - OPEN MEDIAN
(LOOKING EAST)




**PROPOSED F.A.I 74**

SUPERELEVATED - CLOSED MEDIAN
FRONTAGE ROADS BOTH SIDES
(LOOKING EAST)

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**INTERSTATE 74**

**EXHIBIT 52**



BDE-9808

PLOT DATE = 8/12/2014 - 10:16:06 AM
FILE NAME = L:\IDOT\1106602\Draw\Exhibits\ITS\..
PLOT SCALE = 16.0000 ' / in.
USER NAME = Brad Downen

# ATTACHMENT L

Abbreviated Existing Plans

B.M. #6: Chiseled □ N.E. Corner Sign Base
82' Rt. Sta. 165 + 05 El. 780.44

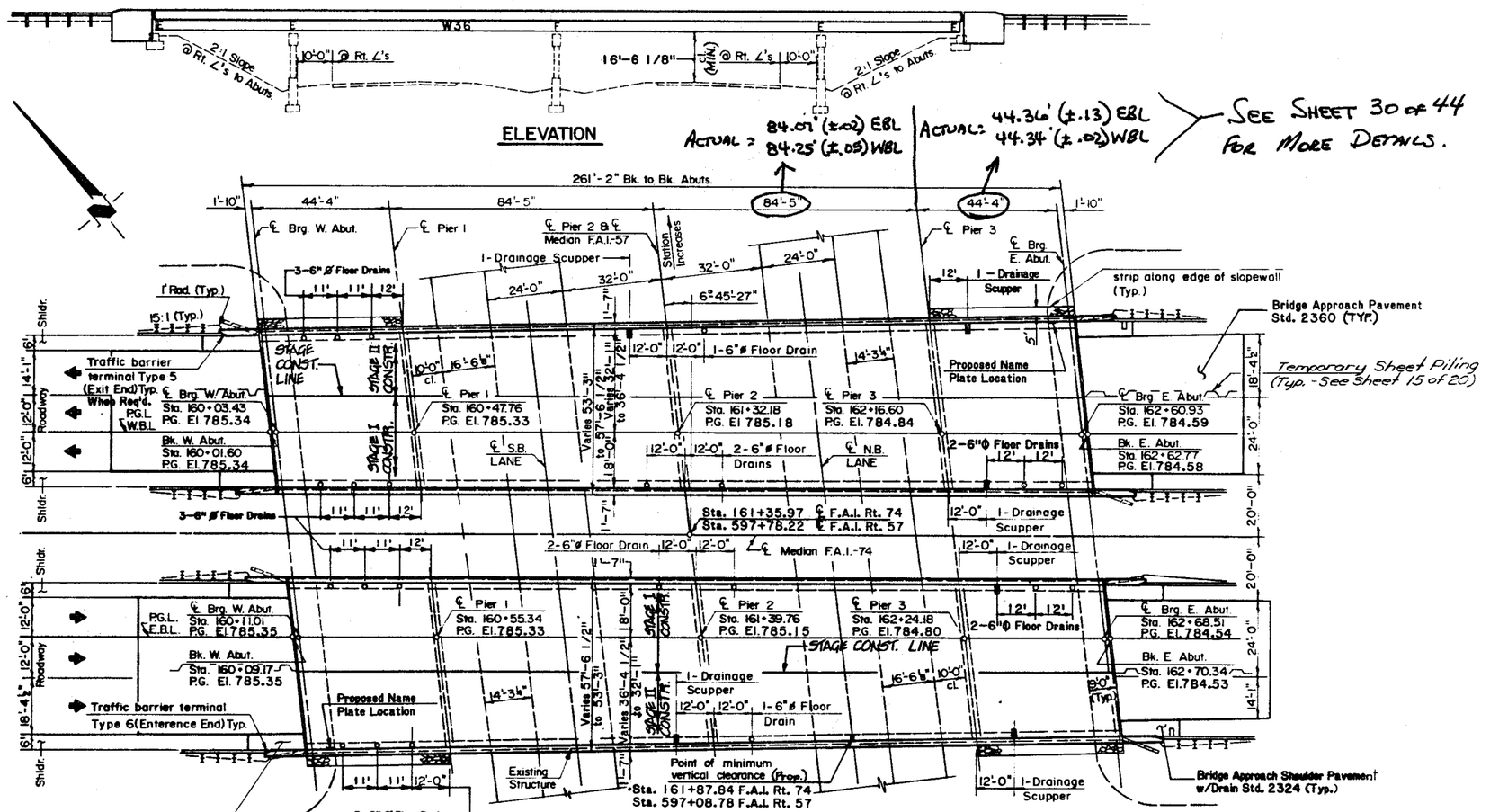
Existing Structure: Structure Nos. 010-0018 E.B. & 010-0019 W.B. Four span continuous bridge, W36 beams & reinforced concrete deck. Concrete open abutments and four column concrete piers on spread footings. Structure length 261'-2" back to back of the abutments. Structure width varies from 48'-4½" to 44'-1" face to face of safety walks.

Remove and Replace Existing Deck, Wingwalls, Structural Steel, and Bearings. The Existing Substructure Will Be Incorporated in the New Work. Construction Shall Be Staged As Shown On Sheet 2 of 20.

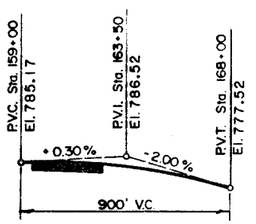
| ROUTE NO | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. 74 | * | CHAMPAIGN | 44 | 21 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT | | |

*110-34HB-1) BR

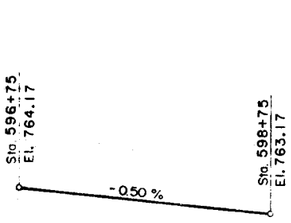
SHEET NO. 1 OF 20 SHEETS




PLAN




PROFILE GRADE
(F.A.I.-74)




PROFILE GRADE
(F.A.I.-57)

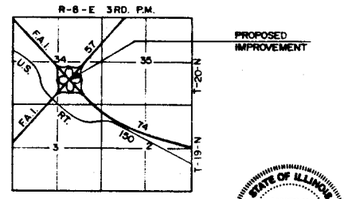
STATION 161+35.97
BUILT 198 BY
STATE OF ILLINOIS
F.A.I. RT. 74 SEC (10-34HB-1)BR
F.A. PROJ. ACIR-74-5(126)
LOADING HS20 & ALT
STR. NO. *

NAME PLATE
* STD. 2113
010-0018 EASTBOUND STRUCTURE
010-0019 WESTBOUND STRUCTURE

DESIGN SPECIFICATIONS
1983 AASHTO and 1984 Thru 1988 Interims

LOADING HS 20-44 AND ALTERNATE
Allow 25#/Sq. Ft. For Future W.S.

DESIGN STRESSES
Load Factor Design (Superstructure)
f'c : 3,500 psi
fy : 60,000 psi (Rebars)
fy : 36,000 psi (M-183)




LOCATION SKETCH

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
James L. Kaufman
Engineer of Bridges & Structures

JAMES K. CLINARD NUMBER 4656 REGISTERED STRUCTURAL ENGINEER STATE OF ILLINOIS
5-5-89

## GENERAL NOTES

1 FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 3/4" ø, OPEN HOLES 13/16" ø, UNLESS OTHERWISE NOTED.

2 CALCULATED WEIGHT OF STRUCTURAL STEEL = 831,300 LBS.

3 THE ZINC-SILICATE AND VINYL PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF STRUCTURAL STEEL EXCEPT WHERE OTHERWISE NOTED.

4 FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS OR GIRDERS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FORTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS FOR SPANS 2 & 3 NOR FOR A DISTANCE EQUAL TO ONE-HALF THE SPAN LENGTH FROM THE PIER SUPPORTS FOR SPANS 1 & 4. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.

5 ANCHOR BOLTS SHALL BE SET BEFORE BOLTING DIAPHRAGMS OVER SUPPORTS.

6 THE MAIN LOAD CARRING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE 'SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2'. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS AND ALL SPLICE PLATE MATERIAL OF THE STEEL GIRDERS.

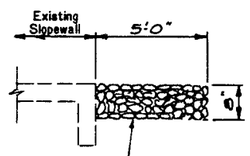
7 REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53 GRADE 60.

8 PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

9 BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8 INCH. ADJUSTMENT SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING THE BEARING. TWO 1/8" ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS. FOR TYPE I ELASTOMERIC BEARINGS, SHIMS OF THE DIMENSIONS OF THE TOP PLATE SHALL BE PROVIDED AND PLACED AS DETAILED.

10 CALCULATED AREA FOR BRIDGE SEAT SEALER 364 SQ. FT.

11 FINISH COAT OF PAINT SHALL BE AS FOLLOWS
EXTERIOR FACE OF EXTERIOR BEAMS : INTERSTATE GREEN 7.5G 4/8
INTERIOR FACE OF EXTERIOR BEAMS AND ALL INTERIOR BEAMS : LIGHT GREY 10Y 7/1




SECTION THRU SLOPEWALL

GENERAL PLAN AND ELEVATION

| REVISIONS | | |
|---|---|---|
| NO. | DATE | REMARKS |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

F.A.I. 74 SEC. (10-34HB-1)BR
CHAMPAIGN S.N. 010-0018 S.N. 010-0019 COUNTY

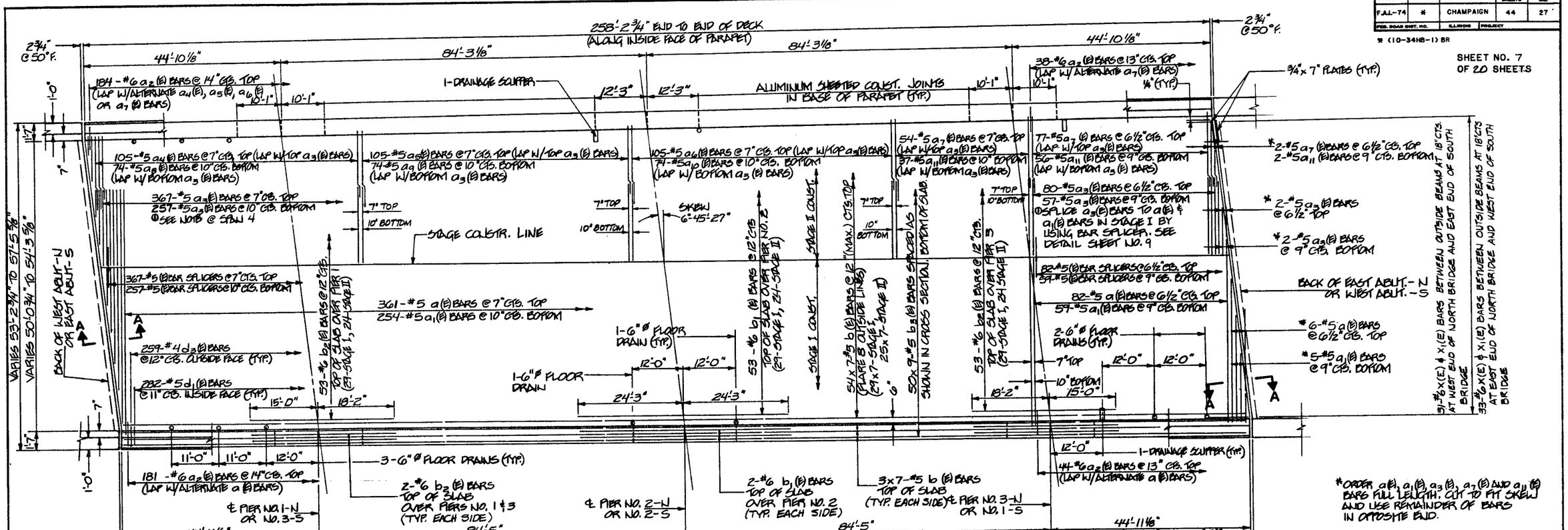
HOMER L. CHASTAIN & ASSOCIATES
CONSULTING ENGINEERS
DECATUR, ILLINOIS

DESIGNED BY RAS 3-89
DRAWN BY JKL 4-89
CHECKED BY
PROJECT NO. 3400-11
QUANTITY NO.

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I.-74 | * | CHAMPAIGN | 44 | 27 |
| FED. ROAD DIST. NO. | ILLINOIS | PROJECT | | |

* (10-34HB-1) BR

SHEET NO. 7 OF 20 SHEETS



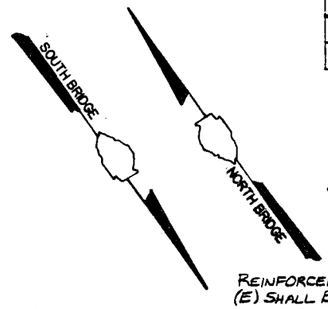

* See Plan Sheet 21 of 44

## PLAN
(NORTH BRIDGE SHOWN)

*ORDER a (E), a1 (E), a3 (E), a7 (E) AND a11 (E) BARS FULL LENGTH. CUT TO FIT SKEW AND USE REMAINDER OF BARS IN OPPOSITE END.

NOTE: CUT b (E), b1 (E), b2 (E) OR b3 (E) BARS TO CLEAR DRAINAGE SCUPPERS.

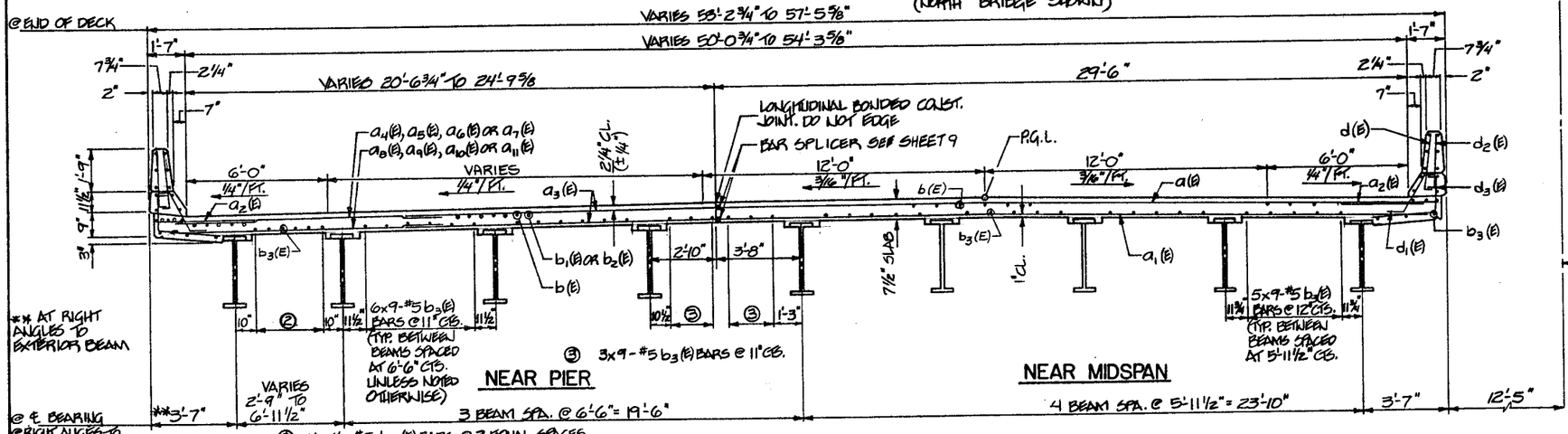
| MINIMUM BAR LAP | |
|---|---|
| Size | Lap |
| #5 | 2'-2" |
| #8 | 4'-7" |




See Sheet 8 For Bill of Material and Section A-A

Reinforcement Bars Designated (E) Shall Be Epoxy Coated

Bars Indicated 5x9 #5 etc. Indicates 5 Lines of Bars With 9 Lengths Per Line.




② 4x4-#5 b3 (E) BARS @ 3 EQUAL SPACES SPANS 1&2 NORTH BRIDGE & SPANS 3&4 SOUTH BRIDGE.
6x5-#5 b3 (E) BARS @ 5 EQUAL SPACES SPANS 3&4 NORTH BRIDGE & SPANS 1&2 SOUTH BRIDGE.

③ 3x9-#5 b3 (E) BARS @ 11" CTS.

6x9-#5 b3 (E) BARS @ 11" CTS. (TYP. BETWEEN BEAMS SPACED AT 6'-6" CTS. UNLESS NOTED OTHERWISE)

5x9-#5 b3 (E) BARS @ 12" CTS. (TYP. BETWEEN BEAMS SPACED AT 5'-11½" CTS.

NEAR PIER

NEAR MIDSPAN

3 BEAM SPA. @ 6'-6" = 19'-6"

4 BEAM SPA. @ 5'-11½" = 23'-10"

## CROSS SECTION

Work This Sheet With Sheets 8 & 9

## SUPERSTRUCTURE DETAILS

| REVISIONS | | |
|---|---|---|
| No. | DATE | INITIALS |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

F.A.I.-74 SEC. (10-34HB-1)BR
CHAMPAIGN S.N. 010-0018 S.N. 010-0019 COUNTY

HOMER L. CHASTAIN & ASSOCIATES
CONSULTING ENGINEERS
DECATUR, ILLINOIS

DRAWN BY RAS DATE 3-89
CHECKED BY JKC DATE 4-89
DESIGN NUMBER
PROJECT NO. 3400-11
SHEET NO.

I-57 STRUCTURE

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

**PADUCAH OFFICE:**
500 South 17th Street, P.O. Box 120
Paducah. Kentucky 42002
Phone: (270) 443-1995
Fax: (270) 443-1904

**MURRAY OFFICE:**
1215 Diuguid Drive
Murray, Kentucky 42071
Phone: (270) 753-7307
Fax: (270) 759-4950

**MARION OFFICE:**
403 North Court Street
Marion, Illinois 62959
Phone: (618) 993-6700
Fax: (618) 993-6717

# Transmittal

**TO:** D. Carl Puzey
Attn: T.A. Craven
Illinois Department of Transportation
Bureau of Bridges and Stuctures
2300 S. Dirksen Parkway
Springfield, IL 62764

Phone: (217)524-4848
Fax:
Email:

**DATE:** 10/17/2014
**RE:** BCR
US 150 over FAI 57
Section (10-34HB)BR
SN 010-0050

**WE ARE FORWARDING THE FOLLOWING:**

☒ ATTACHED
☐ UNDER SEPARATE COVER

| QUANTITY | DESCRIPTION |
|---|---|
| 1 | Electronic copy sent to dot.bbs.planning@illinois.gov for review and approval. File name: *0100050BCR 20140701.pdf* |
| | |
| | |

☐ REVIEWED (AS NOTED ON DWG.)
☐ FURNISH AS CORRECTED
☐ NOT APPROVED
☒ FOR YOUR APPROVAL
☐ AS REQUESTED
☒ FOR YOUR USE

REMARKS:

COPY TO: BFW File #11354
District 5

BY: Brandon W. Poiter, P.E., S.E.

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

# BRIDGE CONDITION REPORT

| | |
|---|---|
| **REGION:** | 3 |
| **DISTRICT:** | 5 |
| **COUNTY:** | Champaign |
| **ROUTE:** | FAP 719 (US 150) |
| **JOB NUMBER:** | P-95-030-11 |
| **STRUCTURE NUMBER:** | 010-0050 |
| **LOCATION:** | US 150 over I-57 |

**PREPARED BY:** Brandon W. Poiter, PE, SE
BFW Engineering & Testing

**DATE INSPECTED:** July 1, 2014

**PROPOSED LETTING DATE:** Unknown

# TABLE OF CONTENTS


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| II. | Physical Description of Structure | 1 |
| III. | Field Inspection & Physical Evaluation | 2-3 |
| IV. | Potential Scope of Work Determination & Analysis | 3 |
| V. | Discussion and Recommended Scope of Work | 3 |

Attachments:

| | | |
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# I. Geographical & Administrative Data

| | |
|---|---|
| **Structure Number:** | 010-0050 |
| **County:** | CHAMPAIGN |
| **Route Carried:** | FAP 719 (US 150) |
| **Feature Crossed:** | FAI 57 |
| **Section:** | (10-34HB)BR |
| **Station:** | 157+29.38 |
| **Roadway Classification:** | Other Principal Arterial |
| **Design/Posted Speed:** | 50 mph/50 mph |
| **ADT (current/design):** | 7,450 (2013)/12,100 (2040) |
| **ADTT (current/design):** | 825 (2013)/1,016 (2040) |
| **DHV:** | 1,040 (2040) |
| **Inventory Rating HS:** | **23.0** |
| **Operating Rating HS:** | **38.3** |
| **Sufficiency Rating:** | **98.0** |

## Construction/Reconstruction/Repair History:

1964 - Original construction under FAI 57, Section 10-34HB
2000 - Superstructure widening and replacement under FAI 57, Section (10-34HB)BR

# II. Physical Description of Structure:

The existing structure was originally constructed in 1964 as a four-span rolled steel beam (W36) structure with open stub abutments on concrete piles and single hammerhead reinforced concrete piers supported on spread footings.

In 2000, the structure was widened from 33'-8" to 42'-7 ¾". The deck was replaced and the existing abutments and piers were widened. The area below the existing pier cap overhangs was filled in during the widening, creating a solid wall straight stem type pier. Two new beam lines, one each side of the bridge, composite in the positive moment regions were added. The beams were painted, raised approximately 2 ½", and steel studs were added in the positive moment regions to make them composite with the new deck.

| | |
|---|---|
| Length: | 258'-6" Back to Back of Abutments |
| Width: | 42'-7 ¾" out to out |
| Span: | 44'-11" / 81'-10" / 83'-3" / 44'-11" |
| Skew: | 0° |
| Wearing Surface: | Bare Deck No Overlay |
| Horizontal Alignment: | Tangent |
| Vertical Alignment: | 1400' crest vertical curve with an entry grade of +2.25% and exit grade of -3.25%. |
| Utilities: | None |

## III. Field Inspection & Physical Evaluation:

The bridge was visually inspected by Bacon, Farmer, Workman Engineering and Testing, Inc. on July 1st , 2014.

**Superstructure:**

**Deck:** The deck is in good condition. Transverse hairline cracks with efflorescence spaced at greater than 5' intervals are present over a majority of the bottom of deck. The parapets on both structures are in good condition. There is no wearing surface on either structure.

**Beams:** The beams are W36 wide flange steel and are in good condition with some rust on the bottom flanges over the traffic lanes and the beam ends with no section loss noted. The paint is in good condition.

**Joint:** The preformed joint seal expansion joints at each abutment are in fair condition. The joint at the west abutment is leaking as evidenced by stains on the front face of the abutment backwall and abutment cap. The joint opening at the east abutment was 2 ¼" and 2 ½" at the west abutment" at a temperature of 85° F.

**Bearings:** The fixed bearings at Pier 2 and elastomeric bearings at each of the other substructure elements are in good condition. The abutment bearings have minor rust mainly on the top plate of the assembly. The bearings appear to functioning properly with no excessive deformation.

**Substructure:**

**Abutments:** The abutments are in satisfactory condition. The backwall at each abutment has a moderate amount of leaching vertical cracks.

**Piers:** The piers are in good condition with no problems noted.

**Slope Protection:** The slopewall at each abutment is in good condition with minor cracks noted. There is a small amount of vegetation growing out of the slopewall construction joints.

**Inspection History (NBIS Ratings).**

| Year | Deck | Superstructure | Substructure |
|---|---|---|---|
| 2013 | 7 | 7 | 7 |
| 2011 | 7 | 7 | 7 |
| 2010 | 7 | 7 | 7 |

**Geometric, Horizontal & Vertical Clearance:**

The face-to-face width of the structure is 39'-4 ½" The location of piers 1 and 3 provides 10' of lateral clearance between the edge of ramp and face of pier. Guardrail is provided to protect the piers 1 and 3 on the approach side. The vertical clearance over I-57 is 16'-3 ¼".

## IV. Potential Scope of Work Determination & Analysis:

This report is being prepared in conjunction with an interchange type study of two alternates for the reconstruction of the existing I-74/I-57 interchange. I-74 will be upgraded to a 6 lane urban section with 12' lanes, a 60' median, and 12' inside and outside shoulders. Alternate 1 is a full direction interchange with flyovers. Alternate 2 is semi-directional with directional flyovers and two loops. It is anticipated that this structure will be replaced to accommodate the proposed ramp geometry along I-57 for the proposed interchange.

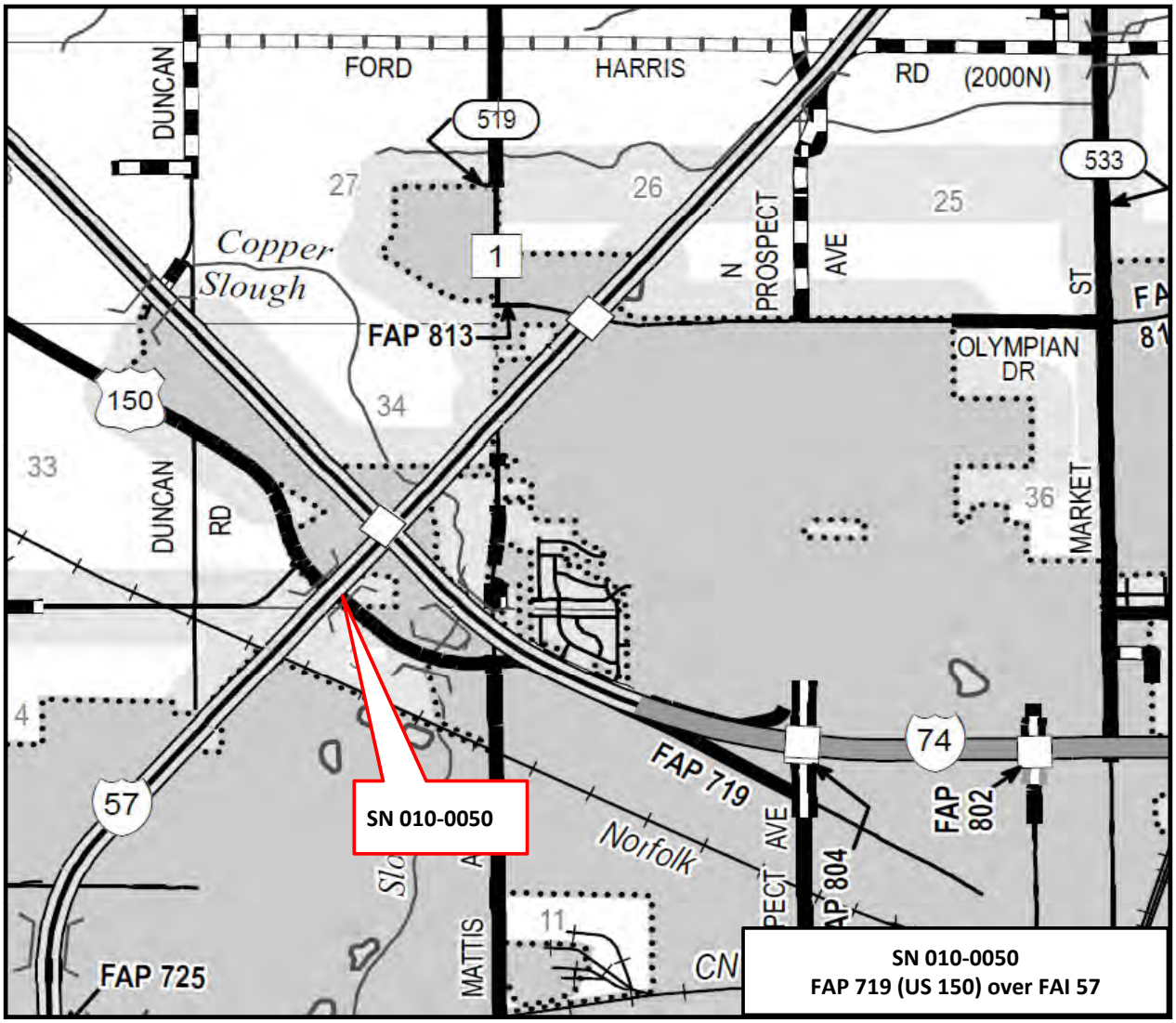
## V. Discussion and Recommended Scope of Work

Based on the Ramp A and Ramp B location for the proposed interchange, the recommended scope of work is to replace the existing structure. At the time this report was prepared, Alternate 2 was the preferred alternate. The proposed structure for Alternate 2 is a two span 70" web plate girder structure, 342' back to back of abutment and a clear width of 40'-0" face to face of F-Shape parapets with a 5' sidewalk and pedestrian fence on the north side of structure for an out to out width of 48'-10" assuming 8" from face of pedestrian fence to the edge of bridge deck.

Replacing the existing bridge can be completed using stage construction. A 14' minimum Stage I traffic lane should be considered to avoid the need for wide load detour.

# **ATTACHMENT A**

Location Map


DUNCAN
FORD
HARRIS
RD (2000N)
519
533
27
26
25
Copper Slough
1
N PROSPECT AVE
ST
FAP 813
OLYMPIAN DR
150
34
33
DUNCAN RD
36
MARKET
4
74
FAP 719
57
SN 010-0050
Norfolk
FAP 802
AP 804
11
MATTIS
CN
FAP 725
N
SN 010-0050
FAP 719 (US 150) over FAI 57

# **ATTACHMENT B**

IDOT Master Structure Report

# Illinois Department of Transportation
# Structures Information Management System
# Structure Summary Report



**Structure Number:** 010-0050 **District:** 5

## Inventory Data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Facility Carried:** | FAP 719 (US 150) | **Bridge Name:** | | **Sufficiency Rating:** | 98.0 | **Structure Length:** | 258.5 |
| **Feature Crossed:** | I-57 | **Location:** | NW OF CHAMPAIGN | **HBP Eligible:** | No | **AASHTO Bridge Length:** | 99.9 |
| **Bridge Remarks:** | (02105) | | | **Replaced By:** | - | **Length of Long Span:** | 83.2 |
| **Bridge Status:** | 1 OPEN - NO RESTRICT | **Status Date:** | 04/1988 | **Replaces:** | - | **Bridge Roadway Width:** | 39.4 |
| **Status Remarks:** | | | | **Last Update Date:** | 11/13/2013 | **Appr Roadway Width:** | 40.6 |
| **Maint County:** | 010 CHAMPAIGN | **Maint Township:** | 12 HENSLEY | **Parallel Structure:** | None | **Deck Width:** | 42.6 |
| **Maint Responsibility:** | 01 I.D.O.T. | | | **Multi-Level Structure Nbr:** | | **Sidewalk Width Right:** | 0.0 |
| **Service On/Under:** | 1 HIGHWAY | 1 / HIGHWAY | | **Skew Direction:** | N None | **Sidewalk Width Left:** | 0.0 |
| **Reporting Agency:** | 1 I.D.O.T. - BUREAU OF MAINTENANCE | | | **Skew Angle:** | D | **Navigation Control:** | N N/A |
| **Main Span Matl/Type:** | 4 STEEL CONTINUOUS | / | 02 STRINGER/MULTI-BEAM/GIRDER | **Structure Flared:** | No | **Navigation Horiz Clear:** | 0 |
| **Nbr Of Main Spans:** | 4 **Nbr Of Approach Spans:** 0 | | | **Historical Significance:** | No | **Navigation Vert Clear:** | 0 |
| *****Approaches***** | | | | **Border Bridge State:** | | **Culvert Fill Depth:** | 0.0 |
| **Near #1 Matl/Type:** | / | | | **Bdr State SN:** | | **Number Culvert Cells:** | 0 |
| **Near #2 Matl/Type:** | / | | | **Bdr State % Responsibility:** | 0 | **Culvert Opening Area:** | 0.0 |
| **Far #1 Matl/Type:** | / | | | **Structural Steel Wt** | 253800 | **Culvert Cell Height:** | 0.00 |
| **Far #2 Matl/Type:** | / | | | **Substructure Material:** | 55 | **Culvert Cell Width:** | 0.00 |
| **Median Width/Type:** | 0 Ft. / 0 None | | | **Rated By:** 2 IDOT | | **Rate Method:** 6 | |
| **Guardrail Type L/R:** | 0None / 0 None | | | **Inventory Rating:** | 1.150(41) | **Load Rating Date:** | 10/07/2009 | **Railroad Crossing Info** |
| **Toll Facility Indicator:** | 0 No Toll | | | **Operating Rating:** | 1.915(68) | **Crossing 1 Nbr:** | |
| **Latitude:** | 40.14291984 **S** | **Longitude:** | 88.28731497 **S** | **Design Load:** 02 | HS20 | **Crossing 1 Nbr:** | |
| **Deck Structure Type:** | A CIP CON NRMLLY FORM | | | **Deck Structure Thickness:** | 7.7 **SD:** N **FO:** N | **RR Lateral Underclear:** | 0.0 |
| **Sidewalks Under Structure:** | 0 None | | | | | **RR Vertical Underclear:** 0 **Ft** 0 **In** | |

## Key Route On Data

| | | | |
|---|---|---|---|
| **Key Route Nbr:** | FEDERAL-AID PRIMARY 0719 | **Station:** | 5.2700 |
| **Appurtenances** | Main Route 00000 | **Segment:** | |
| **Inventory County:** | 010 CHAMPAIGN | **Linked:** | Y |
| **Township/Road Dist** | 54 CHAMPAIGN CITY | **Natl. Hwy System:** | On NHS |
| **Municipality** | 0990 CHAMPAIGN | **Inventory Direction:** | |
| **Urban Area:** | 0990 0990 | **Curr AADT Yr/Count:** | 2013 / 7450 |
| **Functional Class:** | 3 OTHER PRINCIPAL ARTERIAL | **Est Truck Percentage:** | 9 |
| **** CLEARANCES **** | **South/East** **North/West** | **Number Of Lanes:** | 2 |
| **Max Rdwy Width:** | 39.4 | **One Or Two Way:** | 2 Two-Way |
| **Horizontal:** | 40.6 0.0 | **Bypass Length:** | 0 |
| | | **Future AADT Yr/Cnt:** | 2032 / 9137 |
| | | **Designated Truck Rte:** | CLASS II |
| **Lateral:** | | **Special Systems:** | No |

## Key Route Under Data

| | | | |
|---|---|---|---|
| FEDERAL-AID INTERSTATE 0057 | | **Station:** | 19.2900 |
| Main Route 00000 | | **Segment:** | |
| 010 | | **Linked:** | Y |
| 54 CHAMPAIGN CITY (CHAMPAIGN) | | **Natl. Hwy System:** | On NHS |
| 0990 CHAMPAIGN | | **Inventory Direction:** | |
| 0990 0990 | | **Curr AADT Yr/Count:** | 2013 / 32400 |
| 1 INTERSTATE | | **Est Truck Percentage:** | 22 |
| **South/East** | **North/West** | **Number Of Lanes:** | 4 |
| 80.0 | | **One Or Two Way:** | 2 Two-Way |
| 80.0 | 82.0 | **Bypass Length:** | 0 |
| | | **Future AADT Yr/Cnt:** | 2032 / 37901 |
| | | **Designated Truck Rte:** | CLASS I |
| | | **Special Systems:** | Yes |

## *** Marked Route On Data ***

| | **Designation** | **Kind** | **Number** |
|---|---|---|---|
| **Route #1:** | 1 Mainline | 2 U.S. Highways | 150 |
| **Route #2:** | 1 Mainline | | |
| **Route #3:** | 1 Mainline | | |

## *** Marked Route Under Data ***

| | **Designation** | **Kind** | **Number** |
|---|---|---|---|
| | 1 Mainline | 1 Interstate Highway | 057 |
| | 1 Mainline | | |
| | 1 Mainline | | |

**Structure Number:** 010-0050 **District:** 5

## Data Related to Inspection Information

| *** Inspection Intervals *** | | | | *** Maximum Allowable Posting Limits *** | | | | Bridge Posting Level: | |
|---|---|---|---|---|---|---|---|---|---|
| **Routine NBIS:** | 24 MOS | **Underwater:** | 0 MOS | **One Truck At A Time:** | 0 | **Combination Type 3S-1:** | Tons | 5 | No Posting Required |
| | | **Special:** | N | **Single Unit Vehicles:** | Tons | **Combination Type 3S-2** | Tons | | |

## Inspection/Appraisal Information

**Inspection Date:** 10/22/2013 **Inspection Temperature:** 45Deg. F

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Deck:** | 7 | GOOD CONDITION - SOME MINOR PROBLEMS | | | | | | **Single Unit Vehicles:** | Tons |
| **Superstructure:** | 7 | GOOD CONDITION - SOME MINOR PROBLEMS | | | | | | **Combination Type 3S-1:** | Tons |
| **Substructure:** | 7 | GOOD CONDITION - SOME MINOR PROBLEMS | | | | | | **Combination Type 3S-2:** | Tons |
| **Culvert:** | N | NOT APPLICABLE | | | | | | **One Truck At A Time:** | 0 |
| **Channel and Protection:** | N | NOT APPLICABLE | | **Deck Wearing Surf:** | A | BARE DECK NO OVRLAY | | **Last Paint Type:** | FS |
| **Structural Evaluation:** | 7 | BETTER THAN PRESENT MINIMUM CRITERIA | | **Deck Membrane:** | F | NONE | | LD FLD GRN&AL FNL | |
| **Deck Geometry:** | 5 | BETTER THAN ADEQUATE TO BE LEFT IN PLACE | | **Deck Protection:** | A | EPOXY COATED REINF | | | |
| **Underclearance-Vert/Lat.:** | 5 | BETTER THAN ADEQUATE TO BE LEFT IN PLACE | | **Total Deck Thick:** | 7.7 | | | SHP ZINC&FLD ACRYL | |
| **Waterway Adequacy:** | N | NOT APPLICABLE | | **Last Paint Date:** | 10/2000 | | | | |
| **Approach Roadway Align:** | 7 | BETTER THAN PRESENT MINIMUM CRITERIA | | | | | | | |
| **Bridge Railing Appraisal:** | 3 | Meets Standards | | | | | | | |
| **Approach Guardrail:** | 333 | Acceptable | Acceptable | Acceptable | | | | | |
| **Pier Navig Protection:** | N | N/A | | | | | | | |

## Underwater Inspection/Appraisal Information

**Inspection Date:**

**Temperature:** **Inspection Method:**

**Appraisal Rating:**

## Scour Critical Information

**Rating:** **Evaluation Method:**

**Analysis Date:**

## Miscellaneous

**Microfilm Data Recorded:** Yes

## Construction Information

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Year:** | 1964 | Original | | 2000 | Reconstructed | | |
| **Route:** | FAI 57 | | **Sta:** 582+50.00 | FAI 57 | | **Sta:** 4+794.32 | |
| **Section Nbr:** | | 10-34HB | | | (10-34HB)BR | | |
| **Contract Nbr:** | | 22975 | | | 90409 | | |
| **Fed Aid Pr#:** | | I-57-5(24)235 | | | SEE REMARKS | | |
| **Built By:** | 1 | I.D.O.T. | | 1 | I.D.O.T. | | |

# **ATTACHMENT C**

Bridge Inspection Report

Illinois Department of Transportation

# Bridge Inspection Report (MI)

**Structure Number: 010-0050**

| 90 - Insp. Date | 90A - Insp. Team Leader/Qualification | Temp. |
|---|---|---|
| 12/6/2011 | S. Conklin C. Bruscher / | 34° |
| / / | / | |
| / / | / | |
| / / | / | |
| / / | / | |

Maintenance County: CHAMPAIGN
Township: HENSLEY
Municipality: CHAMPAIGN
Facility Carried: FAP 719 (US 150)
Feature Crossed: I-57
Location: NW OF CHAMPAIGN
Material/Type: STEEL CONTINUOUS/STRINGER/MULTI-BEAM/G
Bridge Inspection Year: 2011
Nbr of Spans: 4 Team Sect./Sub-Sect: 544 - 570

| | Appraisals | Comments (All comments must be dated.) |
|---|---|---|
| **Deck** | | |
| **58 - Deck Condition:** | 7 | Trans. Cracks in Surface & Soffit (1) |
| Wearing Surface: | 3 | |
| Parapets / Bridge Railings: | 3 | Vertical Cracks (1) |
| Curbs: | N | |
| Median: | N | |
| Sidewalks: | N | |
| Drain System: | 3 | |
| Light Standards: | N | |
| Expansion Joints: | 4 | Openings (In.): Silicone in Steel (1) |
| **Superstructure** | | |
| **59 - Superstructure Cond:** | 7 | |
| Bearing Devices: | 4 | |
| Girders / Beams / Stringers: | 3 | Rusty Bottom Flanges (1) |
| Diaphragms / Braces: | 3 | |
| Trusses / Portals / Bracing: | N | |
| Rivets / Bolts: | 3 | |
| Paint: | 3 | |
| **Substructure** | | |
| **60 - Substructure Cond:** | 7 | |
| Abutments: Stem / Columns / Piles: | 3 | |
| Abutments: Caps: | 3 | |
| Abutments: Bearing Seats: | 3 | |
| Abutments: Backwalls: | 3 | |
| Abutments: Wingwalls: | 3 | |
| Piers: Stem / Columns / Piles: | 4 | |
| Piers: Caps: | 4 | |
| Piers: Bearing Seats: | 4 | |
| Piers: Crash Walls: | N | |
| Fender Systems: | N | |
| Paint: | N | |

Bridge Inspection Year: 11

| | Appraisals | Comments (All comments must be dated.) |
|---|---|---|
| **Culvert** | | |
| **62 - Culvert Condition:** | N | |
| Top Slab / Soffit: | | |
| Side Walls / Arch: | | |
| Bottom: | | |
| Headwalls: | | |
| Wingwalls: | | |
| **Waterway and Channel** | | |
| **61 - Channel Condition:** | N | |
| Streambed: | | |
| Slope Walls & Rip-Rap: | | |
| Stream Banks: | | |
| Spur Dykes & Jetties | | |
| **71 - Waterway Adequacy:** | N | |
| **Approach Roadway** | | |
| **72 - Appr. Rdwy Alignment:** | 7 | |
| Riding Quality: | 3 | |
| Structural Condition: | 3 | |
| Relief Joints: | - | |
| **Navigable Waterways** | | |
| **111 - Pier Navig. Protect'n:** | N | |

**Inspection Remarks**

| Year | Item 90B - Inspection Remarks (237 characters maximum.) |
|---|---|
| 20 | |
| 20 | |
| 20 | |
| 20 | |
| 20 | |

## Additional Inspection Data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 36A – Bridge Railing Adequacy: | | | Rail Types: | | | | |
| Approach Guardrail Adequacy: 36B – Transitions: | | | 36C – Guardrail: | | | 36D – Ends: | |

| | | | | | |
|---|---|---|---|---|---|
| 108A – Wearing Surface Type: | 7 | | 108B – Type of Membrane: | 0 | | 108C – Deck Protection: | 0 | |
| 108D – Total Deck Thickness (In.): | 07.7 | | | | | | | |

| | | |
|---|---|---|
| 59A – Paint Date (Mo/Yr): | 10/2000 | / |
| 59B – Paint Systems: | FS | |

Color: Fascia – _____; Inter. – _____; Railing – _____.

| | | |
|---|---|---|
| 59C – Utilities Attached: | NNN | |

## Weight Limit Posting

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 70A2 – Single Units: | | T. | Comb. Veh: 70B2 – 3 or 4 Axle: | | T. | 70C2 – 5 or More Axle: | | T. |
| 70D2 – One Truck at a Time: | | | | | | | | |

**Inspection Resource Needs**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Time to Inspect (H:M):** | | 00:30 | **Traffic Control:** | | | | | | | | |
| **Equipment:** | **Boat –** | | **Waders –** | | | **Snooper –** | | | **Manlift –** | | |
| | **Ladder – Short** | | **Medium** | | | **Tall** | | | **Other –** | | |

93C – Special Inspection Date: / / / / / / / / / /

## Signature Block

| | Signature | Date | Unit Supervisor Init. & Date |
|---|---|---|---|
| Inspection Team Leader | Shannon D. Combs | 12-6-11 | 12/9/11 |
| | | | |
| | | | |
| | | | |
| | | | |

Additional Comments:

(Continue comments on page 4)

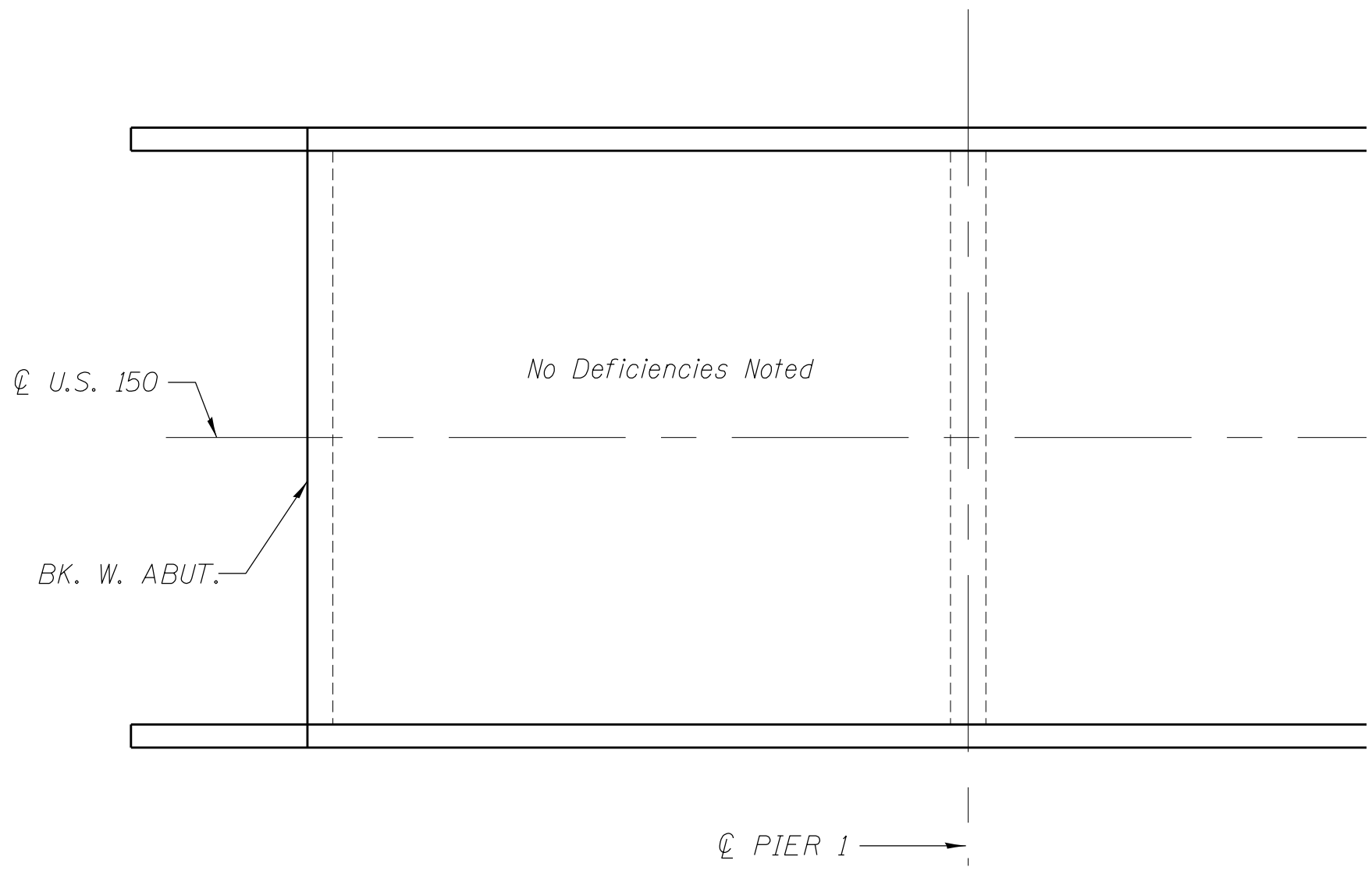
# **ATTACHMENT D**

Top and Bottom of Deck Condition Survey

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

100

U.S. ROUTE 150
OVER I-57

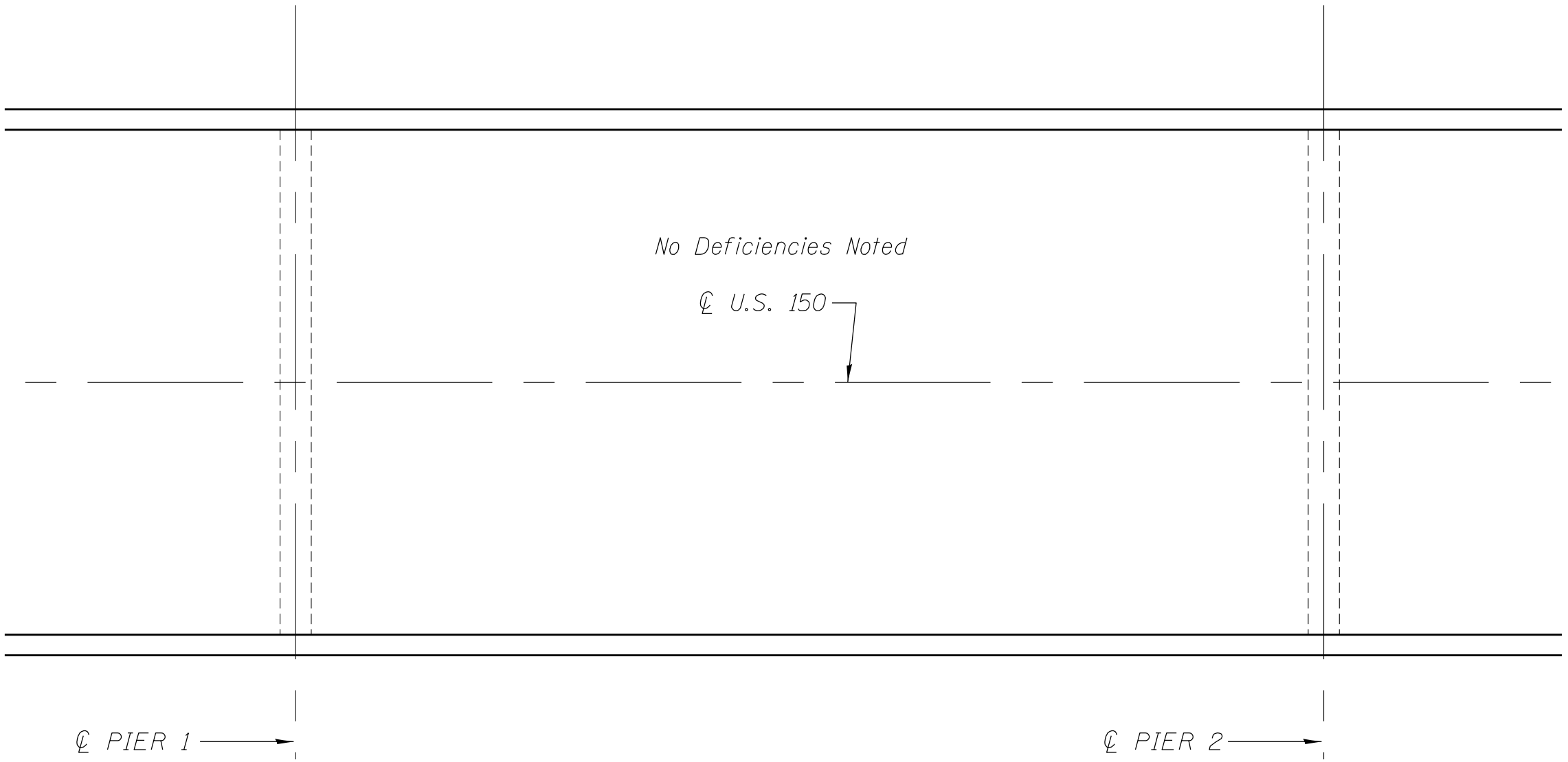
# TOP OF DECK CONDITION SURVEY, SPAN 1

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

100

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

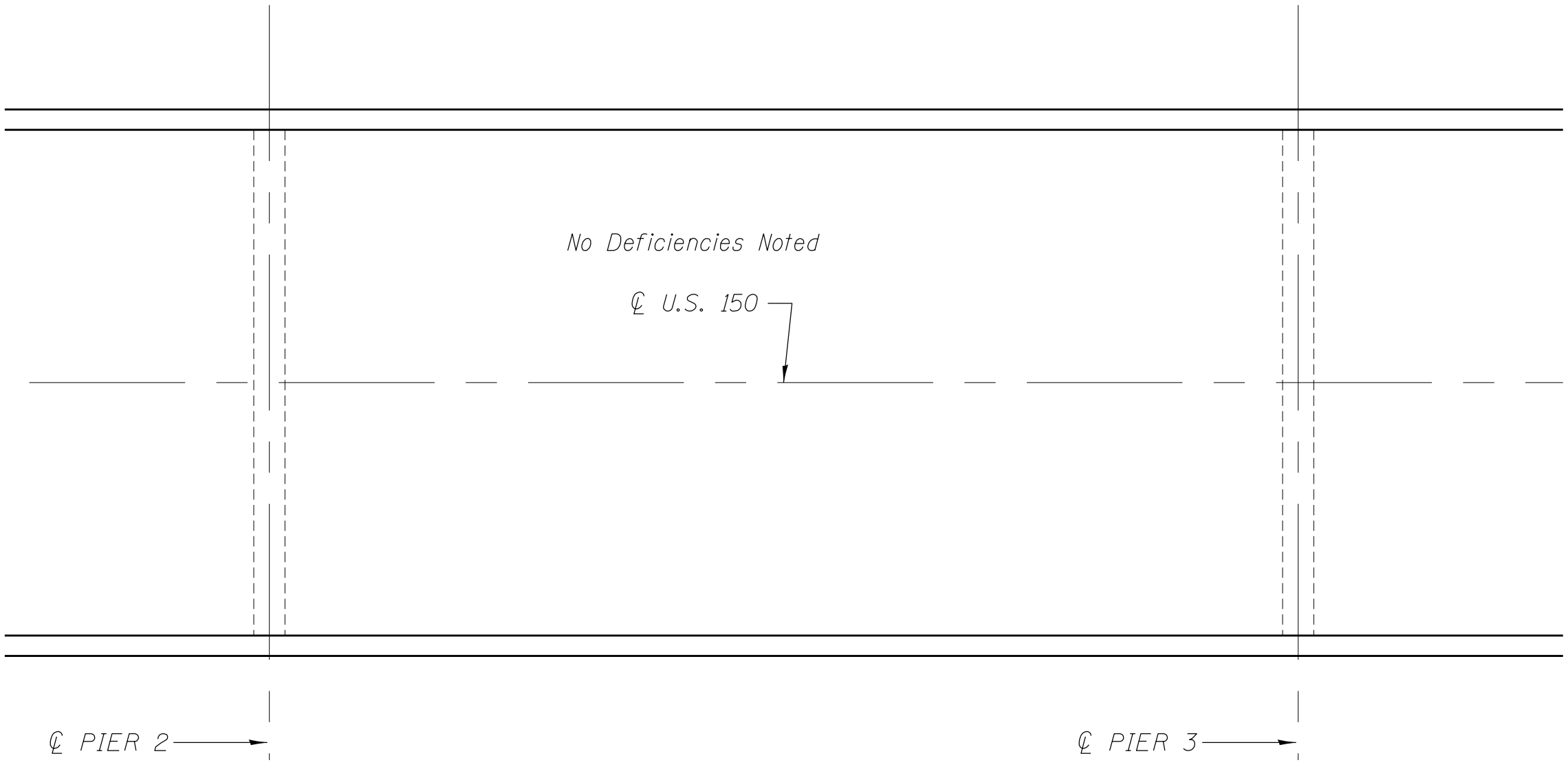
U.S. ROUTE 150
OVER I-57

# TOP OF DECK CONDITION SURVEY, SPAN 2

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

100

U.S. ROUTE 150
OVER I-57

# TOP OF DECK CONDITION SURVEY, SPAN 3

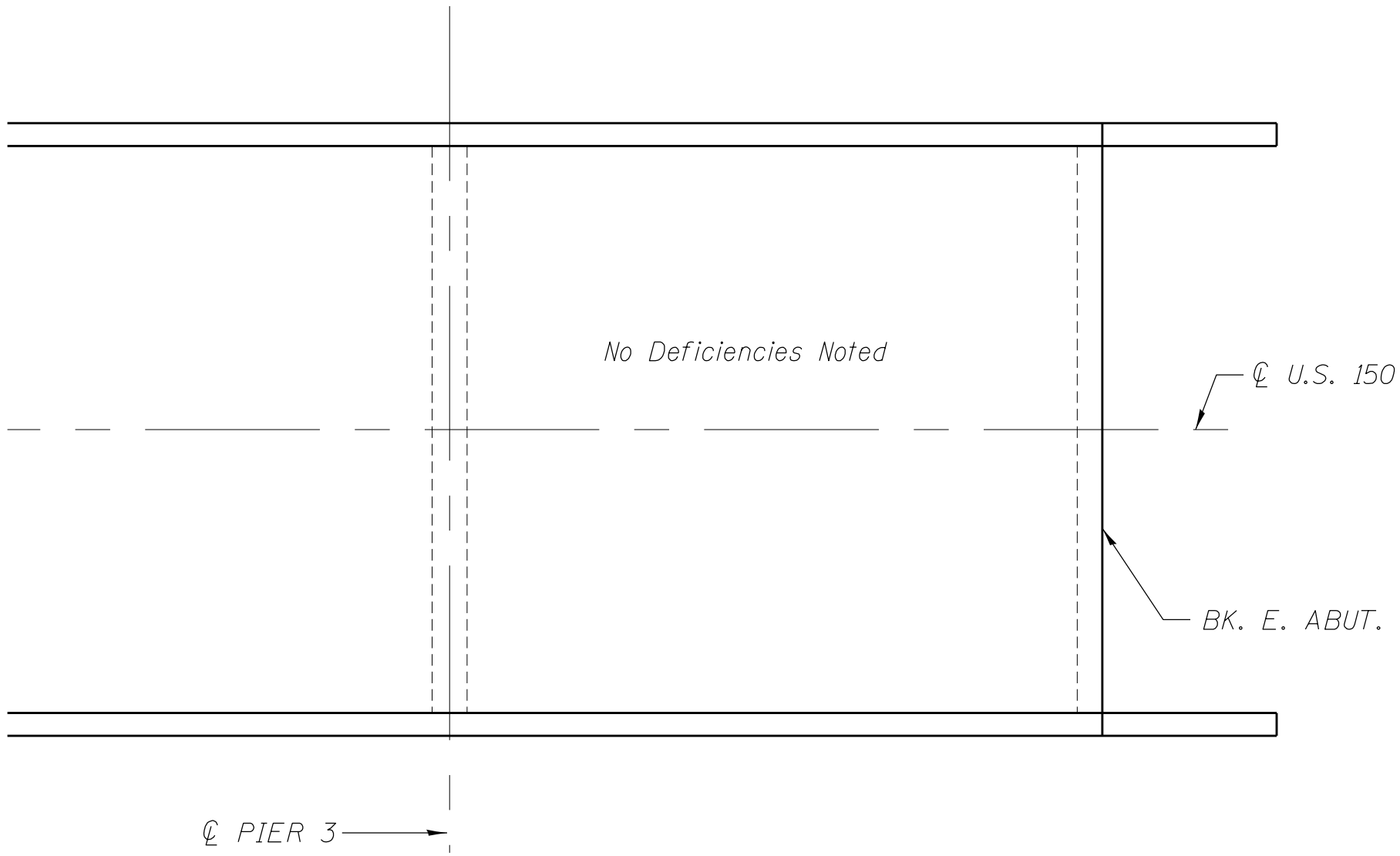
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

16

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

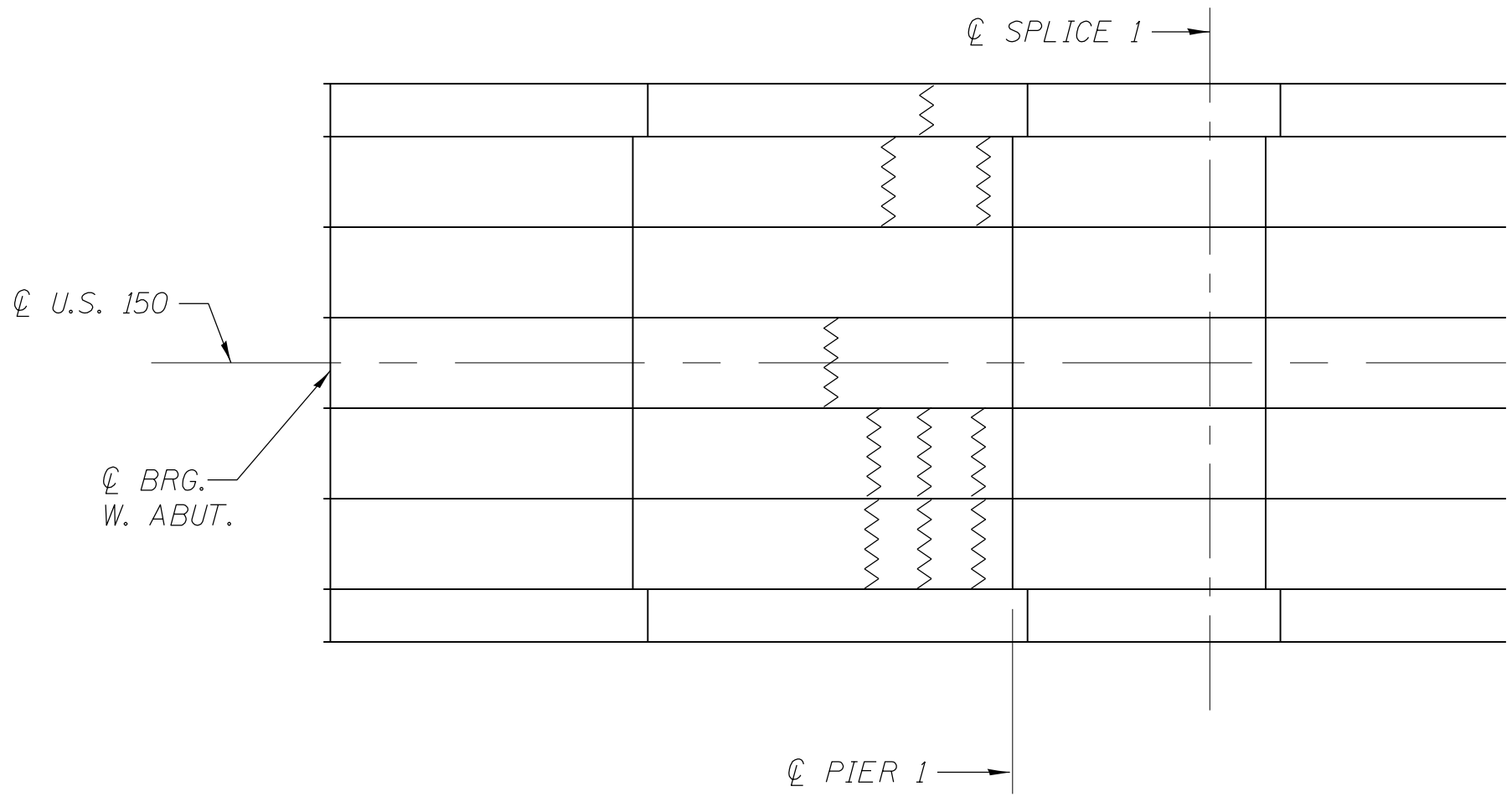
100

N

U.S. ROUTE 150
OVER I-57

# TOP OF DECK CONDITION SURVEY, SPAN 4

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



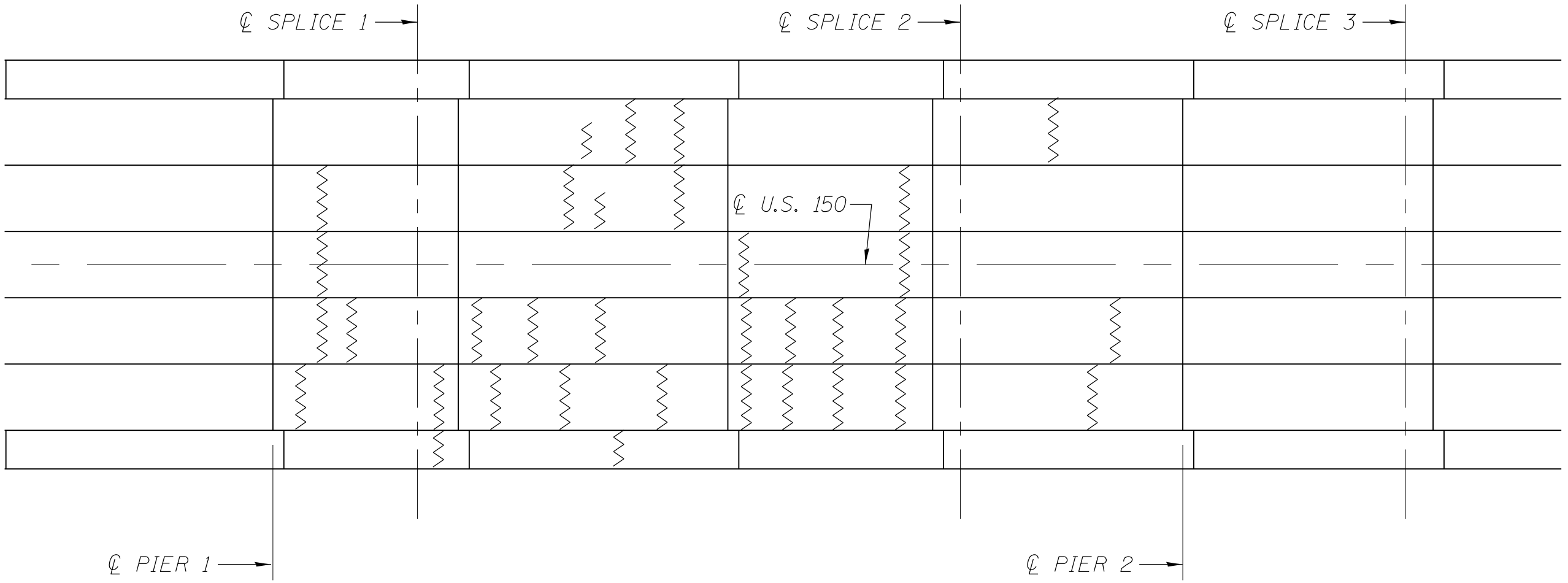

N

LEGEND

Cracking

U.S. ROUTE 150
OVER I-57

# BOTTOM OF DECK CONDITION SURVEY, SPAN 1



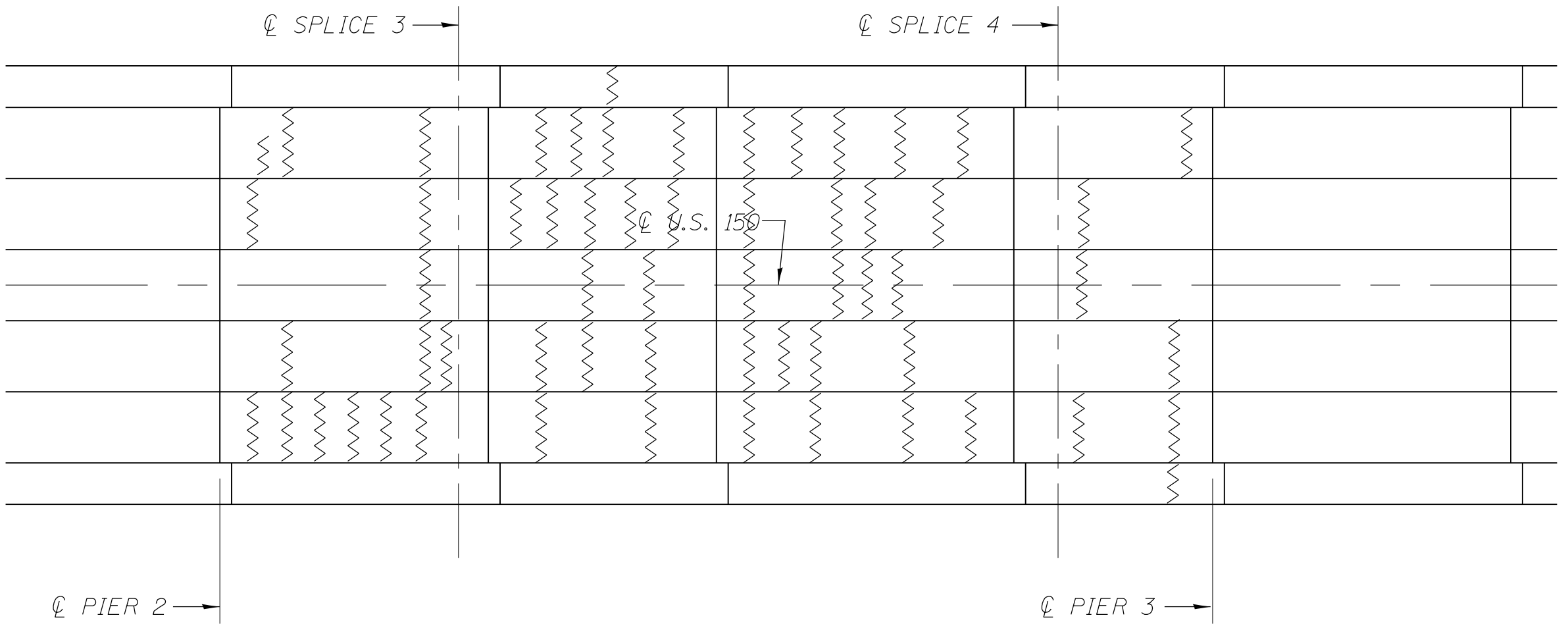

N

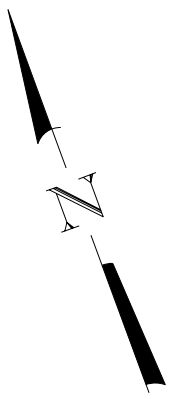
LEGEND

Cracking

U.S. ROUTE 150
OVER I-57

# BOTTOM OF DECK CONDITION SURVEY, SPAN 2



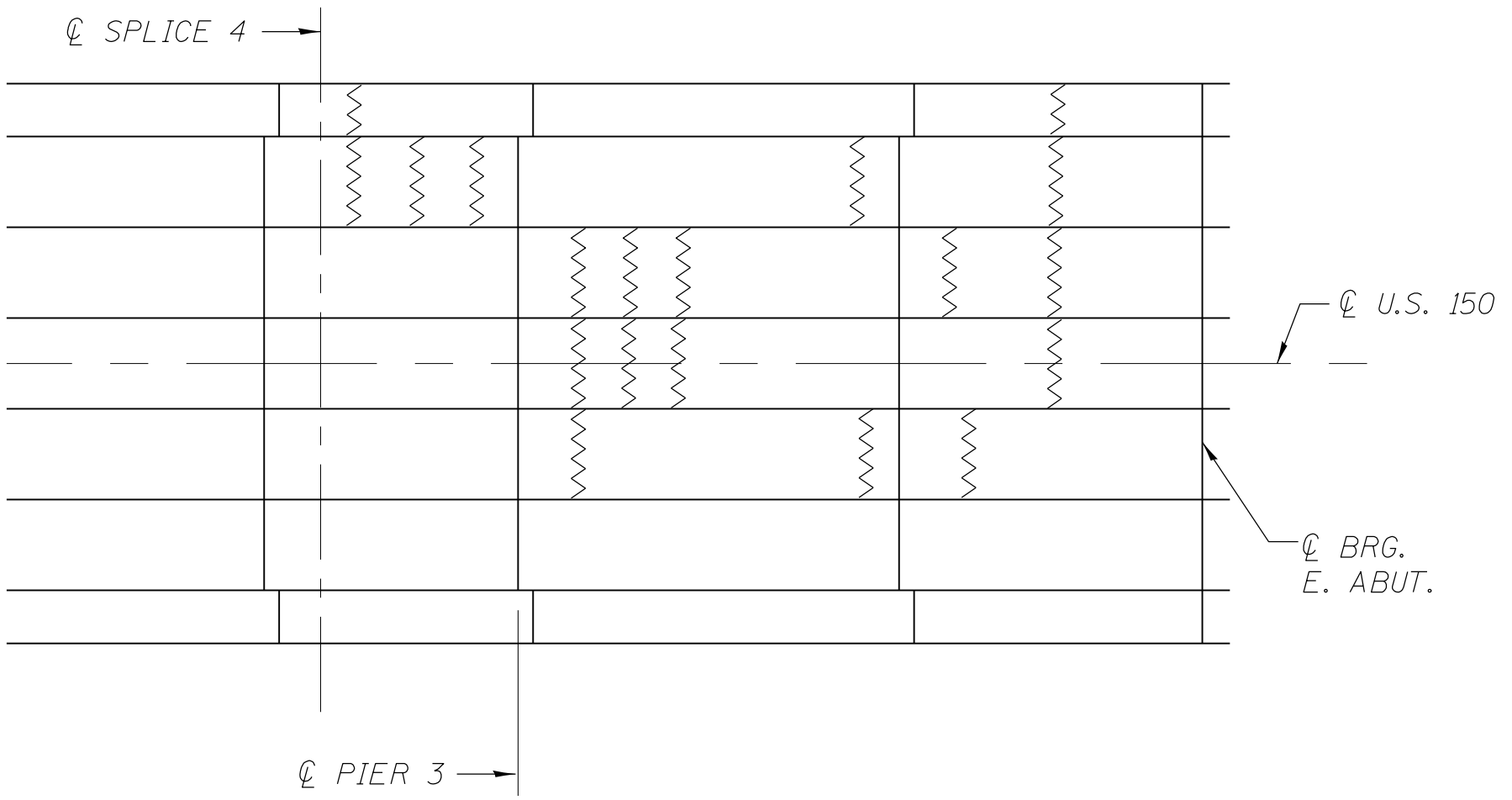




LEGEND

Cracking

U.S. ROUTE 150
OVER I-57

# BOTTOM OF DECK CONDITION SURVEY, SPAN 3




N

LEGEND

Cracking

U.S. ROUTE 150
OVER I-57

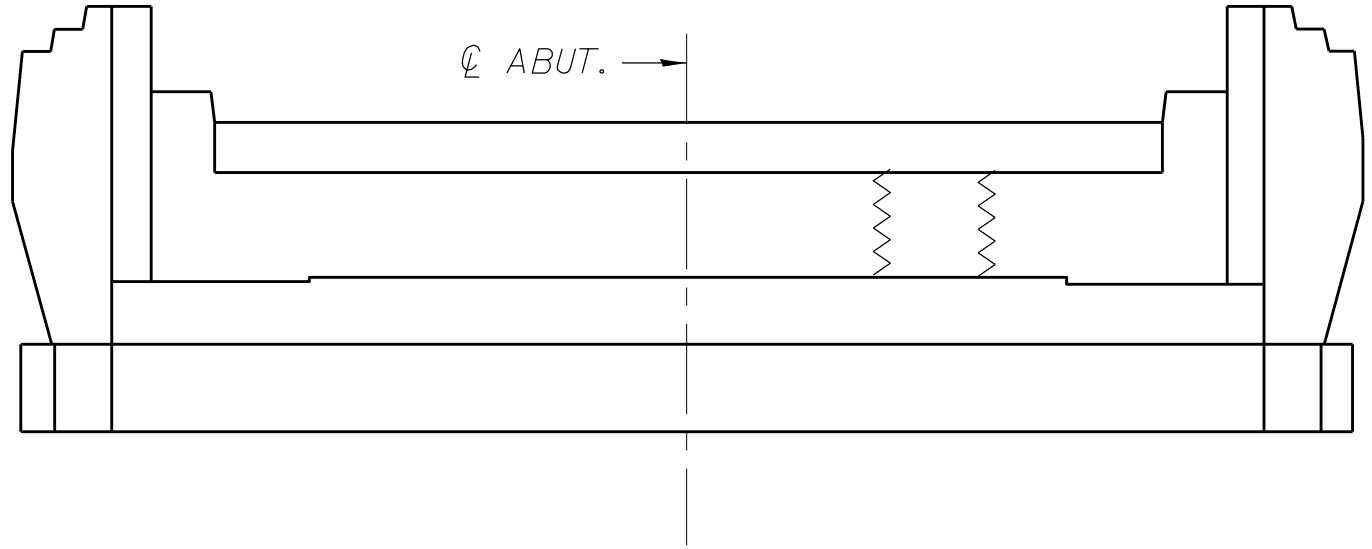
# BOTTOM OF DECK CONDITION SURVEY, SPAN 4

# **ATTACHMENT E**

Substructure Condition Surveys

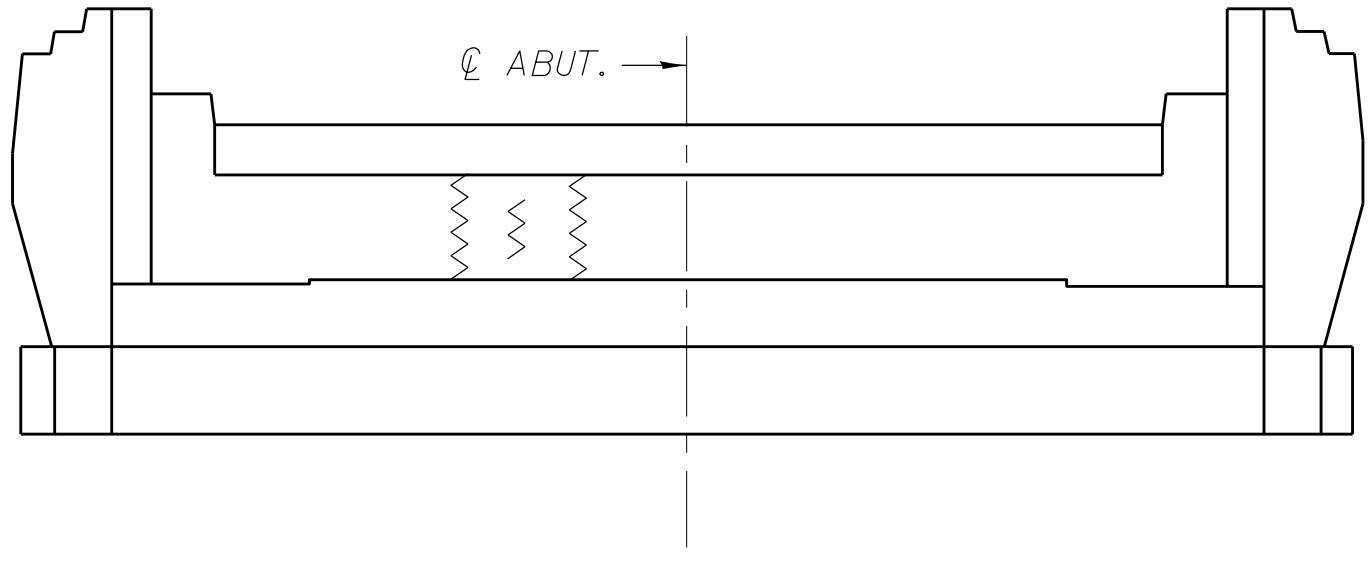
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105




100

WEST ABUTMENT




105

EAST ABUTMENT

LEGEND

Cracking

100

U.S. ROUTE 150
OVER I-57

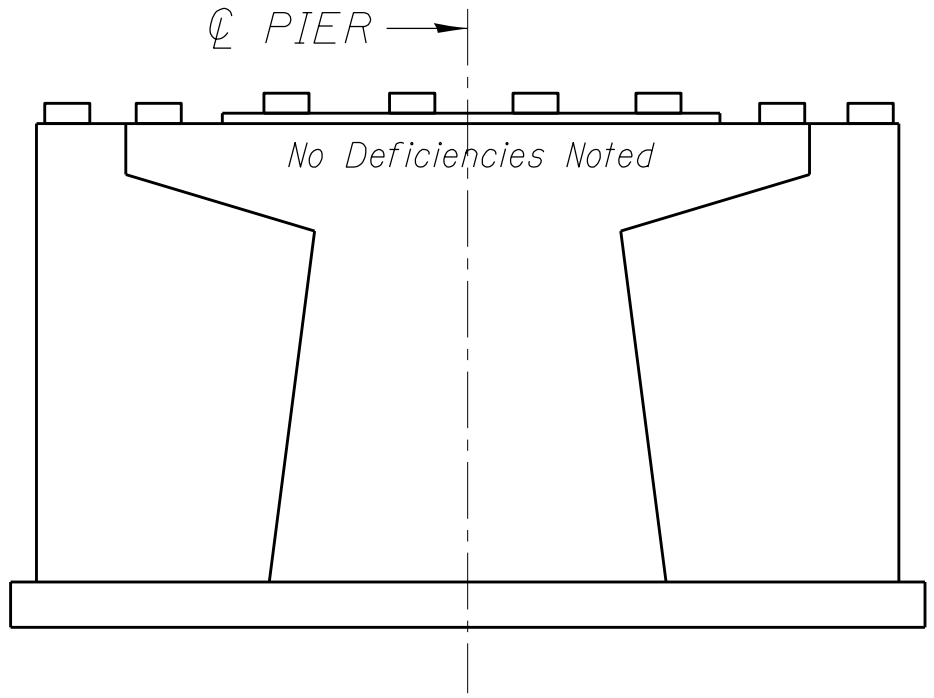
ABUTMENT CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

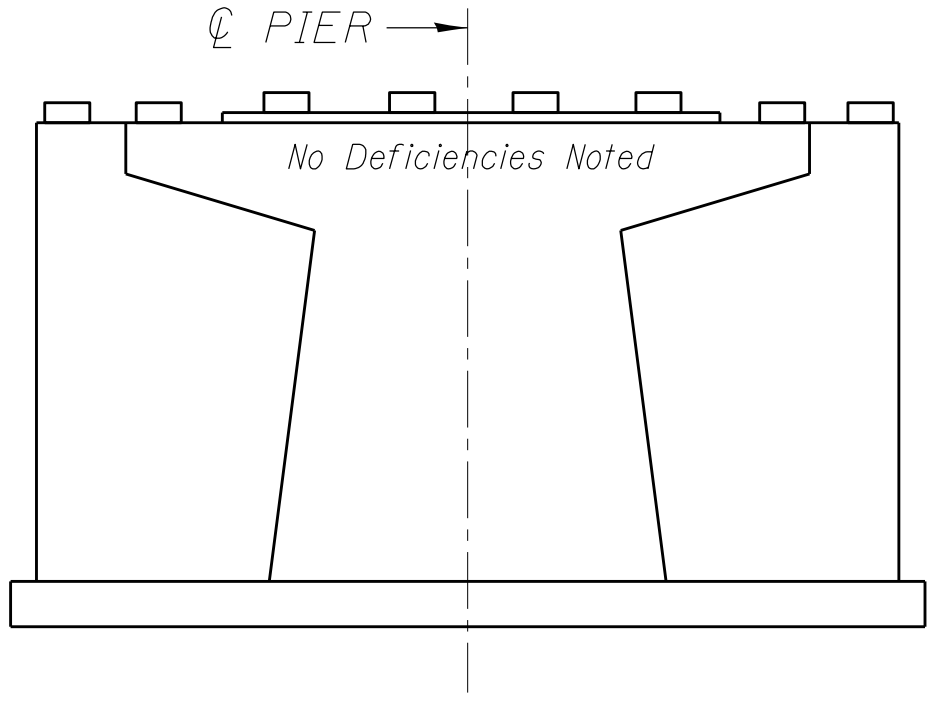
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




PIER 1
(LOOKING EAST)




PIER 1
(LOOKING WEST)

U.S. ROUTE 150
OVER I-57

# PIER CONDITION SURVEY

105

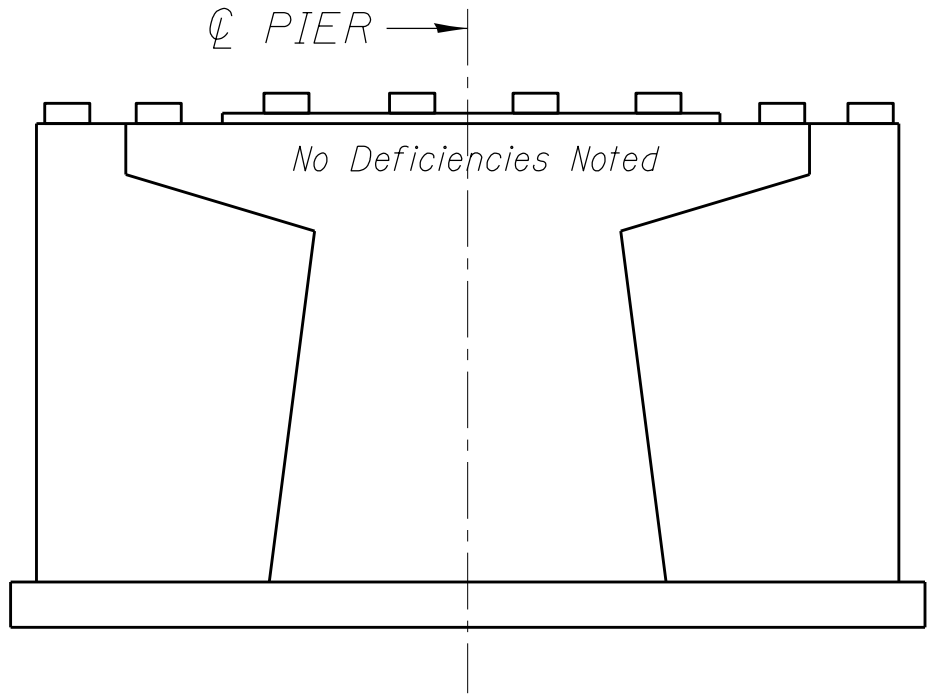
100

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

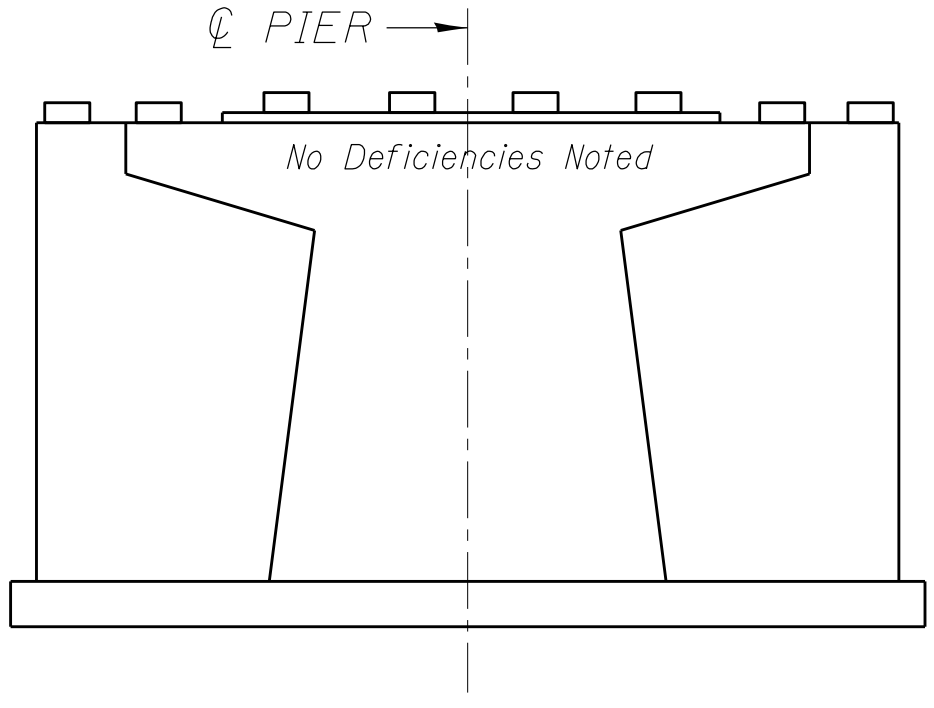
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




PIER 2
(LOOKING EAST)




PIER 2
(LOOKING WEST)

# PIER CONDITION SURVEY

U.S. ROUTE 150
OVER I-57

105

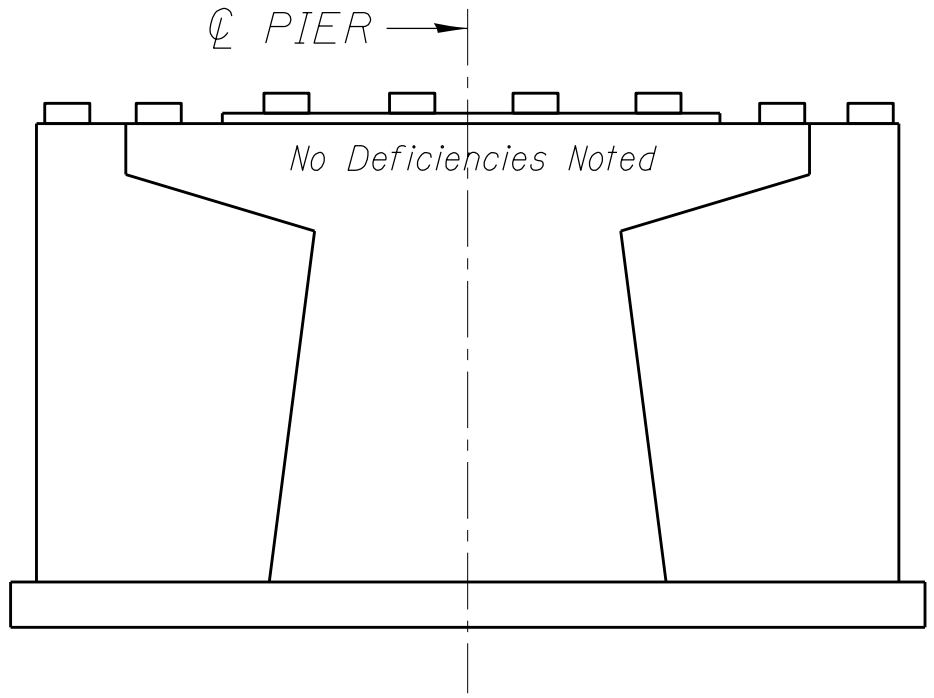
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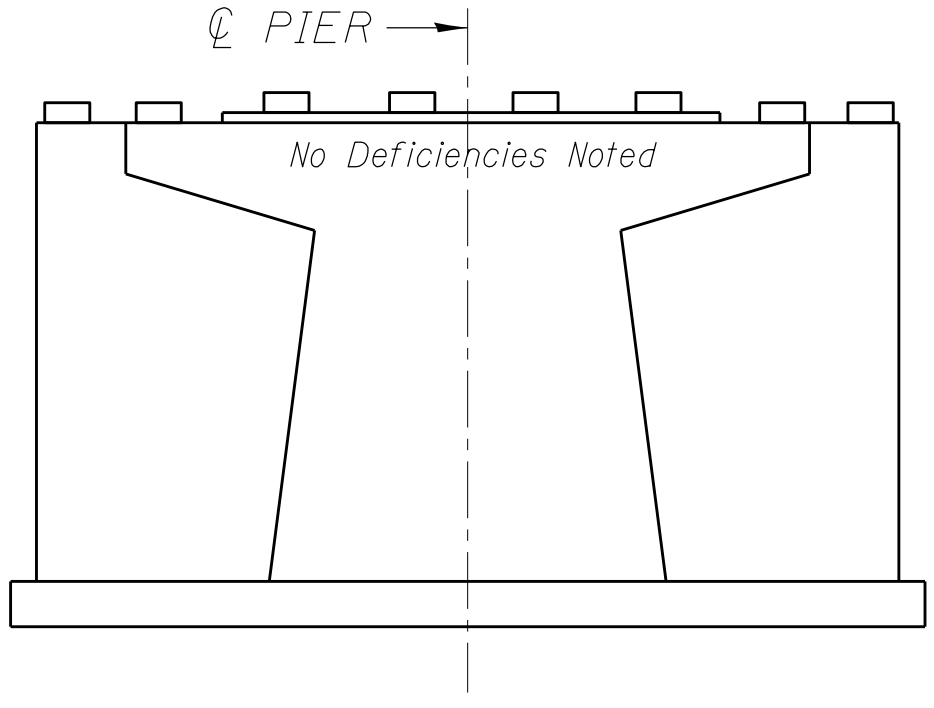
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




PIER 3
(LOOKING EAST)




105

PIER 3
(LOOKING WEST)

100

U.S. ROUTE 150
OVER I-57

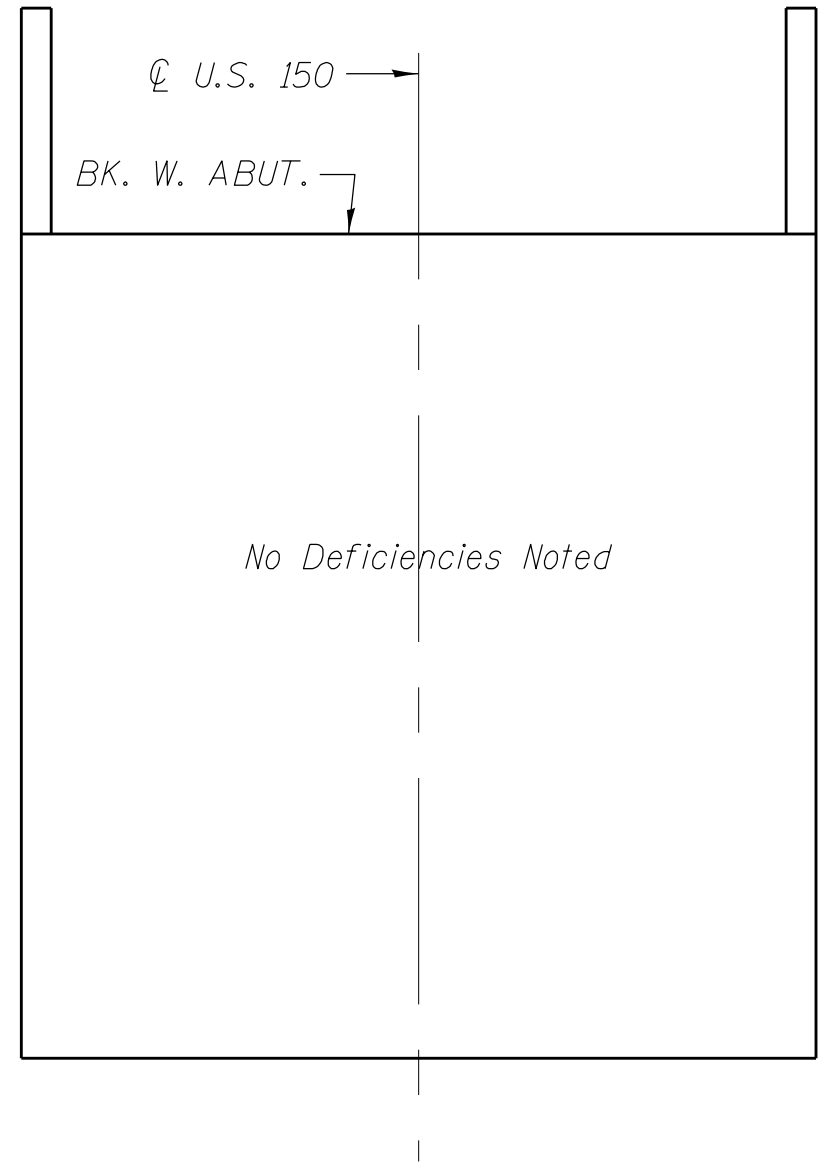
# PIER CONDITION SURVEY

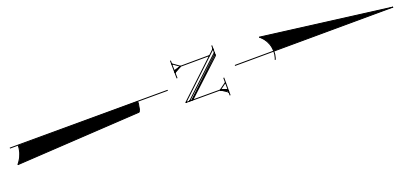
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

100

# WEST SLOPEWALL

U.S. ROUTE 150
OVER I-57

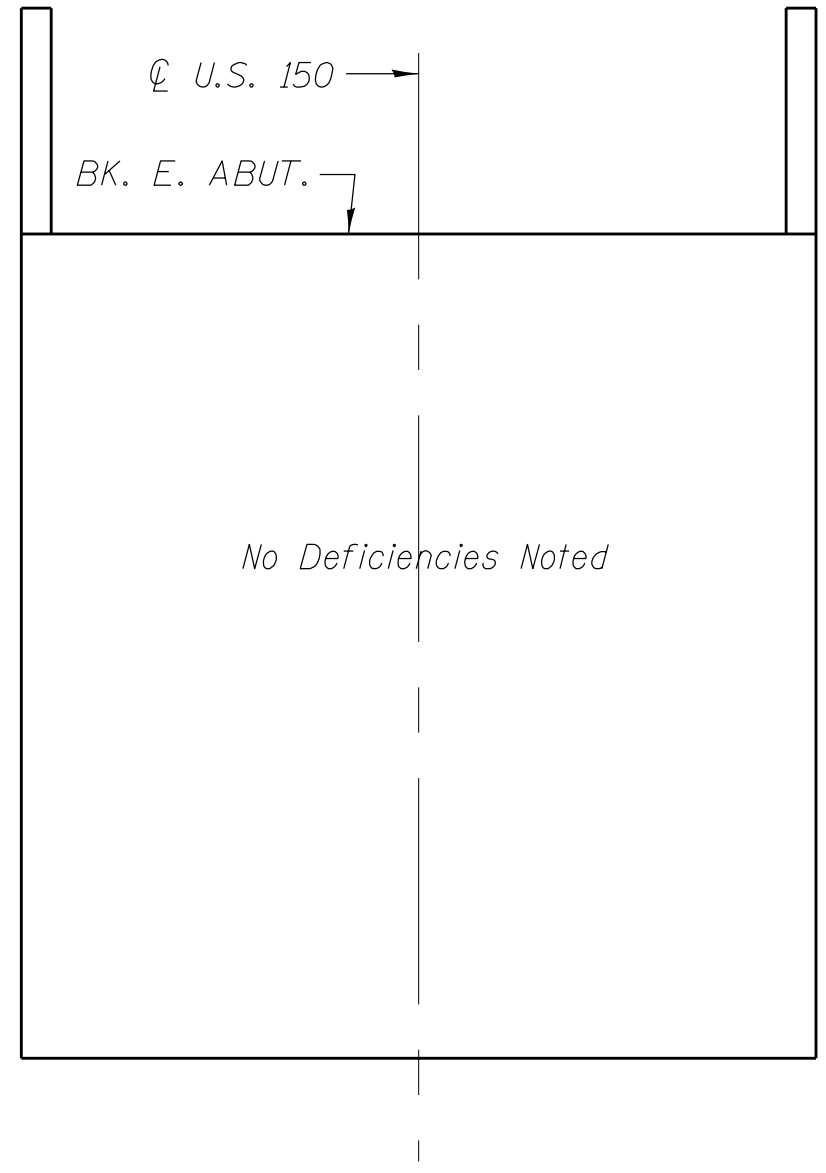
# SLOPEWALL CONDITION SURVEY

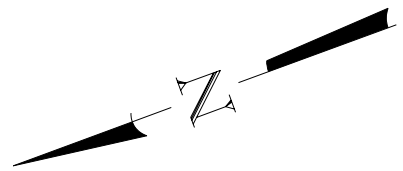
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




EAST SLOPEWALL

105

100

U.S. ROUTE 150
OVER I-57

# SLOPEWALL CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

# **ATTACHMENT F**

Cost Estimates

US 150 over FAI 57
SN 010-0050

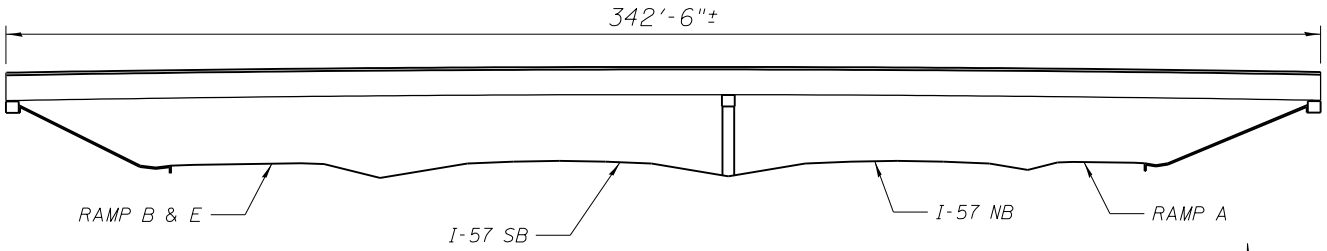
Preliminary Cost Estimate
Complete Replacement

| CODE | PAY ITEM | UNIT | QUANTITY | | | UNIT COST | ITEM COST |
|---|---|---|---|---|---|---|---|
| | | | SUPER | SUB | TOTAL | | |
| 50100100 | REMOVAL OF EXISTING STRUCTURES | EACH | | | **1** | $90,000.00 | $90,000.00 |
| 50200100 | STRUCTURE EXCAVATION | CU YD | | 490 | **490** | $24.00 | $11,760.00 |
| 50300225 | CONCRETE STRUCTURES | CU YD | | 178 | **178** | $600.00 | $106,800.00 |
| 50300255 | CONCRETE SUPERSTRUCTURE | CU YD | 557 | | **557** | $750.00 | $417,750.00 |
| 50300260 | BRIDGE DECK GROOVING | SQ YD | 1638 | | **1638** | $6.00 | $9,828.00 |
| 50300300 | PROTECTIVE COAT | SQ YD | 2014 | | **2014** | $2.50 | $5,035.00 |
| 50500105 | FURNISHING AND ERECTING STRUCTURAL STEEL | L SUM | | | **1** | $1,390,000 | $1,390,000.00 |
| 50500505 | STUD SHEAR CONNECTORS | EACH | 8484 | | **8484** | $3.25 | $27,573.00 |
| 50800205 | REINFORCEMENT BARS, EPOXY COATED | POUND | 111300 | 35600 | **146900** | $1.20 | $176,280.00 |
| 51100100 | SLOPE WALL 4 INCH | SQ YD | | 410 | **410** | $90.00 | $36,900.00 |
| 51201600 | FURNISHING STEEL PILES HP12X53 | FOOT | | 700 | **700** | $42.00 | $29,400.00 |
| 51202305 | DRIVING PILES | FOOT | | 700 | **700** | $0.65 | $455.00 |
| 51500100 | NAME PLATES | EACH | 1 | | **1** | $420.00 | $420.00 |
| 52100520 | ANCHOR BOLTS, 1" | EACH | | 42 | **42** | $77.00 | $3,234.00 |
| 59100100 | GEOCOMPOSITE WALL DRAIN | SQ YD | | 142 | **142** | $20.00 | $2,840.00 |
| X5860110 | GRANULAR BACKFILL FOR STRUCTURES | CU YD | | 350 | **350** | $40.00 | $14,000.00 |
| Z0026407 | TEMPORARY SHEET PILING | SQ FT | | 1000 | **1000** | $25.00 | $25,000.00 |
| Z0046304 | PIPE UNDERDRAINS FOR STRUCTURES 4" | FOOT | | 181 | **181** | $18.75 | $3,393.75 |

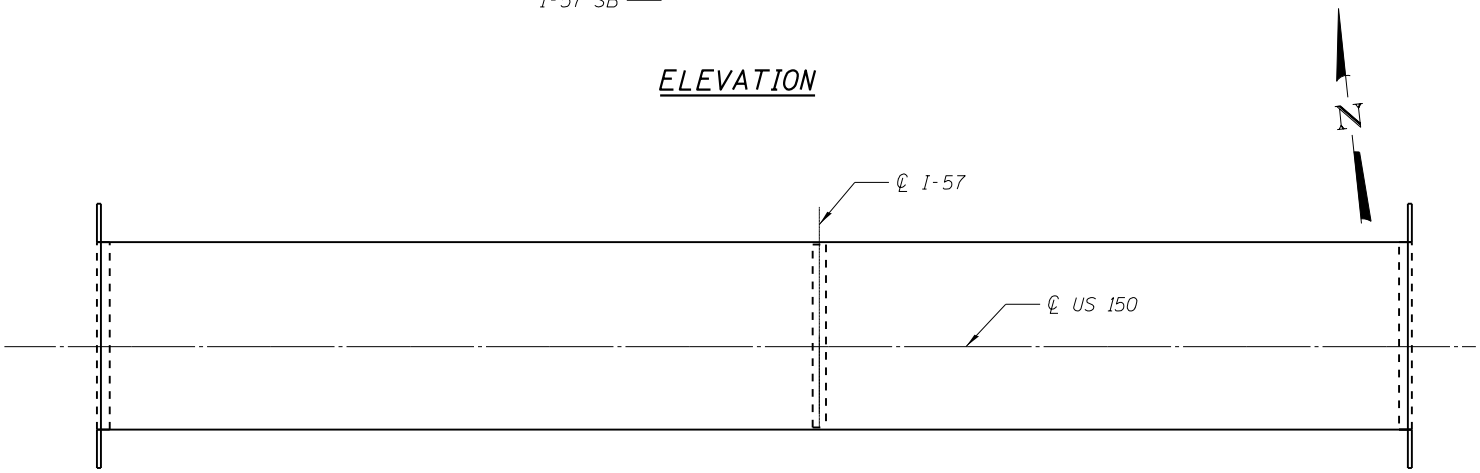
| | | |
|---|---|---|
| | Subtotal = | $2,350,668.75 |
| 15% | Contingency = | $352,600.31 |
| | Total = | **$2,703,270** |

# ATTACHMENT G

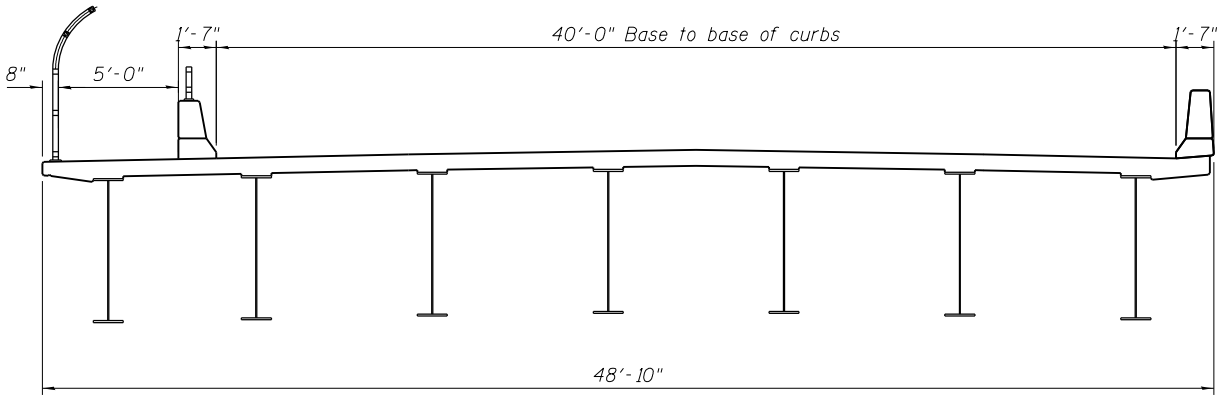
Proposed Structure




## ELEVATION




## PLAN PROPOSED STRUCTURE




## PROPOSED STRUCTURE WIDTH

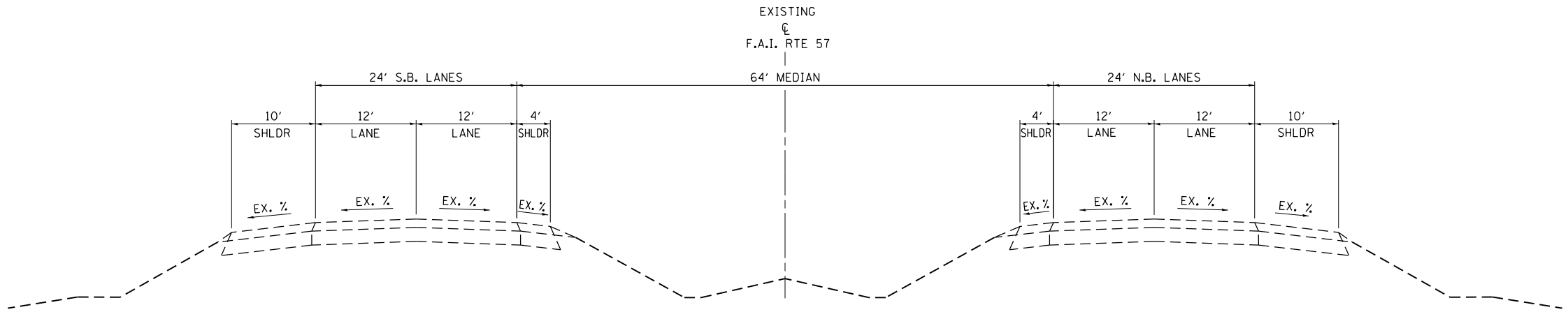
(LOOKING EAST)

*Notes:*

*The number and location of piers, the profile grade and bridge length are subject to refinement in the TSL phase.*

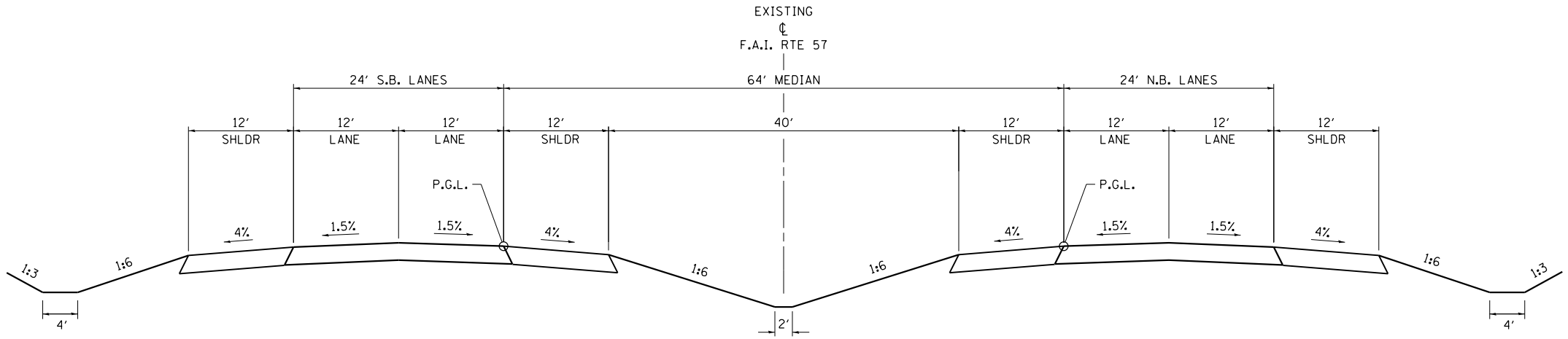
*Superstructure type, beam spacing and rail type to be determined during the TSL phase.*

**PROPOSED STRUCTURE SKETCH SN 010-0050**



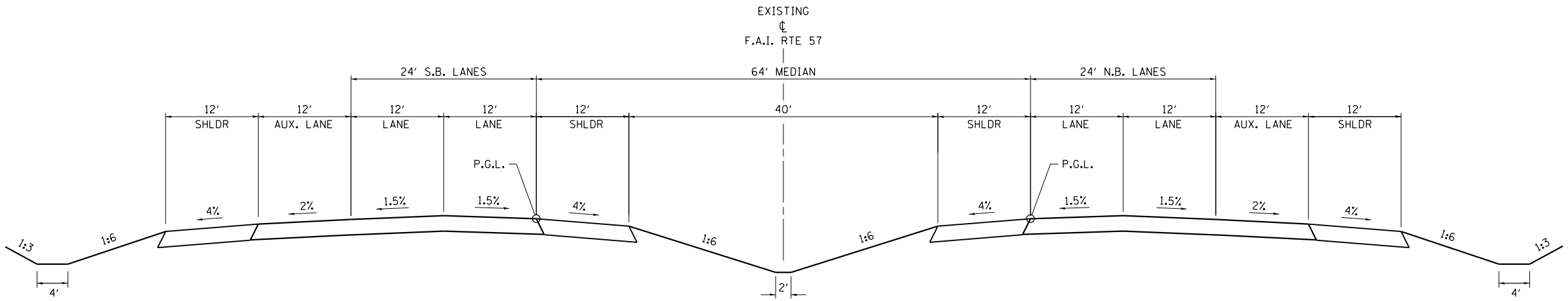

**EXISTING F.A.I 57**

(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
WITH AUXILIARY LANE
(LOOKING NORTH)

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**INTERSTATE 57**

**EXHIBIT 51**

BDE-9008

PLOT DATE = 8/12/2014 - 10:15:21 AM
FILE NAME = L:\IDOT\1106602\Draw\Exhibits\TTS\..
PLOT SCALE = 16.0000 ' / in.
USER NAME = Brad Downen

# **ATTACHMENT H**

Structure Photos



**Looking up-station (East) through structure**



**Looking down-station (West) through structure**



**Looking down-station (South) of I-57 from structure**



**Looking up-station (North) of I-57 from structure**



**Southwest Wingwall**



**Northwest Wingwall**



**Southeast Wingwall**



**Northeast Wingwall**



**West abutment expansion joint of Eastbound Structure (Looking South)**




**East abutment expansion joint of Eastbound Structure (Looking South)**



**West abutment expansion joint (Looking North)**



**East abutment expansion joint (Looking South)**



**Structure Bridge Rail**



**General condition of underside of superstructure Span 1**



**General condition of underside of superstructure Span 2**



**General condition of underside of superstructure Span 3**



**General condition of underside of superstructure Span 4**



**West abutment of Eastbound Structure**



**West abutment**



**East abutment**



**West face of Pier 1**



**East face of Pier 1**



**West face of Pier 2**



**East face of Pier 2**



**West face of Pier 3**



**East face of Pier 3**



**Slopewall at West abutment**



**Slopewall at East abutment**

# **ATTACHMENT J**

Proposed Plan & Profile

| | | | | |
|---|---|---|---|---|
| FILE NAME = P:\Projects\2011 Projects\11354 - IDOT I-74 Interchange\ST\BCR\D5708970-sht-_prprof_ALT.dgn | USER NAME = $USER$ | DESIGNED - | REVISED - | |
| $MODELNAME$ | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - | |
| | PLOT DATE = 10/13/2014 | DATE - | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ALTERNATE #2, BLOOMINGTON RD.**
**PLAN & PROFILE**

SCALE: | SHEET | OF | SHEETS | STA. | TO STA.

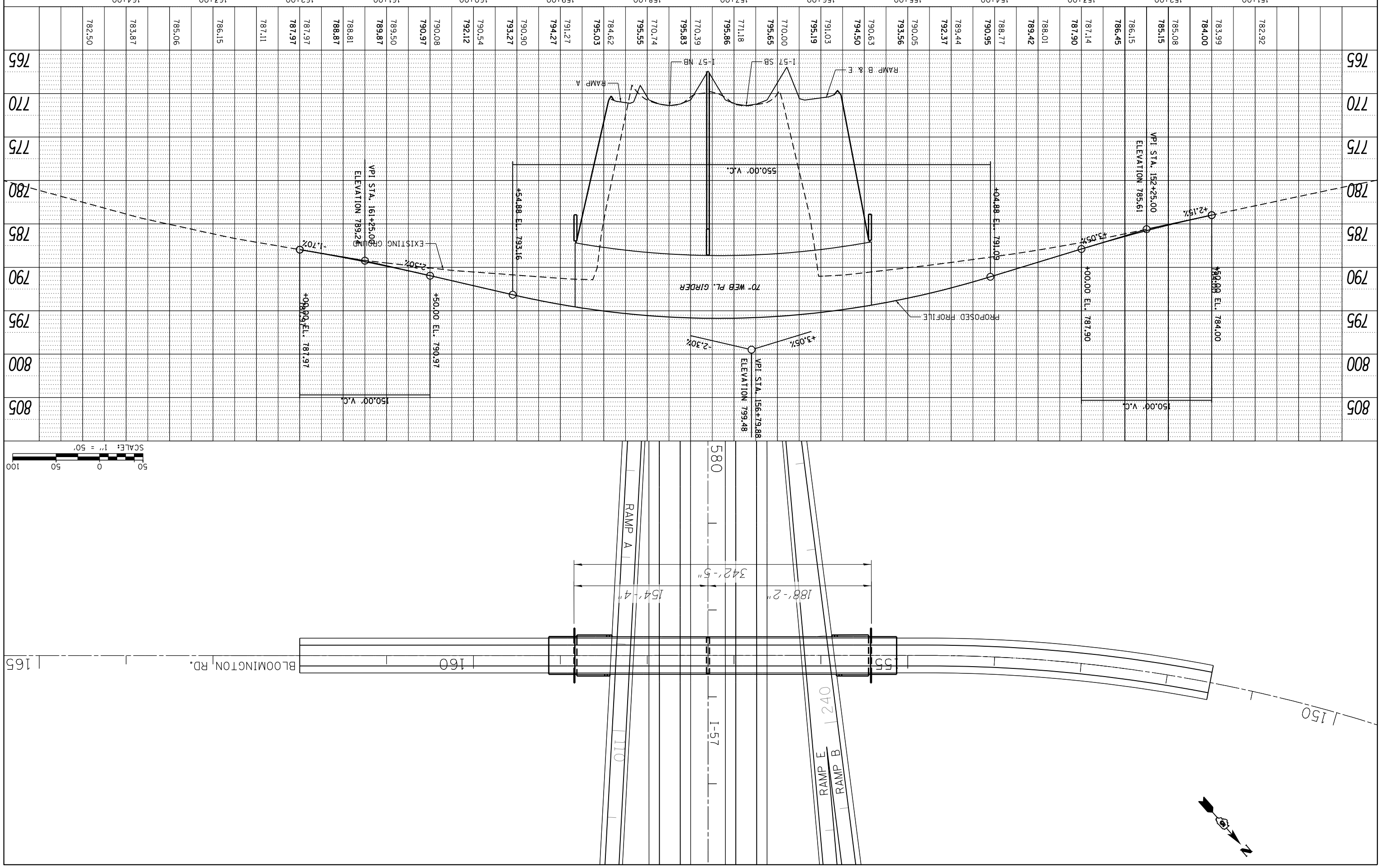
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |

ILLINOIS FED. AID PROJECT

CONTRACT NO.

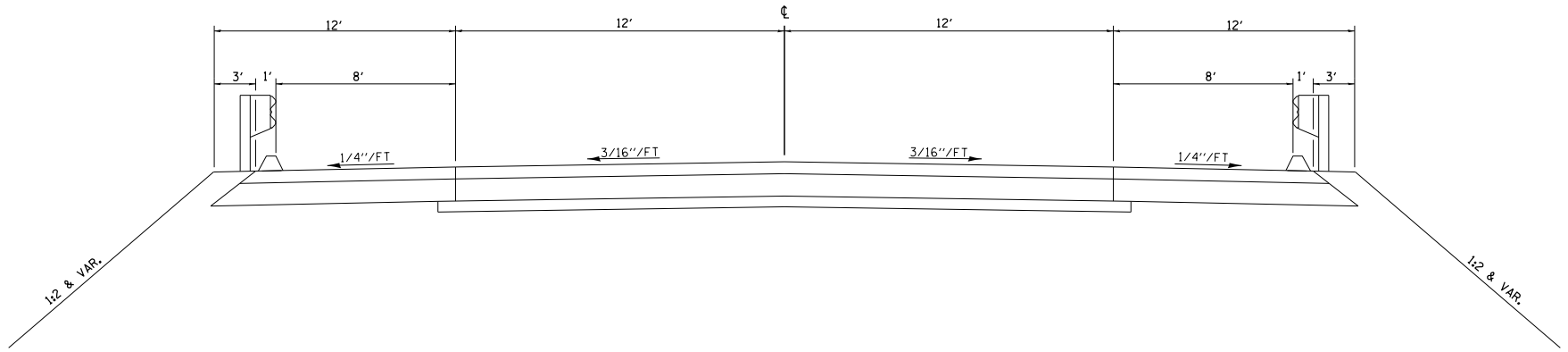
PROFILE
SURVEYED
PLOTTED
ROUGHED CHECKED
BM. NOTED
STRUCTURE NOTATING CHKD
NOTE BOOK
NO. ____
BY
DATE

PLAN
SURVEYED
PLOTTED CHECKED
ALIGNED
RT. OF WAY CHECKED
CAD FILE NAME ____
NOTE BOOK
NO. ____
BY
DATE

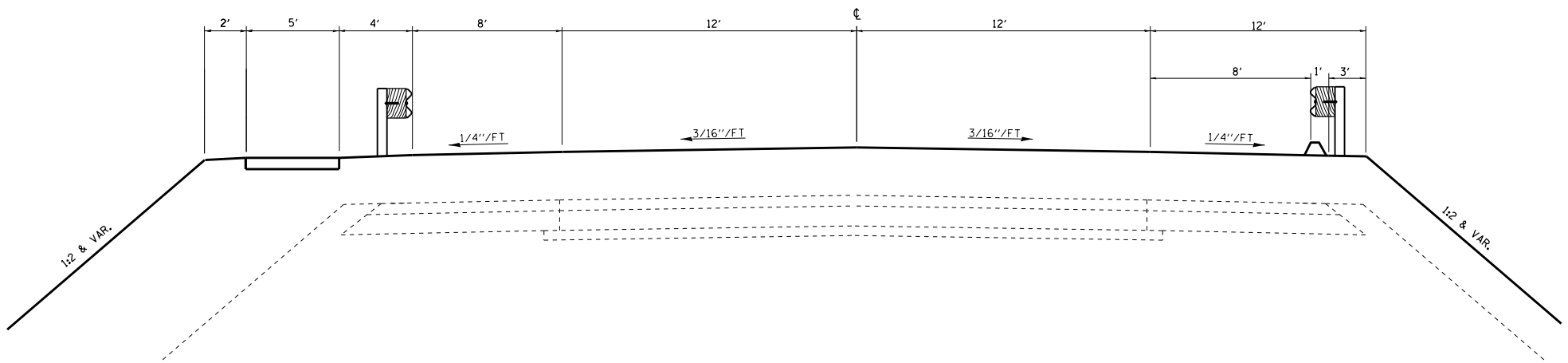


# ATTACHMENT K

Existing and Proposed Roadway Cross Sections




**EXISTING TYPICAL CROSS SECTION**
**U.S. 150**




**PROPOSED TYPICAL CROSS SECTION**
**U.S. 150**

| | | | |
|---|---|---|---|
| FILE NAME = P:\Projects\2011 Projects\11354 - IDOT I-74 Interchange\ST\D570897-sht-LocalRouteTypicalSection Rev-US 150 October 2014).dgn | USER NAME = $USER$ | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = 10/16/2014 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**FAP 719 (U.S. 150)**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 719 | 10(5-1-RS-1,14-1,6)R | CHAMPAIGN | 20 | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

# **ATTACHMENT L**

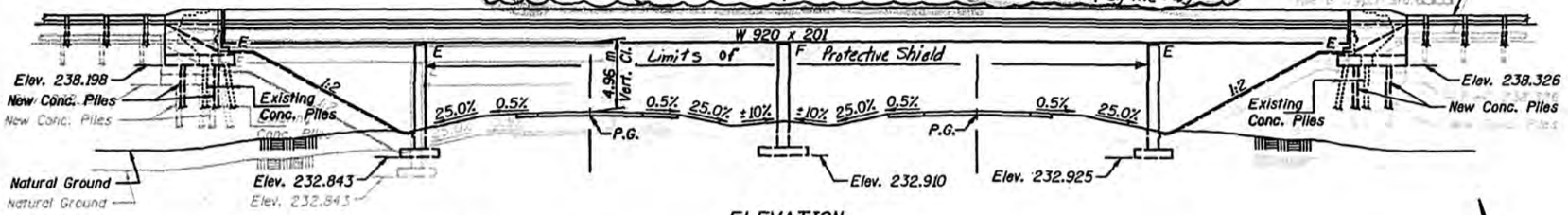
Abbreviated Existing Plans

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. 57 | (10-34HB)BR | CHAMPAIGN | 47 | 16 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | |

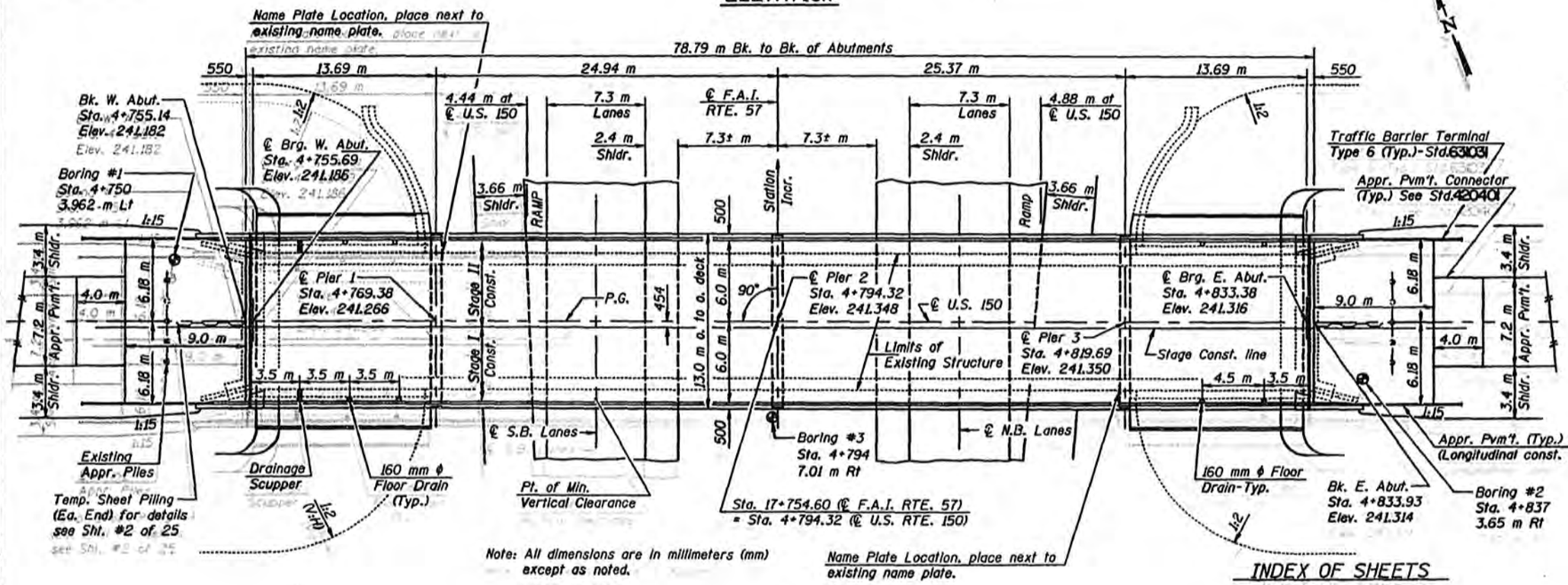
Sheet #1 of 25

B.M. Chisled square on top of abutment H.E. corner of bridge. 4.27 m left of Sta. 4+833.52 Elev.=241.411

EXISTING STRUCTURE: The superstructure consists of a R.C. deck 78.11 m long by 10.26 m wide supported on a four span 36 WF 135 girder. Traffic shall be maintained during the rehabilitation of the structure by stage construction. S.N. 010-0050 built as Section (10-34HB)BR in 1964. The Removed pipe hand'rail shall be salvaged and shall remain the property of the Department and stored on site as directed by the Engineer.




## ELEVATION




Note: All dimensions are in millimeters (mm) except as noted.

Name Plate Location, place next to existing name plate.

## PLAN

## TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|---|---|---|---|---|
| Concrete Removal | m3 | | 20.7 | 20.7 |
| Removal of Existing Concrete Deck | Each | 1 | | 1 |
| Structure Excavation | m3 | | 209.8 | 209.8 |
| Preformed Joint Seal 102 mm | m | 25.6 | | 25.6 |
| Concrete Structures | m3 | | 177.4 | 177.4 |
| Concrete Superstructure | m3 | 252.5 | | 252.5 |
| Bridge Deck Grooving | m2 | 936.0 | | 936.0 |
| Protective Coat | m2 | 1115 | | 1115 |
| Elastomeric Bearing Assembly, Type I | Each | 16 | | 16 |
| Elastomeric Bearing Assembly, Type II | Each | 16 | | 16 |
| Furnishing and Erecting Structural Steel | L. Sum | 1 | | 1 |
| Stud Shear Connectors | Each | 4856 | | 4856 |
| Jack and Remove Existing Bearings | Each | 30 | | 30 |
| Structural Steel Removal | kg | 450 | | 450 |
| Cleaning and Painting Steel Bridge | L. Sum | 1 | | 1 |
| Reinforcement Bars, Epoxy Coated | kg | 35,890 | 11,690 | 47,580 |
| Slope Wall 100 mm | m2 | | 135.1 | 135.1 |
| Name Plates | Each | 2 | | 2 |
| Bridge Seat Sealer | m2 | | 13.9 | 13.9 |
| Bar Splicers | Each | 724 | 26 | 750 |
| Power Tool Cleaning Residue Containment and Disposal | L. Sum | 1 | | 1 |
| Blasting Residue Containment and Disposal | L. Sum | 1 | | 1 |
| Drainage Scupper | Each | 2 | | 2 |
| Floor Drains | Each | 8 | | 8 |
| Furnishing Concrete Piles | m | | 73.0 | 73.0 |
| Driving Concrete Piles | m | | 73.0 | 73.0 |
| Test Piles - Concrete | Each | | 1 | 1 |
| Temporary Sheet Piling | m2 | | 16.3 | 16.3 |
| Protective Shield | m2 | | 714 | 714 |

| REVISIONS | |
|---|---|
| NAME | DATE |
| B. BLAND | 2-20-97 |
| B. BLAND | 2-20-97 |

## SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.05
Site Coefficient (S) = 1.0

## DESIGN SPECIFICATIONS

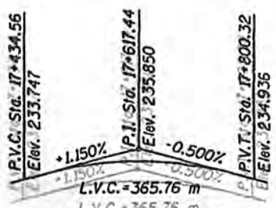
1992 AASHTO & 1993 Interim & 1994 Interim
1983 Seismic Retrofitting
Guidelines for Highway Bridges
F.H.W.A./RD-83/007

## LOADING MS18

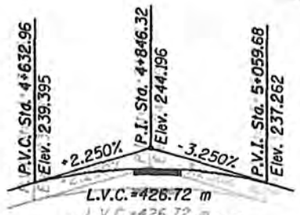
Allow 1.2 kN/m² for future wearing surface.

## DESIGN STRESSES

| NEW CONSTRUCTION | OLD CONSTRUCTION |
|---|---|
| f'c = 24 MPa | fs = 138 MPa (struct. steel) |
| fs = 138 MPa (struct. steel) | fs = 138 MPa (reinf.) |
| fy = 400 MPa (reinf.) | f'c = 9.65 MPa |




PROFILE GRADE
F.A.I. RTE. 57
Along ℄ Roadway



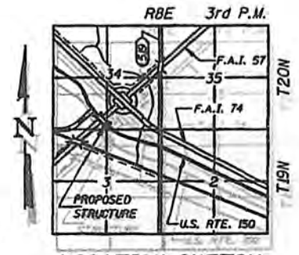

PROFILE GRADE
U.S. RTE. 150
Along ℄ Roadway

## INDEX OF SHEETS


1. General Plan & Elevation
2. Stage Construction and Slopewall Details
3. Deck Elevations
4. Deck Elevations
5. Deck Elevations
6. Superstructure
7. Superstructure Details
8. Structural Steel Details
9. Structural Steel Details
10. Bearing Details-Existing Beams
11. Bearing Details-Existing Beams
12. Bearing Details-New Beams
13. Abutment Concrete Removal Details
14. East Abutment Details
15. West Abutment Details
16. Abutment Details
17. Pier Extension-Pier 1 & 3
18. Pier Extension-Pier 2
19. Temporary Concrete Barrier and Preformed Joint Seal Details
20. Bar Splicer Details
21. Steel Drainage Scupper Details
22. Alternate Cast Iron Drainage Scupper Details
23. Pile Details
24. Anchor Bolt Details
25. Soil Boring Data


# REVISED PLAN SHEETS

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES




LOCATION SKETCH

STATION 4+794.32
REBUILT 19 BY
STATE OF ILLINOIS
F.A.I. 57 SEC. (10-34HB)BR
F.A. PROJ. IM-57-5( )257
LOADING MS18
STR. NO. 010-0050

NAME PLATE
See Std.515001

STATE OF ILLINOIS PAUL B. LIN No. 4419 SPRINGFIELD, ILLINOIS LICENSED STRUCTURAL ENGINEER

Paul B. Lin 3-12-96
ILLINOIS STRUCTURAL NO. 4419 DATE

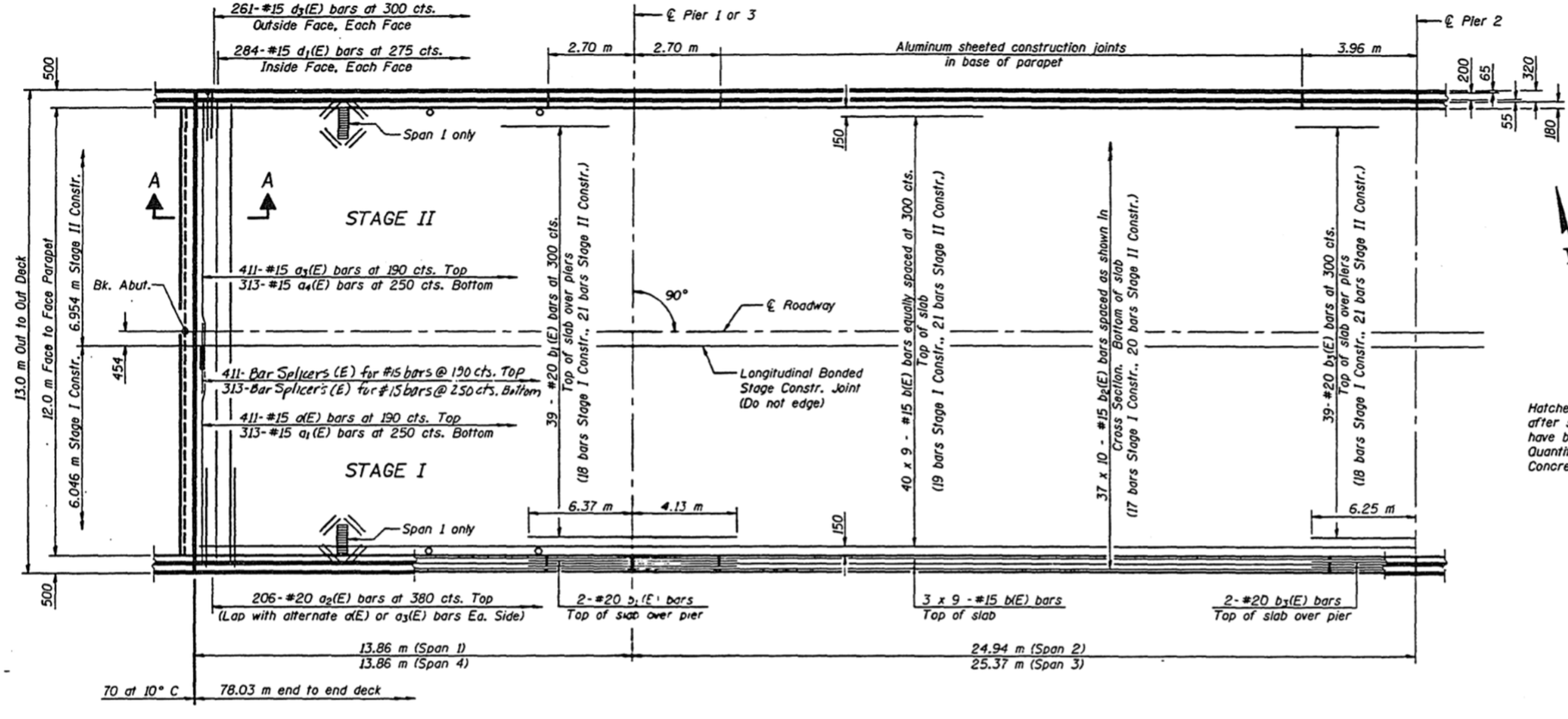
GENERAL PLAN & ELEVATION
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 ( U.S. RTE. 150)
STA. 17+754.60 ( F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.
DESIGN: T.M.M. CHECKED: L.W.
DRAWN: N.C. DATE: 12/95

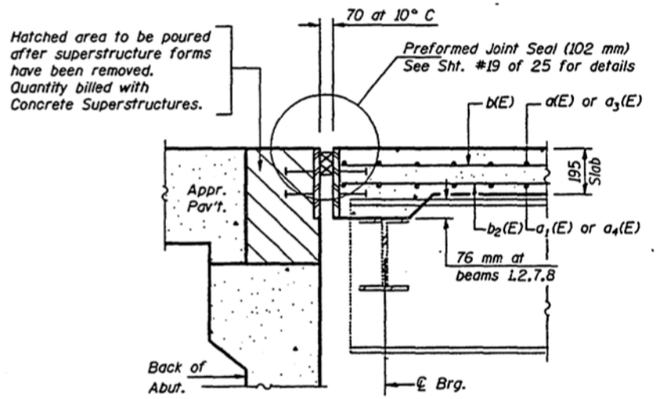
AS REVISED [illegible]

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. 57 | (10-34HB)BR | CHAMPAIGN | 47 | 21 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT- | | |

Sht. #6 of 25



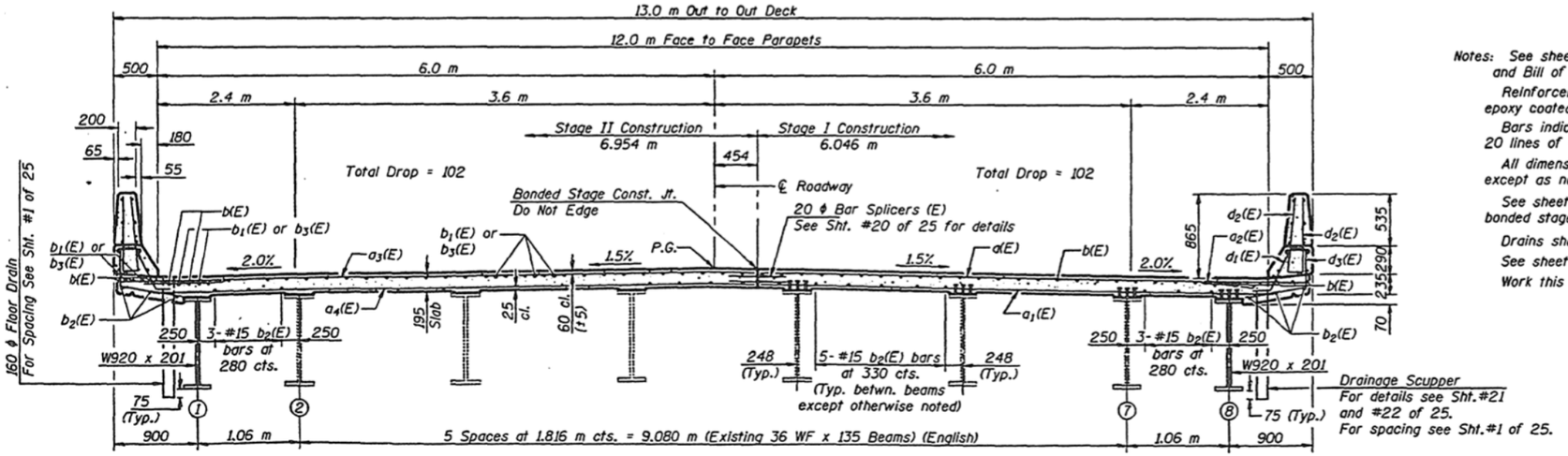

HALF PLAN




SECTION A-A

MIN. BAR LAP

#15 bars 640 mm




NEAR PIERS

CROSS SECTION
(Looking East)

NEAR MIDSPAN

Notes: See sheet #7 of 25 for superstructure details and Bill of Material.

Reinforcement bars designated (E) shall be epoxy coated.

Bars indicated thus 20 x 3-#15 etc. indicates 20 lines of bars with 3 lengths per line.

All dimensions are in millimeters (mm) except as noted.

See sheet #20 of 25 for Bar Splicer details at bonded stage construction joint.

Drains shall be located clear of all diaphragms.

See sheet #7 of 25 for parapet reinforcement.

Work this sheet with sht. #7 of 25.

SUPERSTRUCTURE
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

| LIN ENGINEERING, LTD. | |
|---|---|
| DESIGN: T.M.M. | CHECKED: J.W. |
| DRAWN: N.C. | DATE: 12/95 |

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

**PADUCAH OFFICE:**
500 South 17th Street, P.O. Box 120
Paducah. Kentucky 42002
Phone: (270) 443-1995
Fax: (270) 443-1904

**MURRAY OFFICE:**
1215 Diuguid Drive
Murray, Kentucky 42071
Phone: (270) 753-7307
Fax: (270) 759-4950

**MARION OFFICE:**
403 North Court Street
Marion, Illinois 62959
Phone: (618) 993-6700
Fax: (618) 993-6717

# Transmittal

**TO:** D. Carl Puzey
Attn: T.A. Craven
Illinois Department of Transportation
Bureau of Bridges and Stuctures
2300 S. Dirksen Parkway
Springfield, IL 62764

Phone: (217)524-4848
Fax:
Email:

**DATE:** 10/17/2014
**RE:** BCR
Mattis Ave. over FAI 57
Section 10-34HB-3
SN 010-0100

**WE ARE FORWARDING THE FOLLOWING:**

☒ ATTACHED
☐ UNDER SEPARATE COVER

| QUANTITY | DESCRIPTION |
|---|---|
| 1 | Electronic copy sent to dot.bbs.planning@illinois.gov for review and approval. File name: *0100100BCR 20140630.pdf* |
| | |
| | |

☐ REVIEWED (AS NOTED ON DWG.)
☐ FURNISH AS CORRECTED
☐ NOT APPROVED
☒ FOR YOUR APPROVAL
☐ AS REQUESTED
☒ FOR YOUR USE

REMARKS:

COPY TO: BFW File #11354
District 5

BY: Brandon W. Poiter, P.E., S.E.

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

# BRIDGE CONDITION REPORT

| | |
|---|---|
| **REGION:** | 3 |
| **DISTRICT:** | 5 |
| **COUNTY:** | Champaign |
| **ROUTE:** | FAU 7158 (Mattis Ave) |
| **JOB NUMBER:** | P-95-030-11 |
| **STRUCTURE NUMBER:** | 010-0100 |
| **LOCATION:** | Mattis Avenue over I-57 |

**PREPARED BY:** Brandon W. Poiter, PE, SE
BFW Engineering & Testing

**DATE INSPECTED:** June 30, 2014

**PROPOSED LETTING DATE:** Unknown

# TABLE OF CONTENTS


| Item: | | Page: |
|---|---|---|
| I. | Geographical & Administrative Data | 1 |
| II. | Physical Description of Structure | 1 |
| III. | Field Inspection & Physical Evaluation | 2-3 |
| IV. | Potential Scope of Work Determination & Analysis | 3 |
| V. | Discussion and Recommended Scope of Work | 3 |

Attachments:

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|---|---|---|
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| B. | IDOT Master Structure Report | 6-8 |
| C. | Bridge Inspection Report | 10-12 |
| D. | Top and Bottom of Deck Condition Surveys | 13-21 |
| E. | Substructure Condition Surveys | 22-28 |
| F. | Cost Estimates | 29-30 |
| G. | Proposed Structure | 31-33 |
| H. | Structure Photos | 34-50 |
| I. | Hydraulic Analysis Summary (N/A) | --- |
| J. | Proposed Plan & Profile (if available) | 51-52 |
| K. | Existing and Proposed Roadway Cross Sections | 53-54 |
| L. | Abbreviated Existing Plans | 55-57 |

# I. Geographical & Administrative Data

| | |
|---|---|
| **Structure Number:** | 010-0100 |
| **County:** | CHAMPAIGN |
| **Route Carried:** | FAU 7158 (Mattis Avenue) |
| **Feature Crossed:** | FAI 57 |
| **Section:** | 10-34HB-3 |
| **Station:** | 24+90.58 |
| **Roadway Classification:** | Minor Arterial |
| **Design/Posted Speed:** | 45 mph/45 mph |
| **ADT (current/design):** | 6,100 (2013)/7,100 (2040) |
| **ADTT (current/design):** | 305 (2013)/355 (2040) |
| **DHV:** | 701 (2040) |
| **Inventory Rating HS:** | **17.8** |
| **Operating Rating HS:** | **29.4** |
| **Sufficiency Rating:** | **63.3** |

## Construction/Reconstruction/Repair History:

1965 - Constructed under FAI 74, Section 10-34HB-3

# II. Physical Description of Structure:

The existing structure was constructed in 1965 as a four-span steel wide flange beam (36WF182) structure, composite in the positive moment regions. The superstructure is supported on open stub abutments on concrete piles and multi-column reinforced concrete piers. Pier 1 is supported on creosoted timber piles with Piers 2 and 3 on spread footings.

| | |
|---|---|
| Length: | 332'-4" Back to Back of Abutments |
| Width: | 33'-8" out to out |
| Span: | 62'-4" / 100'-10" / 100'-10" / 62'-4" |
| Skew: | 48° 09' 30" Right |
| Wearing Surface: | Bituminous Overlay |
| Horizontal Alignment: | Tangent |
| Vertical Alignment: | 1500' crest vertical curve with an entry grade of +3.50% and exit grade of -2.50%. |
| Utilities: | None |

# III. Field Inspection & Physical Evaluation:

The bridge was visually inspected by Bacon, Farmer, Workman Engineering and Testing, Inc. on June 30th, 2014.

**Superstructure:**

**Deck:** The deck is in poor condition. There are numerous transverse hairline cracks with efflorescence over a majority of the bottom of deck and soffit. Spalling with exposed reinforcement and delaminations exceed 10% of the deck and soffit area. Protective shield has been installed between the east fascia beam and the adjacent interior beam over the traffic lanes in spans 2 and 3. There are numerous areas concrete patches along the northbound lane. The bituminous wearing surface has extensive map cracking and several potholes along the northbound lane. The bridge railing consisting of an 11" concrete curb with a steel channel on pipe post handrail is in poor condition and does not meet currently acceptable standards. The curb has extensive spalling with exposed reinforcement. The guardrail transition is not attached to the bridge rail.

**Beams:** The 36WF steel beams and are in fair condition with some minor rust throughout the entire bridge length and initial section loss of less than 10% at the beam ends at each abutment. The paint is in poor condition with significant flaking.

**Joint:** The neoprene expansion joints at each abutment are in poor condition. A portion of the joint length at each abutment is acting as an open joint with no seal. In the areas with no seal, wood plywood that was used to form concrete repairs is still in place within the joint opening. The joints are leaking as evidenced by stains on the front face of the abutment backwall and standing water on the abutment cap. The joint opening at the south abutment was 1 ¾" and 1 ½" at the north abutment at a temperature of 80° F.

**Bearings:** The fixed bearings at Pier 2 and rocker bearings at Piers 1 and 3 of the abutments are in good condition with light rust. The abutment rocker bearings have are in fair condition with moderate rust mainly on the bottom plate of the assembly. Most of the bearings appear to be functioning properly except the bearing under the east fascia beam at the south abutment is loose and moves by lightly tapping with a hammer.

**Substructure:**

**Abutments:** The abutments are in satisfactory condition. The backwall at each abutment has a moderate amount of leaching vertical cracks and the caps have a moderate amount of horizontal cracks as well. No loss of bearing area was noted. There is map cracking and minor spalls on the wingwalls, mainly at the corner intersecting the abutment backwall.

**Piers:** The piers are in satisfactory condition with a few spalled areas on the bottom of the cap with exposed reinforcement.

**Slope Protection:** The slopewall at each abutment is in good condition with minor cracks noted. There is a small amount of vegetation growing out of the slopewall construction joints.

**Inspection History (NBIS Ratings).**

| Year | Deck | Superstructure | Substructure |
|---|---|---|---|
| 2014 | 4 | 5 | 6 |
| 2012 | 4 | 5 | 7 |
| 2011 | 4 | 5 | 7 |

**Geometric, Horizontal & Vertical Clearance:**

The face-to-face width of the structure is 33'-8" carrying one lane of traffic in each direction. The location of the piers 1 and 3 provides 10' of lateral clearance between the edge of the traveled way and face of pier. Guardrail is provided to protect the pier 1 the approach side from each direction. The vertical clearance over I-57 is 16'-3".

## IV. Potential Scope of Work Determination & Analysis:

This report is being prepared in conjunction with an interchange type study of two alternates for the reconstruction of the existing I-74/I-57 interchange. I-74 will be upgraded to a 6 lane urban section with 12' lanes, a 60' median, and 12' inside and outside shoulders. Alternate 1 is a full direction interchange with flyovers. Alternate 2 is semi-directional with directional flyovers and two loops. It is anticipated that this structure will be replaced due to the poor condition of the existing structure and to accommodate the proposed ramp geometry along I-74 for the proposed interchange.

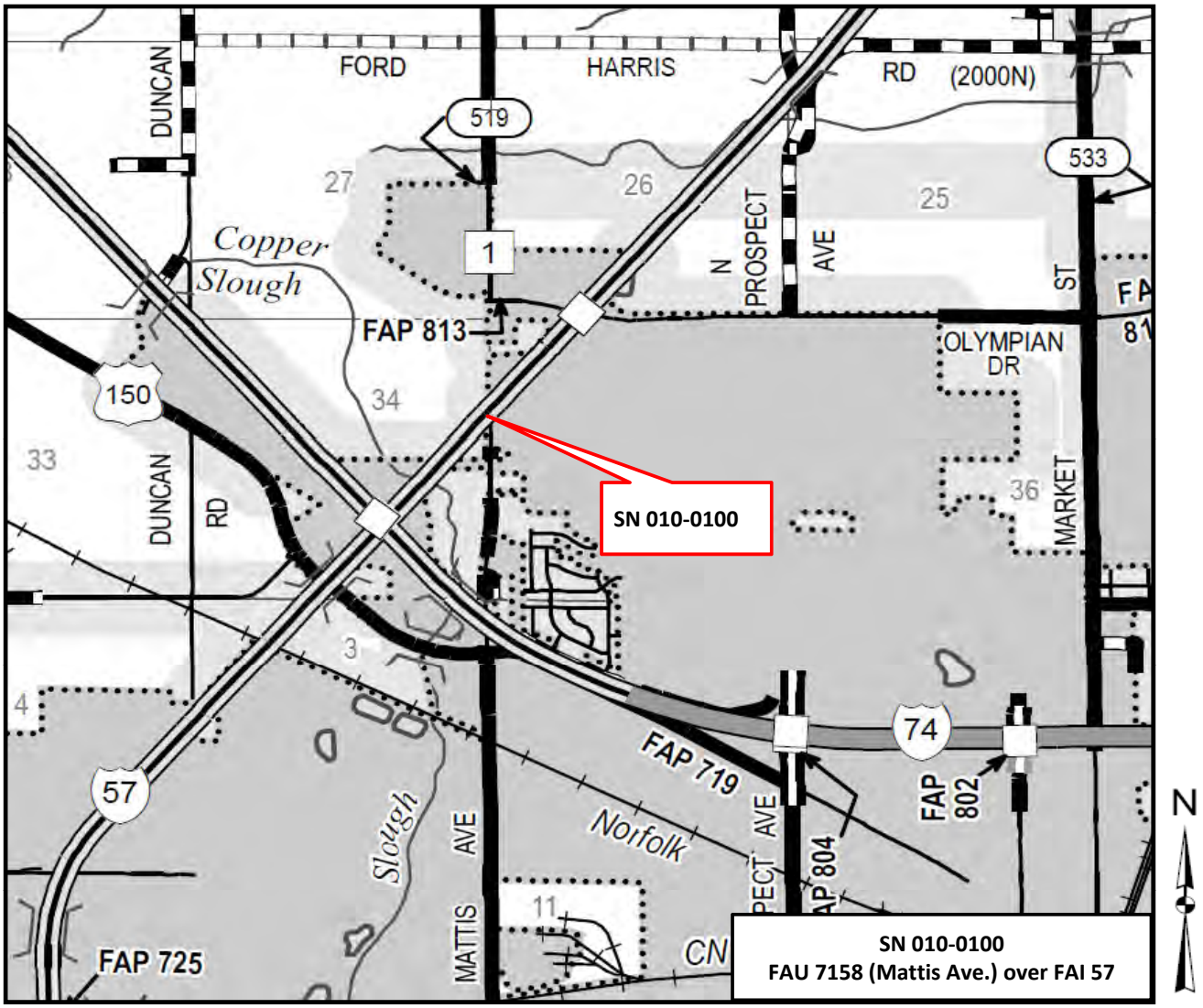
## V. Discussion and Recommended Scope of Work

Based on the Ramp G location for the proposed interchange, the recommended scope of work is to replace the existing structure. At the time this report was prepared, Alternate 2 was the preferred alternate. The proposed structure for Alternate 2 is a two span 70" web plate girder structure, 366' back to back of abutment and a clear width of 40'-0" face to face of F-Shape parapet with a 5' sidewalk and pedestrian fence each side of structure for an out to out width of 54'-6" assuming 8" from face of pedestrian fence to the edge of bridge deck.

Replacing the existing bridge can be completed using stage construction while allowing for one lane of traffic during each stage. The Stage I traffic should be placed on the west half of the existing bridge. The deck on this side of the bridge is in better condition and is more suitable for stage construction. A 14' minimum Stage I traffic lane should be considered to avoid the need for wide load detour.

# **ATTACHMENT A**

Location Map




Attachment A
Location Map

# **ATTACHMENT B**

IDOT Master Structure Report

# Illinois Department of Transportation
# Structures Information Management System
# Structure Summary Report



**Structure Number:** 010-0100 **District:** 5

## Inventory Data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Facility Carried:** | MATTIS (FAU7158) | **Bridge Name:** | | **Sufficiency Rating:** | 63.3 | **Structure Length:** | 332.3 |
| **Feature Crossed:** | I-57 | **Location:** | N OF CHAMPAIGN | **HBP Eligible:** | Yes | **AASHTO Bridge Length:** | 99.9 |
| **Bridge Remarks:** | (02159) | | | **Replaced By:** | - | **Length of Long Span:** | 100.8 |
| **Bridge Status:** | 1 OPEN - NO RESTRICT | **Status Date:** | 04/1988 | **Replaces:** | - | **Bridge Roadway Width:** | 28.0 |
| **Status Remarks:** | | | | **Last Update Date:** | 10/23/2012 | **Appr Roadway Width:** | 34.0 |
| **Maint County:** | 010 CHAMPAIGN | **Maint Township:** | 12 HENSLEY | **Parallel Structure:** | None | **Deck Width:** | 33.7 |
| **Maint Responsibility:** | 01 I.D.O.T. | | | **Multi-Level Structure Nbr:** | | **Sidewalk Width Right:** | 2.0 |
| **Service On/Under:** | 1 HIGHWAY | 1 / HIGHWAY | | **Skew Direction:** | R Right | **Sidewalk Width Left:** | 2.0 |
| **Reporting Agency:** | 1 I.D.O.T. - BUREAU OF MAINTENANCE | | | **Skew Angle:** | * **D** | **Navigation Control:** | N N/A |
| **Main Span Matl/Type:** | 4 STEEL CONTINUOUS | / | 02 STRINGER/MULTI-BEAM/GIRDER | **Structure Flared:** | No | **Navigation Horiz Clear:** | 0 |
| **Nbr Of Main Spans:** | 4 **Nbr Of Approach Spans:** 0 | | | **Historical Significance:** | No | **Navigation Vert Clear:** | 0 |
| *****Approaches***** | | | | **Border Bridge State:** | | **Culvert Fill Depth:** | 0.0 |
| **Near #1 Matl/Type:** | / | | | **Bdr State SN:** | | **Number Culvert Cells:** | 0 |
| **Near #2 Matl/Type:** | / | | | **Bdr State % Responsibility:** | 0 | **Culvert Opening Area:** | 0.0 |
| **Far #1 Matl/Type:** | / | | | **Structural Steel Wt** | 379800 | **Culvert Cell Height:** | 0.00 |
| **Far #2 Matl/Type:** | / | | | **Substructure Material:** | 55 | **Culvert Cell Width:** | 0.00 |
| **Median Width/Type:** | 0 Ft. / 0 None | | | **Rated By:** 2 IDOT | | **Rate Method:** 7 | |
| **Guardrail Type L/R:** | 0None / 0 None | | | **Inventory Rating:** | 0.890(32) | **Load Rating Date:** | 07/21/1992 | **Railroad Crossing Info** |
| **Toll Facility Indicator:** | 0 No Toll | | | **Operating Rating:** | 1.470(52) | **Crossing 1 Nbr:** | |
| **Latitude:** | 40.15256905 **S** | **Longitude:** | 88.27703209 **S** | **Design Load:** 02 | HS20 | **Crossing 1 Nbr:** | |
| **Deck Structure Type:** | A CIP CON NRMLLY FORM | | | **Deck Structure Thickness:** | 7 **SD:** Y **FO:** N | **RR Lateral Underclear:** | 0.0 |
| **Sidewalks Under Structure:** | 0 None | | | | | **RR Vertical Underclear:** 0 **Ft** 0 **In** | |

## Key Route On Data

| | | | |
|---|---|---|---|
| **Key Route Nbr:** | FEDERAL-AID URBAN 7158 | **Station:** | 0.7900 |
| **Appurtenances** | Main Route 00000 | **Segment:** | |
| **Inventory County:** | 010 CHAMPAIGN | **Linked:** | Y |
| **Township/Road Dist** | 54 CHAMPAIGN CITY | **Natl. Hwy System:** | Not on NHS |
| **Municipality** | 0990 CHAMPAIGN | **Inventory Direction:** | |
| **Urban Area:** | 0990 0990 | **Curr AADT Yr/Count:** | 2011 / 6100 |
| **Functional Class:** | 4 MINOR ARTERIAL | **Est Truck Percentage:** | 7 |
| **** CLEARANCES **** | **South/East** **North/West** | **Number Of Lanes:** | 2 |
| **Max Rdwy Width:** | 28.0 | **One Or Two Way:** | 2 Two-Way |
| **Horizontal:** | 32.0 0.0 | **Bypass Length:** | 2 |
| | | **Future AADT Yr/Cnt:** | 2032 / 6881 |
| | | **Designated Truck Rte:** | NONE |
| **Lateral:** | | **Special Systems:** | No |

## Key Route Under Data

| | | | |
|---|---|---|---|
| FEDERAL-AID INTERSTATE 0057 | | **Station:** | 20.1100 |
| Main Route 00000 | | **Segment:** | |
| 010 | | **Linked:** | Y |
| 54 CHAMPAIGN CITY (CHAMPAIGN) | | **Natl. Hwy System:** | On NHS |
| 0990 CHAMPAIGN | | **Inventory Direction:** | |
| 0990 0990 | | **Curr AADT Yr/Count:** | 2013 / 22200 |
| 1 INTERSTATE | | **Est Truck Percentage:** | 20 |
| **South/East** | **North/West** | **Number Of Lanes:** | 4 |
| 65.0 | | **One Or Two Way:** | 2 Two-Way |
| 65.0 | 65.0 | **Bypass Length:** | 0 |
| | | **Future AADT Yr/Cnt:** | 2032 / 25944 |
| | | **Designated Truck Rte:** | CLASS I |
| | | **Special Systems:** | Yes |

## *** Marked Route On Data ***

| | **Designation** | **Kind** | **Number** |
|---|---|---|---|
| **Route #1:** | 1 Mainline | 8 Other | |
| **Route #2:** | 1 Mainline | | |
| **Route #3:** | 1 Mainline | | |

## *** Marked Route Under Data ***

| | **Designation** | **Kind** | **Number** |
|---|---|---|---|
| | 1 Mainline | 1 Interstate Highway | 057 |
| | 1 Mainline | | |
| | 1 Mainline | | |

**Structure Number:** 010-0100 **District:** 5

## Data Related to Inspection Information

| *** Inspection Intervals *** | | | | *** Maximum Allowable Posting Limits *** | | | | Bridge Posting Level: | |
|---|---|---|---|---|---|---|---|---|---|
| **Routine NBIS:** | 24 MOS | **Underwater:** | 0 MOS | **One Truck At A Time:** | 0 | **Combination Type 3S-1:** | Tons | 5 | No Posting Required |
| | | **Special:** | N | **Single Unit Vehicles:** | Tons | **Combination Type 3S-2** | Tons | | |

## Inspection/Appraisal Information

**Inspection Date:** 08/06/2014 **Inspection Temperature:** 76Deg. F

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Deck:** | 4 | POOR CONDITION - ADVANCED DETERIORATION | | | | | | **Single Unit Vehicles:** | Tons |
| **Superstructure:** | 5 | FAIR CONDITION - MINOR SECTION LOSS, CRACKS | | | | | | **Combination Type 3S-1:** | Tons |
| **Substructure:** | 6 | SATISFACTORY CONDITION - MINOR DETERIORATION | | | | | | **Combination Type 3S-2:** | Tons |
| **Culvert:** | N | NOT APPLICABLE | | | | | | **One Truck At A Time:** | 0 |
| **Channel and Protection:** | N | NOT APPLICABLE | **Deck Wearing Surf:** | G | BITUMINOUS OVERLAY | | | **Last Paint Type:** | J |
| **Structural Evaluation:** | 5 | BETTER THAN ADEQUATE TO BE LEFT IN PLACE | **Deck Membrane:** | A | WATERPROOF MEM SYST | IR/ZC/OXIDE ALKYD | | | |
| **Deck Geometry:** | 4 | MINIMUM ADEQUACY TO BE LEFT IN PLACE | **Deck Protection:** | J | NONE | | | | |
| **Underclearance-Vert/Lat.:** | 4 | MINIMUM ADEQUACY TO BE LEFT IN PLACE | **Total Deck Thick:** | 9.0 | | | | | |
| **Waterway Adequacy:** | N | NOT APPLICABLE | **Last Paint Date:** | 07/1989 | | | | | |
| **Approach Roadway Align:** | 8 | EQUAL TO PRESENT DESIRABLE CRITERIA | | | | | | | |
| **Bridge Railing Appraisal:** | 2 | Doesn't Meet Standards | | | | | | | |
| **Approach Guardrail:** | 133 | Does Not Exist Acceptable Acceptable | | | | | | | |
| **Pier Navig Protection:** | N | N/A | | | | | | | |

** Actual Posted Limits **

## Underwater Inspection/Appraisal Information

**Inspection Date:**
**Temperature:** **Inspection Method:**
**Appraisal Rating:**

## Scour Critical Information

**Rating:** **Evaluation Method:**
**Analysis Date:**

## Miscellaneous

**Microfilm Data Recorded:** Yes

## Construction Information

| | | | | | |
|---|---|---|---|---|---|
| **Year:** | 1965 | Original | | Reconstructed | |
| **Route:** | FAI 57 | | **Sta:** 626+66.67 | **Sta:** | |
| **Section Nbr:** | | 10-34HB-3 | | | |
| **Contract Nbr:** | | 23200 | | | |
| **Fed Aid Pr#:** | | I-57-5(25)236 | | | |
| **Built By:** | 1 | I.D.O.T. | | | |

# **ATTACHMENT C**

Bridge Inspection Report

# Illinois Department of Transportation

## Bridge Inspection Report (MI)

**Structure Number:** 010-0100

Maintenance County: _____
Township: _____
Municipality: _____
Fac Carried: Mattis Ave
Feat Crossed: I-57
Location: N. of Champaign
Mat/Type/# Span: 4 STL Cont Multi Beam

| 90 – Insp. Date | 90A – Insp. Team Leader/Qualification | | Temp. |
|---|---|---|---|
| 3/2/07 | C. Buescher, S. Conklin | 1 | 30° |
| 2/23/2009 | D. Carbonca, A. Brennan | 1 | 30° |
| 1/16/2011 | S Conklin C. Buescher | 1 | 24° |
| / / | | 1 | |
| / / | | 1 | |

Bridge Inspection Year: 07 09 11

Team Sect. – Sub-Sect: –

| | Appraisals | Comments (All comments must be dated.) |
|---|---|---|
| **Deck** | | |
| **58 - Deck Condition:** | 5 5 4 | Spalling & delam exceed 10% in Surface and Soffit (11) |
| Wearing Surface | 2 2 | Map Cracked, Pot Holes (07)(09) |
| Parapets / Bridge Railings: | 1 1 | Several anchor bolt rusted off (07)(09) |
| Curbs: | 2 2 | Spalls, Delam w/exp rebar (07)(09) |
| Median: | – – | |
| Sidewalks: | – – | |
| Drain System: | 3 3 | |
| Light Standards: | – – | |
| Expansion Joints: | 2 2 | Openings (In.): |
| **Superstructure** | | |
| **59 - Superstructure Cond:** | 6 6 5 | Initial Sect loss in critical areas (11) |
| Bearing Devices: | 3 3 3 | Heavy rust (07) |
| Girders / Beams / Stringers: | 3 3 2 | Light-moderate rust throughout (07)(09) |
| Diaphragms / Braces: | 3 3 3 | |
| Trusses / Portals / Bracing: | – – | |
| Rivets / Bolts: | 3 3 3 | |
| Paint: | 3 3 2 | |
| **Substructure** | | |
| **60 - Substructure Cond:** | 7 7 7 | |
| Abutments – Stem / Columns / Piles: | – – | |
| Abutments – Caps: | 3 3 3 | Horizontal cracks (07)(09) |
| Abutments – Bearing Seats: | 3 3 3 | |
| Abutments – Backwalls: | 3 3 3 | Vertical leaching cracks (07)(09) |
| Abutments – Wingwalls: | 3 3 3 | Map cracking at corners (07)(09) |
| Piers – Stem / Columns / Piles: | 3 3 3 | Spalls w/exp rebar (07)(09) |
| Piers – Caps: | 3 3 3 | |
| Piers – Bearing Seats: | 3 3 3 | |
| Piers – Crash Walls: | 3 3 3 | |
| Fender Systems: | – – | |
| Paint: | – – | |

# Bridge Inspection Report

Structure Number: 020-2100

Bridge Inspection Year: 07 09 11

| | Appraisals | Comments (All comments must be dated.) |
|---|---|---|
| **Culvert** | | |
| **62 – Culvert Condition** | N N N | |
| Top Slab / Soffit: | | |
| Side Walls / Arch: | | |
| Bottom: | | |
| Headwalls: | | |
| Wingwalls: | | |
| **Waterway and Channel** | | |
| **61 - Channel Condition:** | N N N | |
| Streambed: | | |
| Slope Walls & Rip-Rap: | | |
| Stream Banks: | | |
| Spur Dykes & Jetties: | | |
| **71 – Waterway Adequacy:** | N N N | |
| **Approach Roadway** | | |
| **72 – Appr. Rdwy Alignment:** | 8 8 8 | |
| Riding Quality: | 3 3 3 | |
| Structural Condition: | 3 3 3 | |
| Relief Joints: | 3 3 3 | |
| **Navigable Waterways** | | |
| **111 – Pier Navig. Protect'n:** | N N N | |

**Inspection Remarks**

| Year | Item 90B – Inspection Remarks (237 characters maximum.) |
|---|---|
| 20 11 | Spalling w/exposed rebar and section loss and delaminations in deck surface and soffit exceed 10%. Top and bottom flanges of North fascia beam near drains have section loss in center half of both the East and West spans. |
| 20 | |
| 20 | |
| 20 | |
| 20 | |

# Bridge Inspection Report

Structure Number: 010-0100

## Additional Inspection Data

36A – Bridge Railing Adequacy: 4 | Rail Types:

Approach Guardrail Adequacy: 36B – Transitions: 1 | 36C – Guardrail: 2 | 36D – Ends: 2

New Guardrail and terminals, Guardrail not attached to Structure. (1) 3 3

108A – Wearing Surface Type: 6 | 108B – Type of Membrane: 4 | 108C – Deck Protection: J

108D – Total Deck Thickness (In.): 9.0

59A – Paint Date (Mo/Yr): 7/89

59B – Paint Systems: J - - -

Color: Fascia – ___; Inter. – ___; Railing – ___.

59C – Utilities Attached: - -

## Weight Limit Posting

70A2 – Single Unit Vehicles: T. | Combinations: 70B2 – 3 or 4 Axle: T. | 70C2 – 5 or More Axle: T.

70D2 – One Truck at a Time:

Inspection Resource Needs

Time to Inspect (H:M): 00 : 45 | Traffic Control: 1

Equipment: Boat– | Waders– | Snooper– | Manlift–

Ladder– Short | Medium | Tall | Other–

93C – Special Inspection Date: / / / / / / / / / /

## Signature Block

| | Signature | Date | Unit Supervisor Initials - Date |
|---|---|---|---|
| Inspection Team Leader | Chris Buccola | 3-2-07 | |
| | Drew Caldfield | 2/23/09 | |
| | Shawn D. Cash | 1-6-10 | 1/7/11 |
| | | | |
| | | | |

Additional Comments:

(Continue comments on page 4)

# **ATTACHMENT D**

Top and Bottom of Deck Condition Survey

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

N

100

Various holes and
map cracking

℄ MATTIS AVE.

Asphalt Patches

Expansion Jt.
open

BK. S. ABUT.

℄ PIER 1

105

100

MATTIS AVE.
OVER I-57

# TOP OF DECK CONDITION SURVEY, SPAN 1

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100

N

℄ MATTIS AVE.

8' Area With various Asphalt patching throughout

2'x5' Concrete Patch

8'x36' Concrete Patch

℄ PIER 1

℄ PIER 2

105

100

MATTIS AVE.
OVER I-57

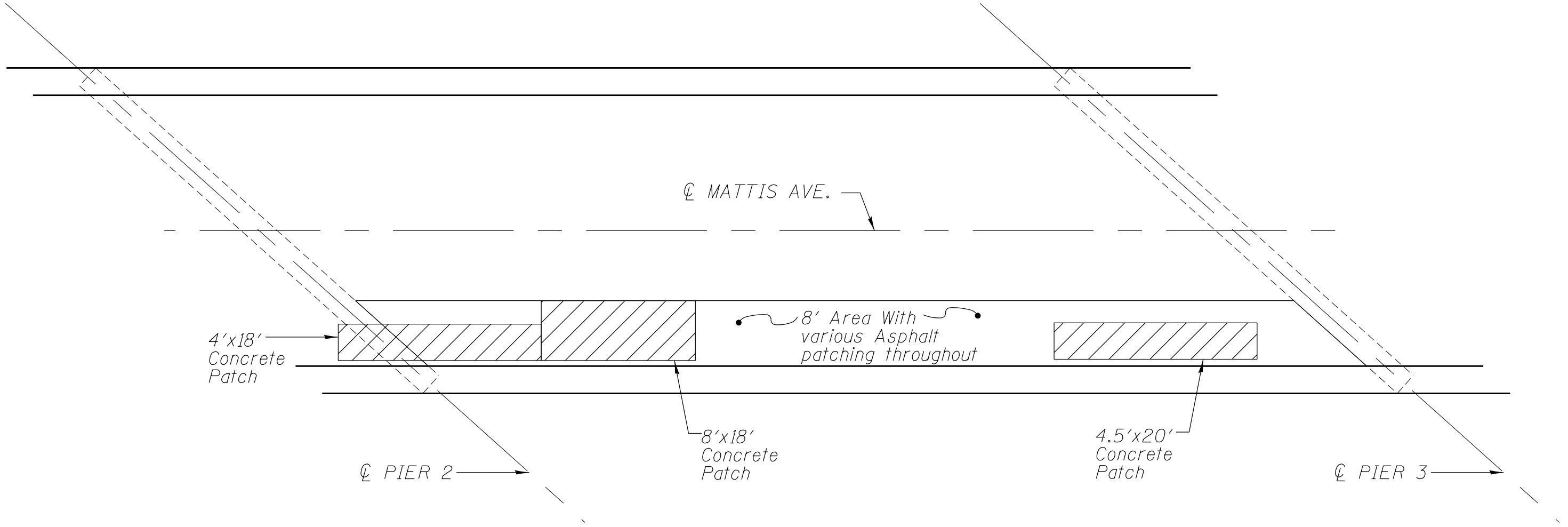
# TOP OF DECK CONDITION SURVEY, SPAN 2

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

100

MATTIS AVE.
OVER I-57

# TOP OF DECK CONDITION SURVEY, SPAN 3

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100

N

℄ MATTIS AVE.

Expansion Jt.
open

BK. N. ABUT.

8' Area With
various Asphalt
patching throughout

4'x8'
Concrete
Patch

Concrete
Patch

℄ PIER 3

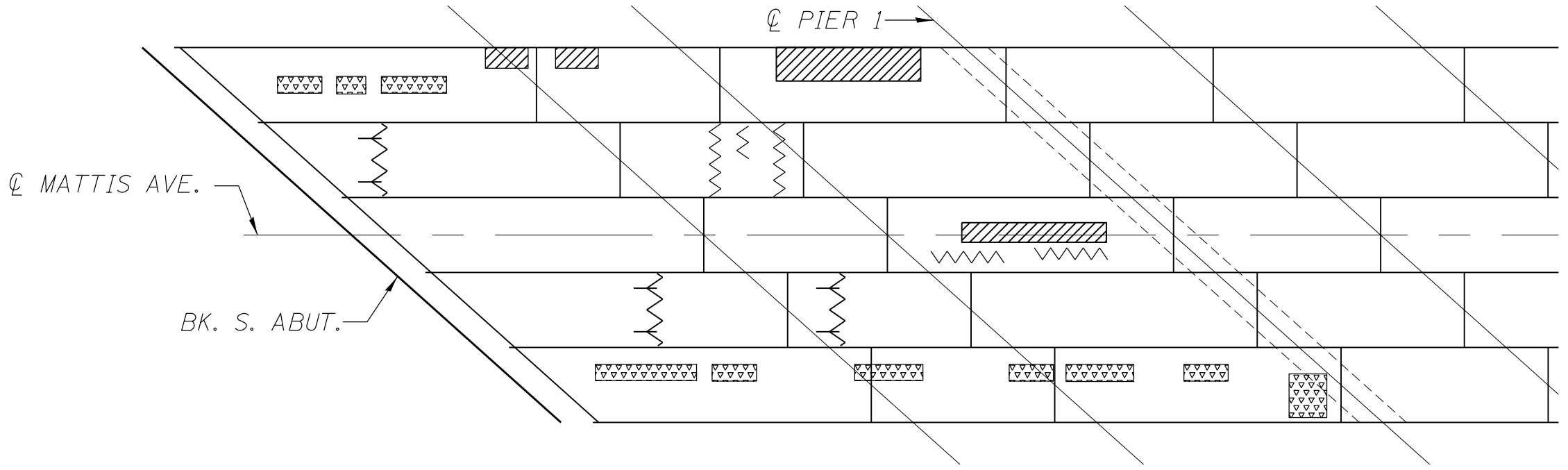
105

100

MATTIS AVE.
OVER I-57

# TOP OF DECK CONDITION SURVEY, SPAN 4

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



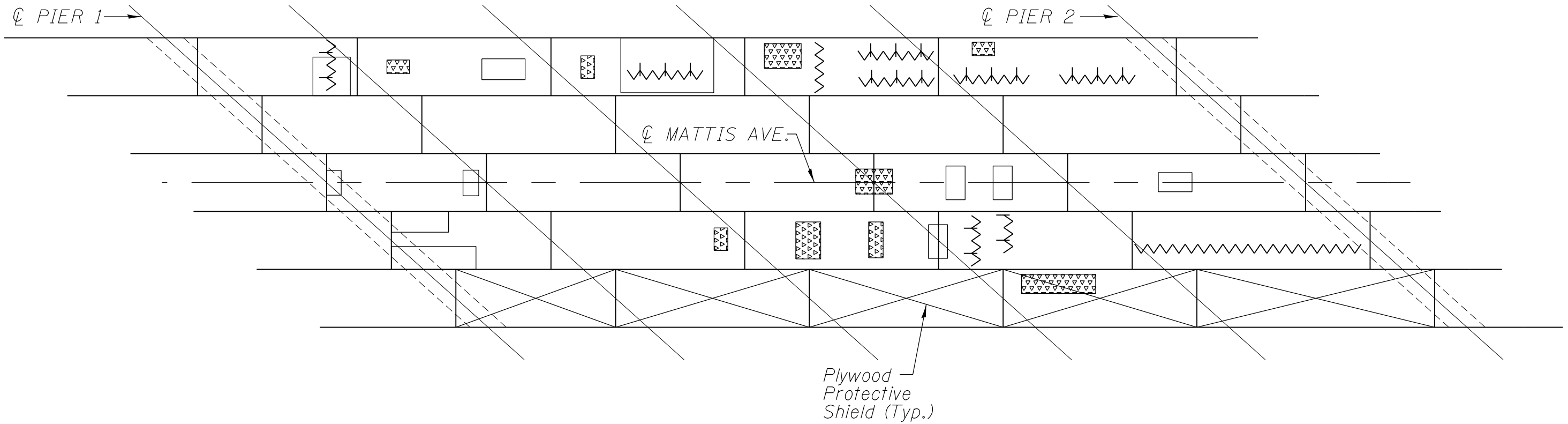

N

## LEGEND

- Cracking
- Exposed Rebar
- Cracking w/ Efflorescence
- Scaling

MATTIS AVE.
OVER I-57

# BOTTOM OF DECK CONDITION SURVEY, SPAN 1

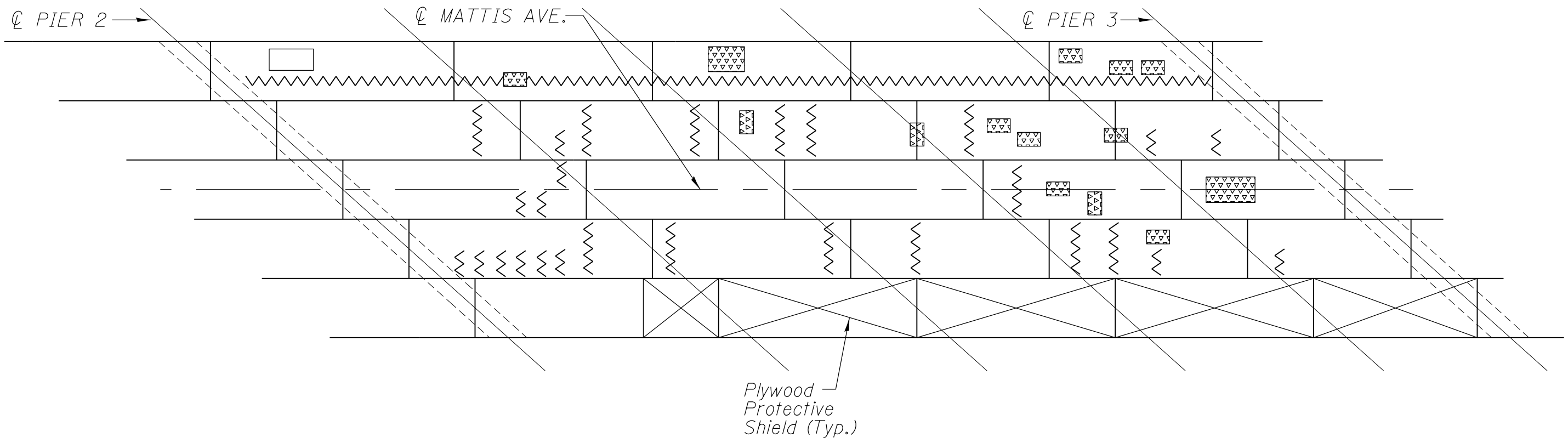



## LEGEND

- Cracking
- Exposed Rebar
- Cracking w/ Efflorescence
- Staining

MATTIS AVE.
OVER I-57

# BOTTOM OF DECK CONDITION SURVEY, SPAN 2




LEGEND

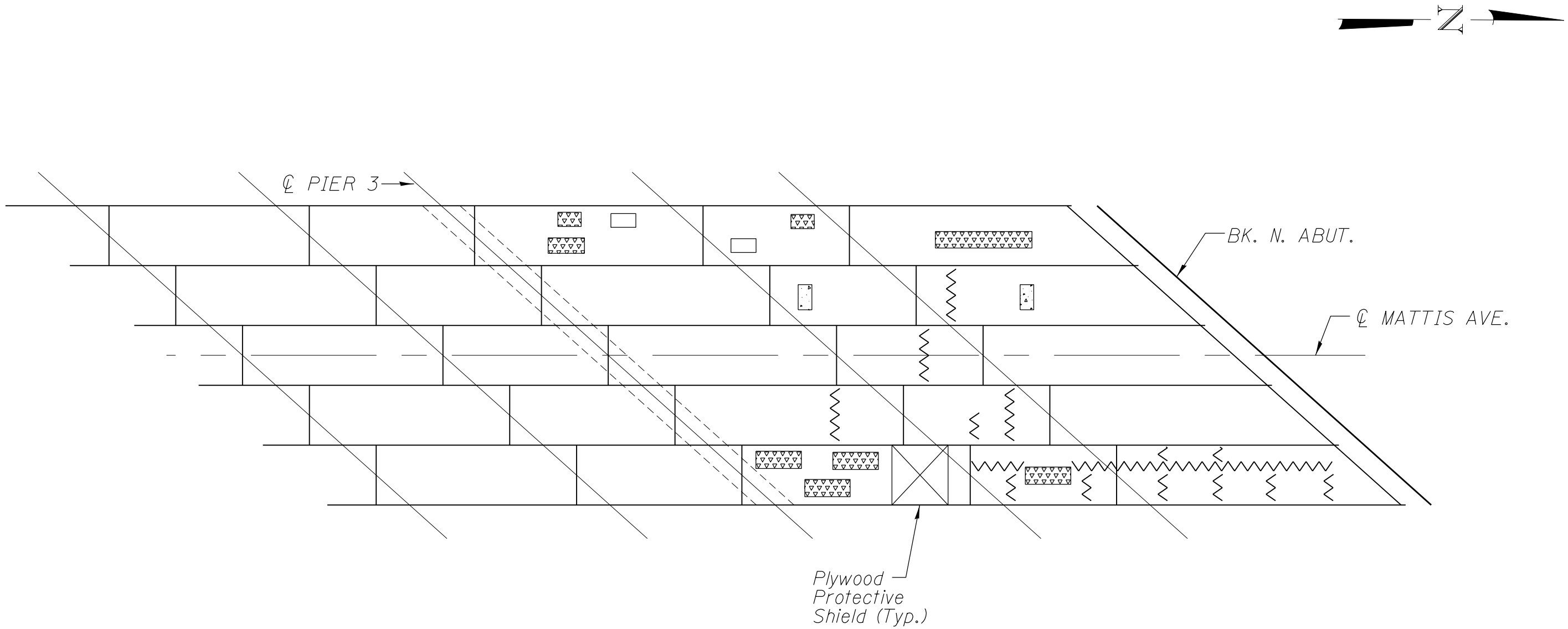
Cracking

Exposed Rebar

Staining

MATTIS AVE.
OVER I-57

# BOTTOM OF DECK CONDITION SURVEY, SPAN 3




LEGEND

- Cracking
- Exposed Rebar
- Staining
- Concrete Patch

MATTIS AVE.
OVER I-57

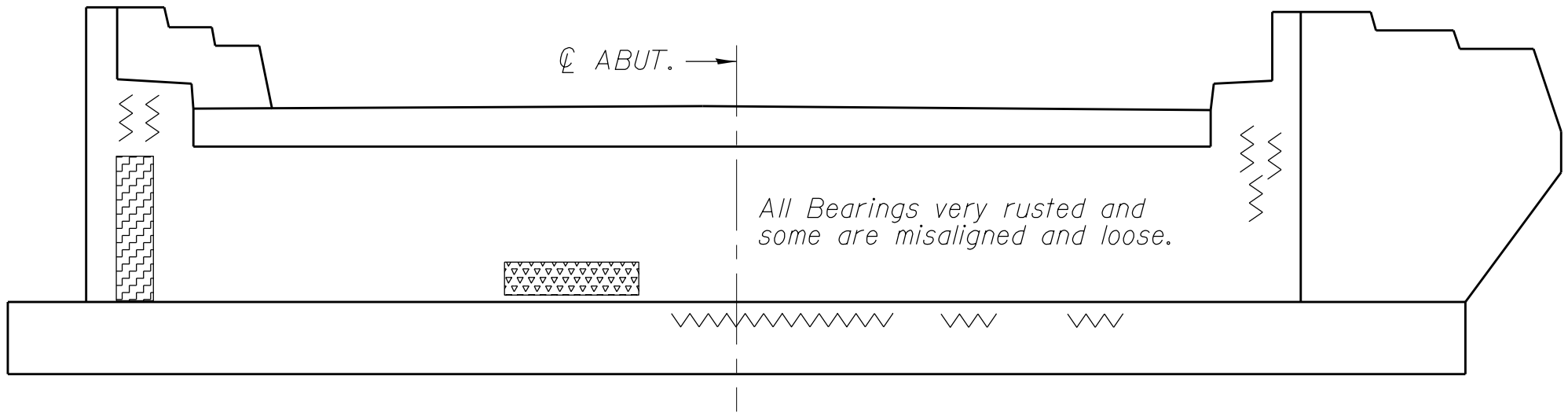
# BOTTOM OF DECK CONDITION SURVEY, SPAN 4

# **ATTACHMENT E**

Substructure Condition Surveys

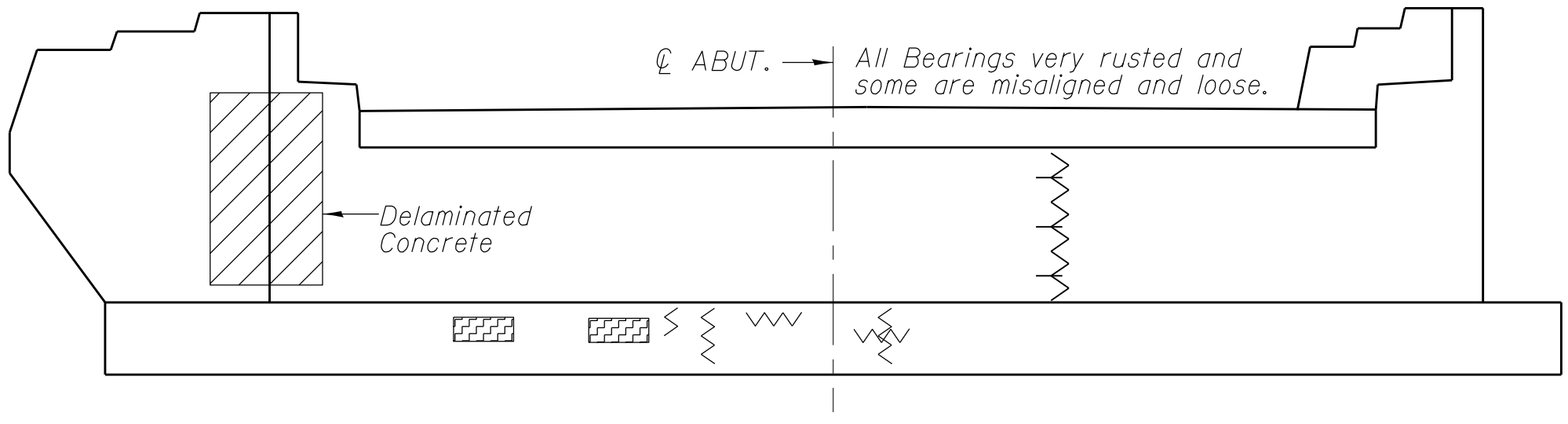
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105




100

NORTH ABUTMENT




105

SOUTH ABUTMENT

LEGEND

- Cracking
- Exposed Rebar
- Spalling
- Cracking w/ Efflorescence

100

MATTIS AVE.
OVER I-57

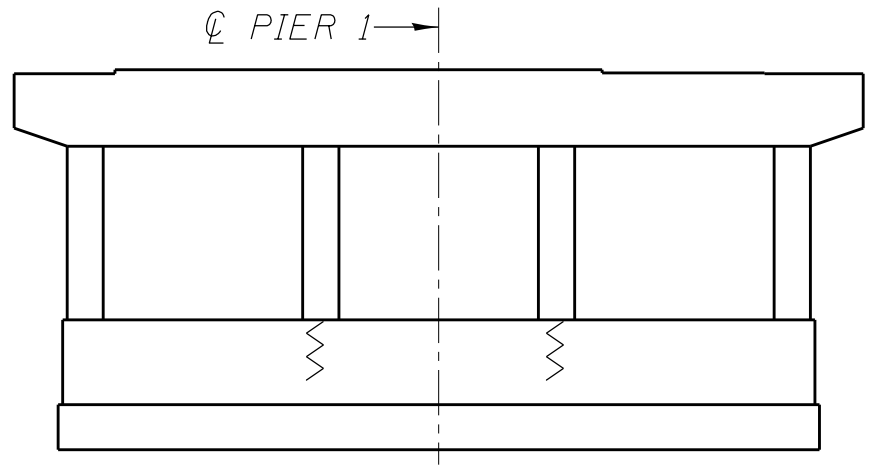
# ABUTMENT CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

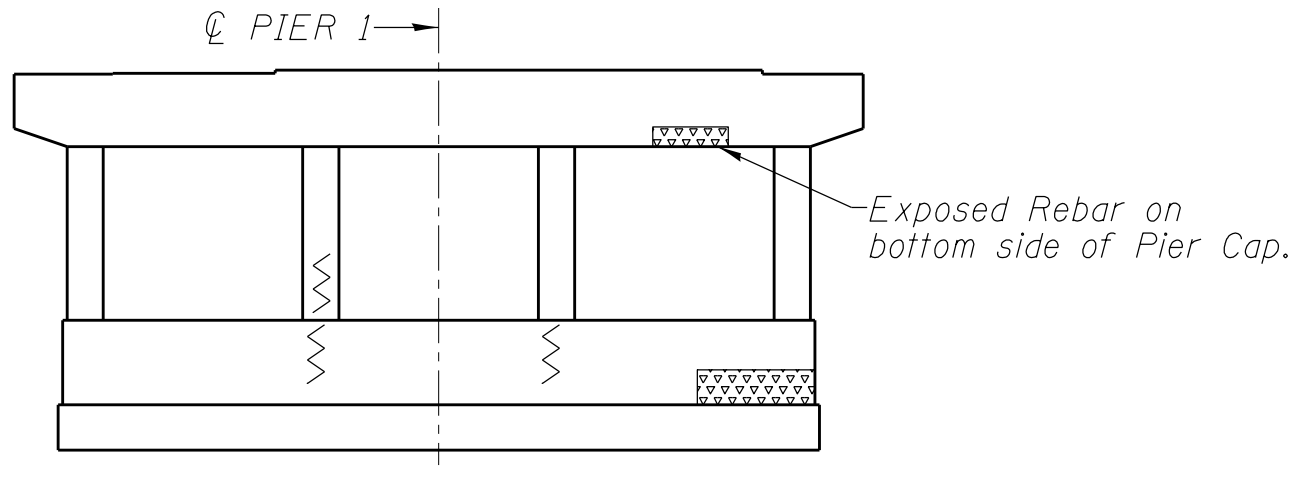
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




PIER 1
(LOOKING SOUTH)




105

LEGEND

Cracking

Exposed Rebar

100

PIER 1
(LOOKING NORTH)

MATTIS AVE.
OVER I-57

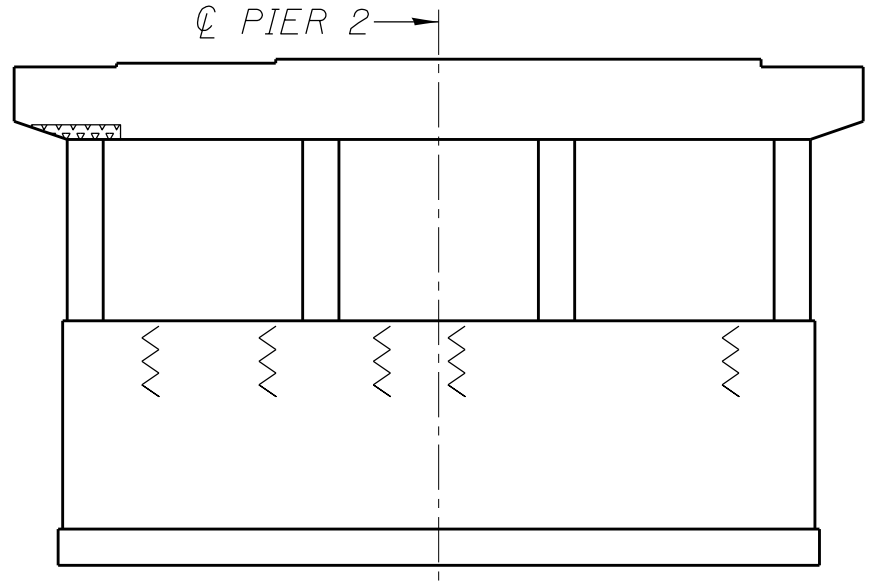
# PIER CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

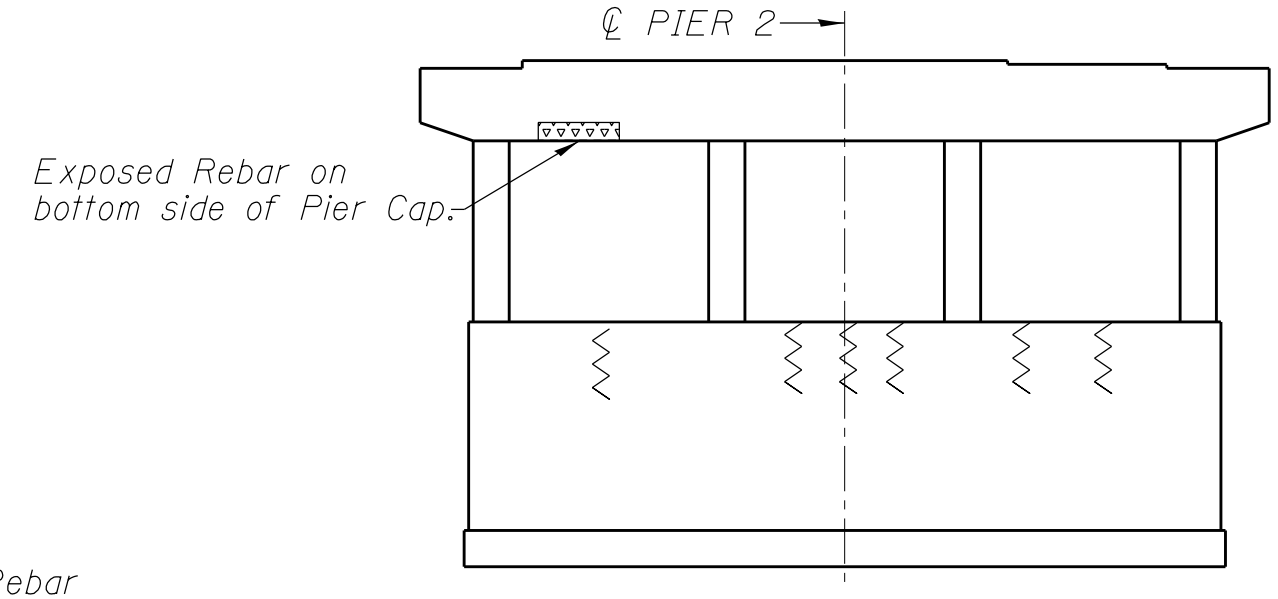
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




PIER 2
(LOOKING SOUTH)




105

LEGEND

Cracking

Exposed Rebar

100

PIER 2
(LOOKING NORTH)

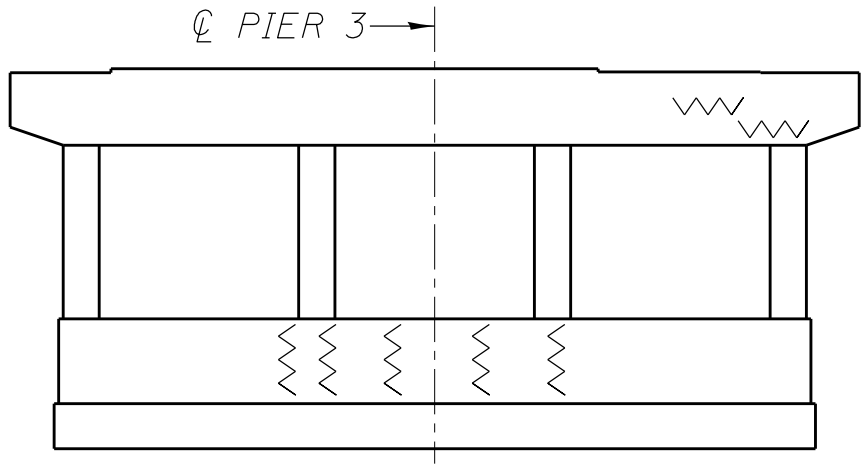
MATTIS AVE.
OVER I-57

# PIER CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

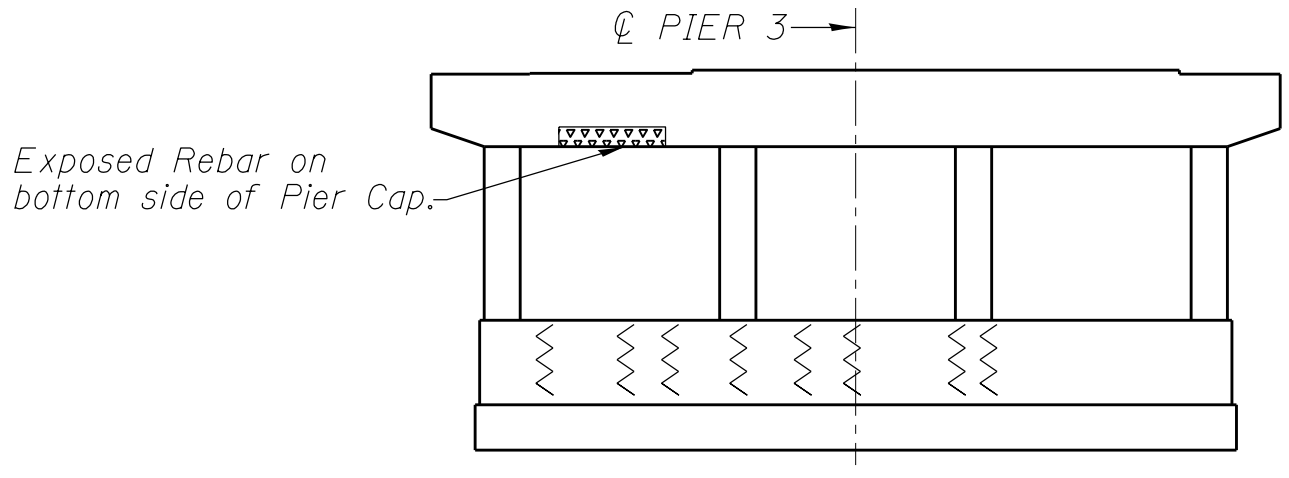
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105




100

PIER 3
(LOOKING SOUTH)




105

LEGEND

Cracking

Exposed Rebar

100

PIER 3
(LOOKING NORTH)

MATTIS AVE.
OVER I-57

# PIER CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

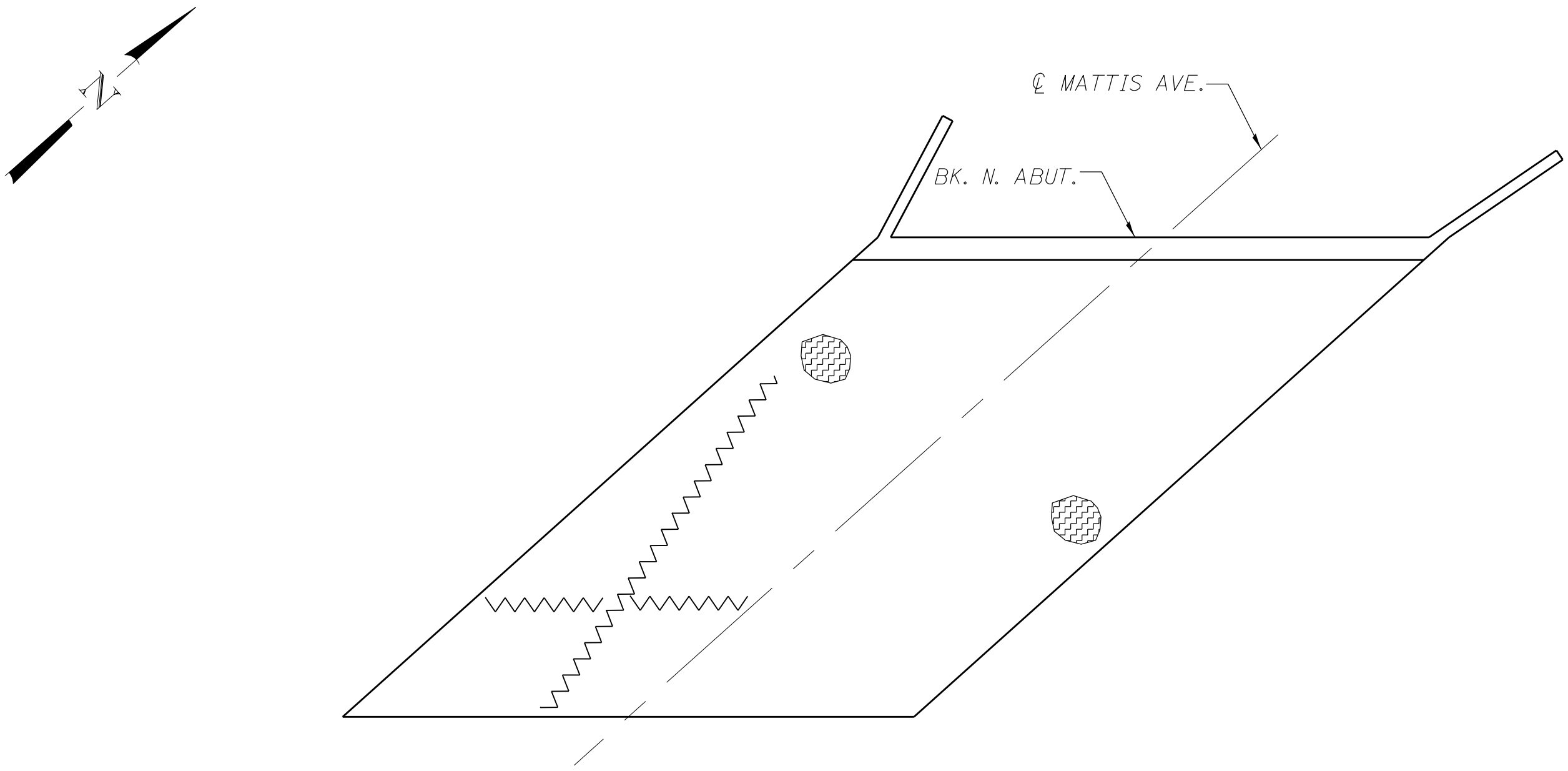
N

℄ MATTIS AVE.

BK. N. ABUT.

100

105



LEGEND

Cracking

Spalling

100

# NORTH SLOPEWALL

MATTIS AVE.
OVER I-57

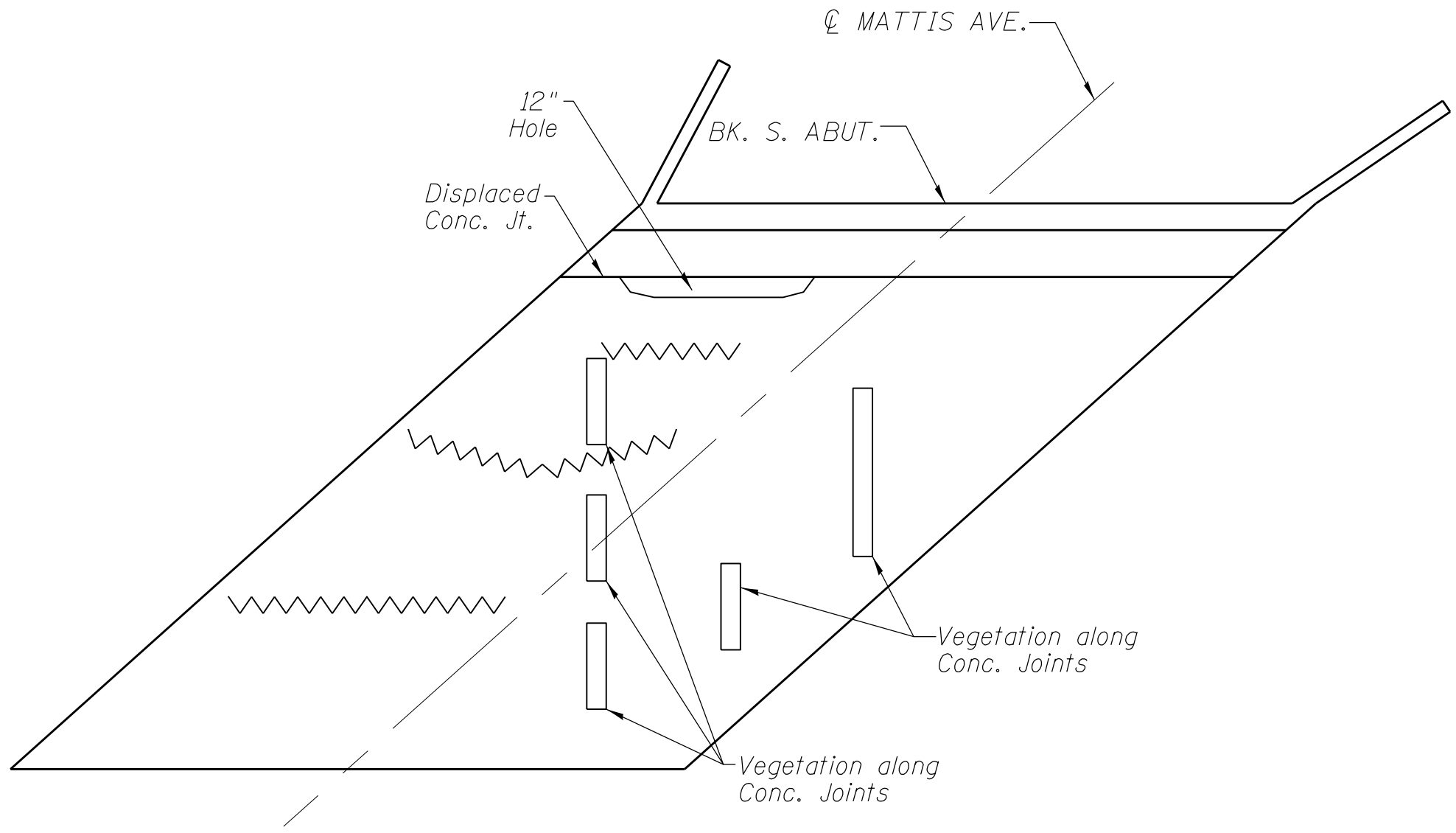
# SLOPEWALL CONDITION SURVEY

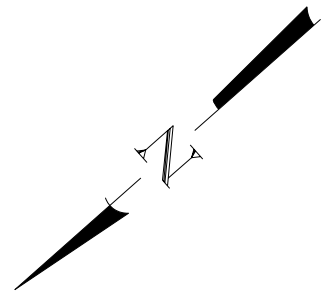
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

100

LEGEND

Cracking

# SOUTH SLOPEWALL

MATTIS AVE.
OVER I-57

# SLOPEWALL CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

# **ATTACHMENT F**

Cost Estimates

Mattis Avenue over FAI 57
SN 010-0100

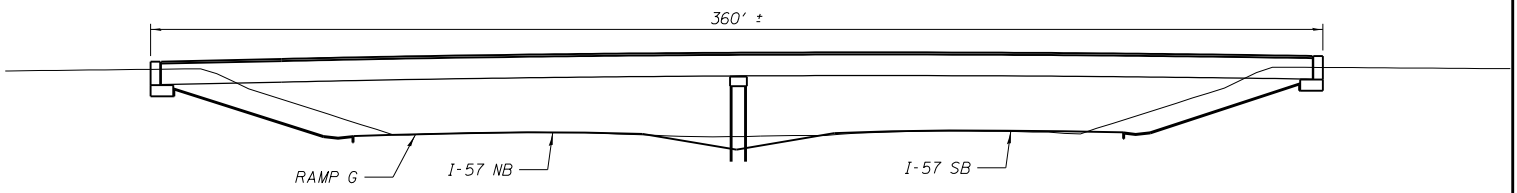
Preliminary Cost Estimate
Complete Replacement

| CODE | PAY ITEM | UNIT | QUANTITY | | | UNIT COST | ITEM COST |
|---|---|---|---|---|---|---|---|
| | | | SUPER | SUB | TOTAL | | |
| 50100100 | REMOVAL OF EXISTING STRUCTURES | EACH | | | **1** | $75,000.00 | $75,000.00 |
| 50200100 | STRUCTURE EXCAVATION | CU YD | | 764 | **764** | $24.00 | $18,336.00 |
| 50300225 | CONCRETE STRUCTURES | CU YD | | 305 | **305** | $600.00 | $183,000.00 |
| 50300255 | CONCRETE SUPERSTRUCTURE | CU YD | 696 | | **696** | $750.00 | $522,000.00 |
| 50300260 | BRIDGE DECK GROOVING | SQ YD | 2006 | | **2006** | $6.00 | $12,036.00 |
| 50300300 | PROTECTIVE COAT | SQ YD | 2413 | | **2413** | $2.50 | $6,032.50 |
| 50500105 | FURNISHING AND ERECTING STRUCTURAL STEEL | L SUM | | | **1** | $1,690,000 | $1,690,000.00 |
| 50500505 | STUD SHEAR CONNECTORS | EACH | 10512 | | **10512** | $3.25 | $34,164.00 |
| 50800205 | REINFORCEMENT BARS, EPOXY COATED | POUND | 60920 | 139250 | **200170** | $1.20 | $240,204.00 |
| 51100100 | SLOPE WALL 4 INCH | SQ YD | | 840 | **840** | $90.00 | $75,600.00 |
| 51201600 | FURNISHING STEEL PILES HP12X53 | FOOT | | 800 | **800** | $42.00 | $33,600.00 |
| 51202305 | DRIVING PILES | FOOT | | 800 | **800** | $0.65 | $520.00 |
| 51500100 | NAME PLATES | EACH | 1 | | **1** | $420.00 | $420.00 |
| 52100520 | ANCHOR BOLTS, 1" | EACH | | 48 | **48** | $77.00 | $3,696.00 |
| 59100100 | GEOCOMPOSITE WALL DRAIN | SQ YD | | 210 | **210** | $20.00 | $4,200.00 |
| X5860110 | GRANULAR BACKFILL FOR STRUCTURES | CU YD | | 516 | **516** | $40.00 | $20,640.00 |
| Z0026407 | TEMPORARY SHEET PILING | SQ FT | | 1000 | **1000** | $25.00 | $25,000.00 |
| Z0046304 | PIPE UNDERDRAINS FOR STRUCTURES 4" | FOOT | | 288 | **288** | $18.75 | $5,400.00 |

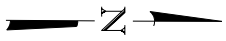
| | | |
|---|---|---|
| | Subtotal = | $2,949,848.50 |
| 15% | Contingency = | $442,477.28 |
| | Total = | **$3,392,330** |

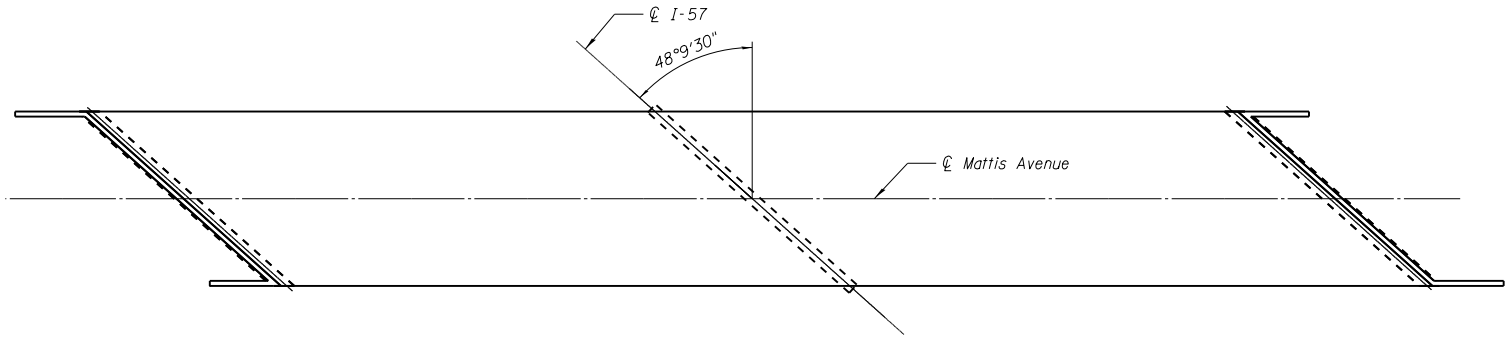
# ATTACHMENT G

Proposed Structure

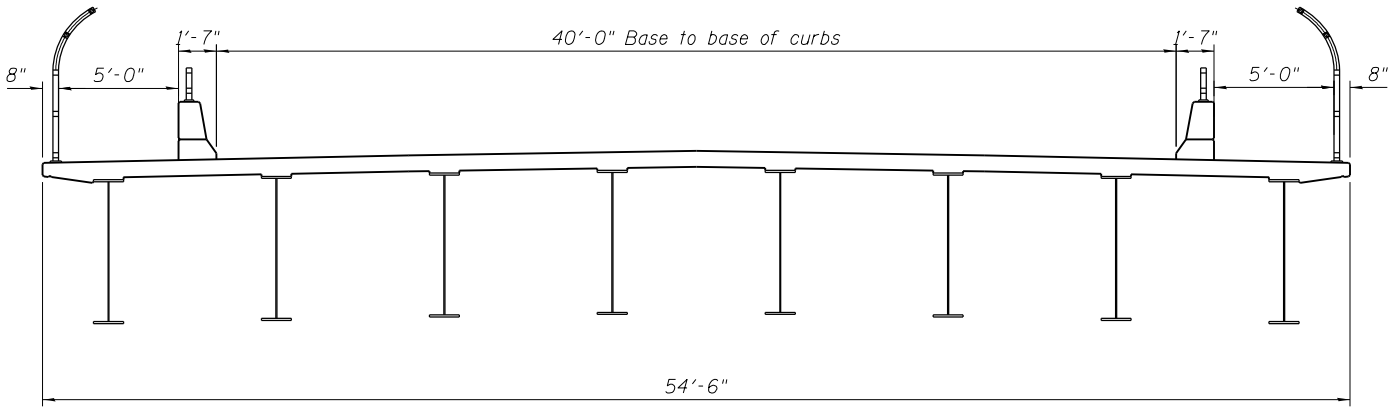



ELEVATION



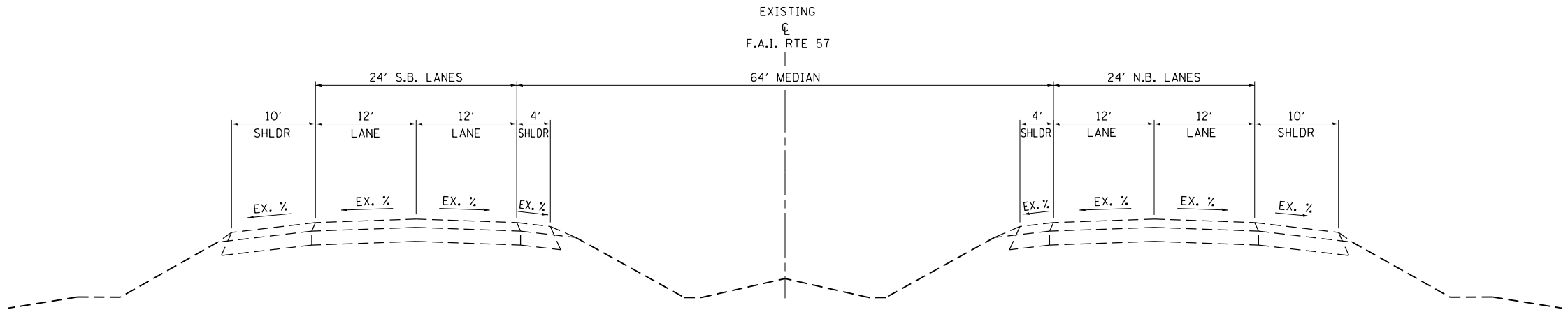

PLAN PROPOSED
STRUCTURE




PROPOSED STRUCTURE
WIDTH

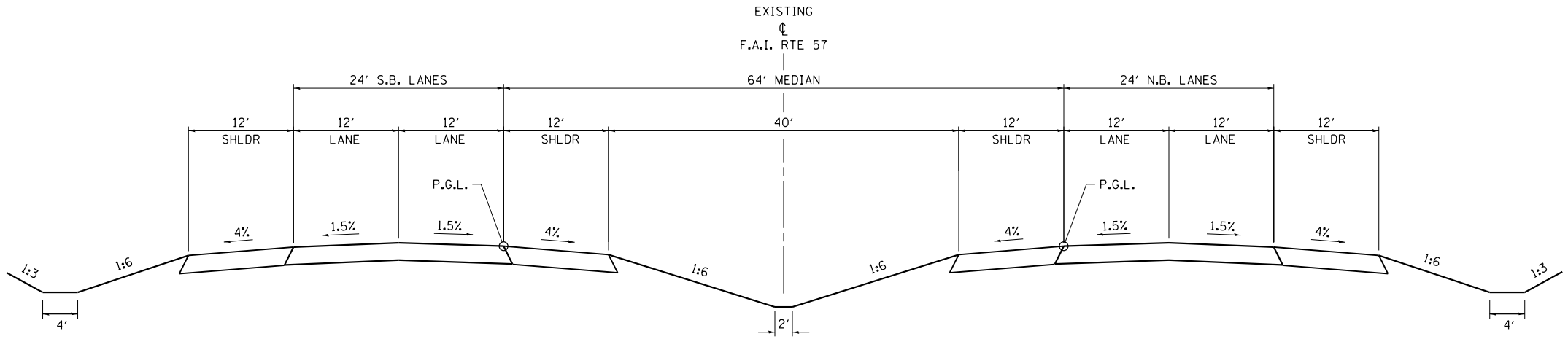
*Notes:*
*The number and location of piers, the profile grade and bridge length are subject to refinement in the TSL phase.*
*Superstructure type, beam spacing and rail type to be determined during the TSL phase.*

PROPOSED
STRUCTURE SKETCH
SN 010-0100



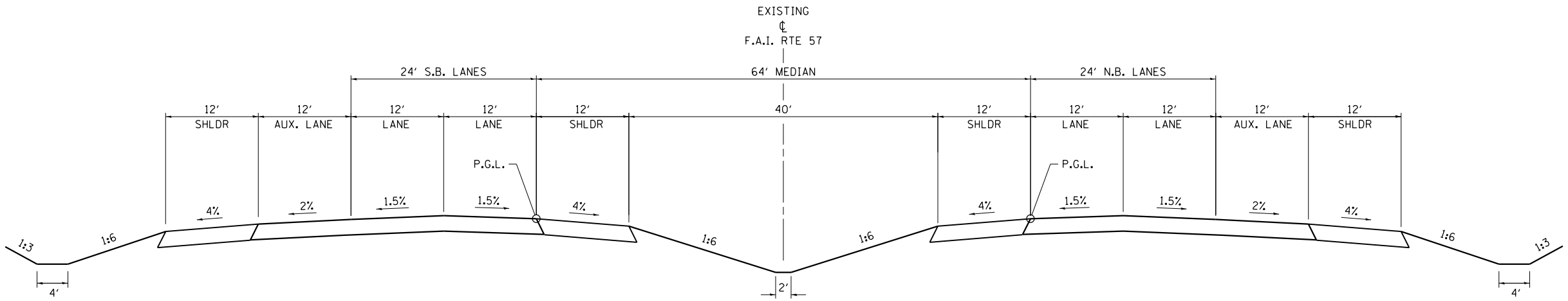

**EXISTING F.A.I 57**

(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
WITH AUXILIARY LANE
(LOOKING NORTH)

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**INTERSTATE 57**

**EXHIBIT 51**

BDE-9008

PLOT DATE = 8/12/2014 - 10:15:21 AM
FILE NAME = L:\IDOT\1106602\Draw\Exhibits\ITS\...
PLOT SCALE = 16.0000 ' / in.
USER NAME = Brad Downen

# **ATTACHMENT H**

Structure Photos



**Looking up-station (North) through structure**



**Looking down-station (South) through structure**



**Looking up-station (East) of I-57 from structure**



**Looking down-station (West) of I-57 from structure**



**Looking up-station (East) of I-57 showing the bridge**



**Looking down-station (West) of I-57 showing the bridge**



**Southwest Wingwall**



**Southeast Wingwall**



**Northwest Wingwall**



**Northeast Wingwall**



**South abutment expansion joint (Looking West)**



**North abutment expansion joint (Looking West)**



**Structure Bridge Rail (East side)**



**General condition of underside of superstructure Span 1**



**General condition of underside of superstructure Span 2**



**General condition of underside of superstructure Span 3**



**General condition of underside of superstructure Span 4**



**Protective shield along east side of bridge**



**South abutment**



**North abutment**



**Northwest corner of North Abutment**



**General condition of abutment bearing**



**South face of Pier 1**



**North face of Pier 1**



**South face of Pier 2**



**North face of Pier 2**



**South face of Pier 3**



**North face of Pier 3**



**Diaphragm deterioration and patched deck area (East end of Pier 2 shown)**



**Exposed reinforcement at Pier 3**



**Slopewall at South abutment**



**Slopewall at North abutment**

# **ATTACHMENT J**

Proposed Plan & Profile

62

| | | | |
|---|---|---|---|
| FILE NAME = P:\Projects\2011 Projects\11354 - IDOT I-74 Interchange\ST\BCR\D5708979-sht-plnprof.alt | USER NAME = $USER$ | DESIGNED - | REVISED - |
| $MODELNAME$ | PLOT DATE = 10/13/2014 | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| | PLOT DATE = $DATE$ | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ALTERNATE #2, NORTH MATTIS AVE. OVER I-57**
**PLAN & PROFILE**

SCALE: | SHEET | OF | SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |

ILLINOIS | FED. AID PROJECT

CONTRACT NO.

19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00

784.97 786.07 787.17 788.27 789.37 790.47 791.57 792.67 793.77 794.70 795.34 795.68 795.73 795.48 794.92 794.08 792.94 791.73 790.52 789.31 788.10 787.67 787.02 786.00

784.94 785.97 787.00 788.03 788.72 789.27 789.82 790.38 770.39 780.41 770.41 769.61 771.09 771.08 788.22 790.86 790.54 790.21 789.50 788.74 787.97

784.65 783.70 782.34

EXISTING GROUND
PROPOSED PROFILE
388.25' V.C.
+35.92 EL. 793.28
+47.56 EL. 793.71
70' WEB PL. GIRDER
-2.42%
+2.20%
VPI STA. 25+41.79
ELEVATION 797.99

765 770 775 780 785 790 795 800 805

PROFILE
SURVEYED
PLOTTED
DRAWN
CHECKED
BM. NOTED
STRUCTURE NOTATING CHKD
NOTE BOOK
NO. ____
BY
DATE

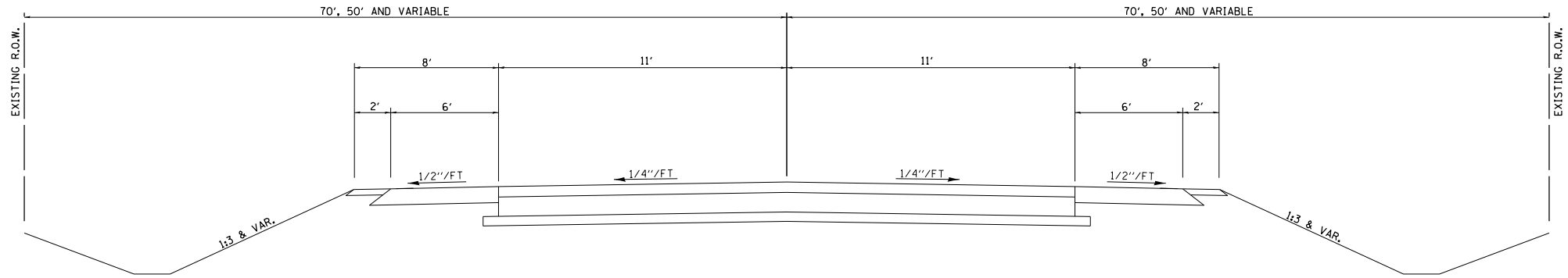
SCALE: 1" = 50'
100 50 0 50

L630
I-57
366'-0"
356'-6"
180'-6"
176'-0"
4'-9"
4'-9"
L625
RAMP C
I-57
N. MATTIS AVE.
30 25 20

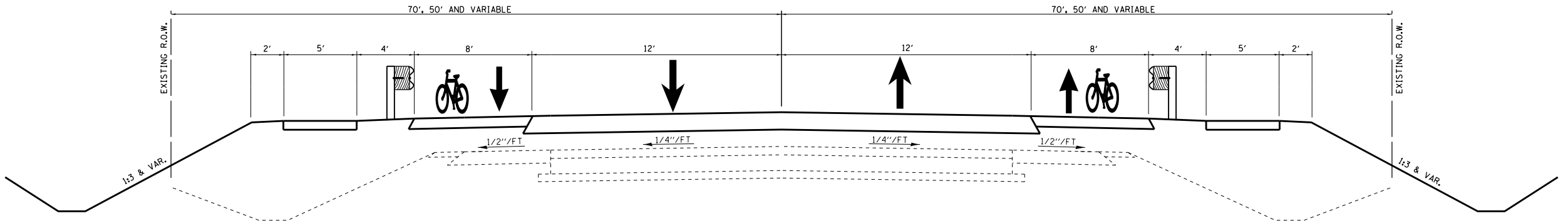
PLAN
SURVEYED
PLOTTED
DRAWN
CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO. ____
BY
DATE

# ATTACHMENT K

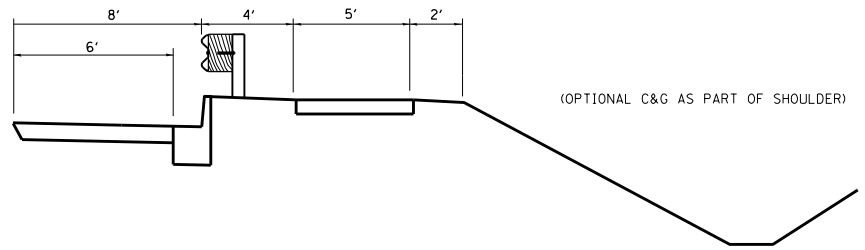
Existing and Proposed Roadway Cross Sections




**EXISTING TYPICAL CROSS SECTION**
**MATTIS AVENUE**




**PROPOSED TYPICAL CROSS SECTION**
**MATTIS AVENUE**




(OPTIONAL C&G AS PART OF SHOULDER)

| | | | |
|---|---|---|---|
| FILE NAME = P:\Projects\2011 Projects\11354 - IDOT I-74 Interchange\ST\I-74 Interchange (Radial Subdivision Layout).B3.dgn | USER NAME = $USER$ | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = 10/13/2014 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**FAU 7158 (MATTIS AVENUE)**
**(NORTH OF WEST ANTHONY DRIVE)**

SCALE: _____ | SHEET ___ OF ___ SHEETS | STA. _____ | TO STA. _____

| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 7158 | 10IS-1-BS-1.14-1.61B | CHAMPAIGN | 20 | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

# **ATTACHMENT L**

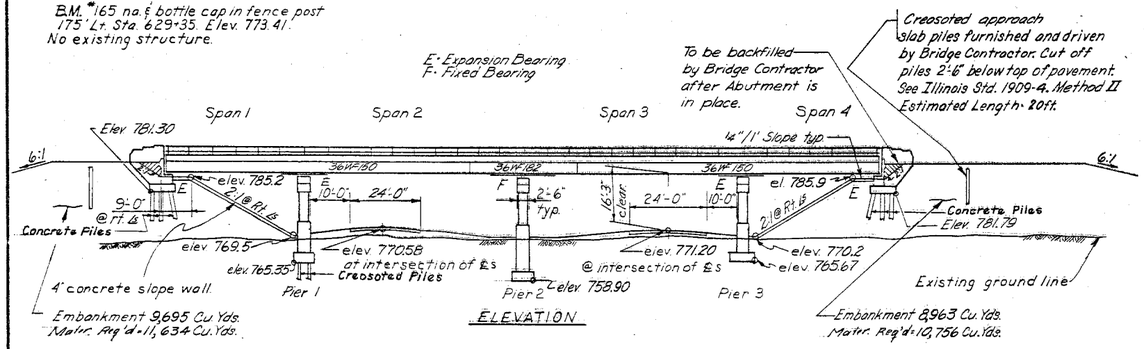
Abbreviated Existing Plans

BRIDGE DWG. 1 OF 10

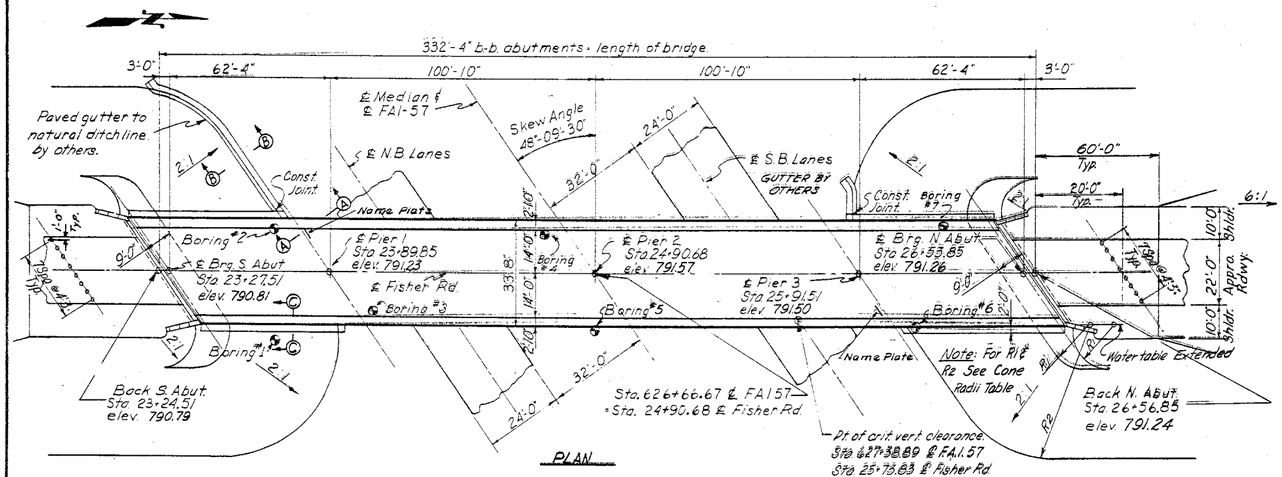
| ROUTE NO. | SECTION | CO. NTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| FAI 57 | 10-34HB -3 | CHAMPAIGN | 22 | 7 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT | I-57-5(25) 736 | |

B.M. "165 na. & bottle cap in fence post 175' Lt. Sta. 629+35. Elev. 773.41". No existing structure.

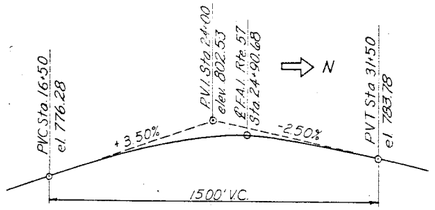
E - Expansion Bearing
F - Fixed Bearing



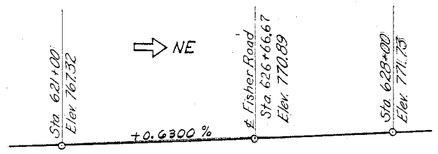

ELEVATION



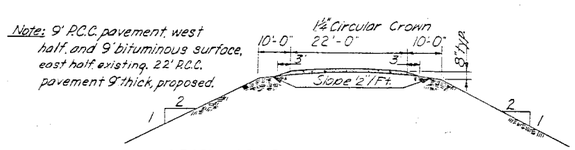

PLAN




PROFILE OF FISHER ROAD




PROFILE OF FAI-57




SECTION THRU FISHER ROAD AT APPROACHES
Class C ROAD
ADT - 1100 (1979)

CONE RADII TABLE

| Corner | Station | $R_1$ | $R_2$ |
|---|---|---|---|
| S.W. | 22+94.50 | 12'-8" | — |
| | 23+00.00 | 12'-8" | 45°-1 |
| S.E. | 23+32.75 | 12'-8" | — |
| | 23+39.00 | 12'-8" | 45°-1 |
| N.W. | 26+44.20 | 12'-4" | 43°-2" |
| | 26+50.45 | 12'-4" | — |
| N.E. | 26+81.50 | 12'-4" | 43°-2" |
| | 26+87.00 | 12'-4" | — |

DESIGN STRESSES

$f_c$ = 1400 psi (Super. & Substruct)
$f_s$ = 20,000 psi (Reinf.)
$f_s$ = 20,000 psi, Struct (A-36)
$n$ = 10
$v$ = 75 psi (footings)
$\Delta LL$ = 1/1200 (Composite)
$f_c$ = 1000 psi (Substruct. under earth pressure)

FUNCTIONS OF SKEW ANGLE

sin 48°-09'-30" = 0.744991
cos 48°-09'-30" = 0.667074
tan 48°-09'-30" = 1.116804

LOADING: H20-516-44

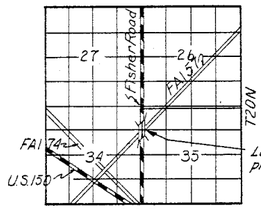
STATION 626+66.67
BUILT 196 BY
STATE OF ILLINOIS
F.A.I. RTE. 57 SEC. 10-34HB-3
F.A. PROJECT I-57-5(25)
LOADING H20-516-44

See Standard 2113-1 Locate Name Plate as shown on Bridge Dwg. 5 of 10.

NAME PLATE DATA

GENERAL NOTES

1. SPECIFICATIONS: THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 2, 1958 AND THE REVISIONS THERETO SHALL APPLY.
2. CONCRETE: CLASS X CONCRETE SHALL BE USED THROUGHOUT. THE CONCRETE FLOOR SLAB SHALL BE FINISHED IN ACCORDANCE WITH ARTICLE 51.19 OF THE STANDARD SPECIFICATIONS AND SHALL BE POURED IN ONE CONTINUOUS OPERATION BETWEEN CONSTRUCTION JOINTS IN ACCORDANCE WITH ARTICLE 51.11. COARSE AGGREGATE WHICH IS TO BE USED IN END POSTS MUST BE FREE OF CHERT, FLINT LIMONITE, LIGMITE AND SOFT SAND-STONE.
3. PAINT: EXCEPT AS OTHERWISE PROVIDED ALL STRUCTURAL STEEL AND METAL HANDRAIL SHALL RECEIVE ONE SHOP COAT OF RED LEAD PAINT AND TWO FIELD COATS OF ALUMINUM PAINT IN ACCORDANCE WITH ARTICLES 56.1 THROUGH 56.5 OF THE STANDARD SPECIFICATIONS. ALL PAINT SHALL BE FURNISHED AND APPLIED BY THE CONTRACTOR. THE EXPOSED SURFACES OF EXPANSION GUARDS SHALL BE GIVEN TWO SHOP COATS OF RED LEAD PAINT.
4. PRECORING: HOLES SHALL BE PRECORED FOR THE ABUTMENT PILES IN ACCORDANCE WITH ARTICLE 60.9 (C) OF THE STANDARD SPECIFICATIONS.
5. TEST PILES: THE CONTRACTOR SHALL DRIVE ONE CONCRETE TEST PILE AT EACH ABUTMENT AND ONE TIMBER TEST PILE AT PIER 1 IN PERMANENT LOCATIONS IN ACCORDANCE WITH ARTICLE 60.15 OF THE STANDARD SPECIFICATIONS BEFORE ORDERING THE REMAINDER OF THE PILES.
6. PERMANENT FORMS WILL NOT BE PERMITTED IN FORMING THE CONCRETE FLOOR.
7. MINIMUM LAP FOR ALL REINFORCING BARS SHALL BE 20 DIAMETERS.
8. DETOUR ROAD: THE BRIDGE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN A DETOUR ROAD AROUND THE BRIDGE CONSTRUCTION SITE IN ACCORDANCE WITH THE PLANS AND SPECIAL PROVISIONS.




LOCATION SKETCH
Champaign County

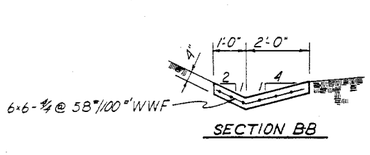
SECTION 10-34HB-3
TOTAL BILL OF MATERIAL

| | ITEM | UNIT | SUPER. | SUBSTR. | TOTAL |
|---|---|---|---|---|---|
| | *Borrow Excavation | Cu. Yds. | | 21,653 | 21,653 |
| *** | Class A Excav. For Structs. | Cu. Yds. | | 365 | 365 |
| | Furn. & Erecting Struct. Steel | Lbs. | 379,898 | | 379,898 |
| | Class Y Concrete | Cu. Yds. | 317.1 | 330.3 | 647.4 |
| | Metal Handrail | Lin. Ft. | 659 | | 659 |
| | Reinforcement Bars | Lbs. | 63,097 | 26,026 | 89,123 |
| | Concrete Piles | Lin. Ft. | | 600 | 600 |
| | Test Piles (Concrete) | Each | | 2 | 2 |
| | Name Plates | Each | | 2 | 2 |
| | Slope Wall 4" | Sq. Yds. | | 380 | 380 |
| | Creosoted Piles (up to 20') | Lin. Ft. | | 980 | 980 |
| | Test Pile (Timber) | Each | | 1 | 1 |
| | Protective Coat | Sq. Yds. | 1,310 | | 1,310 |
| ** | Bridge Seat Sealant | Lump Sum | | | 1 |

* 737 Cu. Yds To Be Obtained from DETOUR ROAD CONSTRUCTION. OTHER QUANTITIES FOR DETOUR ROAD ARE SHOWN IN SUMMARY OF QUANTITIES ON SHEET 3 OF 22. NO OVERHAUL SHALL BE ALLOWED.

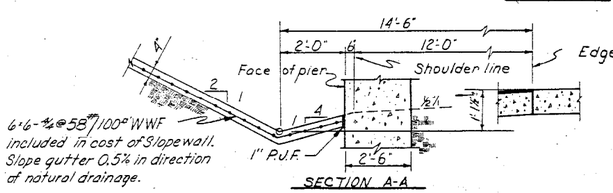
** Bridge Seat Sealant shall be applied at the abutments, only (See Special Provisions)

*** Includes excavation for slope wall




SECTION BB

SECTION C-C




SECTION A-A

SLOPE WALL AND GUTTER DETAILS

| NO. | REVISION | BY | DATE |
|---|---|---|---|
| 1 | Revised Vertical Geometry | CBP | 10-11-62 |

GENERAL PLAN AND ELEVATION
SECTION 10-34HB-3 STATION 626+66.67
F.A.I. RTE. 57 PROJECT I-57-5( )
CHAMPAIGN COUNTY

CLARK, DAILY, DIETZ AND ASSOCIATES
CONSULTING ENGINEERS
URBANA, ILLINOIS

| | | | |
|---|---|---|---|
| DESIGNED | C.B.P. | SCALE AS NOTED | SHEET 1 |
| DRAWN | B.D.S. | DATE 9-27-61 | OF 10 |
| CHECKED | C.B.P. | | JOB NO. 394-V14 |

DESIGNED BY C.B.P. | DRAWN BY B.D.S. | CHECKED BY C.B.P. | DATE 10-12-62 | IN CHARGE M.F.T.

Rev. 5-10-63 V.D.S. Rev. Approx. Piles: 15' to 20'. Locate Name Pl's. Rev. Quant. Added Bridge Seat Sealant; Cre. Piles: 900 to 980 lin. ft. Revised Quant. of Reinf. Bars from 88946 to 89123 1-23-64 J.M.J.

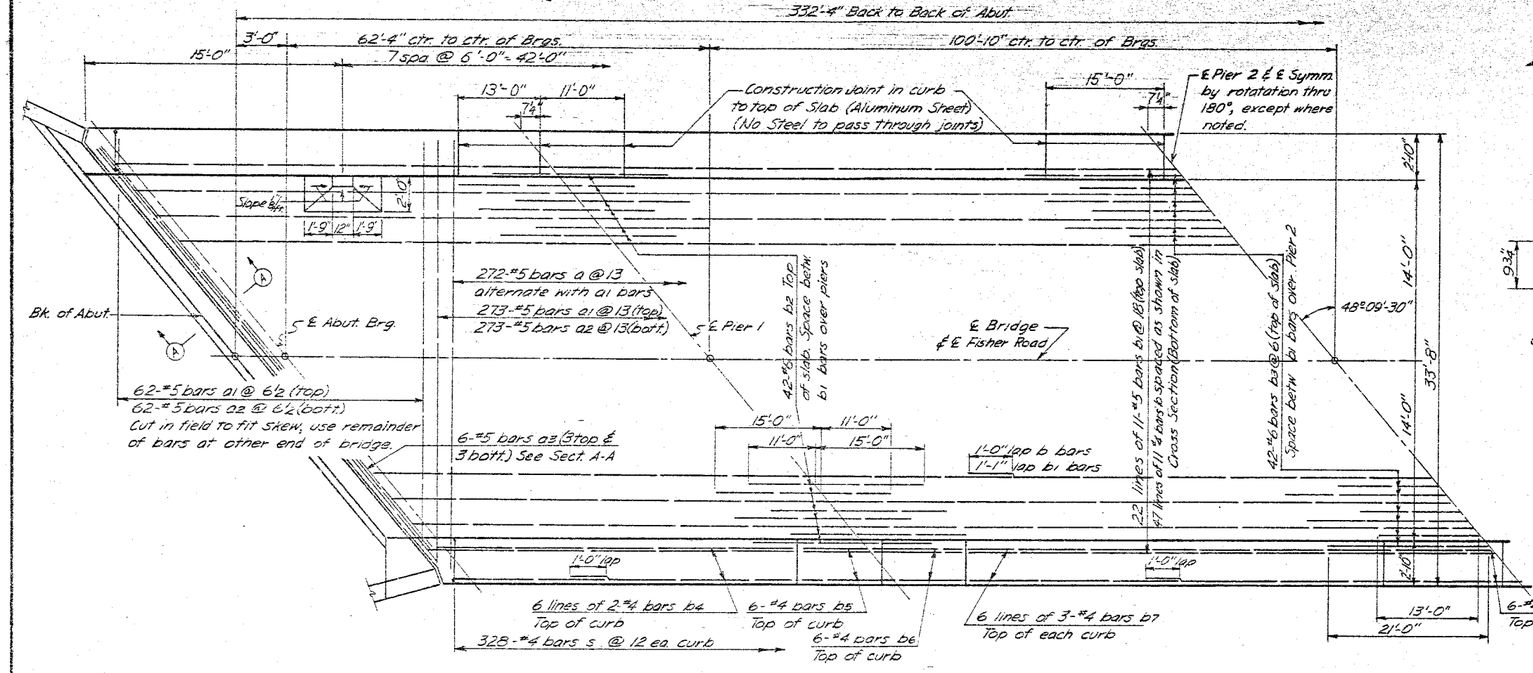
P.R. Added *** Includes excavation for slope wall 5-10-64

* Corrected Borrow Exc note - W.M.D - 6/21/66

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. 57 | 10-34HB-3 | CHAMPAIGN | 22 | 9 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT | | |

BRIDGE DWG. 3 OF 10

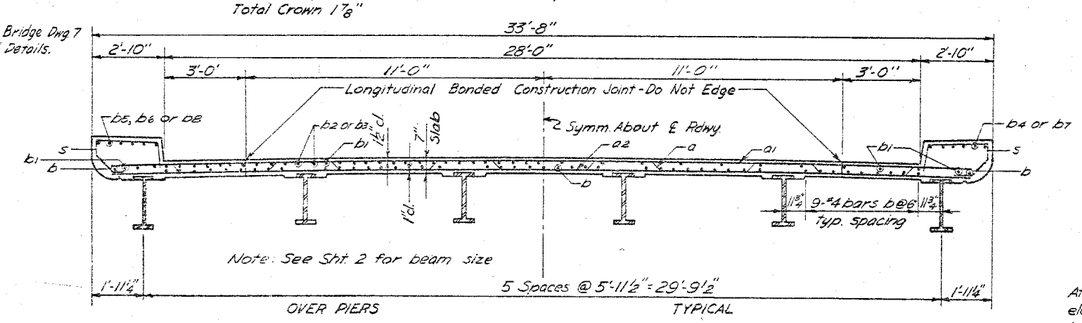
Note: Floor Drains to be placed at each curb in end spans only.



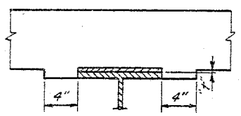

HALF PLAN

Roadway Crown: 1¼" circular curve for 11' each side of ℄, remainder sloped at 0.227 in. per ft. Total Crown 1⅞"

Note: See Bridge Dwg 7 for Handrail Details.



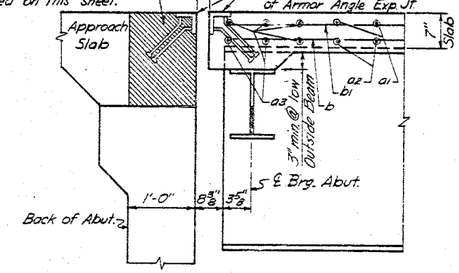

CROSS SECTION




METHOD OF DETERMINING FILLET HEIGHT "t"

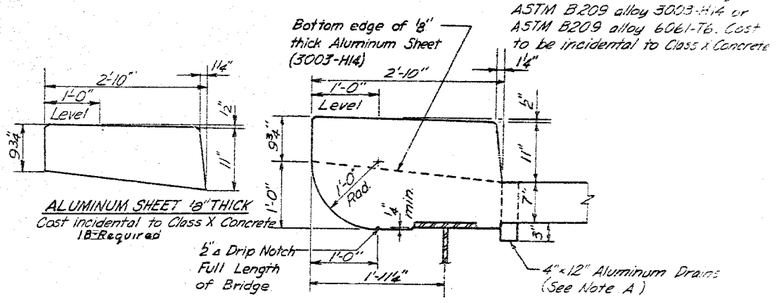
After all Structural Steel has been erected, elevations of the top flanges of the beams shall be taken at the stations shown on Bridge Dwg. 8 These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Bridge Dwg. 8 floor thickness equals the fillet heights above top of beams.

Shaded area to be poured after superstructure formwork has been removed. Quantity of Class X Concrete is included on this sheet.

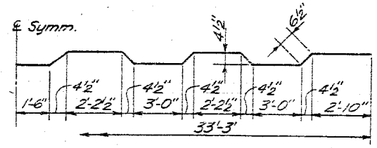



SECTION A-A

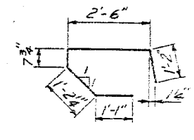
Note A: 4"×12" Aluminum Drains to be fabricated from ⅛" welded sheets of material conforming to ASTM B209 alloy 3003-H14 or ASTM B209 alloy 6061-T6. Cost to be incidental to Class A Concrete




CURB DETAIL




Bar a




Bar s

BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|---|---|---|---|---|
| a | 272 | #5 | 34'-11" | |
| a1 | 335 | #5 | 33'-3" | |
| a2 | 335 | #5 | 32'-9" | |
| a3 | 12 | #5 | 41'-0" | |
| | | | | |
| b | 517 | #4 | 31'-0" | |
| b1 | 242 | #5 | 3'-0" | |
| b2 | 84 | #6 | 26'-0" | |
| b3 | 42 | #6 | 34'-0" | |
| b4 | 48 | #4 | 25'-3" | |
| b5 | 24 | #4 | 12'-6" | |
| b6 | 24 | #4 | 10'-6" | |
| b7 | 72 | #4 | 25'-3" | |
| b8 | 28 | #4 | 14'-6" | |
| | | | | |
| s | 656 | #4 | 6'-7" | |
| | | | | |
| Class X Concrete | | | Cu yds | 317 |
| Reinforcement Bars | | | Lbs | 35,000 |
| Protective Coat | | | Sq yds | 1320 |

DESIGNED BY [illegible] DRAWN BY [illegible] CHECKED BY [illegible] DATE 12-63

SUPERSTRUCTURE
F.A.I. RTE. 57 SEC. 10-34HB-3
CHAMPAIGN COUNTY
STA. 626+66.67

BRIDGE DWG. 3 OF 10

JOB NO. 394-V14

Rev. 5-10-65 VDS Rev. Sect. A-A (@ 50°F.) ; Curb Detail (Alum. Sht's. 1⅛" Req.)

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

# BRIDGE CONDITION REPORT

| | |
|---|---|
| **REGION:** | 3 |
| **DISTRICT:** | 5 |
| **COUNTY:** | Champaign |
| **ROUTE:** | FAP 813 (Duncan Rd) |
| **JOB NUMBER:** | P-95-030-11 |
| **STRUCTURE NUMBER:** | 010-0169 |
| **LOCATION:** | Duncan Road over I-74 |

**PREPARED BY:** Brandon W. Poiter, PE, SE
BFW Engineering & Testing

**DATE INSPECTED:** July 1, 2014

**PROPOSED LETTING DATE:** Unknown

# I. Geographical & Administrative Data

**Structure Number:** 010-0169
**County:** CHAMPAIGN
**Route Carried:** FAP 813 (Duncan Rd)
**Feature Crossed:** FAI 74
**Section:** 10-5HB-1
**Station:** 1837+30.89

**Roadway Classification:** Other Principal Arterial
**Design/Posted Speed:**

**ADT (current/design):** 400 (2013)/1,579 (2032)
**ADTT (current/design):** 16 (2013)/63(2032)
**DHV:**

**Inventory Rating HS:** **16.7**
**Operating Rating HS:** **25.6**
**Sufficiency Rating:** **79.8**

## Construction/Reconstruction/Repair History:

1966 - Constructed under FAI 74, Section 10-5HB-1

# II. Physical Description of Structure:

The existing structure was constructed in 1966 as a four-span rolled steel beam (30 WF 108) non-composite. The superstructure is supported on open stub abutments and multi-column reinforced concrete piers on concrete piles.

| | |
|---|---|
| Length: | 211'-0" Back to Back of Abutments |
| Width: | 30'-0" out to out |
| Span: | 52'-3" / 57'-3" / 57'-3" / 52'-3" |
| Skew: | 15° Left |
| Wearing Surface: | Bare Deck No Overlay |
| Horizontal Alignment: | Tangent |
| Vertical Alignment: | 900' crest vertical curve with an entry grade of +4.0% and exit grade of -5.0%. |
| Utilities: | None |

# III. Field Inspection & Physical Evaluation:

The bridge was visually inspected by Bacon, Farmer, Workman Engineering and Testing, Inc. on July 1st, 2014.

**Superstructure:**

**Deck:** The deck is in fair condition. Transverse hairline cracks with efflorescence spaced at less than 5' intervals are present over a majority of the bottom of deck and soffit. Spalls are present on over 5% of the riding surface area with exposed reinforcement in some areas. Light scaling over the majority of the riding surface is also present with exposure of the surface of coarse aggregates. The bridge railing consisting of a 9" concrete curb with aluminum pipe steel post rail system on a concrete parapet is in good condition but does not meet currently acceptable standards. There is no wearing surface.

**Beams:** The 30WF steel beams are in good condition. Some minor rust along the bottom flange without section loss is present and is mainly over the traffic lanes. The paint is in good condition.

**Joint:** The expansion joint system is paved over and could not be inspected. The as built plans for the existing structure show the end of the deck extending over the abutment back wall with a ½" preformed joint filler between the deck and backwall interface to allow for thermal movement. A steel angle was embedded at each end of the deck to protect the edge.

**Bearings:** The fixed bearings at Pier 2 and rocker bearings at Piers 1 and 3 are in good condition with light rust. The rocker bearings at each abutment are in good condition with light rust on the bottom plates. The bearings appear to functioning properly with no excessive deformation.

**Substructure:**

**Abutments:** The abutments are in very good condition with no problems noted.

**Piers:** The piers are in very good condition with no problems noted.

**Slope Protection:** The slopewall at each abutment is in good condition with minor cracks noted. There is a small amount of vegetation growing out of the slopewall construction joints.

**Inspection History (NBIS Ratings).**

| Year | Deck | Superstructure | Substructure |
|---|---|---|---|
| 2014 | 5 | 7 | 8 |
| 2012 | 6 | 7 | 8 |
| 2011 | 5 | 6 | 8 |

**Geometric, Horizontal & Vertical Clearance:**

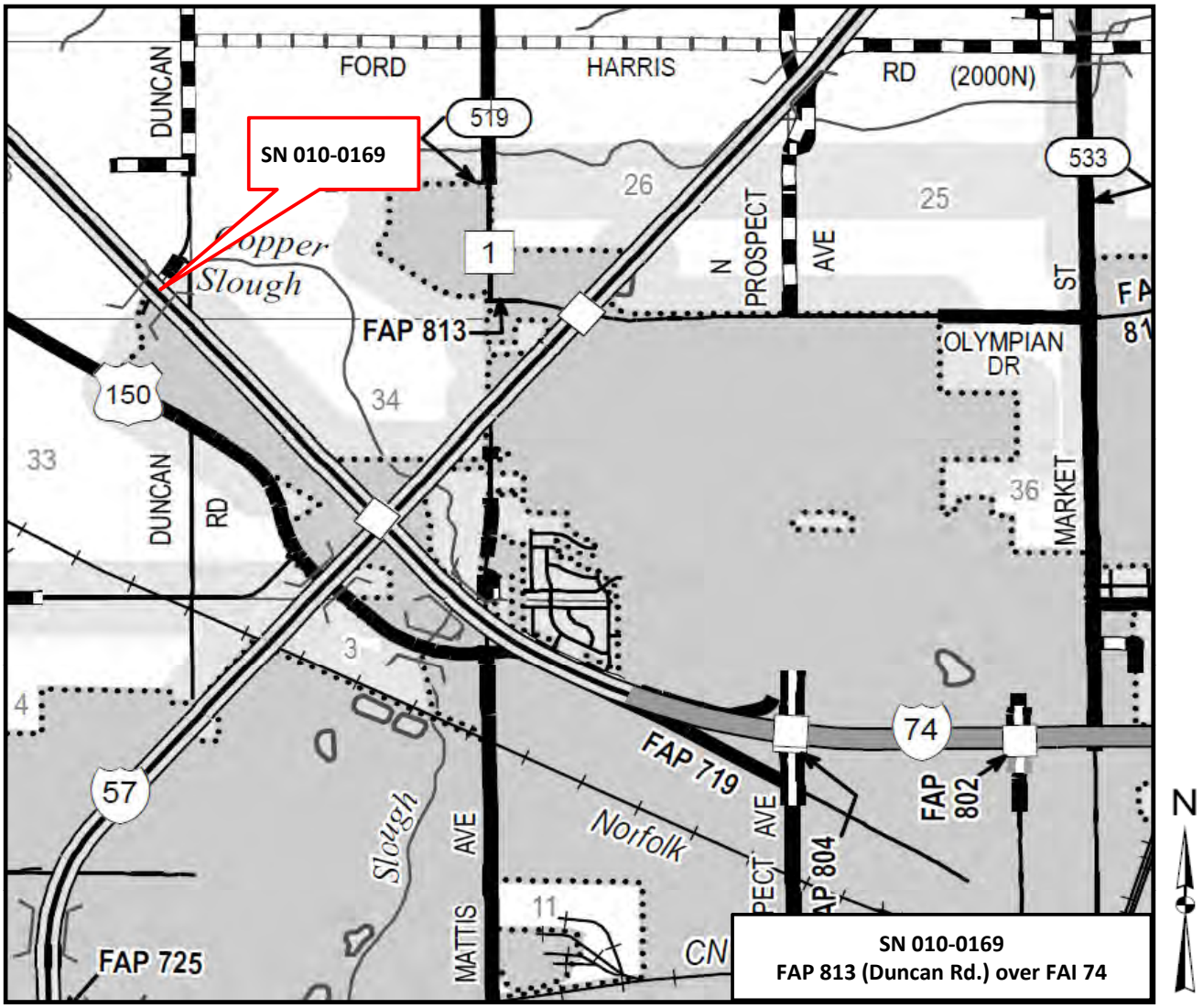
The face-to-face width of the structure is 24'-0" carrying one lane of traffic in each direction. The location of the piers 1 and 3 provides 10' of lateral clearance between the edge of the traveled way and face of pier. Guardrail is provided to protect the pier approach side from each direction. The vertical clearance over I-74 is 16'-3".

## IV. Potential Scope of Work Determination & Analysis:

## V. Discussion and Recommended Scope of Work

# **ATTACHMENT A**

Location Map


SN 010-0169
DUNCAN
FORD
HARRIS
RD (2000N)
519
533
26
25
1
N PROSPECT AVE
ST
Copper Slough
FAP 813
OLYMPIAN DR
150
34
33
DUNCAN RD
36
MARKET
3
4
74
57
FAP 719
FAP 802
Slough
MATTIS AVE
Norfolk
PECT AVE
AP 804
11
CN
FAP 725
N
SN 010-0169
FAP 813 (Duncan Rd.) over FAI 74

# **ATTACHMENT B**

IDOT Master Structure Report

# Illinois Department of Transportation
# Structures Information Management System
# Structure Summary Report



**Structure Number:** 010-0169 **District:** 5

## Inventory Data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Facility Carried:** | FAP 813 | **Bridge Name:** | DUNCAN RD N | **Sufficiency Rating:** | 79.8 | **Structure Length:** | 211.0 |
| **Feature Crossed:** | I-74 | **Location:** | NW OF CHAMPAIGN | **HBP Eligible:** | No | **AASHTO Bridge Length:** | 99.9 |
| **Bridge Remarks:** | (02373) | | | **Replaced By:** | - | **Length of Long Span:** | 57.2 |
| **Bridge Status:** | 1 OPEN - NO RESTRICT | **Status Date:** | 04/1988 | **Replaces:** | - | **Bridge Roadway Width:** | 24.0 |
| **Status Remarks:** | | | | **Last Update Date:** | 11/13/2013 | **Appr Roadway Width:** | 20.0 |
| **Maint County:** | 010 CHAMPAIGN | **Maint Township:** | 12 HENSLEY | **Parallel Structure:** | None | **Deck Width:** | 30.0 |
| **Maint Responsibility:** | 01 I.D.O.T. | | | **Multi-Level Structure Nbr:** | | **Sidewalk Width Right:** | 2.0 |
| **Service On/Under:** | 1 HIGHWAY | 1 / HIGHWAY | | **Skew Direction:** | L Left | **Sidewalk Width Left:** | 2.0 |
| **Reporting Agency:** | 1 I.D.O.T. - BUREAU OF MAINTENANCE | | | **Skew Angle:** | D | **Navigation Control:** | N N/A |
| **Main Span Matl/Type:** | 4 STEEL CONTINUOUS | / | 02 STRINGER/MULTI-BEAM/GIRDER | **Structure Flared:** | No | **Navigation Horiz Clear:** | 0 |
| **Nbr Of Main Spans:** | 4 **Nbr Of Approach Spans:** 0 | | | **Historical Significance:** | No | **Navigation Vert Clear:** | 0 |
| *****Approaches***** | | | | **Border Bridge State:** | | **Culvert Fill Depth:** | 0.0 |
| **Near #1 Matl/Type:** | / | | | **Bdr State SN:** | | **Number Culvert Cells:** | 0 |
| **Near #2 Matl/Type:** | / | | | **Bdr State % Responsibility:** | 0 | **Culvert Opening Area:** | 0.0 |
| **Far #1 Matl/Type:** | / | | | **Structural Steel Wt** | 141000 | **Culvert Cell Height:** | 0.00 |
| **Far #2 Matl/Type:** | / | | | **Substructure Material:** | 55 | **Culvert Cell Width:** | 0.00 |
| **Median Width/Type:** | 0 Ft. / 0 None | | | **Rated By:** | 2 IDOT | **Rate Method:** | 7 |
| **Guardrail Type L/R:** | 0None / 0 None | **Inventory Rating:** | 0.835(30) | **Load Rating Date:** | 06/16/1992 | **Railroad Crossing Info** | |
| **Toll Facility Indicator:** | 0 No Toll | **Operating Rating:** | 1.280(46) | | | **Crossing 1 Nbr:** | |
| **Latitude:** | 40.15771814 **S** | **Longitude:** | 88.29848779 **S** | **Design Load:** | 03 HS15 | **Crossing 1 Nbr:** | |
| **Deck Structure Type:** | A CIP CON NRMLLY FORM | **Deck Structure Thickness:** | 6.5 **SD:** N **FO:** N | | | **RR Lateral Underclear:** | 0.0 |
| **Sidewalks Under Structure:** | 0 None | | | | | **RR Vertical Underclear:** | 0 **Ft** 0 **In** |

## Key Route On Data

| | | | |
|---|---|---|---|
| **Key Route Nbr:** | FEDERAL-AID PRIMARY 0813 | **Station:** | 0.3400 |
| **Appurtenances** | Main Route 00000 | **Segment:** | |
| **Inventory County:** | 010 CHAMPAIGN | **Linked:** | Y |
| **Township/Road Dist** | 54 CHAMPAIGN CITY | **Natl. Hwy System:** | On NHS |
| **Municipality** | 0990 CHAMPAIGN | **Inventory Direction:** | |
| **Urban Area:** | 0990 0990 | **Curr AADT Yr/Count:** | 2014 / 400 |
| **Functional Class:** | 3 OTHER PRINCIPAL ARTERIAL | **Est Truck Percentage:** | 11 |
| **** CLEARANCES **** | **South/East** **North/West** | **Number Of Lanes:** | 2 |
| **Max Rdwy Width:** | 24.0 | **One Or Two Way:** | 2 Two-Way |
| **Horizontal:** | 24.0 0.0 | **Bypass Length:** | 2 |
| | | **Future AADT Yr/Cnt:** | 2032 / 1579 |
| | | **Designated Truck Rte:** | NONE |
| **Lateral:** | | **Special Systems:** | No |

## Key Route Under Data

| | | | |
|---|---|---|---|
| FEDERAL-AID INTERSTATE 0074 | | **Station:** | 9.7200 |
| Main Route 00000 | | **Segment:** | |
| 010 | | **Linked:** | Y |
| 54 CHAMPAIGN CITY (CHAMPAIGN) | | **Natl. Hwy System:** | On NHS |
| 0990 CHAMPAIGN | | **Inventory Direction:** | |
| 0990 0990 | | **Curr AADT Yr/Count:** | 2013 / 32900 |
| 1 INTERSTATE | | **Est Truck Percentage:** | 16 |
| **South/East** | **North/West** | **Number Of Lanes:** | 4 |
| 52.0 | | **One Or Two Way:** | 2 Two-Way |
| 52.0 | 52.0 | **Bypass Length:** | 0 |
| | | **Future AADT Yr/Cnt:** | 2032 / 31020 |
| | | **Designated Truck Rte:** | CLASS I |
| | | **Special Systems:** | Yes |

## *** Marked Route On Data ***

| | Designation | Kind | Number |
|---|---|---|---|
| **Route #1:** | 1 Mainline | 8 Other | |
| **Route #2:** | 1 Mainline | | |
| **Route #3:** | 1 Mainline | | |

## *** Marked Route Under Data ***

| | Designation | Kind | Number |
|---|---|---|---|
| | 1 Mainline | 1 Interstate Highway | 074 |
| | 1 Mainline | | |
| | 1 Mainline | | |

**Structure Number:** 010-0169 **District:** 5

## Data Related to Inspection Information

| *** Inspection Intervals *** | | | | *** Maximum Allowable Posting Limits *** | | | | Bridge Posting Level: | |
|---|---|---|---|---|---|---|---|---|---|
| **Routine NBIS:** | 24 MOS | **Underwater:** | 0 MOS | **One Truck At A Time:** | 0 | **Combination Type 3S-1:** | Tons | 5 | No Posting Required |
| | | **Special:** | N | **Single Unit Vehicles:** | Tons | **Combination Type 3S-2** | Tons | | |

## Inspection/Appraisal Information

**Inspection Date:** 07/15/2014 **Inspection Temperature:** 67Deg. F

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Deck:** | 5 | FAIR CONDITION - MINOR SECTION LOSS, CRACKS | | | | | | **Single Unit Vehicles:** | Tons |
| **Superstructure:** | 7 | GOOD CONDITION - SOME MINOR PROBLEMS | | | | | | **Combination Type 3S-1:** | Tons |
| **Substructure:** | 8 | VERY GOOD CONDITION - NO PROBLEMS NOTED | | | | | | **Combination Type 3S-2:** | Tons |
| **Culvert:** | N | NOT APPLICABLE | | | | | | **One Truck At A Time:** | 0 |
| **Channel and Protection:** | N | NOT APPLICABLE | | **Deck Wearing Surf:** | A | BARE DECK NO OVRLAY | | **Last Paint Type:** | F |
| **Structural Evaluation:** | 6 | EQUAL TO PRESENT MINIMUM CRITERIA | | **Deck Membrane:** | F | NONE | | LD FLD GRN&AL FNL | |
| **Deck Geometry:** | 5 | BETTER THAN ADEQUATE TO BE LEFT IN PLACE | | **Deck Protection:** | J | NONE | | | |
| **Underclearance-Vert/Lat.:** | 4 | MINIMUM ADEQUACY TO BE LEFT IN PLACE | | **Total Deck Thick:** | 6.5 | | | | |
| **Waterway Adequacy:** | N | NOT APPLICABLE | | **Last Paint Date:** | 09/1986 | | | | |
| **Approach Roadway Align:** | 6 | EQUAL TO PRESENT MINIMUM CRITERIA | | | | | | | |
| **Bridge Railing Appraisal:** | 2 | Doesn't Meet Standards | | | | | | | |
| **Approach Guardrail:** | 222 | Not Acceptable | Not Acceptable | Not Acceptable | | | | | |
| **Pier Navig Protection:** | N | N/A | | | | | | | |

## Underwater Inspection/Appraisal Information

**Inspection Date:**

**Temperature:** **Inspection Method:**

**Appraisal Rating:**

## Scour Critical Information

**Rating:** **Evaluation Method:**

**Analysis Date:**

## Miscellaneous

**Microfilm Data Recorded:** Yes

## Construction Information

| | | | | | |
|---|---|---|---|---|---|
| **Year:** | 1966 | Original | | Reconstructed | |
| **Route:** | FAI 74 | | **Sta:** 1837+30.89 | **Sta:** | |
| **Section Nbr:** | | 10-5HB-1 | | | |
| **Contract Nbr:** | | 24372 | | | |
| **Fed Aid Pr#:** | | I-74-5(34)179 | | | |
| **Built By:** | 1 | I.D.O.T. | | | |

# **ATTACHMENT C**

Bridge Inspection Report

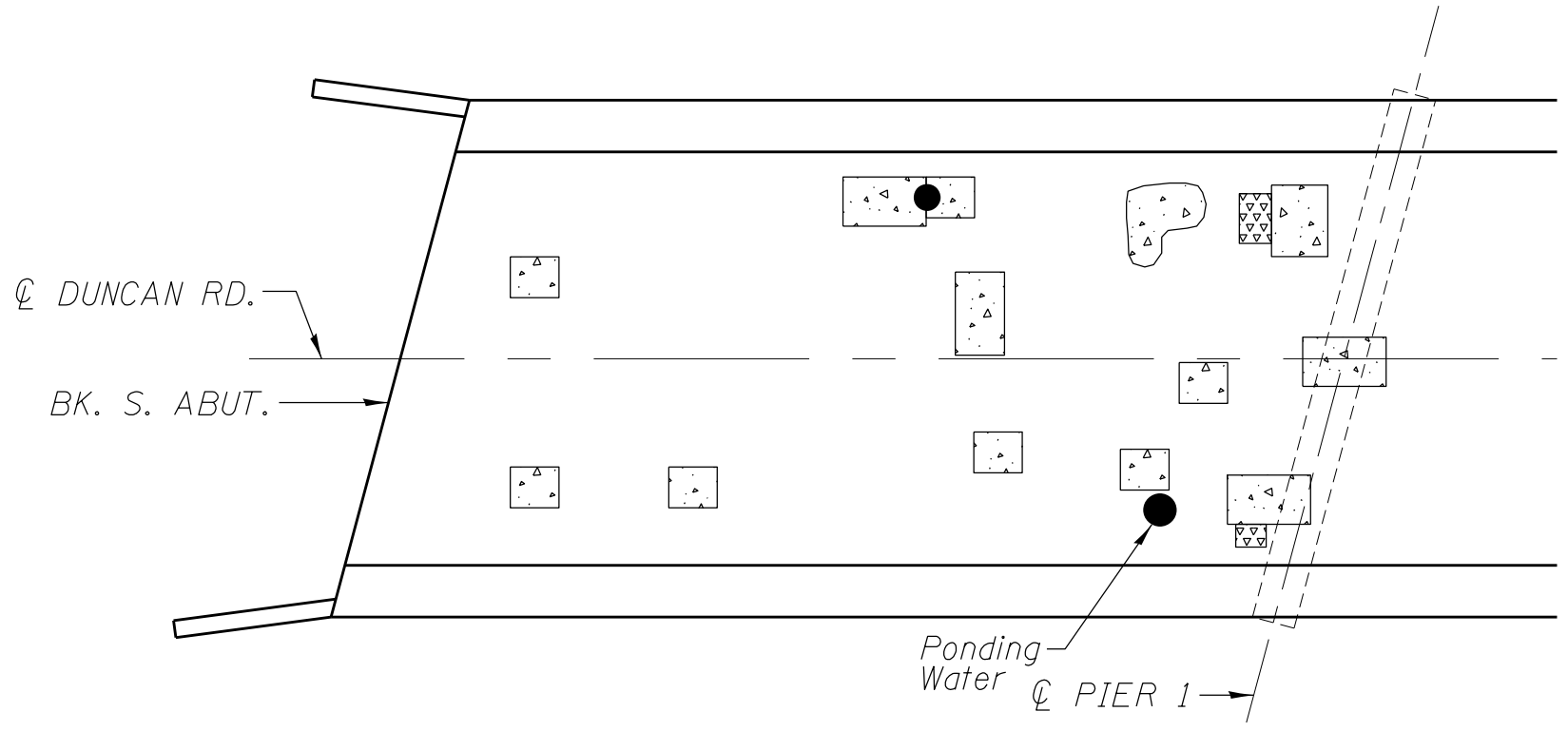
# **ATTACHMENT D**

Top and Bottom of Deck Condition Survey

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

## LEGEND

Exposed Rebar

Asphalt Patch

Ponding Water

100

DUNCAN RD.
OVER I-74

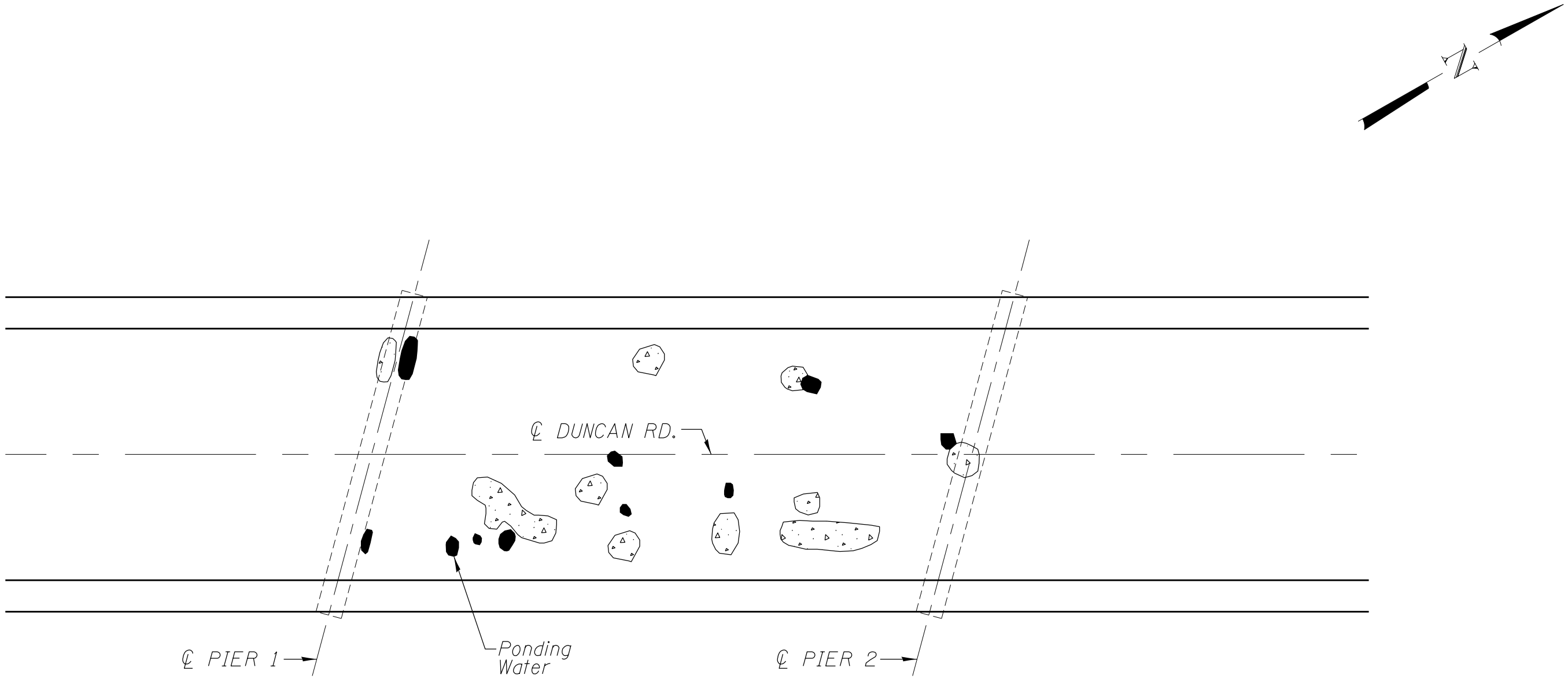
# TOP OF DECK CONDITION SURVEY, SPAN 1

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

100

## LEGEND

Exposed Rebar

Asphalt Patch

Ponding Water

DUNCAN RD.
OVER I-74

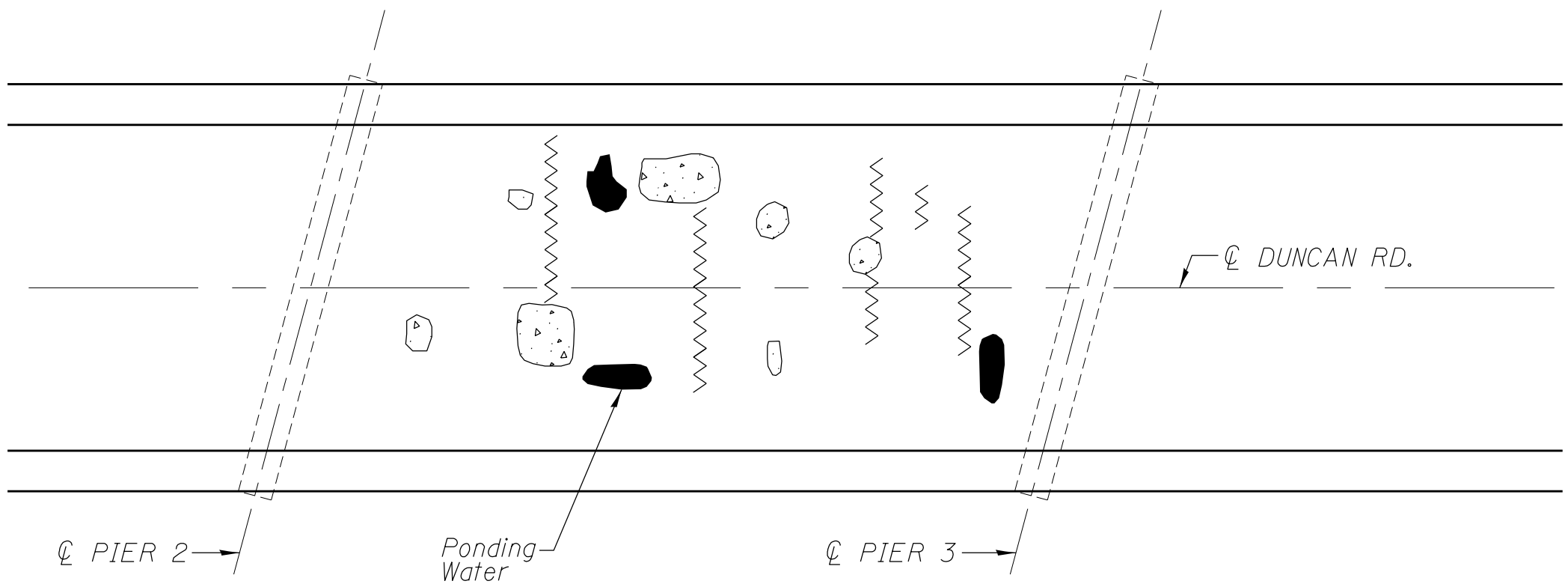
# TOP OF DECK CONDITION SURVEY, SPAN 2

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

## LEGEND

Exposed Rebar

Asphalt Patch

Ponding Water

100

DUNCAN RD.
OVER I-74

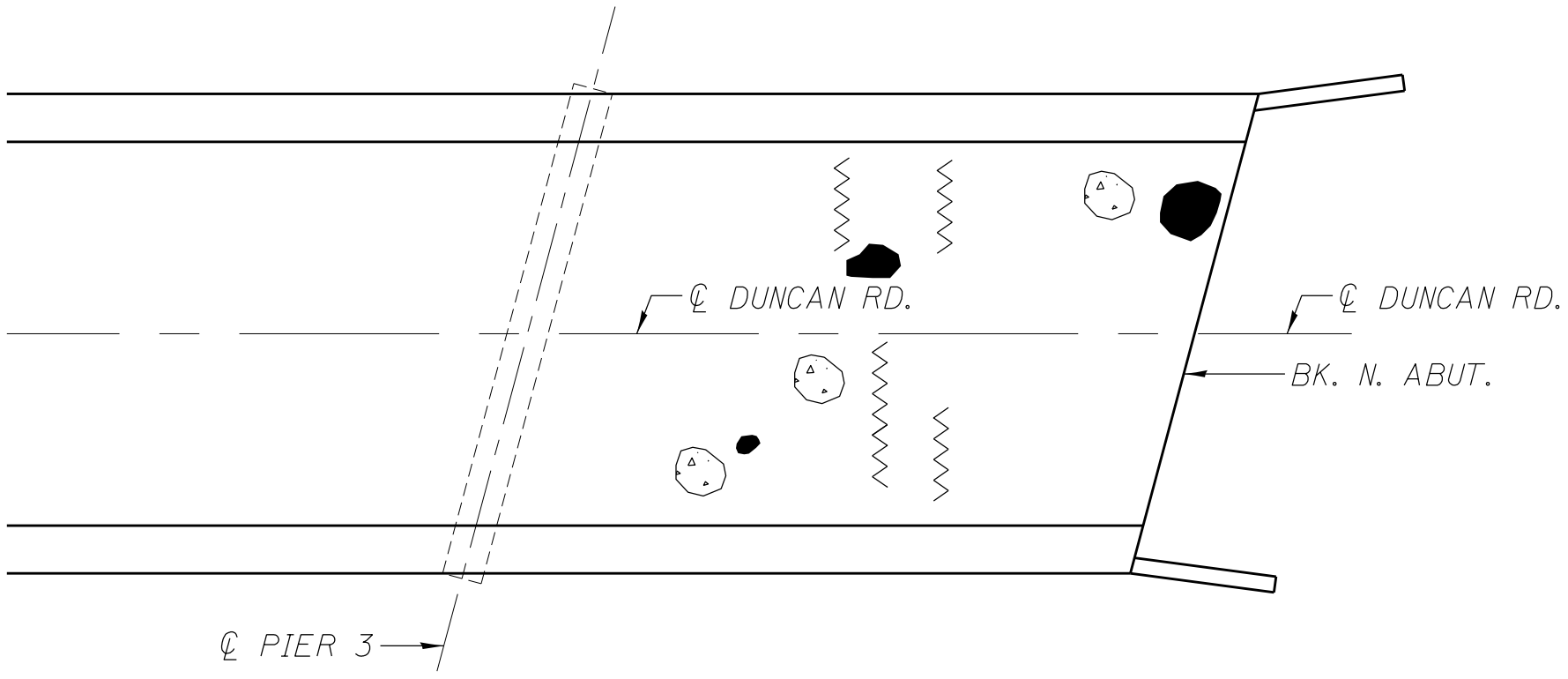
# TOP OF DECK CONDITION SURVEY, SPAN 3

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

## LEGEND

Asphalt Patch

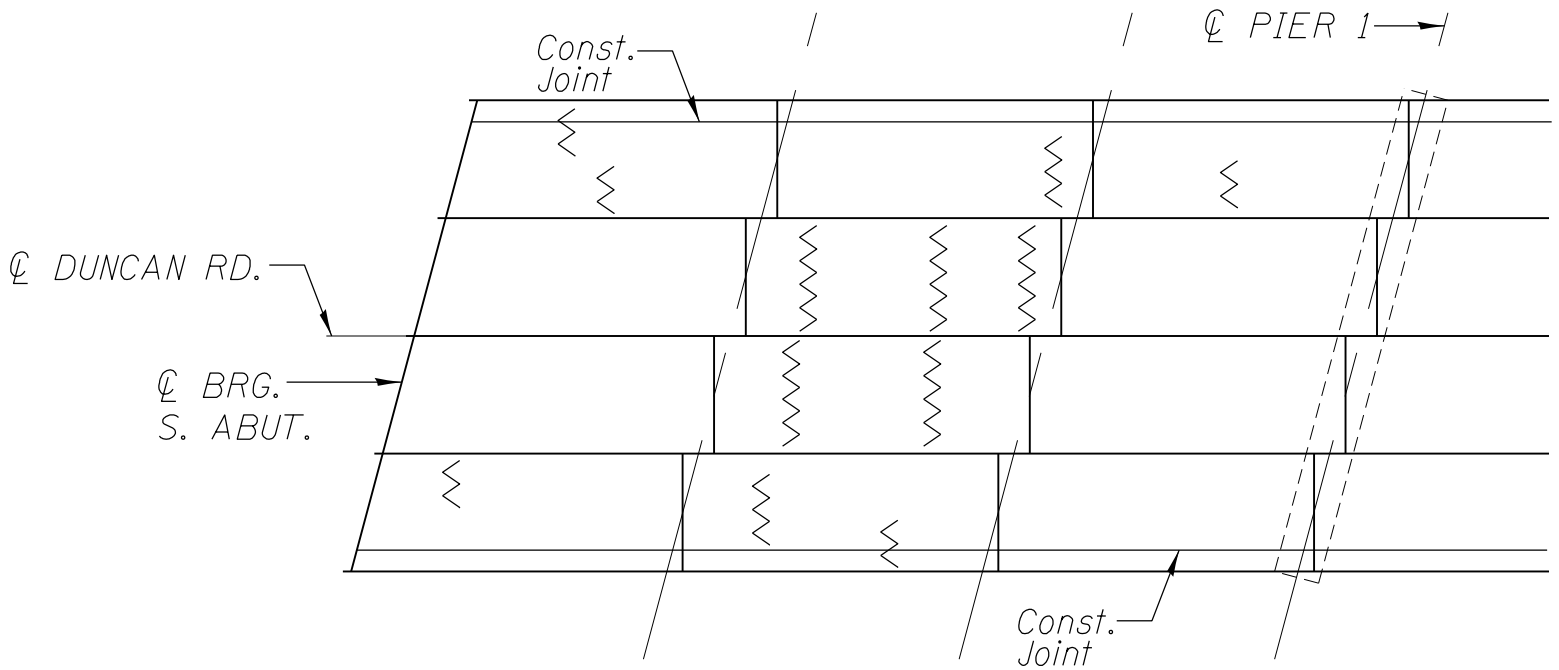
Ponding Water

100

DUNCAN RD.
OVER I-74

# TOP OF DECK CONDITION SURVEY, SPAN 4

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

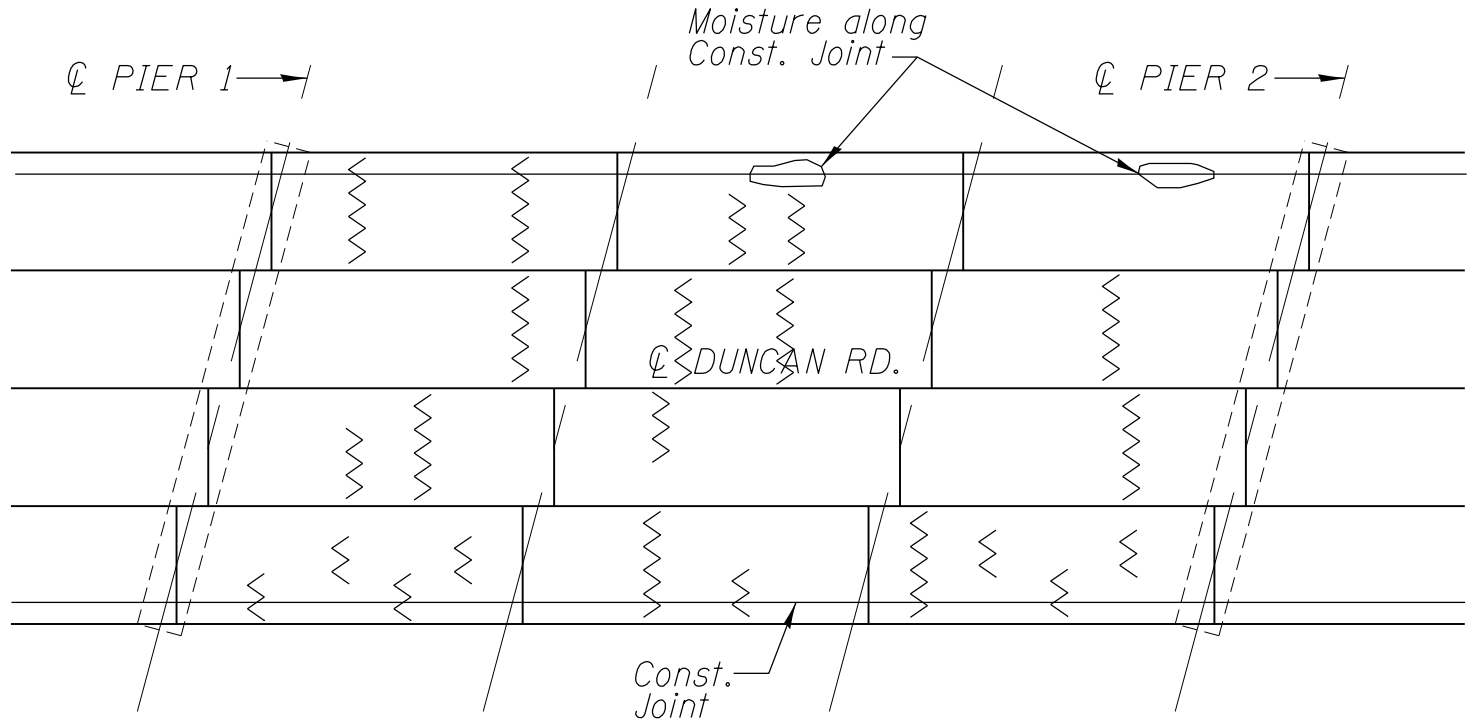



LEGEND

Cracking

DUNCAN RD.
OVER I-74

# BOTTOM OF DECK CONDITION SURVEY, SPAN 1

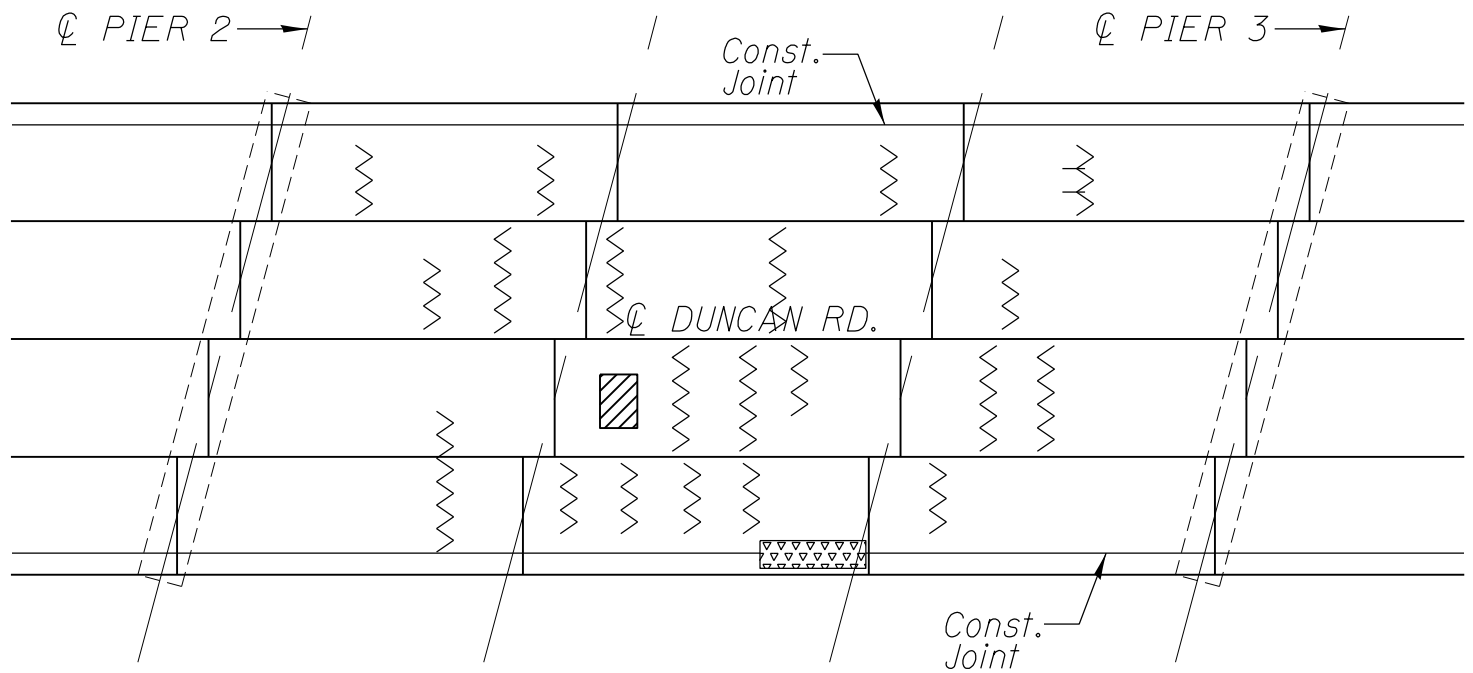



LEGEND

Cracking

DUNCAN RD.
OVER I-74

# BOTTOM OF DECK CONDITION SURVEY, SPAN 2

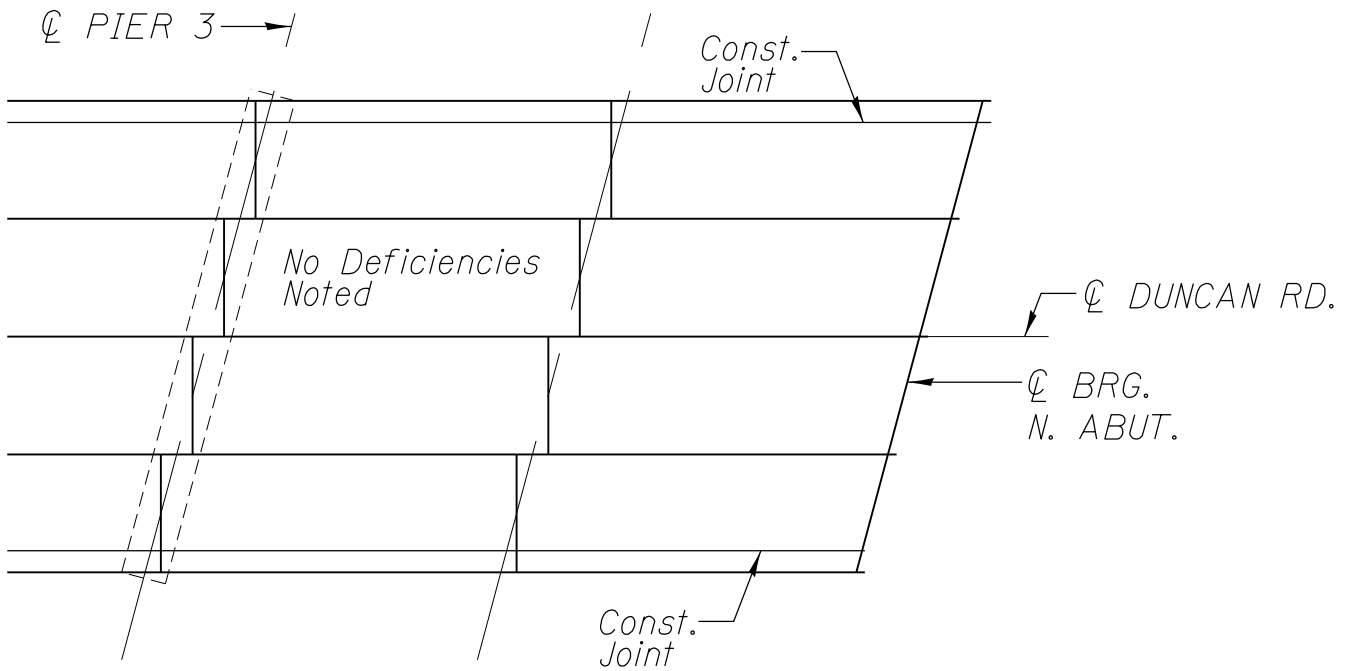



## LEGEND

- Cracking
- Cracking w/ Efflorescence
- Exposed Rebar
- Spalling

DUNCAN RD.
OVER I-74

# BOTTOM OF DECK CONDITION SURVEY, SPAN 3




DUNCAN RD.
OVER I-74

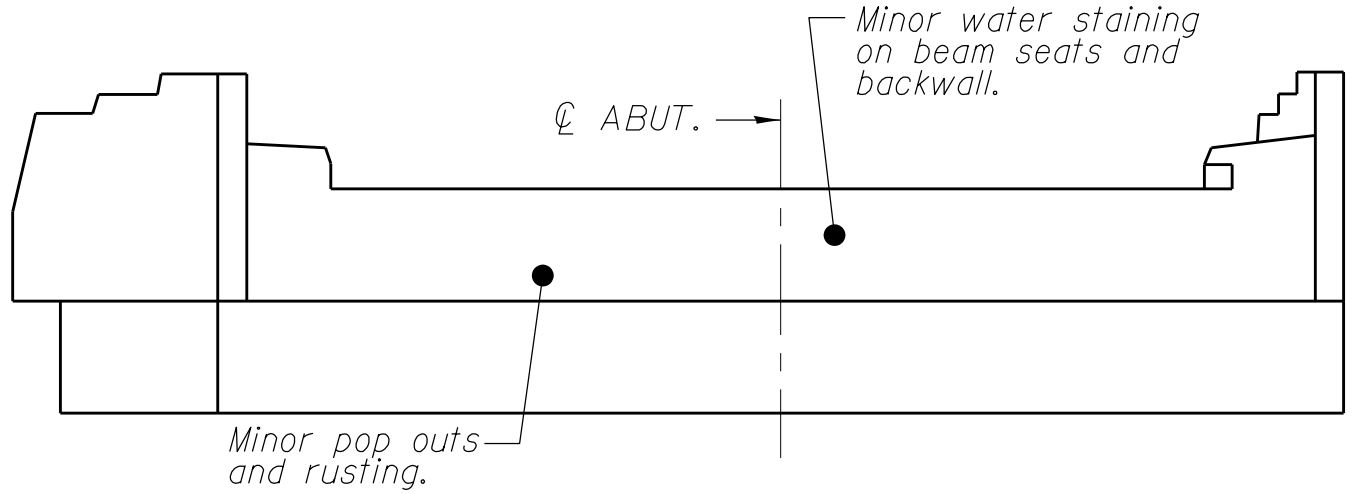
# BOTTOM OF DECK CONDITION SURVEY, SPAN 4

# **ATTACHMENT E**

Substructure Condition Surveys

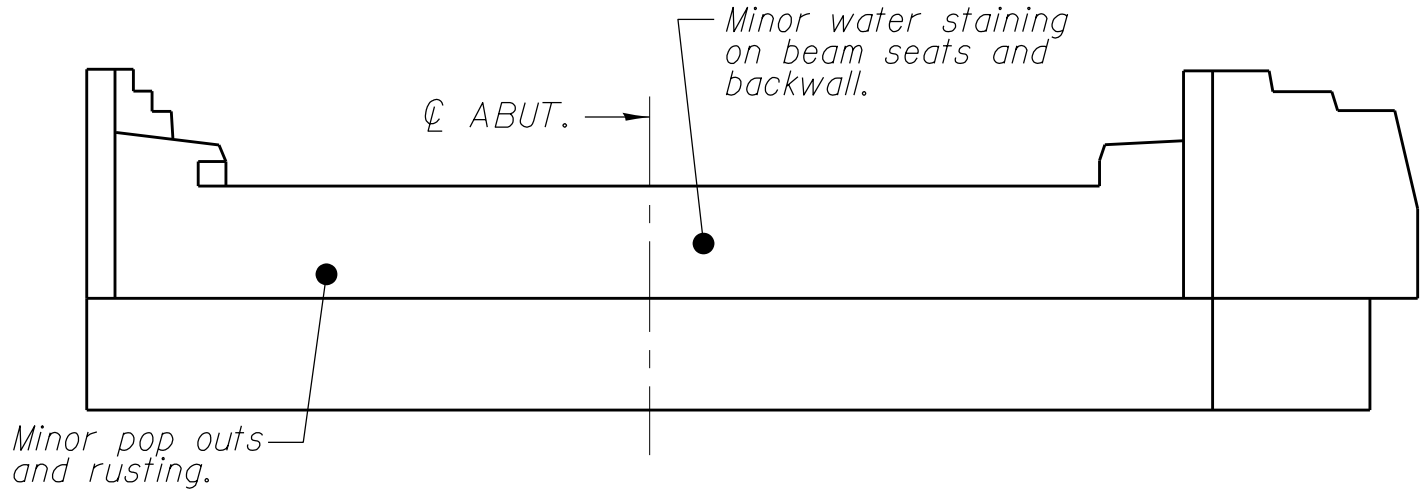
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105




100

NORTH ABUTMENT




105

SOUTH ABUTMENT

100

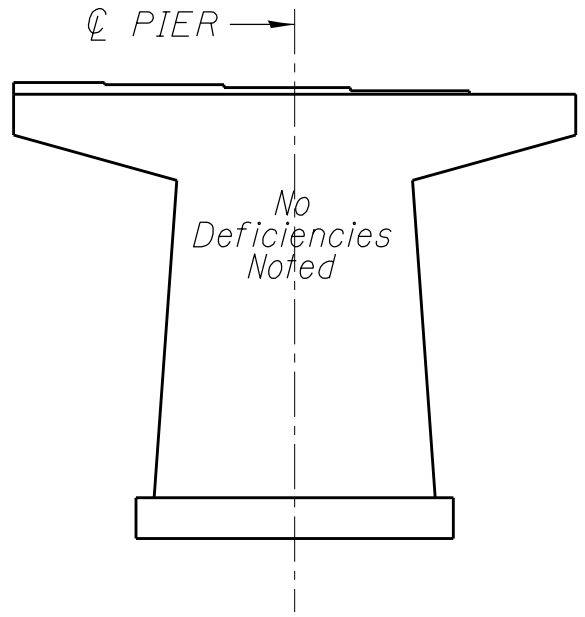
DUNCAN RD.
OVER I-74

# ABUTMENT CONDITION SURVEY

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70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

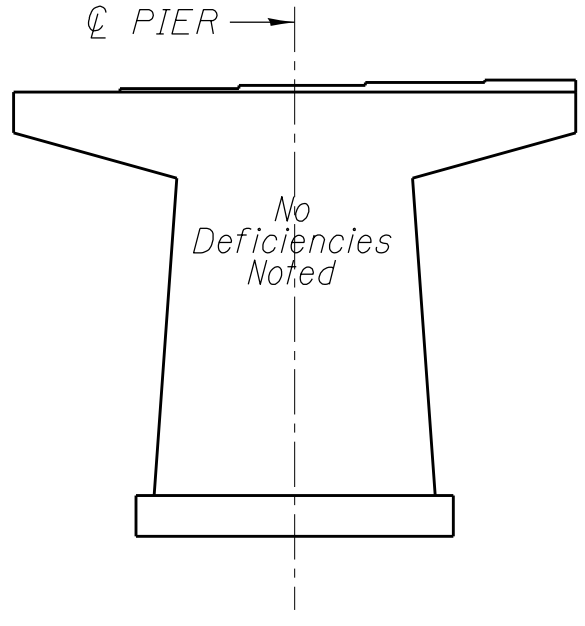
105




100

PIER 1
(LOOKING SOUTH)

105




PIER 1
(LOOKING NORTH)

100

DUNCAN RD.
OVER I-74

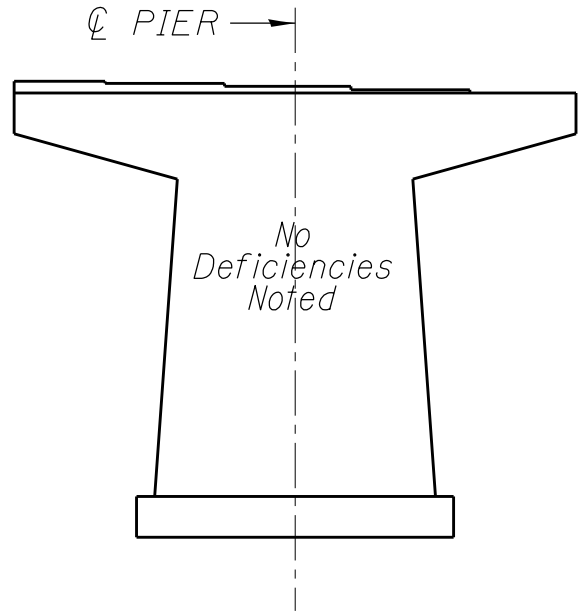
# PIER CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

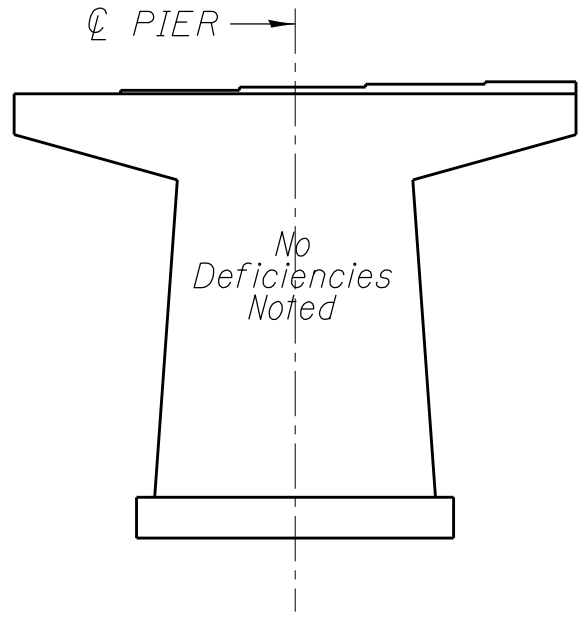
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




PIER 2
(LOOKING NORTH)




PIER 2
(LOOKING SOUTH)

DUNCAN RD.
OVER I-74

# PIER CONDITION SURVEY

105

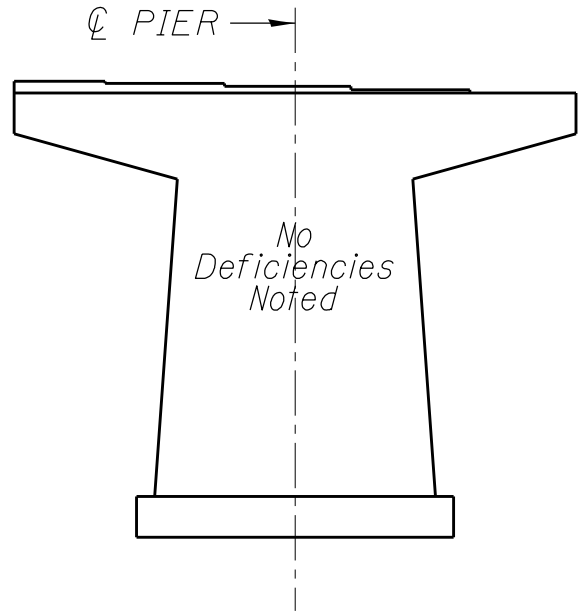
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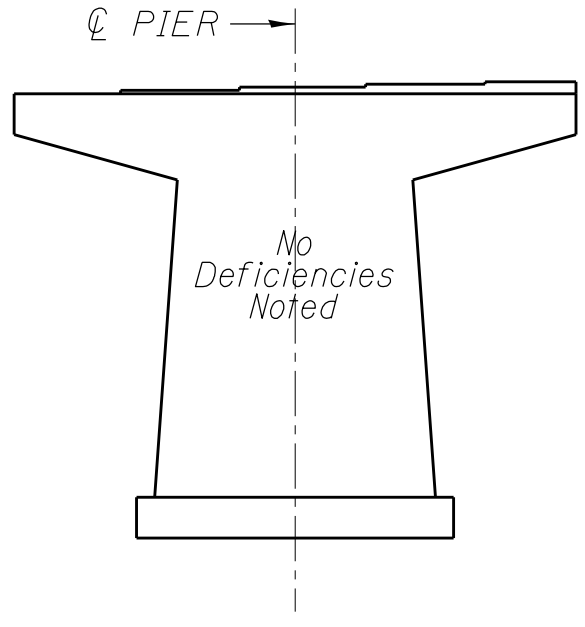
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




PIER 3
(LOOKING SOUTH)




105

100

PIER 3
(LOOKING NORTH)

DUNCAN RD.
OVER I-74

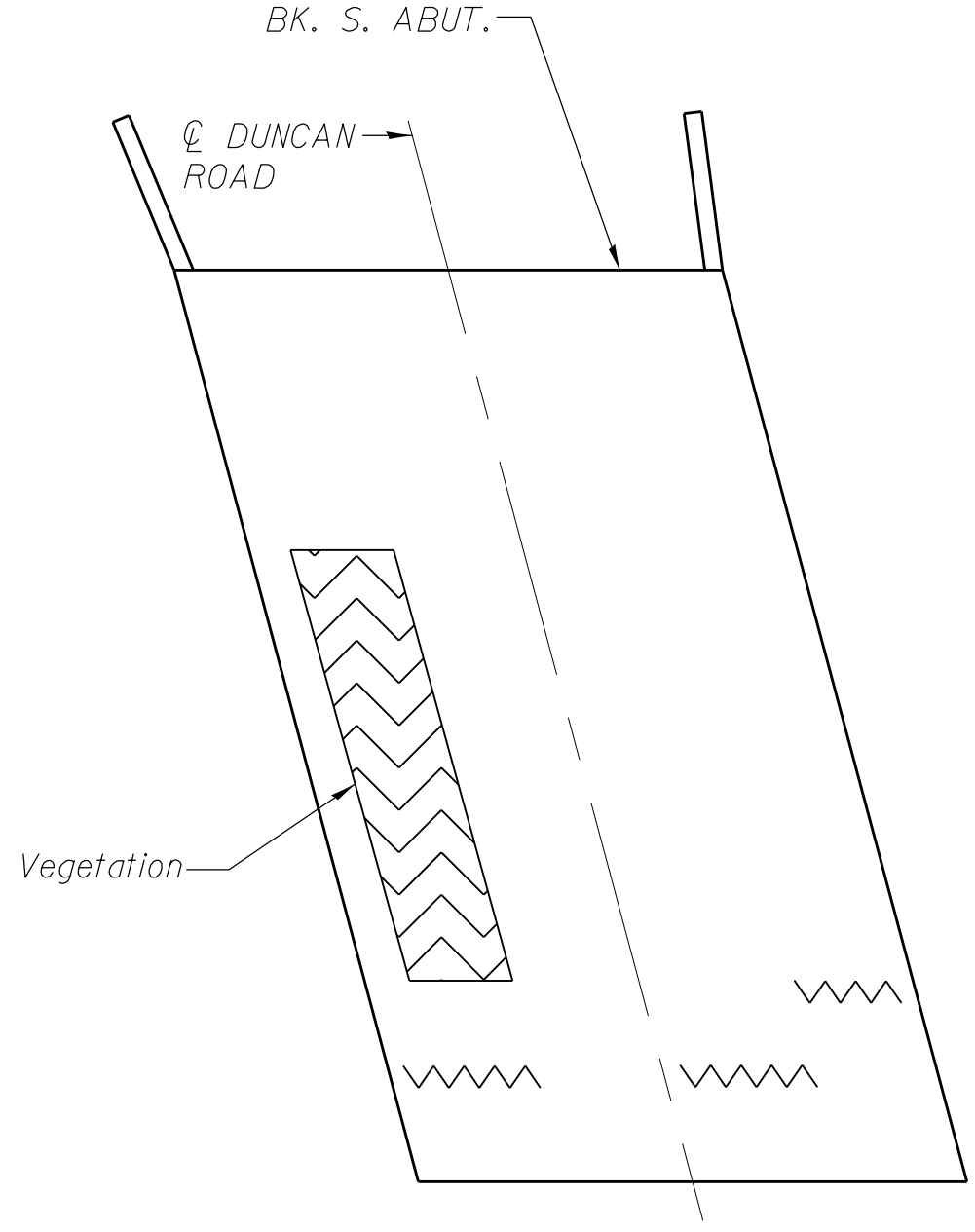
# PIER CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




N

105

100

## LEGEND

Cracking

# SOUTH SLOPEWALL

DUNCAN RD.
OVER I-74

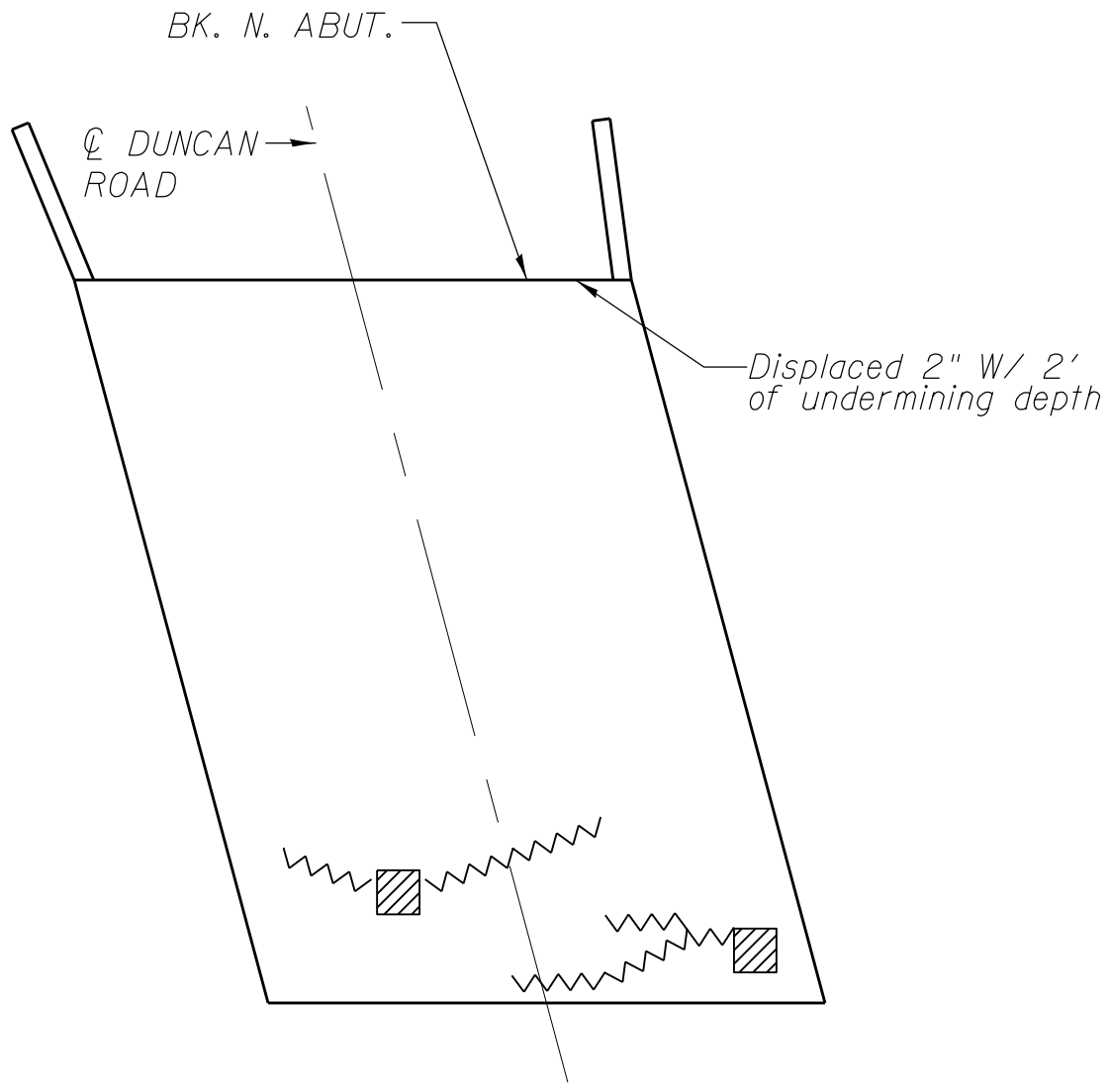
# SLOPEWALL CONDITION SURVEY

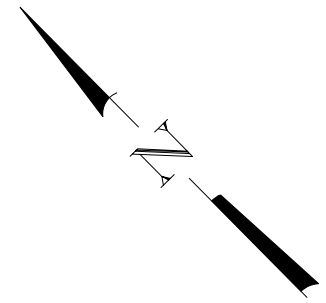
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100



105

100

LEGEND

Cracking

Spalling

# NORTH SLOPEWALL

DUNCAN RD.
OVER I-74

# SLOPEWALL CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

# **ATTACHMENT F**

Cost Estimates

# ATTACHMENT G

Proposed Structure

# **ATTACHMENT H**

Structure Photos



**Looking up-station (North) through structure**



**Looking down-station (South) through structure**



**Looking up-station (East) of I-74 from structure**



**Looking down-station (West) of I-74 from structure**



**Looking up-station (East) of I-74 showing the bridge**



**Looking down-station (West) of I-74 showing the bridge**



**Southwest Wingwall**



**Southeast Wingwall**



**Northeast Wingwall**



**Northwest Wingwall**



**South abutment expansion joint (Looking West)**



**North abutment expansion joint (Looking East)**



**Structure Bridge Rail (East side)**



**General condition of underside of superstructure Span 1**



**General condition of underside of superstructure Span 2**



**General condition of underside of superstructure Span 3**



**General condition of underside of superstructure Span 4**



**South abutment**



**North abutment**



**South face of Pier 1**



**North face of Pier 1**



**South face of Pier 2**



**North face of Pier 2**



**South face of Pier 3**



**North face of Pier 3**



**Slopewall at South abutment**



**Slopewall at North abutment**

# **ATTACHMENT J**

Proposed Plan & Profile

# ATTACHMENT K

Existing and Proposed Roadway Cross Sections

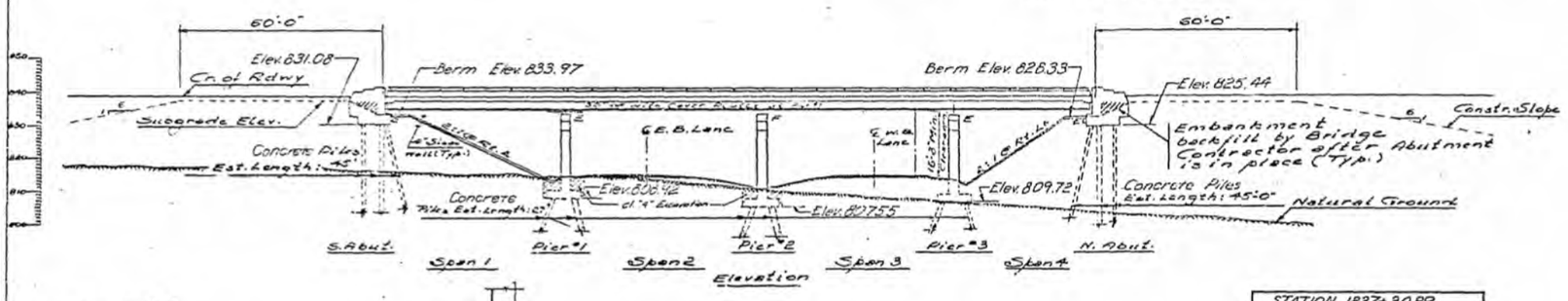
# **ATTACHMENT L**

Abbreviated Existing Plans

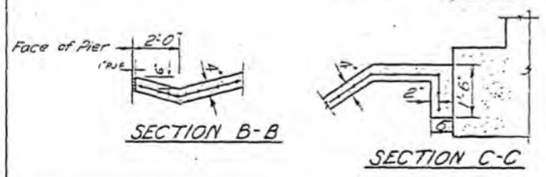
B.M.: U.S.C. & G.S. Marked "W-204" 360' LT. Sta. 184&+80 (Elev. 810.22)

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| | | | | | |
|---|---|---|---|---|---|
| | | | | | SHEET NO. 1 |
| F.A.I. 74 | 10-5HB-1 | CHAMPAIGN | 24 | 6 | 10 SHEETS |
| | | | | | |




Elevation




SECTION B-B



SECTION C-C

STATION 1837+30.89
BUILT 196 BY
STATE OF ILLINOIS
F.A.I. RT. 74 SEC. 10-5HB-1
PROJ. I-74-5(34)
LOADING HS 15

NAME PLATE
(See Standard 2113-1)

## GENERAL NOTES

Coarse aggregate to be used in parapet handrails and end post must be free of chert, flint, limonite, lignite and soft sandstone.

The concrete floor slab shall be finished in accordance with Art. 51.19 of the Standard Specifications.

Slope Wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 58 # per 100 Sq. Ft.

All reinforcement bars shall be kapped 20 diameters unless otherwise shown.

All structural steel shall conform to A.S.T.M. Designation A-36. Rivets 7/8" ϕ, Open Holes 15/16" ϕ, unless otherwise noted.

Anchor bolts shall be set before fastening diaphragms over supports.

Exposed surfaces of the expansion devices, inaccessable after erection, shall receive two shop coats of red lead paint. All other surfaces shall be given one shop coat of red lead paint. Anchor studs shall not be painted.

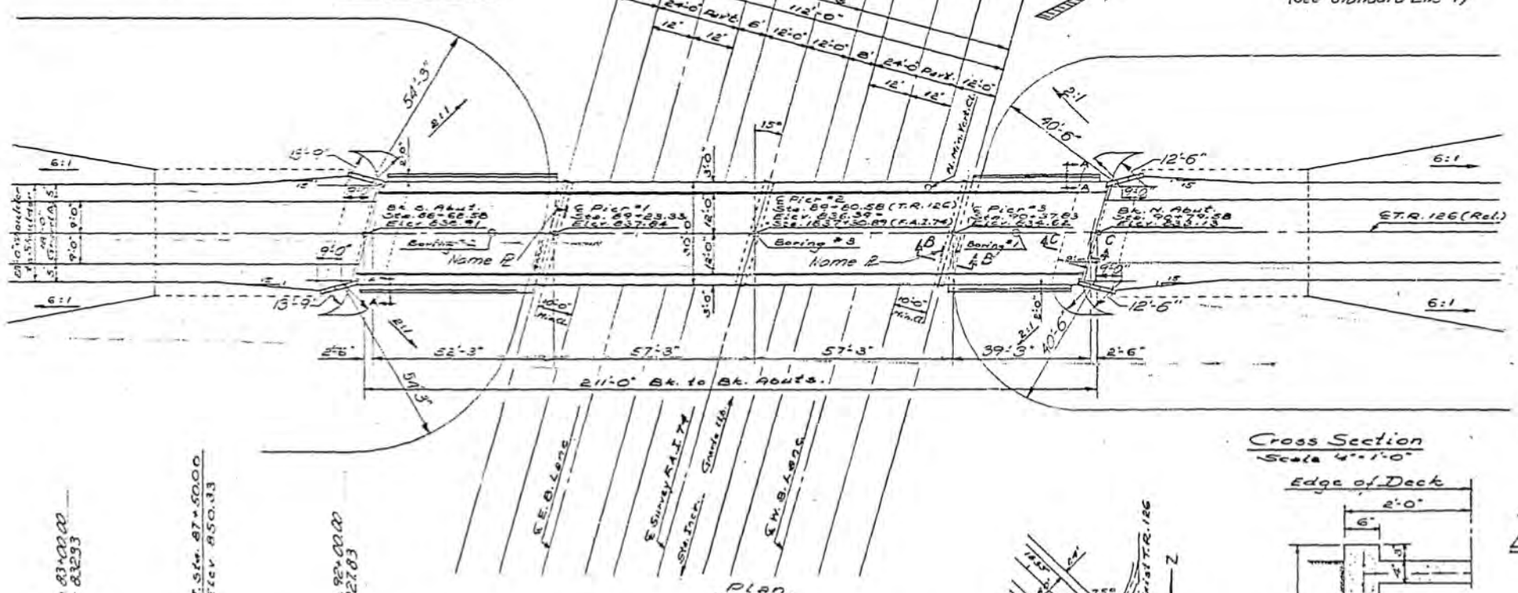
Expansion devices are included in the quantity of structural steel. Est. weight = 690 Lbs.

Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint. See Article 56.1 to 56.5 inclusive of the Standard Specifications.

Concrete piles at abutments shall be driven in holes precored thru the embankment in accordance with Article 60.9 (c) of the Standard Specifications.

The contractor shall drive two concrete test piles one at North Abutment and one at Pier 2 all in permanent locations as directed by the Engineer before ordering the remainder of piles.

Excavation for portions of structures in the embankments shall not be classified.



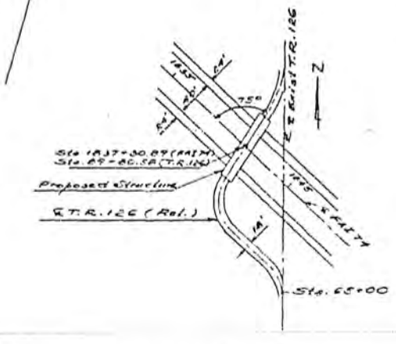

Plan



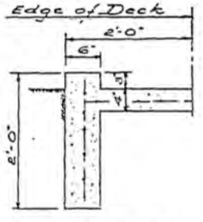

Proposed Profile T.R. 126




Profile F.A.I. Rte 74




Cross Section
Scale 4"=1'-0"



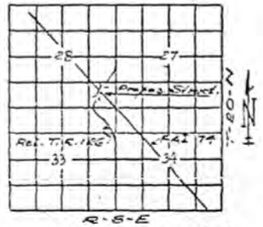

Section A-A

DESIGN STRESSES
$f_c$ = 1400 psi. Super & Sub.
$v_c$ = 75 psi. Footings
$f_s$ = 20,000 psi. Reinf.
$f_s$ = 20,000 psi. Struct. (A36)
n = 10
Allow ℄ Deflect: 1/1000

LOADING: HS15-44

## TOTAL BILL OF MATERIALS

| Item | Unit | Super. | Sub | Total |
|---|---|---|---|---|
| Cl. "A" Excav. for Structure | Cu. Yds. | | 80 | 80 |
| Cl. "X" Concr. 3000 | Cu. Yds. | 188.4 | 198 | 386.4 |
| Protective Coat | Sq. Yds. | 774 | | 774 |
| Structural Steel | Lbs | 141,080 | | 141,080 |
| Aluminum Handrail | Lin. Ft. | 415 | | 415 |
| Reinforcement Bars | Lbs | 39400 | 16120 | 55520 |
| Concrete Piles | Lin. Ft. | | 1710 | 1710 |
| Test Piles (Concrete) | Each | | 2 | 2 |
| Name Plates | Each | | 2 | 2 |
| Slope Wall 4" | Sq. Yds. | | 370 | 370 |




Location Sketch

| | |
|---|---|
| DESIGNED | Stanley S. Lin |
| CHECKED | Yun C. Wang |
| DRAWN | P. P. Summer |
| CHECKED | Yun C. Wang |

March 27 1965

EXAMINED Carl Hennerich
PASSED H. L. Peters
APPROVED J. E. Sanvordenker

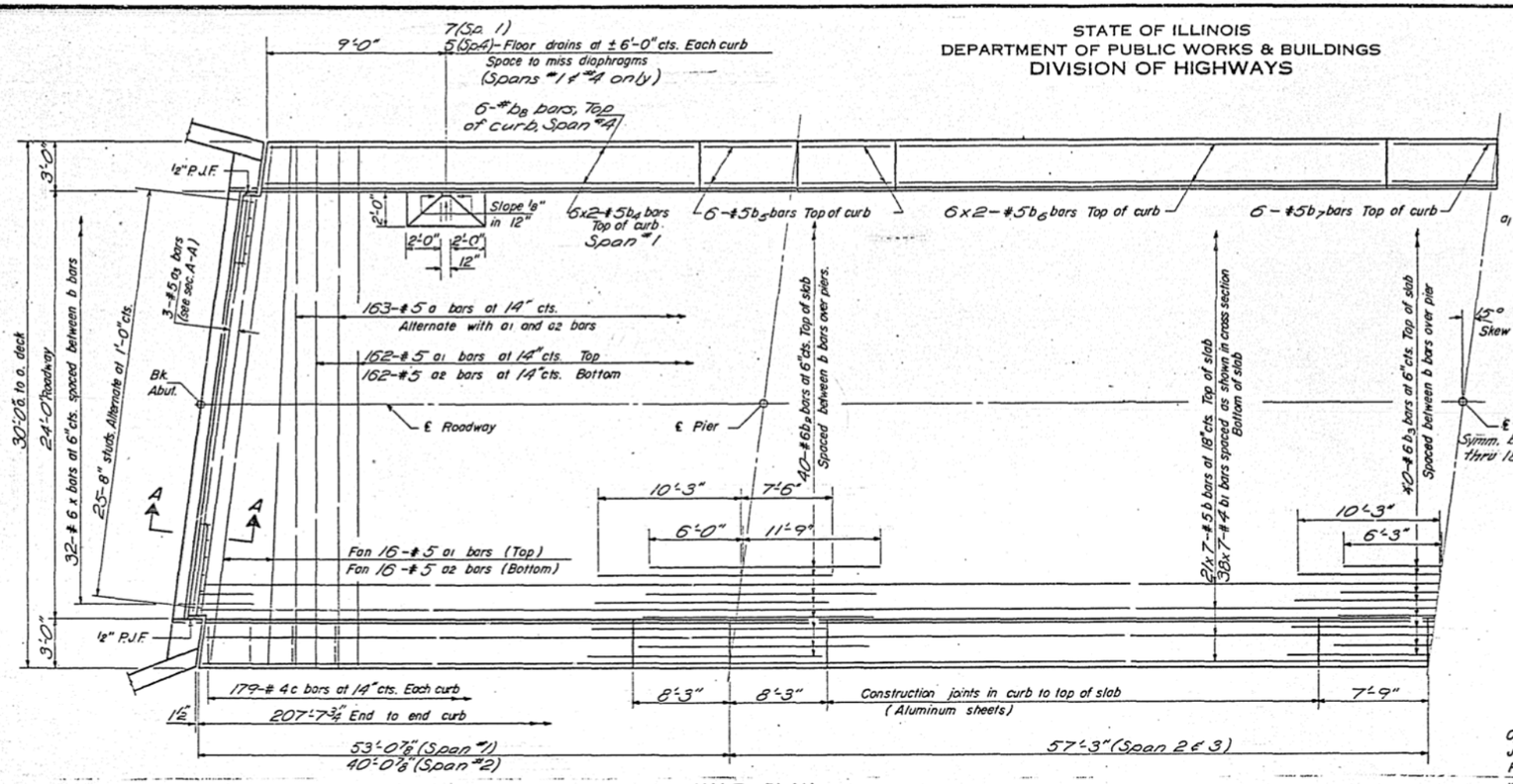
General Layout of Proposed Structure

GENERAL PLAN & ELEVATION
T.R. 126 OVER F.A.I. RT. 74
PROJ: I-74-5(34) 179
F.A.I. RT. 74 - SECTION 10-5HB-1
CHAMPAIGN COUNTY
STA. 1837+30.89

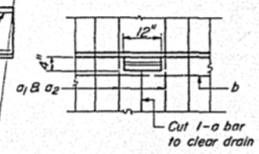
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. 74 | 10-5HB-1 | Champaign | 24 | 10 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT: | | |

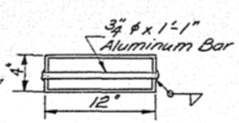
SHEET NO 3
10 SHEETS



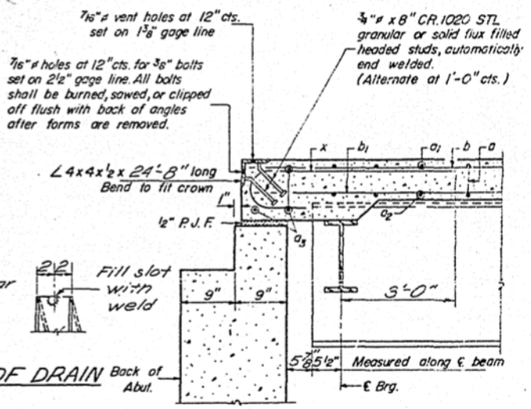

HALF PLAN



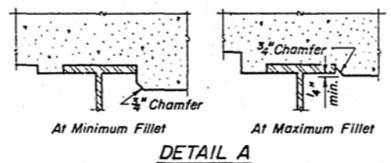

TYP. DETAIL AT DRAIN



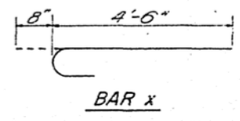

DETAIL ~ TOP OF DRAIN




SECTION A-A

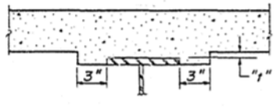



DETAIL A



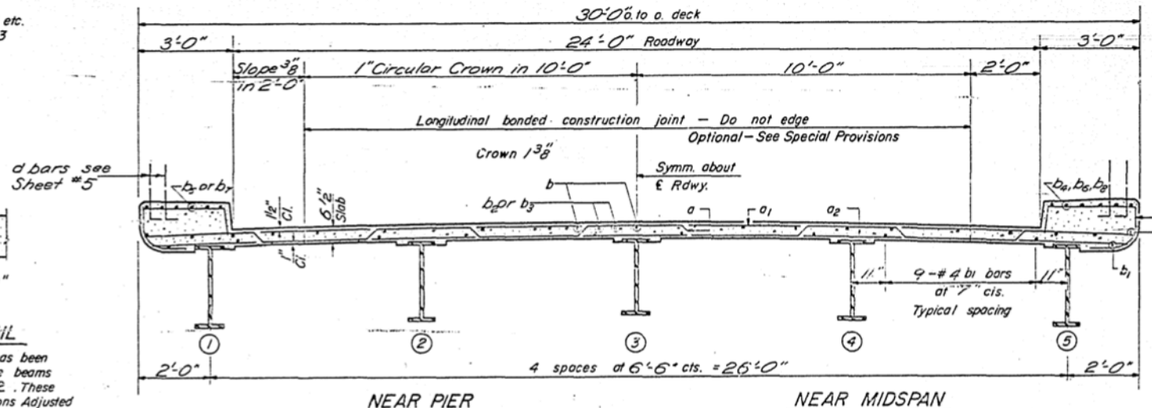

BAR x

Note:
Bars indicated thus 20 x 3 - #5 etc. indicates 20 lines of bars with 3 lengths per line.
Min bar laps = 20 dia.



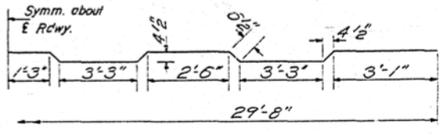

STANDARD FILLET DETAIL

To determine "I": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheet 2. These elevations subtracted from the "Grade Elevations Adjusted for Dead Load Deflections" shown on sheet 2, minus slab thickness, equals the fillet heights "I" above top of beams.

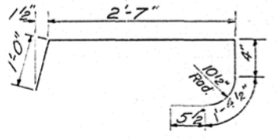



NEAR PIER NEAR MIDSPAN

CROSS SECTION

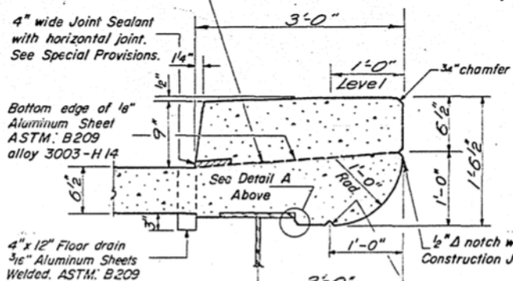



BAR a




BAR c

Optional Construction Joint - See Special Provisions. Not permitted with longitudinal joints.



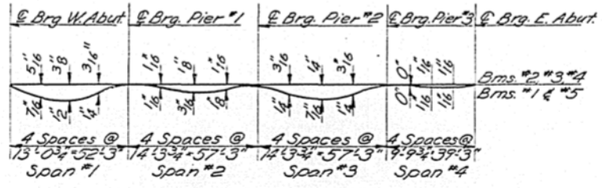

CURB DETAIL

Cost of Aluminum Drains and Sheets shall be incidental to Class X Concrete.

BILL OF MATERIAL

| Bar | No. | Size | Length | Shape |
|---|---|---|---|---|
| a | 163 | #5 | 31'-0" | |
| a1 | 194 | #5 | 29'-9" | |
| a2 | 194 | #5 | 28'-9" | |
| a3 | 6 | #5 | 24'-6" | |
| | | | | |
| b | 147 | #5 | 30'-9" | |
| b1 | 266 | #4 | 30'-0" | |
| b2 | 80 | #6 | 17'-9" | |
| b3 | 40 | #6 | 16'-6" | |
| b4 | 24 | #5 | 23'-0" | |
| b5 | 48 | #5 | 8'-0" | |
| b6 | 48 | #5 | 21'-3" | |
| b7 | 24 | #5 | 7'-6" | |
| b8 | 12 | #5 | 31'-5" | |
| c | 358 | #4 | 5'-9" | |
| | | | | |
| x | 64 | #6 | 5'-2" | |
| | | | | |
| Reinforcement Bars | | | Lbs. | 35000 |
| * Structural Steel | | | Lbs. | 141080 |
| Class X Concrete | | | Cu. Yd. | 167.2 |

* Weight of bearing assemblies with lead plates, and anchor bolts are included as structural steel. Est. Wt = 6320 Lbs.




DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheet 2.

| | |
|---|---|
| DESIGNED | Stanley S. Lin |
| CHECKED | Pius C. Wang |
| P.G. Barnett | |
| DRAWN | D.L. Beemer |
| CHECKED | Pius C. Wang |

EXAMINED C.E. Furman — ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
PASSED H.J. Deeg — ENGINEER OF DESIGN
APPROVED F.E. Sent — CHIEF HIGHWAY ENGINEER
APRIL 27 1965

I-5-L (≦ 15°) 10-10-62 Rev. 11-1-63 5-1-64

SUPERSTRUCTURE
F.A.I. RT. 74 SEC. 10-5HB-1
CHAMPAIGN COUNTY
STA. 1837+30.89

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

**PADUCAH OFFICE:**
500 South 17th Street, P.O. Box 120
Paducah. Kentucky 42002
Phone: (270) 443-1995
Fax: (270) 443-1904

**MURRAY OFFICE:**
1215 Diuguid Drive
Murray, Kentucky 42071
Phone: (270) 753-7307
Fax: (270) 759-4950

**MARION OFFICE:**
403 North Court Street
Marion, Illinois 62959
Phone: (618) 993-6700
Fax: (618) 993-6717

# Transmittal

**TO:** D. Carl Puzey
Attn: T.A. Craven
Illinois Department of Transportation
Bureau of Bridges and Stuctures
2300 S. Dirksen Parkway
Springfield, IL 62764

Phone: (217)524-4848
Fax:
Email:

**DATE:** 10/17/2014
**RE:** BCR
Mattis Ave. over FAI 74
Section (10-5-1HB)BR
SN 010-0270

**WE ARE FORWARDING THE FOLLOWING:**

☒ ATTACHED
☐ UNDER SEPARATE COVER

| QUANTITY | DESCRIPTION |
|---|---|
| 1 | Electronic copy sent to dot.bbs.planning@illinois.gov for review and approval. File name: *0100270BCR 20140701.pdf* |
| | |
| | |

☐ REVIEWED (AS NOTED ON DWG.)
☐ FURNISH AS CORRECTED
☐ NOT APPROVED
☒ FOR YOUR APPROVAL
☐ AS REQUESTED
☒ FOR YOUR USE

REMARKS:

COPY TO: BFW File #11354
District 5

BY: Brandon W. Poiter, P.E., S.E.

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

# BRIDGE CONDITION REPORT

| | |
|---|---|
| **REGION:** | 3 |
| **DISTRICT:** | 5 |
| **COUNTY:** | Champaign |
| **ROUTE:** | FAU 7158 (Mattis Ave) |
| **JOB NUMBER:** | P-95-030-11 |
| **STRUCTURE NUMBER:** | 010-0270 |
| **LOCATION:** | Mattis Avenue over I-74 |

**PREPARED BY:** Brandon W. Poiter, PE, SE
BFW Engineering & Testing

**DATE INSPECTED:** July 1, 2014

**PROPOSED LETTING DATE:** Unknown

# TABLE OF CONTENTS


| Item: | | Page: |
|---|---|---|
| I. | Geographical & Administrative Data | 1 |
| II. | Physical Description of Structure | 1 |
| III. | Field Inspection & Physical Evaluation | 2 |
| IV. | Potential Scope of Work Determination & Analysis | 3 |
| V. | Discussion and Recommended Scope of Work | 3 |

Attachments:

| | | |
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| B. | IDOT Master Structure Report | 6-8 |
| C. | Bridge Inspection Report | 9-12 |
| D. | Top and Bottom of Deck Condition Surveys | 13-17 |
| E. | Substructure Condition Surveys | 18-22 |
| F. | Cost Estimates | 23-24 |
| G. | Proposed Structure | 25-27 |
| H. | Structure Photos | 28-40 |
| I. | Hydraulic Analysis Summary (N/A) | --- |
| J. | Proposed Plan & Profile (if available) | 41-42 |
| K. | Existing and Proposed Roadway Cross Sections | 43-44 |
| L. | Abbreviated Existing Plans | 45-47 |

# I. Geographical & Administrative Data

**Structure Number:** 010-0270
**County:** CHAMPAIGN
**Route Carried:** FAU 7158 (Mattis Avenue)
**Feature Crossed:** FAI 74
**Section:** (10-5-1HB)BR
**Station:** 19+01.76

**Roadway Classification:** Minor Arterial
**Design/Posted Speed:** 45 mph/45 mph

**ADT (current/design):** 16,000 (2013)/18,700 (2040)
**ADTT (current/design):** 800 (2013)/935 (2040)
**DHV:** 1,760 (2040)

**Inventory Rating HS:** **22.8**
**Operating Rating HS:** **38.3**
**Sufficiency Rating:** **91.7**

## Construction/Reconstruction/Repair History:

1992 - Constructed under FAI 74, Section (10-5-1 HB)BR

# II. Physical Description of Structure:

The existing structure was constructed in 1992 as a two-span 48" web steel plate girder structure composite in the positive moment regions. The superstructure is supported on open stub abutments on concrete piles and multi-column reinforced concrete piers on spread footings.

| | |
|---|---|
| Length: | 249'-10 ¾" Back to Back of Abutments |
| Width: | 71'-7" out to out |
| Span: | 121'-5 ¾" / 121'-5 ¾" |
| Skew: | 40° 51' 29" Left |
| Wearing Surface: | Bare Deck No Overlay |
| Horizontal Alignment: | Tangent |
| Vertical Alignment: | 600' crest vertical curve with an entry grade of +2.20% and exit grade of -3.36%. |
| Utilities: | None |

# III. Field Inspection & Physical Evaluation:

The bridge was visually inspected by Bacon, Farmer, Workman Engineering and Testing, Inc. on July 1st, 2014.

**Superstructure:**

**Deck:** The deck is in fair condition. Transverse hairline cracks with efflorescence spaced at less than 5' intervals are present over a majority of the bottom of deck and soffit. The parapets on both structures are in good condition. There is no wearing surface on either structure.

**Beams:** The 48" web steel plate girders and are in satisfactory condition with some rust on the bottom flanges over the traffic lanes and the beam ends with no section loss noted. The paint is in poor condition with significant flaking.

**Joint:** The neoprene expansion joints at each abutment are in fair condition. The joints are leaking as evidenced by stains on the front face of the abutment backwall and abutment cap. The joint opening at the south abutment was 1 ½" and 1 ¾" at the north abutment at a temperature of 85° F.

**Bearings:** The fixed bearings at Pier 2 and elastomeric bearings at each of the abutments are in good condition. The abutment bearings have minor rust mainly on the top plate of the assembly. The bearings appear to functioning properly with no excessive deformation.

**Substructure:**

**Abutments:** The abutments are in satisfactory condition. The backwall at each abutment has a moderate amount of leaching vertical cracks.

**Piers:** The piers are in good condition with no problems noted.

**Slope Protection:** The slopewall at each abutment is in good condition with minor cracks noted. There is a small amount of vegetation growing out of the slopewall construction joints.

**Inspection History (NBIS Ratings).**

| Year | Deck | Superstructure | Substructure |
|---|---|---|---|
| 2014 | 5 | 6 | 8 |
| 2012 | 5 | 6 | 8 |
| 2011 | 5 | 6 | 8 |

**Geometric, Horizontal & Vertical Clearance:**

The face-to-face width of the structure is 64'-0" carrying two lanes of traffic in each direction with a 12' painted flush median and a 5' wide sidewalk on the east side of the bridge.

The location of the piers provides 17'-10" of lateral clearance between the edge of the traveled way and face of pier. Guardrail is provided to protect the pier 1 the approach side from each direction. The vertical clearance over I-74 is 16'-3 ¼".

## IV. Potential Scope of Work Determination & Analysis:

This report is being prepared in conjunction with an interchange type study of two alternates for the reconstruction of the existing I-74/I-57 interchange. I-74 will be upgraded to a 6 lane urban section with 12' lanes, a 60' median, and 12' inside and outside shoulders. Alternate 1 is a full direction interchange with flyovers. Alternate 2 is semi-directional with directional flyovers and two loops. It is anticipated that this structure will be replaced to accommodate the proposed ramp geometry along I-74 for the proposed interchange.

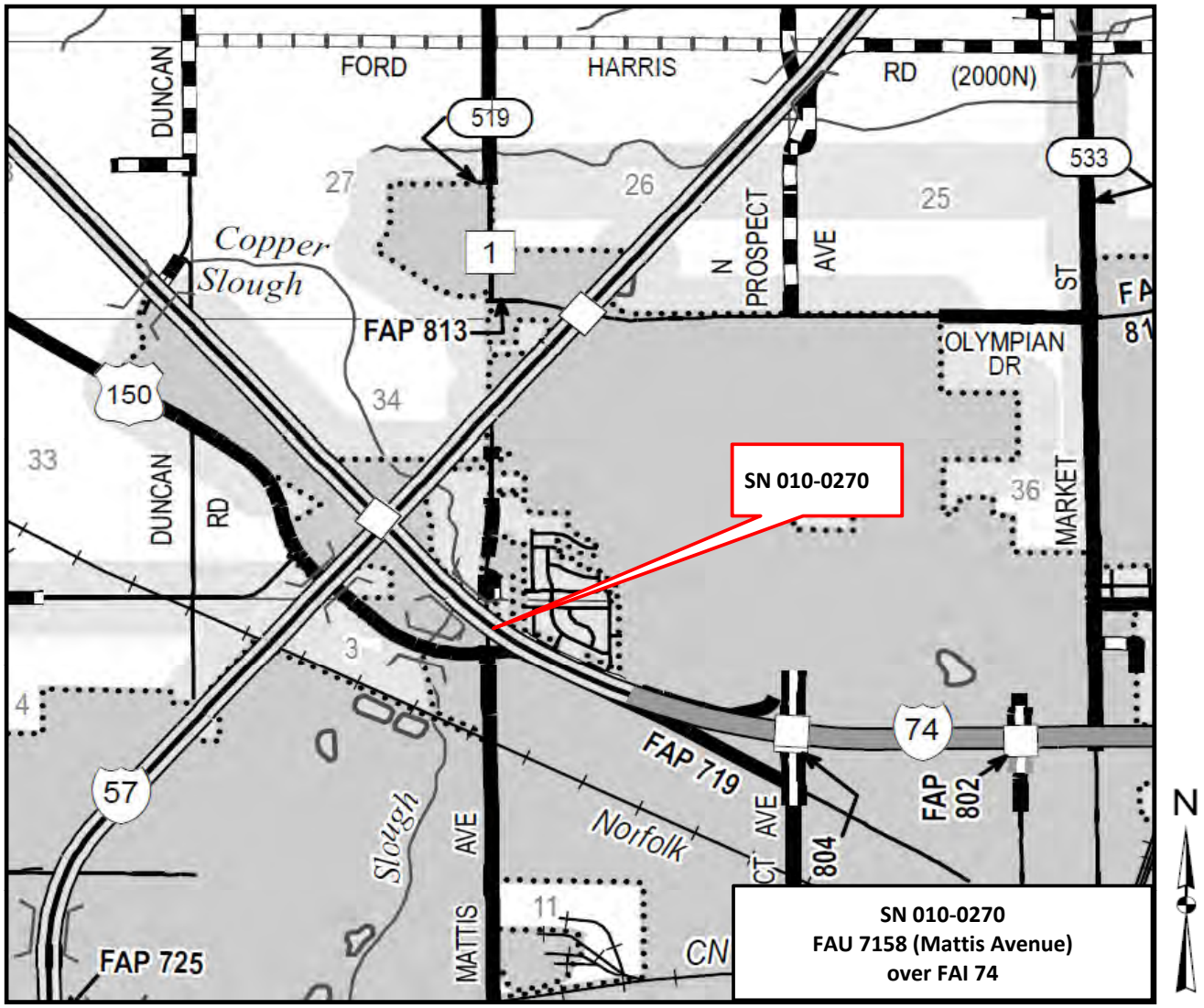
## V. Discussion and Recommended Scope of Work

Based on the Ramp G location for the proposed interchange, the recommended scope of work is to replace the existing structure. At the time this report was prepared, Alternate 2 was the preferred alternate. The proposed structure for Alternate 2 is a two span 70" web plate girder structure, 349'-9" back to back of abutment and a clear width of 72'-0" face to face of curb with a 5' sidewalk each side of structure and 1' barriers for an out to out width of 84'-0".

Replacing the existing bridge can be completed using stage construction while allowing for two-way traffic during each stage. A 14' minimum Stage I traffic lane should be considered to avoid the need for wide load detour.

# **ATTACHMENT A**

Location Map




Attachment A
Location Map

# **ATTACHMENT B**

IDOT Master Structure Report

# Illinois Department of Transportation
# Structures Information Management System
# Structure Summary Report



**Structure Number:** 010-0270 **District:** 5

## Inventory Data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Facility Carried:** | FAU 7158(MATTIS AVE) | **Bridge Name:** | | **Sufficiency Rating:** | 91.7 | **Structure Length:** | 249.9 |
| **Feature Crossed:** | I-74 | **Location:** | 2.5 MI NW CHAMPAIGN | **HBP Eligible:** | No | **AASHTO Bridge Length:** | 99.9 |
| **Bridge Remarks:** | | | | **Replaced By:** | - | **Length of Long Span:** | 121.5 |
| **Bridge Status:** | 1 OPEN - NO RESTRICT | **Status Date:** | 07/1992 | **Replaces:** | 010-0101 | **Bridge Roadway Width:** | 64.0 |
| **Status Remarks:** | | | | **Last Update Date:** | 08/14/2014 | **Appr Roadway Width:** | 63.0 |
| **Maint County:** | 010 CHAMPAIGN | **Maint Township:** | 03 CHAMPAIGN | **Parallel Structure:** | None | **Deck Width:** | 71.6 |
| **Maint Responsibility:** | 01 I.D.O.T. | | | **Multi-Level Structure Nbr:** | | **Sidewalk Width Right:** | 5.0 |
| **Service On/Under:** | 1 HIGHWAY | 1 / | HIGHWAY | **Skew Direction:** | L Left | **Sidewalk Width Left:** | 0.0 |
| **Reporting Agency:** | 1 I.D.O.T. - BUREAU OF MAINTENANCE | | | **Skew Angle:** | D | **Navigation Control:** | 0 No |
| **Main Span Matl/Type:** | 4 STEEL CONTINUOUS | / | 02 STRINGER/MULTI-BEAM/GIRDER | **Structure Flared:** | No | **Navigation Horiz Clear:** | 0 |
| **Nbr Of Main Spans:** | 2 **Nbr Of Approach Spans:** 0 | | | **Historical Significance:** | No | **Navigation Vert Clear:** | 0 |
| *****Approaches***** | | | | **Border Bridge State:** | | **Culvert Fill Depth:** | 0.0 |
| **Near #1 Matl/Type:** | / | | | **Bdr State SN:** | | **Number Culvert Cells:** | 0 |
| **Near #2 Matl/Type:** | / | | | **Bdr State % Responsibility:** | 0 | **Culvert Opening Area:** | 0.0 |
| **Far #1 Matl/Type:** | / | | | **Structural Steel Wt** | 485980 | **Culvert Cell Height:** | 0.00 |
| **Far #2 Matl/Type:** | / | | | **Substructure Material:** | 55 | **Culvert Cell Width:** | 0.00 |
| **Median Width/Type:** | 0 Ft. / 0 None | | | **Rated By:** | 2 IDOT | **Rate Method:** | 6 |
| **Guardrail Type L/R:** | 0None / 0 None | | | **Inventory Rating:** | 1.140(41) | **Load Rating Date:** | 02/05/1993 |
| **Toll Facility Indicator:** | 0 No Toll | | | **Operating Rating:** | 1.915(68) | **Railroad Crossing Info** | |
| **Latitude:** | 40.14138505 **S** | **Longitude:** | 88.27732740 **S** | **Design Load:** | 01 HS20+MOD | **Crossing 1 Nbr:** | |
| **Deck Structure Type:** | A CIP CON NRMLLY FORM | | | **Deck Structure Thickness:** | 7.5 **SD:** N **FO:** N | **Crossing 1 Nbr:** | |
| **Sidewalks Under Structure:** | 0 None | | | | | **RR Lateral Underclear:** | 0.0 |
| | | | | | | **RR Vertical Underclear:** | 0 **Ft** 0 **In** |

## Key Route On Data

| | | | |
|---|---|---|---|
| **Key Route Nbr:** | FEDERAL-AID URBAN 7158 | **Station:** | 1.5500 |
| **Appurtenances** | Main Route 00000 | **Segment:** | |
| **Inventory County:** | 010 CHAMPAIGN | **Linked:** | Y |
| **Township/Road Dist** | 54 CHAMPAIGN CITY | **Natl. Hwy System:** | Not on NHS |
| **Municipality** | 0990 CHAMPAIGN | **Inventory Direction:** | |
| **Urban Area:** | 0990 0990 | **Curr AADT Yr/Count:** | 2012 / 16000 |
| **Functional Class:** | 4 MINOR ARTERIAL | **Est Truck Percentage:** | 4 |
| **** CLEARANCES **** | **South/East** **North/West** | **Number Of Lanes:** | 4 |
| **Max Rdwy Width:** | 64.0 | **One Or Two Way:** | 2 Two-Way |
| **Horizontal:** | 69.6 0.0 | **Bypass Length:** | 2 |
| | | **Future AADT Yr/Cnt:** | 2032 / 17146 |
| | | **Designated Truck Rte:** | NONE |
| **Lateral:** | | **Special Systems:** | No |

## Key Route Under Data

| | | | |
|---|---|---|---|
| FEDERAL-AID INTERSTATE 0074 | | **Station:** | 11.3300 |
| Main Route 00000 | | **Segment:** | |
| 010 | | **Linked:** | Y |
| 54 CHAMPAIGN CITY (CHAMPAIGN) | | **Natl. Hwy System:** | On NHS |
| 0990 CHAMPAIGN | | **Inventory Direction:** | |
| 0990 0990 | | **Curr AADT Yr/Count:** | 2013 / 38900 |
| 1 INTERSTATE | | **Est Truck Percentage:** | 15 |
| **South/East** | **North/West** | **Number Of Lanes:** | 4 |
| 52.8 | | **One Or Two Way:** | 2 Two-Way |
| 52.8 | 51.8 | **Bypass Length:** | 0 |
| | | **Future AADT Yr/Cnt:** | 2032 / 43315 |
| | | **Designated Truck Rte:** | CLASS I |
| | | **Special Systems:** | Yes |

## *** Marked Route On Data ***

| | **Designation** | **Kind** | **Number** |
|---|---|---|---|
| **Route #1:** | 1 Mainline | 8 Other | |
| **Route #2:** | 1 Mainline | | |
| **Route #3:** | 1 Mainline | | |

## *** Marked Route Under Data ***

| | **Designation** | **Kind** | **Number** |
|---|---|---|---|
| | 1 Mainline | 1 Interstate Highway | 074 |
| | 1 Mainline | | |
| | 1 Mainline | | |

**Structure Number: 010-0270** **District: 5**

## Data Related to Inspection Information

| *** Inspection Intervals *** | | | | *** Maximum Allowable Posting Limits *** | | | | Bridge Posting Level: | |
|---|---|---|---|---|---|---|---|---|---|
| Routine NBIS: | 24 MOS | Underwater: | 0 MOS | One Truck At A Time: | 0 | Combination Type 3S-1: | Tons | 5 | No Posting Required |
| | | Special: | N | Single Unit Vehicles: | Tons | Combination Type 3S-2 | Tons | | |

## Inspection/Appraisal Information

**Inspection Date:** 08/11/2014 **Inspection Temperature:** 72Deg. F

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Deck: | 5 | FAIR CONDITION - MINOR SECTION LOSS, CRACKS | | | | | ** Actual Posted Limits ** | |
| Superstructure: | 6 | SATISFACTORY CONDITION - MINOR DETERIORATION | | | | | Single Unit Vehicles: | Tons |
| Substructure: | 8 | VERY GOOD CONDITION - NO PROBLEMS NOTED | | | | | Combination Type 3S-1: | Tons |
| Culvert: | N | NOT APPLICABLE | | | | | Combination Type 3S-2: | Tons |
| Channel and Protection: | N | NOT APPLICABLE | Deck Wearing Surf: | A | BARE DECK NO OVRLAY | | One Truck At A Time: 0 | |
| Structural Evaluation: | 6 | EQUAL TO PRESENT MINIMUM CRITERIA | Deck Membrane: | F | NONE | | Last Paint Type: | G |
| Deck Geometry: | 7 | BETTER THAN PRESENT MINIMUM CRITERIA | Deck Protection: | A | EPOXY COATED REINF | | SHP ZINC & VINYL | |
| Underclearance-Vert/Lat.: | 4 | MINIMUM ADEQUACY TO BE LEFT IN PLACE | Total Deck Thick: | 7.5 | | | | |
| Waterway Adequacy: | N | NOT APPLICABLE | Last Paint Date: | 10/1992 | | | | |
| Approach Roadway Align: | 8 | EQUAL TO PRESENT DESIRABLE CRITERIA | | | | | | |
| Bridge Railing Appraisal: | 2 | Doesn't Meet Standards | | | | | | |
| Approach Guardrail: | 222 | Not Acceptable Not Acceptable Not Acceptable | | | | | | |
| Pier Navig Protection: | N | N/A | | | | | | |

## Underwater Inspection/Appraisal Information

**Inspection Date:**
**Temperature:** **Inspection Method:**
**Appraisal Rating:**

## Scour Critical Information

**Rating:** **Evaluation Method:**
**Analysis Date:**

## Miscellaneous

**Microfilm Data Recorded:** Yes

## Construction Information

| | | | | | | |
|---|---|---|---|---|---|---|
| Year: | 1992 | Original | | Reconstructed | | |
| Route: | FAI 74 | | Sta: 19+01.76 | | Sta: | |
| Section Nbr: | | (10-5-1 HB)BR | | | | |
| Contract Nbr: | | 90095 | | | | |
| Fed Aid Pr#: | | SEE REMARKS | | | | |
| Built By: | 1 | I.D.O.T. | | | | |

# **ATTACHMENT C**

Bridge Inspection Report

Illinois Department of Transportation

# Bridge Inspection Report (MP)

**Structure Number: 010-0270**

| 90 - Insp. Date | 90A - Insp. Team Leader/Qualification | Temp. |
|---|---|---|
| 1/14/2011 | S. Conkin / Bridge | 23° |
| / / | / | |
| / / | / | |
| / / | / | |
| / / | / | |

Maintenance County: CHAMPAIGN
Township: CHAMPAIGN
Municipality: CHAMPAIGN
Facility Carried: FAU 7158(MATTIS AVE)
Feature Crossed: I-74
Location: 2.5 MI NW CHAMPAIGN
Material/Type: STEEL CONTINUOUS/STRINGER/MULTI-BEAM/GI
Nbr of Spans: 2 Team Sect./Sub-Sect: 543 - 740

Bridge Inspection Year: 09 11

| | Appraisals | Comments (All comments must be dated.) |
|---|---|---|
| **Deck** | | |
| **58 - Deck Condition:** | 65 | See Insp. Remarks (1) |
| Wearing Surface: | 3 | |
| Parapets / Bridge Railings: | 3 | |
| Curbs: | - | |
| Median: | - | |
| Sidewalks: | 3 | |
| Drain System: | 3 | |
| Light Standards: | - | |
| Expansion Joints: | 2 | Openings (In.): Leaking (1) |
| **Superstructure** | | |
| **59 - Superstructure Cond:** | 76 | |
| Bearing Devices: | 3 | |
| Girders / Beams / Stringers: | 3 | Heavy Rust w/ Pitting & Flaking on Bottom Flanges (1) |
| Diaphragms / Braces: | 3 | |
| Trusses / Portals / Bracing: | - | |
| Rivets / Bolts: | 3 | |
| Paint: | 1 | Failed, Peeling (1) |
| **Substructure** | | |
| **60 - Substructure Cond:** | 88 | |
| Abutments: Stem / Columns / Piles: | 3 | |
| Abutments: Caps: | 3 | |
| Abutments: Bearing Seats: | 3 | |
| Abutments: Backwalls: | 3 | |
| Abutments: Wingwalls: | 3 | |
| Piers: Stem / Columns / Piles: | 4 | |
| Piers: Caps: | 4 | |
| Piers: Bearing Seats: | 4 | |
| Piers: Crash Walls: | 4 | |
| Fender Systems: | - | |
| Paint: | - | |

Bridge Inspection Year: 2011

**Structure Number: 010-0270**

| | Appraisals | Comments (All comments must be dated.) |
|---|---|---|
| **Culvert** | | |
| **62 - Culvert Condition:** | N | |
| Top Slab / Soffit: | | |
| Side Walls / Arch: | | |
| Bottom: | | |
| Headwalls: | | |
| Wingwalls: | | |
| **Waterway and Channel** | | |
| **61 - Channel Condition:** | N | |
| Streambed: | | |
| Slope Walls & Rip-Rap: | | |
| Stream Banks: | | |
| Spur Dykes & Jetties | | |
| **71 - Waterway Adequacy:** | N | |
| **Approach Roadway** | | |
| **72 - Appr. Rdwy Alignment:** | 8 | |
| Riding Quality: | 3 | |
| Structural Condition: | 3 | |
| Relief Joints: | - | |
| **Navigable Waterways** | | |
| **111 - Pier Navig. Protect'n:** | N | |

**Inspection Remarks**

| Year | Item 90B - Inspection Remarks (237 characters maximum.) |
|---|---|
| 2011 | Transverse leaching Cracks @ ±5' intervals throughout deck surface and soffit with intersecting longitudinal leaching Cracks in soffit some of which are visable in surface also. 2 of the longitudinal Cracks Run full distance of deck. Paint on Superstructure has failed w/ flaking, pitting Rust on bottom flng |
| 20 | |
| 20 | |
| 20 | |
| 20 | |

**Additional Inspection Data**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 36A – Bridge Railing Adequacy: | | 2 | Rail Types: | | | | |
| Approach Guardrail Adequacy: 36B – Transitions: | | 2 | 36C – Guardrail: | | 2 | 36D – Ends: | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 108A – Wearing Surface Type: | 1 | A | 108B – Type of Membrane: | | F | 108C – Deck Protection: | A |
| 108D – Total Deck Thickness (In.): | 07.5 | 7.5 | | | | | |

| | | |
|---|---|---|
| 59A – Paint Date (Mo/Yr): | 06/1992 | / |
| 59B – Paint Systems: | C | |

Color: Fascia – _____; Inter. – _____; Railing – _____.

| | | |
|---|---|---|
| 59C – Utilities Attached: | NNN | |

**Weight Limit Posting**

| | | | | | |
|---|---|---|---|---|---|
| 70A2 – Single Units: | | T. | Comb. Veh: 70B2 – 3 or 4 Axle: | | T. |
| 70C2 – 5 or More Axle: | | T. | 70D2 – One Truck at a Time: | | |

**Inspection Resource Needs**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Time to Inspect (H:M):** | | 01:00 | **Traffic Control:** | | 1 | | | | | | |
| **Equipment:** | **Boat –** | | **Waders –** | | | **Snooper –** | | | **Manlift –** | | |
| | **Ladder – Short** | | **Medium** | | | **Tall** | | | **Other –** | | |

93C – Special Inspection Date: / / / / / / / / / /

**Signature Block**

| | Signature | Date | Unit Supervisor Init. & Date |
|---|---|---|---|
| Inspection Team Leader | Shawn D. Crabb | 1-14-11 | BR 1/19/11 |
| | | | |
| | | | |
| | | | |
| | | | |

Additional Comments:

(Continue comments on page 4)

# **ATTACHMENT D**

Top and Bottom of Deck Condition Survey

50 40 30 20 10 0 10 20 30 40 50 60 70

N

℄ PIER 2

BK. S. ABUT.

℄ MATTIS AVE.

No Deficiencies Noted

MATTIS AVE.
OVER I-74

# TOP OF DECK CONDITION SURVEY, SPAN 1

50 40 30 20 10 0 10 20 30 40 50 60 70

50 40 30 20 10 0 10 20 30 40 50 60 70

N

℄ PIER 2

℄ MATTIS AVE.

No Deficiencies Noted

BK. N. ABUT.

105

100

MATTIS AVE.
OVER I-74

# TOP OF DECK CONDITION SURVEY, SPAN 2

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

N

℄ SPLICE 1

℄ PIER

BACK S. ABUT.

℄ MATTIS AVE.

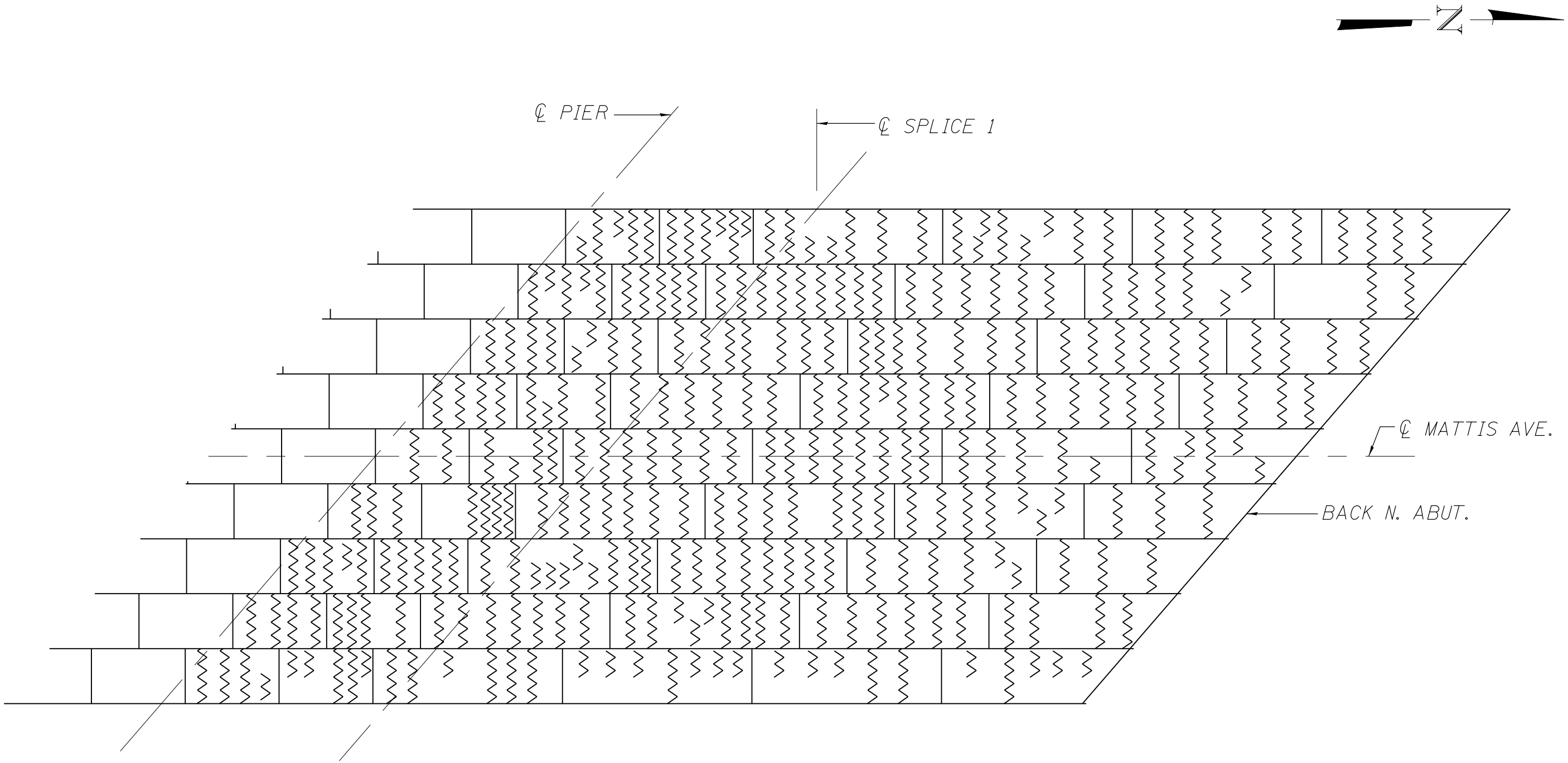
LEGEND

Cracking

MATTIS AVE.
OVER I-74

# BOTTOM OF DECK CONDITION SURVEY, SPAN 1

16




LEGEND

Cracking

MATTIS AVE.
OVER I-74

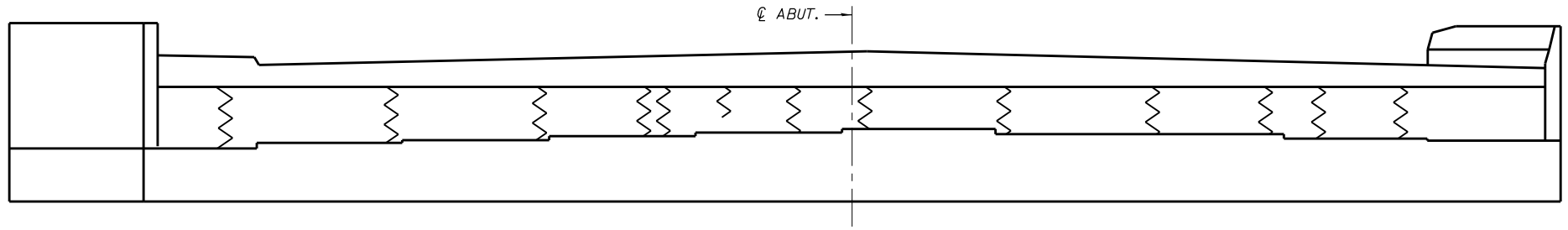
# BOTTOM OF DECK CONDITION SURVEY, SPAN 2

# **ATTACHMENT E**

Substructure Condition Surveys

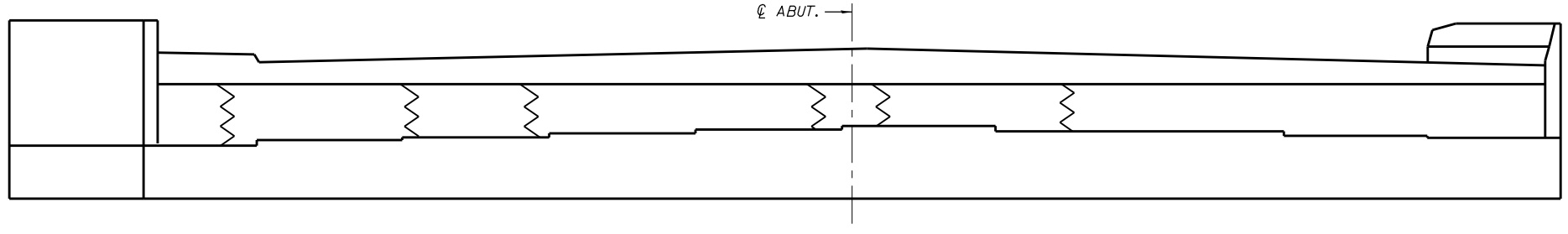
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105




100

NORTH ABUTMENT




105

SOUTH ABUTMENT

LEGEND

Cracking

100

MATTIS AVE.
OVER I-74

# ABUTMENT CONDITION SURVEY

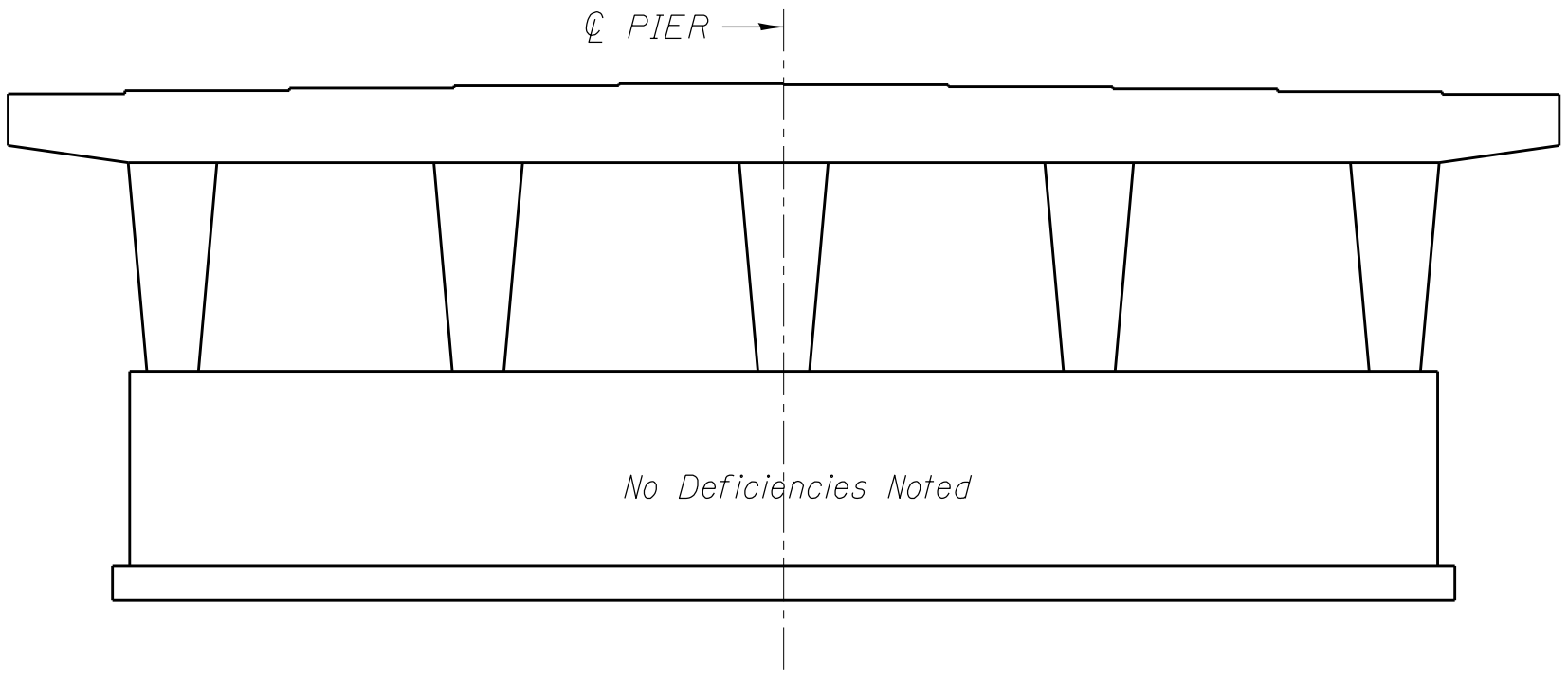
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

19

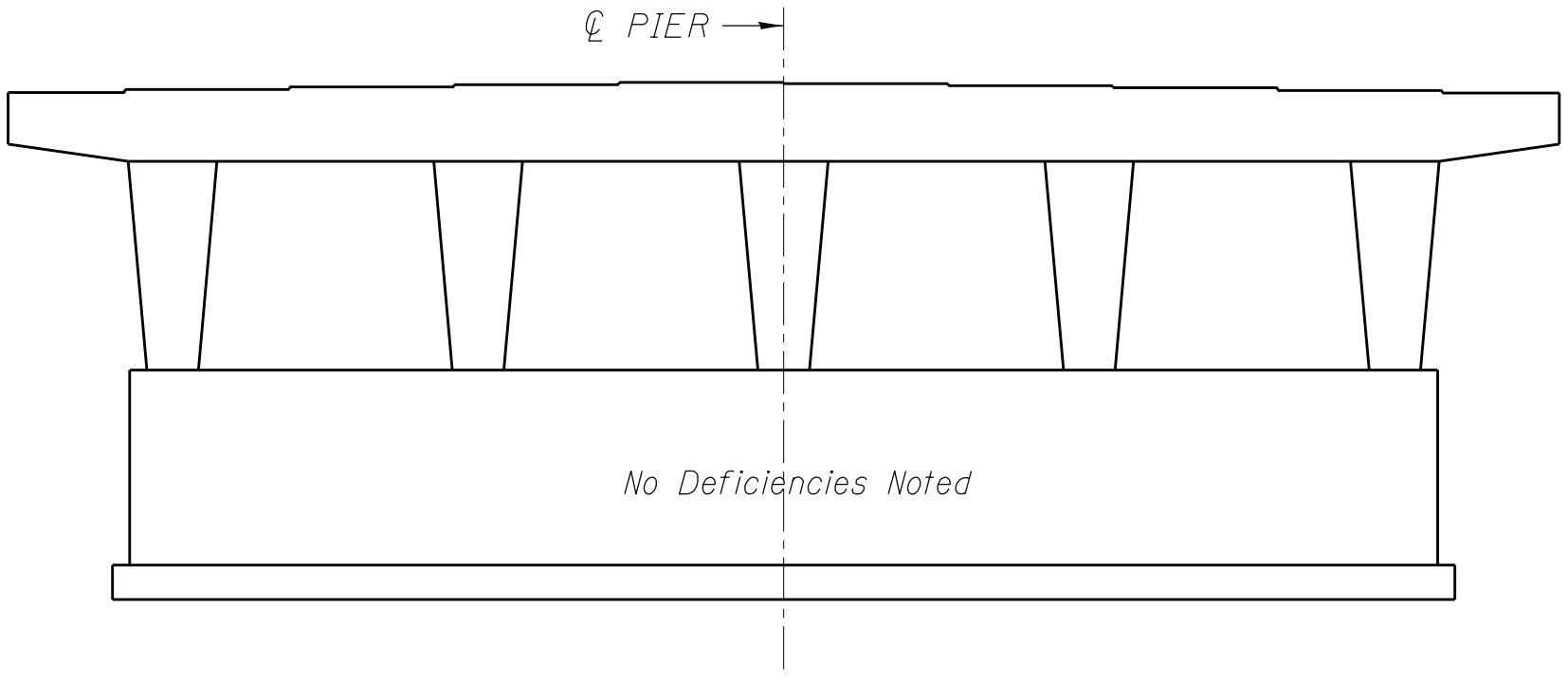
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




PIER 1
(LOOKING SOUTH)




105

100

PIER 1
(LOOKING NORTH)

MATTIS AVE.
OVER I-74

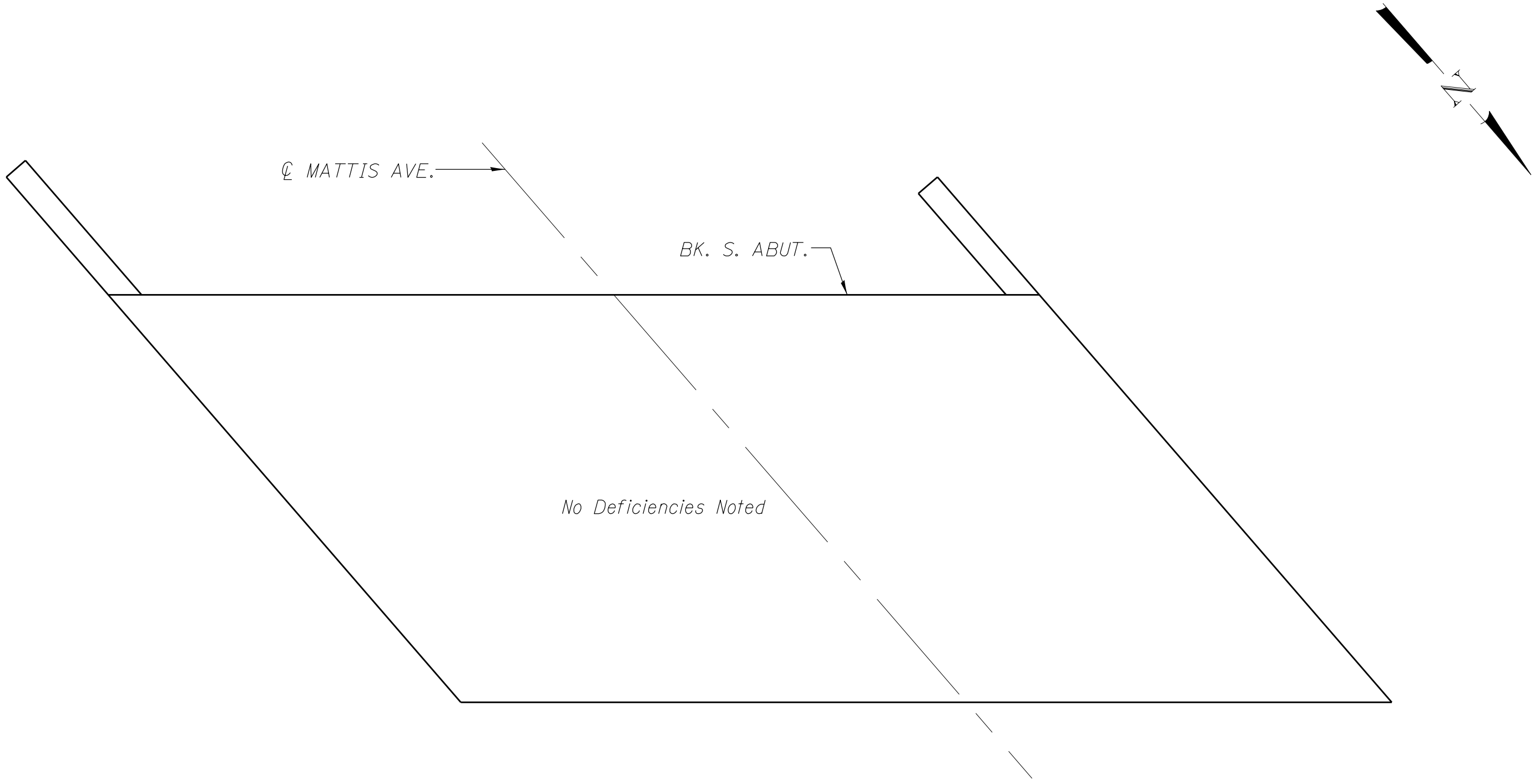
# PIER CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

100

# SOUTH SLOPEWALL

MATTIS AVE.
OVER I-74

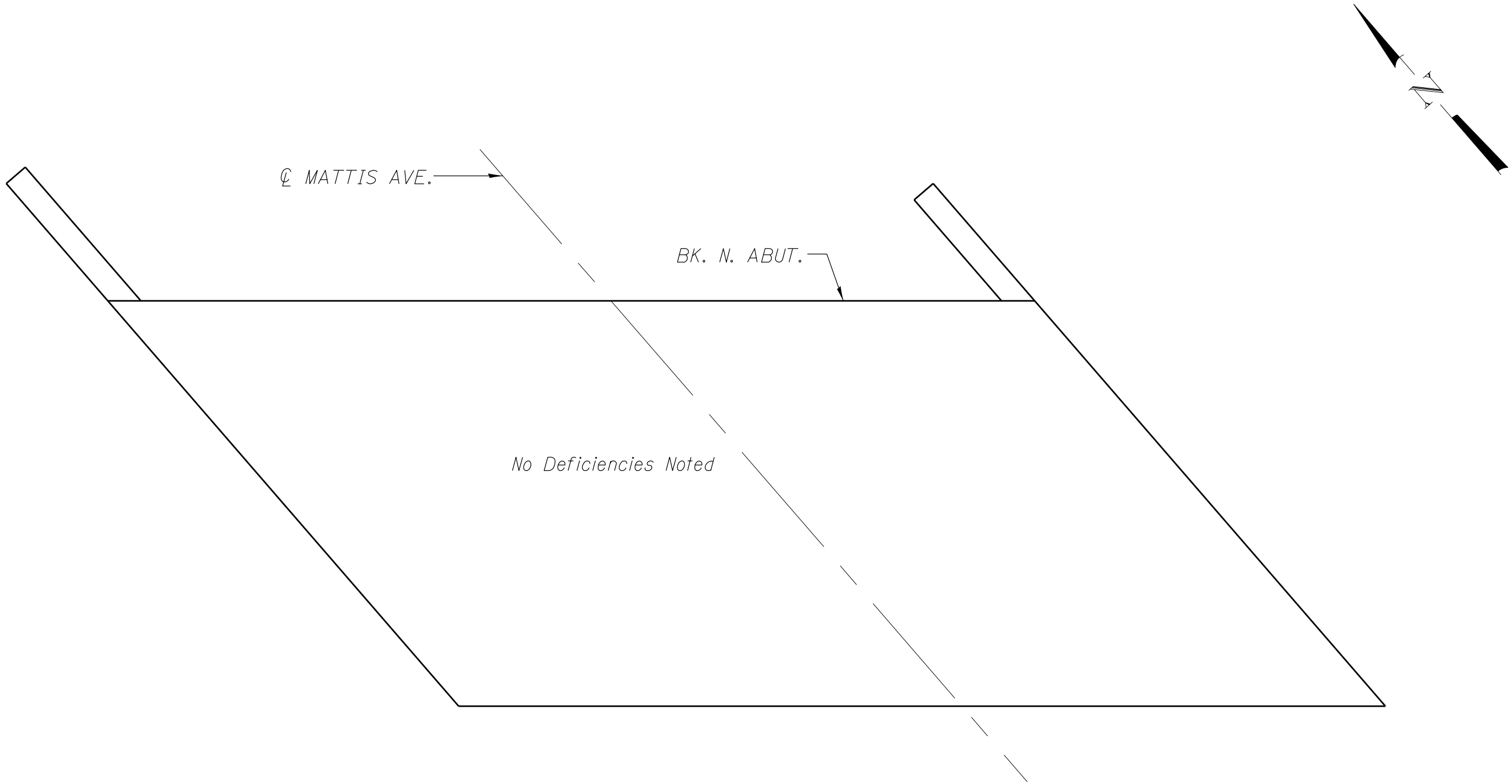
# SLOPEWALL CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

100

# NORTH SLOPEWALL

MATTIS AVE.
OVER I-74

## SLOPEWALL CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

# **ATTACHMENT F**

Cost Estimates

Mattis Avenue over FAI 74
SN 010-0270

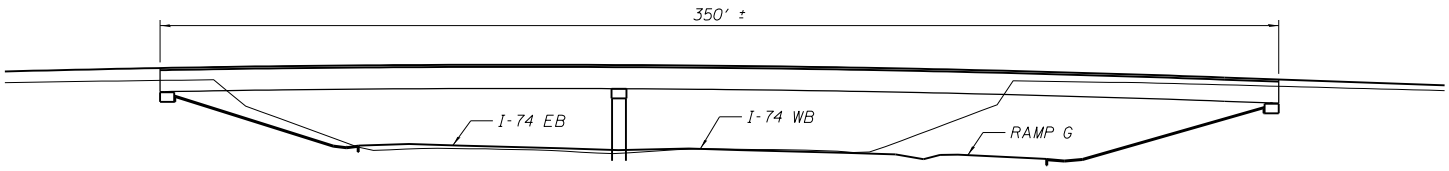
Preliminary Cost Estimate
Complete Replacement

| CODE | PAY ITEM | UNIT | QUANTITY | | | UNIT COST | ITEM COST |
|---|---|---|---|---|---|---|---|
| | | | SUPER | SUB | TOTAL | | |
| 50100100 | REMOVAL OF EXISTING STRUCTURES | EACH | | | **1** | $75,000.00 | $75,000.00 |
| 50200100 | STRUCTURE EXCAVATION | CU YD | | 1009 | **1009** | $24.00 | $24,216.00 |
| 50300225 | CONCRETE STRUCTURES | CU YD | | 416 | **416** | $600.00 | $249,600.00 |
| 50300255 | CONCRETE SUPERSTRUCTURE | CU YD | 1035 | | **1035** | $750.00 | $776,250.00 |
| 50300260 | BRIDGE DECK GROOVING | SQ YD | 3035 | | **3035** | $6.00 | $18,210.00 |
| 50300300 | PROTECTIVE COAT | SQ YD | 3420 | | **3420** | $2.50 | $8,550.00 |
| 50500105 | FURNISHING AND ERECTING STRUCTURAL STEEL | L SUM | | | **1** | $2,440,000 | $2,440,000.00 |
| 50500505 | STUD SHEAR CONNECTORS | EACH | 14904 | | **14904** | $3.25 | $48,438.00 |
| 50800205 | REINFORCEMENT BARS, EPOXY COATED | POUND | 206860 | 83120 | **289980** | $1.20 | $347,976.00 |
| 51100100 | SLOPE WALL 4 INCH | SQ YD | | 685 | **685** | $90.00 | $61,650.00 |
| 51201600 | FURNISHING STEEL PILES HP12X53 | FOOT | | 1200 | **1200** | $42.00 | $50,400.00 |
| 51202305 | DRIVING PILES | FOOT | | 1200 | **1200** | $0.65 | $780.00 |
| 51500100 | NAME PLATES | EACH | 1 | | **1** | $420.00 | $420.00 |
| 52100520 | ANCHOR BOLTS, 1" | EACH | | 72 | **72** | $77.00 | $5,544.00 |
| 59100100 | GEOCOMPOSITE WALL DRAIN | SQ YD | | 271 | **271** | $20.00 | $5,420.00 |
| X5860110 | GRANULAR BACKFILL FOR STRUCTURES | CU YD | | 665 | **665** | $40.00 | $26,600.00 |
| Z0026407 | TEMPORARY SHEET PILING | SQ FT | | 1000 | **1000** | $25.00 | $25,000.00 |
| Z0046304 | PIPE UNDERDRAINS FOR STRUCTURES 4" | FOOT | | 332 | **332** | $18.75 | $6,225.00 |

| | | |
|---|---|---|
| | Subtotal = | $4,170,279.00 |
| 15% | Contingency = | $625,541.85 |
| | Total = | **$4,795,820** |

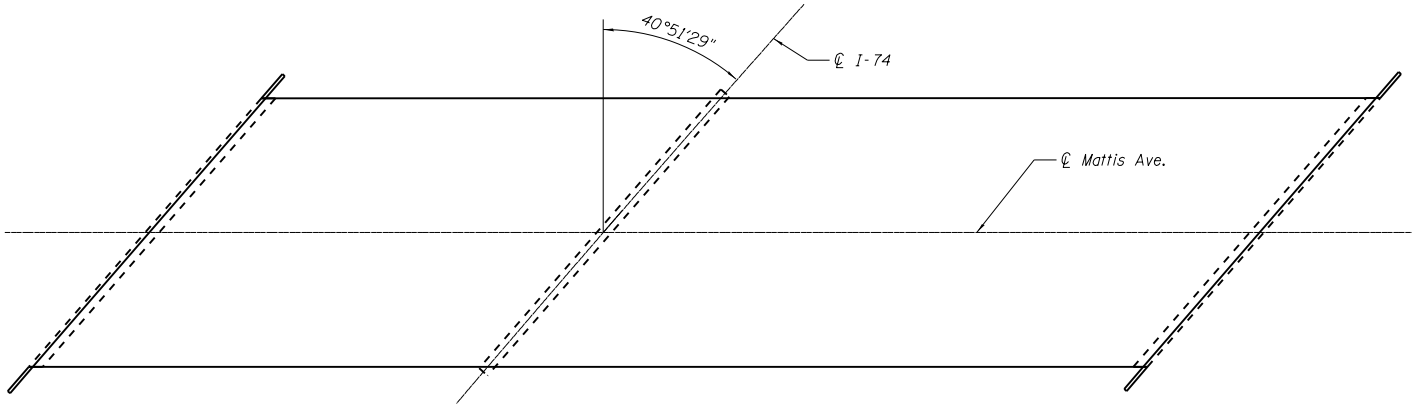
# **ATTACHMENT G**

Proposed Structure

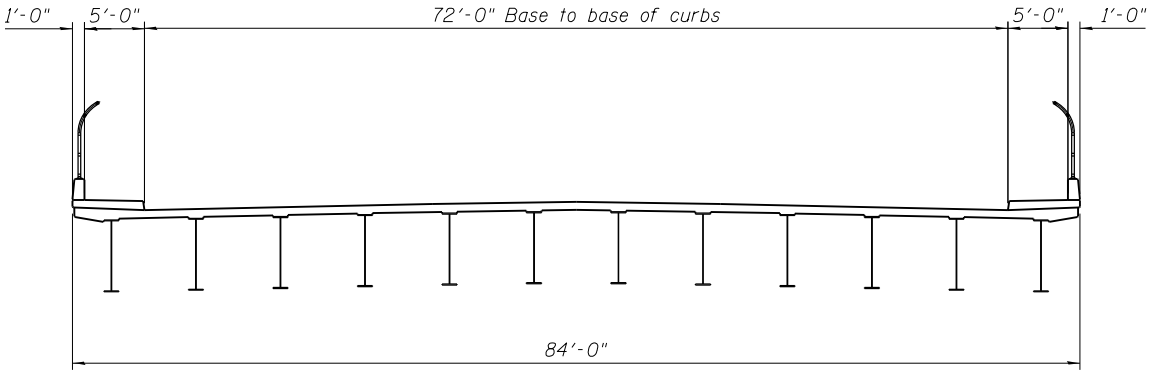



ELEVATION

N



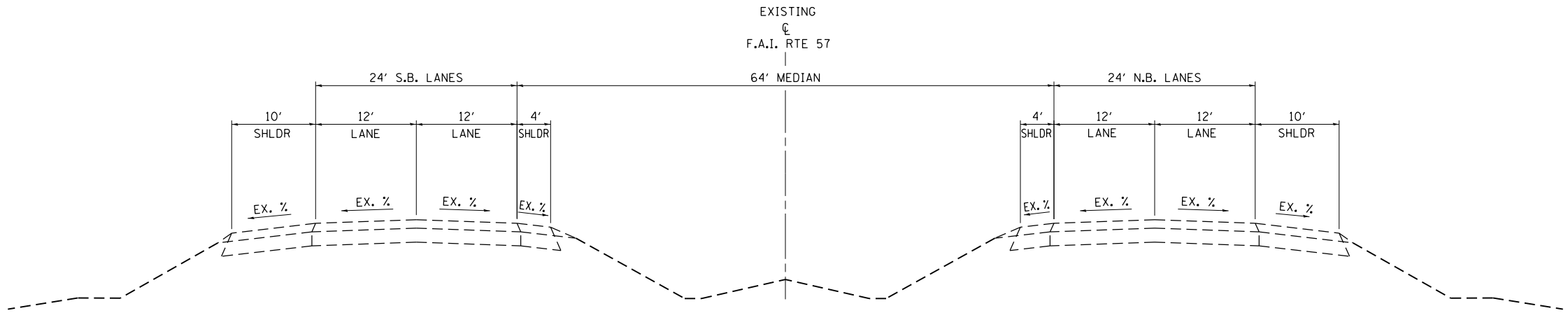

PLAN PROPOSED
STRUCTURE




PROPOSED STRUCTURE
WIDTH

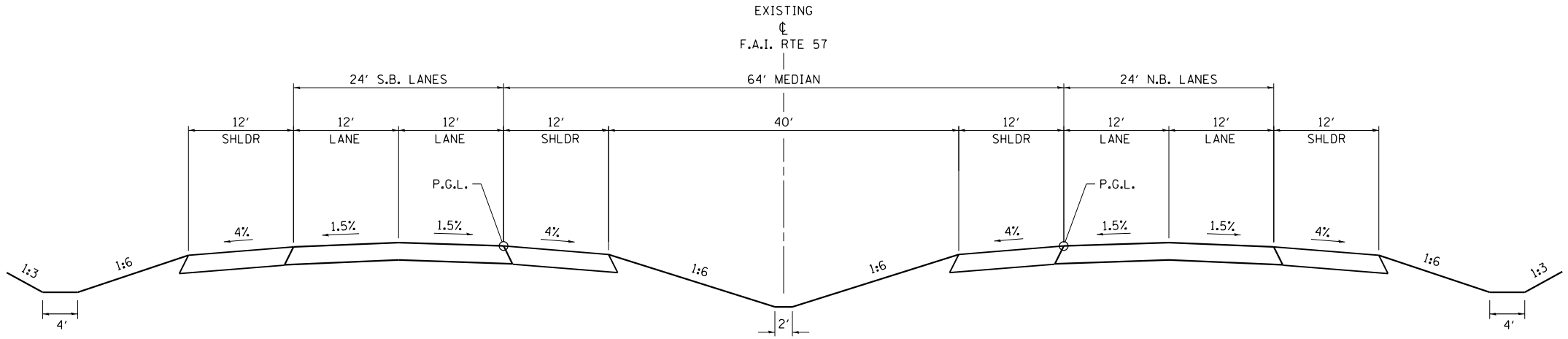
*Notes:*
*The number and location of piers, the profile grade and bridge length are subject to refinement in the TSL phase.*
*Superstructure type, beam spacing and rail type to be determined during the TSL phase.*

PROPOSED
STRUCTURE SKETCH
SN 010-0270



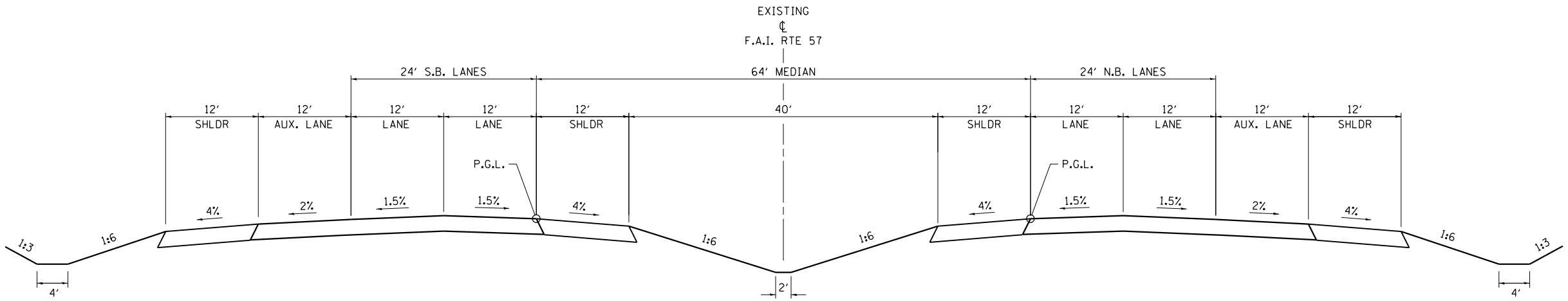

**EXISTING F.A.I 57**

(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
WITH AUXILIARY LANE
(LOOKING NORTH)

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**INTERSTATE 57**

**EXHIBIT 51**

BDE-9348

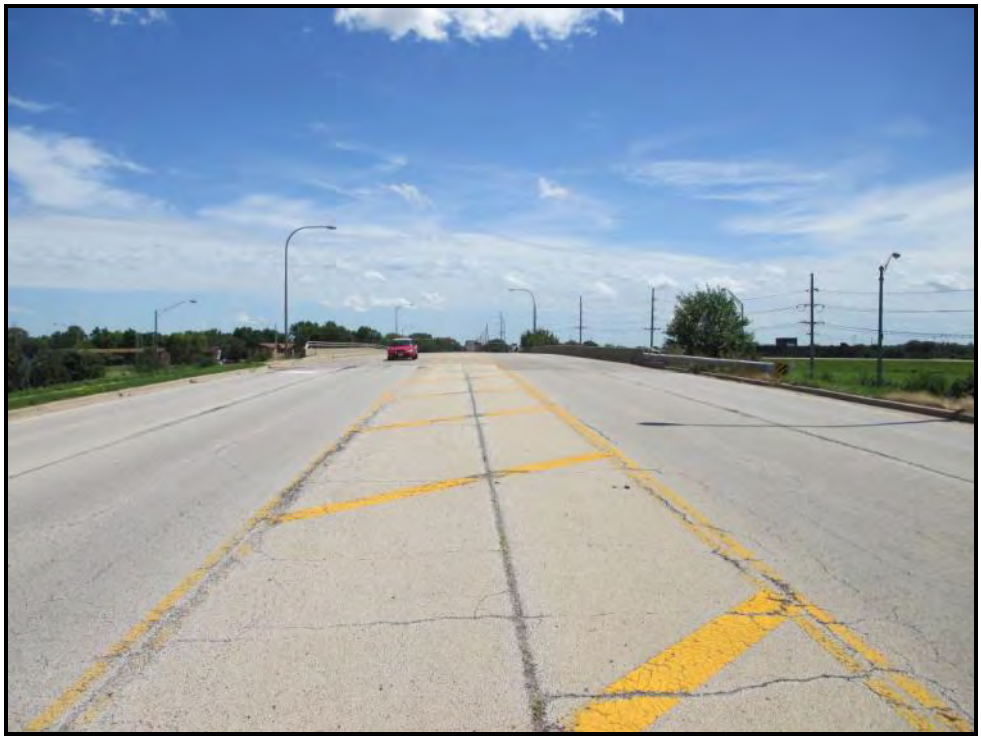
PLOT DATE = 8/12/2014 - 10:15:21 AM
FILE NAME = L:\IDOT\1106602\Draw\Exhibits\TS\..
PLOT SCALE = 16.0000 ' / in.
USER NAME = Brad Downen

# **ATTACHMENT H**

Structure Photos



**Looking up-station (North) through structure**



**Looking down-station (South) through structure**



**Looking up-station (East) of I-74 from structure**



**Looking down-station (West) of I-74 from structure**




**Looking up-station (East) of I-74 showing the bridge**



**Looking down-station (West) of I-74 showing the bridge**



**Southwest Wingwall**



**Northwest Wingwall**



**Southeast Wingwall**



**Northeast Wingwall**



**South abutment expansion joint (Looking West)**



**North abutment expansion joint (Looking West)**




**Structure Bridge Rail (East side)**



**General condition of underside of superstructure Span 1**



**General condition of underside of superstructure Span 2**



**General condition of girders**



**South abutment**



**North abutment**



**General condition of abutment bearing**



**South face of Pier 1**



**East face of Pier 1**



**Slopewall at South abutment**



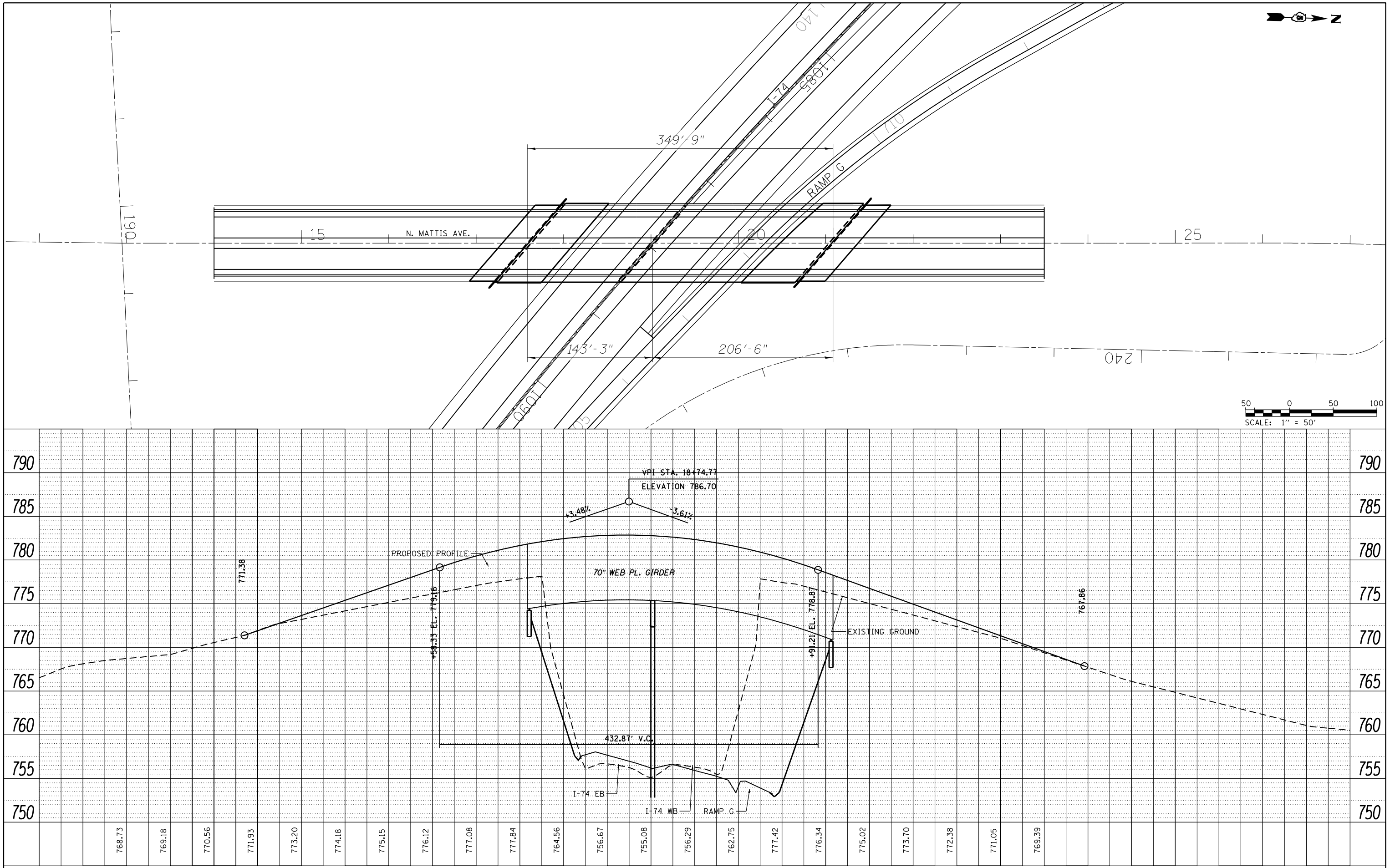
**Slopewall at North abutment**

# **ATTACHMENT J**

Proposed Plan & Profile

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
BM. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE




| | | | |
|---|---|---|---|
| FILE NAME = P:\Projects\2011 Projects\11354 - IDOT I-74 $MODELNAME$ | USER NAME = $USER$ | DESIGNED - | REVISED - |
| | Interchange\ST\BCR\D570897-sht_ plnprof_AL | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| | PLOT DATE = 10/13/2014 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

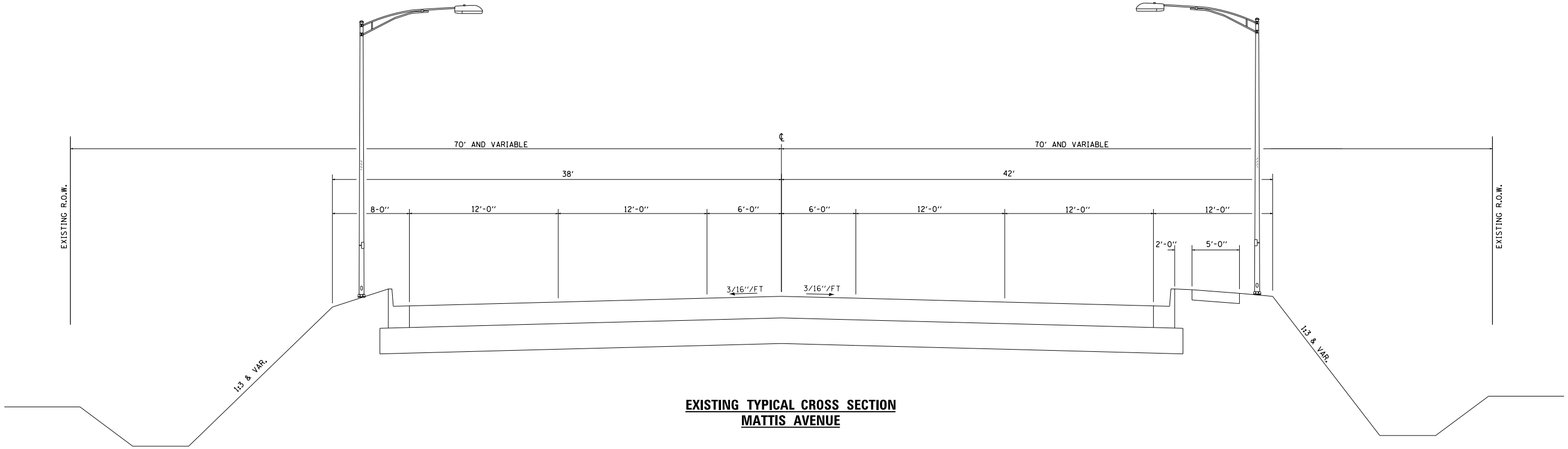
**ALTERNATE #2, NORTH MATTIS AVE. OVER I-74**
**PLAN & PROFILE**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

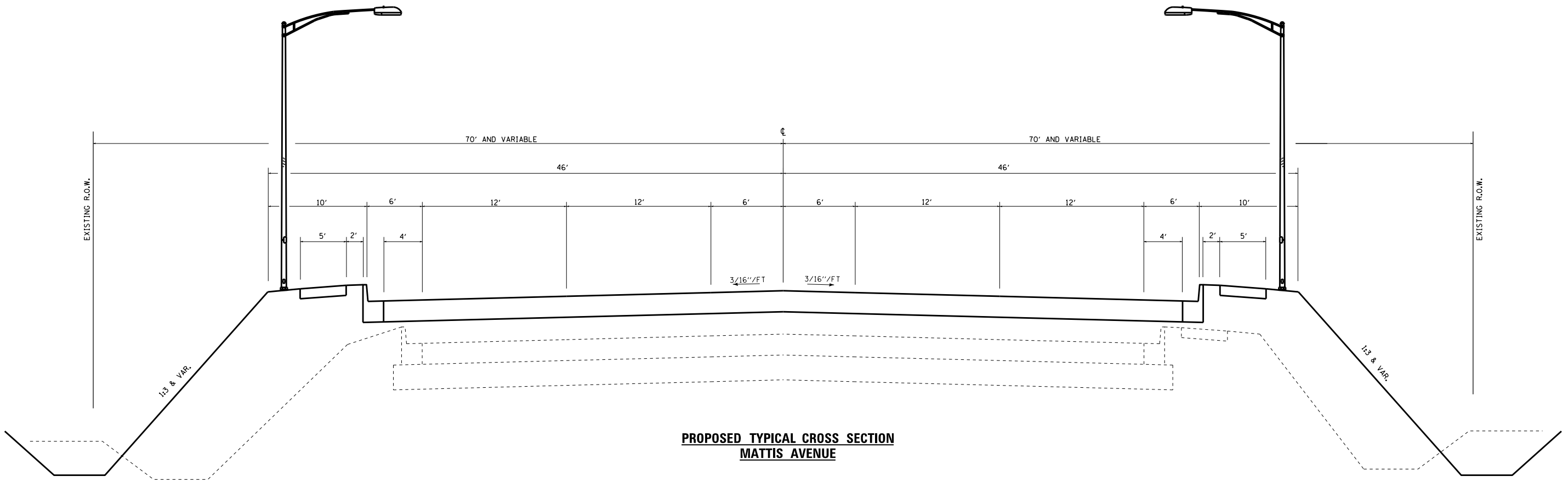
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |

# **ATTACHMENT K**

Existing and Proposed Roadway Cross Sections




**EXISTING TYPICAL CROSS SECTION**
**MATTIS AVENUE**




**PROPOSED TYPICAL CROSS SECTION**
**MATTIS AVENUE**

| | | | |
|---|---|---|---|
| FILE NAME = P:\Projects\2011 Projects\11354 - IDOT I-74 Interchange\ST\I-74 Interchange (Radial Subdivision Layout).B3.dgn | USER NAME = $USER$ | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = $SCALE$ | CHECKED - | REVISED - |
| $MODELNAME$ | PLOT DATE = 10/7/2014 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**FAU 7158 (MATTIS AVENUE)**
**(SOUTH OF WEST ANTHONY DRIVE INTERSECTION)**

SCALE: _____ | SHEET ___ OF ___ SHEETS | STA. _____ | TO STA. _____

| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 7158 | 10(5-1-BS-1.14-1.6)B | CHAMPAIGN | 20 | |
| | | CONTRACT NO. 70897 | | |
| | | ILLINOIS FED. AID PROJECT | | |

# ATTACHMENT L

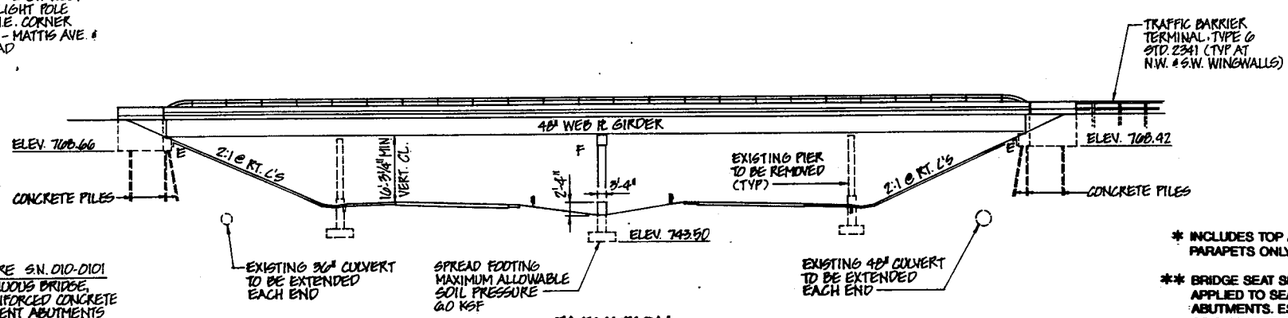
Abbreviated Existing Plans

SHEET NO. 1 OF 20 SHEETS

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. 74 | * | CHAMPAIGN | 70 | 32 |
| FED. ROAD DIST. NO. | | ILLINOIS | PROJECT | |

* SEC (10-5-1 HB) BR

BENCH MARK:
B.M. "A" - CHISELED "a" ON WEST SIDE OF TRAFFIC LIGHT POLE BASE (CONC.) AT N.E. CORNER OF INTERSECTION - MATTIS AVE. & BLOOMINGTON ROAD
ELEV. 769.04

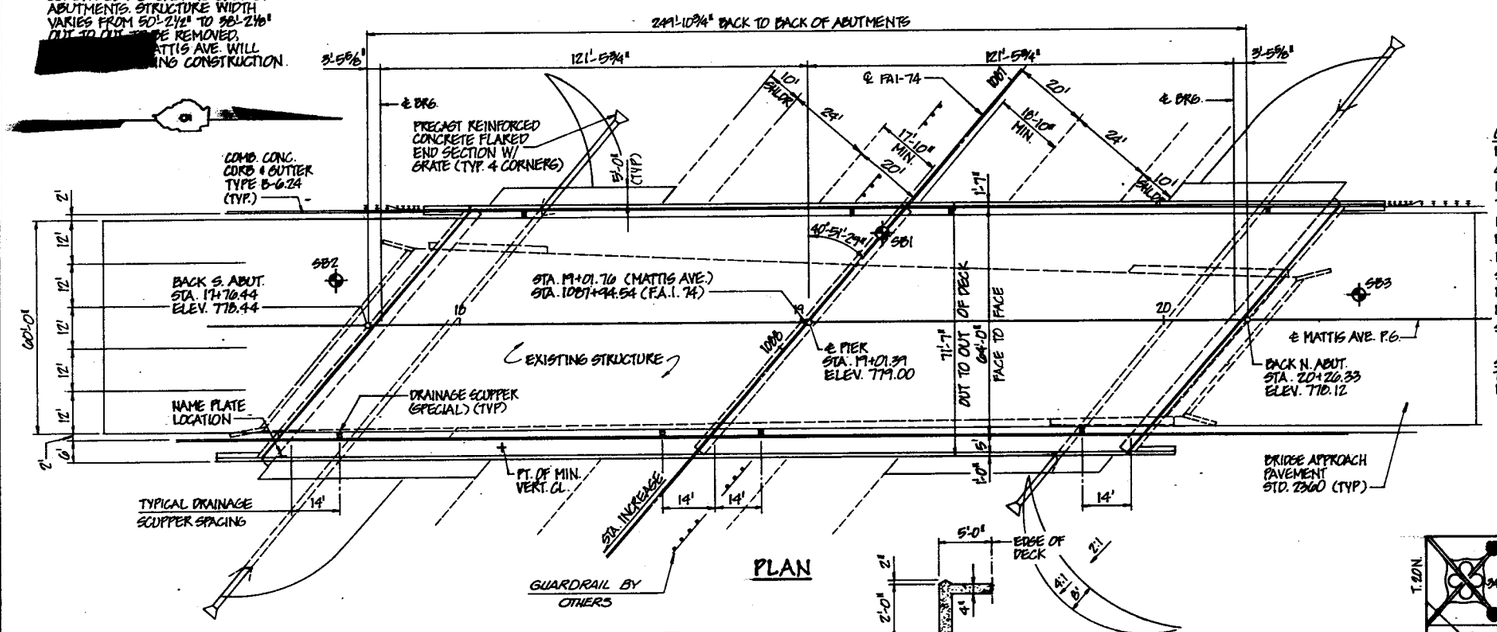



ELEVATION

EXISTING STRUCTURE S.N. 010-0101
FOUR-SPAN CONTINUOUS BRIDGE, W33 BEAMS & REINFORCED CONCRETE DECK. TWO PILE BENT ABUTMENTS AND THREE 6-COLUMN PIERS ON SPREAD FOOTINGS. STRUCTURE LENGTH 253'-0" BACK TO BACK OF ABUTMENTS. STRUCTURE WIDTH VARIES FROM 50'-2½" TO 58'-2⅛" [redacted] TO BE REMOVED. MATTIS AVE. WILL REMAIN DURING CONSTRUCTION.

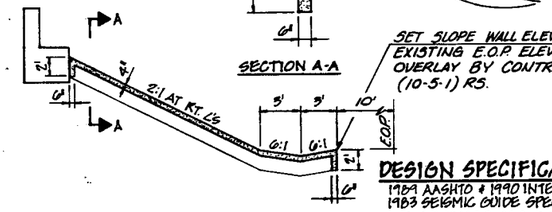
* INCLUDES TOP AND INSIDE FACES OF PARAPETS ONLY.

** BRIDGE SEAT SEALER SHALL BE APPLIED TO SEAT AREA OF THE ABUTMENTS. EST. AREA OF BRIDGE SEAT SEALER 513 SQ. FT.



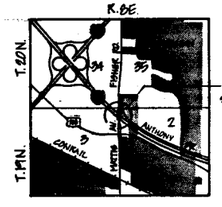

PLAN

CURVE DATA - F.A.I. 74
P.I. STA. 1088+66.18
Δ = 10°-39'-04"
D = 00°-48'-51"
T = 1155.70'
R = 7097.78'
L = 2290.45'
E = 94.20'
S.E. = 0.020 FT./ FT.
P.C. STA. 1077+10.48
P.C.C. STA. 1100+01.43
S.E. ATTAINED STA. 1076+60.48 TO STA. 1078+10.48
S.E. TRANSITION FROM 0.02'/ FT. TO 0.0156'/ FT. FROM STA. 1099+51.43 TO STA. 1100+51.43

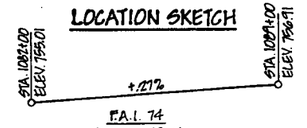



SECTION A-A

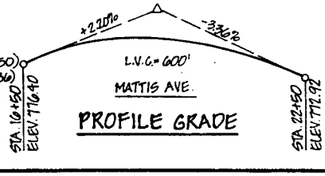
TYPICAL SECTION THRU SLOPEWALL




LOCATION SKETCH




F.A.I. 74
P.V.I. STA. 19+50
ELEV. 783.00




PROFILE GRADE

TOTAL BILL OF MATERIAL

| | ITEM | UNIT | SUPERSTRUCTURE | SUBSTRUCTURE | TOTAL |
|---|---|---|---|---|---|
| | POROUS GRANULAR EMBANKMENT | CU YD | | 62 | 62 |
| | REMOVAL OF EXISTING STRUCTURES | EACH | | | 1 |
| | STRUCTURE EXCAVATION | CU YD | | 453.7 | 453.7 |
| | NEOPRENE EXPANSION JOINT 2" | LIN FT | 187 | | 187 |
| | CLASS X CONCRETE SUPERSTRUCTURES | CU YD | 520.1 | | 520.1 |
| * | PROTECTIVE COAT | SQ YD | 343 | | 343 |
| | ELASTOMERIC BEARING ASSEMBLY, TYPE I | EACH | 20 | | 20 |
| | FURNISHING AND ERECTING STRUCTURAL STEEL | L SUM | 1 | | 1 |
| | STUD SHEAR CONNECTORS | EACH | 4320 | | 4320 |
| | ALUMINUM RAILING, TYPE L | LIN FT | 270 | | 270 |
| | REINFORCEMENT BARS | POUND | | 2650 | 2650 |
| | REINFORCEMENT BARS, EPOXY COATED | POUND | 121080 | 39,540 | 160,620 |
| | FURNISHING CONCRETE PILES | LIN FT | | 1968 | 1968 |
| | DRIVING CONCRETE PILES | LIN FT | | 1968 | 1968 |
| | TEST PILE CONCRETE | EACH | | 2 | 2 |
| | NAME PLATES | EACH | 1 | | 1 |
| | SLOPE WALL REMOVAL | SQ YD | | | 862 |
| | SLOPE WALL 4 INCH | SQ YD | | | 955 |
| ** | BRIDGE SEAT SEALER | L SUM | | 1 | 1 |
| | DRAINAGE SCUPPERS (SPECIAL) | EACH | 8 | | 8 |
| | CLASS X CONCRETE | CU. YD. | | 421.1 | 421.1 |
| | BRIDGE DECK GROOVING | SQ. YD. | 1746 | | 1746 |

NOTES:
1. THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2. THESE COMPONENTS ARE THE TENSION FLANGES, WEBS AND ALL SPLICE PLATE MATERIAL EXCEPT FILL PLATES.
2. FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 7/8" ø, OPEN HOLES 15/16" ø, UNLESS OTHERWISE NOTED.
   65890 POUND M183
3. CALCULATED WEIGHT OF STRUCTURAL STEEL = 480090 POUND M223
4. THE ZINC-SILICATE AND VINYL PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF STRUCTURAL STEEL EXCEPT WHERE OTHERWISE NOTED. THE COLOR OF THE VINYL FINISH COAT SHALL BE MUNSELL NO. 10Y 7/1 LIGHT GREY EXCEPT THE EXTERIOR FACE OF THE EXTERIOR BEAMS SHALL BE MUNSELL NO. 7.5G 4/8 INTERSTATE GREEN.
5. FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF GIRDERS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.
6. ANCHOR BOLTS SHALL BE SET BEFORE BOLTING DIAPHRAGMS OVER SUPPORTS.
7. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53 GRADE 60.
8. SLOPE WALL SHALL BE REINFORCED WITH WELDED WIRE FABRIC, 6" x 6" -W4.0 x W4.0, WEIGHING 58 LBS. PER 100 SQ. FT..
9. THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE ABUTMENTS.
10. BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8". ADJUSTMENT SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING THE BEARING. TWO 1/8" ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS. FOR TYPE I ELASTOMERIC BEARINGS, SHIMS OF THE DIMENSIONS OF TOP PLATE SHALL BE PROVIDED AND PLACED AS DETAILED.
11. THE CONTRACTOR SHALL DRIVE 1 CONCRETE TEST PILE IN A PERMANENT LOCATION AT EACH ABUTMENT AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.

STATION 19+01.76
BUILT 199_ BY
STATE OF ILLINOIS
F.A.I. RT. 74 SEC. (10-5-1 HB) BR
F.A. PROJ. FIR-74-5(129)
LOADING HS20 & ALT.
STR. NO. 010 - 0270

NAME PLATE
(STD. 2113)

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson
Engineer of Bridges and Structures

DESIGN SPECIFICATIONS
1989 AASHTO & 1990 INTERIM SPECIFICATIONS & 1983 SEISMIC GUIDE SPECIFICATIONS

LOADING HS 20-44
(ALLOW 25 LB./SQ.FT. FOR FUTURE WEARING SURFACE)

DESIGN STRESSES
f'c = 3600 PSI
fy = 60,000 PSI (REINF)
Fy = 50,000 PSI (STRUCTURAL STEEL)(M223, GR.50)
Fy = 36,000 PSI (STRUCTURAL STEEL)(M183, GR.36)
MAXIMUM ALLOWABLE SOIL PRESSURE 6.0 KSF
MAXIMUM SOIL PRESSURE = 6.0 KSF

REGISTERED STATE OF ILLINOIS JAMES K. CLINARD NUMBER 4655 STRUCTURAL ENGINEER
Exp. 11-92

GENERAL PLAN AND ELEVATION

| REVISIONS | | |
|---|---|---|
| NO. | DATE | INITIALS |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

F.A.I.-74 SEC. (10-5-1HB)BR
CHAMPAIGN COUNTY
SN 010-0270

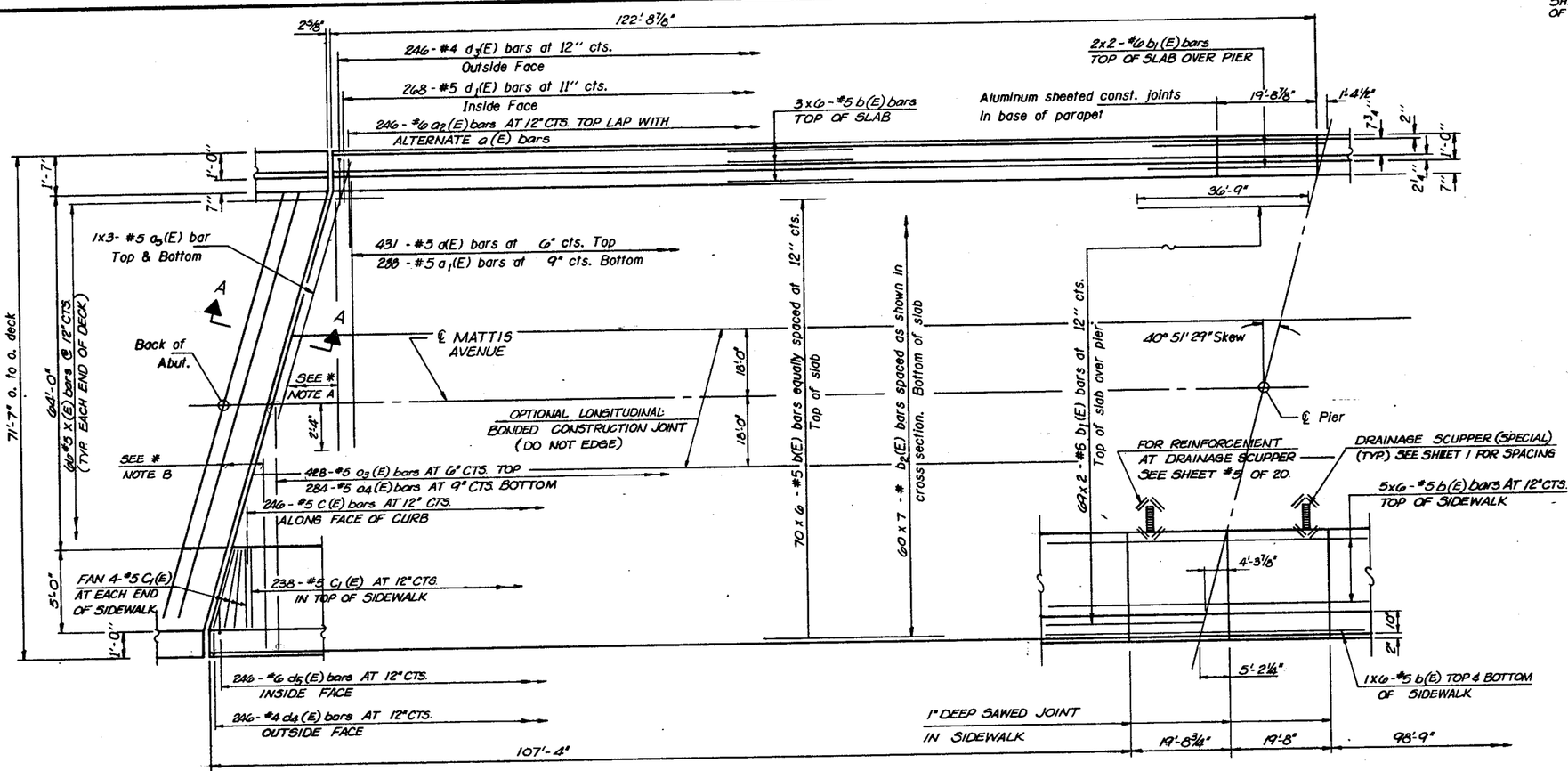
HOMER L. CHASTAIN & ASSOCIATES
CONSULTING ENGINEERS
DECATUR, ILLINOIS

DRAWN BY K.Kim 11-90
DESIGNED BY JKC 1-91
PROJECT NO. 3400-1
SHEET NO.

SHEET NO. 4 OF 20 SHEETS

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| FAI-74 | * | CHAMPAIGN | 70 | 35 |
| FED.ROAD DIST.NO. | | ILLINOIS | PROJECT | |

* (10 - 6 - 1 HB)BR



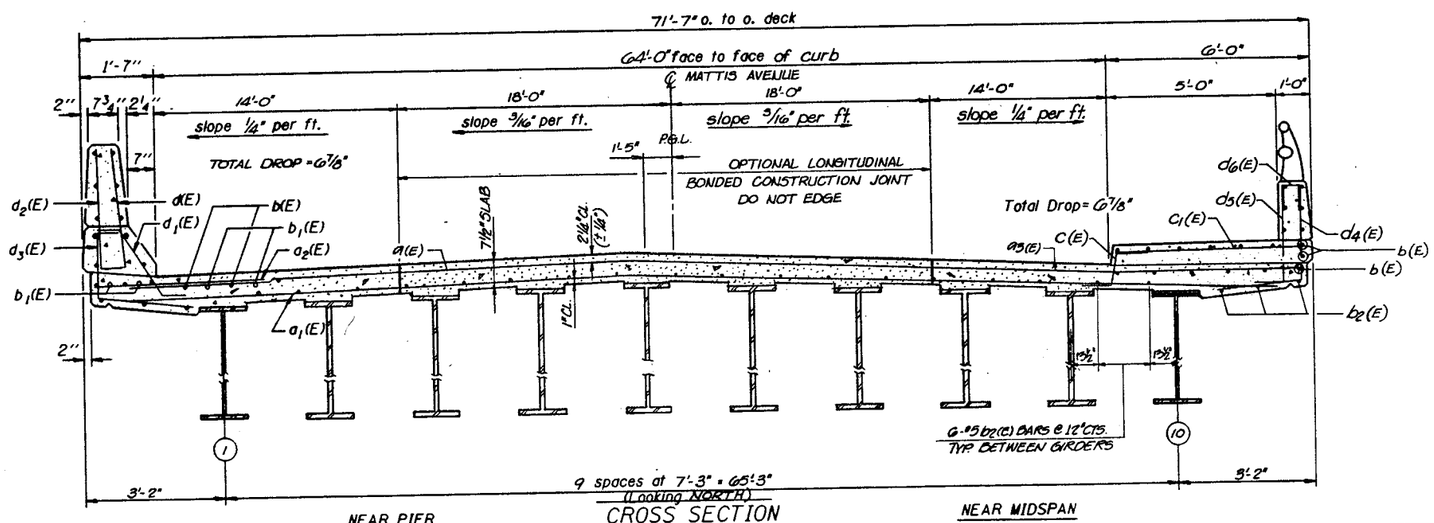

HALF PLAN

SYMMETRICAL ABOUT ℄ PIER BY ROTATION EXCEPT AS NOTED

NOTE A: 60 - #5 a(E) bars AT 6" CTS. TOP
39 - #5 a1(E) bars AT 9" CTS. BOTTOM

NOTE B: 63 - #5 a3(E) bars AT 6" CTS. TOP
43 - #5 a4(E) bars AT 9" CTS. BOTTOM

* Order a(E), a1(E), a3(E) & a4(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.




MIN. LAPS

| | |
|---|---|
| #5 | 2'-2" |
| #6 | 2'-7" |

Notes: See Sheet # 5 of 20 for superstructure details and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 20 x 3 - #5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet # 6 of 20 for parapet reinforcement.
See Sheet # 5 of 20 for SECTION A-A.

## SUPERSTRUCTURE DETAILS

| REVISIONS | | |
|---|---|---|
| NO. | DATE | DETAILS |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

DESIGNED BY m.l.t. DATE 3-9-
CHECKED BY M DATE 4-1-
DRAWN BY DATE

F.A.I. - 74 SEC(10 - 5 - 1 HB)BR
SN 010-0270
CHAMPAIGN COUNTY

PROJECT NO. 3400-1
SHEET NO.

HOMER L. CHASTAIN & ASSOCIATES
CONSULTING ENGINEERS

MATTIS AVENU

S-2-L(30P) 12-31-87

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

**PADUCAH OFFICE:**
500 South 17th Street, P.O. Box 120
Paducah. Kentucky 42002
Phone: (270) 443-1995
Fax: (270) 443-1904

**MURRAY OFFICE:**
1215 Diuguid Drive
Murray, Kentucky 42071
Phone: (270) 753-7307
Fax: (270) 759-4950

**MARION OFFICE:**
403 North Court Street
Marion, Illinois 62959
Phone: (618) 993-6700
Fax: (618) 993-6717

# Transmittal

**TO:** D. Carl Puzey
Attn: T.A. Craven
Illinois Department of Transportation
Bureau of Bridges and Stuctures
2300 S. Dirksen Parkway
Springfield, IL 62764

Phone: (217)524-4848
Fax:
Email:

**DATE:** 10/17/2014
**RE:** BCR
FAI 74 over Copper Slough
Section 10-5-1B-1
SN 010-2004

**WE ARE FORWARDING THE FOLLOWING:**

☒ ATTACHED
☐ UNDER SEPARATE COVER

| QUANTITY | DESCRIPTION |
|---|---|
| 1 | Electronic copy sent to dot.bbs.planning@illinois.gov for review and approval. File name: *0102004BCR 20140702.pdf* |
| | |
| | |

☐ REVIEWED (AS NOTED ON DWG.)
☐ FURNISH AS CORRECTED
☐ NOT APPROVED
☒ FOR YOUR APPROVAL
☐ AS REQUESTED
☒ FOR YOUR USE

REMARKS:

COPY TO: BFW File #11354
District 5

BY: Brandon W. Poiter, P.E., S.E.

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

# BRIDGE CONDITION REPORT

| | |
|---|---|
| **REGION:** | 3 |
| **DISTRICT:** | 5 |
| **COUNTY:** | Champaign |
| **ROUTE:** | FAI 74 |
| **SECTION:** | 10-5-1B-1 |
| **JOB NUMBER:** | P-95-030-11 |
| **STRUCTURE NUMBER:** | 010-2004 |
| **LOCATION:** | I-74 over Copper Slough |

**PREPARED BY:** Brandon W. Poiter, PE, SE
BFW Engineering & Testing

**DATE INSPECTED:** July 2, 2014

**PROPOSED LETTING DATE:** Unknown

# TABLE OF CONTENTS


| Item: | | Page: |
|---|---|---|
| I. | Geographical & Administrative Data | 1 |
| II. | Physical Description of Structure | 1 |
| III. | Field Inspection & Physical Evaluation | 2 |
| IV. | Potential Scope of Work Determination & Analysis | 2 |
| V. | Discussion and Recommended Scope of Work | 3 |

Attachments:

| | | |
|---|---|---|
| A. | Location Map | 4-5 |
| B. | IDOT Master Structure Report | 6-8 |
| C. | Bridge Inspection Report | 9-12 |
| D. | Culvert Condition Surveys | 13-17 |
| E. | Substructure Condition Surveys (N/A) | --- |
| F. | Cost Estimates | 18-19 |
| G. | Proposed Structure | 20-21 |
| H. | Structure Photos | 22-27 |
| I. | Hydraulic Analysis Summary (N/A) | --- |
| J. | Proposed Plan & Profile (N/A) | --- |
| K. | Existing and Proposed Roadway Cross Sections | 28-29 |
| L. | Abbreviated Existing Plans | 30-32 |

# I. Geographical & Administrative Data

| | |
|---|---|
| **Structure Number:** | 010-2004 |
| **County:** | CHAMPAIGN |
| **Route Carried:** | FAI 74 |
| **Feature Crossed:** | Copper Slough |
| **Section:** | 10-5-1B-1 |
| **Station:** | 1082+25 |

| | |
|---|---|
| **Roadway Classification:** | Interstate, FAI |
| **Design/Posted Speed:** | 70 mph/65 mph |
| **ADT (current/design):** | 38,400 (2011)/43,315 (2032) |
| **ADTT (current/design):** | 7,300 (2011)/8,230 (2032) |
| **DHV:** | |
| **Inventory Rating HS:** | 42.8 |
| **Operating Rating HS:** | 55.0 |
| **Sufficiency Rating:** | 83.0 |

## Construction/Reconstruction/Repair History:

1965– Original construction under FAI 74, Section 10-5-1B-1

# II. Physical Description of Structure:

The existing structure, built in 1965, is a triple barrel cast-in-place concrete box culvert with an 18.1° right forward. The barrel dimensions are 8'-0" clear span and 3'-0" clear height with approximately 3.4' of fill over the barrels. The structure is 142'-3" out-to-out of headwalls measured along the centerline of the culvert, and is constructed on a 0.22% longitudinal grade flowing from north to south. The barrels consist of a 7" top slab, 6" walls, and an 8" bottom slab. The 8" thick horizontal cantilever type wingwalls are 4'-6" and 6'-3" long and built on angles to the culvert headwall of 55° and 35° respectively.

I-74 crosses the culvert on a horizontal curve with a 7042.16' radius and on a vertical tangent with a profile grade of +0.27%. The approach roadway for eastbound and westbound I-74 consists of two 12' lanes of concrete pavement with bituminous overlay and 6' bituminous concrete shoulders at the interior lanes. The eastbound direction also includes a variable width concrete entrance ramp measuring 4'-5" at the centerline of the culvert. The shoulders at the exterior lanes are 10' bituminous concrete in the westbound direction and 8' bituminous concrete in the eastbound direction. The existing median width from inside edge of the westbound driving lands to the inside edge of the eastbound driving lanes is 40'. Steel plate beam guardrail exists along the right shoulder in both the eastbound and westbound directions.

## III. Field Inspection & Physical Evaluation:

The bridge was visually inspected by Bacon, Farmer, Workman Engineering and Testing, Inc. on July 2nd , 2014. The barrels were not accessed during the inspection.

**Culvert:** The culvert is in good condition. The headwall at the downstream (south) end of the culvert above the center barrel is spalled with exposed rebar. A small amount of trash debris was noted at the downstream end of the culvert.

**Inspection History (NBIS Ratings).**

| Year | Culvert | Channel |
|---|---|---|
| 2014 | 7 | 7 |
| 2011 | 7 | 7 |
| 2009 | 7 | 7 |

## IV. Potential Scope of Work Determination & Analysis:

This report is being prepared in conjunction with an interchange type study of two alternates for the reconstruction of the existing interchange. I-74 will be upgraded to a 6 lane urban section with 12' lanes, a 60' median, and 12' inside and outside shoulders. Alternate 1 is a full direction interchange with flyovers. Alternate 2 is semi-directional with directional flyovers and two loops.

The two improvement options considered are 1) Remain in Place/Culvert Extension and 2) Complete Replacement

**Option 1: Rehabilitation/Extension**
This option requires extending the existing barrels of the existing culvert as necessary for the proposed 6 lane urban section geometry. There is no hydraulic analysis information available at this time but the District did state in minutes from a 9/6/12 meeting that there is no history of maintenance problems or flooding at this location.

The original plans show that the reinforcement is uniform along the entire length of the barrels therefore the increased fill over the area within the median widening will have no effect on the load carrying capacity of the culvert. Based on the current culvert condition rating of 7 and an inventory rating of HS 42.8, the existing culvert has sufficient load carrying capacity to remain in place.

**Option 2: Complete Replacement**
Based on the current condition of the existing culvert a complete replacement is not warranted for the proposed improvements.

## V. Discussion and Recommended Scope of Work

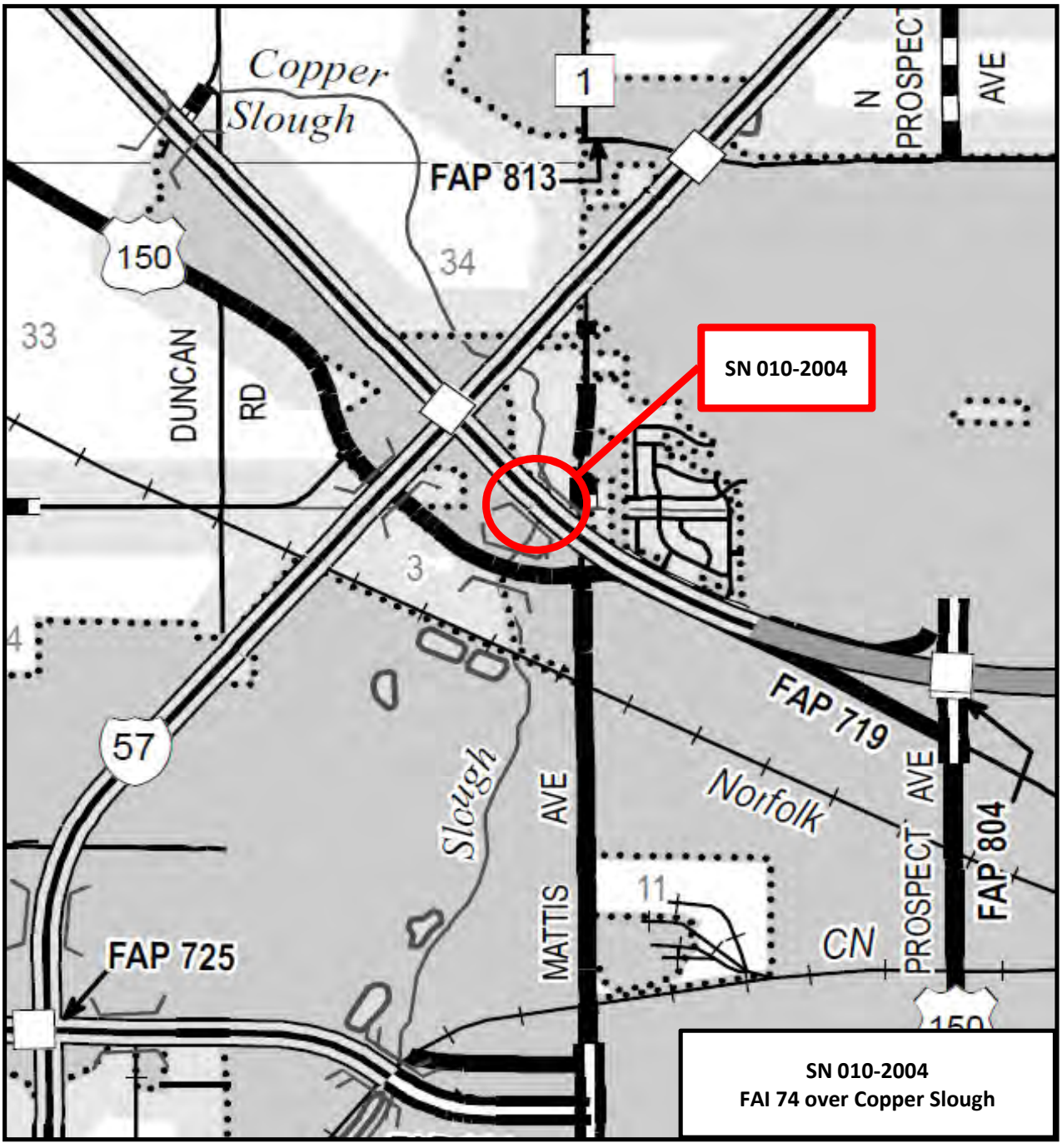
The recommended scope of work is to extend the existing triple barrel cast-in-place culvert as required to accommodate proposed widening for the 6 lane urban section. The proposed structure shown in Attachment F is based on the geometry presented in preferred Alternate 2 of the interchange type study. Alternate 2 requires culvert extension at each end of the existing culvert in order to carry the proposed entrance ramp from NB I-57 to EB I-74 and the proposed exit ramp from WB I-74 to NB I-57 over Copper Slough.

At the time this report was prepared, Alternate 2 was the preferred alternate.

A cost comparison was not done based the recommendation for the existing culvert to remain in place and extended. A cost estimate for the proposed extension is included in Attachment E.

# **ATTACHMENT A**

Location Map


Copper
Slough
1
FAP 813
150
34
33
DUNCAN
RD
SN 010-2004
3
4
57
FAP 719
Norfolk
Slough
MATTIS
AVE
11
CN
PROSPECT
AVE
FAP 804
FAP 725
SN 010-2004
FAI 74 over Copper Slough

# **ATTACHMENT B**

IDOT Master Structure Report

**Structure Number: 010-2004** **District: 5**

## Inventory Data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Facility Carried:** | I-74 | **Bridge Name:** | | **Sufficiency Rating:** | 83.0 | **Structure Length:** | 28.0 |
| **Feature Crossed:** | COPPER SLOUGH | **Location:** | NW OF CHAMPAIGN | **HBP Eligible:** | No | **AASHTO Bridge Length:** | 26.3 |
| **Bridge Remarks:** | (02074) | | | **Replaced By:** | - | **Length of Long Span:** | 8.4 |
| **Bridge Status:** | 1 OPEN - NO RESTRICT | **Status Date:** | 04/1988 | **Replaces:** | - | **Bridge Roadway Width:** | 0.0 |
| **Status Remarks:** | | | | **Last Update Date:** | 11/13/2013 | **Appr Roadway Width:** | 84.0 |
| **Maint County:** | 010 CHAMPAIGN | **Maint Township:** | 03 CHAMPAIGN | **Parallel Structure:** | None | **Deck Width:** | 0.0 |
| **Maint Responsibility:** | 01 I.D.O.T. | | | **Multi-Level Structure Nbr:** | | **Sidewalk Width Right:** | 0.0 |
| **Service On/Under:** | 1 HIGHWAY | 5 / WATERWAY | | **Skew Direction:** | R Right | **Sidewalk Width Left:** | 0.0 |
| **Reporting Agency:** | 1 I.D.O.T. - BUREAU OF MAINTENANCE | | | **Skew Angle:** | D | **Navigation Control:** | 0 No |
| **Main Span Matl/Type:** | 1 CONCRETE | / 19 CULVERT | | **Structure Flared:** | No | **Navigation Horiz Clear:** | 0 |
| **Nbr Of Main Spans:** | 3 **Nbr Of Approach Spans:** 0 | | | **Historical Significance:** | No | **Navigation Vert Clear:** | 0 |
| *****Approaches***** | | | | **Border Bridge State:** | | **Culvert Fill Depth:** | 3.4 |
| **Near #1 Matl/Type:** | / | | | **Bdr State SN:** | | **Number Culvert Cells:** | 3 |
| **Near #2 Matl/Type:** | / | | | **Bdr State % Responsibility:** | 0 | **Culvert Opening Area:** | 72.0 |
| **Far #1 Matl/Type:** | / | | | **Structural Steel Wt** | 0 | **Culvert Cell Height:** | 3.00 |
| **Far #2 Matl/Type:** | / | | | **Substructure Material:** | NN | **Culvert Cell Width:** | 8.00 |
| **Median Width/Type:** | 40 Ft. / 1 Open Median | | | **Rated By:** | 2 IDOT | **Rate Method:** | 7 |
| **Guardrail Type L/R:** | 0None / 0 None | | | **Inventory Rating:** | 2.140(77) | **Load Rating Date:** | 03/08/1993 |
| **Toll Facility Indicator:** | 0 No Toll | | | **Operating Rating:** | 2.750(99) | **Railroad Crossing Info** | |
| **Latitude:** | 40.14203619 **S** | **Longitude:** | 88.27909432 **S** | **Design Load:** | 01 HS20+MOD | **Crossing 1 Nbr:** | |
| **Deck Structure Type:** | N N/A | | | **Deck Structure Thickness:** | 0 **SD:** N **FO:** N | **Crossing 1 Nbr:** | |
| **Sidewalks Under Structure:** | 0 None | | | | | **RR Lateral Underclear:** | 0.0 |
| | | | | | | **RR Vertical Underclear:** | 0 **Ft** 0 **In** |

## Key Route On Data

| | | | |
|---|---|---|---|
| **Key Route Nbr:** | FEDERAL-AID INTERSTATE 0074 | **Station:** | 11.2300 |
| **Appurtenances** | Main Route 00000 | **Segment:** | |
| **Inventory County:** | 010 CHAMPAIGN | **Linked:** | Y |
| **Township/Road Dist** | 03 CHAMPAIGN | **Natl. Hwy System:** | On NHS |
| **Municipality** | 0000 | **Inventory Direction:** | |
| **Urban Area:** | 0990 0990 | **Curr AADT Yr/Count:** | 2013 / 38900 |
| **Functional Class:** | 1 INTERSTATE | **Est Truck Percentage:** | 15 |
| **** CLEARANCES **** | **South/East** **North/West** | **Number Of Lanes:** | 4 |
| **Max Rdwy Width:** | 114.0 | **One Or Two Way:** | 2 Two-Way |
| **Horizontal:** | 999.9 0.0 | **Bypass Length:** | 0 |
| | | **Future AADT Yr/Cnt:** | 2032 / 43315 |
| | | **Designated Truck Rte:** | CLASS I |
| **Lateral:** | | **Special Systems:** | Yes |

## Key Route Under Data

| | | | |
|---|---|---|---|
| | | **Station:** | |
| | | **Segment:** | |
| | | **Linked:** | |
| | | **Natl. Hwy System:** | |
| | | **Inventory Direction:** | |
| | | **Curr AADT Yr/Count:** | / |
| | | **Est Truck Percentage:** | |
| **South/East** | **North/West** | **Number Of Lanes:** | |
| | | **One Or Two Way:** | |
| | | **Bypass Length:** | |
| | | **Future AADT Yr/Cnt:** | / |
| | | **Designated Truck Rte:** | |
| | | **Special Systems:** | |

## *** Marked Route On Data ***

| | Designation | Kind | Number |
|---|---|---|---|
| **Route #1:** | 1 Mainline | 1 Interstate Highway | 074 |
| **Route #2:** | 1 Mainline | | |
| **Route #3:** | 1 Mainline | | |

## *** Marked Route Under Data ***

| | Designation | Kind | Number |
|---|---|---|---|

**Structure Number: 010-2004** **District: 5**

## Data Related to Inspection Information

| *** Inspection Intervals *** | | | | *** Maximum Allowable Posting Limits *** | | | | Bridge Posting Level: | |
|---|---|---|---|---|---|---|---|---|---|
| **Routine NBIS:** | 24 MOS | **Underwater:** | 0 MOS | **One Truck At A Time:** | 0 | **Combination Type 3S-1:** | Tons | 5 | No Posting Required |
| | | **Special:** | N | **Single Unit Vehicles:** | Tons | **Combination Type 3S-2** | Tons | | |

## Inspection/Appraisal Information

**Inspection Date:** 08/11/2014 **Inspection Temperature:** 70Deg. F

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Deck:** | N | NOT APPLICABLE | | | | | **Single Unit Vehicles:** | Tons |
| **Superstructure:** | N | NOT APPLICABLE | | | | | **Combination Type 3S-1:** | Tons |
| **Substructure:** | N | NOT APPLICABLE | | | | | **Combination Type 3S-2:** | Tons |
| **Culvert:** | 7 | GOOD CONDITION - SOME MINOR PROBLEMS | | | | | **One Truck At A Time:** | 0 |
| **Channel and Protection:** | 7 | GOOD CONDITION - SOME MINOR PROBLEMS | | **Deck Wearing Surf:** | N | N/A - NO DECK | **Last Paint Type:** | |
| **Structural Evaluation:** | 7 | BETTER THAN PRESENT MINIMUM CRITERIA | | **Deck Membrane:** | N | N/A | | |
| **Deck Geometry:** | N | NOT APPLICABLE | | **Deck Protection:** | N | N/A | | |
| **Underclearance-Vert/Lat.:** | N | NOT APPLICABLE | | **Total Deck Thick:** | 0.0 | | | |
| **Waterway Adequacy:** | 7 | BETTER THAN PRESENT MINIMUM CRITERIA | | **Last Paint Date:** | | | | |
| **Approach Roadway Align:** | 8 | EQUAL TO PRESENT DESIRABLE CRITERIA | | | | | | |
| **Bridge Railing Appraisal:** | N | N/A | | | | | | |
| **Approach Guardrail:** | N23 | N/A | Not Acceptable Acceptable | | | | | |
| **Pier Navig Protection:** | N | N/A | | | | | | |

## Underwater Inspection/Appraisal Information

**Inspection Date:**

**Temperature:** **Inspection Method:**

**Appraisal Rating:**

## Scour Critical Information

**Rating:** 8 CALCULATED SCOUR ABOVE FOOTING **Evaluation Method:** B Rational Analysis

**Analysis Date:** 08/26/1996

## Miscellaneous

**Microfilm Data Recorded:** Yes

## Construction Information

**Year:** 1965 Original Reconstructed

**Route:** FAI 74 **Sta:** 182+20.00 **Sta:**

**Section Nbr:** 10-5-1B-1

**Contract Nbr:** 23333

**Fed Aid Pr#:** I 0745011181

**Built By:** 1 I.D.O.T.

# **ATTACHMENT C**

Bridge Inspection Report

Illinois Department of Transportation

# Bridge Inspection Report (MI)

Structure Number: 010-2004

Maintenance County:

| 90 – Insp. Date | 90A – Insp. Team Leader/Qualification | | Temp. |
|---|---|---|---|
| 02/10/2004 | G. Ross, M. Brennan | / | 27° |
| 01/20/06 | D. Craddock, M. Brennan | / | 40° |
| 3/2/07 | [illegible] | / | [illegible] |
| 2/24/2009 | D. Craddock, S. Conklin | / | 34° |
| 1/14/11 | Buescher, Conklin | / | [illegible] |

Township:

Municipality:

Fac Carried:

Feat Crossed:

Location:

Mat/Type/# Span:

Bridge Inspection Year: 04 06 07 09 11

Team Sect. – Sub-Sect: –

| | Appraisals | Comments (All comments must be dated.) |
|---|---|---|
| **Deck** | | |
| 58 - Deck Condition: | N N N N N | |
| Wearing Surface | | |
| Parapets / Bridge Railings: | | |
| Curbs: | | |
| Median: | | |
| Sidewalks: | | |
| Drain System: | | |
| Light Standards: | | |
| Expansion Joints: | | Openings (In.): |
| **Superstructure** | | |
| 59 - Superstructure Cond: | N N N N N | |
| Bearing Devices: | | |
| Girders / Beams / Stringers: | | |
| Diaphragms / Braces: | | |
| Trusses / Portals / Bracing: | | |
| Rivets / Bolts: | | |
| Paint: | | |
| **Substructure** | | |
| 60 - Substructure Cond: | N N N N N | |
| Abutments: Stem / Columns / Piles: | | |
| Abutments: Caps: | | |
| Abutments: Bearing Seats: | | |
| Abutments: Backwalls: | | |
| Abutments: Wingwalls: | | |
| Piers: Stem / Columns / Piles: | | |
| Piers: Caps: | | |
| Piers: Bearing Seats: | | |
| Piers: Crash Walls: | | |
| Fender Systems: | | |
| Paint: | | |

# Bridge Inspection Report

Structure Number: [illegible]

Bridge Inspection Year: 04

| | Appraisals | | | | | Comments (All comments must be dated.) |
|---|---|---|---|---|---|---|
| **Culvert** | | | | | | |
| **62 – Culvert Condition** | 7 | 7 | 7 | 7 | | |
| Top Slab / Soffit: | 3 | 3 | 3 | 3 | | |
| Side Walls / Arch: | 3 | 3 | 3 | 3 | | |
| Bottom: | 3 | 3 | 3 | 3 | | |
| Headwalls: | 3 | 3 | 3 | 3 | 3 | Sm. Spall @ W. Barrel N.End W/ Exposed Rebar (04)(06)(07) |
| Wingwalls: | 3 | 3 | 3 | 3 | 3 | |
| **Waterway and Channel** | | | | | | |
| **61 - Channel Condition:** | 6 | 6 | 7 | 7 | 7 | Due to Channel maint. |
| Streambed: | 3 | 3 | 3 | 3 | 3 | Sm. Tree on So. End (04) |
| Slope Walls & Rip-Rap: | – | – | – | – | – | |
| Stream Banks: | – | – | – | – | – | |
| Spur Dykes & Jetties: | – | – | – | – | – | |
| **71 – Waterway Adequacy:** | 7 | 7 | 7 | 7 | 7 | |
| **Approach Roadway** | | | | | | |
| **72 – Appr. Rdwy Alignment:** | 8 | 8 | 8 | 8 | 8 | |
| Riding Quality: | 4 | 4 | 4 | 4 | 4 | |
| Structural Condition: | 4 | 4 | 4 | 4 | 4 | |
| Relief Joints: | – | – | – | – | – | |
| **Navigable Waterways** | | | | | | |
| **111 – Pier Navig. Protect'n:** | N | N | N | N | N | |

**Inspection Remarks**

| Year | Item 90B – Inspection Remarks (237 characters maximum.) |
|---|---|
| 20 | |
| 20 | |
| 20 | |
| 20 | |
| 20 | |

# Bridge Inspection Report

Structure Number: 010-7001

## Additional Inspection Data

| | | | | | |
|---|---|---|---|---|---|
| 36A – Bridge Railing Adequacy: | N | Rail Types: | | | |
| Approach Guardrail Adequacy: | 36B – Transitions: | N | 36C – Guardrail: | N | 36D – Ends: N |

| | | | | | |
|---|---|---|---|---|---|
| 108A – Wearing Surface Type: | N | 108B – Type of Membrane: | N | 108C – Deck Protection | N |
| 108D – Total Deck Thickness (In.): | 12 | 0.0 | | | |

| | |
|---|---|
| 59A – Paint Date (Mo/Yr): | — |
| 59B – Paint Systems: | N - - - |
| 59B – Color: Fascia – —; Inter. – ___; Railing – ___ | |
| 59C – Utilities Attached: | N - N - N |

## Weight Limit Posting

| | | | | | |
|---|---|---|---|---|---|
| 70A2 – Single Unit Vehicles: | T. | Combinations: 70B2 – 3 or 4 Axle: | T. | 70C2 – 5 or More Axle: | T |
| 70D2 – One Truck at a Time: | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Inspection Resource Needs: None | Time to Inspect (H:M): | 00:30 | Traffic Control: | 1 | |
| | Equipment: | Boat– | Waders– | Snooper– | Manlift– |
| | | Ladder– Short | Medium | Tall | Other– |

93C – Special Inspection Date: / / / / / / / / / /

## Signature Block

| | Signature | Date | Unit Supervisor Initials - Date |
|---|---|---|---|
| Inspection Team Leader | Barry Ross | 02/10/04 | |
| | Dan Craddock | 01/20/06 | |
| | Chris Bruesch | 3-2-07 | |
| | Chris Bruesch | 1-14-11 | 1/20/11 |

Additional Comments:

4th 756 Remove 3" Tree From So. End (04) BC 1 4hrs

(Continue comments on page 4)

# **ATTACHMENT D**

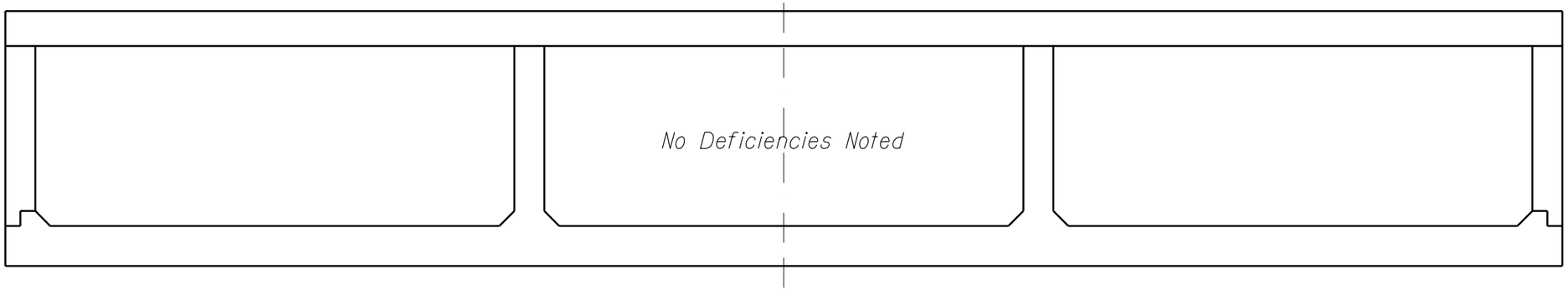
Culvert Condition Survey

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100

℄ CULVERT




105

# NORTH END VIEW
# (LOOKING SOUTH)

100

I-74
COPPER SLOUGH

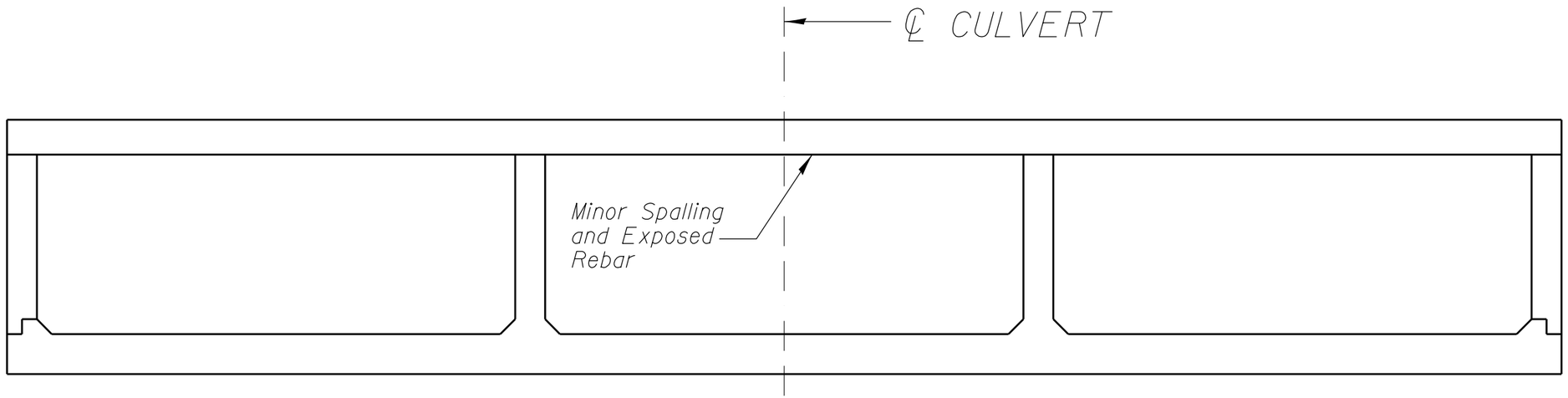
# CULVERT CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

# SOUTH END VIEW
# (LOOKING NORTH)

100

I-74
COPPER SLOUGH

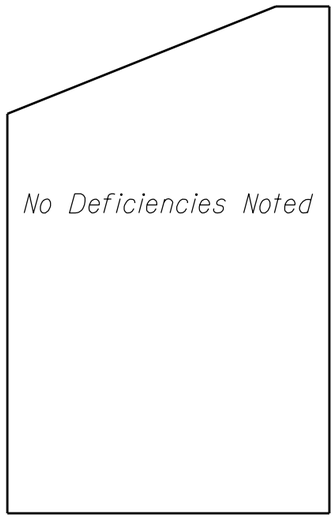
# CULVERT CONDITION SURVEY

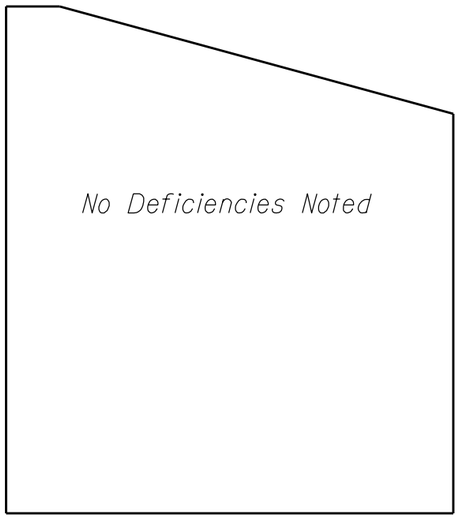
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

SOUTHWEST WINGWALL ELEVATION

SOUTHEAST WINGWALL ELEVATION

100

I-74
COPPER SLOUGH

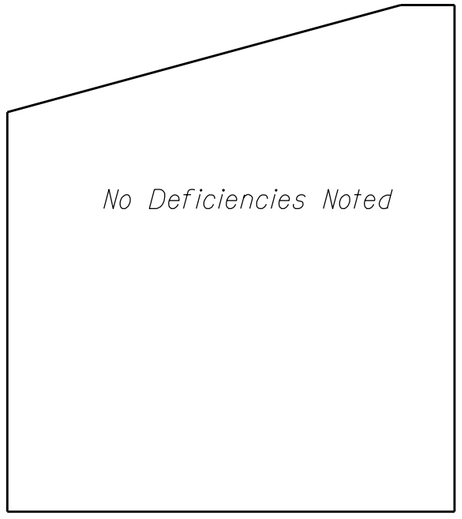
# WINGWALL CONDITION SURVEY

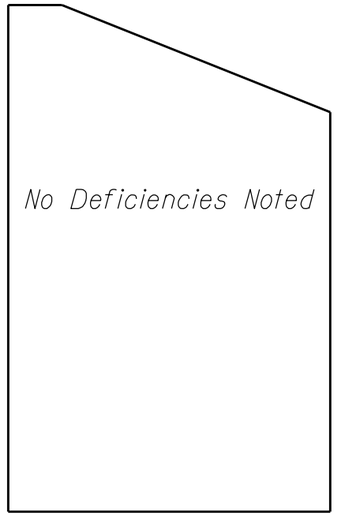
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

NORTHWEST WINGWALL ELEVATION

NORTHEAST WINGWALL ELEVATION

100

I-74
COPPER SLOUGH

# WINGWALL CONDITION SURVEY

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

# **ATTACHMENT F**

Cost Estimates

FAI 74 over Copper Slough

SN 010-2004

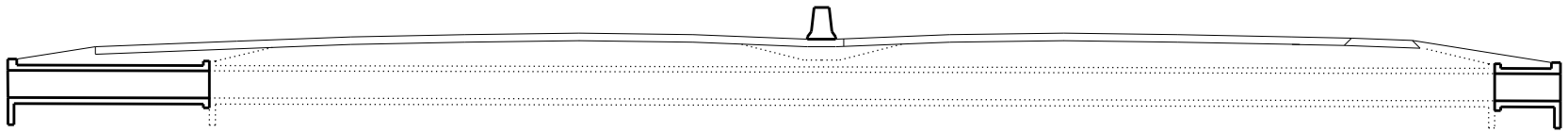
Preliminary Cost Estimate
Complete Replacement

| CODE | PAY ITEM | UNIT | QUANTITY | | | UNIT COST | ITEM COST |
|---|---|---|---|---|---|---|---|
| | | | SUPER | SUB | TOTAL | | |
| 54003000 | CONCRETE BOX CULVERTS | CU YD | 50 | | **50** | $920.00 | $46,000.00 |
| 50800105 | REINFORCEMENT BARS | POUND | 11000 | | **11000** | $1.00 | $11,000.00 |

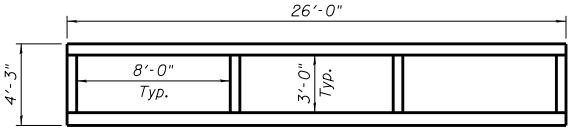
| | | |
|---|---|---|
| | Subtotal = | $57,000.00 |
| 15% | Contingency = | $8,550.00 |
| | Total = | **$65,550** |

# **ATTACHMENT G**

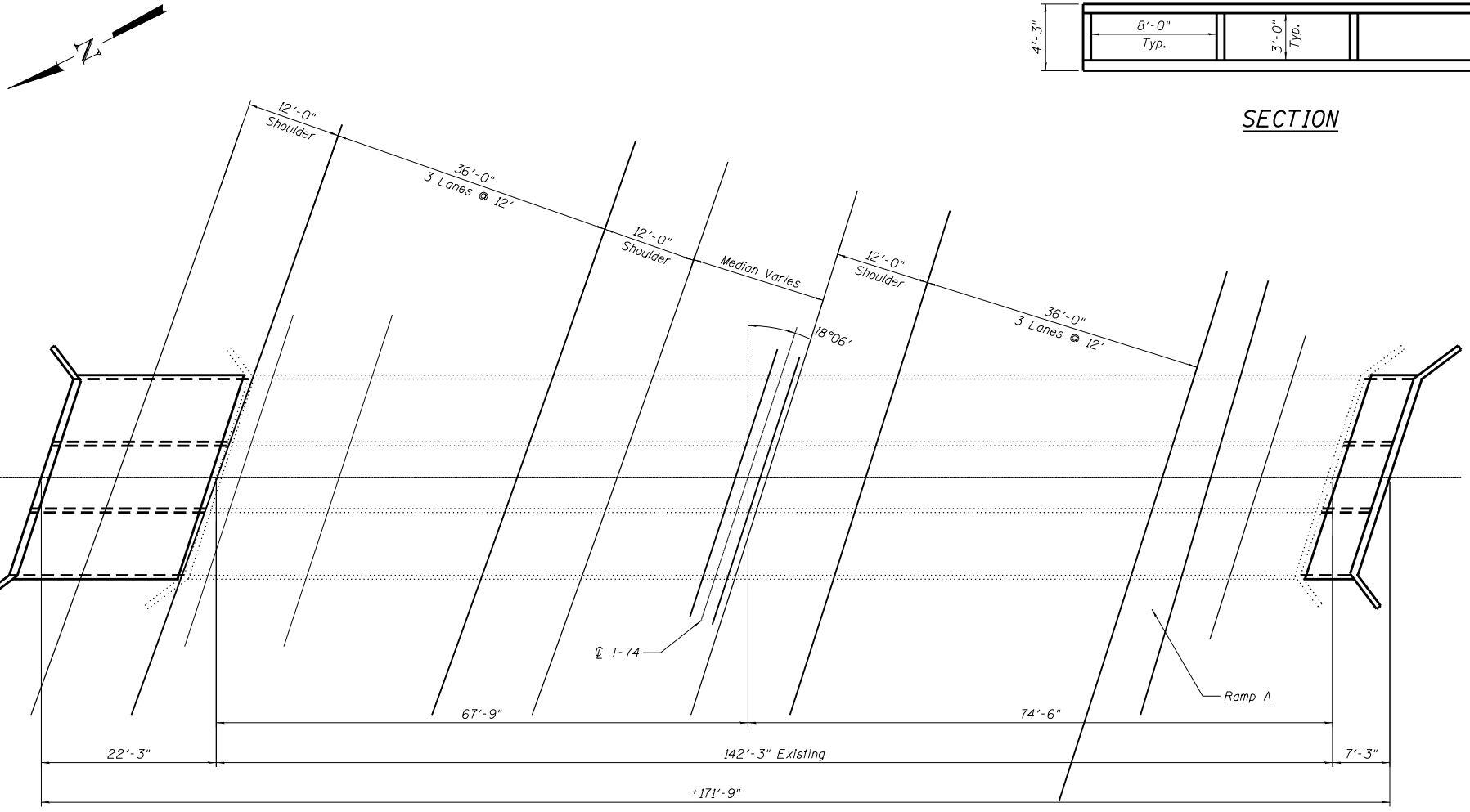
Proposed Structure



ELEVATION




SECTION




Notes:
Length of culvert extension subject to refinement in the TSL phase.

PLAN PROPOSED
STRUCTURE

PROPOSED
STRUCTURE SKETCH
SN 010-2004

# ATTACHMENT H

Structure Photos



**Upstream (North) end of culvert**



**Looking west from Upstream end of culvert**



**Looking east from Upstream end of culvert**



**Looking upstream from North end of culvert**



**Looking through barrel from upstream end of culvert**



**Downstream (South) end of culvert**



**Looking East from Upstream end of culvert**



**Looking West from Upstream end of culvert**



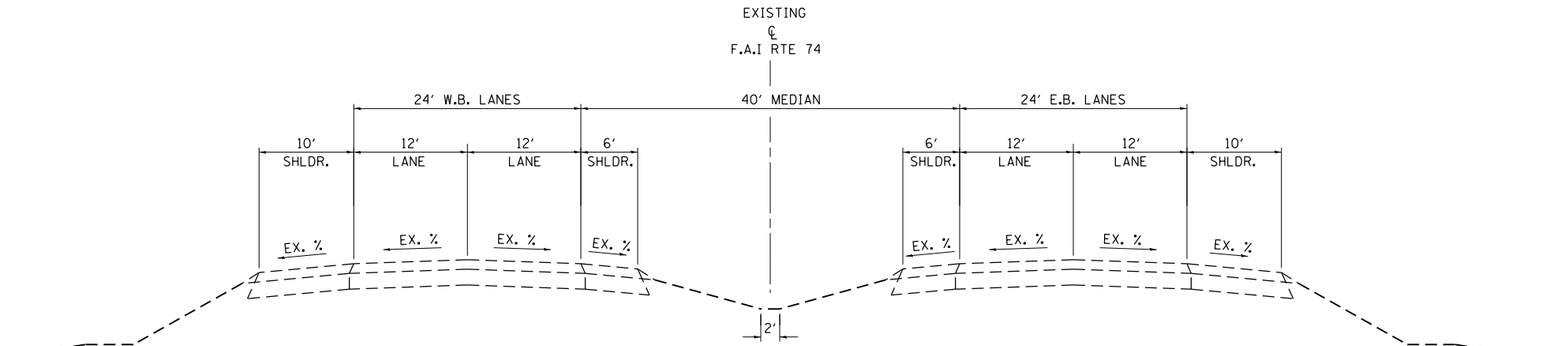
**Looking downstream from South end of culvert**



**Spall with exposed reinforcement center barrel at south end of culvert**

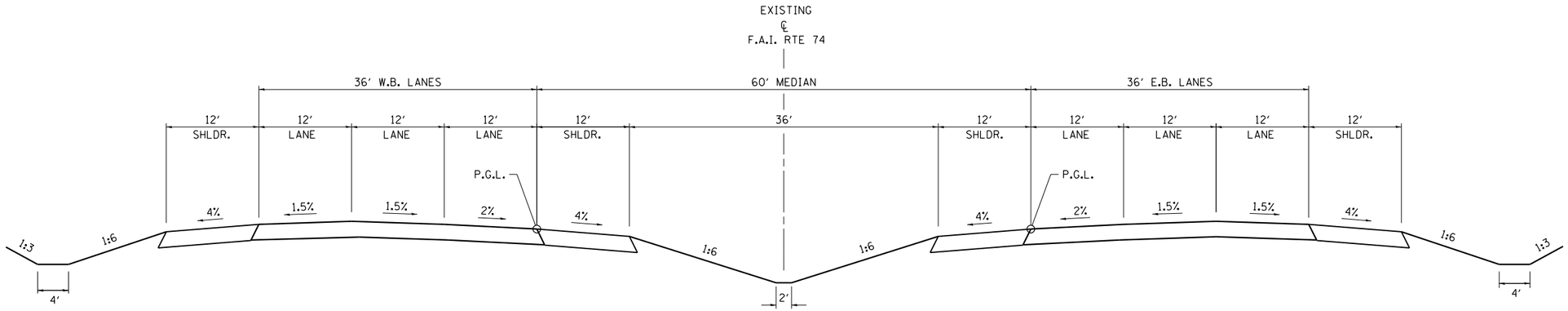
# **ATTACHMENT K**

Existing and Proposed Roadway Cross Sections



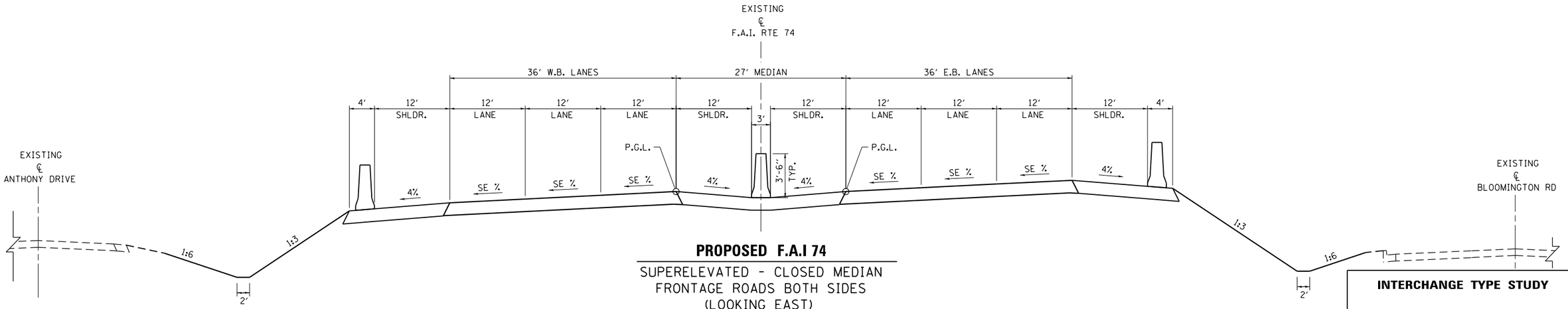

**EXISTING F.A.I 74**

(LOOKING EAST)




**PROPOSED F.A.I 74**

NORMAL CROWN - OPEN MEDIAN
(LOOKING EAST)




**PROPOSED F.A.I 74**

SUPERELEVATED - CLOSED MEDIAN
FRONTAGE ROADS BOTH SIDES
(LOOKING EAST)

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**INTERSTATE 74**

**EXHIBIT 52**

BDE-9908

PLOT DATE = 8/12/2014 - 10:16:06 AM
FILE NAME = L:\IDOT\1106602\Draw\Exhibits\TS\...
PLOT SCALE = 16.0000 ' / in.
USER NAME = Brad Downen

# **ATTACHMENT L**

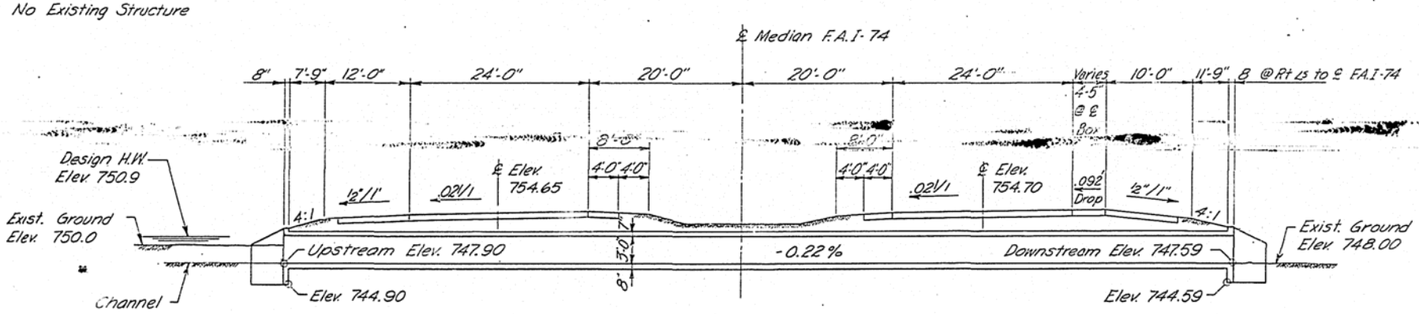
Abbreviated Existing Plans

BRIDGE DWG. 1 OF 2

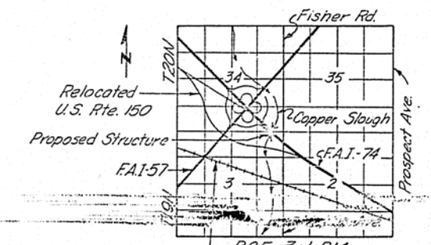
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. 74 | 10-5-18-1 | CHAMPAIGN | 133 | 12.1 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT | | |

Bench Mark: #161-5 Elev. 753.28 Nail & B.C. in Power Pole 184' Lt. Sta. 183+16

No Existing Structure




SECTION ALONG ℄ CULVERT




LOCATION SKETCH

## GENERAL NOTES

1. THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 2, 1958 AND THE REVISIONS THERETO SHALL APPLY.
2. CONCRETE: CLASS X CONCRETE SHALL BE USED THROUGHOUT. BEVEL ALL EXPOSED EDGES OF BARREL AND WINGWALLS 3/4". ALL BARS SHALL BE LAPPED 25 DIAMETERS UNLESS OTHERWISE SHOWN.
3. WATERPROOFING: THE TOP OF THE CULVERT, THE BACKS OF THE EXTERIOR WALLS ABOVE THE LOWER CONSTRUCTION JOINT AND THE BACKS OF THE WINGS SHALL BE WATERPROOFED IN ACCORDANCE WITH ARTICLE 51.21 OF THE STANDARD SPECIFICATIONS.

## ℄ FAI 74 CURVE DATA

P.I. STA. 188+62.94
Δ = 18°-38'-38"
D = 0°-48'-49"
R = 7042.16'
L = 2291.50'
T = 1155.97'

STATION 182+20.00
BUILT 19[illegible] BY
STATE OF ILLINOIS
F.A.I. RTE. 74 SEC. 10-5-18-1
F.A. PROJ. I-74-5(11)
LOADING H20-S16 & ALT.

SEE STANDARD 2113 AND LOCATE AS SHOWN ON BRIDGE DWG. 2

NAMEPLATE DATA

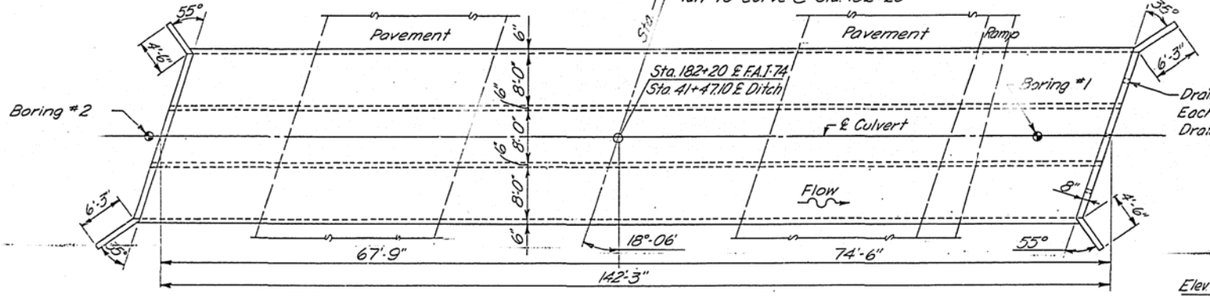
## WATERWAY DATA

DRAINAGE AREA ---------- 805 ACRES
CHARACTER ---------- ROLLING, CULTIVATED
OPENING REQUIRED ---------- 72 SQ.FT.
PROPOSED OPENING ---------- 72 SQ.FT.

## DESIGN DATA

fc = 1400 psi BARREL
fc = 1200 psi WINGWALL
fs = 20,000 psi REINFORCEMENT
n = 10

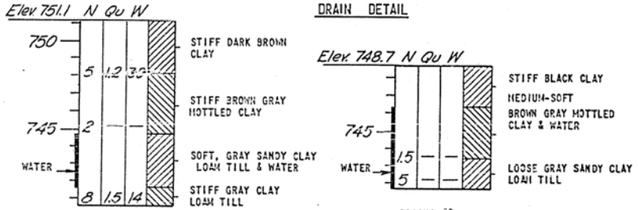
LOADING: H20-S16-44 & ALT.




PLAN




DRAIN DETAIL




BORING #1
STA. 182+40.00
62' RT. OF ℄ F.A.I. 74

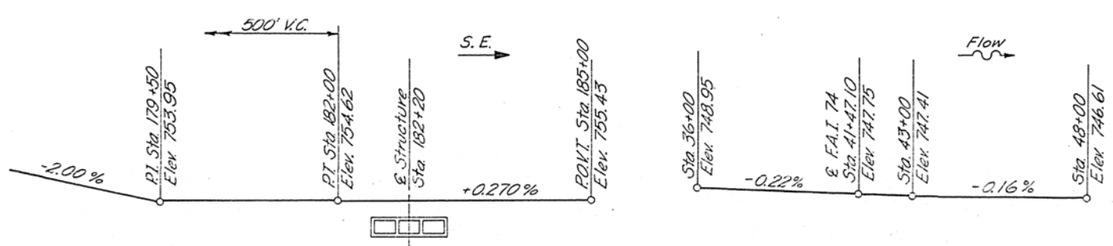
BORING #2
STA. 181+98.00
68' LT. OF ℄ F.A.I. 74

BORING DATA

Qu = UNCONFINED COMPRESSIVE STRENGTH - t/S.F.
W = WATER CONTENT-PERCENTAGE OF OVEN DRY WEIGHT-%
N = STANDARD PENETRATION. TEST-BLOWS PER FOOT TO DRIVE 2" O.D. SPLIT SPOON SAMPLER 12" WITH 140# HAMMER FALLING 30".

## TOTAL BILL OF MATERIAL

| ITEM | UNIT | QUANTITY |
|---|---|---|
| CLASS X CONCRETE | CU. YDS. | 211.1 |
| REINFORCEMENT BARS | LBS. | 44,986 |
| NAME PLATES | EACH | 1 |
| REMOVAL OF EXISTING STRUCTURES | EACH | 1 |
| | | |
| | | |
| | | |




ROADWAY PROFILE FAI 74




COPPER SLOUGH DITCH PROFILE

| NO. | REVISION | BY | DATE |
|---|---|---|---|
| | | | |

GENERAL PLAN AND ELEVATION

SECTION 10-5-18-1 STATION 182+20.00
F.A.I. RTE. 74 PROJECT I-74-5(11)160
CHAMPAIGN COUNTY

CLARK, DAILY, DIETZ & ASSOCIATES
CONSULTING ENGINEERS
URBANA, ILLINOIS

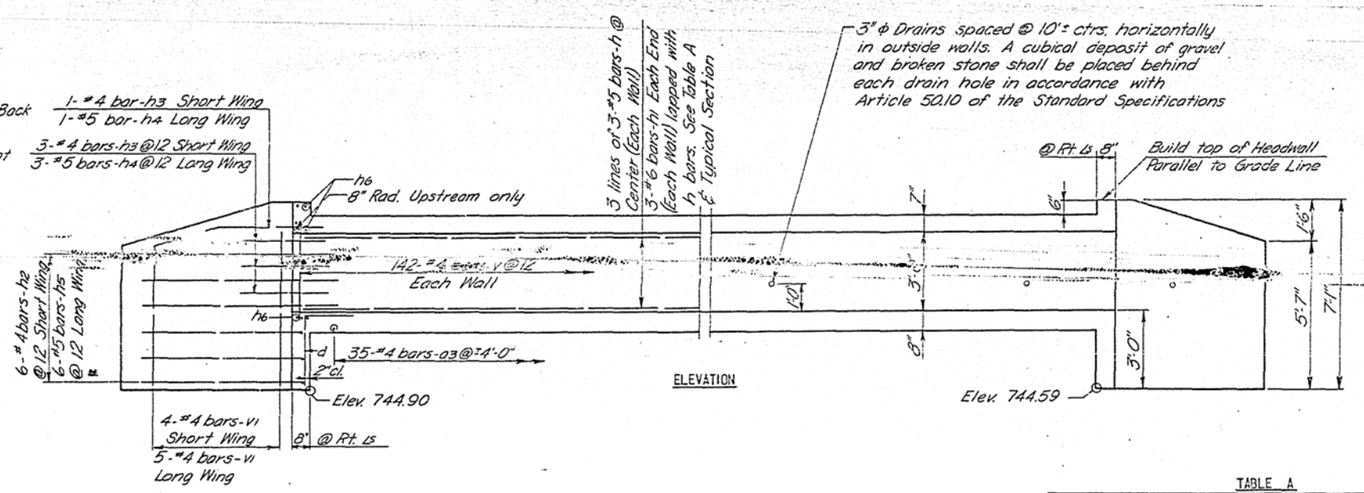
| | | |
|---|---|---|
| DESIGNED MKJ | SCALE AS NOTED | SHEET 1 |
| DRAWN BDS | | |
| CHECKED CBP | DATE FEB. 1963 | OF 2 |

JOB NO. 394 3.21

| DESIGNED BY | DRAWN BY | DATE | CHECKED BY | DATE | DETAILED BY | DATE |
|---|---|---|---|---|---|---|
| MKJ | BDS | 2-63 | CBP | 2-63 | MFT | |

BRIDGE DWG. 2 OF 2

| ROUTE NO | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. 74 | 10-5-1B-1 | CHAMPAIGN | 1'5" | 1'2" |
| FED. ROAD DIST NO 7 | ILLINOIS | PROJECT | | |



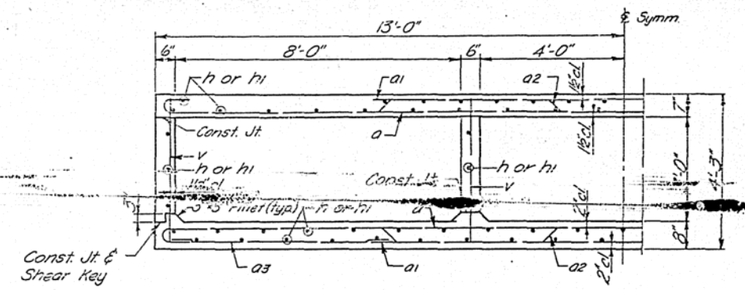
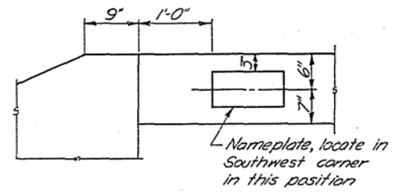



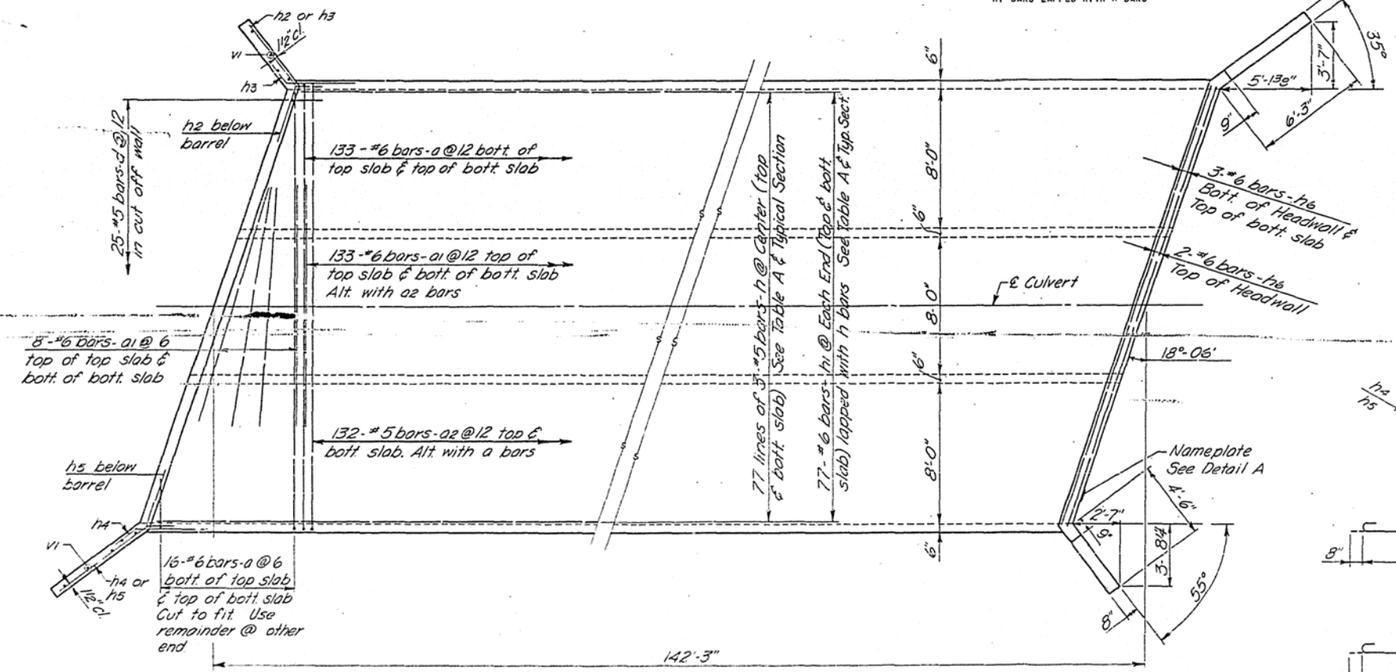

TABLE A

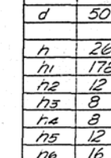
| LOCATION OF h & h1 BARS | h1 (EACH END) | h | SPACING |
|---|---|---|---|
| TOP OF TOP SLAB | ** 16 | 16 x 3" | See Section |
| BOTT. OF TOP SLAB | ** 20 | 20 x 3" | 16" |
| TOP OF BOTT. SLAB | ** 21 | 21 x 3" | 15" |
| BOTT. OF BOTT. SLAB | ** 20 | 20 x 3" | 15" |
| EACH WALL | ** 3 | 3 x 3 " | 12" |

* 16 X 3 = 16 LINES OF 3 BARS
** h1 BARS LAPPED WITH h BARS

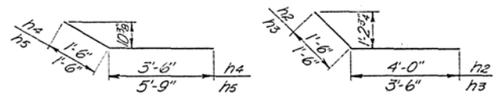



DETAIL A

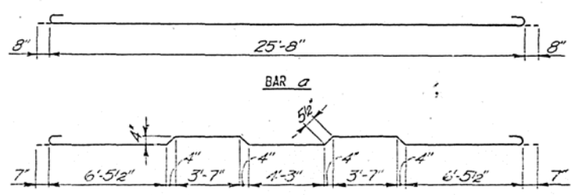



BAR d




BAR h4 & h5 BAR h2 & h3




BILL OF MATERIAL

| BAR | NO. | SIZE | LENGTH | SHAPE |
|---|---|---|---|---|
| a | 298 | #6 | 27'-0" | straight |
| a1 | 298 | #6 | 14'-0" | straight |
| a2 | 264 | #5 | 27'-2" | bent |
| a3 | 70 | #4 | 6'-10" | straight |
| | | | | |
| d | 50 | #5 | 2'-3" | straight |
| | | | | |
| h | 267 | #5 | 29'-6" | straight |
| h1 | 178 | #6 | 29'-8" | straight |
| h2 | 12 | #4 | 3'-6" | bent |
| h3 | 8 | #4 | 3'-0" | bent |
| h4 | 8 | #5 | 7'-0" | bent |
| h5 | 12 | #5 | 7'-3" | bent |
| h6 | 16 | #6 | 26'-10" | straight |
| | | | | |
| v | 568 | #4 | 3'-1" | straight |
| v1 | 18 | #4 | 6'-1" | straight |
| | | | | |
| CLASS X CONCRETE | | | CU. YDS. | 2.11 |
| REINFORCEMENT BARS | | | LBS. | 44,595 |
| NAME PLATES | | | EACH | 1 |

CULVERT DETAILS
F.A.I. RTE. 74 SEC. 10-5-1B-1
CHAMPAIGN COUNTY
STA. 182+20.00

BRIDGE DWG. 2 OF 2

JOB NO. 394-V21

| DESIGNED BY | DETAILED BY | CHECKED BY | QUANTITIES BY |
|---|---|---|---|
| JKC | 5-22-83 | CDP 7-6-83 | JHT |

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

**PADUCAH OFFICE:**
500 South 17th Street, P.O. Box 120
Paducah. Kentucky 42002
Phone: (270) 443-1995
Fax: (270) 443-1904

**MURRAY OFFICE:**
1215 Diuguid Drive
Murray, Kentucky 42071
Phone: (270) 753-7307
Fax: (270) 759-4950

**MARION OFFICE:**
403 North Court Street
Marion, Illinois 62959
Phone: (618) 993-6700
Fax: (618) 993-6717

# Transmittal

**TO:** D. Carl Puzey
Attn: T.A. Craven
Illinois Department of Transportation
Bureau of Bridges and Stuctures
2300 S. Dirksen Parkway
Springfield, IL 62764

Phone: (217)524-4848
Fax:
Email:

**DATE:** 10/17/2014
**RE:** BCR
FAI 57 over Copper Slough
Section 10-34-1
SN 010-8306

**WE ARE FORWARDING THE FOLLOWING:**

☒ ATTACHED
☐ UNDER SEPARATE COVER

| QUANTITY | DESCRIPTION |
|---|---|
| 1 | Electronic copy sent to dot.bbs.planning@illinois.gov for review and approval. File name: *0108306BCR 20140702.pdf* |
| | |
| | |

☐ REVIEWED (AS NOTED ON DWG.)
☐ FURNISH AS CORRECTED
☐ NOT APPROVED
☒ FOR YOUR APPROVAL
☐ AS REQUESTED
☒ FOR YOUR USE

REMARKS:

COPY TO: BFW File #11354
District 5

BY: Brandon W. Poiter, P.E., S.E.

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.

# BRIDGE CONDITION REPORT

| | |
|---|---|
| **REGION:** | 3 |
| **DISTRICT:** | 5 |
| **COUNTY:** | Champaign |
| **ROUTE:** | FAI 57 |
| **SECTION:** | 10-34-1 |
| **JOB NUMBER:** | P-95-030-11 |
| **STRUCTURE NUMBER:** | 010-8306 |
| **LOCATION:** | I-57 over Copper Slough |

**PREPARED BY:** Brandon W. Poiter, PE, SE
BFW Engineering & Testing

**DATE INSPECTED:** July 2, 2014

**PROPOSED LETTING DATE:** Unknown

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| II. | Physical Description of Structure | 1 |
| III. | Field Inspection & Physical Evaluation | 2 |
| IV. | Potential Scope of Work Determination & Analysis | 2 |
| V. | Discussion and Recommended Scope of Work | 3 |

Attachments:

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| B. | IDOT Master Structure Report | 7-8 |
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| F. | Cost Estimates | 19 |
| G. | Proposed Structure | 21 |
| H. | Structure Photos | 23-28 |
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| J. | Proposed Plan & Profile (N/A) | --- |
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# I. Geographical & Administrative Data

| | |
|---|---|
| **Structure Number:** | 010-8306 |
| **County:** | CHAMPAIGN |
| **Route Carried:** | FAI 74 |
| **Feature Crossed:** | Copper Slough |
| **Section:** | 10-34-1 |
| **Station:** | 608+50 |

| | |
|---|---|
| **Roadway Classification:** | Interstate, FAI |
| **Design/Posted Speed:** | 70 mph/65 mph |
| **ADT (current/design):** | 22,200 (2013)/33,400 (2040) |
| **ADTT (current/design):** | 5,775 (2013)/9,420 (2040) |
| **DHV:** | 2,250 |
| **Inventory Rating HS:** | 20.0 |
| **Operating Rating HS:** | 37.0 |
| **Sufficiency Rating:** | 83.0 |

## Construction/Reconstruction/Repair History:

1965– Original construction under FAI 57, Section 10-34-1

# II. Physical Description of Structure:

The existing structure, built in 1965, is a double barrel cast-in-place concrete box culvert with an 12° right forward. The barrel dimensions are 9'-0" clear span and 3'-0" clear height with approximately 5.9' of fill over the barrels. The structure is 232'-5" out-to-out of headwalls measured along the centerline of the culvert, and is constructed on a 0.09% longitudinal grade flowing from west to east. The barrels consist of a 8" top slab, 6" walls, and an 9" bottom slab. The 8" thick horizontal cantilever type wingwalls are 4'-9" and 6'-0" long and built on angles to the culvert headwall of 56° and 34° respectively.

I-57 crosses the culvert on a vertical tangent with a profile grade of +0.2256%. The approach roadway for northbound and southbound I-57 consists of two 12' lanes of concrete pavement with bituminous overlay and 4' bituminous concrete shoulders at the interior lanes. The southbound direction includes a variable width concrete exit ramp with bituminous overlay and the northbound direction includes a variable width concrete entrance ramp with bituminous overlay. The shoulders at the exterior lanes are 10' bituminous concrete. The existing median width from inside edge of the westbound driving lands to the inside edge of the eastbound driving lanes is 64'. Steel plate beam guardrail exists along the right shoulder in both the northbound and southbound directions.

## III. Field Inspection & Physical Evaluation:

The bridge was visually inspected by Bacon, Farmer, Workman Engineering and Testing, Inc. on July 2nd , 2014. The barrels were not accessed during the inspection.

**Culvert:** The culvert is in good condition. The headwall at the each end of the culvert has some minor spalls. The wingwalls are in good condition with only minor cracking noted.

**Inspection History (NBIS Ratings).**

| Year | Culvert | Channel |
|---|---|---|
| 2011 | 7 | 7 |

## IV. Potential Scope of Work Determination & Analysis:

This report is being prepared in conjunction with an interchange type study of two alternates for the reconstruction of the existing interchange. I-57 will be upgraded to a section that maintains the existing lane and median width while widening the inside and outside shoulders to 12'.Alternate 1 is a full direction interchange with flyovers. Alternate 2 is semi-directional with directional flyovers and two loops.

The two improvement options considered are 1) Remain in Place/Culvert Extension and 2) Complete Replacement

**Option 1: Rehabilitation/Extension**
This option requires extending the existing barrels of the existing culvert as necessary for the proposed interchange geometry. There is no hydraulic analysis information available at this time but the District did state in minutes from a 9/6/12 meeting that there is no history of maintenance problems or flooding at this location.

The original plans show that the reinforcement is uniform over the length of the barrels in which the widening is proposed near the upstream (west) end, therefore the increased fill over the culvert will have no effect on the load carrying capacity of the culvert. Based on the current culvert condition rating of 7 and an inventory rating of HS 20.0, the existing culvert has sufficient load carrying capacity to remain in place.

**Option 2: Complete Replacement**
Based on the current condition of the existing culvert a complete replacement is not warranted for the proposed improvements.

## V. Discussion and Recommended Scope of Work

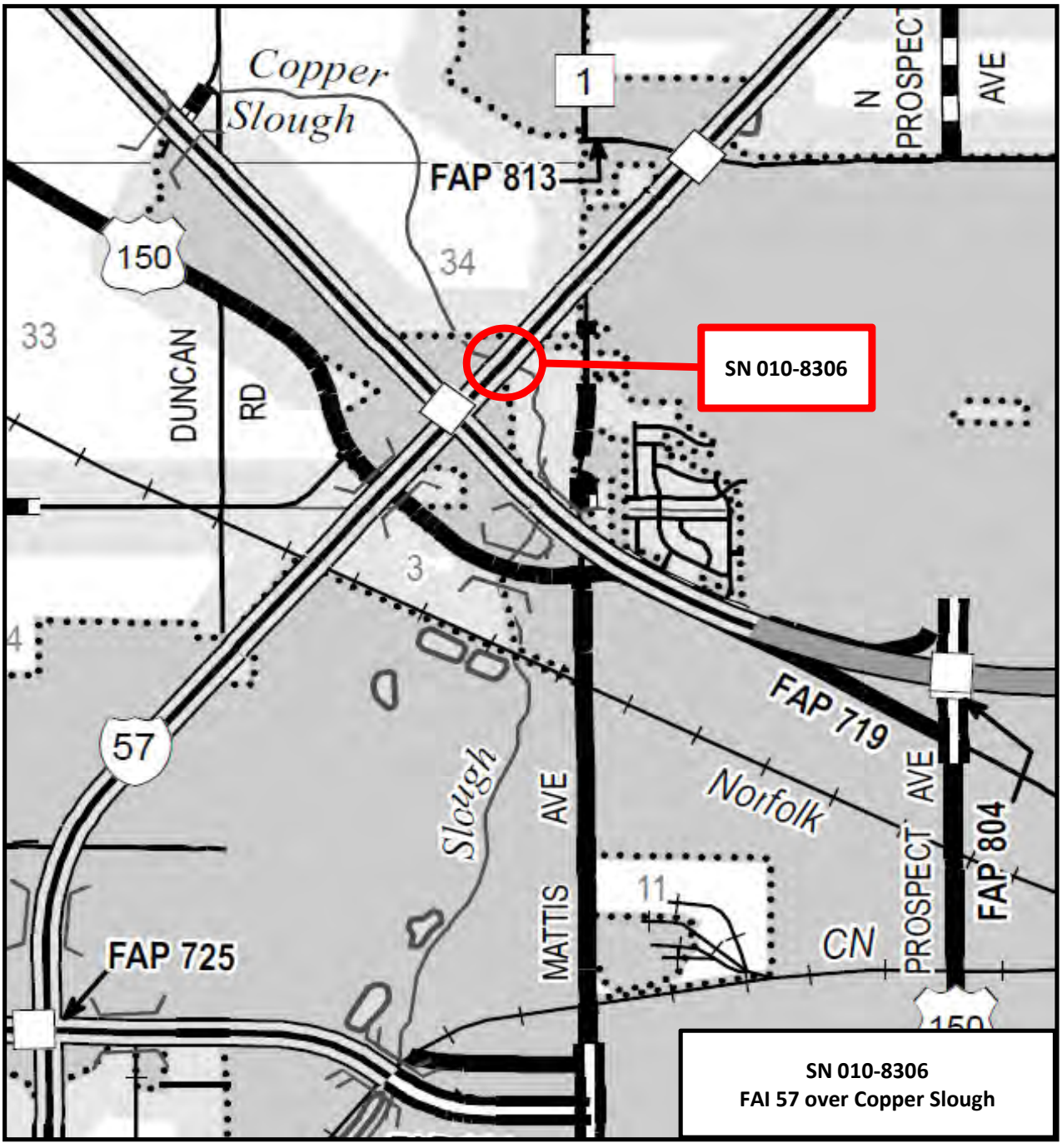
The recommended scope of work is to extend the existing double barrel cast-in-place culvert as required to accommodate proposed interchange. The proposed structure shown in Attachment G is based on the geometry presented in preferred Alternate 2 of the interchange type study. Alternate 2 requires culvert extension at the upstream (west) end of the existing culvert in order to carry the proposed exit Ramp H from SB I-57 to WB I-74 over Copper Slough.

At the time this report was prepared, Alternate 2 was the preferred alternate.

A cost comparison was not done based on the recommendation for the existing culvert to remain in place and extended. A cost estimate for the proposed extension is included in Attachment F.

# **ATTACHMENT A**

Location Map


Copper
Slough
1
N PROSPECT AVE
FAP 813
150
34
33
DUNCAN
RD
SN 010-8306
3
4
57
FAP 719
Slough
MATTIS AVE
Norfolk
PROSPECT AVE
FAP 804
11
FAP 725
CN
SN 010-8306
FAI 57 over Copper Slough

# **ATTACHMENT B**

IDOT Master Structure Report

# Illinois Department of Transportation
## Structures Information Management System
## Master Structure Report (S-107)

**Structure Number: 010-8306** **District: 5**

## Inventory Data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Facility Carried:** | I-57 | **Bridge Name:** | | **Sufficiency Rating:** | 83.0 | **Structure Length:** | 20.6 |
| **Feature Crossed:** | COPPER SLOUGH | **Location:** | .2 MI N OF I-74 | **HBP Eligible:** | No | **AASHTO Bridge Length:** | 18.4 |
| **Bridge Remarks:** | | | | **Replaced By:** | 000-0000 | **Length of Long Span:** | 9.2 |
| **Bridge Status:** | 1 OPEN - NO RESTRICT | **StatusDate:** | 04/1988 | **Replaces:** | 000-0000 | **Bridge Roadway Width:** | 0.0 |
| **Status Remarks:** | | | | **Last Update Date:** | 02/29/2012 | **Appr Roadway Width:** | 42.0 |
| **Maint County:** | 010 CHAMPAIGN | **Maint Township:** | 12 HENSLEY | **Parallel Structure:** | None | **Deck Width:** | 0.0 |
| **Maint Responsibility:** | 01 I.D.O.T. | | | **Multi-Level Structure Nbr:** | | **Sidewalk Width Right:** | 0.0 |
| **Service On/Under:** | 1 HIGHWAY | / | 5 WATERWAY | **Skew Direction:** | Right | **Sidewalk Width Left:** | 0.0 |
| **Reporting Agency:** | 1 I.D.O.T. - BUREAU OF MAINTENANCE | | | **Skew Angle:** | 12 D 00 M 00 S | **Navigation Control:** | 0 No |
| **Main Span Matl/Type:** | 1 CONCRETE | / | 19 CULVERT | **Structure Flared:** | No | **Navigation Horiz Clear:** | 0 |
| **Nbr Of Main Spans:** | 2 | **Nbr Of Approach Spans:** | 0 | **Historical Significance:** | No | **Navigation Vert Clear:** | 0 |
| ***Approaches*** | | | | **Border Bridge State:** | | **Culvert Fill Depth:** | 6.7 |
| **Near #1 Matl/Type:** | / | | | **Bdr State SN:** | | **Number Culvert Cells:** | 2 |
| **Near #2 Matl/Type:** | / | | | **Bdr State % Responsibility:** | 0 | **Culvert Opening Area:** | 54.0 |
| **Far #1 Matl/Type:** | / | | | **Structural Steel Wt:** | 0 | **Culvert Cell Height:** | 3.00 |
| **Far #2 Matl/Type:** | / | | | **Substructure Material:** | | **Culvert Cell Width:** | 9.00 |

**Median Width/Type:** 64 Ft. / 1 Open Median
**Rated By:** 2 IDOT **Rate Method:** 2 ALLOWABLE STRESS
**Guardrail Type L/R:** 0 None / 0 None
**Inventory Rating:** 20.0 (236) **Load Rating Date:** 05/07/1996
***Railroad Crossing Info***
**Toll Facility Indicator:** 0 No Toll
**Operating Rating:** 37.0 (267)
**Crossing 1 Nbr:**
**Latitude:** 40 D 08 M 51.85 S **Longitude:** 88 D 16 M 54.40 S
**Design Load:** 01 HS20+MOD
**Crossing 1 Nbr:**
**Deck Structure Type:** N N/A
**Deck Structure Thickness:** 0.0 **SD:** N **FO:** N
**RR Lateral Underclear:** 00.0
**Sidewalks Under Structure:** 0 None
**RR Vertical Underclear:** 00 Ft 00 In

## Key Route On Data

| | | | | | |
|---|---|---|---|---|---|
| **Key Route Nbr:** | FEDERAL-AID INTERSTATE 0057 | **Station:** | 019.780 | | |
| **Appurtenances** | Main Route 00.000 | **Segment:** | | | |
| **Inventory County:** | 010 CHAMPAIGN | **Linked:** | Y | | |
| **Township/Road Dist** | 54 CHAMPAIGN CITY (CHAMPAI | **Natl. Hwy System:** | On NHS | | |
| **Municipality** | 0990 CHAMPAIGN | **Inventory Direction:** | N North | | |
| **Urban Area:** | 0990 | **Curr AADT Yr/Count:** | 2011 / 23000 | | |
| **Functional Class:** | 10 INTERSTATE, FAI | **Est Truck Percentage:** | 23 | | |
| **** CLEARANCES **** | **South/East** | **North/West** | **Number Of Lanes:** | 4 | |
| **Max Rdwy Width:** | 036.0 | | **One Or Two Way:** | 2 Two-Way | |
| **Horizontal:** | 999.9 | 000.0 | **Bypass Length:** | 0 | |
| **Min Vertical:** | 99 Ft 11 In | 00 Ft 00 In | **Future AADT Yr/Cnt:** | 2023 / 28100 | |
| **10 Ft Vertical:** | 99 Ft 11 In | 00 Ft 00 In | **Designated Truck Rte:** | CLASS I | |
| **Lateral:** | | | **Special Systems:** | Yes | |

## Key Route Under Data

| | | | |
|---|---|---|---|
| **Station:** | | | |
| **Segment:** | | | |
| **Linked:** | | | |
| **Natl. Hwy System:** | | | |
| **Inventory Direction:** | | | |
| **Curr AADT Yr/Count:** | / | | |
| **Est Truck Percentage:** | | | |
| **South/East** | **North/West** | **Number Of Lanes:** | |
| | | **One Or Two Way:** | |
| | | **Bypass Length:** | |
| Ft In | Ft In | **Future AADT Yr/Cnt:** | / |
| Ft In | Ft In | **Designated Truck Rte:** | |
| Ft | Ft | **Special Systems:** | |

## *** Marked Route On Data ***

| | Designation | Kind | Number |
|---|---|---|---|
| **Route #1:** | 1 Mainline | 1 Interstate Highway | 0057 |
| **Route #2:** | | | |
| **Route #3:** | | | |

## *** Marked Route Under Data ***

| | Designation | Kind | Number |
|---|---|---|---|
| **Route #1:** | | | |
| **Route #2:** | | | |
| **Route #3:** | | | |

# Illinois Department of Transportation
## Structures Information Management System
## Master Structure Report (S-107)

**Structure Number: 010-8306** **District: 5**

## Data Related to Inspection Information

***Inspection Intervals ***

| | | | | | |
|---|---|---|---|---|---|
| **Routine NBIS:** | 24 MOS | **Underwater:** | 0 MOS | | |
| **Fracture Critical:** | 0 MOS | **Special:** | N | | |

*** Maximum Allowable Posting Limits ***

| | | | |
|---|---|---|---|
| **One Truck At A Time:** | | **Combination Type 3S-1:** | Tons |
| **Single Unit Vehicles:** | Tons | **Combination Type 3S-2:** | Tons |

**Bridge Posting Level:** 5 No Posting Required

## Inspection/Appraisal Information

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Inspection Date:** | 01/05/2011 | **Inspection Temperature:** | 35 Deg. F | **Insp by (Name):** | BUESCHERCA | ** Actual Posted Limits ** | |
| **Deck:** | N | NOT APPLICABLE | | **Insp by (Name):** | CONKLINSD | **Single Unit Vehicles:** | Tons |
| **Superstructure:** | N | NOT APPLICABLE | | **Utilities Attached:** | N N/A | **Combination Type 3S-1:** | Tons |
| **Substructure:** | N | NOT APPLICABLE | | | N N/A | **Combination Type 3S-2:** | Tons |
| **Culvert:** | 7 | GOOD CONDITION - SOME MINOR PROBLEMS | | | N N/A | **One Truck At A Time:** | |
| **Channel and Protection:** | 7 | GOOD CONDITION - SOME MINOR PROBLEMS | | **Deck Wearing Surf:** | N N/A - NO DECK | **Last Paint Type:** | |
| **Structural Evaluation:** | 7 | BETTER THAN PRESENT MINIMUM CRITERIA | | **Deck Membrane:** | N N/A | | |
| **Deck Geometry:** | N | NOT APPLICABLE | | **Deck Protection:** | N N/A | | |
| **Underclearance-Vert/Lat.:** | N | NOT APPLICABLE | | **Total Deck Thick:** | 00.0 | | |
| **Waterway Adequacy:** | 8 | EQUAL TO PRESENT DESIRABLE CRITERIA | | **Last Paint Date:** | | | |
| **Approach Roadway Align:** | 8 | EQUAL TO PRESENT DESIRABLE CRITERIA | | **Inspection Remarks:** | | | |
| **Bridge Railing Appraisal:** | N | N/A | | DELAM AT EAST END OF SOUTH BOX. | | | |
| **Approach Guardrail:** | NNN | N/A | N/A | N/A | | | |
| **Pier Navig Protection:** | N | N/A | | | | | |

## Underwater Inspection/Appraisal Information

| | | | | | |
|---|---|---|---|---|---|
| **Inspection Date:** | | **Inspection Category:** | | | |
| **Temperature:** | | **Inspection Method:** | | | |
| **Inspected By:** | | **Inspected By:** | | **Appraisal Rating:** | |
| **Inspection Remarks:** | | | | | |

## Scour Critical Information

| | | | |
|---|---|---|---|
| **Rating:** | | **Evaluation Method:** | |
| **Analysis Date:** | | **Analysis By:** | |

## Miscellaneous

| | |
|---|---|
| **Fracture Critical Members:** | No |
| **Microfilm Data Recorded:** | Yes |

## Construction Information

| | | | | | |
|---|---|---|---|---|---|
| **Year:** | 1965 Original | | Reconstructed | | |
| **Route:** | FAI 57 | **Sta:** 608+50 | | **Sta:** | |
| **Section Nbr:** | 10-34-1 | | | | |
| **Contract Nbr:** | 23333 | | | | |
| **Fed Aid Pr #:** | 00000000000000 | | | | |
| **Built By:** | 1 I.D.O.T. | | | | |

## Waterway Information

| | | | |
|---|---|---|---|
| **Flood Design Frequency:** | 0 YRS | **Drainage Area:** | 0 Acre |
| **Flood Design Q (CFS):** | 0 | | |
| **Flood Design Nat H W E:** | 0 | **Flood Base Q (CFS):** | 0 |
| **Flood Des Open Prop:** | 0 SF | **Flood Base Nat H W E:** | 0 |

## Proposed Improvement

| | | | |
|---|---|---|---|
| **Cost Estimate Year:** | | **Length:** | |
| **Type of Work:** | | | |
| **Done By:** | | | |
| **Remarks:** | | | |

*** Costs in Dollars ***

| | |
|---|---|
| **Bridge Cost:** | |
| **Roadway Cost:** | |
| **Total Project Cost:** | |

# **ATTACHMENT C**

Bridge Inspection Report

# Illinois Department of Transportation

## Bridge Inspection Report (MI)

**Structure Number: 010-8306**

| 90 - Insp. Date | 90A - Insp. Team Leader/Qualification | Temp. |
|---|---|---|
| 11 5 11 | [redacted] / | [redacted] |
| / / | / | |
| / / | / | |
| / / | / | |
| / / | / | |

Maintenance County: CHAMPAIGN
Township: HENSLEY
Municipality: CHAMPAIGN
Facility Carried: I-57
Feature Crossed: COPPER SLOUGH
Location: .2 MI N OF I-74
Material/Type: CONCRETE/CULVERT
Nbr of Spans: 2 Team Sect./Sub-Sect: 544 - 570

Bridge Inspection Year: 11

**Appraisals** **Comments** (All comments must be dated.)

### Deck

**58 - Deck Condition:** 7

Wearing Surface:
Parapets / Bridge Railings:
Curbs:
Median:
Sidewalks:
Drain System:
Light Standards:
Expansion Joints: Openings (In.):

### Superstructure

**59 - Superstructure Cond:** 7

Bearing Devices:
Girders / Beams / Stringers:
Diaphragms / Braces:
Trusses / Portals / Bracing:
Rivets / Bolts:
Paint:

### Substructure

**60 - Substructure Cond:** 7

Abutments:
- Stem / Columns / Piles:
- Caps:
- Bearing Seats:
- Backwalls:
- Wingwalls:

Piers:
- Stem / Columns / Piles:
- Caps:
- Bearing Seats:
- Crash Walls:

Fender Systems:
Paint:

| | Appraisals | Comments (All comments must be dated.) |
|---|---|---|
| **Culvert** | | |
| **62 - Culvert Condition:** | 7 | Slope board on L & R on Low Cr. |
| Top Slab / Soffit: | 3 | Patch on L & R Low Cr. |
| Side Walls / Arch: | 3 | |
| Bottom: | 3 | |
| Headwalls: | 3 | |
| Wingwalls: | 3 | |
| **Waterway and Channel** | | |
| **61 - Channel Condition:** | 7 | |
| Streambed: | 3 | |
| Slope Walls & Rip-Rap: | | |
| Stream Banks: | 3 | |
| Spur Dykes & Jetties | | |
| **71 - Waterway Adequacy:** | 8 | |
| **Approach Roadway** | | |
| **72 - Appr. Rdwy Alignment:** | 8 | |
| Riding Quality: | 4 | |
| Structural Condition: | 4 | |
| Relief Joints: | - | |
| **Navigable Waterways** | | |
| **111 - Pier Navig. Protect'n:** | N | |

**Inspection Remarks**

| Year | Item 90B - Inspection Remarks (237 characters maximum.) |
|---|---|
| 20 | |
| 20 | |
| 20 | |
| 20 | |
| 20 | |

## Additional Inspection Data

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 36A – Bridge Railing Adequacy: | | | Rail Types: | | | | | |
| Approach Guardrail Adequacy: | 36B – Transitions: | | | 36C – Guardrail: | | | 36D – Ends: | |

| | | | | | |
|---|---|---|---|---|---|
| 108A – Wearing Surface Type: | | 108B – Type of Membrane: | | 108C – Deck Protection: | |
| 108D – Total Deck Thickness (In.): | | | | | |

| | | |
|---|---|---|
| 59A – Paint Date (Mo/Yr): | / | |
| 59B – Paint Systems: | | Color: Fascia – _____; Inter. – _____; Railing – _____. |
| 59C – Utilities Attached: | | |

## Weight Limit Posting

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 70A2 – Single Units: | | T. | Comb. Veh: 70B2 – 3 or 4 Axle: | | T. | 70C2 – 5 or More Axle: | | T. |
| 70D2 – One Truck at a Time: | | | | | | | | |

**Inspection Resource Needs**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Time to Inspect (H:M):** | | 00:20 | **Traffic Control:** | | / | | | | | | |
| **Equipment:** | **Boat –** | | **Waders** | | | **Snooper –** | | | **Manlift –** | | |
| | **Ladder – Short** | | **Medium** | | | **Tall** | | | **Other –** | | |

93C – Special Inspection Date: / / / / / / / / / /

## Signature Block

| | Signature | Date | Unit Supervisor Init. & Date |
|---|---|---|---|
| Inspection Team Leader | Chris Kucek | 1-5-11 | 1/11/11 |
| | | | |
| | | | |
| | | | |
| | | | |

Additional Comments:

(Continue comments on page 4)

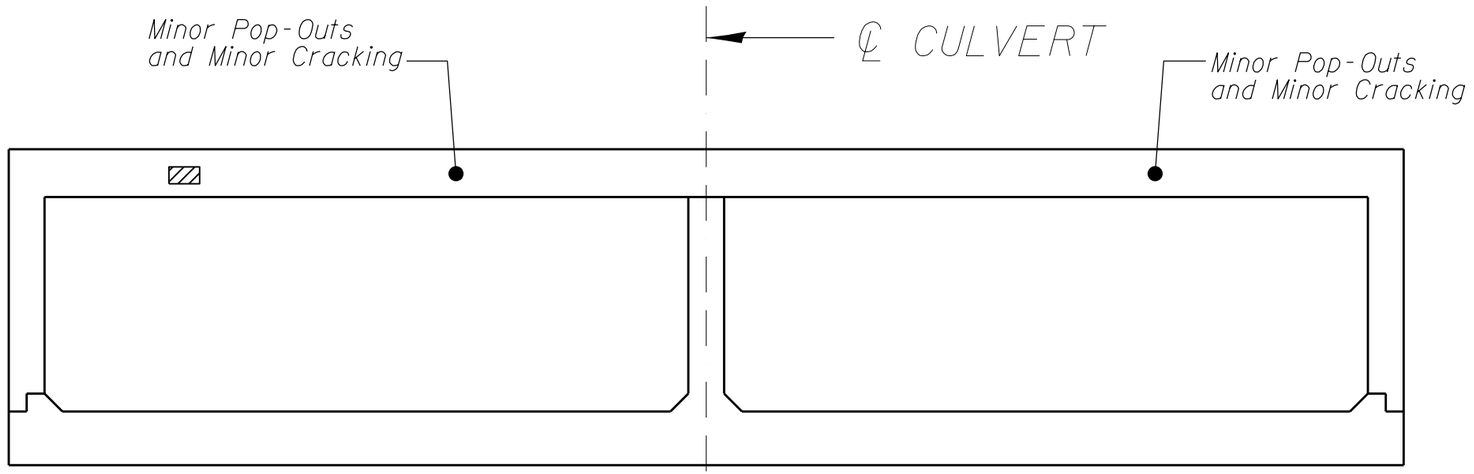
# **ATTACHMENT D**

Culvert Condition Survey

14 12 10 8 6 4 2 0 2 4 6 8 10 12 14

105

100




105

# UPSTREAM (WEST) END VIEW
# (LOOKING EAST)

LEGEND

Spalling

100

I-57
COPPER SLOUGH

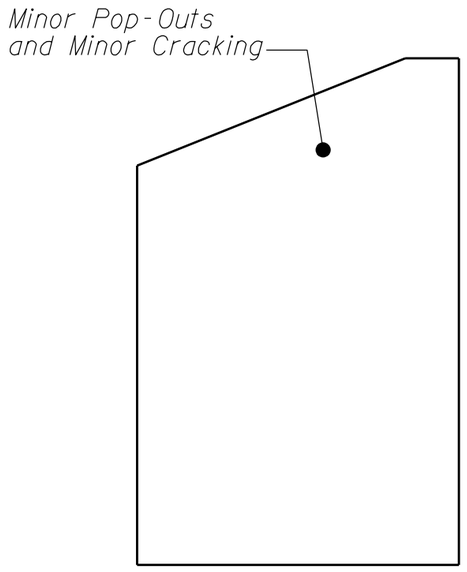
# CULVERT CONDITION SURVEY

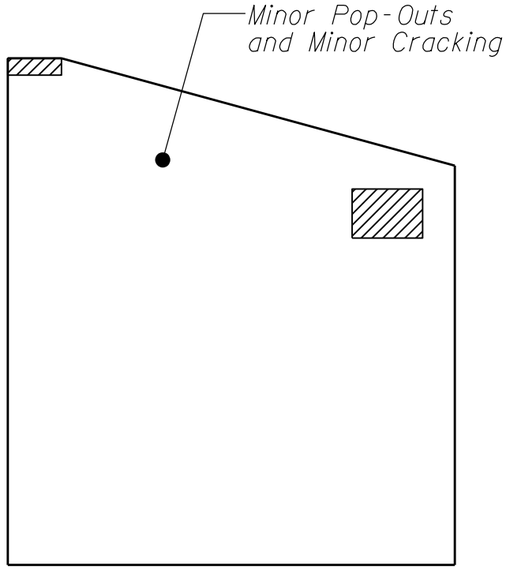
14 12 10 8 6 4 2 0 2 4 6 8 10 12 14

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

NORTH WINGWALL
ELEVATION

SOUTH WINGWALL
ELEVATION

100

# WINGWALL CONDITION SURVEY
# (UPSTREAM END)

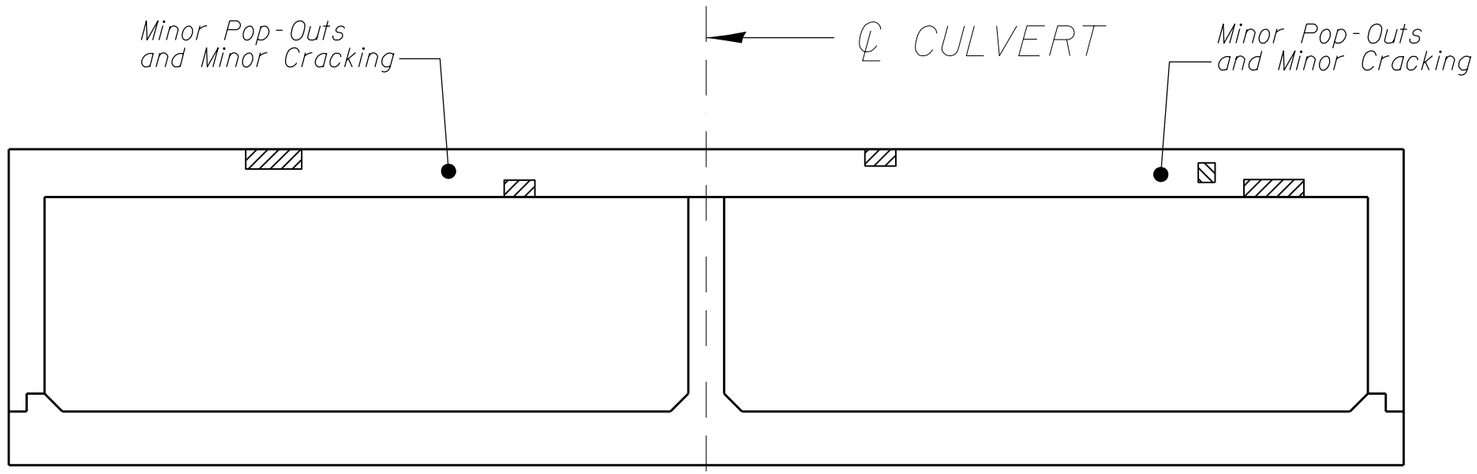
I-57
COPPER SLOUGH

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

## DOWNSTREAM (EAST) END VIEW
## (LOOKING WEST)

LEGEND

Spalling

100

I-57
COPPER SLOUGH

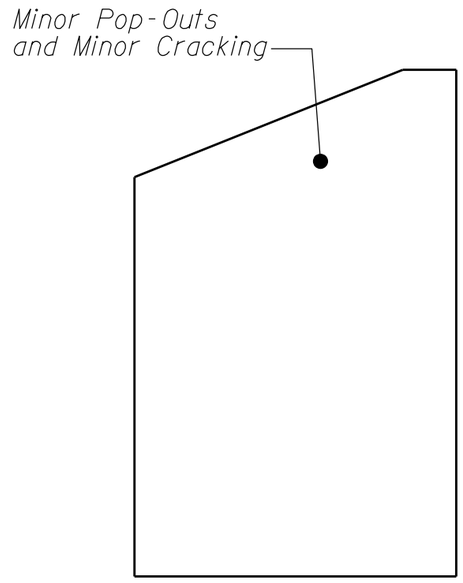
# CULVERT CONDITION SURVEY

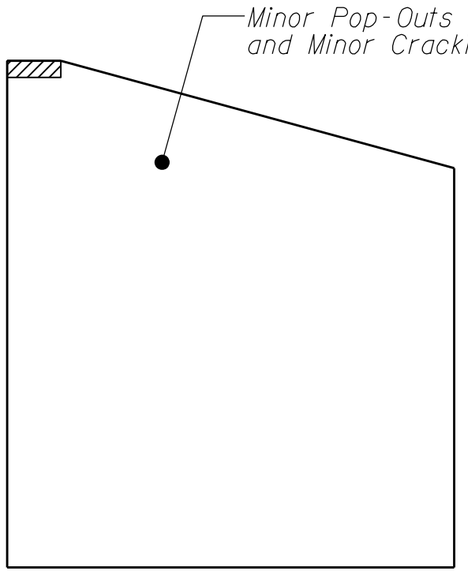
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

105

100




105

SOUTH WINGWALL
ELEVATION

NORTH WINGWALL
ELEVATION

LEGEND

Spalled

100

# WINGWALL CONDITION SURVEY
# (DOWNSTREAM END)

I-57
COPPER SLOUGH

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

# **ATTACHMENT F**

Cost Estimates

FAI 57 over Copper Slough

SN 010-8306

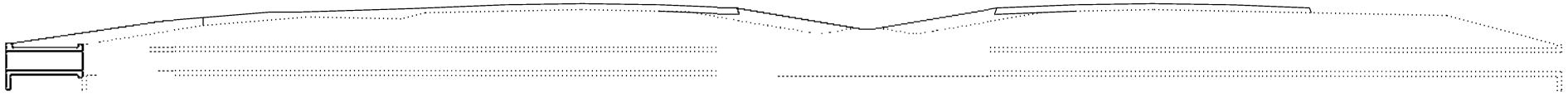
Preliminary Cost Estimate
Complete Replacement

| CODE | PAY ITEM | UNIT | QUANTITY | | | UNIT COST | ITEM COST |
|---|---|---|---|---|---|---|---|
| | | | SUPER | SUB | TOTAL | | |
| 54003000 | CONCRETE BOX CULVERTS | CU YD | 17 | | **17** | $920.00 | $15,640.00 |
| 50800105 | REINFORCEMENT BARS | POUND | 11000 | | **11000** | $1.00 | $11,000.00 |

| | | |
|---|---|---|
| | Subtotal = | $26,640.00 |
| 15% | Contingency = | $3,996.00 |
| | Total = | **$30,640** |

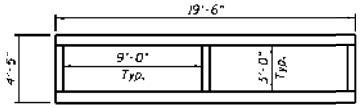
# ATTACHMENT G

Proposed Structure

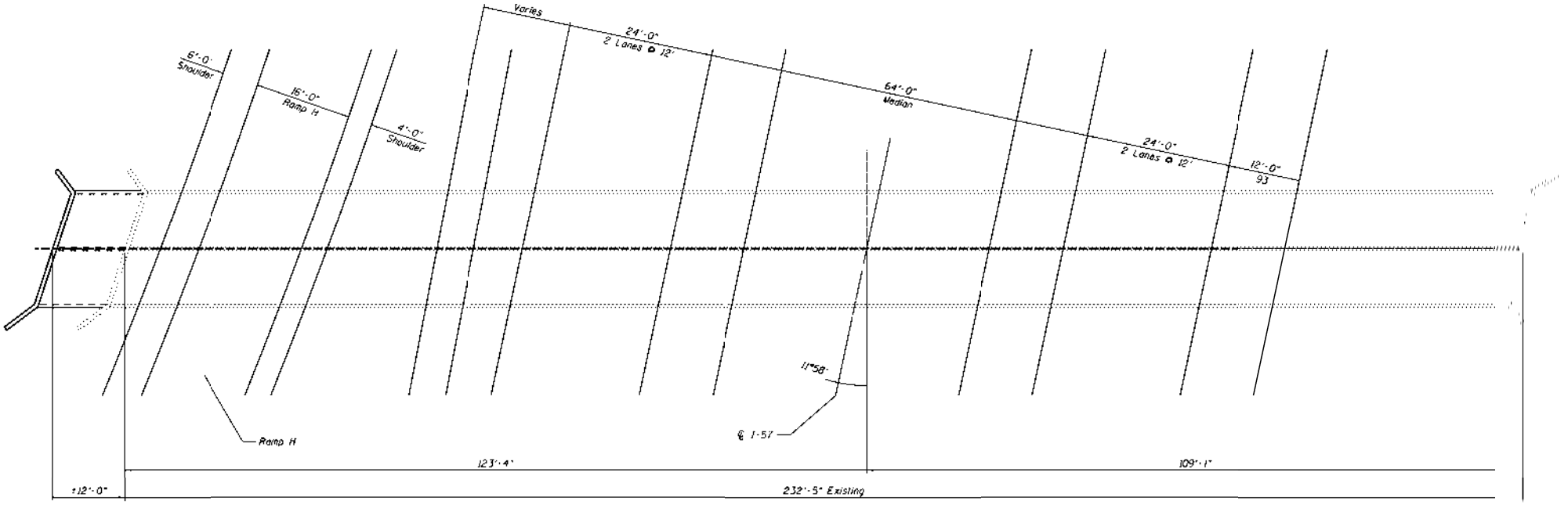


ELEVATION




SECTION




PLAN PROPOSED
STRUCTURE

Notes:
Length of culvert extension subject to refinement in the TSL phase.

PROPOSED
STRUCTURE SKETCH
SN 08-8108

# ATTACHMENT H

Structure Photos



**Upstream (West) end of culvert**




**Looking south from Upstream (West) end of culvert**



**Looking north from Upstream (West) end of culvert**



**Looking upstream from West end of culvert**



**Headwall at upstream (West) end of culvert**



**North wingwall at upstream end of culvert**



**Downstream (South) end of culvert**



**Looking north from downstream (east) end of culvert**



**Looking south from downstream (east) end of culvert**



**Looking downstream from east end of culvert**



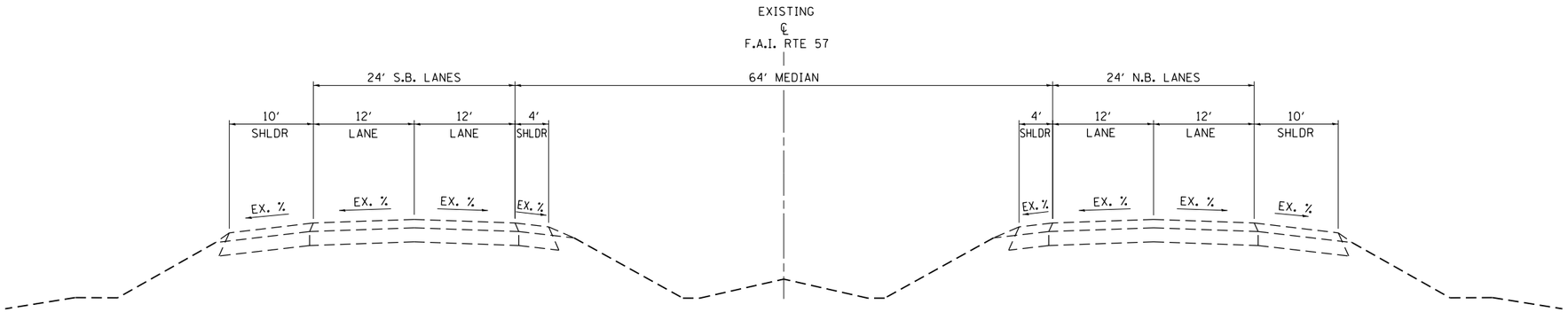
**Downstream channel**



**Headwall downstream (east) end of culvert**

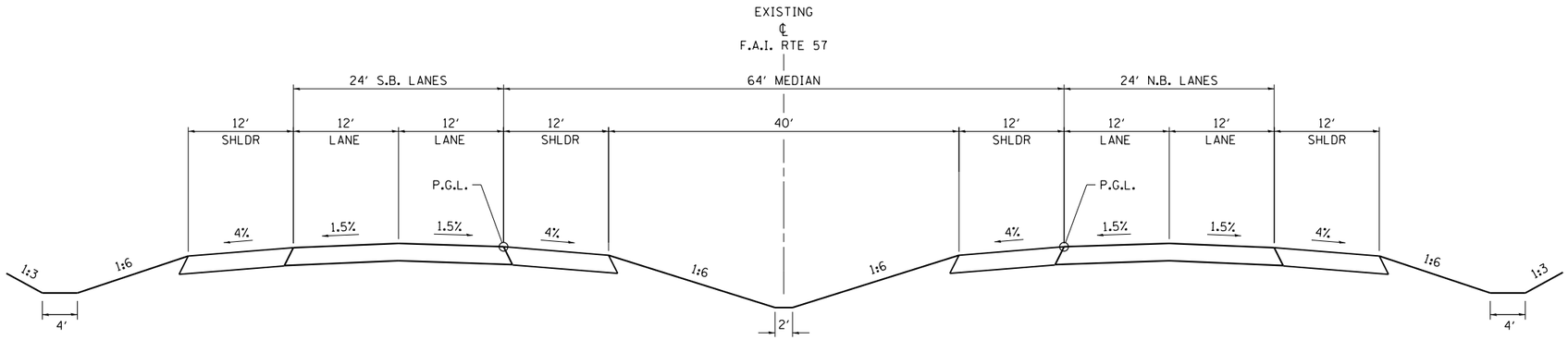
# ATTACHMENT K

Existing and Proposed Roadway Cross Sections



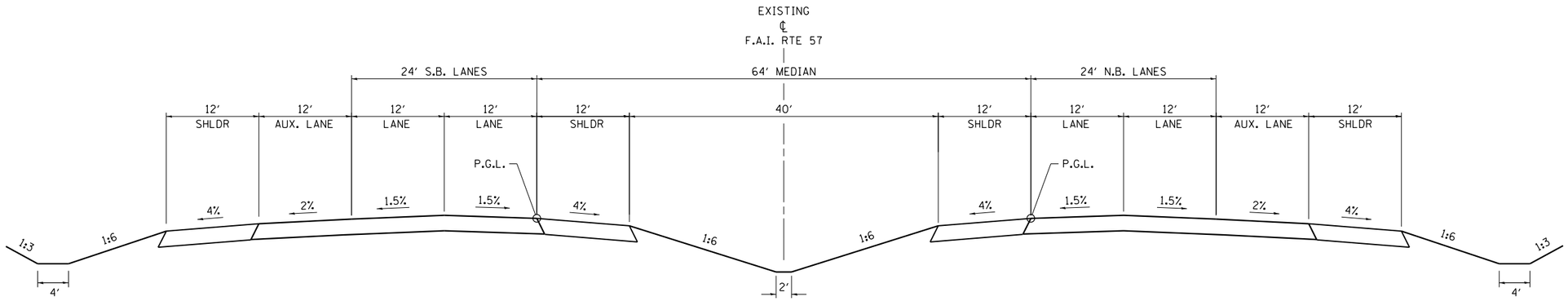

**EXISTING F.A.I 57**

(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
(LOOKING NORTH)




**PROPOSED F.A.I 57**

NORMAL CROWN
WITH AUXILIARY LANE
(LOOKING NORTH)

**INTERCHANGE TYPE STUDY**

**EXISTING & PROPOSED TYPICAL SECTIONS**

**INTERSTATE 57**

**EXHIBIT 51**

BDE-9908

PLOT DATE = 8/12/2014 - 10:15:21 AM
FILE NAME = L:\IDOT\1106602\Draw\Exhibits\TS\..
PLOT SCALE = 16.0000 ' / in.
USER NAME = Brad Downen

# **ATTACHMENT L**

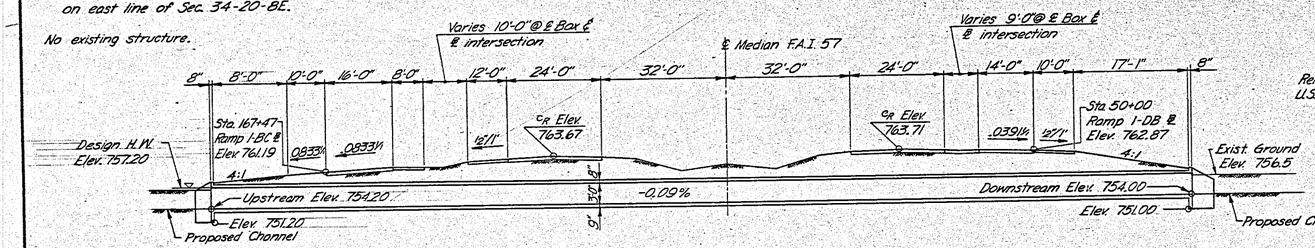
Abbreviated Existing Plans

BRIDGE DWG. 1 OF 2

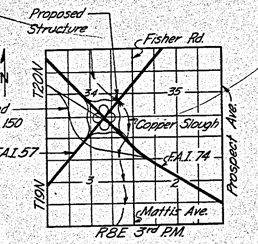
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. 57 | 10-348 | CHAMPAIGN | 110 | 94 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT. | | |

Bench Mark: #163 Elev. 764.84' Nail & B.C. in fence post 7' west from east ¼ corner on east line of Sec. 34-20-8E.

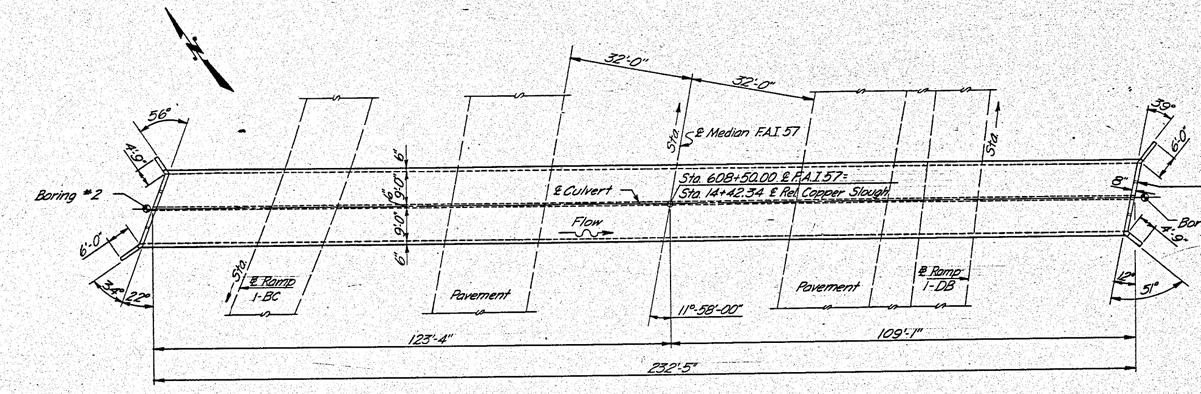
No existing structure.




SECTION ALONG ℄ CULVERT




LOCATION SKETCH
CHAMPAIGN COUNTY

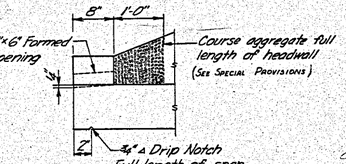



PLAN

STATION 608+50.00
BUILT 19 .. BY
STATE OF ILLINOIS
FAI RTE. 57 SEC. 10-348
FA PROJ. I-57-5(39)
LOADING: H20-S16 & ALT.

SEE STANDARD 2113 AND LOCATE AS SHOWN ON BRIDGE DWG. 2

NAME PLATE DATA




DRAIN DETAIL

GENERAL NOTES

1. SPECIFICATIONS: THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 2, 1958 AND THE REVISIONS THERETO SHALL APPLY.
2. CONCRETE: CLASS X CONCRETE SHALL BE USED THROUGHOUT. BEVEL ALL EXPOSED EDGES OF BARREL AND WINGWALLS 3/4". ALL BARS SHALL BE LAPPED 20 DIAMETERS UNLESS OTHERWISE SHOWN.
3. WATERPROOFING: THE TOP OF THE CULVERT, THE BACKS OF THE EXTERIOR WALLS ABOVE THE LOWER CONSTRUCTION JOINT AND THE BACKS OF THE WINGS SHALL BE WATERPROOFED IN ACCORDANCE WITH ARTICLE 57.21 OF THE STANDARD SPECIFICATIONS.

WATERWAY DATA

DRAINAGE AREA ---------- 558 ACRES
CHARACTER ---------- ROLLING & CULTIVATED
OPENING REQUIRED ---------- 58 SQ.FT.
OPENING PROPOSED ---------- 58 SQ.FT.

DESIGN DATA

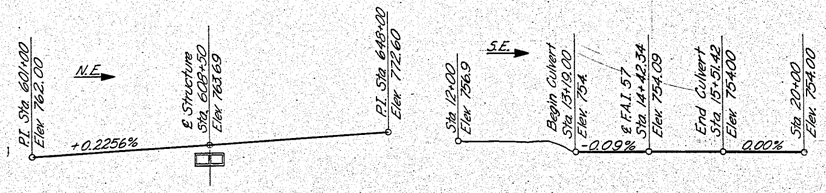
fc = 1600 psi BARREL
fc = 1200 psi WINGWALL
fs = 20,000 psi REINFORCEMENT
n = 10

LOADING

H20-S16-44 & ALTERNATE

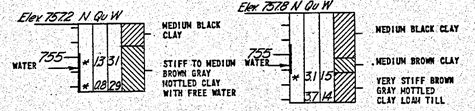
TOTAL BILL OF MATERIAL

| ITEM | UNIT | QUANTITY |
|---|---|---|
| CLASS X CONCRETE | CU.YDS. | 284.1 |
| REINFORCEMENT BARS | LBS. | 50,609 |
| NAME PLATES | EACH | 1 |
| EARTH EXCAVATION | CU.YDS. | 770 |
| STORM SEWER TY. 1 15" | L.IN.FT. | 188 |




MAINLINE ROADWAY PROFILE
(F.A.I. RTE. 57)

RELOCATED COPPER SLOUGH DITCH PROFILE




BORING NO. 1
STA. 608+75
117' RT. OF ℄ F.A.I. 57

BORING NO. 2
STA. 608+23
129' LT. OF ℄ F.A.I. 57

BORING DATA

Qu = UNCONFINED COMPRESSIVE STRENGTH - t/sf.
Qu TESTS WERE MADE ON 1 1/2" O.D. SAMPLES TAKEN FROM A PUSHED ILLINOIS SAMPLER
W = WATER CONTENT - PERCENTAGE OF OVER DRY WEIGHT-%

BORING BY STATE OF ILLINOIS, TAKEN ON 2-1-62

| DESIGNED BY | DATE | CHECKED BY | DATE | QUANTITIES BY | DATE | DETAILED BY | DATE | TRACED BY | DATE |
|---|---|---|---|---|---|---|---|---|---|
| CBP | 1-63 | CBP | 1-63 | BDS | 1-63 | CBP | 1-63 | MFT | |

| NO. | REVISION | BY | DATE |
|---|---|---|---|
| | | | |

GENERAL PLAN AND ELEVATION

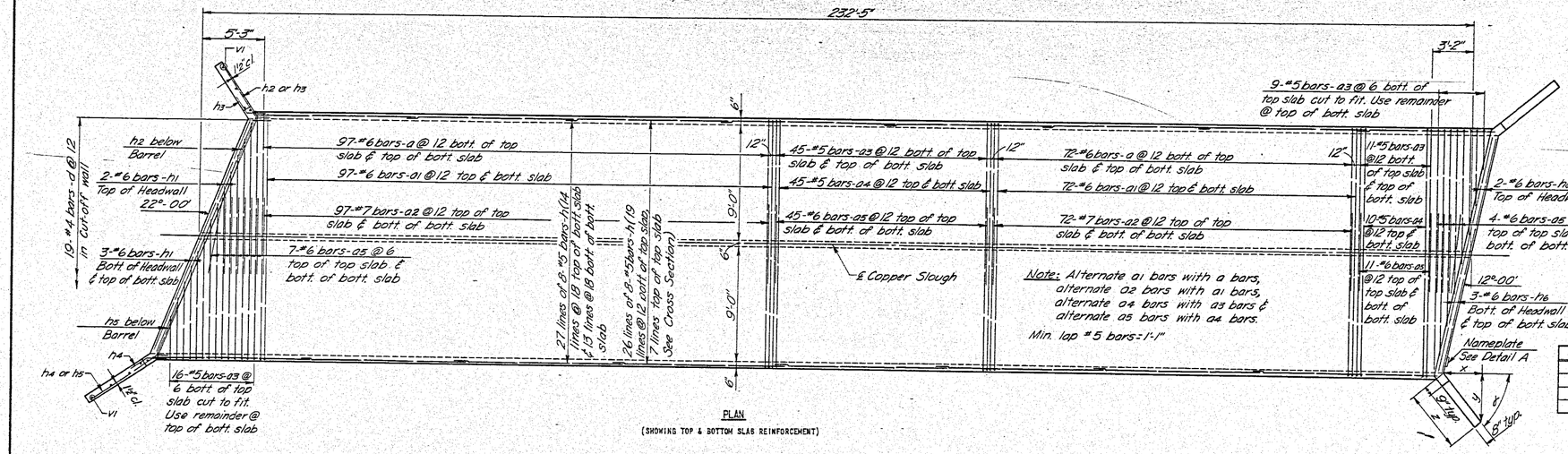
SECTION 10-348 STATION 608+50.00
FAI RTE 57 PROJECT I-57-5(39)285
CHAMPAIGN COUNTY

CLARK, DAILY, DIETZ & ASSOCIATES
CONSULTING ENGINEERS
URBANA, ILLINOIS

| DESIGNED ELM | SCALE AS NOTED | SHEET 1 |
|---|---|---|
| DRAWN BDS | DATE JAN. 1963 | OF 2 |
| CHECKED CBP | | JOB NO. 394 '19 |

BRIDGE DWG. 2 OF 2

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.I. 57 | 10-348 | CHAMPAIGN | 110 | 95 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | PROJECT | | |

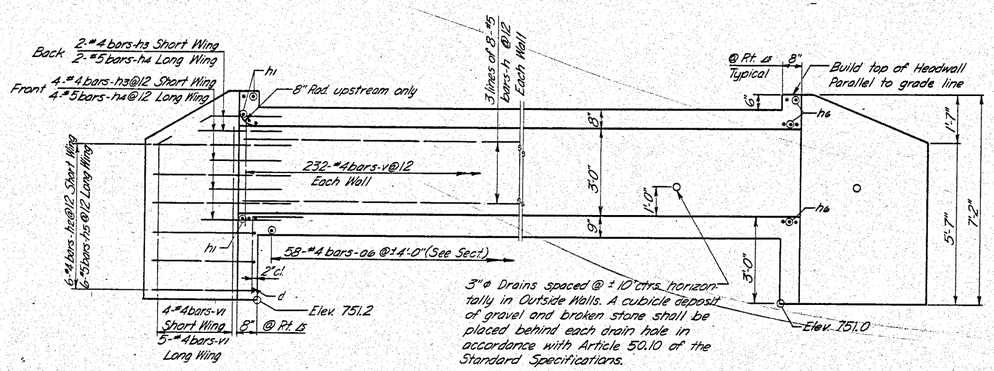



PLAN

(SHOWING TOP & BOTTOM SLAB REINFORCEMENT)

WINGWALL DIMENSIONS

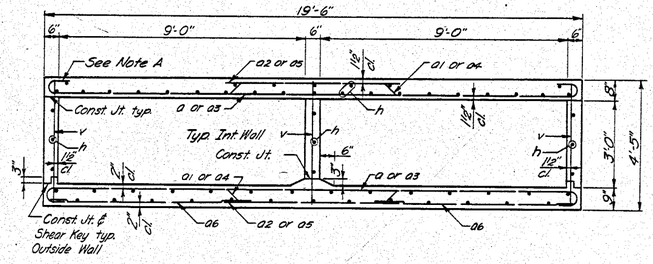
| WINGS | X | Y | Z | ∝ |
|---|---|---|---|---|
| S.W. | 4-1¼ | 3'-4¼ | 6'-0" | 34° |
| N.W. | 2'-7⅛ | 3'-1¼ | 4'-9" | 56° |
| N.E. | 4'-8 | 3'-9¼ | 6'-0" | 39° |
| S.E. | 2'-1⅛ | 3'-8¼ | 4'-9" | 51° |




LONGITUDINAL SECTION

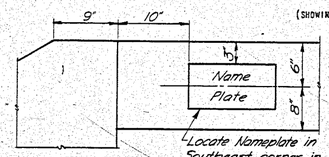
(SHOWING WINGWALLS & WALLS REINFORCEMENT)

Note A: Tilt hooks of bars a, a1, a3 & a4 if necessary for 1½" min. cl.

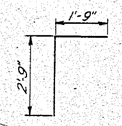



BILL OF MATERIAL

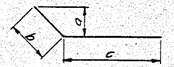
| BAR | NO. | SIZE | LENGTH | SHAPE |
|---|---|---|---|---|
| a | 338 | #6 | 20'-6" | |
| a1 | 338 | #6 | 20'-10" | |
| a2 | 338 | #7 | 6'-0" | |
| a3 | 137 | #5 | 20'-4" | |
| a4 | 110 | #5 | 20'-8" | |
| a5 | 134 | #6 | 6'-0" | |
| a6 | 116 | #4 | 7'-6" | |
| d | 38 | #4 | 4'-6" | |
| h | 496 | #5 | 30'-2" | |
| h1 | 8 | #6 | 20'-6" | |
| h2 | 12 | #4 | 6'-0" | |
| h3 | 12 | #4 | 5'-0" | |
| h4 | 12 | #5 | 5'-0" | |
| h5 | 12 | #5 | 7'-3" | |
| h6 | 8 | #6 | 19'-6" | |
| v | 696 | #4 | 4'-1" | |
| v1 | 18 | #4 | 6'-2" | |
| CLASS X CONCRETE | | CU. YDS. | 284 | |
| REINFORCEMENT BARS | | LBS. | 50609 | |
| NAME PLATES | | EACH | 1 | |




DETAIL A




BAR d




BARS h2 THRU h5

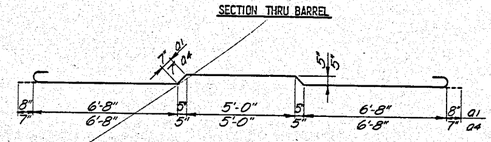
SEE TABLE A

NOTE: ADJUST THE BAR BENDS FOR BARS h2 THRU h5 IN FIELD TO FIT THE WINGWALL SKEW

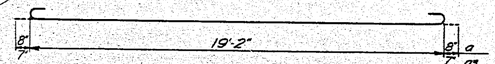
TABLE A

| BAR | A | B | C |
|---|---|---|---|
| h2 | 1'-2⅛ | 1'-6" | 4'-6" |
| h3 | 1'-2⅛ | 1'-6" | 3'-6" |
| h4 | 0'-10⅝ | 1'-6" | 3'-6" |
| h5 | 0'-10⅝ | 1'-6" | 5'-9" |

SECTION THRU BARREL




BARS a1 & a4




BARS a1 & a3

DESIGNED BY ELM | DRAWN BY BDS 1/63 | CHECKED BY CBP 1/63 | DATE | IN CHARGE MFT

**CULVERT DETAILS**

**F.A.I. RTE. 57 SEC. 10-348**
**CHAMPAIGN COUNTY**
**STA. 608+50.00**

BRIDGE DWG. 2 OF 2

JOB NO. 394-V19

# APPENDIX J
# TS&Ls

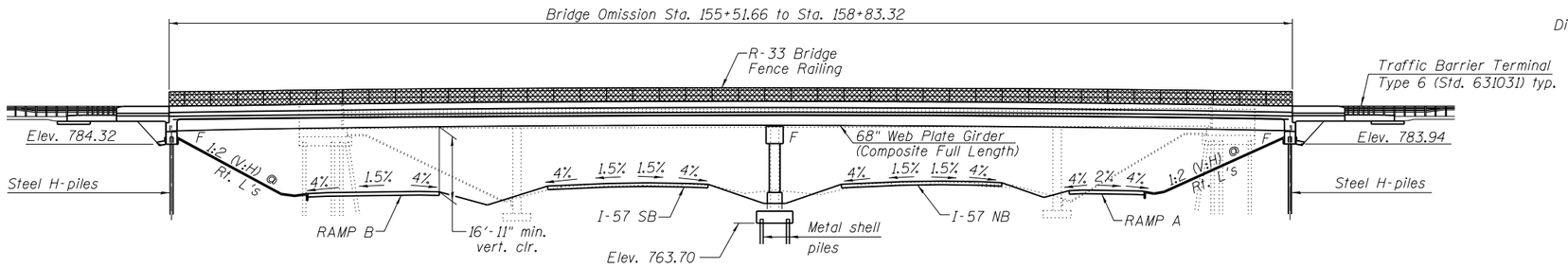
Bench Mark: Chisled "□" on the concrete foundation of the first light pole north of Bloomington Rd. (US 150) located on the west side of FAI 57, Sta. 583+73, 91' LT. Elev. 767.92.

Existing Structure: S.N. 010-0050 built 1964 as F.A.S. Route 719 (U.S. 150) Section (10-34HB)BR at Station 157+29.38. Existing structure is a four-span rolled steel beam structure with open stub abutments on concrete piles and single hammerhead reinforced concrete piers supported on spread footings. In 2000, the structure was widened, the deck replaced, and the existing abutments and piers were widened. 258'-6" back-to-back abutments. 42'-7 3/4" out-to-out deck. Structure to be removed and replaced using stage construction.

## HIGHWAY CLASSIFICATION

F.A.P. 719 (U.S. 150)
Functional Class: Other Principal Arterial
ADT: 7,450 (2013); 12,100 (2040)
ADTT: 825 (2013); 1,016 (2040)
DHV: 1,040 (2040)
Design Speed: 50 m.p.h.
Posted Speed: 50 m.p.h.
2-Way Traffic
Directional Distribution: 50:50

F.A.I. 57
Functional Class: Interstate
ADT: 32,400 (2013); 49,900 (2040)
ADTT: 9,450 (2013); 14,170 (2040)
DHV: 3,640 (2040)
Design Speed: 75 m.p.h.
Posted Speed: 70 m.p.h.
2-Way Traffic
Directional Distribution: 50:50




ELEVATION

## DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

## LOADING HL-93

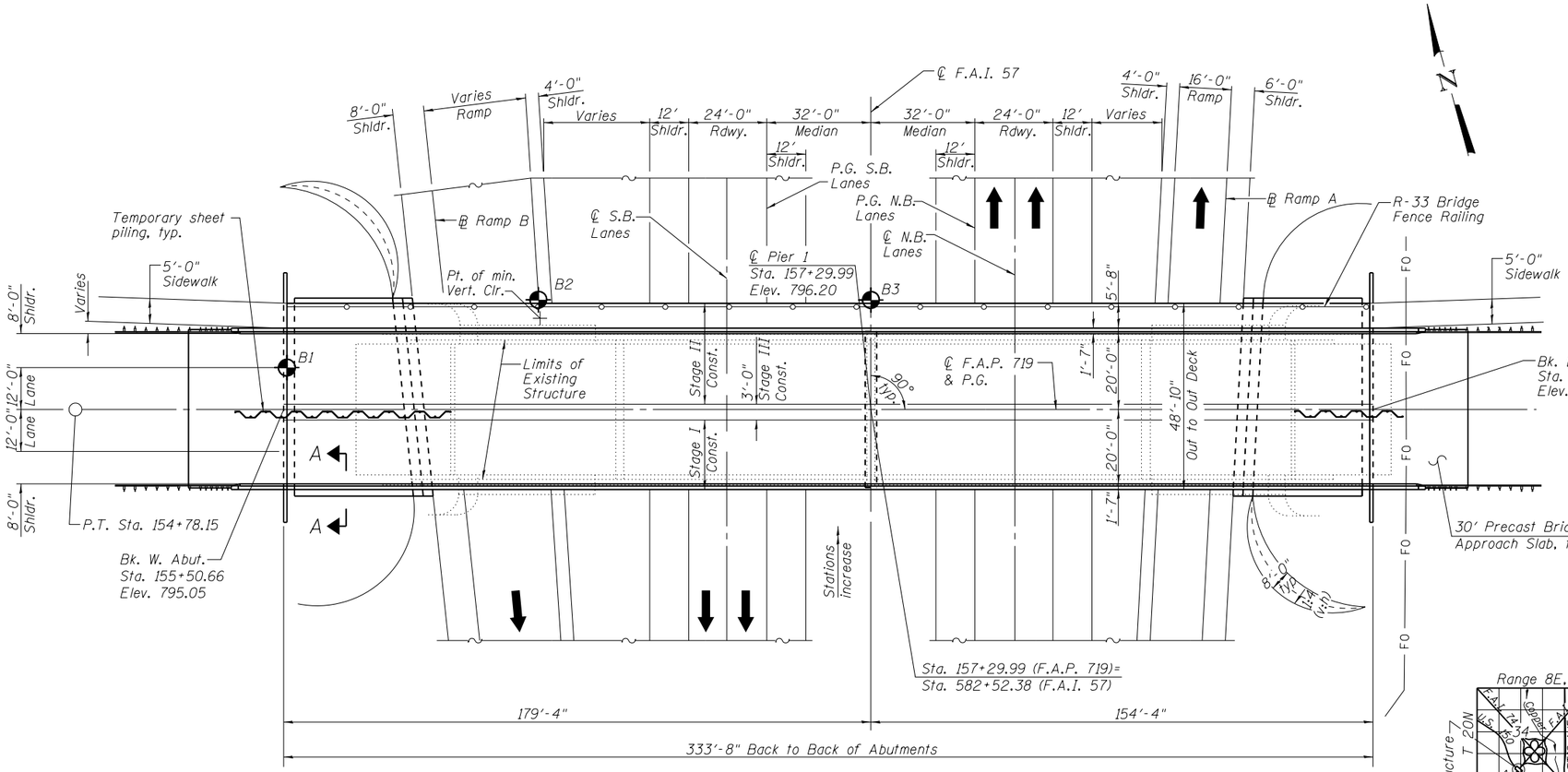
Allow 50#/sq. ft. for future wearing surface.

## SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. ($S_{D1}$) = 0.234g
Design Spectral Acceleration at 0.2 sec. ($S_{DS}$) = 0.135g
Soil Site Class = D

## DESIGN SPECIFICATIONS

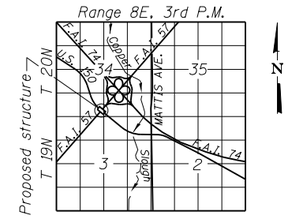
2014 AASHTO LRFD Bridge Design Specifications, 7th Edition




PLAN

## F.A.P. 719 CURVE DATA

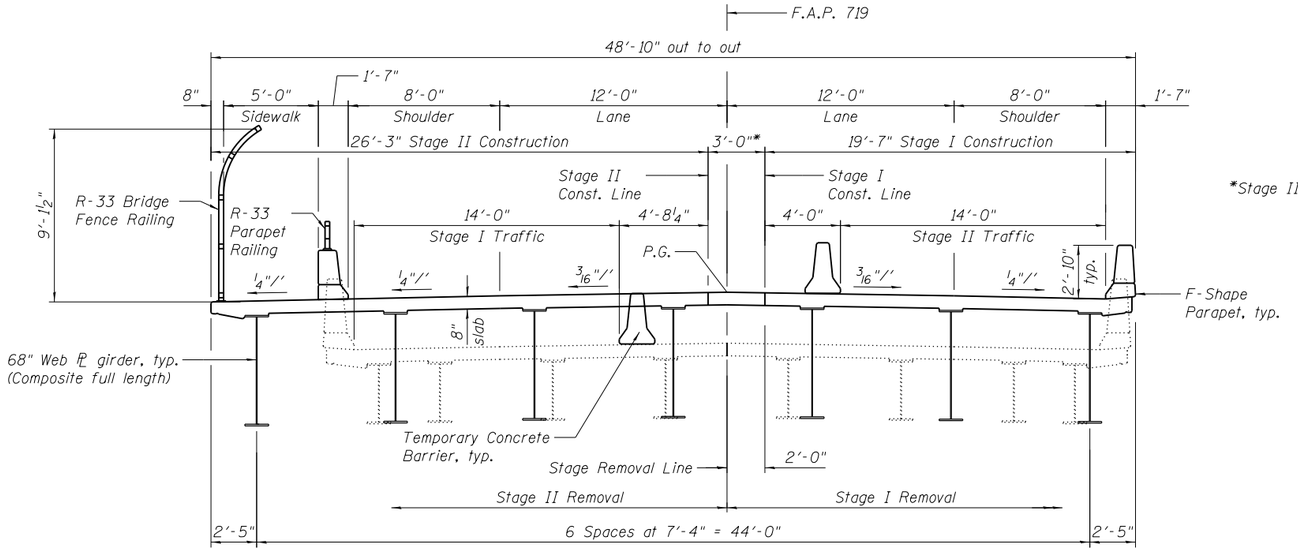
PI STA. = 149+64.98
Δ = 35° 19' 30" (LT)
D = 3° 19' 43"
R = 1,721.38'
T = 548.12'
L = 1,061.30'
E = 85.16'
e = 3.21%
T.R. = 38'
S.E. RUN = 77'
P.C. STA. = 144+16.86
P.T. STA. = 154+78.15
S.E. Removed from Sta. 154+35.00 to Sta. 155+50




LOCATION SKETCH

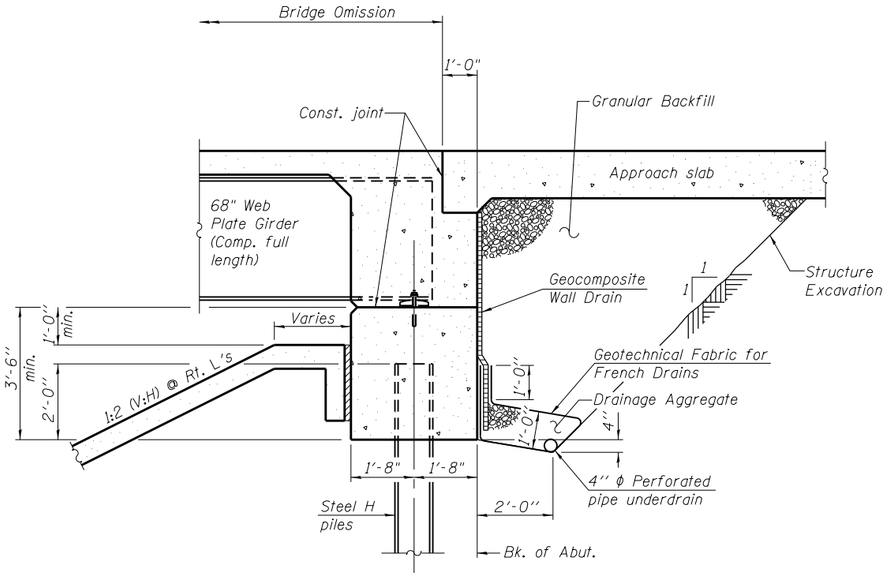
# GENERAL PLAN & ELEVATION
# U.S. 150 (BLOOMINGTON RD.) OVER F.A.I. 57
# F.A.P. RT 719 - SECTION 10(5-1RS-1,14-1,6)R
# CHAMPAIGN COUNTY
# STATION 157+29.99
# STRUCTURE NO. 010-1050

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FILE NAME = D570897-TSL.150 over 157.dgn | USER NAME = | DESIGNED - BWP | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | | F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| BFW BACON \| FARMER \| WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.3190 | | CHECKED - RSB | REVISED - | | | 719 | (10(5-1-RS-1,14-1,6)R | CHAMPAIGN | | |
| | PLOT SCALE = | DRAWN - BJV | REVISED - | | | | | | CONTRACT NO. 70897 | |
| | PLOT DATE = 4/1/2015 | CHECKED - RSB | REVISED - | | SHEET NO. 1 OF 2 SHEETS | | | ILLINOIS | FED. AID PROJECT | |

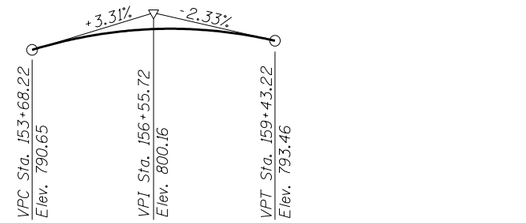



*Stage III Construction

## CROSS SECTION
(Looking East)

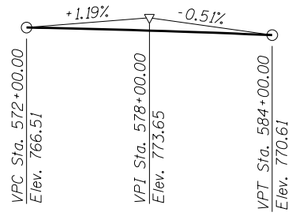



## SECTION THRU INTEGRAL ABUTMENT
(Horizontal Dimensions @ Rt. L's)



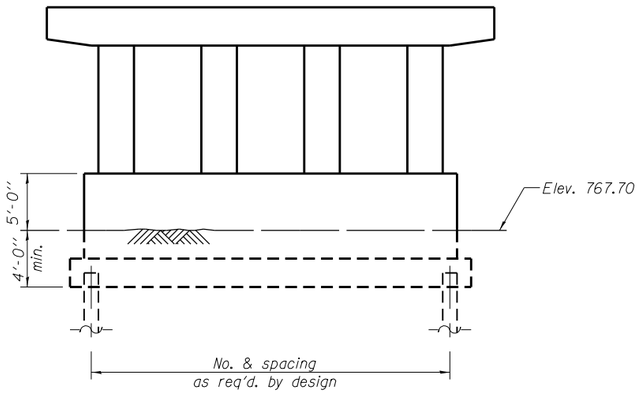

LVC = 575'

## PROFILE GRADE F.A.P. 719
(along ℄ roadway)

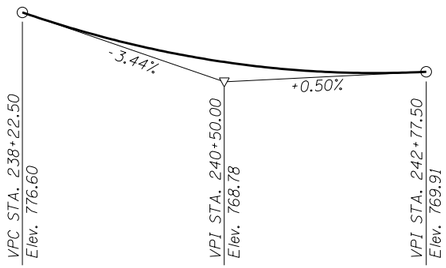



LVC = 1,200'

## PROFILE GRADE F.A.I. 57
(along ℄ roadway)

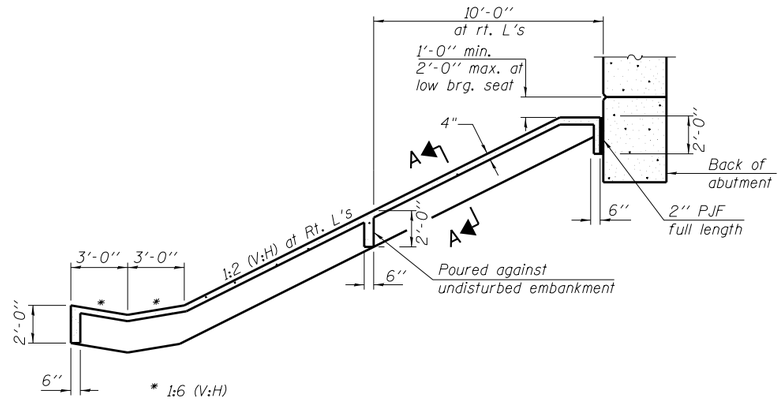



## PIER SKETCH

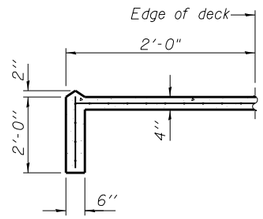



LVC = 455'

## PROFILE GRADE RAMP B
(along ℄ roadway)




## SECTION THRU
## CONCRETE SLOPEWALL




## SECTION A-A

# STAGING & DETAILS
# U.S. 150 (BLOOMINGTON RD.) OVER F.A.I. 57
# F.A.P. RT. 719 - SECTION 10(5-1-RS-1,14-1,6)R
# CHAMPAIGN COUNTY
# STATION 157+29.99
# STRUCTURE NO. 010-1050

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FILE NAME = D570897-TSL_150 over 157.dgn | USER NAME = | DESIGNED - BWP | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | | | |
| BACON \| FARMER \| WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9190 | | CHECKED - RSB | REVISED - | | | | |
| | PLOT SCALE = | DRAWN - BJV | REVISED - | | | | |
| | PLOT DATE = 4/1/2015 | CHECKED - RSB | REVISED - | | SHEET NO. 2 OF 2 SHEETS | | |

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 719 | (10(5-1-RS-1,14-1,6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | | ILLINOIS FED. AID PROJECT | | |

Bench Mark: Chisled "□" on crash wall at the east end of Pier 1 of SN 010-0100. Elev. 772.23.

Existing Structure: S.N. 010-0100 built 1965 as F.A.U. 7158 (Mattis Ave.). Section 10-34HB-3 at Station 24+90.58. The existing structure consists of a four span steel wide flange beam bridge supported by open stub abutments on concrete piles and multi-column reinforced concrete piers. 332'-4" back-to-back abutments. 33'-8" out-to-out deck. Structure to be removed and replaced using stage construction.

No Salvage

## HIGHWAY CLASSIFICATION

F.A.U. 7158 - Mattis Avenue
Functional Class: Minor Arterial
ADT: 5,800 (2013); 6,700 (2040)
ADTT: 476 (2013); 550 (2040)
DHV: 701 (2040)
Design Speed: 45 m.p.h.
Posted Speed: 45 m.p.h.
2 -Way Traffic
Directional Distribution: 50:50

F.A.I. 57
Functional Class: Interstate
ADT: 22,200 (2013); 33,400 (2040)
ADTT: 5,775 (2013); 9,420 (2040)
DHV: 2,250 (2040)
Design Speed: 75 m.p.h.
Posted Speed: 70 m.p.h.
2-Way Traffic
Directional Distribution: 50:50

## DESIGN STRESSES

### FIELD UNITS

f'c = 3,500 psi
f'c = 4,000 psi (superstructure concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

## LOADING HL-93

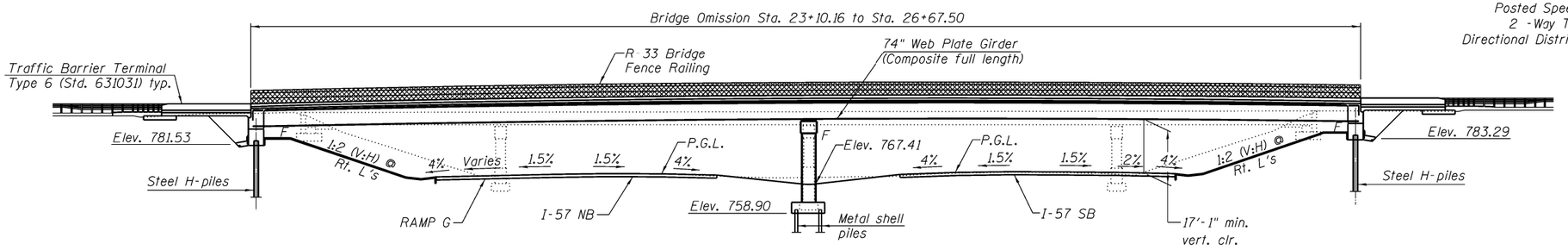
Allow 50#/sq. ft. for future wearing surface.

## SEISMIC DATA

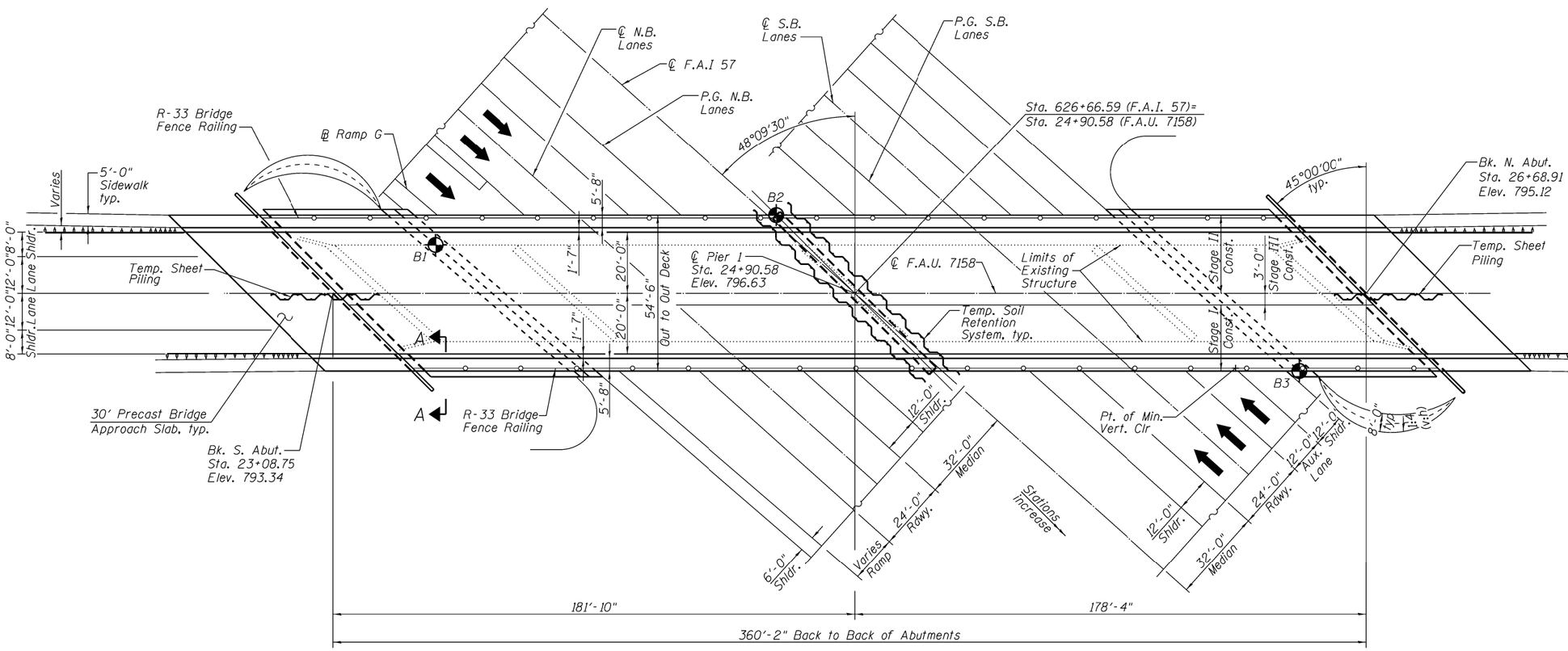
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. ($S_{D1}$) = 0.234 g
Design Spectral Acceleration at 0.2 sec. ($S_{DS}$) = 0.135 g
Soil Site Class = D

## DESIGN SPECIFICATIONS

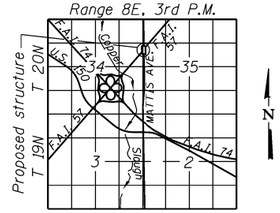
2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 Interims.




## ELEVATION




## PLAN




## LOCATION SKETCH

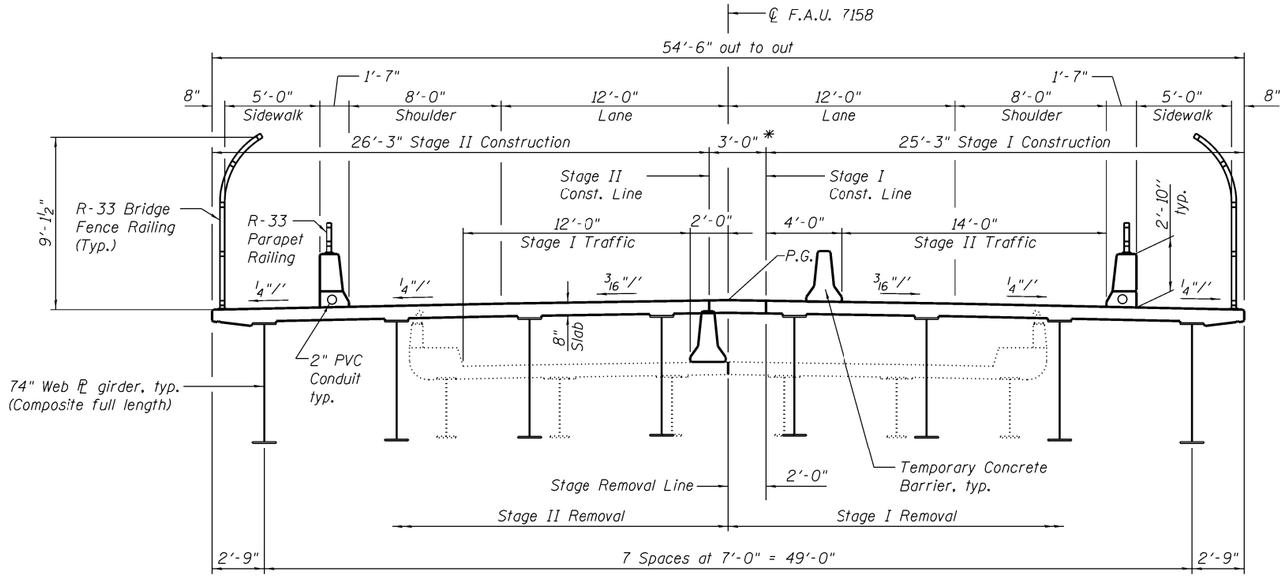
# GENERAL PLAN & ELEVATION
# MATTIS AVE. OVER F.A.I. 57
# F.A.U. 7158-SECTION 10(5-1-RS-1,14-1,6)R
# CHAMPAIGN COUNTY
# STATION 24+90.58
# STRUCTURE NO. 010-1100

| | | | |
|---|---|---|---|
| FILE NAME = D570897-TSL.Mattis over 157.dgn | USER NAME = | DESIGNED - BWP | REVISED - |
| BACON \| FARMER \| WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.9190 | | CHECKED - RSB | REVISED - |
| | PLOT SCALE = | DRAWN - BJV | REVISED - |
| | PLOT DATE = 5/4/2015 | CHECKED - RSB | REVISED - |

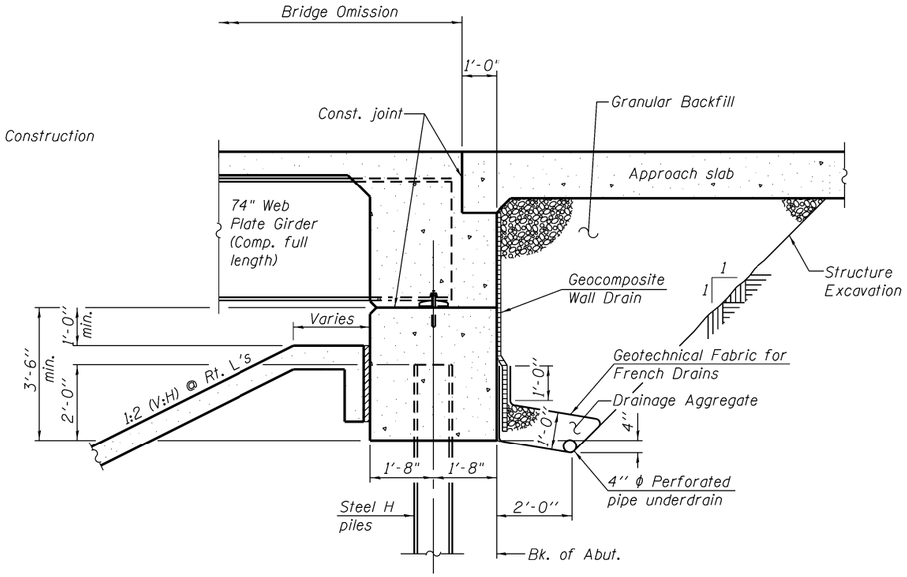
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

SHEET NO. 1 OF 2 SHEETS

| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 7158 | 10-34HB-3 | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |



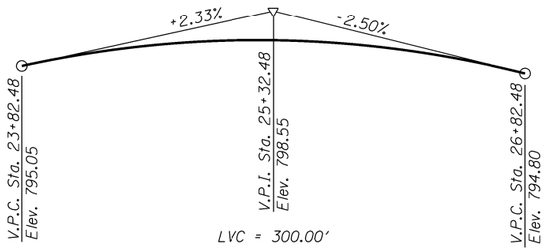

## CROSS SECTION
(Looking North)




## SECTION THRU INTEGRAL ABUTMENT
(Horizontal Dimensions @ Rt. L's)



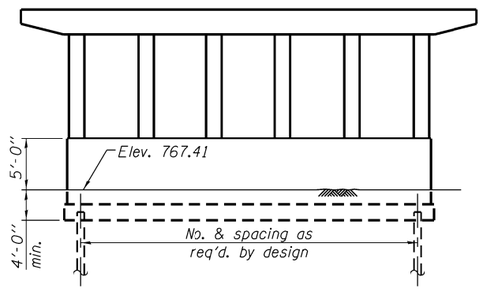

## PROFILE GRADE F.A.I. 57
(along ℄ roadway)



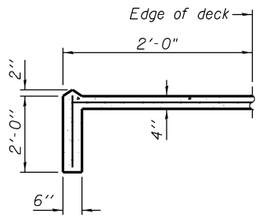

## PROFILE GRADE F.A.U. 7158 (MATTIS AVE.)
(along ℄ roadway)




## SECTION THRU CONCRETE SLOPEWALL




## PIER SKETCH




## SECTION A-A

# STAGING & DETAILS
# MATTIS AVE. OVER F.A.I. 57
# F.A.U. 7158-SECTION 10(5-1-RS-1,14-1,6)R
# CHAMPAIGN COUNTY
# STATION 24+90.58
# STRUCTURE NO. 010-1100

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FILE NAME = D570897-TSL_Mattis over 157.dgn | USER NAME = | DESIGNED - BWP | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | | | |
| BFW BACON \| FARMER \| WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE - 618.997.3190 | | CHECKED - RSB | REVISED - | | | | |
| | PLOT SCALE = | DRAWN - BJV | REVISED - | | | | |
| | PLOT DATE = 5/4/2015 | CHECKED - RSB | REVISED - | | SHEET NO. 2 OF 2 SHEETS | | |

| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 7158 | 10-34HB-3 | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | | ILLINOIS FED. AID PROJECT | | |

Bench Mark: Chiseled "□" on the north side of the south leg of the interstate sign foundation located on the south side of F.A.I. 74, Sta. 1093+41, 93' RT. Elev. 757.45.

Existing Structure: S.N. 010-0270 built 1992 as F.A.U. 7158 (Mattis Ave.), Section (10-5-1 HB)BR at Station 19+01.76. Structure is a two-span 48" web steel plate girder bridge supported by open stub abutments on concrete piles and multi-column reinforced concrete piers on spread footings. 249'-10 3/4" back-to-back abutments. 71'-7" out-to-out deck. Structure to be removed and replaced using stage construction.

No Salvage.

## HIGHWAY CLASSIFICATION

| F.A.U. 7158 (Mattis Ave.) | F.A.I. 74 |
|---|---|
| Functional Class: Minor Arterial | Functional Class: Interstate |
| ADT: 16,000 (2013); 18,700 (2040) | ADT: 38,900 (2013); 59,900 (2040) |
| ADTT: 800 (2013); 935 (2040) | ADTT: 7,350 (2013); 13,720 (2040) |
| DHV: 1,760 (2040) | DHV: 4,930 (2040) |
| Design Speed: 45 m.p.h. | Design Speed: 75 m.p.h. |
| Posted Speed: 40 m.p.h. | Posted Speed: 70 m.p.h. |
| 2 -Way Traffic | 2 -Way Traffic |
| Directional Distribution: 50:50 | Directional Distribution: 50:50 |

## DESIGN STRESSES

### FIELD UNITS

f'c = 3,500 psi
f'c = 4,000 psi (Superstructure concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

## LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

## SEISMIC DATA

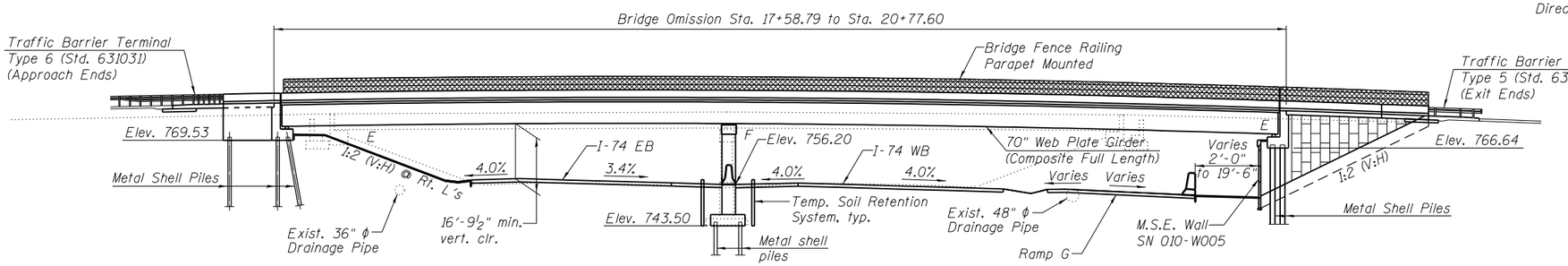
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. ($S_{D1}$) = 0.234 g
Design Spectral Acceleration at 0.2 sec. ($S_{DS}$) = 0.135 g
Soil Site Class = D

## DESIGN SPECIFICATIONS

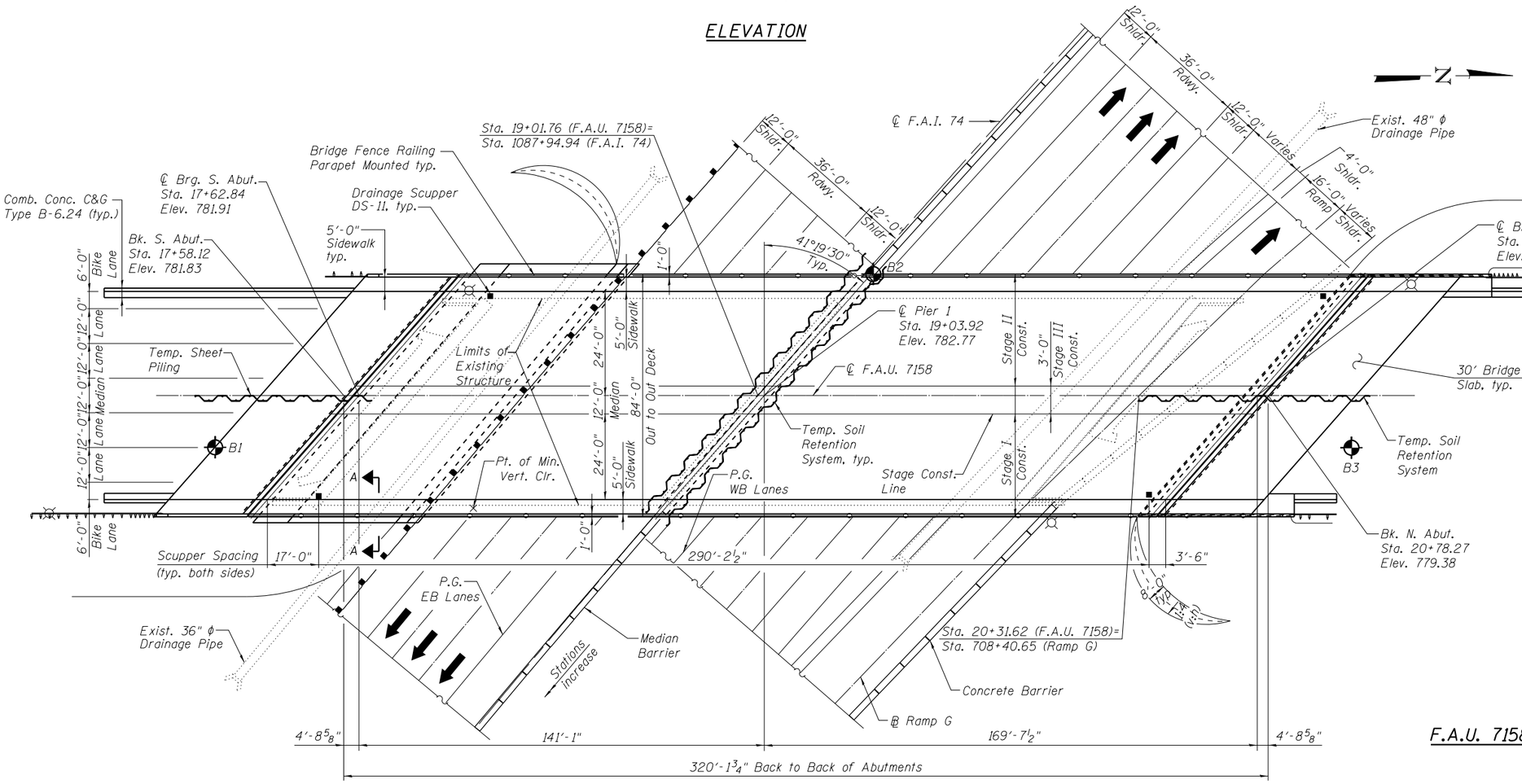
2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 Interims.

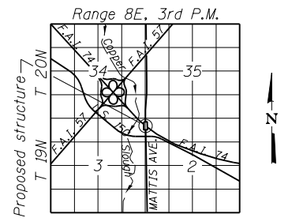
⌧ Existing Light Pole to be removed.

## ELEVATION




## PLAN



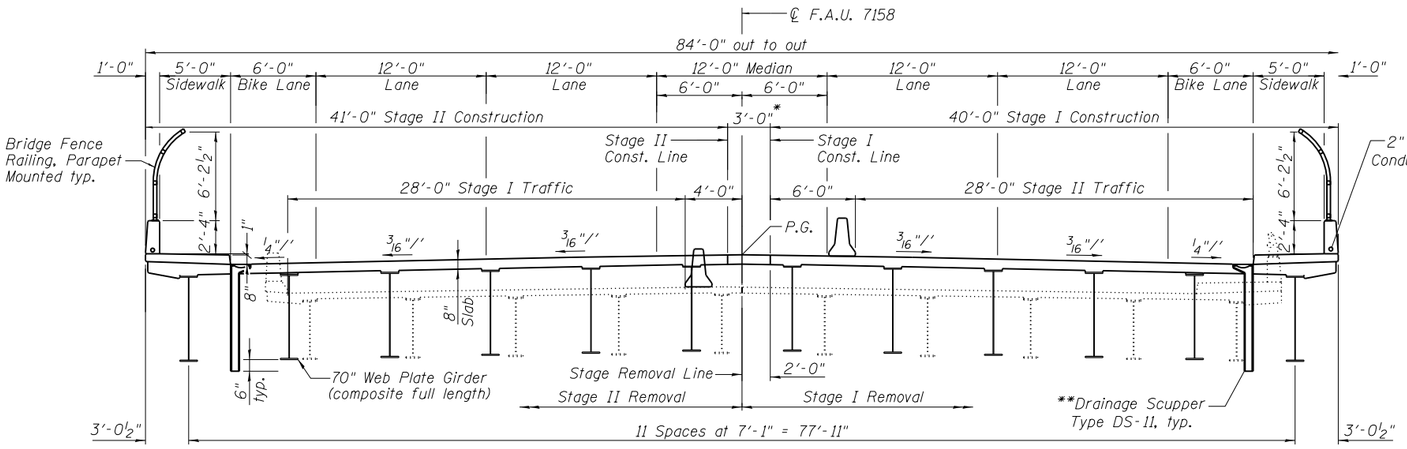




LOCATION SKETCH

# GENERAL PLAN
# MATTIS AVE. OVER F.A.I. 74
# F.A.U. 7158-SECTION (10-34)BR, BR-1 & (10-5-1)BR-1
# CHAMPAIGN COUNTY
# STATION 19+01.76
# STRUCTURE NO. 010-1270

*(10-34)BR, BR-1 & (10-5-1)BR-1

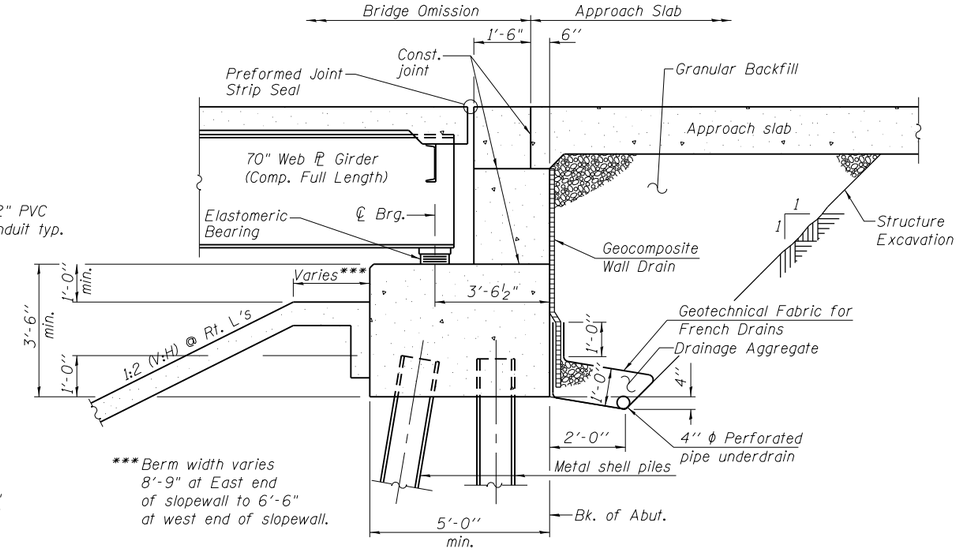
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FILE NAME = 0101270-70B38-TSL-001.dgn | USER NAME = | DESIGNED - BWP | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | | F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| BFW BACON \| FARMER \| WORKMAN ENGINEERING & TESTING, INC. 603 NORTH COURT STREET MAHOMET, ILLINOIS 61853 PHONE - 618.967.9190 | | CHECKED - RSB | REVISED - | | | 7158 | * | CHAMPAIGN | 3 | 1 |
| | PLOT SCALE = | DRAWN - BJV | REVISED - | | | | | | CONTRACT NO. 70B38 | |
| | PLOT DATE = 6/11/2015 | CHECKED - BWP | REVISED - | | SHEET NO. 1 OF 3 SHEETS | | | ILLINOIS | FED. AID PROJECT | |




## CROSS SECTION
(Looking North)

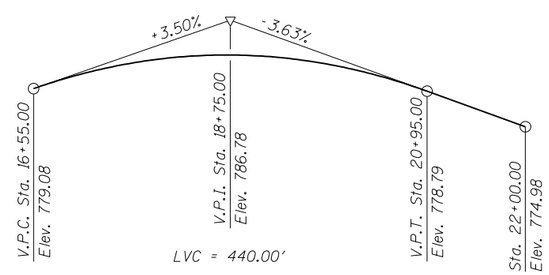
* Stage III Construction

** Drainage Scuppers at north end of bridge shall be attached to a closed drainage system.

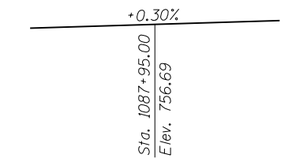



*** Berm width varies 8'-9" at East end of slopewall to 6'-6" at west end of slopewall.

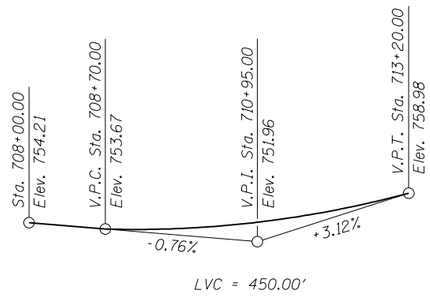
## SECTION THRU SOUTH ABUTMENT
(Horiz. dim. @ Rt. L's)



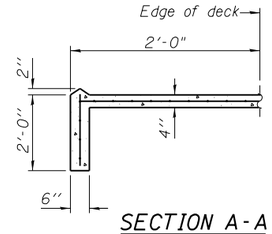

## PROFILE GRADE F.A.U. 7158 (MATTIS AVE.)
(along ℄ roadway)



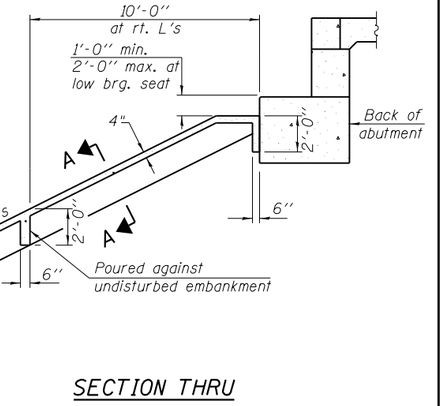

## PROFILE GRADE F.A.I. 74
(along PG EB & WB I-74)



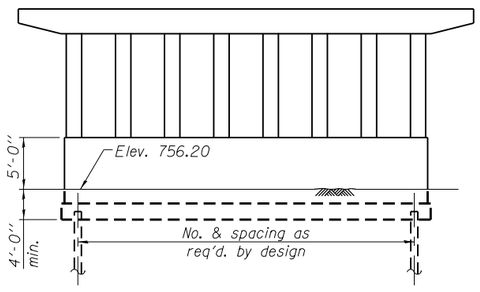

## PROFILE GRADE RAMP G
(along ℄ Roadway)




## SECTION A-A




## SECTION THRU CONCRETE SLOPEWALL




## PIER SKETCH

## EXIST. CURVE F.A.I. 74-1

PI STA. = 1088+67.30
Δ = 18° 37' 57" (LT)
D = 0° 48' 50"
R = 7,040.65'
T = 1,155.00'
L = 2,289.60'
E = 94.11'
e = 3.4%
T.R. = N/A
S.E. RUN = 215'
P.C. STA. = 1077+12.30
P.C.C. STA. = 1100+01.90

## PROP. CURVE RAMP G-1

PI STA. = 709+83.61
Δ = 16° 53' 10" (RT)
D = 4° 35' 01"
R = 1,250.00'
T = 185.54'
L = 368.40'
E = 13.70'
e = 7.6%
T.R. = N/A
S.E. RUN = 260'
P.C. STA. = 707+98.07
P.T. STA. = 711+66.47
ATTAIN S.E. (EXIT TERMINAL):
STA. 707+44.91 (+4.0% MATCH M.L.)
STA. 708+68.07 (+7.6% S.E. @ D-D)

## PROP. MEDIAN TRANSITION (W.B. LANES)

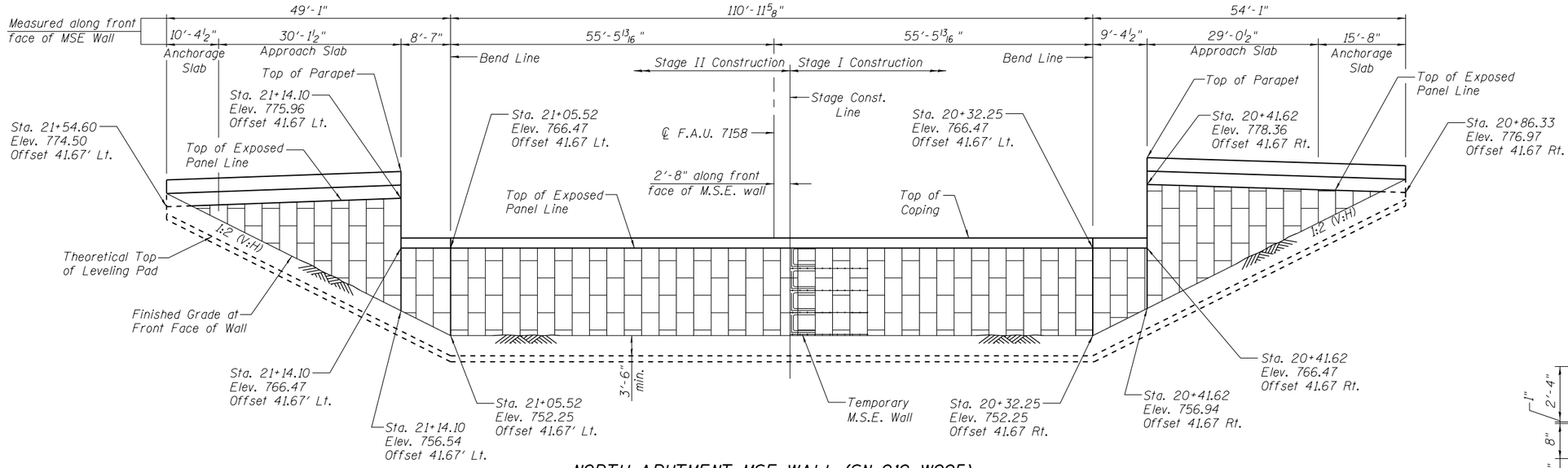
R = 5,950.00' (INSIDE E.O.P.)
e = 4.0%
T.R. = 125'
S.E. RUN = 250'
P.C. STA. = 1079+51.02
P.C.C. STA. = 1092+77.27

# STAGING & DETAILS
# MATTIS AVE. OVER F.A.I. 74
# F.A.U. 7158-SECTION (10-34)BR, BR-1 & (10-5-1)BR-1
# CHAMPAIGN COUNTY
# STATION 19+01.76
# STRUCTURE NO. 010-1270

*(10-34)BR, BR-1 & (10-5-1)BR-1

| | | | | | |
|---|---|---|---|---|---|
| FILE NAME = 0101270-70B38-TSL-002.dgn | USER NAME = | DESIGNED - BWP | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | |
| BACON \| FARMER \| WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE 618.997.9700 | | CHECKED - RSB | REVISED - | | |
| | PLOT SCALE = | DRAWN - BJV | REVISED - | | |
| | PLOT DATE = 6/11/2015 | CHECKED - BWP | REVISED - | | SHEET NO. 2 OF 3 SHEETS |

| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 7158 | * | CHAMPAIGN | 3 | 2 |
| | | CONTRACT NO. 70B38 | | |
| | | ILLINOIS FED. AID PROJECT | | |

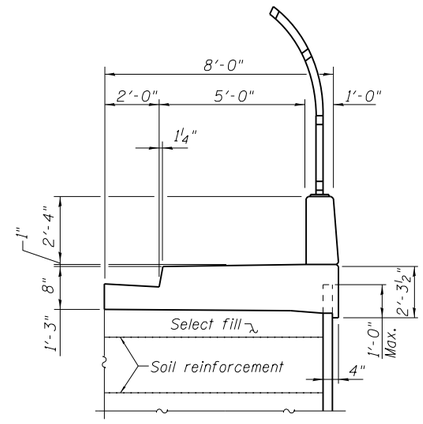



## NORTH ABUTMENT MSE WALL (SN 010-W005)

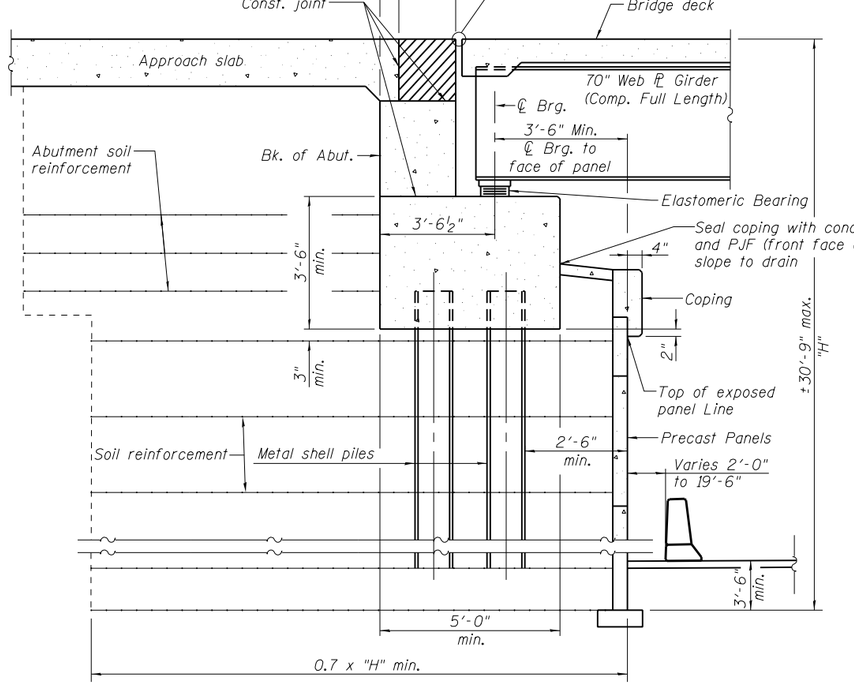
(Unfolded Elevation)

**NOTE:**

*Wall offsets are measured to the front face of the precast panels.*

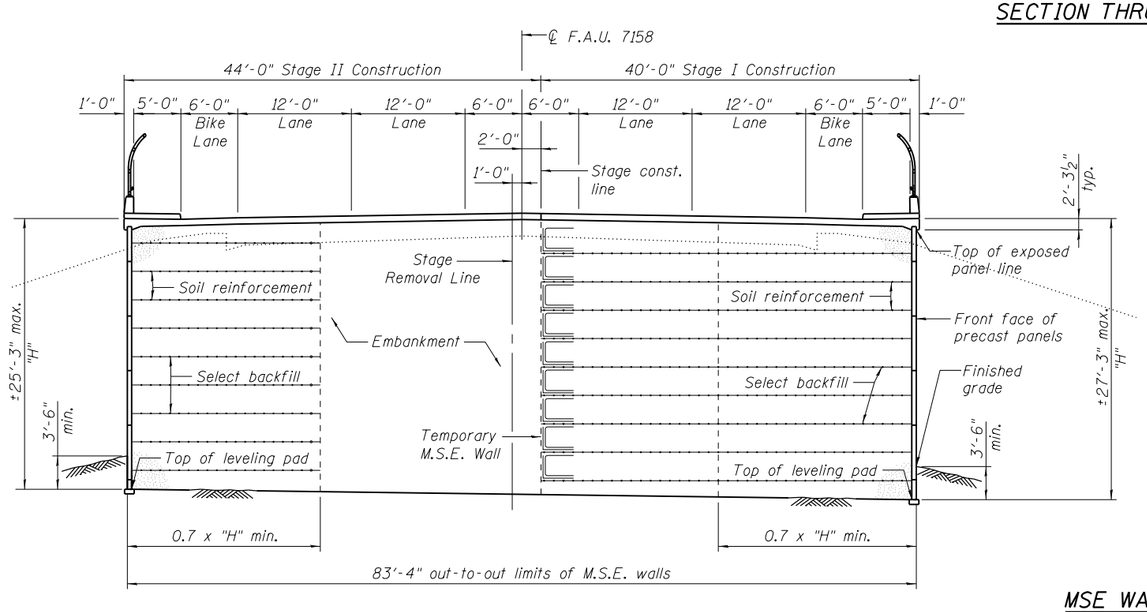



## SECTION THRU ANCHORAGE SLAB




## SECTION THRU NORTH ABUTMENT

(Horiz. dim. ℄ Rt. L's)




## SECTION THRU MSE WALL AT APPROACHES

(Looking North)

# MSE WALL
# MATTIS AVE. OVER F.A.I. 74
# F.A.U. 7158-SECTION (10-34)BR, BR-1 & (10-5-1)BR-1
# CHAMPAIGN COUNTY
# STATION 19+01.76
# STRUCTURE NO. 010-1270

*(10-34)BR, BR-1 & (10-5-1)BR-1

| | | | |
|---|---|---|---|
| FILE NAME = 0101270-70B38-TSL-003.dgn | USER NAME = | DESIGNED - BWP | REVISED - |
| BACON \| FARMER \| WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARION, ILLINOIS 62959 PHONE: 618.997.3190 | | CHECKED - RSB | REVISED - |
| | PLOT SCALE = | DRAWN - BJV | REVISED - |
| | PLOT DATE = 6/11/2015 | CHECKED - BWP | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

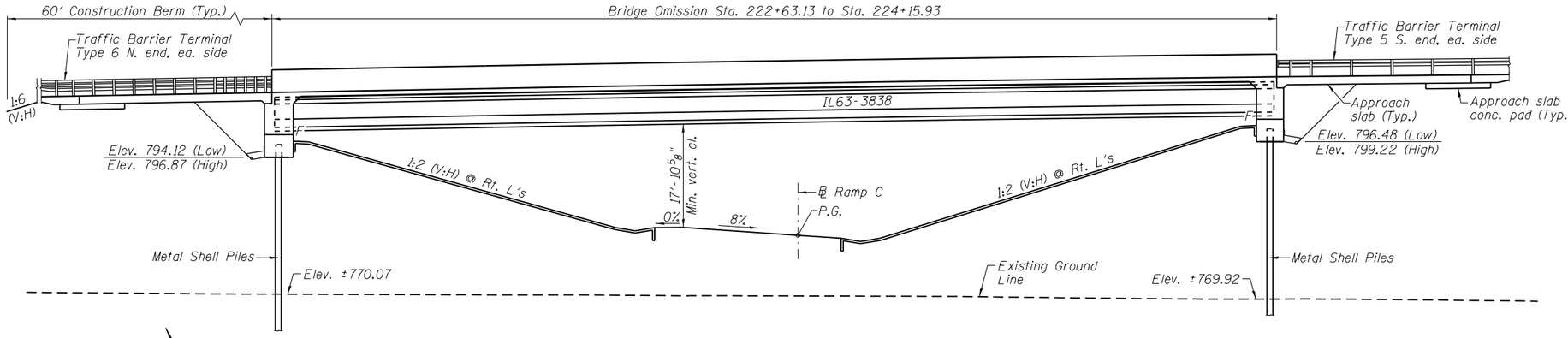
SHEET NO. 3 OF 3 SHEETS

| F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 7158 | * | CHAMPAIGN | 3 | 3 |
| | | CONTRACT NO. 70B38 | | |
| | ILLINOIS | FED. AID PROJECT | | |

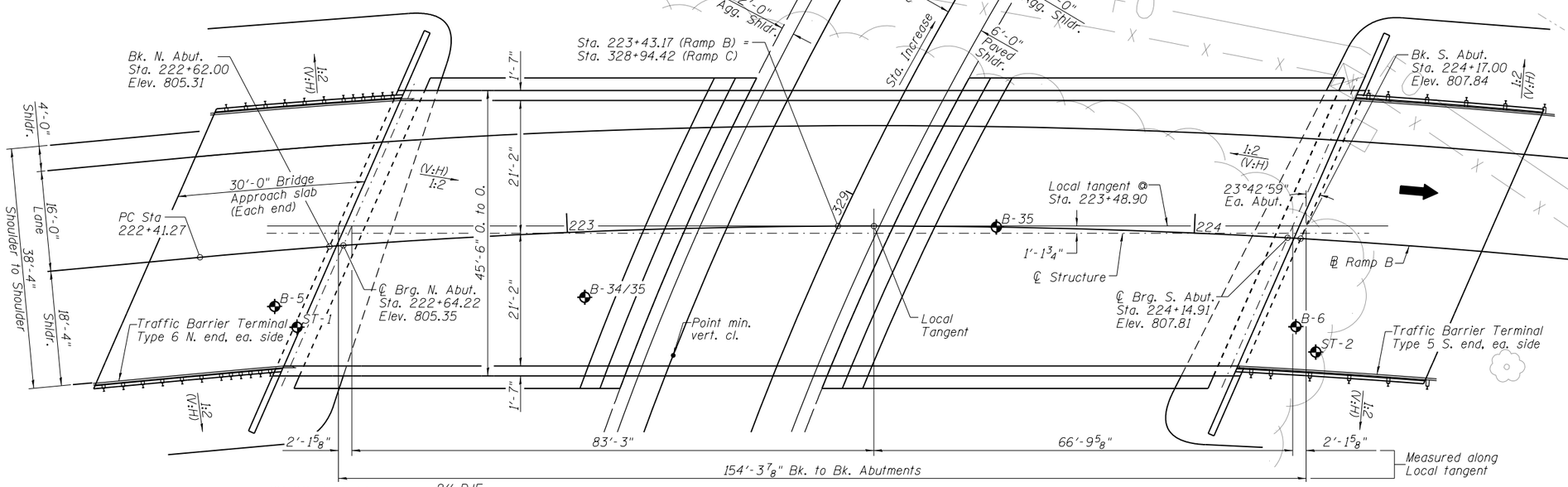
Bench Mark: Chiseled "□" on top of S.W. corner of SW parapet wall of I-74 west bound bridge over FAI 57. Sta. 1059+99.73, -12.54'.

Existing Structure: None

No Salvage

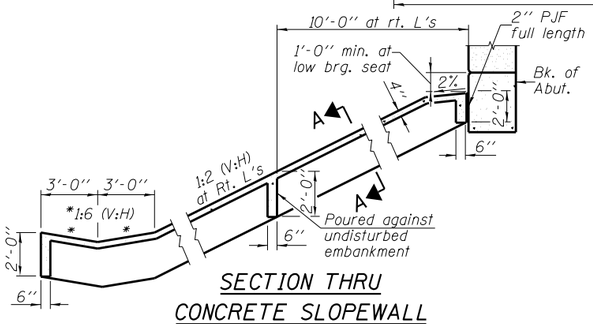



## ELEVATION

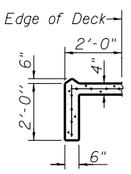



## PLAN

◆ Boring Location




## SECTION THRU CONCRETE SLOPEWALL




## SECTION A-A

## DESIGN STRESSES

### FIELD UNITS

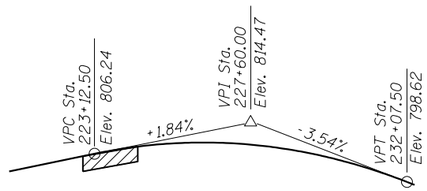
f'c = 3,500 psi (Cast-in-Place)
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)

### PRECAST PRESTRESSED UNITS

f'c = 8,500 psi
fci = 7,000 psi
fpu = 270,000 psi (½" ϕ low lax strands)
fpbt = 201,960 psi (½" ϕ low lax strands)

## SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec (SD1) = 0.135g
Design Spectral Acceleration at 0.2 sec (SDS) = 0.233g
Soil Site Class = D

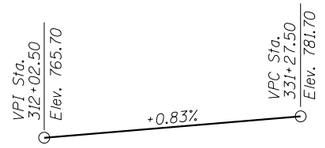



## PROFILE GRADE RAMP B

(Along ℄ Roadway)

## PROPOSED RAMP B CURVE DATA

| | |
|---|---|
| P.I. Sta. = 230+56.25 | L = 1,420.88' |
| △ = 70°-10'-53" (Rt.) | E = 257.67' |
| D = 4°-56'-21" | S.E. = 7.8% |
| R = 1,160.00' | P.C. Sta. = 222+41.27 |
| T = 814.98' | P.T. Sta. = 236+62.15 |




## PROFILE GRADE RAMP C

(Along ℄ Roadway)

## PROPOSED RAMP C CURVE DATA

| | |
|---|---|
| P.I. Sta. = 330+93.16 | L = 1,041.65' |
| △ = 124°-20'-18" (Rt.) | E = 548.14' |
| D = 11°-56'-12" | S.E. = 8.0% |
| R = 480.00' | P.C.C. Sta. = 321+83.95 |
| T = 909.21' | P.C.C. Sta. = 332+25.60 |

## HIGHWAY CLASSIFICATION

FAI 57/74 -Ramp B
Functional Class: Interstate Ramp
ADT: 2,800 (2013); 4,550 (2040)
ADTT: 795 (2013); 1,292 (2040)
DHV: 320
Design Speed: 55 m.p.h.
Posted Speed: 55 m.p.h.
One-Way Traffic
Directional Distribution: 100% EB

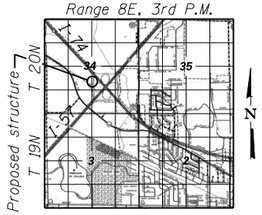
FAI 57/74 -Ramp C
Functional Class: Interstate Ramp
ADT: 2,100 (2013); 2,650 (2040)
ADTT: 376 (2013); 474 (2040)
DHV: 215
Design Speed: 40 m.p.h.
Posted Speed: 40 m.p.h.
One-Way Traffic
Directional Distribution: 100% SB

## DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Specifications, 7th Edition w/2015 Interims

## LOADING HL-93

Allow 50 psf for future wearing surface




## LOCATION SKETCH

# GENERAL PLAN
# RAMP B OVER RAMP C
# F.A.I. RTE. 57/74
# SECTION 10 (5-1-RS-1, 14-1,6) R
# CHAMPAIGN COUNTY
# STATION 223+43.16
# STRUCTURE NO. 010-1005

L:\IDOT\1106602\Draw\CADD_Sheets\Structural Sheets\TSLs\...

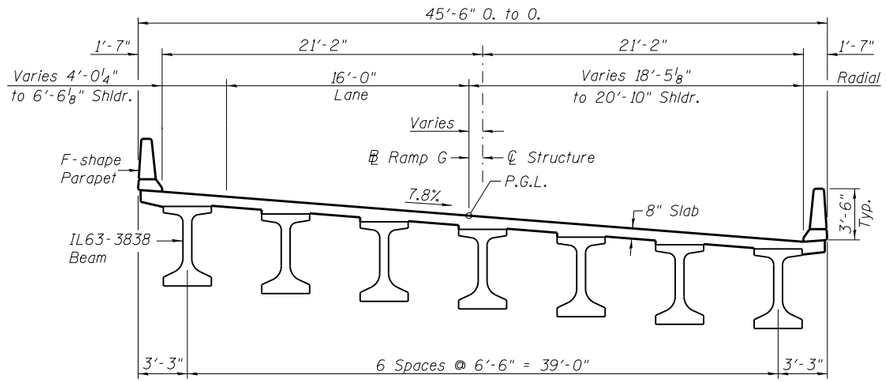
CMT

| | | | |
|---|---|---|---|
| USER NAME = Brad Downen | DESIGNED M. LACHECKI | REVISED | |
| ...\D570897-TSL-(1)_Ramp B over C-3.dgn | CHECKED W. BAILEY | REVISED | |
| PLOT SCALE = | DRAWN G. DAVIS | REVISED | |
| PLOT DATE = | CHECKED M. LACHECKI | REVISED | |

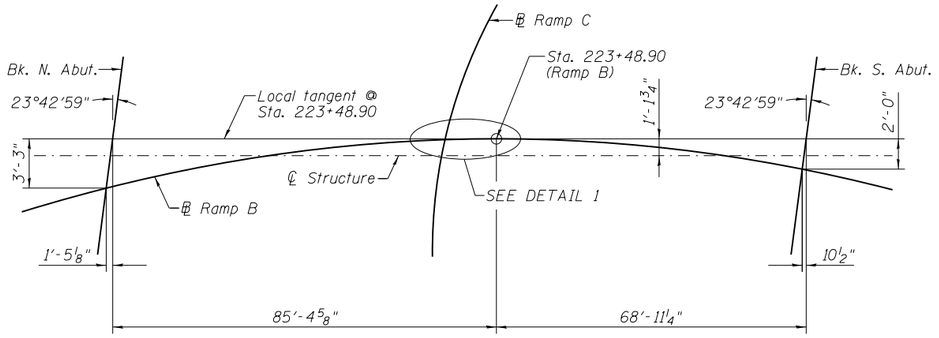
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

SHEET NO. 1 OF 2 SHEETS

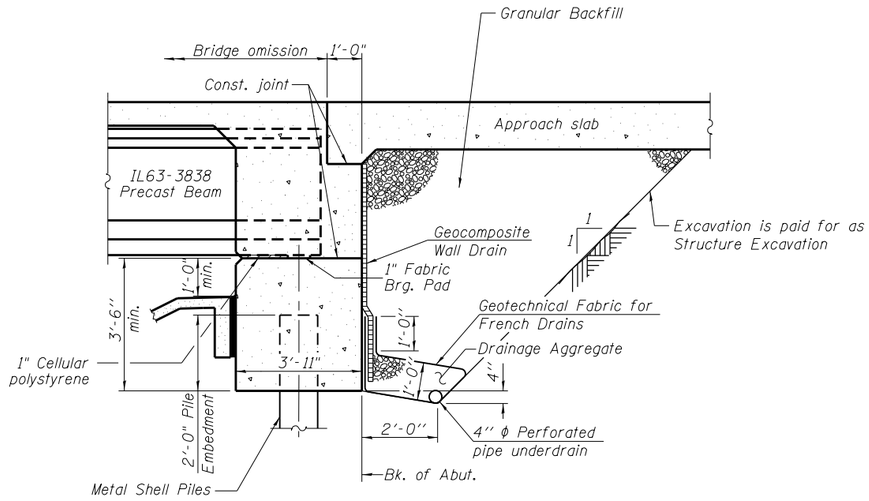
| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |



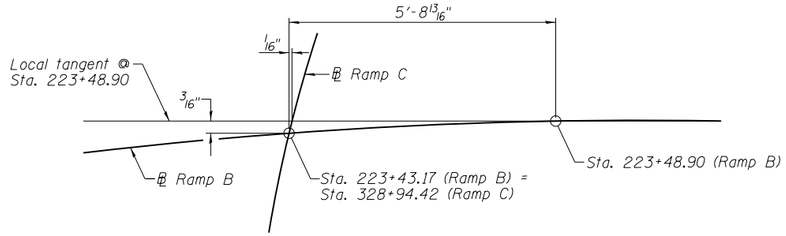

## CROSS SECTION
(Looking South)




## OFFSET SKETCH




## SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)




## DETAIL 1

L:\IDOT\108682\Draw\CADD Sheets\Structural Sheets\TSLs\...

| | | | |
|---|---|---|---|
| USER NAME = Brad Downen | DESIGNED M. LACHECKI | REVISED | |
| ...\D570897-TSL-(2),Ramp B over C-3.dgn | CHECKED W. BAILEY | REVISED | |
| PLOT SCALE = | DRAWN G. DAVIS | REVISED | |
| PLOT DATE = | CHECKED M. LACHECKI | REVISED | |

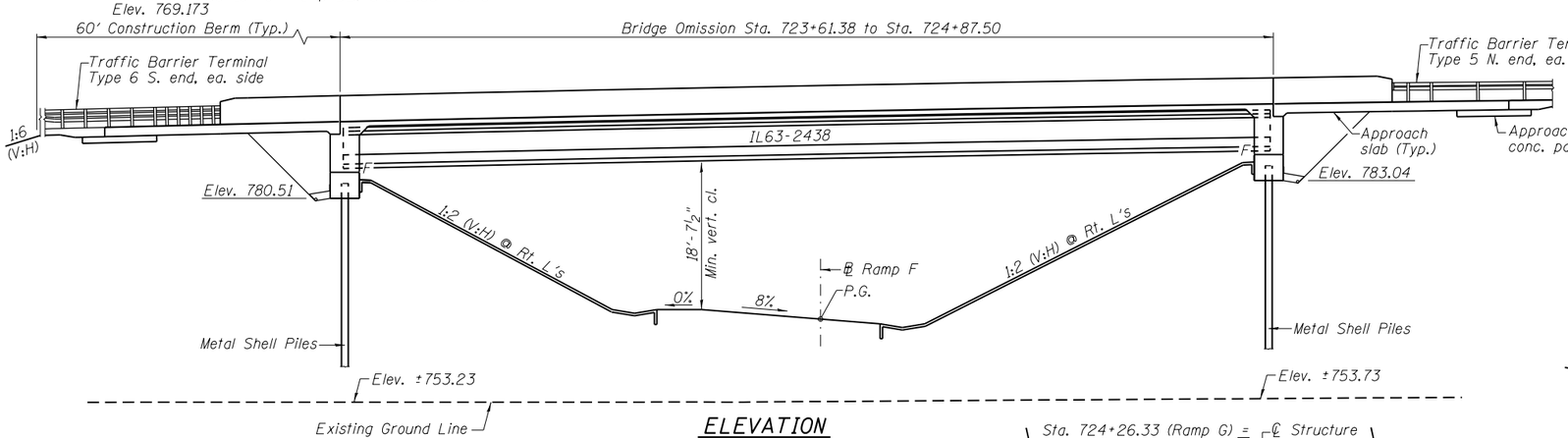
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**I-57 & I-74 INTERCHANGE**
**STRUCTURE NO. 010-1005 - GENERAL DETAILS**
SHEET NO. 1 OF 2 SHEETS

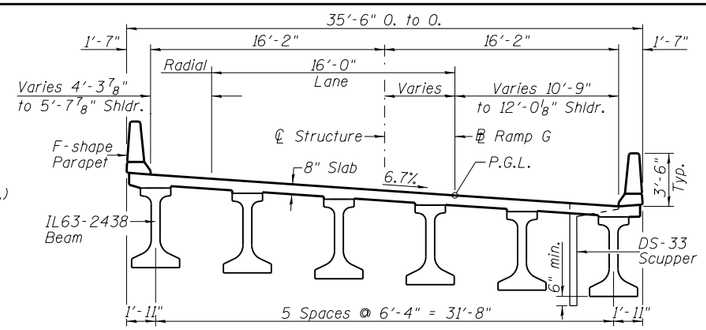
| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |

Bench Mark: Chiseled "□" on top of N.W. corner of light pole foundation #50-107 on Ramp DB, Sta. 1068+46.46 Elev. 769.173

Existing Structure: None  No Salvage

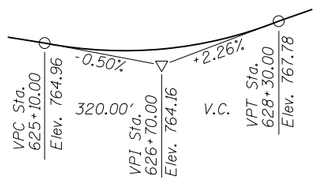



## ELEVATION



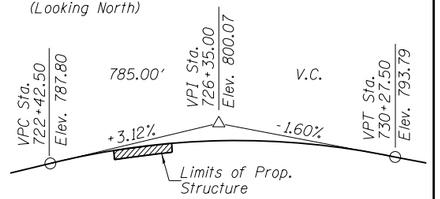

## CROSS SECTION

(Looking North)



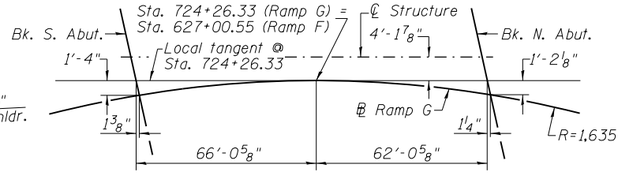

## PROFILE GRADE RAMP F

(Along ℄ Roadway)




## PROFILE GRADE RAMP G

(Along ℄ Roadway)



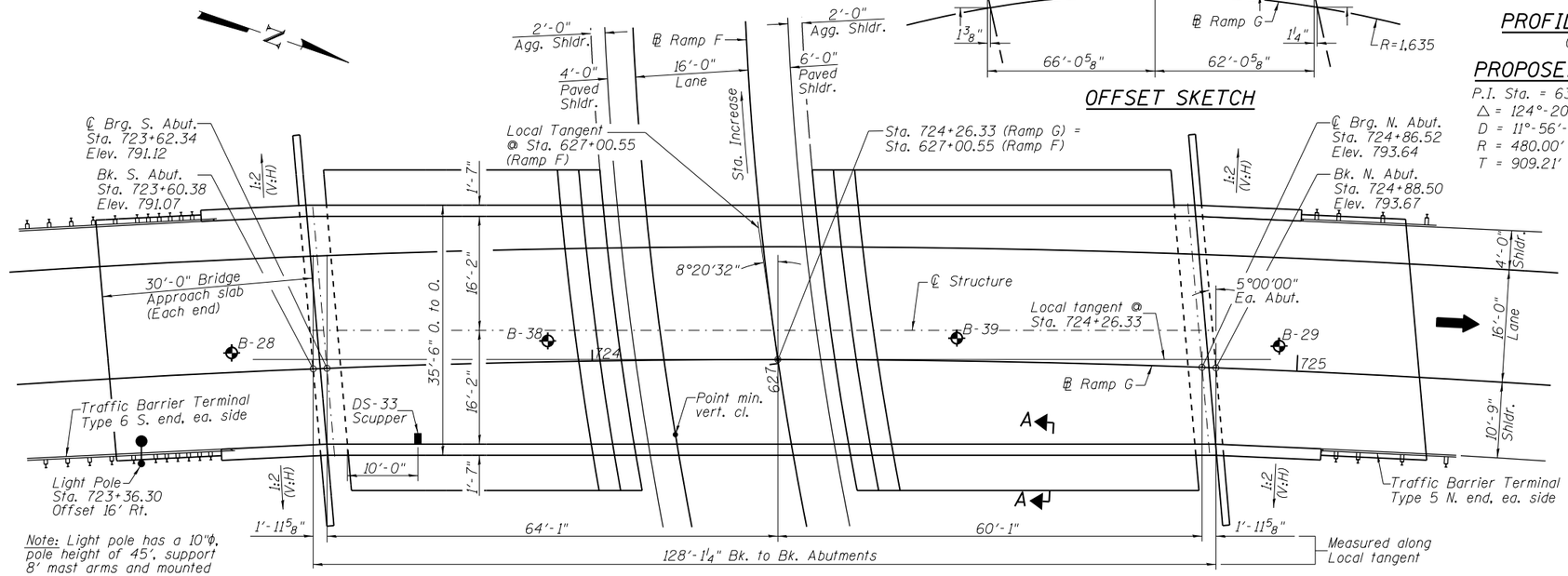

## OFFSET SKETCH

## PROPOSED RAMP F CURVE DATA

P.I. Sta. = 630+93.16
△ = 124°-20'-18" (Rt.)
D = 11°-56'-12"
R = 480.00'
T = 909.21'
L = 1041.65'
E = 548.14'
S.E. = 8.0%
P.C.C. Sta. = 621+83.95
P.C.C. Sta. = 632+25.60

## PROPOSED RAMP G CURVE DATA

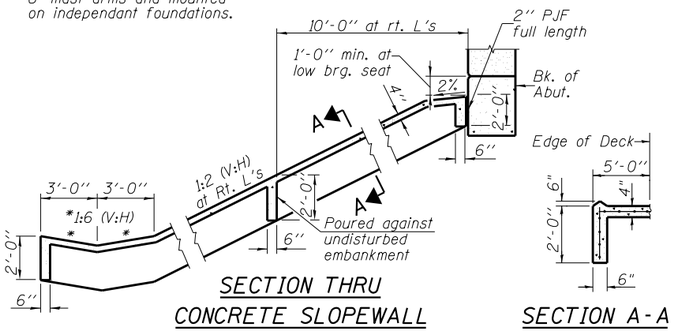
P.I. Sta. = 730+86.74
△ = 60°-51'-35" (Rt.)
D = 3°-30'-16"
R = 1,635'
T = 960.40'
L = 1,736.70'
E = 261.20'
S.E. = 6.7%
P.C. Sta. = 721+26.34
P.T. Sta. = 738+63.05




Note: Light pole has a 10"ϕ, pole height of 45', support 8' mast arms and mounted on independant foundations.

## PLAN

Boring Location




## SECTION THRU CONCRETE SLOPEWALL

## SECTION A-A

## LOADING HL-93

Allow 50 psf for future wearing surface

## DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Specifications, 7th Edition

## HIGHWAY CLASSIFICATION

FAI 57/74 -Ramp F
Functional Class: Interstate Ramp
ADT: 3,300 (2013); 4,950 (2040)
ADTT: 901 (2013); 1,351 (2040)
DHV: 360
Design Speed: 40 m.p.h.
Posted Speed: 40 m.p.h.
One-Way Traffic
Directional Distribution: 100% NB

FAI 57/74 -Ramp G
Functional Class: Interstate Ramp
ADT: 2,100 (2013); 2,650 (2040)
ADTT: 365 (2013); 461 (2040)
DHV: 235
Design Speed: 55 m.p.h.
Posted Speed: 55 m.p.h.
One-Way Traffic
Directional Distribution: 100% WB

## DESIGN STRESSES

### FIELD UNITS

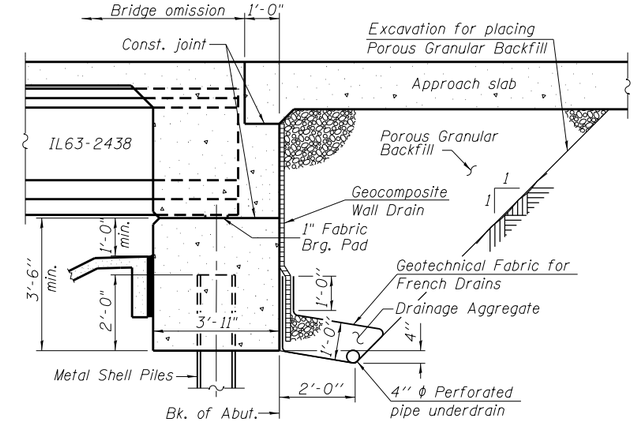
f'c = 3,500 psi (Cast-in-Place)
fy = 60,000 psi (Reinforcement)

### PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
fci = 5,000 psi
fpu = 270,000 psi (½" ϕ low lax strands)
fpbt = 201,960 psi (½" ϕ low lax strands)

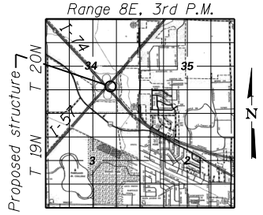
## SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec (SD1) = 0.135g
Design Spectral Acceleration at 0.2 sec (SDS) = 0.233g
Soil Site Class = D




## SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. L's)




## LOCATION SKETCH

# GENERAL PLAN
# RAMP G OVER RAMP F
# F.A.I. RTE. 57/74
# SECTION 10 (5-1-RS-1, 14-1.6) R
# CHAMPAIGN COUNTY
# STATION 724+26.33
# STRUCTURE NO. 010-1002

| | | | |
|---|---|---|---|
| USER NAME = | DESIGNED - | REVISED | |
| | CHECKED - | REVISED | |
| PLOT SCALE = | DRAWN - | REVISED | |
| PLOT DATE = | CHECKED - | REVISED | |

CMT

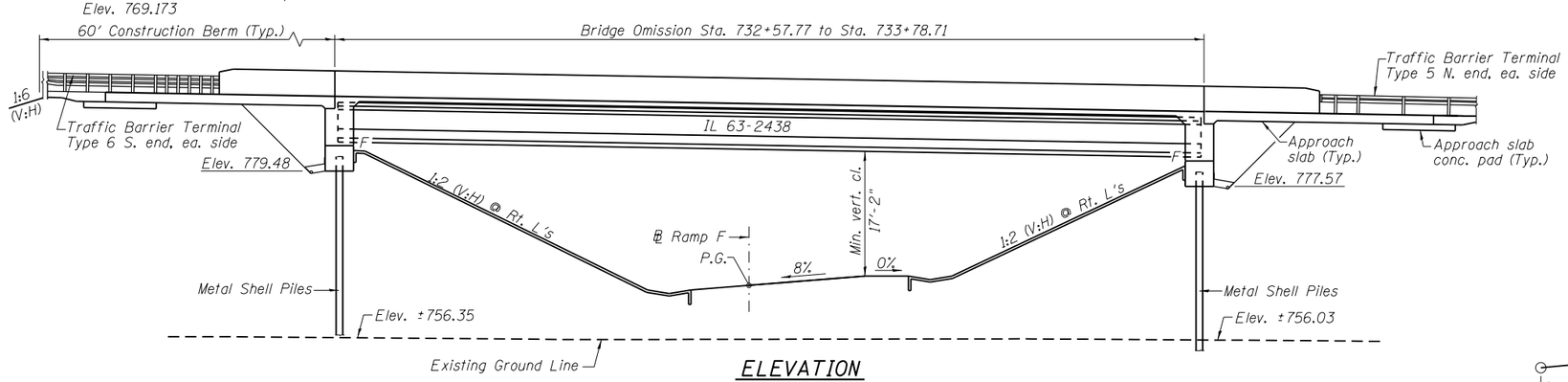
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

SHEET NO. OF SHEETS

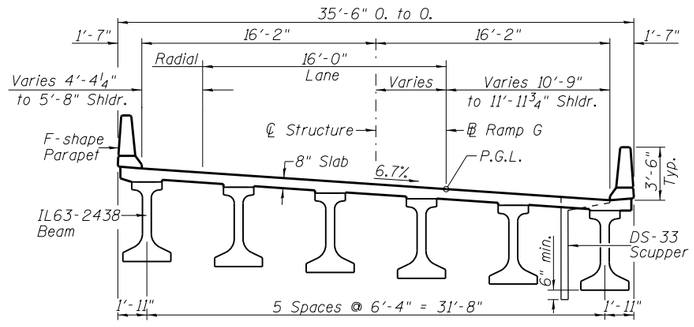
| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| I-57 & I-74 | 10(5-1-RS-1, 14-1.6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| | ILLINOIS FED. AID PROJECT | | | |

Bench Mark: Chiseled "□" on top of N.W. corner of light pole foundation #50-107 on Ramp DB, Sta. 1068+46.46 Elev. 769.173

Existing Structure: None — No Salvage

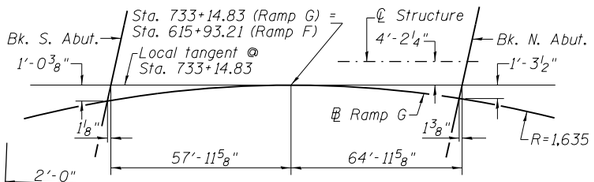



## ELEVATION

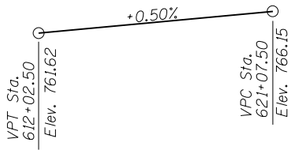



## CROSS SECTION

(Looking North)

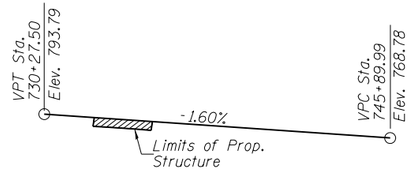



## OFFSET SKETCH




## PROFILE GRADE RAMP F

(Along ℄ Roadway)




## PROFILE GRADE RAMP G

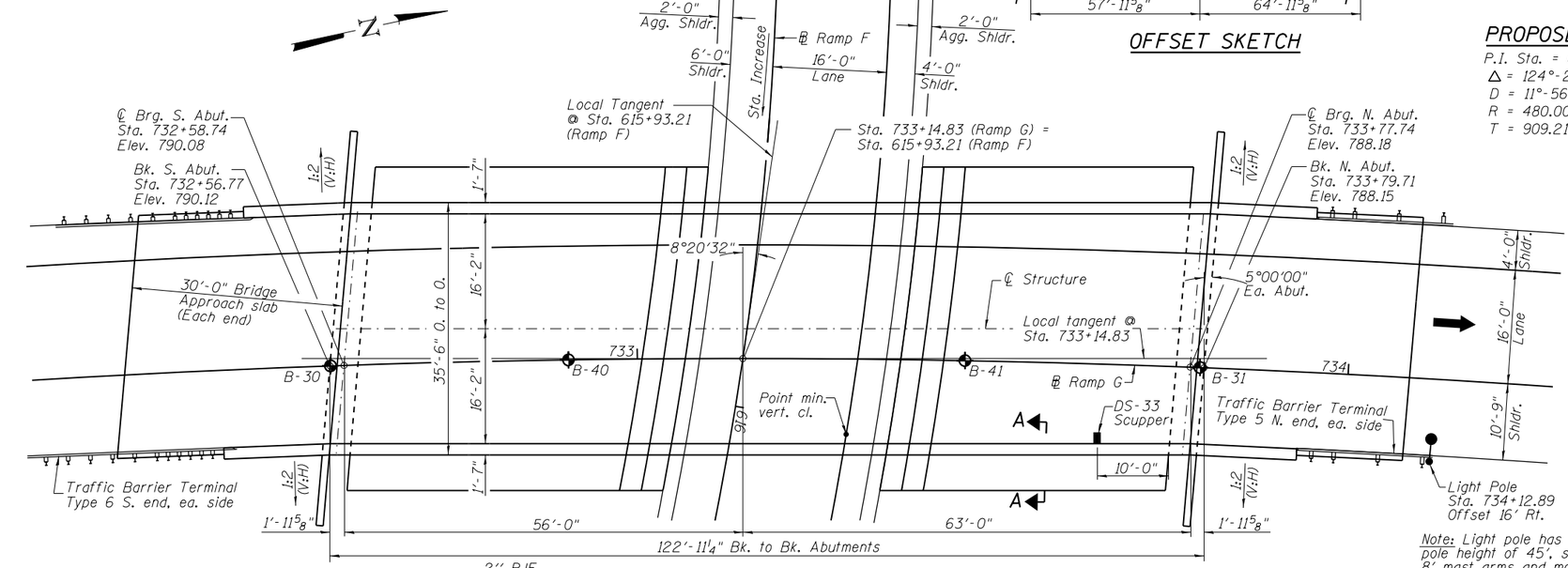
(Along ℄ Roadway)

## PROPOSED RAMP F CURVE DATA

| | |
|---|---|
| P.I. Sta. = 620+51.51 | L = 1041.65' |
| △ = 124°-20'-18" (Rt.) | E = 548.14' |
| D = 11°-56'-12" | S.E. 8.0% |
| R = 480.00' | P.C. Sta. = 611+42.29 |
| T = 909.21' | P.C.C. Sta. = 621+83.95 |

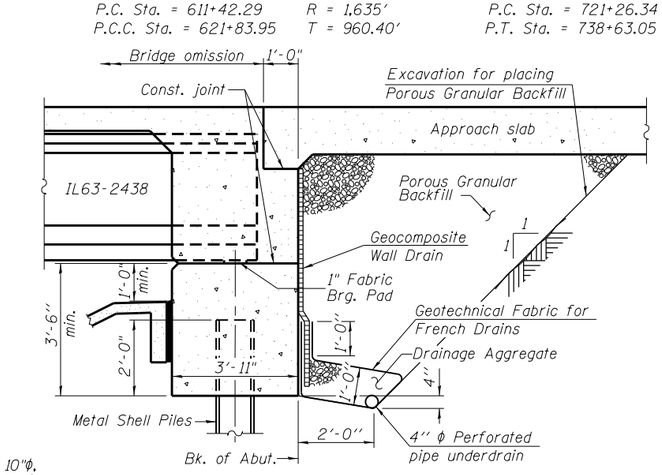
## PROPOSED RAMP G CURVE DATA

| | |
|---|---|
| P.I. Sta. = 730+86.74 | L = 1,736.70' |
| △ = 60°-51'-35" (Rt.) | E = 261.20' |
| D = 3°-30'-16" | S.E. = 6.7% |
| R = 1,635' | P.C. Sta. = 721+26.34 |
| T = 960.40' | P.T. Sta. = 738+63.05 |



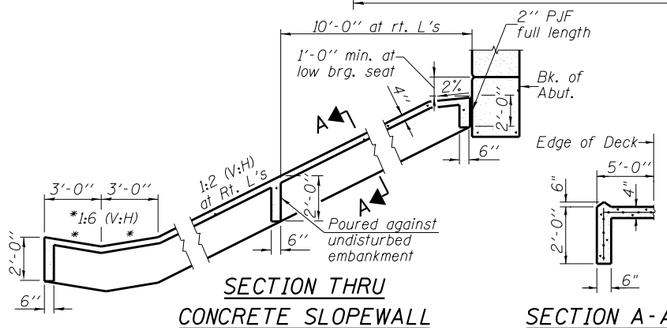

## PLAN

Note: Light pole has a 10"ϕ, pole height of 45', support 8' mast arms and mounted on independant foundations.




## SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. L's)




## SECTION THRU CONCRETE SLOPEWALL




## SECTION A-A

## LOADING HL-93

Allow 50 psf for future wearing surface

## DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Specifications, 7th Edition

## HIGHWAY CLASSIFICATION

FAI 57/74 - Ramp F
Functional Class: Interstate Ramp
ADT: 3,300 (2013); 4,950 (2040)
ADTT: 901 (2013); 1,351 (2040)
DHV: 360
Design Speed: 40 m.p.h.
Posted Speed: 40 m.p.h.
One-Way Traffic
Directional Distribution: 100% NB

FAI 57/74 - Ramp G
Functional Class: Interstate Ramp
ADT: 2,100 (2013); 2,650 (2040)
ADTT: 365 (2013); 461 (2040)
DHV: 235
Design Speed: 55 m.p.h.
Posted Speed: 55 m.p.h.
One-Way Traffic
Directional Distribution: 100% WB

## DESIGN STRESSES

### FIELD UNITS

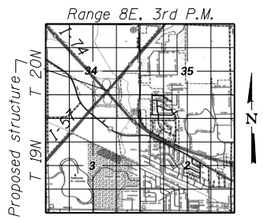
f'c = 3,500 psi (Cast-in-Place)
fy = 60,000 psi (Reinforcement)

### PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
fci = 5,000 psi
fpu = 270,000 psi (½" ϕ low lax strands)
fpbt = 201,960 psi (½" ϕ low lax strands)

## SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec (SD1) = 0.135g
Design Spectral Acceleration at 0.2 sec (SDS) = 0.233g
Soil Site Class = D




## LOCATION SKETCH

# GENERAL PLAN
# RAMP G OVER RAMP F
# F.A.I. RTE. 57/74
# SECTION 10 (5-1-RS-1, 14-1,6) R
# CHAMPAIGN COUNTY
# STATION 733+14.83
# STRUCTURE NO. 010-1003

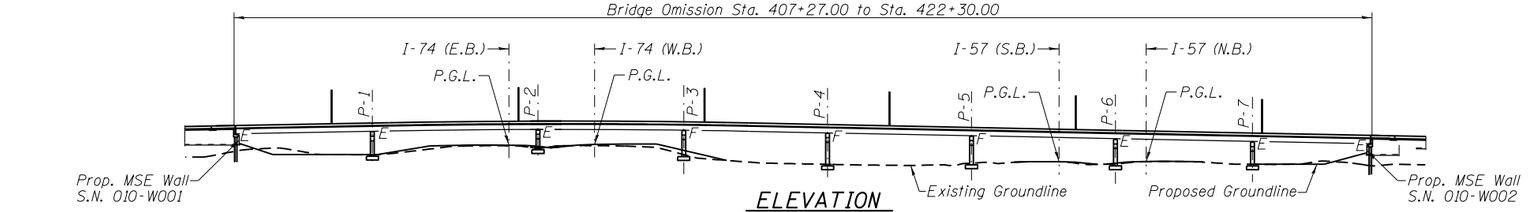
CMT

| | | |
|---|---|---|
| USER NAME = | DESIGNED - | REVISED |
| | CHECKED - | REVISED |
| PLOT SCALE = | DRAWN - | REVISED |
| PLOT DATE = | CHECKED - | REVISED |

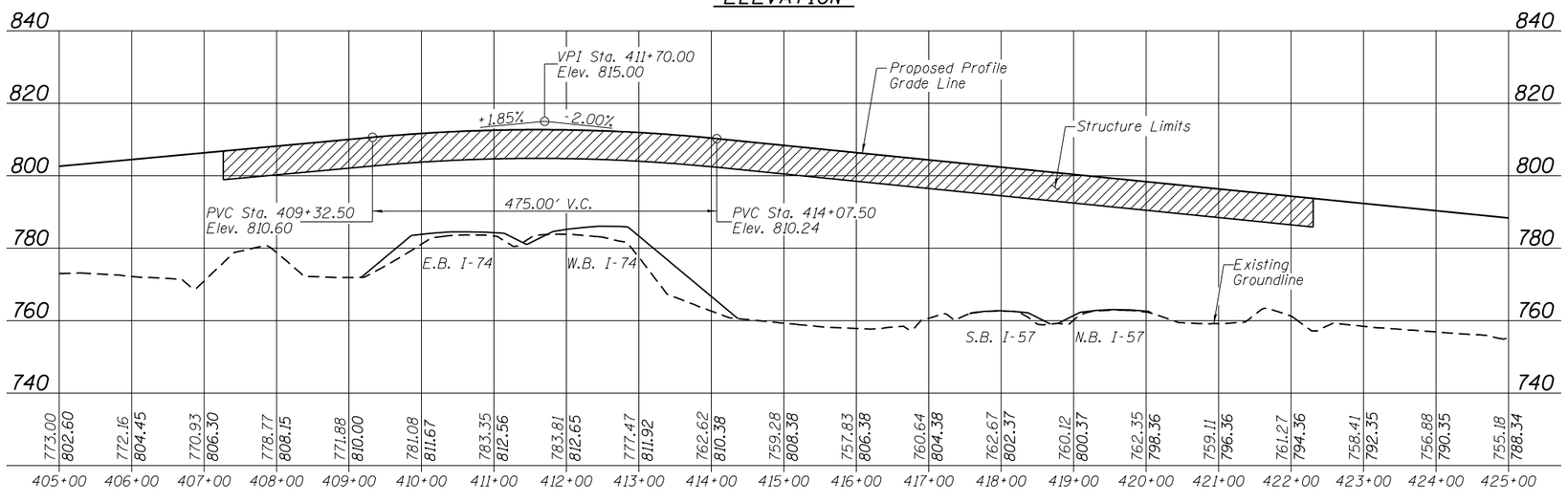
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

SHEET NO. OF SHEETS

| F.A. RTE. | | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| I-57 & I-74 | 10(5-1-RS-1, 14-1,6)R | CHAMPAIGN | | |
| | | CONTRACT NO. 70897 | | |
| ILLINOIS FED. AID PROJECT | | | | |

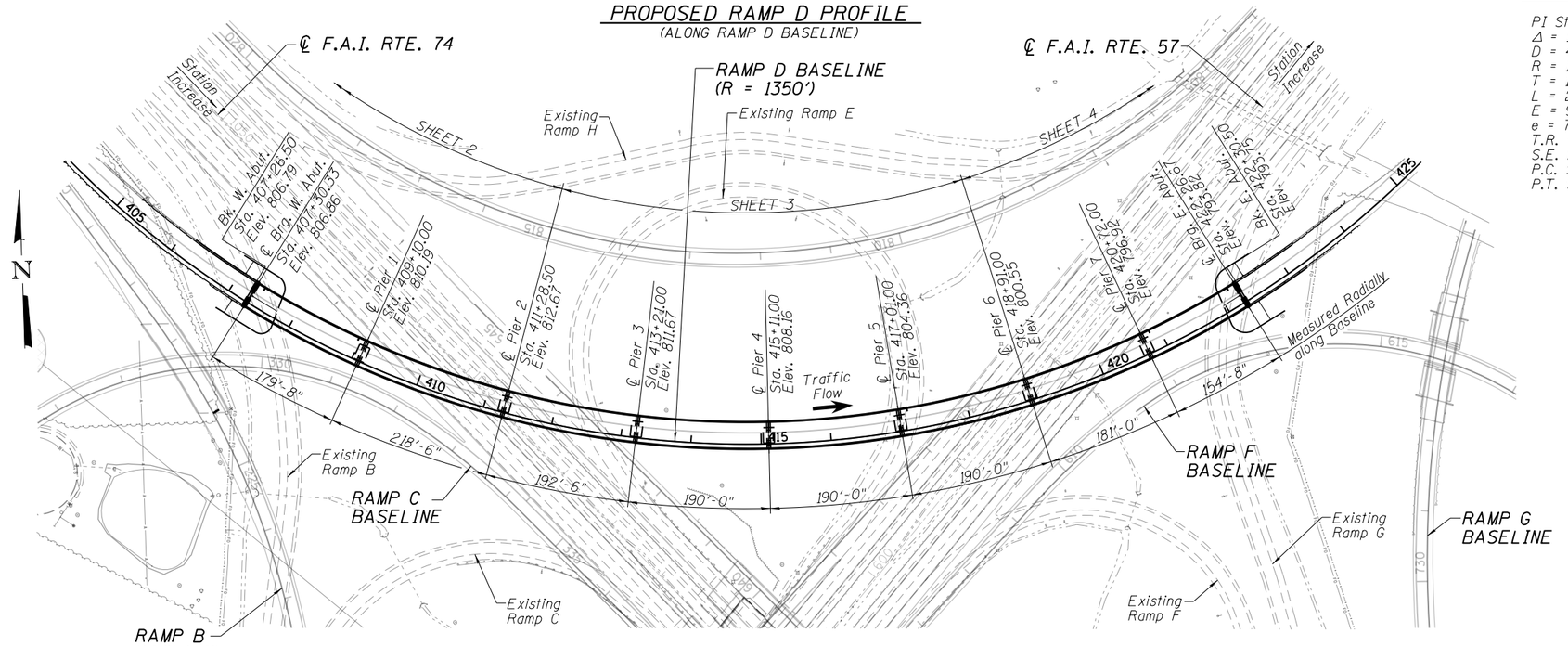



## ELEVATION




## PROPOSED RAMP D PROFILE

(ALONG RAMP D BASELINE)




## PLAN

(SEE SHEETS 2, 3 & 4 FOR ENLARGED PLANS)

## HIGHWAY CLASSIFICATION

Ramp D
Functional Class: Interstate (Ramp)
ADT: 500 (2013); 1000 (2040)
ADTT: 95 (2013); 190 (2040)
DHV: 140 (2040)
Design Speed: 55 m.p.h.
Posted Speed: 55 m.p.h.
One-Way Traffic

F.A.P. Rte. 74 - I 74
Functional Class: Interstate
ADT: 38,900 (2013); 59,900 (2040)
ADTT: 4,832 (2013); 13,717 (2040)
DHV: 3,153 (2040)
Design Speed: 75 m.p.h.
Posted Speed: 70 m.p.h.
Two-Way Traffic
Directional Distribution: 50:50

F.A.P. Rte. 57 - I 57
Functional Class: Interstate
ADT: 32,400 (2013); 49,900 (2040)
ADTT: 4,572 (2013); 14,172 (2040)
DHV: 2,113 (2040)
Design Speed: 75 m.p.h.
Posted Speed: 70 m.p.h.
Two-Way Traffic
Directional Distribution: 50:50

## DESIGN SPECIFICATIONS

2014 AASHTO LRFD 7th Edition,
Bridge Design Specifications
w/2015 Interims

## LOADING HL-93

Allow 50 psf for future
wearing surface

## DESIGN STRESSES

### FIELD UNITS

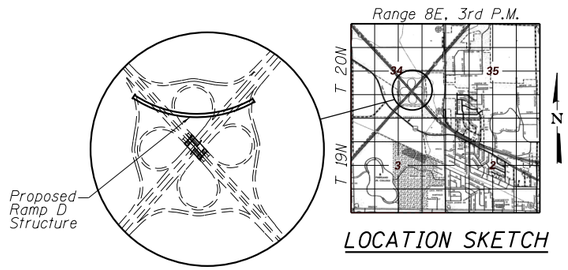
f'c = 3,500 psi (Cast-in-Place)
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

## SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec (SD1) = 0.135g
Design Spectral Acceleration at 0.2 sec (SDS) = 0.233g
Soil Site Class = D

## CURVE DATA

(RAMP D)
PI Sta. = 421+90.36
Δ = 109° 32' 31" (Lt.)
D = 4° 14' 39"
R = 1,350.00'
T = 1,911.69'
L = 2,581.02'
E = 990.32'
e = 7.4%
T.R. = N/A
S.E. RUN = 250'
P.C. Sta. = 402+78.67
P.T. Sta. = 428+59.69




## LOCATION SKETCH

# GENERAL PLAN
# RAMP D OVER
# F.A.I. RTE. 74 AND F.A.I. RTE. 57
# SECTION 10 (5-1-RS-1, 14-1,6) R
# CHAMPAIGN COUNTY
# STATION 414+78.50
# STRUCTURE NO. 010-1004

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CMT

| | | |
|---|---|---|
| USER NAME = Brad Downen | DESIGNED M. LACHECKI | REVISED |
| ...\D570897-TSL-(0)_Ramp D over 174 and 157.dgn | CHECKED W. BAILEY | REVISED |
| PLOT SCALE = | DRAWN G. DAVIS | REVISED |
| PLOT DATE = | CHECKED M. LACHECKI | REVISED |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

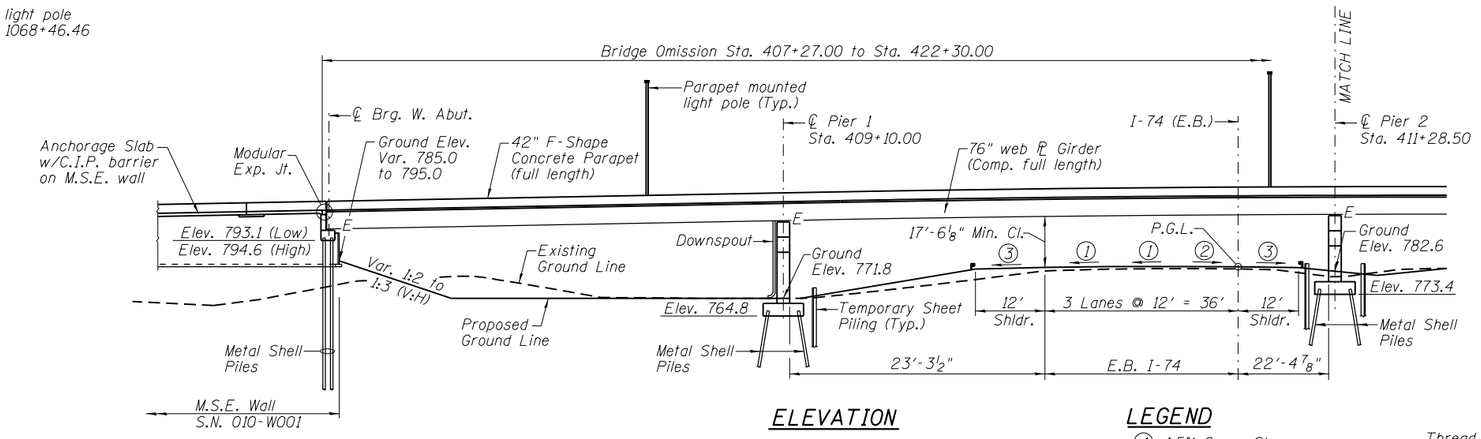
SHEET NO. 1 OF 5 SHEETS

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |
| | | CONTRACT NO. | | |
| | ILLINOIS | FED. AID PROJECT | | |

*Bench Marks:*
Chiseled "□" on top of N.W. corner of light pole foundation #50-107 on Ramp DB, Sta. 1068+46.46
Elev. 769.173

*Existing Structure:* None

No Salvage




## ELEVATION

## LEGEND

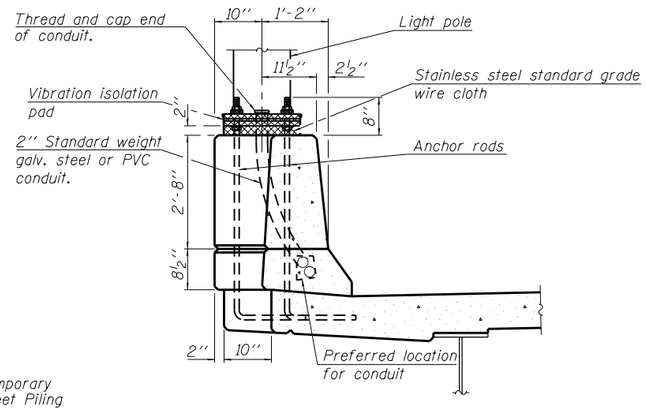
1. 1.5% Cross Slope
2. 2.0% Cross slope
3. 4.0% Cross Slope

## LIGHT POLE LOCATIONS

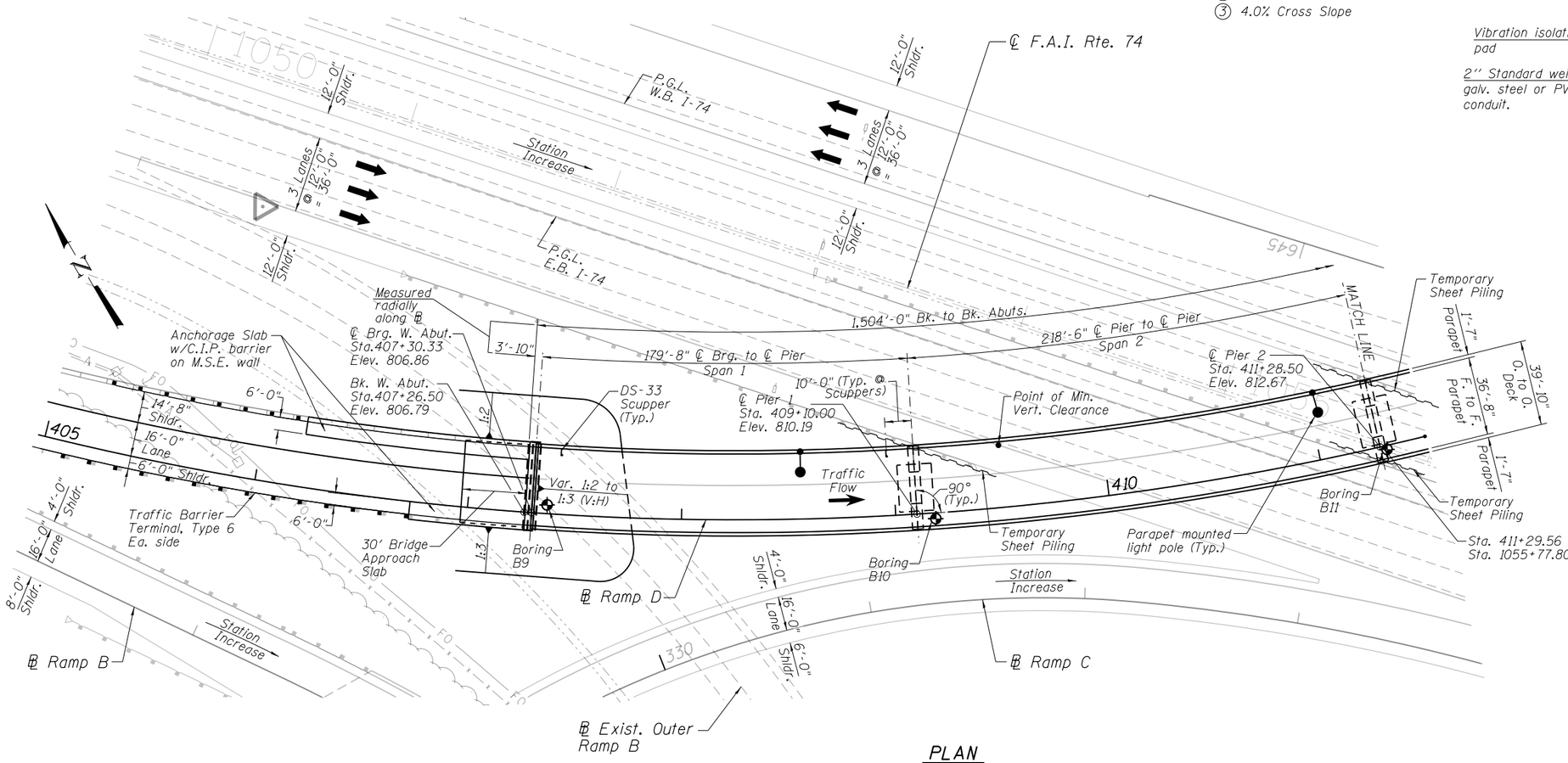
| STATION | *OFFSET |
|---|---|
| 408+56.07 | 31.46' Lt. |
| 411+02.74 | 31.46' Lt. |
| 413+48.41 | 31.46' Lt. |
| 415+92.74 | 31.46' Lt. |
| 418+38.60 | 31.46' Lt. |
| 420+84.48 | 31.46' Lt. |

*From ℄ Ramp D

Note: Pole height is 45 ft. with an 8 ft. mast arm. Bolt circle diameter is 15 in.




## PARAPET MOUNTED LIGHT POLE




## PLAN

## SCUPPER LOCATIONS

| STATION | OFFSET |
|---|---|
| 407+42.47 | 30.67' Lt. |
| 408+97.24 | 30.67' Lt. |
| 417+13.76 | 30.67' Lt. |
| 420+84.76 | 30.67' Lt. |
| 422+14.53 | 30.67' Lt. |

## SOIL BORING LOCATIONS

| Boring No. | Station | Offset | Northing | Easting |
|---|---|---|---|---|
| B9 | 407+36.98 | 4.09' Lt. | 1267740.170 | 997355.733 |
| B10 | 409+18.57 | 2.70' Lt. | 1267645.173 | 997510.376 |
| B11 | 411+31.42 | 1.78' Rt. | 1267569.508 | 997709.458 |

## NOTE:

1. Existing Outer Ramp B will be out of service prior to construction of West Abutment.

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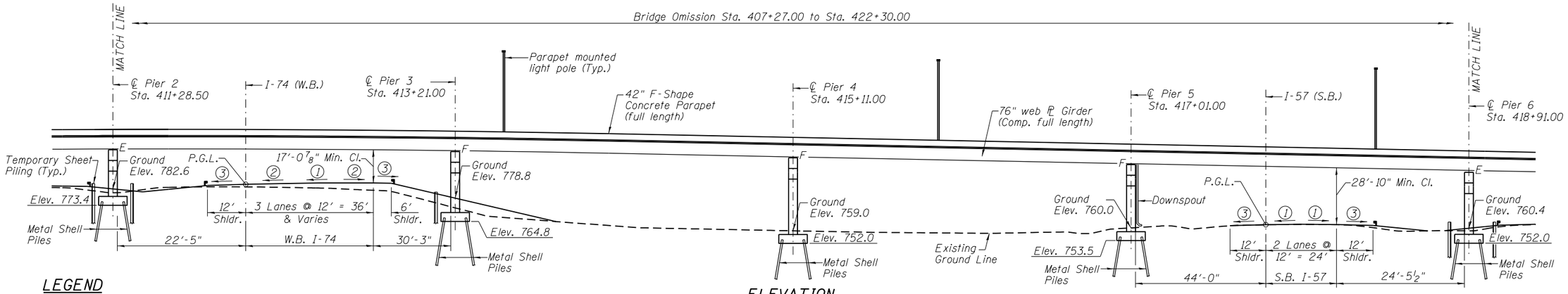
CMT

| | | |
|---|---|---|
| USER NAME = Brad Downen | DESIGNED M. LACHECKI | REVISED |
| ...\D570897-TSL-(1)_Ramp D over I74 and I57.dgn | CHECKED W. BAILEY | REVISED |
| PLOT SCALE = | DRAWN G. DAVIS | REVISED |
| PLOT DATE = | CHECKED M. LACHECKI | REVISED |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**I-57 & I-74 INTERCHANGE**
**STRUCTURE NO. 010-1004 – GENERAL PLAN I**
SHEET NO. 2 OF 5 SHEETS

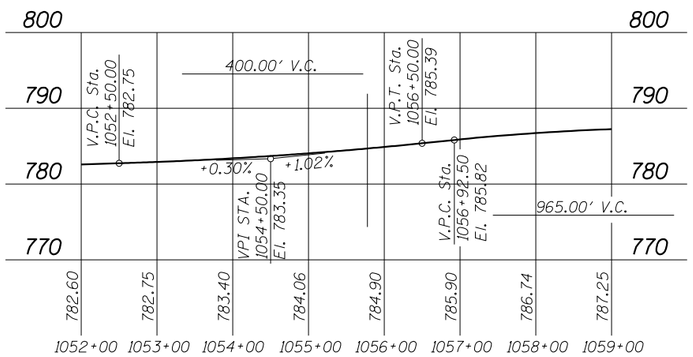
| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |
| | | CONTRACT NO. | | |
| | | ILLINOIS FED. AID PROJECT | | |



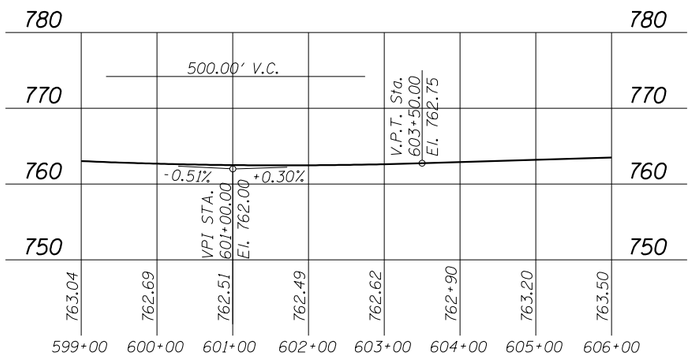

ELEVATION

## LEGEND

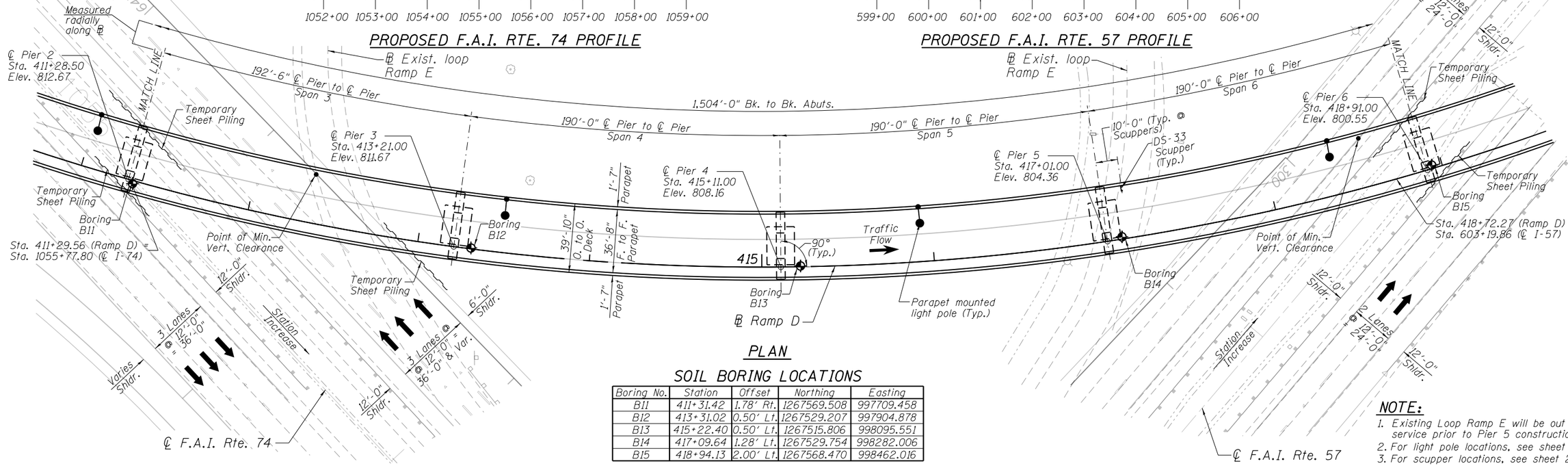
① 1.5% Cross Slope
② 2.0% Cross slope
③ 4.0% Cross Slope




PROPOSED F.A.I. RTE. 74 PROFILE




PROPOSED F.A.I. RTE. 57 PROFILE




PLAN

## SOIL BORING LOCATIONS

| Boring No. | Station | Offset | Northing | Easting |
|---|---|---|---|---|
| B11 | 411+31.42 | 1.78' Rt. | 1267569.508 | 997709.458 |
| B12 | 413+31.02 | 0.50' Lt. | 1267529.207 | 997904.878 |
| B13 | 415+22.40 | 0.50' Lt. | 1267515.806 | 998095.551 |
| B14 | 417+09.64 | 1.28' Lt. | 1267529.754 | 998282.006 |
| B15 | 418+94.13 | 2.00' Lt. | 1267568.470 | 998462.016 |

## NOTE:

1. Existing Loop Ramp E will be out of service prior to Pier 5 construction.
2. For light pole locations, see sheet 2 of 5.
3. For scupper locations, see sheet 2 of 5.

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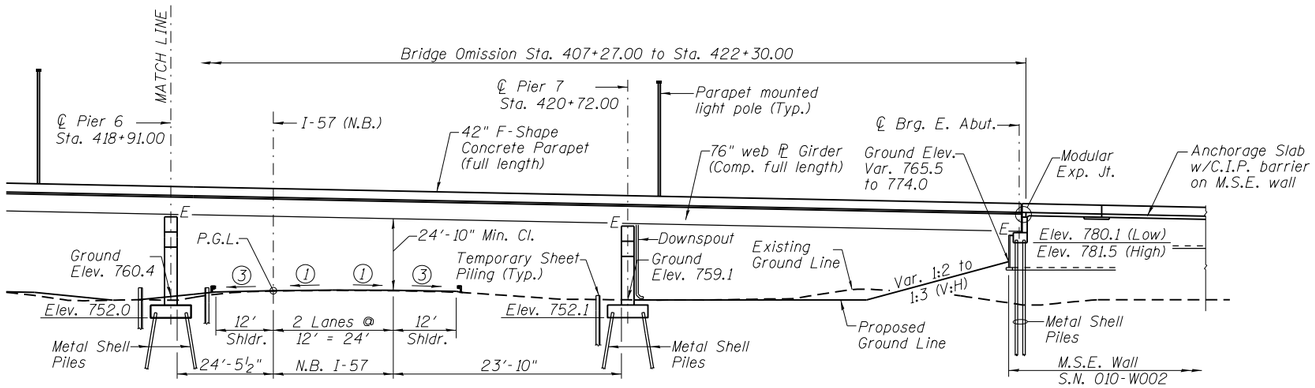
CMT

| | | |
|---|---|---|
| USER NAME = Brad Downen | DESIGNED M. LACHECKI | REVISED |
| ...\D570897-TSL-(2)_Ramp D over 174 and 157.dgn | CHECKED W. BAILEY | REVISED |
| PLOT SCALE = | DRAWN G. DAVIS | REVISED |
| PLOT DATE = | CHECKED M. LACHECKI | REVISED |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**I-57 & I-74 INTERCHANGE**
**STRUCTURE NO. 010-1004 - GENERAL PLAN II**
SHEET NO. 3 OF 5 SHEETS

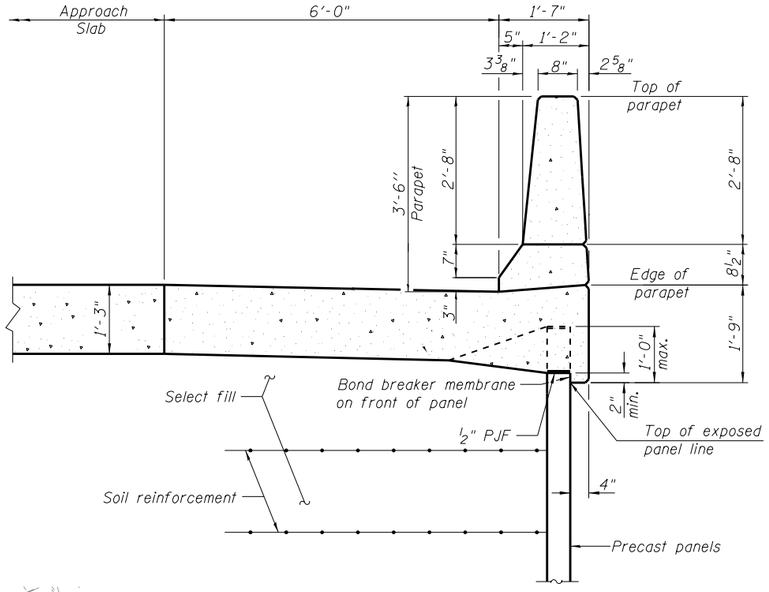
| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |



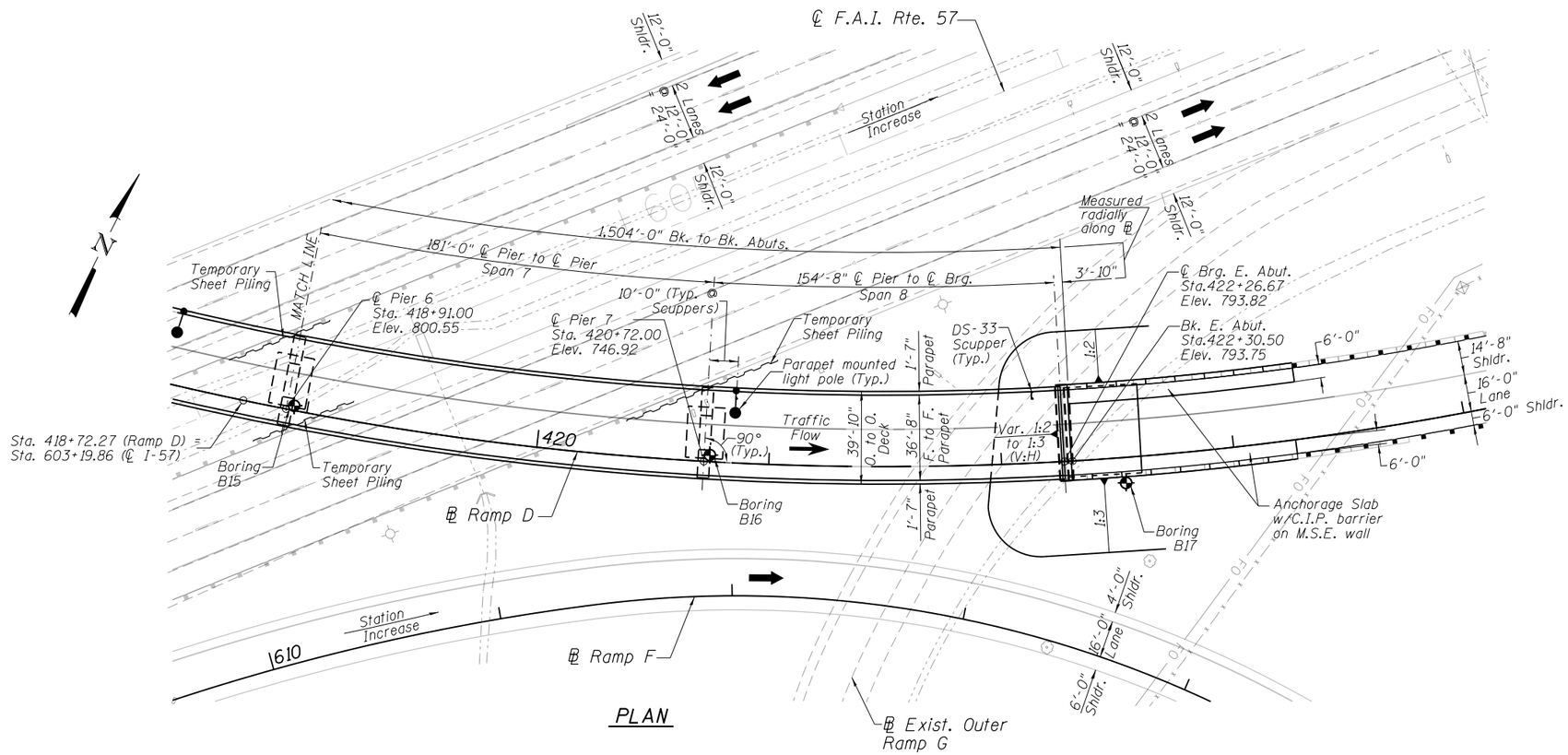

## ELEVATION

## LEGEND

① 1.5% Cross Slope
② 2.0% Cross slope
③ 4.0% Cross Slope




## SECTION THRU ANCHORAGE SLAB




## PLAN

## SOIL BORING LOCATIONS

| Boring No. | Station | Offset | Northing | Easting |
|---|---|---|---|---|
| B15 | 418+94.13 | 2.00' Lt. | 1267568.470 | 998462.016 |
| B16 | 420+74.44 | 2.84' Lt. | 1267629.768 | 998629.768 |
| B17 | 422+52.79 | 10.93' Rt. | 1267699.443 | 998796.285 |

## NOTE:

1. Existing Outer Ramp G will be out of service prior to construction of East Abutment.
2. For light pole locations, see sheet 2 of 5.
3. For scupper locations, see sheet 2 of 5.

L:\IDOT\186682\Draw\CADD Sheets\Structural Sheets\TSLs\...

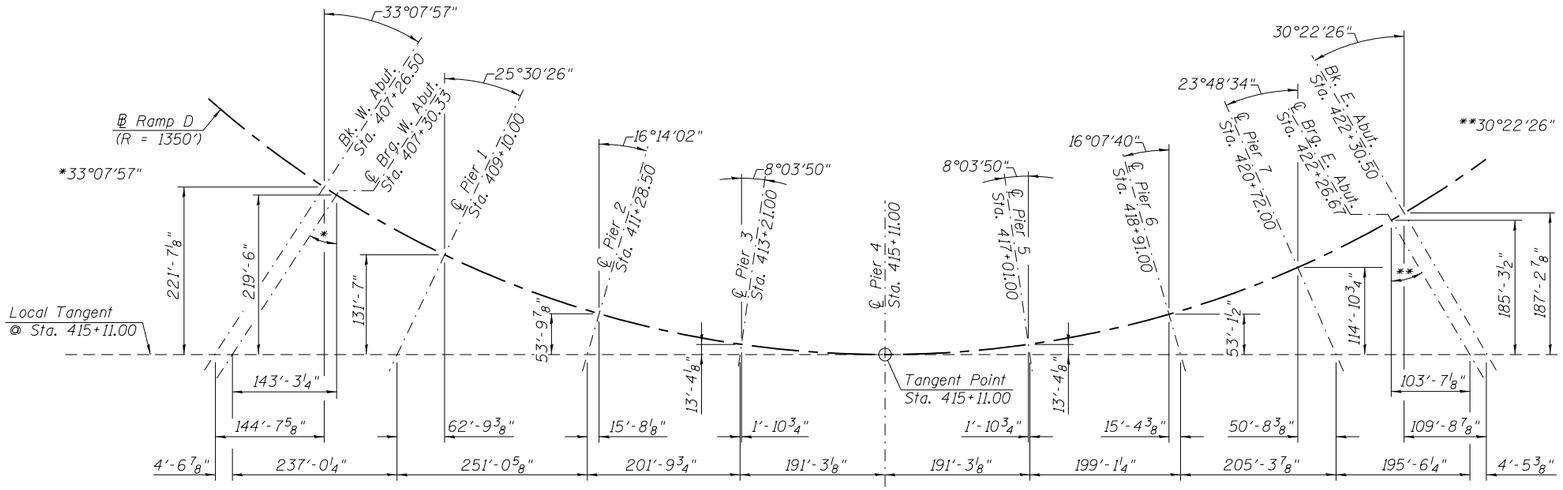
CMT

| | | |
|---|---|---|
| USER NAME = Brad Downen | DESIGNED M. LACHECKI | REVISED |
| ...\D570897-TSL-(3)_Ramp D over I74 and I57.dgn | CHECKED W. BAILEY | REVISED |
| PLOT SCALE = | DRAWN G. DAVIS | REVISED |
| PLOT DATE = | CHECKED M. LACHECKI | REVISED |

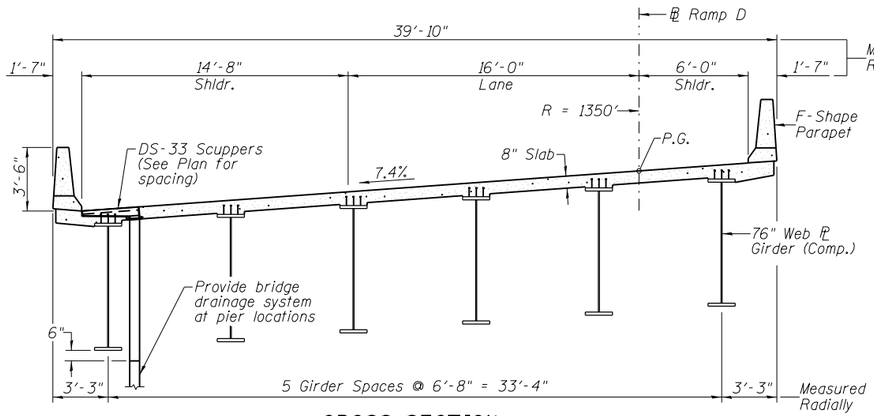
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**I-57 & I-74 INTERCHANGE**
**STRUCTURE NO. 010-1004 - GENERAL PLAN III**
SHEET NO. 4 OF 5 SHEETS

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |
| | | CONTRACT NO. | | |
| | ILLINOIS | FED. AID PROJECT | | |

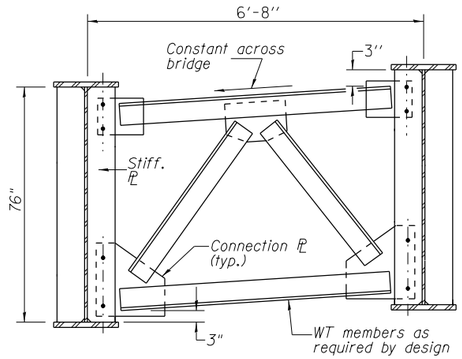



## OFFSET SKETCH

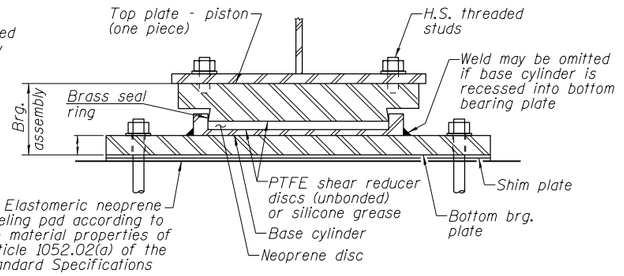



## CROSS SECTION

(Looking Upstation)

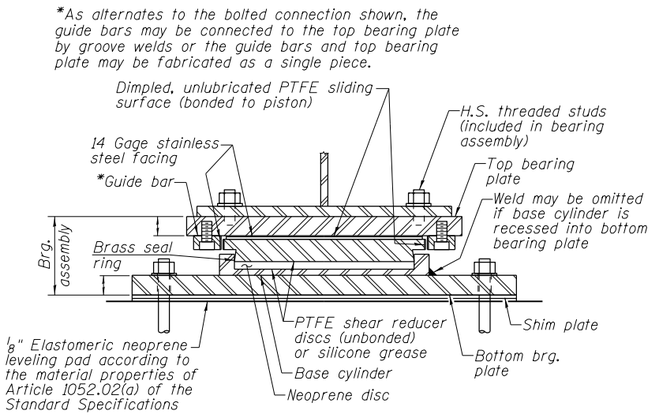



## INTERIOR CROSS FRAME



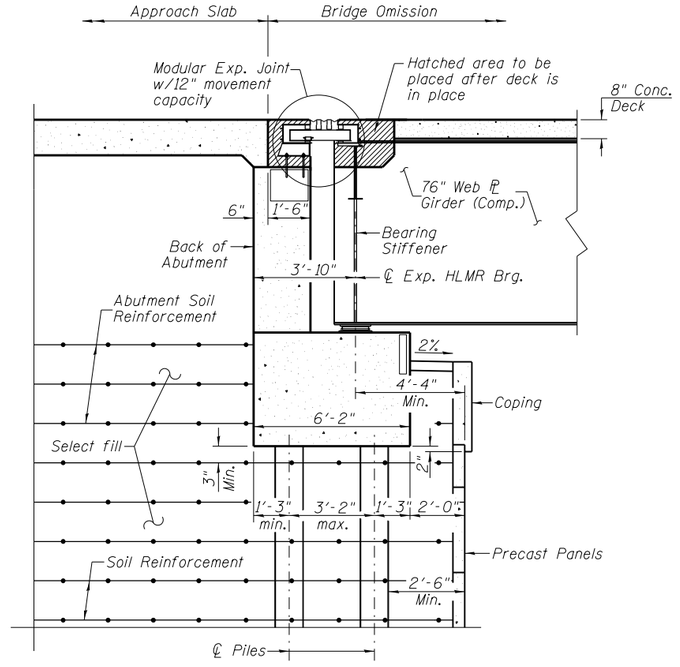

## FIXED HLMR BEARING

Piers 3, 4 & 5

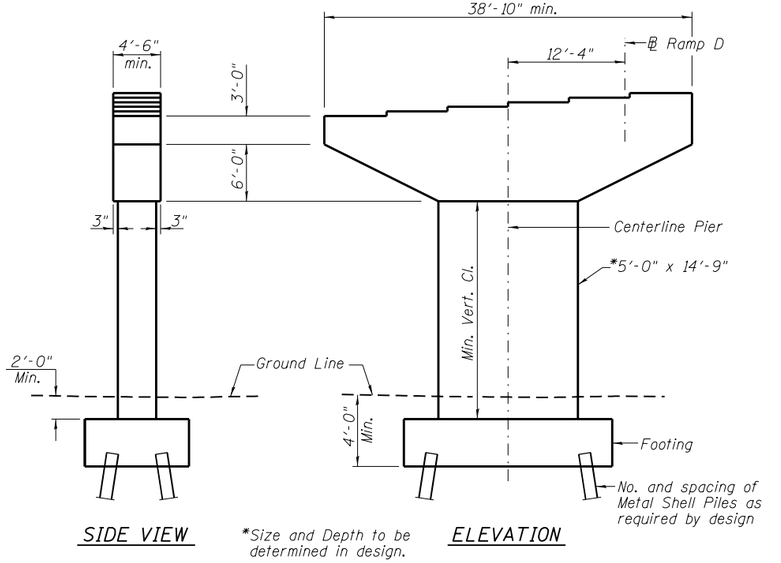



## GUIDED EXPANSION HLMR BEARING

W. Abut., Piers 1, 2, 6 & 7, and E. Abut.




## SECTION THRU ABUTMENT




## PIER 1 THRU PIER 7 SKETCH

(Looking Upstation)

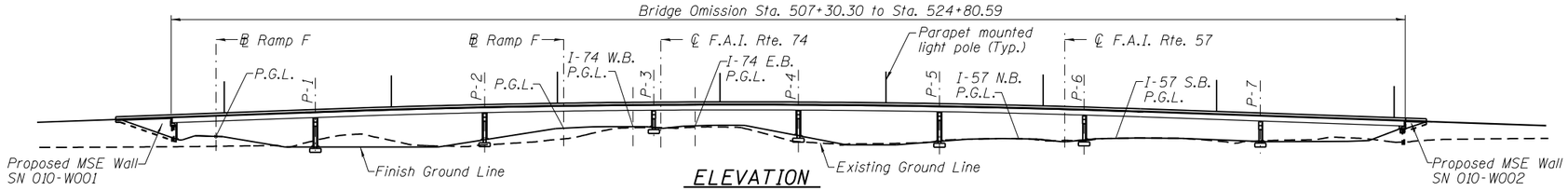
| | | | |
|---|---|---|---|
| USER NAME = Brad Downen | DESIGNED M. LACHECKI | REVISED | |
| ...\D570897-TSL-(4)_Ramp D over I74 and I57.dgn | CHECKED W. BAILEY | REVISED | |
| PLOT SCALE = | DRAWN G. DAVIS | REVISED | |
| PLOT DATE = | CHECKED M. LACHECKI | REVISED | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

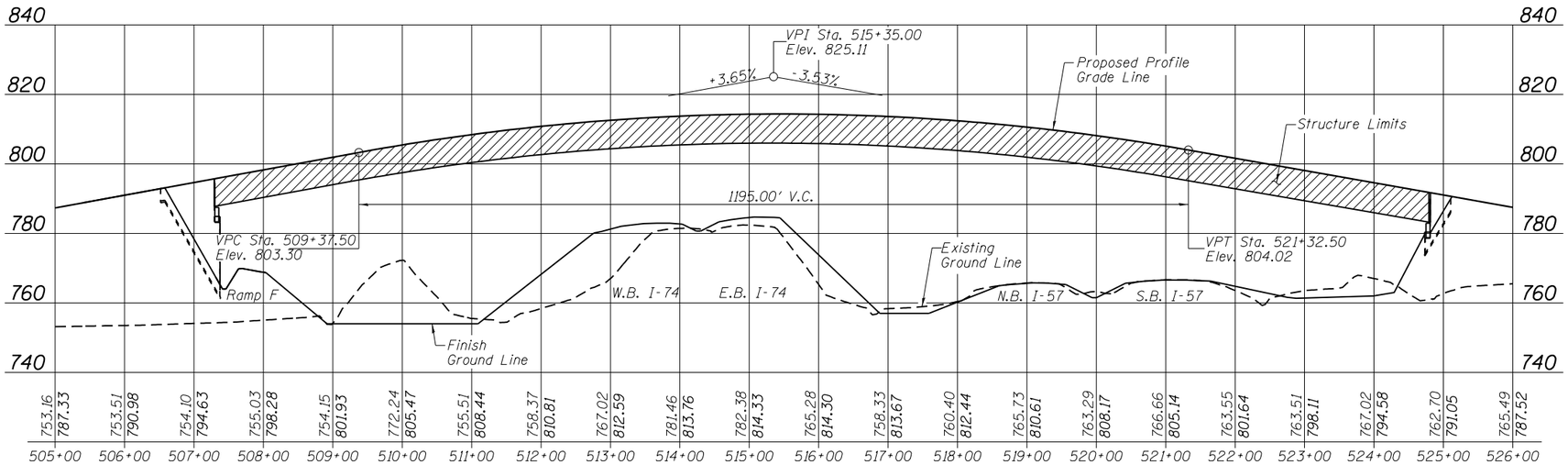
**I-57 & I-74 INTERCHANGE**
**STRUCTURE NO. 010-1004 - GENERAL DETAILS**
SHEET NO. 5 OF 5 SHEETS

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | |
| | | CONTRACT NO. | | |
| | ILLINOIS | FED. AID PROJECT | | |

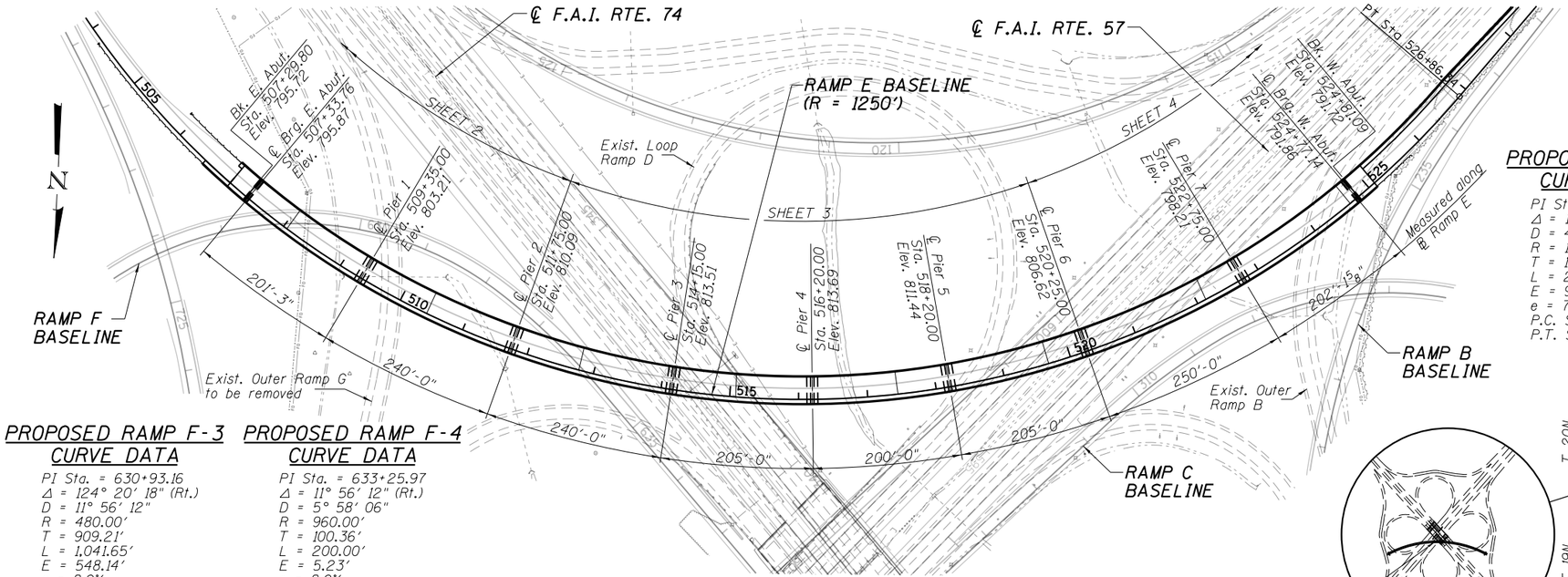
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## ELEVATION




## PROPOSED RAMP E PROFILE




## PLAN

### PROPOSED RAMP F-3 CURVE DATA

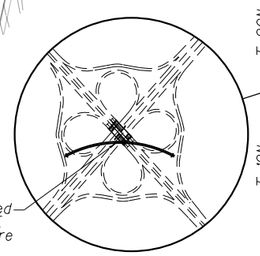
PI Sta. = 630+93.16
Δ = 124° 20' 18" (Rt.)
D = 11° 56' 12"
R = 480.00'
T = 909.21'
L = 1,041.65'
E = 548.14'
e = 8.0%
P.C. Sta. = 621+83.95
P.T. Sta. = 632+25.60

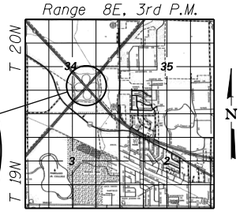
### PROPOSED RAMP F-4 CURVE DATA

PI Sta. = 633+25.97
Δ = 11° 56' 12" (Rt.)
D = 5° 58' 06"
R = 960.00'
T = 100.36'
L = 200.00'
E = 5.23'
e = 8.0%
S.E. RUN = 275'
P.C. Sta. = 632+25.60
P.T. Sta. = 634+25.60

### PROPOSED RAMP E CURVE DATA

PI Sta. = 520+74.57
Δ = 110° 15' 02" (Lt.)
D = 4° 35' 01"
R = 1,250.00'
T = 1,793.52'
L = 2,405.30'
E = 936.14'
e = 7.6%
P.C. Sta. = 502+81.04
P.T. Sta. = 526+86.34




LOCATION SKETCH

## HIGHWAY CLASSIFICATION

F.A.I. 57/74 - Ramp E
Functional Class: Interstate Ramp
ADT: 5,700 (2013); 9,900 (2040)
ADTT: 1,197 (2013); 2,079 (2040)
DHV: 920
Design Speed: 55 m.p.h.
Posted Speed: 55 m.p.h.
One-Way Traffic
Directional Distribution = 100%

F.A.I. Rte. 74 - I 74
Functional Class: Interstate
ADT: 38,900 (2013); 59,900 (2040)
ADTT: 9,336 (2013); 14,376 (2040)
DHV: 3,921 (2040)
Design Speed: 75 m.p.h.
Posted Speed: 70 m.p.h.
Two-Way Traffic
Directional Distribution: 50:50

F.A.I. Rte. 57 - I 57
Functional Class: Interstate
ADT: 32,400 (2013); 49,900 (2040)
ADTT: 7,776 (2013); 11,976 (2040)
DHV: 1,956 (2040)
Design Speed: 75 m.p.h.
Posted Speed: 70 m.p.h.
Two-Way Traffic
Directional Distribution: 50:50

F.A.I. 57/74 - Ramp F
Functional Class: Interstate Ramp
ADT: 3,300 (2013); 4,950 (2040)
ADTT: 901 (2013); 1,351 (2040)
DHV: 360
Design Speed: 40 m.p.h.
Posted Speed: 40 m.p.h.
One-Way Traffic
Directional Distribution: 100% NB

## DESIGN SPECIFICATIONS

2014 AASHTO LRFD 7th Edition,
Bridge Design Specifications
w/2015 Interims

## LOADING HL-93

Allow 50 psf for future wearing surface

## DESIGN STRESSES

### FIELD UNITS

f'c = 3,500 psi
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50W)
fy = 70,000 psi (M270 Grade HPS 70W)

## SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec (SD1) = 0.135g
Design Spectral Acceleration at 0.2 sec (SDS) = 0.233g
Soil Site Class = D

# GENERAL PLAN
# RAMP E OVER RAMP F AND F.A.I. RTE. 74 AND F.A.I. RTE. 57
# SECTION 10 (5-1-RS-1, 14-1,6) R
# CHAMPAIGN COUNTY
# STATION 516+05.45
# STRUCTURE NO. 010-1001

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CMT

| | | |
|---|---|---|
| USER NAME = Brad Downen | DESIGNED CJW | REVISED |
| ...\D570897-TSL-(0).Ramp E over 174 and 157.dgn | CHECKED WLB | REVISED |
| PLOT SCALE = | DRAWN GLD | REVISED |
| PLOT DATE = | CHECKED CJW | REVISED |

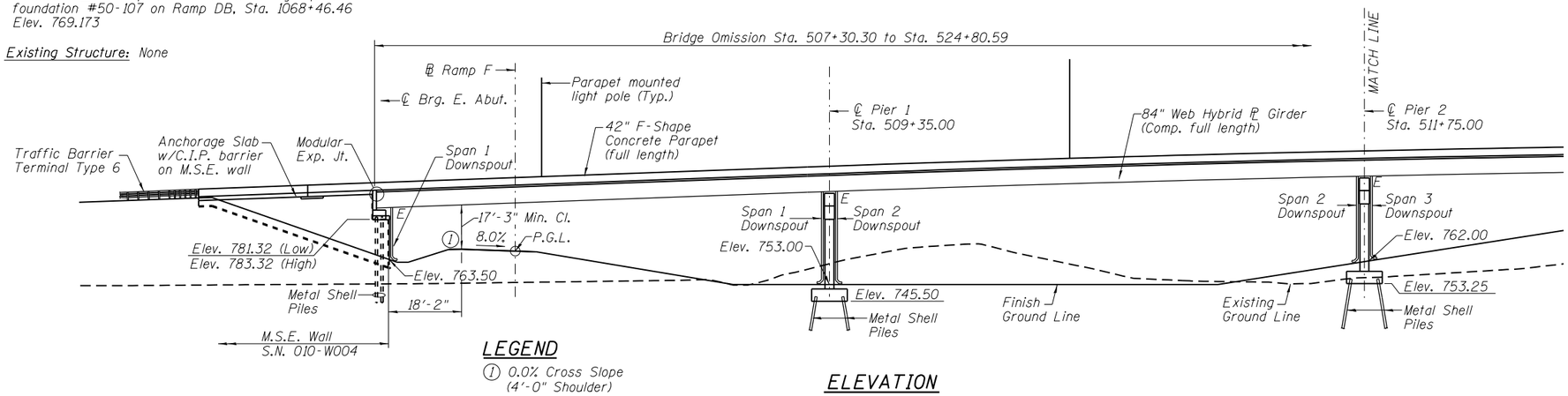
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

SHEET NO. OF SHEETS

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | 1 |
| | | CONTRACT NO. | | |
| ILLINOIS | FED. AID PROJECT | | | |

Bench Marks:
Chiseled "□" on top of N.W. corner of light pole foundation #50-107 on Ramp DB, Sta. 1068+46.46
Elev. 769.173

Existing Structure: None



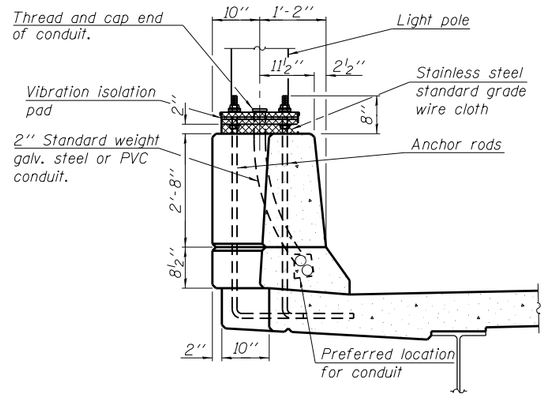

LEGEND
① 0.0% Cross Slope (4'-0" Shoulder)

ELEVATION

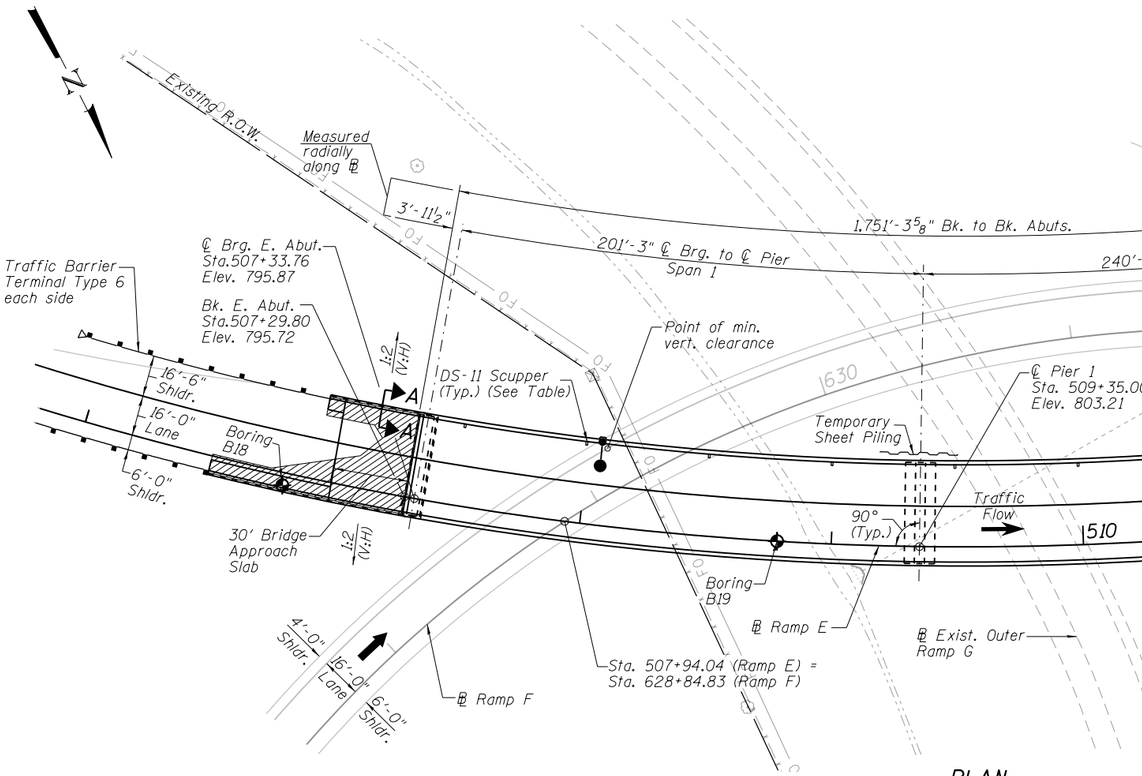
## LIGHT POLE LOCATIONS

| STATION | *OFFSET |
|---|---|
| 508+05.26 | 34.08' Lt. |
| 510+42.26 | 34.08' Lt. |
| 512+77.12 | 34.08' Lt. |
| 515+07.47 | 34.08' Lt. |
| 517+43.29 | 34.08' Lt. |
| 519+67.07 | 34.08' Lt. |
| 522+15.36 | 34.08' Lt. |
| 524+64.51 | 34.08' Lt. |

*From ℙ Ramp E
10"ϕ Light pole has height of 45 ft. with an 8 ft. mast arm. Bolt circle diameter is 15 in.




PARAPET MOUNTED LIGHT POLE




PLAN

## SOIL BORING LOCATIONS

| Boring No. | Station | Offset | Northing | Easting |
|---|---|---|---|---|
| B18 | 506+81.72 | 5.08' Rt. | 1266611.090 | 999025.606 |
| B19 | 508+81.19 | 1.38' Rt. | 1266722.099 | 998859.480 |
| B20A | 510+83.87 | 1.21' Lt. | 1266807.235 | 998675.757 |
| B20B | 510+80.98 | 7.13' Lt. | 1266800.678 | 998676.320 |
| B21 | 512+39.59 | 13.53' Rt. | 1266867.987 | 998530.909 |

NOTES:
1. See sheet 4 for Section A-A.
2. Existing Outer Ramp G shall be removed prior to Ramp E construction.

Approximate limits of Reinforced Soil Mass

## DS-11 SCUPPER LOCATIONS

| STATION | OFFSET | STATION | OFFSET | STATION | OFFSET | STATION | OFFSET | STATION | OFFSET | STATION | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 507+49.00 | 32.5' Lt. | 510+49.00 | 32.5' Lt. | 513+49.00 | 32.5' Lt. | 516+49.00 | 32.5' Lt. | 519+49.00 | 32.5' Lt. | 522+49.00 | 32.5' Lt. |
| 507+99.00 | 32.5' Lt. | 510+99.00 | 32.5' Lt. | 513+99.00 | 32.5' Lt. | 516+99.00 | 32.5' Lt. | 519+99.00 | 32.5' Lt. | 522+99.00 | 32.5' Lt. |
| 508+49.00 | 32.5' Lt. | 511+49.00 | 32.5' Lt. | 514+49.00 | 32.5' Lt. | 517+49.00 | 32.5' Lt. | 520+49.00 | 32.5' Lt. | 523+49.00 | 32.5' Lt. |
| 508+99.00 | 32.5' Lt. | 511+99.00 | 32.5' Lt. | 514+99.00 | 32.5' Lt. | 517+99.00 | 32.5' Lt. | 520+99.00 | 32.5' Lt. | 523+99.00 | 32.5' Lt. |
| 509+49.00 | 32.5' Lt. | 512+49.00 | 32.5' Lt. | 515+49.00 | 32.5' Lt. | 518+49.00 | 32.5' Lt. | 521+49.00 | 32.5' Lt. | 524+49.00 | 32.5' Lt. |
| 509+99.00 | 32.5' Lt. | 512+99.00 | 32.5' Lt. | 515+99.00 | 32.5' Lt. | 518+99.00 | 32.5' Lt. | 521+99.00 | 32.5' Lt. | | |

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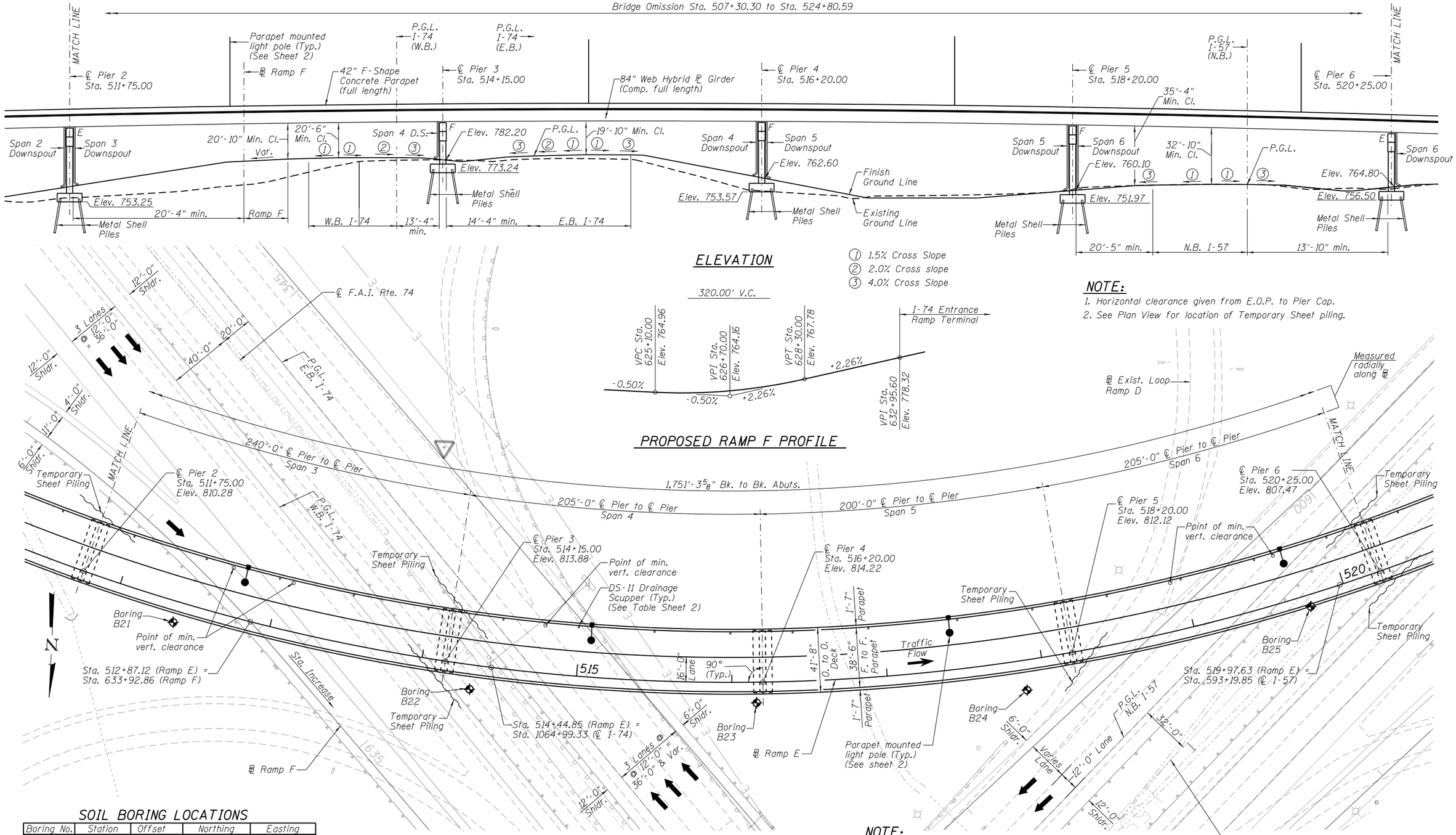
CMT

| | | |
|---|---|---|
| USER NAME = Brad Downen | DESIGNED CJW | REVISED |
| ...\D570897-TSL-(1)_Ramp E over I74 and I57.dgn | CHECKED WLB | REVISED |
| PLOT SCALE = | DRAWN GLD | REVISED |
| PLOT DATE = | CHECKED CJW | REVISED |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-57 & I-74 INTERCHANGE
STRUCTURE NO. 010-1001 - GENERAL PLAN I
SHEET NO. OF SHEETS

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | 2 |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |




## ELEVATION

① 1.5% Cross Slope
② 2.0% Cross slope
③ 4.0% Cross Slope




## PROPOSED RAMP F PROFILE

## NOTE:

1. Horizontal clearance given from E.O.P. to Pier Cap.
2. See Plan View for location of Temporary Sheet piling.




## PLAN

## NOTE:

1. Existing Loop Ramp D shall be in service during Ramp E construction.

## SOIL BORING LOCATIONS

| Boring No. | Station | Offset | Northing | Easting |
|---|---|---|---|---|
| B21 | 512+39.59 | 13.53' Rt. | 1266867.987 | 998530.909 |
| B22 | 514+32.86 | 15.86' Rt. | 1266902.120 | 998338.552 |
| B23 | 516+15.94 | 13.31' Rt. | 1266902.016 | 998153.483 |
| B24 | 517+87.57 | 19.18' Rt. | 1266885.527 | 997980.444 |
| B25 | 519+75.77 | 7.88' Rt. | 1266823.499 | 997800.440 |

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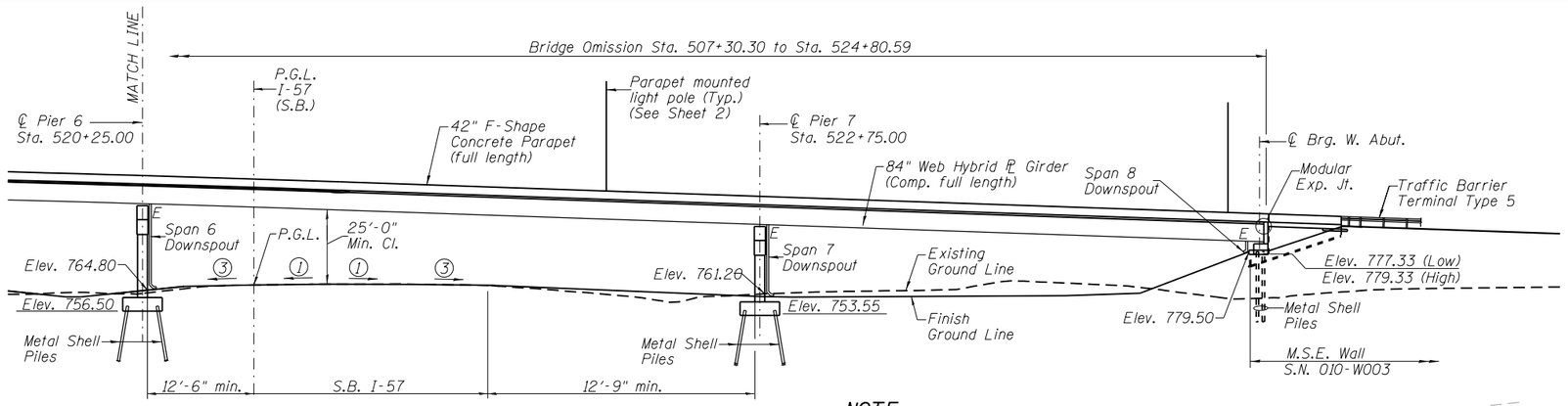
CMT

| | | |
|---|---|---|
| USER NAME = Brad Downen | DESIGNED CJW | REVISED |
| ...\D570897-TSL-(2),Ramp E over I74 and I57.dgn | CHECKED WLB | REVISED |
| PLOT SCALE = | DRAWN GLD | REVISED |
| PLOT DATE = | CHECKED CJW | REVISED |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**I-57 & I-74 INTERCHANGE**
**STRUCTURE NO. 010-1001 – GENERAL PLAN II**
SHEET NO. OF SHEETS

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
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| | | CONTRACT NO. | | |
| ILLINOIS FED. AID PROJECT | | | | |



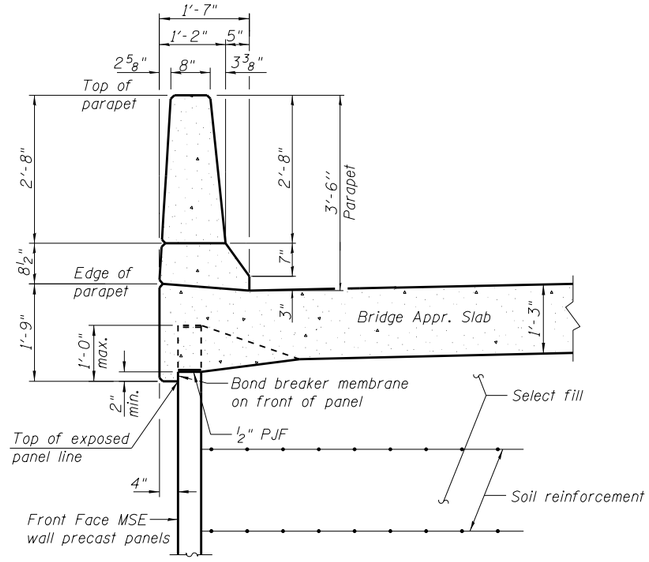

ELEVATION

**LEGEND**

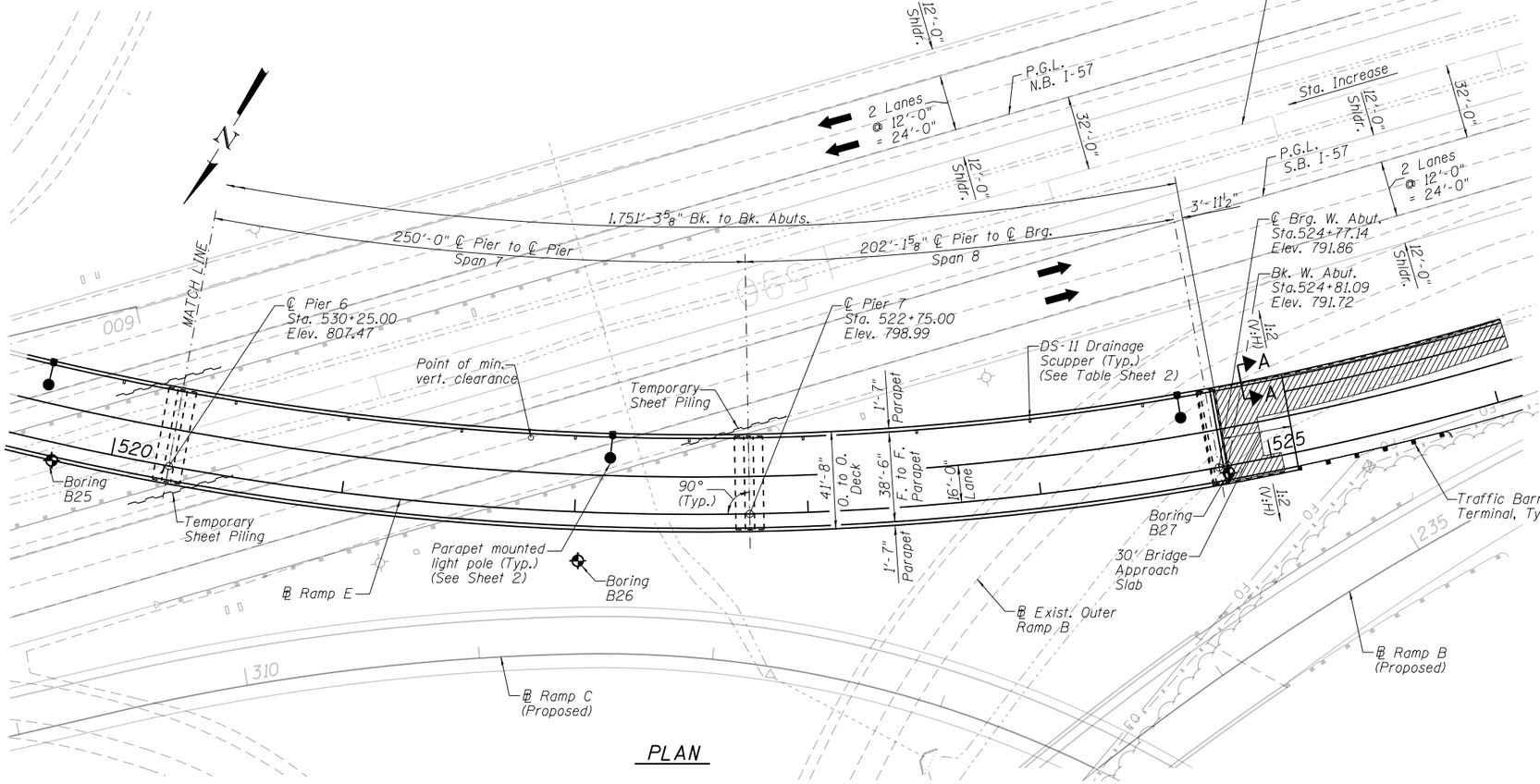
① 1.5% Cross Slope
② 2.0% Cross slope
③ 4.0% Cross Slope

**NOTE:**

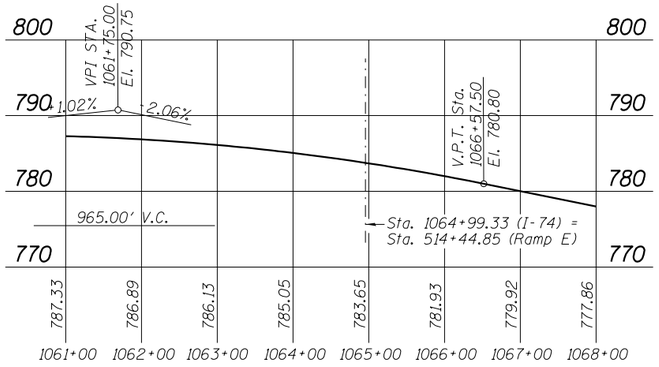
1. Horizontal clearance given from E.O.P. to Pier Cap.
2. See Plan View for location of Temporary Sheet piling.



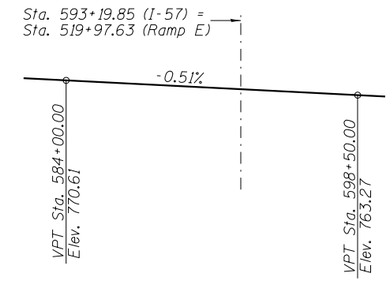

SECTION A-A




PLAN




PROPOSED F.A.I. RTE. 74 PROFILE




PROPOSED F.A.I. RTE. 57 PROFILE

**NOTE:**

1. Existing Outer Ramp B shall be temporarily relocated to not impede West Abutment construction.

**SOIL BORING LOCATIONS**

| Boring No. | Station | Offset | Northing | Easting |
|---|---|---|---|---|
| B25 | 519+75.77 | 7.88' Rt. | 1266823.499 | 997800.440 |
| B26 | 522+02.29 | 20.96' Rt. | 1266738.141 | 997587.740 |
| B27 | 524+80.74 | 3.09' Rt. | 1266556.248 | 997373.411 |

Approximate limits of Reinforced Soil Mass

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CMT

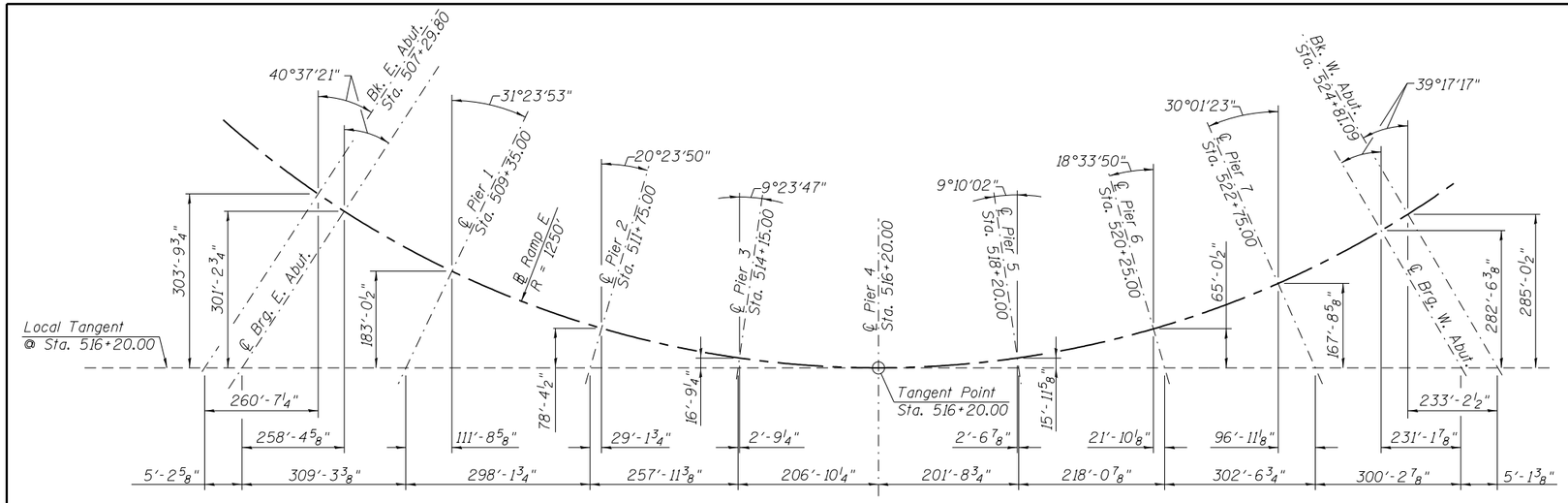
| | | |
|---|---|---|
| USER NAME = Brad Downen | DESIGNED CJW | REVISED |
| ...\D570897-TSL-(3)_Ramp E over I74 and I57.dgn | CHECKED WLB | REVISED |
| PLOT SCALE = | DRAWN GLD | REVISED |
| PLOT DATE = | CHECKED CJW | REVISED |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

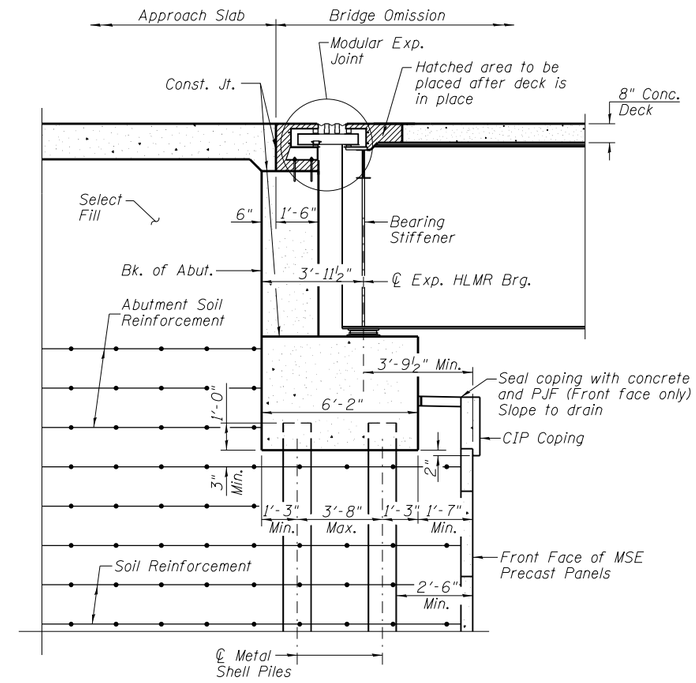
**I-57 & I-74 INTERCHANGE**
**STRUCTURE NO. 010-1001 - GENERAL PLAN III**
SHEET NO. OF SHEETS

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | 4 |

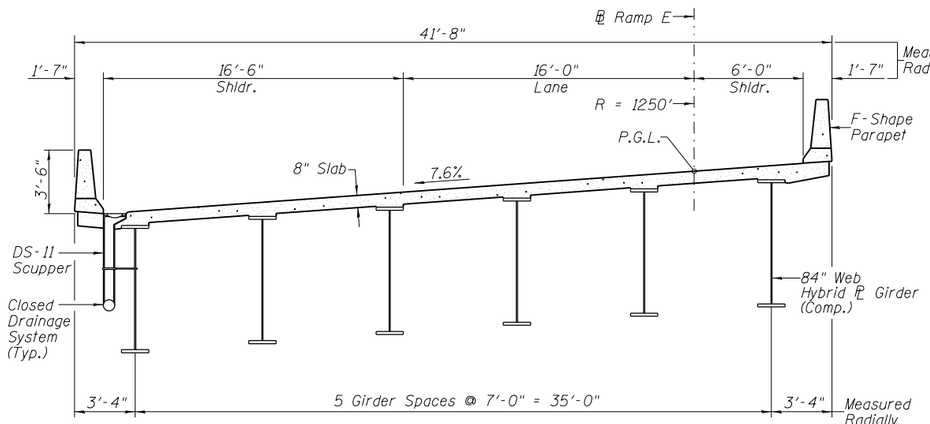
CONTRACT NO.
ILLINOIS FED. AID PROJECT




## OFFSET SKETCH

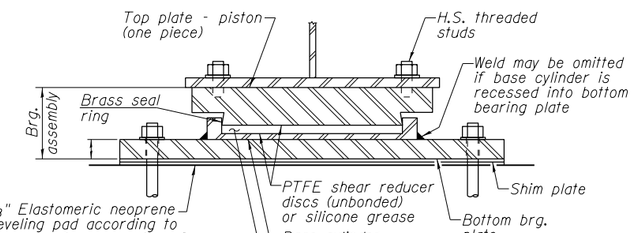



## SECTION THRU ABUTMENT



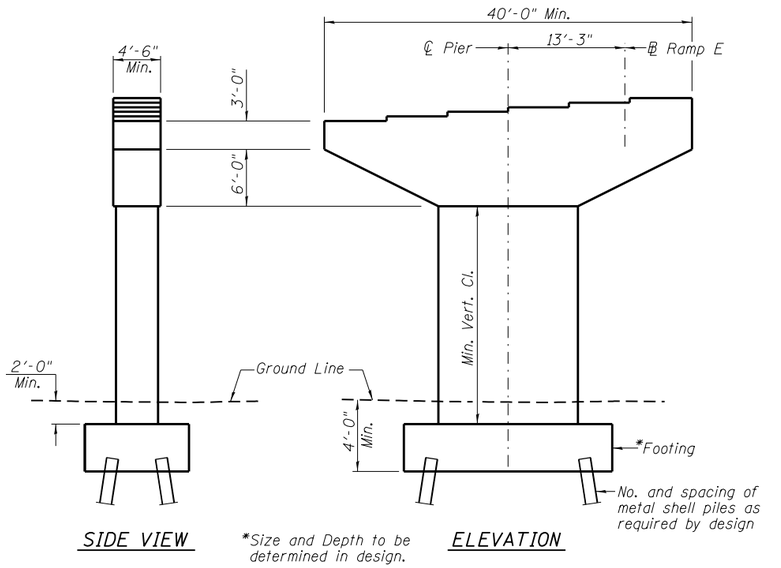

## CROSS SECTION

(Looking Upstation)



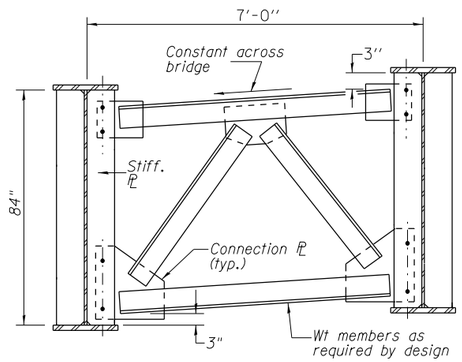

## FIXED HLMR BEARING

Pier 3 - 5



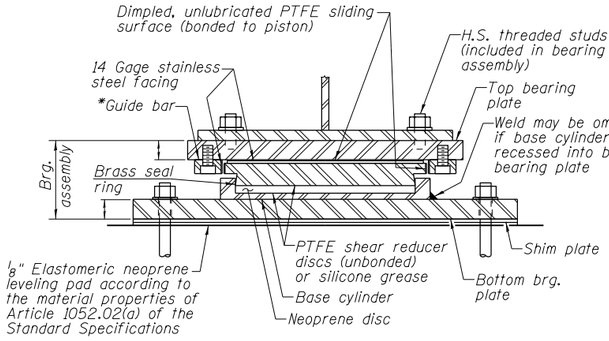

## PIER 1 THRU PIER 7 SKETCH

(Looking Upstation)




## INTERIOR CROSS FRAME

*As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.




## GUIDED EXPANSION HLMR BEARING

E. Abut., Pier 1, 2, 6 & 7, and W. Abut.

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| | | | |
|---|---|---|---|
| USER NAME = Brad Downen | DESIGNED CJW | REVISED | |
| ...\D570897-TSL-(4),Ramp E over 174 and 157.dgn | CHECKED WLB | REVISED | |
| PLOT SCALE = | DRAWN GLD | REVISED | |
| PLOT DATE = | CHECKED CJW | REVISED | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**I-57 & I-74 INTERCHANGE**
**STRUCTURE NO. 010-1001 - GENERAL DETAILS**
SHEET NO. OF SHEETS

| F.A.I. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| | | | | 5 |
| | | CONTRACT NO. | | |
| | ILLINOIS FED. AID PROJECT | | | |