



Illinois Department of Transportation

To: Keith Roberts
From: Jack A. Elston
Subject: Pavement Design Approval
Date: November 5, 2021

Attn: Carrie Nelsen
By: Michael Brand

A handwritten signature in blue ink, appearing to read 'Michael Brand'.

Route: IL 15 at I-57/64 Job No.: D-99-043-15
Section: Contract No.:
County: Jefferson Target Letting:
Limits: I-57/64 and IL 15 Interchange at Mt. Vernon

We have reviewed the pavement design for the above referenced project which was most recently submitted on October 28, 2021. The project will reconstruct IL 15 within the interchange to provide a diverging diamond configuration with a 6-lane cross-section. The existing interchange ramps will also be replaced.

We concur with the district this is a special design due to the volume of multiple-unit trucks in the design lane. We also agree with the District's recommendation to use a mechanistic rigid pavement design.

In summary, the approved pavement design is as follows:

IL 15 - Reconstruction

10.5" JPCP with PCC Curb & Gutter or Tied 10.5" PCC Shlds.
4" Stabilized Subbase
12" Aggregate Subgrade Improvement

I-57/64 Interchange Ramps - Reconstruction

10.5" JPCP with 10.5" tied PCC Shoulders
4" Stabilized Subbase
12" Aggregate Subgrade Improvement

If you have any questions, please contact Mike Brand at (217) 782-7651.

I-57/64 & IL 15 PRELIMINARY ENGINEERING STUDY

PAVEMENT DESIGN:

I-57/64 & IL 15 PAVEMENT RECONSTRUCTION

ROUTE: FAI 57/64 (I-57/64) AT FAP 821 (IL 15)

SECTION: VARIOUS

COUNTY: JEFFERSON

JOB NO: D-99-043-15

DATE: NOVEMBER 2021

PREPARED FOR:

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT NINE, BUREAU OF PROGRAM DEVELOPMENT

2801 MURPHYSBORO ROAD, CARBONDALE, ILLINOIS 62901



PREPARED BY:





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1.0 Introduction

The limits of the Preliminary Engineering Studies for improvements at the existing Interstate 57/64 (I-57/I-64) interchange with Illinois Route 15 (IL 15) on the west side of the City of Mount Vernon in Jefferson County, Illinois are shown in **Exhibit 1: Location Map** and **Exhibit 2: Project Overview**. Mount Vernon is at the crossroads of two major interstates of I-57 as a north-south route connecting Chicago and Memphis and I-64 as an east-west route connecting St. Louis to Louisville. In this overlap section of I-57 and I-64, the IL 15 Interchange is one of two service interchanges that are between the system interchanges located approximately 1.6 miles north of and 3.1 miles south of IL 15.

2.0 Project Information

The section of IL 15 is anticipated to be reconstructed at the interchange between 45th Street (Potomac Boulevard) and the 44th Street Frontage Road.

Route Designation - FAI 57/64 (I-57/64): Interstate & FAP 821 (IL 15): Other Principal Arterial

FAI 57/64 (I-57/64) is a Class I Truck Route

FAP 821 (IL 15) is a Class II Truck Route

Anticipated Construction Year: 2024

Design Year: 2044 (20-year design)

Traffic counts from 2019 were used to determine the existing daily traffic along IL Route 15. Based upon historic traffic and recent completed studies in the area, a 1.0% annual growth rate was used to forecast for future years. In addition to the 1.0% annual general traffic growth, a previously completed Traffic Impact Study for the West Industrial Park was reviewed and half of the anticipated additional traffic volumes were added to the 2044 traffic projections for the project. The 2044 design year traffic volumes were developed based upon these sources with truck volumes of 25% (MU 15% & SU 10%).

Table 1 – Traffic Data from the IDOT's 2019 Traffic Study

Roadway	2019 ADT	2044 ADT	% Trucks
IL Route 15	24,700	27,300	25%
I-57/64	47,300	60,700	30%
Southbound Off-Ramp	4,550	5,400	28%
Southbound On-Ramp	4,000	4,500	31%
Northbound Off-Ramp	3,100	3,600	35%
Northbound On-Ramp	5,400	5,900	23%



2.1. Existing Condition

The existing IL 15 typical roadway section generally consists of 4, 12-foot travel lanes, 2 in each direction, with 12-foot outside concrete shoulders and a concrete median separating the travelled ways. The typical section varies throughout the IL 15 corridor as median widths and shoulder widths change with the presence of turn lanes. Throughout this section there are three concrete medians that vary from 3.5-foot to 17-foot. The existing pavement is comprised of $10\pm$ inches of Portland Cement Concrete (PCC), $4\pm$ inches of stabilized Sub-Base, and $12\pm$ inches of Lime Modified Soil.

The existing I-57/64 interstate pavement within the limits of the existing ramps for the IL 15 diamond interchange consists of 10.50 inches of Continuously Reinforced Concrete (CRC) pavement with the typical roadway section consisting of 6, 12-foot travel lanes, 3 in each direction, with a 12-foot auxiliary lane between IL 15 and the next interchange to the south (Veterans Memorial Drive) and 12-foot outside shoulders consisting of 10.50 inches CRC pavement.

The existing I-57/64 interstate ramps consist of 10.50 inches of Continuously Reinforced Concrete (CRC) pavement within the terminal connections to the mainline interstate pavement and then 10.50 inches of jointed PCC pavement from the exit/entrance terminal to the crossroad intersection and consist of single lane ramps with 16-foot travel lanes and additional turn lanes at the signalized intersections.

2.2. Proposed Improvements

The proposed IL 15 typical section within the limits of the interchange will consist of 6, 12-foot travel lanes, 3 in each direction with concrete shoulders or curb and gutter. The new typical section will include a raised concrete median the length to the project. The proposed horizontal alignment will be shifted to the south of the existing IL 15 alignment. The proposed horizontal alignment will incorporate horizontal curves required for a Diverging Diamond type interchange. The proposed vertical profile associated with the IL 15 alignment provides longitudinal grades necessary to accommodate minimum urban drainage requirements as well as minimum vertical clearance over I-57/I-64. The proposed improvements will require full pavement reconstruction.

Per BDE 34-2.02(c) any approach roadway shoulders will be full-depth pavement to allow the shoulders to carry traffic during current and future construction improvements, but most of the improved segment will include combination concrete curb and gutter Type B-6.24.

The proposed I-57/64 interstate ramps are all anticipated to be single lane ramps with additional turn lanes introduced at the signalized diverging diamond intersections near the crossovers. The existing CRC pavement ramp terminal connections to the mainline interstate pavement will be maintained if possible and confirmed during preparation of the Interchange Design Study prepared for the new interchange type. If required, new CRC ramp terminal connections will be provided adjacent to the mainline CRC pavement with jointed PCC pavement proposed beyond the exit/entrance terminal. See **Exhibit 4: Plan Sheets**, for the limits of the proposed improvements.



2.3. IL 15 Pavement Design

Per Section 54-1.05(a) of the BDE Manual, conditions were met for a “High-Stress” intersection given the volume of multiple-unit trucks anticipated in the design lane. The proposed configuration of turning roadways as part of the diverging diamond interchange type could also cause shoving or rutting of HMA surface material. Therefore, PCC pavement is desired for this location.

Based on the flowchart for selection of the design methodology, this location was identified as a “Special Design” and concurrence given by BDE in a teleconference meeting on October 21, 2021. Based on this special design condition a LCCA is not included. The IL 15 Pavement Design was completed in accordance with BDE Chapter 54. The pavement structure for the proposed pavement designs can be seen in **Exhibit 3: Typical Sections**. The IDOT Mechanistic Pavement Design spreadsheet (Rev. 11/22/2019) was utilized to determine the proposed pavement thickness. The comprehensive Mechanistic Pavement Design for IL 15 is summarized below. See **Exhibit 5: Pavement Design for IL 15** for detailed calculations.

IL 15 Pavement Design

	Traffic Factor	Depth (in)
HMA	16.57	14.75
JPCP	23.00	10.50

The JPCP option was selected for this special design location given the anticipated truck volumes and turning movements being high and given the surrounding land usage and potential for future growth in trucks utilizing the facility. Also, the majority of the new IL 15 pavement will be constructed on new alignment which better facilitates the construction of concrete with less future maintenance on such a high truck traffic facility. The recommended pavement design for IL 15 is a rigid pavement with a thickness of 10.50 inches and any approach shoulders would be full depth JPCP shoulders:

Lane Pavement

- JCPC Pavement (Full-Depth), 10.50”
- Stabilized Sub-Base, 4”

Shoulder Pavement

- JCPC Pavement (Full-Depth), 10.50”
- Stabilized Sub-Base, 4”



3.0 Interstate Ramps Pavement Design

3.1. I-57/64 Ramps

The I-57 & I-74 ramps are proposed to be single 16' lanes with 6' paved shoulders on the left and 10' paved shoulders on the right edges of pavement. See **Exhibit 3: Proposed Typical Sections**.

The ramp with the highest volume of trucks (Ramp A) was used to summarize a comprehensive pavement design for the entire length of the I-57/64 ramps in accordance with BDE Figure 54-1.B. Structural design traffic calculations are shown in **Exhibit 4: Traffic Factor Calculation** and **Table 1**.

Full depth shoulders are recommended for all I-57/64 ramps due to high truck volumes per BDE Section 54-5.01(l) and to accommodate staged construction for this project and future maintenance and reconstruction activities per BDE Section 34-2.02(c).

The comprehensive Mechanistic Pavement Design for all the I-57/64 ramps with full depth shoulders is summarized below. See **Exhibit 6: Pavement Design for I-57/64 Ramps** for detailed calculations.

I-57/64 Ramps Pavement Design

	Traffic Factor	Depth (in)
HMA	17.12	15.00
JPCP	24.54	10.50

Since JPCP is the preferred pavement type for the new IL 15 pavement that will need to be constructed on new alignment as part of the interchange reconfiguration, and given the high anticipated truck volumes and turning movements at this interchange, the recommended pavement design for the I-57/64 ramps is a rigid pavement with a thickness of 10.5 inches and full depth JPCP shoulders:

Lane Pavement

- JCPC Pavement (Full-Depth), 10.50"
- Stabilized Sub-Base, 4"

Shoulder Pavement

- JCPC Pavement (Full-Depth), 10.50"
- Stabilized Sub-Base, 4"



4.0 Exhibits

Exhibit 1: *Location Map*

LOCATION MAP

PROJECT LOCATION
I-57/64 AT
IL 15 INTERCHANGE

DRIVERS
Drivers

MOUNT VERNON

VETERANS MEMORIAL DR

MARCOE

SCALE BAR

0 1 MILE 2 MILE 3 MILE

FAI (I-57/64) AT FAP 821 (IL 15)
ILLINOIS DEPARTMENT OF TRANSPORTATION
JEFFERSON COUNTY, ILLINOIS

LOCATION MAP
EXHIBIT 1
DATE: JULY 2021

PROJECT LOCATION
I-57/64 AT
IL 15 INTERCHANGE

MOUNT VERNON



VETERANS MEMORIAL DR

IL 148

IL 37

I-64

MARCOE

LOCATION MAP
EXHIBIT 1
DATE: JULY 2021

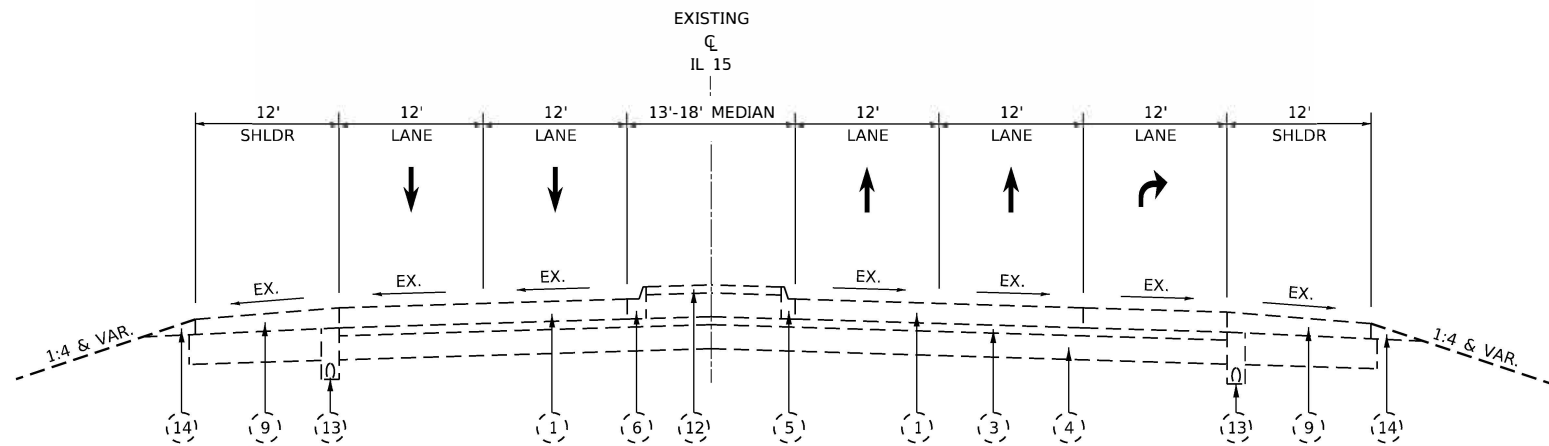




Exhibit 2: *Project Overview*

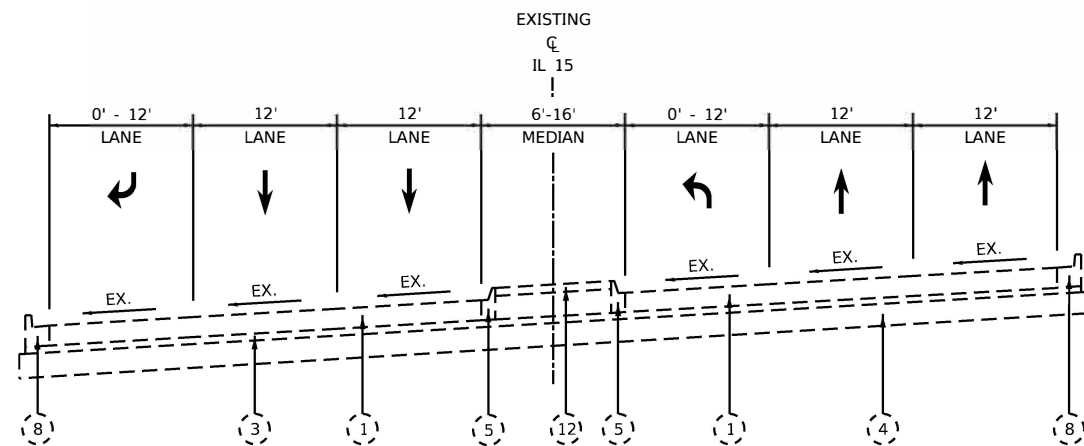


Exhibit 3: *Typical Sections*



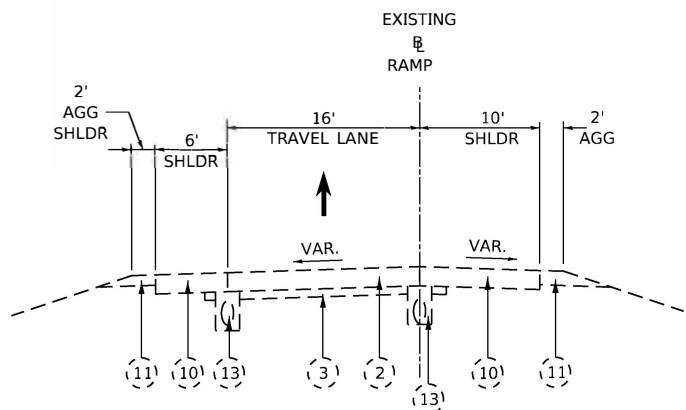
IL 15 - EXISTING

IL 15 AT SB RAMPS
(LOOKING EAST)



IL 15 - EXISTING

IL 15 EAST OF NB RAMPS
(LOOKING EAST)



EXISTING I-57/64 & IL 15 INTERCHANGE RAMP

(LOOKING NORTH)

EXISTING LEGEND

- (1) P.C.C. PAVEMENT, 10" HINGE JOINT
- (2) CONT. REINF. PCC PAVEMENT, 9.5"
- (3) STABILIZED SUB-BASE, 4"
- (4) 12" LIME MODIFIED SOIL
- (5) COMB. CONCRETE CURB & GUTTER, TYPE M-6.06
- (6) COMB. CONCRETE CURB & GUTTER, TYPE M-6.12
- (7) COMB. CONCRETE CURB & GUTTER, TYPE M-6.24
- (8) COMB. CONCRETE CURB & GUTTER, TYPE B-6.24
- (9) P.C.C. SHOULDERS, 10"
- (10) BITUMINOUS SHOULDER, 9.5"
- (11) AGGREGATE SHOULDER, TYPE A
- (12) CONCRETE MEDIAN SURFACE, 4"
- (13) PIPE UNDERDRAIN SYSTEM
- (14) EARTH WEDGE SHOULDER

EXHIBIT 3

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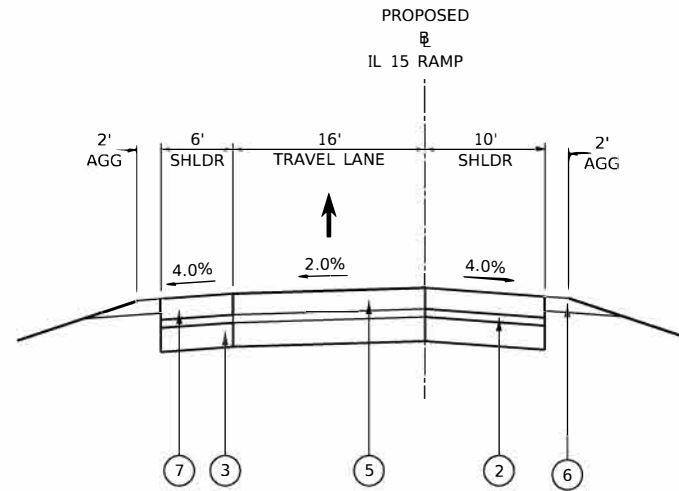
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING TYPICAL SECTIONS

SCALE: SHEET OF SHEETS STA. TO STA.

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		CONTRACT NO.		
		ILLINOIS	FED. AID PROJECT	

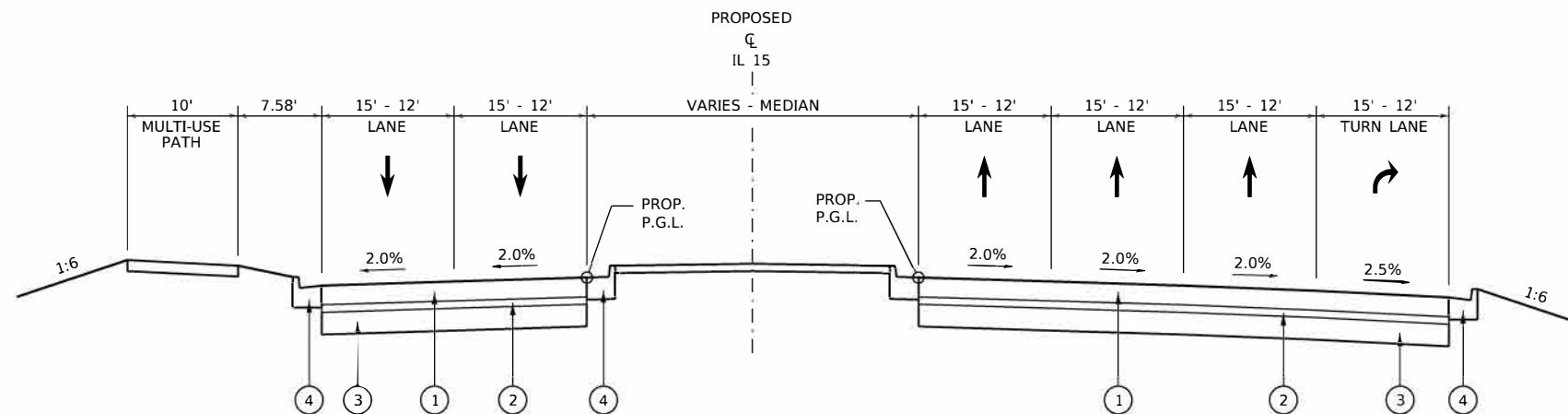
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PROPOSED IL 15 INTERCHANGE RAMP
(LOOKING NORTH)

PROPOSED LEGEND

- ① PROPOSED PCC PAVEMENT, 10.50"
- ② STABILIZED SUBBASE, 4"
- ③ PROPOSED AGGREGATE SUBGRADE IMPROVEMENT, 12"
- ④ PROPOSED C.C.C. & G TYPE B-6.24
- ⑤ PROPOSED PCC PAVEMENT, 10.50"
- ⑥ AGGREGATE SHOULDER, TYPE B
- ⑦ PROPOSED PCC SHOULDER, 10.50"

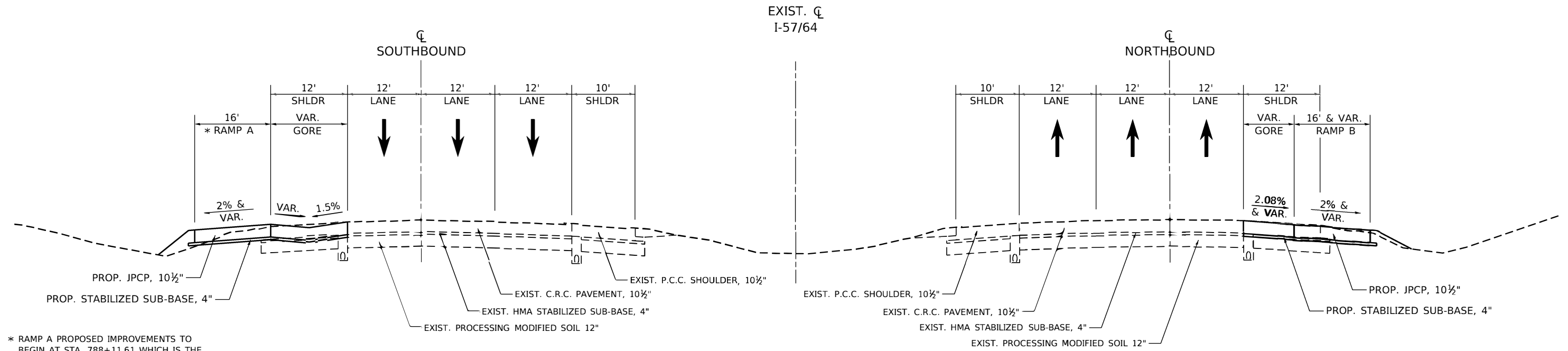


IL 15 - PROPOSED THROUGH INTERCHANGE
(LOOKING EAST)

EXHIBIT 3

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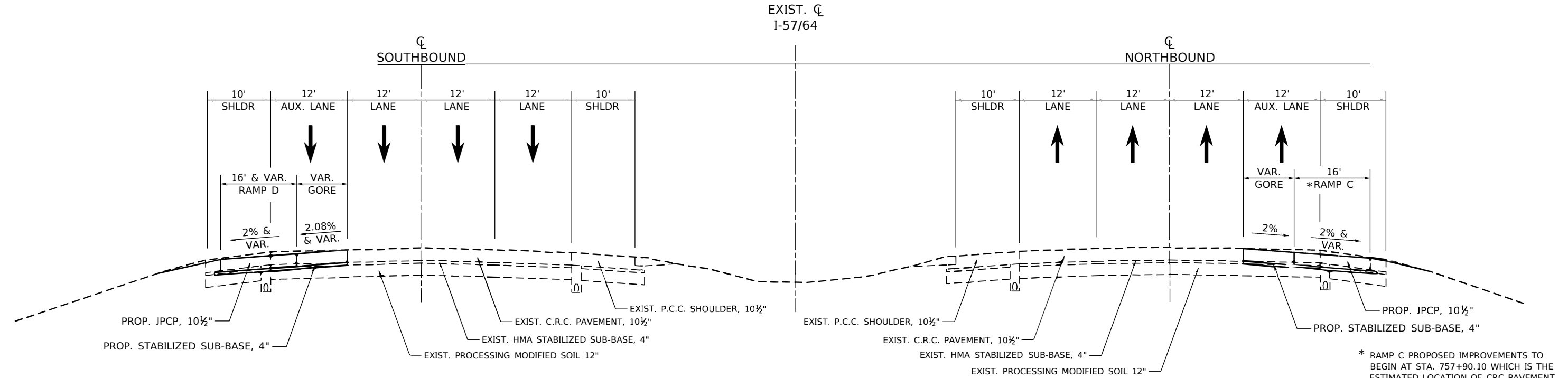
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* RAMP A PROPOSED IMPROVEMENTS TO BEGIN AT STA. 788+11.61 WHICH IS THE ESTIMATED LOCATION OF CRC PAVEMENT LIMITS.

I-57/64 EXISTING SECTION - 3 LANE NORTH OF INTERCHANGE

(LOOKING NORTH)



* RAMP C PROPOSED IMPROVEMENTS TO BEGIN AT STA. 757+90.10 WHICH IS THE ESTIMATED LOCATION OF CRC PAVEMENT LIMITS.

I-57/64 EXISTING SECTION - 4 LANE SOUTH OF INTERCHANGE

(LOOKING NORTH)

INTERCHANGE DESIGN STUDY

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FAP ROUTE XXX WITH (IL RTE 15)

SEC. NO. NEED

SCALE COUNTY JEFFERSON

SIN : PROJ. NO.

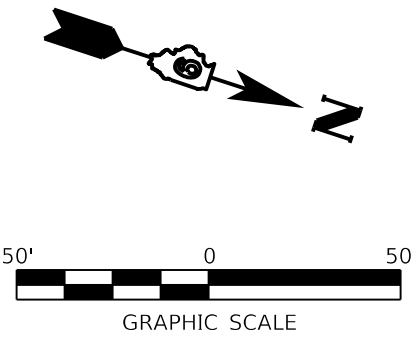
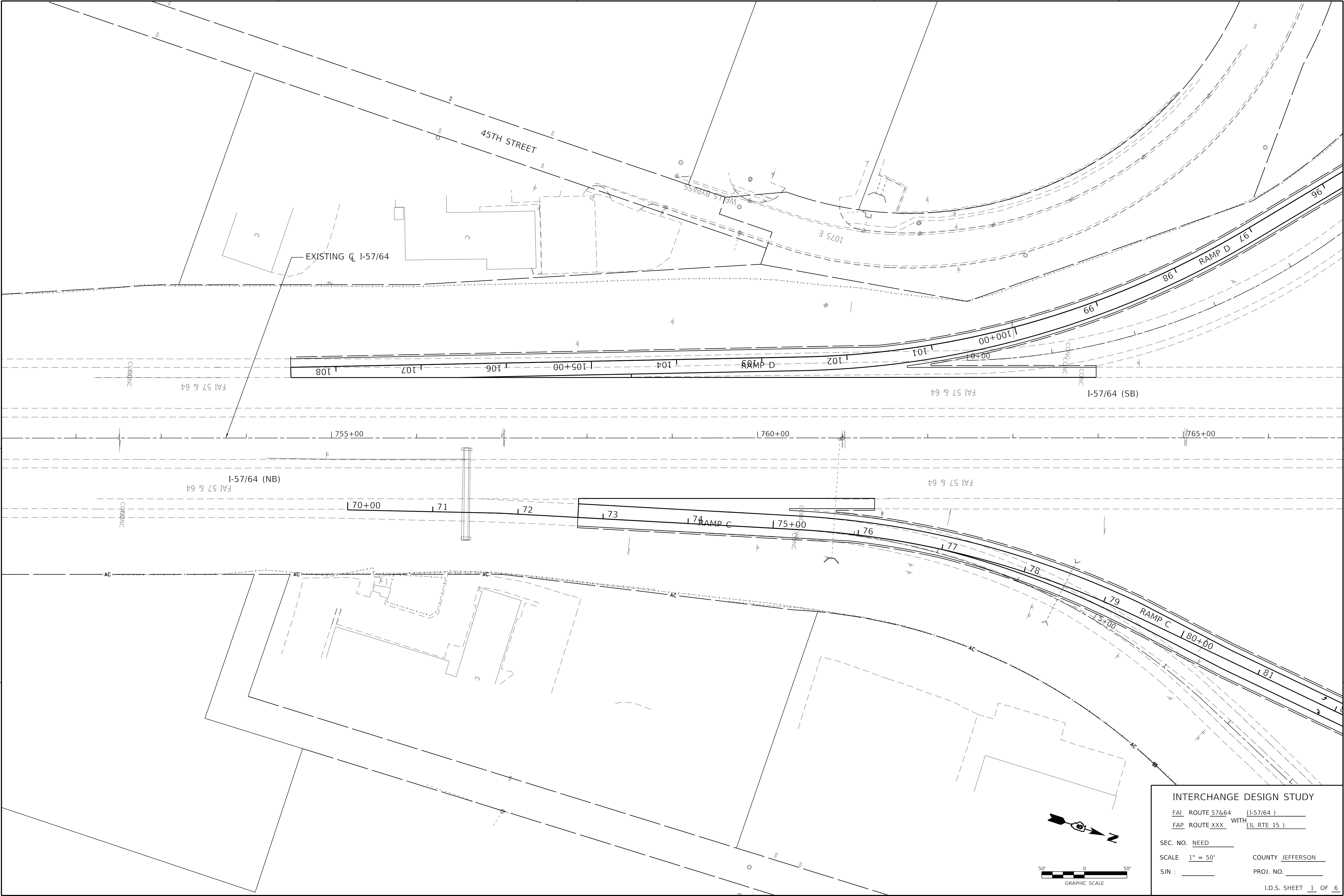
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EXHIBIT 3



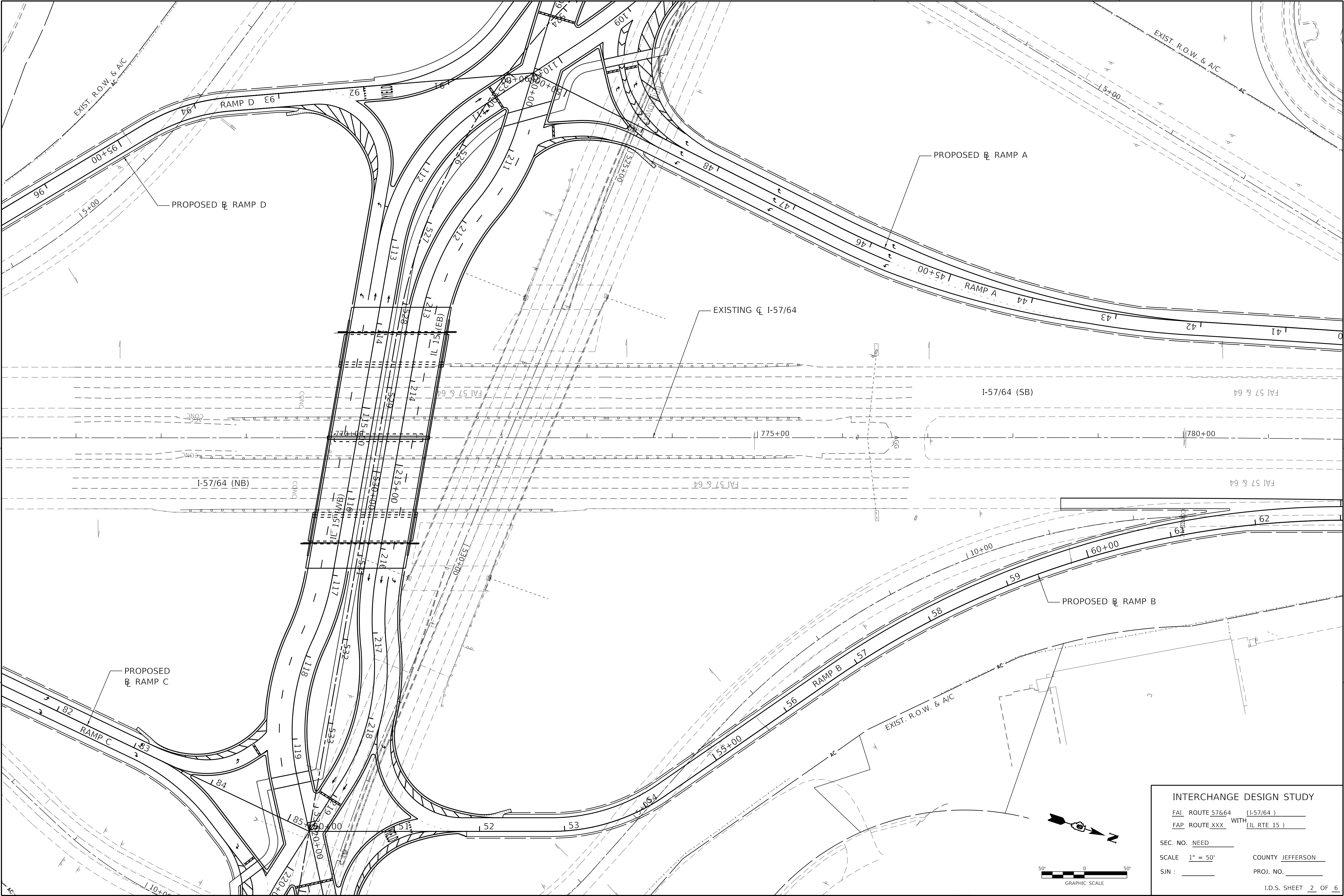
Exhibit 4: *Plan Sheets*

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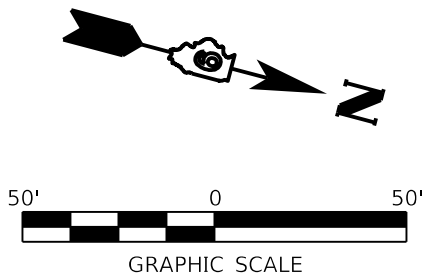
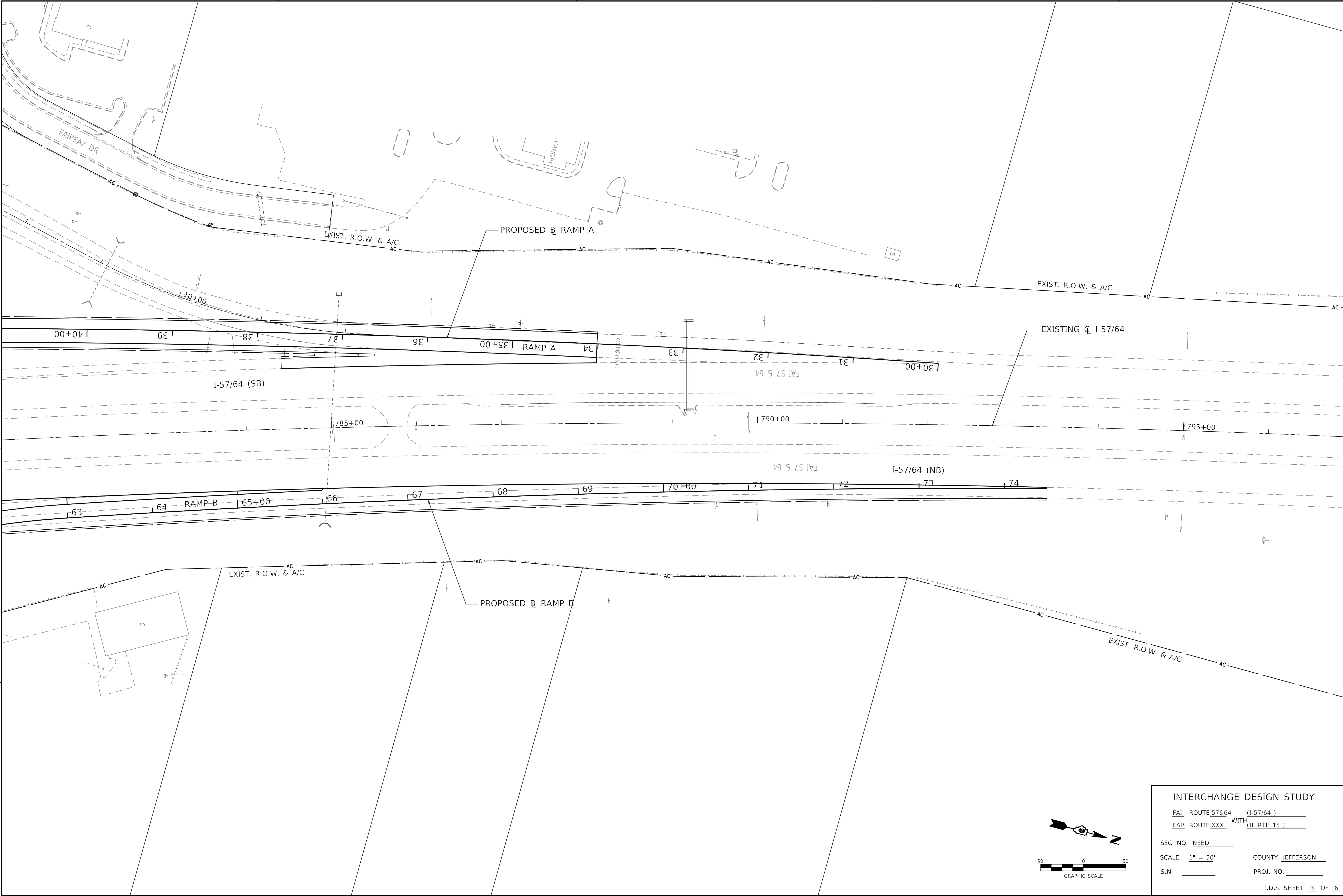


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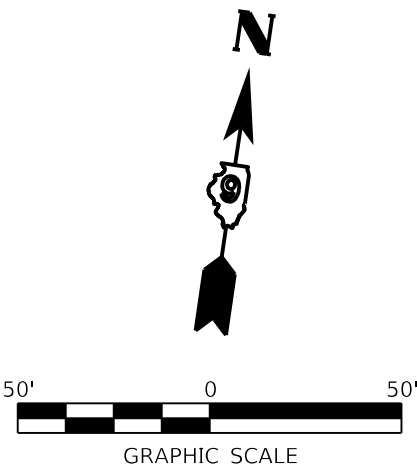
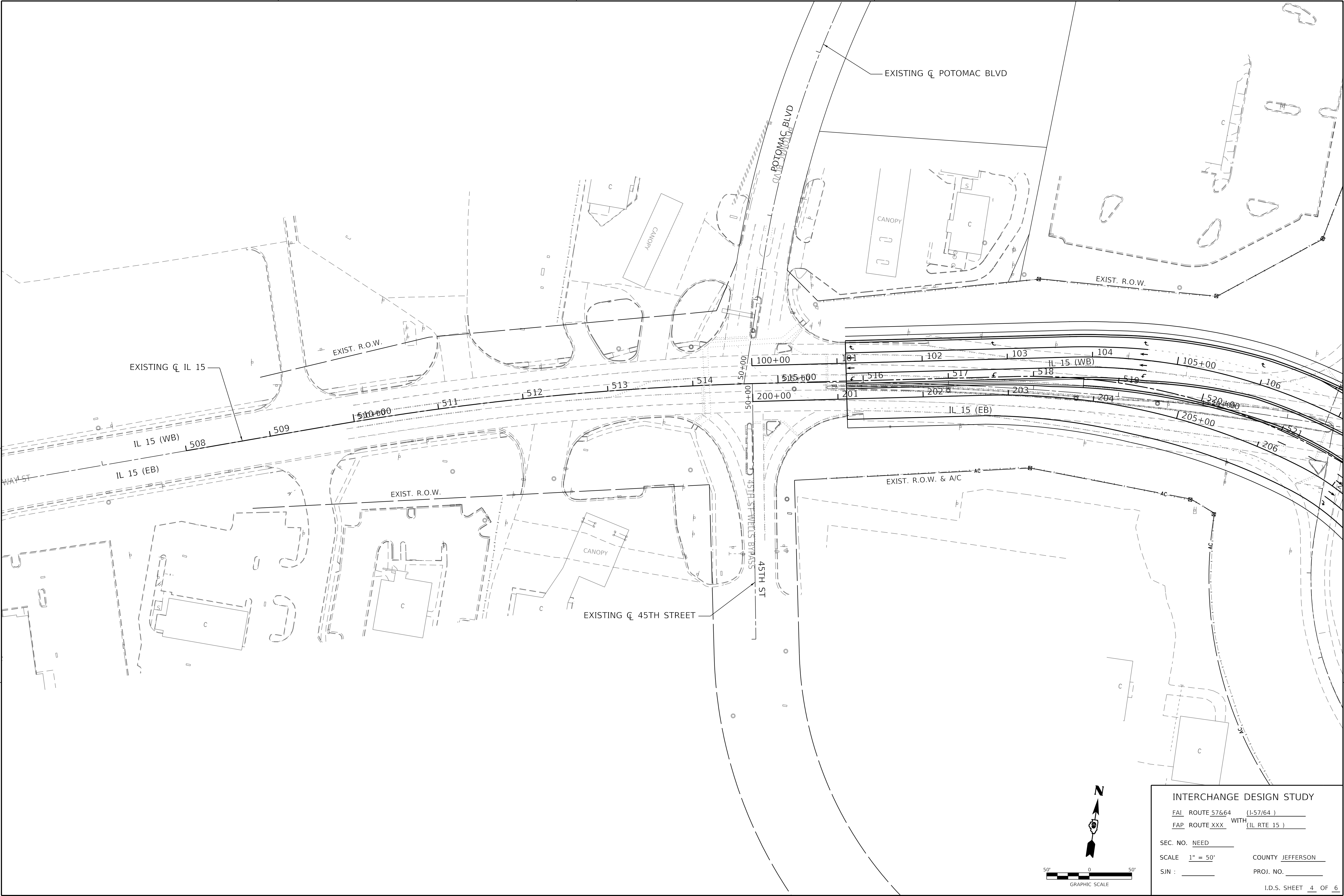
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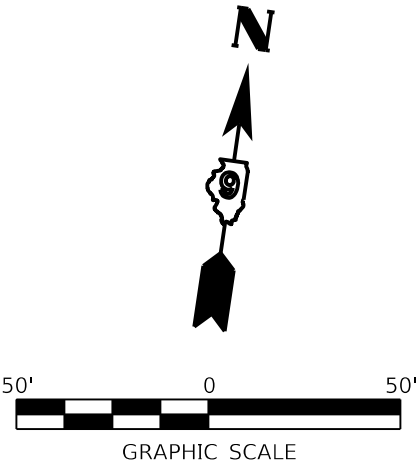
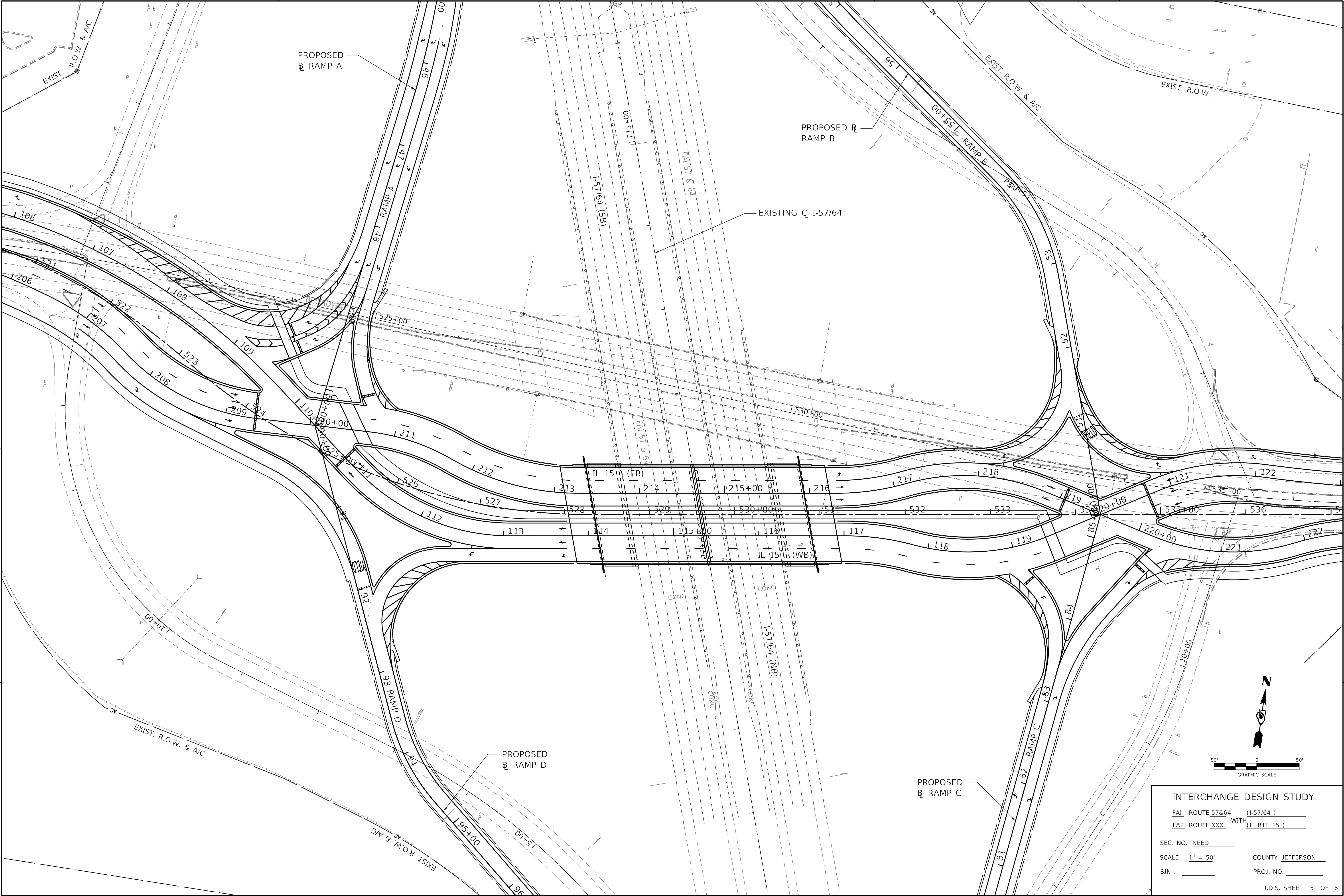
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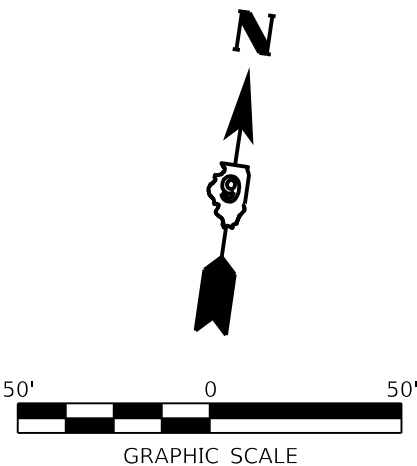
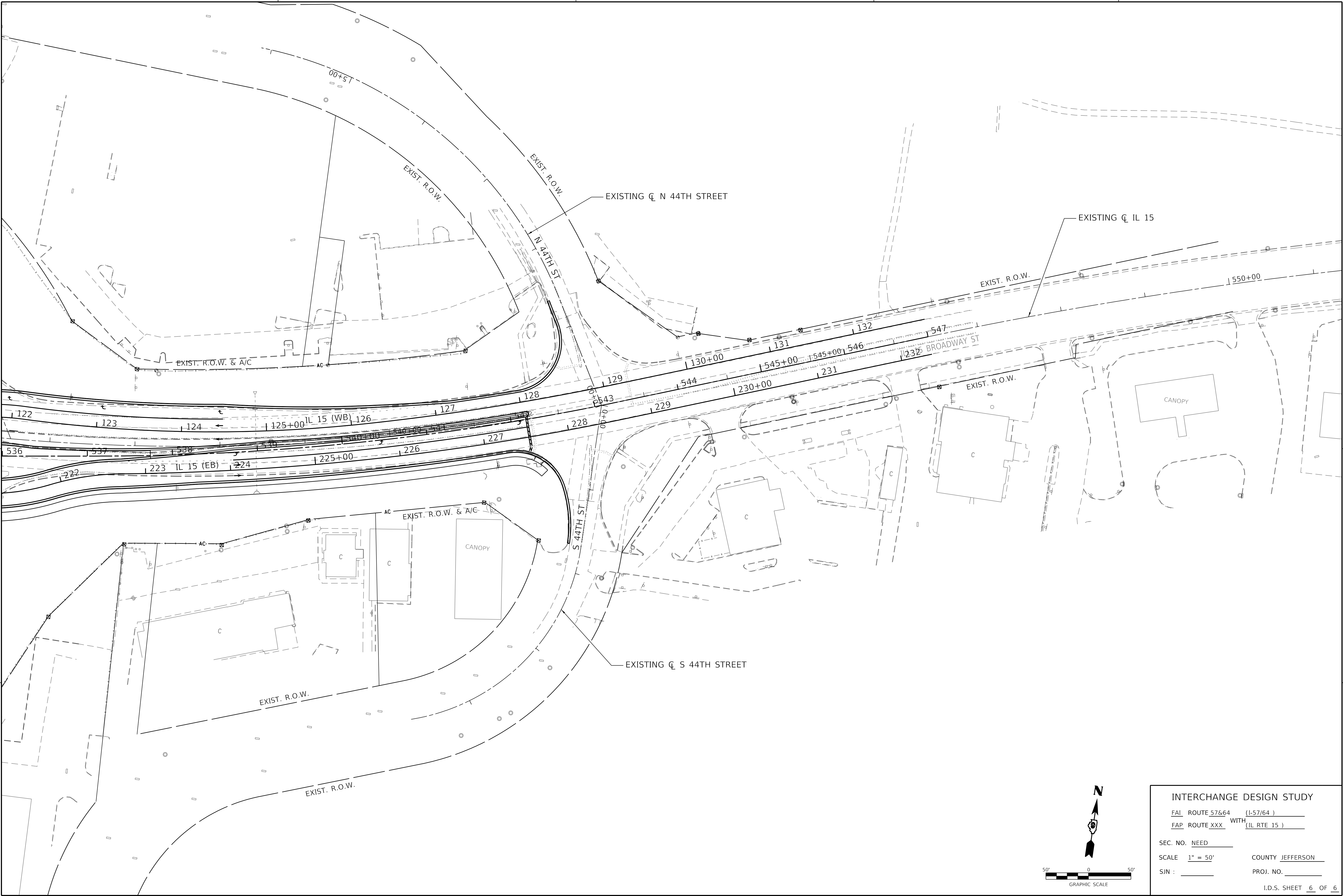


INTERCHANGE DESIGN STUDY

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INTERCHANGE DESIGN STUDY

FAI ROUTE 57&64 (L-57/64)
FAP ROUTE XXX WITH (IL RTE 15)

SEC. NO. NEED
SCALE 1" = 50'
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PROJ. NO.
I.D.S. SHEET 6 OF 6



Exhibit 5: *Pavement Design for IL Route 15*

PROJECT AND TRAFFIC INPUTS

(Enter Data in Gray Shaded Cells)

Route: **FAP 821 (IL Route 15)**Section: **Various**County: **Jefferson**Location: **IL Route 15**

Comments:

Design Date:

Modify Date:

<-- BY

<-- BY

ADT

Year

Current:

25,000

2024

Future:

27,300

2044

Facility Type: **Other Marked State Route**# of Lanes = **6 or more**

Road Class:

I

Rural or Urban ?

Urban

Subgrade Support Rating (SSR):

Poor

Construction Year:

2024

Design Period (DP) =

20

years

Structural Design Traffic

	Minimum ADT	Actual ADT	Actual % of Total ADT	% of ADT in Design Lane
PV =	0	19,613	75.0%	P = 8%
SU =	250	2,615	10.0%	S = 37%
MU =	750	3,923	15.0%	M = 37%
Struct. Design ADT =	26,150	(2034)		

TRAFFIC FACTOR CALCULATION

FLEXIBLE PAVEMENT

Cpv = 0.15

Csu = **132.5**Cmu = **482.53**

TF flexible (Actual) = 16.57 (Actual ADT)

TF flexible (Min) = 2.92 (Min ADT Fig. 54-2.C)

RIGID PAVEMENT

Cpv = 0.15

Csu = **143.81**Cmu = **696.42**

TF rigid (Actual) = 23.00 (Actual ADT)

TF rigid (Min) = 4.13 (Min ADT Fig. 54-2.C)

NEW CONSTRUCTION / RECONSTRUCTION PAVEMENT DESIGN CALCULATIONS

Full-Depth HMA Pavement

Use TF flexible = 16.57

PG Grade Lower Binder Lifts = **PG 64-22** (Fig. 53-4.O)HMA Mixture Temp. = **80.0** deg. F (Fig. 54-5.C)Design HMA Mixture Modulus (E_{HMA}) = 560 ksi (Fig. 54-5.D)Design HMA Strain (ε_{HMA}) = 54 (Fig. 54-5.E)

Full Depth HMA Design Thickness = 14.75 in. (Fig. 54-5.F)

Limiting Strain Criterion Thickness = **16.75** in. (Fig. 54-5.I)Use Full-Depth HMA Thickness = **14.75** inches

JPC Pavement

Use TF rigid = 23.00

Edge Support = **Tied** Shoulder or C&GRigid Pavt Thick. = **10.50** in. (Fig. 54-4.E)

CRC Pavement

Use TF rigid = 23.00

IBR value = **3**CRCP Thickness = **10.00** in. (Fig. 54-4.M)

TF MUST BE > 60 FOR CRCP

RECONSTRUCTION ONLY (SUPPLEMENTAL) PAVEMENT DESIGN CALCULATIONS

HMA Pavement Over Rubblized PCC

Use TF flexible = 16.57

HMA Overlay Design Thickness = 11.50 in. (Fig. 54-5.U)

Limiting Strain Criterion Thickness = **11.75** in. (Fig. 54-5.V)Use HMA Overlay Thickness = **11.50** inches

Unbonded Concrete Overlay

Review 54-4.03 for limitations and special considerations.

JPCP Thickness = **NA** inches

CONTACT RESEARCH 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	2 lanes with ADT > 2000	2 Lanes	2 Lanes
Part of a future 4 lanes or more	One way Street with ADT <= 3500	(ADT 750 -2000)	(ADT < 750)
One-way Streets with ADT > 3500			

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)		Flexible (Fig. 54-5.B)	
	Csu	Cmu	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			Urban		
	P	S	M	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 6:
Pavement Design for I-57/64
Ramps

PROJECT AND TRAFFIC INPUTS

(Enter Data in Gray Shaded Cells)

Route: FAI(I-57) Ramps AT FAP 821 (IL 15)	Comments:				
Section: Various	Design Date:	<-- BY			
County: Jefferson	Modify Date:	<-- BY			
Location: IL Route 15		ADT	Year		
		Current:	3,300	2024	
		Future:	3,600	2044	
Facility Type: Interstate or Freeway	** Ramp Design Fig. 54-1.B **				
# of Lanes = 1 Lane Ramp	Crossroad? Other Marked State Route				
	# of Lanes = 6 or more				
Road Class: I	Rural or Urban? Rural				
Subgrade Support Rating (SSR): Poor					
Construction Year: 2024					
Design Period (DP) = 20 years					
		Minimum ADT	Actual ADT	Actual % of Total ADT	% of ADT in Design Lane
		PV = 0	2,243	65.0%	P = 100%
		SU = 250	518	15.0%	S = 100%
		MU = 750	690	20.0%	M = 100%
		Struct. Design ADT = 3,450		(2034)	

TRAFFIC FACTOR CALCULATION			
FLEXIBLE PAVEMENT		RAMP DESIGN MIN	
Cpv = -	0.15	20%	
Csu = -	112.06	40%	
Cmu = -	385.44	40%	
TF flexible (Actual) = -	(Actual ADT)	2.54	
TF flexible (Min) = -	(Min ADT Fig. 54-2.C)		

RIGID PAVEMENT		RAMP DESIGN MIN	
Cpv = -	0.15	20%	
Csu = -	135.78	40%	
Cmu = -	567.21	40%	
TF rigid (Actual) = -	(Actual ADT)	3.67	
TF rigid (Min) = -	(Min ADT Fig. 54-2.C)		

NEW CONSTRUCTION / RECONSTRUCTION PAVEMENT DESIGN CALCULATIONS

Full-Depth HMA Pavement		JPC Pavement	
Use TF flexible = 17.12		Use TF rigid = 24.54	
PG Grade Lower Binder Lifts = PG 64-22	(Fig. 53-4.O)	Edge Support = Tied	Shoulder or C&G
HMA Mixture Temp. = 80.0	deg. F (Fig. 54-5.C)	Rigid Pavt Thick. = 10.50 in. (Fig. 54-4.E)	
Design HMA Mixture Modulus (E _{HMA}) = 560	ksi (Fig. 54-5.D)		
Design HMA Strain (ε _{HMA}) = 53	(Fig. 54-5.E)		
Full Depth HMA Design Thickness = 15.00	in. (Fig. 54-5.F)		
Limiting Strain Criterion Thickness = 16.75	in. (Fig. 54-5.I)		
Use Full-Depth HMA Thickness = 15.00 inches		CRCP Thickness = 10.25 in. (Fig. 54-4.M)	

TF MUST BE > 60 FOR CRCP

RECONSTRUCTION ONLY (SUPPLEMENTAL) PAVEMENT DESIGN CALCULATIONS

HMA Pavement Over Rubblized PCC		Unbonded Concrete Overlay	
Use TF flexible = 17.12		Review 54-4.03 for limitations and special considerations.	
HMA Overlay Design Thickness = 11.75	in. (Fig. 54-5.U)		
Limiting Strain Criterion Thickness = 11.75	in. (Fig. 54-5.V)		
Use HMA Overlay Thickness = 11.75 inches		JPCP Thickness = NA inches	

CONTACT RESEARCH 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 Part of a future 4 lanes or more One-way Streets with ADT > 3500	2 lanes with ADT > 2000 One way Street with ADT <= 3500	2 Lanes (ADT 750 -2000)	2 Lanes (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	0	250	750

* Use marked route minimums for unmarked routes (Fig. 54-1.B)

Class	Traffic Factor ESAL Coefficients			
	Rigid (Fig. 54-4.C)		Flexible (Fig. 54-5.B)	
	Csu	Cmu	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 One-Way Streets	
ADT	Class
0 - 3500	II
>3501	I

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

Design Lane Distribution Factors For Structural Design Traffic (Fig. 54-2.B)						
Number of Lanes	Rural			Urban		
	P	S	M	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%