

**Feasibility Report
F.A.I. – 57
Section [28-(1,2,3,4,5)]-1
Franklin County**

Prepared for: Illinois Department of Transportation
2801 West Murphysboro Road, P.O. Box 100
Carbondale, IL 62903-0100

By: Oates Associates, Inc.
Eastport Business Center 1
100 Lanter Court, Suite 1
Collinsville, Illinois 62234

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TABLE OF CONTENTS
F.A.I. – 57 FEASIBILITY REPORT

EXECUTIVE SUMMARY	i
1. INTRODUCTION	1
1.1 Description and Location of Project.....	1
1.2 Project Limits	1
2. PURPOSE AND NEED FOR THE IMPROVEMENT	3
2.1 Goals and Objectives	3
2.2 Conditions of Existing Highway Network	3
2.3 Existing Traffic and Capacity Deficiencies.....	4
2.4 Crash Information.....	6
2.5 Alignment and Profile Deficiencies	6
3. EXISTING SETTINGS OR CONDITIONS	8
3.1 Description of Project Area.....	8
3.2 Existing Transportation Networks.....	10
3.3 Existing Drainage Conditions	10
3.4 Existing Structures.....	11
3.5 Sensitive Environmental Areas.....	12
4. ALTERNATES CONSIDERED	14
4.1 Proposed Highway Design Guidelines	14
4.2 Alternate 1 – Widen Existing Roadway (Median / Inside).....	15
4.3 Alternate 2 – Widen Existing Roadway (Outside).....	25
4.4 Alternate 3 – Widen Existing Roadway (Combination of Median & Outside) ..	36
4.5 No Action	45
5. COORDINATION ACTIVITIES	46
5.1 Local Government.....	46
5.2 State and Federal Agencies	46
6. CONCLUSIONS	47
6.1 Engineering Considerations	47
6.2 Discussion of Costs & Benefits.....	48
7. RECOMMENDATIONS.....	49
7.1 Recommended Design Alternate.....	49
7.2 Additional Considerations.....	49
7.3 Discussion of Potential Design Exceptions	50

EXECUTIVE SUMMARY

INTRODUCTION

Oates Associates was hired by the Illinois Department of Transportation District 9, to conduct a study to determine the feasibility of widening FAI-57 (I-57) from four lanes to six lanes, over 18.6 miles in Franklin County. Three alternates were considered for this study:

- 1) Adding a lane in each direction on the inside of the existing pavement
- 2) Adding a lane in each direction on the outside of the existing pavement
- 3) A combination of inside and outside widening

Increased traffic volume and truck usage are the main factors for investigating the improvements. The design year volume and composition of traffic indicate the need for additional traffic lanes within the study area. The “no action” alternate of continued maintenance was not considered for this study.

The study evaluated each of the three alternates mentioned and makes recommendations on a preferred alternate. Criteria used to determine the preferred alternative included costs, ROW and environmental impacts, constructability, and impacts to the public caused by the proposed improvements.

EXISTING CONDITIONS

I-57 in Franklin County is a four-lane principle arterial running primarily north-south. This section is classified as a rural freeway. The design speed for this study is 70 mph and the posted speed limit on I-57 within the limits of the study is 65 mph.

The existing roadway consists of two 12-foot lanes in each direction with shoulders on each side. The existing median varies in width from 50 feet to 80 feet. The median is 64 feet wide from the northern project limit to approximately eight miles south. From there the median transitions to 50 feet wide for approximately the next nine miles to the south. The median then transitions to 80 feet wide for approximately the next mile to the southern project limit.

I-57 is the primary north-south arterial in Franklin County. Three interchanges provide access to state highways crossing I-57 within the study area. There are six dual structures and two box structures carrying the freeway over waterways, secondary roadways, and a railroad. There are thirteen overhead structures carrying secondary roadways and two structures carrying railroads across I-57 within the limits of the study.

ALTERNATES CONSIDERED

Alternate 1 - Widen Existing Roadway (Median / Inside)

This alternate would involve adding an additional 12-foot lane in each direction on the inside of the existing lanes. The width of the proposed inside shoulder will vary, depending on the width of the existing median. At the locations where the existing median is 50 feet wide to 64 feet wide, the proposed shoulder will span the entire median and a concrete barrier and storm sewers will be constructed in the center of the median to prevent vehicular crossovers and facilitate drainage. Where the existing median width is 80 feet wide, the proposed shoulder will be 12 feet wide and the existing median drainage ditch will be reconstructed to maintain the existing drainage patterns.

There are six dual structures carrying the freeway over waterways, secondary roadways, and a railroad. Each will be rehabilitated as required and widened to accommodate the third lane of traffic. The two box structures will not be modified. The thirteen overhead structures as well as two railroad structures over the freeway will remain in place with some minor modifications. The interchanges will not be modified.

For this widening alternate, the significant cost factors are the increased inside shoulder width, storm sewers, and concrete median barriers. The primary cost savings for this alternate are maintaining the existing overhead structures with minimal alterations.

Alternate 2 - Widen Existing Roadway (Outside)

This alternate would involve adding an additional 12-foot lane in each direction on the outside of the existing lanes. A new 12-foot outside shoulder and 8-foot inside shoulder will be constructed for the entire length of the project. At the two existing railroad structures, with the abutments or piers immediately adjacent to the outside shoulder, it is not economically feasible to remove the bridge and add the required additional lane width outside of the existing lanes. Therefore, the widening will be on the inside at these locations.

The existing right of way is adequate for the majority of the widening for this alternate. It is anticipated that minor right of way acquisitions will be required at the interchanges and drainage structures. Some tree clearing and wetland impacts are anticipated for this alternate.

The six dual structures and two box structures carrying the freeway over waterways, secondary roadways, and a railroad will be widened to accommodate the third lane of traffic. The thirteen overhead structures will be removed and reconstructed and each of the three interchanges will be completely reconstructed under this alternate.

For this widening alternate, the significant cost factors are reconstructing the overhead structures and the interchanges. The primary cost savings for this alternate are eliminating the need for storm sewer and concrete median barriers.

Alternate 3 - Widen Existing Roadway (Combination of Inside and Outside)

The combination widening alternate was determined by dividing the overall study area into individual segments and identifying key points within each segment, then weighing the advantages and disadvantages of both the inside and outside widening for each segment. The individual segments were then combined into a cohesive widening plan. The combination widening alternate yielded 6.2 miles of outside widening and 12.4 miles of inside widening.

- **North Project Terminus to South End of IL 154 Interchange**
This section is approximately 3.5 miles long and the existing median is 64 feet wide for the entire section. The widening will be on the inside for this section.
- **South End of IL 154 Interchange to South End of IL 14 Interchange:**
This section is approximately 6 miles long. The existing median is 64 feet wide for the first 4.2 miles of the section before transitioning to 50 feet wide. The widening remains on the inside for the first 0.7 miles of this section before transitioning to the outside for the next 3 miles. The widening then transitions back to the inside for the remaining 2.3 miles of this section.
- **South End of IL 14 Interchange to South End of IL 149 Interchange:**
This section is approximately 7 miles long and the existing median is 50 feet wide for the entire section. The widening is on the inside for the first 2.9 miles of this section before transitioning to the outside for the next 2.5 miles. The widening then transitions back to the inside for the remaining 1.5 miles of the section.
- **South End of IL 149 Interchange to South Project Terminus:**
The final section is approximately 2.2 miles long and the existing median transitions from 50 feet wide to 80 feet wide after the first mile of this section. The widening will be on the inside for the first 800 feet before transitioning to the outside. The outside widening continues until the existing median begins its transition to 80 feet wide. Over this transition the widening will also transition to the inside, which yields a new median width of 56 feet wide. The inside widening will continue to the south terminus of the project.

CONCLUSIONS & RECOMMENDATIONS

Each of the proposed widening alternates share many of the same engineering considerations. The following table is a summary of the major impacts for each widening alternate.

Impact	Alt 1: Median / Inside Widening	Alt 2: Outside Widening	Alt 3: Combination Widening
Overall Project Cost	\$128 million More Economical Than Outside Alt	\$153 million Most Expensive	\$123 million Least Expensive
At-Grade Structures	All Will Be Widened	All Will Be Widened	All Will Be Widened
Overhead Structures	Minor Pier Modifications	All Will Be Completely Replaced	A Few Will Be Replaced
Interchanges	No Impact	Structures, Crossroads, & Ramps Will Be Reconstructed	Minimal Modifications Anticipated
Construction Traffic Flow	Similar Impacts Each Alt	Similar Impacts Each Alt	Similar Impacts Each Alt
Permanent Traffic Flow	Each Alt Yields Level Of Service "B"	Each Alt Yields Level Of Service "B"	Each Alt Yields Level Of Service "B"
ROW Impacts	None	Isolated Locations Throughout Project	Minimal Impacts
Tree Removal	None	Some Removal Throughout Project	Only @ O/S Widening Sections
Wetlands Impacts	None	Impacts @ Each Water Crossing	Minimal Impacts
Recreation Areas Impacts	None	Impacts @ Rend Lake Areas	Minimal Impacts

Alternates 1 and 3 – Each of these alternates are similar in overall construction costs. Alternate 3 should yield the lowest costs; however, volatility of the individual unit costs due to inflation factors and the specifics of how each section is let for construction could lead to a significant cost savings for either alternate.

Alternate 2 – The outside alternate is the most expensive and causes the most impacts to the environment, right of way and traveling public. Therefore, this alternate could be eliminated from consideration.

Alternate 1 appears to be the most practical option and is recommended for the following reasons:

- Straightforward construction operations
- Consistent pavement and shoulder composition
- No longitudinal joints across driving lanes
- Consistent alignment
- Less disruption to the public during construction
- No ROW or environmental impacts
- Greatly reduces the potential for cross-over accidents
- Similar overall construction costs as Alternate 3, less expensive than Alternate 2

1. INTRODUCTION

1.1 Description and Location of Project

The Illinois Department of Transportation (IDOT) has initiated a study to determine the feasibility of widening FAI-57 (I-57) from four lanes to six lanes, adding a lane in each direction, through Franklin County. The study includes the entire 18.6-mile segment of rural freeway from the Franklin / Jefferson County line to the north to the Franklin / Williamson County line to the south. See Figure 1.1 for the Location Map and Exhibit 1 for the Alignment and Stationing of the freeway.

The following three alternates were considered for this study:

- Alternate 1: add a through lane in each direction on the inside of the existing lanes, adjacent to the passing lane.
- Alternate 2: add a through lane in each direction to the outside of the existing lanes, adjacent to the driving lane.
- Alternate 3: add a through lane in each direction utilizing a combination of inside and outside widening.

Each alternate was studied as a gross 18.6-mile segment and the impacts of each alternate were looked at in their entirety over the whole project. It is anticipated that the actual construction of the pavement widening will be completed in smaller sections, i.e. from interchange to interchange, and thus specific costs and impacts will vary based on the specific sequence of construction.

The general alternates considered for this study were developed by IDOT. The “no action” alternate of continued maintenance was not considered as a part of this study. An additional lane in each direction is necessary in order to maintain the functional capacity of the freeway.

1.2 Project Limits

The northern boundary of the study is the Jefferson / Franklin County line. I-57 is currently four lanes, two lanes in each direction, with a 64-foot wide median in southern Jefferson County. The proposed improvements will transition a six-lane section to the existing four-lane section near the county line. The median width varies throughout Franklin County from 50 feet to 80 feet wide. The southern boundary is the Franklin / Williamson County line. I-57 is currently four lanes, two lanes in each direction, with an 80-foot wide median in northern Williamson County. The proposed improvements will transition a six-lane section to the existing four-lane section near the county line.

Franklin County, Illinois

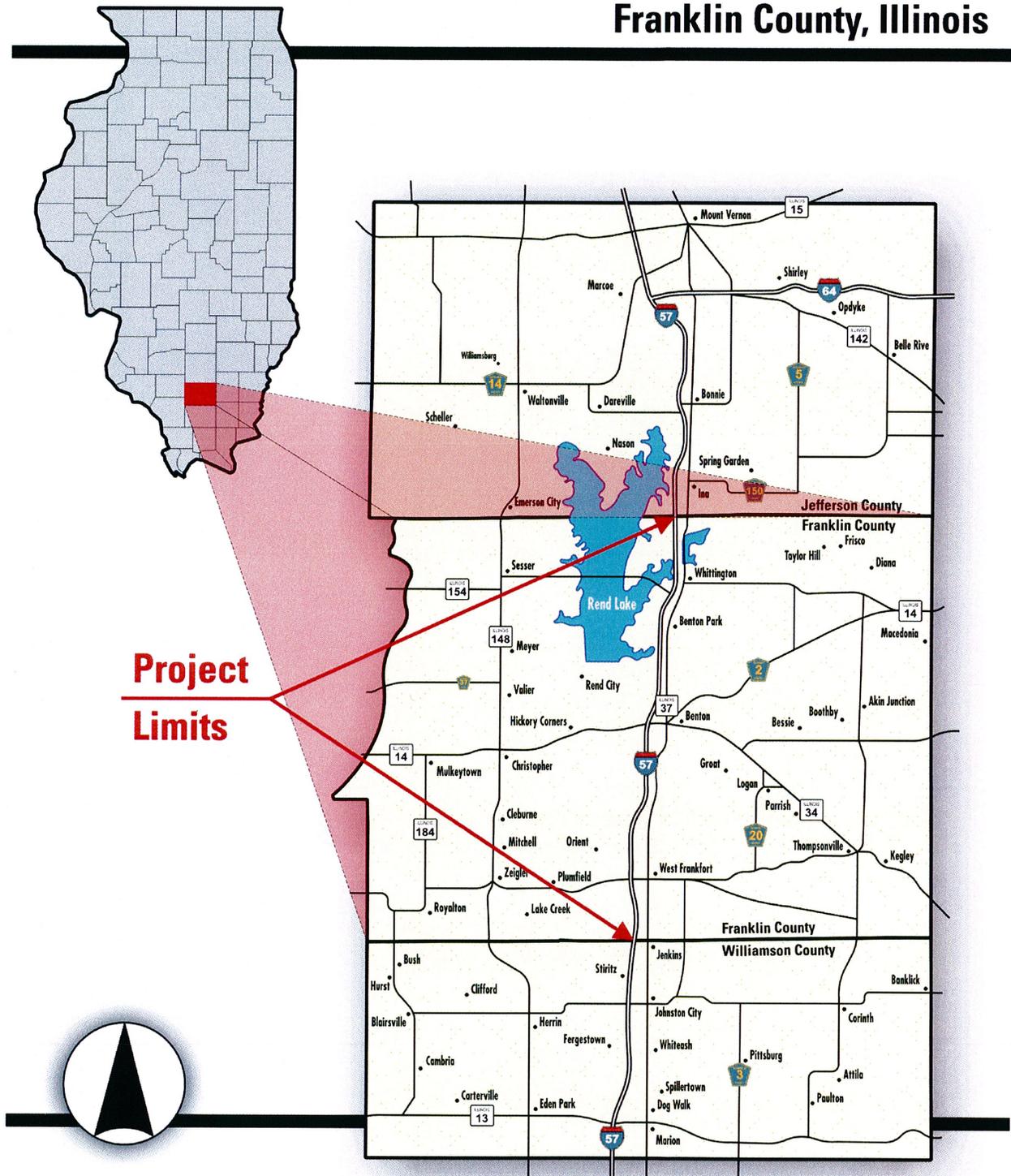


FIGURE 1.1: LOCATION MAP

2. PURPOSE AND NEED FOR THE IMPROVEMENT

2.1 Goals and Objectives

A feasibility study is typically initiated to assess whether or not a proposed highway improvement warrants further study. The purpose of this study is to evaluate the three proposed alternates and make recommendations for a preferred alternate. The criteria used to determine the preferred alternate will include construction costs, impacts to various constraints including wetlands, public recreational areas, environmentally sensitive areas, flood plains, major utility facilities, constructability, impacts to the traveling public, as well as any other social, economic, and engineering effects caused by the proposed improvements. Recommendations derived from this study will be used for detailed analysis during future preliminary phase I engineering design.

2.2 Conditions of Existing Highway Network

Visual inspection determined the existing freeway, constructed in the 1960's, to be in fair condition. The existing pavement has significant faulting issues and plate shifting of the slabs. Also, the existing pavement joints have been re-worked and do not perform as originally designed. There is no evidence of any drainage concerns regarding standing water or washouts. The District has stated that the existing pavement structure will be rehabilitated prior to the proposed widening. The condition of the existing structures carrying I-57 over waterways and secondary roadways, as well as the structures carrying secondary roadways over I-57, will be evaluated on a case by case basis and rehabilitated / replaced as needed.

2.3 Existing Traffic and Capacity Deficiencies

The traffic data for I-57 is provided in segmental portions. The future traffic figures are projected using an annual growth rate of 2.20 percent, as specified by IDOT. The percent of truck traffic is approximately 33 percent. The traffic figures are listed below:

From Jefferson County to IL Route 154:

2005 ADT = 32,000

2030 ADT = 55,130

% Truck Traffic = 34.2%

From IL Route 154 to IL Route 14:

2005 ADT = 28,700

2030 ADT = 49,450

% Truck Traffic = 39.4%

From IL Route 14 to IL Route 149:

2005 ADT = 34,800

2030 ADT = 59,960

% Truck Traffic = 33.2%

From IL Route 149 to Williamson County:

2005 ADT = 35,900

2030 ADT = 61,850

% Truck Traffic = 32.0%

The design year volume and composition of traffic indicate the need for additional traffic lanes within the study area. According to the Figure 44-5A of the IDOT Bureau of Design and Environment (BDE) manual, the recommended One-Way Design Hourly Volume (DHV) for two lanes is 1,950 vehicles per hour (VPH) or less and between 1,950 to 2,900 VPH for three lanes. The design year DHV projections were calculated using a K factor of 0.08 and an equal split between the northbound and southbound traffic. The design year DHV was calculated to be 2,870 VPH. Based on these findings, a third lane in each direction is warranted. See Figure 2.1 for the Current (2005) and Projected (2030) ADT for each segment.

Franklin County, Illinois

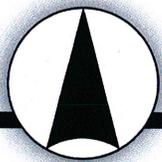
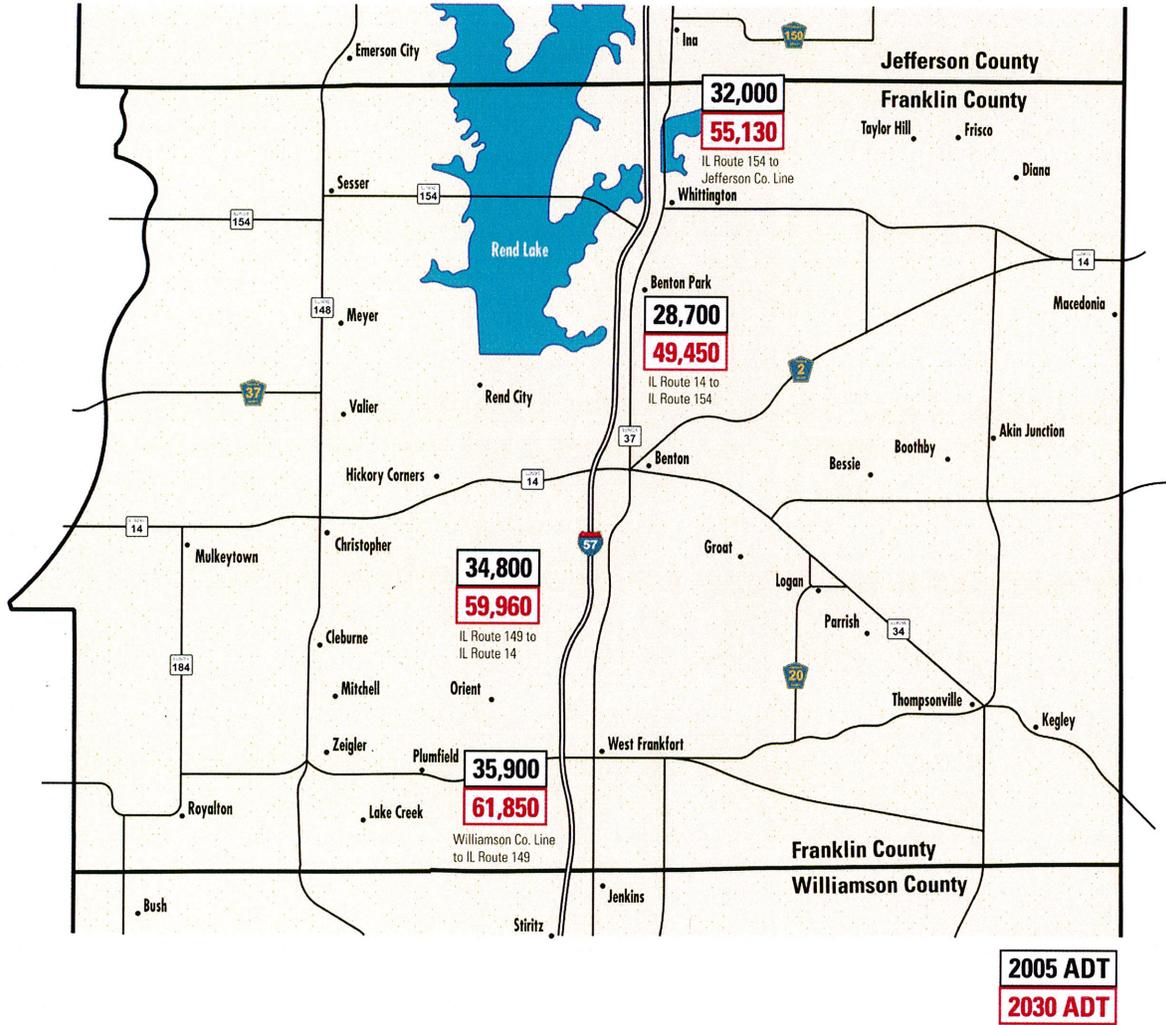


FIGURE 2.1: CURRENT (2005) AND PROJECTED (2030) ADT

2.4 Crash Information

The GIS Crash Analysis Reports for I-57 in Franklin County were provided by IDOT. The reports indicate that a total of 448 crashes have occurred between January 2002 and December 2004. The highest crash pattern was in clear and dry conditions (72 percent). The most common type of collision was animal related (40 percent). Four crossover accidents (1 percent), resulting in one fatality, occurred during this period. No high accident locations (HAL) or wet weather clusters were noted within the project limits.

2.5 Alignment and Profile Deficiencies

The existing horizontal and vertical alignments for the mainline freeway are in compliance with current BDE policies and will not be significantly altered as part of this project. There are no operational deficiencies or accident related problems due to the existing horizontal or vertical alignments.

None of the existing overhead structures across I-57 meet the horizontal clearance policy as stated in Figure 39-5Q of the BDE manual. All of the structures have piers located at the edge of the outside shoulder and all are currently protected by guardrail.

Three existing overhead structures across I-57 do not meet the minimum vertical clearance policy of 16'-0" as stated in Figure 39-6A of the BDE manual. The existing I-57 profile grade may be lowered at these locations to achieve the required minimum vertical clearances. The structures and minimum vertical clearances are as follows:

- | | | |
|---------------|------------------|----------|
| • SN 028-0055 | County Line Road | 15'-11" |
| • SN 028-0022 | IL 14 | 15'-9" |
| • SN 028-0063 | Webster Street | 15'-11½" |

Six of the overhead structures are located within superelevated sections of I-57 and may have vertical clearance deficiencies once the widening is completed, depending on which alternate is implemented and how the superelevation is developed. These clearances would be investigated during the phase I and II design phases. The structures and existing vertical clearances are as follows:

- | | | |
|---------------|------------------------|----------|
| • SN 028-0056 | Franklin Cemetery Road | 16'-3½" |
| • SN 028-0057 | Petroff Road | 16'-2" |
| • SN 028-0022 | IL 14 | 15'-9" |
| • SN 028-0063 | Webster Street | 15'-11½" |
| • SN 028-0062 | Yellow Banks Road | 16'-1½" |
| • SN 028-0058 | Country Club Road | 16'-2" |

Several of the existing interchange and rest area ramps do not meet the horizontal alignment requirements shown in Figures 37-6A and 37-6K of the BDE manual. The ramps on the south side of IL 14 and IL 149 have significant horizontal alignment deficiencies due to the close proximity of a railroad structure over I-57 at each location. Several of the ramp terminals have deficient tangent lengths at the gore areas. See Exhibit 7 for a Typical Existing Ramp Terminal Layout which illustrates the deficient tangent length. The ramp deficiencies are as follows:

- SB Rest Area – North Terminal does not meet 140' tangent
- SB Rest Area – South Acceleration lane does not meet 950' length

- IL 154 – NE Quad Meets policy
- IL 154 – NW Quad Terminal does not meet 140' tangent
- IL 154 – SE Quad Terminal does not meet 140' tangent
- IL 154 – SW Quad Terminal does not meet 200' tangent

- NB Rest Area – North Terminal does not meet 200' tangent
- NB Rest Area – South Terminal does not meet 140' tangent

- IL 14 – NE Quad Terminal does not meet 200' tangent
- IL 14 – NW Quad Terminal does not meet 140' tangent
- IL 14 – SE Quad Terminal does not meet 140' tangent
- IL 14 – SW Quad Terminal does not meet taper rates

- IL 149 – NE Quad Terminal does not meet 200' tangent
- IL 149 – NW Quad Terminal does not meet horizontal alignment
- IL 149 – SE Quad Terminal does not meet horizontal alignment
- IL 149 – SW Quad Acceleration lane does not meet 950' length

3. EXISTING SETTINGS OR CONDITIONS

3.1 Description of Project Area

Information for this study was obtained from IDOT, field visits, and various other sources. Aerial photography, USGS mapping, and tax maps were used to supplement the visual field investigation. Limited on-site field surveys were performed as part of this study. See Exhibit 2 for Ground Level Photographs of the existing roadway.

The existing pavement consists of 10-inch portland cement concrete (PCC) pavement constructed on a granular base with a bituminous overlay. The existing roadway consists of two 12-foot lanes in each direction with shoulders on each side. The outside shoulders are 12-foot wide, consisting of a 10-foot wide bituminous section and a 2-foot wide earth section. The existing inside shoulders are 8-foot wide, consisting of a 4-foot wide bituminous section and a 4-foot wide earth section. See Figure 3.1 for the Existing Typical Section.

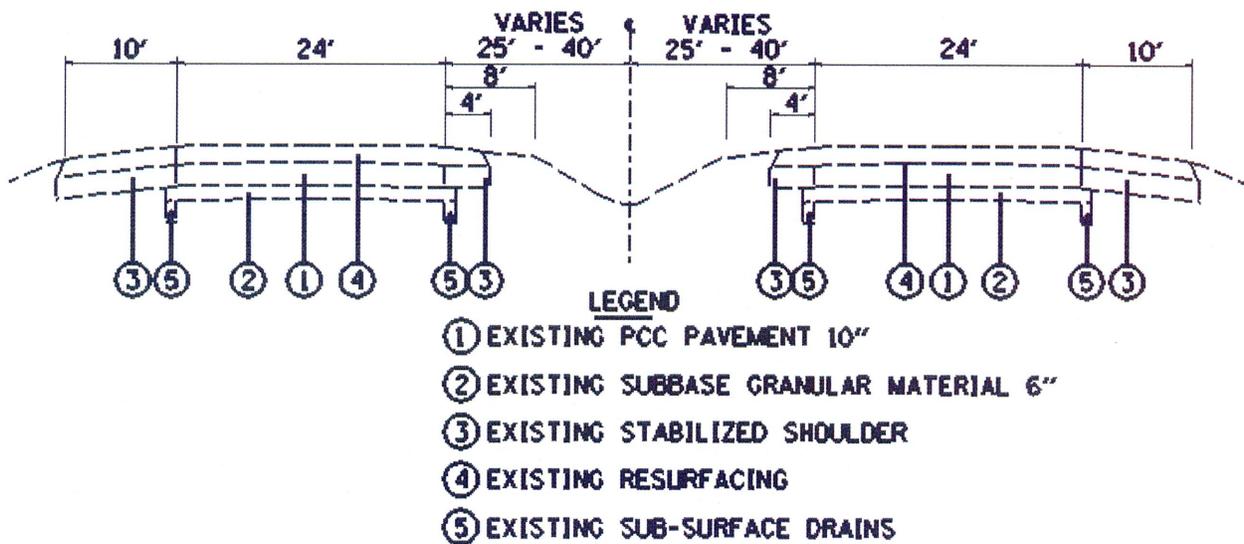


FIGURE 3.1: EXISTING TYPICAL SECTION

The existing median varies in width from 50 feet to 80 feet. The median is 64 feet wide from the northern project limit to approximately eight miles south, transitioning to 50 feet wide for approximately the next nine miles to the south. The median then transitions to 80 feet wide for approximately the next mile to the southern project limit. See Figure 3.2 for a map showing the Existing Median Widths.

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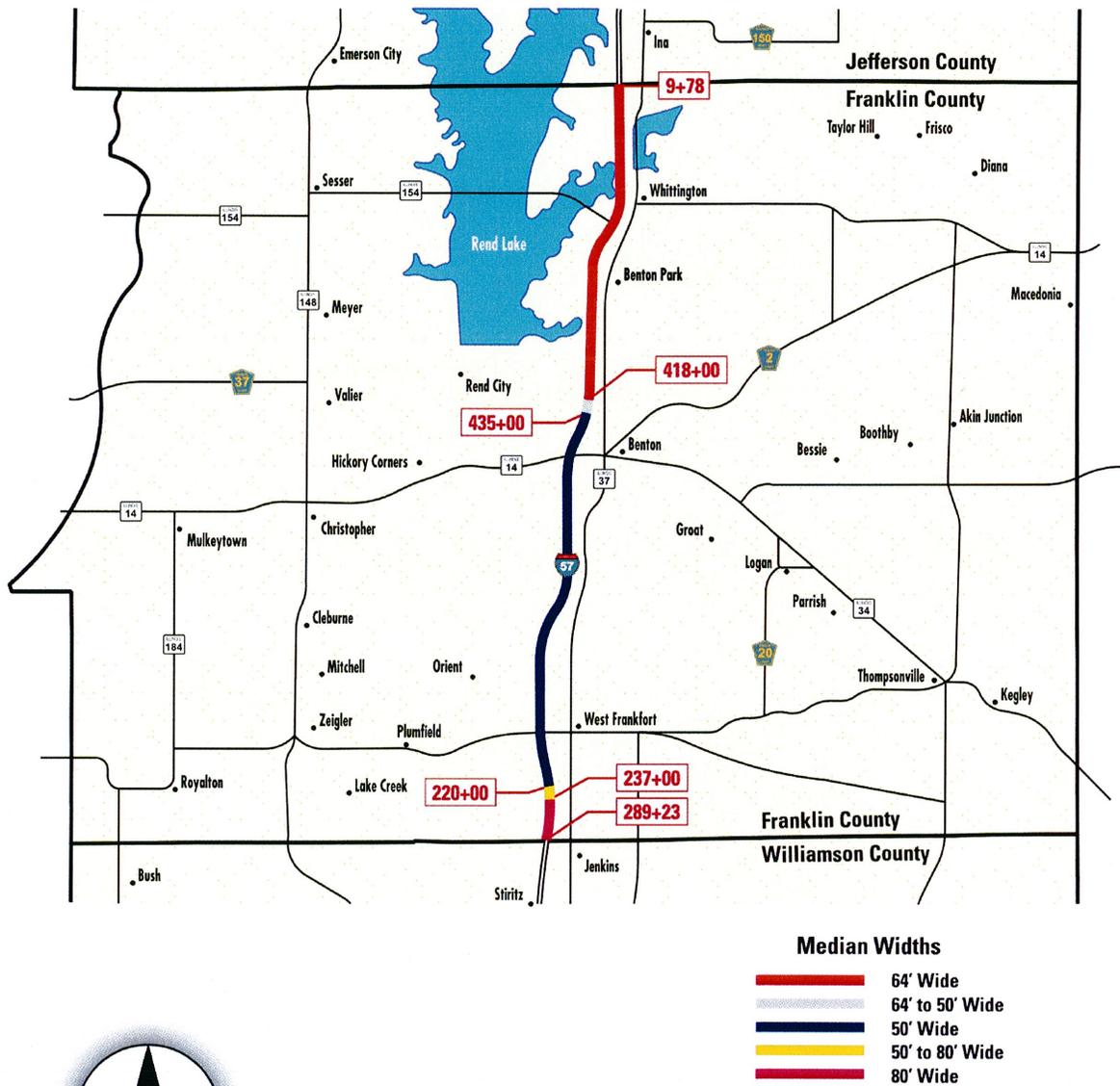


FIGURE 3.2: EXISTING MEDIAN WIDTHS

The existing right of way corridor varies in width, from approximately 300 feet to 500 feet, throughout the length of the project. There is additional right of way width at the three interchanges and at the two rest areas.

The existing land use adjacent to the I-57 alignment varies throughout the length of the project. Near the communities of Benton, West City, and West Frankfort, the land use is primarily residential with some commercial development near the interchanges. Rend Lake and the Rend Lake Conservation Area are recreational areas along the northern section of the alignment. The rest of the alignment is primarily agricultural with some forested areas.

3.2 Existing Transportation Networks

I-57 is the primary north-south arterial in Franklin County. Illinois Routes 37 and 148 are two-lane state highways and also provide north-south access through the county, as do several secondary routes.

Three interchanges provide access to state highways crossing I-57 within the study area. Illinois Routes 154, 14, and 149 are two-lane roadways and provide east-west access across the county. IL 154 crosses I-57 in the northern part of the county and provides access to Wayne Fitzgerald State Park and the town of Sesser. IL 14 crosses I-57 near the center of the county within the town of Benton. IL 149 crosses I-57 in the southern part of the county within the town of West Frankfort.

Ten other secondary routes cross I-57 within the study area, but do not have access to the interstate. The Canadian National Railroad crosses over I-57 just south of Benton and the Burlington Northern Railroad crosses over I-57 just south of West Frankfort.

There are two rest areas within the project limits. The southbound rest area is just north of IL 154 and the northbound rest area is between IL 154 and IL 14. See Figure 1.1 for the Location Map and Exhibit 1 for Alignment and Stationing.

3.3 Existing Drainage Conditions

The project is located within the Big Muddy River drainage basin. The Big Muddy River flows southerly and is generally parallel to I-57, which is located approximately two to three miles to the east. Approximately three miles north of IL 14, the Big Muddy River's flow is restricted by a US Corp of Engineers dam that creates the impoundment known as Rend Lake. South of the dam, there are no restrictions to the flow of the river within the project limits.

The tributary branches and streams from the Jefferson County line to just north of Benton flow into Rend Lake. The flow of these tributaries is generally southwesterly and is conveyed beneath I-57 at various locations. The water elevations of these tributaries within the project limits are directly impacted by the pool elevation of Rend Lake since the shoreline of the lake is only 1.5 miles west of I-57. The existing stream crossings consist of bridges and box culverts. Several of the larger crossings provide equalization of the water surface levels from one side of the interstate to the other. The major tributaries affected by Rend Lake include Gunn Creek and Marcum Branch.

The tributaries from Benton south to the Williamson County line flow southwesterly and outlet into the Big Muddy River south of the Rend Lake dam. There are two tributaries that convey the majority of the flow within the southern portion of the project limits. The first is the Middle Fork of Big Muddy. I-57 crosses the Middle Fork approximately two miles north of IL 149 in West Frankfort. The second tributary is Pond Creek. I-57 crosses Pond Creek approximately one mile south of IL 149. Both of these tributaries flow primarily west from I-57 to the Big Muddy River.

In general, the existing roadway utilizes open channel flow to convey the surface drainage offsite. The existing median drainage is collected by longitudinal ditches that drain to pipe culverts perpendicular to I-57. The pipe culverts outlet in to the roadside ditches located along the outside of the roadway embankment.

One exception is the interchange at IL 149 and I-57. The outside roadway ditches along the ramps in all four quadrants drain in to the infield of the ramp. In the center of the infield, a storm sewer system conveys the water to a pumping station located outside of the northeast ramp. The water is then pumped to the Big Ditch Tributary located in the southwest quadrant of West Frankfort. See Exhibit 3 for the USGS Map of the area.

3.4 Existing Structures

3.4.1 At-Grade Structures

There are six dual structures and two box structures carrying the freeway over waterways, secondary roadways, and a railroad within the limits of the study. Bridge Condition Reports (BCR) will be prepared for each of the I-57 structures. For the general structure locations, see Exhibit 1 Alignment and Stationing and Figure 3.3 for a summary of the At-Grade Structures. Appendix A provides a detailed summary of these structures.

Structure Number	Crossing	Median Width	Year Constructed/ Reconstructed	Sufficiency Rating	Preliminary BCR Recommendation
SN 028-0013&14	Gunn Creek	64'	1962 / 1992	97.3	Satisfactory Widening Feasible
SN 028-2006	Drainage Ditch (Box Structure)	64'	1962	81.2	Satisfactory Lengthen if Required
SN 028-0011&12	Marcum Branch	64'	1962 / 1993	97.3	Satisfactory Widening Feasible
SN 028-0008&9	Union Pacific Railroad	50'	1962 / 1992	83.2 / 94.2	Poor Rehab Deck & Widen
SN 028-2000	Linn Road (Box Structure)	50'	1961	88.9	Satisfactory Lengthen if Required
SN 028-0006&7	Middle Fork Big Muddy River	50'	1961 / 1992	97.2	Satisfactory Widening Feasible
SN 028-0004&5	7th Street	50'	1962	92.1	Poor Complete Replacement
SN 028-0001&2	Pond Creek	50'	1961 / 1992	97.2	Satisfactory Widening Feasible

FIGURE 3.3: AT-GRADE STRUCTURES

3.4.2 Overhead Structures

There are thirteen structures carrying secondary roadways and two structures carrying railroads across I-57 within the limits of the study. For the general structure locations, see Exhibit 1 Alignment and Stationing and Figure 3.4 for a summary of the Overhead Structures. Appendix A provides a detailed summary of these structures.

Structure Number	Structure Crossing Over I-57	Year Constructed / Reconstructed	Sufficiency Rating
SN 028-0055	County Line Road	1962	83.8
SN 028-0059	IL 154	1962 / 1994	90.7
SN 028-0056	Franklin Cemetery Road	1961	92.2
SN 028-0053	Marcum Branch Road	1962	81.1
SN 028-0057	Petroff Road	1963	80.6
SN 028-0064	DuQuoin Street	1962	83.4
SN 028-0022	IL 14	1963 / 1994	77.6
SN 028-0063	Webster Street	1964	75.0
SN 028-0054	Forest Baptist Church Road	1961	86.5
SN 028-0062	Yellow Banks Road	1961	77.8
SN 028-0039	IL 149	1963 / 1994	79.9
SN 028-0061	North Road	1961	81.5
SN 028-0058	Country Club Road	1961 / 1998	71.8
SN 028-0010	Canadian National Railroad	1963 / 1979	N/A
SN 028-0003	Burlington Northern Railroad	1962	N/A

FIGURE 3.4: OVERHEAD STRUCTURES

The required minimum vertical clearance per Figure 39-6A of the BDE manual is 16'-0" for structures to remain in place. Three existing structures do not meet this requirement, along with the six structures potentially impacted by superelevation as previously discussed. For the purpose of this study, it was assumed that I-57 would be re-profiled to meet the BDE vertical clearance policy at these locations. All vertical clearances should be verified prior to any improvements being made to the freeway.

The required minimum horizontal clearance, measured from the edge of traveled way per Figure 39-5Q of the BDE manual, is 30'-0" for structures to remain in place. The existing overhead structures all have piers or abutments along the outside edge of shoulder within the clear zone. All of these piers and abutments are protected with guardrail along the outside edge of shoulder.

3.5 Sensitive Environmental Areas

An Environmental Survey Request (ESR) was completed by IDOT District 9. The ESR findings and clearances are pending.

3.5.1 Parks and Recreational Areas (Section 4(f) Properties)

The ESR findings and clearances are pending.

3.5.2 Floodplains and Waterways

I-57 crosses over the four tributaries discussed in **Section 3.3**. The Gunn Creek and Marcum Branch waterways are used primarily for wildlife habitat and recreational purposes. None of these tributaries are used for navigational purposes with the intent to transport goods. The approximate flood boundaries are illustrated in the FEMA Flood Insurance Rate Maps (FIRM), see Appendix B. No detailed flood studies were performed by FEMA for the unincorporated areas of Franklin County.

A detailed study was performed by FEMA for the City of West Frankfort. The pump station outlet channel, the Big Ditch Tributary, is included in the study. According to the FEMA study, this area is between the 100-year and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one foot. See Appendix B for the FIRM for West Frankfort.

3.5.3 Wetlands

The project is located in the Big Muddy River drainage basin. I-57 crosses over four large tributaries, two upstream and two downstream of the Rend Lake Dam. The areas adjacent to these tributary crossings are identified on the United State Fish and Wildlife Service's National Wetlands Inventory maps as wetlands.

The two crossings upstream of the dam are Gunn Creek and Marcum Branch. These areas are classified as non-tidal permanently flooded with regions of the reaches intermittently exposed. The two tributaries south of the dam are Pond Creek and the Middle Fork of the Big Muddy. The wetlands are classified as non-tidal semi-permanently to seasonally flooded. Isolated pockets of delineated wetlands are shown throughout the length of the project, but appear to be outside the anticipated project limits. See Exhibit 4 for the existing Wetland Features.

3.5.4 Historical Sites

The ESR findings and clearances are pending.

3.5.5 Special Waste Sites

The ESR findings and clearances are pending.

3.5.6 Endangered Species Locations

The ESR findings and clearances are pending.

3.5.7 Natural Areas

The ESR findings and clearances are pending. See Exhibit 5 for the existing Cultural Features.

4. ALTERNATES CONSIDERED

4.1 Proposed Highway Design Guidelines

The design criteria for this study were developed using the BDE manual, the IDOT Drainage Manual, and the Highway Capacity Manual. I-57 in Franklin County is a four-lane principle arterial running primarily north-south. This section is classified as a rural freeway.

The design speed for this study is 70 mph, per Figure 44-5A of the BDE manual. The posted speed limit on I-57 within the limits of the study is 65 mph.

4.1.1 Typical Sections

The existing pavement structure will be rehabilitated prior to construction of the proposed widening. The existing bituminous overlay will be removed and the existing PCC pavement will be rubblized and overlaid with 8 inches of bituminous concrete pavement. The proposed pavement structure of each widening alternate will consist of a full depth bituminous pavement on a prepared subgrade.

The proposed typical section for each widening alternate will consist of three 12-foot lanes with a 10 to 12-foot outside shoulder and an 8 to 18.5-foot inside shoulder. The shoulder widths will vary depending on which widening alternate is selected and the existing median width.

Depending on the width of the existing median, either a ditch or a concrete barrier with storm sewer will be utilized to accommodate drainage of the median. The side slopes on the outside of the roadway will be 6:1 to the clear zone, and then 3:1 to the existing ground. A drainage ditch along the toe of slope will be utilized as necessary. See Exhibit 6 for the Proposed Typical Sections of each widening alternate.

4.1.2 To Remain in Place Criteria

For the inside widening alternate, the outside shoulder will be reconstructed with full depth bituminous concrete to allow for staged construction traffic. The improved shoulder will be 10 feet wide to match the existing shoulder width. The existing side slopes and ditching along the outside of the roadway will be left intact and will not be modified for the inside alternate.

Similarly, for the outside widening alternate, the inside shoulder will be reconstructed with full depth bituminous concrete to allow for staged construction traffic. The improved shoulder will be 8 feet wide, matching the existing shoulder width, to limit grading in the existing median. The existing drainage patterns will be maintained. At these locations a design variance will be required for the inside shoulder, since it does not meet the 10-foot minimum requirement as stated in Figure 44-5A of the BDE manual. These criteria were set forth by IDOT to minimize costs related to non-essential roadway improvements.

4.2 Alternate 1 – Widen Existing Roadway (Median / Inside)

4.2.1 Scope of Work

This alternate would involve adding an additional 12-foot lane in each direction on the inside of the existing lanes. The existing inside shoulders will be removed and replaced with a 12-foot driving lane and wider full-depth shoulders for the entire length of the project. See Figure 4.1 for the Proposed Inside Widening Layout and Figure 4.2 for the Photo Rendering – Inside Widening. See Exhibit 6 for the detailed Proposed Typical Sections for this widening alternate.

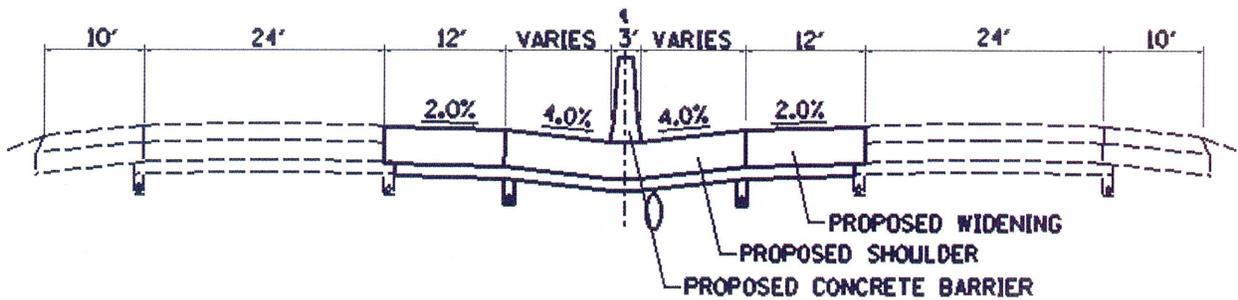


FIGURE 4.1: PROPOSED INSIDE WIDENING LAYOUT

The width of the proposed inside shoulder will vary, depending on the width of the existing median. At the locations where the existing median is 50 feet to 64 feet wide, the proposed inside shoulder will span the entire median and a concrete barrier and storm sewer will be constructed in the center of the median to prevent vehicular crossovers and facilitate drainage. Where the existing median is 50 feet wide, the proposed inside shoulder will be 11'-6" wide. Where the existing median is 64 feet wide, the proposed inside shoulder will be 18'-6" wide.



FIGURE 4.2: PHOTO RENDERING – INSIDE WIDENING, EXISTING



FIGURE 4.2: PHOTO RENDERING – INSIDE WIDENING, PROPOSED

For the 64-foot median section, three options were initially studied for the median barrier. The first option was to install a cable barrier at each edge of shoulder and construct a median ditch to collect runoff. This option has the lowest initial cost but the highest long-term maintenance costs. Also, the proposed median ditch would require steep side slopes and may not accommodate the pavement underdrain system.

The second option was to construct two single faced concrete barriers at the edge of the inside shoulders along with a concrete median. This option provides a consistent 12-foot shoulder width and would reduce the angle of impact if a vehicle struck the barrier. A storm sewer system would be required to collect runoff from the pavement and median. This option has the highest initial cost.

The third option was to construct a single double-faced concrete barrier in the center of the median with 18.5-foot shoulders. A storm sewer system would be required to collect runoff from the pavement. This option was preferred by IDOT and was utilized as the proposed typical section for the 64-foot existing median width.

Where the existing median width is 80 feet wide, the proposed inside shoulder will be 12 feet wide and the existing median drainage ditch will be reconstructed to maintain the existing drainage patterns. Cable median barrier will be utilized for this section.

The six existing at-grade structures will be widened on the inside to accommodate the third traffic lane. The two box structures will remain in place with no widening required.

The thirteen existing overhead structures will remain in place with minor modifications to the center pier in the existing median. The three interchanges within the project limits will not be significantly affected by this alternate.

The existing 10-foot wide outside shoulder will be reconstructed to allow for staged construction traffic. According to Figure 44-5A of the BDE manual, 10-foot wide shoulders are required and 12-foot wide shoulders should be considered based on truck volumes. The truck traffic for this project warrants the 12-foot shoulder width. However, the additional shoulder width would require significant reconstruction of the existing side slopes and corresponding ditches on the outside of the existing pavement. Therefore, to limit reconstruction costs, it is recommended that the outside shoulder width match the existing shoulder width of 10 feet. This proposed configuration was coordinated with the District.

4.2.2 Traffic Management Analysis

The proposed roadway widening will be constructed utilizing staged construction. The first stage of the proposed improvements will be to remove the existing 10-foot outside shoulder and reconstructing the shoulder with full depth bituminous concrete pavement to allow staged construction traffic. After completion of the first stage, traffic would be shifted onto the improved outside shoulder and temporary concrete barrier would be placed along the existing inside edge of pavement to protect the work zone.

This configuration would allow two 12-foot lanes with 2-foot inside shoulders and 4-foot outside shoulders in each direction for the duration of the project. The inside widening can

then be constructed in its entirety, including widening the at-grade structures to provide adequate width for the third lane of traffic. The existing alignment would need to be shifted approximately 6 feet to the outside in order to allow two 12-foot lanes and one 5-foot shoulder on each side of the roadway across the structures.

After traffic has been shifted, work in the median can commence. The existing inside shoulder will be removed, earthwork and storm sewer work would be completed next, followed by subgrade preparation, subbase, pavement, and finally the installation of concrete barrier where required. Once this work has been completed, traffic can be shifted to its final configuration. See Figure 4.3 for Stage Construction Layout – Inside Widening.

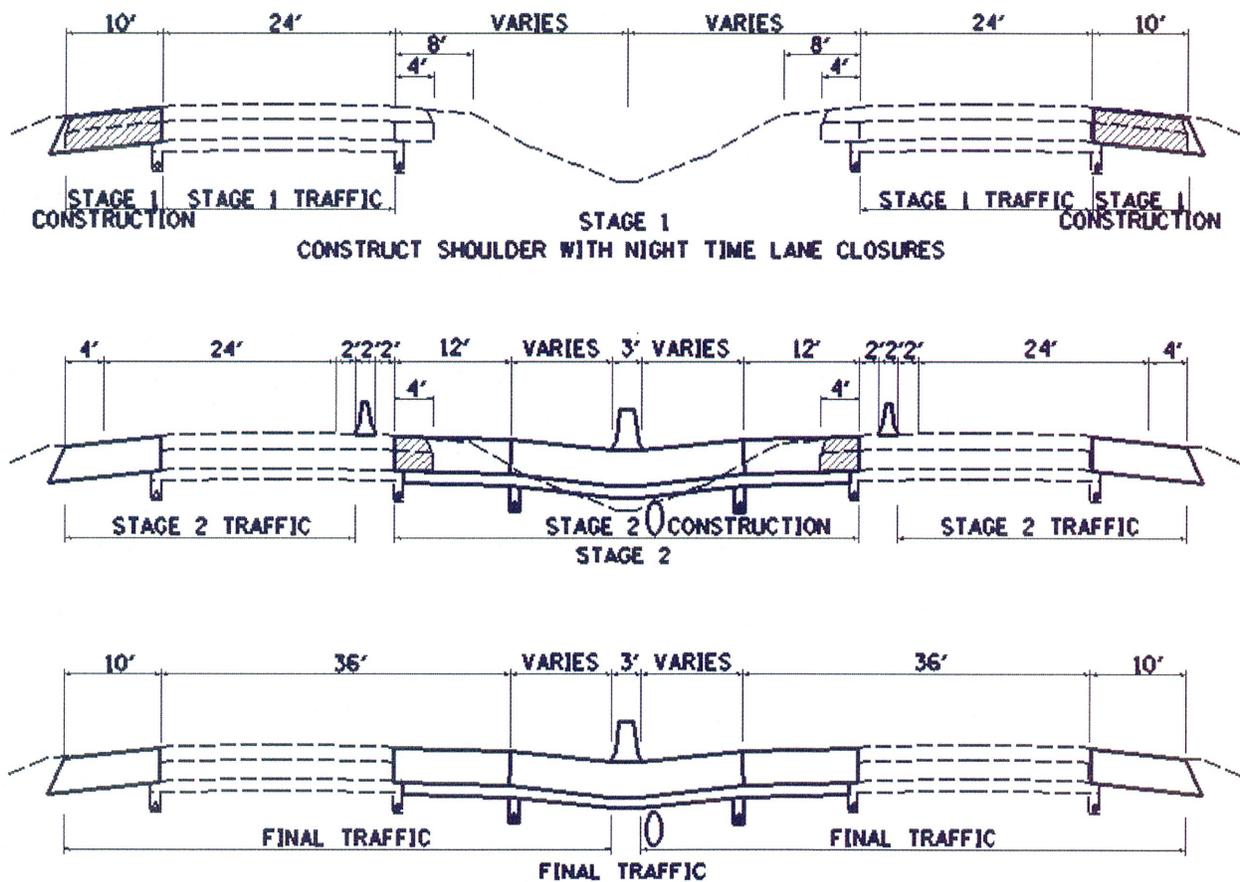


FIGURE 4.3: STAGE CONSTRUCTION LAYOUT – INSIDE WIDENING

Traffic along I-57 will be impacted at several times during these operations. In order to complete the stage 1 shoulder reconstruction, the existing outside traffic lane will have to be closed. It is recommended that the closures be made at night to minimize traffic delays. Type 2 barricades can be placed along the outside edge of pavement to permit two lanes of traffic to remain open in each direction during daylight hours.

Narrow shoulders will impact the traffic flow throughout the project. Two 12-foot lanes across the at-grade structures appear feasible; however, lane width restrictions may be required to facilitate the widening of these structures. Traffic through this corridor will be under work zone restrictions for the duration of these operations.

There are no alternate routes in the vicinity of the project that could accommodate the I-57 traffic. No crossovers or temporary pavement construction are anticipated for this project.

Minor disruptions are anticipated for traffic on the ramps at each of the interchanges and rest areas due to the outside shoulder reconstruction. No ramp closures are anticipated.

Since no overhead structures will be replaced under this alternate, no adverse impacts are anticipated for any of the crossroad traffic.

4.2.3 Adjacent Property Impacts

No impacts are anticipated to the adjacent property owners for this alternate.

4.2.4 At-Grade Structure Recommendations

There are six dual structures and two box structures carrying the freeway over waterways, secondary roadways, and a railroad. These structures will be rehabilitated and widened on the inside to accommodate an extra lane of traffic for this alternate. No modifications will be made to the box structure (SN 028-2006) carrying I-57 over the drainage ditch or the box structure (SN 028-2000) carrying I-57 over Linn Road. See Figure 4.4 for the Bridge Typical Section – Inside Widening and Appendix A for a detailed summary of these structures.

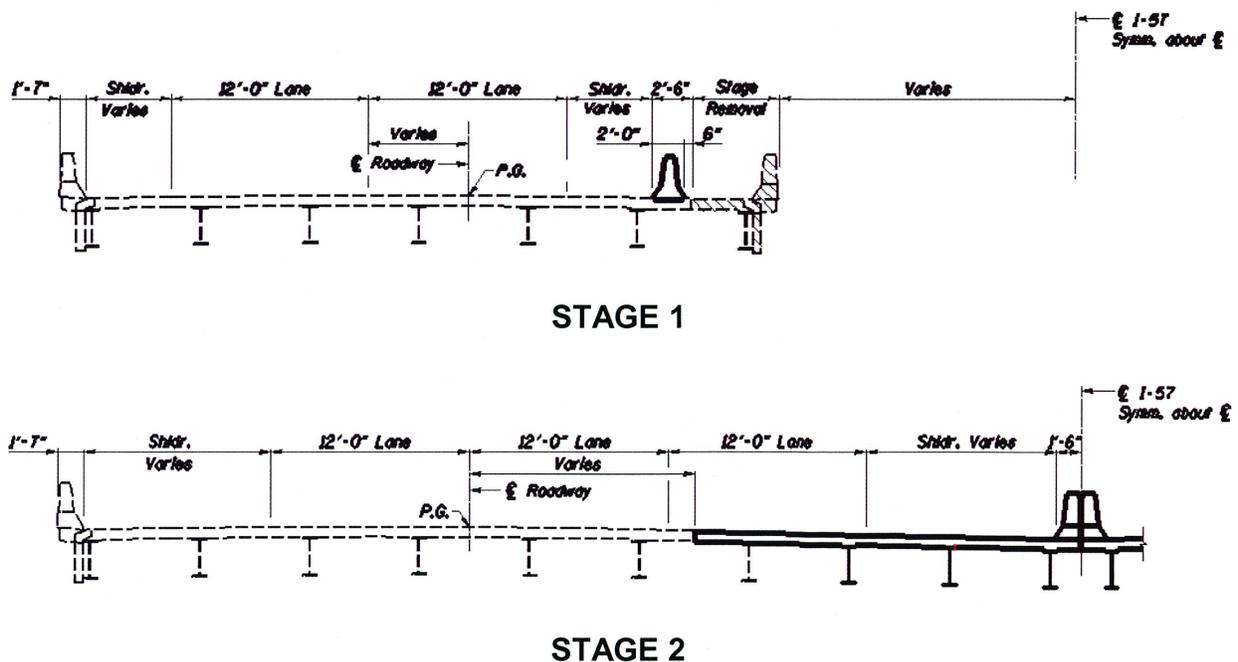


FIGURE 4.4: BRIDGE TYPICAL SECTION – INSIDE WIDENING

For the 50-foot median section, construction of the widened structures will require approximately 6 feet of removal of the existing concrete superstructure to allow for widening of approximately 23 feet. The widened structure will carry the typical cross-section of an 11'-6" inside shoulder, three 12-foot lanes, and a variable outside shoulder (based on existing outside shoulder width). Approximately three new beams and 18 feet of substructure would need to be added to widen each structure for this alternate.

In order to keep the costs of widening the existing structures to a minimum, the structures should be widened on the inside of the structure only. This method of construction results in a difference between the outside shoulder width of the roadway and the width of the outside shoulder through the structure. The structures have outside shoulder widths varying from 10'-0" to 11'-3". The outside shoulder along the mainline will be transitioned from the proposed 10-foot width to match the bridge section width at each bridge approach.

The recommendation to carry the inside shoulder width across the structure reduces the construction complexity, but the structure widening could be reduced to meet the minimum required inside shoulder width of 10 feet per Figure 44-5A of the BDE manual. This would reduce the width of each structure by 1.5 feet for the 50-foot median section.

For structures within the 64-foot median section, the widened width is approximately 29 feet with an 18'-6" interior shoulder. Similar to the 50-foot median section, the outside shoulders along the structures are variable and the outside mainline shoulder will be transitioned to match the bridge section at each bridge approach.

Also similar to the 50-foot median section, the inside structure widening could be reduced. The inside shoulder could be reduced by 8.5 feet to meet the minimum required inside shoulder width of 10 feet per Figure 44-5A of the BDE manual. This would reduce the width of each structure and would require the median barrier to be transitioned as it approaches each structure to match the bridge parapets.

There are no structures to be widened within the 80-foot median section.

4.2.5 Overhead Structure Recommendations

There are thirteen structures carrying secondary roadways across the freeway within the limits of the study, as well as two railroad structures over the freeway. These overhead structures will remain in place with some minor modifications. See Appendix A for a detailed summary of these structures.

The median piers on the overhead structures that do not have a smooth wall greater than 32 inches high, as measured from the top of shoulder pavement per Figure 38-7E of the BDE manual, will be required to have a concrete median placed along the face of the piers. This will reduce the shoulder width along the face of the pier. The barrier width required along the face of the pier will be 15 inches. Those that do meet this criterion will have the proposed concrete median barrier transition into the face of the pier at each end. The median barriers were not investigated in detail and should be evaluated during phase 1 engineering.

Guardrail is currently in place to protect the piers and abutments that encroach on the minimum horizontal clearances at each of the overhead structures. This guardrail will be maintained at its existing locations along the outside shoulder and at locations throughout the 80-foot median section.

For the three existing overhead structures that do not meet the minimum vertical clearance requirements and the six structures potentially impacted by superelevation it is recommended that the I-57 profile be lowered as previously discussed.

4.2.6 Interchange Rehabilitation Recommendations

There are three existing interchanges and two rest areas within the limits of the study, as previously discussed. See Figure 1.1 for the Location Map. The existing interchanges will not be affected by the proposed improvements under this alternate and the existing ramps will remain in place.

Several of the existing interchange and rest area ramps do not meet the BDE horizontal alignment and terminal requirements, as previously discussed. Since the proposed improvements do not change any of the existing ramp alignments, a variance from BDE policy would be required to allow the existing ramps to remain in place without modification. See Exhibit 7 for the Typical Existing Ramp Terminal Layout, which illustrates the deficient tangent length.

Two existing railroad structures over I-57 impact the southern half of the interchanges at IL 14 and IL 149 and will not be modified. The existing ramp alignments through these structure openings do not meet current BDE policy and options for reconstructing the ramps to meet policy are limited due to the existing clear width below the structures.

A four-span structure (SN 028-0010) carries the Canadian National Railroad across I-57 approximately 2,000 feet south of the IL 14 interchange. As such, the two ramps at this location would require complete reconstruction in order to meet policy.

A two-span structure (SN 028-0003) carries the Burlington Northern Railroad across I-57 approximately 1,400 feet south of the IL 149 interchange. This location would also require significant ramp reconstruction in order to meet policy.

4.2.7 Drainage Considerations

The proposed drainage system for the inside widening option is dictated by the proposed median width. When the proposed median width is less than 50 feet, a concrete barrier will be required to protect opposing traffic from potential errant crossover vehicles. This accounts for approximately seventeen miles, or 95 percent of the project. Within these regions, a closed drainage system will be utilized to drain the median and inside traffic lanes. The remaining five percent of the project will utilize median ditches similar to the existing conditions. The existing crossroad culverts will be used to convey the water collected in the median for both the closed system and the open median.

The longitudinal grade of I-57 creates a unique challenge to the proposed closed drainage system. Of the 17 miles of interstate that requires the use of storm sewer, approximately 11 miles have a longitudinal grade of less than 0.5 percent, the minimum desirable slope as specified in the IDOT Drainage Manual. Median inlets beneath the barrier still may be utilized when the longitudinal grade is between 0.3 and 0.5 percent. However, when the longitudinal slope is less than 0.3 percent, approximately half of the 11 miles, the use of a continuous slotted drain system is recommended. See Figure 4.5 and Exhibit 8 for the Locations of Existing Profile Grade < 0.3%.

Standard storm sewers and inlets could still be utilized by varying the cross slope of the proposed shoulders to introduce fall along the face of the barrier. However, this will require close inlet spacing, encroachment onto the proposed shoulders, thus limiting options for future staged construction, and increased complexity in construction of the shoulders. The use of slotted drains versus conventional storm sewers and inlets would be investigated and determined in phase I and II design phases.

If utilized, the slotted drain would connect to the median inlets to allow access to clean the pipes. Two longitudinal runs of sewer will be required, one at each face of barrier. The slotted drains are hydraulically more effective in reducing the amount of encroachment on the shoulders and provide more flexibility for the shoulders to be utilized for traffic lanes during future stage construction.

Franklin County, Illinois

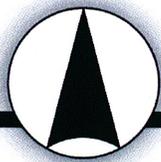
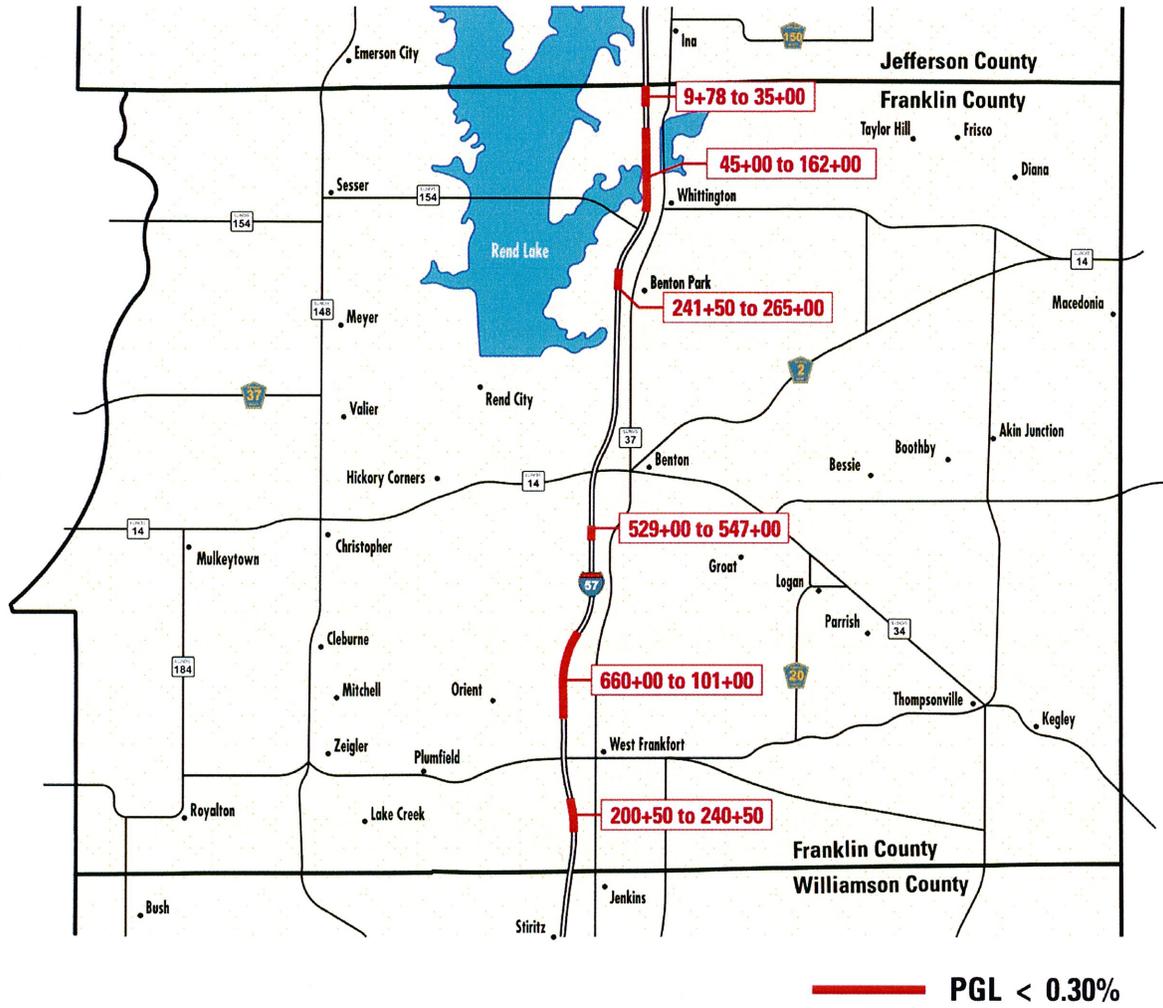


FIGURE 4.5: LOCATIONS OF EXISTING PROFILE GRADE < 0.3%

The existing pump station at the IL 149 interchange will be only minimally affected by the widening. Runoff to the pump station would increase by approximately ten percent for the inside alternate.

Pipe underdrains will be installed along the proposed inside edge of pavement on each side for the length of the project.

4.2.8 Other Considerations

All concrete median barrier constructed should be a minimum of 42 inches high due to the high level of truck traffic, as discussed in Chapter 38-7.02, Item 2, of the BDE manual. If conditions are warranted, the use of concrete barrier as a glare screen is recommended through the horizontal curves along the mainline alignment. This will increase the height as well as the cost of the concrete barrier at these locations. The determination of the barrier height and locations was not included as part of this study.

There are no significant utility conflicts anticipated for this alternate. See Exhibit 9 for the Known Utility Features.

4.2.9 Cost Estimates

For this widening alternate, the significant cost factors are the increased inside shoulder width within the 64-foot median section, as well as storm sewers and concrete median barriers within the 50-foot and 64-foot median sections. The primary cost savings for this alternate are maintaining the existing overhead structures with minimal alterations. The total cost for this alternate is approximately \$128 million. See Exhibit 10 for the Cost Estimates of the inside alternate and the inside widening of the at-grade structures.

Regarding the proposed storm sewers, in areas where the profile grade of the existing roadway is flatter than 0.3 percent, it is recommended that a slotted drain system be installed in lieu of standard inlets and storm sewers. Two runs of sewer are required in sections where the slotted drain is utilized. The slotted drain system adds approximately \$150 per foot versus the standard storm sewer system.

4.3 Alternate 2 – Widen Existing Roadway (Outside)

4.3.1 Scope of Work

This alternate would involve adding an additional 12-foot lane in each direction primarily on the outside of the existing lanes. A new 12-foot outside shoulder and 8-foot inside shoulder will be constructed for the entire length of the project. The 8-foot inside shoulder was recommended by IDOT to minimize the costs of reconstructing the median ditch section. A variance will be required for the inside shoulder since it does not meet the 10-foot minimum required by Figure 44-5A of the BDE manual. See Figure 4.6 for the Proposed Outside Widening Layout and Figure 4.7 for the Photo Rendering – Outside Widening. See Exhibit 6 for the detailed Proposed Typical Sections of this widening alternate.

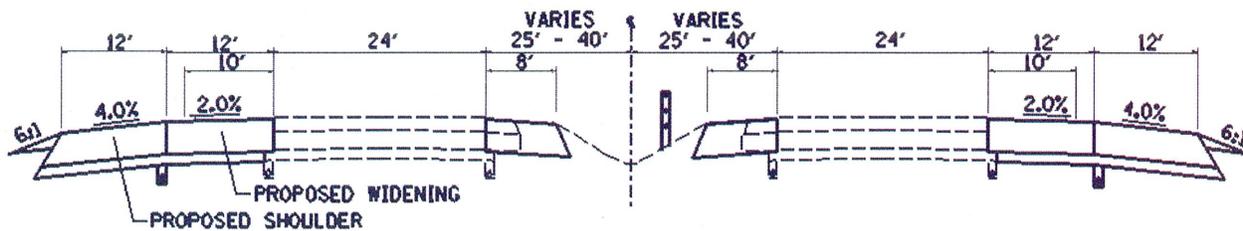


FIGURE 4.6: PROPOSED OUTSIDE WIDENING LAYOUT

The existing shoulder on the inside of the existing pavement consists of a 4-foot paved section and a 4-foot earth section. The existing shoulder will be removed and an 8-foot full-depth paved shoulder will be constructed in its place. Minimal grading is anticipated in the median and the existing median slopes and ditches will be maintained as much as possible. Cable median barrier will be added for the length of the project.

The existing 10-foot shoulder on the outside of the pavement will be removed and embankment will be placed to accommodate an additional 12-foot lane and a 12-foot full-depth paved shoulder. The embankment will extend out to include 6:1 side slopes to the clear zone and then 3:1 slopes to the existing ground. Drainage ditches will be constructed where necessary to accommodate runoff. Guardrail will be installed in accordance with BDE policy.



FIGURE 4.7: PHOTO RENDERING – OUTSIDE WIDENING, EXISTING



FIGURE 4.7: PHOTO RENDERING – OUTSIDE WIDENING, PROPOSED

The outside pier of each of the overhead structures is located within the limits of the additional lane. Therefore, the overhead structures carrying the crossroads over I-57 will be removed and reconstructed under this alternate. The crossroads may be closed to through traffic during reconstruction or the structures may be reconstructed utilizing staged construction. Each structure would be looked at individually during phase I planning to determine which reconstruction method is appropriate.

The six existing at-grade structures and two box structures will be widened on the outside to accommodate the third traffic lane. The three interchanges within the project limits will be completely reconstructed under this alternate.

At the two existing railroad structures, the existing structure opening is not adequate to allow the outside widening to be constructed. Neither of the rail lines can be taken out of service to allow new structures to be constructed and a relocated alignment with a temporary structure would be cost prohibitive. As such, it is not economically feasible to add the required additional lane width outside of the existing lanes at these two locations. Therefore, each structure will remain in place and the widening will be constructed through the existing opening below the structures.

At these locations the additional 12-foot pavement width will be added on the inside of the existing pavement. The widening will be transitioned from the outside of the existing pavement to the inside and back to the outside over an appropriate length in accordance with the BDE manual. See **Section 4.4.2** for a discussion of the transition lengths and taper rates. See Figure 4.8 for Photo Rendering – Railroad Bridge.

On either side of the two railroad structures that will remain in place, the pavement will be widened on both the inside and the outside of the existing pavement throughout the transition length. This will necessitate the use of concrete barriers in the median until the minimum median width, per the BDE manual, can be established. Storm sewer will be added as needed to accommodate runoff and impact attenuators will be placed at the end of the concrete barrier.



FIGURE 4.8: PHOTO RENDERING – RAILROAD BRIDGE, EXISTING



FIGURE 4.8: PHOTO RENDERING – RAILROAD BRIDGE, PROPOSED

4.3.2 Traffic Management Analysis

The proposed roadway widening will be constructed utilizing staged construction. The first phase of this widening alternate will involve removing the overhead structures and reconstructing the structures with longer spans over the proposed widening. Short-term lane closures may be required on I-57 to facilitate the bridge demolition and subsequent reconstruction.

The structure replacements at the three interchanges will be completed utilizing staged construction. This will increase the cost of the reconstruction but is recommended due to the existing traffic volumes on the state routes and maintaining access to the interstate. Short-term ramp closures may be required to accommodate the associated roadway and ramp reconstructions at these locations.

The secondary crossroad structures can be removed and reconstructed in an alternating sequence to allow for a reasonable detour route and timely reconstruction. Each crossroad carried by the overhead structures would be detoured to the nearest overhead structure. Stage construction of these overhead structures is a possibility, but would add significant time and cost to the first phase of construction that can be avoided with minimal impact to existing traffic patterns.

The first stage of construction on I-57 will involve removing the existing 8-foot inside shoulder and reconstructing the shoulder with full depth bituminous concrete pavement to allow staged construction traffic. Once this operation is complete, traffic can be shifted onto the improved inside shoulder and temporary concrete barrier would be placed along the existing outside edge of pavement to protect the work zone.

This configuration would allow two 12-foot lanes with 2-foot shoulders inside and out in each direction for the duration of the project. The outside widening can then be constructed in its entirety, including widening the at-grade structures and two box structures to provide adequate width for the third lane of traffic.

After traffic has been shifted, work along the outside of the roadway can commence. The existing outside shoulder will be removed, followed by placement of embankment, subgrade preparation, subbase, and pavement. The ramp terminals and any additional length of ramp should then be reconstructed. Once all of this work has been completed traffic can be shifted to its final configuration.

At the two railroad structures to remain in place, the inside pavement widening should be constructed during the inside shoulder reconstruction stage. Any storm sewer and concrete barrier required in this area should be constructed at this time as well. The new pavement and shoulder can then be utilized for stage 2 traffic as previously described. See Figure 4.9 for Stage Construction Layout – Outside Widening.

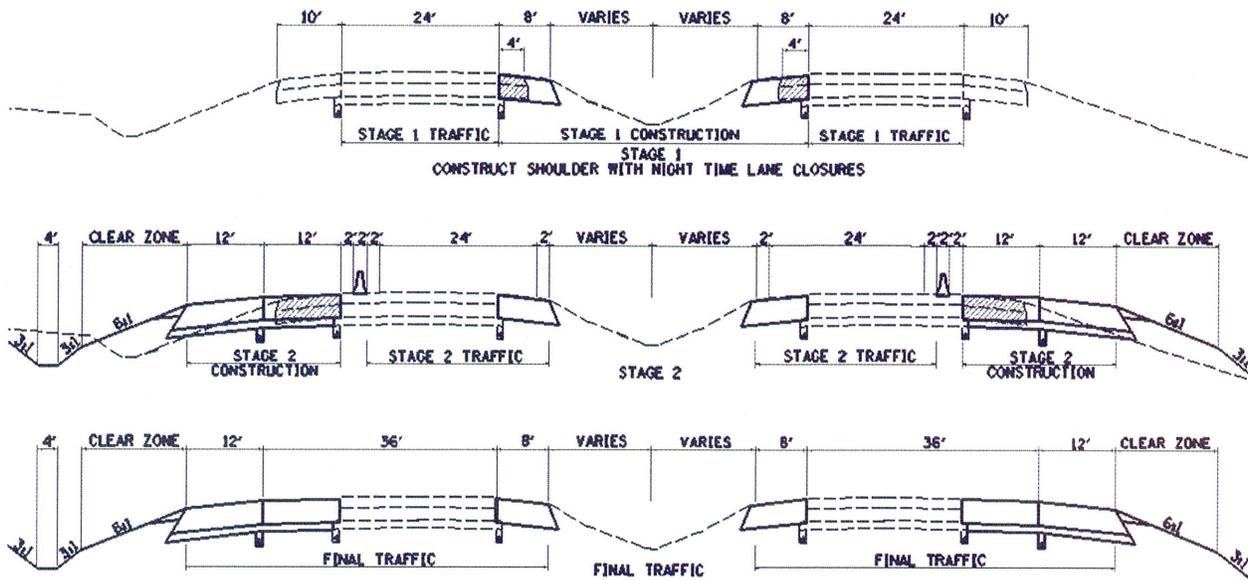


FIGURE 4.9: STAGE CONSTRUCTION LAYOUT – OUTSIDE WIDENING

Traffic along I-57 will be impacted at several times during these operations. In order to complete the stage 1 shoulder reconstruction, the existing inside traffic lane will have to be closed. It is recommended that the closures be made at night to minimize traffic delays. Type 2 barricades can be placed along the inside edge of pavement to permit two lanes of traffic to remain open in each direction during daylight hours. Some lane restrictions may be required to complete the inside widening at the two railroad bridges that will remain in place.

Narrow shoulders will impact the traffic flow. Two 12-foot lanes across the at-grade structures appear feasible; however, lane width restrictions may be required to facilitate the widening of these structures. Traffic through this corridor will be under work zone restrictions for the duration of these operations.

There are no alternate routes in the vicinity of the project that could accommodate the I-57 traffic. No crossovers or temporary pavement construction are anticipated for this project.

Ramp closures are anticipated during reconstruction of the three interchanges. It is recommended that the reconstructions be sequenced so that consecutive ramps are not closed at the same time. Lane width restrictions and possible short-term ramp closures are also anticipated during construction of the I-57 widening.

Traffic on the crossroads at the interchanges will be impacted as well. Stage construction will result in lane width restrictions and possible short-term lane closures on each interchange crossroad for the duration of the reconstruction.

Crossroads across I-57 on the other ten overhead structures will be intermittently closed during reconstruction. Reconstruction of the new overhead structures should be sequenced to allow reasonable detours for local traffic, as previously discussed.

4.3.3 Adjacent Property Impacts

The existing right of way is adequate for the majority of the widening for this alternate. It is anticipated that minor right of way acquisitions will be required at the interchanges in order to reconstruct the ramps in accordance with BDE policy.

There are five locations along the mainline where the proposed construction could impact adjacent property owners. The impact locations are as follows:

- Station 55+00 Region 1 Right: Accommodate special ditch
- Station 502+00 Region 1 Left: Backslope may encroach on local street
- Station 502+50 Region 2 Left: Culvert outfall
- Station 515+00 Region 2 Right: Large fill required over railroad tracks
- Station 37+00 Region 3 Both: Culvert outfall

See Exhibit 11 for Potential ROW Impacts. There may also be additional right of way or easement requirements to facilitate special ditching and other drainage considerations.

4.3.4 At-Grade Structure Recommendations

There are six dual structures and two box structures carrying the freeway over waterways, secondary roadways, and a railroad. These structures will be rehabilitated and widened on the outside to accommodate an extra lane of traffic for this alternate. See Figure 4.10 for the Bridge Typical Section – Outside Widening and Appendix A for a detailed summary of these structures.

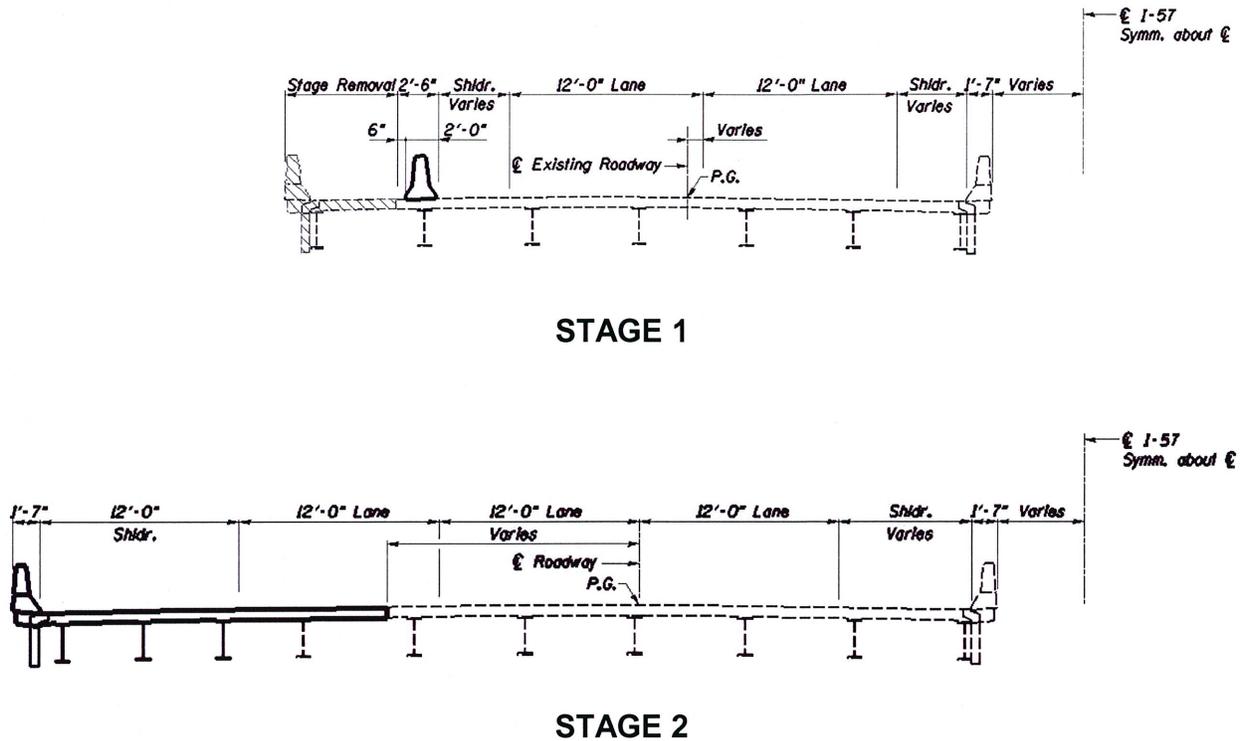


FIGURE 4.10: BRIDGE TYPICAL SECTION –OUTSIDE WIDENING

The widening will require the removal of approximately 7 feet of the existing structure and widening the structure by approximately 22.5 feet measured from the construction line. The widened structure will carry the typical cross-section of a variable width interior shoulder (based on existing interior shoulder width), three 12-foot lanes, and a 12-foot exterior shoulder. Approximately three beams and 15 feet of substructure would need to be added to each widen each structure to the outside.

In order to keep the costs of widening the existing structures to a minimum, the structures should be widened on the outside of the structure only. This method of construction results in a difference between the interior shoulder width of the roadway and the width of the interior shoulder through the structure. The structures have interior shoulder widths varying from 5'-3" to 6'-0". The structures can accommodate the difference with a design variance allowing the reduced shoulder width along the interior of the existing structure. The inside shoulder along the mainline will be transitioned from the proposed 8-foot width to match the bridge section width at each bridge approach.

There are two concrete box structures under I-57 within the project limits. One allows a drainage ditch (SN 028-2006) to cross under I-57 and the other carries Linn Road (SN 028-2000) under I-57. Both of these structures will be extended on each end to accommodate the outside widening.

4.3.5 Overhead Structure Recommendations

There are thirteen structures carrying secondary roadways across the freeway within the limits of the study. The existing clear width below each structure does not allow enough room for the outside widening alternate; therefore each of these structures will require complete removal and replacement under this alternate. Since longer spans will be needed to span the widened roadway, deeper beams will be required to support the structures. This will require that the secondary roadway profiles be raised approximately 18 to 24 inches. See Figure 4.11 for the Proposed Typical Overhead Structure Replacement and Appendix A for a detailed summary of these structures.

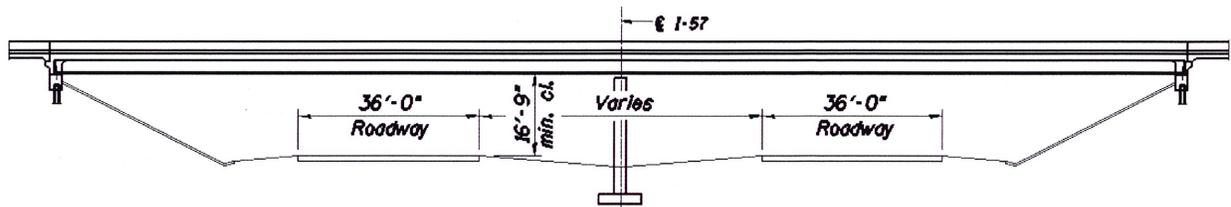


FIGURE 4.11: PROPOSED TYPICAL OVERHEAD STRUCTURE REPLACEMENT

The proposed structure replacements will be two span spill-through or integral abutment structures. The proposed abutments will be set back a minimum of 30 feet from the edge of the traveled way to meet the horizontal clearance requirements. The layout of the structures will meet the requirements of Figure 39-5Q of the BDE manual.

The required minimum vertical clearance per Figure 39-6A of the BDE manual is 16'-9" for new and replaced overhead structures. These vertical clearance requirements will be met for each of the new overhead structures.

The two railroad overhead structures previously mentioned will remain in place without modification.

4.3.6 Interchange Rehabilitation Recommendations

The three interchanges will be substantially affected by the outside widening alternate. Each crossroad structure will be reconstructed under staged construction, raising the existing profile grade 18 to 24 inches, requiring a significant portion of the roadway and ramp intersections to be reconstructed. Also, the existing ramp terminals and a significant portion of ramps will have to be reconstructed to accommodate the outside widening along I-57. Short-term ramp closures may be required to facilitate these reconstructions. See Exhibit 12 for the Typical Ramp Terminal Reconstruction Layout.

The two railroad bridges that are to remain in place, as previously mentioned, affect both the IL 14 and IL 149 interchanges. The pavement widening will be on the inside of the existing pavement at these locations, as previously discussed, and the southern ramp terminals are located within the transition areas and will have to be reconfigured accordingly. It is anticipated that the entire length of the ramps will have to be reconstructed at these locations due to the limited existing clear width below the railroad structures.

The interchange at IL 149 was investigated in detail to determine the economic costs and other impacts of the outside widening alternate through the interchange. The existing Burlington Northern Railroad overhead structure was the limiting factor for the proposed interchange layout at this location. The south ramps will be completely reconstructed, as well as a portion of IL 149 roadway on either side of the new structure over I-57. A variance will likely be required for the deficient horizontal alignment of the south ramps. Also, a variance will be required at this location since the clearance between the existing face of abutment of the railroad structure and the proposed edge of pavement of I-57 does not meet the 35-foot minimum distance shown in Figure 37-6J of the BDE manual.

4.3.7 Drainage Considerations

The existing drainage patterns will be maintained as much as possible under this alternate. The existing ditching along the outside of the roadway will be reconstructed to accommodate the widening and any additional runoff from the extra pavement width. When the widening is transitioned to the inside at the railroad structures, storm sewer will be utilized in the median and outletted to the nearest crossroad culvert.

The outside widening will require extensions of several culverts including approximately 82 smaller culverts, 16 larger culverts, and 14 box culverts. Riprap will be added at the outfalls as needed.

The existing pump station at the IL 149 interchange will be only minimally affected by the widening. Runoff to the pump station would increase by approximately ten percent for the outside alternate.

Pipe underdrains will be installed along each outside edge of pavement for the entire length of the project.

4.3.8 Other Considerations

Approximately 2,500 feet of the existing roadway, immediately north of the Gunn Creek crossing, is constructed on a fill section, effectively carrying I-57 over Rend Lake. Large riprap fill will be placed adjacent to the existing riprap lined side slopes to provide the embankment for the outside pavement widening. This option will be cost prohibitive, in addition to potential environmental impacts and special permitting requirements. Also, the existing soils at this location may be unsuitable for the additional loading and could require remediation or reinforcement. The costs for any remediation or reinforcement at this location or any other fill locations were not included as a part of this study. Additional study would be required at this location.

There is an overhead electric transmission line crossing I-57 immediately south of West Frankfort that would likely require power poles to be relocated with this alternate. See Exhibit 9 for the Known Utility Features.

4.3.9 Cost Estimates

For this widening alternate, the most significant cost factor is the replacement of the thirteen overhead structures and rehabilitation of the three interchanges. The cost savings for this alternate are eliminating the need for storm sewers and concrete barriers within the median. The total cost for this alternate is approximately \$153 million.

This alternate, however, provides an additional benefit in that the existing structures, which are at various stages of their life cycle, will be replaced with new structures. This will reduce future maintenance costs for the structures as well as delay future replacement costs.

The IL 149 interchange was investigated in detail, as previously discussed. The total cost for the interchange reconstruction is approximately \$6.2 million. The cost of reconstructing the IL 14 interchange should be similar in scope due to the close proximity of the Canadian National Railroad structure. The IL 154 interchange will be less expensive since the existing ramps will not have to be completely reconstructed.

Other added costs under this alternate are extending the existing culverts to the new toes of slope, additional earthwork, and adding a significant amount of riprap fill at the Gunn Creek crossing.

See Exhibit 10 for the Cost Estimates of the outside alternate, the overhead structure replacements, the IL 149 interchange, and the outside widening of the at-grade structures.

4.4 Alternate 3 – Widen Existing Roadway (Combination of Median & Outside)

4.4.1 Scope of Work

This alternate would involve adding an additional 12-foot lane for the entire length of the project along a combination of the inside and outside edge of the existing pavement, utilizing the optimal design with the minimum negative impacts from the inside and outside widening alternates.

In general, the primary benefits of the inside widening alternate are that the overhead structures can remain in place and there will be little or no environmental or right of way impacts. The primary benefits of the outside widening alternate are the reduced costs of eliminating the need for storm sewers and median barriers.

This alternate was determined by dividing the overall study area into individual segments and identifying key points within each segment, then weighing the advantages and disadvantages of both the inside and outside widening for each segment. The individual segments were then combined into a cohesive widening plan.

The following key points were identified:

- Canadian National Railroad structure south of IL 14: to remain in place per IDOT scope, therefore inside widening alternate required.
- Burlington Northern Railroad structure south of IL 149: to remain in place per IDOT scope, therefore inside widening alternate required.
- Riprap fill section near Gunn Creek: riprap fill for outside widening would be cost prohibitive and may create environmental concerns, therefore prefer inside widening alternate.
- 80-foot wide median section: storm sewer and median barrier not required for inside widening alternate, therefore prefer inside widening alternate.
- Three State Highway Interchanges: outside widening requires complete replacement of interchange, including structure, roadway, and ramps. Therefore, prefer inside widening alternate.
- Remaining ten overhead structures: outside widening requires replacement of structures, therefore prefer inside widening alternate.
- Sections of the existing profile grade flatter than 0.3 percent: inside widening requires use of slotted drain system, therefore prefer outside widening alternate.

The detailed analysis is discussed in subsequent text, however, in summary:

The combination widening alternate yielded 6.2 miles of outside widening and 12.4 miles of inside widening. None of the interchanges will be reconstructed under this alternate. One overhead structure will be replaced. Three of the at-grade structures will be widened to the inside; three will be widened to the outside. The two box structures will not be modified. See Figure 4.12 and Exhibit 13 for details of Alternate 3 – Combination Widening Alternate.

Franklin County, Illinois

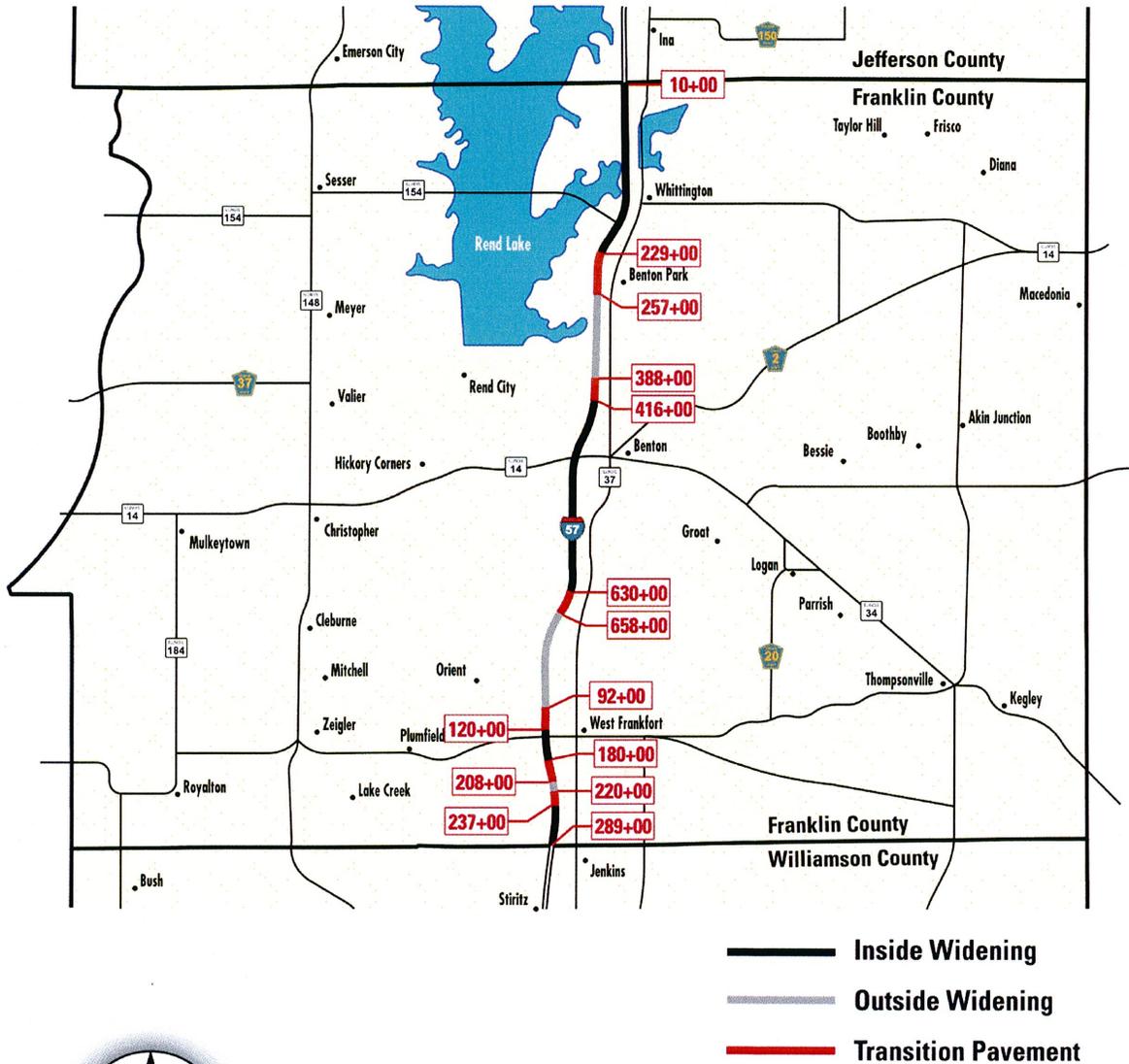


FIGURE 4.12: ALTERNATE 3 – COMBINATION WIDENING ALTERNATE

4.4.2 Detailed Analysis Discussion of Combination Alternate

General

Transitioning the widening from outside to inside or vice versa over short distances was deemed undesirable to allow for consistency in the traveled way. In order to achieve the 12-foot transition from one side of the pavement to the other, the horizontal alignment of the section must meet BDE policy. For the purpose of this study the transitions were achieved using kink points. Section 32-2.04 of the BDE allows for a 0 degree 15 minute deflection angle for rural highways. Over a 12-foot width, this yields a transition length of 2,750 feet. See Figure 4.13 for the Pavement Transition Detail.

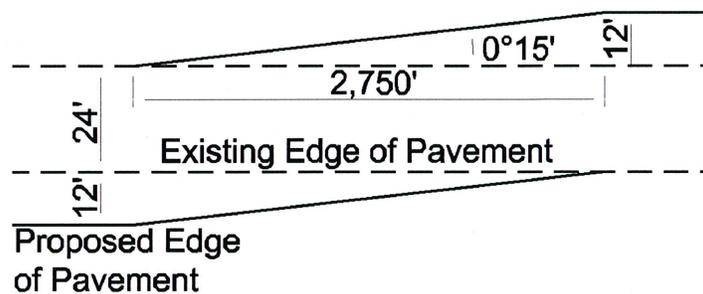


FIGURE 4.13: PAVEMENT TRANSITION DETAIL

North End Terminus into Jefferson County

The north end of the study terminated somewhat arbitrarily at the Franklin County line, which includes a bridge carrying County Line Road over I-57. It is anticipated that widening will continue north, into Jefferson County, in the future. The next major crossing is at an interchange approximately two miles north of County Line Road. Based solely on costs, the outside widening alternate would be less expensive through Jefferson County if taken from the south end of the interchange, through the County Line Road crossing, including replacement of this bridge.

However, all constraints would need to be evaluated which are beyond the study limits, including environmental impacts, additional costs for possible right of way and wetland mitigation, extensions of bridge or box structures, etc. Therefore, for the purposes of this study, alternates north of Franklin County were not evaluated. If widening continues into Jefferson County at a later date, options should be evaluated similar to this study.

North Project Terminus to South End of IL 154 Interchange: (Sta. 10+00 Region 1 to Sta. 194+00 Region 1)

This section is approximately 18,400 feet long and the existing median is 64 feet wide. The key points identified within this section are the riprap fill section near the Gunn Creek crossing (Sta. 75+00 R 1 to 100+00 R 1) and the IL 154 interchange (Sta. 176+00 R 1).

It is recommended that the pavement widening be constructed on the inside at Gunn Creek due to the obvious environmental impacts and large quantity of riprap fill and associated costs required for the outside widening alternate. The riprap fill cost alone is estimated at \$3.0 million.

The Gunn Creek crossing location is approximately 6,500 feet from the north project terminus, where the County Line Road overhead structure (SN 028-0055, Sta. 10+00 R 1) crosses I-57. The widening would be held on the inside through the project terminus to avoid the replacement cost of the structure, approximately \$1.3 million.

As previously noted, the next overhead structure outside of the project limits is approximately 2 miles to the north. If it is anticipated that I-57 will be widened within Jefferson County at a future date, the County Line Road structure could be replaced and the outside widening alternate constructed, allowing for potentially significant future cost savings.

The existing vertical clearance for the County Line Road structure is 15'-11", which does not meet the minimum vertical clearance requirement of 16 feet for existing structures, therefore, the I-57 profile should be lowered at this location.

Moving south from Gunn Creek, the IL 154 interchange is approximately 7,600 feet south of the riprap fill section. It is desirable to hold the widening on the inside at this location to avoid the structure replacement (SN 028-0059, Sta. 176+00 R 1) as well as reconstruction of the ramp terminals. There is also a rest area (Sta. 122+00 R 1) along the southbound lanes immediately south of Gunn Creek.

The proposed widening should be held on the inside through the IL 154 structure plus an additional 1,800 feet to include the southern half of the interchange (Sta. 194+00 R 1).

**South End of IL 154 Interchange to South End of IL 14 Interchange:
(Sta. 194+00 Region 1 to Sta. 508+00 Region 1 / 477+00 Region 2)**

This section is 31,400 feet long and the existing median remains 64 feet wide for the first 22,400 feet (Sta. 418+00 R 1), and then transitions to 50 feet through the IL 14 interchange (Sta. 490+00 R 1). The key points are the two interchanges, where the inside widening alternate is desirable. Also, there are four overhead structures between IL 154 and IL 14.

The first structure south of the IL 154 interchange is the Franklin Cemetery Road overhead structure (SN 028-0056, Sta. 229+00 R 1) approximately 3,500 feet south of the south ramp terminals. Assuming a distance of 2,800 feet to transition from the inside to the outside widening, it is recommended to maintain the widening on the inside through this structure. Looking south, it is notable that the horizontal alignment is within a curve at this location, which would facilitate a shorter transition distance if shifting the widening to the outside is justified.

The next structure is Marcum Branch Road (SN 028-0053, Sta. 283+00 R 1), approximately 5,400 feet south of Franklin Cemetery Road. Both the inside and outside widening alternates are viable for the section from Franklin Cemetery Road south to the next key point.

The first structure north of the IL 14 interchange (Sta. 490+00 R 1) is the DuQuoin Street overhead structure (SN 028-0064, Sta. 444+00 R 1) approximately 2,800 feet north of the north ramp terminals. It is recommended that the inside widening be held through this structure. The next overhead structure, Petroff Road (SN 028-0057, Sta. 416+00 R 1), is approximately 2,800 feet north of DuQuoin Street. Note that within this distance the existing median transitions from 50 feet wide to the south to 64 feet wide to the north. Again, since the structure is within the pavement widening transition distance, it is recommended that the inside widening be maintained through this structure. From this location north, both the inside and outside widening alternates should be considered.

The total distance from Petroff Road to Franklin Cemetery Road is approximately 18,700 feet. The existing median is 64 feet wide for the entire distance. In order to provide a consistent alignment, it is preferable to utilize one alternate for this section rather than shifting from one side to the other at several locations. There is one overhead structure, Marcum Branch Road (Sta. 283+00 R 1), and a rest area (Sta. 362+00 R 1) along the northbound lanes.

The corresponding cost per foot for each alternate, plus the cost of the structure replacement and the rest area ramp terminal reconstructions, was used to evaluate this section and determined that the outside widening is the appropriate widening alternate for this section.

Another option for this section would be to hold the inside alternate from Franklin Cemetery Road (Sta. 229+00 R 1) south to Marcum Branch Road (Sta. 283+00 R 1) and then transition to the outside alternate, thus eliminating the structure replacement. Note that the structure carrying I-57 over Marcum Branch (SN 028-0011&12, Sta. 305+00 R 1) would be within the transition length for this option, therefore the inside alternate would have to extend south past this structure prior to beginning the transition to the outside. This yields an 11,100 foot section for the outside widening alternate.

The estimated costs indicate that the outside widening would be the appropriate widening alternate for this reduced length of section. However, it is more cost effective to utilize the outside widening alternate for the entire section, replacing the Marcum Branch Road structure, as previously discussed.

**South End of IL 14 Interchange to South End of IL 149 Interchange:
(Sta. 508+00 Region 1 / Sta. 477+00 Region 2 to Sta. 172+00 Region 4)**

This section is 36,600 feet long and the existing median is 50 feet wide for the entire section. The key points within this section are the two interchanges and the Canadian National Railroad structure (SN 028-0010, Sta. 480+00 R 2), approximately 2,000 feet south of IL 14 (SN 028-0022, Sta. 490+00 R 1). The inside widening alternate is recommended at these locations.

The total distance from the Canadian National Railroad structure to the northern ramp terminals of the IL 149 interchange (Sta. 140+00 R 4) is approximately 33,100 feet. Both the outside and inside widening alternates are viable for this section. To provide a consistent alignment, it is preferable to utilize one alternate for this section rather than shifting from one side to the other at several locations.

There are two overhead structures, Forest Baptist Church Road (SN 028-0054, Sta. 576+00 R 2) and Yellow Banks Road (SN 028-0062, Sta. 630+00 R 2), as well as a tunnel carrying Linn Road (SN 028-2000, Sta. 523+00 R 2) under I-57 within this section.

The corresponding cost per foot for each alternate, plus the cost of the two structure replacements and lengthening the Linn Road tunnel was used to determine the appropriate alternate for this section. Note that the existing profile grade is less than 0.3% from 529+00 R 2 to 547+00 R 2 and from 660+00 R 2 to 101+00 R 4 for a total of 13,000 feet. The slotted drain system will be utilized in these areas if the inside widening alternate is used.

The estimated costs are similar for each alternate. Although funding resources of state versus local was not evaluated, the primary benefit of the outside alternate is that two existing overhead structures would be replaced with new structures, reducing future maintenance costs. The primary benefits of the inside alternate are that there would be no environmental or right of way impacts and reduced impact on the traveling public during construction, since the overhead structures would remain open during construction.

Another option for this section would be to utilize the inside alternate through the existing structures and then transition to the outside over the remaining distance. This option would also eliminate the need to lengthen the Linn Road tunnel (Sta. 523+00 R 2). Forest Baptist Church Road (Sta. 576+00 R 2) is approximately 9,600 feet south of the Canadian National Railroad, and Yellow Banks Road (Sta. 630+00 R 2) is approximately 5,300 feet further south. This option yields approximately 15,000 feet of widening to the inside and 18,100 feet to the outside.

Based on the cost breakdown, it is recommended that the inside alternate be held through Yellow Banks Road (Sta. 630+00 R 2) and then transitioned to the outside. The horizontal alignment is curved at this location, which could potentially allow for a shorter transition length. The widening will transition back to the inside prior to the IL 149 interchange.

South End of IL 149 Interchange to South Project Terminus: (Sta. 172+00 Region 4 to Sta. 289+00 Region 4)

This section is 11,700 feet long and the existing median remains 50 feet wide for the first 4,800 feet and then transitions to 80 feet wide. The key points within this section are the interchange, the Burlington Northern Railroad structure (SN 028-0003, Sta. 172+00 R 4), and the 80-foot median section (Sta. 237+00 R 4 to Sta. 289+00 R 4).

As previously discussed, the inside widening alternate is preferred for the 80-foot median section since no storm sewer or median barrier would be required for this section. The inside widening alternate also eliminates any environmental or right of way impacts and reduces the cost of the required earthwork. Note that this alternate yields a 56-foot wide median for this section, adjacent to the existing 50-foot wide existing median to the north.

The railroad structure (SN 028-0003, Sta. 172+00 R 4) is approximately 1,400 feet south of IL 149 (Sta. 158+00 R 4), necessitating the inside alternate be utilized at this location. The North Road overhead structure (SN 028-0061, Sta. 180+00 R 4) is approximately 800 feet south of the railroad structure. The inside alternate should be held through this location and then the transition to the outside alternate can begin (Sta. 180+00 R 4).

The pavement transition length is approximately 2,800 feet (Sta. 208+00 R 4), leaving 1,200 feet of outside widening within the 50-foot median section. At this point (Sta. 220+00 R 4) the existing median begins the transition to the 80-foot section over approximately 1,700 feet (Sta. 237+00 R 4). The outside widening alternate, with a 50-foot median, can be transitioned to the inside alternate over this same 1,700 feet, yielding a 56-foot wide median. The inside alternate will then continue to the south project terminus (Sta. 289+00 R 4). The Country Club Road overhead structure (SN 028-0058, Sta. 239+00 R 4) will not be impacted by this widening alternate.

4.4.3 Additional Options Considered for Combination Alternate

The alternate to add six feet on each side of the existing pavement was also studied. This alternate is only desirable if the need for storm sewer and median barrier can be eliminated while still maintaining the existing overhead structures.

- Within the 50-foot median section, storm sewer and median barrier would be required if any widening is done on the inside.
- Within the 80-foot median section, storm sewer and median barrier would not be required for either widening alternate.
- Within the 64-foot median section, six feet could be added to the inside edge of pavement, yielding a median width of 52 feet, and no storm sewer or median barrier would be required, making the six feet on each side alternate potentially viable for this section. There are five overhead structures within this section. The piers of each of the structures are located at the edge of the existing outside shoulder. The structures would have to be replaced if any widening is done on the outside.

The IDOT Bureau of Materials and Physical Research reviewed this option as well and determined it to be undesirable due to the construction joint being located within a driving lane, creating a potential maintenance issue. Based on these negatives, there is no benefit to widening six feet on each side within the limits of the project and this option will not be considered.

4.4.4 Traffic Management Analysis

The proposed roadway widening will be constructed utilizing staged construction. Each section of the widening, either on the inside or the outside, should be completed in its entirety prior to commencing work on the opposite side of the existing lanes.

The Marcum Branch Road overhead structure should be removed and replaced prior to commencing the outside widening portion of this alternate. Stage construction of this structure is a possibility, but would add significant time and cost to this phase of construction that can be avoided with minimal impact to existing traffic patterns.

Assuming the inside widening sections are constructed first, the first phase of the proposed improvements would be to remove the existing 10-foot outside shoulder and reconstructing the shoulder with full depth bituminous concrete pavement to allow staged construction traffic. Traffic would then be shifted and construction of the inside widening would commence, including widening three at-grade structures, as described in **Section 4.2.2**. See Figure 4.3 for Stage Construction Layout – Inside Widening.

The outside widening sections would be completed next. The next phase of the proposed improvements would be to remove the existing 8-foot inside shoulder and reconstructing the shoulder with full depth bituminous concrete pavement to allow staged construction traffic. Traffic would then be shifted and construction of the outside widening would commence, including widening three at-grade structures, as described in **Section 4.3.2**. See Figure 4.9 for Stage Construction Layout – Outside Widening.

Traffic along I-57 will be impacted at several times during these operations. In order to complete the initial shoulder reconstructions, the existing adjacent traffic lane will have to be closed. It is recommended that the closures be made at night to minimize traffic delays. Type 2 barricades can be placed along the adjacent edge of pavement to permit two lanes of traffic to remain open in each direction during daylight hours.

Narrow shoulders will impact the traffic flow throughout the project. Two 12-foot lanes across the at-grade structures appear feasible; however, lane width restrictions may be required to facilitate the widening of these structures. Traffic through this corridor will be under work zone restrictions for the duration of these operations.

There are no alternate routes in the vicinity of the project that could accommodate the I-57 traffic. No crossovers or temporary pavement construction are anticipated for this project.

Minor disruptions are anticipated for the ramp traffic at each of the interchanges and rest areas due to the outside shoulder reconstruction. Temporary ramp closures may be required to reconstruct the northbound rest area ramp terminals.

Short-term lane closures may be required on I-57 to facilitate the Marcum Branch Road bridge demolition and subsequent reconstruction.

Marcum Branch Road across I-57 will be closed during reconstruction. Local traffic should be detoured to the nearest adjacent overhead structure. Traffic will not be affected on the crossroads over any of the other overhead structures.

4.4.5 Adjacent Property Impacts

There are no anticipated impacts to adjacent property owners for sections where the inside widening is utilized. Within the outside widening sections, there are two locations where the proposed construction could impact adjacent property owners. The impact locations are as follows:

- Station 55+00 Region 1 Right: Accommodate special ditch
- Station 37+00 Region 3 Both: Culvert outfall

See Exhibit 11 for Potential ROW Impacts. There may also be additional right of way or easement requirements to facilitate special ditching and other drainage considerations for sections where the outside widening is utilized.

4.4.6 At-Grade Structure Recommendations

The following at-grade structures will be widened on the inside, as discussed in **Section 4.2.4**. See Figure 4.4 for the Bridge Typical Section – Inside Widening.

- SN 028-0013&14 Gunn Creek
- SN 028-0008&9 Union Pacific Railroad
- SN 028-0004&5 7th Street

The following at-grade structures will be widened on the outside, as discussed in **Section 4.3.4**. See Figure 4.10 for the Bridge Typical Section – Outside Widening.

- SN 028-0011&12 Marcum Branch
- SN 028-0006&7 Middle Fork Big Muddy River
- SN 028-0001&2 Pond Creek

No modifications will be made to the box structure (SN 028-2006) carrying I-57 over the drainage ditch or the box structure (SN 028-2000) carrying I-57 over Linn Road. See Appendix A for a detailed summary of these structures.

4.4.7 Overhead Structure Recommendations

For this widening alternate, the Marcum Branch Road overhead structure (SN 028-0053) is the only structure to be removed and replaced, as discussed in **Section 4.3.5**. See Figure 4.11 for the Proposed Typical Overhead Structure Replacement.

The remaining overhead structures, including the two railroad structures, will remain in place with minor modifications to the center pier, as discussed in **Section 4.2.5**. See Appendix A for a detailed summary of these structures.

4.4.8 Interchange Rehabilitation Recommendations

The widening will be on the inside at each of the three interchanges and at the southbound rest area for this alternate. See **Section 4.2.6** for a discussion of impacts at these locations.

The widening will be on the outside at the northbound rest area for this alternate. The existing entrance and exit ramp terminal and a significant portion of ramp will have to be reconstructed to accommodate the outside widening at this location. Short-term ramp closures may be required to facilitate this reconstruction. See Exhibit 12 for the Typical Ramp Terminal Reconstruction Layout.

4.4.9 Drainage Considerations

This alternate yields approximately 58,600 feet of a closed drainage system, within the inside widening sections. Approximately 30 percent of this system has an existing profile grade of less than 0.3 percent, where the use of a slotted drain system is recommended. See **Section 4.2.7** for a discussion of this system.

The remaining length of the project will continue to utilize an open drainage system, as discussed in **Section 4.3.7**. The existing ditches will be reconstructed to accommodate the outside widening and the existing culverts within this section will be extended accordingly.

The existing pump station at the IL 149 interchange will be only minimally affected by the widening. Runoff to the pump station would increase by approximately ten percent for this alternate.

Pipe underdrains will be installed along the proposed widened edge of pavement on each side for the length of the project.

4.4.10 Other Considerations

All concrete median barrier constructed for the inside widening sections should be a minimum of 42 inches high, as discussed in **Section 4.2.8**.

There are no significant utility conflicts anticipated for this alternate. See Exhibit 9 for the Known Utility Features.

4.4.11 Cost Estimates

The primary factor in selecting either the inside or outside widening for each individual section was the relative cost of each alternate for each segment, in addition to the other factors previously discussed. The total cost for this alternate is approximately \$123 million. See Exhibit 10 for the Cost Estimates of the combination alternate and the combination widening of the at-grade structures.

The approximately \$5 million cost savings for the combination widening alternate versus the inside widening alternate are achieved by reducing the proposed shoulder quantity, less storm sewer, and less concrete median barrier. These savings are offset somewhat by the additional earthwork quantity and ROW and environmental impacts.

4.5 No Action

The alternate to take no action and continue with roadway maintenance is neither desirable nor recommended. The projected traffic flow and high percentage of truck traffic warrants adding a third traffic lane in each direction. Therefore, for the safety of the traveling public and as agreed upon by IDOT, the no action alternate was not considered as part of this study.

5. COORDINATION ACTIVITIES

5.1 Local Government

To be inserted upon completion by IDOT.

5.2 State and Federal Agencies

To be inserted upon completion by IDOT.

6. CONCLUSIONS

6.1 Engineering Considerations

Each of the proposed widening alternates share many of the same engineering considerations. Of primary concern is the ability to construct the additional pavement width while minimizing impacts to the existing traffic flow. See Figure 6.1 for the Impact Summary for each widening alternate.

Impact	Alt 1: Median / Inside Widening	Alt 2: Outside Widening	Alt 3: Combination Widening
Overall Project Cost	More Economical Than Outside Alt	Most Expensive	Least Expensive
At-Grade Structures	All Will Be Widened	All Will Be Widened	All Will Be Widened
Overhead Structures	Minor Pier Modifications	All Will Be Completely Replaced	A Few Will Be Replaced
Interchanges	No Impact	Structures, Crossroads, & Ramps Will Be Reconstructed	Minimal Modifications Anticipated
Construction Traffic Flow	Similar Impacts Each Alt	Similar Impacts Each Alt	Similar Impacts Each Alt
Permanent Traffic Flow	Each Alt Yields Level Of Service "B"	Each Alt Yields Level Of Service "B"	Each Alt Yields Level Of Service "B"
ROW Impacts	None	Isolated Locations Throughout Project	Minimal Impacts
Tree Removal	None	Some Removal Throughout Project	Only @ O/S Widening Sections
Wetlands Impacts	None	Impacts @ Each Water Crossing	Minimal Impacts
Recreation Areas Impacts	None	Impacts @ Rend Lake Areas	Minimal Impacts

FIGURE 6.1: IMPACT SUMMARY

For the outside alternate, replacing the overhead structures while maintaining local traffic networks poses the most significant challenge. The interchange structures should be rehabilitated utilizing staged construction, as previously discussed, while the other structures can be closed during construction. Care should be taken in determining the order of reconstruction in order to maintain local access. Any bridge closures should be coordinated with the appropriate local agency.

For the inside alternate, constructing the storm sewer system within the median is the primary concern. Connecting the individual segments of the storm sewer and slotted drain system to the existing crossroad culverts and ensuring adequate fall and proper clearances below the proposed roadway will be critical.

6.2 Discussion of Costs & Benefits

A typical cost per foot for each section, not including structure widening or replacements, interchange reconstructions, or any other non-standard condition, was developed for each alternate. See Exhibit 14 for the Cost Per Foot Breakdown.

The inside alternate contains a variable inside shoulder width due to the variable existing median width that greatly affects the cost of this alternate. The associated cost per foot of roadway construction for the inside alternate is as follows:

- Inside Alternate (50' existing median): \$890 / ft
- Inside Alternate (64' existing median): \$1,030 / ft
- Inside Alternate (80' existing median): \$790 / ft

Note that at locations where the slotted drain storm sewer system is utilized, the cost per foot for each alternate is increased by \$150.

The cost per foot for the outside widening is approximately \$870 for each median width. Excluding any structural or interchange rehabilitation, the outside widening alternate is more cost effective than the inside alternate. When the cost of reconstructing the three interchanges, at an approximate cost of \$6.2 million each, and replacing the additional ten overhead structures, at an average replacement cost of \$1.2 million each, is included in the total costs for the improvements, the outside widening alternate is much more expensive than the inside alternate.

The combination widening alternate utilizes the most cost effective alternate for each segment of the project, while minimizing the structure replacements and interchange reconstructions. The existing profile grade and median widths are key factors in this process.

The total cost of the widening alternates are as follows. See Exhibit 10 for the Cost Estimates of each alternate.

- Alternate 1 – Inside Widening: \$128 million
- Alternate 2 – Outside Widening: \$153 million
- Alternate 3 – Combination Widening: \$123 million

7. RECOMMENDATIONS

7.1 Recommended Design Alternate

Alternates 1 and 3 – Each of these alternates are similar in overall construction costs. Alternate 3 should yield the lowest costs; however, volatility of the individual unit costs due to inflation factors and the specifics of how each section is let for construction could lead to a significant cost savings for either alternate.

Alternate 2 – The outside alternate is the most expensive and causes the most impacts to the environment, right of way and traveling public. Therefore, this alternate could be eliminated from consideration.

From a general observation, Alternate 1 appears to be the most practical option and is recommended for the following reasons:

- Straightforward construction operations
- Consistent pavement and shoulder composition
- No longitudinal joints across driving lanes
- Consistent alignment
- Less disruption to the public during construction
- No ROW or environmental impacts
- Greatly reduces the potential for cross-over accidents
- Similar overall construction costs as Alternate 3

There has not been any public contact or outside coordination to this point. The ESR has been submitted and is still under review. Final recommendations will be made pending IDOT review of the Draft Feasibility Report and further coordination with the appropriate agencies.

7.2 Additional Considerations

This study assumed the existing pavement would be improved prior to widening, utilizing rubblization of the existing concrete pavement and providing an overlay. It is worth noting that there would be advantages to conducting the rubblization and widening at the same time, under the same construction contract.

Potential overall cost savings, less disruption to the public and relatively shorter construction duration would result if the two operations could be combined. This analysis was not included in this study, however, combining rubblization and widening under one construction contract should be evaluated as project sections are developed and funding becomes available.

7.3 Discussion of Potential Design Exceptions

The following design exceptions are anticipated for this project for each widening alternate as follows:

Alternate 1 – Widen Existing Roadway (Median / Inside):

- The ramp terminals on the south side of the IL 14 and the IL 149 interchanges do not meet the geometric layout requirements in the BDE manual as shown in Figures 37-6A and 37-6K. A variance will be required at these two locations.
- The face of the abutment for the Burlington Northern Railroad structure does not meet the minimum horizontal clearance to the proposed edge of shoulder, as shown in Figure 39-5Q of the BDE manual. A variance will be required at this location.
- Several ramp terminals do not meet the required tangent lengths as shown in Figures 37-6A and 37-6K of the BDE manual. A variance will be required at these locations.
- The existing 4-span overhead structures do not meet the minimum horizontal clearance of 30 feet as shown in Figure 39-5Q of the BDE manual. Guardrail is currently in place to protect the piers in conflict and will be replaced in kind.

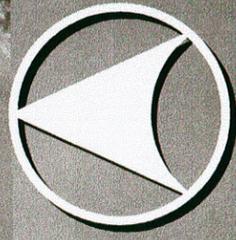
Alternate 2 – Widen Existing Roadway (Outside):

- The proposed 8-foot inside shoulder within this widening alternate does not meet the 10-foot minimum requirement as stated in Figure 44-5A of the BDE manual. A variance will be required for the length of the project.
- This alternate results in a difference of 1'-2" along the interior shoulder at each of the at-grade structures. This difference is due to the proposed widened interior roadway shoulder. The structures can accommodate the difference with a design variance allowing the reduced shoulder width along the interior of the existing structure thereby keeping the proposed centerlines consistent.
- The ramp terminals on the south side of the IL 14 and the IL 149 interchanges are deficient, as stated in the inside widening alternate.
- The face of the abutment for the Burlington Northern Railroad structure does not meet the minimum horizontal clearance to the proposed edge of shoulder, as stated in the inside widening alternate.

Alternate 3 – Widen Existing Roadway (Combination of Median and Outside):

- The ramp terminals on the south side of the IL 14 and the IL 149 interchanges are deficient, as stated in the inside widening alternate.
- The face of the abutment for the Burlington Northern Railroad structure does not meet the minimum horizontal clearance to the proposed edge of shoulder, as stated in the inside widening alternate.
- Several ramp terminals do not meet the required tangent lengths, as stated in the inside widening alternate.
- The proposed 8-foot inside shoulder within the outside widening alternate does not meet the 10-foot minimum requirement, as stated in the outside widening alternate.
- The at-grade structures widened to the outside have a difference of 1'-2" along the interior edge of shoulder. This difference is due to the proposed widened interior roadway shoulder, as stated in the outside widening alternate.
- The existing 4-span overhead structures to remain in place, do not meet the minimum horizontal clearance of 30 feet, as stated in the inside widening alternate.

I-57 will be re-profiled at the locations where the three existing overhead structures do not meet the minimum allowable vertical clearance of 16'-0", as shown in Figure 39-6A of the BDE manual.

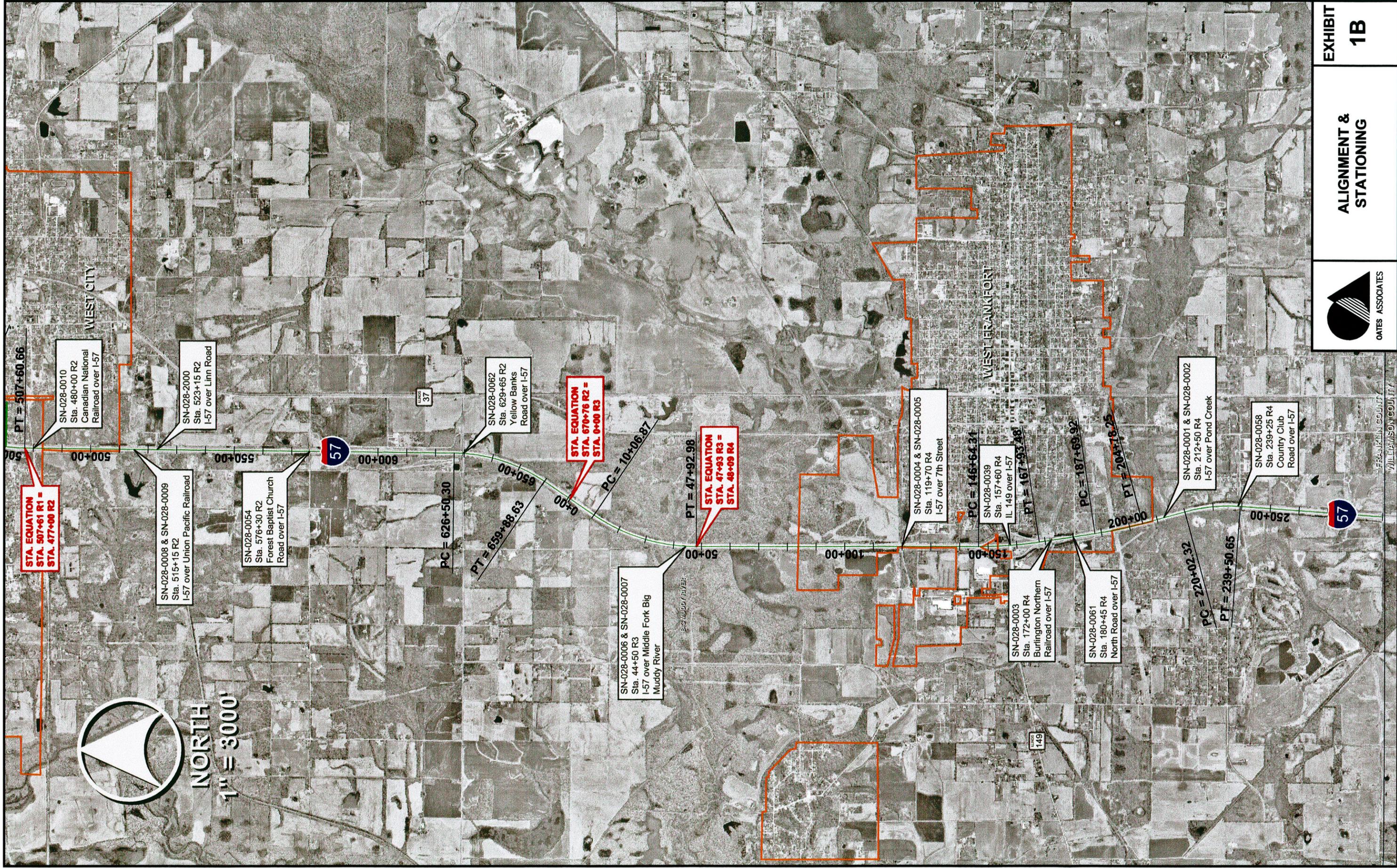


NORTH
1" = 3000'



ALIGNMENT & STATIONING

Images courtesy of Illinois Natural Resources Geospatial Data Clearinghouse.





**80' Median Section
Sta. 290+00 - 4
Looking North**



**Burlington Northern
Railroad (SN 028-0003)
Sta. 175+00 - 4
Looking North**



**GROUND LEVEL
PHOTOS**

**EXHIBIT
2A**



**Burlington Northern
Railroad (SN 028-0003)
Sta. 175+00 - 4
Deficient Ramp Terminal
Looking North**



**@ IL 149 Overhead
Structure (SN 028-0039)
Sta. 158+00 - 4
Deficient Ramp Terminal
Looking South**



**GROUND LEVEL
PHOTOS**

**EXHIBIT
2B**



**@ IL 149 Overhead
Structure (SN 028-0039)
Sta. 158+00 - 4
Looking South**



**@ IL 149 Overhead
Structure (SN 028-0039)
Sta. 158+00 - 4
Looking North**



OATES ASSOCIATES

**GROUND LEVEL
PHOTOS**

**EXHIBIT
2C**



**Yellow Banks Road
Overhead Structure
(SN 028-0062)
Sta. 625+00 - 2
Looking South**



**50' Median Section
Sta. 572+00 - 2
Looking North**



**GROUND LEVEL
PHOTOS**

**EXHIBIT
2D**



**Canadian National
Railroad (SN 028-0010)
Sta. 483+00 - 2
Looking North**



**Webster Street Overhead
Structure (SN 028-0063)
Sta. 505+00 - 1
Looking North**



**GROUND LEVEL
PHOTOS**

**EXHIBIT
2E**



**@ IL 14 Overhead
Structure (SN 028-0022)
Sta. 490+00 -
Looking South**



**@ IL 14 Overhead
Structure (SN 028-0022)
Sta. 490+00 -
Looking North**



OATES ASSOCIATES

**GROUND LEVEL
PHOTOS**

**EXHIBIT
2F**



**@ IL 14 Overhead
Structure (SN 028-0022)
Sta. 490+00 -
Looking East**



**Petroff Road Overhead
Structure (SN 028-0057)
Sta. 423+00 - 1
Looking North**



OATES ASSOCIATES

**GROUND LEVEL
PHOTOS**

**EXHIBIT
2G**



**64' Median Section
Sta. 410+00 - 1
Looking North**



**Franklin Cemetery Road
Overhead Structure
(SN 028-0056)
Sta. 237+00 - 1
Looking North**



OATES ASSOCIATES

**GROUND LEVEL
PHOTOS**

**EXHIBIT
2H**



**@ IL 154 Overhead
Structure (SN 028-0059)
Sta. 177+00 - 1
Looking South**



**@ IL 154 Overhead
Structure (SN 028-0059)
Sta. 177+00 - 1
Looking North**



**GROUND LEVEL
PHOTOS**

**EXHIBIT
21**



**SB Rest Area
Sta. 104+00 - 1
Looking South**



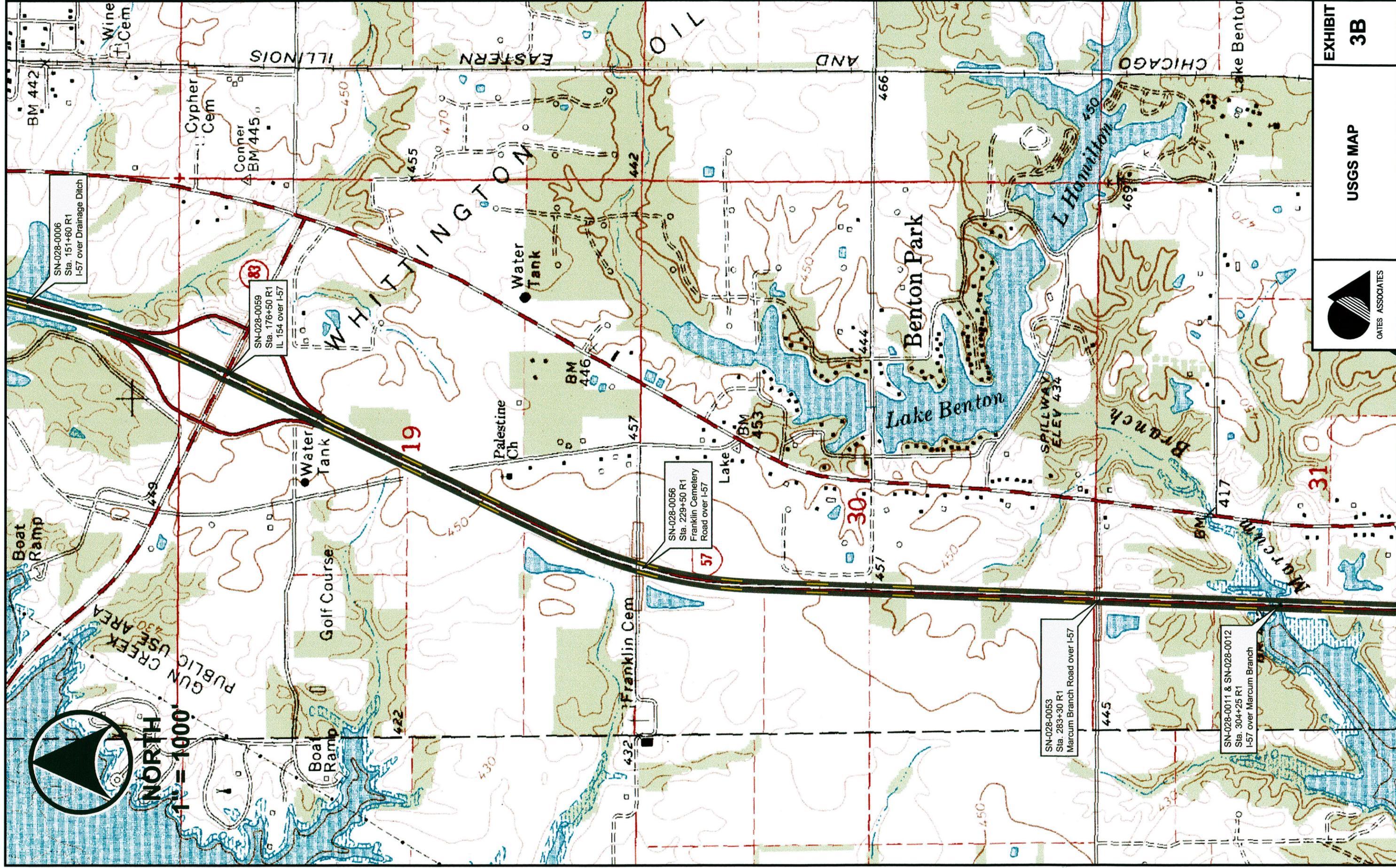
**Gunn Creek
At-Grade Structure
(SN 028-0013 & 14)
Sta. 102+00 - 1
Looking North**



OATES ASSOCIATES

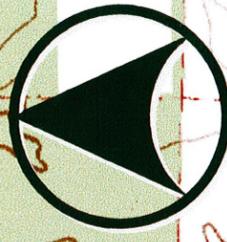
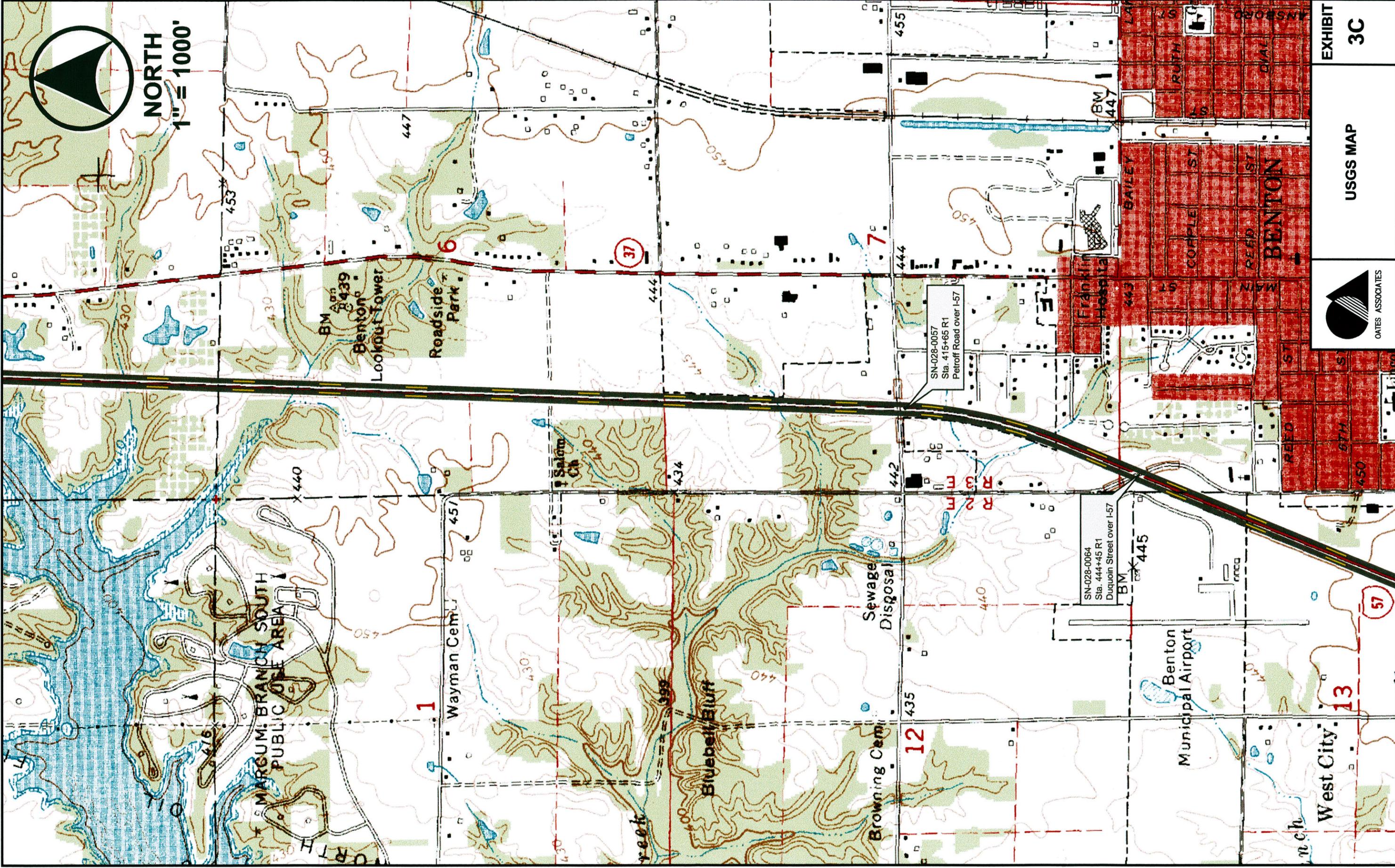
**GROUND LEVEL
PHOTOS**

**EXHIBIT
2J**



USGS MAP

EXHIBIT
3B



NORTH
1" = 1000'

MARGUM BRANCH SOUTH
PUBLIC GOLF AREA

Bentons
Lookout Tower
Roadside Park

Wayman Cem

Bluebell Bluff

Browning Cem

Sewage
Disposal

Benton
Municipal Airport

West City

BENTON

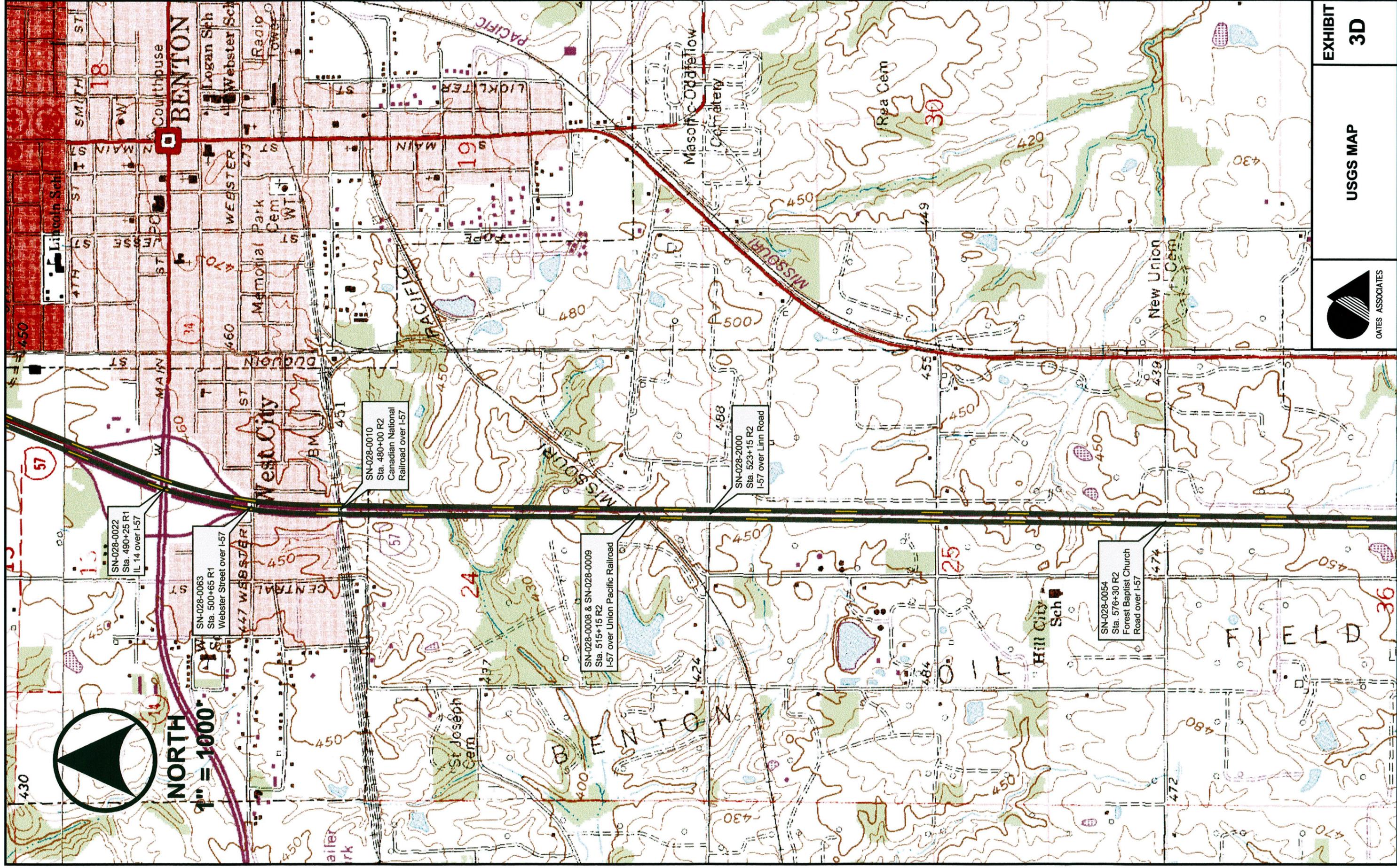
SN-028-0057
Sta. 415+65 R1
Petroff Road over I-57

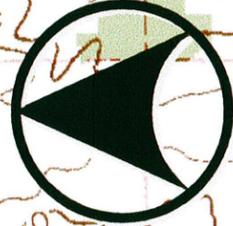
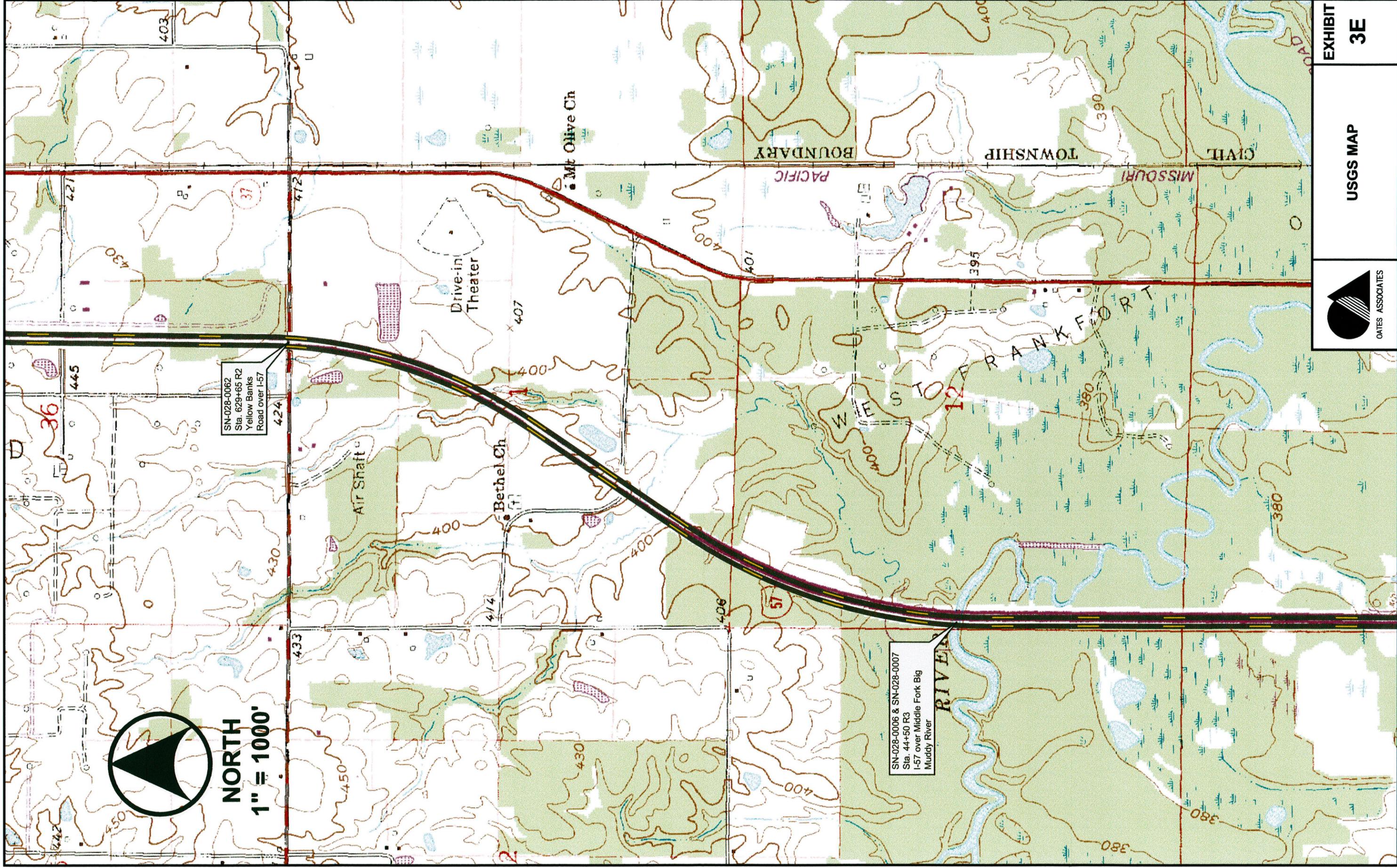
SN-028-0064
Sta. 444+45 R1
Duquoin Street over I-57



USGS MAP

EXHIBIT
3C





NORTH
1" = 1000'

SN-028-0062
Sta. 629+65 R2
Yellow Banks
Road over I-57

SN-028-0006 & SN-028-0007
Sta. 44+50 R3
I-57 over Middle Fork Big
Muddy River



UBFX



JEFFERSON COUNTY

NORTH FRANKLIN COUNTY

1" = 1000'

SN-028-0055
Sta. 10+00 R1
County Line Road over I-57

Digital

PEMCx

PFO1A

Rend Lake Dam

PFO1FH

PEMC

PUBGx

PEMAH

PUBFH

PUBFx

37

57

PUBFH

SN-028-0013 & SN-028-0014
Sta. 102+60 R1
I-57 over Gun Creek

Digital

Rend Lake Dam

57

PFO1A

PEMCH

REND LAKE

L1UBHH

L2UBGH

PFO1FH

PEMCH

PEMFH

PFO1/UBFH

37

L2UBG

L2UBGH

L1UBHH

L2UBGH

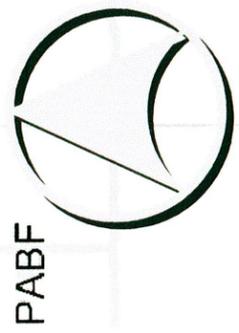
Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
 - Estuarine and Marine Deepwater
 - Estuarine and Marine Wetland
 - Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond
 - Lake
 - Other
 - Riverine
- NHD Streams
- Counties 100K



WETLAND FEATURES

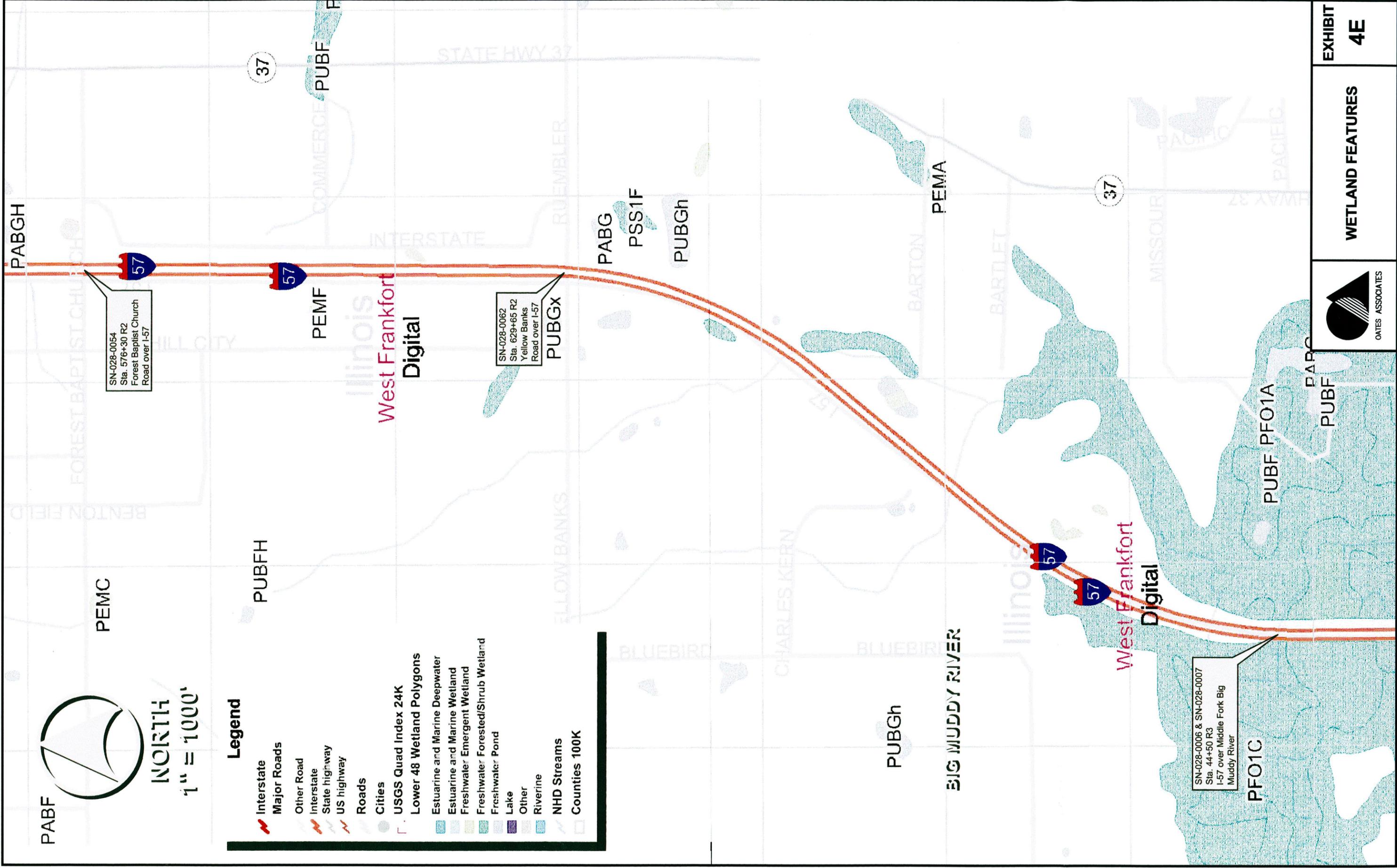
EXHIBIT 4A

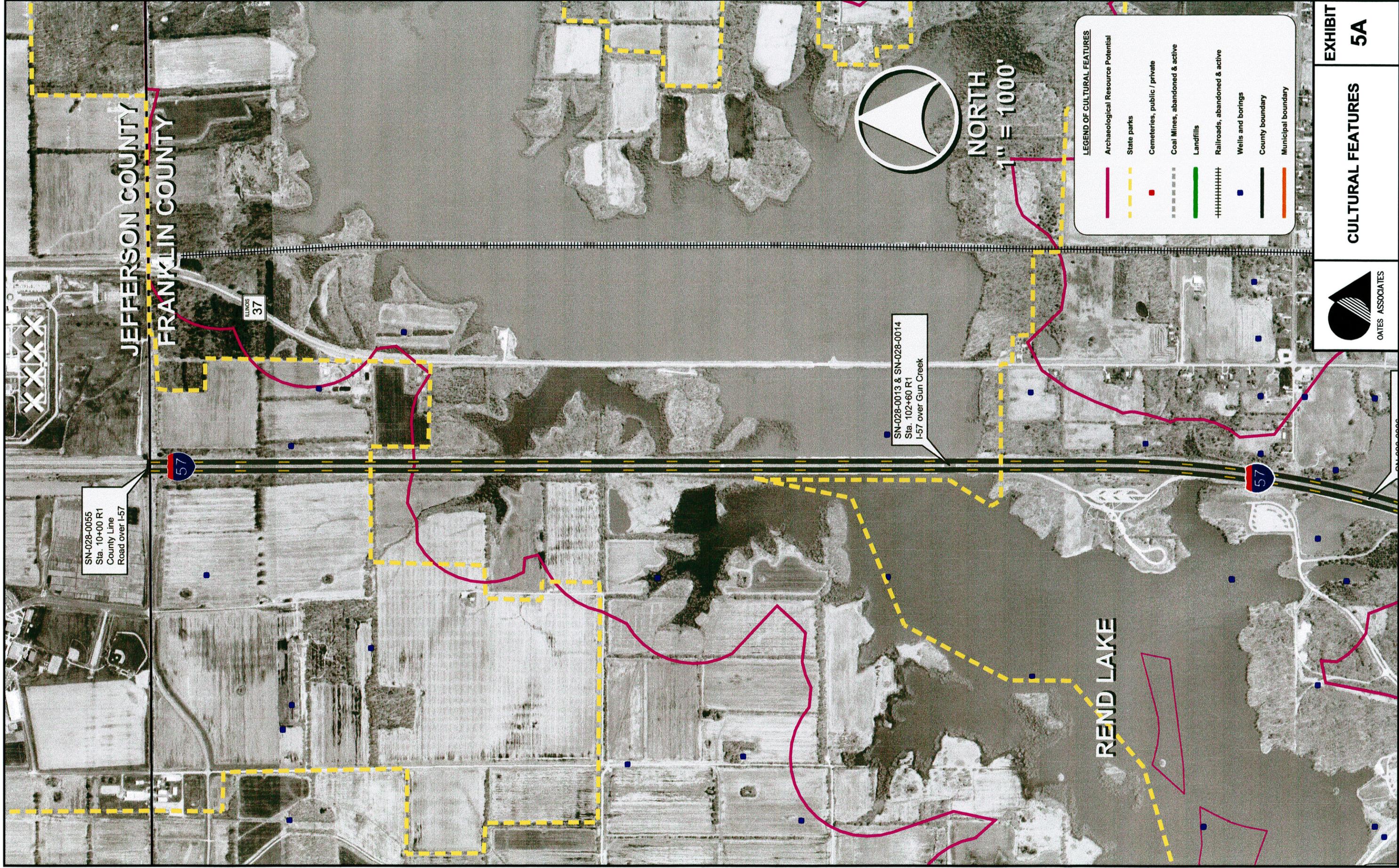


NORTH
1" = 1000'

Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- NHD Streams
- Counties 100K

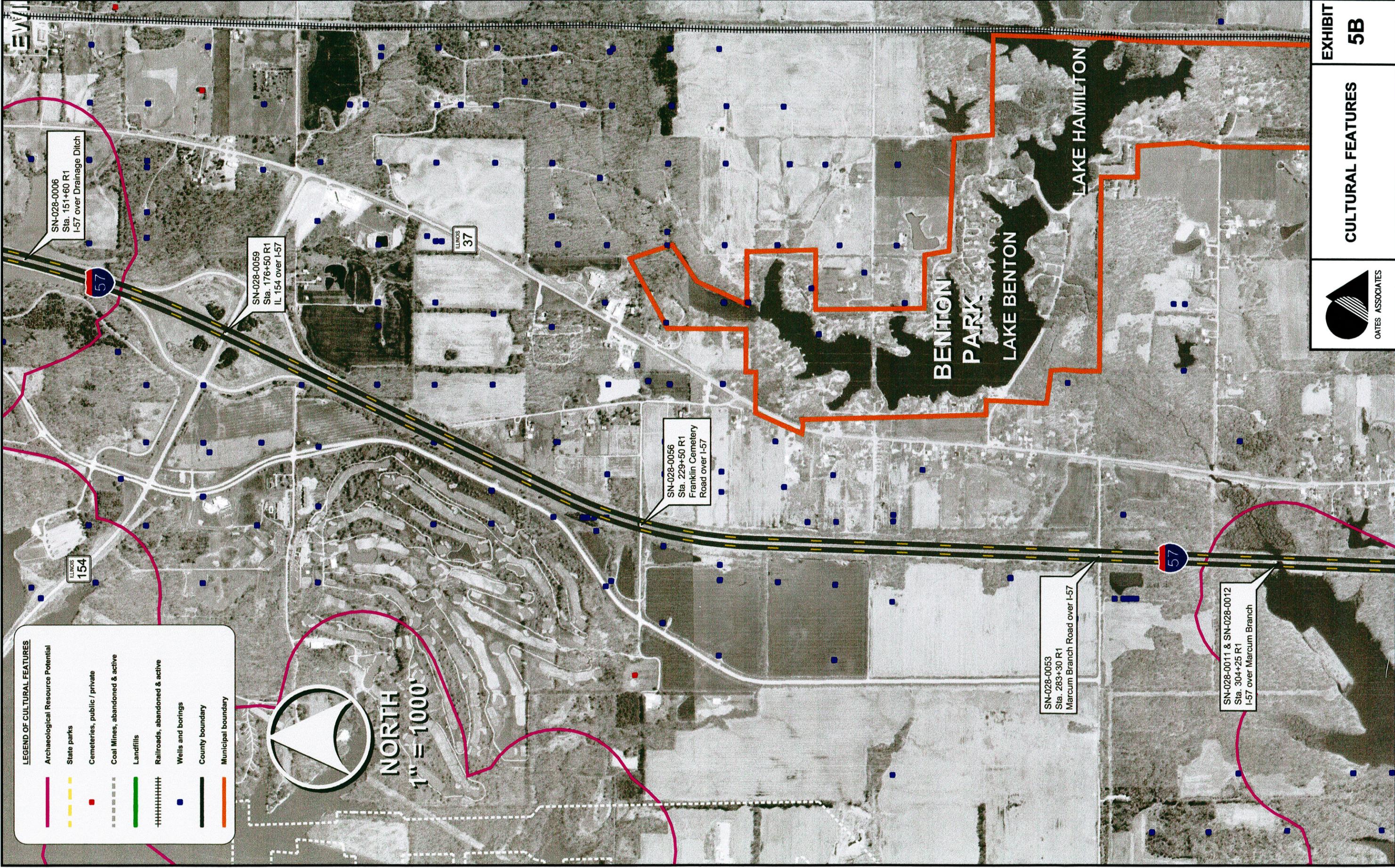




CULTURAL FEATURES

EXHIBIT 5A

Images courtesy of Illinois Natural Resources Geospatial Data Clearinghouse.



LEGEND OF CULTURAL FEATURES

- Archaeological Resource Potential
- State parks
- Cemeteries, public / private
- Coal Mines, abandoned & active
- Landfills
- Railroads, abandoned & active
- Wells and borings
- County boundary
- Municipal boundary



NORTH
1" = 1000'

SN-028-0006
Sta. 151+60 R1
I-57 over Drainage Ditch

SN-028-0059
Sta. 176+50 R1
IL 154 over I-57

SN-028-0056
Sta. 229+50 R1
Franklin Cemetery
Road over I-57

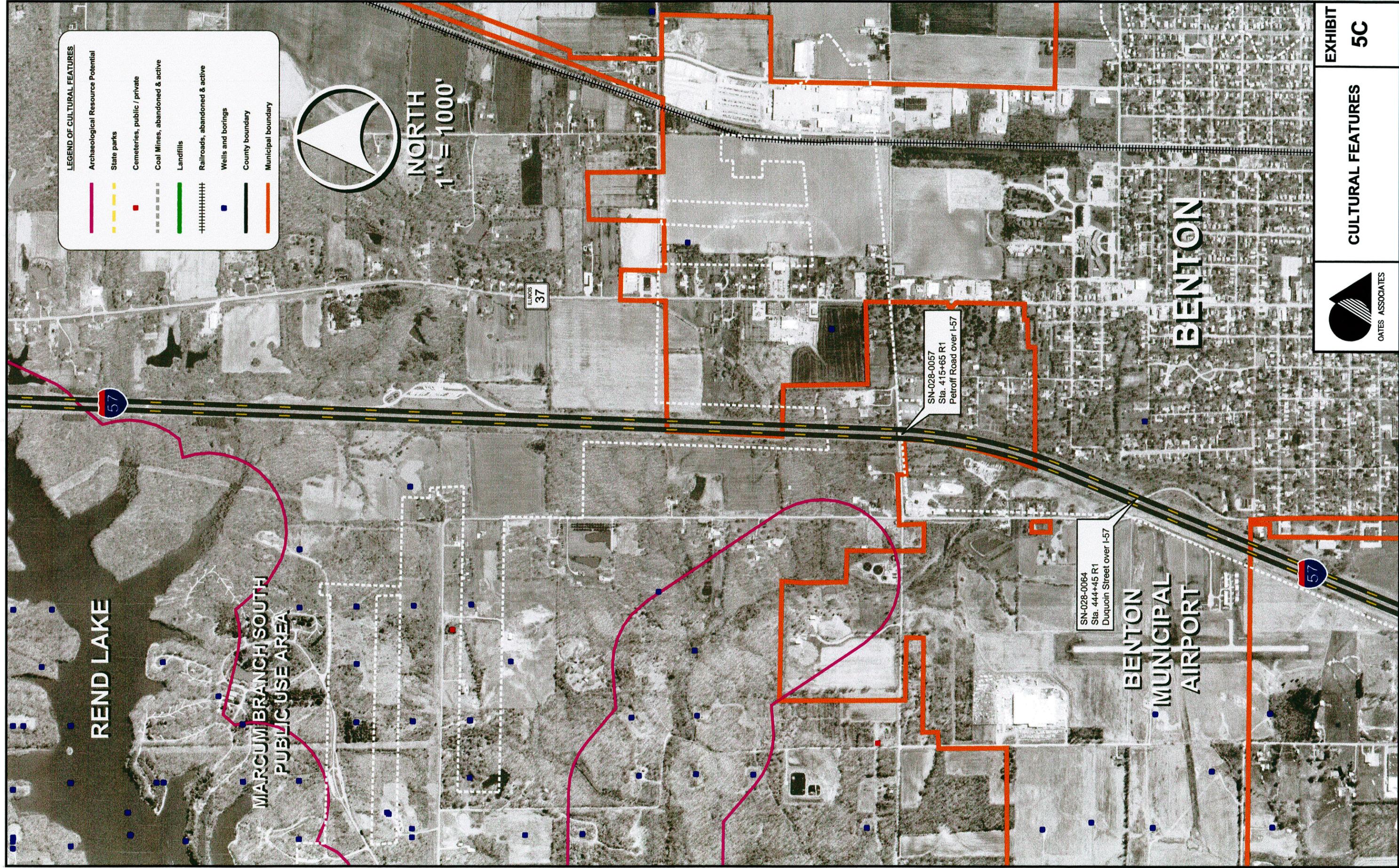
SN-028-0053
Sta. 283+30 R1
Marcum Branch Road over I-57

SN-028-0011 & SN-028-0012
Sta. 304+25 R1
I-57 over Marcum Branch

EXHIBIT 5B

CULTURAL FEATURES

OATES ASSOCIATES



LEGEND OF CULTURAL FEATURES

- Archaeological Resource Potential
- State parks
- Cemeteries, public / private
- Coal Mines, abandoned & active
- Landfills
- Railroads, abandoned & active
- Wells and borings
- County boundary
- Municipal boundary

NORTH
1" = 1000'

REND LAKE

**MARCUM BRANCH SOUTH
PUBLIC USE AREA**

**BENTON
MUNICIPAL
AIRPORT**

BENTON

ILLINOIS
37

SN-028-0057
Sta. 415+65 R1
Petroff Road over I-57

SN-028-0064
Sta. 444+45 R1
Duquoin Street over I-57

Images courtesy of Illinois Natural Resources Geospatial Data Clearinghouse.



NORTH
1" = 1000'

WEST CITY

LEGEND OF CULTURAL FEATURES

-  Archaeological Resource Potential
-  State parks
-  Cemeteries, public / private
-  Coal Mines, abandoned & active
-  Landfills
-  Railroads, abandoned & active
-  Wells and borings
-  County boundary
-  Municipal boundary



CULTURAL FEATURES

EXHIBIT
5D

SN-028-0022
Sta. 490+25 R1
IL 14 over I-57

SN-028-0063
Sta. 500+65 R1
Webster Street over I-57

SN-028-0010
Sta. 480+00 R2
Canadian National
Railroad over I-57

SN-028-0008 & SN-028-0009
Sta. 515+15 R2
I-57 over Union Pacific Railroad

SN-028-2000
Sta. 523+15 R2
I-57 over Linn Road

SN-028-0054
Sta. 576+30 R2
Forest Baptist Church
Road over I-57

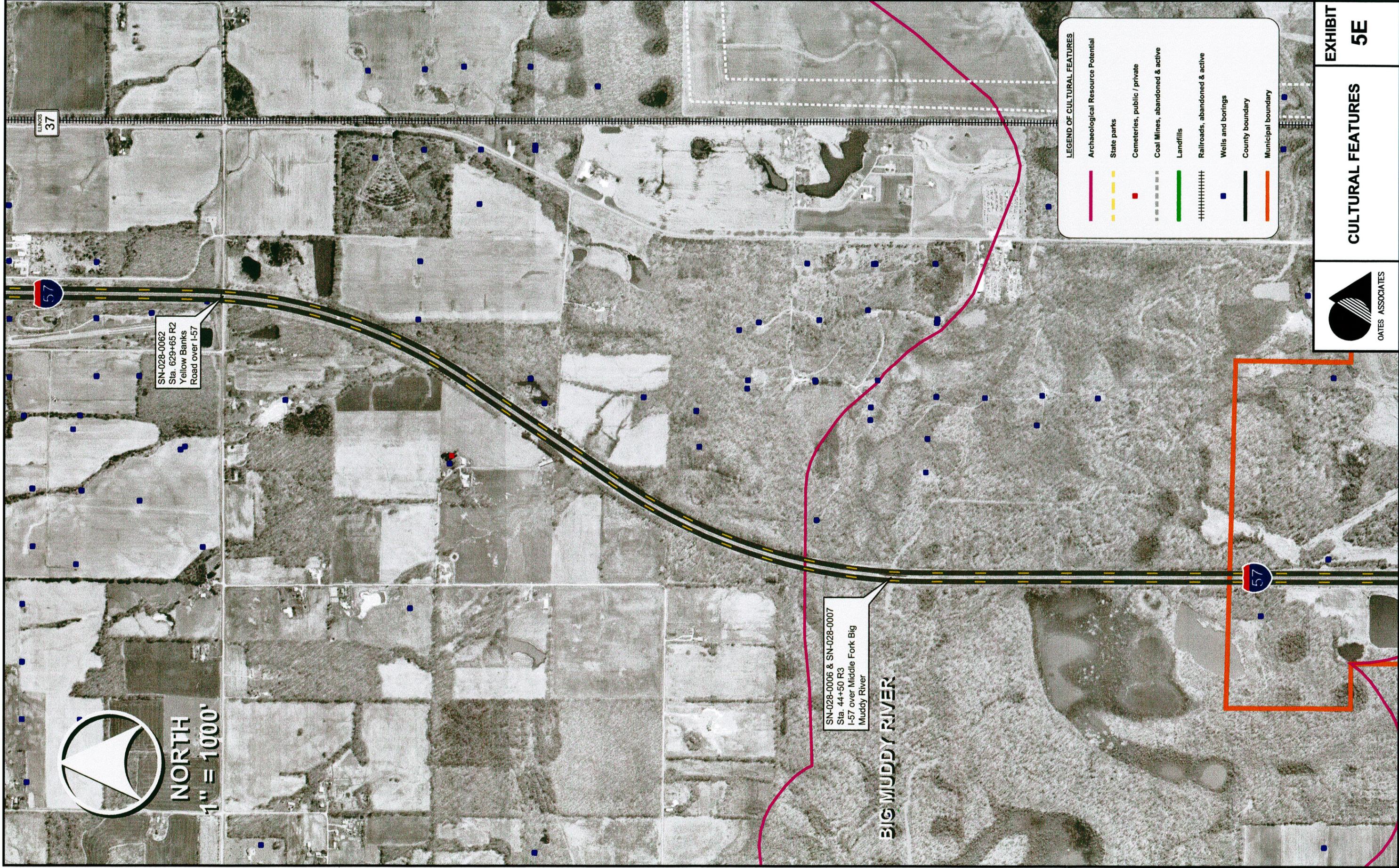
ILLINOIS
14

ILLINOIS
37

ILLINOIS
57



NORTH
1" = 1000'



SN-028-0062
Sta. 629+65 R2
Yellow Banks
Road over I-57

SN-028-0006 & SN-028-0007
Sta. 44+50 R3
I-57 over Middle Fork Big
Muddy River

BIG MUDDY RIVER

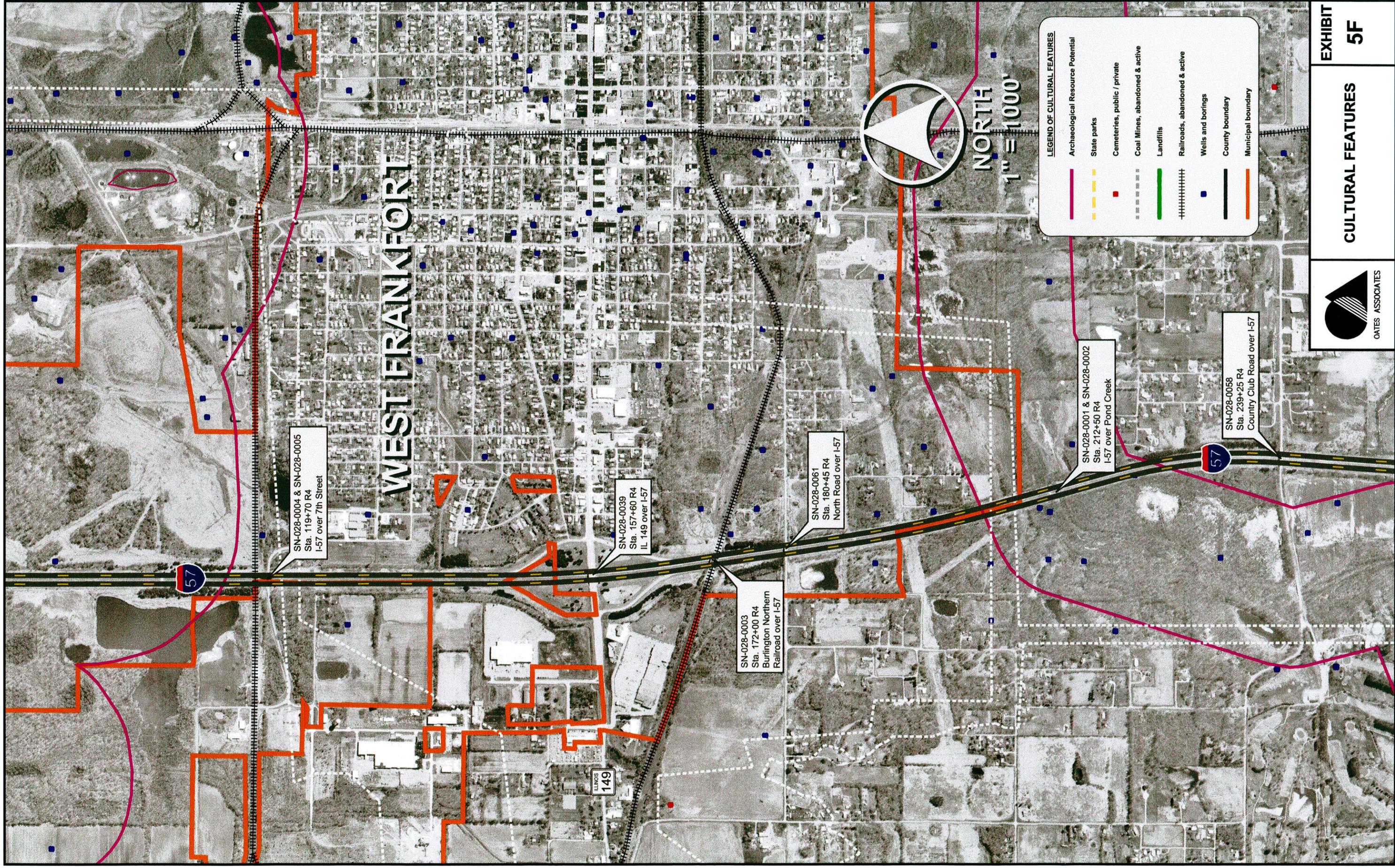
LEGEND OF CULTURAL FEATURES

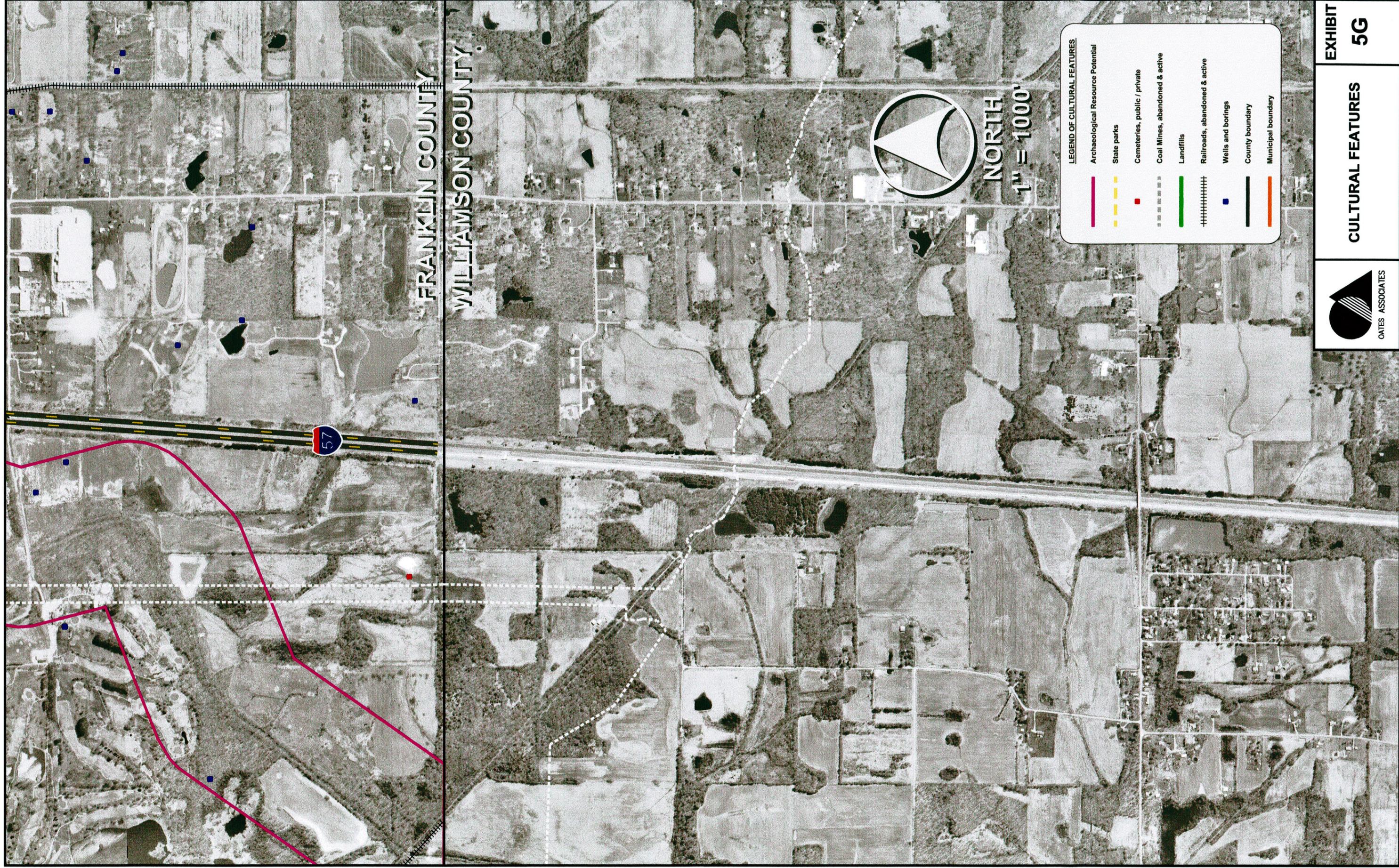
- Archaeological Resource Potential
- State parks
- Cemeteries, public / private
- Coal Mines, abandoned & active
- Landfills
- Railroads, abandoned & active
- Wells and borings
- County boundary
- Municipal boundary



CULTURAL FEATURES

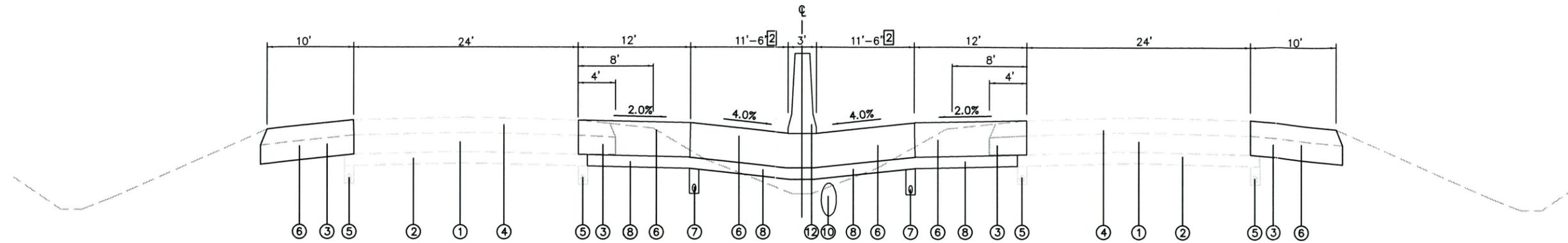
EXHIBIT 5E





CULTURAL FEATURES

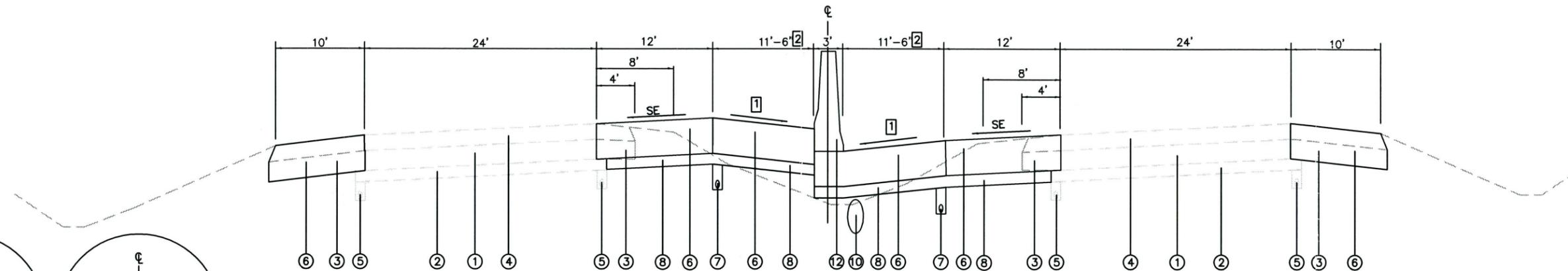
Images courtesy of Illinois Natural Resources Geospatial Data Clearinghouse.



TANGENT SECTION

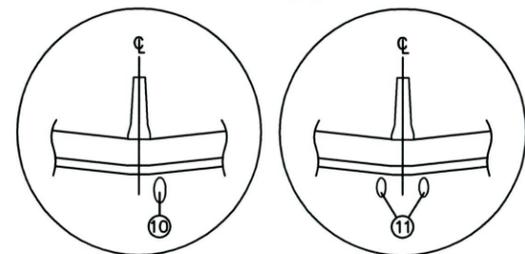
STA. 426+50 R1 TO STA. 507+61 R1 MILE MARKER 72.1
 STA. 477+00 R2 TO STA. 670+76 R2 MILE MARKER 71.3
 STA. 0+00 R3 TO STA. 47+93 R3 MILE MARKER 67.6
 STA. 48+09 R4 TO STA. 228+50 R4 MILE MARKER 66.7

STATION EQUATIONS:
 STA. 507+61 R1 = STA. 477+00 R2
 STA. 670+76 R2 = STA. 0+00 R3
 STA. 47+93 R3 = STA. 48+09 R4



SUPERELEVATION SECTION

STA. 426+50 R1 TO STA. 507+61 R1 MILE MARKER 72.1
 STA. 477+00 R2 TO STA. 670+76 R2 MILE MARKER 71.3
 STA. 0+00 R3 TO STA. 47+93 R3 MILE MARKER 67.6
 STA. 48+09 R4 TO STA. 228+50 R4 MILE MARKER 66.7



STORM SEWER PIPE DETAIL

LEGEND

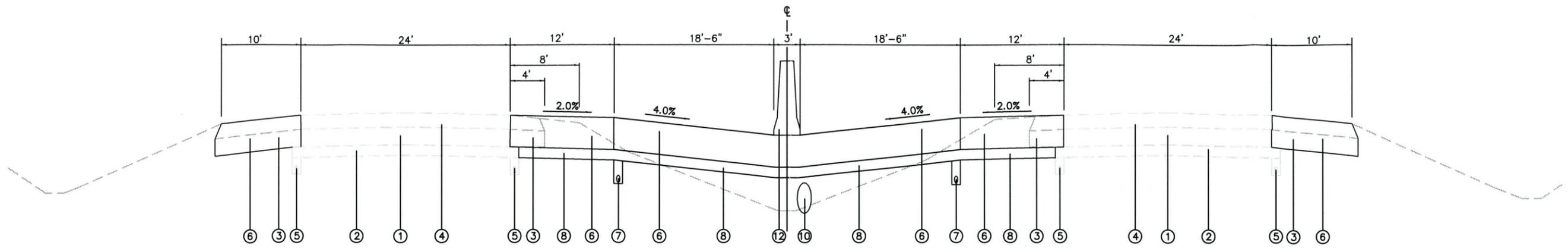
- ① EXISTING RUBBLIZED PCC PAVEMENT
- ② EXISTING SUBBASE GRANULAR MATERIAL
- ③ EXISTING STABILIZED SHOULDER
- ④ EXISTING RESURFACING
- ⑤ EXISTING SUB-SURFACE DRAINS
- ⑥ PROPOSED BITUMINOUS CONCRETE PAVEMENT (FULL DEPTH)
- ⑦ PROPOSED SUB-SURFACE DRAINS
- ⑧ PROPOSED SUBBASE GRANULAR MATERIAL
- ⑨ PROPOSED AGGREGATE SHOULDERS
- ⑩ PROPOSED STORM SEWER
- ⑪ PROPOSED SLOTTED DRAIN PIPE
- ⑫ PROPOSED CONCRETE BARRIER DOUBLE FACE 42" HEIGHT
- ⑬ PROPOSED CABLE MEDIAN BARRIER

- ① SEE STANDARD 482001 FOR SHOULDER CROSS SLOPE
- ② 12' SHOULDERS ARE DESIRABLE
10' SHOULDERS ARE ACCEPTABLE
- ③ VARIES 10:1 TO 4:1 TO OBTAIN POSITIVE DRAINAGE
- ④ DESIGN EXCEPTION REQUIRED

NOTES:

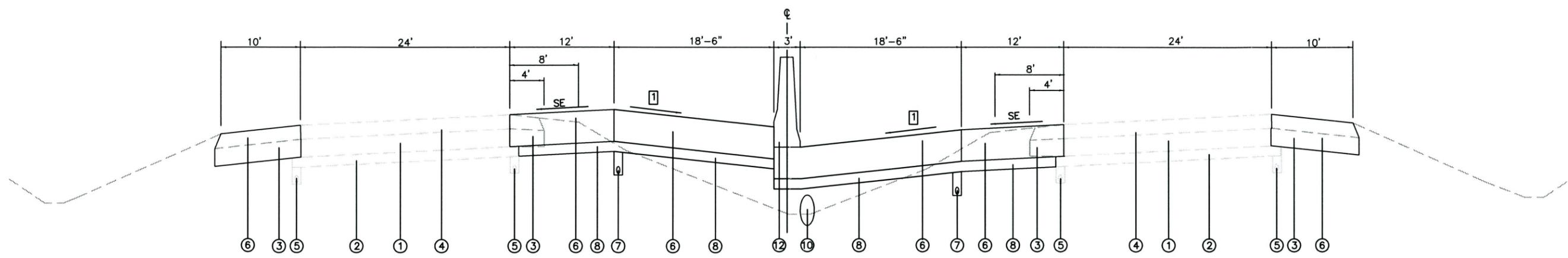
1. FUTURE "EXISTING" SECTION SHOWN ASSUMES CURRENT PAVEMENT RUBBLIZED WITH 8-1/2" BITUMINOUS OVERLAY.
2. PAVEMENT DESIGN TO BE COMPLETED BY IDOT.
3. USE SINGLE STORM SEWER PIPE WHERE PROFILE GRADE IS 0.3% OR GREATER. USE TWO RUNS OF SLOTTED DRAIN PIPE WHERE PROFILE GRADE IS LESS THAN 0.3%. SEE DETAIL.
4. SHOULDERS SHALL BE TRANSITIONED TO FULL WIDTH APPROACHING THE AT-GRADE STRUCTURES.

 GATES ASSOCIATES	TYPICAL SECTIONS EXISTING 50' MEDIAN INSIDE WIDENING	EXHIBIT 6A
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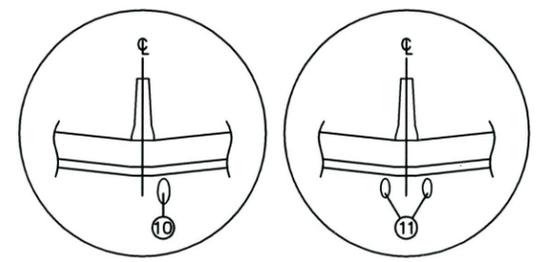


TANGENT SECTION
 STA. 9+78 R1 TO STA. 426+50 R1 MILE MARKER 80.7

STATION EQUATIONS:
 STA. 507+61 R1 = STA. 477+00 R2
 STA. 670+76 R2 = STA. 0+00 R3
 STA. 47+93 R3 = STA. 48+09 R4



SUPERELEVATION SECTION
 STA. 9+78 R1 TO STA. 426+50 R1 MILE MARKER 80.7



STORM SEWER PIPE DETAIL

STORM SEWER PIPE DETAIL

- 1 SEE STANDARD 482001 FOR SHOULDER CROSS SLOPE
- 2 12' SHOULDERS ARE DESIRABLE
10' SHOULDERS ARE ACCEPTABLE
- 3 VARIES 10:1 TO 4:1 TO OBTAIN POSITIVE DRAINAGE
- 4 DESIGN EXCEPTION REQUIRED

NOTES:

- 1. FUTURE "EXISTING" SECTION SHOWN ASSUMES CURRENT PAVEMENT RUBBLIZED WITH 8-1/2" BITUMINOUS OVERLAY.
- 2. PAVEMENT DESIGN TO BE COMPLETED BY IDOT.
- 3. USE SINGLE STORM SEWER PIPE WHERE PROFILE GRADE IS 0.3% OR GREATER. USE TWO RUNS OF SLOTTED DRAIN PIPE WHERE PROFILE GRADE IS LESS THAN 0.3%, SEE DETAIL.
- 4. SHOULDERS SHALL BE TRANSITIONED TO FULL WIDTH APPROACHING THE AT-GRADE STRUCTURES.

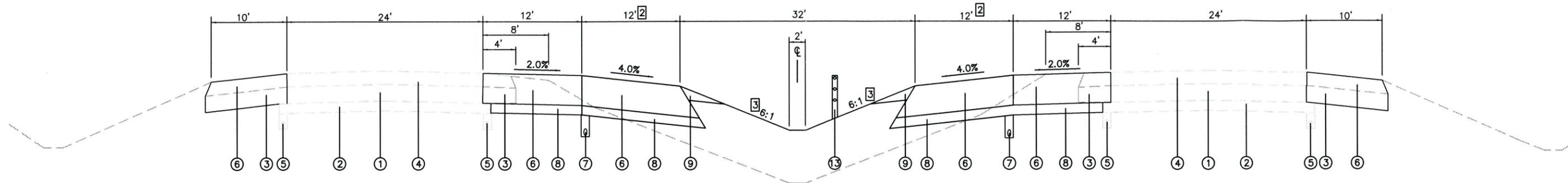
LEGEND

- 1 EXISTING RUBBLIZED PCC PAVEMENT
- 2 EXISTING SUBBASE GRANULAR MATERIAL
- 3 EXISTING STABILIZED SHOULDER
- 4 EXISTING RESURFACING
- 5 EXISTING SUB-SURFACE DRAINS
- 6 PROPOSED BITUMINOUS CONCRETE PAVEMENT (FULL DEPTH)
- 7 PROPOSED SUB-SURFACE DRAINS
- 8 PROPOSED SUBBASE GRANULAR MATERIAL
- 9 PROPOSED AGGREGATE SHOULDERS
- 10 PROPOSED STORM SEWER
- 11 PROPOSED SLOTTED DRAIN PIPE
- 12 PROPOSED CONCRETE BARRIER DOUBLE FACE 42" HEIGHT
- 13 PROPOSED CABLE MEDIAN BARRIER



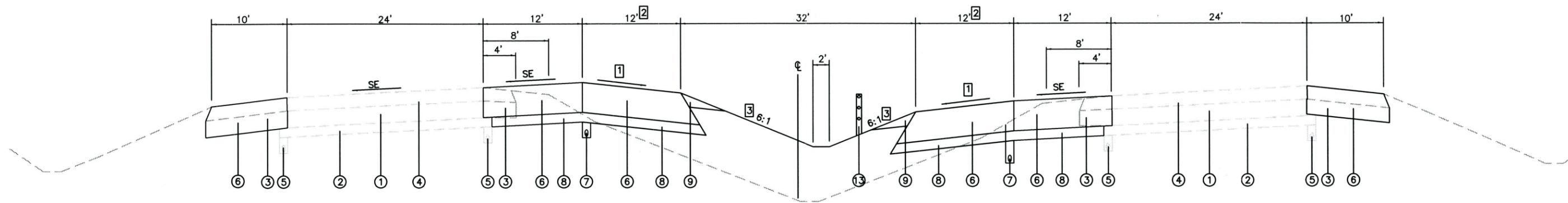
**TYPICAL SECTIONS
 EXISTING 64' MEDIAN
 INSIDE WIDENING**

**EXHIBIT
 6B**



TANGENT SECTION
 STA. 228+50 R4 TO STA. 289+23 R4 MILE MARKER 63.2

STATION EQUATIONS:
 STA. 507+61 R1 = STA. 477+00 R2
 STA. 670+76 R2 = STA. 0+00 R3
 STA. 47+93 R3 = STA. 48+09 R4



SUPERELEVATION SECTION
 STA. 228+50 R4 TO STA. 289+23 R4 MILE MARKER 63.2

STORM SEWER PIPE DETAIL

- 1 SEE STANDARD 482001 FOR SHOULDER CROSS SLOPE
- 2 12' SHOULDERS ARE DESIRABLE
10' SHOULDERS ARE ACCEPTABLE
- 3 VARIES 10:1 TO 4:1 TO OBTAIN POSITIVE DRAINAGE
- 4 DESIGN EXCEPTION REQUIRED

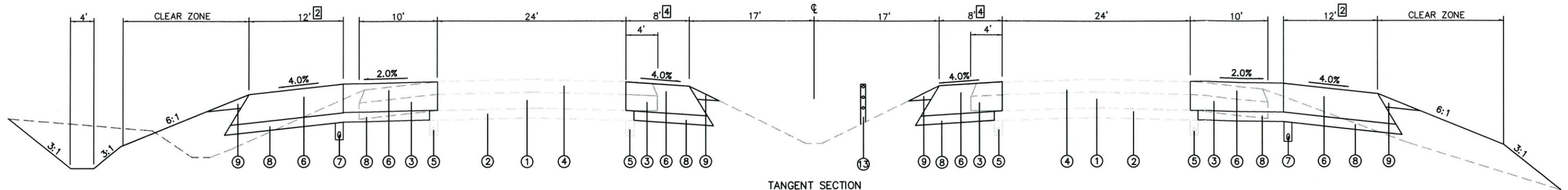
NOTES:

1. FUTURE "EXISTING" SECTION SHOWN ASSUMES CURRENT PAVEMENT RUBBLIZED WITH 8-1/2" BITUMINOUS OVERLAY.
2. PAVEMENT DESIGN TO BE COMPLETED BY IDOT.
3. USE SINGLE STORM SEWER PIPE WHERE PROFILE GRADE IS 0.3% OR GREATER. USE TWO RUNS OF SLOTTED DRAIN PIPE WHERE PROFILE GRADE IS LESS THAN 0.3%, SEE DETAIL.
4. SHOULDERS SHALL BE TRANSITIONED TO FULL WIDTH APPROACHING THE AT-GRADE STRUCTURES.

LEGEND

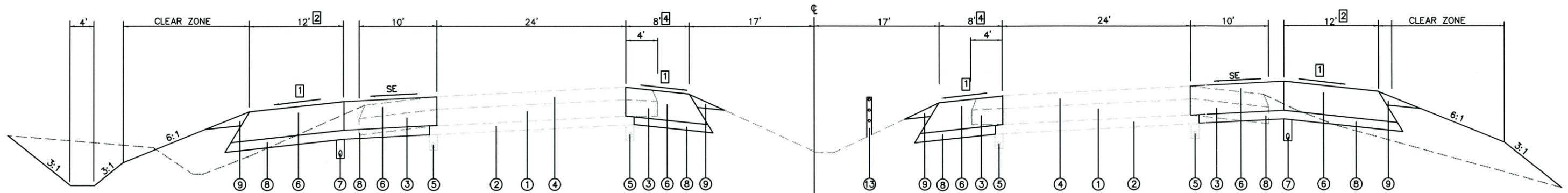
- 1 EXISTING RUBBLIZED PCC PAVEMENT
- 2 EXISTING SUBBASE GRANULAR MATERIAL
- 3 EXISTING STABILIZED SHOULDER
- 4 EXISTING RESURFACING
- 5 EXISTING SUB-SURFACE DRAINS
- 6 PROPOSED BITUMINOUS CONCRETE PAVEMENT (FULL DEPTH)
- 7 PROPOSED SUB-SURFACE DRAINS
- 8 PROPOSED SUBBASE GRANULAR MATERIAL
- 9 PROPOSED AGGREGATE SHOULDERS
- 10 PROPOSED STORM SEWER
- 11 PROPOSED SLOTTED DRAIN PIPE
- 12 PROPOSED CONCRETE BARRIER DOUBLE FACE 42" HEIGHT
- 13 PROPOSED CABLE MEDIAN BARRIER

 OATES ASSOCIATES	TYPICAL SECTIONS EXISTING 80' MEDIAN INSIDE WIDENING	EXHIBIT 6C
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TANGENT SECTION

STA. 426+50 R1 TO STA. 507+61 R1 MILE MARKER 72.1
 STA. 477+00 R2 TO STA. 670+76 R2 MILE MARKER 71.3
 STA. 0+00 R3 TO STA. 47+93 R3 MILE MARKER 67.6
 STA. 48+09 R4 TO STA. 228+50 R4 MILE MARKER 66.7



SUPERELEVATION SECTION

STA. 426+50 R1 TO STA. 507+61 R1 MILE MARKER 72.1
 STA. 477+00 R2 TO STA. 670+76 R2 MILE MARKER 71.3
 STA. 0+00 R3 TO STA. 47+93 R3 MILE MARKER 67.6
 STA. 48+09 R4 TO STA. 228+50 R4 MILE MARKER 66.7

STATION EQUATIONS:
 STA. 507+61 R1 = STA. 477+00 R2
 STA. 670+76 R2 = STA. 0+00 R3
 STA. 47+93 R3 = STA. 48+09 R4

STORM SEWER PIPE DETAIL

- 1 SEE STANDARD 482001 FOR SHOULDER CROSS SLOPE
- 2 12' SHOULDERS ARE DESIRABLE
10' SHOULDERS ARE ACCEPTABLE
- 3 VARIES 10:1 TO 4:1 TO OBTAIN POSITIVE DRAINAGE
- 4 DESIGN EXCEPTION REQUIRED

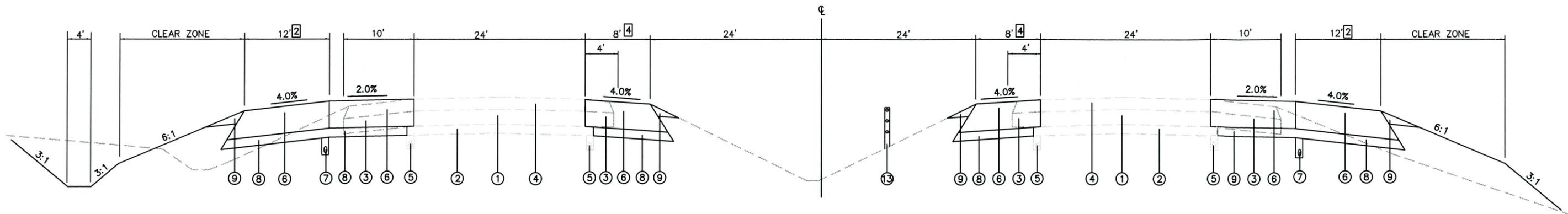
NOTES:

1. FUTURE "EXISTING" SECTION SHOWN ASSUMES CURRENT PAVEMENT RUBBLIZED WITH 8-1/2" BITUMINOUS OVERLAY.
2. PAVEMENT DESIGN TO BE COMPLETED BY IDOT.
3. USE SINGLE STORM SEWER PIPE WHERE PROFILE GRADE IS 0.3% OR GREATER. USE TWO RUNS OF SLOTTED DRAIN PIPE WHERE PROFILE GRADE IS LESS THAN 0.3%. SEE DETAIL.
4. SHOULDERS SHALL BE TRANSITIONED TO FULL WIDTH APPROACHING THE AT-GRADE STRUCTURES.

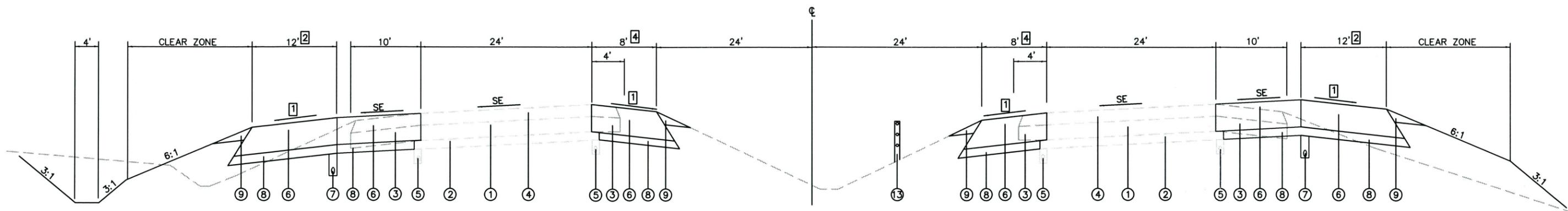
LEGEND

- 1 EXISTING RUBBLIZED PCC PAVEMENT
- 2 EXISTING SUBBASE GRANULAR MATERIAL
- 3 EXISTING STABILIZED SHOULDER
- 4 EXISTING RESURFACING
- 5 EXISTING SUB-SURFACE DRAINS
- 6 PROPOSED BITUMINOUS CONCRETE PAVEMENT (FULL DEPTH)
- 7 PROPOSED SUB-SURFACE DRAINS
- 8 PROPOSED SUBBASE GRANULAR MATERIAL
- 9 PROPOSED AGGREGATE SHOULDERS
- 10 PROPOSED STORM SEWER
- 11 PROPOSED SLOTTED DRAIN PIPE
- 12 PROPOSED CONCRETE BARRIER DOUBLE FACE 42" HEIGHT
- 13 PROPOSED CABLE MEDIAN BARRIER

 OATES ASSOCIATES	TYPICAL SECTIONS EXISTING 50' MEDIAN OUTSIDE WIDENING	EXHIBIT 6D
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TANGENT SECTION
 STA. 9+78 R1 TO STA. 426+50 R1 MILE MARKER 80.7



SUPERELEVATION SECTION
 STA. 9+78 R1 TO STA. 426+50 R1 MILE MARKER 80.7

STATION EQUATIONS:
 STA. 507+61 R1 = STA. 477+00 R2
 STA. 670+76 R2 = STA. 0+00 R3
 STA. 47+93 R3 = STA. 48+09 R4

STORM SEWER PIPE DETAIL

- 1 SEE STANDARD 482001 FOR SHOULDER CROSS SLOPE
- 2 12' SHOULDERS ARE DESIRABLE
10' SHOULDERS ARE ACCEPTABLE
- 3 VARIES 10:1 TO 4:1 TO OBTAIN POSITIVE DRAINAGE
- 4 DESIGN EXCEPTION REQUIRED

NOTES:

- 1. FUTURE "EXISTING" SECTION SHOWN ASSUMES CURRENT PAVEMENT RUBBLIZED WITH 8-1/2" BITUMINOUS OVERLAY.
- 2. PAVEMENT DESIGN TO BE COMPLETED BY IDOT.
- 3. USE SINGLE STORM SEWER PIPE WHERE PROFILE GRADE IS 0.3% OR GREATER. USE TWO RUNS OF SLOTTED DRAIN PIPE WHERE PROFILE GRADE IS LESS THAN 0.3%. SEE DETAIL.
- 4. SHOULDERS SHALL BE TRANSITIONED TO FULL WIDTH APPROACHING THE AT-GRADE STRUCTURES.

LEGEND

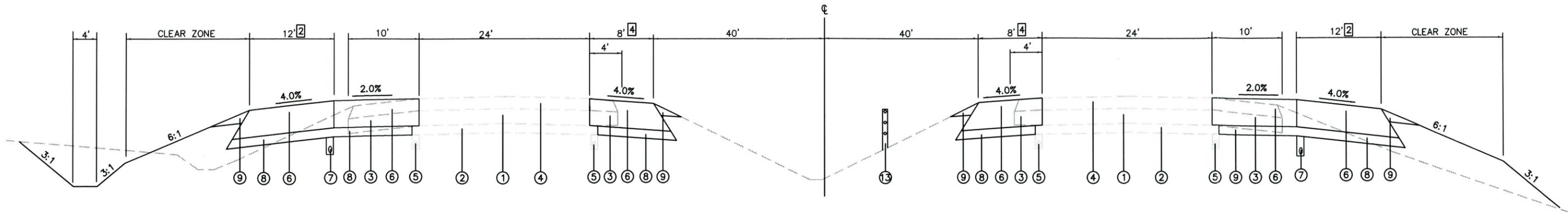
- 1 EXISTING RUBBLIZED PCC PAVEMENT
- 2 EXISTING SUBBASE GRANULAR MATERIAL
- 3 EXISTING STABILIZED SHOULDER
- 4 EXISTING RESURFACING
- 5 EXISTING SUB-SURFACE DRAINS
- 6 PROPOSED BITUMINOUS CONCRETE PAVEMENT (FULL DEPTH)
- 7 PROPOSED SUB-SURFACE DRAINS
- 8 PROPOSED SUBBASE GRANULAR MATERIAL
- 9 PROPOSED AGGREGATE SHOULDERS
- 10 PROPOSED STORM SEWER
- 11 PROPOSED SLOTTED DRAIN PIPE
- 12 PROPOSED CONCRETE BARRIER DOUBLE FACE 42" HEIGHT
- 13 PROPOSED CABLE MEDIAN BARRIER



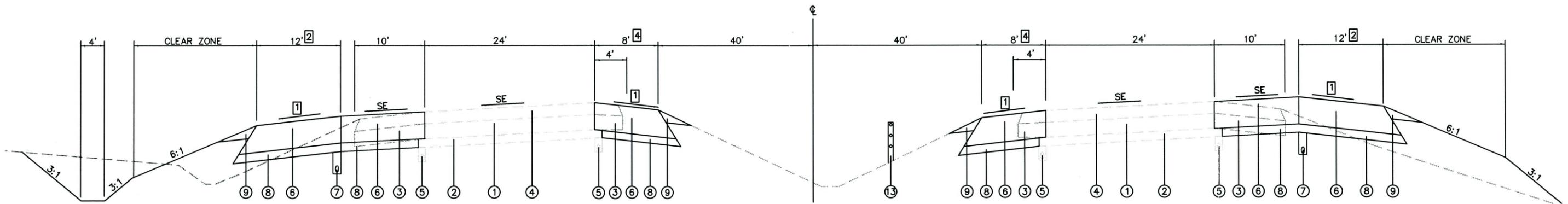
OATES ASSOCIATES

TYPICAL SECTIONS
 EXISTING 64' MEDIAN
 OUTSIDE WIDENING

EXHIBIT
 6E



TANGENT SECTION
 STA. 9+78 R1 TO STA. 426+50 R1 MILE MARKER 80.7



SUPERELEVATION SECTION
 STA. 9+78 R1 TO STA. 426+50 R1 MILE MARKER 80.7

STATION EQUATIONS:
 STA. 507+61 R1 = STA. 477+00 R2
 STA. 670+76 R2 = STA. 0+00 R3
 STA. 47+93 R3 = STA. 48+09 R4

STORM SEWER PIPE DETAIL

- 1 SEE STANDARD 482001 FOR SHOULDER CROSS SLOPE
- 2 12' SHOULDERS ARE DESIRABLE
10' SHOULDERS ARE ACCEPTABLE
- 3 VARIES 10:1 TO 4:1 TO OBTAIN POSITIVE DRAINAGE
- 4 DESIGN EXCEPTION REQUIRED

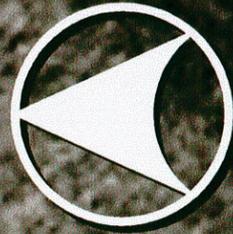
NOTES:

- 1. FUTURE "EXISTING" SECTION SHOWN ASSUMES CURRENT PAVEMENT RUBBLIZED WITH 8-1/2" BITUMINOUS OVERLAY.
- 2. PAVEMENT DESIGN TO BE COMPLETED BY IDOT.
- 3. USE SINGLE STORM SEWER PIPE WHERE PROFILE GRADE IS 0.3% OR GREATER. USE TWO RUNS OF SLOTTED DRAIN PIPE WHERE PROFILE GRADE IS LESS THAN 0.3%, SEE DETAIL.
- 4. SHOULDERS SHALL BE TRANSITIONED TO FULL WIDTH APPROACHING THE AT-GRADE STRUCTURES.

LEGEND

- 1 EXISTING RUBBLIZED PCC PAVEMENT
- 2 EXISTING SUBBASE GRANULAR MATERIAL
- 3 EXISTING STABILIZED SHOULDER
- 4 EXISTING RESURFACING
- 5 EXISTING SUB-SURFACE DRAINS
- 6 PROPOSED BITUMINOUS CONCRETE PAVEMENT (FULL DEPTH)
- 7 PROPOSED SUB-SURFACE DRAINS
- 8 PROPOSED SUBBASE GRANULAR MATERIAL
- 9 PROPOSED AGGREGATE SHOULDERS
- 10 PROPOSED STORM SEWER
- 11 PROPOSED SLOTTED DRAIN PIPE
- 12 PROPOSED CONCRETE BARRIER DOUBLE FACE 42" HEIGHT
- 13 PROPOSED CABLE MEDIAN BARRIER

 OATES ASSOCIATES	TYPICAL SECTIONS EXISTING 80' MEDIAN OUTSIDE WIDENING	EXHIBIT 6F
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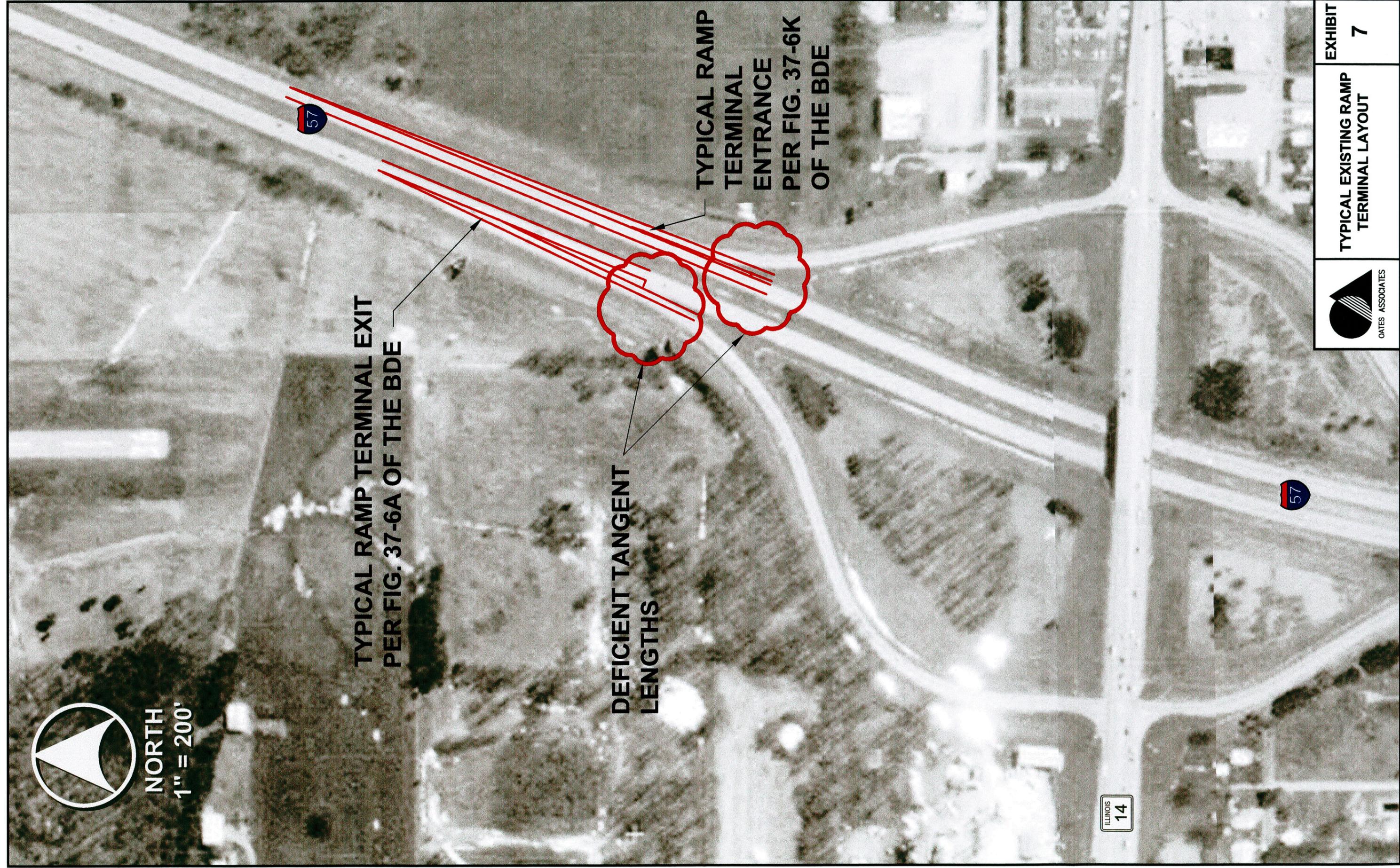


NORTH
1" = 200'

TYPICAL RAMP TERMINAL EXIT
PER FIG. 37-6A OF THE BDE

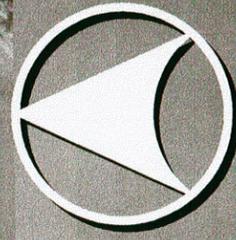
DEFICIENT TANGENT
LENGTHS

TYPICAL RAMP
TERMINAL
ENTRANCE
PER FIG. 37-6K
OF THE BDE

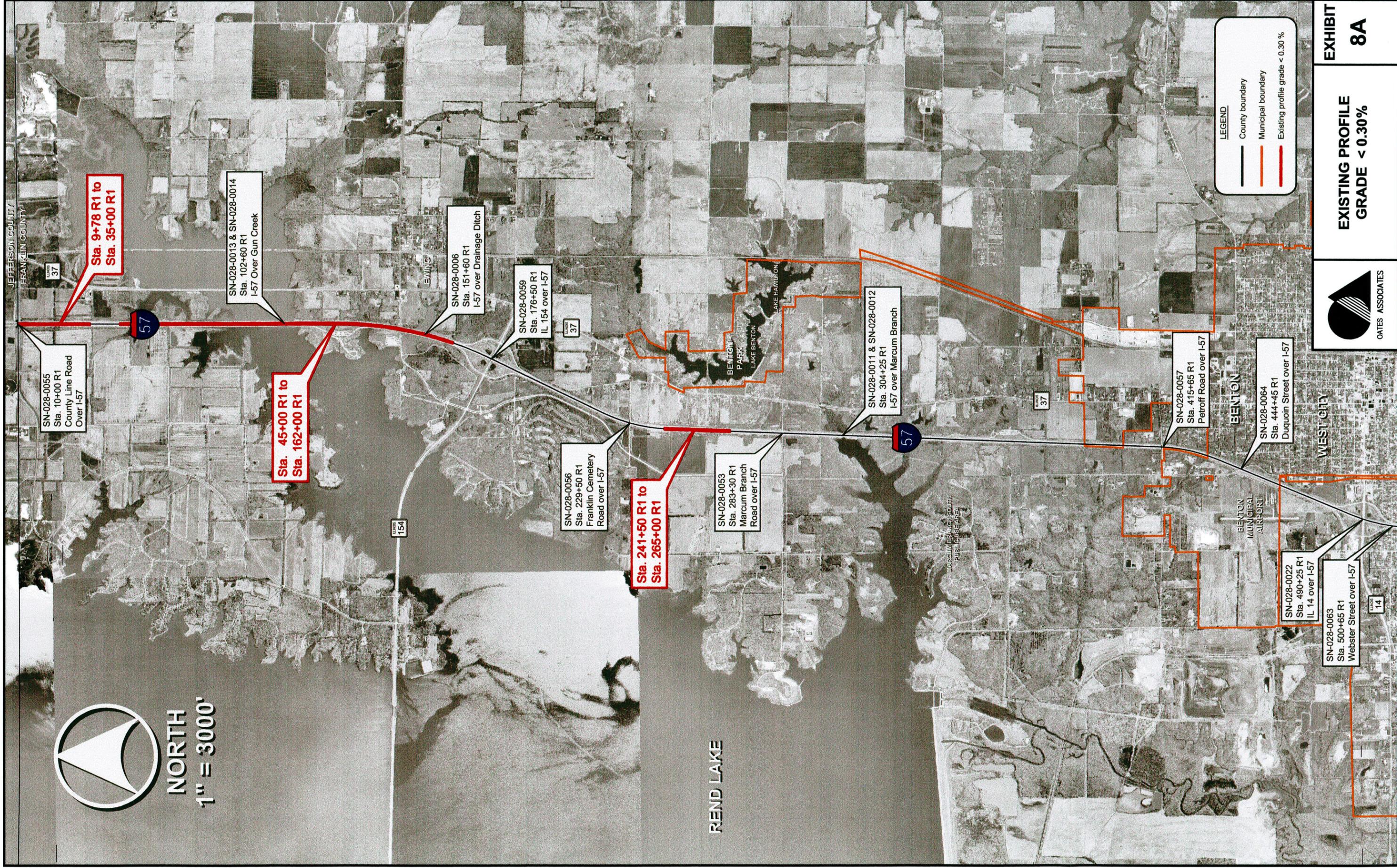


TYPICAL EXISTING RAMP
TERMINAL LAYOUT

EXHIBIT
7



NORTH
1" = 3000'



LEGEND

- County boundary
- Municipal boundary
- Existing profile grade < 0.30 %



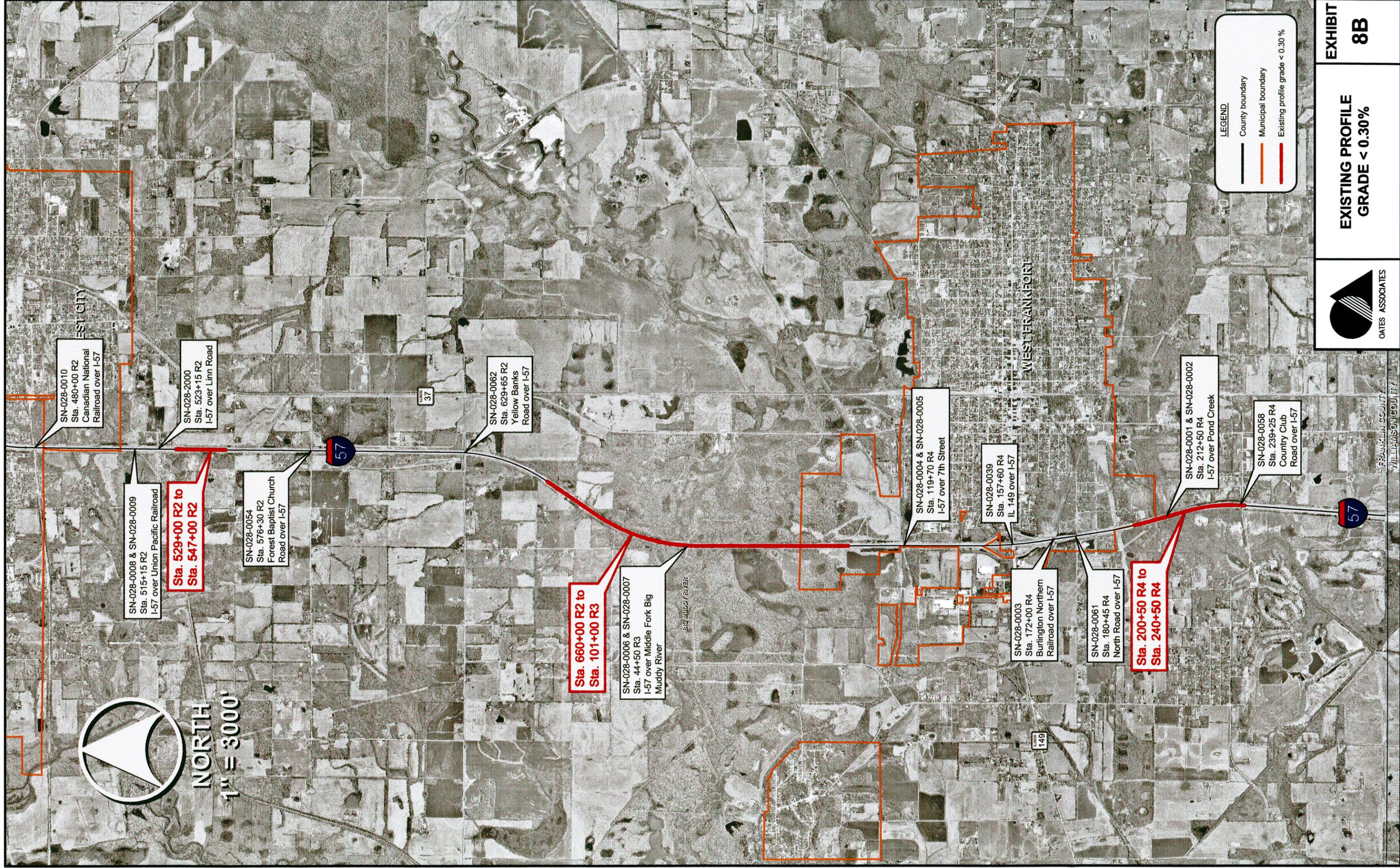
**EXISTING PROFILE
GRADE < 0.30%**

**EXHIBIT
8A**

Images courtesy of Illinois Natural Resources Geospatial Data Clearinghouse.



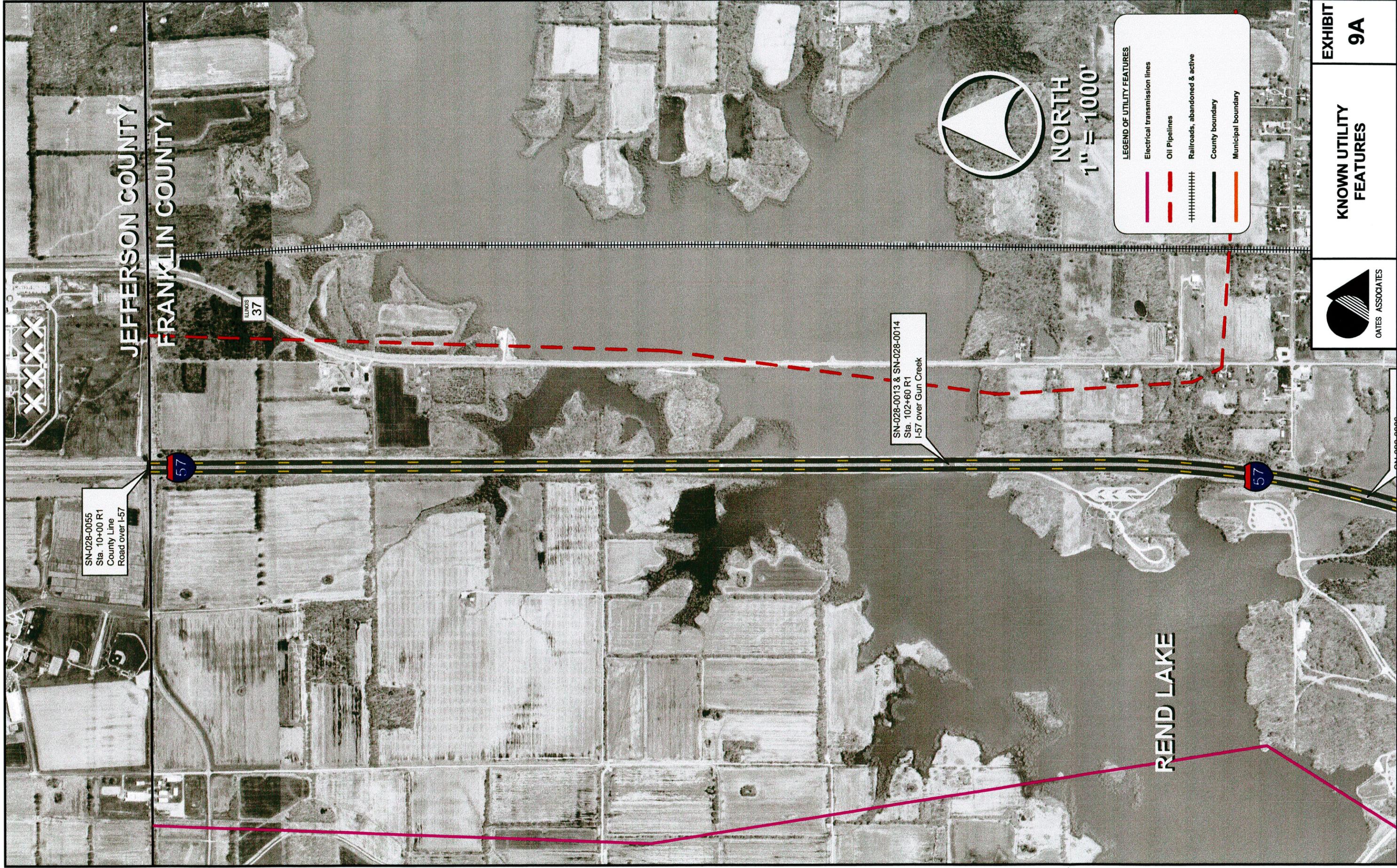
NORTH
1" = 3000'

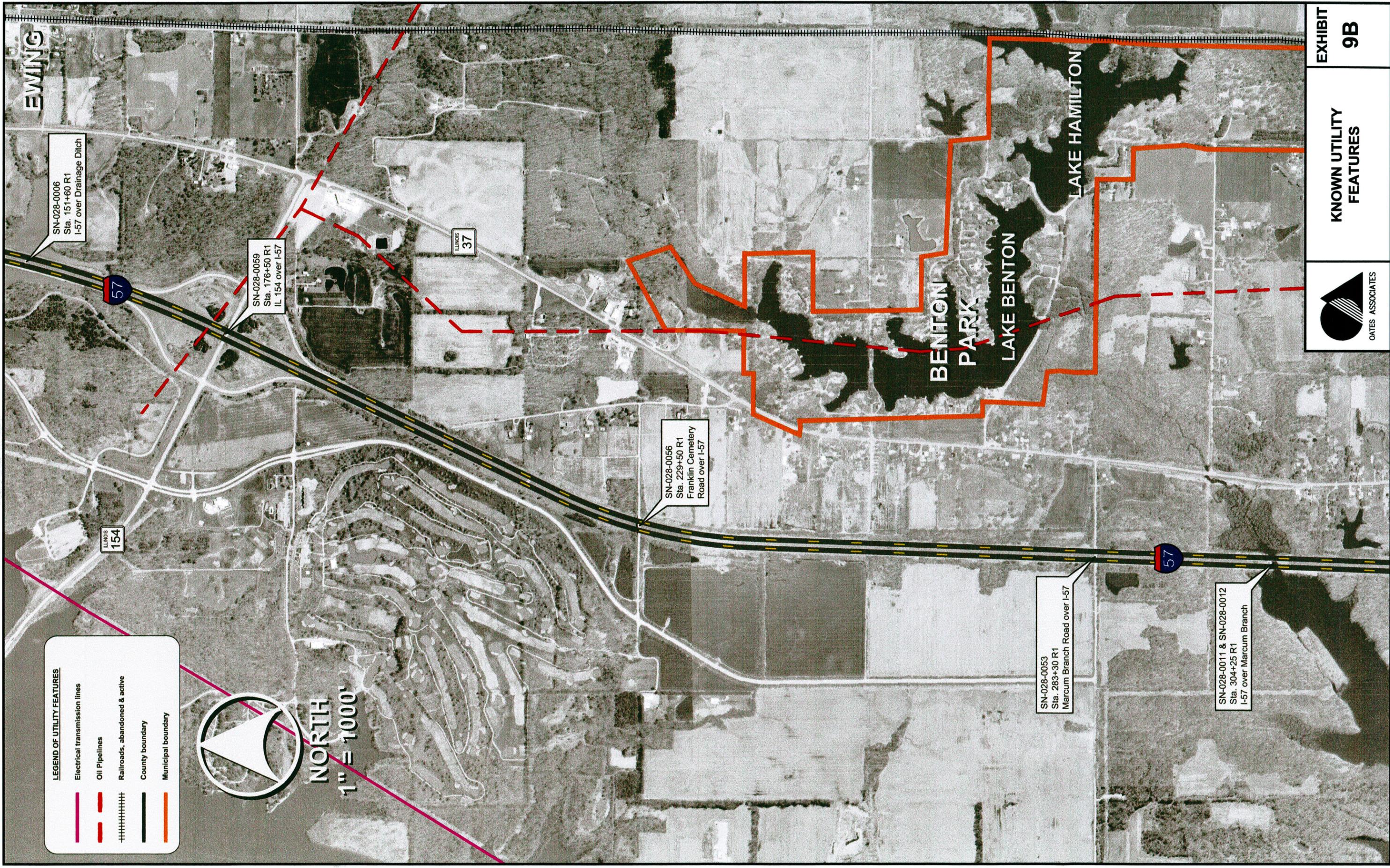


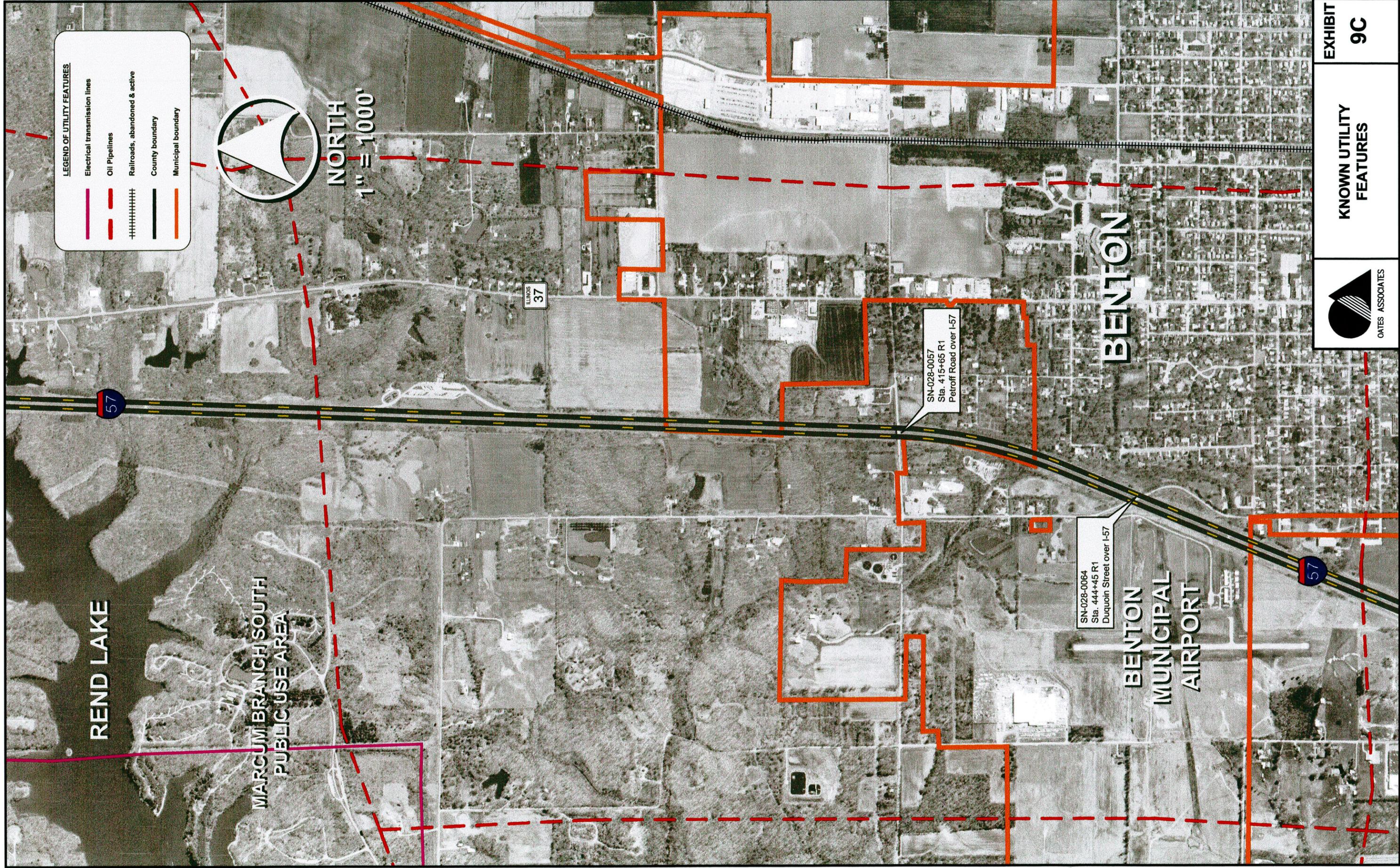
LEGEND

- County boundary
- Municipal boundary
- Existing profile grade < 0.30 %









LEGEND OF UTILITY FEATURES

- Electrical transmission lines
- Oil Pipelines
- Railroads, abandoned & active
- County boundary
- Municipal boundary



NORTH
1" = 1000'

REND LAKE

**MARCUM BRANCH SOUTH
PUBLIC USE AREA**

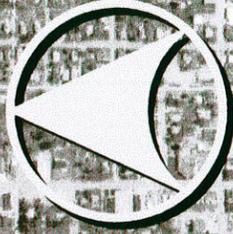
BENTON

**BENTON
MUNICIPAL
AIRPORT**

SN-028-0057
Sta. 415+65 R1
Petroff Road over I-57

SN-028-0064
Sta. 444+45 R1
Duquoin Street over I-57





NORTH
1" = 1000'

WEST CITY

SN-028-0022
Sta. 490+25 R1
IL 14 over I-57

SN-028-0063
Sta. 500+65 R1
Webster Street over I-57

SN-028-0010
Sta. 480+00 R2
Canadian National
Railroad over I-57

SN-028-0008 & SN-028-0009
Sta. 515+15 R2
I-57 over Union Pacific Railroad

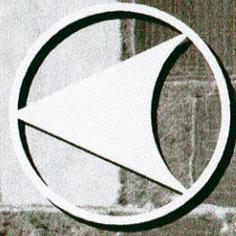
SN-028-2000
Sta. 523+15 R2
I-57 over Linn Road

SN-028-0054
Sta. 576+30 R2
Forest Baptist Church
Road over I-57

LEGEND OF UTILITY FEATURES

- Electrical transmission lines
- Oil Pipelines
- Railroads, abandoned & active
- County boundary
- Municipal boundary





NORTH
1" = 1000'

ILLINOIS
37

57

SN-028-0062
Sta. 629+65 R2
Yellow Banks
Road over I-57

SN-028-0006 & SN-028-0007
Sta. 44+50 R3
I-57 over Middle Fork Big
Muddy River

BIG MUDDY RIVER

57

LEGEND OF UTILITY FEATURES

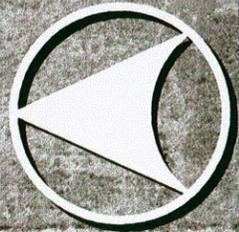
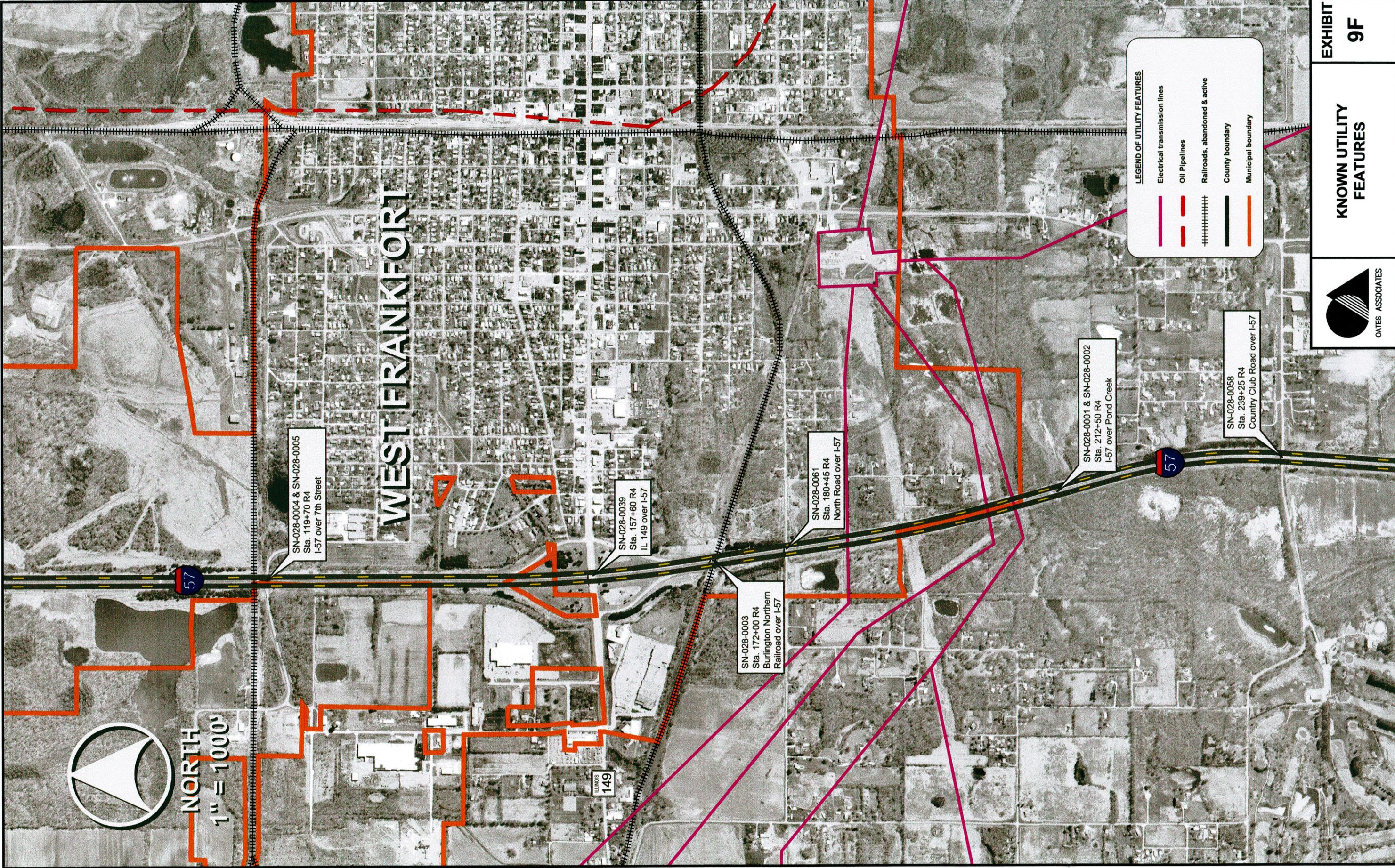
-  Electrical transmission lines
-  Oil Pipelines
-  Railroads, abandoned & active
-  County boundary
-  Municipal boundary



OATES ASSOCIATES

KNOWN UTILITY FEATURES

**EXHIBIT
9E**



NORTH
1" = 1000'

WEST FRANKFORT

SN-028-0004 & SN-028-0005
Sta. 119+70 R4
I-57 over 7th Street

SN-028-0039
Sta. 157+60 R4
IL 149 over I-57

SN-028-0003
Sta. 172+00 R4
Burlington Northern
Railroad over I-57

SN-028-0061
Sta. 180+45 R4
North Road over I-57

SN-028-0001 & SN-028-0002
Sta. 212+50 R4
I-57 over Pond Creek

SN-028-0058
Sta. 239+25 R4
Country Club Road over I-57

LEGEND OF UTILITY FEATURES

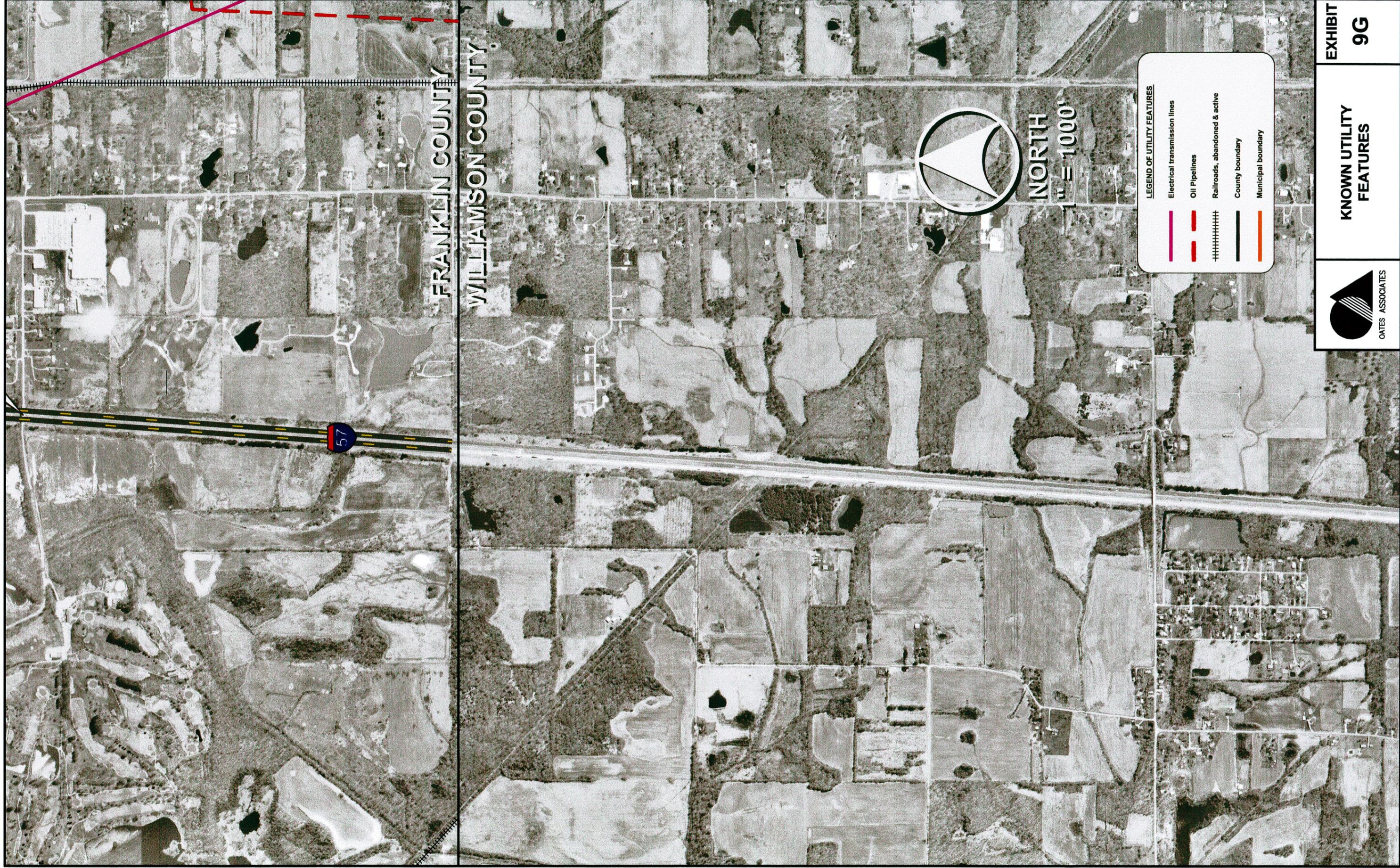
-  Electrical transmission lines
-  Oil Pipelines
-  Railroads, abandoned & active
-  County boundary
-  Municipal boundary

EXHIBIT 9F

KNOWN UTILITY FEATURES

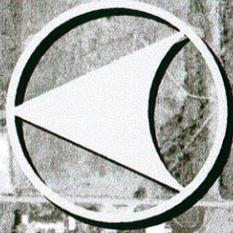


OATES ASSOCIATES



FRANKLIN COUNTY

WILLIAMSON COUNTY



NORTH
1" = 1000'

LEGEND OF UTILITY FEATURES

- Electrical transmission lines
- Oil Pipelines
- Railroads, abandoned & active
- County boundary
- Municipal boundary



OATES ASSOCIATES

KNOWN UTILITY
FEATURES

EXHIBIT
9G

I-57 FEASIBILITY STUDY

Preliminary Quantities - Summary

Roadway Item	Unit	Cost	Alternate 1 (Inside)		Alternate 2 (Outside)		Alternate 3 (Combo)		Comment
			Quantity	\$\$\$	Quantity	\$\$\$	Quantity	\$\$\$	
Clearing	ACRE	\$6,000	0	\$0	45	\$270,000	15	\$90,000	o/s only
Earth Excavation	CU YD	\$10	103,000	\$1,030,000	470,500	\$4,705,000	225,400	\$2,254,000	actual cut from xs
Furnished Excavation	CU YD	\$10	2,800	\$28,000	247,300	\$2,473,000	84,200	\$842,000	fill - (cut x 0.75) from xs
Seeding	ACRE	\$2,000	5	\$10,000	230	\$460,000	80	\$160,000	o/s - side slopes / i/s - grass median
Erosion Control - Ditch Checks	EACH	\$200	30	\$6,000	790	\$158,000	290	\$58,000	ditch cks
Erosion Control - Fence	FOOT	\$3	0	\$0	196,500	\$589,500	65,300	\$195,900	fence
Inlet & Pipe Protection	EACH	\$200	410	\$82,000	60	\$12,000	260	\$52,000	@ new and modified inlets
Riprap	TON	\$45	0	\$0	66,400	\$2,988,000	130	\$5,850	Gunn Creek fill section & culvert outfalls
Shoulder Removal	SQ YD	\$8	305,500	\$2,444,000	305,500	\$2,444,000	305,500	\$2,444,000	10' O/S, 4' I/S shldr, NB & SB
Pavement	SQ YD	\$85	261,900	\$22,261,500	261,900	\$22,261,500	261,900	\$22,261,500	Assume 8.5" bit, 10" base, 6" granular
Shoulders	SQ YD	\$85	535,600	\$45,526,000	436,500	\$37,102,500	496,900	\$42,236,500	o/s - 8' & 12' wide / i/s - 12' & 10' wide
Aggregate Shoulders	SQ YD	\$20	46,000	\$920,000	87,300	\$1,746,000	60,800	\$1,216,000	2' wide along each shldr
Interchange Reconstruction	EACH	\$6,200,000	0	\$0	3	\$18,600,000	0	\$500,000	str, rps, new PGL/NB rest area ramps
Replace Overhead Structures	EACH	\$1,200,000	0	\$0	10	\$12,000,000	1	\$1,200,000	10 structures (no interchanges)
Widen I-57 Structures	SQ FT	\$150	41,300	\$6,400,000	37,100	\$5,800,000	37,700	\$5,800,000	5 structures
Replace Deck & Widen Str.	EACH	Varies	1	\$3,300,000	1	\$3,200,000	1	\$3,300,000	UP RR
Reconstruct Structure	EACH	Varies	1	\$3,900,000	1	\$3,500,000	1	\$3,900,000	7th St
Culverts (small)	FOOT	\$50	600	\$30,000	3,900	\$195,000	1,700	\$85,000	see summary spreadsheet
Culverts (large)	FOOT	\$100	0	\$0	1,100	\$110,000	370	\$37,000	see summary spreadsheet
Box Culverts	FOOT	\$500	0	\$0	1,000	\$500,000	330	\$165,000	see summary spreadsheet
Storm Sewers	FOOT	\$50	62,100	\$3,105,000	11,000	\$550,000	40,800	\$2,040,000	single run under median barrier
Storm Sewers (Slotted Drain)	FOOT	\$100	67,100	\$6,710,000	0	\$0	35,700	\$3,570,000	2 runs under median barrier - flat PGL
Pipe Underdrains	FOOT	\$7	196,500	\$1,375,500	196,500	\$1,375,500	196,500	\$1,375,500	under ep's on widening side
Manholes/Inlets	EACH	\$2,000	360	\$720,000	50	\$100,000	225	\$450,000	250'-300' inlet spacing
Modify Manholes/Inlets	EACH	\$2,000	50	\$100,000	10	\$20,000	35	\$70,000	existing median inlets
Concrete Median Barrier	FOOT	\$65	93,000	\$6,045,000	3,400	\$221,000	58,600	\$3,809,000	where prop median is < 50'
Cable Median Barrier	FOOT	\$30	5,300	\$159,000	94,900	\$2,847,000	39,700	\$1,191,000	for all o/s widening
Guardrail	FOOT	\$20	0	\$0	14,200	\$284,000	1,000	\$20,000	@ structures and Gunn Creek fill section
Traffic Control	LSUM	\$2,000,000	1	\$2,000,000	1	\$2,000,000	1	\$2,000,000	Assume same each alternate
Mobilization	LSUM	\$5,000,000	1	\$5,000,000	1	\$5,000,000	1	\$5,000,000	
ROW Acquisitions	ACRE	\$25,000	0	\$0	10	\$250,000	1	\$25,000	@ interchanges & drainage outfalls
Environmental Impacts	ACRE	\$15,000	0	\$0	40	\$600,000	25	\$375,000	o/s - wetland, lake, etc.
Utility Relocations	LSUM	\$100,000	0	\$0	1	\$100,000	0	\$0	436+00-1 E - Relocate 1 pole on o/s
SUBTOTAL				\$111,200,000		\$132,500,000		\$106,700,000	
Contingency		15%		16,680,000		19,880,000		16,010,000	
TOTAL				\$127,900,000		\$152,400,000		\$122,700,000	



COST ESTIMATES

EXHIBIT
10A

Alternate 1 - Widen Existing Roadway (Median / Inside)

Structure No.	Crossing	Cost Per Sq. Ft.	Area (Sq. Ft.)	Cost
SN 028-0013&14	Gun Creek	\$150	9,800	\$1,500,000
SN 028-2006	Drainage Ditch	\$150	0	\$0
SN 028-0011&12	Marcum Branch	\$150	8,000	\$1,200,000
SN 028-0008&9	Union Pacific Railroad	\$90 / \$150	17,000 / 10,800 ₁	\$3,300,000
SN 028-2000	Linn Road	\$150	0	\$0
SN 028-0006&7	Middle Fork Big Muddy	\$150	17,400	\$2,700,000
SN 028-0004&5	7th Street	\$150	25,600 ₂	\$3,900,000
SN 028-0001&2	Pond Creek	\$150	6,100	\$1,000,000
TOTAL				\$13,600,000

Footnote: 1. Structure area is figured assuming complete deck replacement and widening, respectively.
2. Structure area is figured assuming complete replacement and widening.

Alternate 2 - Widen Existing Roadway (Outside)

Structure No.	Crossing	Cost Per Sq. Ft.	Area (Sq. Ft.)	Cost
SN 028-0013&14	Gun Creek	\$150	7,100	\$1,100,000
SN 028-2006	Drainage Ditch	\$150	900	\$200,000
SN 028-0011&12	Marcum Branch	\$150	5,800	\$900,000
SN 028-0008&9	Union Pacific Railroad	\$90 / \$150	17,000 / 10,200 ₁	\$3,200,000
SN 028-2000	Linn Road	\$150	1,200	\$200,000
SN 028-0006&7	Middle Fork Big Muddy	\$150	16,300	\$2,500,000
SN 028-0004&5	7th Street	\$150	23,100 ₂	\$3,500,000
SN 028-0001&2	Pond Creek	\$150	5,800	\$900,000
TOTAL				\$12,500,000

Footnote: 1. Structure area is figured assuming complete deck replacement and widening, respectively.
2. Structure area is figured assuming complete replacement and widening.

Alternate 3 - Widen Existing Roadway (Combination of Median & Outside)

Structure No.	Crossing	Cost Per Sq. Ft.	Area (Sq. Ft.)	Cost	Widening Alternate
SN 028-0013&14	Gun Creek	\$150	9,800	\$1,500,000	I/S
SN 028-2006	Drainage Ditch	\$150	0	\$0	I/S
SN 028-0011&12	Marcum Branch	\$150	5,800	\$900,000	O/S
SN 028-0008&9	Union Pacific Railroad	\$90 / \$150	17,000 / 10,800 ₁	\$3,300,000	I/S
SN 028-2000	Linn Road	\$150	0	\$0	I/S
SN 028-0006&7	Middle Fork Big Muddy	\$150	16,300	\$2,500,000	O/S
SN 028-0004&5	7th Street	\$150	25,600 ₂	\$3,900,000	I/S
SN 028-0001&2	Pond Creek	\$150	5,800	\$900,000	O/S
TOTAL				\$13,000,000	

Footnote: 1. Structure area is figured assuming complete deck replacement and widening, respectively.
2. Structure area is figured assuming complete replacement and widening.

Alternate 2 - Widen Existing Roadway (Outside)

Structure No.	Crossing	Sq. Ft.	Cost
SN 028-0055	County Line Road	8,806	\$1,300,000
SN 028-0059	IL 154	8,806	\$1,300,000
SN 028-0056	Franklin Cemetery Road	7,350	\$1,100,000
SN 028-0053	Marcum Branch Road	7,378	\$1,100,000
SN 028-0057	Petroff Road	7,616	\$1,100,000
SN 028-0064	DuQuoin Street	10,112	\$1,500,000
SN 028-0022	IL 14	18,711	\$2,800,000
SN 028-0063	Webster Street	10,800	\$1,600,000
SN 028-0054	Forest Baptist Church Road	6,720	\$1,000,000
SN 028-0062	Yellow Banks Road	7,104	\$1,100,000
SN 028-0039	IL 149	18,080	\$2,700,000
SN 028-0061	North Road	6,944	\$1,000,000
SN 028-0058	Country Club Road	7,936	\$1,200,000
TOTAL			\$18,800,000

Overhead Structure Replacement Cost

Alternate 2 - Widen Existing Roadway (Outside)

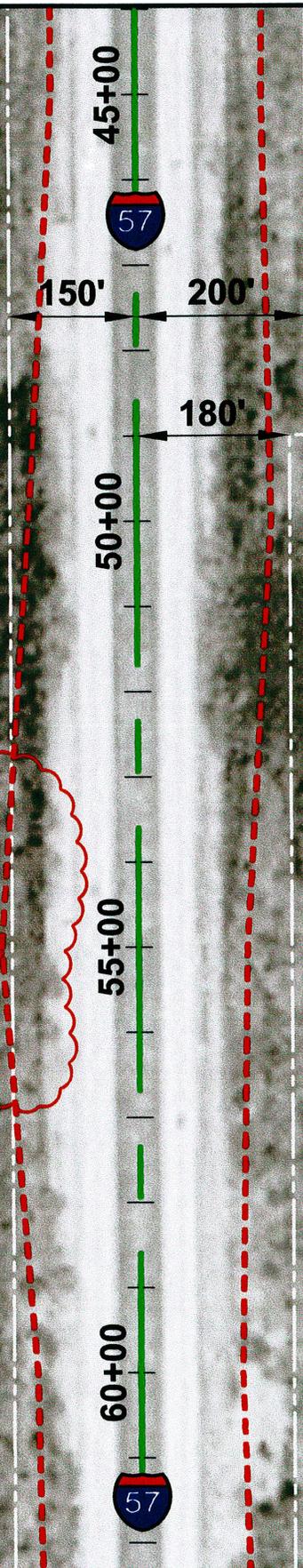
Roadway Item	Unit	Unit Cost	Quantity	Cost
Structure Replacement	EACH	\$2,700,000	1	\$2,700,000
Embankment	CU YD	\$10	55,700	\$560,000
Pavement	SQ YD	\$85	27,100	\$2,310,000
Shoulder	SQ YD	\$25	7,300	\$190,000
Median Removal	SQ FT	\$8	13,300	\$110,000
Concrete Median	SQ FT	\$20	12,500	\$250,000
TOTAL				\$6,200,000

IL 149 Interchange Cost Estimate



NORTH
1" = 200'

Grading for ditchline



LEGEND

- Proposed construction limits
- Proposed right-of-way
- Railroads, abandoned & active
- County boundary
- Municipal boundary



POTENTIAL RIGHT OF WAY IMPACT OUTSIDE WIDENING STA. 55+00 R1 RT

EXHIBIT 11A



NORTH
1" = 200'



500+00

505+00

180'

180'

PT = 507+60.66

480+00

485+00

SN-028-0010
Sta. 480+00
Canadian National
Railroad

**Large cut section at
interchange**

WEST CITY

LEGEND

- Proposed construction limits
- Proposed right-of-way
- Railroads, abandoned & active
- County boundary
- Municipal boundary



OATES ASSOCIATES

**POTENTIAL RIGHT OF
WAY IMPACT OUTSIDE
WIDENING
STA. 502+00 R1 LT**

**EXHIBIT
11B**

Images courtesy of Illinois Natural Resources Geospatial Data Clearinghouse.



NORTH
1" = 200'

LEGEND

- Proposed construction limits
- Proposed right-of-way
- Railroads, abandoned & active
- County boundary
- Municipal boundary

SN-028-0063
Sta. 500+65
Webster Street

Mainline culvert crossing

BENTON

495+00
500+00
505+00
510+00

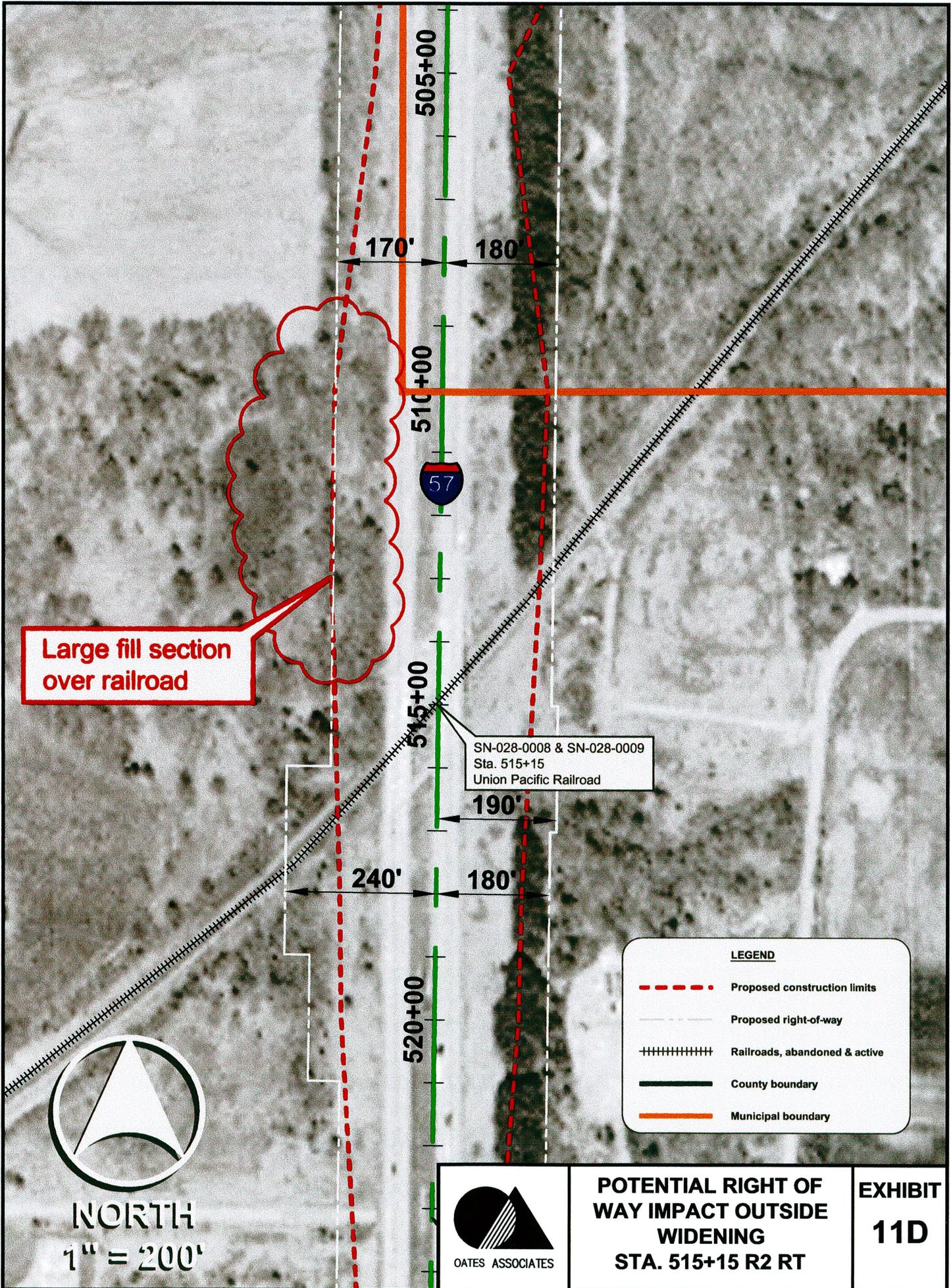
170' 180'




OATES ASSOCIATES

POTENTIAL RIGHT OF WAY IMPACT OUTSIDE WIDENING
STA. 502+50 R2 LT

EXHIBIT
11C



Images courtesy of Illinois Natural Resources Geospatial Data Clearinghouse.



NORTH
1" = 200'



30+00

150'

150'

35+00

40+00

45+00

SN-028-0006 & SN-028-0007
Sta. 44+50
Middle Fork Big Muddy River
Crossing

Mainline culvert crossing

BIG MUDDY RIVER

LEGEND

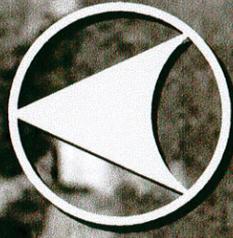
- Proposed construction limits
- Proposed right-of-way
- Railroads, abandoned & active
- County boundary
- Municipal boundary



OATES ASSOCIATES

**POTENTIAL RIGHT OF
WAY IMPACT OUTSIDE
WIDENING
STA. 37+00 R3 LT & RT**

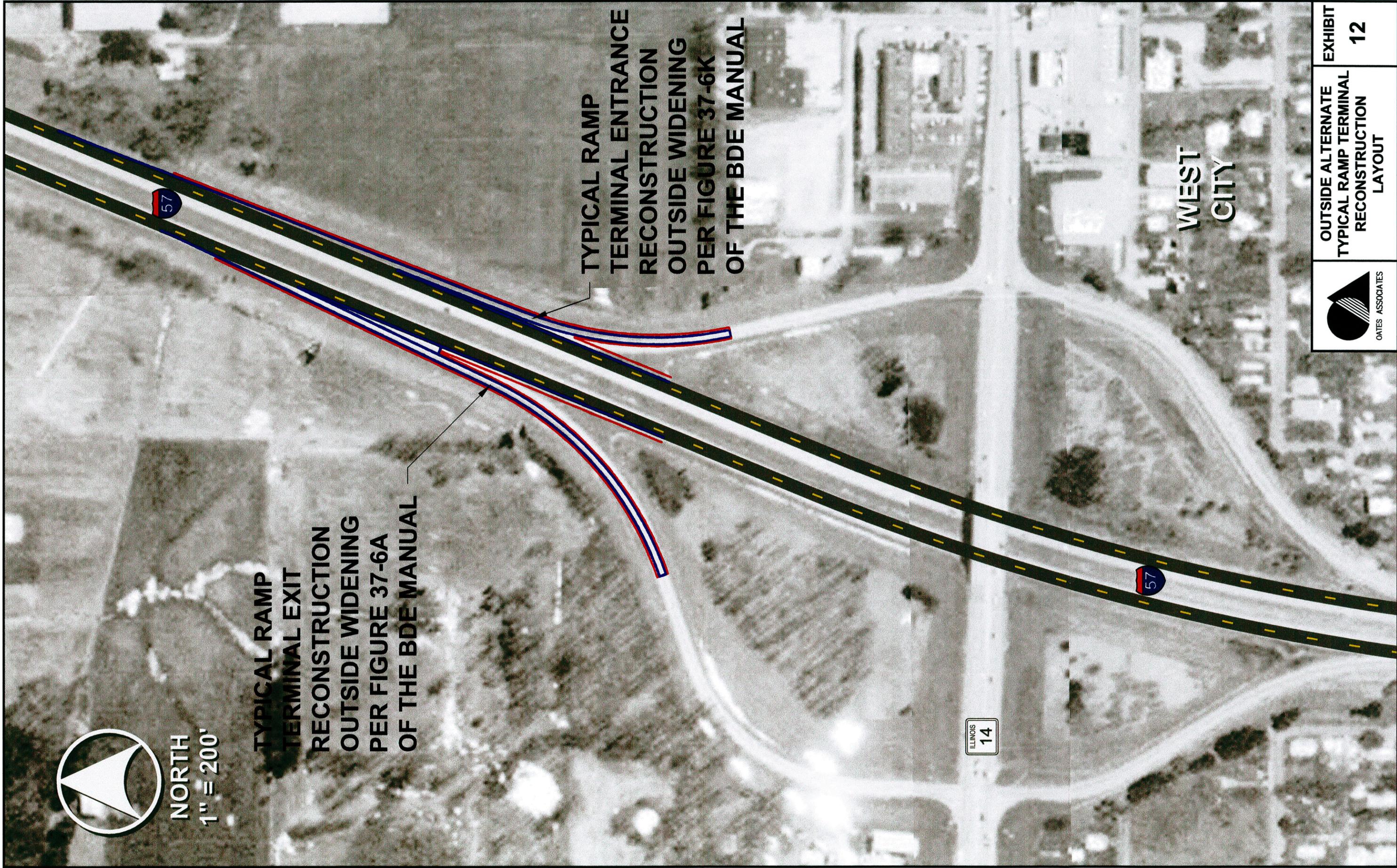
**EXHIBIT
11E**



NORTH
1" = 200'

**TYPICAL RAMP
TERMINAL EXIT
RECONSTRUCTION
OUTSIDE WIDENING
PER FIGURE 37-6A
OF THE BDE MANUAL**

**TYPICAL RAMP
TERMINAL ENTRANCE
RECONSTRUCTION
OUTSIDE WIDENING
PER FIGURE 37-6K
OF THE BDE MANUAL**



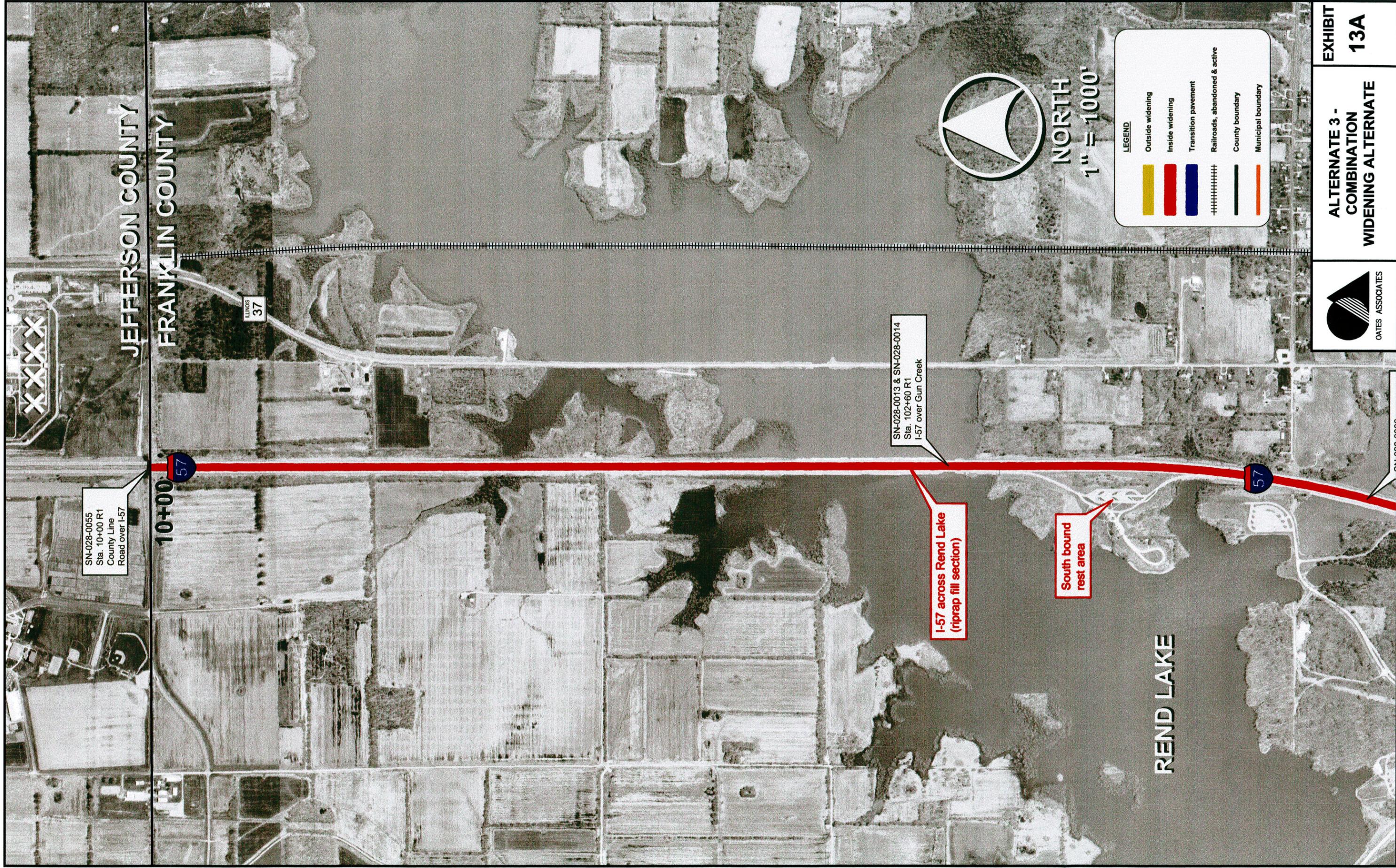
**WEST
CITY**

ILLINOIS
14

**OUTSIDE ALTERNATE
TYPICAL RAMP TERMINAL
RECONSTRUCTION
LAYOUT**



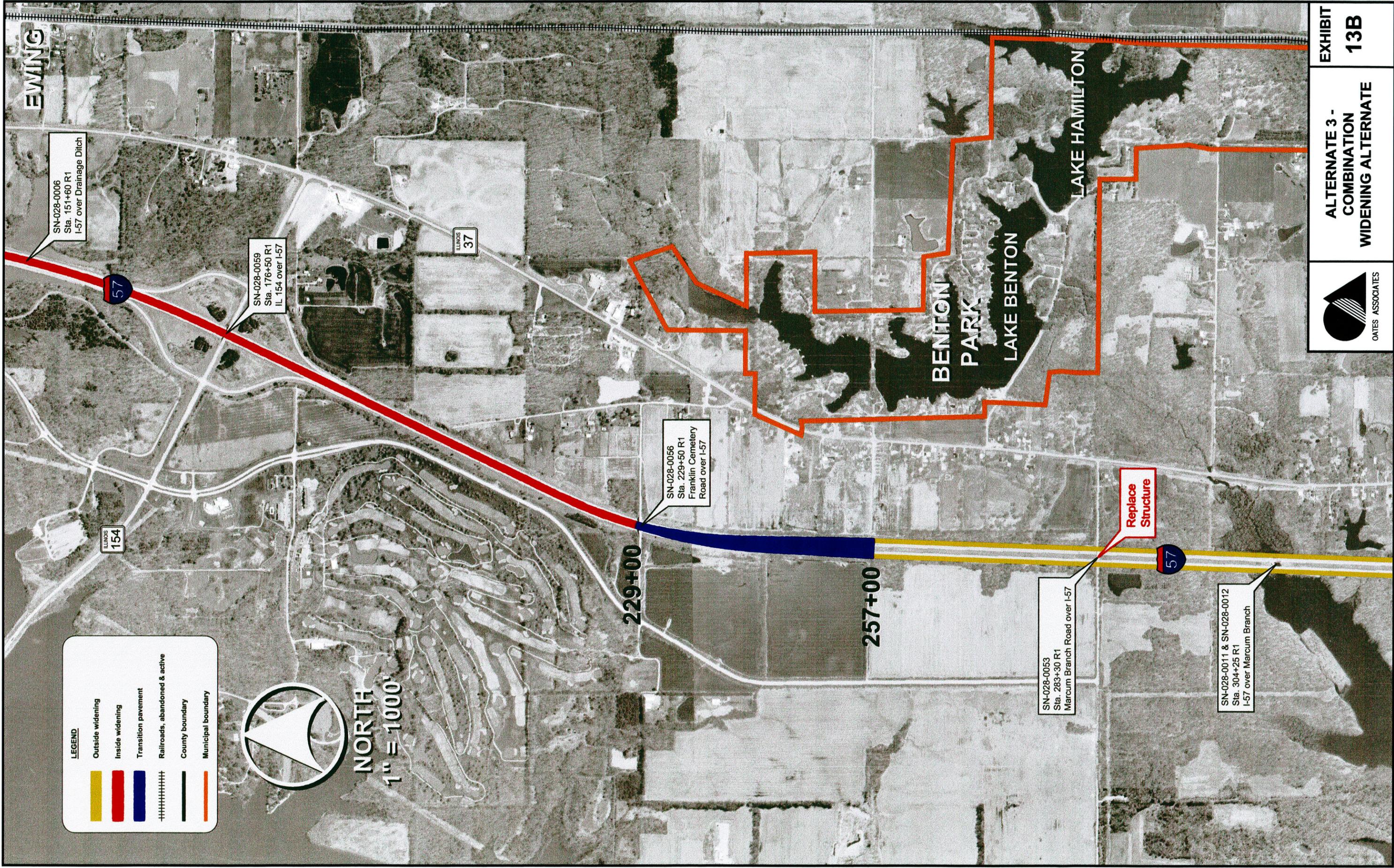
**EXHIBIT
12**



**ALTERNATE 3 -
COMBINATION
WIDENING ALTERNATE**

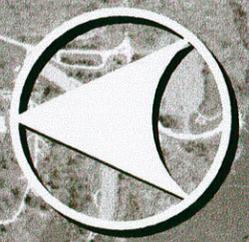
**EXHIBIT
13A**

Images courtesy of Illinois Natural Resources Geospatial Data Clearinghouse.



LEGEND

- Outside widening
- Inside widening
- Transition pavement
- +++++ Railroads, abandoned & active
- County boundary
- Municipal boundary



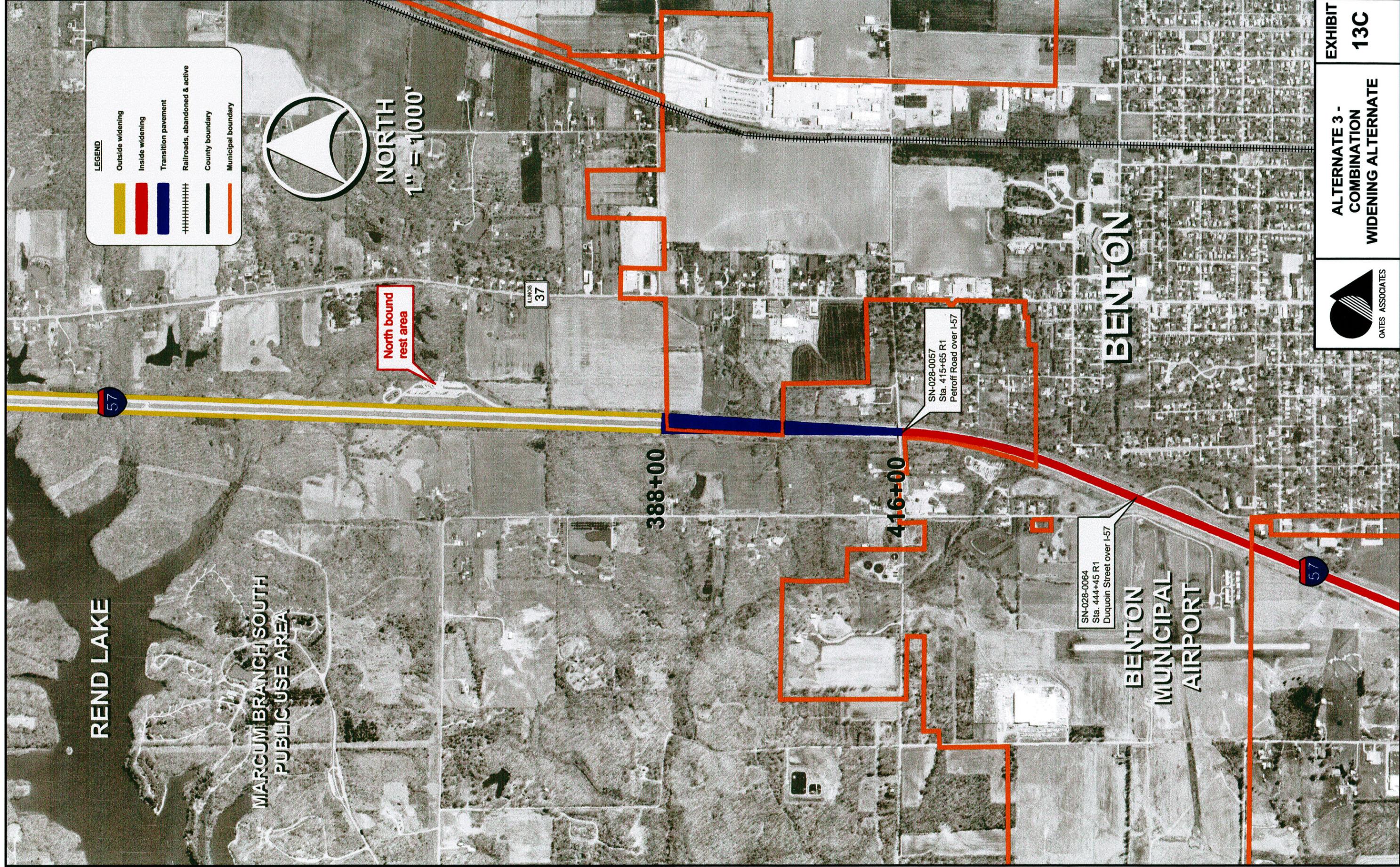
NORTH
1" = 1000'

EXHIBIT 13B

ALTERNATE 3 - COMBINATION WIDENING ALTERNATE

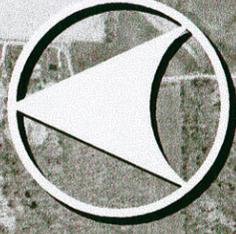
OATES ASSOCIATES

Images courtesy of Illinois Natural Resources Geospatial Data Clearinghouse.



LEGEND

- Outside widening
- Inside widening
- Transition pavement
- Railroads, abandoned & active
- County boundary
- Municipal boundary



NORTH
1" = 1000'

North bound rest area

ILLINOIS
37

388+00

416+00

SN-028-0057
Sta. 415+65 R1
Petroff Road over I-57

SN-028-0064
Sta. 444+45 R1
Duquoin Street over I-57

REND LAKE

MARCUM BRANCH SOUTH
PUBLIC USE AREA

BENTON

**BENTON
MUNICIPAL
AIRPORT**

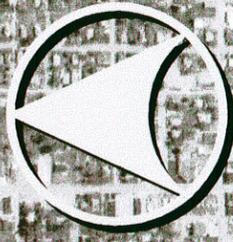
**EXHIBIT
13C**

**ALTERNATE 3 -
COMBINATION
WIDENING ALTERNATE**



OATES ASSOCIATES

Images courtesy of Illinois Natural Resources Geospatial Data Clearinghouse.



NORTH
1" = 1000'

WEST CITY

LEGEND

- Outside widening
- Inside widening
- Transition pavement
- +++++ Railroads, abandoned & active
- County boundary
- Municipal boundary

SN-028-0022
Sta. 490+25 R1
IL 14 over I-57

SN-028-0063
Sta. 500+65 R1
Webster Street over I-57

SN-028-0010
Sta. 480+00 R2
Canadian National
Railroad over I-57

SN-028-0008 & SN-028-0009
Sta. 515+15 R2
I-57 over Union Pacific Railroad

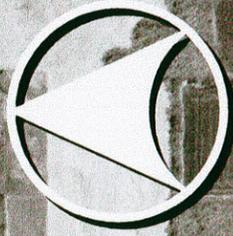
SN-028-2000
Sta. 523+15 R2
I-57 over Linn Road

SN-028-0054
Sta. 576+30 R2
Forest Baptist Church
Road over I-57



ALTERNATE 3 -
COMBINATION
WIDENING ALTERNATE

EXHIBIT
13D



NORTH
1" = 1000'

LEGEND

- Outside widening
- Inside widening
- Transition pavement
- Railroads, abandoned & active
- County boundary
- Municipal boundary

SN-028-0062
Sta. 629+65 R2
Yellow Banks
Road over I-57

630+00

658+00

SN-028-0006 & SN-028-0007
Sta. 44+50 R3
I-57 over Middle Fork Big
Muddy River

BIG MUDDY RIVER

57

92+00

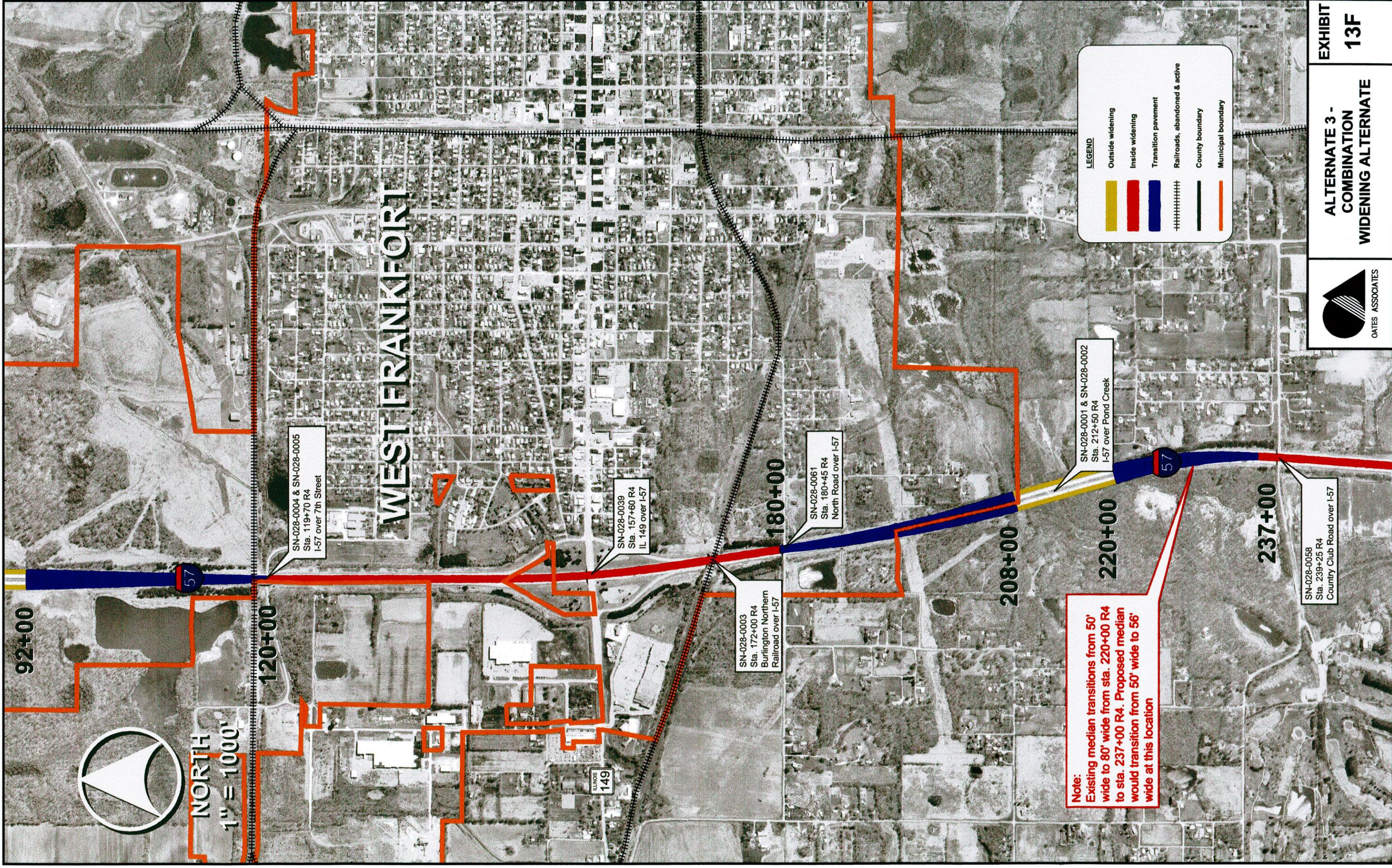
ILLINOIS
37

57

**EXHIBIT
13E**

**ALTERNATE 3 -
COMBINATION
WIDENING ALTERNATE**





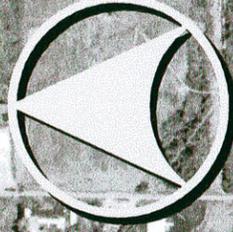
237+00

SN-028-0058
Sta. 239+25 R4
Country Club Road over I-57

289+00

FRANKLIN COUNTY

WILLIAMSON COUNTY



NORTH
1" = 1000'

LEGEND

-  Outside widening
-  Inside widening
-  Transition pavement
-  Railroads, abandoned & active
-  County boundary
-  Municipal boundary

EXHIBIT
13G

ALTERNATE 3 -
COMBINATION
WIDENING ALTERNATE



Preliminary Quantities - Cost per ft of generic section (e.g. no structures, etc.) for each median width

Sections with PGL > 0.3%

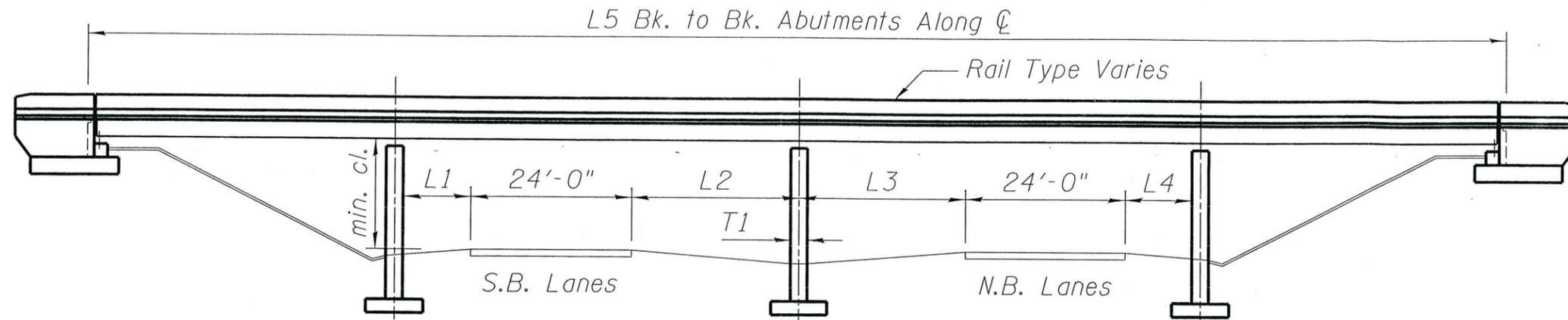
Roadway Item	Unit	Cost	Alternate 1 (Inside) 50' median		Alternate 1 (Inside) 64' median		Alternate 1 (Inside) 80' median		Alternate 2 (Outside)		Comment
			Quantity	\$\$\$	Quantity	\$\$\$	Quantity	\$\$\$	Quantity	\$\$\$	
Clearing	ACRE	\$6,000	0	\$0	0	\$0	0	\$0	45	\$270,000	same for each width
Earth Excavation	CU YD	\$10	101,000	\$1,010,000	98,400	\$984,000	162,100	\$1,621,000	470,500	\$4,705,000	assume similar for each width
Furnished Excavation	CU YD	\$10	0	\$0	48,500	\$485,000	0	\$0	247,300	\$2,473,000	assume similar for each width
Seeding	ACRE	\$2,000	0	\$0	0	\$0	70	\$140,000	230	\$460,000	80' only on i/s
Erosion Control - Ditch Checks	EACH	\$200	0	\$0	0	\$0	400	\$80,000	790	\$158,000	80' only on i/s
Erosion Control - Fence	FOOT	\$3	0	\$0	0	\$0	0	\$0	196,500	\$589,500	same for each width
Inlet & Pipe Protection	EACH	\$200	450	\$90,000	450	\$90,000	0	\$0	0	\$0	same for each width
Riprap	TON	\$45	0	\$0	0	\$0	0	\$0	400	\$18,000	omit riprap fill section
Shoulder Removal	SQ YD	\$8	305,500	\$2,444,000	305,500	\$2,444,000	305,500	\$2,444,000	305,500	\$2,444,000	same for each width
Pavement	SQ YD	\$85	261,900	\$22,261,500	261,900	\$22,261,500	261,900	\$22,261,500	261,900	\$22,261,500	same for each width
Shoulder	SQ YD	\$85	469,300	\$39,890,500	622,000	\$52,870,000	480,200	\$40,817,000	436,500	\$37,102,500	i/s shoulder width varies
Aggregate Shoulders	SQ YD	\$20	43,700	\$874,000	43,700	\$874,000	87,300	\$1,746,000	87,300	\$1,746,000	on i/s 80' section only
Interchange Reconstruction	EACH	\$6,200,000	0	\$0	0	\$0	0	\$0	0	\$0	interchanges added separately
Replace Overhead Structures	EACH	\$1,200,000	0	\$0	0	\$0	0	\$0	0	\$0	structures added separately
Widen I-57 Structures	SQ FT	\$150	0	\$0	0	\$0	0	\$0	0	\$0	structures added separately
Replace Deck & Widen Str.	EACH	Varies	0	\$0	0	\$0	0	\$0	0	\$0	structures added separately
Reconstruct Structure	EACH	Varies	0	\$0	0	\$0	0	\$0	0	\$0	structures added separately
Culverts (small)	FOOT	\$50	600	\$30,000	600	\$30,000	600	\$30,000	3,900	\$195,000	same for each width
Culverts (large)	FOOT	\$100	0	\$0	0	\$0	0	\$0	1,100	\$110,000	same for each width
Box Culverts	FOOT	\$500	0	\$0	0	\$0	0	\$0	1,000	\$500,000	same for each width
Storm Sewers	FOOT	\$50	98,100	\$4,905,000	98,100	\$4,905,000	0	\$0	0	\$0	added separately on o/s, none for 80'
Storm Sewers (Slotted Drain)	FOOT	\$100	0	\$0	0	\$0	0	\$0	0	\$0	assume none, see note
Pipe Underdrains	FOOT	\$7	196,500	\$1,375,500	196,500	\$1,375,500	196,500	\$1,375,500	196,500	\$1,375,500	80' only on i/s
Manholes/Inlets	EACH	\$2,000	400	\$800,000	400	\$800,000	0	\$0	0	\$0	only where st sew present
Modify Manholes/Inlets	EACH	\$2,000	50	\$100,000	50	\$100,000	0	\$0	0	\$0	only where st sew present
Concrete Median Barrier	FOOT	\$65	98,100	\$6,376,500	98,100	\$6,376,500	0	\$0	0	\$0	added separately on o/s, none for 80'
Cable Median Barrier	FOOT	\$30	0	\$0	0	\$0	0	\$0	98,100	\$2,943,000	o/s only
Guardrail	FOOT	\$20	0	\$0	0	\$0	0	\$0	14,200	\$284,000	same for each width
Traffic Control	LSUM	\$2,000,000	1	\$2,000,000	1	\$2,000,000	1	\$2,000,000	1	\$2,000,000	same for each width
Mobilization	LSUM	\$5,000,000	1	\$5,000,000	1	\$5,000,000	1	\$5,000,000	1	\$5,000,000	same for each width
ROW Acquisitions	ACRE	\$25,000	0	\$0	0	\$0	0	\$0	10	\$250,000	same for each width
Environmental Impacts	ACRE	\$15,000	0	\$0	0	\$0	0	\$0	40	\$600,000	same for each width
Utility Relocations	LSUM	\$100,000	0	\$0	0	\$0	0	\$0	1	\$100,000	same for each width
SUBTOTAL				\$87,200,000		\$100,600,000		\$77,500,000		\$85,600,000	
Cost / Ft				\$890		\$1,030		\$790		\$870	
TOTAL											

For Segments with PGL < 0.3%, use Slotted Drain & add \$150/ft - 2 runs @ double the cost

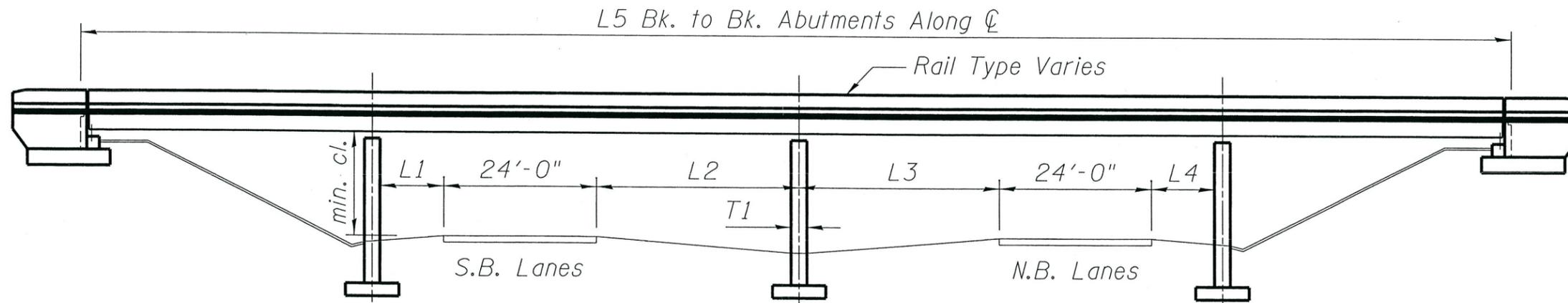
**I-57 FEASIBILITY STUDY
OVERHEAD STRUCTURES SUMMARY**

STRUCTURE NO.	Spans (Each)	L1 (Minimum) (Foot)	L2 (Foot)	L3 (Foot)	L4 (Minimum) (Foot)	L5 (Along CL) (Foot)	T1 (Foot)	S.B. Face to Face of Pier Clearance (Foot)	N.B. Face to Face of Pier Clearance (Foot)	Min. Vert. Clearance (Per Plans) (Foot)	Min. Vert. Clearance (From Survey Shots) (Foot)	Special Condition
4 SPAN: 50'- 0" MEDIAN												
028-0022, IL Route 14 over I-57	4	10.00	25.00	25.00	10.00	218.67	2.25	58.25	58.25	16.229	15.75	I-57 on Horiz. Curve Curb & Gutter @ outer piers I-57 on Horiz. Curve storm sewer crosses I-57
028-0039, IL Route 149 over I-57	4	10.00	25.00	25.00	10.00	210.33	2.50	57.75	57.75	16.25	16.03	
028-0054, Forest Baptist Church Road over I-57	4	10.00	25.00	25.00	10.00	209.75	2.50	57.75	57.75	16.25	16.04	
028-0061, North Road over I-57	4	12.58	25.00	25.00	12.58	203.67	2.50	60.36	60.36	16.25	15.99	
028-0062, Yellow Bk. over I-57	4	10.00	25.00	25.00	10.00	208.50	2.50	57.76	57.76	16.25	16.1	
028-0064, DuQuoin Street over I-57	4	10.00	25.00	25.00	10.00	295.25	2.25	58.15	58.15	16.25	16.12	
4 SPAN: 64'- 0" MEDIAN												
028-0053, Marcum Branch Road over I-57	4	10.00	32.00	32.00	10.00	222.50	2.25	64.99	64.99	16.25	16.19	I-57 on Horiz. Curve I-57 on Horiz. Curve
028-0055, County Line Road over I-57	4	10.00	32.00	32.00	10.00	222.83	2.50	64.91	64.91	16.25	15.92	
028-0056, Franklin Cemetery Road over I-57	4	10.00	32.00	32.00	10.00	228.83	2.50	64.81	64.81	16.25	16.29	
028-0057, Petroff Road over I-57	4	10.00	31.83	31.83	10.00	221.50	2.50	64.60	64.60	16.25	16.16	
028-0059, IL Route 154 over I-57	4	10.00	32.00	32.00	10.00	225.17	2.50	64.83	64.83	16.375	16.024	
4 SPAN: 80'- 0" MEDIAN												
028-0058, T.R. 403 (Country Club) over I-57	4	10.00	40.00	40.00	10.00	239.67	2.50	72.75	72.75	16.25	16.18	I-57 on Horiz. Curve
5 SPAN: 50'- 0" MEDIAN												
028-0063, Webster Street over I-57	5	32.08	21.25	28.75	14.00	285.00	2.50	76.08	63.94	16.25	15.97	I-57 on Horiz. Curve
RAILROAD STRUCTURES												
028-0003, B.N. Railroad over I-57	2	25.35	25.00	25.00	13.14	-	4.50	72.14	59.93	16.25	16.1	
028-0010, C.N. Railroad over I-57	4	10.47	25.00	25.00	10.47	-	4.00	57.47	57.47	16.25	16.23	

See following sheets: A2, A3, & A4 for "L" & "T" designations.

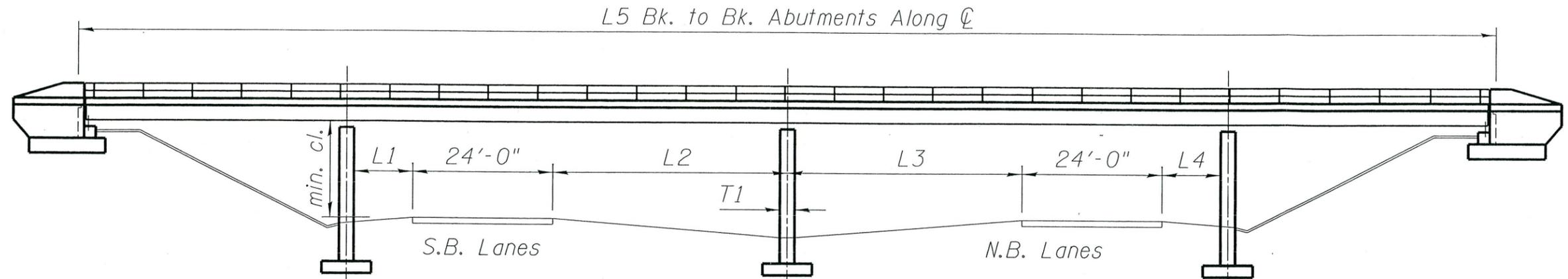


ELEVATION - 50'-0" MEDIAN

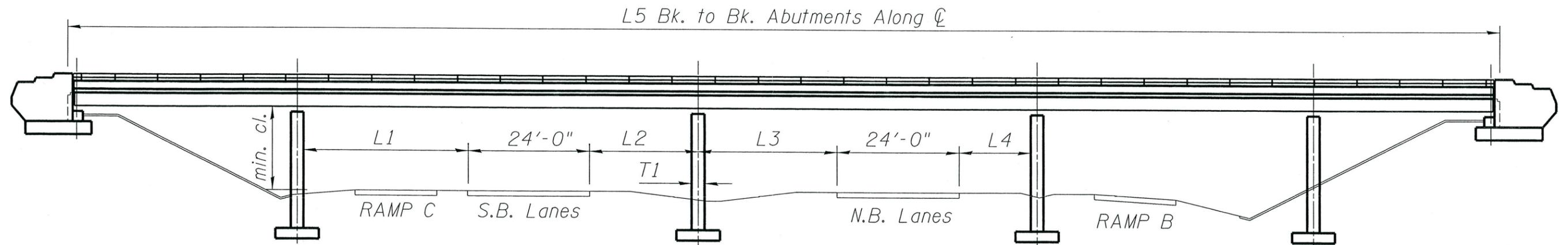


ELEVATION - 64'-0" MEDIAN

See Appendix A1 for tables of values shown.

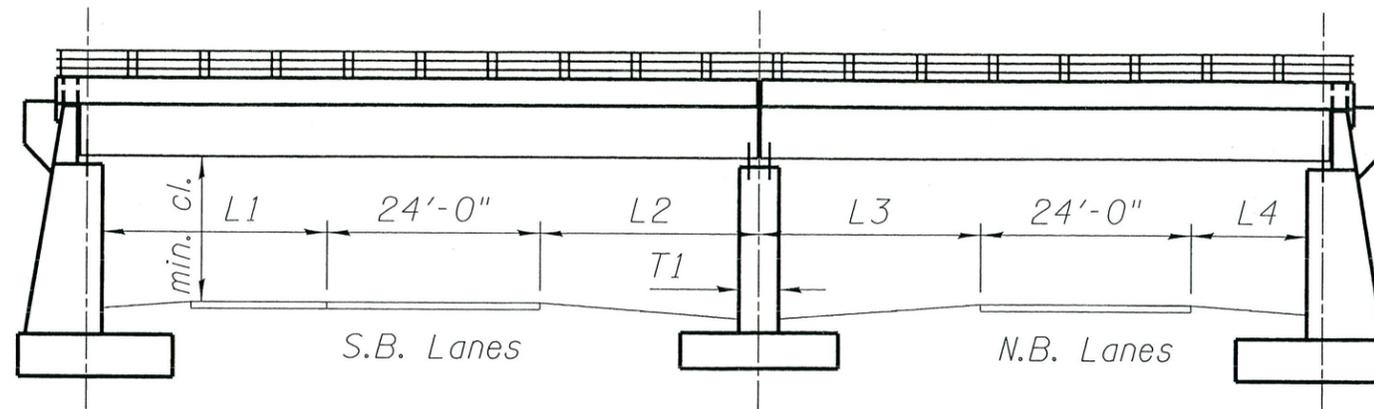


ELEVATION - 80'-0" MEDIAN

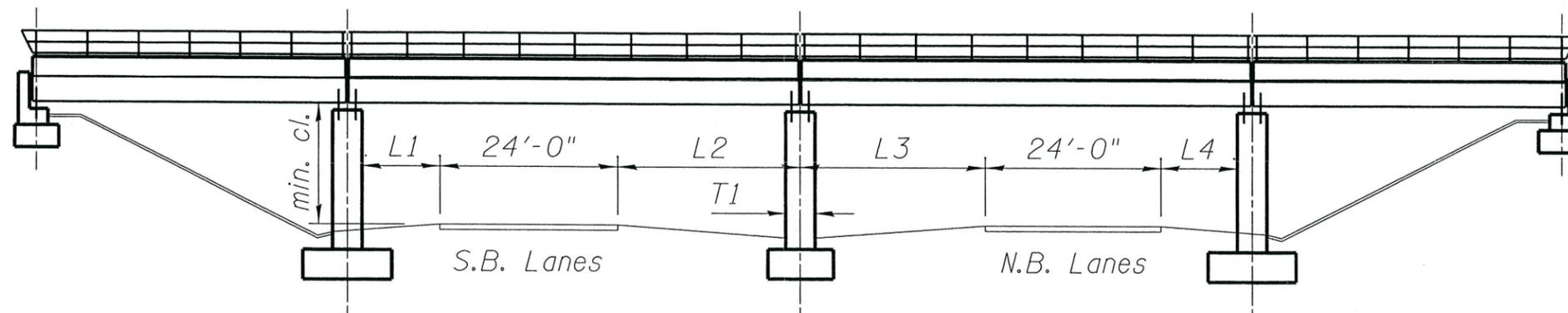


ELEVATION - 5 SPAN STRUCTURE

See Appendix A1 for tables of values shown.

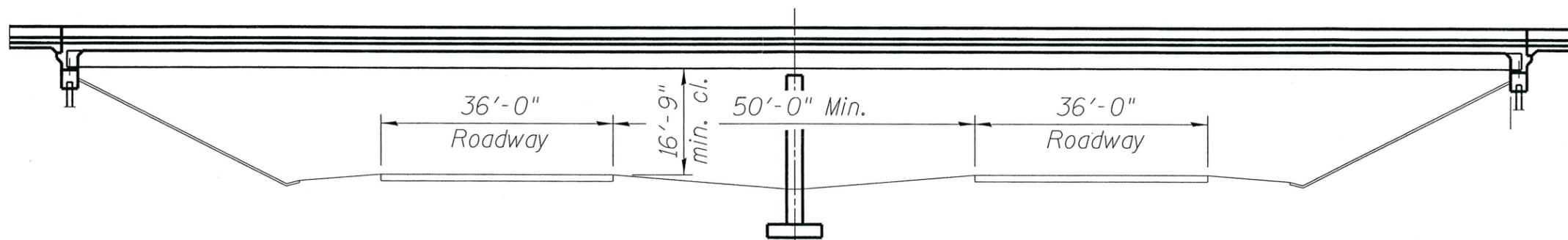


ELEVATION - 2 SPAN RAILROAD STRUCTURE

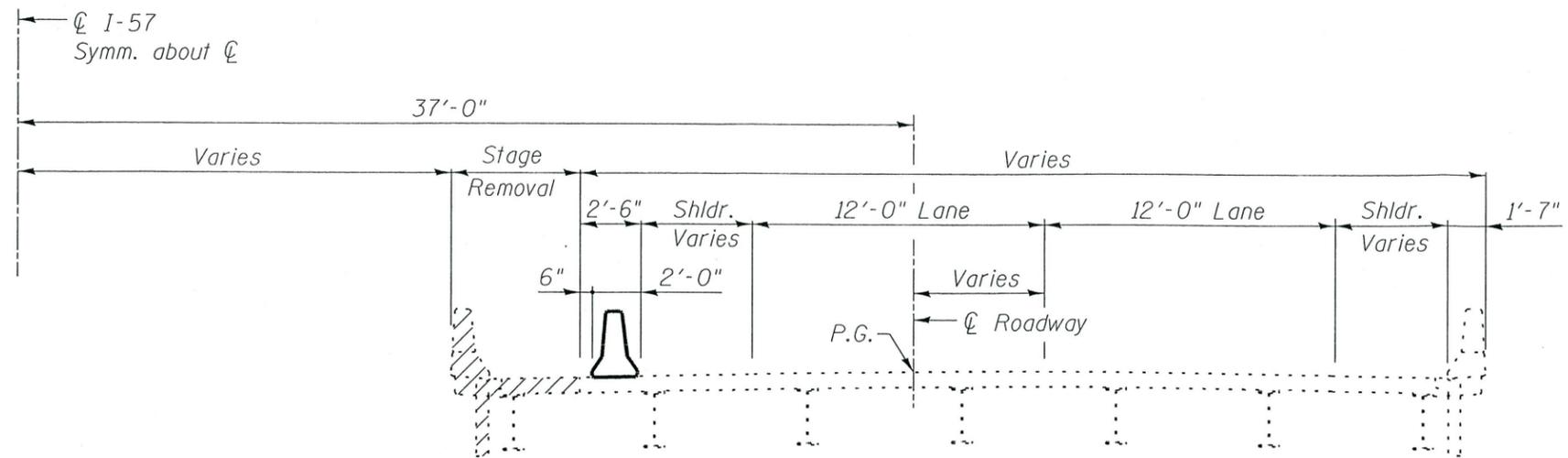


ELEVATION - 4 SPAN RAILROAD STRUCTURE

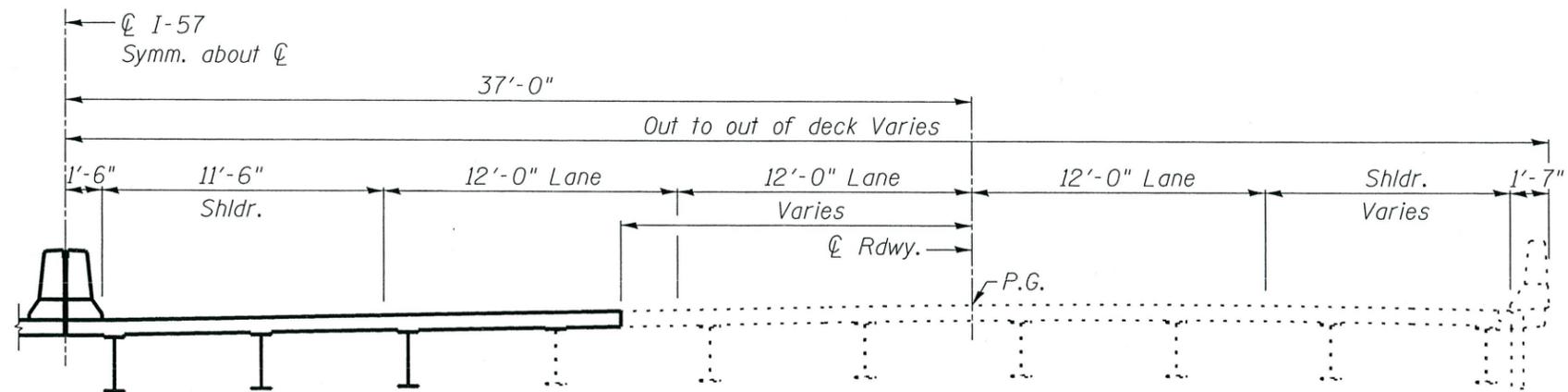
See Appendix A1 for tables of values shown.



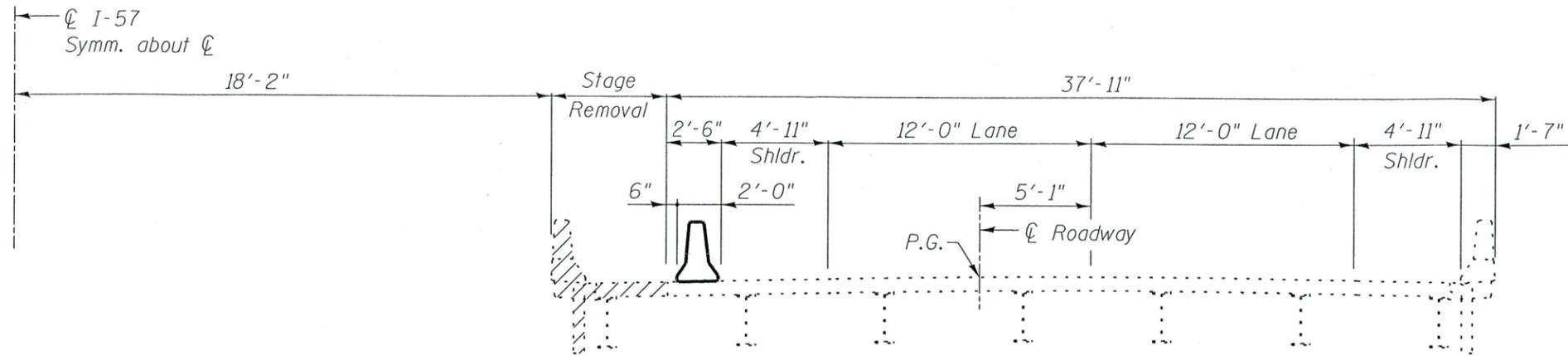
PROPOSED TYPICAL OVERHEAD STRUCTURE REPLACEMENT
FOR THE OUTSIDE WIDENING OPTION



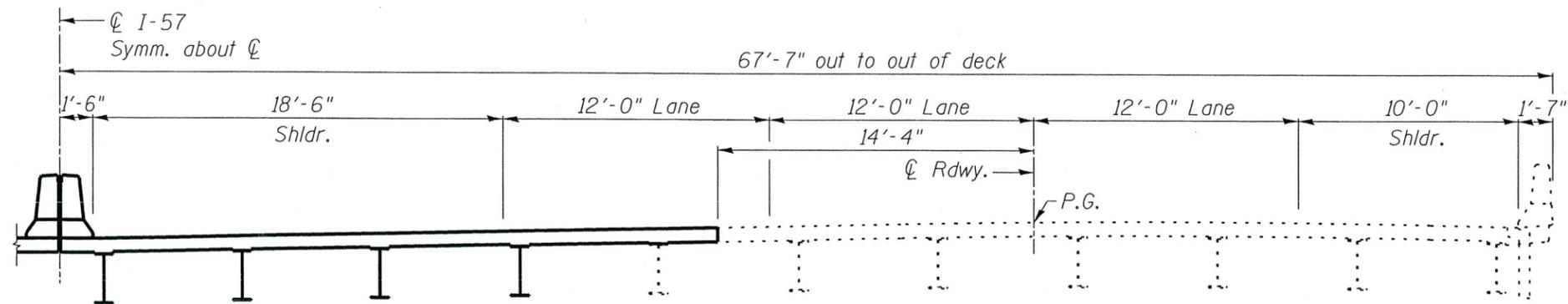
STAGE 1 - INSIDE WIDENING



STAGE 2 - INSIDE WIDENING



STAGE 1 - INSIDE WIDENING



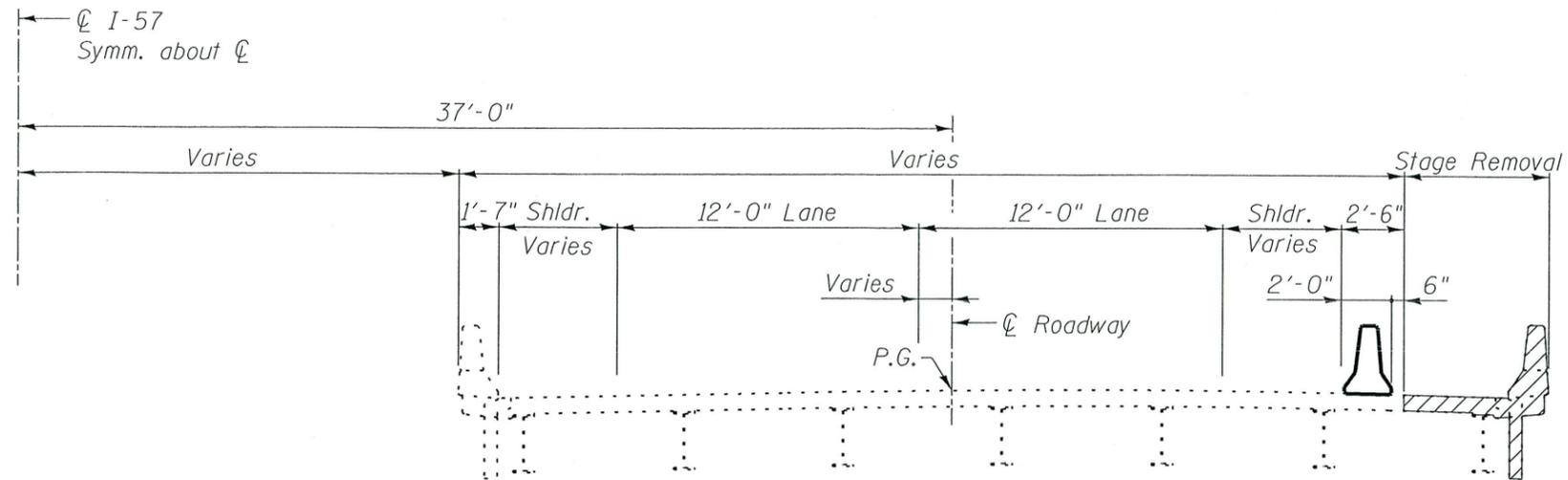
STAGE 2 - INSIDE WIDENING



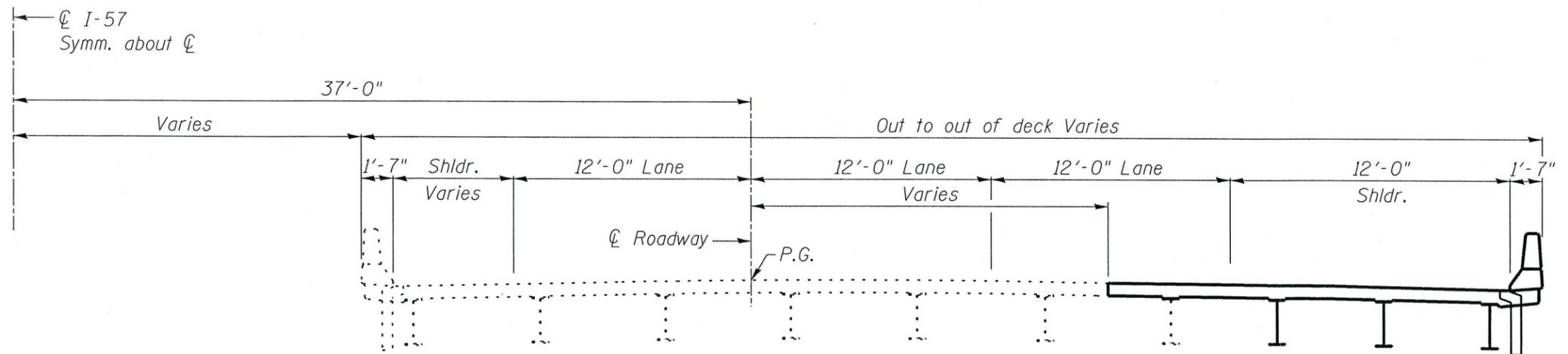
I-57 MAINLINE
 STRUCTURES
 64 FOOT MEDIAN

Appendix

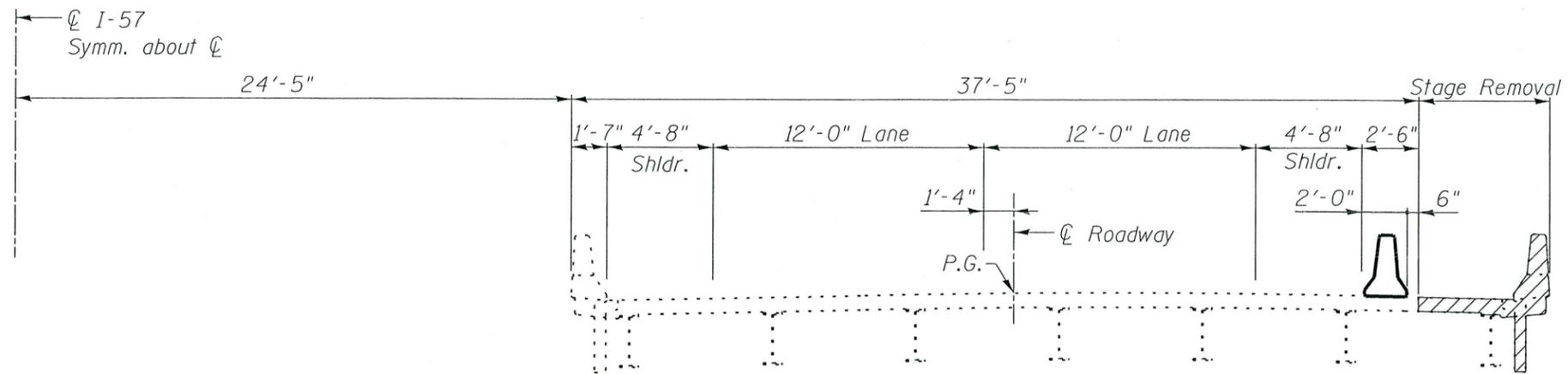
A7



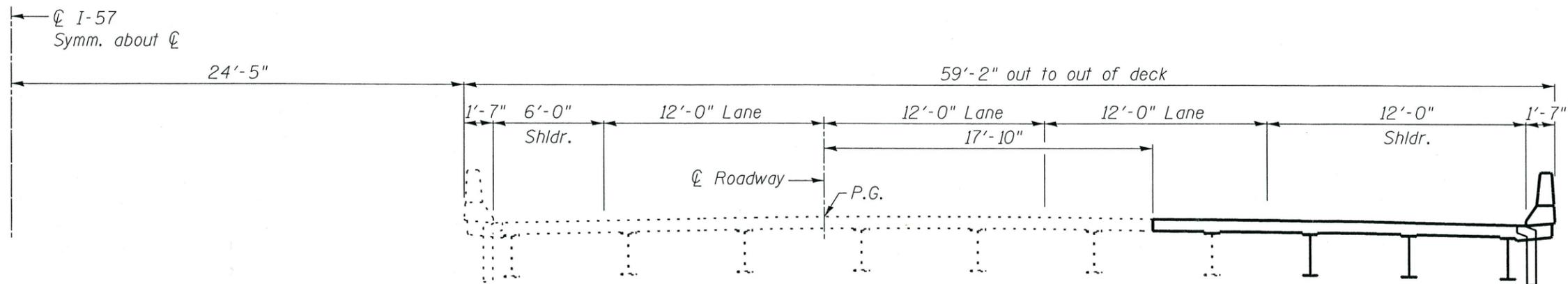
STAGE 1 - OUTSIDE WIDENING



STAGE 2 - OUTSIDE WIDENING



STAGE 1 - OUTSIDE WIDENING



STAGE 2 - OUTSIDE WIDENING

STRUCTURE NO.	Deck Thickness (Inches)	Epoxy Reinforcing Y/N	Last Inspected Year	Deck Condition 0-10	Superstructure Condition 0-10	Substructure Condition 0-10	Approach Roadway Alignment 0-10	Last Painted Year	Bridge Rail Adequate Y/N	Guardrail Ends Adequate Y/N	Year Constructed Year
4 SPAN: 50'- 0" MEDIAN											
028-0022, IL Route 14 over I-57	7.5	Yes	2003	8	7	7	8	1996	Yes	No	1963/1994
028-0039, IL Route 149 over I-57	7.5	Yes	2003	8	7	7	8	1996	Yes	No	1963/1994
028-0054, Forest Baptist Church Road over I-57	6.5	No	2005	6	7	8	8	2001	Yes	No	1961
028-0061, North Road over I-57	6.5	No	2005	7	7	8	8	2001	Yes	No	1961
028-0062, Yellow Bk. over I-57	6.5	No	2005	7	7	8	8	2001	Yes	No	1961
028-0064, DuQuoin Street over I-57	7	No	2003	7	7	7	6	2001	Yes	No	1962
4 SPAN: 64'- 0" MEDIAN											
028-0053, Marcum Branch Road over I-57	6.5	No	2002	7	7	7	8	2001	Yes	No	1962
028-0055, County Line Road over I-57	7	No	2002	7	7	8	8	2001	Yes	No	1962
028-0056, Franklin Cemetery Road over I-57	6.5	No	2003	7	7	8	8	2001	Yes	No	1961
028-0057, Petroff Road over I-57	6.5	No	2002	7	7	8	8	2001	Yes	No	1963
028-0059, IL Route 154 over I-57	7.5	Yes	2003	8	7	8	8	1996	Yes	Yes	1962/1994
4 SPAN: 80'- 0" MEDIAN											
028-0058, T.R. 403 (Country Club) over I-57	7	No	2005	7	8	8	8	2001	Yes	No	1961/1998
5 SPAN: 50'- 0" MEDIAN											
028-0063, Webster Street over I-57	6.5	No	2005	6	7	7	8	2001	No	No	1964
RAILROAD STRUCTURES											
028-0010, C.N. Railroad over I-57	Varies 12.5625" @ Pier 9.005" @ Abuts.	No	2005	5	5	6	N/A	2001	No	N/A	1963/1979
028-0003, B.N. Railroad over I-57	Varies 15.25" @ Pier 10.25" @ Abuts.	No	2005	7	7	7	N/A	1998	No	N/A	1962



OVERHEAD STRUCTURE
CONDITION INFORMATION

Appendix

A10

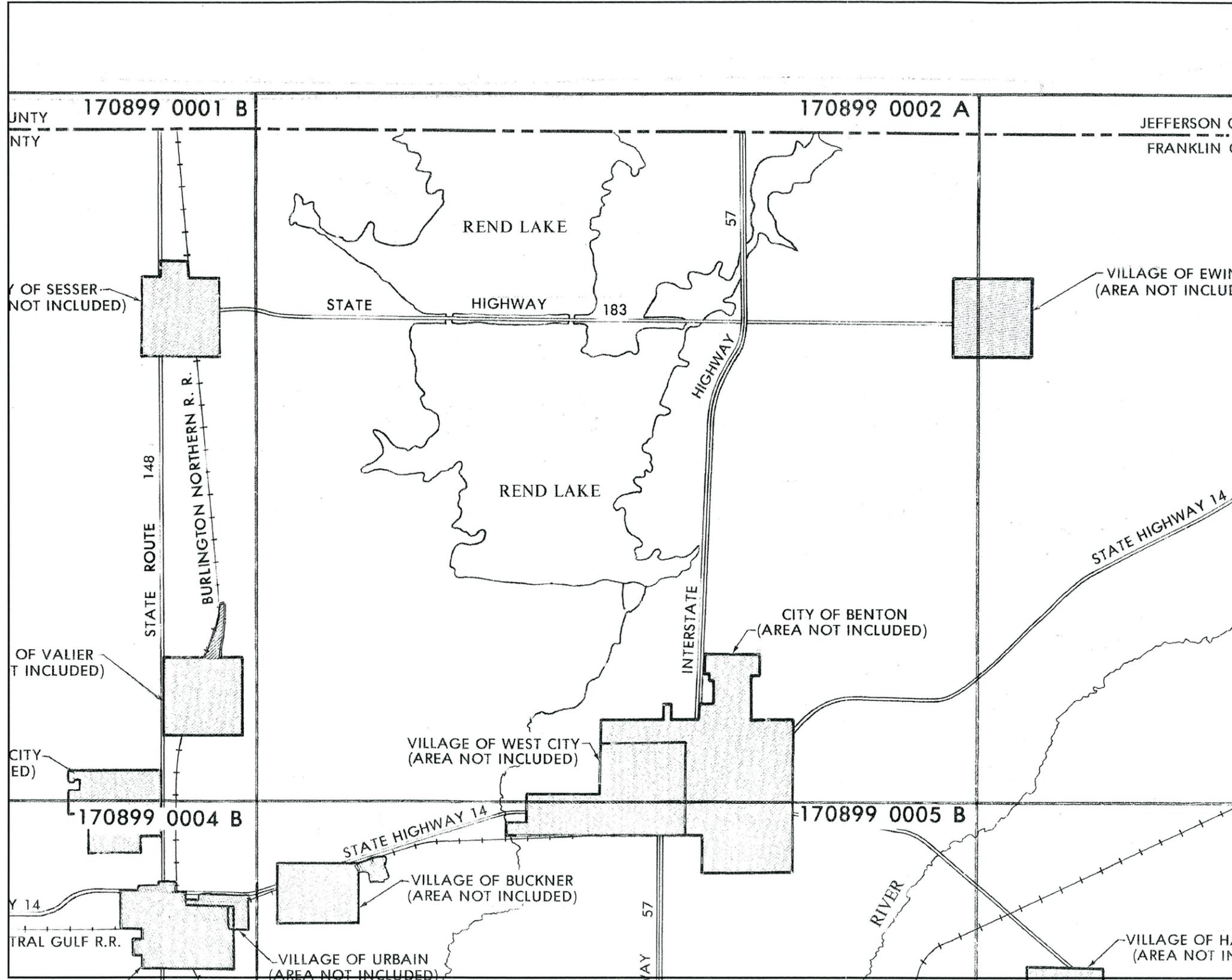
STRUCTURE NO.	Deck Thickness (Inches)	Epoxy Reinforcing Y/N	Last Inspected Year	Deck Condition 0-10	Superstr. Condition 0-10	Substr. Condition 0-10	Culvert 0-10	Channel and Protection 0-10	Approach Roadway Alignment 0-10	Waterway Adequacy 0-10	Last Painted Year	Bridge Rail Adequate Y/N	Guardrail Ends Adequate Y/N	Year Constructed Year	Sufficiency Rating
028-0013, N.B. I-57 over Gun Creek	7.5	Yes	2005	8	7	7	N/A	6	8	8	1998	Yes	Yes	1962/1993	97.3
028-0014, S.B. I-57 over Gun Creek	7.5	Yes	2005	8	7	7	N/A	7	8	8	1998	Yes	Yes	1962/1994	97.3
028-2006, I-57 over Drainage Ditch	N/A	N/A	2004	N/A	N/A	N/A	7	5	8	8	N/A	N/A	N/A	1963	81.2
028-0011, S.B. I-57 over Marcum Branch	7.5	Yes	2005	8	7	7	N/A	7	8	8	1998	Yes	Yes	1962/1994	97.3
028-0012, N.B. I-57 over Marcum Branch	7.5	Yes	2005	6	7	7	N/A	7	8	8	1998	Yes	Yes	1962/1993	97.3
028-0008, S.B. I-57 over Union Pacific Railroad	7.0	No	2005	4	7	7	N/A	N/A	8	N/A	2003	No	Yes	1962	83.2
028-0009, N.B. I-57 over Union Pacific Railroad	7.0	No	2005	4	7	7	N/A	N/A	8	N/A	2003	No	Yes	1962	94.2
028-2000, I-57 over Linn Road	N/A	N/A	2004	N/A	N/A	N/A	7	N/A	8	N/A	N/A	N/A	Yes	1962	88.9
028-0006, N.B. I-57 over Middle Fork Big Muddy	7.5	Yes	2005	7	7	7	N/A	7	8	8	1998	Yes	Yes	1962/1993	97.2
028-0007, S.B. I-57 over Middle Fork Big Muddy	7.5	Yes	2005	6	7	7	N/A	7	8	8	1998	Yes	Yes	1962/1994	97.2
028-0004, N.B. I-57 over 7th St.	7.0	No	2005	3	7	7	N/A	N/A	8	N/A	2003	No	Yes	1962	92.1
028-0005, S.B. I-57 over 7th St.	7.0	No	2005	3	7	7	N/A	N/A	8	N/A	2003	No	Yes	1962	92.1
028-0001, N.B. I-57 over Pond Creek	7.5	Yes	2005	7	6	7	N/A	6	8	6	1998	Yes	Yes	1961/1993	97.2
028-0002, S.B. I-57 over Pond Creek	7.5	Yes	2005	8	6	7	N/A	7	8	6	1998	Yes	No	1961/1994	97.2



MAINLINE I-57
STRUCTURE CONDITION
INFORMATION

Appendix

A11



FLOOD HAZARD BOUNDARY MAP

**FRANKLIN COUNTY
ILLINOIS**
UNINC. AREAS
INDEX TO MAPS
PAGES 1 THRU 6
PAGES PRINTED: ALL PAGES

MAP INDEX
AUGUST 29, 1980

COMMUNITY—PANEL NUMBER
170899 0001-0006



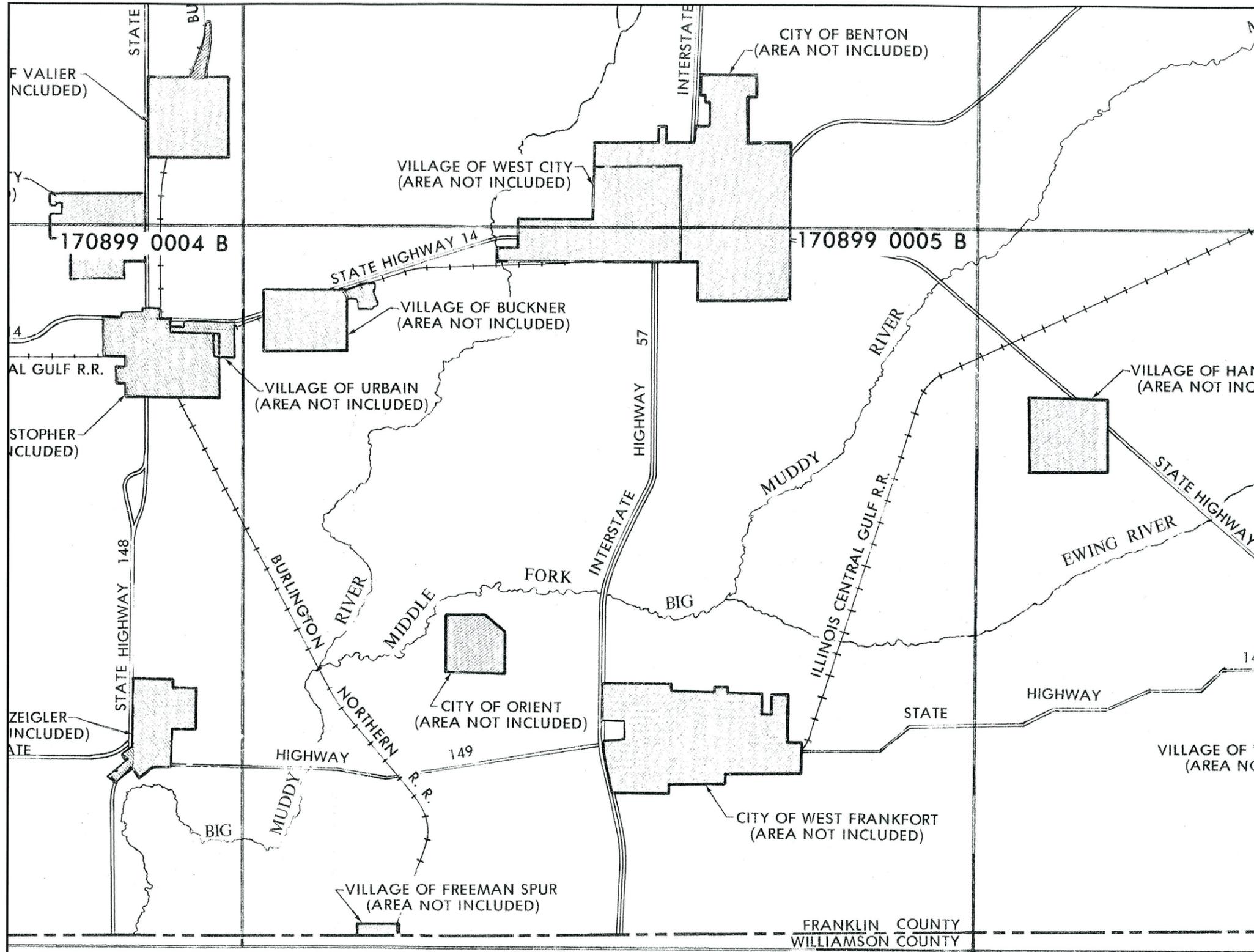
U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



FIRM MAP

APPENDIX
B1



FLOOD HAZARD BOUNDARY MAP

**FRANKLIN COUNTY
ILLINOIS**
UNINC. AREAS
INDEX TO MAPS
PAGES 1 THRU 6
PAGES PRINTED: ALL PAGES

MAP INDEX
AUGUST 29, 1980

COMMUNITY—PANEL NUMBER
170899 0001-0006



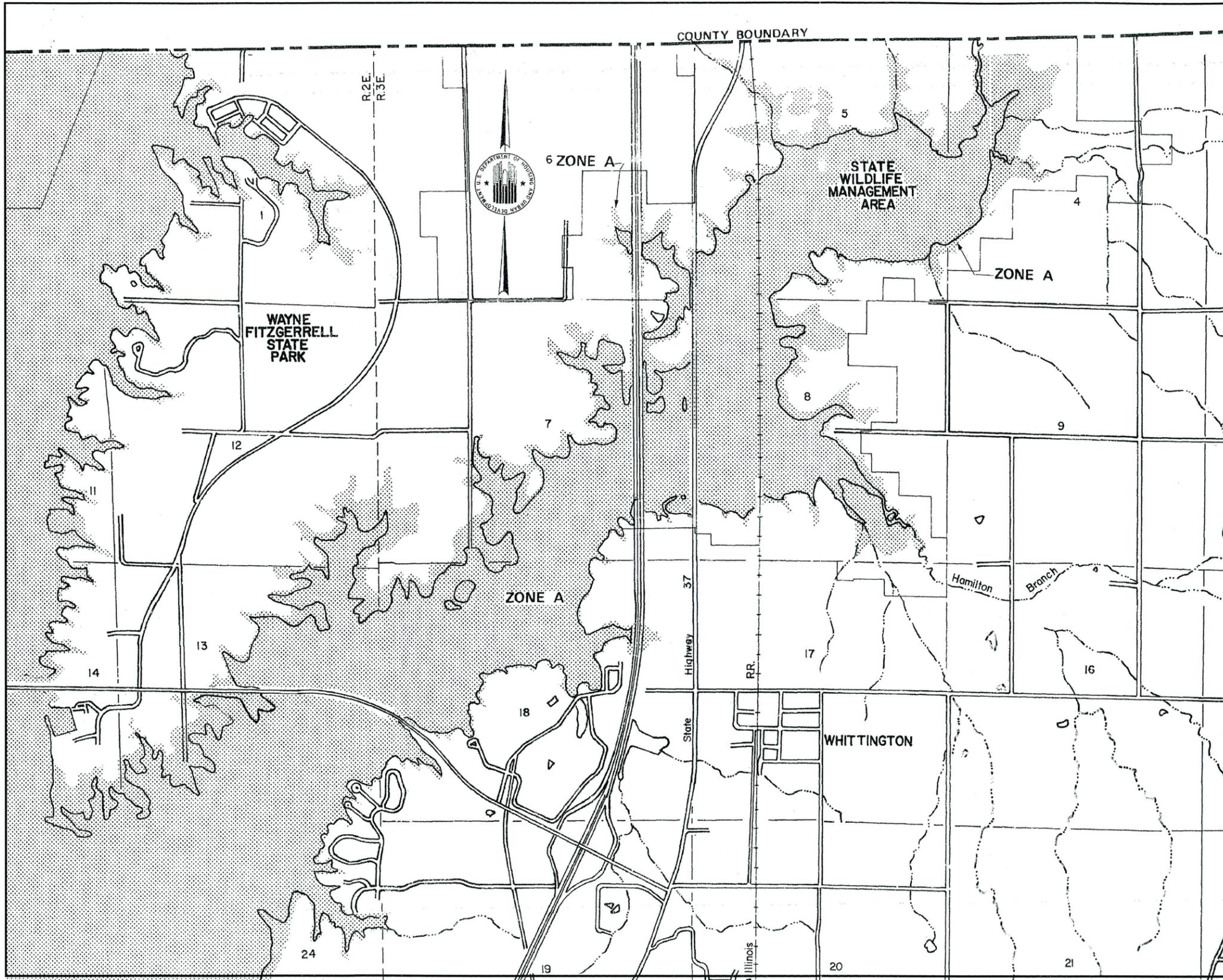
**U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT**
FEDERAL INSURANCE ADMINISTRATION

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FIRM MAP

**APPENDIX
B2**



2000 0 2000

FLOOD HAZARD BOUNDARY MAP

**FRANKLIN COUNTY
ILLINOIS
UNINC. AREAS**

PAGE 2 OF 6
(SEE MAP INDEX FOR PAGES NOT PRINTED)

EFFECTIVE DATE:
JANUARY 13, 1978

COMMUNITY—PANEL NUMBER
170899 0002 A



**U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT**
FEDERAL INSURANCE ADMINISTRATION

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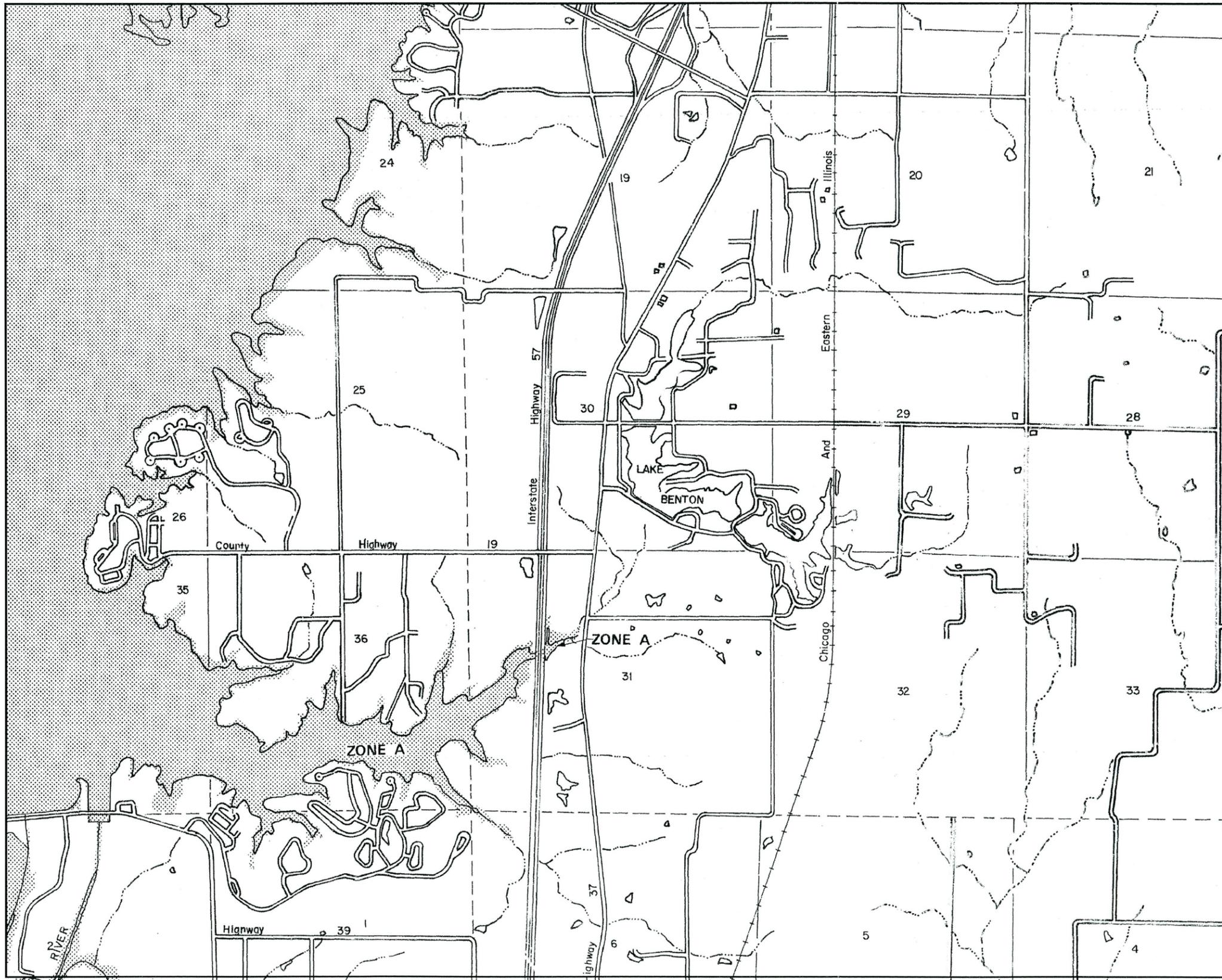


OATES ASSOCIATES

FIRM MAP

APPENDIX

B3



2000 0 2000

FLOOD HAZARD BOUNDARY MAP

FRANKLIN COUNTY
ILLINOIS
UNINC. AREAS

PAGE 2 OF 6
(SEE MAP INDEX FOR PAGES NOT PRINTED)

EFFECTIVE DATE:
JANUARY 13, 1978

COMMUNITY-PANEL NUMBER
170899 0002 A



U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

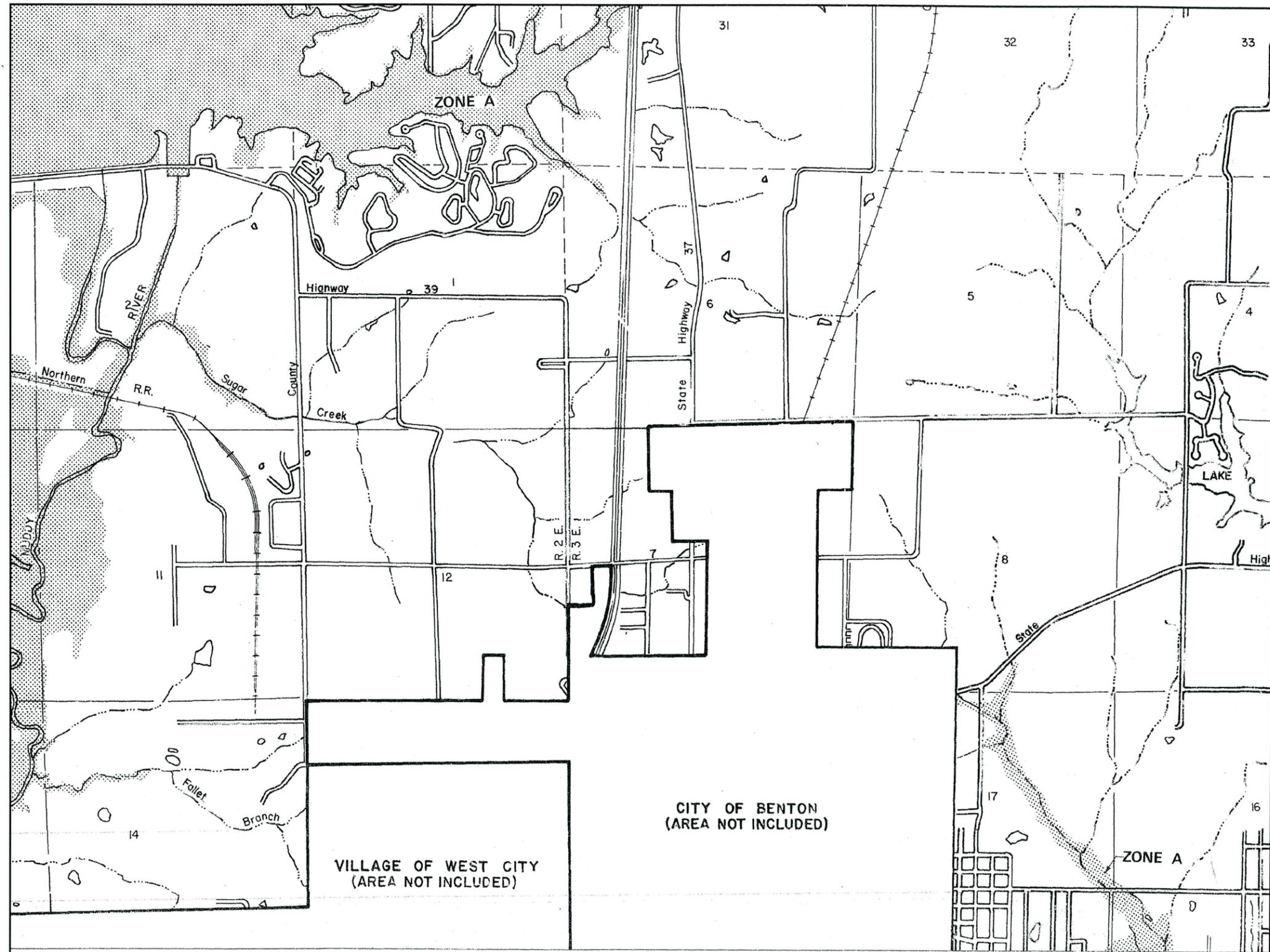
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



OATES ASSOCIATES

FIRM MAP

APPENDIX
B4



2000 0 2000

FLOOD HAZARD BOUNDARY MAP

FRANKLIN COUNTY
ILLINOIS
UNINC. AREAS

PAGE 2 OF 6
(SEE MAP INDEX FOR PAGES NOT PRINTED)

EFFECTIVE DATE:
JANUARY 13, 1978

COMMUNITY-PANEL NUMBER
170899 0002 A



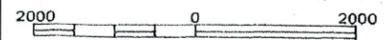
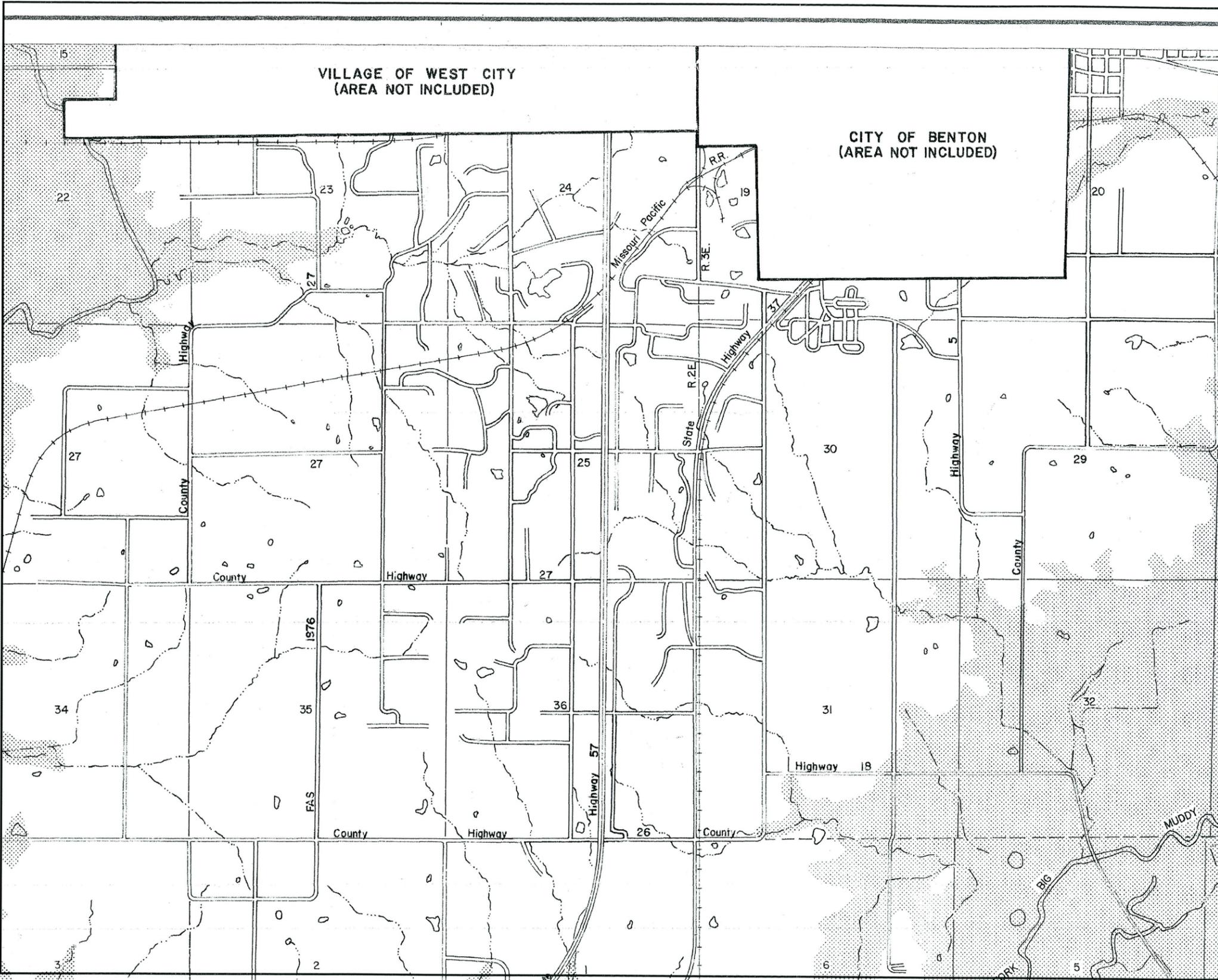
U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

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FIRM MAP

APPENDIX
B5



FLOOD HAZARD BOUNDARY MAP

**FRANKLIN COUNTY
ILLINOIS
UNINC. AREAS**

PAGE 5 OF 6
(SEE MAP INDEX FOR PAGES NOT PRINTED)

MAP REVISED:
AUGUST 17, 1979

COMMUNITY—PANEL NUMBER
170899 0005 B



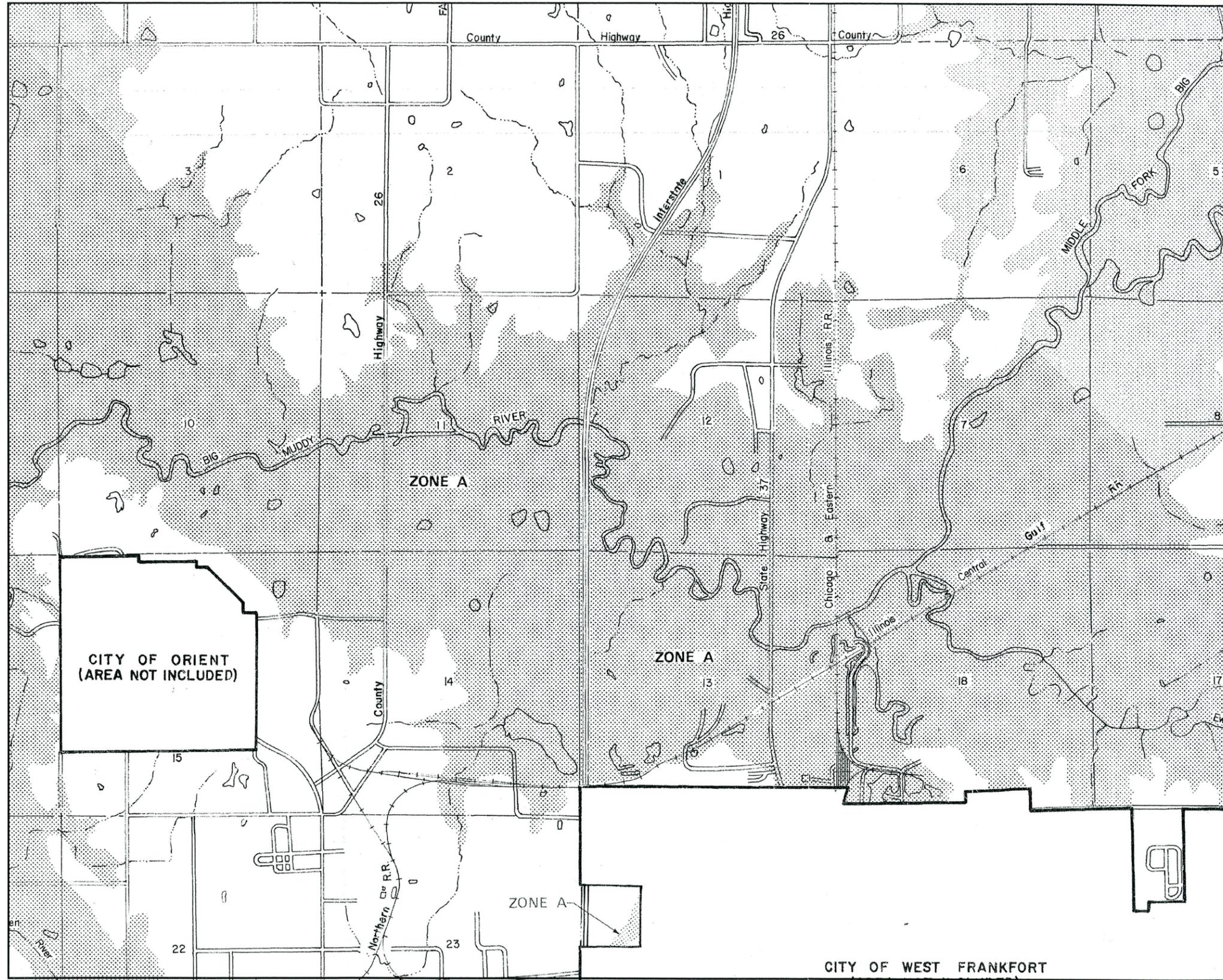
**U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT**
FEDERAL INSURANCE ADMINISTRATION

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FIRM MAP

APPENDIX
B6



2000 0 2000

FLOOD HAZARD BOUNDARY MAP

**FRANKLIN COUNTY
ILLINOIS
UNINC. AREAS**

PAGE 5 OF 6
(SEE MAP INDEX FOR PAGES NOT PRINTED)

MAP REVISED:
AUGUST 17, 1979

COMMUNITY—PANEL NUMBER
170899 0005 B



**U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT**
FEDERAL INSURANCE ADMINISTRATION

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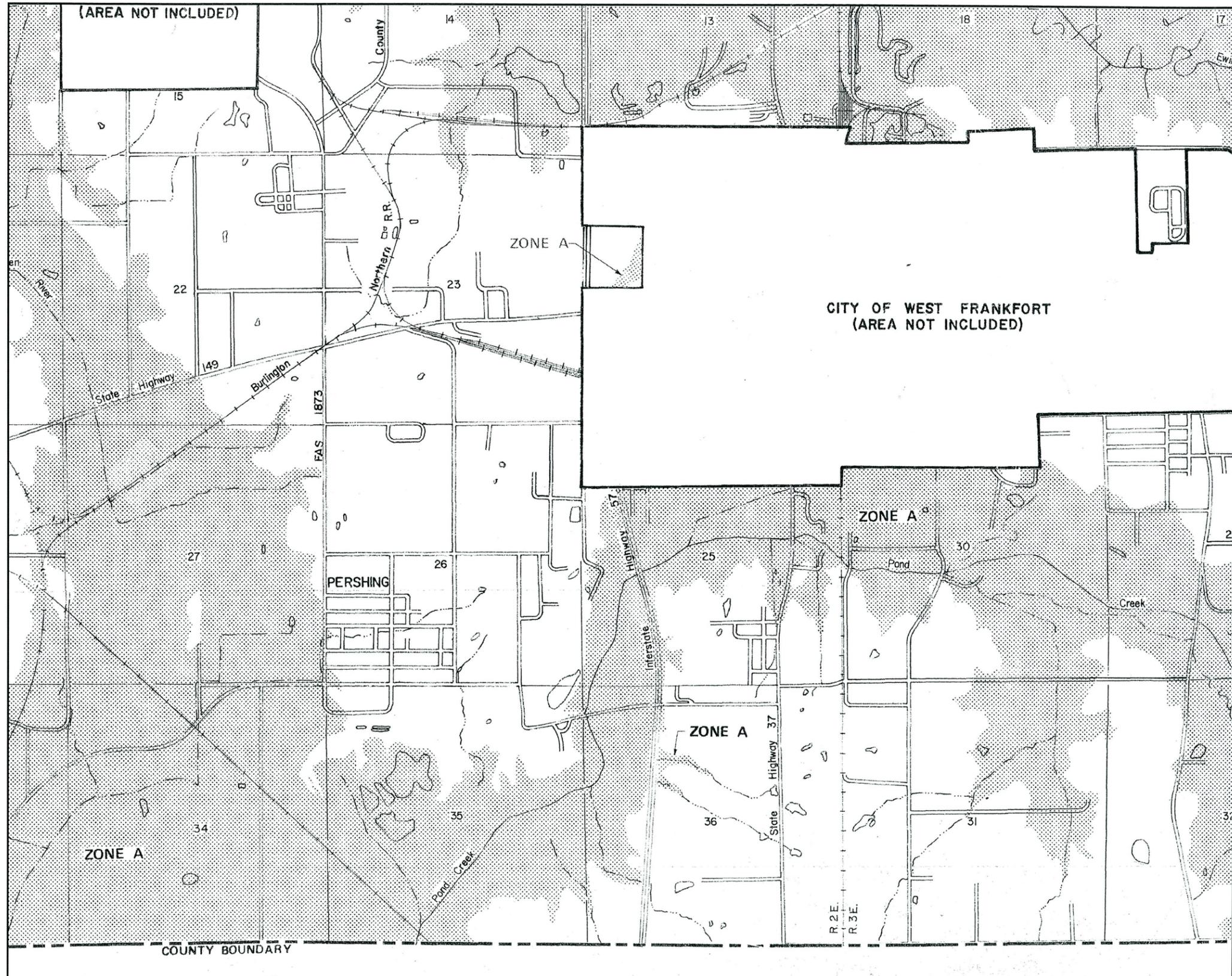


OATES ASSOCIATES

FIRM MAP

APPENDIX

B7



FLOOD HAZARD BOUNDARY MAP

**FRANKLIN COUNTY
ILLINOIS**
UNINC. AREAS
PAGE 5 OF 6
(SEE MAP INDEX FOR PAGES NOT PRINTED)

MAP REVISED:
AUGUST 17, 1979

COMMUNITY—PANEL NUMBER
170899 0005 B



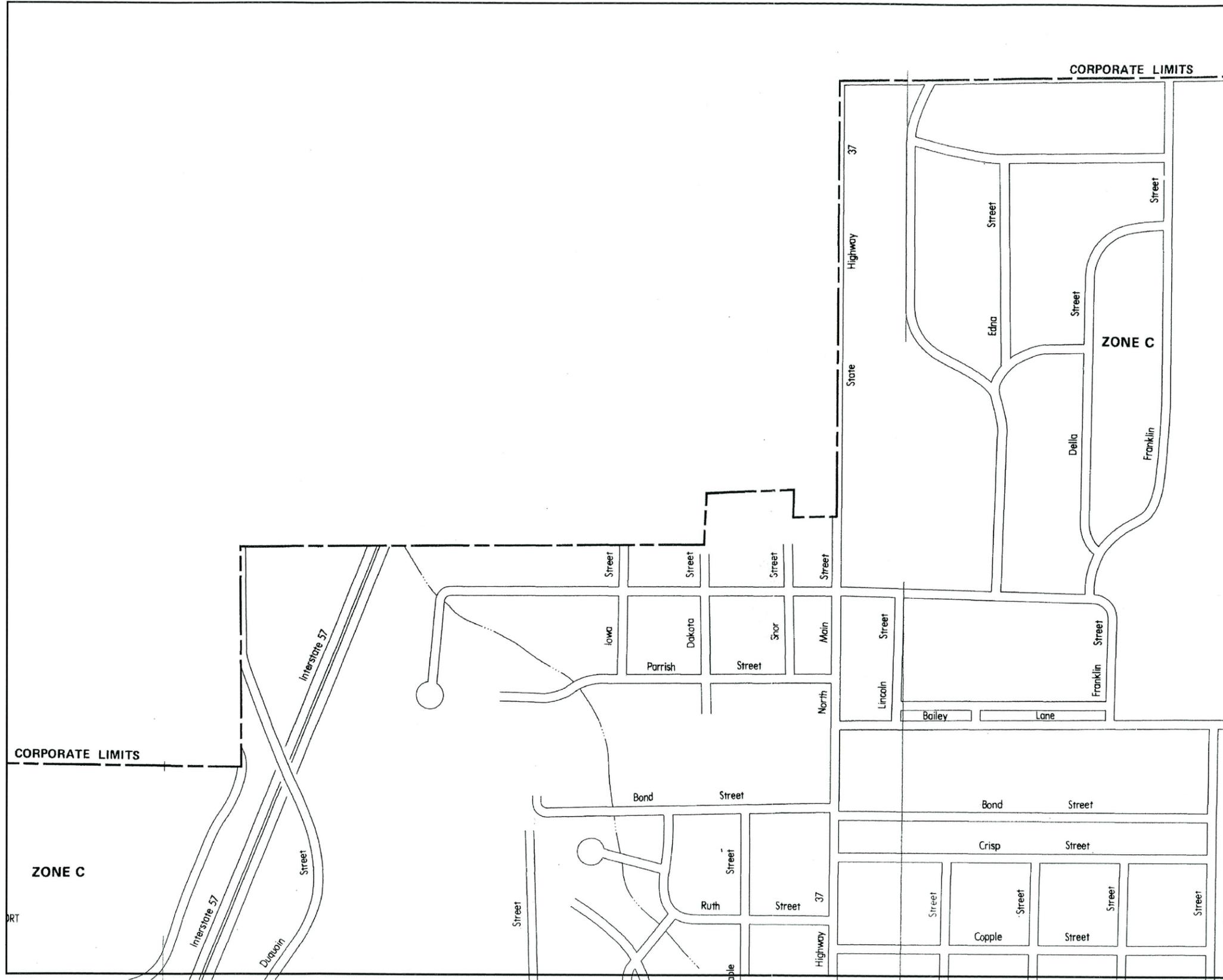
**U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT**
FEDERAL INSURANCE ADMINISTRATION

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FIRM MAP

APPENDIX
B8



APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE
MAP

CITY OF
BENTON,
ILLINOIS
FRANKLIN COUNTY

PAGE 1 OF 2
PAGES PRINTED: ALL PAGES

COMMUNITY - PANEL NUMBER
170237 0001 B

EFFECTIVE DATE:
DECEMBER 14, 1979



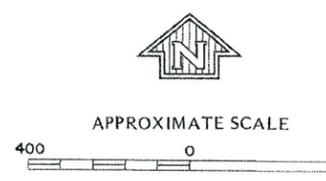
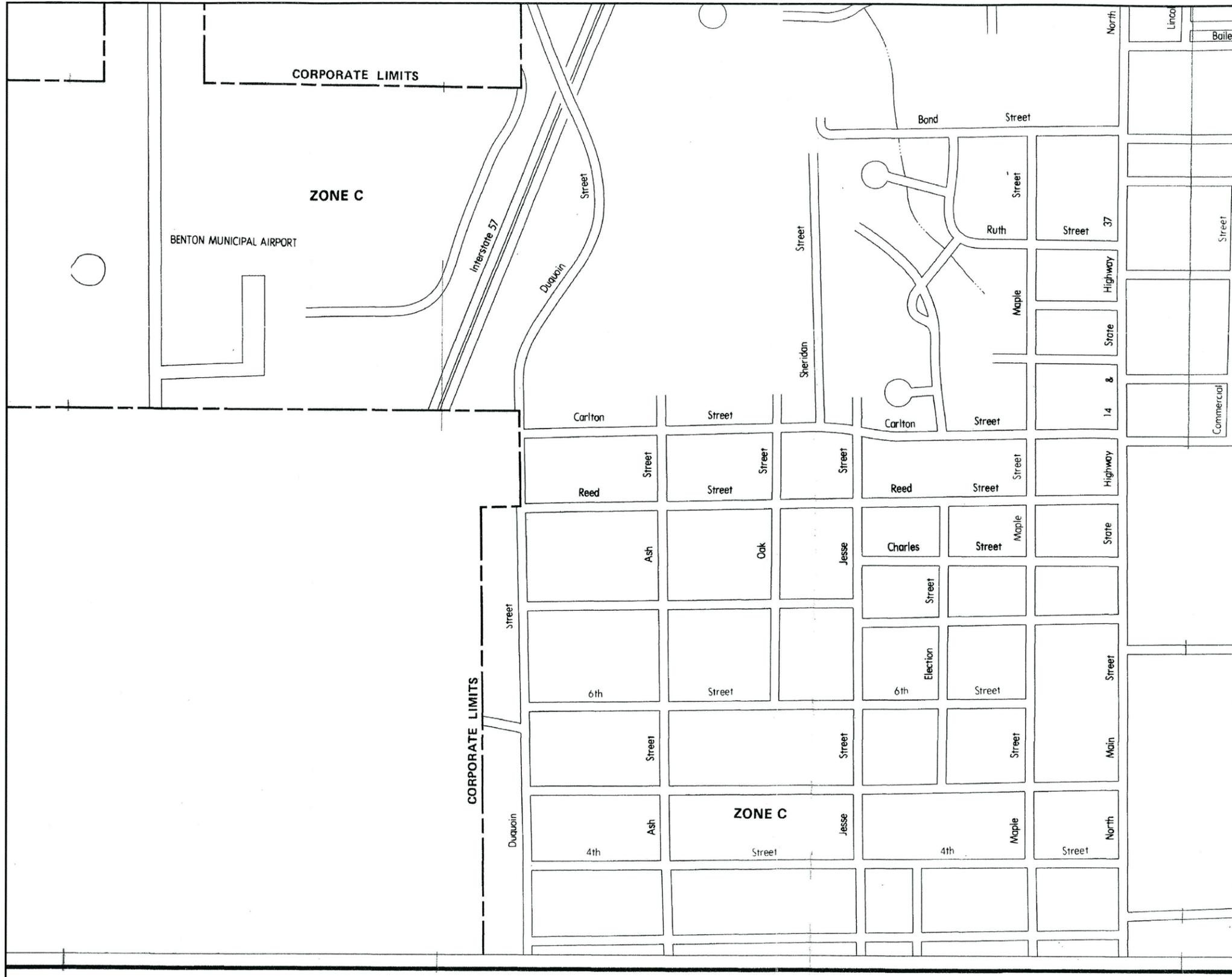
U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

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FIRM MAP

APPENDIX
B9



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE
MAP

CITY OF
BENTON,
ILLINOIS
FRANKLIN COUNTY

PAGE 1 OF 2
PAGES PRINTED: ALL PAGES

COMMUNITY - PANEL NUMBER
170237 0001 B

EFFECTIVE DATE:
DECEMBER 14, 1979

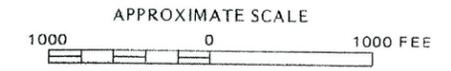
U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



FIRM MAP

APPENDIX
B10



NATIONAL FLOOD INSURANCE PROGRAM

**FIRM
FLOOD INSURANCE RATE MAP**

CITY OF
**WEST
FRANKFORT,
ILLINOIS**
FRANKLIN COUNTY
(ONLY PANEL PRINTED)

**COMMUNITY-PANEL NUMBER
170239 0005 C**

**EFFECTIVE DATE:
MAY 16, 1983**



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

KEY TO MAP

500-Year Flood Boundary	→	—————
100-Year Flood Boundary	→	—————
Zone Designations*		
100-Year Flood Boundary	→	—————
500-Year Flood Boundary	→	—————
Base Flood Elevation Line With Elevation In Feet**		~~~~~ 513 ~~~~~
Base Flood Elevation in Feet Where Uniform Within Zone**		(EL 987)
Elevation Reference Mark		RM7x
Zone D Boundary	→	—————
River Mile		•M1.5

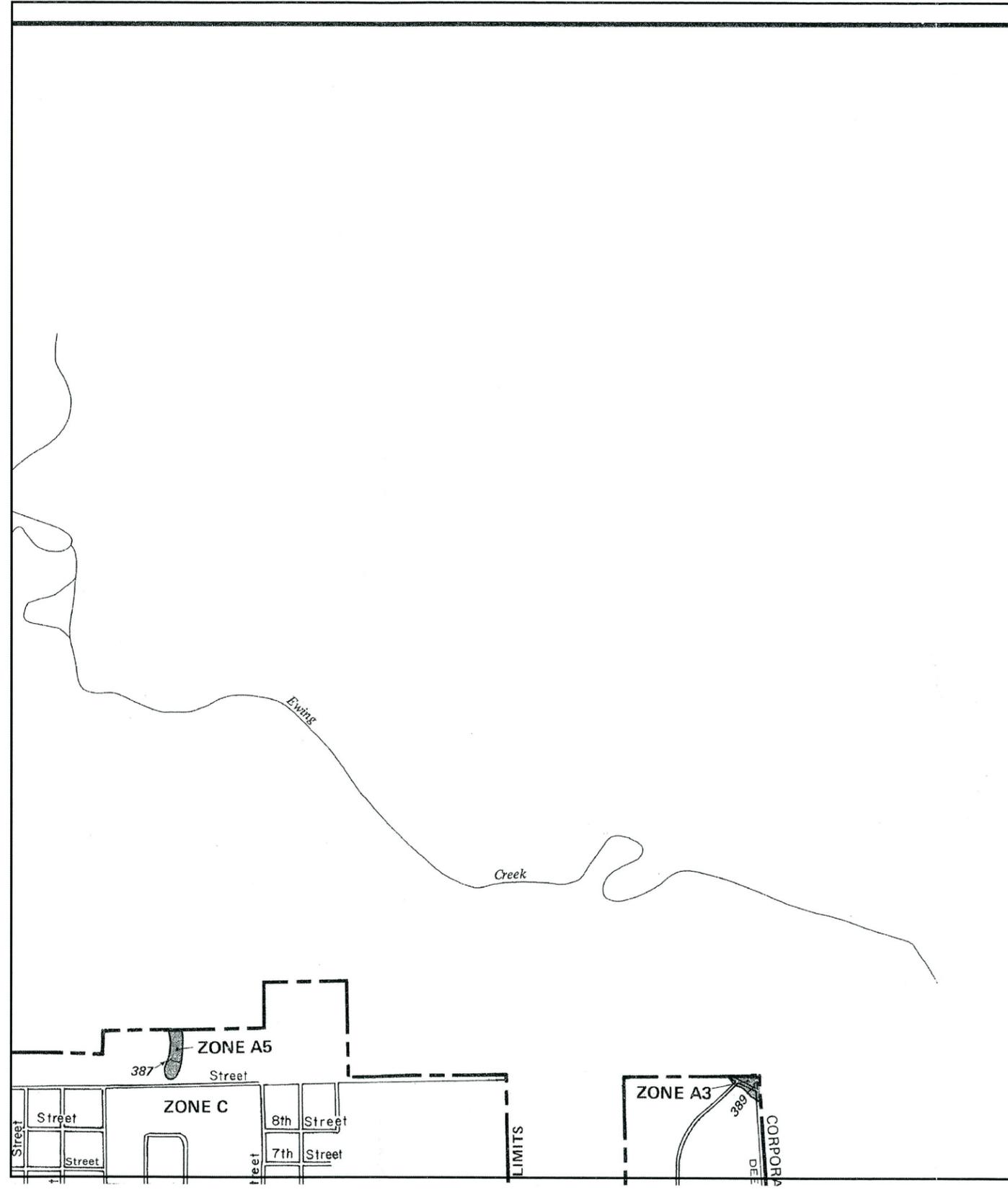
**Referenced to the National Geodetic Vertical Datum of 1929

***EXPLANATION OF ZONE DESIGNATIONS**

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.
This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.
For adjoining map panels, see separately printed Index To Map Panels.



FIRM MAP

**APPENDIX
B11**

