

## **APPENDIX 15**

### **Location Drainage Report**



# Illinois Department of Transportation

## Location Drainage Study

PROJECT ROUTE: FAP 653 (IL 18)  
LIMITS: East of Third Street to East of Illinois River  
MUNICIPALITY/COUNTY: Marshall & Putnam Counties  
SECTION: (104B-D) BR  
EXISTING STRUCTURE No.: 062-0036  
PROPOSED STRUCTURE No.: 062-0089  
JOB NUMBER: P-94-007-20  
PTB No.: 195-038  
CONTRACT No.: 68F09

PREPARED FOR: District Four  
Bureau of Programming  
Hydraulics Section

DATE:

PREPARED BY: Infrastructure Engineering, Inc.  
456 Fulton Street (Ste 265)  
Peoria, IL 61602

DATE: 3-14-2025

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## LOCATION DRAINAGE STUDY CHECKLIST

Project Route: FAP 653 (IL 18)

Limits: East of Third Street to East of Illinois River

Municipality/County: Marshall & Putnam Counties

Job Number: P-94-007-20

### 0-00 OVERALL PROJECT SCOPE (Provide a brief description of the overall project.)

Removal and replacement of structure S.N. 062-0036 that carries IL 18 over the Illinois River at the city of Henry and associated roadway reconstruction from east of Third Street to Illinois River bridge, and from Illinois River bridge to east of Duck Ranch Road.

The proposed bridge is approximately 80-ft upstream of the existing bridge. The proposed IL-18 roadway ties back into the existing roadway on the west side at 2nd Street and on the east side approximately 1,000-ft east of the existing IL-18 abutment. The proposed structure has 11 spans and is 2,206-ft from back of abutment to back of abutment.

### 1-00 EXISTING DRAINAGE SYSTEM (see Exhibit 1-00a, General Location Drainage Map;

☒ Exhibit 1-00b, Existing Drainage Plan)

West of the Illinois River: Existing urban section of IL Route 18 from existing STA 49+70 / proposed STA 3002+03 is currently served by curb and gutter and a storm sewer system consisting of a 15-inch typical diameter concrete storm sewer and corrugated metal pipe (CMP). The outfall is 24" RCP into the Illinois River. The terrain is sloping east and north.

East of the Illinois River: The area on both sides of the roadway for about three quarters of a mile is floodplain and marshy with no well-defined drainage.

#### 1-01 IDENTIFIED DRAINAGE PROBLEMS (see Appendix C)

☒ Yes

☐ No

1-01.1 Description:

West of Illinois River: The area between Third Street and Second Street slopes from southwest to northeast. Most of the area, from beyond IL Route 18 ROW from the existing alley to IL Route 18, drains to the roadway. This creates a ponding situation; storm water encroaches into driving lane on IL Route 18 even from a minor storm event.

East of the Illinois River: The existing IL Route 18 pavement is below Base Flood Elevation of 461.1 for approximately  $\frac{3}{4}$  of a mile.

In the vicinity of the existing structure, the east overbank is completely inundated during all studied storm events (10-yr, 50-yr, 100-yr, 200-yr, 500-yr). This reach of the Illinois River is controlled by backwater affects from the downstream Peoria Lock and Dam. Periodically, IDOT has been required to close IL 18 on the east approach to prevent vehicles from traversing the flooded pavement areas.



Responsibility      ☒ IDOT      ☐ Others

Action:

West of the Illinois River: Add inlets and new storm sewers so that there are no storm water encroachments more than 3' into the driving lane from a 10-year storm event.

East of Illinois River: Reconstruct roadway above the Base Flood Elevation. The new bridge and approach will be constructed above the BFE, however, reconstruction of roadway above BFE is not in the project scope.

The proposed IL-18 roadway profile on the east approach to the bridge does not meet the State's minimum freeboard criteria, which states that there must be a minimum roadway freeboard of 3-ft between the design (50-year) headwater elevation and the lowest pavement elevation within the floodplain. The scope and schedule of the current bridge replacement project does not permit addressing the approach roadway freeboard issue as part of this Project. IDOT has programmed budget to begin the study and planning phase required to eventually raise the roadway in the floodplain to an elevation of 462.48-ft, which is 3-ft above the design headwater elevation, to meet policy criteria

1-02 IDENTIFIED BASE FLOODPLAINS

The Flood Insurance Rate Map for Counties      of Marshall & Putnam  
were examined for identified base floodplains traversed by IL Route 18.

East of Illinois River: Existing IL Route 18 is in floodplain for three quarters of a mile.

Floodplains      ☒ Yes      ☐ No  
Floodways      ☒ Yes      ☐ No

1-03 MAJOR DRAINAGE FEATURES (see Exhibit 1-00a)

1-03.1 Bridges

Location:      IL Route 18 over Illinois River at Henry, IL

Structure No.:      062-0089 proposed

Hydraulic Report Prepared by      Parsons      in 12/2024

Waterway Information Table Available:

☒ Yes  
☐ No

Narrative Summary: (overtopping frequency, clearance, freeboard, flooding, scour, etc.):

The existing structure, located at river mile 195.96, is a 14-span structure with a length of 1,725-ft from abutment to abutment. The superstructure is comprised of steel trusses with steel girder approach spans and the substructure is comprised of concrete piers, pile bents, and abutments. The structure carries a two-lane roadway with no shoulders and has a deck width of 23-ft curb-to-curb.

A minimum of two feet of clearance must be established between the design natural highwater elevation (N.H.W.E.) and the low beam elevation. The design N.H.W.E is 459.59-ft and the existing low beam elevation in the channel is 499.2-ft. This criteria is applied over the main channel only. The main channel consists of the conveyance section between the channel overbanks where the majority of water is flowing. This criteria is being satisfied by the proposed bridge.

The Coast Guard navigational clearance criteria requires that the low chord of the navigational channel be 50-ft above the 2% flow line. The 2% flow line elevation is 451.70-ft. The low beam elevation in the middle of the channel is 502.00-ft, so the navigational clearance criteria is being satisfied by the proposed bridge.

A minimum roadway freeboard of 3-ft must be established between the 50-yr headwater elevation and the lowest pavement elevation within the floodplain. This requirement is not being satisfied in the existing condition, with a 50-yr headwater elevation of 459.48-ft and a minimum pavement elevation within the floodplain of approximately 457.00-ft.

The Illinois River is an Illinois Department of Natural Resources – Office of Water Resources (IDNR-OWR) designated Public Body of Water and runs from north to south in the vicinity of the Project. The Illinois River has a drainage area of approximately 13,544 square miles upstream of the existing structure. The existing drainage area is characterized as rural with some urban developments. The channel is well defined with a large conveyance capacity. In the vicinity of the existing structure, the east overbank is completely inundated during all studied storm events (10-yr, 50-yr, 100-yr, 200-yr, 500-yr). This reach of the Illinois River is controlled by backwater affects from the downstream Peoria Lock and Dam.

At the Project location, the floodplain is a Zone AE as shown in the Flood Insurance Rate Map (FIRM). The 100-year water surface elevation (WSE) at IL-18 is approximately 461.1-ft. The Project area surface topography is relatively flat, with the exception of the west end of the Project, which includes embankment slopes of up to 30%. The surface elevation varies from 480-ft to 445-ft declining from west to east. The west overbank is the developed town of Henry, IL, while the east overbank area is undeveloped and mostly wooded.

The maximum river gage height recorded at Gage 05558300, located just downstream of the bridge, is 32.94-ft which occurred on April 22, 2013. With a gage elevation of 425.85-ft NAVD (1988), this equates to an all-time high WSE of 458.79-ft. The existing roadway elevations east of the bridge are approximately 457' +/- and are overtopped with the ten-year storm event.

IDOT's 2022 Bridge Inspection Report (BIR), mentions minor scour of 3-4 ft around Pier 3. The BIR also mentions that the channel appears stable with well vegetated banks. No other hydraulically-relevant items were noted in the BIR.

1-03.2 Major Culvert Crossings (refer to 1-03.1 and LDS Task Description for information, as applicable) N/A

1-03.3 Pump Stations (refer to 1-03.1 and LDS Task Description for required information, as applicable) N/A

1-03.4 Reservoirs/Detention Facilities (refer to 1-03.1 and LDS Task Description for required information, as applicable) N/A

1-03.5 Depressed Road (refer to 1-03.1 and LDS Task Description for required information, as applicable) N/A

1-03.6 Channels and Zone A Floodplains See Appendix - Exhibits

**2-00 PROPOSED DRAINAGE SYSTEM** (☒ Exhibit 2-00a, Proposed Drainage Plan)

West of the Illinois River: Add inlets and new storm sewers between Third Street and Second Street so that there are no storm water encroachments more than 3' into the driving lane from a 10-year storm event. A new sewer main is proposed to convey the drainage flows from IL Route 18 corridor southeast. The sewer main outfalls into the Illinois River. Existing sewer outfall into the river is maintained.

Between Second Street and the new bridge, the proposed roadway is on embankment, with B6.24 curb and gutter and curb inlets. Roadside ditches are proposed on both sides of IL Route 18 new alignment to receive flows from the curb inlets. The ditches drain by proposed inlets and storm sewers to the sewer main that out falls to the Illinois River.

Front Street, south of IL Route 18, to drain to the sewer main. Front Street, north of IL Route 18 to drain via proposed drywells.

East of Illinois River: The roadway will be on embankment and sheet flows to exiting marshy area. The new roadway alignment meets existing IL Route 18 alignment in ¼ of a mile. A drainage ditch is proposed between existing and proposed IL Route 18.

**2-01 DESIGN CRITERIA** (☒ Exhibit 2-01a - Typical Existing Cross Section.

☒ Exhibit 2-01b - Typical Proposed Cross Sections

The existing roadway is 2-lane 2-way. Lane width varies 12' to 13'. Existing roadway with 12' wide lanes has 3' to 4' wide shoulder and curb and gutter. Existing roadway with 13' wide lanes has curb and gutter.

The proposed roadway will be 2-lane 2-way. The proposed roadway between Third Street and Second Street will have 15' wide lanes and curb and gutter. The proposed roadway between Second Street and the Illinois River bridge will have 12' wide lanes, 6' shoulder and curb and gutter.

The proposed roadway east of the Illinois River bridge will have 12' wide lanes, and 10' wide asphalt shoulders. Fill in the floodplain will be balanced by extending the bridge to reduce the amount of embankment and cut in the existing IL Route 18 which will utilized as Duck Ranch Road at lower alignment.

Check all that apply:

☐ New Construction ☒ Reconstruction ☐ 3R Projects (Non-Freeways)

☐ 3R Projects (Freeways)

Reconstruction existing Station 49+80.32 to Station 93+00 (proposed Station 3002+03 to Station 3045+10). Includes bridge reconstruction.

1. Proposed storm sewer conveyance systems will be designed for a 10 year storm frequency with a minimum velocity of 900mm/sec (3 ft/sec).

☒ Yes ☐ No ☐ N/A

Justification for non-compliance:

2. Proposed ditches will be designed for a 20 year storm frequency and desirable ditch grades will be no less than 0.5%.

☒ Yes    ☐ No    ☐ N/A

Justification for non-compliance:

3. The roadway edge of pavement at the low grade point in a floodplain area for highways with a Design Hourly Volume (DHV) of 100 or more shall be a minimum of three feet above design headwater elevation.

☐ Yes    ☒ No    ☐ N/A

Justification for non-compliance: The proposed bridge is also subject to freeboard criteria. The proposed bridge meets IDOT's policy that there must be 2-ft of clearance between the Design N.H.W.E and the low beam elevation of the bridge. The proposed bridge also meets the Coast Guard's navigational clearance criteria of 50-ft between the low chord and the 2% flow line in the navigational channel. The roadway on the east approach does not meet IDOT's criteria of 3-ft of freeboard between the 50-yr WSE and minimum pavement elevation within the floodplain. This criteria will be met with a future project that plans to raise the roadway 3-ft above the 50-yr WSE to meet IDOT's criteria. Analysis discussed hereinunder the "Ultimate" scenario has shown that the proposed bridge can accommodate such a future project without violating no-rise criteria in the River.

4. It is required that a minimum clearance of two (2) feet be established between the design high water and the low beam elevation of bridge structures. The bottom of the bridge super structure shall not be below the all-time high water elevation for the new freeway and expressway construction.

☒ Yes    ☐ No    ☐ N/A

Justification for non-compliance:

5. The waterway openings of bridges and culverts will be designed for a 50 year storm frequency.

☒ Yes    ☐ No    ☐ N/A

Justification for non-compliance:

6. The vertical alignment for curbed pavements will have a minimum grade of 0.3% and a drainage maximum "K" value of 51 (167 English Unit).

☒ Yes    ☐ No    ☐ N/A

Justification for non-compliance:

7. Minimum Pavement cross slopes will be 1.5% to 2% per BDE Manual Section 34.2.01 (b).

☒ Yes    ☐ No    ☐ N/A

Justification for non-compliance:

## 2-02 OUTLET EVALUATION

Unless otherwise noted below, the various outlets within the limits of the subject improvement were determined to be suitable for continued use under proposed conditions without modifications or the provision of storm water detention.

Unsuitable outlets: ☐ Yes (continue below) ☒ No (delete below)

Sensitive (receptor to rate, volume, and/or water quality) outlets:

☐ Yes ☒ No

Existing outlet is to Illinois River.

## 2-03 STORM WATER DETENTION ANALYSIS

This project has been reviewed in accordance with Drainage Manual, Section 1-304.03 "Storm Water Storage".

### 2-03.1 Evaluation

☒ No storm water detention required

Comments (provide a brief explanation and delete below):

The proposed outfall was not considered sensitive to the increase in flow rate.

While the City of Henry's Code provides for storm water detention for a minimum 25-year rainfall event (see Sec. 18-47. Drainage), it also acknowledges the reduction of impacts on the public storm sewer, i.e., discharge to the Illinois River (see Sec. 15-149. Fixed Charge).

Reference: <https://storage.googleapis.com/wzukusers/user-15712285/documents/5b04b8db3b151vuWdoiC/HenryCode-revised%202018.pdf>

## 2-04 RIGHT OF WAY ANALYSIS

☐ Yes ☒ No

An additional right of way is required to accommodate the proposed drainage system.

Drainage work shall be contained to existing ROW and the additional acquired properties already inherent to the project will be leveraged to aid in the drainage for Front Street.

☐ Yes ☒ No

A drainage easement(s) is required to accommodate the proposed drainage system.

## 2-05 DRAINAGE ALTERNATIVES (Briefly describe each alternative and justify the selection)

The bridge was originally developed as a 10-span 1900-ft long structure and, without considering the approach roadway freeboard, was meeting no-rise hydraulic criteria for a Reconstruction Project. Under the future road-raise ("Ultimate") condition, the bridge span would need to be (1) lengthened by 288-ft and (2) fill associated with the access roads on the east overbank would need to be removed down to original native grade elevations to meet no-rise hydraulic criteria. Item (1) has been added to this Project and implemented. The Proposed condition of a 2206-ft bridge discussed in this Report

reflects lengthening that was not necessary to make the bridge meet hydraulic criteria, but will be necessary to allow a future road-raise project to meet hydraulic criteria. The future road-raise project's WSE's are compared to the Pre-Project conditions for this Project. IDNR-OWR has confirmed this approach is appropriate.

2-06 LOCAL AND OTHER AGENCY COORDINATION (see Appendix C)

- |                                         |                                        |                                               |
|-----------------------------------------|----------------------------------------|-----------------------------------------------|
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No            | Local ordinances considered                   |
| <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No | Joint participation                           |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No            | Sewer separation                              |
| <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No | Jurisdictional transfer                       |
| <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No | Letter of intent                              |
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No            | Coordination completed and comments provided. |

Comments:

2-07 PROPOSED DRAINAGE PLAN

2-07.1 Roadway Drainage

Ditches and Swales

- ☐ Yes    ☒ No    Regrade/reestablish existing ditches/swales

Limits:

Comments:

- ☒ Yes    ☐ No    Construct new ditches/swales

Limits: Station 3005+50 to 3008+50

Comments:

Storm Sewers

- ☐ Yes    ☒ No    Utilize existing storm sewers with minor extensions and/or adjustment of existing drainage structures

- ☒ Yes    ☐ No    Replace/relocate/upsized existing storm sewers

Limits: Station 3001+60 to 3011+10

Comments: Existing outfall to Illinois River will be utilized.

- ☐ Yes    ☒ No    Abandon existing storm sewers

Limits: STA 3002+60 to STA 3011+10+00

Comments: Existing storm sewer along RT is CMP and should be upgraded to Class A

☐ Yes ☒ No

Construct new storm sewers (e.g. converting from an open drainage system to closed drainage system)

Limits:

Comments:

#### Combined Sewers

☐ Yes ☒ No

Utilize existing combined sewers with minor extensions and/or adjustment of existing drainage structures

Limits:

Comments:

☐ Yes ☒ No

Replace/relocate existing combined sewers

Limits and sizes:

Comments:

#### Outlets

☒ Yes ☐ No

Regrade/reestablish/maintain existing outlets

Locations: Station 3011+30

Comments: Existing outlet will be utilized

☐ Yes ☒ No

Construct new outlets

Locations and types:

Comments:

#### Cross Road Culverts

☐ Yes ☒ No

Maintain/replace/extend existing cross road culverts

☒ Yes ☐ No

Construct new cross road culverts

Locations: 74+00

Comments: 24-inch culvert under proposed Duck Ranch Road in existing marshy area.

#### Other Items

☐ Yes    ☒ No    Construct/modify special drainage structures/sewers

2-07.2 Proposed Action for all Major Drainage Features (include all Major Drainage Features listed in Section 1-03 and any additional Major Drainage Features proposed)  
IL 18 over Illinois River at Henry

2-07.2.1 Bridges

Location: River Mile 195.96 (ex bridge) Prop River Mile 195.98

Structure No. 062-0089 (proposed)

Hydraulic Report Prepared by: Parsons

Waterway Information Table Available:

☒ Yes  
☐ No

Narrative Summary: (include hydraulic data such as waterway opening, overtopping frequency, clearance, freeboard, backwater, flooding, scour, etc.):

The proposed bridge was analyzed hydraulically in both HEC-RAS and SMS-SRH 2D. The HEC-RAS model was used to show that the Project meets permit criteria, which is that the proposed bridge is no more restrictive to flood flows than the existing bridge. To IDOT and IDNR-OWR, this translates to a rise in WSEL of no greater than 0.0049-ft. The proposed bridge meets this criteria. The HEC-RAS results were also used to populate the Waterway Information Table in Section 2.0 of the Hydraulic Report. A SMS-SRH 2D model was also developed for the bridge. The model output is comprehensive and can be used to analyze velocity, water depths, and pressure throughout the model footprint. For this analysis, SMS-SRH 2D was used specifically to assess scour at the existing and proposed bridge piers. Detailed scour calculations and results can be found in Section 14.0 of the Hydraulic Report.

The proposed bridge is also subject to freeboard criteria. The proposed bridge meets IDOT's policy that there must be 2-ft of clearance between the Design N.H.W.E and the low beam elevation of the bridge. The proposed bridge also meets the Coast Guard's navigational clearance criteria of 50-ft between the low chord and the 2% flow line in the navigational channel. The roadway on the east approach does not meet IDOT's criteria of 3-ft of freeboard between the 50-yr WSE and minimum pavement elevation within the floodplain. This criteria will be met with a future project that plans to raise the roadway 3-ft above the 50-yr WSE to meet IDOT's criteria. Analysis discussed herein under the "Ultimate" scenario has shown that the proposed bridge can accommodate such a future project without violating no-rise criteria in the River. See full Bridge Hydraulic Report for structure 062-0089 as a separate Appendix to this Location Drainage Study.

2-07.2.2 Major Culvert Crossings (refer to 2-07.2.1 and LDS Task Description for required information, as applicable)  
N/A

2-07.2.3 Pump Stations (refer to 2-07.2.1 and LDS Task Description for required information, as applicable) N/A

2-07.2.4 Reservoirs/Detention Facilities (refer to 2-07.2.1 and LDS Task Description for required information, as applicable)  
N/A



2-07.2.5 Depressed Road (refer to 2-07.2.1 and LDS Task Description for required information, as applicable)

N/A

2-07.2.6 Channel and Zone A Floodplain (refer to 2-07.2.1 and LDS Task Description for required information, as applicable)

Illinois River regulator Floodway extend up to 0.75 miles east of the river.

## 2-08 WATER QUALITY BEST MANAGEMENT PRACTICES (BMP) PERMANENT MEASURES

☒ Yes ☐ N/A Identification of USACE and other Federal/State BMP Requirements  
Comments: BMPs and sediments erosion controls will be provided.

☐ Yes ☐ N/A Coordination with Project & Environmental Studies  
Comments:

☐ Yes ☐ No Did you coordinate with other agencies? If yes, list them here  
Comments:

☒ Yes ☐ N/A Green Infrastructure BMP Alternatives

Comments: Infiltration swale, drywells and sheet flow considered.

Limits: Station 4+50 to Station 7+00 Front Street

☐ Yes ☒ N/A Improve existing vegetated drainage facilities (ditches, swales, etc.)

☐ Yes ☒ No Establish new BMP measures (see below)

☐ Yes ☒ No Consideration of open drainage system ("daylight" storm sewer)

☐ Yes ☒ No Bioretention or rain garden (separate facility)

☐ Yes ☒ No Constructed wetland detention or naturalized detention (multi-purpose storage)

☐ Yes ☒ No Bioswale or vegetated swale (multi-purpose conveyance)

☐ Yes ☒ No Bank/shoreline stabilization, native buffers, invasive species control, etc.

☐ Yes ☒ No Lengthened overland flow paths

☐ Yes ☒ No Riffle/Pool Conveyance

☐ Yes ☒ No Permanent Ditch Checks

☐ Yes ☒ No Permanent Sediment Traps

☐ Other

☐ Yes ☒ N/A Grey Infrastructure BMP Alternatives

Comments:

Limits:

☐ Yes ☒ N/A Improve existing non-vegetated drainage facilities (paved or lined ditches, riprap, etc.)

☐ Yes ☒ No Establish new BMP measures

☐ Yes ☒ N/A Sufficient Right-of-Way Allocated for Recommended BMP Alternatives

Comments:

Limits:

☐ Yes ☒ N/A Sufficient Permanent Easement Allocated for Recommended BMP Alternatives

Comments:

☒ Yes ☐ N/A Identify BMP Locations on the Proposed Drainage Plans

Comments: Infiltration swale and drywells are provided along Front St.

Limits: Station 4+50 to Station 7+00 Front Street

☒ Yes ☐ N/A Identify Right-of-Way/Permanent Easement on the Proposed Drainage Plans

Comments: Parcels acquired

Limits: Second Street to Front Street

☒ Yes ☐ N/A Adequate BMP Guidelines provided for Phase II Designer to Comply with NPDES Requirements

Comments: Silt fence and inlet protection will be added in Phase II

Limits: Project limits

☐ Yes ☒ N/A Adequate BMP Guidelines provided for Phase II Designer to Comply with USACE Requirements

Comments:

Limits:

### 3-00 FLOODPLAIN ENCROACHMENT EVALUATION

The proposed project has been reviewed in accordance with Executive Order 11988 "Floodplain Management"; Section 26-7.05(d) "Assessment and Documentation of Floodplain Encroachments" as contained in the Illinois Department of Transportation, Bureau of Design and Environment Manual; Drainage Manual; and 17 Illinois Administration Code 3708 "Floodway Construction in Northeastern Illinois."

☐ No Potential Floodplain Encroachment (delete below)

☒ Potential Floodplain Encroachment (continue below)

3-00.1 Location of base floodplain: Station: 69+00-113+00 Stream: Illinois River  
(see Exhibit 1-02a, Flood Boundary and Floodway Map or Flood Insurance Rate Map)

Type of potential encroachment

☒ Transverse ☐ Longitudinal

Overtopping elevation

- ☐ greater than 100 year frequency flood elevation  
☒ less than 100 year frequency flood elevation (50 year frequency)

Fill in the floodplain, fringe, or floodplain if no floodway:

- ☐ Yes (continue below) ☒ No (delete below)

Excavation in the Floodplain fringe, or floodplain if no floodway :

- ☒ Yes (continue below) ☐ No (delete below)

Fill in the floodway:

- ☒ Yes (continue below) ☐ No (delete below)

27,523 Cubic yards at normal-10 year storm frequency elevation

13,518 Cubic yards at 10-100 year storm frequency elevation

Compensatory storage for fill in the floodway

- ☐ Yes (continue below) ☒ No (delete below)

**4-00 ILLINOIS DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF WATER RESOURCES (IDNR-OWR) PERMIT**

- ☒ Required (continue below) ☐ Not Required (delete below)

- ☒ Individual Permit

Location: Proposed IL 18 bridge over Illinois River at Henry

- ☐ Statewide Permit #

Location:

- ☒ Floodway Permit

- ☒ Regulated Floodway Construction Permit

Location: Proposed IL 18 bridge over Illinois River at Henry.

- ☐ Regional Permit #1

Location:

- ☐ Regional Permit #2

Location:

☐ Regional Permit #3

Location:

☐ Permit Summary form completed and included in Appendix C

☒ IDNR-OWR coordination documented and included in Appendix C

**5-00 Appendix A: Source Data Reviewed** (suggested exhibits as follows)

USGS Maps\* - Quadrangle Map and/or Hydrologic Atlas

Survey notes\*

Local Drainage Plans\* City of Henry

As Built and/or Microfilm Highway Plans\*\*\*

Scoping Report\*\*

Flood Insurance Study\* Putnam Co and Marshall Co

Proposed Geometrics\*\*

\* On file in the Hydraulics Section

\*\* On file in the Project and Environmental Studies Section

\*\*\* Transmitted to the Bureau of Design

**Appendix B: Exhibits** (suggested exhibits as follows)

USGS Topo Map, Exhibit 1-00a

Existing Drainage Plan, Exhibit 1-00b

Floodway and Flood Boundary Map, Exhibit 3-00.1a

Proposed Drainage Plan, Exhibit 2-00a

Typical Existing Cross Sections, Exhibit 2-06a

Typical Proposed Cross Sections, Exhibit 2-06b

Existing Site Photos

**Appendix C: Correspondence** (external (to Hydraulics Section) correspondence related to drainage and included in the study; each section to be ordered chronologically beginning with most recent)

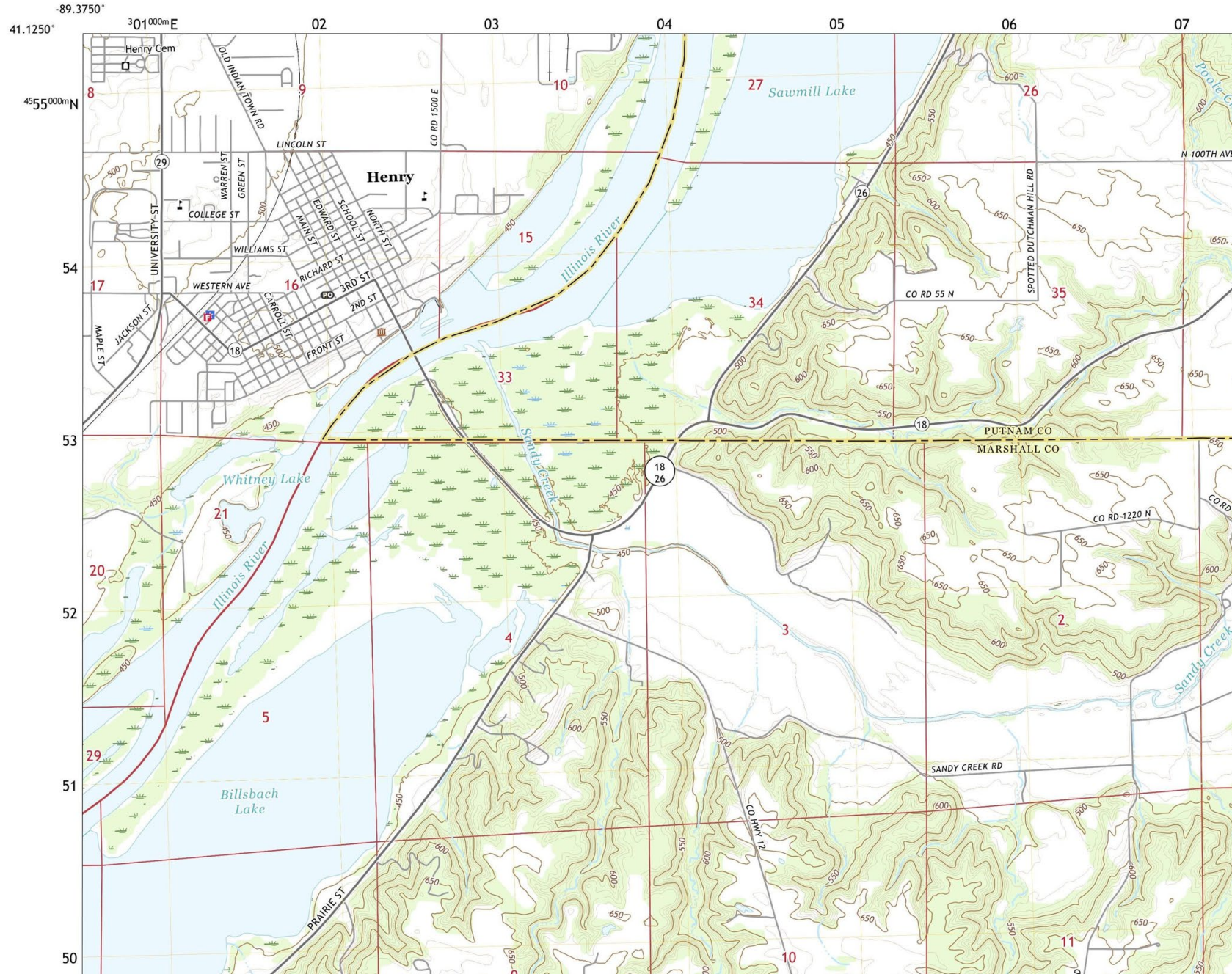
Letters - Phase I- IL-18 Henry Bridge Intermediate Hydraulics Summary Letter to IDOT, dated April 7, 2023

**Appendix D: Supporting Documents** (suggested contents as follows)

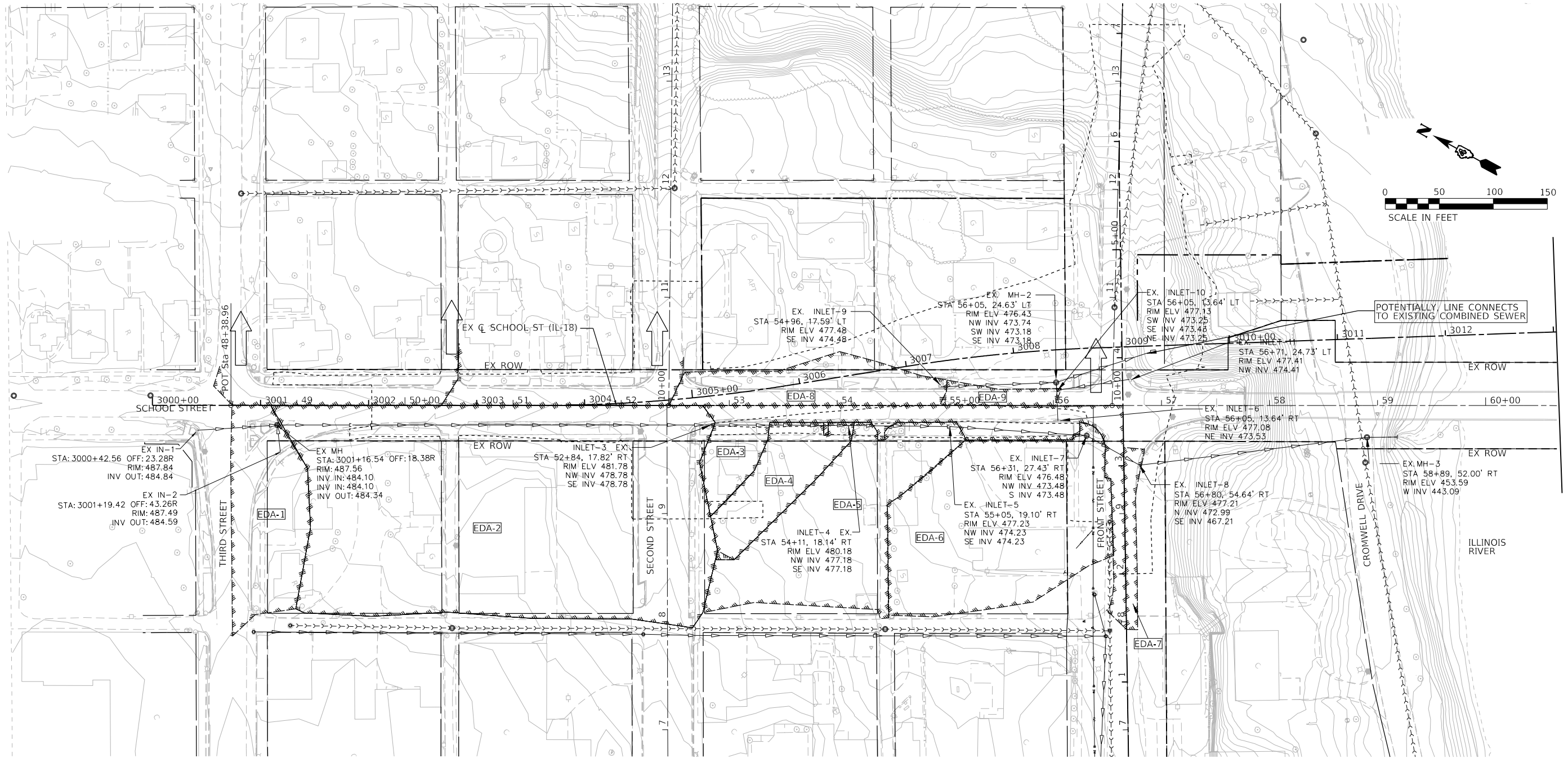
Calculations – Storm Sewer Sizing Calculations.

Size and Location of Proposed Single Culvert – N/A

## EXHIBITS







| LEGEND                  |  |
|-------------------------|--|
| RIGHT OF WAY LINE       |  |
| DRAINAGE DIVIDE         |  |
| SWALE                   |  |
| DITCH                   |  |
| OUTLET-SHEET FLOW       |  |
| EXISTING STORM SEWER    |  |
| EXISTING SENETARY SEWER |  |
| EXISTING WATER LINE     |  |
| EXISTING COUNTOUR       |  |

| TRIBUTARY AREA | AREA(ACRE) |
|----------------|------------|
| EDA-1          | 0.29       |
| EDA-2          | 1.70       |
| EDA-3          | 0.32       |
| EDA-4          | 0.17       |
| EDA-5          | 0.47       |
| EDA-6          | 0.65       |
| EDA-7          | 0.04       |
| EDA-8          | 0.20       |
| EDA-9          | 0.04       |

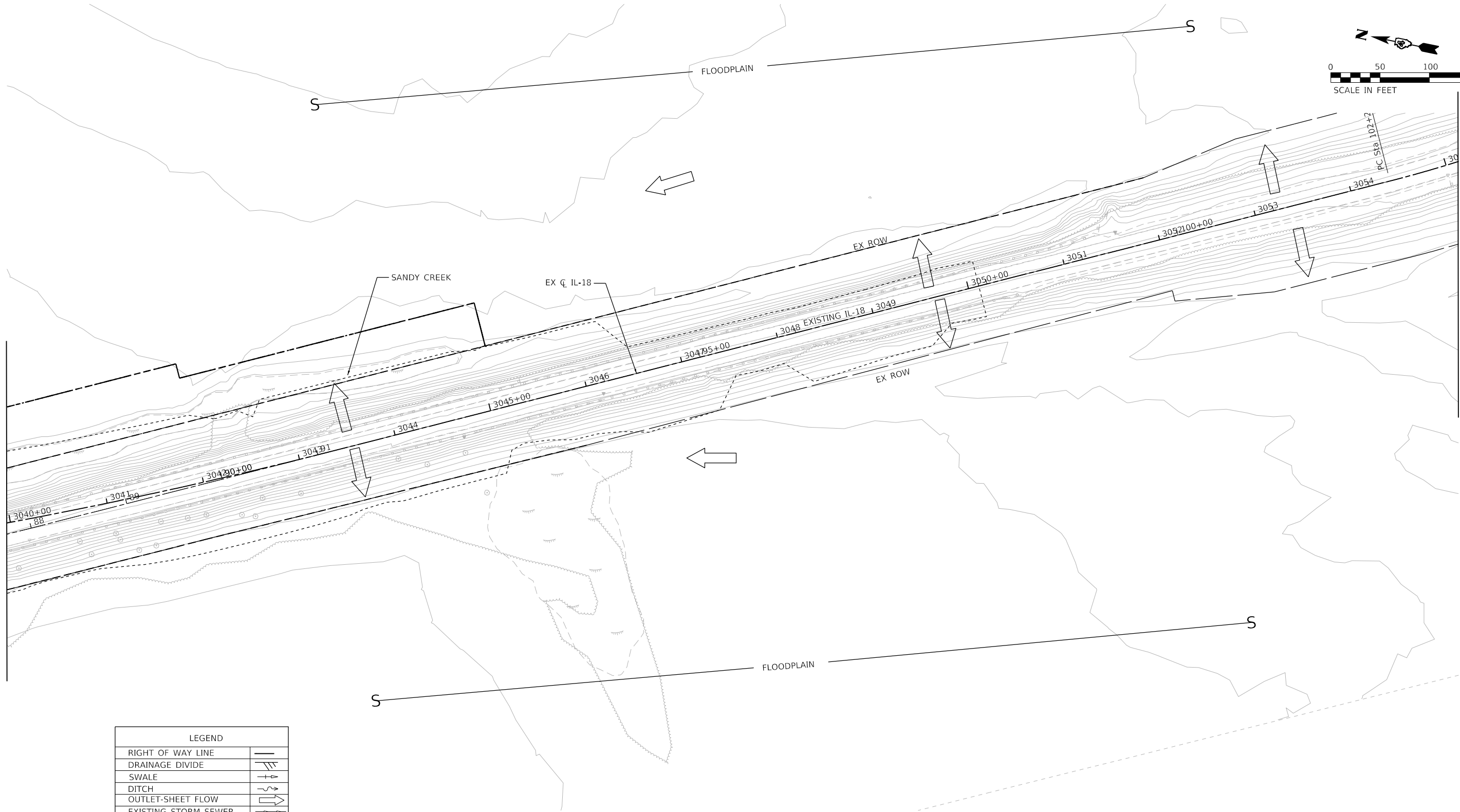
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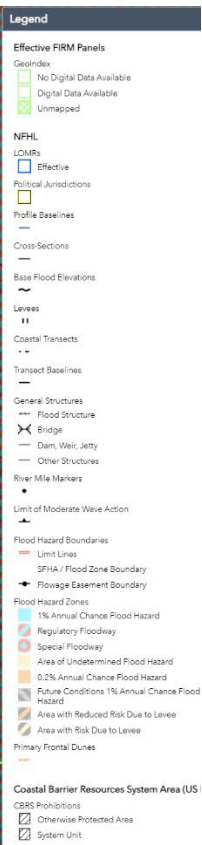
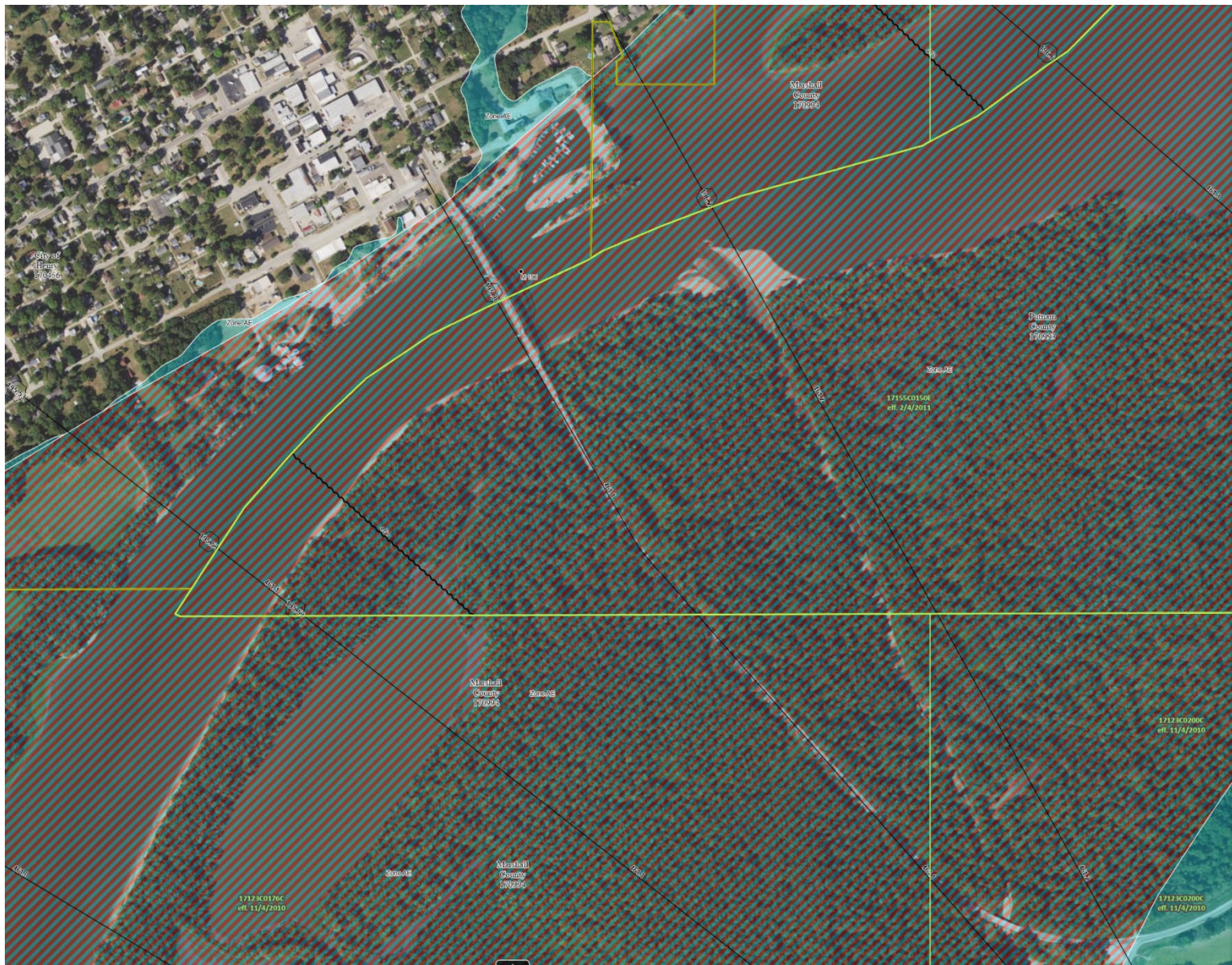
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MATCHLINE STA. 88+00

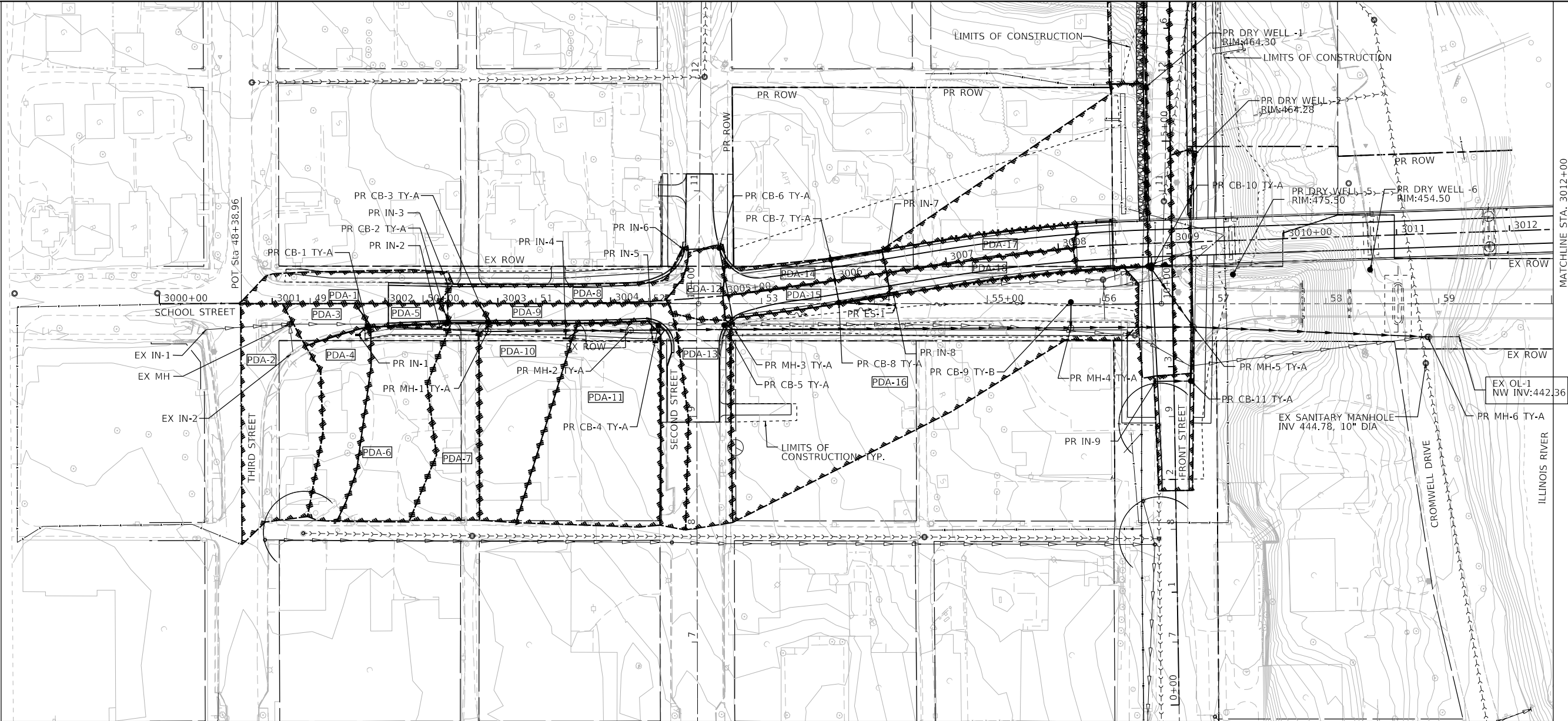


| LEGEND                  |  |
|-------------------------|--|
| RIGHT OF WAY LINE       |  |
| DRAINAGE DIVIDE         |  |
| SWALE                   |  |
| DITCH                   |  |
| OUTLET-SHEET FLOW       |  |
| EXISTING STORM SEWER    |  |
| EXISTING SENETARY SEWER |  |
| EXISTING WATER LINE     |  |
| EXISTING COUNTOUR       |  |



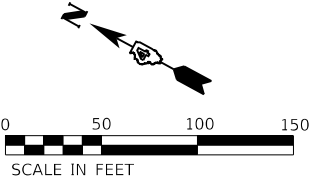






| LEGEND                  |     |
|-------------------------|-----|
| RIGHT OF WAY LINE       | --- |
| DRAINAGE DIVIDE         | /// |
| SWALE                   | + + |
| DITCH                   | - - |
| OUTLET-SHEET FLOW       | →   |
| EXISTING STORM SEWER    | —●— |
| EXISTING SANITARY SEWER | —○— |
| EXISTING WATER LINE     | —   |
| EXISTING COUNTOUR       | —   |
| PROPOSED MANHOLE        | ⊙   |
| PROPOSED CATCH BASIN    | ●   |
| PROPOSED INLET          | +   |
| PROPOSED STORM SEWER    | —●— |

| TRIBUTARY AREA | AREA(ACRE) |
|----------------|------------|
| PDA-1          | 0.11       |
| PDA-2          | 0.28       |
| PDA-3          | 0.04       |
| PDA-4          | 0.15       |
| PDA-5          | 0.03       |
| PDA-6          | 0.25       |
| PDA-7          | 0.01       |
| PDA-8          | 0.09       |
| PDA-9          | 0.15       |
| PDA-10         | 0.24       |
| PDA-11         | 0.42       |
| PDA-12         | 0.06       |
| PDA-13         | 0.17       |
| PDA-14         | 0.07       |
| PDA-15         | 0.07       |
| PDA-16         | 0.94       |
| PDA-17         | 0.08       |
| PDA-18         | 0.08       |



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|                                                                                                                                                                                                                                                              |                                |                   |           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------|-----------|
|  <b>INFRASTRUCTURE<br/>ENGINEERING</b>   INCORPORATED<br>456 Fulton Street   Suite 265   Peoria, IL 61602<br>P 309.537.3000   F 309.637.8210   www.infrastructure-eng.com | USER NAME = RDabbasuti         | DESIGNED - RB     | REVISED - |
|                                                                                                                                                                                                                                                              | PLOT SCALE = 100.000004" / in. | DRAWN - RD        | REVISED - |
|                                                                                                                                                                                                                                                              | PLOT DATE = 3/19/2025          | CHECKED - RB      | REVISED - |
|                                                                                                                                                                                                                                                              |                                | DATE - 03/18/2025 | REVISED - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

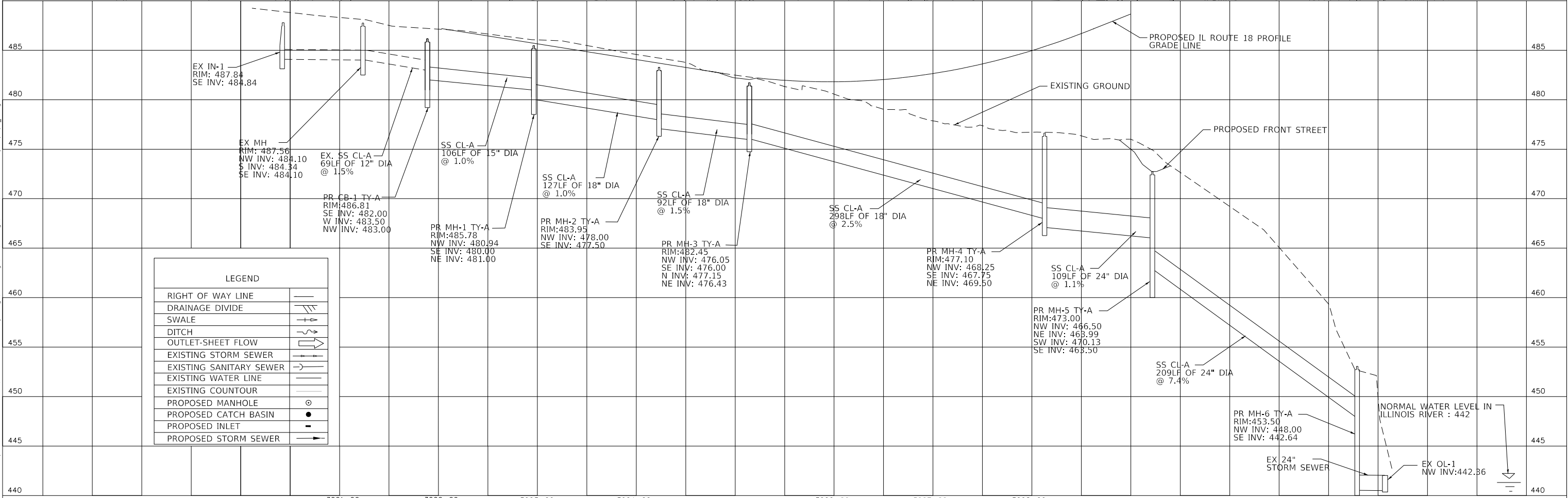
| DRAINAGE AREAS<br>BEGIN TO STA. 3012+00.00 |                     |      |         |
|--------------------------------------------|---------------------|------|---------|
| SCALE: 1"=50'                              | SHEET 1 OF 1 SHEETS | STA. | TO STA. |

| F&P<br>RTE.        | SECTION   | COUNTY               | TOTAL<br>SHEETS | SHEET<br>NO. |
|--------------------|-----------|----------------------|-----------------|--------------|
| 653                | 1048-D-BR | MARSHALL &<br>PUTNAM | 10              | 04           |
| CONTRACT NO. 68F09 |           |                      |                 |              |
| ILLINOIS           |           | FED. AID PROJECT     | N/A             |              |

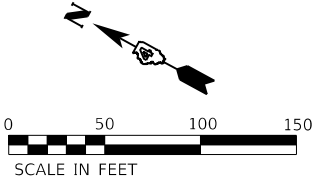
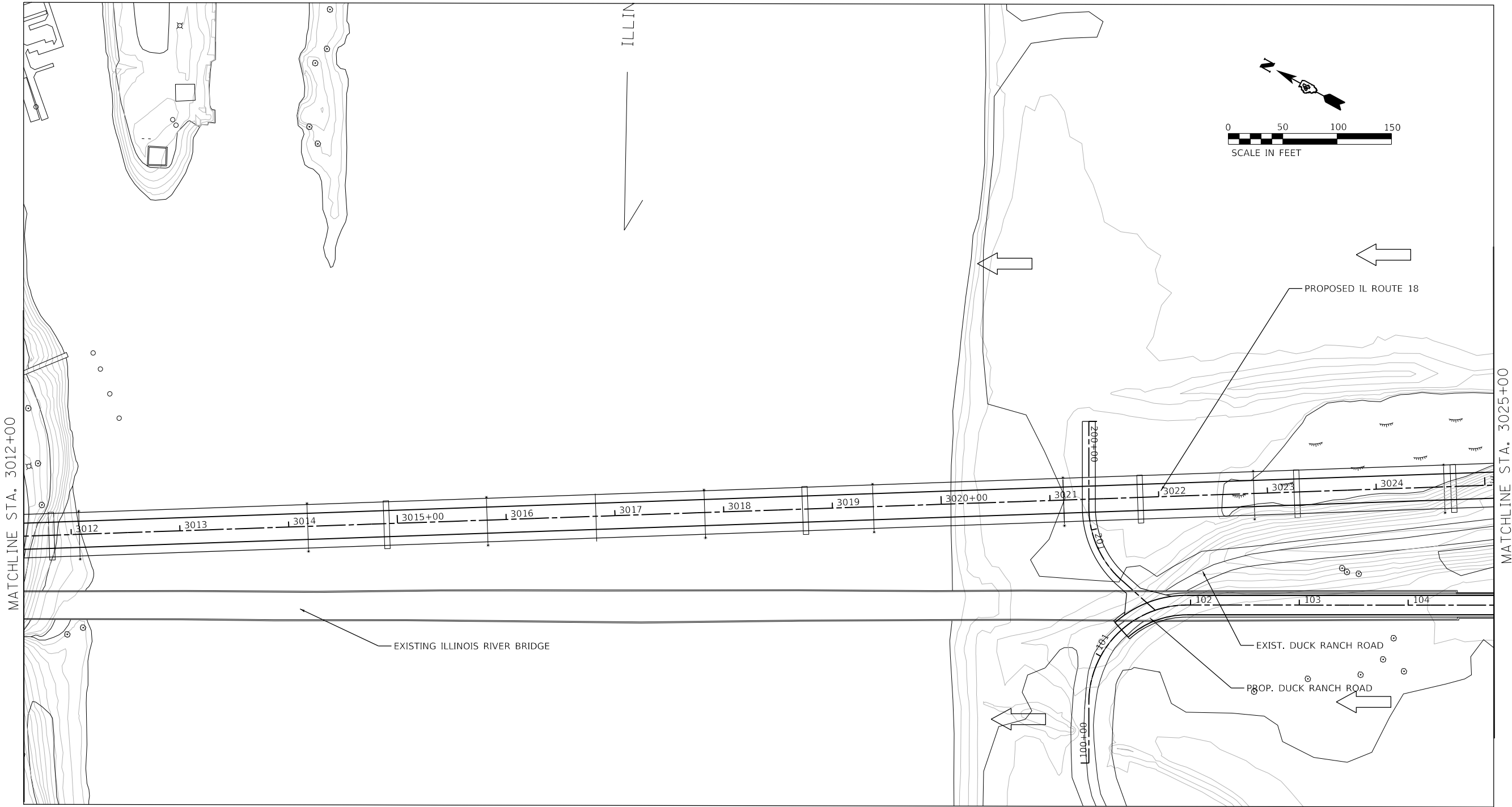
| PLAN      | BY                       |  | DATE |
|-----------|--------------------------|--|------|
|           |                          |  |      |
| NOTE BOOK | SURVEYED _____           |  |      |
|           | PLOTTED _____            |  |      |
|           | ALIGNMENT CHECKED _____  |  |  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

| PROFILE   |                             | BY | DATE |
|-----------|-----------------------------|----|------|
| NOTE BOOK | SURVEYED                    |    |      |
|           | PLOTTED                     |    |      |
|           | GRADES CHECKED              |    |      |
|           | R.M. NOTED                  |    |      |
|           | STRUCTURE NOTATIONS CHECKED |    |      |
| NO.       |                             |    |      |

Detail FILE NAME: tw:\VIA\IAD\1PW\INTD\1persons.com\Illinois State Documents\IL18 Henry Bridge\40 - Design\CAD\Drainage\Sheets\4007020-Sub-Prop\DrainProf\_01.dgn



|                                                                                     |                                                                                                                                                                 |                                |                   |           |                                                   |         |         |         |         |                                              |         |         |         |         |                     |           |                      |                           |              |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------|-----------|---------------------------------------------------|---------|---------|---------|---------|----------------------------------------------|---------|---------|---------|---------|---------------------|-----------|----------------------|---------------------------|--------------|
|                                                                                     |                                                                                                                                                                 | 3000+00                        | 3001+00           | 3002+00   | 3003+00                                           | 3004+00 | 3005+00 | 3006+00 | 3007+00 | 3008+00                                      | 3009+00 | 3010+00 | 3011+00 | 3012+00 |                     |           |                      |                           |              |
|  | INFRASTRUCTURE<br>ENGINEERING, INCORPORATED<br>456 Fulton Street   Suite 265   Peoria, IL 61602<br>P 309.637.5010   F 309.637.9210   www.infrastructure-eng.com | USER NAME = RDabbakuti         | DESIGNED , RB     | REVISED , | STATE OF ILLINOIS<br>DEPARTMENT OF TRANSPORTATION |         |         |         |         | PLAN AND PROFILE<br>BEGIN TO STA. 3012+00.00 |         |         |         |         | F.A.P.<br>RTE.      | SECTION   | COUNTY               | TOTAL<br>SHEETS           | SHEET<br>NO. |
|                                                                                     |                                                                                                                                                                 |                                | DRAWN , RD        | REVISED , |                                                   |         |         |         |         |                                              |         |         |         |         | 653                 | 1048-D-BR | MARSHALL &<br>PUTNAM | 10                        | 05           |
|                                                                                     |                                                                                                                                                                 | PLOT SCALE = 100.000000' / in. | CHECKED , RB      | REVISED , |                                                   |         |         |         |         |                                              |         |         |         |         | CONTRACT NO. 68F09  |           |                      |                           |              |
|                                                                                     |                                                                                                                                                                 | PLOT DATE = 3/19/2025          | DATE , 03/18/2025 | REVISED , |                                                   |         |         |         |         | SCALE: 1" = 50'                              |         |         |         |         | SHEET 1 OF 1 SHEETS | STA.      | TO STA.              | ILLINOIS FED. AID PROJECT |              |



| LEGEND                  |  |
|-------------------------|--|
| RIGHT OF WAY LINE       |  |
| DRAINAGE DIVIDE         |  |
| SWALE                   |  |
| DITCH                   |  |
| OUTLET-SHEET FLOW       |  |
| EXISTING STORM SEWER    |  |
| EXISTING SANITARY SEWER |  |
| EXISTING WATER LINE     |  |
| EXISTING COUNTOUR       |  |
| PROPOSED MANHOLE        |  |
| PROPOSED CATCH BASIN    |  |
| PROPOSED INLET          |  |
| PROPOSED STORM SEWER    |  |



INFRASTRUCTURE

ENGINEERING | INCORPORATED

456 Fulton Street | Suite 265 | Peoria, IL 61602

P 309.537.3000 | F 309.637.8210 | [www.infrastructure-eng.com](http://www.infrastructure-eng.com)

USER NAME

= RDabbasuti

DESIGNED - RB

REVISED -

DRAWN - RD

REVISED -

CHECKED - RB

REVISED -

DATE - 03/18/2025

REVISED -

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

PROPOSED DRAINAGE PLAN

SCALE: 1"=50'

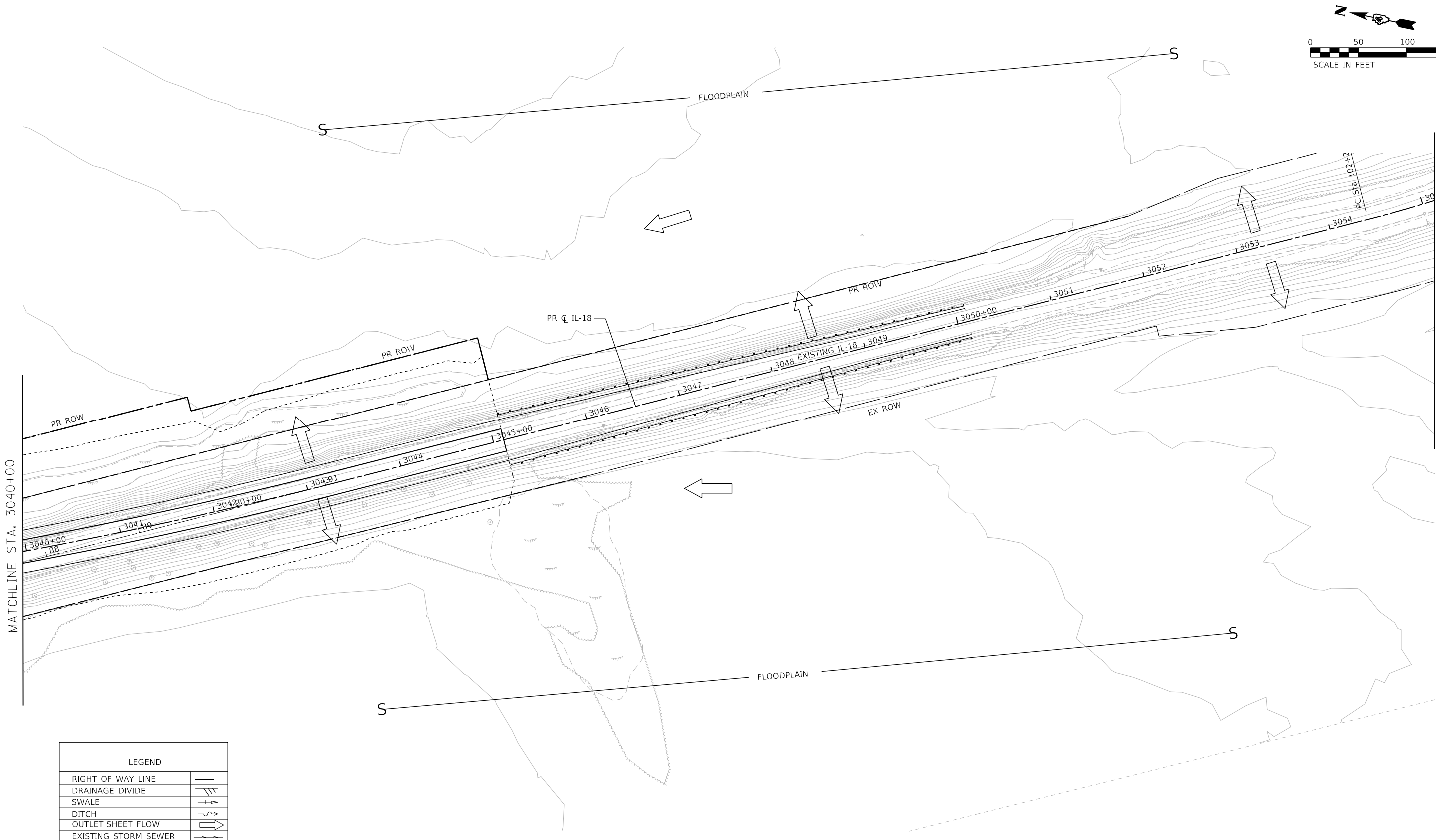
SHEET 1 OF 3 SHEETS

STA. TO STA.

|                    |           |                   |              |           |
|--------------------|-----------|-------------------|--------------|-----------|
| F.A.P. RTE.        | SECTION   | COUNTY            | TOTAL SHEETS | SHEET NO. |
| 653                | 1048-D-BR | MARSHALL & PUTNAM | 10           | 06        |
| CONTRACT NO. 68F09 |           |                   |              |           |
| ILLINOIS           |           | FED. AID PROJECT  | N/A          |           |

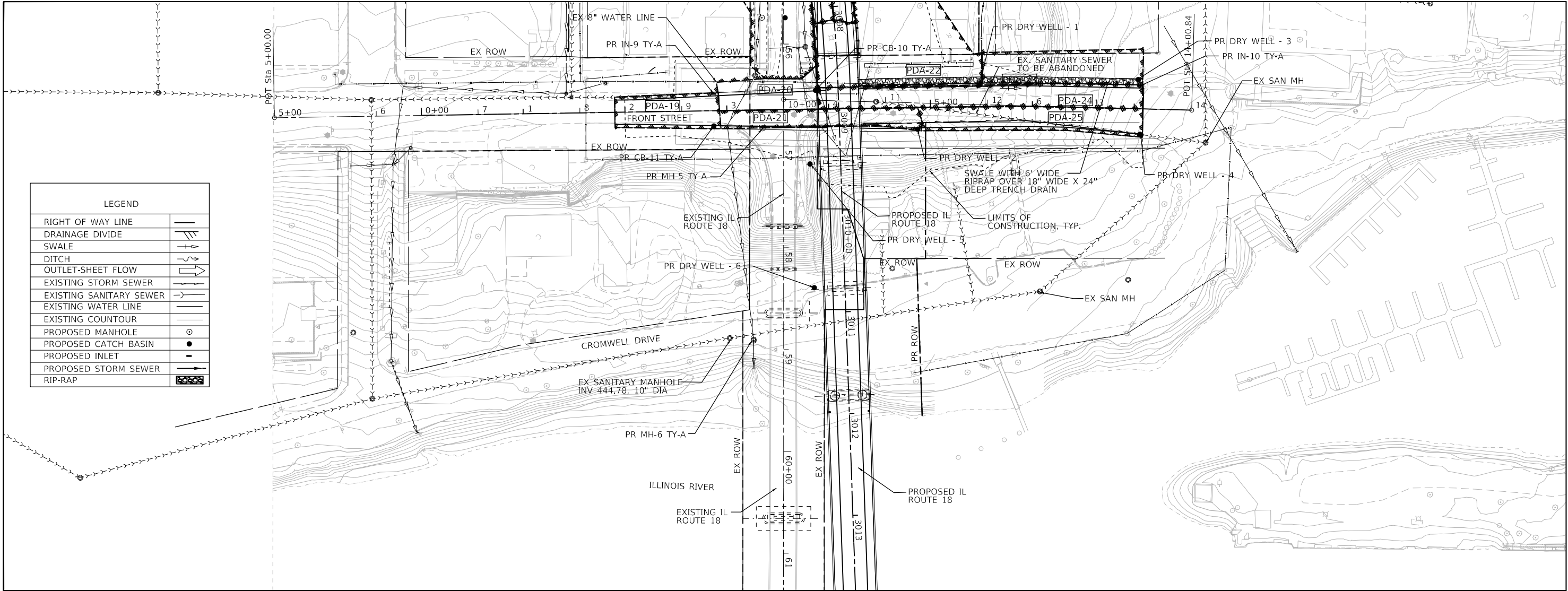
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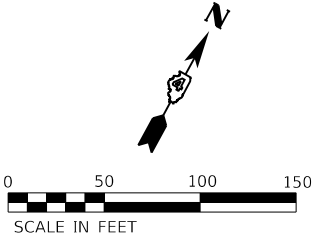


|                                                                                                                                                                                                                                                                                                                                     |                               |                   |           |                                                                             |                                          |         |      |        |      |               |           |                      |                 |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------|-----------|-----------------------------------------------------------------------------|------------------------------------------|---------|------|--------|------|---------------|-----------|----------------------|-----------------|--------------|
| <div></div> <div><b>INFRASTRUCTURE<br/>ENGINEERING</b> INCORPORATED<br/>456 Fulton Street   Suite 2651   Peoria, IL 61602<br/>P 309.637-3200   F 309.637-9210   <a href="http://www.infrastructure-eng.com">www.infrastructure-eng.com</a></div> | USER NAME = RDabbasruti       | DESIGNED - RB     | REVISED - | <div><b>STATE OF ILLINOIS</b><br/><b>DEPARTMENT OF TRANSPORTATION</b></div> | <div><b>PROPOSED DRAINAGE PLAN</b></div> |         |      |        |      | F.A.P<br>RTE. | SECTION   | COUNTY               | TOTAL<br>SHEETS | SHEET<br>NO. |
|                                                                                                                                                                                                                                                                                                                                     | PLOT SCALE = 100.000000 "/in. | DRAWN - RD        | REVISED - |                                                                             |                                          |         |      |        |      | 653           | 1048-D-BR | MARSHALL &<br>PUTNAM | 10              | 08           |
|                                                                                                                                                                                                                                                                                                                                     | PLOT DATE = 3/19/2025         | CHECKED - RB      | REVISED - |                                                                             | CONTRACT NO. 68F09                       |         |      |        |      |               |           |                      |                 |              |
|                                                                                                                                                                                                                                                                                                                                     | PLOT DATE = 03/18/2025        | DATE - 03/18/2025 | REVISED - |                                                                             | ILLINOIS FED. AID PROJECT N/A            |         |      |        |      |               |           |                      |                 |              |
|                                                                                                                                                                                                                                                                                                                                     |                               |                   |           |                                                                             | SCALE: 1"=50'                            | SHEET 3 | OF 3 | SHEETS | STA. | TO STA.       |           |                      |                 |              |
|                                                                                                                                                                                                                                                                                                                                     |                               |                   |           |                                                                             |                                          |         |      |        |      |               |           |                      |                 |              |

MATCH LINE STA: 3008+00 SHEET-5



| TRIBUTARY AREA | AREA(ACRE) |
|----------------|------------|
| PDA-19         | 0.06       |
| PDA-20         | 0.07       |
| PDA-21         | 0.06       |
| PDA-22         | 0.43       |
| PDA-23         | 0.14       |
| PDA-24         | 0.11       |
| PDA-25         | 0.08       |



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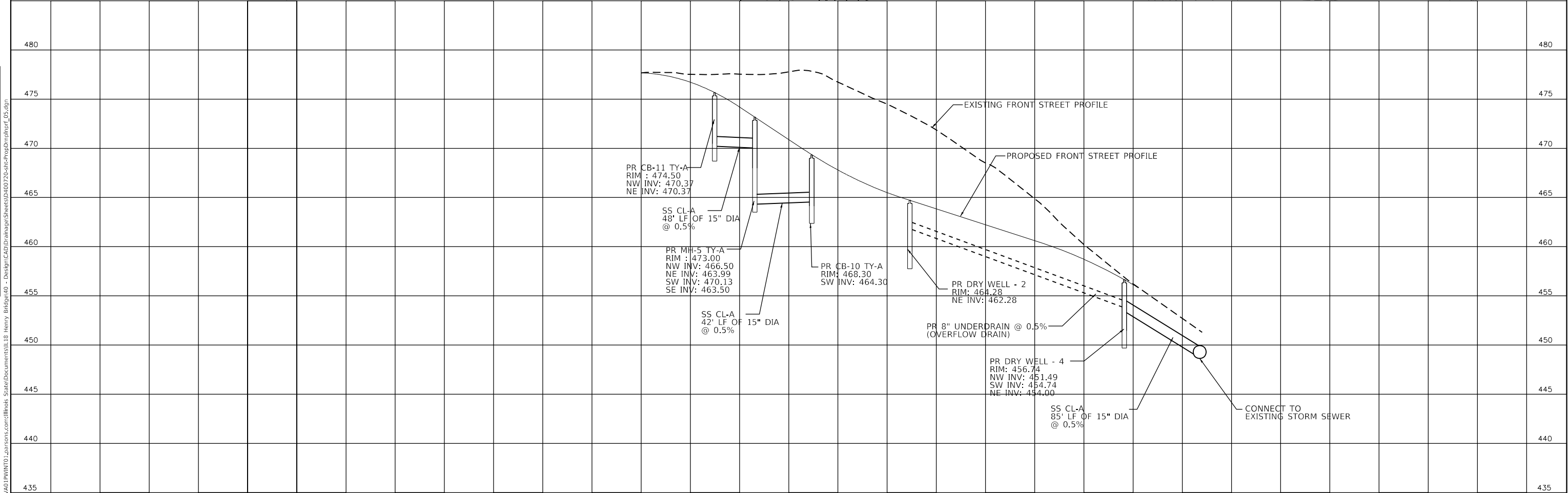
|                                                                                                                                                                                                                                                                                             |                                |                   |           |                                                                             |                                                          |      |        |      |                               |           |                   |              |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------|-----------|-----------------------------------------------------------------------------|----------------------------------------------------------|------|--------|------|-------------------------------|-----------|-------------------|--------------|-----------|
| <div></div> <div><b>INFRASTRUCTURE</b><br/><b>ENGINEERING</b>   INCORPORATED<br/>456 Fulton Street   Suite 265   Peoria, IL 61602<br/>P 309.637.3000   F 309.637.8110   www.infrastructure-eng.com</div> | USER NAME = RDabbasuti         | DESIGNED - RB     | REVISED - | <div><b>STATE OF ILLINOIS</b><br/><b>DEPARTMENT OF TRANSPORTATION</b></div> | <div><b>DRAINAGE AREAS</b><br/><b>FRONT STREET</b></div> |      |        |      | F&P RTE.                      | SECTION   | COUNTY            | TOTAL SHEETS | SHEET NO. |
|                                                                                                                                                                                                                                                                                             | PLOT SCALE = 100.000000' / in. | CHECKED - RB      | REVISED - |                                                                             |                                                          |      |        |      | 653                           | 1048-D-BR | MARSHALL & PUTNAM | 10           | 09        |
|                                                                                                                                                                                                                                                                                             | PLOT DATE = 3/19/2025          | DATE - 03/18/2025 | REVISED - |                                                                             |                                                          |      |        |      | CONTRACT NO. 68F09            |           |                   |              |           |
|                                                                                                                                                                                                                                                                                             |                                |                   |           |                                                                             |                                                          |      |        |      | ILLINOIS FED. AID PROJECT N/A |           |                   |              |           |
|                                                                                                                                                                                                                                                                                             | SCALE: 1"=50'                  |                   |           |                                                                             | SHEET 1                                                  | OF 1 | SHEETS | STA. | TO STA.                       |           |                   |              |           |



| PLAN      | SURVEYED<br>PLOTTED<br>ALIGNMENT CHECKED<br>CADD FILE NAME | BY | DATE |
|-----------|------------------------------------------------------------|----|------|
|           |                                                            |    |      |
| NOTE BOOK |                                                            |    |      |
| NO.       |                                                            |    |      |

| LEGEND                  |  |
|-------------------------|--|
| RIGHT OF WAY LINE       |  |
| DRAINAGE DIVIDE         |  |
| SWALE                   |  |
| DITCH                   |  |
| OUTLET-SHEET FLOW       |  |
| EXISTING STORM SEWER    |  |
| EXISTING SANITARY SEWER |  |
| EXISTING WATER LINE     |  |
| EXISTING COUNTOUR       |  |
| PROPOSED MANHOLE        |  |
| PROPOSED CATCH BASIN    |  |
| PROPOSED INLET          |  |
| PROPOSED STORM SEWER    |  |
| RIP-RAP                 |  |

| PROFILE   | SURVEYED<br>PLOTTED<br>GRADES CHECKED<br>STRUCTURE NOTATIONS CPWD | BY | DATE |
|-----------|-------------------------------------------------------------------|----|------|
|           |                                                                   |    |      |
| NOTE BOOK |                                                                   |    |      |
| NO.       |                                                                   |    |      |



**INFRASTRUCTURE ENGINEERING** INCORPORATED  
456 Fulton Street | Suite 265 | Peoria, IL 61602  
P 309.637.8210 | F 309.637.8210 | www.infrastructure-eng.com

|                                |                   |           |
|--------------------------------|-------------------|-----------|
| USER NAME = RDabbakuti         | DESIGNED , RB     | REVISED , |
|                                | DRAWN , RD        | REVISED , |
| PLOT SCALE = 100.000000' / in. | CHECKED , RB      | REVISED , |
| PLOT DATE = 3/19/2025          | DATE , 03/18/2025 | REVISED , |

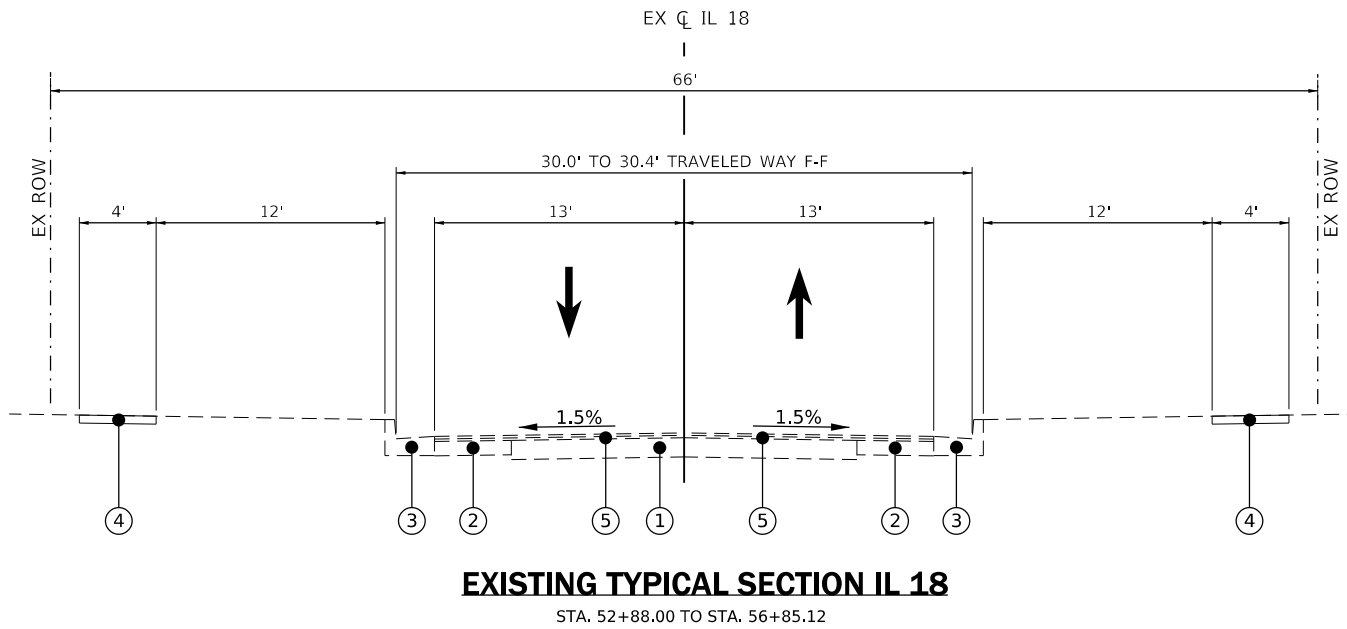
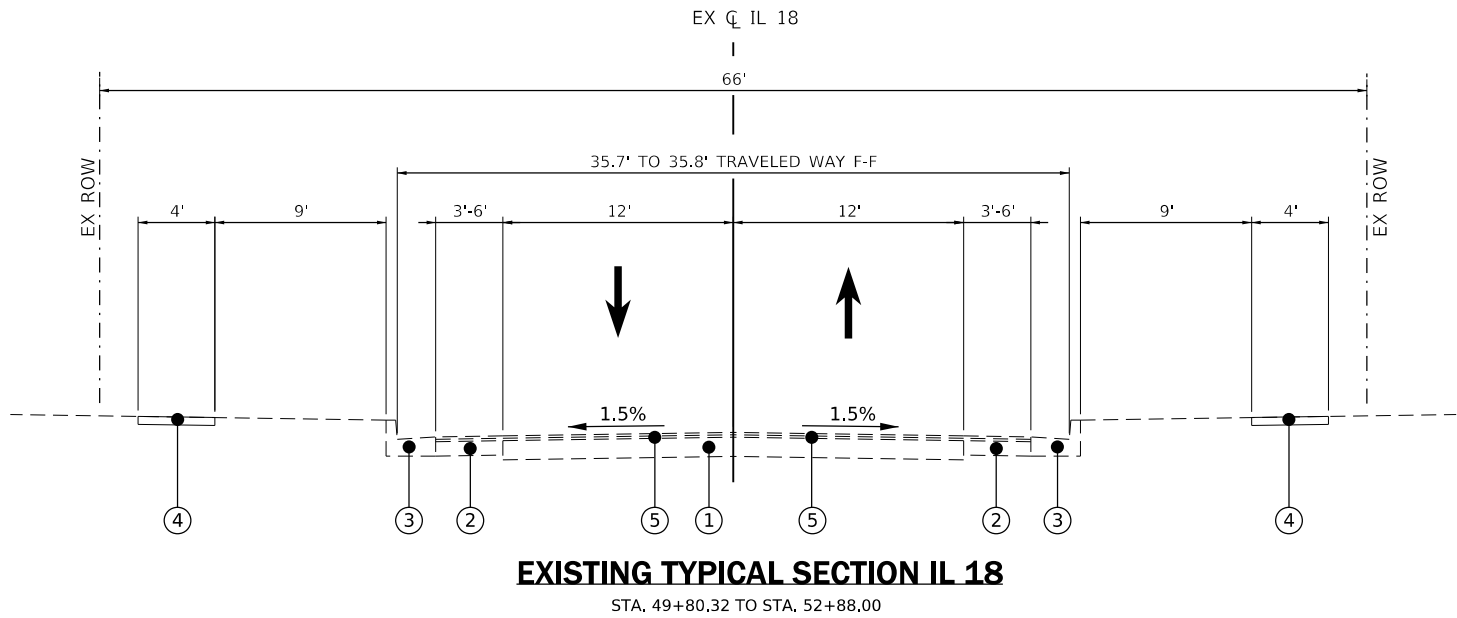
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PLAN AND PROFILE**  
**FRONT STREET**

SCALE: 1"=50'    SHEET 1 OF 1 SHEETS    STA.    TO STA.

|                    |                   |                          |                 |              |
|--------------------|-------------------|--------------------------|-----------------|--------------|
| F.A.P. RTE. 653    | SECTION 1048-D-BR | COUNTY MARSHALL & PUTNAM | TOTAL SHEETS 10 | SHEET NO. 10 |
| CONTRACT NO. 68F09 |                   |                          |                 |              |
| ILLINOIS           |                   | FED. AID PROJECT         |                 |              |

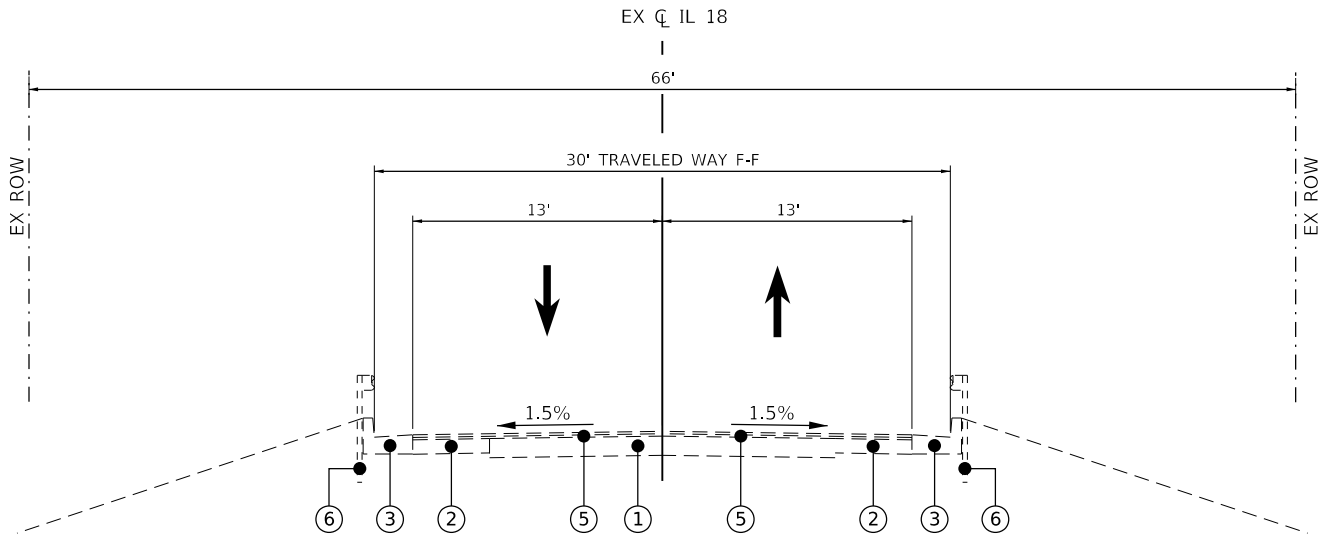
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**EXISTING LEGEND**

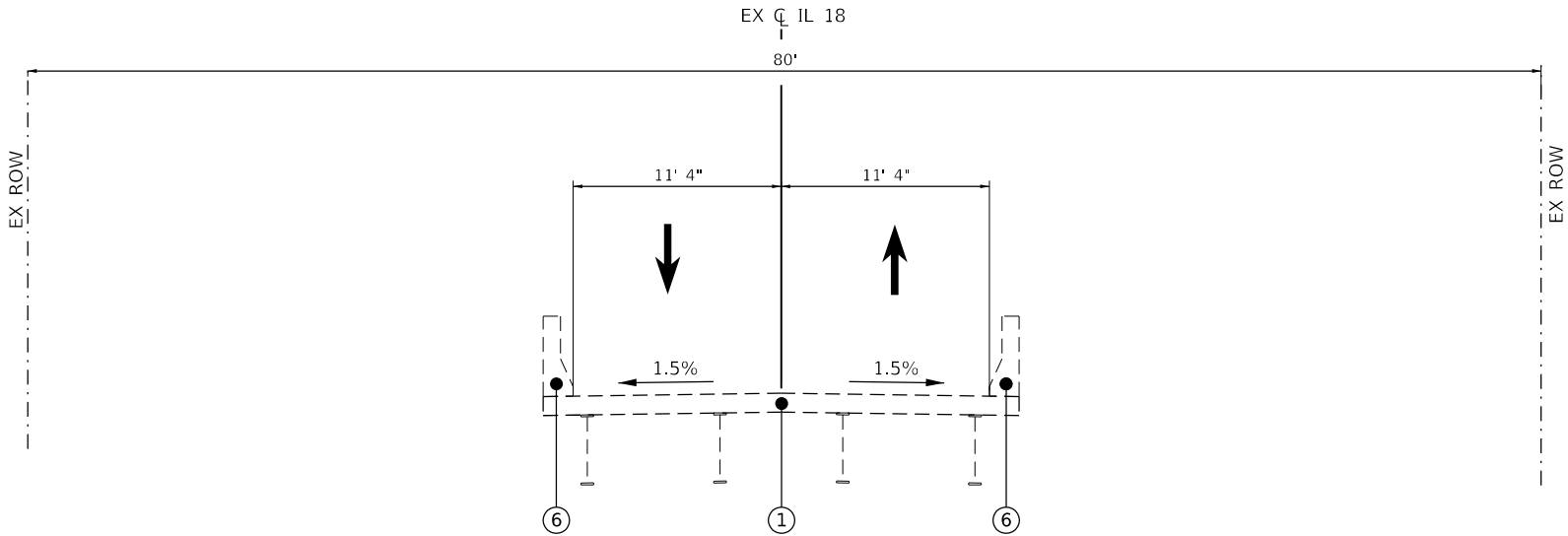
- ① EX PCC PAVEMENT, 12"
- ② EX BITUMINOUS BASE CSE, 9"
- ③ EX CC&G
- ④ EX PCC SIDEWALK
- ⑤ HMA PAVEMENT, 3.5"
- ⑥ EX GUARDRAIL
- ⑦ EX AGGREGATE SHOULDER

|  |                             |                 |           |                                                   |                                 |       |    |                    |           |                   |                           |           |
|--|-----------------------------|-----------------|-----------|---------------------------------------------------|---------------------------------|-------|----|--------------------|-----------|-------------------|---------------------------|-----------|
|  | USER NAME = RDabbasuti      | DESIGNED - AB   | REVISED - | STATE OF ILLINOIS<br>DEPARTMENT OF TRANSPORTATION | IL-18 EXISTING TYPICAL SECTIONS |       |    | F&P RTE.           | SECTION   | COUNTY            | TOTAL SHEETS              | SHEET NO. |
|  |                             | DRAWN - AB      | REVISED - |                                                   |                                 |       |    | 653                | 1048-D-BR | MARSHALL & PUTNAM | 10                        | 01        |
|  | PLOT SCALE = 10.0000" / in. | CHECKED - JAC   | REVISED - |                                                   |                                 |       |    | CONTRACT NO. 68F09 |           |                   |                           |           |
|  | PLOT DATE = 10/15/2024      | DATE - 10/10/24 | REVISED - |                                                   | SCALE:                          | SHEET | OF | SHEETS             | STA.      | TO STA.           | ILLINOIS FED. AID PROJECT |           |



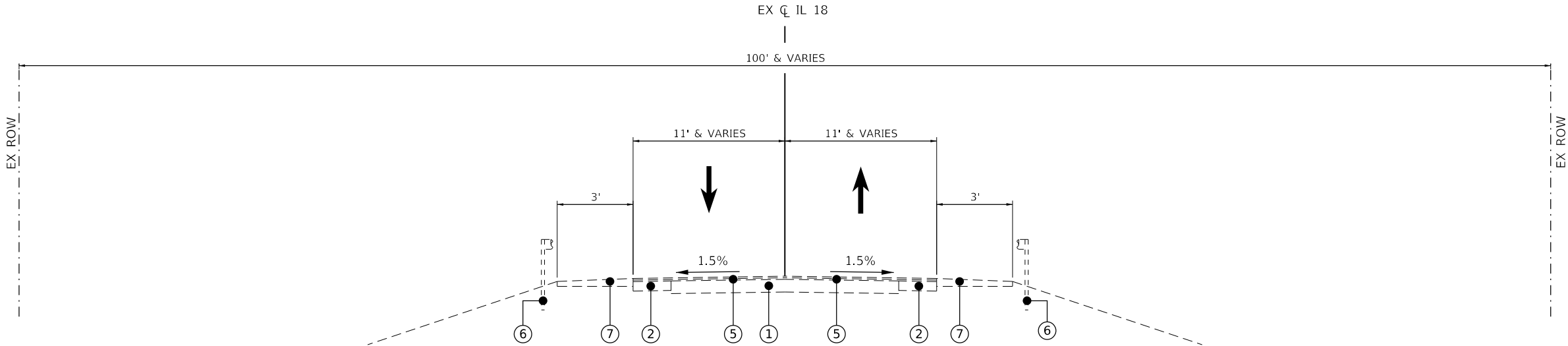
**EXISTING TYPICAL SECTION IL 18**

STA. 56+85.12 TO STA. 57+50.99



**EXISTING BRIDGE TYPICAL SECTION IL 18**

STA. 57+50.99 TO STA. 75+46.33



**EXISTING TYPICAL SECTION IL 18**

STA. 75+46.33 TO STA. 99+18.04

**EXISTING LEGEND**

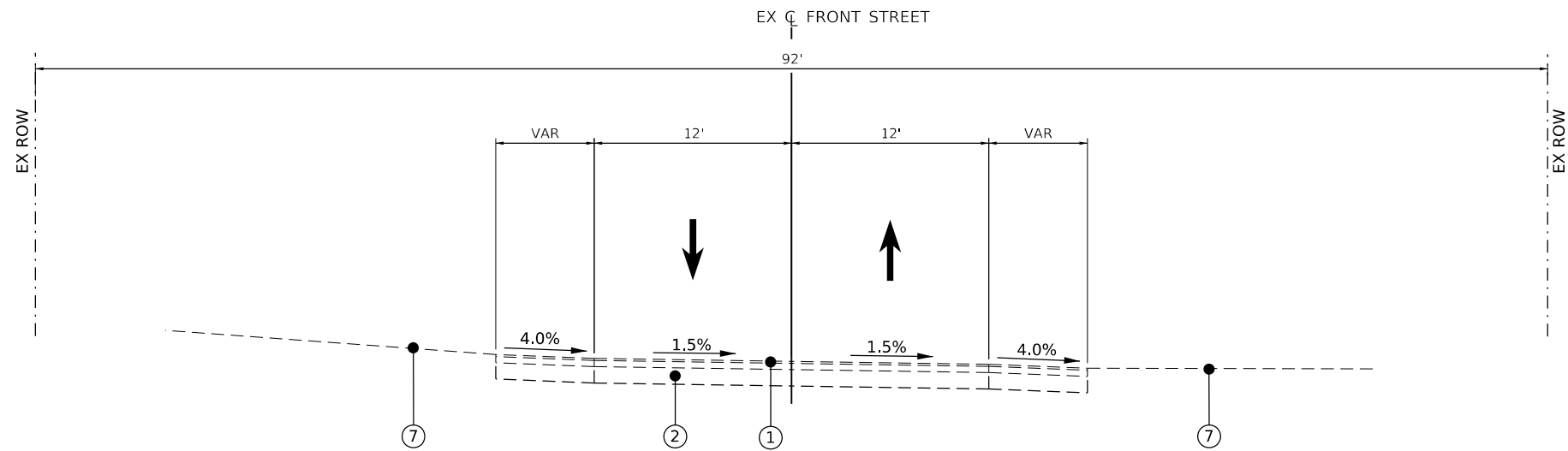
- ① EX PCC PAVEMENT, 12"
- ② EX BITUMINOUS BASE CSE, 9"
- ③ EX CC&G
- ④ EX PCC SIDEWALK
- ⑤ HMA PAVEMENT, 3.5"
- ⑥ EX GUARDRAIL
- ⑦ EX AGGREGATE SHOULDER

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

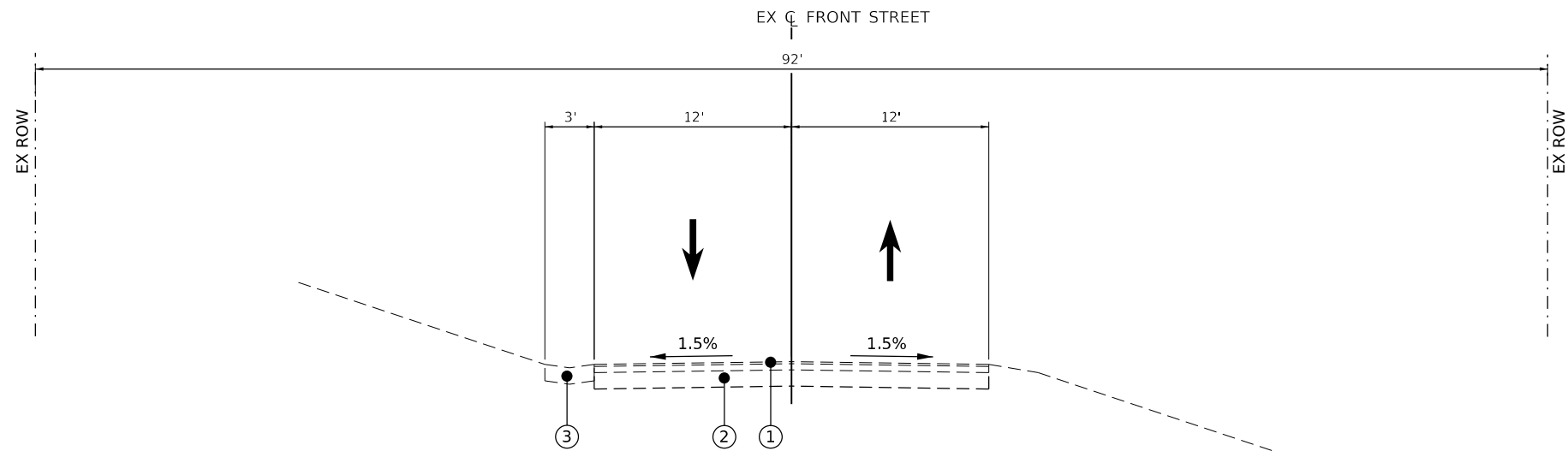
IL-18 EXISTING TYPICAL SECTIONS

SCALE: SHEET OF SHEETS STA. TO STA.

| F&P RTE.                  | SECTION   | COUNTY            | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|-------------------|--------------|-----------|
| 653                       | 1048-D-BR | MARSHALL & PUTNAM | 10           | 02        |
| CONTRACT NO. 68F09        |           |                   |              |           |
| ILLINOIS FED. AID PROJECT |           |                   |              |           |



**EXISTING TYPICAL SECTION FRONT STREET**  
STA. 8+44.27 TO STA. 10+00.00



**EXISTING TYPICAL SECTION FRONT STREET**  
STA. 10+00.00 TO STA. 13+49.32

**EXISTING LEGEND**

- ① EX PCC PAVEMENT, 12"
- ② EX BITUMINOUS BASE CSE, 9"
- ③ EX CC&G
- ④ EX PCC SIDEWALK
- ⑤ HMA PAVEMENT, 3.5"
- ⑥ EX GUARDRAIL
- ⑦ EX AGGREGATE SHOULDER

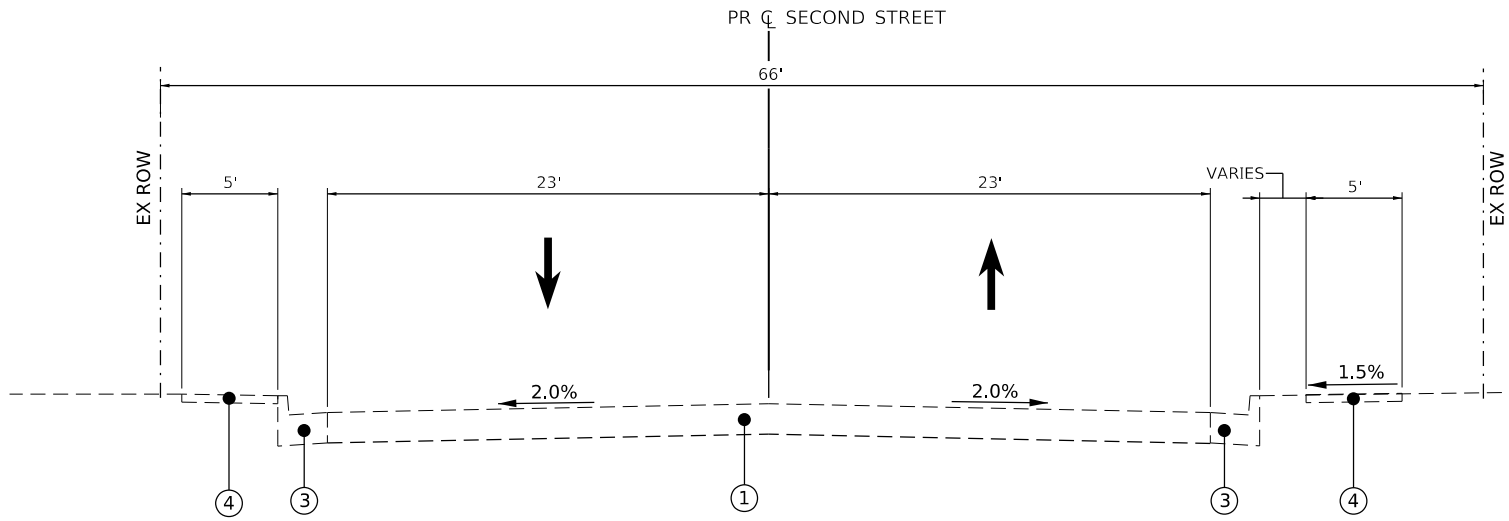
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|  |                             |                 |           |                                                   |                                       |       |    |        |                    |           |                           |                 |              |
|--|-----------------------------|-----------------|-----------|---------------------------------------------------|---------------------------------------|-------|----|--------|--------------------|-----------|---------------------------|-----------------|--------------|
|  | USER NAME = RDabbasuti      | DESIGNED - AB   | REVISED - | STATE OF ILLINOIS<br>DEPARTMENT OF TRANSPORTATION | FRONT STREET EXISTING TYPICAL SECTION |       |    |        | F&P<br>RTE.        | SECTION   | COUNTY                    | TOTAL<br>SHEETS | SHEET<br>NO. |
|  |                             | DRAWN - AB      | REVISED - |                                                   |                                       |       |    |        | 653                | 1048-D-BR | MARSHALL &<br>PUTNAM      | 10              | 03           |
|  | PLOT SCALE = 10.0000" / in. | CHECKED - JAC   | REVISED - |                                                   |                                       |       |    |        | CONTRACT NO. 68F09 |           |                           |                 |              |
|  | PLOT DATE = 10/15/2024      | DATE - 10/10/24 | REVISED - |                                                   | SCALE:                                | SHEET | OF | SHEETS | STA.               | TO STA.   | ILLINOIS FED. AID PROJECT |                 |              |

Default: FILE NAME: j:\wv\VAN\AD1\PW\NTD1\parsons.com\illinois - State\Documents\ILL18 Henry Bridge\40 - Design\CAD\Roadway\Sheets\400720-d-in-typical\_04.dgn

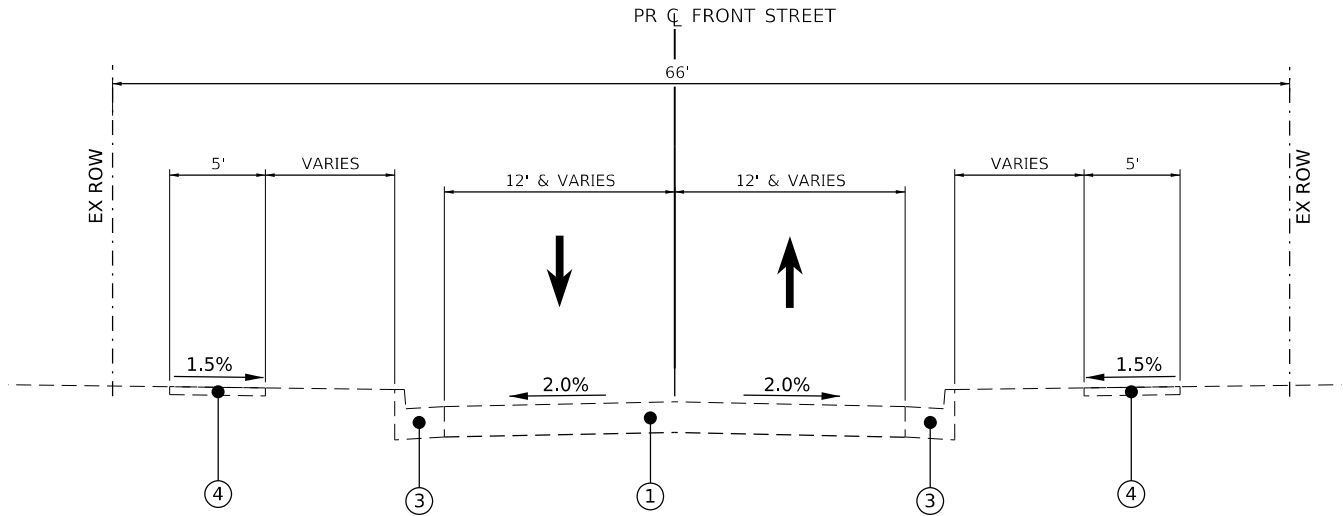
EXISTING LEGEND

- ① EX PCC PAVEMENT, 12"
- ② EX BITUMINOUS BASE CSE, 9"
- ③ EX CC&G
- ④ EX PCC SIDEWALK
- ⑤ HMA PAVEMENT, 3.5"
- ⑥ EX GUARDRAIL
- ⑦ EX AGGREGATE SHOULDER



EXISTING TYPICAL SECTION SECOND STREET

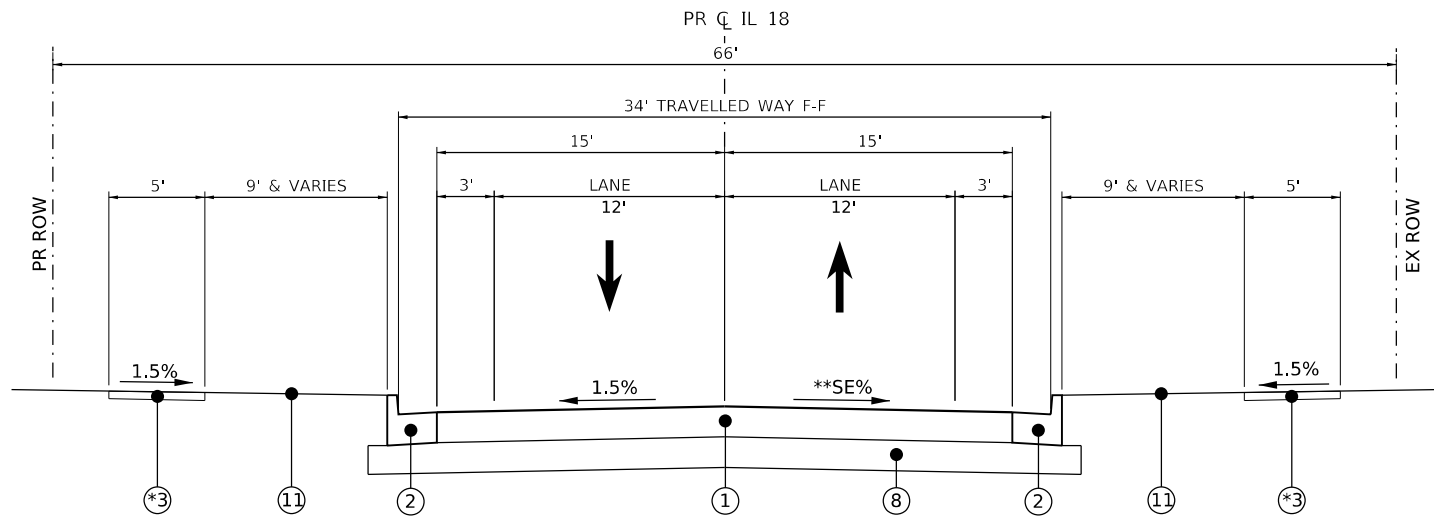
STA. 9+20.00 TO STA. 10+00.00



EXISTING TYPICAL SECTION SECOND STREET

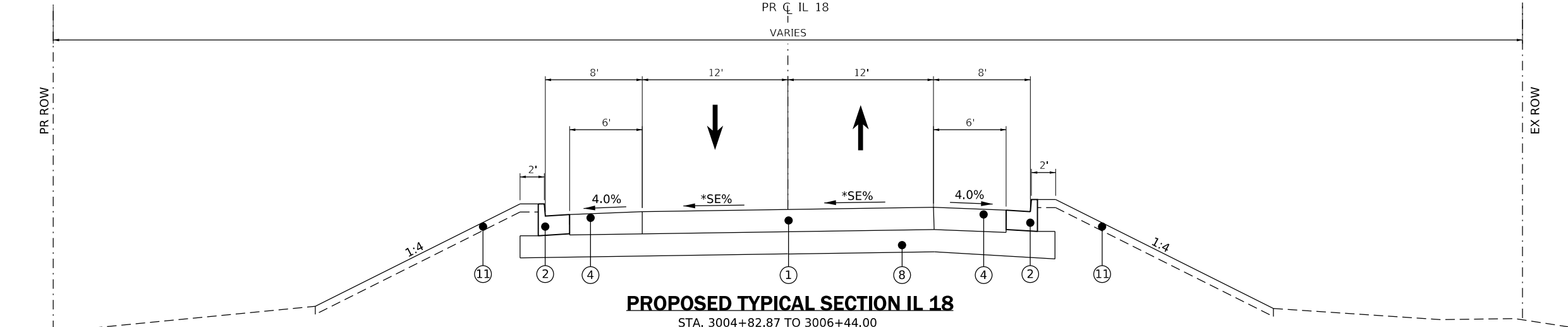
STA. 10+00.00 TO STA 11+00.00

|  |                             |            |           |                                                   |                                        |  |  |                           |           |                      |                 |              |
|--|-----------------------------|------------|-----------|---------------------------------------------------|----------------------------------------|--|--|---------------------------|-----------|----------------------|-----------------|--------------|
|  | USER NAME = RDabbasuti      | DESIGNED - | REVISED - | STATE OF ILLINOIS<br>DEPARTMENT OF TRANSPORTATION | SECOND STREET EXISTING TYPICAL SECTION |  |  | F.A.P.<br>RTE.            | SECTION   | COUNTY               | TOTAL<br>SHEETS | SHEET<br>NO. |
|  | PLOT SCALE = 10.0000" / in. | DRAWN -    | REVISED - |                                                   |                                        |  |  | 653                       | 1048-D-BR | MARSHALL &<br>PUTNAM | 10              | 04           |
|  | PLOT DATE = 10/15/2024      | CHECKED -  | REVISED - |                                                   | SCALE: SHEET OF SHEETS STA. TO STA.    |  |  | CONTRACT NO. 68F09        |           |                      |                 |              |
|  |                             | DATE -     | REVISED - |                                                   |                                        |  |  | ILLINOIS FED. AID PROJECT |           |                      |                 |              |



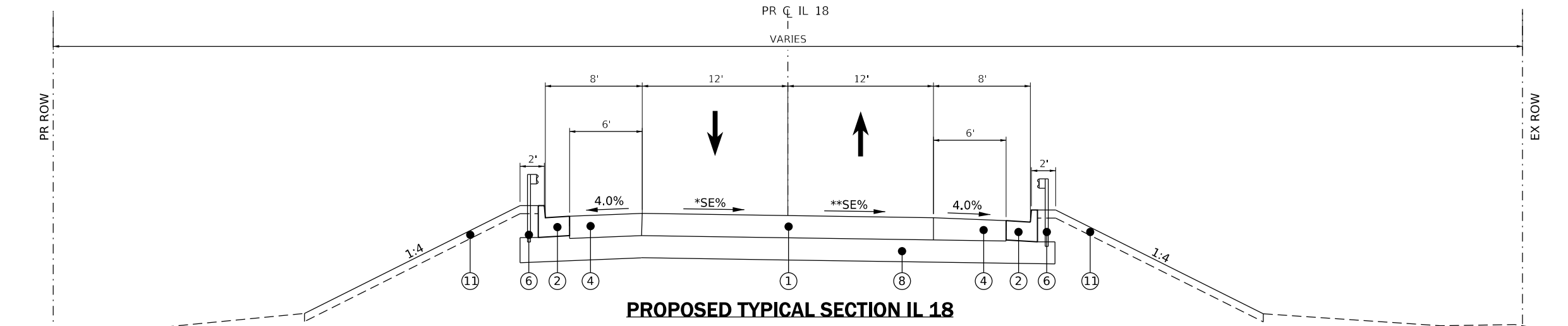
**PROPOSED TYPICAL SECTION IL 18**

STA. 3002+03.00 TO STA. 3004+82.87  
\*LT SIDEWALK BEGINS STA. 3001+12.24  
\*RT SIDEWALK BEGINS STA. 3001+82.32  
\*\*-1.5% TO 0% STA. 3002+71.00 TO STA. 3003+02.00  
\*\*0% TO 1.5% STA. 3003+02.00 TO STA. 3003+33.00



**PROPOSED TYPICAL SECTION IL 18**

STA. 3004+82.87 TO 3006+44.00  
\*-1.5% TO 0% STA. 3005+59.45 TO STA. 3006+44.00



**PROPOSED TYPICAL SECTION IL 18**

STA. 3006+44.00 TO 3008+15.99  
\*0% TO 4.0% STA. 3006+44.00 TO STA. 3007+33.00  
\*4.0% TO 0% STA. 3007+33.00 TO STA. 3008+51.00  
\*\*0% TO -4.0% STA. 3006+44.00 TO STA. 3007+33.00

**PROPOSED LEGEND**

- ① PR HMA PAVEMENT
- ② PR CC&G B-6.24
- ③ PR PCC SIDEWALK
- ④ PR HMA SHOULDER
- ⑤ PR AGG SHOULDER
- ⑥ PR GUARD RAIL
- ⑦ PR STABILIZED SUBBASE
- ⑧ PR AGG SUBBASE
- ⑨ PR STEEL BRIDGE STRUCTURE
- ⑩ PR CONCRETE BRIDGE PARAPET
- ⑪ PR TOPSOIL
- ⑫ PR GUTTER TYPE A
- ⑬ PR BRIDGE DECK

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|            |                  |          |            |         |   |
|------------|------------------|----------|------------|---------|---|
| USER NAME  | = RDabbasuti     | DESIGNED | - AB       | REVISED | - |
| DRAWN      | - AB             | CHECKED  | - JAC      | REVISED | - |
| PLOT SCALE | = 10.0000" / in. | DATE     | - 10/10/24 | REVISED | - |
| PLOT DATE  | = 10/15/2024     |          |            |         |   |

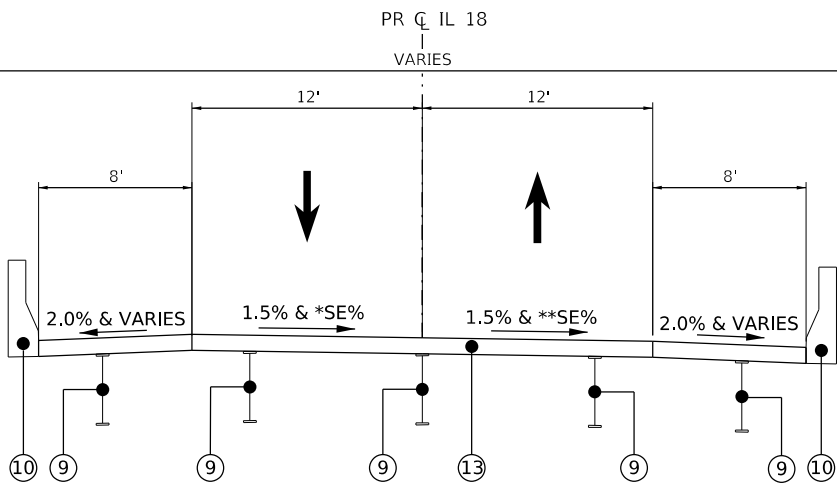
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

IL-18 PROPOSED TYPICAL SECTION

SCALE: SHEET OF SHEETS STA. TO STA.

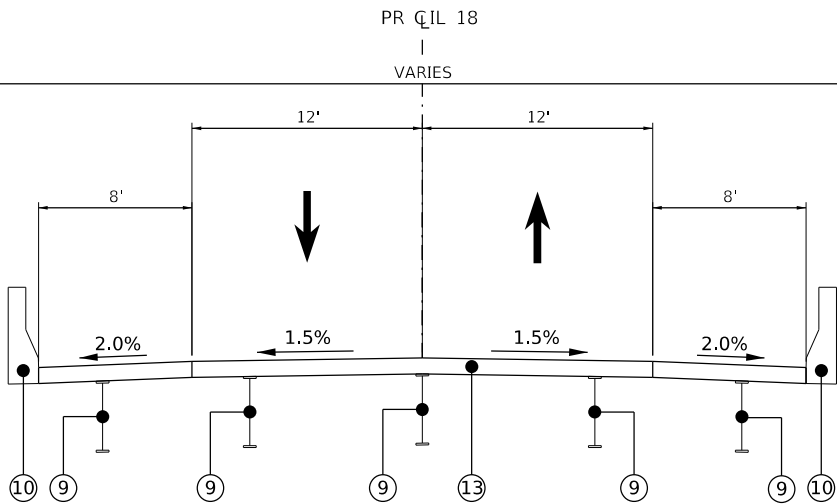
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|---------------------------|-----------|-------------------|--------------|-----------|
| F&P RTE.                  | SECTION   | COUNTY            | TOTAL SHEETS | SHEET NO. |
| 653                       | 1048-D-BR | MARSHALL & PUTNAM | 10           | 05        |
| CONTRACT NO. 68F09        |           |                   |              |           |
| ILLINOIS FED. AID PROJECT |           |                   |              |           |





**PROPOSED BRIDGE TYPICAL SECTION IL 18**

STA. 3008+15.99 TO STA. 3009+65.00  
APPROACH SLAB:  
STA. 3008+15.99 TO STA. 3008+52.51  
\*0% TO -1.5% STA. 3008+51.00 TO STA. 3009+65.00  
\*\*-4.0% TO -1.5% STA. 3008+51.00 TO STA. 3009+65.00



**PROPOSED BRIDGE TYPICAL SECTION IL 18**

STA. 3009+65.00 TO STA. 3030+81.00  
APPROACH SLAB:  
STA. 3027+44.50 TO STA. 3030+81.00

**PROPOSED LEGEND**

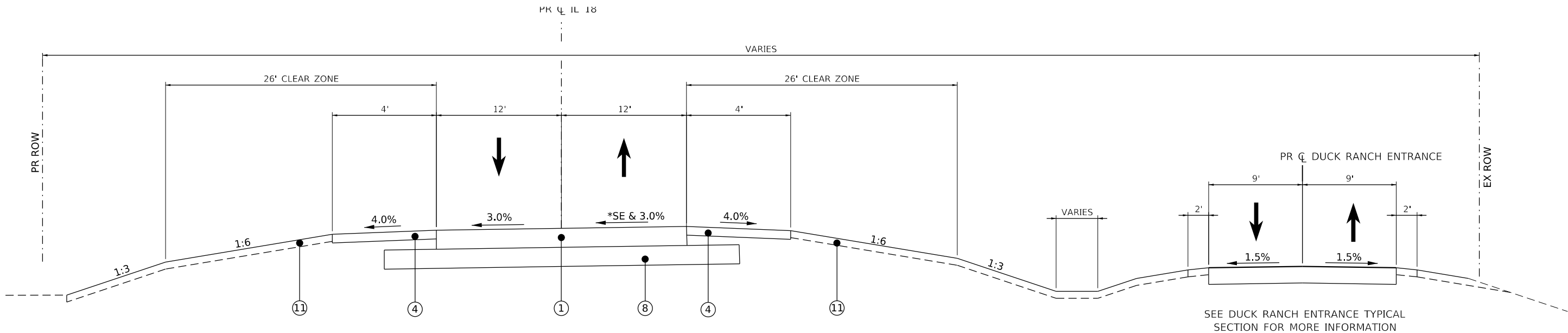
- ① PR HMA PAVEMENT
- ② PR CC&G B-6.24
- ③ PR PCC SIDEWALK
- ④ PR HMA SHOULDER
- ⑤ PR AGG SHOULDER
- ⑥ PR GUARD RAIL
- ⑦ PR STABLIZED SUBBASE
- ⑧ PR AGG SUBBASE
- ⑨ PR STEEL BRIDGE STRUCTURE
- ⑩ PR CONCRETE BRIDGE PARAPET
- ⑪ PR TOPSOIL
- ⑫ PR GUTTER TYPE A
- ⑬ PR BRIDGE DECK

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|  |                             |                 |           |                                                   |                                 |       |    |                    |           |                      |                           |              |
|--|-----------------------------|-----------------|-----------|---------------------------------------------------|---------------------------------|-------|----|--------------------|-----------|----------------------|---------------------------|--------------|
|  | USER NAME = RDabbahuti      | DESIGNED - AB   | REVISED - | STATE OF ILLINOIS<br>DEPARTMENT OF TRANSPORTATION | IL-18 PROPOSED TYPICAL SECTIONS |       |    | F&P<br>RTE.        | SECTION   | COUNTY               | TOTAL<br>SHEETS           | SHEET<br>NO. |
|  |                             | DRAWN - AB      | REVISED - |                                                   |                                 |       |    | 653                | 1048-D-BR | MARSHALL &<br>PUTNAM | 10                        | 06           |
|  | PLOT SCALE = 10.0000" / in. | CHECKED - JAC   | REVISED - |                                                   |                                 |       |    | CONTRACT NO. 68F09 |           |                      |                           |              |
|  | PLOT DATE = 10/15/2024      | DATE - 10/10/24 | REVISED - |                                                   | SCALE:                          | SHEET | OF | SHEETS             | STA.      | TO STA.              | ILLINOIS FED. AID PROJECT |              |



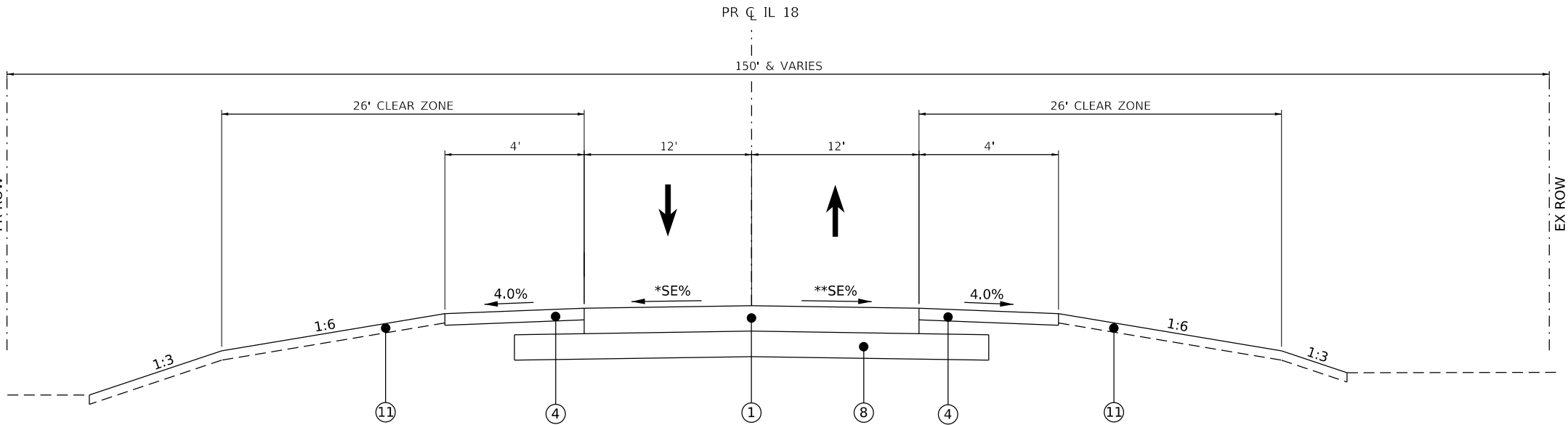




**PROPOSED TYPICAL SECTION IL 18**

STA. 3032+06.59 TO STA. 3036+00.00  
\*1.5% TO 3.0% STA. 3031+92.00 TO STA. 3032+32.00

SEE DUCK RANCH ENTRANCE TYPICAL SECTION FOR MORE INFORMATION



**PROPOSED TYPICAL SECTION IL 18**

STA. 3036+00.00 TO STA. 3045+10.88  
\*-3.0% TO 1.5% STA. 3043+11.00 TO STA. 3044+31.00  
\*\*-3.0% TO 0% STA. 3043+00.00 TO STA. 3043+91.00  
\*\*0% TO -1.5% STA. 3043+91.00 TO STA. 3044+31.00

**PROPOSED LEGEND**

- ① PR HMA PAVEMENT
- ② PR CC&G B-6.24
- ③ PR PCC SIDEWALK
- ④ PR HMA SHOULDER
- ⑤ PR AGG SHOULDER
- ⑥ PR GUARD RAIL
- ⑦ PR STABLIZED SUBBASE
- ⑧ PR AGG SUBBASE
- ⑨ PR STEEL BRIDGE STRUCTURE
- ⑩ PR CONCRETE BRIDGE PARAPET
- ⑪ PR TOPSOIL
- ⑫ PR GUTTER TYPE A
- ⑬ PR BRIDGE DECK

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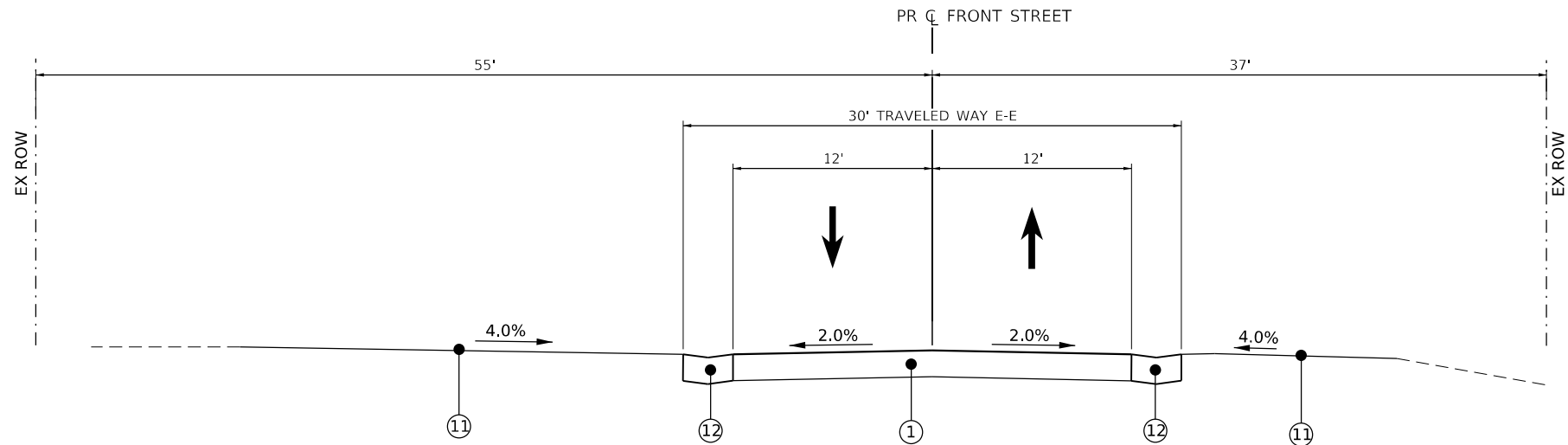
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| USER NAME  | = RDabbasuti     | DESIGNED | - AB       | REVISED | - |
|            |                  | DRAWN    | - AB       | REVISED | - |
| PLOT SCALE | = 10.0000" / in. | CHECKED  | - JAC      | REVISED | - |
| PLOT DATE  | = 10/15/2024     | DATE     | - 10/10/24 | REVISED | - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

IL-18 PROPOSED TYPICAL SECTION

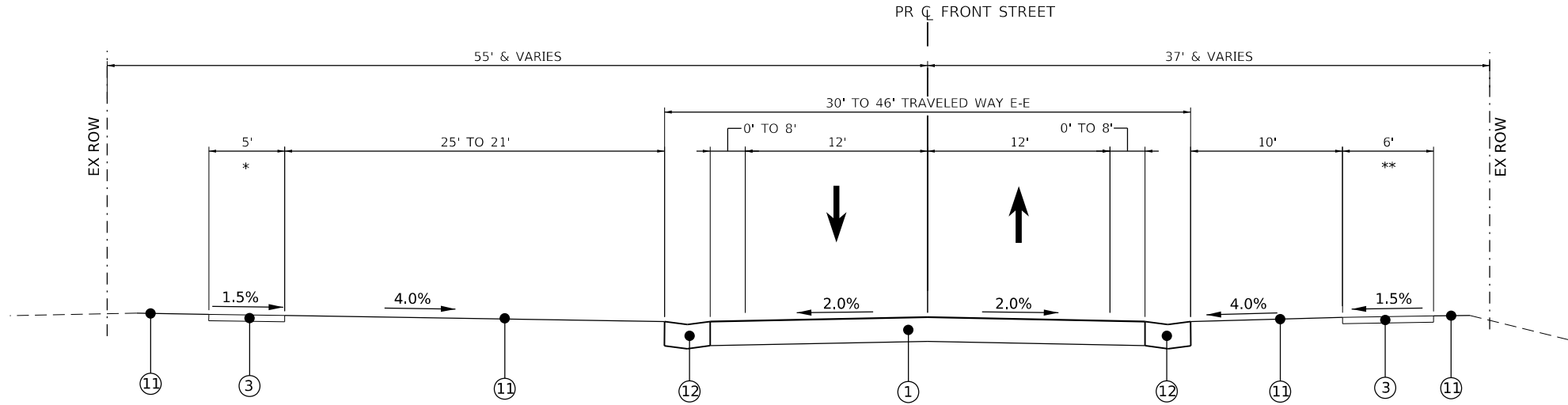
SCALE: SHEET OF SHEETS STA. TO STA.

|                           |           |                   |              |           |
|---------------------------|-----------|-------------------|--------------|-----------|
| F&P RTE.                  | SECTION   | COUNTY            | TOTAL SHEETS | SHEET NO. |
| 653                       | 1048-D-BR | MARSHALL & PUTNAM | 10           | 08        |
| CONTRACT NO. 68F09        |           |                   |              |           |
| ILLINOIS FED. AID PROJECT |           |                   |              |           |



**PROPOSED TYPICAL SECTION FRONT STREET**

STA. 1+90.00 TO STA. 2+10.00

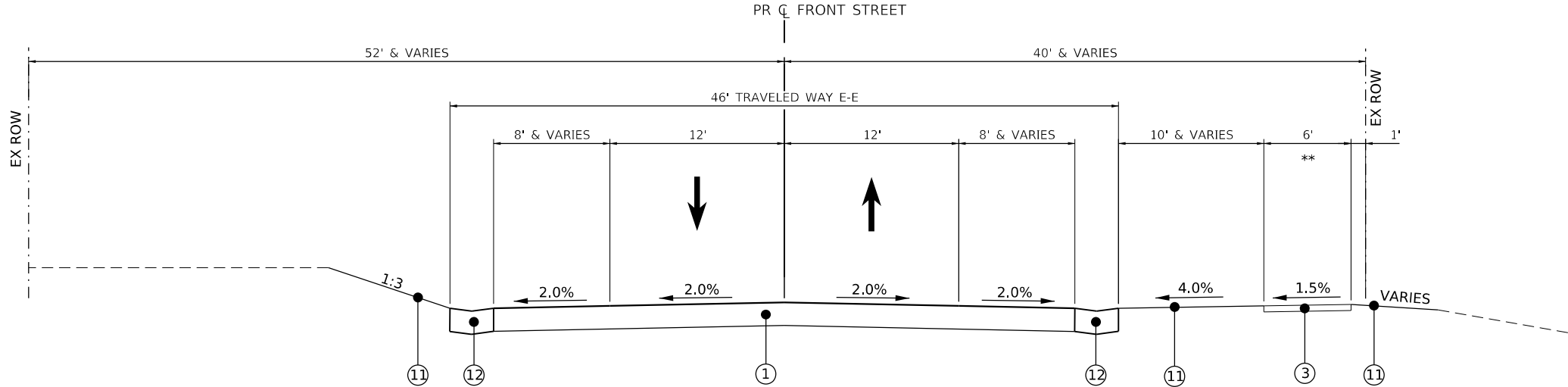


**PROPOSED TYPICAL SECTION FRONT STREET**

STA. 2+10.00 TO STA. 4+50.00

\* STA. 2+50.26 TO STA. 3+36.01

\*\* STA. 2+49.77 TO STA. 4+50.00



**PROPOSED TYPICAL SECTION FRONT STREET**

STA. 4+50.00 TO STA. 7+08.86

\*\* STA. 4+50.00 TO STA. 5+81.09

**PROPOSED LEGEND**

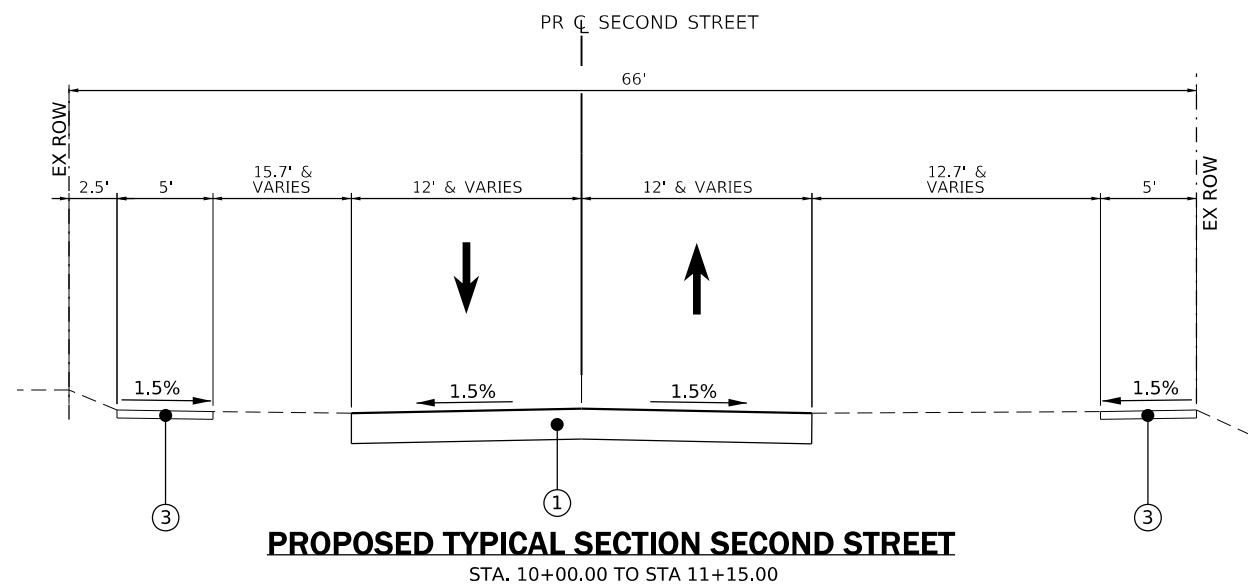
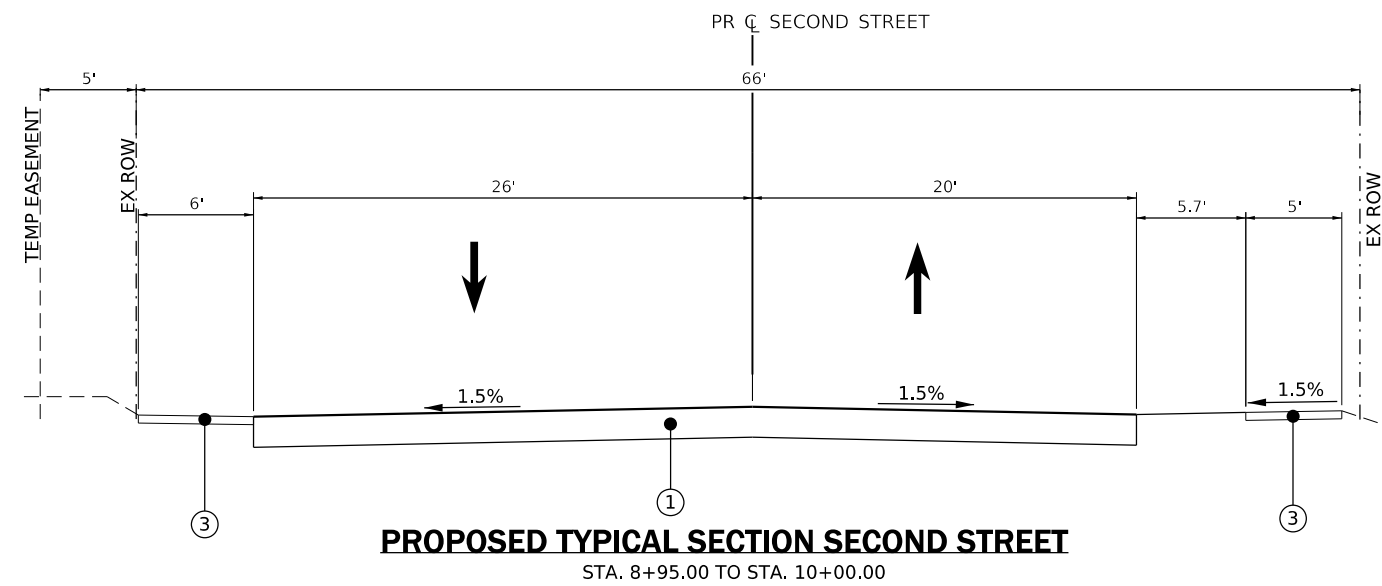
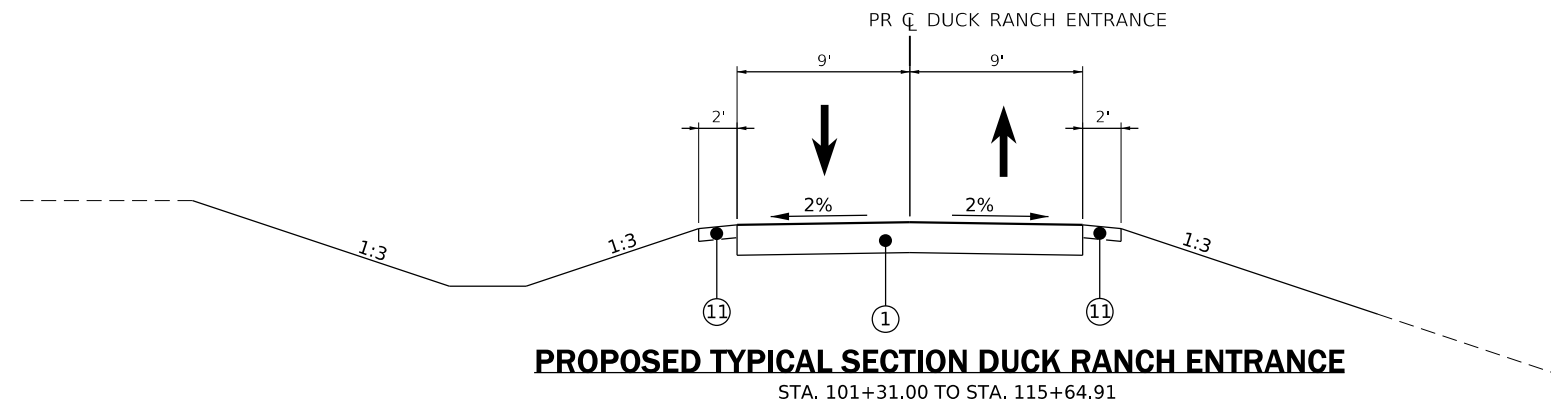
- ① PR HMA PAVEMENT
- ② PR CC&G B-6.24
- ③ PR PCC SIDEWALK
- ④ PR HMA SHOULDER
- ⑤ PR AGG SHOULDER
- ⑥ PR GUARD RAIL
- ⑦ PR STABLIZED SUBBASE
- ⑧ PR AGG SUBBASE
- ⑨ PR STEEL BRIDGE STRUCTURE
- ⑩ PR CONCRETE BRIDGE PARAPET
- ⑪ PR TOPSOIL
- ⑫ PR GUTTER TYPE A
- ⑬ PR BRIDGE DECK

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

FRONT STREET  
PROPOSED TYPICAL SECTION

| F&P<br>RTE.               | SECTION   | COUNTY               | TOTAL<br>SHEETS | SHEET<br>NO. |
|---------------------------|-----------|----------------------|-----------------|--------------|
| 653                       | 1048-D-BR | MARSHALL &<br>PUTNAM | 10              | 09           |
| CONTRACT NO. 68F09        |           |                      |                 |              |
| ILLINOIS FED. AID PROJECT |           |                      |                 |              |

Scale: 1" = 10'-0" (Horizontal)  
1" = 4'-0" (Vertical)  
FILE NAME: I:\projects\1048-D-BR\1048-D-BR.dgn



**PROPOSED LEGEND**

- ① PR HMA PAVEMENT
- ② PR CC&G B-6.24
- ③ PR PCC SIDEWALK
- ④ PR HMA SHOULDER
- ⑤ PR AGG SHOULDER
- ⑥ PR GUARD RAIL
- ⑦ PR STABILIZED SUBBASE
- ⑧ PR AGG SUBBASE
- ⑨ PR STEEL BRIDGE STRUCTURE
- ⑩ PR CONCRETE BRIDGE PARAPET
- ⑪ PR TOPSOIL
- ⑫ PR GUTTER TYPE A
- ⑬ PR BRIDGE DECK

|                 |                             |                 |           |                                                   |                                                          |                    |           |                   |              |           |         |
|-----------------|-----------------------------|-----------------|-----------|---------------------------------------------------|----------------------------------------------------------|--------------------|-----------|-------------------|--------------|-----------|---------|
| FILE NAME: PWD\ | USER NAME = RDabbakuti      | DESIGNED - AB   | REVISED - | STATE OF ILLINOIS<br>DEPARTMENT OF TRANSPORTATION | DUCK RANCH AND SECOND STREET<br>PROPOSED TYPICAL SECTION | F.A.P RTE.         | SECTION   | COUNTY            | TOTAL SHEETS | SHEET NO. |         |
|                 |                             | DRAWN - AB      | REVISED - |                                                   |                                                          | 653                | 1048-D-BR | MARSHALL & PUTNAM | 10           | 10        |         |
|                 | PLOT SCALE = 10.0000' / in. | CHECKED - JAC   | REVISED - |                                                   |                                                          | CONTRACT NO. 68F09 |           |                   |              |           |         |
|                 | PLOT DATE = 10/15/2024      | DATE - 10/10/24 | REVISED - |                                                   |                                                          | SCALE:             | SHEET     | OF                | SHEETS       | STA.      | TO STA. |
|                 |                             |                 |           |                                                   |                                                          |                    | ILLINOIS  | FED. AID PROJECT  |              |           |         |

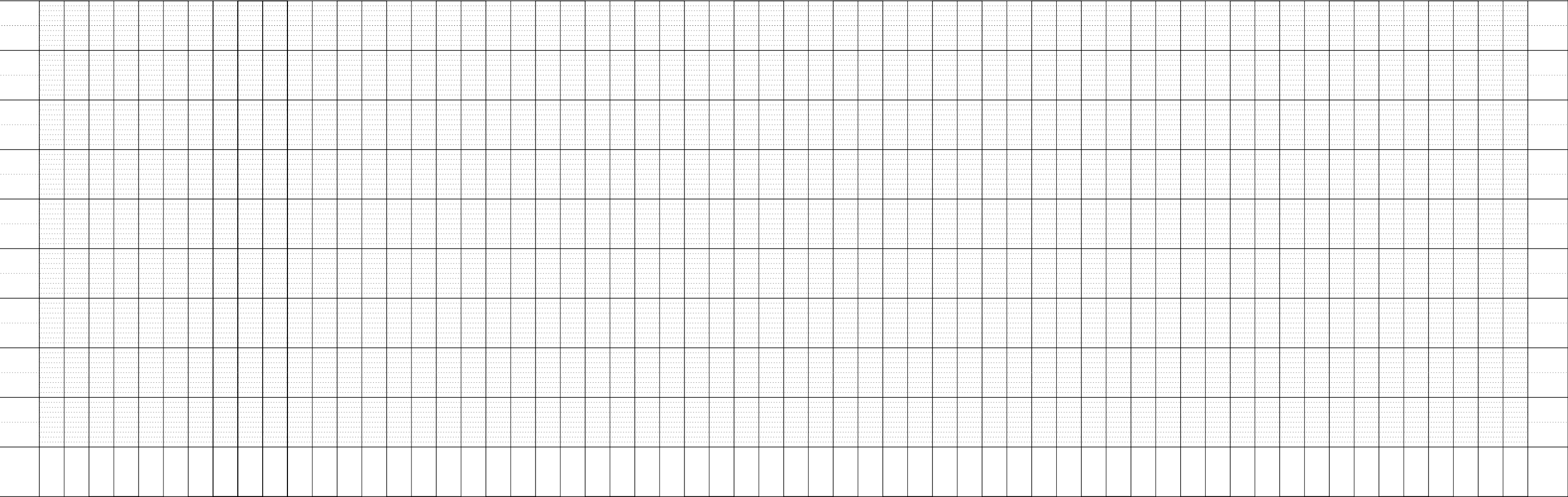
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|      |                                                            |    |      |
|      |                                                            |    |      |
|      |                                                            |    |      |

PROP. CURVE IL18\_SKEW1  
PI STA. = 3004+72.86  
 $\Delta$  = 9° 08' 26" (LT)  
D = 3° 58' 44"  
R = 1,440.00'  
T = 115.11'  
L = 229.72'  
E = 4.59'  
e = 1.5%  
T.R. = 31'  
S.E. RUN = 62'  
P.C. STA. = 3003+57.75  
P.T. STA. = 3005+87.48

PROP. CURVE IL18\_SKEW2  
PI STA. = 3007+88.54  
 $\Delta$  = 7° 08' 26" (RT)  
D = 3° 58' 44"  
R = 1,440.00'  
T = 89.85'  
L = 179.46'  
E = 2.80'  
e = 4.0%  
T.R. = 83'  
S.E. RUN = 114'  
P.C. STA. = 3006+98.70  
P.T. STA. = 3008+78.16

| PROFILE | SURVEYED<br>PLOTTED<br>GRADES CHECKED<br>NOTE BOOK<br>NO. | BY | DATE |
|---------|-----------------------------------------------------------|----|------|
|         |                                                           |    |      |
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|         |                                                           |    |      |

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|                              |                 |           |
|------------------------------|-----------------|-----------|
| USER NAME = RDabbakuti       | DESIGNED , JC   | REVISED , |
|                              | DRAWN , SQ      | REVISED , |
| PLOT SCALE = 100.0000' / in. | CHECKED , MP    | REVISED , |
| PLOT DATE = 10/15/2024       | DATE , 10/10/24 | REVISED , |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

|                                                    |       |    |         |
|----------------------------------------------------|-------|----|---------|
| IL-18 PLAN AND PROFILE<br>BEGIN TO STA. 3013+00.00 |       |    |         |
| SCALE: 1" = 50'                                    | SHEET | OF | SHEETS  |
|                                                    | STA.  |    | TO STA. |

|                           |                   |                          |                 |              |
|---------------------------|-------------------|--------------------------|-----------------|--------------|
| F.A.P. RTE. 653           | SECTION 1048-D-BR | COUNTY MARSHALL & PUTNAM | TOTAL SHEETS 09 | SHEET NO. 01 |
| CONTRACT NO. 68F09        |                   |                          |                 |              |
| ILLINOIS FED. AID PROJECT |                   |                          |                 |              |

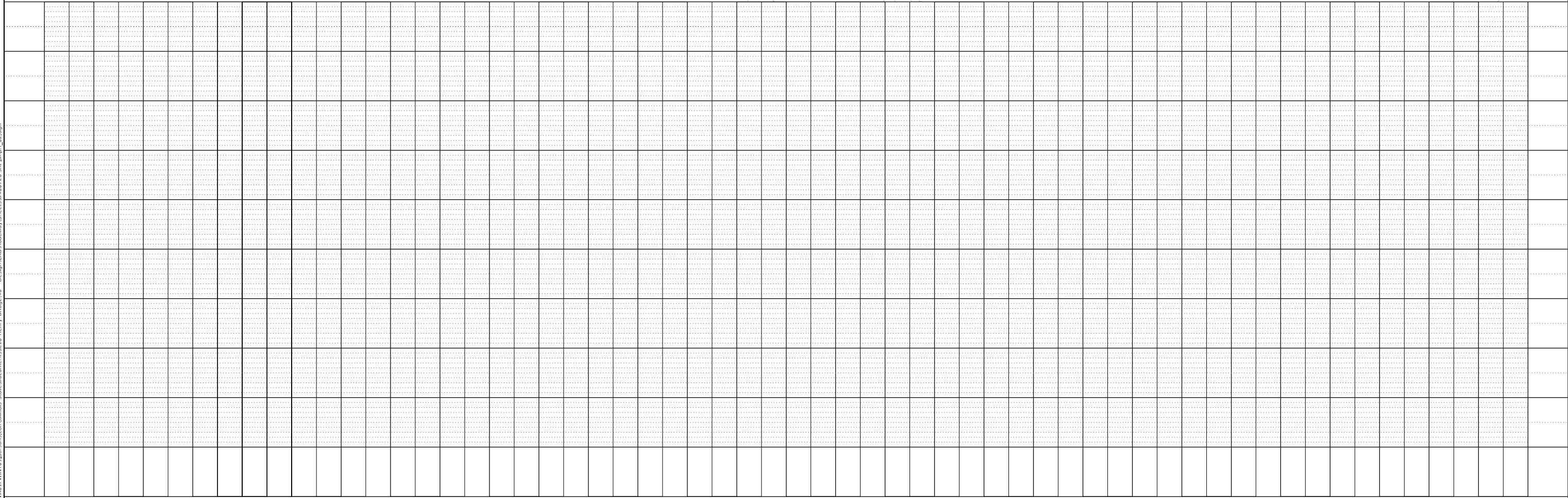
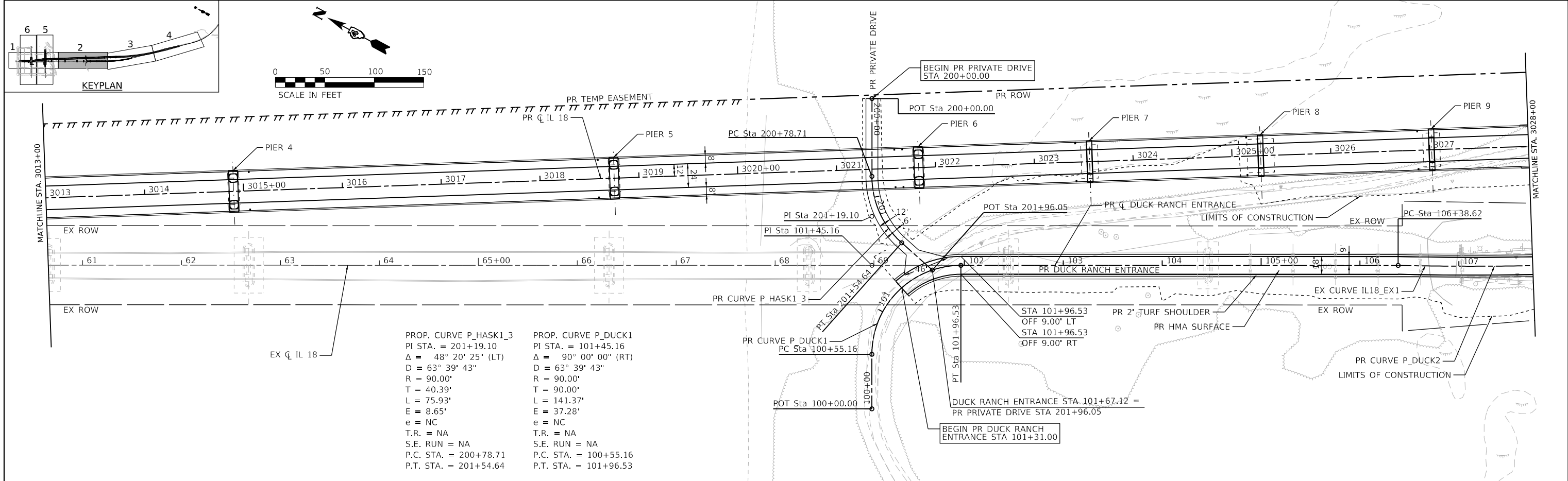




|           |                          |          |            |
|-----------|--------------------------|----------|------------|
| PLAN      | SURVEYED _____           | BY _____ | DATE _____ |
|           | PLOTTED _____            |          |            |
| NOTE BOOK | ALIGNMENT CHECKED _____  |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

|           |                                |          |            |
|-----------|--------------------------------|----------|------------|
| PROFILE   | SURVEYED _____                 | BY _____ | DATE _____ |
|           | PLOTTED _____                  |          |            |
|           | GRADES CHECKED _____           |          |            |
|           | BLM NOTED _____                |          |            |
| NOTE BOOK | STRUCTURE NOTATIONS CHKD _____ |          |            |
| NO. _____ |                                |          |            |

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|                              |                 |           |
|------------------------------|-----------------|-----------|
| USER NAME = RDabbakuti       | DESIGNED = JC   | REVISED = |
|                              | DRAWN = SO      | REVISED = |
| PLOT SCALE = 100.0000' / in. | CHECKED = MP    | REVISED = |
| PLOT DATE = 10/15/2024       | DATE = 10/10/24 | REVISED = |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

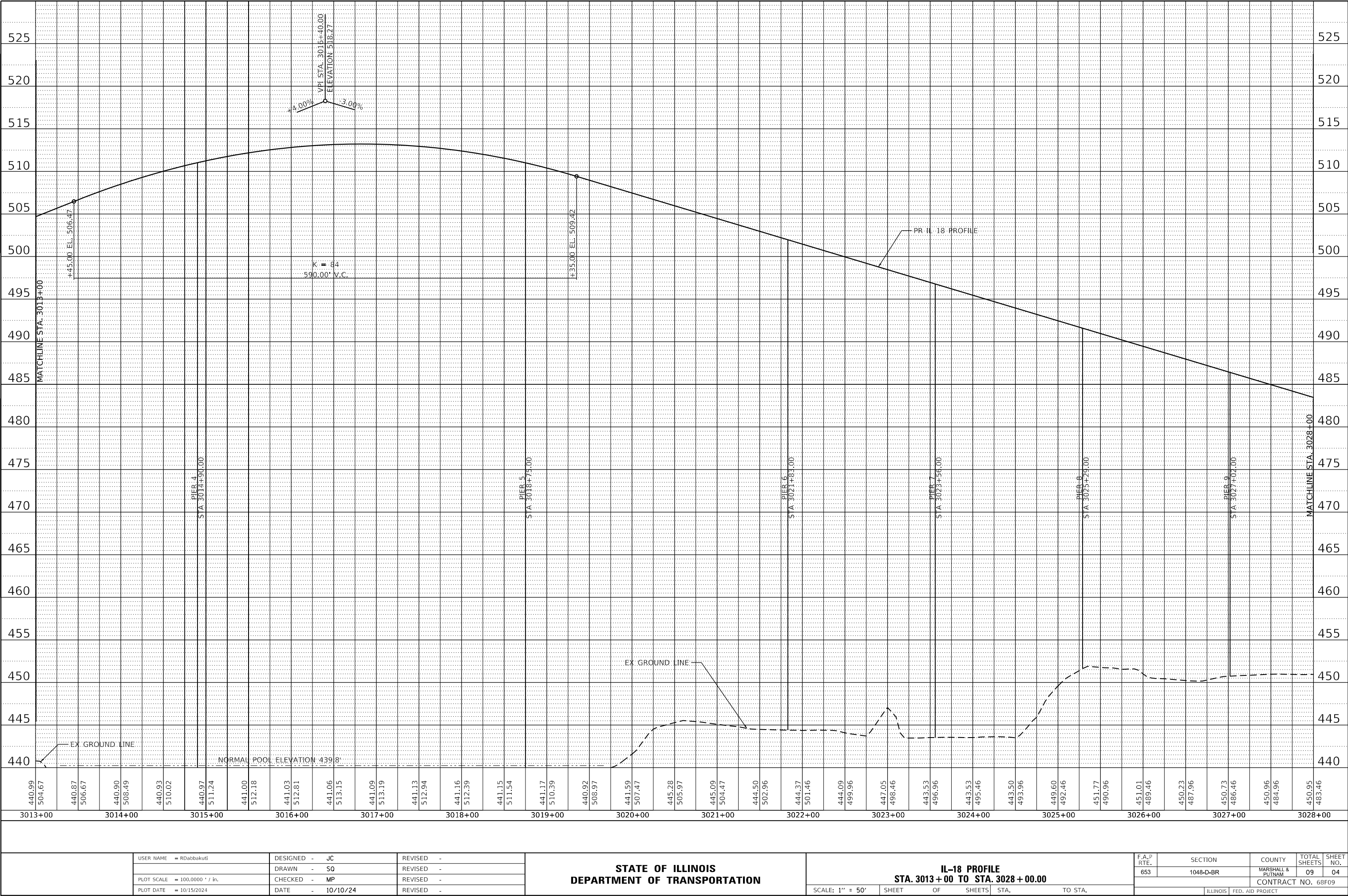
| IL-18 PLAN AND PROFILE<br>STA. 3013 + 00 TO STA. 3028 + 00.00 |       |         |        |
|---------------------------------------------------------------|-------|---------|--------|
| SCALE: 1" = 50'                                               | SHEET | OF      | SHEETS |
| STA.                                                          |       | TO STA. |        |

| F.A.P. RTE.               | SECTION   | COUNTY            | TOTAL SHEETS | SHEET NO. |
|---------------------------|-----------|-------------------|--------------|-----------|
| 653                       | 1048-D-BR | MARSHALL & PUTNAM | 09           | 03        |
| CONTRACT NO. 68F09        |           |                   |              |           |
| ILLINOIS FED. AID PROJECT |           |                   |              |           |

| PLAN                   | SURVEYED<br>PLOTTED                     | BY                      | DATE                    |
|------------------------|-----------------------------------------|-------------------------|-------------------------|
|                        |                                         |                         |                         |
| NOTE BOOK<br>NO. _____ | ALIGNMENT CHECKED<br>_____<br>NO. _____ | _____<br>CADD FILE NAME | _____<br>CADD FILE NAME |
|                        |                                         |                         |                         |

| PROFILE                | SURVEYED<br>PLOTTED                  | BY                               | DATE                             |
|------------------------|--------------------------------------|----------------------------------|----------------------------------|
|                        |                                      |                                  |                                  |
| NOTE BOOK<br>NO. _____ | GRADES CHECKED<br>_____<br>NO. _____ | _____<br>STRUCTURE NOTATION CHNG | _____<br>STRUCTURE NOTATION CHNG |
|                        |                                      |                                  |                                  |

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|                                                         |                        |                 |           |
|---------------------------------------------------------|------------------------|-----------------|-----------|
| PLOT SCALE = 100,0000 ' / in.<br>PLOT DATE = 10/15/2024 | USER NAME = RDabbakuti | DESIGNED - JC   | REVISED - |
|                                                         |                        | DRAWN - SQ      | REVISED - |
|                                                         |                        | CHECKED - MP    | REVISED - |
|                                                         |                        | DATE - 10/10/24 | REVISED - |

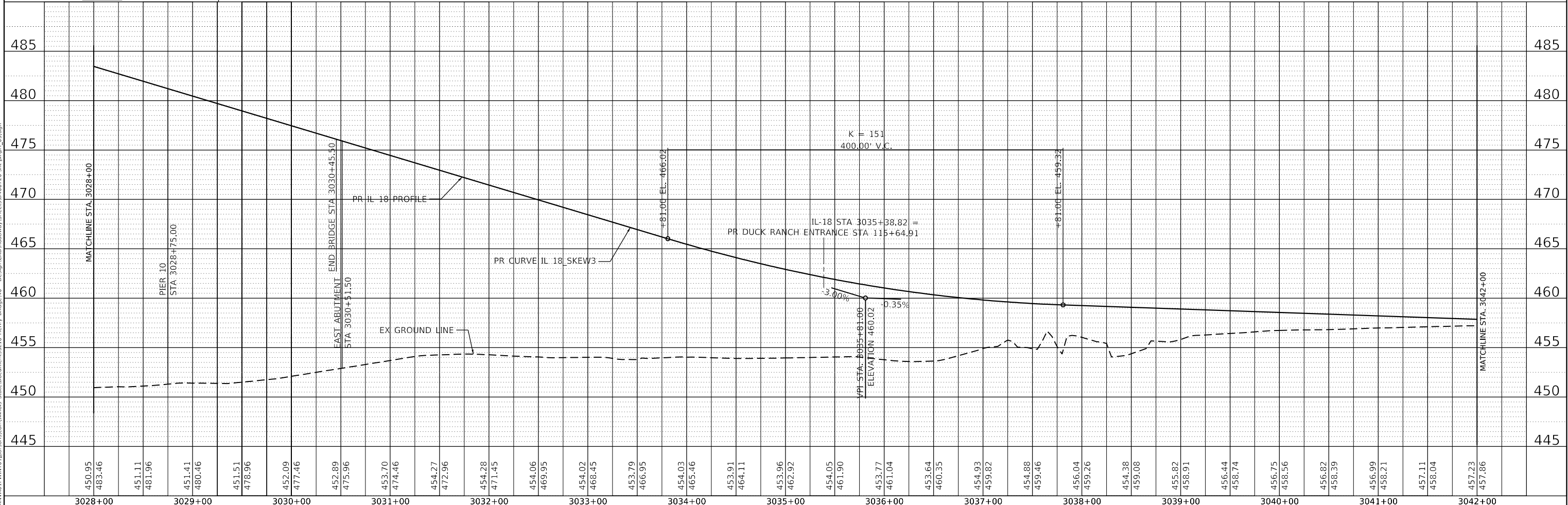
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

SCALE: 1" = 50' SHEET OF SHEETS STA. TO STA.

| F.A.P<br>RTE.             | SECTION   | COUNTY            | TOTAL<br>SHEETS | SHEET<br>NO. |
|---------------------------|-----------|-------------------|-----------------|--------------|
| 653                       | 1048-D-BR | MARSHALL & PUTNAM | 09              | 04           |
| CONTRACT NO. 68F09        |           |                   |                 |              |
| ILLINOIS FED. AID PROJECT |           |                   |                 |              |

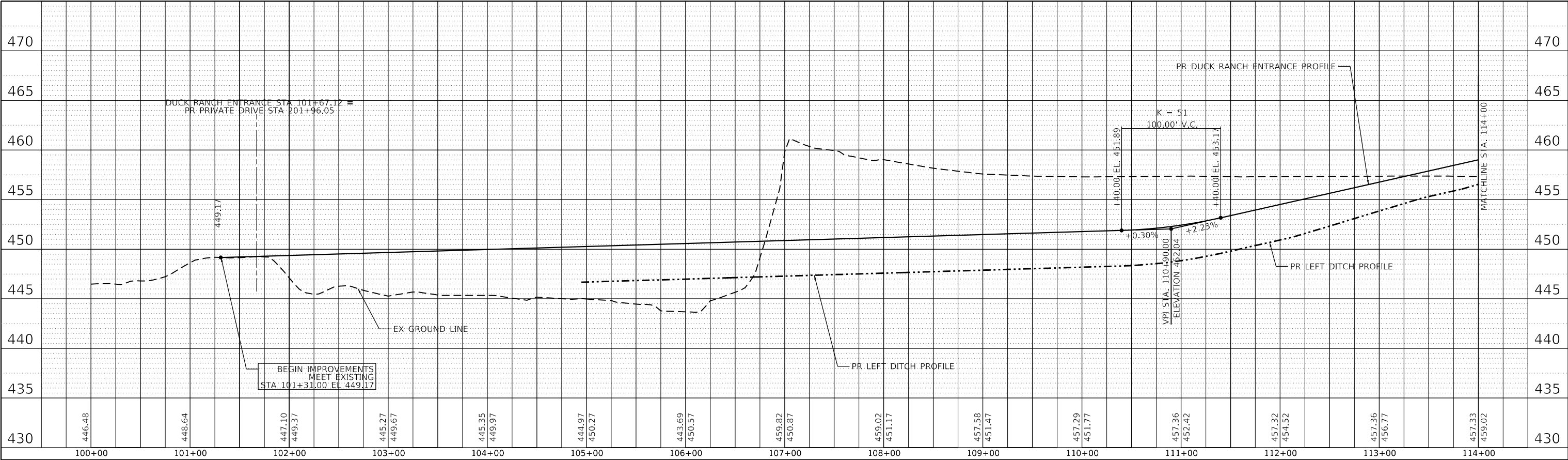


| PROFILE   |                             | BY | DATE |
|-----------|-----------------------------|----|------|
|           | SURVEYED                    |    |      |
|           | PLOTTED                     |    |      |
| NOTE BOOK | GRADES CHECKED              |    |      |
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|           | STRUCTURE NOTATIONS CHECKED |    |      |

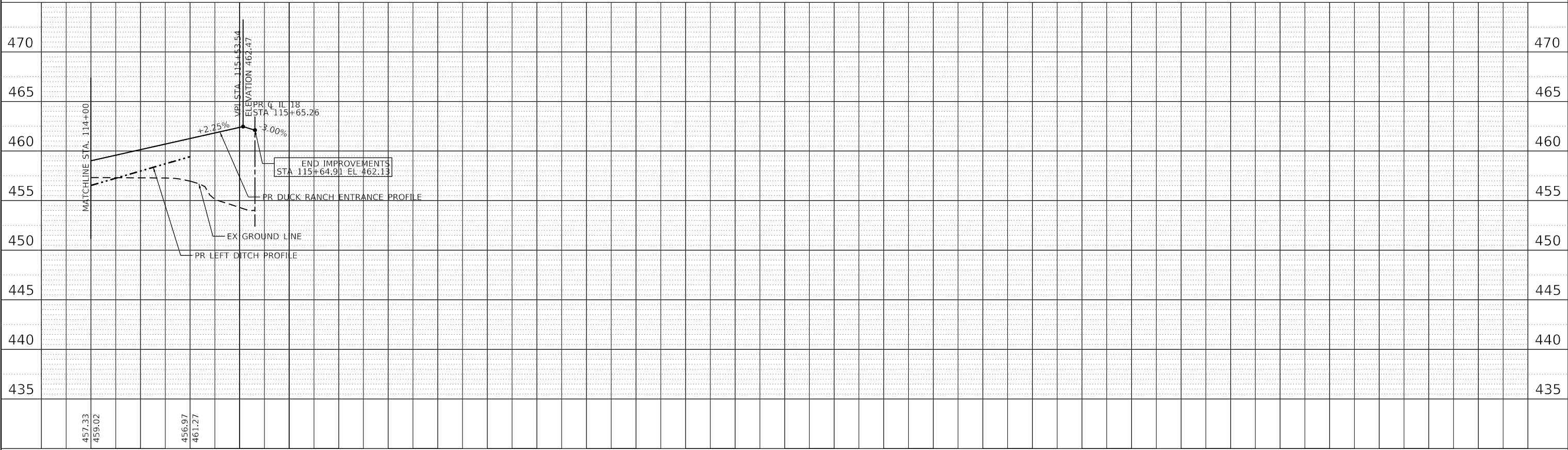


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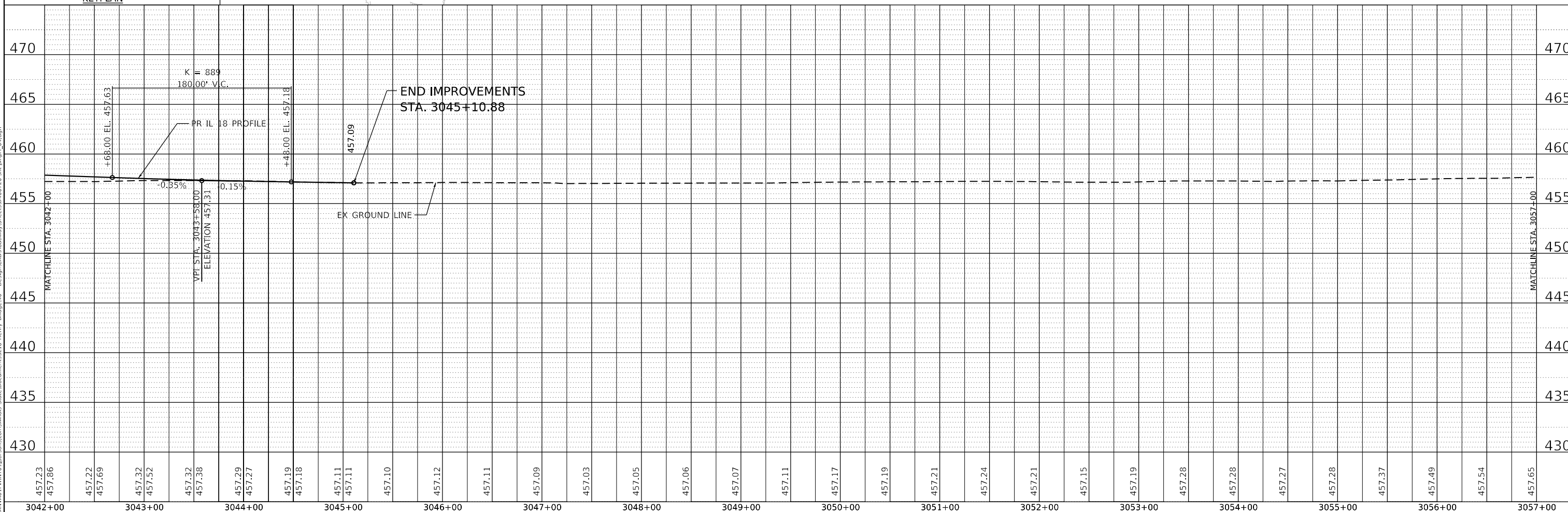
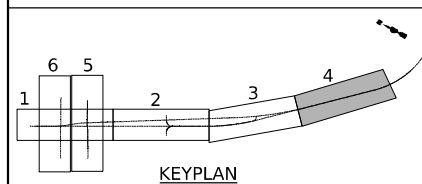
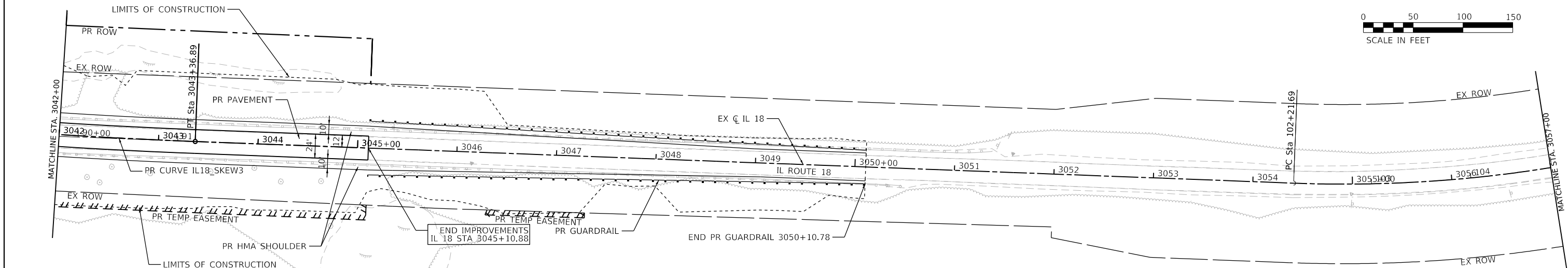
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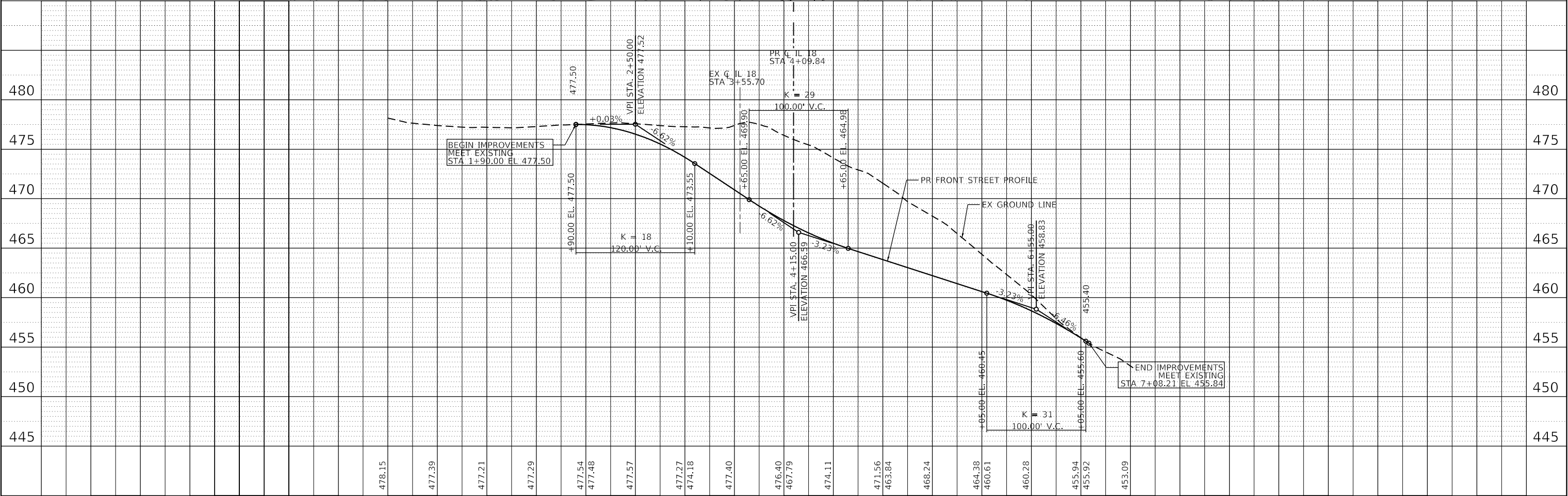
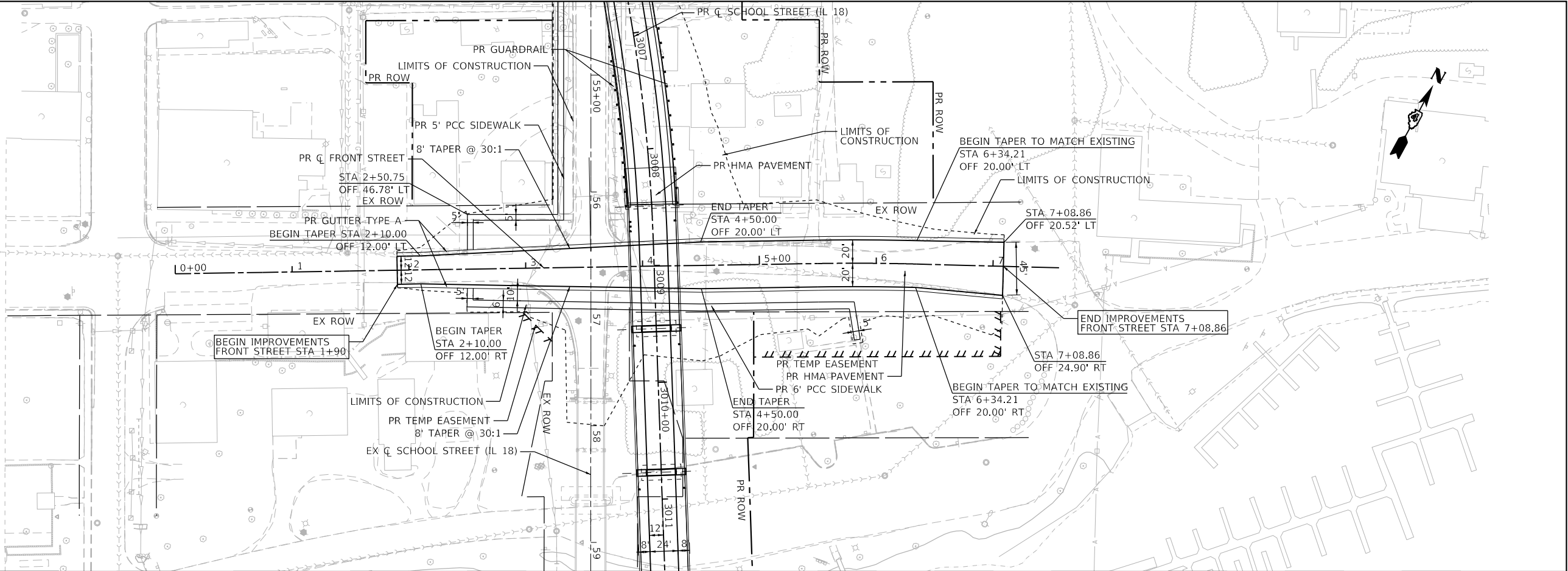
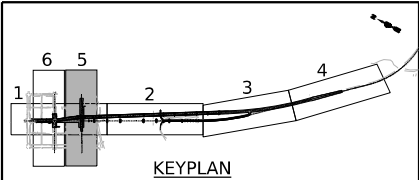
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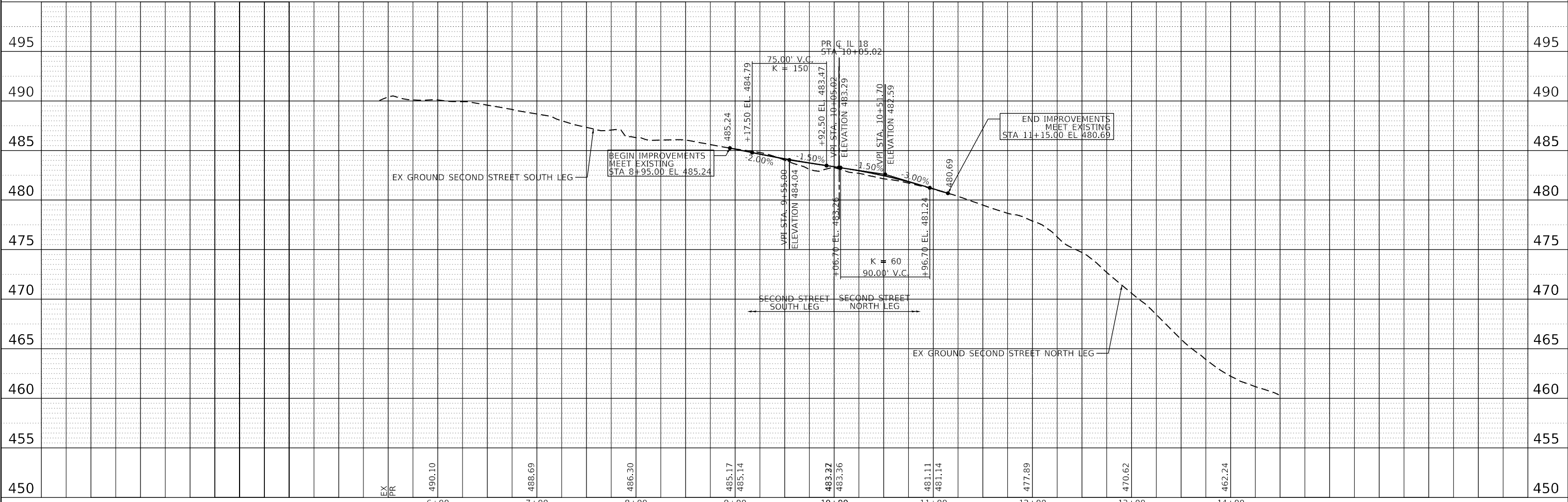
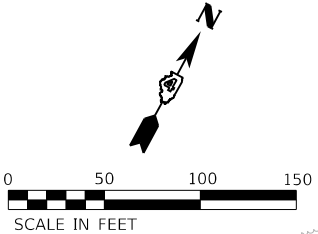
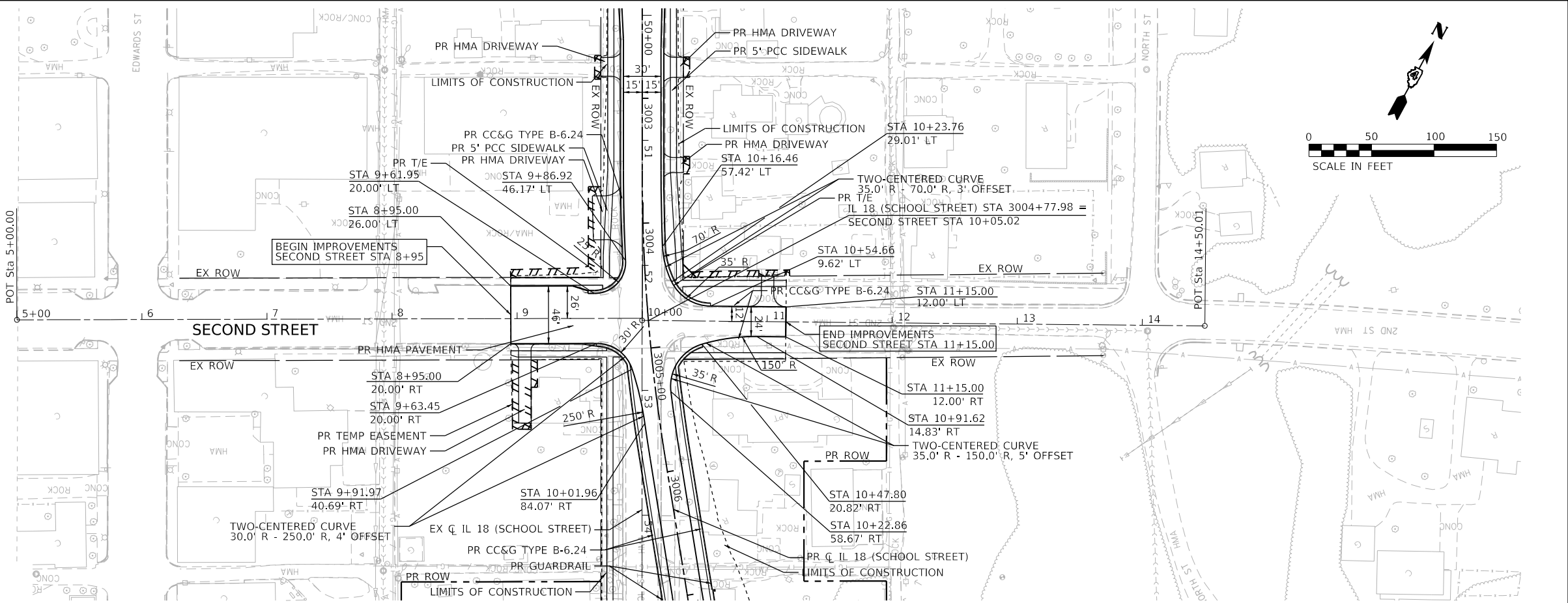
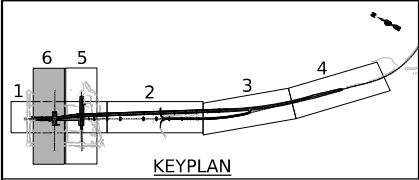
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

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| CONTRACT NO. 68F09        |           |                   |              |           |
| ILLINOIS FED. AID PROJECT |           |                   |              |           |



## Photo Log



The existing outfall at existing STA 59+19 (RT) / proposed STA 3011+55 (RT) along Cromwell Drive shall be retained as outlet for the proposed upgrades to the storm sewer system



STA 48+08 (RT): Inlet at NW Quad of 3<sup>rd</sup> St (IL 18) and School St





STA 48+85 (RT): Inlet at SE Quad of 3<sup>rd</sup> St (IL 18) and School St



STA 48+82 (RT): Traffic Island & SS MH at SE Quad of 3<sup>rd</sup> St (IL 18) and School St





STA 52+85 (RT): EX MH



STA 52+85 (RT): EX Yard Inlet note CMP connections and build.



STA 55+05 (RT): EX Yard Inlet w/ CMP connections and build.



## CORRESPONDENCE

April 7, 2023

Mr. Joshua G. Jochums, PE  
Illinois Department of Transportation  
401 Main St.  
Peoria, IL 61602

RE: Route FAP 653 (IL-18)  
Section (104B-D) BR  
Marshall County  
Job No. P-94-007-20  
PTB No. 195-038  
Phase I- IL-18 Henry Bridge Intermediate Hydraulics Summary

Inclusions: Attachment 1- Effective Model Calibration Summary  
Attachment 2- HEC-RAS Plan Layout and Detailed Results  
Attachment 3- Bridge Drawings

Dear Mr. Jochums

The purpose of this letter is to summarize the hydraulic results obtained to date for the IL-18 Henry Bridge Project (Project). Results summarized herein include various combinations of the following physical conditions:

1. **Natural Condition-** Neither the existing nor new bridge are in place; downstream hydraulic structures remain in place.
2. **Existing Bridge-** Existing bridge is in place without any modifications.
3. **IL-18 Future Compatibility-** IL-18 is raised between the bridge deck and the Sandy Creek Bridge to a fixed elevation 3-ft above the 50-yr water surface elevation (WSE) from the existing condition.
4. **IL-18 Policy Reconstruction-** IL-18 is raised between the bridge deck and the bluff to the east of the IL-18 / IL-26 intersection to a fixed elevation 3-ft above the 50-yr WSE from the existing condition. Includes raising the Sandy Creek Bridge deck to the same elevation.
5. **Proposed Bridge U/S-** New bridge proposed 75-ft upstream (U/S) of the existing bridge.
6. **Proposed Bridge D/S-** New bridge proposed 75-ft downstream (D/S) of the existing bridge.

The hydraulic criteria being adhered to for this Project are provided in 17 ILL. ADM. CODE CH. 1 SEC. 3700 (Sec. 3700). The pertinent hydraulic criteria for bridges in Illinois is dependent on both the bridge classification, being either 'reconstruction' or (new) 'construction' and the classification of the surrounding area, being either 'urban areas' or 'rural areas'. Relevant definitions from Section 3700 are as follows:

**Urban Areas-** Areas of the State where residential, commercial, or industrial development currently exists or, based on land use plans or controls, is expected to exist within 10 years after the application date...

**Rural Areas-** Any areas of the State not determined to be Urban Areas.

**Worst-case Analysis-** The calculation of the maximum increases in flood heights, velocities, and damages a project would cause due to conveyance and storage losses considering both the project alone and the combined effects of other existing construction and reasonably anticipated equally obstructive construction on other similarly situated properties in the locality. Flood events up to and including the 100-yr flood shall be used in this analysis.

**Bridge Reconstruction-** The total replacement of an existing bridge on the existing alignment or within 100-ft of the existing alignment in an urban area or within 500-ft of the existing alignment in a rural area.

**Construction-** The placement, erection, or reconstruction of any building or structure...

The Project location is considered an urban area per Section 3700. The new bridge would typically be classified as 'reconstruction' since the new bridge is within 100-ft of the existing bridge alignment. However, IDOT was unable to certify that the existing bridge has not caused "significant flood damage" as compared to the natural condition. As such, the new bridge is classified as a (new) 'construction' project. With a new bridge classified as 'construction' in an urban setting, the new bridge shall result in no more than 0.5-ft of rise at the new bridge and 0.1-ft at a location 1,000-ft upstream of the new bridge as compared to the Natural condition.

### **Modeling Methodology and Development**

To analyze the Illinois River at the IL-18, the effective Flood Insurance Study (FIS) HEC-RAS model was obtained. The effective FIS model included steady-state flow rates for the 10, 50, 100, and 500-yr flood events. The modeling performed as part of this effort was performed using the 50- and 100-yr flows with GeoHECRAS v. 3.1.0.1381 and the HEC-RAS 5.0.7 computational engine.

The **Effective** model for this Project was developed by cropping the effective FIS model to immediately upstream and downstream of the bathymetric survey extents. Downstream boundary conditions for the truncated Effective model were fixed to the water surface elevations (WSEs) from the corresponding cross section and design flood event from the effective FIS model. It was determined that lateral structures present in the effective FIS model had no impact on model results and were therefore removed from the truncated Effective model. The truncated Effective model was then calibrated against the effective FIS model by comparing WSEs for each flood event at corresponding cross sections and adjusting Manning's roughness values in the overbank areas in the truncated model as necessary to obtain WSEs in the truncated Effective model that match those from the effective FIS model. See the Model Calibration Summary in Attachment 1 for additional details.

The **Corrected Effective** model was then developed by copying of the truncated Effective model and updating cross section geometry using the bathymetric survey data obtained as part of this project.

The **Pre-Project** model is a copy of the Corrected Effective model with the cross sections bounding the IL-18 bridge adjusted to accommodate future modeling scenarios where the IL-18 bridge would be added either upstream or downstream of the existing location. The Pre-Project model includes the existing bridge crossing of the Illinois River. The modifications made during the development of the Pre-Project model are made to avoid adjusting cross sections to accommodate future modeling scenarios, thereby ensuring that differences in WSEs between the Pre-Project and future models are the result of actual proposed modifications to the river and not the result of differences between cross section locations. The cross sections bounding the IL-18 bridge were also lengthened on the east side so that the 100-yr flood extents were completely contained by the cross sections.

The **Natural** model is a copy of the Pre-Project model with the existing bridge (including abutments) and IL-18 roadway embankments removed.

The **Pre-Project w/ IL-18 Future Compatibility** model is a copy of the Pre-Project model but has IL-18 raised to an elevation of 462.48-ft (3-ft above the 50-yr WSE from the Pre-Project model) between the existing bridge and west of the Sandy Creek Bridge.

The **Downstream Bridge** model removes the existing IL-18 bridge and adds in the proposed downstream bridge per the April 2022 layout. The proposed bridge ties back into the existing IL-18 roadway. A cross section (XS 195.97) was added in the existing bridge location to verify that keeping the existing embankments will not result in a rise. There are currently no compensatory storage requirements as part of the NFIP and no additional compensatory storage requirements in IL outside of Cook, DuPage, Kane, Lake, McHenry, and Will Counties. This scenario keeps the existing bridge abutments in place pending future decisions on their use/removal.

The **Upstream Bridge** model removes the existing IL-18 bridge and adds in the proposed upstream bridge per the April 2022 layout. The proposed bridge ties back into the existing IL-18 roadway. A cross section (XS 195.95) was added in the existing bridge location to verify that keeping the existing embankments will not result in a rise. There are currently no compensatory storage requirements as part of the National Flood insurance Program (NFIP) and no additional compensatory storage requirements in IL outside of Cook, DuPage, Kane, Lake, McHenry, and Will Counties. This scenario keeps the existing bridge abutments in place pending future decisions on their use/removal.

The **Downstream Bridge w/ IL-18 Future Compatibility** model is a copy of the Downstream Bridge scenario, but instead of tying back into the existing IL-18 roadway, the bridge ties into the proposed IL-18 future compatibility roadway. This scenario keeps the existing bridge abutments in place pending future decisions on their use/removal.

The **Upstream Bridge w/ IL-18 Policy Reconstruction** model is a copy of the Upstream Bridge scenario with IL-18 raised to an elevation of 462.48-ft (3-ft above the 50-yr WSE from the Pre-Project model) between the new bridge deck and the existing bluff to the east of the IL-18 / IL-26 intersection. This includes raising the Sandy Creek Bridge to the same elevation. This scenario keeps the existing bridge abutments in place pending future decisions on their use/removal.

## **Results and Discussion**

The 50-yr WSE of 459.48-ft was taken from the Pre-Project model at the upstream bounding cross section (XS 195.96 BR U). Detailed comparisons of the 100-yr WSEs between the models described above are included Attachment 2. A summary of hydraulic results for the 100-yr discharge is provided in Table 1 below.

**Table 1. Summary of 100-yr HEC-RAS Results for IL-18 Bridge Replacement Scenarios.**

| Physical Scenario                               | Cross Section | Distance from Bridge (Upstream) (ft) | 100-yr WSEL (ft) | WSE Increase from Natural (ft) |
|-------------------------------------------------|---------------|--------------------------------------|------------------|--------------------------------|
| Natural                                         | 195.98        | 105                                  | 461.13           | -                              |
| Pre-Project                                     |               | 105                                  | 461.06           | -0.07                          |
| Pre-Project w/ IL-18 Future Compatibility       |               | 105                                  | 461.04           | -0.09                          |
| Upstream Bridge w/ IL-18 Policy Reconstruction  |               | 26                                   | 461.42           | 0.29                           |
| Downstream Bridge w/ IL-18 Future Compatibility |               | 180                                  | 461.01           | -0.12                          |
| Upstream Bridge                                 |               | 26                                   | 461.05           | -0.08                          |
| Downstream Bridge                               |               | 180                                  | 461.01           | -0.12                          |
| Natural                                         | 196.19        | 337                                  | 461.40           | -                              |
| Pre-Project                                     |               | 337                                  | 461.57           | 0.17                           |
| Pre-Project w/ IL-18 Future Compatibility       |               | 337                                  | 461.61           | 0.21                           |
| Upstream Bridge w/ IL-18 Policy Reconstruction  |               | 258                                  | 461.64           | 0.24                           |
| Downstream Bridge w/ IL-18 Future Compatibility |               | 412                                  | 461.57           | 0.17                           |
| Upstream Bridge                                 |               | 258                                  | 461.51           | 0.11                           |
| Downstream Bridge                               |               | 412                                  | 461.57           | 0.17                           |
| Natural                                         | 196.42        | 1443                                 | 461.40           | -                              |
| Pre-Project                                     |               | 1443                                 | 461.58           | 0.18                           |
| Pre-Project w/ IL-18 Future Compatibility       |               | 1443                                 | 461.62           | 0.22                           |
| Upstream Bridge w/ IL-18 Policy Reconstruction  |               | 1364                                 | 461.65           | 0.25                           |
| Downstream Bridge w/ IL-18 Future Compatibility |               | 1518                                 | 461.58           | 0.18                           |
| Upstream Bridge                                 |               | 1364                                 | 461.51           | 0.11                           |
| Downstream Bridge                               |               | 1518                                 | 461.58           | 0.18                           |
| Natural                                         | 196.88        | 2811                                 | 461.46           | -                              |
| Pre-Project                                     |               | 2811                                 | 461.63           | 0.17                           |
| Pre-Project w/ IL-18 Future Compatibility       |               | 2811                                 | 461.67           | 0.21                           |
| Upstream Bridge w/ IL-18 Policy Reconstruction  |               | 2732                                 | 461.69           | 0.23                           |
| Downstream Bridge w/ IL-18 Future Compatibility |               | 2886                                 | 461.63           | 0.17                           |
| Upstream Bridge                                 |               | 2732                                 | 461.56           | 0.10                           |
| Downstream Bridge                               |               | 2886                                 | 461.63           | 0.17                           |
| Natural                                         | 197.34        | 5133                                 | 461.48           | -                              |
| Pre-Project                                     |               | 5133                                 | 461.65           | 0.17                           |
| Pre-Project w/ IL-18 Future Compatibility       |               | 5133                                 | 461.69           | 0.21                           |
| Upstream Bridge w/ IL-18 Policy Reconstruction  |               | 5054                                 | 461.72           | 0.24                           |
| Downstream Bridge w/ IL-18 Future Compatibility |               | 5208                                 | 461.65           | 0.17                           |
| Upstream Bridge                                 |               | 5054                                 | 461.59           | 0.11                           |
| Downstream Bridge                               |               | 5208                                 | 461.65           | 0.17                           |

With both the upstream and downstream proposed bridge locations being defined as (new) 'construction', there can only be 0.5-ft of rise at the new bridge and 0.1-ft of rise at a location 1,000-ft upstream of the new bridge as compared to the Natural condition. Table 1 shows that there is a decrease in WSE at the new bridge and a rise of more than 0.1-ft at 1,000-ft U/S of the new bridge for all scenarios. The 'Upstream Bridge' scenario only exceeds the rise criteria by 0.01-ft, however, so with relatively minor adjustments to the proposed bridge and/or existing abutments or it is expected that the rise exceedance can be mitigated for that scenario. Accommodating a policy reconstruction of IL-18 between the new bridge and the bluff to the east of the IL-18 / IL-26 intersection will likely require additional conveyance to be provided through the IL-18 / IL-26 roadway embankments. Drawings showing the bridge pier and abutment locations for both the upstream and downstream bridge options are included in Attachment 2.

Please do not hesitate to contact me with any questions or concerns.

Sincerely,



Brent Heesemann, PE, CFM  
o: (303)764-8829

# **Attachment 1**

## Effective Model Calibration Summary



## UNET Calibration

The UNET model calibration is a multi-step process designed to adjust the model to reproduce observed stage and flow records. The model was calibrated to reproduce observed stages within one foot for the period from water years 1992 through 2000. The model was spot checked against water years 1943, 1973 through 1979, and 1983 through 1985 and adjusted to reproduce the crest stages of these supplemental events. The model was calibrated to reproduce observed flow at the USGS gages for the entire period of record, which for the Illinois River in the Rock Island District covers the dates from 1940-2000. A single geometry set is used to reproduce flows and stages for all time periods.

## Calibration data

The following data sources are used to verify the UNET calibration accuracy.

- USGS flow measurements at Marseilles, IL and Kingston Mines, IL
- USGS daily discharge records at Marseilles, IL, Kingston Mines, IL and Valley City, IL
- Observed daily stage records at 25 mainstem gages, collected by the Corps.

## Manning Roughness Values

The calibration of the UNET model is a multi-step process, beginning with the selection and adjustment of channel and overbank roughness values. Manning's n-value is the roughness parameter used to establish the initial conveyance properties for each cross section. Manning's n-value is the roughness parameter used. The placement and verification of n-values is completed in the early development of the hydraulic model using HEC-RAS software. Channel n-values were derived from experience gained in previous hydraulic modeling efforts of the Illinois River and range between 0.02 and 0.045. Overbank n-values were estimated using GIS spatial land cover data and guidance provided in the HEC-RAS hydraulic reference manual and range between 0.035 and 0.165. HEC-RAS N-values were adjusted using the development HEC-RAS model to reproduce the 1982 and 1997 flood events.

## Null Internal Boundary Condition for Lateral Inflows

The Null Internal Boundary Condition (NIBC) is a tool for estimating ungaged lateral inflow in a river system. Use of the NIBC is an important component of calibrating the model to both flow and stage. The NIBC technique estimates ungaged inflow to reproduce either a stage hydrograph or a flow hydrograph at the NIBC station. When stage reproduction is the priority, the reproduction of flow is secondary, being dependent on the calibration of the model. Likewise, when flow reproduction is the priority, the reproduction of stage is secondary, being dependent on the calibration of the model. In either case, the ungaged inflow compensates for all the errors in the measurement of stage and flow and for systematic changes in roughness and geometry that may not be included in the model. As a result, the ungaged inflow determined using the NIBC procedure includes both flow and an error correction term.

The NIBC feature is used by the Rock Island District to reproduce the flow record at the USGS gage locations at Marseilles, Kingston Mines, and Valley City, IL from 01 Jan 1940 through 30 Sep 2000.

DOWNSTREAM XS:  
191.47

Table C-I-7  
2003 Illinois River Stage and Flow Frequency Profiles (All elevations referenced to NGVD 1929)

| River<br>Mile | Exceedance Probability |        |       |        |       |         |       |         |       |         |       |         |       |         |       |         |
|---------------|------------------------|--------|-------|--------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|
|               | 0.5                    |        | 0.2   |        | 0.1   |         | 0.04  |         | 0.02  |         | 0.01  |         | 0.005 |         | 0.002 |         |
|               | feet                   | cfs    | feet  | cfs    | feet  | cfs     | feet  | cfs     | feet  | cfs     | feet  | cfs     | feet  | cfs     | feet  | cfs     |
| 189.7         | 449.4                  | 57,000 | 453.0 | 80,000 | 455.3 | 98,000  | 457.9 | 114,000 | 459.2 | 125,000 | 460.9 | 134,000 | 462.3 | 142,000 | 463.7 | 148,000 |
| 190.2         | 449.4                  | 57,000 | 453.0 | 80,000 | 455.3 | 98,000  | 458.0 | 115,000 | 459.3 | 126,000 | 460.9 | 135,000 | 462.4 | 143,000 | 463.7 | 149,000 |
| 190.7         | 449.4                  | 58,000 | 453.0 | 80,000 | 455.3 | 99,000  | 458.0 | 115,000 | 459.3 | 126,000 | 461.0 | 136,000 | 462.4 | 144,000 | 463.8 | 151,000 |
| 190.95        | 449.4                  | 58,000 | 453.0 | 81,000 | 455.4 | 99,000  | 458.0 | 116,000 | 459.3 | 127,000 | 461.0 | 137,000 | 462.4 | 144,000 | 463.8 | 151,000 |
| 191.2         | 449.5                  | 58,000 | 453.0 | 81,000 | 455.4 | 99,000  | 458.0 | 116,000 | 459.4 | 127,000 | 461.0 | 137,000 | 462.4 | 145,000 | 463.8 | 152,000 |
| 191.7         | 449.5                  | 58,000 | 453.1 | 81,000 | 455.4 | 100,000 | 458.1 | 117,000 | 459.4 | 128,000 | 461.0 | 138,000 | 462.5 | 146,000 | 463.8 | 153,000 |
| 192.2         | 449.5                  | 58,000 | 453.1 | 81,000 | 455.4 | 100,000 | 458.1 | 117,000 | 459.4 | 129,000 | 461.0 | 139,000 | 462.5 | 147,000 | 463.9 | 154,000 |
| 192.45        | 449.5                  | 58,000 | 453.1 | 81,000 | 455.4 | 100,000 | 458.1 | 118,000 | 459.4 | 129,000 | 461.1 | 139,000 | 462.5 | 148,000 | 463.9 | 155,000 |
| 192.7         | 449.6                  | 58,000 | 453.1 | 82,000 | 455.4 | 101,000 | 458.1 | 118,000 | 459.4 | 129,000 | 461.1 | 140,000 | 462.5 | 148,000 | 463.9 | 155,000 |
| 192.95        | 449.6                  | 58,000 | 453.1 | 82,000 | 455.4 | 101,000 | 458.1 | 118,000 | 459.4 | 130,000 | 461.1 | 140,000 | 462.5 | 149,000 | 463.9 | 156,000 |
| 193.2         | 449.6                  | 58,000 | 453.1 | 82,000 | 455.5 | 101,000 | 458.2 | 119,000 | 459.5 | 130,000 | 461.1 | 141,000 | 462.5 | 149,000 | 463.9 | 156,000 |
| 193.7         | 449.7                  | 59,000 | 453.2 | 82,000 | 455.5 | 101,000 | 458.2 | 119,000 | 459.5 | 131,000 | 461.2 | 141,000 | 462.6 | 150,000 | 463.9 | 157,000 |
| 194.2         | 449.7                  | 59,000 | 453.2 | 82,000 | 455.5 | 102,000 | 458.2 | 120,000 | 459.5 | 131,000 | 461.2 | 142,000 | 462.6 | 151,000 | 464.0 | 158,000 |
| 194.45        | 449.7                  | 59,000 | 453.2 | 83,000 | 455.5 | 102,000 | 458.2 | 120,000 | 459.5 | 132,000 | 461.2 | 143,000 | 462.6 | 151,000 | 464.0 | 159,000 |
| 194.7         | 449.7                  | 59,000 | 453.2 | 83,000 | 455.5 | 102,000 | 458.2 | 120,000 | 459.5 | 132,000 | 461.2 | 143,000 | 462.6 | 152,000 | 464.0 | 160,000 |
| 194.95        | 449.7                  | 59,000 | 453.2 | 83,000 | 455.5 | 102,000 | 458.2 | 120,000 | 459.6 | 132,000 | 461.2 | 144,000 | 462.6 | 153,000 | 464.0 | 160,000 |
| 195.2         | 449.8                  | 59,000 | 453.2 | 83,000 | 455.5 | 102,000 | 458.3 | 121,000 | 459.6 | 133,000 | 461.2 | 144,000 | 462.6 | 153,000 | 464.0 | 161,000 |
| 195.53        | 449.8                  | 59,000 | 453.3 | 83,000 | 455.6 | 103,000 | 458.3 | 121,000 | 459.6 | 133,000 | 461.3 | 145,000 | 462.7 | 154,000 | 464.1 | 161,000 |
| 195.96        | 449.9                  | 59,000 | 453.3 | 83,000 | 455.6 | 103,000 | 458.4 | 121,000 | 459.7 | 133,000 | 461.3 | 145,000 | 462.7 | 154,000 | 464.1 | 162,000 |
| 196.2         | 450.0                  | 59,000 | 453.4 | 83,000 | 455.7 | 102,000 | 458.4 | 120,000 | 459.7 | 132,000 | 461.4 | 143,000 | 462.8 | 152,000 | 464.2 | 160,000 |
| 196.6         | 450.0                  | 59,000 | 453.4 | 83,000 | 455.8 | 102,000 | 458.5 | 120,000 | 459.8 | 133,000 | 461.5 | 144,000 | 462.8 | 153,000 | 464.2 | 161,000 |
| 197.1         | 450.1                  | 59,000 | 453.5 | 83,000 | 455.8 | 102,000 | 458.5 | 121,000 | 459.8 | 133,000 | 461.5 | 144,000 | 462.9 | 153,000 | 464.3 | 161,000 |
| 197.35        | 450.1                  | 59,000 | 453.5 | 83,000 | 455.8 | 103,000 | 458.6 | 121,000 | 459.9 | 133,000 | 461.5 | 145,000 | 462.9 | 154,000 | 464.3 | 162,000 |
| 197.6         | 450.2                  | 59,000 | 453.6 | 83,000 | 455.9 | 103,000 | 458.6 | 121,000 | 459.9 | 134,000 | 461.5 | 145,000 | 462.9 | 154,000 | 464.3 | 162,000 |
| 198           | 450.2                  | 60,000 | 453.6 | 83,000 | 455.9 | 103,000 | 458.6 | 121,000 | 459.9 | 134,000 | 461.6 | 146,000 | 462.9 | 155,000 | 464.3 | 163,000 |
| 198.4         | 450.3                  | 60,000 | 453.6 | 83,000 | 455.9 | 103,000 | 458.6 | 122,000 | 459.9 | 134,000 | 461.6 | 146,000 | 463.0 | 155,000 | 464.3 | 163,000 |
| 198.7         | 450.3                  | 60,000 | 453.6 | 84,000 | 455.9 | 103,000 | 458.6 | 122,000 | 459.9 | 134,000 | 461.6 | 146,000 | 463.0 | 156,000 | 464.3 | 164,000 |
| 198.95        | 450.4                  | 60,000 | 453.7 | 84,000 | 456.0 | 103,000 | 458.6 | 122,000 | 459.9 | 135,000 | 461.6 | 147,000 | 463.0 | 156,000 | 464.4 | 164,000 |
| 199.2         | 450.4                  | 60,000 | 453.7 | 84,000 | 456.0 | 104,000 | 458.7 | 122,000 | 460.0 | 135,000 | 461.6 | 147,000 | 463.0 | 157,000 | 464.4 | 165,000 |
| 199.45        | 450.4                  | 60,000 | 453.7 | 84,000 | 456.0 | 104,000 | 458.7 | 123,000 | 460.0 | 136,000 | 461.6 | 148,000 | 463.0 | 158,000 | 464.4 | 166,000 |
| 199.7         | 450.5                  | 60,000 | 453.7 | 84,000 | 456.0 | 104,000 | 458.7 | 123,000 | 460.0 | 136,000 | 461.6 | 149,000 | 463.0 | 159,000 | 464.4 | 167,000 |
| 200           | 450.5                  | 61,000 | 453.8 | 84,000 | 456.0 | 105,000 | 458.7 | 124,000 | 460.0 | 137,000 | 461.6 | 149,000 | 463.0 | 159,000 | 464.4 | 168,000 |
| 200.3         | 450.6                  | 61,000 | 453.8 | 85,000 | 456.0 | 105,000 | 458.7 | 124,000 | 460.0 | 137,000 | 461.6 | 150,000 | 463.0 | 160,000 | 464.4 | 169,000 |
| 200.75        | 450.6                  | 61,000 | 453.8 | 85,000 | 456.0 | 105,000 | 458.7 | 125,000 | 460.0 | 138,000 | 461.6 | 151,000 | 463.0 | 162,000 | 464.4 | 170,000 |
| 201.02        | 450.7                  | 61,000 | 453.8 | 85,000 | 456.0 | 106,000 | 458.7 | 125,000 | 460.0 | 139,000 | 461.6 | 152,000 | 463.0 | 162,000 | 464.4 | 171,000 |
| 201.3         | 450.7                  | 61,000 | 453.8 | 85,000 | 456.1 | 106,000 | 458.7 | 125,000 | 460.0 | 139,000 | 461.6 | 152,000 | 463.0 | 163,000 | 464.4 | 172,000 |
| 201.55        | 450.7                  | 62,000 | 453.9 | 86,000 | 456.1 | 106,000 | 458.7 | 126,000 | 460.0 | 140,000 | 461.6 | 153,000 | 463.0 | 164,000 | 464.4 | 173,000 |
| 201.8         | 450.8                  | 62,000 | 453.9 | 86,000 | 456.1 | 106,000 | 458.7 | 126,000 | 460.0 | 140,000 | 461.6 | 154,000 | 463.0 | 165,000 | 464.4 | 174,000 |

UPSTREAM XS:  
199.04

## USACE Flow Frequency Study and HEC-RAS Model Boundary Condition Interpolation

|        | Flow Rate at Upstream Cross Section |        |        |        |
|--------|-------------------------------------|--------|--------|--------|
| XS     | 10-YR                               | 50-YR  | 100-YR | 500-YR |
| 198.95 | 103000                              | 135000 | 147000 | 164000 |
| 199.04 | 103360                              | 135000 | 147000 | 164360 |
| 199.2  | 104000                              | 135000 | 147000 | 165000 |

|        | WSEL at Downstream Cross Section |       |        |        |
|--------|----------------------------------|-------|--------|--------|
| XS     | NGVD29                           |       |        |        |
|        | 10-YR                            | 50-YR | 100-YR | 500-YR |
| 191.2  | 455.4                            | 459.4 | 461.0  | 463.8  |
| 191.47 | 455.4                            | 459.4 | 461.0  | 463.8  |
| 191.7  | 455.4                            | 459.4 | 461.0  | 463.8  |

|        | WSEL at Downstream Cross Section |       |       |       |
|--------|----------------------------------|-------|-------|-------|
| XS     | NAVD88                           |       |       |       |
| 191.2  | 455.2                            | 459.2 | 460.8 | 463.6 |
| 191.47 | 455.2                            | 459.2 | 460.8 | 463.6 |
| 191.7  | 455.2                            | 459.2 | 460.8 | 463.6 |

## USACE Flow Frequency Study and HEC-RAS Model Calibration: 100-Year Storm

| River Station | Type              | Observed WSEL (ft) | Computed WSEL (ft) | WSEL Change (ft) | n1    | n2    | n3    | n4 | n5 | n6 | n7 |
|---------------|-------------------|--------------------|--------------------|------------------|-------|-------|-------|----|----|----|----|
| 199.04        |                   | 461.4              | 461.4              | 0.0              | 0.12  | 0.02  | 0.12  |    |    |    |    |
| 198.67        |                   |                    | 461.5              |                  | 0.035 | 0.02  | 0.035 |    |    |    |    |
| 198.36        |                   |                    | 461.4              |                  | 0.05  | 0.02  | 0.05  |    |    |    |    |
| 198.01        |                   |                    | 461.4              |                  | 0.035 | 0.02  | 0.035 |    |    |    |    |
| 197.67        |                   |                    | 461.4              |                  | 0.035 | 0.02  | 0.035 |    |    |    |    |
| 197.34        |                   |                    | 461.4              |                  | 0.035 | 0.02  | 0.035 |    |    |    |    |
| 196.88        |                   | 461.3              | 461.3              | 0.0              | 0.035 | 0.02  | 0.035 |    |    |    |    |
| 196.42        |                   |                    | 461.3              |                  | 0.035 | 0.02  | 0.035 |    |    |    |    |
| 196.4         | Lateral Structure |                    |                    |                  |       |       |       |    |    |    |    |
| 196.19        |                   |                    | 461.3              |                  | 0.035 | 0.02  | 0.035 |    |    |    |    |
| 195.98        |                   |                    | 461.1              |                  | 0.12  | 0.02  | 0.12  |    |    |    |    |
| 195.94        |                   |                    | 460.9              |                  | 0.12  | 0.02  | 0.12  |    |    |    |    |
| 195.59        |                   |                    | 461.1              |                  | 0.035 | 0.02  | 0.035 |    |    |    |    |
| 195.18        |                   | 461                | 461.0              | 0.0              | 0.12  | 0.025 | 0.12  |    |    |    |    |
| 194.75        |                   |                    | 460.9              |                  | 0.12  | 0.025 | 0.12  |    |    |    |    |
| 194.33        |                   |                    | 461.0              |                  | 0.035 | 0.025 | 0.035 |    |    |    |    |
| 193.91        |                   |                    | 460.9              |                  | 0.035 | 0.025 | 0.035 |    |    |    |    |
| 193.57        |                   |                    | 460.9              |                  | 0.035 | 0.025 | 0.035 |    |    |    |    |
| 193.2         |                   | 460.9              | 460.9              | 0.0              | 0.08  | 0.025 | 0.08  |    |    |    |    |
| 192.74        |                   |                    | 460.9              |                  | 0.05  | 0.025 | 0.05  |    |    |    |    |
| 192.49        | Lateral Structure |                    |                    |                  |       |       |       |    |    |    |    |
| 192.3         |                   |                    | 460.8              |                  | 0.035 | 0.025 | 0.035 |    |    |    |    |
| 191.86        |                   |                    | 460.8              |                  | 0.035 | 0.025 | 0.035 |    |    |    |    |
| 191.47        |                   | 460.8              | 460.8              | 0.0              | 0.035 | 0.025 | 0.035 |    |    |    |    |

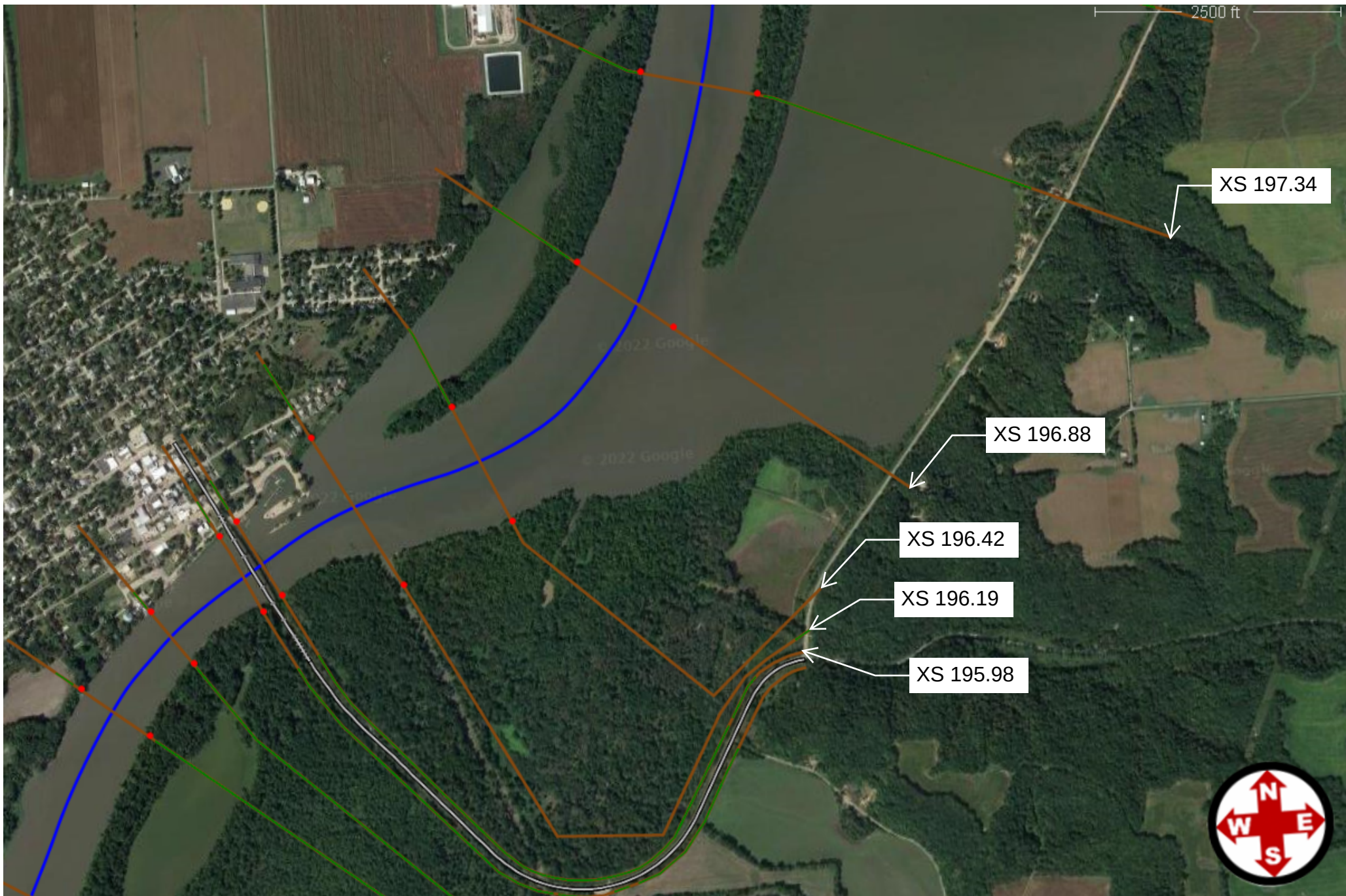
Channel

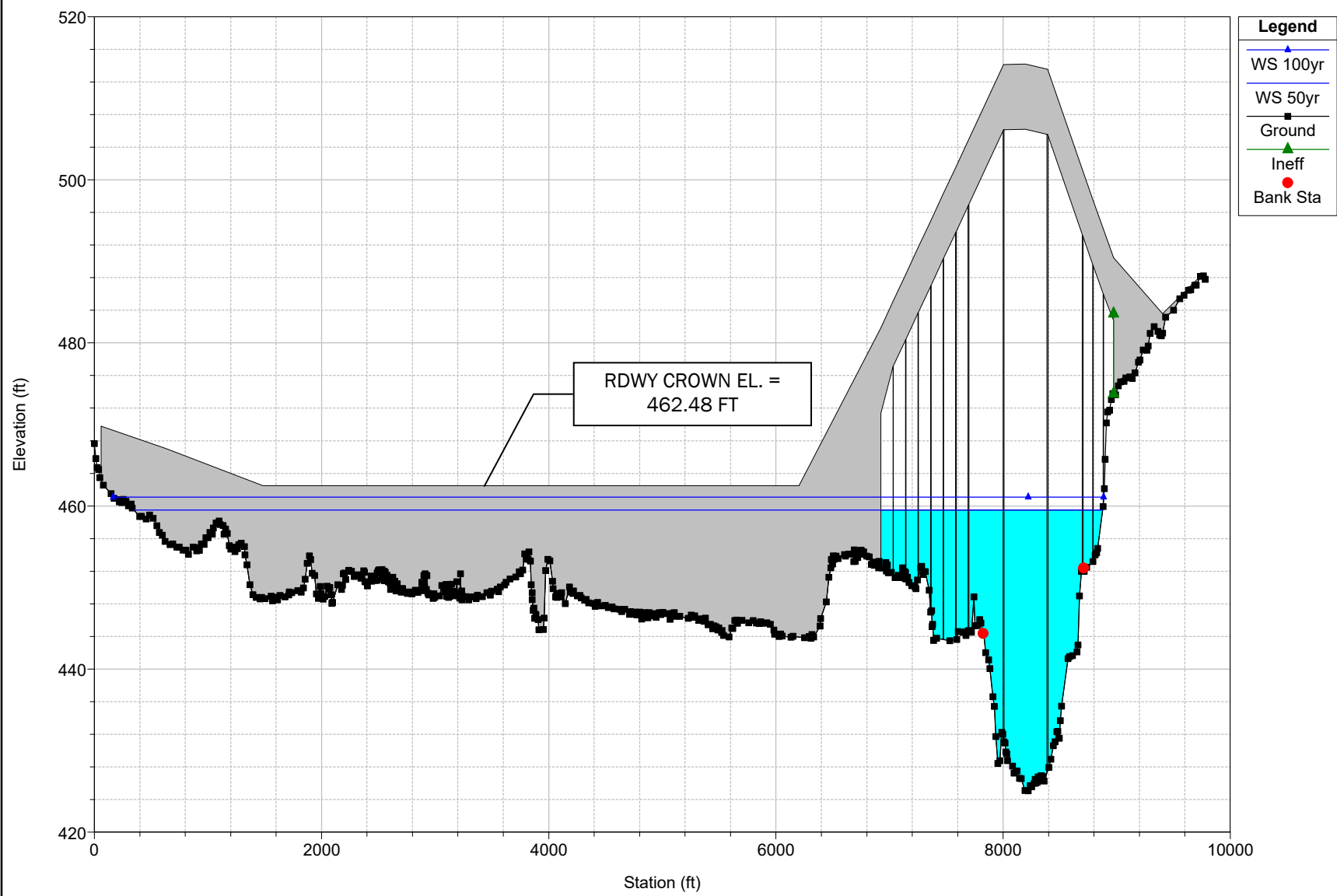
## **Attachment 2**

### HEC-RAS Plan Layout and Detailed Results



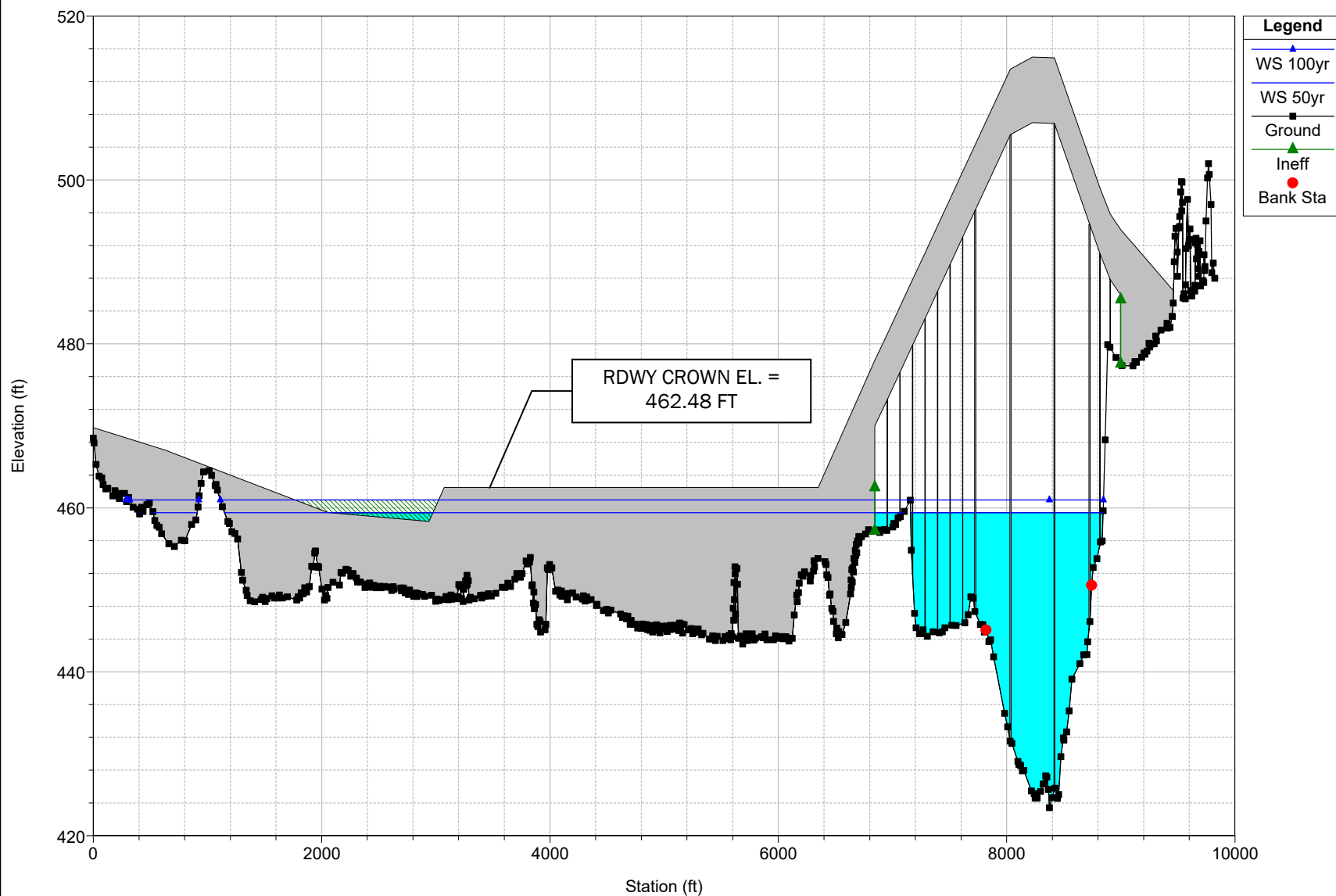
# GeoHECRAS Plan View Layout IL-18 Henry Bridge Replacement



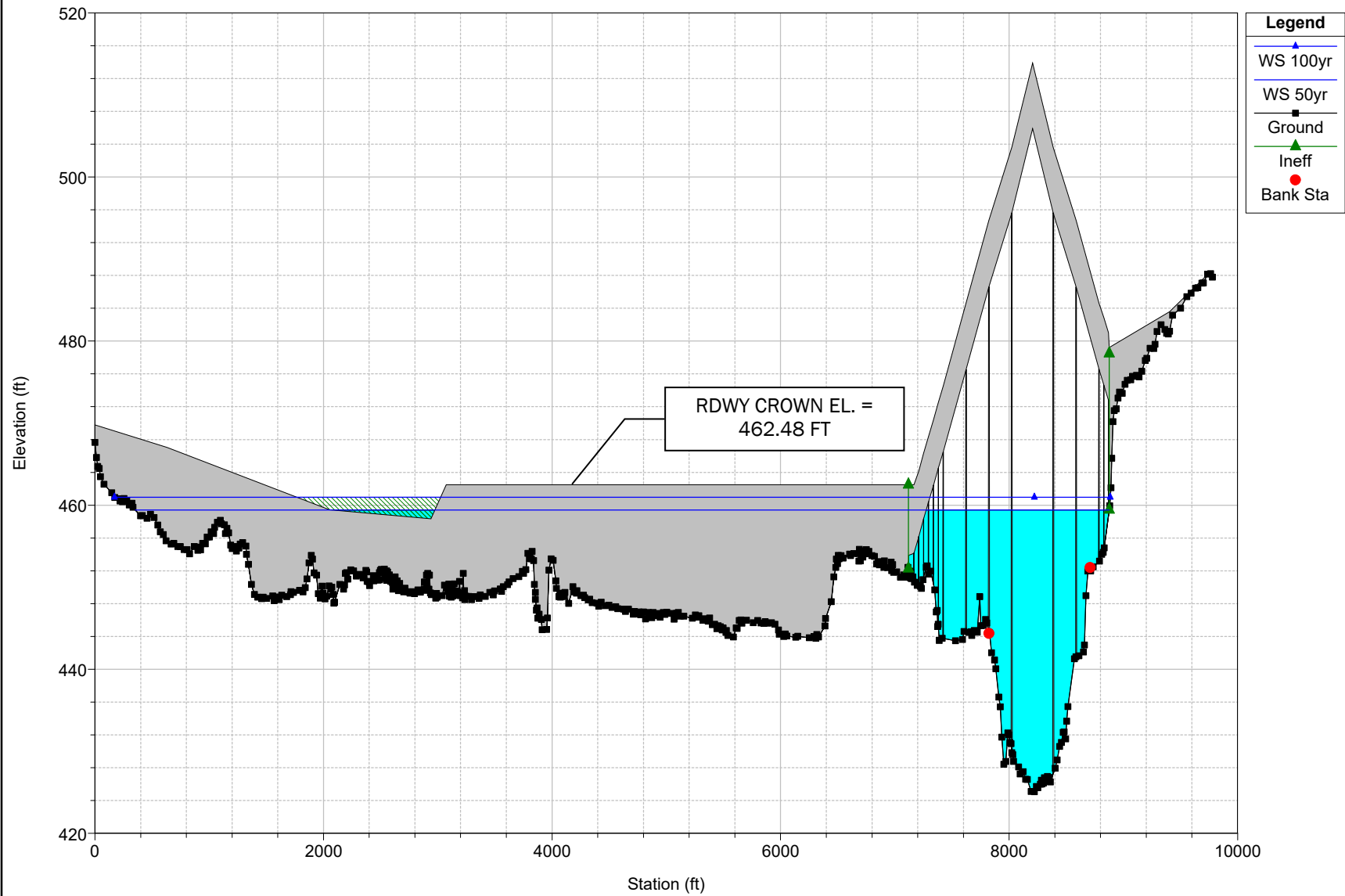




Henry\_Bridge\_Replacement    Plan: Downstream Bridge w IL-18 Future    4/7/2023  
Proposed Downstream Henry Bridge w/ IL 18 Future Compatibility



Existing Henry Bridge w/ IL-18 Future Compatibility



HEC-RAS River: Illinois Reach: Vermil\_FarmDiv

| Reach          | River Sta | Profile | Plan                                                           | Q Total<br>(cfs) | Min Ch El<br>(ft) | W.S. Elev<br>(ft) | Crit W.S.<br>(ft) | E.G. Elev<br>(ft) | E.G. Slope<br>(ft/ft) | Vel Chnl<br>(ft/s) | Flow Area<br>(sq ft) | Top Width<br>(ft) | Froude # Chl |
|----------------|-----------|---------|----------------------------------------------------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------------------|--------------------|----------------------|-------------------|--------------|
| Vermil_FarmDiv | 199.04    | 50yr    | Natural                                                        | 135000.00        | 424.38            | 460.02            | 441.52            | 460.13            | 0.000024              | 3.23               | 146946.20            | 10440.23          | 0.11         |
| Vermil_FarmDiv | 199.04    | 50yr    | Pre-Project w IL-18 Future Compatibility                       | 135000.00        | 424.38            | 460.20            | 441.52            | 460.31            | 0.000024              | 3.20               | 148807.00            | 10441.67          | 0.11         |
| Vermil_FarmDiv | 199.04    | 50yr    | Pre-Project                                                    | 135000.00        | 424.38            | 460.19            | 441.52            | 460.29            | 0.000024              | 3.20               | 148640.70            | 10441.54          | 0.11         |
| Vermil_FarmDiv | 199.04    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 424.38            | 460.11            | 441.52            | 460.22            | 0.000024              | 3.21               | 147827.80            | 10440.91          | 0.11         |
| Vermil_FarmDiv | 199.04    | 50yr    | Downstream Bridge                                              | 135000.00        | 424.38            | 460.18            | 441.52            | 460.28            | 0.000024              | 3.20               | 148548.60            | 10441.47          | 0.11         |
| Vermil_FarmDiv | 199.04    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 424.38            | 460.22            | 441.52            | 460.32            | 0.000024              | 3.19               | 148962.50            | 10441.79          | 0.11         |
| Vermil_FarmDiv | 199.04    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 424.38            | 460.17            | 441.52            | 460.28            | 0.000024              | 3.20               | 148488.70            | 10441.42          | 0.11         |
| Vermil_FarmDiv | 199.04    | 100yr   | Natural                                                        | 147000.00        | 424.38            | 461.56            | 441.99            | 461.67            | 0.000023              | 3.24               | 163339.80            | 10897.54          | 0.11         |
| Vermil_FarmDiv | 199.04    | 100yr   | Pre-Project w IL-18 Future Compatibility                       | 147000.00        | 424.38            | 461.77            | 441.99            | 461.87            | 0.000022              | 3.20               | 165654.10            | 11093.66          | 0.11         |
| Vermil_FarmDiv | 199.04    | 100yr   | Pre-Project                                                    | 147000.00        | 424.38            | 461.73            | 441.99            | 461.83            | 0.000022              | 3.21               | 165212.40            | 11090.96          | 0.11         |
| Vermil_FarmDiv | 199.04    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 424.38            | 461.66            | 441.99            | 461.77            | 0.000022              | 3.22               | 164495.80            | 11040.13          | 0.11         |
| Vermil_FarmDiv | 199.04    | 100yr   | Downstream Bridge                                              | 147000.00        | 424.38            | 461.73            | 441.99            | 461.83            | 0.000022              | 3.21               | 165209.00            | 11090.03          | 0.11         |
| Vermil_FarmDiv | 199.04    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 424.38            | 461.79            | 441.99            | 461.90            | 0.000022              | 3.20               | 165935.10            | 11095.96          | 0.11         |
| Vermil_FarmDiv | 199.04    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 424.38            | 461.73            | 441.99            | 461.83            | 0.000022              | 3.21               | 165210.30            | 11090.04          | 0.11         |
| Vermil_FarmDiv | 198.67    | 50yr    | Natural                                                        | 135000.00        | 425.26            | 460.05            | 440.71            | 460.08            | 0.000009              | 2.04               | 126131.80            | 7524.97           | 0.07         |
| Vermil_FarmDiv | 198.67    | 50yr    | Pre-Project w IL-18 Future Compatibility                       | 135000.00        | 425.26            | 460.23            | 440.71            | 460.26            | 0.000009              | 2.02               | 127470.70            | 7534.38           | 0.07         |
| Vermil_FarmDiv | 198.67    | 50yr    | Pre-Project                                                    | 135000.00        | 425.26            | 460.21            | 440.71            | 460.24            | 0.000009              | 2.02               | 127351.20            | 7533.54           | 0.07         |
| Vermil_FarmDiv | 198.67    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 425.26            | 460.13            | 440.71            | 460.17            | 0.000009              | 2.03               | 126766.00            | 7529.43           | 0.07         |
| Vermil_FarmDiv | 198.67    | 50yr    | Downstream Bridge                                              | 135000.00        | 425.26            | 460.20            | 440.71            | 460.23            | 0.000009              | 2.02               | 127285.00            | 7533.08           | 0.07         |
| Vermil_FarmDiv | 198.67    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 425.26            | 460.24            | 440.71            | 460.27            | 0.000009              | 2.01               | 127582.90            | 7535.17           | 0.07         |
| Vermil_FarmDiv | 198.67    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 425.26            | 460.20            | 440.71            | 460.23            | 0.000009              | 2.02               | 127241.70            | 7532.77           | 0.07         |
| Vermil_FarmDiv | 198.67    | 100yr   | Natural                                                        | 147000.00        | 425.26            | 461.59            | 441.08            | 461.62            | 0.000009              | 2.03               | 137777.80            | 7636.12           | 0.07         |
| Vermil_FarmDiv | 198.67    | 100yr   | Pre-Project w IL-18 Future Compatibility                       | 147000.00        | 425.26            | 461.80            | 441.08            | 461.83            | 0.000008              | 2.01               | 139381.00            | 7646.13           | 0.07         |
| Vermil_FarmDiv | 198.67    | 100yr   | Pre-Project                                                    | 147000.00        | 425.26            | 461.76            | 441.08            | 461.79            | 0.000008              | 2.01               | 139077.30            | 7644.23           | 0.07         |
| Vermil_FarmDiv | 198.67    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 425.26            | 461.69            | 441.08            | 461.72            | 0.000008              | 2.02               | 138583.90            | 7641.15           | 0.07         |
| Vermil_FarmDiv | 198.67    | 100yr   | Downstream Bridge                                              | 147000.00        | 425.26            | 461.76            | 441.08            | 461.79            | 0.000008              | 2.01               | 139074.90            | 7644.22           | 0.07         |
| Vermil_FarmDiv | 198.67    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 425.26            | 461.82            | 441.08            | 461.85            | 0.000008              | 2.00               | 139574.50            | 7647.34           | 0.07         |
| Vermil_FarmDiv | 198.67    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 425.26            | 461.76            | 441.08            | 461.79            | 0.000008              | 2.01               | 139075.80            | 7644.22           | 0.07         |
| Vermil_FarmDiv | 198.36    | 50yr    | Natural                                                        | 135000.00        | 425.84            | 459.99            | 440.58            | 460.06            | 0.000015              | 2.59               | 109359.90            | 6530.37           | 0.09         |
| Vermil_FarmDiv | 198.36    | 50yr    | Pre-Project w IL-18 Future Compatibility                       | 135000.00        | 425.84            | 460.17            | 440.58            | 460.24            | 0.000015              | 2.56               | 110530.50            | 6531.00           | 0.09         |
| Vermil_FarmDiv | 198.36    | 50yr    | Pre-Project                                                    | 135000.00        | 425.84            | 460.16            | 440.58            | 460.22            | 0.000015              | 2.56               | 110425.80            | 6530.94           | 0.09         |
| Vermil_FarmDiv | 198.36    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 425.84            | 460.08            | 440.58            | 460.14            | 0.000015              | 2.57               | 109914.60            | 6530.67           | 0.09         |
| Vermil_FarmDiv | 198.36    | 50yr    | Downstream Bridge                                              | 135000.00        | 425.84            | 460.15            | 440.58            | 460.21            | 0.000015              | 2.56               | 110368.00            | 6530.91           | 0.09         |
| Vermil_FarmDiv | 198.36    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 425.84            | 460.19            | 440.58            | 460.25            | 0.000015              | 2.56               | 110628.30            | 6531.05           | 0.09         |
| Vermil_FarmDiv | 198.36    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 425.84            | 460.14            | 440.58            | 460.21            | 0.000015              | 2.56               | 110330.10            | 6530.89           | 0.09         |
| Vermil_FarmDiv | 198.36    | 100yr   | Natural                                                        | 147000.00        | 425.84            | 461.53            | 441.13            | 461.60            | 0.000014              | 2.58               | 119417.40            | 6536.96           | 0.09         |
| Vermil_FarmDiv | 198.36    | 100yr   | Pre-Project w IL-18 Future Compatibility                       | 147000.00        | 425.84            | 461.74            | 441.13            | 461.81            | 0.000014              | 2.55               | 120798.60            | 6539.62           | 0.08         |
| Vermil_FarmDiv | 198.36    | 100yr   | Pre-Project                                                    | 147000.00        | 425.84            | 461.70            | 441.13            | 461.77            | 0.000014              | 2.56               | 120537.00            | 6539.11           | 0.09         |
| Vermil_FarmDiv | 198.36    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 425.84            | 461.64            | 441.13            | 461.70            | 0.000014              | 2.57               | 120112.30            | 6538.30           | 0.09         |
| Vermil_FarmDiv | 198.36    | 100yr   | Downstream Bridge                                              | 147000.00        | 425.84            | 461.70            | 441.13            | 461.77            | 0.000014              | 2.56               | 120535.00            | 6539.11           | 0.09         |
| Vermil_FarmDiv | 198.36    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 425.84            | 461.77            | 441.13            | 461.83            | 0.000014              | 2.55               | 120965.20            | 6539.94           | 0.08         |
| Vermil_FarmDiv | 198.36    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 425.84            | 461.70            | 441.13            | 461.77            | 0.000014              | 2.56               | 120535.70            | 6539.11           | 0.09         |
| Vermil_FarmDiv | 198.01    | 50yr    | Natural                                                        | 135000.00        | 424.85            | 459.99            | 440.18            | 460.03            | 0.000010              | 2.15               | 111049.30            | 5943.89           | 0.07         |
| Vermil_FarmDiv | 198.01    | 50yr    | Pre-Project w IL-18 Future Compatibility                       | 135000.00        | 424.85            | 460.17            | 440.18            | 460.21            | 0.000010              | 2.13               | 112116.00            | 5944.73           | 0.07         |
| Vermil_FarmDiv | 198.01    | 50yr    | Pre-Project                                                    | 135000.00        | 424.85            | 460.15            | 440.18            | 460.19            | 0.000010              | 2.13               | 112020.60            | 5944.65           | 0.07         |
| Vermil_FarmDiv | 198.01    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 424.85            | 460.07            | 440.18            | 460.11            | 0.000010              | 2.14               | 111554.70            | 5944.29           | 0.07         |
| Vermil_FarmDiv | 198.01    | 50yr    | Downstream Bridge                                              | 135000.00        | 424.85            | 460.14            | 440.18            | 460.18            | 0.000010              | 2.13               | 111968.00            | 5944.61           | 0.07         |
| Vermil_FarmDiv | 198.01    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 424.85            | 460.18            | 440.18            | 460.22            | 0.000010              | 2.13               | 112205.00            | 5944.80           | 0.07         |
| Vermil_FarmDiv | 198.01    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 424.85            | 460.14            | 440.18            | 460.18            | 0.000010              | 2.13               | 111933.50            | 5944.58           | 0.07         |
| Vermil_FarmDiv | 198.01    | 100yr   | Natural                                                        | 147000.00        | 424.85            | 461.53            | 440.78            | 461.57            | 0.000010              | 2.15               | 120210.00            | 5950.67           | 0.07         |
| Vermil_FarmDiv | 198.01    | 100yr   | Pre-Project w IL-18 Future Compatibility                       | 147000.00        | 424.85            | 461.74            | 440.78            | 461.78            | 0.000009              | 2.13               | 121468.40            | 5951.50           | 0.07         |
| Vermil_FarmDiv | 198.01    | 100yr   | Pre-Project                                                    | 147000.00        | 424.85            | 461.70            | 440.78            | 461.74            | 0.000009              | 2.13               | 121230.10            | 5951.35           | 0.07         |
| Vermil_FarmDiv | 198.01    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 424.85            | 461.64            | 440.78            | 461.67            | 0.000010              | 2.14               | 120843.30            | 5951.09           | 0.07         |
| Vermil_FarmDiv | 198.01    | 100yr   | Downstream Bridge                                              | 147000.00        | 424.85            | 461.70            | 440.78            | 461.74            | 0.000009              | 2.13               | 121228.30            | 5951.35           | 0.07         |
| Vermil_FarmDiv | 198.01    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 424.85            | 461.77            | 440.78            | 461.80            | 0.000009              | 2.12               | 121620.20            | 5951.60           | 0.07         |
| Vermil_FarmDiv | 198.01    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 424.85            | 461.70            | 440.78            | 461.74            | 0.000009              | 2.13               | 121229.00            | 5951.35           | 0.07         |
| Vermil_FarmDiv | 197.67    | 50yr    | Natural                                                        | 135000.00        | 425.72            | 459.97            | 440.37            | 460.01            | 0.000011              | 2.18               | 104876.20            | 5528.62           | 0.08         |
| Vermil_FarmDiv | 197.67    | 50yr    | Pre-Project w IL-18 Future Compatibility                       | 135000.00        | 425.72            | 460.15            | 440.37            | 460.19            | 0.000011              | 2.16               | 105872.40            | 5538.89           | 0.07         |
| Vermil_FarmDiv | 197.67    | 50yr    | Pre-Project                                                    | 135000.00        | 425.72            | 460.13            | 440.37            | 460.17            | 0.000011              | 2.16               | 105783.00            | 5538.34           | 0.07         |
| Vermil_FarmDiv | 197.67    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 425.72            | 460.05            | 440.37            | 460.09            | 0.000011              | 2.17               | 105347.90            | 5533.81           | 0.07         |
| Vermil_FarmDiv | 197.67    | 50yr    | Downstream Bridge                                              | 135000.00        | 425.72            | 460.12            | 440.37            | 460.16            | 0.000011              | 2.16               | 105734.20            | 5538.03           | 0.07         |
| Vermil_FarmDiv | 197.67    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 425.72            | 460.16            | 440.37            | 460.20            | 0.000011              | 2.16               | 105955.60            | 5539.41           | 0.07         |
| Vermil_FarmDiv | 197.67    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 425.72            | 460.12            | 440.37            | 460.16            | 0.000011              | 2.17               | 105701.70            | 5537.71           | 0.07         |
| Vermil_FarmDiv | 197.67    | 100yr   | Natural                                                        | 147000.00        | 425.72            | 461.51            | 440.96            | 461.55            | 0.000010              | 2.20               | 113436.00            | 5564.51           | 0.07         |
| Vermil_FarmDiv | 197.67    | 100yr   | Pre-Project w IL-18 Future Compatibility                       | 147000.00        | 425.72            | 461.72            | 440.96            | 461.76            | 0.000010              | 2.17               | 114616.50            | 5565.15           | 0.07         |
| Vermil_FarmDiv | 197.67    | 100yr   | Pre-Project                                                    | 147000.00        | 425.72            | 461.68            | 440.96            | 461.72            | 0.000010              | 2.18               | 114392.80            | 5565.03           | 0.07         |
| Vermil_FarmDiv | 197.67    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 425.72            | 461.61            | 440.96            | 461.66            | 0.000010              | 2.18               | 114029.90            | 5564.83           | 0.07         |
| Vermil_FarmDiv | 197.67    | 100yr   | Downstream Bridge                                              | 147000.00        | 425.72            | 461.68            | 440.96            | 461.72            | 0.000010              | 2.18               | 114391.10            | 5565.03           | 0.07         |
| Vermil_FarmDiv | 197.67    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 425.72            | 461.74            | 440.96            | 461.79            | 0.000010              | 2.17               | 114758.80            | 5565.23           | 0.07         |
| Vermil_FarmDiv | 197.67    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 425.72            | 461.68            | 440.96            | 461.72            | 0.000010              | 2.18               | 114391.80            | 5565.03           | 0.07         |
| Vermil_FarmDiv | 197.34    | 50yr    | Natural                                                        | 135000.00        | 425.66            | 459.94            | 439.90            | 459.99            | 0.000012              | 2.26               | 97100.42             | 5087.79           | 0.08         |
| Vermil_FarmDiv | 197.34    | 50yr    | Pre-Project w IL-18 Future Compatibility                       | 135000.00        | 425.66            | 460.12            | 439.90            | 460.17            | 0.000012              | 2.24               | 98020.40             | 5094.15           | 0.08         |
| Vermil_FarmDiv | 197.34    | 50yr    | Pre-Project                                                    | 135000.00        | 425.66            | 460.10            | 439.90            | 460.15            | 0.000012              | 2.24               | 97938.02             | 5093.40           | 0.08         |
| Vermil_FarmDiv | 197.34    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 425.66            | 460.02            | 439.90            | 460.07            | 0.000012              | 2.25               | 97536.34             | 5089.85           | 0.08         |
| Vermil_FarmDiv | 197.34    | 50yr    | Downstream Bridge                                              | 135000.00        | 425.66            | 460.09            | 439.90            | 460.14            | 0.000012              | 2.24               | 97892.77             | 5092.99           | 0.08         |
| Vermil_FarmDiv | 197.34    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 425.66            | 460.13            | 439.90            | 460.18            | 0.000012              | 2.24               | 98097.19             |                   |              |

HEC-RAS River: Illinois Reach: Vermil\_FarmDiv (Continued)

| Reach          | River Sta | Profile | Plan                                                           | Q Total<br>(cfs) | Min Ch El<br>(ft) | W.S. Elev<br>(ft) | Crit W.S.<br>(ft) | E.G. Elev<br>(ft) | E.G. Slope<br>(ft/ft) | Vel Chnl<br>(ft/s) | Flow Area<br>(sq ft) | Top Width<br>(ft) | Froude # Chl |
|----------------|-----------|---------|----------------------------------------------------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------------------|--------------------|----------------------|-------------------|--------------|
| Vermil_FarmDiv | 196.42    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 423.22            | 460.05            | 439.13            | 460.12            | 0.000015              | 2.53               | 8847.47              | 5920.58           | 0.09         |
| Vermil_FarmDiv | 196.42    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 423.22            | 460.01            | 439.13            | 460.08            | 0.000015              | 2.54               | 8847.13              | 5915.27           | 0.09         |
| Vermil_FarmDiv | 196.42    | 100yr   | Natural                                                        | 147000.00        | 423.22            | 461.40            | 439.84            | 461.47            | 0.000014              | 2.54               | 96902.09             | 6236.69           | 0.09         |
| Vermil_FarmDiv | 196.42    | 100yr   | Pre-Project w IL-18 Future Compatibility                       | 147000.00        | 423.22            | 461.62            | 439.84            | 461.69            | 0.000014              | 2.51               | 98294.30             | 6295.19           | 0.08         |
| Vermil_FarmDiv | 196.42    | 100yr   | Pre-Project                                                    | 147000.00        | 423.22            | 461.58            | 439.84            | 461.65            | 0.000014              | 2.51               | 97997.56             | 6289.18           | 0.08         |
| Vermil_FarmDiv | 196.42    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 423.22            | 461.51            | 439.84            | 461.58            | 0.000014              | 2.52               | 97581.39             | 6279.91           | 0.08         |
| Vermil_FarmDiv | 196.42    | 100yr   | Downstream Bridge                                              | 147000.00        | 423.22            | 461.58            | 439.84            | 461.65            | 0.000014              | 2.51               | 97995.43             | 6289.13           | 0.08         |
| Vermil_FarmDiv | 196.42    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 423.22            | 461.65            | 439.84            | 461.71            | 0.000013              | 2.50               | 98417.83             | 6298.79           | 0.08         |
| Vermil_FarmDiv | 196.42    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 423.22            | 461.58            | 439.84            | 461.65            | 0.000014              | 2.51               | 97996.42             | 6289.16           | 0.08         |
| Vermil_FarmDiv | 196.19    | 50yr    | Natural                                                        | 135000.00        | 426.75            | 459.84            | 443.88            | 459.90            | 0.000016              | 2.30               | 99498.96             | 8174.31           | 0.09         |
| Vermil_FarmDiv | 196.19    | 50yr    | Pre-Project w IL-18 Future Compatibility                       | 135000.00        | 426.75            | 460.03            | 443.88            | 460.08            | 0.000016              | 2.27               | 101004.90            | 8191.61           | 0.09         |
| Vermil_FarmDiv | 196.19    | 50yr    | Pre-Project                                                    | 135000.00        | 426.75            | 460.01            | 443.88            | 460.07            | 0.000016              | 2.27               | 100869.90            | 8190.74           | 0.09         |
| Vermil_FarmDiv | 196.19    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 426.75            | 459.93            | 443.88            | 459.99            | 0.000016              | 2.29               | 100213.00            | 8186.50           | 0.09         |
| Vermil_FarmDiv | 196.19    | 50yr    | Downstream Bridge                                              | 135000.00        | 426.75            | 460.00            | 443.88            | 460.06            | 0.000016              | 2.28               | 100796.20            | 8190.26           | 0.09         |
| Vermil_FarmDiv | 196.19    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 426.75            | 460.04            | 443.88            | 460.10            | 0.000016              | 2.27               | 101130.70            | 8192.42           | 0.09         |
| Vermil_FarmDiv | 196.19    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 426.75            | 460.00            | 443.88            | 460.05            | 0.000016              | 2.28               | 100747.00            | 8189.94           | 0.09         |
| Vermil_FarmDiv | 196.19    | 100yr   | Natural                                                        | 147000.00        | 426.75            | 461.40            | 444.23            | 461.45            | 0.000014              | 2.23               | 112270.00            | 8279.08           | 0.08         |
| Vermil_FarmDiv | 196.19    | 100yr   | Pre-Project w IL-18 Future Compatibility                       | 147000.00        | 426.75            | 461.61            | 444.23            | 461.66            | 0.000013              | 2.20               | 114057.80            | 8306.20           | 0.08         |
| Vermil_FarmDiv | 196.19    | 100yr   | Pre-Project                                                    | 147000.00        | 426.75            | 461.57            | 444.23            | 461.62            | 0.000014              | 2.21               | 113719.60            | 8296.38           | 0.08         |
| Vermil_FarmDiv | 196.19    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 426.75            | 461.51            | 444.23            | 461.56            | 0.000014              | 2.22               | 113170.30            | 8290.39           | 0.08         |
| Vermil_FarmDiv | 196.19    | 100yr   | Downstream Bridge                                              | 147000.00        | 426.75            | 461.57            | 444.23            | 461.62            | 0.000014              | 2.21               | 113716.60            | 8296.35           | 0.08         |
| Vermil_FarmDiv | 196.19    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 426.75            | 461.64            | 444.23            | 461.69            | 0.000013              | 2.20               | 114273.50            | 8315.43           | 0.08         |
| Vermil_FarmDiv | 196.19    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 426.75            | 461.57            | 444.23            | 461.62            | 0.000014              | 2.21               | 113718.10            | 8296.37           | 0.08         |
| Vermil_FarmDiv | 195.98    | 50yr    | Natural                                                        | 135000.00        | 425.06            | 459.57            |                   | 459.82            | 0.000046              | 4.47               | 99227.85             | 8533.54           | 0.15         |
| Vermil_FarmDiv | 195.98    | 50yr    | Pre-Project w IL-18 Future Compatibility                       | 135000.00        | 425.06            | 459.48            | 440.19            | 459.93            | 0.000069              | 5.50               | 33483.66             | 8526.90           | 0.19         |
| Vermil_FarmDiv | 195.98    | 50yr    | Pre-Project                                                    | 135000.00        | 425.06            | 459.48            | 440.21            | 459.92            | 0.000068              | 5.46               | 50421.45             | 8526.71           | 0.19         |
| Vermil_FarmDiv | 195.98    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 425.06            | 459.46            | 440.21            | 459.91            | 0.000070              | 5.52               | 46616.72             | 8525.34           | 0.19         |
| Vermil_FarmDiv | 195.98    | 50yr    | Downstream Bridge                                              | 135000.00        | 425.06            | 459.46            |                   | 459.91            | 0.000069              | 5.48               | 35651.76             | 8525.62           | 0.19         |
| Vermil_FarmDiv | 195.98    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 425.06            | 459.82            | 440.19            | 460.05            | 0.000044              | 4.41               | 101320.80            | 8547.96           | 0.15         |
| Vermil_FarmDiv | 195.98    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 425.06            | 459.46            |                   | 459.90            | 0.000069              | 5.48               | 35638.77             | 8525.17           | 0.19         |
| Vermil_FarmDiv | 195.98    | 100yr   | Natural                                                        | 147000.00        | 425.06            | 461.13            |                   | 461.37            | 0.000042              | 4.46               | 112675.80            | 8722.32           | 0.15         |
| Vermil_FarmDiv | 195.98    | 100yr   | Pre-Project w IL-18 Future Compatibility                       | 147000.00        | 425.06            | 461.04            | 440.86            | 461.51            | 0.000067              | 5.63               | 36217.89             | 8717.68           | 0.19         |
| Vermil_FarmDiv | 195.98    | 100yr   | Pre-Project                                                    | 147000.00        | 425.06            | 461.06            | 440.90            | 461.48            | 0.000063              | 5.44               | 40403.98             | 8718.67           | 0.18         |
| Vermil_FarmDiv | 195.98    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 425.06            | 461.05            | 440.90            | 461.49            | 0.000064              | 5.50               | 60297.36             | 8718.27           | 0.18         |
| Vermil_FarmDiv | 195.98    | 100yr   | Downstream Bridge                                              | 147000.00        | 425.06            | 461.01            |                   | 461.47            | 0.000067              | 5.60               | 38838.41             | 8716.21           | 0.19         |
| Vermil_FarmDiv | 195.98    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 425.06            | 461.42            | 440.86            | 461.65            | 0.000040              | 4.39               | 115187.10            | 8736.29           | 0.14         |
| Vermil_FarmDiv | 195.98    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 425.06            | 461.01            |                   | 461.47            | 0.000067              | 5.60               | 38838.79             | 8716.22           | 0.19         |
| Vermil_FarmDiv | 195.97    | 50yr    | Downstream Bridge                                              | 135000.00        | 423.43            | 459.46            | 440.51            | 459.90            | 0.000067              | 5.49               | 48533.92             | 8032.40           | 0.19         |
| Vermil_FarmDiv | 195.97    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 423.43            | 459.45            | 440.51            | 459.89            | 0.000067              | 5.37               | 34215.90             | 8032.37           | 0.18         |
| Vermil_FarmDiv | 195.97    | 100yr   | Downstream Bridge                                              | 147000.00        | 423.43            | 461.00            | 441.31            | 461.46            | 0.000065              | 5.61               | 61216.27             | 8355.52           | 0.18         |
| Vermil_FarmDiv | 195.97    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 423.43            | 461.00            | 441.27            | 461.46            | 0.000065              | 5.52               | 37265.07             | 8355.63           | 0.18         |
| Vermil_FarmDiv | 195.95    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 423.41            | 459.45            |                   | 459.87            | 0.000065              | 5.34               | 43461.13             | 7333.47           | 0.18         |
| Vermil_FarmDiv | 195.95    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 423.41            | 459.59            |                   | 459.89            | 0.000051              | 4.75               | 74858.02             | 7500.83           | 0.16         |
| Vermil_FarmDiv | 195.95    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 423.41            | 461.01            |                   | 461.45            | 0.000063              | 5.46               | 55435.12             | 7803.22           | 0.18         |
| Vermil_FarmDiv | 195.95    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 423.41            | 461.17            |                   | 461.46            | 0.000048              | 4.77               | 87067.28             | 7806.99           | 0.16         |
| Vermil_FarmDiv | 195.94    | 50yr    | Natural                                                        | 135000.00        | 423.52            | 459.57            |                   | 459.80            | 0.000044              | 4.37               | 97816.12             | 7768.84           | 0.15         |
| Vermil_FarmDiv | 195.94    | 50yr    | Pre-Project w IL-18 Future Compatibility                       | 135000.00        | 423.52            | 459.43            |                   | 459.88            | 0.000069              | 5.48               | 33605.77             | 7745.79           | 0.19         |
| Vermil_FarmDiv | 195.94    | 50yr    | Pre-Project                                                    | 135000.00        | 423.52            | 459.43            |                   | 459.87            | 0.000069              | 5.46               | 48445.41             | 7746.22           | 0.19         |
| Vermil_FarmDiv | 195.94    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 423.52            | 459.44            |                   | 459.87            | 0.000067              | 5.40               | 38601.59             | 7747.27           | 0.18         |
| Vermil_FarmDiv | 195.94    | 50yr    | Downstream Bridge                                              | 135000.00        | 423.52            | 459.44            |                   | 459.87            | 0.000067              | 5.39               | 51613.54             | 7747.37           | 0.19         |
| Vermil_FarmDiv | 195.94    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 423.52            | 459.44            |                   | 459.87            | 0.000067              | 5.40               | 38601.59             | 7747.27           | 0.19         |
| Vermil_FarmDiv | 195.94    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 423.52            | 459.44            |                   | 459.86            | 0.000066              | 5.36               | 38347.31             | 7747.96           | 0.18         |
| Vermil_FarmDiv | 195.94    | 100yr   | Natural                                                        | 147000.00        | 423.52            | 461.12            |                   | 461.36            | 0.000042              | 4.43               | 110050.70            | 7901.29           | 0.15         |
| Vermil_FarmDiv | 195.94    | 100yr   | Pre-Project w IL-18 Future Compatibility                       | 147000.00        | 423.52            | 460.98            |                   | 461.45            | 0.000067              | 5.62               | 36226.62             | 7896.56           | 0.19         |
| Vermil_FarmDiv | 195.94    | 100yr   | Pre-Project                                                    | 147000.00        | 423.52            | 461.00            |                   | 461.43            | 0.000064              | 5.47               | 60745.03             | 7897.12           | 0.18         |
| Vermil_FarmDiv | 195.94    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 423.52            | 460.99            |                   | 461.44            | 0.000065              | 5.53               | 39750.02             | 7896.90           | 0.18         |
| Vermil_FarmDiv | 195.94    | 100yr   | Downstream Bridge                                              | 147000.00        | 423.52            | 461.01            |                   | 461.42            | 0.000063              | 5.41               | 63908.70             | 7897.33           | 0.18         |
| Vermil_FarmDiv | 195.94    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 423.52            | 460.99            |                   | 461.44            | 0.000065              | 5.53               | 39750.02             | 7896.90           | 0.18         |
| Vermil_FarmDiv | 195.94    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 423.52            | 461.00            |                   | 461.43            | 0.000064              | 5.48               | 41457.00             | 7897.05           | 0.18         |
| Vermil_FarmDiv | 195.77    | 50yr    | Natural                                                        | 135000.00        | 420.61            | 459.46            | 440.59            | 459.74            | 0.000052              | 4.98               | 95051.20             | 6312.07           | 0.16         |
| Vermil_FarmDiv | 195.77    | 50yr    | Pre-Project w IL-18 Future Compatibility                       | 135000.00        | 420.61            | 459.46            | 440.59            | 459.74            | 0.000052              | 4.98               | 93051.20             | 6312.07           | 0.16         |
| Vermil_FarmDiv | 195.77    | 50yr    | Pre-Project                                                    | 135000.00        | 420.61            | 459.46            | 440.59            | 459.74            | 0.000052              | 4.98               | 93051.20             | 6312.07           | 0.16         |
| Vermil_FarmDiv | 195.77    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 420.61            | 459.46            | 440.59            | 459.74            | 0.000052              | 4.98               | 93051.20             | 6312.07           | 0.16         |
| Vermil_FarmDiv | 195.77    | 50yr    | Downstream Bridge                                              | 135000.00        | 420.61            | 459.46            | 440.59            | 459.74            | 0.000052              | 4.98               | 93051.20             | 6312.07           | 0.16         |
| Vermil_FarmDiv | 195.77    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 420.61            | 459.46            | 440.59            | 459.74            | 0.000052              | 4.98               | 93051.20             | 6312.07           | 0.16         |
| Vermil_FarmDiv | 195.77    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 420.61            | 459.46            | 440.59            | 459.74            | 0.000052              | 4.98               | 93051.20             | 6312.07           | 0.16         |
| Vermil_FarmDiv | 195.77    | 100yr   | Natural                                                        | 147000.00        | 420.61            | 461.02            | 441.33            | 461.30            | 0.000049              | 5.01               | 102965.70            | 6336.65           | 0.16         |
| Vermil_FarmDiv | 195.77    | 100yr   | Pre-Project w IL-18 Future Compatibility                       | 147000.00        | 420.61            | 461.02            | 441.33            | 461.30            | 0.000049              | 5.01               | 102965.70            | 6336.65           | 0.16         |
| Vermil_FarmDiv | 195.77    | 100yr   | Pre-Project                                                    | 147000.00        | 420.61            | 461.02            | 441.33            | 461.30            | 0.000049              | 5.01               | 102965.70            | 6336.65           | 0.16         |
| Vermil_FarmDiv | 195.77    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 420.61            | 461.02            | 441.33            | 461.30            | 0.000049              | 5.01               | 102965.70            | 6336.65           | 0.16         |
| Vermil_FarmDiv | 195.77    | 100yr   | Downstream Bridge                                              | 147000.00        | 420.61            | 461.02            | 441.33            | 461.30            | 0.000049              | 5.01               | 102965.70            | 6336.65           | 0.16         |
| Vermil_FarmDiv | 195.77    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 420.61            | 461.02            | 441.33            | 461.30            | 0.000049              | 5.01               | 102965.70            | 6336.65           | 0.16         |
| Vermil_FarmDiv | 195.77    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 420.61            | 461.02            | 441.33            | 461.30            | 0.000049              | 5.01               | 102965.70            | 6336.65           | 0.16         |
| Vermil_FarmDiv | 195.59    | 50yr    | Natural                                                        | 135000.00        | 422.66            | 459.60            | 441.98            | 459.64            | 0.000014              | 2.44               | 107567.80            | 6734.20           | 0.08         |
| Vermil_FarmDiv | 195.59    | 50yr    | Pre-Project w IL-18 Future Compatibility                       | 135000.00        | 422.66            | 459.60            | 441.98            | 459.64            | 0.000014              | 2.44               | 107567.80            | 6734.20           | 0.08         |
| Vermil_FarmDiv | 195.59    | 50yr    | Pre-Project                                                    | 135000.00        | 422.66            | 459.60            | 441.98            | 459.64            | 0.000014              | 2.44               | 107567.80            | 6734.20           | 0.08         |
| Vermil_FarmDiv | 195.59    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 422.66            | 459.60            | 441.              |                   |                       |                    |                      |                   |              |



HEC-RAS River: Illinois Reach: Vermil\_FarmDiv (Continued)

| Reach          | River Sta | Profile | Plan                                                           | Q Total<br>(cfs) | Min Ch El<br>(ft) | W.S. Elev<br>(ft) | Crit W.S.<br>(ft) | E.G. Elev<br>(ft) | E.G. Slope<br>(ft/ft) | Vel Chnl<br>(ft/s) | Flow Area<br>(sq ft) | Top Width<br>(ft) | Froude # Chl |
|----------------|-----------|---------|----------------------------------------------------------------|------------------|-------------------|-------------------|-------------------|-------------------|-----------------------|--------------------|----------------------|-------------------|--------------|
| Vermil_FarmDiv | 191.86    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 421.66            | 459.22            | 437.28            | 459.24            | 0.000011              | 1.81               | 126404.20            | 8690.94           | 0.06         |
| Vermil_FarmDiv | 191.86    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 421.66            | 459.22            | 437.28            | 459.24            | 0.000011              | 1.81               | 126404.20            | 8690.94           | 0.06         |
| Vermil_FarmDiv | 191.86    | 100yr   | Natural                                                        | 147000.00        | 421.66            | 460.81            | 438.10            | 460.84            | 0.000010              | 1.77               | 140577.90            | 9163.36           | 0.06         |
| Vermil_FarmDiv | 191.86    | 100yr   | Pre-Project w IL-18 Future Compatibility                       | 147000.00        | 421.66            | 460.81            | 438.10            | 460.84            | 0.000010              | 1.77               | 140577.90            | 9163.36           | 0.06         |
| Vermil_FarmDiv | 191.86    | 100yr   | Pre-Project                                                    | 147000.00        | 421.66            | 460.81            | 438.10            | 460.84            | 0.000010              | 1.77               | 140577.90            | 9163.36           | 0.06         |
| Vermil_FarmDiv | 191.86    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 421.66            | 460.81            | 438.10            | 460.84            | 0.000010              | 1.77               | 140577.90            | 9163.36           | 0.06         |
| Vermil_FarmDiv | 191.86    | 100yr   | Downstream Bridge                                              | 147000.00        | 421.66            | 460.81            | 438.10            | 460.84            | 0.000010              | 1.77               | 140577.90            | 9163.36           | 0.06         |
| Vermil_FarmDiv | 191.86    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 421.66            | 460.81            | 438.10            | 460.84            | 0.000010              | 1.77               | 140577.90            | 9163.36           | 0.06         |
| Vermil_FarmDiv | 191.86    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 421.66            | 460.81            | 438.10            | 460.84            | 0.000010              | 1.77               | 140577.90            | 9163.36           | 0.06         |
| Vermil_FarmDiv | 191.47    | 50yr    | Natural                                                        | 135000.00        | 421.90            | 459.20            | 437.99            | 459.22            | 0.000009              | 1.49               | 135517.60            | 8940.75           | 0.05         |
| Vermil_FarmDiv | 191.47    | 50yr    | Pre-Project w IL-18 Future Compatibility                       | 135000.00        | 421.90            | 459.20            | 437.99            | 459.22            | 0.000009              | 1.49               | 135517.60            | 8940.75           | 0.05         |
| Vermil_FarmDiv | 191.47    | 50yr    | Pre-Project                                                    | 135000.00        | 421.90            | 459.20            | 437.99            | 459.22            | 0.000009              | 1.49               | 135517.60            | 8940.75           | 0.05         |
| Vermil_FarmDiv | 191.47    | 50yr    | US Bridge- Long Span                                           | 135000.00        | 421.90            | 459.20            | 437.99            | 459.22            | 0.000009              | 1.49               | 135517.60            | 8940.75           | 0.05         |
| Vermil_FarmDiv | 191.47    | 50yr    | Downstream Bridge                                              | 135000.00        | 421.90            | 459.20            | 437.99            | 459.22            | 0.000009              | 1.49               | 135517.60            | 8940.75           | 0.05         |
| Vermil_FarmDiv | 191.47    | 50yr    | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 135000.00        | 421.90            | 459.20            | 437.99            | 459.22            | 0.000009              | 1.49               | 135517.60            | 8940.75           | 0.05         |
| Vermil_FarmDiv | 191.47    | 50yr    | Downstream Bridge w IL-18 Future Compatibility                 | 135000.00        | 421.90            | 459.20            | 437.99            | 459.22            | 0.000009              | 1.49               | 135517.60            | 8940.75           | 0.05         |
| Vermil_FarmDiv | 191.47    | 100yr   | Natural                                                        | 147000.00        | 421.90            | 460.80            | 440.37            | 460.82            | 0.000008              | 1.46               | 150110.50            | 9387.64           | 0.05         |
| Vermil_FarmDiv | 191.47    | 100yr   | Pre-Project w IL-18 Future Compatibility                       | 147000.00        | 421.90            | 460.80            | 440.37            | 460.82            | 0.000008              | 1.46               | 150110.50            | 9387.64           | 0.05         |
| Vermil_FarmDiv | 191.47    | 100yr   | Pre-Project                                                    | 147000.00        | 421.90            | 460.80            | 440.37            | 460.82            | 0.000008              | 1.46               | 150110.50            | 9387.64           | 0.05         |
| Vermil_FarmDiv | 191.47    | 100yr   | US Bridge- Long Span                                           | 147000.00        | 421.90            | 460.80            | 440.37            | 460.82            | 0.000008              | 1.46               | 150110.50            | 9387.64           | 0.05         |
| Vermil_FarmDiv | 191.47    | 100yr   | Downstream Bridge                                              | 147000.00        | 421.90            | 460.80            | 440.37            | 460.82            | 0.000008              | 1.46               | 150110.50            | 9387.64           | 0.05         |
| Vermil_FarmDiv | 191.47    | 100yr   | Upstream Bridge w Policy Reconstruction of IL-18 & Sandy Creek | 147000.00        | 421.90            | 460.80            | 440.37            | 460.82            | 0.000008              | 1.46               | 150110.50            | 9387.64           | 0.05         |
| Vermil_FarmDiv | 191.47    | 100yr   | Downstream Bridge w IL-18 Future Compatibility                 | 147000.00        | 421.90            | 460.80            | 440.37            | 460.82            | 0.000008              | 1.46               | 150110.50            | 9387.64           | 0.05         |

## **Attachment 3**

### Bridge Drawings



Benchmark:  
BM-111, chiseled square on north end of existing east abutment. Elev. 461.535. Additional BM-907, square at south end of existing west abutment. Elev. 480.372.

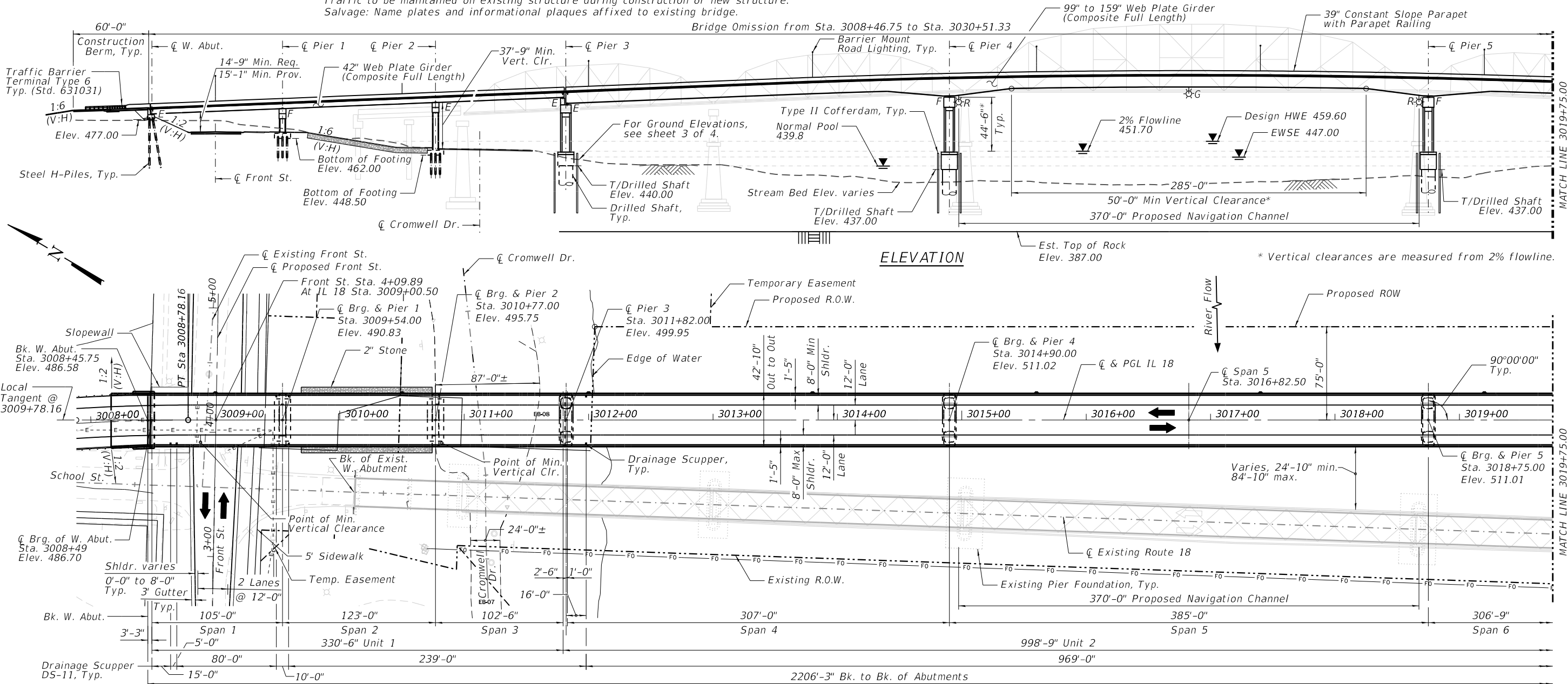
Existing Structure:  
062-0036 Steel truss with concrete deck spans and steel beams with concrete approach spans. Concrete piers on timber pile-supported footings and driven reinforced concrete pile bent piers and pile supported abutments. Approximately 1,719 ft back to back abutments by 22'-8" face to face rails. Originally constructed in 1934 as Route SBI-89C, Section 104-B. Reconstructed in 1988 as Route FAS2369, Section 140B-D. To be removed after new structure is complete.

Traffic Control:  
Traffic to be maintained on existing structure during construction of new structure.  
Salvage: Name plates and informational plaques affixed to existing bridge.

- Notes:
1. All elevations are given in NAVD 1988 Datum unless noted.
  2. EWSE = Estimated Water Surface Elevation.
  3. HWE = High Water Elevation.
  4. For ground elevation see Sheet 3.
  5. All structural steel shall be painted. Steel within 10 ft. of expansion joints shall be metalized or galvanized before painting.
  6. Unit 1 deck drainage shall be collected in a closed system and piped to ground.

LEGEND

- Soil Boring
- Navigation Lights
- Traffic Sign
- Sanitary Sewer
- Storm Structure
- Buried Fiber Optic
- Overhead Electric



DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

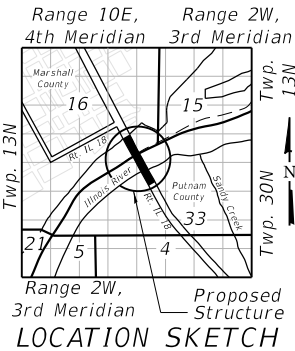
LOADING HL-93

Allow 50#/sq. ft for Future Wearing Surface.

HIGHWAY CLASSIFICATION

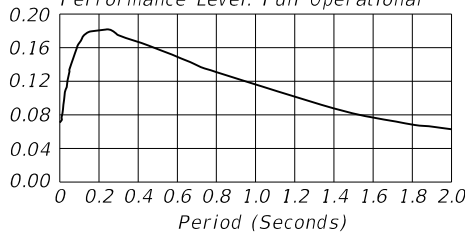
IL 18 (FAP 653)  
Functional Class: Minor Arterial  
ADT: 2,200 (2021); 2900 (2045)  
ADTT: 110 (2021); 145 (2045)  
DHV: 220  
Design Speed: 40 m.p.h. West  
60 m.p.h. East  
Posted Speed: 35 m.p.h. West  
55 m.p.h. East  
Two-Way Traffic  
Directional Distribution: 50/50

PLAN



SEISMIC DATA

2023 AASHTO Seismic Hazard  
Site Class D  
Latitude 41.11N, Longitude 89.35W  
Performance Level: Full Operational



GENERAL PLAN & ELEVATION - 1

IL 18 OVER ILLINOIS RIVER

PUBLIC WATER

F.A.P. 653 - SEC. 104B-D

MARSHALL COUNTY/PUTNAM COUNTY

STATION 3016+82.5

STRUCTURE NO. 062-0089

| WATERWAY INFORMATION TABLE |           |                   |                                                     |          |             |                      |          |          |          |
|----------------------------|-----------|-------------------|-----------------------------------------------------|----------|-------------|----------------------|----------|----------|----------|
| Drainage Area              |           | 13,544.00 sq. mi. | Existing Overtopping Elev. = 456.64 at Sta. 86+87   |          |             |                      |          |          |          |
|                            |           | Discharge         | Proposed Overtopping Elev. = 456.83 at Sta. 3048+61 |          |             |                      |          |          |          |
|                            |           |                   | Waterway Opening (sf)                               | Natural  | Head (ft)   | Headwater Elev. (ft) |          |          |          |
|                            |           |                   |                                                     |          |             |                      | Existing | Proposed |          |
| Flood                      | Freq. Yr. | (cfs)             | Existing                                            | Proposed | H.W.E. (ft) | Existing             | Proposed | Existing | Proposed |
| Ten-Year                   | 10        | 103,360           | 23,041                                              | 27,636   | 455.7       | 0.1                  | 0.1      | 455.8    | 455.8    |
| Design                     | 50        | 135,000           | 29,468                                              | 35,347   | 459.6       | 0.1                  | 0.1      | 459.7    | 459.7    |
| Base                       | 100       | 147,000           | 32,147                                              | 38,783   | 461.2       | 0.1                  | 0.1      | 461.3    | 461.3    |
| Scour Check                | 200       | 156,360           | 34,497                                              | 41,621   | 462.6       | 0.2                  | 0.2      | 462.8    | 462.8    |
| Max Calc.                  | 500       | 164,360           | 36,684                                              | 44,283   | 463.9       | 0.1                  | 0.1      | 464.0    | 464.0    |

10 - Year Velocity through Existing Structure 4.5 ft/s  
10 - Year Velocity through Proposed Structure 3.7 ft/s



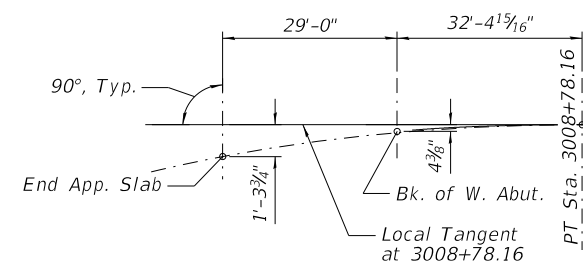
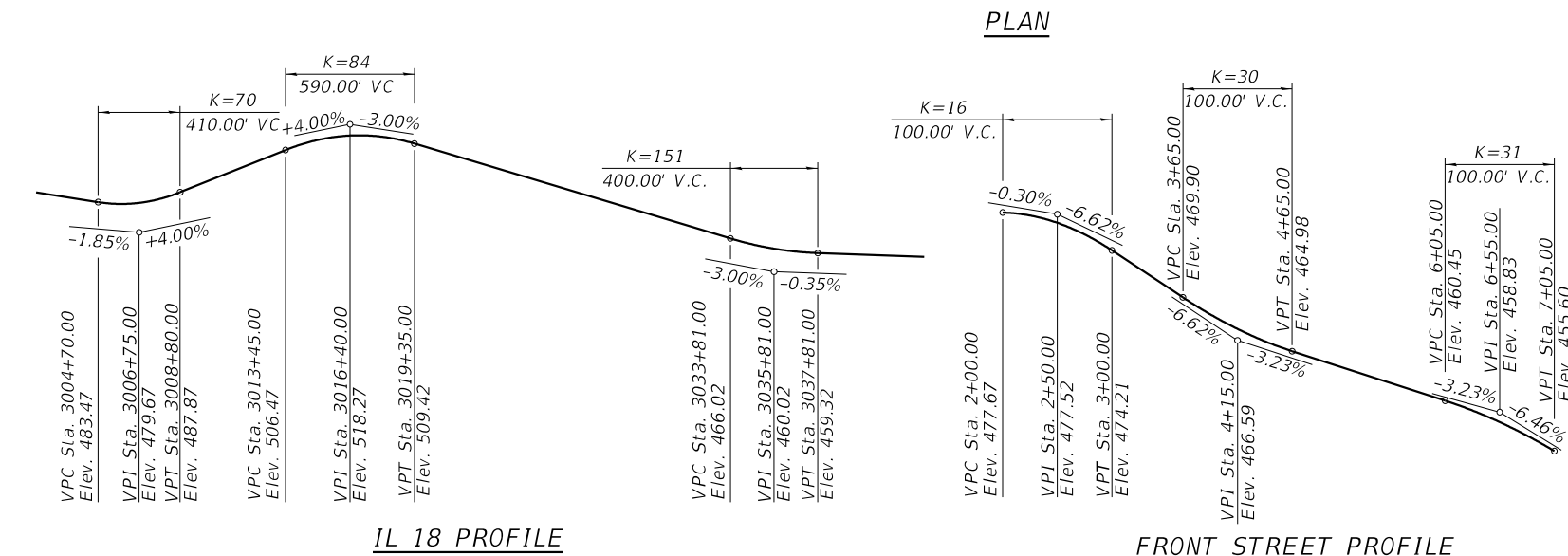
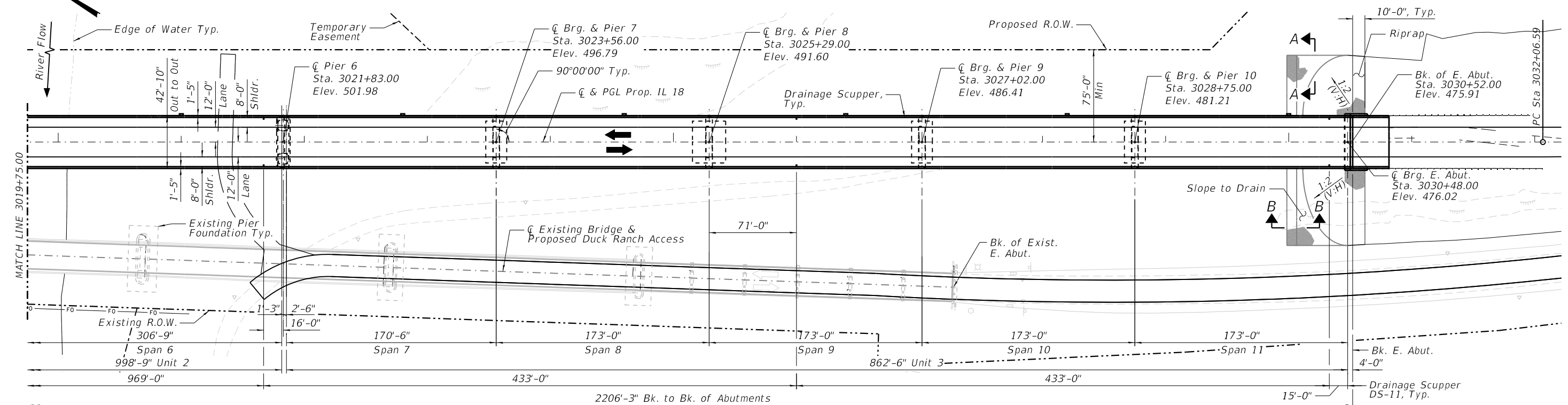
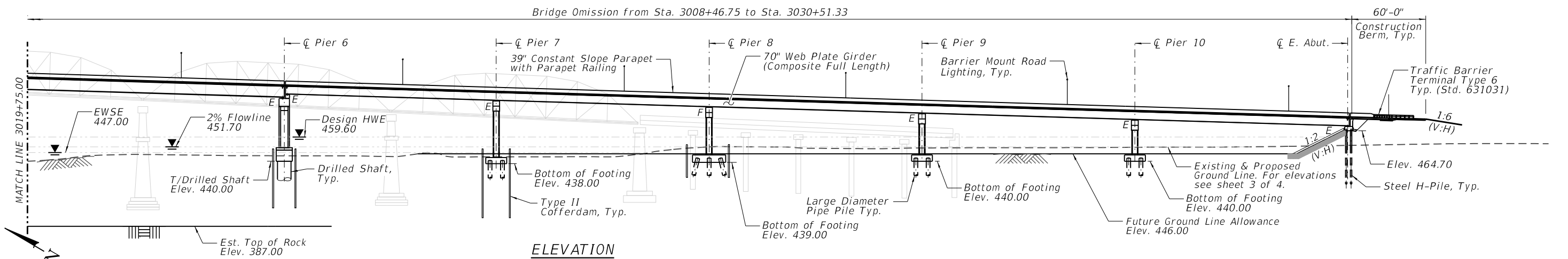
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| CHECKED    | = | TCU      | REVIS | -   |       |   |
| PLOT SCALE | = | DRAWN    | -     | NTE | REVIS | - |
| PLOT DATE  | = | CHECKED  | -     | TCU | REVIS | - |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 4 SHEETS

|                    |         |          |              |           |
|--------------------|---------|----------|--------------|-----------|
| F.A.P. RTE.        | SECTION | COUNTY   | TOTAL SHEETS | SHEET NO. |
| 653                | 104B-D  | MARSHALL | 4            | 1         |
| CONTRACT NO. 68F09 |         |          |              |           |

ILLINOIS FED. AID PROJECT



### OFFSET SKETCH

*P.I. Sta. 3007+88.54*  
 $\Delta = 7^{\circ} 08' 26''$  (RT)  
 $D = 3^{\circ} 58' 44''$   
 $R = 1,440.00'$   
 $T = 89.85'$   
 $L = 179.46'$   
 $E = 2.80'$   
 $e = 4.0\%$   
 $T.R. = 31'$   
 $S.E. Run = 83'$   
 $P.C. STA. = 3006+98.70$   
 $P.T. STA. = 3008+78.16$

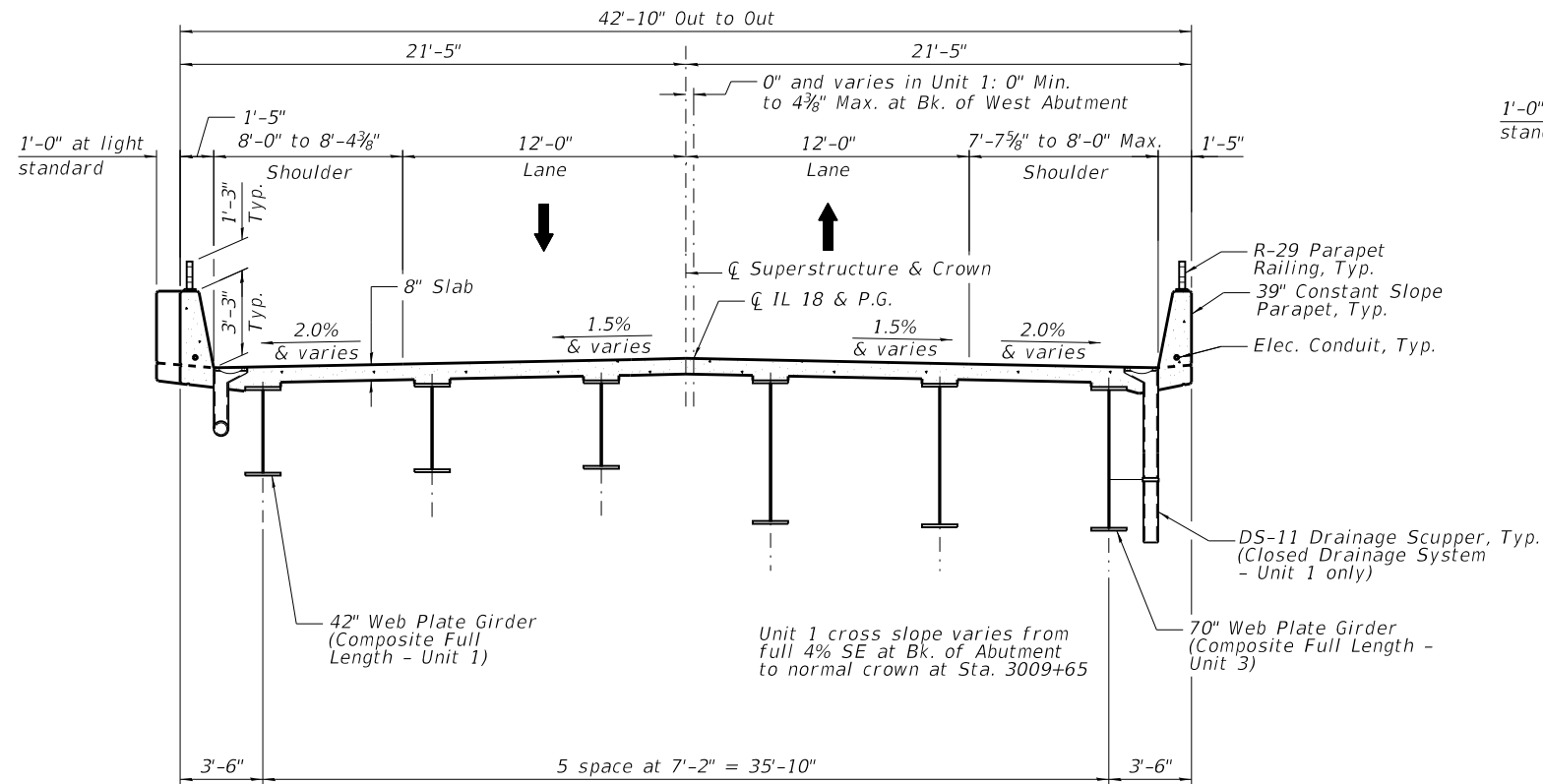
## DESIGN STRESSES FIELD UNITS

$f'_c = 3,500$  psi (Substructure)  
 $f'_c = 4,000$  psi (Superstructure)  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 50,000$  psi (M270 Grade 50)

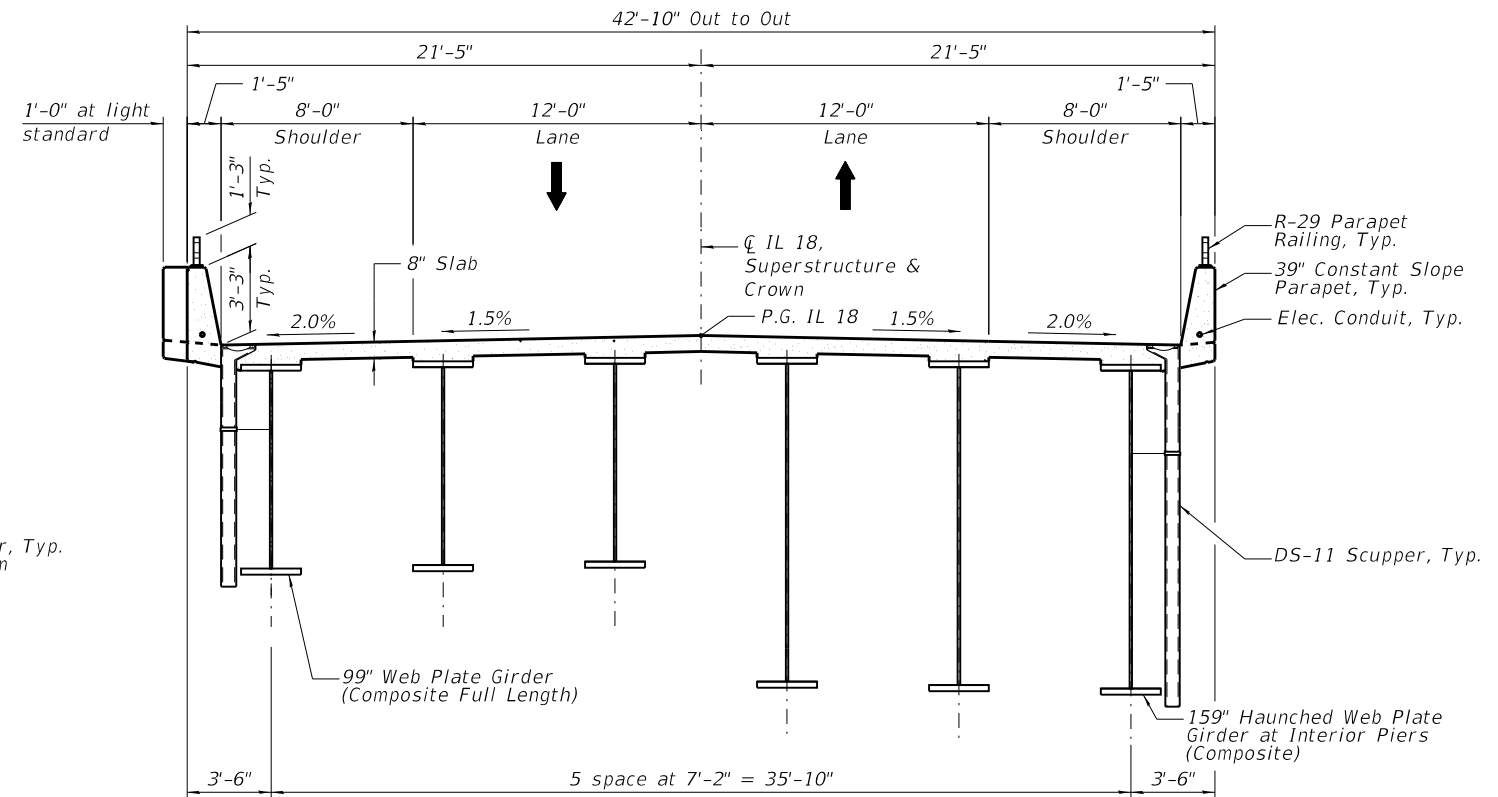
GENERAL PLAN & ELEVATION - 2  
IL 18 OVER ILLINOIS RIVER  
PUBLIC WATER  
F.A.P. 653 - SEC. 104B-D  
MARSHALL COUNTY/PUTNAM COUNTY  
STATION 3016+82.5  
STRUCTURE NO. 062-0089

|                                                                                     |              |               |           |                                                   |                    |                     |         |          |              |           |  |
|-------------------------------------------------------------------------------------|--------------|---------------|-----------|---------------------------------------------------|--------------------|---------------------|---------|----------|--------------|-----------|--|
|  | USER NAME =  | DESIGNED - YC | REVISED - | STATE OF ILLINOIS<br>DEPARTMENT OF TRANSPORTATION | CONTRACT NO. 68F09 | F.A.P. RTE.         | SECTION | COUNTY   | TOTAL SHEETS | SHEET NO. |  |
|                                                                                     |              | CHECKED - TCU | REVISED - |                                                   |                    | 653                 | 104B-D  | MARSHALL | 4            | 2         |  |
|                                                                                     | PLOT SCALE = | DRAWN - NTE   | REVISED - |                                                   |                    | SHEET 2 OF 4 SHEETS |         |          |              |           |  |
|                                                                                     | PLOT DATE =  | CHECKED - TCU | REVISED - |                                                   |                    |                     |         |          |              |           |  |

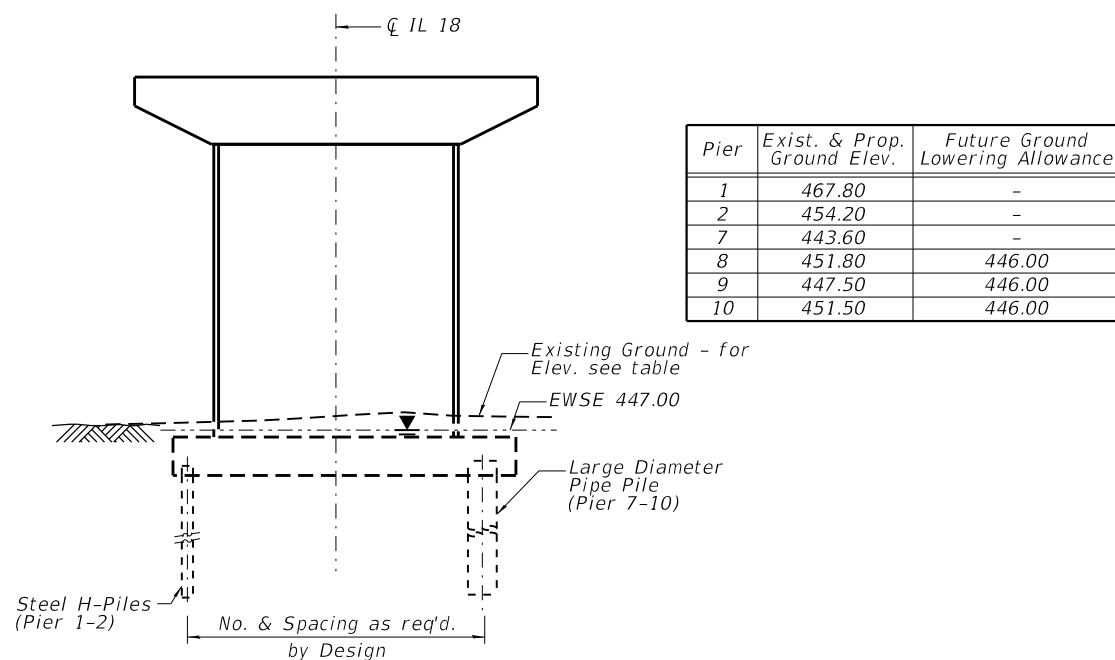
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**CROSS SECTION (UNIT 1 & 3)**  
(Looking East)

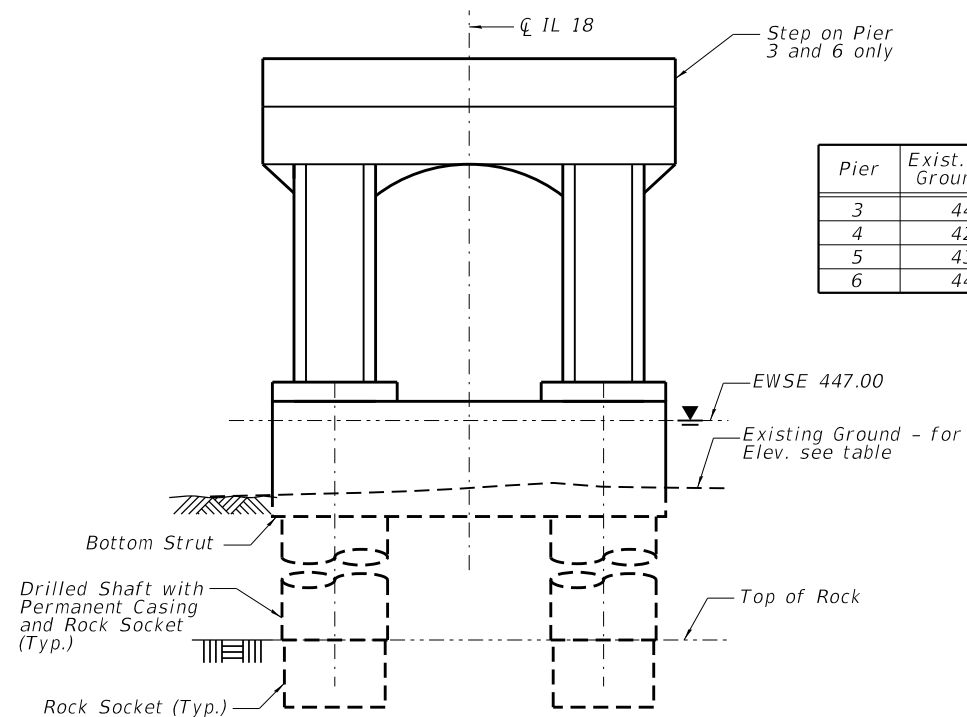


**CROSS SECTION (UNIT 2)**  
(Looking East)



**PIER SKETCH**  
Pier 1-2 & 7-10  
(Unit 1 & 3)

| Pier | Exist. & Prop. Ground Elev. | Future Ground Lowering Allowance |
|------|-----------------------------|----------------------------------|
| 1    | 467.80                      | -                                |
| 2    | 454.20                      | -                                |
| 7    | 443.60                      | -                                |
| 8    | 451.80                      | 446.00                           |
| 9    | 447.50                      | 446.00                           |
| 10   | 451.50                      | 446.00                           |



**PIER SKETCH**  
Pier 3-6  
(Unit 2)

| Pier | Exist. & Prop. Ground Elev. |
|------|-----------------------------|
| 3    | 446.30                      |
| 4    | 426.90                      |
| 5    | 431.00                      |
| 6    | 444.40                      |

| DESIGN SCOUR ELEVATION TABLE |          |        |        |        |        |        |        |        |        |        |         |          |          |
|------------------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|----------|----------|
| Event/Limit State            | W. Abut. | Pier 1 | Pier 2 | Pier 3 | Pier 4 | Pier 5 | Pier 6 | Pier 7 | Pier 8 | Pier 9 | Pier 10 | E. Abut. | Item 113 |
| Q100                         | 477.06   | 462.00 | 447.06 | 405.39 | 405.39 | 405.39 | 405.39 | 429.13 | 429.13 | 429.13 | 429.13  | 464.70   | 5        |
| Q200                         | 476.95   | 462.00 | 446.95 | 405.23 | 405.23 | 405.23 | 405.23 | 428.43 | 428.43 | 428.43 | 428.43  | 464.70   |          |
| Design                       | 477.06   | 462.00 | 447.06 | 405.39 | 405.39 | 405.39 | 405.39 | 425.96 | 425.96 | 425.96 | 425.96  | 464.70   |          |
| Check                        | 476.95   | 462.00 | 446.95 | 405.23 | 405.23 | 405.23 | 405.23 | 425.96 | 425.96 | 425.96 | 425.96  | 464.70   |          |

**TYPICAL SECTION AND DETAILS - 1**  
**IL 18 OVER ILLINOIS RIVER**  
**PUBLIC WATER**  
**F.A.P. 653 - SEC. 104B-D**  
**MARSHALL COUNTY/PUTNAM COUNTY**  
**STATION 3016+82.5**  
**STRUCTURE NO. 062-0089**



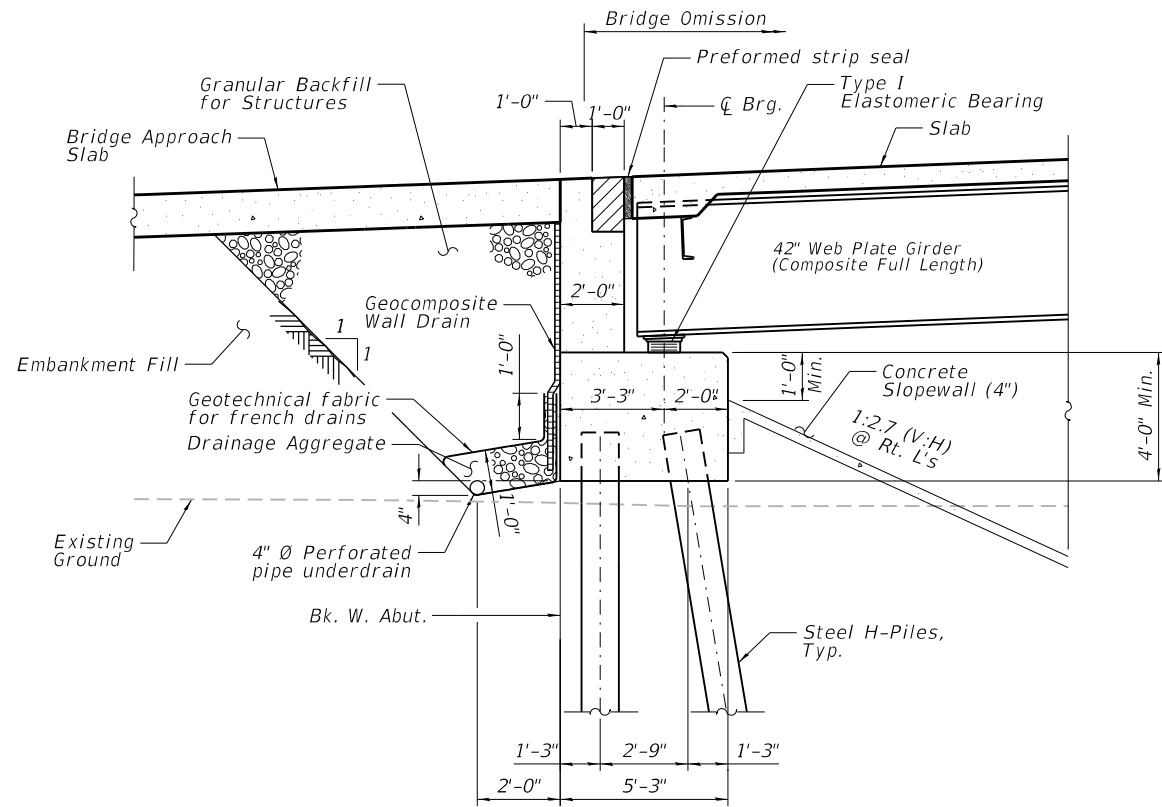
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|              | CHECKED - TCU | REVISED - |
| PLOT SCALE = | DRAWN - NTE   | REVISED - |
| PLOT DATE =  | CHECKED - TCU | REVISED - |

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

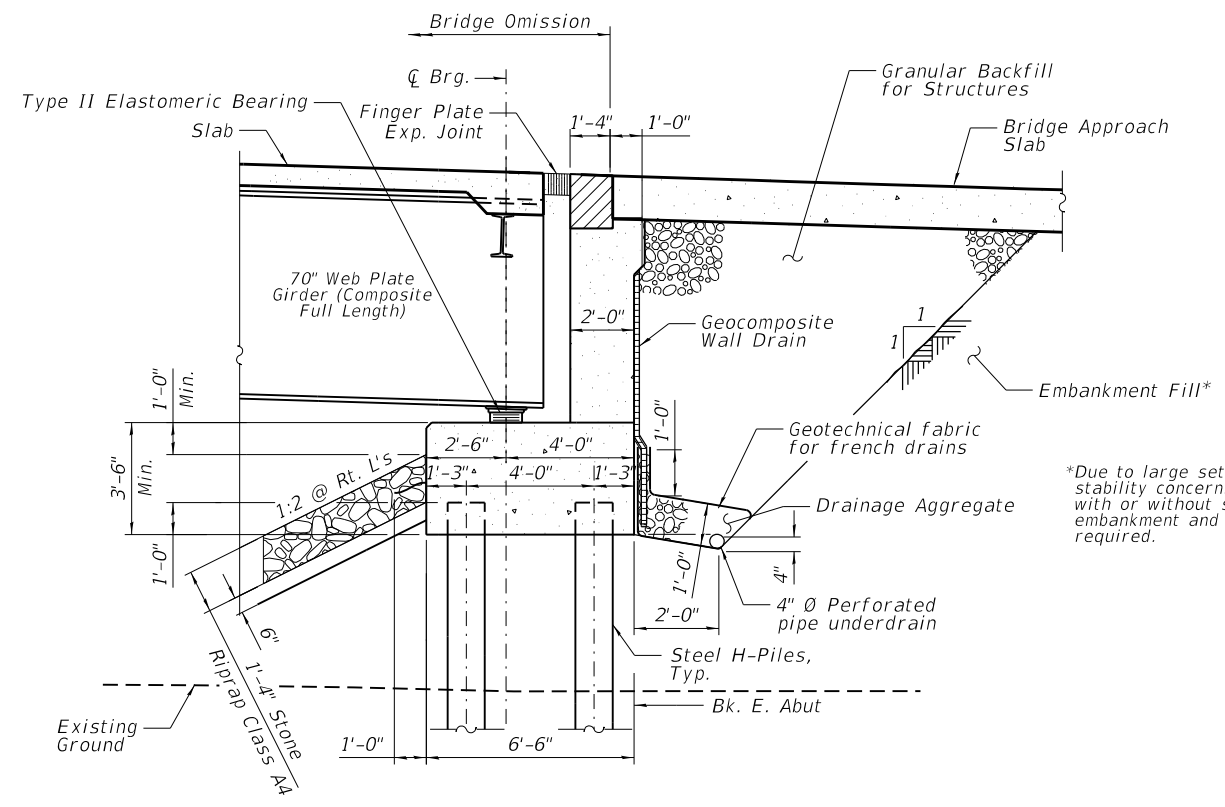
SHEET 3 OF 4 SHEETS

| F.A.P. RTE.               | SECTION | COUNTY   | TOTAL SHEETS | SHEET NO. |
|---------------------------|---------|----------|--------------|-----------|
| 653                       | 104B-D  | MARSHALL | 4            | 3         |
| CONTRACT NO. 68F09        |         |          |              |           |
| ILLINOIS FED. AID PROJECT |         |          |              |           |

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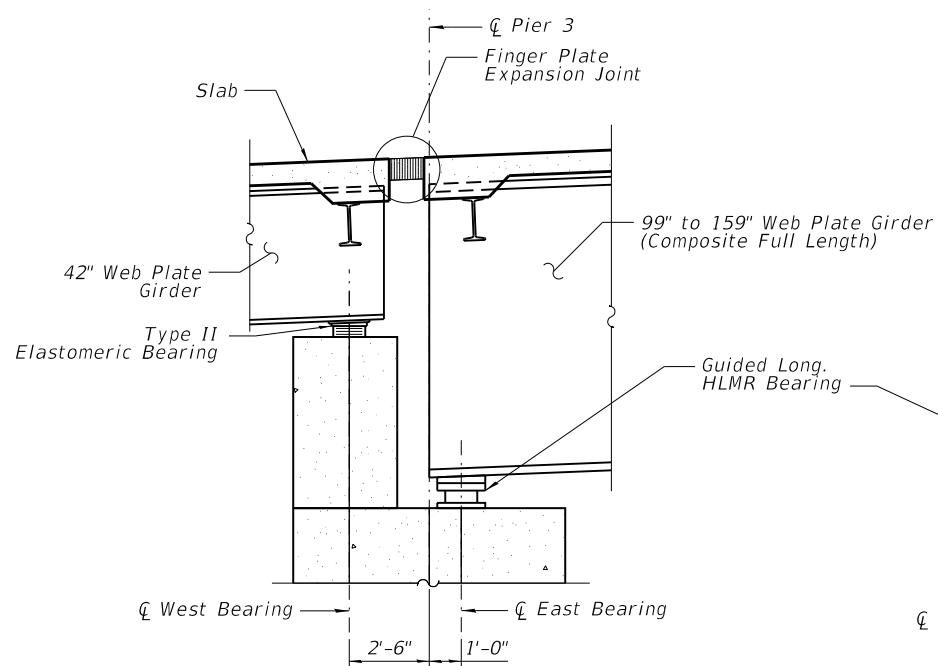


SECTION THROUGH WEST ABUTMENT

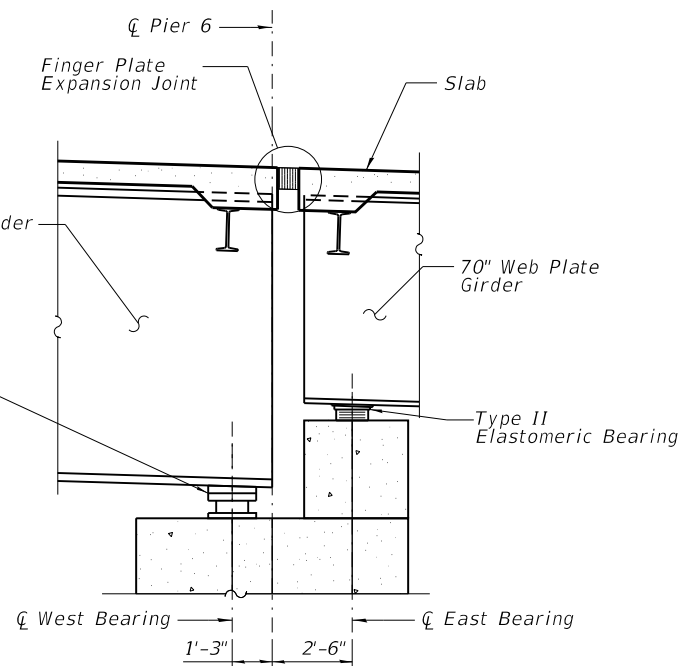


\*Due to large settlement and potential stability concerns, ground improvement, with or without staged construction of embankment and waiting times will be required.

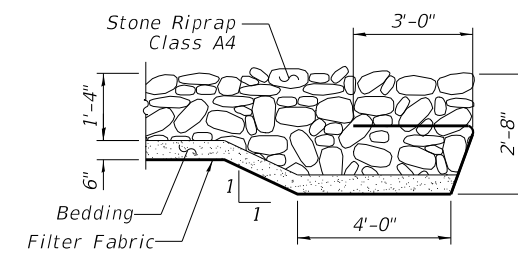
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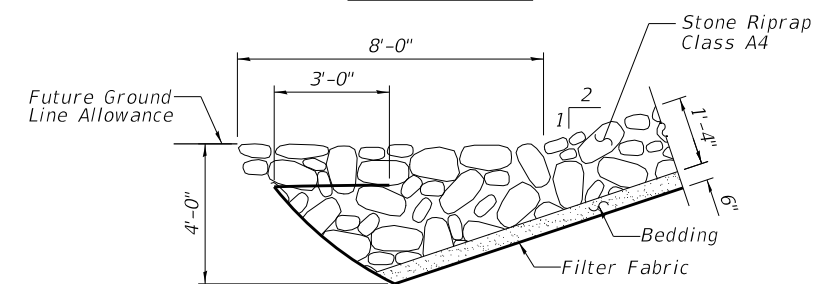
SECTION AT EXPANSION JOINT (Pier 3)



SECTION AT EXPANSION JOINT (Pier 6)



SECTION A-A



SECTION B-B

**TYPICAL SECTION AND DETAILS - 2**  
**IL 18 OVER ILLINOIS RIVER**  
**PUBLIC WATER**  
**F.A.P. 653 - SEC. 104B-D**  
**MARSHALL COUNTY/PUTNAM COUNTY**  
**STATION 3016+82.5**  
**STRUCTURE NO. 062-0089**



|            |   |          |   |     |         |   |
|------------|---|----------|---|-----|---------|---|
| USER NAME  | = | DESIGNED | - | YC  | REVISED | - |
| PLOT SCALE | = | CHECKED  | - | TCU | REVISED | - |
| PLOT DATE  | = | DRAWN    | - | NTE | REVISED | - |
|            |   | CHECKED  | - | TCU | REVISED | - |

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

SHEET 4 OF 4 SHEETS

| F.A.P. RTE.               | SECTION | COUNTY   | TOTAL SHEETS | SHEET NO. |
|---------------------------|---------|----------|--------------|-----------|
| 653                       | 104B-D  | MARSHALL | 4            | 4         |
| CONTRACT NO. 68F09        |         |          |              |           |
| ILLINOIS FED. AID PROJECT |         |          |              |           |

# CALCULATIONS

## Storm Sewer Sizing

| Date: 10/15/2024 |          |           | Project IL-18  |          |              |               |                      |             |                     |               |                          |                        |                    |                              |                              |                            |                          | COMMENTS         |                   |                |                 |                                                        |  |
|------------------|----------|-----------|----------------|----------|--------------|---------------|----------------------|-------------|---------------------|---------------|--------------------------|------------------------|--------------------|------------------------------|------------------------------|----------------------------|--------------------------|------------------|-------------------|----------------|-----------------|--------------------------------------------------------|--|
| By: RB           |          | Check: RD |                | ILLINOIS |              |               |                      |             |                     |               |                          |                        |                    |                              |                              |                            |                          |                  |                   |                |                 |                                                        |  |
| Pipe Location    |          |           | Tributary Area |          |              |               | Intensity            |             |                     | Runoff        | Pipe Design              |                        |                    |                              |                              |                            |                          |                  | Profile           |                |                 |                                                        |  |
| STA.<br>D/S      | From     | To        | Area<br>(acre) | C        | AC<br>(acre) | ΣAC<br>(acre) | Inlet<br>Tc<br>(min) | Tc<br>(min) | I (10yr)<br>(in/hr) | Flow<br>(cfs) | Pipe<br>Length<br>(feet) | Pipe<br>Dia.<br>(inch) | Pipe<br>Slope<br>% | Q <sub>(full)</sub><br>(cfs) | V <sub>(full)</sub><br>(fps) | V <sub>(Av)</sub><br>(fps) | Time in<br>Pipe<br>(min) | Rim<br>Elevation | Pipe Invert Elev. |                |                 |                                                        |  |
|                  |          |           |                |          |              |               |                      |             |                     |               |                          |                        |                    |                              |                              |                            |                          |                  | Up<br>Stream      | Down<br>Stream | Drop            |                                                        |  |
| 3001+20          | EX IN-1  | EX MH     | 0.9            | 0.51     | 0.46         | 0.46          | 10                   | 10.00       | 6.42                | 2.95          | 71"                      | 12"                    | 1.04%              | 3.64                         | 4.63                         | 3.75                       | 0.32                     | 487.84           | 484.84            | 484.10         | 0.65'<br>-0.60' | Main Line Sewer                                        |  |
| 3001+20          | EX IN-2  | EX MH     | 0.28           | 0.81     | 0.23         | 0.23          | 5                    | 5.00        | 7.32                | 1.66          | 25'                      | 12"                    | 0.96%              | 3.49                         | 4.44                         | 2.11                       | 0.20                     | 487.49           | 484.59            | 484.35         |                 |                                                        |  |
| 3001+75          | PR IN-1  | PR CB-1   | 0.14           | 0.62     | 0.09         | 0.09          | 10                   | 10.00       | 6.42                | 0.56          | 10"                      | 12"                    | 2.00%              | 5.04                         | 6.41                         | 0.71                       | 0.23                     | 486.70           | 483.70            | 483.50         |                 |                                                        |  |
| 3001+75          | EX MH    | PR CB-1   | 0              |          | 0.00         | 0.69          |                      | 10.32       | 6.36                | 4.36          | 55'                      | 12"                    | 2.00%              | 5.04                         | 6.41                         | 5.56                       | 0.16                     | 487.56           | 484.10            | 483.00         |                 | Main Line Sewer                                        |  |
| 3002+55          | PR IN-2  | PR CB-2   | 0.25           | 0.67     | 0.17         | 0.17          | 10                   | 10.00       | 6.42                | 1.08          | 5'                       | 12"                    | 1.00%              | 3.56                         | 4.53                         | 1.37                       | 0.06                     | 485.75           | 482.75            | 482.70         |                 |                                                        |  |
| 3002+55          | PR IN-3  | PR CB-2   | 0.11           | 0.83     | 0.09         | 0.09          | 5                    | 5.00        | 7.32                | 0.67          | 20'                      | 12"                    | 3.00%              | 6.17                         | 7.85                         | 0.85                       | 0.39                     | 485.85           | 482.85            | 482.25         |                 |                                                        |  |
| 3002+90          | PR CB-2  | PR CB-3   | 0.03           | 0.9      | 0.03         | 0.12          | 5                    | 5.39        | 7.25                | 0.86          | 35'                      | 15"                    | 1.49%              | 7.87                         | 6.41                         | 0.70                       | 0.83                     | 485.85           | 482.00            | 481.48         |                 |                                                        |  |
| 3002+90          | PR CB-3  | PR MH-1   | 0.18           | 0.91     | 0.16         | 0.28          | 5                    | 5.83        | 7.17                | 2.02          | 5'                       | 15"                    | 9.60%              | 20.01                        | 16.30                        | 1.65                       | 0.05                     | 485.28           | 481.48            | 481.00         |                 |                                                        |  |
| 3002+90          | PR CB-1  | PR MH-1   | 0.04           | 0.9      | 0.04         | 0.72          | 5                    | 10.48       | 6.33                | 4.57          | 115'                     | 15"                    | 0.92%              | 6.20                         | 5.05                         | 3.73                       | 0.51                     | 486.81           | 482.00            | 480.94         |                 | Main Line Sewer                                        |  |
| 3003+65          | PR IN-4  | PR T-CON  | 0.24           | 0.84     | 0.20         | 0.20          | 10                   | 10.00       | 6.42                | 1.29          | 5'                       | 12"                    | 19.20%             | 15.61                        | 19.87                        | 1.65                       | 0.05                     | 484.46           | 481.46            | 480.50         |                 |                                                        |  |
| 3004+20          | PR MH-1  | PR MH-2   | 0              |          |              | 0.92          |                      | 10.99       | 6.24                | 5.76          | 130'                     | 18"                    | 1.54%              | 13.02                        | 7.37                         | 3.26                       | 0.66                     | 485.78           | 480.00            | 478.00         |                 | Main Line Sewer                                        |  |
| 3004+45          | PR IN-5  | PR CB-4   | 0.45           | 0.88     | 0.40         | 0.40          | 10                   | 10.00       | 6.42                | 2.54          | 5'                       | 12"                    | 30.80%             | 19.77                        | 25.17                        | 3.24                       | 0.03                     | 483.54           | 480.54            | 479.00         |                 |                                                        |  |
| 3004+50          | PR CB-4  | PR T-CON  | 0.15           | 0.9      | 0.14         | 0.53          | 5                    | 10.03       | 6.42                | 3.41          | 5'                       | 15"                    | 2.00%              | 9.13                         | 7.44                         | 2.78                       | 0.03                     | 482.80           | 478.00            | 477.90         |                 |                                                        |  |
| 3005+05          | PR MH-2  | PR MH-3   |                |          |              | 1.45          |                      | 11.66       | 6.12                | 8.90          | 85'                      | 18"                    | 1.06%              | 10.81                        | 6.11                         | 5.04                       | 0.28                     | 483.95           | 477.50            | 476.60         |                 | Main Line Sewer                                        |  |
| 3005+00          | PR IN-6  | PR CB-6   | 0.09           | 0.9      | 0.08         | 0.08          | 5                    | 5.00        | 7.32                | 0.59          | 22'                      | 12"                    | 1.14%              | 3.80                         | 4.83                         | 0.76                       | 0.49                     | 481.90           | 478.00            | 477.75         |                 |                                                        |  |
| 3005+00          | PR CB-6  | PR MH-3   | 0.06           | 0.9      | 0.05         | 0.14          | 5                    | 5.49        | 7.23                | 0.98          | 22'                      | 12"                    | 4.86%              | 7.85                         | 10.00                        | 1.24                       | 0.29                     | 481.55           | 477.50            | 476.43         |                 |                                                        |  |
| 3005+05          | PR CB-5  | PR MH-3   | 0.17           | 0.85     | 0.14         | 0.14          | 5                    | 5.00        | 7.32                | 1.06          | 22'                      | 12"                    | 2.05%              | 5.09                         | 6.49                         | 1.35                       | 0.27                     | 482.05           | 477.60            | 477.15         |                 |                                                        |  |
| 3008+00          | PR MH-3  | PR MH-4   |                |          |              | 1.73          |                      | 11.94       | 6.07                | 10.53         | 295'                     | 18"                    | 2.63%              | 17.02                        | 9.63                         | 5.96                       | 0.82                     | 482.45           | 476.00            | 468.25         |                 | Main Line Sewer                                        |  |
| 3006+00          | PR IN-7  | PR CB-7   | 0.08           | 0.9      | 0.07         | 0.07          | 5                    | 5.00        | 10.20               | 0.73          | 50'                      | 12"                    | 3.00%              | 6.17                         | 7.85                         | 0.94                       | 0.89                     | 482.50           | 480.50            | 479.00         |                 |                                                        |  |
| 3006+00          | PR CB-7  | PR CB-8   | 0.07           | 0.9      | 0.06         | 0.14          | 5                    | 5.89        | 9.96                | 1.35          | 40'                      | 12"                    | 0.63%              | 2.82                         | 3.58                         | 1.71                       | 0.39                     | 482.30           | 479.00            | 478.75         |                 |                                                        |  |
| 3006+00          | PR IN-8  | PR CB-8   | 0.08           | 0.9      | 0.07         | 0.07          | 5                    | 5.00        | 10.20               | 0.73          | 50'                      | 12"                    | 3.50%              | 6.66                         | 8.48                         | 0.94                       | 0.89                     | 482.50           | 480.50            | 478.75         |                 | Sag Location.<br>Intensity for 50-<br>year Storm Event |  |
| 3006+00          | PR CB-8  | PR ES-1   | 0.07           | 0.9      | 0.06         | 0.27          | 5                    | 6.28        | 9.86                | 2.66          | 40'                      | 12"                    | 0.63%              | 2.82                         | 3.58                         | 3.39                       | 0.20                     | 482.30           | 478.75            | 478.50         |                 |                                                        |  |
| 3008+00          | PR CB-9  | PR MH-4   | 0.94           | 0.64     | 0.60         | 0.87          | 10                   | 10.00       | 6.42                | 5.60          | 16'                      | 12"                    | 0.94%              | 3.45                         | 4.39                         | 7.13                       | 0.04                     | 473.00           | 468.40            | 468.25         |                 |                                                        |  |
| 3009+20          | PR MH-4  | PR MH-5   |                |          |              | 2.61          |                      | 12.76       | 5.92                | 15.43         | 120'                     | 24"                    | 1.04%              | 23.08                        | 7.35                         | 4.91                       | 0.41                     | 477.10           | 467.75            | 466.50         |                 | Main Line Sewer                                        |  |
| 3009+15          | PR IN-9  | PR CB-11  | 0.06           | 0.9      | 0.05         | 0.05          | 5                    | 5.00        | 7.32                | 0.40          | 24'                      | 12"                    | 0.54%              | 2.62                         | 3.34                         | 0.50                       | 0.79                     | 474.50           | 470.50            | 470.37         |                 |                                                        |  |
| 3009+20          | PR CB-11 | PR MH-5   | 0.06           | 0.9      | 0.05         | 0.11          | 5                    | 5.79        | 7.18                | 0.78          | 40'                      | 12"                    | 0.60%              | 2.76                         | 3.51                         | 0.99                       | 0.68                     | 474.50           | 470.37            | 470.13         |                 |                                                        |  |
| 3009+20          | PR CB-10 | PR MH-5   | 0.06           | 0.86     | 0.05         | 0.05          | 5                    | 5.00        | 7.32                | 0.38          | 60'                      | 12"                    | 0.52%              | 2.56                         | 3.26                         | 0.48                       | 2.08                     | 468.30           | 464.30            | 463.99         |                 |                                                        |  |
| 3011+20          | PR MH-5  | PR MH-6   |                |          |              | 2.77          |                      | 13.17       | 5.85                | 16.17         | 200'                     | 24"                    | 7.75%              | 62.96                        | 20.04                        | 5.15                       | 0.65                     | 473.00           | 463.50            | 448.00         |                 | Main Line Sewer                                        |  |
| 3011+45          | PR MH-6  | EX OL-1   |                |          |              | 2.77          |                      | 13.82       | 5.73                | 15.85         | 345'                     | 24"                    | 1.55%              | 28.19                        | 8.97                         | 5.05                       | 1.14                     | 453.50           | 448.00            | 442.64         |                 | Main Line Sewer                                        |  |

## **APPENDIX 16**

### **Cost Estimate**

**Illinois Route 18**  
**Contract D400720**

**2025 Costs**

| ITEM           | ITEM DESCRIPTION                   | UNIT  | QUANTITY         | UNIT PRICE | TOTAL        |
|----------------|------------------------------------|-------|------------------|------------|--------------|
| <b>ROADWAY</b> |                                    |       |                  |            |              |
|                | IL 18                              |       |                  |            |              |
|                | HMA FULL DEPTH PAVEMENT, 10.25"    | SQ YD | 6691             | \$67.50    | \$451,643    |
| 1              | HMA SHOULDER, 8"                   | SQ YD | 4194             | \$50.00    | \$209,700    |
|                | 12" AGGREGATE SUBGRADE             | SQ YD | 6691             | \$30.00    | \$200,730    |
|                | B-6.24 CURB AND GUTTER             | FOOT  | 988              | \$55.00    | \$54,340     |
|                | PCC SIDEWALK, 5"                   | SQ FT | 6511             | \$9.50     | \$61,855     |
|                | FRONT STREET                       |       |                  |            |              |
|                | HMA FULL DEPTH PAVEMENT, 10.25"    | SQ YD | 2080             | \$67.50    | \$140,400    |
| 2              | 12" AGGREGATE SUBGRADE             | SQ YD | 2080             | \$30.00    | \$62,400     |
|                | GUTTER TYPE A                      | FOOT  | 1039             | \$60.00    | \$62,340     |
|                | PCC SIDEWALK, 5"                   | SQ FT | 3055             | \$9.50     | \$29,023     |
|                | DUCK RANCH ACCESS                  |       |                  |            |              |
| 3              | HMA FULL DEPTH PAVEMENT, 8"        | SQ YD | 2908             | \$61.00    | \$177,388    |
|                | 12" AGGREGATE SUBGRADE             | SQ YD | 2908             | \$30.00    | \$87,240     |
|                | MISC ROADWAY                       |       |                  |            |              |
| 4              | GUARDRAIL                          | FOOT  | 1300             | \$35.00    | \$45,500     |
|                | HMA DRIVEWAY                       | SQ FT | 548              | \$80.00    | \$43,840     |
|                | REMOVALS                           |       |                  |            |              |
|                | PAVEMENT REMOVAL                   | SQ YD | 10793            | \$15.00    | \$161,895    |
| 5              | SIDEWALK REMOVAL                   | SQ FT | 8693             | \$3.50     | \$30,426     |
|                | DRIVEWAY REMOVAL                   | SQ YD | 1865             | \$16.50    | \$30,773     |
|                | CURB AND GUTTER REMOVAL            | FOOT  | 1601             | \$10.50    | \$16,806     |
|                | GUARDRAIL REMOVAL                  | FOOT  | 8950             | \$8.00     | \$71,600     |
|                | IL-18 EARTHWORK                    |       |                  |            |              |
| 6              | EARTH EXCAVATION                   | CU YD | 2038             | \$32.00    | \$65,216     |
|                | FURNISHED EXCAVATION               | CU YD | 55340            | \$30.00    | \$1,660,200  |
|                | FRONT STREET EARTHWORK             |       |                  |            |              |
| 7              | EARTH EXCAVATION                   | CU YD | 6173             | \$32.00    | \$197,549    |
|                | FURNISHED EXCAVATION               | CU YD | 29               | \$30.00    | \$870        |
|                | DUCK RANCH EARTHWORK               |       |                  |            |              |
| 8              | EARTH EXCAVATION                   | CU YD | 13618            | \$32.00    | \$435,776    |
|                | FURNISHED EXCAVATION               | CU YD | 11               | \$30.00    | \$330        |
|                | SUBTOTAL ROADWAY COSTS (ITEMS 1-8) |       |                  |            | \$4,297,838  |
| 9              | FIELD OFFICE                       | CA MO | 24               | \$3,000.00 | \$72,000     |
| 10             | DRAINAGE                           | L SUM | 20% OF ITEMS 1-8 |            | \$859,568    |
| 11             | SIGNING AND PAVEMENT MARKINGS      | L SUM | 5% OF ITEMS 1-8  |            | \$214,892    |
| 12             | LANDSCAPING AND EROSION CONTROL    | L SUM | 5% OF ITEMS 1-8  |            | \$214,892    |
| 13             | UTILITY RELOCATIONS                | L SUM | 3% OF ITEMS 1-8  |            | \$128,935    |
| 14             | LIGHTING                           | L SUM | 2% OF ITEMS 1-8  |            | \$85,957     |
| 14             | MAINTENANCE OF TRAFFIC             | L SUM | 10% OF ITEMS 1-8 |            | \$429,784    |
| 15             | BRIDGE REMOVAL AND REPLACEMENT     | L SUM |                  |            | \$56,646,312 |



|                                       |                 |       |                        |              |
|---------------------------------------|-----------------|-------|------------------------|--------------|
| 15                                    | MOBILIZATION    | L SUM | 5% OF ITEMS 1-15       | \$3,147,509  |
| 16                                    | CONTINGENCY     | L SUM | 30% OF ITEMS 1-14      | \$1,891,160  |
| 17                                    | ROW ACQUISITION | ACRE  | 11.9      \$500,000.00 | \$5,950,000  |
| 18                                    | TEMP EASEMENTS  | ACRE  | 6.0      \$100,000.00  | \$600,000    |
| TOTAL CONSTRUCTION COSTS (ITEMS 1-18) |                 |       |                        | \$74,538,846 |

## **APPENDIX 17**

### **Aesthetics Master Plan**

# IL18 RIVER BRIDGE PROJECT AESTHETIC MASTER PLAN REPORT

February 10, 2025

**FINAL**

## 1.0 Introduction

The existing IL 18 bridge over the Illinois River at the city of Henry was constructed in 1934. Due to the age and condition of the bridge, the Illinois Department of Transportation (IDOT) District 4 is evaluating potential improvement options. The project study limits extend from the intersection of IL 18 and 3<sup>rd</sup> Street in Henry on the west to the intersection of IL 18 and IL 26 on the east (Figure 1). The IL 18 River Bridge Project study includes detailed evaluation of potential improvements to IL 18 and the bridge over the Illinois River.

The purpose of the project is to accommodate IL 18 traffic through the project area and across the Illinois River on a transportation system that is structurally sound, meets current design standards, provides a safe crossing for the public, reduces flooding over IL 18, supports regional connectivity needs, and meets the needs of river traffic.

IDOT develops and implements projects using a three-phase process. The IL 18 River Bridge Project is currently at the end of Phase I: Preliminary Engineering and Environmental Studies. During this phase, IDOT has studied a range of potential improvements, conducted public involvement activities, and completed an environmental analysis. The Phase I Study has determined the alignment, bridge type, and right-of-way needs for the project.

As part of the public involvement process IDOT established an Aesthetics Focus Group (AFG) with the goal to provide collaborative aesthetics recommendations that would be incorporated into this Aesthetics Master Plan. The AFG was comprised of residents and officials of Henry, staff of the Illinois Department of Transportation (IDOT), and staff of IDOT's consultant engineer project team.

FIGURE 1 – PROJECT STUDY LIMITS



## 2.0 Aesthetic Focus Group Meetings

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Three in-person meetings were held with the AFG. The meetings were held in October 2022, February 2023, and May 2024.

### 2.1 AFG MEETING #1

At the first meeting held on October 20, 2022 at the Henry City Hall, the group discussed the goals for the AFG, the potential aesthetic elements that could be incorporated into the project, and the division of costs for these potential elements between the City of Henry and IDOT. A detailed summary of AFG Meeting #1 is located in Appendix A.

The five goals that were identified for the AFG include:

Goal 1 – Identify City opportunities and responsibilities.

Goal 2 – Document the process through meeting minutes.

Goal 3 – Inform the Aesthetics Master Plan and identify an aesthetics theme.

Goal 4 – Help develop and provide the concepts for final design.

Goal 5 – The Project Team will incorporate approved aesthetic elements into project plans and specifications in accordance with an interagency agreement between IDOT and the City of Henry.

### 2.2 AFG MEETING #2

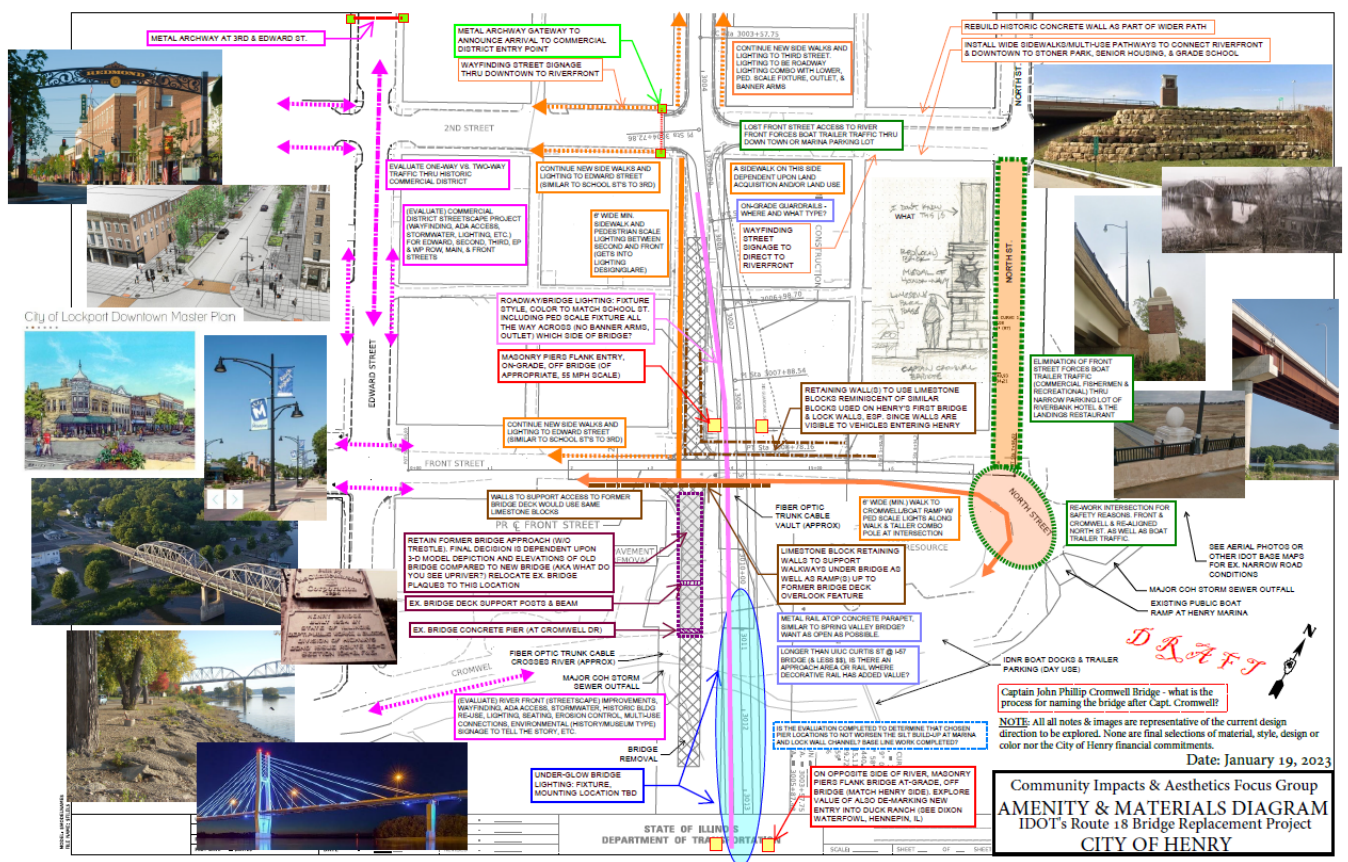
At the second meeting held on February 1, 2023 at Henry City Hall the City's wish list of aesthetic elements was discussed along with funding opportunities and next steps. A detailed summary of AFG Meeting #2 is provided in Appendix A. The City's wish list (Figure 2) included the following items:

- Limestone block walls
- Sidewalks/Pedestrian scale lighting
- Wayfinding and street signage
- River overlook
- Bridge railing
- Roadway/bridge lighting
- Bridge underlighting
- Bridge monuments
- Local road connectivity
- Bridge name

A post meeting call was held in April 2023 to discuss a package of sketches that were developed by IDOT following the meetings. The sketches illustrated a subset of possible aesthetic opportunities from the wish list:

- Creation of a river overlook
- Alley connectivity after Front Street is lowered
- Monument location / grading options behind the west abutment

FIGURE 2 – CITY WISH LIST



A detailed summary of this coordination call is provided in Appendix A. Following this coordination call, the Mayor provided a memo refining the City's priorities for aesthetic design elements (Appendix B). This memo identified six elements:

- Monument piers (columns)
- Overlook
- School Street Lighting
- Guardrails
- Grading and landscaping
- Plantings/tree replacement

## 2.3 AFG MEETING #3

At the third AFG meeting held on May 24, 2024 at Henry City Hall a response to the City's aesthetic design elements memo was presented. IDOT prepared a response memo (Appendix C) that offered feedback and concept cost discussions for each of the AFG's aesthetic design priorities. A detailed summary of AFG Meeting #3 is provided in Appendix A.

### 3.0 Summary/Next Steps

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The AFG process allowed for the City of Henry and IDOT to collaboratively identify potential aesthetic elements that could be incorporated into the IL 18 River Bridge project.

At every AFG meeting, costs and funding sources were discussed with the City of Henry. The City of Henry will need to determine which of their aesthetic priorities they wish to pursue and identify the necessary funding sources. Potential funding sources include local funds, private funding, and Illinois Transportation Enhancement Program (ITEP) grants. The ITEP grant application cycle occurs every two years in late summer/fall. IDOT has offered to help the City of Henry with the ITEP grant application process, if requested. The City of Henry did not apply for ITEP funds in the 2024 cycle for this project.

### 4.0 Appendices

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Appendix A – AFG Meeting Summaries

Appendix B – City of Henry Aesthetic Design Elements Memo

Appendix C – IDOT Response Memo (Concepts and Costs)

## Appendix A – AFG Meeting Summaries



# **IL 18 River Bridge Project**

## **Aesthetics Focus Group Meeting #1**

### **Meeting Summary**

**FAP Route 653 (IL 18)**  
**Section (104B-D)BR**  
**Marshall and Putnam Counties**  
**Structure carrying IL 18 over the Illinois River at Henry**  
**SN 062-0036**

**Job No. P-94-007-20**  
**Catalog No. 035761-00P**  
**PTB 195-038**

**Location: Henry City Hall – City Chambers Room**

**Date / Time: Thursday, October 20, 2022 – 6:00pm – 8:30 pm**

#### **Meeting Summary:**

The Illinois Department of Transportation (IDOT) and the Aesthetics Focus Group (AFG) for the IL 18 River Bridge Project met to establish an understanding of aesthetic opportunities related to the design and construction of the Illinois 18 Bridge project in Henry, Illinois. This also includes the responsibilities for planning, designing, funding and maintaining aesthetic elements. This includes the need to explain and understand the difference between what a baseline element is – what IDOT would typically provide on a similar project - versus an enhancement of any element above the baseline condition. Representing the AFG were the following individuals:

- April Rowe, Henry Resident
- Tarra Lewis, Henry Resident
- Jeff Bergfeld, City of Henry Mayor
- Bob Watkins, Mid-America National Bank
- Doug Johnson, City of Henry Alderman
- Karen Dvorsky, IDOT District 4 Program Development Engineer
- Travis Wallenfang, IDOT District 4 Project Manager
- Paul Nikolai, Parsons
- Todd Ude, Parsons

The meeting opened when everyone took a moment to introduce themselves and explain who they represented. Karen then opened up the presentation giving a quick history of the project and where it stands now in the design process. She then turned it over to Paul and Todd.

#### **CAG MEETING #4 SUMMARY**

Paul Nikolai reviewed the project process.

#### **PROJECT PROCESS**

- Paul explained this is a 3 Phase Process and we are currently in Phase I – Planning. Phase II is Engineering Design and Phase III is Construction.
- Paul explained the Aesthetics Focus Group was part of Phase I.
- The Aesthetics Master Plan is also a deliverable of Phase I and is used as a Design Guidance Document for the final design phase.

- The Phase I Schedule was discussed to show the project is nearing the end of Phase I, having started in June of 2021. The importance of this is that the timeframe for decision making on aesthetics is not long, requiring focused discussions and decisions. The 2nd and 3rd meetings are not scheduled but anticipated to be this winter.

## AFG GOALS AND OBJECTIVES

- Paul explained the difference between a Goal and an Objective
  - Goal 1 - Identify City Opportunities and Responsibilities
    - The most significant of these is the cost sharing requirement. This is critical with respect to Design, Construction and Maintenance. The presentation focused on this issue.
    - The City will need to prioritize what aesthetic elements they would prefer to commit their money to.
    - The City will also need to provide documentation of what funds are available and where they should be focused in final design through a Letter of Commitment.
  - Goal 2 - Document the Process through meeting minutes, council decisions and other forms of communication such as other stakeholder groups.
  - Goal 3 - Inform the Aesthetic Master Plan of the decisions made. The AFG is tasked with identifying an aesthetics theme that will allow the aesthetic elements to tie together throughout the project. The treatment of these elements will also need to work within the requirements of IDOT.
  - Goal 4 – Inform the AFG that the Master Plan is a Preliminary Design Guide to help final design incorporate aesthetic decisions. This includes the understanding that the AFG is to help develop and provide the concepts for final design but not provide final design. The master plan will not be construction styled drawings but will be provided in a report format with text and graphics.
  - Goal 5 – Inform the AFG that the IDOT / Parsons team doing this preliminary work will also be preparing final construction documents and incorporating approved plans and specifications for aesthetic enhancements into final documents.
- Bridge Project Overview:
  - Todd provided a quick description of the current bridge alignment and selected bridge type. This included using an aerial image of the existing structure and showing the new structure running next to it. Also part of this graphic was a preliminary bridge profile showing the new structures relationship to the existing bridge.
  - Todd relayed the recent news that IDOT's Bureau of Bridges and Structures approved the final Bridge Type Evaluation study, which documents the selection of the haunched girder bridge as the best bridge type for the main river spans of the bridge.
  - A plan view aerial image was also used to show potential impacts to properties along the alignment. Todd pointed out that these tended to be the worse-case scenarios and as design gets more finalized some of these potential impacts may be avoidable.
- Aesthetic Elements:
  - Paul continued the discussion walking the team through the potential list of elements which could have an aesthetic up-grade. These will not be discussed here in depth since a pdf of the presentation accompanies these minutes. The focus of the discussion was to convey what IDOT's baseline is for each element, to give examples of aesthetic enhancements that the city might consider, and to define the associated responsibilities for design, construction cost and maintenance.
  - Paul gave an example of the division of cost for those elements where the city is required to pay for the "increase in cost": if a 200-footlong standard sidewalk cost \$50 per linear foot and an up-grade, or enhancement, of making that same sidewalk out of colored concrete which might cost \$55 per linear foot, the City would only pay the additional, or delta, of \$5 per linear foot. In this example that would come out to be \$1,000 of construction cost (plus 15% for engineering) as well as any maintenance costs associated with the repair of the colored concrete.
  - The elements discussed included: Retaining Walls; Bridge Monuments; Aesthetic Medallions; Lighting; Sidewalks; Crosswalks; Interpretive and Historic Markers (which included the possible repurposing of parts of the existing bridge); Wayfinding Signage and Landscaping.
  - It's important to understand that many of the listed elements have no baseline condition; provision of such elements would be considered 100% as enhancement.
  - A summary table of the elements was provided to each AFG member. This table was used in the presentation as well and showed each element and which agency, IDOT or the City, would be

responsible for the design, construction and maintenance costs if it was implemented having a baseline or up-graded condition.

- IDOT pointed out that the City currently pays for the power usage and maintenance on the lighting for the existing bridge and that would continue with the new structure.
- IDOT added that wayfinding signs on State ROW are subject to standard IDOT permitting process.
- The discussion of the interpretive markers included the potential for IDOT to provide a baseline historic / interpretive marker but only if the State Historical Preservation Office (SHPO) requires IDOT to provide it. This issue is currently undecided but will be resolved as part of the current Phase 1 process.

## NEXT STEPS

- What is needed from the AFG / City:
  - IDOT requested that the City develop an available budget for the aesthetic upgrades they would like to pursue. With that there needs to be an understanding of potential maintenance costs.
  - IDOT will be looking for a commitment by the end of Phase I Engineering (Spring 2023) as to what aesthetic elements that the city will want to include in the project. IDOT ITEP funding was briefly discussed, and it was noted that the next application cycle will likely be in the Fall of 2024, not in time to be factored in to the city's initial commitment to fund aesthetic upgrades.
  - IDOT also requested that the City prioritize what aesthetic elements would be preferred. There was a lot of discussion about how Front Street will be aligned in the final design. This comes with the understanding that certain elements of that design could be more prominent depending on how this alignment is designed. Options for mitigation Front Street will be presented to the CAG at the next meeting in late November, and finalized prior to the completion of the Phase I work.
  - An open channel of communication between the City and IDOT needs to be maintained so decisions can be facilitated. The final design of the project is over a year away; however, these aesthetic decisions need to be made and incorporated into the plans prior to that so timing is critical.
- Schedule:
  - The AFG will meet another 2 times prior to the completion of the Aesthetics Masterplan. These times are not set because of the nature of the tasks of determining budget and prioritizing the aesthetic elements take some time. The next meetings are anticipated in the winter of 2022 / 2023.
  - The goal is to complete the Aesthetic Masterplan during the Phase I Study, anticipated to be completed Spring 2023.
  - The IDOT / Parsons team will help and be available to discuss aesthetics with the City on an as-needed basis. No standard timing was established but an understanding that these discussions can take place was talked about.

## OPEN DISCUSSION

- Mayor Bergfeld noted the example of Wisconsin, where some adornment of bridge projects with color, texture, customized shapes and massing seems to be the norm, and asked if IDOT routinely sets aside any resources to put toward aesthetic enhancement. No – IDOT projects are typically developed to prefer standardized solutions and details which have been selected and refined through experience for their maintainability, constructability and economy.
- Doug asked if the presentation could be provided to the City. IDOT will distribute.
- The final disposition of Front Street is important to the City and impactful to aesthetics. The determination will not be part of the AFG discussion but will be handled by the Citizen Advisory Group (CAG) team.
- Parsons will be providing renderings of the final aesthetic elements as part of the Masterplan deliverables. The City asked if there was any way that draft versions of this model could be provided as it's being developed. The focus would be showing critical locations such as the touch down area, how high the roadway sits at different locations along the alignment, and how the block from Front to 2<sup>nd</sup> and from 2<sup>nd</sup> to 3<sup>rd</sup> could be impacted. Paul said he will ask how this can be done as quickly as possible so the City can have some "in-progress" images to better understand the grade changes of the new bridge alignment.
- Jeff showed some slides of other bridge projects near Henry showing some example aesthetics those projects had. He also showed some very interesting images of the historic elements of the City and adjacent river. These included some flood images and the impacts the river can have along the banks.
- A question was raised about whether an IDOT structural element (typically a wall) could be treated (say with a painted mural) by the City after the fact. [Does IDOT concur with this statement? Do you want to add a follow up statement such as, "If the City were to approach IDOT with a proposal and a plan ...] Follow-up: Painting may be

considered; the City would be required to submit a plan which is subject to review and approval by the Department.

- On the topic of monuments, Paul noted that landscaping can sometimes be designed to function in a role similar to a hard monument. Karen noted that ITEP funding was used in the ornamentation and monuments deployed on the “University of Illinois” bridge.
- The question was raised of whether the intersection of School St. & 3<sup>rd</sup> St. would be improved as part of the project. Karen indicated that the estimated end of roadway improvements would be at the end of the west leg of the 2<sup>nd</sup> Street intersection. We are not planning to improve the intersection at 3<sup>rd</sup> Street. Aesthetic treatments could extend the entire block between 2<sup>nd</sup> and 3<sup>rd</sup> if included as part of the Phase I Study.

## ACTION ITEMS

| Issue             | Action                                                                    | Responsible Party    | Deadline   |
|-------------------|---------------------------------------------------------------------------|----------------------|------------|
| Available Funding | Identify Existing Budget                                                  | City of Henry        | Pre AFG #2 |
| Available Funding | Research ITEP Grant Application Process                                   | City of Henry        | Pre AFG #2 |
| 3D Model          | Provide in-progress views produced by model when available                | Parsons              | ASAP       |
| Communication     | Develop point person from IDOT and City for continued phone conversations | IDOT & City of Henry | ASAP       |
|                   |                                                                           |                      |            |

## Attachments:

- Aesthetic Elements Table

| Design Element                  |                                                       | Aesthetics Masterplan                                                                                           | Design Development & Construction Documents | Division of Cost (construction*)         | Maintenance Responsibility             |
|---------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------|----------------------------------------|
| Retaining Walls                 | Baseline                                              | identification of locations and baseline concepts included (concepts for enhanced treatments by CITY)           | STATE                                       | STATE                                    | STATE                                  |
|                                 | Enhanced                                              |                                                                                                                 | Structural - STATE<br>Aesthetic - CITY      | Structural - STATE<br>Aesthetic - CITY   | Structural - STATE<br>Aesthetic - CITY |
| Bridge Monuments                | Baseline                                              | identification of locations included (concepts for monuments by CITY)                                           | N/A                                         | N/A                                      | N/A                                    |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                     | CITY                                   |
| Aesthetic Medallions            | Baseline                                              | identification of locations included (concepts for medallions by CITY)                                          | N/A                                         | N/A                                      | N/A                                    |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                     | CITY                                   |
| Lighting                        | Relocation of Existing Lighting (if req'd by project) | identification of locations and concepts included                                                               | STATE                                       | BASELINE - STATE/CITY<br>INCREASE - CITY | CITY                                   |
|                                 | Moderization of Ex. Lighting                          |                                                                                                                 | STATE                                       | CITY                                     | CITY                                   |
|                                 | New Lighting - standard or decorative                 |                                                                                                                 | STATE                                       | CITY                                     | CITY                                   |
| Sidewalks                       | Baseline                                              | identification of locations and concepts included                                                               | STATE                                       | STATE                                    | CITY                                   |
|                                 | Enhanced                                              |                                                                                                                 | STATE                                       | BASELINE - STATE<br>INCREASE - CITY      | CITY                                   |
| Crosswalks                      | Baseline                                              | identification of locations and concepts included                                                               | STATE                                       | STATE                                    | CITY                                   |
|                                 | Enhanced                                              |                                                                                                                 | STATE                                       | CITY                                     | CITY                                   |
| Interpretive & Historic Markers | Baseline (only if required by SHPO)                   | identification of locations included (concepts for required elements - STATE; concepts for enhancements - CITY) | STATE                                       | STATE                                    | STATE                                  |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                     | CITY                                   |
| Wayfinding Signage              | Baseline                                              | identification of locations included (concepts for enhanced signage by CITY)                                    | STATE                                       | STATE                                    | STATE                                  |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                     | CITY                                   |
| Landscaping                     | Baseline                                              | identification of locations included (concepts for enhanced landscaping by CITY)                                | STATE                                       | STATE                                    | CITY                                   |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | BASELINE - STATE<br>INCREASE - CITY      | CITY                                   |

\* - for construction items paid for by the City, an engineering cost of 15% will be added

Highlighted columns for items paid or maintained by the City will require the City to execute a Letter of Commitment prior to the conclusion of Phase I.

# **IL 18 River Bridge Project**

## **Aesthetics Focus Group Meeting #2**

### **Meeting Summary**

**FAP Route 653 (IL 18)  
Section (104B-D)BR  
Marshall and Putnam Counties  
Structure carrying IL 18 over the Illinois River at Henry  
SN 062-0036**

**Job No. P-94-007-20  
Catalog No. 035761-00P  
PTB 195-038**

**Location: Henry City Hall – City Chambers Room**

**Date / Time: Wednesday, February 1, 2023 – 4:30pm – 7:00 pm**

#### **Meeting Summary:**

The Illinois Department of Transportation (IDOT) and the Aesthetics Focus Group (AFG) for the IL 18 River Bridge Project met a 2<sup>nd</sup> time to further develop previously identified aesthetic opportunities related to the design and construction of the Illinois 18 Bridge project in Henry, Illinois. This meeting focused on options identified during AFG Meeting #1 as well as additional concepts and ideas developed and proposed by the City after the initial AFG meeting. A schematic drawing provided to the IDOT / Parsons team identifying multiple concepts and options for the City was used to help facilitate this discussion. Representing the AFG were the following individuals:

- Glenn Allen, Henry Resident
- Lisa Allen, Henry Resident
- Tarra Lewis, Henry Resident
- Jeff Bergfeld, City of Henry Mayor
- Bob Watkins, Mid-America National Bank
- Doug Johnson, City of Henry Alderman
- Karen Dvorsky, IDOT District 4 Program Development Engineer
- Travis Wallenfang, IDOT District 4 Project Manager
- Paul Nikolai, Parsons
- Todd Ude, Parsons

The meeting opened with everyone reintroducing themselves and explaining who they represented. Karen then opened up the presentation giving a quick history of the AFG goals and recognizing the progress made in the aesthetics design. She then turned it over to Paul and Todd.

#### **AFG MEETING #1 SUMMARY**

Paul Nikolai reviewed the previous meeting and quickly discussed the aesthetics process. The idea of base project funded by IDOT and what qualifies as enhancements and sources for funding the same was reviewed. The AFG Goals and Objectives were discussed, the bridge location and explaining the Aesthetic Elements previously identified.

#### **CITY OF HENRY WISH LIST**

The City's aesthetic schematic plan was shown on the screen as well as having large and small plots placed on both tables for closer review. Paul explained how useful this graphic was to the team in developing the presentation. From this

graphic a City Wish List was developed for items that specifically pertained to the IDOT bridge project. The following list of items was discussed.

- **Limestone Block Walls:** This material represents an acknowledgement of previous projects in the corridor, including the original 1800's river bridge, river lock walls and multiple walls used in Henry. Precedence picture used showed individual stone blocks but the Mayor explained it was understood that the look of rough-cut block was the goal and that could be accomplished via form-liner or gravity walls.

The walls shown were anticipated to be a terraced system supporting the roadway fill as well as being landscaped. Paul explained that if the walls were located inside the limits of where a maintainable slope was placed has significant impacts on if the walls would be considered roadway or landscape walls. Roadway walls would be IDOT walls while landscape walls would be City walls. Both having significantly different requirements and maintenance responsibilities. Using walls below the roadway would also impact limits of roadway barriers needed to protect cars from a fall condition versus a recoverable slope condition.

- **Sidewalks / Pedestrian Scale Lighting:** Standard sidewalks/crosswalks will be installed within the limits of the project to maintain and/or enhance the existing sidewalk network. Upgrades (such as colored concrete or brick) can be considered as well. Pedestrian scale light could be added as well.
- **Wayfinding and Street Signage:** Standard wayfinding signage is something IDOT can provide within their immediate ROW, however, with the circulation to the river for vehicles pulling trailers and service and supply trucks to downtown, locating and perhaps upgrading the signage to a Henry standard has been considered.
- **River Overlook:** An overlook of the river using the existing bridge structure was identified by the City as a possible way to enhance the river experience and connect Henry to its past. Todd discussed this in detail since the option to keep a section of the existing bridge was identified. Parsons provided multiple options of how this could be accomplished:
  - Keep existing structure to 1<sup>st</sup> existing pier away from bridge abutment.
  - Keep existing structure to 2<sup>nd</sup> existing pier away from bridge abutment
  - Remove existing deck and replace it with a new off-the-shelf pedestrian styled bridge deck to either of the 2 piers mentioned above
  - Provide a retained earth 'peninsula' with an overlook beginning at the future elevation of the lowered Front Street.

Parsons provided 2 simulated images showing the view at the 1<sup>st</sup> and 2<sup>nd</sup> pier locations described. This exercise was done to ensure the viewer in both locations would adequately see below the new bridge, thus justifying the expenditure of an overlook. Much discussion was generated including the necessary maintenance upgrades to the existing piers, the reuse of the existing deck and future maintenance responsibilities. Also, an overlook would be a natural location for interpretive markers discussing the history of the river impacts in Henry and discussion of Captain Cromwell.

- **Bridge Railing:** The City is familiar with the galvanized tube rail on top of concrete parapet, as appears on other recent IL River bridge replacements. This is a crash tested design criteria requirement on the bridge and at its ends. City expressed interest in the limits of concrete barrier wall and galvanized guardrails on the approaches. How far must they extend, are there any options to improve their looks. And if locations arise away from traffic where pedestrian or bike traffic requires railing, what options are available.
- **Roadway / Bridge Lighting:** Roadway lighting on the bridge was discussed primarily with an emphasis on understanding how many poles will be needed. This is something that has not been developed by the design team yet. IDOT plans to provide lighting on the new bridge and it will likely consist of 30' or 35' poles mounted at 100' or 150' intervals down one side of the bridge. If dark skys or light pollution is a priority of the community, they should raise the concern. The existing bridge has lighting.
- **Bridge Under-Lighting:** This discussion focused on the use of colored bridge underlighting. IDOT stated that it is not a fan of this treatment since it has such a high maintenance level that often is not kept up and then simply is in their way while trying to maintain the structure. This is also an expensive initial investment and potentially costly maintenance effort. The mayor stated that the view from IL 26 across Sawmill Lake, toward Henry, marina,



and the bridge is an opportunity to capitalize on the potential of light as an ornamental element. Another option to this lighting would be ground based accent lighting shining on the bridge from below.

- **Bridge Monuments:** Any bridge monument would need to be an independent structure not attached to the bridge. This helps delineate maintenance responsibilities between the City and IDOT. It was discussed if these should be built later after the bridge is finished and the consensus was that they should be built with the structure. The City's current vision for bridge monuments would include the use of the limestone used in the wall design. Locations at both ends of the bridge at the abutments are desired. The city also suggested entry monuments at the Duck Ranch entry across the river. It was suggested that the monuments themselves be different but use similar materials.
- **Local Road Connectivity:** This primarily focused on the Front Street design at the bridge. This will be discussed in detail below.
- **Bridge Name:** The concept is to name the bridge after Captain Cromwell. As bridge naming is a function of legislature, not the District project implementation team, it was suggested that the City begin contacting their legislative members to make this happen.
- From all the aesthetic discussion described above, an Aesthetic Theme of Historic Remembrance seems to be the focus. It was reiterated that the theme will impact the final design efforts through materials use, colors and furniture types of selections. If the City has any more thoughts on this or want to develop and formal design theme they should let the IDOT / Parsons team know.

## **FRONT STREET MITIGATION UPDATE**

Todd walked the team through the current Front Street design explaining the lowering of the street approximately 8' below current elevation and how that required the additional taking of 2 properties and the closing off of the current alley between those properties. The current limits of the lowered road were shown with the understanding that these limits are very preliminary and will likely change some with final design.

A section view of the Front Street under the bridge was shown. The section shows Front Street below grade on both sides of the street. It was pointed out that there is an opportunity to grade the slope toward the river and create a view to the river along Front Street.

A colored plan of the Front Street mitigation was shown which included potential for turning the remnant of the School Street right-of-way into an alley which would allow the drive-thru into the Rio Vista. The alley could be extended to connect to the existing north/south alley. This alley concept would likely rely on walls to retain the slope. These walls would then need to be determined if they would be retaining walls or landscape walls. Sidewalks are proposed in this area to connect 2<sup>nd</sup> Street to Front Street, and along Front Street to connect to Riverfront Park.

Parsons had another modeled simulation prepared for this location showing Front Street lowered, the alley, sidewalk and wall concept. Discussion of this plan focused on potentially not creating an alley in the former IL 18 alignment but instead creating a connection from the existing alley between the Rio Vista and the Extension Service building, and around the back of the Rio Vista property, through the former Stash house parcel (intended to be taken).

## **FUNDING OPPORTUNITIES**

The funding source discussion was primarily focused on the use of ITEP grants. The next cycle of ITEP grant applications needs to be submitted in Fall 2024 IDOT mentioned that having a city master plan can help improve an ITEP application. The mayor was concerned that the City could not get a master plan together in time. Paul and Karen pointed out that what the City has already done is a good start toward a draft master plan. Having a city-wide masterplan is not a requirement for the bridge project, nor for submitting an ITEP grant application.

Two other funding alternatives were mentioned. These were City Money allocated to aesthetics and any Private Funding opportunities that may exist. Neither of these were discussed in any detail.

IDOT stressed that the City needs to identify the elements the City would like included in the Phase I document and Aesthetics Master Plan. To help in that determination, the City was asked to provide a ranking of each wish list item into a High – Medium – Low categorization.



At AFG Meeting #1, IDOT/Parsons provided a table of aesthetic elements showing who would be responsible for design, construction, and maintenance of each aesthetic element. This table was updated to reflect which aesthetic elements would qualify for ITEP funding.

## **NEXT STEPS**

Three aspects under discussion with the AFG are going to become critical path priorities to allow the Phase I Engineering process to conclude:

1. Overlook - included or excluded?
2. Monuments – type, size, and location
3. Alley north of Rio Vista – included or excluded?

These are the Next Steps to allow the Aesthetic Master Plan process to advance:

- City to decide if the three critical path elements will be incorporated into the Aesthetics Master Plan.
- IDOT / Parsons evaluate modified alley access using existing alley. Prepare a few sketches to consolidate some of the options / scenarios discussed.
- AFG categorize the aesthetic element groupings (e.g. overlook, monuments, sidewalks and ped lighting, bridge lighting, etc.) as High – Medium – Low priority.
- City revise, modify or finalize the Aesthetic Theme (Historic Remembrance).
- City continue to communicate with IDOT regarding questions, ideas and clarifications on aesthetic options.

## **SCHEDULE**

IDOT is seeking to conclude the Phase I Preliminary Engineering by end of Spring 2023. (Final review and approvals will run later in the year.) Major public involvement milestones in the completion of Phase I will be:

- A final AFG Meeting (AFG 3) - This is anticipated to give the authors of the Aesthetic Master Plan (Parsons and IDOT) concurrence from the AFG on what to include, what to exclude, and how to integrate with the emerging finished Phase I project.
- A final CAG Meeting (CAG 7) - This is anticipated to preview the Public Hearing and environmental document, share the results of the Aesthetics Master Plan process, and gather any final comments from this group which has been closely involved in project development.
- Public Hearing – This final public meeting will present the Preferred Alternatives including type, size, location, and visualizations. The public will have the opportunity to review displays, ask questions, and submit comments.

**ACTION ITEMS**

| Issue                   | Action                                                                                                                                                    | Responsible Party        | Deadline       |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------|
| General                 | Study Team meet with Mayor to provide updates & discuss next steps/action items                                                                           | Study Team/City of Henry | Mid March 2023 |
| Evaluate Elements       | Identify High – Medium – Low Aesthetic Wish List Elements                                                                                                 | City of Henry            | March 31, 2023 |
| Critical Path Elements  | Decide which critical path elements will be included in the Aesthetics Master Plan (overlook, monuments, alley)                                           | City of Henry            | April 14, 2023 |
| Available Funding       | Feedback – limit budget for aesthetic elements for the bridge project to potential ITEP funding? Or is additional money available for aesthetic elements? | City of Henry            | April 28, 2023 |
| Alley Connections       | Evaluate possible alley connections and use of the area between Rio Vista and Illinois 18                                                                 | Parsons                  | ASAP           |
| Aesthetic Element Costs | Develop ROM Costs to help with Evaluation                                                                                                                 | Study Team               | TBD            |

## Attachments:

- Aesthetic Elements Table
- AFG #2 Presentation

| Design Element                  |                                                       | Aesthetics Masterplan                                                                                           | Design Development & Construction Documents | Division of Cost (construction*)        | Maintenance Responsibility             | ITEP Eligibility                                                              |
|---------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------|----------------------------------------|-------------------------------------------------------------------------------|
| Retaining Walls                 | Baseline                                              | identification of locations and baseline concepts included (concepts for enhanced treatments by CITY)           | STATE                                       | STATE                                   | STATE                                  | Yes                                                                           |
|                                 | Enhanced                                              |                                                                                                                 | Structural - STATE<br>Aesthetic - CITY      | Structural - STATE<br>Aesthetic - CITY  | Structural - STATE<br>Aesthetic - CITY |                                                                               |
| Bridge Monuments                | Baseline                                              | identification of locations included (concepts for monuments by CITY)                                           | N/A                                         | N/A                                     | N/A                                    | Yes                                                                           |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                    | CITY                                   |                                                                               |
| Aesthetic Medallions            | Baseline                                              | identification of locations included (concepts for medallions by CITY)                                          | N/A                                         | N/A                                     | N/A                                    | Yes                                                                           |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                    | CITY                                   |                                                                               |
| Lighting**                      | Relocation of Existing Lighting (if req'd by project) | identification of locations and concepts included                                                               | STATE                                       | BASLINE - STATE/CITY<br>INCREASE - CITY | CITY                                   | Yes (ITEP/CITY)<br>Street Lighting - (50/50)<br>Pedestrian Lighting - (80/20) |
|                                 | Moderization of Ex. Lighting                          |                                                                                                                 | STATE                                       | CITY                                    | CITY                                   |                                                                               |
|                                 | New Lighting - standard or decorative                 |                                                                                                                 | STATE                                       | CITY                                    | CITY                                   |                                                                               |
| Sidewalks / Multi-Use Trails    | Baseline                                              | identification of locations and concepts included                                                               | STATE                                       | STATE                                   | CITY                                   | Yes                                                                           |
|                                 | Enhanced                                              |                                                                                                                 | STATE                                       | BASLINE - STATE<br>INCREASE - CITY      | CITY                                   |                                                                               |
| Crosswalks                      | Baseline                                              | identification of locations and concepts included                                                               | STATE                                       | STATE                                   | CITY                                   | Yes                                                                           |
|                                 | Enhanced                                              |                                                                                                                 | STATE                                       | CITY                                    | CITY                                   |                                                                               |
| Interpretive & Historic Markers | Baseline (only if required by SHPO)                   | identification of locations included (concepts for required elements - STATE; concepts for enhancements - CITY) | STATE                                       | STATE                                   | STATE                                  | Yes                                                                           |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                    | CITY                                   |                                                                               |
| Wayfinding Signage              | Baseline                                              | identification of locations included (concepts for enhanced signage by CITY)                                    | STATE                                       | STATE                                   | STATE                                  | Yes                                                                           |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                    | CITY                                   |                                                                               |
| Landscaping                     | Baseline                                              | identification of locations included (concepts for enhanced landscaping by CITY)                                | STATE                                       | STATE                                   | CITY                                   | Yes<br>Not as a Stand-Alone Project                                           |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | BASLINE - STATE<br>INCREASE - CITY      | CITY                                   |                                                                               |

\* - for construction items paid for by the City, an engineering cost of 15% will be added

\*\* - ITEP funds cover only a percentage of cost and that depends on location / use.

Highlighted columns for items paid or maintained by the City will require the City to execute a Letter of Commitment prior to the conclusion of Phase I.



# IL-18 RIVER BRIDGE PROJECT AT HENRY

Aesthetics Focus Group Meeting #2

February 1, 2023





# Aesthetics Focus Group (AFG)

## Meeting #2 Agenda

- AFG Meeting #1 Summary
- City of Henry
  - Wish List
  - Locations for Aesthetic Opportunities
  - Aesthetic Theme
- Front Street Mitigation Update
- Funding Opportunities:
  - ITEP Grants
  - City Money
  - Private Funding
- ITEP Eligible Aesthetic Elements
- Next Steps / AFG Milestones
- Project Schedule / AFG Involvement
- General Discussion / Questions

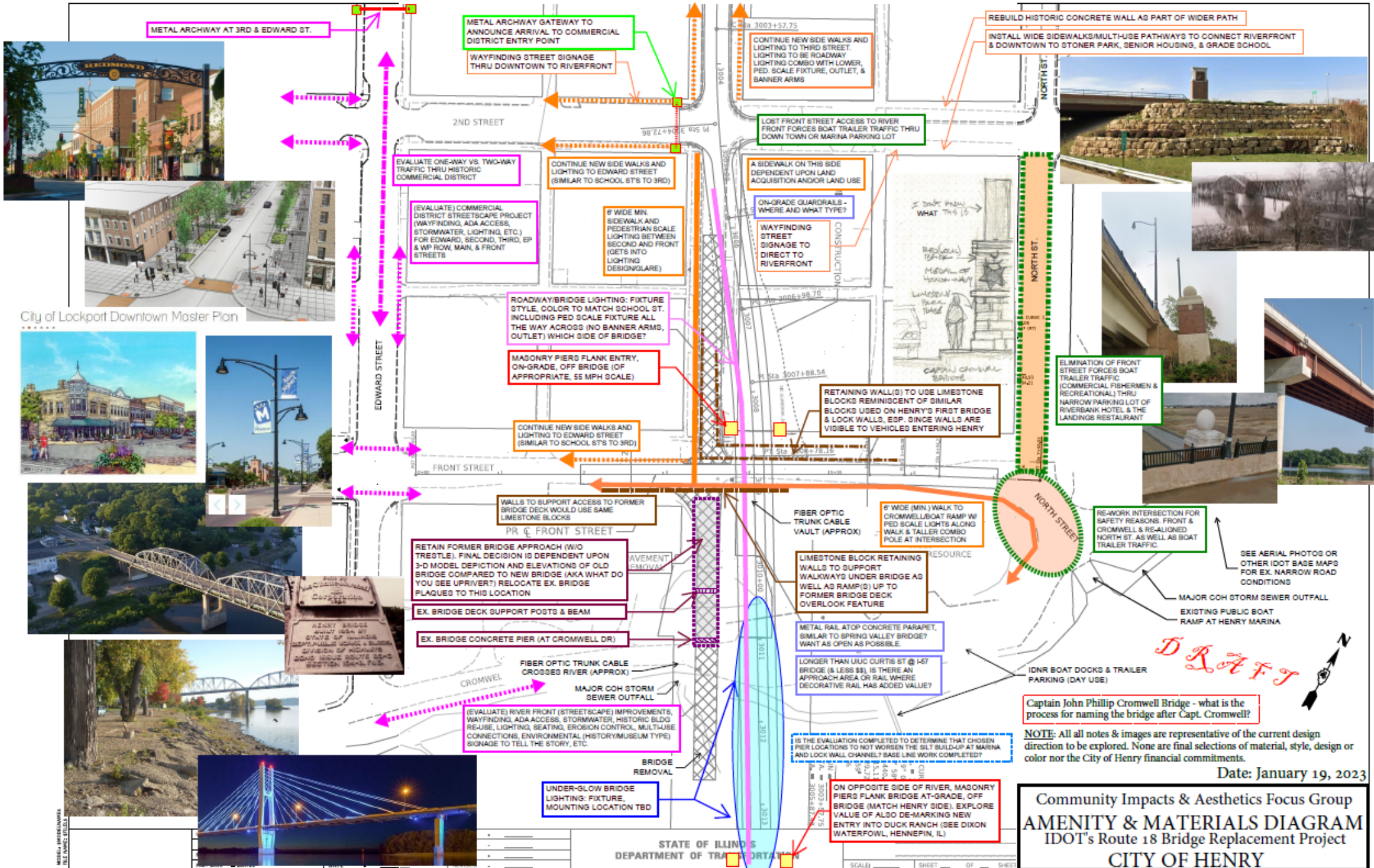


# AFG Meeting #1 Summary

- Project Process
- AFG Goals and Objectives
- Bridge Project Overview
- Aesthetic Elements
- Next Steps / AFG Milestones
- Project Schedule / AFG Involvement



# City Wish List





# City Wish List

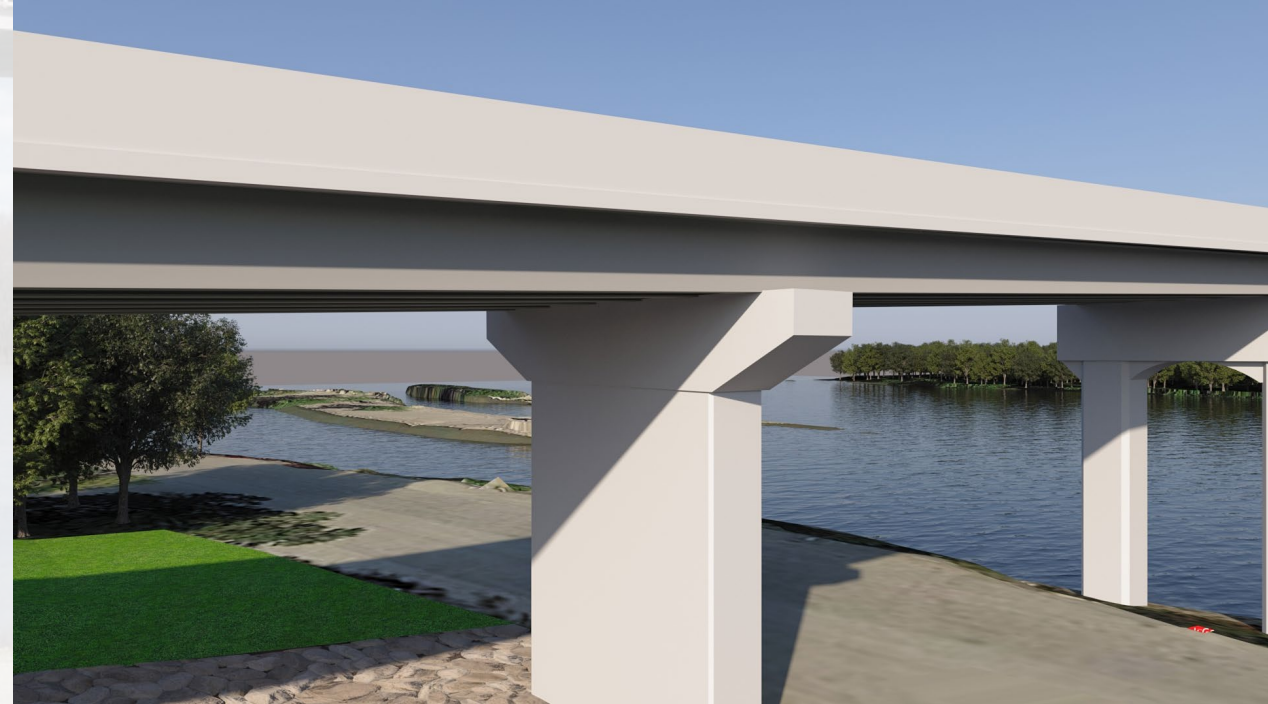
- Limestone block retaining walls
- Sidewalks and pedestrian scale lighting
- Wayfinding /street signage
- River overlook
- Bridge railing
- Roadway/bridge lighting
  - Under-glow bridge lighting
- Bridge monuments
- Local road connectivity
- Bridge name





# City Wish List

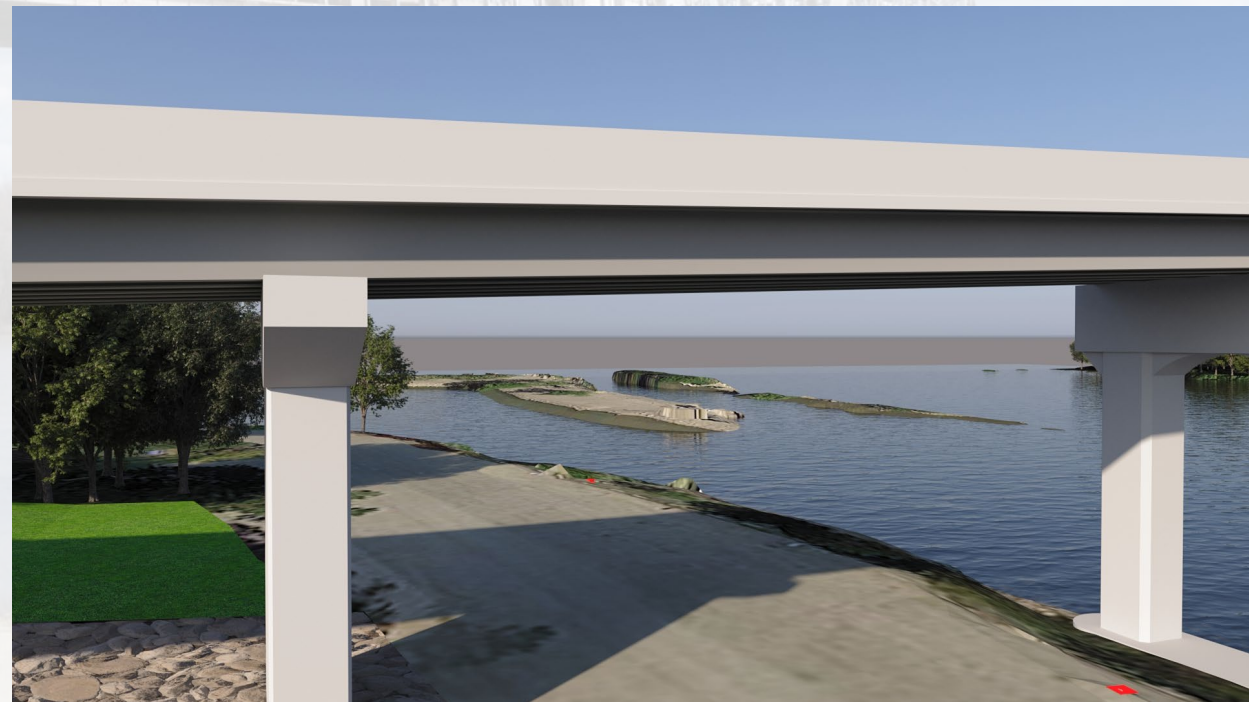
River Overlook – Existing Pier 1





# City Wish List

River Overlook  
Existing Pier 2





# City Wish List – Priorities

## On Bridge:

- Bridge railing
- Roadway/bridge lighting
  - Under-glow bridge lighting
- Bridge name

## Off Bridge:

- Limestone block retaining walls
- Sidewalks and pedestrian scale lighting
- Wayfinding/street signage
- River overlook
- Bridge monuments
- Local road connectivity

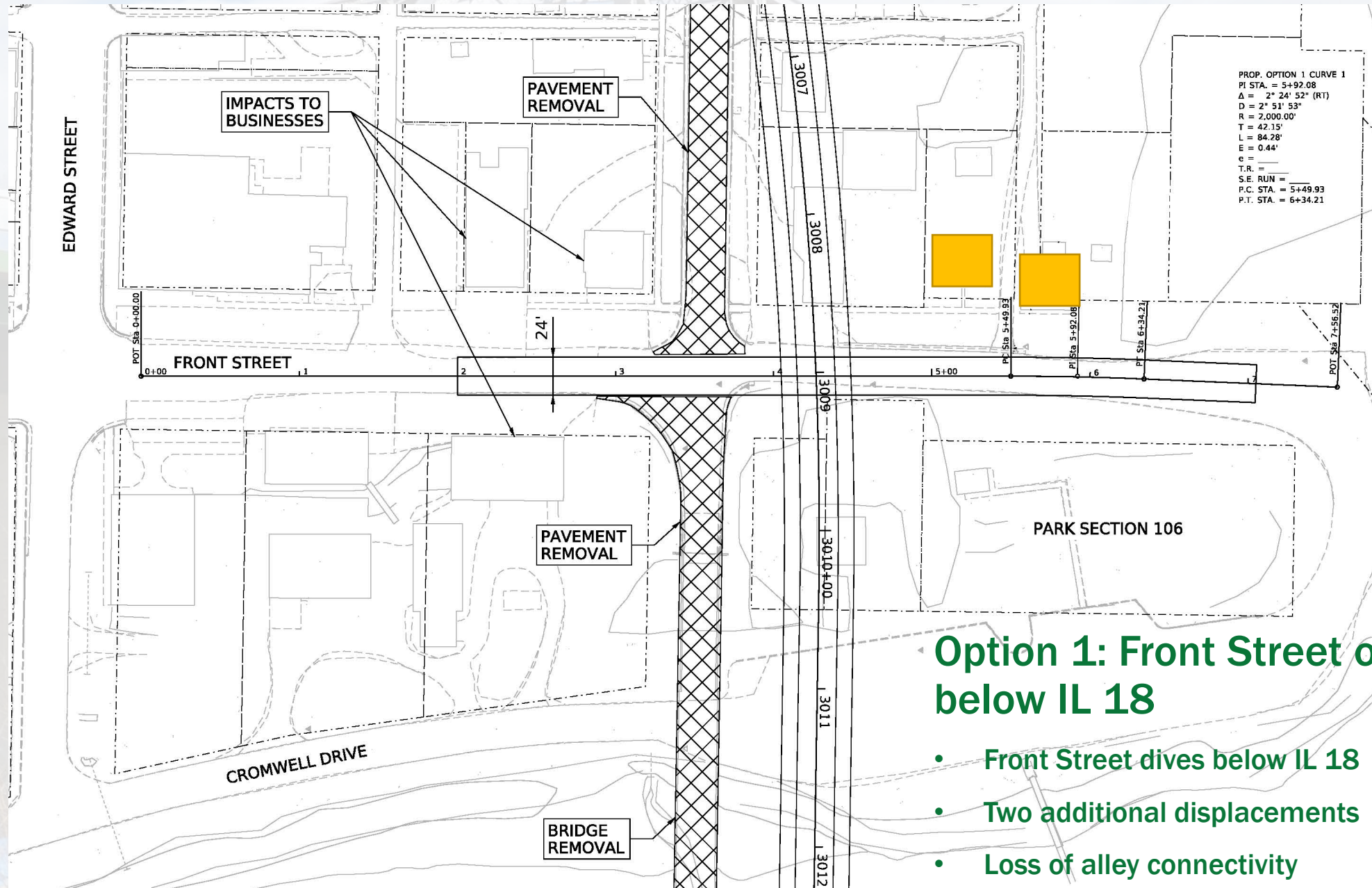


# Aesthetic Theme

## Historic Preservation

- Preserve historic bridge marker
- Use of limestone that matches the historic lock
- Scenic overlook allowing a portion of existing bridge to remain
- Naming new bridge after John Phillip Cromwell
- Metal arches at edges of downtown

# Front Street Mitigation Option 1

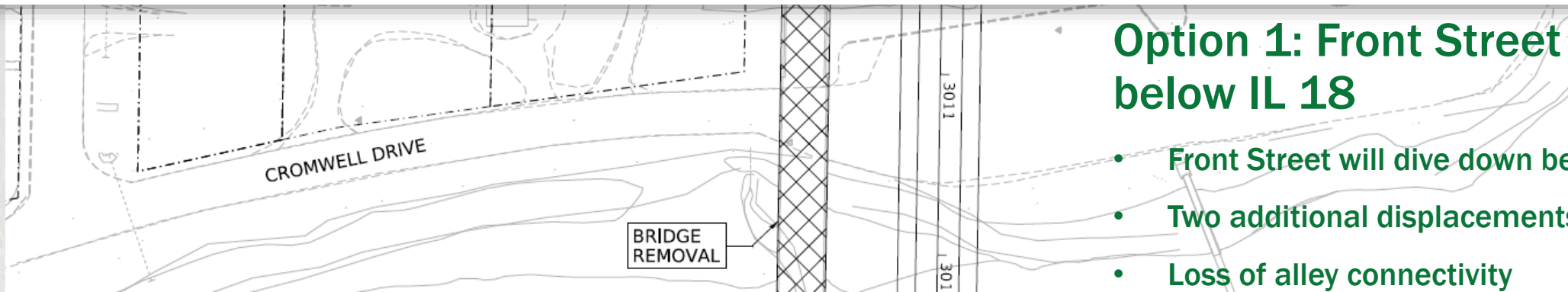
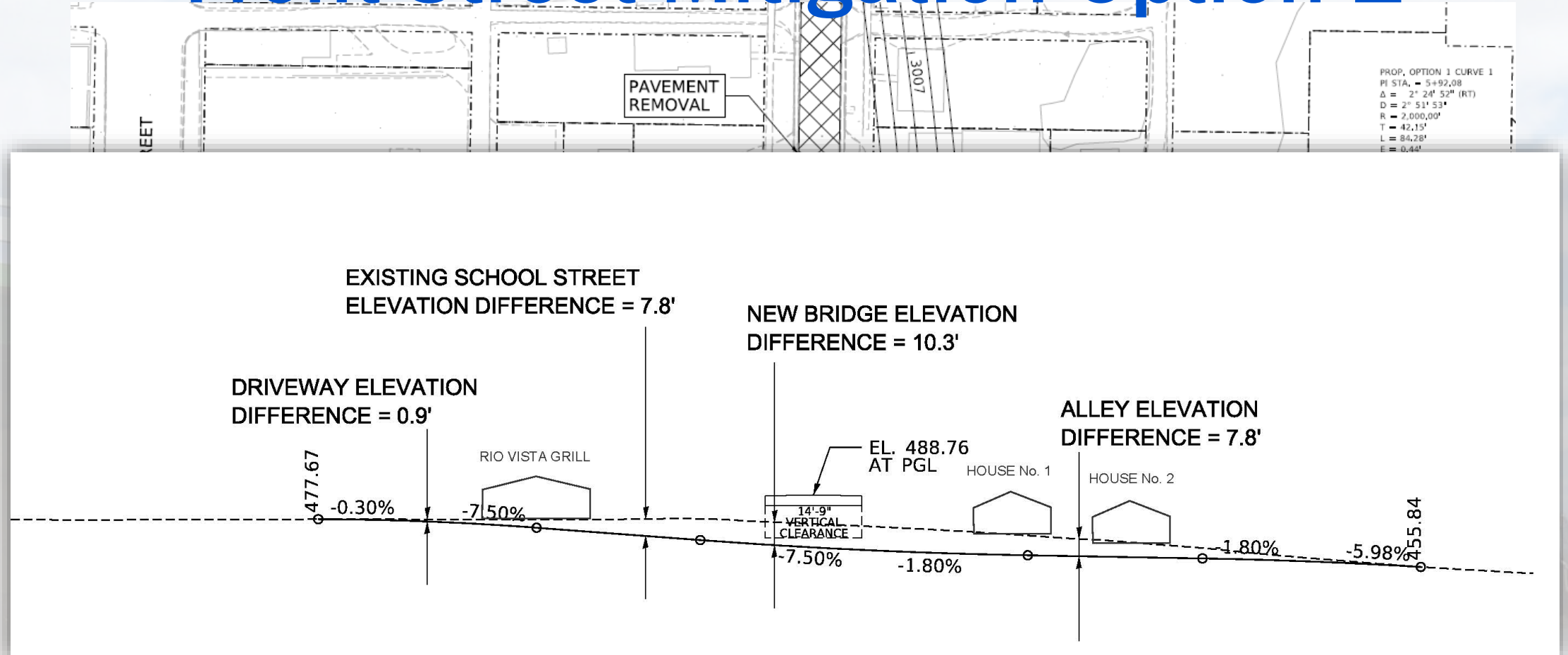


## Option 1: Front Street open below IL 18

- Front Street dives below IL 18
- Two additional displacements
- Loss of alley connectivity



# Front Street Mitigation Option 1

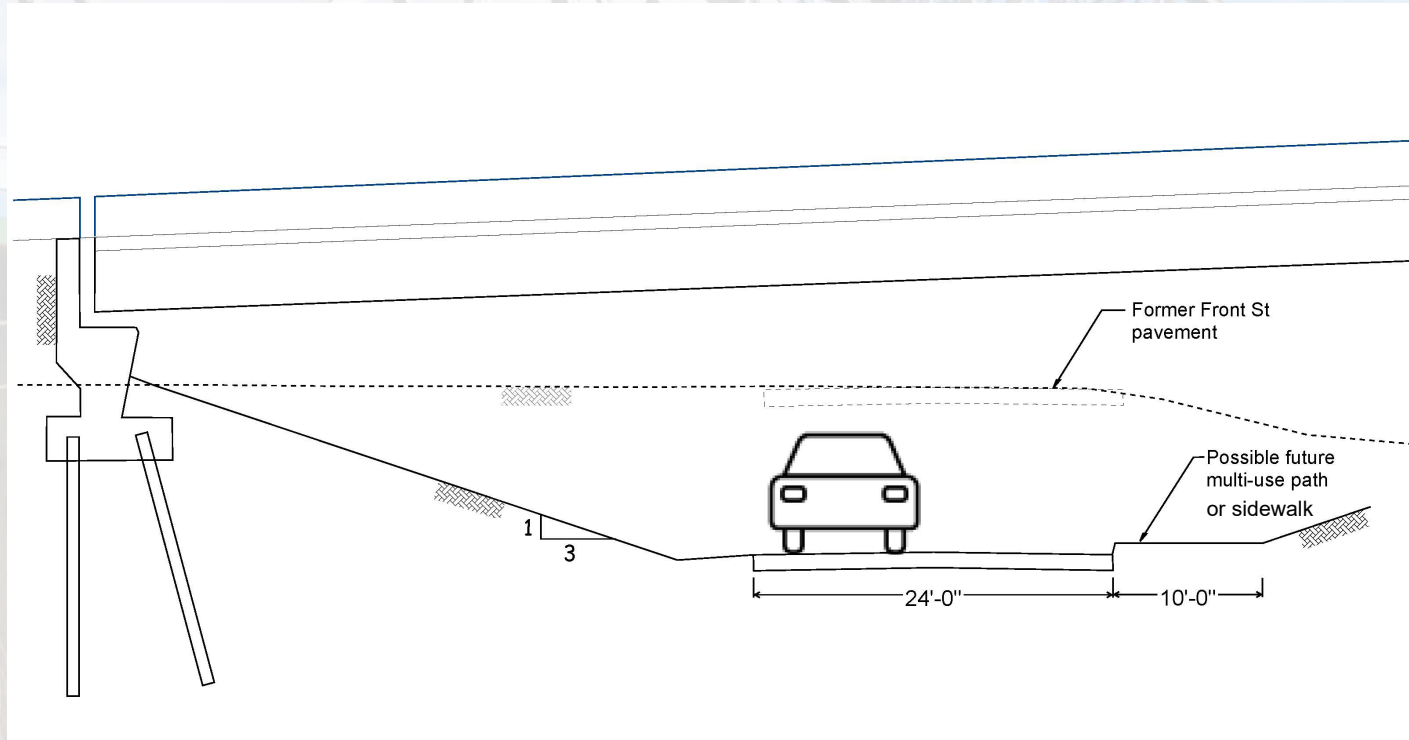


## Option 1: Front Street open below IL 18

- Front Street will dive down below IL 18
- Two additional displacements
- Loss of alley connectivity



# Front Street Mitigation Option 1



**Option 1 – Front St Underpass  
Open Cut**

# Front Street Mitigation Opportunities and Constraints

A large steel truss bridge spans a wide river. In the foreground, a concrete retaining wall with a textured surface is visible. The bridge has multiple spans with arched trusses. The sky is blue with some clouds, and the river is calm.

## Opportunities:

- Connectivity – Sidewalk Trail Along Front Street
- Seamless Grading with Park
- Reuse of Alleys (south side)
- Opening up views to the Illinois River/Overlook
- Retaining Wall Texture

## Constraints:

- Alley Access Losses (north side)
- Under Bridge Lighting

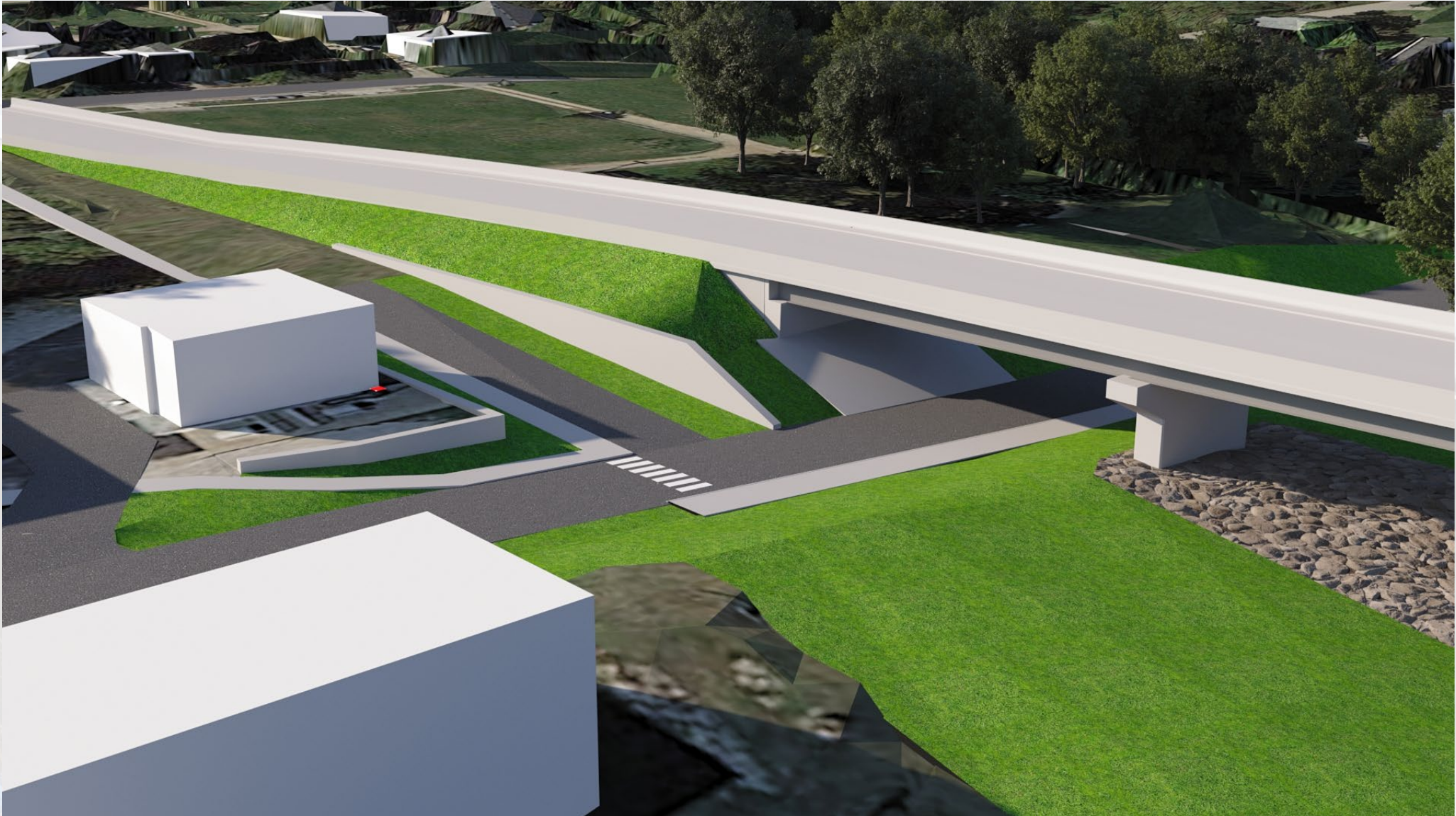


# Front Street Mitigation Option 1





# Front Street Mitigation Bridge Simulation





# Funding Opportunities

- ITEP Grants
- City Money
- Private Funding





# Illinois Transportation Enhancement Program (ITEP)

- The goal of the ITEP is to allocate resources to well-planned projects that provide and support alternate modes of transportation, enhance the transportation system through preservation of visual and cultural resources and improve the quality of life for members of the communities.
- ITEP requires communities to coordinate efforts to develop and build safe, valuable, and functional projects in a timely manner.



# Cost Share & Maintenance



\* - for construction items paid for by the City, an engineering cost of 15% will be added

Highlighted columns for items paid or maintained by the City will require the City to execute a Letter of Commitment prior to the conclusion of Phase I.

| Design Element                  |                                                       | Aesthetics Masterplan                                                                                           | Design Development & Construction Documents | Division of Cost (construction*)         | Maintenance Responsibility             | ITEP Eligibility                                                             |
|---------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------|----------------------------------------|------------------------------------------------------------------------------|
| Retaining Walls                 | Baseline                                              | identification of locations and baseline concepts included (concepts for enhanced treatments by CITY)           | STATE                                       | STATE                                    | STATE                                  | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | Structural - STATE<br>Aesthetic - CITY      | Structural - STATE<br>Aesthetic - CITY   | Structural - STATE<br>Aesthetic - CITY |                                                                              |
| Bridge Monuments                | Baseline                                              | identification of locations included (concepts for monuments by CITY)                                           | N/A                                         | N/A                                      | N/A                                    | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                     | CITY                                   |                                                                              |
| Aesthetic Medallions            | Baseline                                              | identification of locations included (concepts for medallions by CITY)                                          | N/A                                         | N/A                                      | N/A                                    | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                     | CITY                                   |                                                                              |
| Lighting**                      | Relocation of Existing Lighting (if req'd by project) | identification of locations and concepts included                                                               | STATE                                       | BASELINE - STATE/CITY<br>INCREASE - CITY | CITY                                   | Yes (ITEP/CITY)<br>Steet Lighting - (50/50)<br>Pedestrian Lighting - (80/20) |
|                                 | Moderization of Ex. Lighting                          |                                                                                                                 | STATE                                       | CITY                                     | CITY                                   |                                                                              |
|                                 | New Lighting - standard or decorative                 |                                                                                                                 | STATE                                       | CITY                                     | CITY                                   |                                                                              |
| Sidewalks / Multi-Use Trails    | Baseline                                              | identification of locations and concepts included                                                               | STATE                                       | STATE                                    | CITY                                   | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | STATE                                       | BASELINE - STATE<br>INCREASE - CITY      | CITY                                   |                                                                              |
| Crosswalks                      | Baseline                                              | identification of locations and concepts included                                                               | STATE                                       | STATE                                    | CITY                                   | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | STATE                                       | CITY                                     | CITY                                   |                                                                              |
| Interpretive & Historic Markers | Baseline (only if required by SHPO)                   | identification of locations included (concepts for required elements - STATE; concepts for enhancements - CITY) | STATE                                       | STATE                                    | STATE                                  | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                     | CITY                                   |                                                                              |
| Wayfinding Signage              | Baseline                                              | identification of locations included (concepts for enhanced signage by CITY)                                    | STATE                                       | STATE                                    | STATE                                  | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                     | CITY                                   |                                                                              |
| Landscaping                     | Baseline                                              | identification of locations included (concepts for enhanced landscaping by CITY)                                | STATE                                       | STATE                                    | CITY                                   | Yes<br>Not as a Stand-Alone Project                                          |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | BASELINE - STATE<br>INCREASE - CITY      | CITY                                   |                                                                              |

# Next Steps

## What we need from AFG / City

- Continue Budget / Funding Strategies Discussion
- Finalize Design Themes
- Finalize the City Wish List of Aesthetic Elements
- Keep Open Communication with IDOT

## IDOT / Parsons Final Design Team

- Will do Final Bridge Design
- Incorporate Design Concepts into Real World



# Next Steps / Milestones

## AFG Meeting #1 - COMPLETED

- Outline the Aesthetics Master Plan process
- Establish the range of aesthetic elements
- Understand the division of cost for construction and maintenance responsibilities

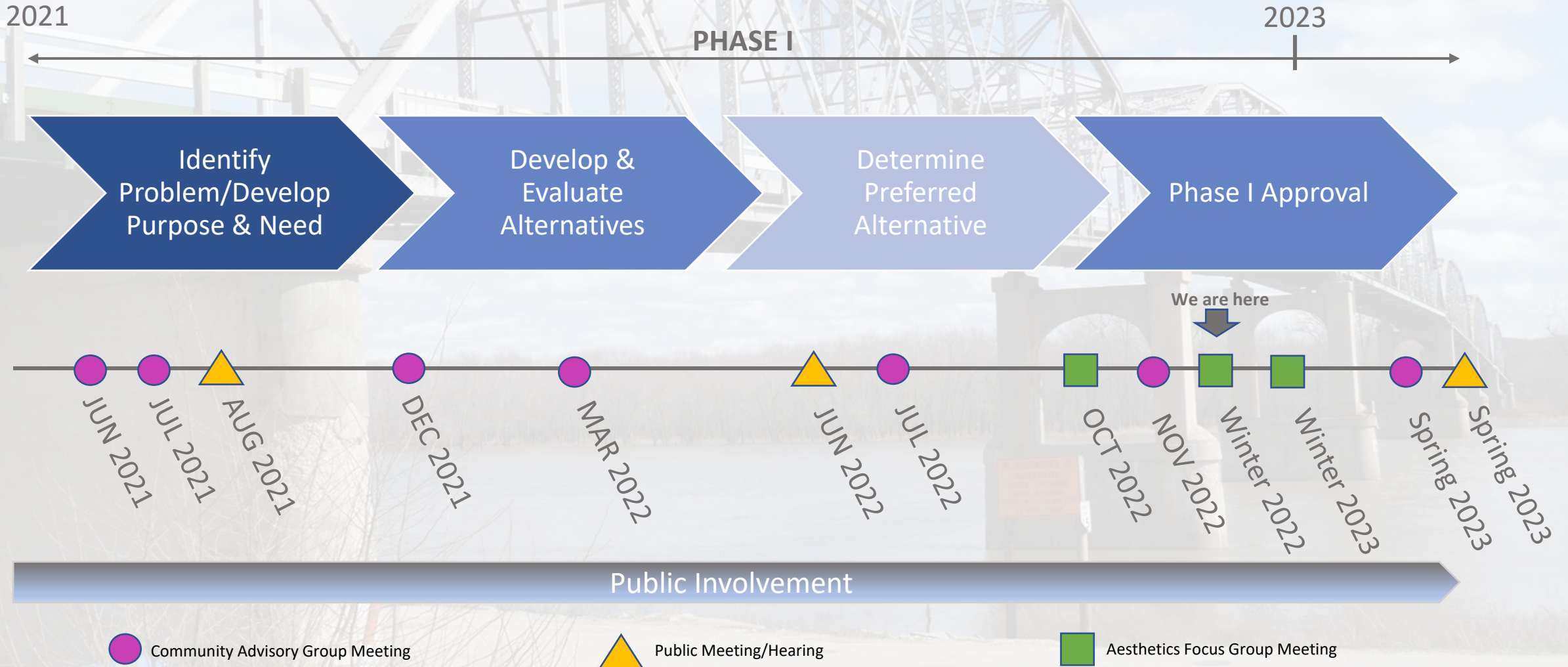
## AFG Meeting #2

- Identify items on the City wish list
- Identify a project theme
- Identify locations for aesthetic opportunities
- Review funding opportunities

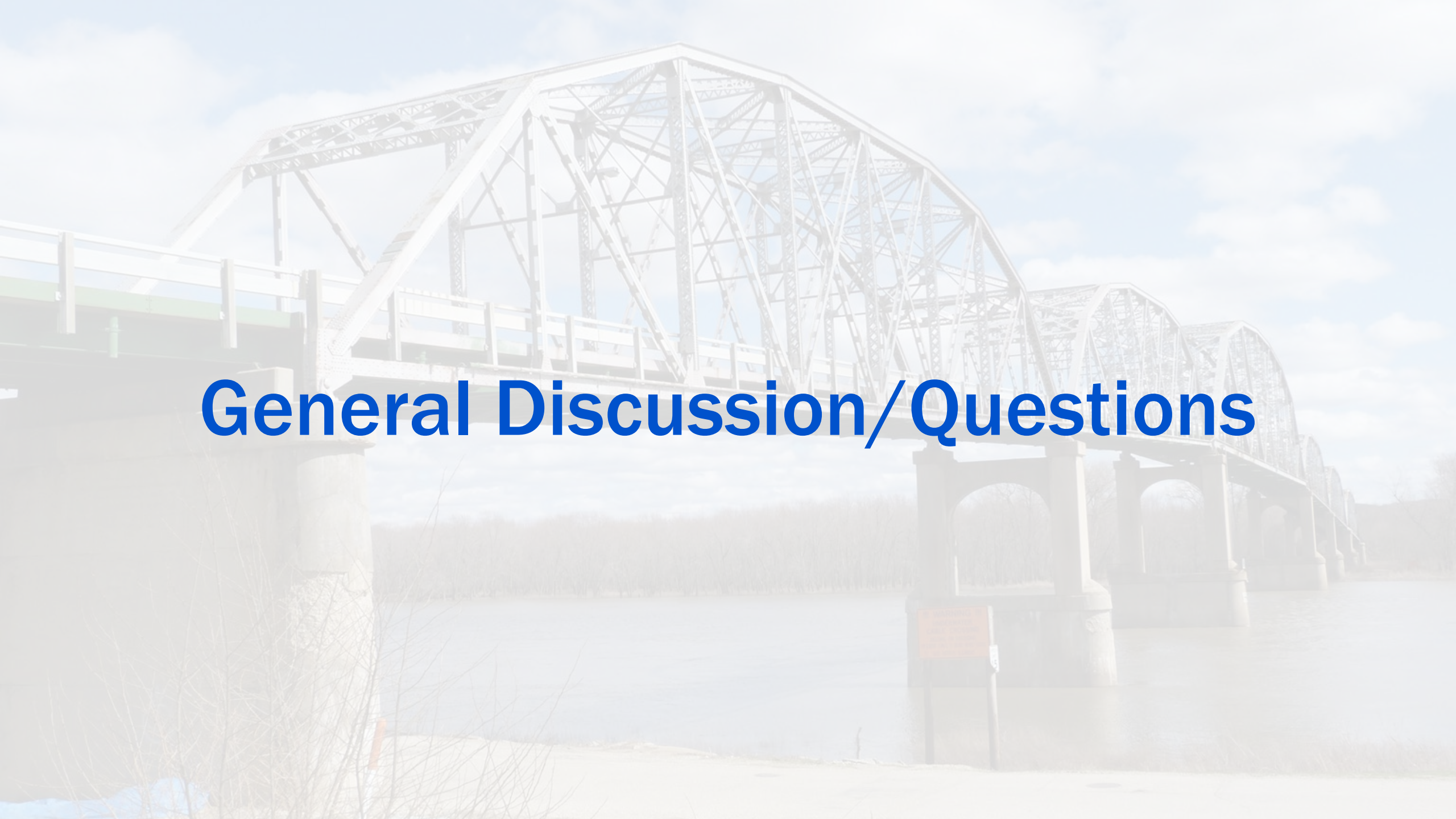
## AFG Meeting #3

- Finalize aesthetic recommendations that will be incorporated into the final Aesthetics Master Plan

# Schedule





A large steel truss bridge spans a wide river. The bridge features a prominent steel truss structure with multiple arches. The river is calm, and the sky is blue with scattered white clouds. The text "General Discussion/Questions" is overlaid in a bold, blue font across the center of the image.

# General Discussion/Questions



A large steel truss bridge spans a wide river. The bridge features multiple arches and a complex network of steel beams. The sky is blue with scattered white clouds. The river is calm, and the far bank is lined with bare trees. In the foreground, there are some bare branches and a concrete structure on the left.

# Thank you for your participation!

## See you in a few weeks!

# IL 18 River Bridge Project

## Aesthetics Focus Group

### Post Meeting #2 Call Summary

FAP Route 653 (IL 18)  
Section (104B-D)BR  
Marshall and Putnam Counties  
Structure carrying IL 18 over the Illinois River at Henry  
SN 062-0036

Job No. P-94-007-20  
Catalog No. 035761-00P  
PTB 195-038

**Location: Teams Call**

**Date / Time: Monday, April 20, 2023 – 1:00pm – 2:00 pm**

#### Meeting Summary:

The Illinois Department of Transportation (IDOT) requested a call with the Mayor of the City of Henry (COH) to follow up on action items committed to during the Aesthetics Focus Group (AFG) Meeting #2, and to review schedule and milestones refined as part of the AFG Meeting #2 summary document.

#### PARTICIPANTS

| IDOT                   | City of Henry (COH)      | Parsons       |
|------------------------|--------------------------|---------------|
| Karen Dvorsky (KD)     | Mayor Jeff Bergfeld (JB) | Todd Ude (TU) |
| Travis Wallenfang (TW) | Councilman Doug Johnson  |               |

#### ITEMS DISCUSSED

- Mayor sought clarification on project schedule and whether it has been pushed out. There have been media claims by legislators that it will be open to traffic in '27 or '28. KD clarified that for 2 or 3 years of construction that might imply a '24 or '25 letting which has not (recently) been the plan. KD indicated that the recent consistent target has been a calendar '26, possibly '27 letting, followed by 2 to 3 years of construction.
- TW recapped the dates and action items that arose from the AFG Meeting 2 summary (attached) and were transmitted to COH. TW recapped the contents of the Aesthetic Priority Table (APT) (attached). The APT has been prepared by IDOT and provided to COH as an aid to deciding and tracking the priority of different possible aesthetic elements that could be requested for inclusion to the project.
- TU walked through a package of sketches (attached) that were offered at AFG Meeting 2 or which were developed in the meeting summarization process. The sketches illustrate a subset of the possible aesthetic opportunities:
  - creation of a river overlook.
  - alley connectivity after Front St is lowered.
  - monument location / grading options behind the west abutment.

These were selected on account of their potential to become critical path items for completion of the Phase I engineering documents (what gets included or excluded from project limits), the relative difficulty of visualization of what different solutions may look like, and the potential for visualization to spark refinement of ideas or additional questions from the AFG community members.

With regard to alley connectivity, for Option 2 (existing School Street), IDOT noted that they would likely fund construction, while COH would commit to maintain. With Option 3 (mid-block to the south) the alley work is presumably too far outside the project limits to warrant IDOT participation, though IDOT would work with COH on the real estate arrangements necessary to allow a “back entrance” crossing of the Stash property (presumed taken by IDOT) to the Rio Vista parcel.

In response to COH question about any potential credit if an alley is not requested by the COH, IDOT stated no; if the involvement process (CAG + AFG) establishes the desire for and benefit of alley inclusion, IDOT will work to include. If it is not desired or beneficial, IDOT will not provide it.

COH inquired if the exhibits can be shared with the owners of the Rio Vista property. IDOT responded post-meeting that options and exhibits discussed with Community Advisory Group (CAG) and AFG can be reviewed by the Mayor with the owners, but recommend the meeting be a 3-way affair, including the owners, COH, and representatives of IDOT (Land Acquisition).

COH inquired where their request to salvage elements of the existing bridge, for public display or other use, fits in. IDOT understands that City’s priority on such would be captured on the “Interpretive / Historic Markers” row of the Aesthetic Priority Table. It was further noted that SHPO determination on historic significance could add weight to IDOT participation in such salvage and display. But even if not part of a formally required historic mitigation, if it is a priority of the AFG, there are ways to include such activities in the project.

COH inquired about the division of responsibilities for features like monuments. IDOT responded that the design concept and development of construction documents for a monument would be COH responsibility. But if the timing works out such that these can be included to the bridge construction process, coordination will take place between COH and the Design Team to embed the monuments’ construction into the road and bridge construction. Parsons noted instance in which timing has not worked out, but in which an infrastructure project was able to install (for example) foundation elements of agreed-upon dimension and capacity and provide site preparation and accommodation for future monument construction.

COH indicated that they will manage the relay of this information and the next stage of work on the Aesthetic Priority Table amongst themselves; IDOT/Parsons participation not required.

## **ATTACHMENTS**

1. Agenda
2. Action Item Schedule
3. Aesthetic Priority Table
4. PS\_PTG\_TCU\_HenryAFGFollow\_03152023 slides

## MEETING AGENDA

### IL 18 River Bridge Project

**Purpose:** AFG Follow Up / COH Meeting  
**Date:** DAY – TBD, 2023 **Mon, 3/20/23**  
**Time:** TIME TBD CST **1:00 pm CDT**  
**Location:** Teams Meeting

#### AGENDA

---

- 1) AFG Meeting #2 Action Items / Deadlines
- 2) Aesthetic Priority Table – High/Medium/Low
- 3) Critical Path Elements - Presentation of refined concepts
- 4) General Discussion / Questions

## ACTION ITEMS

| Issue                   | Action                                                                                                                                                    | Responsible Party        | Deadline       |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------|
| General                 | Study Team meet with Mayor to provide updates & discuss next steps/action items                                                                           | Study Team/City of Henry | Mid March 2023 |
| Evaluate Elements       | Identify High – Medium – Low Aesthetic Wish List Elements                                                                                                 | City of Henry            | March 31, 2023 |
| Critical Path Elements  | Decide which critical path elements will be included in the Aesthetics Master Plan (overlook, monuments, alley)                                           | City of Henry            | April 14, 2023 |
| Available Funding       | Feedback – limit budget for aesthetic elements for the bridge project to potential ITEP funding? Or is additional money available for aesthetic elements? | City of Henry            | April 28, 2023 |
| Alley Connections       | Evaluate possible alley connections and use of the area between Rio Vista and Illinois 18                                                                 | Parsons                  | ASAP           |
| Aesthetic Element Costs | Develop ROM Costs to help with Evaluation                                                                                                                 | Study Team               | TBD            |

### Attachments:

- Aesthetic Elements Table
- AFG #2 Presentation



See second tab for Division of Cost/Responsibility Table

| Design Element Category         | Aesthetic Implementation                                        | Identified in City Exhibit | Critical Phase I Item | City Priority Level (High/Medium/Low) | City Comments | Study Team Comments                                                                                            |
|---------------------------------|-----------------------------------------------------------------|----------------------------|-----------------------|---------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------|
| Retaining Walls                 | Enhanced Texture of IDOT Design                                 | X                          |                       |                                       |               | Off-shelf Formliner Texture covered by STATE                                                                   |
| Retaining Walls                 | Landscaping Retaining Walls                                     | X                          |                       |                                       |               | May have guardrail implications pending location                                                               |
| Bridge Monuments                | Monuments Henry-side                                            | X                          | X                     |                                       |               | Impacts to grading and barrier length-of-need at bridge approaches                                             |
| Bridge Monuments                | Monuments E. Side of River                                      | X                          | X                     |                                       |               | Impacts to grading and barrier length-of-need at bridge approaches                                             |
| Aesthetic Medallion             |                                                                 | X                          |                       |                                       |               |                                                                                                                |
| Lighting                        | Pedestrian Lighting                                             | X                          |                       |                                       |               |                                                                                                                |
| Lighting                        | Additional Street lighting                                      | X                          |                       |                                       |               |                                                                                                                |
| Lighting                        | Ornamental Lighting Fixtures                                    | X                          |                       |                                       |               |                                                                                                                |
| Lighting                        | On Structure decorative lighting Enhancements                   | X                          |                       |                                       |               | Operations staff against any on-structure enhancements based on previous experience and maintenance concerns.  |
| Lighting                        | Underglow Lighting                                              | X                          |                       |                                       |               | Operations staff against any on-structure enhancements based on previous experience and maintenance concerns.  |
| Lighting                        | Ground Level Lighting of Bridge                                 |                            |                       |                                       |               |                                                                                                                |
| Sidewalks                       | Reconnect Sidewalk within limits (Front to Second; along Front) | X                          |                       |                                       |               | Reconnecting existing network within project limits part of base project.                                      |
| Sidewalks                       | Extend Project Sidewalk limits (Second to Third)                | X                          |                       |                                       |               | Preference to determine during Phase I, but can be coordinated Phase II                                        |
| Sidewalks                       | Extend Project Sidewalk limits (Second Street toward Edwards)   | X                          |                       |                                       |               | Preference to determine during Phase I, but can be coordinated Phase II                                        |
| Sidewalks                       | Enhance sidewalk (color, pattern, etc)                          |                            |                       |                                       |               |                                                                                                                |
| Multi-use Path                  | Multi-use Path North along Second St.                           | X                          |                       |                                       |               | Outside of project limits/scope                                                                                |
| Crosswalks                      | Enhanced crosswalks                                             |                            |                       |                                       |               |                                                                                                                |
| Interpretive / Historic Markers |                                                                 |                            |                       |                                       |               |                                                                                                                |
| Wayfinding Signage              | Enhanced Wayfinding Signage                                     | X                          |                       |                                       |               | Baseline IDOT wayfinding will be included.                                                                     |
| Streetscape                     | Gateway Arch (at Second Street)                                 | X                          |                       |                                       |               |                                                                                                                |
| Landscaping                     |                                                                 |                            |                       |                                       |               | Baseline - grading and grass seeding                                                                           |
| Overlook                        |                                                                 | X                          | X                     |                                       |               | 3 concepts have been generated. Team will need to know what direction to go.                                   |
| Connectivity                    | Reconnect Alley Existing School St. ROW                         |                            | X                     |                                       |               | Alley connection decision required for Phase I<br>Also impacts required retaining wall & sidewalk reconnection |
| Connectivity                    | Reconnect Alley midblock School & Edwards                       |                            | X                     |                                       |               |                                                                                                                |
| Connectivity                    | Modified North St. to Front St. Connection                      | X                          |                       |                                       |               | Outside of project limits/scope                                                                                |
| Other                           | Bridge Railing                                                  | X                          |                       |                                       |               | Baseline IDOT railing                                                                                          |

| Design Element                  |                                                       | Aesthetics Masterplan                                                                                           | Design Development & Construction Documents | Division of Cost (construction*)        | Maintenance Responsibility             | ITEP Eligibility                                                             |
|---------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------|----------------------------------------|------------------------------------------------------------------------------|
| Retaining Walls                 | Baseline                                              | identification of locations and baseline concepts included (concepts for enhanced treatments by CITY)           | STATE                                       | STATE                                   | STATE                                  | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | Structural - STATE<br>Aesthetic - CITY      | Structural - STATE<br>Aesthetic - CITY  | Structural - STATE<br>Aesthetic - CITY |                                                                              |
| Bridge Monuments                | Baseline                                              | identification of locations included (concepts for monuments by CITY)                                           | N/A                                         | N/A                                     | N/A                                    | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                    | CITY                                   |                                                                              |
| Aesthetic Medallions            | Baseline                                              | identification of locations included (concepts for medallions by CITY)                                          | N/A                                         | N/A                                     | N/A                                    | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                    | CITY                                   |                                                                              |
| Lighting**                      | Relocation of Existing Lighting (if req'd by project) | identification of locations and concepts included                                                               | STATE                                       | BASLINE - STATE/CITY<br>INCREASE - CITY | CITY                                   | Yes (ITEP/CITY)<br>Steet Lighting - (50/50)<br>Pedestrian Lighting - (80/20) |
|                                 | Moderization of Ex. Lighting                          |                                                                                                                 | STATE                                       | CITY                                    | CITY                                   |                                                                              |
|                                 | New Lighting - standard or decorative                 |                                                                                                                 | STATE                                       | CITY                                    | CITY                                   |                                                                              |
| Sidewalks / Multi-Use Trails    | Baseline                                              | identification of locations and concepts included                                                               | STATE                                       | STATE                                   | CITY                                   | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | STATE                                       | BASLINE - STATE<br>INCREASE - CITY      | CITY                                   |                                                                              |
| Crosswalks                      | Baseline                                              | identification of locations and concepts included                                                               | STATE                                       | STATE                                   | CITY                                   | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | STATE                                       | CITY                                    | CITY                                   |                                                                              |
| Interpretive & Historic Markers | Baseline (only if required by SHPO)                   | identification of locations included (concepts for required elements - STATE; concepts for enhancements - CITY) | STATE                                       | STATE                                   | STATE                                  | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                    | CITY                                   |                                                                              |
| Wayfinding Signage              | Baseline                                              | identification of locations included (concepts for enhanced signage by CITY)                                    | STATE                                       | STATE                                   | STATE                                  | Yes                                                                          |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | CITY                                    | CITY                                   |                                                                              |
| Landscaping                     | Baseline                                              | identification of locations included (concepts for enhanced landscaping by CITY)                                | STATE                                       | STATE                                   | CITY                                   | Yes<br>Not as a Stand-Alone Project                                          |
|                                 | Enhanced                                              |                                                                                                                 | CITY                                        | BASLINE - STATE<br>INCREASE - CITY      | CITY                                   |                                                                              |

\* - for construction items paid for by the City, an engineering cost of 15% will be added

\*\* - ITEP funds cover only a percentage of cost and that depends on location / use.

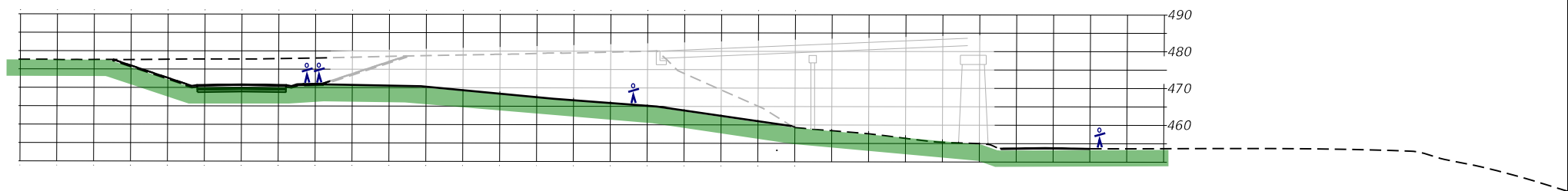
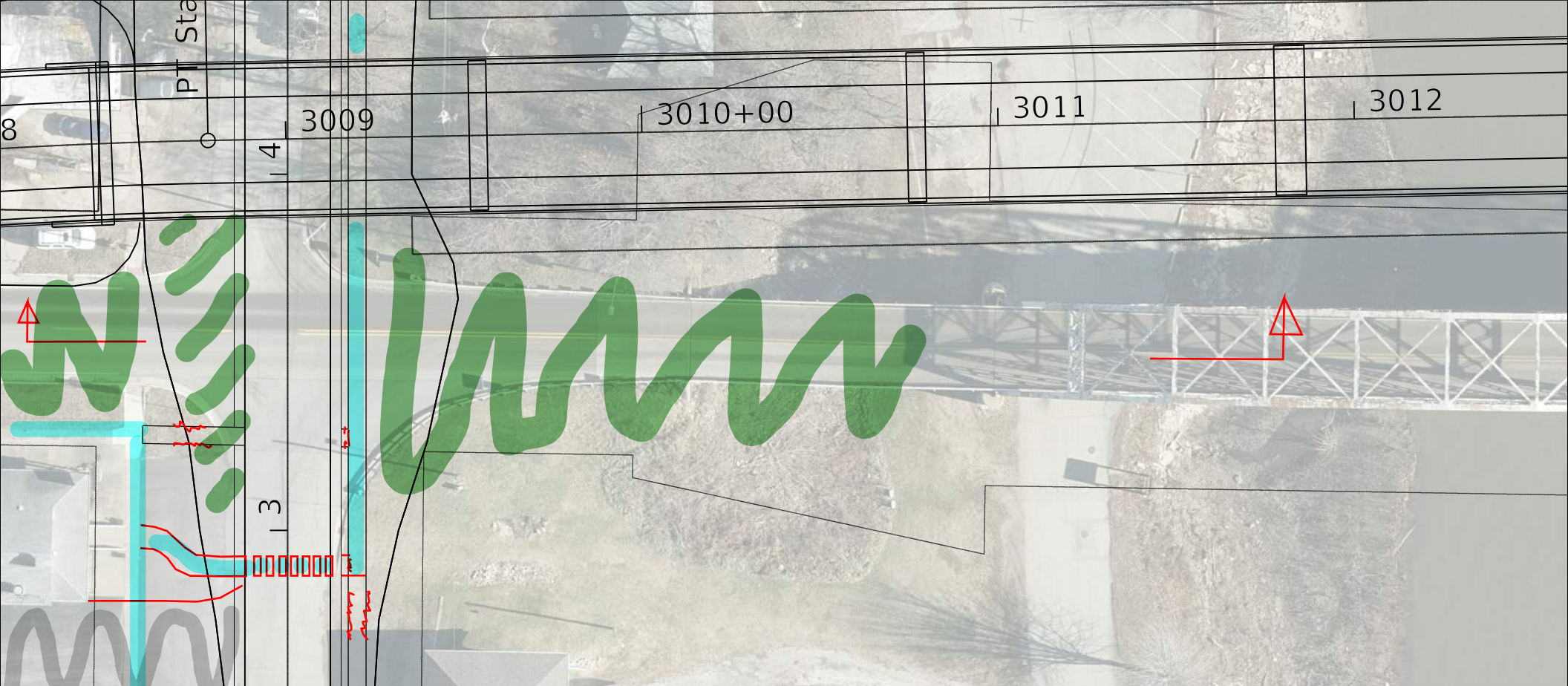
Highlighted columns for items paid or maintained by the City will require the City to execute a Letter of Commitment prior to the conclusion of Phase I.

## AN OVERLOOK Does Phase I indicate:

1. No overlook (base case)
  - a) Remove bridge and substructure, knock down IL 18 approach embankment between Front and Cromwell
2. Overlook based on existing IL 18 grading and (possibly) structure
  - a) Remove bridge and piers, leave grading high, climb to existing grade at abutment and create overlook plaza.
  - b) Retain bridge spans 1 and 2, create overlook plaza at pier 2 end of bridge.
  - c) Retain abutment and pier 2 only, set new 9'x80' ped truss to create overlook at pier 2.

### Notes

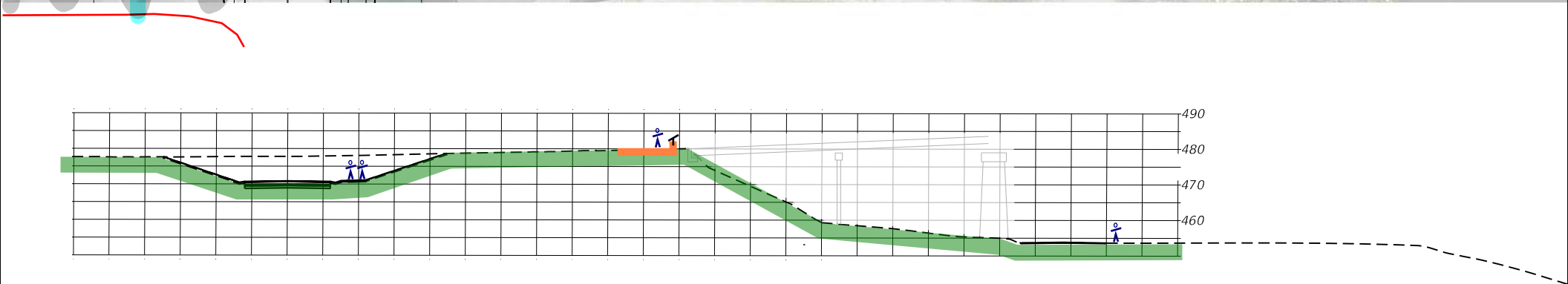
- Overlooks are ITEP eligible. IDOT can include to project design (and remove if funding not granted).
- Any commemoration of the bridge made as mitigation of a resource impact needs flexibility to remain whether or not an overlook is included to the project.



1(a) - No overlook, but graded down the old embankment.

Say 22 @ 5'x10' (counting squares above) x 40' avg width / 27 cf/cy => 1600 CY additional soil removal. Probably not large compared to the removal already in play for Front St lowering, probably usable onsite for the east or west embankment.

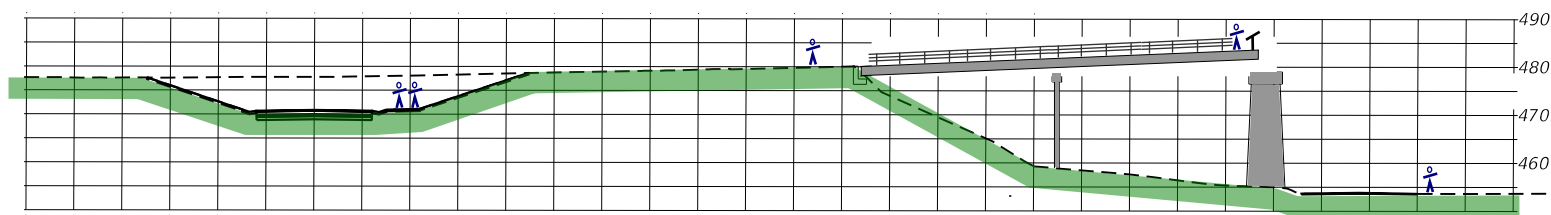
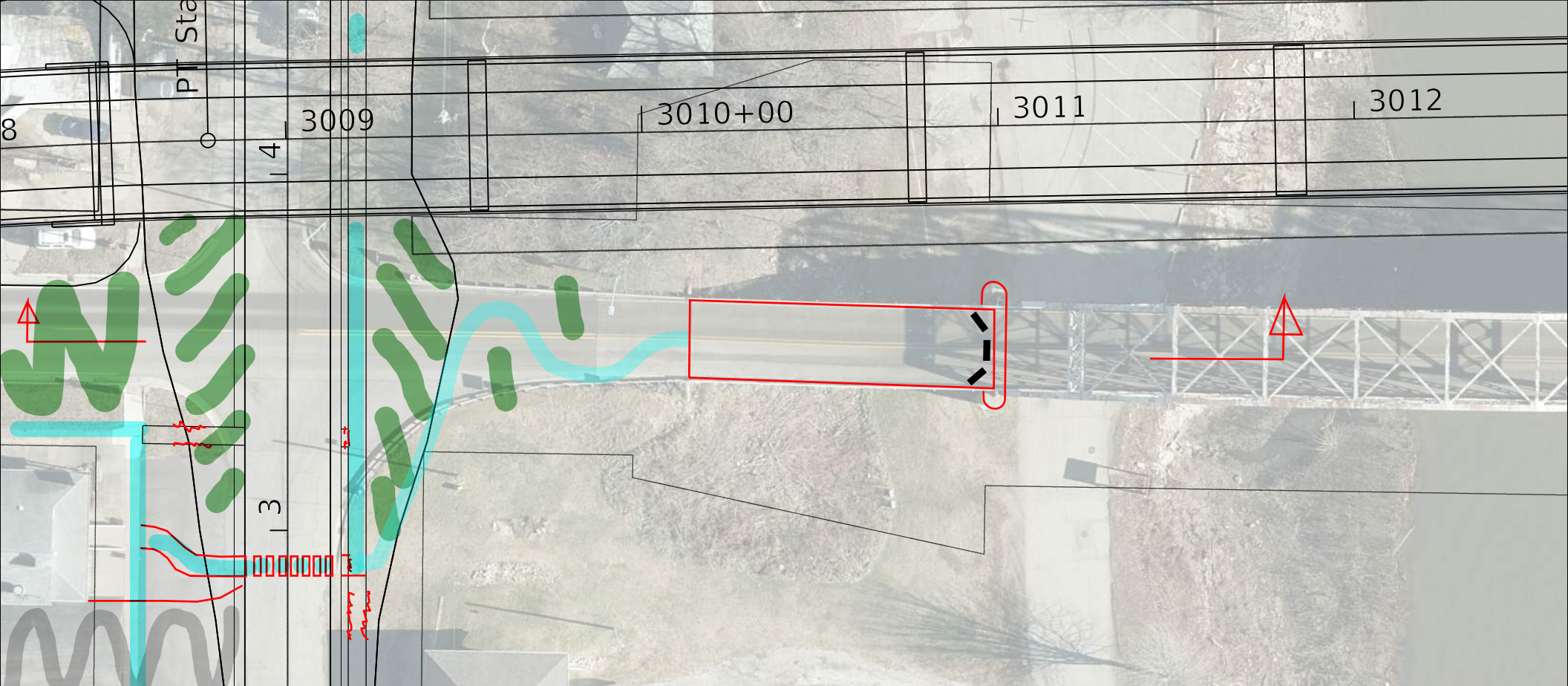




2(a) - Take bridge and substructures, but leave approach embankment. Craft a plaza with interpretive / historical markers on the remaining nob.  
Low cost, low maintenance.

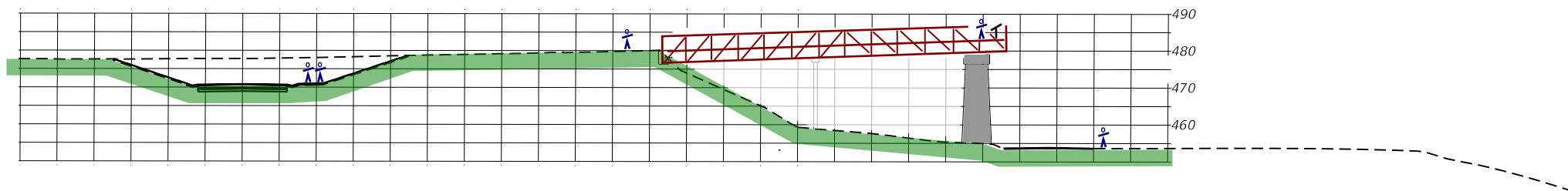
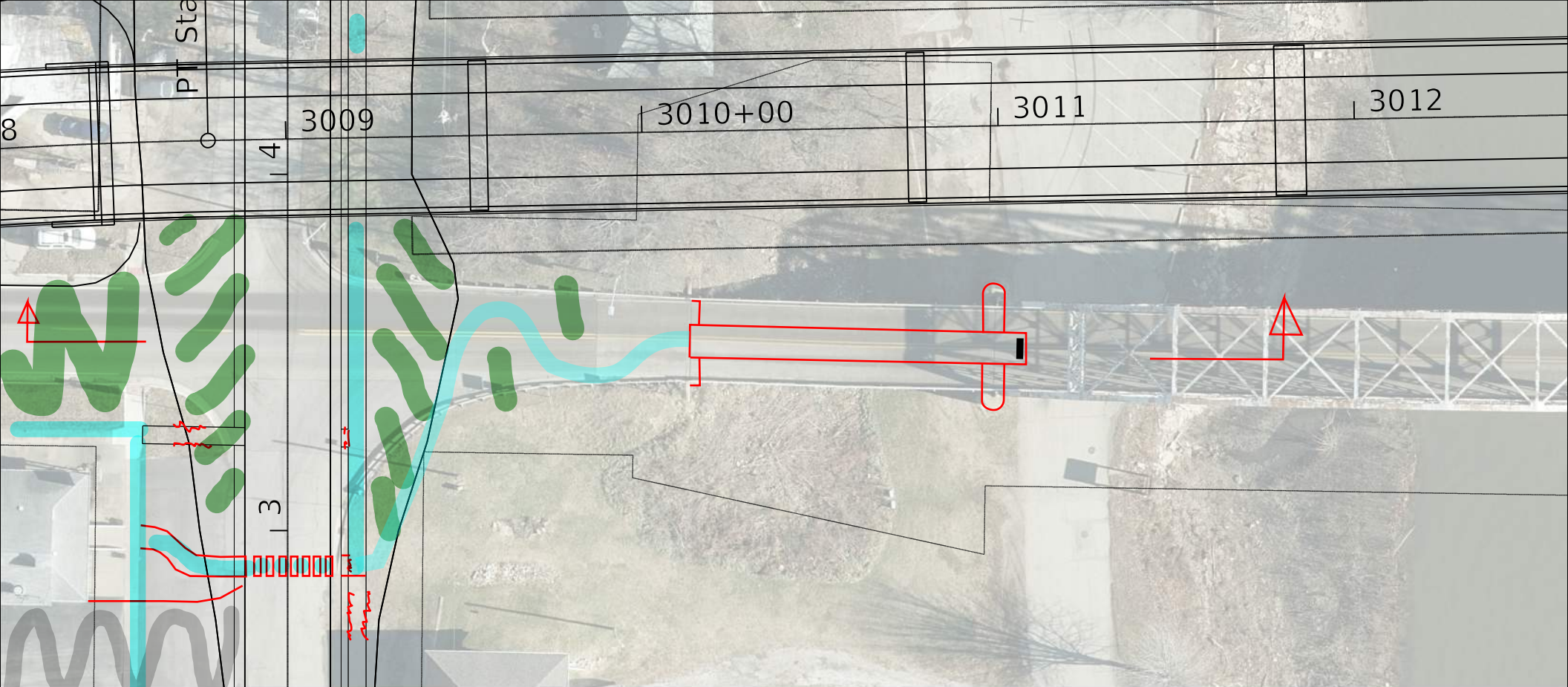
There could be a connection between inclusion of an overlook, and provision of parking. e.g. Parking on IDOT's Stash acquisition could be part of an overlook.





2(b) - Retain spans 1 and 2 of the existing bridge. Fashion an overlook and interpretive plaza at the end of span 2. Non-trivial future maintenance. Some cost to improve existing material-to-remain.

There could be a connection between inclusion of an overlook, and provision of parking. e.g. Parking on IDOT's Stash acquisition could be part of an overlook.



2(c) - Retain abutment and pier 2 of the existing bridge, but take pier 1 and all superstructure. Furnish and install an 8' to 10' wide pre-fab ped truss.

Less existing structure to improve. Ped truss should prove to be a low maintenance demand for Henry. Existing pier an unmistakable artifact preserved from existing bridge.

There could be a connection between inclusion of an overlook, and provision of parking. e.g. Parking on IDOT's Stash acquisition could be part of an overlook.

CONNECTIVITY Does Phase I indicate:

1. Front St underpass, only
2. Front St underpass, former School St alley & sidewalk connectivity
3. Front St underpass, mid-block alley connections to corner parcel



## CONNECTIVITY Does Phase I indicate:

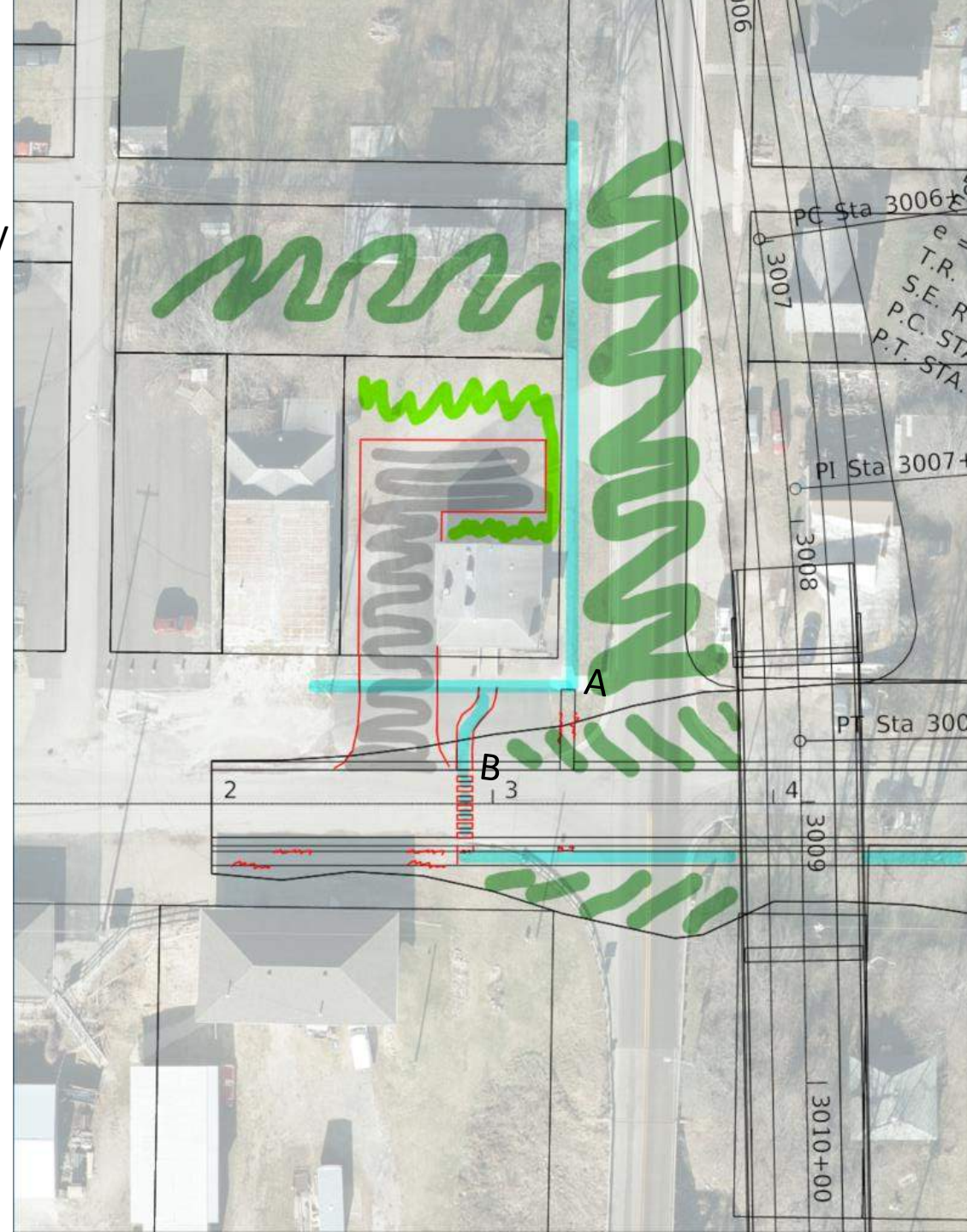
1. **Front St underpass, only**
2. Front St underpass, former School St alley & sidewalk connectivity
3. Front St underpass, mid-block alley connections to corner parcel

Works as a “base project” solution

COH / Property Owner loses a few parking slots on Front St ROW

Parcel loses School St access

Sidewalk acrobatics to get down from 477.8 at A to 474.6 at B in 60'



CONNECTIVITY Does Phase I indicate:

1. Front St underpass, only
- 2. Front St underpass, former School St alley & sidewalk connectivity**
3. Front St underpass, mid-block alley connections to corner parcel

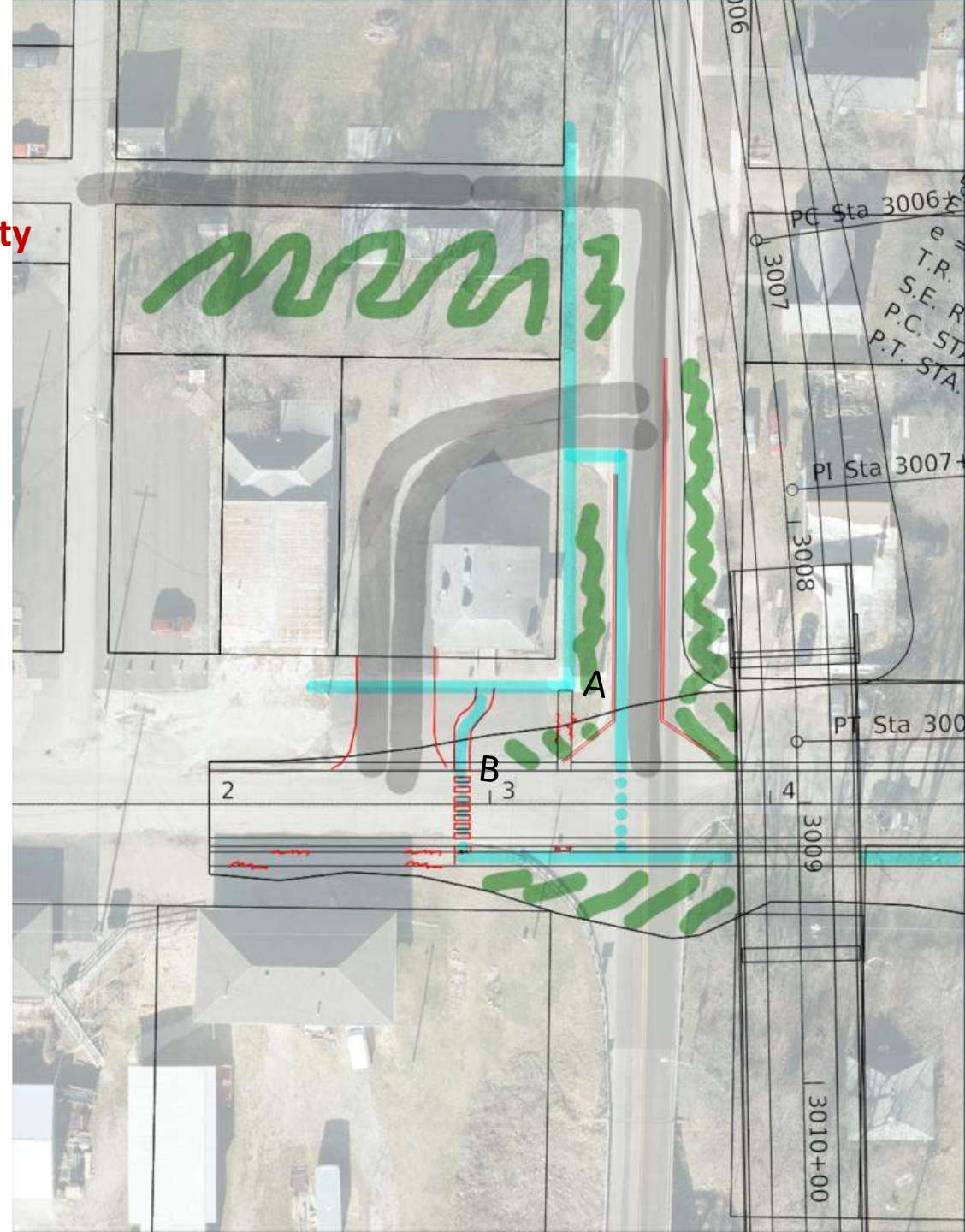
Works as a “base project” solution

COH / Property Owner loses a few parking slots on Front St ROW

Parcel retains a School St alley access.

Alley bordered by retaining walls.

Sidewalk acrobatics to get down from 477.8 at A to 474.6 at B in 60'

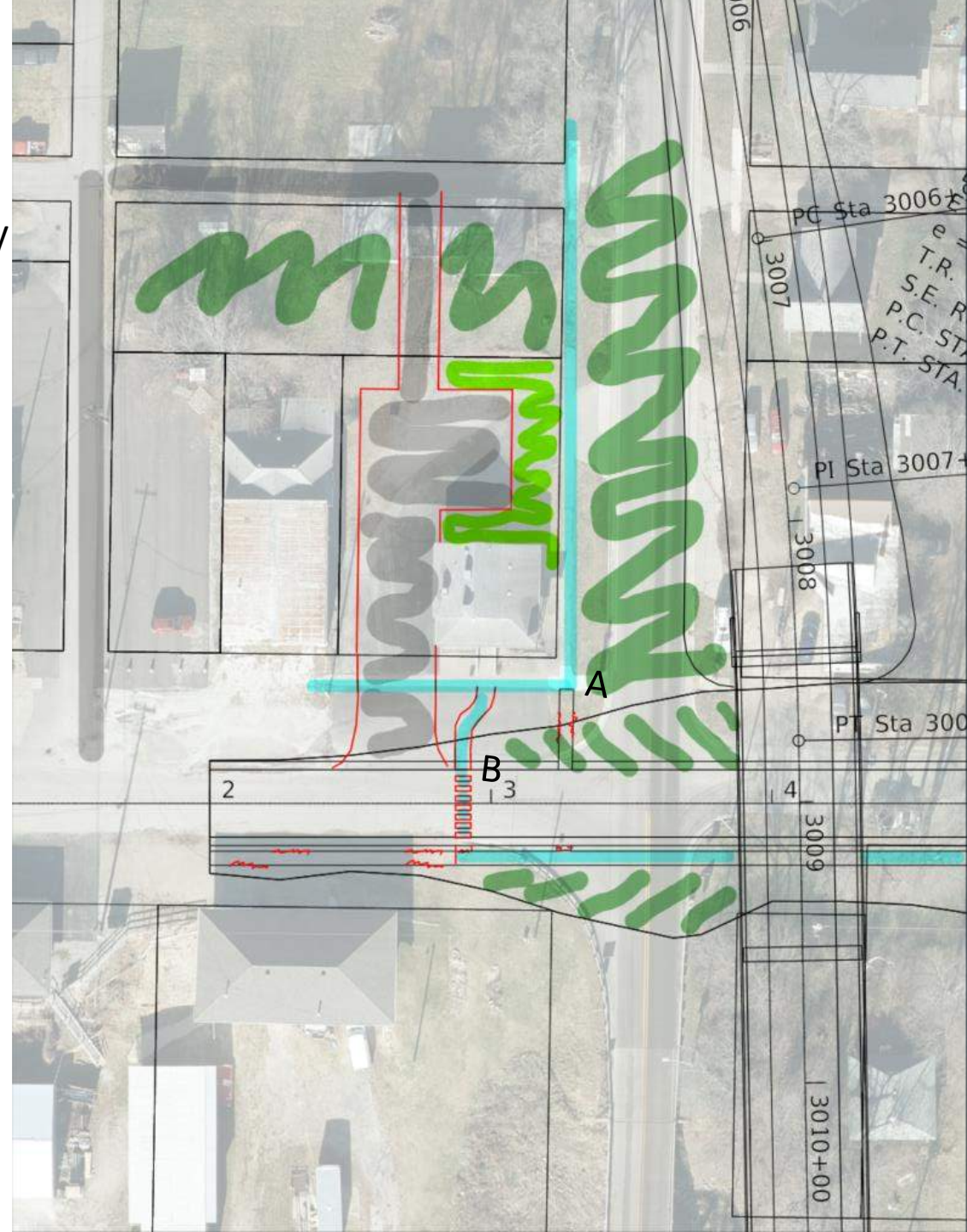




CONNECTIVITY Does Phase I indicate:

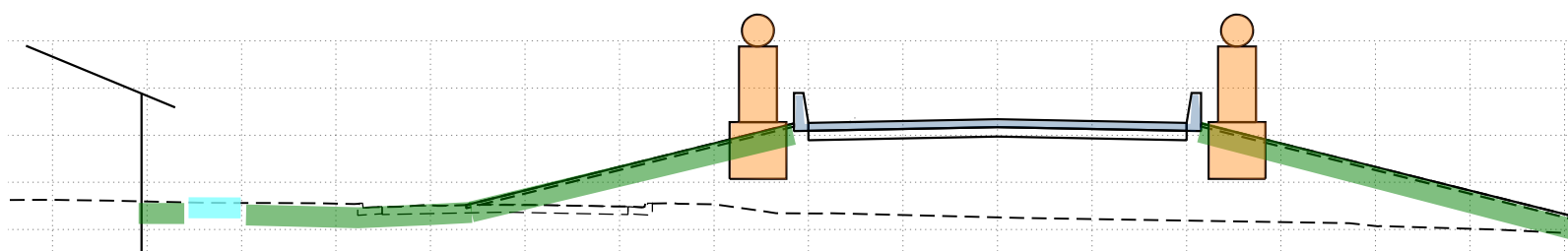
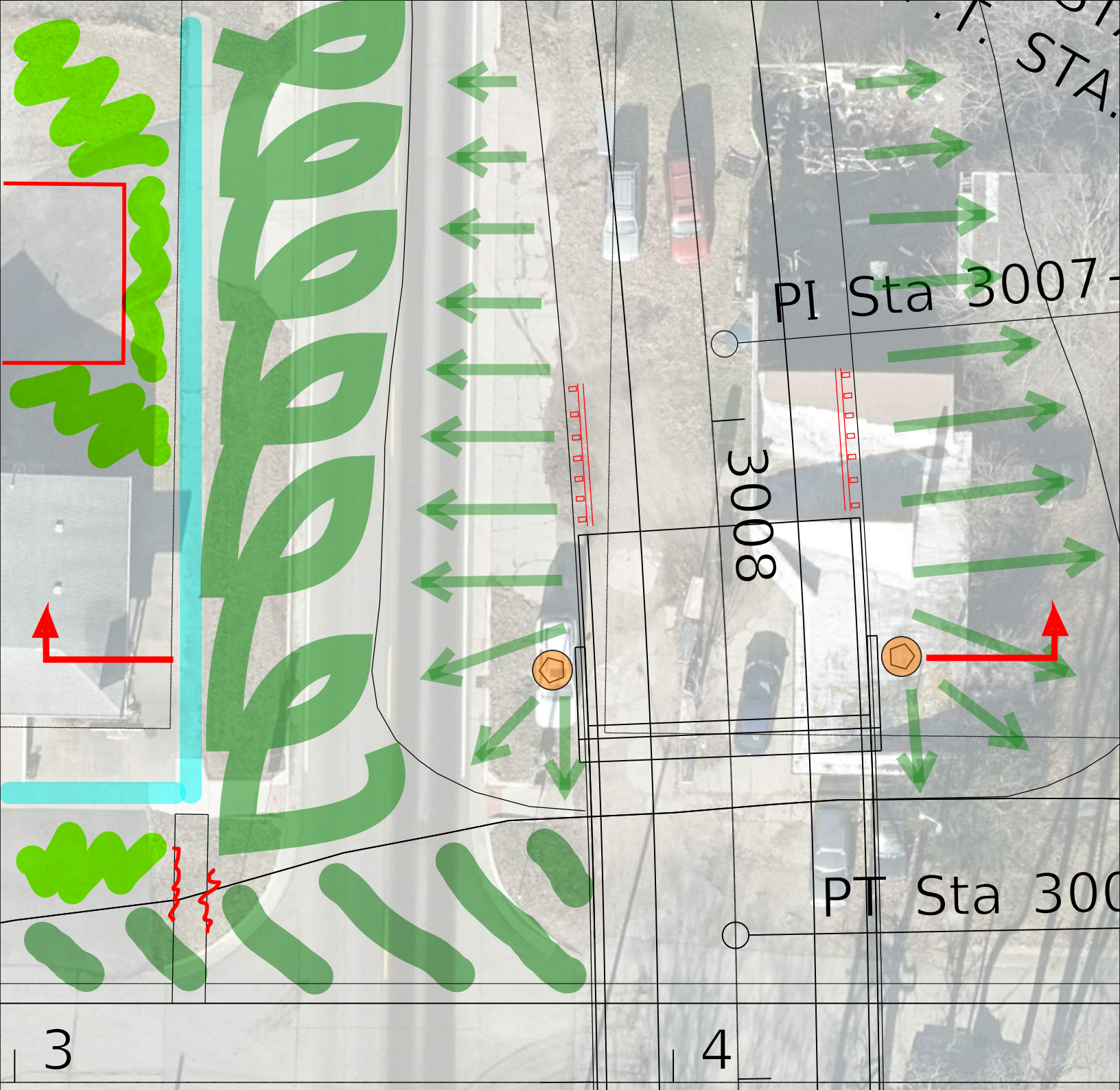
1. Front St underpass, only
2. Front St underpass, former School St alley & sidewalk connectivity
- 3. Front St underpass, mid-block alley connections to corner parcel**

COH / Property Owner loses a few parking slots on Front St ROW  
IDOT will work with COH on ground lease or easement (only)  
arrangements for access across (acquired) Stash parcel.  
Sidewalk acrobatics to get down from 477.8 at A to 474.6 at B in 60'

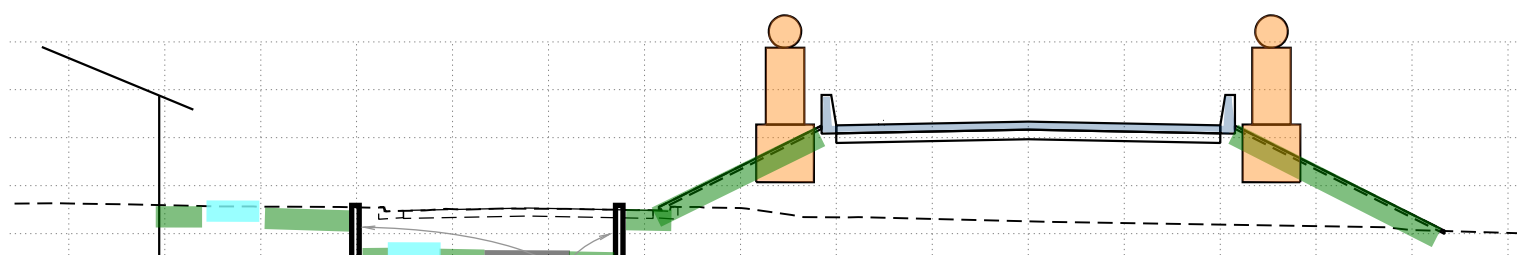
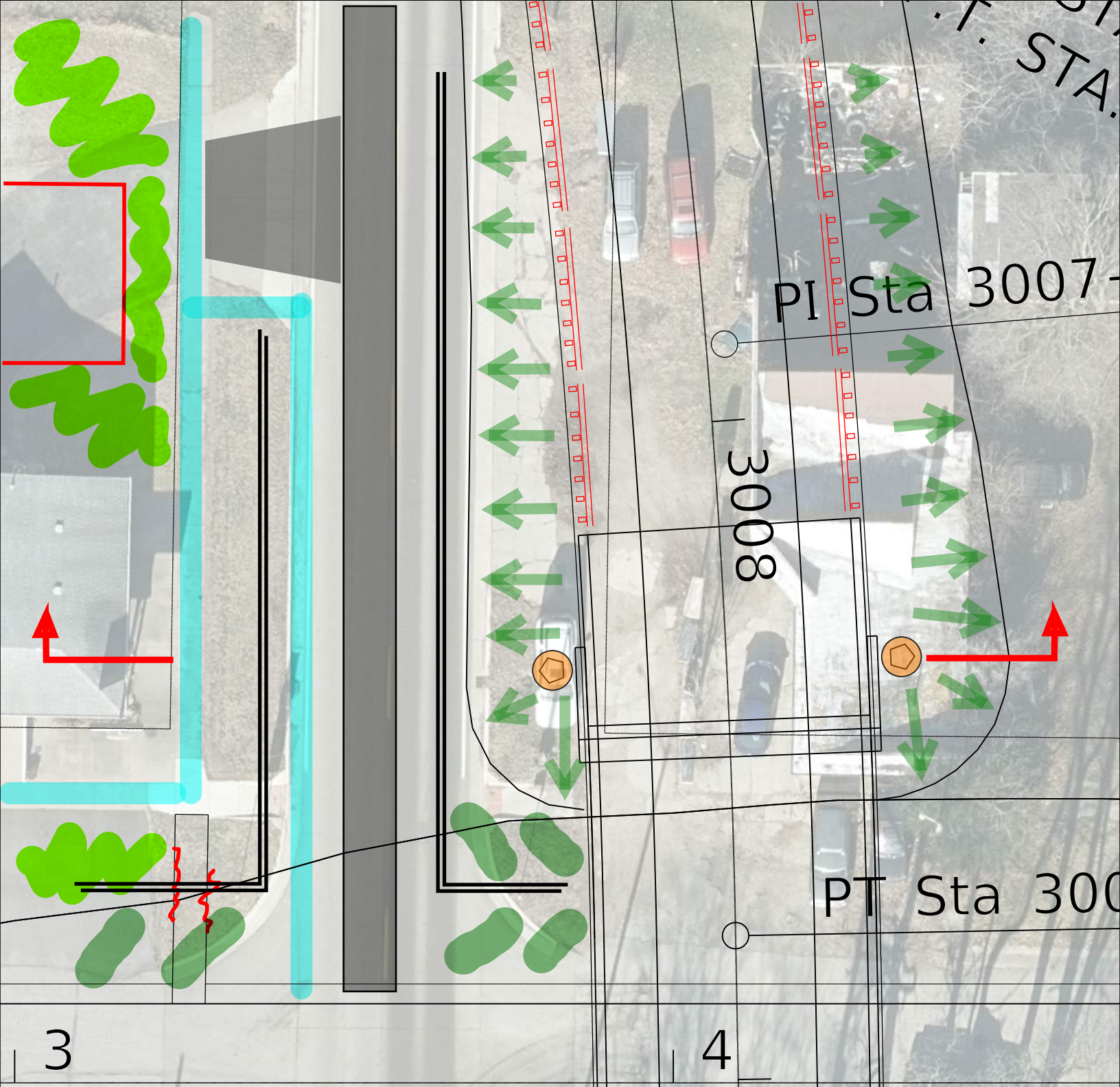


EXISTING SCHOOL ST ROW / MONUMENTS Does Phase I indicate:

1. IL-18 approach on 4:1 embankment without extended guardrail
  - a) Base type solution
  - b) Mowable, or clear-zone type planting opportunities?
  - c) Monument on IDOT ROW, vehicular only
  - d) Does not go with School St Alley and sidewalk
  
2. IL-18 approach on 2:1 embankment with additional guardrail
  - a) Base type solution
  - b) Unmowable embankment: planting opportunities?
  - c) Monument on IDOT ROW, vehicular only
  - d) Works with School St alley & sidewalk (or without)



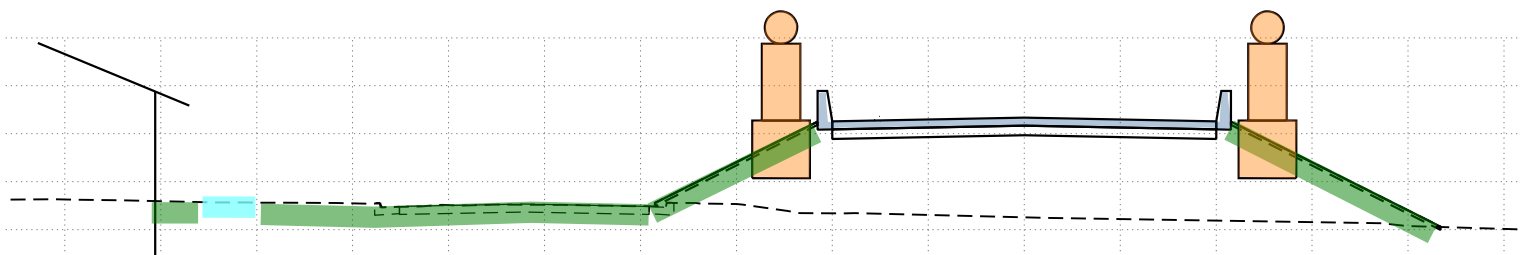
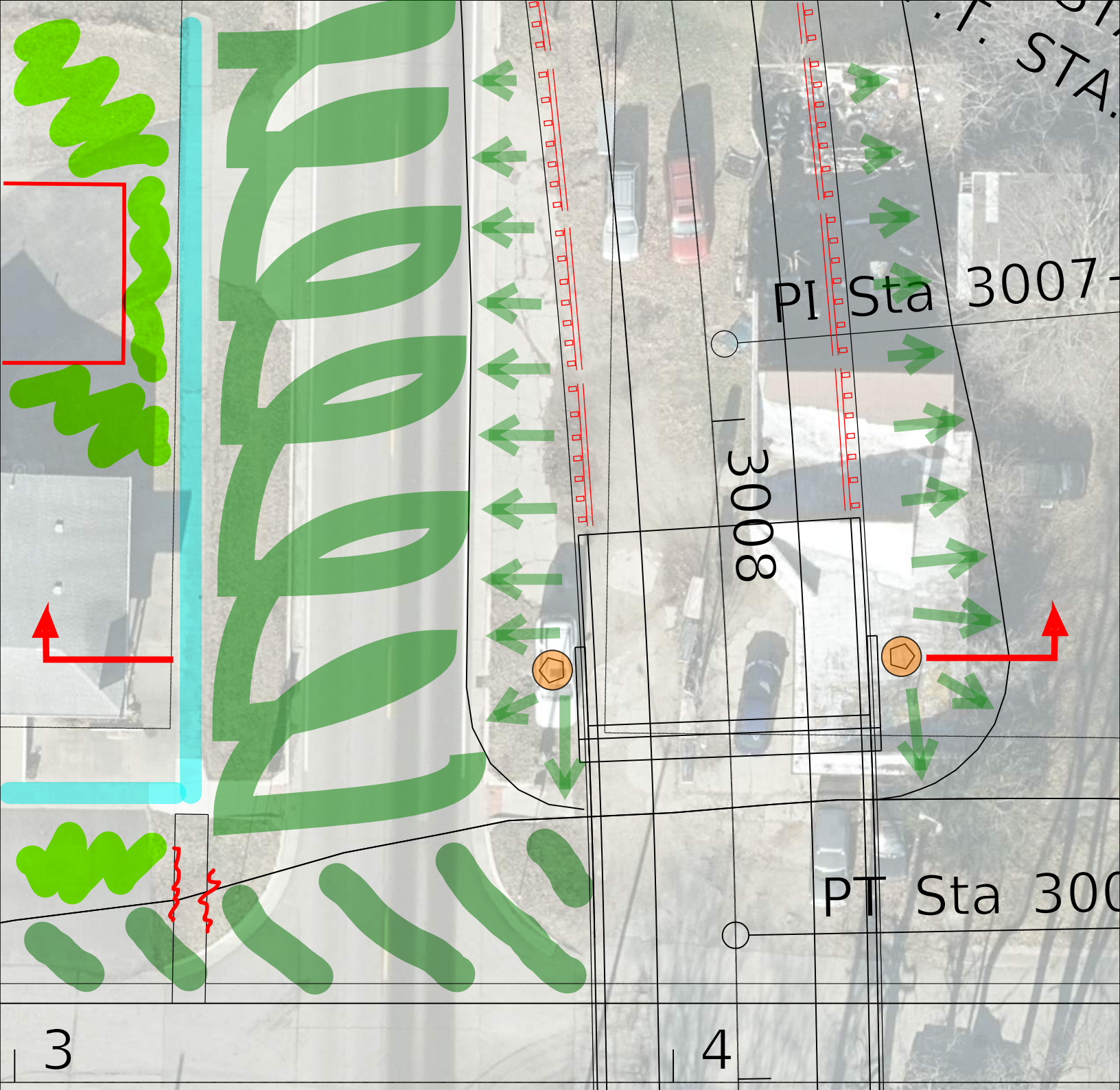




Wall Aesthetic:  
 - formlined/colored representation of cut limestone, or  
 - actual gravity block wall type; IDOT standard, precast  
 modular block wall, has the desired look.

**OPTION 2**  
 with alley





**FAP 653 IL 18 River Bridge Project  
Job No. P-94-007-20/D-94-041-19  
SN 062-0036 – Marshall County**

**Meeting Purpose:** COH Coordination Meeting  
**Meeting Location:** City Hall / Teleconference  
**Meeting Date:** May 24, 2024 at 10:00 am  
**Distribution Date:** June 13, 2024

**Distribution:**

| <u>Present</u> | <u>Name</u>    | <u>Representing</u> | <u>Email</u>                                                                     |
|----------------|----------------|---------------------|----------------------------------------------------------------------------------|
| Yes            | Karen Dvorsky  | IDOT                | <a href="mailto:Karen.Dvorsky@Illinois.gov">Karen.Dvorsky@Illinois.gov</a>       |
| Yes            | Greg Larson    | IDOT                | <a href="mailto:Greg.Larson@Illinois.gov">Greg.Larson@Illinois.gov</a>           |
| Yes            | Jeff Bergfeld  | City of Henry       | <a href="mailto:Jeff@Henry-IL.com">Jeff@Henry-IL.com</a>                         |
| Yes            | Astrid Haryati | City of Henry       | <a href="mailto:Astrid.Haryati@Terralumen.com">Astrid.Haryati@Terralumen.com</a> |
| Yes            | Mark Peterson  | Parsons             | <a href="mailto:Mark.W.Peterson@Parsons.com">Mark.W.Peterson@Parsons.com</a>     |
| Yes            | Tony Pakeltis  | Parsons             | <a href="mailto:Anthony.Pakeltis@parsons.com">Anthony.Pakeltis@parsons.com</a>   |
| Yes            | Todd Ude       | Parsons             | <a href="mailto:Todd.Ude@Parsons.com">Todd.Ude@Parsons.com</a>                   |
| Yes            | Amy Eckland    | Parsons             | <a href="mailto:Amy.Eckland@Parsons.com">Amy.Eckland@Parsons.com</a>             |
| Yes            | Paul Nikolai   | Parsons             | <a href="mailto:Paul.Nikolai@Parsons.com">Paul.Nikolai@Parsons.com</a>           |

| <u>Item</u> | <u>Topic and Discussion</u> |
|-------------|-----------------------------|
|-------------|-----------------------------|

**1.0 Riverfront Park OWJ Letter**

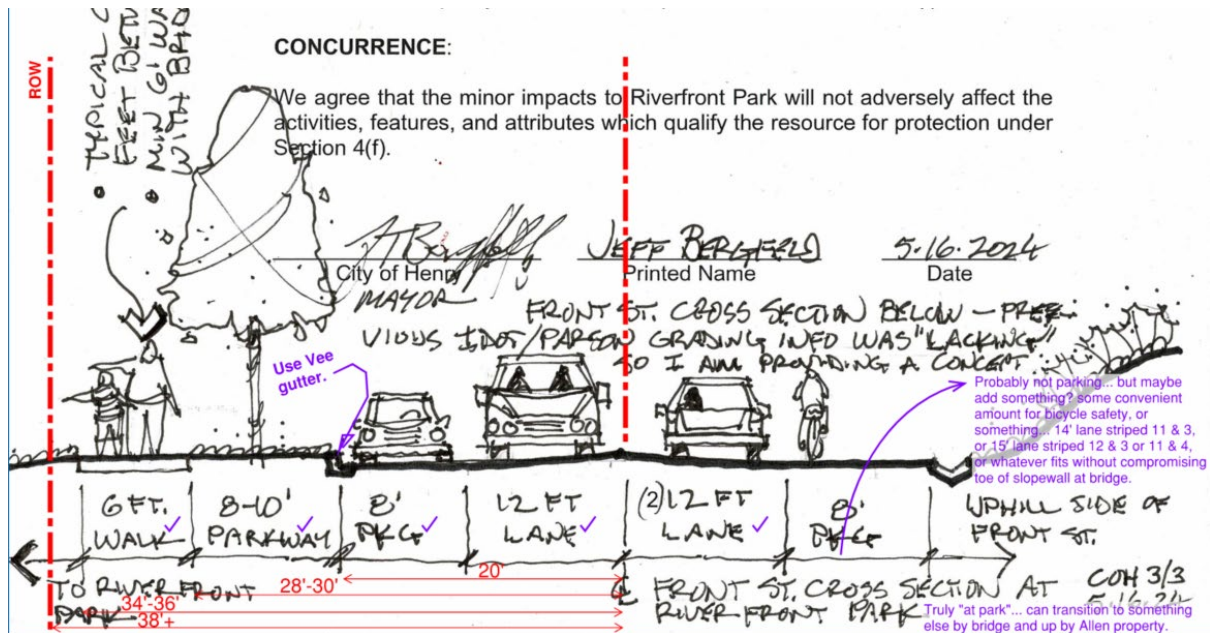
- Comments provided on the previously signed copy will be incorporated into the Aesthetics Memo and incorporate into phase 2 design as appropriate.
- A clean copy of the letter was printed and signed by the Mayor.
- Mayor requested functioning contacts within IDNR who can speak to questions he may have regarding Duck Ranch, IDOT to provide.

## Item

## Topic and Discussion

### 2.0 Typical Section Elements for Front Street

- The concept Front Street typical section north of IL 18, along Riverfront Park shall be modified as shown in the markup below.
  - Vee gutter (Outlet Type A), not curb, on the park side of street.
  - No parking on the town side of street; but some added width for shoulder/bicycle safety.
  - Parking lane layout will fit within existing on ROW.
- The section of Front Street south of IL 18 can be what fits with the grades and policies (similar to what has been shown in Public Hearing documents).
- This section of sidewalk in front of the park will be six feet wide if it can fit within the existing ROW and will extend to Cromwell Drive.
- A new typical section for Front Street will be developed based on this information and will be shared with COH for review and concurrence.
- The remaining new sidewalks constructed for this project will be five feet wide.
- Trees can be provided as mitigation for the trees being removed on the Duck Ranch side of the river.
- These trees can be planted in any of the parcels being acquired for the project, within IDOT's ROW, or can be delivered to the City for their planting at the locations of their choosing.



### 3.0 North Street Agreement

- The COH is still considering the North Street agreement.
- There are issues with the hotel, restaurant, marina and lock wall (ownership, land) that need to be considered.
- It was requested that if Cromwell Drive is closed, signage be provided to direct traffic to the hotel and marina.

ItemTopic and Discussion**4.0 Aesthetics Priorities Memo**

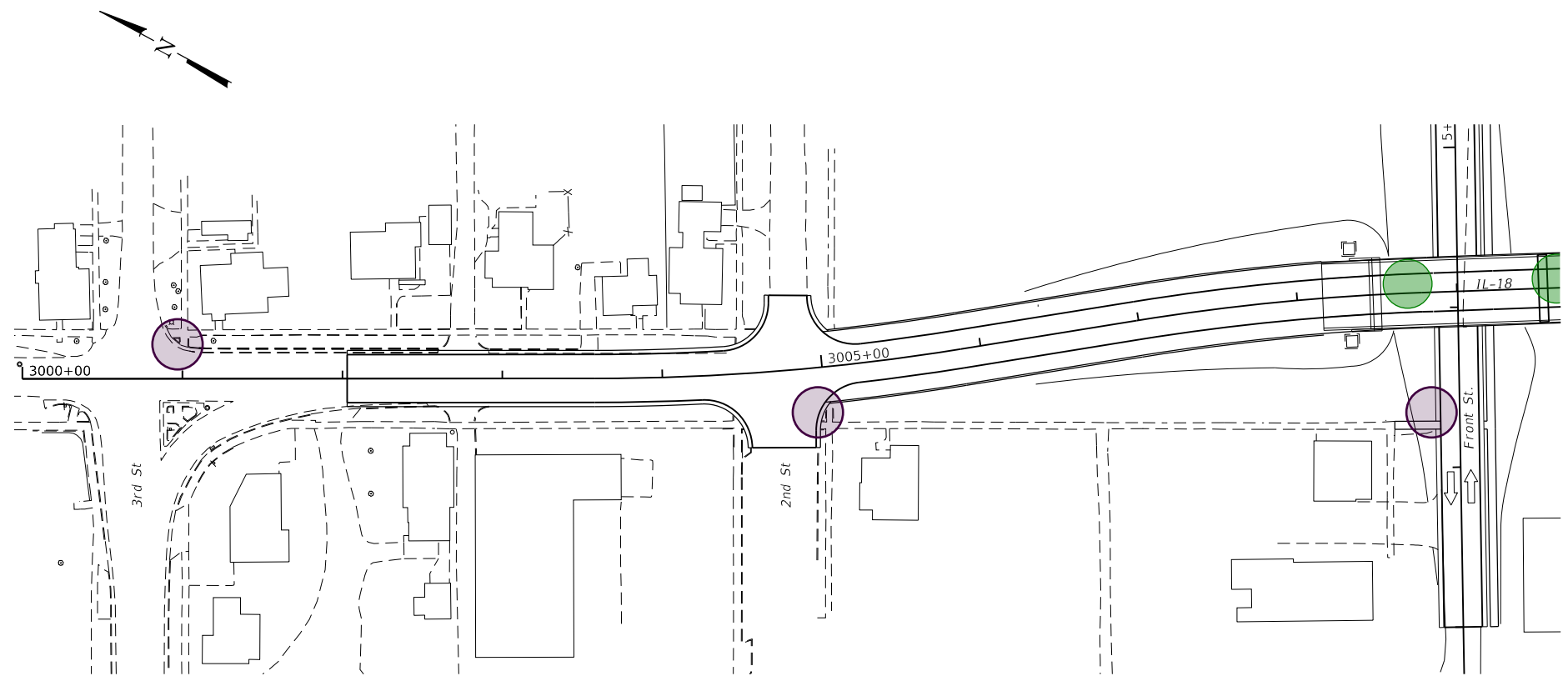
- The Aesthetics Priorities memo was reviewed.
- Monuments Piers (Columns)
  - Monuments remain of interest to COH.
  - The COH asked about lighting the monuments. D4 stated they would ask how lighting (and fabrication and installation) has been handled on other projects.
- Overlook
  - The COH is interested in having an overlook as part of the project.
  - Direct connection to Cromwell Drive is questionable because of the large grade change, and because an ADA compliant companion access will likely be required. (Refer to text of the AFG response memo for additional discussion.)
  - Based on the costs presented in the AFG memo for the overlook, COH indicated they would not pursue an overlook connection to Cromwell.
- School Street/Lighting
  - Existing intersection lighting is a lease agreement between COH and power utility. That set up could be retained after construction at no cost to COH.
  - Expansions of street and pedestrian lighting in the blocks from 3<sup>rd</sup> to 2<sup>nd</sup> to Front would be COH funded. COH stated their expectation that IDOT should pay for “highway lighting” on the embankment from 2<sup>nd</sup> to the bridge abutment.
  - The memo presentation of costs for an “Enhanced Lighting 1” and “Enhanced Lighting 2” scheme, but only a single exhibit caused some confusion. Improved exhibits of the no-cost, Enhanced-1, and Enhanced-2 schemes to match the cost estimates in the memo are attached.
- Guardrails
  - Refer to text of AFG response memo.
  - No further discussion at the meeting.
- Grading and Landscaping
  - The “Henry” sign will need to be moved due to the grading in Riverfront Park.
  - The Mayor is coordinating with a pre-cast company regarding replacing the letters. It is likely the existing letters will fall apart if moved.
- Plantings/Tree Replacement
  - The Mayor requested that some of the existing trees (hackberry trees) be removed. The COH can do a tree survey and identify the species and the condition of the trees in Phase II. Removing some of the existing trees may make sidewalk design easier.
  - The Mayor requested grass be planted under the bridge. Parsons responded that this may be an issue with trying to get the grass to grow due to lack of light and water. (eg – this area is also under consideration due to comments from IDOT maintenance and operations reviewers; if the area were graded without gravel, it may be an erosion concern in flooding events.)

Attachment:

Lighting concepts; these may be considered replacements for Figure 3 of the AFG Priorities memo.

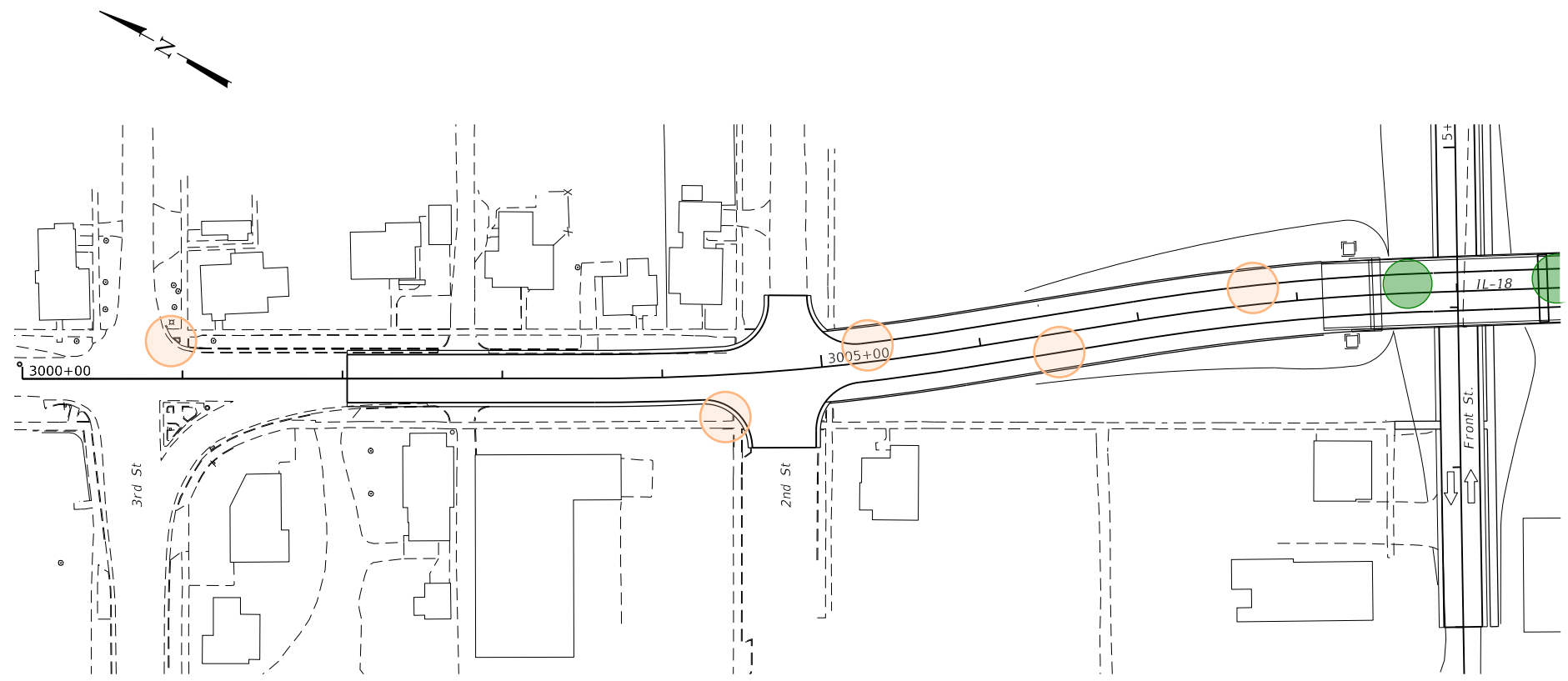


LIGHTING CONCEPT 0 - MAINTAIN EXISTING  
Fig 3-0, alternate to Fig 3 in 3/15/24 Aesthetic Design Elements Memo  
IL-18 River Bridge Project



-  Bridge-mount roadway lighting
-  IDOT Std 35' davit arm
-  Existing leased Ameren davit arm

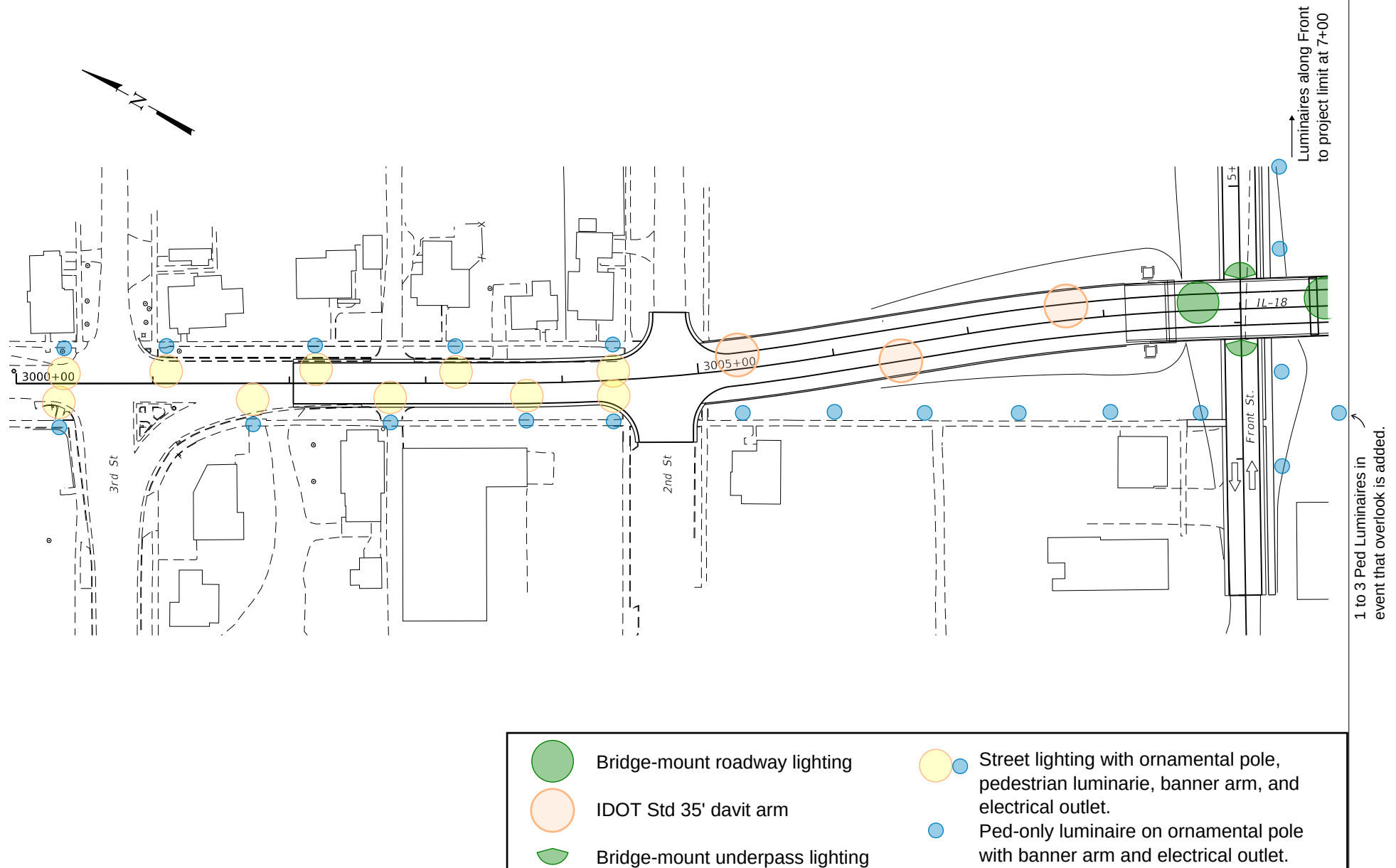
LIGHTING CONCEPT 1 (LOW UPGRADE)  
Fig 3-1, alternate to Fig 3 in 3/15/24 Aesthetic Design Elements Memo  
IL-18 River Bridge Project



- Bridge-mount roadway lighting
- IDOT Std 35' davit arm

# LIGHTING CONCEPT 2 (HIGH UPGRADE)

Fig 3-2, alternate to Fig 3 in 3/15/24 Aesthetic Design Elements Memo  
IL-18 River Bridge Project



## **Appendix B – City of Henry Aesthetics Design Elements Memo**



Date: May 17, 2023

To: Karen S. Dvorsky  
Program Development Engineer  
Illinois Department of Transportation  
Region 3 / District 4  
401 Main Street  
Peoria, IL 61602-1111

RE: Aesthetic Design Elements – City of Henry Response **DRAFT**  
Route 18 Bridge Replacement

From: Jeff Bergfeld, Mayor  
City of Henry

Copy: Bob Watkins, Doug Johnson, April Rowe, Tara Lewis (Committee)  
Sherry Klein, City Clerk, City Council Members

Dear Karen,

I apologize for the lateness of this memo. Spring is just an extra busy time and there are always additional city items needing my attention. Hopefully we can clarify any outstanding items, IDOT can provide some rough budget numbers and we can finalize the city's response for these "aesthetic elements", our wish list. In addition, we hope to find time in the near future to provide IDOT with the City's utility information in and around the bridge project; water, stormwater, and sanitary.

1) Monuments Piers (Columns)

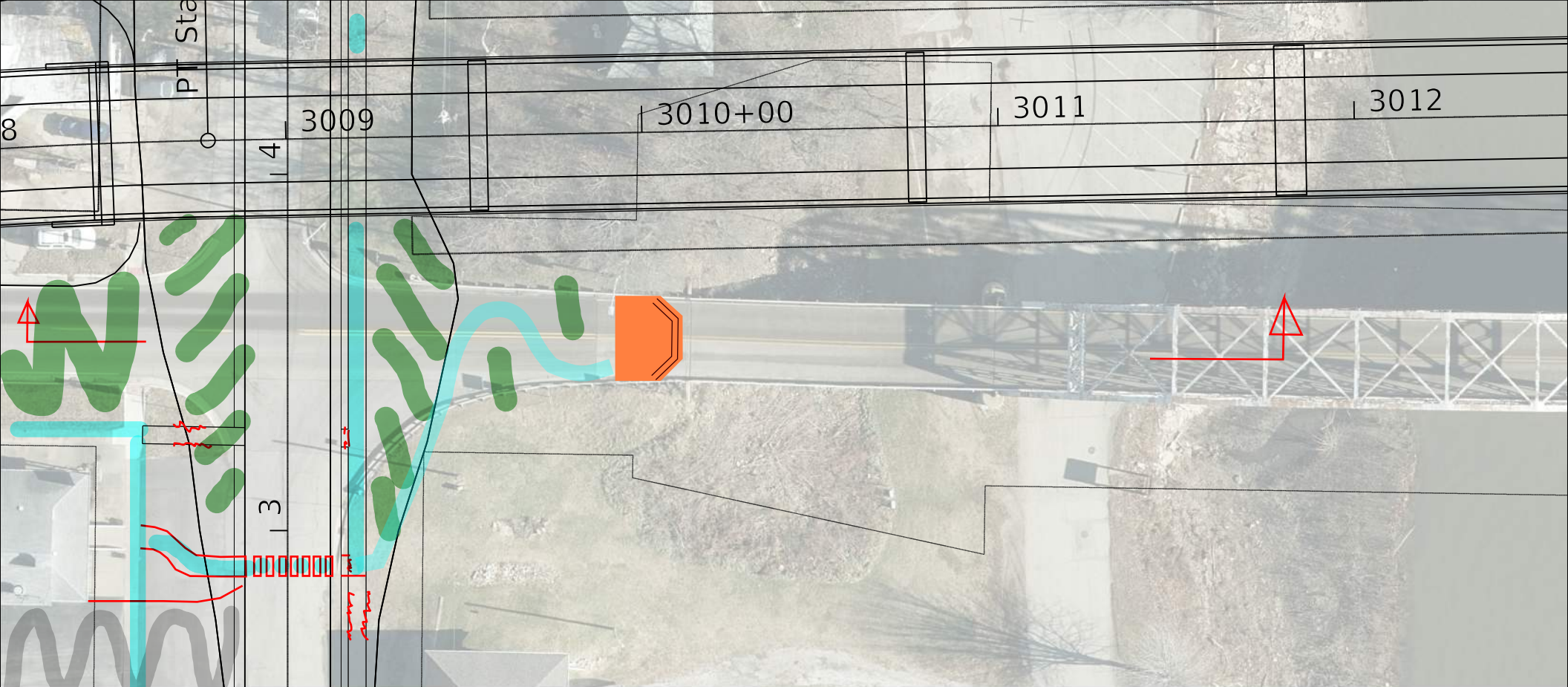
- a) Four Piers – We envision two identical monument piers flanking the bridge at each approach, a total of four piers that would be nearly identical in their size, scale, and materials but might differ in their signage, lighting, or messaging. Like the Burr Ridge (I-55) and University of Illinois (I-57) examples shared by Henry's committee, these piers would be built as separate, unattached structures to allow these to be maintained separately from the IDOT bridge structure.
- b) Henry's West Bluff – The piers on the Henry side of the bridge would reflect or be branded in a way that reflects Henry's character. Logo, signage, etc.
- c) East Beach/Duck Ranch Side – "Captain John P. Cromwell Bridge", Medal of Honor recipient would be identifiable in the piers on this side of the river. We believe that this side of the bridge is the best place to highlight the bridge's namesake because there are fewer distractions and because the bridge construction will remove hundreds of trees and open the view. In addition, we see an opportunity to combine or locate these piers at or near the new entry, access road into Duck Ranch.

- 2) Overlook: We prefer option 2(a) with the plaza opportunity shown at grade and not utilizing any current or future bridge structure except for the existing concrete bridge anchoring footing. This concept would require:

- a) IDOT to remove all existing invasive Tree of Heaven trees, existing rip-rap stone (or bury), and provide clean fill and topsoil cap in order to provide a manageable and accessible slope between Cromwell Drive and the overlook area.
  - b) Accessible walkway or path from Front Street to overlook area.
  - c) Walkway or path (can combine steps, think of those steps in Galena) between the overlook and Cromwell Drive. Because if this isn't provided from the start, a cow path will occur.
- 3) School Street
- a) Alley Connections & property access (at Front Street): Pending
  - b) Lighting – Front Street to Third Street (but not on bridge or approach)
    - i) Overhead lighting – fixtures on arms off taller pole with lower, pedestrian scale mounted fixture with electrical receptable (Christmas lights), and banner arms. Color: black.
    - ii) This lighting concept (with banner arms, pedestrian scale fixture, etc., along with wayfinding signage, area items we would like to continue along the Route 18 ROW out to Route 29.
  - c) Sidewalks & parkway strip– new concrete sidewalks, 5' wide minimum. Retain existing trees, replace any dead or damaged trees.
  - d) Stormwater Drainage: Currently, IDOT has an undersized pipe running between Third Street and Cromwell Drive. Please ensure that as part of the bridge project that all storm water needs are adequately attended to within the IDOT right of way. This was something that IDOT avoided like the plague when it resurfaced Rt 18 in 2017 or 2018.
- 4) Guardrails (not on-structure/bridge) - On both sides of the river, when guardrails are required and installed, we would prefer:
- a) The use of guardrails be minimized whenever possible through generous or creative grading techniques and/or landforms.
  - b) Guardrail metals should receive a treatment to achieve a rustic appearance; acid-etched, powder-coated, and/or weathered steel, for both the rail and the post. We feel the metal use would be more economical than steel backed, wooden railing systems and probably more acceptable, aesthetically, than trying to combine wood with the proposed concrete bridge parapet wall/structure.
  - c) Railing resources:
    - i) [https://safety.fhwa.dot.gov/roadway\\_dept/countermeasures/docs/Aesthetic\\_Mar2015SaferIogo.pdf](https://safety.fhwa.dot.gov/roadway_dept/countermeasures/docs/Aesthetic_Mar2015SaferIogo.pdf)
    - ii) <https://dot.ca.gov/-/media/dot-media/programs/design/documents/2016-03-11-wsgr-research-project-summary-final-a11y.pdf>
    - iii) <https://www.cor-ten.com/steel-backed-timber-guardrail/>
- 5) Grading and Landscaping (bridge approaches at Grade, not on-structure/bridge)
- a) Upriver Side of Bridge (North-East, toward the marina) – we would prefer that this grading be as generous as possible to minimize the need for vehicular guardrails. This also allows for a transition to Front Street passing below the bridge. We are also interested in learning what IDOT's plans are for the properties that they must acquire on this side of the bridge as well as what opportunities there are for the City of Henry to utilize as public open space.

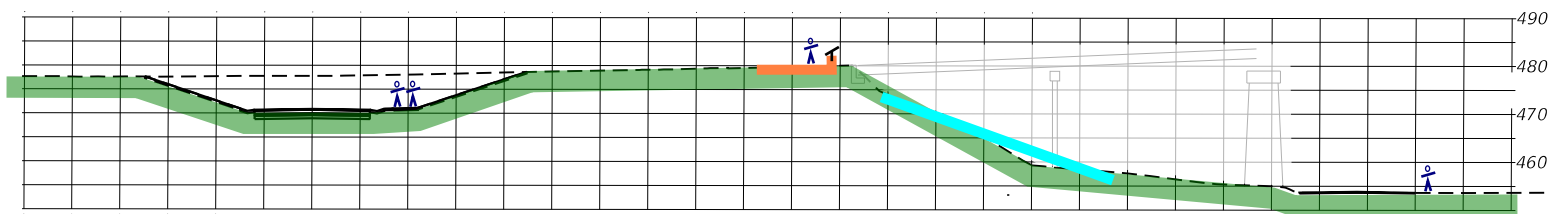
- b) Down river side (Edward Street/Rio Vista) – to be determined (TBD) based upon access needs for Rio Vista property and connection to alleyway midway between Front and Second Streets.
- c) Retaining walls (at various locations, TBD) – Utilize large, limestone blocks that similar to the first swing bridge in Henry or the first lock and dam on the Illinois River. If the cost of stone retaining walls became too expensive, we would explore alternative materials or the reduction or removal of retaining walls. Locations:
  - i) School Street right of way (ROW)-one side, two sides, depending on design.
  - ii) Overlook area.
  - iii) Walk access to overlook area from both Front Street and Cromwell Drive
- 6) Plantings/Tree Replacement: Oak, hardwood savanna as found in the Illinois River Valley in 1830 on both sides of the river. But this might involve IDNR on their side of the river too.
  - a) <https://libsysdigi.library.illinois.edu/OCA/Books2012-06/historyofillinoi1/historyofillinoi01cong/historyofillinoi01cong.pdf>

end of memo



Looking at this approach, plaza would be opportunity to incorporate historical, story telling signage, piece(s) of old bridge, etc.

Utilize current bridge's concrete abutment.



Walk connection between Cromwell Drive and observation plaza.

Remove stone rip-rap, add soil, & regrade so maintenance (mow/string trim) is manageable.



2(a) Take bridge and substructures, but leave approach embankment. Craft a plaza with interpretive / historical markers on the remaining nob.  
Low cost, low maintenance.

There could be a connection between inclusion of an overlook, and provision of parking. e.g. Parking on IDOT's Stash acquisition could be part of an overlook.



## **Appendix C – IDOT Response Memo (Concepts and Costs)**

|             |                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------|
| <b>Date</b> | March 15, 2024                                                                                                     |
| <b>To</b>   | Jeff Bergfeld, Mayor<br>City of Henry                                                                              |
| <b>RE</b>   | Aesthetic Design Elements – City of Henry Response IL 18 River Bridge Project                                      |
| <b>From</b> | Karen S. Dvorsky<br>Program Development Engineer<br>Illinois Department of Transportation<br>Region 3 / District 4 |

Mayor Bergfeld:

Thank you for your and the Aesthetic Focus Group's (AFG) efforts in further developing the City's priorities for the Aesthetics Master Plan component of the IL 18 Bridge Replacement. The District and our consultant offer the following feedback and concept cost discussions to further the conversation and facilitate the City's planning and decision making. Elements included in the City's draft wish list, dated May 17, 2023, are listed below (blue headings), followed by IDOT's feedback (green heading).

## Monument Piers (Columns)

- a) *Four Piers – We envision two identical monument piers flanking the bridge at each approach, a total of four piers that would be nearly identical in their size, scale, and materials but might differ in their signage, lighting, or messaging. Like the Burr Ridge (I-55) and University of Illinois (I-57) examples shared by Henry's committee, these piers would be built as separate, unattached structures to allow these to be maintained separately from the IDOT bridge structure.*
- b) *Henry's West Bluff – The piers on the Henry side of the bridge would reflect or be branded in a way that reflects Henry's character. Logo, signage, etc.*
- c) *East Beach/Duck Ranch Side – "Captain John P. Cromwell Bridge", Medal of Honor recipient would be identifiable in the piers on this side of the river. We believe that this side of the bridge is the best place to highlight the bridge's namesake because there are fewer distractions and because the bridge construction will remove hundreds of trees and open the view. In addition, we see an opportunity to combine or locate these piers at or near the new entry, access road into Duck Ranch.*

## IDOT Feedback

As discussed in the Aesthetic Focus Group #2 meeting presentation, bridge monuments have no "base" equivalent that would be included in a usual Illinois Department of Transportation (IDOT) project. Also, such monuments are not specifically listed as Illinois Transportation Enhancement Program (ITEP) grant eligible; however, it is worth noting that the aforementioned example piers @ I-57 were funded in part by an ITEP Grant. Discussion with ITEP administrators is recommended.

If monuments are selected for inclusion in the project, we agree that these would be free-standing of the bridge structure but will sit within IDOT right-of-way (ROW) to achieve the desired proximity to the bridge. Because of the location and proximity to the bridge, IDOT anticipates that the bridge project would take responsibility for cost of designing and constructing foundations buried in the roadway embankments, up to a plinth level just above finished grade. These would be sized to accommodate agreed-upon weight and dimensions, generally in line with the Curtis Rd (Champaign) and County Line Rd (Burr Ridge) examples. See Figure 1. A formal letter of commitment from the COH Council as well as an agreement between IDOT and the COH would be required for IDOT to include monument foundations into the project.

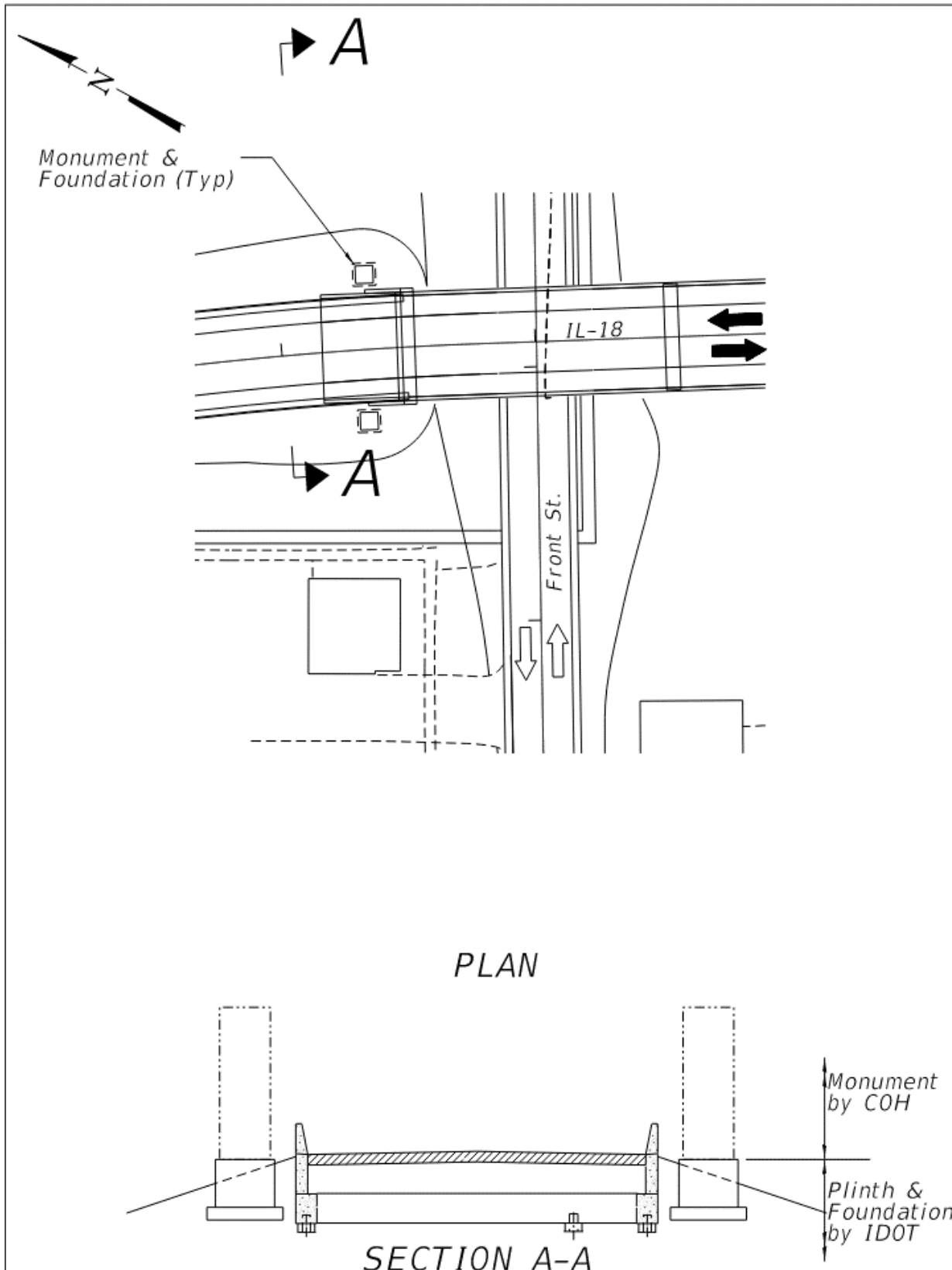


FIGURE 1 - BRIDGE MONUMENT CONCEPT 1

COH would take responsibility for design, fabrication, and installation of the monuments on the plinths. If these were designed and fabricated in time for inclusion with the bridge construction, the installation work could be bid with and performed by the road and bridge contractor. That should facilitate good pricing, with that cost broken out for COH to reimburse the State. Pending the final design, fabrication and delivery to the site could be done by COH or by the road and bridge contractor.

If a Letter of Commitment and joint agreement cannot be established in time for the inclusion of this work into the State's final plans and specifications, the foundations and plinths would have to be designed and constructed in the future. At that time, the COH and IDOT would reopen discussions about acceptable type, size and location, and work out a permit agreement by which a COH contractor would be allowed to access the State ROW. As they are on State ROW, the State would retain final approval on the design.

The matter of "naming" the bridge would be decided at the Legislative level.

The east abutment and the entrance for the new Duck Ranch access road will be located too far apart to allow the one pair of monuments to mark both. Locating the monuments close to the abutment is desirable since there will be a concrete barrier and a protective guardrail terminal at these locations. These protected locations close to the roadway are thus available without incurring additional land costs. If the monuments were located 300' or 1000' back from the east abutment toward the Duck Ranch entrance, guardrail protection that might not otherwise be required must be introduced, or the markers must be located farther away from the roadway, outside the clear zone. It is recommended that the COH discuss installation of a marker for Duck Ranch with the Illinois Department of Natural Resources (IDNR). If such installation is amenable to IDNR, the decision of whether to locate on IDOT ROW or IDNR ROW, at what time, and at who's expense, will have to be investigated further.

A concept cost for 4 monuments at the bridge abutments is provided in Table 1.

**TABLE 1 - BRIDGE MONUMENT ORDER OF MAGNITUDE COST AND POSSIBLE ALLOCATION.**

|                                            |                                  |      |       |         |          | COH               | IDOT              |
|--------------------------------------------|----------------------------------|------|-------|---------|----------|-------------------|-------------------|
| <b>Monuments</b>                           |                                  |      |       |         |          | <b>\$ 167,900</b> | <b>\$ 105,340</b> |
| <b>Foundations</b>                         |                                  |      |       |         |          | <b>\$ -</b>       | <b>\$ 105,340</b> |
| <b>Construction</b>                        |                                  |      |       |         |          | <b>\$ -</b>       | <b>\$ 91,600</b>  |
|                                            | Pay Item                         | Unit | Qty   | Unit \$ | Total \$ |                   |                   |
|                                            | Structure Excavation             | CY   | 150   | 50      | 7500     |                   |                   |
|                                            | Concrete Structures              | CY   | 56    | 1000    | 56300    |                   |                   |
|                                            | Reinforcement Bars, Epoxy Coate  | LB   | 10133 | 2       | 20300    |                   |                   |
|                                            | Anchor Rods                      | LB   | 1500  | 5       | 7500     |                   |                   |
| <b>Design and Construction Engineering</b> |                                  |      |       |         |          | <b>\$ 13,740</b>  | <b>\$ 13,740</b>  |
| <b>Visible Monuments</b>                   |                                  |      |       |         |          | <b>\$ 62,560</b>  | <b>\$ -</b>       |
| <b>Construction</b>                        |                                  |      |       |         |          | <b>\$ 54,400</b>  | <b>\$ -</b>       |
|                                            | CMU Backing                      | SY   | 160   | 75      | 12000    |                   |                   |
|                                            | Stone Veneer                     | SY   | 192   | 75      | 14400    |                   |                   |
|                                            | Medallion, Furnished & Installed | EA   | 8     | 2500    | 20000    |                   |                   |
|                                            | Crown, Furnished & Installed     | EA   | 4     | 2000    | 8000     |                   |                   |
| <b>Design and Construction Engineering</b> |                                  |      |       |         |          | <b>\$ 8,160</b>   | <b>\$ -</b>       |



## Overview

We prefer option 2(a) with the plaza opportunity shown at grade and not utilizing any current or future bridge structure except for the existing concrete bridge anchoring footing (abutment). This concept would require:

- IDOT to remove all existing invasive Tree of Heaven trees, existing rip-rap stone (or bury), and provide clean fill and topsoil cap in order to provide a manageable and accessible slope between Cromwell Drive and the overlook area.
- Accessible walkway or path from Front Street to overlook area.
- Walkway or path (can combine steps, think of those steps in Galena) between the overlook and Cromwell Drive. Because if this isn't provided from the start, a cow path will occur.
- Use plaza as an opportunity to incorporate historical, story-telling signage, piece(s) of old bridge, etc.

## IDOT Feedback

To further this discussion and allow assembly of representative quantities and costs, a conceptual layout addressing the stated overlook preferences has been developed in Figure 2.

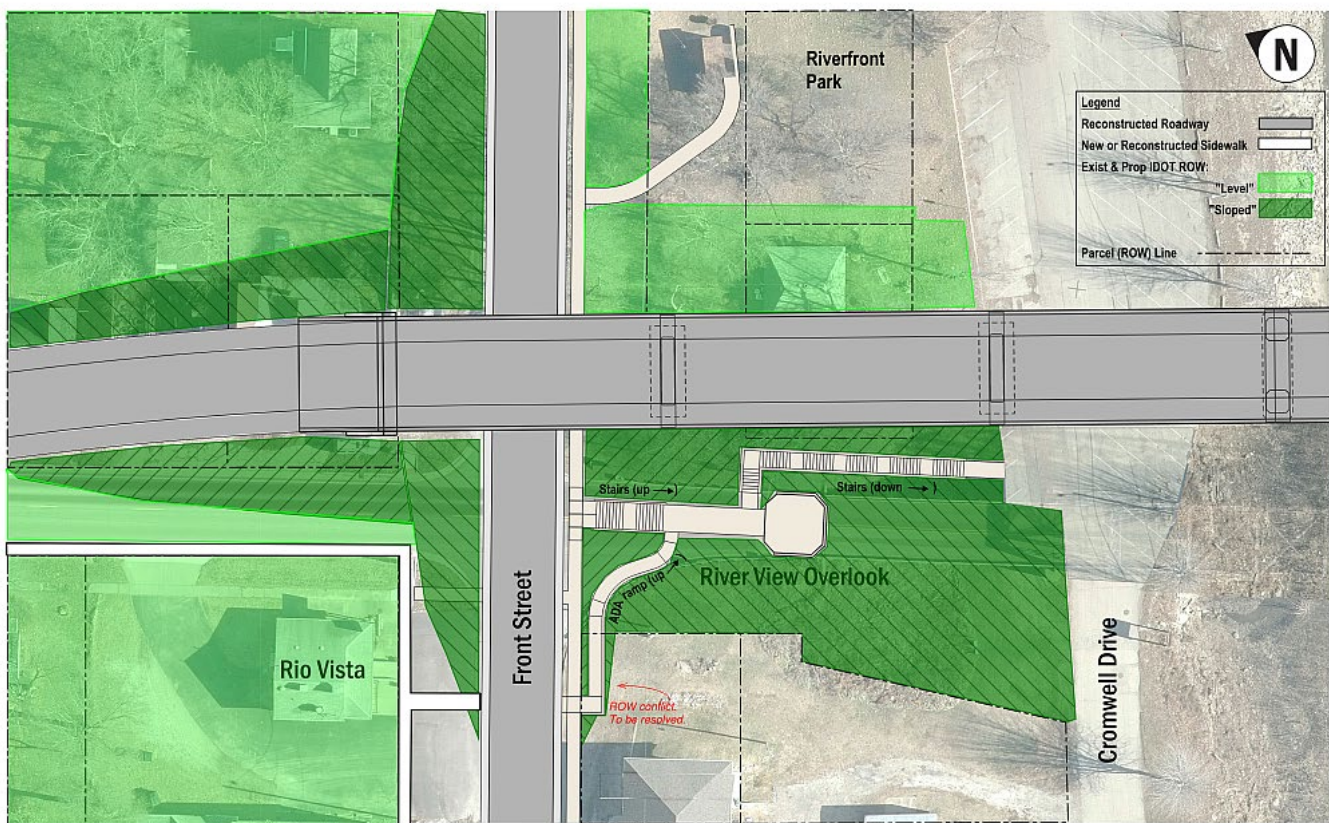


FIGURE 2 - CONVERSION OF EXISTING IL 18 APPROACH EMBANKMENT TO OVERLOOK PLAZA

The Overlook would be an at-grade hardscape plaza utilizing the existing grade leading up to the existing bridge's abutment. The plaza would also land on the centerline of the existing IL 18 alignment. The termination of the existing abutment and use of the existing IL 18 alignment and elevation would memorialize the previous bridge structure. It is agreed that this would also be an opportune location for interpretive markers describing multiple unique features of this location and the existing IL 18 River Bridge.

The plaza may require new retaining walls on 3 sides which could also function as bases for the interpretive markers and necessary safety railing. Access to the plaza will require an Americans with Disabilities Act (ADA) accessible route which can be provided using 2 ADA ramps and landings. We recommend another option be provided from the sidewalk along lowered Front Street which could utilize a 10' wide staircase. This staircase would tie into the ADA ramp at the top of the stairs prior to the plaza. As Front Street drops down under the new bridge structure, a new Front Street pedestrian crossing is anticipated across from the Rio Vista Restaurant. The ADA ramp system would begin there and curve its way up to the overlook elevation. Additional walls would be needed for the staircase and both access options will require handrails. A rough cost estimate is provided in Table 2.

TABLE 2 ORDER-OF-MAGNITUDE COST ESTIMATE: OVERLOOK PLAZA

|                                                                    |                               |      |      |         |            | COH        | IDOT       |
|--------------------------------------------------------------------|-------------------------------|------|------|---------|------------|------------|------------|
| <b>River Overlook</b>                                              |                               |      |      |         | \$ 695,635 | \$ 509,105 | \$ 186,530 |
| <b>Plaza &amp; Access Site Prep (Walls and Grading)</b>            |                               |      |      |         | \$ 186,530 | \$ -       | \$ 186,530 |
| <b>Construction</b>                                                |                               |      |      |         | \$ 162,200 | \$ -       | \$ 162,200 |
|                                                                    | Pay Item                      | Unit | Qty  | Unit \$ | Total \$   |            |            |
|                                                                    | Earth Excavation              | CY   | 233  | 30      | 7000       |            |            |
|                                                                    | Furnished Excavation          | CY   | 200  | 35      | 7000       |            |            |
|                                                                    | Retaining Wall                | SF   | 1852 | 80      | 148200     |            |            |
| <b>Design and Construction Engineering</b>                         |                               |      |      |         | \$ 24,330  | \$ -       | \$ 24,330  |
| <b>Plaza Paving, Furniture, Markings</b>                           |                               |      |      |         | \$ 60,145  | \$ 60,145  | \$ -       |
| <b>Construction</b>                                                |                               |      |      |         | \$ 52,300  | \$ 52,300  | \$ -       |
|                                                                    | Concrete Paving               | SF   | 452  | 25      | 11300      |            |            |
|                                                                    | Seating Furnished & Installed | EA   | 2    | 2500    | 5000       |            |            |
|                                                                    | Interpretive Markers          | EA   | 4    | 3500    | 14000      |            |            |
|                                                                    | Railing                       | FT   | 55   | 400     | 22000      |            |            |
| <b>Design and Construction Engineering</b>                         |                               |      |      |         | \$ 7,845   | \$ 7,845   | \$ -       |
| <b>Plaza Access from Front Street (Stairs + ADA Ramp)</b>          |                               |      |      |         | \$ 156,860 | \$ 156,860 | \$ -       |
| <b>Construction</b>                                                |                               |      |      |         | \$ 136,400 | \$ 136,400 | \$ -       |
|                                                                    | Concrete Paving               | SF   | 1111 | 50      | 55600      |            |            |
|                                                                    | Railing                       | FT   | 202  | 400     | 80800      |            |            |
| <b>Design and Construction Engineering</b>                         |                               |      |      |         | \$ 20,460  | \$ 20,460  | \$ -       |
| <b>Plaza Access to Cromwell (Stairs &amp; Connection Sidewalk)</b> |                               |      |      |         | \$ 292,100 | \$ 292,100 | \$ -       |
| <b>Construction</b>                                                |                               |      |      |         | \$ 254,000 | \$ 254,000 | \$ -       |
|                                                                    | Concrete Paving               | SF   | 1183 | 50      | 59200      |            |            |
|                                                                    | Railing                       | FT   | 487  | 400     | 194800     |            |            |
| <b>Design and Construction Engineering</b>                         |                               |      |      |         | \$ 38,100  | \$ 38,100  | \$ -       |

The total cost of the plaza and access are estimated at under \$1M. If IDOT provides the rough grading to allow construction by COH of a final design furnished by COH, the break down is estimated at about \$185,000 borne by IDOT, \$510,000 borne by COH. There is opportunity for the City to qualify for ITEP funds for the overlook, as Construction of Overlooks and Viewing Areas is one of the nine ITEP Project categories. Similar to the monuments, if the City's portion of

the overlook were designed in time for inclusion with the bridge construction, the work could be bid with and performed by the road and bridge contractor. That could facilitate good pricing, with that cost broken out for COH to reimburse the State.

Development of the sketch and cost estimate have generated the following concerns with the specific points noted in the COH memo.

- a) Site Clean Up and Grading – IDOT ROW can be cleared of existing vegetation and re-seeded as part of the removal of the existing road and bridge. Regrading “to provide a manageable and accessible slope” to Cromwell, however, cannot be presumed. It is possible that pulling back some of the existing fill slope, steepening the grade or introducing terraced walls down to Cromwell within the existing IL 18 footprint may prove necessary to accommodate roadway flooding improvements.
- b) Front Street to Overlook Access – Agree, see Figure 2.
- c) Plaza to Cromwell Access – This is not advisable. The design team has considered a long sloping path with grades and a landing that would meet ADA requirements. To establish the required grades, the path length would swing from the downstream side of the plaza, upstream past the bridge into Riverfront Park, and back to Cromwell in the vicinity of existing IL 18. The length would be such that the “cow path” may form anyway as able users seek a direct route. The ADA accessible route to the waterfront should instead follow lowered Front Street down to the marina and come back along Cromwell Drive. For demonstration and cost estimating purposes, the stair in Figure 2 and Table 2 has been evaluated. IDOT cautions, however, that the State and FHWA do not normally fund non-ADA compliant features such as this, even when alternate accessible routes have been provided. Whether ITEP would grant funds for such a stair and whether IDOT would permit them on IDOT ROW is not certain. The design team would recommend railings, low retaining walls, and plantings to dissuade short cuts and redirect pedestrians to the Front Street route down to the park, marina and river.
- d) Installation of historical markers and/or artifacts on the plaza – Concur. IDOT will participate in such if the State Historic Preservation Office determines that mitigation for loss of the eligible historic structure is warranted. Otherwise, State participation would be limited to salvage and delivery of items off the existing structure. Items to consider include nameplates, navigation lights, pin and rocker truss bearings, and intact panel points of the riveted truss comprised of gusset plates and 24” of the connected built-up members.

At a higher level, the design team observes that the “overlook” notion is somewhat at odds with a “connection to the riverfront” objective. The existing ROW is largely occupied by the current bridge approach embankment and abutment. Maintaining that rising grade and installing a spacious overlook plaza will consume that ROW and establish an elevation very high above Cromwell Drive. COH and the AFG may contrast the value of the overlook (and the accompanying waterfront access being primarily via the lowered Front Street), against a design concept where the grade is not kept high between Front Street and Cromwell Drive. Rather, the grade lowering of Front Street could be extended toward the river, with the existing bridge approach embankment knocked down in a series of terraces or ramps. The high overlook view would be traded for easier pedestrian access to Cromwell Drive and the waterfront.

With regard to salvage and inclusion of the existing concrete abutment and wingwalls; the idea is feasible and can be implemented if an overlook design for doing so is available prior to demolition. The design team recommends further consideration, however. The value of the actual concrete artifact must be weighed against the fact that the abutment is inherently a low, ground-level feature, and as such is not completely compatible with the “high overlook” idea. Without the bridge superstructure in place, the form and function of the abutment may not be obvious to the casual observer. COH may consider instead salvage and presentation of other physical artifacts from the bridge as described above, or perhaps a type of bronze survey marker or plaque marking the intersection of the former IL 18 centerline and the centerline of abutment bearing (the beginning of the former bridge).

## School Street

- a) *Alley Connections & property access (at Front Street): Pending*
- b) *Lighting – Front Street to Third Street (but not on bridge or approach)*
  - i. *Overhead lighting – fixtures on arms off taller pole with lower, pedestrian scale mounted fixture with electrical receptable (Christmas lights), and banner arms. Color: black.*
  - ii. *This lighting concept (with banner arms, pedestrian scale fixture, etc., along with wayfinding signage, area items we would like to continue along the Route 18 ROW out to Route 29.*
- c) *Sidewalks & parkway strip– new concrete sidewalks, 5’ wide minimum. Retain existing trees, replace any dead or damaged trees.*
- d) *Stormwater Drainage: Currently, IDOT has an undersized pipe running between Third Street and Cromwell Drive. Please ensure that as part of the bridge project that all storm water needs are adequately attended to within the IDOT right of way.*

## IDOT Feedback

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- Alley connections and Property Access –The Rio Vista Restaurant owners have requested that their property and business be acquired as by the State as part of the project due to a number of impacts such as no direct access to the state highway, loss of parking, and vehicular circulation challenges. The Phase I process (environmental clearance and permitting) is proceeding without commitment to an alley in the current School Street ROW at this time. It is IDOT's expectation that if a School Street alley does ultimately emerge as desirable and committable by the COH, development and inclusion of such in the final engineering will proceed along the lines of exhibits we have shared previously, and will not jeopardize any of the clearance or permits acquired in Phase I. Since it is not anticipated that any new ROW will be required or that any new impacts to people or property would result from the inclusion of the alley in the project, it could be accommodated in final design. In the absence of an alley, the Aesthetics Master Plan will address the School Street corridor on the basis of pedestrian connectivity, lighting and landscaping (see below). If retaining walls become part of such addition, the Aesthetics Master Plan will guide these toward the hewn limestone look of the old lock and the upper Illinois River area in general.
- Lighting – Recall Aesthetics Focus Group Meeting 2, where State and City responsibilities for different aspects of different lighting schemes were addressed in the table of “Cost Share & Maintenance” information. Figure 3 illustrates two possible enhanced roadway and pedestrian lighting layouts for the project. Concept costs for both are developed in Table 3. The default, no-cost plan will be for COH to dismantle, store, and reinstall the few utility-pole davit arm fixtures in the existing School Street intersections, and for IDOT to light the bridge. Lighting Concept 1 improves upon the existing conditions by installing IDOT Standard pole solutions on the intersections, and along the block from 2<sup>nd</sup> Street to Front Street approaching the bridge. Lighting Concept 2 enhances the plan further by adding mid-block roadway lighting, dedicated pedestrian lighting, and substituting ornamental poles with banner arms and electrical outlets for standard aluminum poles. There is opportunity for the City to qualify for ITEP funds for the street and pedestrian scale lighting under the Streetscape Category. Note that stand-alone lighting projects are ineligible. Since lighting will be designed by the State, this work will be incorporated into the State's construction project, with the cost broken out for COH to reimburse the State.
- Sidewalks and Parkway –School Street from 2<sup>nd</sup> to 3<sup>rd</sup> Street will be reconstructed using an IDOT “urban” section, with 5’ sidewalks, 5’ parkways, and curb and gutter. An effort will be made to retain the existing mature trees in this block. The Front Street reconstruction is currently envisioned as including sidewalk on the river side only. Please refer to the section on Plantings and Tree Replacement herein for more detail on IDOT standards for tree plantings.
- Stormwater Drainage –The reconstruction of IL 18 will include management of runoff and drainage for the roadway project within the State ROW and their discharge to the river.



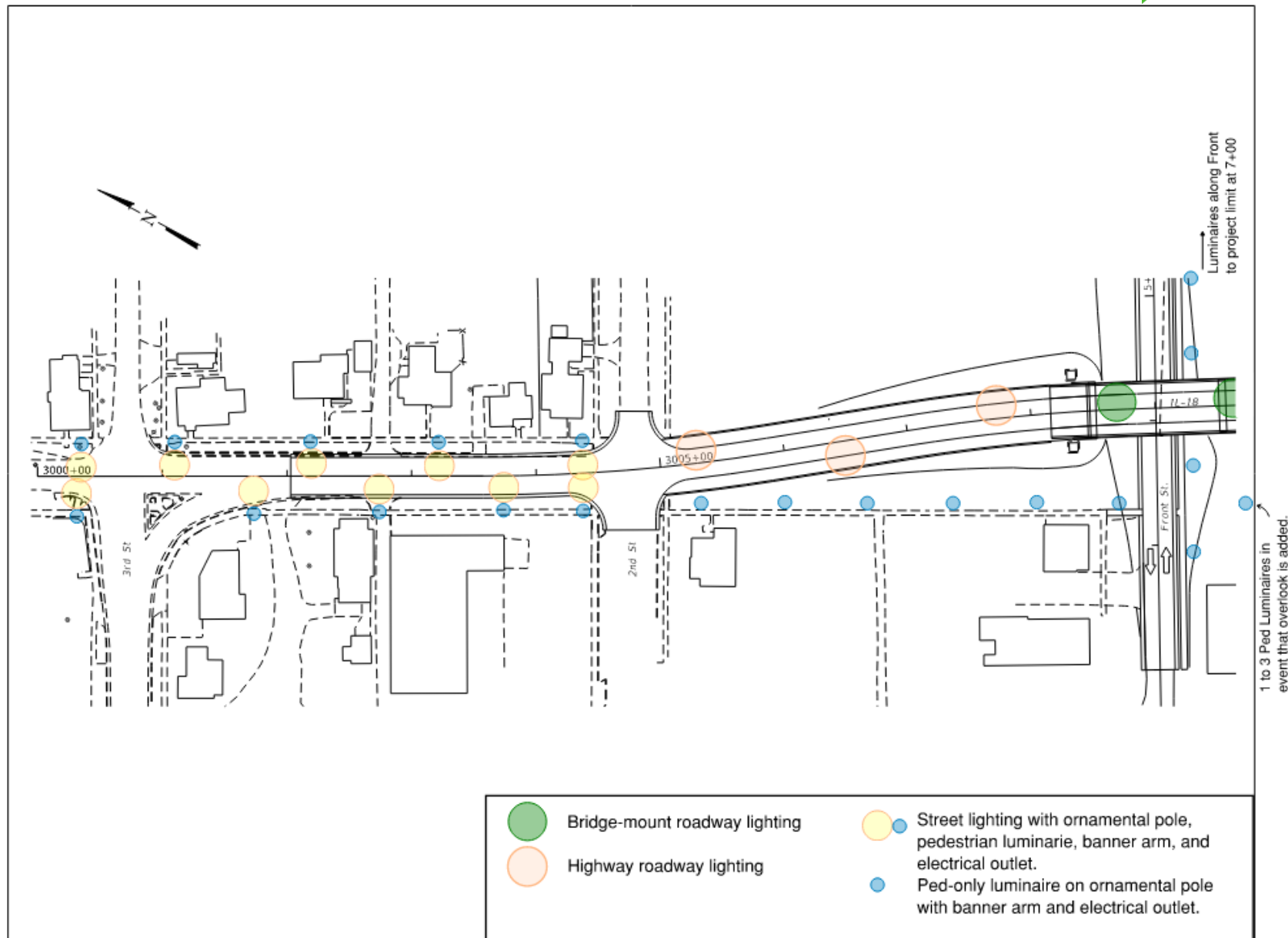


FIGURE 3 - FOR INSTANCE: ENHANCED ROADWAY AND SIDEWALK LIGHTING

TABLE 3 - FOR INSTANCE: ORDER OF MAGNITUDE COST AND ALLOCATION FOR TWO POSSIBLE LI3 - CONCEPT COSTS FOR LANDSCAPE PLANTING

|                                                       |                                 |    |           |           |           | COH        | IDOT       |
|-------------------------------------------------------|---------------------------------|----|-----------|-----------|-----------|------------|------------|
| <b>Lighting Concept 1: Basic / Standards Solution</b> |                                 |    |           |           |           |            |            |
| 3rd Street Intersection                               |                                 |    |           |           |           |            |            |
|                                                       | 35' Aluminum Davit Arm / LED EA | 1  | \$ 15,000 | \$ 15,000 |           | \$ 15,000  | \$ -       |
| 2nd Street Intersection                               |                                 |    |           |           |           |            |            |
|                                                       | 35' Aluminum Davit Arm / LED EA | 1  | \$ 15,000 | \$ 15,000 |           | \$ 15,000  | \$ -       |
| 3rd St to 2nd St Block                                |                                 |    |           |           |           |            |            |
|                                                       | N/A                             |    |           |           |           |            |            |
| 2nd St to Front St                                    |                                 |    |           |           |           |            |            |
|                                                       | 35' Aluminum Davit Arm / LED EA | 3  | \$ 15,000 | \$ 45,000 |           | \$ 45,000  | \$ -       |
| Front Street                                          |                                 |    |           |           |           |            |            |
|                                                       | Under-Bridge LED                | EA | 0         | \$ 8,000  | \$ -      | \$ -       | \$ -       |
| Bridge                                                |                                 |    |           |           |           |            |            |
|                                                       | 45' Aluminum Davit Arm / LED EA | 10 | \$ 20,000 | \$200,000 |           | \$ -       | \$ 200,000 |
| Total Construction Cost                               |                                 |    |           |           |           | \$ 75,000  | \$ 200,000 |
| Design & Construction Engineering                     |                                 |    |           |           |           | \$ 11,250  | \$ 30,000  |
| <b>Lighting Concept 2: Henry Elements Upgraded</b>    |                                 |    |           |           |           |            |            |
| 3rd Street Intersection                               |                                 |    |           |           |           |            |            |
|                                                       | 25' Ornamental Combined Po EA   | 3  | \$ 20,000 | \$ 60,000 |           | \$ 60,000  | \$ -       |
| 2nd Street Intersection                               |                                 |    |           |           |           |            |            |
|                                                       | 25' Ornamental Combined Po EA   | 2  | \$ 20,000 | \$ 40,000 |           | \$ 40,000  | \$ -       |
| 3rd St to 2nd St Block                                |                                 |    |           |           |           |            |            |
|                                                       | 25' Ornamental Combined Po EA   | 5  | \$ 20,000 | \$100,000 |           | \$ 100,000 | \$ -       |
| 2nd St to Front St                                    |                                 |    |           |           |           |            |            |
|                                                       | 35' Aluminum Davit Arm / LED EA | 3  | \$ 15,000 | \$ 45,000 |           | \$ 45,000  | \$ -       |
|                                                       | 12' Ornamental Pedestrian Pole  | 6  | \$ 10,000 | \$ 60,000 |           | \$ 60,000  | \$ -       |
| Front Street                                          |                                 |    |           |           |           |            |            |
|                                                       | Under-Bridge LED                | EA | 2         | \$ 8,000  | \$ 16,000 | \$ 16,000  | \$ -       |
|                                                       | 12' Ornamental Pedestrian Pole  | 7  | \$ 10,000 | \$ 70,000 |           | \$ 70,000  | \$ -       |
| Bridge                                                |                                 |    |           |           |           |            |            |
|                                                       | 45' Aluminum Davit Arm / LED EA | 10 | \$ 20,000 | \$200,000 |           | \$ -       | \$ 200,000 |
| Total Construction Cost                               |                                 |    |           |           |           | \$ 391,000 | \$ 200,000 |
| Design & Construction Engineering                     |                                 |    |           |           |           | \$ 58,650  | \$ 30,000  |

Footnotes:

- (1) COH is responsible for 100% of annual energy costs for lighting.
- (2) Street and pedestrian scale lighting are eligible for ITEP grant funding. ITEP will continue to contribute up to 50% for street lighting and up to 80% for pedestrian scale lighting and appurtenances.
- (3) Pole heights and spacings are estimated and are subject to revision in final design.
- (4) The zero-cost lighting solution is for COH and utility to coordinate on salvage and re-installation of existing School Street features and for IDOT to light the bridge.

## Guardrails (at grade)

On both sides of the river, when guardrails are required and installed, we would prefer:

- a) *The use of guardrails be minimized whenever possible through generous or creative grading techniques and/or landforms.*
- b) *Guardrail metals should receive a treatment to achieve a rustic appearance; acid-etched, powder-coated, and/or weathered steel, for both the rail and the post. We feel the metal use would be more economical than steel backed, wooden railing systems and probably more acceptable, aesthetically, than trying to combine wood with the proposed concrete bridge parapet wall/structure.*
- c) *Railing resources:*
  - i. [https://safety.fhwa.dot.gov/roadway\\_dept/countermeasures/docs/Aesthetic\\_Mar2015Saferlogo.pdf](https://safety.fhwa.dot.gov/roadway_dept/countermeasures/docs/Aesthetic_Mar2015Saferlogo.pdf)
  - ii. <https://dot.ca.gov/-/media/dot-media/programs/design/documents/2016-03-11-wsgr-research-project-summary-final-a11y.pdf>
  - iii. <https://www.cor-ten.com/steel-backed-timber-guardrail/>

## IDOT Feedback

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Guardrail is generally not desirable to IDOT. It protects motorists from hazards but creates a lesser hazard of its own and results in costs related to installation and ongoing maintenance. Where conditions permit, IDOT will employ grading that meets safety policy guidelines in such areas as the run from the Front Street abutment down to the 2<sup>nd</sup> Street intersection, and on the embankment from the east abutment down to the Duck Ranch access.

There are costs associated with the flatter slopes of safety policy compliant grading, such as ROW takes in developed areas (e.g., the Henry side), as well as the larger volume and footprint of embankment (e.g., on the Duck Ranch side). Those trade-offs are being evaluated as we advance into final design. However, the overall goal is to minimize guardrail on both sides of the roadway, particularly on the Henry side.

The ends of fixed concrete parapets at the bridge abutments are a hazard to motorists that will require some length of guardrail right near the abutment. The most likely condition requiring additional guardrail on the Henry side would be the inclusion of the School Street alley in the existing ROW. With this configuration, it may not be possible to achieve the foreslope grades needed to minimize or avoid guardrail installation on that side of the IL 18 roadway.

Thank you for providing some research on rails. Guardrails are a road safety feature and a source of significant maintenance cost. As a result, they are highly standardized and policy driven within IDOT. We will not be able to implement non-standard designs, materials or coatings for guardrail. Where required, the rails will be constructed of galvanized materials for both rails and posts.

Where used, the graded slopes behind the rail are protected, and are typically made steeper in order to limit costs, required land acquisition and environmental impacts. As the side slopes get steeper than about 3H:1V, mowing becomes less desirable. Opportunities for moderate-height plantings which can camouflage the view of guardrail from town can be considered.

Figure 4 is an in-progress, incomplete rendering that shows what the grading and guardrail condition of the 2<sup>nd</sup> Street to Front Street section of IL 18 may look like. There will be no cost to COH associated with these standard roadway design elements.



FIGURE 4 - RENDERED VIEW LOOKING EAST AT PROPOSED IL 18 FROM 2ND STREET TO FRONT STREET. SHOWING GUARDRAIL AND GRADING POSSIBILITIES.

## Grading and Landscaping (bridge approaches at grade)

- a) City side, upriver (northeast, toward the marina) – we would prefer that this grading be as generous as possible to minimize the need for vehicular guardrails. This also allows for a transition to Front Street passing below the bridge. We are also interested in learning what IDOT’s plans are for the properties that they must acquire on this side of the bridge as well as what opportunities there are for the City of Henry to utilize as public open space.
- b) City side, downriver (Edward Street/Rio Vista) – to be determined (TBD) based upon access needs for Rio Vista property and connection to alleyway midway between Front and Second Streets.
- c) Retaining walls (at various locations, TBD) – Utilize large, limestone blocks similar to the first swing bridge in Henry or the first lock and dam on the Illinois River. If the cost of stone retaining walls became too expensive, we would explore alternative materials or the reduction or removal of retaining walls. Locations:
  - i. School Street right of way (ROW)-one side, two sides, depending on design.
  - ii. Overlook area.
  - iii. Walk access to overlook area from both Front Street and Cromwell Drive

## IDOT Feedback

In regards to item a) – as discussed in the Guardrails item above, IDOT shares the desire for grading that is at least flat enough to be “recoverable” for motorists, thus eliminating as much guardrail as possible

The parcels being acquired “in whole” for the project are considered excess land beyond the area that is needed for state right-of-way for the project. Upon completion of the project, there are several options for the excess land:

- IDOT can own and maintain the excess land long term. IDOT has an annual mowing contract to maintain its inventory of excess land. Mowing is provided up to twice a month during growing season, depending on the



availability of someone to mow in the area. Alternatively, the City can agree to mow and maintain the excess land within its municipal boundary through a routine Letter of Understanding.

- IDOT can sell the excess land to a private entity for personal or business use, consistent with the City's zoning. Sale of excess land is based on fair market value. Note that some of the parcels will no longer have access to a public roadway, and therefore have limited use. In these cases, we could only sell the excess land to an adjacent property owner who has access.
- IDOT can jurisdictionally transfer (JT) excess land to a public entity for public use. Examples include parking lots, parks, areas for art sculptures, or open spaces, IDOT has the option of either keeping or transferring the underlying land ownership to the public entity along with the rights to use the land.
- IDOT can lease the excess land to a private or public entity pending review and approval of intended use. Parking, picnic tables, and the like are generally acceptable. "Permanent structures" on leased land are not normally encouraged.

Advertising signage is not allowed on IDOT property, only informational signage that meets the guidelines of the policy.

IDOT is agreeable to constructing an alley within the existing IL 18 (School Street) ROW to provide connectivity for the city, though at this point it is not being shown since its obvious need (to serve Rio Vista) has been removed. IDOT plans to maintain ownership of the ROW, but maintenance of an alley would be the responsibility of the City.

In regards to item b) - during the course of development of this memo, it has emerged that the owner's of the Rio Vista property prefer to be acquired. As noted in the COH comment, the City downriver side is indeed TBD. The character, concerns and solutions for the downriver side could come to resemble more like whatever is anticipated on the upriver side after construction is complete.

In regards to item c) - at present, the design team is not forcing retaining structures into areas of the design, nor will IDOT prefer the introduction of hardscape features in the State ROW for decorative purposes only. But where earth retention becomes warranted, as it may with an overlook development or a School Street alley, the attempt will be made to employ large block construction, echoing the look and coloration of the limestone native to the Illinois River valley.

The cost sharing exhibit from AFG Meeting 2 noted the portion of costs for aesthetic enhancement of walls that would be borne by the COH, above the costs for the configuration that current state standards would provide. The degree of "enhancement" required to achieve City objectives may vary by wall type. Some additional discussion and order-of-magnitude cost is provided in Table 4.

TABLE 4 - RETAINING WALL OPTIONS & OPPORTUNITIES

|                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                           | <p>In certain conditions, large modular block walls such as this RediRock example are an approved standard wall. The material is concrete, not limestone. If special attention to achieve the buff coloration of the river valley limestone is desired, that would likely be considered “enhancement.” Past experience with coloring concrete surfaces suggests a cost of about \$20/SF. City cost share for coloration of an otherwise standard wall 100’ long by 5’ exposed height might be order of \$10,000, but this would ultimately be determined by bid pricing for the contract.</p>                                                                                                                |
|  <p>Ashlar Stone, Plain</p>  <p>Pigment or Stained Ashlar Stone</p>  | <p>Mechanically Stabilized Earth walls are typically built up from thin concrete panels that are approximately 5’ x 5’. An IDOT standard wall would typically include a basic, linear rustication pattern without coloration (at left, top).</p> <p>The introduction of a “stonework” pattern would be a City-funded enhancement. For decision making purposes, the addition of an off-the-shelf formliner such as the Ashlar Stone shown at left would be a modest additional cost to be borne by the City, approximately \$10/SF (\$5,000 for a wall 5’ high x 100’ long).</p> <p>Further enhancing the wall through addition of coloration could add an additional \$20/SF of wall, similar to above.</p> |
|                                                                                                                                                                                                                                         | <p>Some conditions favor a “soldier-pile” or “cut-wall” construction. This could arise, for example, if walls tight to the Rio Vista property line were introduced as part of alley construction, or as part of on-ROW parking accommodation. The typical face for this type of wall would be flat grey concrete. The introduction of formliner (as shown at left) would add on the order of 10\$/SF, which would be the City’s cost. The further addition of color would be the \$20/SF value mentioned above.</p>                                                                                                                                                                                          |

## Plantings/Tree Replacement

*Oak, hardwood savanna as found in the Illinois River Valley in 1830 on both sides of the river. But this might involve IDNR on their side of the river too.*

<https://libsysdigi.library.illinois.edu/OCA/Books2012-06/historyofillinoi1/historyofillinoi01cong/historyofillinoi01cong.pdf>

### IDOT Feedback

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Based on IDOT standards, the following plantings are recommended based on location within the project study area.

- School Street / IL 18, 3<sup>rd</sup> Street to 2<sup>nd</sup> Street. Within this block, with curb and gutter, parkway, and sidewalk, the base IDOT landscape treatment would consist of seeded grass with blankets (or sod). Regularly spaced trees within the parkway strip would constitute an example of enhancement, however, since tree mitigation will be required for the project, there is a likelihood that there will be no additional cost to the City. Smaller ornamental trees could be used sporadically to identify intersections or break up the longer runs of the medium-sized street trees. Spacing would vary depending on the actual species used in final design but the anticipated spacing would likely be 30' to 50'.
- School Street / IL 18, 2<sup>nd</sup> Street to Front Street. Within this block, IL 18 will not have sidewalks nor parkway along the new highway, and attempts are being made to keep the roadway clear zone clear, to limit the need for guardrail. The base IDOT landscape treatment along the road and on taken parcels will be seeded grass with blankets. IDOT will reconstruct the existing sidewalk between 2<sup>nd</sup> Street to Front Street as shown in Figure 4 above, in order to maintain pedestrian connectivity in this area. An effort will be made to retain the existing mature trees in this block. Tree planting in this block behind guardrail and beyond the embankment toe, on both sides of the new bridge approach, could be considered for tree mitigation.

Plantings close to the bridge abutment should be limited to low flowering shrubs and perennials which would be in keeping with any monuments. Large shrubs and small trees would block the view to the monuments from the approach to the new bridge.

Surface treatments within the park strip where the tree plantings would occur would be a lawn seeding or turf sod. Shrubs or perennials within this area would be atypical for a residential area such as this. Any plantings other than grass or trees would only be appropriate at intersections with only very low shrubs or flowering plants of 2' in height or less. The surface treatment within any planting beds would be a wood mulch sitting above weed barrier fabric to help with maintenance.

- Front Street Plantings: No tree plantings are anticipated on the sloping embankment west (north) of the lowered Front Street. East (south) of lowered Front, trees could be placed behind the sidewalk or in the park. A surface treatment of lawn seeding or sod would be used.
- East Side of the River: Trees to be installed across the river on the Duck Ranch side of the project would include native deciduous species. A combination of smaller, understory trees mixed in with larger native hardwood species may be used to meet policy requirements for replacement of trees impacted by construction. IDOT will coordinate tree replacement locations and species with the Illinois Department of Natural Resources (IDNR).

Particular species or planting beyond that required by policy to mitigate impacts would represent a landscaping enhancement, which could be considered for ITEP grant funding under the category of Streetscape.

An illustration of a possible planting design for the town-side of the project is shown in Figure 5. Some representative data for tree plantings furnished and installed are provided in Table 6. Tree plantings are not a significant cost item for COH or IDOT, but if enhanced tree planting becomes a priority, careful coordination on placement and maintenance will be required.





FIGURE 5 - PARTIAL PLANTING PLAN. REMAINDER OF FRONT STREET AND RIVERSIDE NOT SHOWN, DUCK RANCH SIDE NOT SHOWN.



**TABLE 4 - CONCEPT COSTS FOR LANDSCAPE PLANTING**

|                           |                     |    | IDOT Base Solution |         |           | Possible COH Enhancement |         |          |
|---------------------------|---------------------|----|--------------------|---------|-----------|--------------------------|---------|----------|
|                           |                     |    | QTY                | Unit \$ | Total     | QTY                      | Unit \$ | Total    |
| <b>3rd St to 2nd St</b>   |                     |    |                    |         |           |                          |         |          |
|                           | Topsoil 6"          | SY | 530                | 10      | \$ 5,302  |                          |         |          |
|                           | Seed (Type 1)       | AC | 0.1                | 10000   | \$ 1,000  |                          |         |          |
|                           | Weed Barrier        | SY | 20                 | 12      | \$ 240    |                          |         |          |
|                           | Wood Mulch          | SY | 20                 | 20      | \$ 400    |                          |         |          |
|                           | Shrub 3' OC         | EA |                    |         |           |                          |         |          |
|                           | Perennials (18" OC) | EA |                    |         |           |                          |         |          |
|                           | Ornamental Tree     | EA | 6                  | 500     | \$ 3,000  |                          |         |          |
|                           | Street Tree         | EA | 8                  | 600     | \$ 4,800  |                          |         |          |
| <b>2nd St to Front St</b> |                     |    |                    |         |           |                          |         |          |
|                           | Topsoil 6"          | SY | 1466               | 10      | \$ 14,658 |                          |         |          |
|                           | Seed (Type 1)       | AC | 0.3                | 10000   | \$ 3,000  |                          |         |          |
|                           | Weed Barrier        | SY | 20                 | 12      | \$ 240    |                          |         |          |
|                           | Wood Mulch          | SY | 20                 | 20      | \$ 400    |                          |         |          |
|                           | Shrub 3' OC         | EA |                    |         |           | 50                       | 100     | \$ 5,000 |
|                           | Perennials (18" OC) | EA |                    |         |           | 167                      | 45      | \$ 7,515 |
|                           | Ornamental Tree     | EA | 6                  | 500     | \$ 3,000  |                          |         |          |
|                           | Street Tree         | EA | 6                  | 600     | \$ 3,600  |                          |         |          |
| <b>Front Street</b>       |                     |    |                    |         |           |                          |         |          |
|                           | Topsoil 6"          | SY | 2518               | 10      | \$ 25,178 |                          |         |          |
|                           | Seed (Type 1)       | AC | 0.5                | 10000   | \$ 5,000  |                          |         |          |
|                           | Weed Barrier        | SY | 40                 | 12      | \$ 480    |                          |         |          |
|                           | Wood Mulch          | SY | 40                 | 20      | \$ 800    |                          |         |          |
|                           | Shrub 3' OC         | EA |                    |         |           |                          |         |          |
|                           | Perennials (18" OC) | EA |                    |         |           |                          |         |          |
|                           | Ornamental Tree     | EA | 9                  | 500     | \$ 4,500  |                          |         |          |
|                           | Street Tree         | EA | 12                 | 600     | \$ 7,200  |                          |         |          |
|                           |                     |    |                    |         | \$ 83,000 | \$13,000                 |         |          |

**Footnotes:**

- (1) Tree mitigation will be required for this project to compensate for tree removal on the east side of the river.
- (2) IDOT anticipates that trees to be planted in town as desired by the COH can be provided as part of the required mitigation (at no cost to the City). This would apply to street trees within the ROW, within the City park, and on the parcels to be acquired by IDOT as part of the project.

## **APPENDIX 18**

### **Design Exception Forms**



Key Route: FAP 653

Marked Route/Road Name: IL 18 (School St)

State Job No.: P-94-007-20 Contract No.: 68F09

Functional Classification: Rural Minor Arterial Highway Type: Two-Lane

County(ies): Putnam and Marshall Project Length: 1 mile

City: Henry, IL Section: (104B-D)BR

Project Location: IL 18 from 3rd Street to IL 26

**Project Scope of Work**

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

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

☐ 3P      ☐ SMART      ☐ HSIP      ☐ Other

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

*This form is required for all new construction, reconstruction, and 3R projects.*

- b. Provide a brief project description:

IL Route 18 is an east-west highway facility in central Illinois that runs from Henry at IL Route 29 to IL Route 17 near Blackstone. IL 18 is functionally classified as a Rural Minor Arterial through the limits of this project. Urban design policy will be utilized from the beginning of the project at 3<sup>rd</sup> Street to the horizontal curve PT at Sta. 3005+87.48 in the City of Henry. This project focuses on the portion of IL 18 that crosses the Illinois River between Marshall and Putnam counties. This bridge was constructed in 1934 and then rehabilitated in 1988. Due to the age and condition of the existing IL 18 bridge over the Illinois River at the city of Henry, the Illinois Department of Transportation District 4, in cooperation with the Federal Highway Administration is evaluating potential improvement options for the bridge.

The proposed work includes demolition of the existing bridge and construction of a new two-lane bridge north of the existing bridge. The proposed bridge and roadway will feature a new alignment and profile. This proposed roadway will consist of one 12 foot wide travel lane in each direction with 10 foot wide outside shoulders on both sides. Four to eight feet of the outside shoulder along IL 18 will be paved. The proposed bridge includes two 12' wide travel lanes and 8 foot wide shoulders. On the west side of the river in Henry, the proposed improvements will transition from the rural typical section to an urban roadway section with curb and gutter and sidewalks.

Front Street is a north-south local road which runs adjacent to the Illinois River. Currently intersecting with IL 18, this project will regrade Front Street to run under the proposed IL 18 bridge with no intersection.

| Design Criteria<br>(Provide numerical values, where indicated.)                                                                            | Does the proposed design meet the criteria? |                                     |                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------|-------------------------------------|
|                                                                                                                                            | Yes                                         | No                                  | N/A                                 |
| 1. Basic Design Controls (Chapter 31)                                                                                                      |                                             |                                     |                                     |
| a. Design speed      60                      mph (km/h)<br>Figure 47-2.K                                                                   | <input type="checkbox"/>                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b. Stopping Sight Distance (SSD) application for<br>vertical curves (downgrade adjusted SSD used)                                          | <input type="checkbox"/>                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c. Truck SSD (level) (at specific sites)                                                                                                   | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| d. Level of service (mainline)<br>LOS C, per BDE Figure 47-2.K                                                                             | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 2. Horizontal Alignment (mainline) (Chapter 32)                                                                                            |                                             |                                     |                                     |
| a. Horizontal curvature (minimum radius for selected<br>design speed) 1330' per BDE Figure 47-2.M feet<br>(meters)                         | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| b. Superelevation rates ( $e_{max}$ = 6%,BDE Figure 47-2.M<br>%)                                                                           | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| c. Superelevation transition lengths<br>107' required for runoff at 4% curve Fig 32-3.E                                                    | <input type="checkbox"/>                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d. SSD application at horizontal curves (downgrade<br>adjusted SSD used)                                                                   | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| e. Superelevation distribution between tangent<br>and curve (ratio or percent)      67%                                                    | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| f. "Breakover" of outside shoulder on super-<br>elevated curves (percent)              8.0%                                                | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| g. Relative longitudinal slope of shoulder to edge of<br>traveled way on high side of S.E. curve<br>adjacent to bridge with S.E.      8.0% | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| h. Superelevation development at reverse<br>curves      Eq. 32-3.8 92.50' required                                                         | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |



| Design Criteria<br>(Provide numerical values, where indicated.)                                       | Does the proposed design meet the criteria? |                                     |                                     |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------|-------------------------------------|
|                                                                                                       | Yes                                         | No                                  | N/A                                 |
| i. Is superelevation transition length located off of bridges and bridge approach pavements?          | <input type="checkbox"/>                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| j. Horizontal stopping sight distance on inside of horizontal curves (Level SSD for passenger cars)   | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 3. Vertical Alignment (mainline) (Chapter 33)                                                         |                                             |                                     |                                     |
| a. Maximum grades (in percent) 3% on Level Terrain, per BDE Figure 47-2.M                             | <input type="checkbox"/>                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b. SSD at crest vertical curves (level SSD for passenger cars)                                        | <input type="checkbox"/>                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c. SSD at sag vertical curves (level SSD for passenger cars)                                          | <input type="checkbox"/>                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d. Minimum grades (in percent) considering drainage<br>Desirable 0.5%, Min 0.0% (w/ Special Ditching) | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| e. Critical length of grade                                                                           | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| f. Truck-climbing lanes/critical grade analysis                                                       | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| g. Design criteria for truck-climbing lanes (e.g., lane width and shoulder width)                     | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| h. Minimum length of vertical curves for selected design speed<br>3V, BDE 33-4.01(a)(3)               | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| i. Maximum length of vertical curves (drainage of curbed facilities and bridges)                      | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 4. Cross Section Elements (mainline) (Chapter 34)                                                     |                                             |                                     |                                     |
| a. Lane widths 12' per BDE Figure 47-2.K feet (meters)                                                | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |

| Design Criteria<br>(Provide numerical values, where indicated.)                                                                                                                                                                                                                                                                        | Does the proposed design meet the criteria?                                                                             |                                                                                                              |                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                        | Yes                                                                                                                     | No                                                                                                           | N/A                                                                                                                                           |
| b. Traveled way widening                                                                                                                                                                                                                                                                                                               | <input type="checkbox"/>                                                                                                | <input type="checkbox"/>                                                                                     | <input checked="" type="checkbox"/>                                                                                                           |
| c. Cross-slopes on through lanes (in percent):<br><div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: right;"> Inside lane      Lane 1<br/> Outside lanes    Lane 2<br/> Lane 3<br/> Lane 4 </div> <div style="text-align: left;"> 1.5%<br/> <br/> <br/> <br/> </div> </div> | <input checked="" type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/> | <input type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/> |
| d. Shoulder widths _____ feet (meters)(inside)<br>10' _____ feet (meters)(outside)                                                                                                                                                                                                                                                     | <input type="checkbox"/><br><input checked="" type="checkbox"/>                                                         | <input type="checkbox"/><br><input type="checkbox"/>                                                         | <input checked="" type="checkbox"/><br><input type="checkbox"/>                                                                               |
| e. Design of parking lanes:<br>• Cross-slope _____ %<br>• Width _____ feet (meters)                                                                                                                                                                                                                                                    | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/>                                              | <input type="checkbox"/><br><input type="checkbox"/>                                                         | <input type="checkbox"/><br><input type="checkbox"/>                                                                                          |
| f. Type of curb and gutter used on median                                                                                                                                                                                                                                                                                              | <input type="checkbox"/>                                                                                                | <input type="checkbox"/>                                                                                     | <input checked="" type="checkbox"/>                                                                                                           |
| g. Drainage of raised curb medians:<br>• Direction of flow of median surface or pavement _____<br>• Direction of cross-slope on gutter _____ %                                                                                                                                                                                         | <input type="checkbox"/><br><input type="checkbox"/>                                                                    | <input type="checkbox"/><br><input type="checkbox"/>                                                         | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/>                                                                    |
| h. Type of curb and gutter used along outside edges of pavement <u>B-6.24, Figure 48-6.A</u>                                                                                                                                                                                                                                           | <input checked="" type="checkbox"/>                                                                                     | <input type="checkbox"/>                                                                                     | <input type="checkbox"/>                                                                                                                      |
| i. Two Way Left Turn Lane (TWLTL) width:<br>• Flush type _____ feet (meters)<br>• Traversable type _____ feet (meters)                                                                                                                                                                                                                 | <input type="checkbox"/><br><input type="checkbox"/>                                                                    | <input type="checkbox"/><br><input type="checkbox"/>                                                         | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/>                                                                    |
| j. Median widths:<br>• Urban _____ feet (meters)<br>• Suburban _____ feet (meters)<br>• Rural _____ feet (meters)                                                                                                                                                                                                                      | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                                        | <input type="checkbox"/><br><input type="checkbox"/><br><input type="checkbox"/>                             | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/><br><input checked="" type="checkbox"/>                             |
| k. Shoulder cross slopes <u>4%</u> per %<br><u>BDE Figure 47-2.K</u>                                                                                                                                                                                                                                                                   | <input checked="" type="checkbox"/>                                                                                     | <input type="checkbox"/>                                                                                     | <input type="checkbox"/>                                                                                                                      |
| l. Fill slopes <u>1:6</u> (V:H)                                                                                                                                                                                                                                                                                                        | <input checked="" type="checkbox"/>                                                                                     | <input type="checkbox"/>                                                                                     | <input type="checkbox"/>                                                                                                                      |

| Design Criteria<br>(Provide numerical values, where indicated.)                 | Does the proposed design meet the criteria? |                                     |                                     |
|---------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------|-------------------------------------|
|                                                                                 | Yes                                         | No                                  | N/A                                 |
| m. Outside roadway ditch:                                                       |                                             |                                     |                                     |
| • Slopes <u>1V:3H</u> • Depth <u>3'</u>                                         | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| • Widths <u>4'</u>                                                              | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| Median ditch:                                                                   |                                             |                                     |                                     |
| • Slopes _____ • Depth _____ :                                                  | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| • Width _____                                                                   | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| n. Cross-section transitions into bridges/<br>underpasses                       | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| o. Use of mountable curbs (V > 45 mph (70 km/h))                                | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| p. Cross-section transition details (e.g., four-lane<br>to two-lane)            | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Intersections (Chapter 36)                                                   |                                             |                                     |                                     |
| a. Accommodation of design vehicle<br>(identify vehicle) <u>WB-50 and S-BUS</u> | <input type="checkbox"/>                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b. Level of service:                                                            |                                             |                                     |                                     |
| • Through lanes <u>LOS C</u>                                                    | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| • Turn lanes _____                                                              | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| c. Skew angle<br><15 degrees                                                    | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| d. Profiles<br>2%                                                               | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| e. Volume guidelines for turn-lanes:                                            |                                             |                                     |                                     |
| • Right-turns                                                                   | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| • Left turns                                                                    | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| f. Design of right-turn lanes                                                   | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Design of left-turn lanes                                                       | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

| Design Criteria<br>(Provide numerical values, where indicated.)                               |                                                              | Does the proposed design meet the criteria? |                                     |                                     |
|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------|-------------------------------------|-------------------------------------|
|                                                                                               |                                                              | Yes                                         | No                                  | N/A                                 |
| g. Turn-lane tapers                                                                           | Approach taper                                               | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|                                                                                               | Departure taper                                              | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|                                                                                               | Bay taper                                                    | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| h. Turning roadway widths                                                                     |                                                              | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| i. Turn-lane lengths                                                                          | Deceleration (rural)                                         | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|                                                                                               | Storage (urban)                                              | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| j. Intersection sight distance:<br>List criteria and type <u>BDE Manual Fig 36-6.E</u>        |                                                              | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| k. Median opening length _____ feet (meters)                                                  |                                                              | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| l. Minimum corner island size _____ sq. ft (sq. m)                                            |                                                              | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| m. Does right-turn radius accommodate design vehicle without encroachment?<br>WB-50 and S-BUS |                                                              | <input type="checkbox"/>                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| n. Driveway widths _____ feet (meters)                                                        |                                                              | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| o. Type of traffic control:                                                                   |                                                              | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| • Two-way stop                                                                                |                                                              | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| • All-way stop                                                                                |                                                              | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| • Traffic signals                                                                             |                                                              | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| p. Is maximum grade exceeded on any approach?<br>4%                                           |                                                              | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| q. Max. superelevation "e" (in percent) for intersections on curve<br>1.5%                    |                                                              | <input checked="" type="checkbox"/>         | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 6. Interchanges (Chapter 37)                                                                  |                                                              |                                             |                                     |                                     |
| a. Exit terminal                                                                              | Standard type                                                | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|                                                                                               | Design speed of first curve                                  | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|                                                                                               | Are any exit terminals located on mainline horizontal curve? | <input type="checkbox"/>                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

| Design Criteria<br>(Provide numerical values, where indicated.)                                                        |                                            | Does the proposed design meet the criteria? |                          |                                     |
|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------|--------------------------|-------------------------------------|
|                                                                                                                        |                                            | Yes                                         | No                       | N/A                                 |
| b. Entrance terminal                                                                                                   | Standard type                              | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                        | Length of tangent after the entering curve | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                        | Design speed of entering curve             | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Design speed of ramp proper<br>_____ mph (km/h)                                                                     |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Design speed of crossroad<br>_____ mph (km/h)                                                                       |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. Maximum ramp grades:                                                                                                |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Exit ramp _____ %                                                                                                    |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Entrance ramp _____ %                                                                                                |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f. Ramp pavement width<br>_____ feet (meters)                                                                          |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g. Ramp shoulder widths:                                                                                               |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Left _____ feet (meters)                                                                                             |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Right _____ feet (meters)                                                                                            |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h. Horizontal ramp curvature in conjunction with selected design speeds                                                |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i. Superelevation development on ramps                                                                                 | Superelevation rate                        | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                        | Transition length                          | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                                        | Distribution between tangent & curve       | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| j. Vertical curvature compliance with selected design speed on ramp                                                    |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| k. Length of access control at crossroad                                                                               |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| l. Type of traffic control at crossroad:                                                                               |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Stop signs                                                                                                           |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Traffic signals                                                                                                      |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Free flow                                                                                                            |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| m. Is length of crest vertical curve used on crossroad $\geq$ that required by the selected design speed of crossroad? |                                            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |



| Design Criteria<br>(Provide numerical values, where indicated.)                                  |          |                         | Does the proposed design meet the criteria? |                          |                                     |
|--------------------------------------------------------------------------------------------------|----------|-------------------------|---------------------------------------------|--------------------------|-------------------------------------|
|                                                                                                  |          |                         | Yes                                         | No                       | N/A                                 |
| n. Are crossroad approach grades through ramp/<br>crossroad intersections $\leq 2\%$ ?           |          |                         | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| o. Are ramp/crossroad intersections located on a<br>tangent section of crossroad alignment?      |          |                         | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| p. Is decision sight distance available in advance of exit<br>gore?                              |          |                         | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| q. Is clear recovery area available beyond gore nose?                                            |          |                         | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| r. Level of service:                                                                             |          |                         |                                             |                          |                                     |
| • Exit terminal _____                                                                            |          |                         | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Entrance terminal _____                                                                        |          |                         | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Ramp proper _____                                                                              |          |                         | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Weaving area _____                                                                             |          |                         | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Ramp/crossroad intersection _____                                                              |          |                         | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| s. Freeway lane<br>drops                                                                         | Location | Upgrade                 | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                  |          | Downgrade               | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                  |          | Inside lane             | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                  |          | Outside lane            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                  |          | At exit<br>terminal     | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                  |          | Beyond exit<br>terminal | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|                                                                                                  |          | Taper length            | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. Roadside Safety (Chapter 38)                                                                  |          |                         |                                             |                          |                                     |
| a. Horizontal clearances:                                                                        |          |                         |                                             |                          |                                     |
| • Clear zones on tangent sections 26'                                                            |          |                         | <input checked="" type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/>            |
| • Clear zones on outside of horizontal curves<br>26' * 1.2 Factor = 31.2', per BDE Figure 38-3.D |          |                         | <input checked="" type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/>            |
| b. Barrier warrants                                                                              |          |                         | <input checked="" type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/>            |
| c. Barrier length of need                                                                        |          |                         | <input checked="" type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/>            |

| Design Criteria<br>(Provide numerical values, where indicated.)      | Does the proposed design meet the criteria? |                          |                                     |
|----------------------------------------------------------------------|---------------------------------------------|--------------------------|-------------------------------------|
|                                                                      | Yes                                         | No                       | N/A                                 |
| d. Deceleration criteria for impact attenuators                      | <input checked="" type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/>            |
| 8. Structure Planning/Geometrics (Chapter 39)                        |                                             |                          |                                     |
| a. Clear roadway bridge widths 32' feet (meters)                     | <input checked="" type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/>            |
| b. Structural capacity of bridges HS-20 Fig. 39-6.A                  | <input checked="" type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/>            |
| c. Vertical clearances 16'-6" per BDE feet (meters)<br>Figure 47-2.K | <input type="checkbox"/>                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9. Pavement Design (Chapter 54)                                      |                                             |                          |                                     |
| a. Structural capacity of roadway                                    | <input checked="" type="checkbox"/>         | <input type="checkbox"/> | <input type="checkbox"/>            |

Note: Use multiple forms for each roadway within the project.

Prepared by:  Date: 3/3/25  
 Designer (IDOT or Consultant) Signature



|           |                        |                 |                  |                |
|-----------|------------------------|-----------------|------------------|----------------|
| Key Route | Marked Route/Road Name | Contract Number | State Job Number | Section Number |
| FAP 653   |                        | 68F09           | P-94-007-20      | (104B-D)BR     |

|             |              |               |
|-------------|--------------|---------------|
| County(ies) | Municipality | Local Agency  |
|             |              | City of Henry |

|                    |                  |               |                |
|--------------------|------------------|---------------|----------------|
| LRS Section Number | Permit Applicant | Permit Number | Project Length |
| N/A                | N/A              | N/A           | 1 mile         |

Project Limits

IL 18 from east of 3rd Street to west IL 26

|                      |                  |                           |           |                    |                    |
|----------------------|------------------|---------------------------|-----------|--------------------|--------------------|
| Current Posted Speed | Estimate of Cost | Functional Classification | Design Yr | Design Traffic ADT | Design Traffic DHV |
|                      | \$81,100,000.00  |                           |           |                    | AM 290 PM 290      |

|                                                                     |                   |                                                                           |
|---------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------|
| On the NHS System?                                                  | Structure Numbers | Type of Project (Construction, Reconstruction, 3R, 3P, SMART, HSIP, etc.) |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   | Construction/Reconstruction                                               |

Brief Project Description

IL Route 18 is an east-west highway facility in central Illinois that runs from Henry at IL Route 29 to IL Route 17 near Blackstone. IL 18 is functionally classified as as a Rural Minor Arterial through the limits of this project. Urban design policy will be utilized from the beginning of the project at 3rd Street to the horizontal curve PT at Sta. 3005+87.48 in the City of Henry. This project focuses on the portion of IL 18 that crosses the Illinois River between Marshall and Putnam counties. This bridge was constructed in 1934 and then rehabilitated in 1988. Due to the age and condition of the existing IL 18 bridge over the Illinois River at the city of Henry, the Illinois Department of Transportation District 4, in cooperation with the Federal Highway Administration is evaluating potential improvement options for the bridge.

The proposed work includes demolition of the existing bridge and construction of a new two-lane bridge north of the existing bridge. The proposed bridge and roadway will feature a new alignment and profile. This proposed roadway will consist of one 12 foot wide travel lane in each direction with 10 foot wide outside shoulders on both sides. Four to eight feet of the outside shoulder along IL 18 will be paved. The proposed bridge includes two 12' wide travel lanes and 8 foot wide shoulders. On the west side of the river in Henry, the proposed improvements will transition from the rural typical section to an urban roadway section with curb and gutter and sidewalks.

Front Street is a north-south local road which runs adjacent to the Illinois River. Currently intersecting with IL 18, this project will regrade Front Street to run under the proposed IL 18 bridge with no intersection.

EXCEPTION DOCUMENTATION

Level of Exception ☐ Level 1 ☒ Level 2

Design Element for Which an Exception is Requested

3.a Maximum Grades

Design Element Policy Value

3% on level terrain per BDE Figure 47.-2.M

Proposed Design Element Value

4%

Location(s) of Exception

Between 2nd Street and center of proposed bridge

Crash History and Potential of Exception Location(s)

2 crashes in 5 year period on bridge deck, reduced crash potential due to widened bridge with 8' wide shoulders on each side and lighted deck. Residential and business access points eliminated and Front Street intersection removed in proposed condition. IL 18 proposed to be lighted through this section.

Cost of Using Policy Value

Cost of Using Proposed Exception Value

\$1,000,000.00

\$0.00

Impacts Other Than Cost of Using Policy Value

Requires higher grade on west bridge approach and would raise IL 18 at 2nd Street approximately 4' eliminating intersection at Front Street and reducing mobility in Henry.

Proposed Mitigation to Address Exception

Posted speed 45 mph on bridge and 35 mph on roadway.

Geometric Compatibility with Adjacent Sections

Improved compatibility as existing grade is 5%.

Potential Effects on Other Design Elements

Vertical curvature at bridge crest and sag curve just east of 2nd Street.

Potential Impacts on Mobility or Traffic Operations

Improved mobility because 2nd Street intersection can be maintained.

Summary of Justification for Exception

A 3.0% profile grade into the City of Henry would cause the IL 18 and 2nd Street intersection to be raised around 4' to 4.5'. This elevation change would result in more displacements and right of way takes. The intersection being raised by that amount would also create difficult driveway tie ins to the commercial and residential properties in the vicinity of the intersection. Lastly, a 3.0% grade would push the limits of the project to the 3rd Street intersection which this project is attempting to avoid. The existing grade is 5% entering Henry from the east so a 4% grade is a significant improvement without more significant impacts of the 3% grade.

Coordination Meeting Date

Proposed By

Date

Jason Chae

3/3/25

**APPROVAL/DISAPPROVAL**

BDE Approval Date

FHWA Approval Date (Level One)



|           |                        |                 |                  |                |
|-----------|------------------------|-----------------|------------------|----------------|
| Key Route | Marked Route/Road Name | Contract Number | State Job Number | Section Number |
| FAP 653   | IL-18/School Street    | 68F09           | P-94-007-20      | (104B-D)BR     |

|                     |                 |               |
|---------------------|-----------------|---------------|
| County(ies)         | Municipality    | Local Agency  |
| Marshall and Putnam | Henry, Illinois | City of Henry |

|                    |                  |               |                |
|--------------------|------------------|---------------|----------------|
| LRS Section Number | Permit Applicant | Permit Number | Project Length |
| N/A                | N/A              | N/A           | 1 mile         |

Project Limits

IL 18 from east of 3rd Street to west of IL 26

|                      |                  |                           |           |                    |                    |
|----------------------|------------------|---------------------------|-----------|--------------------|--------------------|
| Current Posted Speed | Estimate of Cost | Functional Classification | Design Yr | Design Traffic ADT | Design Traffic DHV |
| 30 MPH               | \$81,100,000.00  | Rural Minor Arterial      | 2045      | 2900               | AM 290 PM 290      |

|                                                                     |                   |                                                                           |
|---------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------|
| On the NHS System?                                                  | Structure Numbers | Type of Project (Construction, Reconstruction, 3R, 3P, SMART, HSIP, etc.) |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 062-0036          | Construction/Reconstruction                                               |

Brief Project Description

IL Route 18 is an east-west highway facility in central Illinois that runs from Henry at IL Route 29 to IL Route 17 near Blackstone. IL 18 is functionally classified as as a Rural Minor Arterial through the limits of this project. Urban design policy will be utilized from the beginning of the project at 3rd Street to the horizontal curve PT at Sta. 3005+87.48 in the City of Henry. This project focuses on the portion of IL 18 that crosses the Illinois River between Marshall and Putnam counties. This bridge was constructed in 1934 and then rehabilitated in 1988. Due to the age and condition of the existing IL 18 bridge over the Illinois River at the city of Henry, the Illinois Department of Transportation District 4, in cooperation with the Federal Highway Administration is evaluating potential improvement options for the bridge.

The proposed work includes demolition of the existing bridge and construction of a new two-lane bridge north of the existing bridge. The proposed bridge and roadway will feature a new alignment and profile. This proposed roadway will consist of one 12 foot wide travel lane in each direction with 10 foot wide outside shoulders on both sides. Four to eight feet of the outside shoulder along IL 18 will be paved. The proposed bridge includes two 12' wide travel lanes and 8 foot wide shoulders. On the west side of the river in Henry, the proposed improvements will transition from the rural typical section to an urban roadway section with curb and gutter and sidewalks.

Front Street is a north-south local road which runs adjacent to the Illinois River. Currently intersecting with IL 18, this project will regrade Front Street to run under the proposed IL 18 bridge with no intersection.

**EXCEPTION DOCUMENTATION**

Level of Exception ☐ Level 1 ☒ Level 2

Design Element for Which an Exception is Requested

1.b. and 3.c. Stopping Sight Distance application for sag vertical curves

Design Element Policy Value

For 60 mph design speed: Minimum K = 136 (level) per BDE Figure 33-4.E and minimum K = 149 (downgrade adjusted, 4%) per BDE Figure 33-4F

Proposed Design Element Value

K=70 to meet design speed of 40 mph at 4% grades.

Location(s) of Exception

Sag vertical curve on IL18 at STA. 3004+70.00 to STA. 3008+80.00.

Crash History and Potential of Exception Location(s)

5 crashes occurred in the vicinity of this design exception in 5 years. Potential is not expected to be affected as one cross-street is being removed (2 previous crashes) and a number of driveways and alley connections will no longer be permitted.



Cost of Using Policy Value

Cost of Using Proposed Exception Value

\$1,000,000.00

\$0.00

Impacts Other Than Cost of Using Policy Value

3 additional residential takes would occur for policy value. Reduced mobility due to elimination of 2nd St. intersection. Contrary to stakeholder requests.

Proposed Mitigation to Address Exception

Street lighting is anticipated throughout this section. Posted speed limit will be 35-45 mph or less.

Geometric Compatibility with Adjacent Sections

Compatible with reduced speeds when entering the City of Henry and tying into the street grid.

Potential Effects on Other Design Elements

Reduced profile height at 2nd Street will provide improved 2nd Street approach grades on the north and south approaches.

Potential Impacts on Mobility or Traffic Operations

Limited effect on traffic operations. Meets mobility expectations in Henry by allowing 2nd Street intersection to be maintained.

Summary of Justification for Exception

The proposed K-value of 70 meets a design speed of 40 mph at 4% grades. The proposed vertical profile is an improvement from the existing 5% grade on the bridge. The design speed transitions from 60 mph from east of the bridge down to 40 mph to the west as it enters the City of Henry. The intent is to provide a smooth speed transition from the rural to urban as we move from east to west. This vertical curve is within the limits of the City of Henry where the existing posted speed limit is 35 mph, which would indicate an existing design speed of no more than 40 mph.

Coordination Meeting Date

Proposed By

Date

Jason Chae

3/3/25

**APPROVAL/DISAPPROVAL**

BDE Approval Date

FHWA Approval Date (Level One)



|           |                        |                 |                  |                |
|-----------|------------------------|-----------------|------------------|----------------|
| Key Route | Marked Route/Road Name | Contract Number | State Job Number | Section Number |
| FAP 653   |                        | 68F09           | P-94-007-20      | (104B-D)BR     |

|             |              |               |
|-------------|--------------|---------------|
| County(ies) | Municipality | Local Agency  |
|             |              | City of Henry |

|                    |                  |               |                |
|--------------------|------------------|---------------|----------------|
| LRS Section Number | Permit Applicant | Permit Number | Project Length |
| N/A                | N/A              | N/A           | 1 mile         |

Project Limits

IL 18 from east of 3rd Street to west of IL 26

|                      |                  |                           |           |                    |                    |
|----------------------|------------------|---------------------------|-----------|--------------------|--------------------|
| Current Posted Speed | Estimate of Cost | Functional Classification | Design Yr | Design Traffic ADT | Design Traffic DHV |
|                      | \$81,100,000.00  |                           |           |                    | AM 290 PM 290      |

|                                                                     |                   |                                                                           |
|---------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------|
| On the NHS System?                                                  | Structure Numbers | Type of Project (Construction, Reconstruction, 3R, 3P, SMART, HSIP, etc.) |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   | Construction/Reconstruction                                               |

Brief Project Description

IL Route 18 is an east-west highway facility in central Illinois that runs from Henry at IL Route 29 to IL Route 17 near Blackstone. IL 18 is functionally classified as as a Rural Minor Arterial through the limits of this project. Urban design policy will be utilized from the beginning of the project at 3rd Street to the horizontal curve PT at Sta. 3005+87.48 in the City of Henry. This project focuses on the portion of IL 18 that crosses the Illinois River between Marshall and Putnam counties. This bridge was constructed in 1934 and then rehabilitated in 1988. Due to the age and condition of the existing IL 18 bridge over the Illinois River at the city of Henry, the Illinois Department of Transportation District 4, in cooperation with the Federal Highway Administration is evaluating potential improvement options for the bridge.

The proposed work includes demolition of the existing bridge and construction of a new two-lane bridge north of the existing bridge. The proposed bridge and roadway will feature a new alignment and profile. This proposed roadway will consist of one 12 foot wide travel lane in each direction with 10 foot wide outside shoulders on both sides. Four to eight feet of the outside shoulder along IL 18 will be paved. The proposed bridge includes two 12' wide travel lanes and 8 foot wide shoulders. On the west side of the river in Henry, the proposed improvements will transition from the rural typical section to an urban roadway section with curb and gutter and sidewalks.

Front Street is a north-south local road which runs adjacent to the Illinois River. Currently intersecting with IL 18, this project will regrade Front Street to run under the proposed IL 18 bridge with no intersection.

EXCEPTION DOCUMENTATION

Level of Exception ☐ Level 1 ☒ Level 2

Design Element for Which an Exception is Requested

1.b. and 3.b. Stopping Sight Distance application for crest vertical curves

Design Element Policy Value

For 60 mph design speed: Minimum K = 151 (level) per BDE Figure 33-4.A and minimum K = 176 (downgrade adjusted, 4%) per BDE Figure 33-4B

Proposed Design Element Value

K=84 to meet design speed of 45 mph at 4% grades.

Location(s) of Exception

Crest vertical curve on proposed IL18 STA. 3013+45.00 to STA. 3019+35.00

Crash History and Potential of Exception Location(s)

5 crashes occurred in the vicinity of this design exception in 5 years. Potential is not expected to be affected as one cross-street is being removed (2 previous crashes) and a number of driveways and alley connections will no longer be permitted.

Cost of Using Policy Value

Cost of Using Proposed Exception Value

\$1,000,000.00

\$0.00

Impacts Other Than Cost of Using Policy Value

3 additional residential takes would occur for policy value. Reduced mobility due to elimination of 2nd St. intersection. Contrary to stakeholder requests.

Proposed Mitigation to Address Exception

Street lighting is anticipated throughout this section. Posted speed limit will be 35-45 mph or less.

Geometric Compatibility with Adjacent Sections

Compatible with reduced speeds when entering the City of Henry and tying into the street grid.

Potential Effects on Other Design Elements

Reduced profile height at 2nd Street will provide improved 2nd Street approach grades on the north and south approaches.

Potential Impacts on Mobility or Traffic Operations

Limited effect on traffic operations. Meets mobility expectations in Henry by allowing 2nd Street intersection to be maintained.

Summary of Justification for Exception

The proposed K-value of 84 meets a design speed of 45 mph at 4% grades. The existing bridge profile meets a 40 mph design speed and increasing the design speed of the bridge to 45 mph is a significant improvement and provides a smooth speed transition from rural roadway environment to the east and the urbanized environment in the City of Henry to the west. In addition, the existing bridge is signed for 35 mph which indicates a 40 mph design speed. Policy value would require additional relocations and eliminate 2nd Street access. Maintaining access is important to the stakeholders in the community.

Coordination Meeting Date

Proposed By

Date

Jason Chae

3/3/25

#### APPROVAL/DISAPPROVAL

BDE Approval Date

FHWA Approval Date (Level One)



|           |                        |                 |                  |                |
|-----------|------------------------|-----------------|------------------|----------------|
| Key Route | Marked Route/Road Name | Contract Number | State Job Number | Section Number |
| FAP 653   |                        | 68F09           | P-94-007-20      | (104B-D)BR     |

|             |              |               |
|-------------|--------------|---------------|
| County(ies) | Municipality | Local Agency  |
|             |              | City of Henry |

|                    |                  |               |                |
|--------------------|------------------|---------------|----------------|
| LRS Section Number | Permit Applicant | Permit Number | Project Length |
| N/A                | N/A              | N/A           | 1 mile         |

Project Limits

IL 18 from east of 3rd Street to west of IL 26

|                      |                  |                           |           |                    |                    |
|----------------------|------------------|---------------------------|-----------|--------------------|--------------------|
| Current Posted Speed | Estimate of Cost | Functional Classification | Design Yr | Design Traffic ADT | Design Traffic DHV |
|                      | \$81,100,000.00  |                           |           |                    | AM 290 PM 290      |

|                                                                     |                   |                                                                           |
|---------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------|
| On the NHS System?                                                  | Structure Numbers | Type of Project (Construction, Reconstruction, 3R, 3P, SMART, HSIP, etc.) |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   | Construction/Reconstruction                                               |

Brief Project Description

IL Route 18 is an east-west highway facility in central Illinois that runs from Henry at IL Route 29 to IL Route 17 near Blackstone. IL 18 is functionally classified as as a Rural Minor Arterial through the limits of this project. Urban design policy will be utilized from the beginning of the project at 3rd Street to the horizontal curve PT at Sta. 3005+87.48 in the City of Henry. This project focuses on the portion of IL 18 that crosses the Illinois River between Marshall and Putnam counties. This bridge was constructed in 1934 and then rehabilitated in 1988. Due to the age and condition of the existing IL 18 bridge over the Illinois River at the city of Henry, the Illinois Department of Transportation District 4, in cooperation with the Federal Highway Administration is evaluating potential improvement options for the bridge.

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Front Street is a north-south local road which runs adjacent to the Illinois River. Currently intersecting with IL 18, this project will regrade Front Street to run under the proposed IL 18 bridge with no intersection.

EXCEPTION DOCUMENTATION

|                                                                                                                |                                        |                                             |
|----------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------|
| Level of Exception                                                                                             | <input type="checkbox"/> Level 1       | <input checked="" type="checkbox"/> Level 2 |
| Design Element for Which an Exception is Requested                                                             |                                        |                                             |
| 2.c. Superelevation transition lengths                                                                         |                                        |                                             |
| Design Element Policy Value                                                                                    |                                        |                                             |
| Superelevation transition lengths from normal crown to e=4.0% = 107' per Figure 32-3.E (60 mph design speed)   |                                        |                                             |
| Proposed Design Element Value                                                                                  |                                        |                                             |
| Transition lengths proposed are 83', which meet a 40 mph design speed                                          |                                        |                                             |
| Location(s) of Exception                                                                                       |                                        |                                             |
| Horizontal curve at STA. 3006+98.70 to STA. 3008+78.16                                                         |                                        |                                             |
| Crash History and Potential of Exception Location(s)                                                           |                                        |                                             |
| 5 crashes occurred in this section. Potential is offset by removal of driveways, alleys, and one cross-street. |                                        |                                             |
| Cost of Using Policy Value                                                                                     | Cost of Using Proposed Exception Value |                                             |
| \$100,000.00                                                                                                   | \$0.00                                 |                                             |
| Impacts Other Than Cost of Using Policy Value                                                                  |                                        |                                             |
| Right of way impacts to surrounding neighborhood and increased skew of IL 18/2nd Street intersection           |                                        |                                             |

Proposed Mitigation to Address Exception

Reduced posted speeds to 30 to 45 mph consistent with overall project design strategy to transition vehicle speeds across the bridge.

Geometric Compatibility with Adjacent Sections

Compatible with design speed = 40 mph and consistent with reduced SE rate and vertical design over the same section.

Potential Effects on Other Design Elements

2nd Street intersection skew is improved

Potential Impacts on Mobility or Traffic Operations

Limited impacts on traffic operations

Summary of Justification for Exception

The superelevation runoff lengths were designed with a design speed of 40 mph which is consistent with the design criteria used for the superelevation and vertical profile design in this section. The current posted speed limit in the City of Henry is 35 mph.

Coordination Meeting Date

Proposed By

Date

Jason Chae

3/3/25

**APPROVAL/DISAPPROVAL**

BDE Approval Date

FHWA Approval Date (Level One)





|           |                        |                 |                  |                |
|-----------|------------------------|-----------------|------------------|----------------|
| Key Route | Marked Route/Road Name | Contract Number | State Job Number | Section Number |
| FAP 653   |                        | 68F09           | P-94-007-20      | (104B-D)BR     |

|             |              |               |
|-------------|--------------|---------------|
| County(ies) | Municipality | Local Agency  |
|             |              | City of Henry |

|                    |                  |               |                |
|--------------------|------------------|---------------|----------------|
| LRS Section Number | Permit Applicant | Permit Number | Project Length |
| N/A                | N/A              | N/A           | 1 mile         |

Project Limits

IL 18 from east of 3rd Street to west of IL 26

|                      |                  |                           |           |                    |                    |
|----------------------|------------------|---------------------------|-----------|--------------------|--------------------|
| Current Posted Speed | Estimate of Cost | Functional Classification | Design Yr | Design Traffic ADT | Design Traffic DHV |
|                      | \$81,100,000.00  |                           |           |                    | AM 290 PM 290      |

|                                                                     |                   |                                                                           |
|---------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------|
| On the NHS System?                                                  | Structure Numbers | Type of Project (Construction, Reconstruction, 3R, 3P, SMART, HSIP, etc.) |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   | Construction/Reconstruction                                               |

Brief Project Description

IL Route 18 is an east-west highway facility in central Illinois that runs from Henry at IL Route 29 to IL Route 17 near Blackstone. IL 18 is functionally classified as as a Rural Minor Arterial through the limits of this project. Urban design policy will be utilized from the beginning of the project at 3rd Street to the horizontal curve PT at Sta. 3005+87.48 in the City of Henry. This project focuses on the portion of IL 18 that crosses the Illinois River between Marshall and Putnam counties. This bridge was constructed in 1934 and then rehabilitated in 1988. Due to the age and condition of the existing IL 18 bridge over the Illinois River at the city of Henry, the Illinois Department of Transportation District 4, in cooperation with the Federal Highway Administration is evaluating potential improvement options for the bridge.

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Front Street is a north-south local road which runs adjacent to the Illinois River. Currently intersecting with IL 18, this project will regrade Front Street to run under the proposed IL 18 bridge with no intersection.

EXCEPTION DOCUMENTATION

Level of Exception ☐ Level 1 ☒ Level 2

Design Element for Which an Exception is Requested

2.i. Superelevation transition length located off bridge and bridge approach pavement

Design Element Policy Value

Superelevation transition length should be located off of bridges and bridge approach pavements, per BDE Section 32-3.07.

Proposed Design Element Value

Superelevated section is within the bridge limits

Location(s) of Exception

STA. 3008+44.50 to STA. 3009+64.77

Crash History and Potential of Exception Location(s)

No crashes have occurred at this location. Shoulders have been widened to 8' on both sides of horizontal curve.

|                            |                                        |
|----------------------------|----------------------------------------|
| Cost of Using Policy Value | Cost of Using Proposed Exception Value |
| \$590,000.00               | \$0.00                                 |

Impacts Other Than Cost of Using Policy Value

Locating the PT of the curve and having the superelevation transition onto the bridge allows the roadway alignment to transition back to the existing IL 18 alignment as soon as possible. This reduces right of way impacts to the surrounding community. Creates some complexity to the bridge design but only in the first span.

Proposed Mitigation to Address Exception

Proposed bridge has 8' wide shoulders on each side. Posted speed on bridge 45 mph. Evaluate skid resistance measures on bridge deck.

Geometric Compatibility with Adjacent Sections

Compatible with roadway curvature through IL 18 as alignment transitions to the existing street grid.

Potential Effects on Other Design Elements

Adjust bridge design to incorporate SE transition on deck. 3% longitudinal grade will ensure that no "flat spot" occurs on the bridge deck.

Potential Impacts on Mobility or Traffic Operations

No impacts expected.

Summary of Justification for Exception

The horizontal curve is located on the bridge structure to reduce right of way take and potential displacement at the northwestern corner of 2nd Street intersection. Shifting the curve off the bridge would also result in a greater skew at the proposed IL 18/2nd Street intersection.

Coordination Meeting Date

Proposed By

Date

Jason Chae

3/3/25

**APPROVAL/DISAPPROVAL**

BDE Approval Date

FHWA Approval Date (Level One)



|           |                        |                 |                  |                |
|-----------|------------------------|-----------------|------------------|----------------|
| Key Route | Marked Route/Road Name | Contract Number | State Job Number | Section Number |
| FAP 653   |                        | 68F09           | P-94-007-20      | (104B-D)BR     |

|             |              |               |
|-------------|--------------|---------------|
| County(ies) | Municipality | Local Agency  |
|             |              | City of Henry |

|                    |                  |               |                |
|--------------------|------------------|---------------|----------------|
| LRS Section Number | Permit Applicant | Permit Number | Project Length |
| N/A                | N/A              | N/A           | 1 mile         |

Project Limits

IL 18 from east of 3rd Street to west of IL 26

|                      |                  |                           |           |                    |                    |
|----------------------|------------------|---------------------------|-----------|--------------------|--------------------|
| Current Posted Speed | Estimate of Cost | Functional Classification | Design Yr | Design Traffic ADT | Design Traffic DHV |
|                      | \$81,100,000.00  |                           |           |                    | AM 290 PM 290      |

|                                                                     |                   |                                                                           |
|---------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------|
| On the NHS System?                                                  | Structure Numbers | Type of Project (Construction, Reconstruction, 3R, 3P, SMART, HSIP, etc.) |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   | Construction/Reconstruction                                               |

Brief Project Description

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EXCEPTION DOCUMENTATION

Level of Exception ☐ Level 1 ☒ Level 2

Design Element for Which an Exception is Requested

5.a. Accommodation of Design Vehicle

Design Element Policy Value

Accommodation of design vehicle WB-50; BDE Figure 31-5.B

Proposed Design Element Value

S-BUS

Location(s) of Exception

East, West, and South legs of 2nd Street intersection

Crash History and Potential of Exception Location(s)

No crashes have occurred at the 2nd Street location. Driveways and one cross-street have been removed. Street lighting is anticipated throughout this section.

Cost of Using Policy Value

Cost of Using Proposed Exception Value

\$150,000.00

\$0.00

Impacts Other Than Cost of Using Policy Value

Additional right of way impacts to the business parking lot at southwest corner and residence on SE corner.

Proposed Mitigation to Address Exception

Policy design vehicle (WB-50) can make turning movement but would be encroaching in other lanes.

Geometric Compatibility with Adjacent Sections

More compatible with local streets and pedestrian movements.

Potential Effects on Other Design Elements

Smaller design vehicle improves ADA design for intersection by reducing crosswalk length.

Potential Impacts on Mobility or Traffic Operations

Encroachment of policy design vehicle (WB-50) on side street may affect traffic but traffic volumes are very low.

Summary of Justification for Exception

Trucks are discouraged in the downtown area and bus movements are more appropriate for the local street network.

Coordination Meeting Date

Proposed By

Date

Jason Chae

3/3/25

**APPROVAL/DISAPPROVAL**

BDE Approval Date

FHWA Approval Date (Level One)



|           |                        |                 |                  |                |
|-----------|------------------------|-----------------|------------------|----------------|
| Key Route | Marked Route/Road Name | Contract Number | State Job Number | Section Number |
| FAP 653   |                        | 68F09           | P-94-007-20      | (104B-D)BR     |

|             |              |               |
|-------------|--------------|---------------|
| County(ies) | Municipality | Local Agency  |
|             |              | City of Henry |

|                    |                  |               |                |
|--------------------|------------------|---------------|----------------|
| LRS Section Number | Permit Applicant | Permit Number | Project Length |
| N/A                | N/A              | N/A           | 1 mile         |

Project Limits

IL 18 from east of 3rd Street to west of IL 26

|                      |                  |                           |           |                    |                    |
|----------------------|------------------|---------------------------|-----------|--------------------|--------------------|
| Current Posted Speed | Estimate of Cost | Functional Classification | Design Yr | Design Traffic ADT | Design Traffic DHV |
|                      | \$81,100,000.00  |                           |           |                    | AM 290 PM 290      |

|                                                                     |                   |                                                                           |
|---------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------|
| On the NHS System?                                                  | Structure Numbers | Type of Project (Construction, Reconstruction, 3R, 3P, SMART, HSIP, etc.) |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   | Construction/Reconstruction                                               |

Brief Project Description

IL Route 18 is an east-west highway facility in central Illinois that runs from Henry at IL Route 29 to IL Route 17 near Blackstone. IL 18 is functionally classified as as a Rural Minor Arterial through the limits of this project. Urban design policy will be utilized from the beginning of the project at 3rd Street to the horizontal curve PT at Sta. 3005+87.48 in the City of Henry. This project focuses on the portion of IL 18 that crosses the Illinois River between Marshall and Putnam counties. This bridge was constructed in 1934 and then rehabilitated in 1988. Due to the age and condition of the existing IL 18 bridge over the Illinois River at the city of Henry, the Illinois Department of Transportation District 4, in cooperation with the Federal Highway Administration is evaluating potential improvement options for the bridge.

The proposed work includes demolition of the existing bridge and construction of a new two-lane bridge north of the existing bridge. The proposed bridge and roadway will feature a new alignment and profile. This proposed roadway will consist of one 12 foot wide travel lane in each direction with 10 foot wide outside shoulders on both sides. Four to eight feet of the outside shoulder along IL 18 will be paved. The proposed bridge includes two 12' wide travel lanes and 8 foot wide shoulders. On the west side of the river in Henry, the proposed improvements will transition from the rural typical section to an urban roadway section with curb and gutter and sidewalks.

Front Street is a north-south local road which runs adjacent to the Illinois River. Currently intersecting with IL 18, this project will regrade Front Street to run under the proposed IL 18 bridge with no intersection.

EXCEPTION DOCUMENTATION

|                                                                                                             |                                        |                                             |
|-------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------|
| Level of Exception                                                                                          | <input type="checkbox"/> Level 1       | <input checked="" type="checkbox"/> Level 2 |
| Design Element for Which an Exception is Requested                                                          |                                        |                                             |
| 5.m Does right-turn radius accommodate design vehicle without encroachment?                                 |                                        |                                             |
| Design Element Policy Value                                                                                 |                                        |                                             |
| Does right turn radius accommodate design vehicle without encroachment? (WB-50) BDE Figure 31-5.B           |                                        |                                             |
| Proposed Design Element Value                                                                               |                                        |                                             |
| S-BUS                                                                                                       |                                        |                                             |
| Location(s) of Exception                                                                                    |                                        |                                             |
| South leg of 2nd Street intersection.                                                                       |                                        |                                             |
| Crash History and Potential of Exception Location(s)                                                        |                                        |                                             |
| No crashes have occurred at the 2nd Street location. Street lighting is anticipated at the intersection.    |                                        |                                             |
| Cost of Using Policy Value                                                                                  | Cost of Using Proposed Exception Value |                                             |
| \$50,000.00                                                                                                 | \$0.00                                 |                                             |
| Impacts Other Than Cost of Using Policy Value                                                               |                                        |                                             |
| Additional right of way impacts to the business parking lot at southwest corner and residence on SE corner. |                                        |                                             |



Proposed Mitigation to Address Exception

Policy design vehicle (WB-50) can make turning movement but would be encroaching in other lanes.

Geometric Compatibility with Adjacent Sections

More compatible with local streets and pedestrian movements.

Potential Effects on Other Design Elements

Smaller design vehicle improves ADA design for intersection by reducing crosswalk length.

Potential Impacts on Mobility or Traffic Operations

Encroachment of policy design vehicle (WB-50) on side street may affect traffic but traffic volumes are very low.

Summary of Justification for Exception

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Coordination Meeting Date

Proposed By

Date

Jason Chae

3/3/25

**APPROVAL/DISAPPROVAL**

BDE Approval Date

FHWA Approval Date (Level One)



|           |                        |                 |                  |                |
|-----------|------------------------|-----------------|------------------|----------------|
| Key Route | Marked Route/Road Name | Contract Number | State Job Number | Section Number |
| FAP 653   |                        | 68F09           | P-94-007-20      | (104B-D)BR     |

|             |              |               |
|-------------|--------------|---------------|
| County(ies) | Municipality | Local Agency  |
|             |              | City of Henry |

|                    |                  |               |                |
|--------------------|------------------|---------------|----------------|
| LRS Section Number | Permit Applicant | Permit Number | Project Length |
| N/A                | N/A              | N/A           | 1 mile         |

Project Limits

IL 18 from east of 3rd Street to west of IL 26

|                      |                  |                           |           |                    |                    |
|----------------------|------------------|---------------------------|-----------|--------------------|--------------------|
| Current Posted Speed | Estimate of Cost | Functional Classification | Design Yr | Design Traffic ADT | Design Traffic DHV |
|                      | \$81,100,000.00  |                           |           |                    | AM 290 PM 290      |

|                                                                     |                   |                                                                           |
|---------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------|
| On the NHS System?                                                  | Structure Numbers | Type of Project (Construction, Reconstruction, 3R, 3P, SMART, HSIP, etc.) |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   | Construction/Reconstruction                                               |

Brief Project Description

IL Route 18 is an east-west highway facility in central Illinois that runs from Henry at IL Route 29 to IL Route 17 near Blackstone. IL 18 is functionally classified as as a Rural Minor Arterial through the limits of this project. Urban design policy will be utilized from the beginning of the project at 3rd Street to the horizontal curve PT at Sta. 3005+87.48 in the City of Henry. This project focuses on the portion of IL 18 that crosses the Illinois River between Marshall and Putnam counties. This bridge was constructed in 1934 and then rehabilitated in 1988. Due to the age and condition of the existing IL 18 bridge over the Illinois River at the city of Henry, the Illinois Department of Transportation District 4, in cooperation with the Federal Highway Administration is evaluating potential improvement options for the bridge.

The proposed work includes demolition of the existing bridge and construction of a new two-lane bridge north of the existing bridge. The proposed bridge and roadway will feature a new alignment and profile. This proposed roadway will consist of one 12 foot wide travel lane in each direction with 10 foot wide outside shoulders on both sides. Four to eight feet of the outside shoulder along IL 18 will be paved. The proposed bridge includes two 12' wide travel lanes and 8 foot wide shoulders. On the west side of the river in Henry, the proposed improvements will transition from the rural typical section to an urban roadway section with curb and gutter and sidewalks.

Front Street is a north-south local road which runs adjacent to the Illinois River. Currently intersecting with IL 18, this project will regrade Front Street to run under the proposed IL 18 bridge with no intersection.

EXCEPTION DOCUMENTATION

|                                                                                         |                                        |                                             |
|-----------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------|
| Level of Exception                                                                      | <input type="checkbox"/> Level 1       | <input checked="" type="checkbox"/> Level 2 |
| Design Element for Which an Exception is Requested                                      |                                        |                                             |
| 2.a. Horizontal curve minimum radii                                                     |                                        |                                             |
| Design Element Policy Value                                                             |                                        |                                             |
| Minimum radii for e=4.0% at 30 mph design speed = 250', per BDE 32-2.03 & Figure 32-2.F |                                        |                                             |
| Proposed Design Element Value                                                           |                                        |                                             |
| Horizontal curve radius = 60'                                                           |                                        |                                             |
| Location(s) of Exception                                                                |                                        |                                             |
| Duck Ranch Entrance - STA. 114+68.87 to STA. 115+55.66                                  |                                        |                                             |
| Crash History and Potential of Exception Location(s)                                    |                                        |                                             |
| No crash history                                                                        |                                        |                                             |
| Cost of Using Policy Value                                                              | Cost of Using Proposed Exception Value |                                             |
| \$100,000.00                                                                            | \$0.00                                 |                                             |
| Impacts Other Than Cost of Using Policy Value                                           |                                        |                                             |
| Additional ROW impacts to the surrounding community                                     |                                        |                                             |

Proposed Mitigation to Address Exception

This is the beginning of a low speed/low volume access road where it intersects IL-18. There is additional pavement area for vehicles to negotiate a portion of the curve from the radius return pavement area.

Geometric Compatibility with Adjacent Sections

Compatible with proposed IL-18 mainline

Potential Effects on Other Design Elements

Proposed alignment of Duck Ranch Entrance has a significant impact on its vertical profile due to its short overall length and geometric constraints with tying into IL-18 as it approaches the bridge.

Potential Impacts on Mobility or Traffic Operations

Limited impacts on traffic operations.

Summary of Justification for Exception

Restricted by geometric and ROW constraints, Duck Ranch Entrance is a low speed/low volume access road.

Coordination Meeting Date

Proposed By

Date

Jason Chae

3/3/25

**APPROVAL/DISAPPROVAL**

BDE Approval Date

FHWA Approval Date (Level One)



|           |                        |                 |                  |                |
|-----------|------------------------|-----------------|------------------|----------------|
| Key Route | Marked Route/Road Name | Contract Number | State Job Number | Section Number |
| FAP 653   |                        | 68F09           | P-94-007-20      | (104B-D)BR     |

|             |              |               |
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|                    |                  |               |                |
|--------------------|------------------|---------------|----------------|
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|                      |                  |                           |           |                    |                    |
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|                                                                     |                   |                                                                           |
|---------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------|
| On the NHS System?                                                  | Structure Numbers | Type of Project (Construction, Reconstruction, 3R, 3P, SMART, HSIP, etc.) |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                   | Construction/Reconstruction                                               |

Brief Project Description

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EXCEPTION DOCUMENTATION

|                                                        |                                        |                                  |
|--------------------------------------------------------|----------------------------------------|----------------------------------|
| Level of Exception                                     | <input type="checkbox"/> Level 1       | <input type="checkbox"/> Level 2 |
| Design Element for Which an Exception is Requested     |                                        |                                  |
| Curve Length                                           |                                        |                                  |
| Design Element Policy Value                            |                                        |                                  |
| BDE Figure 32-2.G min length of curve at 30mph = 100'. |                                        |                                  |
| Proposed Design Element Value                          |                                        |                                  |
| 87'                                                    |                                        |                                  |
| Location(s) of Exception                               |                                        |                                  |
| STA. 114+68.87 to STA. 115+55.66                       |                                        |                                  |
| Crash History and Potential of Exception Location(s)   |                                        |                                  |
| No crash history, limited potential for future crashes |                                        |                                  |
| Cost of Using Policy Value                             | Cost of Using Proposed Exception Value |                                  |
| \$50,000.00                                            | \$0.00                                 |                                  |

Impacts Other Than Cost of Using Policy Value

Additional right of way impacts to the community.

Proposed Mitigation to Address Exception

Duck Ranch Entrance is a low volume access road

Geometric Compatibility with Adjacent Sections

Compatible with local streets.

Potential Effects on Other Design Elements

None anticipated.

Potential Impacts on Mobility or Traffic Operations

None anticipated.

Summary of Justification for Exception

Restricted by geometric and ROW constraints, Duck Ranch Entrance is a low speed/low volume access road.

Coordination Meeting Date

Proposed By

Date

Jason Chae

3/3/25

**APPROVAL/DISAPPROVAL**

BDE Approval Date

FHWA Approval Date (Level One)



IL 18 Phase I Study  
IDOT Project No. P-94-007-20  
Design Exception Summary Table

| DE # | Exception Type                          | BDE Standard                                                                                                                                                                | Proposed Design                                   | Location of Exception                                                     | JUSTIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Mainline and Ramps;<br>Level Two 3.a    | Maximum Grade<br>3% on Level Terrain<br>per BDE Figure 47-2.M                                                                                                               | 4%                                                | STA. 3006+75.00<br>to STA.<br>3016+40.00                                  | A 3.0% profile grade into the City of Henry would cause the IL 18 and 2 <sup>nd</sup> Street intersection to be raised around 4' to 4.5'. This elevation change would result in more displacements and right of way takes. The intersection being raised by that amount would also create difficult driveway tie ins to the commercial and residential properties in the vicinity of the intersection. Lastly, a 3.0% grade would push the limits of the project to the 3 <sup>rd</sup> Street intersection which this project is attempting to avoid. The existing grade is 5% entering Henry from the east and a 4% grade provides an improvement. |
| 2    | Vertical Alignment; Level Two 1.b & 3.c | Stopping Sight Distance application at sag Vertical Curves. Minimum K = 136 per BDE Figure 33-4.E, Adjusted to K = 149 for 4% grades. Figure 33-4.F (60 mph design speed)   | K = 70                                            | Sag vertical curve on IL 18 STA. 3004+70.00 to STA. 3008+80.00            | The proposed K-value of 70 meets a design speed of 40 MPH at 4% grades. The proposed vertical profile is an improvement from the existing 5% grade on the bridge. The design speed transitions from 60 mph from east of the bridge down to 40 mph to the west as it enters the City of Henry. The intent is to provide a smooth speed transition from the rural to urban as we move from east to west. This vertical curve is within the limits of the City of Henry where the existing posted speed limit is 35 MPH, which would indicate an existing design speed of no more than 40 MPH.                                                          |
| 3    | Vertical Alignment; Level Two 1.b & 3.b | Stopping Sight Distance application at crest Vertical Curves. Minimum K = 151 per BDE Figure 33-4.A, Adjusted to K = 176 for 4% grades. Figure 33-4.B (60 mph design speed) | K = 84                                            | Crest vertical curve on proposed IL 18 STA. 3013+45.00 to STA. 3019+35.00 | The proposed K-value of 84 meets a design speed of 45 MPH at 4% grades. The existing bridge profile meets a 40 MPH design speed and increasing the design speed of the bridge to 45 MPH is a significant improvement and provides a smooth speed transition from rural roadway environment to the east and the urbanized roadway environment in the City of Henry to the west. In addition, the existing bridge is signed for 35 MPH which indicates a 40 MPH design speed.                                                                                                                                                                          |
| 4    | Horizontal Alignment; Level Two 2.c     | Superelevation transition lengths from normal crown to e% = 107' per Figure 32-3.E (60 mph design speed)                                                                    | 83'                                               | Horizontal curve at STA. 3006+98.70 to STA. 3008+78.16                    | These superelevation runoff lengths were designed with a design speed of 40 MPH which is consistent with the design criteria used for the superelevation and vertical profile design in this section. The current posted speed limit in the City of Henry is 35 MPH.                                                                                                                                                                                                                                                                                                                                                                                 |
| 5    | Horizontal Alignment; Level Two 2.i     | Superelevation transition length should be located off of bridges and bridge approach pavements, per BDE Section 32-3.07                                                    | Superelevated section is within the bridge limits | STA. 3008+44.50 to STA. 3009+64.77                                        | The horizontal curve is located on the bridge structure to reduce right of way take and potential displacement at the northwestern corner of 2 <sup>nd</sup> Street intersection. Shifting the curve off the bridge would also result in a greater skew at the proposed IL 18/2 <sup>nd</sup> Street intersection.                                                                                                                                                                                                                                                                                                                                   |
| 6    | Intersections; Level Two 5.a            | Accommodation of design vehicle WB-50 and S-BUS for north leg of 2nd Street BDE Figure 31-5.B                                                                               | S-BUS                                             | East, West, and South legs of 2nd Street intersection                     | Trucks are discouraged in the downtown area and bus movements are more appropriate for the local street network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 7    | Intersections; Level Two 5.m            | Does right turn radius accommodate design vehicle without encroachment? (WB-50) BDE Figure 31-5.B                                                                           | S-BUS                                             | South leg of 2nd Street intersection                                      | Trucks are discouraged in the downtown area and bus movements are more appropriate for the local street network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 8    | Horizontal Alignment; Level Two 2.a     | BDE 32-2.03 & Figure 32-2.F, minimum radii for e=4.0% at 30 mph design speed = 250'                                                                                         | 60'                                               | STA. 114+68.87 to STA. 115+55.66                                          | Restricted by geometric and ROW constraints, Duck Ranch Entrance is a low speed/low volume access road.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 9    | Horizontal Alignment BDE 32-2.05        | BDE 32-2.G minimum length of curve at 30 mph = 100'.                                                                                                                        | 87'                                               | STA. 114+68.87 to STA. 115+55.66                                          | Restricted by geometric and ROW constraints, Duck Ranch Entrance is a low speed/low volume access road.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |