

APPENDIX 6

Asbestos Determination Certification (BBS-2536)



Structure Identification

Structure Number(s) (000-0000):
062-0036

Asbestos Determination

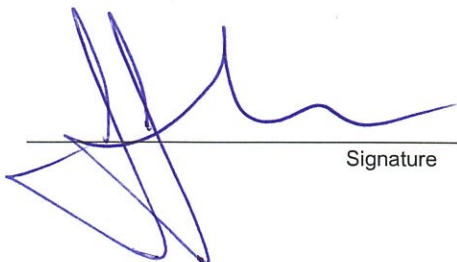
- ☐ 1. The identified structures are included in the list that the USEPA exempted from the asbestos notification requirements in its letter of October 19, 2001.
- ☒ 2. The identified structures were unconfirmed for asbestos involvement as of October 19, 2001 but have subsequently been determined, on the basis of information available in the District office, not to involve asbestos in a bituminous bridge deck wearing surface or waterproofing membrane.
- ☐ 3. The identified structures were unconfirmed for asbestos involvement as of October 19, 2002 but have subsequently been determined, through testing, not to involve asbestos in a bituminous bridge deck wearing surface or waterproofing membrane. The test results were obtained in conformance with the approved "Sampling and Testing Procedures for Asbestos in Bituminous Bridge Deck Wearing Surface or Waterproofing Membrane" (Attachment 2 to BDE Procedure Memorandum 26-02).
- ☐ 4. The identified structures have been determined to involve asbestos in a bituminous bridge deck wearing surface and/or waterproofing membrane. The District will ensure compliance with the asbestos notification requirements for work on these structures that could disturb the asbestos-containing materials. The District also will ensure that the special provision for "Asbestos Waterproofing Membrane and Asbestos Bituminous Concrete Surface Removal (BDE)" is included in any contract for demolition of these structures or for other work involving removal of the existing bituminous bridge deck wearing surface and/or waterproofing membrane.
- ☐ 5. The identified structures had been determined to involve asbestos in a bituminous bridge deck wearing surface and/or waterproofing membrane. Removal operations have been completed for all asbestos bituminous concrete surface and asbestos waterproofing membrane on the identified structures.

Certification

Name: Josh Jochims Position Title: CE ✓

Office Address: 401 MAIN ST.

PEORIA, IL Phone Number: (309) 671 3333


Signature

6/28/2023
Date

APPENDIX 7

Bike/Ped Warrant Analysis

IL18 RIVER BRIDGE PROJECT PEDESTRIAN AND BICYCLE WARRANT MEMO

1.0 Introduction

As part of the IL 18 Illinois River Bridge Project, an assessment of bicycle and pedestrian needs through the project area was conducted to determine what bicycle and pedestrian accommodations are warranted. This assessment was conducted in accordance with Chapter 17 of the IDOT Bureau of Design and Environment (BDE) Manual.

2.0 Pedestrian Accommodations

Through the project area, sidewalks are present along both sides of IL 18 between 3rd Street and Front Street. East of Front Street, there are no sidewalks along IL 18 through the rest of the project area. Under the Preferred Alternative, sidewalks will be provided along both sides of IL 18, west of 2nd Street, where IL 18 rejoins the existing street network. East of 2nd Street, IL 18 will be shifted to the north and elevated above existing ground. The existing sidewalk on the south side of IL 18 will be reconstructed at its present location. On the north side of IL 18, all the properties between 2nd Street and Front Street will be acquired for the proposed improvements, and no sidewalk will be provided through this area. Additionally, new sidewalk will be provided along the east side of Front Street from a point approximately 100 feet south of IL 18 and extending to the north and under the proposed IL 18 to Cromwell Drive.

IL 18 through the project area is classified as a rural roadway. According to the BDE Manual, pedestrian accommodations do not have to be considered in a rural context. However, for the project area east of Front Street, the Pedestrian Warrants – Needs Assessment was completed since there are existing sidewalks at the west end of the project area, and there has been interest from the Community Advisory Group regarding pedestrian accommodations.

Based on the analysis, none of the pedestrian warrants are met. Therefore, no pedestrian accommodations will be provided along IL 18, east of Front Street. Table 1 summarizes this assessment.

TABLE 1 – PEDESTRIAN WARRANTS – NEEDS ASSESSMENT

Warrant	Is the Warrant Met?
There is current evidence of frequent pedestrian activity.	No. There is no indication that there is frequent pedestrian activity along IL 18 across the bridge or east of the river. There are no sidewalks present along IL 18 through the project area, east of Front Street, and the total roadway width across the bridge is 22.6 feet. Both of which would deter pedestrian activity. However, there are no pedestrian travel generators on the east side of the river.
There is a history of pedestrian-related crashes.	No. Crashes in the project area between 2016 and 2020 were reviewed. Through this period, there was one pedestrian crash. This incident occurred along IL 18 near 2 nd Street and Front Street, where a pedestrian crossed the street and ran into a car.
The roadway improvement will create a safety impediment to existing or anticipated pedestrian travel (e.g., adding lanes so that the improvement itself acts as a barrier to pedestrian traffic).	No. The proposed improvements will not create a safety impediment along IL 18. There is little to no pedestrian travel along IL 18, east of Front Street.
There is urban or suburban development that would attract pedestrian travel along or immediately adjacent to the route to be improved.	No. IL 18 is classified as a rural roadway. There is no urban or suburban development along IL 18 east of the river.
Pedestrian-attracting development is expected along the route within five years of completion, either as documented in a local plan or anticipated as a factor of similar development history.	No. there is no known planned development along the east side of the river that would generate pedestrian traffic.
The roadway provides access to a park, recreation area or other significant destination, or across a natural or man-made barrier, within contexts other than rural.	No. IL 18 crosses the Illinois River which is a natural barrier. However, as noted above the project is considered to be in a rural setting, and therefore, this warrant is not met.

3.0 Bicycle Accommodations

To assess the need for bicycle accommodations on the project, a Bicycle Travel Assessment (BDE 1702) was completed (Attachment A).

As shown on the form, a number of bicycle travel generators (residential areas, park/recreation areas, churches, schools, library, downtown shopping district, employment centers, government offices, local businesses, and industrial plants) are present in the project vicinity. However, all of these generators are located on the west side of the river within the City of Henry.

Based on the results of the Bicycle Travel Assessment, the project meets Bicycle Travel Warrant 4: Does the project provide access across a river, railroad, highway, corridor, or other natural or man-made barrier? The IL 18 River Bridge provides access across the Illinois River.

According to the Bicycle Facility Selection Table (BDE Manual Figure 17-2.A), a four-foot paved shoulder should be provided as the bicycle accommodation for this project (Attachment D). However, to better accommodate wide farm equipment, to improve Bicycle Level of Service, to provide refuge for stalled vehicles on a two-lane long bridge, and to provide greater flexibility for traffic control for future maintenance activities, an eight-foot shoulder is recommended. The projected Bicycle Level of Service ranges from A (with an eight-foot shoulder) to D (with a four-foot shoulder). The following assumptions were made on form BDE 1703 (Attachment E) to determine the Bicycle Level of Service:

- Pavement Rating (CRS): 5
- Posted speed limit: 45 mph on the bridge
- Projected Average Daily Traffic: 2,900 (The 2019 ADT on the IL 18 Illinois River Bridge is 2,200. A 1.0% annual growth rate was used to increase the existing traffic volume to a 2045 design year.)

The eight-foot shoulder will be provided along IL 18 from 2nd Street to the eastern project limits. West of 2nd Street, the pavement will be 30 feet wide and striped for 12-foot travel lanes in each direction which will leave three feet on the outside for bicycle travel.

ATTACHMENT A

Bicycle Travel Assessment (BDE 1702)



Bicycle Travel Assessment

E-mail

Reset Form



To	From	Date
		06/10/24

Route	Section Number	County
FAP 653 (IL 18)	(104B-D)BR	Marshall

Contract Number	Job Number	TIP Number
68F09	P-94-007-20/D-94-041-19	

Project Limits

The intersection of IL18/3rd Street in Henry on the west and the intersection of IL 18/IL 26 on the east.

Project Description

Due to the age and condition of the bridge (constructed in 1934), potential improvement options for IL 18 and the bridge over the Illinois River are being evaluated.

Region **3** / District **4** has assessed and coordinated bicycle travel needs for the referenced project, which is ☒ / is not ☐ in or within one mile of a municipality with a population over 1,000 people.

Checklist for bicycle travel generators in project vicinity

Generator	Yes	No	Generator	Yes	No
Residential Areas	☒	☐	Shopping Center	☒	☐
Parks	☒	☐	Hospitals	☐	☒
Recreation Areas	☒	☐	Employment Centers	☒	☐
Churches	☒	☐	Government Offices	☒	☐
Schools	☒	☐	Local Businesses	☒	☐
Libraries	☒	☐	Industrial Plants	☒	☐
Existing Bicycle Trails	☐	☒	Public Transportation Facilities	☐	☒
Planned Bicycle Trails	☐	☒	Other	☐	☐

Checklist for organizations and public coordination

Organization	Yes	No	Organization	Yes	No
Illinois Department of Natural Resources	☐	☒	Ride Illinois	☐	☒
Local Municipalities	☒	☐	Local Bicycle Clubs, Advocacy Groups	☒	☐
Park or Forest Preserve Districts	☐	☒	Active Transportation Alliance (District 1 only)	☐	☒
Metropolitan Planning Organization (if applicable)	☐	☒			
Sub-Regional Planning Council (as appropriate)	☐	☒	Other	☐	☐

Summary of comments received

A local bicycle group, Illinois Valley Wheelm'n attended a stakeholder meeting. They requested that the existing bridge be left in place for bikes. If that cannot occur, then accommodations should be made on the new bridge for bikes. They stated that if the bridge is rehabilitated or replaced, the approaches need to be addressed as well. Nine to ten-foot wide lanes should be used for the bikes so that if the riders meet each other on the path, they have room to pass. Also, they stated that a barrier, like a concrete barrier wall, needs to be between the bikes and the cars. They stated it is important to have a dedicated lane for cycling. Scuppers and drains on the bridges are a problem. Their preference is to have at a minimum six-foot to nine-foot shoulders with a barrier. If there is no barrier, then eight-foot to nine-foot shoulders would be adequate.

Bicycle travel warrants:

Warrant 1: Is the highway or street designated as a bikeway or recommended bike route in a regionally or locally adopted bike plan or shown in a regionally or locally adopted map as a recommended bike route? ☐ Yes ☒ No

Describe the designation

Warrant 2: Will the projected two-way bicycle traffic volume approximate 25 ADT or more during the peak three months of the bicycling season five years after completion of the project? ☐ Yes ☒ No

Estimating method

US Census Data: Table B08301 (Means of transportation to work) 2019 data for zip codes 61336 and 61537 (see attached). Projected bicycle ADT is 0.

Warrant 3: Does the route provide access to a park, recreational area, school, or other significant destination? ☐ Yes ☒ No

Destinations

Warrant 4: Does the project provide access across a river, railroad, highway, corridor, or other natural or man-made barrier?

☒ Yes ☐ No

Barriers

Illinois River

Warrant 5: Will the highway project negatively affect the recreational or transportation utility or an independent bikeway or trail? Highway projects will negatively affect at-grade paths or trails when they are severed, when the projected roadway traffic volumes increase to a level that prohibits safe crossing at-grade, or where the widening of the roadway prohibits sufficient time for safe crossing.

☐ Yes ☒ No

Bikeway(s) affected

If any of the five warrants above are met, the Department shall provide on-road or off-road accommodations for bicycle travel. Roadway improvement corridors should also be assessed with respect to adjacent/contiguous routes

Warrant 4 is met.

The following bicycle network considerations apply

The IL 18 River Bridge is on the Northern Tier bike route. This bike route crosses the northern half of the US starting in Washington and ending in Maine. The route is divided into 11 sections, with maps for each section of the route available online (www.adventurecycling.org). Section 8 of the bike route passes through Henry, utilizing the IL 18 Bridge over the Illinois River. The route can be ridden from late spring to late fall.

Accommodation type(s) identified as in the Bicycle Facility Selection Table

Four-foot paved shoulder

Accommodations proposed

Eight-foot paved shoulder to provide better Bicycle LOS, to accommodate wide farm equipment, provide refuge for stalled vehicles on a two-lane long bridge, and provide greater flexibility for traffic control for future maintenance activities.

Key connections to be provided with this project

The bicycle accommodation will provide access across the Illinois River.

Reasons for lesser accommodations (highest/best or none)

Bicycle LOS information (for on-road non-separated facilities only; complete [BDE 1703](#))

Four-foot paved shoulder, LOS=D; Six-foot paved shoulder, LOS=C; Eight-foot paved shoulder, LOS=A.

Local coordination has been completed with

Name of the Local Agency

The local agency (☒ will / ☐ will not) accept the maintenance of the facility in accordance with requirements outlined in Chapter 5 of the BDE Manual. The local agency (☐ has / ☒ has not) passed a resolution indicating the accommodation does not fit with their development plan. Include a copy of the resolution, when applicable.

Additional justification of accommodation decisions, if applicable

☒ By checking this box and typing my name below, I verify that I have reviewed and concur with the information provided.

Name

Niel Slawinski

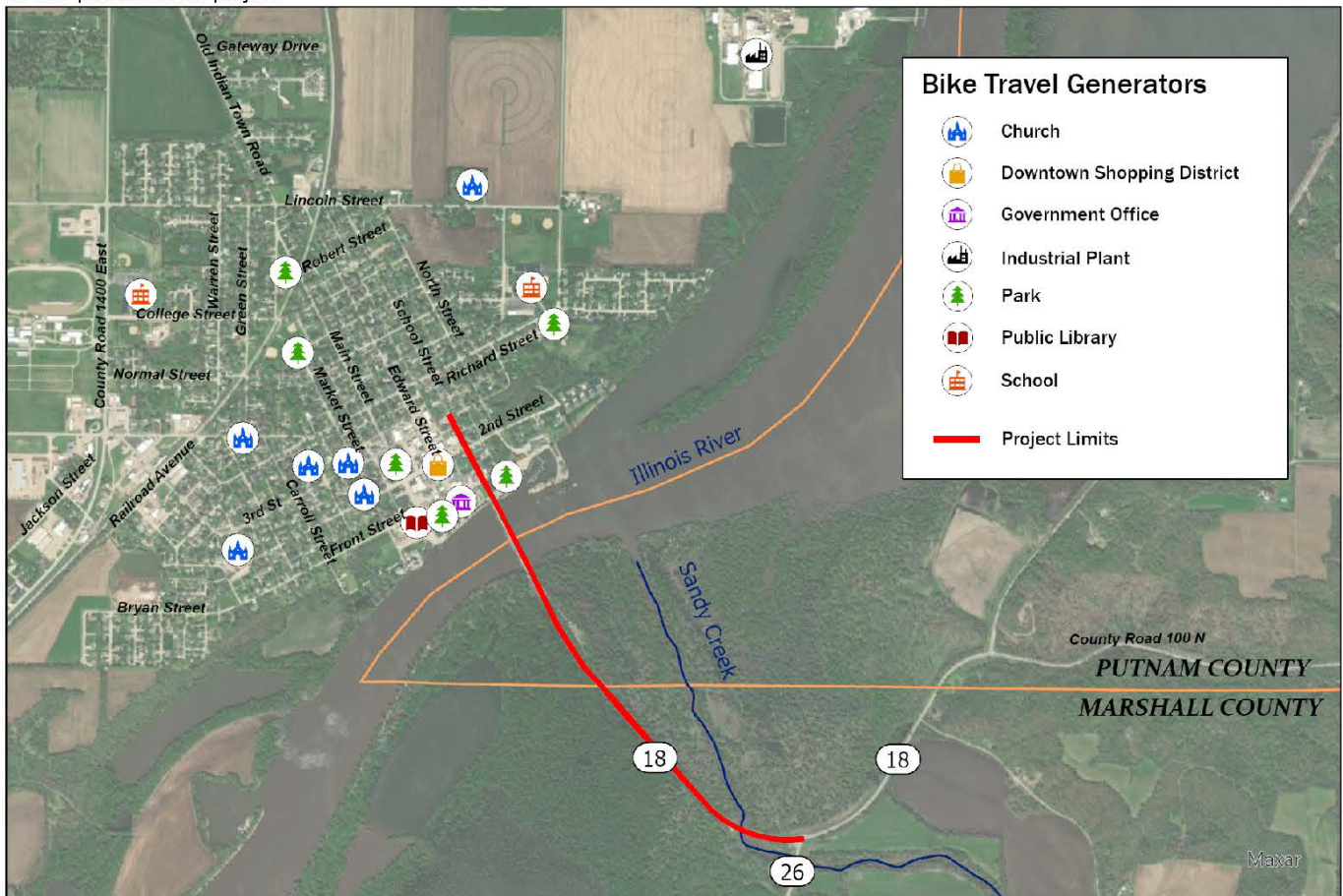
Date

6/11/2024

CC: Bicycle and Pedestrian/ADA Policy Engineer

Attachments

Insert an image below or attach a map to the form illustrating generators and travel paths. Show and describe where bicyclists would cross or ride parallel to the project.



ATTACHMENT B

US Census Data

Table B08301 – Means of Transportation to Work

American Community Survey

B08301

| MEANS OF TRANSPORTATION TO WORK

Universe: Workers 16 years and over

Notes

2 Geos

1 Year

Topics

Surveys

123

Hide

Transpose

Margin of Error

Restore

Excel

Download

Print

Map

	ZCTA5 61336		ZCTA5 61537	
Label	Estimate	Margin of Error	Estimate	Margin of Error
▼ Total:	233	±63	1,217	±115
▼ Car, truck, or van:	227	±63	1,118	±115
Drove alone	227	±63	989	±109
▼ Carpooled:	0	±11	129	±58
In 2-person carpool	0	±11	94	±51
In 3-person carpool	0	±11	30	±24
In 4-person carpool	0	±11	0	±11
In 5- or 6-person carpool	0	±11	0	±11
In 7-or-more-person carpool	0	±11	5	±7
▼ Public transportation (excluding taxicab):	0	±11	0	±11
Bus	0	±11	0	±11
Subway or elevated rail	0	±11	0	±11
Long-distance train or commuter rail	0	±11	0	±11
Light rail, streetcar or trolley (carro público in Puerto Rico)	0	±11	0	±11
Ferryboat	0	±11	0	±11
Taxicab	0	±11	0	±11
Motorcycle	0	±11	9	±13
Bicycle	0	±11	0	±11

ATTACHMENT C

Projected Bicycle Average Daily Traffic

Projected Bicycle Average Daily Traffic

	Zip Code 61537 (Henry)	Zip Code 61336 (East side)	Zip Codes 61537 / 61336
			COMBINED
Projected 2045 ADT	2900	2900	2900
Total Commuters	1217	233	1450
Bicycle Commuters	0	0	0
Bicycle Travel Factor*			0.000000
Projected Bicycle ADT			0
*Bicycle travel factor = Bicycle Commuters/Total Commuters			

ATTACHMENT D

Bicycle Facility Selection Table (BDE Manual Figure 17-2.A)

Roadway Characteristics [#]	Type and Width of Bicycle Accommodation ^{1, 2}			
	Paved Shoulder	Wider Outside Lane	Bicycle Lane including Buffers ³	One-way Separated Bicycle Lane ^{4, 5}
Rural Roadway Two-Lane, ≤ 40 mph				
Design Year ADT < 2,900	3 ft (0.9 m) [#]	14 ft (4.2 m) ⁷		
Design Year ADT 2,900 - 8,000	4 ft (1.2 m)			
Design Year ADT > 8,000	5 ft (1.8 m)			
Rural Roadway Two-Lane, ≥ 45 mph				
Design Year ADT < 2,750	3 ft (0.9 m) [#]			
Design Year ADT 2,750 - 5,000	4 ft (1.2 m)			
Design Year ADT 5,001 - 10,000	5 ft (1.5 m)			
Design Year ADT > 10,000	6 ft (1.8 m)			
Rural Roadway Multilane, All Speeds				
Design Year ADT < 12,000	6 ft (1.8 m)			
Design Year ADT ≥ 12,000	8 ft (2.4 m)			
Urban Roadway Two-Lane, <30 mph				
Design Year ADT < 2,900		14 ft (4.3 m) ⁷	5 ft (1.5 m)	
Design Year ADT 2,900 - 4,000			5 ft (1.5 m)	
Design Year ADT > 4,000			6 ft (1.8 m)	
Urban Roadway Two-Lane, 30-35 mph				
Design Year ADT < 2,900			5 ft (1.5 m)	
Design Year ADT 2,900 - 4,000			6 ft (1.8 m)	7 ft (2.1 m)
Design Year ADT 4,001 - 9,500			7 ft (2.1 m)	7 ft (2.1 m)
Design Year ADT > 9,500			8 ft (2.4 m)	7 ft (2.1 m)
Urban Roadway Two-Lane, 40 mph				
Design Year ADT < 3,500			6 ft (1.8 m)	7 ft (2.1 m)
Design Year ADT 3,500 - 7,700			7 ft (2.1 m)	7 ft (2.1 m)
Design Year ADT > 7,700			8 ft (2.4 m)	7 ft (2.1 m)
Suburban Roadway Two-Lane, 40-45 mph				
Design Year ADT < 6,500	6 ft (1.8 m)			7 ft (2.1 m)
Design Year ADT ≥ 6,500	8 ft (2.4 m)			7 ft (2.1 m)
Urban Roadway Four-Lane, <30 mph				
Design Year ADT < 5,800		14 ft (4.3 m) ⁷	5 ft (1.5 m)	
Design Year ADT 5,800 - 8,000			5 ft (1.5 m)	
Design Year ADT > 8,000			6 ft (1.8 m)	
Urban Roadway Four-Lane, 30-35 mph				
Design Year ADT < 5,800			5 ft (1.5 m)	
Design Year ADT 5,801 - 8,000			6 ft (1.8 m)	7 ft (2.1 m)
Design Year ADT 8,001 - 19,000			7 ft (2.1 m)	7 ft (2.1 m)
Design Year ADT > 19,000			8 ft (2.4 m)	7 ft (2.1 m)
Urban Roadway Four-Lane, 40 mph				
Design Year ADT < 7,000			6 ft (1.8 m)	7 ft (2.1 m)
Design Year ADT 7,000 - 15,400			7 ft (2.1 m)	7 ft (2.1 m)
Design Year ADT > 15,400			8 ft (2.4 m)	7 ft (2.1 m)
Suburban Roadway Four-Lane, 40-45 mph				
Design Year ADT < 13,000	6 ft (1.8 m)			7 ft (2.1 m)
Design Year ADT ≥ 13,000	8 ft (2.4 m)			7 ft (2.1 m)

BICYCLE FACILITY SELECTION TABLE

FIGURE 17-2.A (1 of 2)

Notes:

- 1/ A shared use path adjacent to the roadway (i.e., a side path) is an option that fulfills accommodation requirements in most situations. A side path can be selected whenever it is locally supported and the locals agree to maintain it. Two-way side paths shall be a minimum of 10 ft (3.0 m) wide.
- 2/ All widths shown are considered minimums for typical design situations. Wider facilities can be provided. Project-level assessments of highest-and-best facilities may also affect widths provided.
- 3/ Bicycle lane widths are measured from the outside lane line to the face of curb or edge of parking lane. Bicycle lane widths of 5 to 6 ft *may* be buffered; widths greater than 6 ft *must* be buffered. Buffer striping is included in the bicycle lane widths shown.
- 4/ One-way separated bicycle lane width shown is the minimum clear width between vertical features and allows bicycle passing. Additional width is needed for vertical elements such as raised curbs, tubular markers with striped buffer, or parking lanes. Each jurisdiction may identify larger minimum clear width restrictions based on maintenance requirements.
- 5/ As an alternate to a one-way SBL, a two-way SBL of a minimum 8 ft (2.4 m) clear width can be provided on one side of the roadway. Additional width is needed for vertical elements.
- 6/ This value assumes no rumble strips are present. If rumble strips will be installed, utilize Standard 642006 and increase the paved shoulder width to 4 ft (1.2 m) to maintain the required 3 ft (0.9 m) clear width for bicycles.
- 7/ Truck (Single Unit + Multi-Unit) volumes should be less than 3% of ADT in order to select a Wider Outside Lane accommodation. Refer to Figure 17-2.C for measurement of the Wider Outside Lane.
- 8/ Refer to Section 17-2.03. Determine Project Context in the Scoping Phase. Speeds listed refer to posted speed limits and are assumed consistent with the 85th percentile speed.

BICYCLE FACILITY SELECTION TABLE

Figure 17-2.A (2 of 2)

ATTACHMENT E

Bicycle Level of Service (BDE 1703)

Four-Foot Shoulder Accommodation

SHOULDER ACCOMMODATION

2016 Highway Capacity Manual (6th Ed)
Volume 2 - Chapter 15

CONTRACT	68F09
ROUTE	FAP 653 (IL 18)
SECTION	(104B-D)BR
COUNTY	Marshall/Putnam
ADT	2,900
DATE	1/31/2022

USER INPUT		
Outside Lane Width (ft)	W_{OL}	12
Paved Shoulder Width (ft)	W_s	4
Hourly directional vehicle volume = 55% of future DHV; DHV = 10% of ADT	V	160
Number of thru lanes each direction	N	1
Percent Trucks (SU + MU) (decimal)	T	0.05
Posted Speed Limit	S_p	45
Percent with on-highway parking	%OHP	0
Pavement Rating (CRS)	P	5
PHF = Peak Hour Factor Use 0.9 for rural roadways Use 0.92 for urban roadways	PHF	0.9

2900 ADT

FHWA Rating 2.75

CALCULATE DIRECTIONAL FLOW RATE IN THE OUTSIDE LANE	V_{OL}	177.78
---	----------	--------

CALCULATE EFFECTIVE WIDTH		
Effective width as a function of traffic volume	W_v	19.2
Find Effective Width	W_e	23.2

CALCULATE SPEED FACTOR		
Effective speed factor	S_t	4.42

BICYCLE LEVEL OF SERVICE (BLOS)	Score	3.67
	Grade	D

BLOS Score	Grade
<= 1.5	A
> 1.5 - 2.5	B
> 2.5 - 3.5	C
> 3.5 - 4.5	D
> 4.5 - 5.5	E
> 5.5	F

Formula Cells - no input by user

Printed 1/31/2022

BDE 1703 (10/06/21)

Six-Foot Shoulder Accommodation

SHOULDER ACCOMMODATION

2016 Highway Capacity Manual (6th Ed)
Volume 2 - Chapter 15

CONTRACT	68F09
ROUTE	FAP 653 (IL 18)
SECTION	(104B-D)BR
COUNTY	Marshall/Putnam
ADT	2,900
DATE	1/31/2022

USER INPUT		
Outside Lane Width (ft)	W_{OL}	12
Paved Shoulder Width (ft)	W_s	6
Hourly directional vehicle volume = 55% of future DHV; DHV = 10% of ADT	V	160
Number of thru lanes each direction	N	1
Percent Trucks (SU + MU) (decimal)	T	0.05
Posted Speed Limit	S_p	45
Percent with on-highway parking	%OHP	0
Pavement Rating (CRS)	P	5
PHF = Peak Hour Factor Use 0.9 for rural roadways Use 0.92 for urban roadways	PHF	0.9

2900 ADT

FHWA Rating 2.75

CALCULATE DIRECTIONAL FLOW RATE IN THE OUTSIDE LANE	V_{OL}	177.78
--	----------	--------

CALCULATE EFFECTIVE WIDTH		
Effective width as a function of traffic volume	W_v	21.6
Find Effective Width	W_e	27.6

CALCULATE SPEED FACTOR		
Effective speed factor	S_t	4.42

BICYCLE LEVEL OF SERVICE (BLOS)	Score	2.55
	Grade	C

BLOS Score	Grade
<= 1.5	A
> 1.5 - 2.5	B
> 2.5 - 3.5	C
> 3.5 - 4.5	D
> 4.5 - 5.5	E
> 5.5	F

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BDE 1703 (10/06/21)

Eight-Foot Shoulder Accommodation

SHOULDER ACCOMMODATION

2016 Highway Capacity Manual (6th Ed)
Volume 2 - Chapter 15

CONTRACT	68F09
ROUTE	FAP 653 (IL 18)
SECTION	(104B-D)BR
COUNTY	Marshall/Putnam
ADT	2,900
DATE	1/31/2022

USER INPUT		
Outside Lane Width (ft)	W_{OL}	12
Paved Shoulder Width (ft)	W_s	8
Hourly directional vehicle volume = 55% of future DHV; DHV = 10% of ADT	V	160
Number of thru lanes each direction	N	1
Percent Trucks (SU + MU) (decimal)	T	0.05
Posted Speed Limit	S_p	45
Percent with on-highway parking	%OHP	0
Pavement Rating (CRS)	P	5
PHF = Peak Hour Factor Use 0.9 for rural roadways Use 0.92 for urban roadways	PHF	0.9

2900 ADT

FHWA Rating 2.75

CALCULATE DIRECTIONAL FLOW RATE IN THE OUTSIDE LANE	V_{OL}	177.78
--	----------	--------

CALCULATE EFFECTIVE WIDTH		
Effective width as a function of traffic volume	W_v	24
Find Effective Width	W_e	32

CALCULATE SPEED FACTOR		
Effective speed factor	S_t	4.42

BICYCLE LEVEL OF SERVICE (BLOS)	Score	1.24
	Grade	A

BLOS Score	Grade
<= 1.5	A
> 1.5 - 2.5	B
> 2.5 - 3.5	C
> 3.5 - 4.5	D
> 4.5 - 5.5	E
> 5.5	F

Formula Cells - no input by user

Printed 1/31/2022

BDE 1703 (10/06/21)

APPENDIX 8

Bridge Type Screening Memo



**IL-18 over Illinois River Bridge
Replacement
Bridge Type Evaluation**

**Henry, Illinois, Marshall and Putnam
Counties**

August 2022

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Executive Summary

The Illinois Department of Transportation is evaluating bridge replacement alternatives for the existing IL-18 bridge over the Illinois River at Henry. The existing bridge is multiple simply supported truss spans with steel stringer approaches. A new bridge would feature two wider lanes and shoulders, with slightly increased horizontal and vertical clearance requirements on the main navigation span. Modern design policy favors shallower approach grades than the 5% found on the existing bridge. Alignment studies have identified two alignments at the immediate upstream (Corridor #3) and downstream (Corridor #5) as candidates for the preferred alternate. The present study investigates feasible structure types for the main navigation span. The pros and cons of each type are discussed and scored based on various criteria, including cost, maintenance, performance, and public input.

Per the US Coast Guard, a horizontal clearance of 360' is required on the main span. An increase of 2.5' over the existing vertical clearance is also required. These increases, coupled with policy preference for flatter approach slopes, raise the matter of structure depth and its effect on roadway profile as potential discriminators among bridge type. Structural depth will also affect the total length of the bridge and the amount of embankment walls in the town, which not only affect the cost of the bridge, but also impact the community. The conventional priorities of first cost, maintainability, and redundancy are also discussed. Final scores and a ranking are based on a weighted sum of all screening criteria. The results indicate that a haunched continuous plate girder bridge is the best bridge type for the main river spans of the IL-18 over Illinois River bridge at Henry.

Introduction

Illinois DOT is performing Phase I engineering for replacement of the existing IL-18 bridge over the Illinois River at Henry, IL, Marshall and Putnam counties. The basis for replacement is discussed in the Bridge Condition Report and the Alternatives Carried Forward memoranda. The new candidate alignments that remain under consideration are “Corridor 3” and “Corridor 5”, see Figure 1. These lie parallel to existing, offset 50’ to 100’ upstream or downstream, respectively. On the east (south), the new bridge will touch down and tie back into the existing IL 18 alignment at some convenient location west of the Sandy Creek bridge and IL-26 intersection. On the west (north), the alignment will touch down and tie back into School Street (existing IL-18) with as little disruption to property and street grid as is reasonably possible.

This memorandum evaluates feasible structure types and establishes a recommended bridge type.

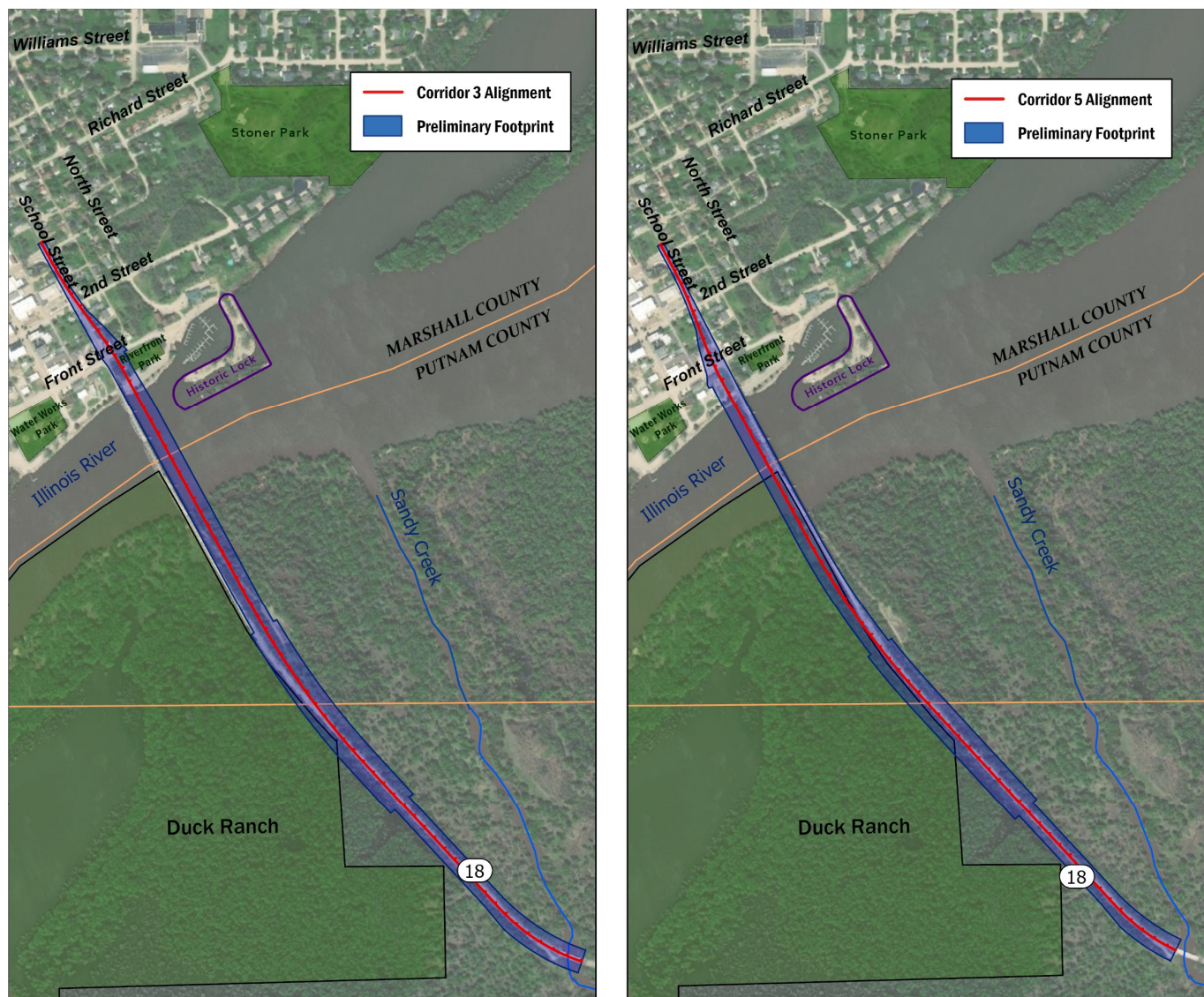


FIGURE 1: CORRIDOR 3 (IMMEDIATELY UPSTREAM OF EXISTING) AND CORRIDOR 5 (IMMEDIATELY DOWNSTREAM OF EXISTING).

Existing Bridge

The existing bridge was constructed in 1934 and is 88 years old in 2022. It carries two 11'-4" lanes with no shoulders. The main river bridge consists of six (6) simply supported through-truss structures, with a main span of 364' above a navigation channel, see Figure 2. It provides 59.2 ft vertical clearance above pool stage (USACE, 2013). To provide this vertical clearance, the roadway has a 5% grade between the main span and the intersection with Front Street in Henry.

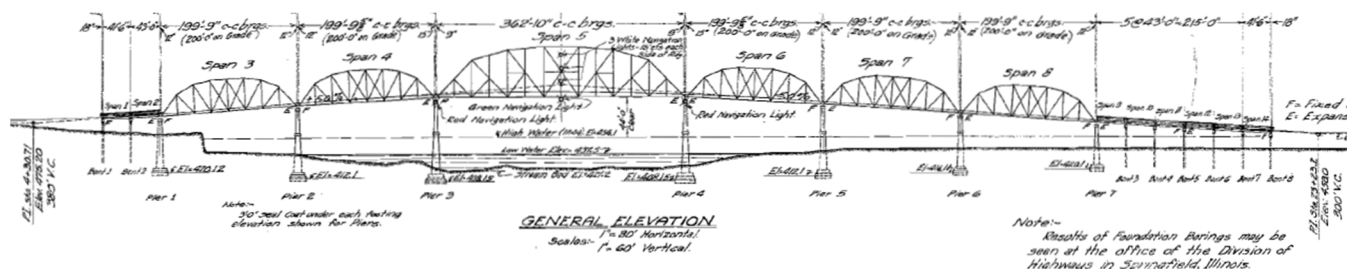


FIGURE 2: EXISTING BRIDGE

Selection Criteria

Geometric Requirements

SPAN LENGTH AND VERTICAL CLEARANCE

In the case of a navigable waterway such as the Illinois River at Henry, the US Coast Guard is charged with setting and enforcing the accommodations which bridge must meet for the sake of commercial navigation. The clearances on the existing Henry bridge are 350 ft horizontally, and 59.2 ft vertically (referenced to normal pool). For the new structure, for alignments close in and parallel to the existing, the USCG has established requirements of 358 ft horizontally, and 61.7 ft vertically (USCG, 2022). The horizontal span in particular conditions the type of bridge which is normally found economical. The depth of some structures increases as horizontal span increases. The depth of other structure types can be insensitive to increases in span length.

ROADWAY ELEMENTS

The needs of vehicular traffic, including agricultural and truck traffic, dictate desirable width of the bridge, as well as the roadway grades leading up to and down from the bridge. The face-to-face width between bridge rails has been established as 40 ft, providing for one 12 ft lane and one 8 ft shoulder in each direction. Some bridge types are sensitive to this width dimension, with structure depth increasing as width increases. Others are not.

Modern design policy for a state route such as IL-18 in this mixed rural/urban setting targets a 3% grade on the roadway. Flattening the roadway grades from the existing 5% to 3%, while trying to increase the vertical clearance for navigation, while trying to maintain connection to the Henry street grid, are conflicting objectives. The desire to provide a balanced design which minimizes community impacts while providing safe and efficient operations on IL 18 is an aspect of project development. How structure type affects the depth of structure below the roadway will impact the roadway grades. It also determines how far the bridge must run out before returning to grade (total bridge length).

ALIGNMENT

The location for the new bridge, the alignment on which the new IL-18 will be constructed, has been the subject of study and community input comprising the Phase I Engineering process. The alignments which best meet the project's purpose and need and the priorities of the project stakeholders have been established to be parallel and just offset from the existing bridge, either upstream or downstream. The choice between either an upstream or downstream option does

not affect which structure type would be preferred; neither site is distinguished with regard to favorable or unfavorable bridge types.

Cost

The state must consider initial cost, to construct the bridge, and ongoing life-cycle cost to maintain the bridge, in respect of their mission "... to provide safe, cost-effective transportation for Illinois in ways that enhance quality of life, promote economic prosperity, and demonstrate respect for our environment."

Constructability

Simplicity and familiarity of construction type lower construction risk, construction time, and construction cost. Simpler, more familiar types of construction are preferred over types whose erection is complex, requires novel methods and equipment, or requires technical sophistication.

Maintainability

Bridges must sustain many decades of repeated cycles of heavy loading, in full exposure to the elements of weather and chemical attack associated with snow and ice removal. Bridges must be inspected every 2 years and defects promptly repaired. Bridge types which are more fault tolerant are preferred. So-called fracture critical bridge types, in which loss of a single member can reasonably precipitate complete loss of the bridge, are not preferred.

Coatings on steel protected from direct exposure to the elements have a life of 20 to 25 years, before re-coating is required. Coatings with more direct exposure to moisture, weather, and traffic require more frequent maintenance. Bridge types which protect the primary structural elements are preferred.

Reinforced concrete bridge decks (driving surface) are common to virtually all bridge types. Decks typically experience a major structural repair cycle between 20 and 30 years of life and are typically completely removed and replaced between 40 and 50 years of life. The ease with which deck replacement can be carried out is a factor in determining preference for one bridge type over another.

Visual Impact

Aesthetic quality, or visual impact, is not typically a factor that is considered in selecting a bridge type. Where very long spans are required (the Golden Gate in San Francisco Bay, the East and Hudson Rivers in New York) or where topographic constraints are severe (Hoover Dam in Nevada), visually arresting and so-called iconic structures do arise. Modern crossings of inland waterways around the Midwest do not typically have the kinds of span length or terrain accommodation that leads to such structures.

Economical, constructible bridge types have also changed in the generations since the last generation of Illinois River bridges was constructed. In the 1930's the availability of material, and the ability to fabricate, transport, and erect it, required the use of truss bridge technology to achieve spans of 250' to 350' as in Henry. Out of the river, where conditions allowed shorter spans, the original designers reverted to girder type bridges.

Where investment in aesthetic enhancement is determined consistent with the mission of providing a safe, cost-effective transportation system that respects the environment, such enhancements normally take the form of landscaping, grading, and ornamentation of large surfaces through texture, color, and lighting. Selection of structure type is a primarily function of engineering and cost requirements. Due to community interest, visual aesthetics were considered as a possible tie-breaker should multiple bridge types be nearly equal after considering other categories.

Potential Bridge Types

All roadway bridges may fall into one of the four basic types: girder, truss, arch and cable supported. Some bridge types and their sub-variations were quickly screened and excluded from further comparison. These are:

- Simply supported girder bridge: extremely inefficient and impractical for a span range of 400 ft.
- Deck arch bridge: impractical due to the occupation of the navigational clearance by the arch.
- Cable supported bridges, including cable-stayed bridge and suspension bridge: They are the most complex types of bridges, requiring specialized erecting and prestressing equipment in construction, and specialized inspection devices in service. Cable supported structures behave quite differently from other bridge types and are not well suited to span lengths in the low hundreds of feet. The expense and complexity of cable supported bridges are normally only accepted as spans approach or exceed 1000 ft, where the challenges of girder, arch or truss types exceed those of cable supported types.

As evidenced by recent truss replacements at Morris, Seneca, Utica, Spring Valley, Beardstown (in design) and Florence (in design), girder bridge technology has repeatedly proven to be an economical and constructible solution in the 350 ft to 400 ft span range on the Illinois River. On the Mississippi, at the Chain of Rocks Canal, IDOT recently replaced an original truss bridge with a (haunched) girder span of 490 ft. This is near to the upper limit of span which can be accomplished economically and practically with girder technology.

On the Illinois River at Peoria and Meredosia and the Mississippi River at Savanna, arch type structures have also been selected. These are primarily a function of the large horizontal clearance requirements established by the USCG on those sites. The Meredosia site shares some of the concerns for road grade and reconnection to town street grid which is immediately off the riverbank.

Truss bridges, which were a common and optimal solution for long spans from the early to mid-1900's, are built less frequently now. The I-72 bridge over the Mississippi at Hannibal is one of the few regional examples of a recent truss span. The state of Iowa is designing a truss for the replacement of a 700 ft span over the Mississippi at Lansing.

Through-type structures such as truss and arch can be made relatively shallow in terms of depth below the roadway. Their depths are more controlled by the transverse spacing associated with width of the road, rather than the length of the span between piers in the river. Girder bridges, in contrast, must get deeper as the length of the span increases. In the case of the Meredosia bridge, the selection of arch over girder type mitigated the problem of IL-104 approaching town from a higher elevation but could not eliminate the effect of tall embankments nor the requirement for retaining walls extending into town.

For the Henry bridge with a span of just under 400 ft, but with profile concerns for touching back down in town, the continuous-girder and the through-type bridges (truss and arch) are considered in the following.

Option 1: Steel Plate Girder Bridge

This option uses the longitudinal steel girders as the main force-resisting structure. This option can be refined to two sub-options. Option 1A: Constant depth plate girder, see Figure 3 (a). Option 1B: Haunched plate girder, see Figure 3 (b). For Option 1A, the minimum depth of the steel girder is about 10.5 ft, total structural depth is about 11.75 ft. The existing structure depth is about 6 ft. USCG requirements lead to low steel needing to increase by 2.5 ft, from elevation 499.2 to elevation 501.7. Considering the existing structural depth of 6', the new profile for a constant depth girder is 8.25 ft higher than existing (11.75-6.0+2.5). For the haunched girder of Option 1B, the steel depth at midspan can be reduced to 8.0 ft with a total structure depth 9.25'. The new profile for a haunched girder could be 5.75 ft higher than existing.

Since the steel plate girder bridge is the most common type of bridge, it is used as a reference to compare with other options. Additional details are estimated for this option as the basis of this comparison.

Bridge length: The existing bridge is about 1718 ft long with 5% grades. The tangent slope is 486 ft long to the west and 869 ft to the east. With 8.25 ft profile raise and 4%-3% desired slopes, the total length of the bridge will increase. Considering how the west bank in the town is going up slope as the bridge lengthens, and that we can increase the embankment depth at the west abutment, the anticipated total bridge length for Option 1A is about 2050' (back-to-back of abutments). This is 332 ft longer than the existing bridge. For Option 1B, the total length would be about 1906 ft, or 188 ft longer than existing, but 144 ft shorter than Option 1A.

Bridge cost: Based on investigation of recent bid prices of similar bridges with long girder spans and approach spans over major rivers, the approach spans are estimated to cost \$250/SF. The long-span units are estimated to cost at \$500/SF for Option 1A, and \$515/SF for Option 1B (3% increase). The resulting total bridge construction costs are \$32.8 M for Option 1A, and \$31.9 M for Option 1B. The reduced overall length covers the slight increase in cost for the long-span unit. At the west abutment, both Option 1A and Option 1B land 96 ft beyond current abutment. The embankment height behind west abutment is 14'-8" at Option 1A and 10'-5" at Option 1B.

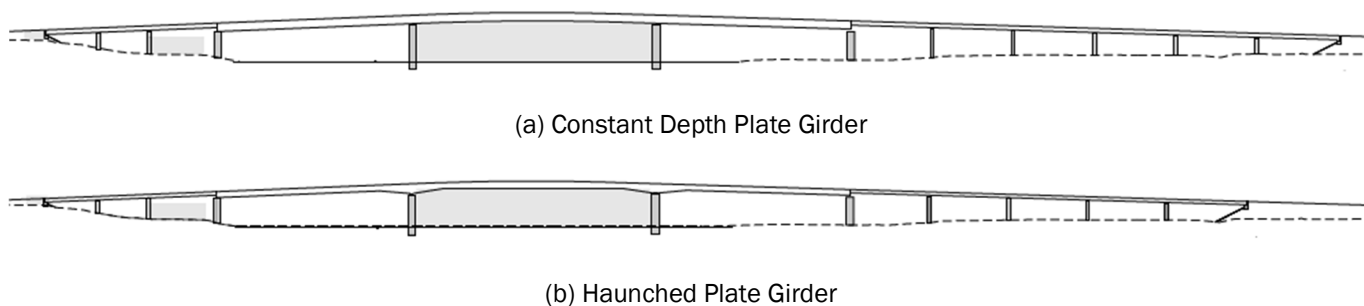


FIGURE 3: STEEL PLATE GIRDER BRIDGES, OPTION 1(A) AND 1(B).

Option 2: Single Span Truss Bridge

The challenge presented by a long navigation span and the desire to limit the slope and grade raise of the road can be met by using a truss as a single span at the navigation opening, see Figure 4. The approaches, with less stringent horizontal and vertical clearance requirements are efficiently developed as girder spans. Using modern high strength steels and particular floor framing details, the total depth below the roadway can be held similar to existing, although the new bridge will be almost twice as wide as existing. Therefore, the main span profile has a 2.5 ft rise associated with the navigation requirement. The approach spans can use the same structural depth of the main span for span lengths ranging from 150 to 200 ft.

Due to a dip in the ground elevation near the new east abutment, the further lowering of the profile does not reduce the total bridge length very much. The bridge is estimated 1878 ft long, which is 160 ft longer than the existing, and 172 ft shorter than Option 1A. Building the main span truss is about 50% more expensive comparing to the girder bridge based on review of costs for similar truss bridges. By limiting the expensive structure type to the single navigation span, and shortening the bridge by lowering the profile, the initial cost to construct this bridge is about \$31.7 M, which is in the same range as the girder bridges. Comparing with Option 1A, the bridge profile is about 6 ft lower. However, this improvement is not enough to eliminate the impact at the Front St. An 8-ft tall embankment is still needed at Front St.



FIGURE 4: OPTION 2, TRUSS BRIDGE

Option 3: Single Span Arch Bridge

The main navigation channel can also be spanned by a single tied arch structure, with girder approach spans, see Figure 5. As mentioned above, the depth of structure below the roadway is controlled by the floor beam. For a face-to-face roadway width of 40 ft, the floor beams will span about 50 ft and can be designed with a depth of 4 ft. Similar to the floor framing of the existing bridge, the longitudinal stringers can be framed between floor beams without taking extra structural depth. The governing total structural depth can be the same as the truss bridge, therefore only 2.5 ft of profile raise is needed, for the navigation accommodation. The arch bridge will be the same length as the truss option. Comparing to Option 1A, the main span will cost 75% more than a girder bridge based on the bid price of some similar arch bridges. But the side spans will cost less. The total construction cost of the bridge is expected to be about \$33.8 M, which is \$1 M more than Option 1A, and \$2 M more than Option 1B and Option 2.

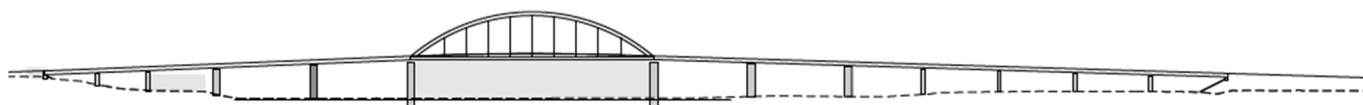


FIGURE 5: OPTION 3, TIED ARCH BRIDGE

Evaluation and Recommendations

To do a closer comparison among the above three options, the Selection Criteria categories are assigned weighting factors, and scores for each bridge type in each category are assigned. The weighting factors are selected to reflect IDOT's mission – providing a safe and efficient transportation system and reflect the preference of local people. Those criteria related to IDOT's mission are given higher weights. The pros and cons of each bridge type are considered in establishing the scores. Table 1 summarizes the weights, scores, and ranking.

First Cost (30%)

First cost reflects the initial construction cost; the contract value for a builder to supply the material, equipment, and labor to construct the bridge. A weighting factor of 30% (about 1/3 of the decision) is attached to construction cost. Among the four options, construction costs turn out to be very similar, and are not a strong differentiator. They are all in the neighborhood of \$32M. The haunched girder (Option 1B) and the truss bridge (Option 2) have the lowest, and almost the same initial cost. The constant-depth girder (Option 1A) is about \$1 M higher (3%), and the arch bridge is estimated \$2M higher (6%). Based on the relative lack of differentiation, the options are scored as 5 (arch and constant depth girder) or 6 (slight cost preference for haunched girder or truss)

Maintenance (25%)

The maintenance score reflects the challenge and cost of keeping the bridge inspected and in good working order over the expected bridge life of 75 to 100 years. Inspections, cleaning, painting, patching, and eventual replacement of the concrete deck are reflected in maintenance, as are the associated interruptions to traffic. The girder bridge options (Option 1A and 1B) are strongly preferred over the through-type structure options in this context. Girder bridges do not have structure above the deck; the main structural elements, those which require painting and inspection are tucked under the concrete deck. Girder bridges are also easy to widen in the future, if traffic demands should ever require that. In contrast, both truss and arch bridges have overhead structure, exposed to water and salt spray, exposed to vehicle and debris damage, and requiring greater traffic disruption to inspect and repair. It is also not practical to widen a truss or arch type bridge in the future. The life-long implications of the maintenance category are of similar priority to the redundancy category (below) and almost as important as the first cost category. A weight of 25% is assigned to the maintenance category. The girder options are scored as 10 (highly preferred), and the through girder structures are scored as 4 (not preferred)

Redundancy (25%)

Redundancy reflects the fault tolerance of a bridge. Flaws can arise in design, materials, or construction. Flaws can be introduced over time as a result of corrosion, collision, and repetitive loading of heavy trucks. Steel girders are a common, well-understood, and relatively low-tech structural system. The assembly of (typically) 6 girder lines for a bridge like this makes a system that is intrinsically redundant by normal design without additional cost. A flaw or damage introduced to any one girder is not considered capable of causing total loss of a span. Truss and arch bridges, on the other hand, are not intrinsically redundant. The lower chord (truss) or tie beam (arch) are defined as Fracture Critical Members (FCM). Loss of any part of an FCM can result in total loss of a span. The safety of bridges with FCM must be addressed by using more expensive materials, fabrication type, and taking on a higher level of inspection and maintenance over the life of the structure. The use of FCM's always attracts scrutiny and requires justification to the State DOT and to the Federal Highway Administration.

A weight of 25% is assigned to Redundancy, making it of similar importance to life-long maintenance, and combined with maintenance making it more important than first cost. The girder type bridges are highly preferred in the redundancy category and scored as 10. The fracture critical through structure types are scored as 4. Taken together, maintainability and redundancy are considerably more important than the first cost category.

Profile (15%)

Profile is important for the cost (bridge length), design policy (grade steepness), and the impact on tying the new roadway back to the existing Henry street grid. For these reasons, the Structure Depth (or Profile) is given a relatively high weight of 15%. The constant-depth girder option (1A) requires the highest roadway profile making it the least desirable. The through structures of truss and arch allow the lowest roadway profile, making them the most desirable in this category. The profile improvements associated with the shallow depth through structures are not enough to prevent the disruption of Front St at IL-18 in the proposed condition. They will, however, mitigate the visual and ROW impacts of the required grade raise. The options are thus differentiated with assigned scores ranging from 10 to 8 to 6, most desirable to least.

Public Input: (5%)

Public Input represents any and all sentiments which might be expressed in public comments and through the forum of Community Advisory Group (CAG) meetings. This could, for example, be a simple aesthetic preference between structure types. It could, for example, be a judgement on whether one structure type or another responds more favorably to the project Purpose and Need in their eyes. A weight (5%) is assigned to this category. This reflects the much larger priority that the Owner (the State and its stewardship of federal dollars) must put on the categories of cost, maintenance, and redundancy. It also reflects the fact that CAG interest in limiting the visual and street grid impacts of the raised and widened road is also partially captured in the "Profile" category. The 5% weight reflects this category's role as a potential tie-breaker, as opposed to a primary driver.

At CAG Meeting 5, a preview of these four bridge types and their evaluations was presented. Feedback was consistent with feedback received at prior meeting in which the topic of bridge type has arisen. Many members of the CAG expressed concerns that the girder type bridges lack the visual drama of a through type structure, do not serve as a distinguishing landmark, and do little to attract attention to Henry. Several voices in the community express the opinion that a truss or an arch type structure is more preferable, for its monumental appearance and its potential to enhance the view of the river and river front. The sole written comment received in response to the preview presentation is along these lines, and is reproduced as Attachment 1.

On the other hand, comments have also been voiced in CAG meetings to the effect that a priority for the replacement bridge should be speed; the existing crossing should be upgraded via replacement as quickly as possible. If a girder type bridge results in rapid approval, and a through type structure results in protracted justification and re-evaluations and lobbying efforts, a girder type bridge would be preferred from that viewpoint. It was also noted

during CAG Meeting 5 that the girder type bridge results in the longer side spans, effectively reducing the number of piers in the waterway which could be considered a benefit or safety improvement for users of the river. The absence of structural members overhead that is achieved by the girder type bridge was also noted as possible benefit to the high and wide loads which arise with agricultural implement traffic.

Although no quantitative ranking or voting was conducted, CAG input to the four structure types has been assigned as 3 (Constant Depth Girder, least preferred), 5 (Haunched Girder), 8 (Arch Bridge), and 9 (Truss, most preferred). Per the discussion above, it is debatable whether the full CAG judges a truss this much more preferred than a girder; these selections serve, however, to show that even with significant preference expressed for through structure types, they are not able to rise above the other factors favoring girder type bridges.

Result

The category scores of each bridge type are combined in a weighted sum to create a single weighted score value for each bridge Type in Table 1.

Table 1: Bridge Type Scoring and Ranking

Option	Type	Sketch	Constr. Cost	First Cost	Maint.	Redundancy	Profile	Public Input	Weighted Total	Rank
Weight				0.30	0.25	0.25	0.15	0.05	10	
1A	Plate Girder		32.8 M	5	10	10	6	3	7.6	2
1B	Haunched Girder		31.9 M	6	10	10	8	5	8.3	1
2	Truss		31.7 M	6	4	4	10	9	5.8	3
3	Tied Arch		33.8 M	5	4	4	10	8	5.4	4

Note: Score of 10 represents most favored, 1 represents least desirable.

Despite the relatively small differentiation among structure types based on first cost, overall the categories, weights, and scores combine to present a clear picture of the most preferred option. For their advantage in cost, maintenance and redundancy, the girder bridge types are preferred to the through structure types in this span range (350 ft to 400 ft). Because of the relative importance of profile in this project, the modest increase in complexity associated with a haunched type girder is preferred by more than half a point over the constant depth girder. The ordered final rankings are:

Bridge Type	Score (out of 10)
Haunched Girder	8.3
Constant Depth Girder	7.6
Truss	5.8
Arch	5.4

Development of the new IL-18 river bridge, along either alignment 3 or 5, should proceed based on use of a haunched plate girder navigation span.

References

- US Army Corp of Engineers (2013). Illinois Waterway Navigation Charts Grafton, IL to Lake Michigan at Chicago and Calumet Harbors. Mississippi Valley Division, Great Lakes & Ohio River Division.
- US Coast Guard (2022). Electronic letter dated 3/1/22 from Eric Washburn (USCG) to Travis Wallenfang (IDOT D4).

Attachment 1

Community Advisory Group Comment: Bridge Type Screening Presentation

IL 18 River Bridge Project
IDOT – District 4
401 Main
Peoria, IL 61602

I.D.O.T.
Received

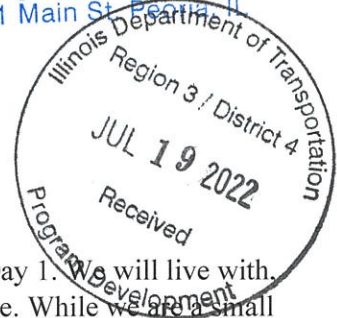
JUL 18 2022

To whom it may concern:

Please find my 'public input' for the bridge types presented.

- Constant depth girder – red
- Haunched girder – red
- Truss – yellow
- Arch – green

Region 3 / District 4
401 Main St. Peoria, IL



Aesthetics is important to this river town. This was clearly communicated from Day 1. We will live with, and look at, this bridge long after the IL 18 River Bridge Team has come and gone. While we are a small town, we are actively pursuing multiple initiatives to enhance the appeal of our riverside community. This new bridge has the potential to be a cornerstone piece of the reimagining of our hometown.

I feel as if this entire process -- the "bringing us along", if you will -- including the painstaking bureaucracy culminated into the ultimate disappointment during the last CAG meeting. To deliver the message, and try to "sell" us, the very type of bridge that we stated on Day 1 that we didn't want made this entire process feel like a colossal waste of time as well as personally insulting.

A plain-Jane vanilla girder bridge has its place. Locations that are simply a connection between two pieces of land with no community or personality at play fit this use-case. However, a community river town where the bridge is part of the history and heritage is not a use-case for such a structure. To attempt to use maintenance and redundancy categories as just-cause for not building a more aesthetically pleasing structure was a poorly delivered excuse. Certainly, building an appealing and memorable bridge is within the capability of IDOT, as evidenced by the many communities that have them. While perhaps not 'necessitated' by the technical requirements of the structure, it would be a waste of an opportunity to not grant the city of Henry an aesthetically pleasing bridge when it costs no more or less than the unattractive and forgettable design proposed by IDOT. A new bridge only comes around once in a lifetime so to not take advantage of this moment in time is a true shame. I'm disappointed that the bridge engineer tried to play on the emotions of the audience by citing bridge failures for the design types he knew we would be more in-favor of. To suggest that IDOT cannot build a beautiful and safe bridge is nonsense.

There you have it -- my two cents ... which is apparently worth only 5%.

An anonymous CAG member

CC: Jeff Bergfeld, Mayor of Henry

Attachment 2

Plan and Profile Comparison Exhibits: Girder, Haunched Girder, Truss, Tied Arch

PROFILE	SURVEYED _____	BY _____	DATE _____
	PLOTTED _____		
NOTE BOOK _____	GRADES CHECKED _____		
NO. _____	B.M. NOTED _____		
	STRUCTURE NOTATIONS CHKD _____		

NORTH STREET

SCHOOL STREET

EDWARD STREET

CRONWELL DRIVE

BRIDGE

PR CURVE IL18_ALT3A1

PR CURVE IL18_ALT3A2

LIMITS OF CONSTRUCTION

FEASIBLE WEST ABUTMENT LOCATION

FEASIBLE EAST ABUTMENT LOCATION

LIMITS OF CONSTRUCTION

NOTE: ALIGNMENT 3 (UPSTREAM) SHOWN FOR ILLUSTRATIVE PURPOSES. FINAL ALIGNMENT RECOMMENDATION STILL IN PROGRESS. BRIDGE TYPES SHOWN ARE EQUALLY APPLICABLE TO VARIOUS UPSTREAM AND DOWNSTREAM OPTIONS CLOSE TO THE EXISTING ALIGNMENT.

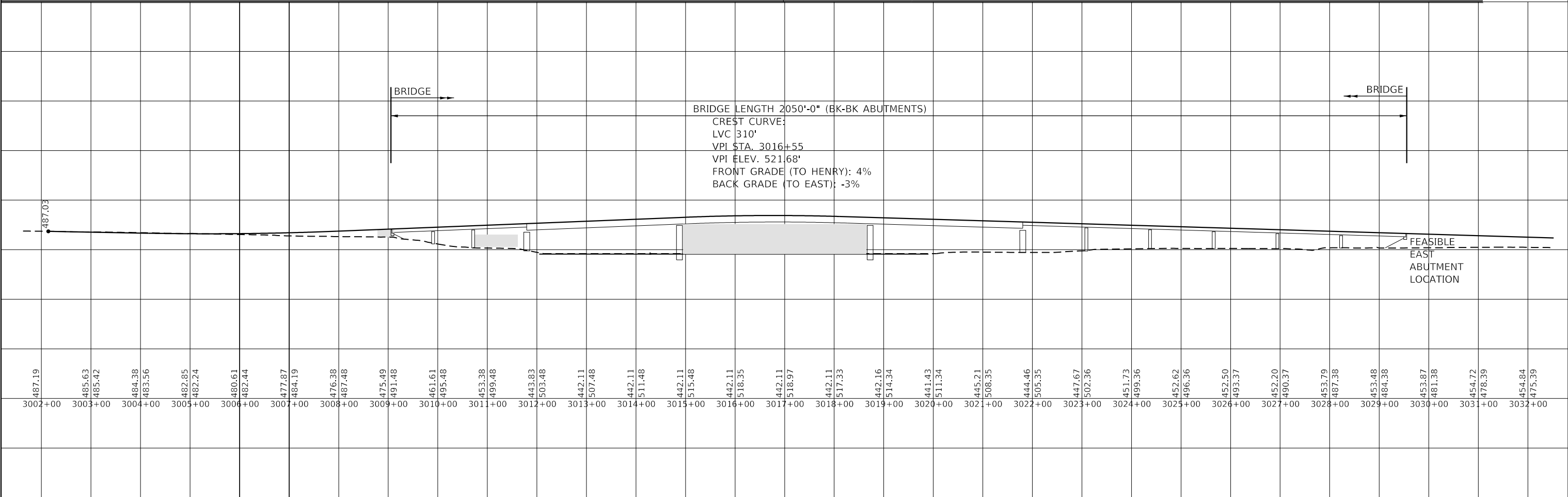
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GRAPHIC SCALE

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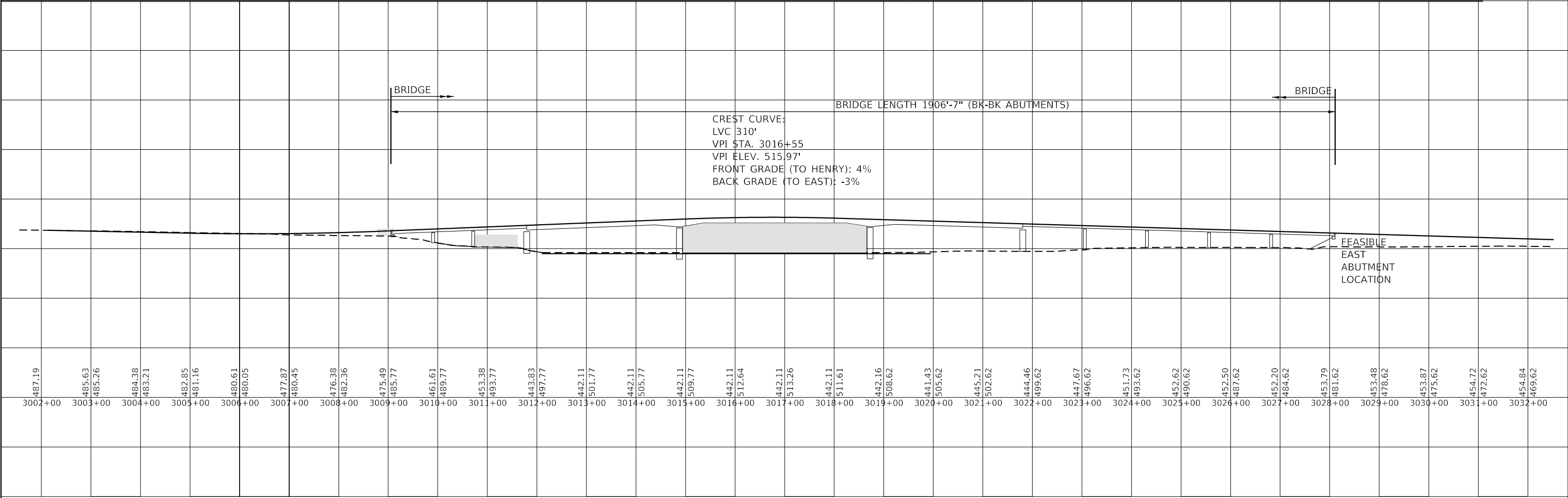
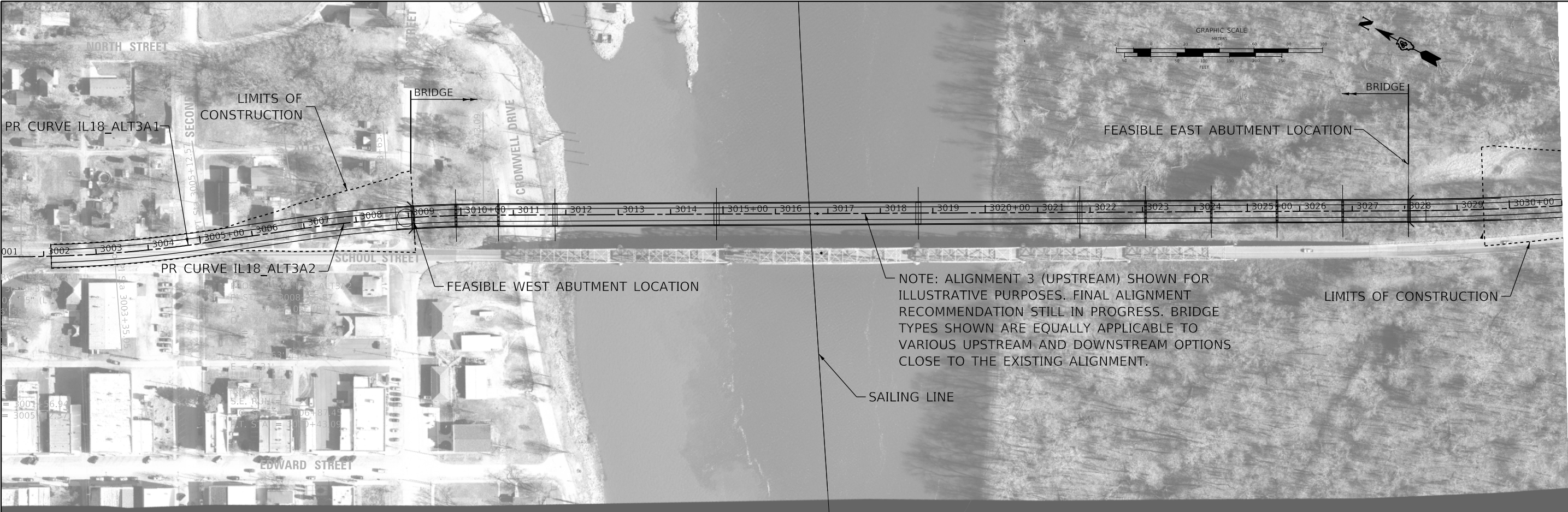


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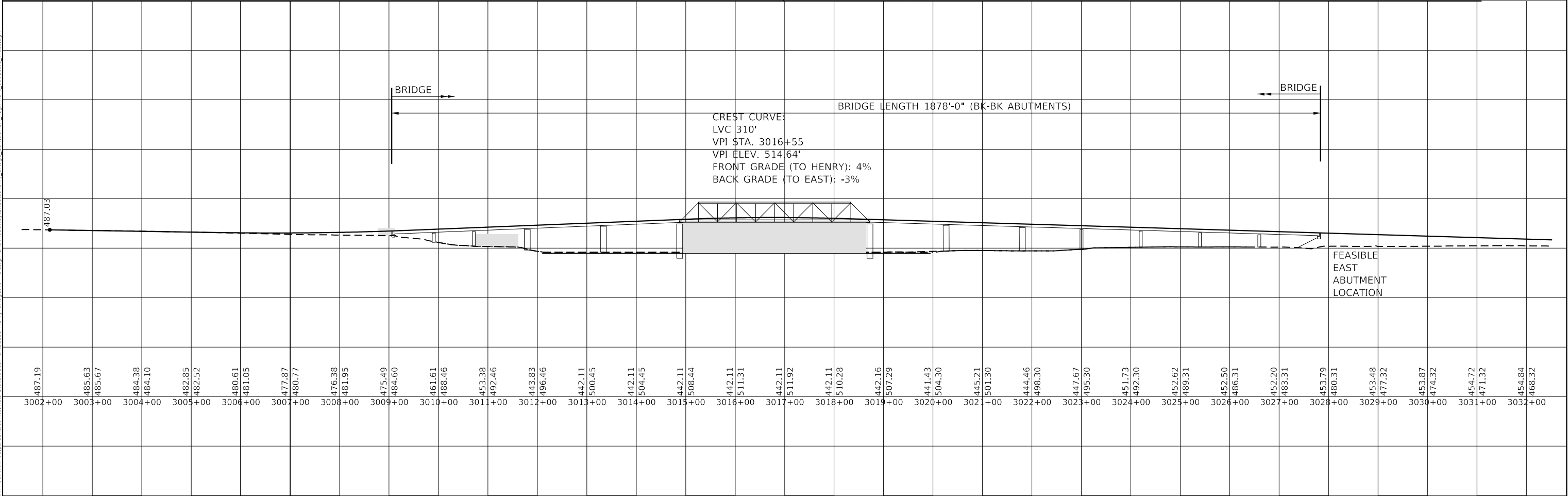
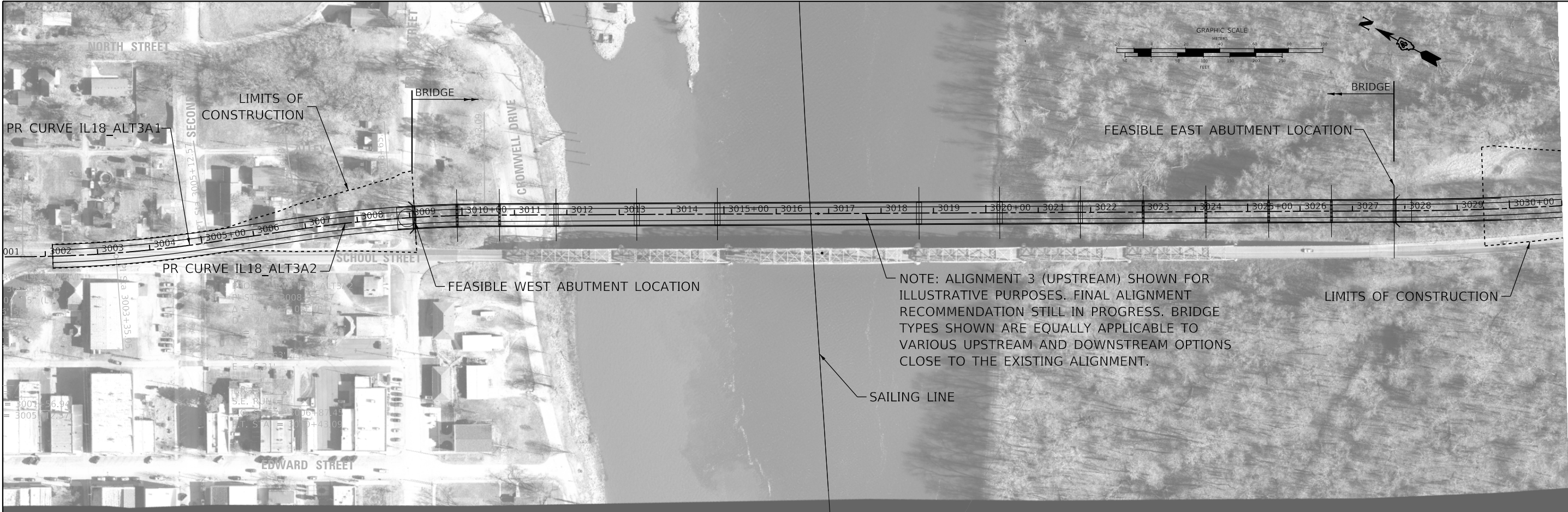
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NOTE BOOK NO.			



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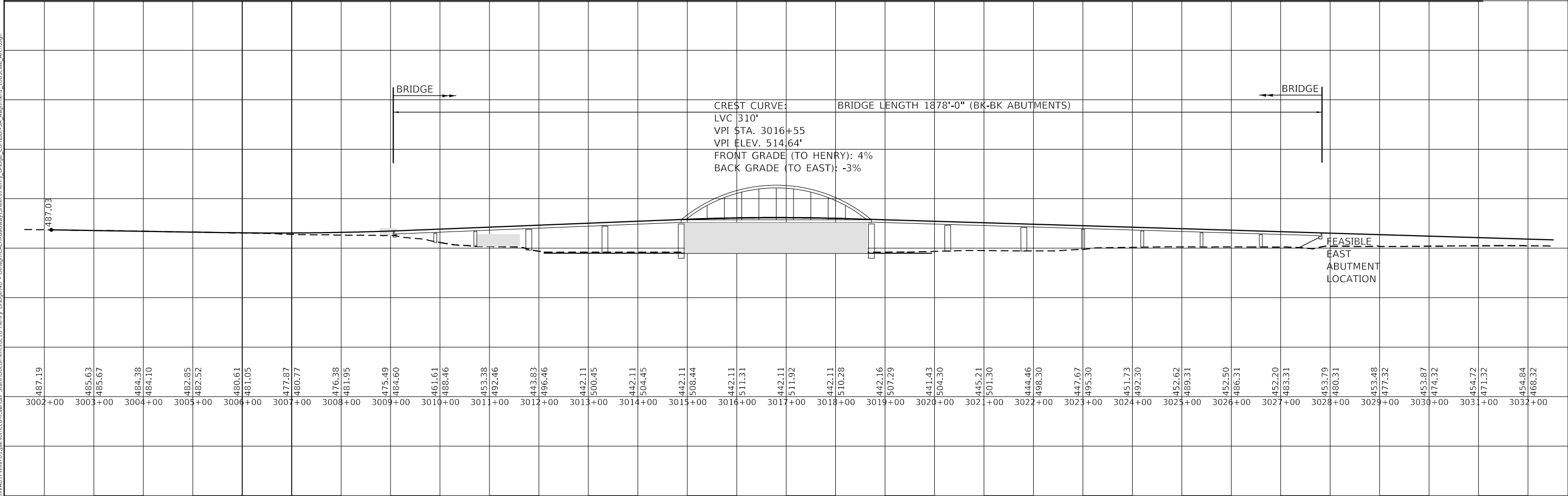
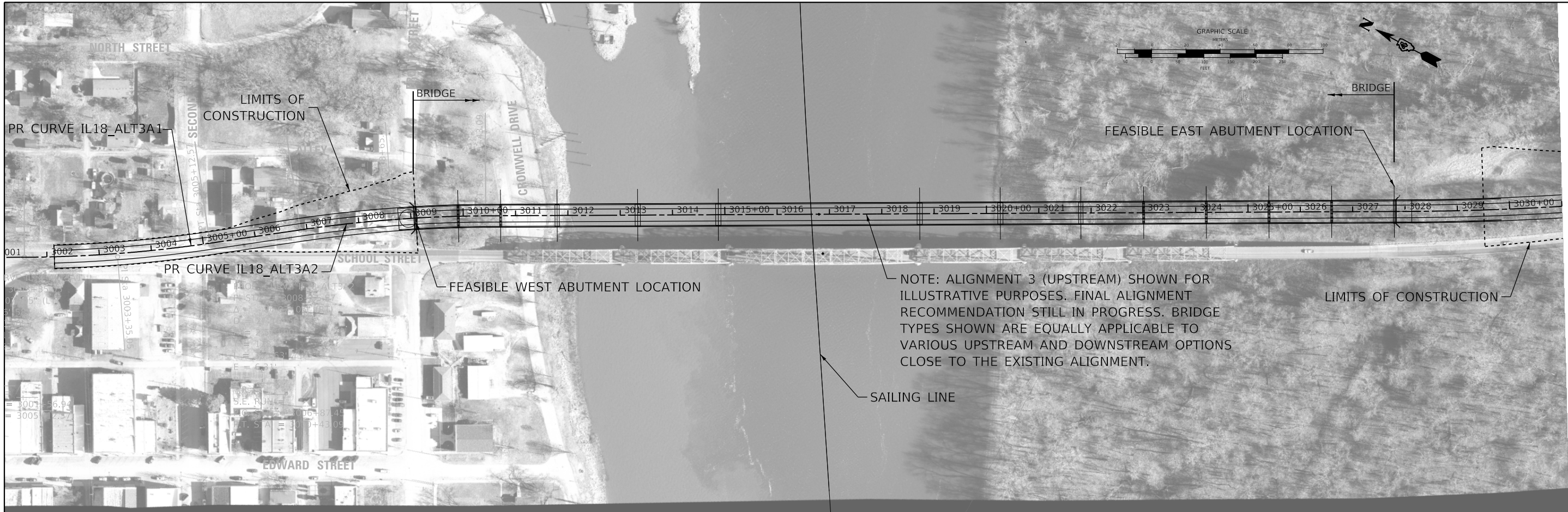
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PLOT DATE = 8/10/2022	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN & PROFILE ALIGNMENT 3 - TRUSS			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

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

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	PLOTTED _____		
NOTE BOOK _____	GRADES CHECKED _____		
NO. _____	B.M. NOTED _____		
	STRUCTURE NOTATIONS CHKD _____		



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PLOT DATE = 8/10/2022	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PLAN & PROFILE
ALIGNMENT 3 – ARCH**

SCALE:	SHEET	OF	SHEETS	STA.	TO STA.
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
ILLINOIS		FED. AID PROJECT		

MODEL: Default

NO.:	STRUCTURE NOTATIONS CHRD
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APPENDIX 9

Type Size and Location Plan

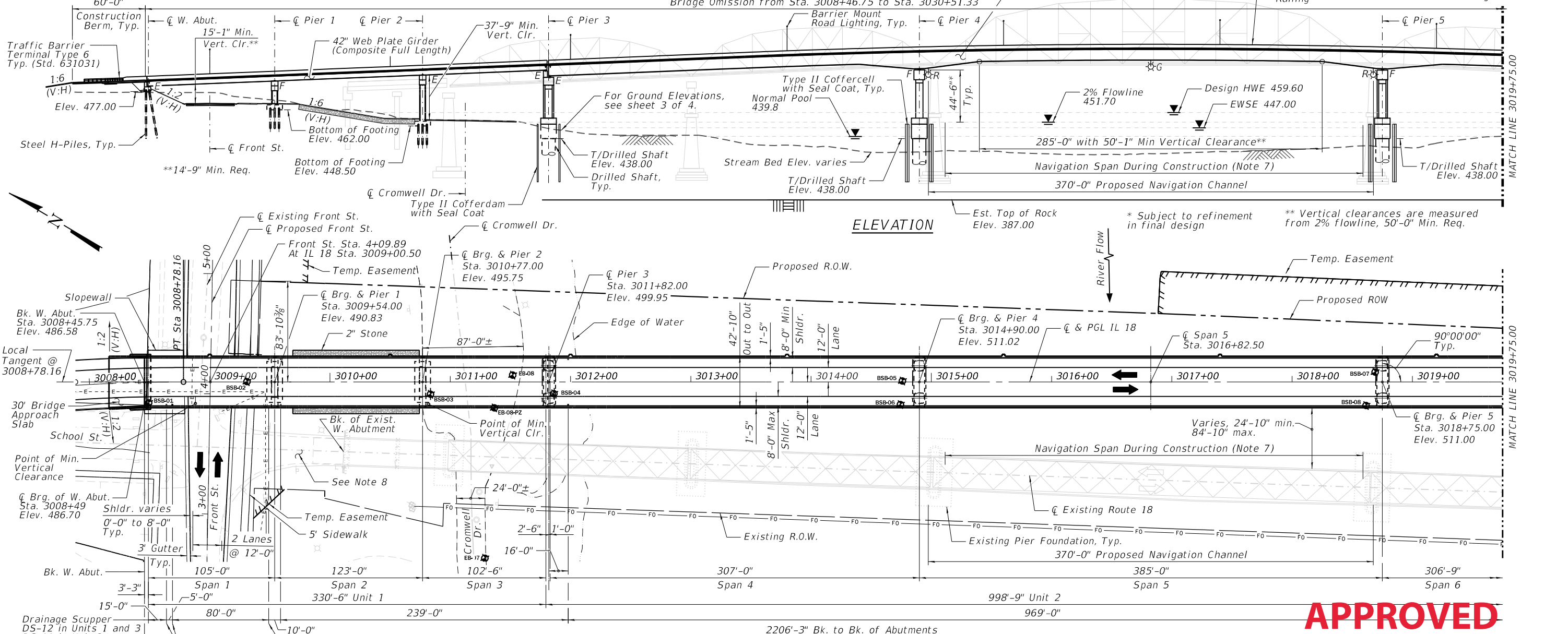
Benchmark: BM-111, chiseled square on north end of existing east abutment. Elev. 461.535. Additional BM-907, square at south end of existing west abutment. Elev. 480.372.

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. Deck drainage at pier 1 shall be collected in a closed system and piped to ground. 7. During construction, navigation will be constrained by the 350' opening of the existing bridge. 8. See Civil plans for disposition of existing approach embankment after removal of structure.

LEGEND: Soil Boring, Navigation Lights, Traffic Sign, Sanitary Sewer, Storm Structure, Buried Fiber Optic, Overhead Electric, Temporary Easement, Proposed ROW, Existing ROW.

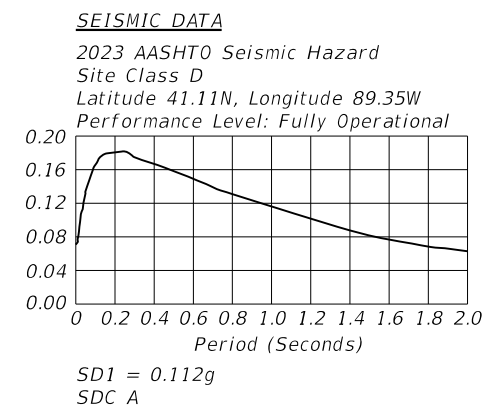
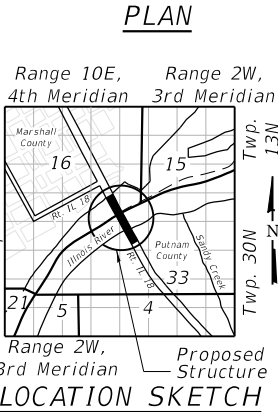


WATERWAY INFORMATION TABLE									
Drainage Area		13,544.00 sq. mi.	Existing Overtopping Elev. = 456.64 at Sta. 86+87						
			Proposed Overtopping Elev. = 456.83 at Sta. 3048+61						
		Discharge	Waterway Opening (sf)	Natural	Head (ft)	Headwater Elev. (ft)			
			Existing	Proposed	H.W.E. (ft)	Existing	Proposed	Existing	Proposed
Flood	Freq. Yr.	(cfs)							
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									

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

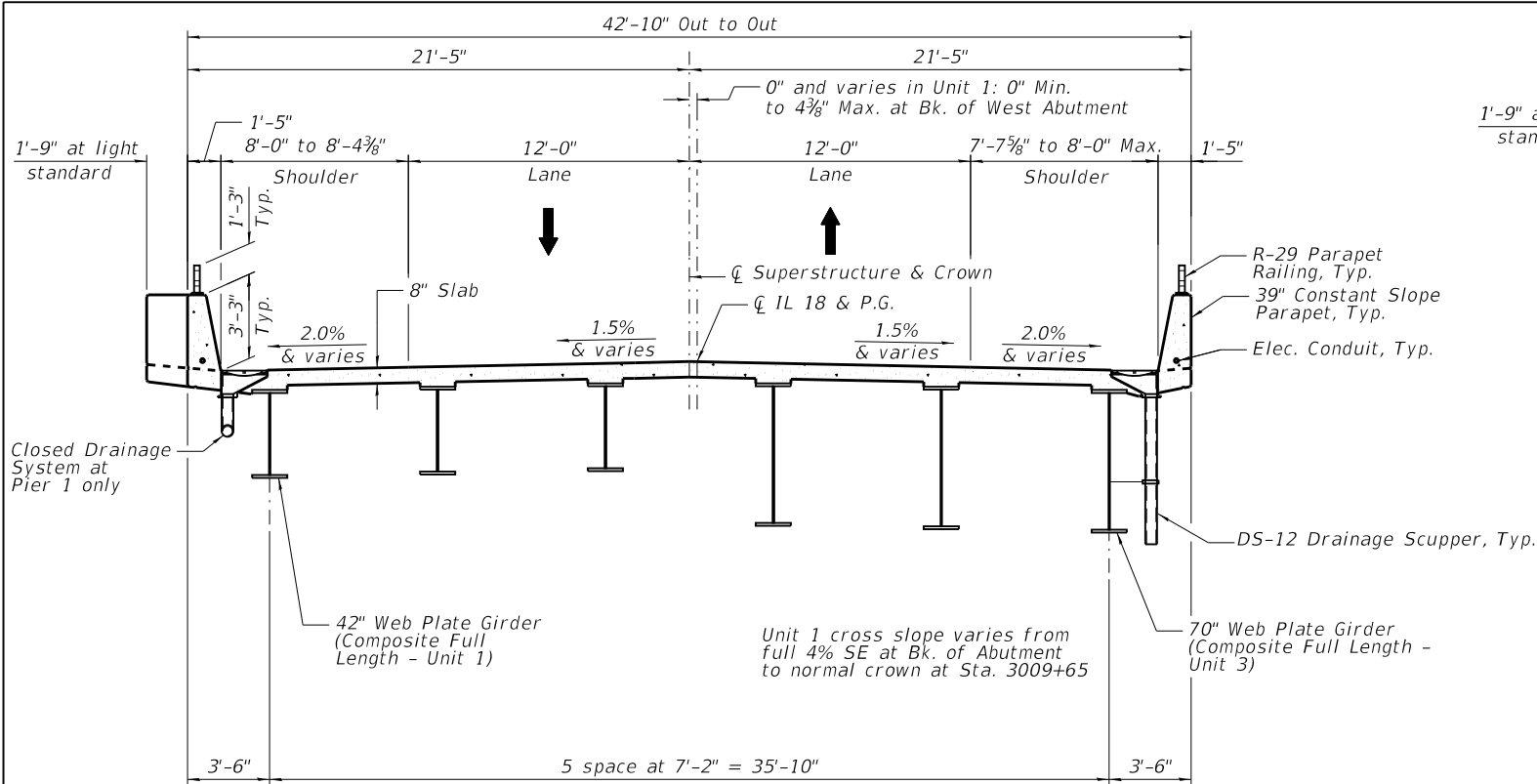


APPROVED

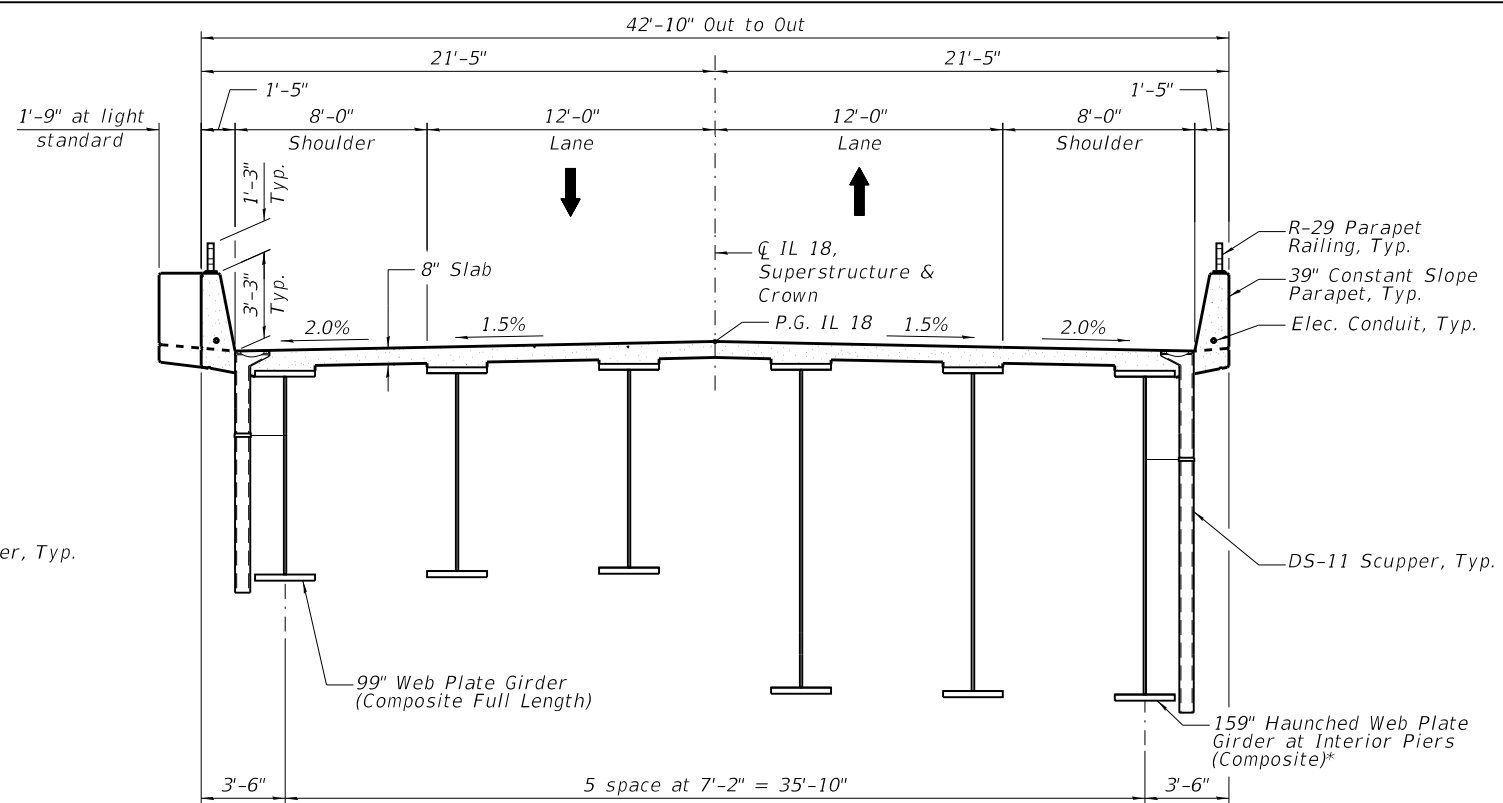
AUGUST 07, 2025

AS A BASIS FOR
PREPARATION OF DETAILED PLANS
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

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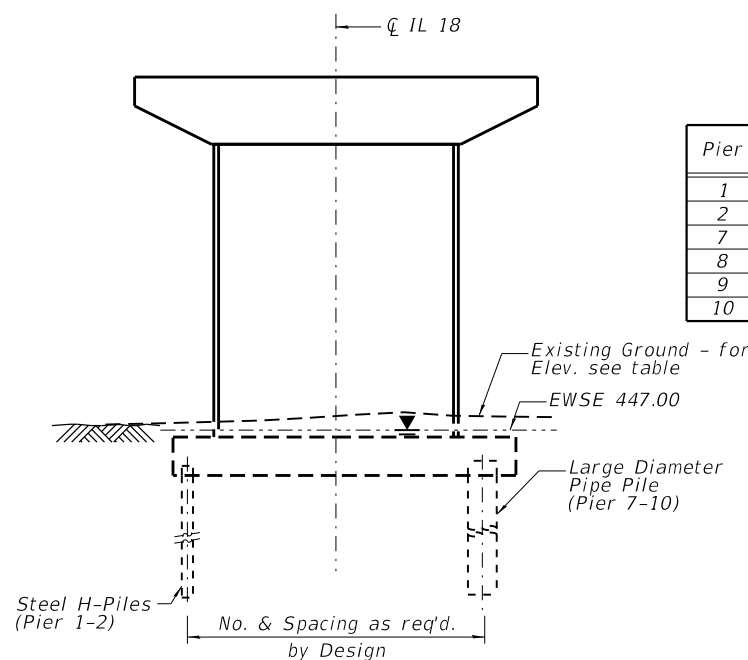


CROSS SECTION (UNIT 1 & 3)
(Looking East)



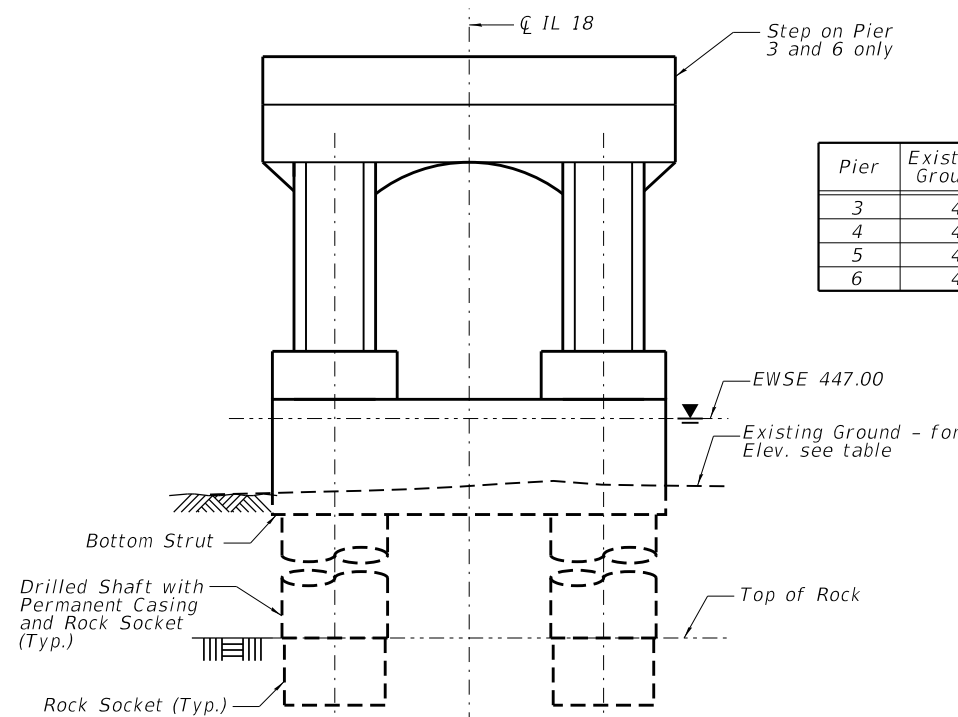
CROSS SECTION (UNIT 2)
(Looking East)

*Subject to refinement
in final design



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	477.00	462.00	446.99	400.78	400.78	400.78	400.78	425.95	425.95	425.95	425.95	464.70	5
Q200	477.00	462.00	446.87	400.64	400.64	400.64	400.64	425.95	425.95	425.95	425.95	464.70	
Design	477.00	462.00	446.99	400.78	400.78	400.78	400.78	425.95	425.95	425.95	425.95	464.70	
Check	477.00	462.00	446.87	400.64	400.64	400.64	400.64	425.95	425.95	425.95	425.95	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



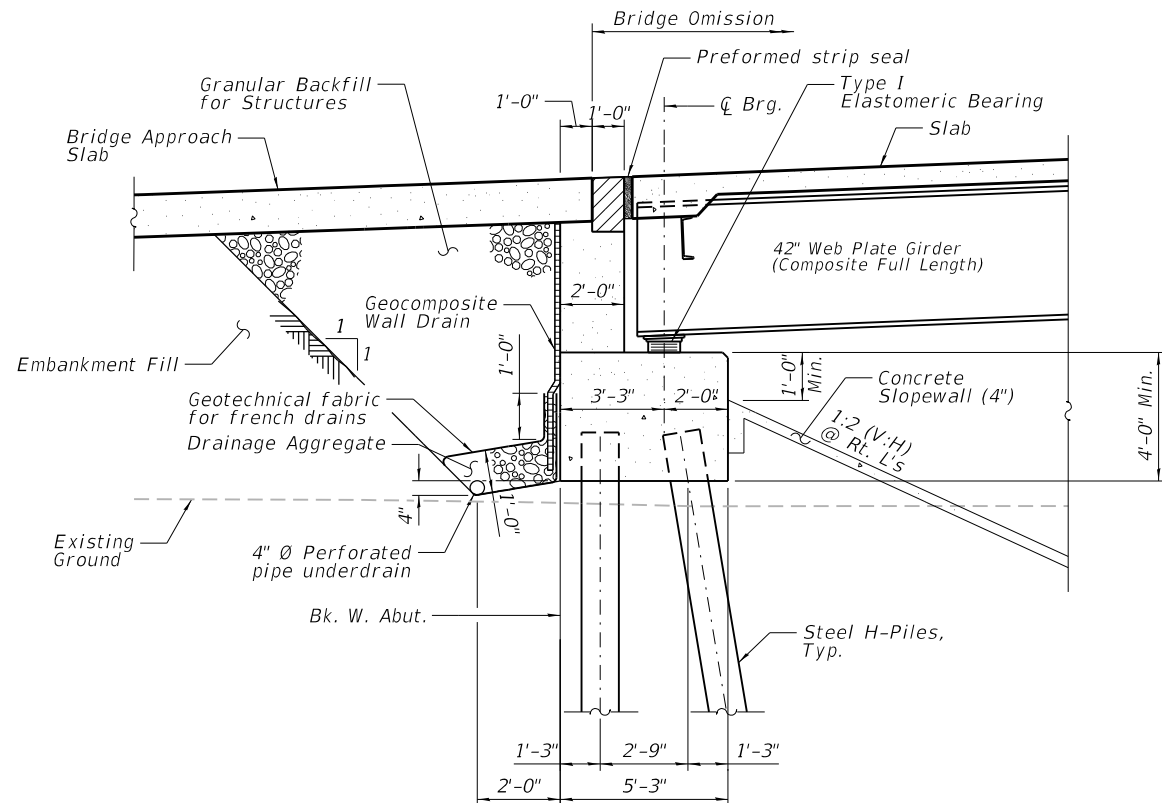
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

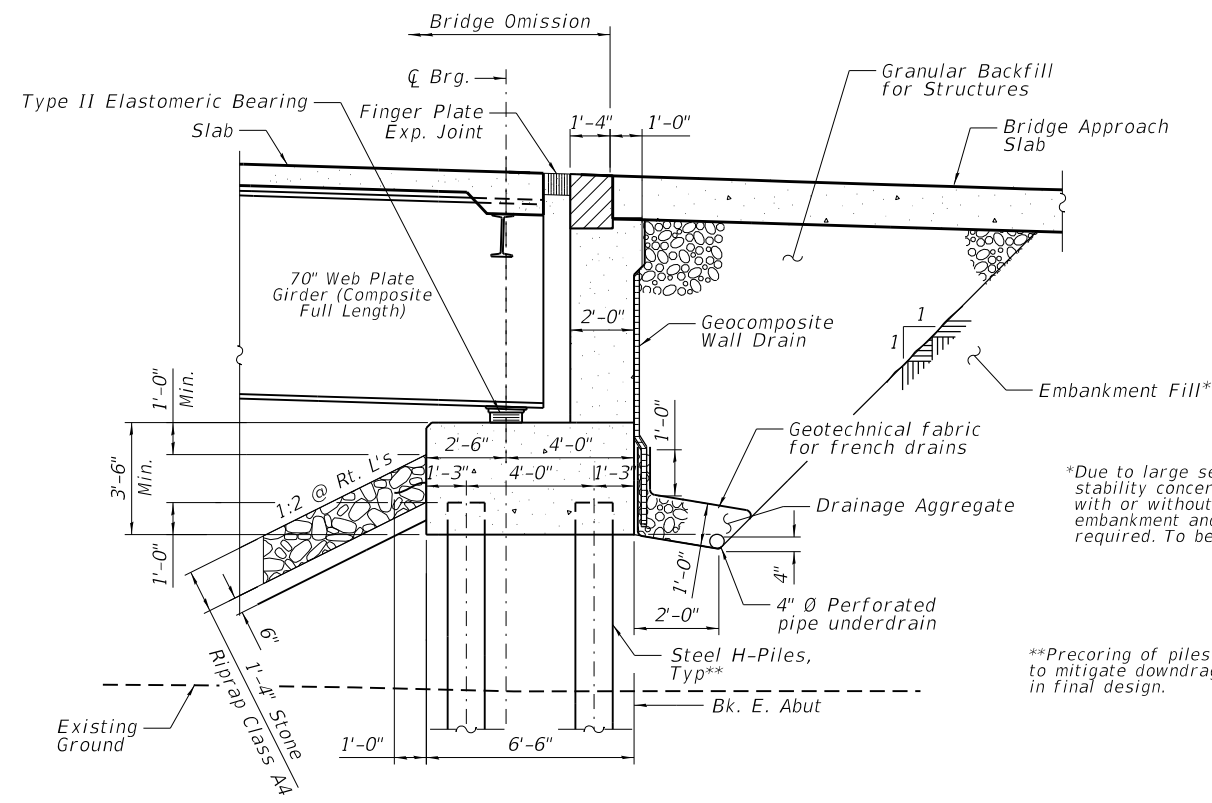
SHEET 3 OF 4 SHEETS

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 THRU WEST ABUTMENT



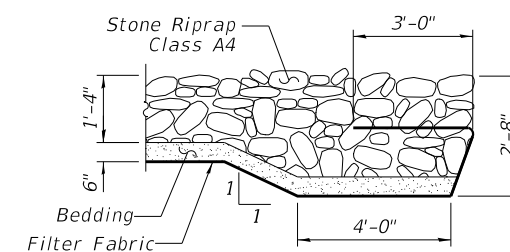
SECTION THRU EAST ABUTMENT

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

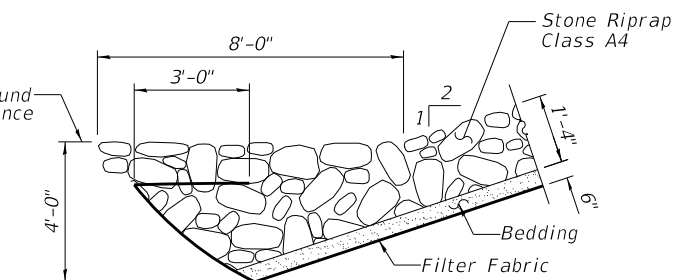
**Precoring of piles may be required to mitigate downdrag. To be established in final design.

BYPASS FLOW RATE FROM BRIDGE LIMITS
(END OF APPROACH SLAB) TO ROADWAY

	W Appr. N Curbline	W Appr. S Curbline	E Appr. N Curbline	E Appr. S Curbline
Q (C.F.S.)	0	2.38	1.68	1.68

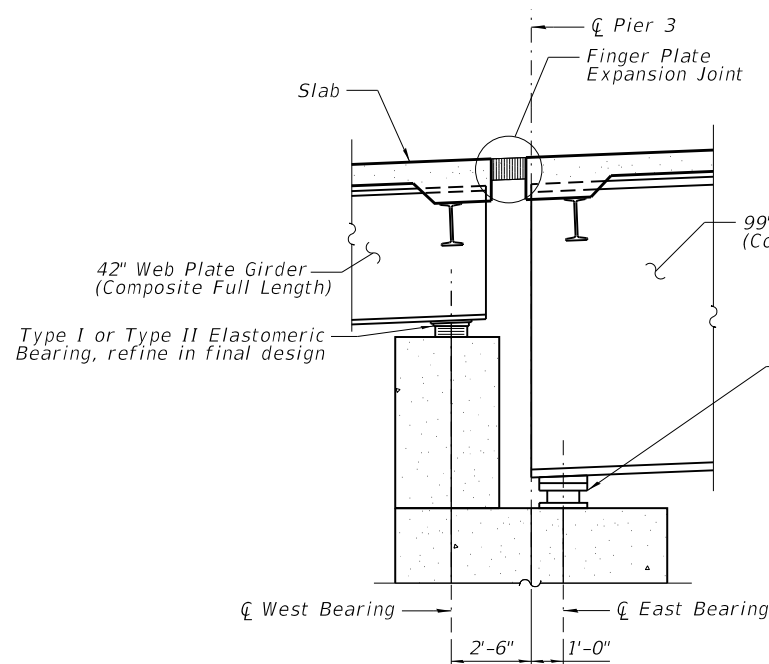


SECTION A-A

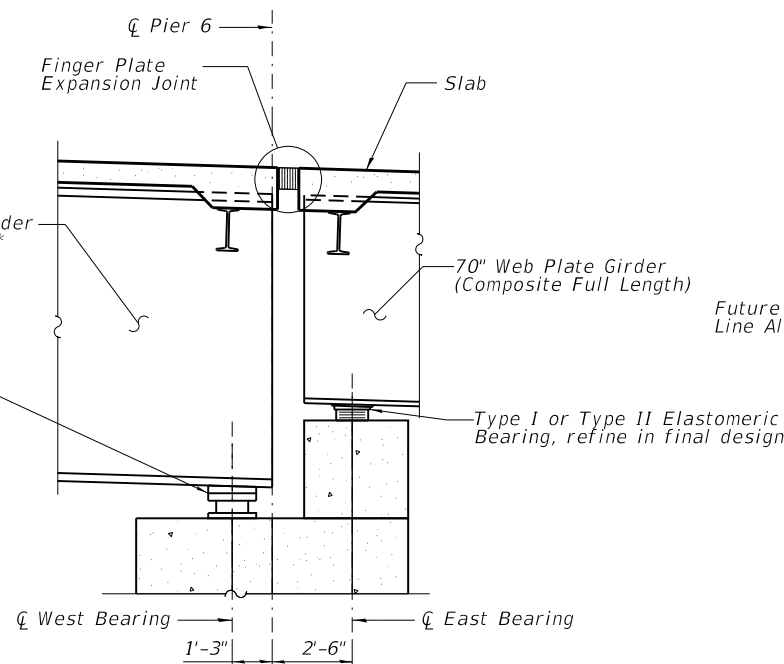


SECTION B-B

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



SECTION AT EXPANSION JOINT (Pier 3)



SECTION AT EXPANSION JOINT (Pier 6)

***Subject to refinement in final design



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		
CONTRACT NO. 68F09				
ILLINOIS FED. AID PROJECT				

APPENDIX 10

Bridge Condition Report

BRIDGE CONDITION REPORT

Original March 17, 2021

Rev 1 November 3, 2021

REGION:	3
DISTRICT:	4
ROUTE:	IL 18
COUNTY:	Marshall (and Putnam)
JOB NUMBER:	P-94-007-20/D-94-041-19
STRUCTURE NUMBER:	062-0036
LOCATION:	IL-18 over Illinois River at Henry, IL



PREPARED BY:	Todd Ude, Parsons
DATE INSPECTED:	The bridge is inspected annually by IDOT forces. Most recent inspection took place 4/5/2021. This BCR is based on most recent NBIS report document, dated 4/20/2020, and an underwater inspection report dated 10/16/2018.
PROPOSED LETTING DATE:	2025

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Hydraulic Adequacy	5
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Geographical & Administrative Data

Structure Number:	062-0036
County:	Marshall
Route Carried:	IL 18 (FAS2369)
Feature Crossed:	Illinois River and Cromwell St.
Section:	104B-D
Station:	13+91.88
Roadway Classification:	Minor arterial
Design/Posted Speed:	40 mph design (assumed) / 35 mph posted
ADT (current/design):	2200 (2019) / 3064 (2032)
ADTT (current/design):	4% trucks
DHV:	
Inventory Rating (HS or HL):	0.68 (HS)
Operating Rating (HS or HL):	1.14 (HS)
Sufficiency Rating:	06.5

Construction / Reconstruction / Repair History

The existing bridge was constructed in 1934 as Route SBI-89C, Section 104-B. It will be 87 years old in 2021.

The bridge was reconstructed in 1988 as Route FAS2369, Section 140B-D. In the steel beam spans, the structure was completely replaced except for the piles. Bent caps and abutments were reconstructed, along with the steel beams and concrete deck. Exposed area of piles in the intermediate bents were repaired as required.

In the truss spans, the floor system was completely replaced along with the concrete deck. Cracks and spalls on the truss piers were repaired.

In 2021, the reconstructed work will be 33 years old.

Physical Description of Structure

The bridge is 1,719 ft long, back-to-back of abutments. The cross section is 22'-8" face to face of rails, or two 11'-4" lanes with no shoulders. The main navigation span is a simply supported 364' through truss. To the north are two more simple span through trusses at 202' each. Two steel beam spans of 42' complete the north approach into the town of Henry. To the south of the navigation span are three simple span through trusses of 202' each. Six steel beam spans of 42' complete the south approach. Thus more than three quarters of the structure length consists of the 6 through truss spans. The deck is a conventionally formed and cast 7.5" reinforced concrete slab.

Substructures for the truss spans are a reinforced concrete portal frame on an unreinforced concrete plinth. The plinth rests on a concrete footing with a single mat of reinforcement. Plans from the original construction provided for 25-ton timber piles supporting the footing. For the deepest footings, at the navigation span, plans directed that ordering of material be deferred until excavation and test piling verified a need for them. The as-built condition is unknown. The 42' beam spans are founded on pile bents comprised of driven reinforced concrete piles and a cast-in-place bent cap. The abutments are spill-through concrete pile bents.

The structure is on tangent alignment, and the substructures are not skewed. The longitudinal grade is 5% on both approaches joined by a 600' vertical curve. There is roadway lighting and navigation lighting mounted on the structure.

Field Inspection & Physical Evaluation

Per the current Master Structure Report (Attachment B), the bridge has an inventory rating factor of 0.68 with date of 10/2019. The bridge is currently signed as posted to legal loads only (Photo 1, Attachment H). The following findings are summarized from the 2019 and 2020 NBIS inspection reports performed by IDOT staff.

Deck

The deck is rated 6 (satisfactory) with minor spalls, delamination and map cracking reported.

Superstructure

The superstructure is rated 3. The paint system on both truss and steel stringer approaches is failing; Element 515 for the paint system records 65% in Condition State 1 (sound and protecting steel) and the remaining 35% in Condition State 4 (corrosion with substantial metal loss and perforation). Steel corrosion is advanced and progressing. Section loss up to 39% of truss members cross sections is reported, see e.g., Span 7 at nodes L3 east and west in Table of Deficiencies within the 2020 Inspection Report (Attachment C). Losses of truss floorbeam bottom flange sections of up to 24% are reported.

Substructure

The substructure is rated 4 (poor), indicating up to 30% loss of concrete reinforcement section and/or up to 30% loss of bearing seat or pile area. Prior concrete repairs have largely failed, and much exposed and corroding reinforcement is visible in the portal frame sections of the truss span piers. Likewise, major areas of exposed corroded reinforcing on the concrete pile bents are apparent. Bents 3 through 6 are identified as up to 3% out of plumb, leaning to the north. The bearing seat areas of truss pier 7 and bent cap 5 (at an expansion joint) have 20% to 25% section loss. According to the 2018 underwater inspection report, concrete below the waterline is in satisfactory condition

SCOUR/SLOPE PROTECTION: Dumped stone riprap armors the north and south embankment cones, which are well removed from the channel at normal flows. The 2018 inspection report does not indicate any specific scour protection on the riverbed at piers 2, 3 and 4. From 2013 to 2018 there was less than a 5' increase in scour depressions at the upstream faces of piers 3 and 4. The least remaining cover over top of footing was about 7', at pier 3, with about 10' from lowest riverbed to bottom of footing. The underwater inspection report presumes the timber piles are present, although the record plans raise the possibility that piles could have been determined unnecessary at time of construction.

Inspection History (NBIS Ratings)

Year	Deck	Super	Sub
2020	6	3	4
2019	6	3	4
2017	7	5	5

Geometric, Horizontal & Vertical Clearance / Hydraulic Data

HORIZONTAL AND VERTICAL CLEARANCE THROUGH THE STRUCTURE

The structure provides 2 lanes 11'-4" each, or 22'-8" face to face of steel rails. Center to center of trusses is 26'-1 3/4". The vertical clearance to portals above the roadway is not known. It is not signed as substandard in the field, but there is evidence of several impact damage to both sway brace portals and main truss members in the 2019 and 2020 NBIS tables of deficiencies and photographs.

In the Structure Summary Report, the bridge railing is appraised as "meets standards", but deck geometry is coded as 2 (intolerable - high priority for replacement).

HORIZONTAL AND VERTICAL CLEARANCE BENEATH THE STRUCTURE

Navigation Channel

According to the US Army Corp Waterway Information Charts, the main span provides 350' horizontal clearance for the navigation channel. The vertical clearance to the normal pool elevation is 59.2'. The US Coast Guard and the Army Corp have reported that navigation interests do not generally report difficulty with this current bridge. However, Coast Guard has signaled that current conventions would require at least 60' vertical clearance to normal pool, and possibly a couple feet more than that.

Existing navigation horizontal and vertical clearances appear satisfactory.

Cromwell Drive

Cromwell Drive is a low-speed local street (driveway) passing beneath the northernmost truss span (right side of Photo 4). Horizontal and vertical clearances are satisfactory.

HYDRAULIC ADEQUACY

The southern approach roadway is prone to occasional flooding (few events per decade) when the Illinois River is in flood. Hydraulic modeling will be conducted in the Phase I project, but the existing bridge is not generally known to be insufficient or inadequate with regard to hydraulic capacity.

Potential Scope of Work Determination & Analysis

In 1988 at age 54 years, the original structure required reconstruction of the approach spans and rehabilitation of the trusses with reconstruction of the floor system. In 2021, the reconstructed decks are in satisfactory condition, but the approach span steel, the truss steel floor system, and the original truss steel are all again in an advancing state of deterioration with section loss. The need for posting the bridge to legal loads only and the need for steel repairs to restore member capacity have begun to arise and will arise with increasing frequency as the structure ages.

The useful life of the 1988 rehabilitations of the concrete substructure has been exhausted. Those repairs are failing, and deterioration of concrete and concrete reinforcement is advancing. Deterioration of reinforced concrete is typical recognized to occur at an increasing rate once chloride ion concentration at the reinforcing steel reaches a critical threshold.

To keep the bridge safe for its design loading, and to mitigate maintenance expenditures over the coming decade, the bridge will require either a 1988-style reconstruction / rehabilitation, or complete replacement.

There are several difficulties with reconstruction / rehabilitation:

- 1) The objective of major reconstruction / rehabilitation is to return the bridge to a like new condition. The 1988 work secured an additional 33 years of life (so far). This time, the work will be much more involved, given:

- the advanced age and advanced deterioration of the substructures, and
 - the need for more widespread intervention on main members and gusset plate connections of the trusses
- 2) A successful reconstruction / rehabilitation would have as its objective a 30 to 40 year life extension. At that time the bridge would be 120 to 125 years old, which is an excessive service life objective for a bridge built in 1934.
 - 3) The geometric deficiency of narrow lanes and zero-width shoulders cannot be addressed in any rehabilitation. An existing through truss structure type cannot reasonably be widened.
 - 4) An existing through truss cannot reasonably be rehabilitated under traffic, even using a single alternating lane of traffic controlled by signals and flaggers. The bridge would have to be removed from service for several months in connection with any reconstruction / rehabilitation.

A complete structure replacement will allow for development of a low-maintenance, long-life bridge that will meet current roadway geometric criteria for widths, grades, and barriers. Up and down the Illinois River, similar 1930's and '40's era crossings have reached the limit of their economical service lives and have been replaced. Examples from recent decades include IL 47 at Morris, IL 89 at Spring Valley, IL 170 at Seneca, and IL 104 at Meredosia.

Discussion and Recommended Scope of Work

It is evident from the inspection reports, the current legal-loads-only posting, and the ongoing need for concrete and steel repairs that the existing bridge has reached the end of its service life. A major investment in reconstruction and rehabilitation would be required to effect a service life extension, which based on prior experience, is unlikely to provide more than 30 years additional life. This investment would require extended closure of the bridge and leave the structure with the substandard roadway geometry of 11' lanes with zero-width shoulders. A complete structure replacement is recommended.

The Phase I process will generate and evaluate alternatives for the location of a replacement structure. Construction off of the existing alignment would make possible maintenance of traffic on the existing bridge while the new bridge is constructed, at the expense of ROW acquisition. The Phase I process will weigh the pros and cons and costs of replacing on alignment, versus replacing immediately adjacent but tying into the Henry street grid at the same location, versus crossing into Henry on an alternate location. For proximity of bridge to Henry street grid, see Attachment A.

The Phase I process will also establish design criteria for the minor arterial, in particular the merging of rural criteria on the south to the more urban condition on the north. A common choice for rural Illinois River bridge reconstructions has been two 12' lanes with two 8' shoulders, for a 40'-0" face to face width and 43'-2" out-to-out width (42'-10" for the new constant-slope parapet).

It is anticipated that a modern steel girder type bridge will be able to meet the span required by US Coast Guard horizontal clearance requirements. Vertically, the interaction of design criteria for grades, the proximity of the navigation span to the Henry street grid, and the US Coast Guard requirement for vertical clearance could prove challenging to the girder type bridge. The existing crossing employs 5% approach grades and has a structure depth of only about 4'-6". A girder bridge will be significantly deeper, and the vertical clearance requirement may increase. Preliminary indications are that grades between 6% and 7% may be required to keep the bridge tied in near its present touchdown point near the intersection of School St (IL-18) and Front St. The interplay of these factors will be addressed in the Phase I process.

Cost

Refined cost estimates will be developed in conjunction with the replacement structure type study and TSL development within the Phase I process for bridge replacement. In 2015, IDOT replaced a similar truss and girder bridge carrying IL-89 over the IL River at Spring Valley with a steel plate girder bridge including a 360' navigation span. The main navigation span was included in a 3-span unit, flanked by more modest steel girder span units to either side. A similar solution may

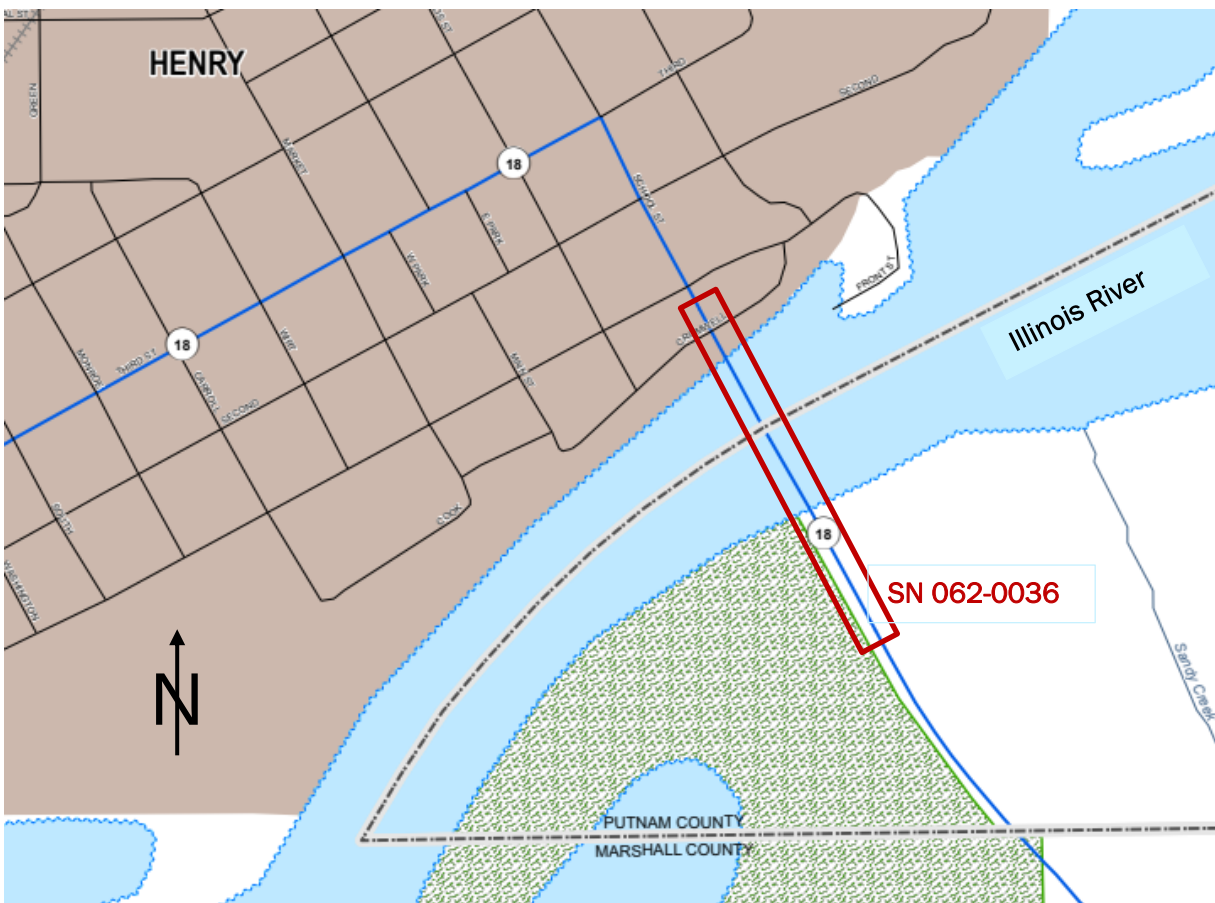
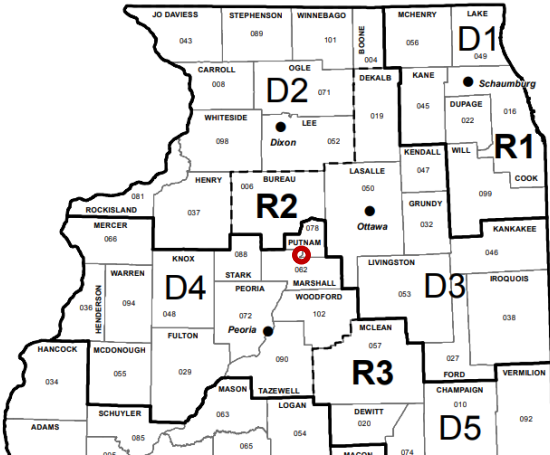
fit conditions at Henry. The bid prices for the Bill of Material on the bridge GPE sheet are in the range of \$27 to \$29 million, resulting in bridge unit costs in the range of 350 to 380 \$/SF.

If IL-18 is replaced by a bridge with similar 43'-2" out-to-out cross section, and at length similar to the existing 1719', the deck area is 74,200. Using the 2015 IL-89 prices, a total bridge cost of \$26 to \$28 million results. Since 2015, the National Highway Construction Cost Index has been rising about 3% per year.

In 2021 dollars, the replacement bridge is estimated to cost \$30 to \$32.5 million.

By (say) 2025, the cost of a replacement steel girder type bridge may be in the range of \$35 to \$37 million.

Attachment A. Location Map



Attachment B. IDOT Master Structure Report

Retrieved from <http://apps.dot.illinois.gov/bridgesinfosystem/main.aspx>, 4/25/2021

**Illinois Department of Transportation
Structures Information Management System
Structure Summary Report**

Date: 04/25/2021

Page: 1

Structure Number: 062-0036

District: 4

Inventory Data

Facility Carried:	ILL 18		Bridge Name:	HENRY BRIDGE		Sufficiency Rating:	6.5		Structure Length:	1719.1		
Feature Crossed:	ILL RIVER, CROMWELL		Location:	1.22 MI E OF ILL 29		HBP Eligible:	Yes		AASHTO Bridge Length:	99.9		
Bridge Remarks:						Replaced By:	-		Length of Long Span:	364.3		
Bridge Status:	1	OPEN - NO RESTRICT	Status Date:	4/20/2020 12:00:00 AM		Replaces:	-		Bridge Roadway Width:	22.6		
Status Remarks:	LLO signs verified installed as of 4-20-20 NBIS insp					Last Update Date:	03/30/2021		Appr Roadway Width:	36.0		
Maint County:	062	MARSHALL	Maint Township:	04	HENRY	Parallel Structure:	None		Deck Width:	23.3		
Maint Responsibility:	10 I.D.O.T.		UNKNOWN		Multi-Level Structure Nbr:			Sidewalk Width Right:	0.0			
Service On/Under:	1	HIGHWAY	6	/ HIGHWAY-WATERWAY		Skew Direction:	N	None	Sidewalk Width Left:	0.0		
Reporting Agency:	2	I.D.O.T. - BUREAU OF LOCAL ROADS			Skew Angle:	0	D	Navigation Control:	1	Yes		
Main Span Matl/Type:	3	STEEL	/	57 PENNSYLVANIA (PETIT) TRUSS		Structure Flared:	No		Navigation Horiz Clear:	338		
Nbr Of Main Spans:	1		Nbr Of Approach Spans:	13		Historical Significance:	No		Navigation Vert Clear:	44		
Approaches						Border Bridge State:			Culvert Fill Depth:	0.0		
Near #1 Matl/Type:	4	STEEL CONTINUOUS	/	02 STRINGER/MULTI-BEAM/GIRDER		Bdr State SN:			Number Culvert Cells:	0		
Near #2 Matl/Type:			/			Bdr State % Responsibility:	0		Culvert Opening Area:	0.0		
Far #1 Matl/Type:	3	STEEL	/	53 PARKER TRUSS - RIVETED		Structural Steel Wt	2898000		Culvert Cell Height:	0.00		
Far #2 Matl/Type:			/			Substructure Material:			Culvert Cell Width:	0.00		
Median Width/Type:	0 Ft. / 0	None				Rated By:	2	IDOT	Rate Method:	6	LOAD FACTOR (LF) REPORTED BY RATING FACTOR (RF)	
Guardrail Type L/R:	0None	/ 0	None		Inventory Rating:	0.680(24)	Load Rating Date:	10/04/2019	Railroad Crossing Info			
Toll Facility Indicator:	0	No Toll			Operating Rating:	1.140(41)			Crossing 1 Nbr:			
Latitude:	41.10989105	S	Longitude:	89.35327151	S	Design Load:	02	HS20	Crossing 1 Nbr:			
Deck Structure Type:	A	CIP CON NRMLLY FORM			Deck Structure Thickness:	7.5	SD:	Y	FO:	Y	RR Lateral Underclear:	0.0
Sidewalks Under Structure:	0	None							RR Vertical Underclear:	0	Ft	0
											In	

Key Route On Data

Key Route Nbr:	FEDERAL-AID PRIMARY	0653	Station:	1.0900
Appurtenances	Main Route	00000	Segment:	
Inventory County:	062 MARSHALL		Linked:	Y
Township/Road Dist	04 HENRY		Natl. Hwy System:	Not on NHS
Municipality	2545 HENRY		Inventory Direction:	
Urban Area:	None 0000		Curr AADT Yr/Count:	2019 / 2200
Functional Class:	4 MINOR ARTERIAL		Est Truck Percentage:	4
** CLEARANCES **	South/East	North/West	Number Of Lanes:	2
Max Rdwy Width:	22.6		One Or Two Way:	2 Two-Way
Horizontal:	23.0	0.0	Bypass Length:	14
			Future AADT Yr/Cnt:	2032 / 3064
			Designated Truck Rte:	CLASS II
Lateral:			Special Systems:	No

Key Route Under Data

Key Route Nbr:	MUNICIPAL STREET	1340	Station:	0.1600
Appurtenances	Main Route	02545	Segment:	
Inventory County:	062		Linked:	Y
Township/Road Dist	04 HENRY		Natl. Hwy System:	Not on NHS
Municipality	2545 HENRY		Inventory Direction:	
Urban Area:	None 0000		Curr AADT Yr/Count:	2019 / 125
Functional Class:	7 LOCAL		Est Truck Percentage:	10
** CLEARANCES **	South/East	North/West	Number Of Lanes:	2
Max Rdwy Width:	0.0		One Or Two Way:	2 Two-Way
Horizontal:	24.0	0.0	Bypass Length:	0
			Future AADT Yr/Cnt:	2032 / 501
			Designated Truck Rte:	NONE
Lateral:			Special Systems:	No

***** Marked Route On Data *****

Designation	Kind	Number
Route #1: 1 Mainline	3 State Highway	018
Route #2: 1 Mainline		
Route #3: 1 Mainline		

***** Marked Route Under Data *****

Designation	Kind	Number
1 Mainline	5 Municipal Streets	
1 Mainline		
1 Mainline		

**Illinois Department of Transportation
Structures Information Management System
Structure Summary Report**

Date: 04/25/2021

Page: 3

Structure Number: 062-0036

District: 4

Data Related to Inspection Information

*** Inspection Intervals ***				*** Maximum Allowable Posting Limits ***				Bridge Posting Level:
Routine NBIS:	12 MOS	Underwater:	60 MOS	One Truck At A Time:	0	Combination Type 3S-1:	Tons	L Legal Load Only
		Special:	N	Single Unit Vehicles:	LL Tons	Combination Type 3S-2:	Tons	

Inspection/Appraisal Information

Inspection Date:	04/20/2020	Inspection Temperature:	52Deg. F	** Actual Posted Limits **					
Deck:	6	SATISFACTORY CONDITION - MINOR DETERIORATION				Single Unit Vehicles:		12	Tons
Superstructure:	3	SERIOUS CONDITION - SIGNIFICANT SECTION LOSS				Combination Type 3S-1:		41	Tons
Substructure:	4	POOR CONDITION - ADVANCED DETERIORATION				Combination Type 3S-2:		41	Tons
Culvert:	N	NOT APPLICABLE				One Truck At A Time:		0	
Channel and Protection:	7	GOOD CONDITION - SOME MINOR PROBLEMS			Deck Wearing Surf:	A	BARE DECK NO OVRLAY	Last Paint Type:	I
Structural Evaluation:	3	INTOLERABLE - HIGH PRIORITY FOR CORRECTION			Deck Membrane:	F	NONE	ALUM EPOXY MASTIC	
Deck Geometry:	2	INTOLERABLE - HIGH PRIORITY FOR REPLACEMENT			Deck Protection:	A	EPOXY COATED REINF		
Underclearance-Vert/Lat.:	2	INTOLERABLE - HIGH PRIORITY FOR REPLACEMENT			Total Deck Thick:	7.5			
Waterway Adequacy:	8	EQUAL TO PRESENT DESIRABLE CRITERIA			Last Paint Date:	06/1988			
Approach Roadway Align:	7	BETTER THAN PRESENT MINIMUM CRITERIA							
Bridge Railing Appraisal:	3	Meets Standards							
Approach Guardrail:	332	Acceptable	Acceptable	Not Acceptable					
Pier Navig Protection:	1	NAVIGATION PROTECTION NOT REQUIRED							

Underwater Inspection/Appraisal Information

Inspection Date:	04/20/2020							
Temperature:	52	Inspection Method:	PS	Probe	Sonar			
				Appraisal Rating:	7	GOOD CONDITION		

Scour Critical Information

Miscellaneous

Rating:	5	CALCULATED SCOUR ACCEPTABLE	Evaluation Method:	A	Computer Calculation			
Analysis Date:	01/05/1995						Microfilm Data Recorded:	Yes

Construction Information

Year:	1934	Original	1988	Reconstructed	
Route:	SBI-89C	Sta: 12+05	FAS2369		Sta: 13+91.88
Section Nbr:	104-B			104B-D	
Contract Nbr:				42926	
Fed Aid Pr#:	000000000000000			BHS-2369(101)	
Built By:	1	I.D.O.T.		0	UNKNOWN

Attachment C. Bridge Inspection Report

4/20/2020 Detailed Inspection Report (Eric Rent, IDOT)

HENRY BRIDGE IL 18 over the Illinois River

SN 062-0036



Inspection Report

April 20, 2020

Prepared by
Illinois Department of Transportation
(Eric Rent)
Bridge Inspection Technician

TABLE OF CONTENTS

- 1) NBIS Bridge Inspection Report
- 2) Fracture Critical Inspection Report
- 3) Underwater Inspection Report
with Elevation Sheets
- 4) Element Level Inspection Report
- 5) Framing Plan, Table of Deficiencies
and Photos
- 6) Table of Joint Openings



SN: 062-0036	District: 4	Spans: 1	Appr. Spans: 13	Skew: 0	ADT: 2600	Truck Pct: 5
ADT Un: 275	Maint. Co: MARSHALL	Twsp: HENRY	Status: OPEN NO RESTRICT			
Facility Carried: IL 18	Feature Crossed: IL RIVER, CROMWELL					
Location: 1.22 MI. EAST OF IL 29	Municipality: HENRY	Team/Sub Section: 344/181	Insp/Rte: 888			
Bridge Name: HENRY BRIDGE	Material & Type: STL./PENNSYLVANIA (PETIT) TRUSS					
Insp. Intervals Routine: 24	Fracture Critical: 24	Underwater: 60	Special: NA	Element Level: 24		
90 – Inspection Date: 04 / 20 / 2020	90C – Temp. (°F): 52	90B1 – In Depth: ☒				
Is Delinquent: ☐	Reason:					
90A – Agency Program Manager: STEVE NEGANGARD	90A3 – Consultant Program Manager:					
90A1 – Team Leader: SHANE SUMMER	90A2 – Inspector: ERIC RENT					
90B – Inspection Remarks:						

Previous Inspection	DECK -2% SPALL/DELAM/MAP CRACK TRANV. CRKS. 5' TO 10' APART, MAJORITY @ 10'. <1% SPALL/DELAM
	SUPER - S.L. UP TO 49% WEB BRG. LOSS, S.L. UP TO 39% ON TRUSS MEMBERS
	S.L. UP TO 24% BOT. FLG. LOSS ON FLOORBEAMS
	SUB - LARGE SPALLS W/ EXP. REBAR. LOSS OF BRG. UP TO 25% ON BENT 5, & 21% ON P 7 TRUSS BRG. BENTS B5 & B6 ARE LEANING NORTH

Resources

Time to Inspect (H:M):	30:00	30:00	Traffic Control:	<u>Y</u>	Y	Boat:	<u>Y</u>	Y	Waders:	<u> </u>	Snooper:	<u>2</u>	2
Ladder:	<u> </u>	Manlift:	<u>1</u>	1	Bucket Truck:	<u> </u>	Other:	<u> </u>					

Inspector's Appraisals

	Prev	New	Comments
58 – Deck Condition:	<u>6</u>	6	SEE 90B
59 – Superstructure Cond:	<u>3</u>	3	SEE 90B
60 – Substructure Cond:	<u>4</u>	4	SEE 90B
62 – Culvert Condition:	<u>-</u>	-	
61 – Channel Condition:	<u>7</u>	7	
71 – Waterway Adequacy:	<u>8</u>	8	
72 – Approach Rdwy Align:	<u>7</u>	7	
111 – Pier Navig Protection:	<u>1</u>	1	

90B – Inspection Remarks:

DECK -2% SPALL/DELAM/MAP CRACK TRANV. CRKS. 5' TO 10' APART, MAJORITY @ 10'. <1% SPALL/DELAM
SUPER - S.L. UP TO 49% WEB BRG. LOSS, S.L. UP TO 39% ON TRUSS MEMBERS
S.L. UP TO 24% BOT. FLG. LOSS ON FLOORBEAMS
SUB - LARGE SPALLS W/ EXP. REBAR. LOSS OF BRG. UP TO 25% ON BENT 5, & 21% ON P 7 TRUSS BRG.
BENTS B5 & B6 ARE LEANING NORTH

Structure Number: 062-0036

[illegible][illegible]

108D – Total Deck Thickness (In.):	<u>7.5</u>	7.5
------------------------------------	------------	-----

59B – Paint Type:	I _ _ _ _ _ _ _ _ _	I
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59C – Utilities Attached:	<u>9</u>	9
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Joint Openings (In.) _____

90B – Inspection Remarks Continued:

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

	Signature	Date
Inspection Team Leader:		04 / 22 / 2020
Consultant Program Manager:		/ /
Agency Program Manager:		8 / 11 / 2020



SN: 062-0036	District: 4	Spans: 1	Appr. Spans: 13	Skew: 0	ADT: 2250	Truck Pct: 6
ADT Un: 275	Maint. Co: MARSHALL	Twsp: HENRY	Status: OPEN NO RESTRICT			
Facility Carried: IL 18			Feature Crossed: IL RIVER, CROMWELL			
Location: 1.22 MI. EAST OF IL 29		Municipality: HENRY	Team/Sub Section: 344/181		Insp/Rte: 888	
Bridge Name: HENRY BRIDGE			Material & Type: STL./PENNSYLVANIA (PETIT) TRUSS			
Insp. Intervals Routine: 24		Fracture Critical: 24	Underwater: 60	Special: NA	Element Level: 24	
93A- Inspection Date: 04 / 20 / 2020		93A4- Temp. (°F): 52				
Is Delinquent: ☐	Reason:					
90A - Agency Program Manager: STEVE NEGANGARD			90A3 - Consultant Program Manager:			
93A3 - Team Leader: SHANE SUMMER			93A5 - Inspector: ERIC RENT			

Resources

Time to Inspect (H:M):	30:00	30:00	Traffic Control:	<u>Y</u>	Y	Boat:	<u>Y</u>	Y	Waders:	<u> </u>	Snooper:	<u>2</u>	2
Ladder:	<u> </u>	Manlift:	<u>1</u>	1	Bucket Truck:	<u> </u>	Other:	<u> </u>					

Inspector's Appraisals

92A1-Type: X2	If "X4-Other" Description: SPANS 3 - 8
93A1-Rating: Prev. <u>5</u> New <u>5</u>	FC Method: Prev. <u>V</u> <u> </u> <u> </u> <u> </u> New: MP ☐ DP ☐ UT ☐ V ☒
93A2-Remarks: S.L. UP TO 18% BOT. FLG. LOSS & 13% WEB LOSS ON FLOORBEAMS.	

92A1-Type: B5	If "X4-Other" Description: SPANS 3 - 8
93A1-Rating: Prev. <u>5</u> New <u>5</u>	FC Method: Prev. <u>V</u> <u> </u> <u> </u> <u> </u> New: MP ☐ DP ☐ UT ☐ V ☒
93A2-Remarks: MBRS: L0 - L4, L1 - U1, L2 - U2, L3 - U3, L4 - U4, U1 - L2, U2 - L3, U3 - L4, L3 - U4. (SPANS 3, 4, 6, 7 & 8) (SPAN 5) L0 - L5, M1 - L1, U2 - L2, M3 - L3, M5 - L5, U6 - L6, M7 - L7, U2 - M3, M3 - L4, U4 - M5, M5 - L6, U6 - M7. S.L. UP TO 18% ON TRUSS MEMBERS.	

92A1-Type: <u> </u>	If "X4-Other" Description: <u> </u>
93A1-Rating: Prev. <u> </u> New ☐	FC Method: Prev. <u> </u> <u> </u> <u> </u> <u> </u> New: MP ☐ DP ☐ UT ☐ V ☐
93A2-Remarks: <u> </u>	

92A1-Type: <u> </u>	If "X4-Other" Description: <u> </u>
93A1-Rating: Prev. <u> </u> New ☐	FC Method: Prev. <u> </u> <u> </u> <u> </u> <u> </u> New: MP ☐ DP ☐ UT ☐ V ☐
93A2-Remarks: <u> </u>	

92A1-Type: _____ If "X4-Other" Description: _____
 93A1-Rating: Prev. ☐ New ☐ FC Method: Prev. ☐ New: MP ☐ DP ☐ UT ☐ V ☐
 93A2-Remarks: _____

92A1-Type: _____ If "X4-Other" Description: _____
 93A1-Rating: Prev. ☐ New ☐ FC Method: Prev. ☐ New: MP ☐ DP ☐ UT ☐ V ☐
 93A2-Remarks: _____

92A1-Type: _____ If "X4-Other" Description: _____
 93A1-Rating: Prev. ☐ New ☐ FC Method: Prev. ☐ New: MP ☐ DP ☐ UT ☐ V ☐
 93A2-Remarks: _____

92A1-Type: _____ If "X4-Other" Description: _____
 93A1-Rating: Prev. ☐ New ☐ FC Method: Prev. ☐ New: MP ☐ DP ☐ UT ☐ V ☐
 93A2-Remarks: _____

92A1-Type: _____ If "X4-Other" Description: _____
 93A1-Rating: Prev. ☐ New ☐ FC Method: Prev. ☐ New: MP ☐ DP ☐ UT ☐ V ☐
 93A2-Remarks: _____

	Signature	Date
Inspection Team Leader:	<i>Shane Sumner</i>	04 / 22 / 2020
Consultant Program Manager:		/ /
Agency Program Manager:	<i>Steve Negangard</i>	8 / 11 / 2020

Two Girder

A1- Suspension Link & Pin
 A2- Suspension Single Pin
 A3- Tension Flanges Riveted/
 Bolted Plate Girders
 A4- Bearing Seat of Suspended
 Spans
 A5- Tension Flange of Rolled
 Beam
 A6- Tension Flange of Welded
 Plate Girders
 A7- Tension Flanges of Lattice
 Truss Web Girders

Truss System

B1- Eyebars & Pin Tension Members
 B2- Simple Span Welded Truss
 Tension Members
 B3- Hanger Link & Pin of Suspended
 Trusses
 B4- Single Element Tension Members
 B5- Simple Span Riveted/Bolted
 Tension Members
 B6- Continuous Truss System- Welded,
 Riveted or Bolted Tension Members

Cable Stayed & Suspension

C1- Suspension Bridge- Cables
 C2- Cable Stayed- Cables
Tied Arches
 D1- Welded Box Ties
 D2- Riveted/Bolted Box Ties
 D3- Stiffened Girders
Framed Steel Substructure
 E1- Welded or Rolled Pier Cap
 E2- Riveted or Bolted Pier Cap
 E3- Welded or Rolled Pier Column
 E4- Riveted or Bolted Pier Column

Box Beams

F1- Single Welded Box
 F2- Single Riveted/Bolted Box
 F3- Double Box Beam- Welded,
 Riveted or Bolted

Other Types

X1- Bascule
 X2- Floorbeams supporting other
 steel members or spacing > 15 ft.
 X3- Cross Frames or Transfer
 Beams
 X4- Other



SN: 062-0036	District: 4	Spans: 1	Appr. Spans: 13	Skew: 0	ADT: 2600	Truck Pct: 5
ADT Un: 275	Maint. Co: MARSHALL	Twsp: HENRY	Status: OPEN NO RESTRICT			
Facility Carried: IL 18			Feature Crossed: IL RIVER, CROMWELL			
Location: 1.22 MI. EAST OF IL 29		Municipality: HENRY	Team/Sub Section: 344/181		Insp/Rte: 888	
Bridge Name: HENRY BRIDGE			Material & Type: STL./PENNSYLVANIA (PETIT) TRUSS			
Insp. Intervals Routine: 24		Fracture Critical: 24	Underwater: 60	Special: NA	Element Level: 24	
93B- Inspection Date: 04 / 20 / 2020			93B6- Temp. (°F): 52			
Is Delinquent:	☐	Reason:				
90A - Agency Program Manager: STEVE NEGANGARD			90A3 - Consultant Program Manager:			
93B3 - Team Leader: SHANE SUMMER			93B7 - Inspector: ERIC RENT			
93B2 - Underwater Inspection Remarks:						

Previous
Inspection

Resources

Time to Inspect (H:M):	2:00	2:00	Traffic Control:		Boat:	<u>Y</u>	Y	Waders:		Snooper:		
Ladder:		Manlift:		Bucket Truck:		Other:						

Inspector's Appraisals

93B8- Substructure Units Inspected

PIERS 2, 3, 4

93B1- Rating

Prev	New
<u>7</u>	7

93B4 - Method:

<u>S</u>	<u>P</u>			
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S	P
---	---

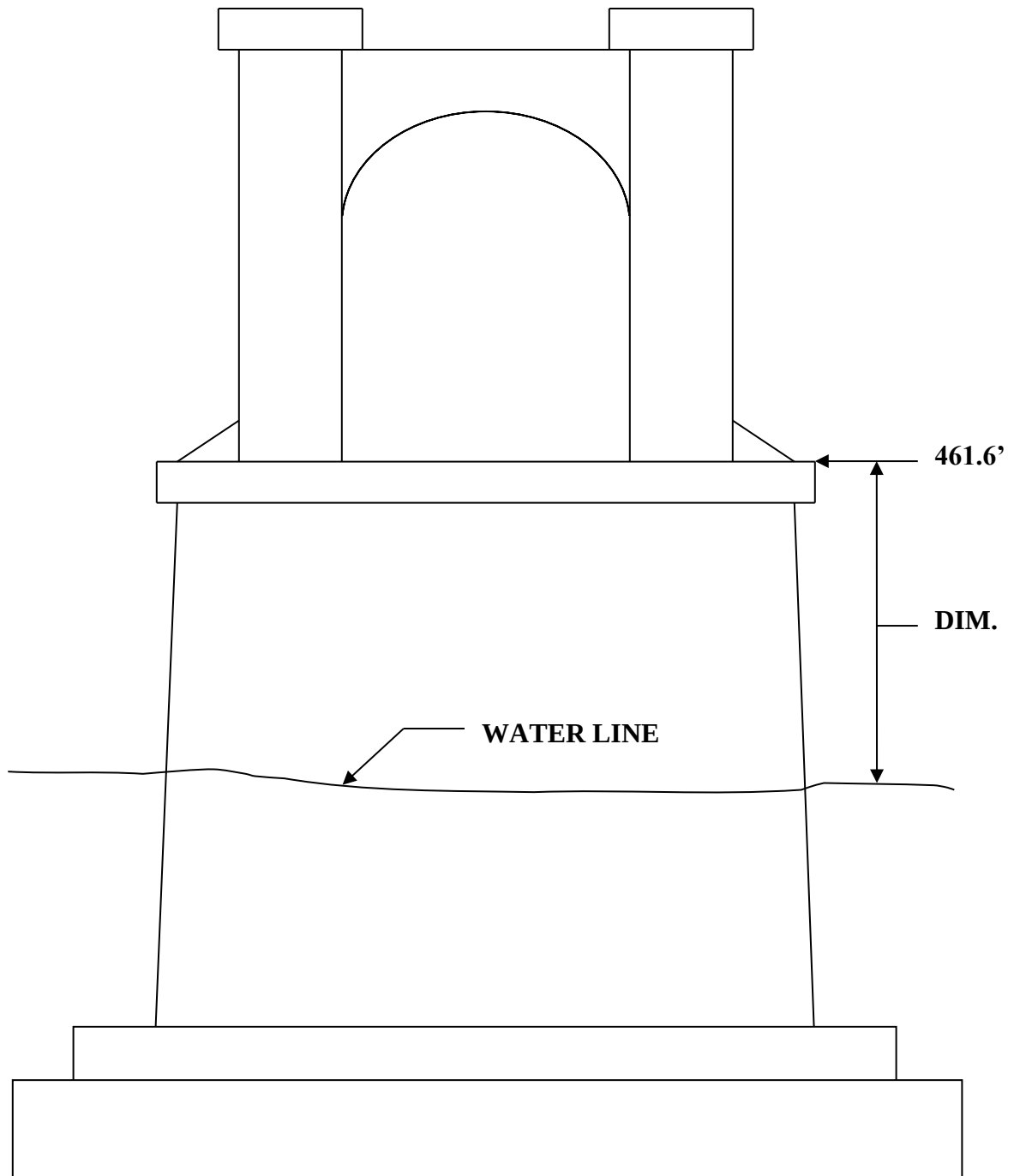
 If "O-Other" Describe: _____

93B2 - Underwater Inspection Remarks:

MINOR SCOUR 3'- 4' AROUND PIERS. NOTED IN 2017.

	Signature	Date
Inspection Team Leader:	<i>Shane Summer</i>	04 / 22 / 2020
Consultant Program Manager:		/ /
Agency Program Manager	<i>Steve Negangard</i>	8 / 11 / 2020

PIER 2



DETAIL A

UNDERWATER INVESTIGATION

SHEET 1 OF 3

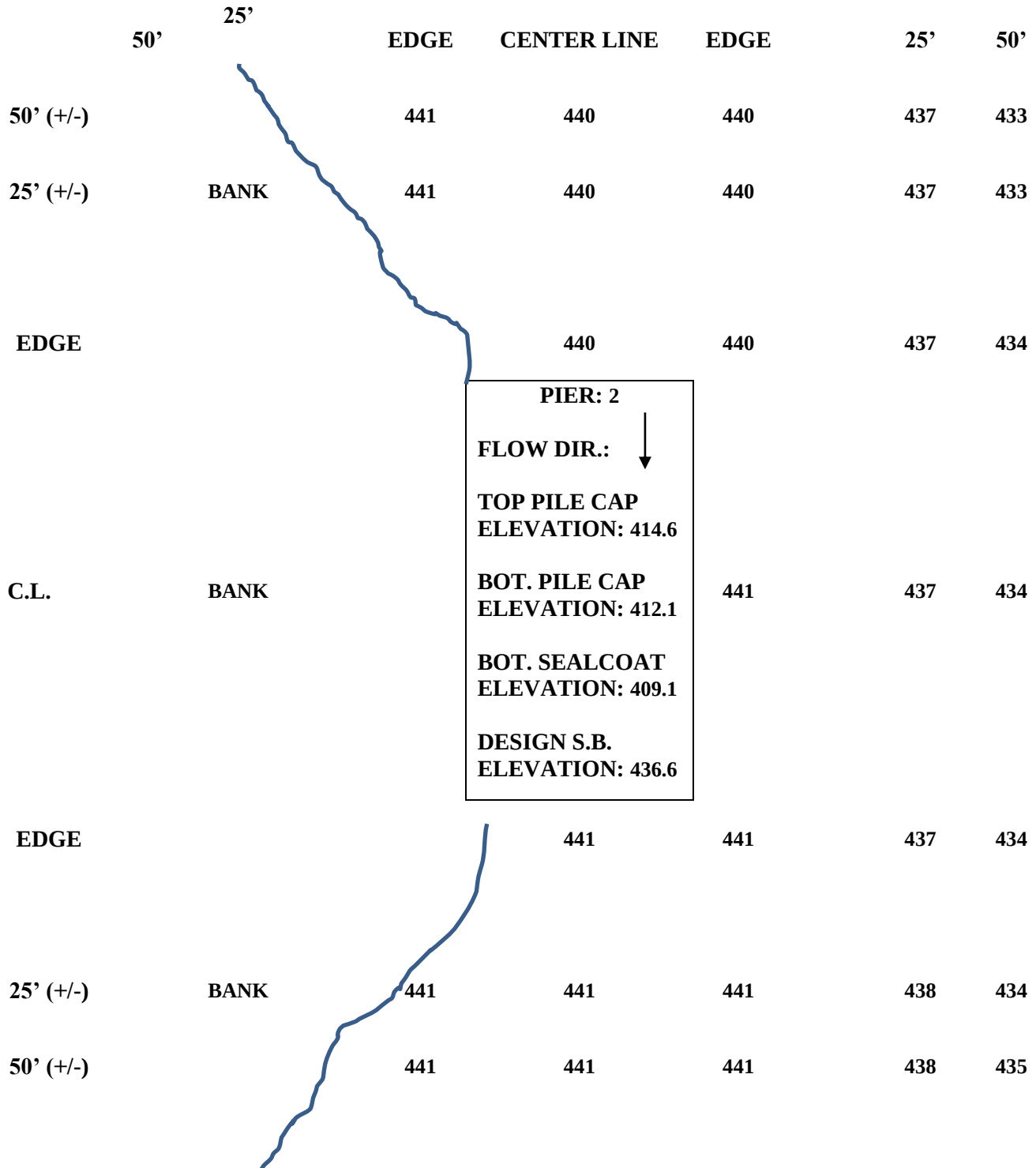
STRUCTURE NUMBER: 062-0036

WATER ELEVATION: 441.5'

INSPECTION DATE: 4/20/2020

INSPECTED BY: SMS, JDD

DETAIL / DIM. / ELEV.: A/20.1'/461.6'



UNDERWATER INVESTIGATION

SHEET 2 OF 3

STRUCTURE NUMBER: 062-0036

WATER ELEVATION: 441.5'

INSPECTION DATE: 4/20/2020

INSPECTED BY: SMS, JDD

DETAIL / DIM. / ELEV.: A/20.1'/461.6'

	50'	25'	EDGE	CENTER LINE	EDGE	25'	50'
50' (+/-)	427	426	426	427	427	427	425
25' (+/-)	427	428	427	422	422	426	425
EDGE	424	423	423	419	419	426	426
PIER: 3 FLOW DIR.: ↓ TOP PILE CAP ELEVATION: 410.6 BOT. PILE CAP ELEVATION: 408.2 BOT. SEALCOAT ELEVATION: 405.2 DESIGN S.B. ELEVATION: 426.2							
C.L.	422	422	420		420	424	426
EDGE	422	423	422	421	421	424	426
25' (+/-)	423	423	420	420	422	424	425
50' (+/-)	424	424	423	423	424	425	424

UNDERWATER INVESTIGATION

SHEET 3 OF 3

STRUCTURE NUMBER: 062-0036

WATER ELEVATION: 441.5'

INSPECTION DATE: 4/20/2020

INSPECTED BY: SMS, JDD

DETAIL / DIM. / ELEV.: A/20.1'/461.6'

	50'	25'	EDGE	CENTER LINE	EDGE	25'	50'
50' (+/-)	429	430	431	431	433	433	437
25' (+/-)	430	431	431	431	432	433	436
EDGE	430	431	431	430	430	431	436
PIER: 4 FLOW DIR.: ↓ TOP PILE CAP ELEVATION: 410.7 BOT. PILE CAP ELEVATION: 408.2 BOT. SEALCOAT ELEVATION: 405.2 DESIGN S.B. ELEVATION: 432.4							
C.L.	430	431	427		430	431	435
EDGE	430	430	430	430	430	431	434
25' (+/-)	430	431	432	432	432	434	435
50' (+/-)	430	432	431	431	433	433	436

SN: 062-0036	District: 4	Spans: 1	Appr. Spans: 13	Skew: 0	ADT: 2600	Truck Pct: 5
ADT Un: 275	Maint. Co: MARSHALL	Twsp: HENRY			Status: OPEN NO RESTRICT	
Facility Carried: IL 18			Feature Crossed: IL RIVER, CROMWELL			
Location: 1.22 MI. EAST OF IL 29		Municipality: HENRY		Team/Sub Section: 344//181		Insp/Rte: 888
Bridge Name: HENRY BRIDGE			Material & Type: STL./PENNSYLVANIA (PETIT) TRUS			
Insp. Intervals Routine: 24		Fracture Critical: 24		Underwater: 60	Special: NA	Element Level: 24
93C– Inspection Date:		04 / 20 / 2020		93C6– Temp. (°F):	52	
Is Delinquent:	☐	Reason:				
90E-Agency Program Manager:		STEVE NEGANGARD		90E3-Consultant Program Manager:		
90E1– Team Leader:		SHANE SUMMER		90E2- Inspector: ERIC RENT		

Resources

Time to Inspect (H:M):	30 : 0	30 : 0	Traffic Control:	Y	Y	Boat:	Y	Y	Waders:	-	Snooper:	2	2
Ladder:	-	Manlift:	1	1	Bucket Truck:	-	Other:						

Inspector's Appraisals

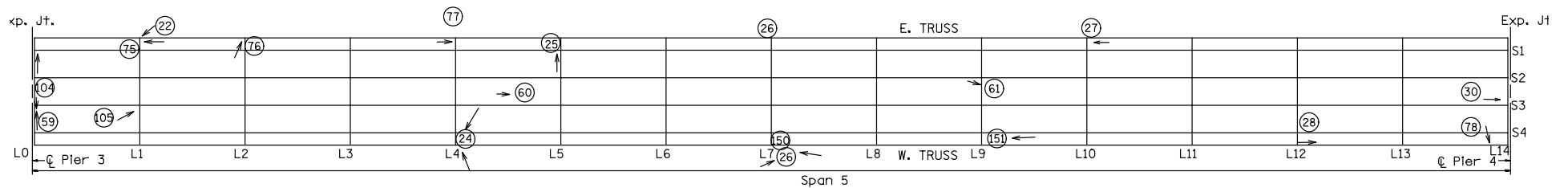
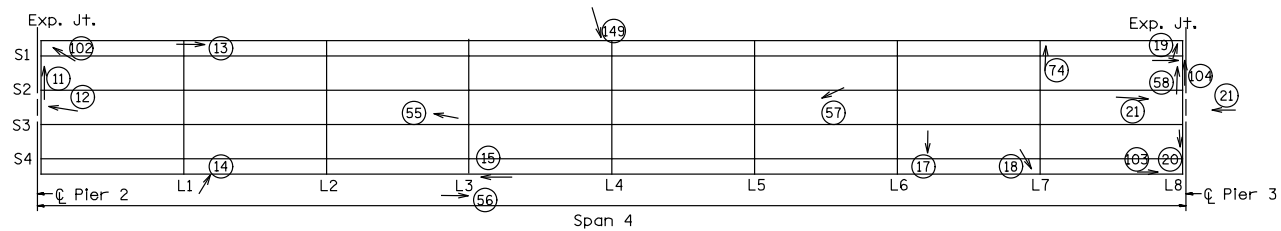
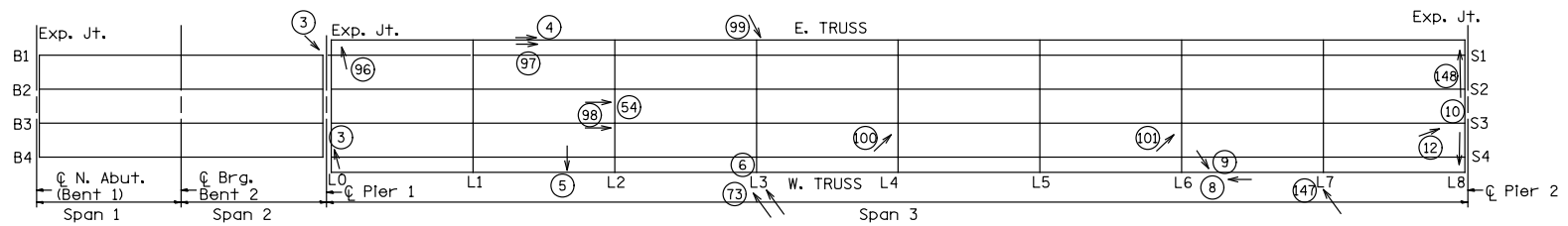
Element	Element Description	Env	Quantity	Unit	CS1	CS2	CS3	CS4
12	Reinforced Conc. Deck	2	39995	LF	37599	2396	0	0
	Remarks							
8102	Steel Beam/Gir./Stringer End	2	20	EA	4	4	0	12
	Remarks							
107	Steel Open Girder/ Beam	2	1370	LF	1131	229	0	10
	Remarks							
113	Steel Stringer	2	5488	LF	5303	185	0	0
	Remarks							
120	Steel Truss	2	2744	LF	0	2739	0	5
	Remarks							
152	Steel FloorBeam	2	1440	LF	792	613	0	35
	Remarks							
162	Steel Gusset Plate	2	508	EA	50	458	0	0
	Remarks							
205	Reinforced Concrete Column	1	12	EA	0	0	0	12
	Remarks							
210	Reinforced Concrete Pier wall	1	271	LF	201	30	30	10
	Remarks							
215	Reinforced Conc. Abutment	1	74	LF	59	15	0	0
	Remarks							
227	Reinforced Conc. Pile Extension	1	30	EA	6	6	6	12
	Remarks							
234	Reinforced Conc. Pier or Abutment Cap	1	286	LF	207	55	15	9
	Remarks							
300	Strip Seal Exp. Jnt.	2	115	LF	8	68	6	33
	Remarks							
302	Compression Jt. Seal	2	50	LF	2	48	0	0
	Remarks							
305	Assembly Jt. W/O Seal	2	23	LF	0	23	0	0
	Remarks							
310	Elastomeric Bearing	2	42	EA	8	30	4	0
	Remarks							
311	Movable Brg.	2	8	EA	0	4	4	0
	Remarks							
313	Fixed Bearing	2	18	EA	10	8	0	0
	Remarks							
330	Metal Bridge Railing	2	3435	LF	3435	0	0	0
	Remarks							

Element Level Inspection Report

Structure Number:

[illegible]

	Signature	Date
Inspection Team Leader:		04 / 22 / 2020
Consultant Program Manager:		/ /
Agency Program Manager:		8 /11 /2020



- ① = Typical Point
- ② = Typical Deck
- ③ = TREES
- ⑦ = RAIL
- ⊕ = ITEM # IN DEF. TABLE
- = DIRECTION OF PHOTO TAKEN

TABLE OF DEFICIENCIES

MONITOR – CONSIDER FOR REPAIR NEXT MAJOR

SN: 062-0036

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1	ALL	PAINT	GENERAL	1, 2, 3, 4, 5	89% CS1, 11% CS2, <1% CS3, <1% CS4 SURFACE RUST FORMING	ZONE PAINTING (SOON)	01	
2	ALL	DECK	GENERAL	6, 7, 8, 9	94% CS1, 6% CS2 (TRANV. CRK. 5' TO 10' APART)	MONITOR	01	
53	7,8	TREES	E & W SIDES	10, 11	TREES OBSTRUCTING INSPECTION ACCESS	TRIM	15	
72	4,5,8	RAIL	GENERAL	SEE TABLE	BOLTS MISSING IN RAIL (SEE TABLE 10)	MONITOR	17	
3	2, 3	P 1	E & W FACE OF CRASH WALL	12, 13	100 SQ. FT. DELAM./ SPALL	MONITOR	01	
96	3	L0E – U1E	@ TOP OF RAIL	14	6" X 1" OFFSET	MONITOR	19	X
4	3	L1E - L2E	12' FROM L1E	15	2 - PLUG WELDS	MONITOR	05	
97	3	CONDUIT	MIDSPAN L1E-L2E	16	BROKEN/EXPOSED WIRES	REPAIR	19	
5	3	U1W - L2W	8' ABOVE DECK	17	1 - PLUG WELD	MONITOR	03	
54	3	U2E – U2W	@ C.L. BOTH SIDES	18	9" X 1" OFFSET	MONITOR	15	X
98	3	SWAY BRACE	P.P. 2 LOWER HORZ. ABOVE BOTH LANES	19	2 – 9' X 1" OFFSETS	MONITOR	19	
73	3	L2W-L3W	@ L3W	20	3/4" MISDRILLED HOLE INSIDE BOTTOM ANGLE (NO HOLE IN COVER PLATE)	MONITOR	17	
99	3	L3E – U4E	@ L3E	21	16% S.L., (SEE DETAIL 3)	MONITOR	19	
6	3	GUSSET PL.	@ L3W O.S.	23	1 – PLUG WELD (BOT.)	MONITOR	09	
100	3	SWAY BRACE	P.P. 4 LOWER HORZ. ABOVE E.B. LANE	22	7" X 1 1/2" OFFSET	MONITOR	19	
101	3	SWAY BRACE	P.P. 6 LOWER HORZ. ABOVE E.B. LANE	24	6" X 3/4" OFFSET	MONITOR	19	
7	3	L6W – U6W	4' ABOVE DECK	*2015	3" X 1/2" OFFSET	REPAIRED	05	
8	3	L6W – U7W	LEVEL WITH DECK	25	2 – PLUG WELDS	MONITOR PER RON RODKEY	99	
9	3	L6W - U7W	3' ABOVE DECK	26	3" X 1/4" OFFSET	MONITOR	05	
147	3	L6W-L7W	@ L7W	27	3/4" MISDRILLED HOLE INSIDE BOTTOM ANGLE (NO HOLE IN COVER PLATE)	MONITOR	20	X

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10	3	FB. 8	THROUGHOUT	28, 29	23% S.L. IN BOT. FLG., 14% S.L. TOP FLG., 2% S.L. IN WEB, 2" HOLE IN BOT OF STIFF. @ STR. 2 & 3, 5" HOLE IN BOT. OF STIFF., @ STR. 4, S. FACE OF BM. & 3" HOLE IN BOT. OF STIFF. @ STR. 1, S. FACE OF BM. (SEE DETAIL 1)	REPAIR 17% S.L. BOT. FLG., IRF= 1.26	13	X
11	3, 4	JOINT	@ P 2, EAST & WEST ENDS	30	9' OF JOINT FAILED/LEAKING, 8' E. END, 1' W. END	REPAIR IMMEDEIATELY	13	
12	3,4	P 2	WALL & COL.	31, 32	500 SQ. FT. DELAM./SPALL ON WALL 200 SQ. FT. DELAM./SPALL ON COL. (6% S.L. COLUMN, DETAIL 14)	MONITOR	01	
148	4	FB. 0	@ STR. 1	28	3" HOLE IN BOT. OF STIFF.	MONITOR	20	X
102	4	L0E – U1E	@ L0E	33	10% S.L., 2" HOLE IN STAY PL.	MONITOR	19	
13	4	L1E - L2E	@ L1E BOTH LEGS OF L.C.	34	2 - PLUG WELDS	MONITOR	05	
14	4	L1W - L2W	@ L1W BOTH LEGS OF L.C.	35	2 - PLUG WELDS	MONITOR	05	
55	4	U2E – U3W	@ MIDSPAN, PAN 3	36	14% S.L. 7/8" MISDRILLED HOLE	MONITOR	15	
56	4	L3W – U3W	@ L3W	37	6% S.L., 3/4" MISSDRILLED HOLE IN STAY PL.	MONITOR	15	
15	4	L3W – L4W	@ L3W	38	2 - PLUG WELDS	MONITOR	01	
149	4	CONDUIT	2' N OF L4E	39	BROKEN/ EXPOSED WIRES	REPAIR	20	X
146	4	L5E – L6E	@ L5E	*2017	PART. CRK. T.W.	REPAIR NOT A CRACK	04	
57	4	U5E – U6W	@ MIDSPAN, PAN 6	40	14% S.L. 1" MISSDRILLED HOLE	MONITOR	15	
17	4	L6W - U7W	2' ABOVE DECK	41	5" X 1/2" OFFSET WITH 1" X 1/16" D GOUGE	MONITOR	99	
18	4	L6W - L7W	@ L7W BOTH LEGS OF L.C.	42	2 - PLUG WELDS	MONITOR	05	
74	4	L7E-U7E	4' ABOVE DECK, INSIDE ANGLE	43	7% S.L. 2-7/8" ABANDONED HOLES	REPAIR	17	

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103	4	L7W – L8W	@ L8W	44	9% S.L., (SEE DETAIL 17) 30% S.L., 2-4" HOLES IN STAY PL.	MONITOR	19	X
58	4	L7W – L8E	@ L8E	45	50% S.L. 8" X 4" HOLE IN BOT. CONN. PL.	MONITOR	15	
19	4	FB. 8	THROUGHOUT	46, 47	17% S.L. IN WEB, 25% S.L. IN BOT. FLG., 9% S.L. TOP FLG., 4" HOLE IN 1 ST STIFF. FROM E & W TRUSS S. FACE SEE DETAIL 2	REPAIR 18% S.L. BOT. FLG., IRF= 1.22	13	X
20	4, 5	CONDUIT	P 3, BTWN. FB. 8 & FB. 0, WEST END	48	BROKEN SUPPORT FOR CONDUIT, EXPOSED WIRES	REPAIR	13	X
21	4, 5	P 3	WALL, CAP, COL. & WEST BRG. OF SP. 4	49, 50	100 SQ. FT. DELAM./SPALL IN WALL WITH 1/8" CRK. FULL PERIMETER 50 SQ. FT. DELAM./SPALL ON CAP, & 2% BEARING LOSS, SP 4 WEST BRG. 60 SQ. FT. DELAM/SPALL. COL. (3% S.L. COLUMN, SEE DETAIL 15)	MONITOR	03	
59	4, 5	JOINT	@ P 3, WEST END	51	7" FAILED, LEAKING	REPAIR IMMEDIATELY	15	
104	5	FB 0	THROUGHOUT	52, 53	9% S.L., BOT. FLG., 7% S.L., TOP FLG., 4% S.L. WEB (SEE DETAIL 18) 4" HOLES IN 1 ST STIFF. FROM E & W, N. FACE	MONITOR	19	
75	5	L1E-U1E	1' ABOVE DECK	54	3% S.L., 1-7/8" MISDRILLED HOLE (THROUGH 1 ANGLE NOT BOTH)	MONITOR	17	
105	5	U1E – U1W	ABOVE EB LANE	55	18" X 1/2" & 6" X 1/2" OFFSETS	MONITOR	19	
22	5	L1E – L2E	4' FROM L1E	56	10% S.L., 1" HOLE IN TOP BAT. PL.	MONITOR	13	
76	5	L2E-U2E	@ L2E	57	7% S.L., INSIDE LEGS HAVE .4433 AVG REMAIN. 5"X 3"X 9/16" ANGLES	MONITIR	17	
23	5	SWAY BRACE	P.P. 4 LOWER HORIZ. E SIDE 1' 3" FROM L4E – U4E	*2015	12" X 1 1/2" OFFSET	REPAIRED	04	
77	5	L3E-L5E	@ L4E, T. INSIDE ANGLE	58	5 PLUG WELDS	MONITOR	17	X

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24	5	L3W – L5W	@ L4W – TOP INSIDE ANGLE, EA. SIDE OF L4W	59, 60	PLUG WELDS (5 ON EA. SIDE), 20% S.L., 2-2" HOLES IN T. STAY PL.	MONITOR	09	X
60	5	U4E – U5W	@ MIDSPAN, PAN 5	61	12" X 1/2" OFFSET IN BOT. ANGLE	MONITOR	15	
25	5	L4E – L5E	@ L5E	62	4" X 3/4" OFFSET ON TOP STAY PLATE	MONITOR	09	
26	5	NAV. LIGHT	E & W. SIDE @ P.P. 7	63	NAV. LIGHT LENS IS BROKEN, & SUPPORT IS BENT	REPAIR	13	
150	5	L7W-L8W	3 RD BAT. PL. FROM L7W	64	40% S.L., 2" HOLE IN T. BAT. PL	MONITOR	20	X
61	5	U9E – U9W	@ C.L.	65	10" X 1/2" OFFSET	MONITOR	15	
151	5	RAIL POST SUPPORT	1ST S. OF L9W	66	50% S.L., 5" HOLE IN WEB	REPAIR	20	X
27	5	RAIL POST SUPPORT	1 ST S. OF L10E	67	60% S.L., 6" HOLE IN WEB	REPAIR	13	
28	5	L12W – L13W	@ L12W	68	10" X 1/4" OFFSETS IN BOT. IS. & OS. ANGLES	MONITOR	11	
78	5	U13W-L14W	@ 10' ABOVE DECK	69	18" X 3 1/2" OFFSET	MONITOR	17	
29	5, 6	JOINT	@ P-4	*2017	DEBRIS IN FINGER JOINT	CLEANED	07	
30	5, 6	P. 4	CAP, COLUMN, & WALL	70, 71	20 SQ. FT. SPALL/DELAM ON CAP, 100 SQ. FT. SPALL / DELAM ON COL. 60 SQ. FT. SPALL / DELAM ON WALL (4% S.L. COLUMN, DETAIL 16)	MONITOR	05	
79	6	L0E-L1E	THROUHGOUT	72	4% S.L., (SEE DETAIL 12) 50% S.L. 10"L X 3" HOLE IN BOTTOM STAY PL	MONITOR	17	
106	6	L1W – L2W	1' FROM L1W	73	6% S.L., 2-7/8" MISDRILLED HOLES IN INSIDE VERTICAL LEGS OF ANGLE 2 PER SECTION, NO HOLE IN COVER PL.	MONITOR	19	
80	6	U1E-L2E	7' ABOVE DECK	74	7" X 1/4" OFFSET	MONITOR	17	
107	6	SWAY BRACE	P.P. 2 LOWER HORZ. E.B. LANE	75	8" X 1/2 " OFFSET	MONITOR	19	
108	6	U2E – L3E	@ L3E	76	13% S.L., (SEE DETAIL 3)	REPAIR	19	
109	6	L3E – U4E	@ L3E	76	6% S.L., (SEE DETAIL 3)	MONITOR	19	
34	6	SWAY BRACE	P.P. 3 ONE SIDE LOWER HORIZ. 4' FROM E. TRUSS	*2015	12" X 1" OFFSET	REPAIRED	04	

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32	6	SWAY BRACE	P.P. 4 ON E SIDE LOWER HORIZ. 4 1/2' FROM E. TRUSS	*2015	8" X 1 1/2" OFFSET	REPAIRED	04	
81	6	U3E-L4E	@ L4E	77	9% S.L. SEE DETAIL 3	MONITOR	17	
62	6	L4W – U4W	4' ABOVE DECK, INSIDE CHANNEL	?	4" X 3/4" OFFSET	MONITOR	15	
82	6	L4E-U5E	@ L4E	78	8% S.L. SEE DETAIL 3	MONITOR	17	
110	6	U4E – L5E	@ L5E	79	10% S.L., (SEE DETAIL 3)	MONITOR	19	
33	6	SWAY BRACE	P.P. 5 ON LOWER HORIZ. 3' E & 3' W. OF C.L.	*2015	4' 6" X 3/8" OFFSET, 12" X 1/2" OFFSET	REPAIRED	09	
34	6	L5E - L6E	@ L6E ON BOT. OUTSIDE ANGLE OF L.C.	80	1 PLUG WELD	MONITOR	05	
35	6	L7W - U7W	2' ABOVE DECK	81	8 – PLUG WELDS @ 2'	MONITOR	99	
36	6	L7W – L8W	@ L7W	82	3 PLUG WELDS BOTH SIDES OF L.C.	MONITOR	09	
111	6	W. BRG.	@ P5	83	6% BRG. LOSS, 2" X 14" CORNER, PL. 33" X 15"	MONITOR	19	
112	6	FB8	THROUGHOUT	84	10% S.L. IN WEB, 8% S.L. IN TOP FLG., 6% S.L. IN BOT. FLG., (SEE DETAIL 19) 3" HOLES IN 1 ST STIFF. FROM E & W, N. FACE	MONITOR	19	
37	6, 7	P 5	CAP & COLUMNS	85, 86	70 SQ. FT. DELAM/SPALL ON COLS., 60 SQ. FT. DELAM/SPALL ON CAP 4 EXPOSED BARS 2 BROKEN @ W. CAP SPALLING AROUND BRG., NO BRG. LOSS	MONITOR	05	
63	6, 7	JOINT	@ P 5, EAST & WEST END	87	7' FAILED, 2' EACH END, 3' @ CTR.	REPAIR	15	

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64	7	FB. 0	THROUGHOUT	88	16% S.L. IN WEB @ E. END, 15% S.L. IN TOP FLG. & 13% S.L. IN BOT. FLG. NEAR C.L., (SEE DETAIL 7) STIFF. @ S1 3" HOLE BOT. STIFF. @ S4 1" HOLE BOT.	REPAIR, RATE 13% S.L. WEB, IRF WEB=2.77	15	X
152	7	L0E-U1E	@ L0E	89	20% S.L., 10" X 2" HOLE IN BOT. STAY PL., 2" HOLE IN 11 TH LAC. BAR FROM LOE	MONITOR	20	X
83	7	L0W-L1E	@ L0W, CONN. PL	90	60% S.L., 8" X 8" HOLE IN CONN. PL	REPAIR	17	
84	7	L0E-L2E	@ L0E	91	16% S.L. (SEE DETAIL 13)	REPAIR	17	
113	7	L0W-L1W	@ L0W	92	18% S.L., (SEE DETAIL 23)	REPAIR	19	
65	7	L0E – L1W	@ L0E	88	50% S.L., 3" X 6" HOLE IN BOT. CONN PL.	REPAIR	15	
114	7	U1E-L2E	@ L2E	93	17% S.L., (SEE DETAIL 3)	REPAIR	19	
38	7	L1E - L2E	@ L2E BOT. OUTSIDE ANGLE	94	2 - PLUG WELDS	MONITOR	05	
115	7	L2W-L6W	FULL LENGTH	95	6% S.L., .49" AVG. REM. PLATES 1/2" NOM., .344 AVG. REM. ANGLES 3/8" NOM.	MONITOR	19	
153	7	U2E-U3W	MIDSPAN	96	PLUG WELD	MONITOR	20	X
116	7	U2E-L3E	@ L3E	97	15% S.L., (SEE DETAIL 3)	MONITOR	19	
39	7	L3W – U3W	2' ABOVE DECK	*2017	2 – 1" PLUG WELDS, O.S. CHAN FLG. & 5" X 3/4" OFFSET W/ 2 – 1/2" GOUGES IN BOT. STAY PL.	REPAIRED	11	
117	7	L3E – U4E	@ L3E	98	39% S.L., (SEE DETAIL 3)	REPAIR	19	
40	7	L3W – U4W	@ L3W	99	24% S.L., (SEE DETAIL 3)	REPAIR	13	
118	7	U3E-L4E	@ L4E	100	11% S.L., (SEE DETAIL 3)	REPAIR	19	
119	7	U3W-L4W	@ L4W	101	15% S.L., (SEE DETAIL 3)	REPAIR	19	
41	7	L4W – U4W	2' ABOVE DECK	*2017	1" PLUG WELD – OS CHAN. FLG.	REPAIRED	11	

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120	7	L4E – U5E	@ L4E	102	17% S.L., (SEE DETAIL 3)	REPAIR	19	
121	7	L4W – U5W	@ L4W	103	16% S.L., (SEE DETAIL 3)	REPAIR	19	
122	7	U4E-L5E	@ L5E	104	21% S.L., (SEE DETAIL 3)	REPAIR	19	
123	7	U4W-L5W	@ L5W	105	14% S.L., (SEE DETAIL 3)	REPAIR	19	
124	7	L5E-U6E	@L5E	106	26% S.L., (SEE DETAIL 3)	REPAIR	19	
42	7	L6W - U6W	12' ABOVE DECK	107	2" X 1/4" OFFSET	MONITOR	05	
125	7	L6E-L8E	FULL LENGTH	108	7% S.L., .30" AVG. REM. PLATES 5/16" NOM., .33 AVG. REM. ANGLES 3/8" NOM.	MONITOR	19	
126	7	GUSSET PL.	L7E, OUTSIDE	109	15% S.L., (SEE DETAIL 21)	MONITOR	19	
127	7	L6W-L8W	FULL LENGTH	110	27% S.L., (SEE DETAIL 22) 70% S.L., 1 ST BATTEN PL. @ L8W, 3" X 7" L & 3" X 9" L HOLES	REPAIR	19	
128	7	U7W – L8W	@ L8W	111	40% S.L., BOT. STAY PL. 2" L X 8" HOLE. 2 ND & 4 TH LAT. BAR 2" HOLES	MONITOR	19	
129	7	FB. 8	FULL LENGTH	112	18% S.L., BOT. FLG. 14% S.L., WEB 11% S.L., TOP FLG. (SEE DETAIL 26) 4" HOLES IN STIFF. @ S1 & S4, 1" HOLE IN STIFF. @ S3	REPAIR	19	
130	7,8	JOINT.	@ P 6	113	3' FAILED	REPAIR	19	X
43	7,8	CONDUIT	P 6, W. SIDE	114	CONDUIT BROKEN IN SEVERAL PLACES, INCLUDING JUNCTION BOX	REPAIR	13	
85	7,8	P6	WALL, COLUMN	115	20 SQ FT SPALL/DELAM WALL 20 SQ FT SPALL/DELAM COLUMN 4 SQ.FT. SPALL/DELAM CAP	MONITOR	17	
131	8	FB. 0	FULL LENGTH TO COVER PL.	112, 117	14% S.L., BOT. FLG. 4% S.L., TOP FLG. (SEE DETAIL 25)	REPAIR	19	
44	8	L0E – L1E	@ L0E	118	26% S.L. (SEE DETAIL 4)	REPAIR2	13	

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132	8	L0E – U1E	@ L0E, & 4' ABOVE L0E	119	LACING BARS 1-12 FROM BOT. CHORD HAVE 1"- 3" HOLES, MOST 100% S.L., 2 BARS BROKEN	MONITOR	19	
133	8	L0W-L1E	@ L0W	120	20% S.L., 12" X 2" HOLE IN CONN. PL.	MONITOR	19	
45	8	PORTAL FRAME	U1W – U1E, 2' WEST OF CENTERLINE OF ROADWAY	*2015	10" X 1" OFFSET	REPAIRED	07	
134	8	L1E-L2W	@ L2W	121	20% S.L., 7" X 2" HOLE IN CONN. PL.	MONITOR	19	
66	8	L2E – L3W	@ L3W	122	10% S.L., 5" X 2" HOLE IN BOT. CONN PL.	MONITOR	15	
135	8	L3E – U4E	2' FROM L3E	?	4% S.L., (SEE DETAIL 3)	MONITOR	19	
86	8	L3W-U4W	@ L3W	123	8% S.L., (SEE DETAIL 3)	MONITOR	17	
67	8	L3E – L4W	@ L4W	124	20% S.L., 4" X 7" & 2-1" HOLES IN BOT. CONN PL.	MONITOR	15	
68	8	GUSS. PL	@ L4W, O.S. PL.	125	5% S.L., .488" AVG REM. IN 12" X 3" AREA, & .625" NOM. (PL. 52"W X 5/8" THICKNESS)	MONITOR	15	
154	8	FB. 4	W END	126	15% S.L. IN WEB, 20% S.L. IN BOT. FLG. (SEE DETAIL 27)	MONITOR	20	X
136	8	L4W – U5W	2' FROM L4W	127	5% S.L., .23 AVG REM INT. LEGS, 5/16" NOM.	MONITOR	19	
69	8	L4E – L5W	@ L5W	128	20% S.L., 4"L X 10" HOLE IN BOT. CONN PL.	MONITOR	15	
137	8	FB. 5	W. END	129	8% S.L., BOT. FLG. @ L5W CONN. PL., .695" REM., .85 NOM.	MONITOR	19	
70	8	U5E – U6W	@ MIDSPAN, PAN 6	130	14% S.L. 7/8" MISDRILLED HOLE	MONITOR	15	
46	8	L6W - U7W	20' ABOVE DECK	?	9" x ½" OFFSET	MONITOR	03	
87	8	L7W-U7W	@ L7W, 8" ABOVE GUSSET	131	26% S.L. (SEE DETAIL 11)	REPAIRED 29% S.L., IRF= 0.63	17	X
71	8	U7W – L8W	@ L8W, & 4' ABOVE L8W	132	30% S.L., 10" X 3"L & 2"L X 3" HOLES IN BATTEN PL., & LACING BARS 2-9 FROM BOT. CHORD HAVE 1"- 3" HOLES, MOST 100% S.L., 4 BARS BROKEN	MONITOR	15	

TABLE OF DEFICIENCIES

MONITOR – CONSIDER FOR REPAIR NEXT MAJOR

SN: 062-0036

REHABILITATION

YEAR: 2020

% S.L. SHOWN IS ESTIMATED

In reference to stiffeners and cross frames,
the first shall be on the pier or abut.

IRF = Inventory Rating Factor

* See report from year indicated for photo of deficiency

ITEM #	SPAN	MEMBER	LOCATION	PHOTO	DEFICIENCY	RECOMMENDATION BY SPN	YR	CH
138	8	L7W-L8W	@ L8W	133	22% S.L., (SEE DETAIL 20)	REPAIR	19	
139	8	L7E-L8E	@ L8E	134	22% S.L., (SIM. TO DETAIL 20)	REPAIR	19	
140	8	FB. 8	@ C.L., THROUGHOUT	135	19% S.L., TOP FLG., 7% S.L. BOT. FLG. (SEE DETAIL 24)	REPAIR	19	X
141	8	E. BRG.	@ P7	136	1 NUT 90% S.L.	MONITOR	19	
47	8, 9	P. 7	PIER CAP ENDS, WALL & W TRUSS BRG.	137, 138, 139	17% LOSS OF BRG. (DETAIL 5), 300 SQ. FT. DELAM./SPALL CAP, 300 SQ. FT. DELAM./SPALL WALL	REPAIR	03	
142	9	B1	@ P7	140	19% S.L., (SEE DETAIL 9)	MONITOR	19	
143	9	B2	@ P7	141	6% S.L., (SEE DETAIL 9)	MONITOR	19	
144	9	B3	@ P7	142	11% S.L., (SEE DETAIL 9)	MONITOR	19	
145	9	B4	@ P7	143	3% S.L., (SEE DETAIL 9)	MONITOR	19	
49	9-13	BENT 3-6	@ BENT 3-6	151, 152, 153, 154	ALL PILES TILTED TO NORTH, 1.8 DEGREES @ BENT 3-6	MONITOR	05	X
88	11	BEAM 1	@ BENT 5	144	27% S.L. WEB BRG. (SEE DETAIL 9)	REPAIR 19% S.L. WEB BRG., IRF=1.62	17	
146	11	DIAPH.	@ BENT 5 BTWN. BM. 1 & 2	145	WEB OF DIAPH. BUCKLED @ BM. 1	REPAIR	19	
89	11	BEAM 2	@ BENT 5	146	16% S.L. (SEE DETAIL 9)	REPAIR 17% S.L., IRF=1.49	17	
90	11	BEAM 3	@ BENT 5	147	9% S.L. (SEE DETAIL 9)	MONITOR 9% S.L., IRF=1.54	17	
91	11	BEAM 4	@ BENT 5	148	14% S.L. (SEE DETAIL 9)	RATE	17	X
92	12	BEAM 1	@ BENT 5	144	45% S.L. (SEE DETAIL 9)	REPAIR 27% S.L., IRF=1.48	17	
93	12	BEAM 2	@ BENT 5	146	29% S.L. (SEE DETAIL 9)	REPAIR 14% S.L., IRF=1.38	17	
94	12	BEAM 3	@ BENT 5	147	41% S.L. (SEE DETAIL 9)	REPAIR 10% S.L., IRF= 1.33	17	

TABLE OF DEFICIENCIES

MONITOR – CONSIDER FOR REPAIR NEXT MAJOR

SN: 062-0036

REHABILITATION

YEAR: 2020

% S.L. SHOWN IS ESTIMATED

In reference to stiffeners and cross frames,
the first shall be on the pier or abut.

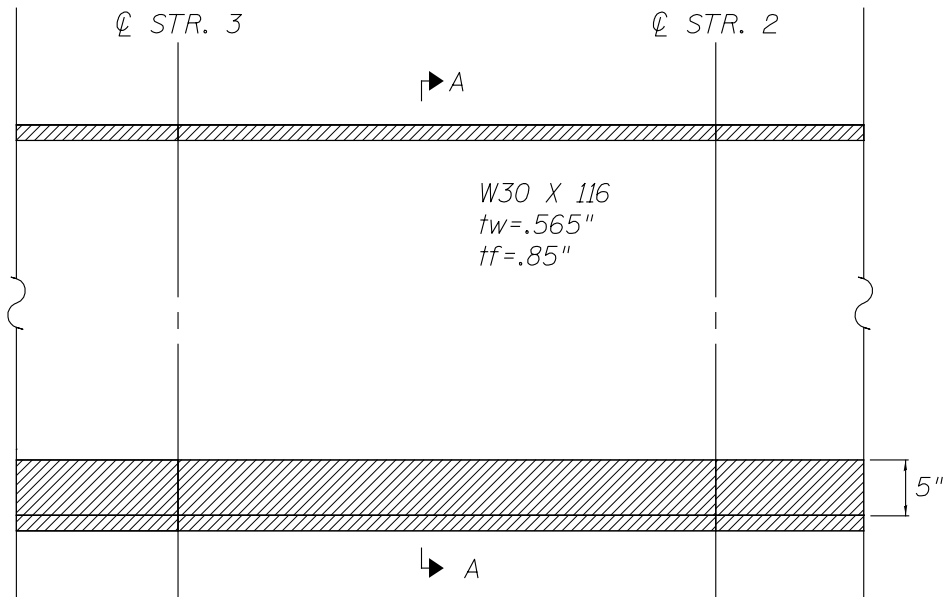
IRF = Inventory Rating Factor

* See report from year indicated for photo of deficiency

ITEM #	SPAN	MEMBER	LOCATION	PHOTO	DEFICIENCY	RECOMMENDATION BY SPN	YR	CH
95	12	BEAM 4	@ BENT 5	148	18% S.L. (SEE DETAIL 9)	RATE 8% S.L., IRF= 1.36	17	X
48	11, 12	BENT 5	ALL PILES	149, 150	25% S.L. PILE VERT. BARS 100% S.L. TIES 30% S.L. PILE CONCRETE (SEE DETAIL 6)	REPAIR	05	X
50	12, 13	BENT 6	PILE 2, & PILE 3 (PILES NUMBERED FROM EAST TO WEST)	155	19% S.L., 6 SQ. FT. DELAM./SPALL W/ EXP. BARS ON PILE 2, & 6 SQ. FT. DELAM./SPALL W/ EXP. BARS, 2 VERT. EXP. & 1 TIE ON PILE 3 (SEE DETAIL 8)	MONITOR	09	X
51	14	JUNCTION BOX	@ S. ABUT., E. SIDE	156	NO COVER ON BOX, CONDUIT BROKEN	REPAIR	13	
52	14	APPROACH SLAB	@ S. ABUT.	157	24 SQ. FT. DELAM./ SPALL	REPAIR	09	X

SP. 3, FB. 8 @MIDSPAN

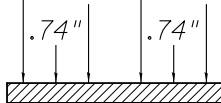
S.N. 062-0036



ELEVATION

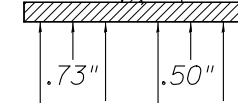
LOOKING NORTH

.71" .74" .74" .71"



THIS SIDE
ASSUMED
(OUT OF REACH)

.46"
44" 5"



.71" .75" .65" .61"

SEC. A-A

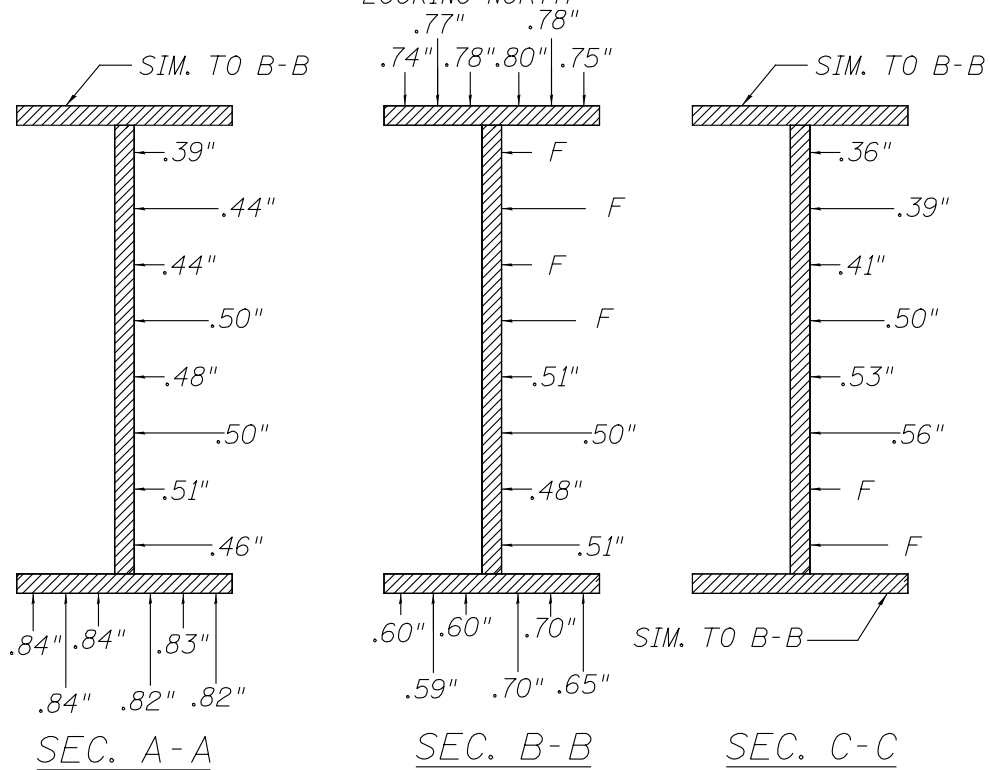
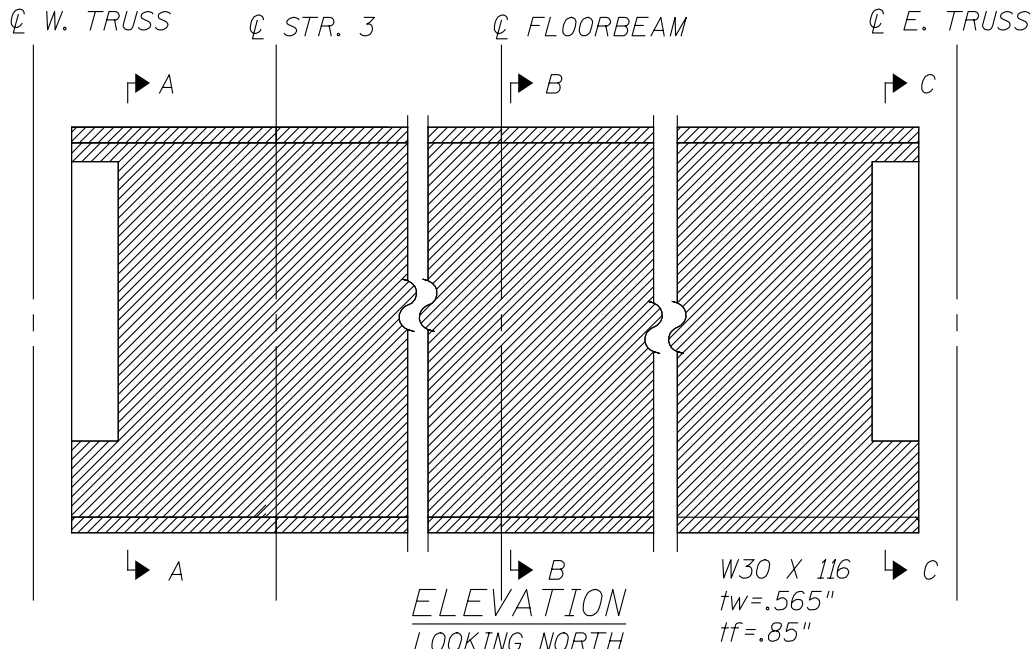
SECTION LOSS

FULL SECTION

DETAIL 1

READINGS EQUALLY SPACED

S.N. 062-0036



SP. 4, FB. 8 @MIDSPAN

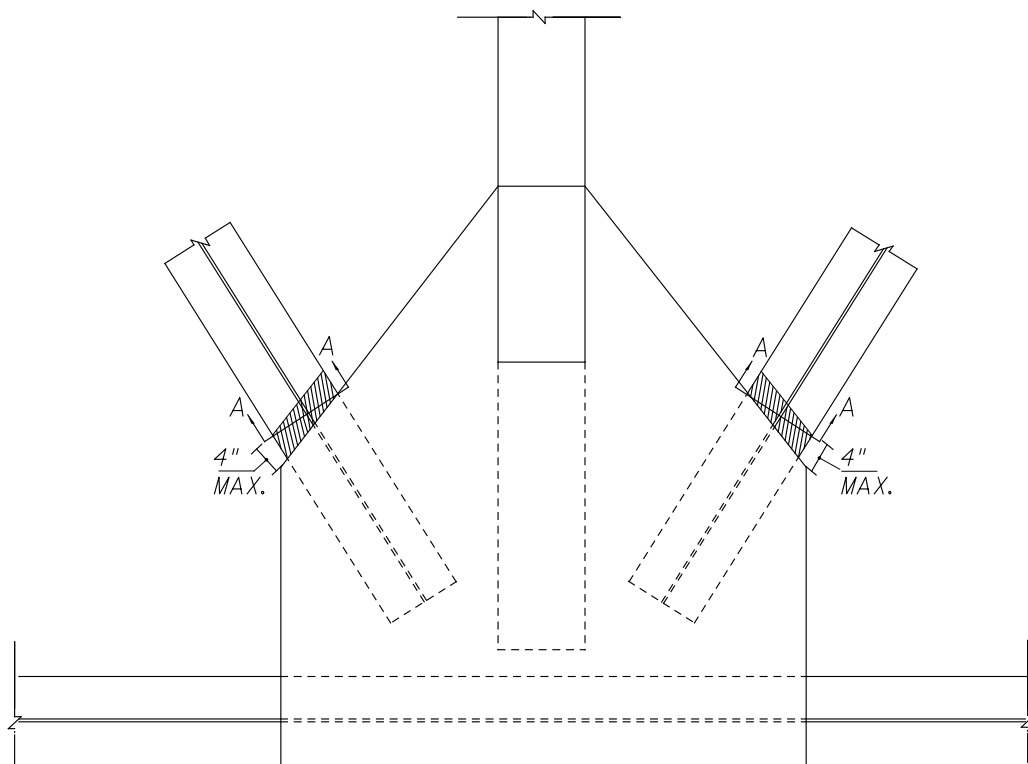
DETAIL 2

SECTION LOSS

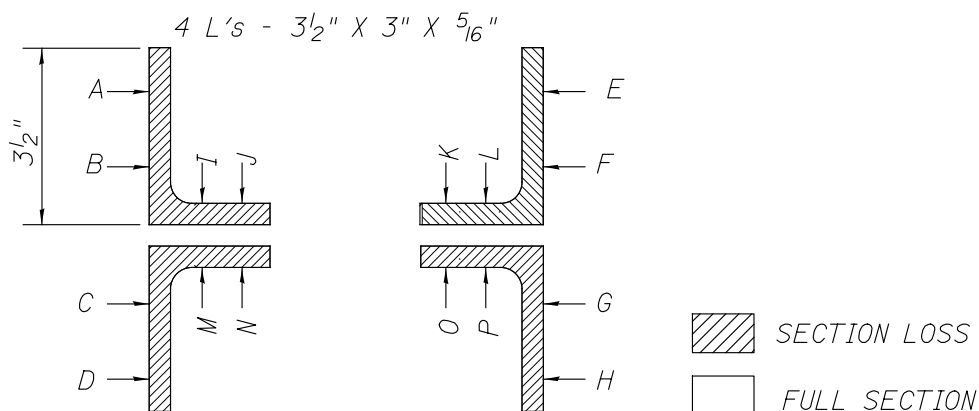
FULL SECTION

READINGS EQUALLY SPACED

S.N. 062-0036



ELEVATION



SEC. A-A

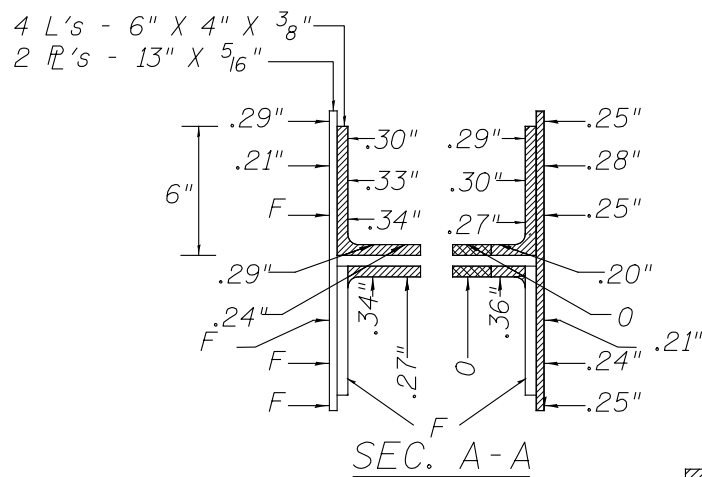
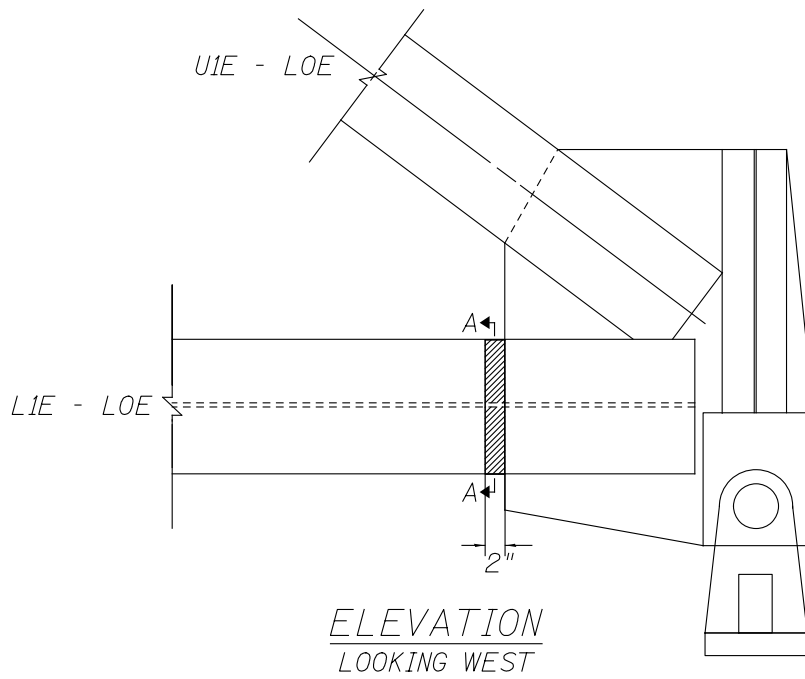
DETAIL 3

READINGS EQUALLY SPACED

SPAN																		
SPAN	MEMBER	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	% S.L.
3	L3E-U4E	0.17	0.17	0.27	0.26	0.24	0.26	0.31	0.31	0.23	0.24	0.31	0.31	0.25	0.25	0.31	0.31	16%
6	U2E-L3E	0.31	0.30	0.23	0.22	0.31	0.31	0.31	0.24	0.27	0.23	0.28	0.28	0.27	0.27	0.25	0.27	13%
6	L3E-U4E	0.21	0.26	0.29	0.30	0.33	0.32	0.28	0.28	0.31	0.31	0.30	0.31	0.31	0.31	0.29	0.31	6%
6	U3E-L4E	0.31	0.31	0.31	0.31	0.22	0.20	0.19	0.26	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	9%
6	L4E-U5E	0.31	0.31	0.31	0.31	0.24	0.20	0.21	0.26	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	8%
6	U4E-L5E	0.31	0.31	0.29	0.31	0.30	0.30	0.26	0.19	0.31	0.30	0.29	0.27	0.25	0.24	0.26	0.27	10%
7	U1E-L2E	0.24	0.26	0.29	0.31	0.30	0.31	0.31	0.31	0.24	0.24	0.24	0.24	0.20	0.22	0.20	0.17	17%
7	U2E-L3E	0.27	0.22	0.27	0.31	0.29	0.31	0.31	0.31	0.24	0.26	0.27	0.23	0.22	0.22	0.23	0.24	15%
7	L3E-U4E	0.12	0.14	0.12	0.11	0.21	0.15	0.31	0.31	0.16	0.12	0.20	0.24	0.20	0.19	0.24	0.24	39%
7	L3W-U4W	0.12	0.14	0.31	0.31	0.29	0.29	0.31	0.31	0.29	0.25	0.22	0.24	0.19	0.20	0.17	0.21	22%
7	U3W-L4W	0.27	0.29	0.31	0.31	0.13	0.21	0.31	0.31	0.24	0.25	0.28	0.31	0.28	0.25	0.25	0.22	15%
7	U3E-L4E	0.21	0.21	0.31	0.31	0.30	0.31	0.31	0.31	0.29	0.30	0.25	0.28	0.28	0.25	0.22	0.28	11%
7	U4W-L5W	0.29	0.31	0.31	0.31	0.26	0.16	0.32	0.30	0.27	0.25	0.24	0.26	0.19	0.24	0.23	0.31	14%
7	L4W-U5W	0.25	0.25	0.31	0.31	0.29	0.29	0.21	0.31	0.27	0.29	0.26	0.22	0.18	0.24	0.21	0.24	16%
7	L4E-U5E	0.24	0.23	0.31	0.31	0.30	0.31	0.31	0.31	0.22	0.23	0.25	0.24	0.22	0.21	0.19	0.16	17%
7	U4E-L5E	0.21	0.17	0.31	0.31	0.23	0.19	0.20	0.35	0.29	0.24	0.20	0.30	0.26	0.31	0.19	0.20	21%
7	L5E-U6E	0.17	0.17	0.29	0.31	0.18	0.08	0.29	0.32	0.25	0.23	0.26	0.27	0.23	0.21	0.21	0.22	26%
8	L3W-U4W	0.31	0.31	0.31	0.31	0.14	0.14	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	8%
8	L3E-U4E	0.31	0.31	0.31	0.31	0.27	0.27	0.27	0.27	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	4%

SP. 8 LOE - L1E
 @LOE

S.N. 062-0036



SECTION LOSS

FULL SECTION

DETAIL 4 READINGS EQUALLY SPACED

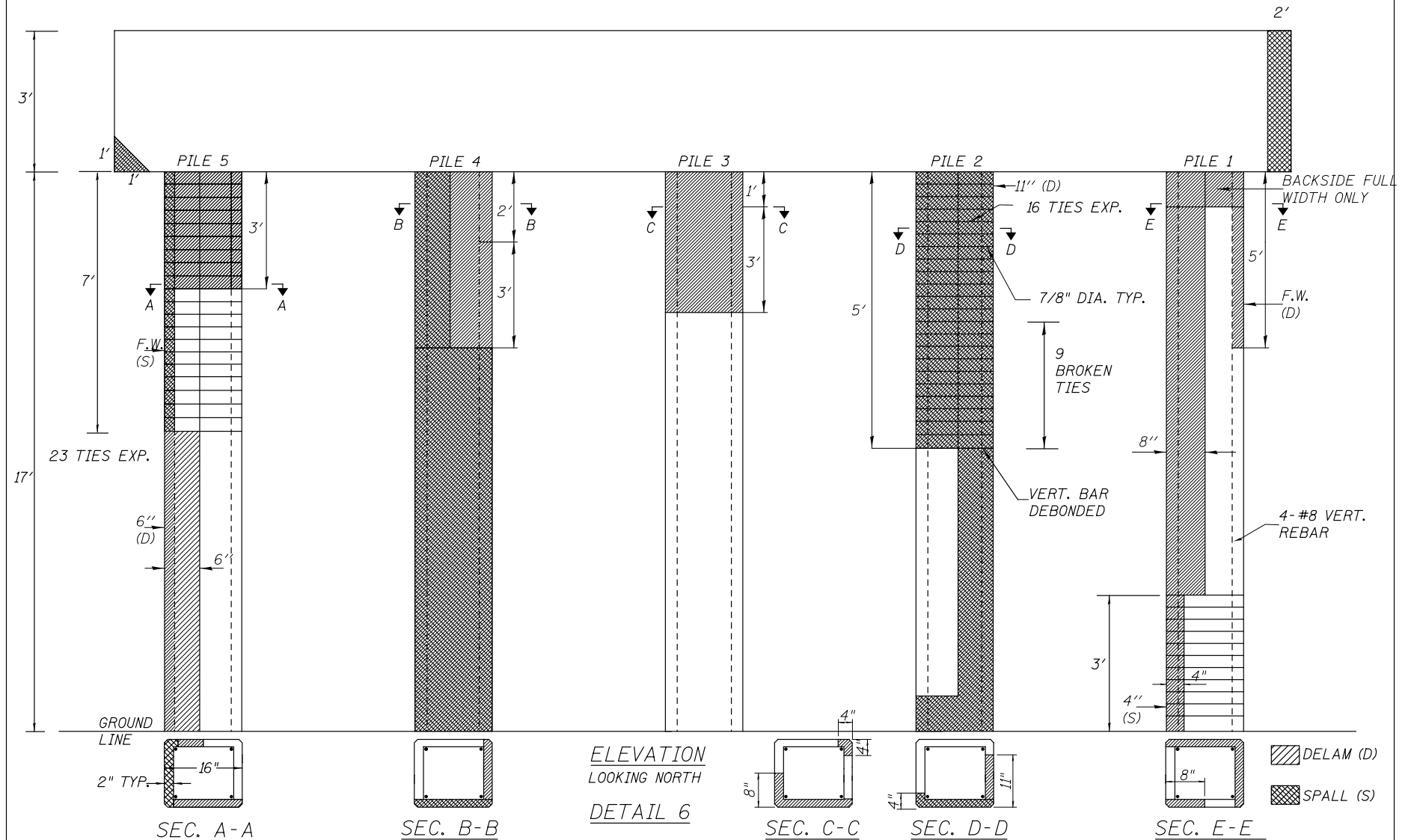
S.N. 062-0036



DETAIL 5

SP. 11,12 BENT 4

S.N. 062-0036

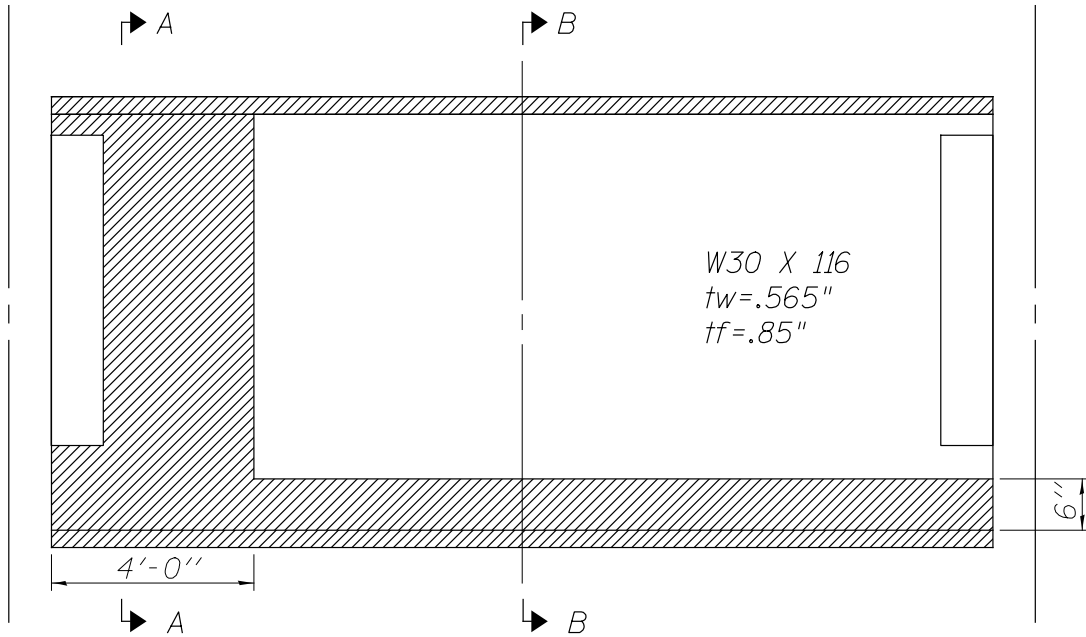


SP. 7, FB. 0 @MIDSPAN

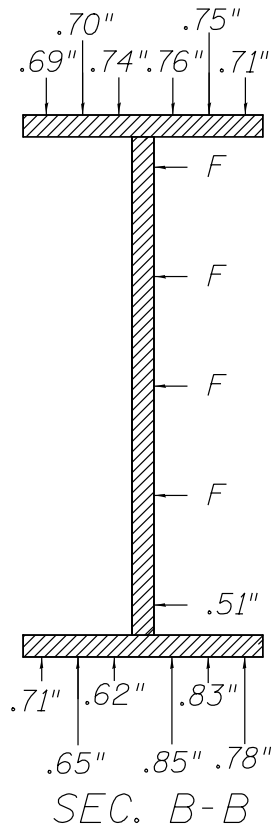
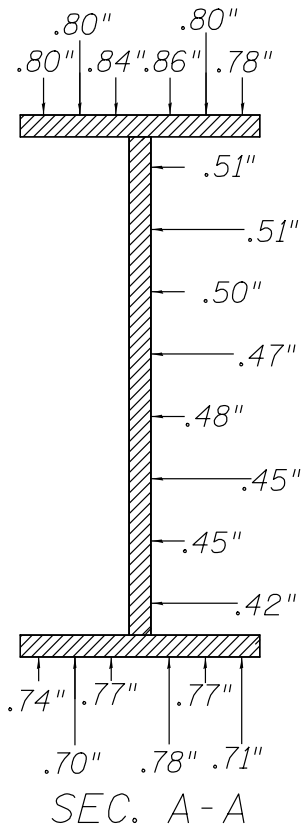
S.N. 062-0036

℄ E. TRUSS

℄ W. TRUSS



ELEVATION
LOOKING SOUTH



SECTION LOSS

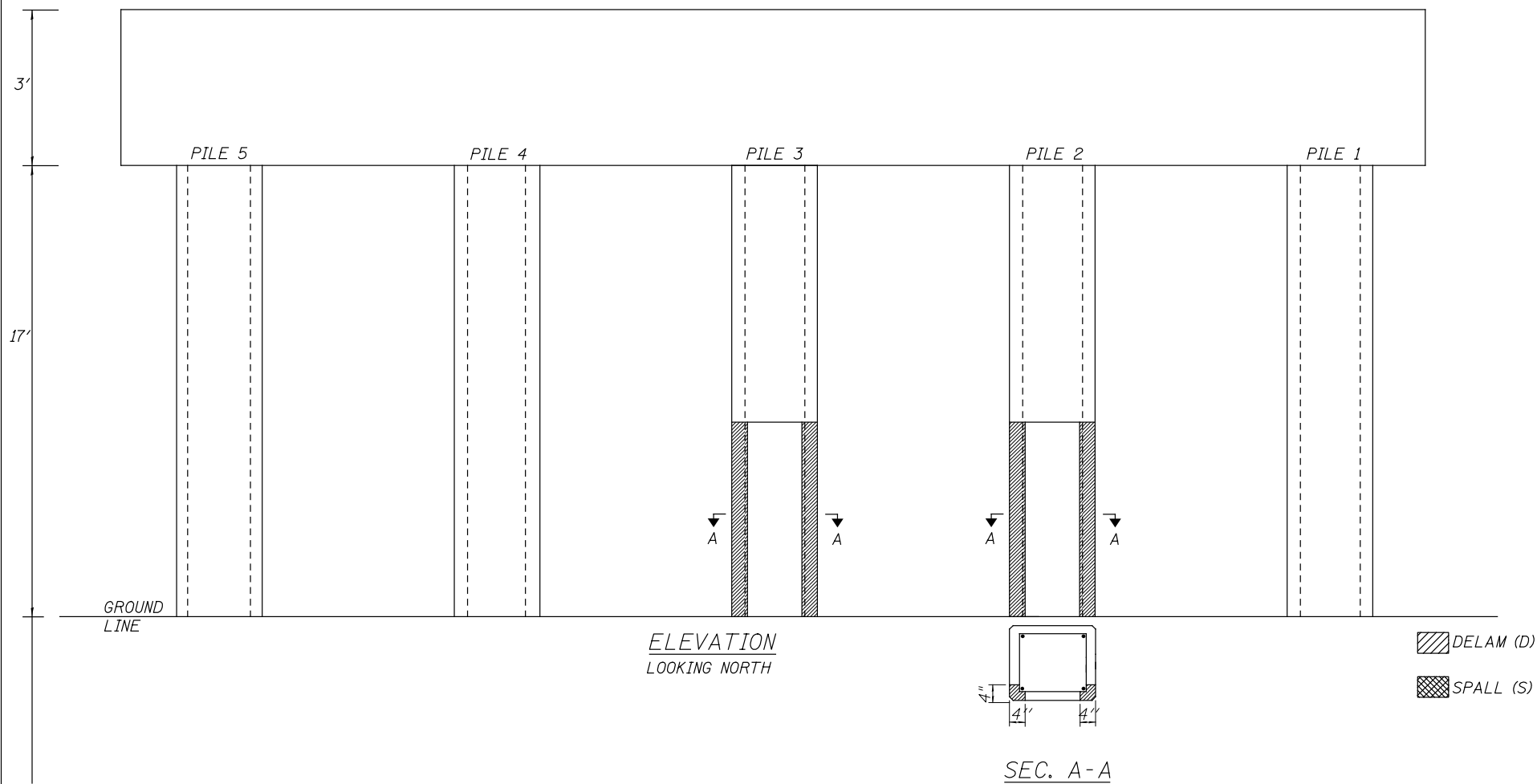
FULL SECTION

DETAIL 7

READINGS EQUALLY SPACED

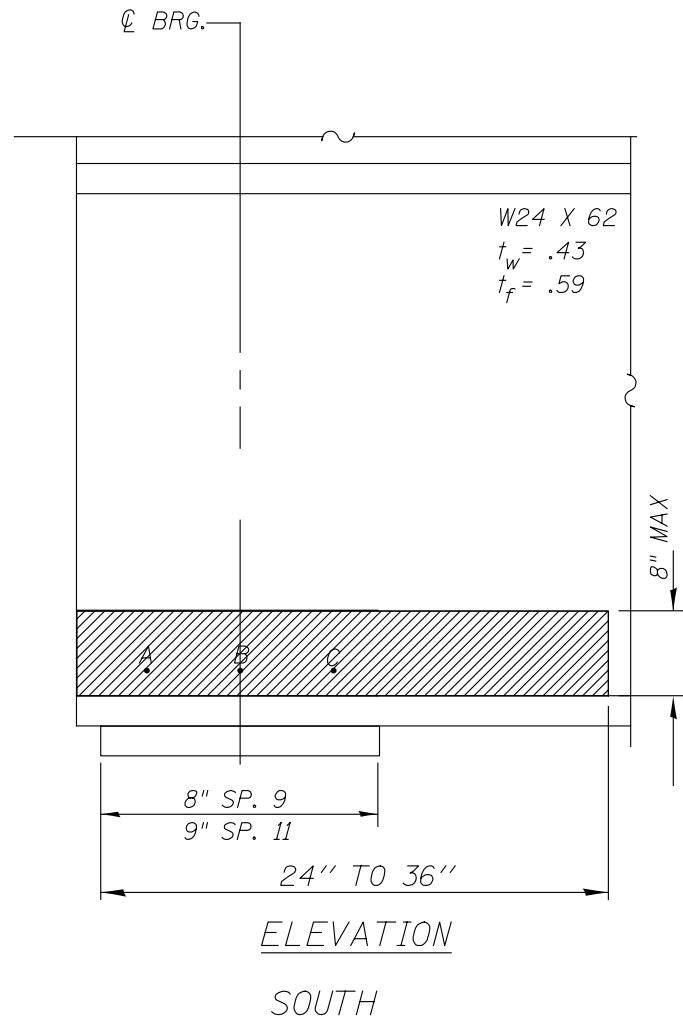
SP. 12,13 BENT 6

S.N. 062-0036



DETAIL 8

SP 9, 11 & 12
 PIER 7 & BENT 4
 BM 1-4



 FULL

 SECTION LOSS

DETAIL 9

READINGS ARE EQUALLY SPACED

TABLE 9

SPAN	BM	A	B	C	S.L
9	1	0.36	0.35	0.34	19%
9	2	0.40	0.41	0.40	6%
9	3	0.38	0.38	0.39	11%
9	4	0.40	0.41	0.44	3%
11	1	0.34	0.32	0.28	27%
11	2	0.35	0.36	0.37	16%
11	3	0.40	0.39	0.39	9%
11	4	0.38	0.36	0.37	14%
12	1	0.28	0.23	0.20	45%
12	2	0.30	0.32	0.30	29%
12	3	0.25	0.24	0.27	41%
12	4	0.36	0.35	0.35	18%

TABLE 10
MISSING GUARDRAIL BOLTS

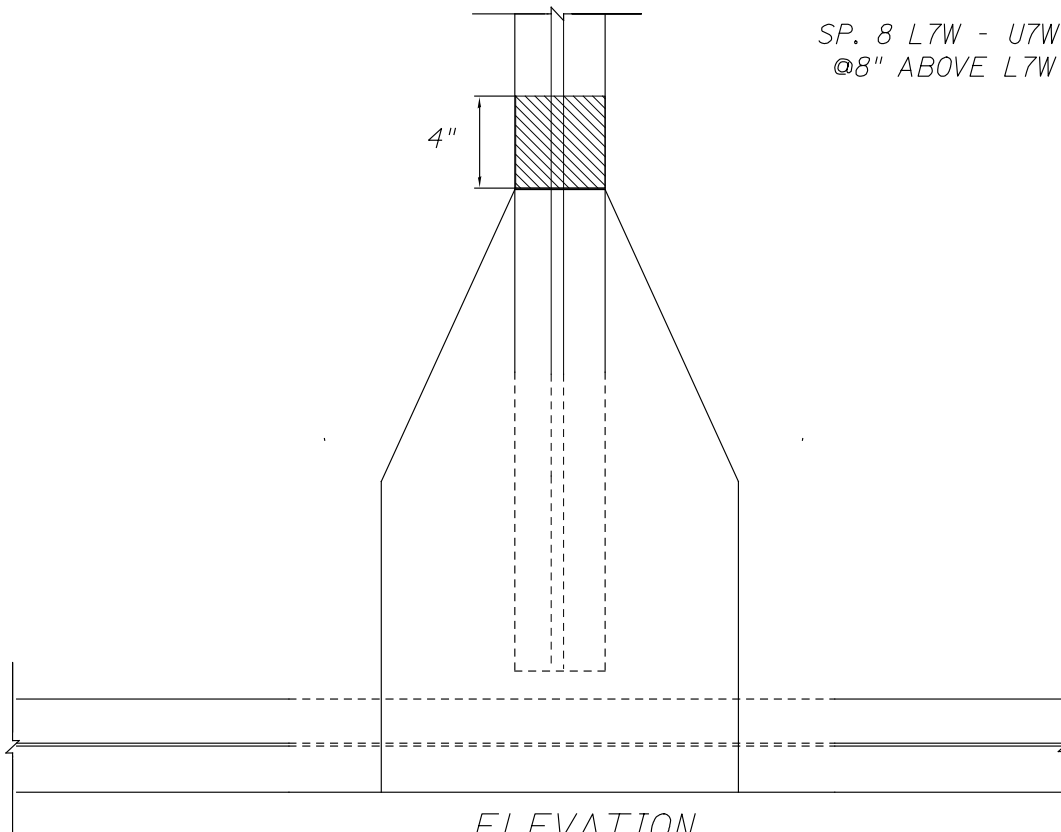
<u>SPAN</u>	<u>MEMBER</u>	<u>LOCATION</u>	<u>DEFIENCY</u>	<u>PHOTO</u>
3	RAIL	1 ST POST N OF L6W	2 MISSING BOLTS	<u>158</u>
4	RAIL	2 ND POST S OF L5W	2 MISSING BOLTS	159
5	RAIL	1 ST POST N & S OF L4W	2 MISSING BOLTS	160
8	RAIL	1 ST POST N OF L2W	2 MISSING BOLTS	161

S.N. 062-0036

L7W-U7W

SP. 8 L7W - U7W
@8" ABOVE L7W

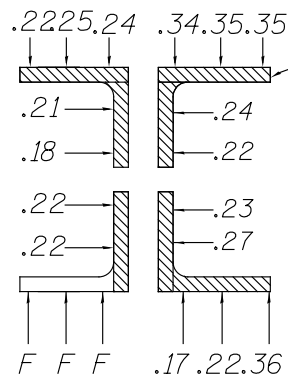
4"



ELEVATION

LOOKING EAST

4 L3"X3"X3/8"



SEC. A-A

 SECTION LOSS

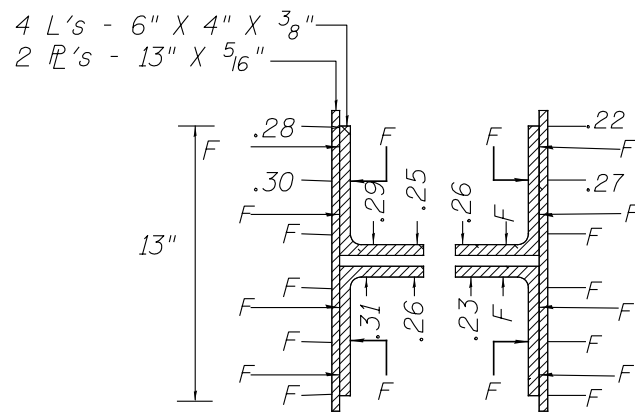
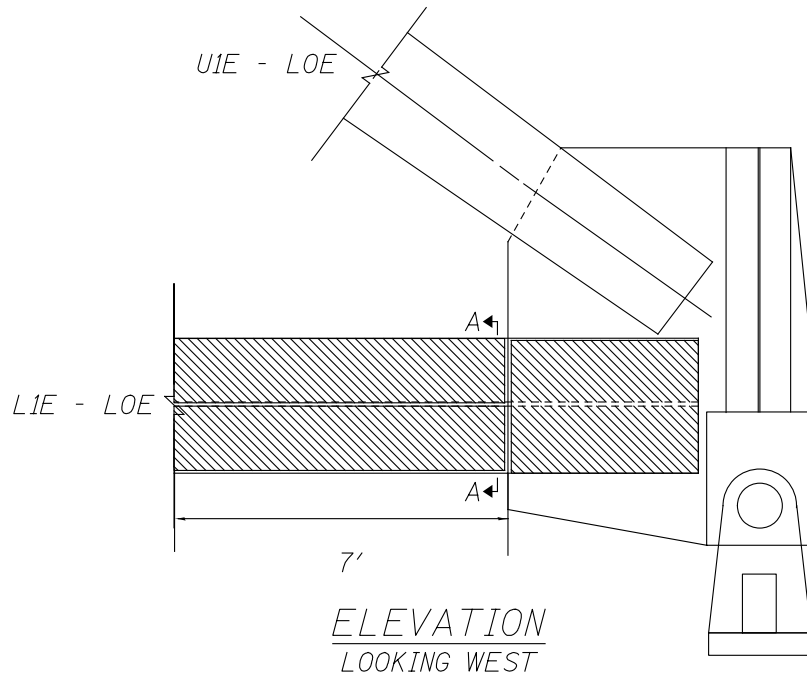
 FULL SECTION

READINGS EQUALLY SPACED

DETAIL 11

SP. 6 L0E - L1E
@L0E

S.N. 062-0036



SEC. A-A

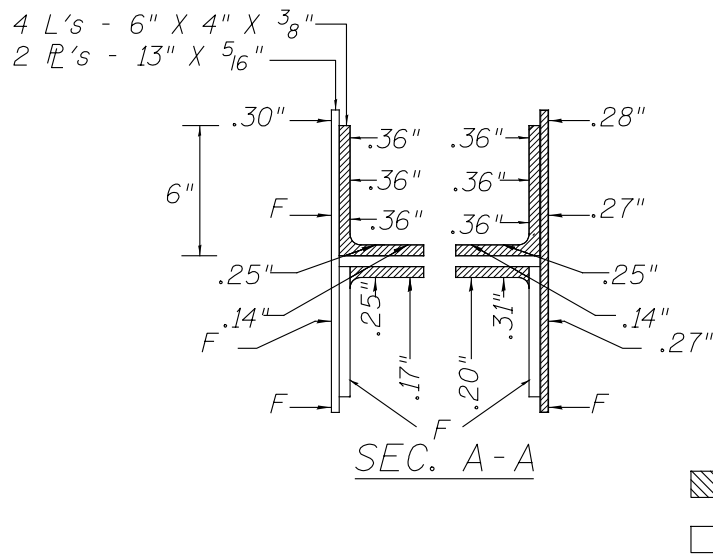
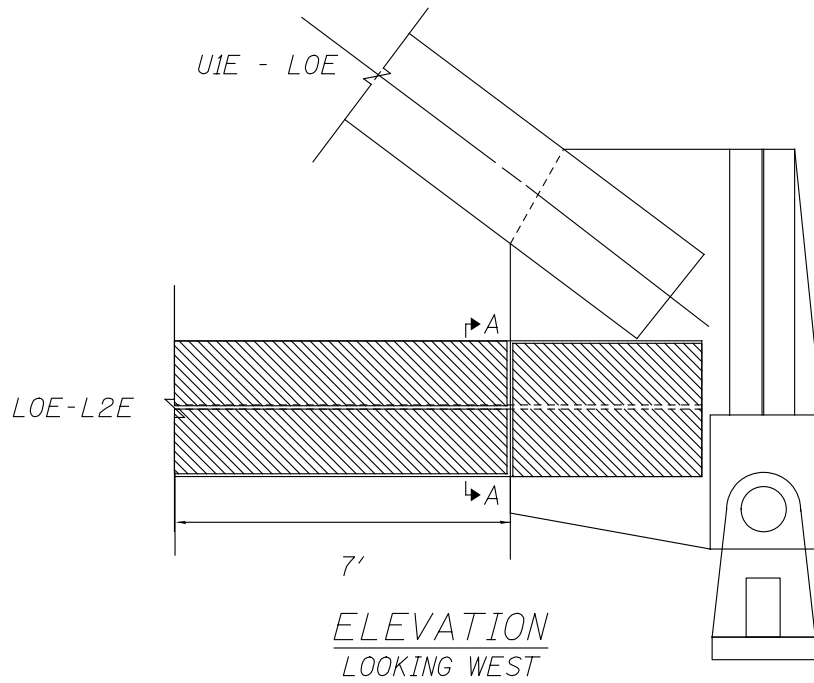
SECTION LOSS

FULL SECTION

DETAIL 12 READINGS EQUALLY SPACED

SP. 7 LOE - L2E
@LOE

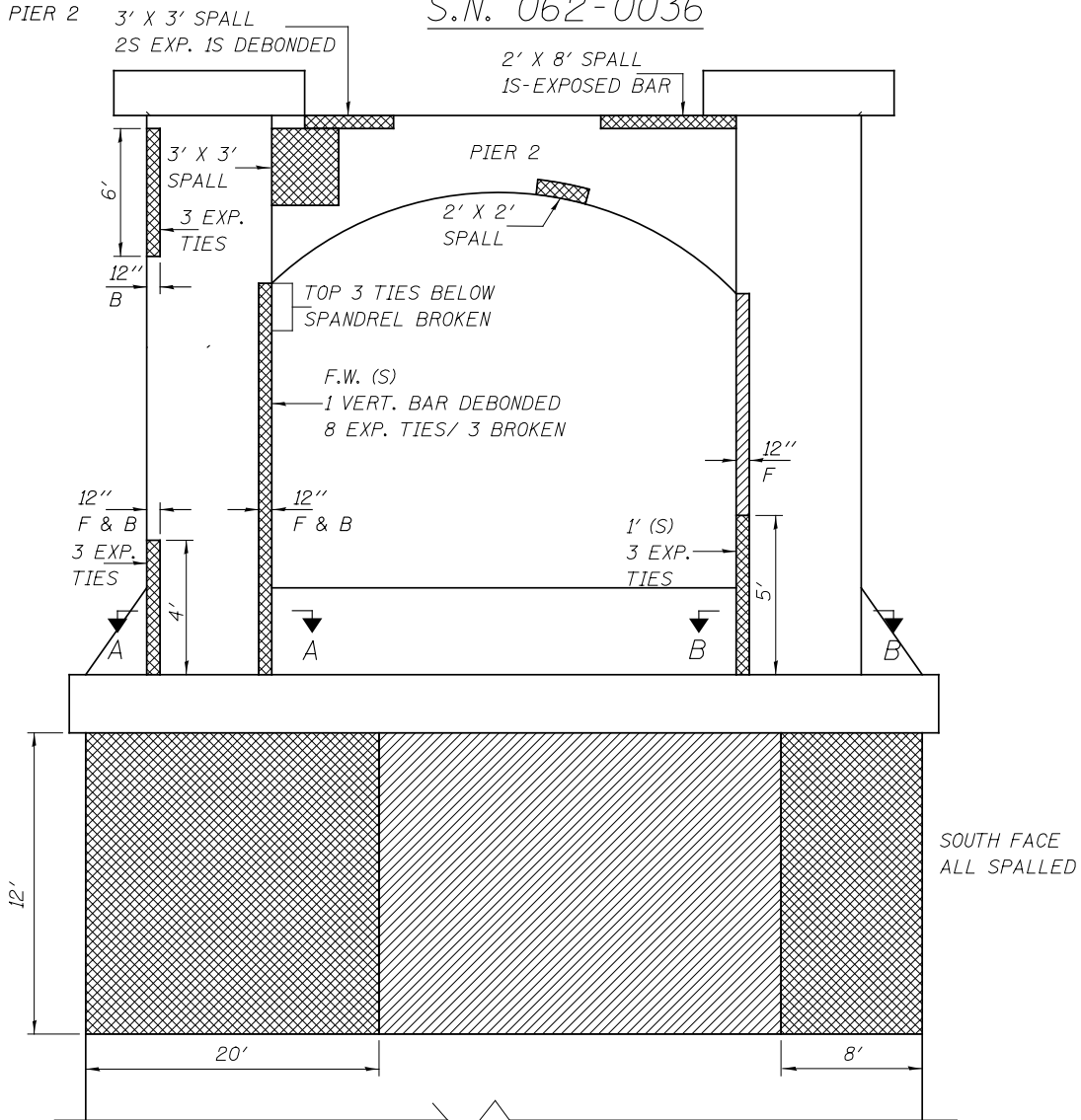
S.N. 062-0036



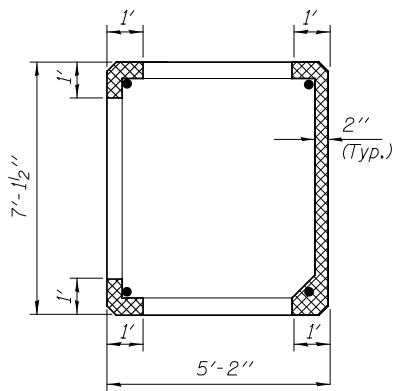
DETAIL 13 READINGS EQUALLY SPACED

SPAN 3,4
PIER 2

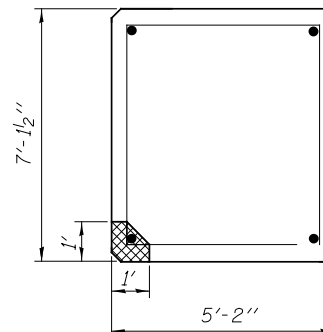
S.N. 062-0036



ELEVATION
LOOKING SOUTH



SEC. A-A



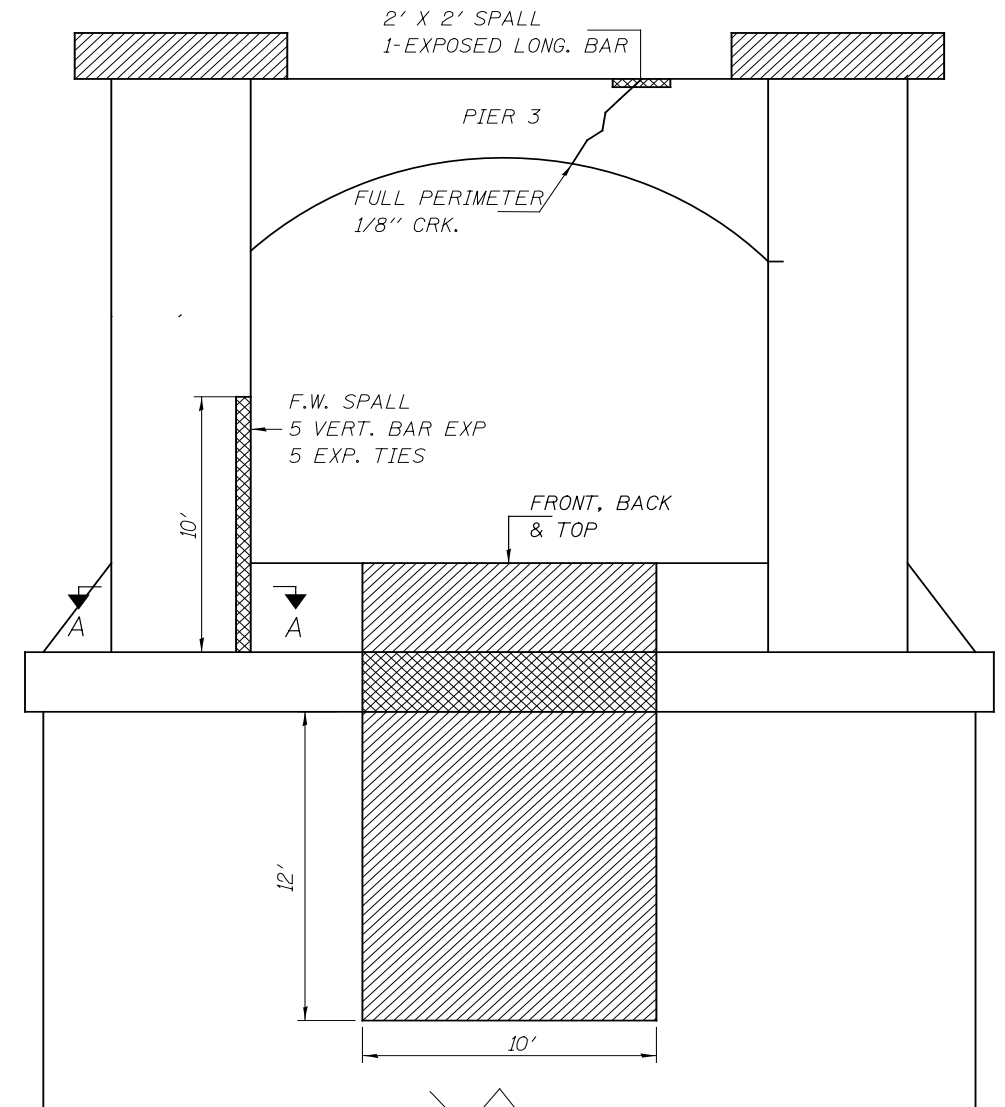
SEC. B-B

DETAIL 14

 DELAM (D)
 SPALL (S)

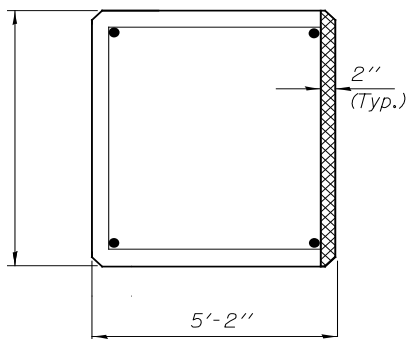
SPAN 4,5
PIER 3

S.N. 062-0036



ELEVATION

LOOKING SOUTH



SEC. A-A

DETAIL 15

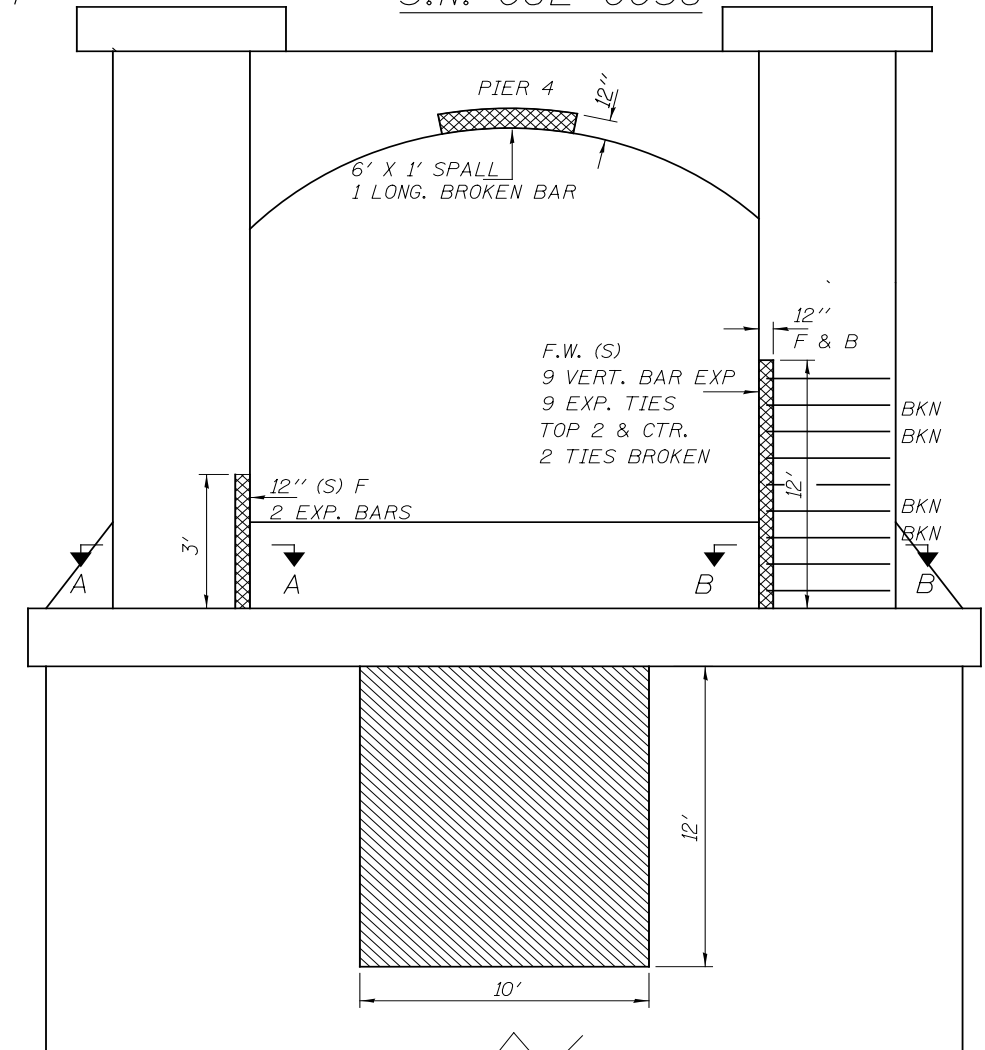
 DELAM (D)

 SPALL (S)

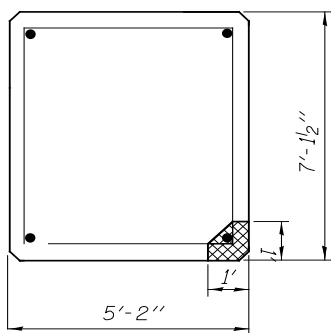
F - FRONT
B - BACK

SPAN 5,6
PIER 4

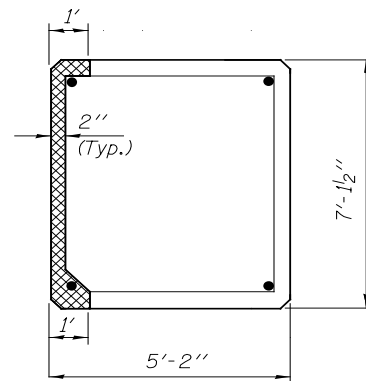
S.N. 062-0036



ELEVATION
LOOKING NORTH



SEC. A-A



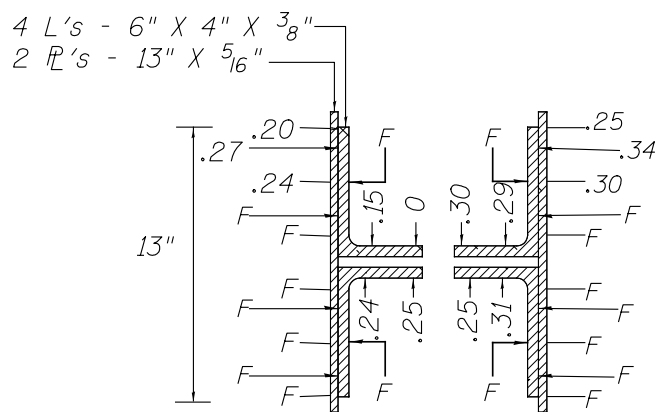
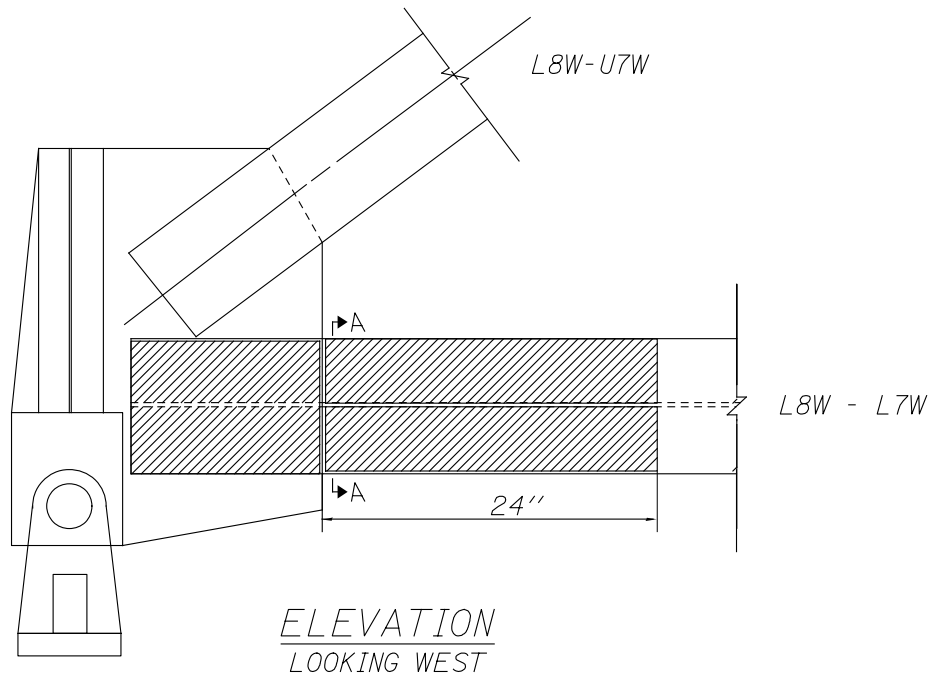
SEC. B-B

DETAIL 16

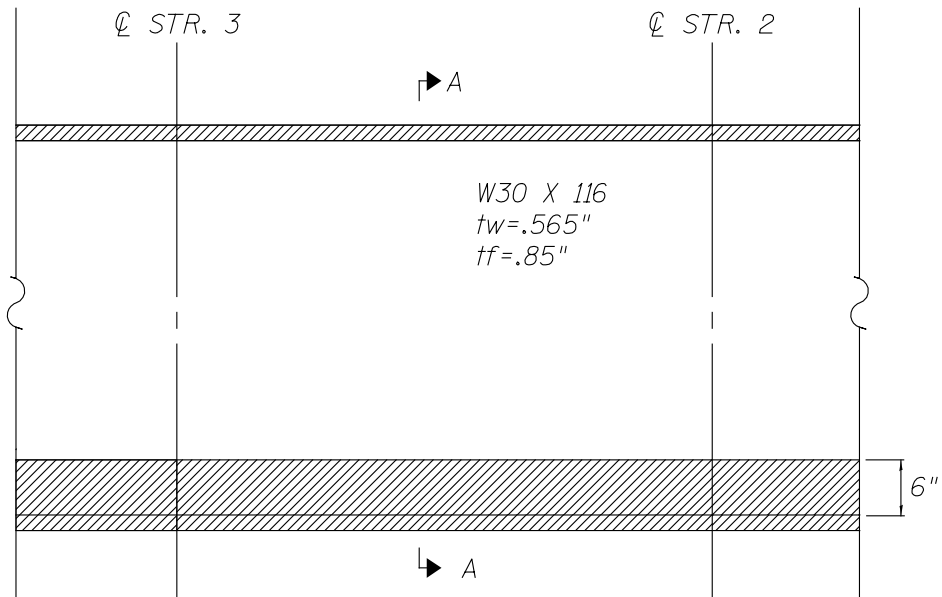
S - STIRRUPS
 DELAM (D)
 SPALL (S)

SP. 4 L7W - L8W
@L8W

S.N. 062-0036



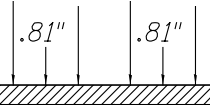
SP. 5, FB. 0 @ MIDSPAN S.N. 062-0036



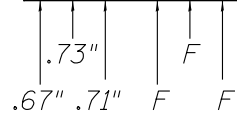
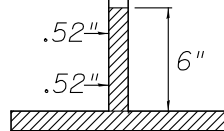
ELEVATION

LOOKING NORTH

.74" .84" .84" .74"



THIS SIDE
ASSUMED
(OUT OF REACH)



SEC. A-A

SECTION LOSS

FULL SECTION

DETAIL 18

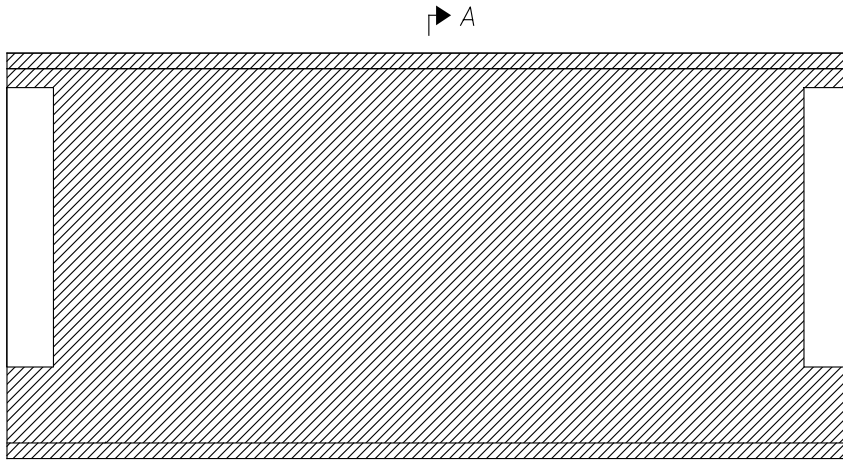
READINGS EQUALLY SPACED

SP. 6, FB. 8

S.N. 062-0036

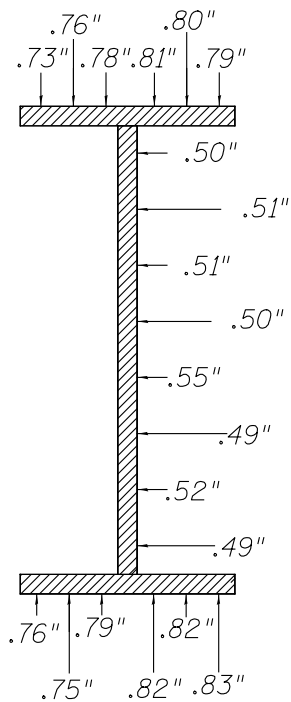
☉ E. TRUSS

☉ W. TRUSS



W30 X 116
 $t_w = .565"$
 $t_f = .85"$

ELEVATION
LOOKING SOUTH



SEC. A-A

 SECTION LOSS

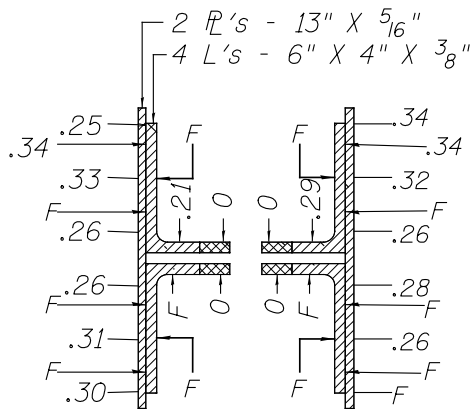
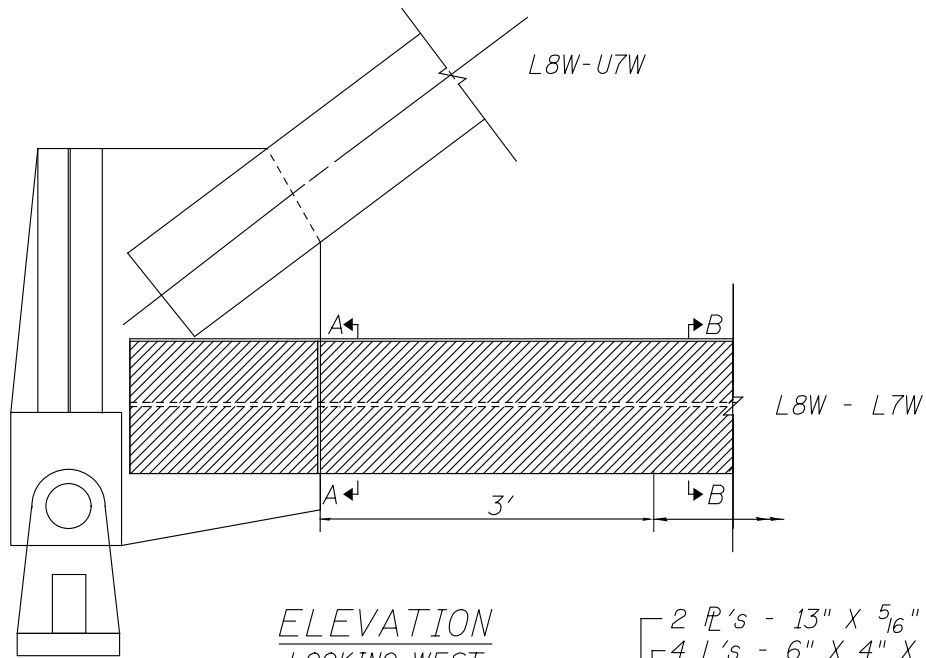
 FULL SECTION

DETAIL 19

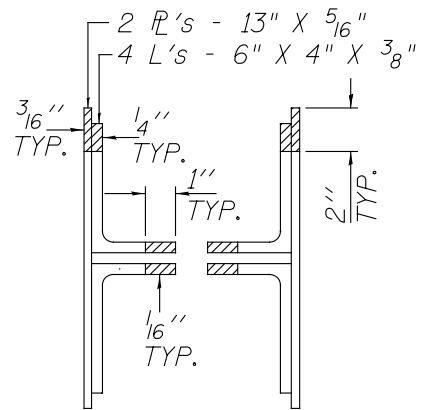
READINGS EQUALLY SPACED

SP. 8 L7W-L8W
@L8W

S.N. 062-0036



SEC. A-A



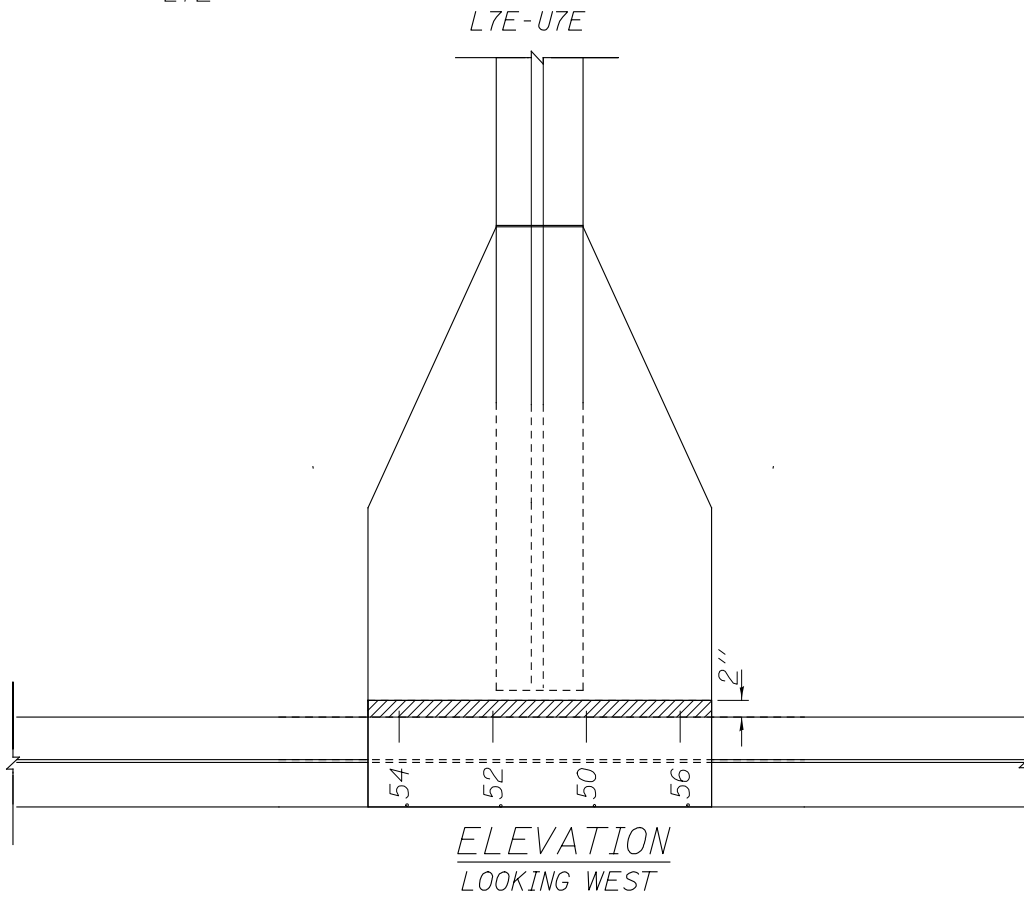
SEC. B-B
FOR ALL L7E-L8E

SECTION LOSS

FULL SECTION

DETAIL 20 READINGS EQUALLY SPACED

SP. 7 OUTSIDE GUSSET PL. S.N. 062-0036
 @ L7E



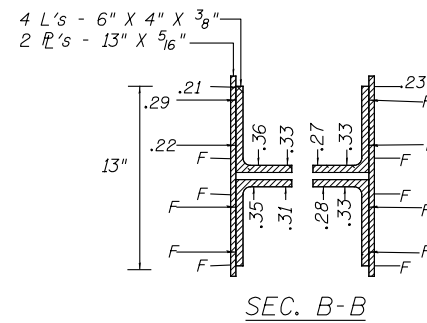
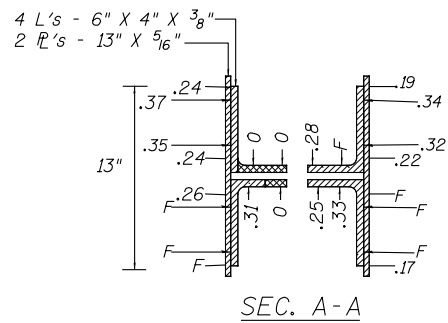
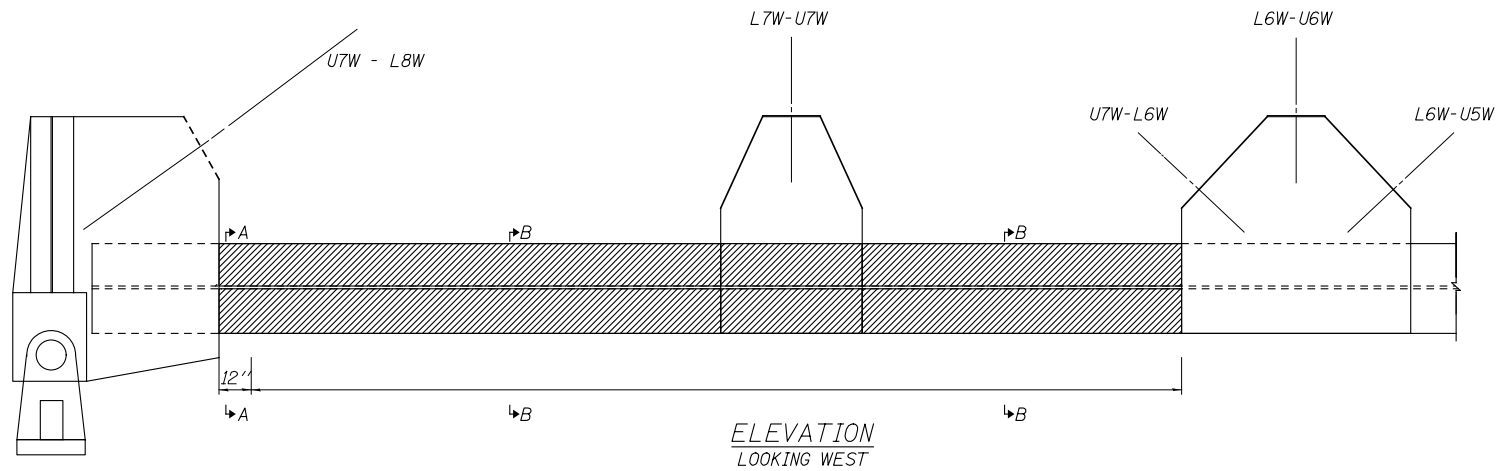
DETAIL 21

 SECTION LOSS
 FULL SECTION

READINGS EQUALLY SPACED

SP. 7 L6W-L8W
THROUGHOUT & @LOE

S.N. 062-0036



SECTION LOSS

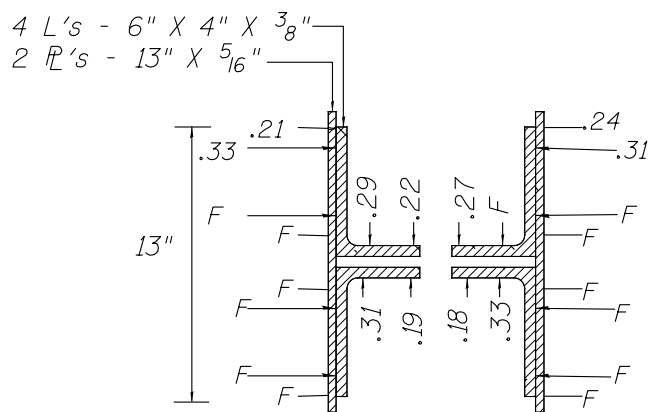
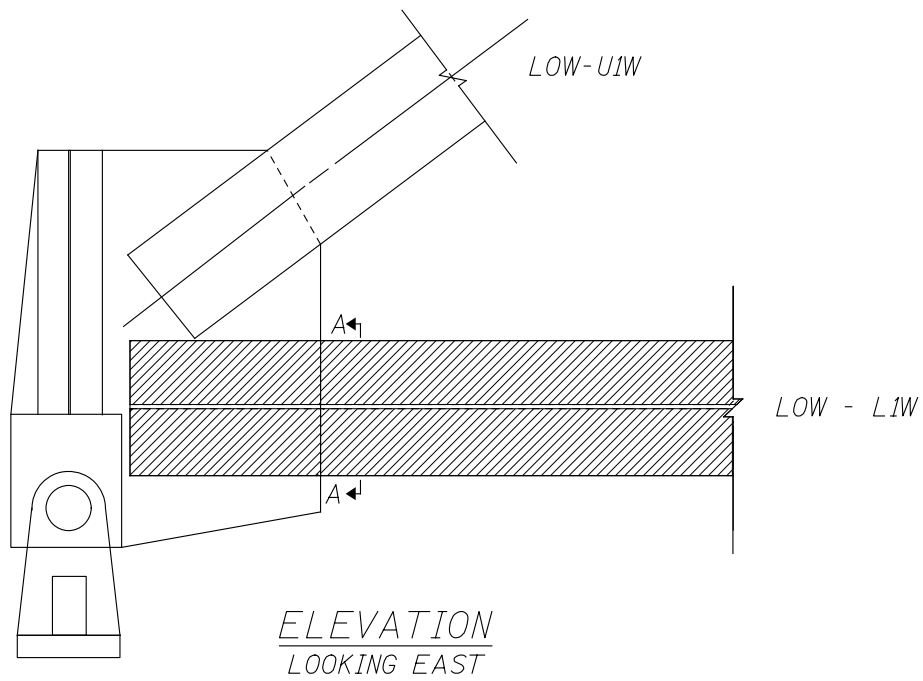
FULL SECTION

READINGS EQUALLY SPACED

DETAIL 22

SP. 7 LOW - LIW
@LOW

S.N. 062-0036



SECTION LOSS

FULL SECTION

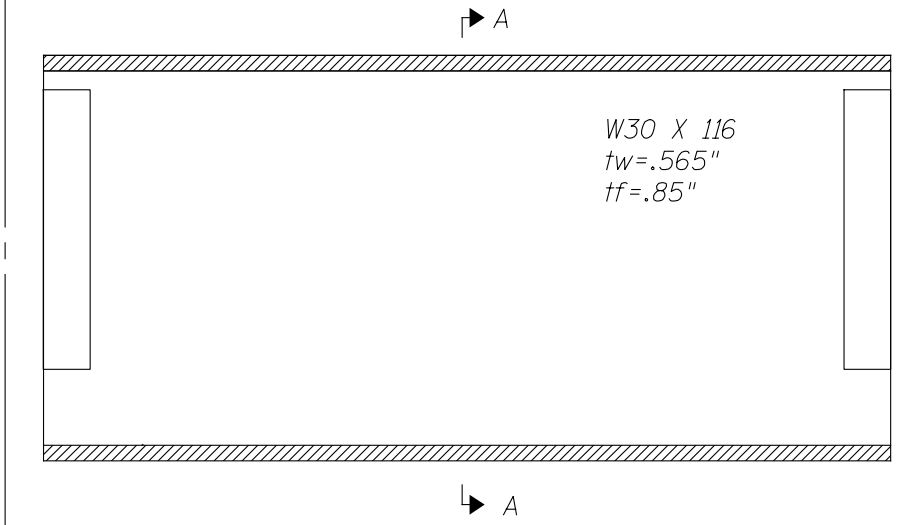
DETAIL 23 READINGS EQUALLY SPACED

SP. 8, FB. 8

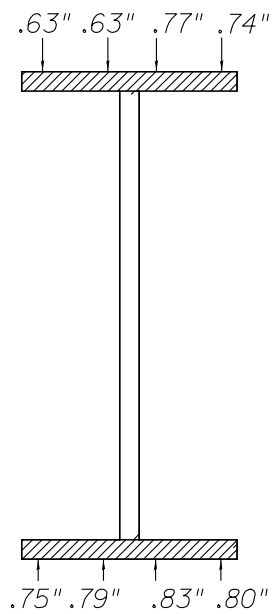
S.N. 062-0036

☞ E. TRUSS

☞ W. TRUSS



ELEVATION
LOOKING SOUTH



SEC. A-A

 SECTION LOSS

 FULL SECTION

DETAIL 24 READINGS EQUALLY SPACED

S.N. 062-0036

Elevation view of a steel beam with repair plates. The beam is labeled *W30 X 116* with $t_w = .565"$ and $t_f = .85"$. The beam is supported by a wall on the left and a column on the right. The wall is labeled *REPAIR PL.* and the column is labeled *REPAIR PL.*. The beam is shown with a top flange, web, and bottom flange. The wall and column are shown with hatching. The beam is labeled *W30 X 116* with $t_w = .565"$ and $t_f = .85"$. The beam is shown with a top flange, web, and bottom flange. The wall and column are shown with hatching.

Diagram of a vertical member with loads and reactions. The member is shown as a vertical line between two horizontal hatched bars representing supports. At the top support, there are four downward-pointing arrows labeled F , $.84''$, $.81''$, and $.77''$. At the bottom support, there are four upward-pointing arrows labeled $.81''$, $.77''$, $.72''$, and $.64''$. Below the bottom support, the text SEC. A - A is written.

☐ FULL SECTION

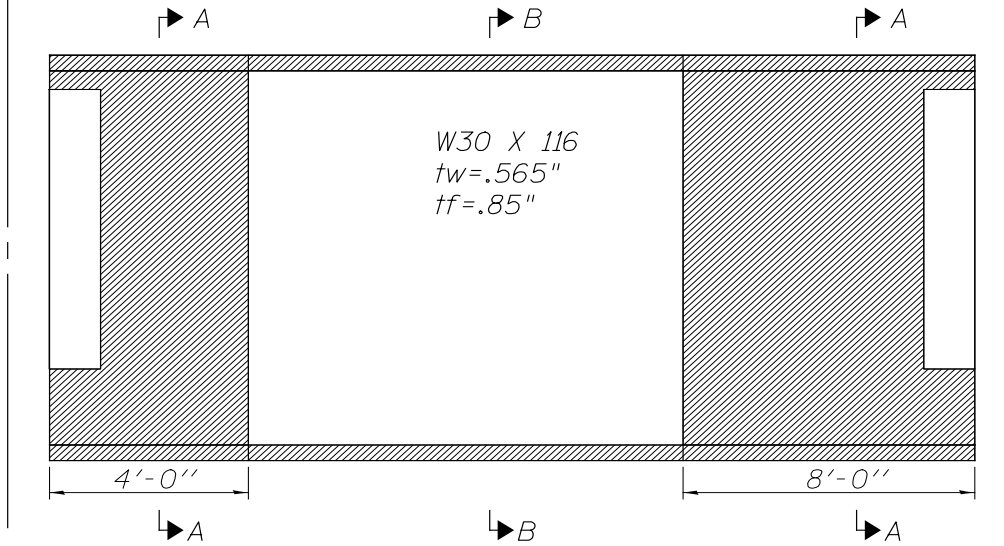
DETAIL 25 READINGS EQUALLY SPACED

SP. 7, FB. 8

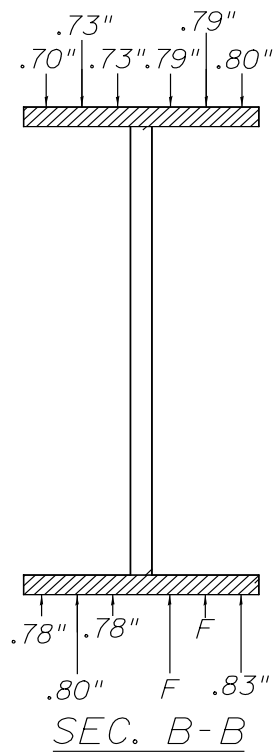
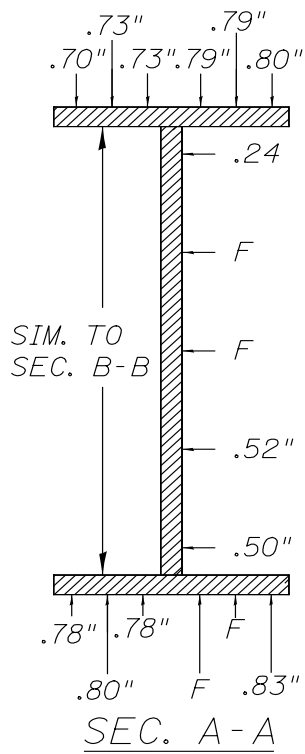
S.N. 062-0036

℄ E. TRUSS

℄ W. TRUSS



ELEVATION
 LOOKING SOUTH



SECTION LOSS

FULL SECTION

DETAIL 26

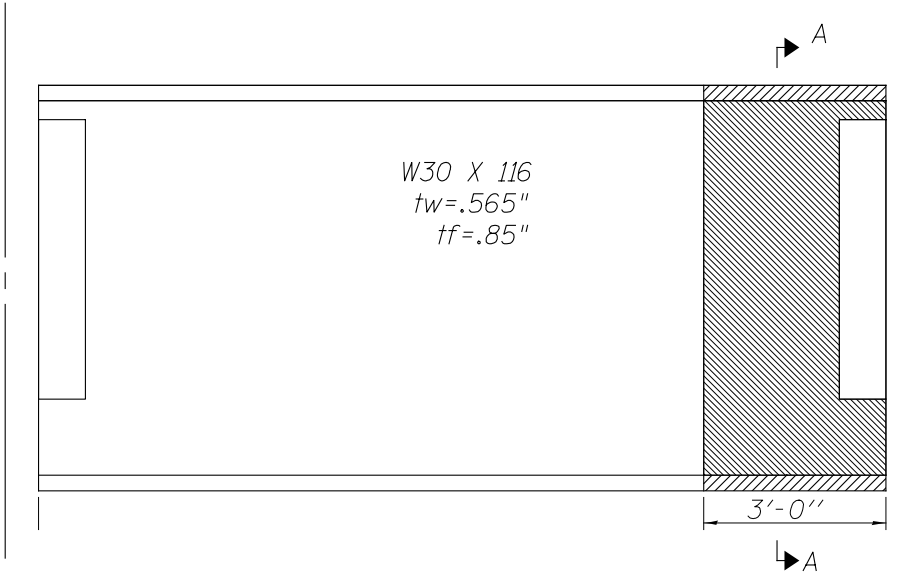
READINGS EQUALLY SPACED

SP. 8, FB. 4

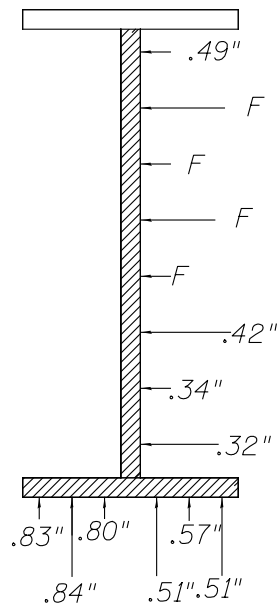
S.N. 062-0036

☒ E. TRUSS

☒ W. TRUSS



ELEVATION
LOOKING SOUTH



SEC. A - A

▨ SECTION LOSS

☐ FULL SECTION

DETAIL 27 READINGS EQUALLY SPACED



PHOTO 1

SP 4 LOOKING NORTH



PHOTO 2

SP. 8, LOOKING SOUTH



PHOTO 3

SP. 6, LOOKING NORTH



PHOTO 4

SP. 6, LOOKING WEST



PHOTO 5

SP. 5, LOOKING SOUTH



PHOTO 6

SP. 4, LOOKING SOUTH



PHOTO 7

SP. 4, LOOKING SOUTH



PHOTO 8

SP. 13 LOOKING NORTH



PHOTO 9

SP. 6, LOOKING NORTH



PHOTO 10

SP.7 , LOOKING NORTH



PHOTO 11

SP.8 , LOOKING NORTH



PHOTO 12



PHOTO 13



PHOTO 14



PHOTO 15



PHOTO 16



PHOTO 17



PHOTO 18



PHOTO 19



PHOTO 20



PHOTO 21



PHOTO 22



PHOTO 23



PHOTO 24



PHOTO 25



PHOTO 26



PHOTO 27



PHOTO 28



PHOTO 29



PHOTO 30



PHOTO 31



PHOTO 32



PHOTO 33



PHOTO 34



PHOTO 35



PHOTO 36



PHOTO 37



PHOTO 38



PHOTO 39



PHOTO 40



PHOTO 41



PHOTO 42



PHOTO 43



PHOTO 44



PHOTO 45



PHOTO 46



PHOTO 47



PHOTO 48



PHOTO 49



PHOTO 50



PHOTO 51



PHOTO 52



PHOTO 53

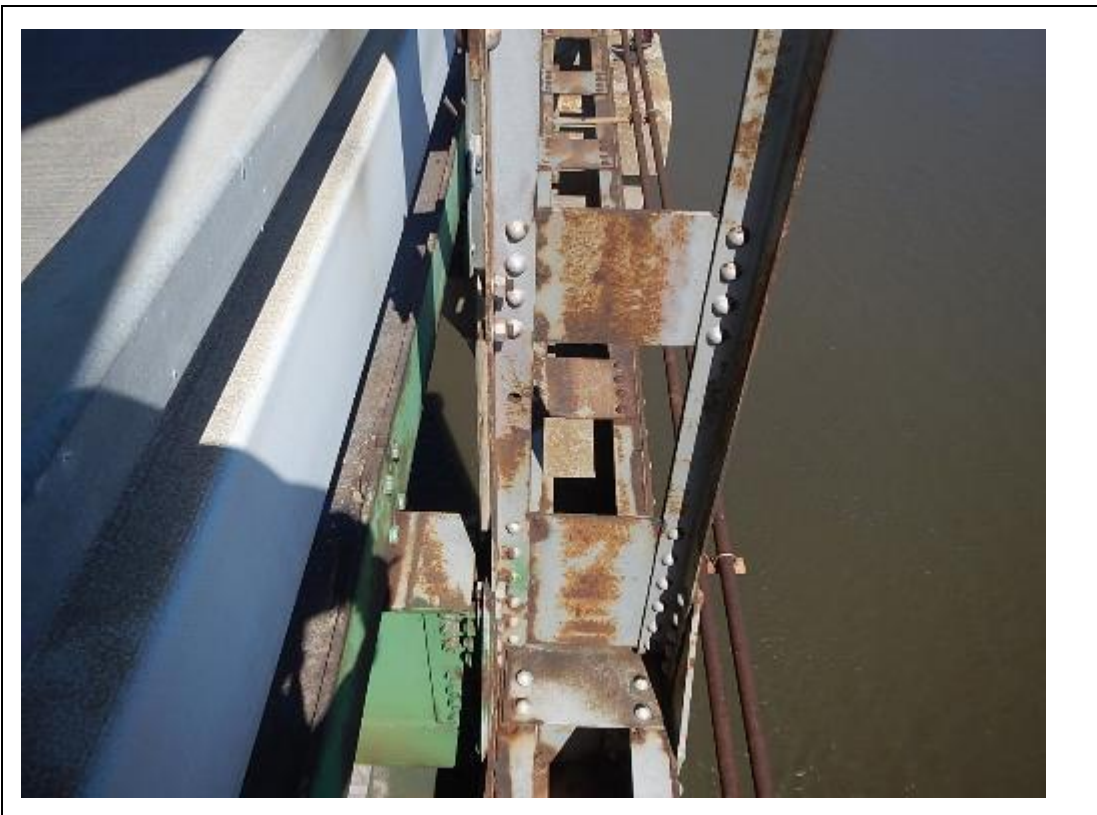


PHOTO 54



PHOTO 55



PHOTO 56



PHOTO 57



PHOTO 58



PHOTO 59



PHOTO 60



PHOTO 61



PHOTO 62



PHOTO 63



PHOTO 64



PHOTO 65



PHOTO 66



PHOTO 67



PHOTO 68



PHOTO 69



PHOTO 70



PHOTO 71



PHOTO 72



PHOTO 73



PHOTO 74



PHOTO 75



PHOTO 76



PHOTO 77

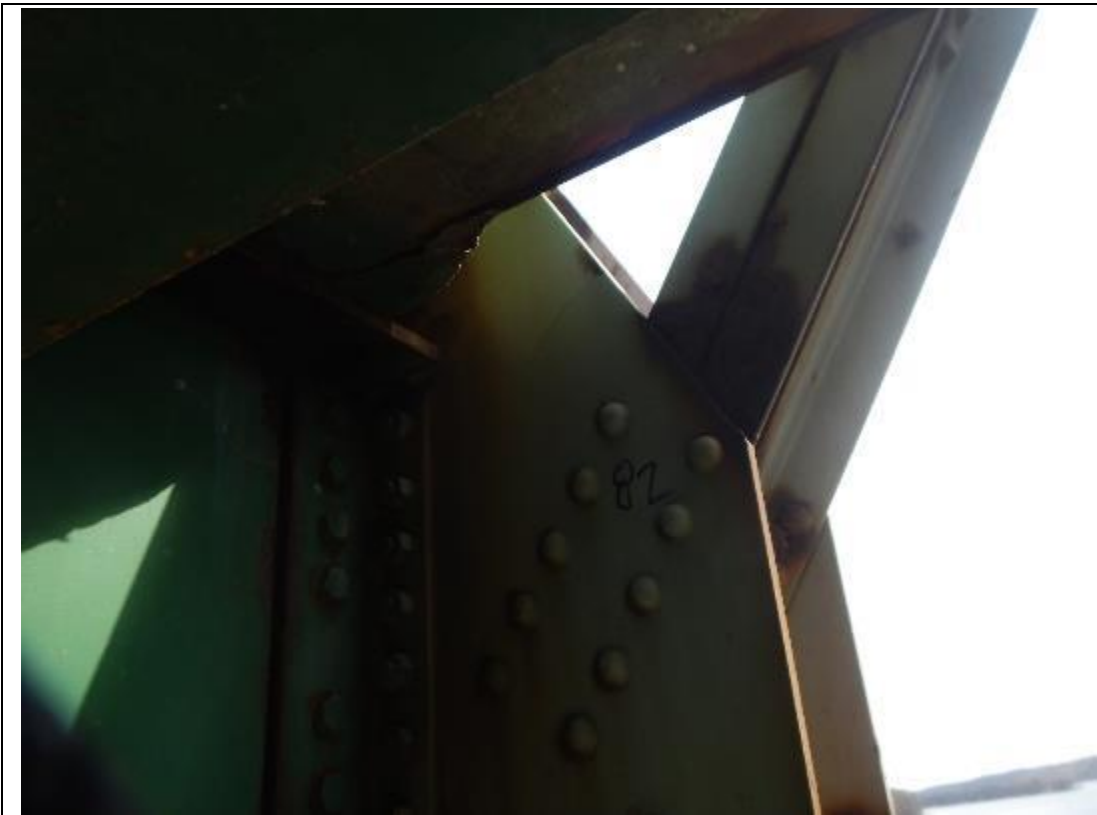


PHOTO 78



PHOTO 79



PHOTO 80



PHOTO 81



PHOTO 82



PHOTO 83



PHOTO 84



PHOTO 85



PHOTO 86



PHOTO 87



PHOTO 88



PHOTO 89



PHOTO 90



PHOTO 91



PHOTO 92



PHOTO 93



PHOTO 94



PHOTO 95



PHOTO 96



PHOTO 97



PHOTO 98



PHOTO 99



PHOTO 100

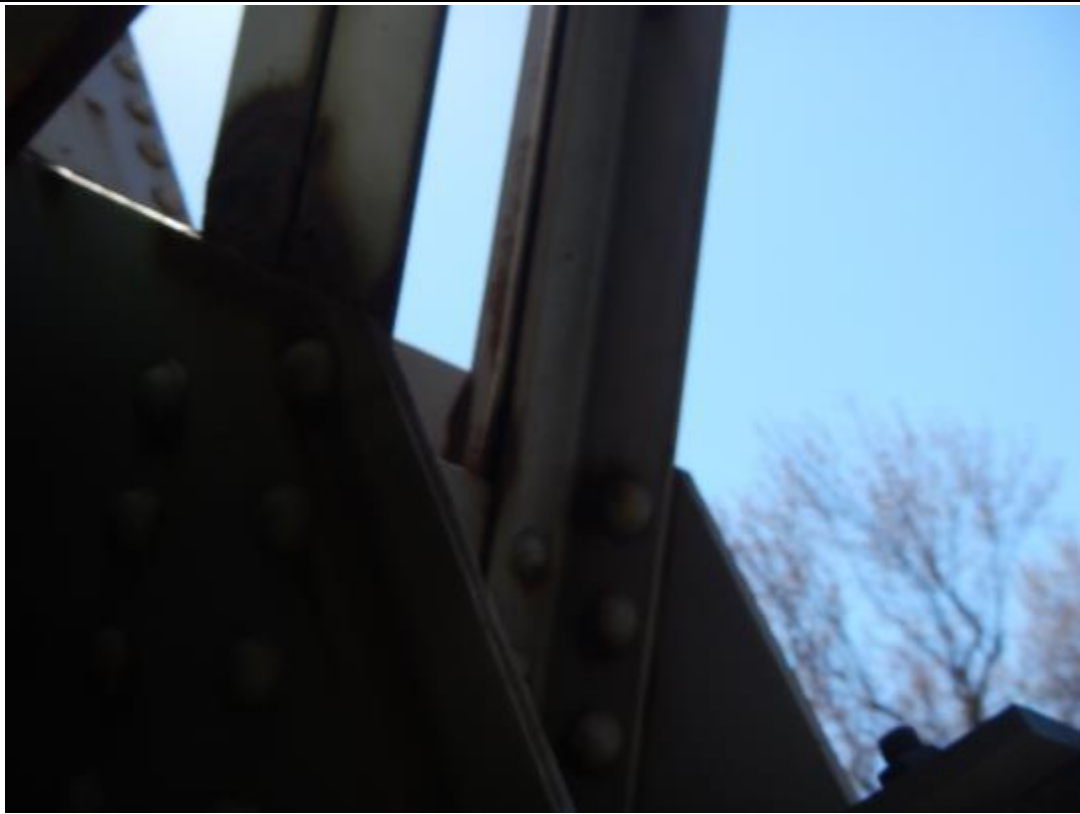


PHOTO 101



PHOTO 102



PHOTO 103



PHOTO 104



PHOTO 105



PHOTO 106



PHOTO 107



PHOTO 108



PHOTO 109



PHOTO 110



PHOTO 111



PHOTO 112



PHOTO 113



PHOTO 114



PHOTO 115



PHOTO 116



PHOTO 117



PHOTO 118



PHOTO 119



PHOTO 120



PHOTO 121



PHOTO 122



PHOTO 123



PHOTO 124



PHOTO 125



PHOTO 126



PHOTO 127



PHOTO 128



PHOTO 129



PHOTO 130



PHOTO 131

REPAIRED



PHOTO 132



PHOTO 133



PHOTO 134



PHOTO 135



PHOTO 136



PHOTO 137



PHOTO 138



PHOTO 139



PHOTO 140



PHOTO 141



PHOTO 142



PHOTO 143



PHOTO 144



PHOTO 145



PHOTO 146



PHOTO 147



PHOTO 148



PHOTO 149



PHOTO 150



PHOTO 151



PHOTO 152



PHOTO 153



PHOTO 154



PHOTO 155



PHOTO 156



PHOTO 157



PHOTO 158



PHOTO 159



PHOTO 160



PHOTO 161

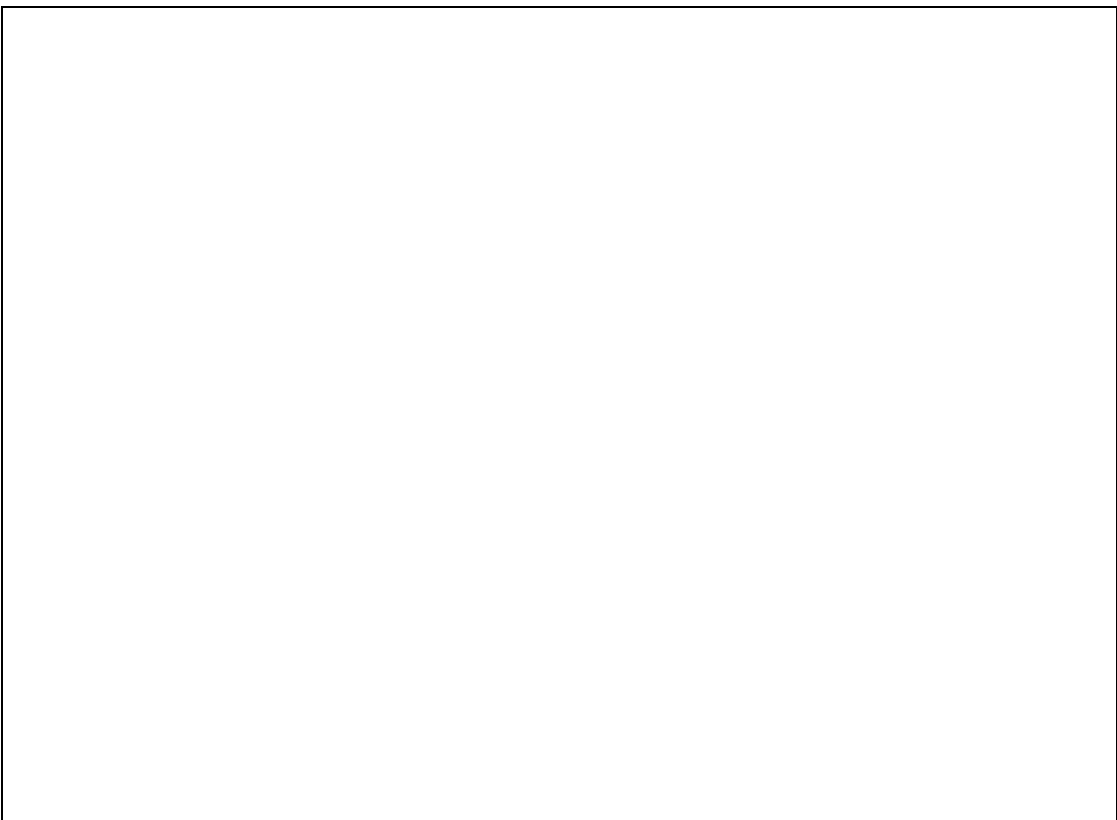


PHOTO 162

STRUCTURE NUMBER: 062-0036

DATE: 4/20/2020

DATE: _____

BY:SMS

BY: _____

[illegible]

ALL READINGS TAKEN 1' FROM PARAPET, CURB OR GUARD RAIL

STRUCTURE NUMBER: 062-0036

DATE: 4/17/2017

DATE: 4/22/2019

BY:CSE, TDB

BY: SMS, JDD

[illegible]

ALL READINGS TAKEN 1' FROM PARAPET, CURB OR GUARD RAIL

[illegible]

DATE: 4/20/2009

DATE: 4/28/2011

BY: CMV

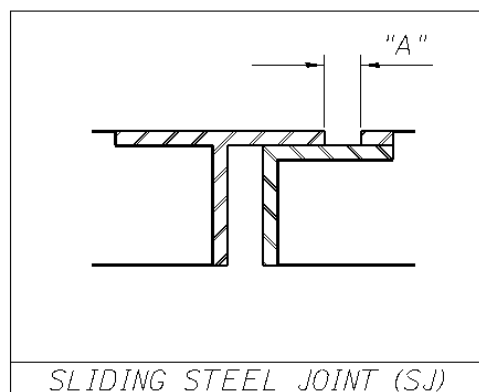
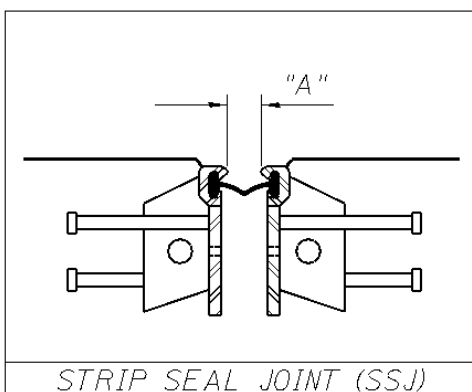
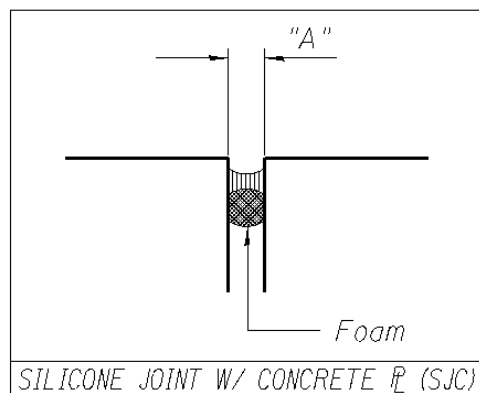
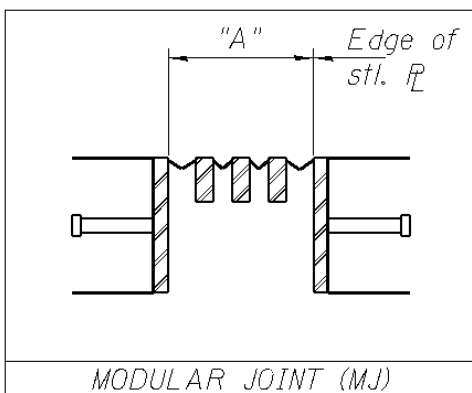
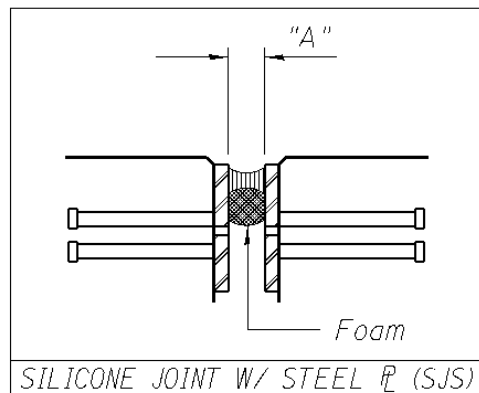
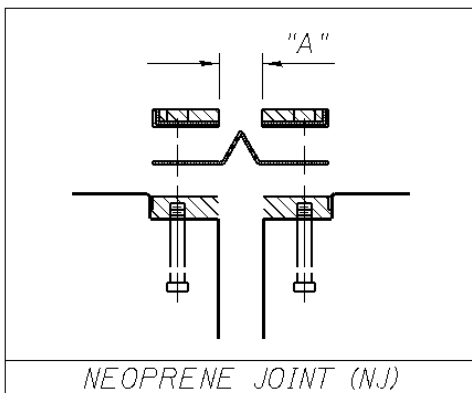
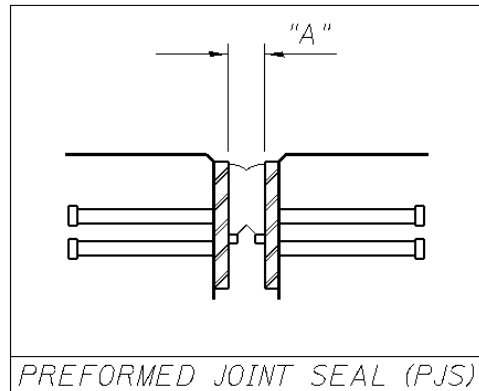
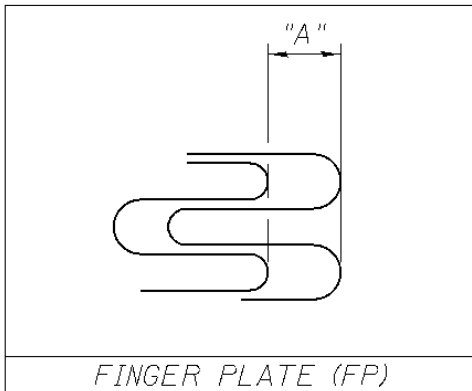
BY: MEL

[illegible]

ALL READINGS TAKEN 1' FROM PARAPET, CURB OR GUARD RAIL

[illegible]

[illegible]



Attachment D. Top and Bottom of Deck Condition Surveys

Not Available.

Attachment E. Substructure Condition Surveys

See Attachment C, NBIS Inspection Report.

Attachment F. Cost Estimates

Preliminary cost discussion has been provided in the Recommendation section.

Attachment G. Proposed Structure

A proposed plan, elevation and cross section will be established as part of a replacement structure type study and TS&L development within the Phase I process for bridge replacement.

With regard to typical section, similar low-volume major river bridge replacements of recent decades have provided two 12' lanes and two 8' shoulders, for a face-to-face parapets dimension of 40', and an out-to-out deck width of 43'-2". (Using the 1'-5" constant slope barrier of All Bridge Designer Memo 19.1, this reduces to 42'-10".) See Figure G-1

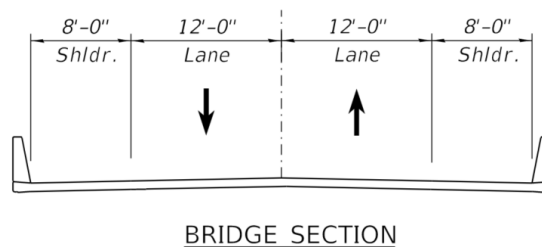


Figure G-1 – Typical section across structure.

The need and justification for inclusion of a Shared Use Path has not been established yet. If inclusion is established, the design of the structure will comply with applicable policies.

Attachment H. Structure Photos

For additional photos, see Attachment C, Inspection Report.



Photo 1 - Looking south from Henry. Approach spans 1 and 2 and truss span 3. Note posting sign restricting bridge to legal loads only.



Photo 2 - Looking south from Cromwell Dr. in Henry.



Photo 3 - Looking west. Spans 3 (partial at right), 4, 5 (navigation), and 6 leading into the trees on the south bank at left.



Photo 4 - Looking west. Truss spans 3 and 4. Cromwell Dr. passes under span 3 at right.



Photo 5 - Looking east. A tow of covered hopper barges being pushed upstream through truss span 5.



Photo 6 - Looking east (upstream). Abandoned lock from former dam at left, Henry marina at far left.



Photo 7 - Looking west (downstream). Henry waterfront and grain elevator at right.



Photo 8 - Looking north. Entering Henry from the bridge.

Attachment I. Hydraulic Analysis Summary

Hydraulic analyses will be performed as part of the Phase I process.

Attachment J. Proposed Plan & Profile

Design criteria and acceptable plan and profile will be established as part of the Phase I process.

Attachment K. Existing and Proposed Roadway Cross Sections

Proposed roadway cross section will be developed as part of the Phase I process.

Attachment L. Abbreviated Existing Plans

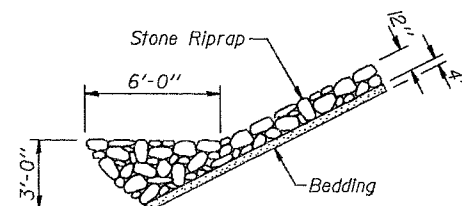
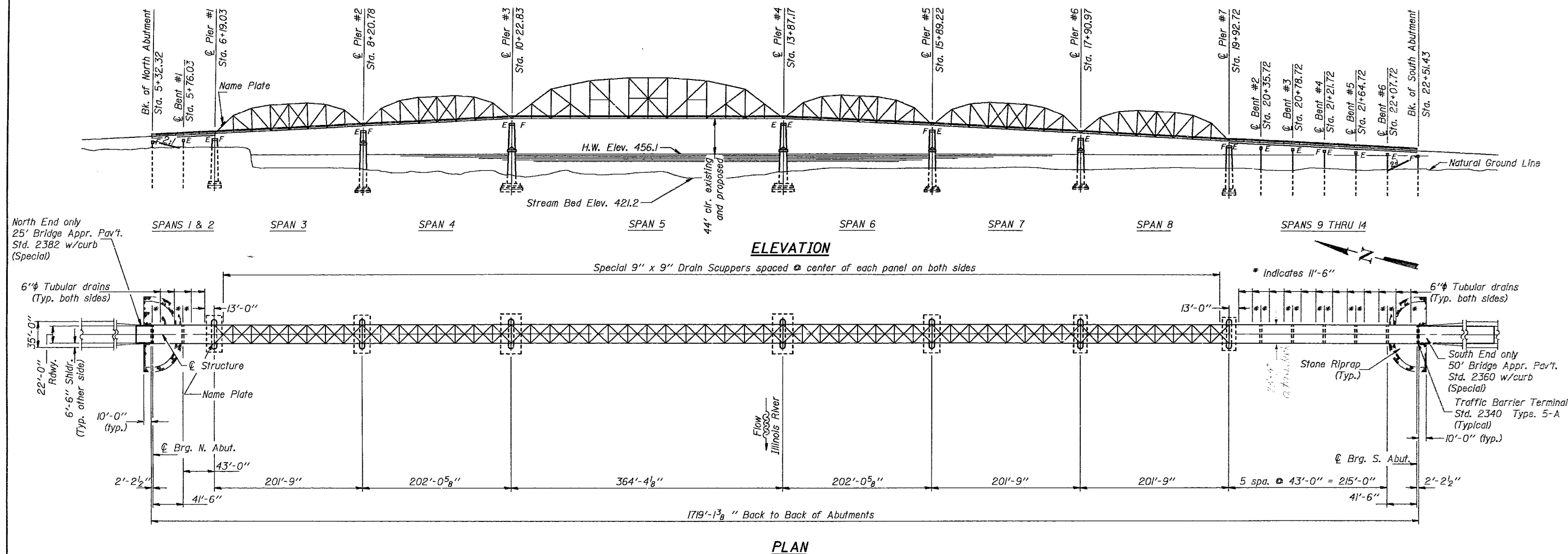
1. General Plan and Elevation - 1988 Redeck and Rehabilitation
2. Deck Cross Sections – 1988 Redeck and Rehabilitation
3. General Plan and Elevation – 1933 Original Construction

Bench Mark: B.M.#1- Rebar set in concrete 19' Rt., Sta. 5+24 El.480.51
 B.M.#5- Chiseled "□" 11.4' Rt., Sta. 12+9.5 El.507.16
 B.M.#2- Rebar set in concrete 17' Rt., Sta. 22+67 El.462.28
 Structure to be closed to traffic during construction.
 No Salvage

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILES	SHEET NO.
18	104B-D	Marshall-Putnam	100	6
F.A.S. 2369				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
 89 SHEETS



STONE RIPRAP ANCHOR DETAIL

DESIGNED	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>
DRAWN	R. Summer
CHECKED	<i>[Signature]</i>

EXAMINED	<i>[Signature]</i>	19 1987
PASSED	<i>[Signature]</i>	
APPROVED	<i>[Signature]</i>	

DESIGN SPECIFICATIONS

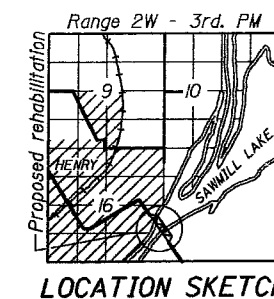
AASHTO (1983) and applicable Interims (1984 and 1985)

LOADING HS20-44

DESIGN STRESSES

FIELD UNITS

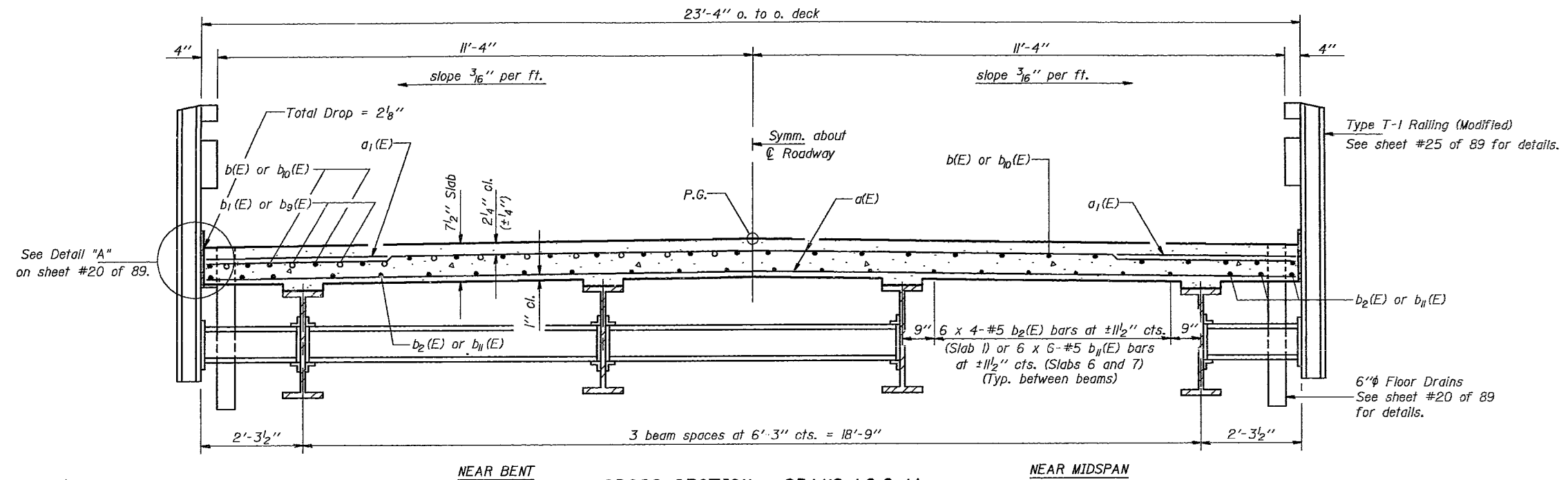
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)
 $f_y = 36,000$ psi (structural steel, AASHTO M183)
 $f_y = 50,000$ psi (structural steel, AASHTO M223, Grade 50)



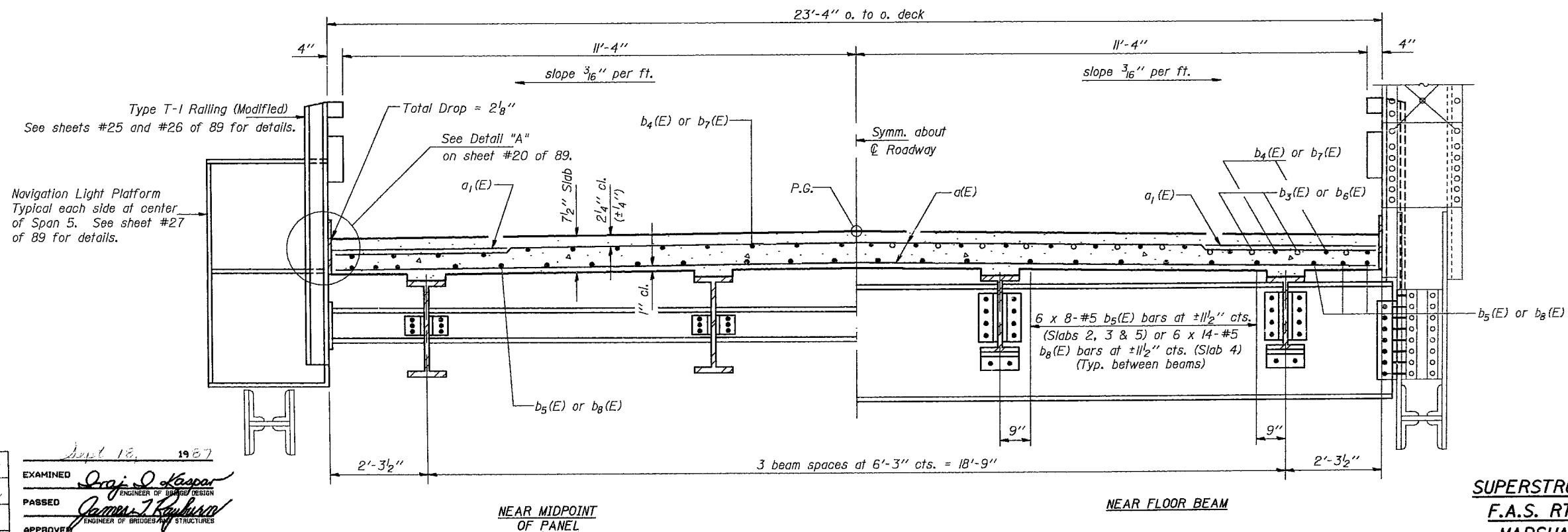
GENERAL PLAN
 ILL. ROUTE 18 OVER ILLINOIS RIVER
 F.A.S. ROUTE 2369 - SECTION 104B-D
 MARSHALL-PUTNAM COUNTIES
 STA. 13+91.88
 STRUCTURE NO. 062-0036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
104B-D	Marshall-Putnam	100	15	89	89 SHEETS
P.A.S. 2369	ILLINOIS	ILLINOIS PROJECT			



Notes: See sheet #20 of 89 for Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
For location of Floor Drains and Drainage Scuppers see sheet #1 of 89.
See sheet #20 of 89 for Special Drainage Scupper Details.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

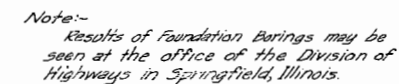


DESIGNED	James J. Kasper
CHECKED	James J. Kasper
DRAWN	R. Sommer
CHECKED	R. Sommer

EXAMINED	James J. Kasper
PASSED	James J. Kasper
APPROVED	James J. Kasper

SUPERSTRUCTURE CROSS SECTIONS
F.A.S. RT. 2369 SEC. 104B-D
MARSHALL-PUTNAM COUNTIES
STA. 13+91.88

BOND ISSUE ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
39C	104 B 104 D 104 E	Marshall	18	3
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



TEMPORARY PILE CLUSTER

EXAMINED 9-23-1933
H. F. Burch
PASSED The Engineer BRIDGE ENGINEER
APPROVED Ernest Dickman ENGINEER OF DESIGN

TOTAL BILL OF MATERIAL					
Item.	Super.	Piers.	Bents	Total	
Class A Concrete (incl. Seal Coats) - Cu Yds.		70553		70553	
Class X Concrete - Cu Yds.			634	634	
Reinforcing Steel - Lbs.		134930	9300	138230	
Untreated Piles - up to 20' - Lin Ft.		20840		20840	
" " 20'1" to 35' - Lin Ft.		100		100	
" " 60' (Clusters) - Lin Ft.				3360	
Reinforced Concrete Piles - Lin Ft.			1800	1800	
Test Piles (Wood) - Each		7		7	
Test Piles (Concrete) - Each			2	2	
Lighting System - Each			1	1	
Removal of Old Bridge - Each					
Class X Concrete - Cu Yds.	9183			918	
Reinforcing Steel - Lbs.	255330			255330	
Structural Steel - Lbs.	2838190			2838190	
Iron Castings - Lbs.	17830			17830	
Steel Castings - Lbs.	59140			59140	
Name Plates - Each	2				
Floor Drains - Each	140			140	
Removal of Temporary Pile Cluster - Each				4	
Lighting System - Each	1			1	
Structural Steel - Lbs.	2838190			2838190	
Iron Castings - Lbs.	17830			17830	
Steel Castings - Lbs.	59140			59140	
Floor Drains - Each	140			140	

A clear channel through Span 5 as shown on this plan shall be maintained at all times. The horizontal clearance shall be not less than 140 ft. at right angles to the channel and the vertical clearance shall be not less than 44 ft. above High Water.

The Contractors for Sections B and E will not be permitted to place falsework or any other obstruction within these limits.

Sec 104 B includes all Piers & Pile Bents and the furnishing & installation of bituminous fibre conduits and pull boxes for the Lighting Systems & Cables.

Sec 104 C includes furnishing, fabrication & delivery, f.o.b. Henry, of Structural Steel, Iron Castings, Steel Castings, and Floor Drains.

Sec 104 E includes installation & erection of Structural Steel, Iron Castings, Steel Castings, and Floor Drains; the furnishing and installation of Class X Concrete and Reinforcing Steel in floor the Lighting System (exclusive of bituminous fibre conduits and pull boxes) and Plastic Poles; and the removal of the Temporary Pile Clusters.

GENERAL LAYOUT & QUANTITIES
ILLINOIS RIVER BRIDGE
HENRY, ILLINOIS
S.B.I. ROUTE 89 C - SEC. 104
MARSHALL COUNTY P

