



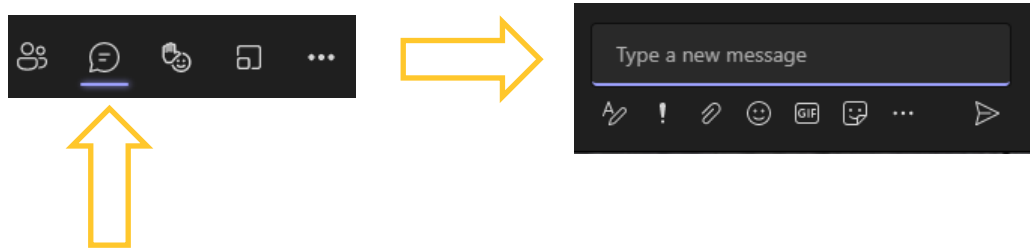
IA 9 / WI 82 Bridge Replacement Lansing, Iowa - Mississippi River

IA9 Bridge over Mississippi River

Construction Advisory Meeting

Questions & Comments are encouraged

- Participants are encouraged to put questions or comments in chat window during meeting



- Email to Ejon.Ranney@iowadot.us during or after the meeting
- Questions and comments will be made available after the meeting

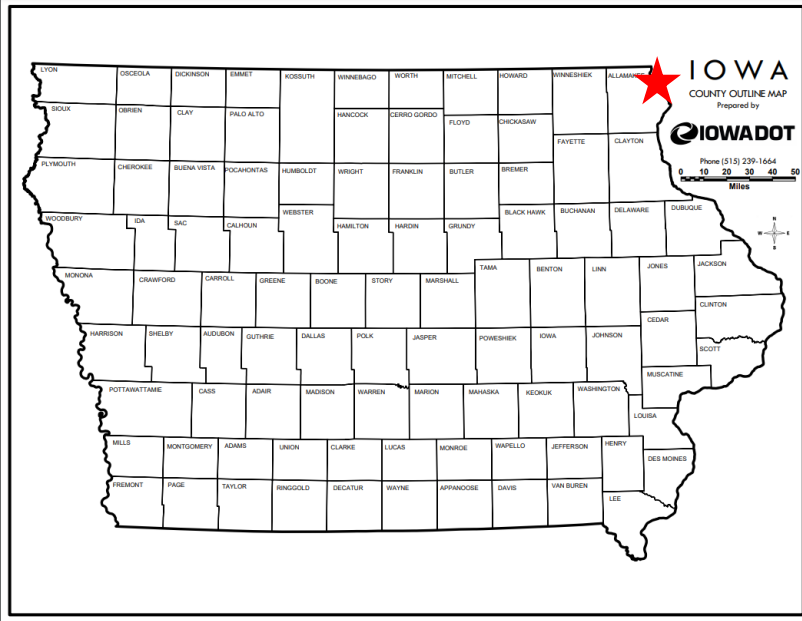
IA9 Bridge over Mississippi River

Construction Advisory Team Meeting

- **Meeting Objective**
 - Raise early awareness of the project with industry
 - Obtain industry comment that may affect course of design
- **Introduction of Speakers**
- **General Project Overview**
 - Key Milestones
 - Required Permits / Environmental Restrictions
 - Construction Laydown Sites
 - D5 Roadway Summary
 - Structural Project Overview
 - 30% Drawing Overview
 - Navigation Considerations
 - Construction Access & Staging
 - Foundation and Substructure Construction
 - Truss Erection Concepts
- **Comments & Questions**
 - Reply to pre-submitted questions
 - Open discussion

IA9 Bridge over Mississippi River

Located in Northeast Iowa



Lansing Iowa is located near the Iowa and Minnesota border along the Mississippi River.

- 191 miles from Minneapolis, MN
- 240 Miles from Chicago, IL
- 35 Miles from La Crosse, WI
- 35 miles from Prairie du Chien, WI





IA9 Bridge over Mississippi River

Who is Involved



Governmental Agencies

Iowa Department of Transportation, Lead Agency

Wisconsin Department of Transportation, Partnering DOT

Federal Highway Administration

US Coast Guard

US Fish and Wildlife

State Highway Historic Preservation Officials, IA & WI

Departments of Natural Resources, Iowa and Wisconsin

City of Lansing, Iowa

Canadian Pacific Railroad



Consultants

Parsons

Stanley

HDR

Burns and McDonnell

IA9 Bridge over Mississippi River

Black Hawk Bridge, 1931

The IA 9 Black Hawk Bridge was built in 1931 as a cantilevered steel truss, 3 span arch.

- Navigational channel span is 650 feet
- 67.5 feet above normal water elevation
- Total length of 1,653 feet
- 21-foot-wide travel way and has 18.5 feet of clearance.

The bridge is historic, and the community has adopted its unique character.



IA9 Bridge over Mississippi River

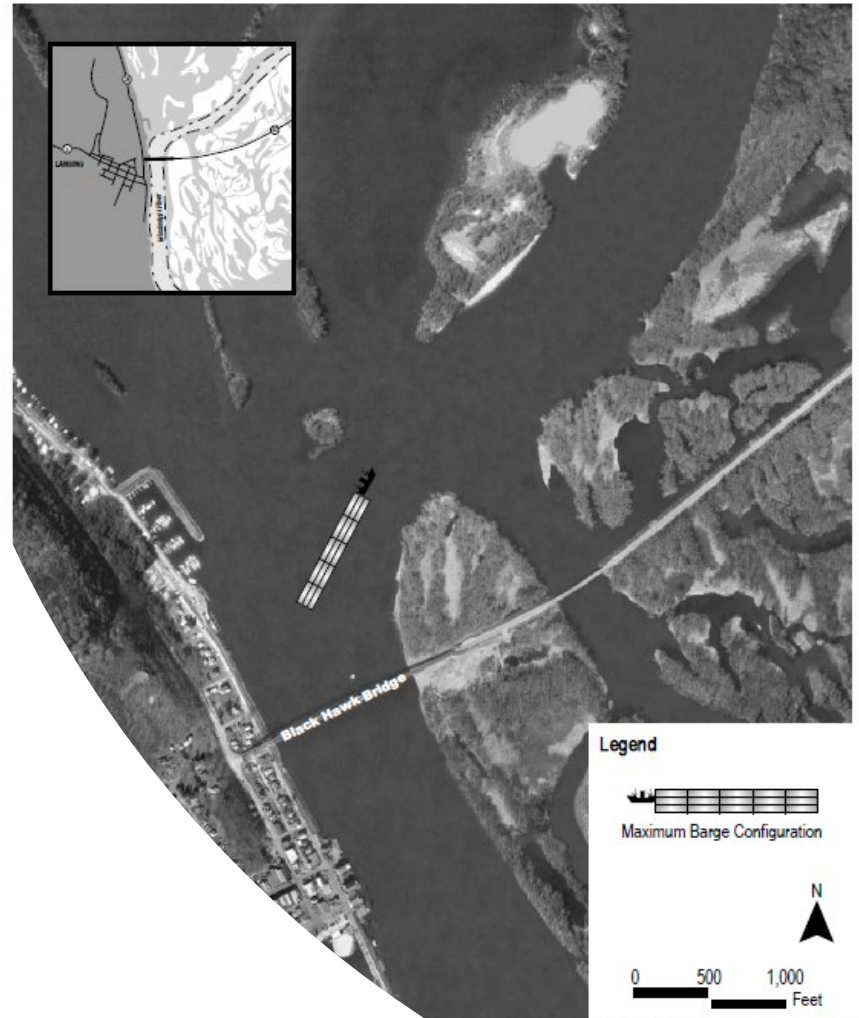
River Channel, Existing Bridge, Slough and Wildlife Refuge



IA9 Bridge over Mississippi River
Construction Advisory Meeting

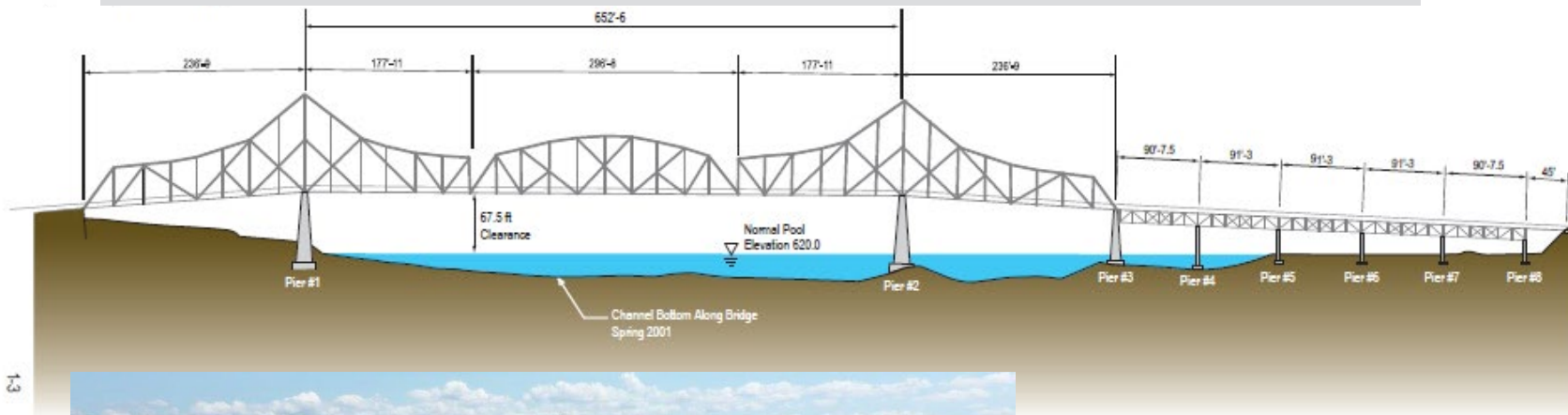
Sharpest Turn on Mississippi River

Simulation of a barge turning the tight corner of the river and through the bridge piers which are 650 feet apart.



IA 9 Bridge Replacement

Existing cross section, slough and wildlife refuge, dolphins, railroad



13



EXHIBIT 1-2
Existing Bridge Dimensions

IA9 Bridge over Mississippi River

Construction Advisory Meeting



Construction Items

- **Letting July 2023, Construction timeframe – 2 to 3 years**
- **Demolition of existing bridge anticipated in 2026**
- **Steel Truss structure with a 750-foot Navigational Span**
- **Vertical Clearance 64 feet over the green light or mid-span**
- **Potential for main span construction off-site;**
 - **Construction Staging Area to be determined**
 - **72-hour closure window for float-in operations**
- **Operating railroad on west shore**
- **Roadway reconstruction on west side and east end tie-ins**
- **Restricted Environmental Areas**
- **Anticipated Permits to be approved**

Three horizontal lines in red, white, and red, stacked vertically.

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Anticipated Permits

- **Section 404 Individual Permit** under the Clean Water Act from the USACE, Rock Island and/or St. Paul Districts
- **Section 10 Permit** under the Rivers and Harbors Act and General Bridge Act from the USACE, St. Paul District, (If required in addition to the USCG Section 9 Permit)
- **Section 408 Permit** under Section 14 of the Rivers and Harbor Act, codified at 33 USC 408
- **Section 9 Permit** under the Rivers and Harbors Act and 'General Bridge Act from the USCG
- **Section 401 Water Quality Certification** under the Clean Water Act from Wisconsin DNR
- **National Pollution Discharge Elimination System General Permit No. 2** for Storm Water Discharges Associated with Construction Activities (NPEDS) from the Iowa DNR
- **Construction Site Storm Water Runoff General Permit** No. WI-S067831-5 from the Wisconsin DNR
- **Sovereign Lands Permit** from the Iowa DNR



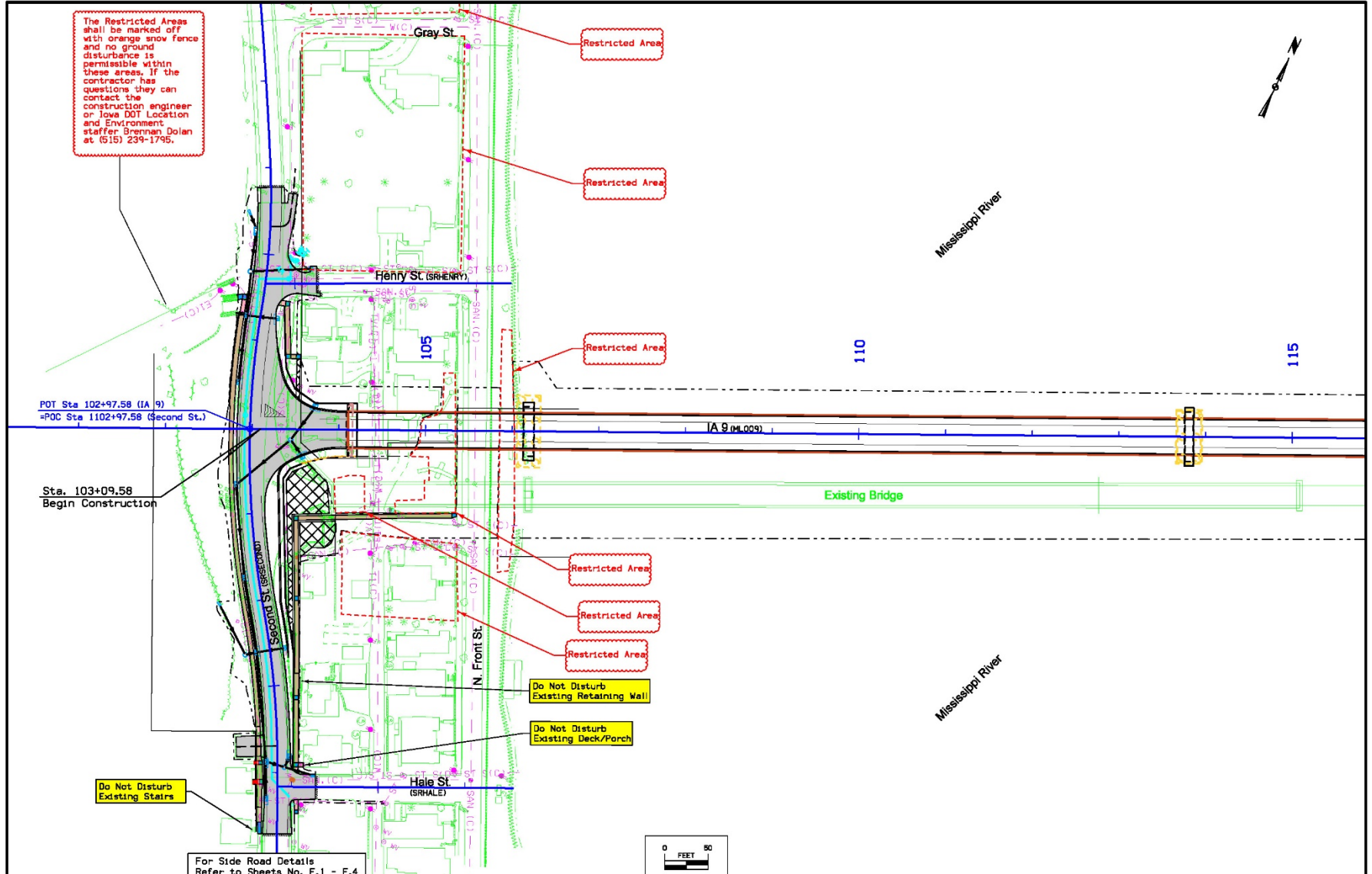
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D5 Roadway Summary

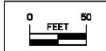
IA9 Bridge over Mississippi River

Construction Advisory Meeting



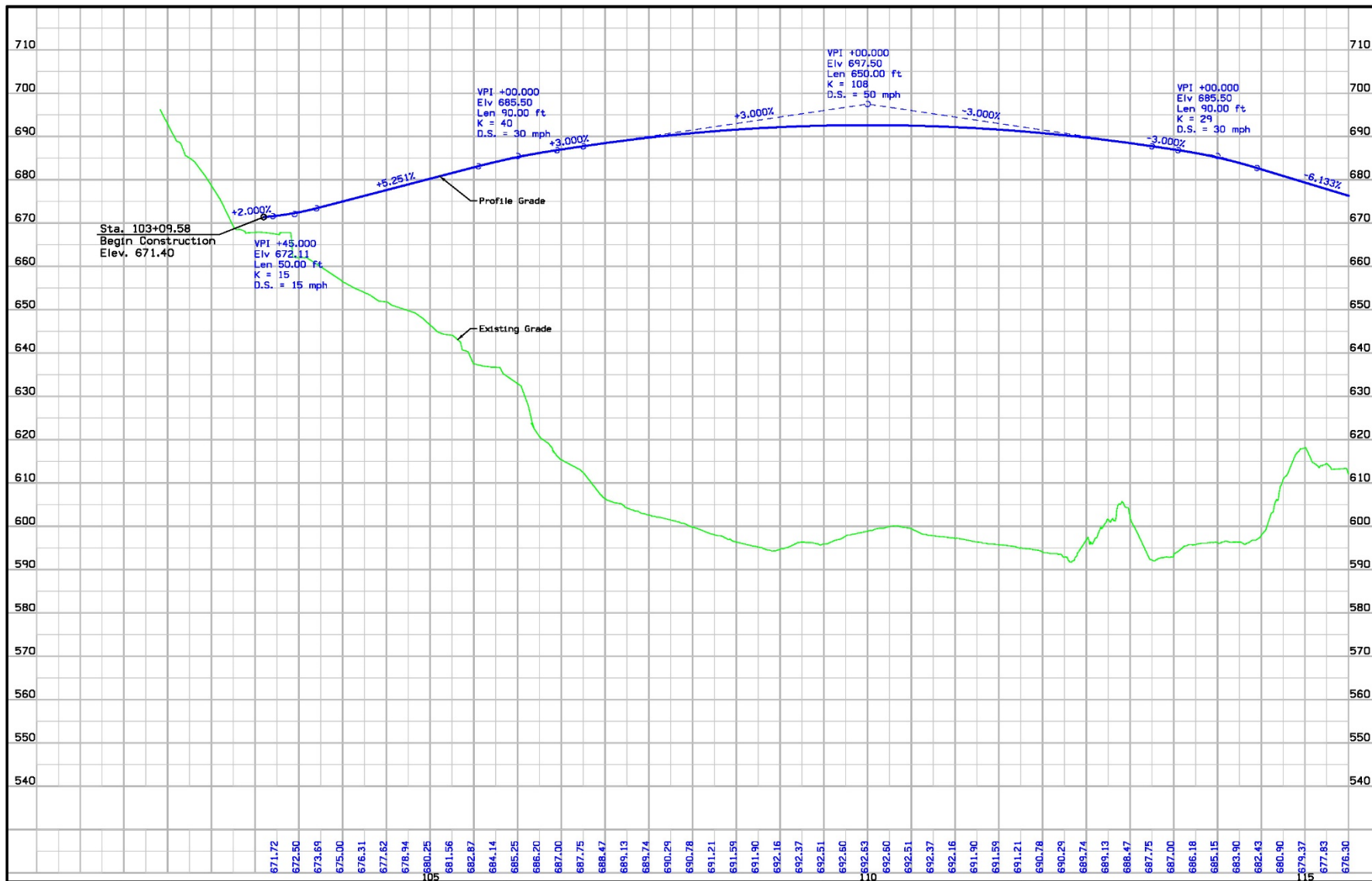
The Restricted Areas shall be marked off with orange snow fence and no ground disturbance is permissible within these areas. If the contractor has questions they can contact the construction engineer or Iowa DOT Location and Environment staffer Brennan Dolan at (515) 239-1795.

For Side Road Details Refer to Sheets No. E.1 - E.4



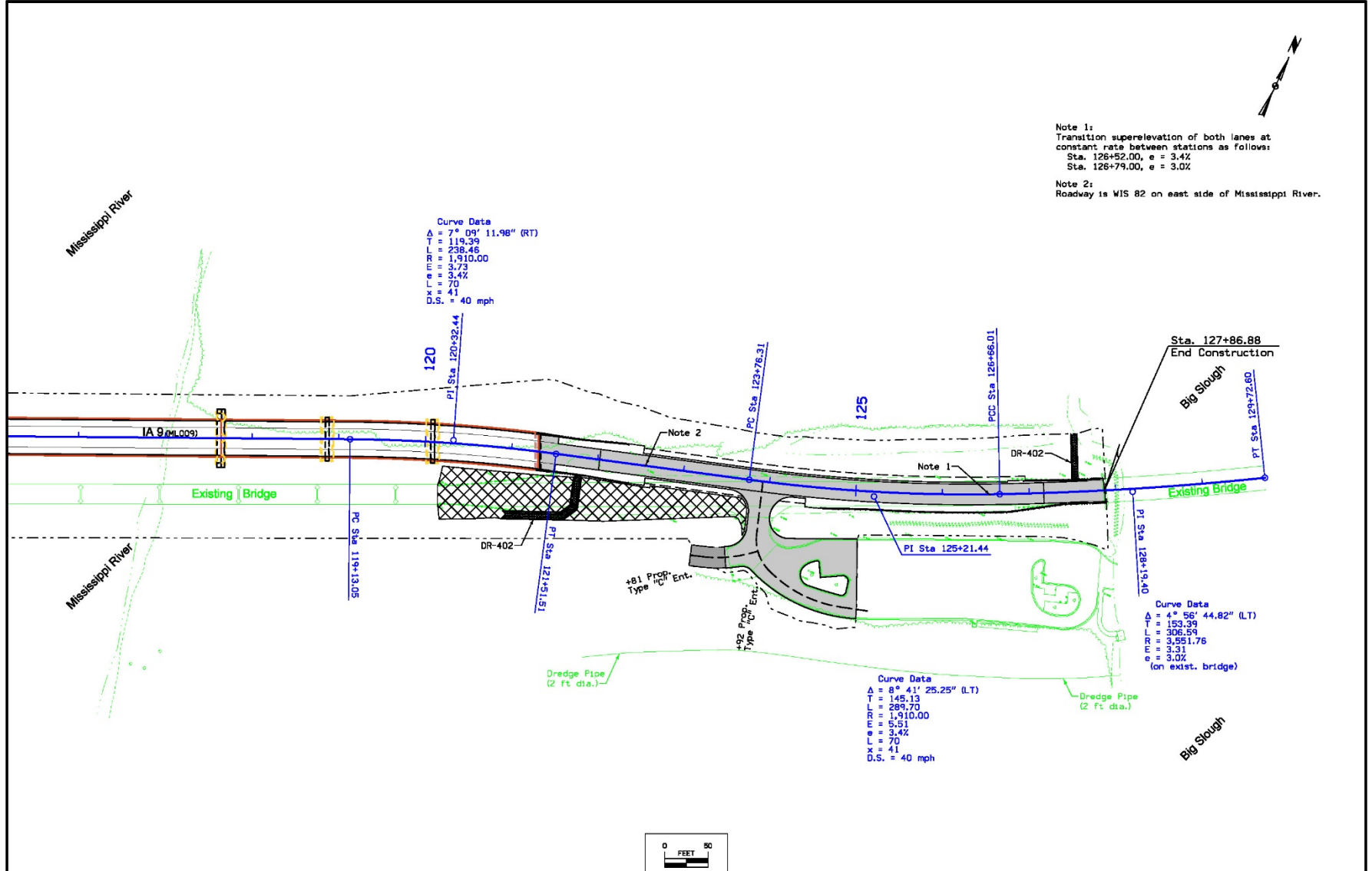
IA9 Bridge over Mississippi River

Construction Advisory Meeting



IA9 Bridge over Mississippi River

Construction Advisory Meeting



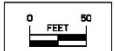
Note 1:
 Transition superelevation of both lanes at constant rate between stations as follows:
 Sta. 126+52.00, e = 3.4%
 Sta. 126+79.00, e = 3.0%

Note 2:
 Roadway 1a WIS 82 on east side of Mississippi River.

Curve Data
 $\Delta = 7^\circ 09' 11.98''$ (RT)
 $T = 119.39$
 $L = 238.46$
 $R = 1,910.00$
 $m = 3.73$
 $e = 3.4\%$
 $L = 70$
 $T = 41$
 D.S. = 40 mph

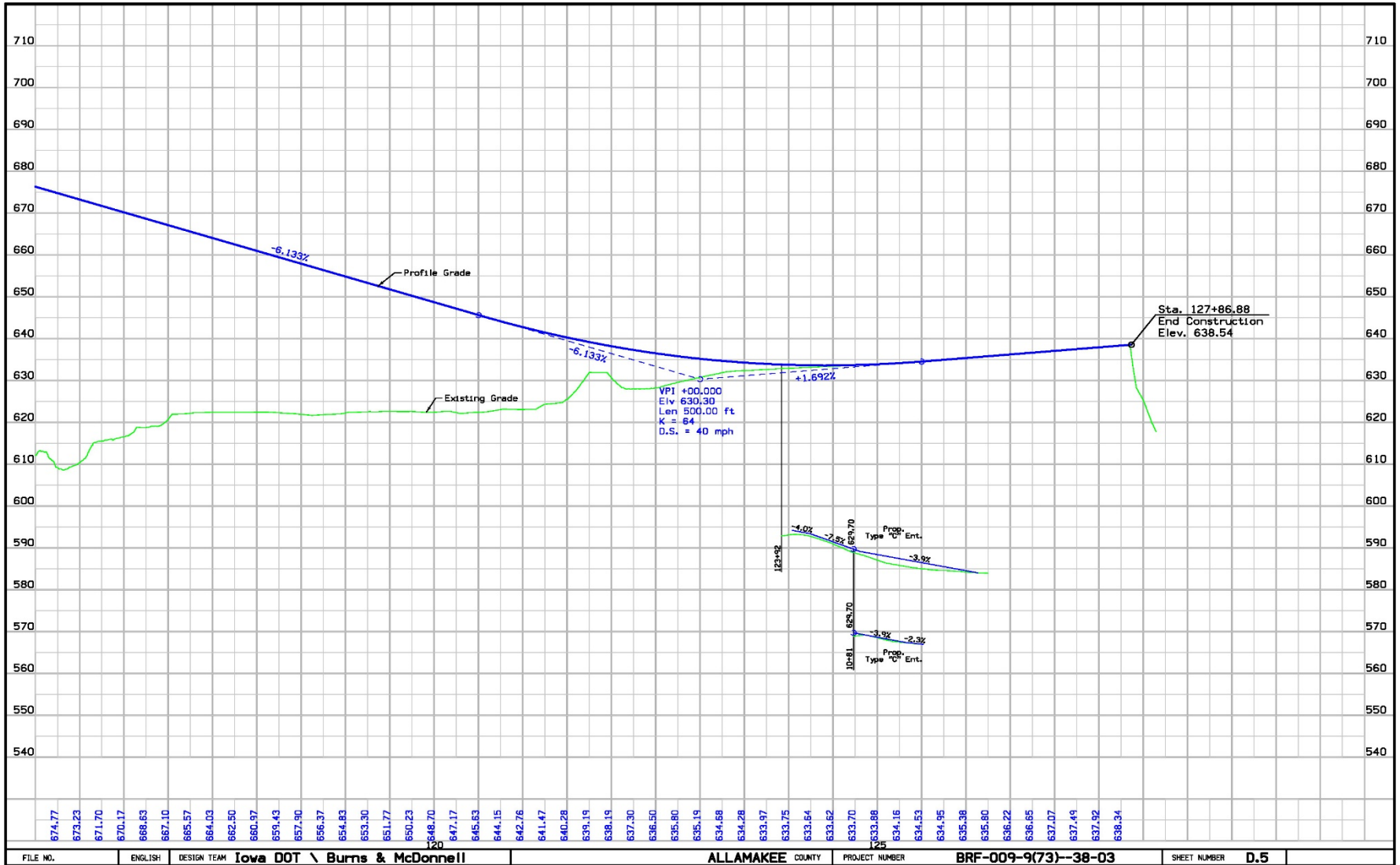
Curve Data
 $\Delta = 4^\circ 56' 44.82''$ (LT)
 $T = 153.39$
 $L = 306.59$
 $R = 3,551.76$
 $m = 3.31$
 $e = 3.0\%$
 (on exist. bridge)

Curve Data
 $\Delta = 8^\circ 41' 25.25''$ (LT)
 $T = 145.13$
 $L = 289.70$
 $R = 1,910.00$
 $m = 5.51$
 $e = 3.4\%$
 $L = 70$
 $T = 41$
 D.S. = 40 mph



IA9 Bridge over Mississippi River

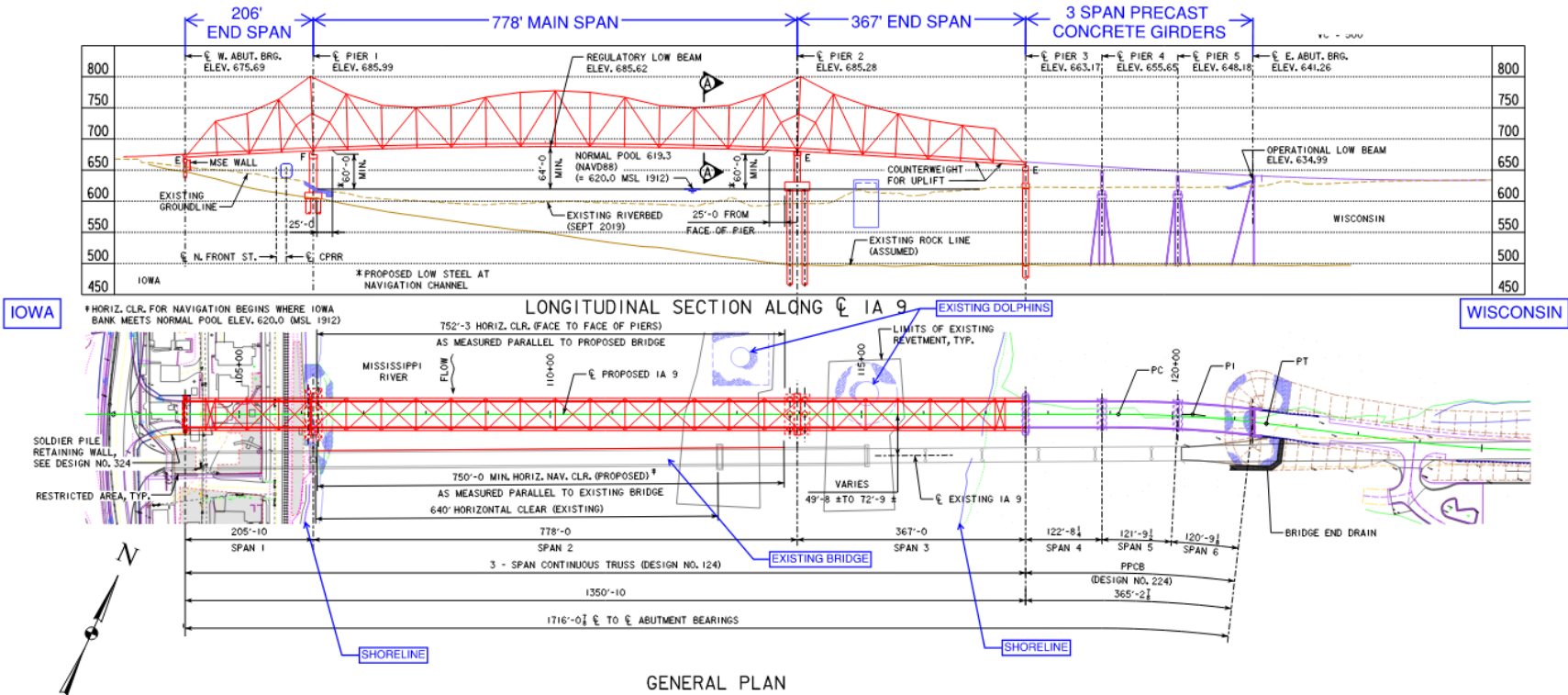
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30% Drawing Overview



IA9 Bridge over Mississippi River

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Navigation Considerations





IA9 Bridge over Mississippi River

Construction Advisory Meeting

Navigation Considerations



 **IA9 Bridge over Mississippi River**

Construction Advisory Meeting

Navigation Considerations

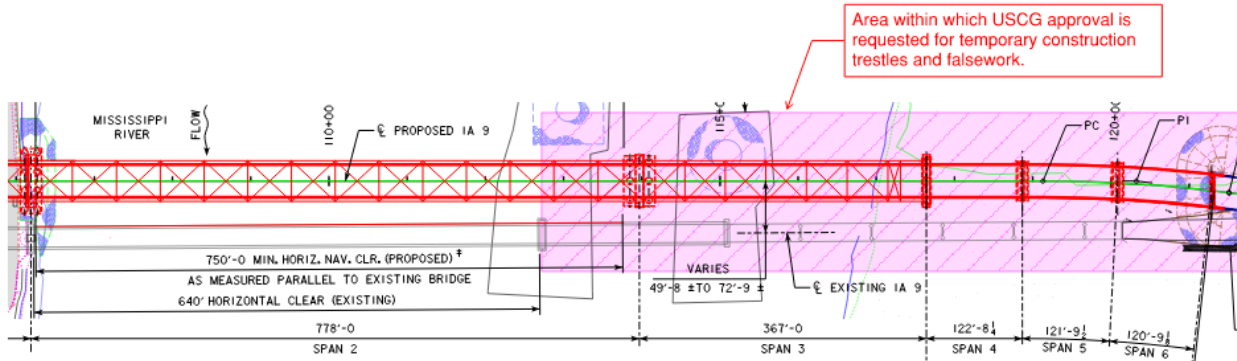
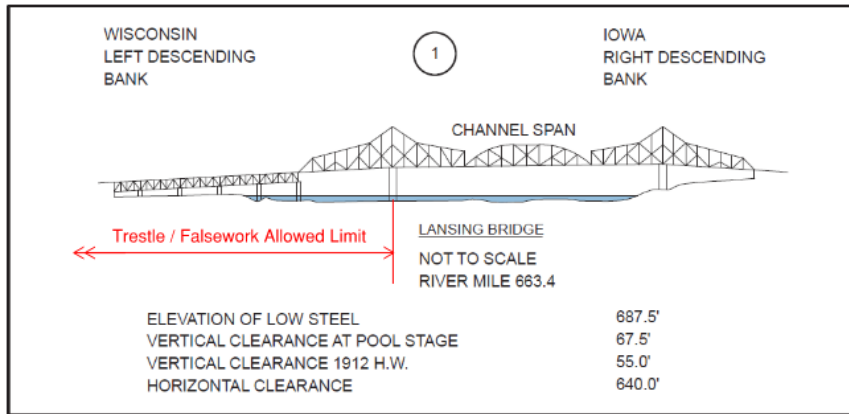
- Outstanding questions to US Coast Guard:
 - Will the contractor be allowed to install temporary falsework and/or temporary trestle to limits shown?
 - Demolition
 - Will blasting of the superstructure be allowed?
 - Will blasting of the substructure be allowed?
 - What restrictions are there to blasting?
 - To what depth/limit does the substructure need to be removed?
 - Can any portion of the existing bridge be allowed to remain at the bottom of the river?
 - What temporary reduced navigation clearances will be allowed during construction?
 - Current bridge = 640 ft horizontal clearance
 - Proposed bridge = 750 ft horizontal clearance

IA9 Bridge over Mississippi River

Construction Advisory Meeting

Navigation Considerations

Figure 1. Proposed Limits for Construction Trestles and Falsework

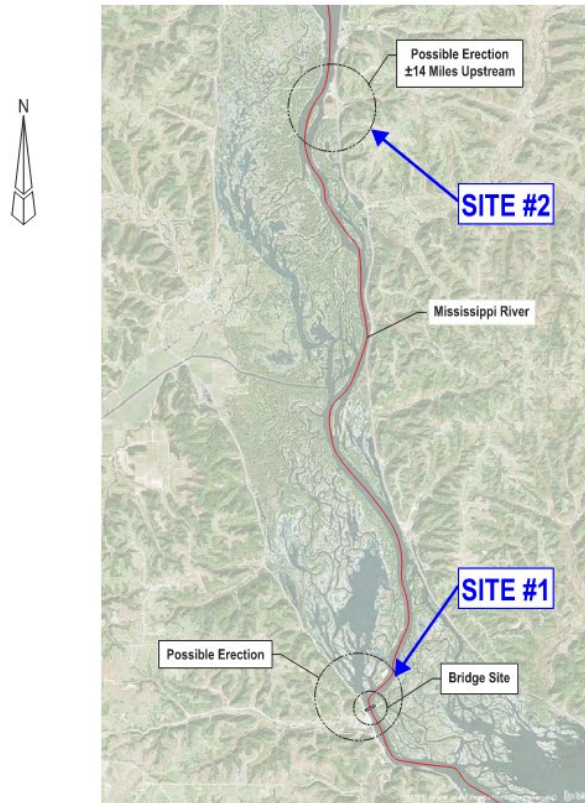




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Potential Construction Laydown Sites

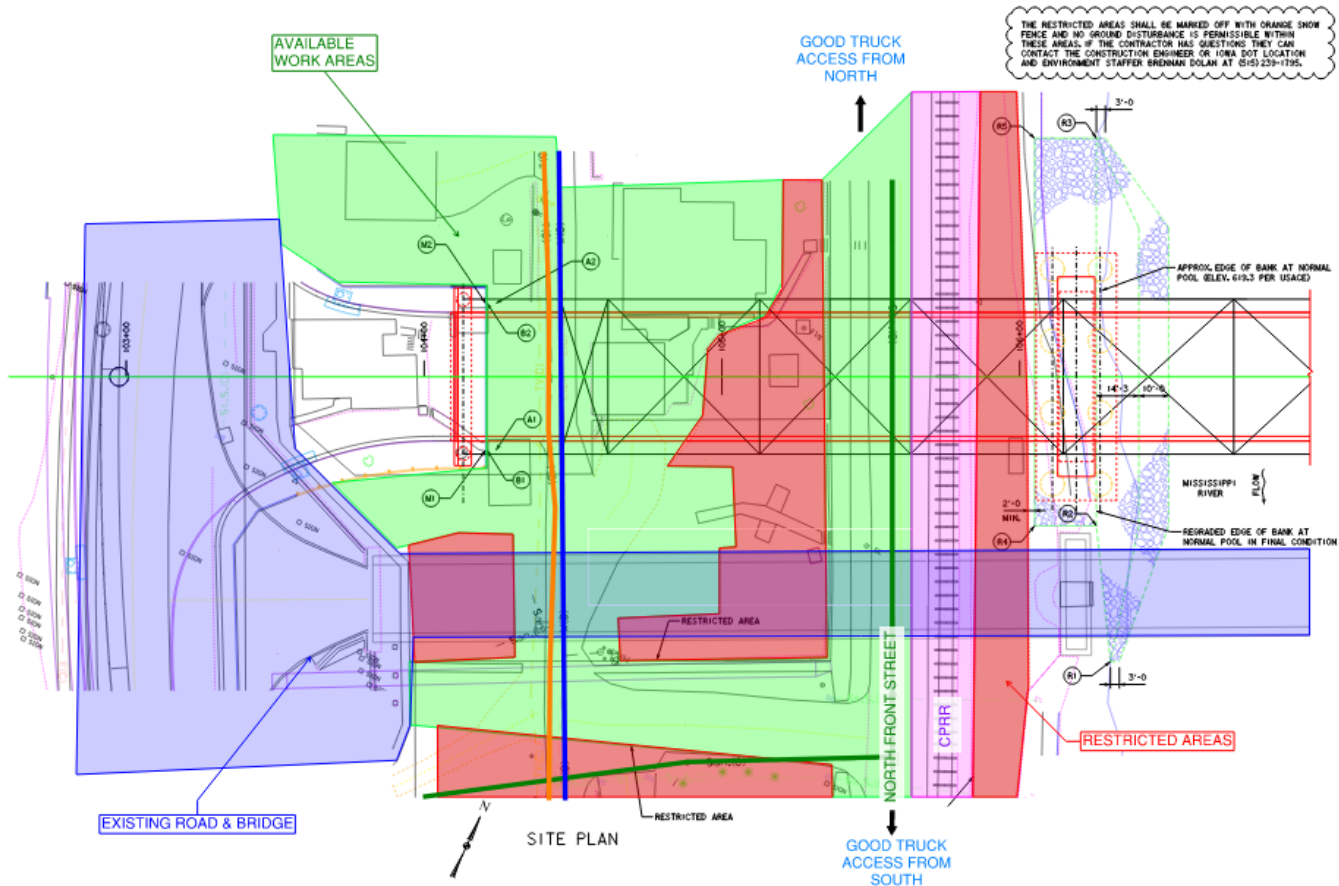


PLAN VIEW - SITE LOCATIONS

IA9 Bridge over Mississippi River

Construction Advisory Meeting

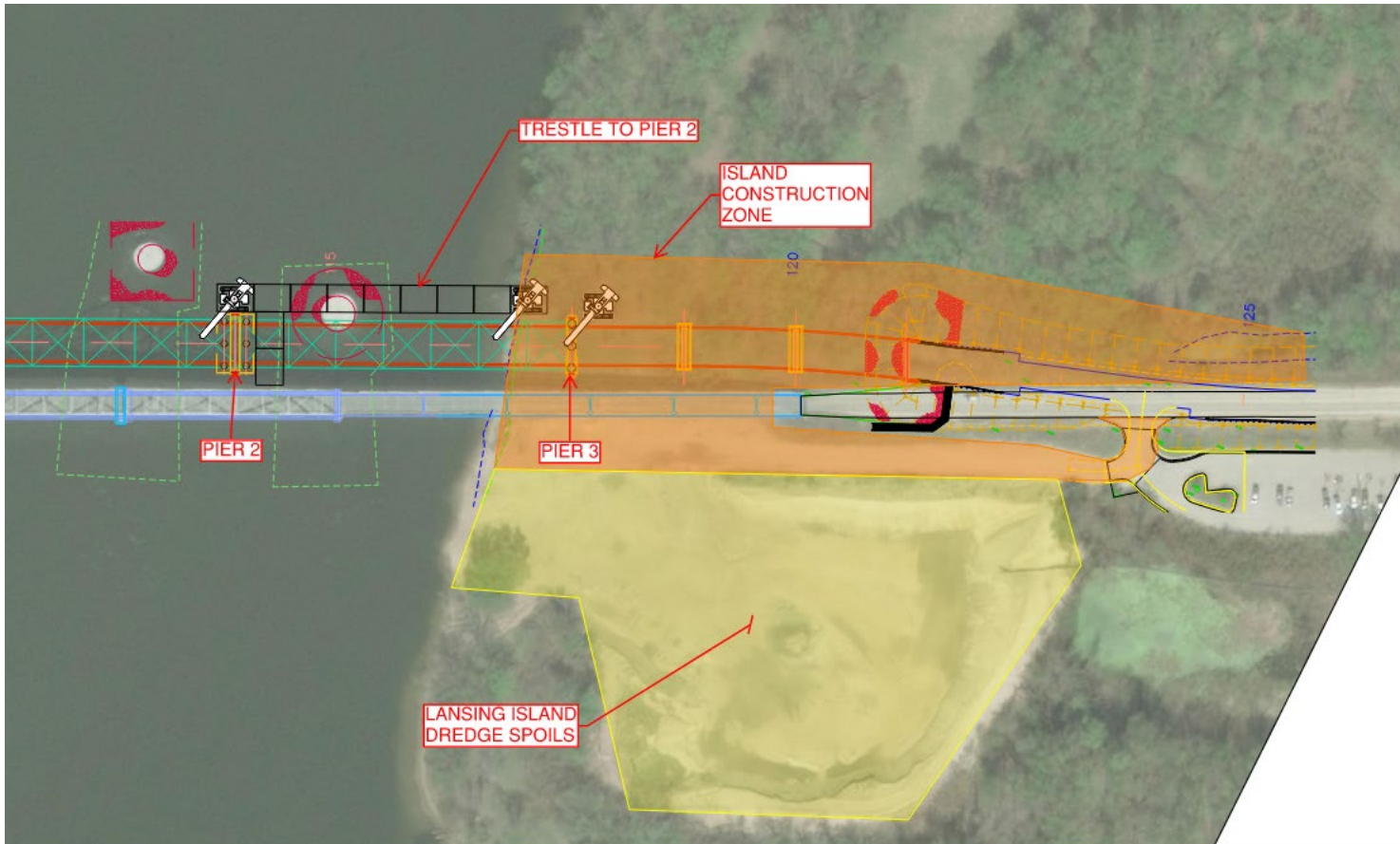
Construction Access & Staging Iowa End Span



IA9 Bridge over Mississippi River

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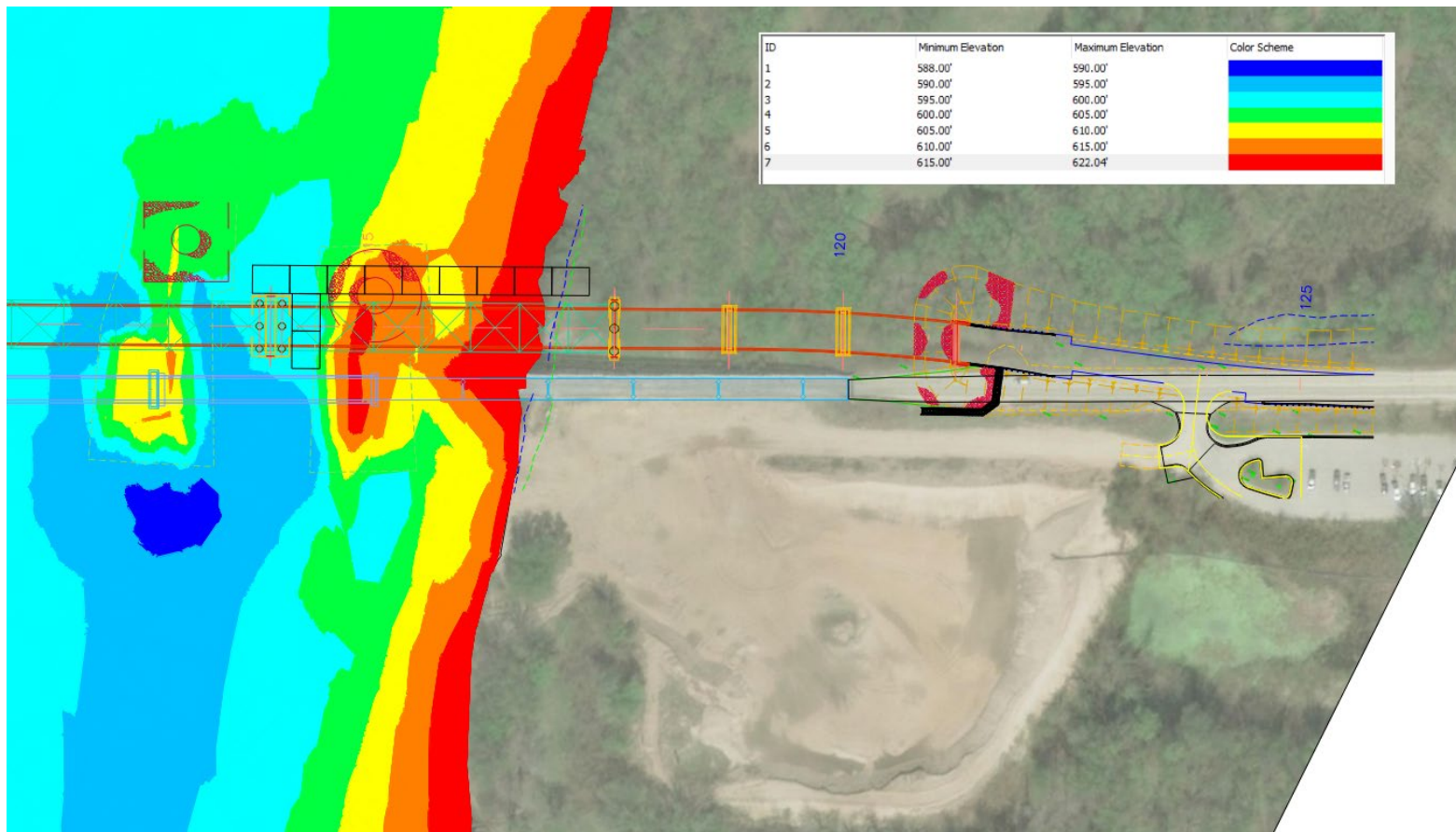
Construction Access & Staging Island

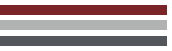


IA9 Bridge over Mississippi River

Construction Advisory Meeting

Construction Access & Staging Island





IA9 Bridge over Mississippi River

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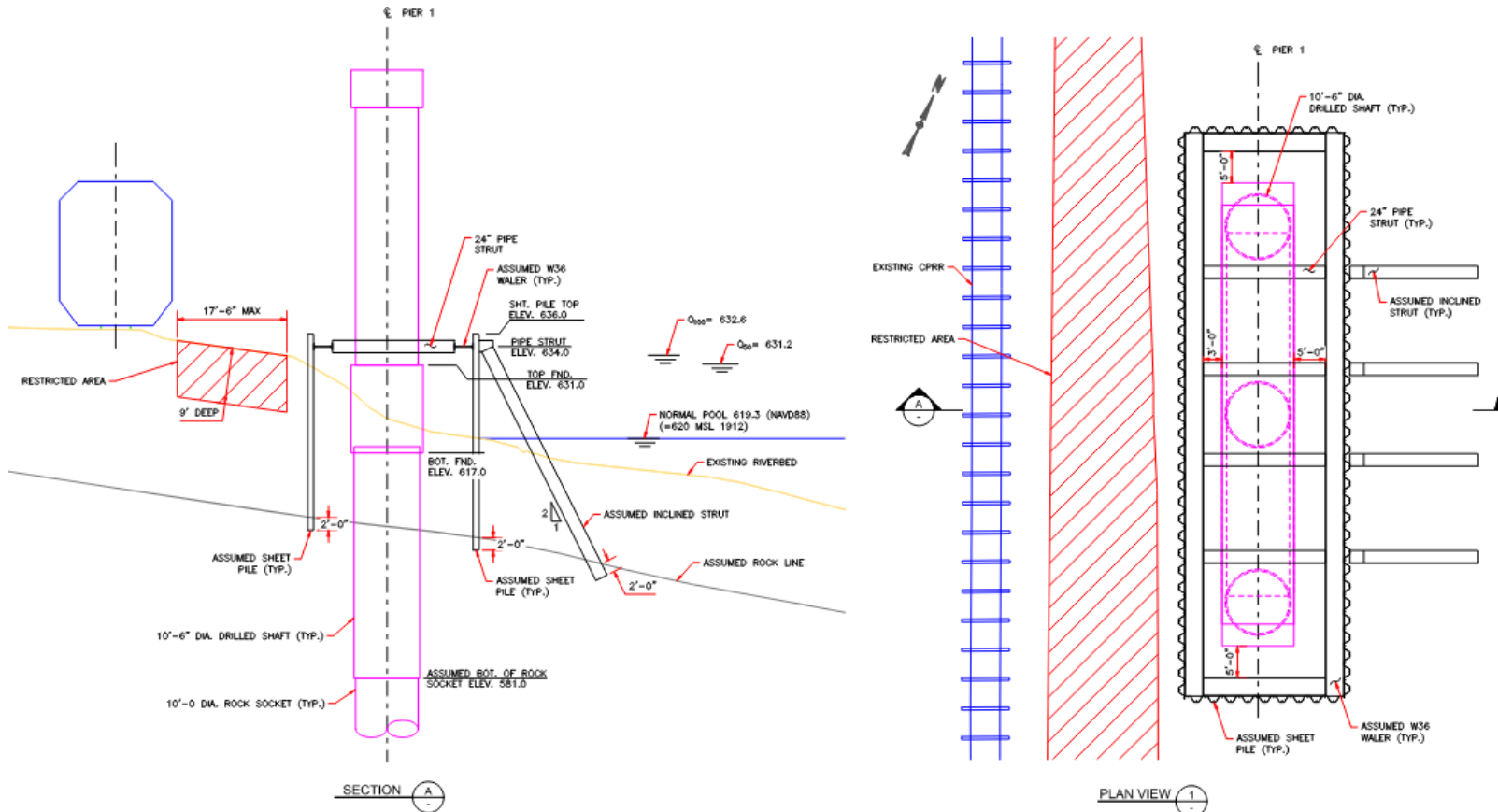
Construction Access & Staging Island



IA9 Bridge over Mississippi River

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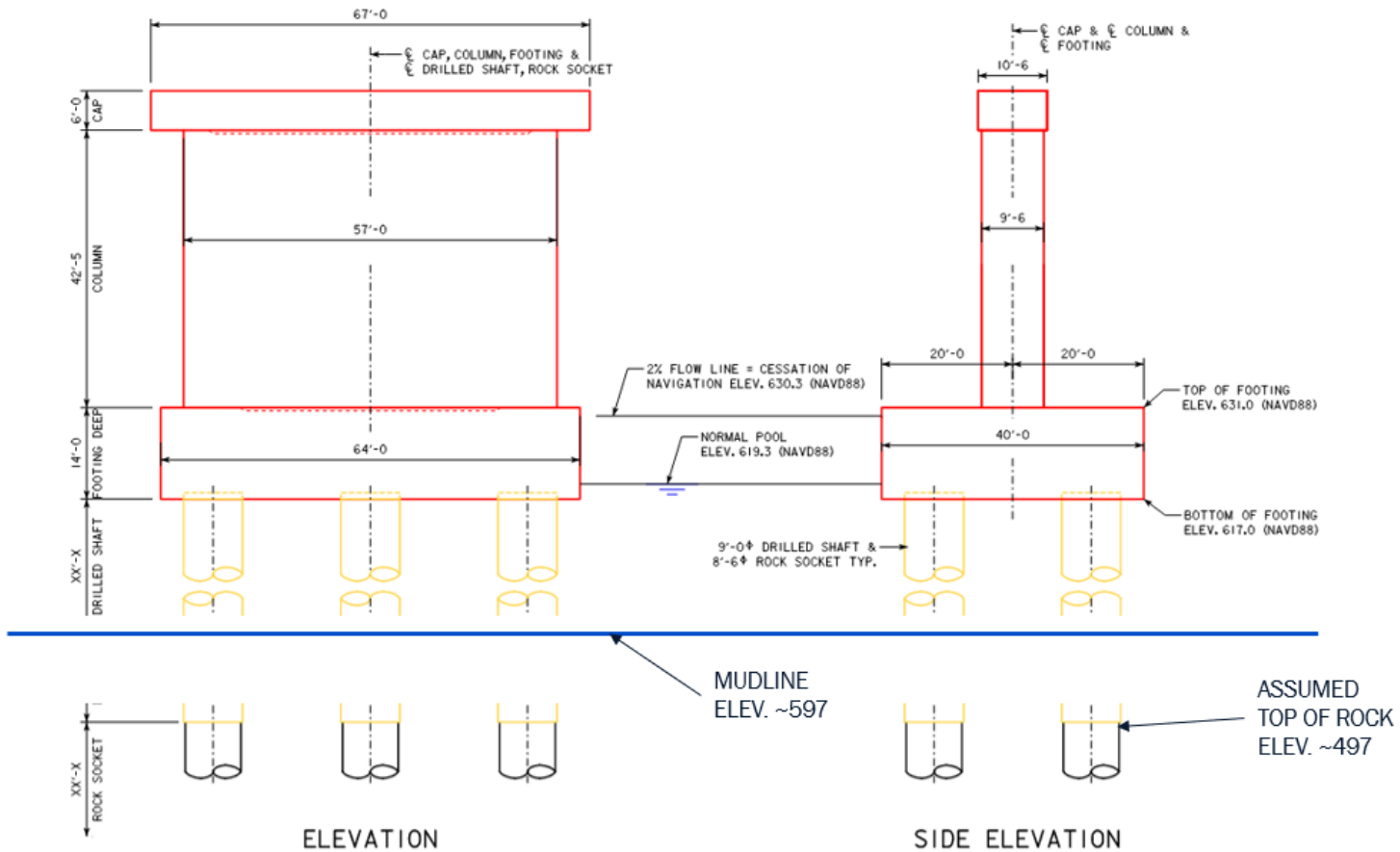
Pier 1 Support of Excavation Concept



IA9 Bridge over Mississippi River

Construction Advisory Meeting

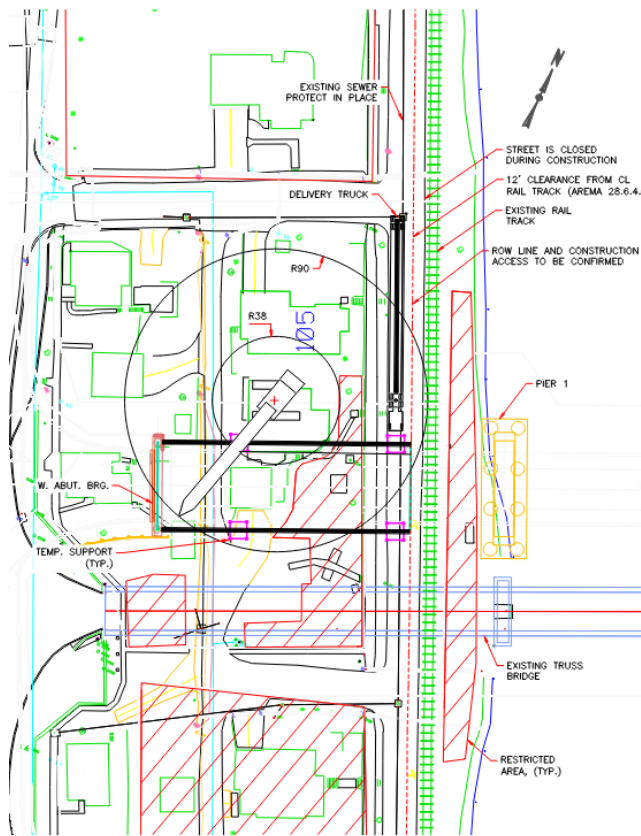
Pier 2 Waterline Footing



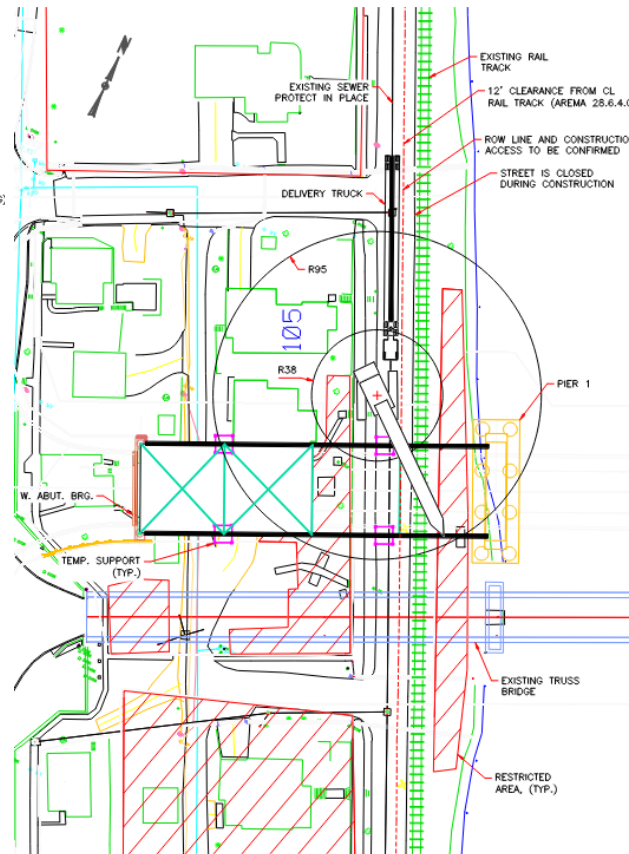
IA9 Bridge over Mississippi River

Construction Advisory Meeting

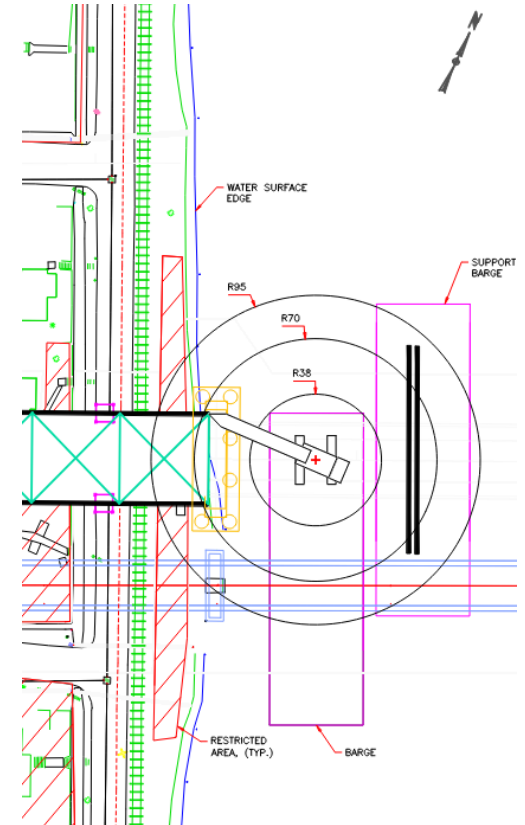
Truss Erection Concept Iowa End Span



L1-L3 ERECTION



L3-L4 ERECTION

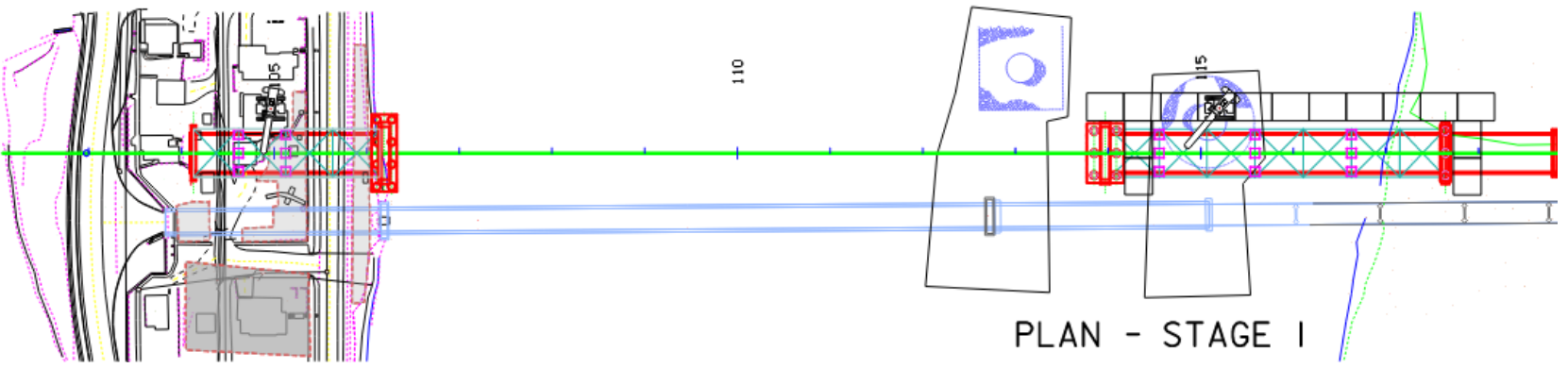
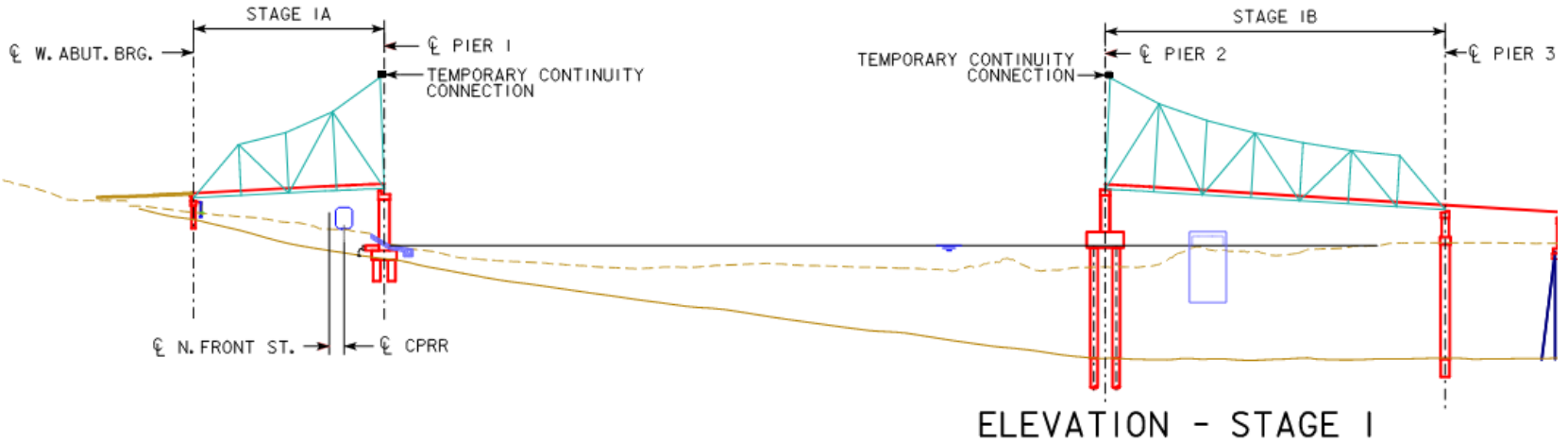


L4-U4 ERECTION

IA9 Bridge over Mississippi River

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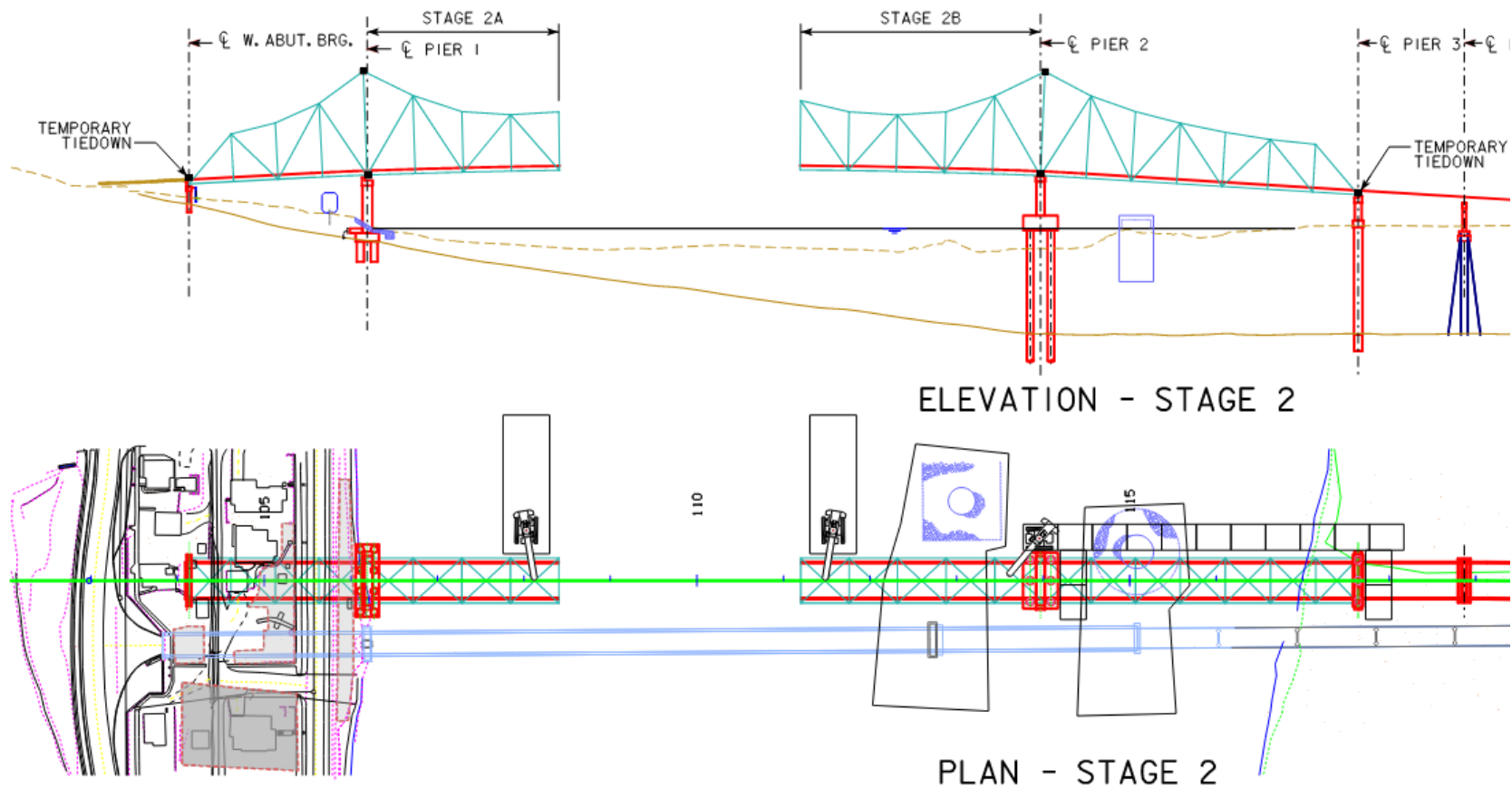
Truss Erection Concept Cantilever method



IA9 Bridge over Mississippi River

Construction Advisory Meeting

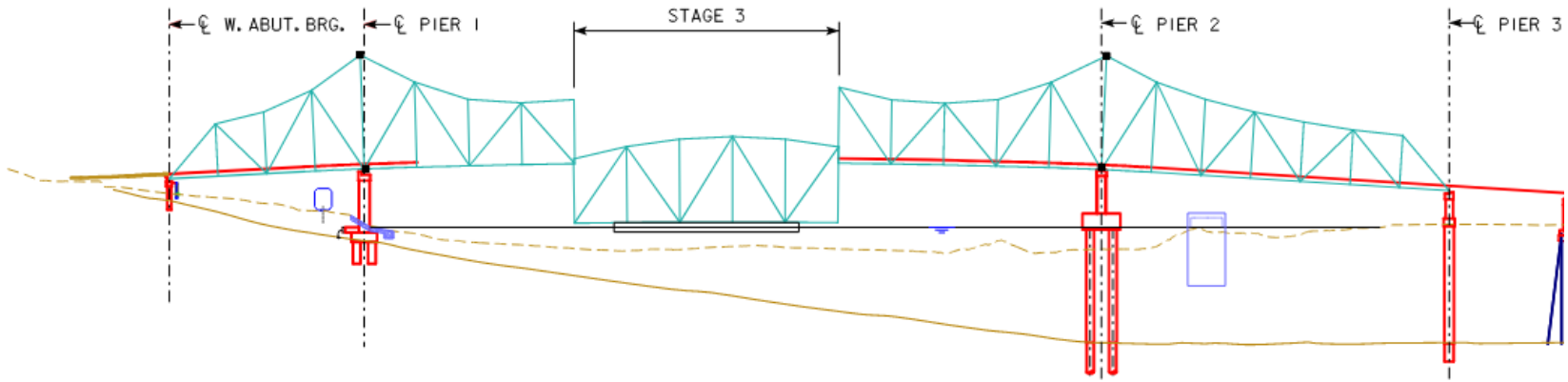
Truss Erection Concept Cantilever method



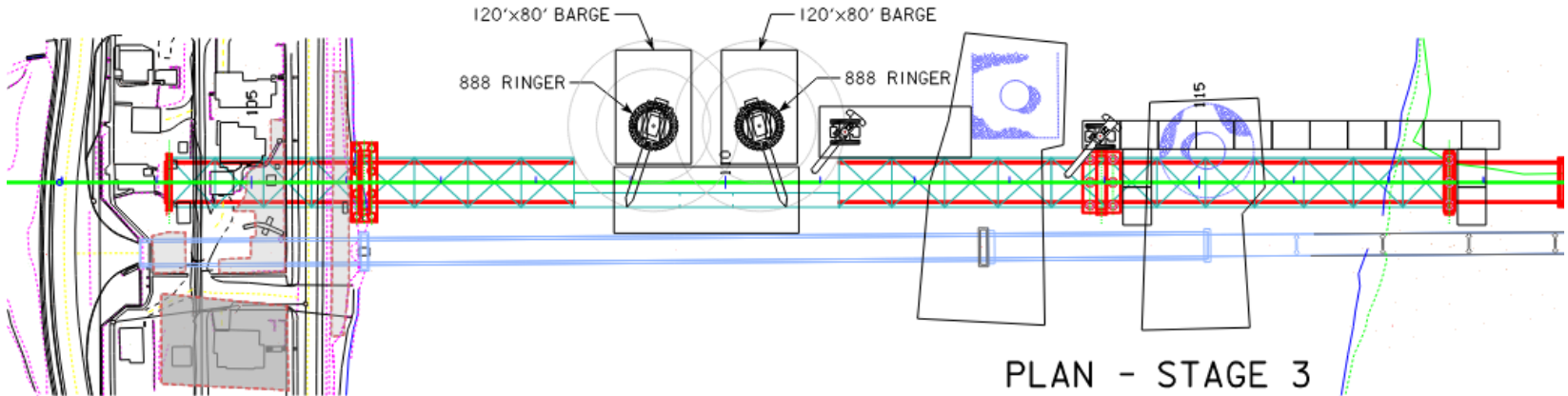
IA9 Bridge over Mississippi River

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Truss Erection Concept Cantilever method



ELEVATION - STAGE 3

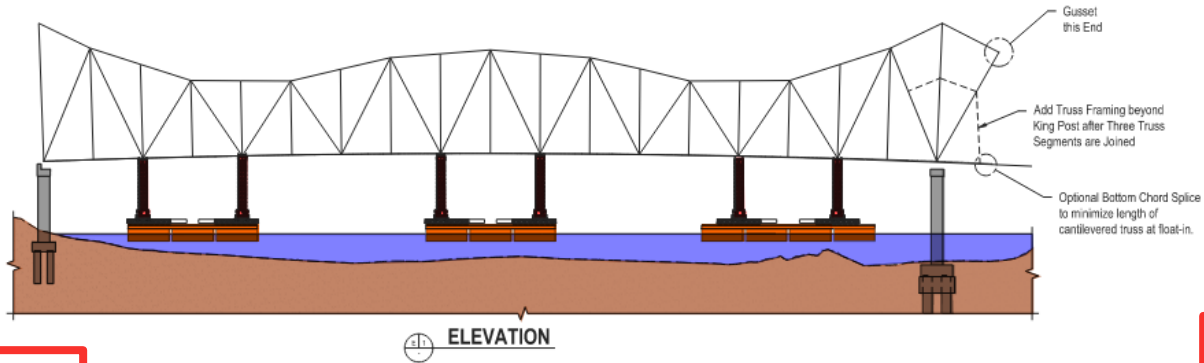


PLAN - STAGE 3

IA9 Bridge over Mississippi River

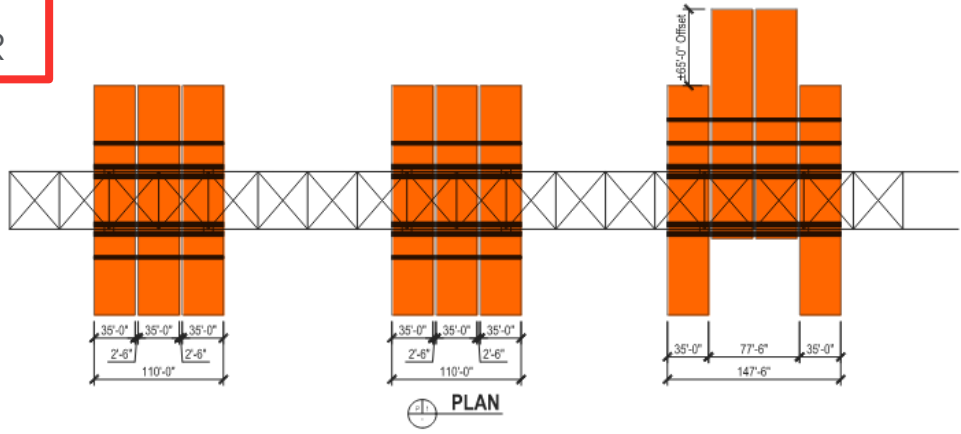
Construction Advisory Meeting

Truss Erection Concept Full Main Span Float-in



CONCEPT FROM PRELIMINARY STUDY BY OTHER

~5000 KIP LIFT FOR TRUSS



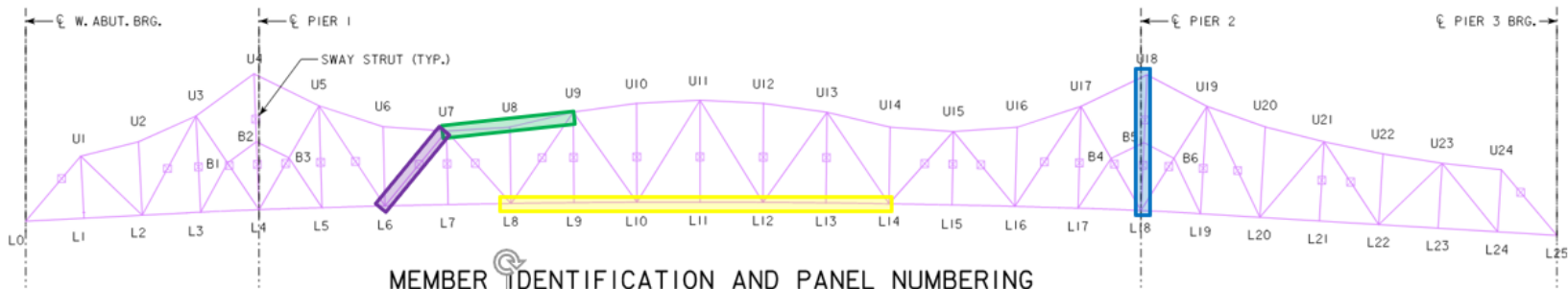
IA-9 OVER MISSISSIPPI RIVER AT LANSING, IA

PRELIMINARY NOT FOR CONSTRUCTION

IA9 Bridge over Mississippi River

Construction Advisory Meeting

Preliminary Component Weights



MEMBER IDENTIFICATION AND PANEL NUMBERING

LOWER CHORD		
MEMBER	LENGTH (ft)	TOTAL MEMBER WEIGHT (lbs)
L0 - L1	51.53	16,130
L1 - L2	51.53	16,130
L2 - L3	51.53	16,130
L3 - L4	51.51	16,123
L4 - L5	55.60	22,060
L5 - L6	55.59	17,400
L6 - L7	55.59	45,569
L7 - L8	55.58	45,561
L8 - L9	55.58	51,178
L9 - L10	55.57	51,168
L10 - L11	55.57	51,168
L11 - L12	55.57	51,168
L12 - L13	55.57	51,168
L13 - L14	55.58	51,178
L14 - L15	55.58	39,839
L15 - L16	55.59	39,847
L16 - L17	55.59	17,400
L17 - L18	55.61	17,407
L18 - L19	52.50	17,833
L19 - L20	52.53	16,443
L20 - L21	52.53	16,443
L21 - L22	52.53	16,443
L22 - L23	52.53	16,443
L23 - L24	52.53	16,443
L24 - L25	52.53	16,443

UPPER CHORD		
MEMBER	LENGTH (ft)	TOTAL MEMBER WEIGHT (lbs)
U1 - U2	52.49	12,083
U2 - U3	55.51	12,778
U3 - U4	63.37	16,841
U4 - U5	63.83	16,963
U5 - U6	59.46	43,539
U6 - U7	56.15	41,115
U7 - U8	55.98	67,890
U8 - U9	57.33	69,527
U9 - U10	56.50	56,466
U10 - U11	56.08	56,046
U11 - U12	56.08	56,046
U12 - U13	56.50	56,466
U13 - U14	57.33	57,295
U14 - U15	55.98	55,946
U15 - U16	56.16	29,968
U16 - U17	59.34	31,665
U17 - U18	64.58	22,511
U18 - U19	59.79	20,841
U19 - U20	54.63	12,576
U20 - U21	53.47	12,309
U21 - U22	53.06	18,843
U22 - U23	52.76	18,736
U23 - U24	52.59	18,676

VERTICALS		
MEMBER	LENGTH (ft)	TOTAL MEMBER WEIGHT (lbs)
L1 - U1	55.00	12,532
L2 - U2	65.00	18,780
L3 - U3	85.00	19,368
L4 - U4	120.00	36,916
L5 - U5	90.00	20,507
L6 - U6	70.00	28,003
L7 - U7	65.00	14,811
L8 - U8	67.50	28,519
L9 - U9	80.00	18,229
L10 - U10	87.50	19,938
L11 - U11	90.00	20,507
L12 - U12	87.50	19,938
L13 - U13	80.00	18,229
L14 - U14	67.50	27,003
L15 - U15	65.00	14,811
L16 - U16	70.00	26,431
L17 - U17	90.00	20,507
L18 - U18	120.00	50,700
L19 - U19	95.00	21,647
L20 - U20	80.00	24,611
L21 - U21	70.00	15,950
L22 - U22	62.50	18,057
L23 - U23	57.50	13,102
L24 - U24	55.00	12,532

DIAGONALS		
MEMBER	LENGTH (ft)	TOTAL MEMBER WEIGHT (lbs)
L0 - U1	75.37	24,597
U1 - L2	75.37	23,186
L2 - U3	99.52	28,520
U3 - L4	99.67	28,796
L4 - U5	105.86	63,374
U5 - L6	105.90	76,900
L6 - U7	85.63	81,732
U7 - L8	85.63	30,209
L8 - U9	97.53	27,950
U9 - L10	97.52	43,392
L10 - U11	105.90	47,121
U11 - L12	105.90	47,121
L12 - U13	97.53	43,397
U13 - L14	97.53	43,397
L14 - U15	85.63	30,209
U15 - L16	85.64	81,742
L16 - U17	105.85	76,863
U17 - L18	106.06	63,493
L18 - U19	108.89	35,536
U19 - L20	108.55	39,615
L20 - U21	87.52	44,409
U21 - L22	87.52	19,942
L22 - U23	77.88	23,958
U23 - L24	77.88	25,416
L24 - U25	76.05	38,589



IA9 Bridge over Mississippi River

Construction Advisory Meeting

Wisconsin Approach

- Erect precast girders from improved earthen haul roads on island



IA9 Bridge over Mississippi River

Construction Advisory Meeting

Some Questions Under Consideration

- Permits – environmental concerns
 - Are there any environmental restrictions to working hours? Times of year?
 - Any fish spawning windows that prohibit in-water work?
 - Any bird/bat nesting work windows?
 - What construction activities are permitted / prohibited in “Restricted areas”?
- Water Depth
 - Are water depths adequate to maneuver marine equipment?
 - East Trestle limits extend to existing river pier (pending approval from USCG)
- Railroad concerns
 - Railroad limits access to water
 - Working near active track (Will flaggers be required? When?)
 - Support of excavation to construction Pier 1 foundations (pile caps raised and narrowed to optimize clearance to railroad and restricted area)

 **IA9 Bridge over Mississippi River**

Construction Advisory Meeting

Some Questions Under Consideration

- Dredge Spoils on island
 - Is the dredge spoil active?
 - Can a portion of the dredge spoil area be used for construction staging?
 - Do we need USACE permission to utilize this area for construction access or staging?
 - Is the fill available/suitable for embankment borrow?
- Load restrictions on the old bridge
 - Bridge is posted at 40-ton weight limit
 - Is the existing bridge adequate to handle permit loads (such as heavy equipment and girders)?
- Demolition
 - Is blasting of superstructure or substructure permitted?
 - What are the limits of removal? (2 ft below mudline? 10'-12' water depth?)
 - Can the existing dolphins be removed early to provide construction access?



IA9 Bridge over Mississippi River

Construction Advisory Meeting

Some Questions Under Consideration

- Other comments or questions?
- Email to Ejon.Ranne@iowadot.us during or after the meeting
- Questions and comments will be made available after the meeting



We are asking for your input.
THANK YOU FOR YOUR TIME AND ATTENTION



Jon Ranney
District Engineer

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Ejon.Ranney@iowadot.us

District 2
428 43rd Street SW
Mason City, IA 50401