Constructing the Winona Bridges

WSU Boat Tour

June 18, 2015

MnDOT's First CMGC Project

We all have a stake in A TO B

Outline

- Introductions
- Looking Back
- Project Background
- What’s Been Done
- Today’s Tour
- What’s Ahead

Feel Free to ask Questions at any time……

Introductions

Terry Ward, P.E., MSISE, PMP
MnDOT Project Manager

30 Years Experience.
MnDOT's First Project Manager.
Co-Chair of Statewide P.M. Group.

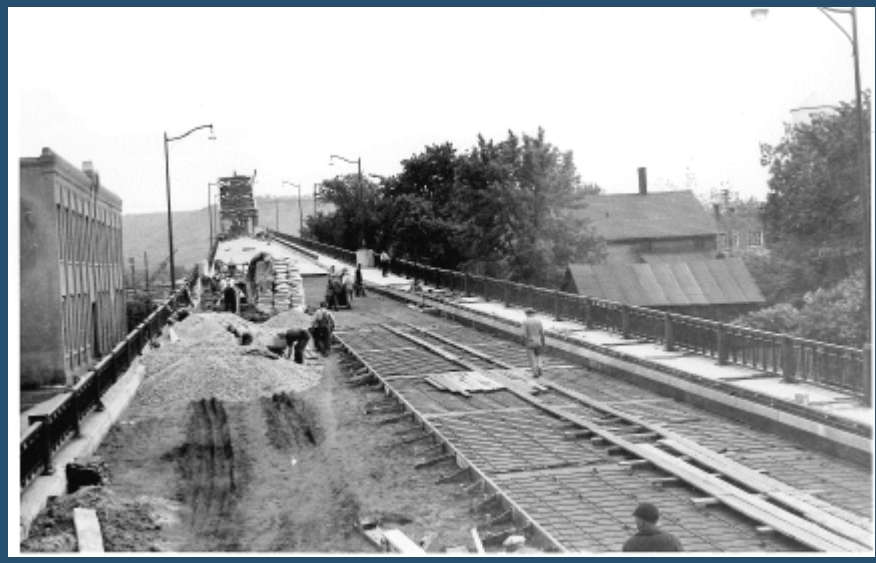
<u>Worked On:</u>

- ROC 52
- 35W Bridge
- Dresbach Bridge

Looking Back

Bridge 5900 Background

- Built in 1942.
- 50-Year Structure - $1.5 million.
- Fracture Critical.
- Scour Critical.
- Closed in 2008 for 2 weeks for 15 gusset plate repairs.
- Eligible for the National Historic Register.
- Frac Sand concerns.

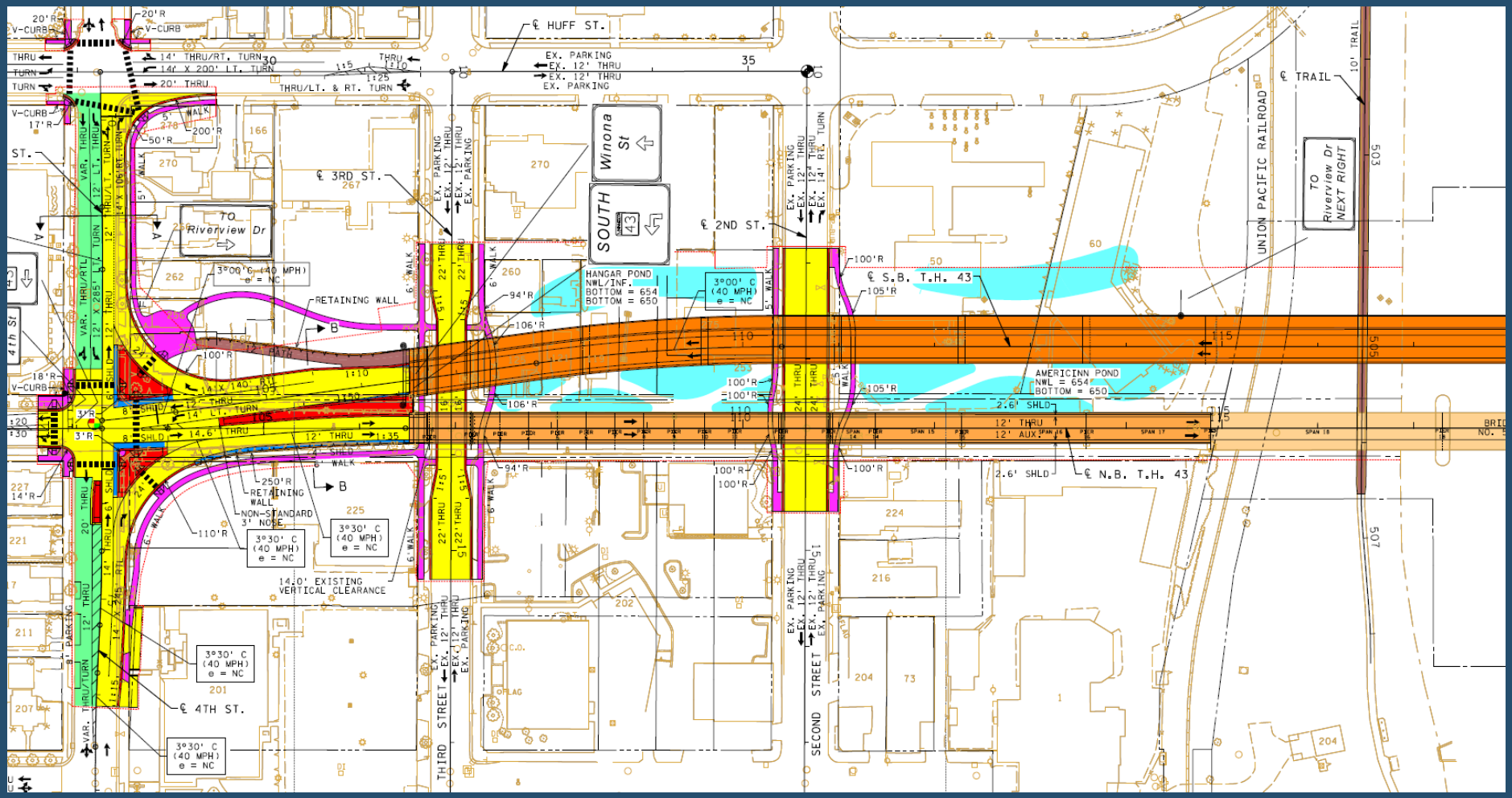


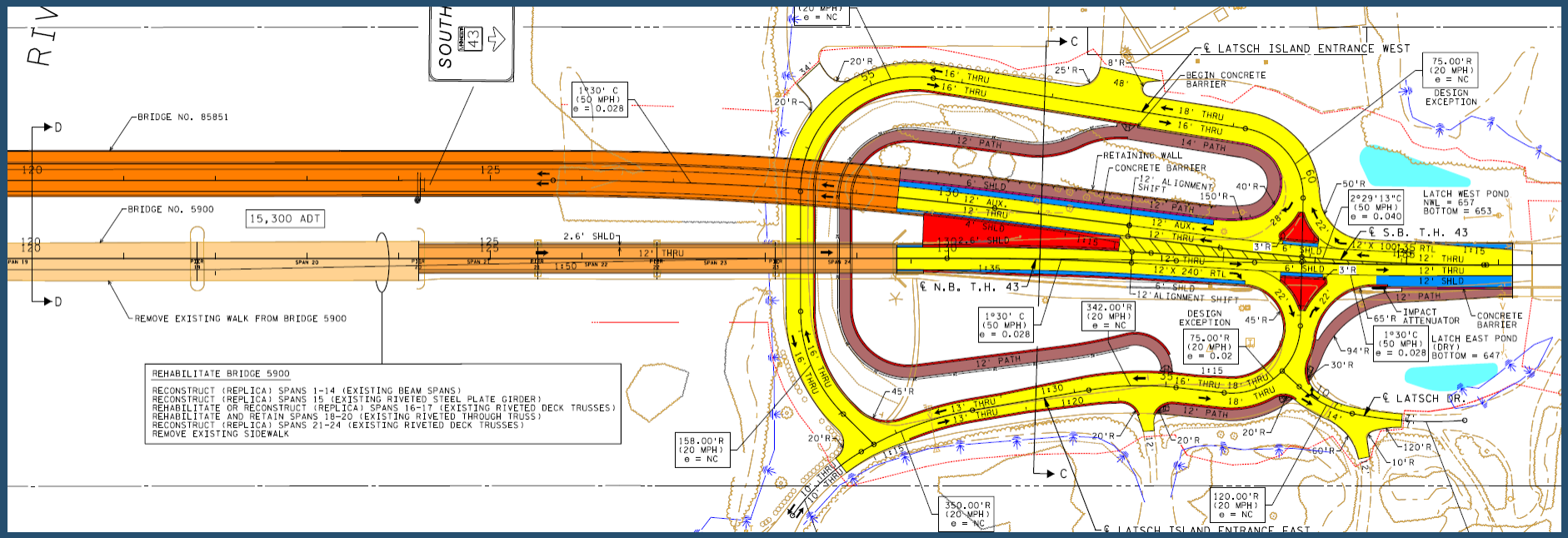
CHICAGO
NORTHWESTERN

Bridge 5900 Background

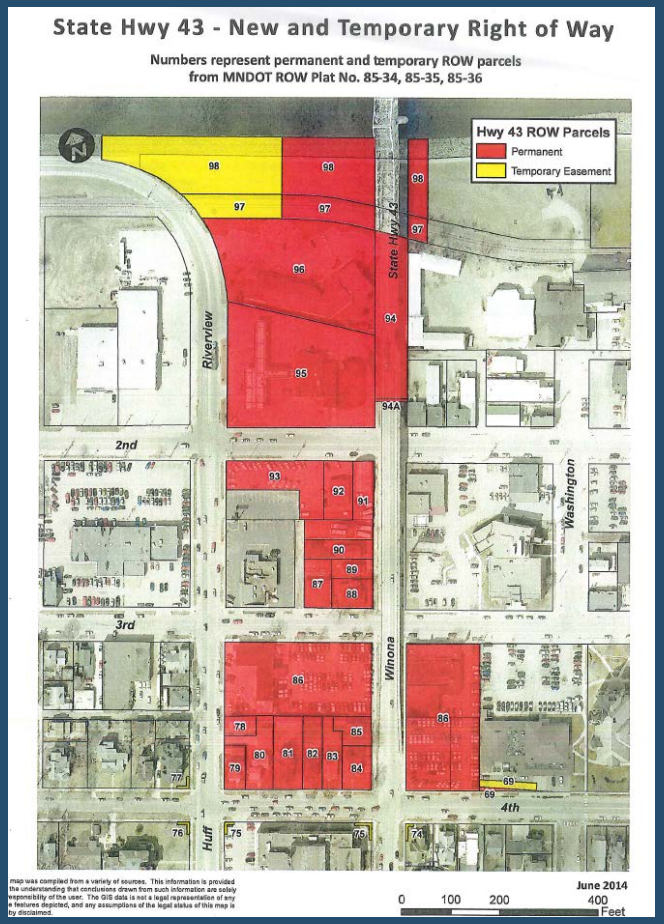
Bridge 5900 Background

Project Background


℄ HUFF ST.
EX. PARKING
EX. 12' THRU
EX. 12' THRU
EX. PARKING
℄ TRAIL
10' TRAIL
UNION PACIFIC RAILROAD
TO Riverview Dr NEXT RIGHT
Winona St
SOUTH 43
℄ 3RD ST.
℄ 2ND ST.
TO Riverview Dr
3°00' C (40 MPH) e = NC
RETAINING WALL
HANGAR POND
NWL/INF.
BOTTOM = 654
BOTTOM = 650
℄ S.B. T.H. 43
AMERICINN POND
NWL = 654
BOTTOM = 650
2.6' SHLD
12' THRU
12' AUX
℄ N.B. T.H. 43
250'R
RETAINING WALL
NON-STANDARD 3' NOSE
3°30' C (40 MPH) e = NC
14.0' EXISTING VERTICAL CLEARANCE
℄ 4TH ST.
THIRD STREET
SECOND STREET
4th St
THRU/LT. & RT. TURN
14' THRU/RT. TURN
14' X 200' LT. TURN
20' THRU
V-CURB
VAR. THRU/RT.
VAR. THRU/LT.
12' LT. TURN
12' THRU
14' LT. TURN
14.6' THRU
6' WALK
SHLD
PIER
SPAN 14
SPAN 15
SPAN 16
SPAN 17
SPAN 18
BRID NO.

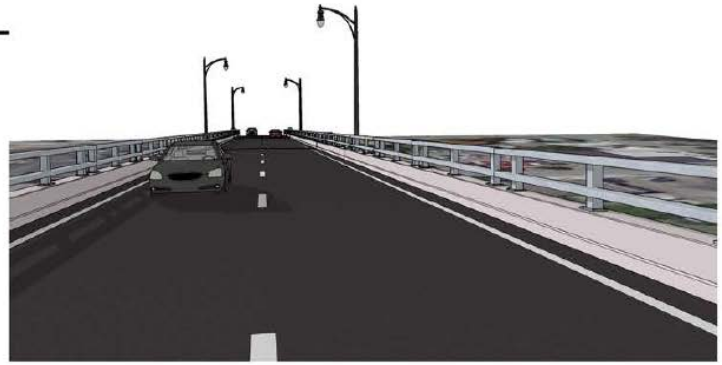

RIV
SOUTH
43
BRIDGE NO. 85851
BRIDGE NO. 5900
15,300 ADT
REMOVE EXISTING WALK FROM BRIDGE 5900
REHABILITATE BRIDGE 5900
RECONSTRUCT (REPLICA) SPANS 1-14 (EXISTING BEAM SPANS)
RECONSTRUCT (REPLICA) SPANS 15 (EXISTING RIVETED STEEL PLATE GIRDER)
REHABILITATE OR RECONSTRUCT (REPLICA) SPANS 16-17 (EXISTING RIVETED DECK TRUSSES)
REHABILITATE AND RETAIN SPANS 18-20 (EXISTING RIVETED THROUGH TRUSS)
RECONSTRUCT (REPLICA) SPANS 21-24 (EXISTING RIVETED DECK TRUSSES)
REMOVE EXISTING SIDEWALK
1°30' C (50 MPH) e = 0.028
℄ N.B. T.H. 43
℄ S.B. T.H. 43
℄ LATSCH ISLAND ENTRANCE WEST
℄ LATSCH ISLAND ENTRANCE EAST
℄ LATSCH DR.
BEGIN CONCRETE BARRIER
RETAINING WALL
CONCRETE BARRIER
12' ALIGNMENT SHIFT
DESIGN EXCEPTION
75.00'R (20 MPH) e = NC
342.00'R (20 MPH) e = NC
75.00'R (20 MPH) e = 0.02
2°29'13"C (50 MPH) e = 0.040
1°30'C (50 MPH) e = 0.028
158.00'R (20 MPH) e = NC
350.00'R (20 MPH) e = NC
120.00'R (20 MPH) e = NC
IMPACT ATTENUATOR
CONCRETE BARRIER
LATCH WEST POND NWL = 657 BOTTOM = 653
LATCH EAST POND (DRY) BOTTOM = 647
16' THRU
18' THRU
14' PATH
12' PATH
12' AUX.
12' THRU
4' SHLD
6' SHLD
2.6' SHLD
12' THRU
12' SHLD
12' X 240' RTL
12' X 100' RTL
13' THRU
10' THRU

MINNESOTA DEPARTMENT OF TRANSPORTATION


State Hwy 43 - New and Temporary Right of Way
Numbers represent permanent and temporary ROW parcels
from MNDOT ROW Plat No. 85-34, 85-35, 85-36
Hwy 43 ROW Parcels
Permanent
Temporary Easement
State Hwy 43
Riverview
2nd
3rd
Winona
Washington
4th
Huff
98
97
96
95
94
94A
93
92
91
90
89
88
87
86
85
84
83
82
81
80
79
78
77
76
75
74
69
June 2014
0 100 200 400
Feet

Bridge 5900 Background

HISTORIC PHOTO



PROPOSED BRIDGE

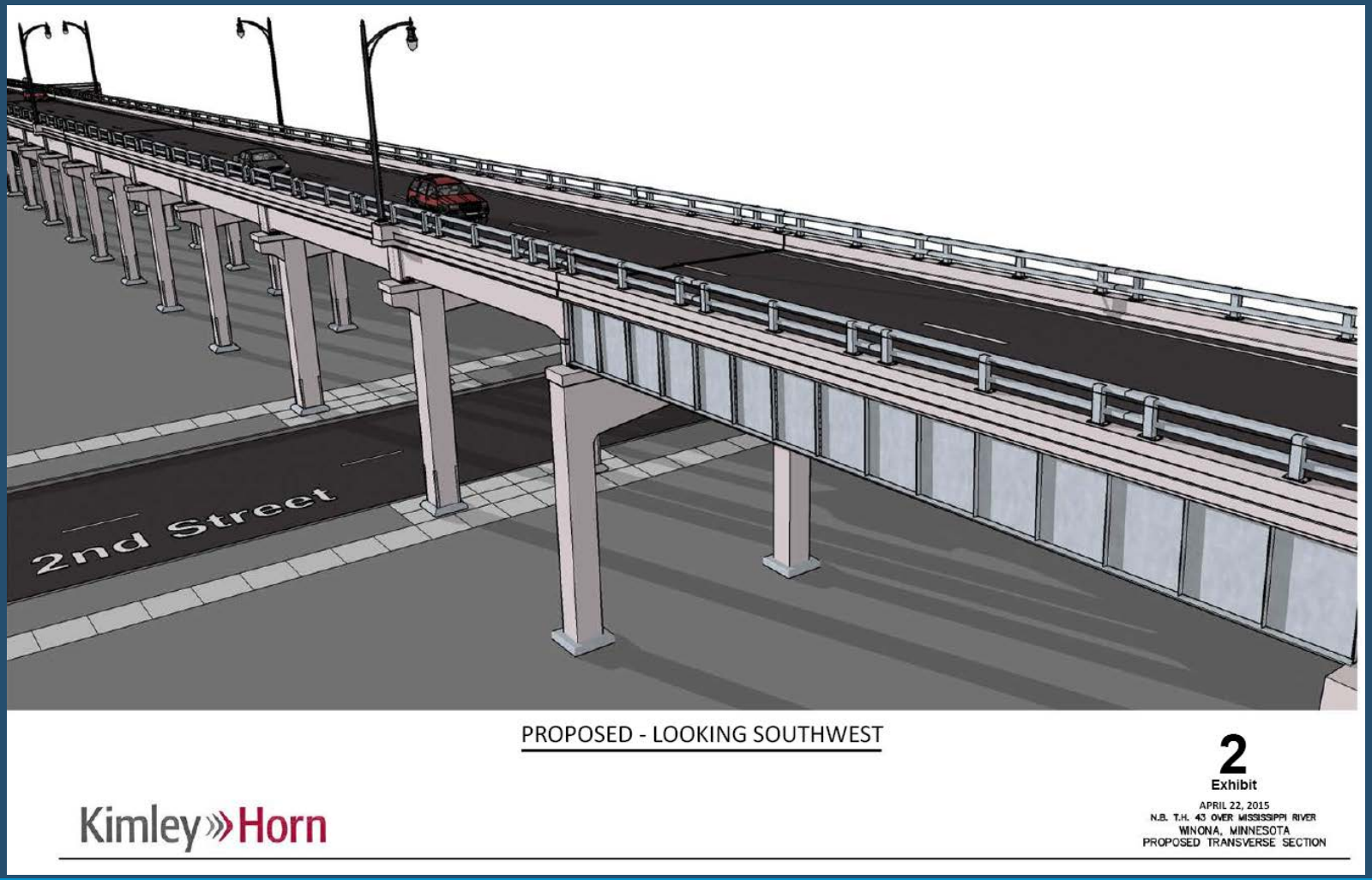
1

Exhibit

APRIL 22, 2015
N.B. T.H. 43 OVER MISSISSIPPI RIVER
WINONA, MINNESOTA
PROPOSED TRANSVERSE SECTION

Kimley»Horn

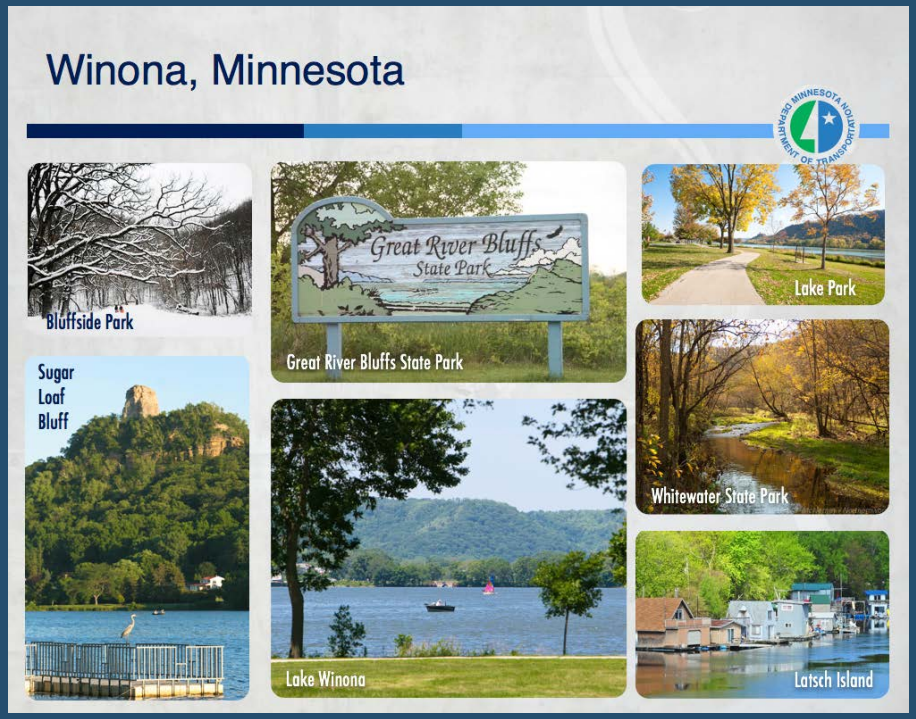
Bridge 5900 Background



Visual Quality Committee Efforts / Recommendations

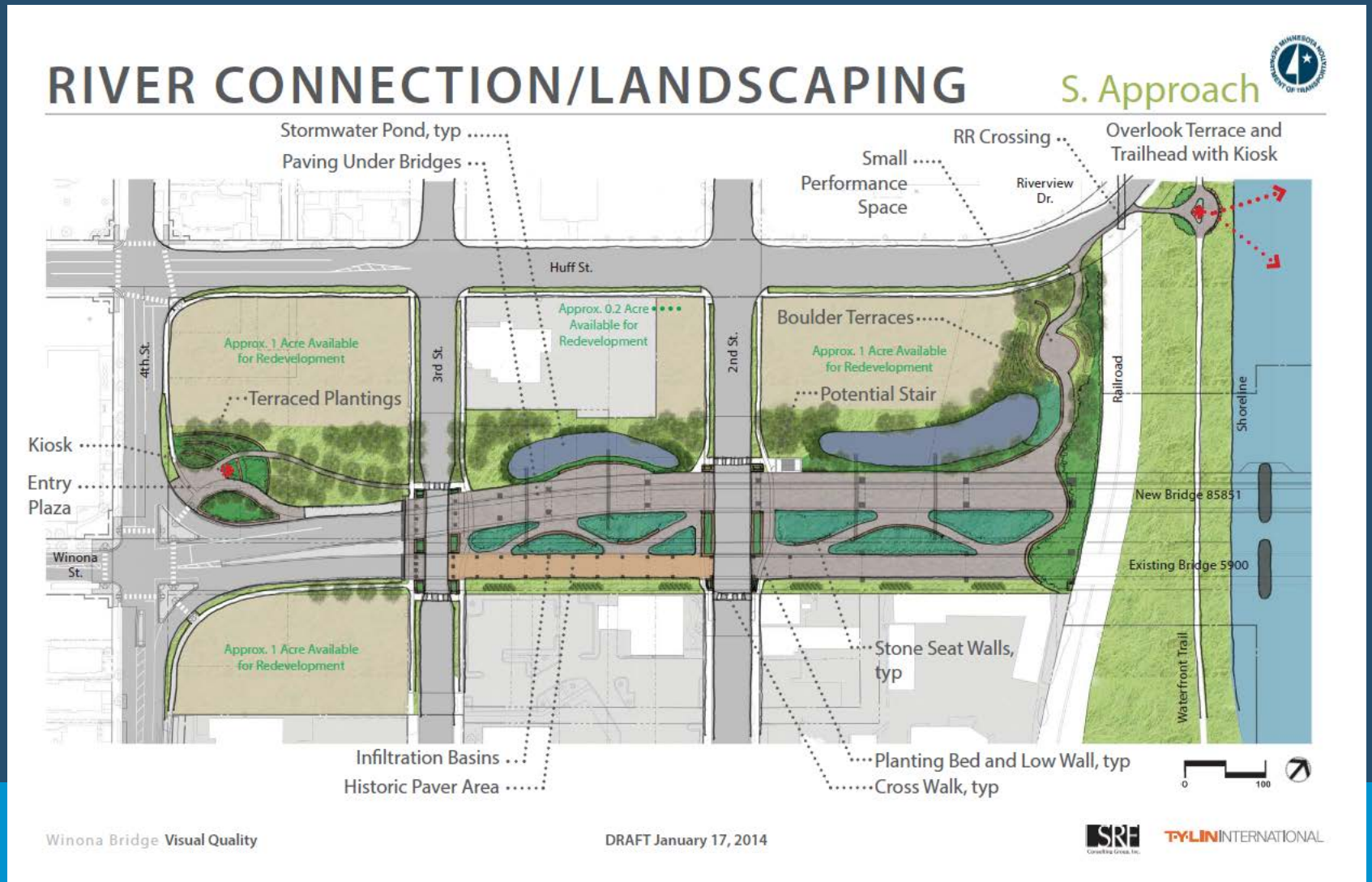
Visual Quality Committee Recommendations

Organic Nature



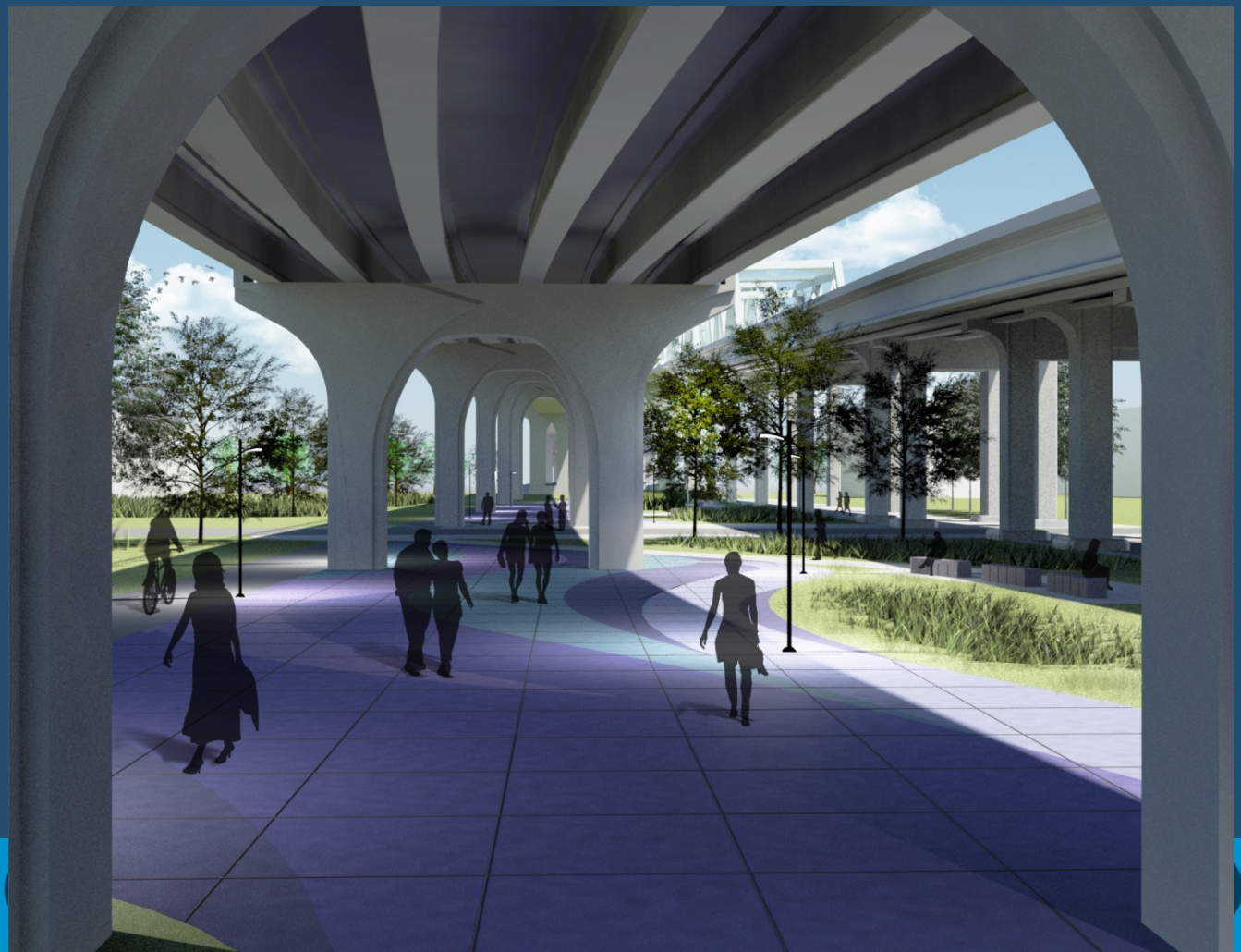
Visual Quality Committee Recommendations

Site Concept A



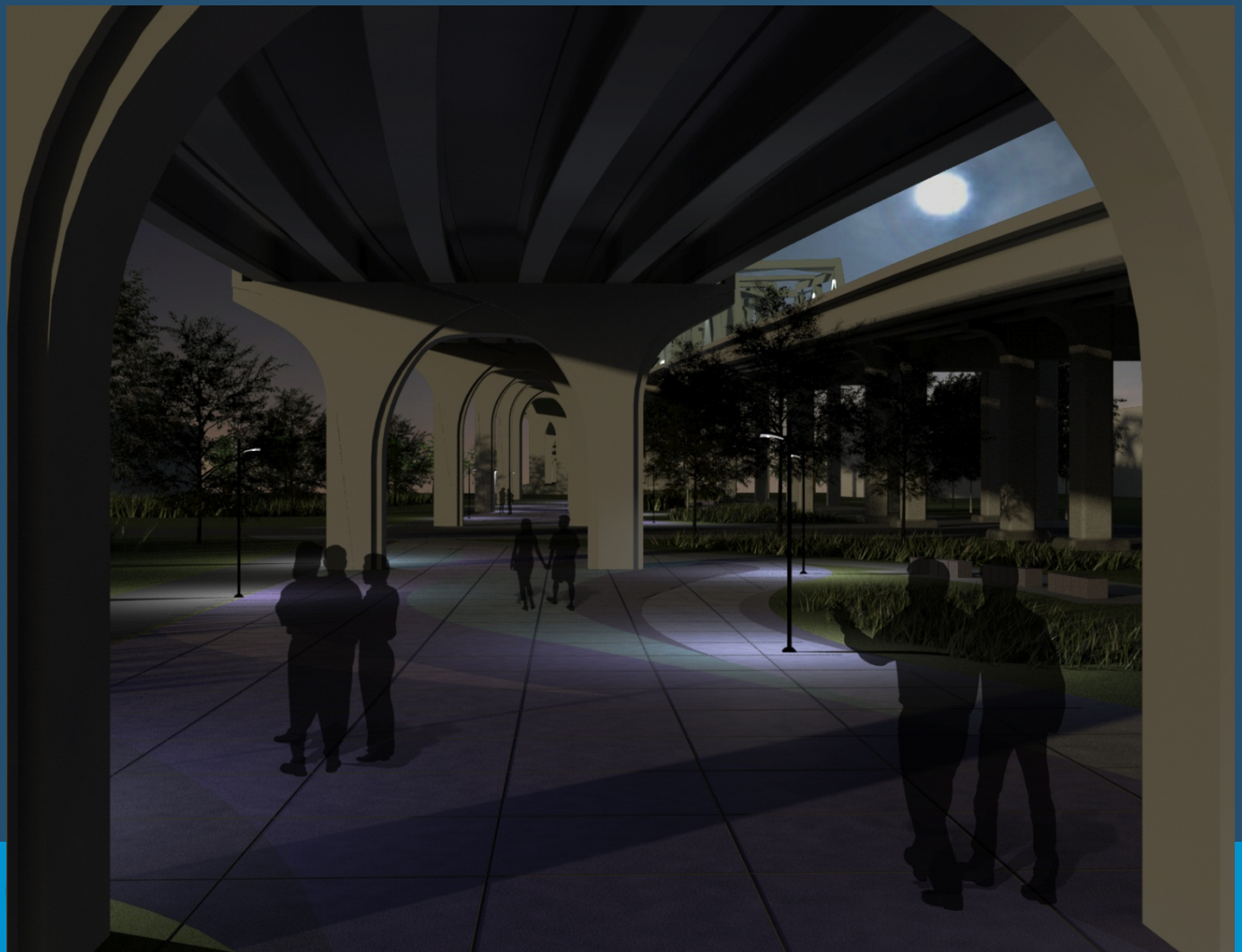
Visual Quality Committee Recommendations

South Plaza Renderings



Visual Quality Committee Recommendations

South Plaza Renderings



What’s Been Done

May 2014

Fabricating 42” OEP For River Pier Foundations

- Approx. 9,000 feet
- Fabricated near St. Louis
- 331 pounds per foot
- Staged at Dresbach

June / mid-July
2014

Latsch Island Temporary Access – July 2014

Steel Sheeting

- From Petersburg, VA
- Approx. 17,000 sq. ft.
- 35 feet long
- 15 foot embedment (min).
- Approx. 50 pounds/foot

SUN 53

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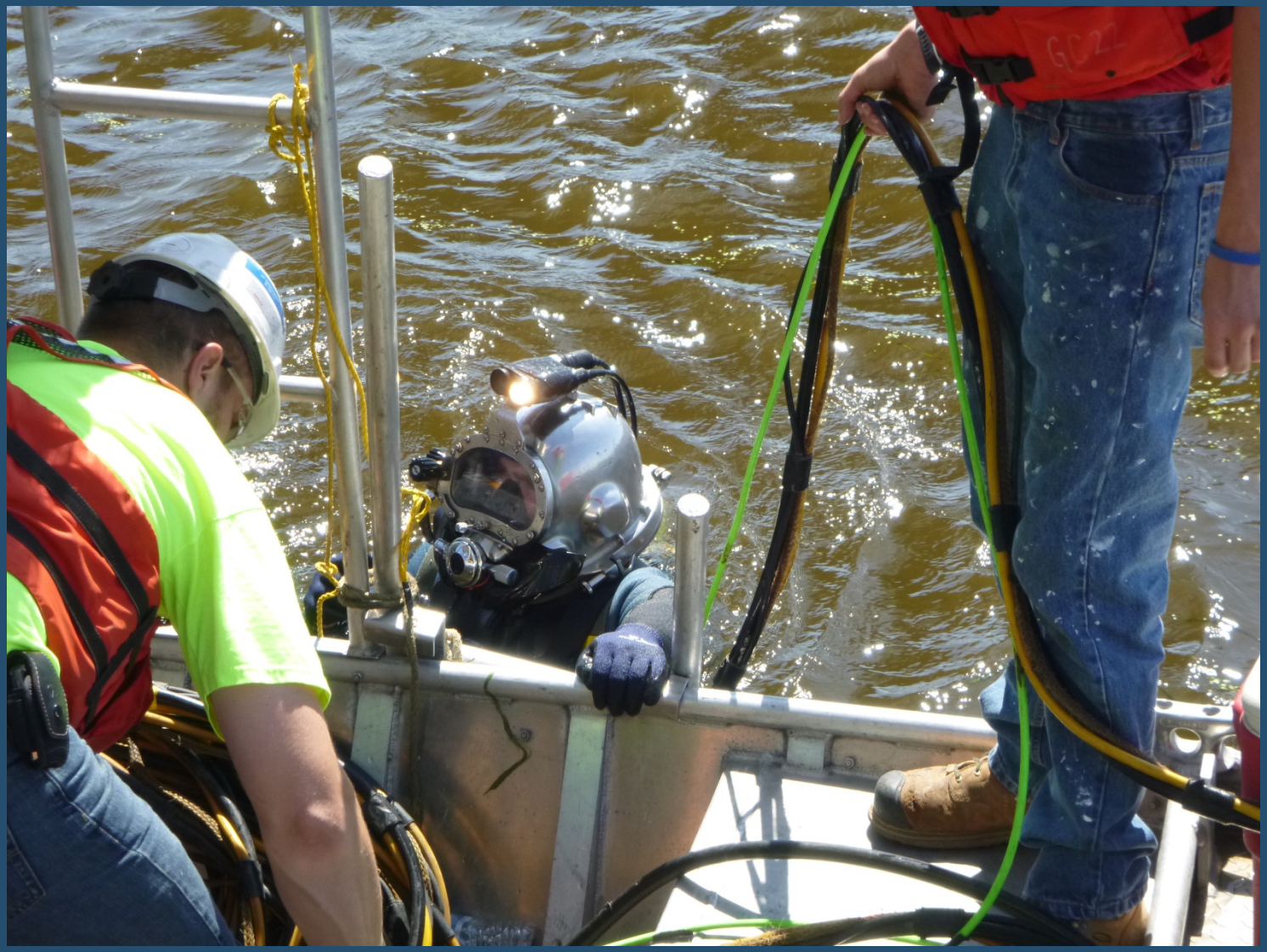
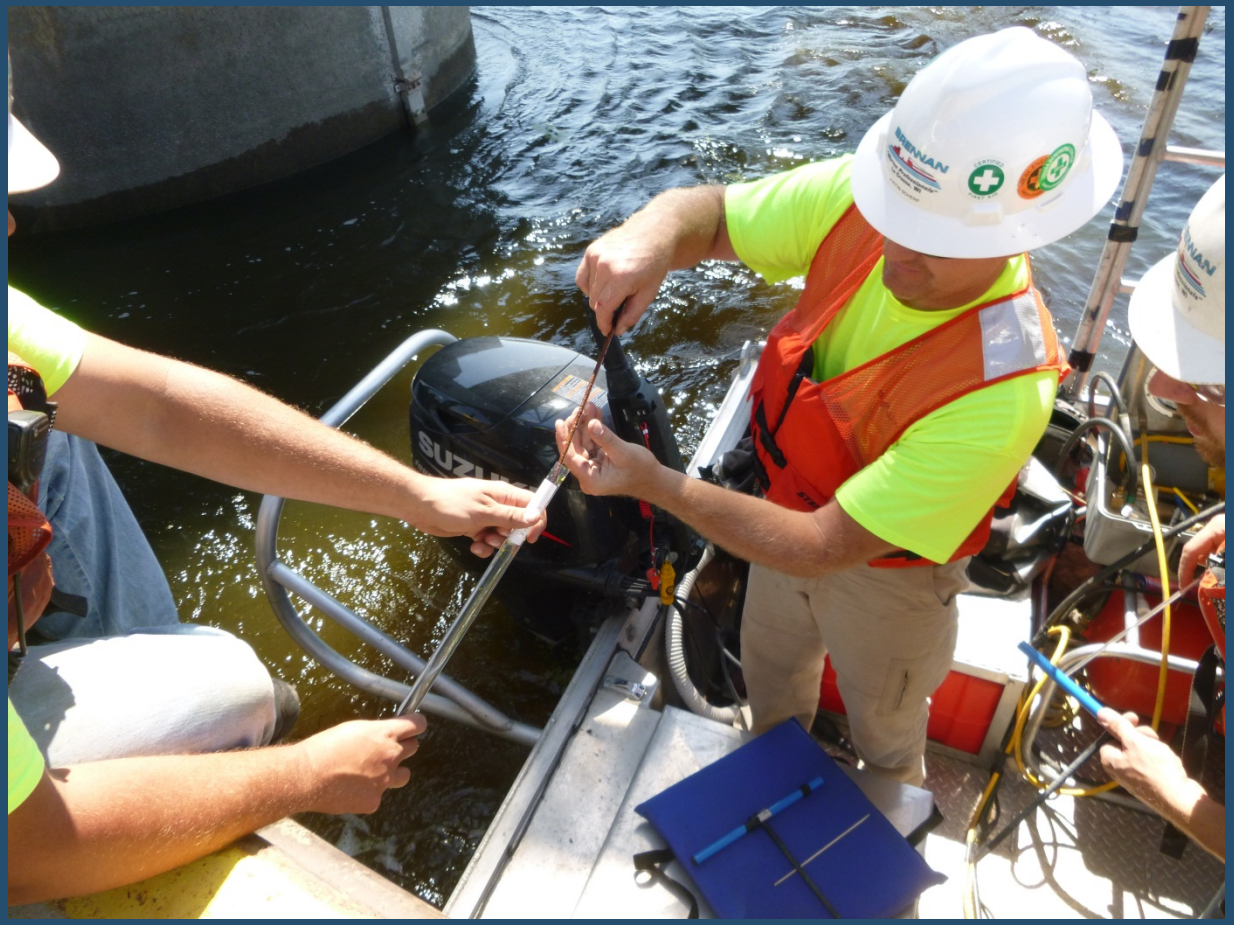
Winona Levee Temporary Access

SURVEY VESSEL
SURVEY VESSEL
BRENNAN
4x4

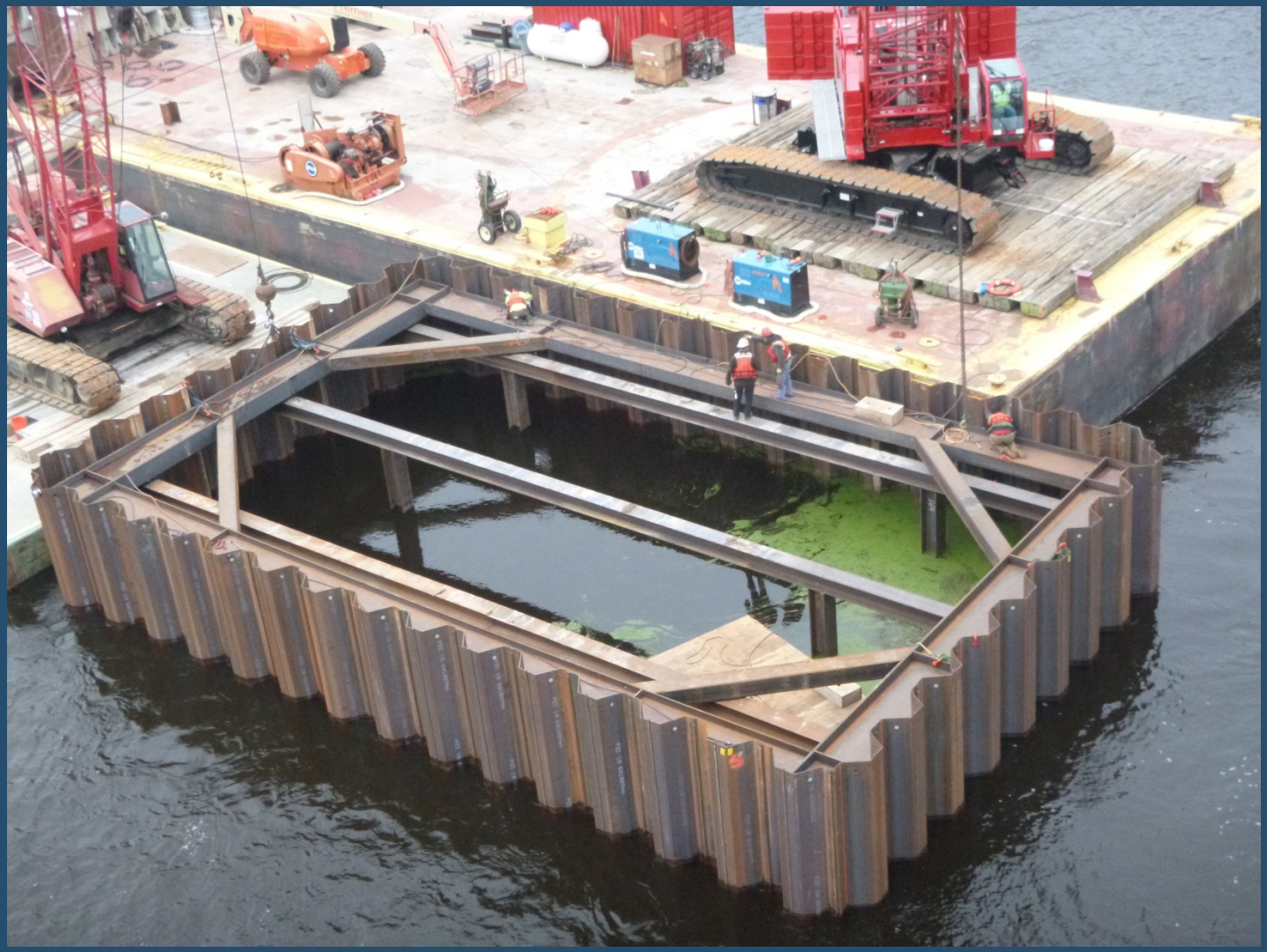



SUZUKI

Pier #11 Cofferdam Details

- 60’ Long Sheeting
- Approx. 50’ from top to seal bottom.
- 65.5’ x 37.5’ Cofferdam “box”
- 3 Ring Beams
- 12.5’ Concrete Seal
- 10.5’ Bridge Concrete Footing
- 24 – 42” OEP Piling at est. 118 ft.
- Top of Bedrock – approx. 135 feet from normal river elevation.
- Design Load per piling – 985 tons

AmericInn



DWEHR

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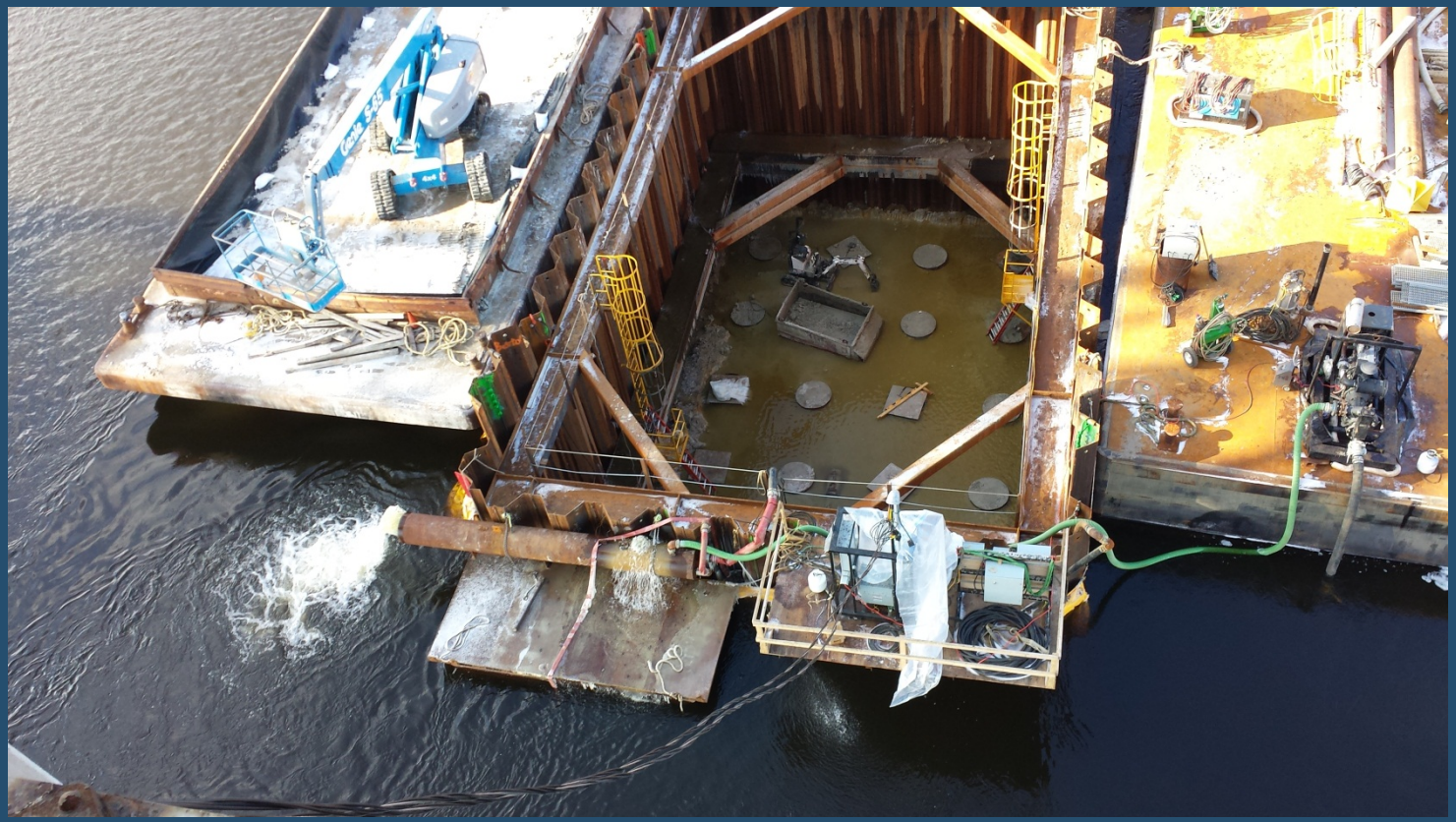
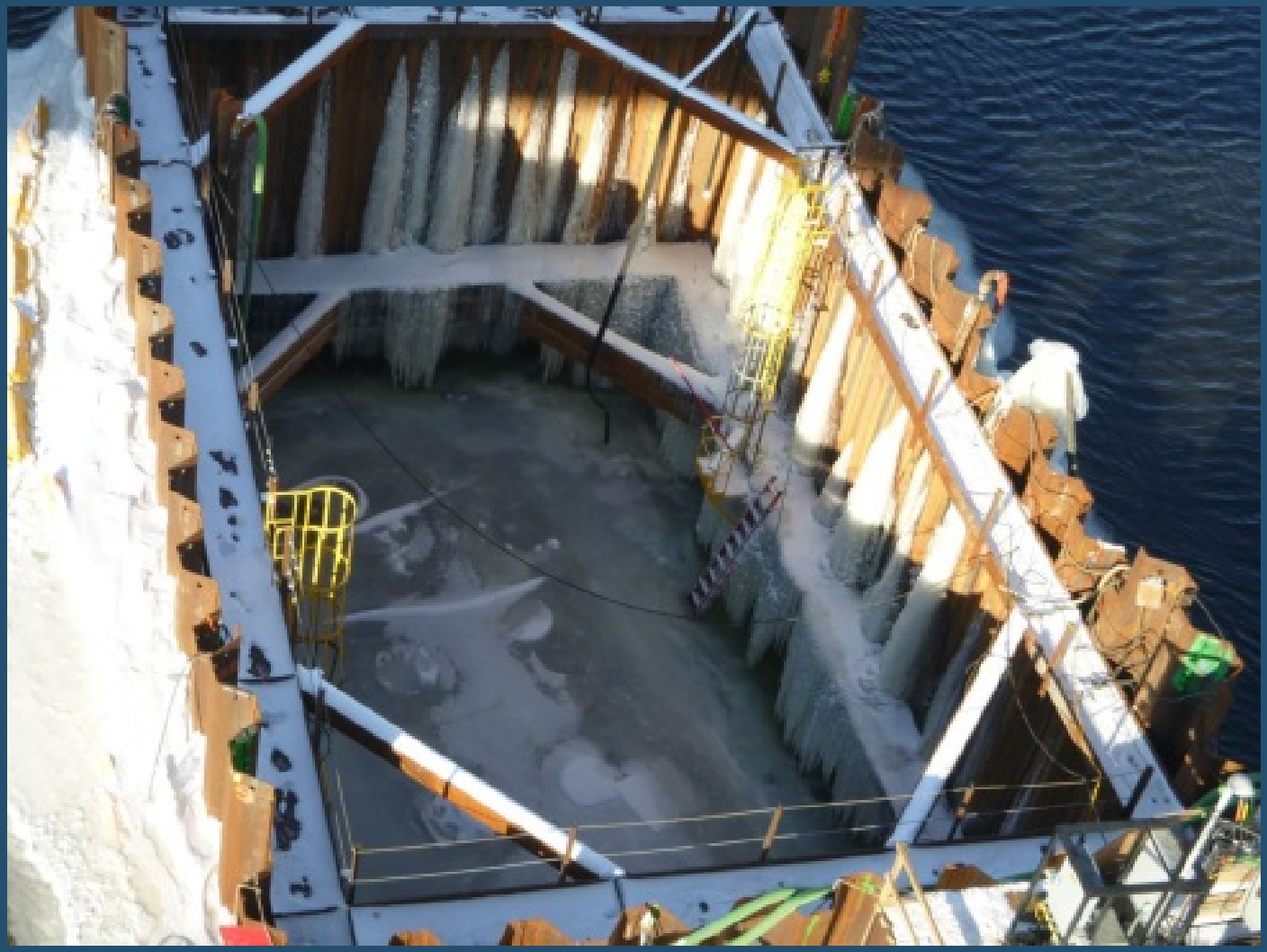
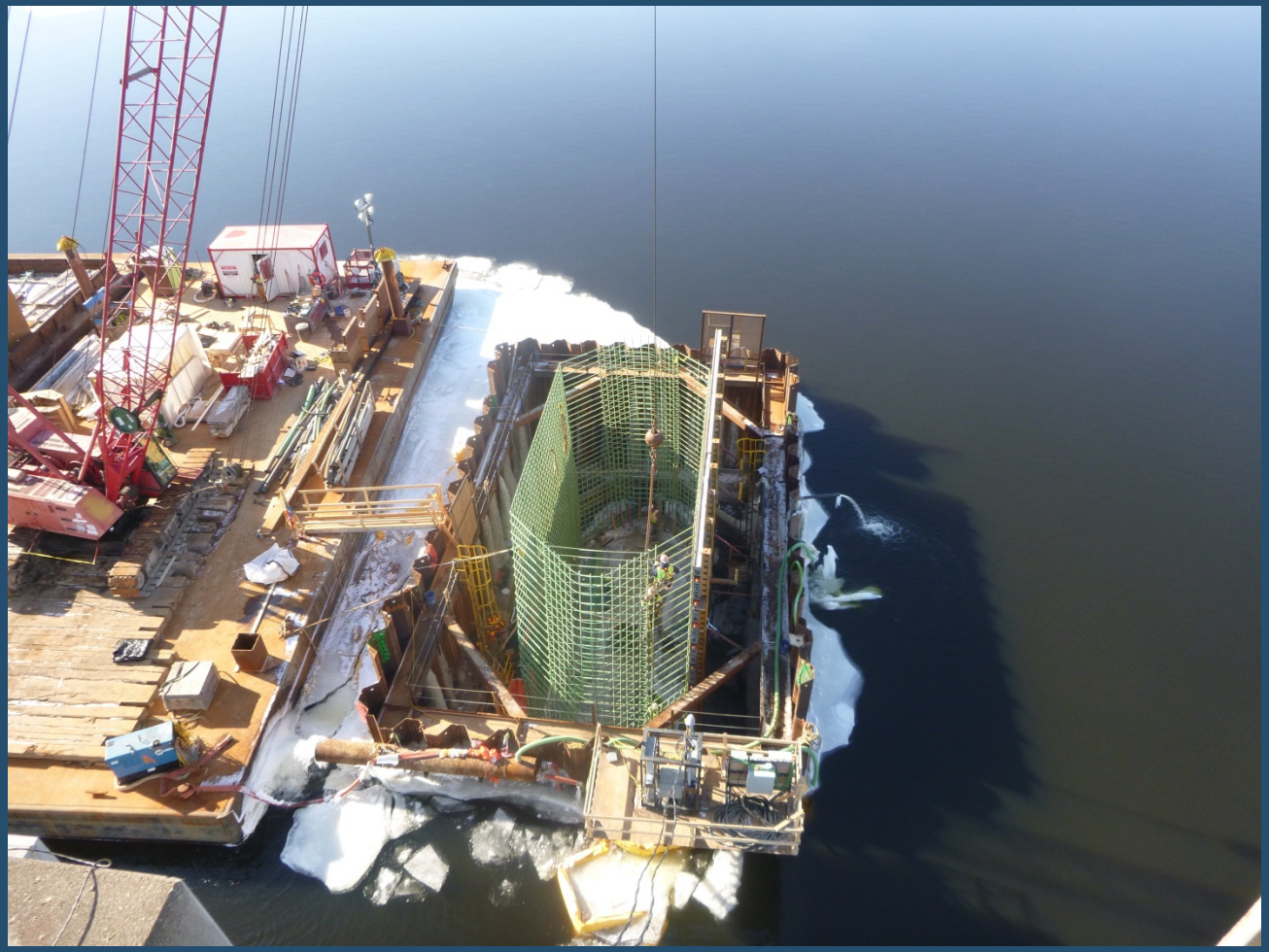
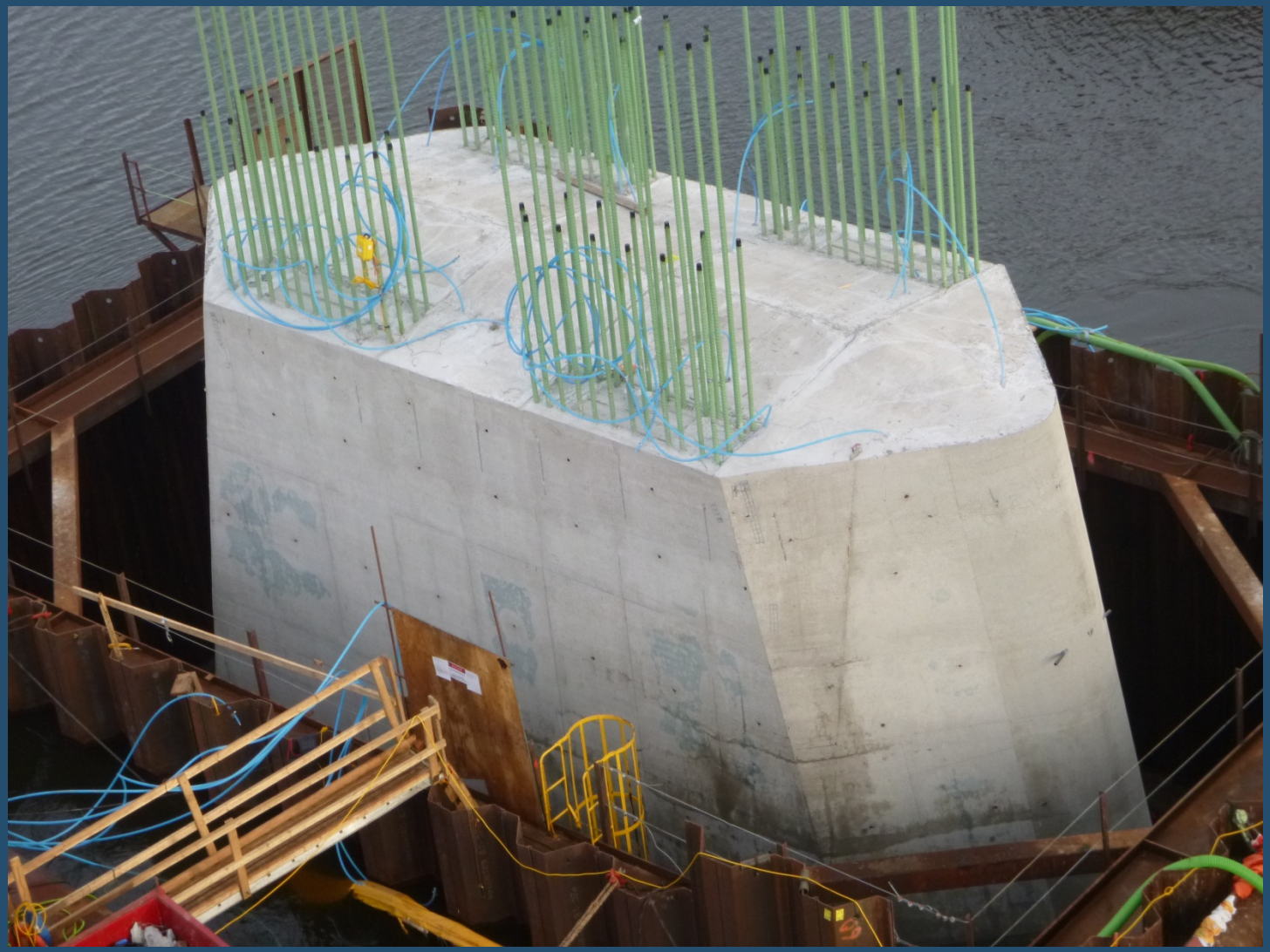
Statnamic Video

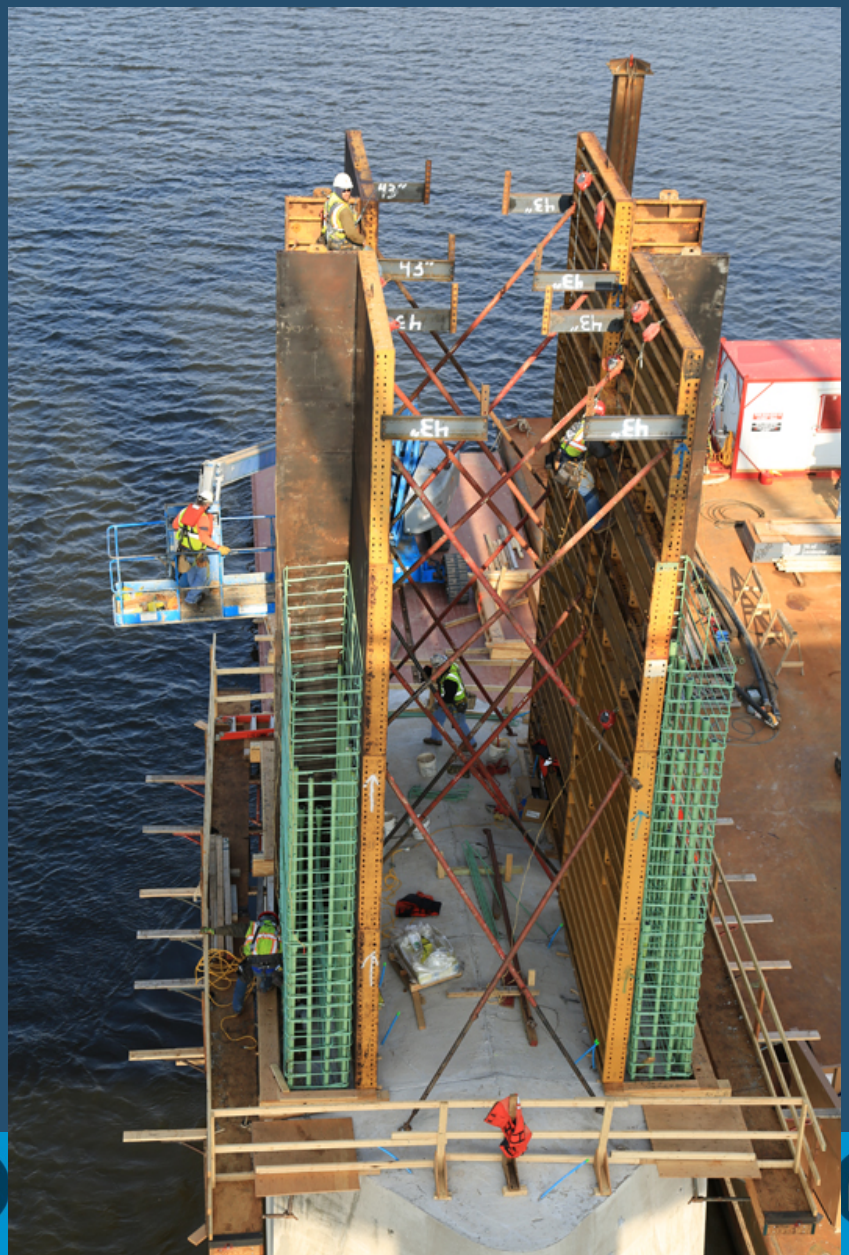


Cofferdam Video








43"
43"

KNAACK

Today’s Tour

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KNAACK

MINNESOTA DEPARTMENT OF TRANSPORTATION

DAVID L. FIELDS
MARQUETTE TRANSPORTATION
BUNGE 876 B

MINNESOTA DEPARTMENT OF TRANSPORTATION

MINNESOTA DEPARTMENT OF TRANSPORTATION

Modern

JLG LIFT
ZIEGLER RENTAL
660SJ

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What’s Ahead

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Dresbach Concrete Segmental Bridge Construction

Winona Bridge Project
PIER 9
PIER 10
PIER 11
PIER 12
Bridge 85851 Concrete Segmental Cast-in-Place Construction Progress
PROGRESS
Poured Sections
Under Construction
Each concrete segmental pour extends extends the bridge superstructure by 16 ft.
Typical Bridge Elements
Pier
Footing
Piles
Deck
Superstructure
Abutment
Bearing
Pier Diagram
Piers
Footing
Piles
A concrete traveler form system similar to this at the Dresbach Bridge Project will also be used on the Winona Bridge.

manitowoc

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JLG
RENTALS

Segment install July 3, 2008

Closure Pour

Construction Update

Project Status Video

TIMBERS
RESTAURANT

FedEx

MINNESOTA DEPARTMENT OF TRANSPORTATION

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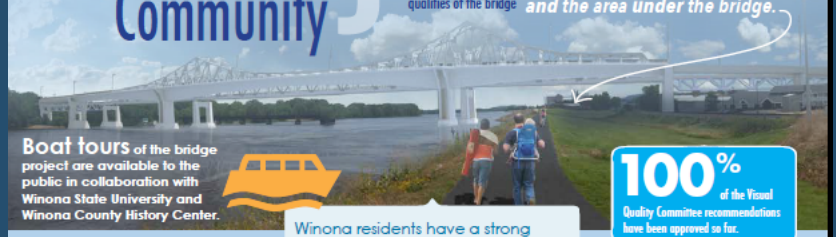
AMES

Good Safety Record to Date.

Communication Collaboration Community

Elements of successful public engagement and connection for the Winona Bridge Project

A visual quality committee consisting of **eighteen** community volunteers met **eleven** times to develop recommendations for the aesthetic qualities of the bridge ***and the area under the bridge.***



Boat tours of the bridge project are available to the public in collaboration with Winona State University and Winona County History Center.

100% of the Visual Quality Committee recommendations have been approved so far.

Community meetings were held to assess risks and develop risk mitigation strategies. ***More than 75 people attended*** and provided input during these and Winona Area Chamber of Commerce events.

Outdoor kiosks at the Winona Family YMCA will **display project updates** and other relevant information.

Interactive indoor kiosk placed at the Winona County History Center allows visitors to **explore the bridge project**, including its history, photos, news and other information.

Facebook page developed and maintained to provide timely progress updates to the community, along with traffic and safety advisories. **1300+ likes**

Nearly **5,000** people reached

Email updates: more than **650** recipients

"MnDOT deserves praise for providing excellent transparency and opportunities for input throughout the process..."
-Brian Voerding, Winona Daily News Editor

AVS Group was hired to help ***support communication*** channels between MnDOT, the community and the media.

Winona residents have a strong passion for their community, evidenced by vocal concerns about how the bridge project would affect their beloved city. ***By collaboratively setting goals with the local community,*** MnDOT learned it would take 3 crucial elements to successfully execute the project: communication, collaboration and community.

OPEN

Winona Bridge Project WINONA *welcomes you*

Winona Welcomes You!
Graphic and radio campaign implemented in collaboration with Winona Radio and the Winona Area Chamber of Commerce.

Project Manager Terry Ward has connected with the community and media. Email address and phone number posted on project website. ***Ask Terry forum featured on local newspaper's website. Public listening sessions and speaking engagements.***

UNANIMOUS Winona City Council vote in support of Municipal Consent and the Work Package #4 Cooperative Cost Agreement.

PR collaboration among **MnDOT**, Winona Chamber of Commerce, AVS Group, and Ames Construction supported the Timbers Restaurant while their business was impacted by the construction.

TIMBERS RESTAURANT

the numbers

Nearly **50 press releases** have been distributed to local media to aid public communication.

Over **175 news articles** have been published about the Winona Bridge project in various media outlets.

2 public web cams that shoot still photos every 20 minutes at construction site.

Over **300 project photos and videos** are being used in communications such as Facebook, the kiosks, and other media.

13 visually-engaging and informative **case studies** have been developed to help document the construction work.

Questions?