



City of Madison Planning Division
215 Martin Luther King Jr. Blvd. | Room LL.100 | P.O. Box 2985 | Madison, WI 53701-2985

Madison Landmarks Commission APPLICATION

1. LOCATION

Project Address: 402 N. THORNTON AVE Aldermanic District: 2

2. PROJECT

Date Submitted: 7/16/12

Project Title / Description: RENOVAL/REPLACEMENT TENNIS PARK BRIDGE

This is an application for: (check all that apply)

- Alteration / Addition to a Designated Madison Landmark
- Alteration / Addition to a building adjacent to a Designated Madison Landmark
- Alteration / Addition to a building in a Local Historic District (specify):
 - Mansion Hill
 - University Heights
 - Third Lake Ridge
 - Marquette Bungalows
 - First Settlement
- New Construction in a Local Historic District (specify):
 - Mansion Hill
 - University Heights
 - Third Lake Ridge
 - Marquette Bungalows
 - First Settlement
- Demolition
- Variance from the Landmarks Ordinance
- Referral from Common Council, Plan Commission, or other referral
- Other (specify): _____

3. APPLICANT

Applicant's Name: KAY RUTLEDGE Company: MADISON PARKS DIVISION
 Address: CCB SUITE 104 City/State: MADISON, WI. Zip: 53701
 Telephone: (608) 266-4714 E-mail: krutledge@cityofmadison.com
 Property Owner (if not applicant): SALES
 Address: _____ City/State: _____ Zip: _____

Property Owner's Signature: Kay H. Rutledge Date: 7-16-12

GENERAL SUBMITTAL REQUIREMENTS

Twelve (12) collated paper copies and electronic (.pdf) files of the following: (Note the filing deadline is 4:30 PM on the filing day)

- Application
- Brief narrative description of the project
- Scaled plan set reduced to 11" x 17" or smaller pages. Please include:
 - Site plan showing all property lines and structures
 - Building elevations, plans and other drawings as needed to illustrate the project
 - Photos of existing house/building
 - Contextual information (such as photos) of surrounding properties
- Any other information that may be helpful in communicating the details of the project and how it complies with the Landmarks Ordinance, including the impacts on existing structures on the site or on nearby properties.

Questions? Please contact the
Historic Preservation Planner:
Amy Scanlon
Phone: 608.266.6552
Email: ascanlon@cityofmadison.com

NOTICE REGARDING LOBBYING ORDINANCE: If you are seeking approval of a development that has over 40,000 square feet of non-residential space, or a residential development of over 10 dwelling units, or if you are seeking assistance from the City with a value of \$10,000 (including grants, loans, TIF or similar assistance), then you likely are subject to Madison's lobbying ordinance (Sec. 2.40, MGO). You are required to register and report your lobbying. Please consult the City Clerk's Office for more information. Failure to comply with the lobbying ordinance may result in fines.

Tenney Park Maintenance Bridge Removal/Replacement

Narrative Description

Description of the Project

The City of Madison Parks Division is applying for an Individual Permit from the Wisconsin Department of Natural Resources to remove and replace one of the 5 bridges in Tenney Park that provide access to the island in the center of the park. The bridge we hope to replace is known as the Thornton Ave. Bridge. The bridge is approximately 300' east of the intersection of Sherman Ave. and Thornton Ave. and crosses the lagoon from north to south, accessing the northwest corner of the island.

History

Tenney Park is one of Madison's oldest parks. The park totals approximately 44 acres. It has frontage on Lake Mendota to the west and the Yahara River bisects it to the north. There is also a man made lagoon in the center of the park proper that creates a +/- 9 acre island. History tells us that most of the park is man-made.

The following excerpts are from "A History of the Parks of Madison" by Henry Behrnd:

"Prior to development, the park area was primarily low lying marsh land and required filling by dredging the lake bottom near the shoreline"

"The park was designed by O.C. Simonds of Chicago but his original design was later altered by John Nolen"

"The park lagoons are all artificial, having been dug by horsepower"

And from "Madison - A History of the Formative Years" by David V. Mollenhoff:

"Rather than build the canal across the waist line of the isthmus, he decided to make his attempt in the low marshy land where the Yahara River meandered from lake to lake....."

"Therefore in early 1849 he built a dam at the outlet where the Tenney Park Lock is today located and cleared out debris from the outlet of Lake Monona...."

In 1999, the Tenney Park/Yahara River Parkway was nominated for and granted inclusion into the National Register of Historic Places. All of the bridges in Tenney Park are considered contributing structures to that determination and therefore are considered historic structures. Only one of them (the Marston St. bridge), is/was adequate to drive maintenance vehicles over to the island. At approximately the same time, it was determined by a consultant that the Marston St. bridge was in need of repair and a weight limit was put on the bridge that stopped all truck traffic from using the bridge. For the last 10-15 years, our maintenance staff has had to park large vehicles on Marston St. and take mowers and cushman type vehicles across to do maintenance. Maintenance that requires crossing the bridge with larger vehicles, (tree trimming, athletic field lighting maintenance, asphalt repair) have required us to verify vehicle weight to be sure we are under the weight limit and at times required multiple trips across with smaller vehicles at a larger cost to the taxpayer. At some point in the future, there will be a need for a major replacement project on the island that will require larger vehicle use.

Why the Thornton Avenue Bridge:

Our engineering consultant stated that there would be no way to assure that modifications to the Marston St. Bridge would be adequate to support the weight of maintenance vehicles needed on the island. The only way to assure that we could use the bridge for maintenance vehicular traffic would be through a massive dissection of the bridge structure to verify re-bar placement and condition. That analysis would be more costly than removal/replacement of the bridge, and would potentially harm the historic integrity of this bridge (one of the oldest concrete span bridges in Wisconsin). It was critical to us to protect this resource in our park. Staff also felt that accessing the island with maintenance vehicles from Thornton Ave. was better than accessing the island from the very residential Marston Ave. side. In 2011, funds were budgeted to remove and replace the Thornton Ave bridge, and the Parks Division hired Bloom Companies, LLC to design the bridge.

New Bridge Design:

The proposed bridge is a single-span, 30'-6" long, 12'-6" wide, concrete arch founded on modified WisDOT semi-expansion abutments (Type A1). The length of the arch matches existing. The bridge width provides 10 feet of horizontal clearance necessary for vehicles and is about 4 feet wider than existing.

The abutments are supported by piles. Concrete wing walls are attached to the abutments that are oriented parallel to the service road. A combination concrete parapet with ornamental steel rail is attached to the concrete arch and parallel wings. The exterior fascia of the arch, wing walls, and concrete parapet will be plain concrete in order to be consistent with the existing bridge. The steel rail will be similar to the existing pipe rail. The ornamental steel rail will be patterned to reflect other rails in the park area.

The arched bridge has a curved profile that lengthened the existing profile and reduced the steepness of the roadway approaches in order to meet ADA standards. The height of the bridge was maintained approximately the same as existing in order to provide 5 feet of navigation clearance under the arch. The lengthening of the north approach was accommodated by a shift in the horizontal alignment of Thornton Avenue. The profile grade line of Thornton was also raised 1'-3" in order to reduce the amount of lengthening in the north approach. The lengthening of the south approach was to accommodate the existing path alignment. The horizontal alignment of the bridge was also rotated about 10 degrees in order to eliminate the existing horizontal curve and align the roadway so it is perpendicular to Thornton Avenue.

Due to the realignment of the bridge and roadway the hydraulic opening of the bridge will be shifted south. The length of the hydraulic opening will remain the same as existing. Fill will be removed from the south side of the existing bridge and placed on the north side of the bridge. The net difference in fill placed in the lagoon will be minimal. Some additional fill will be required because the new bridge will be about 4 feet wider than the existing bridge.

Methods, Materials, and Equipment

Access to the site of work will be from the intersection of Sherman Ave. and Thornton Ave. All work will be staged from the Thornton Ave. right of way. The work will be carried out using typical construction equipment. Methods will ultimately be determined by the contractor selected but typical construction methods for a bridge of this type would be as follows:

- The roadway approaches and the waterway will be closed to traffic during construction.
- Piles will be driven for the abutments by a crane from the Thornton Ave. side.
- Sheet pile or sand bags will be used as a cofferdam at the abutments. The area inside the cofferdam will be excavated (if necessary) and dewatered so the abutments can be poured in dry conditions.
- The reinforced concrete abutments and wing walls will be poured first.
- The reinforced concrete arch will be poured second.
- The concrete parapets will be poured third.
- Fill can be placed and compacted at the abutments after the concrete and stone work is completed.
- The rails will be installed after all of the concrete work is completed.
- The roadway approaches will be paved with asphalt after the bridge is completed.

Restoration Plan

It is anticipated that there will be minimal disturbance for this project. All disturbed areas around and adjacent to the bridge will be seeded with our athletic turf mix and matted with erosion matting, Class II, Type B.

Schedule and Sequence of Work

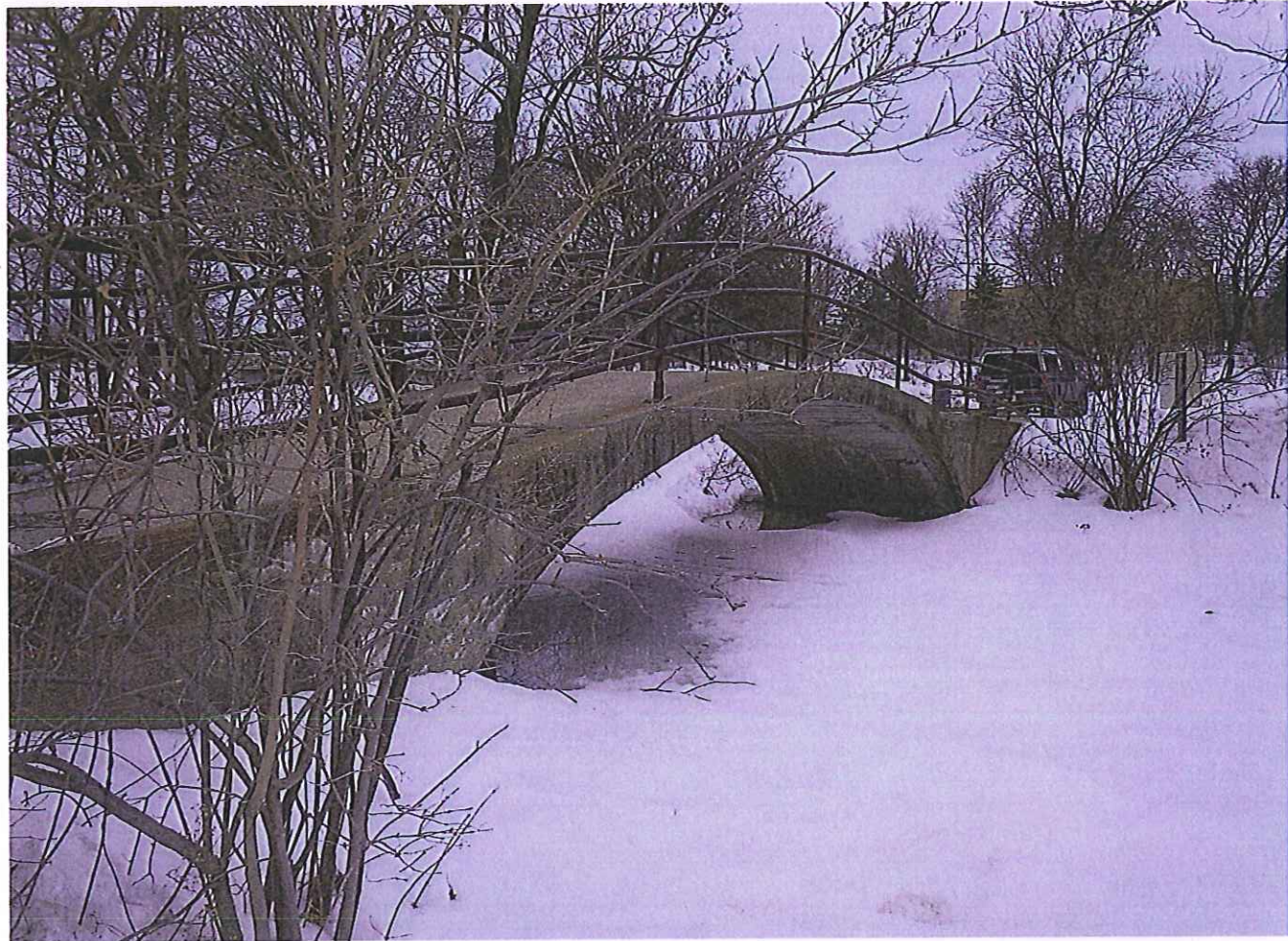
Demolition of the existing Thornton Ave. bridge is anticipated to start early or mid November, 2012, with construction of the new bridge to start immediately after. Completion of the project is expected to be the end of May, 2013.

Temporary and Permanent Erosion Control Measures

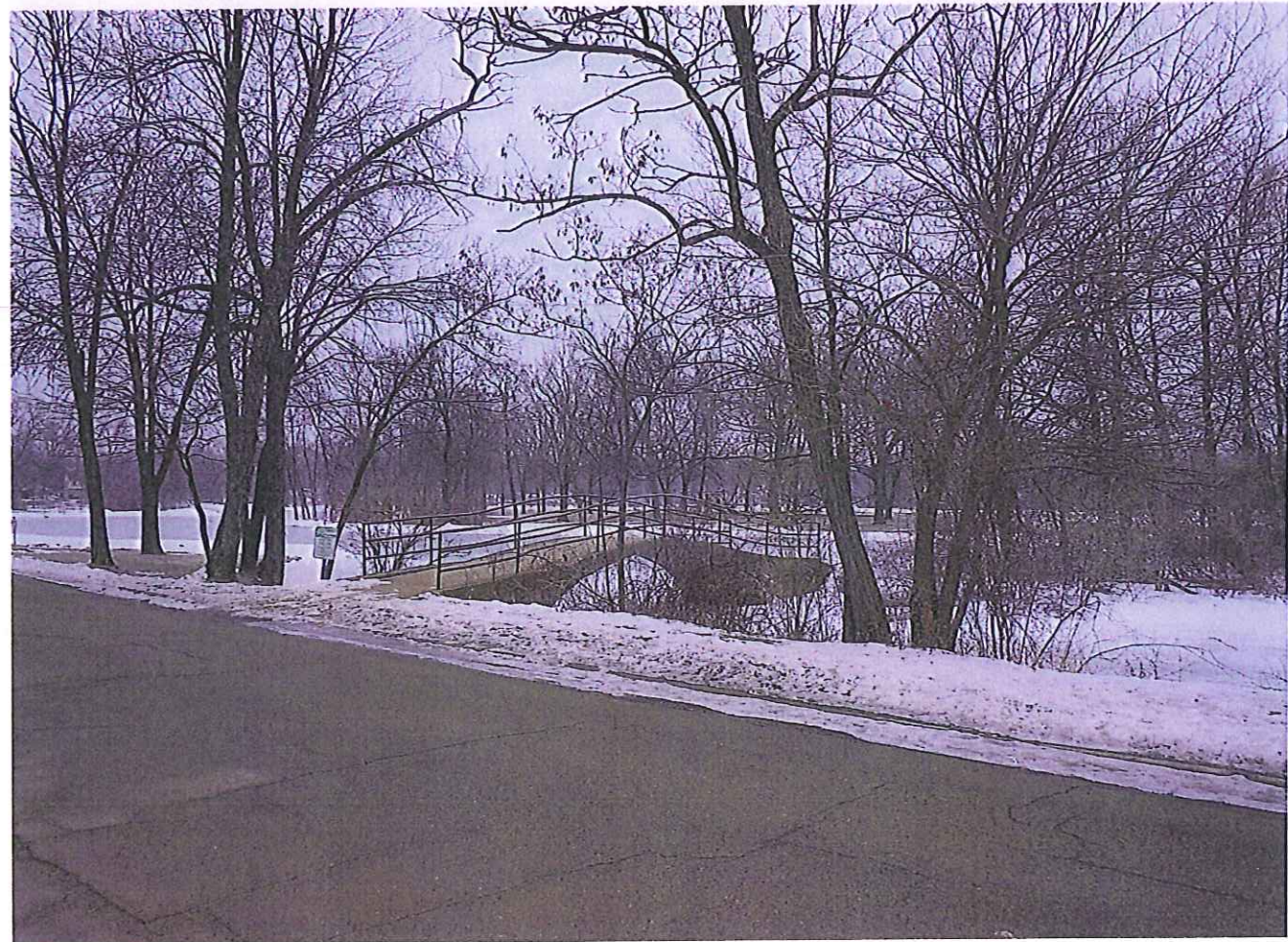
See attached Erosion Control Plan. Temporary silt socks will be placed along the side of the maintenance path during construction. Temporary turbidity barrier will be placed in the water to surround the bridge and cofferdam.

A City of Madison Engineering Stormwater and Erosion Control Permit has been received for this project.

Permanent wetland emergent plants and wet prairie plants will be planted at the water's edge after construction is completed.











HISTORIC "HITS" FROM G.T. VIEWER

(X) WINGWALL NUMBER

DESIGN DATA

VEHICLE: AASHTO H-10 (20,000 LBS)
 PEDESTRIAN: 90 PSF

ULTIMATE DESIGN STRESSES:

CONCRETE
 SUBSTRUCTURES.....f'c = 3,500 psi
 SUPERSTRUCTURE.....f'c = 4,000 psi

HIGH STRENGTH BAR STEEL
 REINFORCEMENT (GRADE 60).....fy = 60,000 psi

STEEL PILING.....fy = 50,000 psi

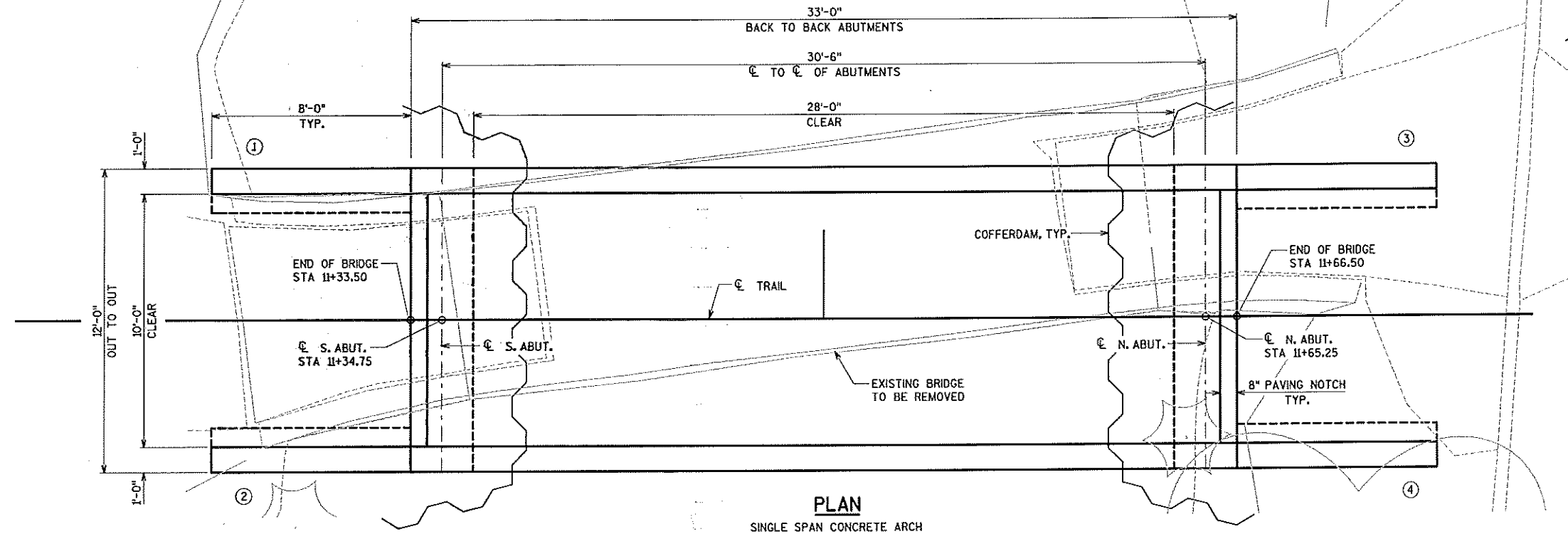
FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON
 HP 12 X 53 STEEL PILING.
 DRIVE PILES TO REFUSAL.

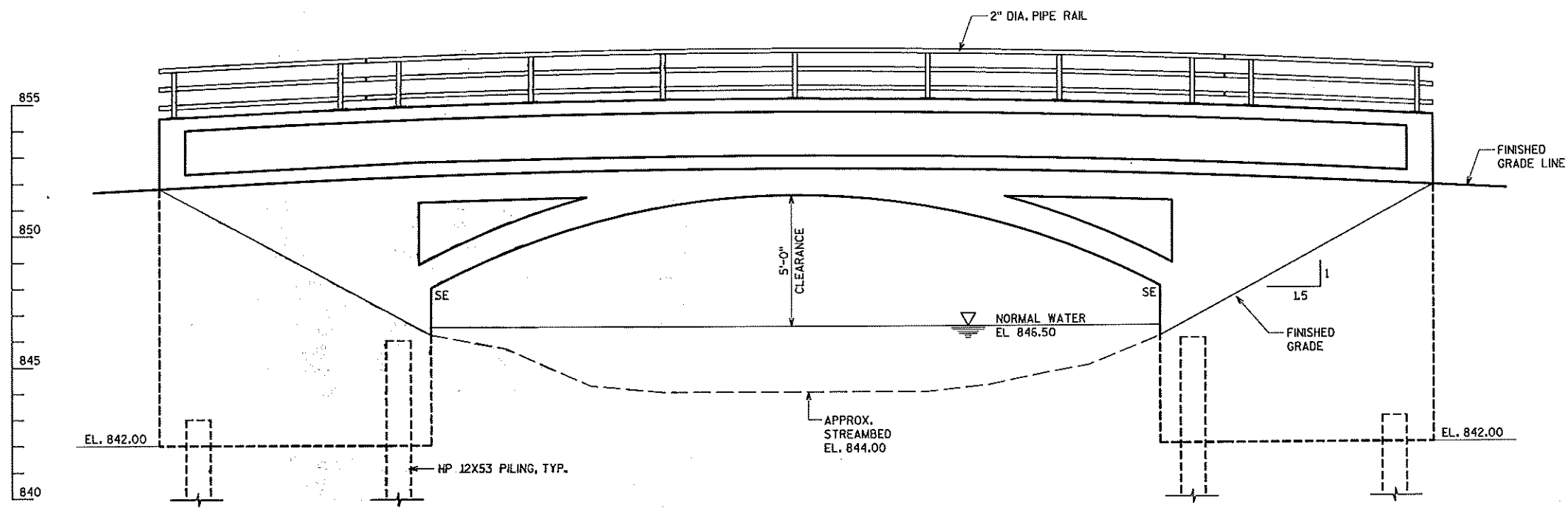
PILE LENGTHS ESTIMATED TO BE 30'.

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. TYPICAL SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. ABUTMENT PILE LAYOUT
5. ABUTMENT & WINGWALL DETAILS
6. ARCH DETAILS
7. VERTICAL FACE PARAPET
8. STEEL RAILING DETAILS
9. ARCH & RAIL DIMENSIONS
10. BILL OF BARS



PLAN
 SINGLE SPAN CONCRETE ARCH




STRUCTURE DESIGN CONTACTS

BUREAU OF STRUCTURES CONTACT:
 WILLIAM DREHER
 (608) 266-8489

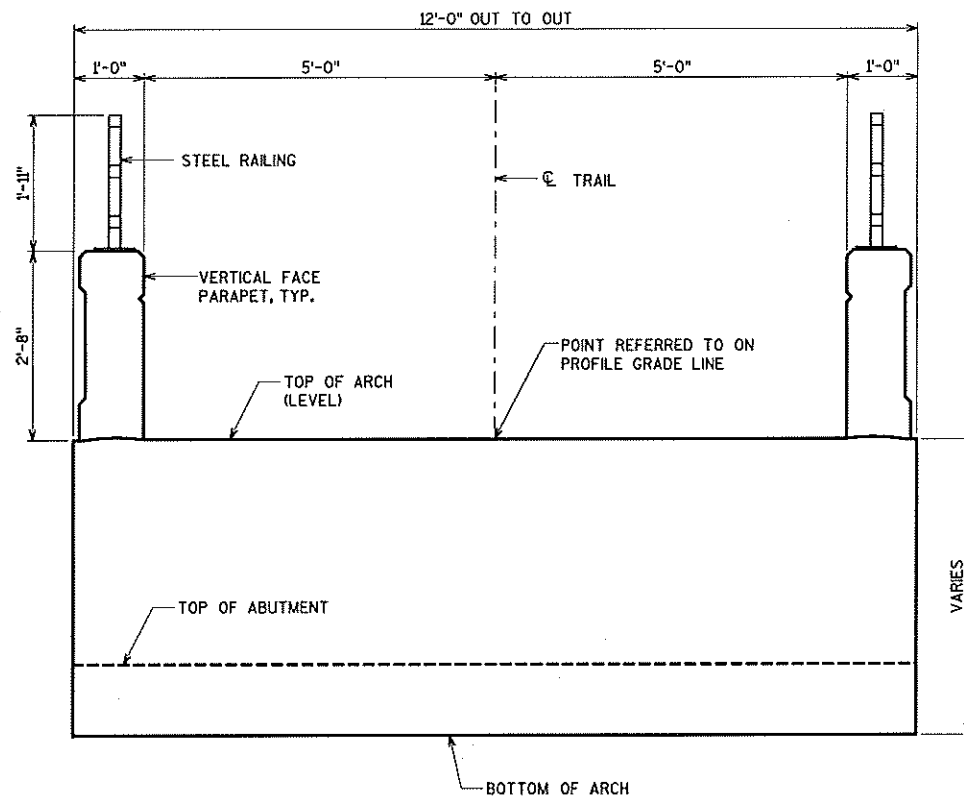
CITY OF MADISON CONTACT:
 TOM MAGLIO
 (608) 266-6518

CONSULTANT CONTACT:
 TOM ZALEWSKI
 (608) 515-3525

NO.	DATE	REVISION	BY
 BLOOM COMPANIES, LLC <i>Infrastructure Innovation and Ingenuity</i> <small>10501 W. Research Drive • Milwaukee, WI 53228 Phone: (414) 771-3390 Fax: (414) 771-4490</small>			
STRUCTURE B-XX-XXX			
TENNEY PARK MAINTENANCE BRIDGE			
COUNTY	DANE	CITY	MADISON
DESIGN SPEC.	AASHTO LRFD 5TH ED.		LOAD H-10
DESIGNED BY	AJA	DESIGN CK'D.	JRS
DRAWN BY	AJA	PLANS CK'D.	JRS
GENERAL PLAN & ELEVATION			SHEET 1 OF 10
			DATE: XX/XX/12

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TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	TOTAL
203.0500.5	REMOVING OLD STRUCTURE OVER WATERWAY STA 11+50.00	LS	1
206.1000	EXCAVATION FOR STRUCTURE, BRIDGES	LS	1
206.5000	COFFERDAMS (STRUCTURE)	LS	1
210.0100	BACKFILL STRUCTURE	CY	120
502.0100	CONCRETE MASONRY BRIDGES	CY	85
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	6,500
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	6,500
51L2110	PILING STEEL DELIVERED AND DRIVEN HP 12-INCH X 53 LB	LF	420
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100
SPV.0090.01	STEEL RAILING SPECIAL	LF	97
SPV.0180.01	CONCRETE PAVEMENT APPROACH SLAB, SPECIAL	SY	23

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

THE FIRST DIGIT OF A THREE DIGIT BAR MARK AND THE FIRST TWO DIGITS OF A FOUR DIGIT MARK SIGNIFY THE BAR SIZE.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACE BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

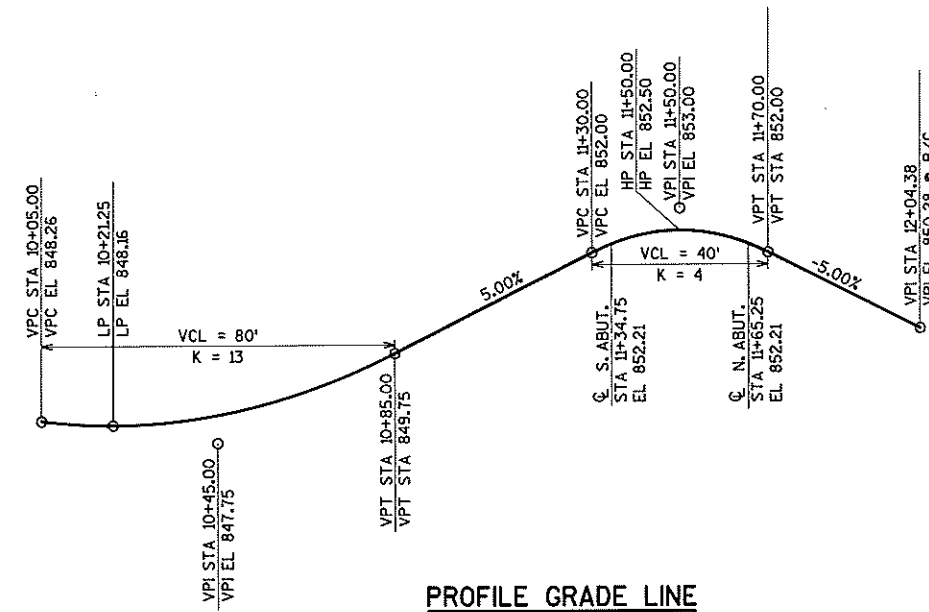
ALL DIMENSIONS ARE IN FEET AND INCHES, UNLESS OTHERWISE NOTED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD) 1988.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP SURFACE OF THE DECK AND TOP AND INSIDE FACE OF THE PARAPETS.

BEVEL EXPOSED EDGES OF CONCRETE $\frac{3}{4}$ " UNLESS NOTED OTHERWISE.

THE EXISTING STRUCTURE IS A SINGLE SPAN CONCRETE ARCH BRIDGE, TO BE REMOVED.

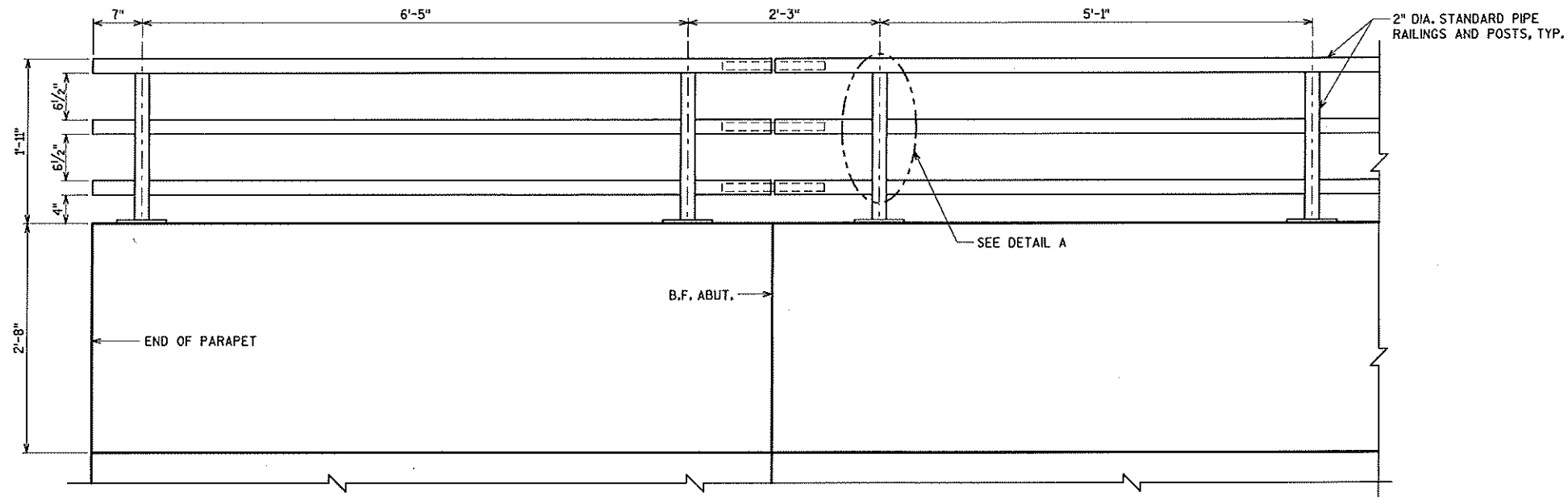


PROFILE GRADE LINE

BENCH MARK INFORMATION

BM NO.	DESCRIPTION	ELEVATION
BM1	XXX	XXX
BM2	XXX	XXX

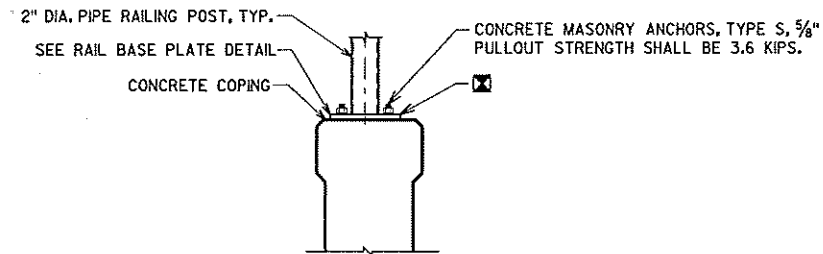
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-XX-XXX			
DRAWN BY		PLANS CK'D.	JRS
AJA			
TYPICAL SECTION & QUANTITIES			SHEET 2 OF 10



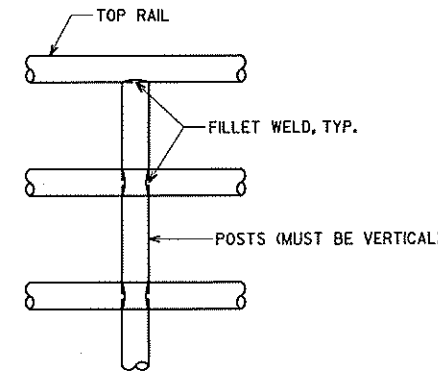
INSIDE ELEVATION

NOTES

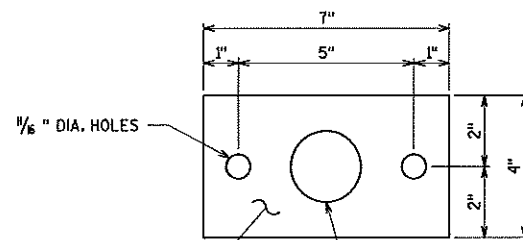
- BID ITEM SHALL BE "STEEL RAILING SPECIAL", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN, INCLUDING PAINTING.
- POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.
- PLATES AND ANCHORS SHALL CONFORM TO ASTM A709 GRADE 36. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.
- ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.
- CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.
- STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.
- CAULK AROUND PERIMETER OF BASE PLATES AND FILL BOLT SLOT OPENINGS IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.
- ALL MATERIAL (EXCEPT EPOXY ANCHORS) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED PRIMER AND TOP COAT AS SPECIFIED IN THE "BRIDGE SPECIAL PROVISIONS".
- RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.
- 1/4" VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.
- PAINT COLOR SHALL BE REDDISH-BROWN, FEDERAL COLOR NO. 20152.
- TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.



BASE PLATE DETAIL AT C.I.P. CONCRETE COPING



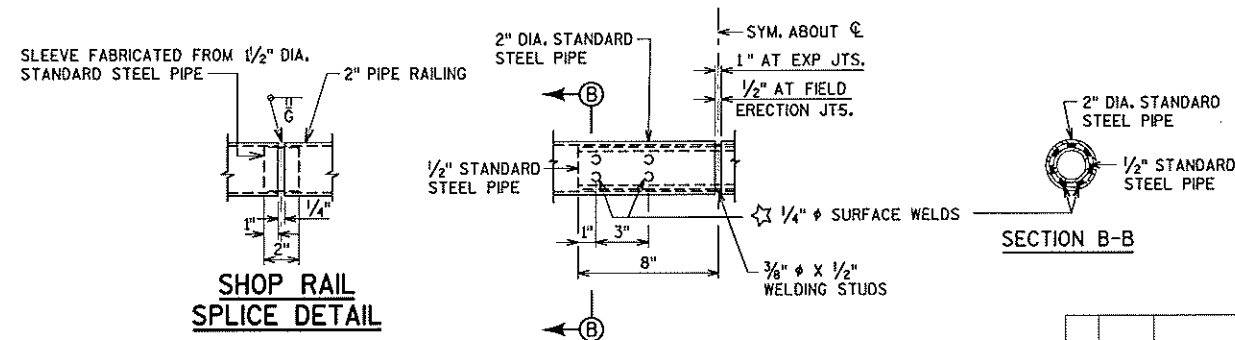
DETAIL A



BASE PLATE 1/2" X 4" X 7" CONFORMING TO ASTM DESIGNATION A709 GRADE 36 WITH 1/16" HOLES FOR HEX BOLTS NO. 6. WELD TO RAIL POST AS SHOWN.

2" DIA. STEEL PIPE POST, CUT BOTTOM OF POST TO MATCH SLOPE OF TOP OF WALL. HOLD 1/16" ABOVE BASE PLATE TO ALLOW POST AND BASE PLATE TO BE WELDED TOGETHER. PLACE POST VERTICAL AND CENTERED ON BASE PLATE.

RAIL BASE PLATE DETAIL



SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)

FIELD ERECTION JOINT DETAIL

☆ MIN. 5/8" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

SECTION B-B

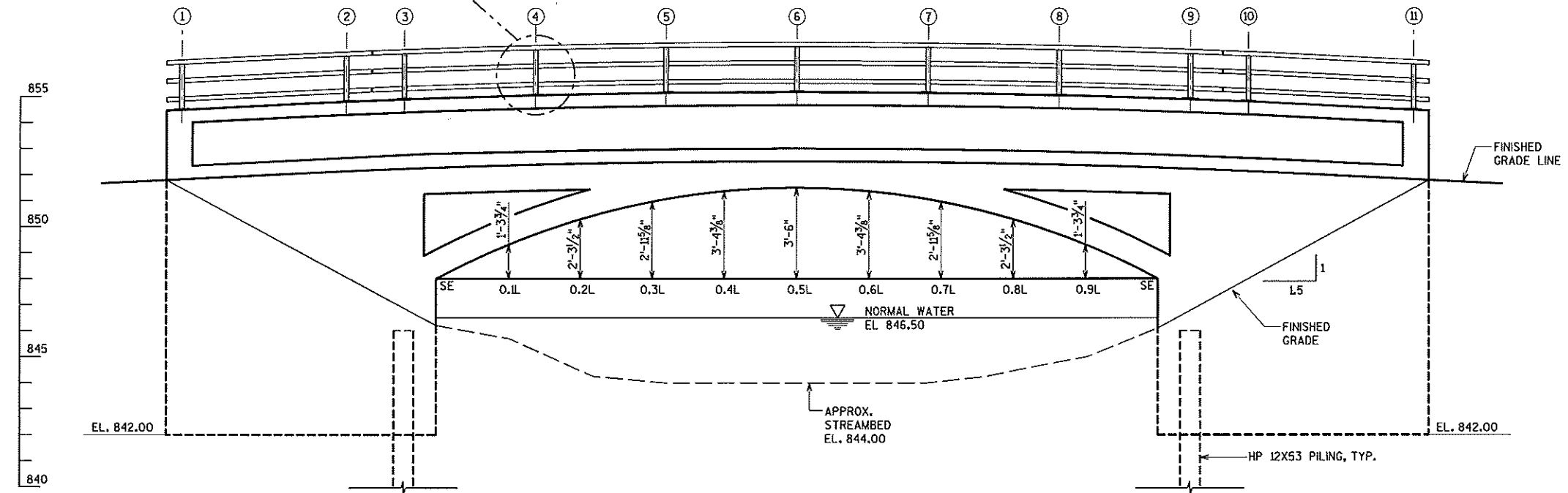
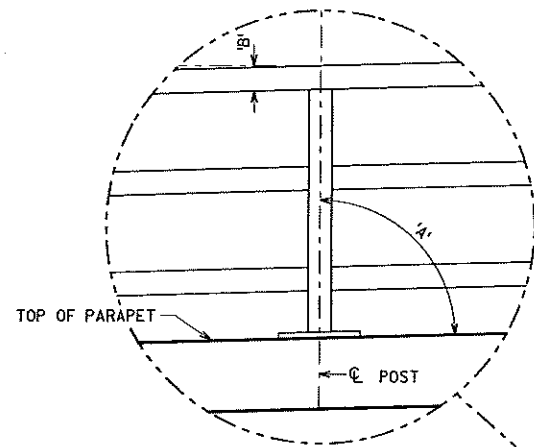
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-XX-XXX			
DRAWN BY		PLANS CK'D.	JRS
BY		AJA	
STEEL RAILING DETAILS			SHEET 8 OF 10

RAILING DETAILS

POST NUMBER	ANGLE 'A'	ANGLE 'B'
1	87°08'15"	02°51'45"
2	87°33'16"	02°26'44"
3	87°47'34"	02°12'26"
4	88°30'30"	01°29'30"
5	89°20'37"	00°46'33"
6	90°00'00"	00°00'00"
7	90°46'33"	00°46'33"
8	91°29'30"	01°29'30"
9	92°12'26"	02°12'26"
10	92°33'53"	02°26'44"
11	92°51'45"	02°51'45"



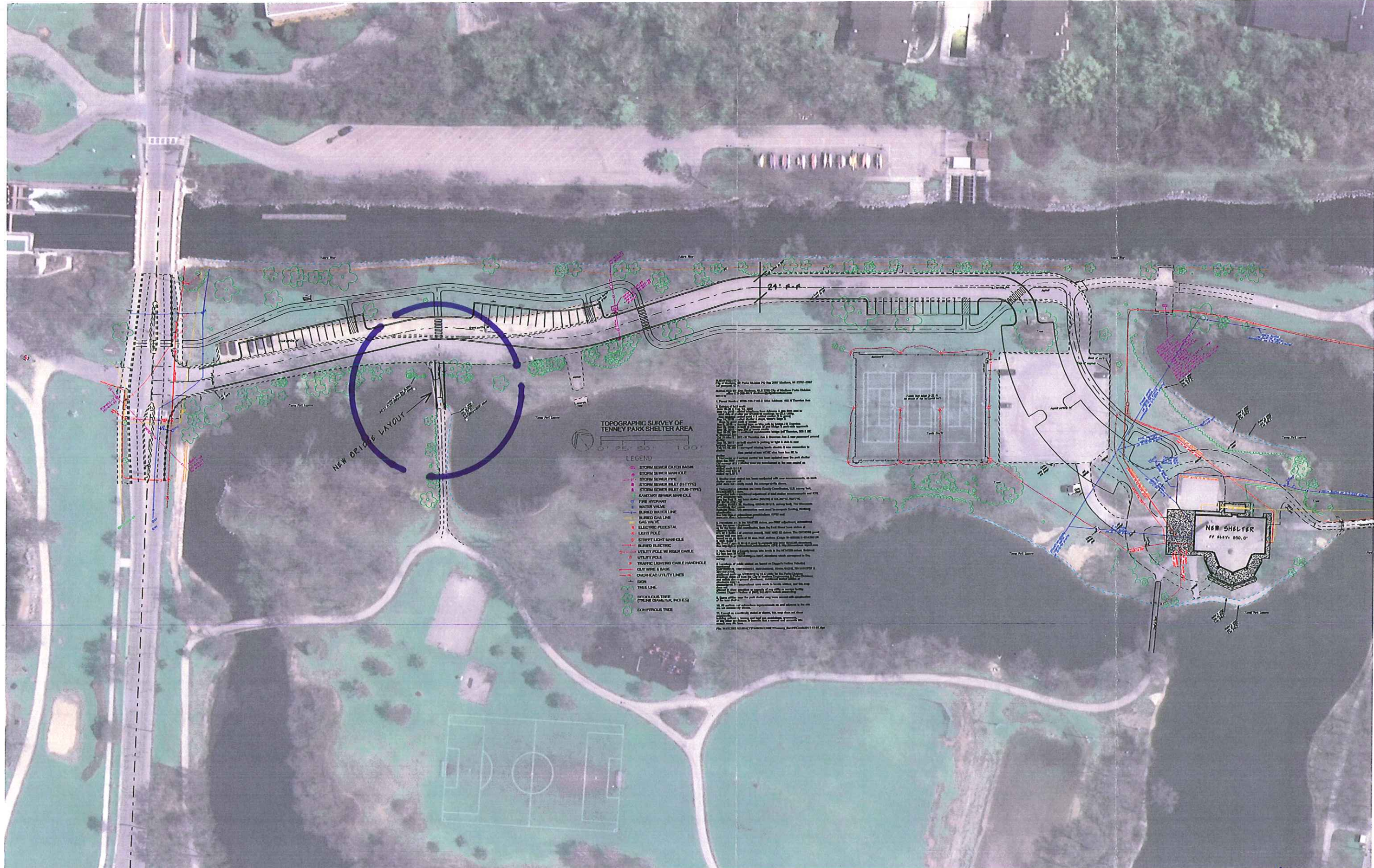
LEGEND

(X) POST NUMBER

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-XX-XXX			
DRAWN BY AJA		PLANS CK'D. JRS	
ARCH & RAIL DIMENSIONS		SHEET 9 OF 10	



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THORNTON AVE. PRELIMINARY DESIGN

1" = 100'