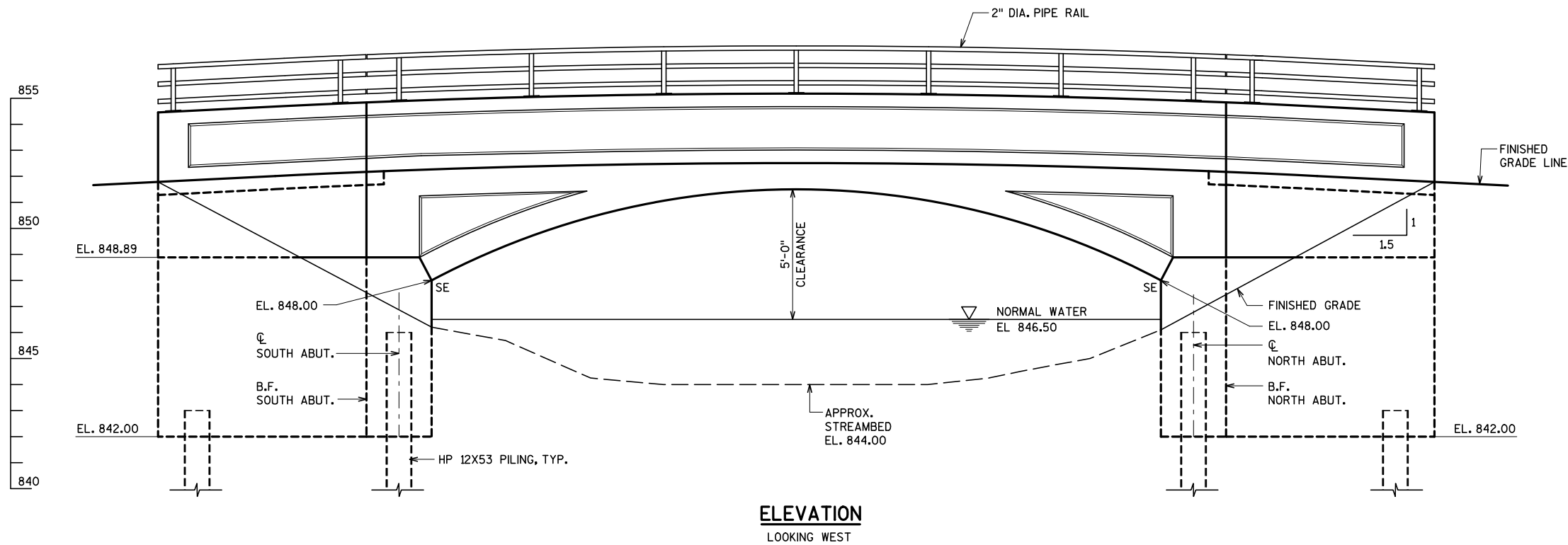
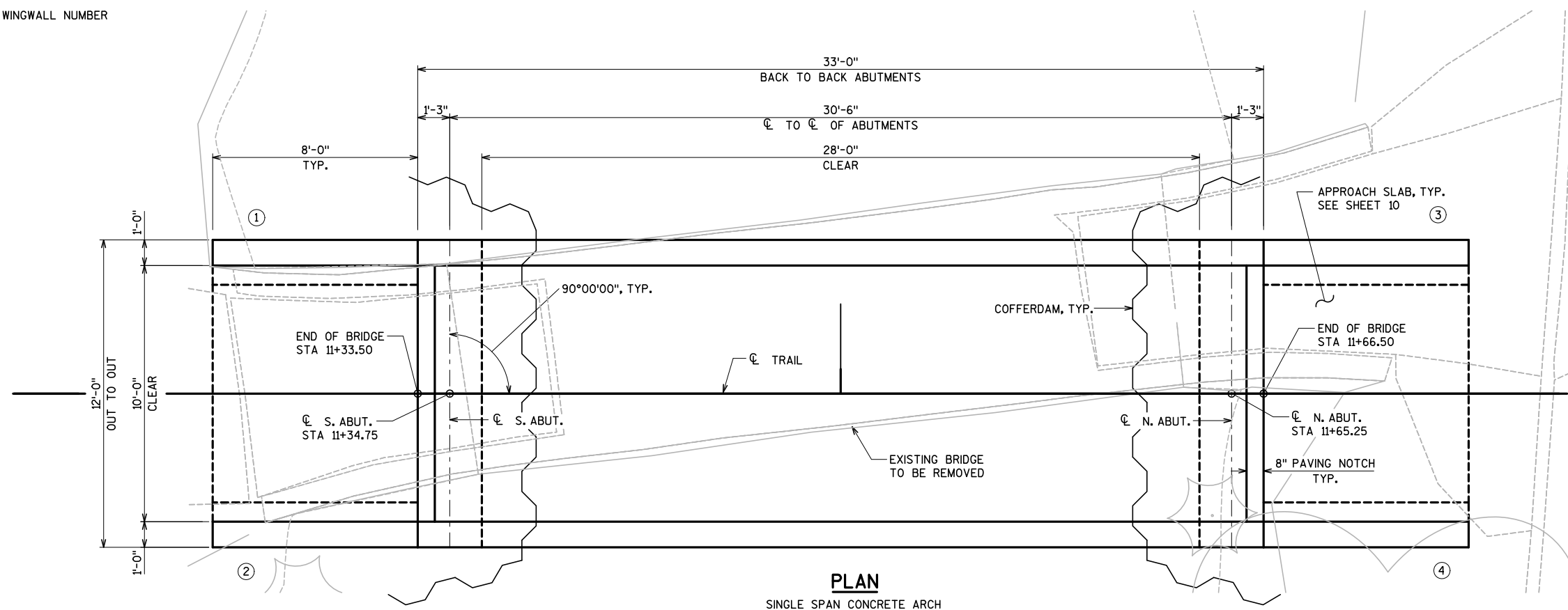


(X) WINGWALL NUMBER



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).... f_y = 60,000 psi

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

FOUNDATION DATA

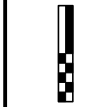
ABUTMENTS TO BE SUPPORTED ON
HP 12 X 53 STEEL PILING, DRIVE PILES
TO REFUSAL. LIMIT PILE DRIVING STRESS
TO 1/3 F_y (16.7 ksi).

PILE LENGTHS ESTIMATED TO BE 30 FT.
MINIMUM PILE TIP ELEVATION IS 822.00.

LIST OF DRAWINGS

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

DESIGNED BY: AJA	DRAWN BY: TB	CHECKED BY: JRS	DATE: 08/10/2012
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TENNEY PARK MAINTENANCE BRIDGE
GENERAL PLAN AND ELEVATION

PROJECT NO.
BM6-1003

SHEET NO.

1



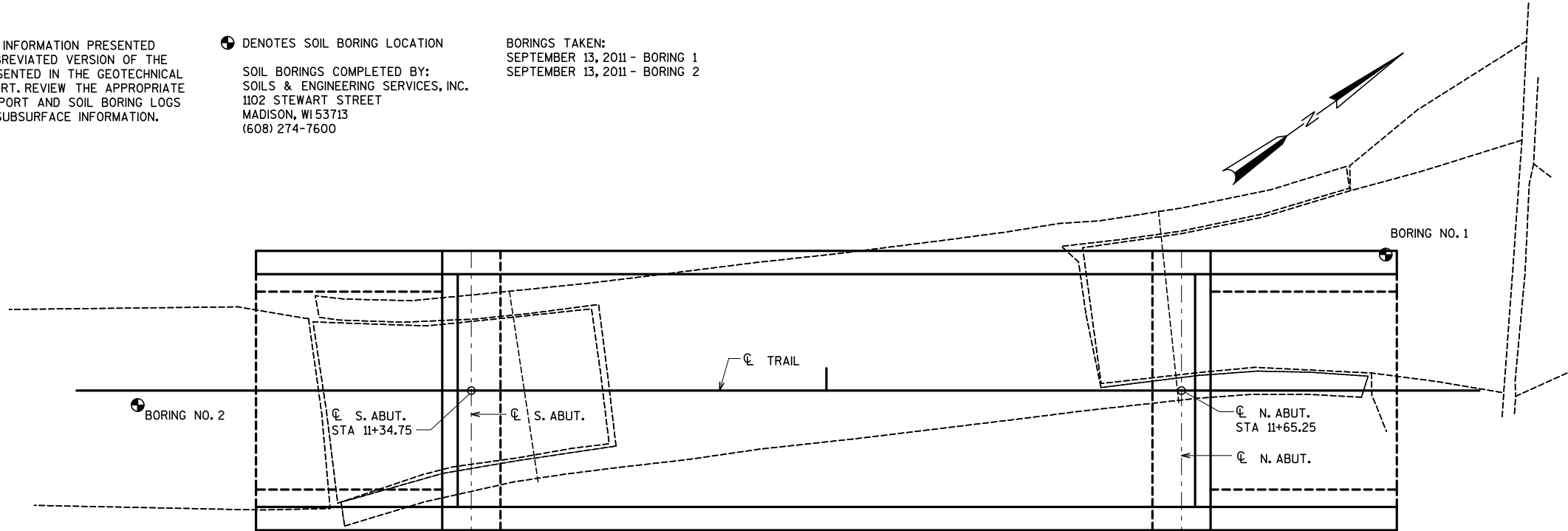
CITY OF MADISON BID ITEM NO.	WISDOT BID ITEM NO.	BID ITEMS	UNIT	TOTAL
90001	203.0500.S	REMOVING OLD STRUCTURE OVER WATERWAY STA 11+50.00	LS	1
90002	206.1000	EXCAVATION FOR STRUCTURE, BRIDGES	LS	1
90003	206.5000	COFFERDAMS	LS	1
90004	210.0100	BACKFILL STRUCTURE	CY	115
90005	502.0100	CONCRETE MASONRY BRIDGES	CY	81
90006	502.3200	PROTECTIVE SURFACE TREATMENT	SY	97
90007	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2,000
90008	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	8,650
90009	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	12
90010	550.1120	PIILING STEEL HP 12-INCHx53 LB	LF	360
90011	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100
90012	SPV.0090.01	STEEL RAILING SPECIAL	LF	98
90013	SPV.0180.01	CONCRETE PAVEMENT APPROACH SLAB, SPECIAL	SY	20

NOTE

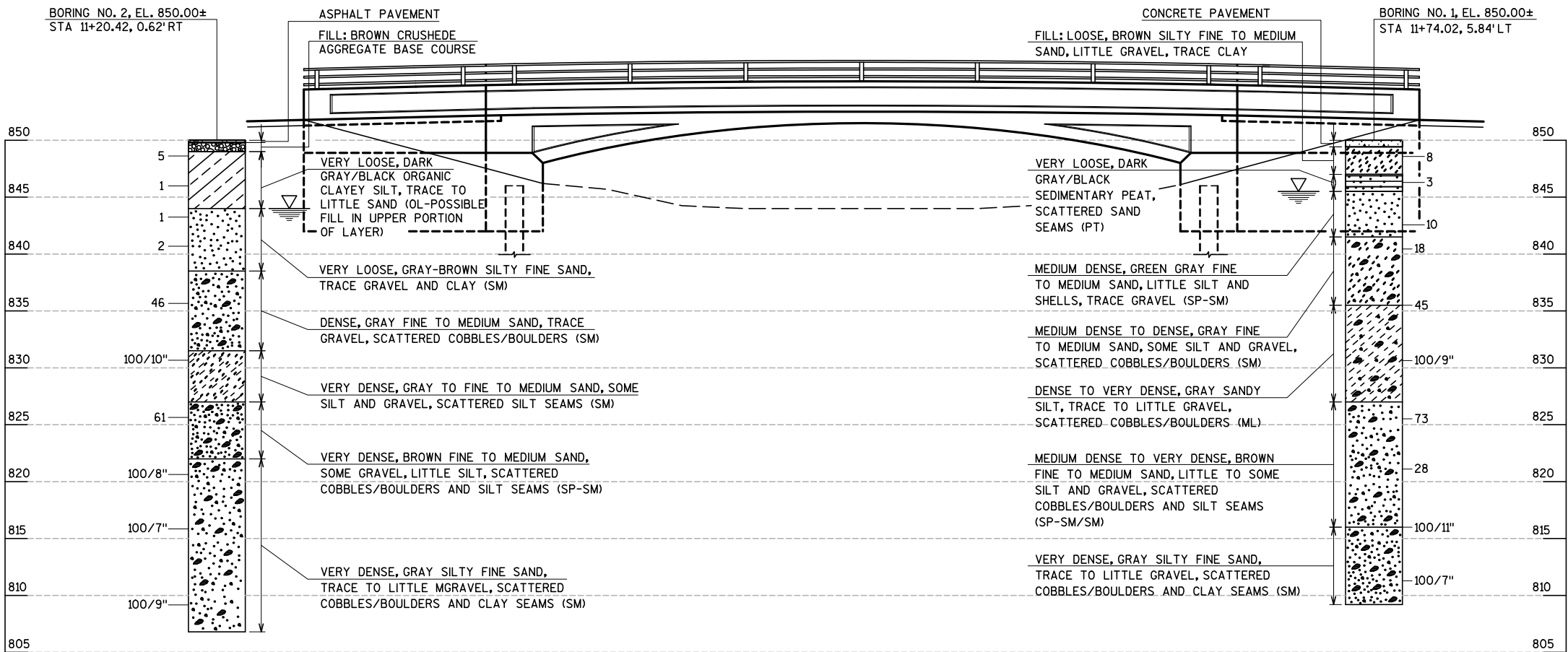
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

DENOTES SOIL BORING LOCATION
SOIL BORINGS COMPLETED BY:
SOILS & ENGINEERING SERVICES, INC.
1102 STEWART STREET
MADISON, WI 53713
(608) 274-7600

BORINGS TAKEN:
SEPTEMBER 13, 2011 - BORING 1
SEPTEMBER 13, 2011 - BORING 2



PLAN
SINGLE SPAN CONCRETE ARCH



ELEVATION
(LOOKING WEST)

ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL	SILT	SANDSTONE
SAND	PEAT	LIMESTONE
GRAVEL	CLAY	IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO. _____
STA. _____
ELEVATION _____
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

95/6=95 BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

BORING NO. _____
STA. _____
ELEV. _____

UNCONFINED STRENGTH → 7.7
BLOWS PER FT. USING 140# WT. FALLING 30"

WASH SAMPLE →

SHELBY TUBE — S.T. →

GROUND WATER ELEVATION →

NO GROUND WATER OBSERVED ABOVE THIS ELEVATION

SANDY GRAVEL
F. BOULDERS OR COBBLES
SAND
SILTY CLAY
SO
LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THESE SOIL BORINGS DO NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

DESIGNED BY: AJA
DRAWN BY: TB
CHECKED BY: JRS
DATE: 08/10/2012

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TENNEY PARK MAINTENANCE BRIDGE
SUBSURFACE EXPLORATION

PROJECT NO.
BM6-1003
SHEET NO.





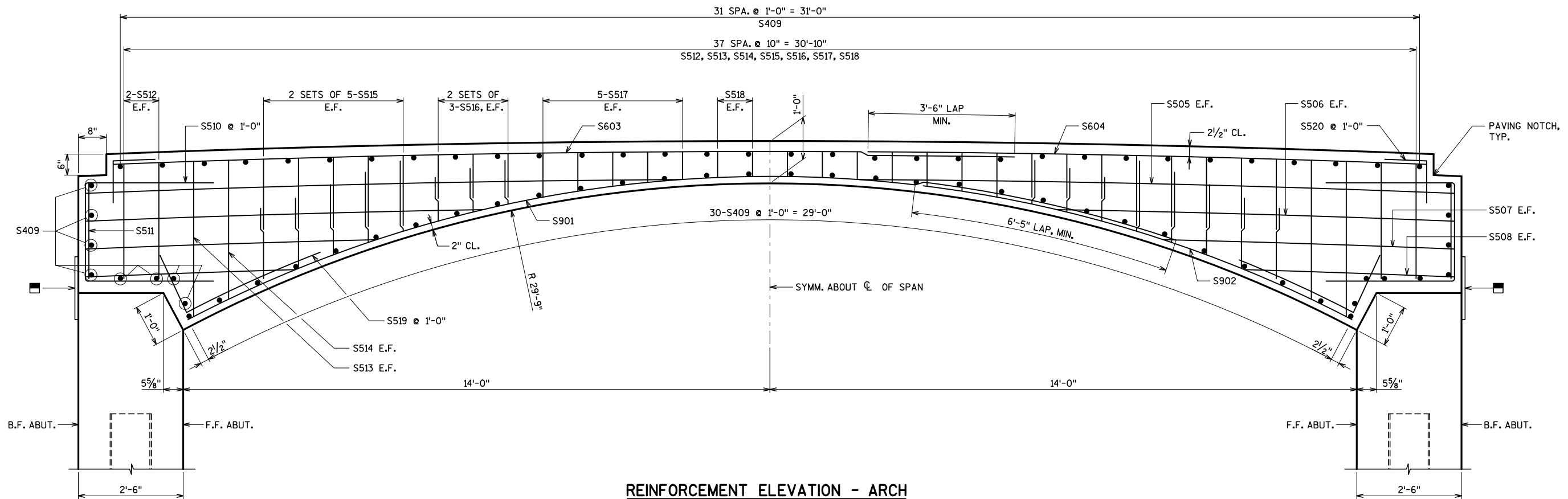
- ## LEGEND
- | | |
|---|--|
| ☒ | KEYED CONSTRUCTION JOINT FORMED BY A SURFACED, BEVELED 2" X 6". |
| ☒ | PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER LEVEL ABUTMENT TOP BEFORE PLACING CONCRETE ARCH. TOTAL THICKNESS OF SHEETS SHALL BE 0.03". |
| ☐ | 18" RUBBERIZED MEMBRANE WATERPROOFING. |
| ▲ | PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE MIN. 0.5% TO SUITABLE DRAINAGE, ATTACH RODENT SHIELD AT EXPOSED END OF PIPE UNDERDRAIN. |

☆ DIMENSIONS ARE APPROXIMATE, THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

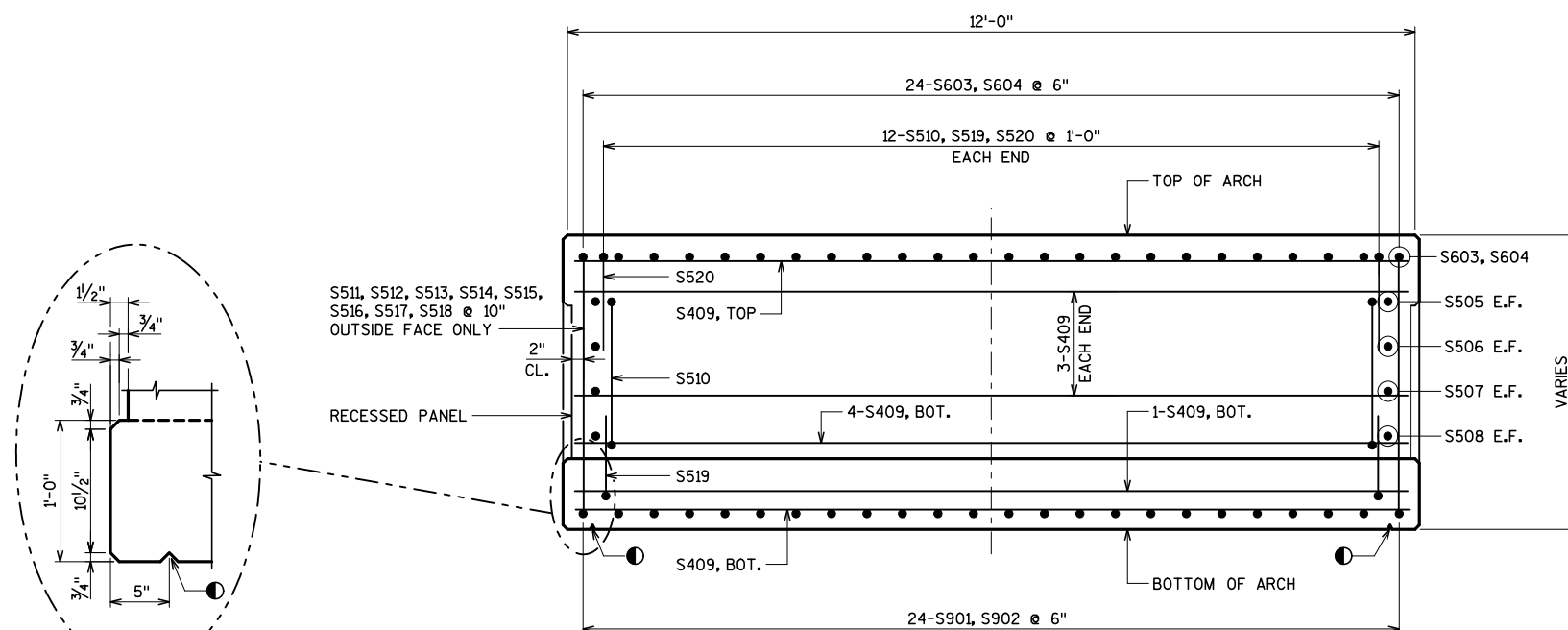
ORIENT SHIELD SO SLOTS ARE VERTICAL.

COST OF RODENT SHIELD AND ALL FITTINGS
TO BE INCLUDED IN THE BID ITEM " PIPE
UNDERDRAIN WRAPPED 6-INCH."





REINFORCEMENT ELEVATION - ARCH
(LOOKING WEST)



REINFORCEMENT SECTION - ARCH

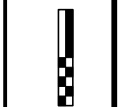
NOTES

- SEE SHEET 9 FOR ADDITIONAL ARCH DIMENSIONS.
- SEE SHEET 9 FOR RECESSED PANEL DETAILS.
- SEE SHEET 10 FOR BILL OF BARS.

LEGEND

- 18" RUBBERIZED MEMBRANE WATERPROOFING
- 3/4" V-GROOVE. TERMINATE 2'-0" AWAY FROM ABUTMENT.

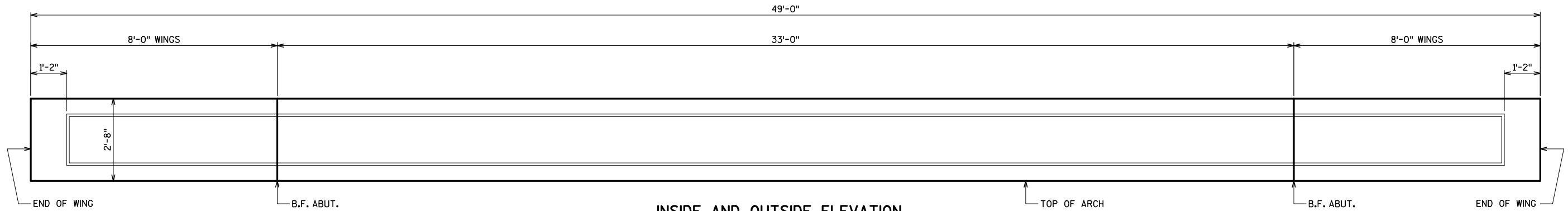
DESIGNED BY: AJA	TB	JRS	08/10/2012
DRAWN BY: TB	JRS		
CHECKED BY: JRS			
DATE: 08/10/2012			



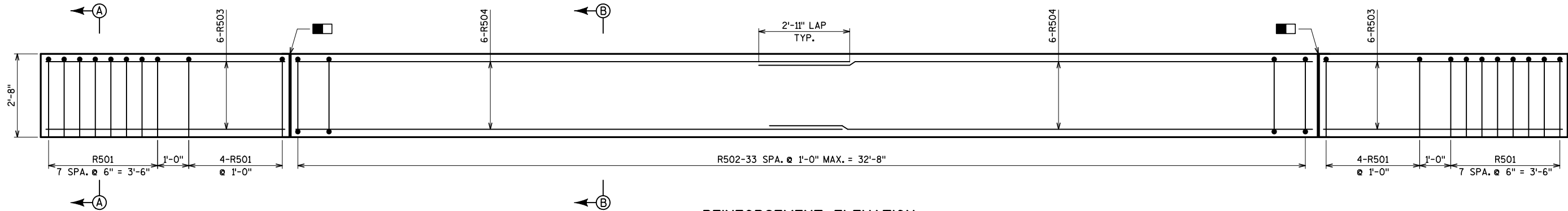
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TENNEY PARK MAINTENANCE BRIDGE
ARCH DETAILS

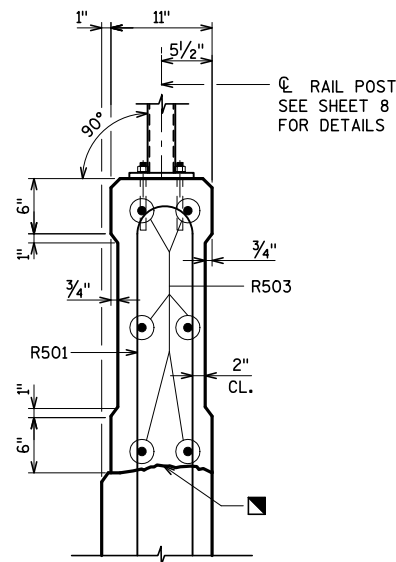
PROJECT NO.
BM6-1003
SHEET NO.



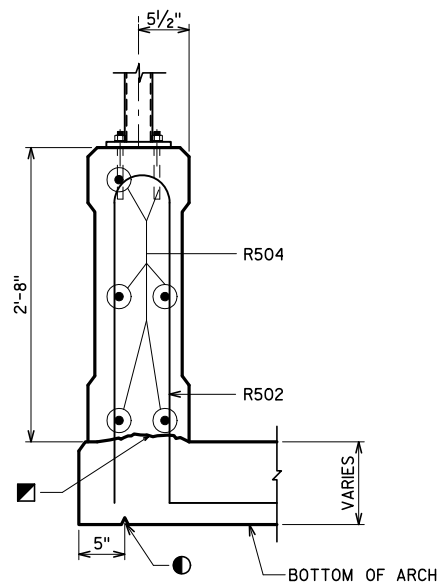
INSIDE AND OUTSIDE ELEVATION
(RAILING NOT SHOWN)



REINFORCEMENT ELEVATION
(RAILING NOT SHOWN)



SECTION A-A
(PARAPET ON WINGS)



SECTION B-B
(PARAPET ON BRIDGE)

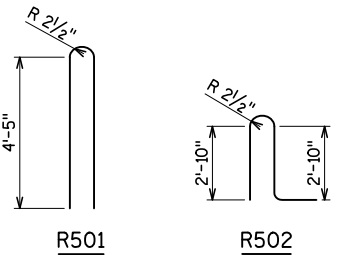
BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	48	9'-5"	X	-	PARAPET VERTICAL ON WINGS
R502	X	68	7'-0"	X	-	PARAPET VERTICAL ON ARCH
R503	X	24	7'-8"	-	-	PARAPET LONGITUDINAL ON WINGS
R504	X	24	18'-0"	-	-	PARAPET LONGITUDINAL ON ARCH

ALL DIMENSIONS IN THE BAR BEND ARE OUT TO OUT

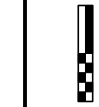
LEGEND

- CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH.
- 3/4" V-GROOVE. TERMINATE 2'-0" AWAY FROM ABUTMENT.
- 1/2" FILLER DEFINE JOINT WITH 3/4" V-GROOVE.



BENDING DIAGRAMS

DESIGNED BY: AJA	
DRAWN BY: TB	
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DATE: 08/10/2012	

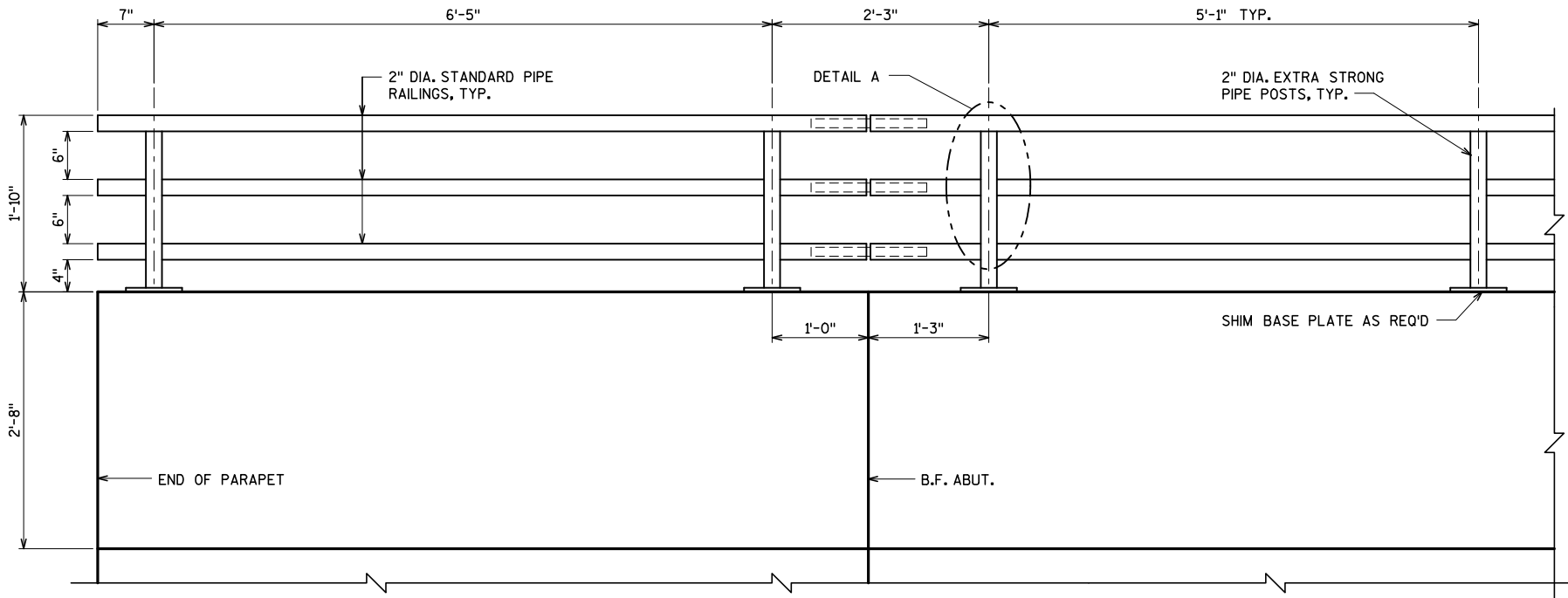


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TENNEY PARK MAINTENANCE BRIDGE
VERTICAL FACE PARAPET

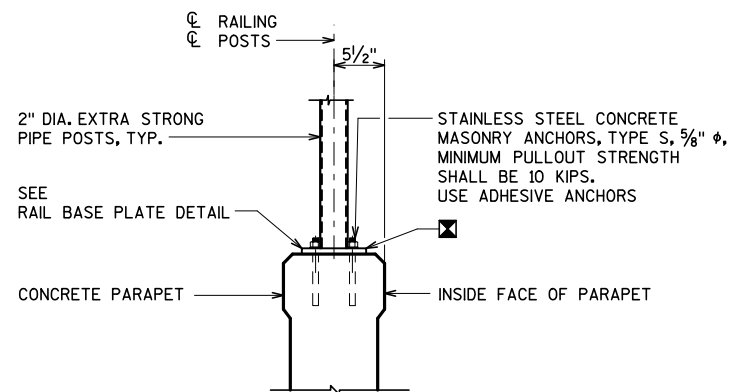
PROJECT NO.
BM6-1003

SHEET NO.
7

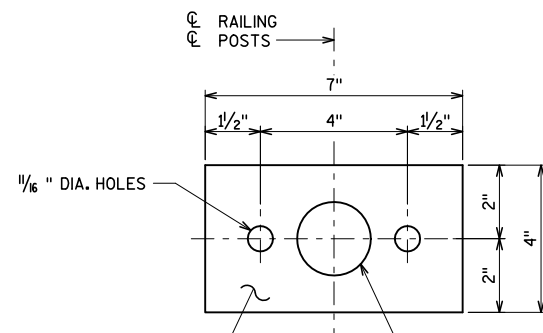


INSIDE ELEVATION

RECESS PANEL NOT SHOWN IN PARAPET

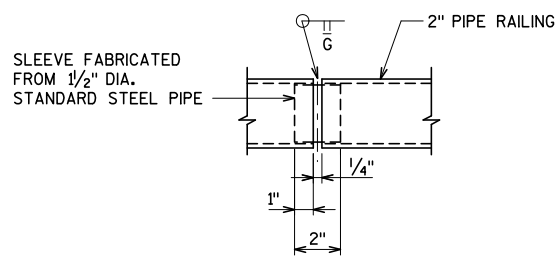


BASE PLATE DETAIL AT PARAPET



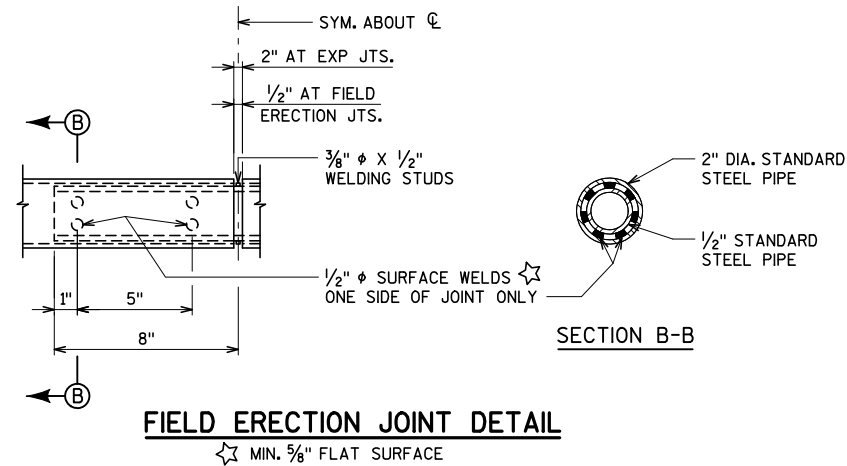
BASE PLATE 1/2" X 4" X 7" CONFORMING TO ASTM DESIGNATION A709 GRADE 36 WITH 1/16" HOLES FOR HEX BOLTS NO. 6. WELD TO RAIL POST AS SHOWN.

RAIL BASE PLATE DETAIL

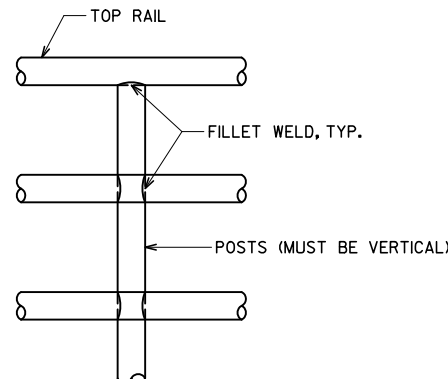


SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



FIELD ERECTION JOINT DETAIL



DETAIL A

NOTES

BID ITEM SHALL BE "STEEL RAILING SPECIAL", WHICH SHALL INCLUDE ALL ITEMS SHOWN, INCLUDING PAINTING AND CONCRETE MASONRY ANCHORS.

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 SHALL CONFORM TO ASTM A709 GRADE 36.
STRUCTURAL PIPE SHALL CONFORM TO ASTM A53 GRADE B.

CONCRETE MASONRY ANCHORS, TYPE S, SHALL BE STAINLESS STEEL.

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 TOP COAT AS SPECIFIED IN THE 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.

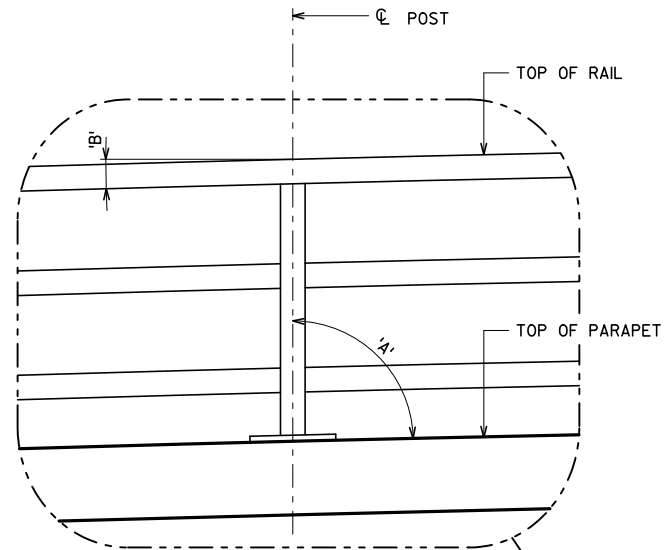
SEE SHEET 9 FOR RAIL LAYOUT DETAILS.

DESIGNED BY: AJA	TB	JRS	08/10/2012
DRAWN BY:			
CHECKED BY:			
DATE:			

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TENNEY PARK MAINTENANCE BRIDGE
STEEL RAILING DETAILS

PROJECT NO.
BM6-1003
SHEET NO.

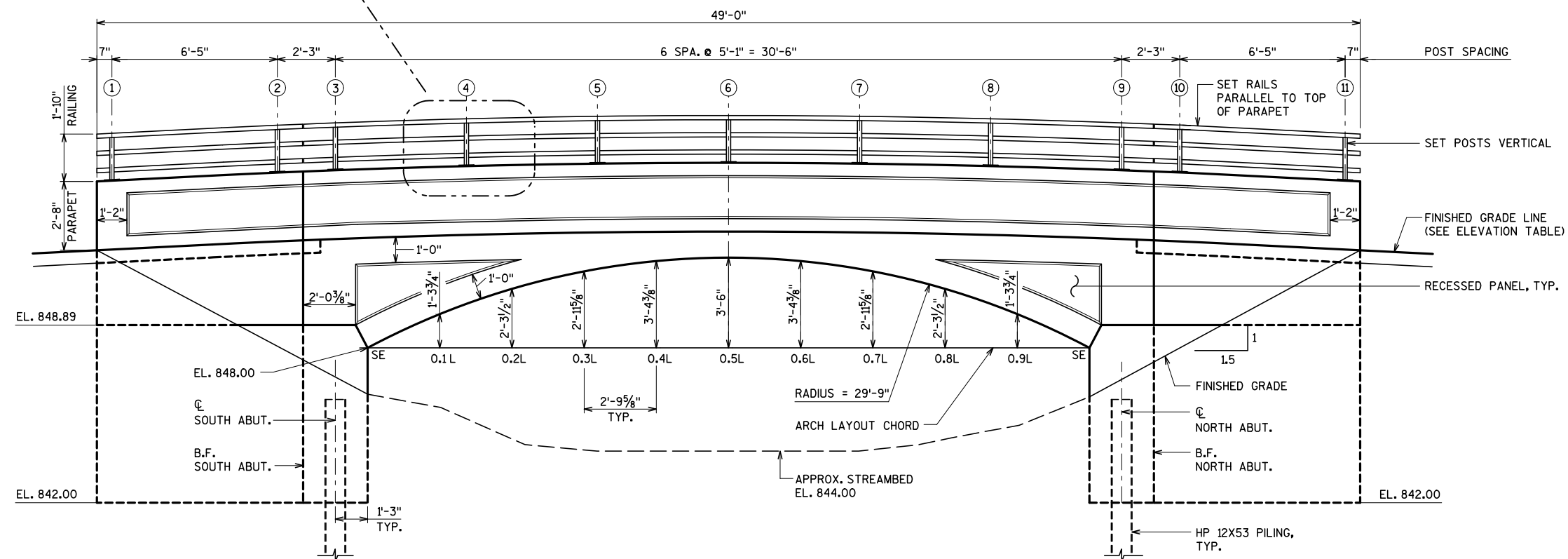


RAILING ANGLES

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°39'23"
6	90°00'00"	00°00'00"
7	90°39'23"	00°39'23"
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"

TOP OF ARCH ELEVATIONS

LOCATION	ELEVATION
BACK FACE S. ABUT.	852.16
CL S. ABUT.	852.21
0.1L	852.31
0.2L	852.40
0.3L	852.45
0.4L	852.49
0.5L	852.50
0.6L	852.49
0.7L	852.45
0.8L	852.40
0.9L	852.31
CL N. ABUT.	852.21
BACK FACE N. ABUT.	852.16

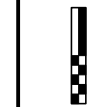


ARCH ELEVATION

LEGEND

(X) POST NUMBER

DESIGNED BY: AJA	
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DATE: 08/10/2012	



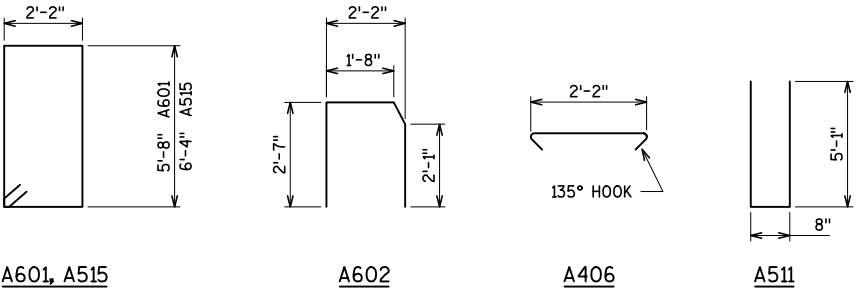
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TENNEY PARK MAINTENANCE BRIDGE
ARCH AND RAIL DIMENSIONS

PROJECT NO.
BM6-1003
SHEET NO.

BILL OF BARS - ABUTMENTS

BAR MARK	COAT	S. ABUT.	N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
A601	-	16	16	16'-3"	X	-	ABUTMENT BODY, VERTICAL
A602	-	16	16	6'-10"	X	-	ABUTMENT BODY, VERTICAL
A804	-	9	9	11'-8"	-	-	ABUTMENT BODY, HORIZONTAL, B.F.
A505	-	9	9	11'-8"	-	-	ABUTMENT BODY, HORIZONTAL, F.F.
A406	-	12	12	2'-11"	X	-	ABUTMENT BODY, TIES AT PILES
A409	-	6	6	6'-5"	-	-	ABUTMENT BODY, VERTICAL AT ENDS
A410	-	2	2	5'-11"	-	-	ABUTMENT BODY, VERTICAL AT ENDS
A511	X	22	22	10'-7"	X	-	WING VERTICAL
A412	X	20	20	7'-8"	-	-	WING HORIZONTAL
A613	X	32	32	9'-11"	-	-	WING HORIZONTAL, TOP AND B.F.
A514	X	20	20	10'-2"	-	-	WING HORIZONTAL, F.F.
A515	X	18	18	17'-6"	X	-	WING VERTICAL



BENDING DIAGRAMS

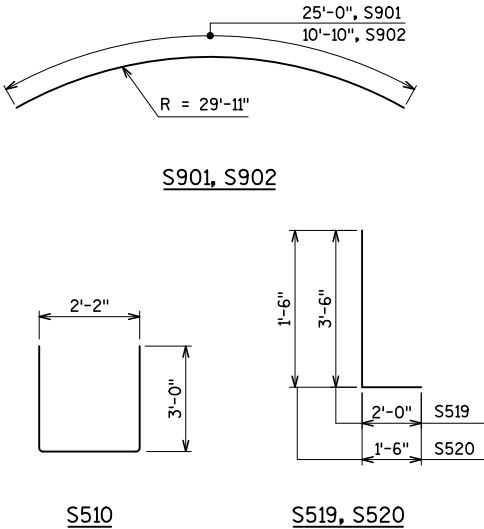
BILL OF BARS - ARCH

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
S901	X	24	25'-0"	X	-	BOTTOM ARCH, LONGITUDINAL
S902	X	24	10'-10"	X	-	BOTTOM ARCH, LONGITUDINAL
S603	X	24	21'-8"	-	-	TOP ARCH, LONGITUDINAL
S604	X	24	13'-4"	-	-	TOP ARCH, LONGITUDINAL
S505	X	4	14'-3"	-	-	ARCH, LONGITUDINAL, SIDES
S506	X	4	9'-6"	-	-	ARCH, LONGITUDINAL, SIDES
S507	X	4	7'-0"	-	-	ARCH, LONGITUDINAL, SIDES
S508	X	4	5'-1"	-	-	ARCH, LONGITUDINAL, SIDES
S409	X	78	11'-7"	-	-	ARCH, TRANSVERSE
S510	X	24	7'-11"	X	-	ARCH, VERTICAL AT ENDS
S511	X	4	2'-2"	-	-	ARCH, VERTICAL, OUTSIDE FACE
S512	X	8	2'-11"	-	-	ARCH, VERTICAL, OUTSIDE FACE
S513	X	4	3'-8"	-	-	ARCH, VERTICAL, OUTSIDE FACE
S514	X	4	3'-3"	-	-	ARCH, VERTICAL, OUTSIDE FACE
S515	X	40	1'-9"	-	-	ARCH, VERTICAL, OUTSIDE FACE
S516	X	24	1'-1"	-	-	ARCH, VERTICAL, OUTSIDE FACE
S517	X	20	0'-11"	-	▲	ARCH, VERTICAL, OUTSIDE FACE
S518	X	8	0'-8"	-	-	ARCH, VERTICAL, OUTSIDE FACE
S519	X	24	5'-5"	X	-	BOTTOM ARCH, VERTICAL AT ENDS
S520	X	24	2'-11"	X	-	ARCH, VERTICAL AT ENDS

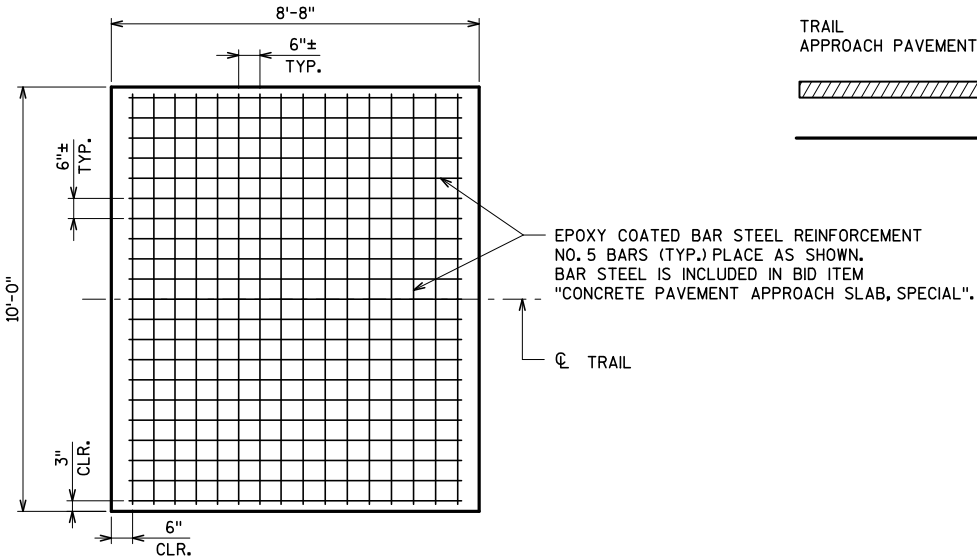
BAR SERIES TABLE

BAR MARK	NUMBER REQUIRED	LENGTH ▲
S517	4 SERIES OF 5	0'-8" TO 1'-1"

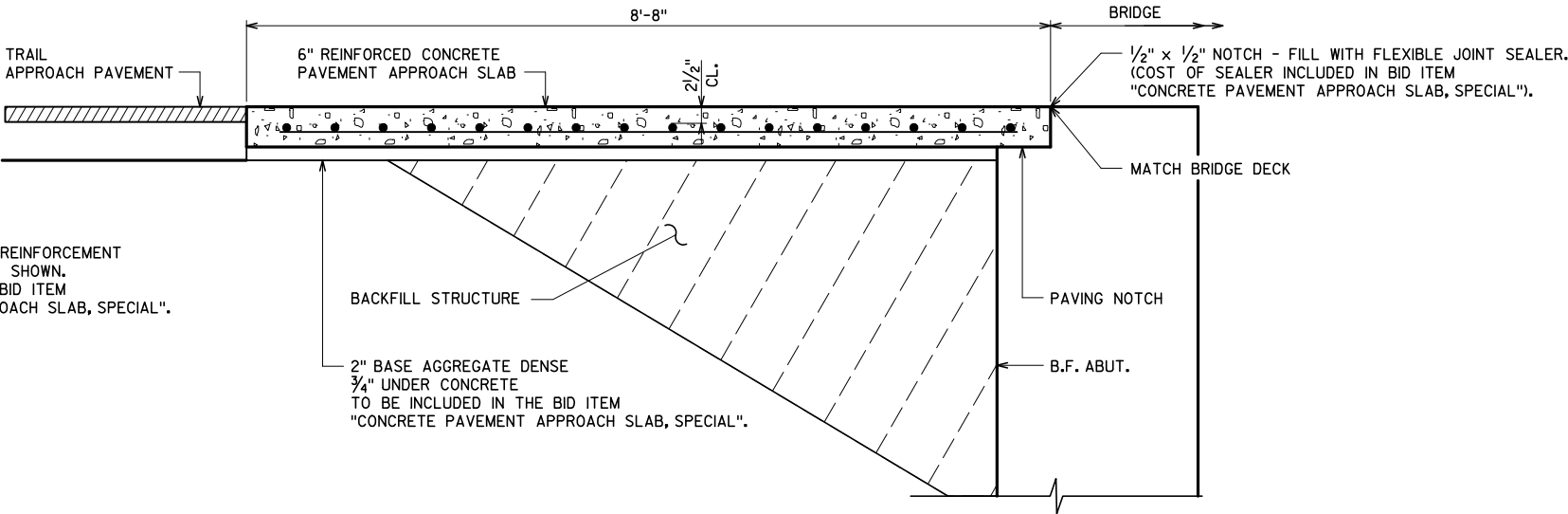
BUNDLE AND TAG EACH SERIES SEPARATELY



BENDING DIAGRAMS



APPROACH SLAB PLAN - REINFORCEMENT



APPROACH SLAB ELEVATION

DESIGNED BY: AJA
DRAWN BY: TB
CHECKED BY: JRS
DATE: 08/10/2012

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TENNEY PARK MAINTENANCE BRIDGE
BILL OF BARS, APPROACH SLAB DETAILS

PROJECT NO.
BM6-1003
SHEET NO.
10