

GRE NOV 2015
ORDER OF SHEETS

PROJECT ID: 1420-22-71
WITH: NA

Section No. 1	Title
Section No. 2	Typical Sections and Details
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plat
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer
Section No. 9	Cross Sec

TOTAL SHEETS = 702



19

DESIGN DESIGNATION

	CTH V	USH 151
A.A.D.T. (2006)	= 3000	= 11500
A.A.D.T. (2038)	= 4700	= 17000
D.H.V. (2038)	= 517	= 1870
D.D.	= 60/40	= 60/40
T. (DHV)	= 7.1	= 7.1
DESIGN SPEED	= 40 MPH	= 70 MPH
ESALS	= 905,200	=

CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	PL + 58.1
PROPERTY LINE	PL + 58.1
LOT LINE	PL + 58.1
LIMITED HIGHWAY EASEMENT	PL + 58.1
EXISTING RIGHT OF WAY	PL + 58.1
PROPOSED OR NEW R/W LINE	PL + 58.1
SLOPE INTERCEPT	PL + 58.1
REFERENCE LINE	PL + 58.1
EXISTING CULVERT	PL + 58.1
PROPOSED CULVERT (Box or Pipe)	PL + 58.1
COMBUSTIBLE FLUIDS	PL + 58.1
MARSH AREA	PL + 58.1
WOODED OR SHRUB AREA	PL + 58.1

PROFILE	
GRADE LINE	PL + 58.1
ORIGINAL GROUND	PL + 58.1
MARSH OR ROCK PROFILE (To be noted as such)	PL + 58.1
SPECIAL DITCH	PL + 58.1
GRADE ELEVATION	PL + 58.1
CULVERT (Profile View)	PL + 58.1
UTILITIES	PL + 58.1
ELECTRIC	PL + 58.1
FIBER OPTIC	PL + 58.1
GAS	PL + 58.1
SANITARY SEWER	PL + 58.1
STORM SEWER	PL + 58.1
TELEPHONE	PL + 58.1
WATER	PL + 58.1
UTILITY PEDESTAL	PL + 58.1
POWER POLE	PL + 58.1
TELEPHONE POLE	PL + 58.1

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

FOND DU LAC BYPASS

CTH V INTERCHANGE

USH 151

FOND DU LAC COUNTY

STATE PROJECT NUMBER
1420-22-71

STRUCTURE AS-BUILT PLAN

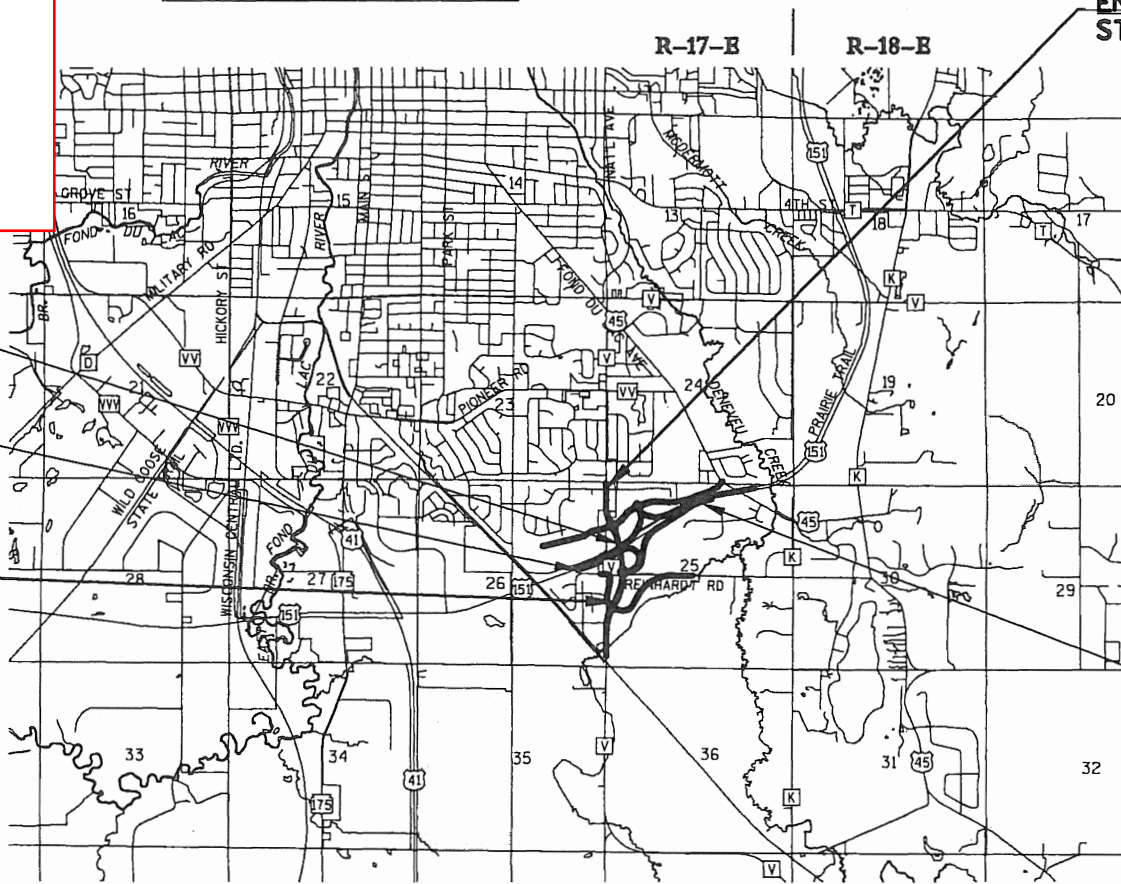
SUPERVISOR: Rob Wagner
PROJECT MANAGER: Bryan Learst
PROJECT LEADER: Zach Pilichowski
CONTRACTOR: Mashuda Contractors, Inc.
Work Started 4/16/2016
Work Completed 12/28/2016

STRUCTURE B-20-0226

STRUCTURE S-20-41

BEGIN PROJECT 1420-22-71
STA 115'NB'+00.00 CTH V
Y = 371287.776
X = 823900.386

END PROJECT 1420-22-71
STA 149'NB'+06.31 CTH V



STRUCTURE S-20-42

T-15-N

T-14-N

LAYOUT

SCALE 0 1/2 MI. 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.645 MI. (CTH V)

COORDINATES ON THIS PLAN ARE REFERENCED TO THE
WISCONSIN COUNTY COORDINATE SYSTEM (WCCS),
FOND DU LAC COUNTY, NAD 1983 (97)

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO
THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

ORIGINAL PLANS PREPARED BY
OMNI
ASSOCIATES



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor MSDOT/GREMMER & ASSOCIATES, INC.
Designer OMNI ASSOCIATES, INC.
Project Manager B. LEARST
Regional Examiner -
Regional Supervisor R. WAGNER
C.O. Examiner -

APPROVED FOR THE DEPARTMENT
DATE: 04/23/15 B. Learst (Signature)

1

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DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.09
OPERATING RATING FACTOR: RF=1.42
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 235 (KIPS)
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY DECK $f'_c = 4,000$ P.S.I.

ALL OTHER $f'_c = 3,500$ P.S.I.

BAR STEEL REINFORCEMENT, GRADE 60 $f_y = 60,000$ P.S.I.

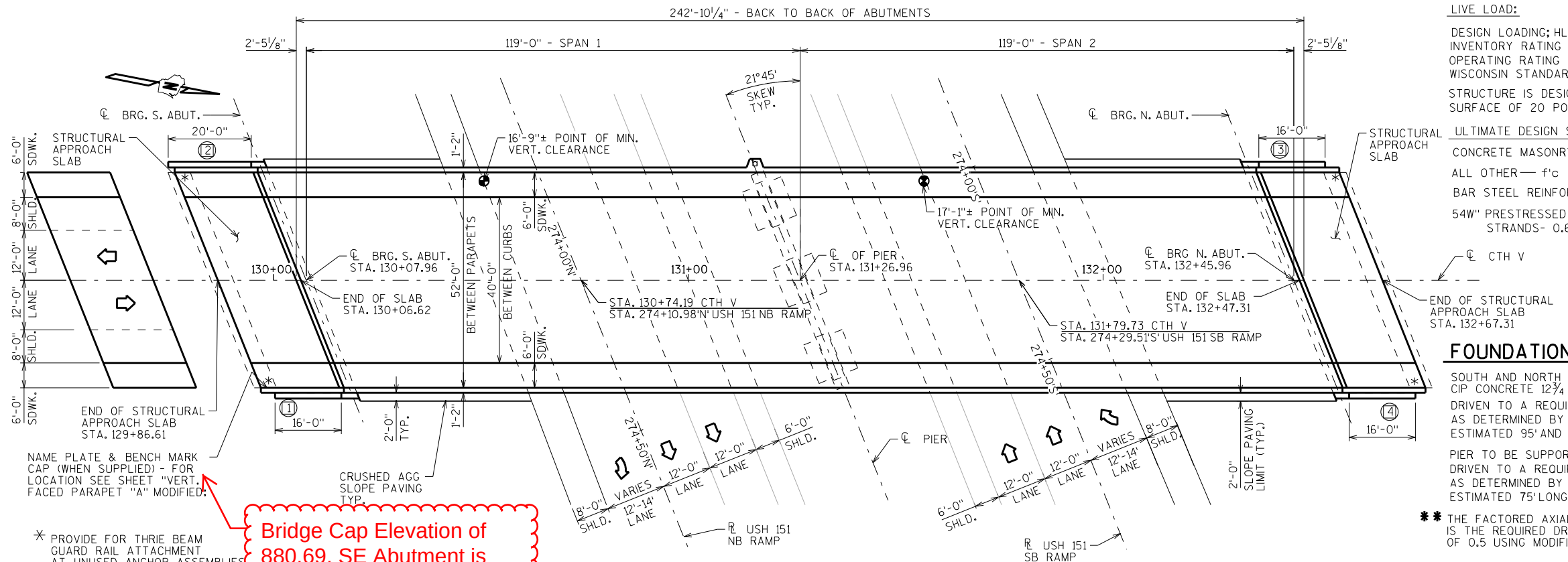
54W" PRESTRESSED GIRDERS, CONCRETE MASONRY $f'_c = 8000$ P.S.I.
STRANDS- 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

SOUTH AND NORTH ABUTMENTS TO BE SUPPORTED ON CIP CONCRETE $12\frac{3}{4}$ " X 0.375-INCH PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 95' AND 90' LONG RESPECTIVELY.

PIER TO BE SUPPORTED ON CIP CONCRETE $12\frac{3}{4}$ " X 0.375-INCH PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 75' LONG.

** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.



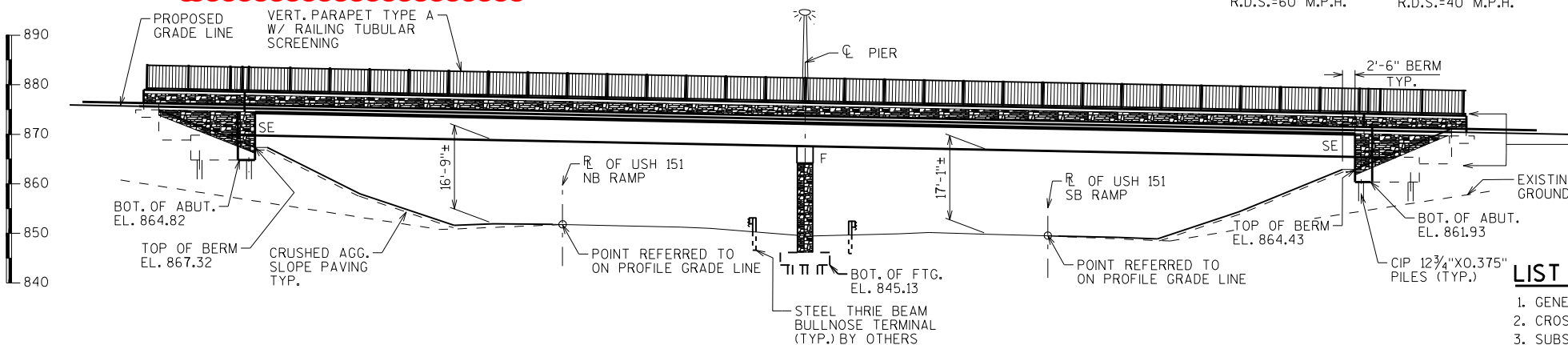
PLAN

2 SPAN - 54W" PRESTRESSED CONCRETE GIRDER BRIDGE

TRAFFIC VOLUME

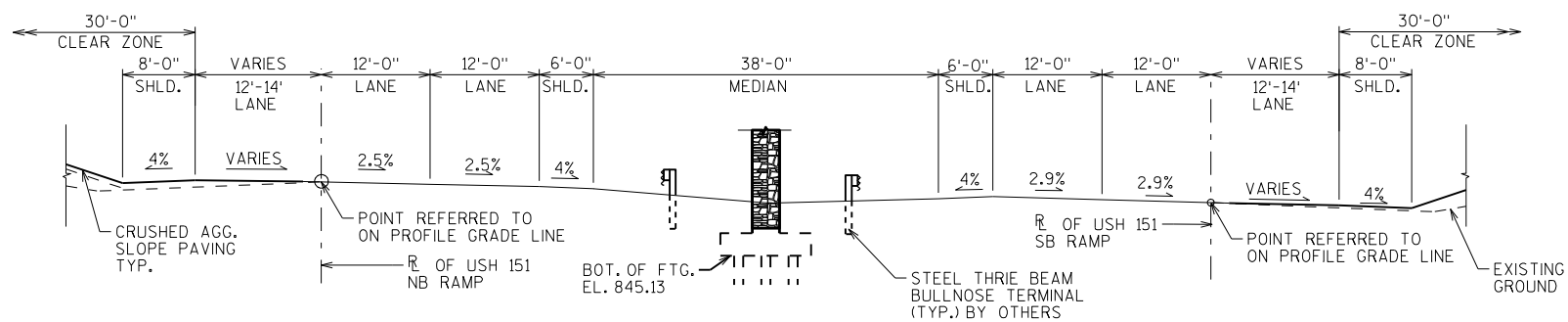
USH 151 NB & SB
A.D.T.=13,400 (2038)
R.D.S.=60 M.P.H.

CTH V
A.D.T.=3,700 (2038)
R.D.S.=40 M.P.H.



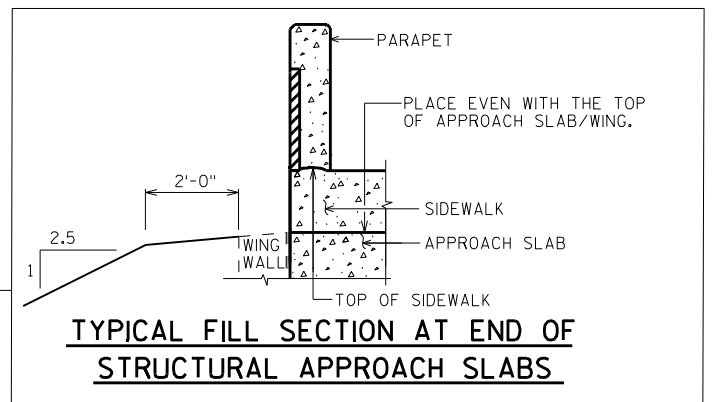
ELEVATION

(NORMAL TO USH 151, LOOKING WEST)



PROPOSED TYPICAL SECTION THRU USH 151

LOOKING WEST

TYPICAL FILL SECTION AT END OF
STRUCTURAL APPROACH SLABS

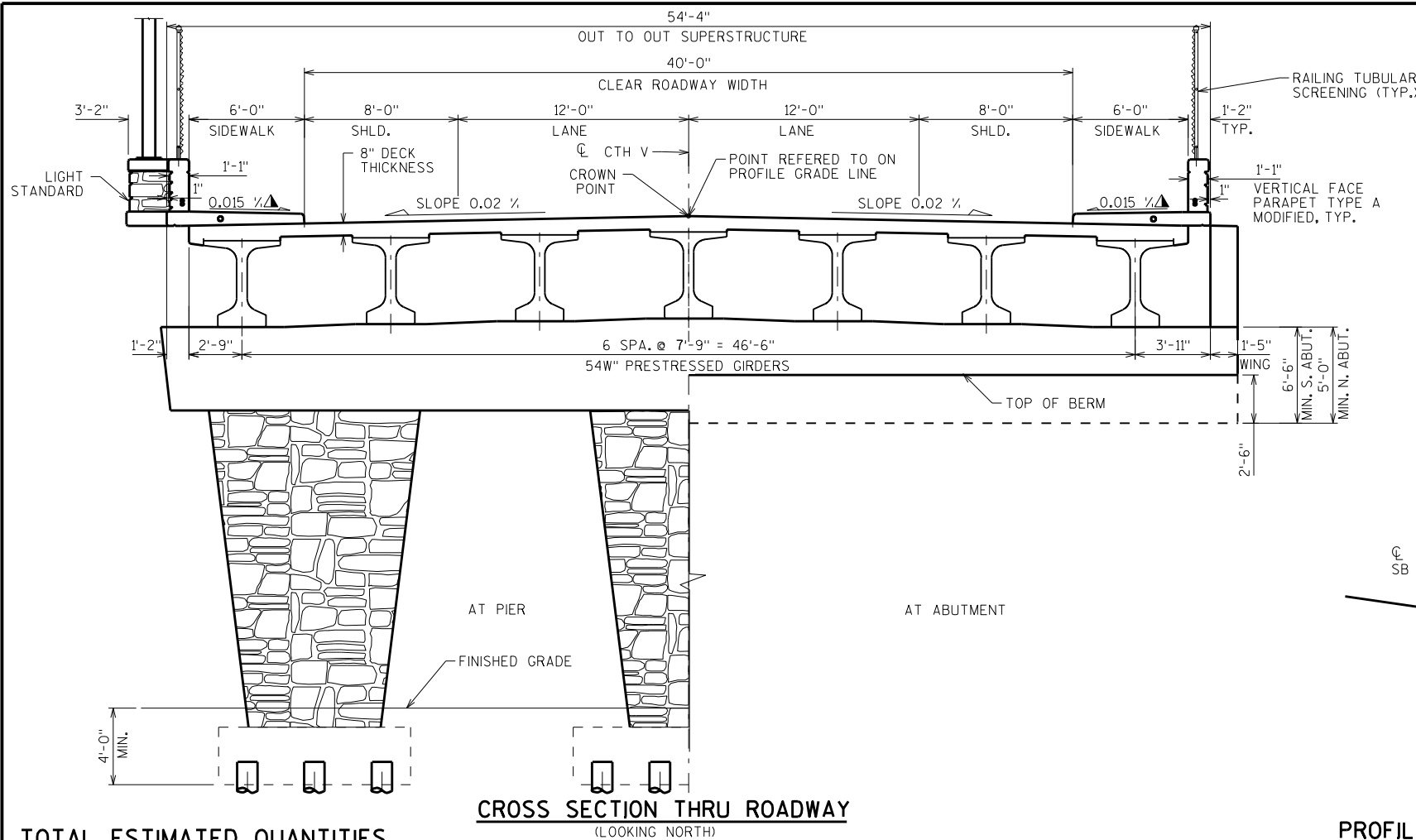
LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. PIER
9. PIER DETAILS
10. 54W" PRESTRESSED GIRDER DETAILS 1
11. 54W" PRESTRESSED GIRDER DETAILS 2
12. STEEL DIAPHRAGM
13. SUPERSTRUCTURE
14. SUPERSTRUCTURE DETAILS 1
15. SUPERSTRUCTURE DETAILS 2
16. LIGHTING STD. & CONDUIT DETAILS
17. VERT. FACED PARAPET "A" MODIFIED
18. SOUTH STRUCTURAL APPROACH SLAB
19. NORTH STRUCTURAL APPROACH SLAB
20. RAILING TUBULAR SCREENING
21. RAILING TUBULAR SCREENING DETAILS
22. AESTHETIC DETAILS
23. SLOPE PAVING
24. ALTERNATE CONSTRUCTION JOINT

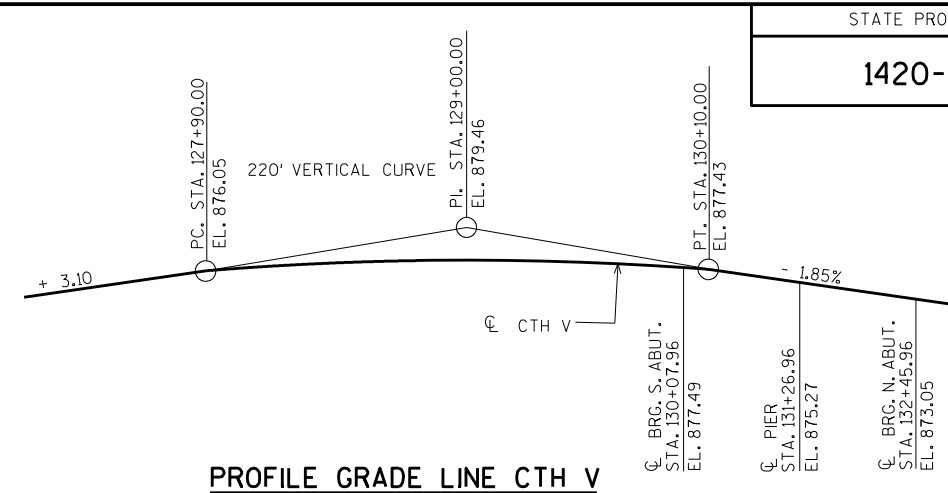
STRUCTURE DESIGN CONTACTS:

STEVEN DOOCY (608) 261-6063
AARON BONK (608) 261-0261

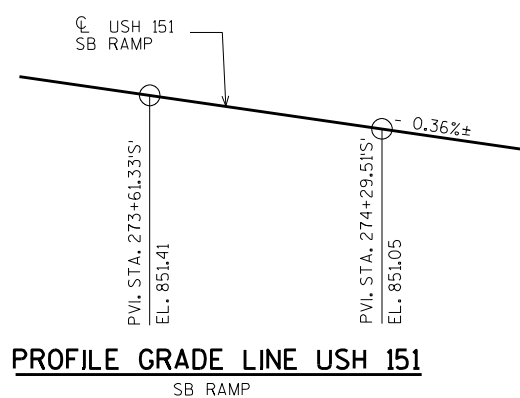
NO.	DATE	REVISION	BY
ACCEPTED			
Plans Prepared By WISDOT BUREAU OF STRUCTURES <i>William C. Dickman</i> 1/21/15 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-20-226			
CTH V OVER USH 151			
COUNTY	FOND DU LAC	TOWN/CITY/VILLAGE	FOND DU LAC
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	SAD	DESIGN CK'D.	EMK
DRAWN BY	EMK	SAD	PLANS CK'D. EMK
GENERAL PLAN			SHEET 1 OF 24



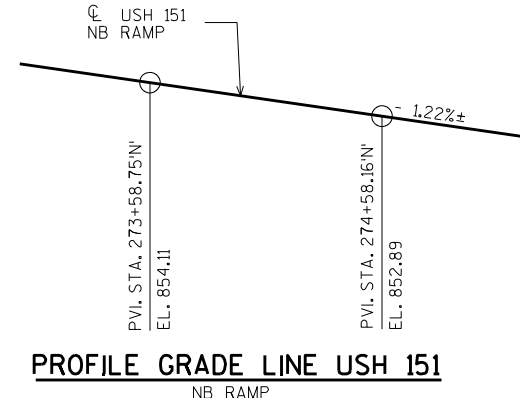
CROSS SECTION THRU ROADWAY
(LOOKING NORTH)



PROFILE GRADE LINE CTH V



PROFILE GRADE LINE USH 151
SB RAMP



PROFILE GRADE LINE USH 151
NB RAMP

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	SOUTH APPROACH SLAB	SOUTH ABUT.	PIER	NORTH ABUT.	NORTH APPROACH SLAB	TOTALS
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-20-226	LS	—	—	—	—	—	—	1
210.0100	BACKFILL STRUCTURE	CY	—	—	210	—	175	—	385
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	—	170	—	—	—	170	340
502.0100	CONCRETE MASONRY BRIDGES	CY	600	80	86	115	65	80	1026
502.3200	PROTECTIVE SURFACE TREATMENT	SY	1610	135	—	—	—	135	1880
503.0155	PRESTRESSED GIRDER TYPE I 54W-INCH	LF	1672	—	—	—	—	—	1672
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	—	—	5335	2335	4070	—	11,740
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	117,190	13,480	2665	19,560	1985	13,480	168,360
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	1870	—	—	—	—	—	1870
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	—	—	7	14	7	—	28
506.4000	STEEL DIAPHRAGMS B-20-226	EACH	24	—	—	—	—	—	24
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	—	16	—	15	—	31
517.1015.S	CONCRETE STAINING MULTI-COLOR B-20-226	SF	969	80	257	1224	204	80	2814
517.1050.S	ARCHITECTURAL SURFACE TREATMENT B-20-226	SF	969	80	257	1224	204	80	2814
550.2126	PILING CIP CONCRETE 12 3/4 X 0.375	LF	—	—	1235	2100	1170	—	4505
550.0600	PILE REDRIVING	EACH	—	—	2	4	2	—	8
604.0500	SLOPE PAVING CRUSHED AGGREGATE	SY	—	—	280	—	275	—	555
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	—	—	100	—	95	—	195
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	—	2	—	—	—	2	4
652.0125	CONDUIT RIGID METALLIC 2-INCH	LF	—	—	72	—	72	—	144
652.0135	CONDUIT RIGID METALLIC 3-INCH	LF	12	50	—	—	—	50	112
652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	944	75	—	—	—	75	1094
652.0235	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	LF	470	—	—	—	—	—	470
653.0222	JUNCTION BOXES 18X12X6-INCH	EACH	5	—	—	—	—	—	5
657.6005.S	ANCHOR ASSEMBLIES LIGHT POLES ON STRUCTURES	EACH	1	—	—	—	—	—	1
SPV.0090.07	RAILING TUBULAR SCREENING GALVINIZED B-20-226	LF	481	40	—	—	—	40	561
	NON-BID ITEMS								
	FILLER	SIZE	—	—	—	—	—	—	1/2", 3/4", & 1/2"
	PLASTIC OR ZINC PLATE	SIZE	—	—	—	—	—	—	1/8"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE OR "BASE AGGREGATE DENSE 1 1/4-INCH" SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIER.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK, TOP OF APPROACH SLAB SURFACES, SIDEWALK, AS WELL AS THE INSIDE AND TOP OF PARAPETS SURFACES ON BOTH DECK AND APPROACH SLABS.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE SHOWN OR NOTED.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON SHEET 1 AND ON THE 'SLOPE PAVING' SHEET AND ON THE ABUTMENT DETAILS SHEETS.

ARCHITECTURAL SURFACE TREATMENT TO BE APPLIED TO BACKS OF PARAPETS, WINGWALLS, AND PIER SHAFTS. FINISHED STAIN IS TO RESEMBLE WEATHERED LIMESTONE. SEE AESTHETICS SHEET AND SPECIAL PROVISIONS FOR ARCHITECTURAL SURFACE TREATMENT.

ALL RAILINGS, POSTS AND ASSOCIATED HARDWARE SHALL BE FINISHED AS SHOWN ON "RAILING TUBULAR SCREENING" SHEET. IF TOUCH UP PAINTING IS REQUIRED AFTER INSTALLATION IS COMPLETE, ALL TOUCH UP PAINTING IS TO BE DONE TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST.

STATE PROJECT NUMBER

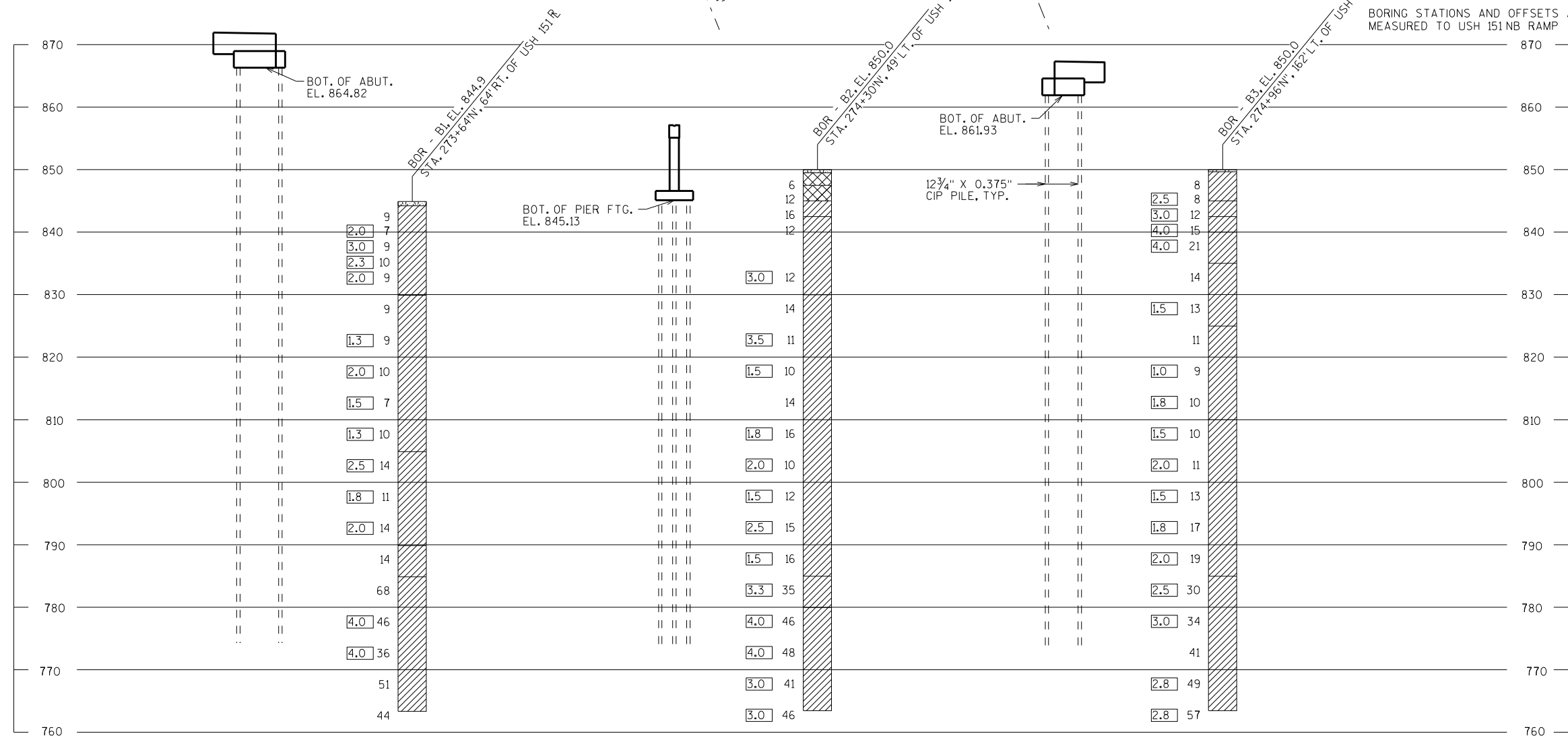
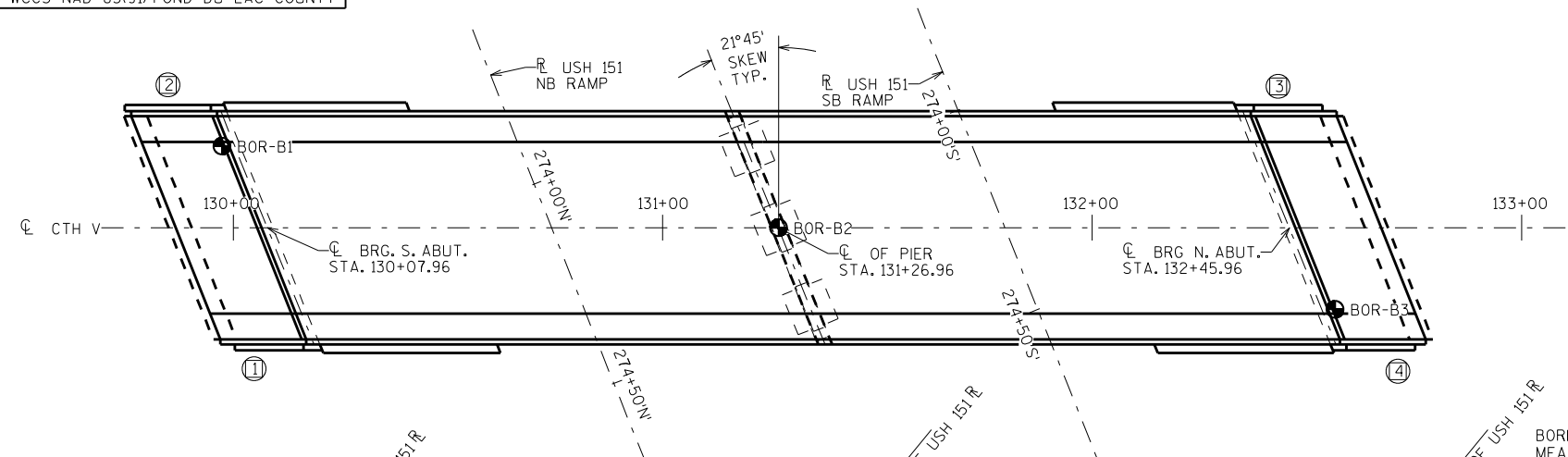
1420-22-71

±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
DRAWN BY SAD		PLANS CK'D. EMK	
CROSS SECTION & QUANTITIES			SHEET 2

SCALE = 4

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	7/24/2013	372719.2326	824054.6499
2	7/30/2013	372850.0807	824048.7782
3	7/30/2013	372980.9289	824042.9064
BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, INC.			
REPORT COMPLETED BY: OMNNI			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) FOND DU LAC COUNTY			



	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/ META

BORING #/EL.
STA./OFF-SET

ST
(1) 0.25
(2) 17

F-C
COBBLE OR BOULDER

WEATHERED LIMESTONE

CORE RUN #1 - 24'-29'
REC=80%, ROD=72%

 AT TIME OF DRILLING
 END OF DRILLING
 AFTER DRILLING

F-FINE	M-MEDIUM	C-COARSE	ST-SHELBY TUBE
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BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

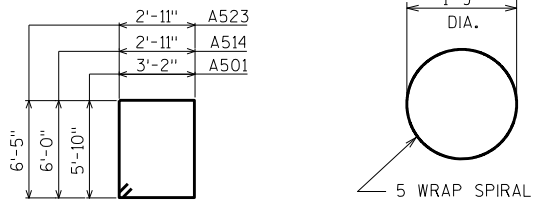
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
DRAWN BY PR/SAD		PLANS CK'D. EMK	
SUBSURFACE EXPLORATION		SHEET 3	

SCALE = 20

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
DRAWN BY SAD		PLANS CK'D. EMK	
SOUTH ABUTMENT		SHEET 4	

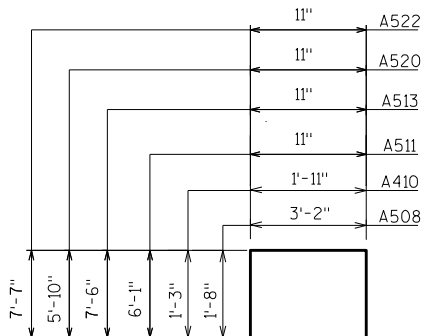
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE
BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A501		104	18'-8"	X	BODY-STIRRUPS
A402		22	2'-3"		PILES- 2 PER PILE
A803		8	16'-11"	X	BODY-HORIZONTAL
A1004		8	21'-5"	X	BODY-HORIZONTAL
A605		30	32'-2"		BODY-HORIZONTAL
A406		11	28'-0"	X	PILES-1 PER PILE
A407		8	22'-0"		BODY-HORZ. OVER GIRLS. 1-5
A508		43	6'-3"	X	BODY-TOP OVER GIRLS. 1-5
A409		12	6'-10"		BODY-HORZ. BETWEEN BEAM SEATS
A410		24	4'-2"	X	BODY-BETWEEN BEAM SEATS
A511	X	9	12'-10"	X	WING 1-VERTICAL
A412	X	2	7'-9"		WING 1-HORIZONTAL
A513	X	13	15'-8"	X	WING 1-VERTICAL
A514	X	10	18'-6"	X	WING 1-STIRRUP
A515	X	7	12'-9"		WING 1-HORIZONTAL
A716	X	7	11'-4"		WING 1-HORIZONTAL
A717	X	2	12'-2"		WING 1-HORIZONTAL
A418	X	12	15'-8"		WING 1-HORIZONTAL
A619	X	2	15'-8"		WING 1-HORIZONTAL
A520	X	9	12'-4"	X	WING 2-VERTICAL
A421	X	2	7'-9"		WING 2-HORIZONTAL
A522	X	18	15'-10"	X	WING 2-VERTICAL
A523	X	14	19'-4"	X	WING 2-STIRRUP
A524	X	8	15'-9"		WING 2-HORIZONTAL
A925	X	8	17'-3"	X	WING 2-HORIZONTAL
A926	X	2	16'-9"	X	WING 2-HORIZONTAL
A427	X	12	19'-8"		WING 2-HORIZONTAL
A628	X	2	19'-8"		WING 2-HORIZONTAL

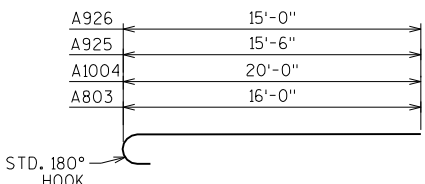


A501, A514, A523

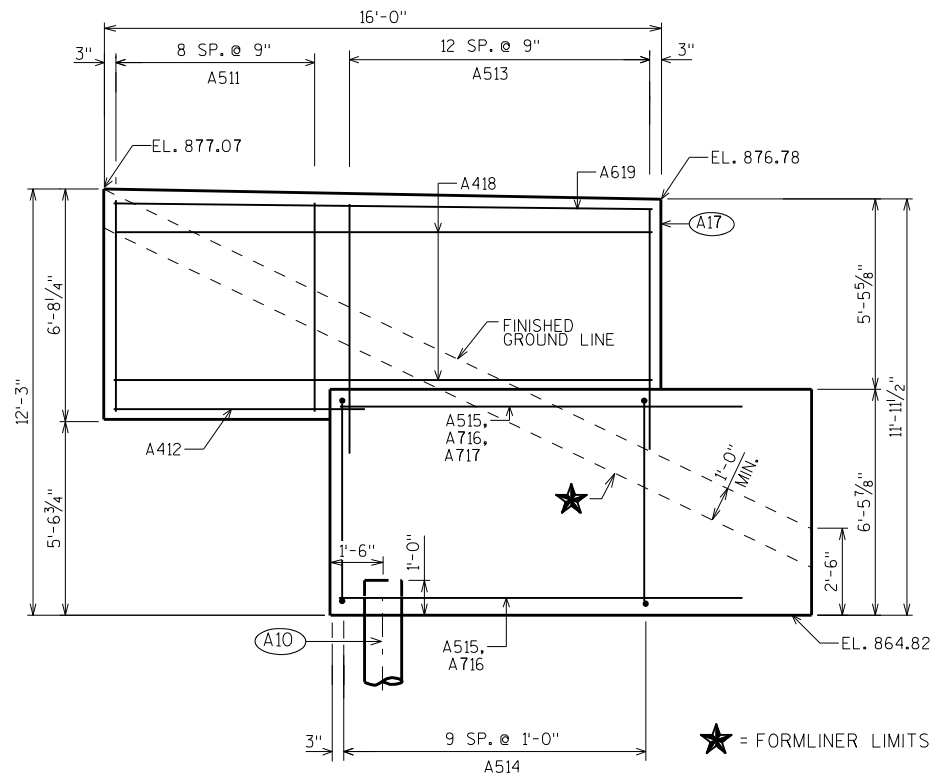
A406



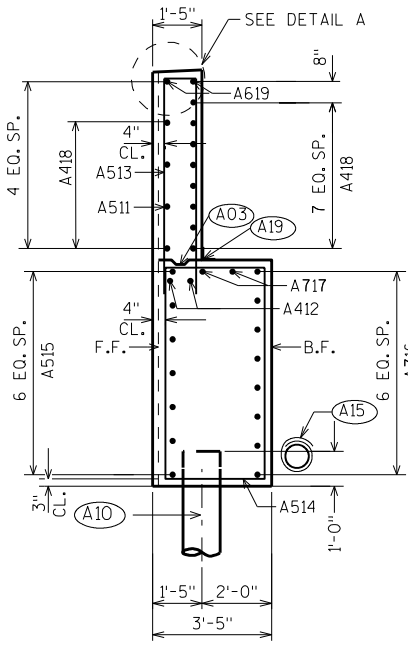
A508, A410, A511,
A513, A520, A522



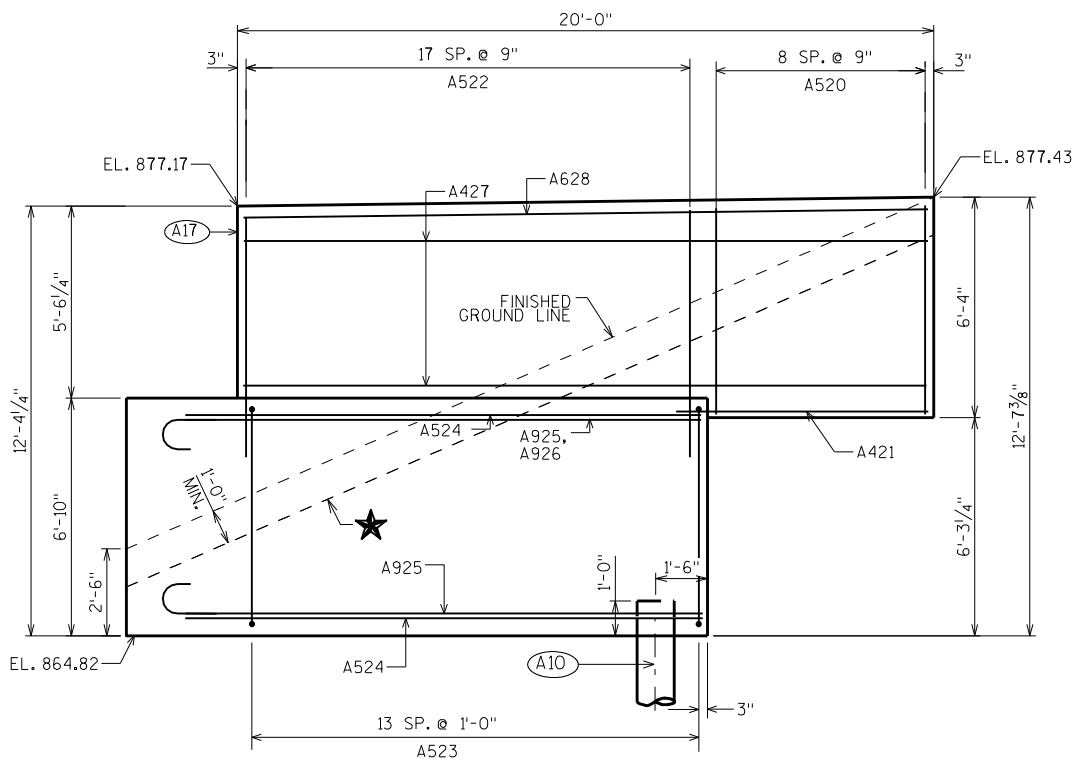
A803, A1004,
A925, A926



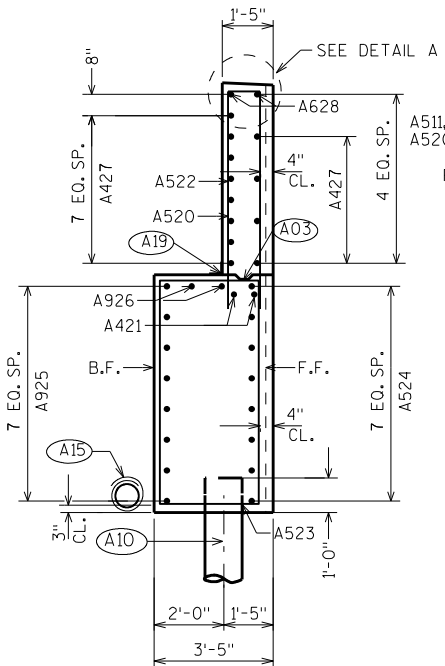
WING 1 ELEVATION



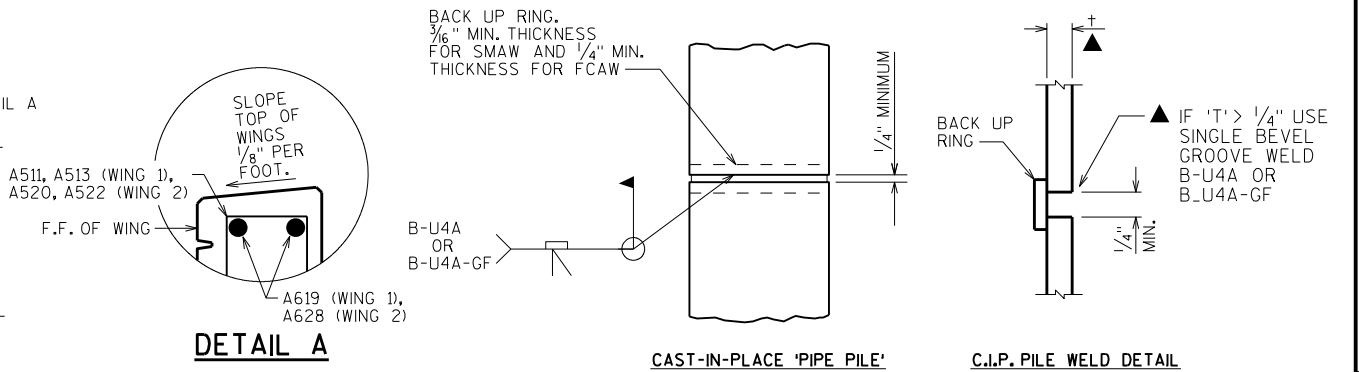
WING 1 SECTION



WING 2 ELEVATION



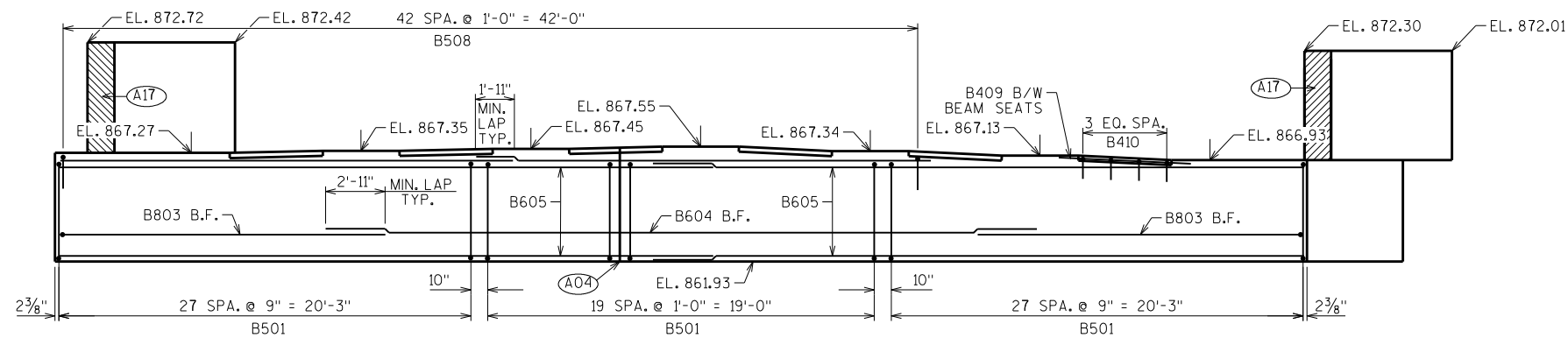
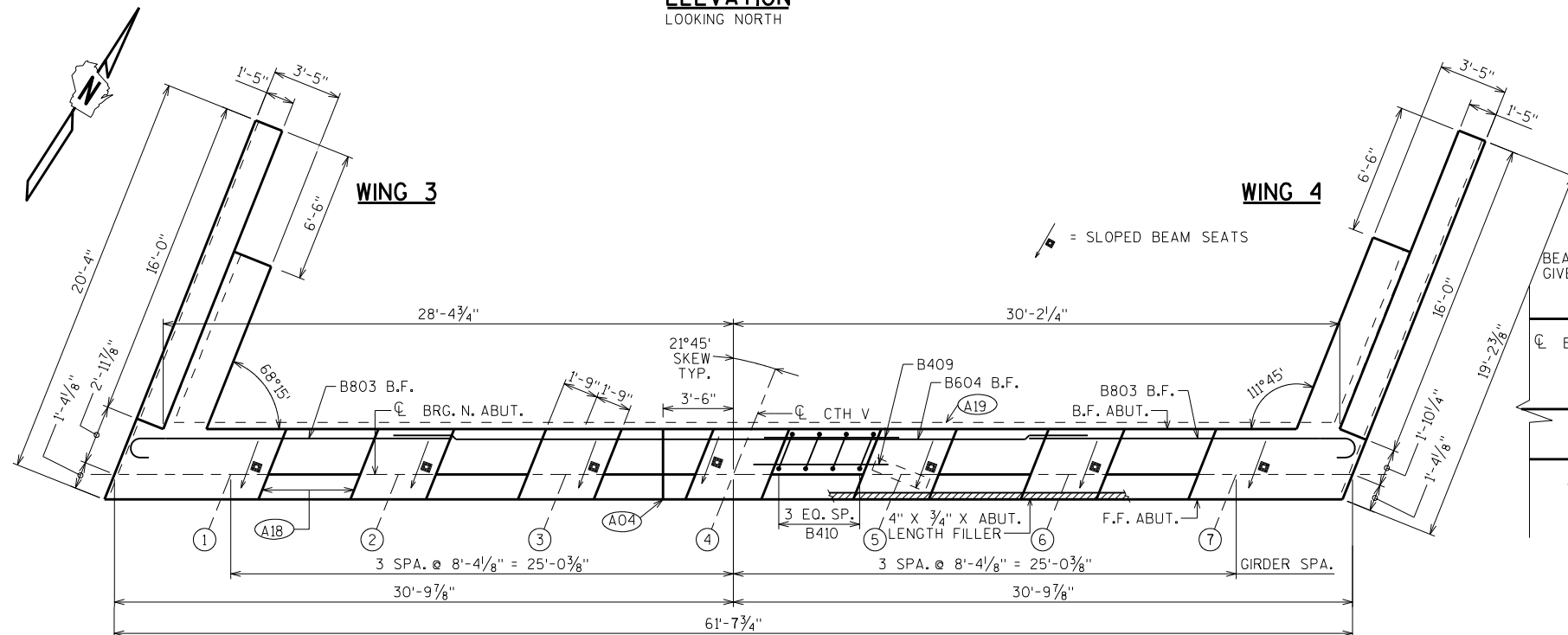
WING 2 SECTION



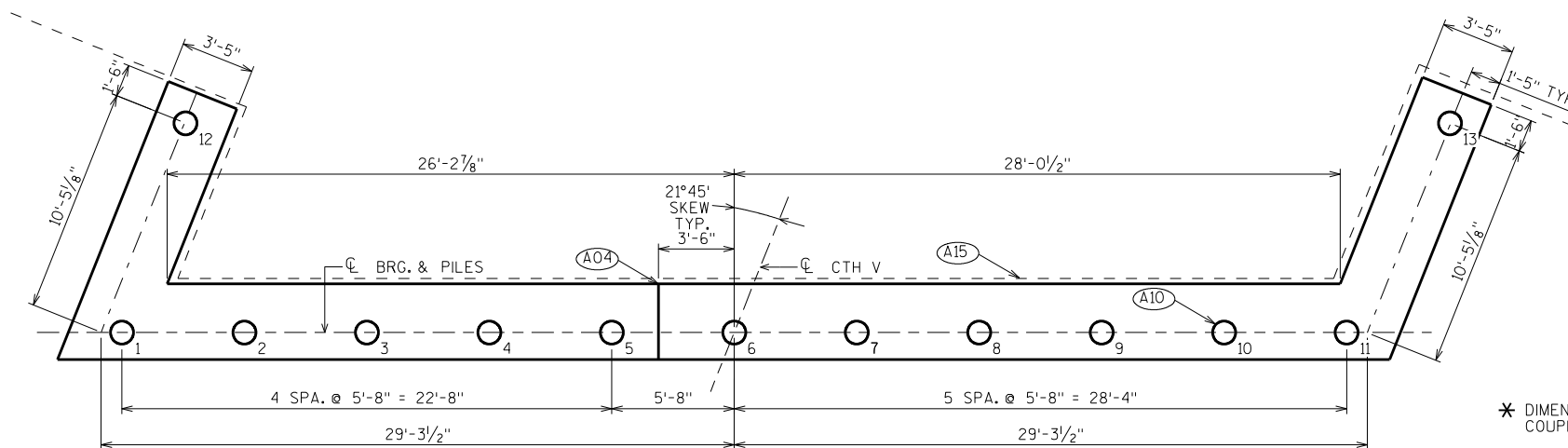
PILE DETAILS

- A03) OPTIONAL. CONST. JOINT: KEYWAY FORMED BY BEVELED 2 X 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- A10) SUPPORT ABUTMENT ON 12 3/4" X 0.375" CAST-IN-PLACE CONCRETE PILING, ESTIMATED 95 FT. LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.
- A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

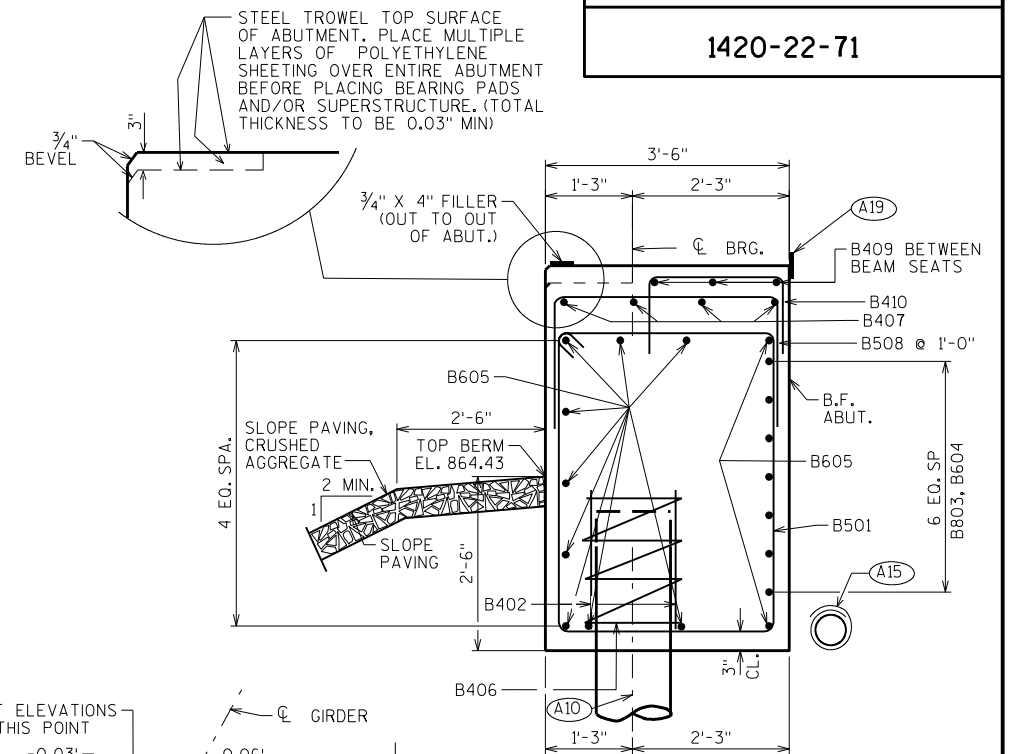
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
		DRAWN BY SAD	PLANS CK'D. EMK
SOUTH ABUTMENT DETAILS		SHEET 5	

ELEVATION
LOOKING NORTH

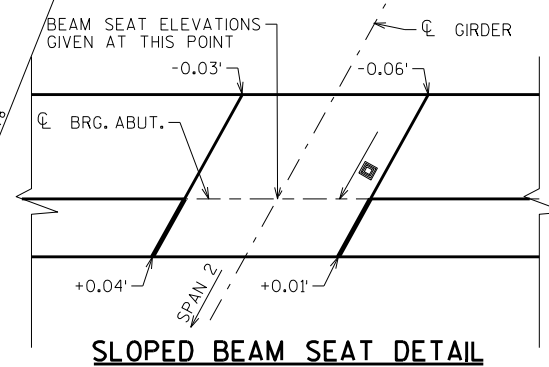
PLAN



PILE PLAN

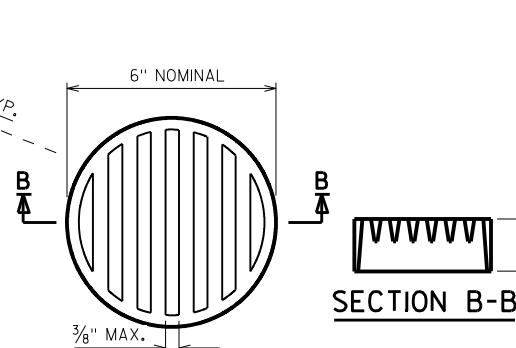


SECTION THRU BODY



SLOPED BEAM SEAT DETAIL

- (A04) VERT. CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 8, 3/4" "V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE. FOR OPTIONAL DETAILS SEE "ALTERNATE CONSTRUCTION JOINT" SHEET.
- (A10) SUPPORT ABUTMENT ON 12 3/4" x 0.375" CAST-IN-PLACE CONCRETE PILING, ESTIMATED 90'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.



SECTION B-B

RODENT SHIELD DETAIL

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

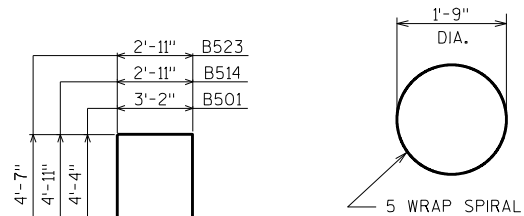
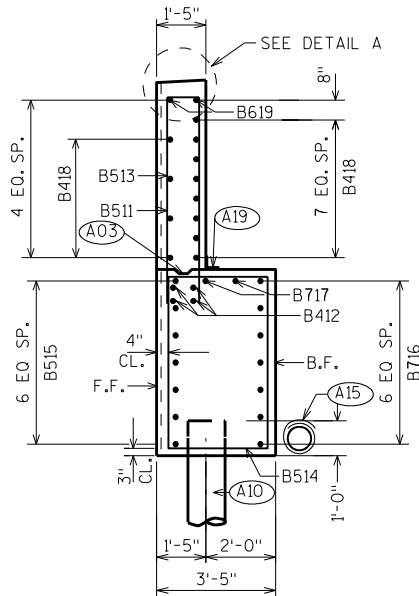
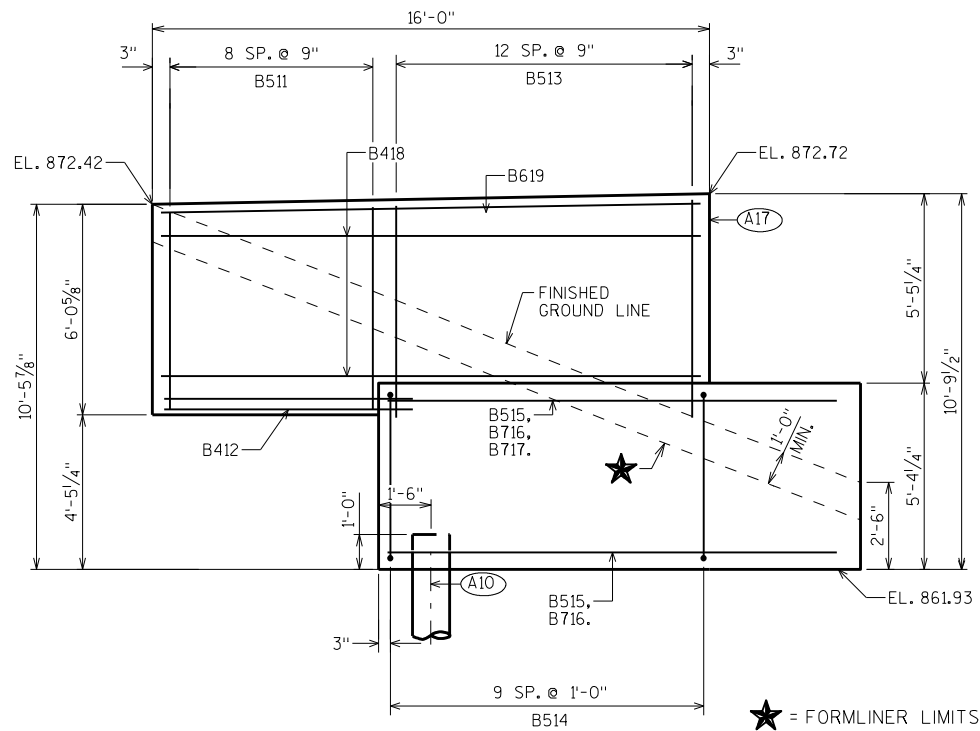
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
DRAWN BY SAD		PLANS CK'D. EMK	
NORTH ABUTMENT		SHEET 6	

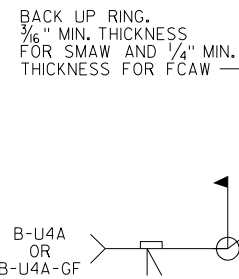
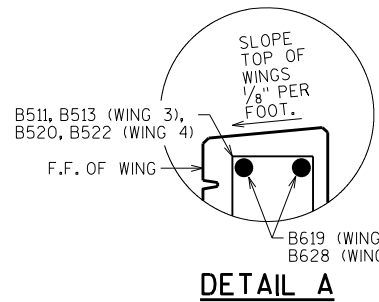
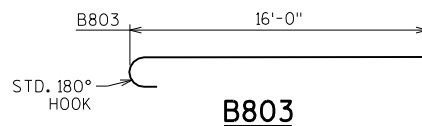
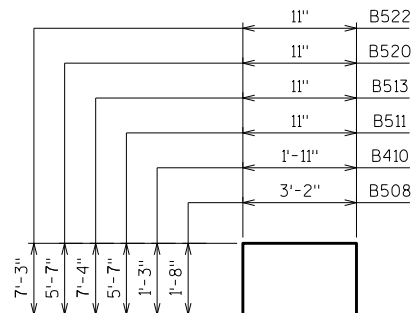
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
B501		76	15'-8"	X	BODY-STIRRUPS
B402		22	2'-3"		PILES- 2 PER PILE
B803		14	16'-11"	X	BODY-HORIZONTAL
B604		7	35'-2"		BODY-HORIZONTAL
B605		22	32'-2"		BODY-HORIZONTAL
B406		11	28'-0"	X	PILES-1 PER PILE
B407		8	22'-0"		BODY-HORZ. OVER GIRS. 1-5
B508		43	6'-3"	X	BODY-TOP OVER GIRS. 1-5
B409		12	6'-10"		BODY-BETWEEN BEAM SEATS
B410		24	4'-2"	X	BODY-HORZ. BETWEEN BEAM SEATS
B511	X	9	11'-10"	X	WING 3-VERTICAL
B412	X	4	7'-9"		WING 3-HORIZONTAL
B513	X	13	15'-4"	X	WING 3-VERTICAL
B514	X	10	16'-4"	X	WING 3-STIRRUP
B515	X	7	12'-9"		WING 3-HORIZONTAL
B716	X	7	11'-6"		WING 3-HORIZONTAL
B717	X	2	12'-2"		WING 3-HORIZONTAL
B418	X	12	15'-8"		WING 3-HORIZONTAL
B619	X	2	15'-8"		WING 3-HORIZONTAL
B520	X	9	11'-10"	X	WING 4-VERTICAL
B421	X	2	7'-9"		WING 4-HORIZONTAL
B522	X	13	15'-2"	X	WING 4-VERTICAL
B523	X	10	15'-8"	X	WING 4-STIRRUP
B524	X	6	11'-11"		WING 4-HORIZONTAL
B725	X	7	12'-10"		WING 4-HORIZONTAL
B726	X	2	12'-1"		WING 4-HORIZONTAL
B427	X	14	15'-8"		WING 4-HORIZONTAL
B628	X	2	15'-8"		WING 4-HORIZONTAL



B501, B514, B523

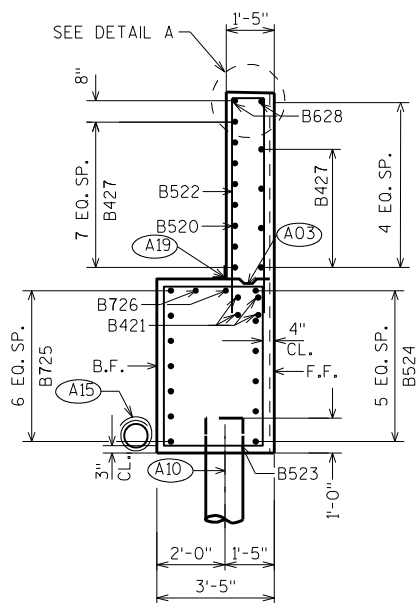
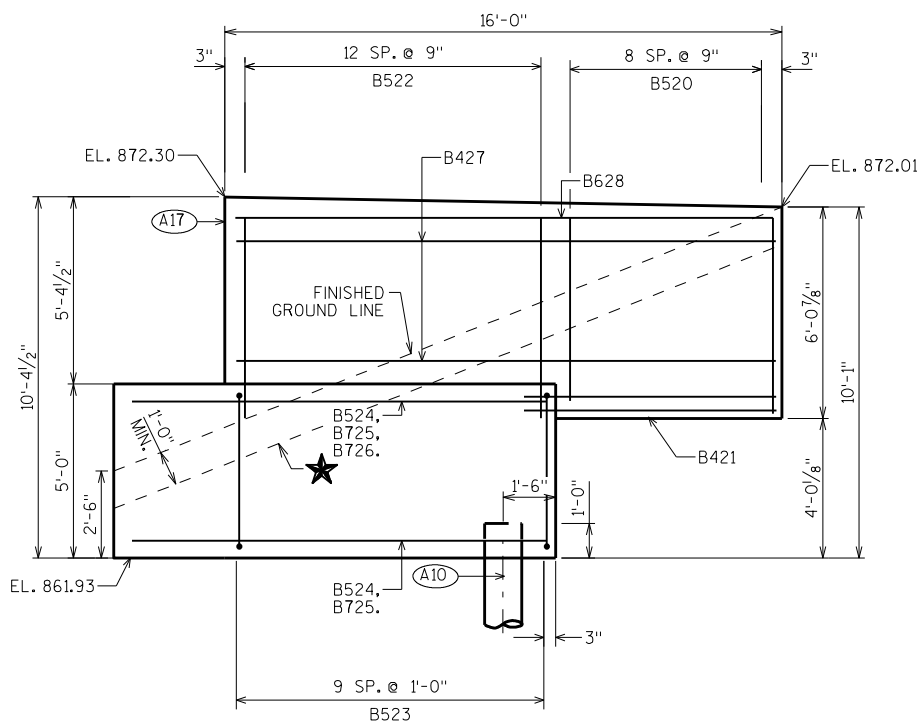


CAST-IN-PLACE 'PIPE PILE'

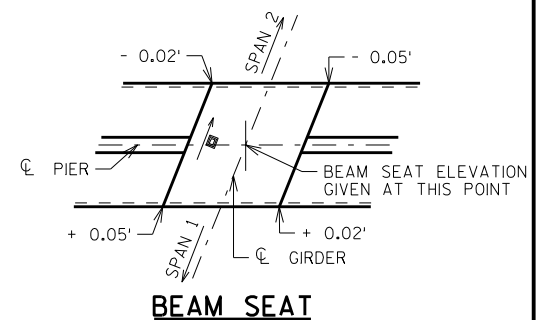
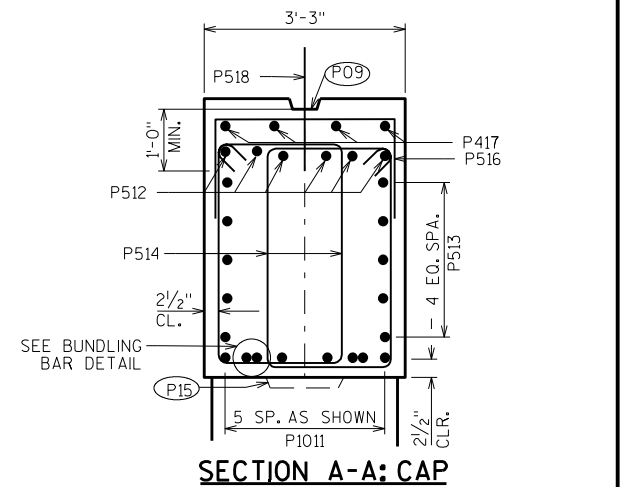
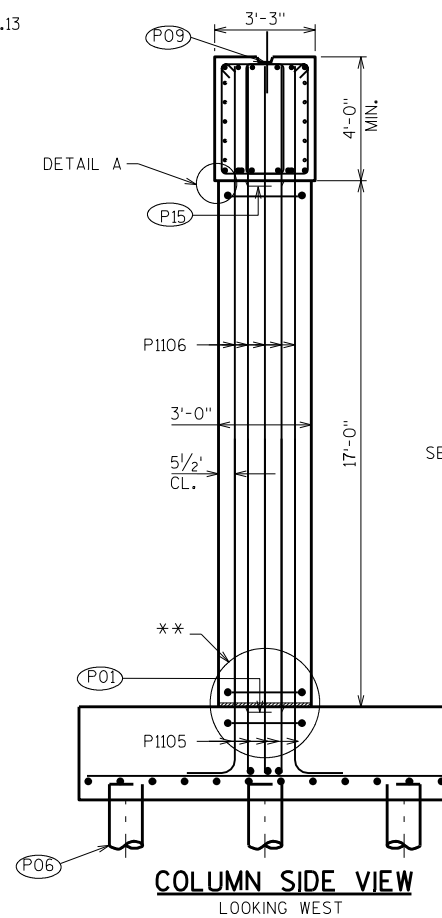
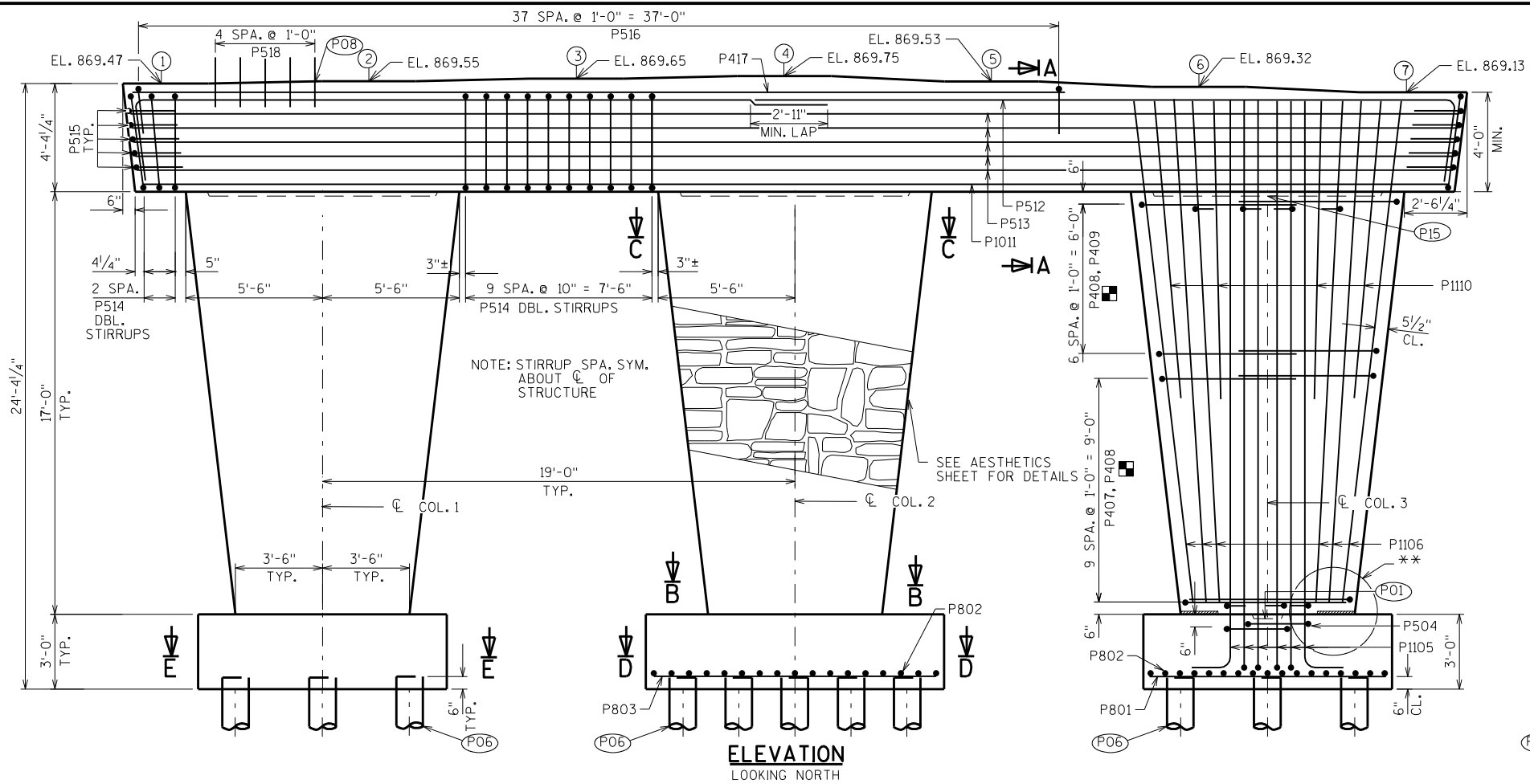
C.I.P. PILE WELD DETAIL

PILE DETAILS

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 X 6, (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A10) SUPPORT ABUTMENT ON 12 3/4" X 0.375" CAST-IN-PLACE CONCRETE PILING, ESTIMATED 90 FT. LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
DRAWN BY SAD		PLANS CK'D. EMK	
NORTH ABUTMENT DETAILS			SHEET 7



** SEE "PIER DETAILS" SHEET FOR COMPRESSIBLE FILLER DETAILS

NOTE: FOR SECTION VIEWS D AND E SEE "PIER DETAILS" SHEET.

■ P408 TIES 1'-0" VERTICAL SPACING 2'-0" MAX HORIZONTAL SPACING. SEE SECTION B-B AND SECTION C-C FOR DETAILS.

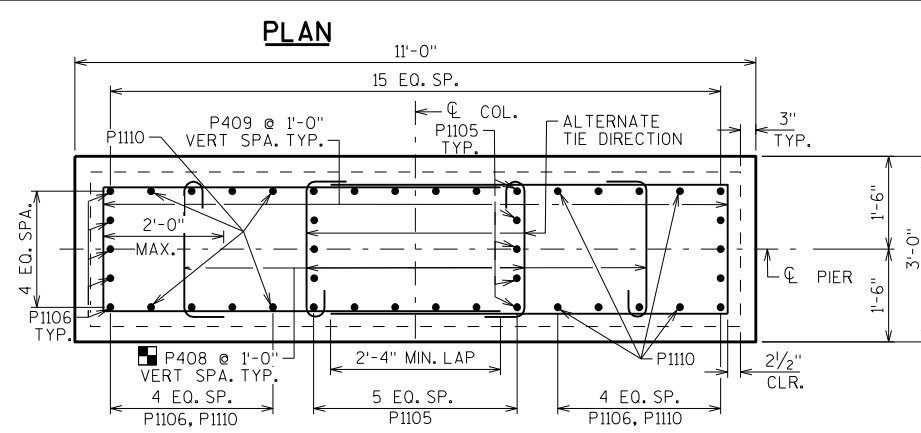
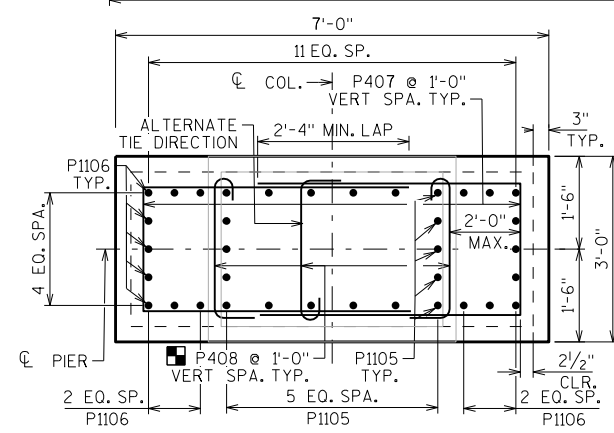
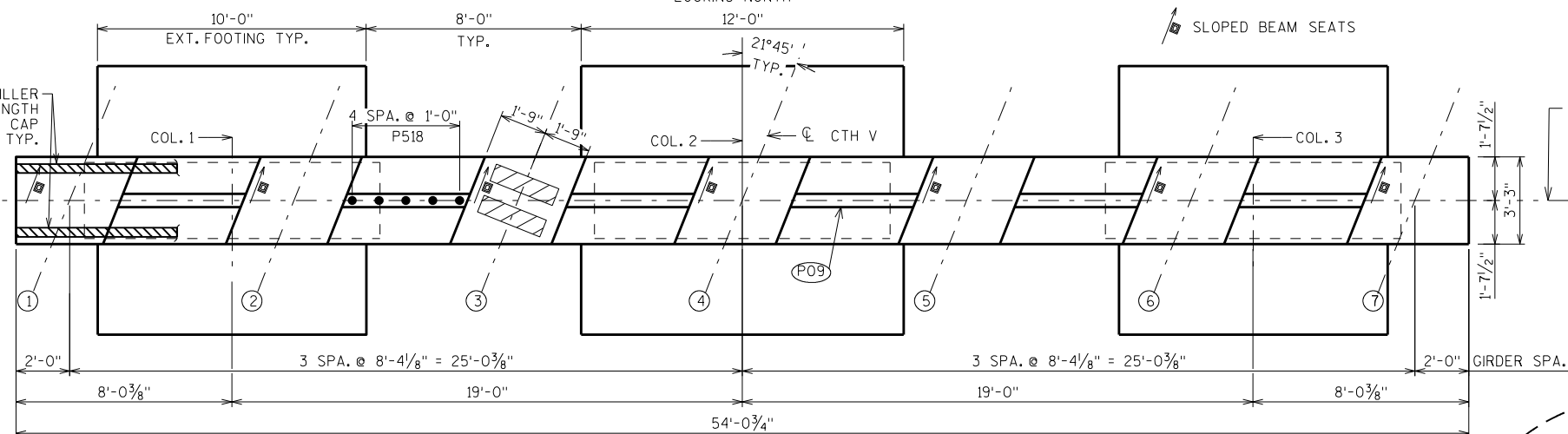
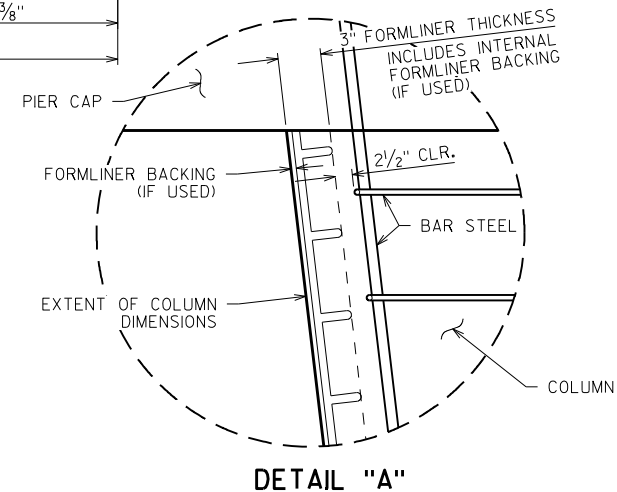
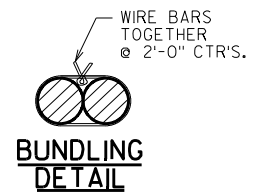
(P01) 3'-0" X 1'-0" X 4" CONST. JOINT SHALL BE FORMED BY A BEVELED KEYWAY

(P06) SUPPORT PIER ON 12 3/4" X 0.375 INCH CAST-IN-PLACE CONCRETE PILING, ESTIMATED 75'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.

(P08) P518 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

(P09) KEYED CONSTRUCTION JOINT-FORMED BY BEVELED 2 X 6 BETWEEN BEAM SEATS.

(P15) 7'-0" X 1'-1" X 4" DEEP CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
DRAWN BY SAD		PLANS CK'D. EMK	
PIER		SHEET 8	

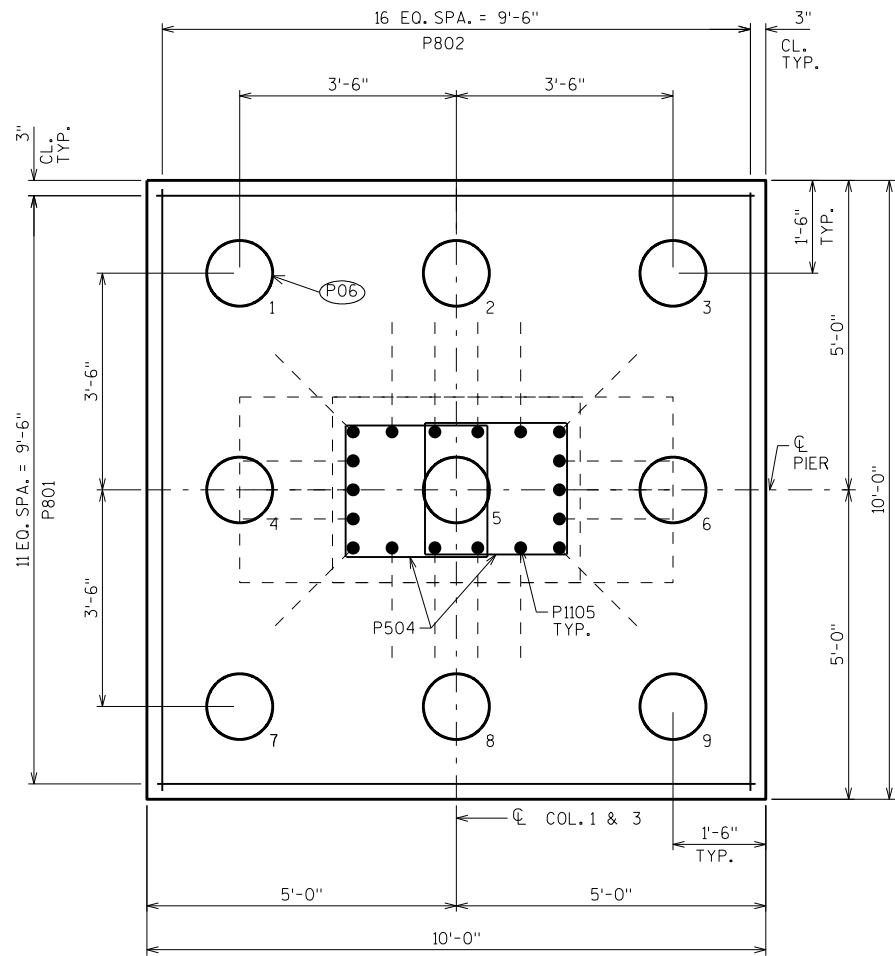
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE
BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P801		24	9'-6"			FOOTINGS - EXTERIOR
P802		51	9'-6"			FOOTINGS - INTERIOR & EXTERIOR
P803		14	11'-6"			FOOTING - INTERIOR
P504	X	6	9'-2"	X		COLUMN BASE STIRRUP
P1105	X	54	24'-6"	X		FOOTING DOWEL - COLUMN VERT.
P1106	X	54	20'-2"			COLUMN - VERT.
P407	X	60	12'-9"	X		COLUMN STIRRUP
P408	X	174	3'-4"	X		COLUMN - HORIZ. TIE
P409	X	42	14'-5"	X		COLUMN STIRRUP
P1110	X	24	12'-0"			COLUMN - VERT.
P1011	X	8	52'-6"			CAP - HORIZ. BOTTOM
P512	X	12	31'-0"	X		CAP - HORIZ. TOP
P513	X	10	53'-1"		▲	CAP - HORIZ. SIDE
P514	X	52	11'-10"	X		CAP STIRRUP
P515	X	10	5'-11"	X		CAP - HORIZ. END U-BAR
P516	X	37	6'-1"	X		CAP - VERT. U-BAR GIR. 1-5
P417	X	4	37'-6"			CAP - HORIZ. GIR. 1-5
P518	X	30	2'-0"			CAP - DOWEL BARS

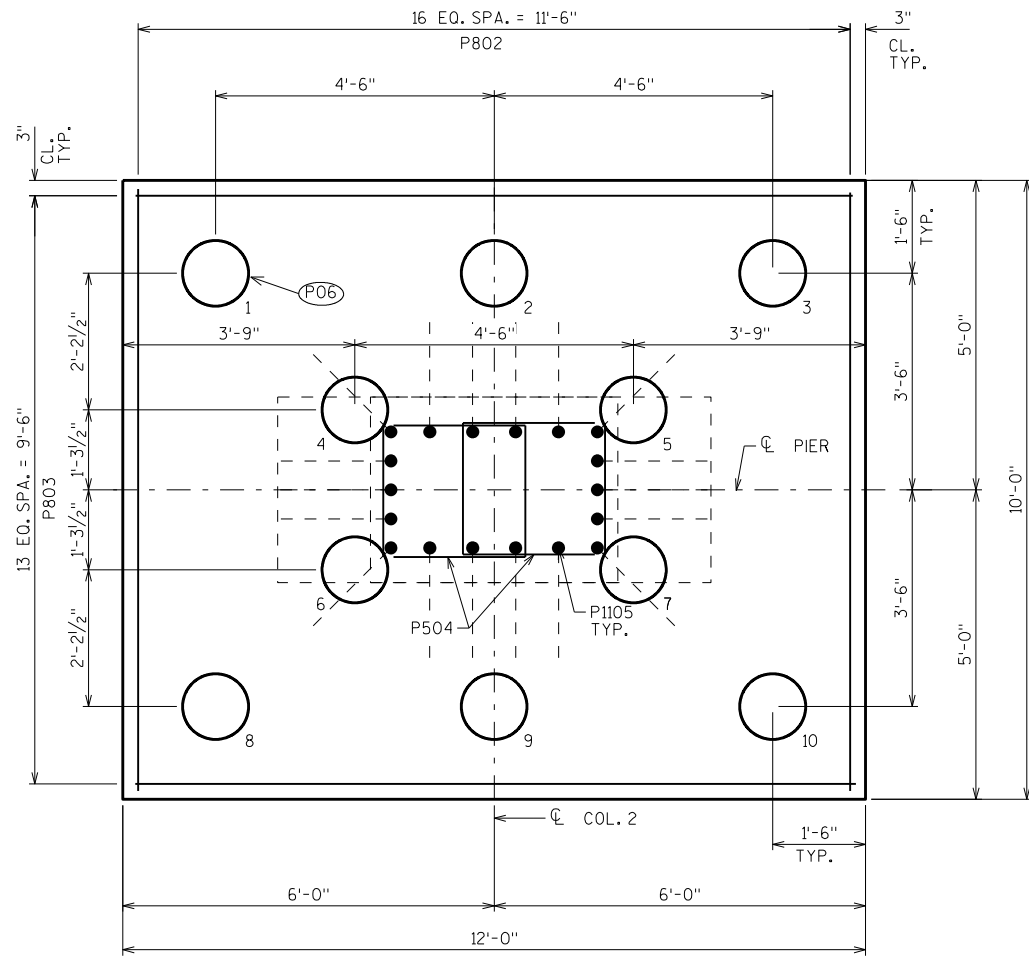
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

MARK	NO. REQD.	LENGTH
P513	2 SERIES OF 5	52'-10" TO 53'-4"

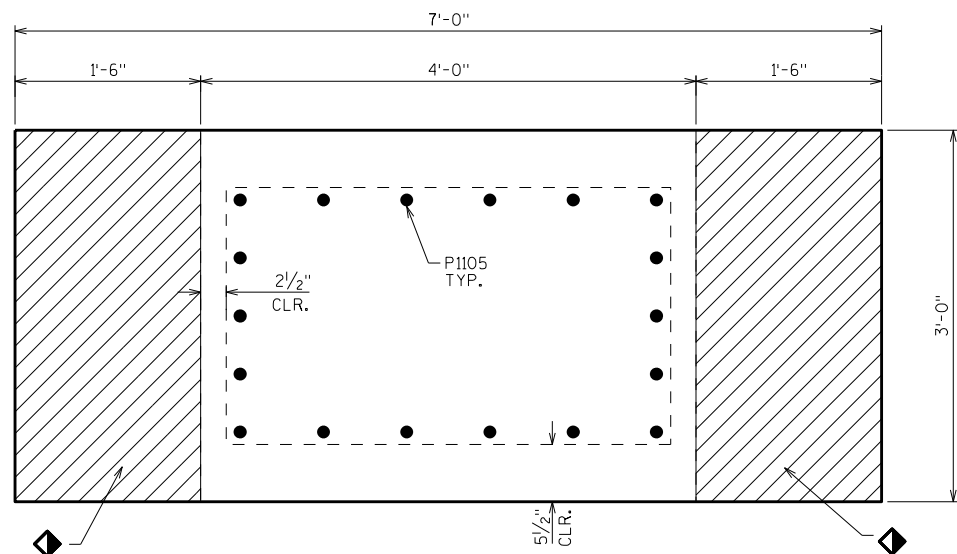
BUNDLE AND TAG EACH SERIES SEPARATELY.



SECTION E-E: EXTERIOR FOOTING

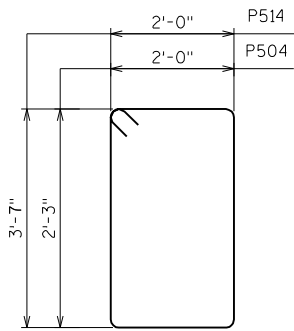


SECTION D-D: INTERIOR FOOTING

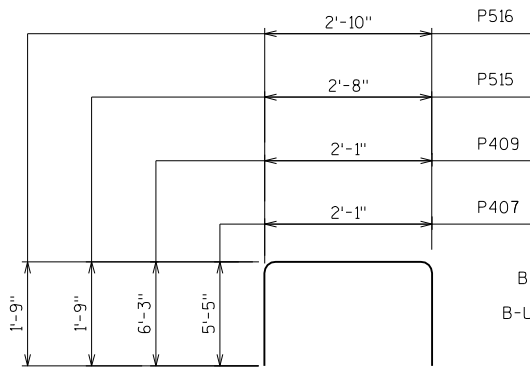


COMPRESSIBLE FILLER DETAIL
TOP OF FOOTING/BASE OF COLUMN

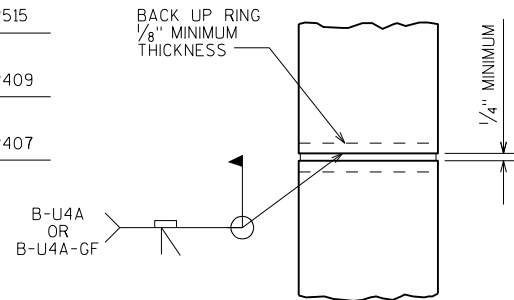
◆ 1½" X 1'-6" X 3'-0" COMPRESSIBLE FILLER
BETWEEN TOP OF FOOTING AND BASE OF COLUMN.



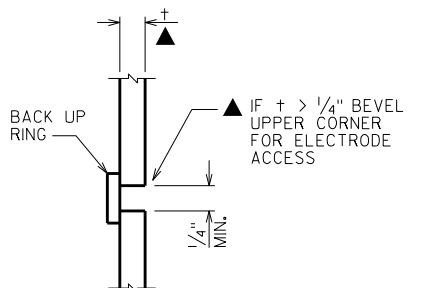
P504, P514



P407, P409, P515, P516



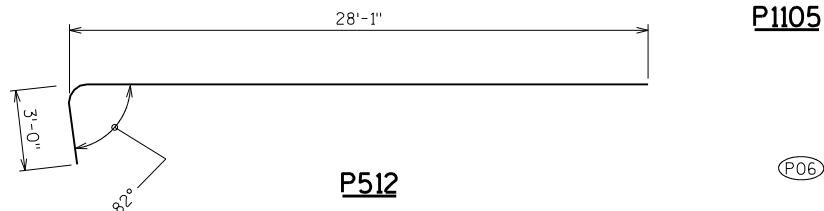
CAST-IN-PLACE 'PIPE PILE'



C.I.P. PILE WELD DETAIL

Technical drawing of a horizontal bar. The bar has a total length of 22'-10" and a height of 2'-0". The label **P1105** is positioned below the bar. To the right, a vertical dimension of 2'-1" is shown for a component of the bar's profile.

P408



P512

(P06)

SUPPORT PIER ON 12 3/4" X 0.375 INCH CAST-IN-PLACE CONCRETE PILING, ESTIMATED 75'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
DRAWN BY SAD		PLANS CK'D. EMK	
PIER DETAILS		SHEET 9	

NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 15" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH, AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 15" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

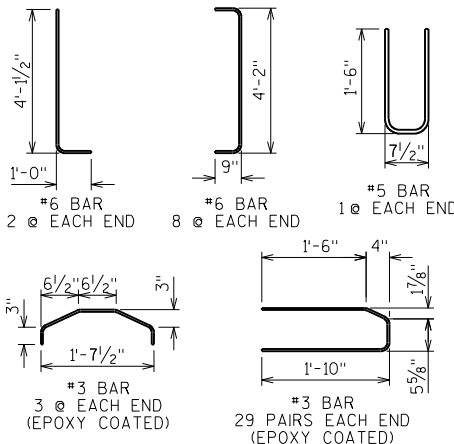
SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, ONE OPTION IS AVAILABLE:

USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

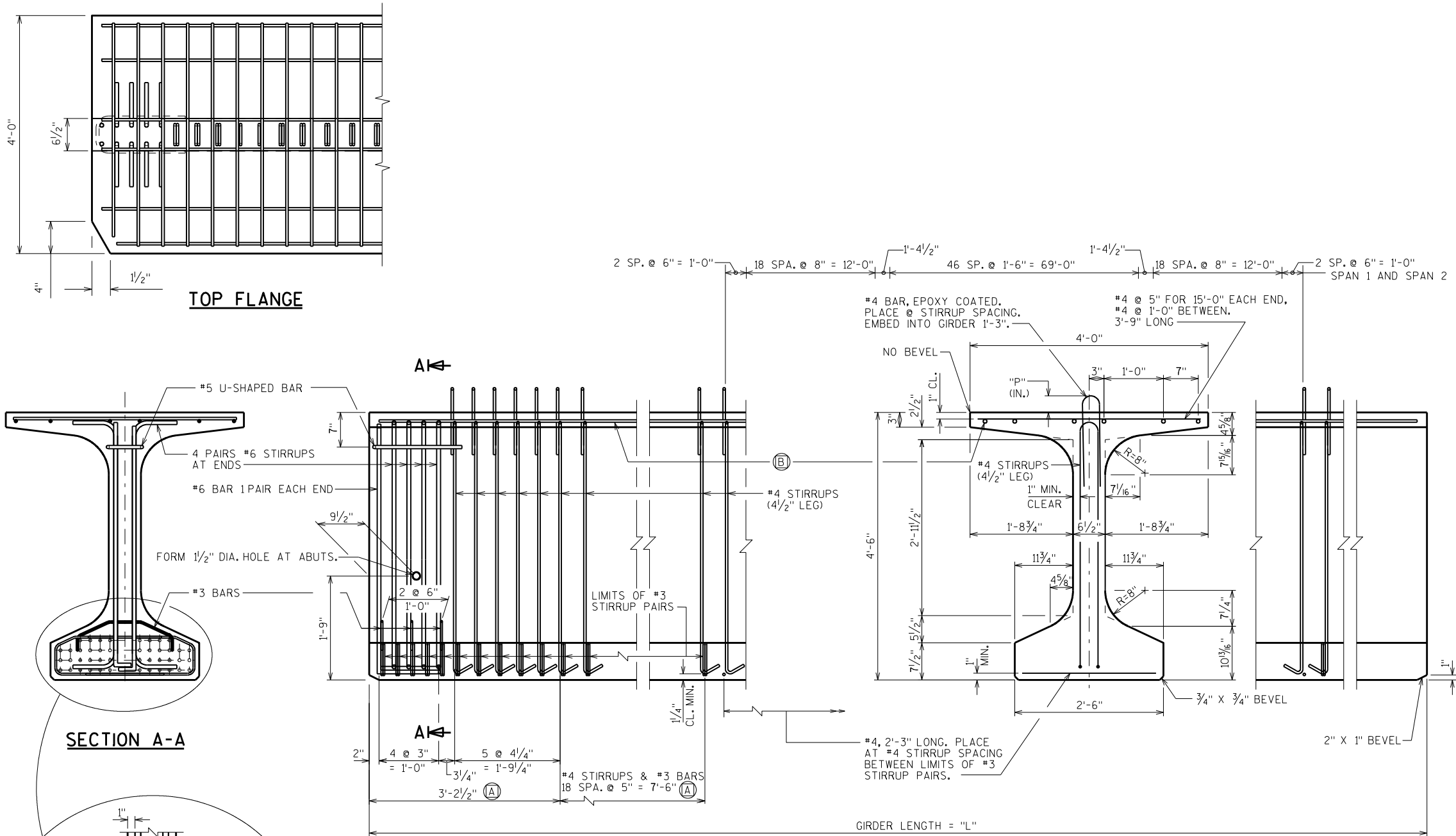
AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

PRESTRESSING STRANDS SHALL BE 0.6" DIA.-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE		B-20-226	
DRAWN BY SAD		PLANS CKD, EMK	
54W" PRESTRESSED GIRDER DETAILS 1		SHEET 10	

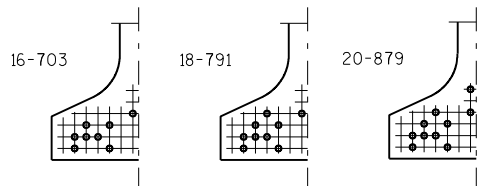


SIDE VIEW & TYP. SECTION IN SPAN

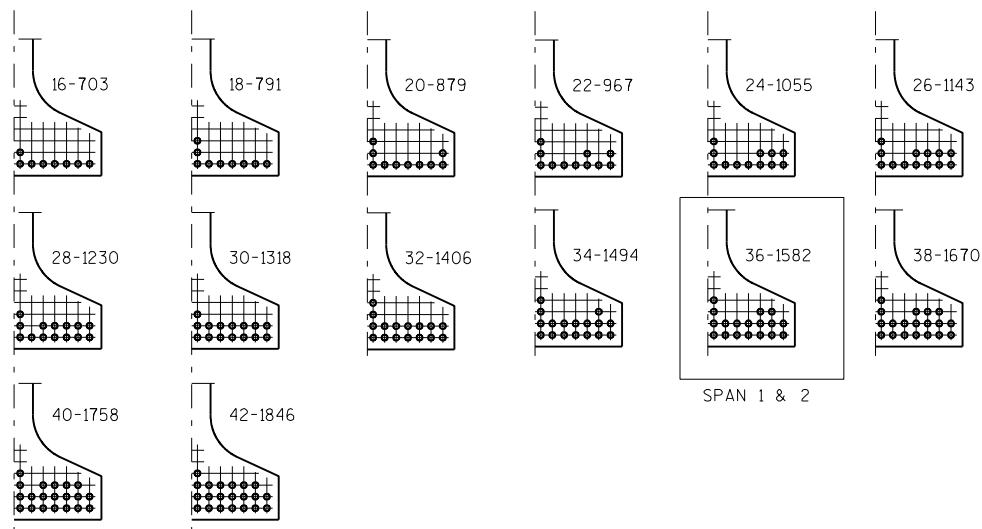
- (A) DETAIL TYP. AT EACH END
(B) (SPAN 1) 6 #4, FULL LENGTH 1'-11" MIN. LAP
(SPAN 2) 6 #4, FULL LENGTH 1'-11" MIN. LAP

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

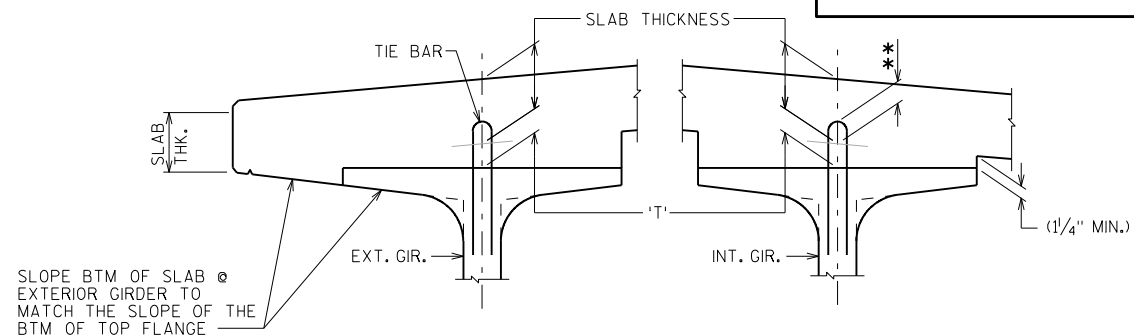
GIRDER DATA																										
SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)										CONC. STRGTH. f'c (p.s.i.)	"P" 1ST 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN							UNDRAPED PATTERN	
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	10/10						TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.)						
																				"A"	"B" MIN.	"B" MAX.	"C"			
1	ALL	119.38	0.7	1.3	1.8	2.1	2.2	2.1	1.8	1.3	0.7	8000	8"	7"	8"	0.6	36	6800	49.0	16.0	19.0	5.0				
2	ALL	119.38	0.7	1.3	1.8	2.1	2.2	2.1	1.8	1.3	0.7	8000	8"	7"	8"	0.6	36	6800	49.0	16.0	19.0	5.0				



STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6" ϕ STRANDS

ARRANGEMENT AT $\frac{1}{4}$ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6" ϕ STRANDS

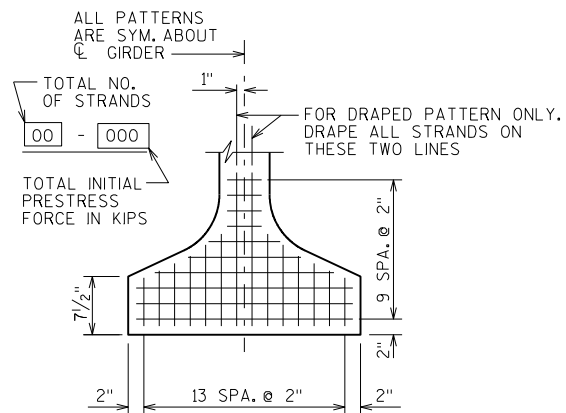
SLAB HAUNCH DETAIL

IF $\frac{1}{4}$ " MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN $\frac{1}{2}$ " OR, ** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

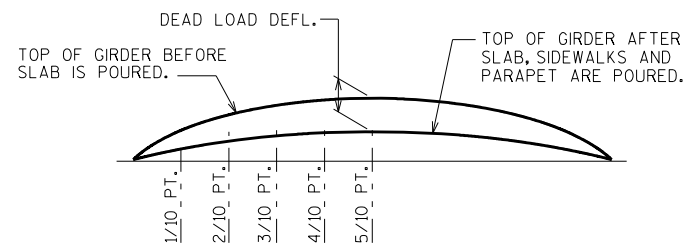
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT $\frac{1}{4}$ OF SUBSTRUCTURE UNITS & AT $\frac{1}{10}$ POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
 - TOP OF GIRDER ELEVATION
 + DEAD LOAD DEFLECTION
 - SLAB THICKNESS
 = HAUNCH HEIGHT 'T'

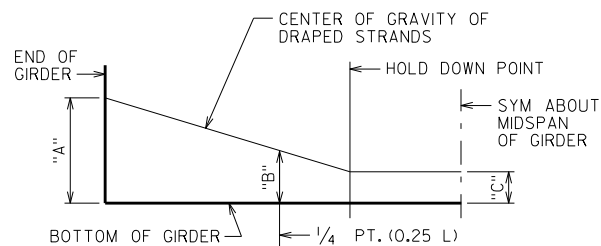
NOTE: AN AVERAGE HAUNCH ('T') OF 3.16" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



TYP. STRAND PATTERN



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

*THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	3.54
2	3.54

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T'.
 USE ACTUAL GIRDER SHOTS.
 THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
DRAWN BY SAD		PLANS CK'D. EMK	
54W" PRESTRESSED GIRDER DETAILS 2			SHEET 11

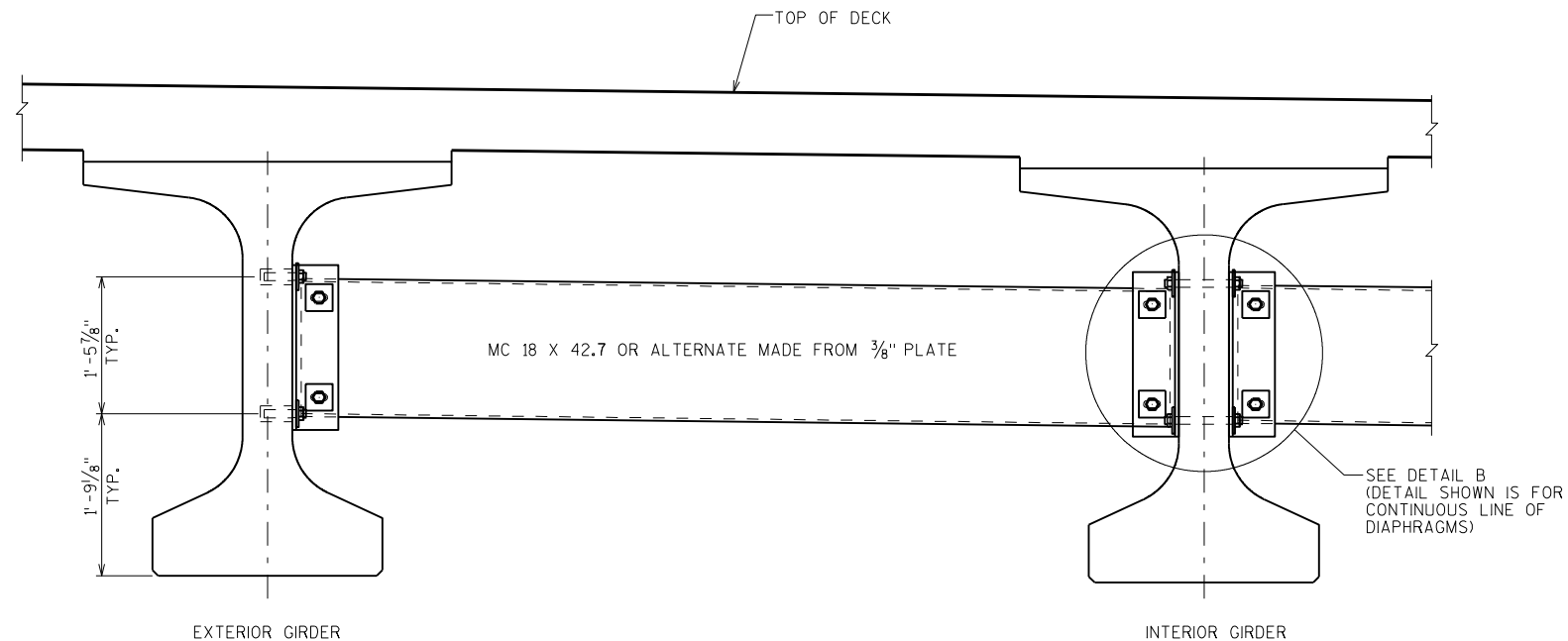
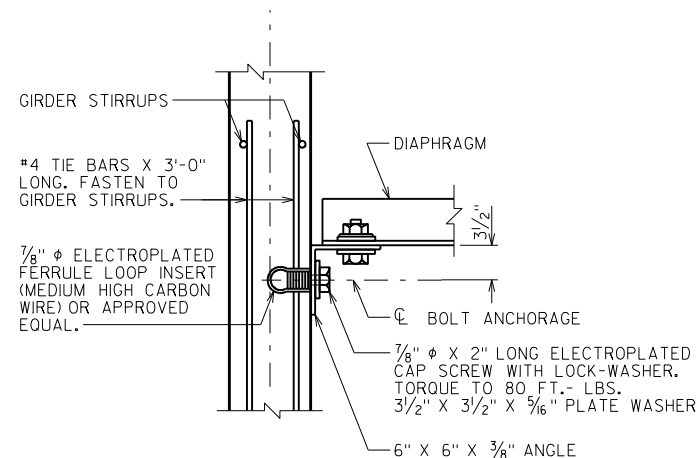
NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-20-226", EACH.

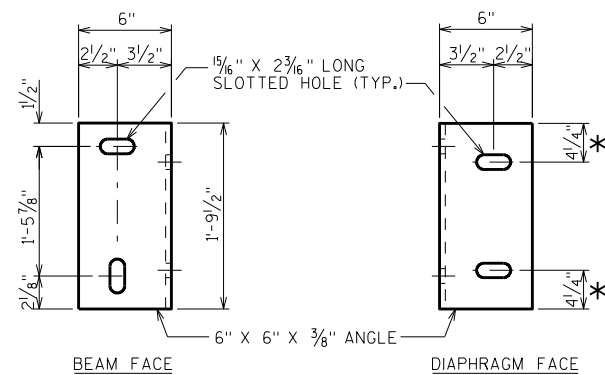
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

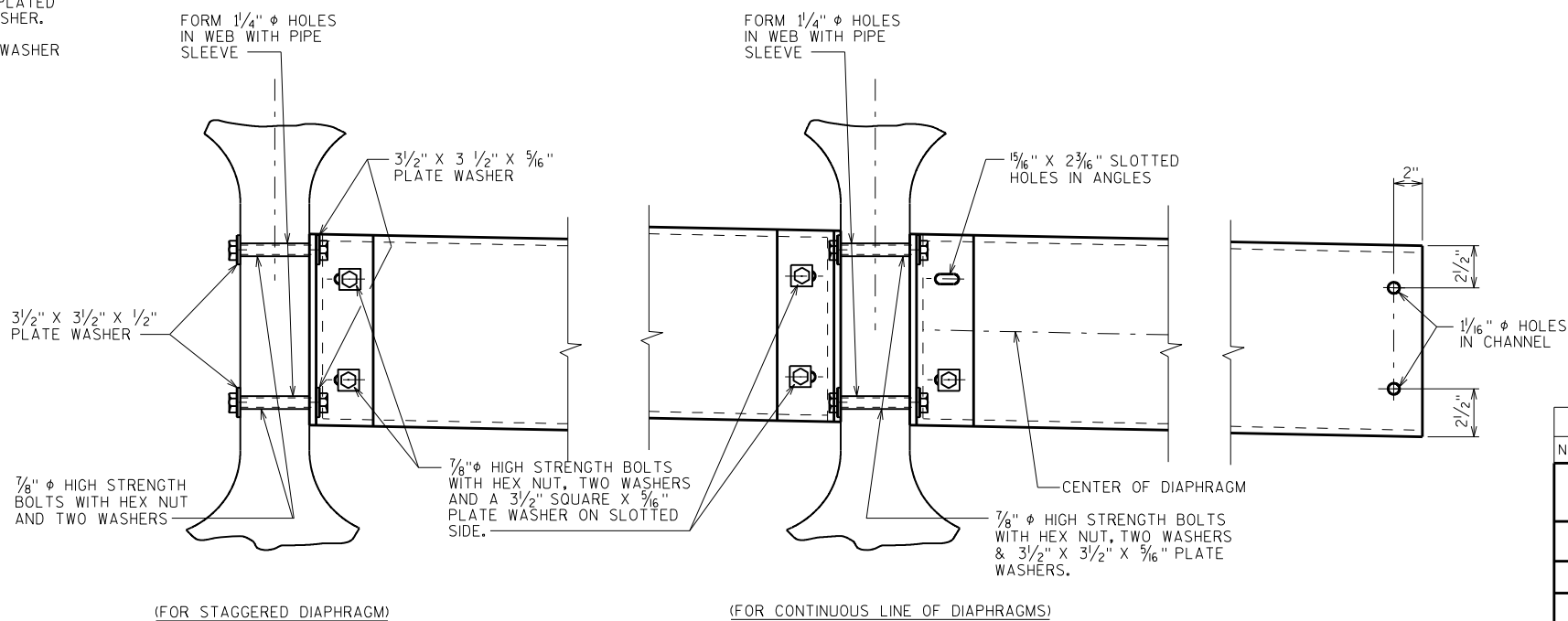
ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S10F OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

**PART TRANSVERSE SECTION AT DIAPHRAGM****SECTION A-A**

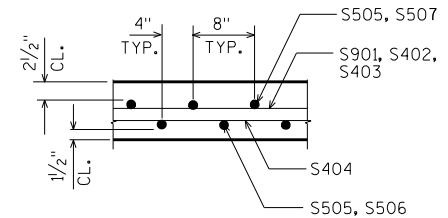
(FOR EXTERIOR ATTACHMENT)

**DIAPHRAGM SUPPORT**

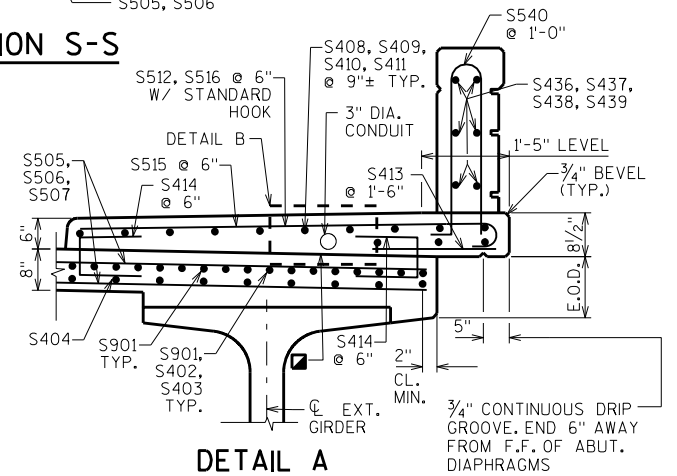
* 2 1/2" FOR ALTERNATE PLATE DIAPHRAGM

**SECTION THRU
ALTERNATE DIAPHRAGM****DETAIL B**

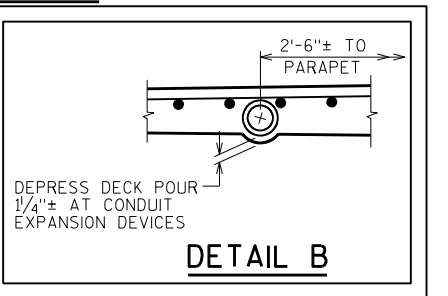
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
DRAWN BY SAD		PLANS CK'D. EMK	
STEEL DIAPHRAGM			SHEET 12



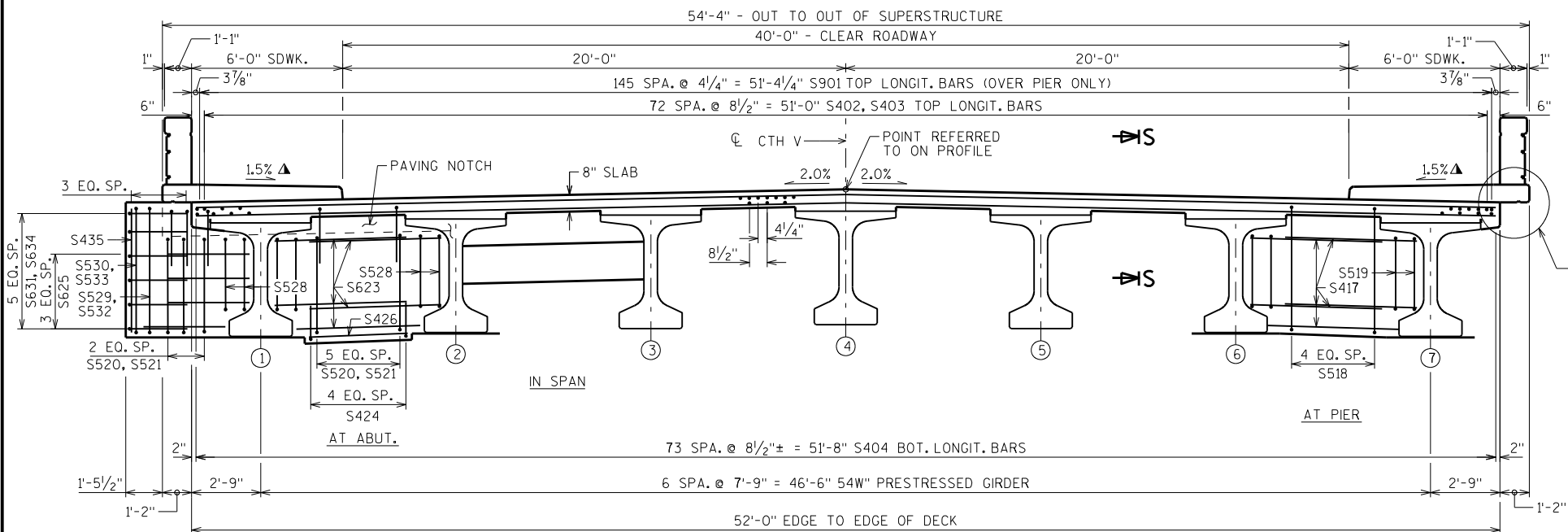
SECTION S-S



DETAIL A

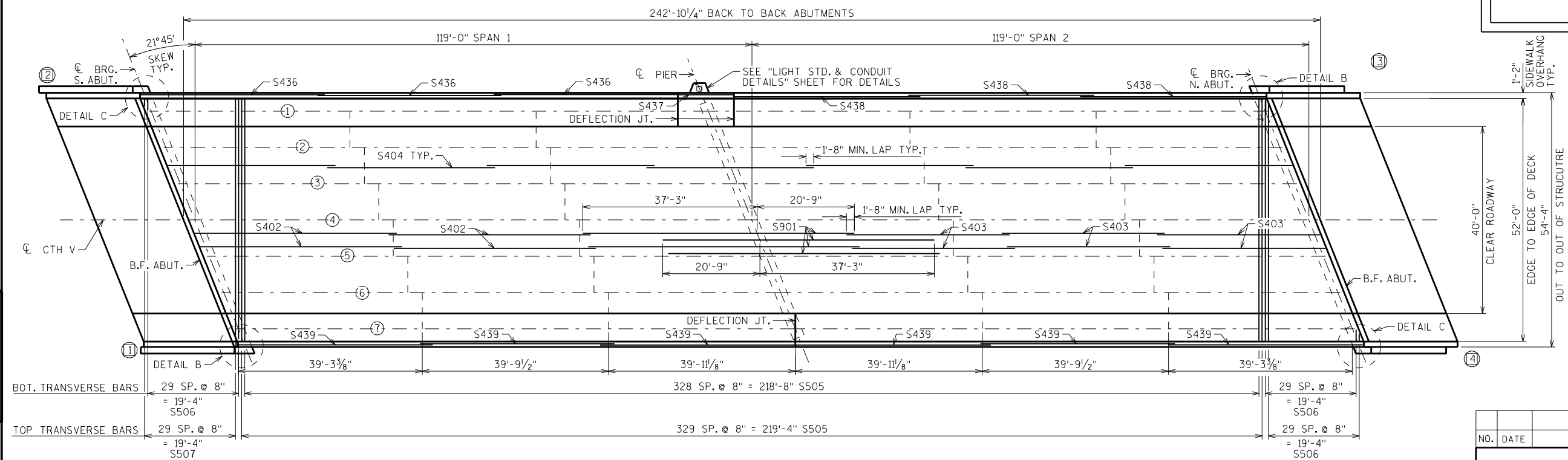


DETAIL B



CROSS SECTION THRU ROADWAY

(LOOKING NORTH)



PLAN

▲ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

NOTE: FOR DETAILS B AND C, SIDEWALK BARS AND RAIL POST SPACING, SEE "SUPERSTRUCTURE DETAILS 1" SHEET.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
DRAWN BY SAD		PLANS CKD. EMK	
SUPERSTRUCTURE		SHEET 13	



	S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	N. ABUT.
EOD	877.11	876.91	876.69	876.47	876.25	876.03	875.81	875.59	875.37	875.15	874.93	874.71	874.49	874.27	874.05	873.83	873.61	873.39	873.17	872.94	872.72
GIR. 1	877.15	876.94	876.73	876.51	876.29	876.07	875.85	875.62	875.40	875.18	874.96	874.74	874.52	874.30	874.08	873.86	873.64	873.42	873.20	872.98	872.76
GIR. 2	877.26	877.05	876.83	876.61	876.39	876.17	875.95	875.73	875.51	875.29	875.07	874.84	874.62	874.40	874.18	873.96	873.74	873.52	873.30	873.08	872.86
GIR. 3	877.36	877.15	876.93	876.71	876.49	876.27	876.05	875.83	875.61	875.39	875.17	874.95	874.73	874.51	874.29	874.07	873.85	873.62	873.40	873.18	872.96
C/GIR. 4	877.47	877.25	877.03	876.81	876.59	876.37	876.15	875.93	875.71	875.49	875.27	875.05	874.83	874.61	874.39	874.17	873.95	873.73	873.51	873.29	873.07
GIR. 5	877.25	877.03	876.81	876.59	876.37	876.15	875.93	875.71	875.49	875.27	875.05	874.83	874.61	874.39	874.17	873.95	873.73	873.51	873.29	873.07	872.85
GIR. 6	877.03	876.81	876.59	876.37	876.15	875.93	875.71	875.49	875.27	875.05	874.83	874.61	874.39	874.17	873.95	873.73	873.51	873.29	873.07	872.85	872.63
GIR. 7	876.81	876.59	876.37	876.15	875.93	875.71	875.49	875.27	875.05	874.83	874.61	874.39	874.17	873.95	873.73	873.51	873.29	873.07	872.85	872.63	872.41
EOD	876.73	876.51	876.29	876.07	875.85	875.63	875.41	875.19	874.97	874.75	874.53	874.31	874.09	873.87	873.65	873.43	873.21	872.99	872.77	872.55	872.33



NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION					
STRUCTURE		B-20-226			
			DRAWN BY SAD	PLANS C'K'D.	EMK
SUPERSTRUCTURE DETAILS 1				SHEET 14	

BILL OF BARS

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR MARK	CO.	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S901	X	146	58'-0"			LONGITUDINAL CONTINUITY
S402	X	146	43'-2"			LONGITUDINAL TOP
S403	X	219	34'-10"			LONGITUDINAL TOP
S404	X	518	35'-10"			LONGITUDINAL BOT.
S505	X	659	51'-8"			TRANSVERSE TOP AND BOTTOM
▲ S506	X	60	27'-1"		▲	TRANSVERSE BOTTOM
▲ S507	X	60	26'-3"		▲	TRANSVERSE TOP
S408	X	39	38'-11"			LONGITUDINAL SIDEWALK
S409	X	13	12'-8"			LONGITUDINAL SIDEWALK
S410	X	39	39'-9"			LONGITUDINAL SIDEWALK
S411	X	78	41'-7"			LONGITUDINAL SIDEWALK
S512	X	952	7'-3"	X		TRANSVERSE SIDEWALK TOP
S413	X	320	2'-0"			TRANSVERSE SIDEWALK BOTTOM
S414	X	1922	2'-8"	X		SIDEWALK U-BAR
▲ S515	X	8	3'-5"		▲	TRANSVERSE SIDEWALK TOP
▲ S516	X	8	4'-8"	X	▲	TRANSVERSE SIDEWALK TOP
S417	X	84	5'-3"			PIER DIAPHRAGM HORIZ.
S518	X	30	13'-0"	X		PIER DIAPHRAGM STIRRUP
S519	X	24	11'-0"	X		PIER DIAPHRAGM STIRRUP
S520	X	84	6'-5"	X		ABUT. DIAPHRAGM DECK U-BAR
S521	X	84	14'-8"	X		ABUT. DIAPHRAGM STIRRUP
S622	X	28	31'-9"			ABUT. DIAPHRAGM HORIZ. B.F.
S623	X	108	5'-3"			ABUT. DIAPHRAGM HORIZ. F.F.
S424	X	60	3'-5"	X		ABUT. DIAPHRAGM U-BAR B/W SEATS
S625	X	20	3'-10"			ABUT. DIAPHRAGM HORIZ. END
S426	X	24	4'-2"			ABUT. DIAPHRAGM HORIZ. B/W SEATS
S527	X	28	6'-0"			ABUT. DIAPHRAGM HORIZ. THRU GIRDERS
S528	X	56	13'-0"	X		ABUT. DIAPHRAGM STIRRUP
S529	X	2	17'-8"	X		ABUT. DIAPHRAGM STIRRUP WING 1 & 3
S530	X	2	18'-2"	X		ABUT. DIAPHRAGM STIRRUP WING 1 & 3
S631	X	12	8'-0"	X		ABUT. DIAPHRAGM HORIZ. WING 1 & 3
S532	X	2	16'-10"	X		ABUT. DIAPHRAGM STIRRUP WING 2 & 4
S533	X	2	16'-4"	X		ABUT. DIAPHRAGM STIRRUP WING 2 & 4
S634	X	12	6'-11"	X		ABUT. DIAPHRAGM HORIZ. WING 2 & 4
S435	X	8	5'-0"			ABUT. DIAPHRAGM VERT. END
S436	X	18	38'-11"			PARAPET HORIZ.
S437	X	6	12'-8"			PARAPET HORIZ.
S438	X	18	39'-9"			PARAPET HORIZ.
S439	X	36	41'-7"			PARAPET HORIZ.
S540	X	482	6'-8"	X		PARAPET VERT.
S641	X	12	4'-9"			LIGHT STD. TRANSVERSE BOT.
S542	X	12	7'-3"	X		LIGHT STD. TRANSVERSE TOP
S543	X	4	7'-8"	X		LIGHT STD. VERT.
S644	X	6	10'-4"	X		LIGHT STD. HORIZ.
S545	X	4	6'-5"	X		LIGHT STD. VERT.
S546	X	2	3'-2"	X		LIGHT STD. VERT.
S547	X	2	3'-4"	X		LIGHT STD. VERT.
S548	X	12	3'-11"	X		PARAPET VERT. - AT ABUT. JUNCTION BOX
S549	X	12	2'-4"			PARAPET VERT. - AT ABUT. JUNCTION BOX

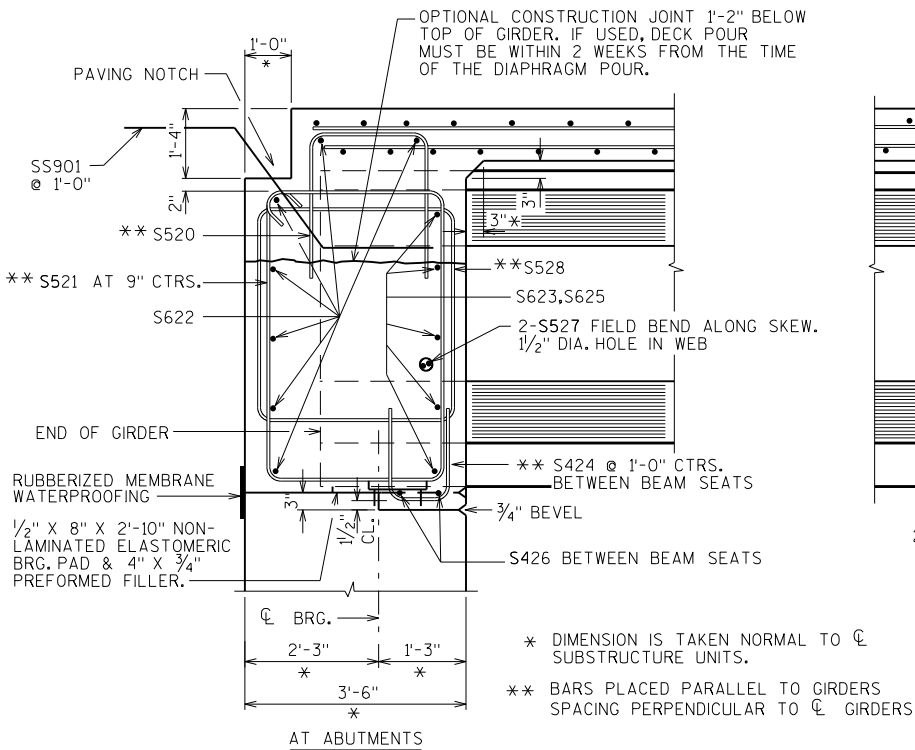
SS901	110	5'-0"	X		CONC. ABUT. DIA. TO APPROACH SLAB
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BAR SERIES TABLE

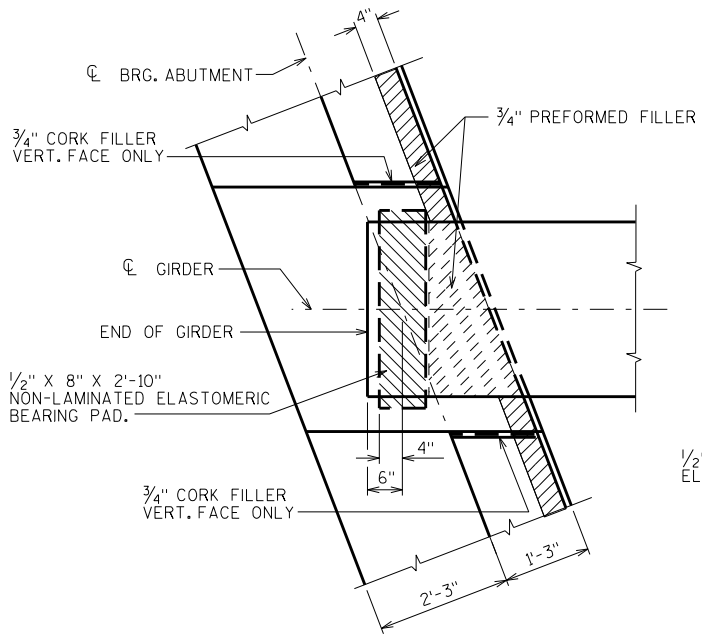
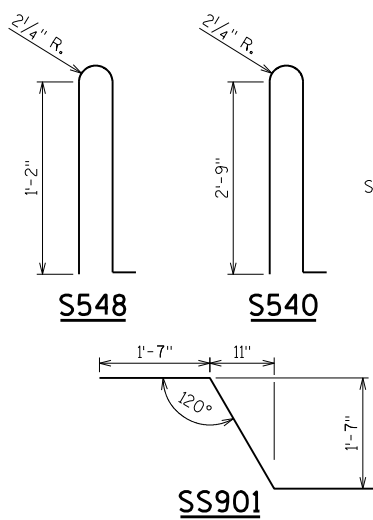
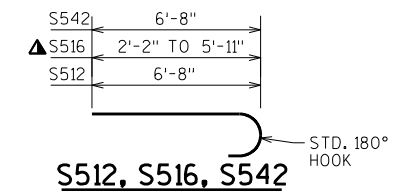
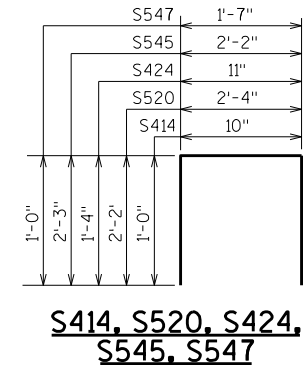
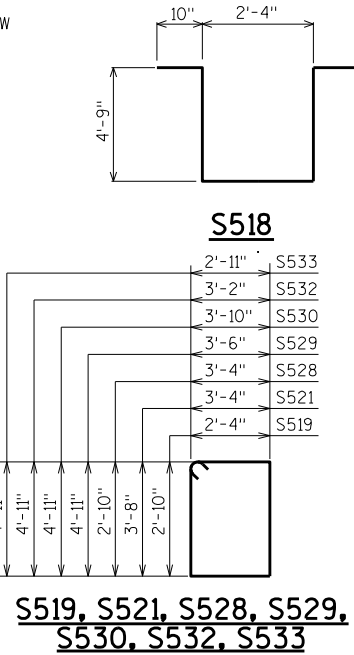
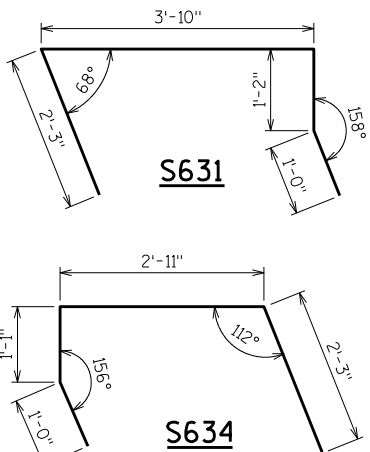
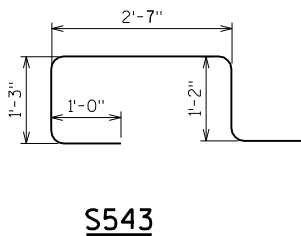
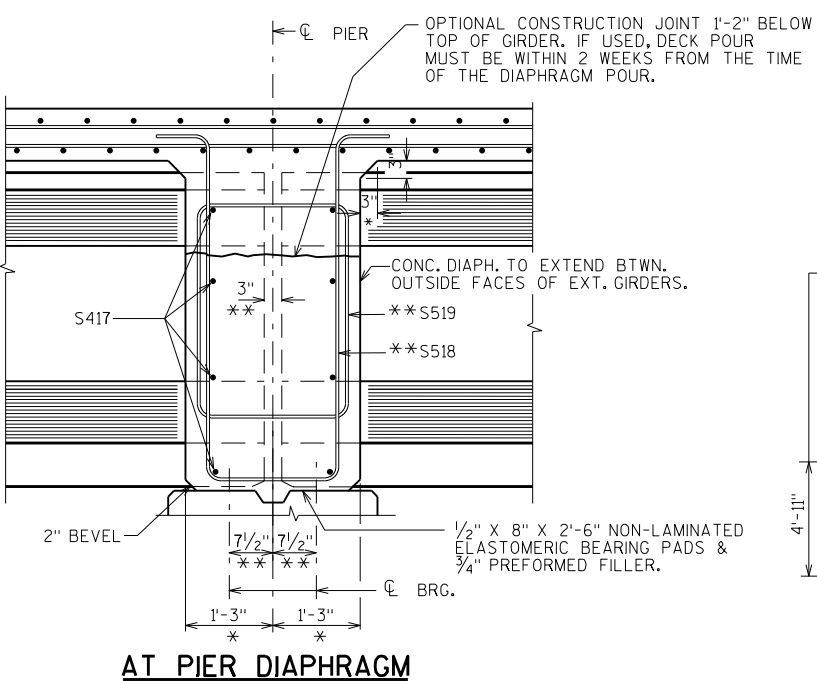
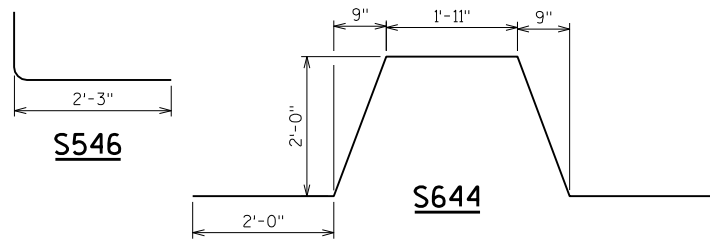
▲ BUNDLE AND TAG EACH SERIES SEPARATELY

MARK	NO. REQ'D.	LENGTH
S506	2 SERIES OF 30	2'-10" TO 51'-3"
S507	2 SERIES OF 30	2'-0" TO 50'-5"
S515	2 SERIES OF 4	1'-6" TO 5'-3"
S516	2 SERIES OF 4	2'-9" TO 6'-6"

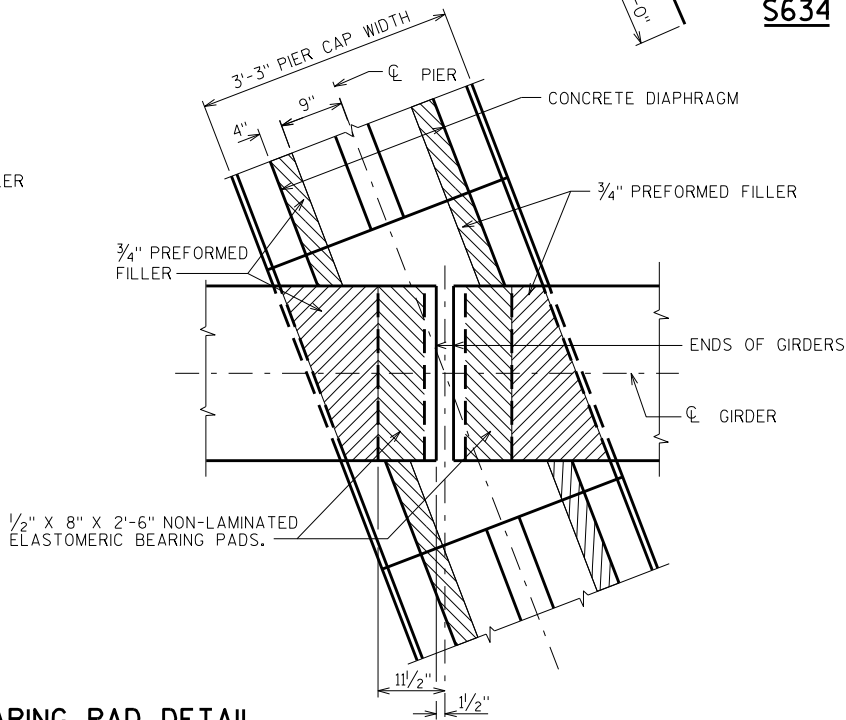
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
DRAWN BY SAD		PLANS CKD. EMK	
SUPERSTRUCTURE DETAILS 2			SHEET 15

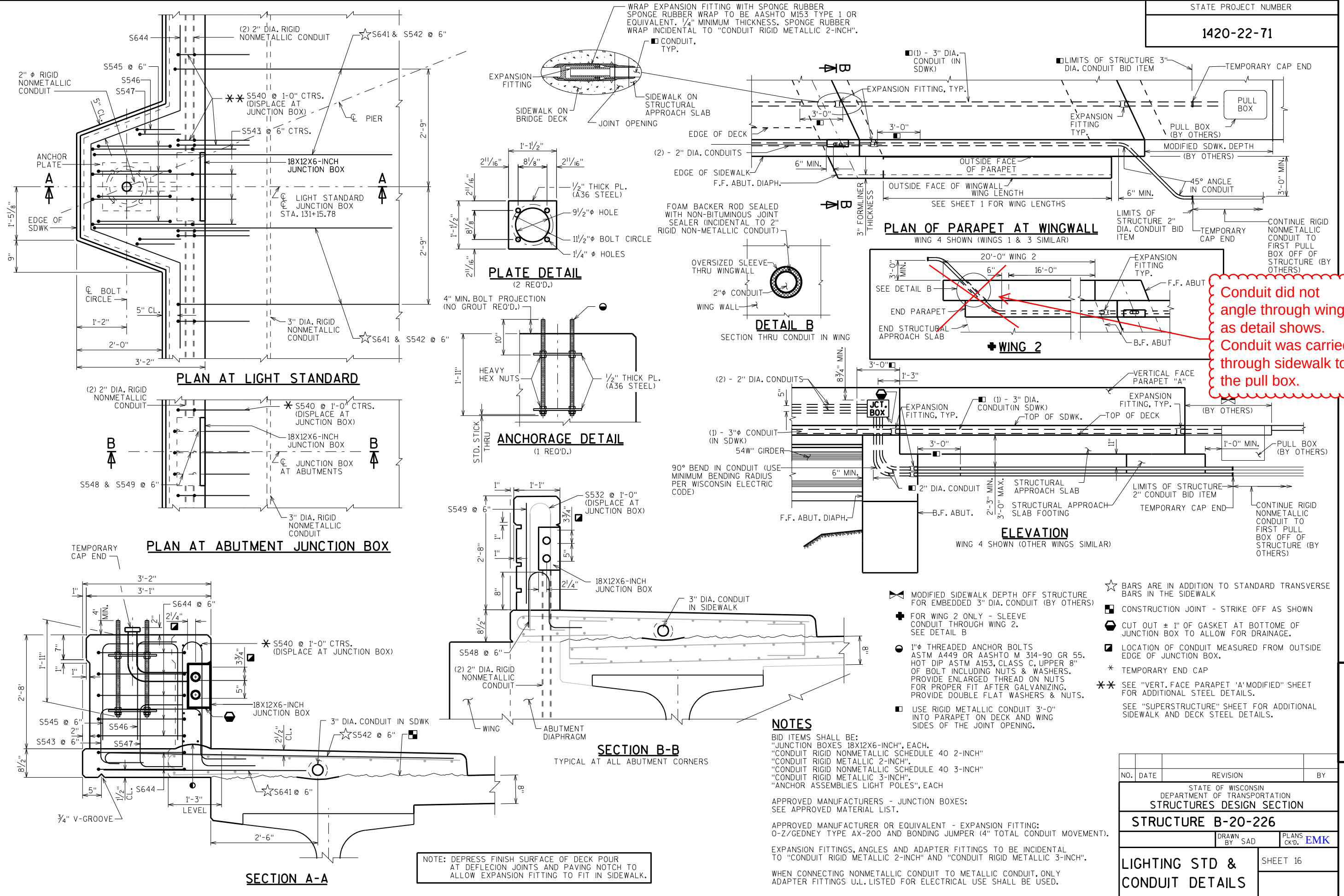


PART LONGIT. SECTION

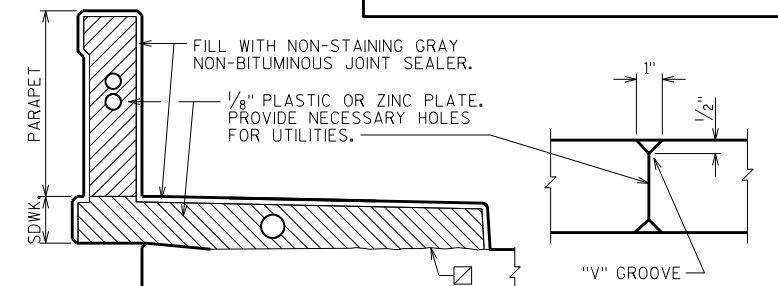


BEARING PAD DETAIL





Conduit did not angle through wing as detail shows. Conduit was carried through sidewalk to the pull box.



SECTION C-C

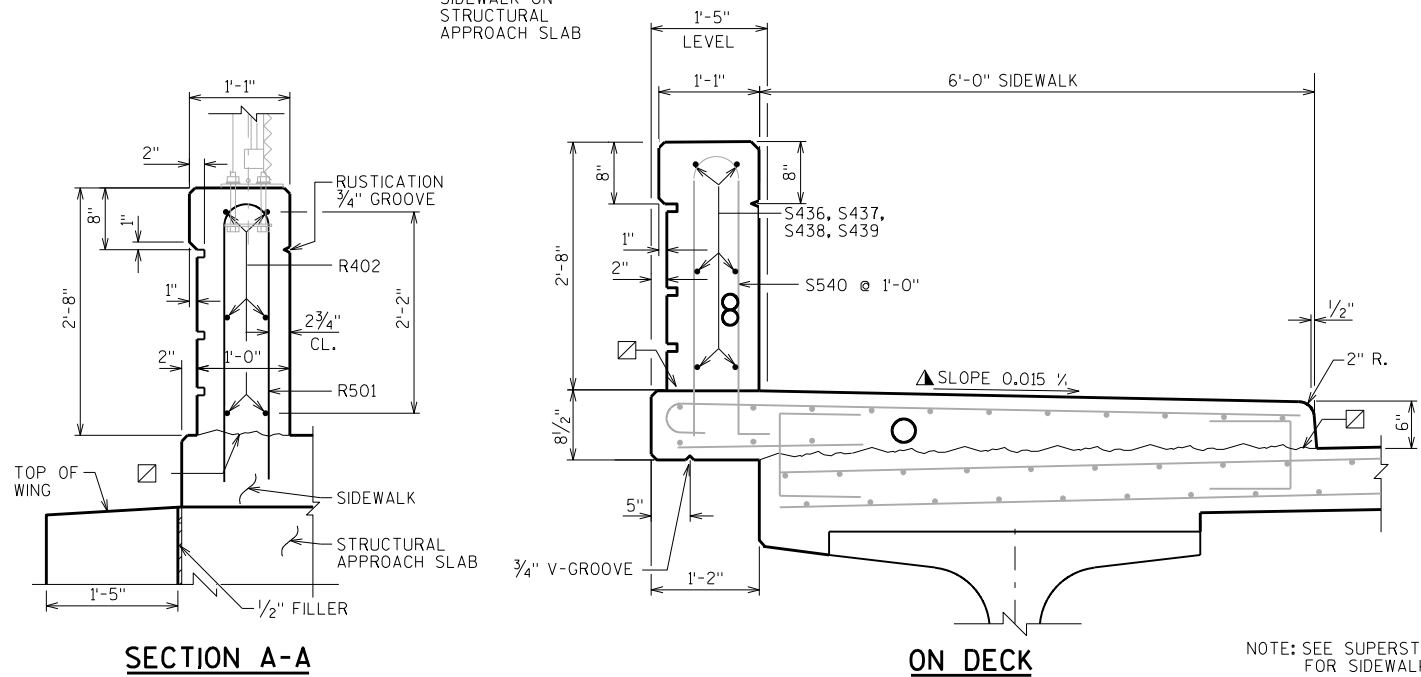
WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF $\frac{1}{8}$ " ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION B-B BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.

[illegible]

Diagram of a vertical post with a 2 1/4" R. top and a 4'-5" height.

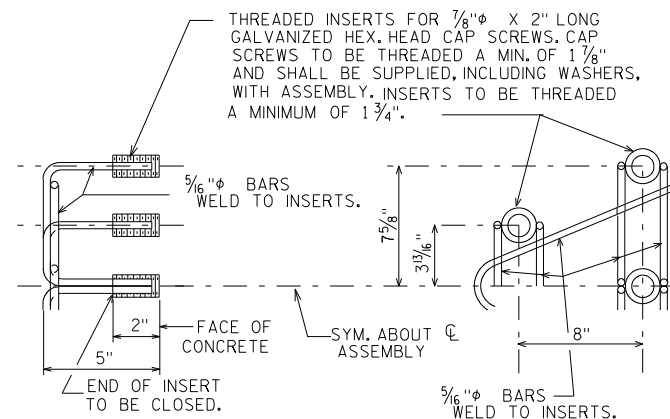
R501

BAR MARK	COAT	SOUTH APPROACH SLAB	NORTH APPROACH SLAB	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	48	48	9'-5"	X		PARAPET VERT.
R402	X	12	12	19'-8"			PARAPET HORIZ.



ON DECK

NOTE: SEE SUPERSTRUCTURE SHEET
FOR SIDEWALK STEEL DETAILS



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

SEE "RAILING TUBULAR SCREENING"
SHEET FOR RAILING DETAILS.

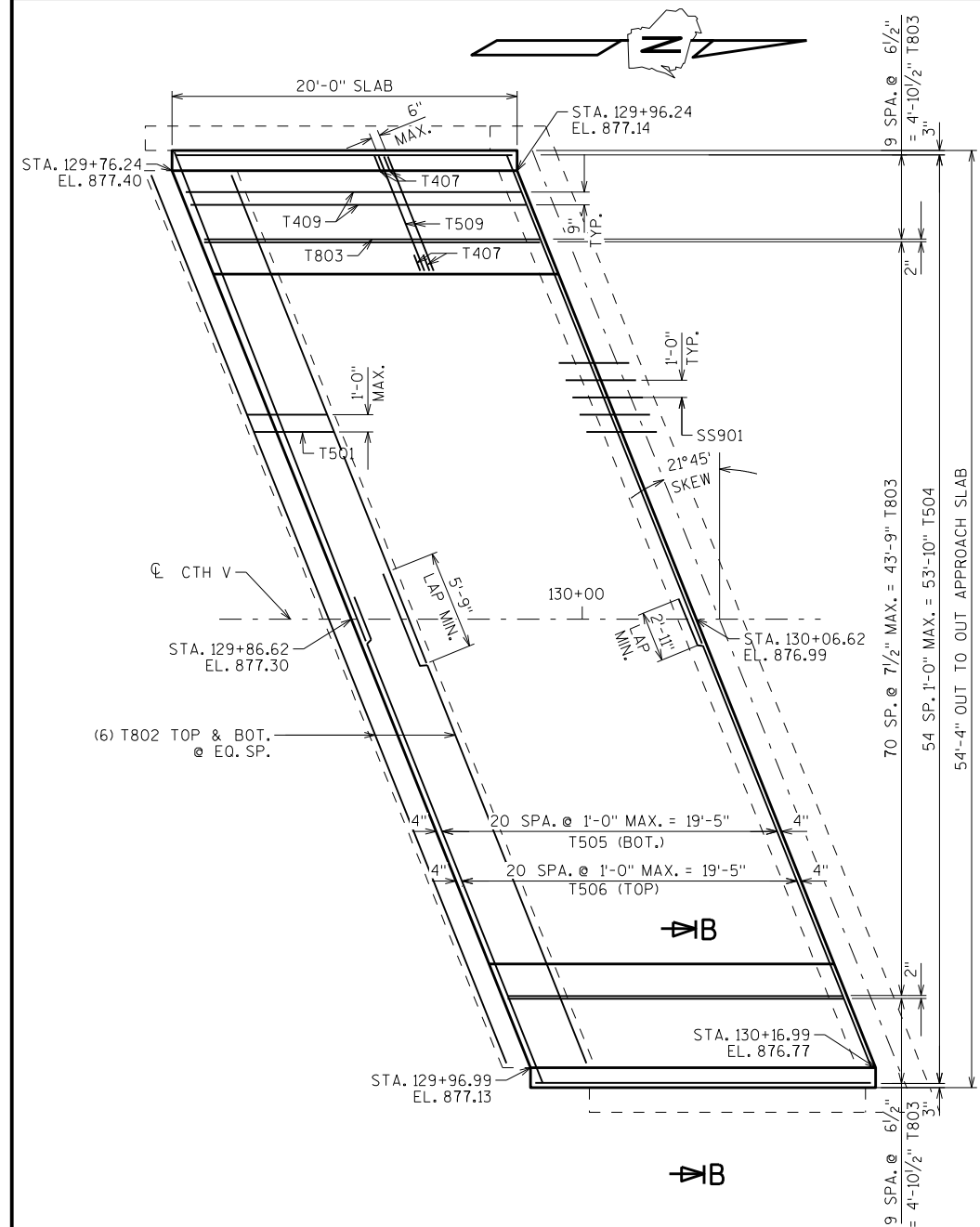
- ▲ ±0.5% CONSTRUCTION TOLERANCE IN
SIDEWALK CROSS SLOPE. THE SIDEWALK
CROSS SLOPE SHALL NOT EXCEED 2%
WITHOUT PRIOR APPROVAL FROM THE
ENGINEER.
- ☑ CONST. JOINT - STRIKE OFF
AS SHOWN AND LEAVE ROUGH.
FOR DECK POUR, MATCH
BRIDGE X-SLOPE.

NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION					
STRUCTURE B-20-226					
			DRAWN BY SAD	PLANS CK'D. EMK	
VERTICAL FACE PARAPET "A" MODIFIED				SHEET 17	

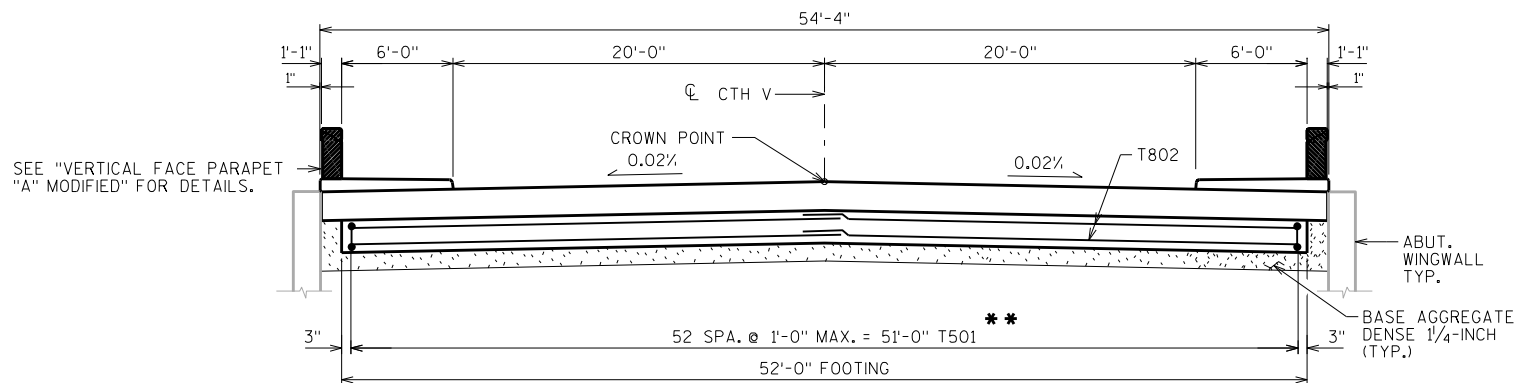
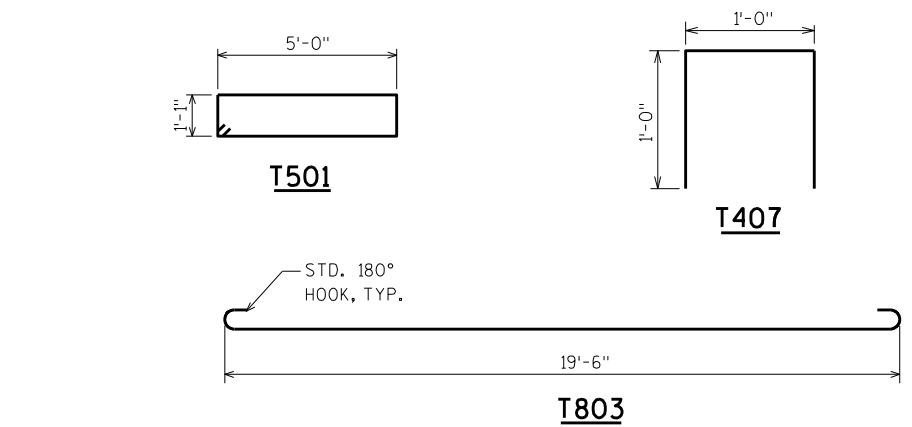
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COM.	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
T501	X	53	12'-10"	X		APPROACH SLAB FTG. - STIRRUP
T802	X	24	30'-9"			APPROACH SLAB FTG. - TRANS.
T803	X	91	21'-4"	X		APPROACH SLAB - LONG. - BOT.
T504	X	55	19'-6"			APPROACH SLAB - LONG. - TOP
T505	X	42	30'-7"			APPROACH SLAB - TRANS - BOT.
T506	X	42	30'-7"			APPROACH SLAB - TRANS - TOP.
T407	X	164	2'-10"	X		SIDEWALK - U-BAR
T408	X	20	19'-8"			SIDEWALK - LONG.
T509	X	82	7'-2"			SIDEWALK - TRANS.

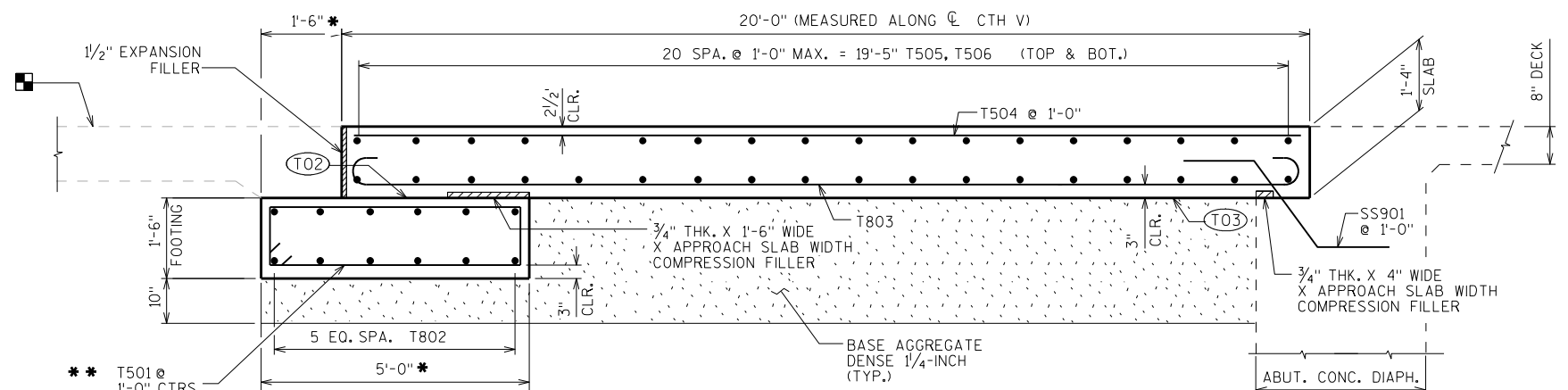


SOUTH STRUCTURAL APPROACH SLAB PLAN

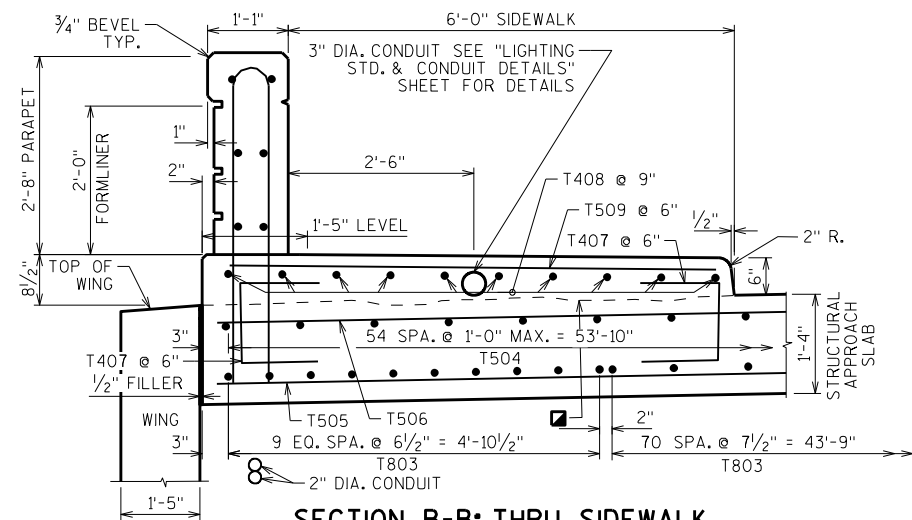


CROSS SECTION THRU ROADWAY - LOOKING WEST

(SHOWING FOOTING STEEL ONLY)



SECTION THRU STRUCTURAL APPROACH SLAB



SECTION B-B: THRU SIDEWALK

☑ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

* MEASURED NORMAL TO SUBSTRUCTURE

** BARS PLACED PARALLEL TO R SPACING PERPENDICULAR TO R

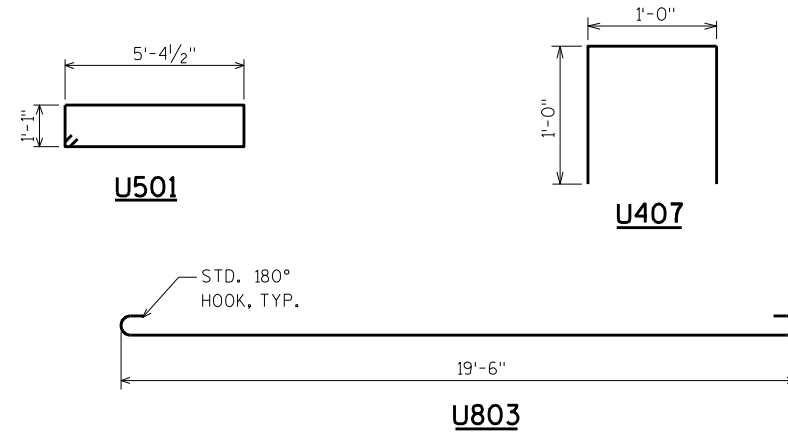
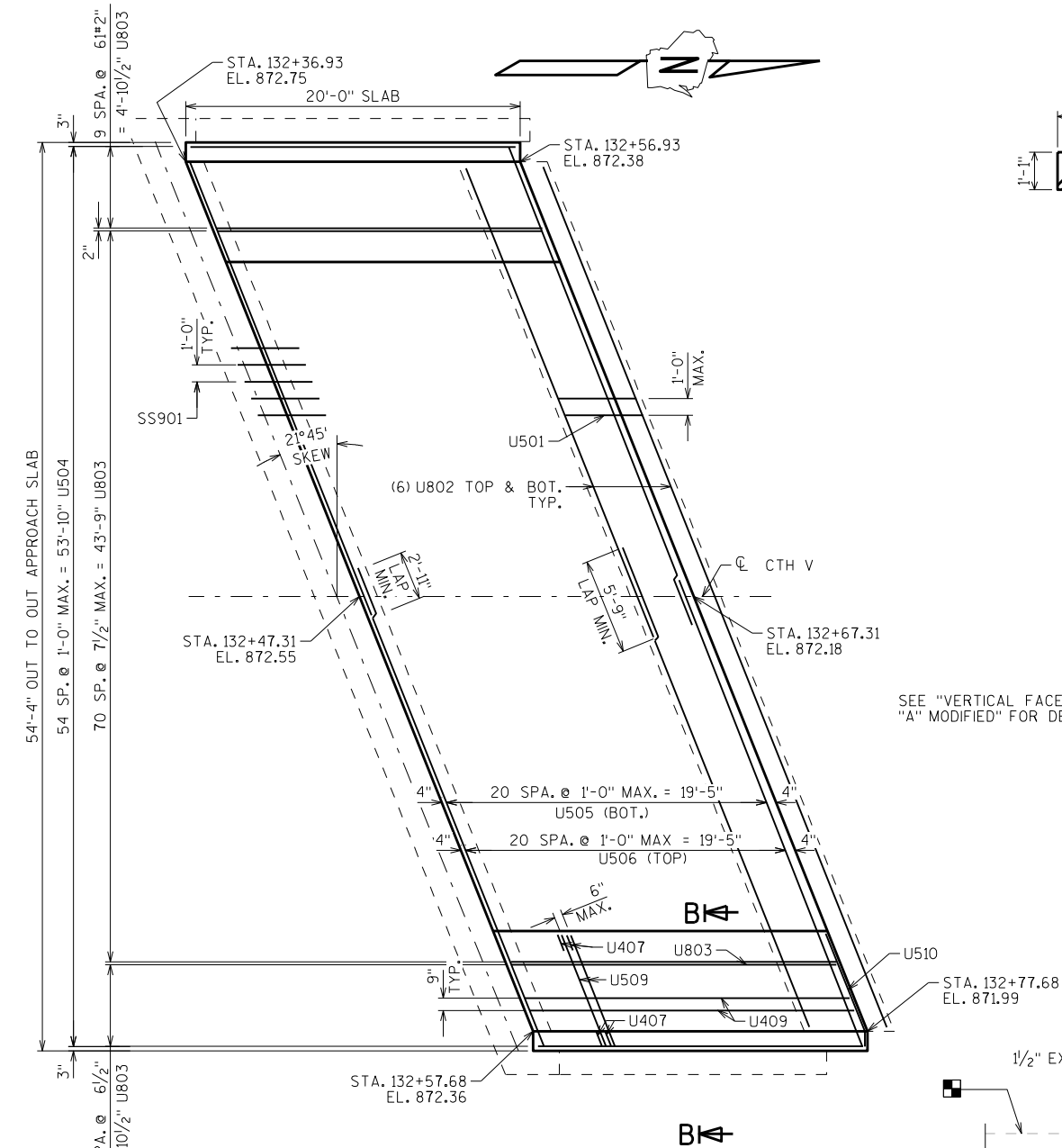
☑ CONCRETE PAVEMENT APPROACH SLAB. SEE ROADWAY PLANS FOR DETAILS.

APPLY PROTECTIVE SURFACE TREATMENT TO PAVING NOTCH SURFACES PRIOR TO POURING STRUCTURAL APPROACH SLAB.

(T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF FOOTING.

(T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.

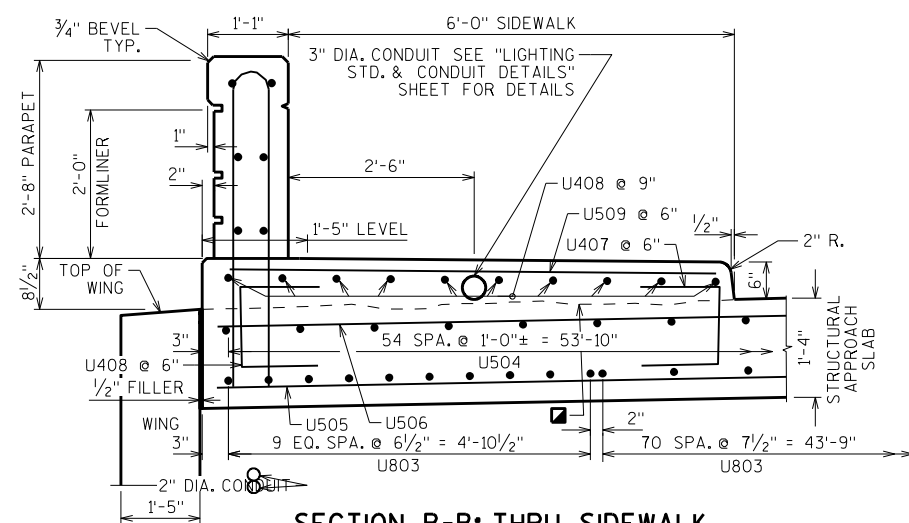
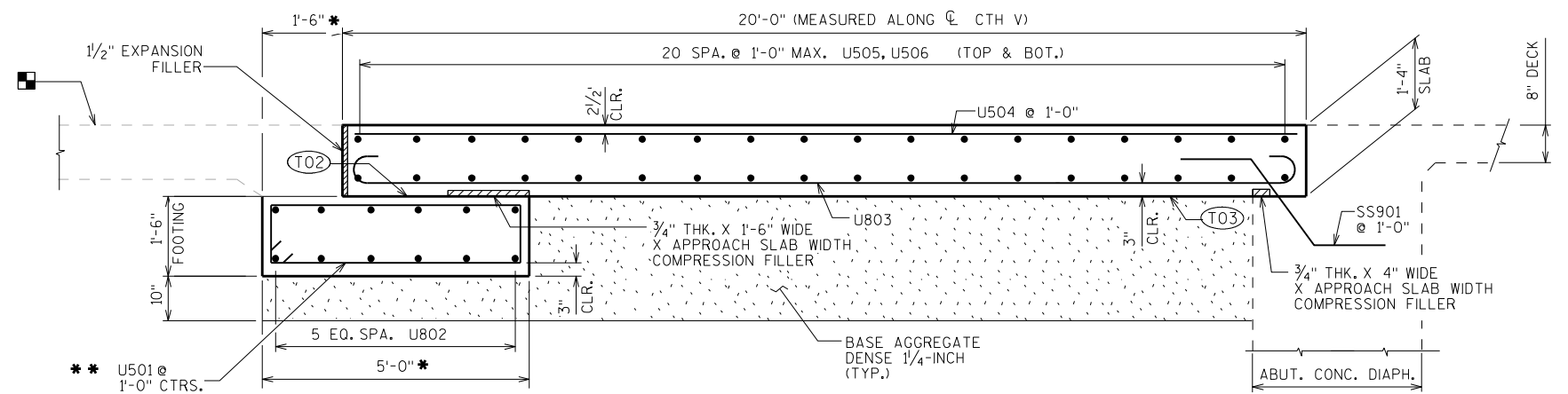
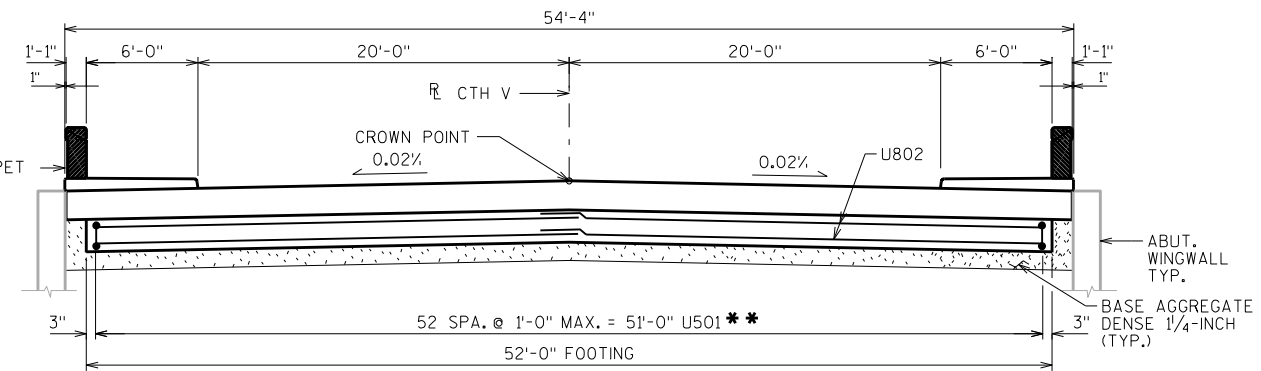
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
DRAWN BY SAD		PLANS CK'D. EMK	
SOUTH STRUCTURAL APPROACH SLAB		SHEET 18	



BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	CoAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
U501	X	53	12'-10"	X		APPROACH SLAB FTG. - STIRRUP
U802	X	24	30'-9"			APPROACH SLAB FTG. - TRANS.
U803	X	91	21'-4"	X		APPROACH SLAB - LONG. - BOT.
U504	X	55	19'-6"			APPROACH SLAB - LONG. - TOP
U505	X	42	30'-7"			APPROACH SLAB - TRANS - BOT.
U506	X	42	30'-7"			APPROACH SLAB - TRANS - TOP.
U407	X	164	2'-10"	X		SIDEWALK - U-BAR
U408	X	20	19'-8"			SIDEWALK - LONG.
U509	X	82	7'-2"			SIDEWALK - TRANS.

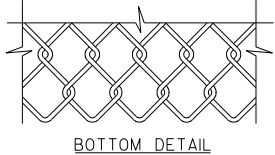
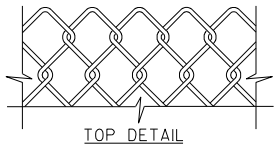
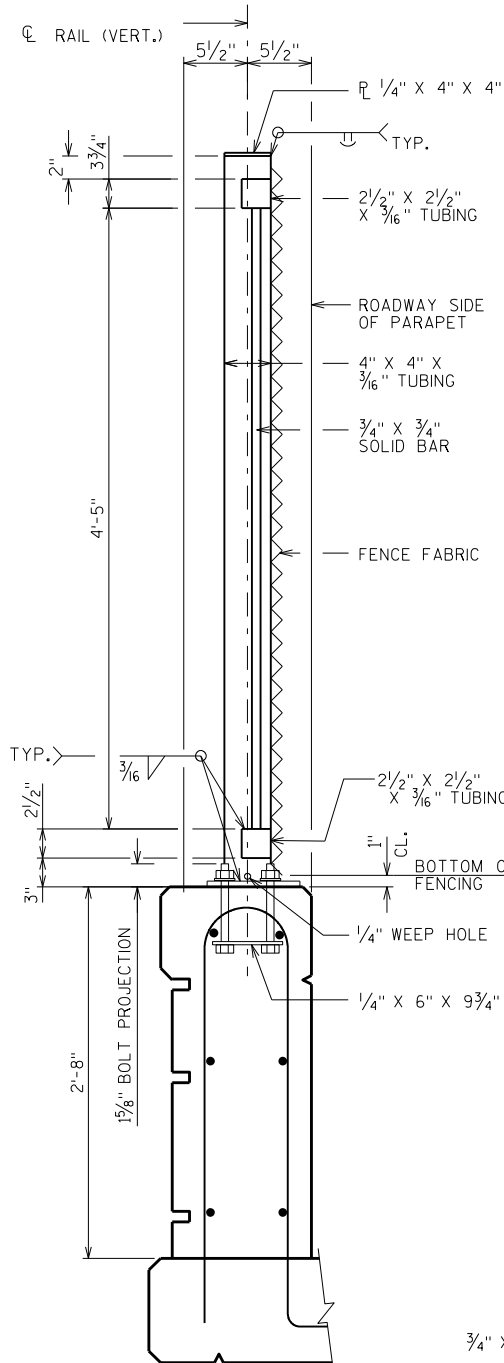
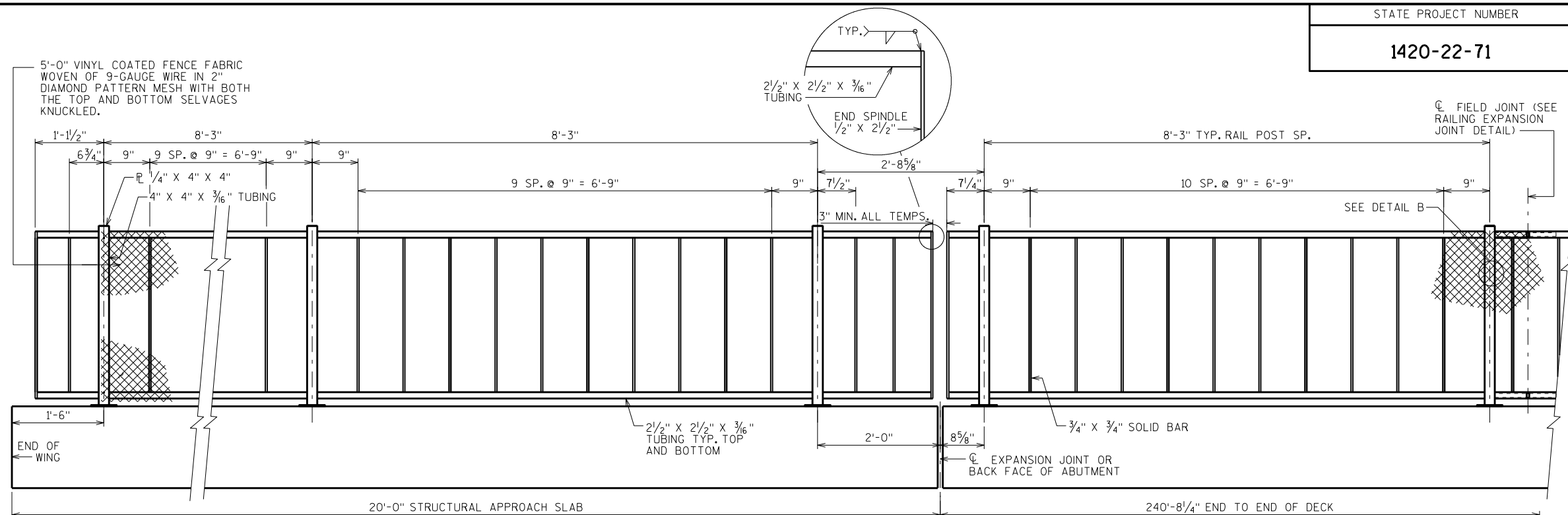
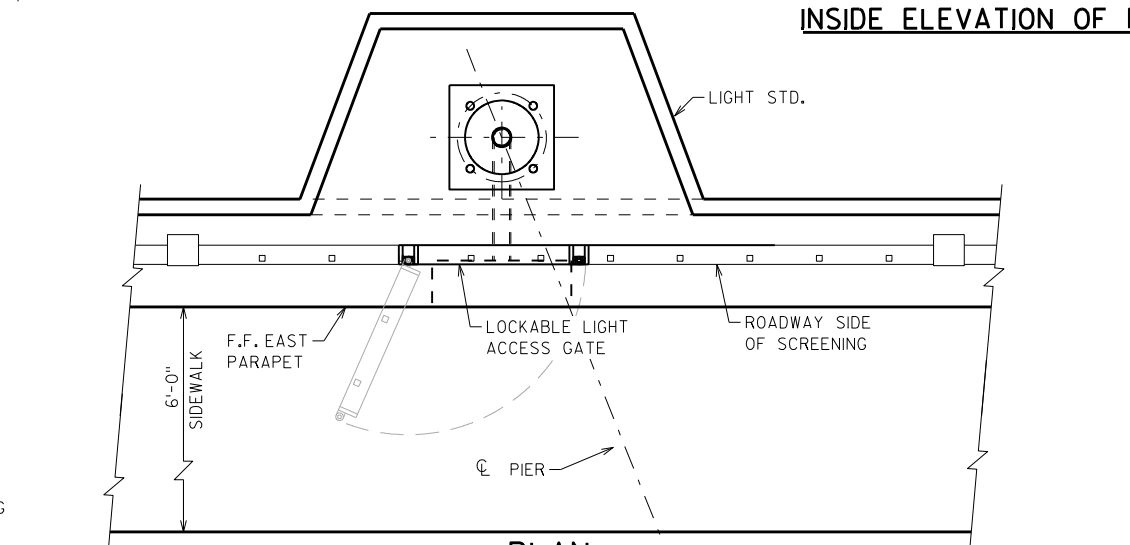
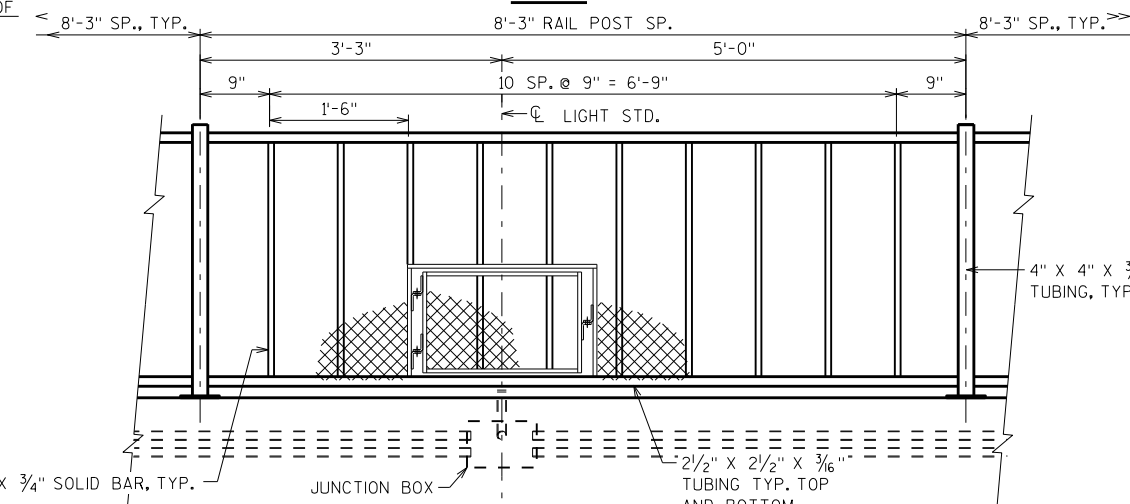
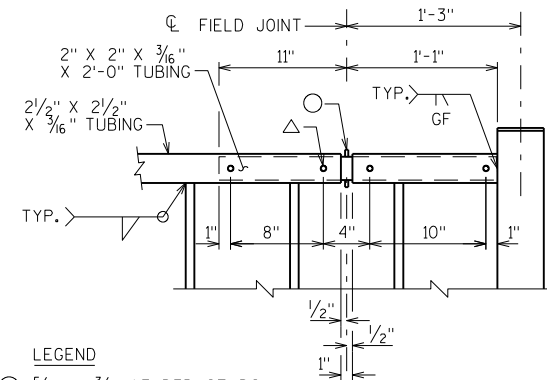


- CONST. JOINT - STRIKE OFF
AS SHOWN AND LEAVE ROUGH.
- * MEASURED NORMAL
TO SUBSTRUCTURE
- ** BARS PLACED PARALLEL TO $\overline{R}$
SPACING PERPENDICULAR TO $\overline{R}$
- CONCRETE PAVEMENT APPROACH SLAB.
SEE ROADWAY PLANS FOR DETAILS.

APPLY PROTECTIVE SURFACE TREATMENT TO
PAVING NOTCH SURFACES PRIOR TO POURING
STRUCTURAL APPROACH SLAB.

- (T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF FOOTING.
- (T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.

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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-20-226			
		DRAWN BY SAD	PLANS CK'D. EMK
NORTH STRUCTURAL APPROACH SLAB		SHEET 19	

**FENCE FABRIC****SECTION THRU RAILING****INSIDE ELEVATION OF RAILING****PLAN****INSIDE ELEVATION AT LIGHT STANDARD****LEGEND**

- 5/16" x 3/8" WELDED STUDS
△ WELD BEAD ON EACH SIDE OF TUBE. GRIND BEADS SO THAT SLEEVE FITS FREELY INSIDE THE 2 1/2" x 2 1/2" TUBE.

RAILING EXPANSION JOINT DETAIL

THE BID ITEM SHALL BE "RAILING TUBULAR SCREENING GALVANIZED B-20-226" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

THE STEEL WIRE MESH SHALL BE ATTACHED TO THE LIGHT ACCESS GATE BY MEANS OF TACK WELDING AT ALL LOCATIONS WHERE THE STEEL WIRE MESH MEETS THE LIGHT ACCESS GATE 1/2" x 2 1/2" SOLID BAR GATE FRAME AND 3/4" x 3/4" SOLID BARS. THE STEEL WIRE MESH SHALL BE WELDED TO THE ROADWAY SIDE OF THE 3/4" x 3/4" SOLID BARS.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A #6 BLAST CLEANING BY SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.

THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.

SEE "RAILING TUBULAR SCREENING DETAILS" SHEET FOR SECTIONS, FABRIC, AND GATE DETAILS.

NOTES

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 CUT.

RAILS AND POSTS TO BE ASTM A500, GRADE B. BASE PLATES AND SHIMS TO BE ASTM A709, GRADE 36. ALL GALVANIZED AFTER FABRICATION.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

ALL POST SPA. ARE TAKEN HORIZ. ALONG CENTER LINE OF RAILING AT BASE OF POST.

SHIMS SHALL BE USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

FABRIC SHALL CONFORM TO ASTM F668, CALSS 2B. STEEL RAILS, POSTS, AND POST SLEEVES SHALL CONFORM TO ASTM F1083. STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM 626. SEE THE "BRIDGE SPECIAL PROVISIONS" FOR ADDITIONAL DETAILS.

THE COLOR OF POLYMER-COATING FOR THIS STRUCTURE SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING.

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RAILING TUBULAR SCREENING		SHEET 20	



BASE PLATE

ANCHORAGE DETAIL

MASONRY ANCHOR TYPE S $\frac{5}{8}$ -INCH.
EMBED 7" IN CONCRETE.

SHJM PLATE DETAILS

TWO SHIMS OF EACH SIZE
REQUIRED PER POST

DETAIL B

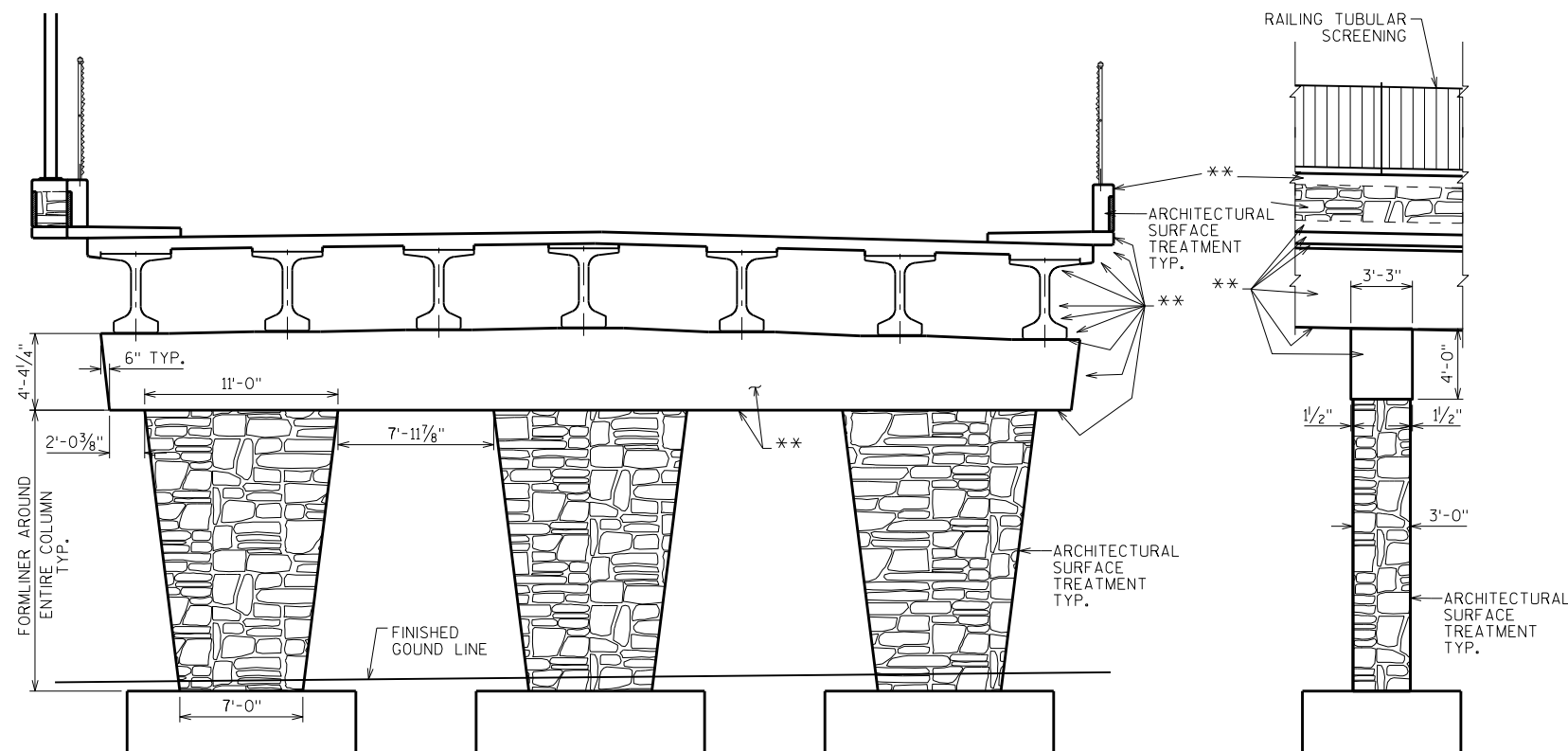
STEEL PLATE DETAIL

LIGHT ACCESS GATE DETAIL

HINGE DETAIL

- 1 MCNICHOLS STEEL WIRE MESH
WITH OPENING SIZE 2" X 2"
SQUARE, 1/4" DIA. WIRE. ITEM NO.
3293920148 (OR EQUIVALENT)
- 2 BENT STEEL PL 1/4" X 3" X 1".
SEE "STEEL PLATE DETAIL"
THIS SHEET.

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						DRAWN BY SAD				PLANS CK'D. EMK			
RAILING TUBULAR SCREENING DETAILS										SHEET 21			



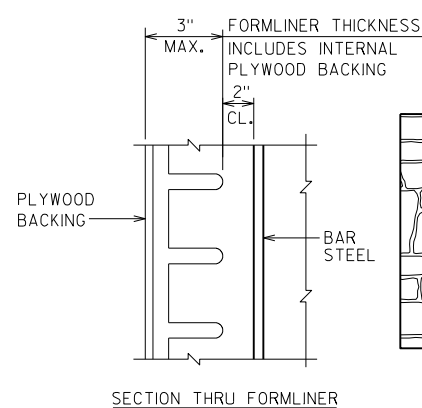
PIER ELEVATION

LOOKING NORTH

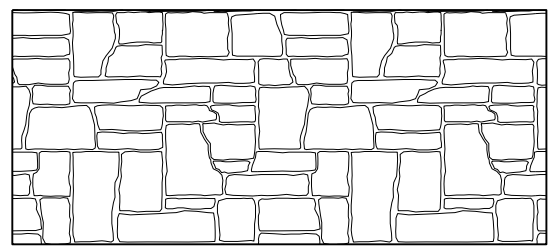
PIER COLUMN SIDE VIEW

LOOKING WEST

** PLAIN CONCRETE, NO STAIN



SECTION THRU FORMLINER

RUSTIC ASHLAR
SIZE = 8" TO 32"
MAX RELIEF = 2"

FORMLINER DETAILS

ABUTMENT NOTES

FORMLINER COURSING ON WINGS SHALL BE LEVEL.

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

PIER NOTES

FORMLINER COURSING ON PIERS SHALL BE LEVEL.

THE FORMLINER COURSING ON ALL FACES OF EACH COLUMN SHALL BE VERTICALLY ALIGNED.

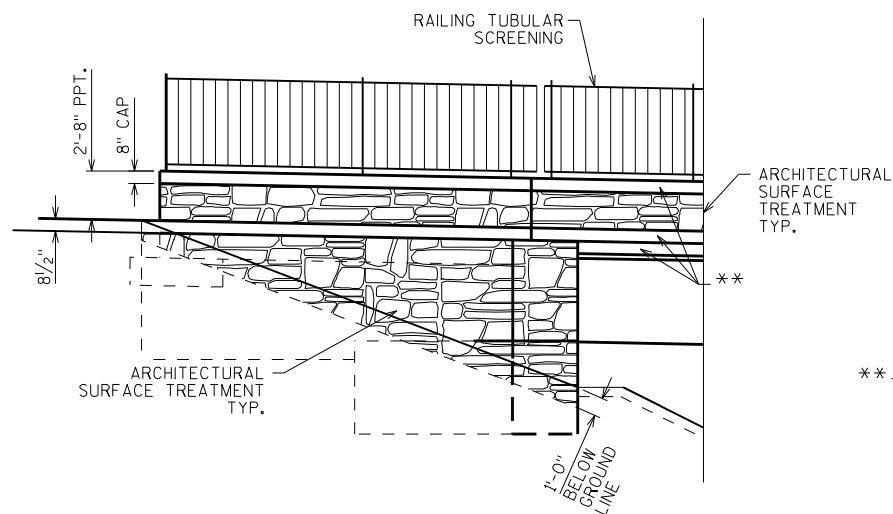
SPACE ADJACENT PORTIONS OF FORMLINER ON SLOPED FACE SO THAT COURSING IS ALIGNED VERTICALLY WITH COURSING ON VERTICAL FACE.

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

WRAP AROUND/MATCH FORMLINER PATTERN AT CORNERS.

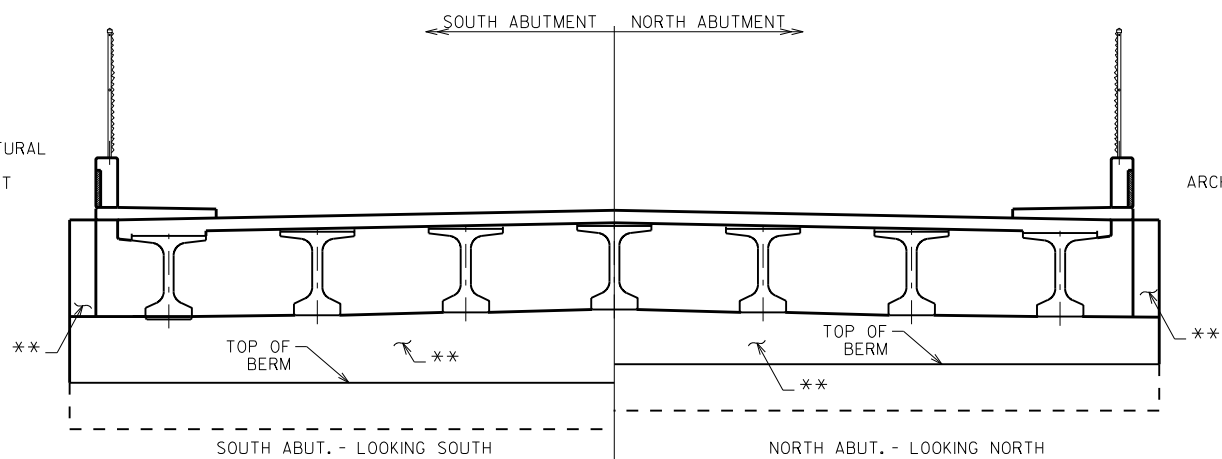
PARAPET NOTES

FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO TOP OF PARAPET.

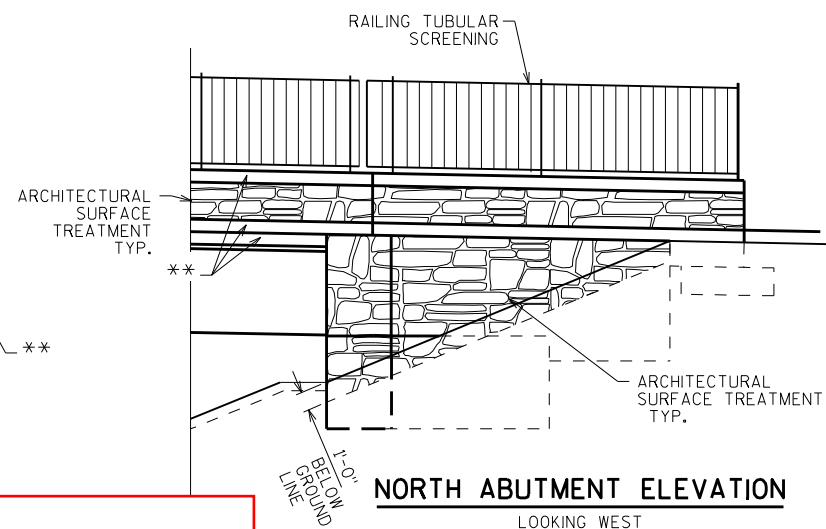
NOTE: MULTI-COLOR STAIN TO LOOK SIMILAR TO WEATHERED LIMESTONE.
SIMILAR TO EXISTING BRIDGE B-20-3832.

SOUTH ABUTMENT ELEVATION

LOOKING WEST



ABUTMENT ELEVATION

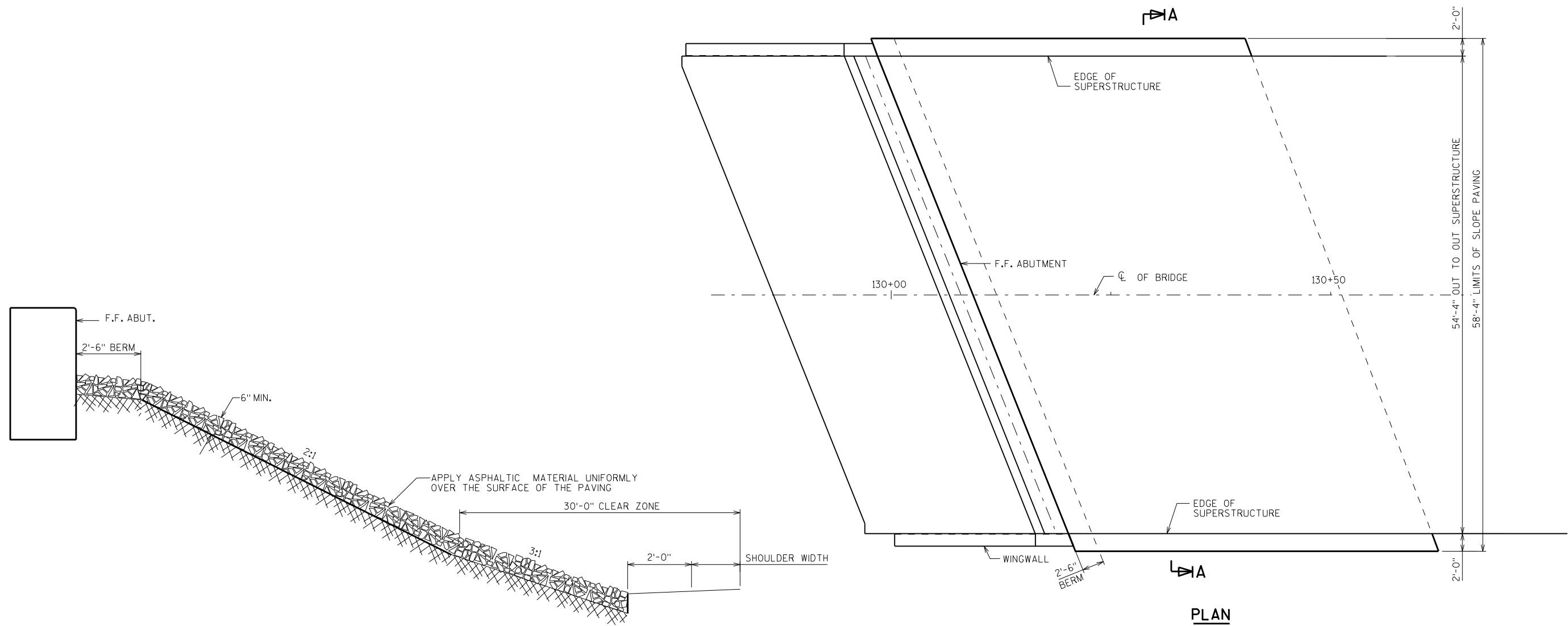


NORTH ABUTMENT ELEVATION

LOOKING WEST

Railing Paint:
Manufacturer: Carboline
Product: Carbothane 133 LH(satin)
Color: 27038, Black
Concrete Stain:
Manufacturer: TK Products
Product: Tri-sheen Acrylic
Color: U-04634

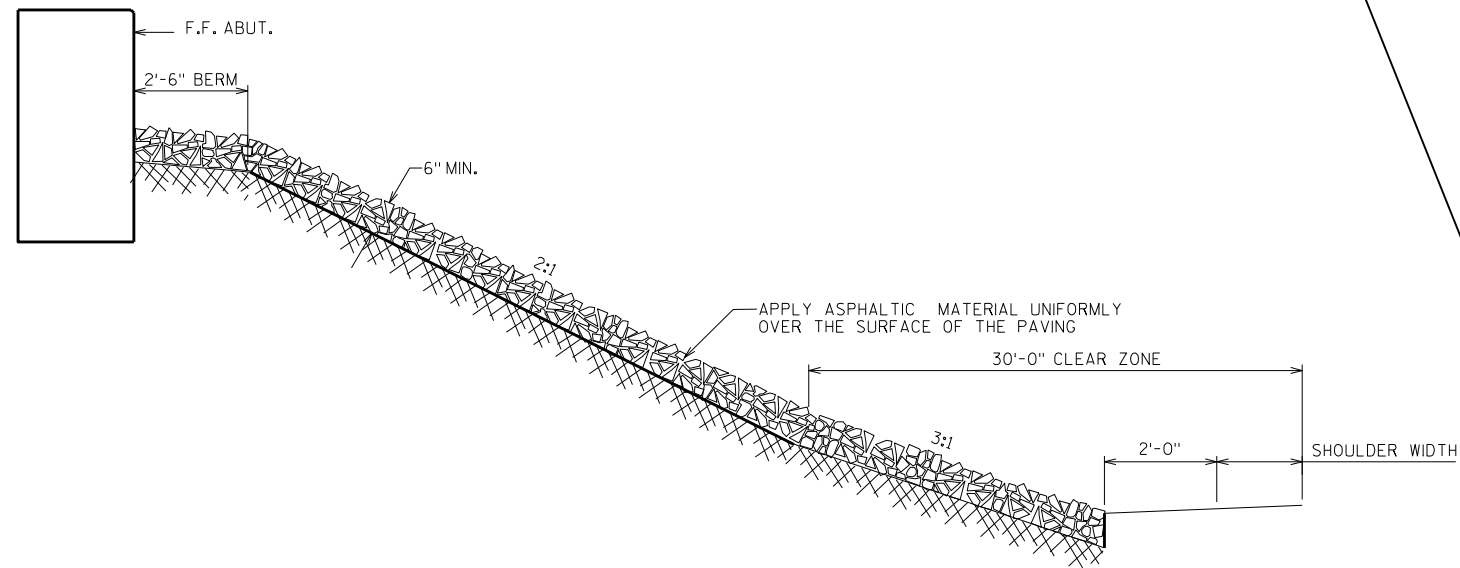
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STRUCTURE B-20-226			
DRAWN BY SAD		PLANS CK'D. EMK	
AESTHETIC DETAILS		SHEET 22	



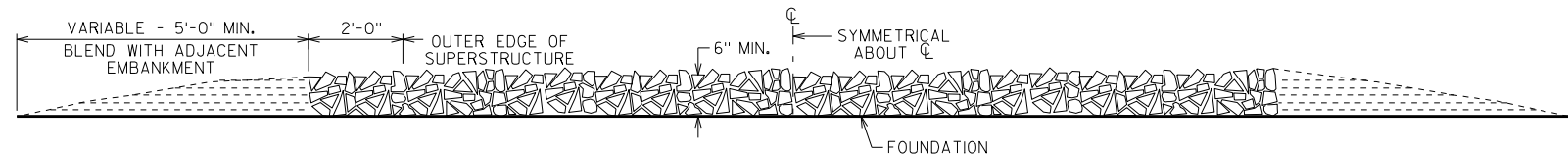
PLAN

STANDARD CROSS SECTION

ROUND STONE WILL NOT BE ACCEPTED



SECTION A-A

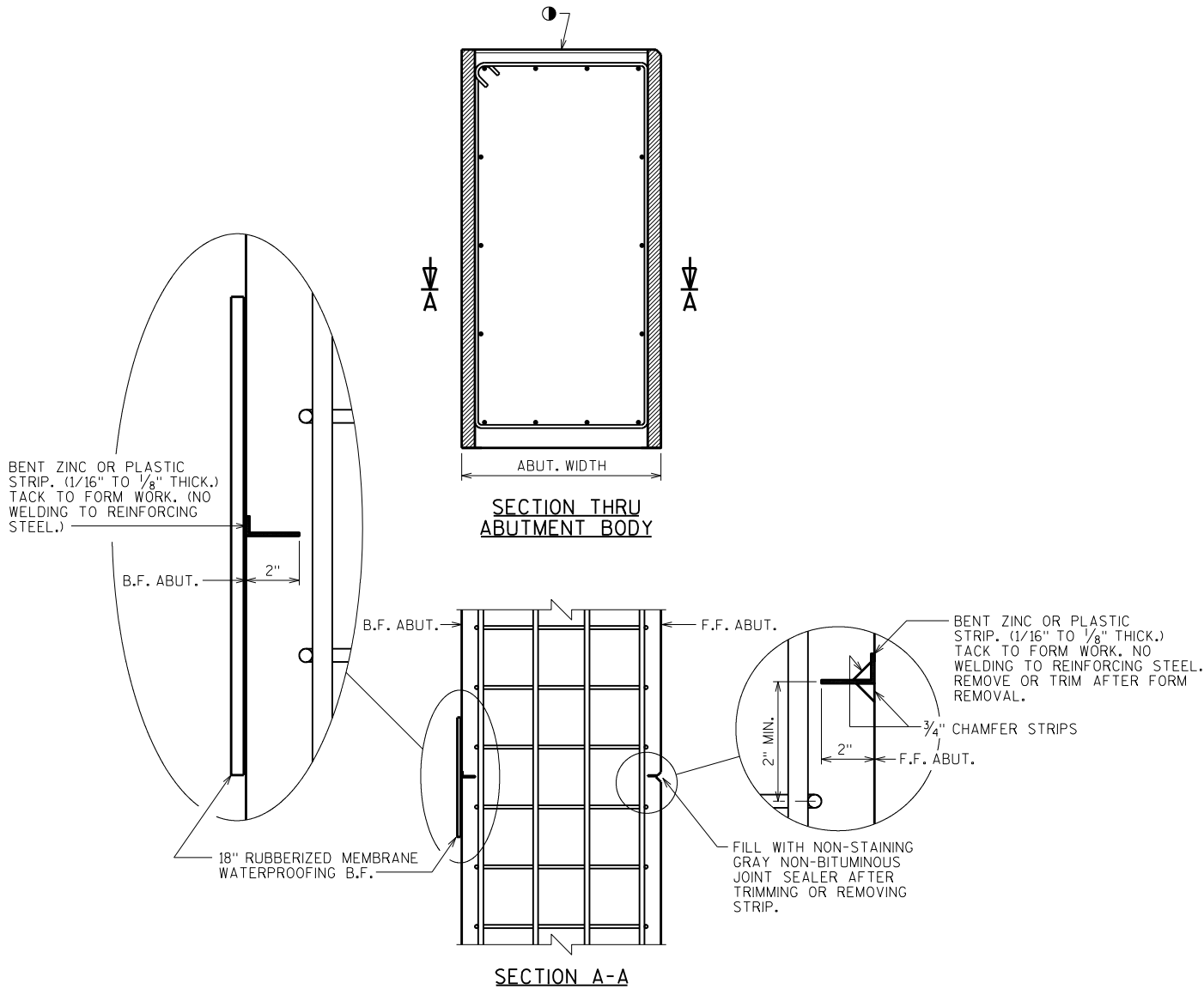


GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

WOOD FORMS MAY BE LEFT IN PLACE WHEN OF A QUALITY ACCEPTABLE TO THE ENGINEER.

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DRAWN BY SAD		PLANS CK'D. EMK	
SLOPE PAVING (CRUSHED AGGREGATE)		SHEET 23	



ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

- 1 USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

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ALTERNATE CONSTRUCTION JOINT			SHEET 24