

EAU  
PROJECT ID:  
WITH: N/A  
7829-00-70

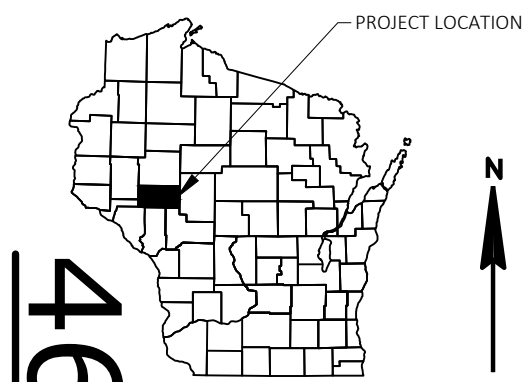
COUNTY:  
EAU CLAIRE

FEBRUARY 2023

ORDER OF SHEETS

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 Plan
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 Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 38



DESIGN DESIGNATION

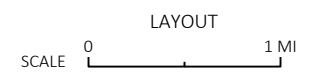
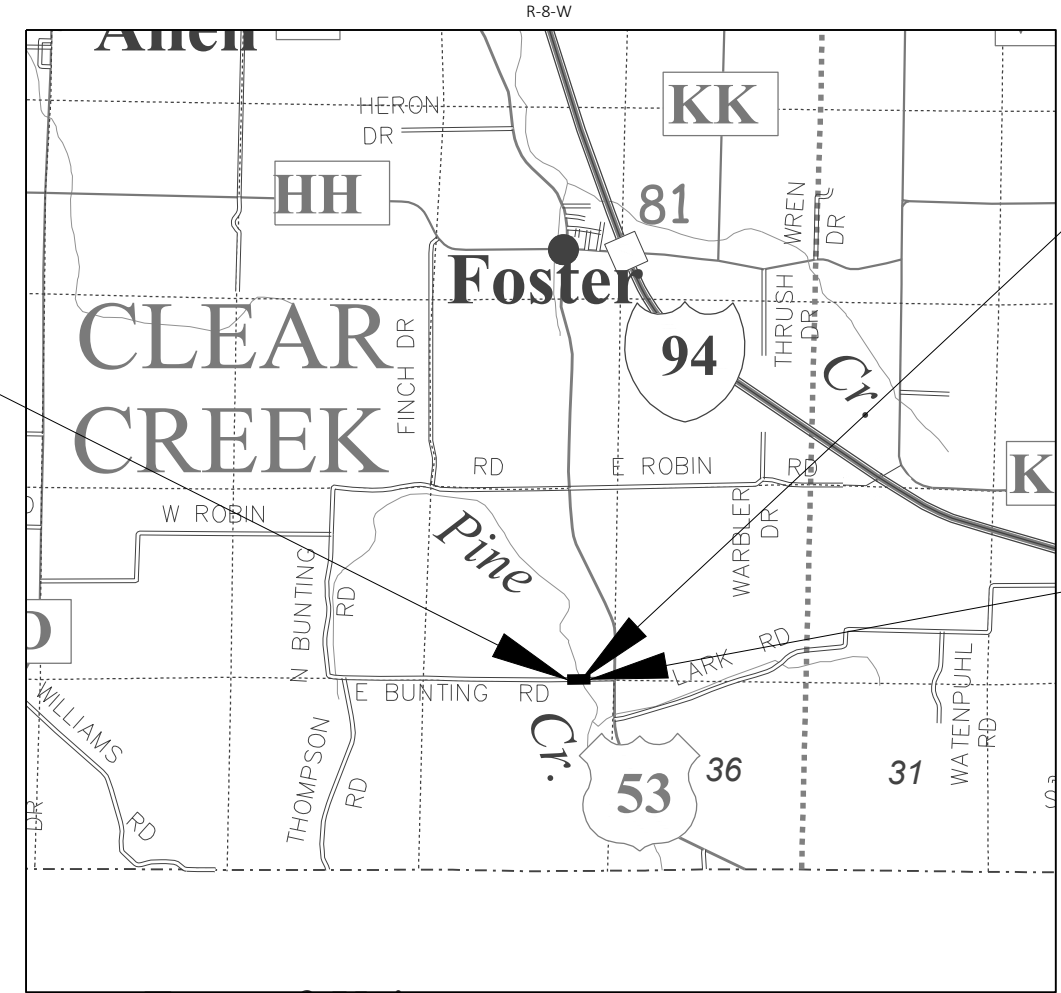
A.A.D.T.	2023	=	230
A.A.D.T.	2043	=	310
D.H.V.		=	23
D.D.		=	50/50
T.		=	10%
DESIGN SPEED		=	60 MPH
ESALS		=	81,000

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
MARSH AREA	STORM SEWER
WOODED OR SHRUB AREA	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
PLAN OF PROPOSED IMPROVEMENT  
T CLEAR CREEK, E BUNTING ROAD  
PINE CREEK BRIDGE B-18-0242  
LOCAL STREET  
EAU CLAIRE COUNTY

STATE PROJECT NUMBER  
7829-00-70



TOTAL NET LENGTH OF CENTERLINE = 0.038 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), EAU CLAIRE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7829-00-70	WISC 2023256	1

ACCEPTED FOR  
EAU CLAIRE COUNTY  
HIGHWAY DEPARTMENT  
DATE: 10/3/2022  
*[Signature]*  
(Highway Commissioner Signature)

ORIGINAL PLANS PREPARED BY  
**SEH**  
WISCONSIN  
TARA L. KRISTA  
37975  
CHIPPEWA FALLS, WI  
PROFESSIONAL ENGINEER  
DATE: 10-5-2022  
*[Signature]*  
(Professional Engineer Signature)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY  
Surveyor: SEH  
Designer: SEH  
Project Manager: TYLER RONGSTAD  
Regional Examiner: TOU YANG  
Regional Supervisor: TYLER RONGSTAD

APPROVED FOR THE DEPARTMENT  
DATE: 10/14/2022  
*[Signature]*  
E

GENERAL NOTES

THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

SILT FENCE AND TURBIDITY BARRIER IS TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, AND IN PLACE PRIOR TO BRIDGE REMOVAL.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE SALVAGED TOPSOILED, FERTILIZED, SEEDED AND MULCHED.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING PAVEMENTS AT REMOVAL LIMITS.

ALL PAVEMENT DIMENSIONS AND STATIONS ARE SHOWN TO THE EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.

4" ASPHALTIC SURFACE SHALL BE CONSTRUCTED IN TWO 2" LAYERS.

WISDOT MONUMENTS WILL BE SUPPLIED BY THE STATE AND INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

UTILITY CONTACTS

EAU CLAIRE ENERGY COOP - ELECTRICITY  
 8214 HIGHWAY 12  
 FALL CREEK, WI 54742  
 TELEPHONE: 715.836.6486  
 ATTENTION: NATHAN KARNES  
 EMAIL: NKARNES@ECEC.COM



Dial **811** or (800)242-8511  
 www.DiggersHotline.com

**RUNOFF COEFFICIENT TABLE**

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

TOTAL PROJECT AREA = 0.30 ACRES  
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.15 ACRES

DESIGN CONTACT

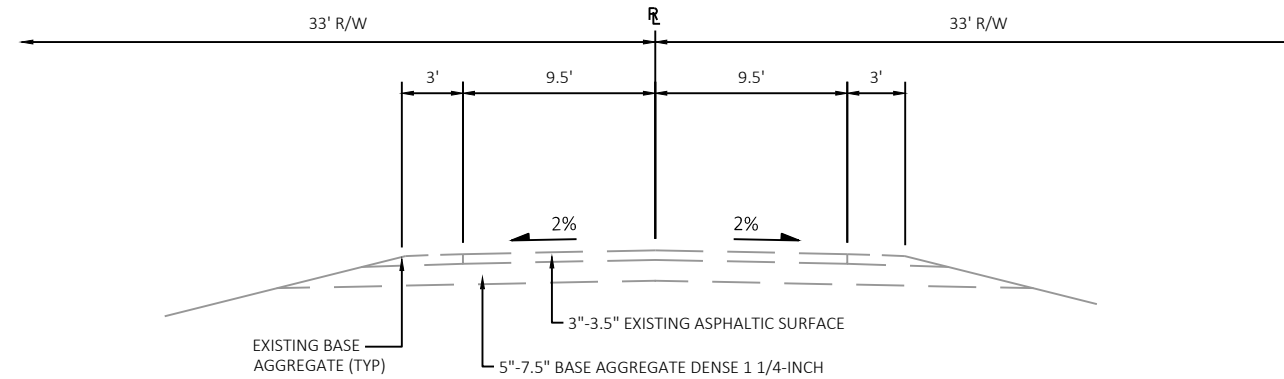
SEH  
 10 NORTH BRIDGE STREET  
 CHIPPEWA FALLS, WI 54729  
 TELEPHONE: 715.720.6291  
 ATTENTION: TARA KRISTA  
 EMAIL: TKRISTA@SEHINC.COM

OWNER CONTACT

EAU CLAIRE COUNTY HIGHWAY DEPARTMENT  
 2000 SPOONER AVENUE  
 ALTOONA, WI 54720  
 TELEPHONE: 715.839.2952  
 ATTENTION: JON JOHNSON  
 EMAIL: JON.JOHNSON@EAUCLAIRECOUNTY.GOV

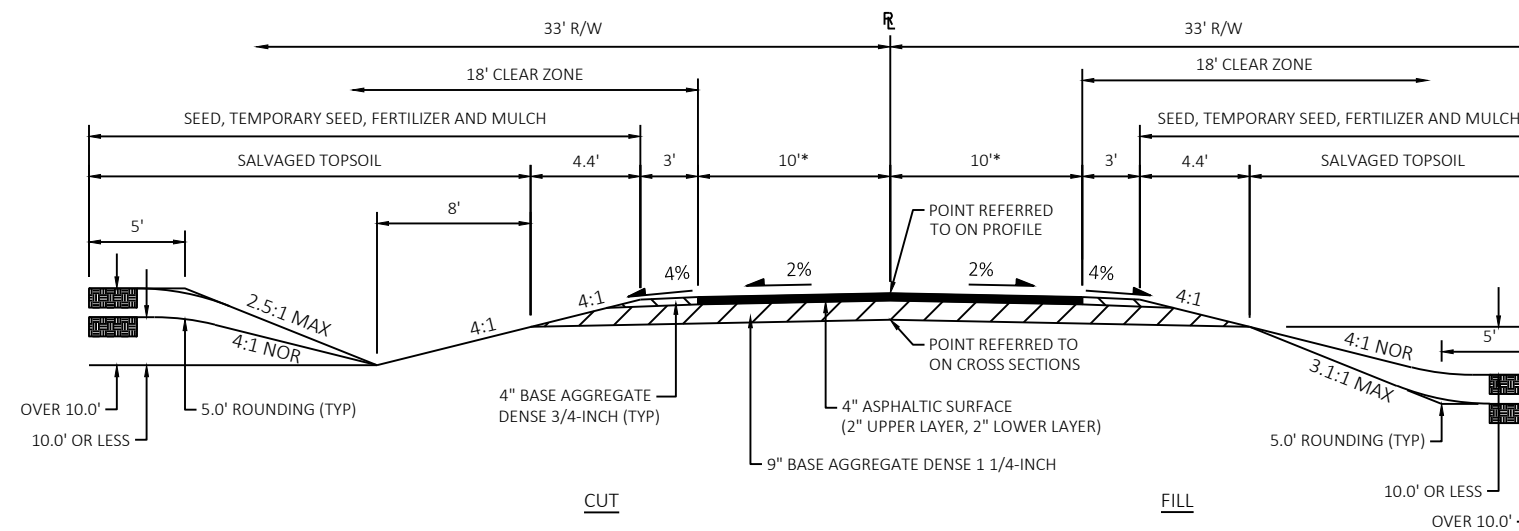
WDNR CONTACT

DNR WEST CENTRAL REGION HQ  
 1300 WEST CLAIREMONT AVENUE  
 EAU CLAIRE, WI 54701  
 TELEPHONE: 715.934.9014  
 ATTENTION: LEAH.NICOL  
 EMAIL: LEAH.NICOL@WISCONSIN.GOV



**EXISTING TYPICAL SECTION**

STA 9+00 TO STA 9+82  
STA 10+18 TO STA 11+00



**FINISHED TYPICAL SECTION**

STA 9+00 TO STA 9+76.58  
STA 10+23.42 TO STA 11+00

\*MATCH EXISTING WIDTH AT PROJECT LIMITS  
AND TAPER TO BRIDGE WIDTH AT STRUCTURE

Estimate Of Quantities

7829-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-18-118	EACH	1.000	1.000
0004	205.0100	Excavation Common	CY	115.000	115.000
0006	206.1001	Excavation for Structures Bridges (structure) 01. B-18-0242	EACH	1.000	1.000
0008	208.0100	Borrow	CY	37.000	37.000
0010	210.1500	Backfill Structure Type A	TON	424.000	424.000
0012	213.0100	Finishing Roadway (project) 01. 7829-00-70	EACH	1.000	1.000
0014	305.0110	Base Aggregate Dense 3/4-Inch	TON	26.000	26.000
0016	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	266.000	266.000
0018	455.0605	Tack Coat	GAL	24.000	24.000
0020	465.0105	Asphaltic Surface	TON	87.000	87.000
0022	502.0100	Concrete Masonry Bridges	CY	105.000	105.000
0024	502.3200	Protective Surface Treatment	SY	136.000	136.000
0026	502.3210	Pigmented Surface Sealer	SY	47.000	47.000
0028	505.0400	Bar Steel Reinforcement HS Structures	LB	4,690.000	4,690.000
0030	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	9,105.000	9,105.000
0032	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	14.000	14.000
0034	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0036	550.2104	Piling CIP Concrete 10 3/4 X 0.25-Inch	LF	960.000	960.000
0038	606.0300	Riprap Heavy	CY	66.000	66.000
0040	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	170.000	170.000
0042	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0044	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7829-00-70	EACH	1.000	1.000
0046	619.1000	Mobilization	EACH	1.000	1.000
0048	624.0100	Water	MGAL	3.000	3.000
0050	625.0500	Salvaged Topsoil	SY	345.000	345.000
0052	627.0200	Mulching	SY	345.000	345.000
0054	628.1504	Silt Fence	LF	411.000	411.000
0056	628.1520	Silt Fence Maintenance	LF	411.000	411.000
0058	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0060	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0062	628.6005	Turbidity Barriers	SY	64.000	64.000
0064	629.0210	Fertilizer Type B	CWT	0.300	0.300
0066	630.0120	Seeding Mixture No. 20	LB	10.000	10.000
0068	630.0200	Seeding Temporary	LB	10.000	10.000
0070	630.0500	Seed Water	MGAL	10.000	10.000
0072	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0074	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0076	638.2602	Removing Signs Type II	EACH	6.000	6.000
0078	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0080	642.5001	Field Office Type B	EACH	1.000	1.000
0082	643.0420	Traffic Control Barricades Type III	DAY	616.000	616.000
0084	643.0705	Traffic Control Warning Lights Type A	DAY	704.000	704.000
0086	643.0900	Traffic Control Signs	DAY	440.000	440.000
0088	643.5000	Traffic Control	EACH	1.000	1.000
0090	645.0111	Geotextile Type DF Schedule A	SY	102.000	102.000
0092	645.0120	Geotextile Type HR	SY	100.000	100.000
0094	650.4500	Construction Staking Subgrade	LF	154.000	154.000
0096	650.5000	Construction Staking Base	LF	154.000	154.000
0098	650.6501	Construction Staking Structure Layout (structure) 01. B-18-0242	EACH	1.000	1.000

Estimate Of Quantities

7829-00-70

Line	Item	Item Description	Unit	Total	Qty
0100	650.9911	Construction Staking Supplemental Control (project) 01. 7829-00-70	EACH	1.000	1.000
0102	650.9920	Construction Staking Slope Stakes	LF	154.000	154.000
0104	690.0150	Sawing Asphalt	LF	40.000	40.000
0106	715.0502	Incentive Strength Concrete Structures	DOL	630.000	630.000
0108	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000
0110	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0112	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0114	SPV.0090	Special 01. Prestressed Girder Box Type 21-Inch	LF	313.000	313.000

3

3

EXCAVATION

STATION	LOCATION	205.0100		EXPANDED FILL CY	208.0100 BORROW CY
		EXCAVATION COMMON CY	AVAILABLE MATERIAL CY		
E BUNTING ROAD					
9+00 - 9+66	LT & RT	61	25	39	14
10+34 - 11+00	LT & RT	54	17	40	23
ITEM TOTALS		115	42	79	37

NOTES:

- 1) UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN COMMON EXCAVATION.
- 2) AVAILABLE MATERIAL DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION AND EXISTING BASE AGGREGATE VOLUME.
- 4) EXPANSION FACTOR = 1.3

SALVAGED TOPSOIL AND SEEDING

STATION	LOCATION	630.0120					
		625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL
E BUNTING ROAD							
9+00 - 9+77	LT & RT	185	185	0.2	5	5	5
10+23 - 11+00	LT & RT	160	160	0.1	5	5	5
ITEM TOTALS		345	345	0.3	10	10	10

TRAFFIC CONTROL

STATION	643.0420 BARRICADES TYPE III EACH DAY		643.0705 WARNING LIGHTS TYPE A EACH DAY		643.0900 SIGNS CALENDAR EACH DAY DAYS	
	E BUNTING ROAD					
9+00 - 11+00	14	616	16	704	10	440 44
ITEM TOTALS		616	704	440		

BASE AGGREGATE DENSE

STATION	LOCATION	305.0110 305.0120 624.0100		
		3/4-INCH TON	1 1/4-INCH TON	WATER MGAL
E BUNTING ROAD				
9+00 - 9+77	LT & RT	14	135	2
10+23 - 11+00	LT & RT	12	131	1
ITEM TOTALS		26	266	3

EROSION CONTROL ITEMS

STATION	LOCATION	628.1504 628.1520 628.6005		
		SILT FENCE LF	MAINTENANCE LF	TURBIDITY BARRIERS SY
E BUNTING ROAD				
9+00 - 9+77	LT & RT	213	213	-
10+00	LT & RT	-	-	64
10+23 - 11+00	LT & RT	198	198	-
ITEM TOTALS		411	411	64

PERMANENT SIGNING

SIGN GROUP CODE	SIGN CODE	SIGN MESSAGE	TYPE II SIZE	634.0612 POSTS WOOD 4X6-INCH		637.2230 SIGNS TYPE II REFLECTIVE F SF		638.2602 REMOVING SIGNS TYPE II EACH		638.3000 REMOVING SMALL SIGN SUPPORT'S EACH		REMARKS
				12-FI EACH	REFLECTIVE F SF	TYPE II EACH	SUPPORT'S EACH					
E BUNTING ROAD												
1-1	W5-52L	CLEARANCE STRIPER	12" X 36"	1	3	1	1	1	1	1	1	REPLACE
1-2	W5-52R	CLEARANCE STRIPER	12" X 36"	1	3	1	1	1	1	1	1	REPLACE
1-3	W5-52R	CLEARANCE STRIPER	12" X 36"	1	3	1	1	1	1	1	1	REPLACE
1-4	W5-52L	CLEARANCE STRIPER	12" X 36"	1	3	1	1	1	1	1	1	REPLACE
1-5	R12-1	WEIGHT LIMIT 20 TONS	24" X 30"	-	-	1	1	1	1	1	1	REMOVE
1-6	R12-1	WEIGHT LIMIT 20 TONS	24" X 30"	-	-	1	1	1	1	1	1	REMOVE
ITEM TOTALS				4	12	6	6	6	6	6	6	

ASPHALTIC PAVEMENT ITEMS

STATION	LOCATION	455.0605 465.0105	
		TACK COAT GAL	ASPHALTIC SURFACE TON
E BUNTING ROAD			
9+00 - 9+77	LT & RT	12	43
10+23 - 11+00	LT & RT	12	44
ITEM TOTALS		24	87

MOBILIZATIONS EROSION CONTROL

STATION	628.1910 628.1905	
	EROSION CONTROL EACH	EROSION CONTROL EACH
E BUNTING ROAD		
9+00 - 11+00	2	2
ITEM TOTALS		2 2

CONSTRUCTION STAKING

STATION	LOCATION	650.4500 650.5000 650.9920		
		SUBGRADE LF	BASE LF	SLOPE STAKES LF
E BUNTING ROAD				
9+00 - 9+77	LT & RT	77	77	77
10+23 - 11+00	LT & RT	77	77	77
ITEM TOTALS		154	154	154

SAWING ASPHALT

STATION	LOCATION	690.0150 LF
E BUNTING ROAD		
9+00	LT & RT	20
11+00	LT & RT	20
ITEM TOTAL		40

PROJECT NO: 7829-00-70

HWY: E BUNTING ROAD

COUNTY: EAU CLAIRE

MISCELLANEOUS QUANTITIES

SHEET

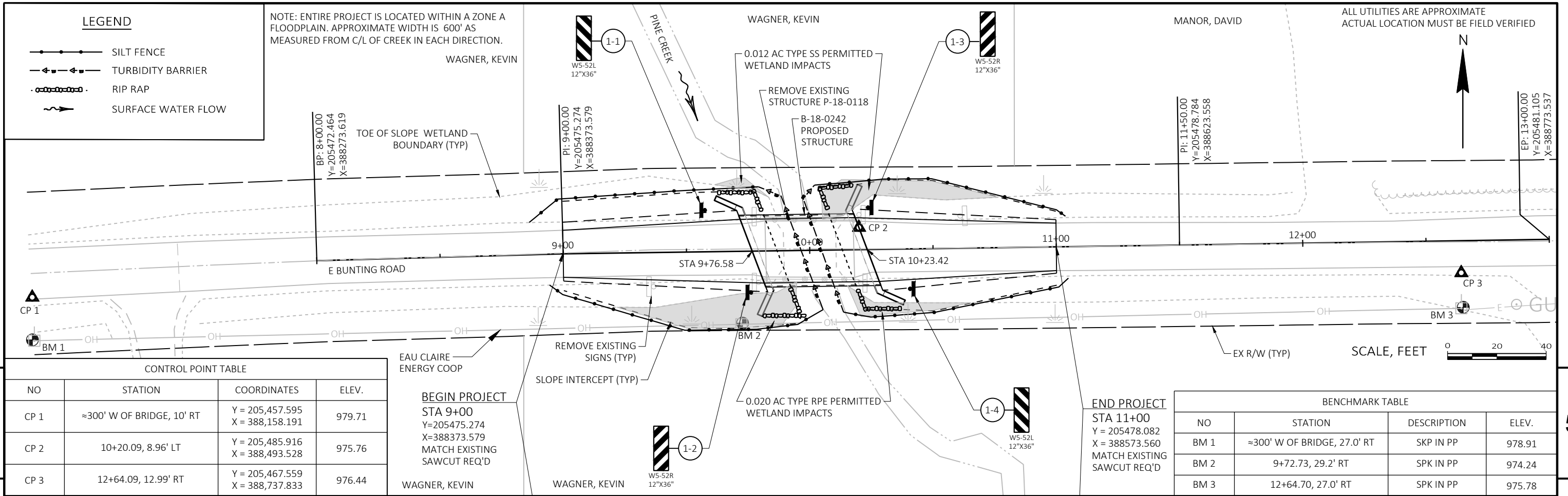
E

**LEGEND**

- SILT FENCE
- TURBIDITY BARRIER
- RIP RAP
- SURFACE WATER FLOW

NOTE: ENTIRE PROJECT IS LOCATED WITHIN A ZONE A FLOODPLAIN. APPROXIMATE WIDTH IS 600' AS MEASURED FROM C/L OF CREEK IN EACH DIRECTION.

ALL UTILITIES ARE APPROXIMATE ACTUAL LOCATION MUST BE FIELD VERIFIED



**CONTROL POINT TABLE**

NO	STATION	COORDINATES	ELEV.
CP 1	≈300' W OF BRIDGE, 10' RT	Y = 205,457.595 X = 388,158.191	979.71
CP 2	10+20.09, 8.96' LT	Y = 205,485.916 X = 388,493.528	975.76
CP 3	12+64.09, 12.99' RT	Y = 205,467.559 X = 388,737.833	976.44

**BEGIN PROJECT**  
STA 9+00  
Y=205475.274  
X=388373.579  
MATCH EXISTING  
SAWCUT REQ'D

**END PROJECT**  
STA 11+00  
Y = 205478.082  
X = 388573.560  
MATCH EXISTING  
SAWCUT REQ'D

**BENCHMARK TABLE**

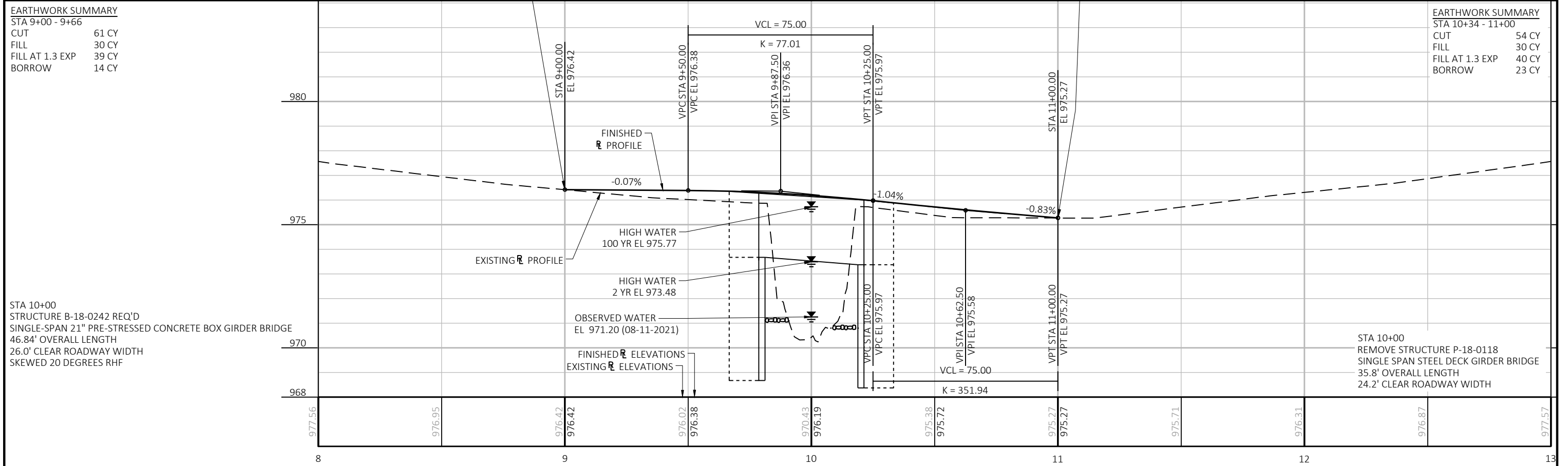
NO	STATION	DESCRIPTION	ELEV.
BM 1	≈300' W OF BRIDGE, 27.0' RT	SKP IN PP	978.91
BM 2	9+72.73, 29.2' RT	SPK IN PP	974.24
BM 3	12+64.70, 27.0' RT	SPK IN PP	975.78

**EARTHWORK SUMMARY**

STA 9+00 - 9+66  
CUT 61 CY  
FILL 30 CY  
FILL AT 1.3 EXP 39 CY  
BORROW 14 CY

**EARTHWORK SUMMARY**

STA 10+34 - 11+00  
CUT 54 CY  
FILL 30 CY  
FILL AT 1.3 EXP 40 CY  
BORROW 23 CY

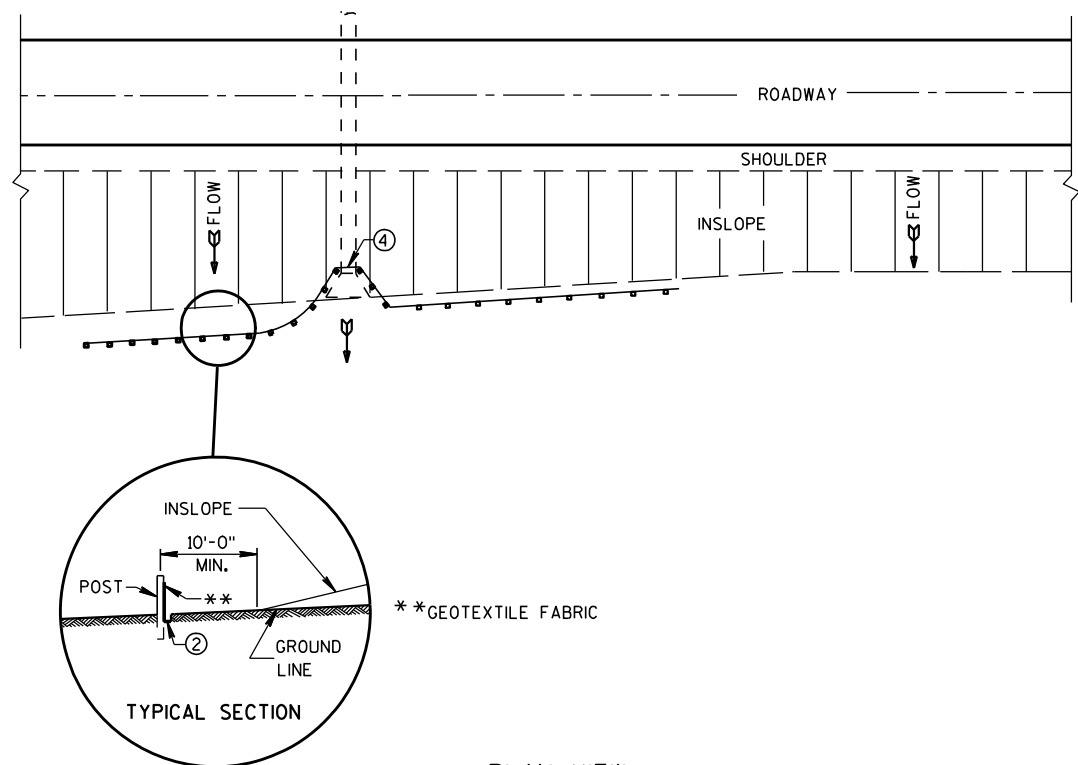


PROJECT NO: 7829-00-70	HWY: E BUNTING ROAD	COUNTY: EAU CLAIRE	PLAN AND PROFILE	SHEET	<b>5</b>
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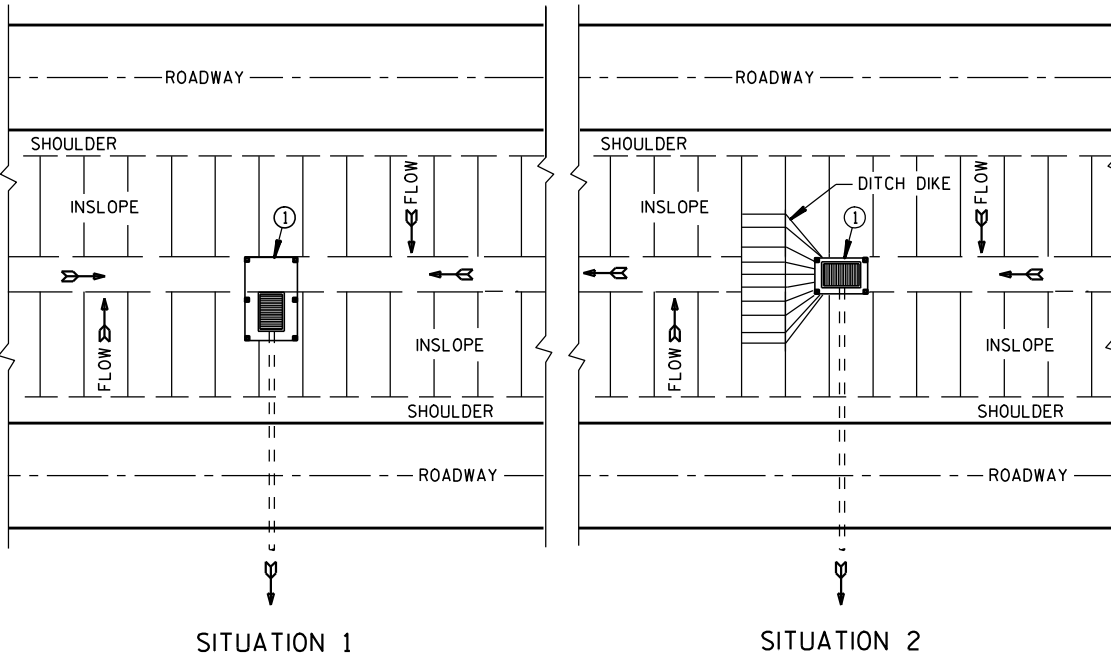
## Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-10	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS





PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE

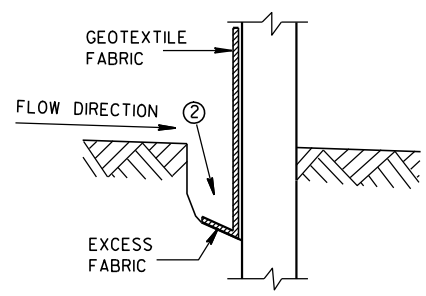


SITUATION 1 SITUATION 2  
PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

**GENERAL NOTES**

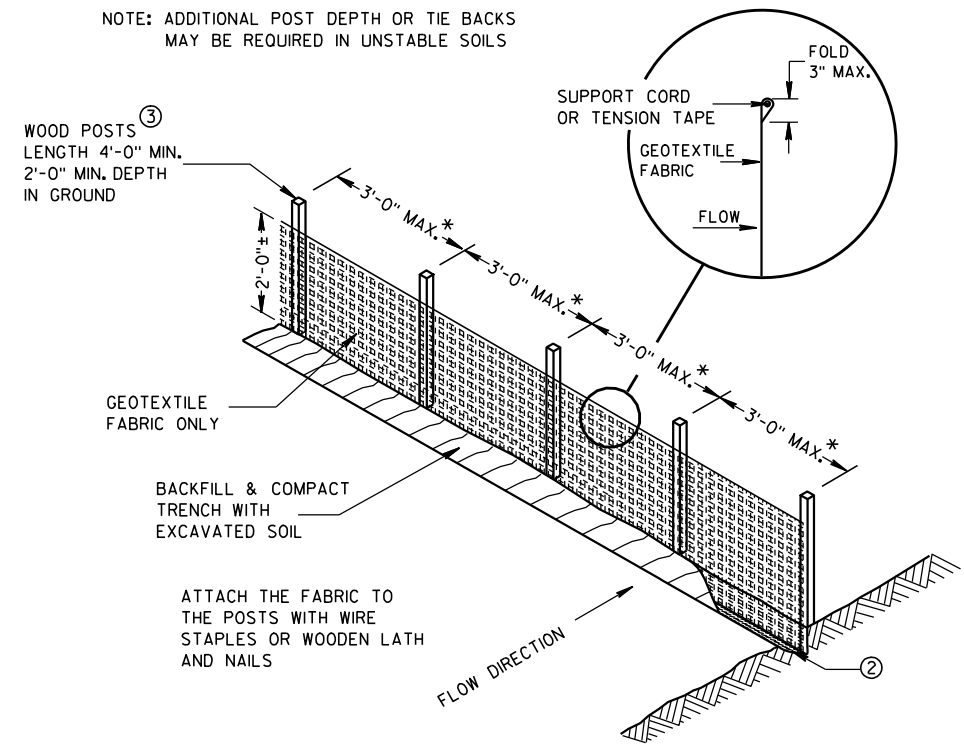
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



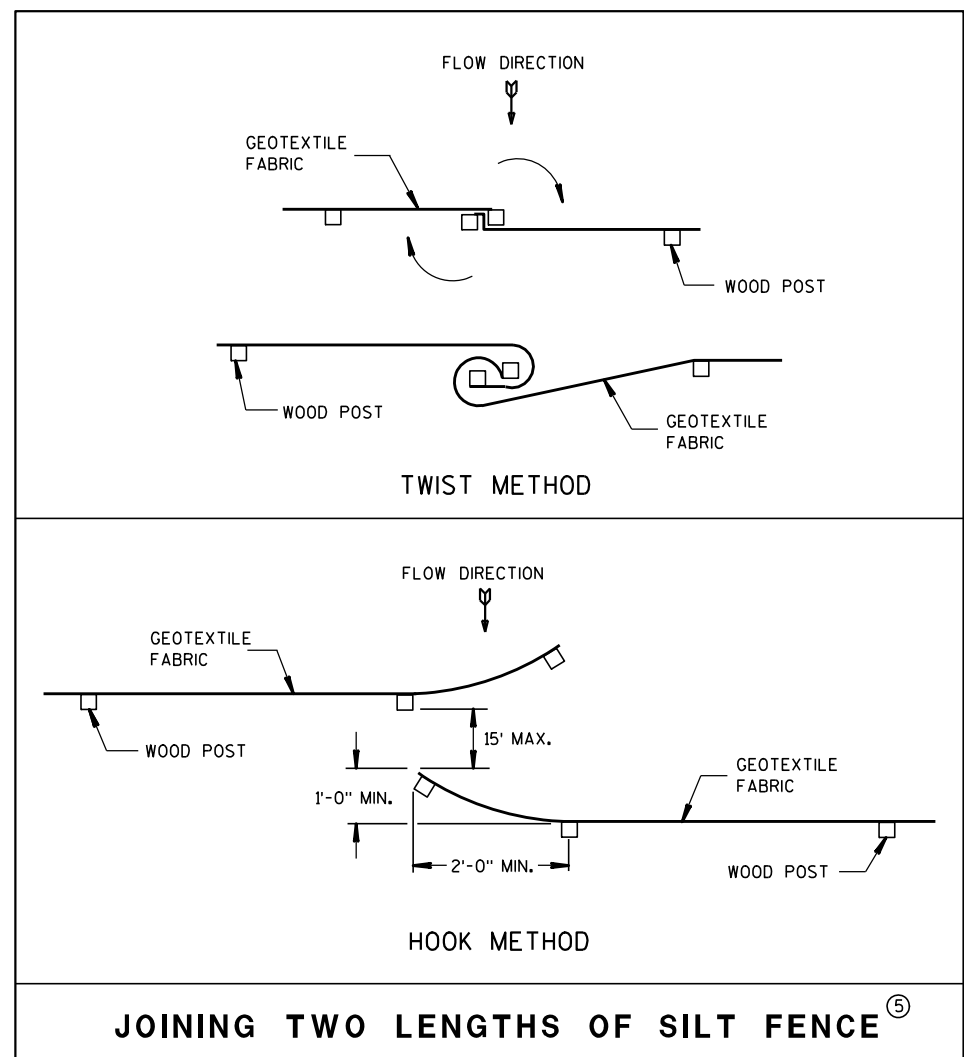
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

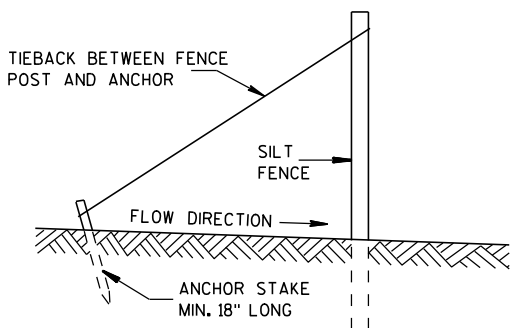


SILT FENCE

\* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

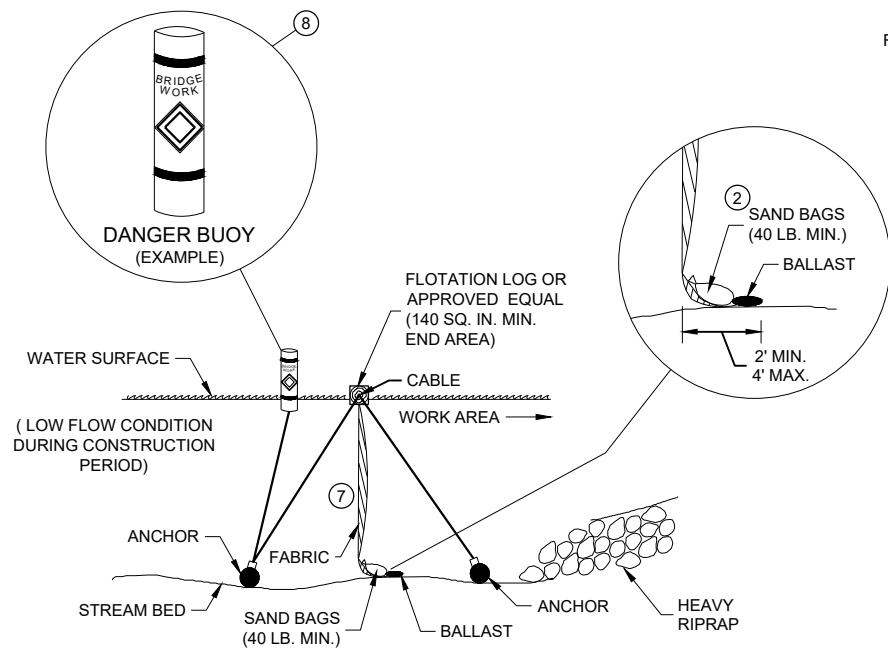


JOINING TWO LENGTHS OF SILT FENCE ⑤



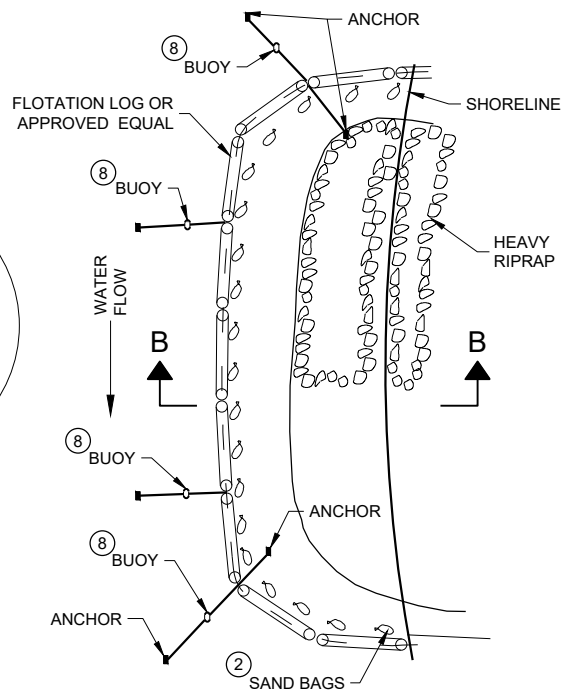
SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

<b>SILT FENCE</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

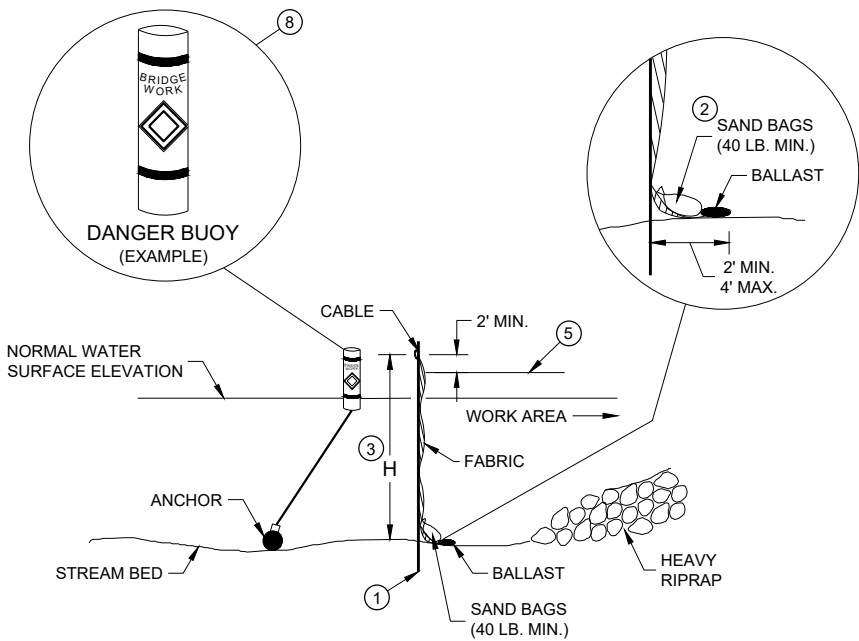


**SECTION B - B**

**TURBIDITY BARRIER - FLOAT ALTERNATIVE  
CAUTION - SEE NOTE 6**

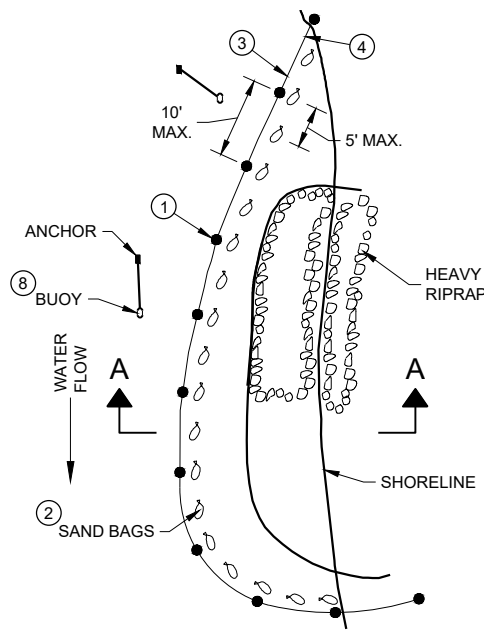


**PLAN VIEW**



**SECTION A - A**

**TURBIDITY BARRIER - STANDARD POST INSTALLATION**



**PLAN VIEW**

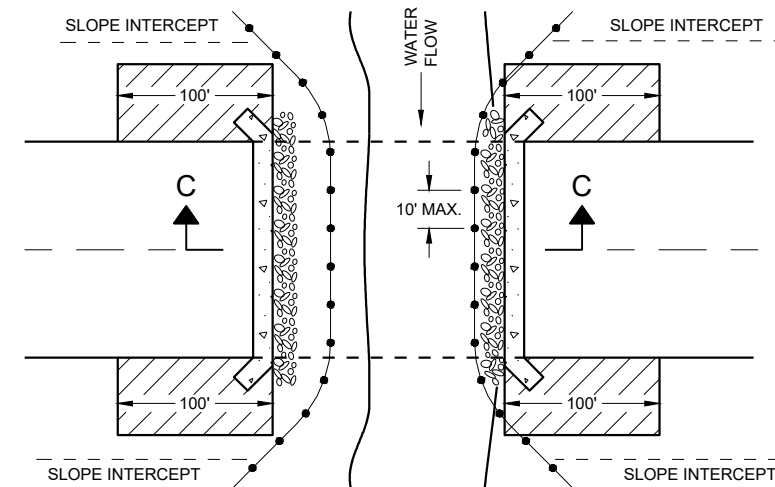
**TURBIDITY BARRIER PLACEMENT DETAILS**

**GENERAL NOTES**

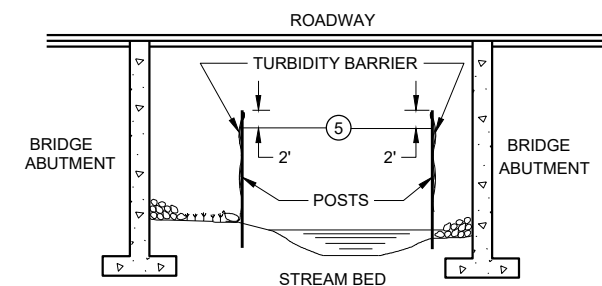
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SAND BAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT "H" EXCEEDS 8 FEET, POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



**PLAN VIEW**



**SECTION C - C**

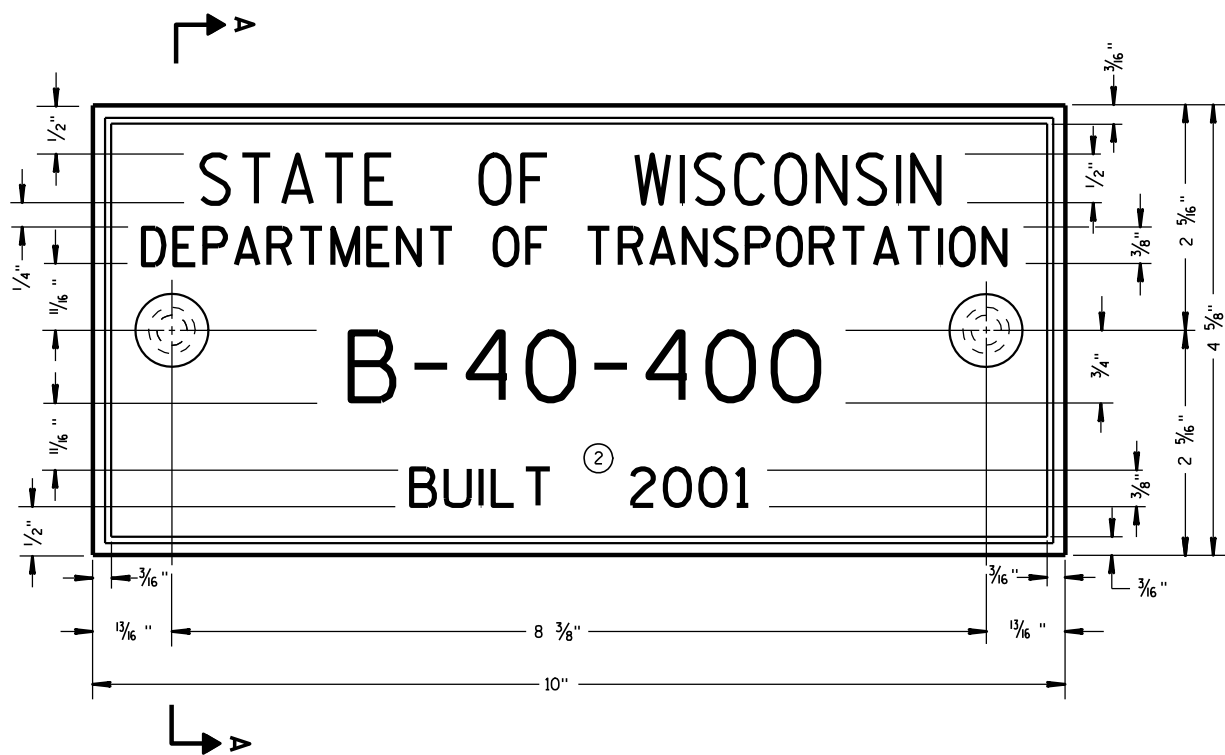
**TURBIDITY BARRIER DETAIL SHOWING  
TYPICAL PLACEMENT AT STRUCTURES**

**TURBIDITY BARRIER**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
6/4/02 DATE /S/ Beth Cannestra  
DATE CHIEF ROADWAY DEVELOPMENT  
ENGINEER

FHWA



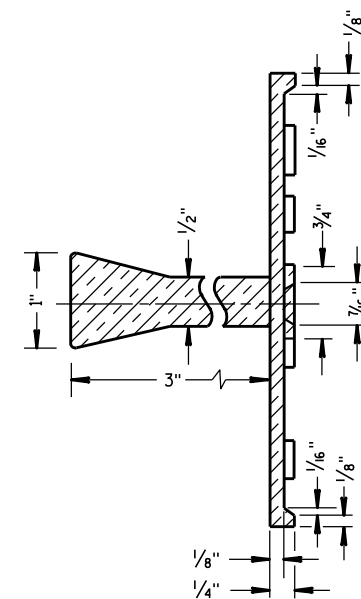
**TYPICAL NAME PLATE**  
(BRIDGES, CULVERTS, AND RETAINING WALLS)

**GENERAL NOTES**

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

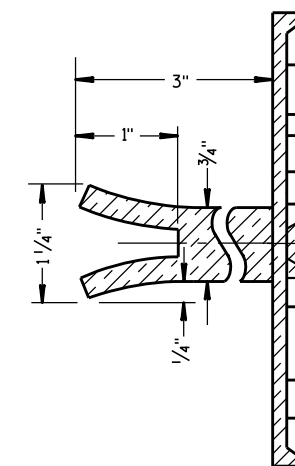
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

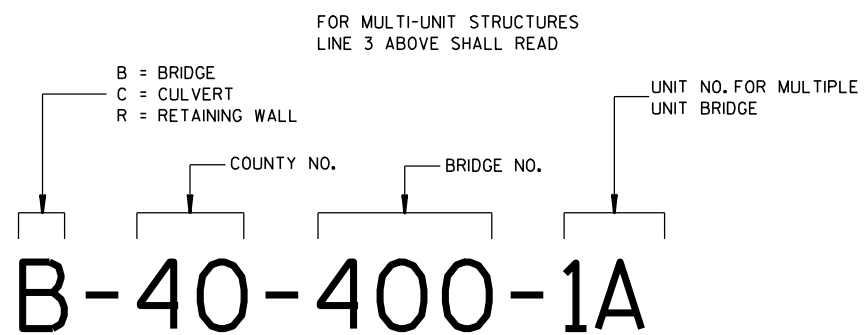


**SECTION A-A**

SPREAD OPEN SO THE TOP OF LUG IS 1 1/4" WIDE

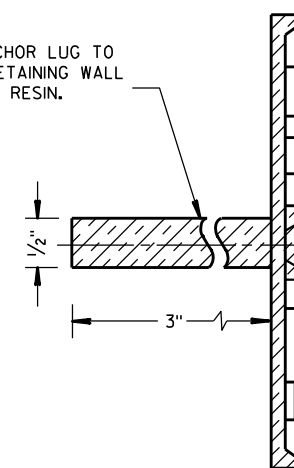


**ALTERNATE LUG**



**NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES**

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.

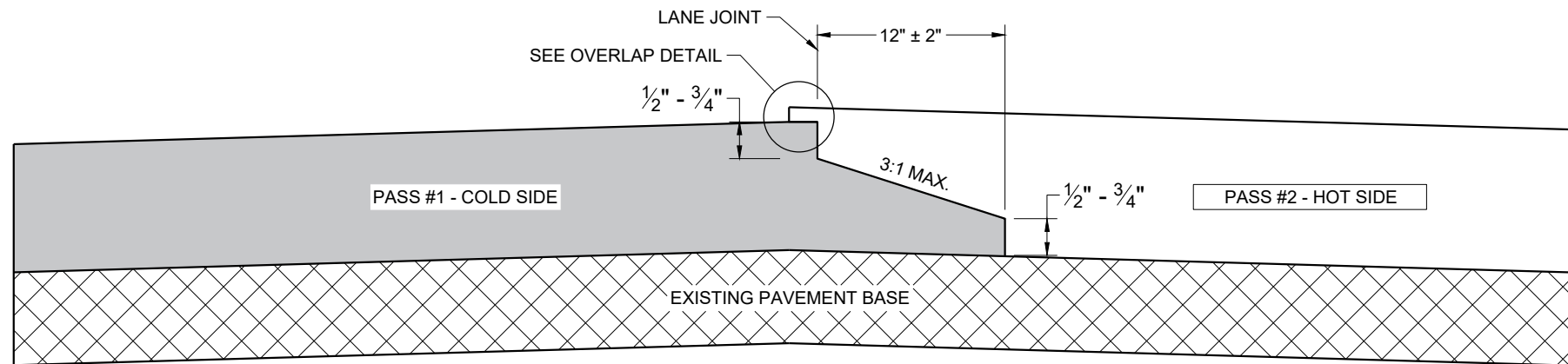


**ALTERNATE LUG**  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

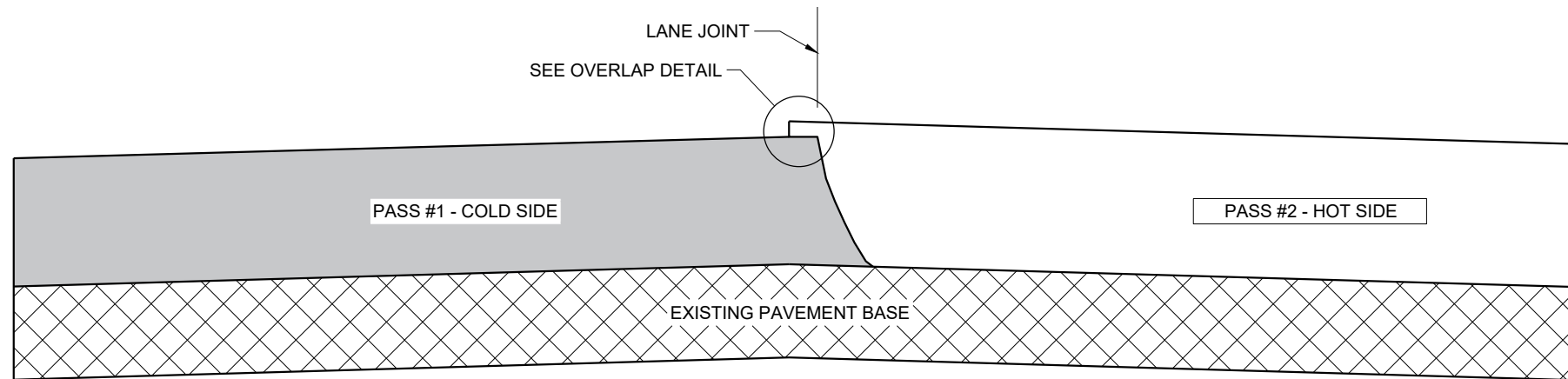
**NAME PLATE  
(STRUCTURES)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

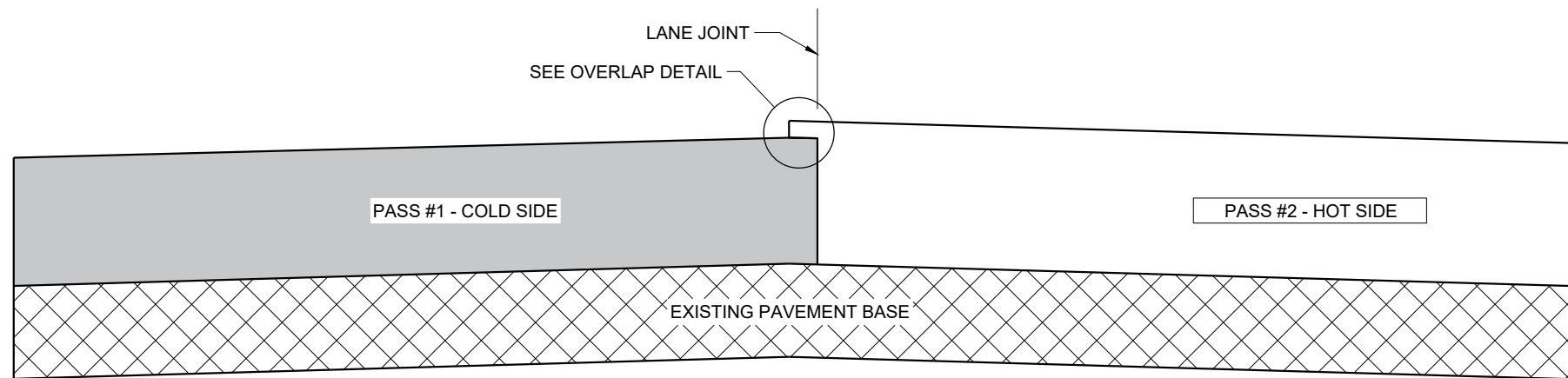
APPROVED  
DATE 3/26/10 /S/ Scot Becker  
CHIEF STRUCTURAL DEVELOPMENT ENGINEER  
FHWA



**TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT (MILLED)**

**GENERAL NOTES**

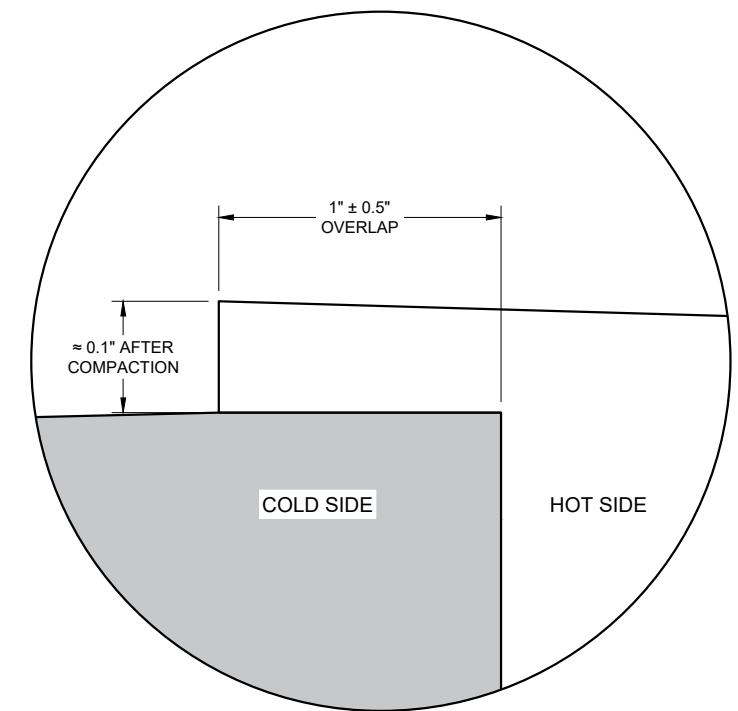
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY  $1" \pm 0.5"$  AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY 0.1" AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO 2" FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



**OVERLAP DETAIL (TYPICAL)**

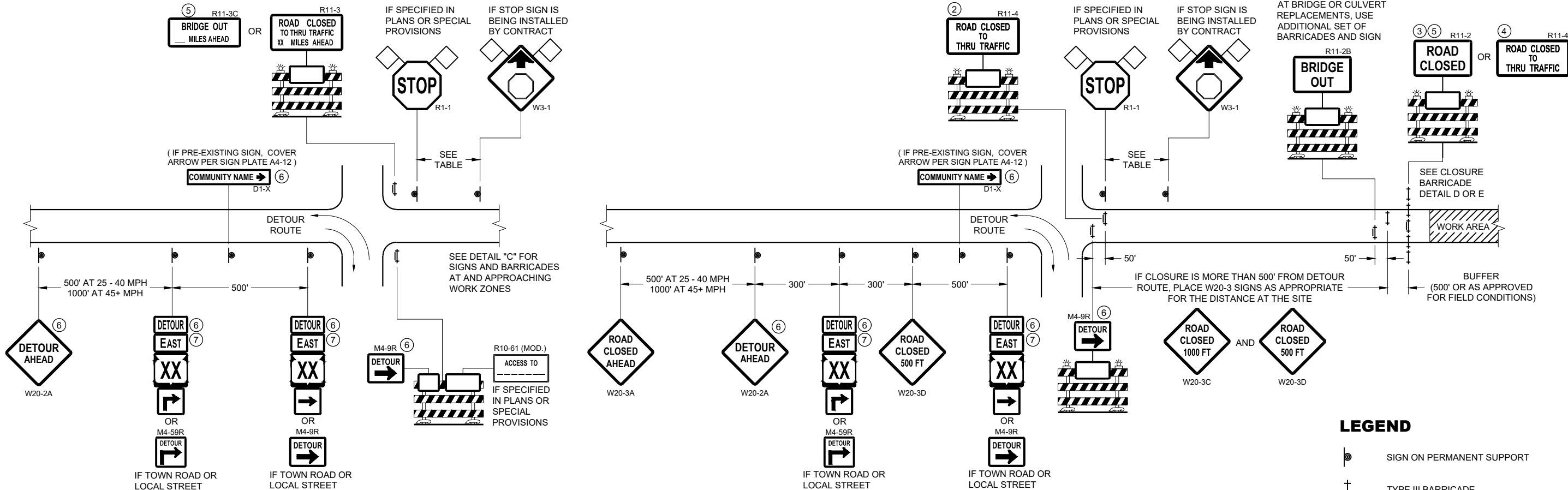
6

6

SDD 13C19 - 03

SDD 13C19 - 03

<b>HMA LONGITUDINAL JOINTS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Steven Hefel HMA PAVEMENT ENGINEER
FHWA	



**DETAIL A  
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

**DETAIL B  
MAINLINE CLOSURE WITH POSTED DETOUR**

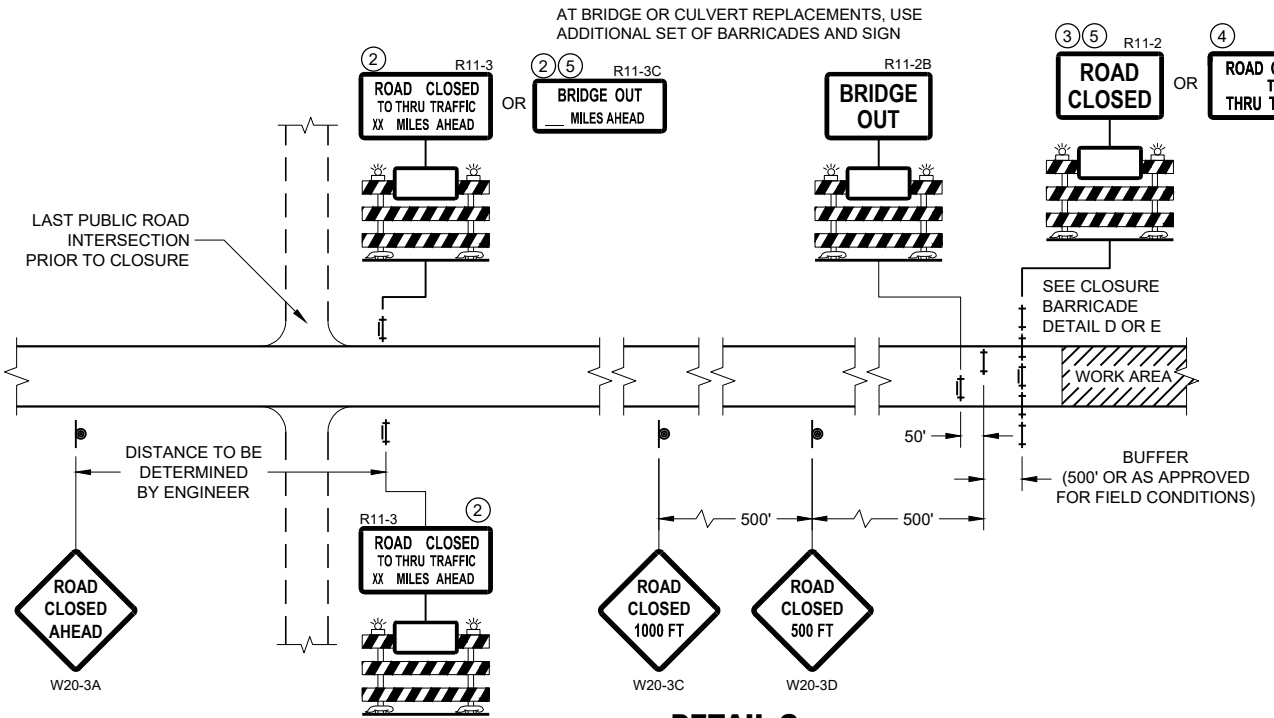
WORK ZONE LESS THAN 1/2 MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

**LEGEND**

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- M4 - 8
- M3 - X
- M1 - 4 OR M1 - 6 OR M1 - 5A
- M05 - 1 OR M06 - 1

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-SHEET "b"  
FOR GENERAL NOTES  
AND FOOTNOTES ① THROUGH ⑦

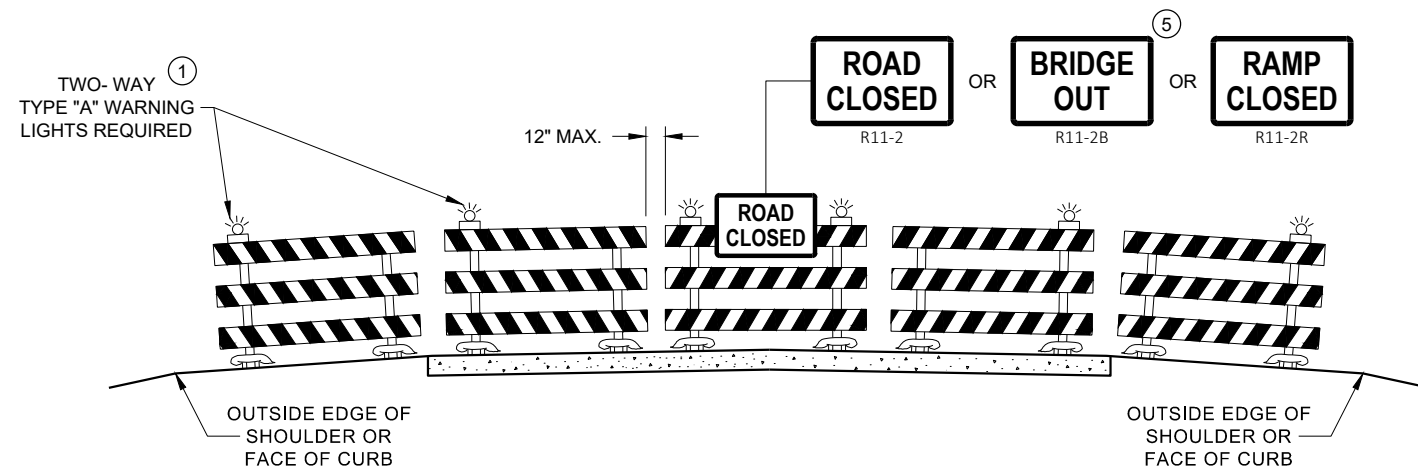


**DETAIL C  
MAINLINE CLOSURE, NO POSTED DETOUR**

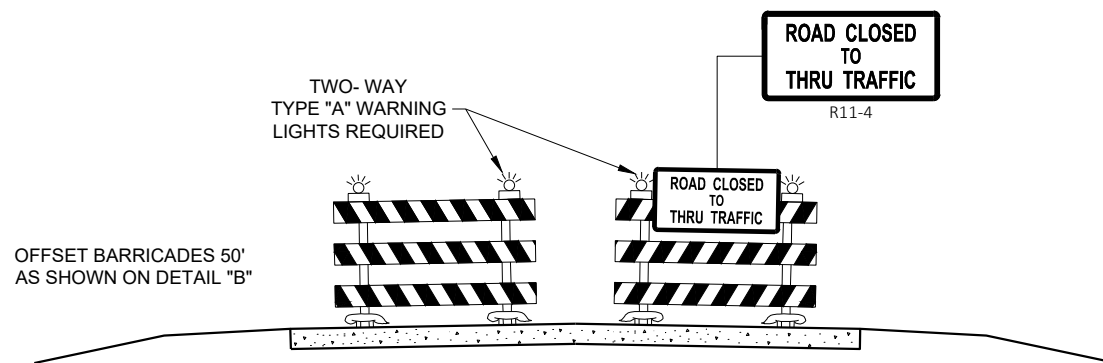
**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER  
FHWA



**DETAIL D  
ROAD CLOSURE BARRICADE DETAIL  
APPROACH VIEW**



**DETAIL E  
LANE CLOSURE BARRICADE DETAIL  
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

**GENERAL NOTES**

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW - INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

"WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

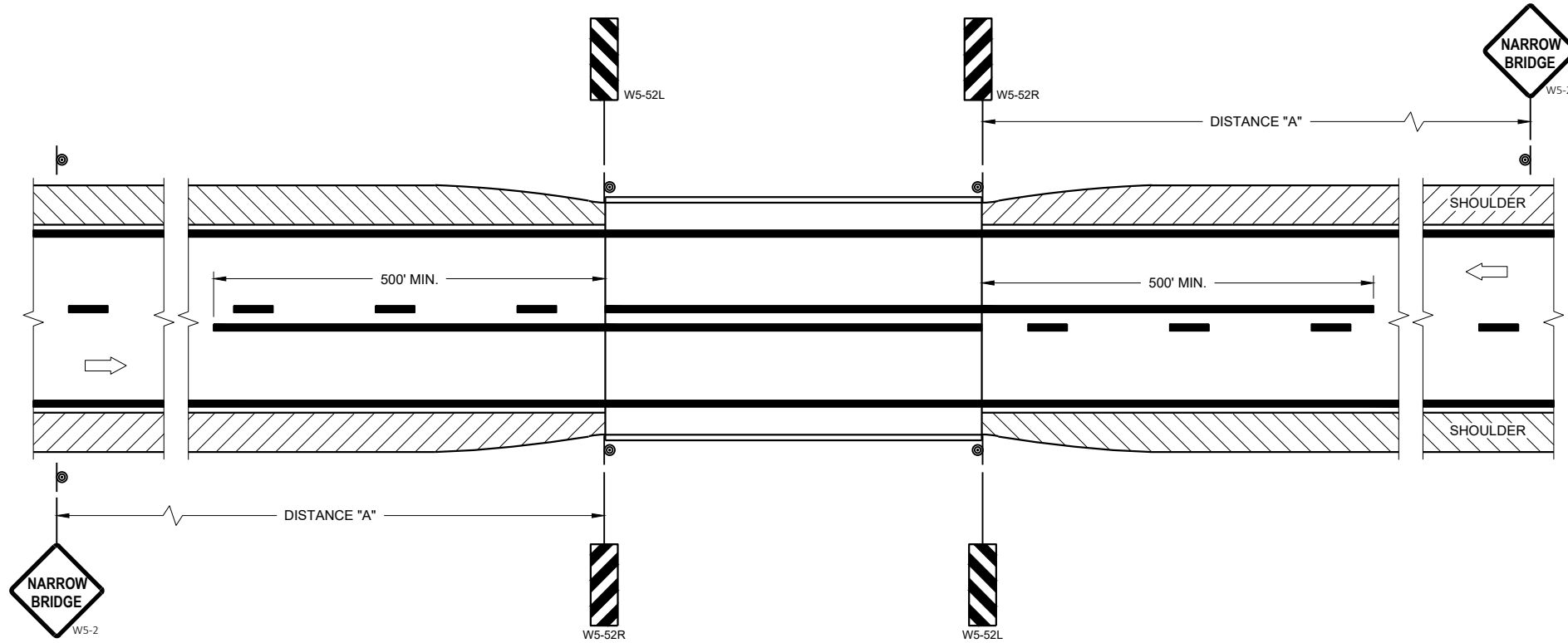
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- ③ FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- ④ FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- ⑤ FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- ⑥ INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- ⑦ "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

**BARRICADES AND SIGNS  
FOR  
VARIOUS CLOSURES**

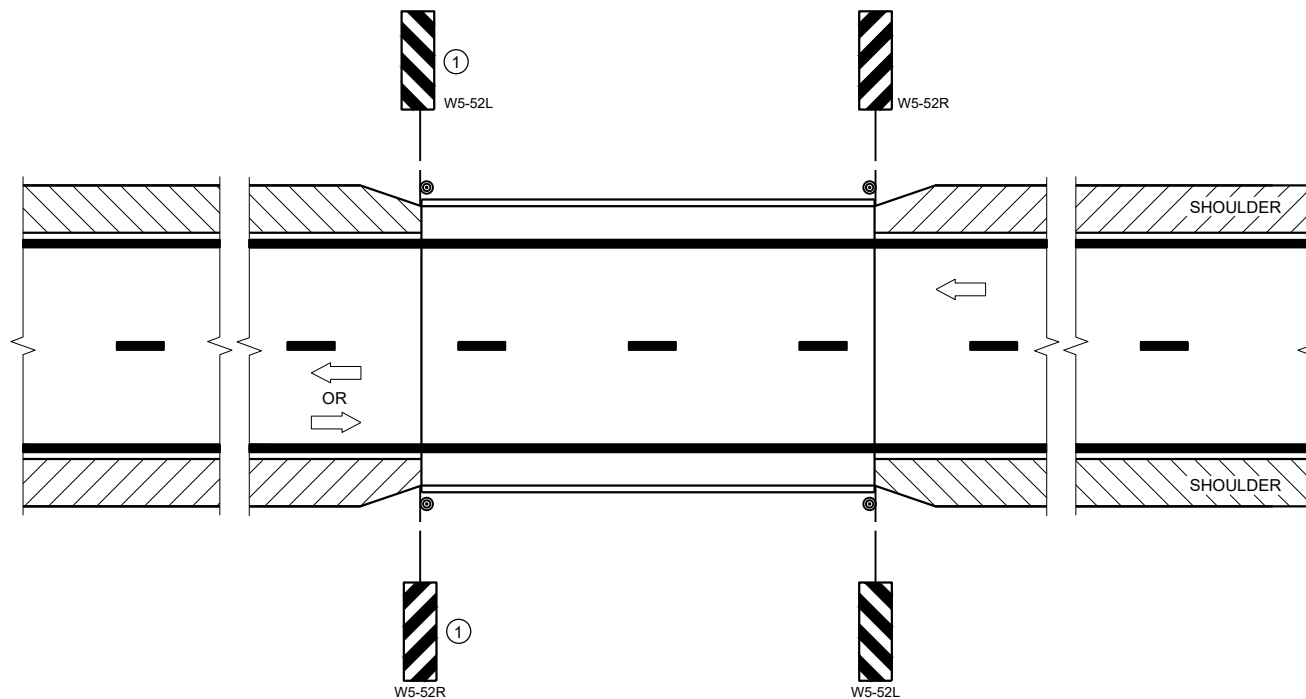
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA



**SITUATION 1**  
 WARRANTING CRITERIA:  
 BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



**SITUATION 2**  
 WARRANTING CRITERIA:  
 1. BRIDGE WIDTH IS AT LEAST 24 FEET AND  
 2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET

**GENERAL NOTES**

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THE DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

**LEGEND**

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

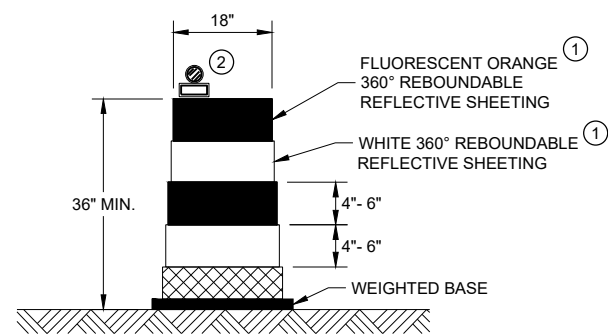
**DISTANCE TABLE**

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

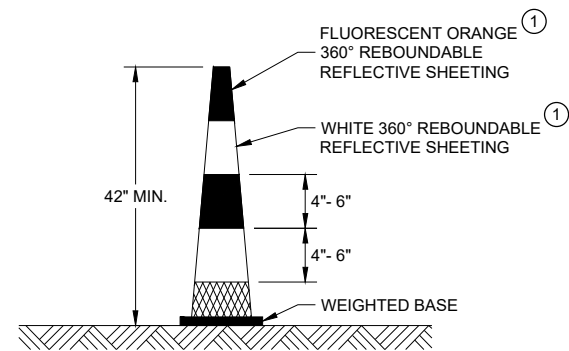
**SIGNING AND MARKING FOR TWO LANE BRIDGES**

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED  
 May 2022 /S/ Jeannie Silver  
 DATE STATE SIGNING AND MARKING ENGINEER

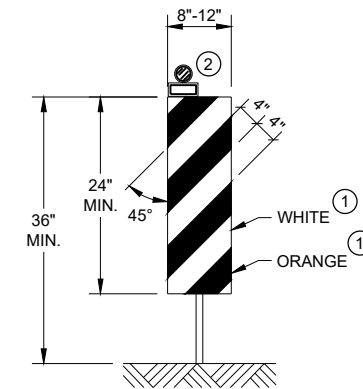


**DRUM**



**42" CONE**

DO NOT USE IN TAPERS  
 1/2 SPACING OF DRUMS

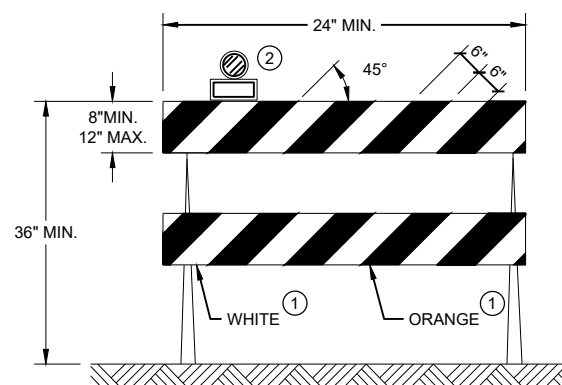


**VERTICAL PANEL**

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.

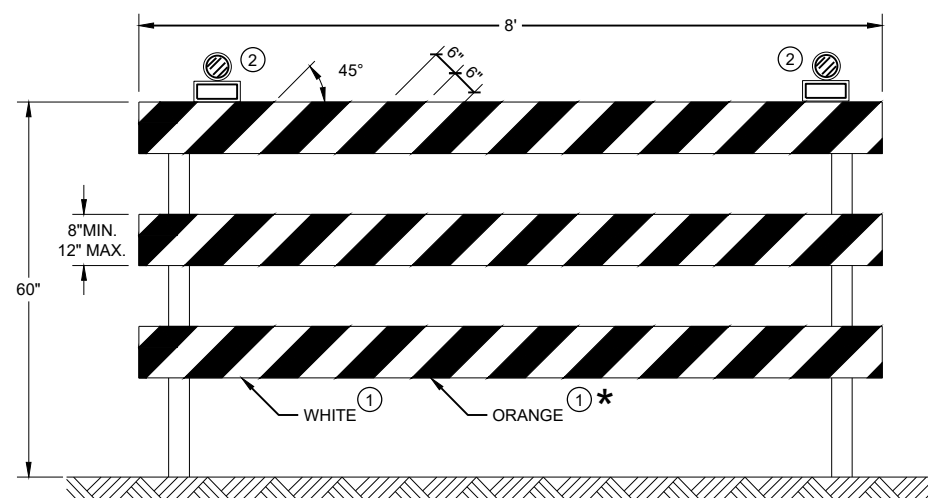
**GENERAL NOTES**

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



**TYPE II BARRICADE**

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



**TYPE III BARRICADE**

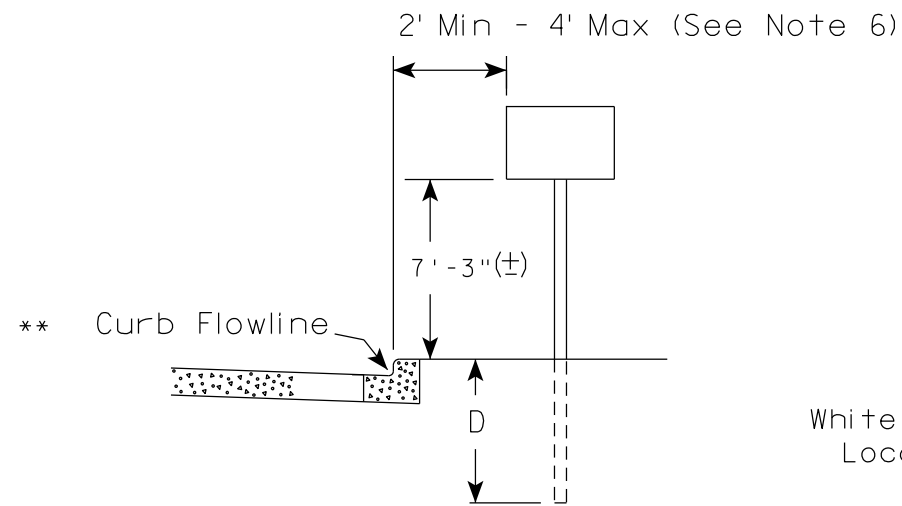
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

\* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

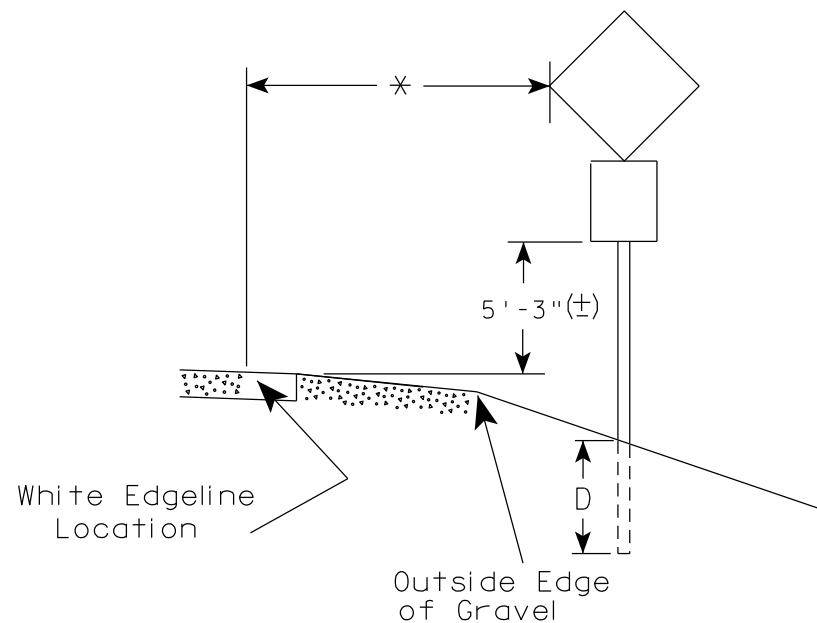
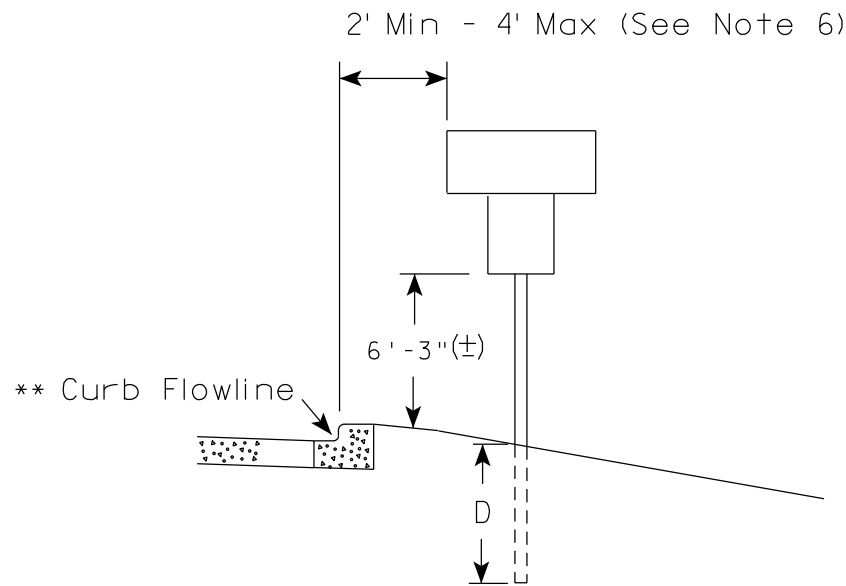
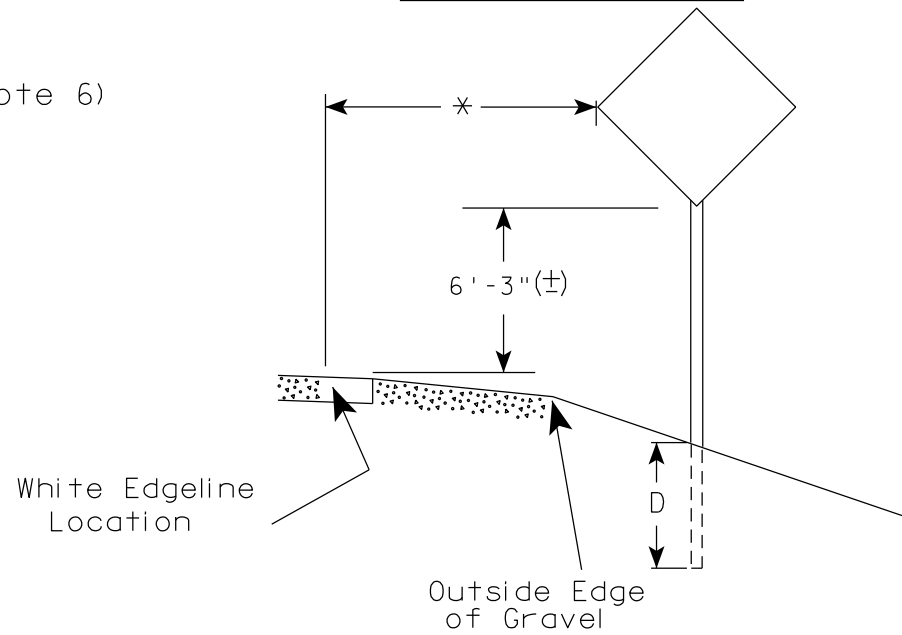
<b>CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	



URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.  
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.

POST EMBEDMENT DEPTH

Area of Sign Installation ( Sq. Ft. )	D ( Min )
20 or Less	4'
Greater than 20	5'

\* \* The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

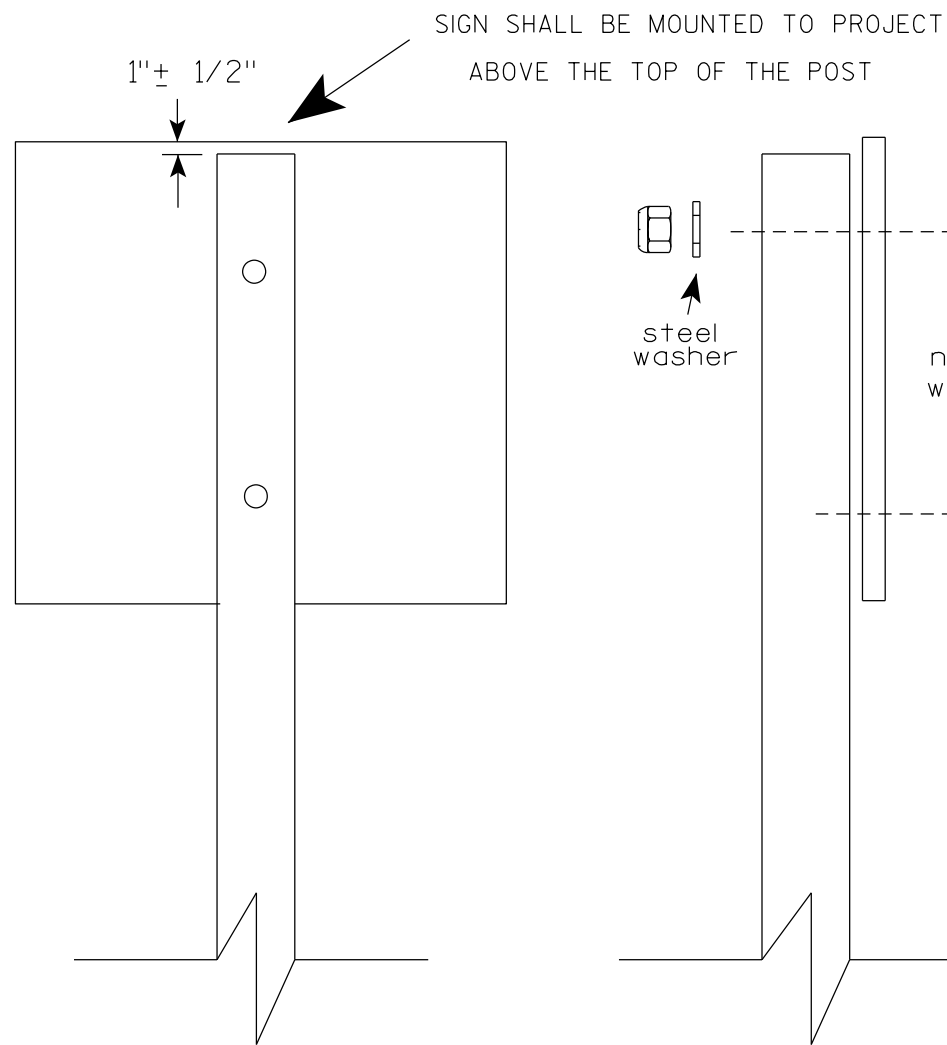
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

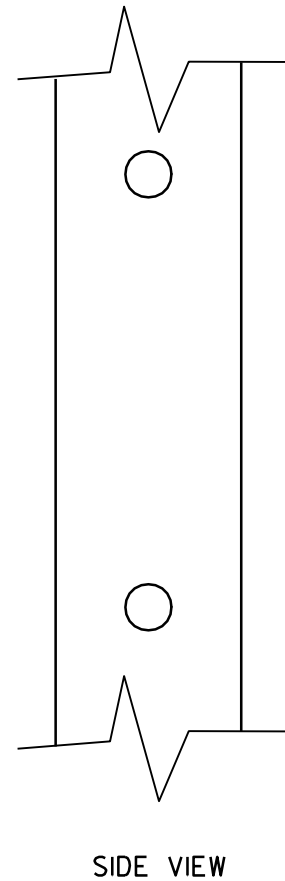
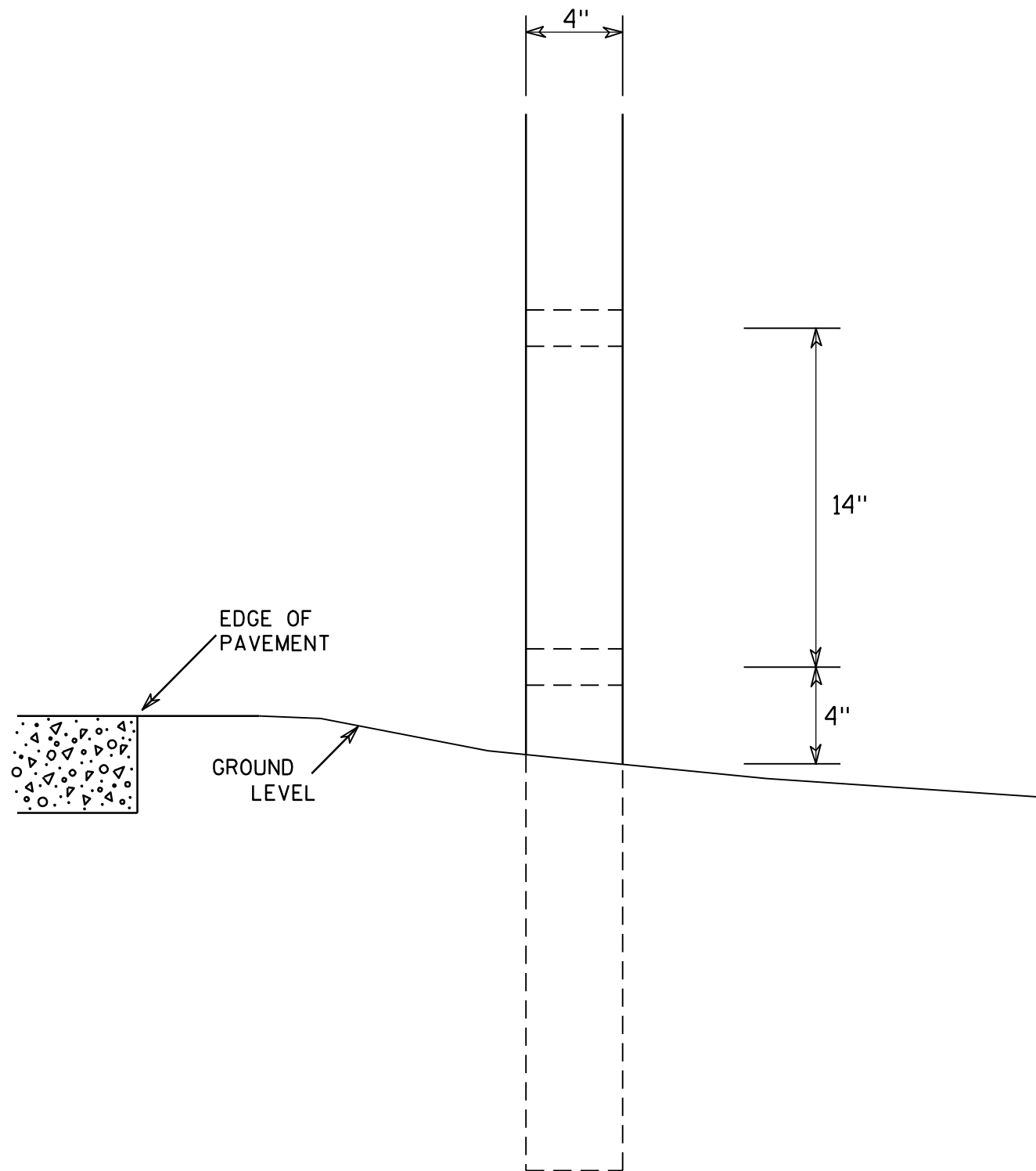
- Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS -  $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS -  $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)  
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS -  $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)  
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS -  $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL  
 O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X  $\frac{3}{8}$ " I.D. X  $\frac{1}{16}$ " STEEL
- 1-1/4" O.D. X  $\frac{3}{8}$ " I.D. X .080 NYLON

\* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9



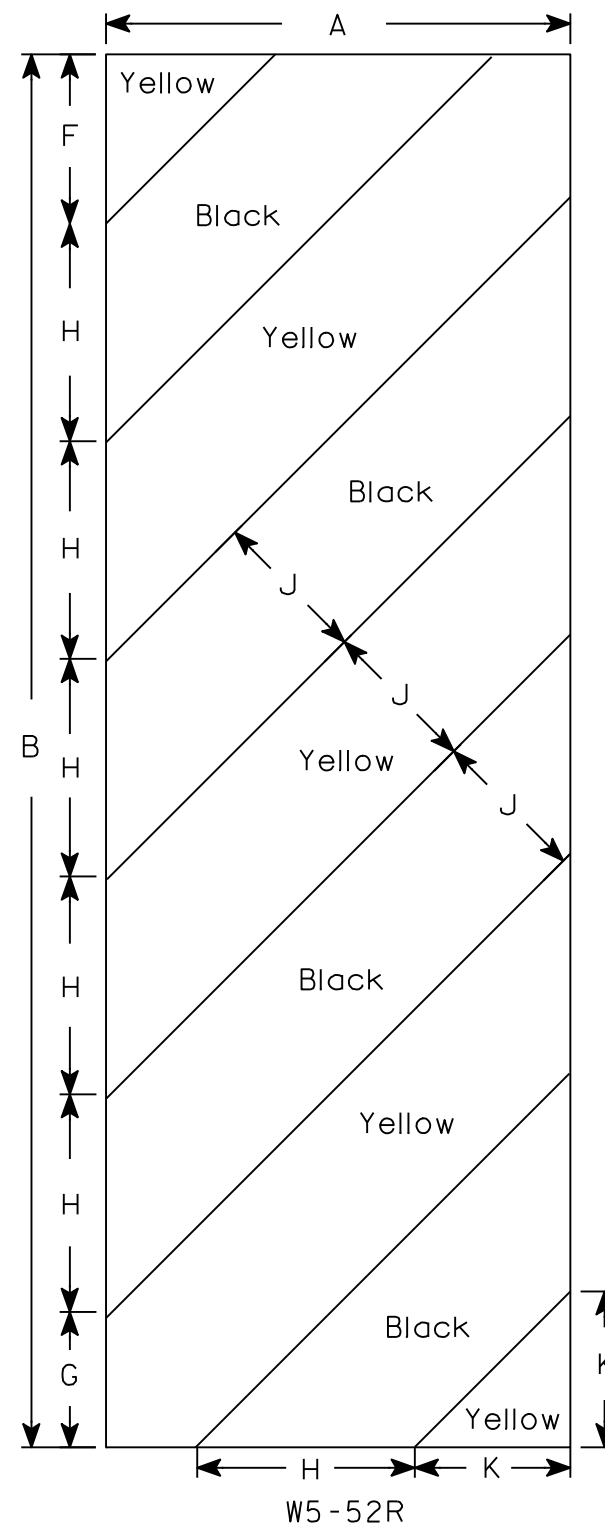
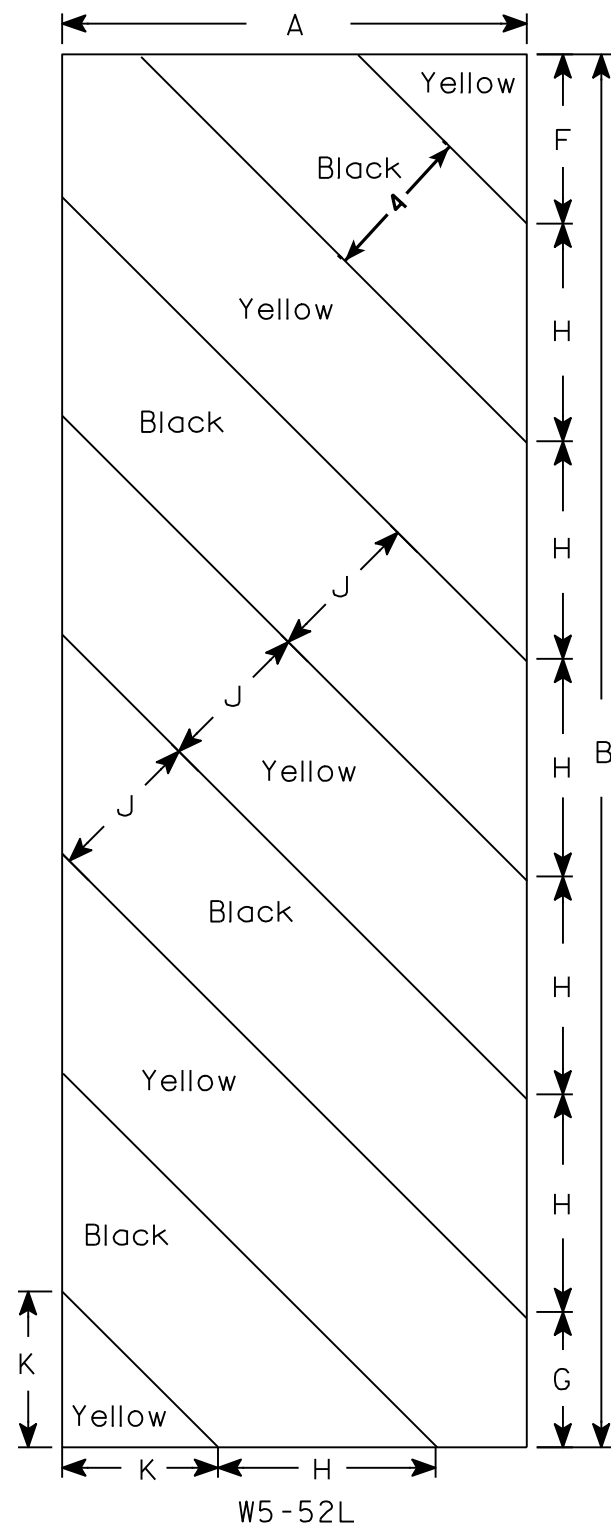
GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

7

<b>4 X 6 WOOD POST MODIFICATIONS</b>	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Yellow  
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN  
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

**DESIGN DATA**

**LIVE LOAD:**  
 DESIGN LOADING = HL-93  
 INVENTORY RATING FACTOR: = RF 1.40  
 OPERATING RATING FACTOR: = RF 2.03  
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF

**MATERIAL PROPERTIES:**

CONCRETE MASONRY - SUPERSTRUCTURE  $f'_c = 4$  ksi  
 - ALL OTHER  $f'_c = 3.5$  ksi

HIGH STRENGTH BAR STEEL REINFORCEMENT  
 AASHTO GRADE 60  $f_y = 60$  ksi

21" PRESTRESSED BOX GIRDER  
 CONCRETE MASONRY  $f'_c = 5.5$  ksi

STRANDS, 0.6" DIA. ULTIMATE  
 TENSILE STRENGTH  $f_y = 270$  ksi

**FOUNDATION DATA**

ABUTMENTS TO BE SUPPORTED ON 10 3/4" CIP PILES WITH 0.25 WALL THICKNESS WITH A REQUIRED DRIVING RESISTANCE OF 130 TONS\* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 60 FEET LONG AT BOTH ABUTMENTS.

\*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 FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

**HYDRAULIC DATA**

100 YEAR FREQUENCY  
 $Q_{100} = 540$  CFS  
 $Q_{100}$  THRU STRUCTURE 540 CFS  
 VELOCITY 5.22 FPS  
 HIGH WATER EL 975.77 FT  
 WATERWAY AREA 103.00 SQ FT  
 DRAINAGE AREA 3.80 SQ MI

2 YEAR FREQUENCY  
 $Q_2 = 140$  CFS  
 $Q_2$  HIGH WATER EL 973.48 FT  
 $Q_2$  VELOCITY 1.44 FPS

**TRAFFIC DATA**

ADT (2023) = 230  
 ADT (2043) = 310  
 DHV = 23  
 DD = 50/50  
 T = 10%  
 DESIGN SPEED = 60 MPH  
 ESALS = 81,000

SCOUR CODE 5

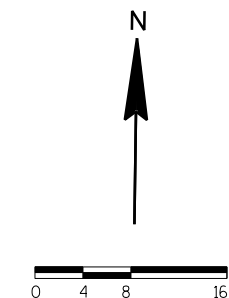
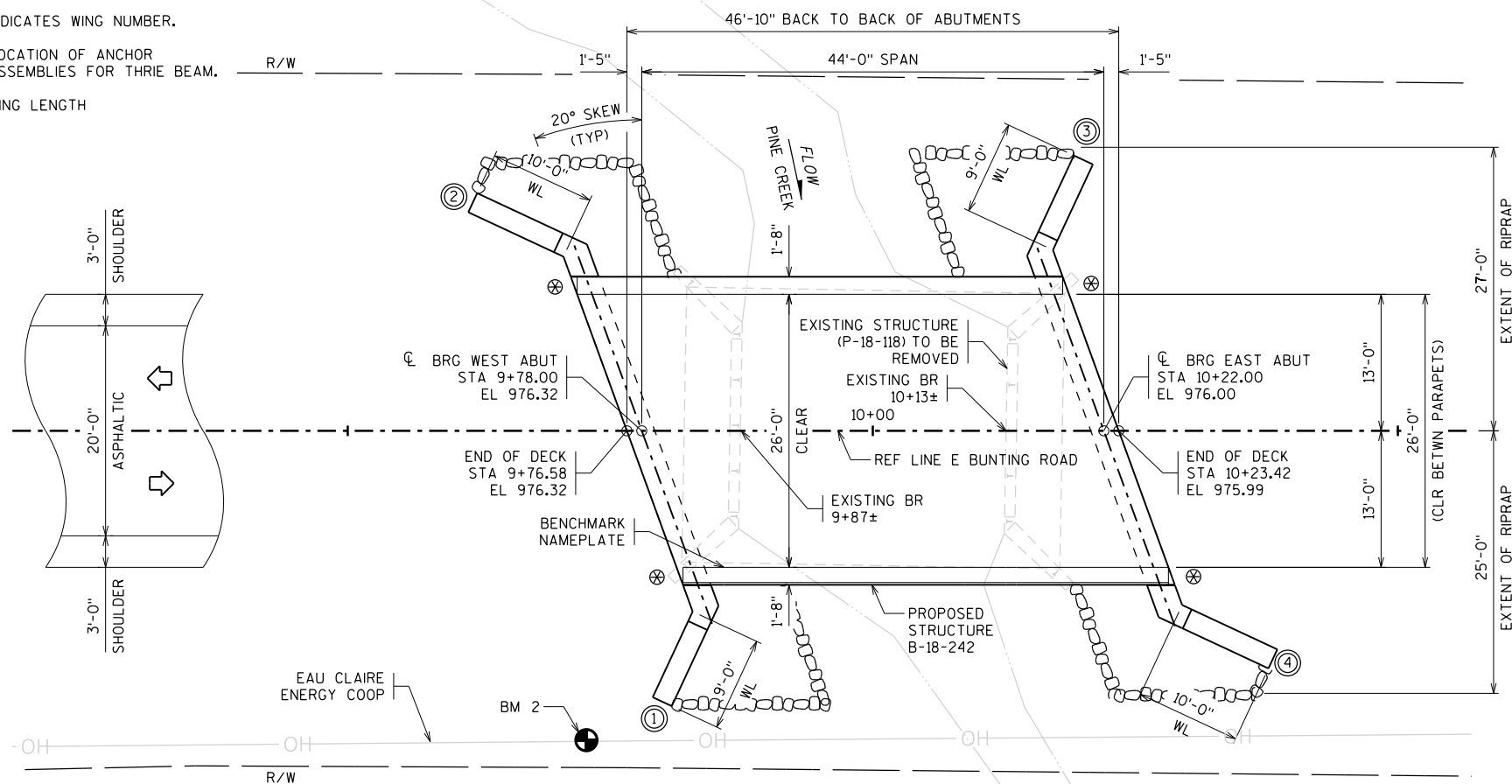
**LIST OF DRAWINGS**

- 1 GENERAL PLAN
- 2 CROSS SECTION, NOTES AND QUANTITIES
- 3 SUBSURFACE EXPLORATION
- 4 WEST ABUTMENT
- 5 WEST ABUTMENT WING DETAILS
- 6 EAST ABUTMENT
- 7 EAST ABUTMENT WING DETAILS
- 8 ABUTMENT DETAILS AND BILL OF BARS
- 9 21-INCH PRESTRESSED BOX GIRDER DETAILS 1
- 10 21-INCH PRESTRESSED BOX GIRDER DETAILS 2
- 11 21-INCH PRESTRESSED BOX GIRDER DETAILS 3
- 12 SUPERSTRUCTURE
- 13 SUPERSTRUCTURE DETAILS
- 14 SINGLE SLOPE PARAPET 42SS

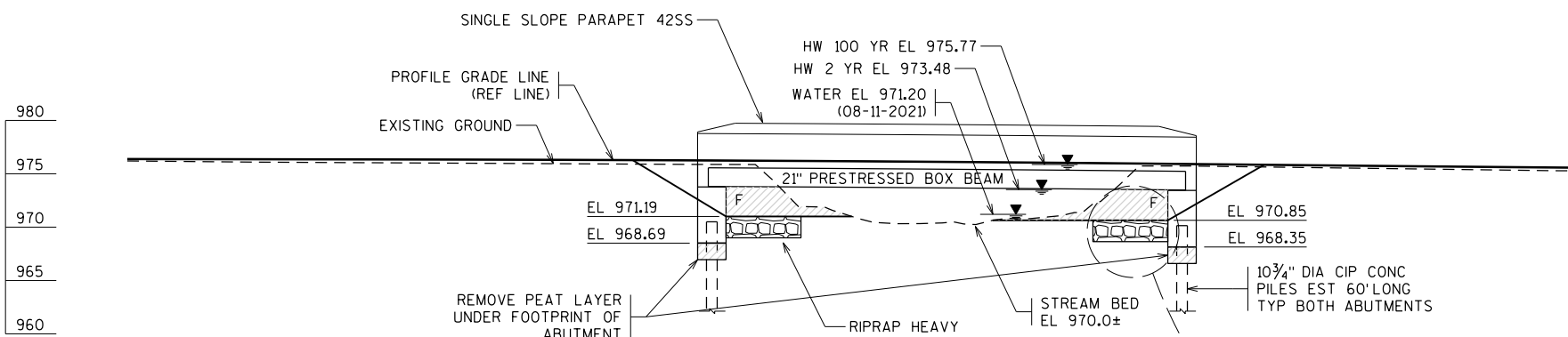
⊙ INDICATES WING NUMBER.

⊗ LOCATION OF ANCHOR ASSEMBLIES FOR THRIE BEAM.

WL = WING LENGTH

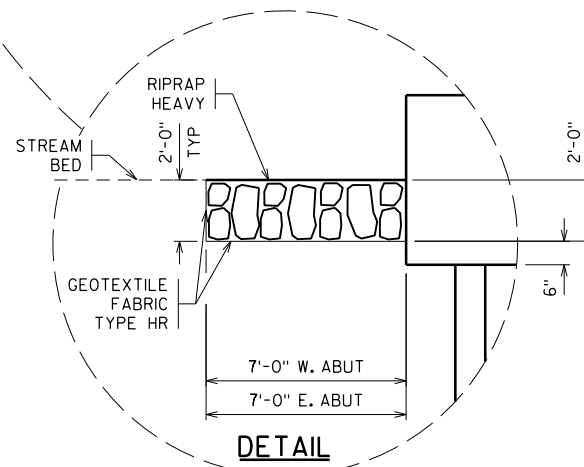


**PLAN**  
 SINGLE SPAN - 21" PRESTRESSED BOX GIRDERS

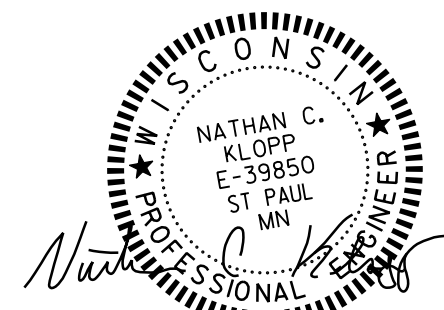


**ELEVATION**  
 (LOOKING NORTH)

AREA TO EXCAVATE INCLUDED IN "EXCAVATION FOR STRUCTURES BRIDGES B-18-242" EXCAVATION INCLUDES REMOVING THE PEAT LAYER BENEATH THE ABUTMENT FOOTPRINT



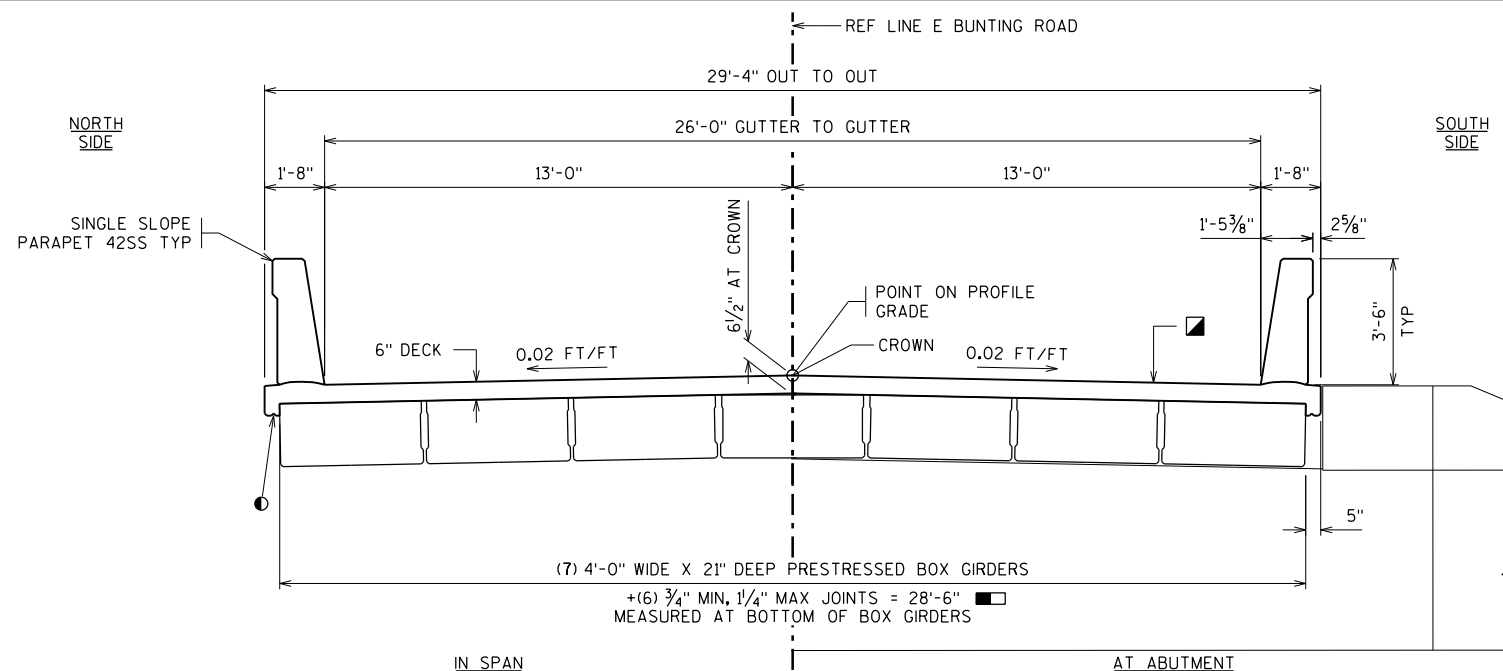
**DETAIL**



SEH CONTACT: CHRIS BLUM, PE, 608.620.6192  
 WISDOT BRIDGE OFFICE CONTACT: AARON BONK, PE, 608.261.0261

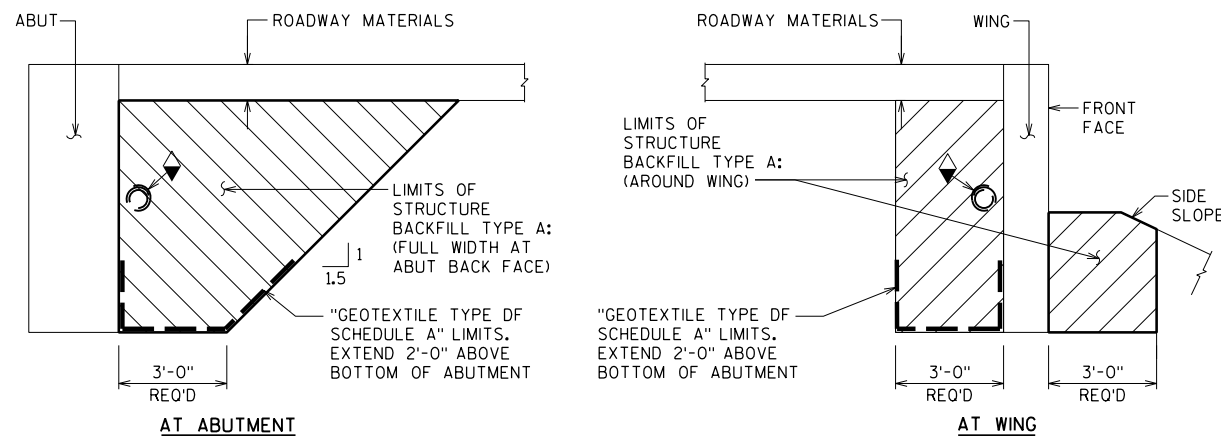
BENCHMARK (DATUM = NAVD 88)			
NO	STATION	DESCRIPTION	ELEV
BM 1	300± W OF BRIDGE, 26.95 RT	SPIKE IN POWER POLE	978.91
BM 2	9+72.73, 29.46 RT	SPIKE IN POWER POLE	974.24
BM 3	250± E OF BRIDGE, 26.56 RT	SPIKE IN POWER POLE	975.78

NO.	DATE	REVISION	BY
 SHORT ELLIOTT HENDRICKSON INC. STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED: <i>[Signature]</i> SDR <b>11/07/22</b> CHIEF STRUCTURES DESIGN ENGINEER DATE			
<b>STRUCTURE B-18-242</b>			
<b>E BUNTING ROAD OVER PINE CREEK</b>			
COUNTY	EAU CLAIRE	TOWN	CLEAR CREEK
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS		
DESIGNED BY	CAD	DESIGN CK'D.	NCK
DRAWN BY	GLE	PLANS CK'D.	NCK
<b>GENERAL PLAN</b>			SHEET 1 OF 14



**CROSS SECTION THRU BRIDGE**

(LOOKING EAST)



**BACKFILL STRUCTURE LIMITS**

A FACTOR OF 2.0 WAS USED TO CONVERT CU YDS TO TONS

PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE.

BID ITEM NUMBER	BID ITEM	UNIT	WEST ABUT	EAST ABUT	SUPER	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-18-118	EACH	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-18-242	EACH	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	220	204	---	424
502.0100	CONCRETE MASONRY BRIDGES	CY	31	31	43	105
502.3200	PROTECTIVE SURFACE TREATMENT	SY	---	---	136	136
502.3210	PIGMENTED SURFACE SEALER	SY	---	---	47	47
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,345	2,345	---	4,690
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,460	1,460	6,185	9,105
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	7	7	---	14
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	10	---	20
550.2104	PILING CIP CONCRETE 10 3/4 X 0.25-INCH	LF	480	480	---	960
606.0300	RIPRAP HEAVY	CY	33	33	---	66
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	85	85	---	170
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	---	---	---	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	51	51	---	102
645.0120	GEOTEXTILE TYPE HR	SY	50	50	---	100
SPV.0090	PRESTRESSED GIRDER BOX TYPE 21-INCH	LF	---	---	313	313
NON-BID ITEMS						
	FILLER	SIZE	-	-	-	1/2" & 3/4"
	NAMEPLATE	EACH	1	-	-	1
	BENCHMARK	EACH	1	-	-	1

① QUANTITY INCLUDES THE FILLING OVER EXCAVATED VOLUME OF THE PEAT AREA BENEATH THE ABUTMENT FOOT PRINT.

**GENERAL NOTES**

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M153 TYPE I, II OR III OR AASHTO DESIGNATION M213.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS, OR AS DIRECTED BY THE ENGINEER.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-18-242" SHALL BE THE EXISTING GROUNDLINE.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE ENTIRE INSIDE FACE AND TOP SURFACE OF THE PARAPETS ON THE WINGS AND SUPERSTRUCTURE.

THE EXISTING STRUCTURE P-18-118, TO BE REMOVED, IS A SINGLE SPAN STEEL DECK GIRDER BRIDGE WITH EXTERIOR PRESTRESSED DOUBLE TEE BEAMS, 36.0 FT. LONG WITH A 26.2 FT. WIDTH.

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

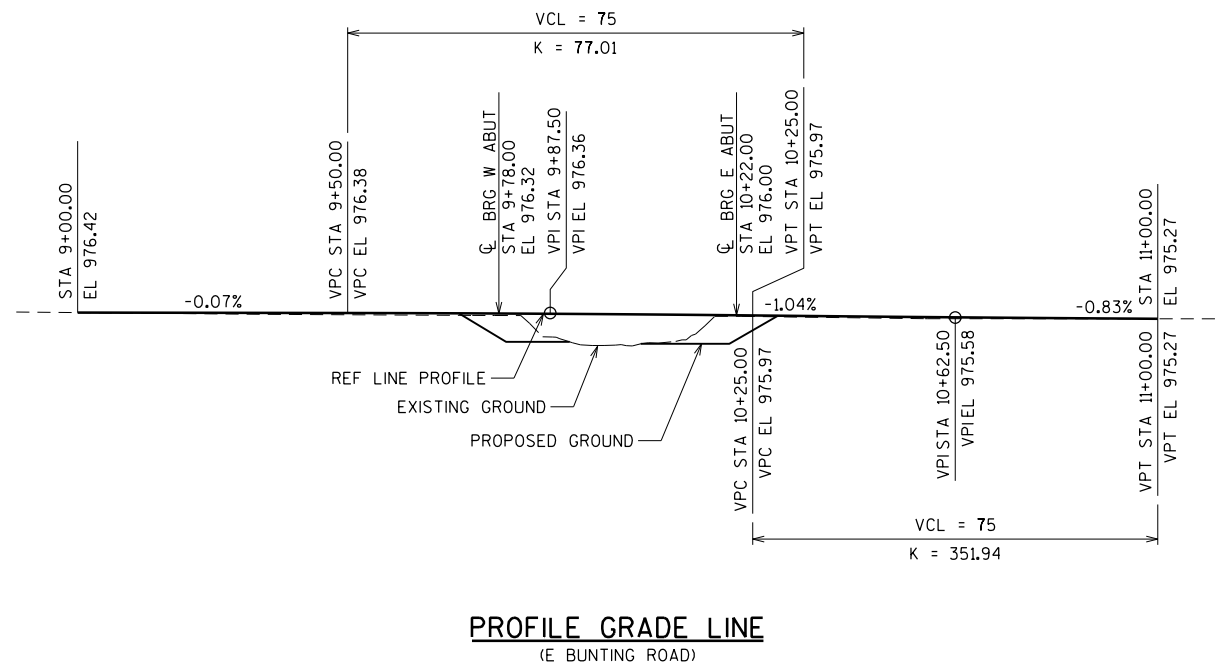
EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

SUPERSTRUCTURE DIMENSIONS SHOWN ARE BASED ON 1" JOINTS BETWEEN GIRDERS. JOINTS ARE ALLOWED TO VARY FROM 3/4" TO 1 1/4". CLEAR DISTANCE BETWEEN PARAPETS AND OUT TO OUT WIDTH OF SUPERSTRUCTURE TO BE DETERMINED AFTER POST-TENSIONING OF GIRDERS. ABUTMENT AND WING DIMENSIONS SHALL NOT VARY FROM THOSE SHOWN ON THE PLANS.

AN AVERAGE DECK THICKNESS OF 6 3/8" WAS USED FOR COMPUTING THE QUANTITY FOR "CONCRETE MASONRY BRIDGES".

VARIATIONS TO THE GRADE LINE OVER 1/4" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.



**PROFILE GRADE LINE**

(E BUNTING ROAD)

**LEGEND**

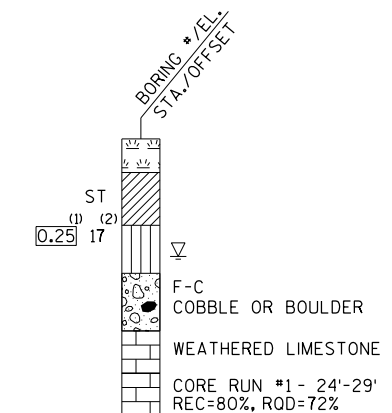
- ① 3/4" V-GROOVE REQUIRED EXTEND 6" FROM F.F. OF ABUTMENT DIAPHRAGM.
- COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS.
- DIMENSION ASSUMES 1" JOINT WIDTH. JOINT WIDTH DIMENSIONS MAY VARY DUE TO ±1/4" JOINT TOLERANCES.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-18-242</b>			
DRAWN BY		GLE	PLANS CK'D. NCK
<b>CROSS SECTION, NOTES AND QUANTITIES</b>			SHEET 2 OF 14

MATERIAL SYMBOLS

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

LEGEND OF BORING



SOIL BORINGS PERFORMED BY:  
 PROFESSIONAL SERVICE INDUSTRIES, INC.  
 CHIPPEWA FALLS, WI  
 OCTOBER 19, 2021  
 REPORTED BY:  
 JAMES M. BECCO, PE  
 REGIONAL VICE PRESIDENT

- (1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)
- (2) UNLESS OTHERWISE SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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			
<b>STRUCTURE B-18-242</b>			
DRAWN BY		GLE	PLANS CK'D. NCK
<b>SUBSURFACE EXPLORATION</b>			SHEET 3 OF 14

EDGE OF OBSERVED WATER

EXISTING STRUCTURE (P-18-118)  
TO BE REMOVED

PROPOSED STRUCTURE B-18-242

PINE CREEK  
FLOW

BRG WEST ABUT  
STA 9+78.00  
EL 976.32

BRG EAST ABUT  
STA 10+22.00  
EL 976.00

10+00



PROFILE GRADE LINE (REF LINE)

B-1 EL 975.9  
STA

HW 100 YR EL 975.87  
HW 2 YR EL 973.52  
WATER EL 971.20  
(08-11-2021)

B-2 EL 975.7  
STA

EXISTING GROUND

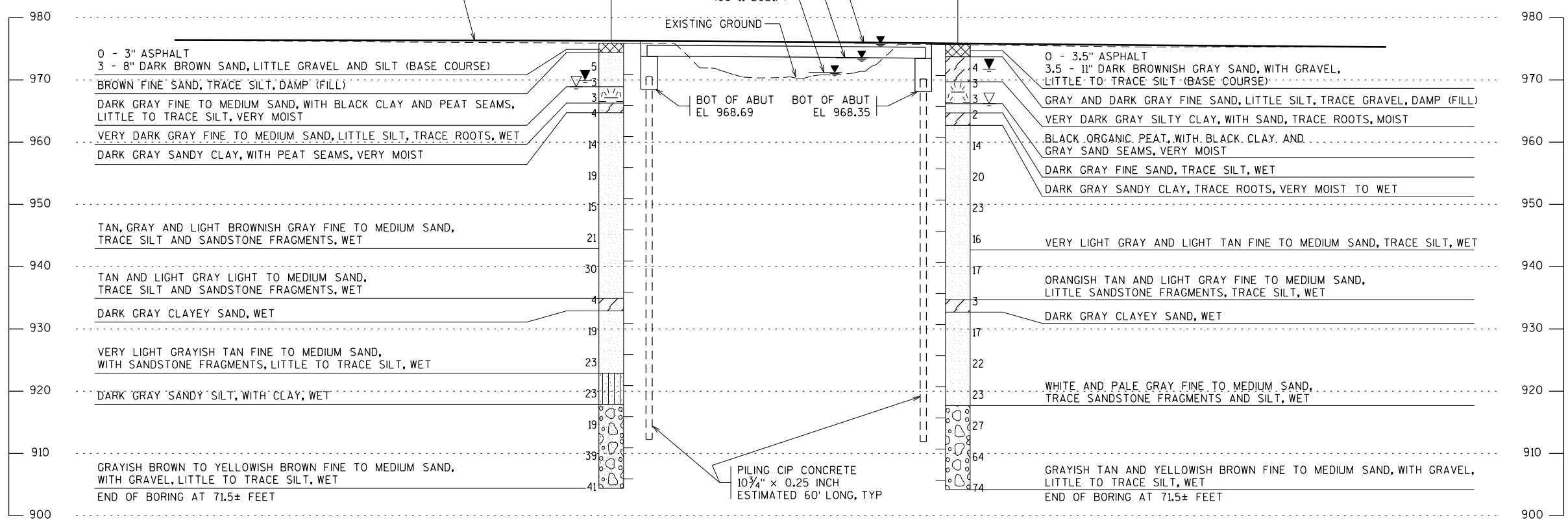
BOT OF ABUT EL 968.69

BOT OF ABUT EL 968.35

PILING CIP CONCRETE  
10 3/4" x 0.25 INCH  
ESTIMATED 60' LONG, TYP

WEST ABUTMENT

EAST ABUTMENT



FILE NAME : X:\AE\EAUCH\62592\5-f\ind-dsgn\5-drawings\20-Struct\B-18-242\br\edge\bl8242bl.dgn  
 PLOT DATE: 10/20/2022  
 PLOT TIME: 9:33:25 AM

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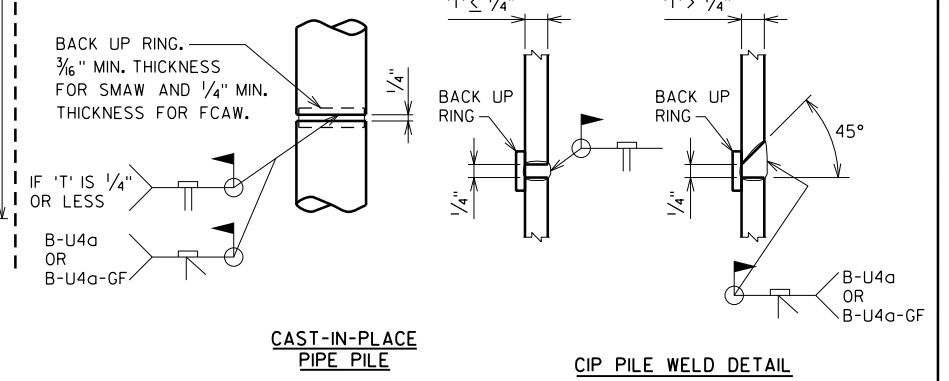
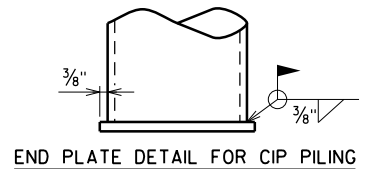
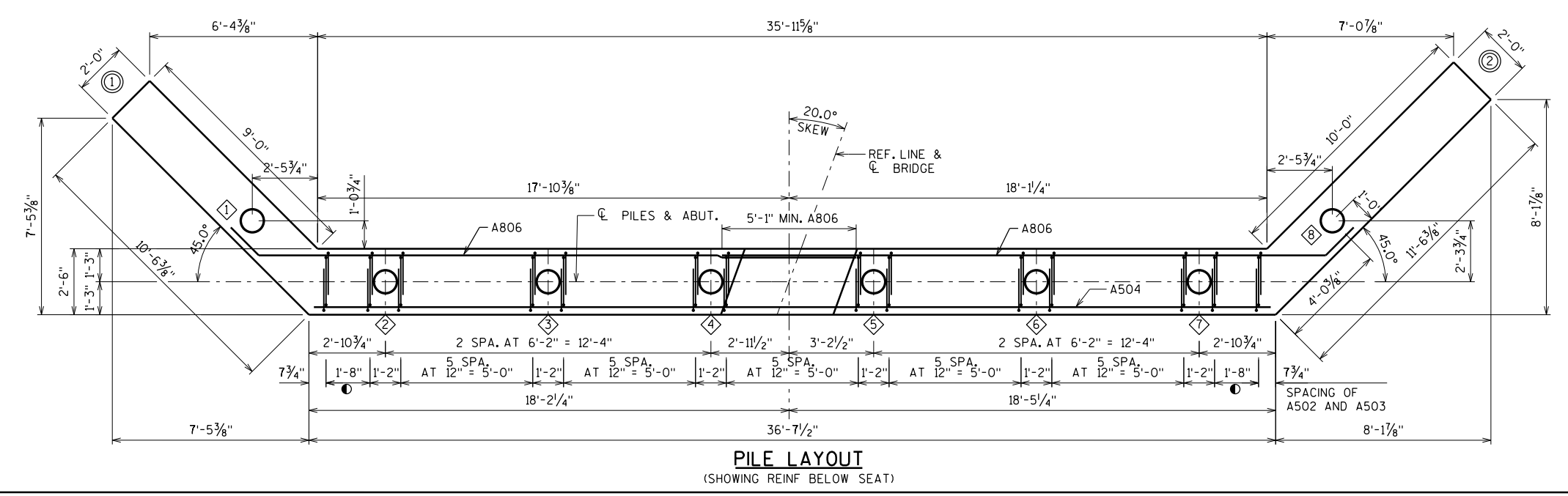
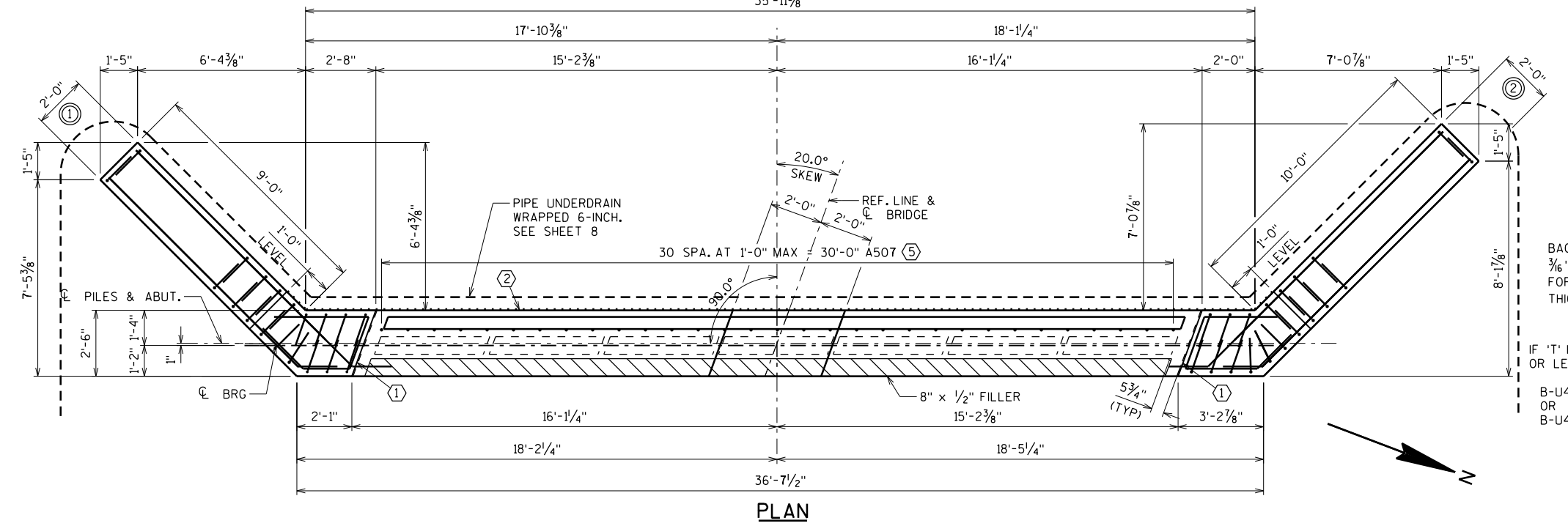
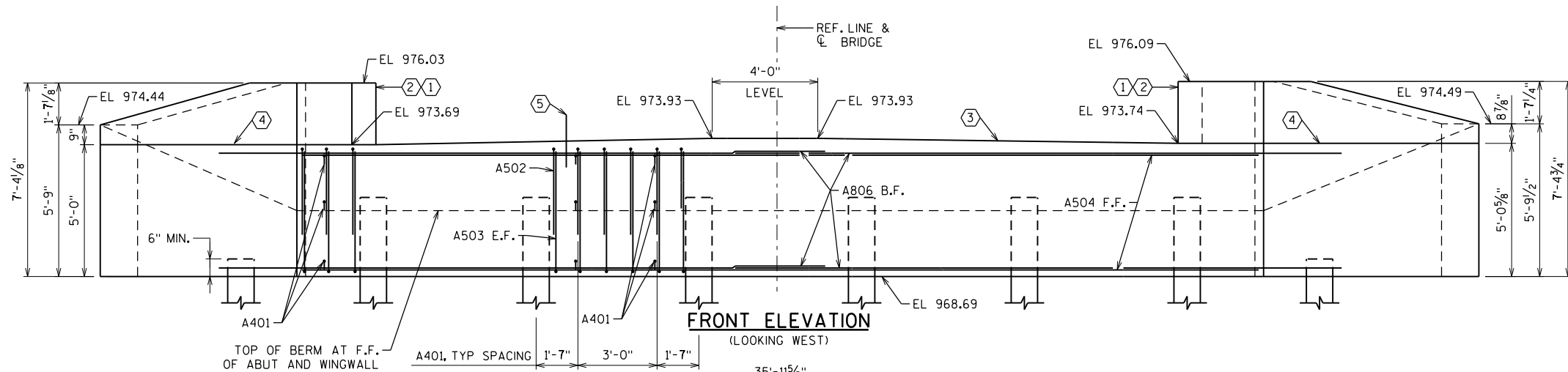
**ABUTMENT NOTES**

- ① SEAL ALL EXPOSED HORIZ. AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-ASPHALTIC JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
- ② 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ & VERT JOINTS ON BACKFACE. VERTICAL WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
- ③ KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6"
- ④ KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6" PLACE CONC ABOVE THIS JOINT AFTER BOX GIRDERS HAVE BE SET.
- ⑤ A507 BARS 1'-0" EMBED MAY BE PLACED AFTER CONC HAS BEEN POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

ABUTMENTS TO BE SUPPORTED OF 10 3/4" CIP PILES WITH 0.25 WALL THICKNESS WITH A REQUIRED DRIVING RESISTANCE OF 130 TONS\* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 60 FEET LONG AT BOTH ABUTMENTS.

\* 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 FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

- 2 SPACES AT 10".



NOTE: CAST-IN-PLACE PILE SHELL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATION.

**PILE SPLICE DETAIL**

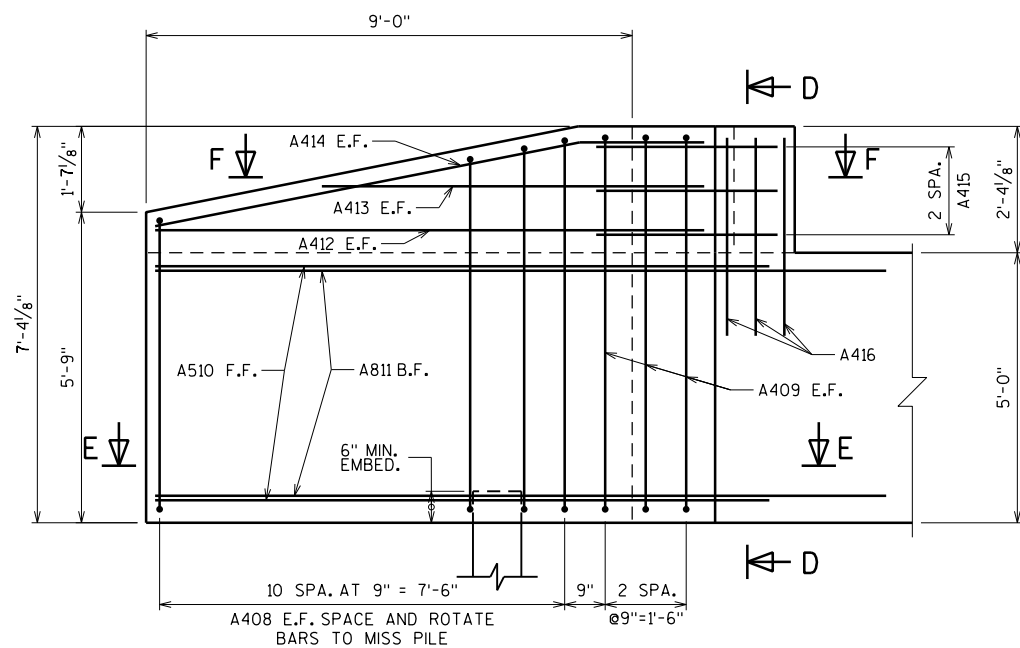
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-18-242</b>			
DRAWN BY GLE		PLANS CK'D. NCK	
<b>WEST ABUTMENT</b>			SHEET 4 OF 14

PLOT TIME: 9:33:25 AM

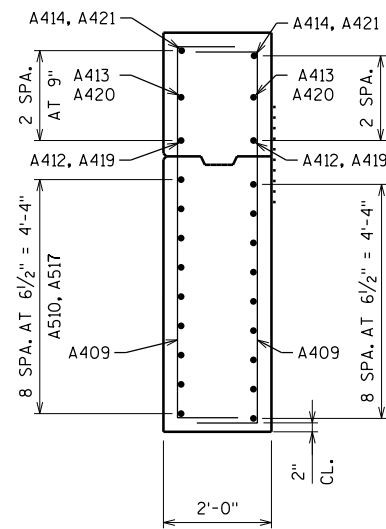
PLOT DATE: 10/20/2022

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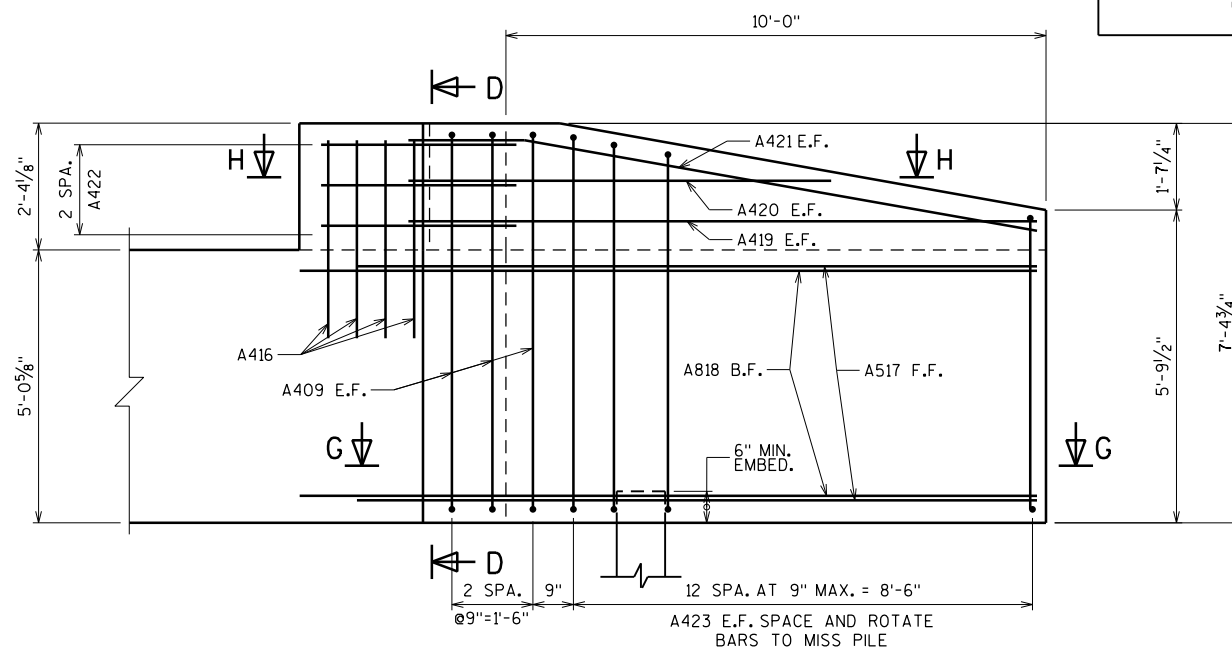




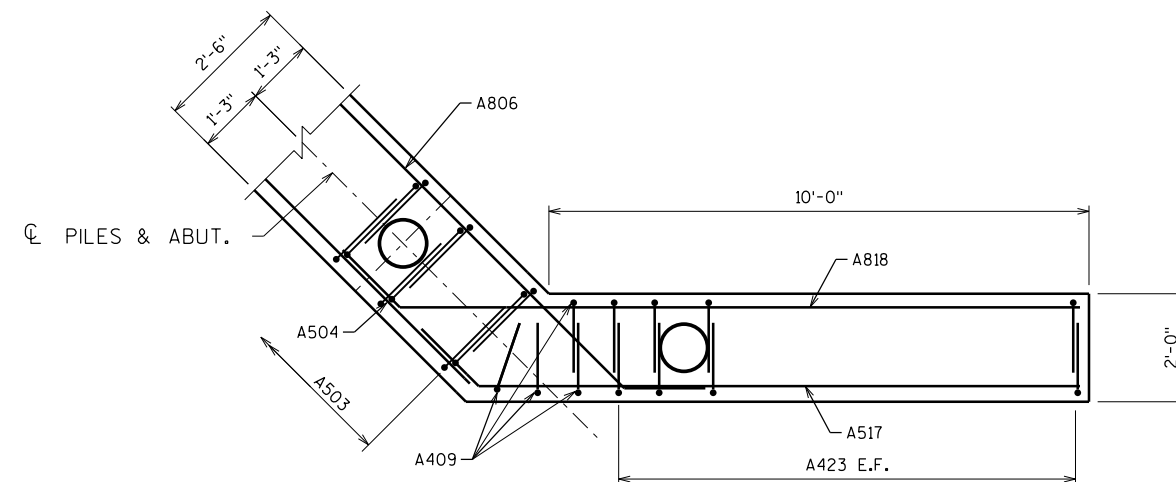
ELEVATION - WING 1



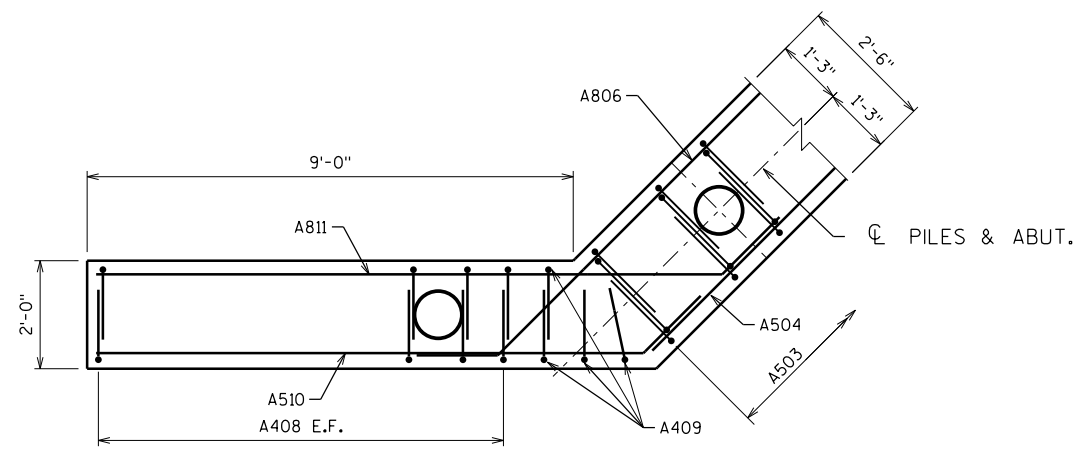
SECTION D



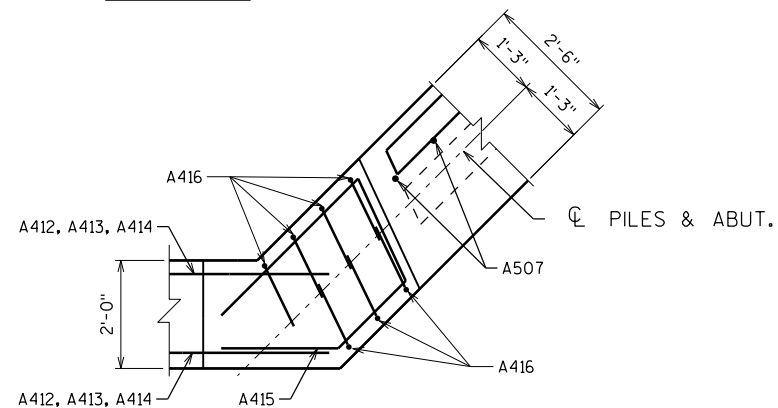
ELEVATION - WING 2



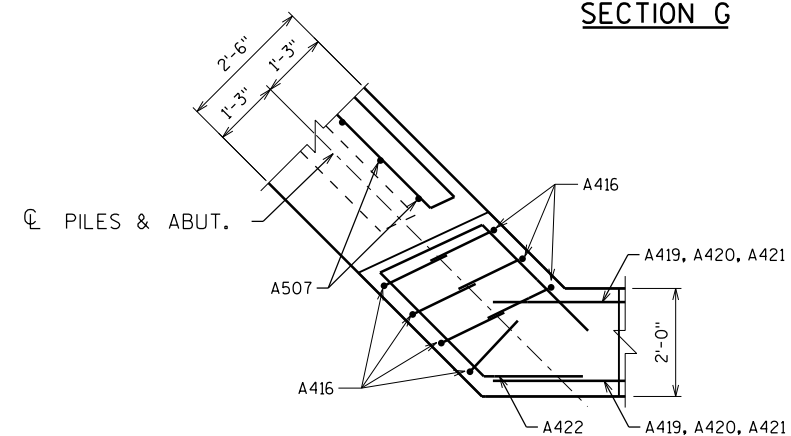
SECTION G



SECTION E



SECTION F



SECTION H

PLOT TIME: 9:33:25 AM

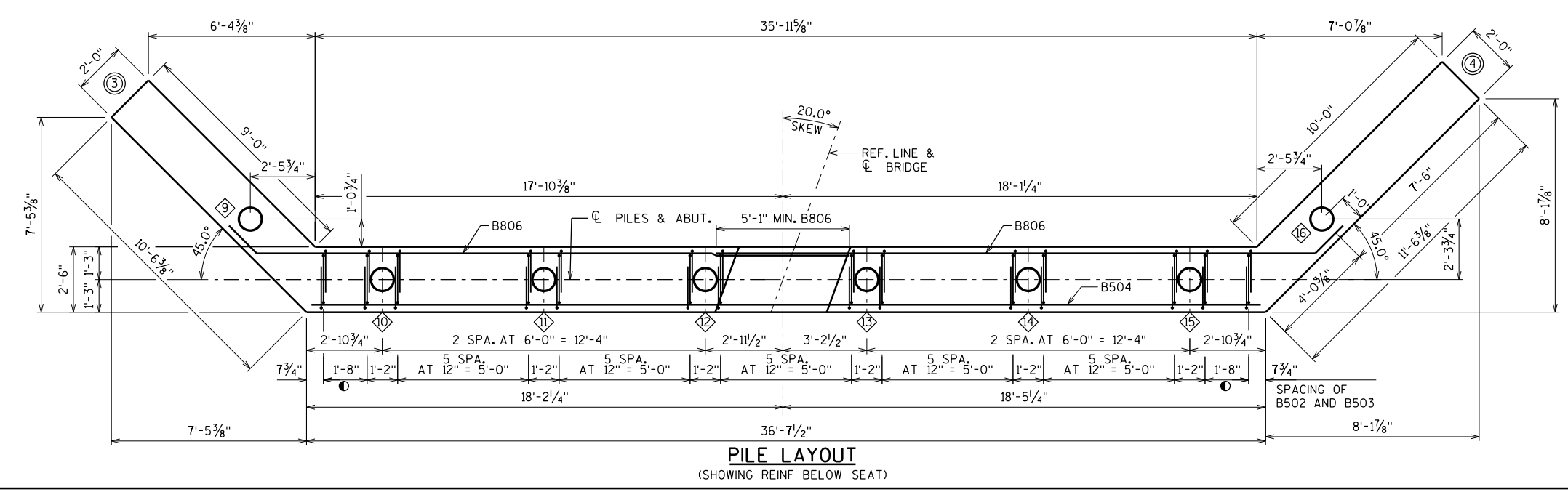
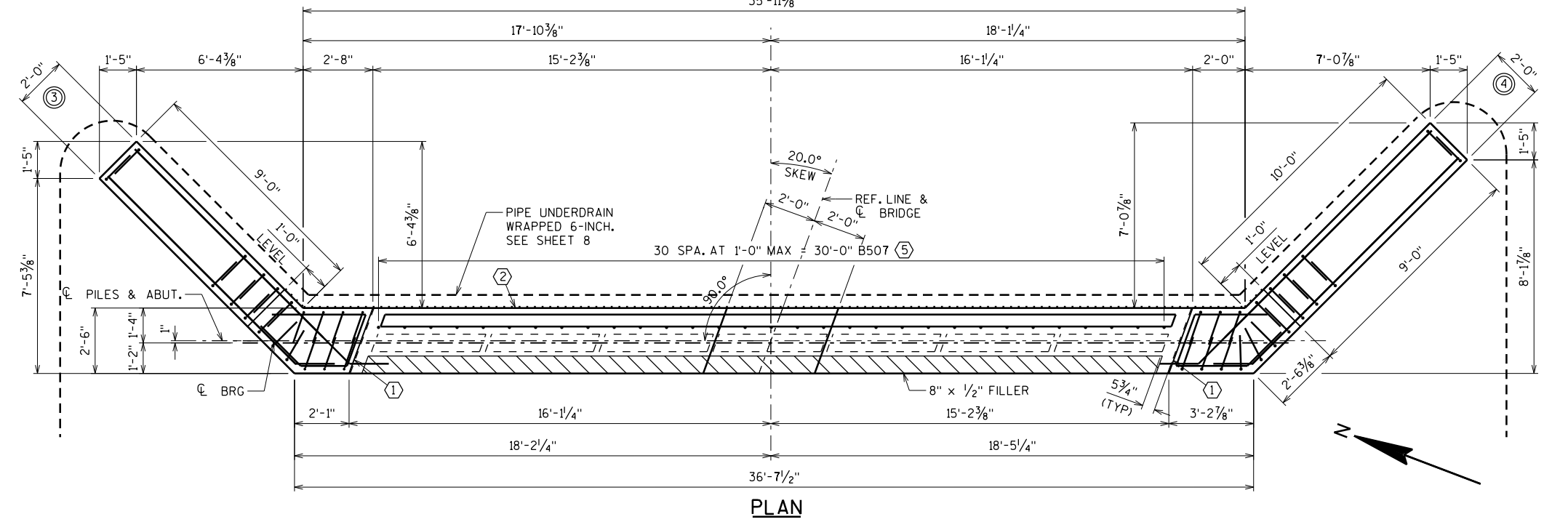
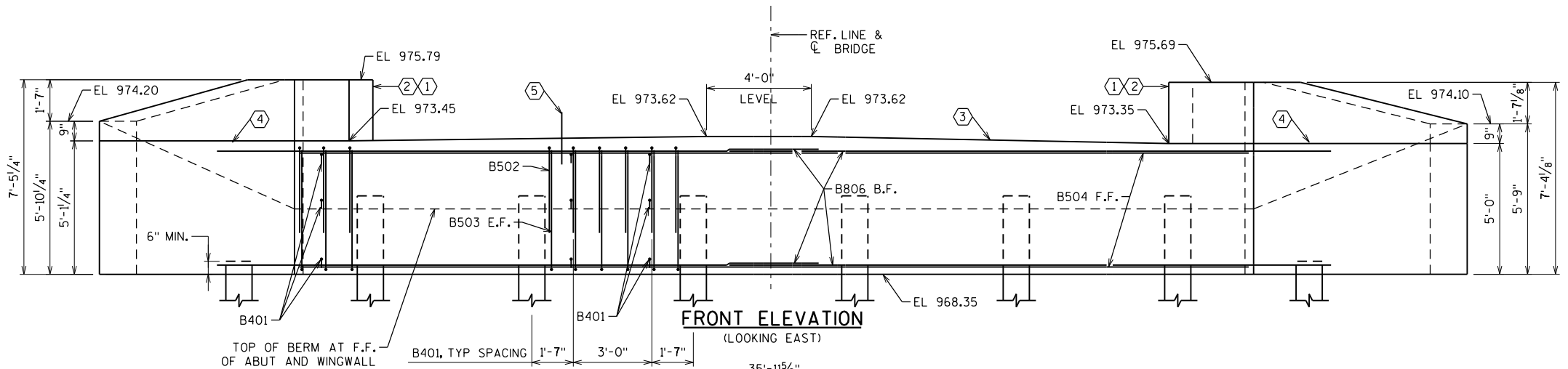
PLOT DATE: 10/20/2022

FILE NAME : X:\AE\EAUCH\62592\5-final-dsgn\5-drawings\20-Struct\B-18-242\bridge\bridge\8242al.dgn

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-18-242			
DRAWN BY		GLE	PLANS CK'D. NCK
WEST ABUTMENT WING DETAILS			SHEET 5 OF 14



**ABUTMENT NOTES**

- ① SEAL ALL EXPOSED HORIZ. AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-ASPHALTIC JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
  - ② 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ & VERT JOINTS ON BACKFACE. VERTICAL WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
  - ③ KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6"
  - ④ KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6" PLACE CONC ABOVE THIS JOINT AFTER BOX GIRDERS HAVE BE SET.
  - ⑤ B507 BARS 1'-0" EMBED MAY BE PLACED AFTER CONC HAS BEEN POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.
- ABUTMENTS TO BE SUPPORTED OF 10 3/4" CIP PILES WITH 0.25 WALL THICKNESS WITH A REQUIRED DRIVING RESISTANCE OF 130 TONS\* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 60 FEET LONG AT BOTH ABUTMENTS.
- \* 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 FORMULA TO DETERMINE DRIVEN PILE CAPACITY.
- 2 SPACES AT 10".

PLOT TIME: 9:33:26 AM

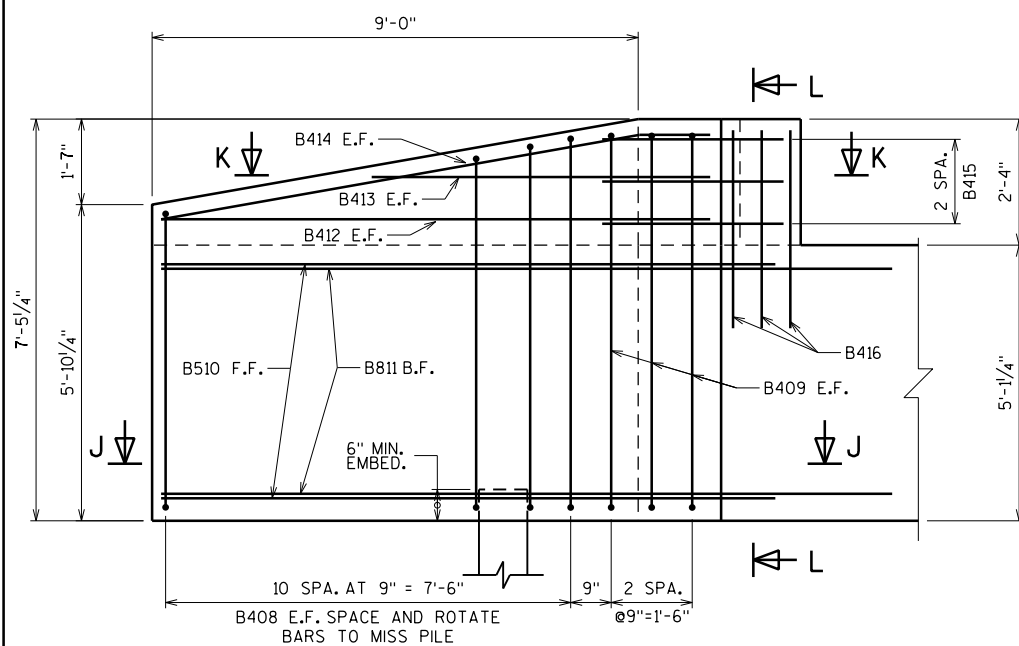
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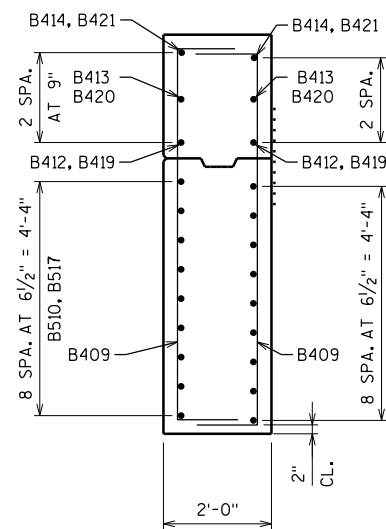
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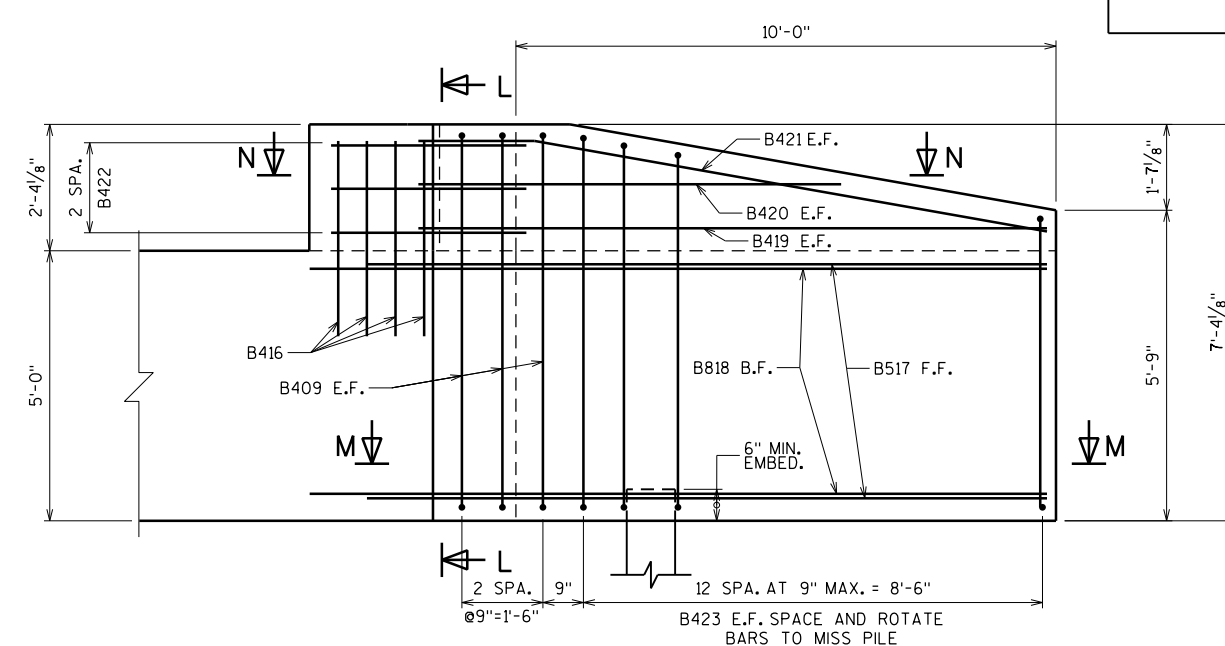
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-18-242</b>			
		DRAWN BY	GLE
		PLANS CK'D.	NCK
<b>EAST ABUTMENT</b>			SHEET 6 OF 14



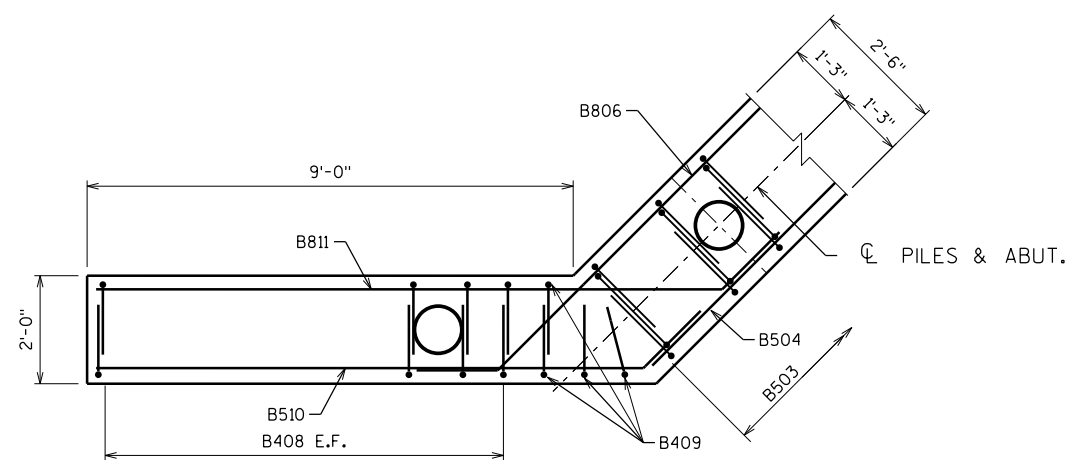
ELEVATION - WING 3



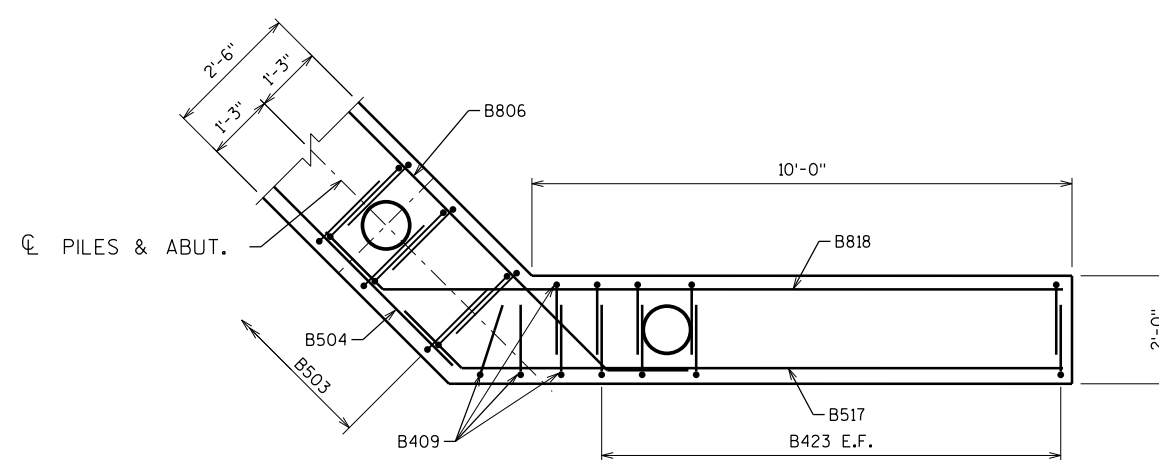
SECTION L



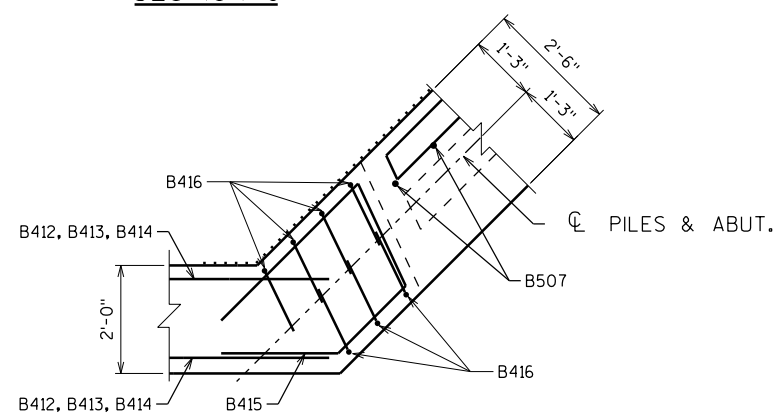
ELEVATION - WING 4



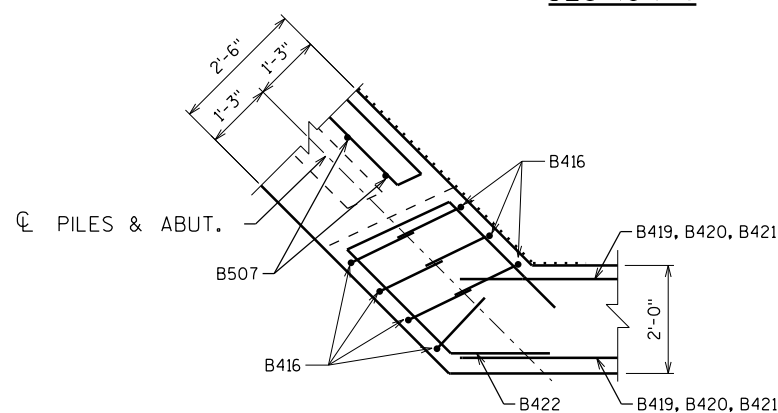
SECTION J



SECTION M



SECTION K



SECTION N

PLOT TIME: 9:33:26 AM

PLOT DATE: 10/20/2022

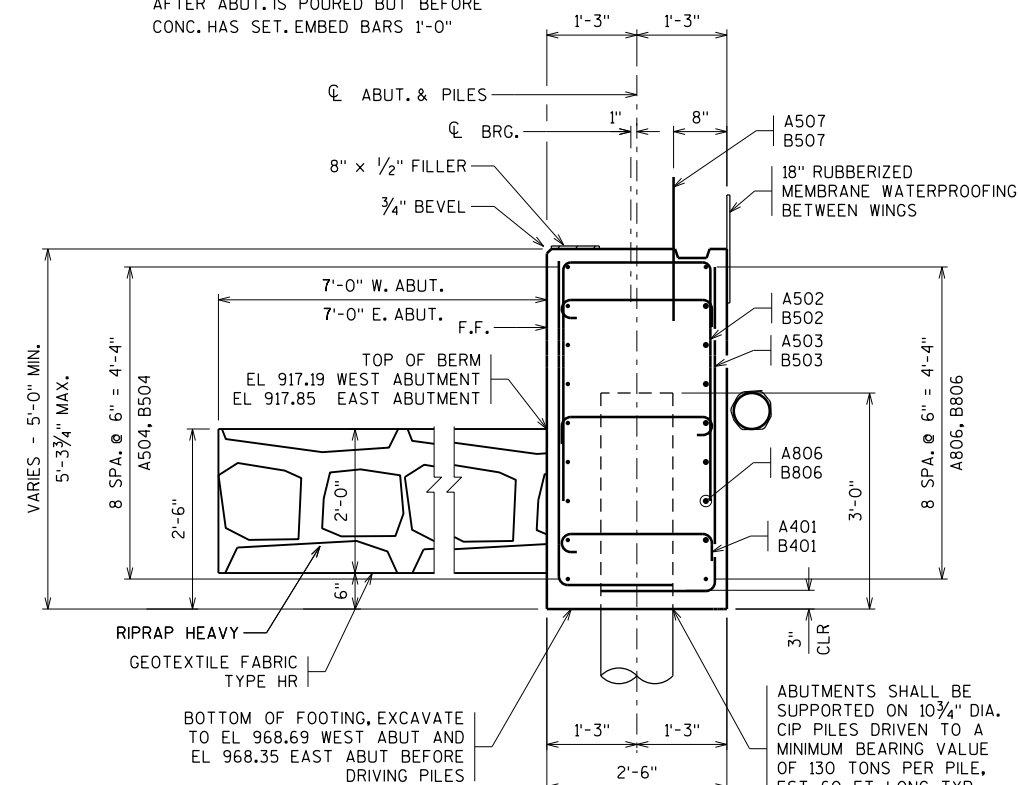
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NO.	DATE	REVISION	BY
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DRAWN BY		GLE	PLANS CK'D. NCK
EAST ABUTMENT WING DETAILS			SHEET 7 OF 14

A507/B507 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. EMBED BARS 1'-0"



EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.

**TYPICAL SECTION THRU BODY**

ALL HORIZ BARS TO BE A504 UNLESS OTHERWISE SHOWN OR NOTED

BILL OF BARS						WEST ABUTMENT	
BAR MARK	COAT	NO. REQ'D.	LENGTH ( FT-IN )	BAR SERIES	BENT	LOCATION	
<b>NON-COATED BARS</b>						<b>TOTAL WEIGHT = 2340 LBS</b>	
A401		36	2 - 10		X	BODY TIES	
A502		36	8 - 9		X	BODY TIES	
A503		72	6 - 0		X	BODY VERT.	
A504		9	36 - 3			BODY HORIZ. F.F.	
<b>NOT USED</b>							
A806		18	24 - 0		X	BODY HORIZ. B.F.	
<b>COATED BARS</b>						<b>TOTAL WEIGHT = 1460 LBS</b>	
A507	X	31	2 - 0			BODY DOWELS TOP	
A408	X	22	8 - 9	X	X	WINGS 1 VERT. E.F.	
A409	X	12	9 - 7	X	X	WINGS 1 & 2 VERT. E.F.	
A510	X	9	11 - 7	X		WING 1 HORIZ. F.F.	
A811	X	9	13 - 3	X		WING 1 HORIZ. B.F.	
A412	X	2	10 - 2			WING 1 HORIZ. E.F.	
A413	X	2	7 - 1			WING 1 HORIZ. E.F.	
A414	X	2	10 - 3	X		WING 1 DIAG. E.F.	
A415	X	3	9 - 5	X		WING 1 HORIZ. CHEEK	
A416	X	14	3 - 8			WINGS 1 & 2 VERT. CHEEK	
A517	X	9	12 - 7	X		WING 2 HORIZ. F.F.	
A818	X	9	14 - 2	X		WING 2 HORIZ. B.F.	
A419	X	2	11 - 2			WING 2 HORIZ. E.F.	
A420	X	2	7 - 9			WING 2 HORIZ. E.F.	
A421	X	2	11 - 3	X		WING 2 DIAG. E.F.	
A422	X	3	10 - 0	X		WING 2 HORIZ. CHEEK	
A423	X	26	8 - 9	X	X	WINGS 2 VERT. E.F.	

BILL OF BARS						EAST ABUTMENT	
BAR MARK	COAT	NO. REQ'D.	LENGTH ( FT-IN )	BAR SERIES	BENT	LOCATION	
<b>NON-COATED BARS</b>						<b>TOTAL WEIGHT = 2340 LBS</b>	
B401		36	2 - 10		X	BODY TIES	
B502		36	8 - 9		X	BODY TIES	
B503		72	6 - 0		X	BODY VERT.	
B504		9	36 - 3			BODY HORIZ. F.F.	
<b>NOT USED</b>							
B806		18	24 - 0		X	BODY HORIZ. B.F.	
<b>COATED BARS</b>						<b>TOTAL WEIGHT = 1460 LBS</b>	
B507	X	31	2 - 0			BODY DOWELS TOP	
B408	X	22	8 - 9	X	X	WINGS 3 VERT. E.F.	
B409	X	12	9 - 7	X	X	WINGS 3 & 4 VERT. E.F.	
B510	X	9	11 - 7	X		WING 3 HORIZ. F.F.	
B811	X	9	13 - 3	X		WING 3 HORIZ. B.F.	
B412	X	2	10 - 2			WING 3 HORIZ. E.F.	
B413	X	2	7 - 1			WING 3 HORIZ. E.F.	
B414	X	2	10 - 3	X		WING 3 DIAG. E.F.	
B415	X	3	9 - 5	X		WING 3 HORIZ. CHEEK	
B416	X	14	3 - 8			WINGS 3 & 4 VERT. CHEEK	
B517	X	9	12 - 7	X		WING 4 HORIZ. F.F.	
B818	X	9	14 - 2	X		WING 4 HORIZ. B.F.	
B419	X	2	11 - 2			WING 4 HORIZ. E.F.	
B420	X	2	7 - 9			WING 4 HORIZ. E.F.	
B421	X	2	11 - 3	X		WING 4 DIAG. E.F.	
B422	X	3	10 - 0	X		WING 4 HORIZ. CHEEK	
B423	X	26	8 - 9	X	X	WINGS 4 VERT. E.F.	

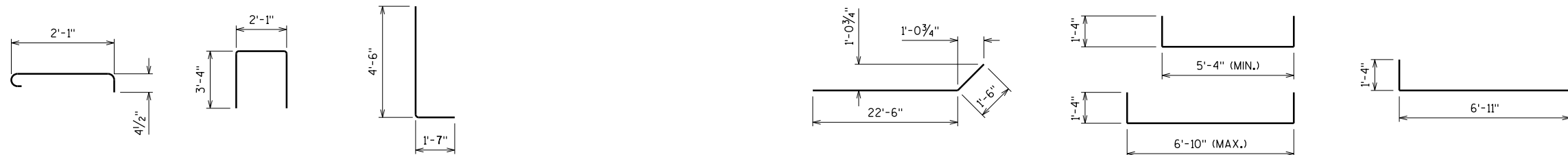
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

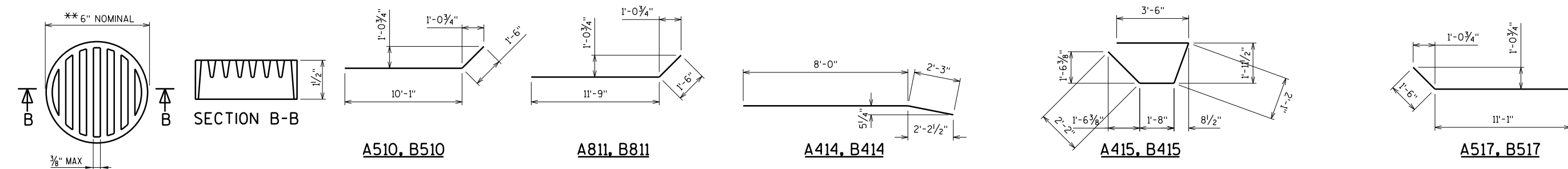
⊗ LENGTH SHOWN FOR SERIES BAR IS AN AVERAGE LENGTH AND SHOULD BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

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

BAR SERIES TABLE		
MARK	NO. REQ'D.	LENGTH ( FT-IN )
A408	2 SERIES OF 11	8-0 TO 9-6
A423	2 SERIES OF 13	8-0 TO 9-6
B408	2 SERIES OF 11	8-0 TO 9-6
B423	2 SERIES OF 13	8-0 TO 9-6



A401, B401      A502, B502      A503, B503      A806, B806      A408, B408      A409, B409



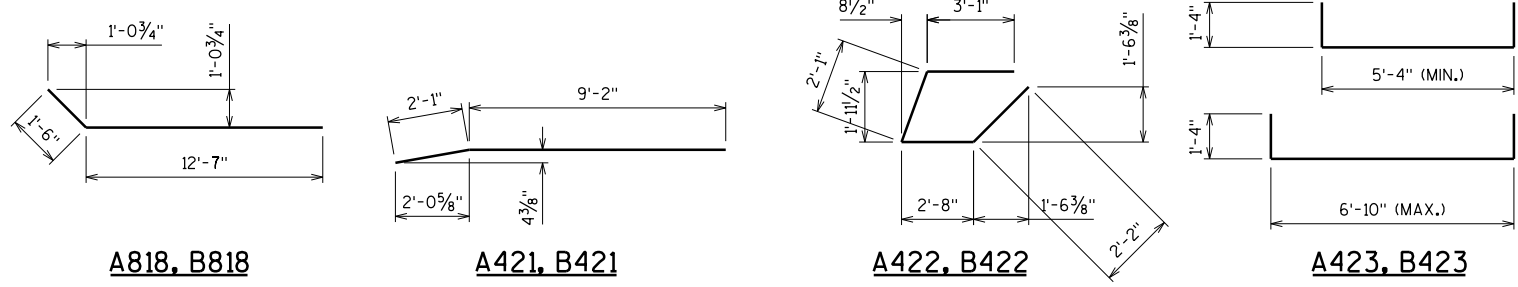
A510, B510      A811, B811      A414, B414      A415, B415      A517, B517

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

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.

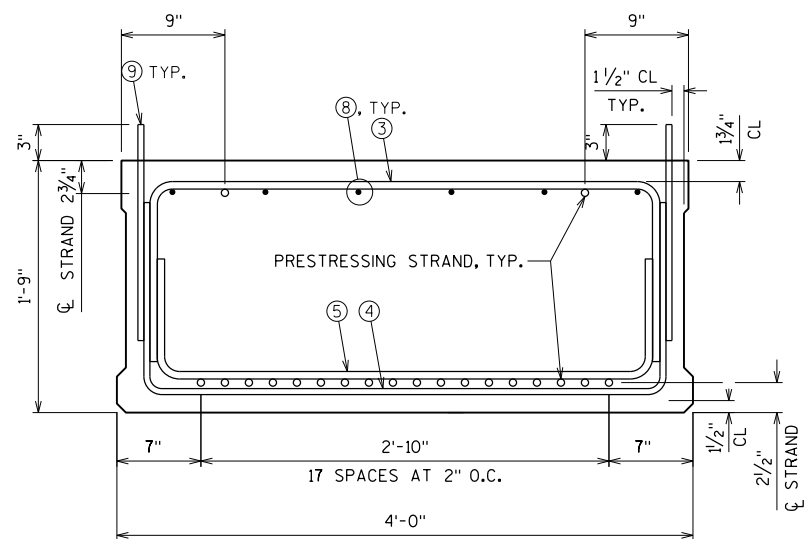
Ⓢ RODENT SHIELD



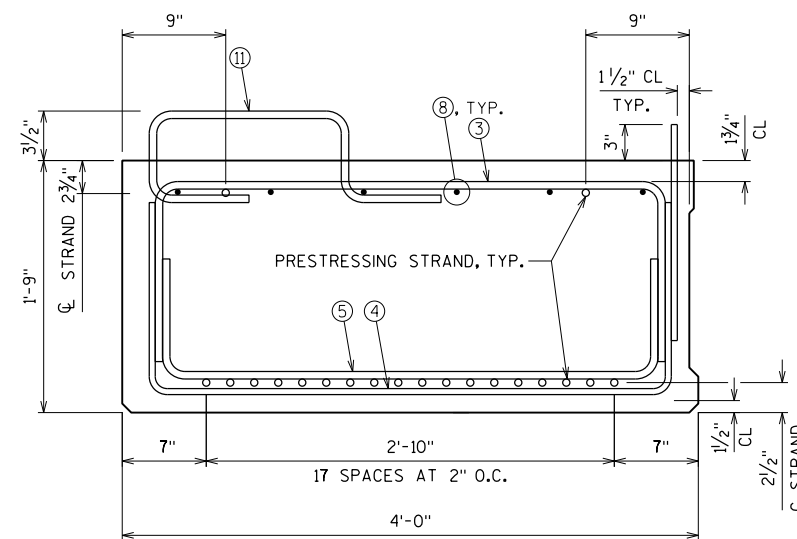
A818, B818      A421, B421      A422, B422      A423, B423

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ABUTMENT DETAILS AND BILL OF BARS			SHEET 8 OF 14

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SECTION THRU INTERIOR GIRDER



SECTION THRU EXTERIOR GIRDER

**NOTES**

THE CONCRETE MIX FOR THE PRESTRESSED BOX GIRDERS SHALL CONFORM TO SECTION 503.2.2 OF THE STANDARD SPECIFICATIONS.

AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO THE BOTTOM OF THE GIRDERS AND THE EXTERIOR FACE OF EXTERIOR GIRDERS. DO NOT APPLY CONCRETE SEALER OR EPOXY TO THE SHEAR KEY OR THE TOP OF GIRDERS.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR CONCRETE ABUTMENTS, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER.

FOUR WAY SLING MUST BE USED TO ENGAGE ALL 4 LIFTING DEVICES ON BOTH ENDS OF UNITS.

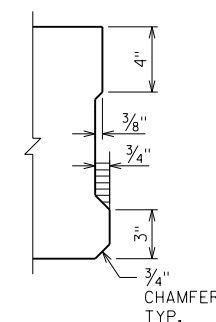
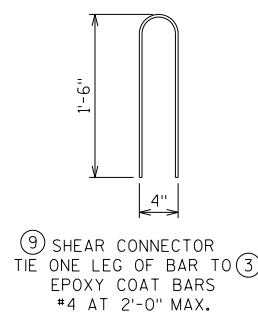
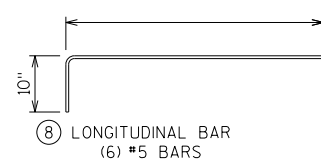
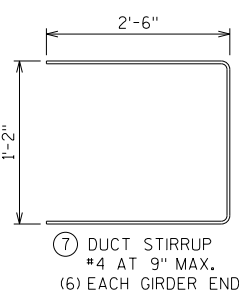
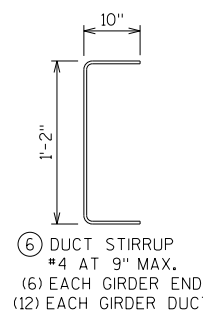
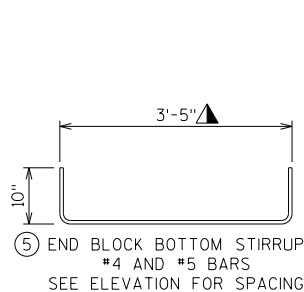
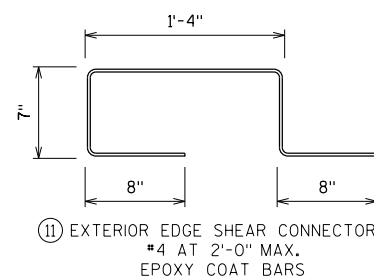
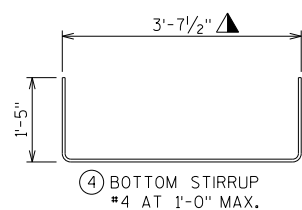
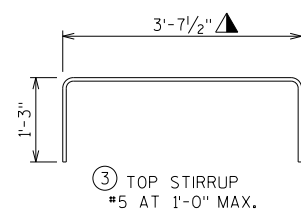
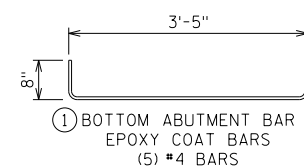
POST-TENSIONING OF THE TRANSVERSE TENDONS SHALL NOT BEGIN UNTIL THE GROUT BETWEEN THE PRECAST BOX GIRDERS HAS BEEN ALLOWED TO CURE FOR 48 HOURS AND GROUT HAS REACHED A COMPRESSIVE STRENGTH OF 3,000 PSI.

SEAL WASHER SHALL BE SPONGE NEOPRENE GASKET 3/4" MIN. THICK. STRESS POCKETS SHALL BE FILLED WITH CHLORIDE FREE NON-SHRINK GROUT AFTER POST TENSIONING.

TRANSITION BETWEEN CHANGING SLOPES OF POST-TENSIONING DUCTS SHALL BE PROVIDED BY EITHER A CIRCULAR OR PARABOLIC CURVE WITH A MINIMUM LENGTH OF 3'-0".

**LEGEND**

▲ DIMENSION GIVEN FOR STIRRUPS PERPENDICULAR TO THE PRESTRESSED BOX GIRDER LENGTH. ADJUST THE DIMENSION FOR STIRRUPS AT SKEWED PRESTRESSED BOX GIRDER ENDS.



**SHEAR KEY RECESS DETAIL**

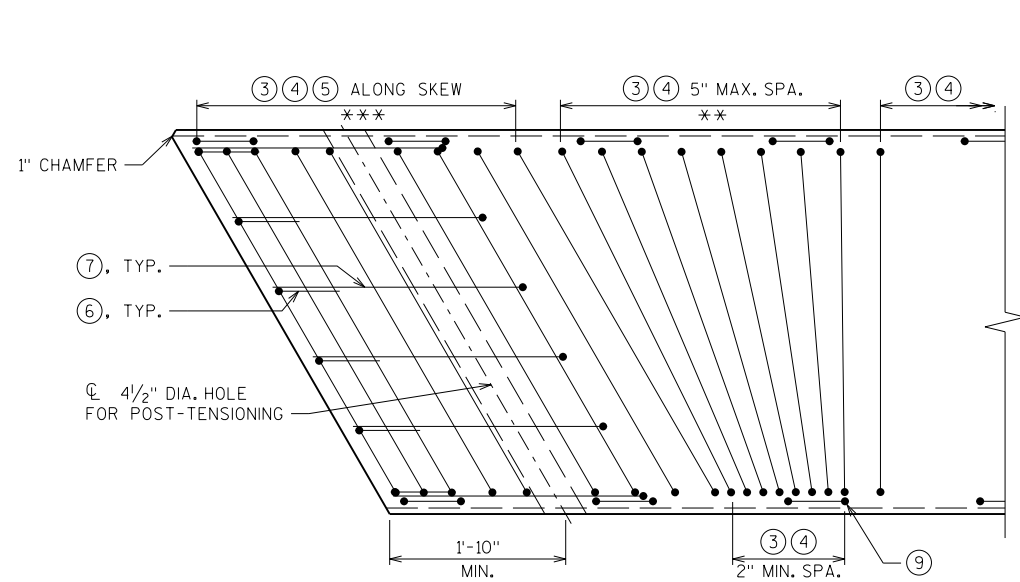
OMIT SHEAR KEY ON EXTERIOR FACE OF EXTERIOR GIRDERS.

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21" PRESTRESSED BOX GIRDER DETAILS 1		SHEET 9 OF 14	

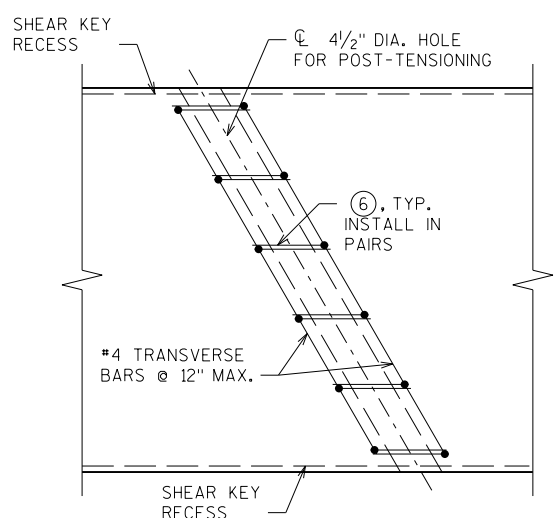
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PLOT DATE: 10/20/2022

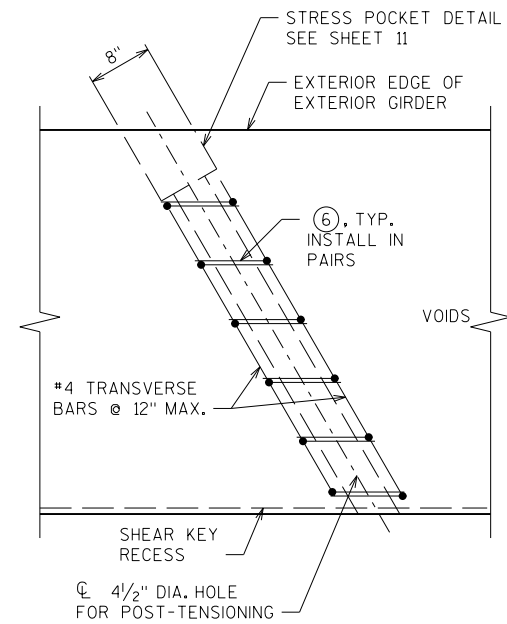
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**PART GIRDER PLAN WITH SKEW**  
 ① & #4 TRANSVERSE BARS NOT SHOWN FOR CLARITY



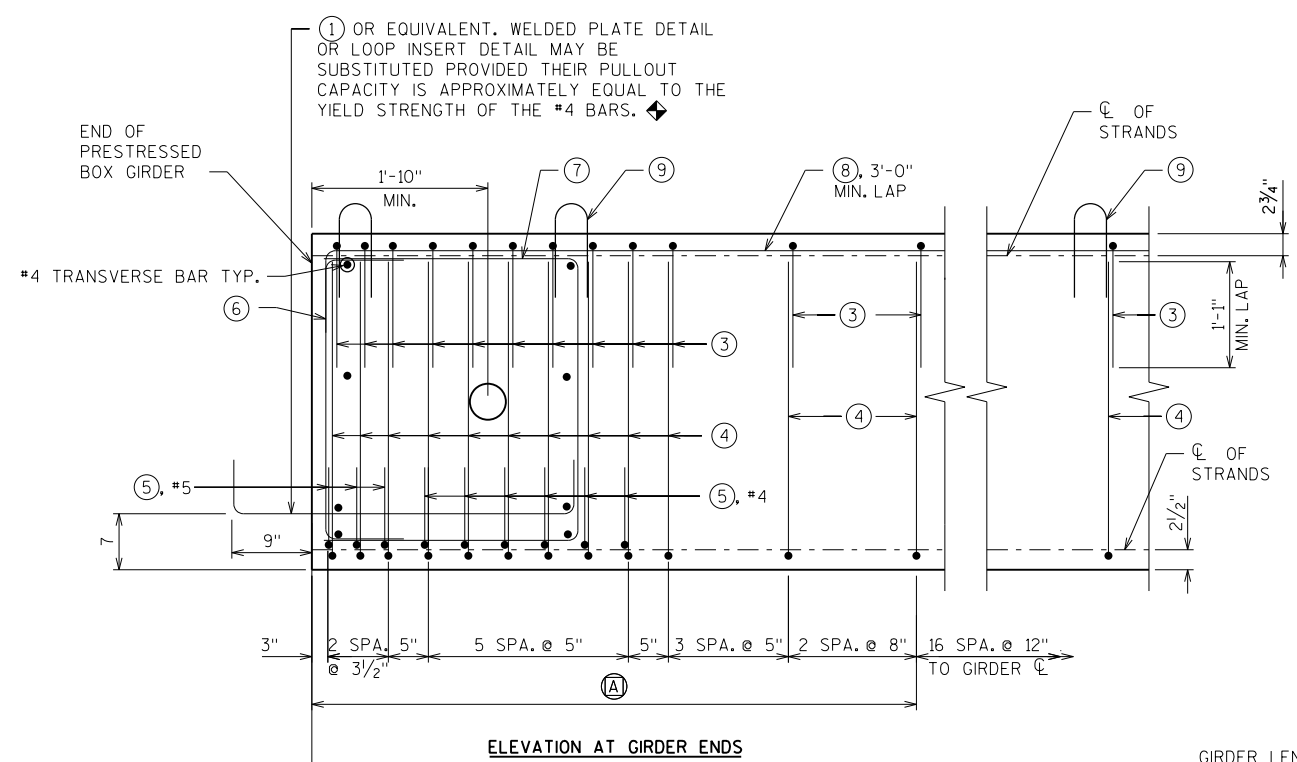
**INTERIOR GIRDER DUCT PLAN**



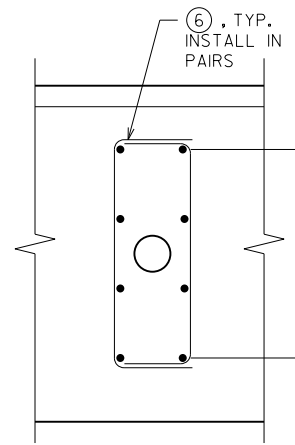
**EXTERIOR GIRDER DUCT PLAN**

**LEGEND**

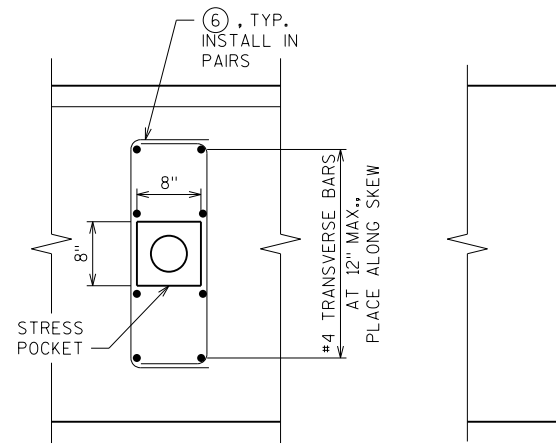
- ◆ BARS PLACED PARALLEL TO GIRDERS. SPACING IS PERPENDICULAR TO THE CL OF THE GIRDERS.
- \*\* PLACE AT 5" MAX. SPACING UNTIL PERPENDICULAR TO THE CL OF THE GIRDER.
- \*\*\* PLACE ALONG SKEW FROM END OF PRESTRESSED BOX GIRDER UNTIL ALL END BLOCK BOTTOM STIRRUP BARS, ⑤, ARE PLACED.



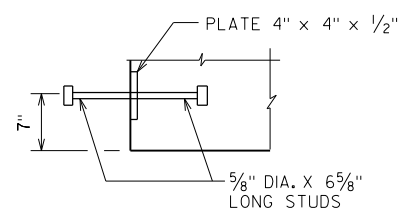
**ELEVATION AT GIRDER ENDS**



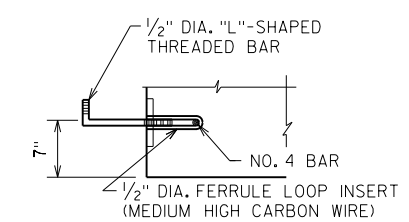
**INTERIOR GIRDER DUCT ELEVATION**



**EXTERIOR GIRDER DUCT ELEVATION**



**WELDED PLATE DETAIL**  
 (EQUIVALENT TO ONE #4 BAR)



**LOOP INSERT DETAIL**

GIRDER DATA									
SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)		CONC. STRGTH. f'c (PSI)	DIA. OF STRAND (IN.)	UNDRAPED PATTERN		
			1/4 PT.	1/2 PT.			TOTAL NO. OF STRANDS	TOTAL INITIAL PRESTRESS FORCE (KIPS)	f'ci (PSI) *
1	1&7	44'-8"	0.164	0.237	5,500	0.6	20	878.85	4,500
1	2-6	44'-8"	0.170	0.243	5,500	0.6	20	878.85	4,500

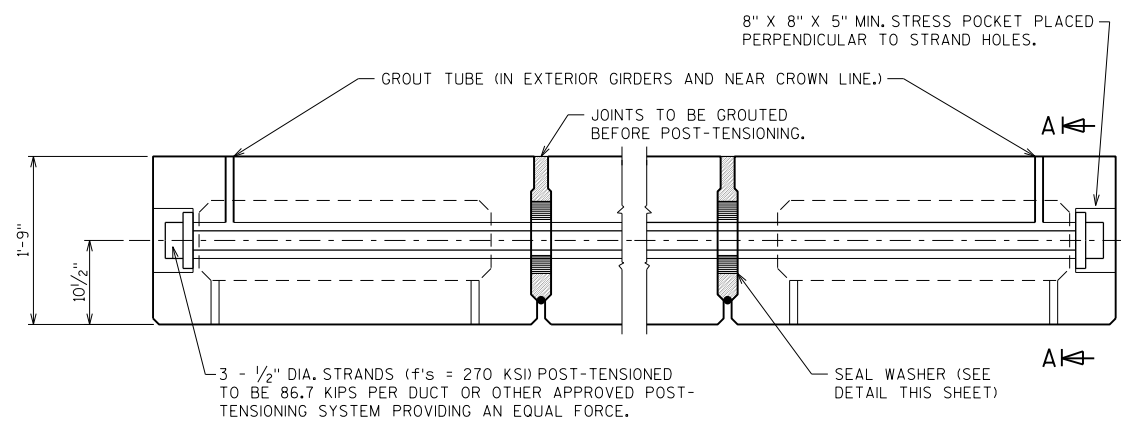
\* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

**GIRDER ELEVATION**  
 (A) DETAIL TYP. AT EACH END

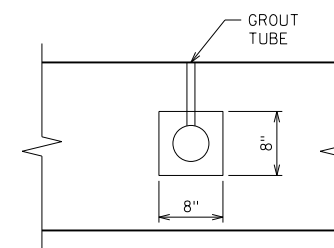
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-18-242</b>			
DRAWN BY		GLE	PLANS CK'D. NCK
<b>21" PRESTRESSED BOX GIRDER DETAILS 2</b>			SHEET 10 OF 14

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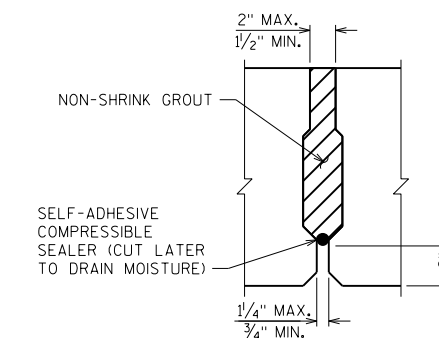
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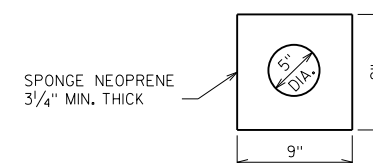
**POST-TENSIONING DETAILS**



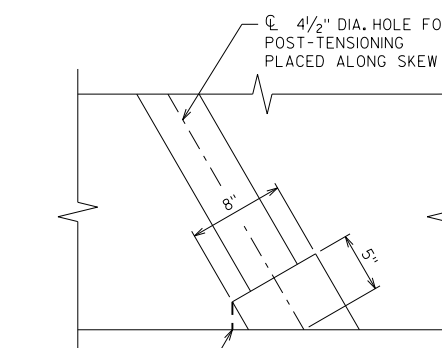
**SECTION A-A**



**SHEAR KEY DETAIL**



**SEAL WASHER**  
(MAY ALSO BE ROUND)



**STRESS POCKET DETAIL**

PLOT TIME: 9:33:27 AM

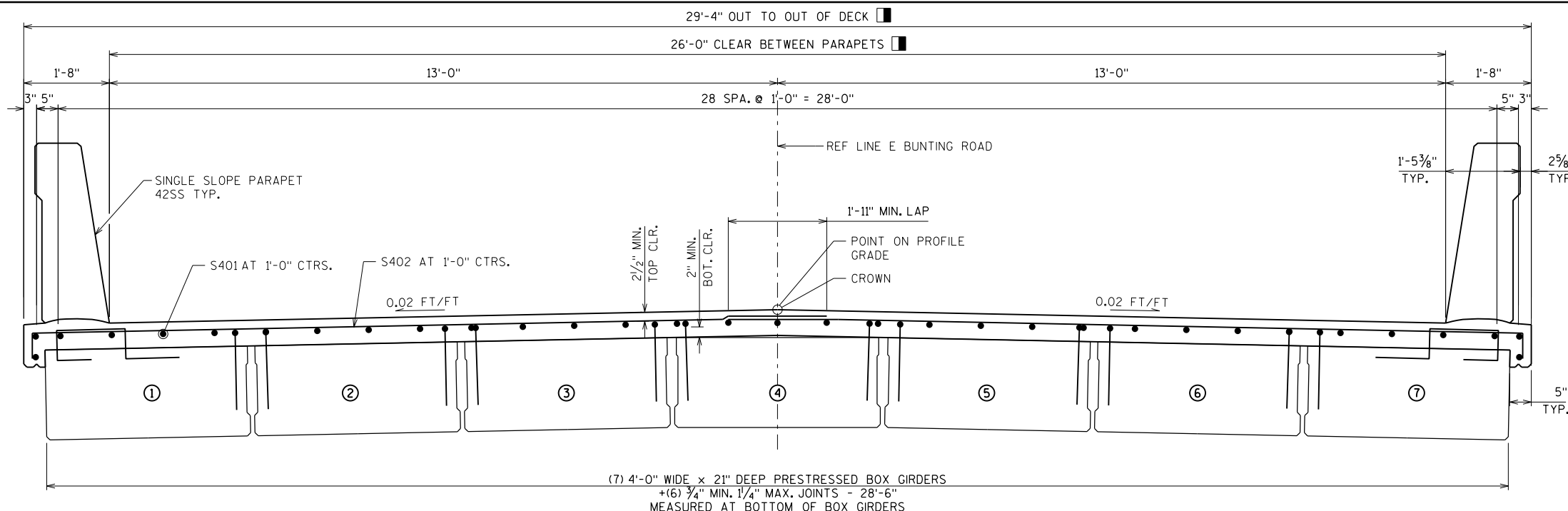
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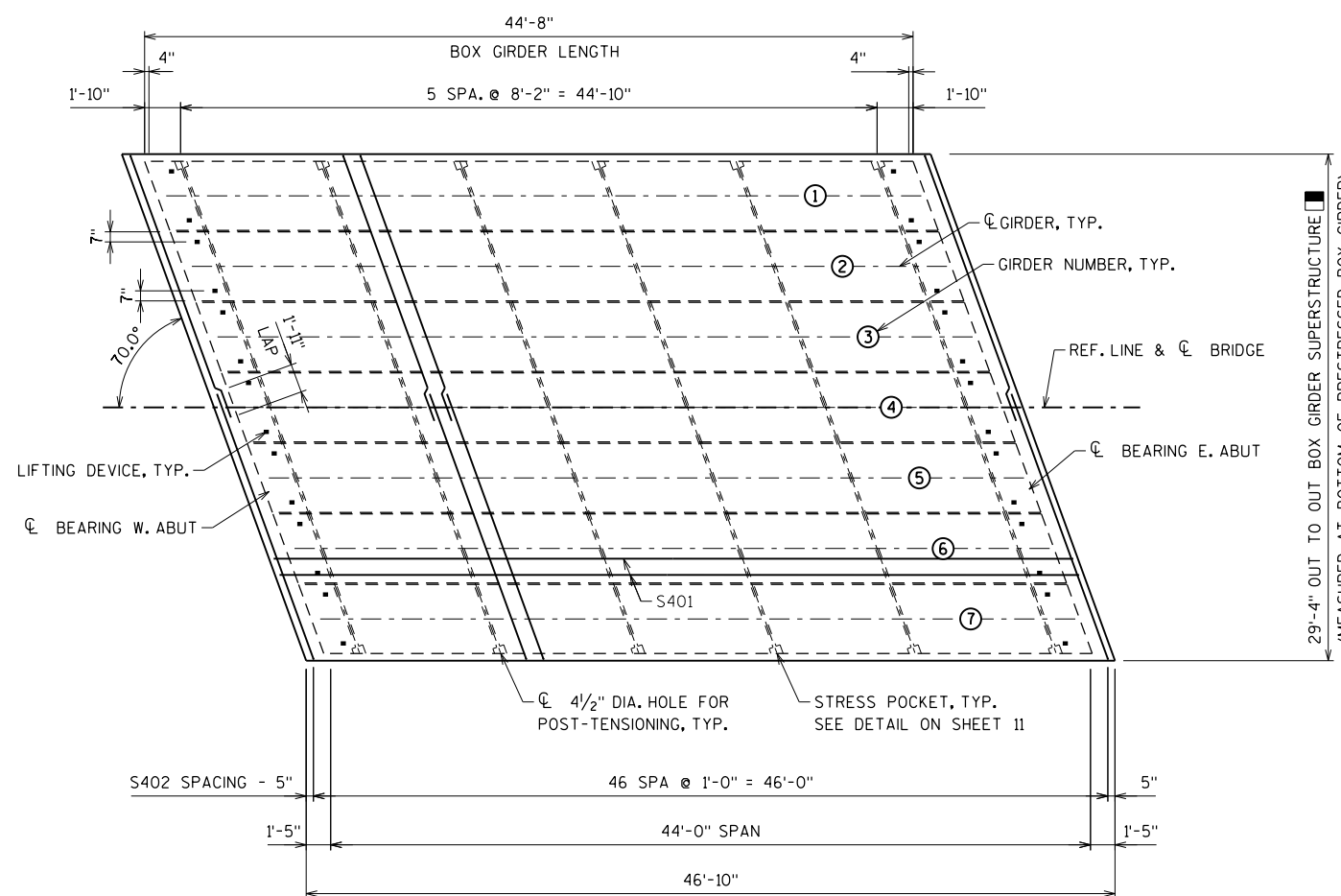
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-18-242			
DRAWN BY		GLE	PLANS CK'D. NCK
21" PRESTRESSED BOX GIRDER DETAILS 3		SHEET 11 OF 14	

**LEGEND**

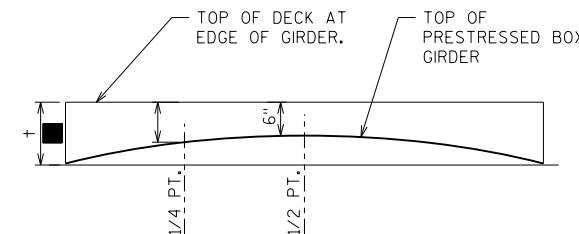
- CONSTRUCTION JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH
- DIMENSION ASSUMES 1" JOINT WIDTH. JOINT WIDTH DIMENSIONS MAY VARY DUE TO ±1/4" JOINT TOLERANCES.



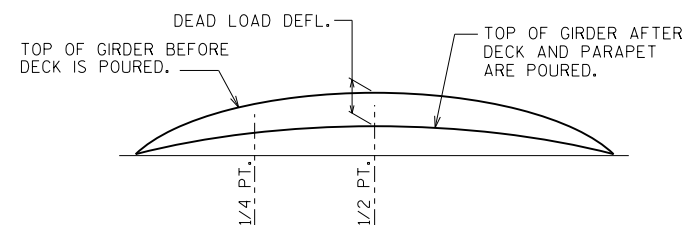
**CROSS SECTION THRU BRIDGE**  
(LOOKING EAST)



**PLAN**



**DECK THICKNESS DIAGRAM**



**DEAD LOAD DEFLECTION DIAGRAM**

■ TO DETERMINE DECK THICKNESS AT GIRDER ENDS FOLLOW THIS PROCESS:

$$6" \text{ MIN. DECK SLAB THICKNESS} + \text{FIELD MEASURED GIRDER CAMBER (AT MID SPAN)} - \text{DEADLOAD DEFLECTION (AT MIDSPAN)} = \text{DECK THICKNESS, } +$$

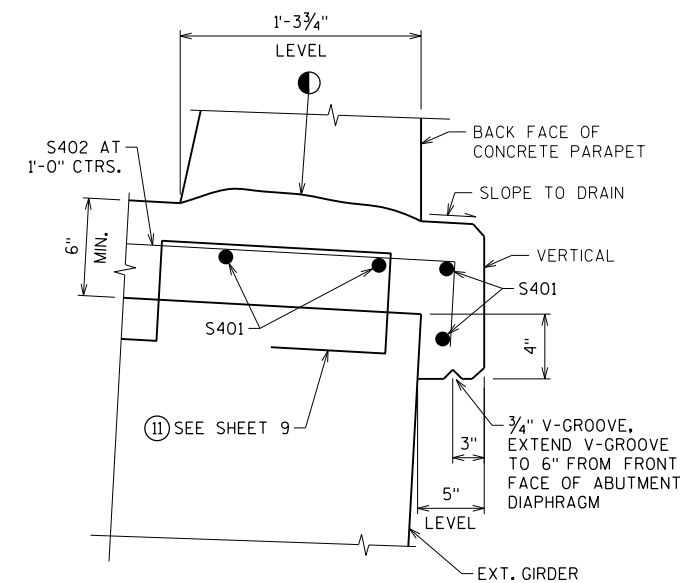
NOTE: PLAN DECK THICKNESS BASED ON THEORETICAL INITIAL CAMBER VALUE. 1/4 PT. MAY BE INTERPOLATED. USE FIELD MEASURED GIRDER CAMBER FOR ACTUAL DECK THICKNESS. THE 1/4 PT. IS INTERPOLATED BETWEEN DECK THICKNESS AT THE END OF DECK AND MIDSPAN.

\*\* 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	0.66

THESE VALUES ARE NOT TO BE USED IN DETERMINING '+', USE FIELD MEASURED GIRDER CAMBER.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



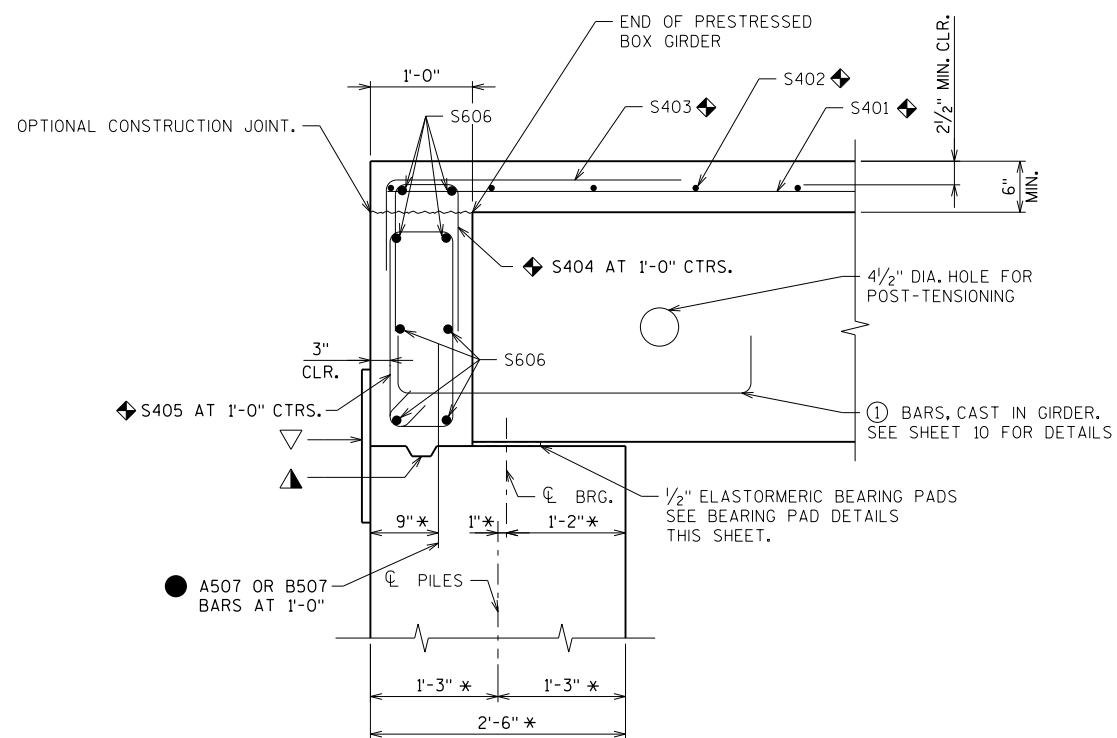
**DECK OVERHANG DETAIL**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-18-242</b>			
DRAWN BY		GLE	PLANS CK'D. NCK
SUPERSTRUCTURE		SHEET 12 OF 14	



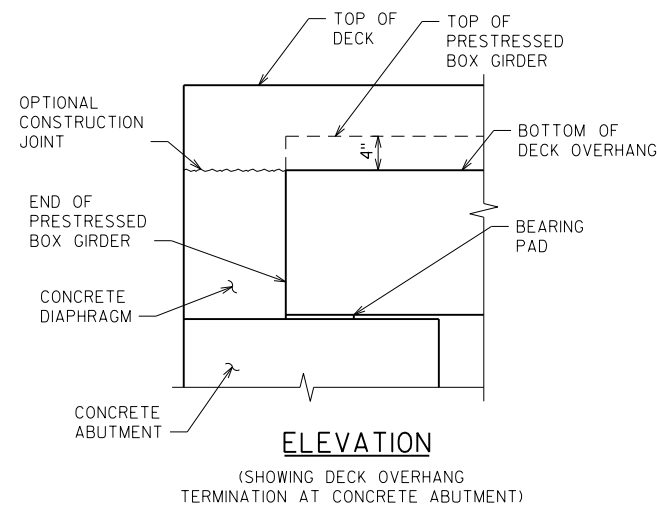
**LEGEND**

- CONST. JOINT - STRIKE OFF AS SHOWN.
- ▽ 1'-6" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- ▲ KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6".
- ◆ BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO  $\phi$  GIRDERS.
- THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.



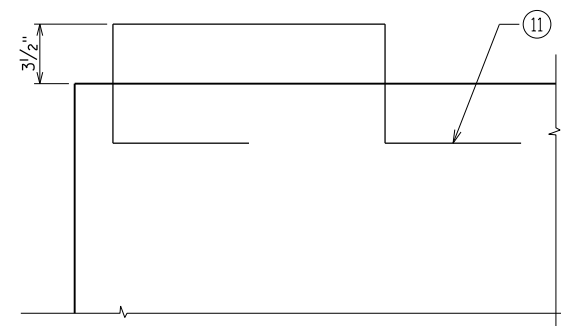
**SECTION THRU SUPERSTRUCTURE**

\* DIMENSION IS TAKEN NORMAL TO  $\phi$  SUBSTRUCTURE UNITS.

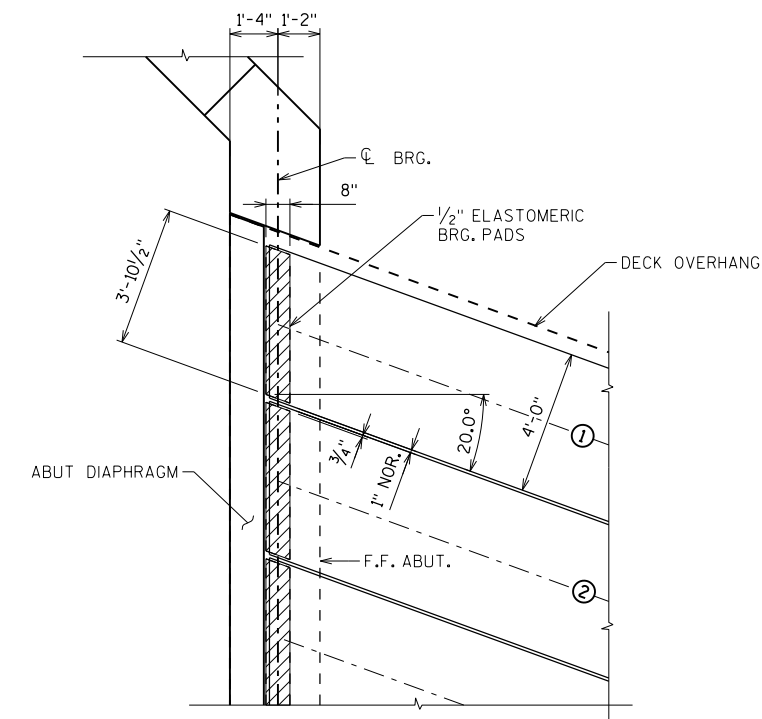


**ELEVATION**

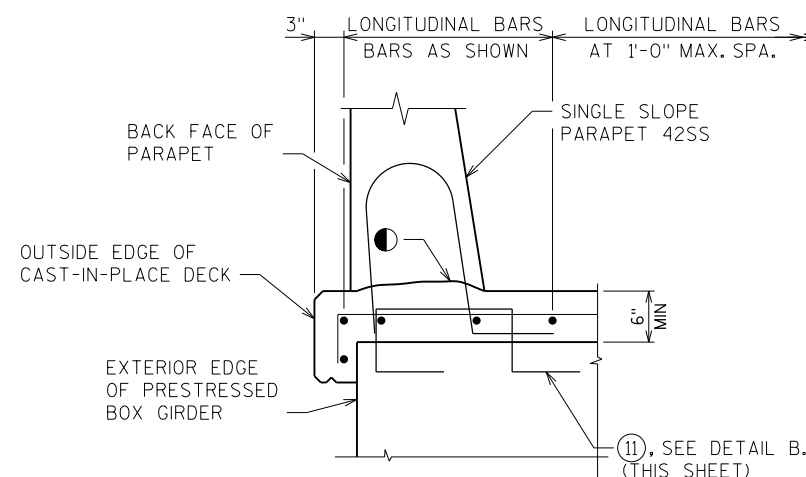
(SHOWING DECK OVERHANG TERMINATION AT CONCRETE ABUTMENT)



**DETAIL B**

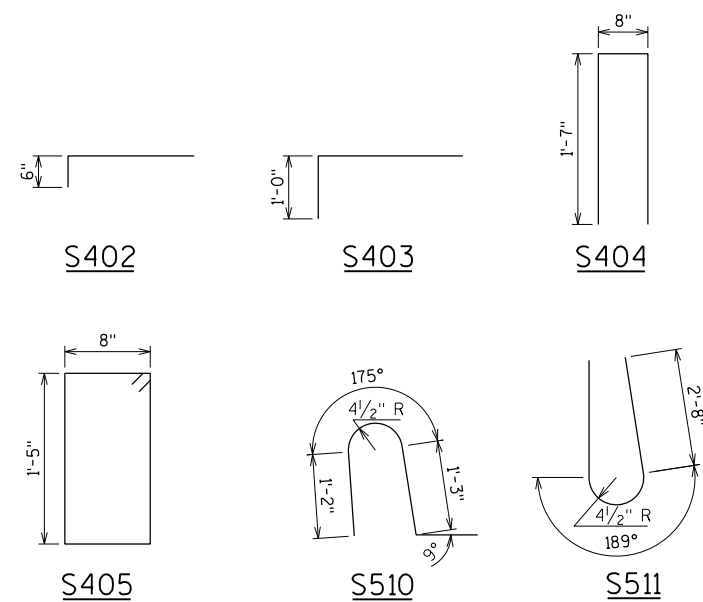


**BEARING PAD DETAILS**



**SECTION THRU PARAPET ON BRIDGE**

BILL OF BARS						SUPERSTRUCTURE	
BAR MARK	COAT	NO REQ'D	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION	
COATED BARS						TOTAL WEIGHT = 4900 LBS	
S401	X	33	46-6			DECK - LONG.	
S402	X	94	16-11		X	DECK - TRANS.	
S403	X	60	3-11		X	DECK - LONG. AT ABUT.	
S404	X	60	3-8		X	ABUT. VERT. DIAPHRAGMS & DECK	
S405	X	60	4-8		X	ABUT. VERT. DIAPHRAGMS	
S606	X	16	30-10			ABUT. HORIZ. DIAPHRAGMS	
S510	X	90	4-5		X	PARAPETS - VERT.	
S511	X	90	6-8		X	PARAPETS - VERT.	
S512	X	20	24-5			PARAPETS - HORIZ.	



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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-18-242			
DRAWN BY		GLE	PLANS CK'D. NCK
SUPERSTRUCTURE DETAILS			SHEET 13 OF 14

**BILL OF BARS**

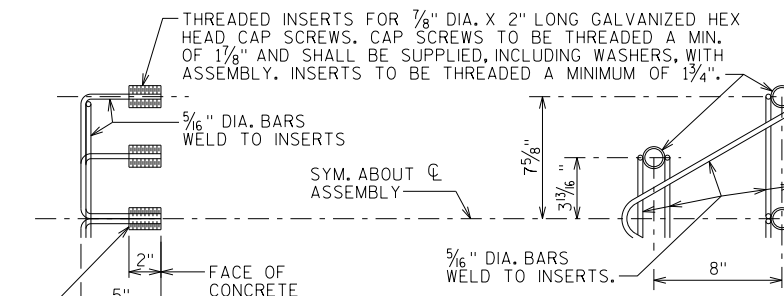
BAR MARK	COAT	SUPERSTR.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X		5'-10"	X		PARAPET VERT.
R502	X		6'-8"	X		PARAPET VERT.
R503	X	44	3'-0"	X		PARAPET VERT.
R504	X	68	5'-7"	X		PARAPET VERT.
R505	X	20	6'-5"	X		PARAPET VERT.
R506	X	24	6'-6"	X		PARAPET VERT.
R507	X	4	24'-10"	X		PARAPET HORIZ.
R508	X					PARAPET HORIZ.
R509	X	24	5'-5"	X	▲	PARAPET VERT.
R510	X	8	24'-10"	X		PARAPET HORIZ.

▲ 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 SERIES TABLE**

BAR MARK	NO. REQ'D	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"

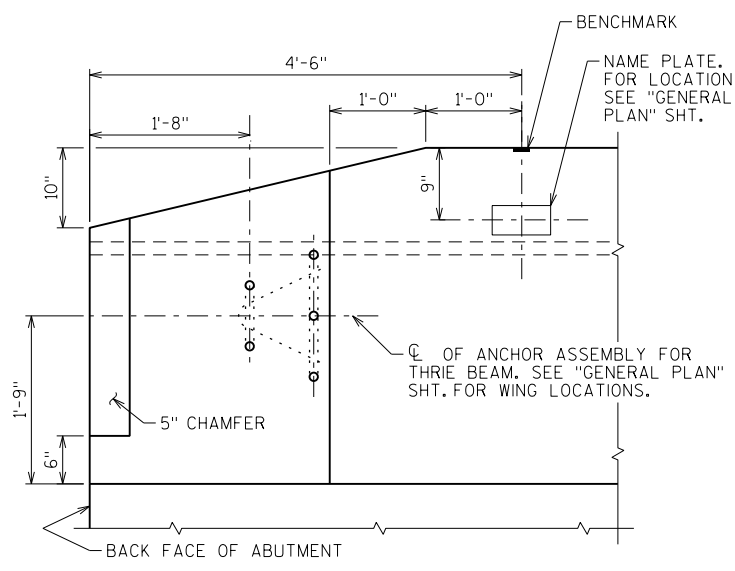
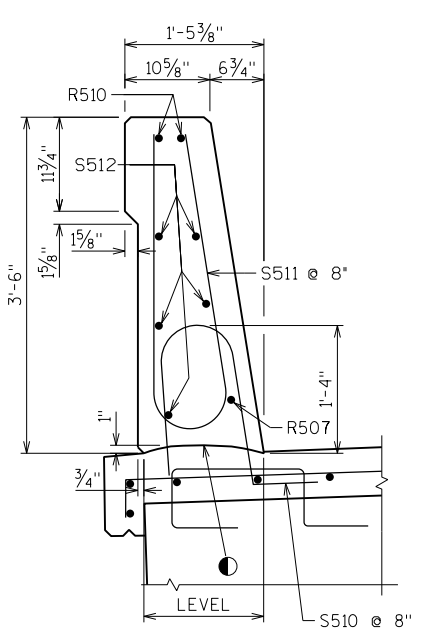
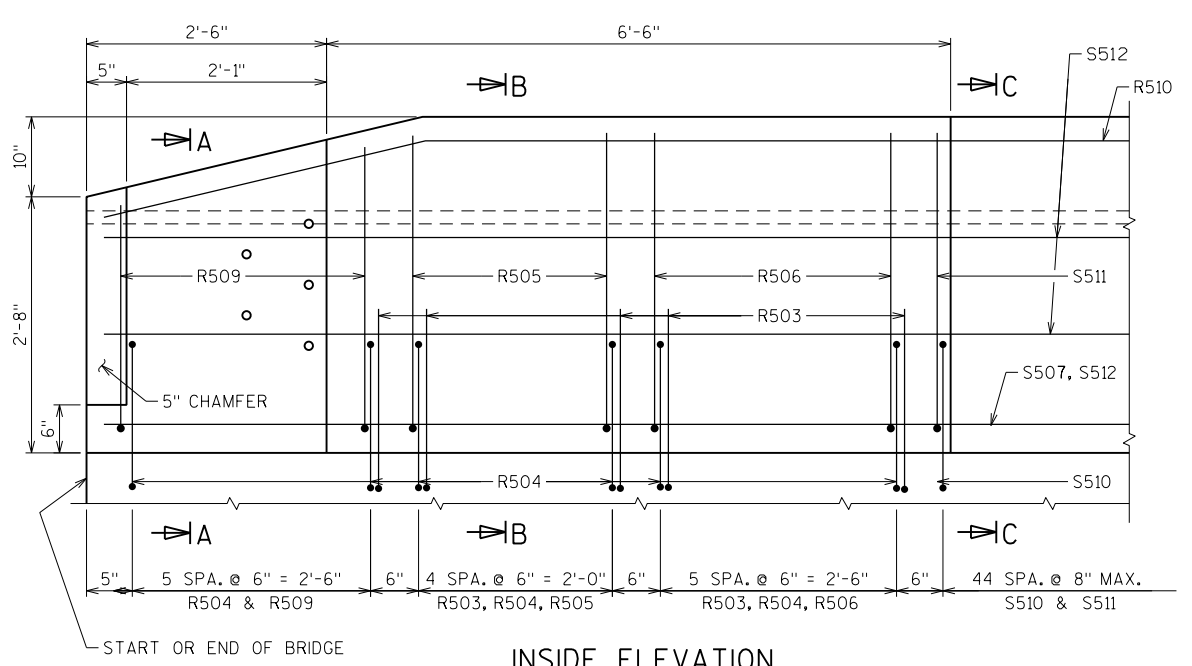
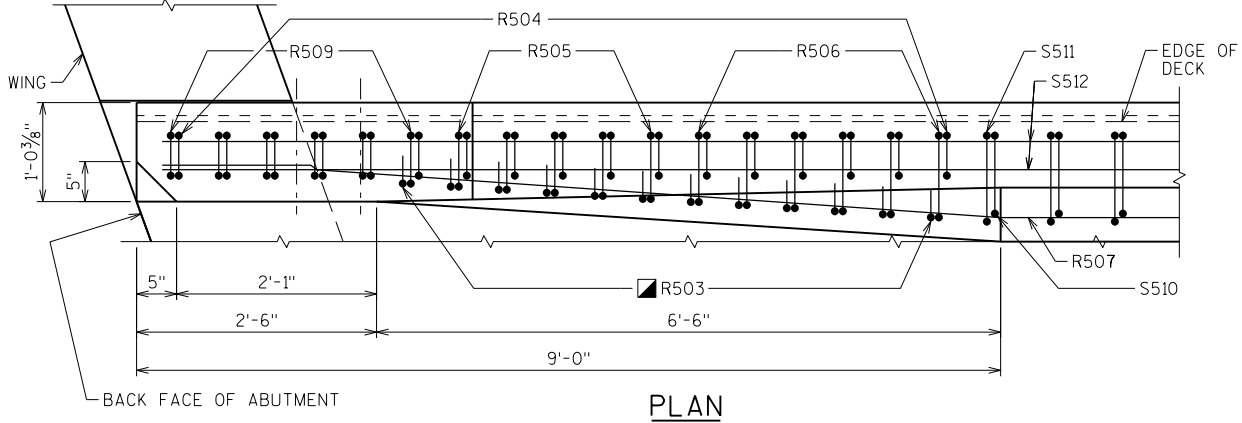
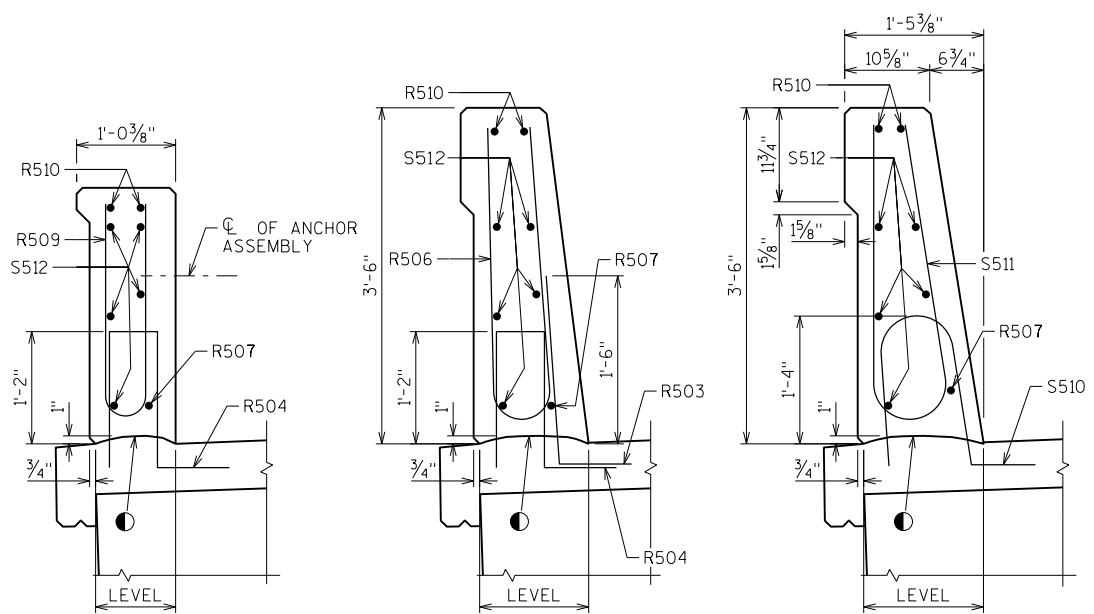
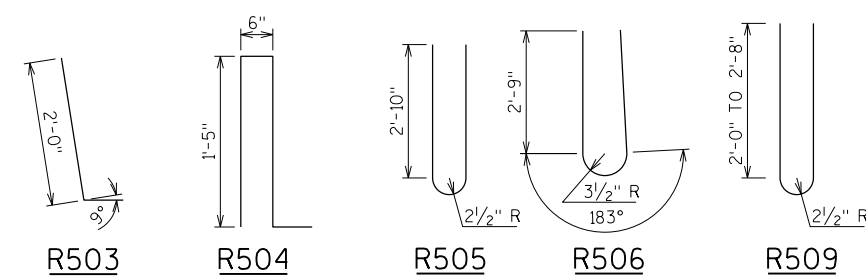
BUNDLE AND TAG EACH SERIES SEPARATELY.



**DETAIL OF ANCHOR ASSEMBLY**

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

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.



● CONST. JOINT - STRIKE OFF AS SHOWN

■ R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

PLOT TIME: 9:33:29 AM  
PLOT DATE: 10/20/2022  
FILE NAME: X:\AE\EAUCH\62592\5-final-dsgn\5-drawings\5-struct\B-18-242\bridge\B18242ssst2.dgn

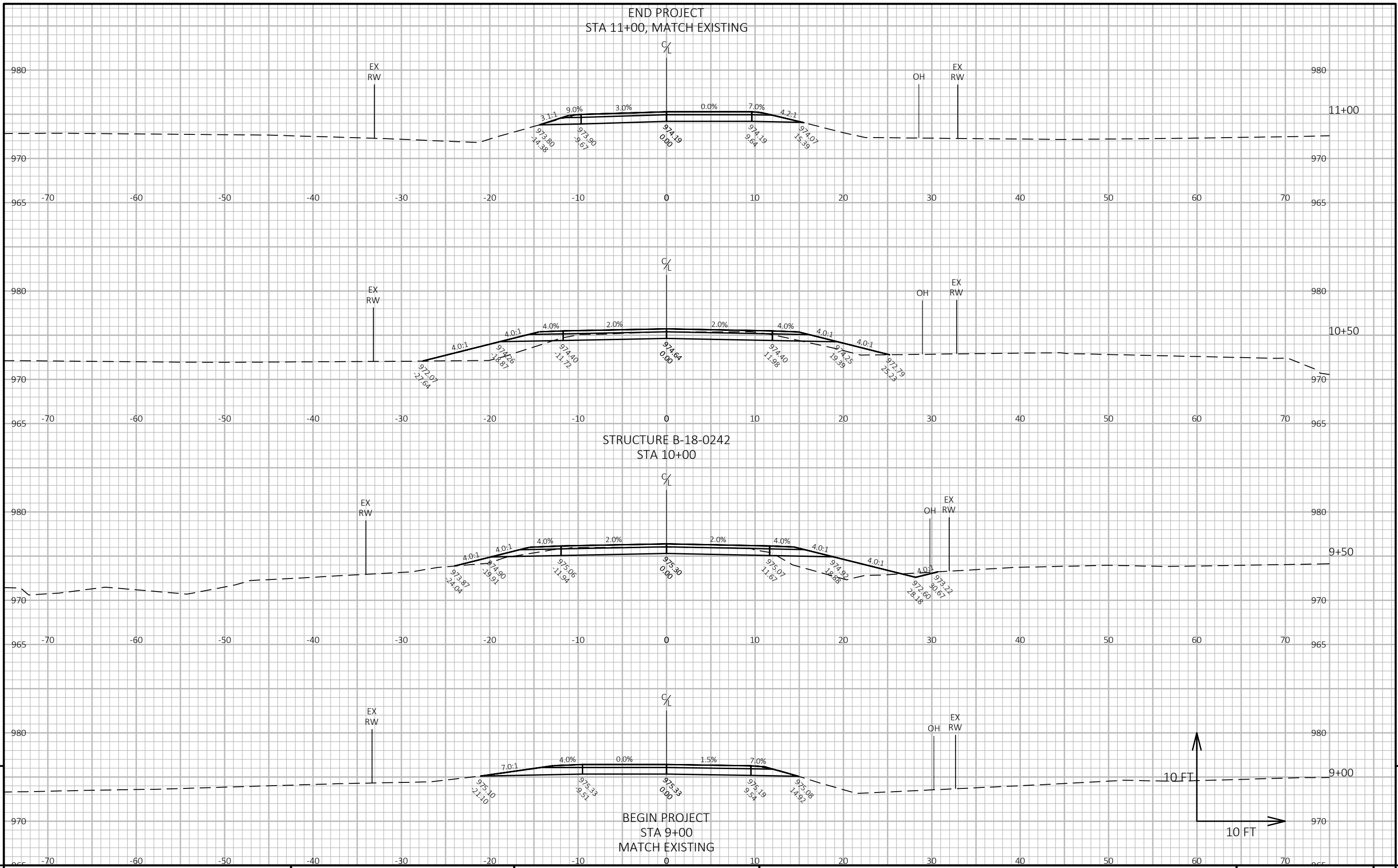
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-18-242			
DRAWN BY		GLE	PLANS CK'D. NCK
SINGLE SLOPE PARAPET 42SS			SHEET 14 OF 14

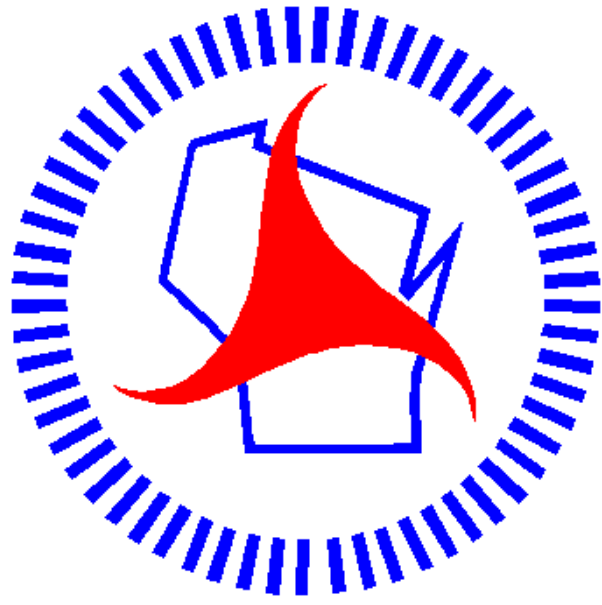
E Bunting Road											
Station	Distance	AREA (SF)		Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)				
		Cut Note 1	Fill	Cut Note 2	Unusable Pavement Material	Fill Note 3	Cut 1.00 Note 2	Unusable Material Note 3	Available Material 1.00 Note 3	Expanded Fill 1.30 Note 4	Mass Ordinate Note 5
9+00	0.00	31.7	0.0	0.0	0.0	0.0	0.0	0	0	0	0
9+50	50.00	21.1	19.8	48.9	27.8	18.3	49	28	21	24	-3
9+66	16.00	21.1	19.8	12.5	8.9	11.7	61	37	25	39	-14
9+66	0.25	0.0	0.0	0.1	0.1	0.1	61	37	25	39	-15
10+34	67.50	0.0	0.0	0.0	0.0	0.0	61	37	25	39	-15
10+34	0.25	18.7	19.9	0.1	0.1	0.1	62	37	25	39	-15
10+50	16.00	18.7	19.9	11.1	8.9	11.8	73	46	27	55	-28
11+00	50.00	27.4	0.0	42.6	27.8	18.4	115	74	42	79	-37

Notes:  
 1) Unusable Pavement Material is included in Cut.  
 2) Excavation Common is the sum of the Cut column. Item number 205.0100  
 3) Does not include Unusable Pavement Excavation and Existing Base Aggregate volume.  
 4) Will be backfilled with Excavation Common or Borrow. Borrow item number 208.0100  
 5) Plus quantity indicates an excess of material. Minus indicates a shortage of material. Borrow item number 208.0100  
 6) Additional cut required within excavation for structures limits (Sta 9+66 to Sta 10+34). See structure plans for additional information.



PROJECT NO: 7829-00-70      HWY: E BUNTING ROAD      COUNTY: EAU CLAIRE      CROSS SECTIONS      SHEET      E

Notes



## ***Wisconsin Department of Transportation***

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