

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH X - CTH E SUGAR RIVER BRIDGE B-23-0181 CTH C GREEN COUNTY

STATE PROJECT NUMBER
5208-00-73

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5208-00-73	WISC 2023015	1

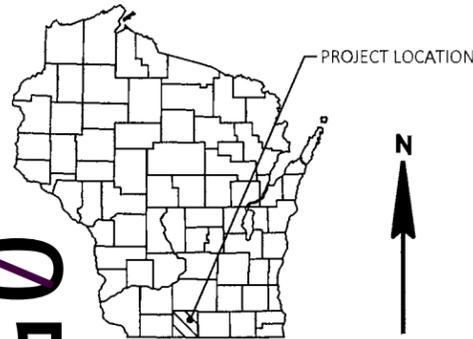
ORDER OF SHEETS

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 (Includes Erosion Control)
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 = 64

PROJECT ID: 5208-00-73

COUNTRY: GREEN



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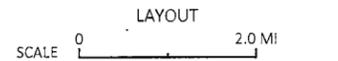
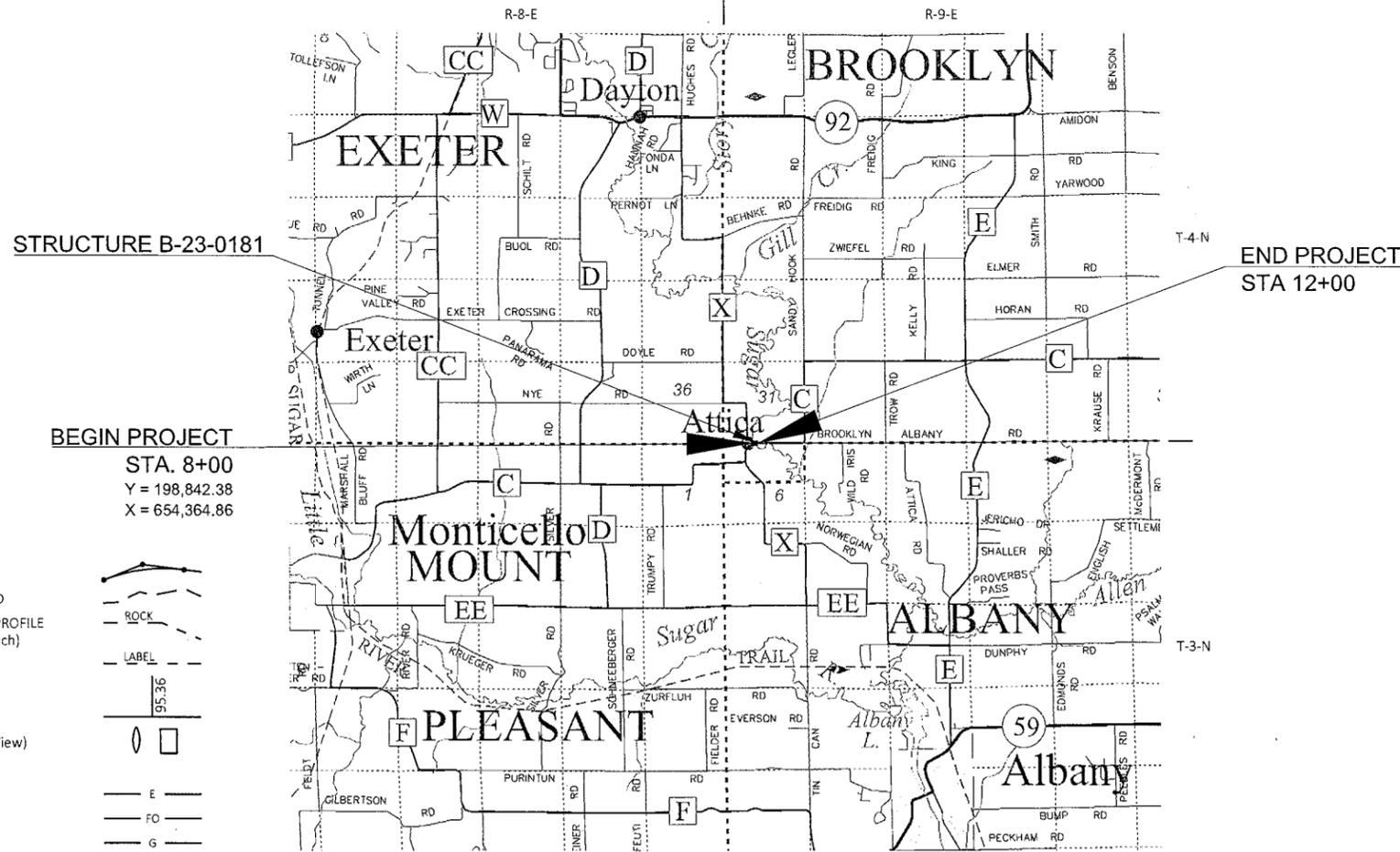
DESIGN DESIGNATION

A.A.D.T. 2023	=	470
A.A.D.T. 2043	=	560
D.H.V.	=	75
D.D.	=	62/38
T.	=	7.8%
DESIGN SPEED	=	55 MPH
ESALS	=	66,000

CONVENTIONAL SYMBOLS

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

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



TOTAL NET LENGTH OF CENTERLINE = 0.076 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), GREEN 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.

ACCEPTED FOR
COUNTY of GREEN
8/11/22
(Date)
HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY
MSA
1702 Pankratz Street, Madison WI 53704
(608) 242-7779 www.msa-ps.com

WISCONSIN
★ JOSHUA R. SWENO ★
E-44384
WAUNAKEE WI
PROFESSIONAL ENGINEER
7/14/2022

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PREPARED BY
Surveyor MSA PROFESSIONAL SERVICES, INC.
Designer MSA PROFESSIONAL SERVICES, INC.
Project Manager ZACHARY PEARSON, P.E.
Regional Examiner SW REGION
Regional Supervisor KYLE HEMP, P.E.

APPROVED FOR THE DEPARTMENT
DATE 08/01/22
(Signature)

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GENERAL NOTES

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

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

USE 12.5MM NOMINAL AGGREGATE FOR THE UPPER ASPHALT LAYER AND 19.0 NOMINAL AGGREGATE FOR THE LOWER ASPHALT LAYER.

ASPHALT PAVEMENT SUGGESTED LAYERS:

- UPPER: 1.75-INCH
- LOWER: 2.25-INCH

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. THE ENGINEER MAY MODIFY LOCATIONS AS NEEDED. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

WETLANDS ARE PRESENT. AREAS OUTSIDE THE SLOPE INTERCEPTS SHALL NOT BE DISTURBED IN WETLAND AREAS.

DNR LIASON

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
 ATTN: SHELLEY NELSON
 3911 FISH HATCHERY ROAD
 FITCHBURG, WI 53711
 PHONE: (608) 444-2835
 EMAIL: SHELLEY.NELSON@WISCONSIN.GOV

UTILITIES

OVERHEAD/BURIED ELECTRIC:
 ALLIANT ENERGY
 ATTN: BETSI BASS
 1915 STATE ROAD 69 S
 MONROE, WI 53566
 PHONE: (608) 328-5323
 EMAIL: BETSIBASS@ALLIANTENERGY.COM

MSA DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC
 ATTN: JOSH SWENO, P.E.
 1702 PANKRATZ STREET
 MADISON, WI 53704
 PHONE: (608) 355-8852
 EMAIL: JSWENO@MSA-PS.COM

COUNTY CONTACT

GREEN COUNTY HIGHWAY DEPARTMENT
 ATTN: CHRIS NARVESON, COMMISSIONER
 2813 6TH STREET
 P.O. BOX 259
 MONROE, WI 53566
 PHONE: (608) 328-9411
 EMAIL: CNARVESON@GREENCOUNTYWI.ORG

* NOT A DIGGERS HOTLINE MEMBER

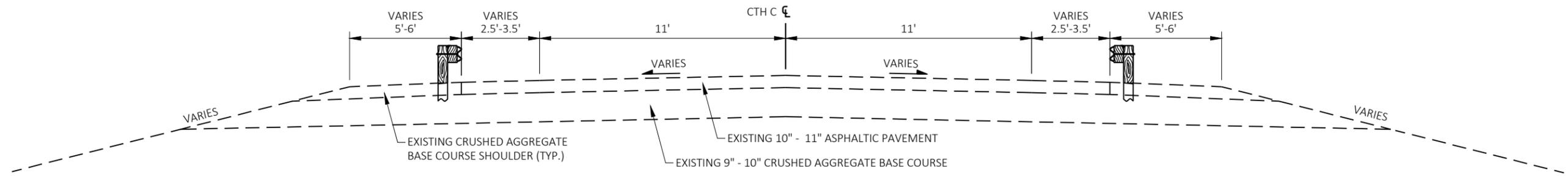


Dial **811** or (800)242-8511
www.DiggersHotline.com

RUNOFF COEFFICIENT TABLE

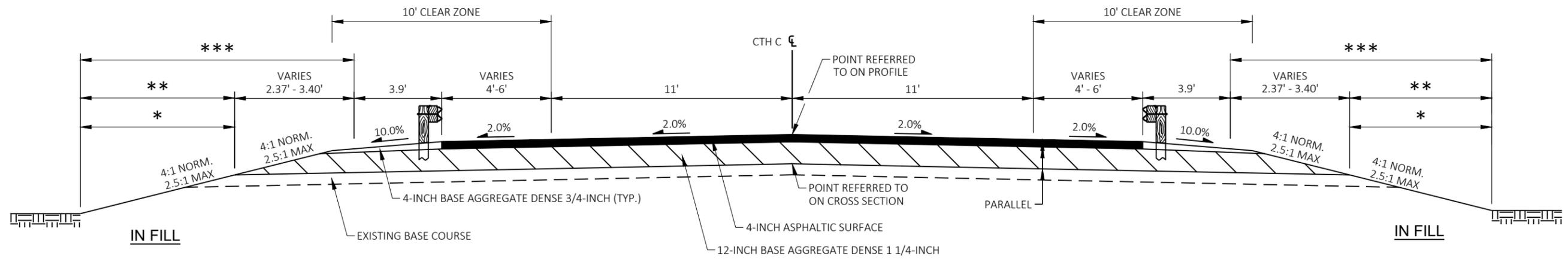
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER									
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIP-TURF	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPE: TURF			.25			.27			.28			.30
			.32			.34			.36			.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 = 1.10 ACRES
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.70 ACRES



EXISTING TYPICAL SECTION

STA 8+00 - STA 9+14.54
STA 10+86.03 - STA 12+00



FINISHED TYPICAL SECTION

STA 8+00 - STA 9+15.73
STA 10+90.27 - STA 12+00

- * LIMITS OF SALVAGED TOPSOIL
- ** LIMITS OF EROSION MAT URBAN CLASS I, TYPE B
- *** LIMITS OF SEEDING MIXTURE #20, SEEDING TEMPORARY, & FERTILIZER TYPE B

Estimate Of Quantities

5208-00-73

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-23-28	EACH	1.000	1.000
0008	205.0100	Excavation Common	CY	262.000	262.000
0010	206.1001	Excavation for Structures Bridges (structure) 01. B-23-181	EACH	1.000	1.000
0012	206.5001	Cofferdams (structure) 01. B-23-181	EACH	1.000	1.000
0014	208.0100	Borrow	CY	310.000	310.000
0016	210.1500	Backfill Structure Type A	TON	384.000	384.000
0018	213.0100	Finishing Roadway (project) 01. 5208-00-73	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	33.000	33.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	723.000	723.000
0024	416.1010	Concrete Surface Drains	CY	2.000	2.000
0026	455.0605	Tack Coat	GAL	55.000	55.000
0028	465.0105	Asphaltic Surface	TON	172.000	172.000
0030	502.0100	Concrete Masonry Bridges	CY	355.000	355.000
0032	502.3200	Protective Surface Treatment	SY	624.000	624.000
0034	502.3210	Pigmented Surface Sealer	SY	174.000	174.000
0036	502.9000.S	Underwater Substructure Inspection (structure) 01. B-23-181	EACH	1.000	1.000
0038	503.0137	Prestressed Girder Type I 36W-Inch	LF	691.000	691.000
0040	505.0400	Bar Steel Reinforcement HS Structures	LB	7,160.000	7,160.000
0042	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	56,740.000	56,740.000
0044	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	16.000	16.000
0046	506.4000	Steel Diaphragms (structure) 01. B-23-181	EACH	12.000	12.000
0048	516.0500	Rubberized Membrane Waterproofing	SY	16.000	16.000
0050	550.0500	Pile Points	EACH	24.000	24.000
0052	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,920.000	1,920.000
0054	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	104.000	104.000
0056	606.0200	Riprap Medium	CY	5.000	5.000
0058	606.0300	Riprap Heavy	CY	230.000	230.000
0060	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	190.000	190.000
0062	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0064	614.0920	Salvaged Rail	LF	355.000	355.000
0066	614.2300	MGS Guardrail 3	LF	50.000	50.000
0068	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0070	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0072	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5208-00-73	EACH	1.000	1.000
0074	619.1000	Mobilization	EACH	1.000	1.000
0076	624.0100	Water	MGAL	15.000	15.000
0078	625.0500	Salvaged Topsoil	SY	1,001.000	1,001.000
0080	628.1504	Silt Fence	LF	755.000	755.000
0082	628.1520	Silt Fence Maintenance	LF	755.000	755.000
0084	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0086	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0088	628.2008	Erosion Mat Urban Class I Type B	SY	1,001.000	1,001.000
0090	628.6005	Turbidity Barriers	SY	444.000	444.000
0092	629.0210	Fertilizer Type B	CWT	0.900	0.900
0094	630.0120	Seeding Mixture No. 20	LB	35.000	35.000
0096	630.0200	Seeding Temporary	LB	35.000	35.000
0098	630.0500	Seed Water	MGAL	29.000	29.000

Estimate Of Quantities

5208-00-73

Line	Item	Item Description	Unit	Total	Qty
0100	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0102	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0104	642.5001	Field Office Type B	EACH	1.000	1.000
0106	643.0420	Traffic Control Barricades Type III	DAY	2,232.000	2,232.000
0108	643.0705	Traffic Control Warning Lights Type A	DAY	3,472.000	3,472.000
0110	643.0900	Traffic Control Signs	DAY	1,736.000	1,736.000
0112	643.5000	Traffic Control	EACH	1.000	1.000
0114	645.0111	Geotextile Type DF Schedule A	SY	72.000	72.000
0116	645.0120	Geotextile Type HR	SY	424.000	424.000
0118	646.1020	Marking Line Epoxy 4-Inch	LF	1,600.000	1,600.000
0120	650.4500	Construction Staking Subgrade	LF	226.000	226.000
0122	650.5000	Construction Staking Base	LF	226.000	226.000
0124	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	104.000	104.000
0126	650.6501	Construction Staking Structure Layout (structure) 01. B-23-0181	EACH	1.000	1.000
0128	650.9911	Construction Staking Supplemental Control (project) 01. 5208-00-73	EACH	1.000	1.000
0130	650.9920	Construction Staking Slope Stakes	LF	226.000	226.000
0132	690.0150	Sawing Asphalt	LF	46.000	46.000
0134	715.0502	Incentive Strength Concrete Structures	DOL	2,130.000	2,130.000
0136	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	400.000	400.000
0138	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	200.000	200.000
0140	SPV.0090	Special 01. Removing Existing Timber Piling	LF	220.000	220.000

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EXCAVATION COMMON & BORROW

CLEARING AND GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
0010	8+00	-	10+00	MAINLINE,RT	2	2
TOTAL 0010					2	2

CATEGORY	STATION	TO	STATION	LOCATION	205.0100 EXCAVATION COMMON CY (3)	FILL CY (1)	EXPANDED FILL CY (2)	WASTE CY	208.0100 BORROW CY
0010	8+00	-	9+15.73	MAINLINE	125	186.00	241.00	-116.00	116
0010	10+90.27	-	12+00	MAINLINE	137	132.00	170.00	-33.00	33
0010				UNUSABLE PAVEMENT	-	-	-	-	161
TOTAL 0010					262				310

CONCRETE SURFACE DRAINS

CATEGORY	STATION	LOCATION	416.1010 CONCRETE SURFACE DRAINS CY
0010	11+31	MAINLINE, LT	1
0010	11+35	MAINLINE, RT	1
TOTAL 0010			2

(1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY.
(2) - FILL EXPANSION 30%
(3) - EXISTING PAVEMENT IS INCLUDED IN EXCAVATION COMON TOTALS. SEE EARTHWORK TABLE.

BASE AGGREGATE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
0010	8+00	-	9+16	MAINLINE	17	378	8
0010	10+90	-	12+00	MAINLINE	16	345	7
TOTAL 0010					33	723	15

ASPHALTIC SURFACE

CATEGORY	STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
0010	8+00	-	9+16	MAINLINE	28	88
0010	10+90	-	12+00	MAINLINE	27	84
TOTAL 0010					55	172

CURB AND GUTTER

CATEGORY	STATION	TO	STATION	LOCATION	601.0588 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT LF	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF
0010	10+87	-	11+40	LT	52	52
0010	10+92	-	11+44	RT	52	52
TOTAL 0010					104	104

RIRPAP AND GEOTEXTILE

CATEGORY	STATION	LOCATION	606.0200 RIRPAP MEDIUM CY	645.0120 GEOTEXTILE TYPE HR SY
0010	11+31	LT	3	15
0010	11+35	RT	2	11
TOTAL 0010			5	26

SALVAGED RAIL

CATEGORY	STATION	TO	STATION	LOCATION	614.0920 SALVAGED RAIL LF
0010	8+20.03	-	9+08.73	MAINLINE, LT	89
0010	8+26.12	-	9+15.40	MAINLINE, RT	89
0010	10+85.00	-	11+73.77	MAINLINE, LT	89
0010	10+91.19	-	11+79.40	MAINLINE, RT	88
TOTAL 0010					355

MGS GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
0010	8+10.57	-	9+15.60	MAINLINE, LT	12.5	39.4	1
0010	8+15.85	-	9+20.89	MAINLINE, RT	12.5	39.4	1
0010	10+85.11	-	11+90.15	MAINLINE, LT	12.5	39.4	1
0010	10+90.41	-	11+95.43	MAINLINE, RT	12.5	39.4	1
TOTAL 0010					50	157.6	4

3

RESTORATION ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0500	628.2008	629.0210	630.0120	630.0200	630.0500
					SALVAGED TOPSOIL SY	EROSION MAT URBAN CLASS I TYPE B SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEEDING TEMPORARY LB	SEED WATER MGAL
0010	8+00	-	9+15.73	LT	273	273	0.2	9	9	7
0010	8+00	-	9+15.73	RT	190	190	0.2	7	7	6
0010	10+90.27	-	12+00	LT	220	220	0.2	7	7	6
0010	10+90.27	-	12+00	RT	118	118	0.1	5	5	4
0010	---	-	---	UNDISTRIBUTED	200	200	0.2	7	7	6
TOTAL 0010					1,001	1,001	0.9	35	35	29

EROSION CONTROL ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	628.1504	628.1520	628.1905	628.1910	628.6005
					SILT FENCE LF	SILT FENCE MAINTENANCE LF	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EROSION CONTROL EACH	TURBIDITY BARRIERS SY
0010	8+00	-	9+35	MAINLINE, LT & RT	313	313	-	-	62
0010	9+71	-	-	PIER, EXISTING BRIDGE	-	-	-	-	119
0010	10+29	-	-	PIER, EXISTING BRIDGE	-	-	-	-	119
0010	10+70	-	12+00	MAINLINE, LT & RT	290	290	-	-	55
0010	---	-	---	UNDISTRIBUTED	152	152	3	2	89
TOTAL 0010					755	755	3	2	444

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SIGNS

CATEGORY	STATION	LOCATION	634.0612	637.2230	REMARKS
			POSTS WOOD 4X6- INCH X 12-FT EACH	SIGNS TYPE II REFLECTIVE F SF	
0010	9+12	MAINLINE, LT	1	3	W5-52L
0010	9+18	MAINLINE, RT	1	3	W5-52R
0010	10+88	MAINLINE, LT	1	3	W5-52R
0010	10+94	MAINLINE, RT	1	3	W5-52L
TOTAL 0010			4	12	

REMOVING SIGNS

STATION	LOCATION	638.2602	638.3000	REMARKS
		REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
9+08	MAINLINE, LT	1	1	REMOVED BY COUNTY
9+15	MAINLINE, RT	2	2	REMOVED BY COUNTY
10+85	MAINLINE, LT	2	2	REMOVED BY COUNTY
10+91	MAINLINE, RT	1	1	REMOVED BY COUNTY
TOTAL 0010		6	6	

TRAFFIC CONTROL

CATEGORY	DAYS	LOCATION	643.0420	643.0705	643.0900	643.5000			
			TRAFFIC CONTROL BARRICADES TYPE III EACH	TRAFFIC CONTROL BARRICADES TYPE III DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	TRAFFIC CONTROL SIGNS EACH	TRAFFIC CONTROL SIGNS DAY	TRAFFIC CONTROL EACH
0010	124	JUNCTION WITH CTH X	2	248	4	496	5	620	-
0010	124	BEGIN PROJECT	7	868	10	1,240	2	248	-
0010	124	END PROJECT	7	868	10	1,240	2	248	-
0010	124	JUNCTION WITH CTH E	2	248	4	496	5	620	-
0010	---	5208-00-73	-	-	-	-	-	-	1
TOTAL 0010				2,232		3,472		1,736	1

PAVEMENT MARKING

CATEGORY	STATION	TO	STATION	LOCATION	646.1020	REMARKS
					MARKING LINE EPOXY 4-INCH LF	
0010	8+00	-	12+00	MAINLINE, CL	800	SOLID DOUBLE YELLOW
0010	8+00	-	12+00	MAINLINE, LT AND RT	800	SOLID WHITE
TOTAL 0010					1,600	

CONSTRUCTION STAKING

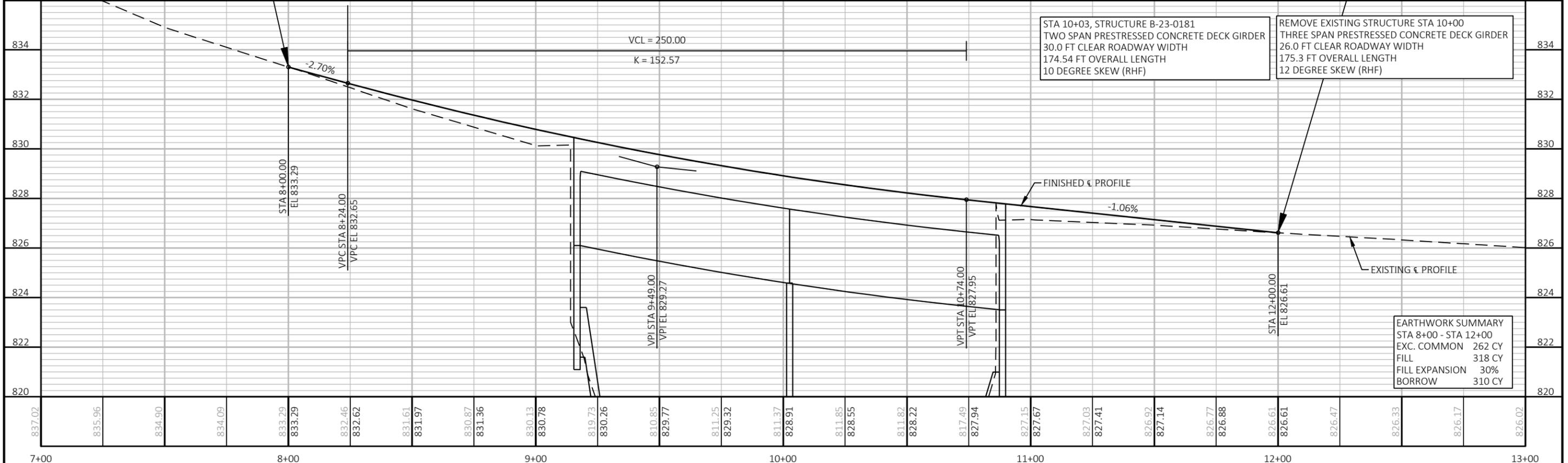
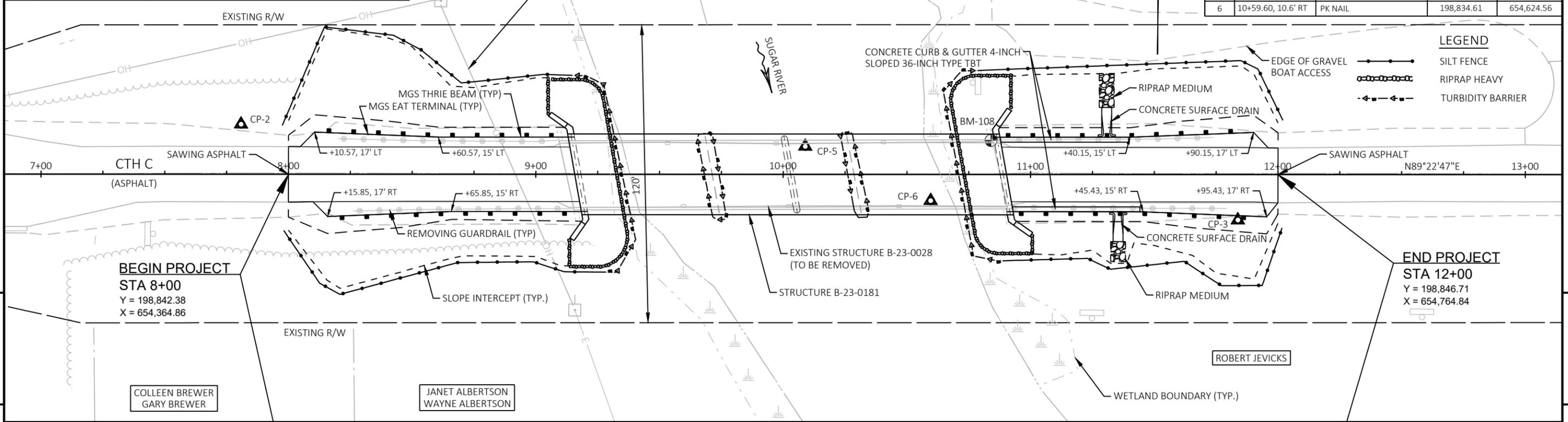
CATEGORY	STATION	TO	STATION	LOCATION	CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING SLOPE STAKES LF	650.6501.01 CONSTRUCTION STAKING STRUCTURE LAYOUT B-23-0181 EACH	650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL PROJECT 5208-00-73 EACH
					650.4500	650.5000	650.9920		
0010	8+00	-	9+16	MAINLINE	116	116	116	-	-
0010	10+90	-	12+00	MAINLINE	110	110	110	-	-
0010	PROJECT 5208-00-73				-	-	-	1	1
TOTAL 0010					226	226	226	1	1

SAWING ASPHALT

CATEGORY	STATION	LOCATION	SAWING ASPHALT LF
			690.0150
0010	8+00	MAINLINE	23
0010	12+00	MAINLINE	23
TOTAL 0010			46

BENCHMARKS			
NO.	STATION	DESCRIPTION	ELEV.
107	6+56.00, 21.5' LT	CHISELED SQ ON TOP OF CURB	838.14
108	10+83.93, 13.7' LT	CHISELED SQ ON TOP OF BRIDGE CURB	827.78
101	17+53.19, 14.1' RT	HIGHWAY COMM DISK	823.39

CONTROL POINTS				
NO.	STATION	DESCRIPTION	Y	X
2	7+80.82, 20.1' LT	3/4" IRON ROD W/ CAP	198,862.28	654,345.46
3	11+83.78, 18.3' RT	3/4" IRON ROD W/ CAP	198,828.19	654,748.82
5	10+08.91, 11.3' LT	PK NAIL	198,855.91	654,573.63
6	10+59.60, 10.6' RT	PK NAIL	198,834.61	654,624.56

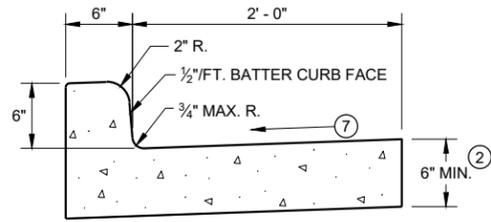


EARTHWORK SUMMARY	
STA 8+00 - STA 12+00	
EXC. COMMON	262 CY
FILL	318 CY
FILL EXPANSION 30%	
BORROW	310 CY

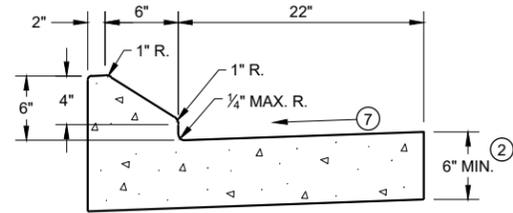
PROJECT NO: 5208-00-73	HWY: CTH C	COUNTY: GREEN	PLAN AND PROFILE: CTH C	SHEET	E
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Standard Detail Drawing List

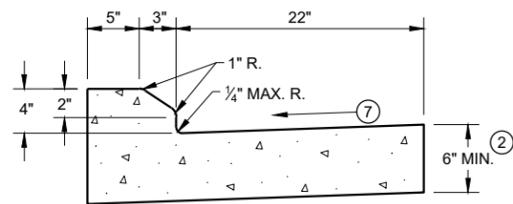
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-07A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-10	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-21A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



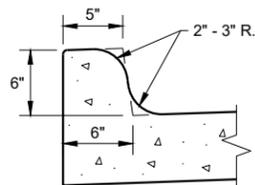
TYPES A^① & D



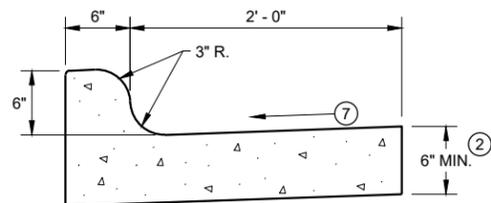
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

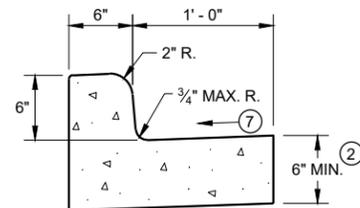


TYPES K^① & L
(OPTIONAL CURB SHAPE)



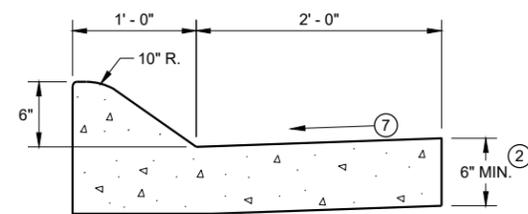
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

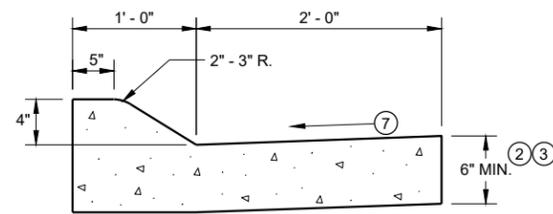


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

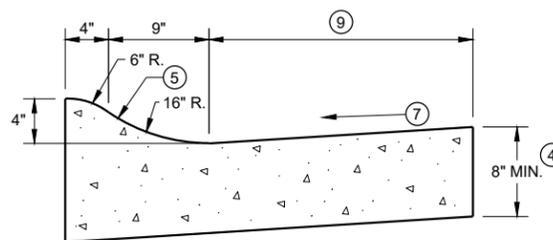


6" SLOPED CURB TYPES A^① & D



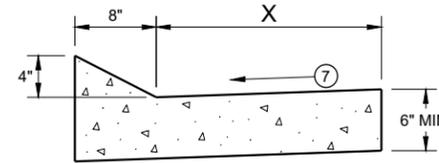
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

TBT & TBTT	X
30"	22"
36"	28"

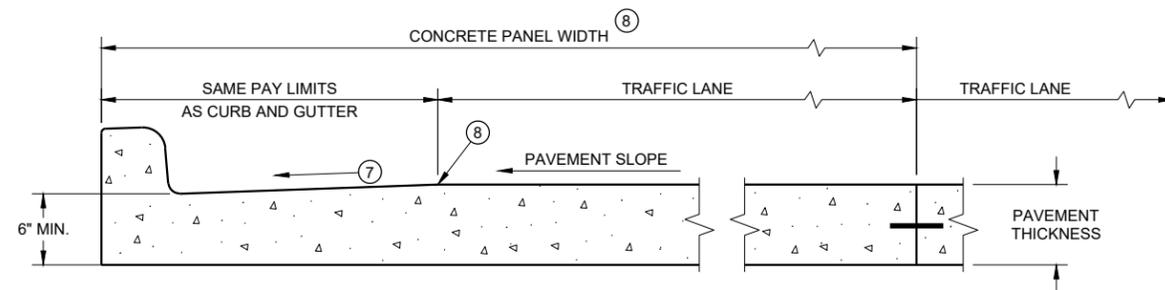


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

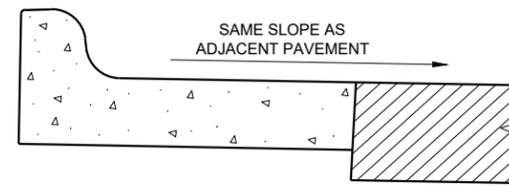
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

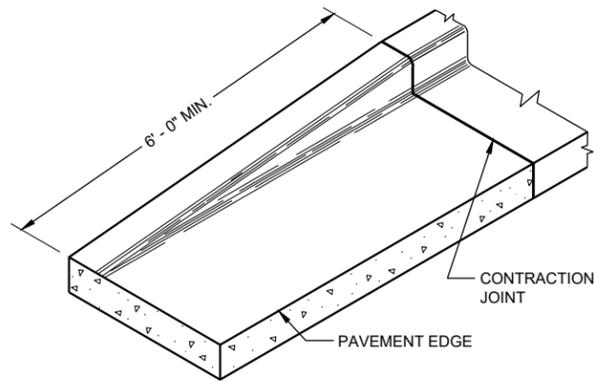
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

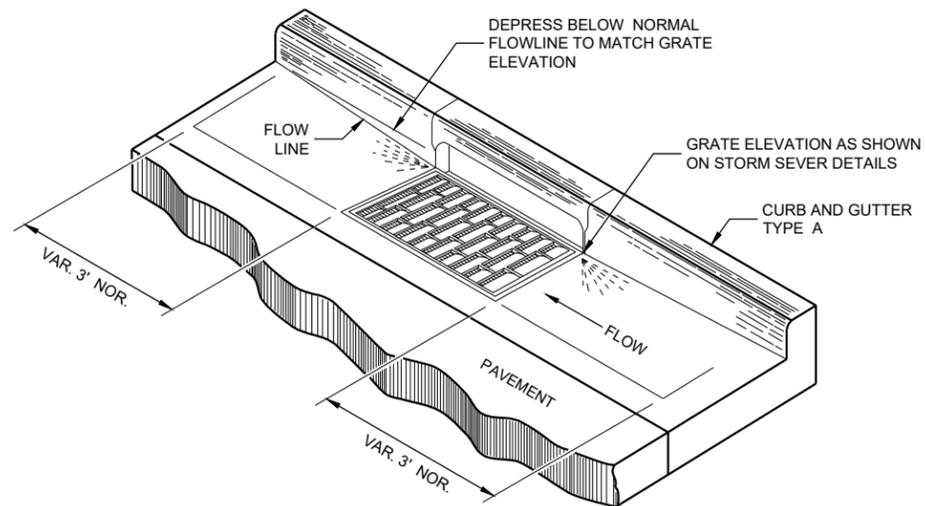
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES



END SECTION CURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

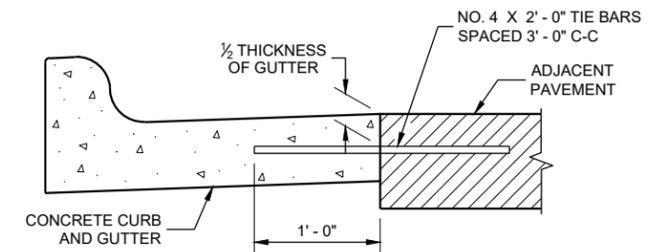
GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

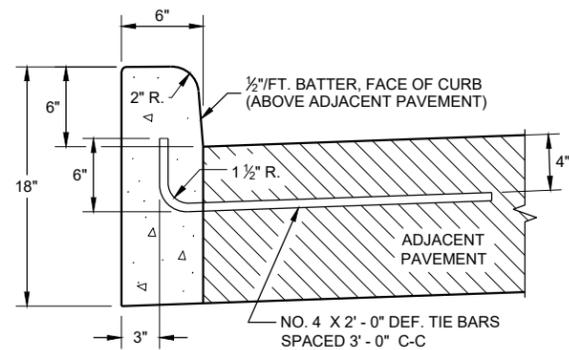
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

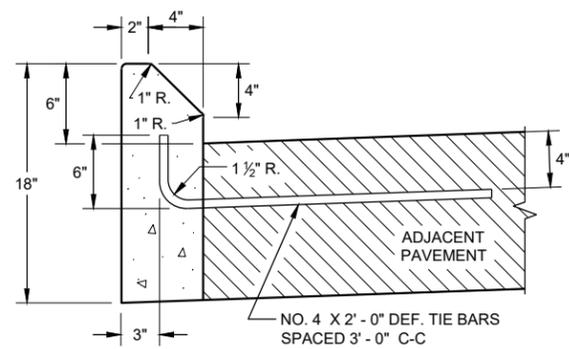
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION ①

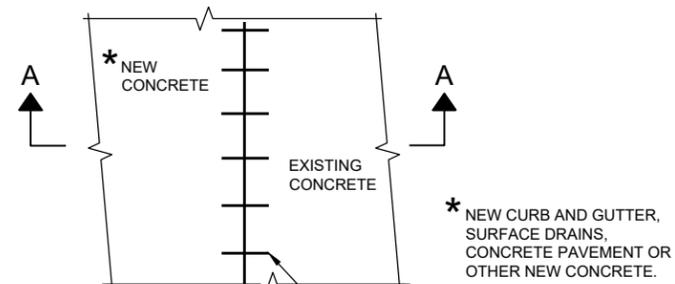


TYPES A ① & D

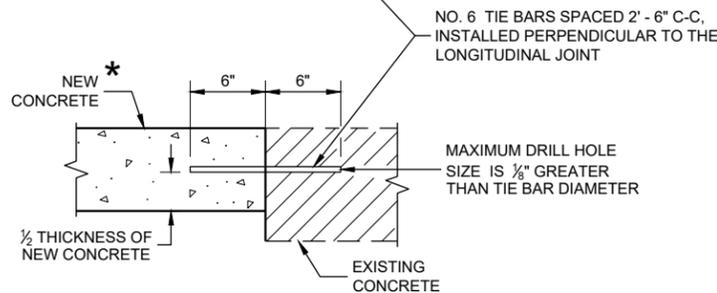


TYPES G ① & J

CONCRETE CURB

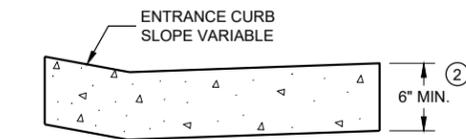


PLAN VIEW



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB ⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

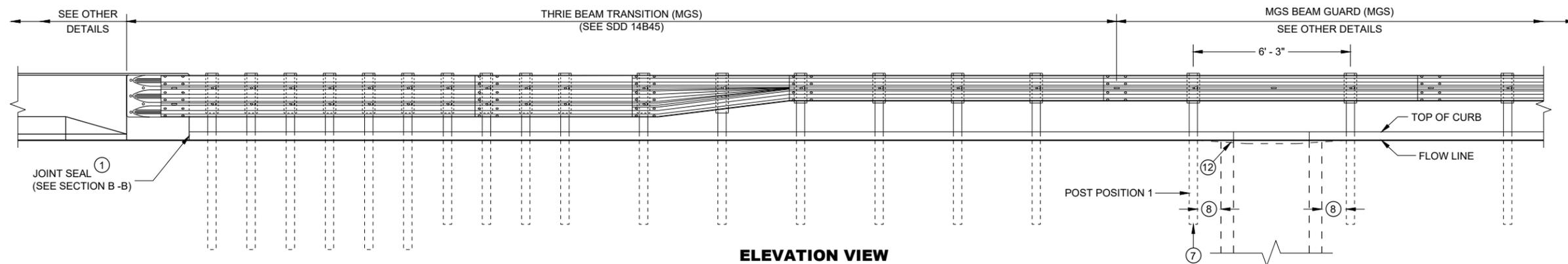
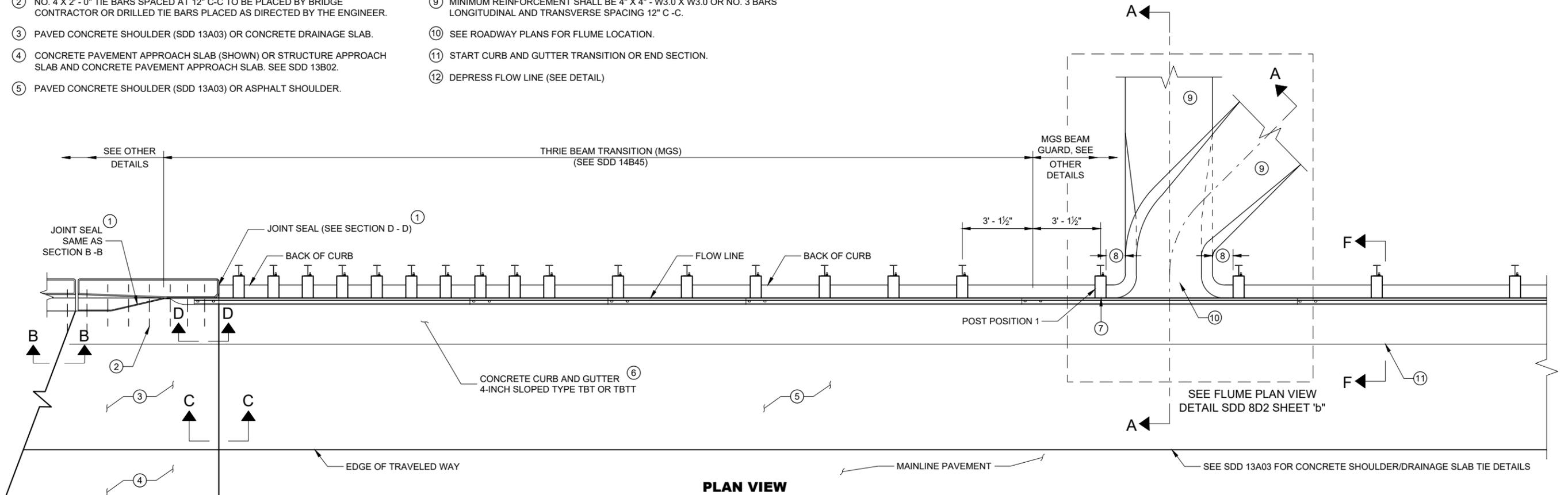
GENERAL NOTES

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.

ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)



**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

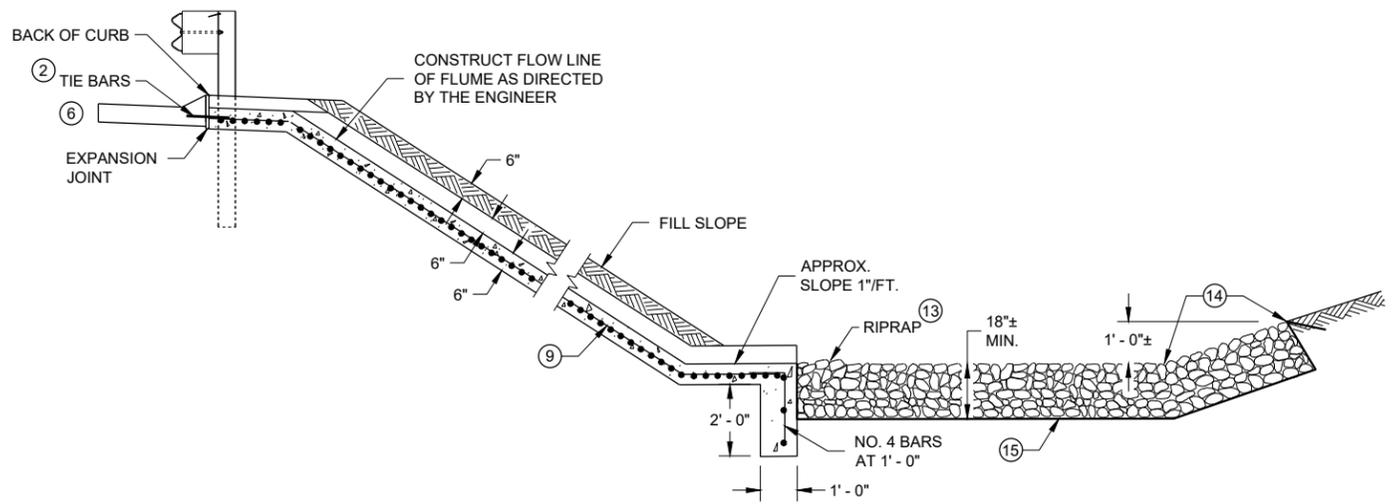
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

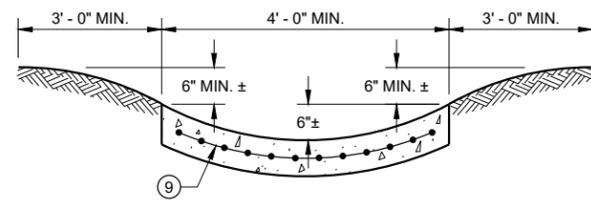
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SDD 08D02 - 07a

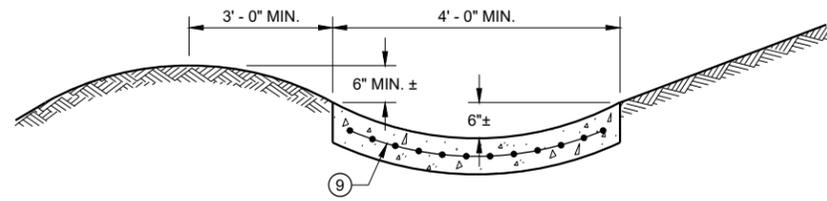
SDD 08D02 - 07a



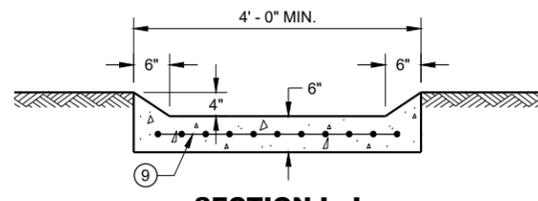
SECTION A - A



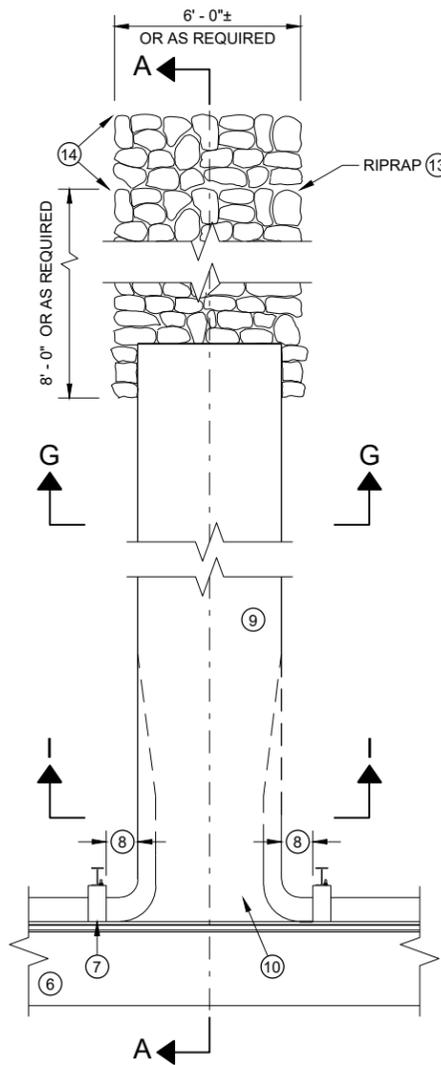
SECTION G - G



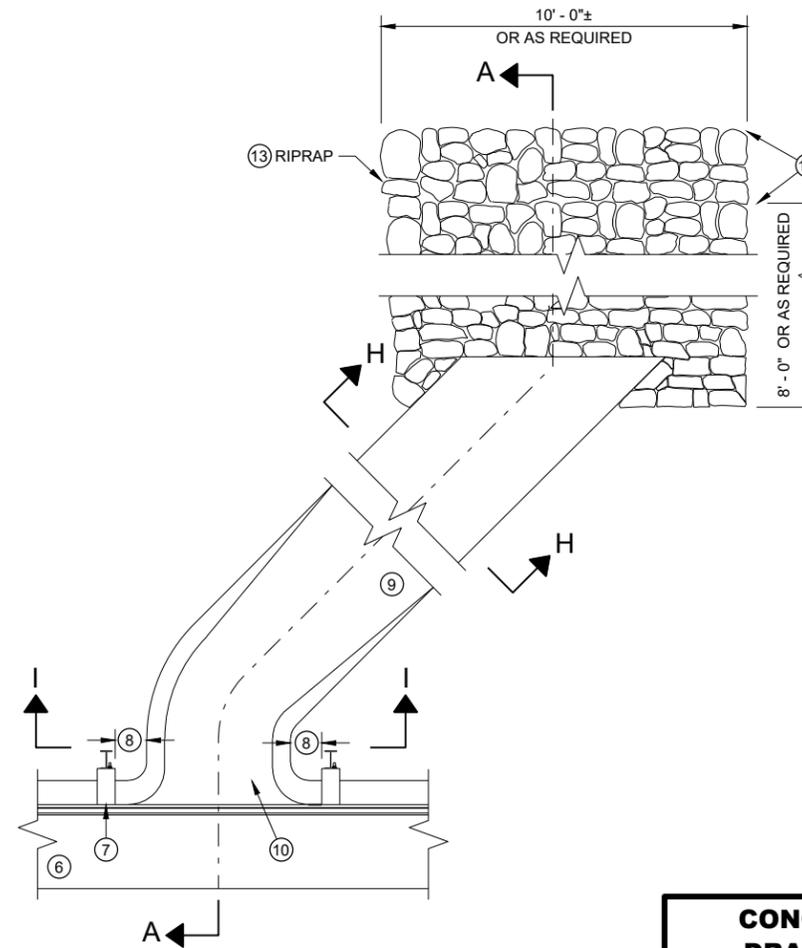
SECTION H - H



SECTION I - I



PLAN VIEW PERPENDICULAR FLUME



PLAN VIEW SKEWED FLUME

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.

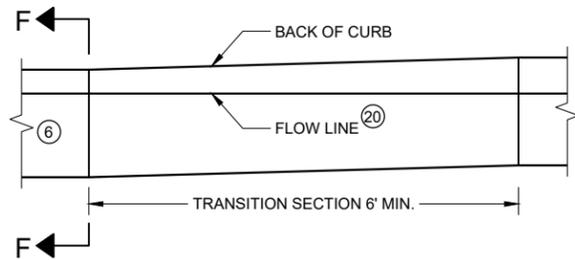
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

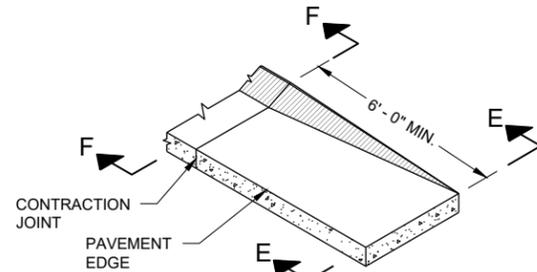
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH AS REQUIRED.
- ⑮ GEOTEXTILE FABRIC TYPE HR.

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

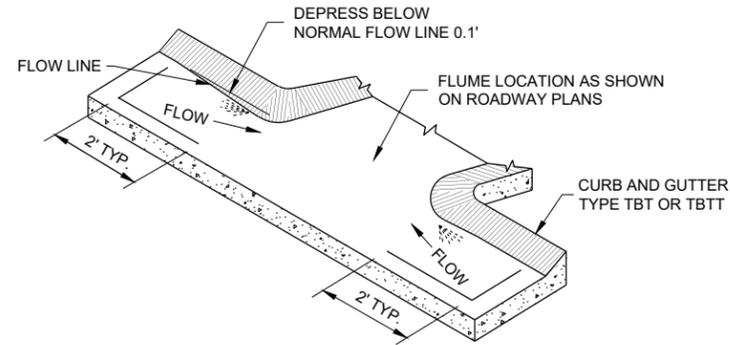
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



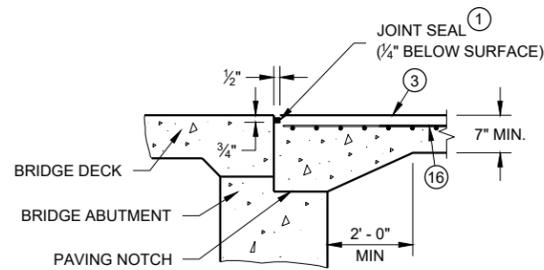
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**

GENERAL NOTES

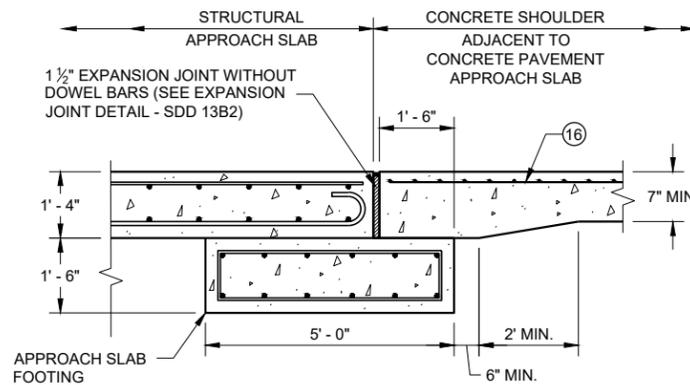
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ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

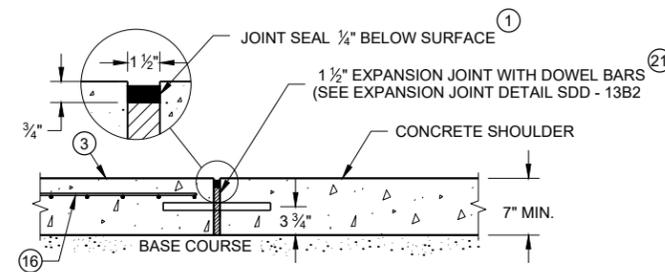
- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑮ GEOTEXTILE FABRIC TYPE HR.
- ⑯ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑰ MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- ⑱ MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ⑲ ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- ⑳ MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- ㉑ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.



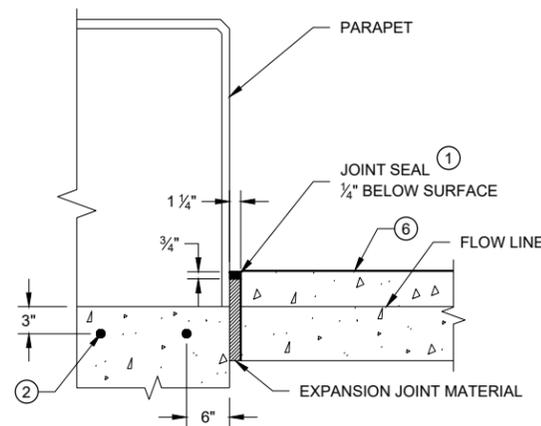
SECTION B-B



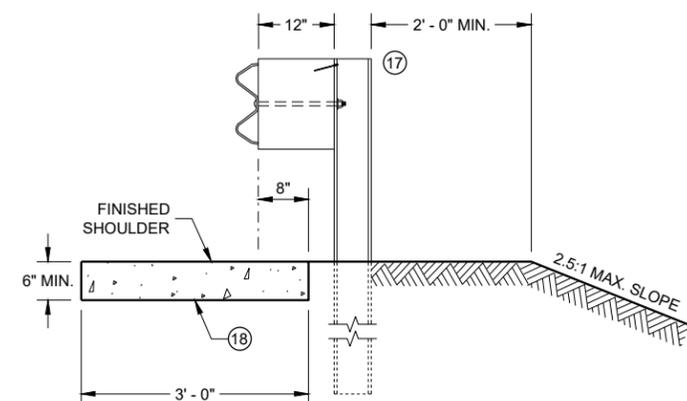
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



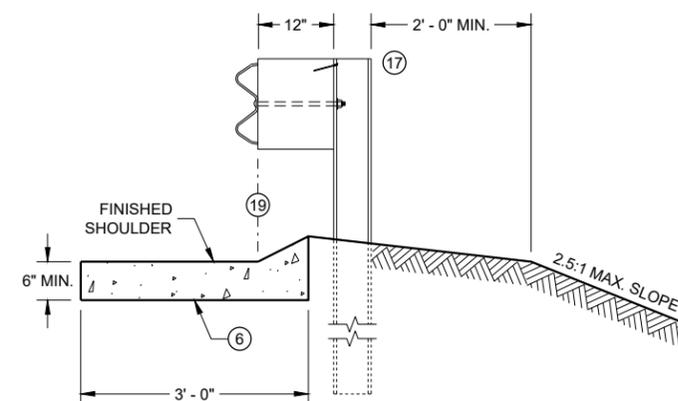
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

6

6

SDD08D02 - 07C

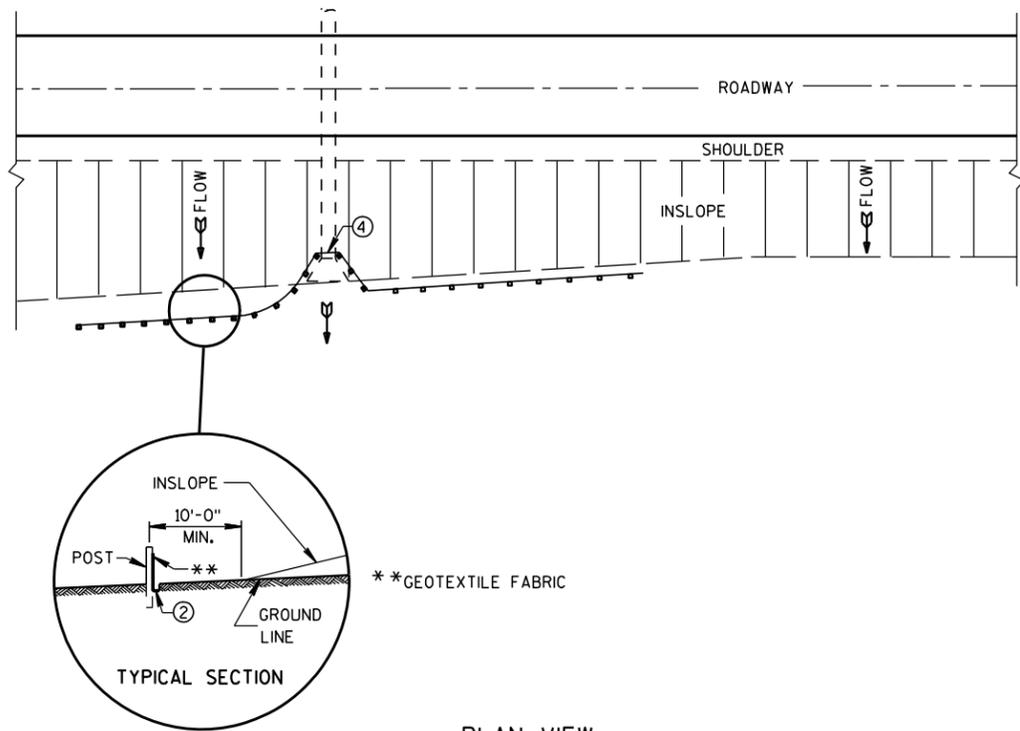
SDD08D02 - 07C

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

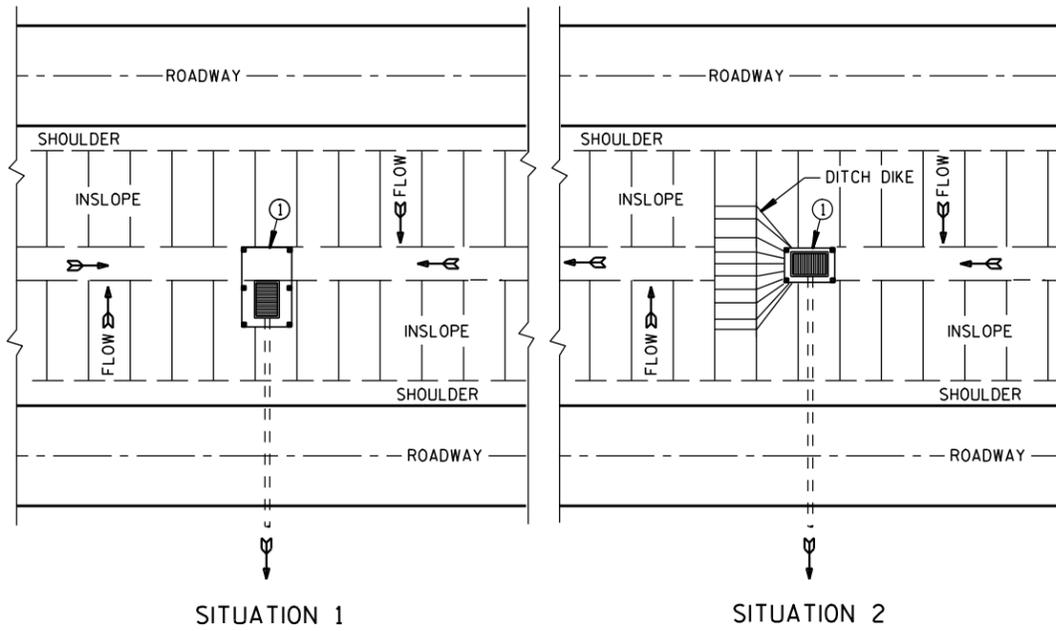
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

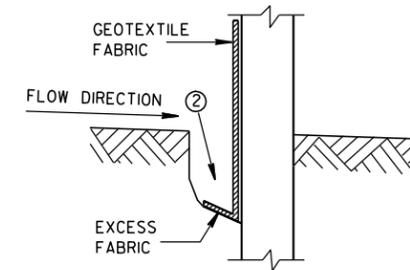


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

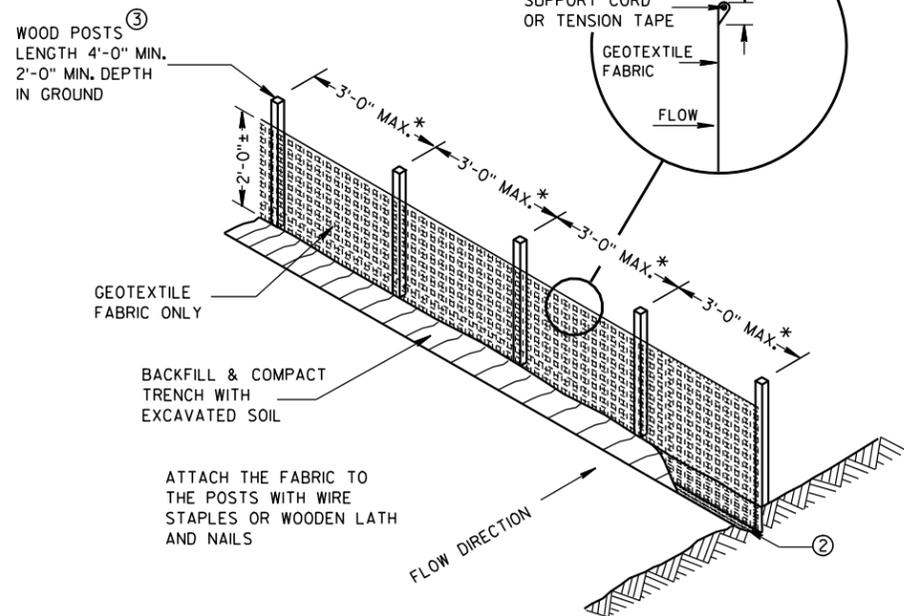
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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.



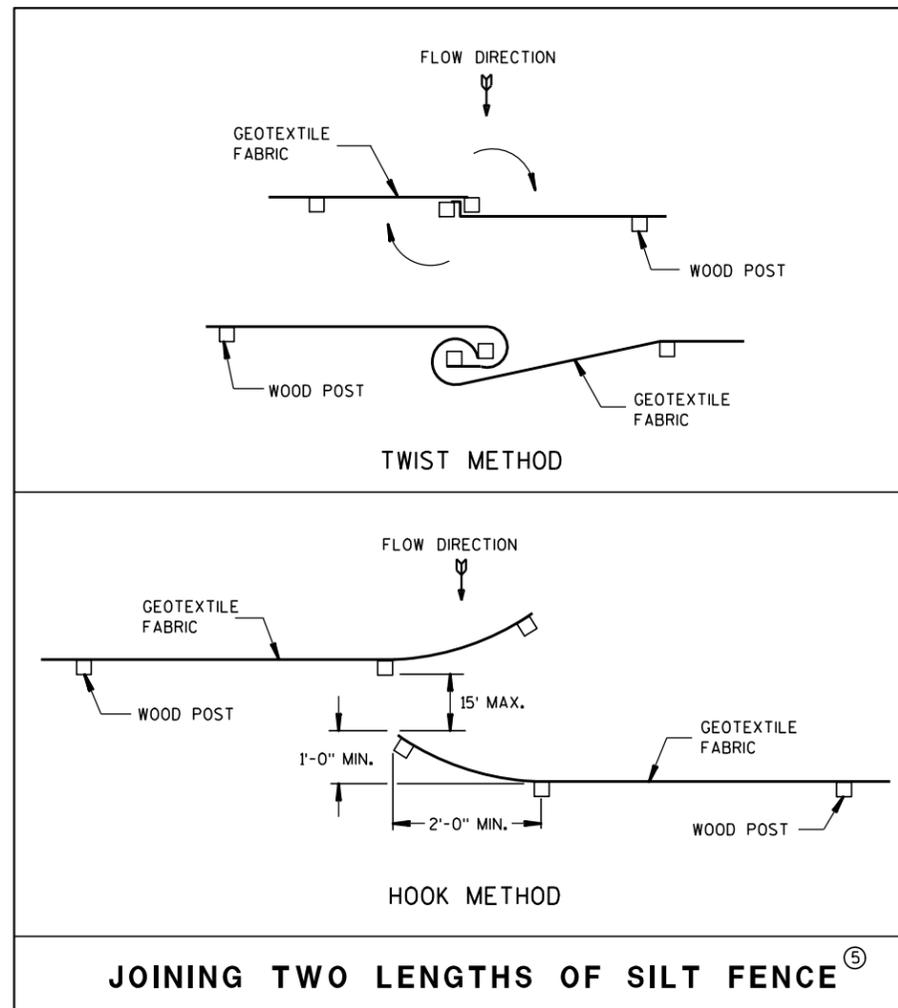
TRENCH DETAIL

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

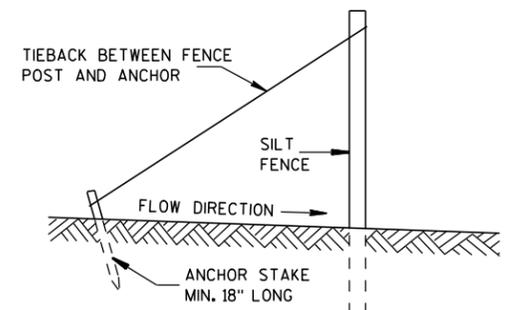


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤

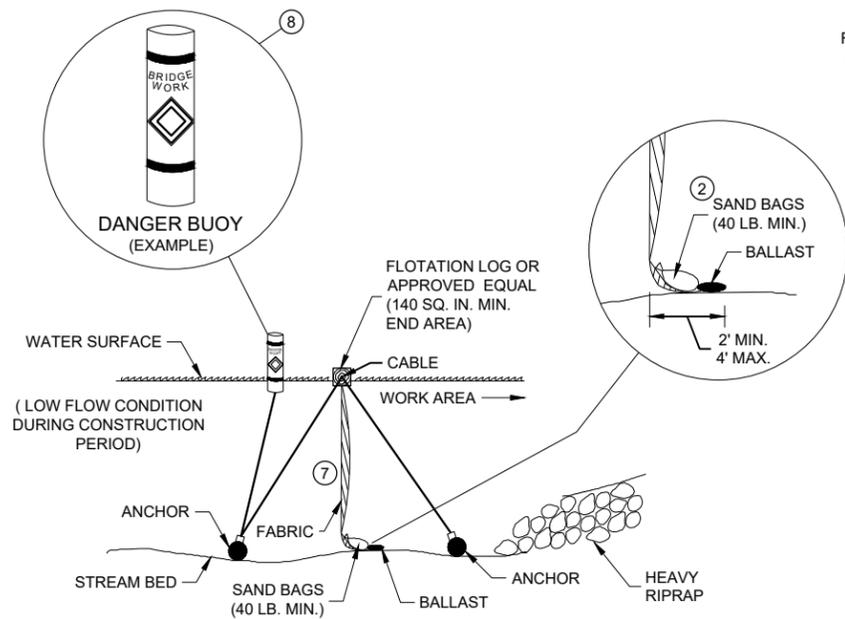


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

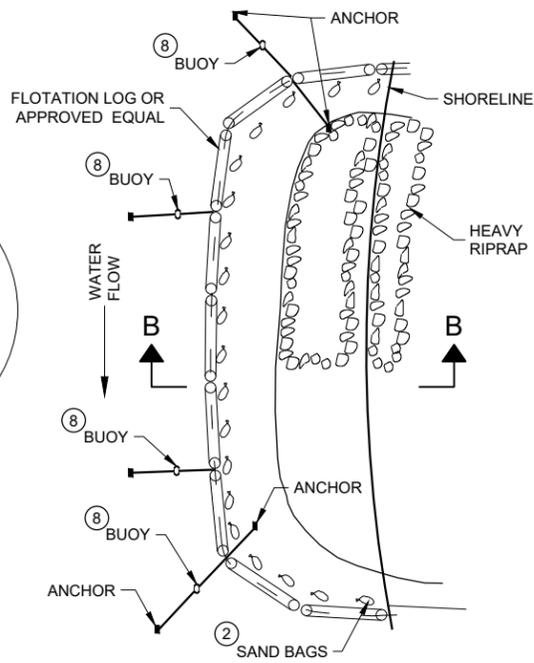
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Canestra
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

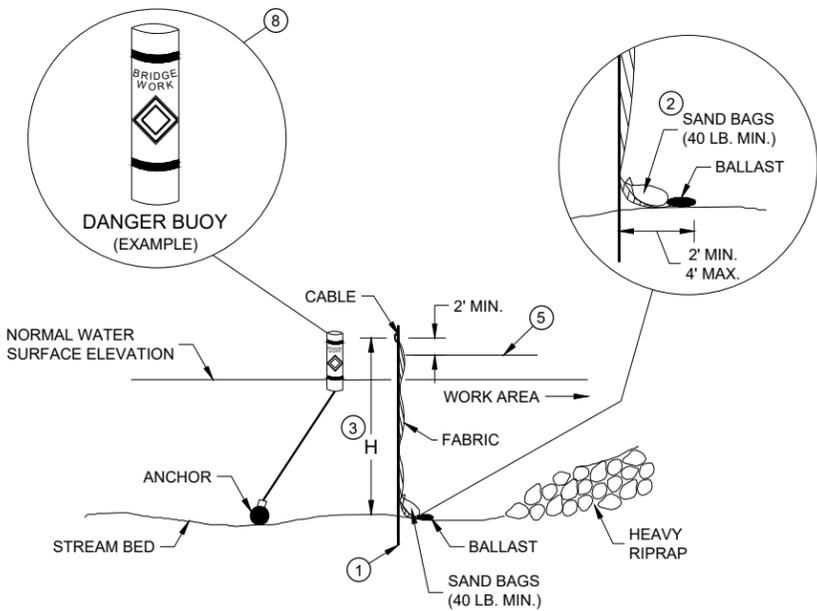


SECTION B - B

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

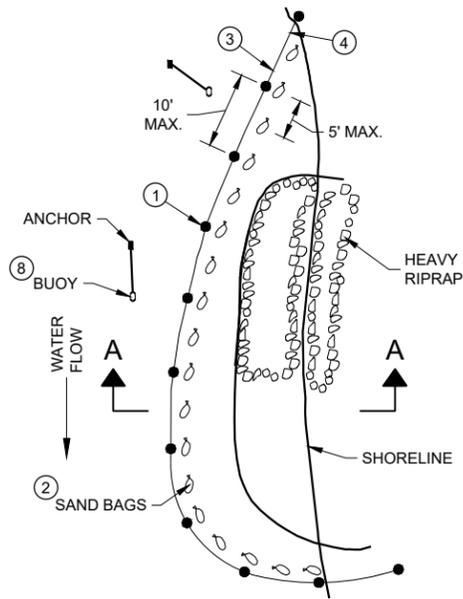


PLAN VIEW



SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW

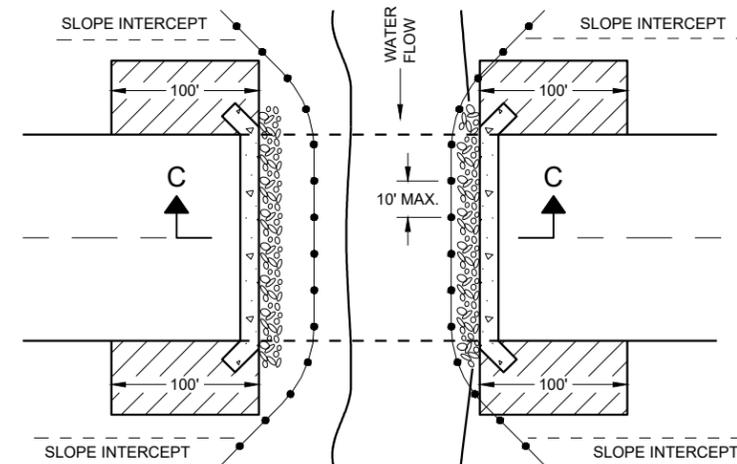
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

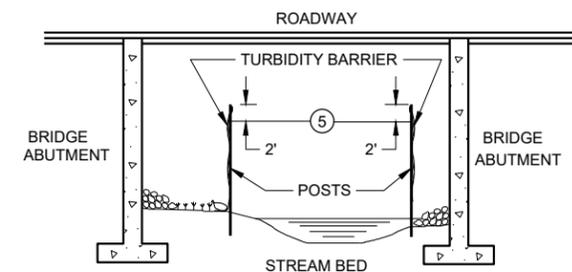
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

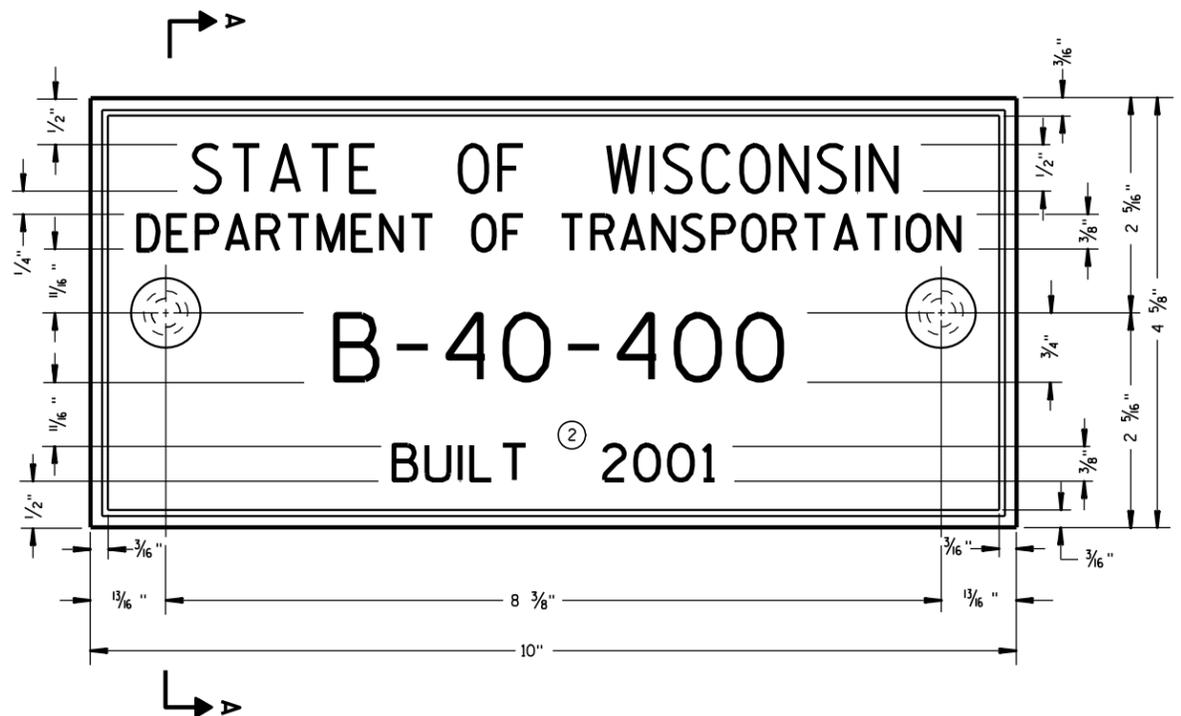
**TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES**

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



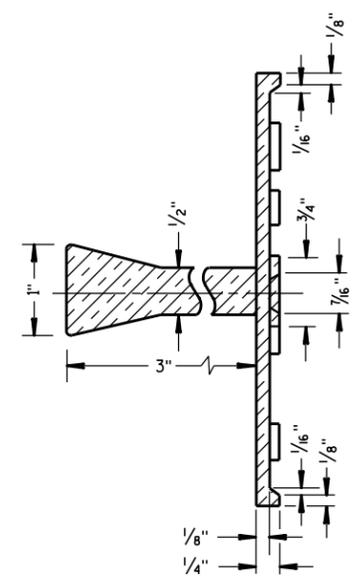
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

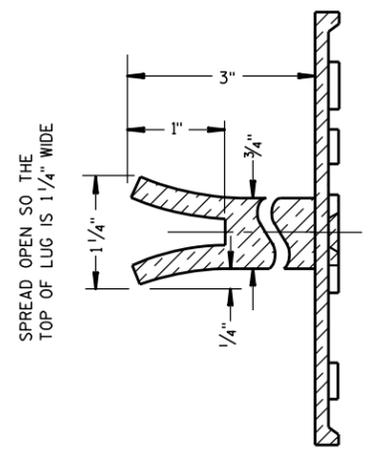
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

6

6

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

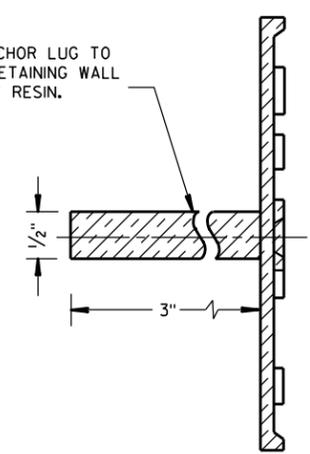
COUNTY NO. BRIDGE NO.

UNIT NO. FOR MULTIPLE
UNIT BRIDGE

B-40-400-1A

**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

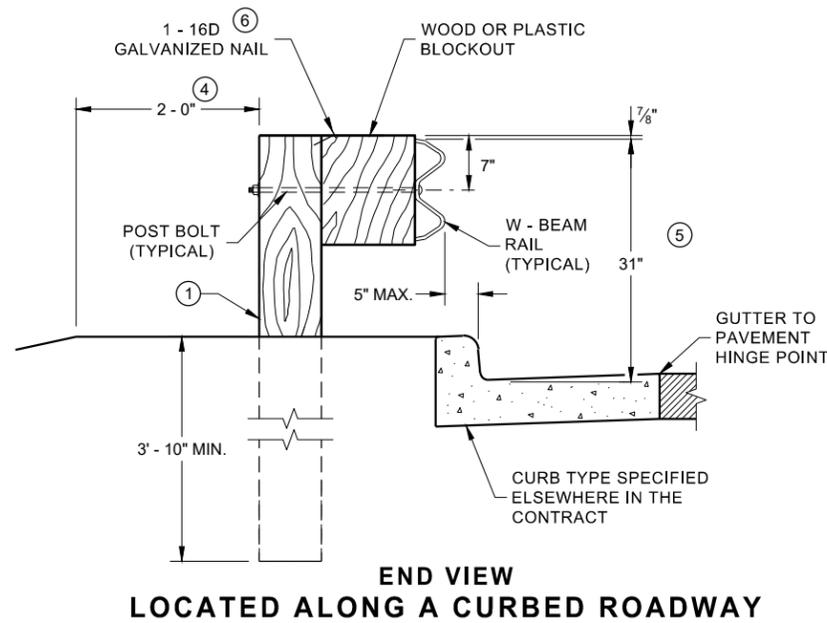
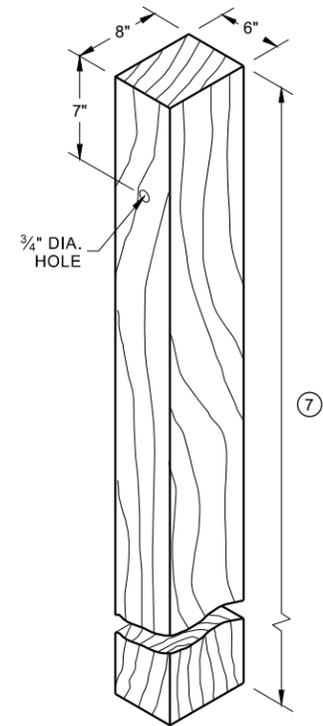
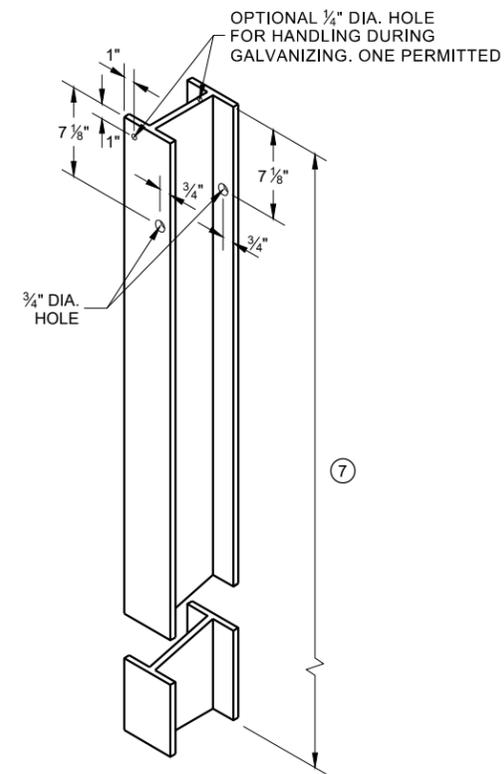
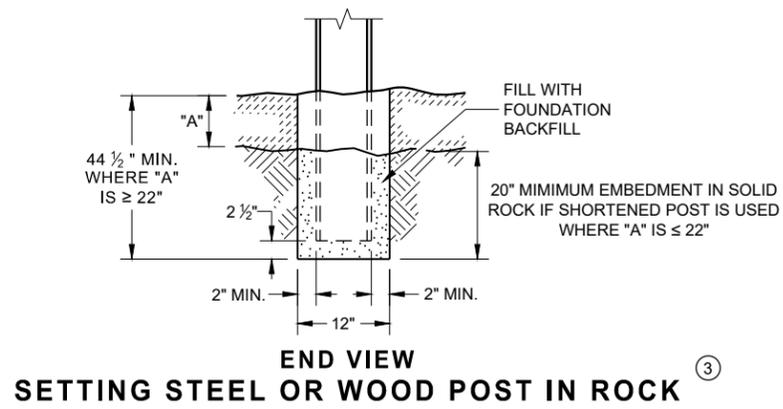
- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

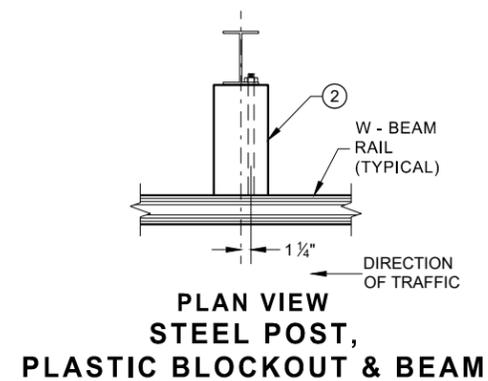
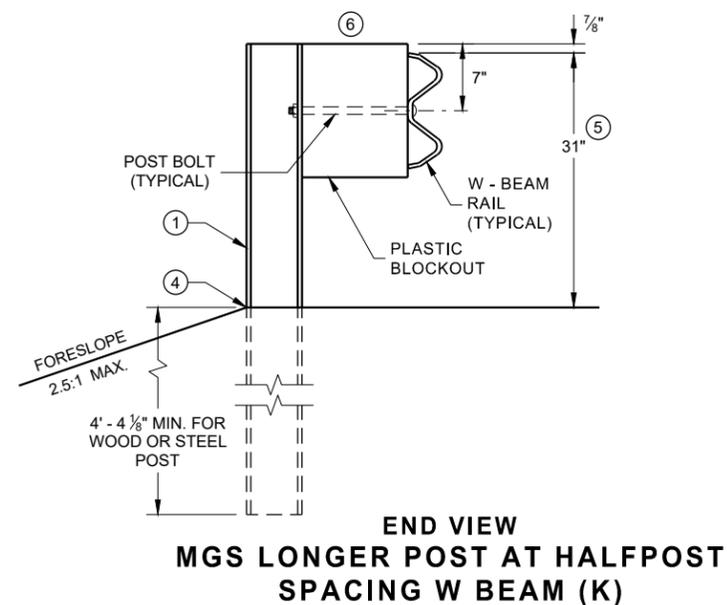
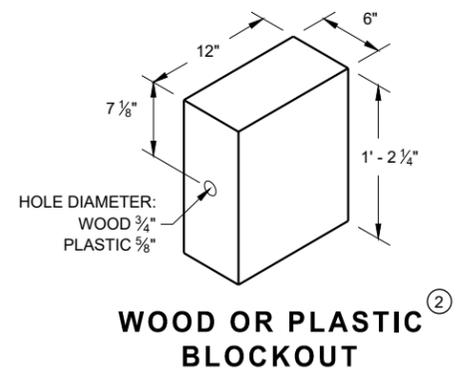
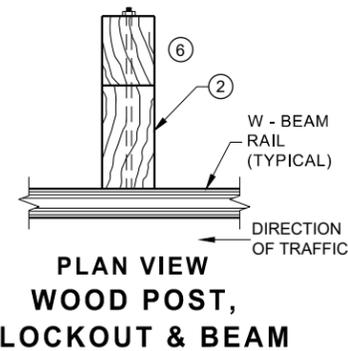
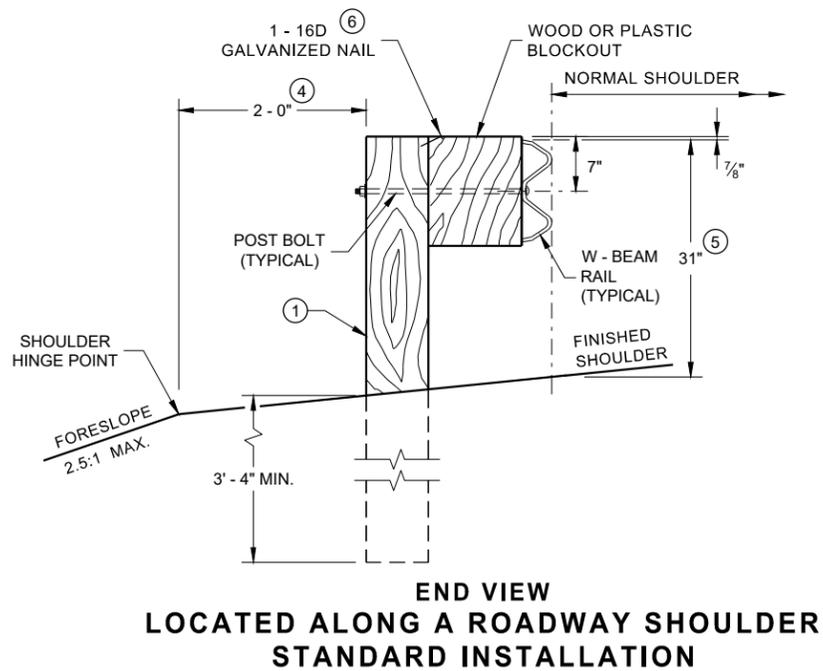
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	

- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0". TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



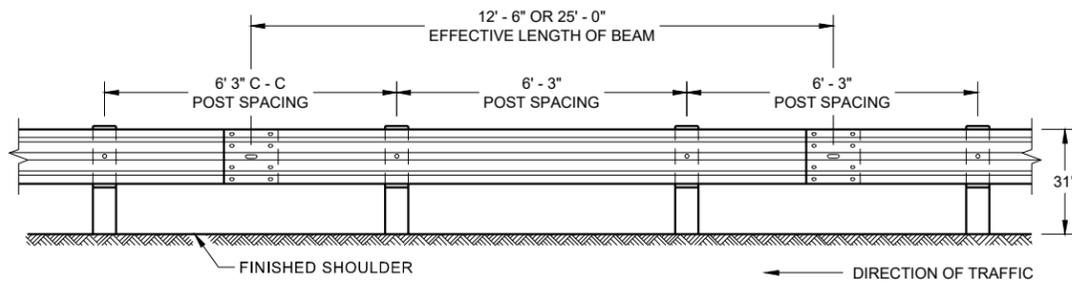
**STEEL POST & HOLE PUNCHING DETAIL
(W 6 X 9)** ①

**WOOD POST
(6" X 8") NOMINAL** ①

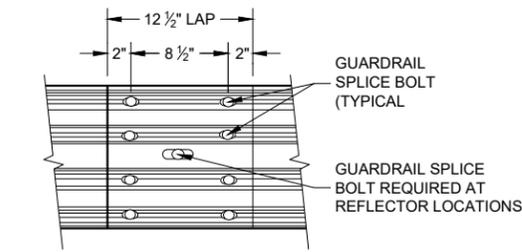


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



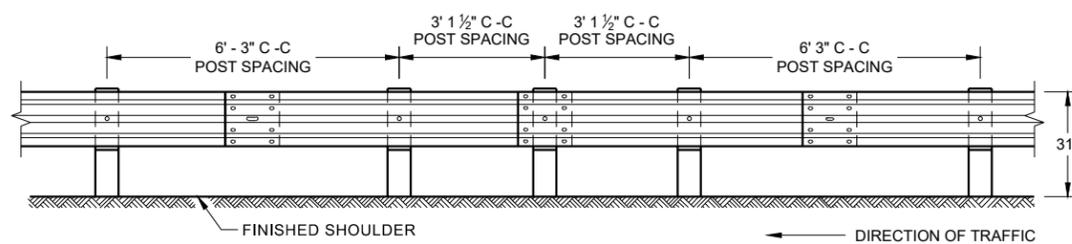
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



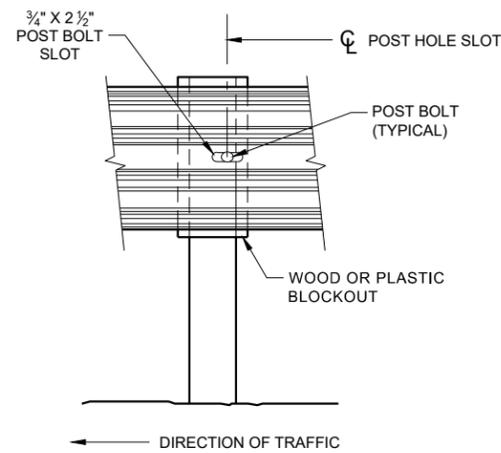
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

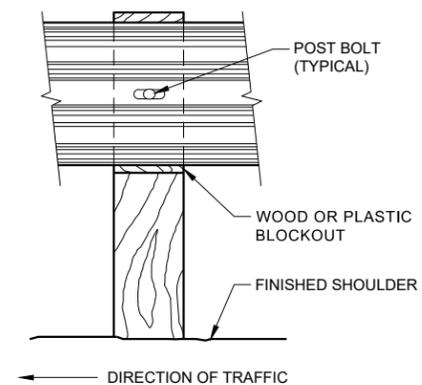
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



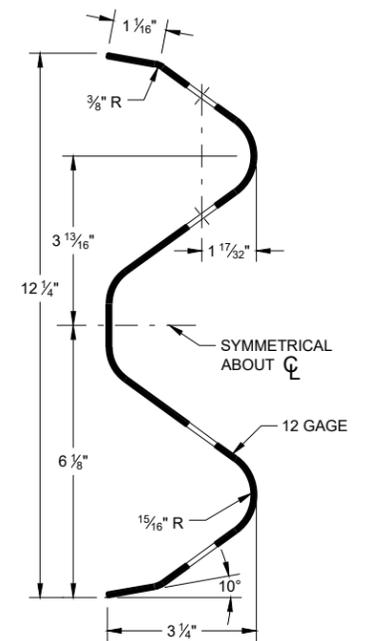
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



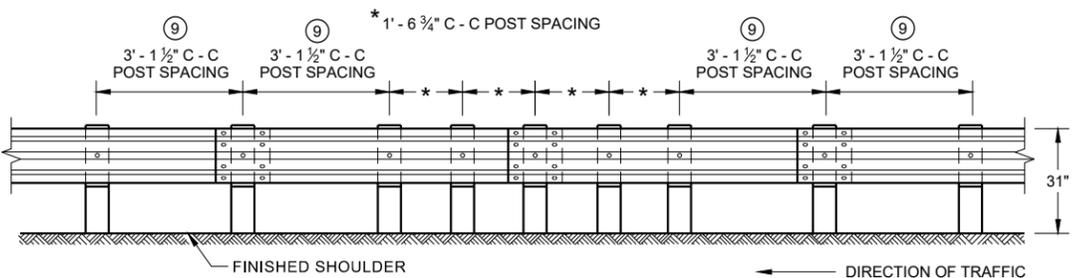
FRONT VIEW AT STEEL POST



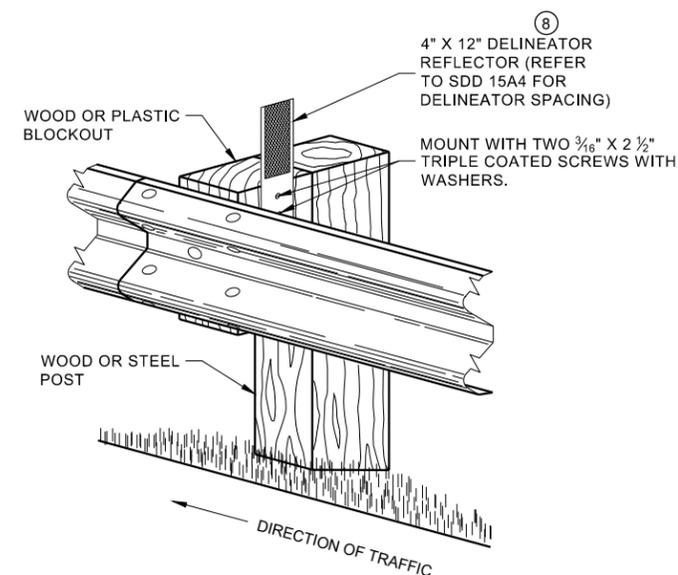
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



**FRONT VIEW
QUARTER POST SPACING (QS)**



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

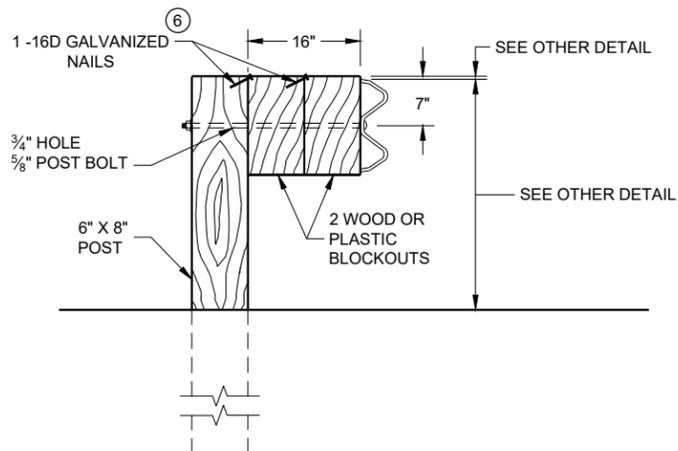
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

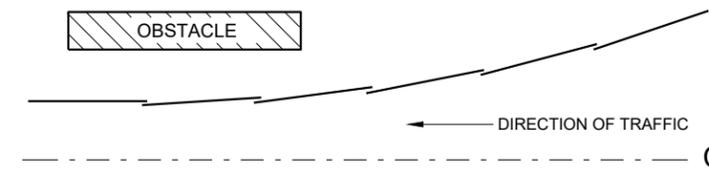
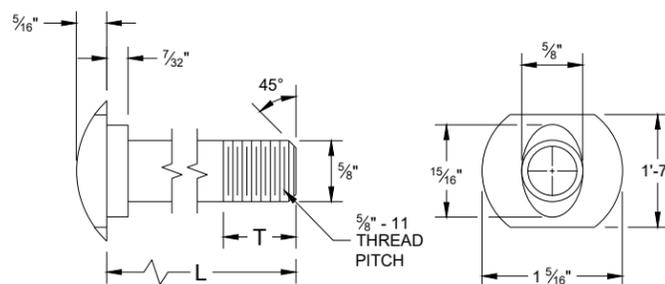


DETAIL FOR 16" BLOCKOUT DEPTH

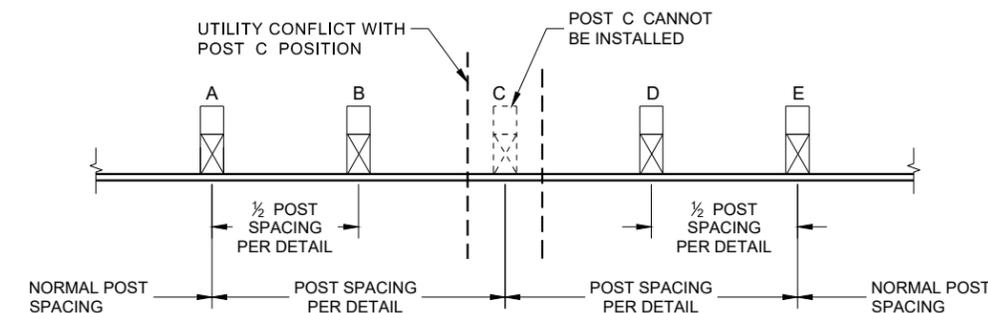
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.



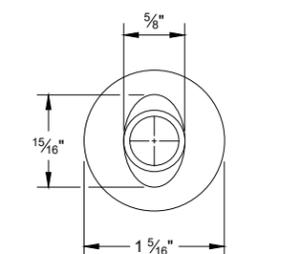
**PLAN VIEW
BEAM LAPPING DETAIL**



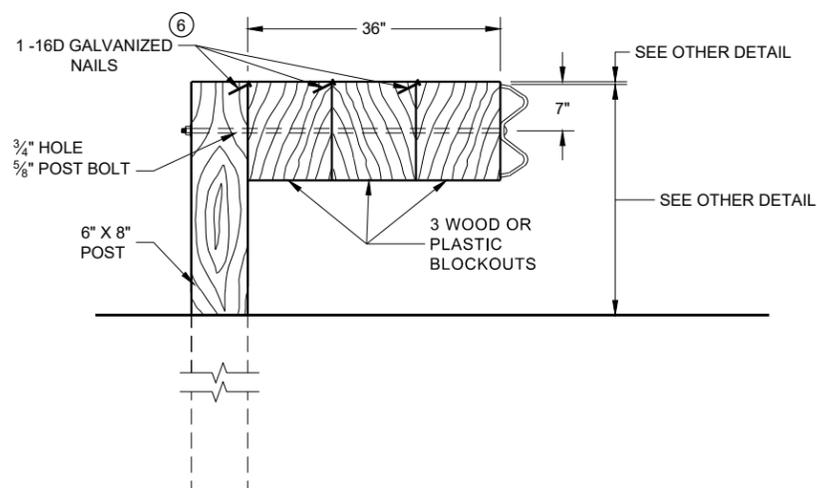
**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

POST BOLT TABLE

L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"

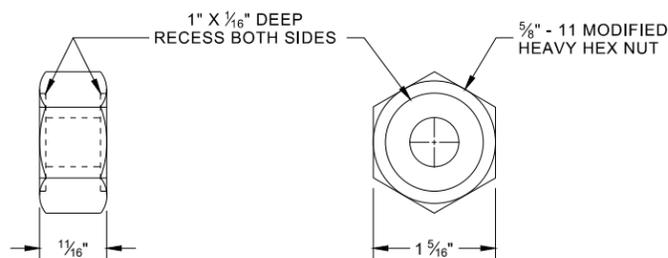


ALTERNATE BOLT HEAD

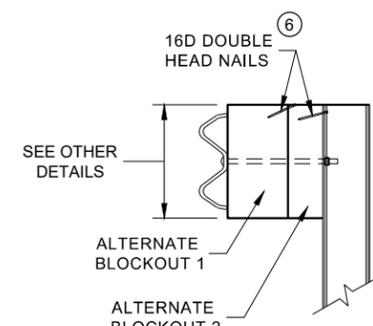


DETAIL FOR 36" BLOCKOUT DEPTH

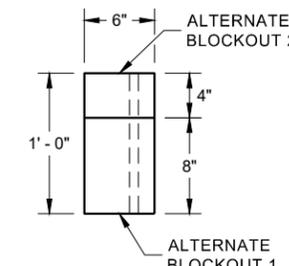
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



**POST BOLT, SPLICE BOLT
AND RECESS NUT**



SIDE VIEW



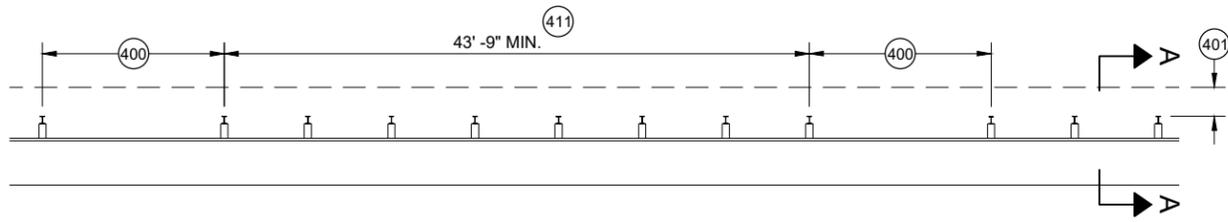
PLAN VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

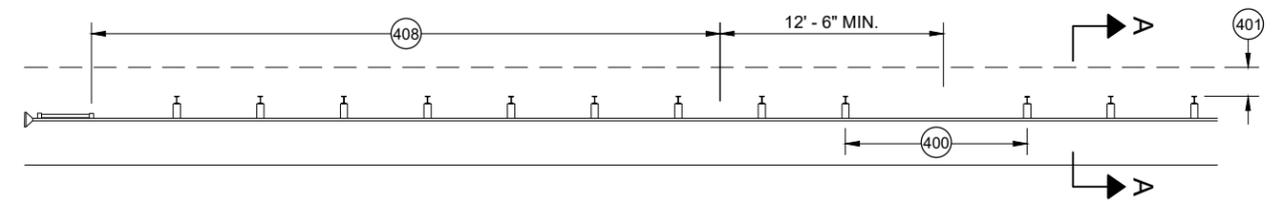
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

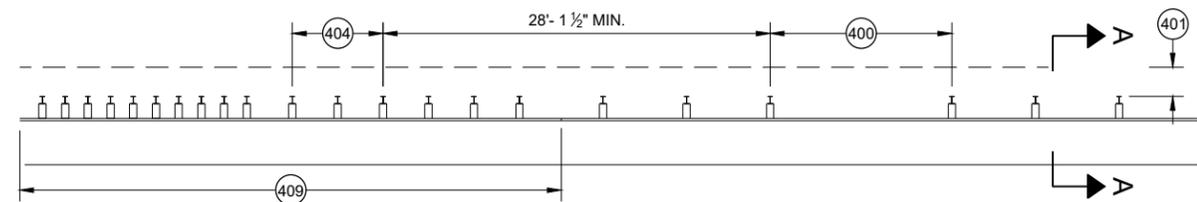
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



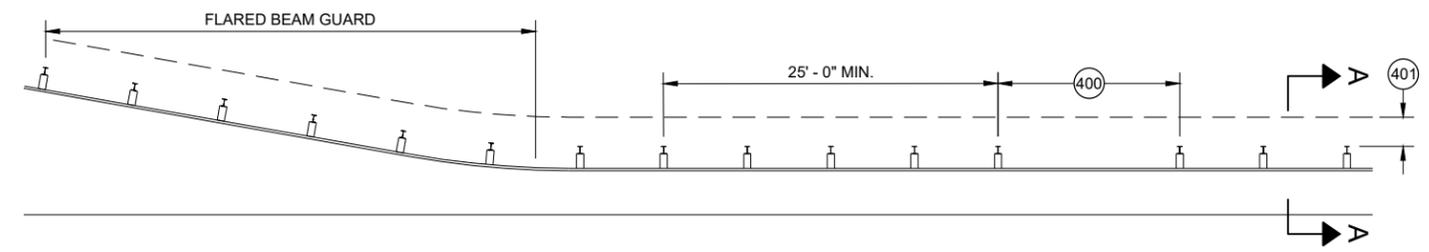
MISSING POST IN MGS GUARDRAIL



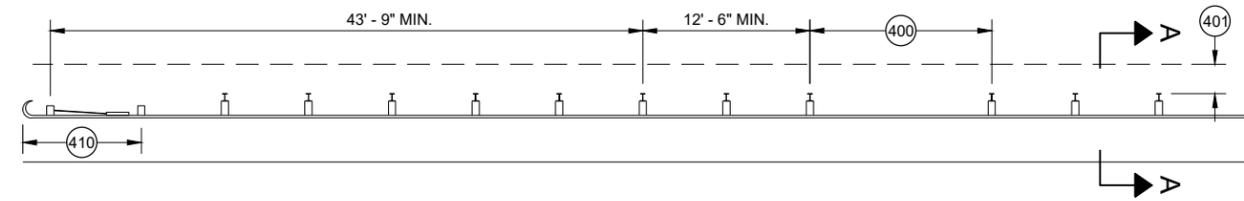
MISSING POST IN MGS GUARDRAIL NEAR EAT



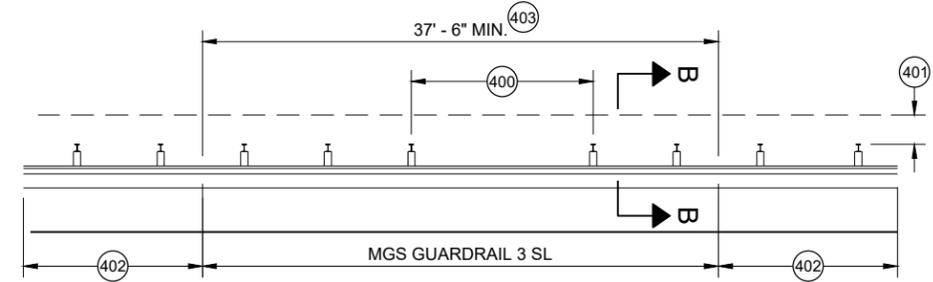
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

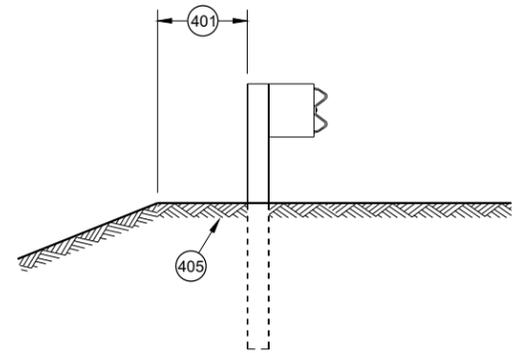


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

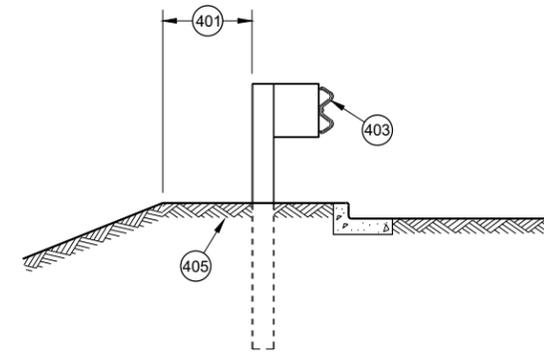


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- ④00 MAX SPAN 12' - 6"
- ④01 2' MIN.
- ④02 MGS GUARDRAIL 3
- ④03 NESTING BEAM GUARD
- ④04 ASYMMETRIC TRANSITION
- ④05 SOIL WELL DRAINED AND COMPACTED
- ④06 SEE OTHER DRAWINGS IN THIS SDD
- ④07 SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- ④08 SEE SDD 14B44
- ④09 SEE SDD 14B45
- ④10 SEE SDD 14B47
- ④11 MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
<small>FHWA</small>	

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
 - (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
 - (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
 - (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
 - (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.
- DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

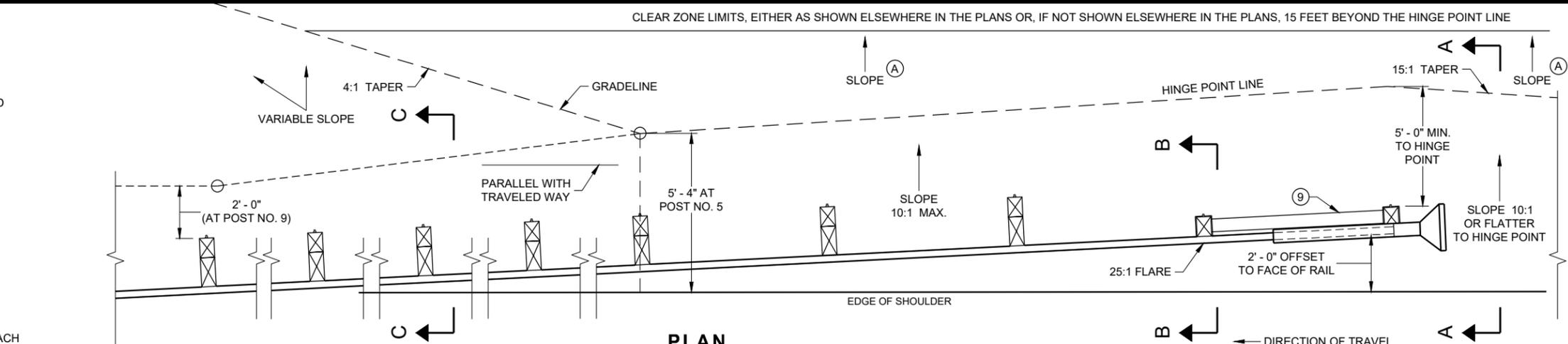
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

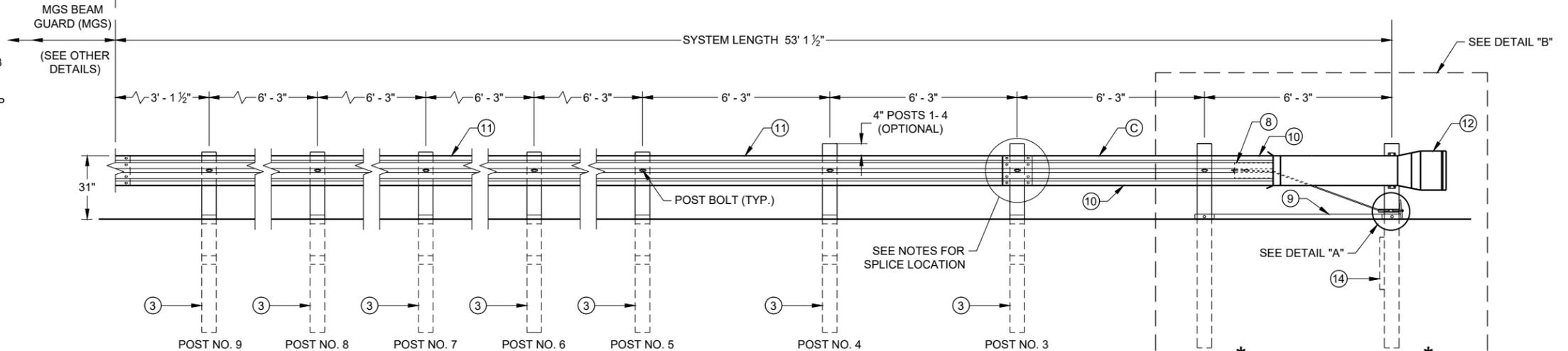
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

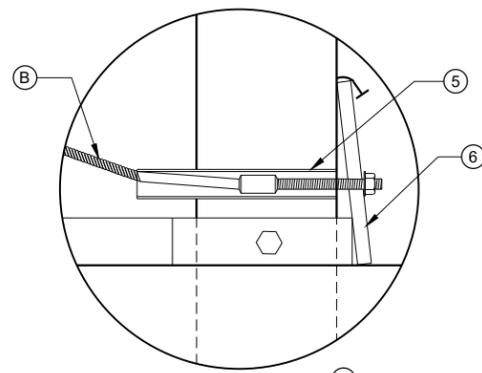
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



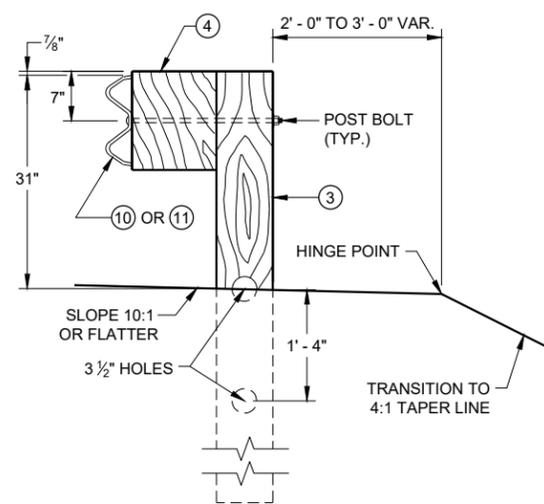
PLAN



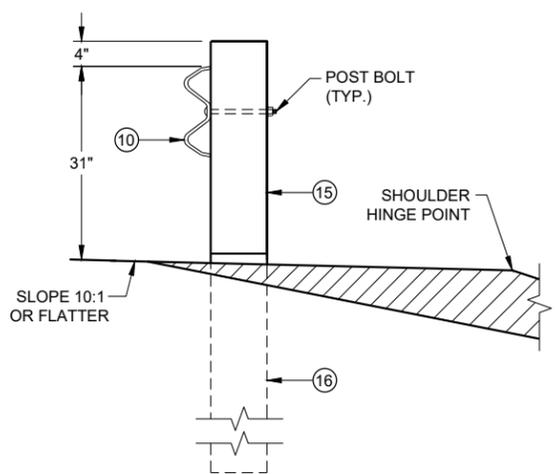
ELEVATION



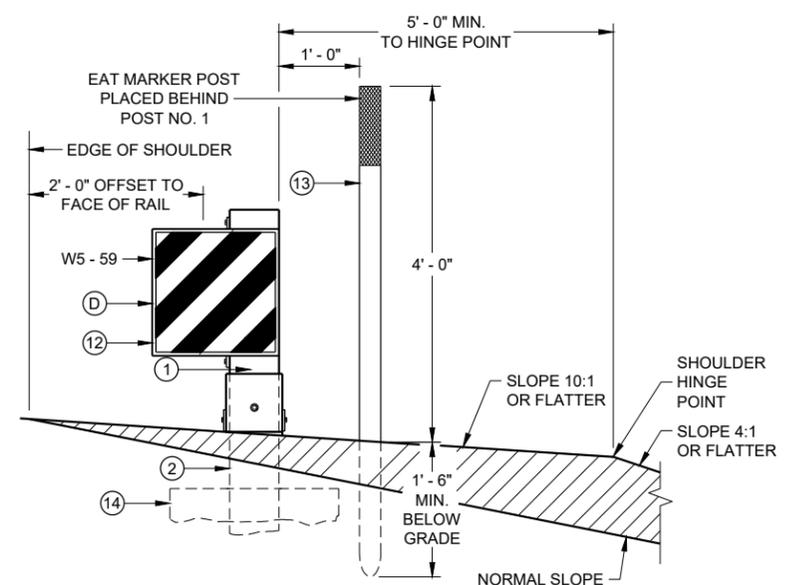
DETAIL "A"



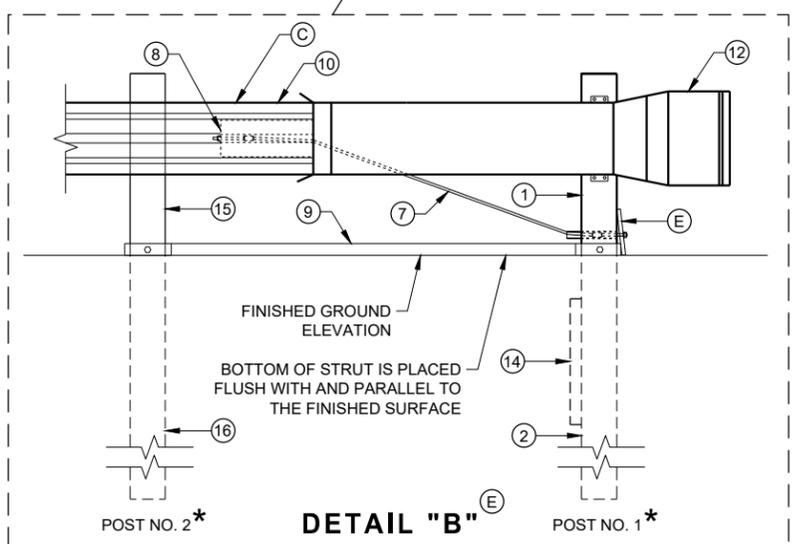
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



**SECTION B - B
TYPICAL AT POST NO. 2***



**SECTION A - A
TYPICAL AT POST NO. 1***



DETAIL "B"

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

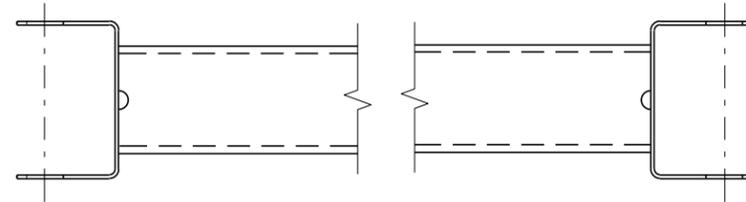
6

SDD 14B44 - 04a

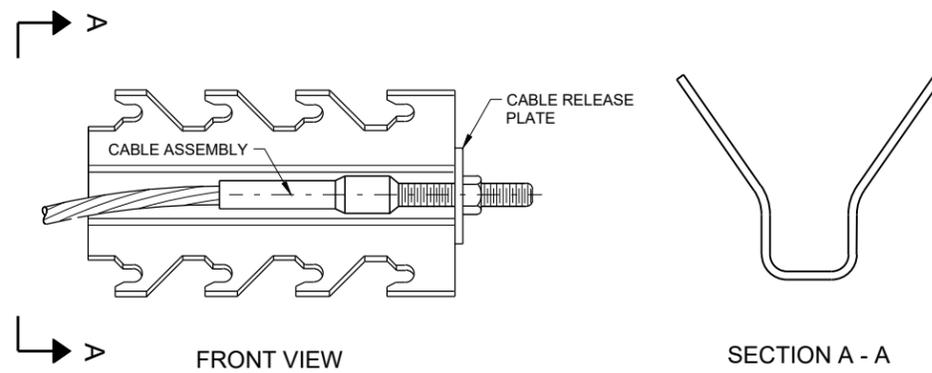
SDD 14B44 - 04a

BILL OF MATERIALS

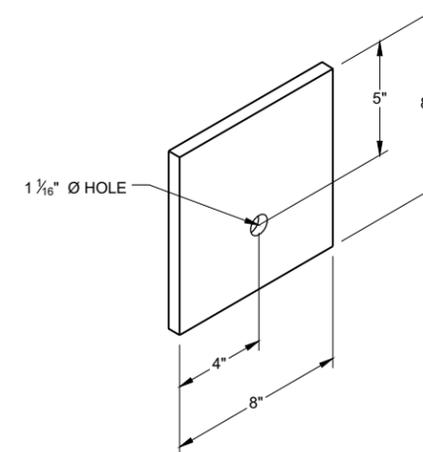
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



GENERIC GROUND STRUT ⑨ ⑤



GENERIC ANCHOR CABLE BOX ⑨ ⑤



BEARING PLATE ⑥ ⑤

6

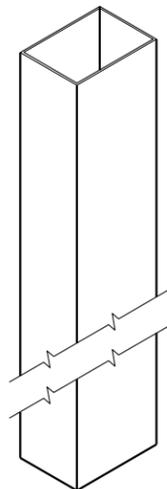
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SDD 14B44 - 04b

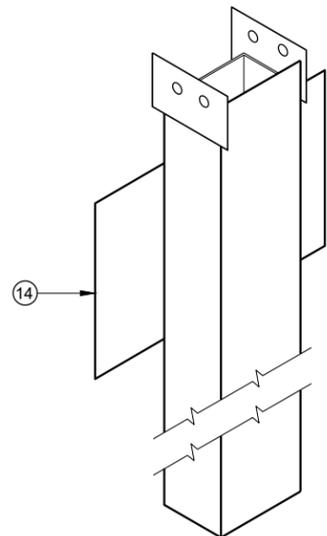
SDD 14B44 - 04b

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

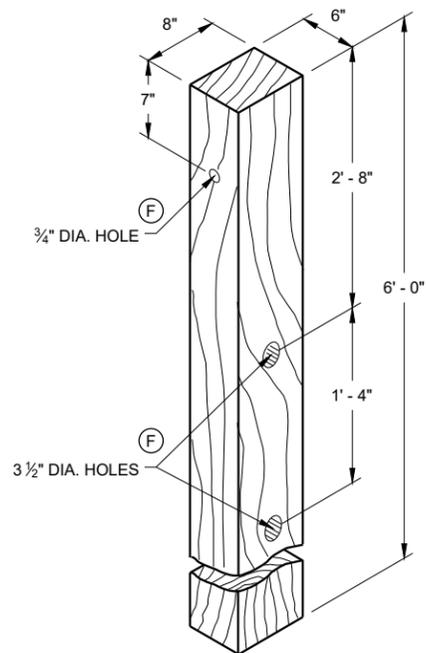
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



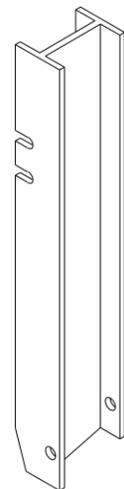
UPPER POST NO. 1 ⁽¹⁾ (E)



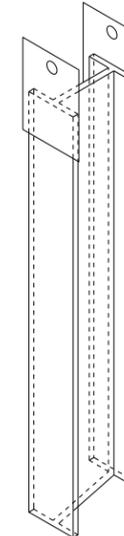
LOWER POST NO. 1 ⁽²⁾ (E)



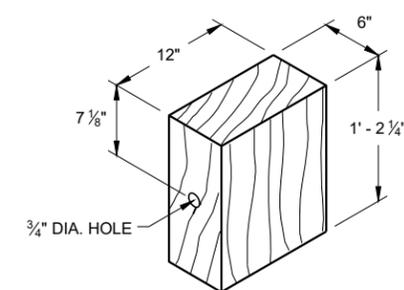
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

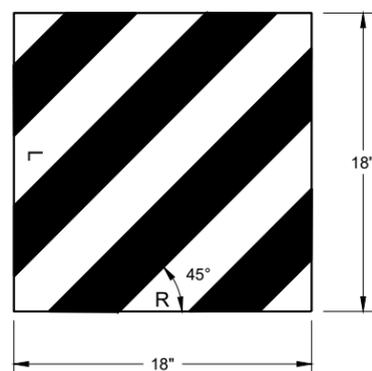


LOWER POST NO. 2 ⁽¹⁶⁾ (E)

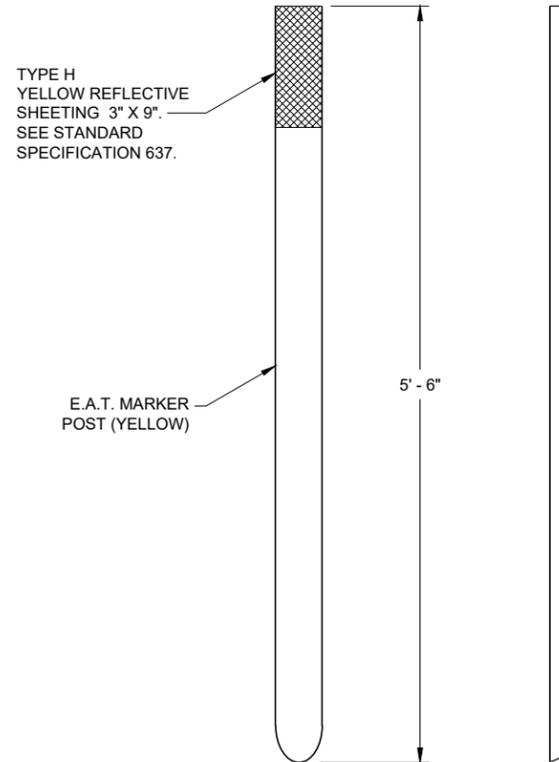


WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

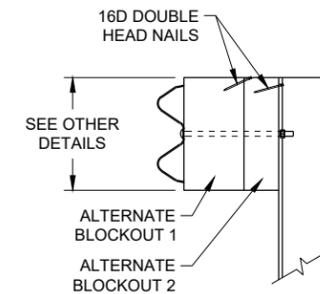
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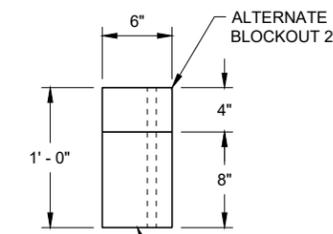
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



FRONT VIEW SIDE VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

6

SDD 14B44 - 04c

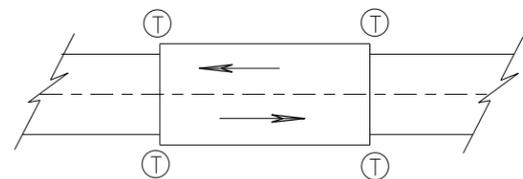
SDD 14B44 - 04c

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

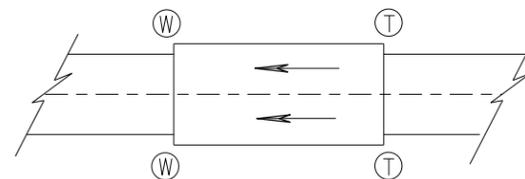
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

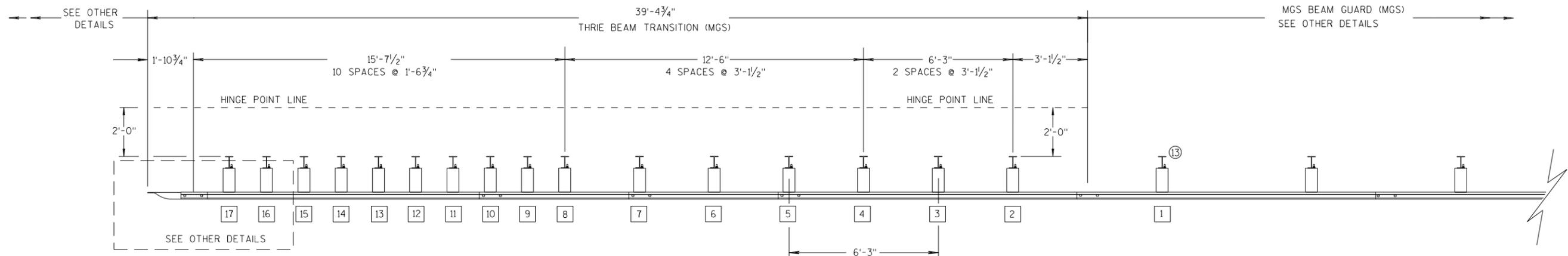
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

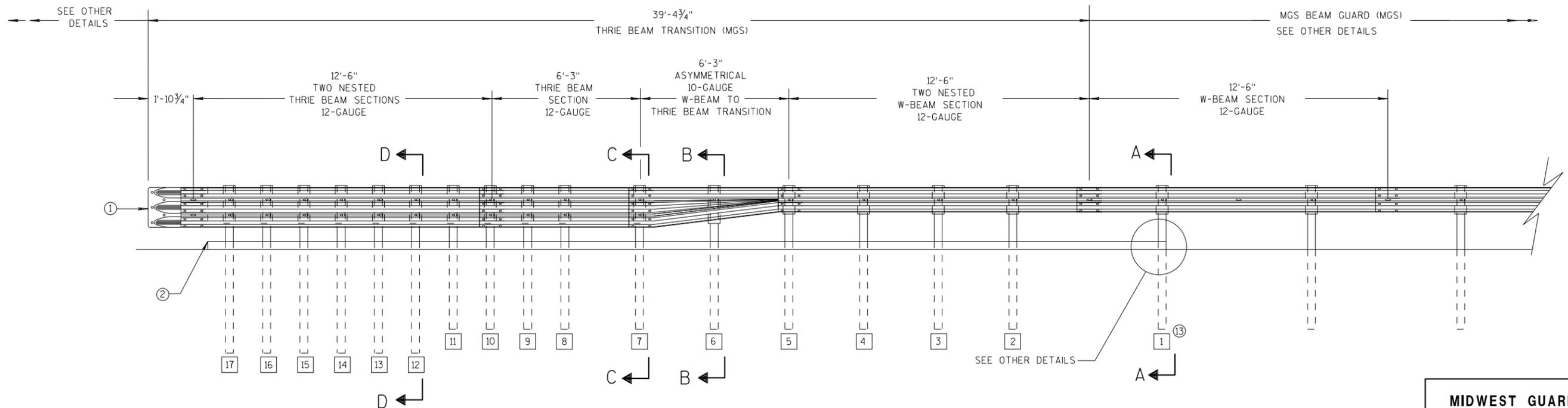
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

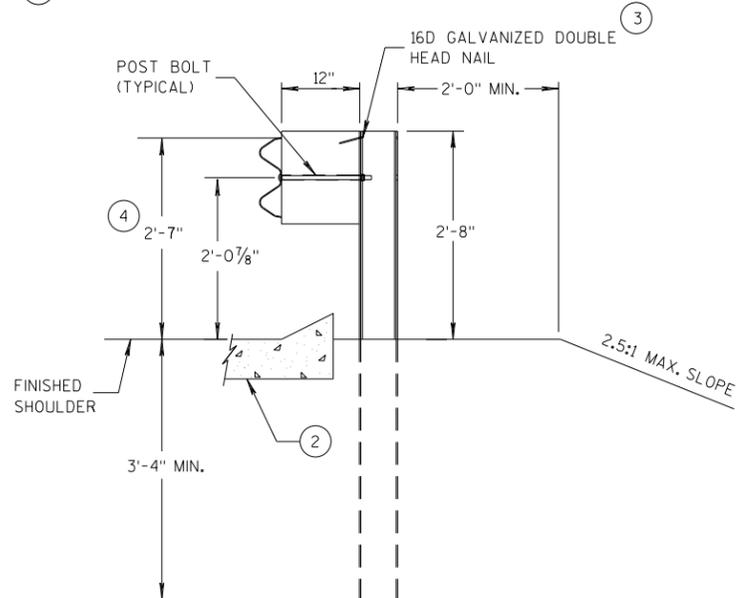
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

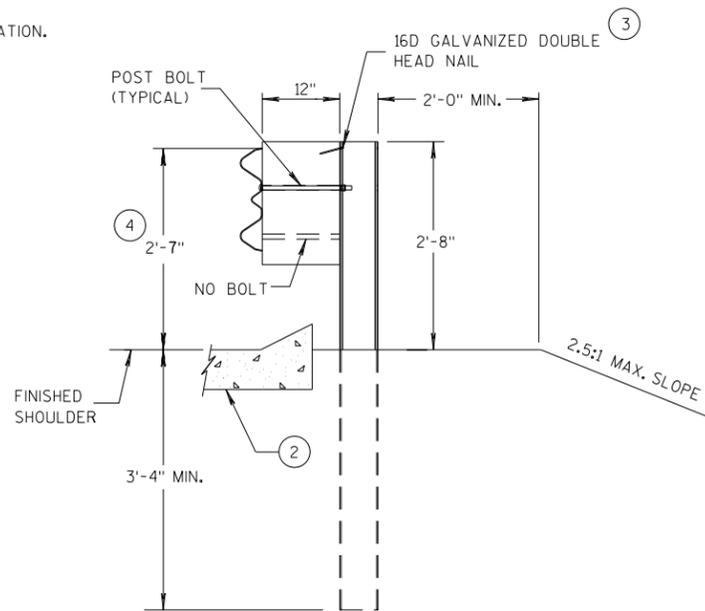
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

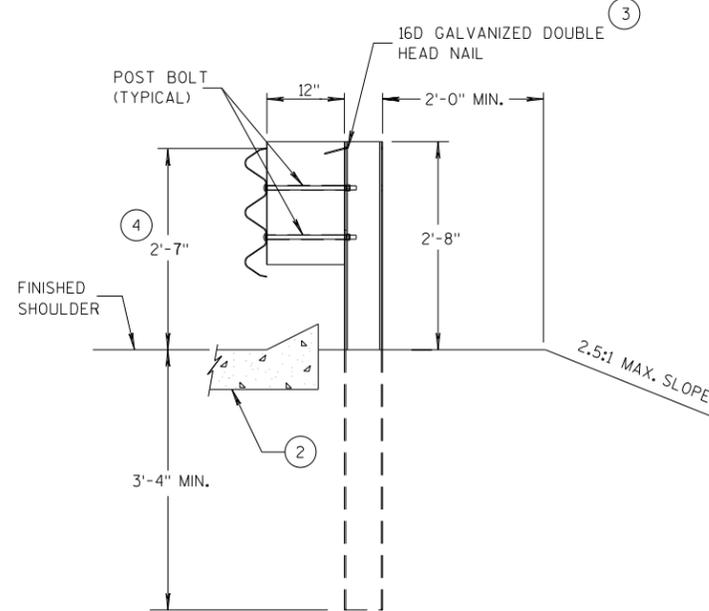
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



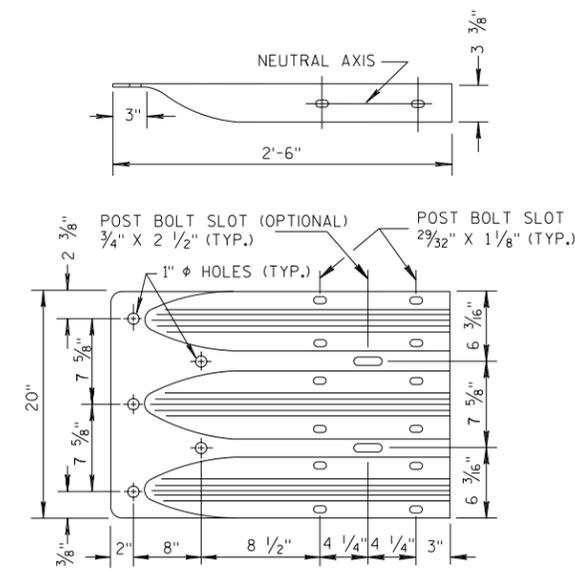
**SECTION A-A
POSTS 1-5**



**SECTION B-B
POST 6**



**SECTION C-C
POSTS 7-11**



**THRIE BEAM
TERMINAL CONNECTOR**

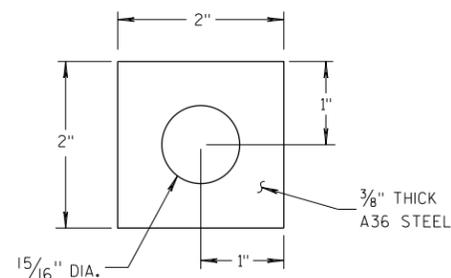
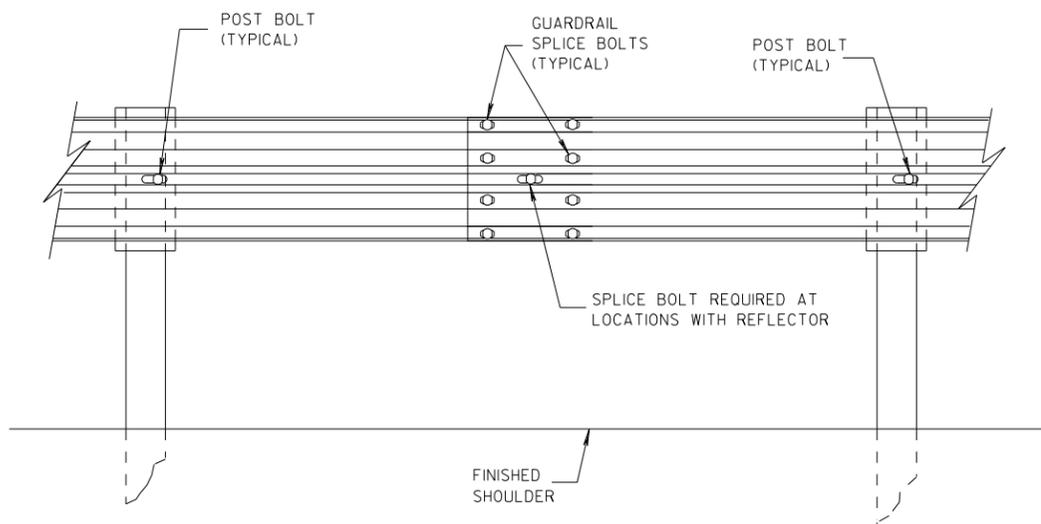
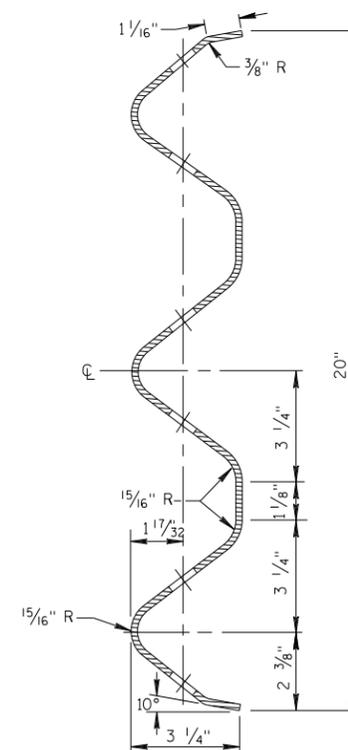


PLATE WASHER DETAIL



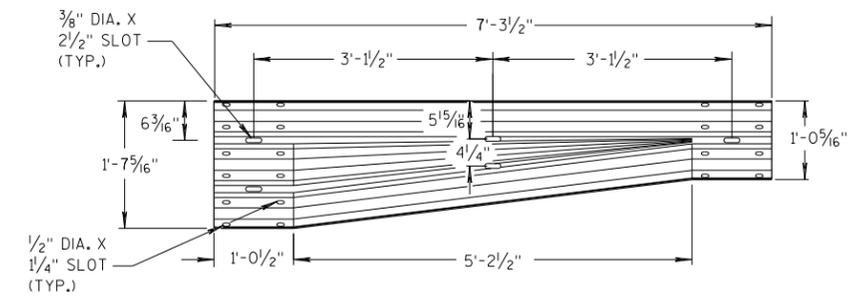
SPLICE DETAIL



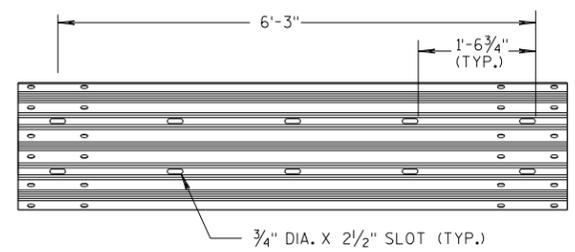
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

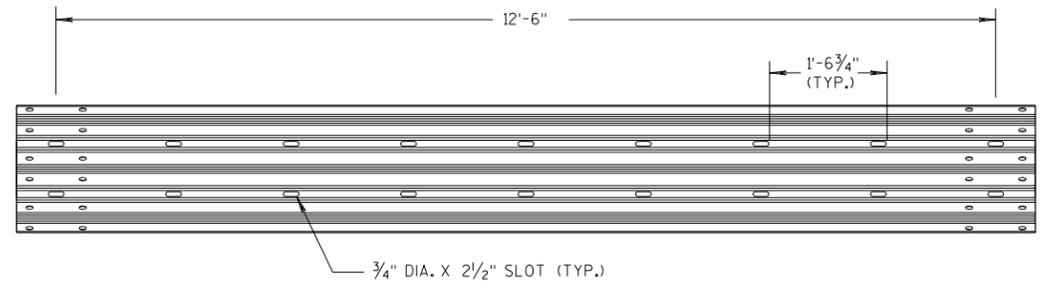
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



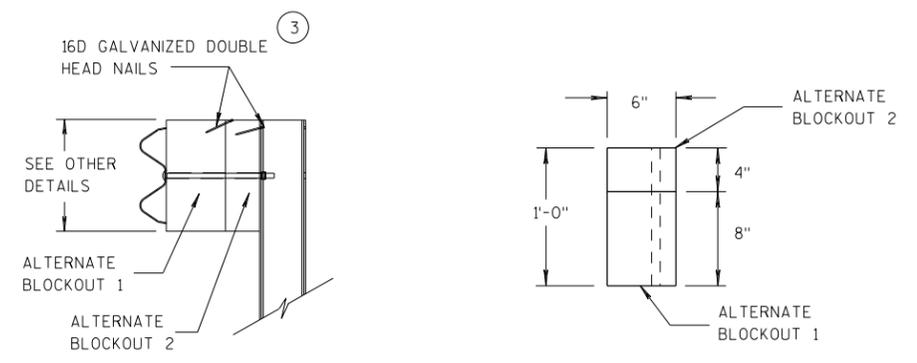
W-BEAM TO THRIE BEAM TRANSITION SECTION



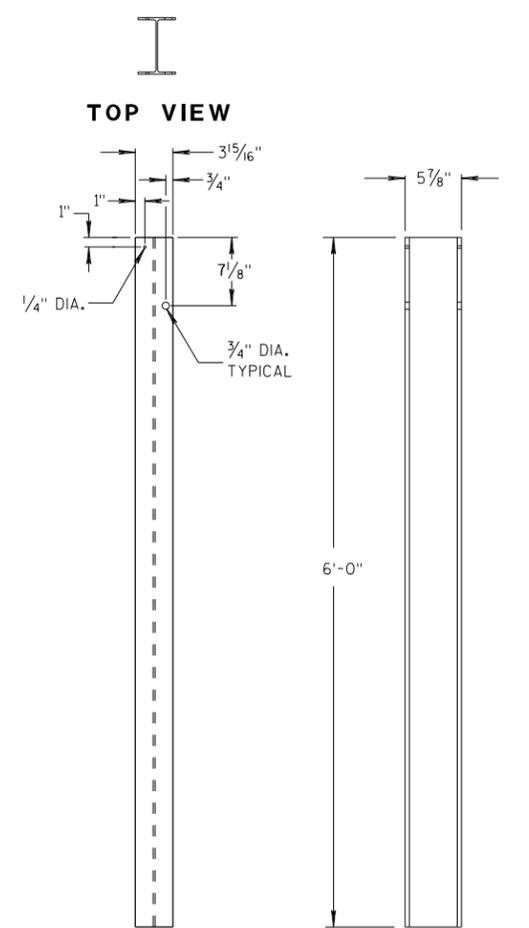
6'-3\"/>



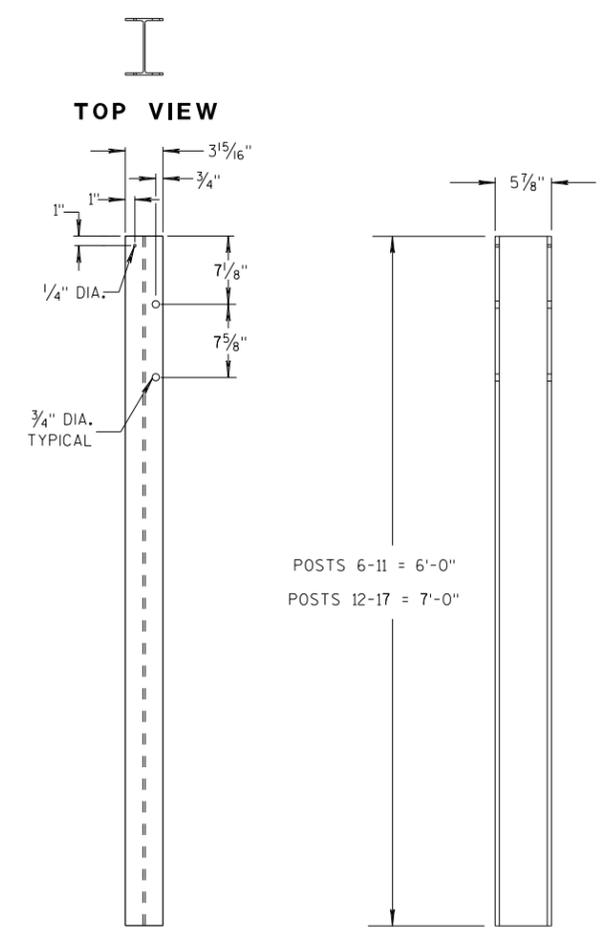
12'-6\"/>



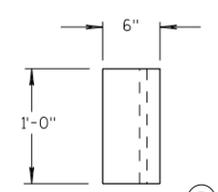
ALTERNATE WOOD BLOCKOUT DETAIL



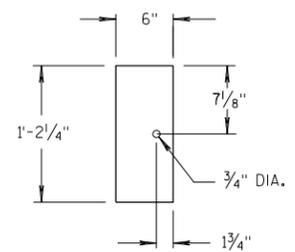
STEEL POSTS 1-5



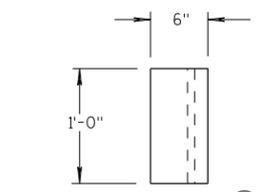
STEEL POSTS 6-17



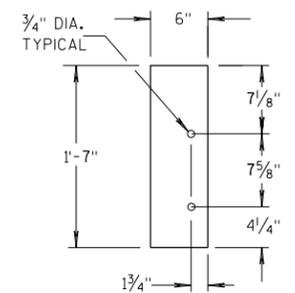
TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 1-5**



TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 6-17**

GENERAL NOTES

- STEEL POSTS ARE W6X9 OR W6X8.5.
- BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.
- (3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- (5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.
- (13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

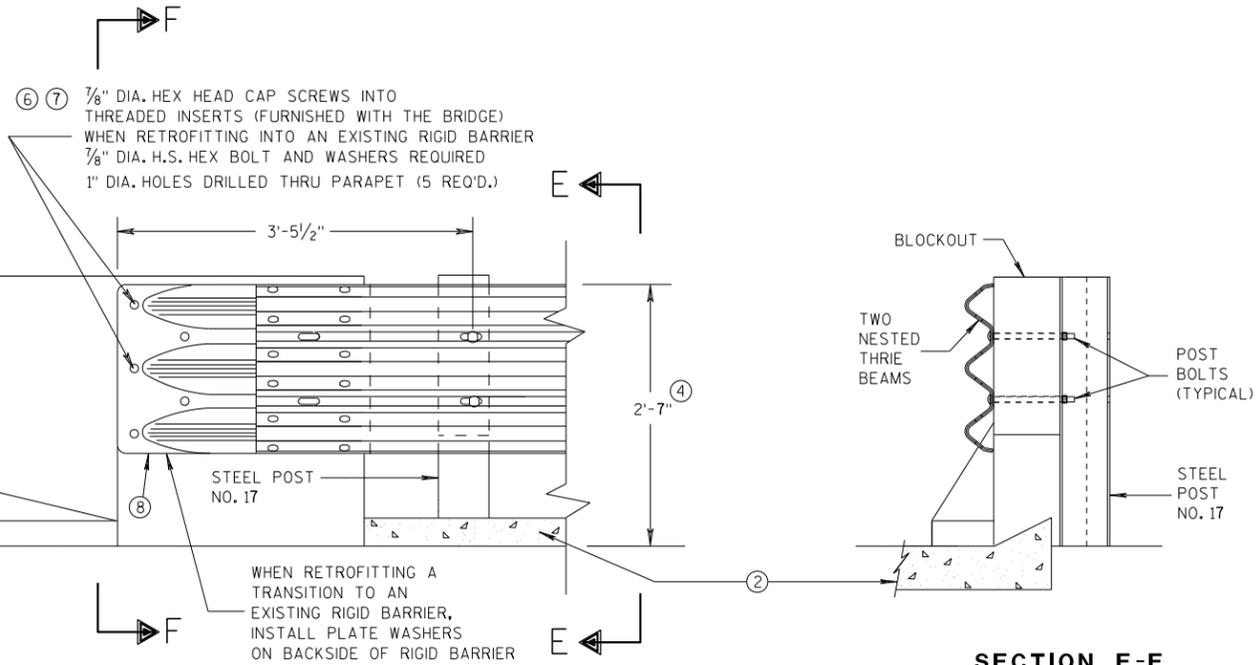
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

S.D.D. 14 B 45-5c

S.D.D. 14 B 45-5c



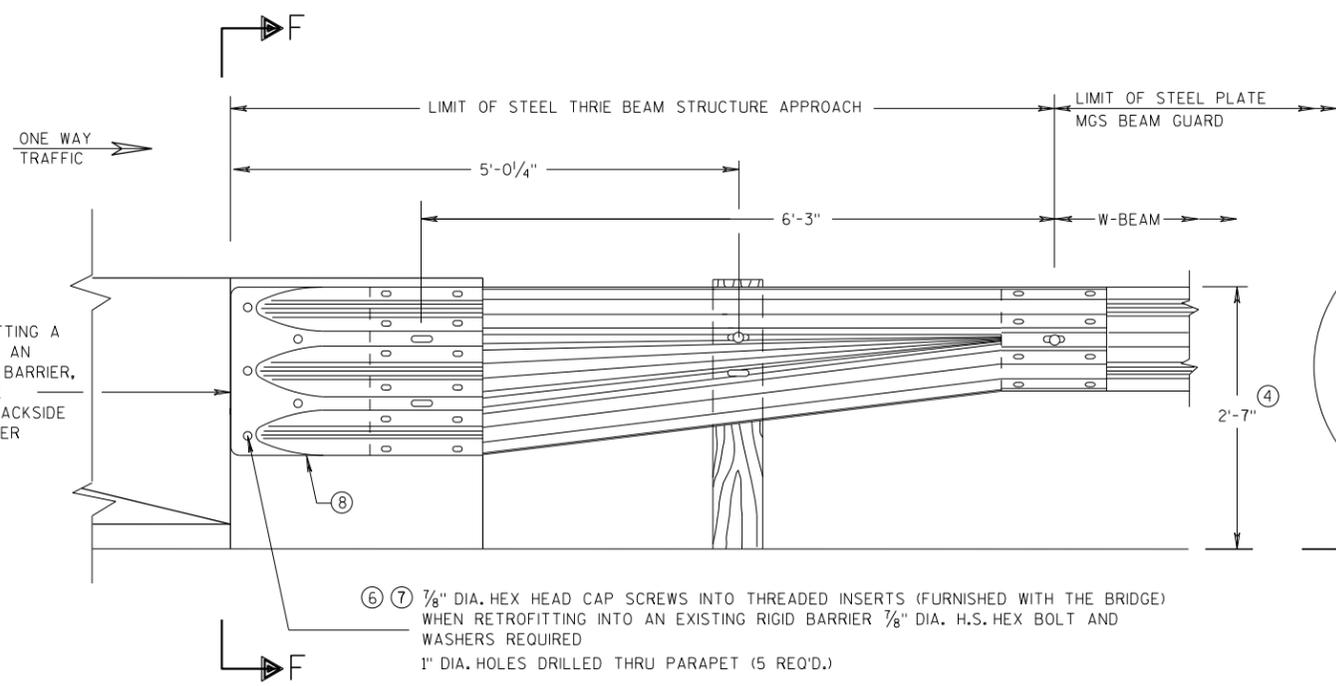
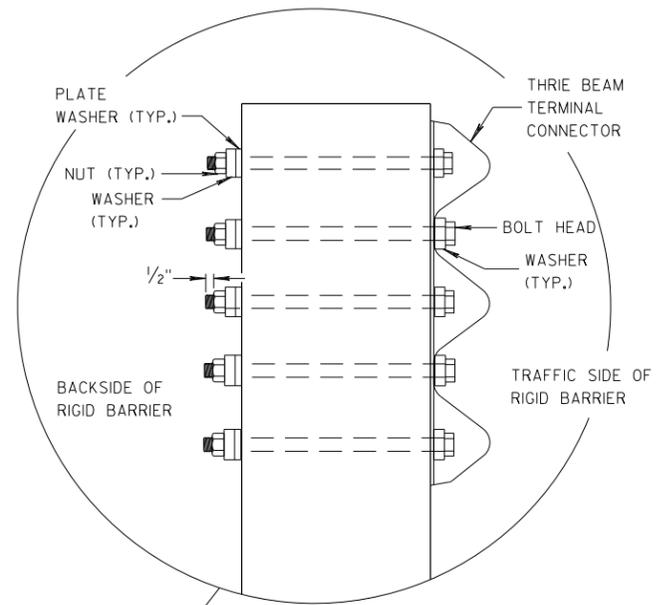
FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

SECTION E-E

GENERAL NOTES

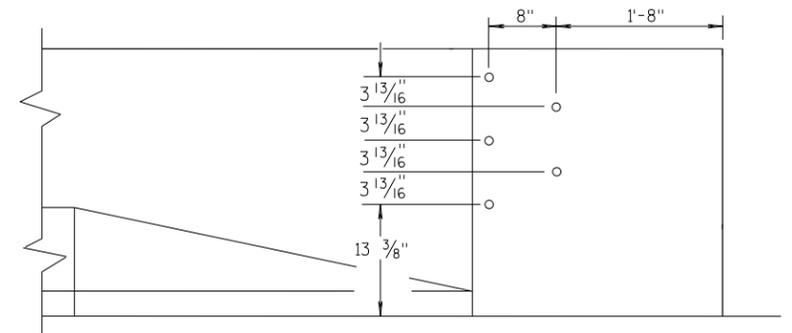
- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
 - (4) TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
 - (6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
 - (7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
 - (8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



FRONT VIEW

**W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)**

SECTION F-F



DRILL HOLE LOCATION

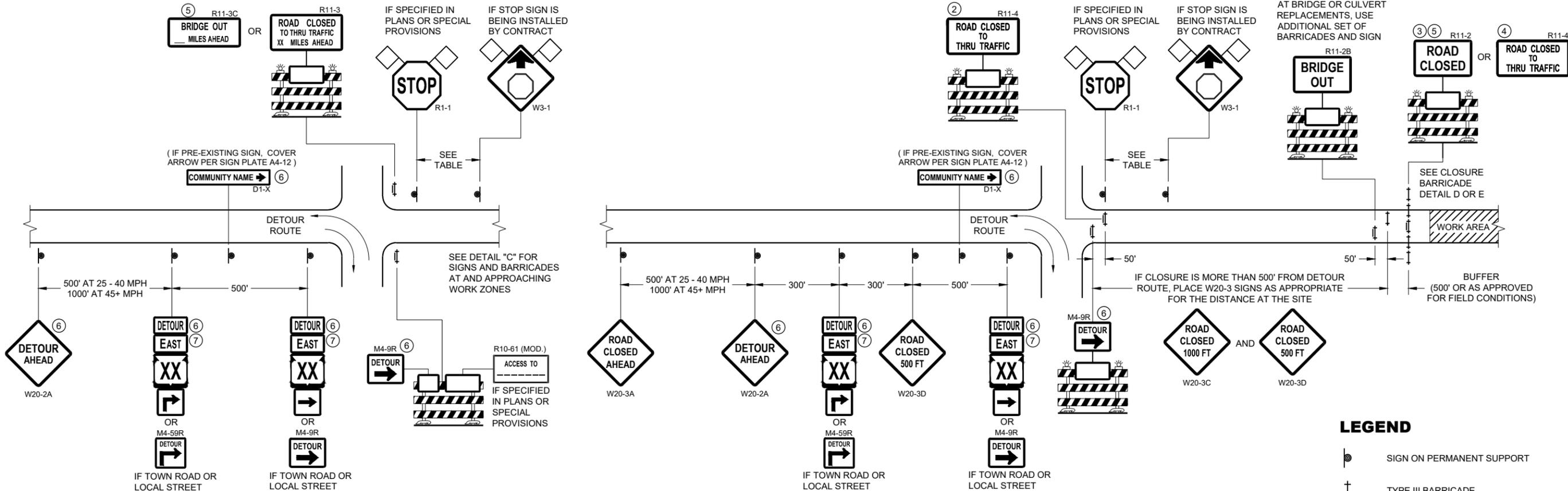
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

6

6

S.D.D. 14 B 45-5d

S.D.D. 14 B 45-5d



**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**

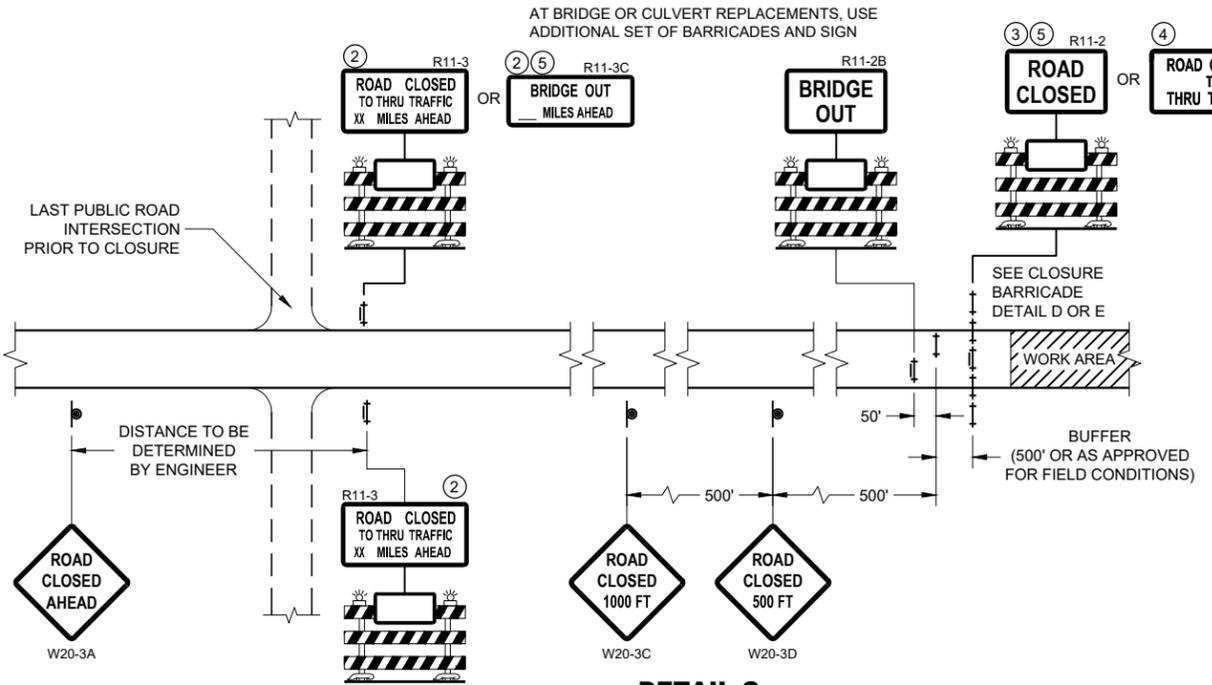
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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



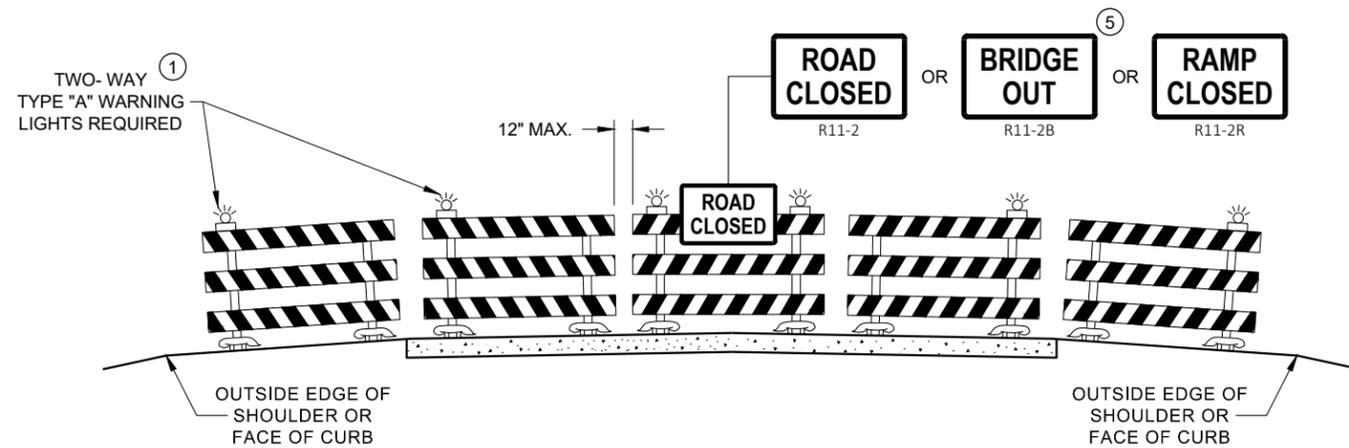
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

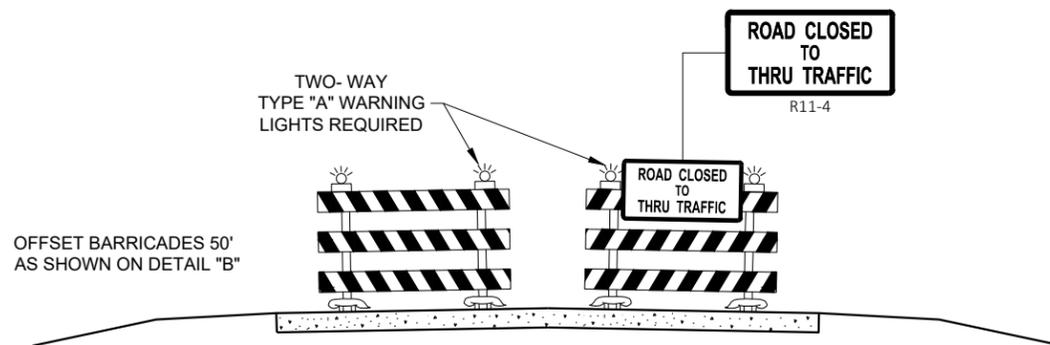
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE 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:

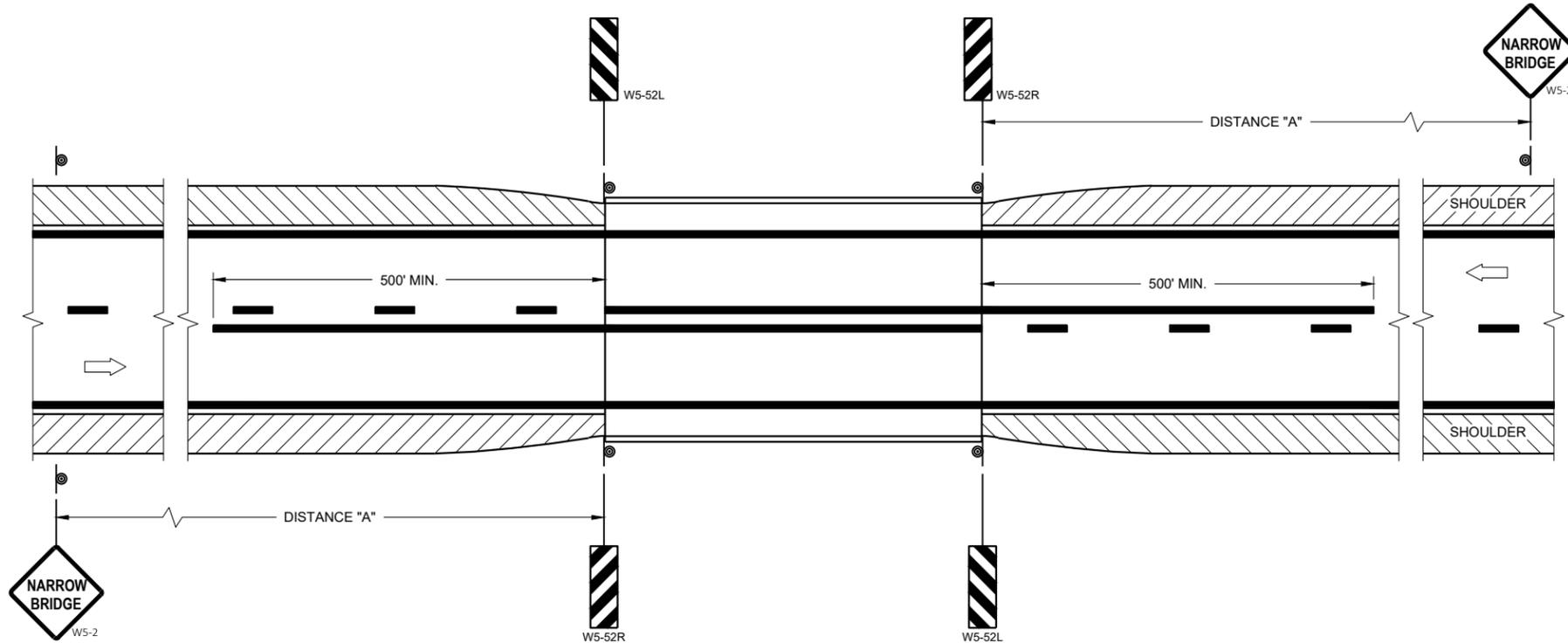
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" 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.

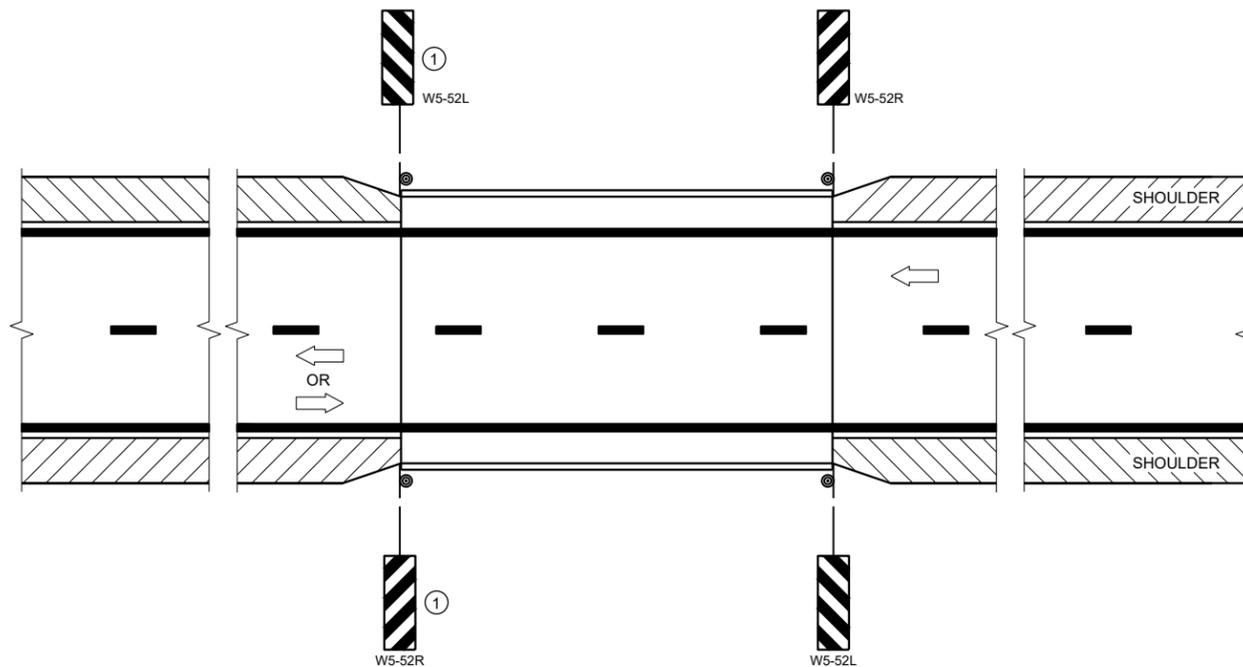
**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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

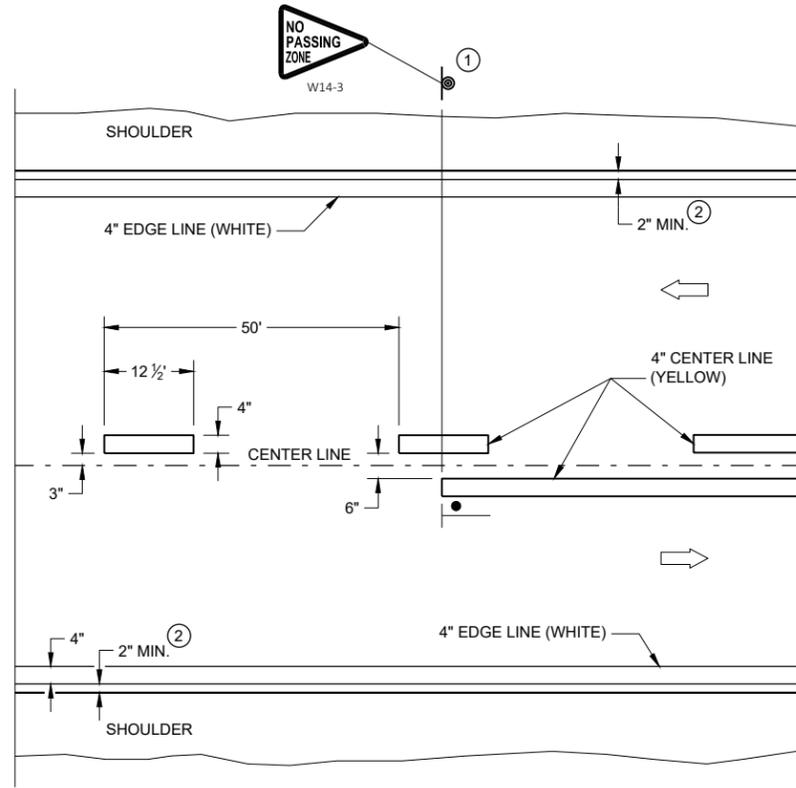
GENERAL NOTES

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

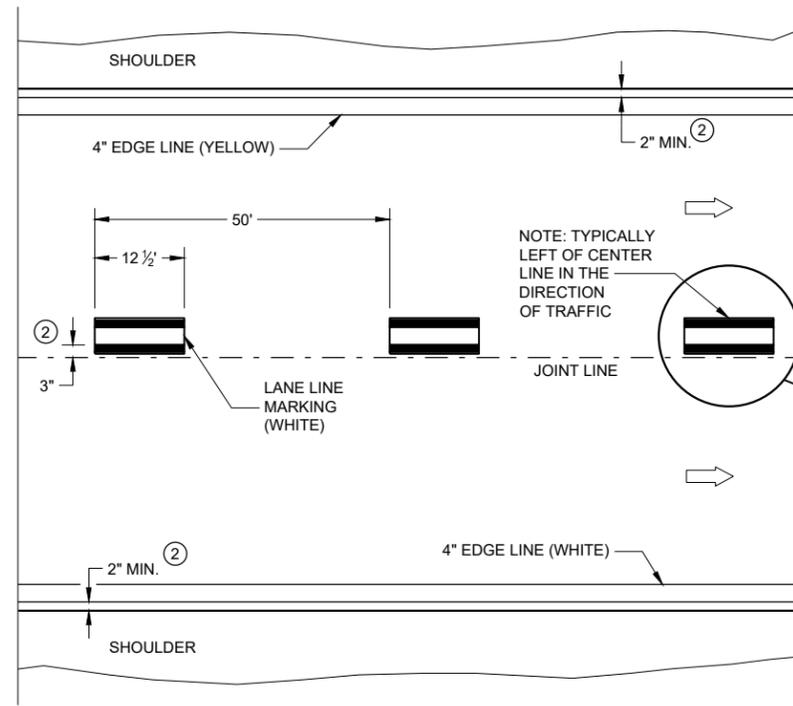
- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

-  "T" MARKING
-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC

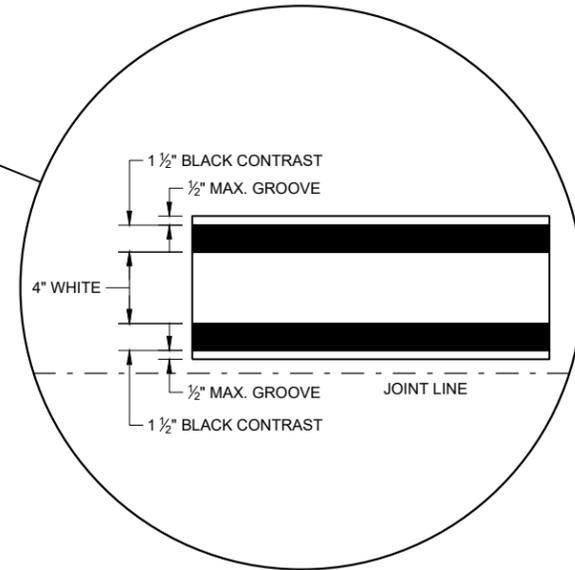


TWO WAY TRAFFIC



ONE WAY TRAFFIC

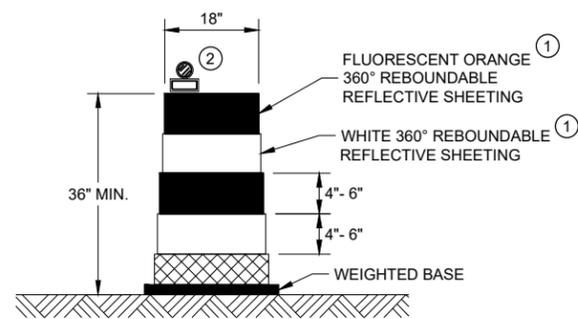
PERMANENT PAVEMENT MARKING



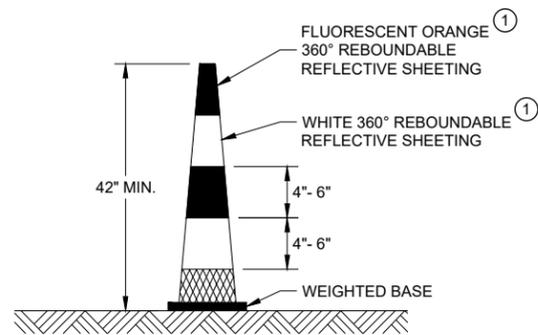
PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

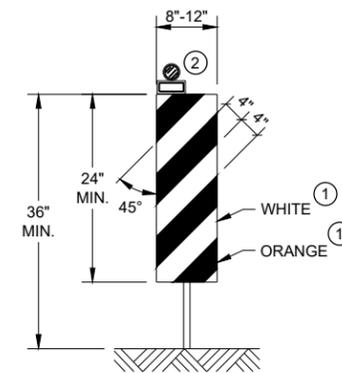


DRUM



42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

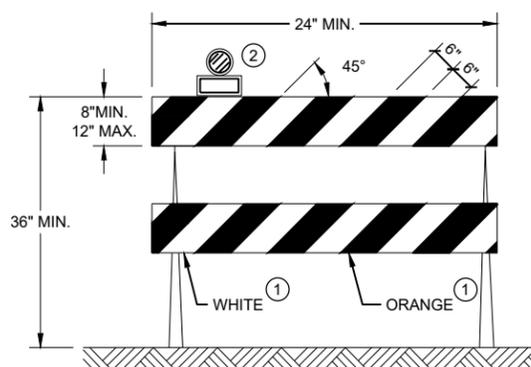


VERTICAL PANEL

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

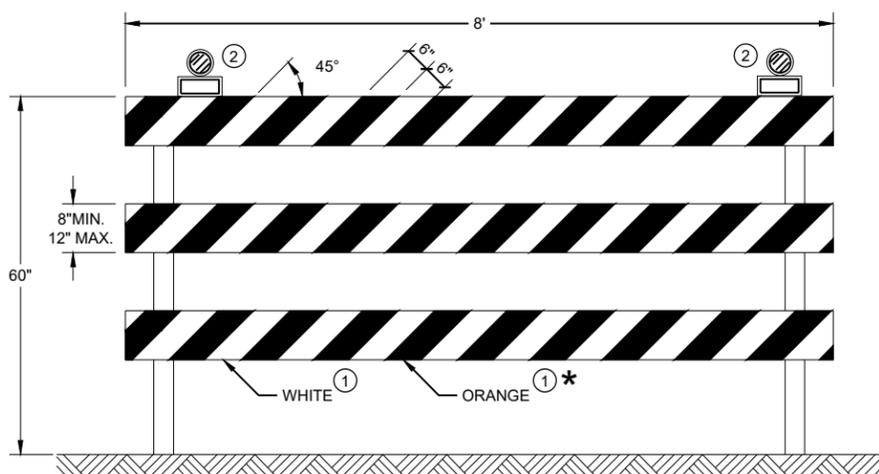
GENERAL NOTES

- 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.

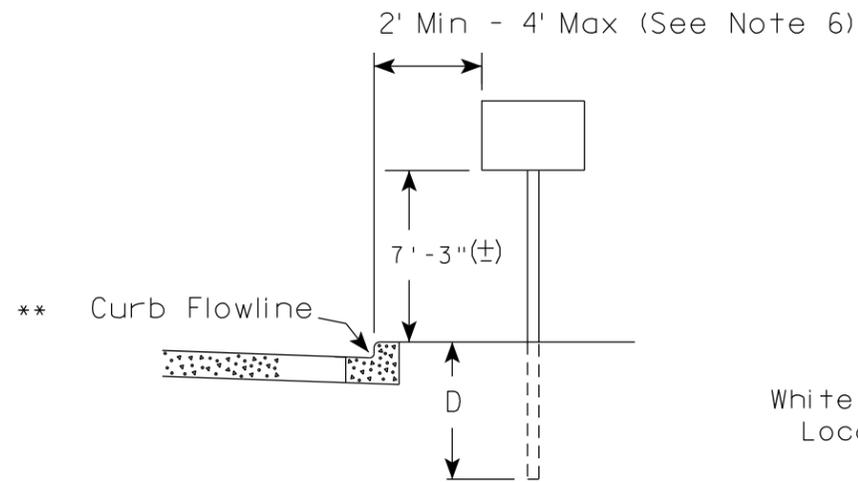
**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

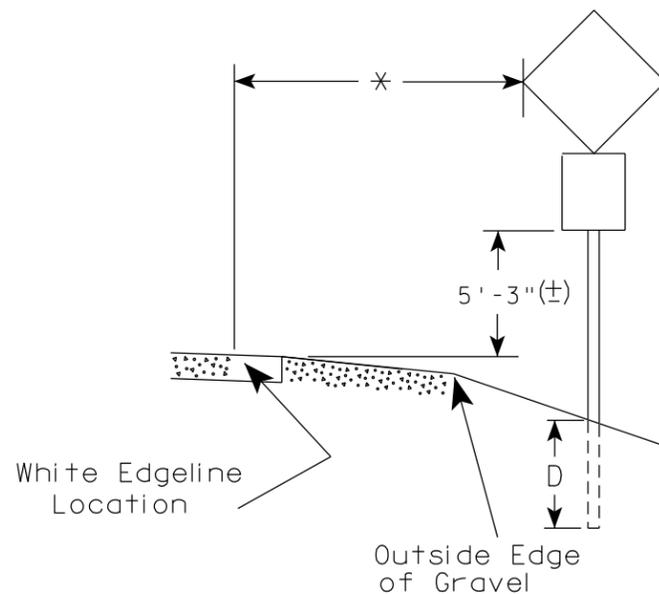
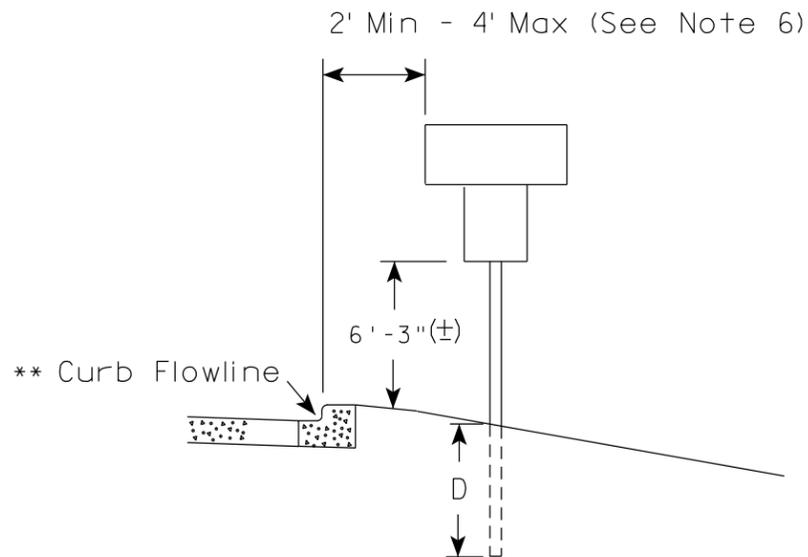
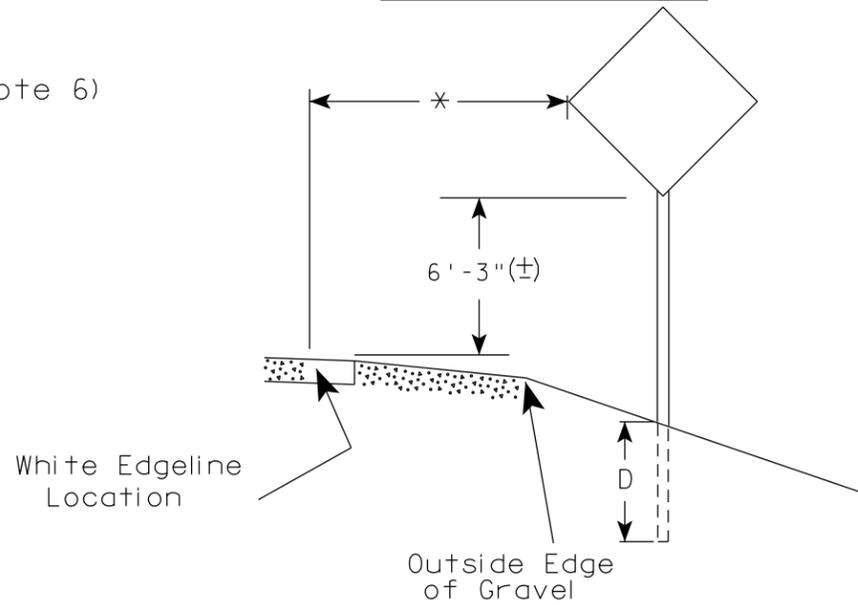
APPROVED
May 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

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.

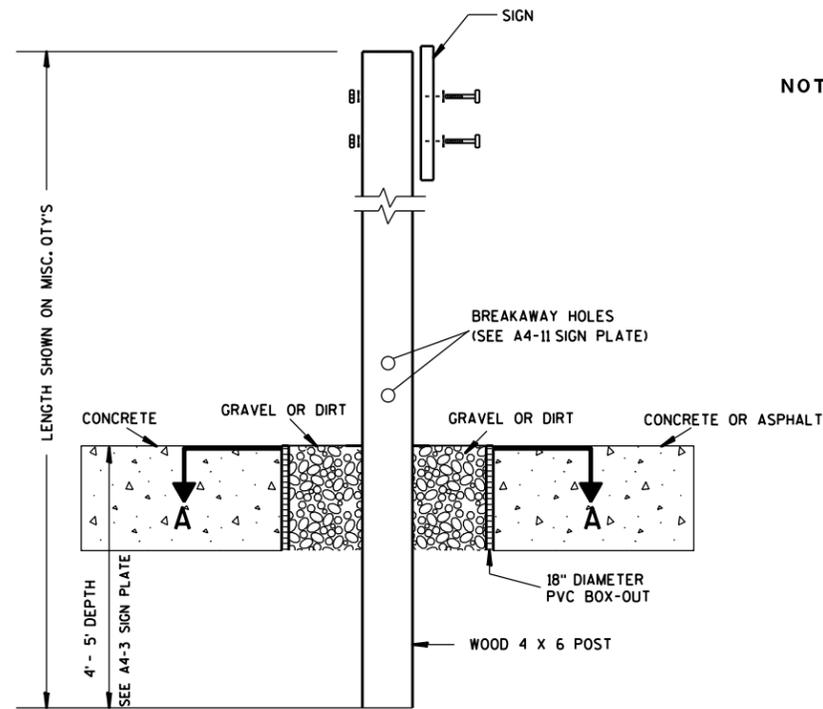
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

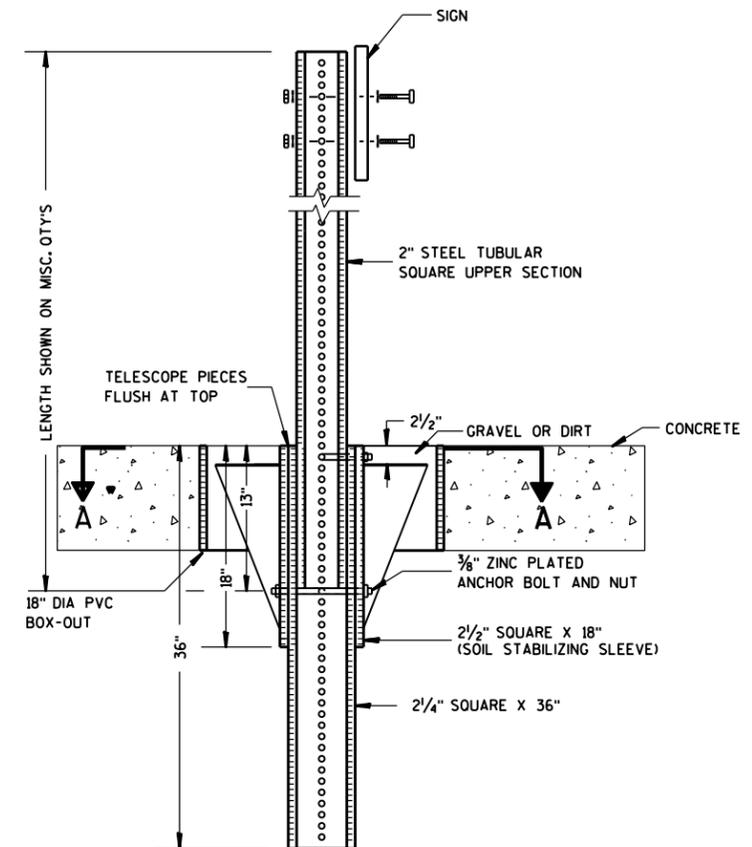
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

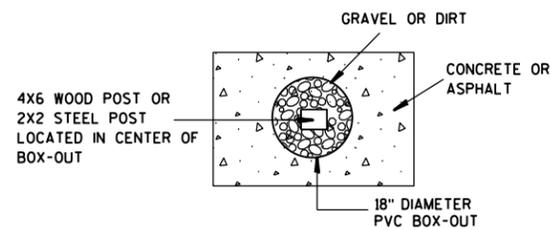
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES:**
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
 2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
 3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

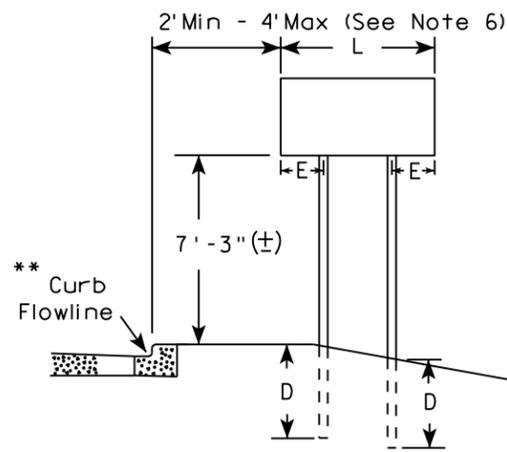
FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
APPROVED <i>Matthew R Rauch</i> <small>for State Traffic Engineer</small>	
<small>DATE 1/27/14</small>	<small>PLATE NO. A4-3B.1</small>

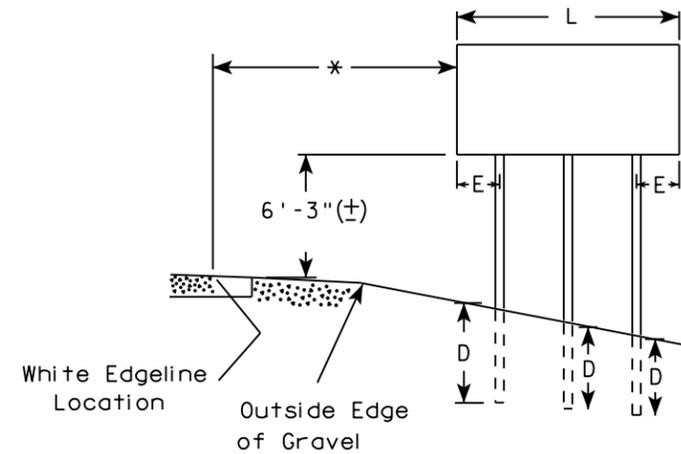
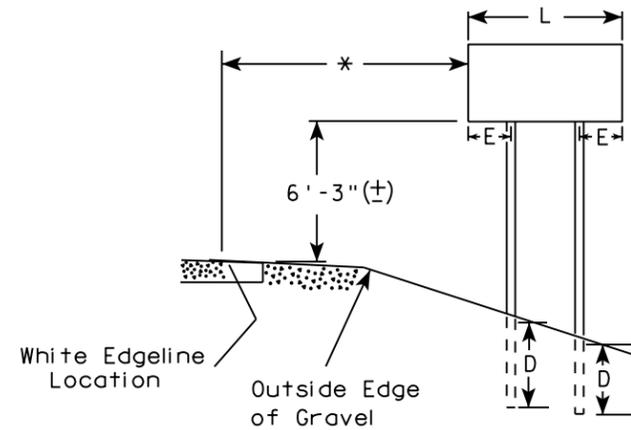
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), 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" (±).

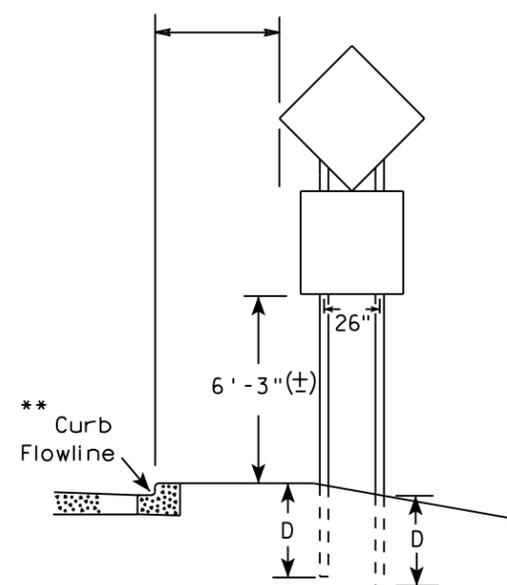
URBAN AREA



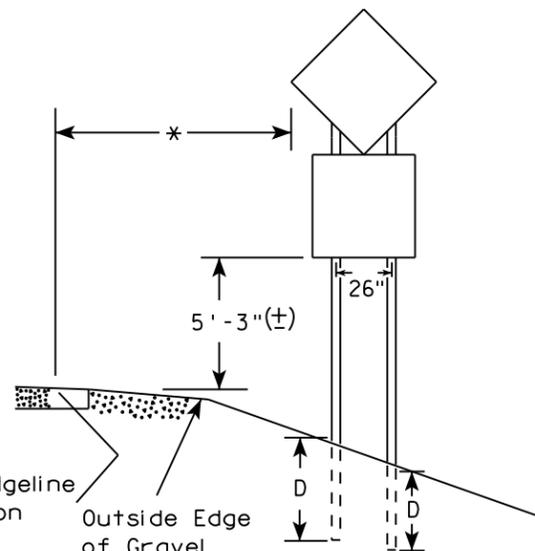
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

* 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.

** 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.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

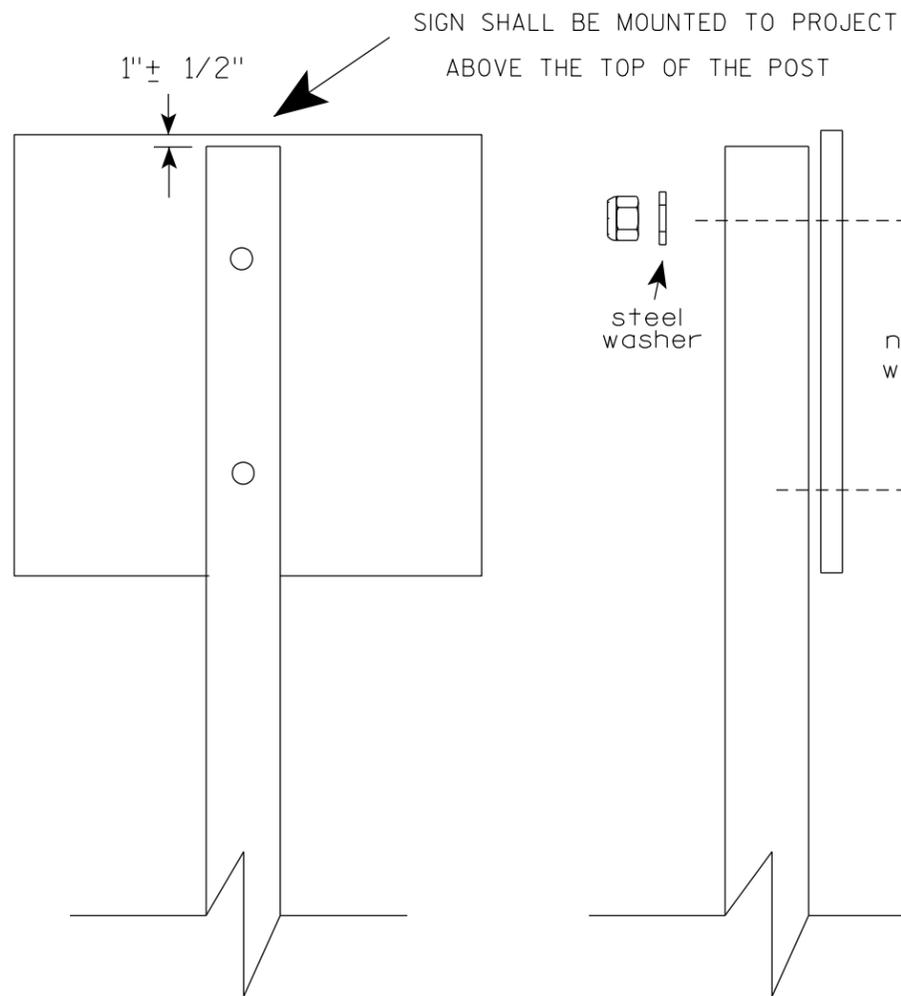
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15



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

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. 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 - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 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 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 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

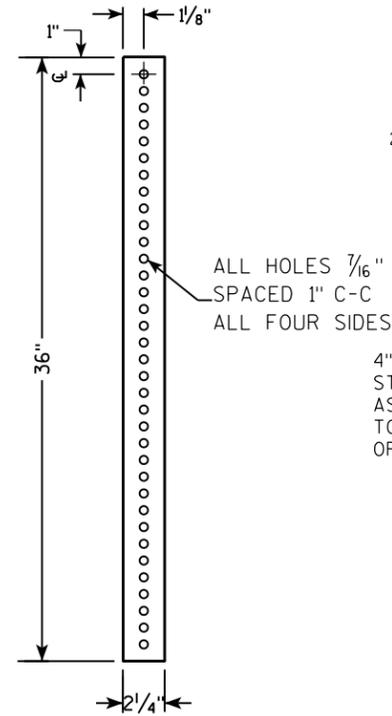
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

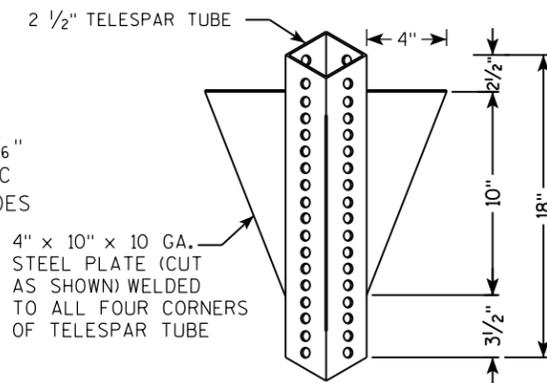
DATE 4/1/2020 PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

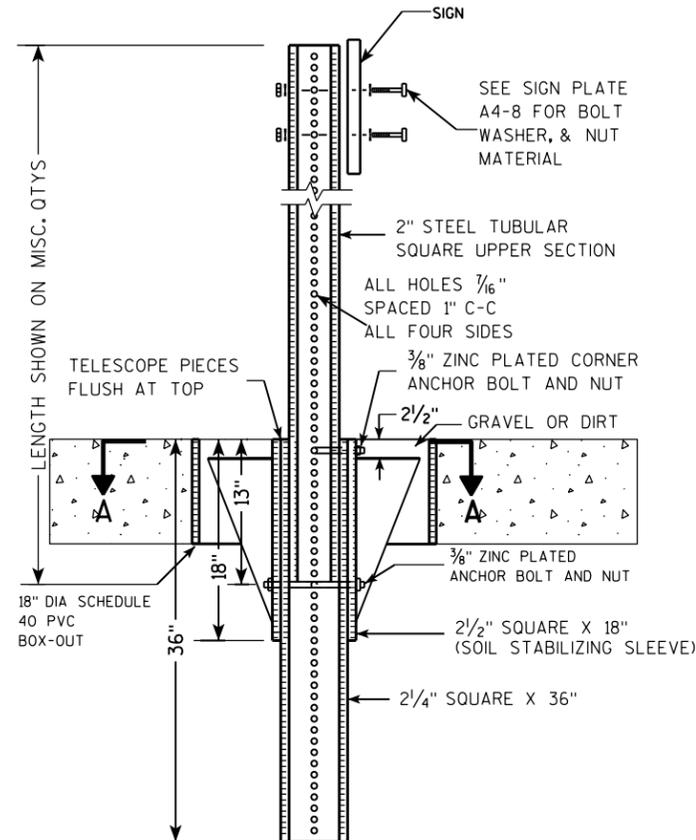
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



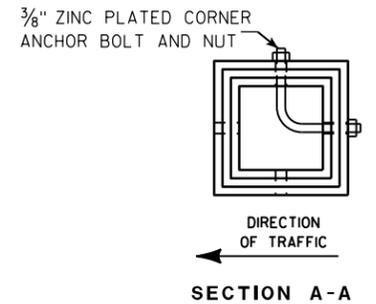
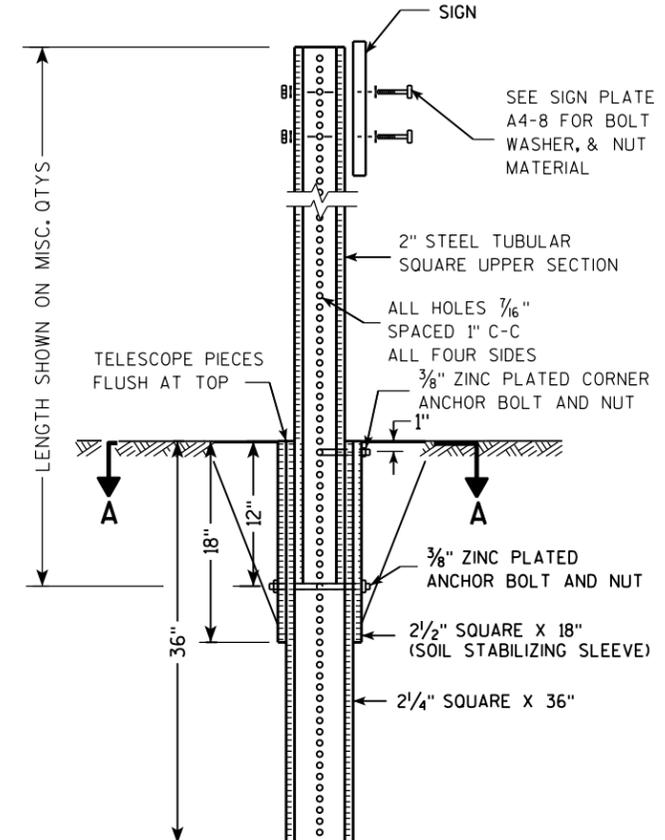
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



**DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)**



**DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)**



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

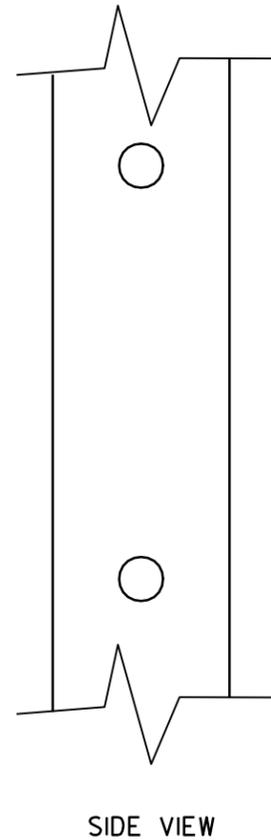
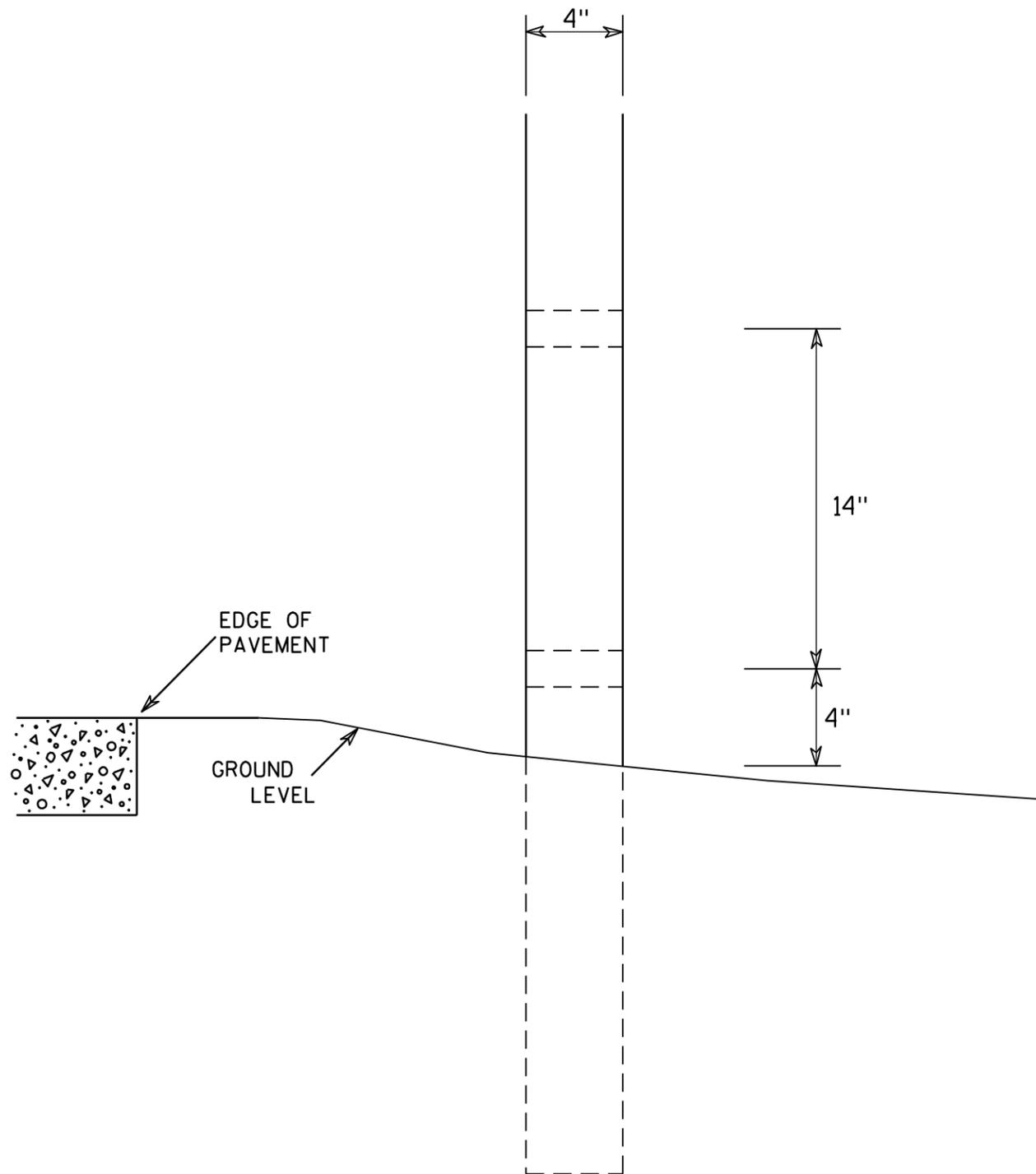
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



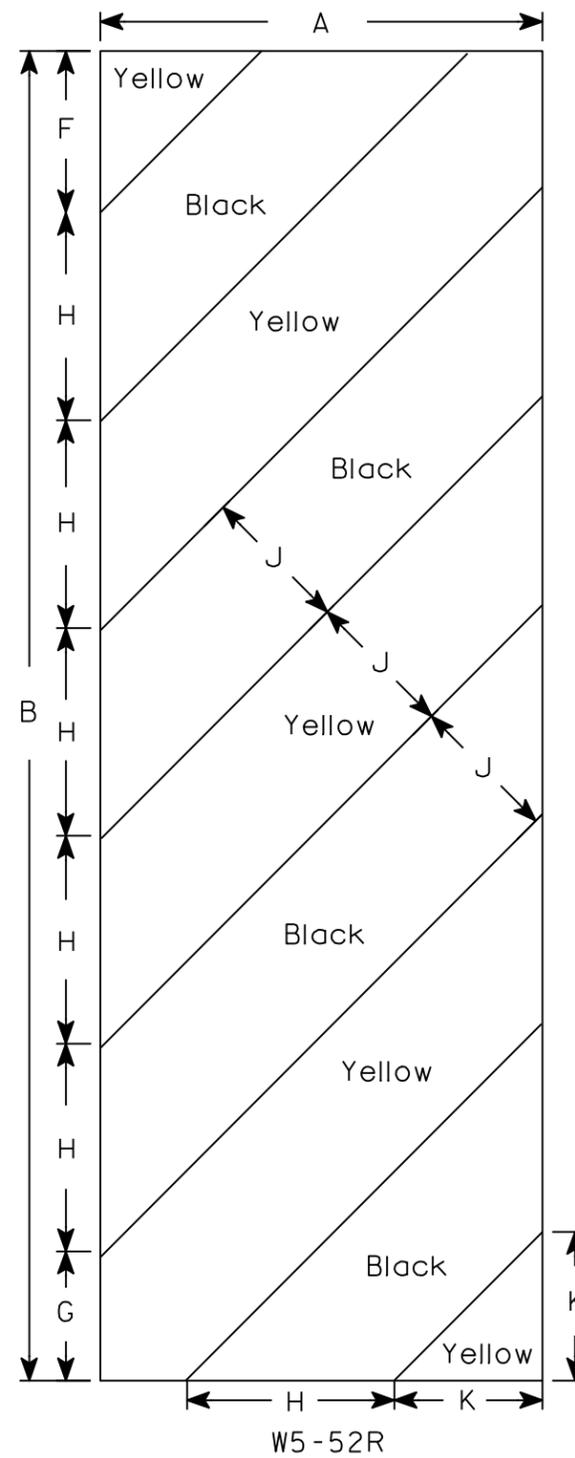
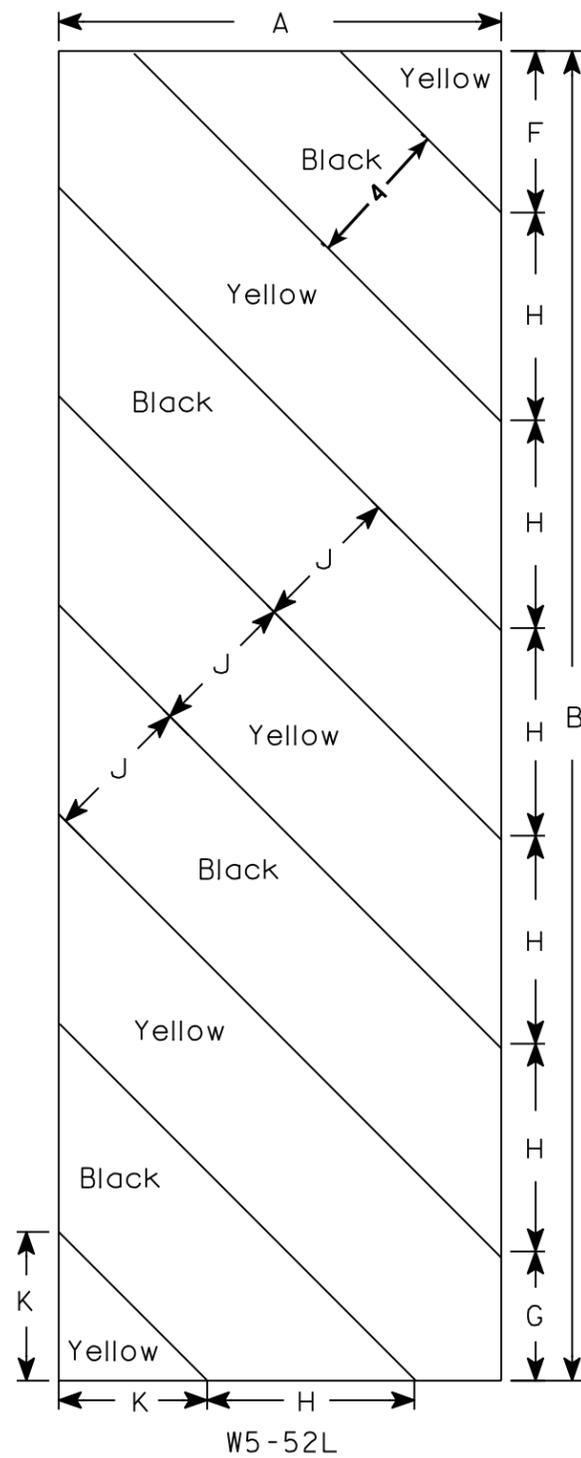
GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS	
<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 : 1.16
 OPERATIONAL RATING FACTOR : 1.50
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS.
 STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

TRAFFIC DATA: A.A.D.T. (2023) = 470
 A.A.D.T. (2043) = 560
 R.D.S. = 55 MPH

MATERIAL PROPERTIES:
 CONCRETE MASONRY, SUPERSTRUCTURE $f'_c = 4,000$ P.S.I.
 ALL OTHER $f'_c = 3,500$ P.S.I.

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

36W-INCH PRESTRESSED GIRDERS CONCRETE MASONRY $f'_c = 8,000$ P.S.I.
 STRANDS - 0.60" ϕ WITH AN ULTIMATE TENSILE STRENGTH OF $f_y = 270,000$ P.S.I.

PILING STEEL HP 10-INCH X 42 LB $f_y = 50,000$ P.S.I.

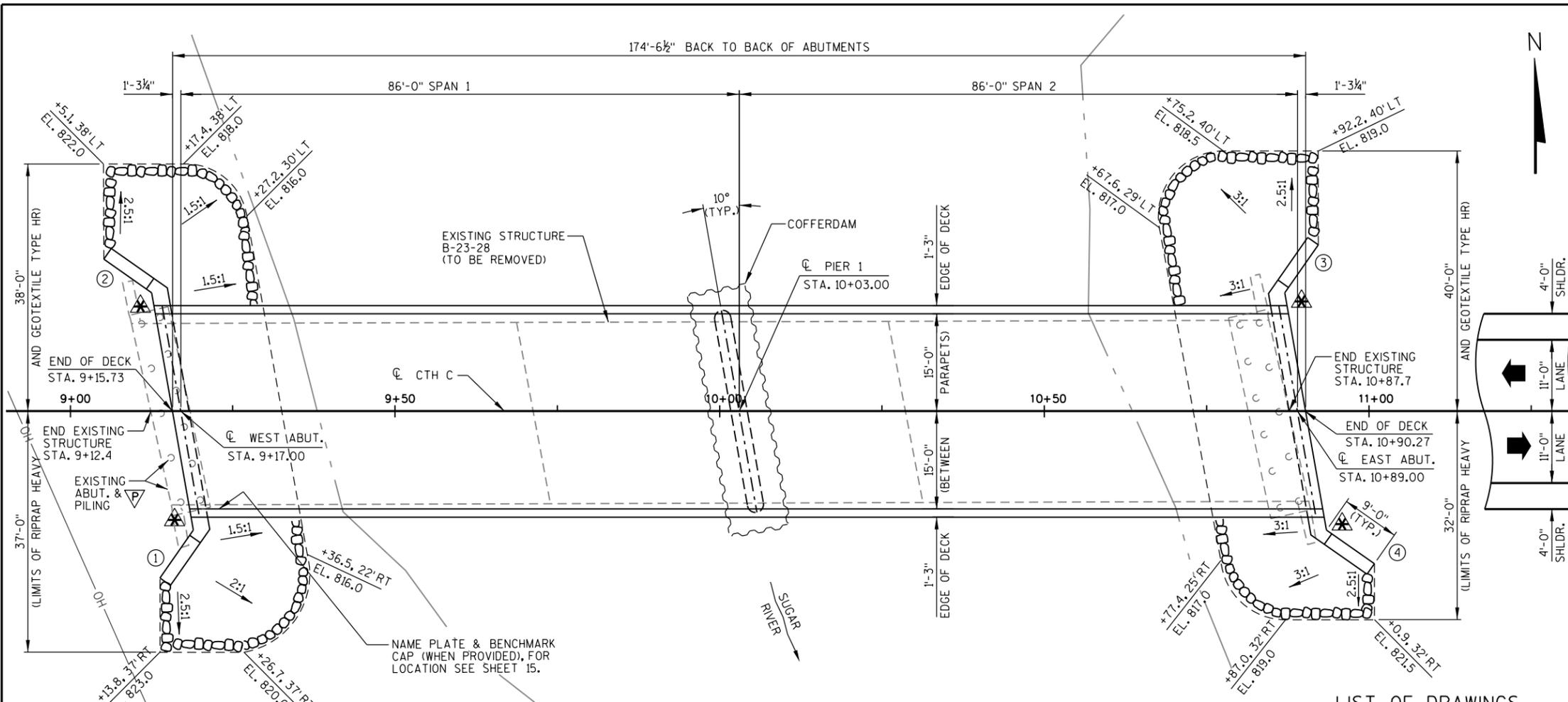
FOUNDATION DATA:
 ABUTMENTS AND PIER TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB WITH PILE POINTS. ABUTMENT AND PIER PILING TO BE DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS * PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. AT THE WEST ABUTMENT DRIVE PILES TO 180 TON RESISTANCE OR PILE TIP ELEVATION 734.0, WHICHEVER IS DEEPER. ESTIMATED PILE LENGTHS ARE 90'-0" AT THE WEST ABUTMENT, 80'-0" AT THE PIER, AND 70'-0" AT THE EAST ABUTMENT.

* 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.

HYDRAULIC DATA:
100 YEAR FREQUENCY
 DRAINAGE AREA 244 SQ. MI.
 Q_{100} - TOTAL 11,000 C.F.S.
 - THRU BRIDGE 8,476 C.F.S.
 - OVERTOPPING ROADWAY 1,319 C.F.S.
 - SUPPLEMENTAL STRUCTURE 1,205 C.F.S.
 VELOCITY 7.01 FT./SEC.
 WATERWAY AREA 1,209 SQ. FT.
 SCOUR CRITICAL CODE 5
 HIGH WATER₁₀₀ ELEVATION 821.74
 Q_2 2,693 C.F.S.
 Q_2 VELOCITY 3.15 FT./SEC.
 Q_2 ELEVATION 818.21

ROADWAY OVERFLOW DESIGN FREQUENCY
 OVERTOPPING FREQUENCY 22 YEARS
 Q_{22} 8,000 C.F.S.
 HIGH WATER₂₂ ELEVATION 820.31

DESIGN CONTACT: JOSHUA SWENO (608) 355-8852
 BRIDGE OFFICE CONTACT: AARON BONK (608) 261-0261

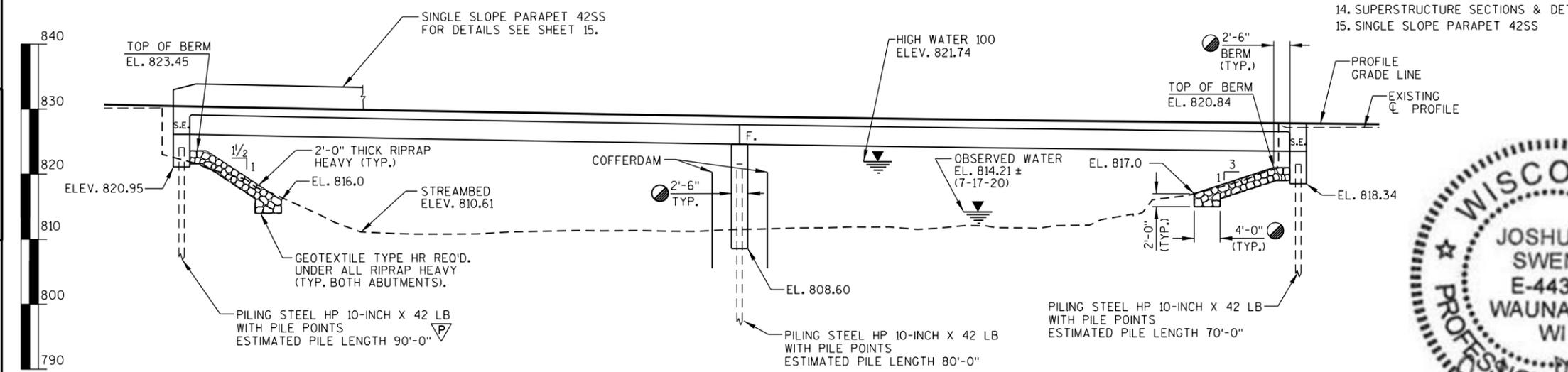


PLAN
 (TWO SPAN 36W" PRESTRESSED CONCRETE GIRDER)

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION, QUANTITIES & NOTES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. PIER
7. EAST ABUTMENT
8. EAST ABUTMENT DETAILS
9. BEARING SEAT LAYOUT
10. 36W" PRESTRESSED GIRDER DETAILS
11. GIRDER AND DECK FORMING DETAILS
12. STEEL DIAPHRAGM
13. SUPERSTRUCTURE
14. SUPERSTRUCTURE SECTIONS & DETAILS
15. SINGLE SLOPE PARAPET 42SS

- - INDICATES WING NUMBER
- ▲ - INDICATES LOCATION OF THREE BEAM GUARD ATTACHMENT AT WINGS.
- - DIMENSION GIVEN NORMAL TO THE ϕ OF ABUTMENTS OR PIER.



ELEVATION
 (LOOKING NORTH)



7/13/2022

NO.	DATE	REVISION	BY

ENGINEERING | ARCHITECTURE | SURVEYING
 FUNDING | PLANNING | ENVIRONMENTAL
MSA
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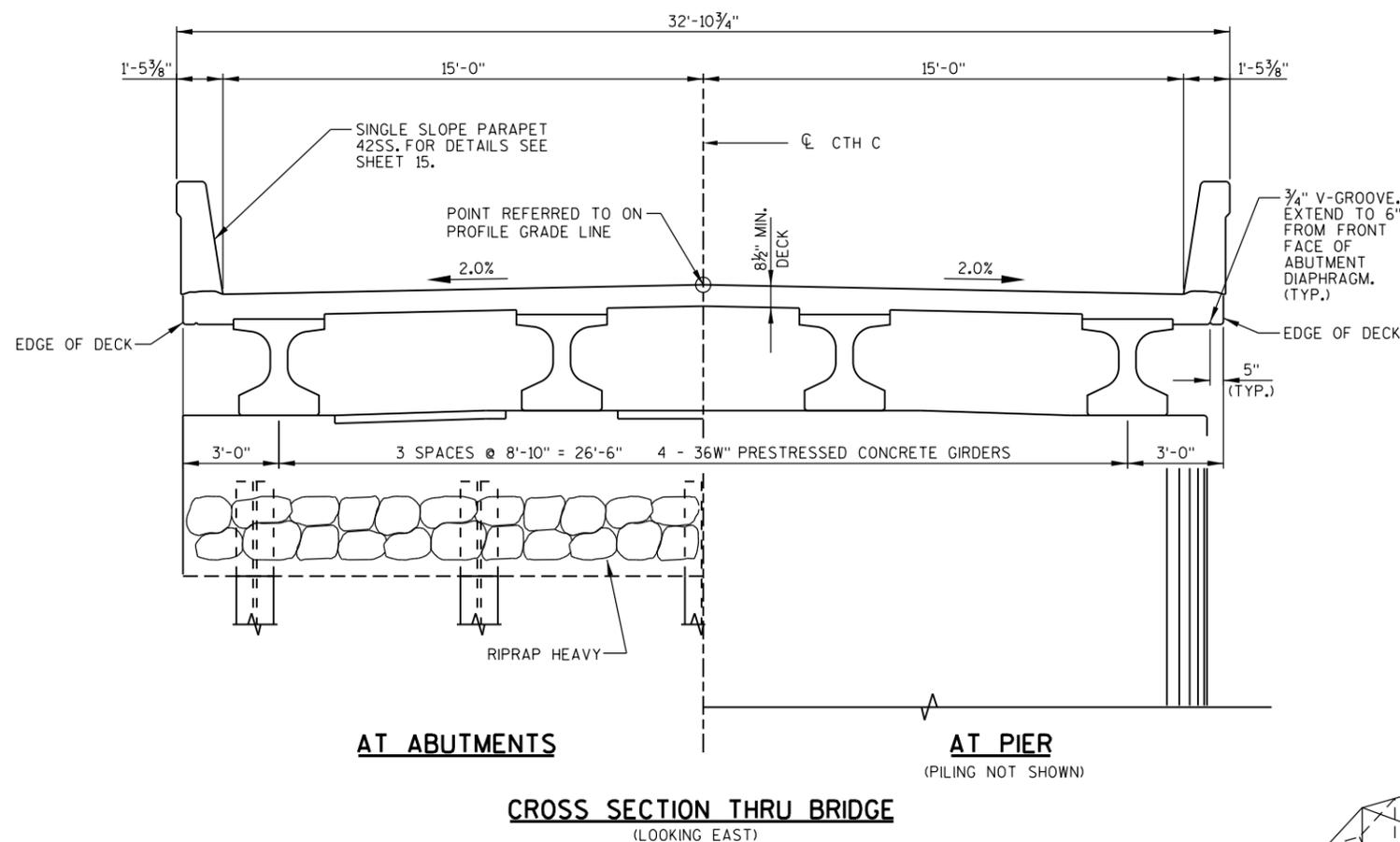
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION
 ACCEPTED *[Signature]* SDR 08/01/22
 CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-23-181
 CTH C OVER SUGAR RIVER

COUNTY GREEN TOWN/CITY/VILLAGE BROOKLYN

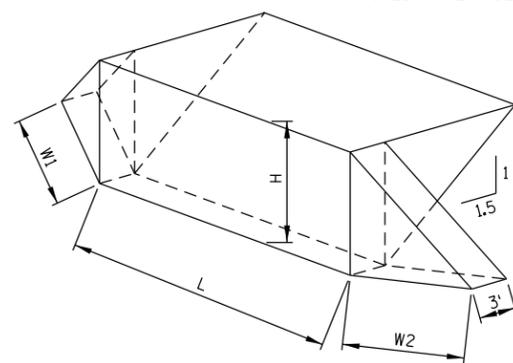
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
 DESIGNED BY JFM DESIGN CK'D. JRS DRAWN BY CAR PLANS CK'D. JRS

GENERAL PLAN SHEET 1 OF 15

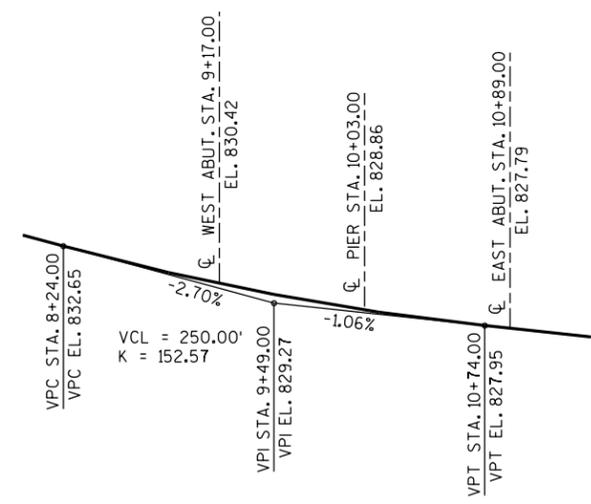
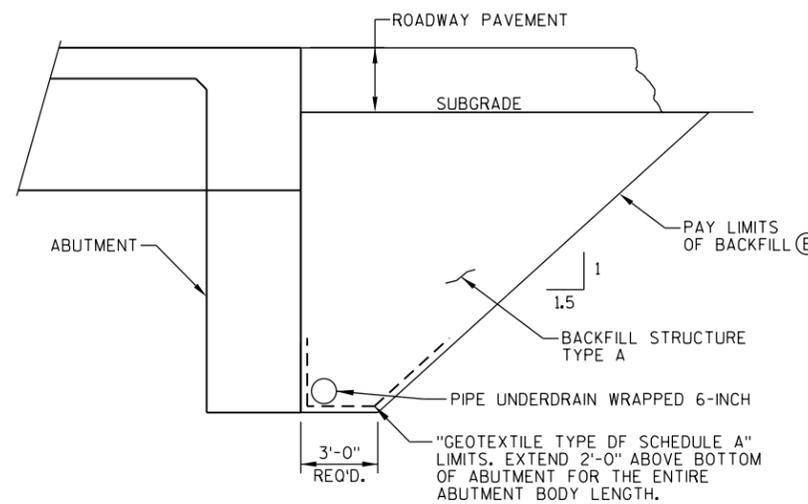


GENERAL NOTES

- 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 MARK SIGNIFIES THE BAR SIZE.
- THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE LIMITS SHOWN ON SHEET 1 AND ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER.
- THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-23-181" FOR THE ABUTMENTS AND PIER.
- THIS STRUCTURE WILL REPLACE EXISTING BRIDGE, B-23-28, A 175.3 FT. LONG, THREE SPAN PRESTRESSED CONCRETE DECK GIRDER BRIDGE ON CONCRETE ABUTMENTS AND PIERS, WITH A 26.0 FT CLEAR ROADWAY WIDTH.
- BACKFILL PAY LIMITS, BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- 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
- 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 STRUCTURE BACKFILL TYPE A.
- 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.
- DO NOT PLACE FILL ABOVE 3'-0" FROM THE BOTTOM OF ABUTMENT UNTIL THE SUPERSTRUCTURE IS IN PLACE.
- APPLY PROTECTIVE SURFACE TREATMENT TO THE TOP OF THE DECK, TO THE EXTERIOR EXPOSED FACES OF WINGS, AND TO THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.
- ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO USGS NAVD 88 (2012) ADJUSTED. BENCHMARK REFERENCES AT THE PROJECT SITE WERE SET BY THE CONSULTANT USING GPS TECHNOLOGY.
- THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE GIRDER AND DECK FORMING DETAILS SHEET.
- PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE INSIDE FACES, THE TOP FACES, AND THE ENDS OF THE PARAPETS.
- AT PIER, COFFERDAM REQUIRED. CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH STANDARD SPEC 502.3.5.3. CONCRETE POURED UNDERWATER SHALL NOT EXCEED 10.0 FEET IN DEPTH, UNLESS APPROVED OTHERWISE.



ABUTMENT BACKFILL DIAGRAM
 L = OUT-TO-OUT OF ABUTMENT (FT)
 H = AVERAGE ABUTMENT FILL HEIGHT (FT)
 W1 = WING 1 LENGTH (FT)
 W2 = WING 2 LENGTH (FT)
 $V_{CF} = (L)(3.0)(H) + (L)(0.5)(1.5H)(H) + (0.5)(H)(W1+W2)(3.0)$
 $V_{TON} = V_{CF} (2.0)/27$



TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	WEST ABUT.	PIER	EAST ABUT.	SUPER	TOTAL
203.0260.01	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-23-28	EACH	-	-	-	-	1
206.1001.01	EXCAVATION FOR STRUCTURES BRIDGES B-23-181	EACH	-	-	-	-	1
206.5001.01	COFFERDAMS B-23-181	EACH	-	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	192	-	192	-	384
502.0100	CONCRETE MASONRY BRIDGES	CY	31.1	45.7	30.9	247.1	355
502.3200	PROTECTIVE SURFACE TREATMENT	SY	21	-	21	582	624
502.3210	PIGMENTED SURFACE SEALER	SY	-	-	-	174	174
502.9000.S.01	UNDERWATER SUBSTRUCTURE INSPECTION B-23-181	EACH	-	1	-	-	1
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	-	-	-	691	691
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2445	2270	2445	-	7160
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1545	40	1545	53610	56740
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	-	-	-	16	16
506.4000.01	STEEL DIAPHRAGMS B-23-181	EACH	-	-	-	12	12
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	8	-	8	-	16
550.0500	PILE POINTS	EACH	7	10	7	-	24
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	630	800	490	-	1920
606.0300	RIPRAP HEAVY	CY	121	-	109	-	230
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	95	-	95	-	190
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-	-	-	4	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	36	-	36	-	72
645.0120	GEOTEXTILE TYPE HR	SY	208	-	190	-	398
SPV.0090.01	REMOVING EXISTING TIMBER PILING	LF	220	-	-	-	220
NON-BID ITEMS							
	CORK FILLER	SIZE					3/4"
	PREFORMED FILLER	SIZE					1/2"

PROFILE GRADE LINE - CTH C

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-23-181	
DRAWN BY		CAR	PLANS CK'D. JRS
CROSS SECTION, QUANTITIES & NOTES		SHEET 2 OF 15	

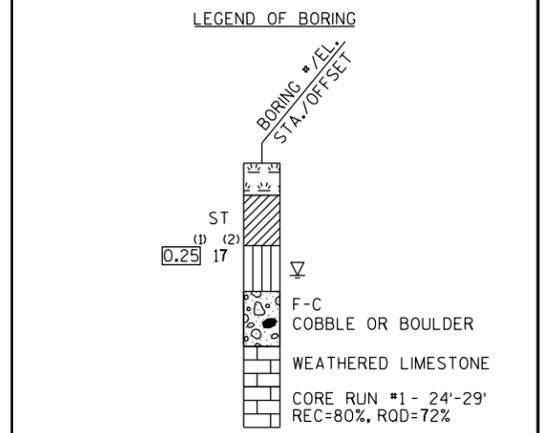
STRUCTURE BACKFILL DETAIL



BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	3-3-2021	198,850.5	654,472.8
2	3-4-2021	198,837.6	654,567.9
3	3-2-2021	198,852.5	654,655.8

BORINGS COMPLETED BY: NUMMELIN TESTING SERVICES, INC.
 REPORT COMPLETED BY: NUMMELIN TESTING SERVICES, INC.
 ALL COORDINATES REFERENCED TO WISCRS NAD 83(11) GREEN COUNTY

STATE PROJECT NUMBER		
5208-00-73		
MATERIAL SYMBOLS		
	ASPHALT	
	CONCRETE	
	SAND	
	BOULDERS OR COBBLES	
	SHALE	
	PEAT	
	GRAVEL	
	BEDROCK (UNKNOWN)	



⁽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.

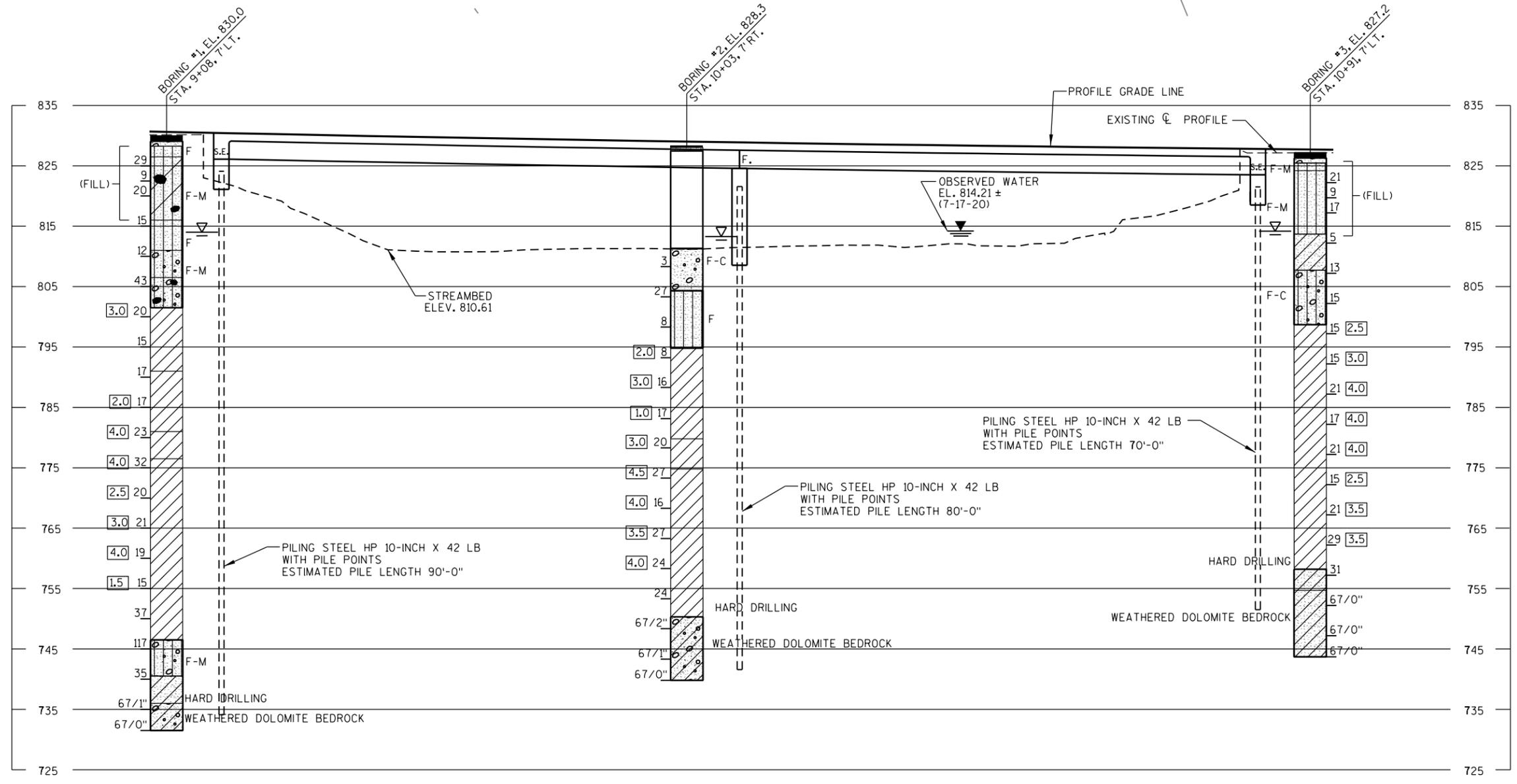
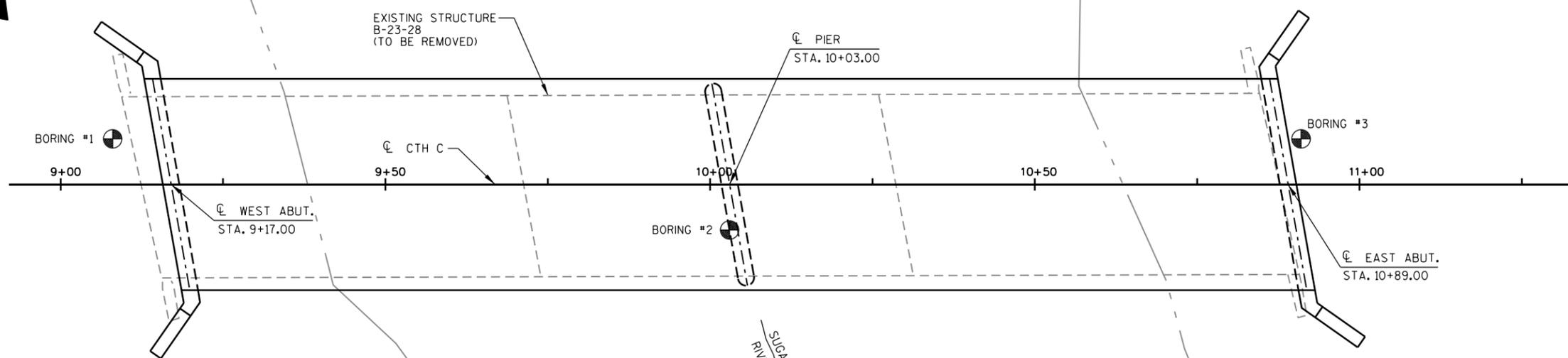
GROUND WATER ELEVATION
 ▽ AT TIME OF DRILLING
 ▽ END OF DRILLING
 ▽ AFTER DRILLING

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

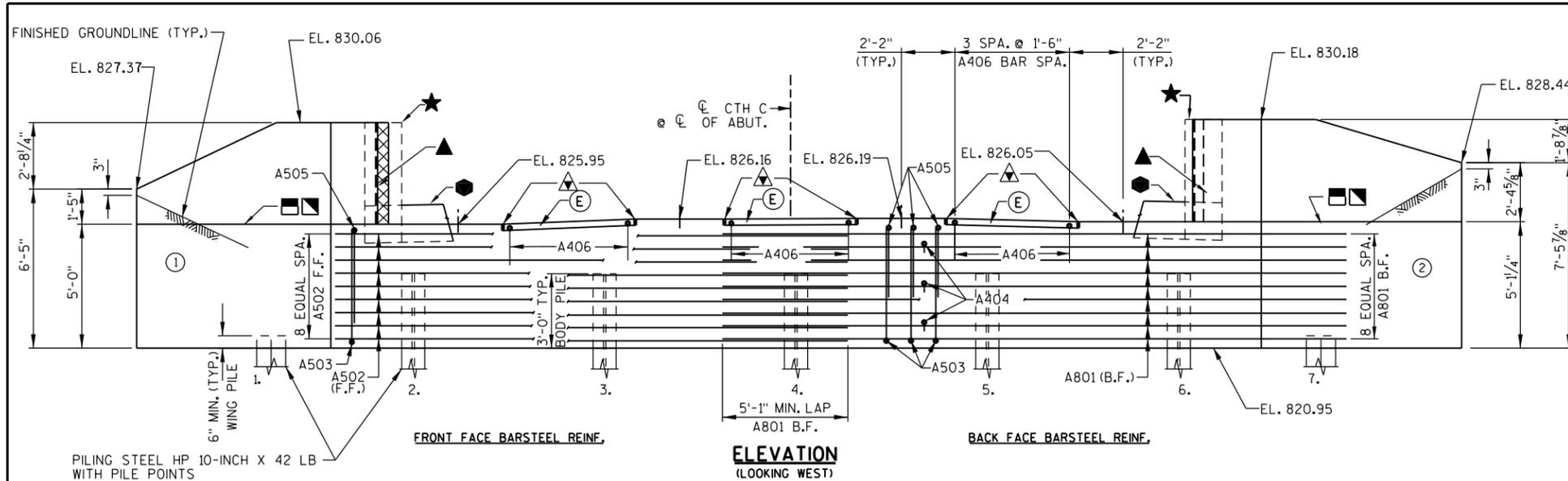
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT 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			
STRUCTURE		B-23-181	
DRAWN BY		PLANS CK'D.	
CAR		JRS	
SUBSURFACE EXPLORATION		SHEET 3 OF 15	

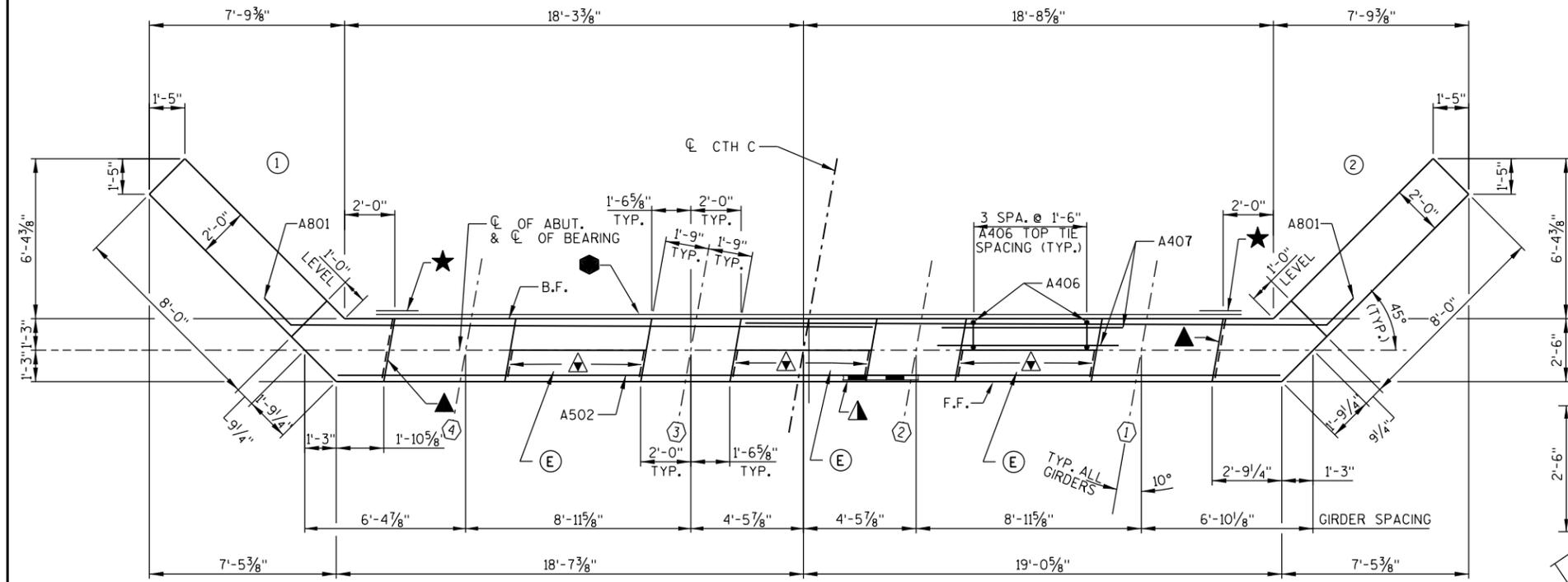


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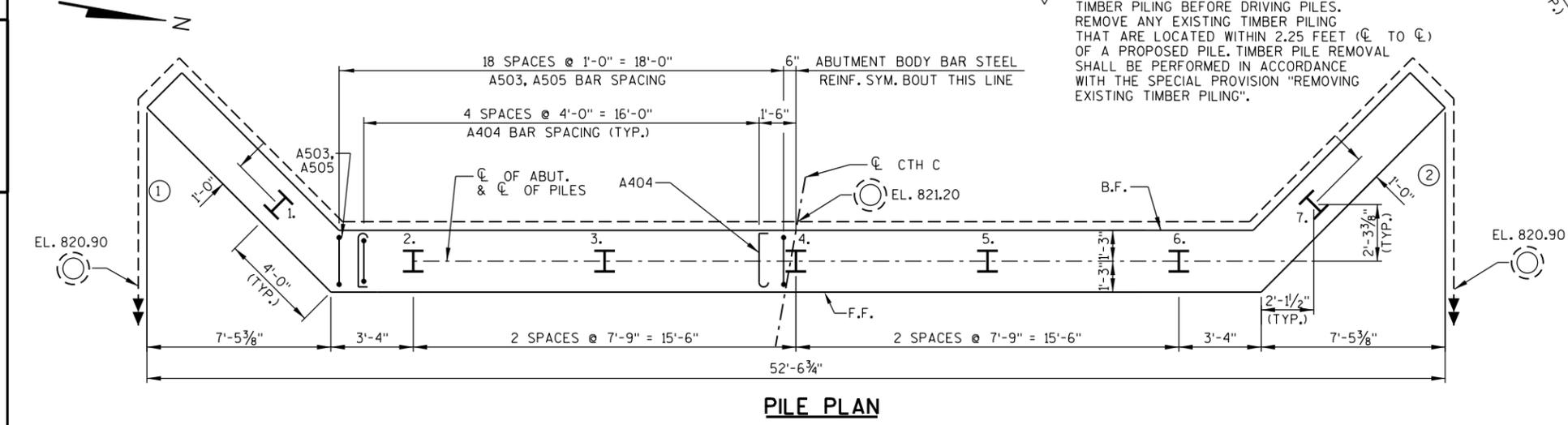
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ELEVATION
(LOOKING WEST)



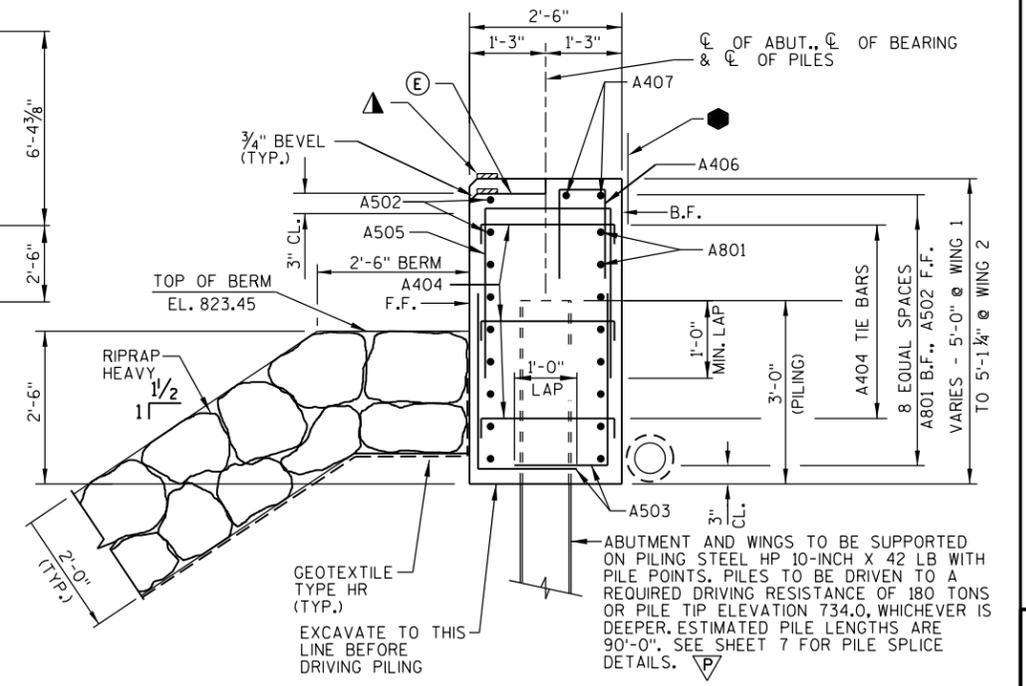
PLAN



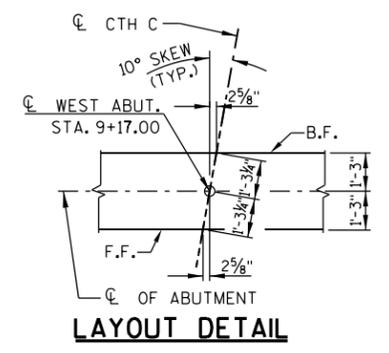
PILE PLAN

- LEGEND**
- INDICATES WING NUMBER
 - ⬡ INDICATES GIRDER NUMBER
 - F.F.— FRONT FACE B.F.— BACK FACE CL.— CLEAR
 - ▲ 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE).
 - ▲ 4"x 1/2" FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF DECK.
 - ★ VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
 - HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WINGS.
 - OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2 X 6. IF JOINT IS USED, PLACE ● ON B.F. OF WING. COST OF ● AT WING IS INCIDENTAL TO "CONCRETE MASONRY BRIDGES".
 - ▣ 3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.
 - PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE TYPE HR AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE. SEE SHEET 5 FOR DETAILS.
 - (E) SEMI-EXPANSION POCKET, CONSTRUCT 3" DEEPER THAN ABUTMENT BACKWALL. STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND/OR SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03 INCHES.
 - ▲ 3/4" CORK FILLER (SIDE VERTICAL FACES ONLY) AT SEMI-EXPANSION POCKETS.

STATE PROJECT NUMBER
5208-00-73



TYPICAL SECTION THRU ABUTMENT

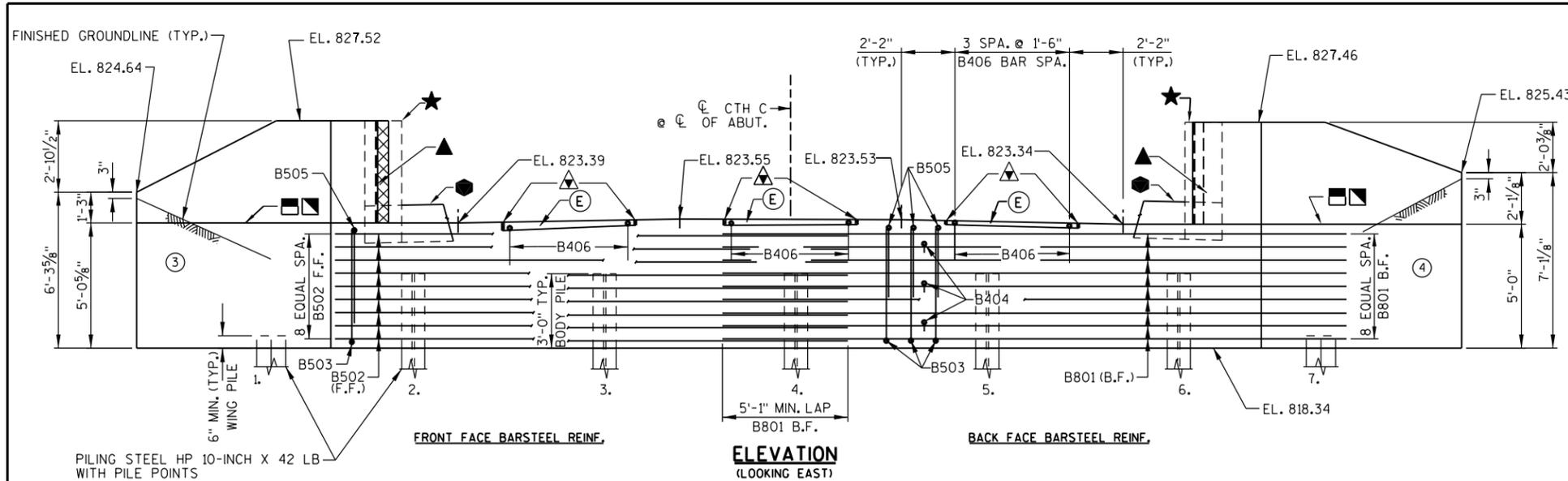


LAYOUT DETAIL

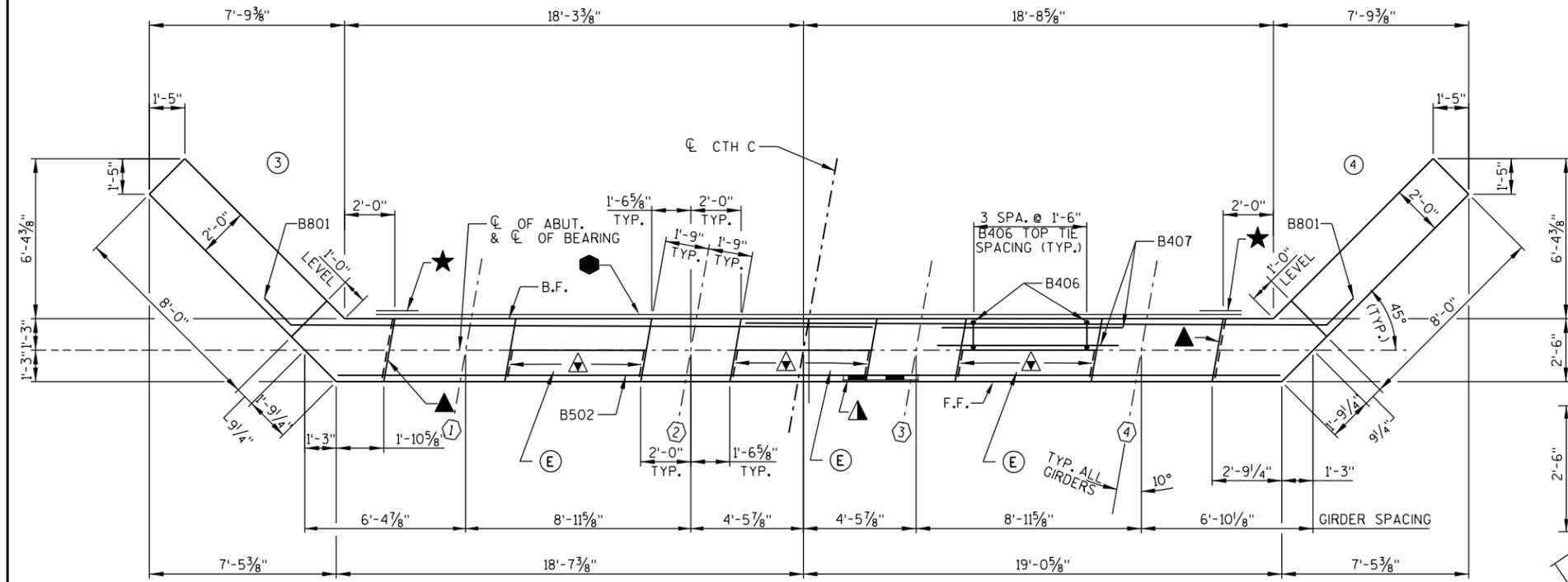
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-23-181	
DRAWN BY		CAR	PLANS CK'D. JRS
WEST ABUTMENT			SHEET 4 OF 15

8

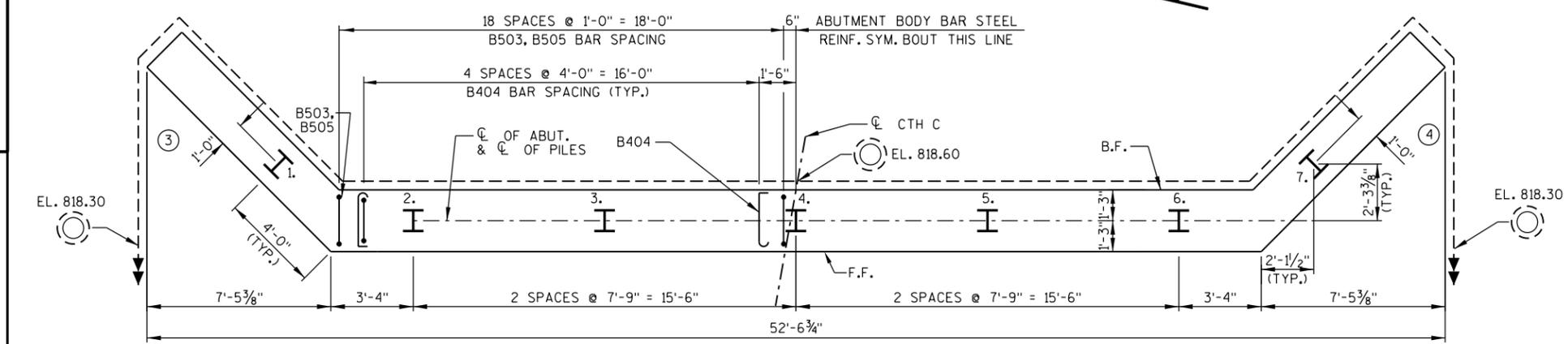
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ELEVATION
(LOOKING EAST)



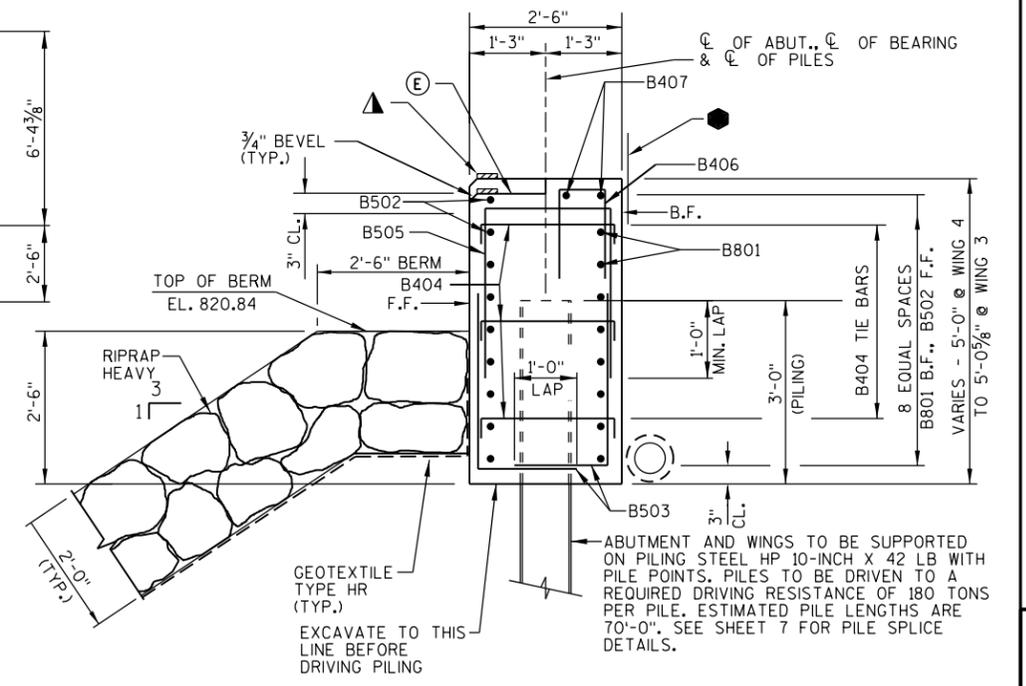
PLAN



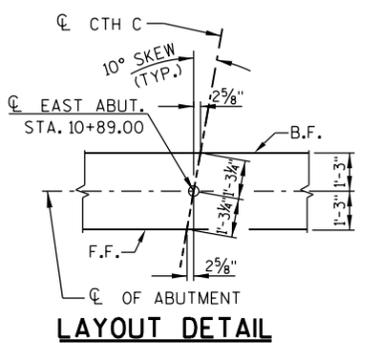
PILE PLAN

- LEGEND**
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STATE PROJECT NUMBER
5208-00-73



TYPICAL SECTION THRU ABUTMENT

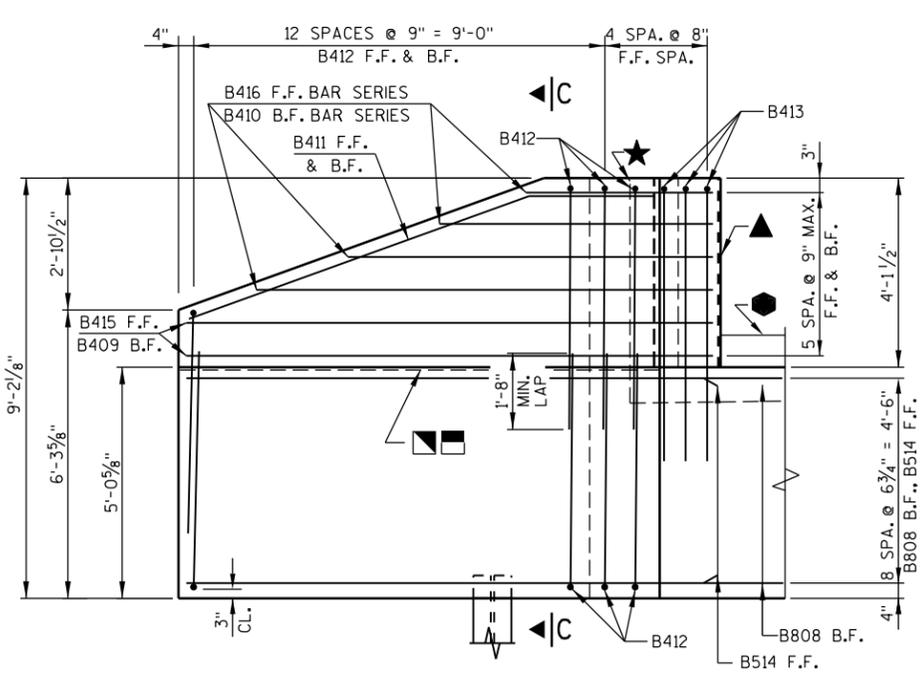


LAYOUT DETAIL

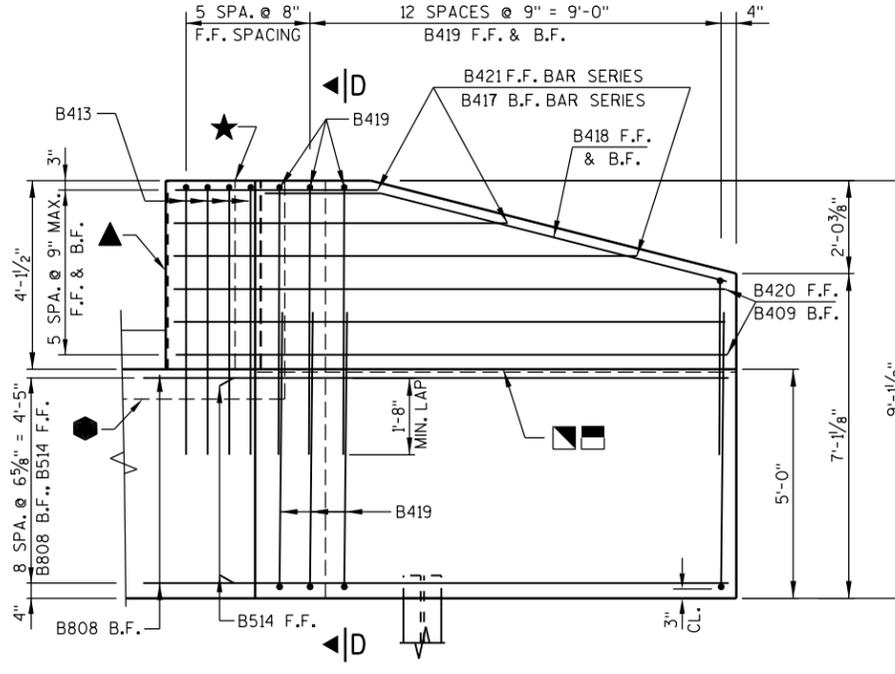
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-23-181	
DRAWN BY		PLANS CK'D.	
EKK		JRS	
EAST ABUTMENT			SHEET 6 OF 15

8

8

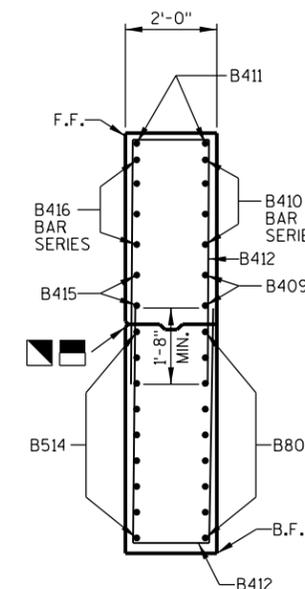


WING 3

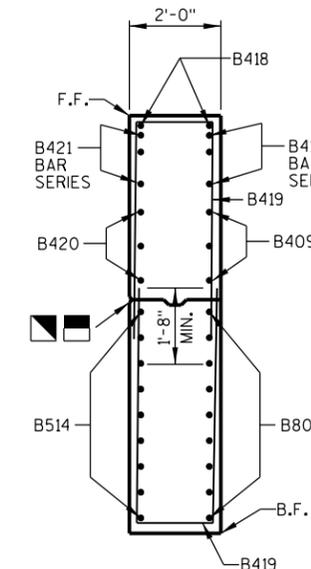


WING 4

ELEVATION
(LOOKING AT F.F. OF WINGS)



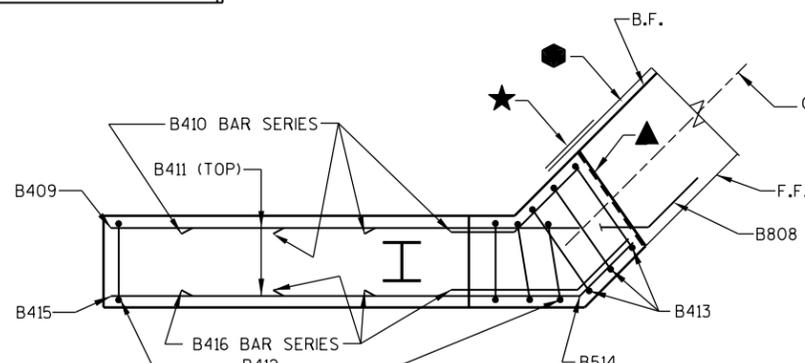
SECTION C-C
THRU WING 3



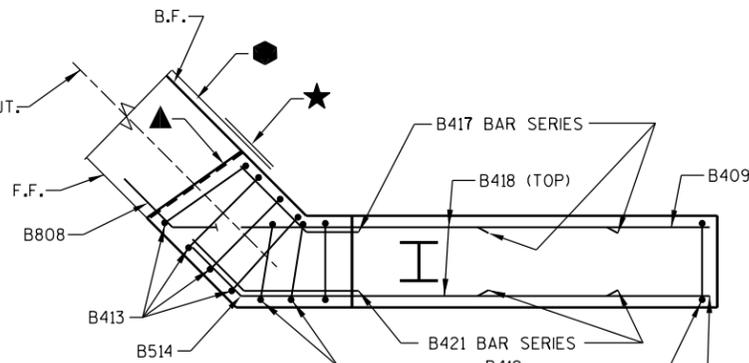
SECTION D-D
THRU WING 4

SEE LEGEND ON SHEET 6 FOR DESCRIPTION OF

★ ● ◻ ◻ ▲



WING 3



WING 4

PLAN

UNCOATED 2445 LBS.
COATED 1545 LBS.

BILL OF BARS (EAST ABUT.)

MARK	NUMBER REQUIRED COATED	NUMBER REQUIRED UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION
B801	-	18	24'-7"	X		ABUTMENT BODY - B.F. - HORIZ.
B502	-	9	37'-6"			ABUTMENT BODY - F.F. - HORIZ.
B503	-	76	6'-0"	X		ABUTMENT BODY - F.F. & B.F. - VERT.
B404	-	30	3'-0"	X		ABUTMENT BODY - TIES - HORIZ.
B505	-	38	7'-11"	X		ABUTMENT BODY - TOP - VERT.
B406	-	12	3'-9"	X		ABUTMENT BODY - BACKWALL STIRRUP - VERT.
B407	-	6	7'-6"			ABUTMENT BODY - BACKWALL - HORIZ.
B808	18	-	13'-3"	X		WINGS - B.F. - HORIZ.
B409	5	-	10'-10"	X		WINGS - B.F. - HORIZ.
B410	4	-	6'-3"	X	◻	WING 3 - B.F. - HORIZ.
B411	2	-	10'-8"	X		WING 3 - F.F. & B.F. - TOP - HORIZ.
B412	28	-	12'-2"	X		WING 3 - TOP & BOTTOM - VERT.
B413	7	-	14'-0"	X		WINGS - TOP - VERT.
B514	18	-	11'-9"	X		WINGS - F.F. - HORIZ.
B415	2	-	11'-10"	X		WING 3 - F.F. - HORIZ.
B416	4	-	7'-4"	X	◻	WING 3 - F.F. - HORIZ.
B417	3	-	6'-0"	X	◻	WING 4 - B.F. - HORIZ.
B418	2	-	10'-5"	X		WING 4 - F.F. & B.F. - TOP - HORIZ.
B419	28	-	12'-0"	X		WING 4 - TOP & BOTTOM - VERT.
B420	3	-	12'-8"	X		WING 4 - F.F. - HORIZ.
B421	3	-	7'-10"	X	◻	WING 4 - F.F. - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

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

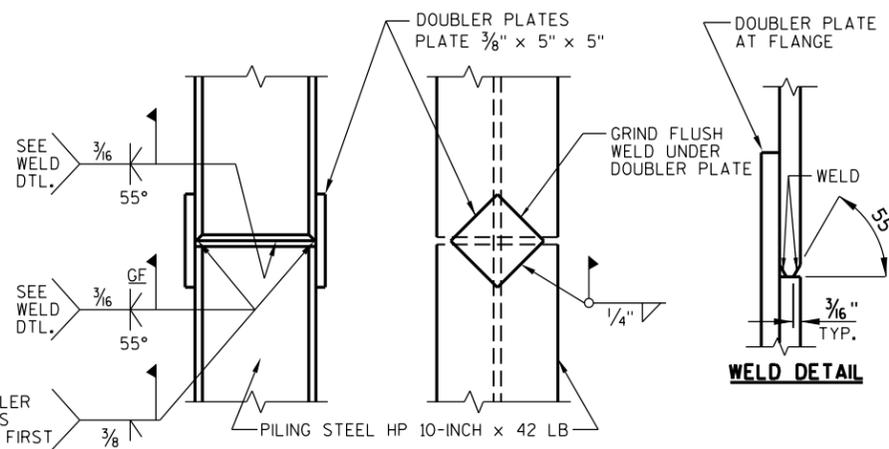
BENT BARS IF USED IN BAR SERIES TABLE SHALL BE BENT AFTER CUTTING.

BAR MARK	NO. REQ'D.	LENGTH
B410	1 SERIES OF 4	3'-4" TO 9'-2"
B416	1 SERIES OF 4	4'-4" TO 10'-4"
B417	1 SERIES OF 3	3'-2" TO 8'-10"
B421	1 SERIES OF 3	5'-0" TO 10'-8"

BAR SERIES TABLE

MARK	C	D
B505	3'-0"	2'-2"
B406	1'-6"	1"
B412	5'-4"	1'-8"
B413	6'-0"	2'-2"
B419	5'-3"	1'-8"

MARK	A	B
B801	1'-6"	45°
B808		
B514		
B409	1'-10"	45°
B410		
B417		
B411	2'-5"	20°
B415	1'-8"	45°
B416		
B418	2'-5"	14°
B419		
B420		
B421	2'-5"	45°

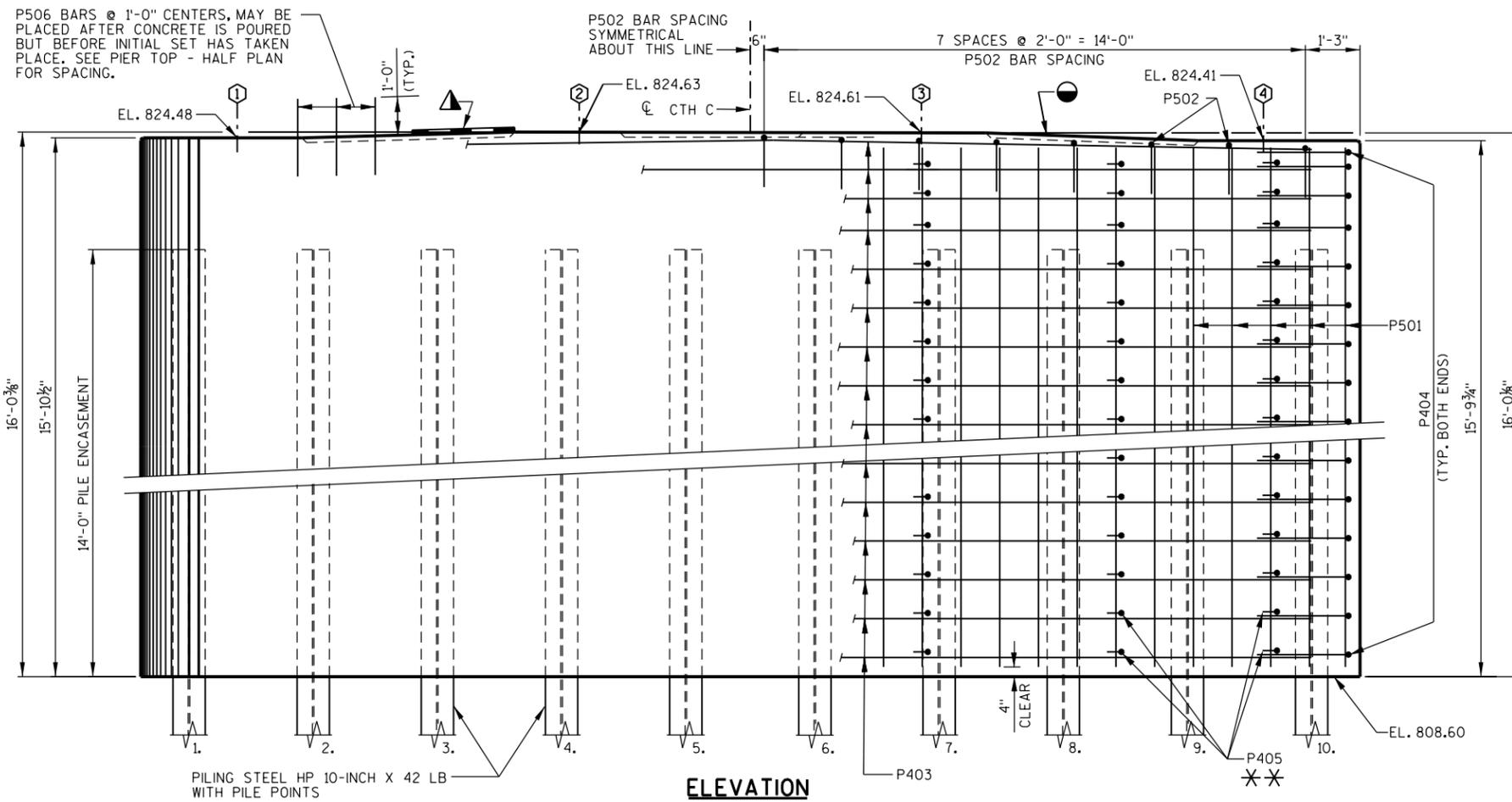


PILE SPLICE DETAILS

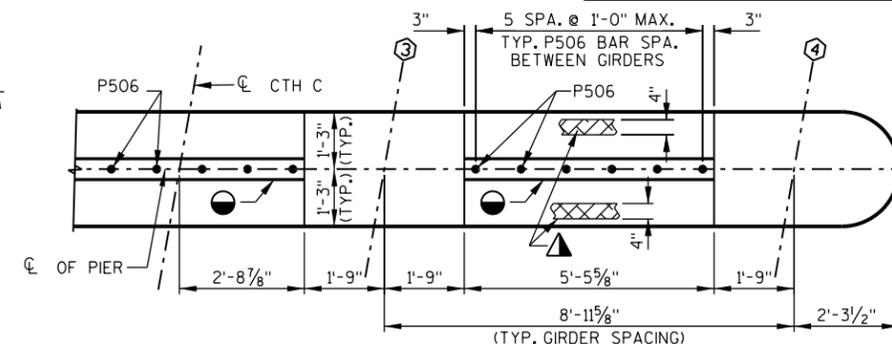


B503

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-23-181	
DRAWN BY EKK		PLANS CK'D. JRS	
EAST ABUTMENT DETAILS			SHEET 7 OF 15



ELEVATION
(LOOKING EAST)



PIER TOP - HALF PLAN

BILL OF BARS

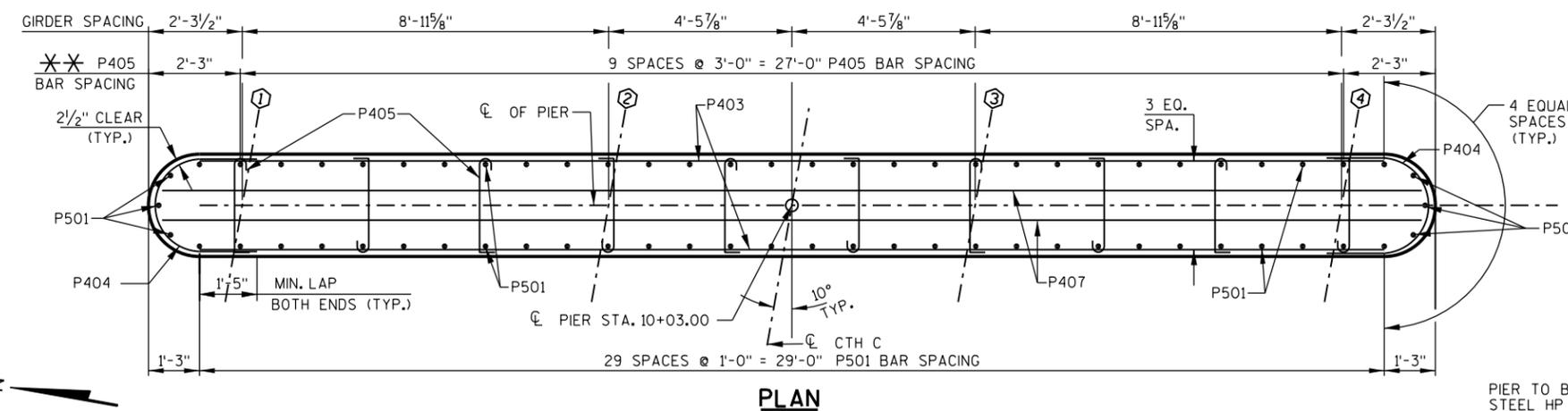
MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
P501	66	15'-3"		PIER - VERT.
P502	16	4'-5"	X	PIER - STIRRUPS - TOP - VERT.
P403	34	29'-0"		PIER - TOP & SIDES - HORIZ.
P404	34	6'-1"	X	PIER - AT ENDS - HORIZ.
P405	160	2'-11"	X	PIER - TIES - HORIZ.
P506	18	2'-0"		PIER - DOWELS @ TOP - VERT.
P407	2	30'-10"		PIER - TOP - HORIZ.

COATED 40 LBS.
UNCOATED 2270 LBS.

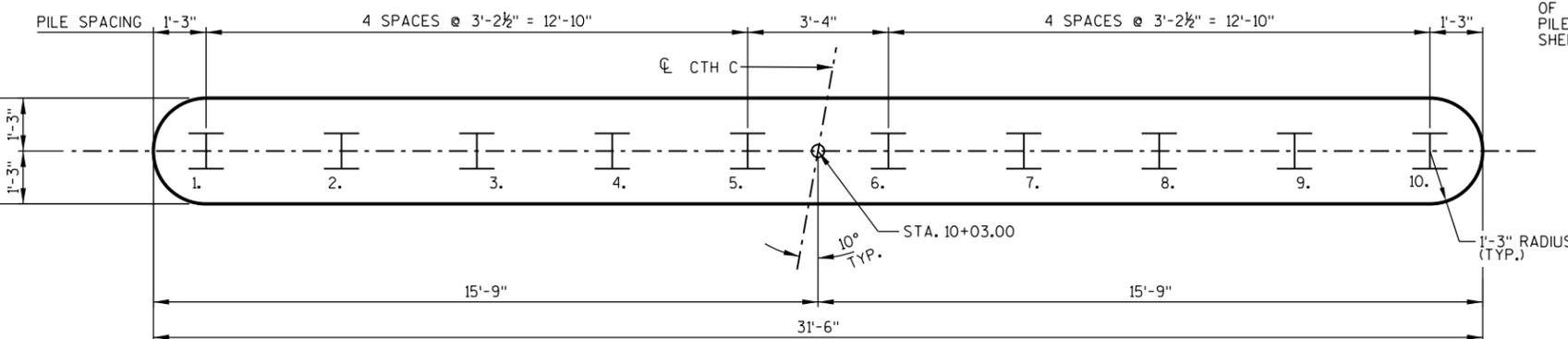
Ⓢ

Ⓢ - THESE BARS SHALL BE EPOXY COATED.

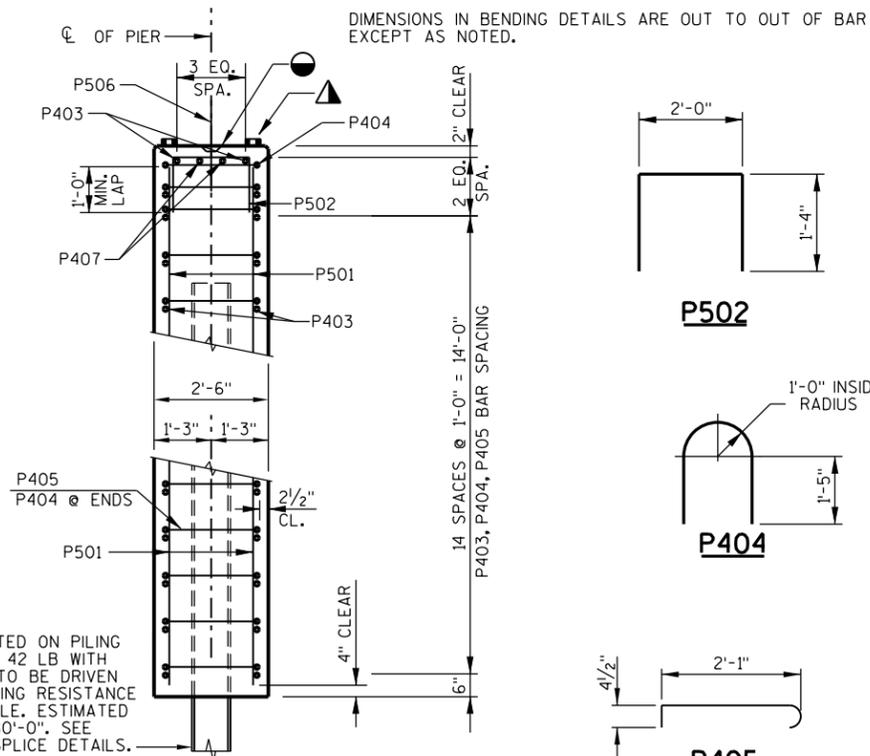
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR EXCEPT AS NOTED.



PLAN



PILE PLAN

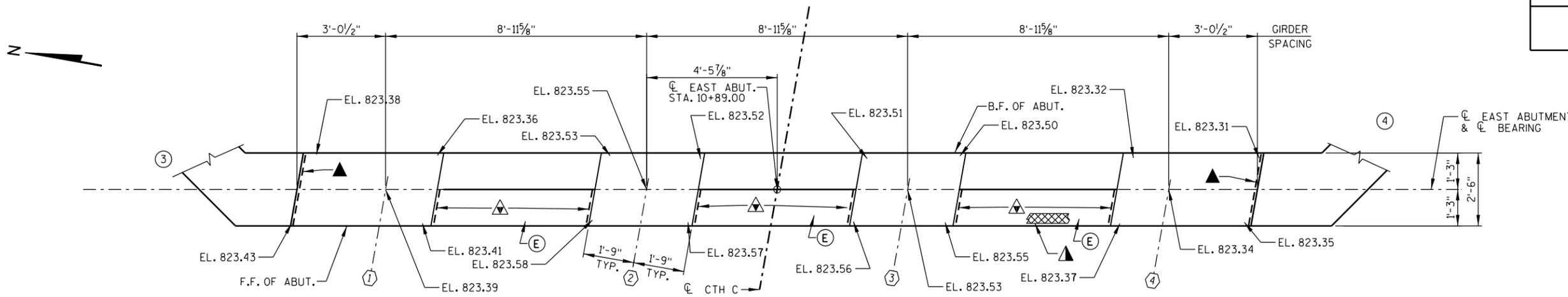


TYPICAL SECTION THRU PIER

LEGEND

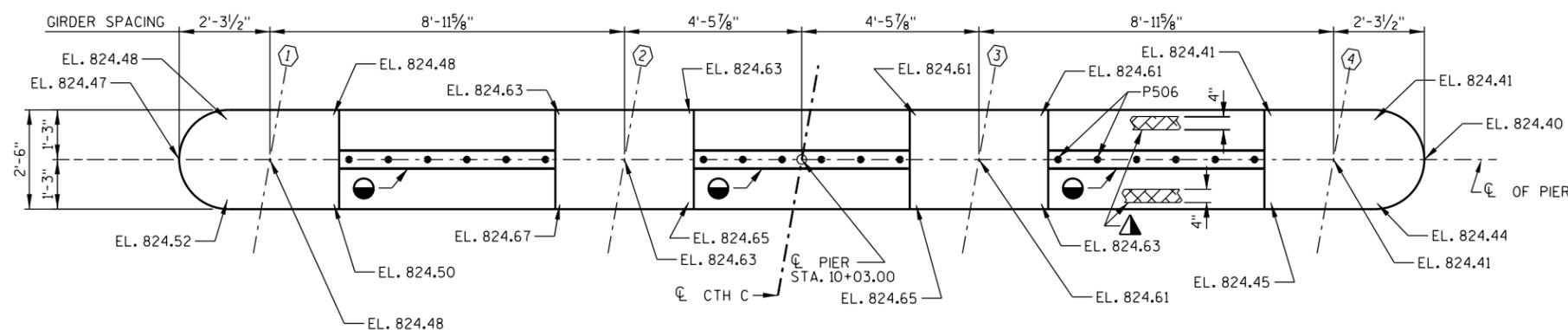
- Ⓢ - INDICATES GIRDER NUMBER.
- ▲ - 4"x 1/2" PREFORMED FILLER BETWEEN GIRDERS.
- - KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
- ✱✱ - ADJACENT TO EACH PILE ONE SIDE ONLY. ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF THE TIES.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-23-181	
DRAWN BY		CAR	PLANS CK'D. JRS
PIER			SHEET 8 OF 15



EAST ABUTMENT

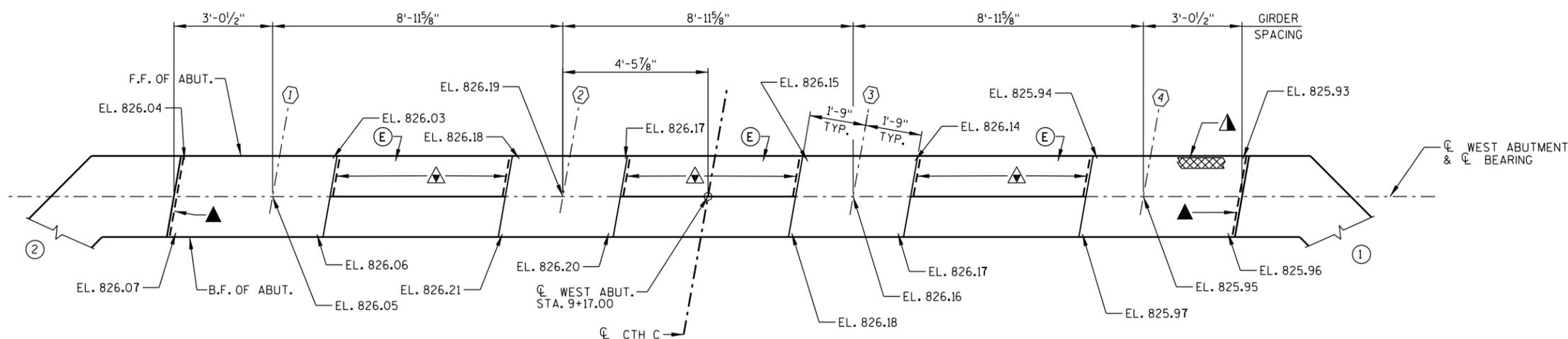
NOTE:
SLOPE BETWEEN BEAM SEATS
(TYP. AT ABUTMENTS & PIERS).



PIER

LEGEND

- - INDICATES WING NUMBER.
- ⬡ - INDICATES GIRDER NUMBER.
- ▲ - 4" x 1/2" PREFORMED FILLER BETWEEN GIRDERS, AT PIER & BETWEEN WINGWALLS AT ABUTMENTS.
- - KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
- ▲ - 1/2" JOINT FILLER.
- ⓔ - SEMI-EXPANSION POCKET, CONSTRUCT 3" DEEPER THAN SURROUNDING BEAM SEATS & BACKWALL.
- ▲ - 3/4" CORK FILLER (SIDE VERTICAL FACES ONLY) AT SEMI-EXPANSION POCKETS.



WEST ABUTMENT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-23-181	
DRAWN BY CAR		PLANS CK'D. JRS	
BEARING SEAT LAYOUT		SHEET 9 OF 15	

NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECTION 503.3.4 OF THE STANDARD SPECIFICATIONS FOR GUIDANCE.

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

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.

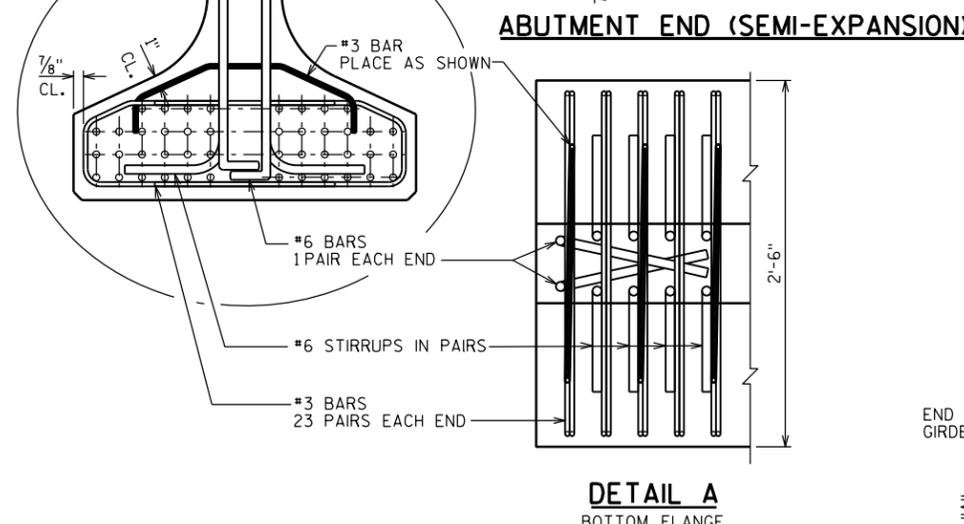
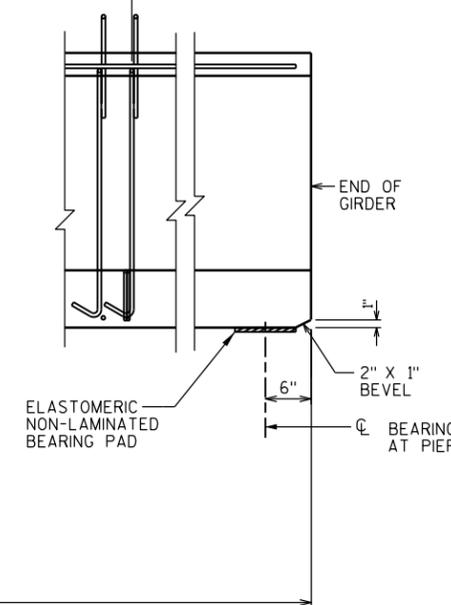
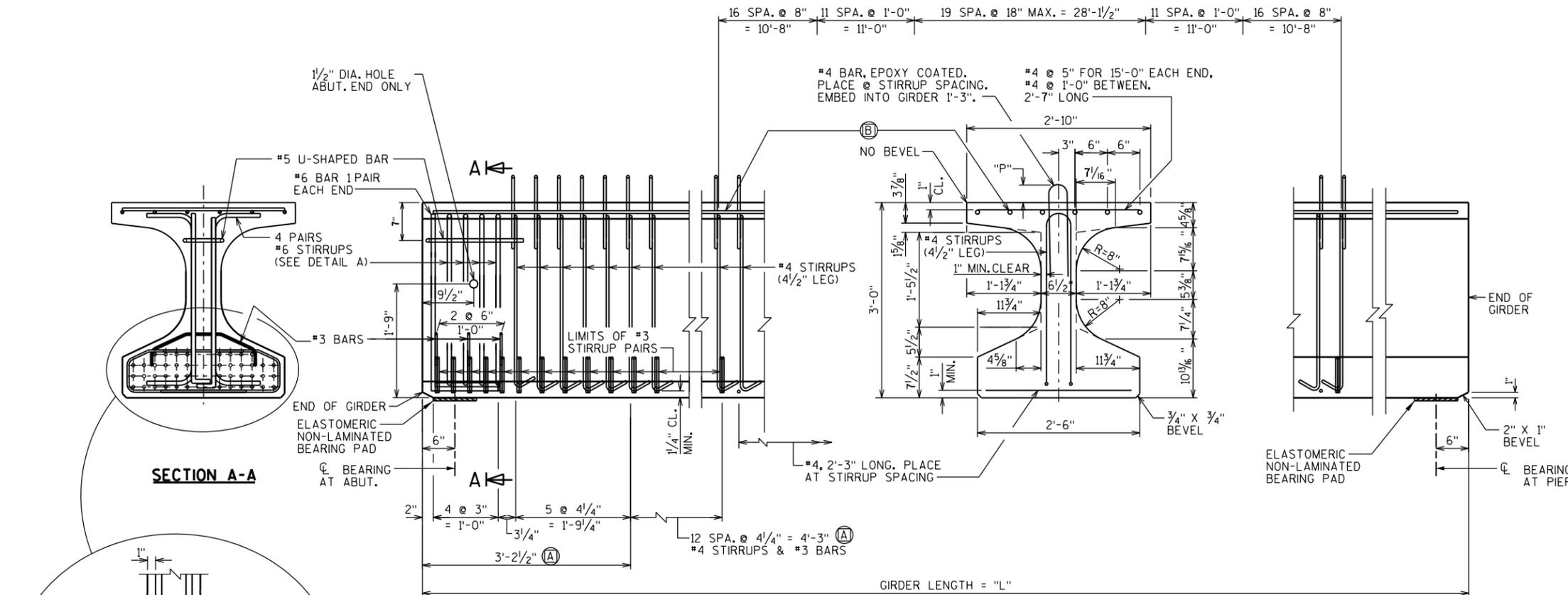
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE SHEET 12.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

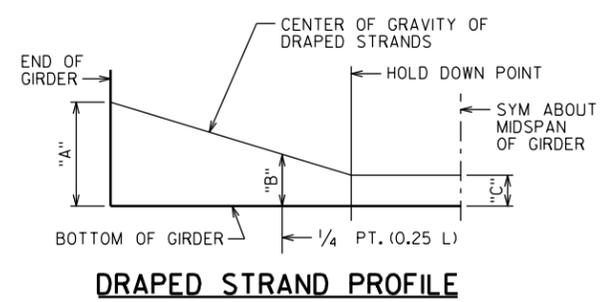
AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES MAINTENANCE SECTION.

IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.



SIDE VIEW & TYP. SECTION

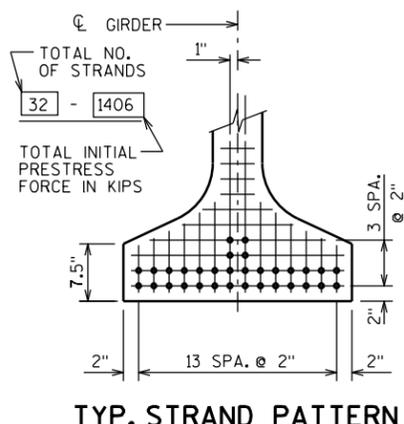
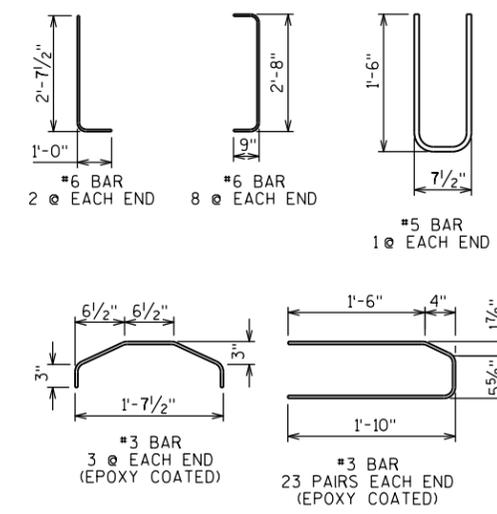
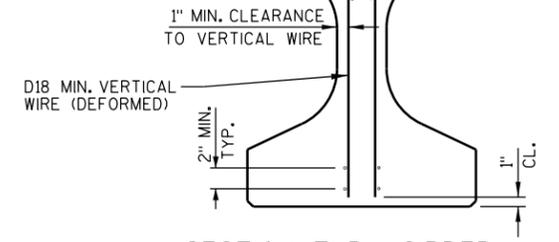
- (A) DETAIL TYP. AT EACH END
- (B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"



NO. 4 BAR, EPOXY COATED. PLACE AT STIRRUP SPACING REQUIRED FOR NON WWF STIRRUPS. EMBED INTO GIRDER 1'-3".

AREA OF HORIZ. WIRE SHALL BE ≥ 40% OF VERT. WIRE AREA (ASTM A1064)

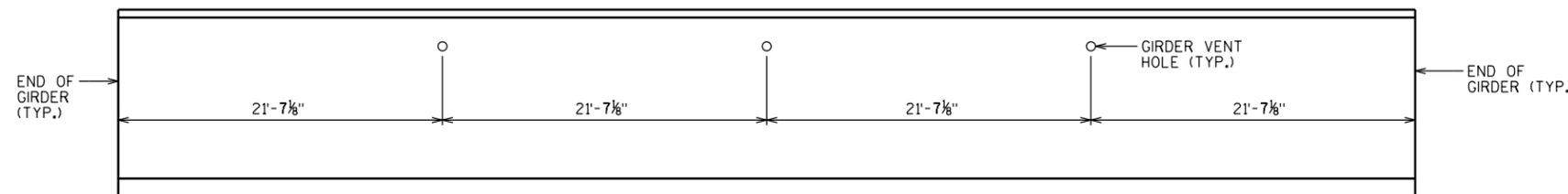
HORIZ. WIRES SHALL BE LOCATED IN TOP AND BOTTOM FLANGES AND NOT IN THE WEB.



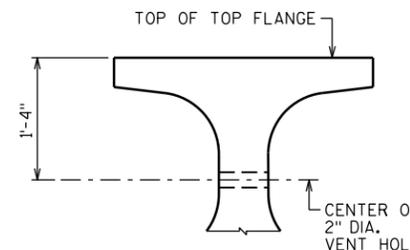
* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

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 (IN.)						
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10						9/10	TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	"A"	"B" MIN.	"B" MAX.	"C"
			0.7	1.2	1.7	2.0	2.1	2.0	1.7	1.2						0.7	8000	9.5"	7"	9.5"	0.6	32
1 & 2	1-4	86'-4 1/2"	0.7	1.2	1.7	2.0	2.1	2.0	1.7	1.2	0.7	8000	9.5"	7"	9.5"	0.6	32	6800	27	10.5	12.5	5

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-23-181	
DRAWN BY	CAR	PLANS CK'D.	JRS
36W" PRESTRESSED GIRDER DETAILS			SHEET 10 OF 15



GIRDER VENT LOCATIONS
(TYPICAL ALL GIRDERS)



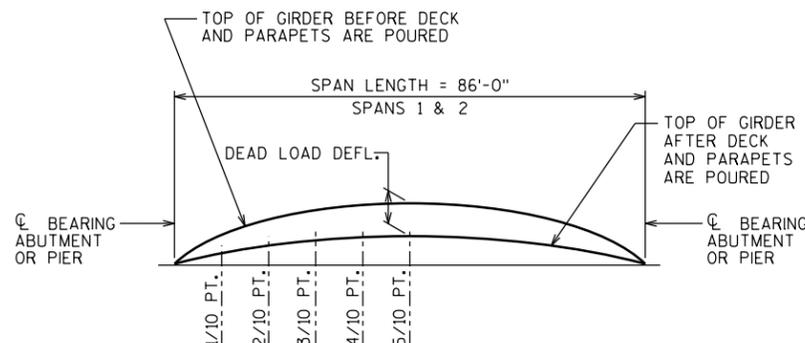
GIRDER VENT HOLE DETAIL

NOTE: 2" DIA. VENT HOLE MAY BE PRODUCED WITH A REMOVABLE OR NON-REMOVABLE FORM. THEY MAY BE SHIFTED SLIGHTLY TO AVOID CONFLICTS WITH GIRDER REINFORCING.

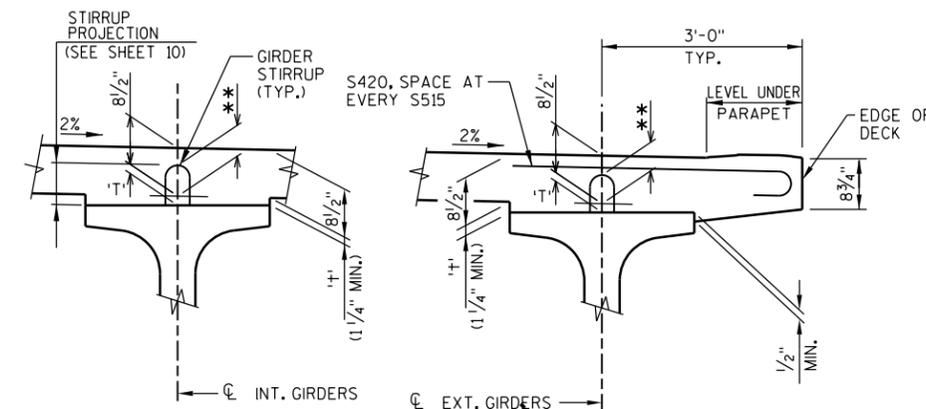
THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN. VALUES INCLUDE A MAGNIFICATION FACTOR OF 1.4 TO ACCOUNT FOR CREEP BETWEEN RELEASE AND INSTALLATION.

SPAN	CAMBER (IN.)
1 & 2	3.6

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



DEAD LOAD DEFLECTION DIAGRAM



DECK HAUNCH DETAIL

IF 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 DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, ** IF 3" MINIMUM DECK EMBEDMENT OF THE BAR CANNOT BE OBTAINED.

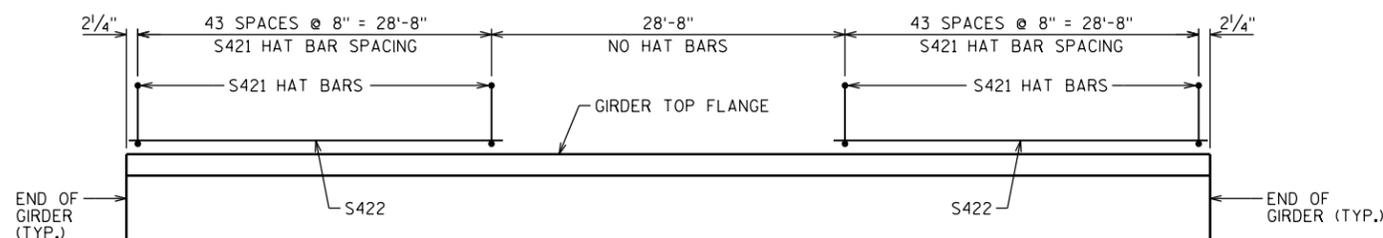
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT C/L OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

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

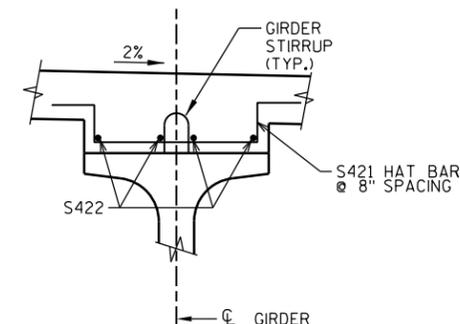
NOTE: AN AVERAGE HAUNCH ('T') OF 3 5/8" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

TOP OF DECK ELEVATIONS

LOCATION	SPAN POINT	SOUTH PARAPET FACE	GIRDER 4	GIRDER 3	C/L CTH C	GIRDER 2	GIRDER 1	NORTH PARAPET FACE
W. ABUT.	1	830.06	830.10	830.31	830.42	830.35	830.20	830.17
	1.1	829.89	829.93	830.14	830.24	830.17	830.02	829.99
	1.2	829.72	829.76	829.96	830.07	829.99	829.85	829.82
	1.3	829.55	829.59	829.80	829.90	829.83	829.68	829.65
	1.4	829.39	829.43	829.63	829.74	829.66	829.52	829.49
	1.5	829.23	829.27	829.48	829.58	829.51	829.36	829.33
	1.6	829.08	829.12	829.32	829.43	829.35	829.20	829.17
	1.7	828.93	828.97	829.18	829.28	829.20	829.05	829.02
	1.8	828.79	828.83	829.03	829.13	829.06	828.91	828.88
PIER	2	828.65	828.69	829.00	829.00	828.92	828.77	828.74
	2.1	828.52	828.56	828.76	828.86	828.79	828.63	828.60
	2.2	828.40	828.43	828.63	828.73	828.66	828.50	828.47
	2.3	828.27	828.31	828.51	828.61	828.53	828.38	828.35
	2.4	828.16	828.19	828.39	828.49	828.41	828.26	828.23
	2.5	828.04	828.08	828.28	828.38	828.30	828.14	828.11
	2.6	827.93	827.97	828.17	828.27	828.19	828.03	828.00
	2.7	827.83	827.87	828.07	828.16	828.08	827.93	827.89
	2.8	827.73	827.77	827.97	828.06	827.98	827.82	827.79
E. ABUT	2.9	827.64	827.68	827.87	827.97	827.89	827.73	827.70
	3	827.55	827.59	827.78	827.88	827.80	827.64	827.60

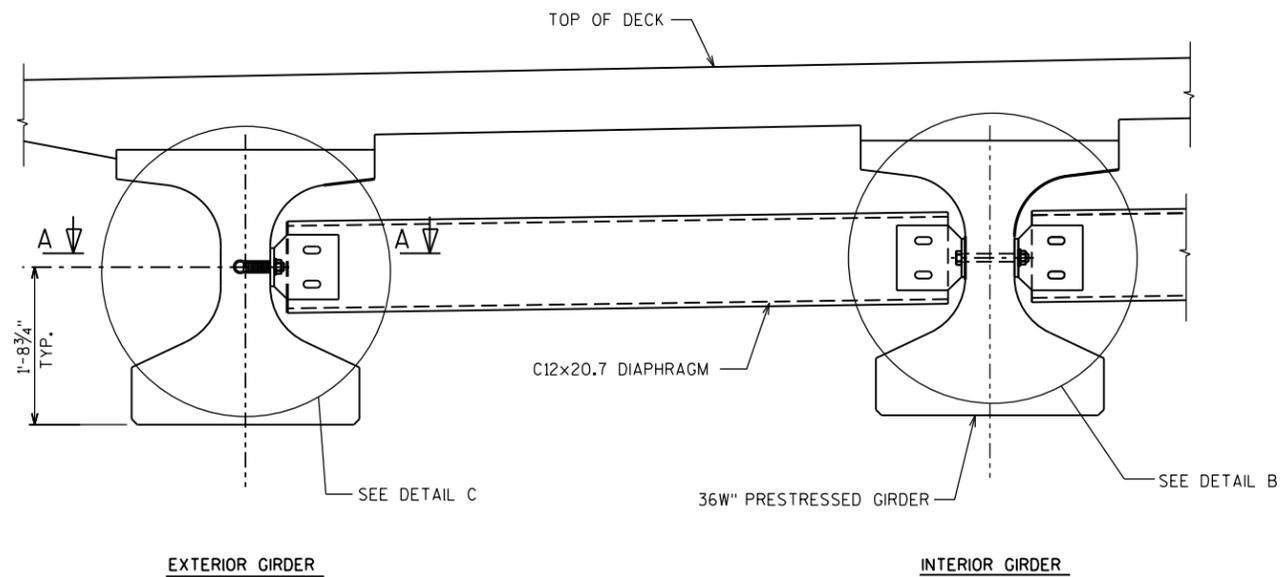


HAT BAR SPACING
(TYPICAL ALL GIRDERS)

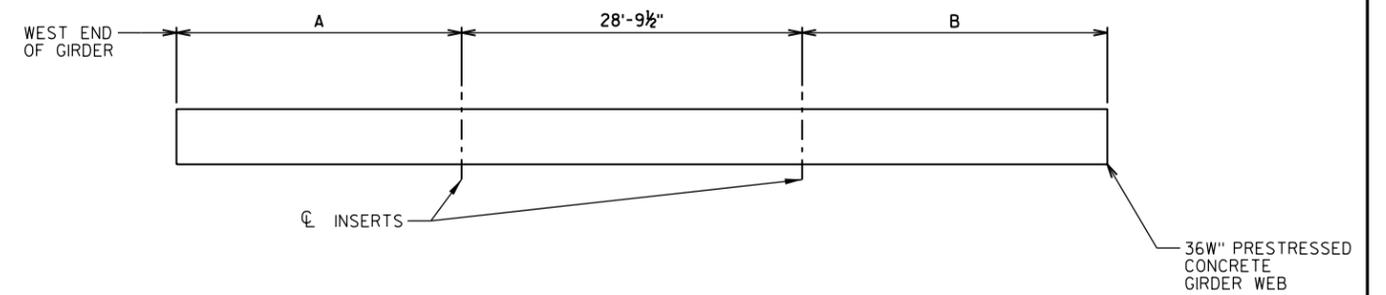


HAT BAR DETAIL
(TYPICAL ALL GIRDERS)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-23-181			
DRAWN BY RLR		PLANS CK'D. JRS	
GIRDER AND DECK FORMING DETAILS			SHEET 11 OF 15



PART TRANSVERSE SECTION AT DIAPHRAGM

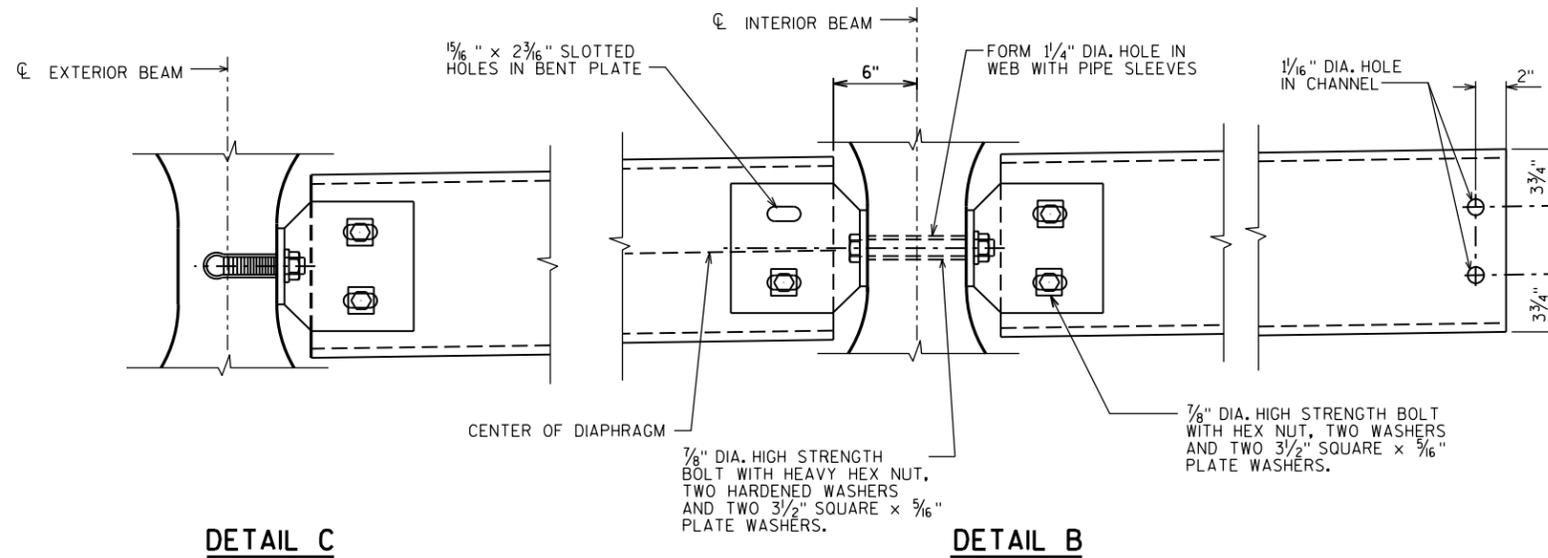


DIAPHRAGM INSERT LOCATION PLAN

SEE PLAN, SHEET 13

DIAPHRAGM INSERT LOCATION TABLE

SPAN	GIRDER NUMBER	A	B	INSERT TYPE
1	1	31'-1 1/2"	26'-5 1/2"	FERRULE LOOPS
	2	29'-6 7/8"	28'-0 1/8"	PIPE SLEEVES
	3	28'-0 1/8"	29'-6 7/8"	PIPE SLEEVES
	4	26'-5 1/2"	31'-1 1/2"	FERRULE LOOPS
2	1	31'-1 1/2"	26'-5 1/2"	FERRULE LOOPS
	2	29'-6 7/8"	28'-0 1/8"	PIPE SLEEVES
	3	28'-0 1/8"	29'-6 7/8"	PIPE SLEEVES
	4	26'-5 1/2"	31'-1 1/2"	FERRULE LOOPS



DETAIL C

DETAIL B

NOTES

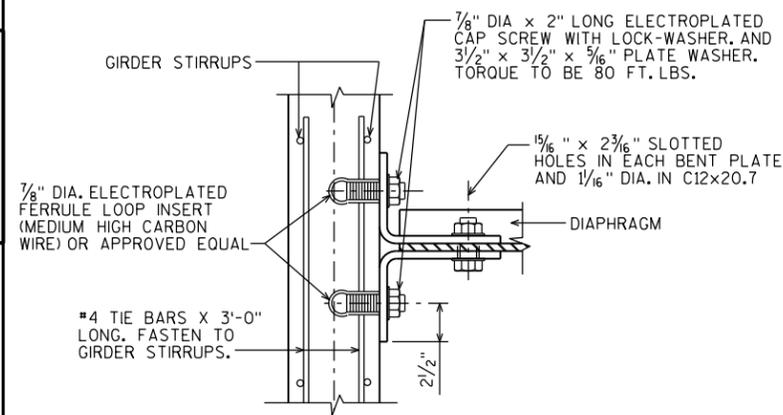
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-23-181", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

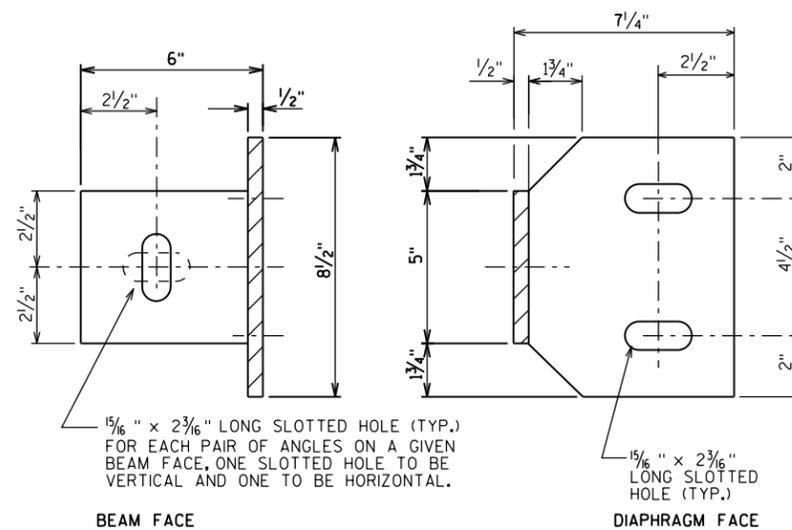
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS OF ASTM A325 OR ASTM A449.

8



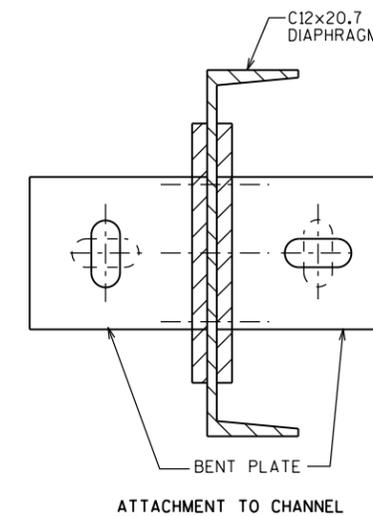
SECTION A-A

(FOR EXTERIOR ATTACHMENT)



BEAM FACE

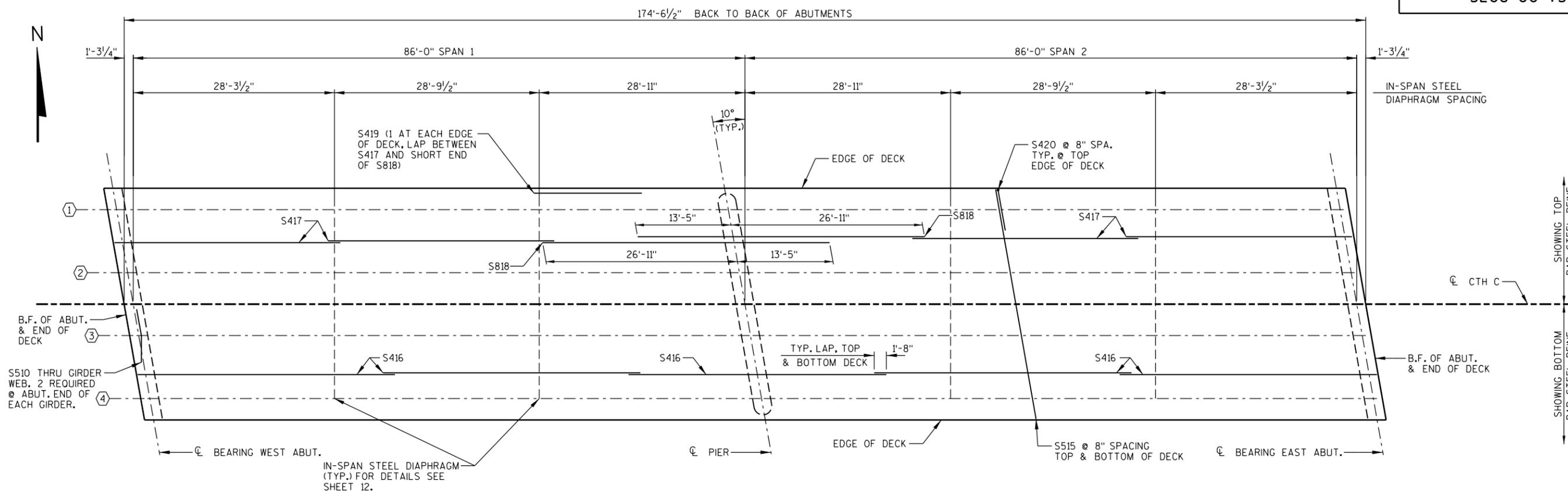
DIAPHRAGM FACE



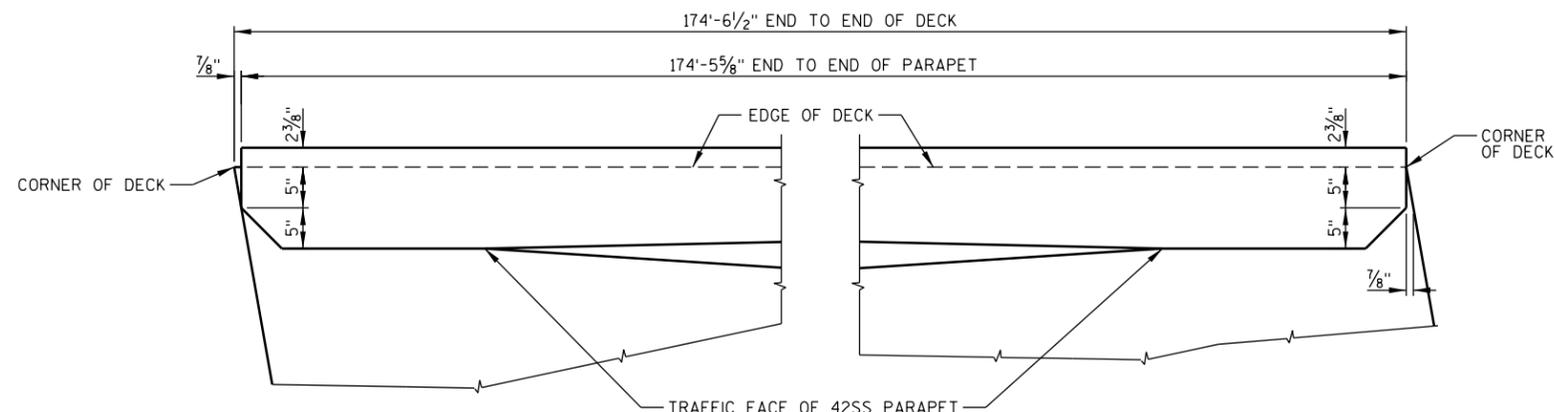
ATTACHMENT TO CHANNEL

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-23-181	
DRAWN BY		CAR	PLANS CK'D. JRS
STEEL DIAPHRAGM			SHEET 12 OF 15



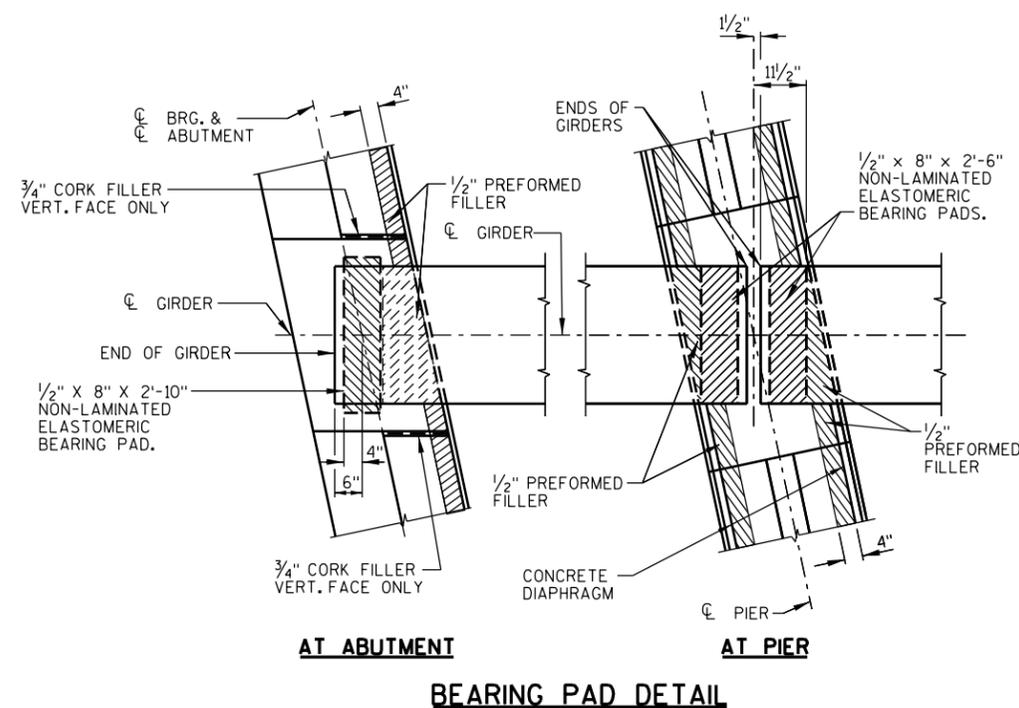
PLAN



PLAN AT WINGS 2 & 4

PLAN AT WINGS 1 & 3

PARAPET/CORNER OF DECK DETAILS



GENERAL NOTES

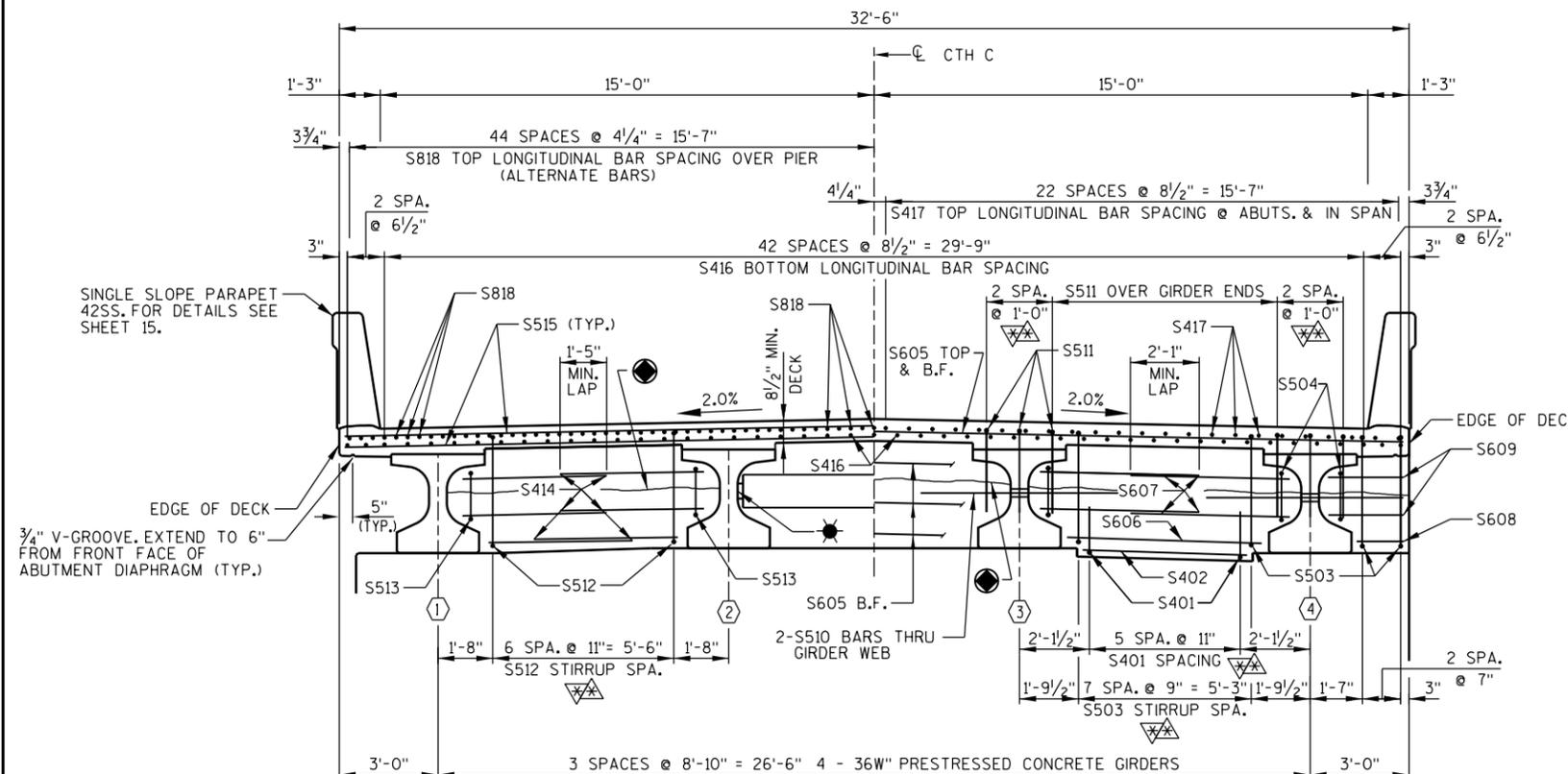
- - INDICATES GIRDER NUMBER
- PLACE ALL TRANSVERSE BARS ON THE SKEW.
- SEE CROSS SECTION THRU BRIDGE ON SHEET 14 FOR TYPICAL LONGITUDINAL BAR SPACING.
- SEE PART LONGITUDINAL SECTION ON SHEET 14 FOR TRANSVERSE BAR SPACING.
- SEE SHEET 15 FOR ADDITIONAL 42SS PARAPET DETAILS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-23-181			
DRAWN BY RLR		PLANS CK'D. JRS	
SUPERSTRUCTURE			SHEET 13 OF 15

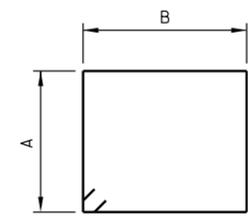
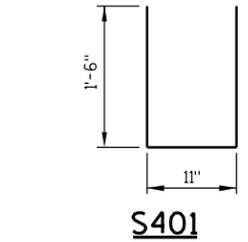
BILL OF BARS (COATED) 44,225 LBS.

MARK	NUMBER REQ'D.	LENGTH	BENT	DESCRIPTION
S401	36	3'-9"	X	DIAPH. @ ABUT. - SEMI-EXP. POCKET - STIRRUP - VERT
S402	12	5'-0"		DIAPH. @ ABUT. - SEMI-EXP. POCKET - HORIZ.
S503	60	12'-2"	X	DIAPH. @ ABUT. - STIRRUP - VERT.
S504	16	7'-8"	X	DIAPH. @ ABUT. - STIRRUP - VERT.
S605	10	32'-7"		DIAPH. @ ABUT. - B.F. & TOP - HORIZ.
S606	6	6'-0"		DIAPH. @ ABUT. - F.F. - INTERIOR BAYS - HORIZ.
S607	24	4'-11"		DIAPH. @ ABUT. - F.F. - INTERIOR BAYS - HORIZ.
S608	4	1'-5"		DIAPH. @ ABUT. - F.F. @ ENDS - HORIZ.
S609	8	2'-3"		DIAPH. @ ABUT. - F.F. @ ENDS - HORIZ.
S510	16	6'-0"	X	DIAPH. @ ABUT. - 2 THRU GIRDER WEB - HORIZ.
S511	24	4'-2"	X	DIAPH. @ ABUT. - OVER GIRDER ENDS - LONGIT.
S512	21	9'-8"	X	DIAPH. @ PIER - STIRRUP - VERT.
S513	6	7'-8"	X	DIAPH. @ PIER - STIRRUP - VERT.
S414	36	4'-5"		DIAPH. @ PIER - HORIZ.
S515	523	32'-7"		DECK - TOP & BOTTOM - TRANS.
S416	235	36'-2"		DECK - BOTTOM - LONGIT.
S417	184	31'-10"		DECK - TOP @ ABUTS. & IN SPAN - LONGIT.
S818	89	40'-4"		DECK - TOP - OVER PIER - LONGIT.
S419	2	15'-2"		DECK - TOP @ EDGE - LONGIT.
S420	524	4'-5"	X	DECK - TOP @ EDGE - TRANS.
S421	704	4'-6"	X	DECK - HAT BARS OVER GIRDERS - TRANS.
S422	64	29'-2"		DECK - OVER GIRDERS - LONGIT.

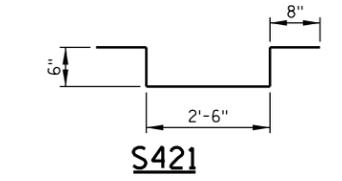
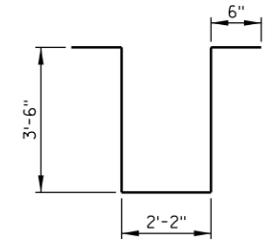
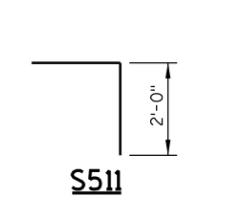
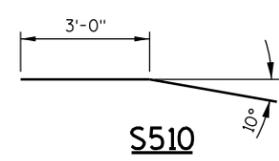
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
EPOXY COAT ALL SUPERSTRUCTURE BAR REINFORCEMENT.



AT PIER IN SPAN AT ABUTMENTS
CROSS SECTION THRU BRIDGE
(LOOKING EAST)

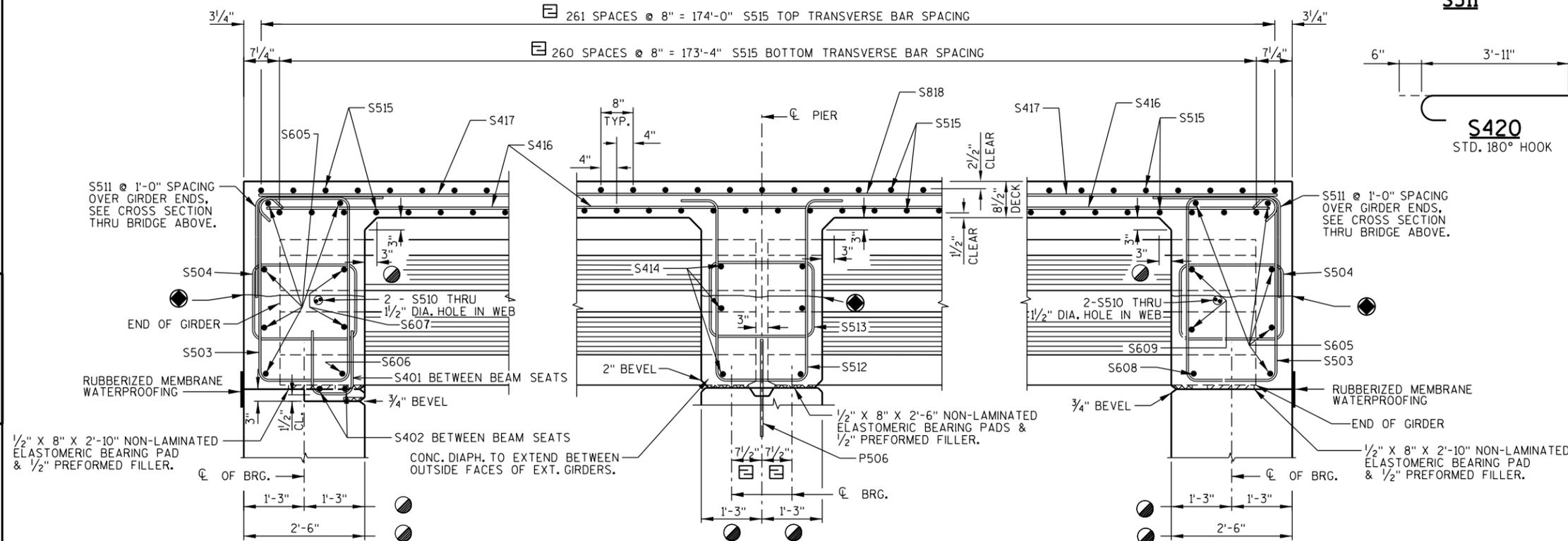


MARK	A	B
S503	3'-7"	2'-2"
S504	1'-4"	2'-2"
S513	1'-4"	2'-2"



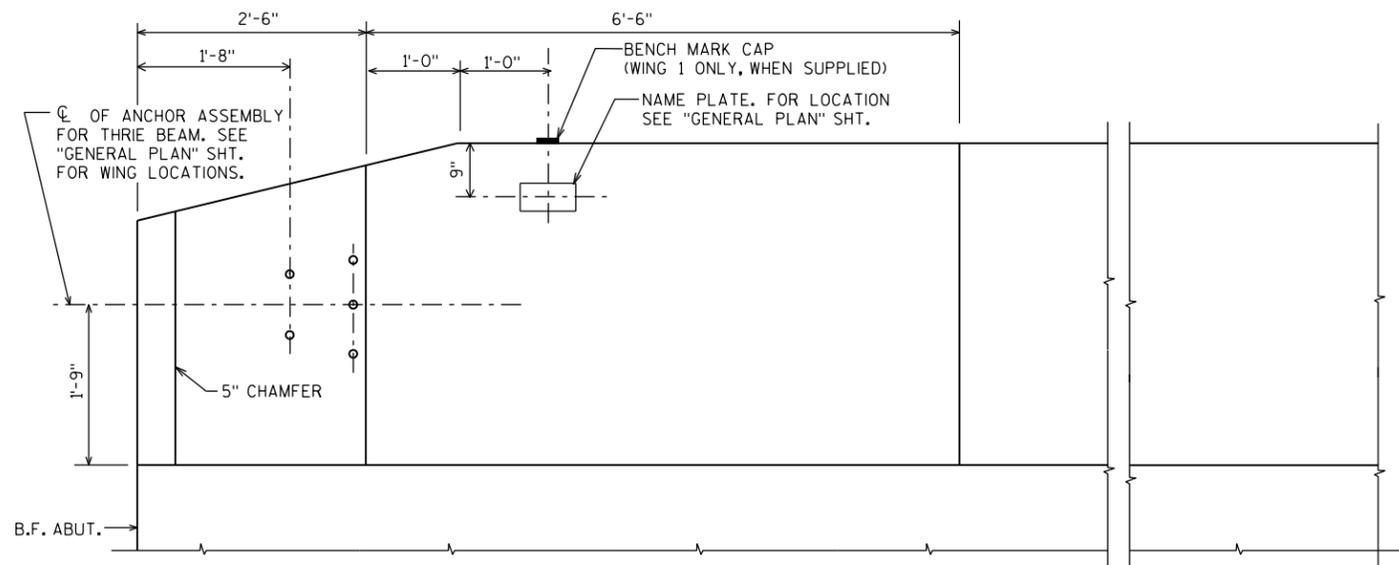
LEGEND

- - INDICATES GIRDER NUMBER
- - OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDER. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR. (TYP. ALL BAYS)
- ⊙ - FOR LAYOUT, SPACING AND DETAILS OF STEEL DIAPHRAGMS, SEE SHEET 12.
- ⊙ - DIMENSION IS TAKEN NORMAL TO SUBSTRUCTURE UNITS.
- ⊙ - DIMENSION IS TAKEN NORMAL TO GIRDER.
- ⊙ - DIMENSION IS TAKEN PARALLEL TO GIRDER.
- F.F. - FRONT FACE
- B.F. - BACK FACE

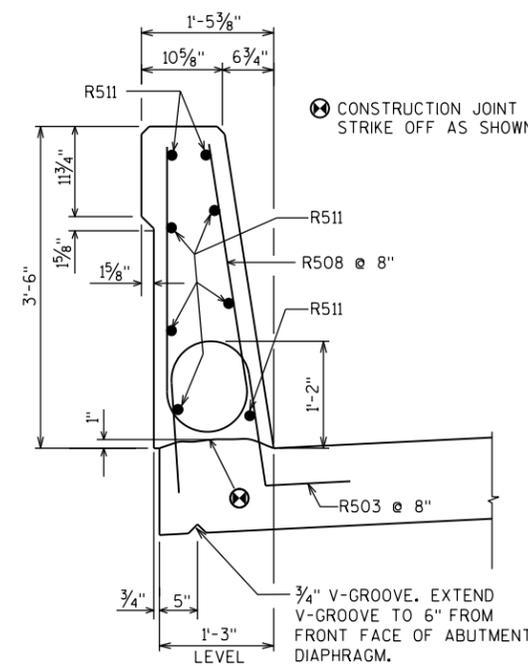


AT ABUTMENT INTERIOR BAYS AT PIER DIAPHRAGM AT ABUTMENT ENDS
PART LONGITUDINAL SECTION

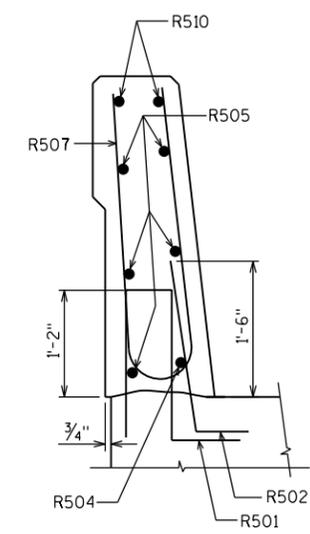
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-23-181			
DRAWN BY RLR		PLANS CK'D. JRS	
SUPERSTRUCTURE SECTIONS & DETAILS			SHEET 14 OF 15



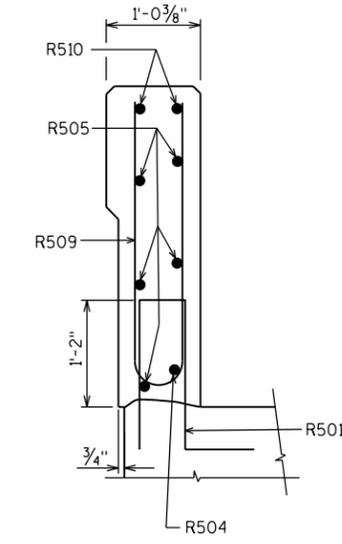
INSIDE ELEVATION



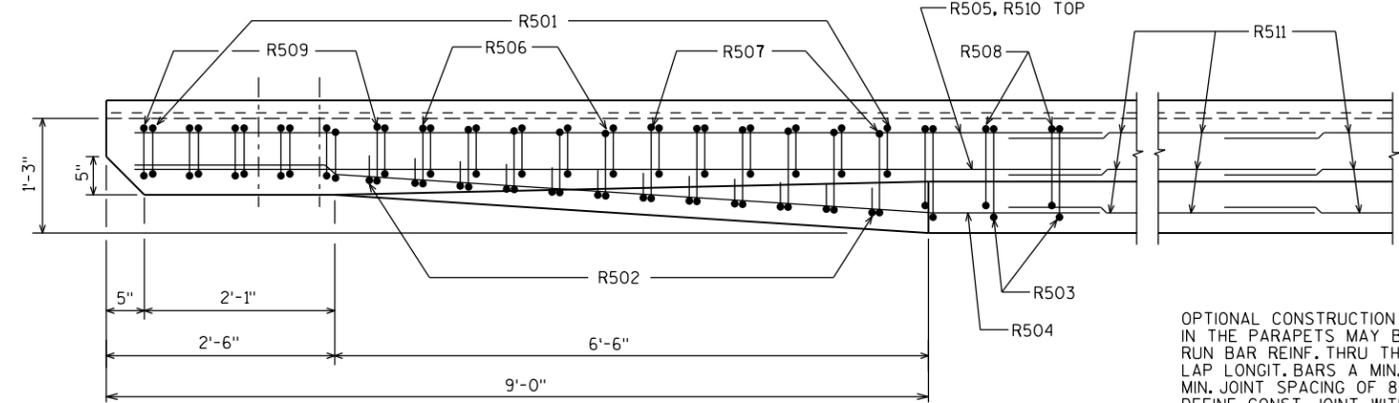
SECTION C-C THRU PARAPET



SECTION B-B AT END OF PARAPET

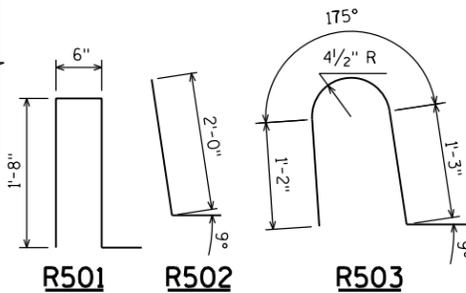


SECTION A-A AT END OF PARAPET



PLAN

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" V-GROOVE.



R501 R502 R503

BILL OF BARS (COATED) 9,385 LBS.

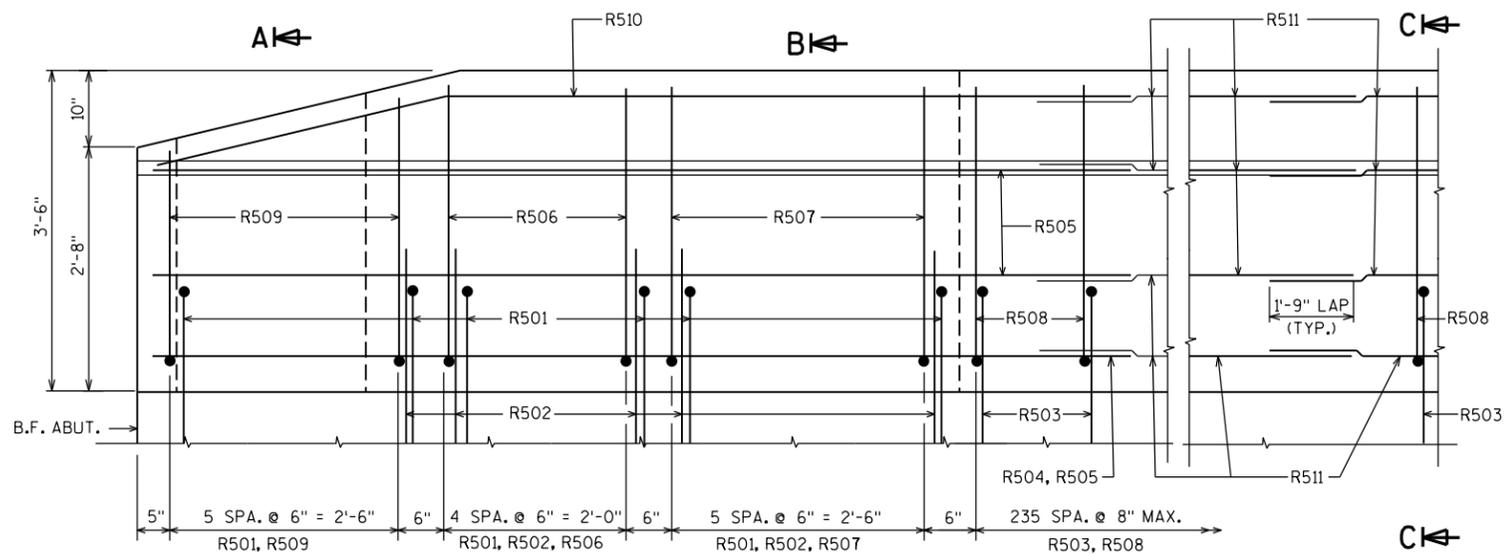
MARK	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
R501	68	4'-4"	X		DECK & PARAPET END - STIRRUP - VERT.
R502	48	2'-9"	X		DECK & PARAPET END - VERT.
R503	472	4'-5"	X		DECK & PARAPET - STIRRUP - VERT.
R504	4	11'-5"	X		PARAPET END - BOTTOM - LONGIT.
R505	20	11'-5"			PARAPET END - LONGIT.
R506	20	6'-5"	X		PARAPET END - STIRRUP - VERT.
R507	24	6'-6"	X		PARAPET END - STIRRUP - VERT.
R508	472	6'-8"	X		PARAPET - STIRRUP - VERT.
R509	24	5'-5"	X		PARAPET END - STIRRUP - VERT.
R510	8	11'-6"	X		PARAPET END - TOP - LONGIT.
R511	64	40'-0"			PARAPET - LONGIT.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR. EPOXY COAT ALL SUPERSTRUCTURE BAR STEEL REINFORCEMENT. LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS. BEND BAR AFTER CUTTING.

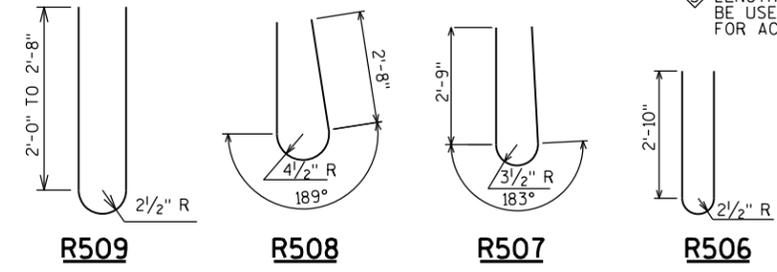
BAR SERIES TABLE

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

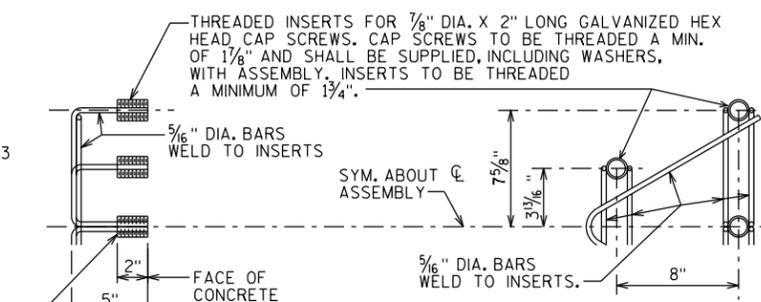
BUNDLE AND TAG EACH SERIES SEPARATELY.



OUTSIDE ELEVATION

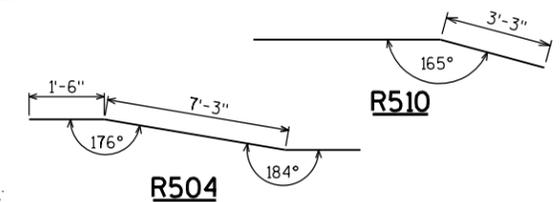


R509 R508 R507 R506



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C. ASSEMBLY BID ITEM SHALL BE "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

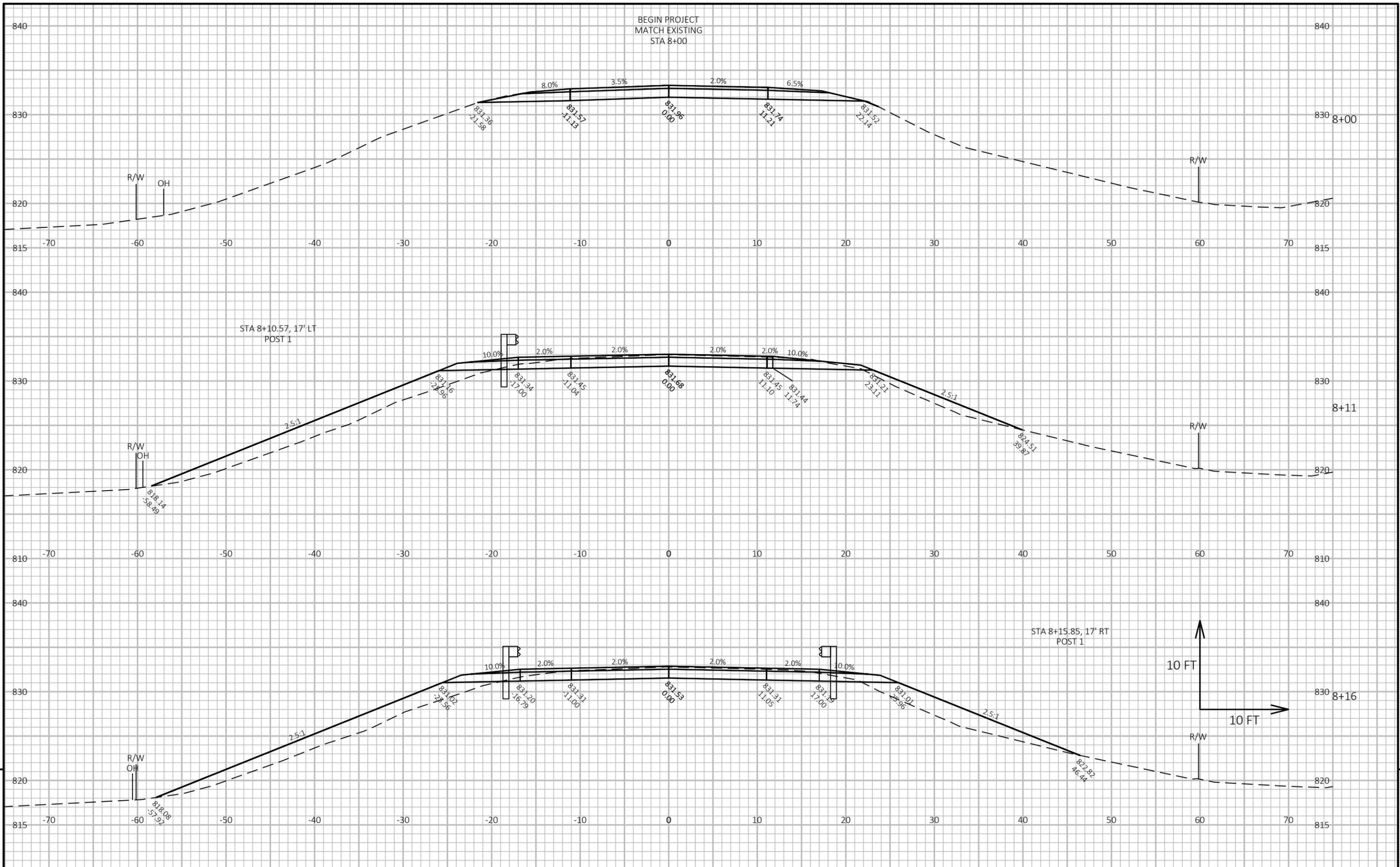


R504

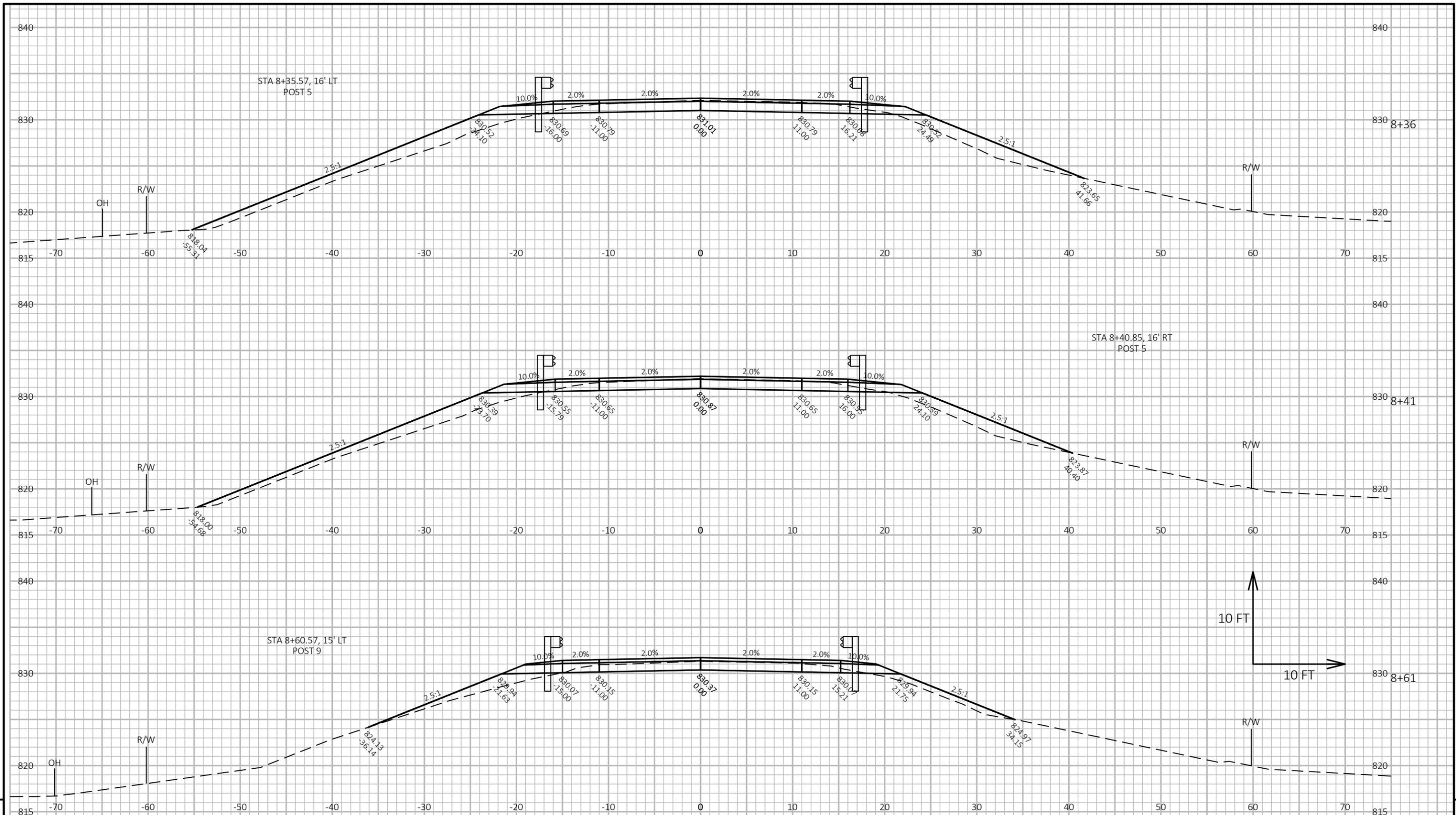
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-23-181	
DRAWN BY		RLR	PLANS CK'D. JRS
SINGLE SLOPE PARAPET 42SS			SHEET 15 OF 15

EARTHWORK SUMMARY

STA	EXCAVATION		EXPANDED		WASTE CY	BORROW CY
	COMMON CY	ROCK CY	FILL (1) CY	FILL (2) CY		
8+00.00	-	-	-	-	-	-
	18.00	0.00	14.00	18.00	0.00	0.00
8+11.00	-	-	-	-	-	-
	8.00	0.00	14.00	18.00	-10.00	10.00
8+16.00	-	-	-	-	-	-
	27.00	0.00	53.00	69.00	-42.00	42.00
8+36.00	-	-	-	-	-	-
	6.00	0.00	10.00	13.00	-7.00	7.00
8+41.00	-	-	-	-	-	-
	21.00	0.00	27.00	35.00	-14.00	14.00
8+61.00	-	-	-	-	-	-
	5.00	0.00	4.00	5.00	0.00	0.00
8+66.00	-	-	-	-	-	-
	28.00	0.00	48.00	62.00	-34.00	34.00
9+00.00	-	-	-	-	-	-
	12.00	0.00	16.00	21.00	-9.00	9.00
9+15.73	-	-	-	-	-	-
STRUCTURE B-23-0181						
10+90.27	-	-	-	-	-	-
	9.00	0.00	8.00	10.00	-1.00	1.00
11+00.00	-	-	-	-	-	-
	26.00	0.00	34.00	44.00	-18.00	18.00
11+25.00	-	-	-	-	-	-
	17.00	0.00	14.00	18.00	-1.00	1.00
11+40.00	-	-	-	-	-	-
	6.00	0.00	4.00	5.00	1.00	-1.00
11+45.00	-	-	-	-	-	-
	26.00	0.00	21.00	27.00	-1.00	1.00
11+65.00	-	-	-	-	-	-
	7.00	0.00	7.00	9.00	-2.00	2.00
11+70.00	-	-	-	-	-	-
	30.00	0.00	33.00	43.00	-13.00	13.00
11+90.00	-	-	-	-	-	-
	8.00	0.00	8.00	10.00	-2.00	2.00
11+95.00	-	-	-	-	-	-
	8.00	0.00	3.00	4.00	4.00	-4.00
12+00.00	-	-	-	-	-	-
SUBTOTALS						
W. APPROACH	125.00	0.00	186.00	241.00	-116.00	116.00
E. APPROACH	137.00	0.00	132.00	170.00	-33.00	33.00
UNUSABLE PAVEMENT (3)						161.00
TOTALS	262.00	0.00	318.00	411.00	-149.00	310.00
(1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY.						
(2) - FILL EXPANSION 30%						
(3) - EXISTING PAVEMENT BASED ON AVE THK OF 10.5"						



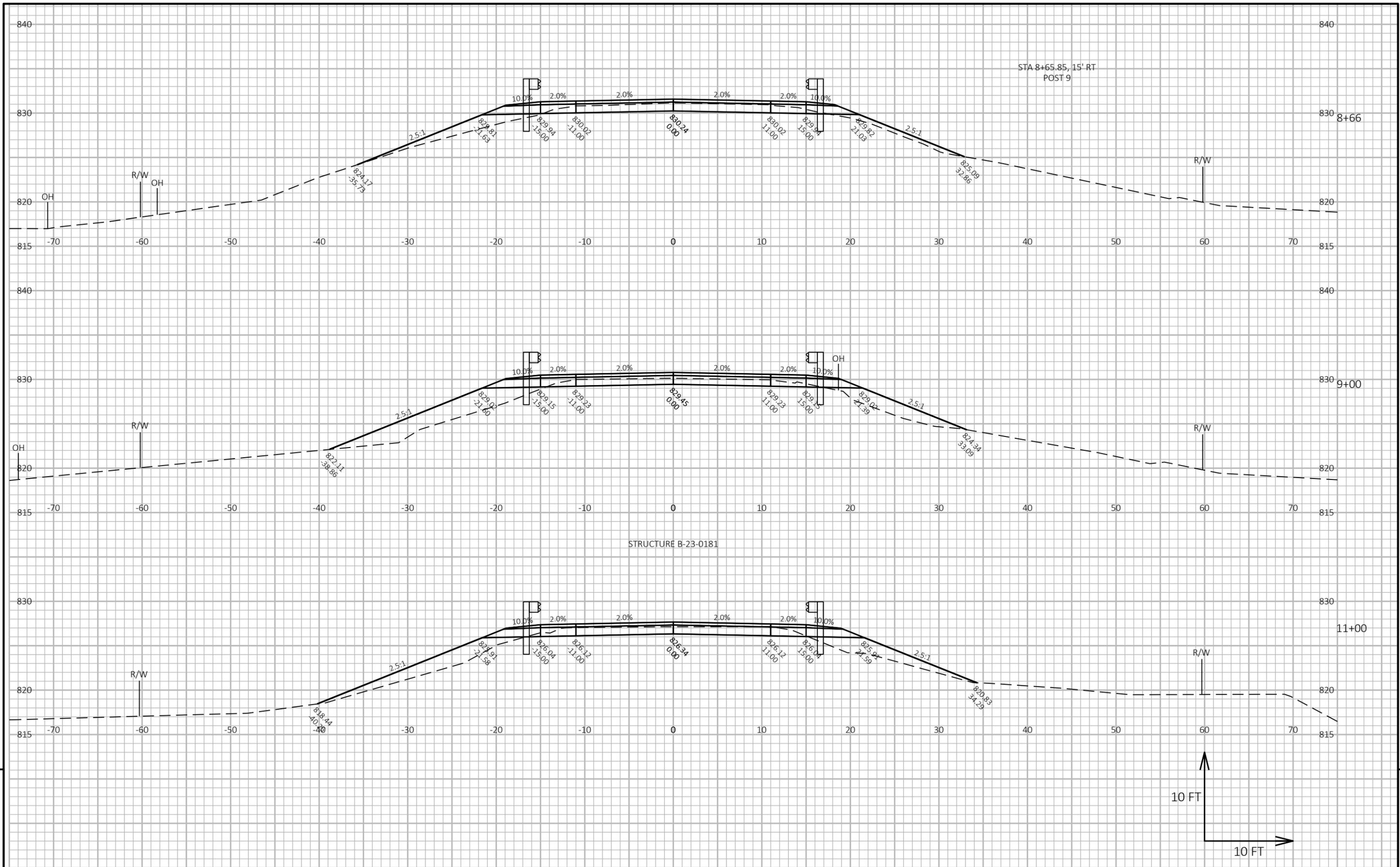
PROJECT NO: 5208-00-73	HWY: CTH C	COUNTY: GREEN	CROSS SECTIONS: CTH C	SHEET
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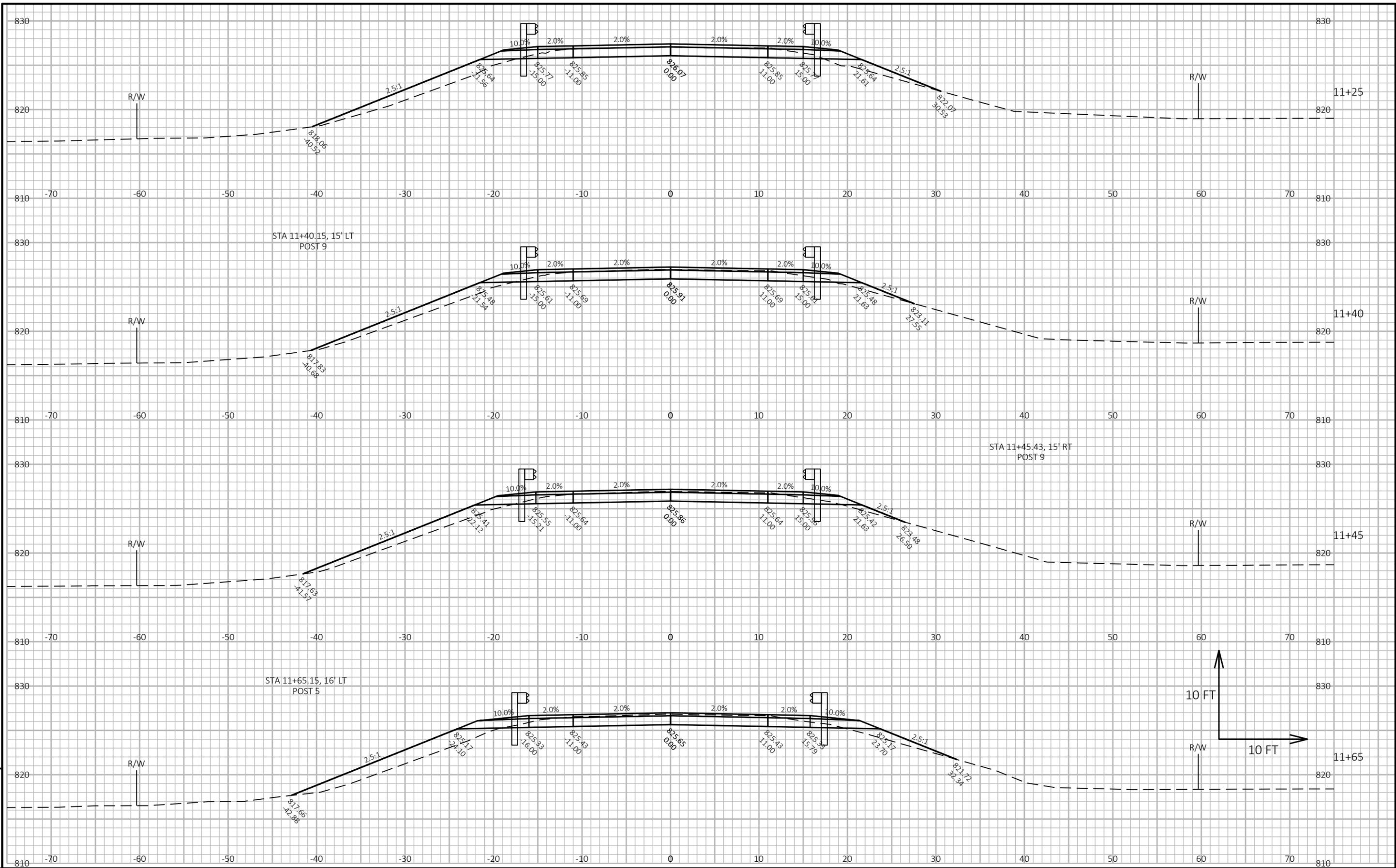
9

9

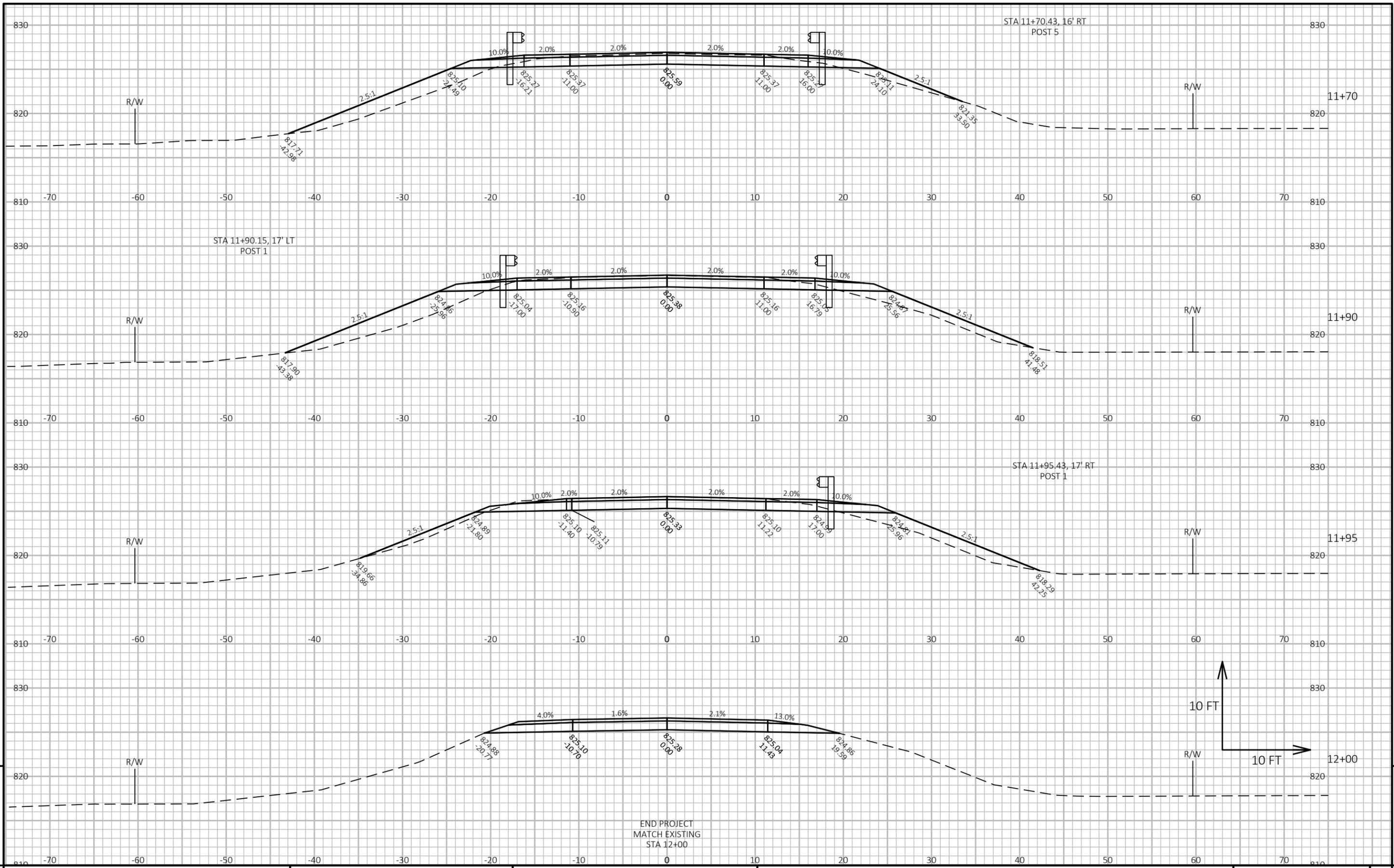
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PROJECT NO: 5208-00-73	HWY: CTH C	COUNTY: GREEN	CROSS SECTIONS: CTH C	SHEET	E
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PROJECT NO: 5208-00-73	HWY: CTH C	COUNTY: GREEN	CROSS SECTIONS: CTH C	SHEET E
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9

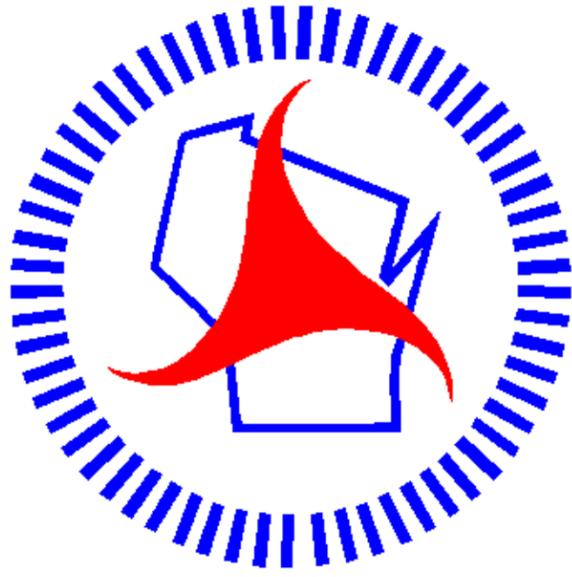
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PROJECT NO: 5208-00-73 HWY: CTH C COUNTY: GREEN CROSS SECTIONS: CTH C SHEET E

FILE NAME : G:\00\00239\00239042\C3D\DESIGN\CORRIDORS\CTH C GREEN CO CRDR.DWG PLOT DATE : 5/24/2022 8:37 AM PLOT BY : CONNOR GIRTEN PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 090205-xs

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

<http://www.dot.wisconsin.gov>