Section No.

Section No.

Section No.

Section No.

Section No. Section No.

Section No.

TOTAL SHEETS = 126

SEPTEMBER 2025 **STATE OF WISCONSIN** ORDER OF SHEETS Section No. **DEPARTMENT OF TRANSPORTATION** Section No. Typical Sections and Details

T47N

2

PLAN OF PROPOSED IMPROVEMENT

INO - ASHLAND

NORTH FISH CREEK BRIDGE B-04-0022

USH 2 **BAYFIELD COUNTY**

STATE PROJECT NUMBER 1180-00-79

GER

Estimate of Quantities

Plan and Profile

Cross Sections

Miscellaneous Quantities

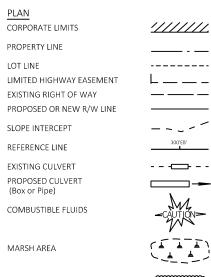
Standard Detail Drawings

Computer Earthwork Data

DESIGN DESIGNATION 1180-00-09

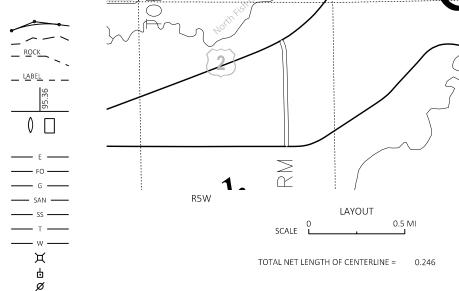
AADT 2025 = 7490 A.A.D.T. 2045 = 8340 = 1650 D.H.V. D.D. = 61/39 = 12.6% DESIGN SPEED = 60 MPH = 2,900,000

CONVENTIONAL SYMBOLS



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 SANITARY SEWER STORM SEWER TELEPHONE UTILITY PEDESTAL POWER POLE TELEPHONE POLE



G

SAJDAK RFURTH \Box \cap HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), BAYFIELD 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 12

T47N

FEDERAL PROJECT STATE PROJECT CONTRACT PROJECT WISC 2025610 1 1180-00-79

PREPARED BY MICK HEBERLEIN Surveyor Designer Project Manage JEFF OLSON

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

APPROVED FOR THE DEPARTMENT Jeffrey G. Digitally signed by Jeffrey G. Olson Olson Date: 0.05.04.29 07.55.33-05'00'

(Signature)

Ε

4/29/2025 6:55 AM

 $\overline{\mathbb{Z}}$

END PROJECT STA 1414+92 X = 797370.6011

BRIDGE B-04-0022

X = 796982.3441

Y = 454254.7269

BEGIN PROJECT

STA 1401+00

X = 796495.9467

STA 1409+02.04

WOODED OR SHRUB AREA

FILE NAME: C:\CIVIL 3D PROJECTS\11800009\SHEETS-PLAN\11800009_TIT.DWG

PEARSON, MICHAEL R

UTILITIES CONTACTS

BRIGHTSPEED OF NORTH CENTRAL WISCONSIN LLC COMMUNICATION LINE

BEN BAKER 135 N. 21ST STREET SUPERIOR, WI 54880 PHONE: 980-376-1560

EMAIL: BEN.BAKER@BRIGHTSPEED.COM

XCEL ENERGY NATURAL GAS JOHN KELSER 1400 WESTERN AVE. EAU CLAIRE, WI 54701 PHONE: 715-737-6020

EMAIL: JOHN.KELSER@XCELENERGY.COM

COMMUNICATION **GUY FOLSOM** P.O. BOX 67 CABLE, WI 54821 PHONE: 715-798-7123

XCEL ENERGY ELECTRICITY JOHN KELSER 1400 WESTERN AVE. EAU CLAIRE, WI 54701

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES TYPICAL SECTIONS CONSTRUCTION DETAILS

NORVADO

EMAIL: GFOLSOM@NORVADO.COM

EMAIL: JOHN.KELSER@XCELENERGY.COM

PHONE: 715-737-6020

WISCONSIN DNR LIAISON

SHAWN HASELEU NW REGION 810 W. MAPLE STREET SPOONER, WI 54801 PHONE: 715-416-0478 EMAIL: SHAWN.HASELEU@WISCONSIN.GOV

REGION SURVEY COORDINATOR

TOM ARMSTRONG NORTHWEST REGION 1701 N. 4TH ST. SUPERIOR, WI 54880 PHONE: 715-392-7955

EMAIL: THOMAS.ARMSTRONG@DOT.WI.GOV

TOWN OF BARKSDALE

JOHN NYARA CHAIRPERSON 29025 E ONDOSSAGON RD ASHLAND WI 54806 PHONE: 715-682-2229 EMAIL: JFNSHOOTER@CENTURYTEL.NET

TOWN OF EILEEN

MARTY MILANOWSKI TOWN CHAIRPERSON 29130 STATE HWY 137 ASHLAND, WI 54806 PHONF: 715-746-2484 EMAIL: MARTYRM@CHEQNET.NET

DESIGN PROJECT MANAGER

KAREN RICHARDSON KL ENGINEERING 5400 KING JAMES WAY, STE 200 MADISON, WI 53719 PHONE: 608-663-1218

EMAIL: KAREN.RICHARDSON@KLENGINEERING.COM

DESIGN PROJECT LEADER

MICHAEL PEARSON WISDOT NW REGION 1701 N. 4TH ST. SUPERIOR, WI 54880 PHONE: 715-395-3024

EMAIL: MICHAEL.PEARSON@DOT.WI.GOV

COUNTY HIGHWAY COMMISSIONER

JAKE BENSON BAYFIELD COUNTY 311 S. 1ST. AVE. E. WASHBURN, WI 54891 PHONE: 715-373-6115

EMAIL: JAKE.BENSON@BAYFIELDCOUNTY.WI.GOV

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 PROJECT AREA THAT ARE NOT

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LBS/SY/IN.

RIGHT OF WAY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE.

THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER. THE S.W. CORNER OF THE STRUCTURE CONTAINS A BENCHMARK THAT WILL BE REMOVED DURING DEMOLITION. CONTACT TOM ARMSTRONG AT THE WISDOT SUPERIOR OFFICE. 1701 N. 4TH ST., SUPERIOR, WI 54880. 715-392-7955 OFFICE, 715-225-6325 CEL. FOR HANDLING INSTRUCTIONS.

TOPSOIL SHALL BE PLACED 1-INCH BELOW THE TOP OF ADJACENT CONCRETE CURBS OR SIDEWALKS.

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE, SUBBASE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYERS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT APPROXIMATE LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND APPROVED BY THE ENGINEER. MAINTAIN EROSION CONTROL MEASURES UNTIL SUCH A TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

RADIUS DIMENSIONS FOR THE CURB AND GUTTER ARE TO THE FLANGE LINE UNLESS OTHERWISE NOTED.

CURVE DATA IS BASED ON THE ARC DEFINITION.

THE EXACT LOCATION AND WIDTH OF DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD. DRIVEWAYS SHALL BE REPLACED IN KIND. COMMERCIAL DRIVEWAYS SHALL BE A MINIMUM OF 30 FEET WIDE UNLESS SHOWN OTHERWISE IN THE PLANS. ALL RESIDENTIAL DRIVEWAYS SHALL BE A MAXIMUM OF 20 FEET

PIPE AND INLET ELEVATIONS AS SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER TO FIT EXISTING FIFLD CONDITIONS

PIPE ELEVATIONS, LENGTHS AND LOCATIONS AS SHOWN ON THE PLANS, MAY BE ADJUSTED TO FIT EXISTING FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

THE PROPOSED SHOULDER WIDTH SHOWN IN THE TYPICAL SECTIONS ARE MINIMUM WIDTH, PERPETUATE EXISTING SHOULDERS THAT ARE WIDER THAN WHAT IS SHOWN IN THE TYPICAL SECTIONS.

SAWCUTS AND LAYER LIMITS, AS SHOWN ON THE PLANS, ARE SUGGESTED LOCATIONS AND MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER TO BETTER SUIT FIELD CONDITIONS.

RUNOFF COEFFICIENT TABLE

		HYDROLOGIC SOIL GROUP										
		А		В			С			D		
	SLOPE	RANGE	(PERCENT)	SLOPE	RANGE	(PERCENT)	SLOPE	RANGE	(PERCENT)	SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS:	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
NOW CROPS.	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIPTURF:	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
IVIEDIAN STRIFTORF.	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPETURF:			.25			.27			.28			.30
SIDE SLOPETORF.			.32			.34			.36			.38
PAVEMENT:												
ASPHALT:						.70 -	95					
CONCRETE:						.80 -	95					
BRICK:						.70 -	80					
DRIVES, WALKS:						.75 -	85					
ROOFS:	.7595											
GRAVEL ROADS, SHOULDERS:		NS: .4060										

Dial [11] or (800)242-8511 www.DiggersHotline.com

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = #### ACRES

PROJECT NO: 1180-00-79

C:\CIVIL 3D PROJECTS\11800009\SHEETS-PLAN\11800009 GN.DWG

HWY: USH 2

COUNTY: BAYFIELD

GENERAL NOTES

PEARSON, MICHAEL R

PLOT NAME

PLOT SCALE:

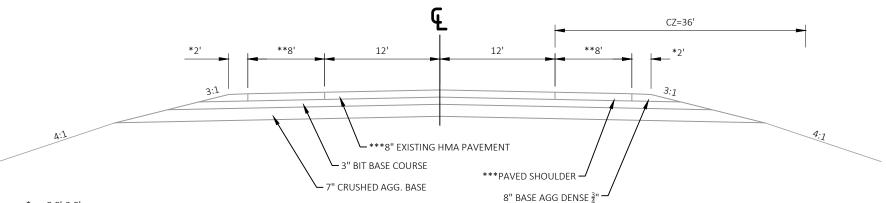
SHEET

WISDOT/CADDS SHEET 42

FILE NAME :

PLOT DATE: 7/31/2025 2:16 PM

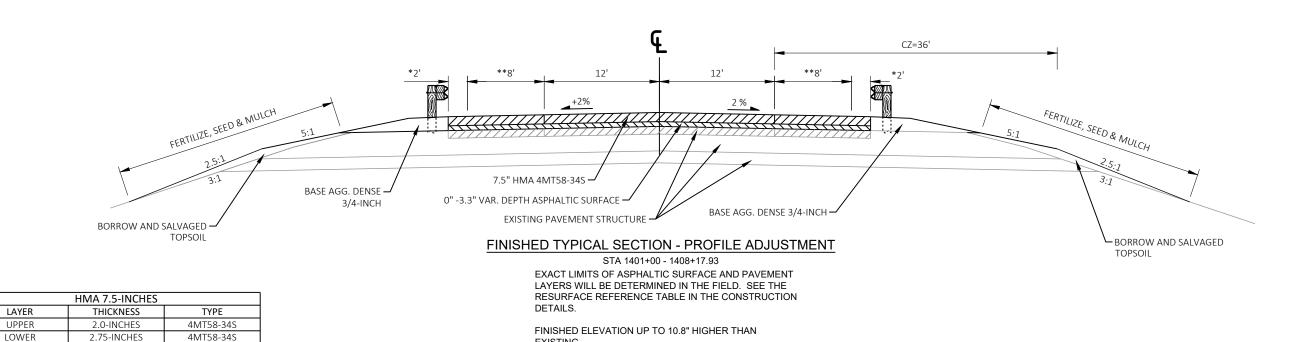




- * 0.0'-2.0'
- ** 8' NORMAL, 10' W/BEAMGUARD *** DRIVING LANES: 2" SMA 58-34V, OVER 2" HMA 4MT58-34S, OVER 4" EXISTING HMA PAVEMENT
- *** SHOULDERS: 2" HMA 4MT58-34S, OVER 6" EXISTING HMA

EXISTING TYPICAL SECTION

STA 1389+54 - 1408+33 STA 1409+71 - 1421+00

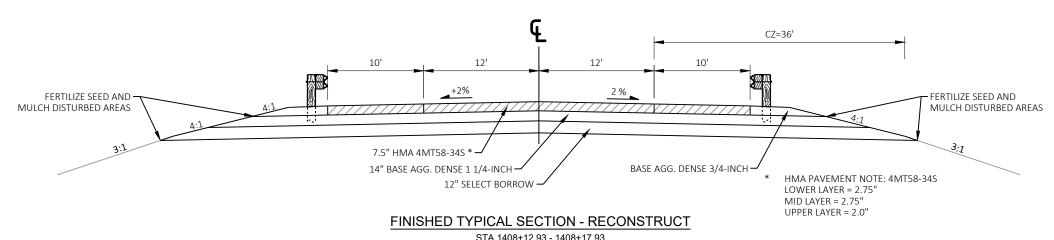


HWY: USH 2 Ε PROJECT NO: 1180-00-79 COUNTY: BAYFIELD TYPICAL SECTIONS SHEET FILE NAME : C:\CIVIL 3D PROJECTS\11800009\SHEETS-PLAN\11800009_TS.DWG 7/28/2025 9:50 AM PLOT BY: PEARSON, MICHAEL R PLOT SCALE : 1 IN:10 FT WISDOT/CADDS SHEET 42

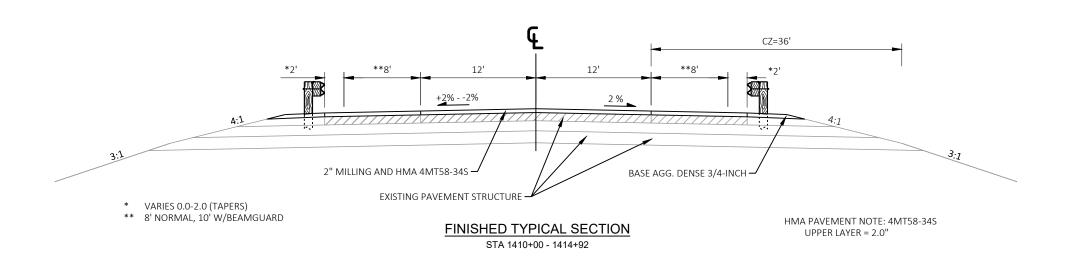
2.75-INCHES

4MT58-34S

LOWER LOWER



STA 1408+12.93 - 1408+17.93 STA 1409+85.6 - 1410+00 ADJACENT TO APPROACH SLABS WHERE DISTURBANCE REQUIRES NEW PAVEMENT STRUCTURE.



HMA 7.5-INCHES									
LAYER	THICKNESS	TYPE							
UPPER	2.0-INCHES	4MT58-34S							
LOWER	2.75-INCHES	4MT58-34S							
LOWER	2.75-INCHES	4MT58-34S							

PROJECT NO: 1180-00-79 HWY: USH 2 COUNTY: BAYFIELD TYPICAL SECTIONS SHEET **E**

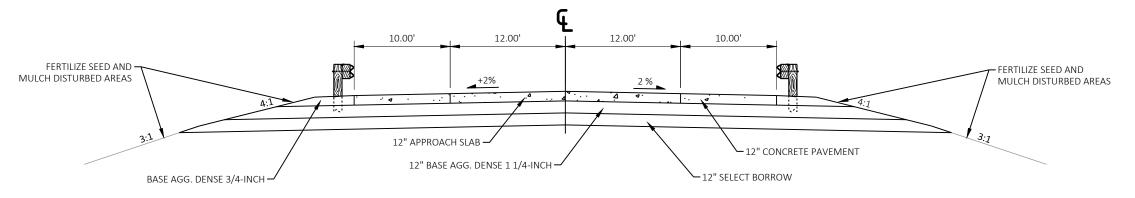
7/28/2025 9:50 AM

PLOT BY: PEARSON, MICHAEL R

FILE NAME : C:\CIVIL 3D PROJECTS\11800009\SHEETS-PLAN\11800009_TS.DWG LAYOUT NAME - 02-10ft

PLOT SCALE :

1 IN:10 FT



FINISHED TYPICAL CONCRETE PAVEMENT APPROACH SLAB SECTION

STA 1408+17.93 - 1408+32.93 STA 1409+70.6 - 1409+85.6

PROJECT NO: 1180-00-79 HWY: USH 2 COUNTY: BAYFIELD TYPICAL SECTIONS SHEET **E**

E: C:\CIVIL 3D PROJECTS\11800009\SHEETS-PLAN\11800009_TS.DWG LAYOUT NAME - 03-10ft

PLOT DATE : 7/28/2025 9:50 AM PLOT BY: PEARSON, MICHAEL R PLOT NAME : PLOT SCALE : 1 IN:10 FT WISDOT/CADDS SHEET 42

PROJECT ID:	1180-00-79					
PROJECT DESCRIPTION:	INO - ASHLAND; NORT BRIDGE, B-04-0022	ΓΗ FISH CREEK				
COUNTY:	BAYFIELD					
STRUCTURE #:	B-04-0022					
ADT:	7500					
DHV:	750					
MINIMUM WIDTH:	15	FEET				
STOPLINE TO STOPLINE DISTANCE:	1300 FEET					
SPEED:	25	МРН				
SPEED:	37 FPS					
MINIMUM RED-RED TIME:	36	SECONDS				
RED-RED TIME:	33	SECONDS				
ASSUMED CYCLE LENGTH:	105	SECONDS				
CALC'D MINIMUM GREEN PER SIDE:	26	SECONDS				
ASSUMED MIN. GREEN PER SIDE:	15	SECONDS				

PROPOSE SIGNAL TIMINGS: USH 2, BAYFIELD COUNTY										
			PHASE 1 DIRECTION	PHASE 2 DIRECTION						
INTERVAL	PHASE TIME (SECONDS)	CUMULATIVE TIME (SECONDS)	EAST	WEST						
1	15	15	GREEN	RED						
2	4	19	YELLOW	RED						
3	33	52	RED	RED						
4	15	67	RED	GREEN						
5	4	71	RED	YELLOW						
6	33	104	RED	RED						

IS COMPUTED TIME LESS THAN ASSUMED CYCLE?......YES

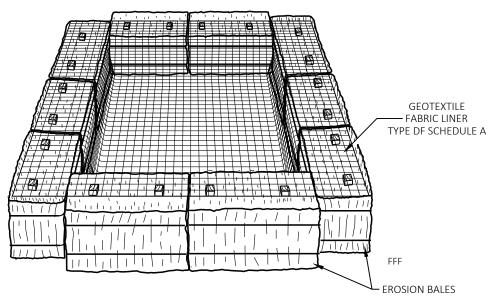
TIME CAN BE ADDED AS NEEDED TO PHASES. FOUR (4) SECONDS FOR YELLOW PHASE TIMES..

THE CONTRACTOR SHALL REVIEW SIGNALS AFTER PROGRAMMING TO ASSURE THERE ARE NO CONFLICTING MOVEMENTS. IF CONFLICTING MOVEMENTS EXIST OR IF MORE ALL-RED TIME IS NEEDED, THE CONTRACTOR SHALL MAKE THE NECESSARY CHANGES.

IF THERE ARE QUESTIONS REGARDING THE TIMINGS, PLEASE CONTACT THE TRAFFIC ENGINEER AARON CHRIST 715-833-9816

PROJECT NO: 1180-00-79 HWY: USH 2 COUNTY: BAYFIELD CONSTRUCTION DETAILS SHEET **E**

FILE NAME: C\CIVIL 3D PROJECTS\11800009\SHEETS-PLAN\11800009_CD.DWG PLOT DATE: 7/28/2025 11:55 AM PLOT BY: PEARSON, MICHAEL R PLOT NAME: 1 IN:10 FT WISDOT/CADDS SHEET 42 LAYOUT NAME - 01



TEMPORARY SETTLING BASIN

(SIZE TO BE DETERMINED IN FIELD AS INDICATED BELOW:)

STORAGE VOLUME (CF) = 16 X GPM (PUMP RATE)

CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM HEIGHT OF BALES = 1.5 FT

SOLUTION: SV (CF) = 16 X 50

SV = 800 CF

 $\frac{800 \text{ CF}}{1.5 \text{ FT}} = 533 \text{ SF}$

USE A 20 FT X 27 FT BASIN

THE RUNOFF COEFFICIENT TABLE IS IN THE GENERAL NOTES

	SEGMENT SUPERELEVATION												
		Left	Left	Left	Left	Right	Right	Right	Right				
Station	Description	Outside	Outside	Inside	Inside	Outside	Outside	Inside	Inside				
		Shoulder	Lane	Lane	Shoulder	Shoulder	Lane	Lane	Shoulder				
1397+44.22'	End Normal Shoulder	-4.00%	-2.00%	0.00%	0.00%	-4.00%	-2.00%	0.00%	0.00%				
1397+97.22'	End Normal Crown	-4.00%	-2.00%	0.00%	0.00%	-4.00%	-2.00%	0.00%	0.00%				
1398+50.22'	Level Crown	-4.00%	0.00%	0.00%	0.00%	-4.00%	-2.00%	0.00%	0.00%				
1399+03.22'	Begin Full Super	-4.00%	2.00%	0.00%	0.00%	-4.00%	-2.00%	0.00%	0.00%				
1399+03.22	Reverse Crown	-4.00%	2.00%	0.00%	0.00%	-4.00%	-2.00%	0.00%	0.00%				
1411+51.60'	End Full Super	-4.00%	2.00%	0.00%	0.00%	-4.00%	-2.00%	0.00%	0.00%				
1411+51.60'	Reverse Crown	-4.00%	2.00%	0.00%	0.00%	-4.00%	-2.00%	0.00%	0.00%				
1412+04.60'	Level Crown	-4.00%	0.00%	0.00%	0.00%	-4.00%	-2.00%	0.00%	0.00%				
1412+57.60'	Begin Normal Crown	-4.00%	-2.00%	0.00%	0.00%	-4.00%	-2.00%	0.00%	0.00%				
1413+10.60'	Begin Normal Shoulder	-4.00%	-2.00%	0.00%	0.00%	-4.00%	-2.00%	0.00%	0.00%				

		(CONTROL POIN	TS
POINT#	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	457788.486	796713.413	616.66	BARKSDALE SE GPS
2	457788.474	796713.358	616.726	NGS CHECK
3	454489.207	797224.659	621.191	CP-3 5/8 X 24" REBAR W/ CEC CAP
4	453435.046	796425.428	633.54	CP-45/8 X 24" REBAR W/ CEC CAP
5	454489.158	797224.697	621.14	CP-3 CHECK
338	454489.23	797224.671	621.209	CP-3 CHECK
393	454650.002	797383.753	620.785	CP-393
430	454489.194	797224.654	621.165	CP-3 CHECK
500	453435.066	796425.426	633.563	CP-4 CHECK
536	453435.051	796425.401	633.536	CP-4 CHECK
589	454720.138	797418.147	620.163	CP TEMP
595	455430.92	795884.84	0	QTR WEST SEC 2
596	455428.5	798537.71	0	QTR CENTER SEC 2
597	452811.42	796127.7	0	SEC SW SEC 2
598	452818.84	798780.79	0	QTR SOUTH SEC 2
			BENCHMARKS	
414	454213.482	796917.929	628.355	BENCHMARK ON STRUCTURE
			DATUM	

PLOT SCALE :

1 IN:10 FT

Ε PROJECT NO: 1180-00-79 HWY: USH 2 COUNTY: BAYFIELD CONSTRUCTION DETAILS SHEET PLOT DATE : 7/28/2025 11:55 AM

PLOT BY: PEARSON, MICHAEL R

PLOT NAME :

C:\CIVIL 3D PROJECTS\11800009\SHEETS-PLAN\11800009_CD.DWG LAYOUT NAME - 02

FILE NAME :



2" MT58-34S

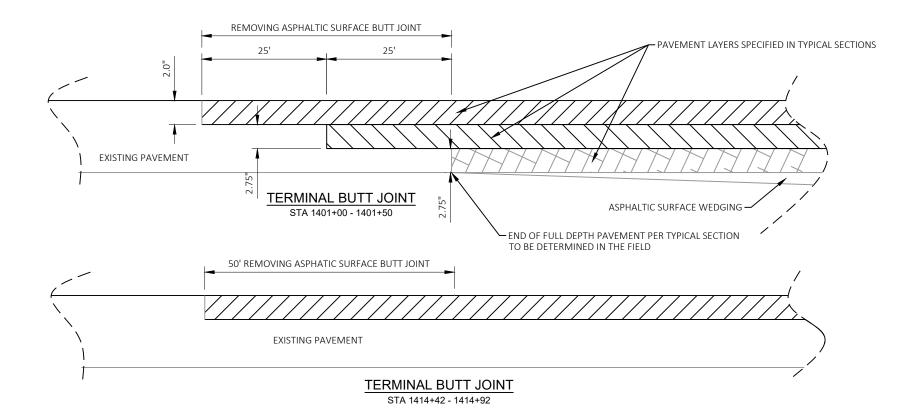
2.75" MT58-34S

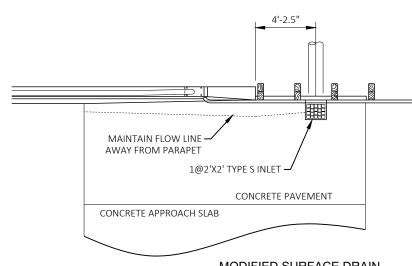
MM

2.75" MT58-34S

REFERENCE STAKING DATA FOR WEDGING LAYER										
Station	Existing	Final	Elevation	Wedge	Wedge					
	Elevation	Elevation	Difference	Thickness	Thickness					
	Feet	Feet	Feet	Feet	Inches					
1401+50	630.240	630.40	0.160	0	0					
1402+00	629.360	629.57	0.210	0	0					
1402+50	628.600	628.91	0.310	0	0					
1403+00	628.030	628.41	0.380	0	0					
1403+50	627.590	628.08	0.490	0	0					
1404+00	627.200	627.85	0.650	0.025	0.300					
1404+50	626.800	627.62	0.820	0.195	2.340					
1405+00	626.530	627.40	0.870	0.245	2.940					
1405+50	626.360	627.17	0.810	0.185	2.220					
1406+00	626.110	626.95	0.840	0.215	2.580					
1406+50	625.830	626.72	0.890	0.265	3.180					
1407+00	625.600	626.50	0.900	0.275	3.300					
1407+50	625.460	626.27	0.810	0.185	2.220					
1408+00	625.390	626.05	0.660	0.035	0.420					

WEDGING LAYER SHALL NOT EXCEED 3.5 INCHES





PLOT BY: PEARSON, MICHAEL R

MODIFIED SURFACE DRAIN DROP INLET TYPE

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

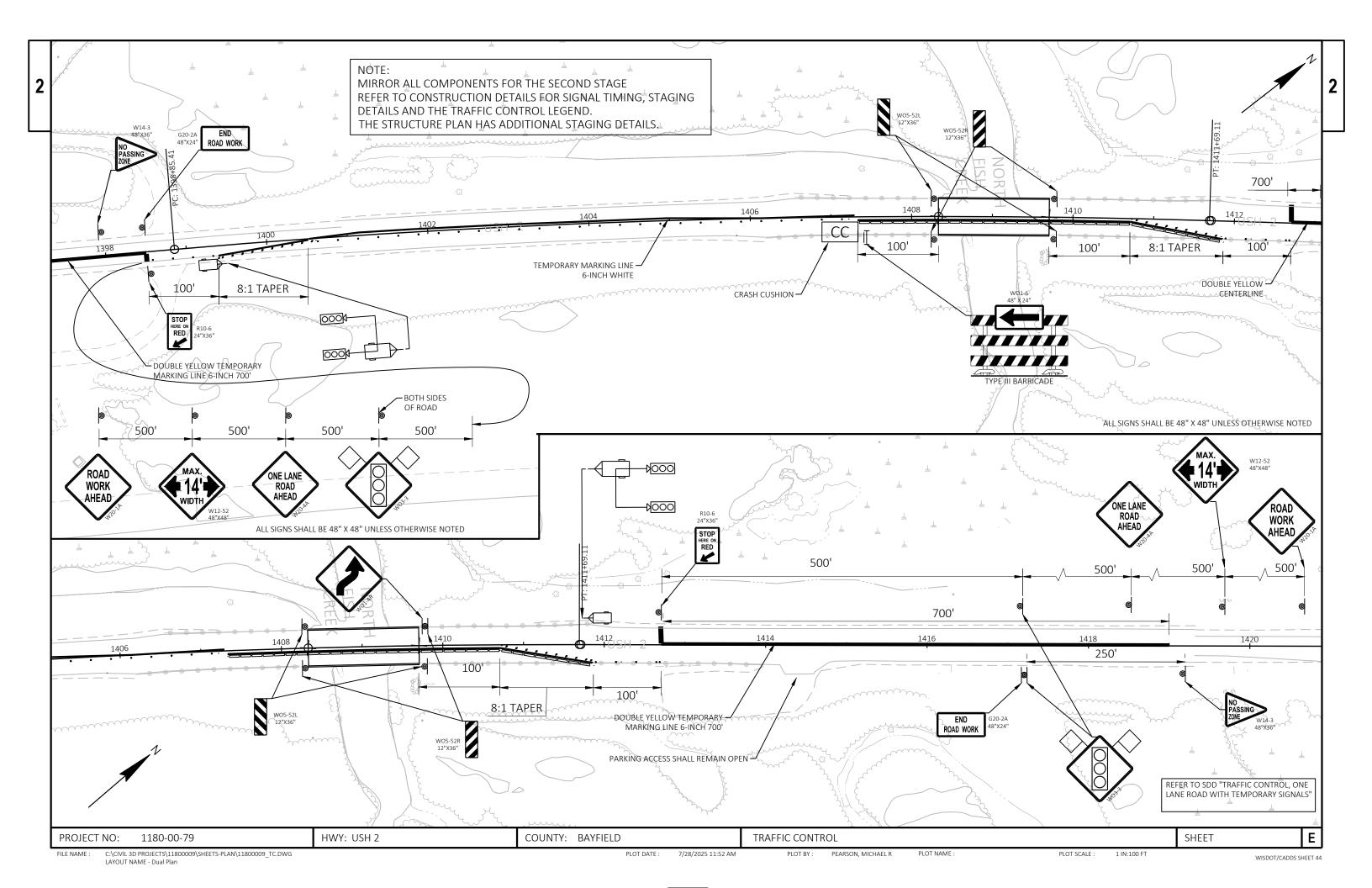
PLOT NAME :

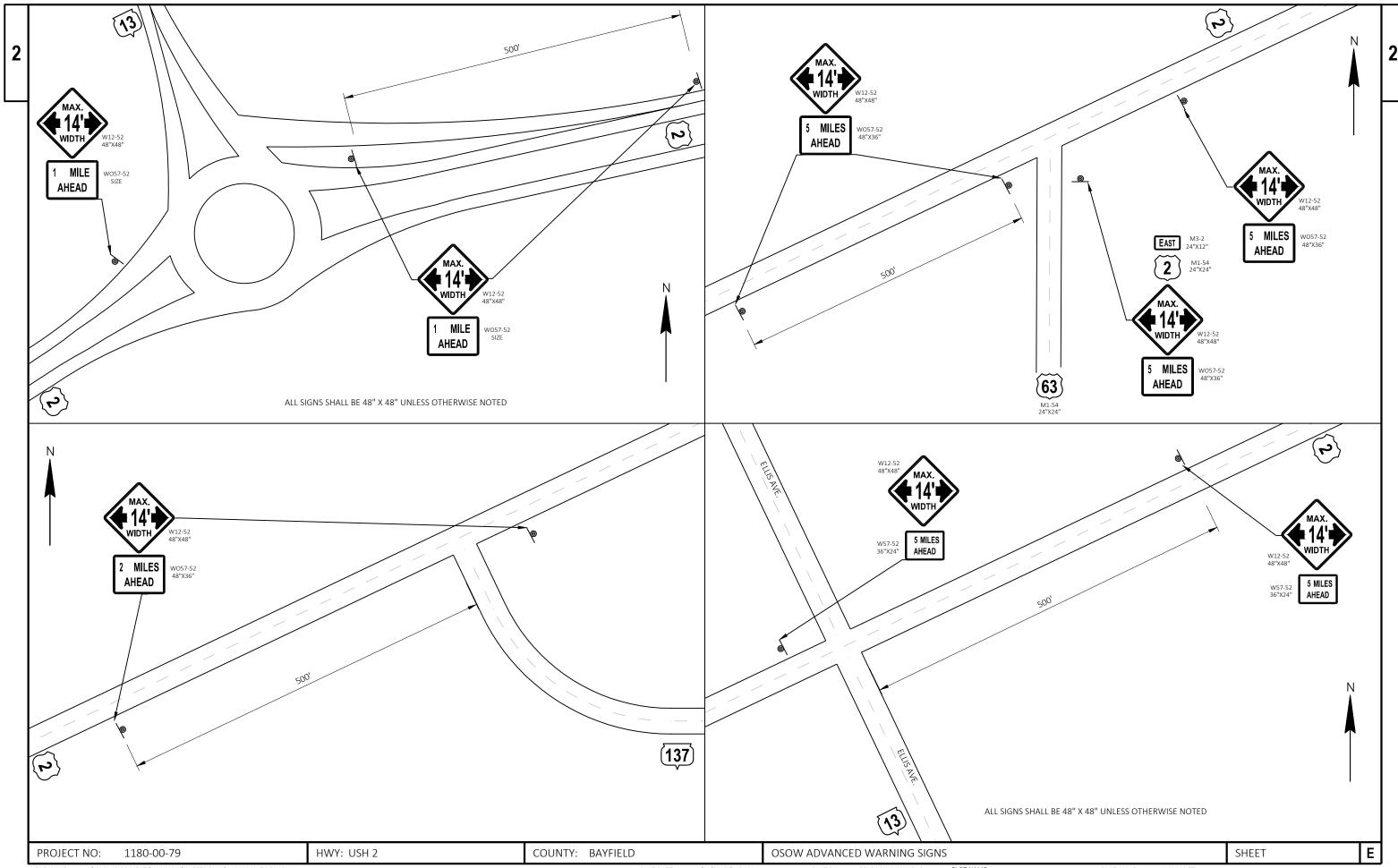
PROJECT NO: 1180-00-79 HWY: USH 2 COUNTY: BAYFIELD CONSTRUCTION DETAILS SHEET **E**

7/28/2025 11:55 AM

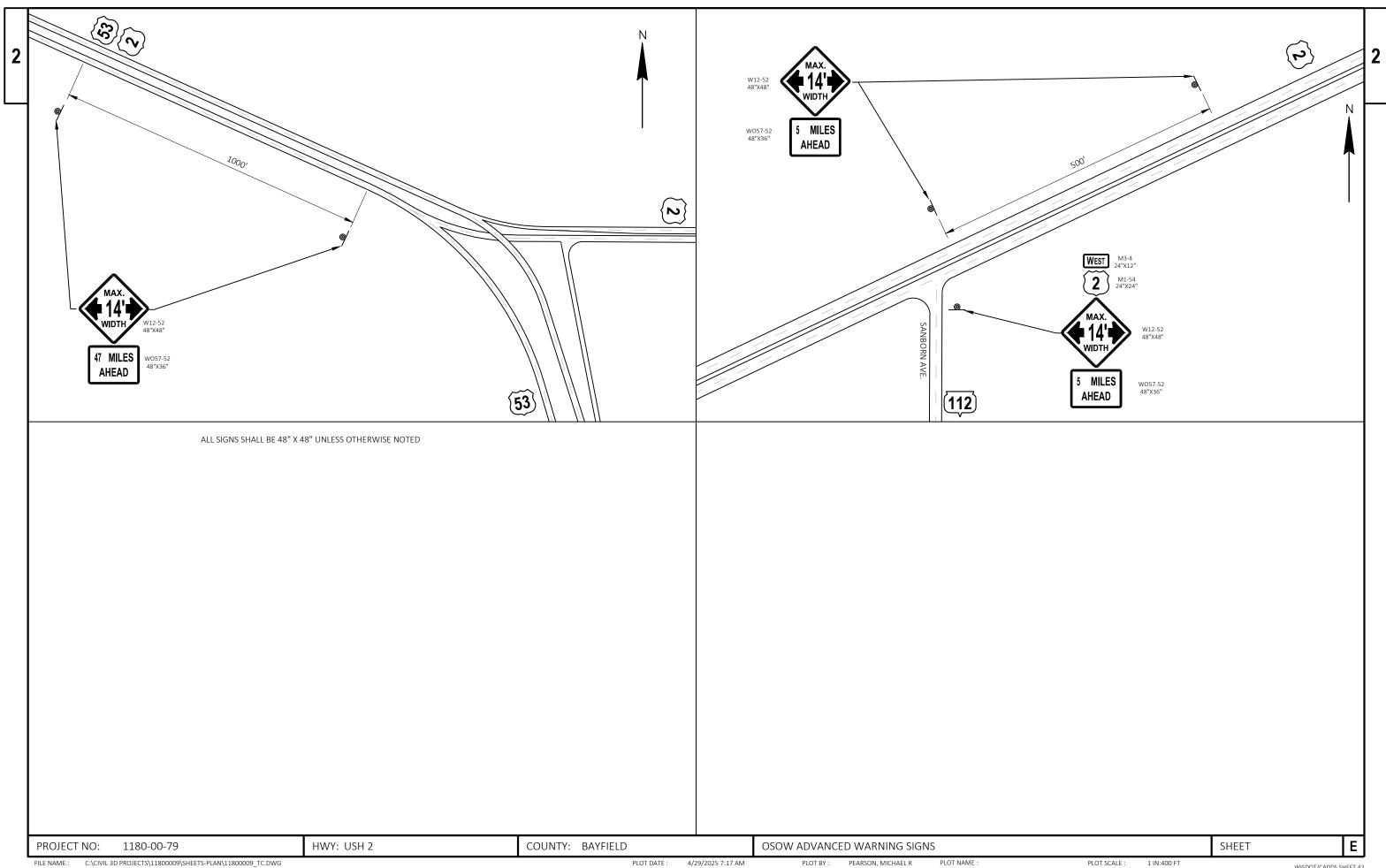
FILE NAME : C:\CIVIL 3D PROJECTS\11800009\SHEETS-PLAN\11800009_CD.DWG LAYOUT NAME - 03

PLOT SCALE: 1 IN:10 FT

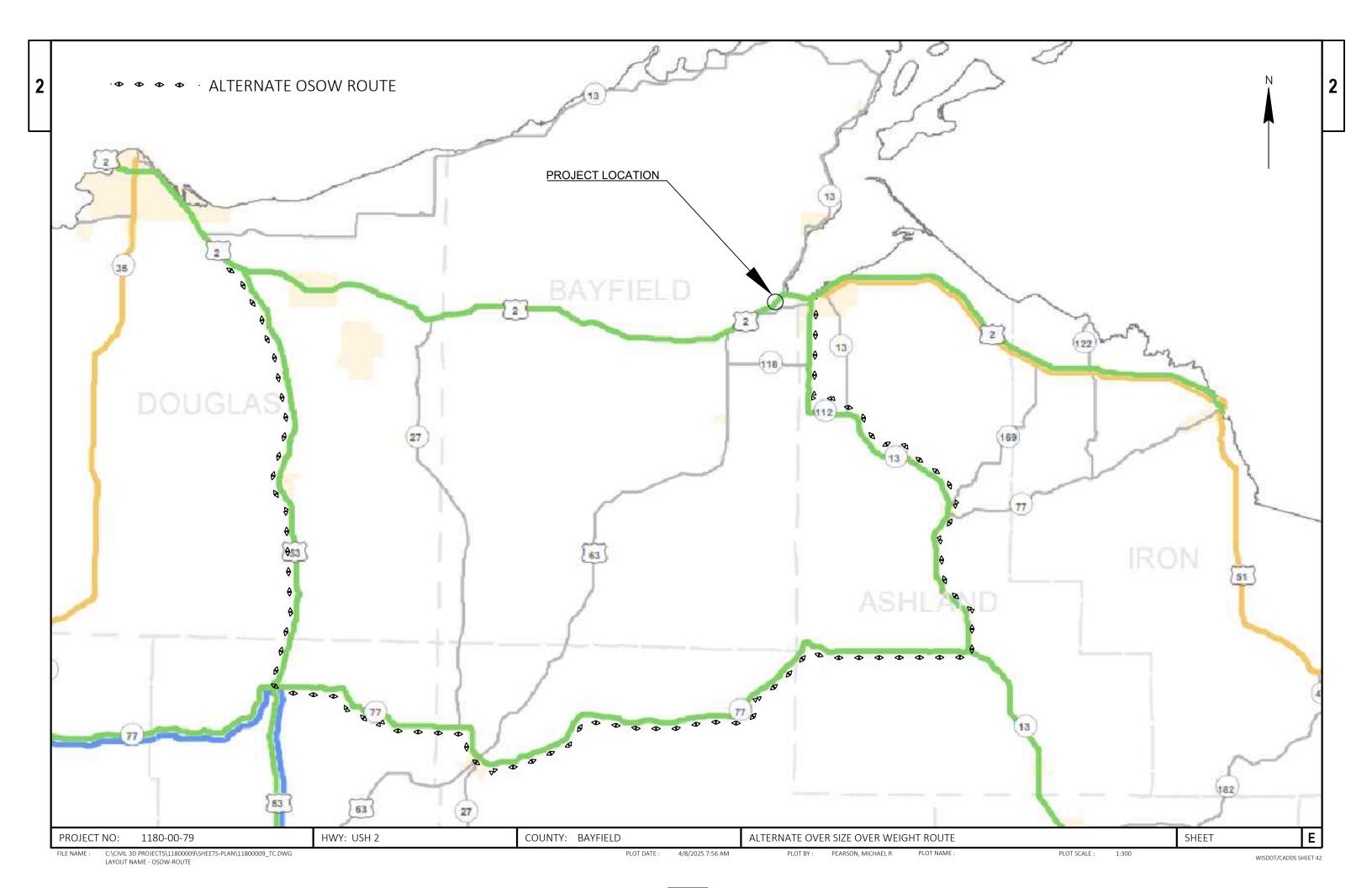




FILE NAME: C\CIVIL 3D PROJECTS\11800009\SHEETS-PLAN\11800009_TC.DWG PLOT DATE: 4/29/2025 7:15 AM PLOT BY: PEARSON, MICHAEL R PLOT NAME: PLOT NAME: 1 in:100 FT WISDOT/CADDS SHEET 42 LAYOUT NAME - OSOW



C:\CIVIL 3D PROJECTS\11800009\SHEETS-PLAN\11800009_TC.DWG LAYOUT NAME - OSOW2 WISDOT/CADDS SHEET 42



1180-00-79

					1180-00-79	
Line	Item	Item Description	Unit	Total	Qty	
0002	203.0211.S	Abatement of Asbestos Containing Material (structure) 01. B-04-0022	EACH	1.000	1.000	
0004	204.0100	Removing Concrete Pavement	SY	194.000	194.000	
0006	204.0115	Removing Asphaltic Surface Butt Joints	SY	444.000	444.000	
8000	204.0120	Removing Asphaltic Surface Milling	SY	1,942.000	1,942.000	
0010	204.0220	Removing Inlets	EACH	1.000	1.000	
0012	205.0100	Excavation Common	CY	120.000	120.000	
0014	208.0100	Borrow	CY	1,394.000	1,394.000	
0016	208.1100	Select Borrow	CY	18.000	18.000	
0018	210.1500	Backfill Structure Type A	TON	45.000	45.000	
0020	213.0100	Finishing Roadway (project) 01. 1180-00-79	EACH	1.000	1.000	
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	883.000	883.000	
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	168.000	168.000	
0026	415.0120	Concrete Pavement 12-Inch	SY	68.000	68.000	
0028	415.0410	Concrete Pavement Approach Slab	SY	80.000	80.000	
0030	455.0605	Tack Coat	GAL	1,005.000	1,005.000	
0032	460.2000	Incentive Density HMA Pavement	DOL	890.000	890.000	
0034	460.6244	HMA Pavement 4 MT 58-34 S	TON	1,364.000	1,364.000	
0036	465.0105	Asphaltic Surface	TON	461.000	461.000	
0038	502.0100	Concrete Masonry Bridges	CY	250.000	250.000	
0040	502.3200	Protective Surface Treatment	SY	689.000	689.000	
0042	502.3210	Pigmented Surface Sealer	SY	159.000	159.000	
0044	502.4205	Adhesive Anchors No. 5 Bar	EACH	606.000	606.000	
0046	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	65,290.000	65,290.000	
0048	506.4000	Steel Diaphragms (structure) 01. B-04-0022	EACH	15.000	15.000	
0050	509.1500	Concrete Surface Repair	SF	32.000	32.000	
0052	516.0500	Rubberized Membrane Waterproofing	SY	28.000	28.000	
0054	522.0112	Culvert Pipe Reinforced Concrete Class III 12-Inch	LF	36.000	36.000	
0056	603.8000	Concrete Barrier Temporary Precast Delivered	LF	588.000	588.000	
0058	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,176.000	1,176.000	
0060	606.0200	Riprap Medium	CY	9.000	9.000	
0062	606.0300	Riprap Heavy	CY	52.000	52.000	
0064	611.0651	Inlet Covers Type S	EACH	1.000	1.000	
0066	611.3220	Inlets 2x2-FT	EACH	2.000	2.000	
0068	614.0010	Barrier System Grading Shaping Finishing	EACH	2.000	2.000	
0070	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000	
0072	614.0905	Crash Cushions Temporary	EACH	2.000	2.000	
0074	614.0920	Salvaged Rail	LF	968.000	968.000	
0076	614.2300	MGS Guardrail 3	LF	614.000	614.000	
0078	614.2500	MGS Thrie Beam Transition	LF	150.000	150.000	
0080	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000	
0082	618.0100	Maintenance and Repair of Haul Roads (project) 01. 1180-00-79	EACH	1.000	1.000	
0082	619.1000	Mobilization	EACH	1.000	1.000	
0084	624.0100	Water	MGAL	10.000	10.000	
0088	625.0500	Salvaged Topsoil	SY	4,078.000	4,078.000	
0090	627.0200	Mulching Freeign Roles	SY	4,078.000	4,078.000	
0092	628.1104	Erosion Bales	EACH	20.000	20.000	
0094	628.1504	Silt Fence	LF	2,010.000	2,010.000	
0096	628.1520	Silt Fence Maintenance	LF	2,010.000	2,010.000	
0098	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000	

1180-00-79

Line	Item	Item Description	Unit	Total	Qty
0100	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0102	629.0210	Fertilizer Type B	CWT	27.000	27.000
0104	630.0110	Seeding Mixture No. 10	LB	113.000	113.000
0106	630.0200	Seeding Temporary	LB	113.000	113.000
0108	630.0500	Seed Water	MGAL	95.000	95.000
0110	638.2102	Moving Signs Type II	EACH	4.000	4.000
0112	638.4000	Moving Small Sign Supports	EACH	2.000	2.000
0114	642.5001	Field Office Type B	EACH	1.000	1.000
0116	643.0300	Traffic Control Drums	DAY	4,420.000	4,420.000
0118	643.0420	Traffic Control Barricades Type III	DAY	66.000	66.000
0120	643.0715	Traffic Control Warning Lights Type C	DAY	650.000	650.000
0122	643.0900	Traffic Control Signs	DAY	3,770.000	3,770.000
0124	643.3165	Temporary Marking Line Paint 6-Inch	LF	5,170.000	5,170.000
0126	643.3805	Temporary Marking Stop Line Paint 18-Inch	LF	48.000	48.000
0128	643.5000	Traffic Control	EACH	1.000	1.000
0130	645.0111	Geotextile Type DF Schedule A	SY	30.000	30.000
0132	645.0120	Geotextile Type HR	SY	120.000	120.000
0134	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	5,100.000	5,100.000
0136	646.9000	Marking Removal Line 4-Inch	LF	160.000	160.000
0138	646.9002	Marking Removal Line 6-Inch	LF	3,975.000	3,975.000
0140	650.4000	Construction Staking Storm Sewer	EACH	1.000	1.000
0142	650.4500	Construction Staking Subgrade	LF	40.000	40.000
0144	650.5000	Construction Staking Base	LF	40.000	40.000
0146	650.6501	Construction Staking Structure Layout (structure) 01. B-04-0022	EACH	1.000	1.000
0148	650.7000	Construction Staking Concrete Pavement	LF	30.000	30.000
0150	650.8000	Construction Staking Resurfacing Reference	LF	1,224.000	1,224.000
0152	650.9911	Construction Staking Supplemental Control (project) 01. 1180-00-79	EACH	1.000	1.000
0154	650.9920	Construction Staking Slope Stakes	LF	732.000	732.000
0156	661.0101	Temporary Traffic Signals for Bridges (structure) 01. B-04-0022	EACH	1.000	1.000
0158	690.0150	Sawing Asphalt	LF	160.000	160.000
0160	690.0250	Sawing Concrete	LF	40.000	40.000
0162	715.0502	Incentive Strength Concrete Structures	DOL	1,500.000	1,500.000
0164	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0166	999.2000.S	,	EACH	1.000	1.000
0168	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0170	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0172	SPV.0060	Special 01. Removing Structure Over Waterway Minimal Debris (B-04-22, Stage 1)	EACH	1.000	1.000
0174	SPV.0060	Special 02. Removing Structure Over Waterway Minimal Debris (B-04-22, Stage 2)	EACH	1.000	1.000
0174	SPV.0165	Special 01. Fiber Wrap Reinforcing Non-Structural	SF	485.000	485.000
0170	J. V.0100	Special Community Normal Strategical	0.	100.000	400.000

				BORR	OW SUMMARY		
`					208.0100	208.1100	
					BORROW	SELECT BORROW	
CAT	STATION	TO	STATION	LOC	CY	CY	REMARKS
0010	1401+00	-	1408+25	LT	914		INSLOPE FILL
0010	1401+00	-	1408+25	RT	380		INSLOPE FILL
	1407+92		1407+97	WEST		9	SLAB GAP RECSTRCT
	1410+05		1410+10	EAST		9	SLAB GAP RECSTRCT
	1409+85	-	1414+92	LT & RT	100		INSLOPE FILL
				,			_
			TOTAL 0010		1,394	18	

	TEMPORARY BARRIER SUMMARY									
					603.8000	603.8125	614.0905			
					CONCRETE BARRIER	CONCRETE BARRIER	CRASH			
					TEMPORARY PRECAST	TEMPORARY PRECAST	CUSHIONS			
					DELIVERED	INSTALLED	TEMPORARY			
CAT	STATION	TO	STATION	LOC	LF	LF	EACH			
0010	1399+00	-	1419+00	LT&RT	588	1,176	2			
			TOTA	_ L 0010	588	1 176	2			

	614.0800	614.0805	614.0905						
LOCATION STATION	CRASH CUSHIONS	CRASH CUSONS PERMANTEN LOW	CRASH CUSHIONS		OBJECTD MARKING	CRASH TEST		TRAFFIC	
	PERMANENT	MAIN.	TEMPORARY	BACK WIDTH	PATTERN	LEVEL	TRAFFIC DIRECTION	LOCATION	CRASH CUSION SHIELDS
1406+55	0	0	1	2	OM-3R	TL-3	SINGLE DIRECTION (WB)	L LANE	TEMP. CONC. BARRIER
1412+00	0	0	1	2	OM -3L	TL-3	SINGLE DIRECTION (EB)	R LANE	TEMP. CONC. BARRIER
·									

INLET STRUCTURE SUMMARY								
204.0220 522.0112 611.0651 611.3220								
				CULVERT PIPE	INLET			
			REMOVING	REINFORCED CONCRETE	COVERS	INLETS 2X2-		
			INLETS	CLASS III 12-INCH	TYPE S	FT	BOX	
CAT	STATION	LOC	EACH	LF	EACH	EACH	DEPTH	
0010	1409+83	RT	1	36	1	1	6.8	
							FEET	
		TOTAL 0010	1	36	1	1		

CONCRETE PAVEMENT SUMMARY								
					415.0120	415.0410		
					CONCRETE	CONCRETE PAVEMENT		
					PAVEMENT 12-INCH	APPROACH SLAB		
CAT	STATION	TO	STATION	LOC	SY	SY	REMARKS	
0010	1408+18	-	1408+33	WEST	34	40		
0010	1409+71	-	1409+86	EAST	34	40		
							_	
			TOTA	AL 0010	68	80		

0010

0010 0010

0010

				Н	MA SUMMARY		
				455.0605	460.6244	465.0105	
				TACK COAT	HMA 4MT58-34 S	ASPHALTIC SURFACE	
CAT	STATION	TO	STATION	GAL	TON	TON	REMARKS
0010	1401+00	-	1402+50	47	75		BUTT STEP 1
0010	1402+50	-	1403+50	62	143		BUTT STEP 2
0010	1403+50	-	1408+18	437	874		FULL DEPTH PVT
0010	1403+50	-	1408+18	295		461	WEDGING
0010	1408+12	-	1408+18	4	11		FULL DEPTH NEAR SLAB
0010	1409+86	-	1409+90	4	11		FULL DEPTH NEAR SLAE
0010	1409+90	-	1414+92	156	250		MILL AND OVERLAY

BASE AGGREGATE SUMMARY 305.0110

BASE AGGREGATE

DENSE 3/4-INCH

853

30

883

STATION TO STATION

1407+92 - 1407+97 WEST

1410+05 - 1410+10 EAST

TOTAL 0010

TOTAL 0010

1,005

1408+17 - 1409+85

1401+00 - 1408+25

1410+10 - 1414+92

305.0120

BASE AGGREGATE

DENSE 1 1/4-INCH

TON

130

19

19

168

1,364

REMARKS

STANDARD SLABS EXCAVATION GAP

EXCAVATION GAP

WEST SHOULDERS

EAST SHOULDERS

MEDIUM RIPRAP									
	606.0200								
		RIPRAP MEDIUM							
CAT	STATION	LOC	CY	REMARKS					
0010	1409+65	RT	9	RESET OUTLET					
	TOTAL	0010	9						

461

PROJECT NO: 1180-00-79 HWY: USH 2 COUNTY: BAYFIELD MISCELLANEOUS QUANTITIES SHEET: **E**

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	BEAMGUARD SUMMARY							
	614.0010 614.0920 614.2300 614.2500 614.2610 BARRIER SYSTEM GRADING MGS GUARDRAIL MGS THRIE BEAM MGS GUARDRAIL SHAPING FINISHING SALVAGED RAIL 3 TRANSITION TERMINAL EAT							
CAT	STATION TO STATION	LOC	EACH	LF	5 LF	LF	EACH	REMARKS
0010	1406+55 - 1408+21	LT		164	75	37.5	1	
0010	1406+18 - 1408+21	RT		202	114	37.5	1	
0010	1409+81 - 1411+84	LT		188	100	37.5	1	
0010	1409+81 - 1413+96	RT	2	414	325	37.5	1	EAST EATS
	TO	ΓAL 0010	2	968	614	150	4	

	MAINTENA	NCE AND REPAIR OF HAUL ROADS	
		618.0100.01	
		MAINTENANCE AND REPAIR OF	
		HAUL ROADS (01. 1180-00-79)	
CAT	LOC	EACH	REMARKS
0010	PROJECT	1	
			•
	TOTAL 0010	1	-

REMARKS QUADRANTS

QUANTITIES FOR ESTIMAT ONLY; BARRIER SYSTEM GRADING, SHAPING							
	AND	FINISHING					
BASE AGG. DENSE SALVAGED SEED MIX FERTILIZER							
BORROW	3/4-INCH	TOPSOIL	NO. 10	TYPE B			
CY	CY	SY	LB	CWT			
100	15	200	2	0.02			

	TOPSOIL AND MULCHING								
					625.0500	627.0200			
					SALVAGED				
					TOPSOIL	MULCHING			
CAT	STATION	TO	STATION	LOC	SY	SY	REMARKS		
0010	1401+00	-	1408+25	LT	1,615	1,615	WEST LEFT		
0010	1401+00	-	1408+25	RT	2,283	2,283	WEST RIGHT		
0010	1407+50	-	1409+50	LT&RT	150	150	UNDISTRIBUTED		
0010	1409+65		1409+90	RT	30	30	INLET EX.		
			TOTA	L0010	4,078	4,078	_		

	WATER								
	624.0100								
			WATER						
CAT	STATION	LOC	MGAL	REMARKS					
0010	PROJECT		10	COMPACTION					
		_							

TOTAL 0010 10

	ER	OSION BALES	
		628.1104	_
		EROSION BALES	
CAT	LOC	EACH	REMARKS
0010	PROJECT	20	SETTLING BASIN
			_
	TOTAL 0010	20	= !

CAT 0010 0010

0010

0010

	SILT FENCE SUMMARY							
					628.1504	628.1520		
						SILT FENCE		
					SILT FENCE	MAINTENANCE		
CAT	STATION	TO	STATION	LOC	LF	LF	REMARKS	
0010	1401+00	-	1408+33	LT	775	775	WEST LEFT	
0010	1401+00	-	1408+33	RT	775	775	WEST RIGHT	
0010	1409+71	-	1410+25	LT	230	230	EAST LEFT	
0010	1409+71	-	1410+25	RT	230	230	EAST RIGHT	

2,010

2,010

TOTAL 0010

				EROSION	MOBILIZATIONS	
					628.1905	628.1910 MOBILIZATION
					MOBILIZATIONS	S EMERGENCY
					EROSION	EROSION
					CONTROL	CONTROL
CAT	STATION	TO	STATION	LOC	EACH	EACH
0010	1407+50	=	1410+25	LT&RT	2	1
			TOTA	L0010	2	1

				SEED	ING SUMMARY			
				629.0210	630.0110	630.0200	630.0500	
				FERTILIZER TYPE	SEEDING MIXTURE	SEEDING		
				В	NO. 10	TEMPORARY	SEED WATER	
STATION	TO	STATION	LOC	CWT	LB	LB	MGAL	REMARKS
1401+00	-	1408+25	RT	11	44	44	35	WEST RIGHT
1401+00	-	1408+25	LT	15	62	62	45	WEST LEFT
1409+65		1409+90	RT	0.30	2	2	5	INLET WORK
1407+50	-	1409+50	LT&RT	0.70	5	5	10	UNDISTRIBUTED
								_
		TOTAL	_0010	27	113	113	95	_

•	PERMANENT SIGN SUMMARY										
			638.2102	638.4000							
			MOVING SIGNS TYPE	MOVING SMALL							
			II	SIGN SUPPORTS							
CAT	STATION	LOC	EACH	EACH	REMARKS						
0010	1408+33	RT	2	1	BRIDGE						
0010	1409+71	LT	2	1	CORNERS						
	TOTAL 0010)	4	2	•						

PROJECT NO:	1180-00-79	HWY:	USH 2	COUNTY: BAYFIELD	MISCELLANEOUS QUANTITIES	I SHEET:	Е
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	TRAFFIC CONTROL SUMMARY										
				643.0300	643.0420	643.0715	643.0900	643.5000			
				TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC			
				DRUMS	BARRICADES TYPE III	WARNING LIGHTS TYPE C	SIGNS	CONTROL			
CAT	STATION TO	STATION	LOC	DAY	DAY	DAY	DAY	EACH	REMARKS		
0010	1399+00 -	1408+50	LT&RT	2,210	33	325	780	1	PROJECT		
	1409+50	1418+00	LT&RT	2,210	33	325	780		PROJECT		
	PROJECT						2,210		OSOW SIGNS		
		TOTA	L0010	4,420	66	650	3,770	1	_		

	RO <i>A</i>	E SUMMARY		
		645.0111	645.0120	
		GEOTEXTILE TYPE	GEOTEXTILE	
		DF SCHEDULE A	TYPE HR *	
CAT	LOC	SY	SY	REMARKS
0010	PROJECT	30		SETTLING BASIN
0010	OUTFALL		18	RESET OUTFALL
	TOTAL 0010	30	18	_
		* ADDITIONAL OLIAN	TIES IN STRUCTUI	RE DI ANI

	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES											
					661.0101							
					TEMPORARY TRAFFIC SIGNALS							
					FOR BRIDGES (01. B-04-0022)							
CAT	STATION	TO	STATION	LOC	EACH	REMARKS						
0010	1399+00	-	1419+00	LT&RT	1							
			TOTA	L0010	1							

						MARKING LINE	SUMMARY			
					643.3165	643.3805	646.2040	646.9000	646.9002	
					TEMPORARY	TEMPORARY MARKING	MARKING LINE			
					MARKING LINE	STOP LINE PAINT 18-	GROOVED WET REF	MARKING REMOVAL	MARKING REMOVAL	
					PAINT 6-INCH	INCH	EPOXY 6-INCH	LINE 4-INCH	LINE 6-INCH	
CAT	STATION	TO	STATION	LOC	LF	LF	LF	LF	LF	REMARKS
0010	1399+00	-	1419+00	LT&RT	3,985	24		160		TC SETUP 1
0010	1399+00	-	1419+00	LT&RT	1,185	24			25	TC SETUP 2
0010	1399+00	-	1419+00	LT&RT			5100		3,950	FINAL
			TOTA	L 0010	5,170	48	5,100	160	3,975	

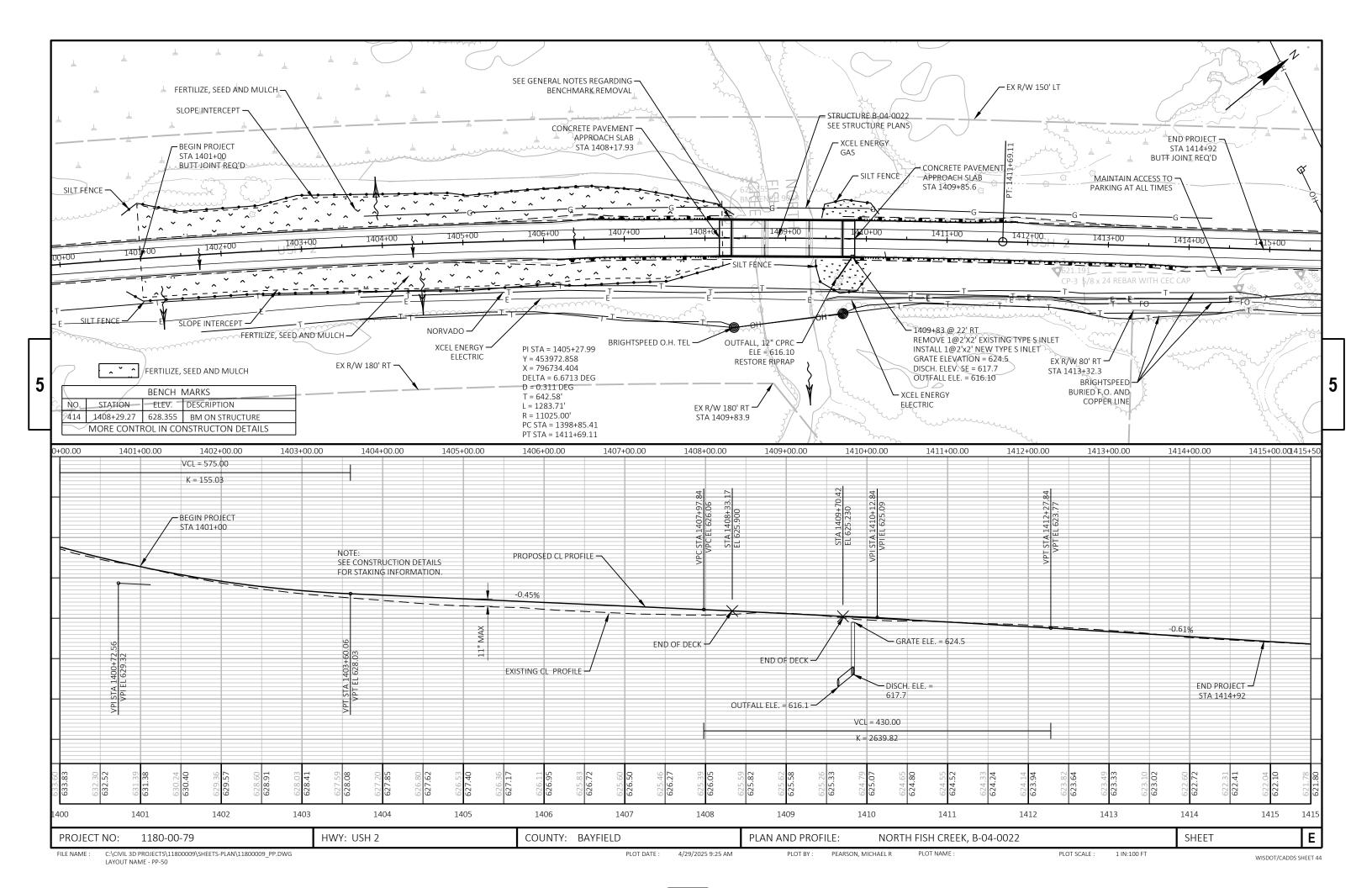
						STAKING SUMMARY				
			650.4000	650.4500	650.5000	650.6501	650.7000	650.8000	650.9911.01	650.9920
			CONSTRUCTION	CONSTRUCTION		CONSTRUCTION	CONSTRUCTION	CONSTRUCTION STAKING	CONSTRUCTION STAKING	CONSTRUCTION
			STAKING STORM	STAKING	CONSTRUCTION	STAKING STRUCTURE	STAKING CONCRETE	RESURFACING	SUPPLEMENTAL CONTROL	STAKING SLOPE
			SEWER	SUBGRADE	STAKING BASE	LAYOUT (01. B-04-0022)	PAVEMENT	REFERENCE	(01. 1180-00-79)	STAKES
CAT	STATION	TO STATION	EACH	LF	LF	EACH	LF	LF	EACH	LF
0010	1401+00	- 1408+17						717		732
0010	1409+85	- 1414+92						507		
0010		PROJECT	1	40	40	1	30		1	
		TOTAL 0010	1	40	40	1	30	1,224	1	732

	SAWING ASPHALT											
-	690.0150											
	SAWING ASPHALT											
CAT	STATION	TO	STATION	LOC	LF	REMARKS						
0010	1399+00	-	1419+00	LT&RT	80	NEAR STRUCTURE						
0010	1399+00	-	1419+00	LT&RT	80	BUTT JOINTS						
			TOTA	L0010	160	_						

			SAV	WING CONCE	RETE	
					690.0250	
					SAWING	
					CONCRETE	
CAT	STATION	TO	STATION	LOC	LF	REMARKS
0010	1408+33	-	1409+71	CTR	40	APPRCH
						SLABS
			TOTA	L 0020	40	_

				BIRD DETI	ERRENT SYSTEM	
					999.2000.S.01	
					INSTALLING AND MAINTAINING BIRD	
					DETERRENT SYSTEM (01. 1409+02)	
CAT	STATION	TO	STATION	LOC	EACH	REMARKS
0010	1408+33	-	1409+71		1	B-04-0022
			TOTAL	.0010	1	

HWY: SHEET: Е COUNTY: BAYFIELD MISCELLANEOUS QUANTITIES PROJECT NO: 1180-00-79 USH 2



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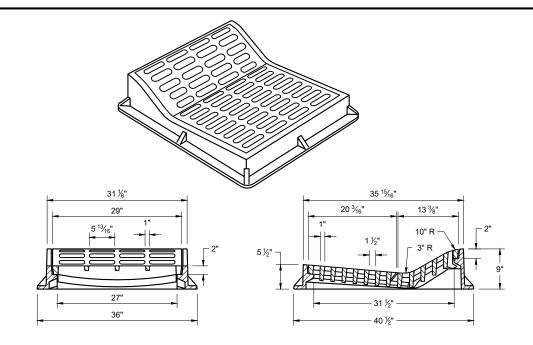
Standard Detail Drawing List

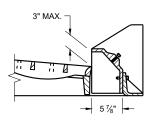
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08A05-21C
               INLET COVERS TYPE F, HM, HM-S, S, T, HM-GJ & HM-GJ-S
08C07-03
               INLETS 2X2-FT, 2X2.5-FT, 2X3-FT, 2.5X3-FT & 2X3.5-FT
08D03-09A
               CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D03-09B
               CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D21-01
               DRI VEWAYS WITHOUT CURB & GUTTER
08E09-06
               SILT FENCE
08F04-08
               JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09G02-05A
               BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05B
              BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05C
               BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10
              NAME PLATE (STRUCTURES)
13A03-07
               CONCRETE PAVEMENT SHOULDERS
13A07-02
               CONTINUOUSLY REINFORCED CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13B02-09A
               CONCRETE PAVEMENT APPROACH SLAB
13B02-09B
               STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
13C19-03
               HMA LONGITUDINAL JOINTS
14B07-16A
              CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16B
              CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16C
               CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16D
               CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16E
               CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16F
               CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16G
               CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
               CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16H
14B07-16I
               CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16J
              CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16K
              CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
               CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16L
14B07-16M
               CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16N
               CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A
               CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B
               CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C
               CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D
               CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
              CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E
               42-INCH VERTICAL SHAPE CONCRETE BARRIER TO 42-INCH SSCB TRANSITION
14B40-02E
14B40-02F
               42-INCH VERTICAL SHAPE CONCRETE BARRIER TO 42-INCH SSCB TRANSITION
14B42-07A
               MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
               MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B
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 THRIE BEAM TRANSITION (MGS)
              MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B
14B45-05C
              MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D
               MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
              MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E
14B45-05F
              MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G
              MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H
               MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I
              MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J
              MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K
              MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L
              MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-09F
               ADVANCED WIDTH RESTRICTION SIGNING
15C04-05
               TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-23A
               PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B
               TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C11-10B
               CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A
               TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D33-09
               TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
```

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.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.



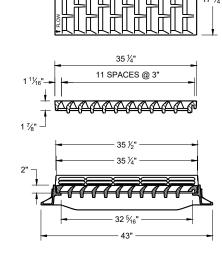


ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

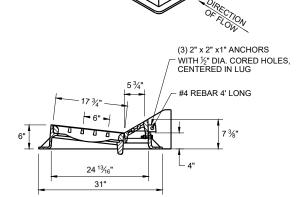
USE WITH TYPES "G" AND "J" CONCRETE CURB AND GUTTER, 30 INCH NOTED AS TYP "HM-GJ" ON DRAINAGE TABLE

> SPECIAL GRATE FOR THE TYPE "H"
> COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

NOTED AS TYPE HM-GJ-S ON THE DRAINAGE TABLE.



— DIRECTION OF FLOW ARROWS



NOTE: GRATE IS

REVERSIBLE

1" X 5 1/8" SLOTS (TYPICAL)

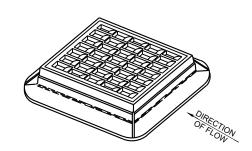
TYPE "HM"

USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"

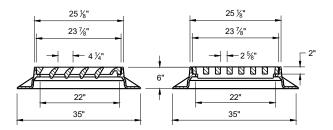
NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

NOTED AS TYPE HM-GJ-S ON THE DRAINAGE TABLE

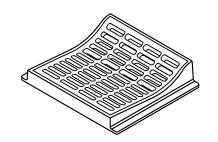


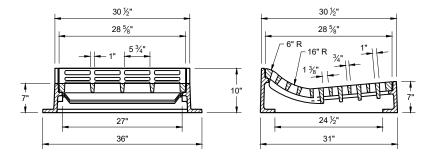


TYPE "F" USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"



TYPE "S"





TYPE "T"

USE WITH TYPES "R" AND "T" CONCRETE CURB AND GUTTER, 36"

INLET COVERS TYPES F, HM, HM-S, S, T, **HM-GJ AND HM-GJ-S**

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

December 2023

/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

UNIT SUPERVISOR

SDD 08A05-21

A05-08

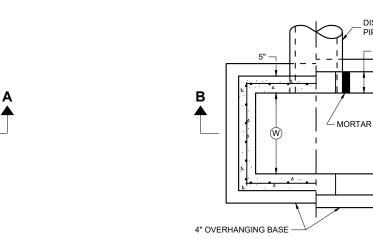
CONCRETE

(MIN. SLOPE 1 IN./FT.)

PRECAST REINFORCED

CONCRETE WITH

MONOLITHIC BASE



PLAN VIEW



PRECAST REINFORCED **CONCRETE WITH INTEGRAL BASE**

DISCHARGE

PLAN VIEW

RISER JOINT TO BE SEALED WITH

A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS

CONFORMING TO ASTM C 990 (TYP.)

DISCHARGE

MORTAR

CAST IN PLACE REINFORCED CONCRETE

4" MIN

(2)

CONCRETE

(MIN. SLOPE

1 IN./FT.) CONSTRUCTION DISCHARGE

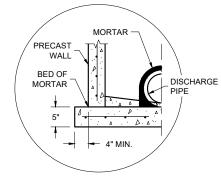
CONCRETE BLOCK WITH CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE (1)

6" MIN. CONCRETE BLOCK

> 1/4" CEMENT PLASTER

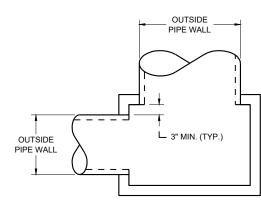
COAT

SECTION A - A SECTION B - B



SEPARATE PRECAST REINFORCED **CONCRETE BASE OPTION**

DETAIL "B"



DETAIL "A"

INLETS 2 X 2-FT, 2 X 2.5-FT, 2 X 3-FT, 2.5 X 3-FT AND 2X3.5-FT

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER. THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

- $\stackrel{\textstyle \frown}{}$ FOR PRECAST INLETS AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO
- (2) CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

CATCH BASIN COVER MATRIX

ſ	INLET	WIDTH	LENGTH	INLET COVER TYPE									
1	SIZE	W (FT.)	(FT.)	ALL A'S	ALL B'S	BW	F	ALL H'S	S	Т	٧	WM	V V-B
Γ	2 X 2-FT	2	2	Х	Х				Х				
Γ	2 X 2.5-FT	2	2.5			х			Х	х	х	Х	
	2 X 3-FT	2	3					Х					
Γ	2.5 X 3-FT	2.5	3				Х						
	2 X 3.5-FT	2	3.5										Х

PIPE MATRIX

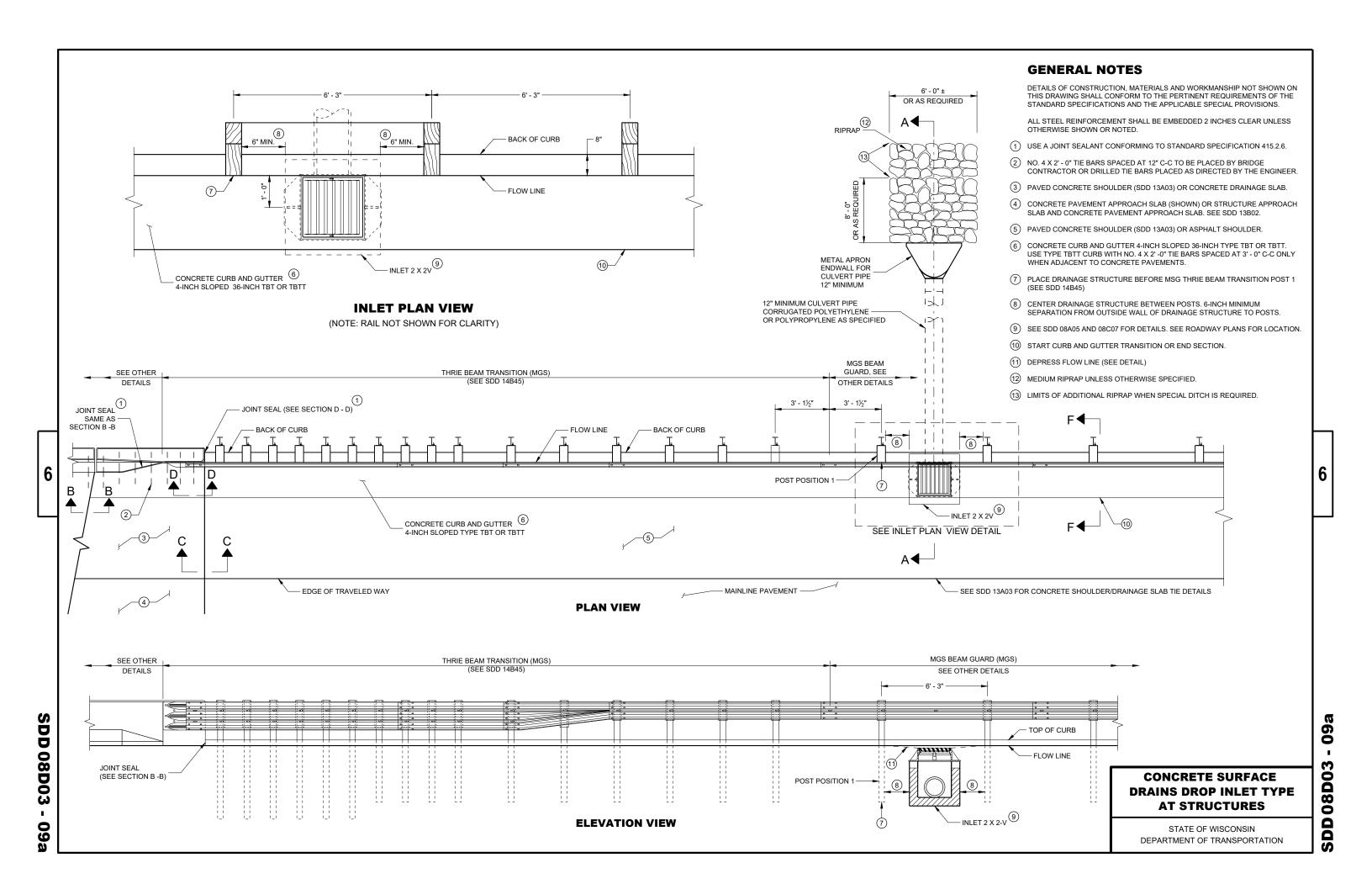
CATCH BASIN	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES				
SIZE	WIDTH (IN)	LENGTH (IN)			
2 X 2-FT	12	12			
2 X 2.5-FT	12	18			
2 X 3-FT	12	24			
2.5 X 3-FT	18	24			
2 X 3.5-FT	12	30			

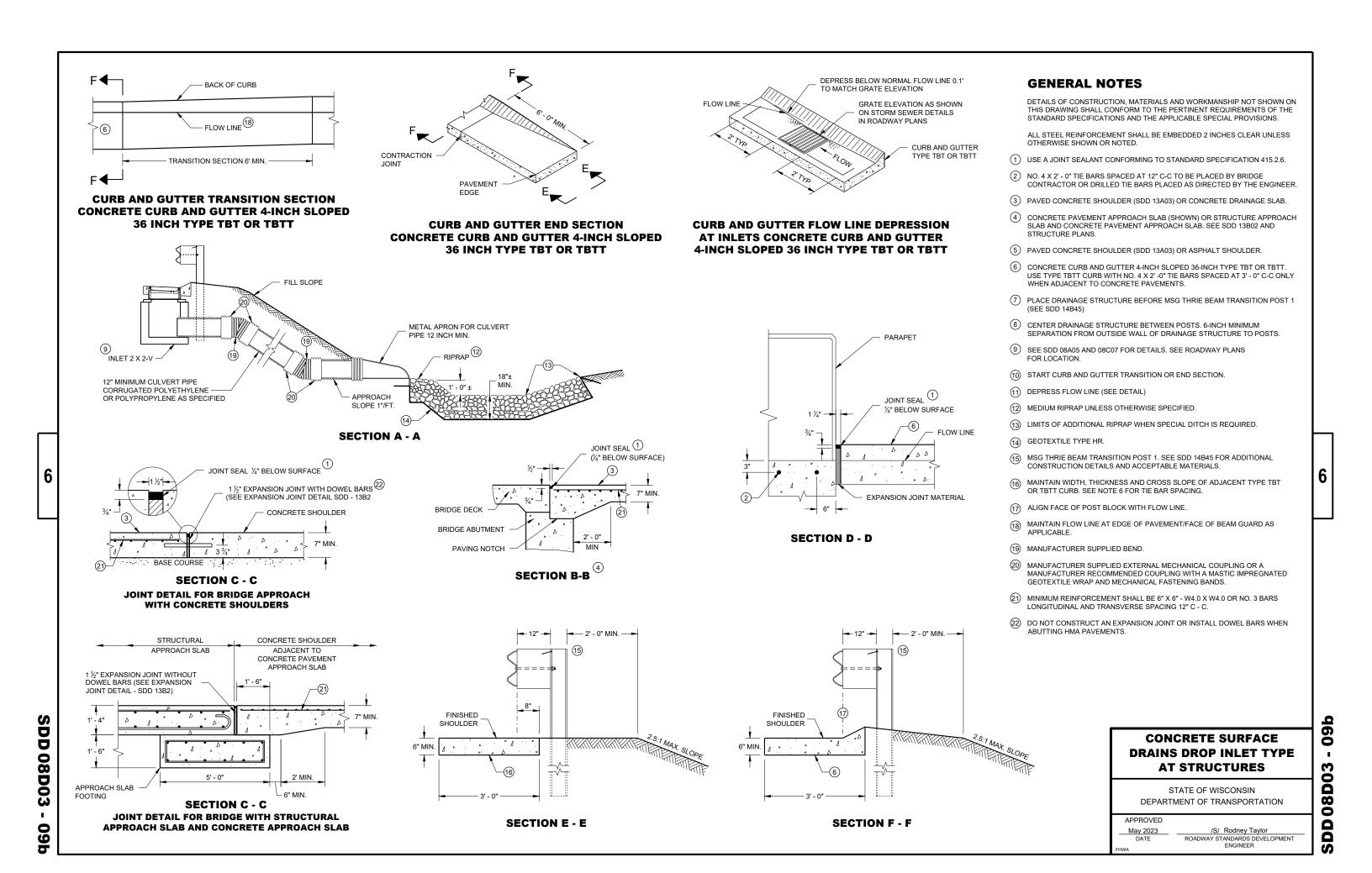
INLETS 2 X 2-FT, 2 X 2.5-FT, 2 X 3-FT, 2.5 X 3-FT **AND 2 X 3.5-FT**

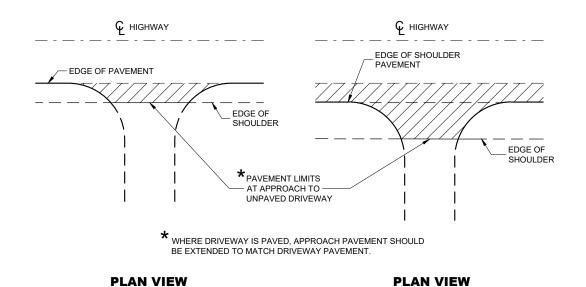
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

December 2023 ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

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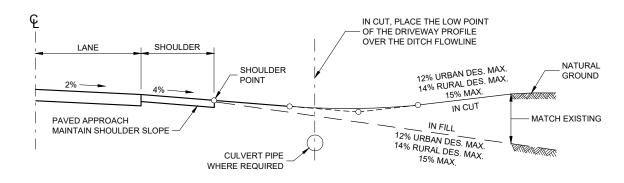




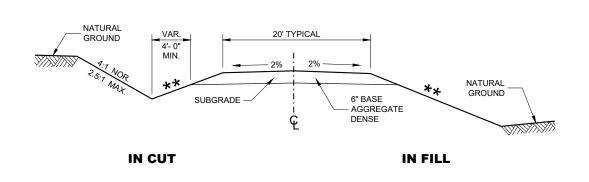


RURAL DRIVEWAY INTERSECTION DETAIL (NO CURB AND GUTTER OR SIDEWALK)

(PAVED SHOULDER ON HIGHWAY)



TYPICAL DRIVEWAY PROFILES

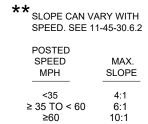


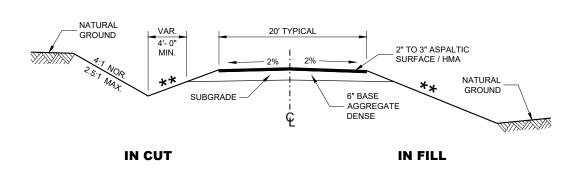
TYPICAL CROSS SECTION FOR

PRIVATE DRIVE OR FIELD ENTRANCE

AGGREGATE SURFACE

(UNPAVED SHOULDER ON HIGHWAY)





TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE ASPHALTIC SURFACE

DRIVEWAYS WITHOUT CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

December 2017

DATE

/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

UNIT SUPERVISOR

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PARTMENT OF TRANS

TYPICAL APPLICATION OF SILT FENCE

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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.

- \bigcirc 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 11/8" X 11/8" 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



SILT FENCE TIE BACK

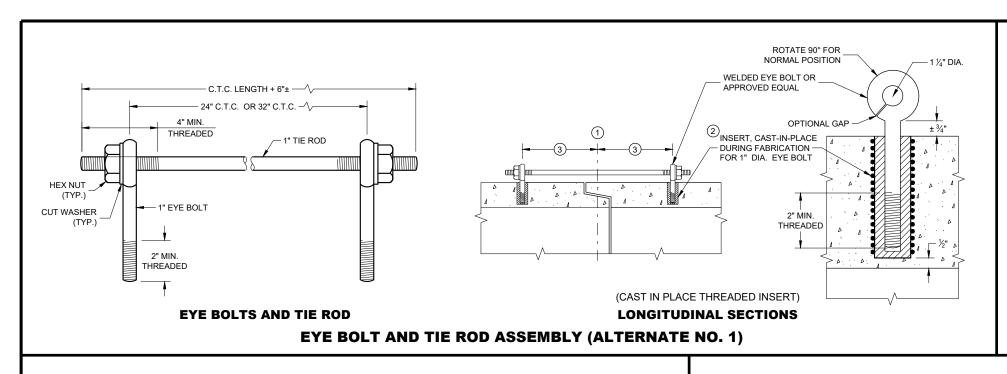
(WHEN REQUIRED BY THE ENGINEER)



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GENERAL NOTES

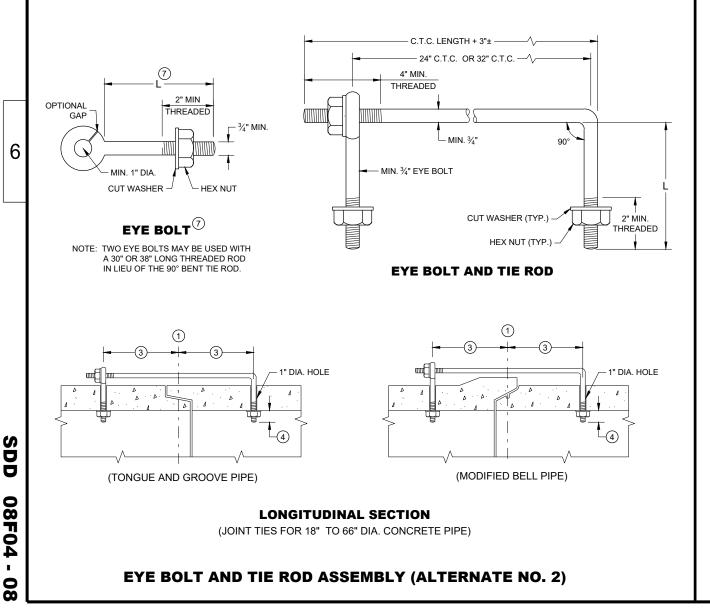
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1. 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1. AND 3 MAY BE USED FOR CATTLE PASSES. LINESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS. FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

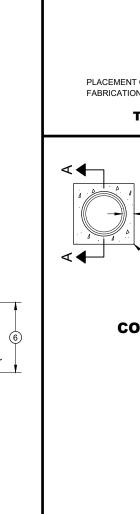
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

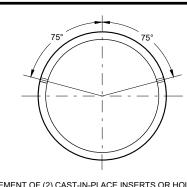
- 1) CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- 2 THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- (3) HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- 4 BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- 5 OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- 6 LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.
- (7) EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.



TIE ROD DIAMETER DIAMETER 5 12 - 60 5 DIMENSIONS SHOWN ARE IN INCHES **TAPERED PLAIN** RIGHT AND LEFT THREADS **SLEEVE NUTS** - 10 3/4" OR 14 3/4" - 10 3/4" OR 14 3/4" -**THREADED** FILL WITH MORTAR SLEEVE NUTS (SEE DETAILS) └- ±½" 12" OR 16 **LONGITUDINAL SECTION**

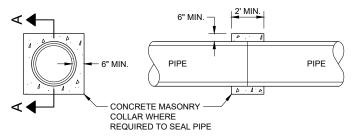
ADJUSTABLE TIE ROD TABLE





PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A - A CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE **COLLAR DETAIL**

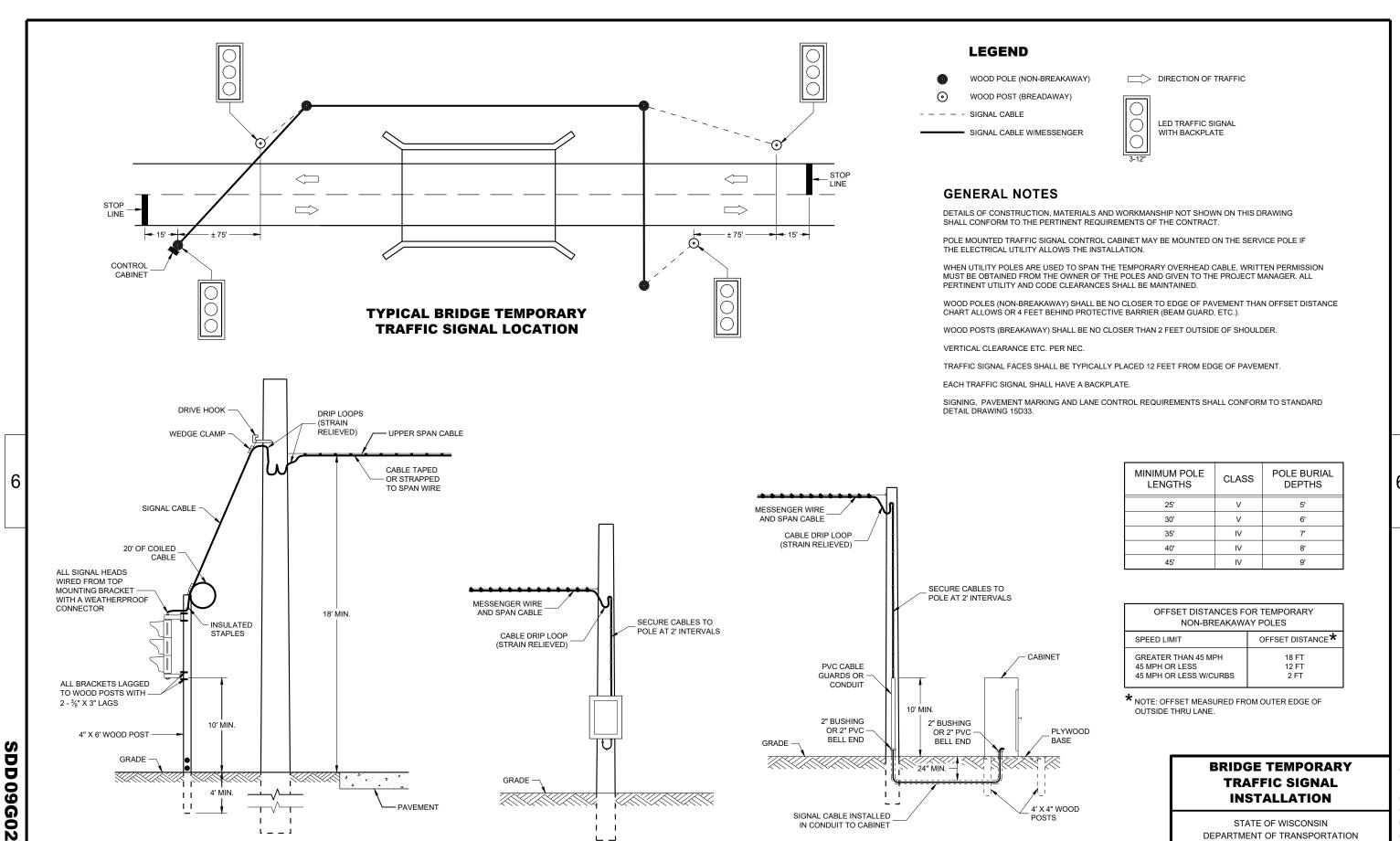
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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APPROVED /S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT
ENGINEER November 2021 DATE

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



POLE MOUNT

CABINET INSTALLATION

GRADE

- PAVEMENT

4' MIN.

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TYPICAL DROP TO

TRAFFIC SIGNAL FACE

24" MIN.

GROUND MOUNT

CABINET INSTALLATION

SIGNAL CABLE INSTALLED IN CONDUIT TO CABINET

4' X 4" WOOD

BRIDGE TEMPORARY TRAFFIC SIGNAL **INSTALLATION**

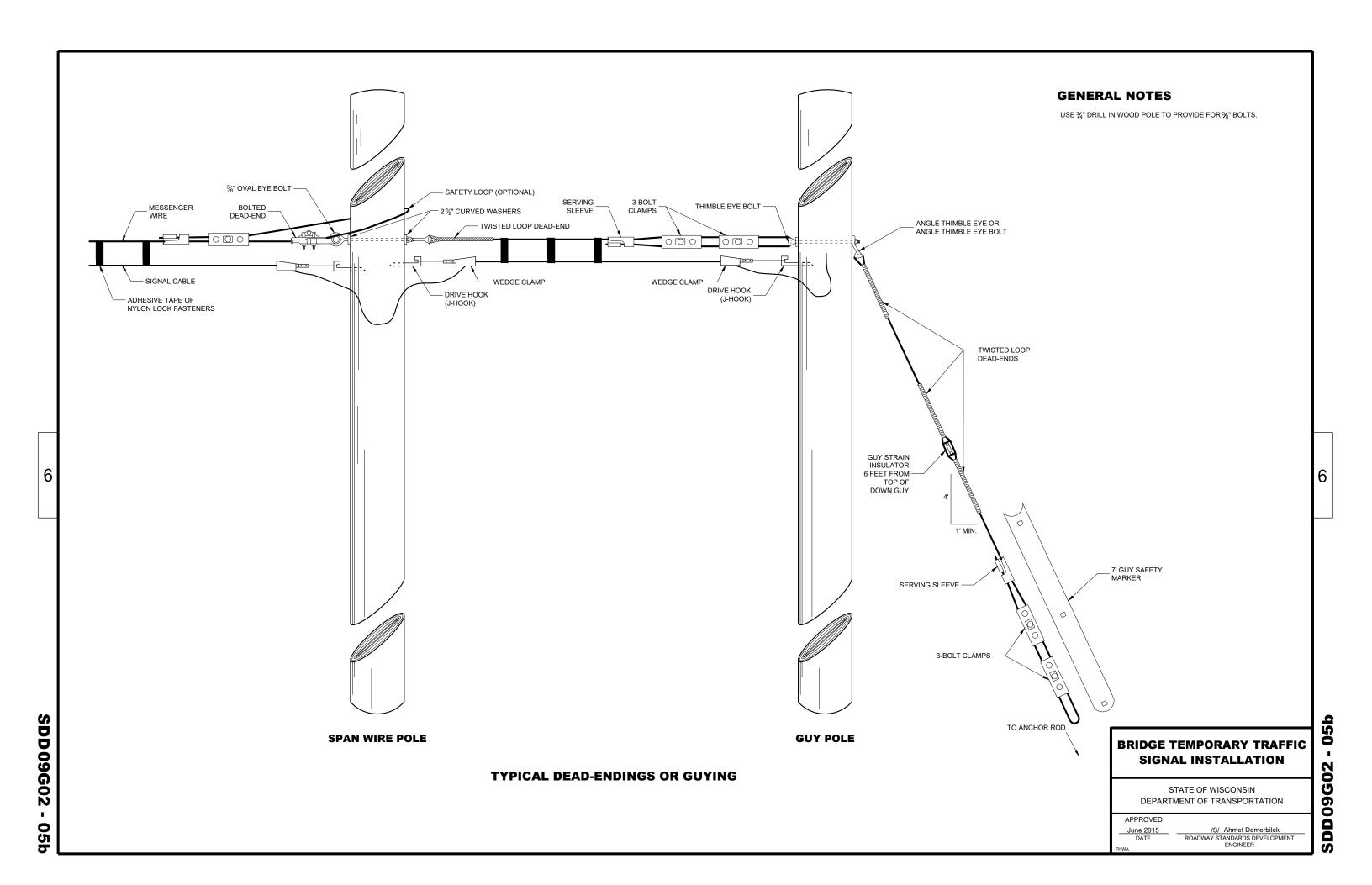
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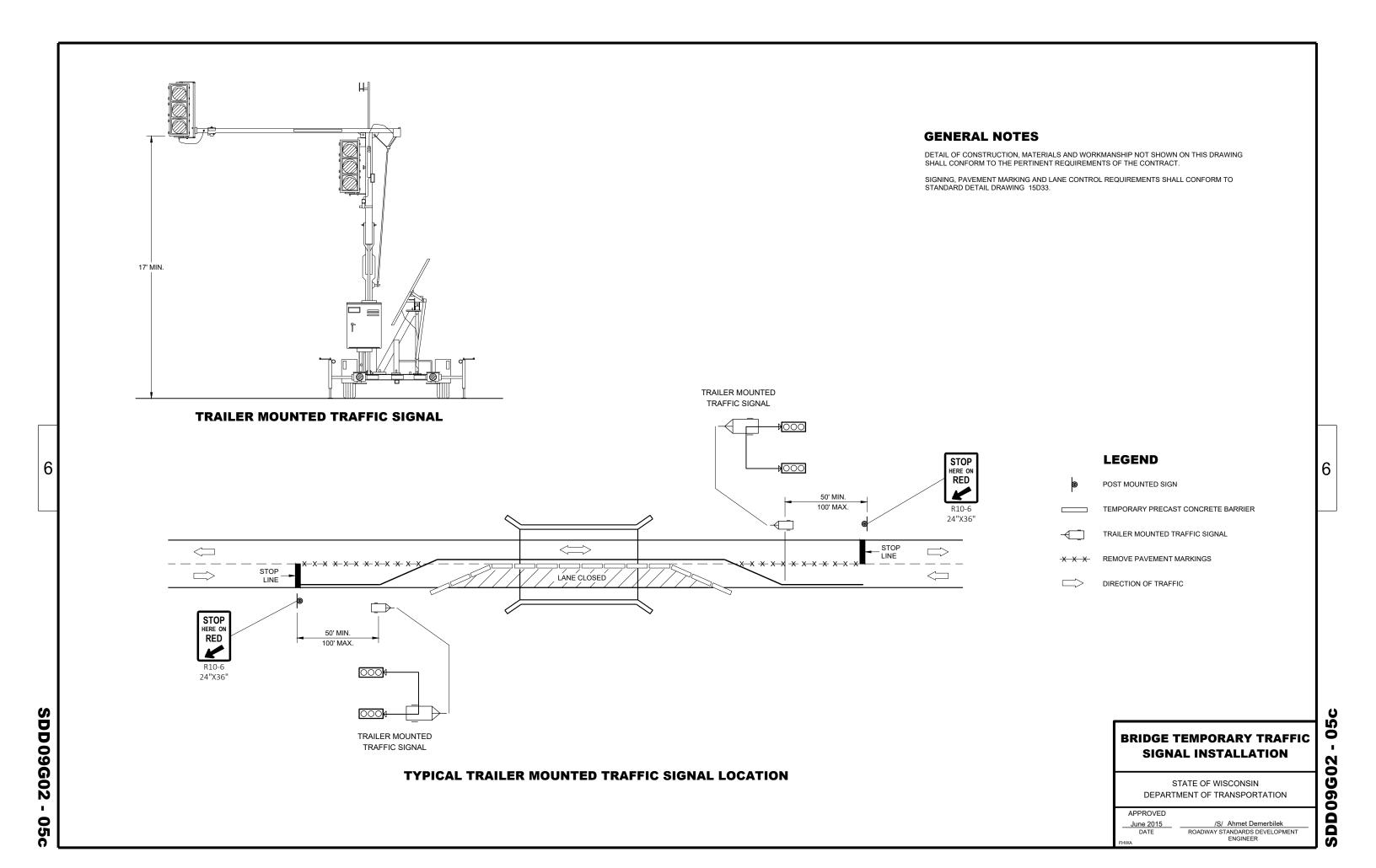
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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED March 2018 DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER









TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION MULTI-UNIT STRUCTURES

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.
- REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SPREAD OPEN SO THE TOP OF LUG IS 11/4" WIDE

SECTION A-A

ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/IO /S/ Scot Becker

DATE CHIEF STRUCTURAL DEVELOPMENT ENGINEER

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SDD 13A03

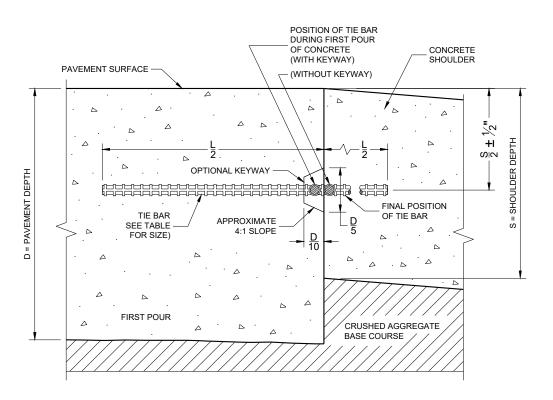
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

GENERAL NOTES

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A - A LONGITUDINAL CONSTRUCTION JOINT

- JOINT SPACING (SEE TABLE) -1' - 0" DOWEL BARS 12" C -C DOWEL BARS 12" C -C (SEE DOWEL BAR TABLE) SHOULDER WIDTH TIE BAR (SEE TIE BAR TABLE TIE BAR SPACING FOR SIZE) (SEE TABLE) LONGITUDINAL JOINT → 15" MIN. →

PLAN VIEW CONCRETE PAVEMENT SHOULDER

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
<10 ½"	NO. 4	30"	36"
>10 ½"	NO. 5	36"	36"
~ 10 / ₂	NO. 4*	30"	_{24"} * *

* SUBSTITUTE BENT BATS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES.

CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

	PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER ***	CONTRACTION JOINT SPACING		
	6", 6 ½"	NONE	12"		
ſ	7", 7½"	1"	14"		
Ī	8" & ABOVE	1 %"	15"		

FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FRO THE AVERAGE THICKNESS OF THE CROSS SECTION.

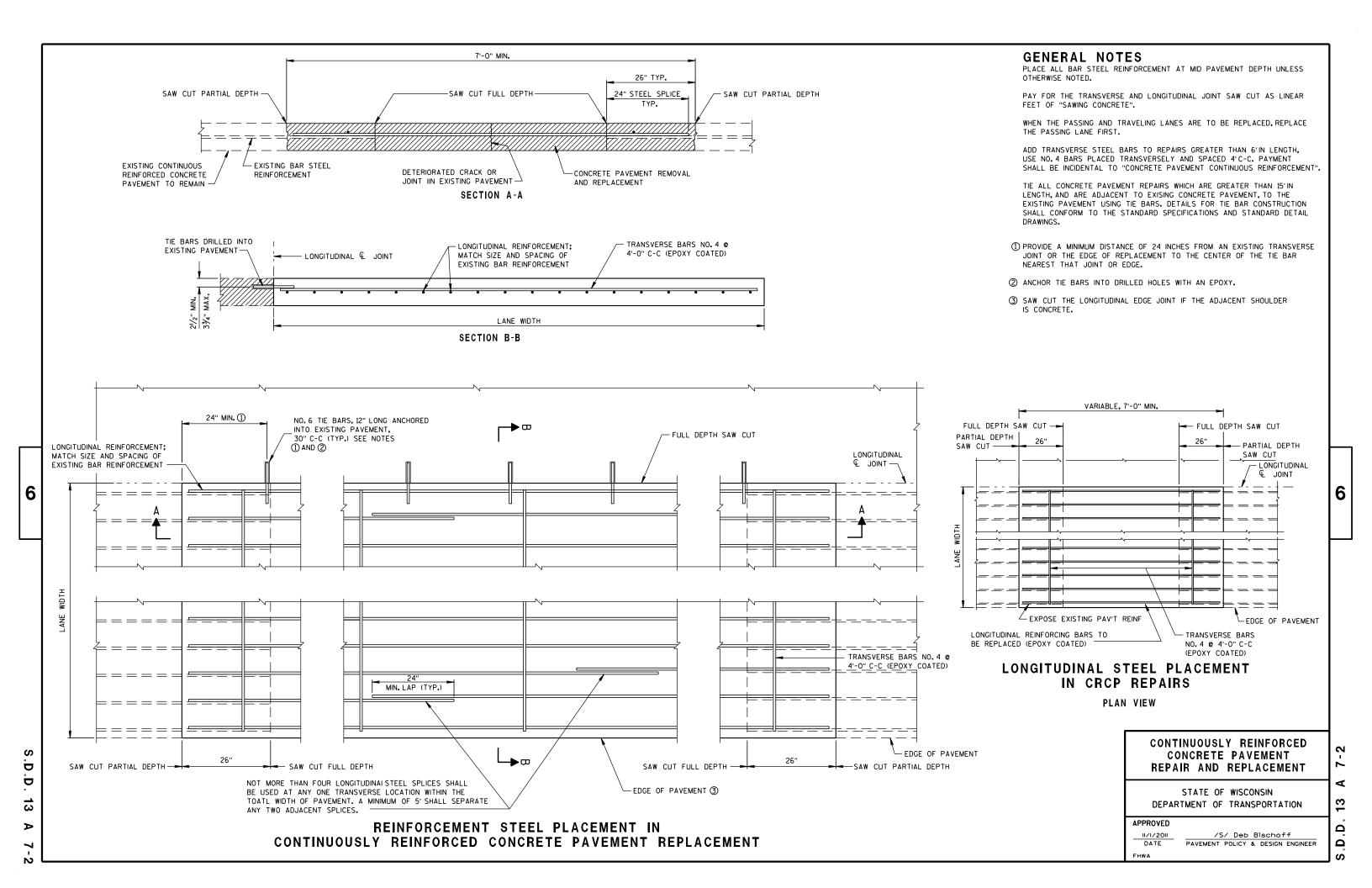
CONCRETE PAVEMENT SHOULDERS

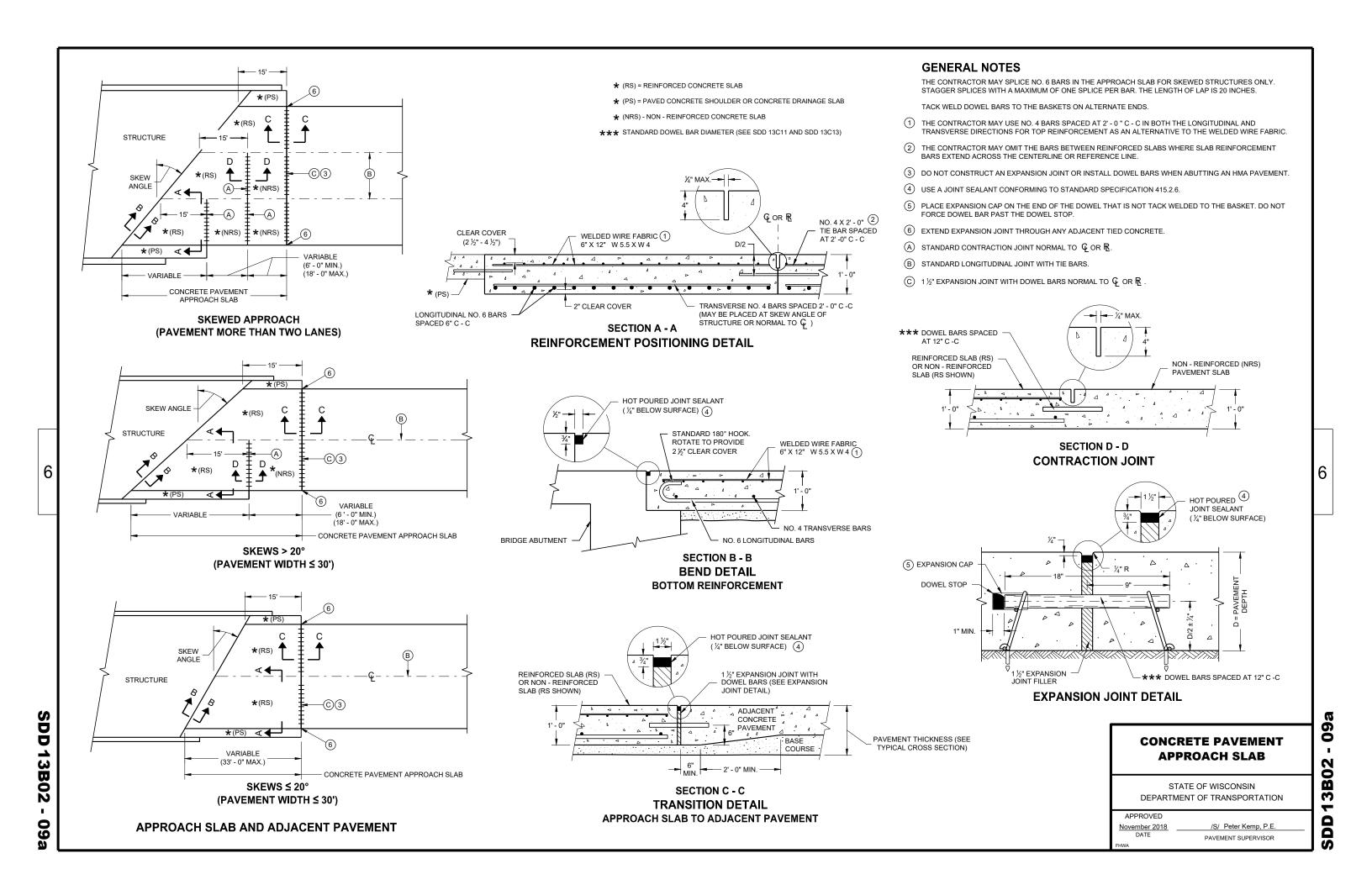
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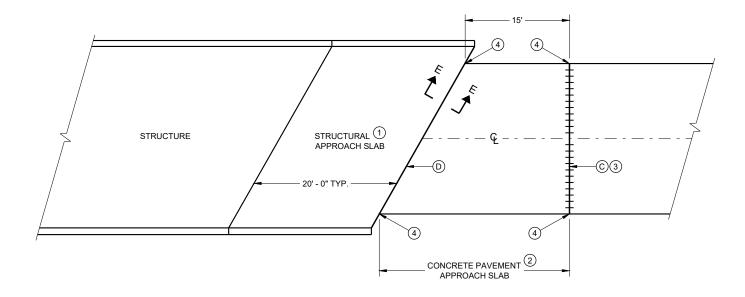
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED November 2022 DATE /S/ Peter Kemp PAVEMENT SUPERVISOR

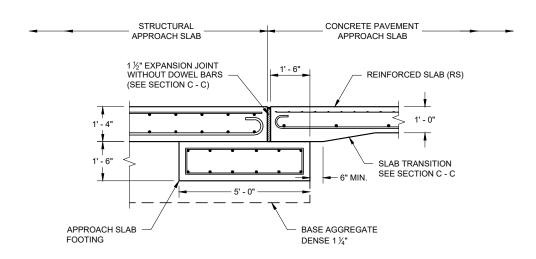








BRIDGE APPROACHES



SECTION E - E FOOTING DETAIL STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE PAVEMENT APPROACH SLAB.

- 1 SEE BRIDGE PLAN.
- (2) CONFORM TO SDD 13B02 SHEET A FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS
- \bigcirc DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- 4 EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- © 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO GOR R.
- D 1 ½" EXPANSION JOINT (NO DOWELS)

STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT **APPROACH SLAB**

> STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

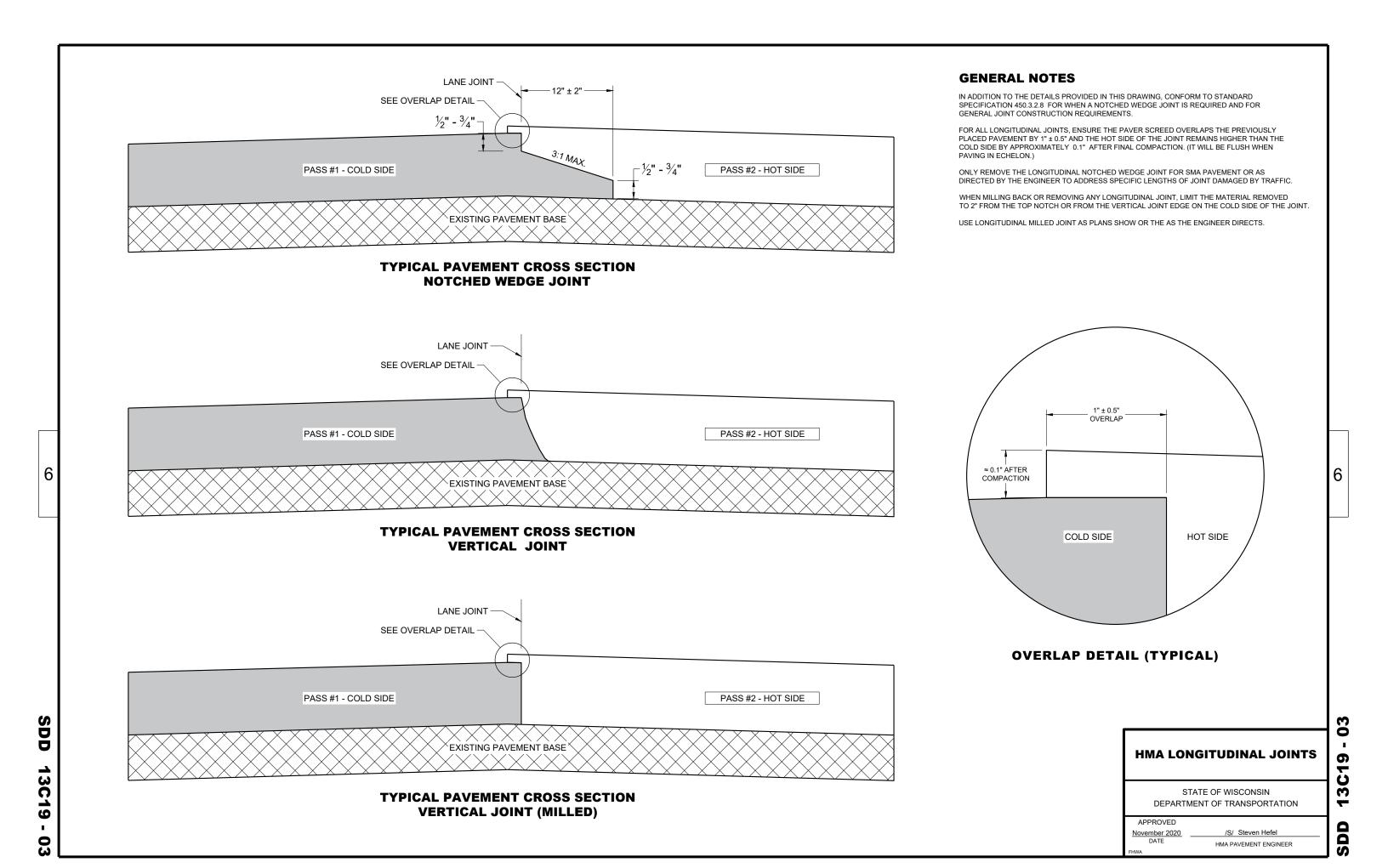
APPROVED

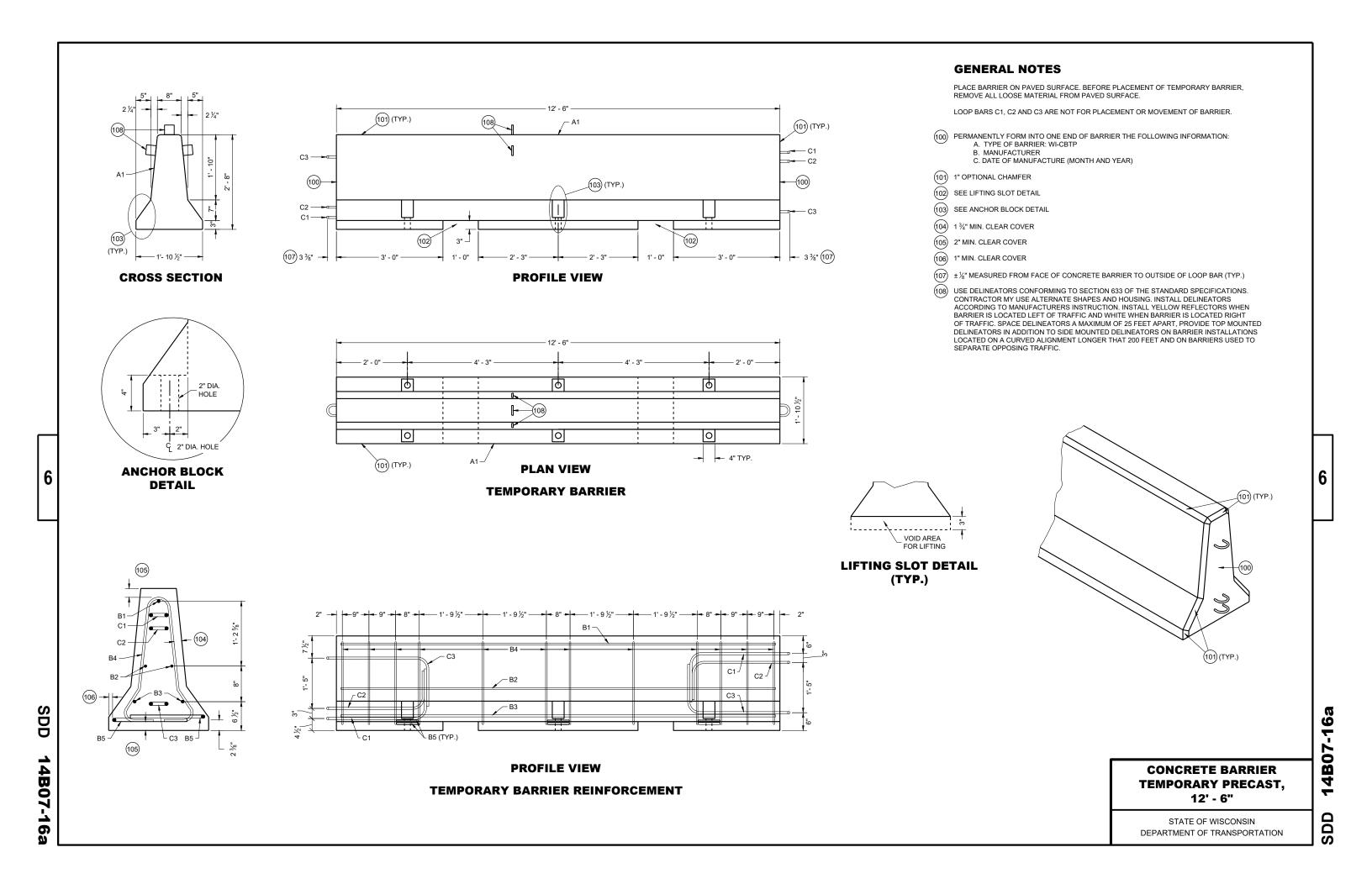
November 2018 DATE

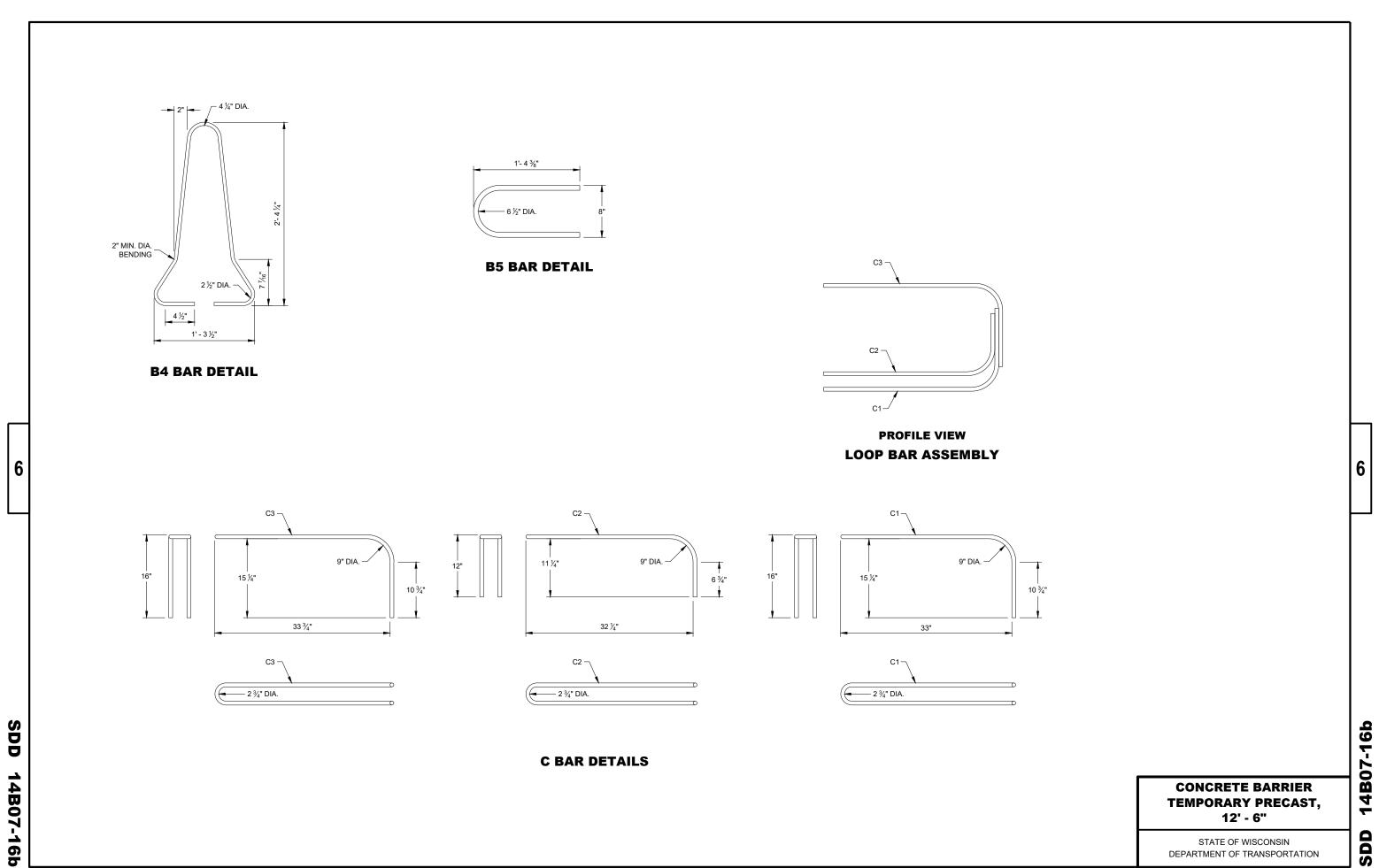
/S/ Peter Kemp P.E. PAVEMENT SUPERVISOR 60

3B02

SDD

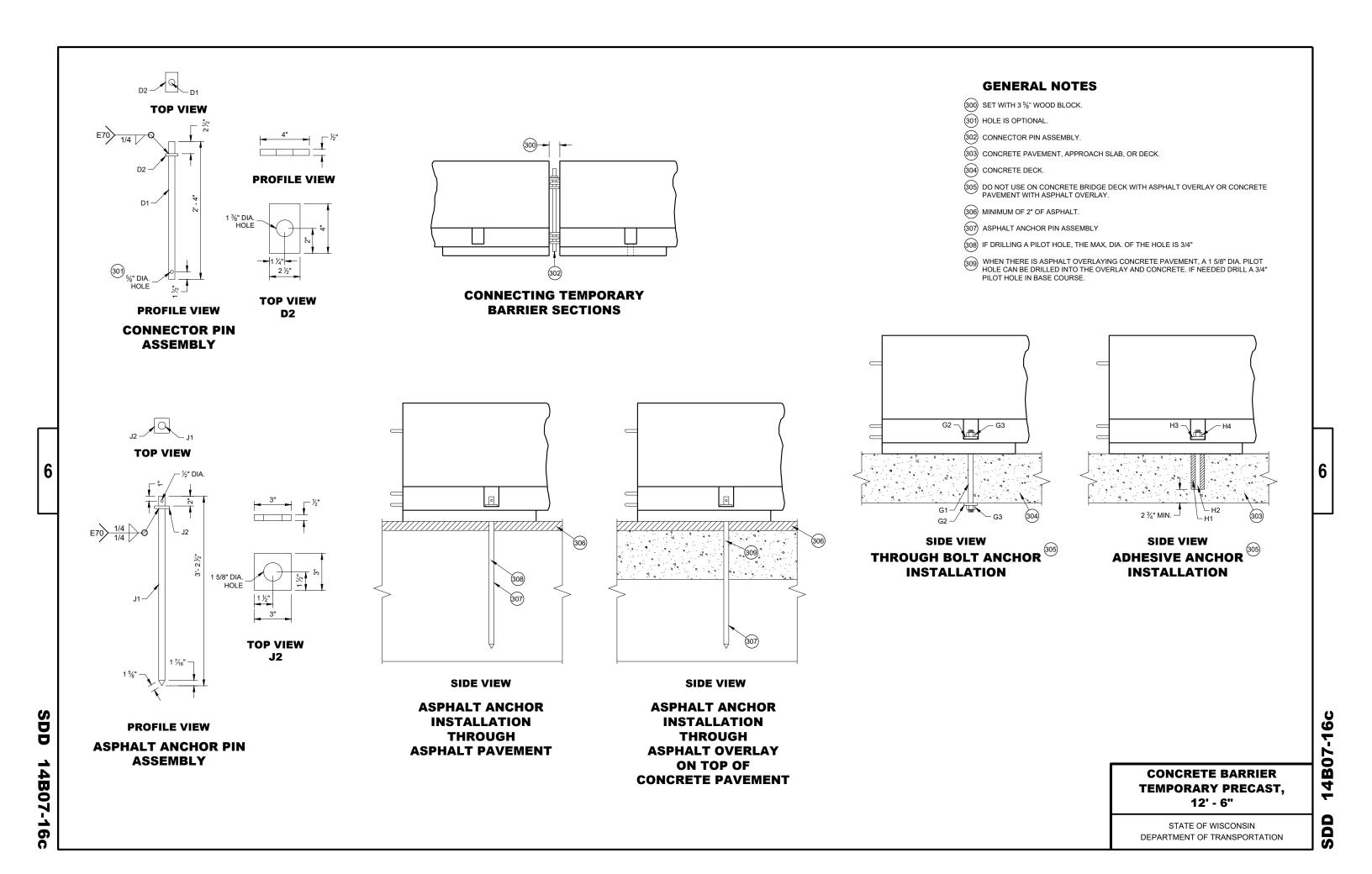


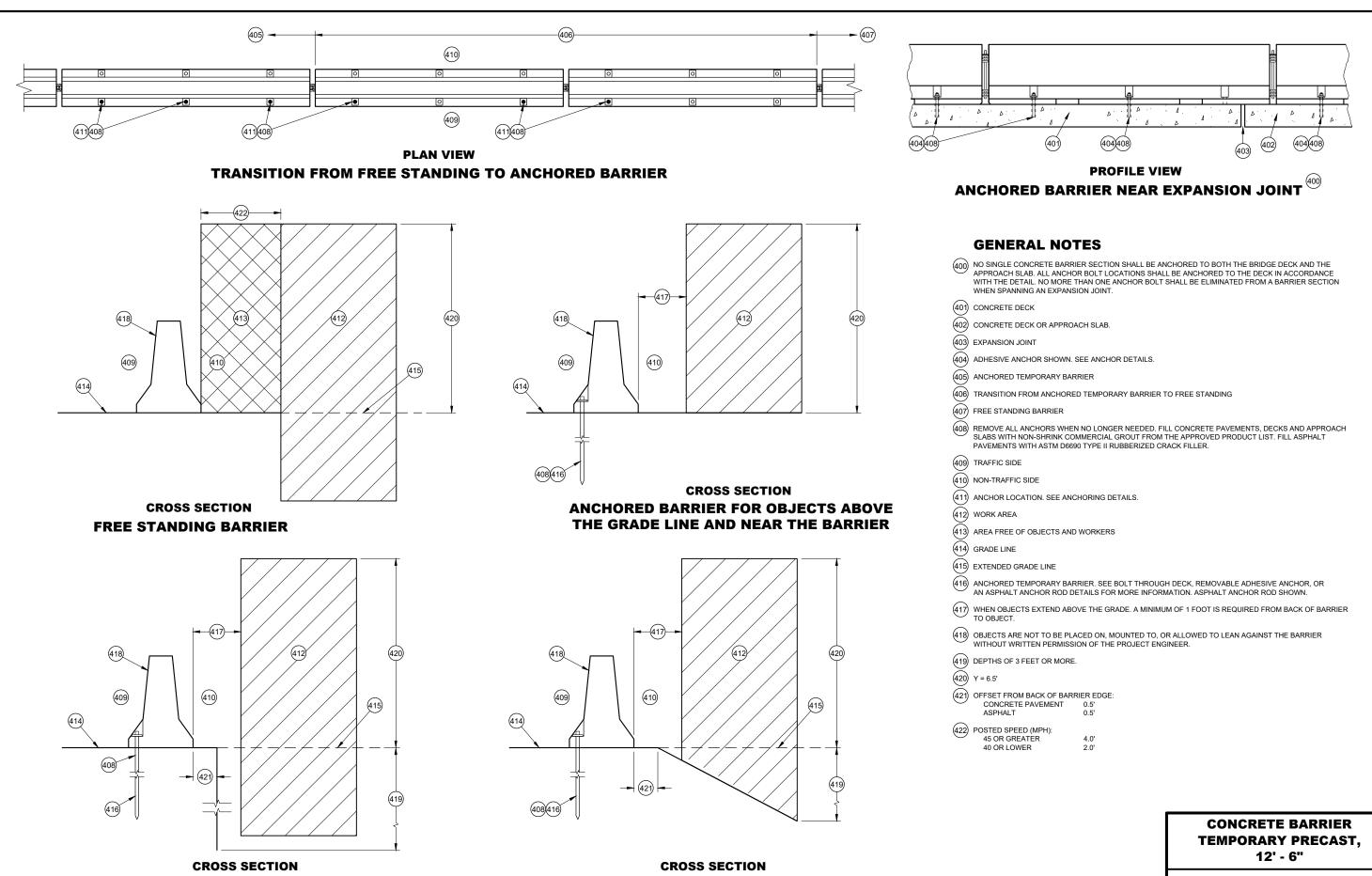




SDD

DEPARTMENT OF TRANSPORTATION





ANCHORED BARRIER NEAR A SLOPE

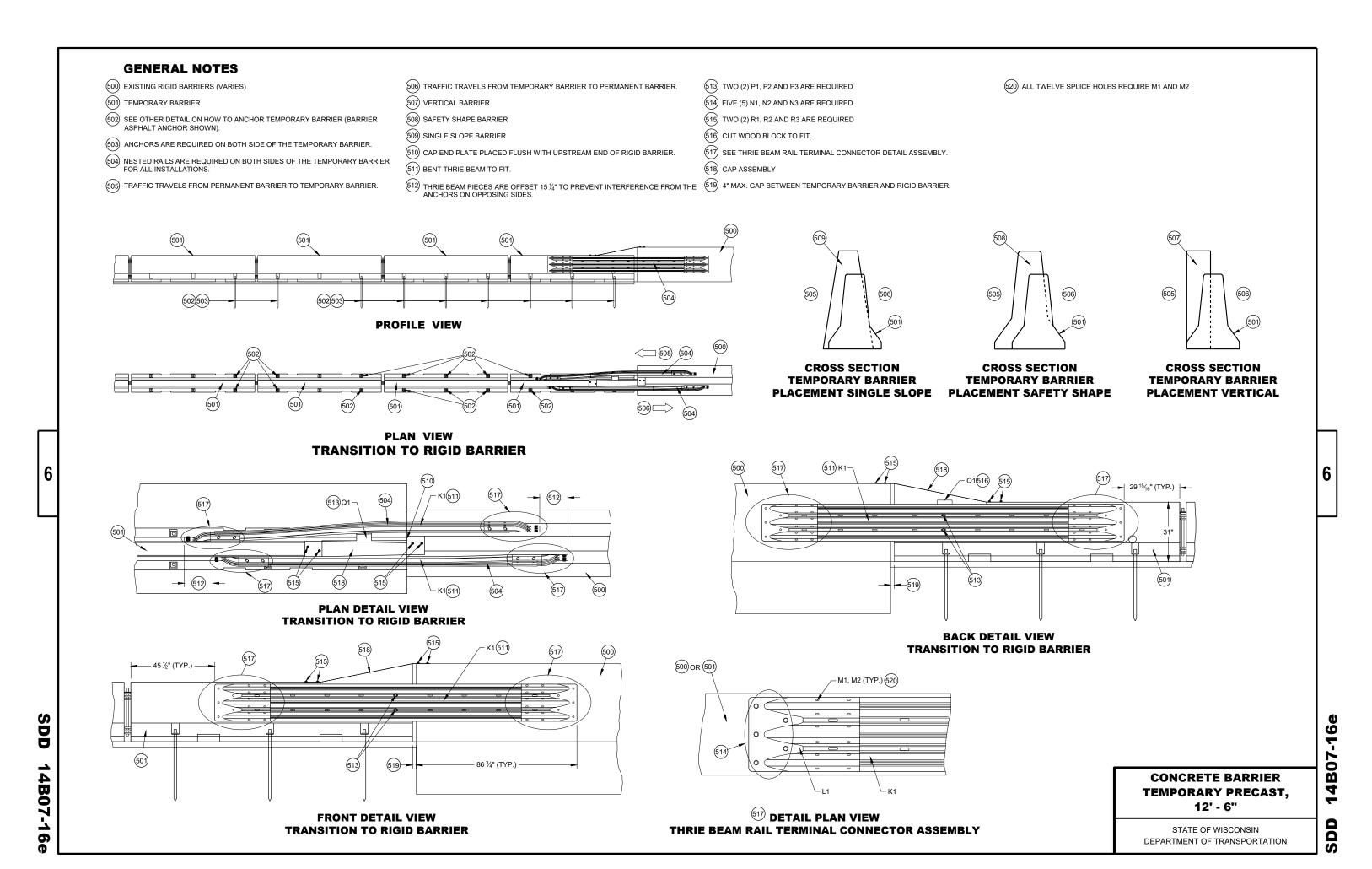
SDD

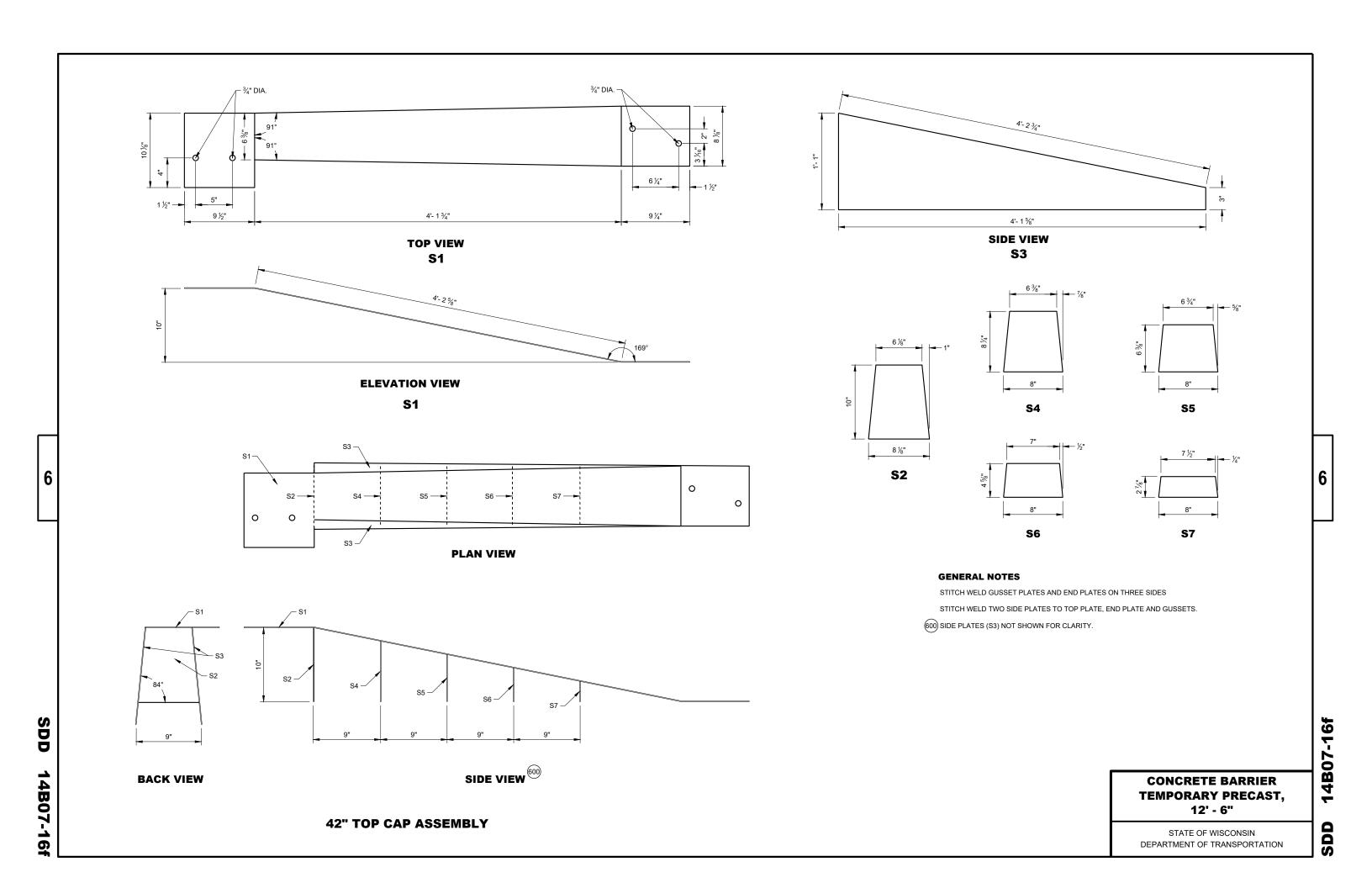
14B07-16d

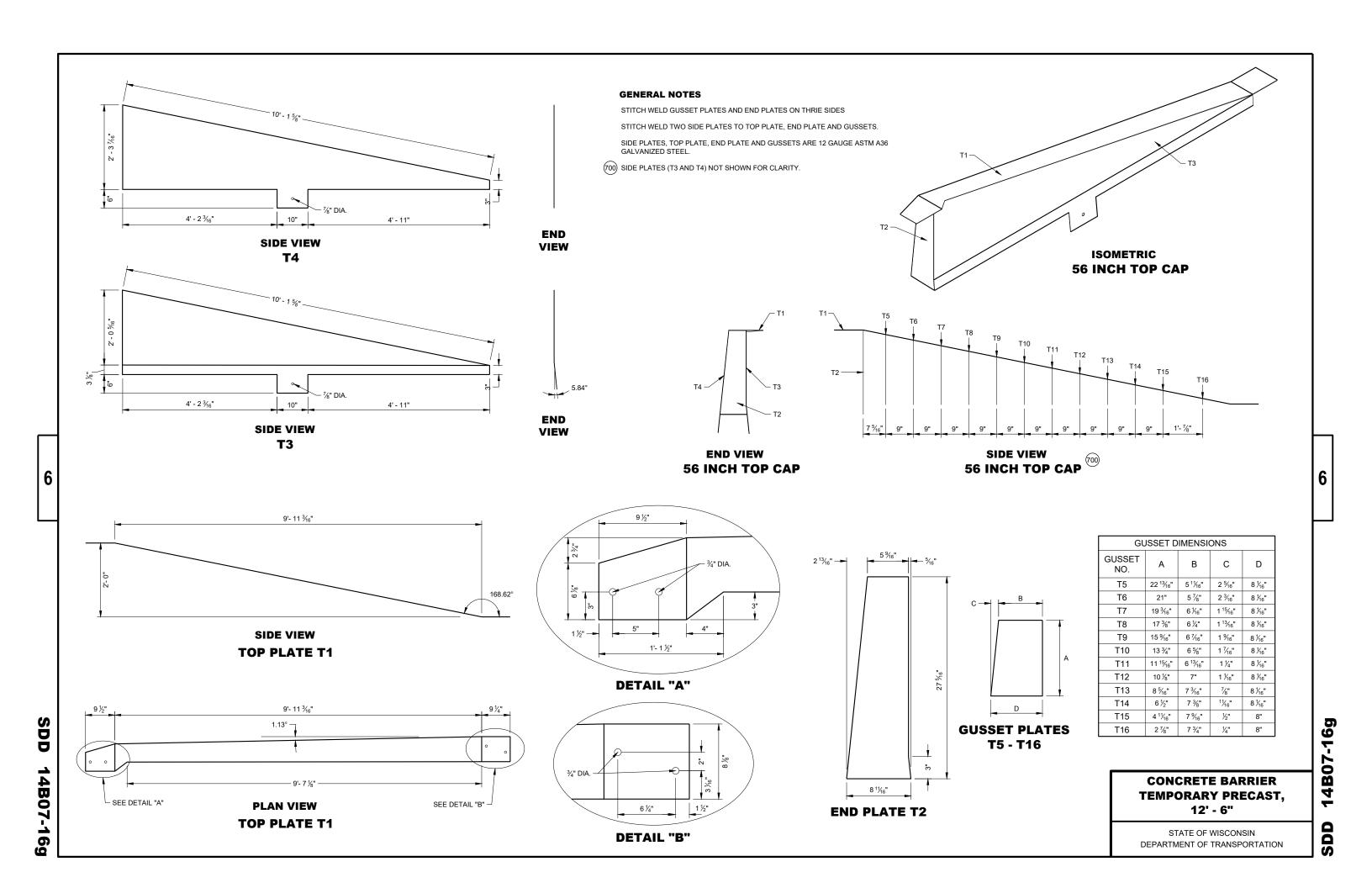
ANCHORED BARRIER NEAR VERTICAL DROP OFF

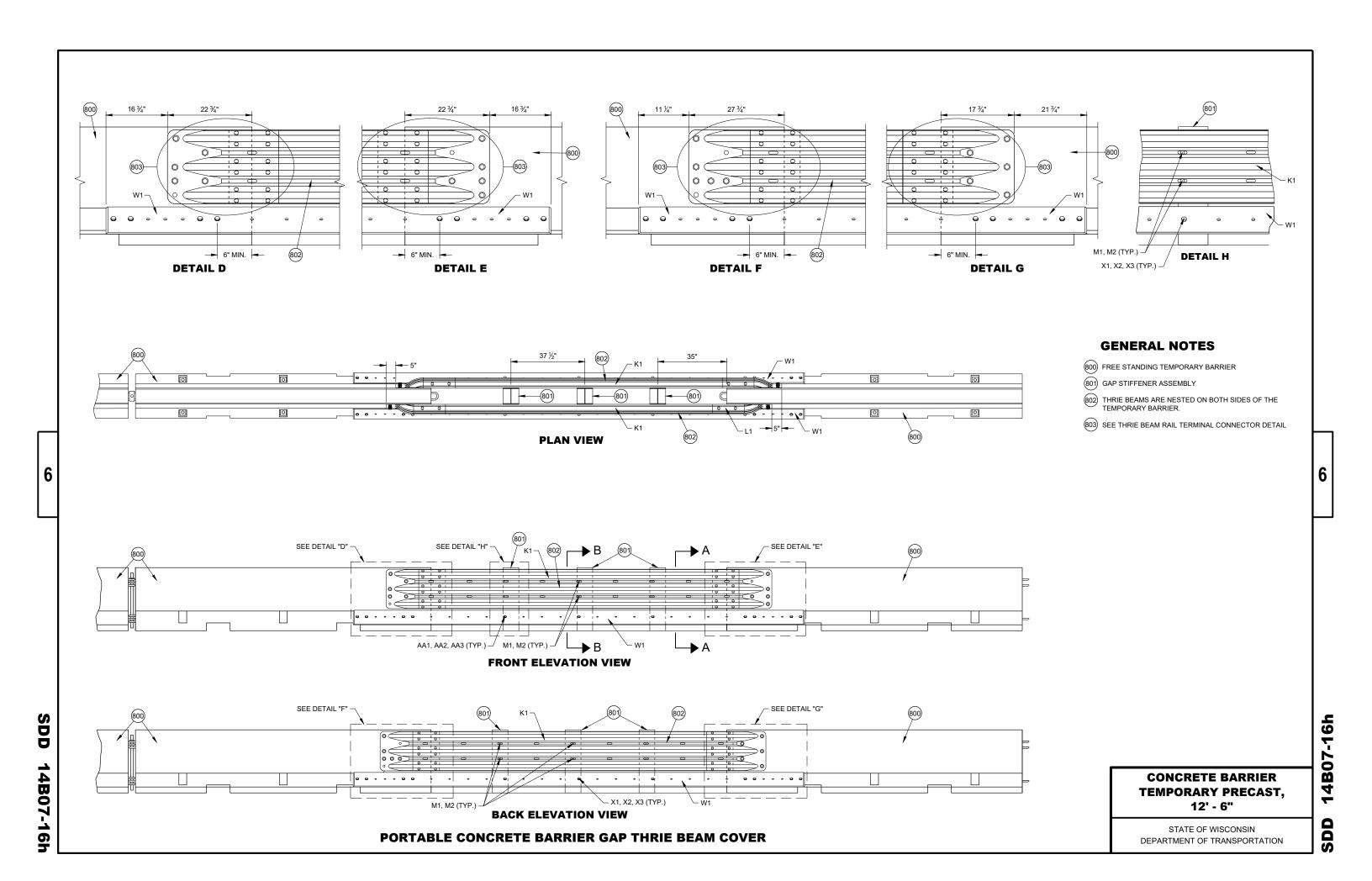
DD 14B07-16d

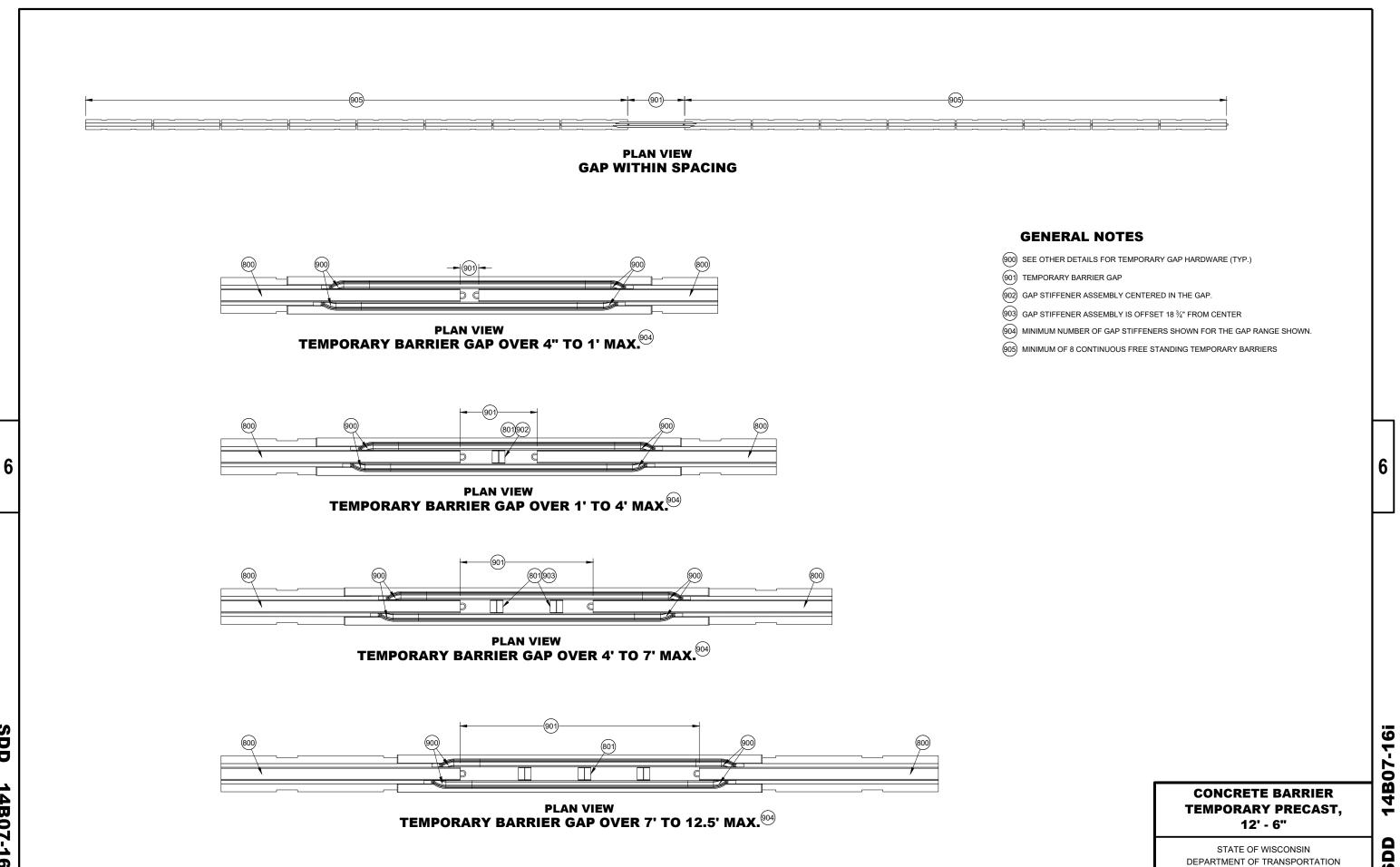
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



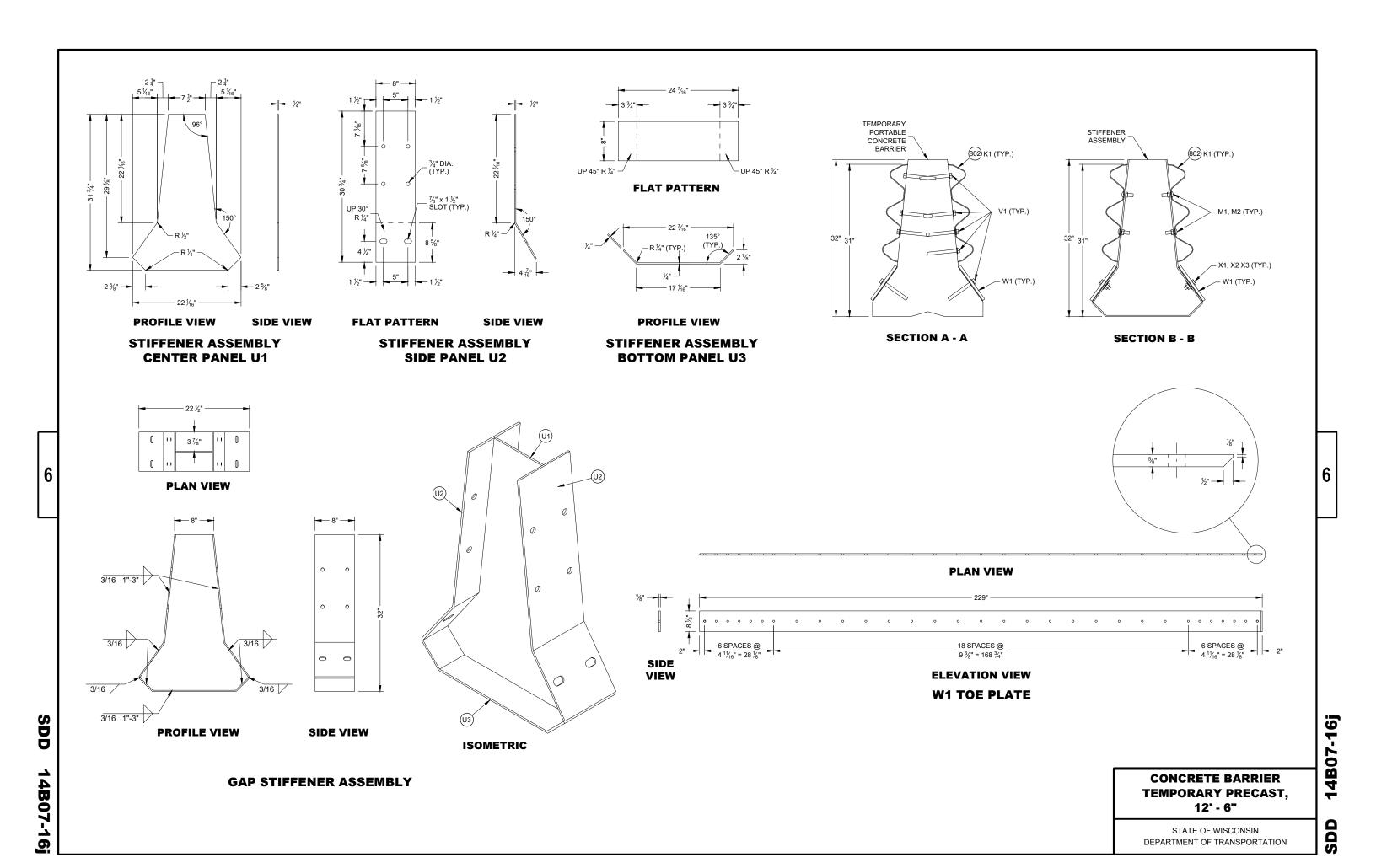








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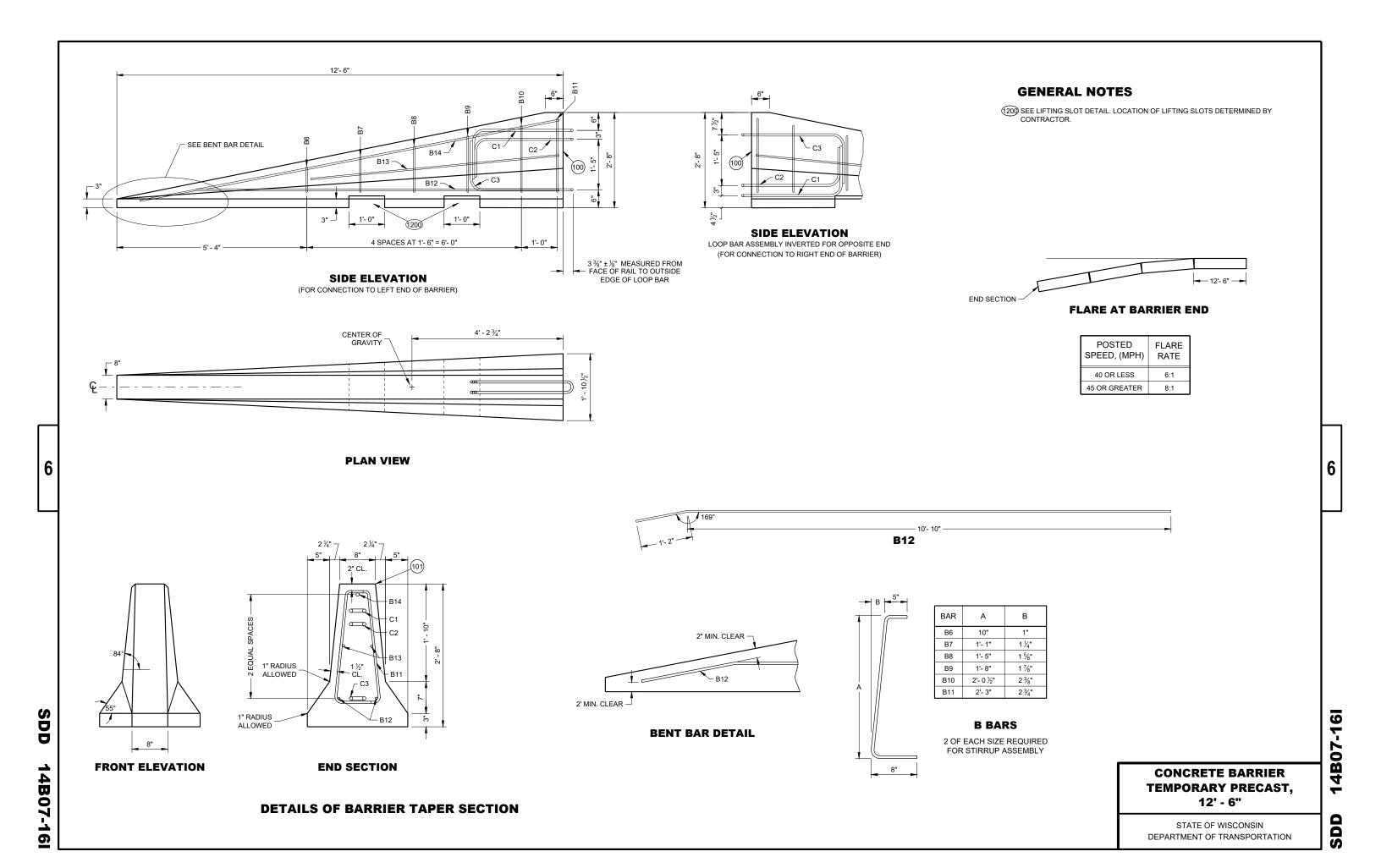


BEAM K1

14B07-16k SDD

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

12' - 6"



PART DESCRIPTION		DESCRIPTION MATERIALS SPECIFICATIONS		
M1	SPLICE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36		
M2	SPLICE BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5		
N1	THRIE BEAM RAIL TERMINAL - MECHANICAL ANCHOR	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5		
N2	THRIE BEAM RAIL TERMINAL - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1		
N3	THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.		
P1	THRIE BEAM RAIL CONNECTION 1-BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5		
P2	THRIE BEAM RAIL CONNECTION 1-WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1		
P3	THRIE BEAM RAIL CONNETION 1- MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.		
Q1	BLOCK WOOD	SEE STANDARD SPEC. 614		
R1	CAP - BOLT	CAP - BOLT HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5		
R2	CAP- BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1		
R3	CAP - BOLT - MECHANICAL ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	12 GAUGE	
S1	CAP 42-INCH TOP PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE	
S2	CAP 42-INCH END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 CAP 42-INCH END PLATE MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI		
S3	CAP 42-INCH SIDE PLATE AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI		12 GAUGE	
S4	CAP 42-INCH GUSSET 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI		
S5	CAP 42-INCH GUSSET 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI		
S6	CAP 42-INCH GUSSET 3	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI		
S7	CAP 42-INCH GUSSET 4	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI		

CONCRETE BARRIER TEMPORARY PRECAST, 12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

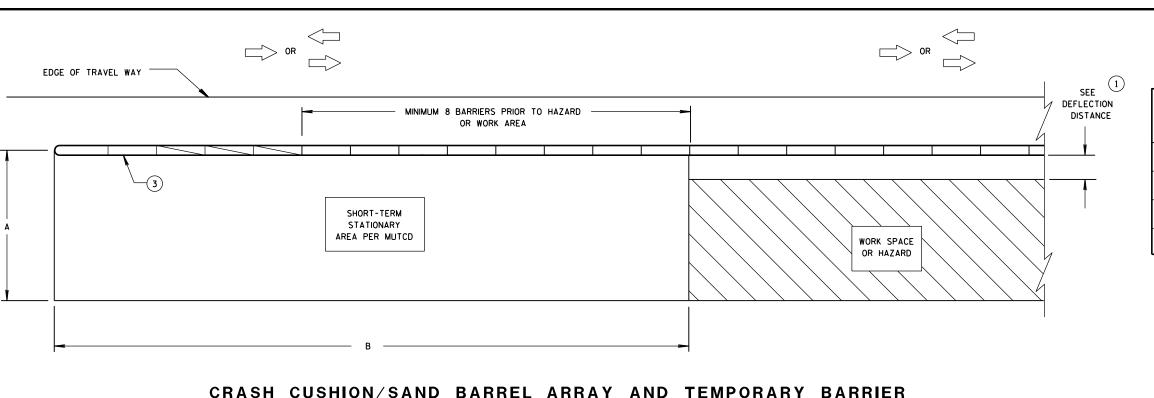
PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
V1	THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 24.0 KIPS AND ULTIMATE SHEAR LOAD 21.5 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	¾" DIA.
V2	GAP STIFFENER - BOLT - NUT HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C O R MECHANICAL GALVANIZE TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5		
W1	TOE PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
X1	TOE PLATE - CONNECTION BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC HEAVY HEX HEAD OR AASTHO M180 HEAD, ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED. PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT.	¾" DIA.
X2	TOE PLATE - CONNECTION BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1 (HARDEN WASHER ONLY)	
ХЗ	TOE PLATE - CONNECTION BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	

CONCRETE BARRIER TEMPORARY PRECAST. 12' - 6"

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED

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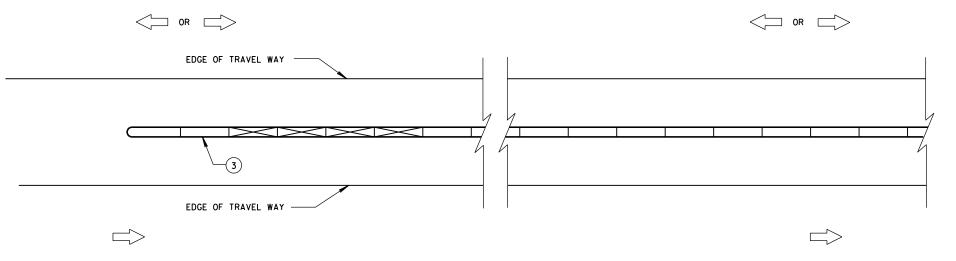
DIMENSION A TABLE (2)

		DIMENSION A	
FACILITY	POSTED SPEED MPH	MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE (2)

POSTED SPEEDS	DIMENSION B
MPH	FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
-	

INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER

GENERAL NOTES

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SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

- (1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.
- (2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.
- (3) ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

DEPARTMENT OF TRANSPORTATION

6

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

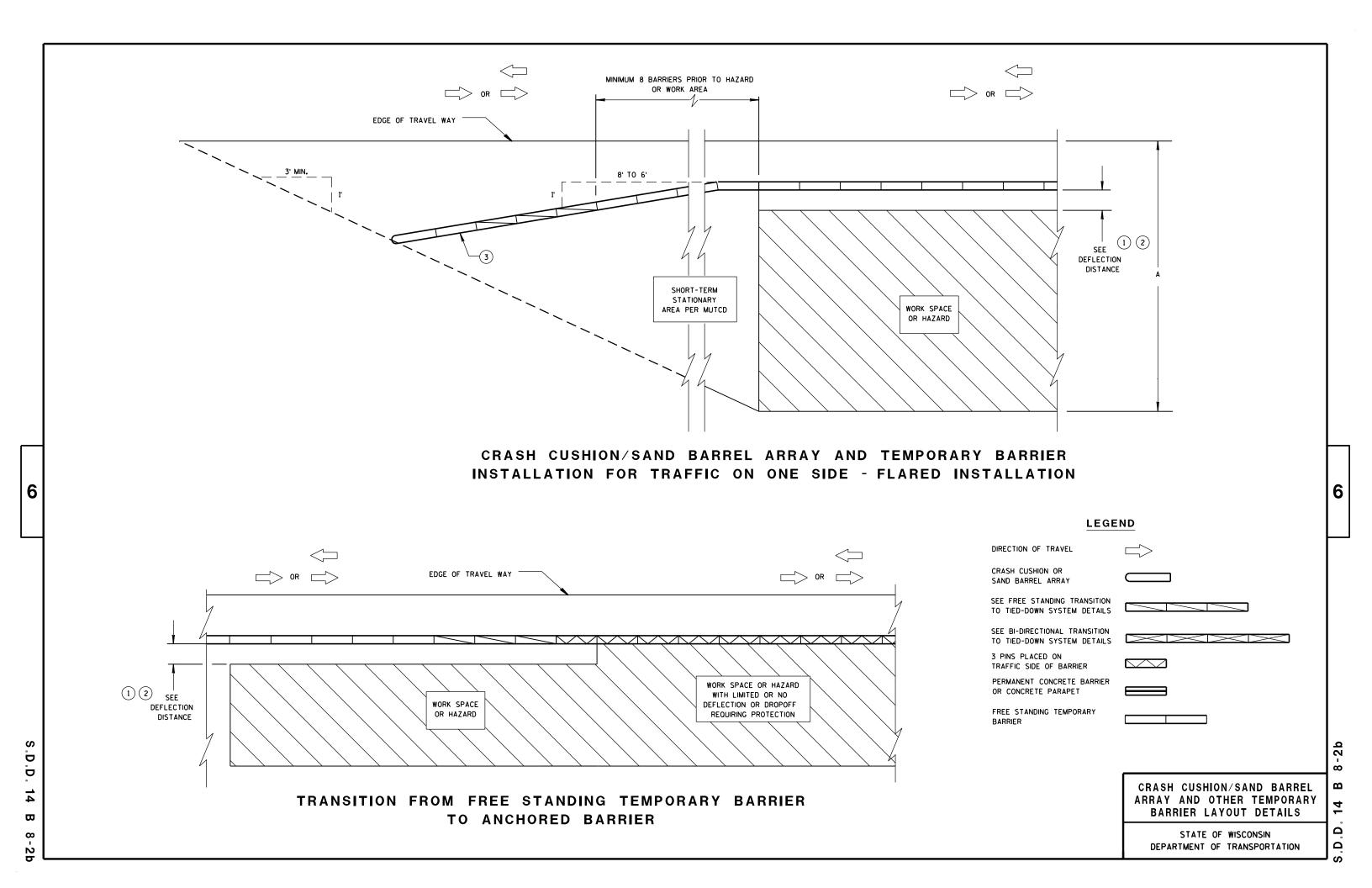
OR CONCRETE PARAPET

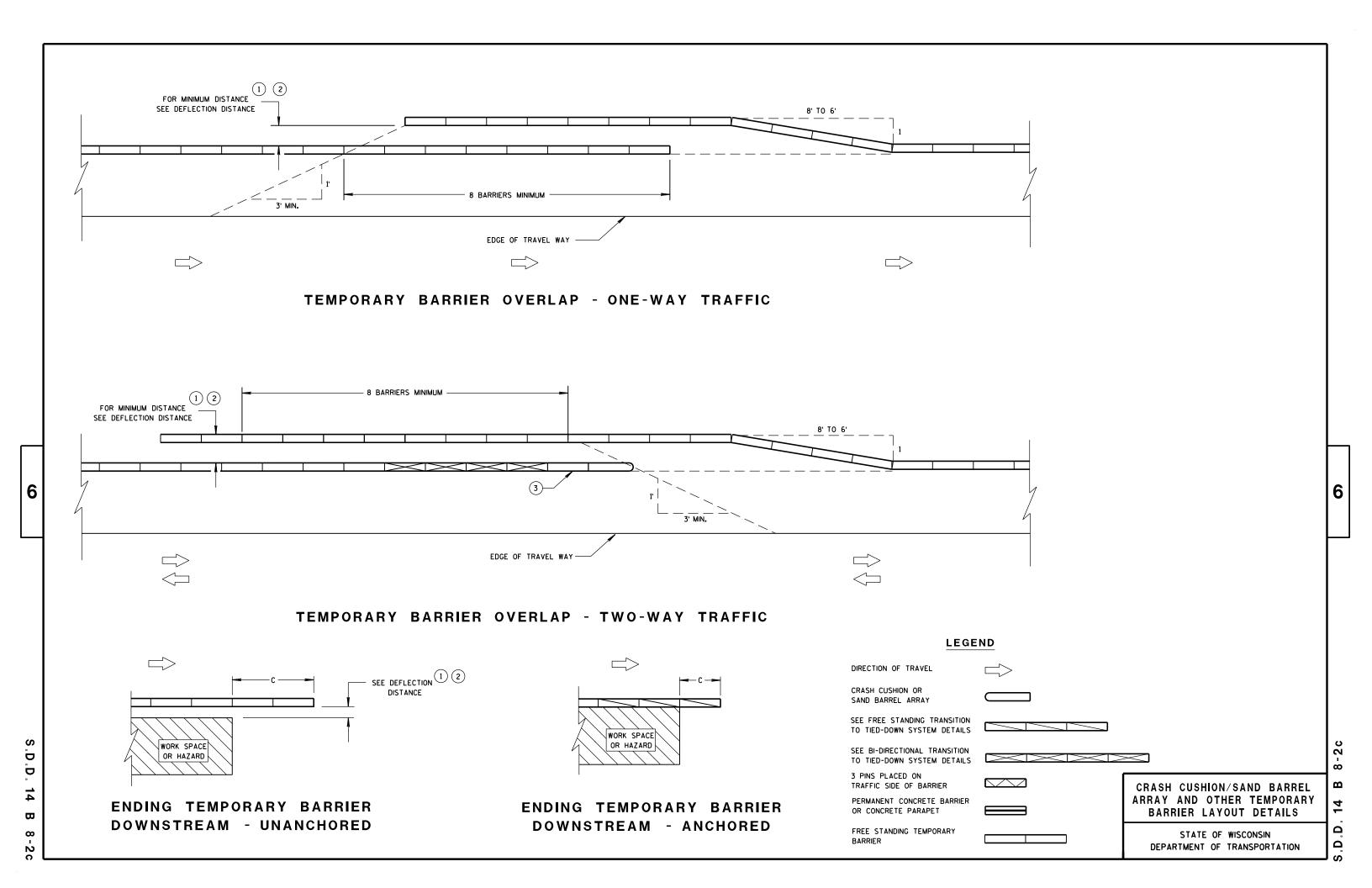
PERMANENT CONCRETE BARRIER

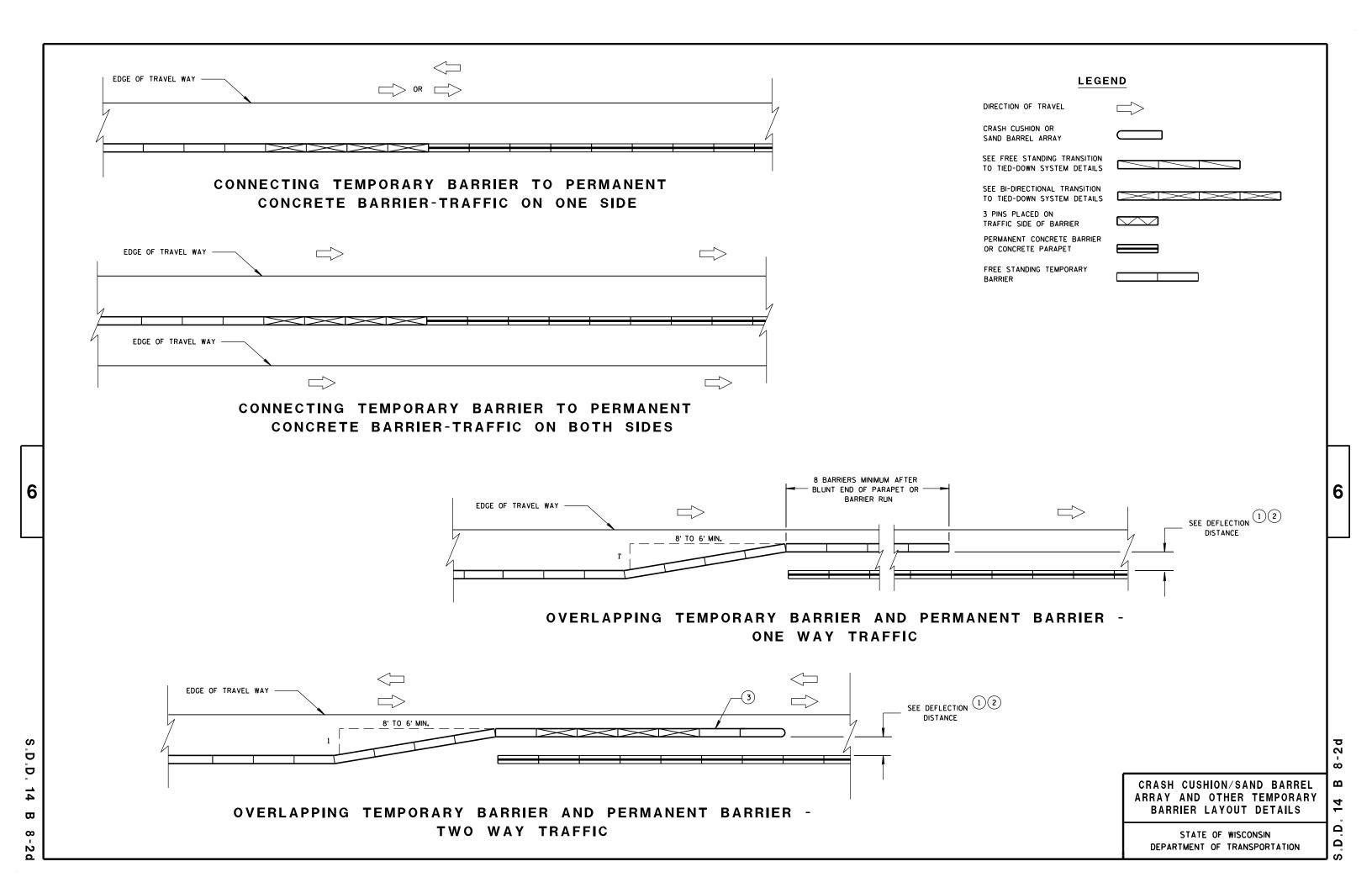
FREE STANDING TEMPORARY BARRIER

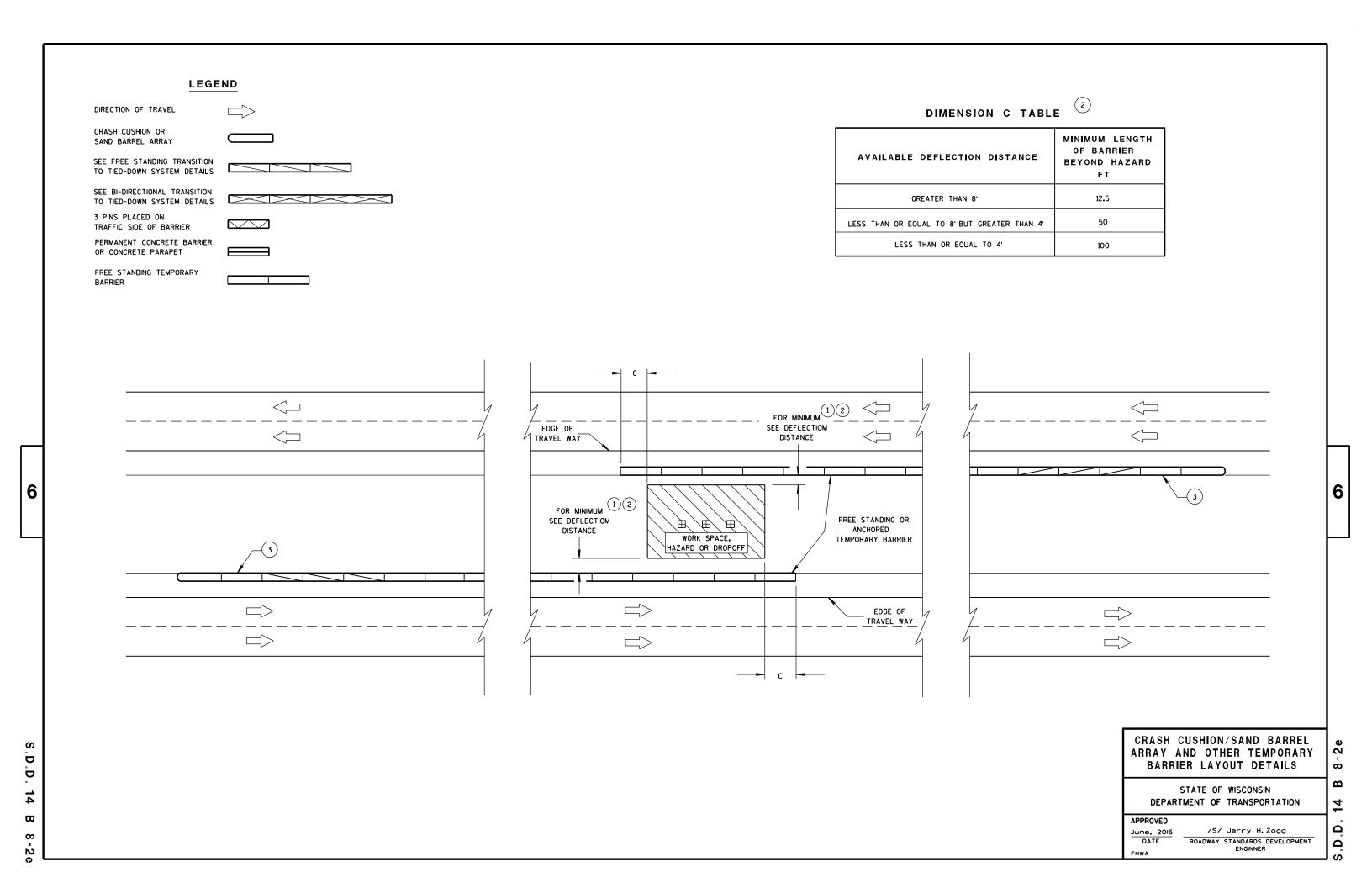
N ∞ $\mathbf{\omega}$ Ω

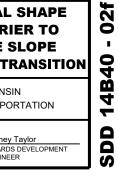
STATE OF WISCONSIN Ω

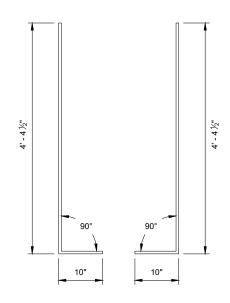










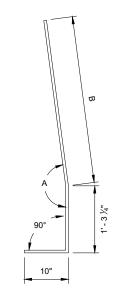






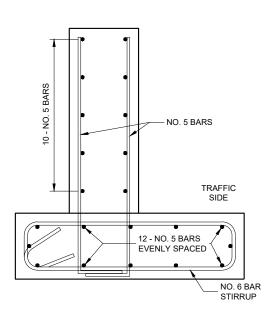
BAR CHART

BAR	Α	В
2	179°	3' - 1 ¾"
3	178°	3' - 1 ¾"
4	177°	3' - 1 3/4"
5	176°	3' - 2"
6	175°	3' - 1 3/4"
7	175°	3' - 1 ¾"
8	174°	3' - 1 ¾"
9	173°	3' - 2"
10	172°	3' - 2"
11	172°	3' - 2"
12	170°	3' - 2 1/4"

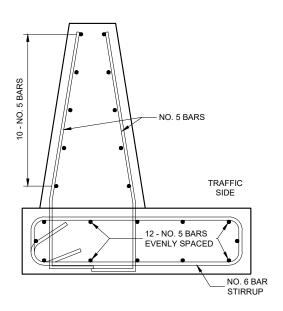


BENDING DETAIL BAR 2 - 12

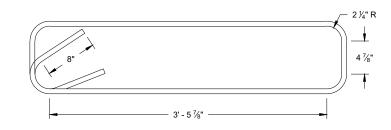
10"



BAR DETAIL BAR POSITION 1



BAR DETAIL BAR POSITIONS 2 - 12



STIRRUP BAR **BENDING DETAIL**

42-INCH VERTICAL SHAPE CONCRETE BARRIER TO 42-INCH SINGLE SLOPE CONCRETE BARRIER TRANSITION

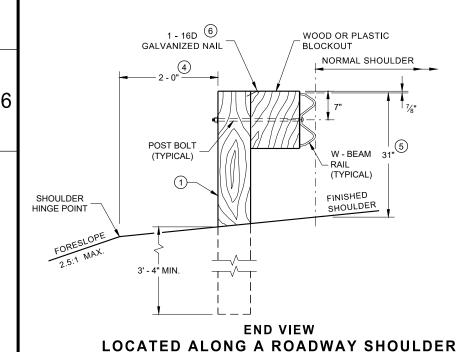
> STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED

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

SDD 14B40 - 02f

- 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 AMD 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).
- $\fill \ensuremath{5}$ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS \$\pm1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 % " 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.
- \bigcirc TOTAL POST LENGTH FOR TYPE K IS 7' 0". TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' 0".



STANDARD INSTALLATION

FILL WITH
FOUNDATION
BACKFILL

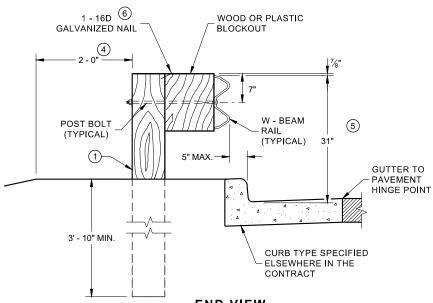
44 ½" MIN.
WHERE "A"
IS ≥ 22"

2½"

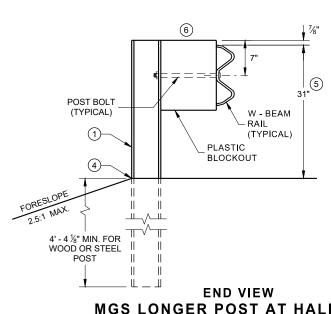
2" MIN.

20" MIMIMUM EMBEDMENT IN SOLID
ROCK IF SHORTENED POST IS USED
WHERE "A" IS ≤ 22"

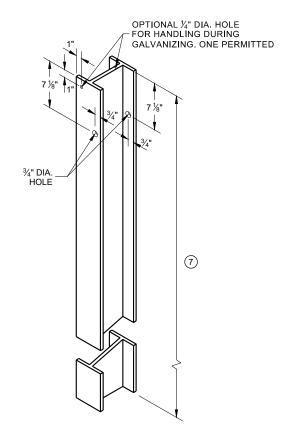
SETTING STEEL OR WOOD POST IN ROCK



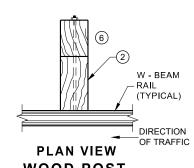
END VIEW
LOCATED ALONG A CURBED ROADWAY



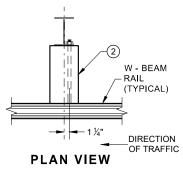
END VIEW
MGS LONGER POST AT HALFPOST
SPACING W BEAM (K)



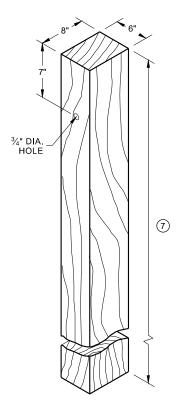
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) ^①



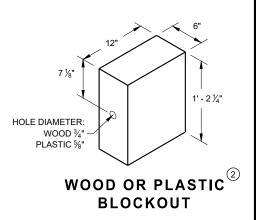
WOOD POST,
BLOCKOUT & BEAM



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM



WOOD POST (6" X 8") NOMINAL



MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B42 - 07

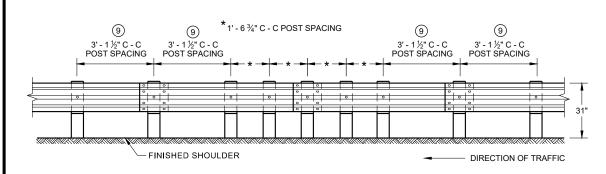
POST SPACING POST SPACING FINISHED SHOULDER DIRECTION OF TRAFFIC

3' 1½" C -C 3' 1½" C - C POST SPACING POST SPACING

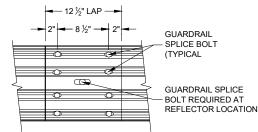
6' 3" C - C

6' - 3" C -C

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



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



MID-SPAN BEAM SPLICE

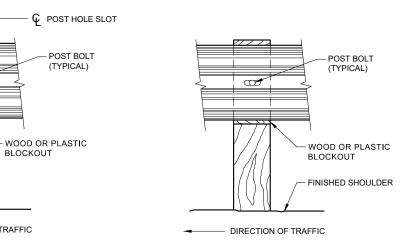
¾" X 2 ½" POST BOLT

REFLECTOR LOCATIONS

BLOCKOUT

— DIRECTION OF TRAFFIC

FRONT VIEW



GENERAL NOTES

OF QUARTER POST SPACING.

RECESSED (DR) HEAVY HEX NUT.

OF THE ENERGY ABSORBING TERMINAL.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END

(9) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS

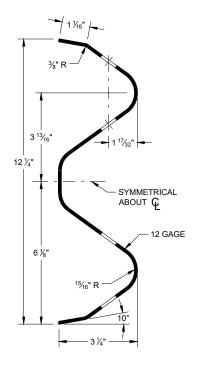
POST BOLTS ARE A %" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT

GUARD RAIL SPLICE BOLTS ARE A %" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES %" DIAMETER A563A DOUBLE

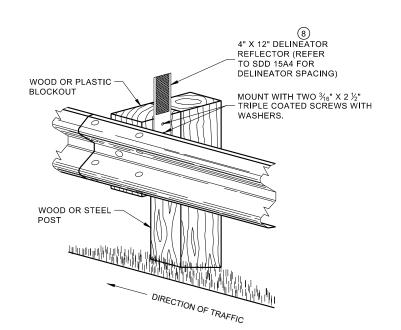
REQUIRES %" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND %"

DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS

FRONT VIEW AT STEEL POST FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



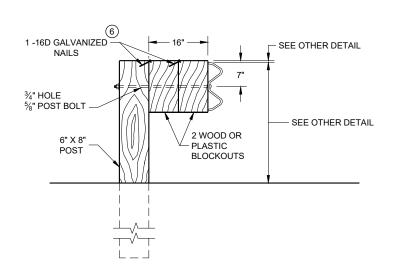
ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

> STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

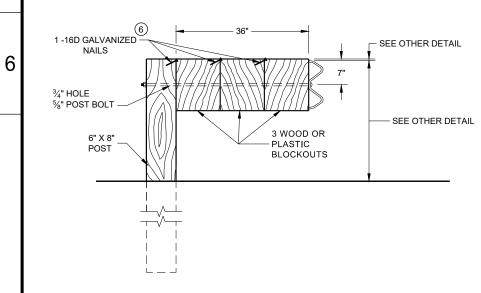
07b

SDD



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.



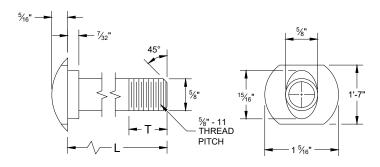
DETAIL FOR 36" BLOCKOUT DEPTH

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.

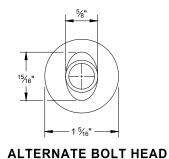
NOTE:

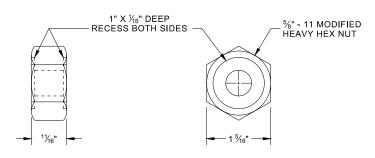
- 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF $\frac{3}{16}$ ".
- 2. IF THE BOLT EXTENDS MORE THAN $\mbox{\ensuremath{\mbox{\sc M}}}\mbox{\sc "}\mbox{\sc FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.}$



POST BOLT TABLE

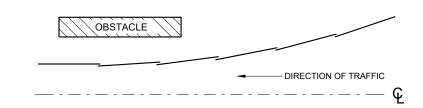
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



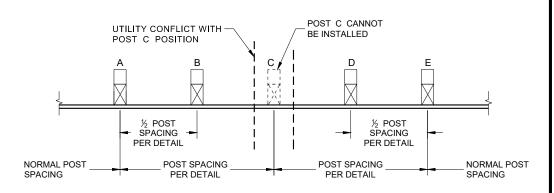


POST BOLT, SPLICE BOLT **AND RECESS NUT**

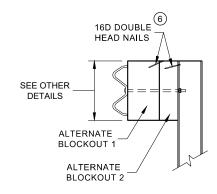
WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D (6) GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

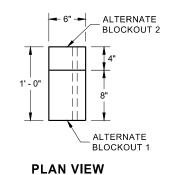


PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION





SIDE VIEW

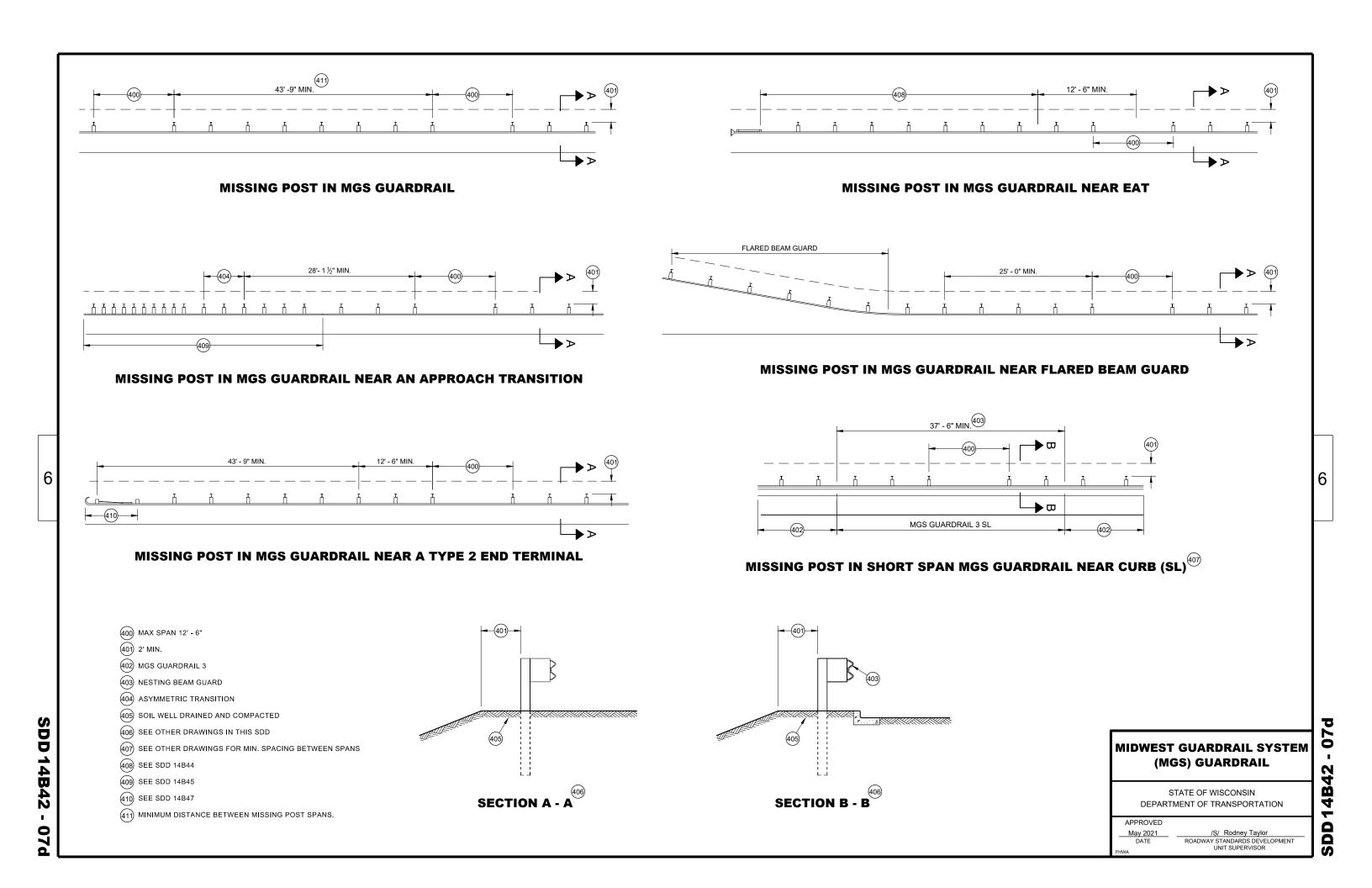
ALTERNATE WOOD BLOCKOUT DETAIL

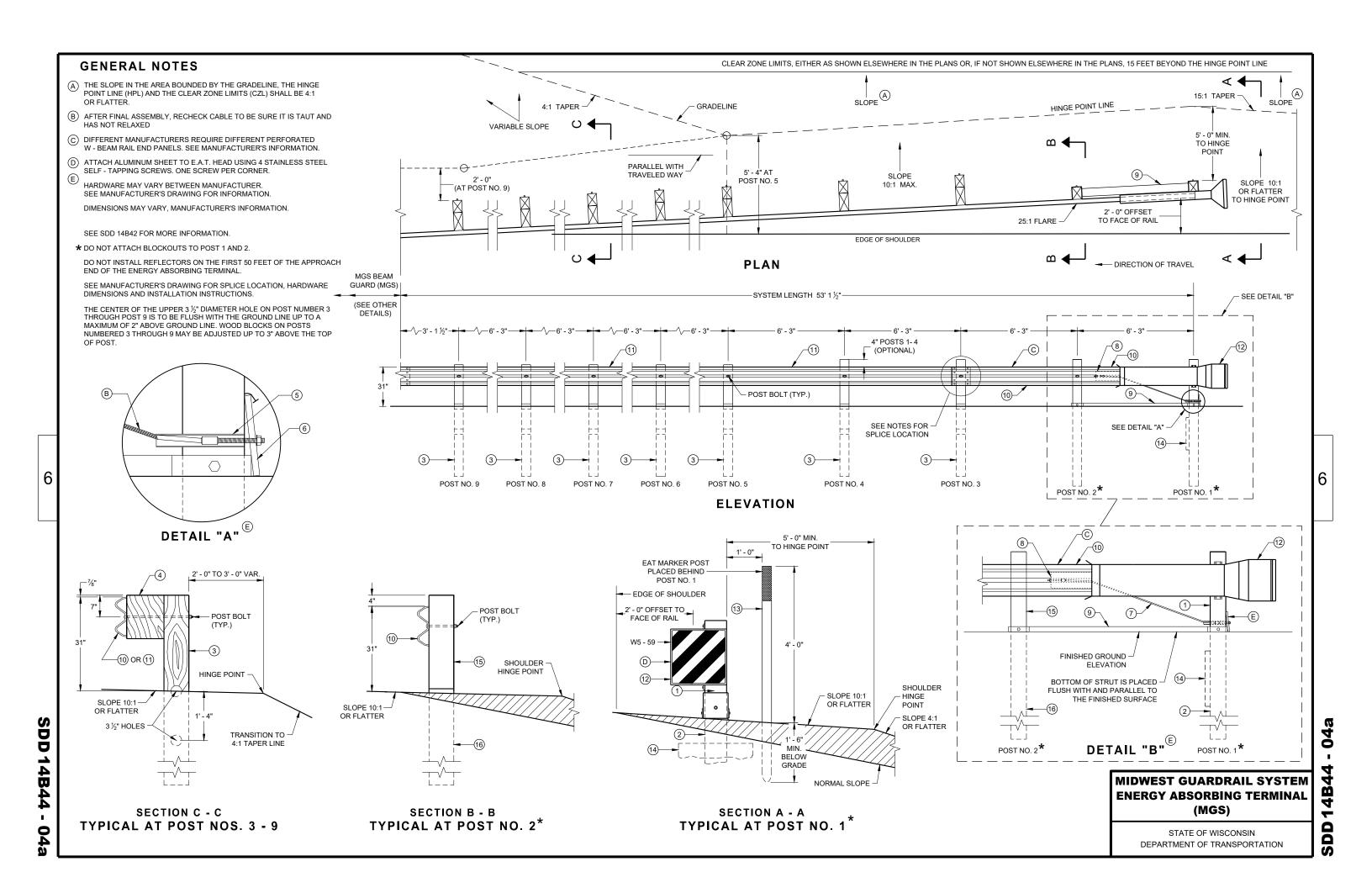
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

07

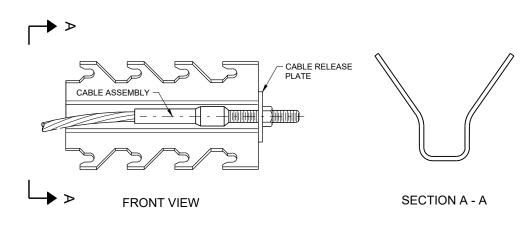
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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

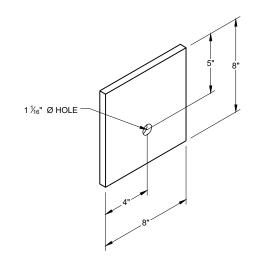




GENERIC GROUND STRUT



GENERIC ANCHOR CABLE BOX ^{(9) (E)}



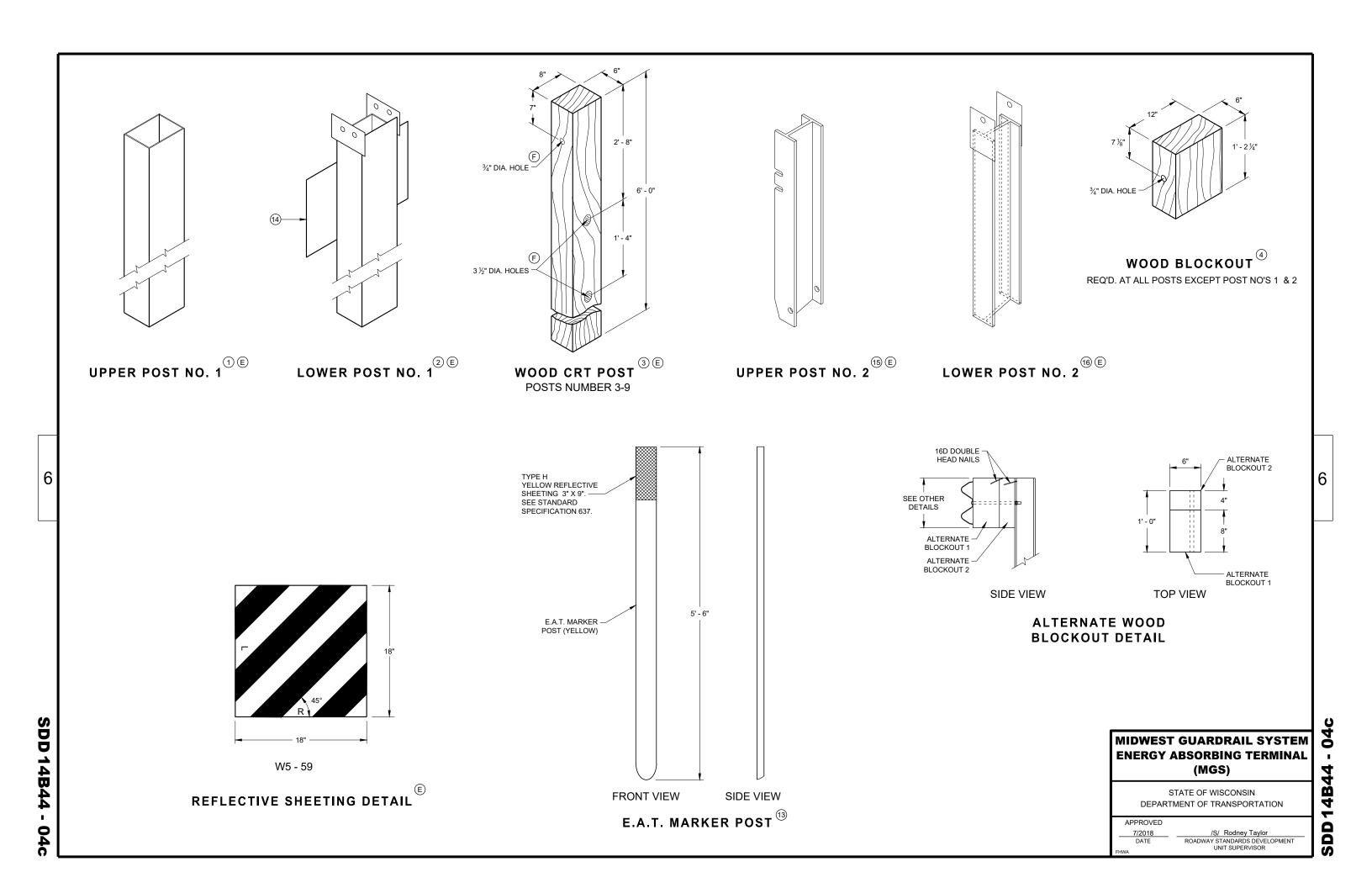
BEARING PLATE

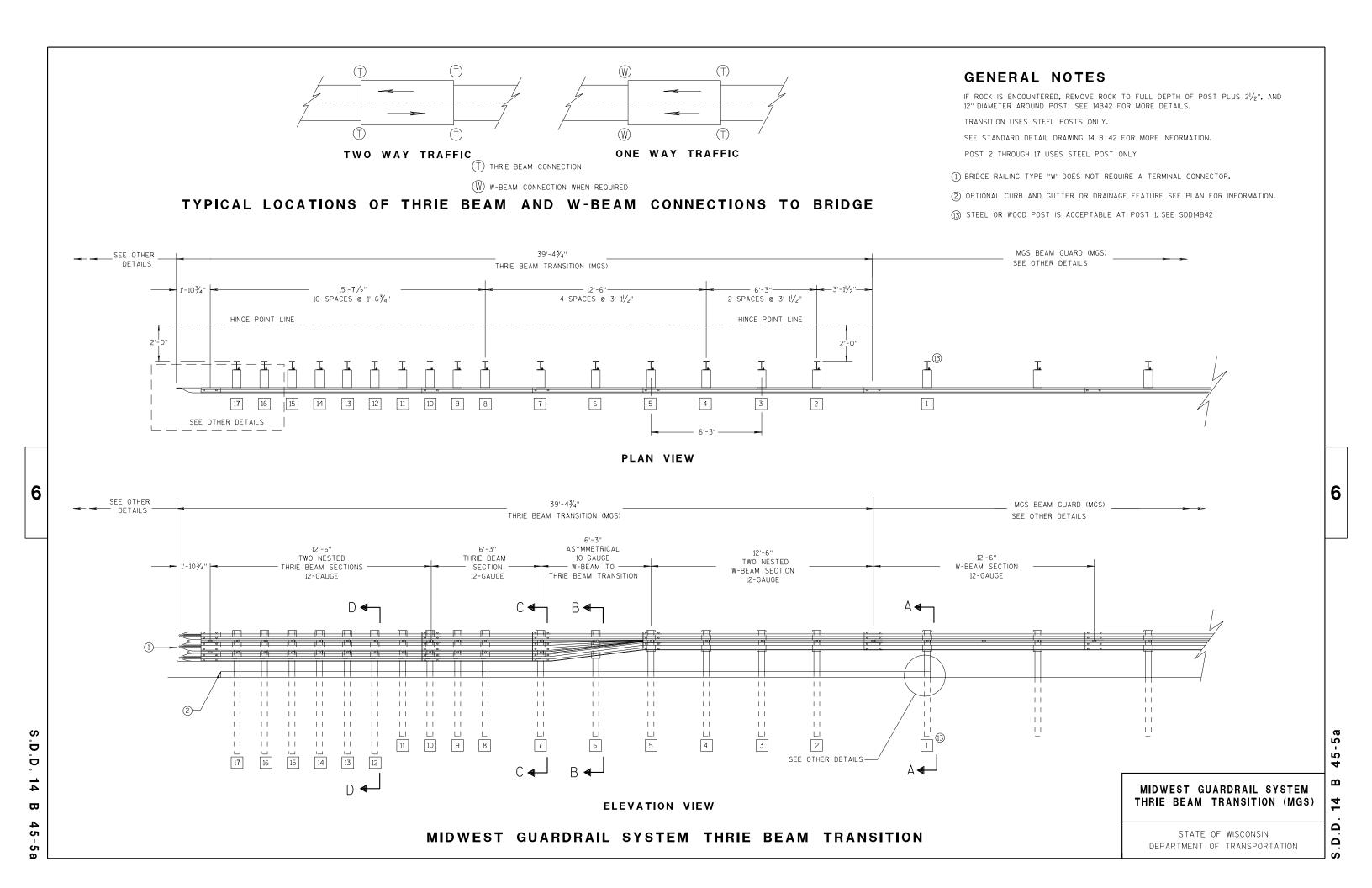
MIDWEST GUARDRAIL SYSTEM **ENERGY ABSORBING TERMINAL** (MGS)

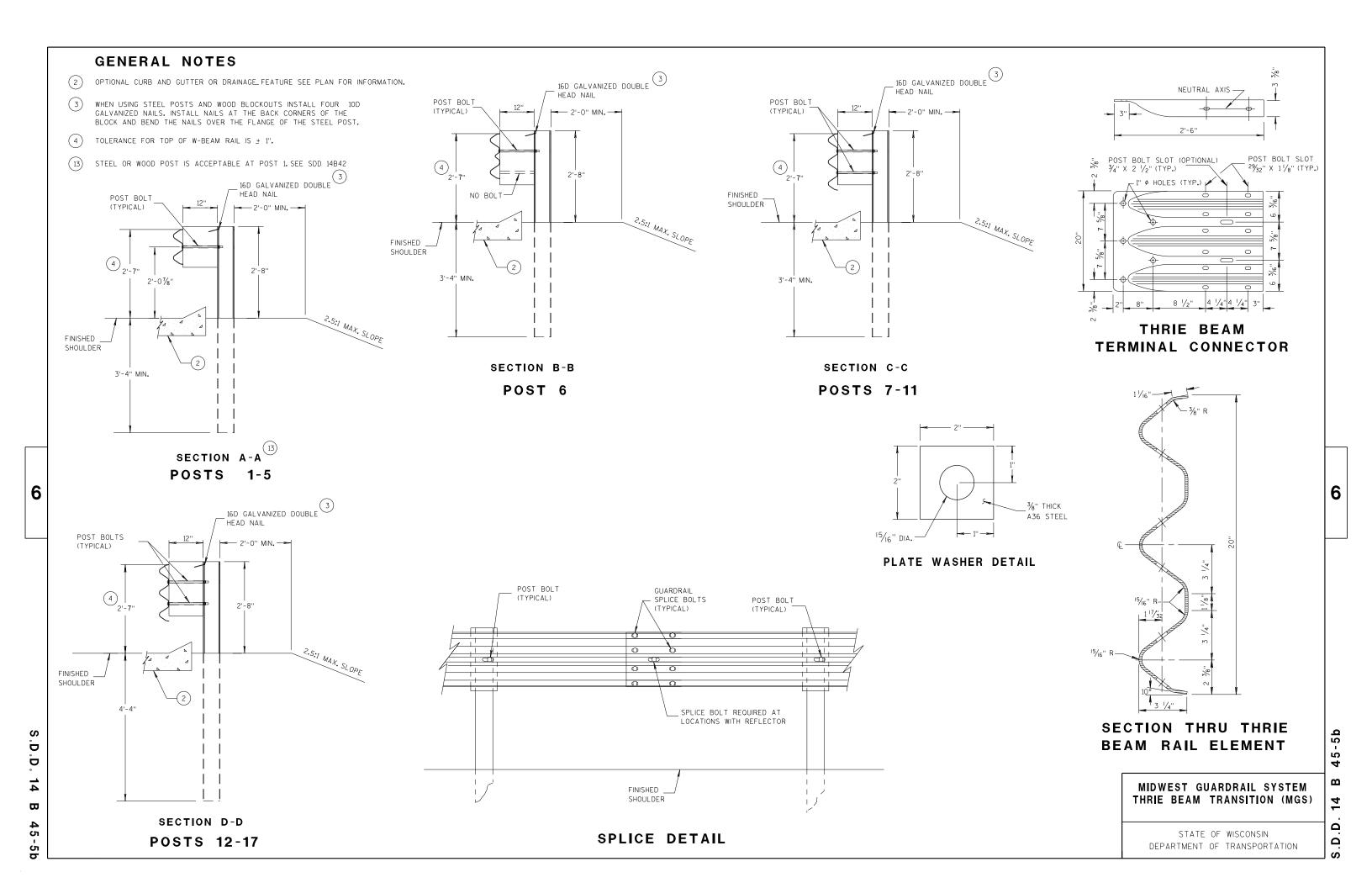
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

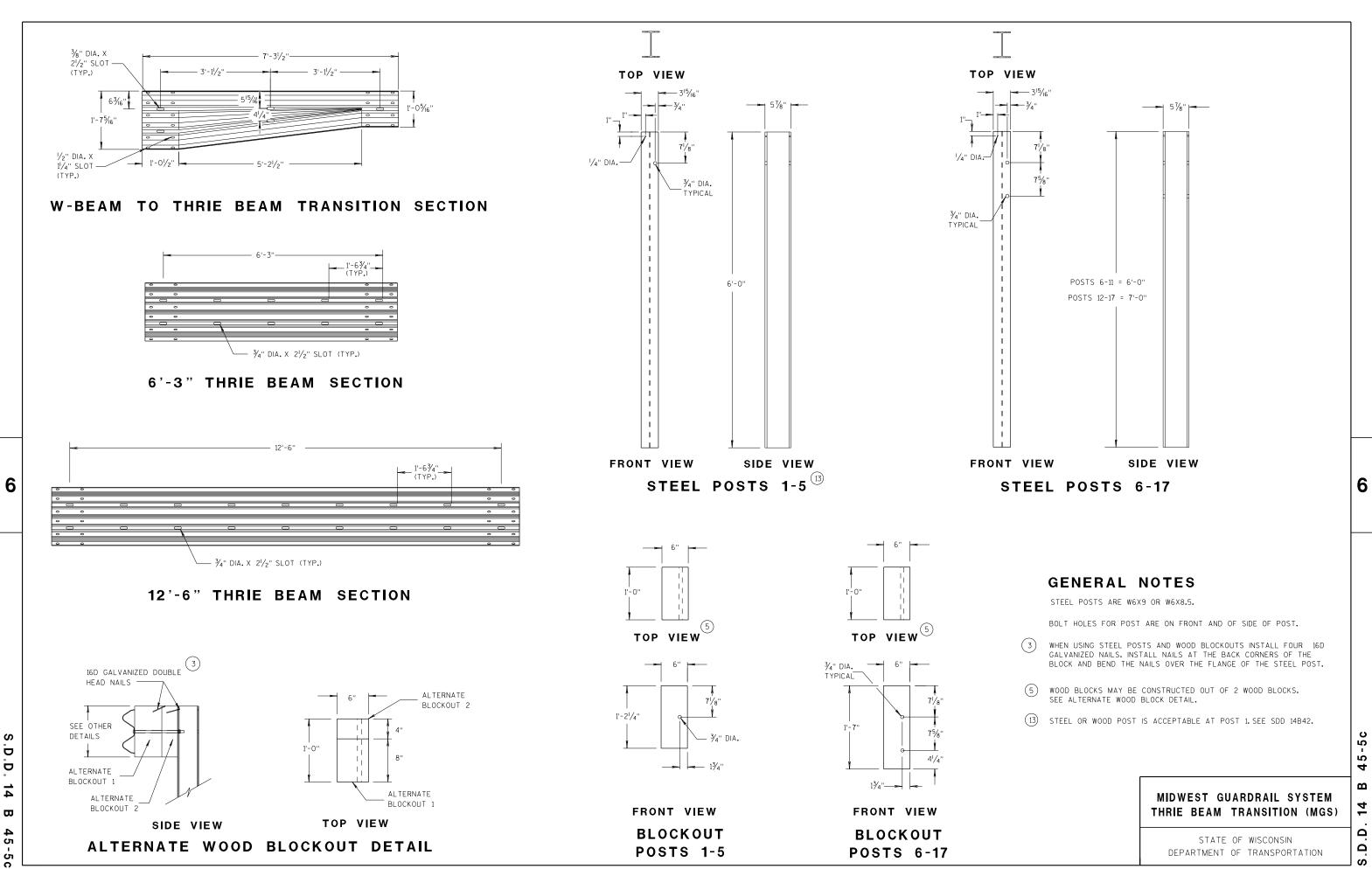
SDD 14B44

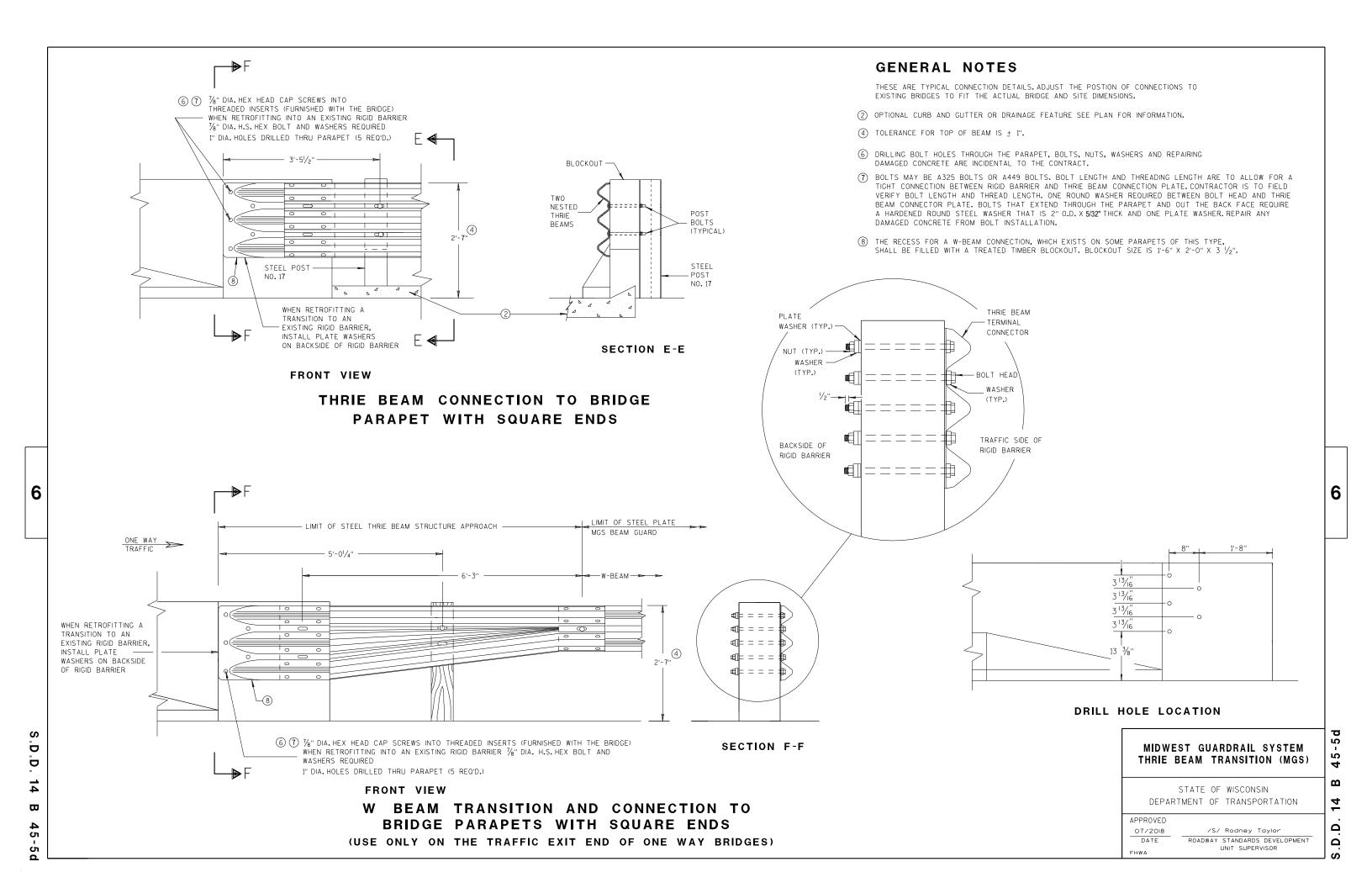
SDD



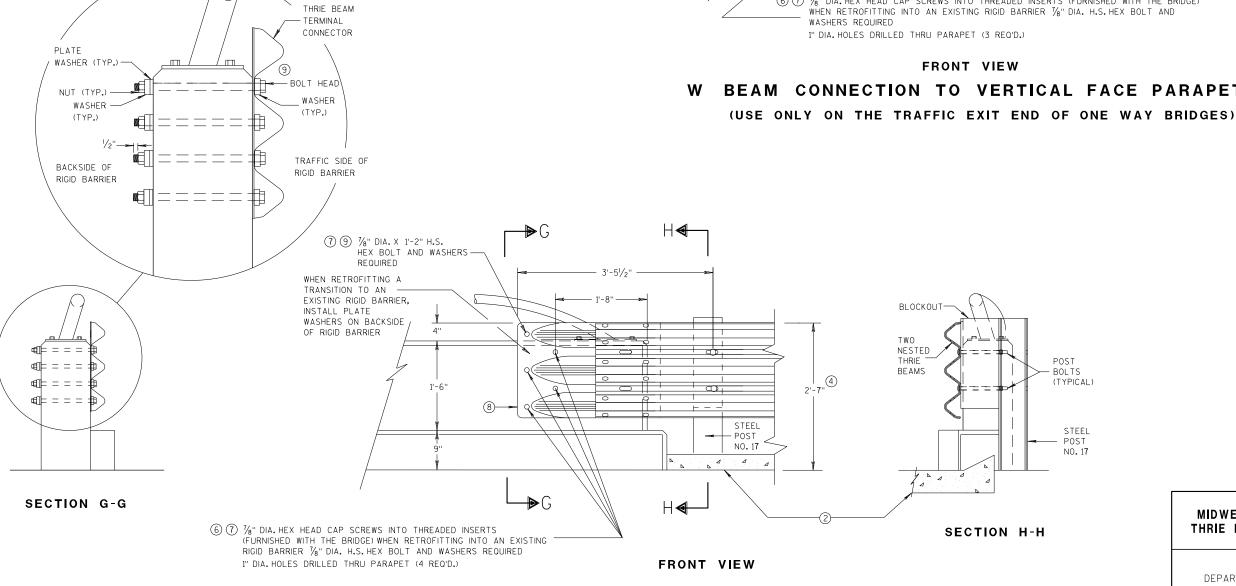








- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- (4) TOLERANCE FOR TOP OF BEAM IS ± 1".
- 6 DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- 7 BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH 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".
- (9) BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.



THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

LIMIT OF STEEL PLATE 7 7/8" DIA. X 1'-2" H.S. MGS BEAM GUARD HEX BOLT AND WASHERS REQUIRED 5'-0 1/4" ONE WAY
TRAFFIC WHEN RETROFITTING A TRANSITION TO AN EXISTING RIGID BARRIER, INSTALL 9 PLATE WASHERS ON BACKSIDE OF RIGID BARRIER W BEAM TERMINAL 8 CONNECTOR (4) 2'-7' 6 7 %" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER 1/8" DIA. H.S. HEX BOLT AND

BEAM CONNECTION TO VERTICAL FACE PARAPET

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

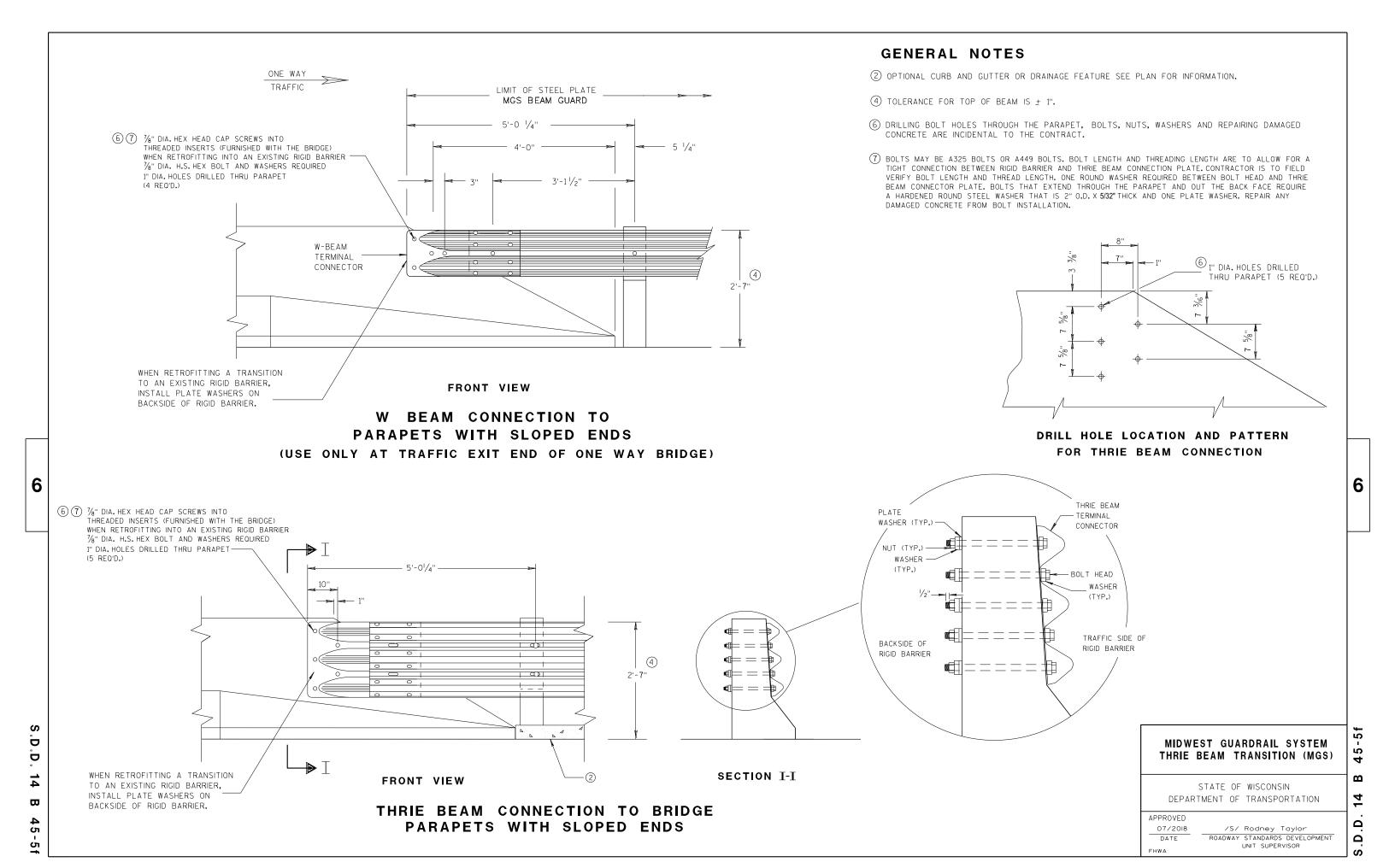
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

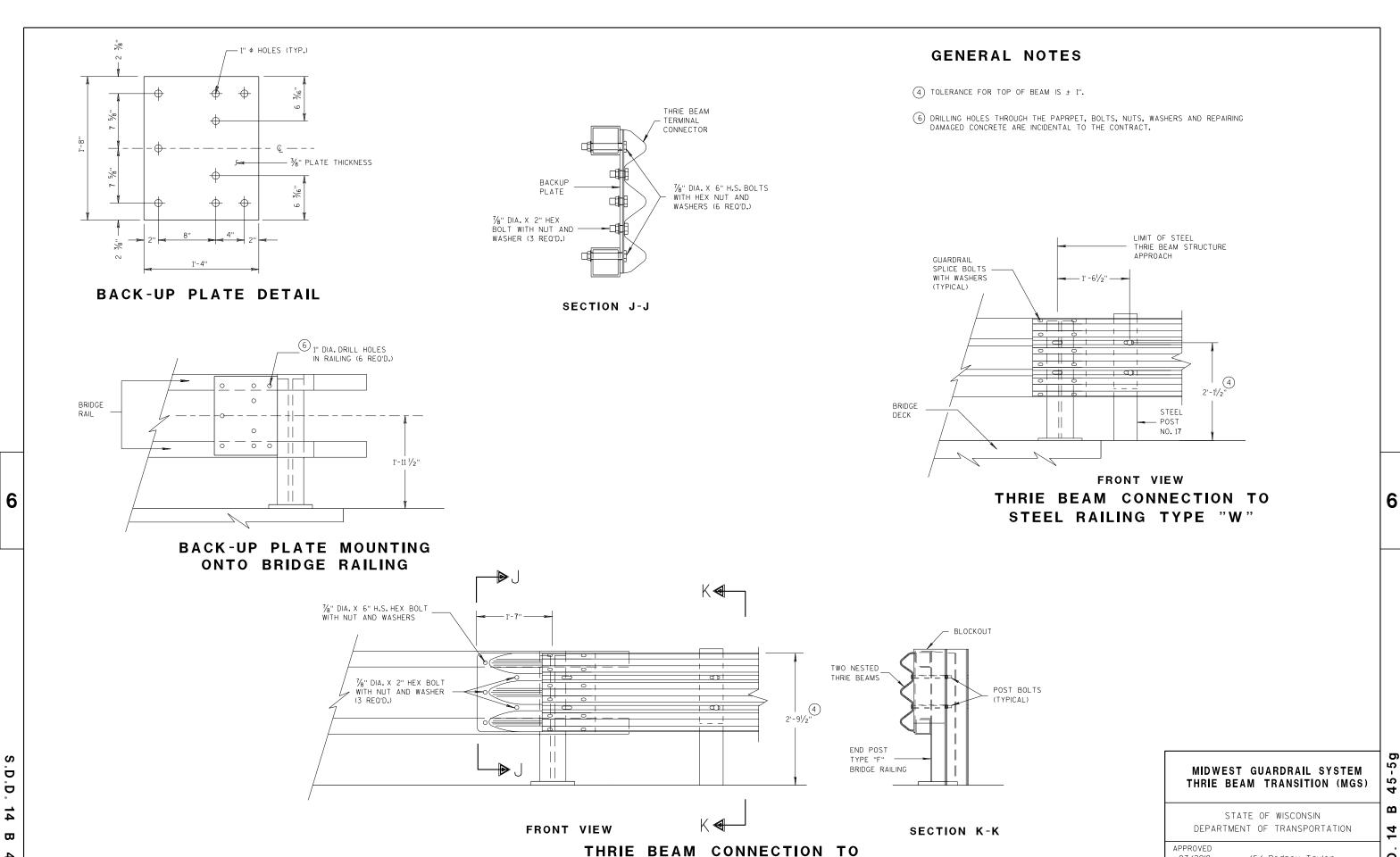
APPROVED /S/ Rodney Taylor 07/2018 DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

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TUBULAR RAILING TYPE "F"

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S.D.D. 14 B 45-5

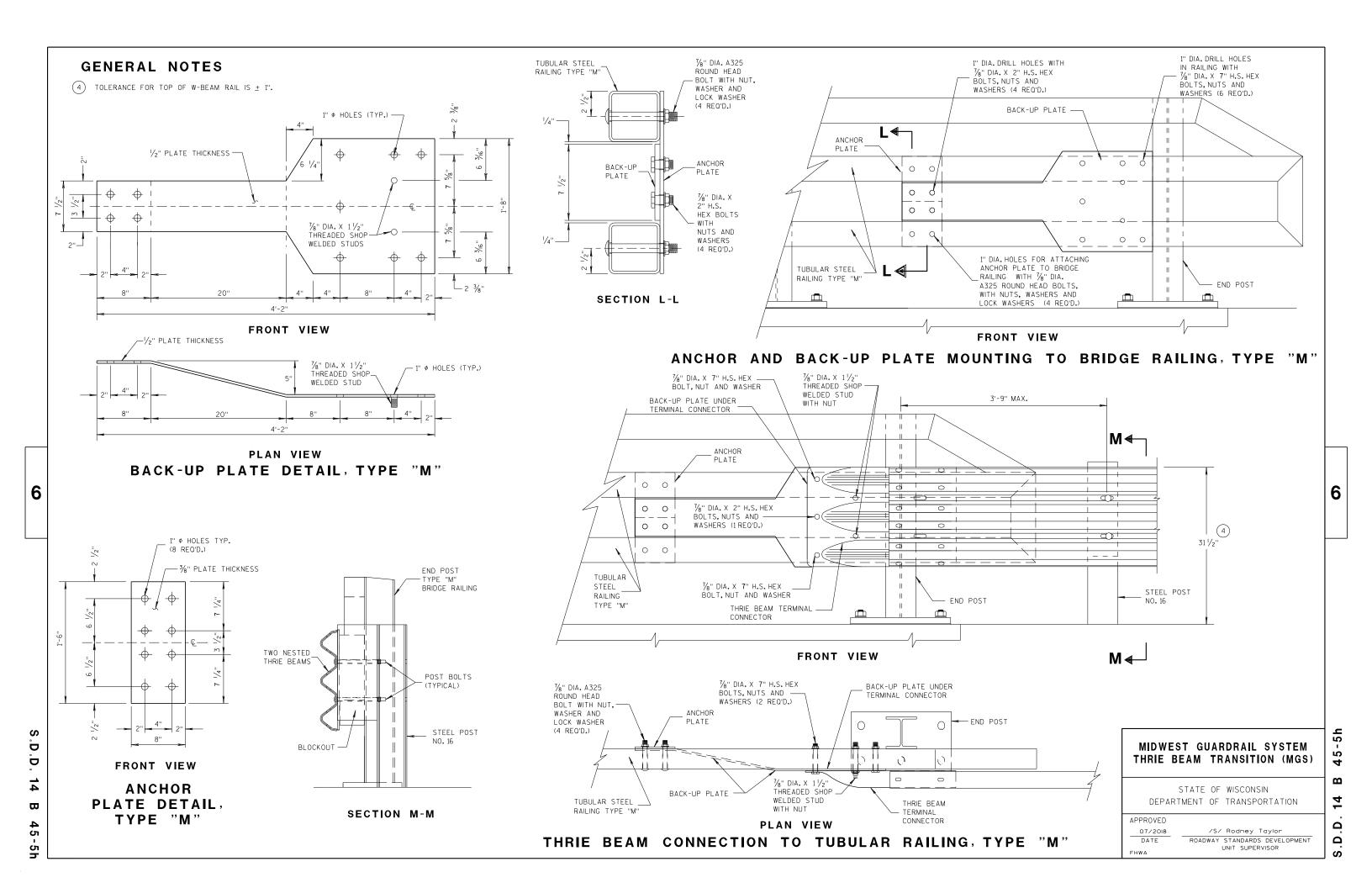
07/2018

DATE

/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

UNIT SUPERVISOR



WELDING INSTRUCTION

21/2"

101/2"

(VIEWED FROM BACK SIDE OF PLATE)

PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A × B × C × D)	THICKNESS
P1	1	в₫	20" × 20"	3/16"
P2	1	B₽€	20" × 20" × 28%6"	3/16"
P3	1	B _ CD	39" × 35/8" × 20" × 195/6"	3/16"
S1	4	B₽	18½" × 3½" × 18¾"	1/4"
S2	1	B O	$10^{1}/_{4}$ " × $2\frac{7}{16}$ " × $10\frac{3}{8}$ " × $\frac{1}{2}$ "	1/4"
S3	1	B☐D	3" × 1½6" × 3½" × ½"	1/4"
S4	1	ВД	6½" × 2½6"	1/4"
S5	1	ВД	6½" × ½"	1/4"
S6	1	В	7¾" × 1¾"	1/4"
S 7	1	A BC	$2\%6" \times 6" \times 3\%" \times 5\%"$	1/4"
S8	1	A BC	$1^{5}/_{32}$ " × $7^{1}/_{2}$ " × $2^{1}/_{2}$ " × $7^{3}/_{8}$ "	1/4"
S9	1	C B	$6\frac{1}{16}$ " × $6\frac{3}{16}$ " × $1\frac{3}{32}$ "	1/4"
S10	1	ğ*	11/8" × 91/8" × 35/8" × 91/16"	1/4"
S11	1	C A	8½" × 8¾" × 1 ¹³ / ₁₆ "	1/4"

BACK SIDE OF PLATE

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED

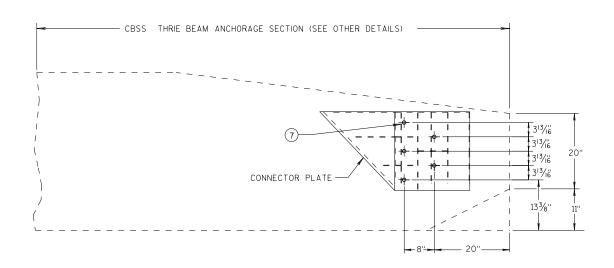
GENERAL NOTES COVER PLATE PANELS ARE 3/16" THICK.

BACK SIDE OF PLATE

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

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THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

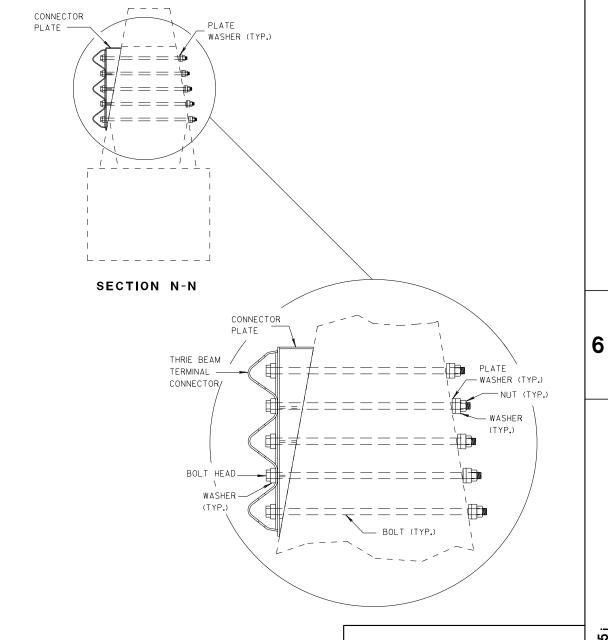


SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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



MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018
DATE
ROADWAY

/S/ Rodney Taylor

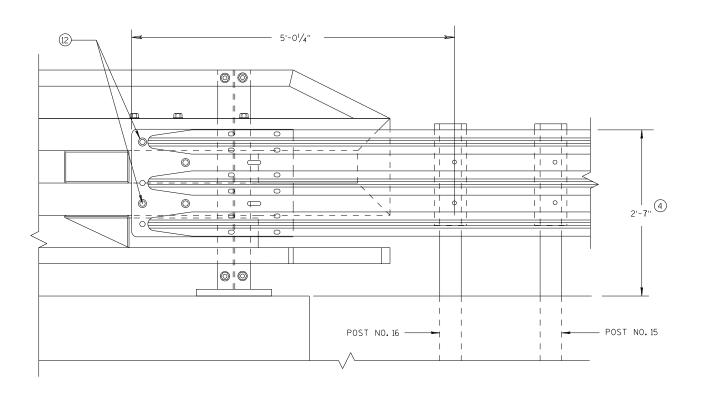
ROADWAY STANDARDS DEVELOPMENT

UNIT SUPERVISOR

D.D. 14 B

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THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

- 4) TOLERANCE FOR TOP OF BEAM IS ± 1".
- (2) 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. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND 1/2-INCH BEYOND NUT.

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 /S/ RODNEY Taylor

DATE ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

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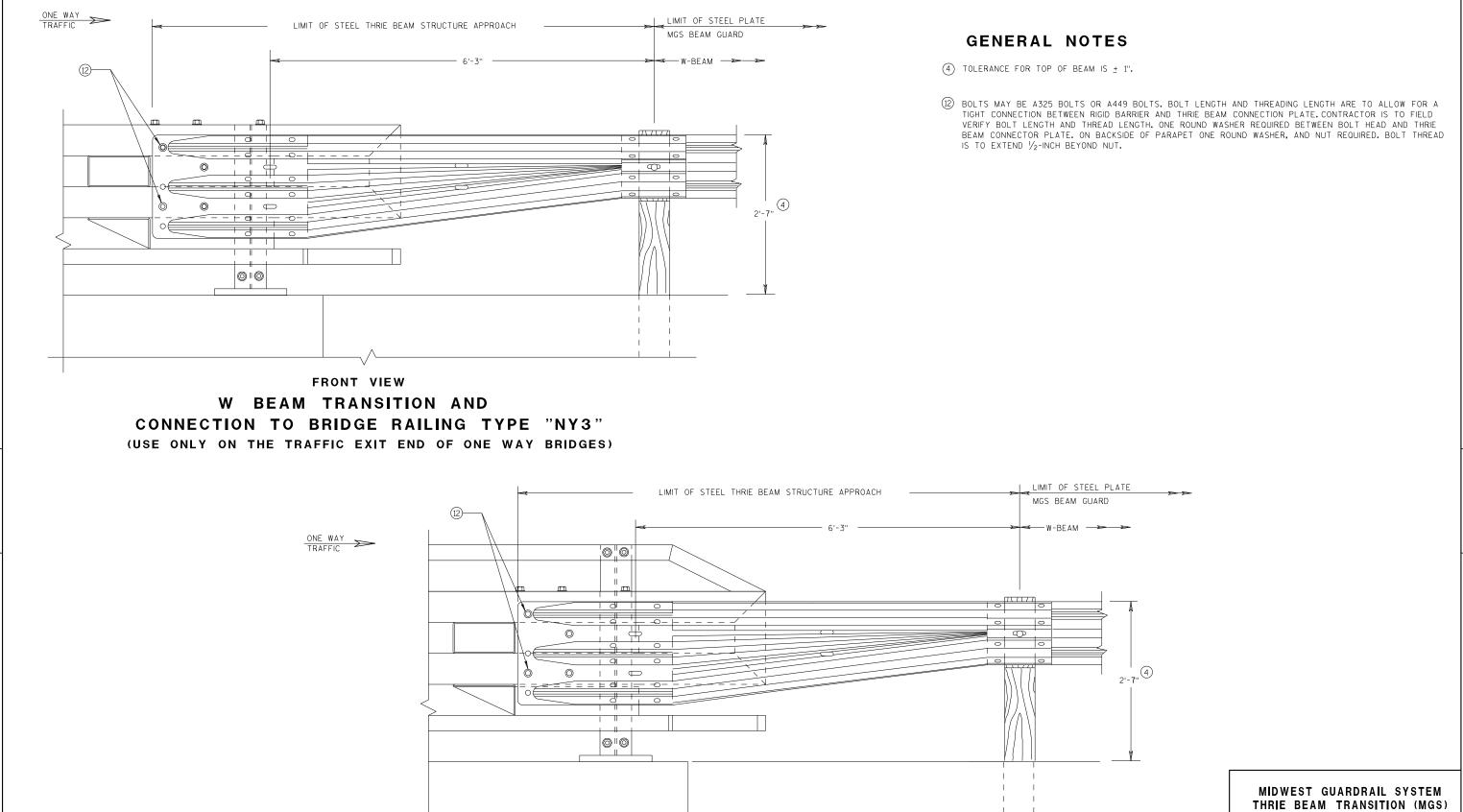
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FRONT VIEW

W BEAM TRANSITION AND

CONNECTION TO BRIDGE RAILING TYPE "NY4"

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

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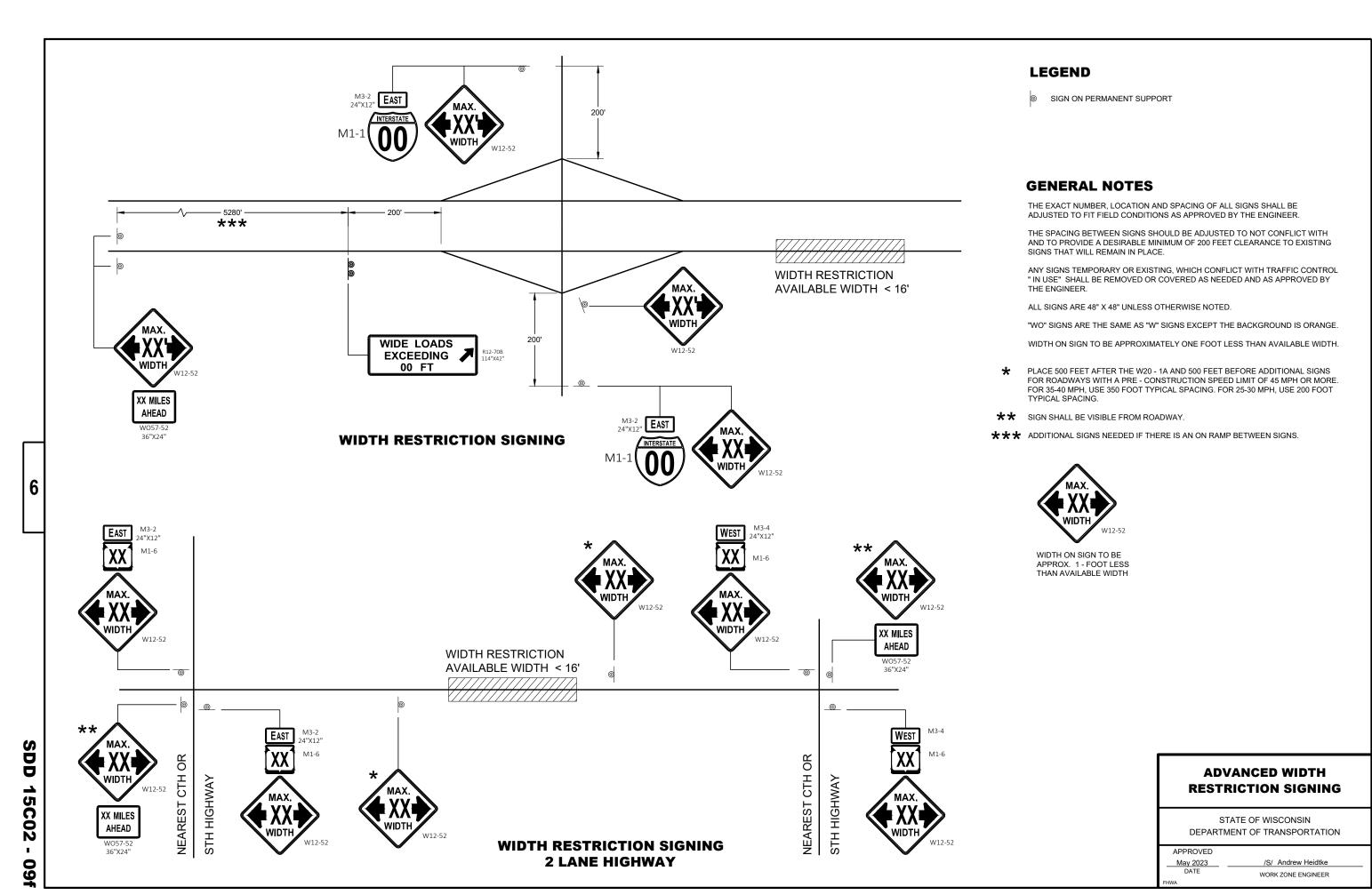
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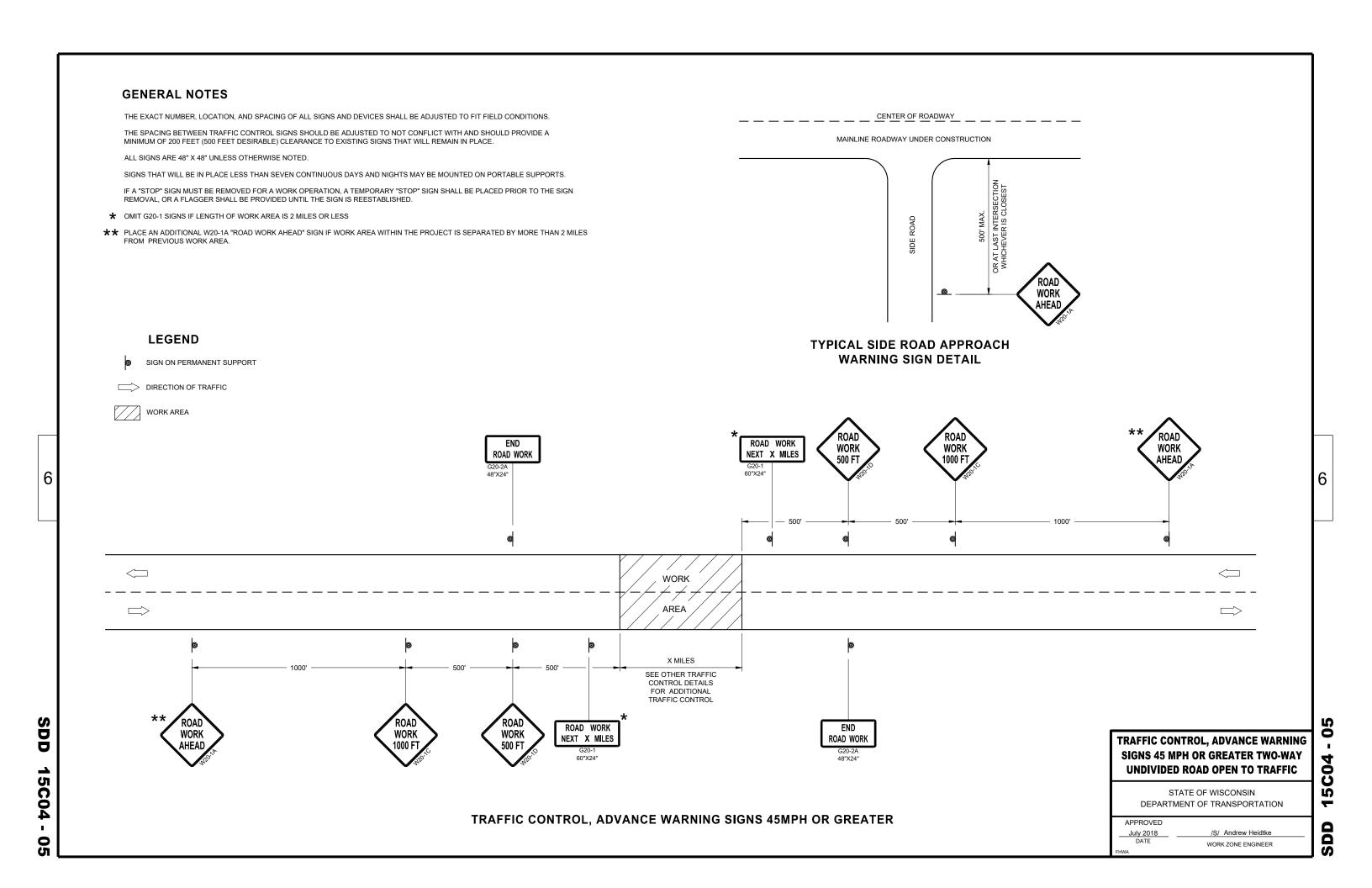
/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

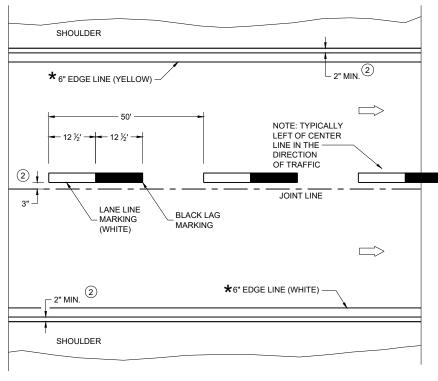
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED

DATE







ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

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

PERMANENT LONGITUDINAL **PAVEMENT MARKINGS**

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

May 2023 DATE

Statewide Pavement Marking Engineer

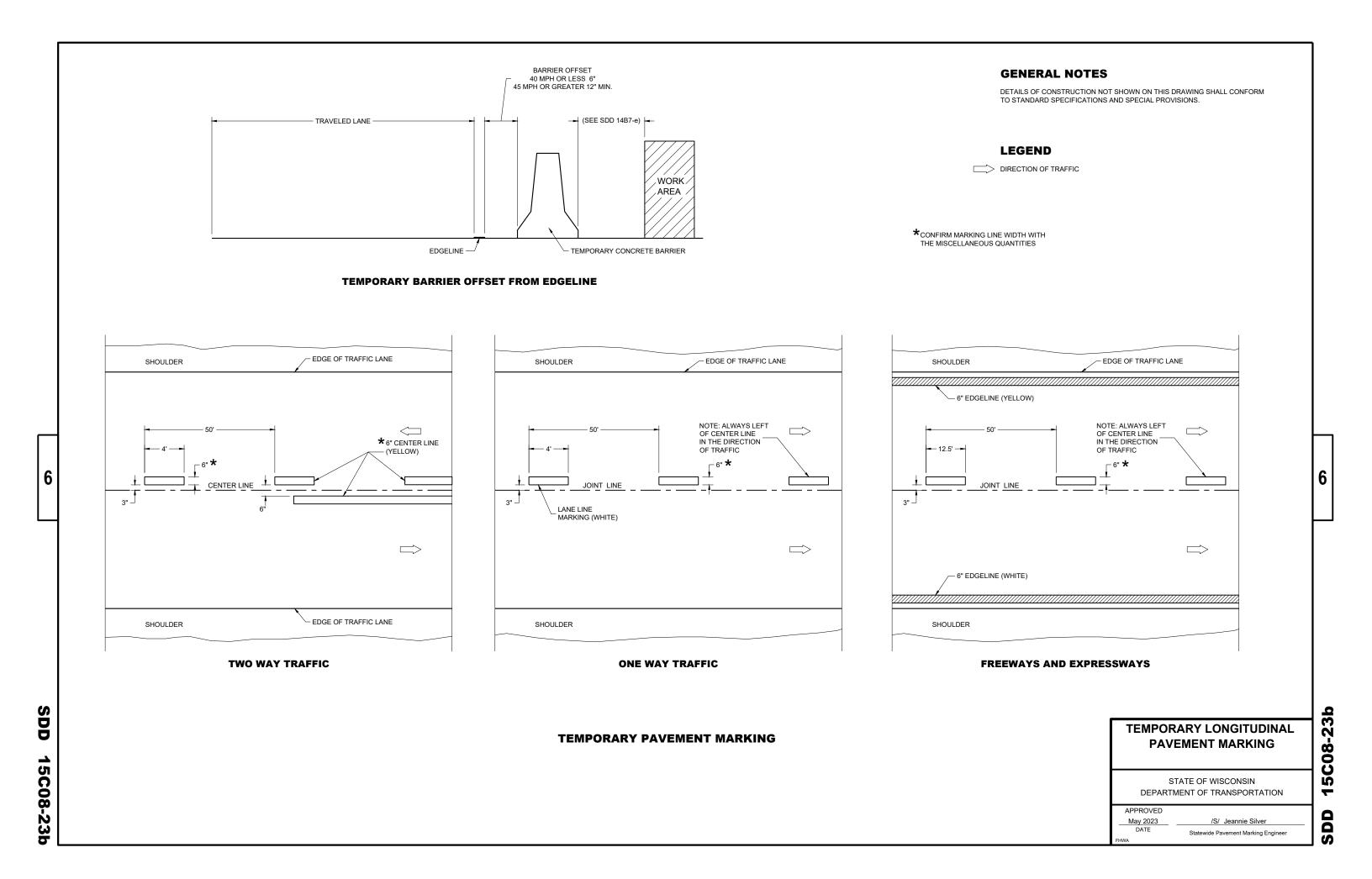
/S/ Jeannie Silver

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SDD

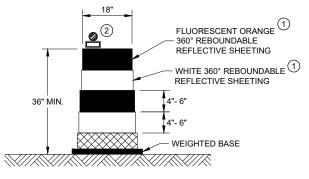
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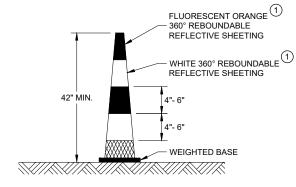
GENERAL NOTES

- (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.



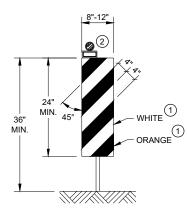
DRUM

BALLAST WIDTHS RANGE FROM 24"-36"



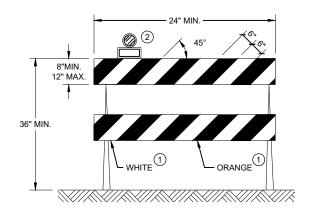
42" CONE

DO NOT USE IN TAPERS ½ SPACING OF DRUMS BALLAST WIDTHS RANGE FROM 14"-20"



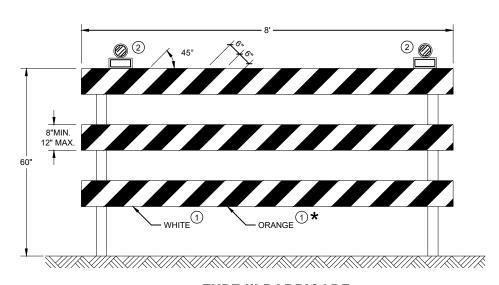
VERTICAL PANEL

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



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 15C

APPROVED	
November 2022	/S/ Andrew Heidtke
DATE	WORK ZONE ENGINEER

RUMBLE

STRIPS

ROAD

WORK

GENERAL NOTES FLAGGING LEGEND FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON SIGN ON PORTABLE OR PERMANENT SUPPORT UNIFORM TRAFFIC CONTROL DEVICES. PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING. ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. TEMPORARY PORTABLE RUMBLE WORK OPERATION OR AS APPROVED BY THE ENGINEER. STRIP ARRAY "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE. (2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA. THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS, DEVICES, AND LOCATION OF ALL FLAGGERS SHALL BE DIRECTION OF TRAFFIC ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER. WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED. THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP WORK AREA **TEMPORARY PORTABLE RUMBLE STRIPS** WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS. TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED FLAGGER, EQUIPPED WITH STOP/SLOW ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT PADDLE FASTENED ON SUPPORT STAFF THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST. INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS. DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS. SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE 5' MIN BE SPACING "A" SPEED LIMIT USE OF WO3-4 SIGN IS OPTIONAL. WHEN USED, PREPARED THIS SIGN SHALL BE LOCATED BETWEEN THE 25-30 MPH TO STOP W20-7A AND W20-4A SIGNS, USING SPACING "A". 35-40 MPH 350' STOP/SLOW PADDLE ŔUMBLĖ 45-55 MPH 500' WO3-4 WORK **ON SUPPORT STAFF** ROAD STRIPS 1 VARIABLE DISTANCE - 200' - 300' (TYP.) END ROAD WORK |||3 WORK AREA A/2 END ROAD WORK 200' - 300' (TYP.) VARIABLE DISTANCE

TRAFFIC CONTROL FOR LANE CLOSURE WITH **FLAGGING OPERATION**

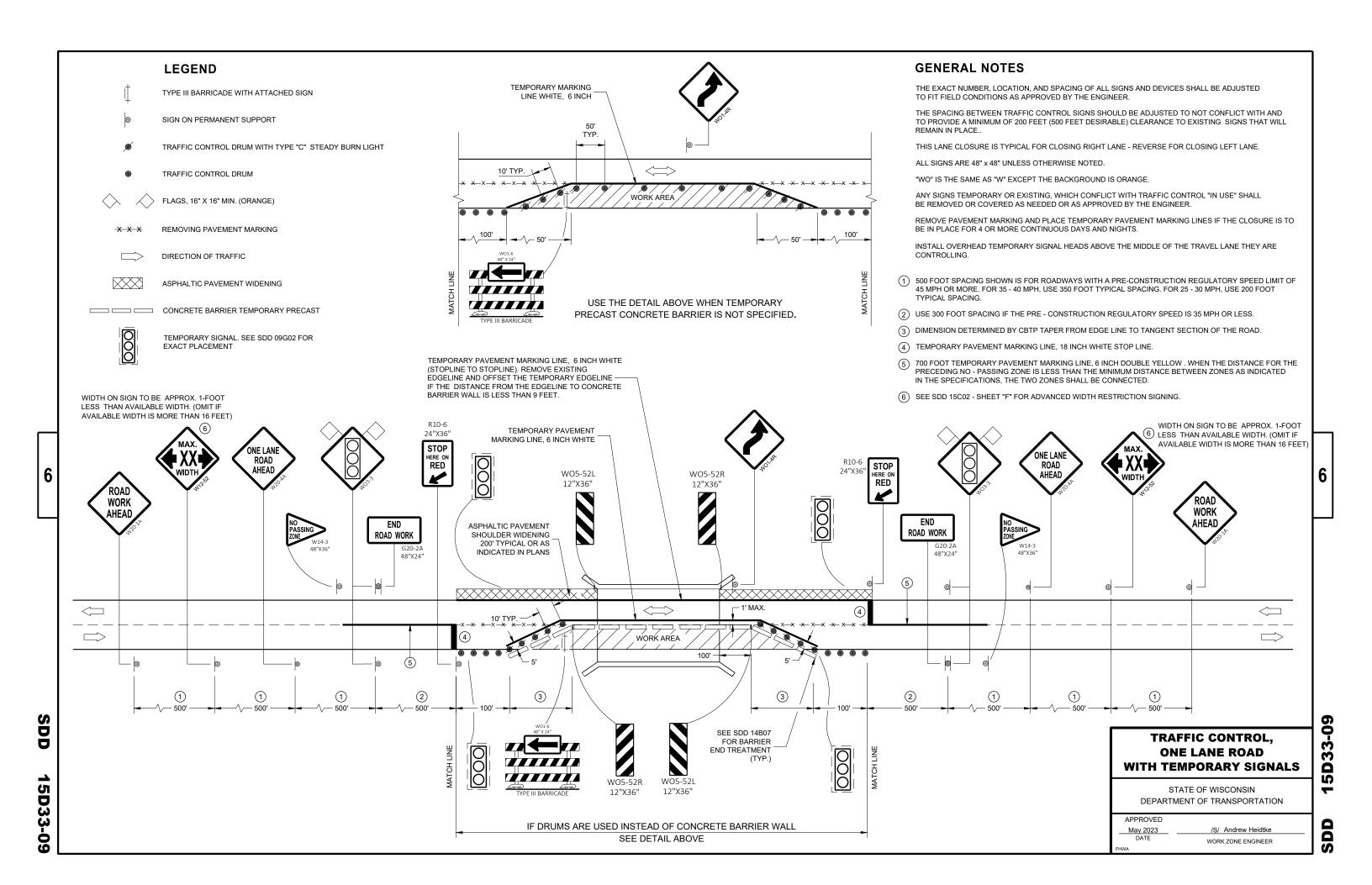
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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED May 2022 DATE /S/ Andrew Heidtke WORK ZONE ENGINEER







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" (\pm) 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" (\pm) 3".

- 3. For expressways and freeways, mounting height is 7'- 3" (\pm) 3" or 6'-3" (\pm) 3" depending upon existence of a sub-sign.
- 4. Minimum mounting height for signs mounted on traffic signal poles is 5' 3'' ($\frac{+}{-}$) 3''.
- 5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
- 6. Folding signs shall be mounted at a height of 5'-3'' (\pm) 3'' or as directd by the Engineer.

2' Min - 4' Max (See Note 5)



White Edgeline
Location

Outside Edge
of Gravel

POST EMBEDMENT DEPTH

Area of Sign	
Installation	D
(Sq.Ft.)	(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.

PLOT BY : mscj9h

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R Rawh

For State Traffic Engineer

DATE 12/6/23 PLATE NO. __A4-3.23

Ε

PROJECT NO: HWY: COUNTY: SHEET NO:



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



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

HWY:



PLAN VIEW

COUNTY:

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

For State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

SHEET NO:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN

PROJECT NO:

PLOT DATE: 27-JAN-2014 09:48

PLOT NAME :

PLOT BY: mscsja

PLOT SCALE: 13.659812:1.000000

APPROVED

WISDOT/CADDS SHEET 42





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



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

HWY:

SIGN SHAPE OTHER THAN	DIAMOND
(THREE POSTS REQUIR	RED)
L	Е
Greater than 108" to 144"	12''

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" (±) 3" or 6'-3" (±) 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'' (\pm) 3'' or as directed by the engineer.
- 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 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" (±) 3".
- * 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.
- $\times \times \times$ See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matther R Rauch
For State Traffic Engineer

DATE 12/6/23

PLATE NO. <u>A4-4.16</u>

Ε

CUEET NO.

SHEET NO:

FILE NAME : C:\CAEfiles\Project\tr_stdplate\A44.dgn

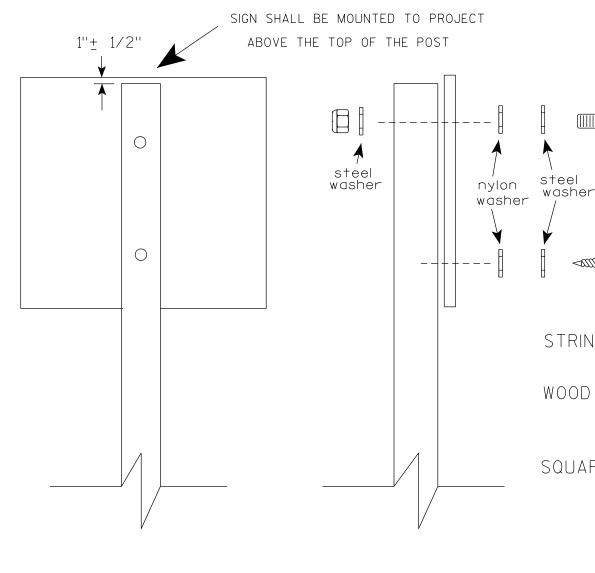
PROJECT NO:

COUNTY:

PLOT DATE: 6-DEC 2023 11:31

PLOT NAME :

PLOT BY : mscj9h



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 - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts

WOOD POSTS $(4'' \times 6'')$

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 - 3/32 " (6605-9-6) BULB-TITE. TRI-FOLD. ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

APPROVED

DATE 4/1/2020

PLATE NO. <u>A4-8.9</u>

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A48.DGN

PROJECT NO:

PLOT DATE: 01-APRIL-2020

PLOT BY : dotc4c

WISDOT/CADDS SHEET 42

Ε

WISCONSIN DEPT OF TRANSPORTATION

Matther ≠or State Traffic Engineer

SHEET NO:



PROJECT NO: HWY: COUNTY: SHEET NO: FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE: 05-FEB-2015 17:09 PLOT BY: mscsja PLOT NAME : PLOT SCALE: 13.659812:1.000000

DATE 2/05/15

PLATE NO. <u>A4-9.9</u>

For State Traffic Engineer



BANDING



SINGLE SIGN





WASHER PLACEMENT



HWY:

WASHERS (ALL POSTS) -

1-1/4" O.D. X³/₈" I.D. X¹/₁₆" STEEL 1-1/4" O.D. $\times \frac{3}{8}$ " I.D. \times .080 NYLON FOR ALL TYPE H SIGNS

CHANNEL

GENERAL NOTES

- 1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
- 2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
- 3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.
- 4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



STANDARD SIGN SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

SHEET NO:

APPROVED

DATE 6/10/19

PLATE NO. A5-9.4

Ε

State Traffic Engineer

COUNTY:

PLOT NAME :

PLOT SCALE: \$\$.....plotscale.....\$\$ WISDOT/CADDS SHEET 42

PROJECT NO:

31/2"

VIEW FROM TOP

GENERAL NOTES

- 1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
- 2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
- 3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS.

 SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
- 4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
- 5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation: B 633, TYPE III, SC 3
- 6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
- 7. STEEL WASHERS SHALL BE $1^{1}/_{4}$ " O.D. X $3/_{8}$ " I.D. X $1/_{16}$ "
- 8. NYLON WASHERS SHALL BE $1^{1}/_{4}$ " O.D. X $3/_{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

 \rightarrow LAG BOLTS SHALL BE $\frac{3}{8}$ " X $\frac{2}{2}$ "

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED //

DATE 4/19/2022 PLATE NO. _A5-10.3

ATE 4/19/2022 PLATE NO. _

SHEET NO:

SIGN

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A510.dgn

PROJECT NO:

PLOT DATE: 19-APRIL 2022 11:55

PLOT BY : dotc4c

WISDOT/CADDS SHEET 42

Ε

- 1. Sign is Type II Type F Reflective
- 2. Color:

Background - Orange Message - Black

- 3. Message Series C
- 4. 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.

C		
		H F V
		H B F G
	A	

G20-2A

PROJECT NO:

SIZE	А	В	С	D	E	F	G	Н	I	J	К	L	М	N	0	Р	Q	R	S	Т	U	٧	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/2	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5
2	48	24	1 1/8	1/2	5/8	6	4 1/2	3 3/4	5 1/8	6 3/4	16 ¾	2 1/2	1 3/4	18 1/2													8.0
2M	48	24	1 1/8	1/2	5/8	6	4 1/2	3 3/4	5 %	6 3/4	16 ¾	2 1/2	1 3/4	18 1/2													8.0
3	48	24	1 1/8	1/2	5/8	6	4 1/2	3 3/4	5 %	6 3/4	16 ¾	2 1/2	1 3/4	18 1/2													8.0
4	48	24	1 1/8	1/2	5/8	6	4 1/2	3 3/4	5 %	6 3/4	16 ¾	2 1/2	1 3/4	18 1/2													8.0
5	48	24	1 1/8	1/2	5/8	6	4 1/2	3 3/4	5 %	6 3/4	16 ¾	2 1/2	1 3/4	18 1/2													8.0

STANDARD SIGN G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew For State Traffic Engineer

DATE 1/26/2023 PLATE NO. G20-2A.10

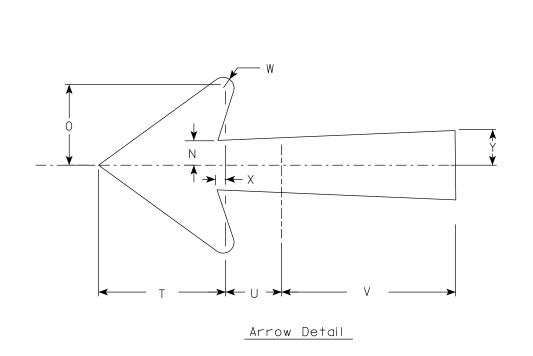
SHEET NO:

HWY: COUNTY: FILE NAME: C:\CAEfiles\Projects\tr_stdplate\G202A.dgn PLOT DATE: 26-JAN 2023 8:27 PLOT BY : dotc4c PLOT NAME :

- 1. Sign is Type II Type H Reflective
- 2. Color:

Background - White Message - Black

3. Message Series - D



C —	
+	
	S K F I
	M N N P P I
	B F R
	S H
4	A
	R10-6

SIZE	А	В	С	D	E	F	G	Ι	I	J	K	L	М	N	0	Р	Q	R	S	Т	U	٧	W	Х	Υ	Z	Area sq. ft.
1																											
25	24	36	1 1/2	3/8	1/2	5	3	7	2 1/2	4	8	8 3/8	9	1	3	5	5 5/8	6 1/4	60°	5 1/4	2 1/4	7 1/8	1/2	3/8	1 3/8		6.0
2M	24	36	1 1/2	3/8	1/2	5	3	7	2 1/2	4	8	8 3/8	9	1	3	5	5	6 1/4	60°	5 1/4	2 1/4	7 1/8	1/2	3/8	1 3/8		6.0
3																											
4																											
5																											

COUNTY:

STANDARD SIGN R10-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matther K Kauch

For State Traffic Engineer

DATE 1/25/24

PLATE NO. R10-6.7

SHEET NO: **E**

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\R106.dgn

HWY:

PROJECT NO:

PLOT DATE: 25-JAN 2024 11:01

PLOT BY: mscj9h

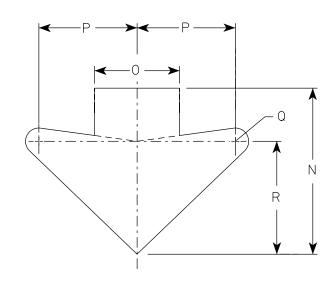
PLOT NAME :



- 1. Sign is Type II Type F Reflective
- 2. Color:

Background - Orange Message – Black

- 3. Message Series See note 5
- 4. The top line is series E, the numerals are series C, and the bottom line is series D.
- 5. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

SIZE	Α	В	С	D	Е	F	G	Н	I	J	K	L	М	N	0	Р	Q	R	S	T	U	٧	W	Х	Y	Z	Area sq. ft.
1																											
25	48		3	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		3	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 %	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											
PROJECT NO: HWY:										·	COUNT	- Y:		•	•						•	•			•		

W12 - 52

STANDARD SIGN W12 - 52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

For State Traffic Engineer DATE 3/10/2024 PLATE NO. W12-52.8

SHEET NO:



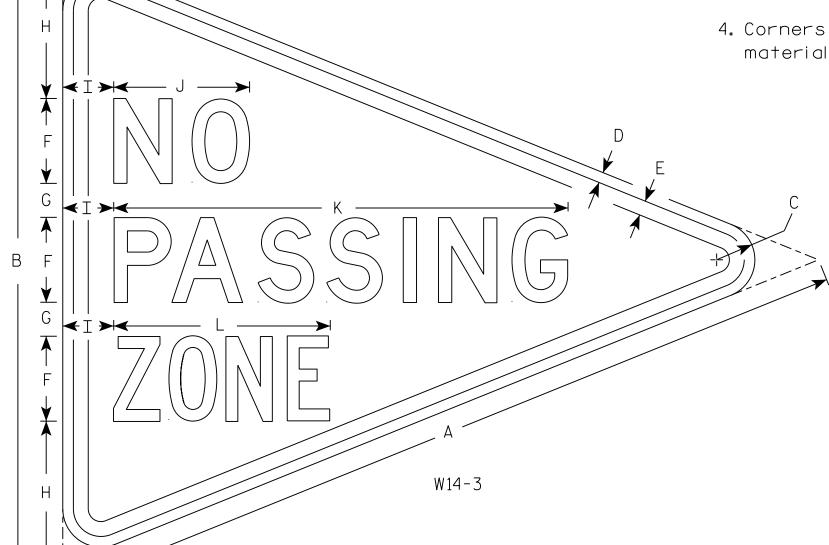
- 1. Sign is Type II Type F Reflective
- 2. Color:

Background - Yellow

Message – Black

3. Message Series - Lines 1 and 2 are Series D. Line 3 is series C.

4. Corners and borders shall be rounded on all base materials for this sign.



			,																								
SIZE	Α	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	0	R	S	Т	U	٧	W	Х	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	<i>7</i> ⁄8	5	2	8 ½	3	8	26 ¾	12 3/4															5 . 56
2M																											
3																											
4																											
5																											
PROJECT NO: HWY:											COL	INTY:															

STANDARD SIGN W14-3

WISCONSIN DEPT OF TRANSPORTATION

500 3/21/17

E 3/21/17 PLATE NO. W14-3

SHEET NO:

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W143.DGN

PLOT DATE: 21-MAR-2017 08:48

PLOT BY: \$\$...plotuser...\$\$ PLOT NAME:

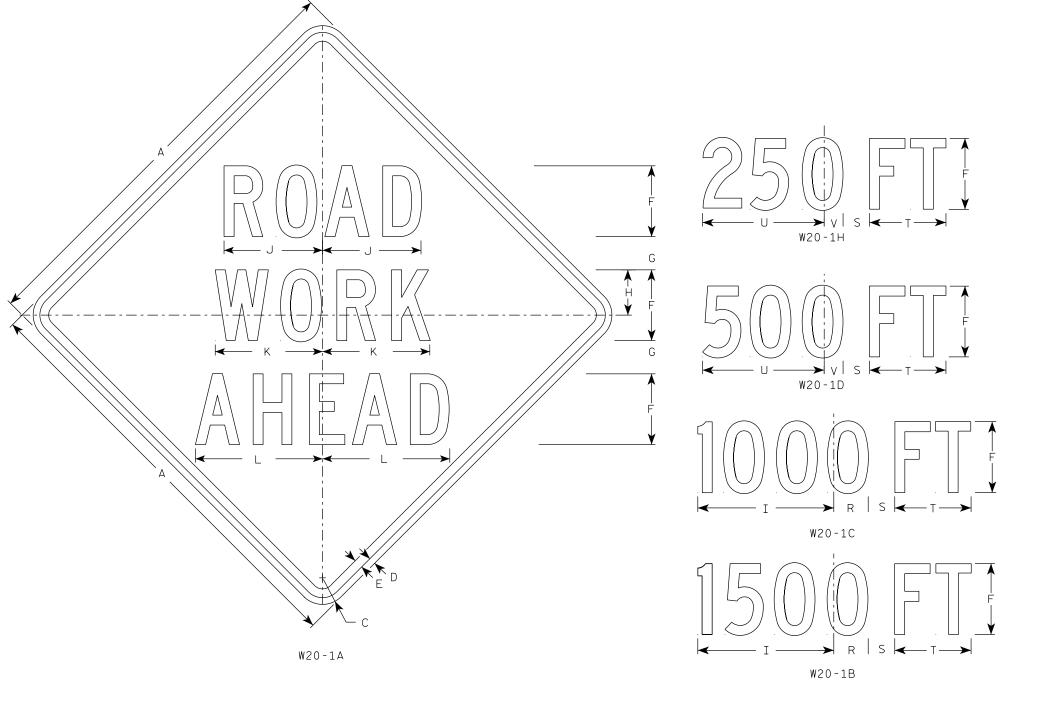
PLOT SCALE: 5.650195:1.000000

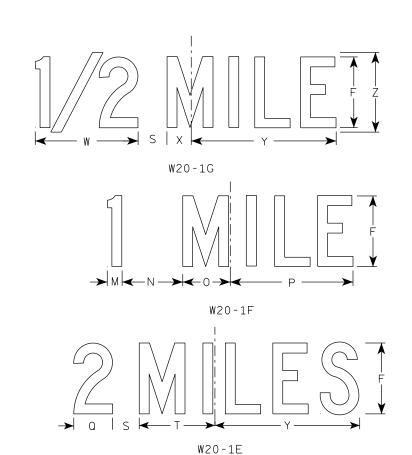
WISDOT/CADDS SHEET 42

- 1. Sign is Type II Type F Reflective
- 2. Color:

Background - Orange Message - Black

- 3. Message Series C
- 4. 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.





SIZE	Α	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	Q	R	S	Т	U	٧	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7	8 1/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5	9	1 3/8	8	1 3/4	10 3/4	6	9.0
25	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1	6 %	5 3/8	13 1/8	4 3/8	3 1/8	3	8	13 ¾	2 1/8	11 1/8	2 3/4	16 3/8	9	16.0
2M	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1	6 1/8	5 3/8	13 1/8	4 3/8	3 1/8	3	8	13 ¾	2 1/8	11 1/8	2 3/4	16 3/8	9	16.0
3	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1	6 %	5 3/8	13 1/8	4 3/8	3 1/8	3	8	13 ¾	2 1/8	11 1/8	2 3/4	16 3/8	9	16.0
4	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1	6 1/8	5 3/8	13 1/8	4 3/8	3 1/8	3	8	13 ¾	2 1/8	11 1/8	2 3/4	16 3/8	9	16.0
5	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 %	5 3/8	13 1/8	4 3/8	3 1/8	3	8 %	13 ¾	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN W20-1A, B, C, D, E, F, G & H

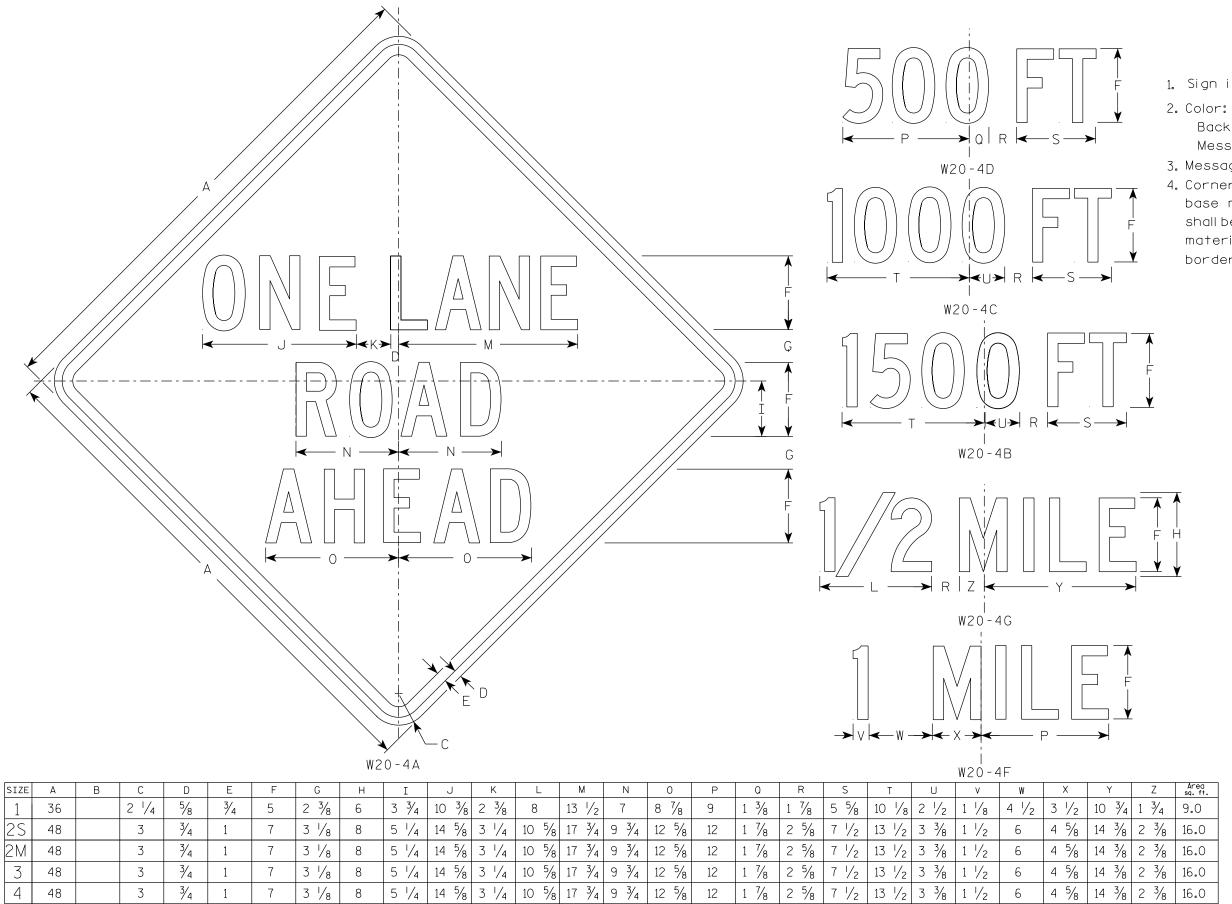
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew & Rauch
For State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-1.12

SHEET NO:

PROJECT NO:



1. Sign is Type II - Type F Reflective

Background - Orange Message – Black

- 3. Message Series C
- 4. 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.

STANDARD SIGN W20-4A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

For State Traffic Engineer

APPROVED

DATE 1/10/2024 PLATE NO. W20-4.10

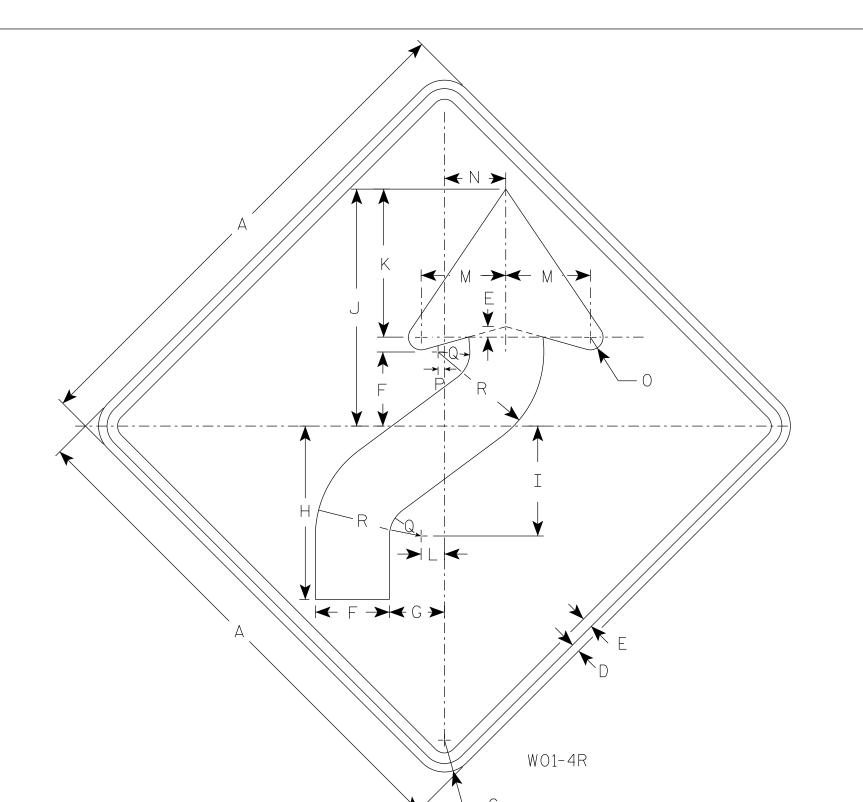
SHEET NO:

3

48

PROJECT NO:

3/4



- 1. Sign is Type II Type F Reflective
- 2. Color:

Background - Orange 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. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

SIZE A 5/8 3/4 5 1/4 4 12 3/8 7 7/8 16 7/8 10 1/2 1 5/8 $4 \frac{1}{2}$ 1/2 2 1/4 7 1/2 9.0 36 2 1/4 3/4 5 1/4 16 1/2 10 1/2 22 1/2 48 3 2 1/4 1 1/4 5/8 3 16.0 l2ML 5 1/4 16 1/2 10 1/2 22 1/2 48 3/4 2 1/4 1 1/4 5/8 3 3 10 16.0 5 1/4 16 1/2 10 1/2 22 1/2 3/4 1 1/4 5/8 48 14 2 1/4 3 10 16.0 3 5 1/4 16 1/2 10 1/2 22 1/2 4 48 3/4 14 2 1/4 6 1 1/4 5/8 3 10 16.0 5 3/4 5 1/4 16 1/2 10 1/2 22 1/2 6 1 1/4 5/8 3 48 3 2 1/4 10 16.0 STANDARD SIGN WO1-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

For State Traffic Engineer

SHEET NO:

DATE 1/24/2024 PLATE NO. WO1-4.2

PROJECT NO: FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W014.dgn HWY:

COUNTY: PLOT DATE: 24-JAN 2024 10:56

PLOT BY : dotc4c

PLOT NAME :

- 1. Sign is Type II Type F Reflective
- 2. Color:

Background - Orange 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.

	B A A A B A A B B A A B B A B B
M N	1-6

SIZE	А	В	С	D	E	F	G	Н	I	J	К	L	М	N	0	Р	Q	R	S	Т	U	٧	W	X	Υ	Z	Area sq. ft.
1																											
25	48	24	1 1/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 1/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 1/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 1/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 1/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

COUNTY:

STANDARD SIGN WO1-6

WISCONSIN DEPT OF TRANSPORTATION

SHEET NO:

APPROVED

Matthew R Rauch

DATE <u>1/24/2024</u>

PLATE NO. <u>W01-6.2</u>

Ε

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W016.dgn

HWY:

PROJECT NO:

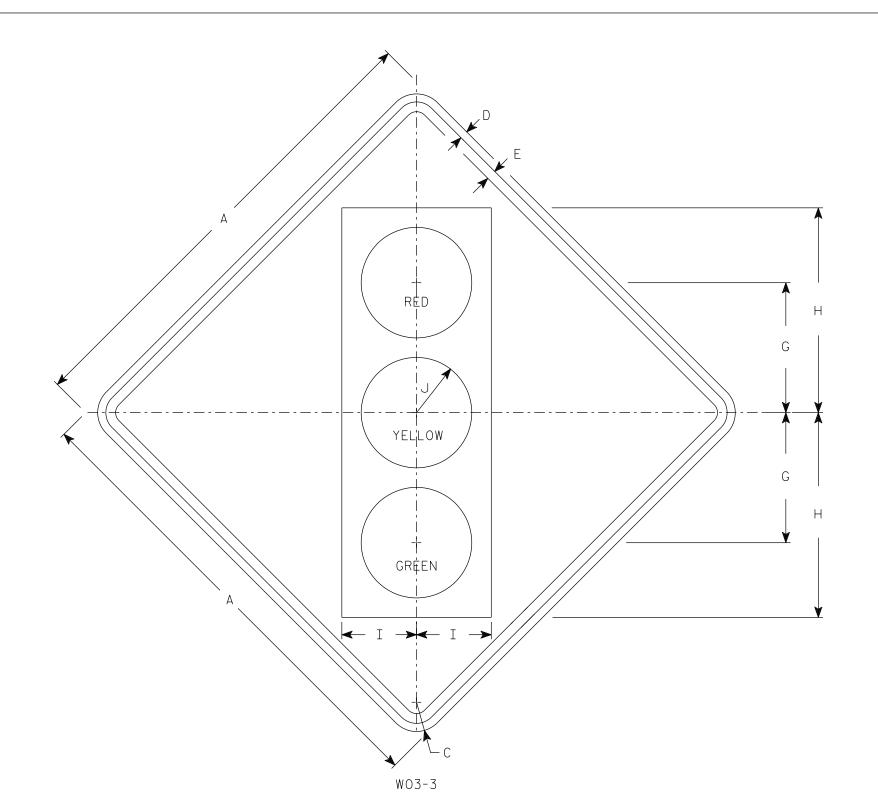
PLOT DATE: 24-JAN 2024 1:12

PLOT BY : dotc4c

PLOT SCALE: \$\$.....plotscale.....\$\$ WISDOT/CADDS SHEET 42

PLOT NAME :





- 1. Sign is Type II Type F Reflective
- 2. Color:

Background - Orange Message - See Note 4

- 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. Symbol and border are non-reflective black. Top circle - Type H Reflectorized Red Center circle - Same as background Bottom circle - Type H Reflectorized Green

SIZE	А	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	Q	R	S	Т	U	٧	W	Х	Υ	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4		10	15 ¾	5 3/4	4 1/4																	9.0
25	48		3	3/4	1		12 1/2	20	7 1/2	5																	16.0
2M	48		3	3/4	1		12 1/2	20	7 1/2	5																	16.0
3	48		3	3/4	1		12 1/2	20	7 1/2	5																	16.0
4	48		3	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		3	3/4	1		12 1/2	20	7 1/2	5																	16.0
PROJECT NO: HWY:						COUN	TY:																				

STANDARD SIGN WO3-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matther

DATE 1/24/2024 PLATE NO. W03-3.2

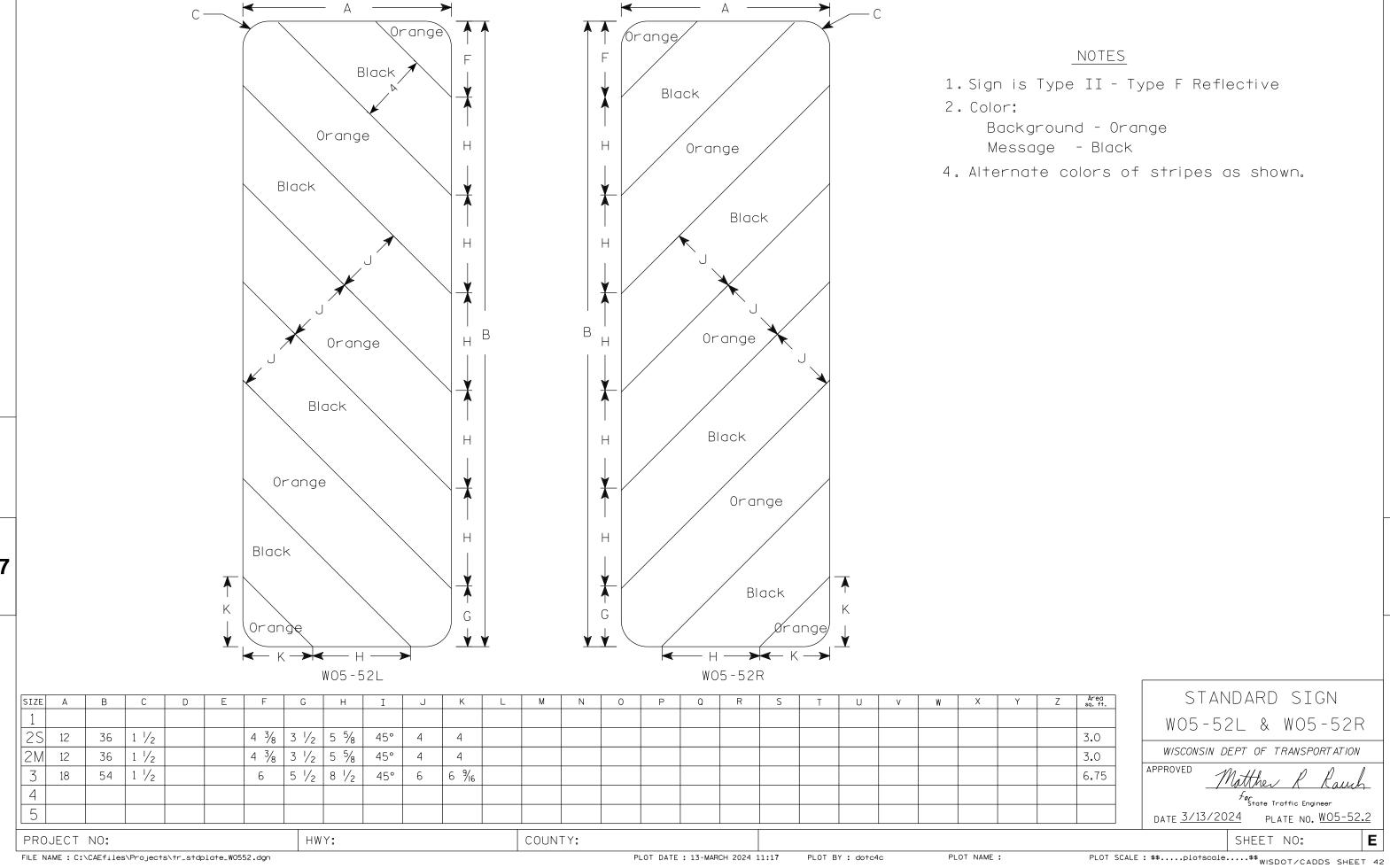
SHEET NO:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W033.DGN

PLOT DATE: 24-JAN 2024 2:07

PLOT BY : dotc4c

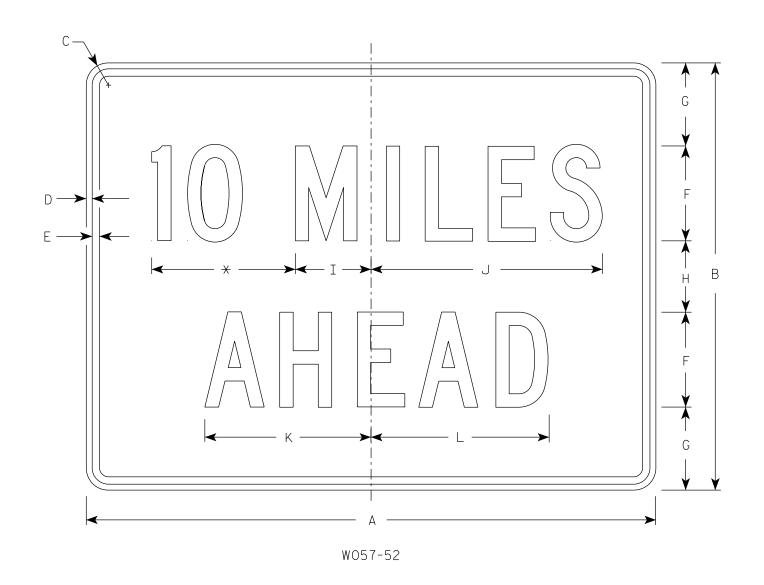
PLOT NAME :



- 1. Sign is Type II Type F Reflective
- 2. Color:

Background - Orange Message - Black

- 3. Message Series C
- 4. 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.
- 5. Substitute appropriate numerals to the nearest quarter mile and optically adjust spacing to achieve proper balance.



HWY:

* See note 5

SIZE	А	В	С	D	Е	F	G	Н	I	J	K	L	М	N	0	Р	Q	R	S	Т	U	٧	W	Х	Υ	Z	Area sq. ft.
1	36	24	1 1/2	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10	11 3/8	2	12													6.0
25	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 ½	14	15	2 3/4	16 ³ / ₈													12.0
2M	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 ½	14	15	2 3/4	16 ³ / ₈													12.0
3	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 ½	14	15	2 3/4	16 3/8													12.0
4	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 ½	14	15	2 3/4	16 3/8													12.0
5	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

COUNTY:

STANDARD SIGN W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

 f_{or} State Traffic Engineer

SHEET NO:

DATE 2/1/2024

PLATE NO. W057-52.3

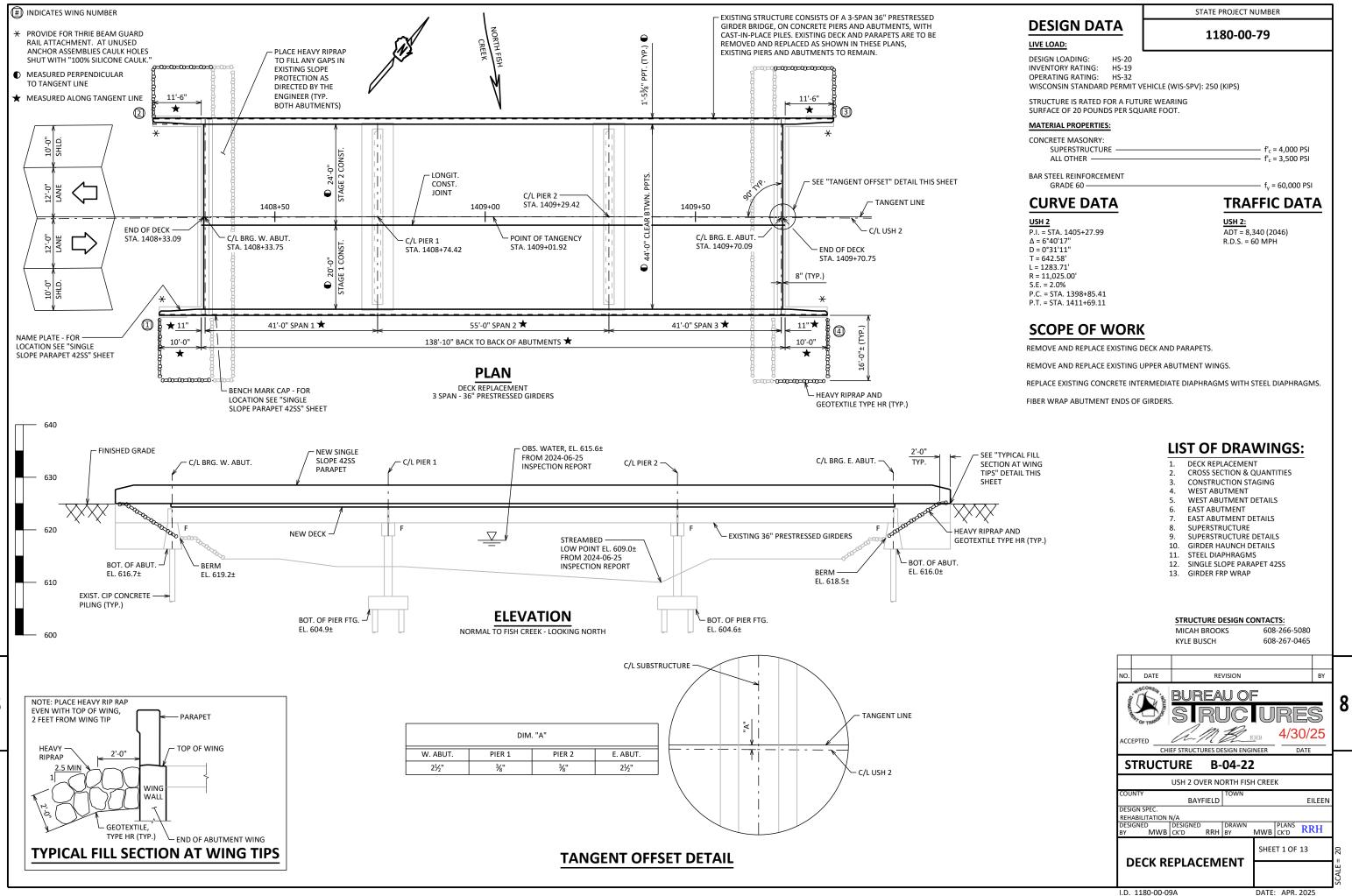
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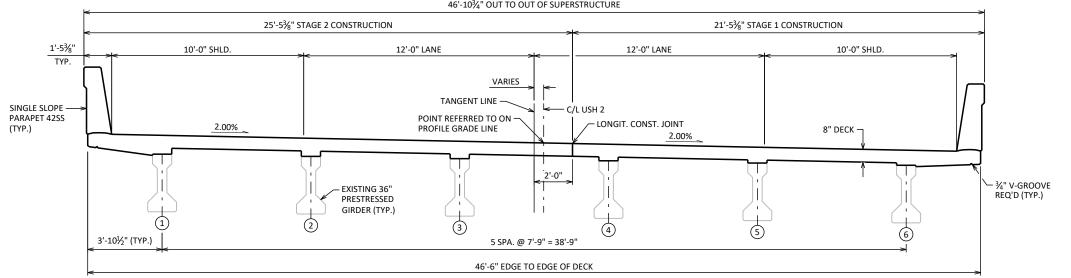
PROJECT NO:

PLOT DATE: 1-FEB 2024 10:54

PLOT BY : dotc4c

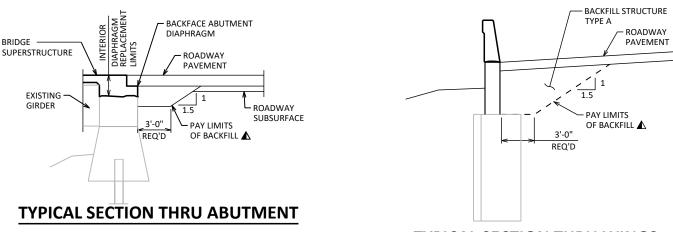
PLOT NAME :





PROPOSED CROSS SECTION THRU ROADWAY

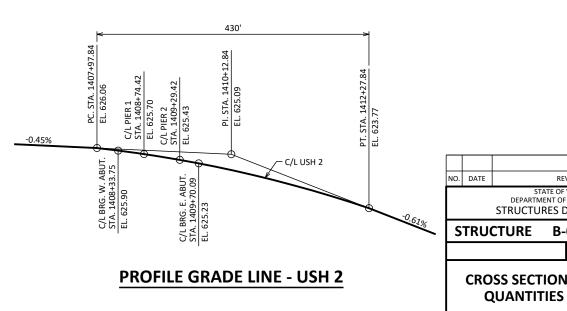
LOOKING EAST DIMENSIONS ARE MEASURED PERPENDICULAR TO TANGENT LINE



TYPICAL SECTION THRU WINGS A BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE

DETERMINED BY THE CONTRACTOR **TOTAL ESTIMATED QUANTITIES**

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	WEST ABUT.	PIER 1	PIER 2	EAST ABUT.	TOTALS
203.0211.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL (B-04-22)	EACH						1
210.1500	BACKFILL STRUCTURE TYPE A	TON		25			20	45
502.0100	CONCRETE MASONRY BRIDGES	CY	236.1	7.0			6.7	250
502.3200	PROTECTIVE SURFACE TREATMENT	SY	689					689
502.3210	PIGMENTED SURFACE SEALER	SY	159					159
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	486	60			60	606
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	62,220	1,500			1,510	65,290
506.4000	STEEL DIAPHRAGMS (B-04-22)	EACH	15					15
509.1500	CONCRETE SURFACE REPAIR	SF	2	15			15	32
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	22	4			4	28
606.0300	RIPRAP HEAVY	CY		26			26	52
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4					4
645.0120	GEOTEXTILE TYPE HR	SY		51			51	102
SPV.0060	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS (B-04-22 STAGE 1)	EACH						1
SPV.0060	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS (B-04-22 STAGE 2)	EACH						1
SPV.0165	FIBER WRAP REINFORCING NON-STRUCTURAL	SF	485					485
	NON-BID ITEMS							
	FILLER	SIZE						½"



DRAWINGS SHALL NOT BE SCALED

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

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

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

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT DIAPHRAGMS

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON ABUTMENT WINGS.

THE HAUNCH CONCRETE QUANTITY IS BASED ON AN AVERAGE HAUNCH HEIGHT OF 51/4". HAUNCH HEIGHT VARIES FROM 7½"± TO 2¼"±.

OLIANTITY OF "CONCRETE SURFACE REPAIR" ON EACH SURSTRUCTURE IS APPROXIMATE LOCATIONS AND EXTENTS ARE TO BE DETERMINED BY THE ENGINEER.

DEFINE ALL AREAS OF CONCRETE REMOVAL WITH A 1" SAWCUT UNLESS OTHERWISE

CARE SHALL BE TAKEN NOT TO DAMAGE THE TOP FLANGES OF EXISTING PRESTRESSED CONCRETE GIRDERS AND SHEAR STIRRUPS. SAWCUTTING THE EXISTING SHEAR STIRRUPS IS NOT ALLOWED. THE ENGINEER SHALL INSPECT THE GIRDERS PRIOR TO PLACING THE NEW

ASBESTOS IS PRESENT IN THE GRAY CAULK IN THE PARAPET JOINTS, AND IN THE BLACK TAR IN THE DECK JOINTS. REMOVAL IS INCLUDED IN THE BID ITEM "ABATEMENT OF ASBESTOS CONTAINING MATERIAL (B-04-22)"

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1977.

ANY EXCAVATION NECESSARY TO COMPLETE THE DECK, PARAPET, AND UPPER WING REPLACEMENT AT THE ABUTMENTS IS INCLUDED WITH THE BID ITEM "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS (B-04-22)

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

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

THE SLOPE OF FILL AT THE WINGS SHALL BE COVERED WITH HEAVY RIPRAP TO THE EXTENT SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL JOINTS AT THE BACK FACE OF WINGS AND ABUTMENTS WITH RUBBERIZED MEMBRANE WATERPROOFING

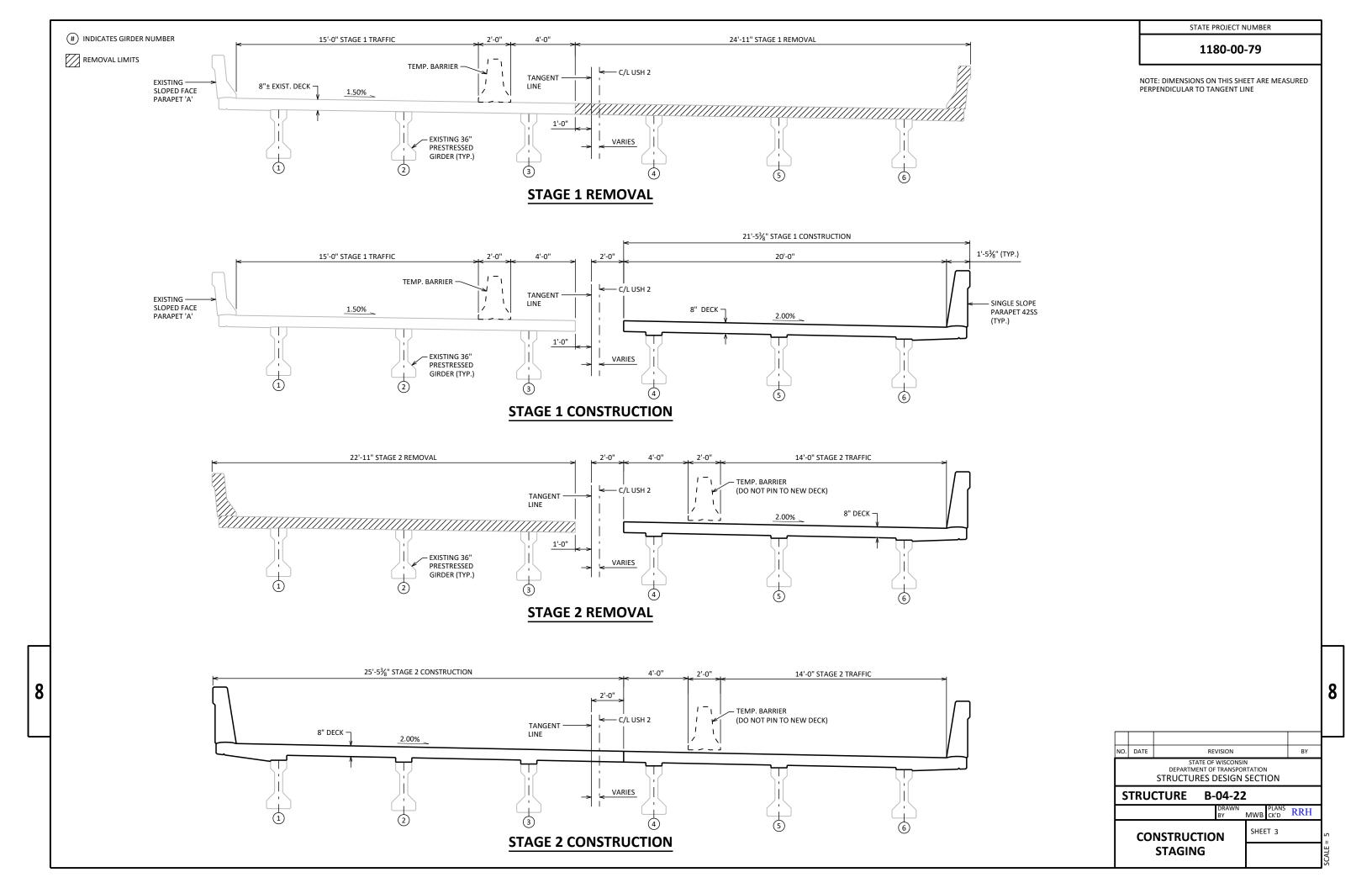
DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION

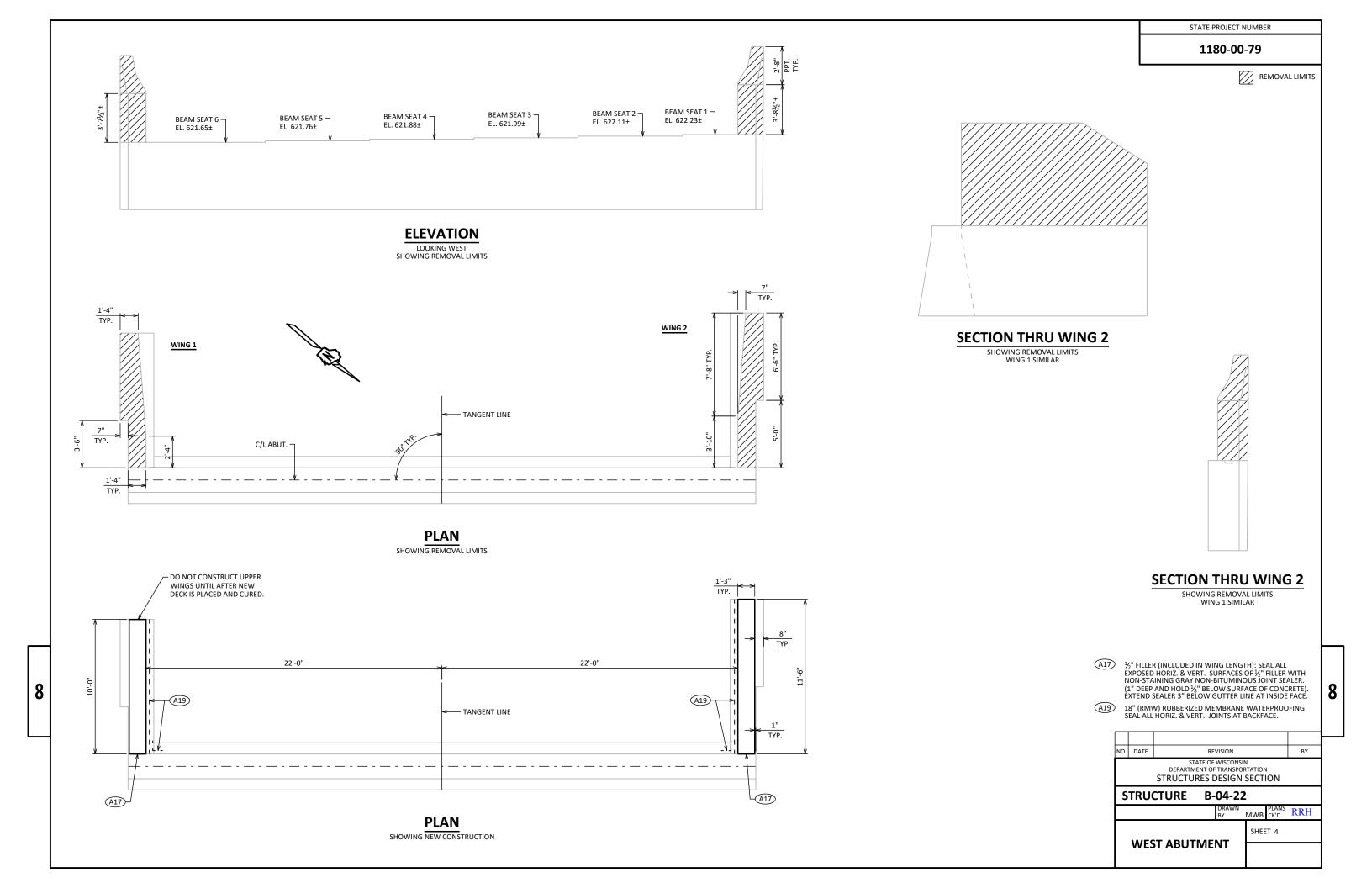
REVISION STATE OF WISCONSIN

STRUCTURE B-04-22

CROSS SECTION &

SHEET 2





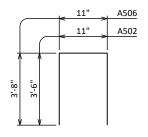
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BILL OF BARS

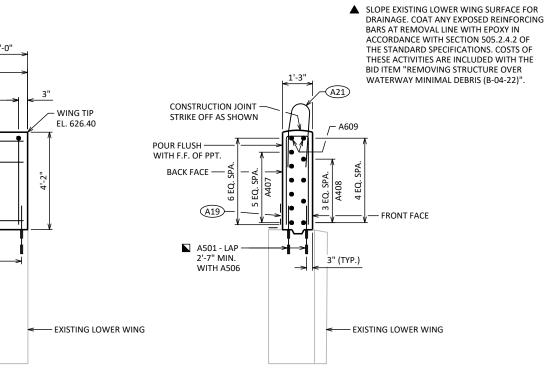
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501	Х	60	4'-7"			WING 1 & 2 - VERT ANCHORS
A502	Х	14	7'-8"	Х		WING 1 - VERT STIRRUPS
A403	Х	5	9'-8"			WING 1 - HORIZ B.F.
A404	Х	4	9'-8"			WING 1 - HORIZ F.F.
A605	Х	2	9'-8"			WING 1 - HORIZ TOP
A506	Х	16	8'-0"	Х		WING 2 - VERT STIRRUPS
A407	Х	6	11'-2"			WING 2 - HORIZ B.F.
A408	Х	4	11'-2"			WING 2 - HORIZ F.F.
A609	Х	2	11'-2"			WING 2 - HORIZ TOP

ADHESIVE ANCHORS NO. 5 BAR. EMBED 1'-0" IN SOUND CONCRETE.



A502, A506



WING 2 ELEVATION

15 SPA. @ 9" MAX. = 11'-0" - A501 ■

11'-6" NEW UPPER WING

15 SPA. @ 9" MAX. = 11'-0" - A506

A407, A408

<u>`</u> A609

FINISHED -GROUNDLINE

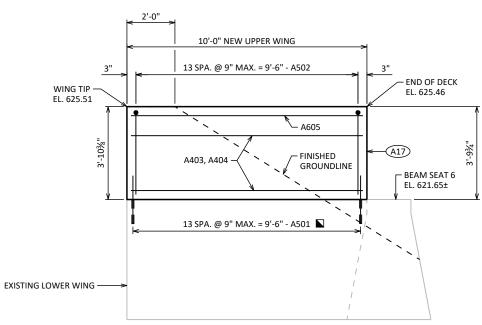
END OF DECK

BEAM SEAT 1 EL. 622.23±

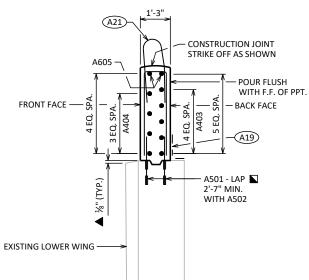
(A17)-

EL. 626.34

WING 2 SECTION



WING 1 ELEVATION WING 1 SECTION

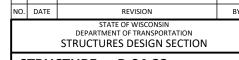


½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅙" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

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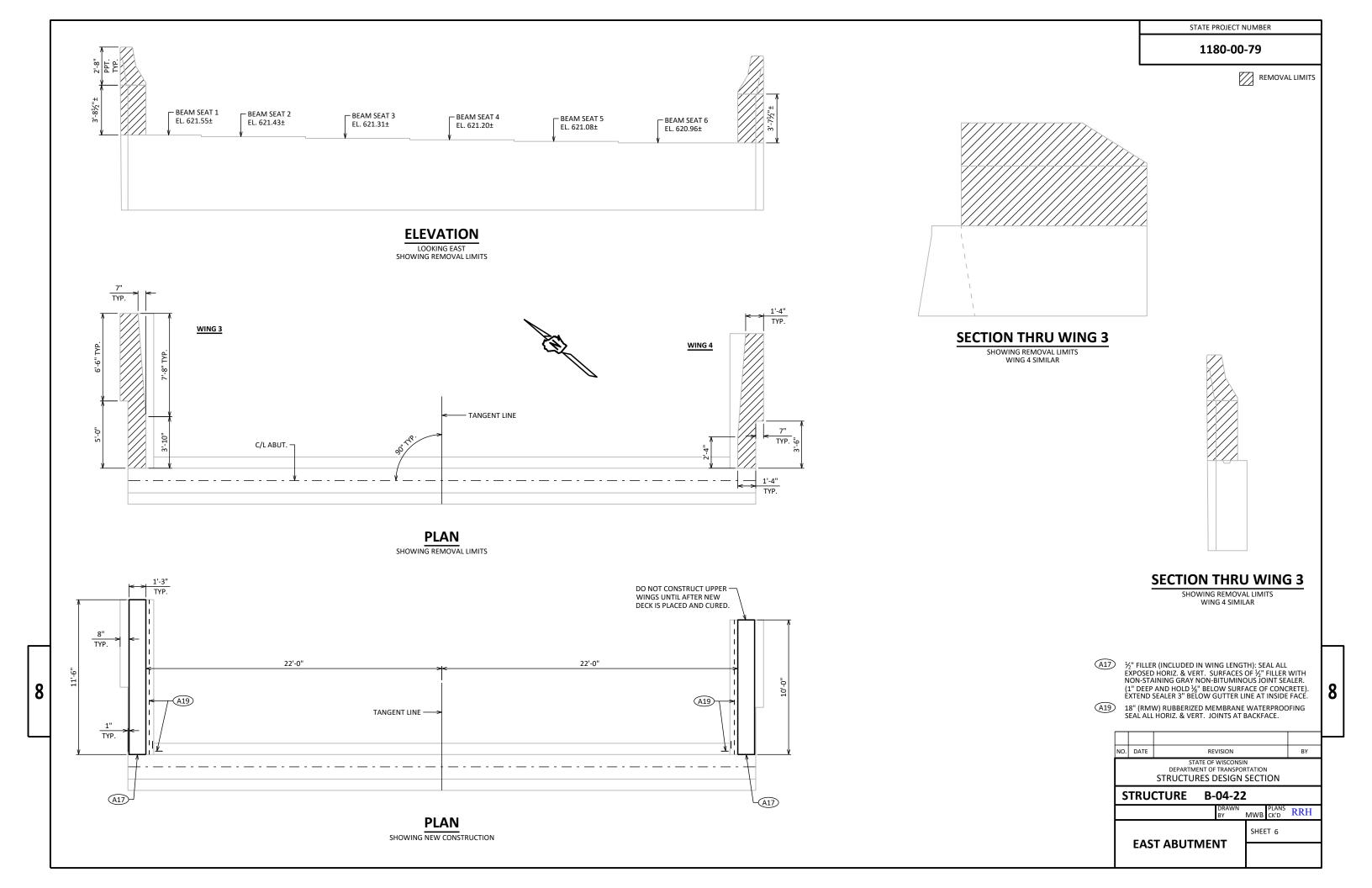
A21 FOR PPT. BARS & DIMENSIONS SEE PARAPET SHEET.



STRUCTURE B-04-22

DETAILS

MWB CK'D RRH SHEET 5 **WEST ABUTMENT**



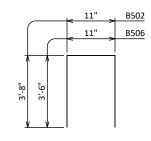
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BILL OF BARS

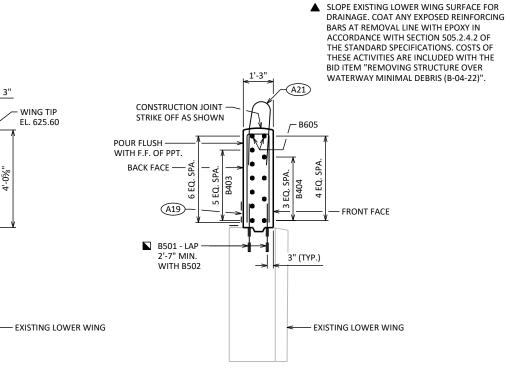
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501	Х	60	4'-7"			WING 3 & 4 - VERT ANCHORS
B502	Х	16	8'-0"	Х		WING 3 - VERT STIRRUPS
B403	Х	6	11'-2"			WING 3 - HORIZ B.F.
B404	Х	4	11'-2"			WING 3 - HORIZ F.F.
B605	Х	2	11'-2"			WING 3 - HORIZ TOP
B506	Х	14	7'-8"	Х		WING 4 - VERT STIRRUPS
B407	Х	5	9'-8"			WING 4 - HORIZ B.F.
B408	Х	4	9'-8"			WING 4 - HORIZ F.F.
B609	Х	2	9'-8"			WING 4 - HORIZ TOP
B410	Х	10	2'-0"			WING 4 - SURFACE DRAIN ANCHORS

ADHESIVE ANCHORS NO. 5 BAR. EMBED 1'-0" IN SOUND CONCRETE.



B502, B506



WING 3 ELEVATION

11'-6" NEW UPPER WING

15 SPA. @ 9" MAX. = 11'-0" - B502

15 SPA. @ 9" MAX. = 11'-0" - B501

B403, B404

− B605

FINISHED ——GROUNDLINE

END OF DECK

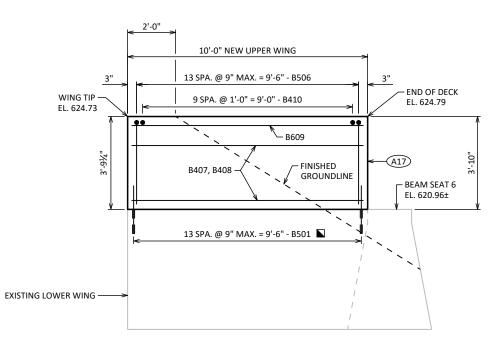
BEAM SEAT 1

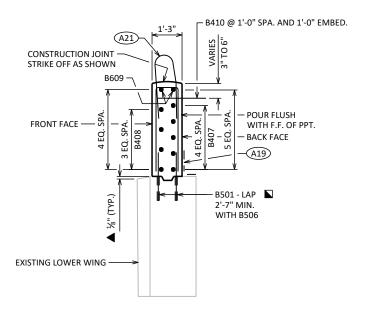
EL. 621.55±

(A17)-

EL. 625.67

WING 3 SECTION

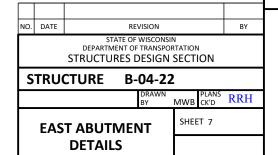




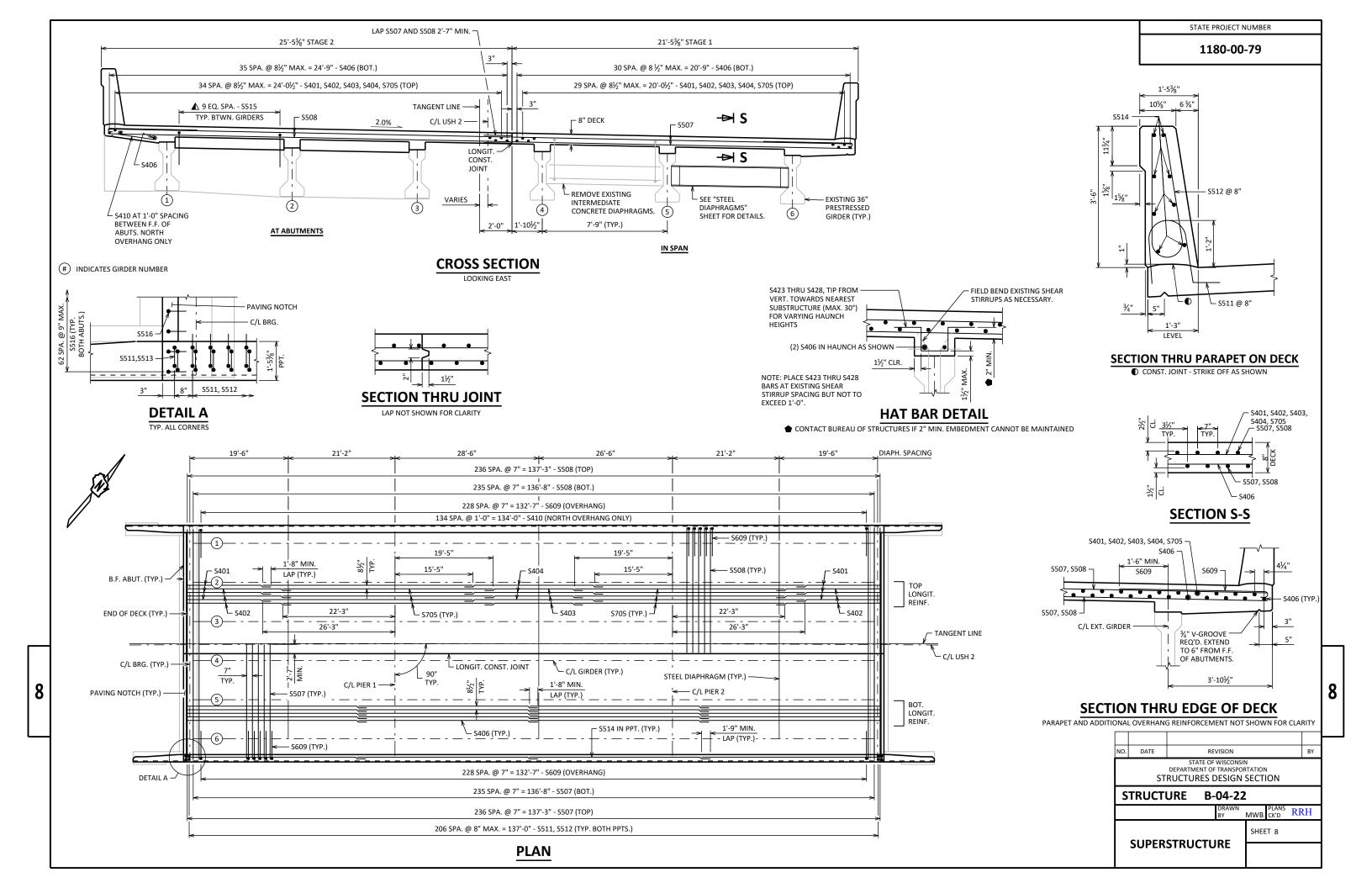
WING 4 ELEVATION WING 4 SECTION

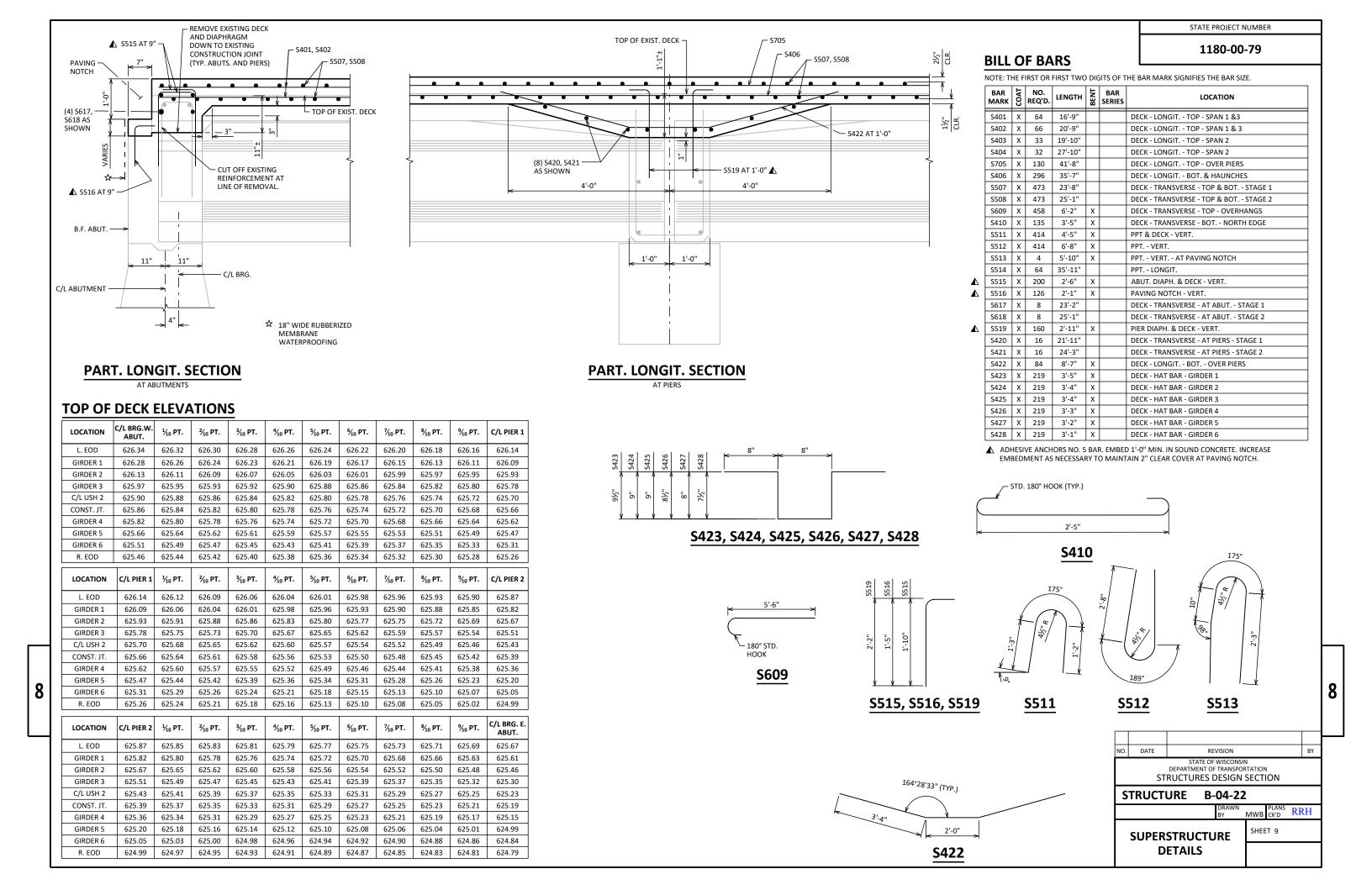
- ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ½" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- FOR PPT. BARS & DIMENSIONS SEE PARAPET SHEET.

8

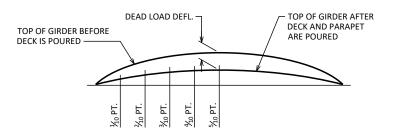


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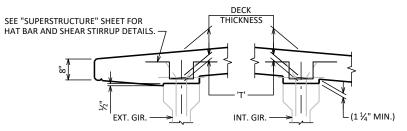


DEAD LOAD DEFLECTION DIAGRAM

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

SPAN	CAMBER (IN.)	*
1	3/8"	
2	11/8"	
3	3/8"	

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



DECK HAUNCH DETAIL

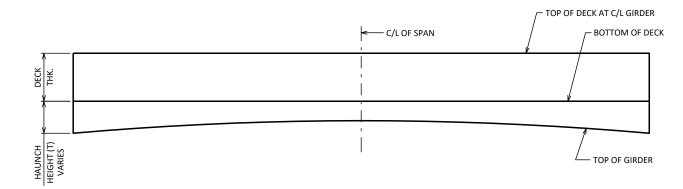
IF 11/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½".

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

TOP OF DECK ELEV. AT FINAL GRADE

- TOP OF GIRDER ELEVATION + DEAD LOAD DEFLECTION
- DECK THICKNESS
- = HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF $5\frac{1}{4}$ " WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



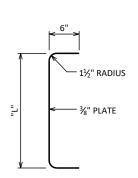
ELEVATION

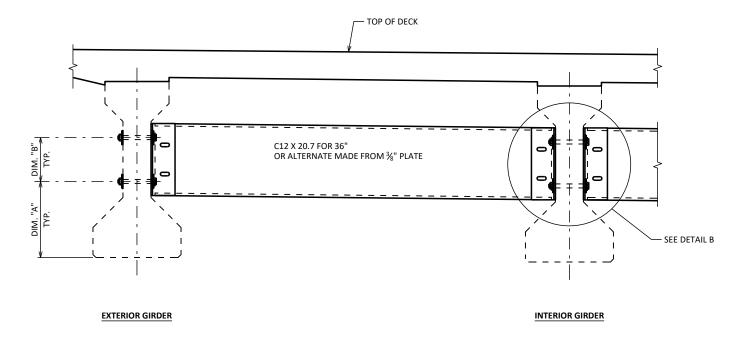
NO. DATE STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION STRUCTURE B-04-22 MWB CK'D RRH SHEET 10 **GIRDER HAUNCH DETAILS**

1180-00-79

GIRDER HEIGHT	DIM. "A"	DIM. "B"	DIM. "L"	* DIM. "X"
-28"	1'-07/8"	57/8"	91/2"	21/4"
36"	1'-27/8"	97/8"	1'-1½"	31/4"
-45 "	1'-5%"	1'-17/8"	1'-51/2"	21/4"
45W"	1'-91/8"	87/8"	1'-0½"	23/4"
-54"	1'-7%"	1'-5%"	1'-9½"	41/4"
E 414/"	1! 01/!!	1' 57/"	1! 01/"	417"

TABLE





NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-04-22". 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.

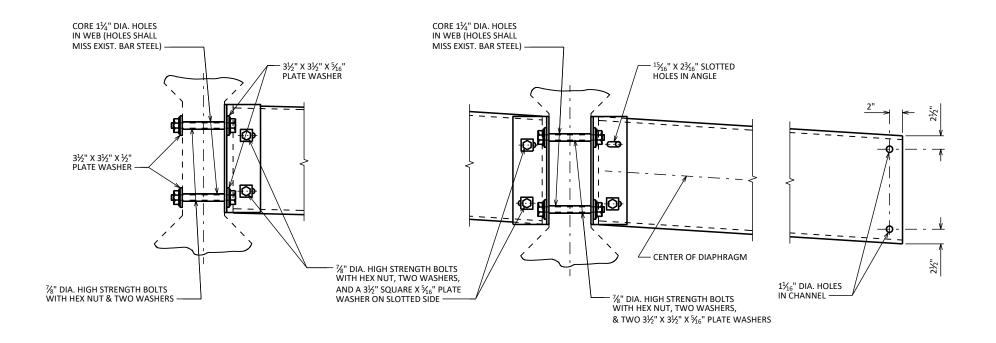
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ½ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449

SECTION THRU ALTERNATE DIAPHRAGM

(FOR EXTERIOR GIRDERS & STAGGERED DIAPHRAGMS)

PART TRANSVERSE SECTION AT DIAPHRAGM

(FOR CONTINUOUS LINE OF DIAPHRAGMS)



6" X 6" X ¾" ANGLE

BEAM FACE

21/8"

DIAPHRAGM SUPPORT

 $^{-15}\!\!/_{16}$ " X $23\!\!/_{16}$ " LONG SLOTTED HOLE, TYP.

*DIM "X" = $2\frac{1}{2}$ " FOR ALTERNATE PLATE DIAPHRAGM

DETAIL B

NO. DATE REVISION BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE P. 04.22

STRUCTURE B-04-22

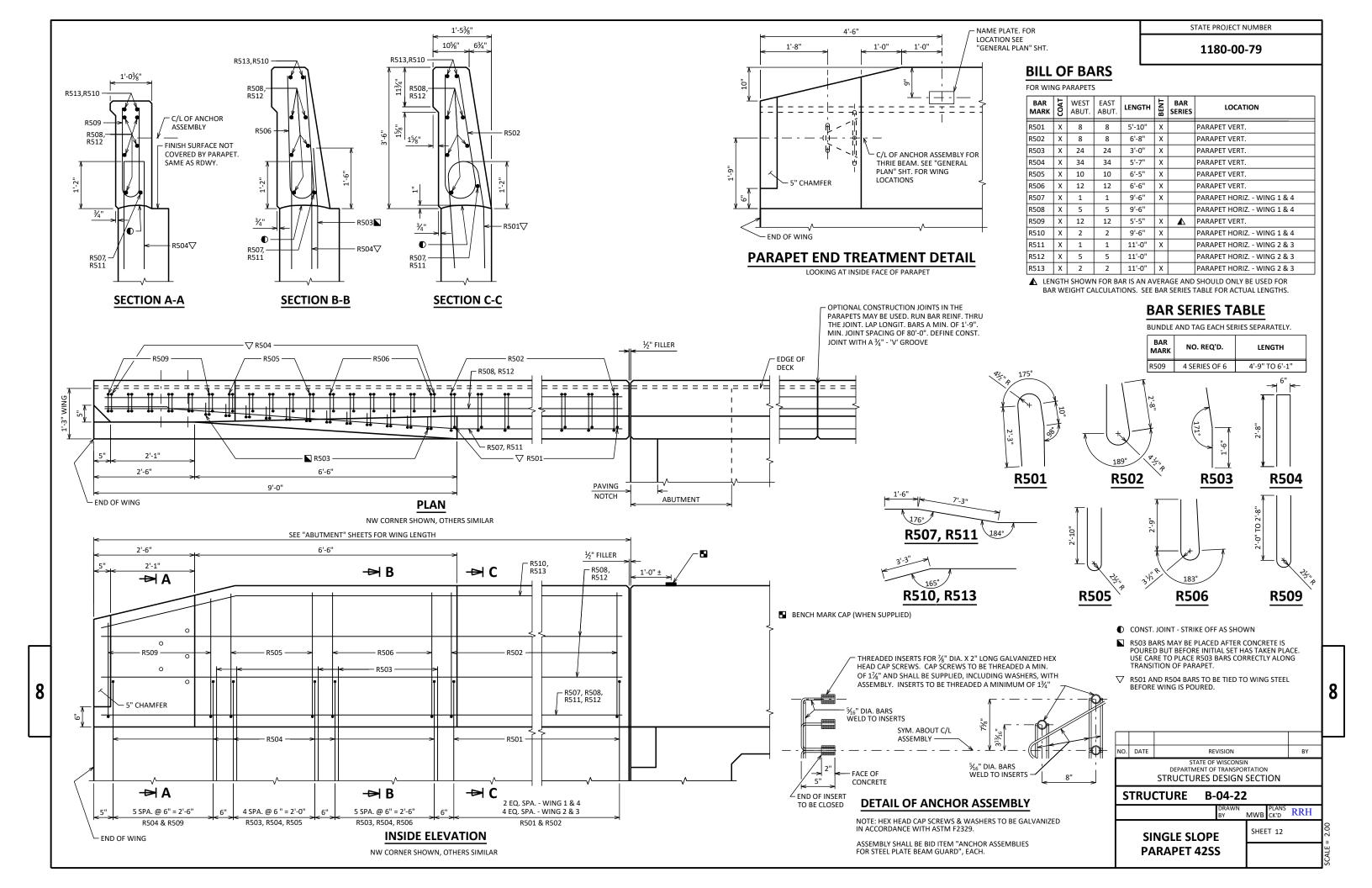
DIAPHRAGM FACE

STEEL DIAPHRAGMS SHEET 11

 $-\frac{15}{16}$ " X $2\frac{3}{16}$ " LONG SLOTTED HOLE, TYP.

| 8

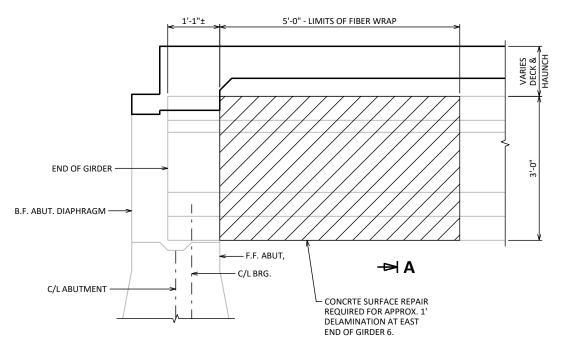
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STATE PROJECT NUMBER

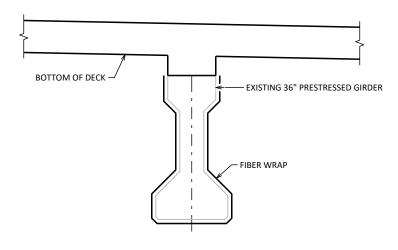
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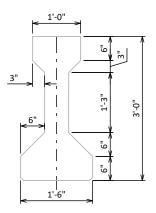
→ A



GIRDER END FIBER WRAP

TYP. ALL GIRDERS AT BOTH ABUTMENTS





SECTION A-A

SECTION THRU GIRDER

SHOWING EXISTING DIMENSIONS

GIRDER FIBER WRAP NOTES

WORK PERFORMED FOR GIRDER FIBER WRAP SHALL BE INCLUDED IN THE BID ITEM "FIBER WRAP REINFORCING NON-STRUCTURAL".

WORK PERFORMED FOR GIRDER END REPAIR SHALL BE INCLUDED IN THE BID ITEMS "CONCRETE SURFACE REPAIR" AND "FIBER WRAP REINFORCING NON-STRUCTURAL".

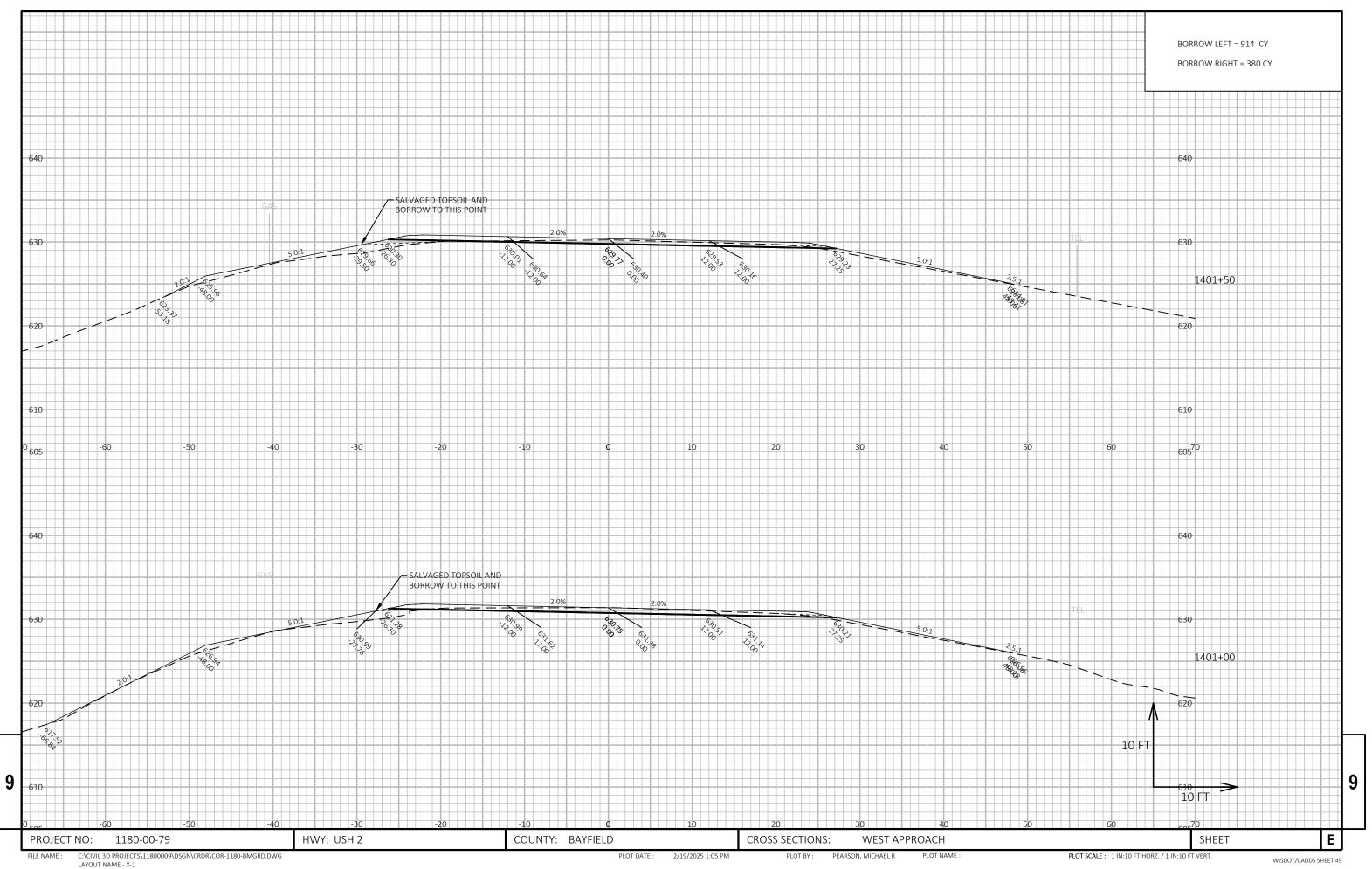
PERFORM "CONCRETE SURFACE REPAIR" PRIOR TO "FIBER WRAP REINFORCING NON-STRUCTURAL" AS DIRECTED BY THE ENGINEER AT THE LOCATIONS INDICATED ON THIS SHEET.

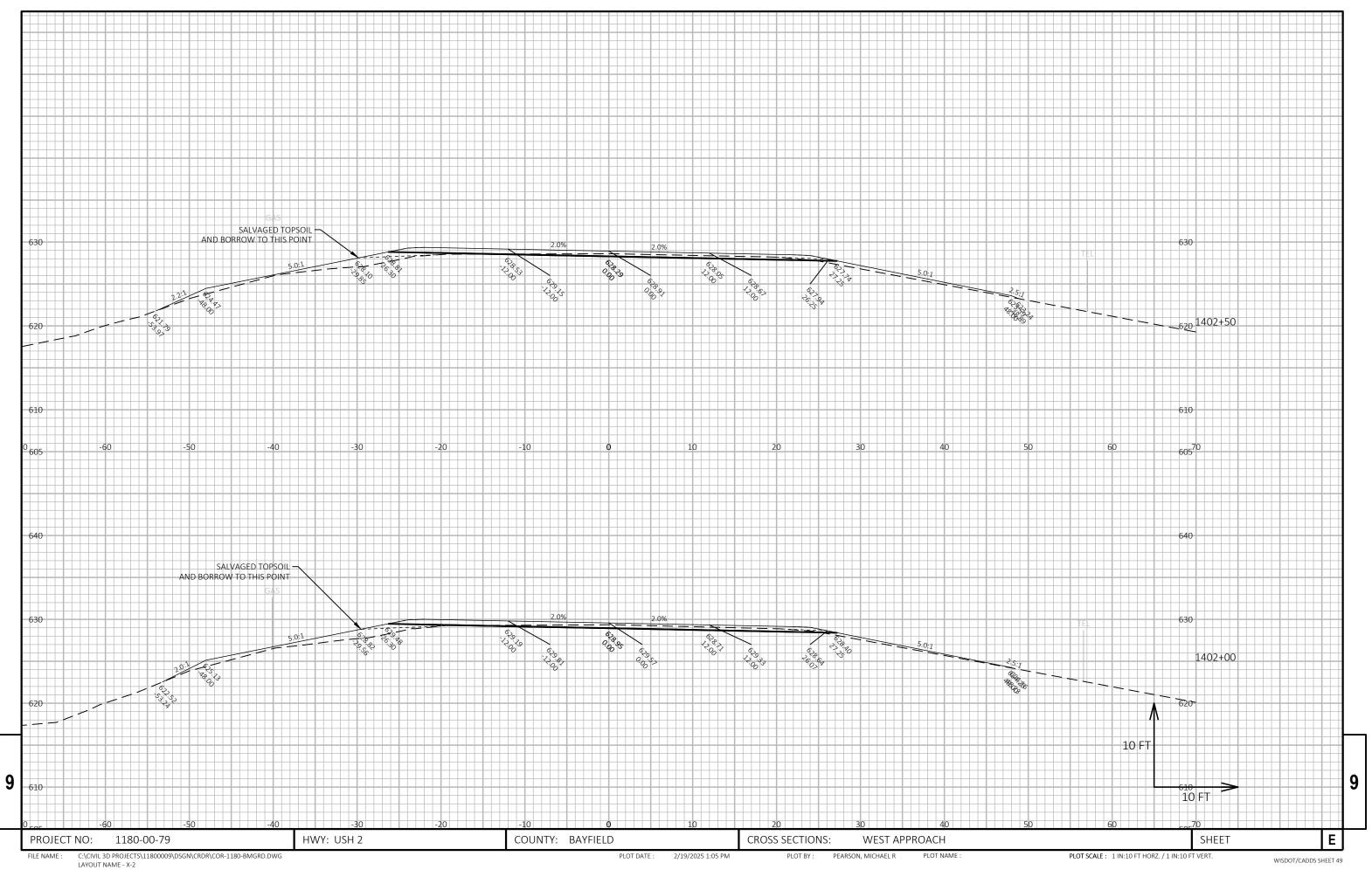
GIRDER FIBER WRAP SHALL BE IN ACCORDANCE WITH THE "FIBER WRAP REINFORCING NON-STRUCTURAL" SPECIAL PROVISION.

APPLY FIBER WRAP AFTER CASTING NEW DECK.

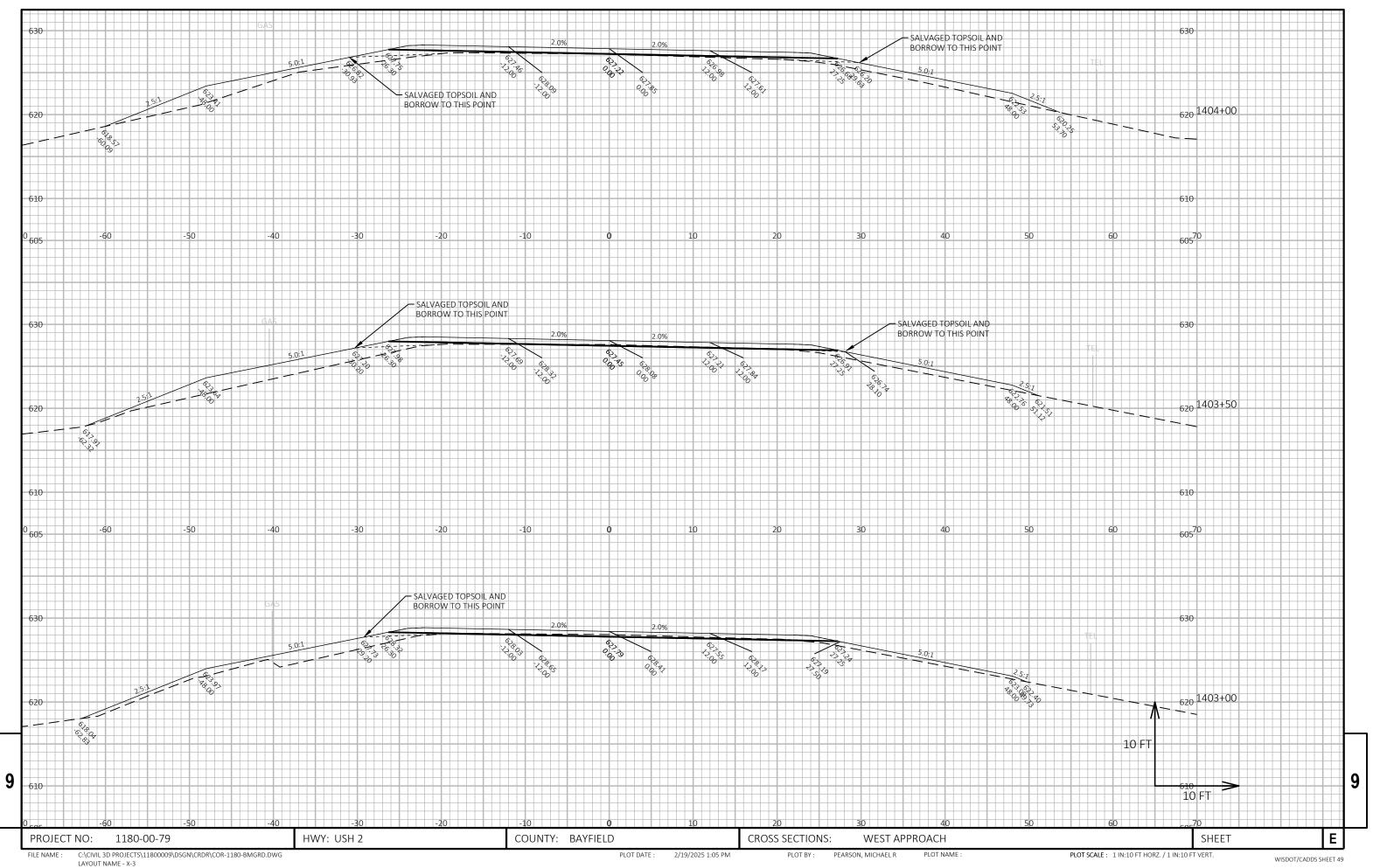
NO.	DATE REVISION		BY					
	STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION							
STRUCTURE B-04-22								
		DRAWN BY MV	VB CK'D RRH					
	01005		SHEET 13					
	GIRDE	R FRP WRAP						

8

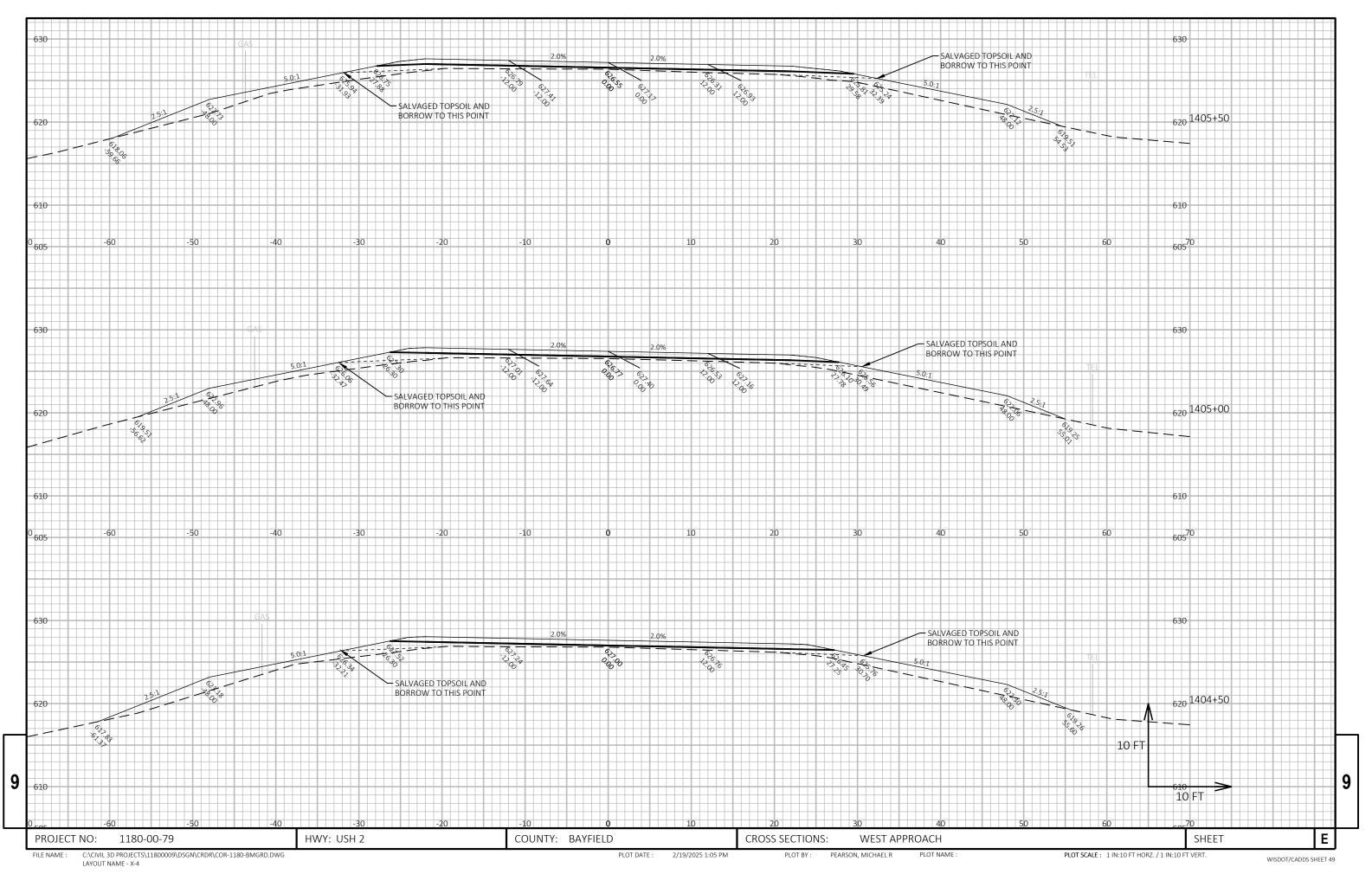


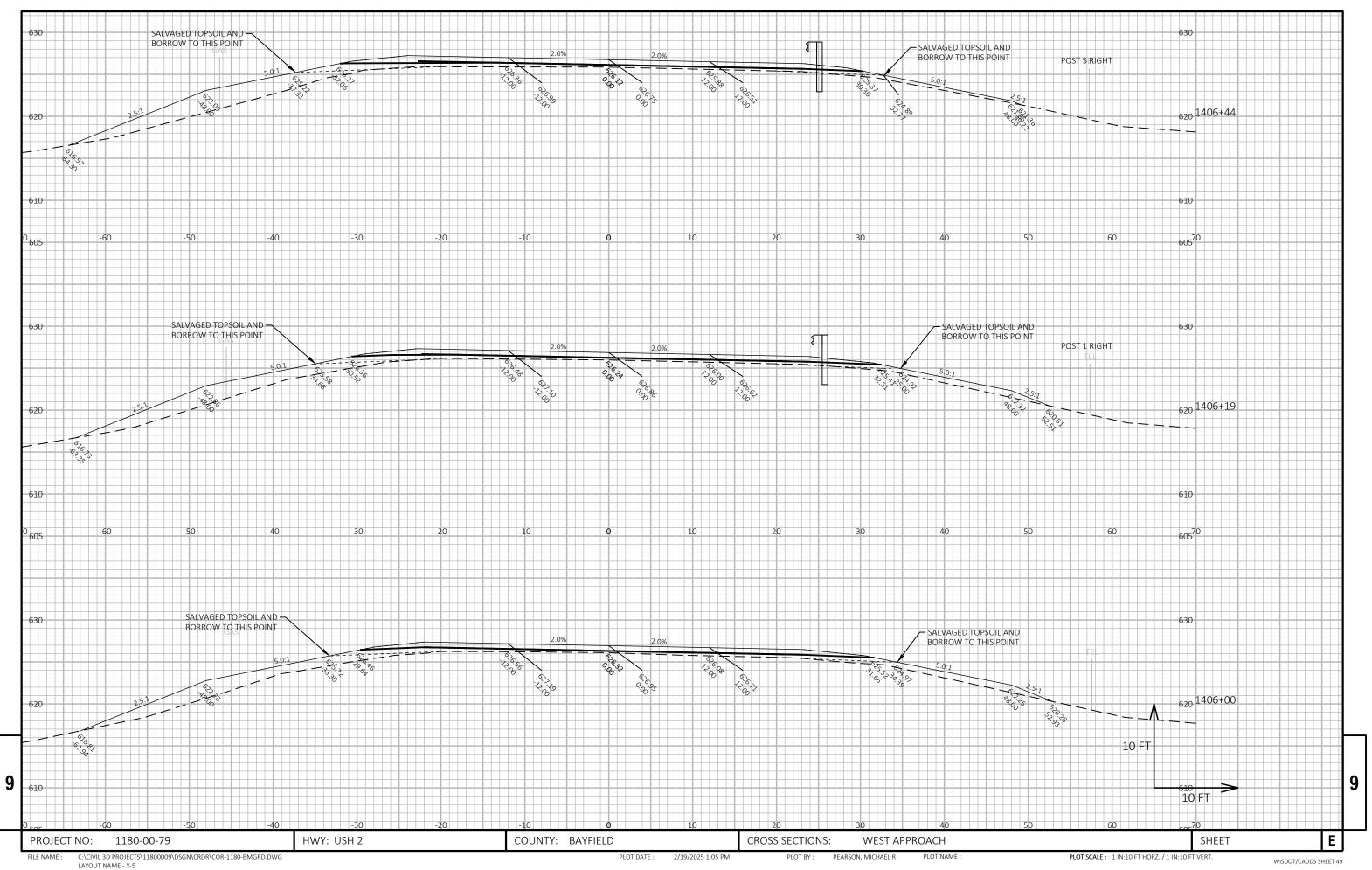


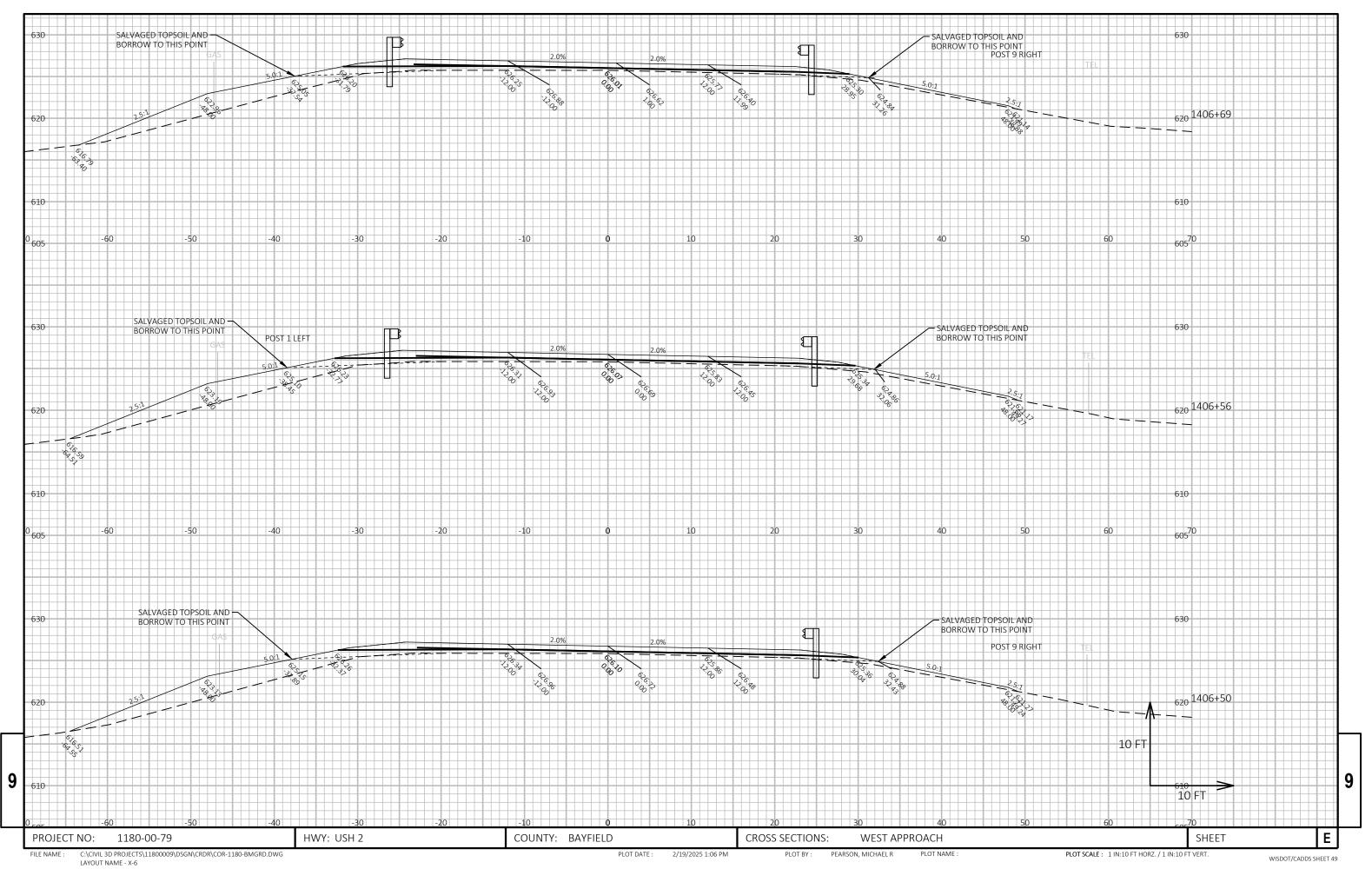
ENGOT MAINE - A-2

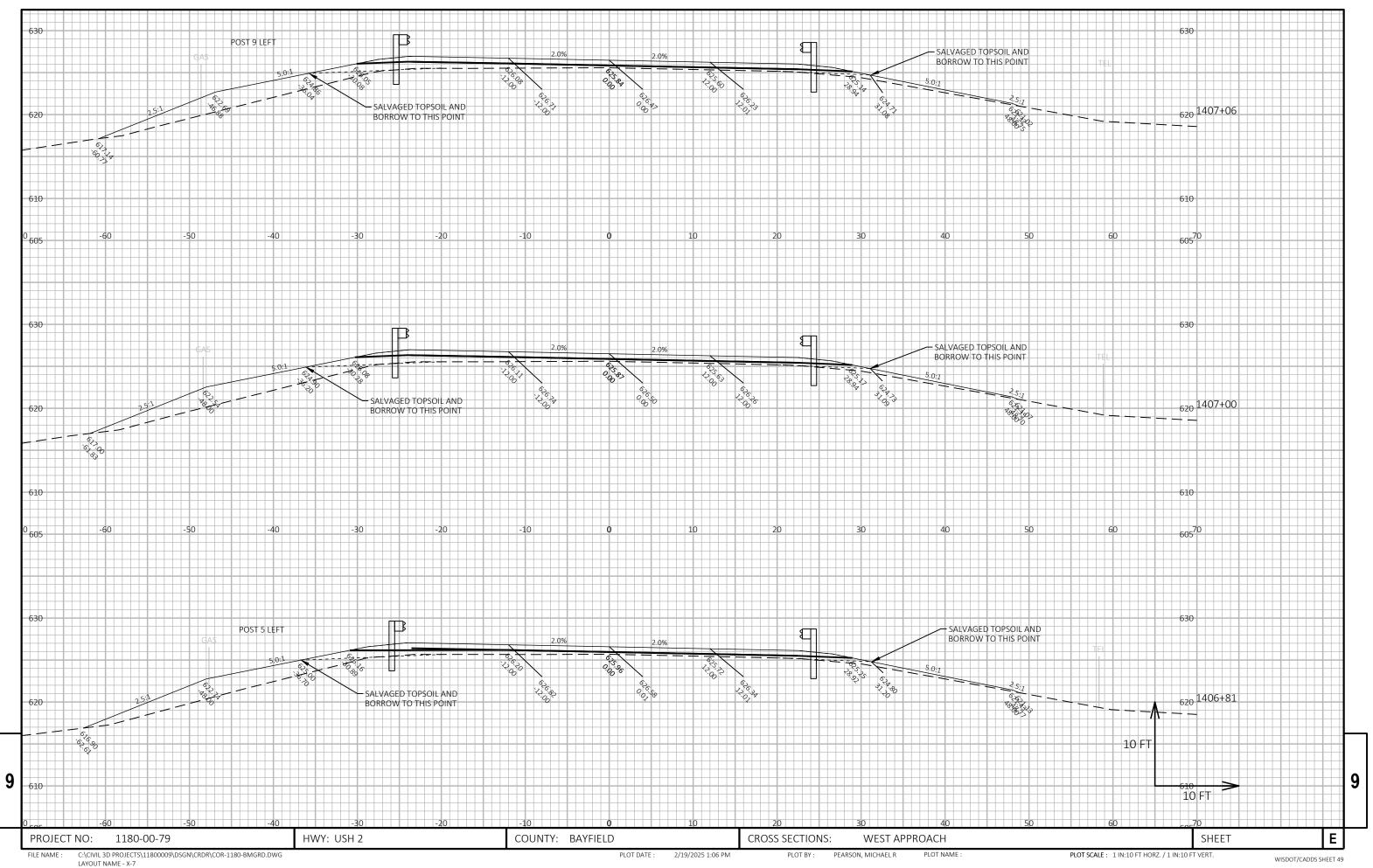


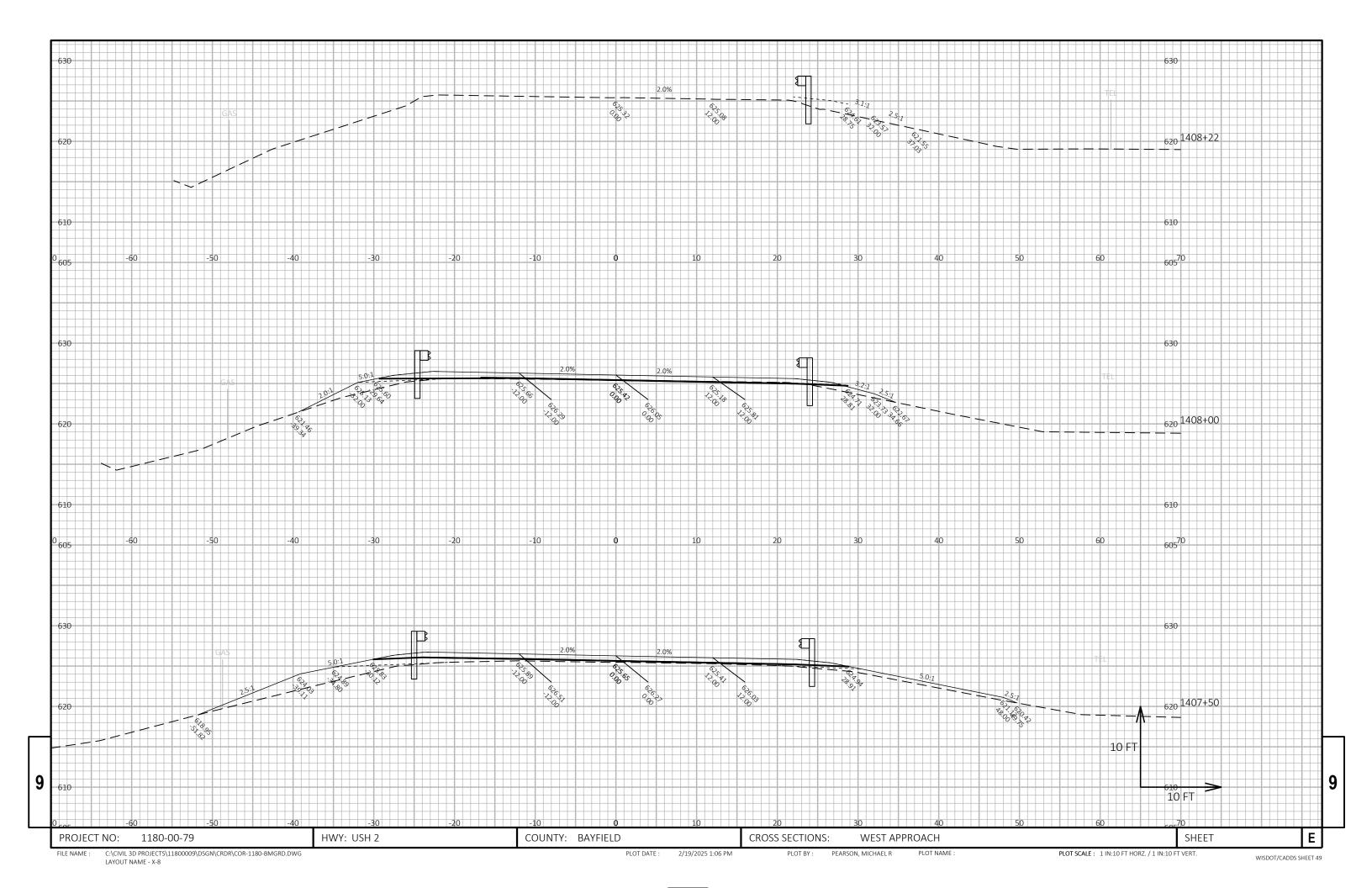
EATOUT NAIVIE - A-5

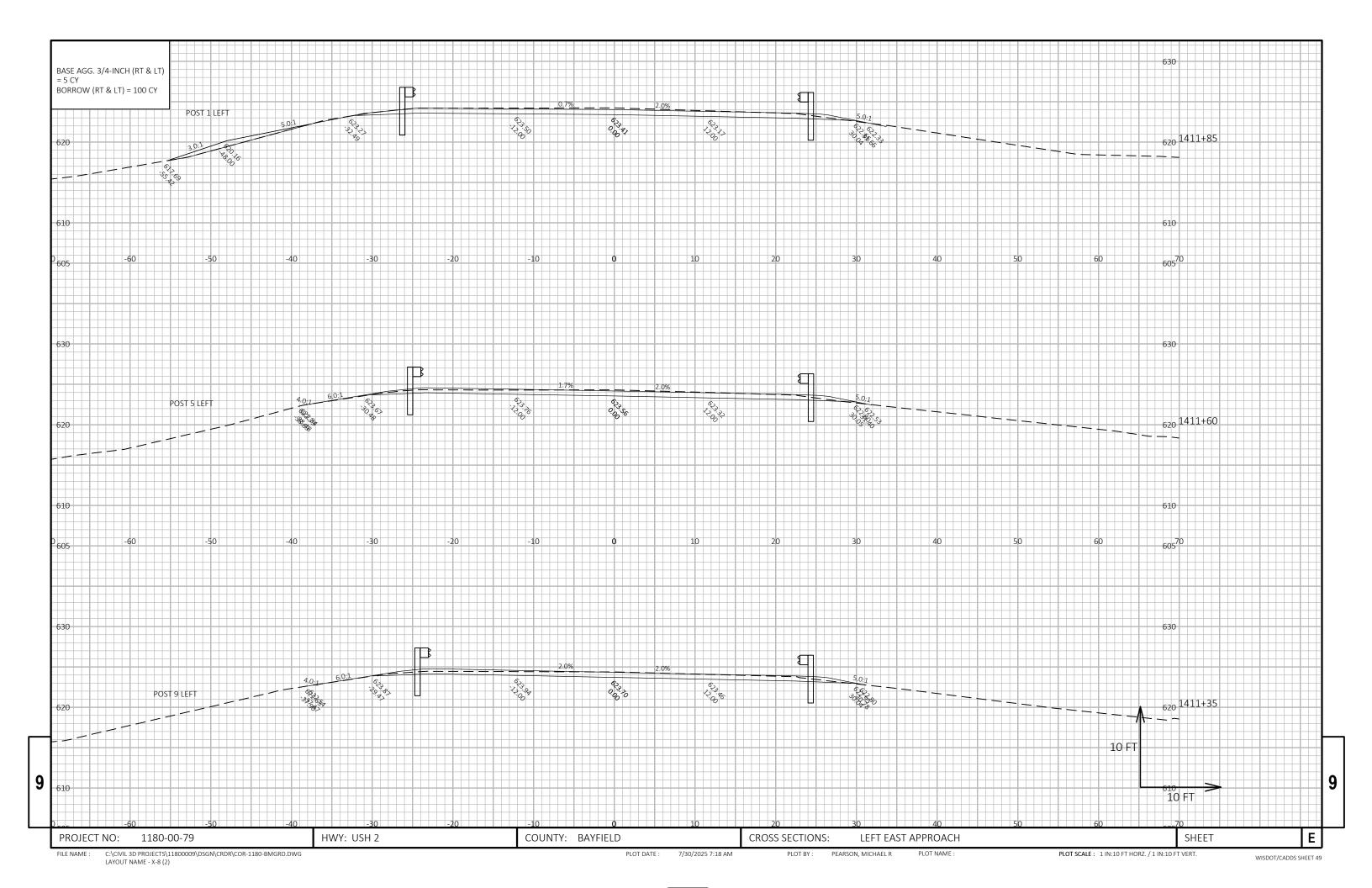


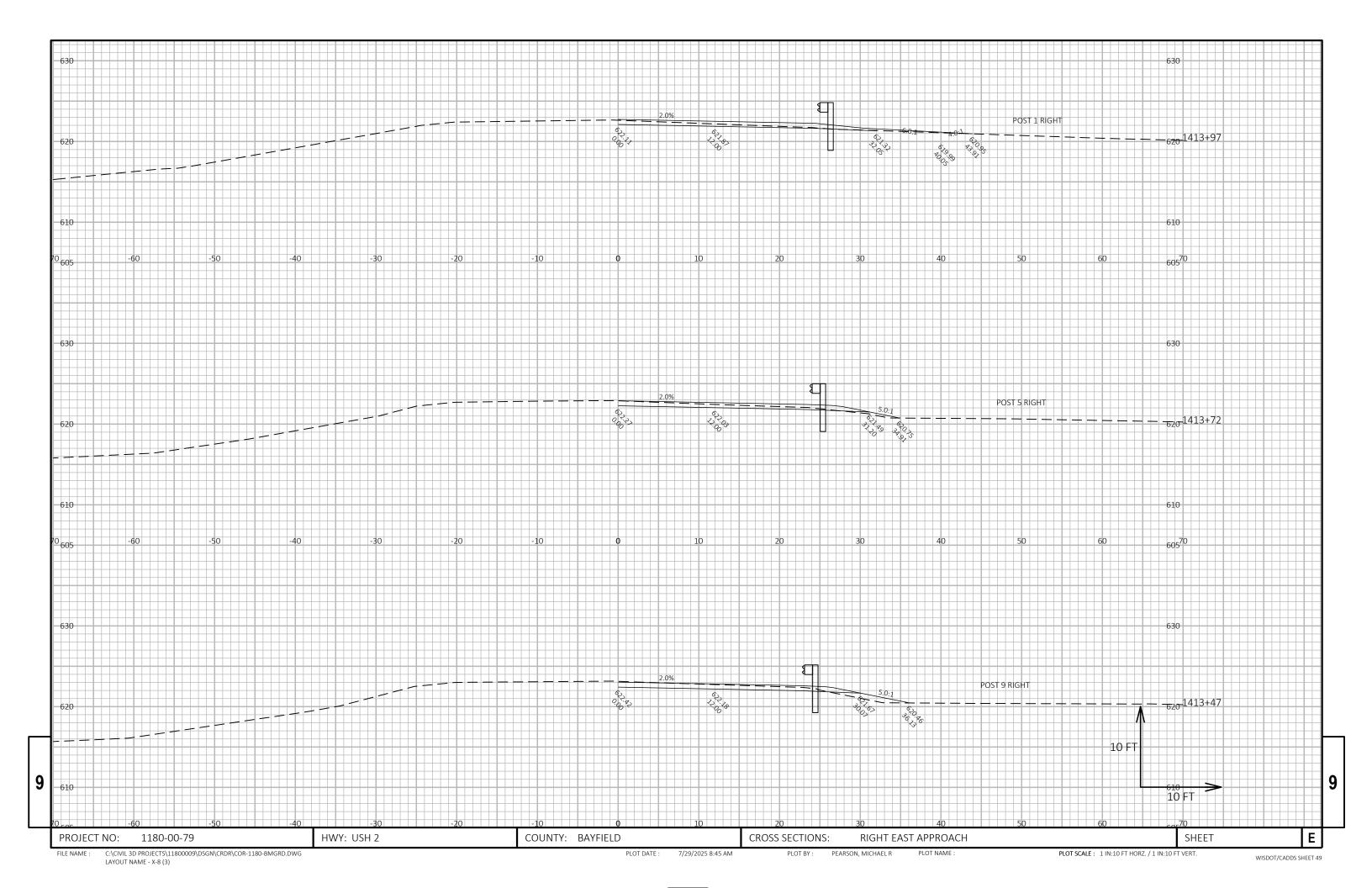




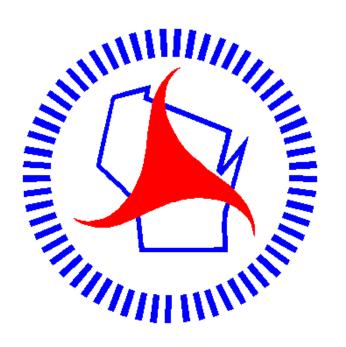








Notes



Wisconsin Department of Transportation

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