

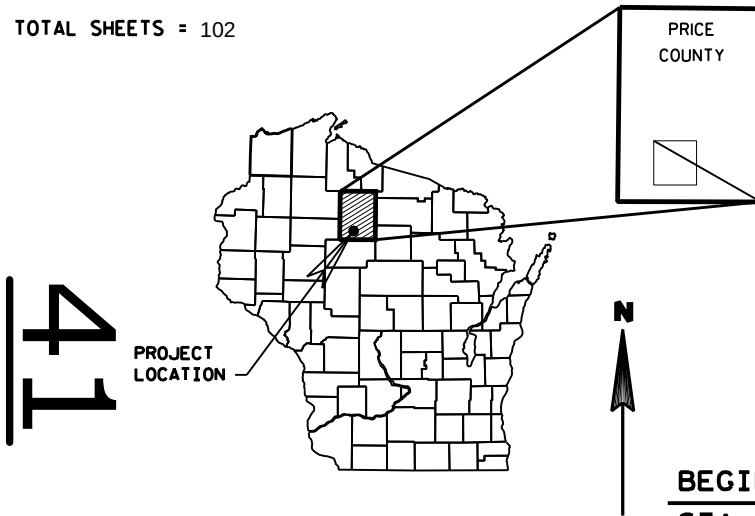
PROJECT ID: **8700-00-70**
WITH: N/A

COUNTY: **PRICE**

FEBRUARY 2025
ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details (Includes Erosion Control Plans)
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plot
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

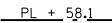
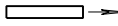
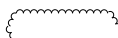
TOTAL SHEETS = 102



DESIGN DESIGNATION

A.A.D.T. (2025)	=	100
A.A.D.T. (2045)	=	140
D.H.V.	=	10
D.	=	50/50
T.	=	5%
DESIGN SPEED	=	60 MPH
ESALS	=	36,500

CONVENTIONAL SYMBOLS PLAN

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

PROFILE

GRADE LINE

ORIGINAL GROUND

MARSH OR ROCK PROFILE
(To be noted as such)

SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES

OVERHEAD

ELECTRIC

FIBER OPTIC

GAS

SANITARY SEWER

STORM SEWER

TELEPHONE

WATER

UTILITY PEDESTAL

POWER POLE

TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

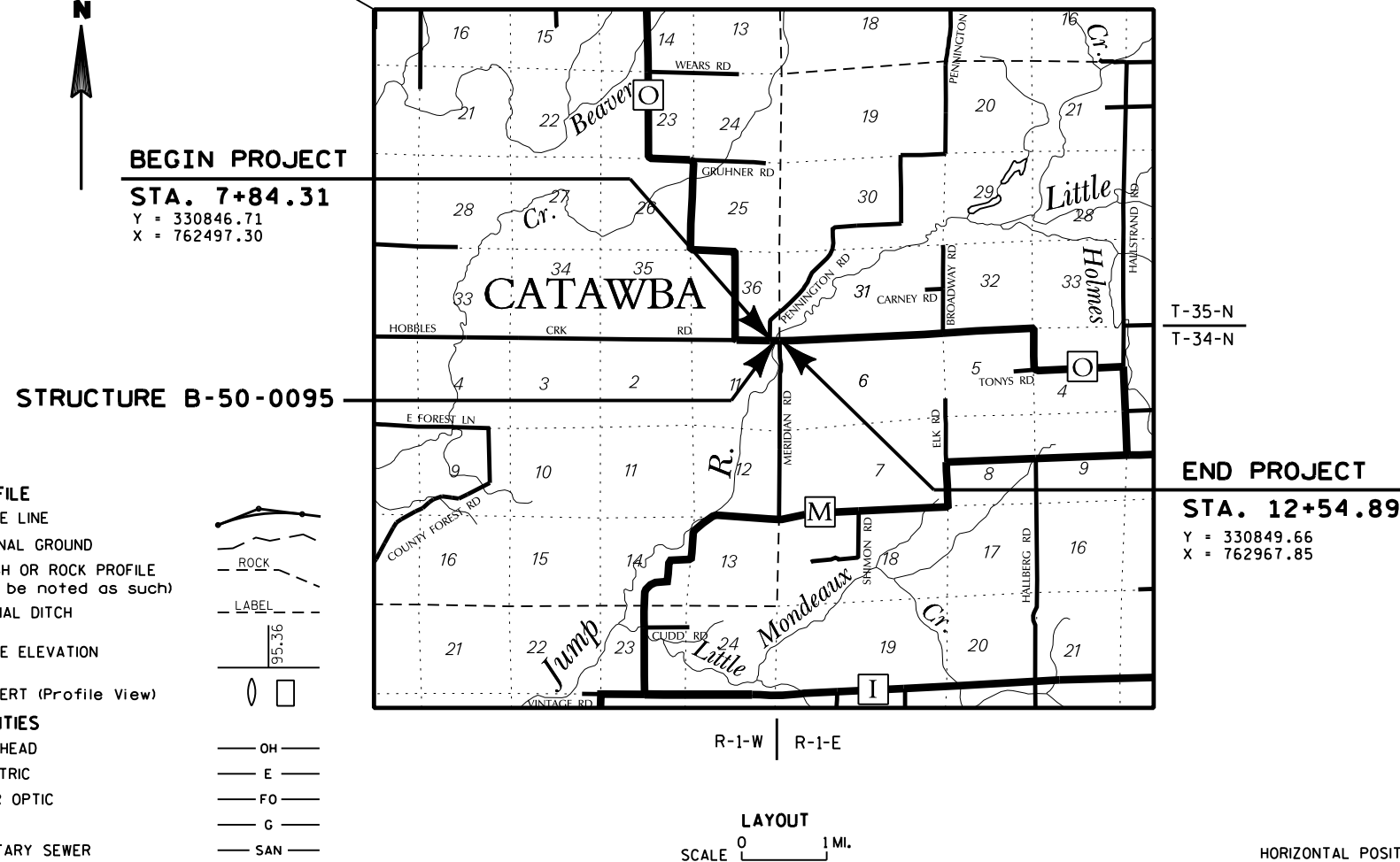
CTH M - USH 8

SOUTH FORK JUMP RIVER B-50-0095

СТН О

PRICE COUNTY

STATE PROJECT NUMBER
8700-00-70



TOTAL NET LENGTH OF CENTERLINE = 0.089 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), PRICE 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 NAVD88 (2012).
GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8700-00-70	WISC 2025333	1

ACCEPTED FOR

County	Price
--------	-------

10/17/2024 [Signature]
Date Highway Commissioner

ORIGINAL PLANS PREPARED BY

AYRES 3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



10/10/2024

DATE _____

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor AYRES ASSOCIATES INC

Designer AYRES ASSOCIATES INC

PROJECT MANAGER MICHAEL GRACE, PE

Regional Examiner N/A

Regional Supervisor DANIEL ERVA, PE

APPROVED FOR THE DEPARTMENT

DATE: 10/28/2024 
(Signature)

1
 2
 3

GENERAL NOTES

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

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

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 SHOWN.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCLUSIVE OF THE ROADBED, SHALL BE FERTILIZED, SEEDED, AND MULCHED AS DIRECTED BY THE ENGINEER.

ASPHALTIC REMOVAL IS INCLUDED IN THE ITEM EXCAVATION COMMON.

THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

ASPHALT SURFACE SHALL USE 1/2" (12.5 mm) NOMINAL AGGREGATE SIZE.

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCE IS ALLOWED OUTSIDE THE SLOPE INTERCEPTS.

TOPSOIL SHALL BE PLACED ON THE SLOPES, TO THE POINT OF INTERCEPT WITH THE ORIGINAL GROUND SHOWN ON THE CROSS SECTIONS.

UTILITIES

BRIGHTSPEED
425 ELLINGSON AVENUE
HAWKINS, WI 54530
ATTN: BEN BAKER
715-567-0725
ben.baker@brightspeed.com

PRICE ELECTRIC COOPERATIVE
W6803 SPRINGS DRIVE
P.O. BOX 110
PHILLIPS, WI 54555
ATTN. BEN ORYSEN
715-339-2155
715-360-2264 (CELL)
borysen@priceelectric.coop

* * DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS



Dial 811 or (800)242-8511

www.DiggersHotline.com

WISCONSIN DEPARTMENT OF
NATURAL RESOURCES CONTACT:

WENDY HENNIGES
107 SUTLIFF
RHINELANDER, WI 54501
715-365-8916
Wendy.Henniges@Wisconsin.gov

COUNTY CONTACT

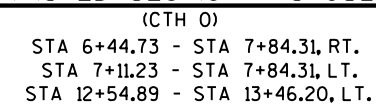
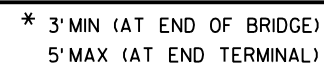
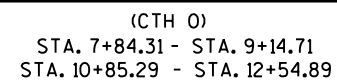
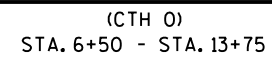
PRICE COUNTY, COMMISSIONER
704 NORTH LAKE AVENUE
PHILLIPS, WI 54555
ATTN: ROGER PETRICK
715-339-3081
roger.petrick@co.price.wi.us

DESIGNER

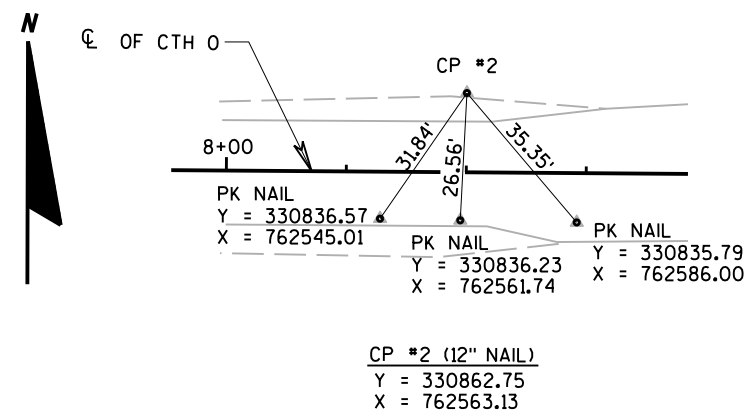
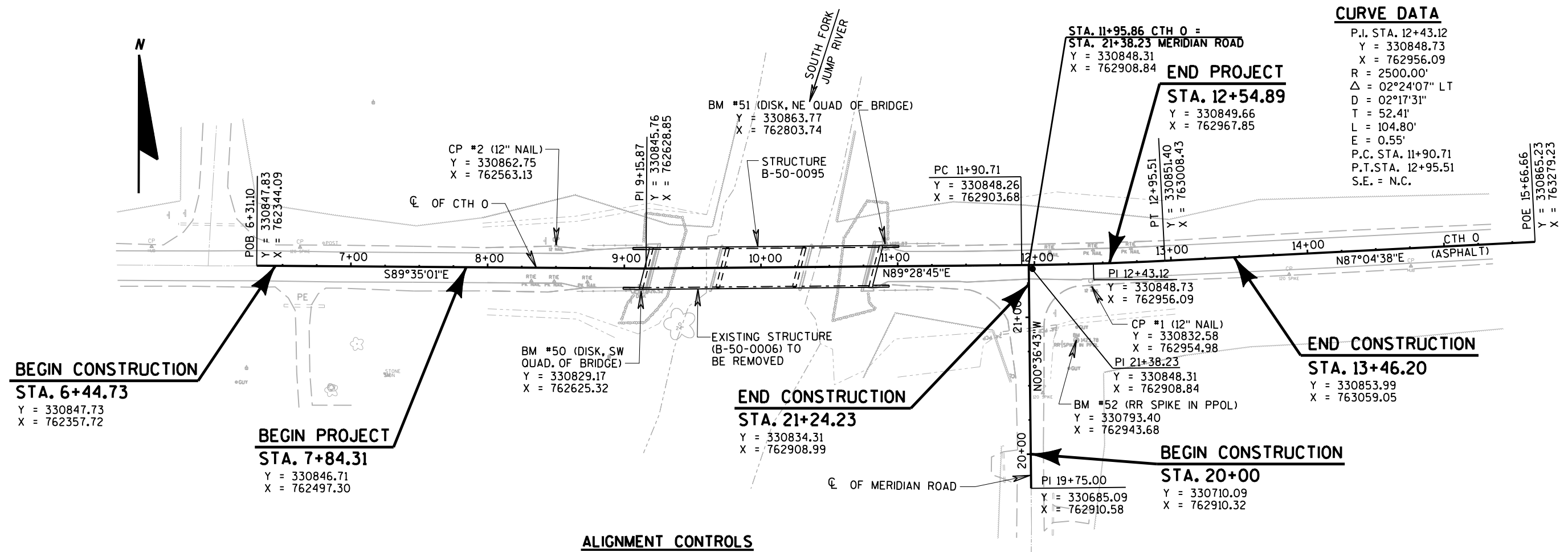
AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: DANIEL SYDOW, PE
715-834-3161
sydowd@ayresassociates.com

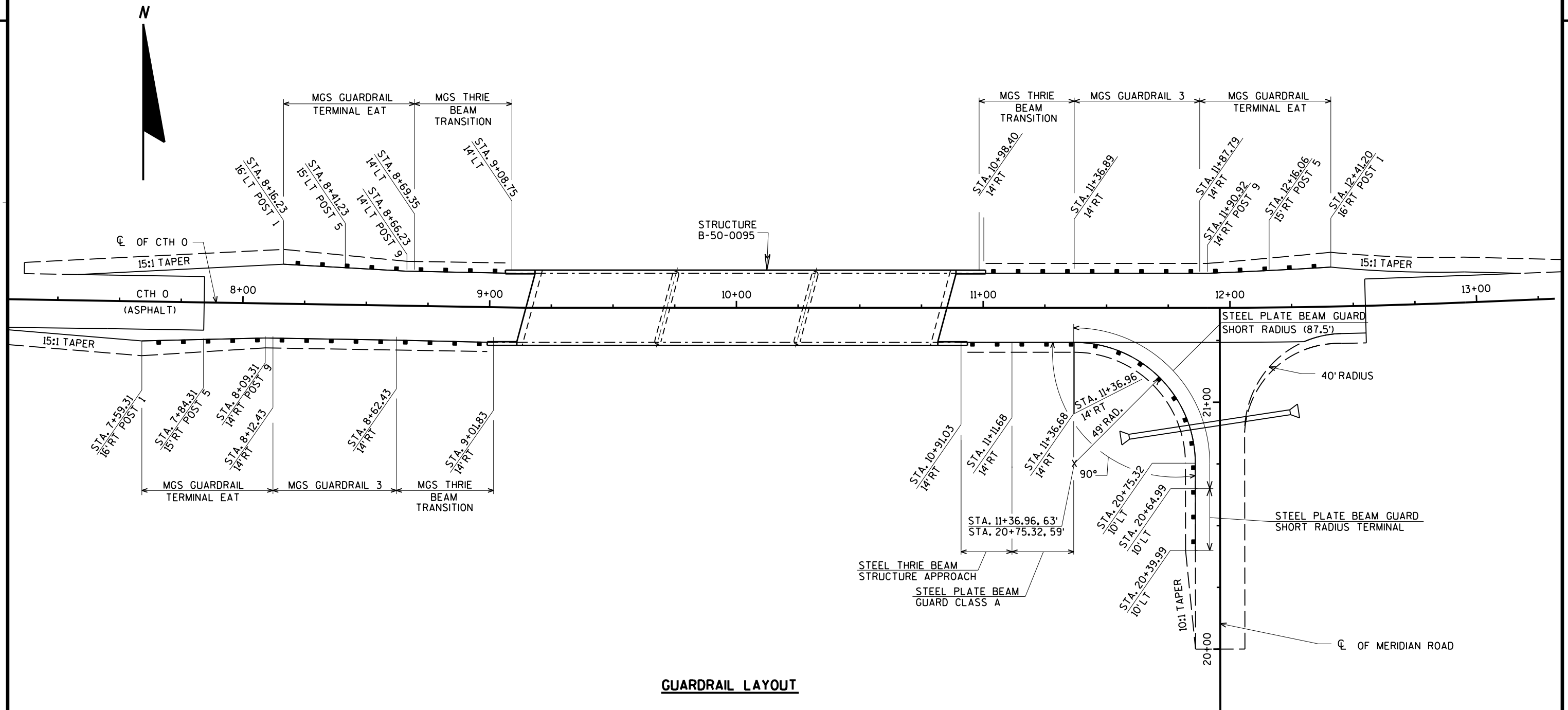
WISDOT

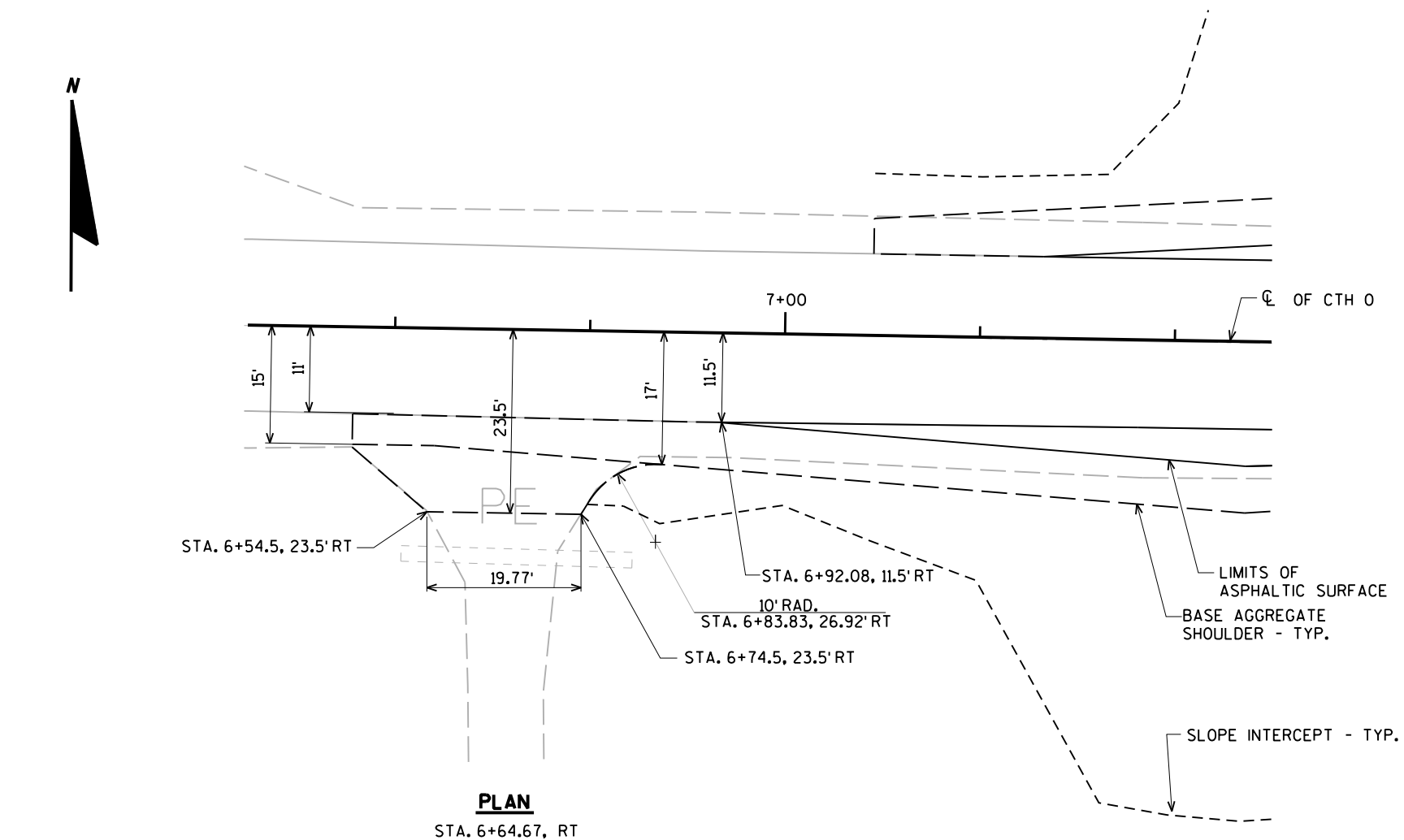
WISDOT NORTH CENTRAL REGION
510 HANSON LAKE ROAD
RHINELANDER, WI 54501
ATTN: MICHAEL GRAGE, PE
715-365-5705
Michael.Grage@dot.wi.gov







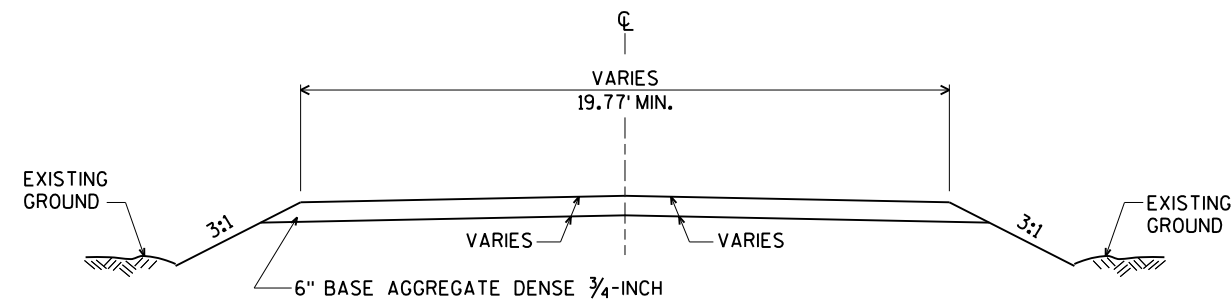




PLAN

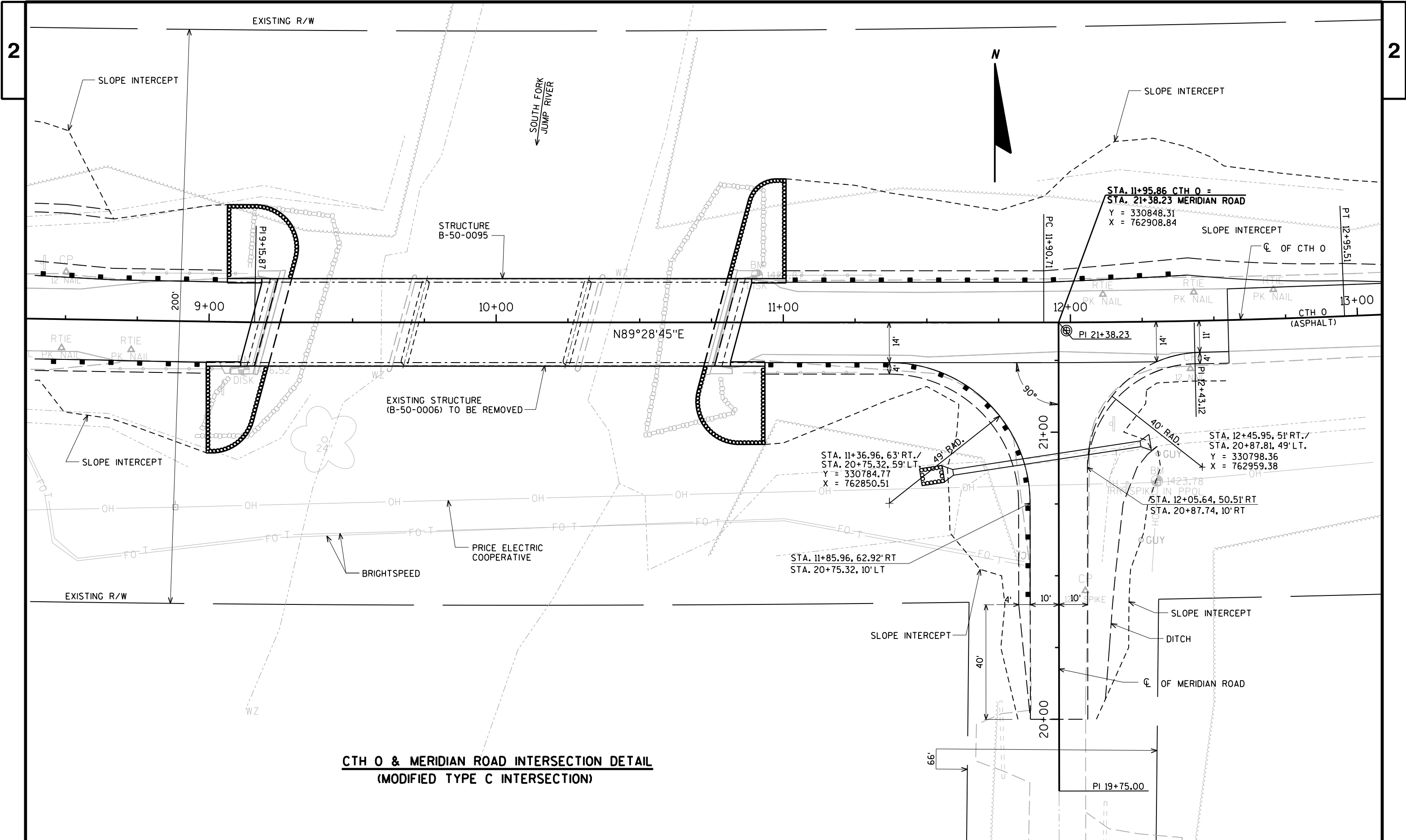
STA. 6+64.67, RT

NOTE:
SEE PLAN AND PROFILE
SHEET FOR PIPE INFORMATION

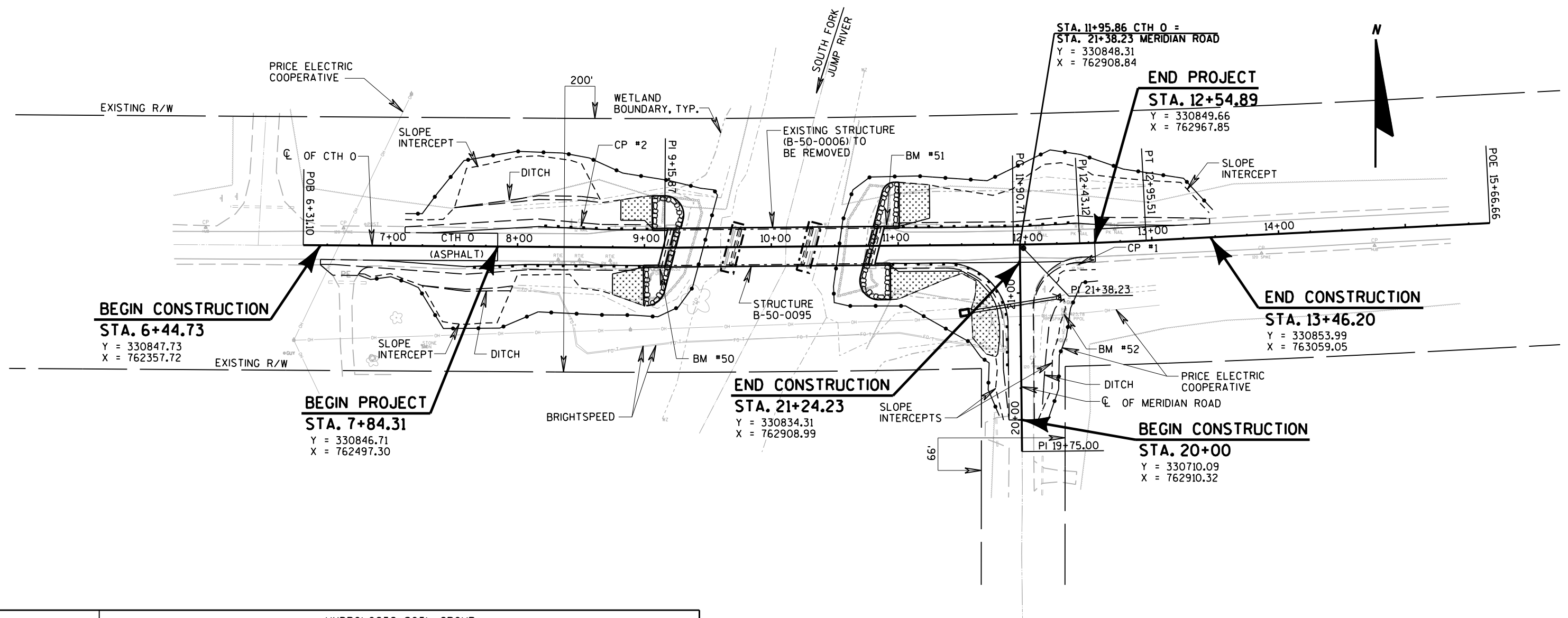


TYPICAL CROSS SECTION

PRIVATE ENTRANCE DETAILS



**CTH 0 & MERIDIAN ROAD INTERSECTION DETAIL
(MODIFIED TYPE C INTERSECTION)**



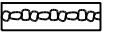
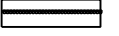
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33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

TOTAL PROJECT AREA = 3.283 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.048 ACRES

NOTE:
MULCH TO BE PLACED ON SIDE SLOPES
NOT PROTECTED BY EROSION MAT.

HIGH WATER₂ EL. 1414.22

LEGEND

-  EROSION MAT CLASS II TYPE C
-  SILT FENCE
-  RIPRAP HEAVY
-  RIPRAP MEDIUM
-  CULVERT PIPE CHECKS
-  TEMPORARY DITCH CHECKS (UNDISTRIBUTED)
-  COFFERDAM (SEE STRUCTURE PLANS)

Estimate Of Quantities

8700-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	6.000	6.000
0004	201.0205	Grubbing	STA	6.000	6.000
0006	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0008	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-50-0006	EACH	1.000	1.000
0010	204.0165	Removing Guardrail	LF	162.000	162.000
0012	205.0100	Excavation Common	CY	763.000	763.000
0014	206.1001	Excavation for Structures Bridges (structure) 01. B-50-0095	EACH	1.000	1.000
0016	206.5001	Cofferdams (structure) 01. B-50-0095	EACH	1.000	1.000
0018	208.0100	Borrow	CY	425.000	425.000
0020	210.1500	Backfill Structure Type A	TON	340.000	340.000
0022	213.0100	Finishing Roadway (project) 01. 8700-00-70	EACH	1.000	1.000
0024	305.0110	Base Aggregate Dense 3/4-Inch	TON	420.000	420.000
0026	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	680.000	680.000
0028	455.0605	Tack Coat	GAL	70.000	70.000
0030	465.0105	Asphaltic Surface	TON	230.000	230.000
0032	502.0100	Concrete Masonry Bridges	CY	349.000	349.000
0034	502.3200	Protective Surface Treatment	SY	685.000	685.000
0036	502.9000.S	Underwater Substructure Inspection (structure) 01. B-50-0095	EACH	2.000	2.000
0038	503.0137	Prestressed Girder Type I 36W-Inch	LF	674.000	674.000
0040	505.0400	Bar Steel Reinforcement HS Structures	LB	8,800.000	8,800.000
0042	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	41,280.000	41,280.000
0044	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	24.000	24.000
0046	506.4000	Steel Diaphragms (structure) 01. B-50-0095	EACH	9.000	9.000
0048	513.4061	Railing Tubular Type M	LF	394.200	394.200
0050	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0052	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	2.000	2.000
0054	520.3324	Culvert Pipe Class III-A 24-Inch	LF	66.000	66.000
0056	550.0020	Pre-Boring Rock or Consolidated Materials	LF	175.000	175.000
0058	550.0500	Pile Points	EACH	28.000	28.000
0060	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	1,820.000	1,820.000
0062	606.0200	Riprap Medium	CY	5.000	5.000
0064	606.0300	Riprap Heavy	CY	245.000	245.000
0066	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	200.000	200.000
0068	614.0200	Steel Thrie Beam Structure Approach	LF	21.000	21.000
0070	614.0305	Steel Plate Beam Guard Class A	LF	25.000	25.000
0072	614.0345	Steel Plate Beam Guard Short Radius	LF	87.500	87.500
0074	614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH	1.000	1.000
0076	614.2300	MGS Guardrail 3	LF	100.000	100.000
0078	614.2500	MGS Thrie Beam Transition	LF	120.000	120.000
0080	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0082	618.0100	Maintenance and Repair of Haul Roads (project) 01. 8700-00-70	EACH	1.000	1.000
0084	619.1000	Mobilization	EACH	1.000	1.000
0086	624.0100	Water	MGAL	37.000	37.000
0088	625.0100	Topsoil	SY	1,700.000	1,700.000
0090	627.0200	Mulching	SY	1,995.000	1,995.000
0092	628.1504	Silt Fence	LF	1,690.000	1,690.000
0094	628.1520	Silt Fence Maintenance	LF	3,380.000	3,380.000
0096	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0098	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000

Estimate Of Quantities

8700-00-70

Line	Item	Item Description	Unit	Total	Qty
0100	628.2027	Erosion Mat Class II Type C	SY	480.000	480.000
0102	628.7504	Temporary Ditch Checks	LF	56.000	56.000
0104	628.7555	Culvert Pipe Checks	EACH	5.000	5.000
0106	629.0210	Fertilizer Type B	CWT	1.400	1.400
0108	630.0120	Seeding Mixture No. 20	LB	95.000	95.000
0110	630.0200	Seeding Temporary	LB	66.000	66.000
0112	630.0500	Seed Water	MGAL	56.000	56.000
0114	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	6.000	6.000
0116	637.2210	Signs Type II Reflective H	SF	25.180	25.180
0118	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0120	638.2102	Moving Signs Type II	EACH	2.000	2.000
0122	638.2602	Removing Signs Type II	EACH	8.000	8.000
0124	638.3000	Removing Small Sign Supports	EACH	7.000	7.000
0126	638.4000	Moving Small Sign Supports	EACH	2.000	2.000
0128	642.5001	Field Office Type B	EACH	1.000	1.000
0130	643.0420	Traffic Control Barricades Type III	DAY	3,840.000	3,840.000
0132	643.0705	Traffic Control Warning Lights Type A	DAY	5,400.000	5,400.000
0134	643.0900	Traffic Control Signs	DAY	2,840.000	2,840.000
0136	643.5000	Traffic Control	EACH	1.000	1.000
0138	645.0111	Geotextile Type DF Schedule A	SY	100.000	100.000
0140	645.0120	Geotextile Type HR	SY	480.000	480.000
0142	646.1020	Marking Line Epoxy 4-Inch	LF	1,577.000	1,577.000
0144	650.4500	Construction Staking Subgrade	LF	531.000	531.000
0146	650.5000	Construction Staking Base	LF	531.000	531.000
0148	650.6501	Construction Staking Structure Layout (structure) 01. B-50-0095	EACH	1.000	1.000
0150	650.9911	Construction Staking Supplemental Control (project) 01. 8700-00-70	EACH	1.000	1.000
0152	650.9920	Construction Staking Slope Stakes	LF	531.000	531.000
0154	690.0150	Sawing Asphalt	LF	250.000	250.000
0156	715.0502	Incentive Strength Concrete Structures	DOL	2,094.000	2,094.000
0158	999.2005.S	Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000
0160	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0162	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

CLEARING & GRUBBING

STATION	TO	STATION	LOCATION	201.0105	201.0205
				CLEARING STA	GRUBBING STA
7+00	-	13+00	CTH O	6	6
TOTAL 0010				6	6

NOTE: TREES TO BE CUT DOWN BY OTHERS PRIOR TO CONSTRUCTION AND LEFT IN PLACE.

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	SIZE/MATERIAL	203.0100 REMOVING SMALL PIPE EACH
20+92	MERIDIAN	24" PCP	1
TOTAL 0010			1

REMOVING GUARDRAIL

STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF
8+73	-	9+14	LT	41
8+65	-	9+05	RT	40
10+94	-	11+35	LT	40
10+86	-	11+26	RT	41
TOTAL 0010				162

BASE AGGREGATE DENSE

				305.0110	305.0120
				BASE	BASE
				AGGREGATE	AGGREGATE
				DENSE 3/4-INCH	DENSE 1 1/4-INCH
STATION	TO	STATION	LOCATION	TON	TON
6+44.73	-	9+14.71	CTH O	60	350
10+85.29	-	13+46.2	CTH O	40	330
		6+54.67	PERT	10	-
20+00	-	21+24.23	MERIDIAN	310	-
TOTAL 0010				420	680

GUARDRAIL ITEMS

				614.0200 STEEL THRIE BEAM STRUCTURE APPROACH	614.0305 STEEL PLATE BEAM GUARD CLASS A	614.0345 STEEL PLATE BEAM GUARD SHORT RADIUS	614.0390 STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	614.2300 MGS GUARDRAIL 3	614.2500 MGS THRIE BEAM TRANSITION	614.2610 MGS GUARDRAIL TERMINAL EAT
STATION	TO	STATION	LOCATION	LF	LF	LF	EACH	LF	LF	EACH
7+59.31	-	9+01.83	RT	--	--	--	--	50	40	1
8+16.23	-	9+08.75	LT	--	--	--	--	--	40	1
10+91.03	-	20+39.99	RT	21	25	87.5	1	--	--	--
10+98.4	-	12+41.2	LT	--	--	--	--	50	40	1
TOTAL 0010				21	25	87.5	1	100	120	3

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

CTH O EARTHWORK SUMMARY

Station	Location	Excavation Common (1) 205.0100	Salvaged / Unuseable Pavement Material (5)	Unexpanded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Waste	Borrow
		Cut			Factor 1.30			
6+44.73-9+14.71	CTH O	524	17	105	137	370	370	0
10+85.29 - 13+46.20	CTH O	101	15	393	511	-425	0	425
10+85.29 - 13+46.20	MERIDIAN ROAD	138	0	77	100	38	38	0
TOTAL		763		575	748			425

- 1) Excavation Common is the Cut. Item number 205.0100.
- 2) Expanded Fill. Factor = 1.30; Expanded Fill = Unexpanded Fill * Fill Factor
- 3) The Mass Ordinate +or - Qty calculated for the Division. Plus quantity indicates an excess of material on the project.
- 4) All quantities shown in CY.
- 5) Salvaged/unuseable asphalt pavement.

ASPHALTIC SURFACE

				455.0605	465.0105
				TACK COAT	ASPHALTIC
STATION	TO	STATION	LOCATION	GAL	TON
6+44.73	-	9+14.71	CTH O	32	105
10+85.29	-	13+46.2	CTH O	38	125
TOTAL 0010				70	230

CULVERT PIPE

		520.1024	520.3324	606.0200	* 645.0120
		APRON ENDWALLS FOR CULVERT PIPE 24-INCH EACH	CULVERT PIPE CLASS III-A 24- INCH LF	RIPRAP MEDIUM CY	GEOTEXTILE TYPE HR SY
STATION	LOCATION				
20+91.6	MERIDIAN ROAD	2	66	5	15
TOTAL 0010		2	66	5	15

WATER	
	624.0100
LOCATION	WATER MGAL
COMPACTION	17
DUST CONTROL	20
TOTAL 0010	37

EROSION CONTROL ITEMS					628.1504	628.1520	628.2027	628.7504	628.7555
					SILT FENCE	SILT FENCE	EROSION MAT	TEMPORARY	CULVERT PIPE
					LF	MAINTENANCE	CLASS II TYPE C	DITCH CHECKS	CHECKS
STATION	TO	STATION	LOCATION		LF	LF	SY	LF	EACH
6+75	-	9+50	CTH O		645	1,290	115	--	--
10+50	-	13+46	CTH O		705	1,410	270	--	3
			UNDISTRIBUTED		340	680	95	56	2
TOTAL 0010					1,690	3,380	480	56	5

MOBILIZATIONS EROSION CONTROL		
	628.1905	628.1910
	MOBILIZATIONS	MOBILIZATIONS
	EROSION	EROSION
	CONTROL	CONTROL
LOCATION	EACH	EACH
PROJECT LIMITS	4	4
TOTAL 0010	4	4

RESTORATION ITEMS						625.0100	627.0200	629.0210	630.0120	630.0200	630.0500
						TOPSOIL	MULCHING	FERTILIZER	SEEDING	SEEDING	
						SY	SY	TYPE B	MIXTURE NO. 20	TEMPORARY	SEED WATER
STATION	TO	STATION	LOCATION			SY	SY	CWT	LB	LB	MGAL
6+44.73	-	9+14.71	CTH O			345	515	0.4	28	17	14
10+85.29	-	13+46.2	CTH O			765	800	0.6	43	26	22
20+00		21+24.23	MERIDIAN ROAD			250	280	0.1	5	10	9
			UNDISTRIBUTED			340	400	0.3	19	13	11
TOTAL 0010						1,700	1,995	1.4	95	66	56

SIGNS TYPE II											
				634.0614	637.2210	637.2230	638.2102	638.2602	638.3000	638.4000	
				POSTS	SIGNS TYPE II	SIGNS TYPE II	MOVING SIGNS	REMOVING	REMOVING	MOVING SMALL	
				WOOD 4X6-	REFLECTIVE H	REFLECTIVE F	TYPE II	SIGNS TYPE II	SMALL SIGN	SIGN SUPPORTS	
				INCH X 14-FT					SUPPORTS		
STATION	LOCATION	SIGN	SIGN SIZE	EACH	SF	SF	EACH	EACH	EACH	EACH	REMARKS
		CODE	(INCHES)								
8+42	CTH O, LT	-	-	--	--	--	1	1	1	1	BLUE & WHITE SIGN
9+04	CTH O, RT	I3-1	60X24	1	20	--	--	2	1	--	SOUTH FORK JUMP RIVER SIGNS
9+05	CTH O, LT	W5-52L	12x36	1	--	3	--	1	1	--	BRIDGE HASH MARKER SIGN
8+98	CTH O, RT	W5-52R	12x36	1	--	3	--	1	1	--	BRIDGE HASH MARKER SIGN
11+02	CTH O, LT	W5-52R	12x36	1	--	3	--	1	1	--	BRIDGE HASH MARKER SIGN
10+95	CTH O, RT	W5-52RL	12x36	1	--	3	--	1	1	--	BRIDGE HASH MARKER SIGN
21+03	MERIDIAN RD, RT	R1-1	30x30	1	5.18	--	--	1	1	--	STOP SIGN
20+80	MERIDIAN RD, RT	-	-	--	--	--	1	--	--	1	MERIDIAN ROAD SIGN
TOTAL 0010				6	25.18	12	2	8	7	2	

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

FIELD OFFICE TYPE B

642.5001 FIELD OFFICE TYPE B EACH	
LOCATION	
PROJECT LIMITS	1
TOTAL 0010	1

TRAFFIC CONTROL

			643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0900 TRAFFIC CONTROL SIGNS	643.5000 TRAFFIC CONTROL
LOCATION	DURATION DAYS	EACH	DAY	EACH	DAY	EACH	DAY	EACH
PER SDD 15C02	120	27	3,240	38	4,560	20	2,400	1
UNDISTRIBUTED		--	600	--	840	--	440	--
TOTAL 0010			3,840		5,400		2,840	1

MARKING LINE EPOXY 4-INCH

					646.1020
					MARKING LINE
					EPOXY 4-INCH
STATION	TO	STATION	LOCATION	COLOR/DESCRIPTION	LF
6+45	-	13+46	CTH O	WHITE/EDGELINE	1,402
6+45	-	13+46	CTH O	YELLOW/CENTERLINE	175
TOTAL 0010					1,577

CONSTRUCTION STAKING

				650.4500	650.5000	650.9920
				CONSTRUCTION		CONSTRUCTION
				STAKING	CONSTRUCTION	STAKING SLOPE
				SUBGRADE	STAKING BASE	STAKES
STATION	TO	STATION	LOCATION	LF	LF	LF
6+45	-	9+15	CTH O	270	270	270
10+85	-	13+46	CTH O	261	261	261
TOTAL 0010				531	531	531

CONSTRUCTION STAKING STRUCTURE LAYOUT

			650.6501.01
			CONSTRUCTION STAKING
			STRUCTURE LAYOUT
			(STRUCTURE) (01. B-50-0095)
CATEGORY	STATION	LOCATION	EACH
0020	10+00	CTH O	1
TOTAL 0020			1

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL

650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 8700-00-70) EACH	
PROJECT	EACH
8700-00-70	1
TOTAL 0010	1

SAWING ASPHALT

				690.0150
				SAWING
				ASPHALT
STATION	TO	STATION	LOCATION	LF
6+92.02	-	7+84.31	RT	92
7+11.23	-	7+84.31	LT	51
		7+84.31	CTH O	22
		12+54.89	CTH O	22
12+54.89	-	13+18.38	LT	63
TOTAL 0010				250

MAINTAINING BIRD DETERRENT SYSTEM

999.2005.S.01 MAINTAINING BIRD DETERRENT SYSTEM (STATION) (01. STA 10+00) EACH	
STATION	LOCATION
10+00	CTH O
TOTAL 0010	

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
50	9+12.3	DISK, SW QUAD. OF BRIDGE, 16.6' RT.	1426.52
51	10+90.8	DISK, NE QUAD. OF BRIDGE, 16.4' LT.	1425.87
52	12+29.3	RR SPIKE IN PPOL, 55.5' RT	1423.78

NOTES:
FOR ALIGNMENT CONTROL POINTS, TIES, BEARINGS, AND COORDINATES, SEE "ALIGNMENT CONTROLS" SHEET.
FOR GUARDRAIL LAYOUT AND INTERSECTION DETAILS, SEE "CONSTRUCTION DETAILS" SHEETS.
FOR PRIVATE ENTRANCE DETAILS, SEE "CONSTRUCTION DETAILS" SHEETS.

BEGIN CONSTRUCTION
STA. 6+44.73
Y = 330847.73
X = 762357.72

BEGIN PROJECT
STA. 7+84.31
Y = 330846.71
X = 762497.30
SAWCUT REQ'D

END CONSTRUCTION
STA. 21+24.23
Y = 330834.31
X = 762908.99
BEGIN CONSTRUCTION
STA. 20+00
Y = 330710.09
X = 762910.32

END CONSTRUCTION
STA. 13+46.20
Y = 330853.99
X = 763059.05

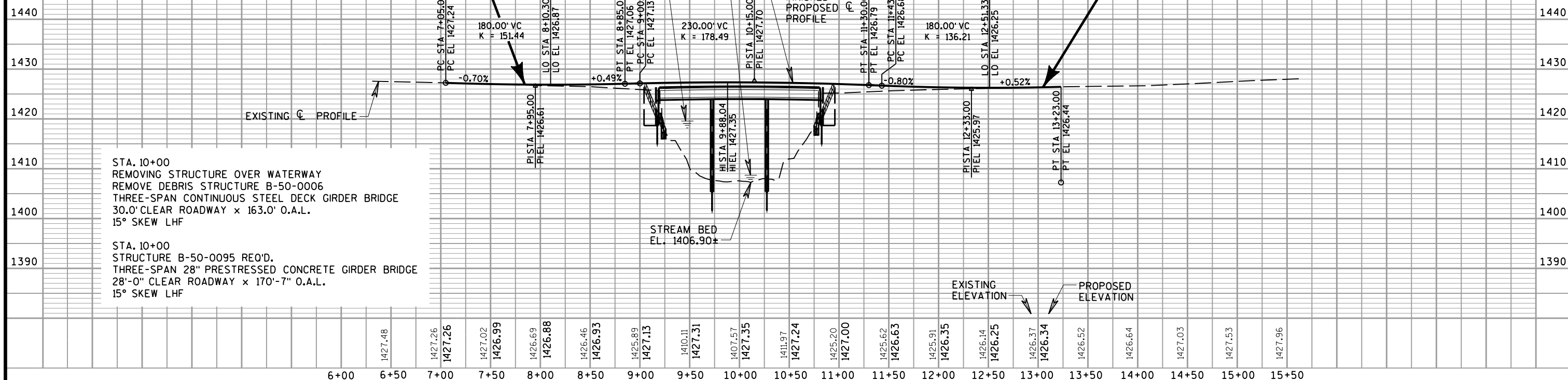
END PROJECT
STA. 12+54.89
Y = 330849.66
X = 762967.85
SAWCUT REQ'D

EARTHWORK SUMMARY

STA. 6+44.73 TO STA. 9+14.71
EXC. COMMON 524 C.Y.
FILL 105 C.Y.
SHR. = 30%
WASTE 370 C.Y.

EARTHWORK SUMMARY

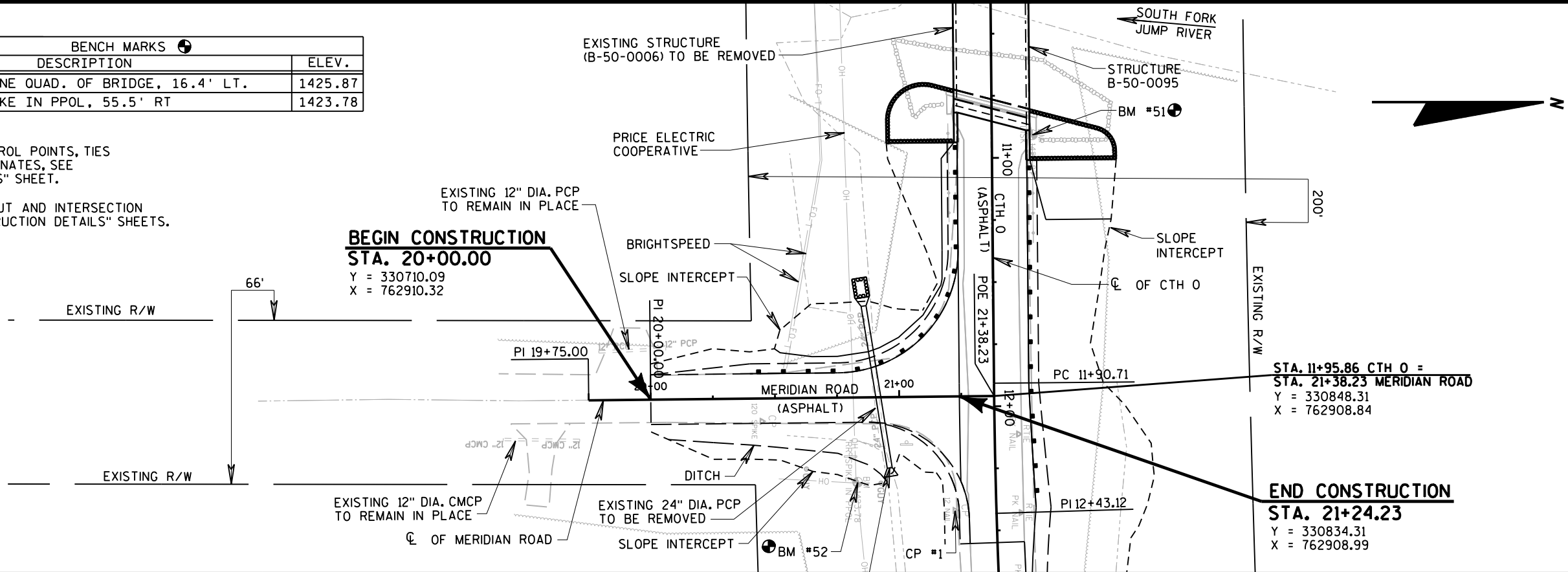
STA. 10+85.29 TO STA. 13+46.20
EXC. COMMON 101 C.Y.
FILL 393 C.Y.
SHR. = 30%
BORROW 425 C.Y.



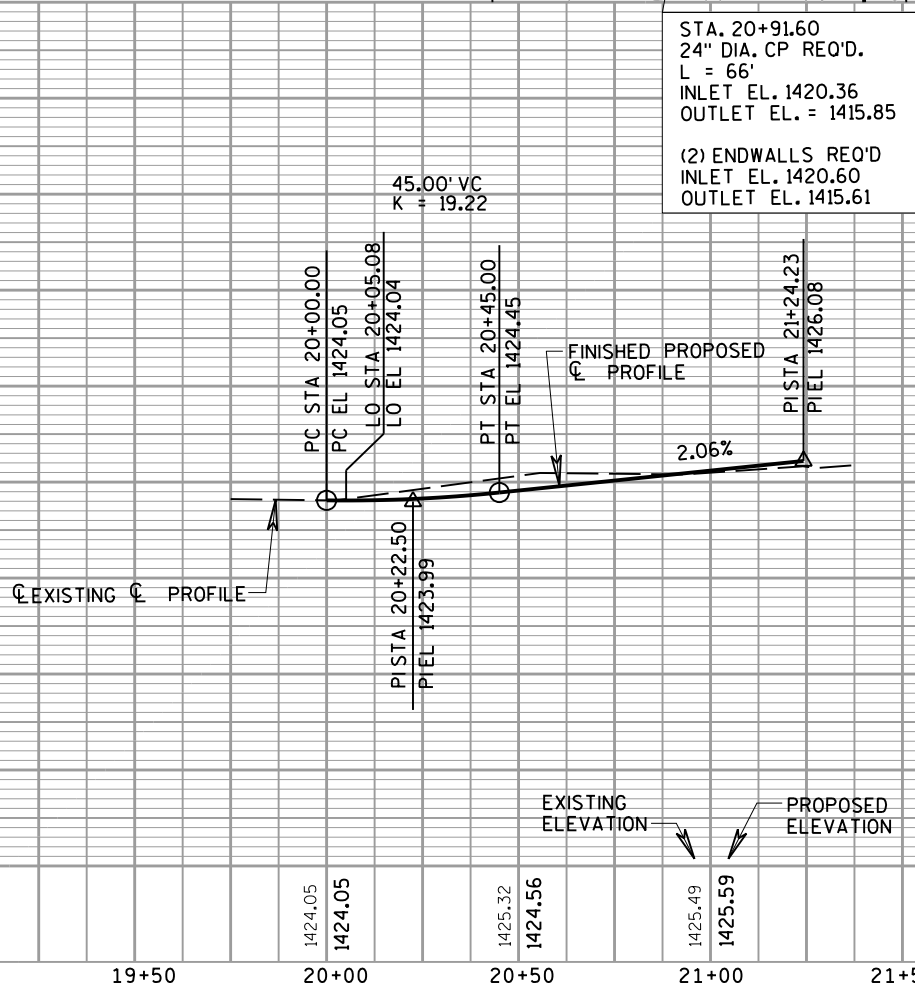
BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
51	10+90.8	DISK, NE QUAD. OF BRIDGE, 16.4' LT.	1425.87
52	12+29.3	RR SPIKE IN PPOL, 55.5' RT	1423.78

NOTE:
FOR ALIGNMENT CONTROL POINTS, TIES
BEARINGS, AND COORDINATES, SEE
"ALIGNMENT CONTROLS" SHEET.

FOR GUARDRAIL LAYOUT AND INTERSECTION
DETAILS, SEE "CONSTRUCTION DETAILS" SHEETS.

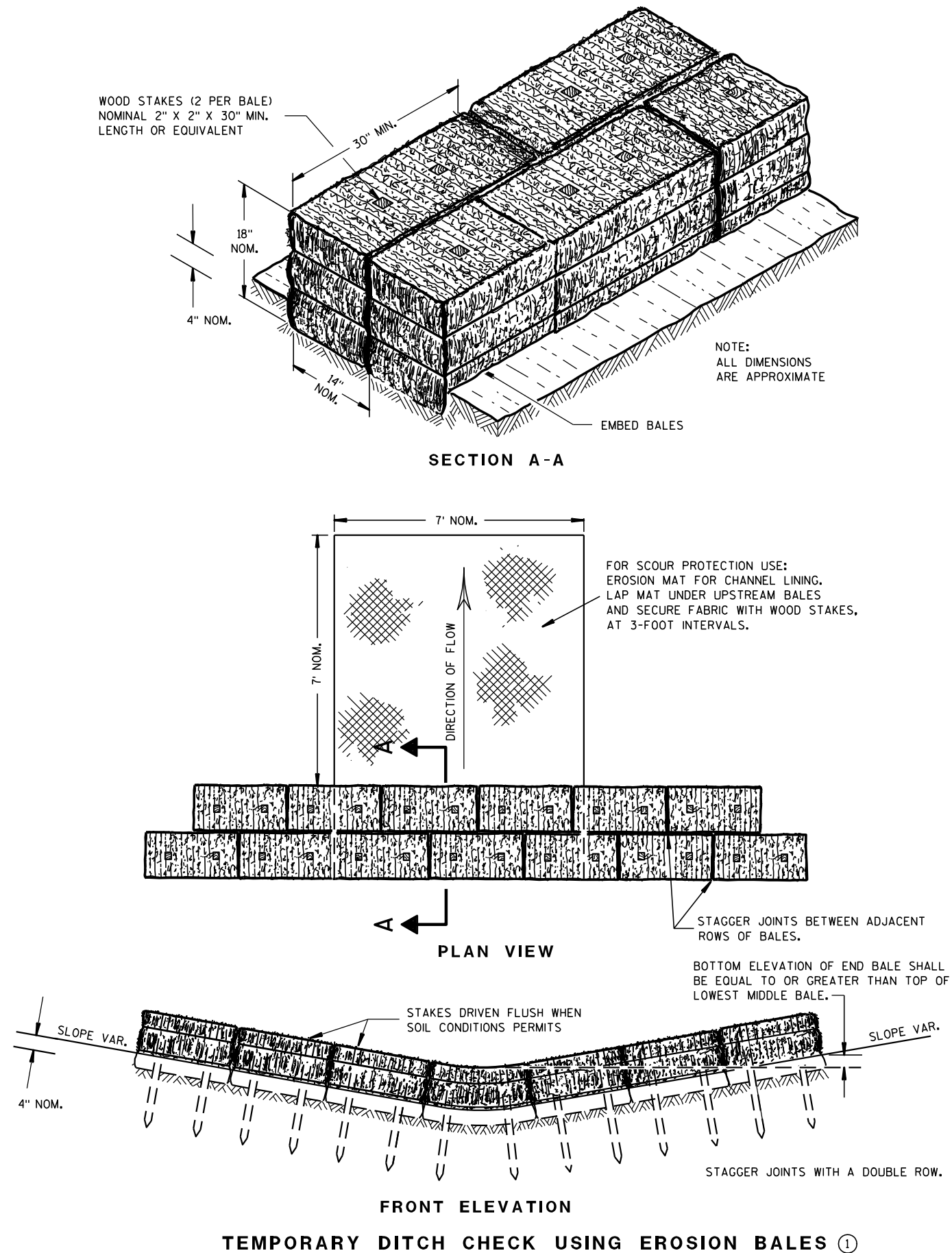


EARTHWORK SUMMARY	
STA. 20+00.00 TO STA. 21+24.23	
EXC. COMMON	138 C.Y.
FILL	77 C.Y.
SHR. = 30%	
WASTE	38 C.Y.



Standard Detail Drawing List

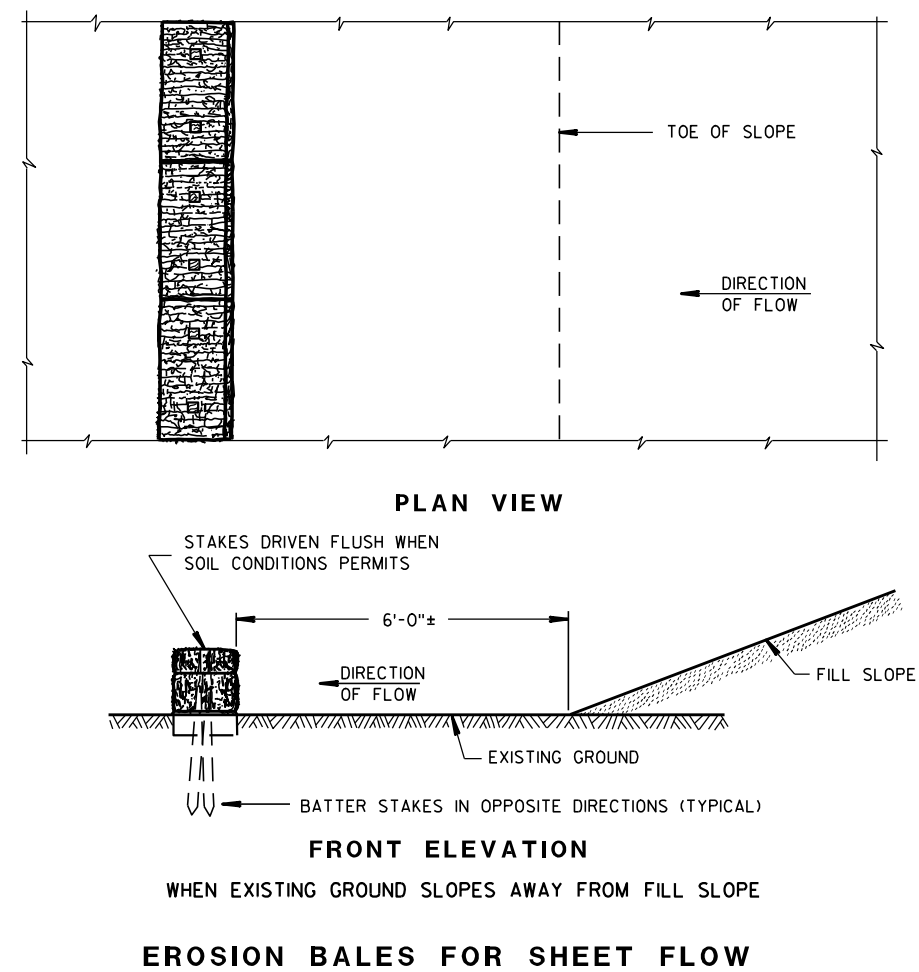
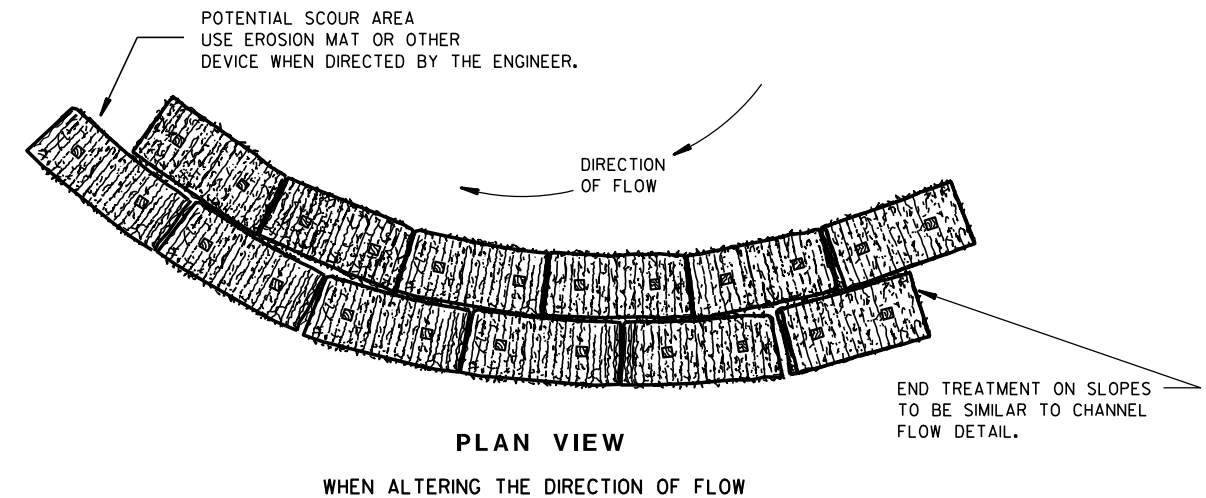
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-12A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-12F	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS



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.

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

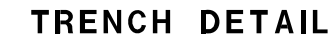
6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

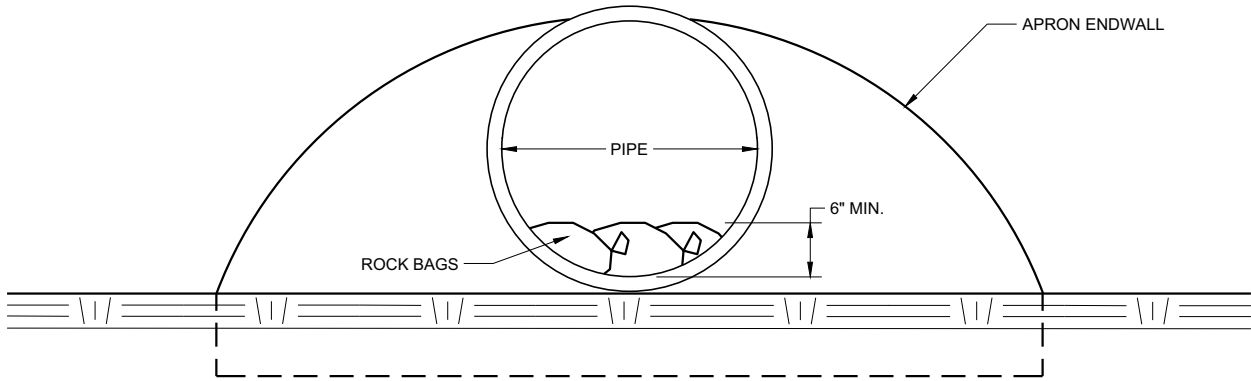
FHWA



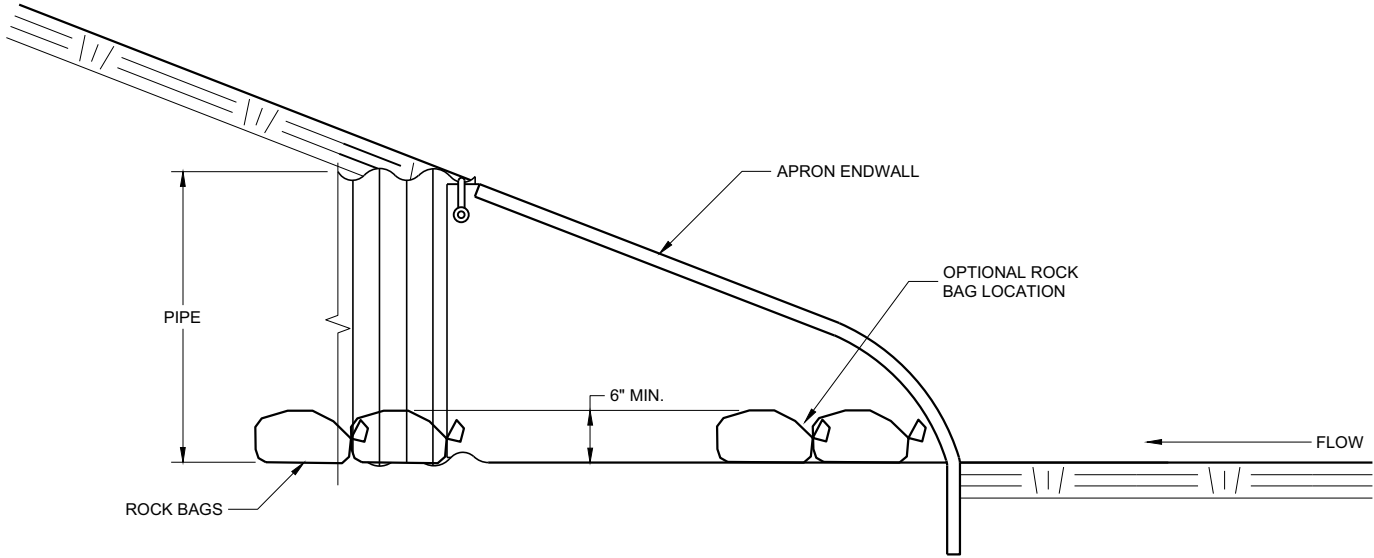
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" 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.



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



END VIEW



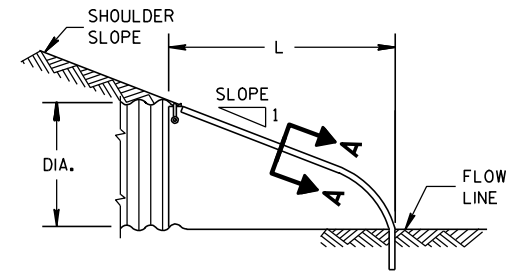
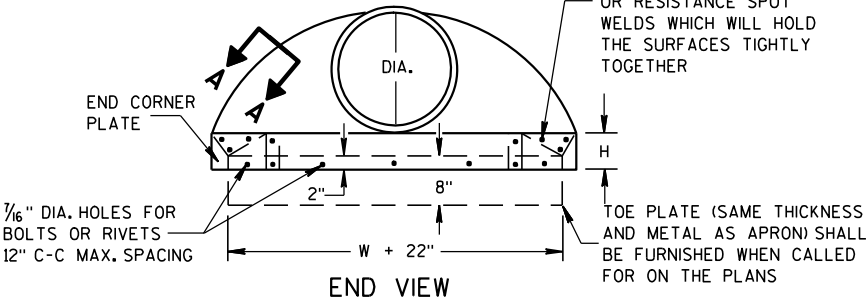
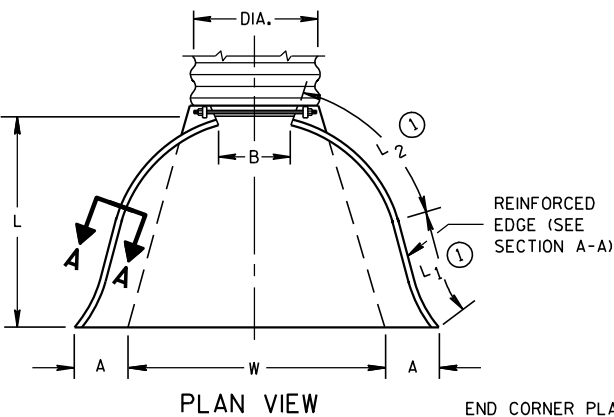
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGINEER
FHWA	

METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE		BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3	3 Pc.

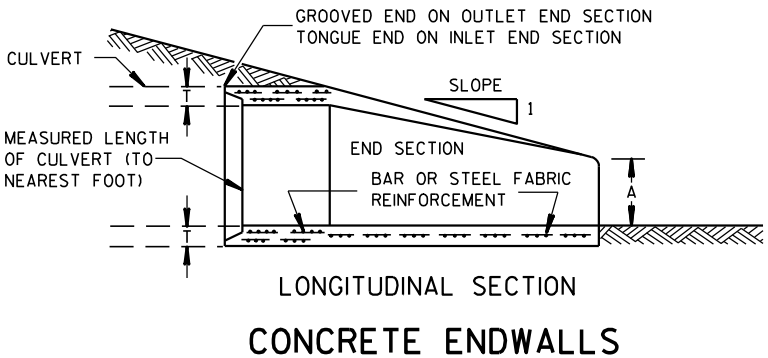
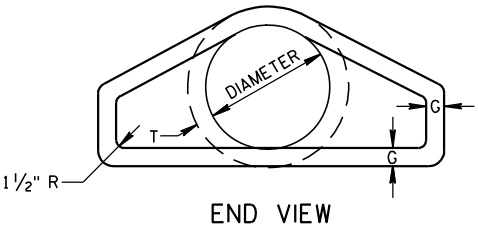
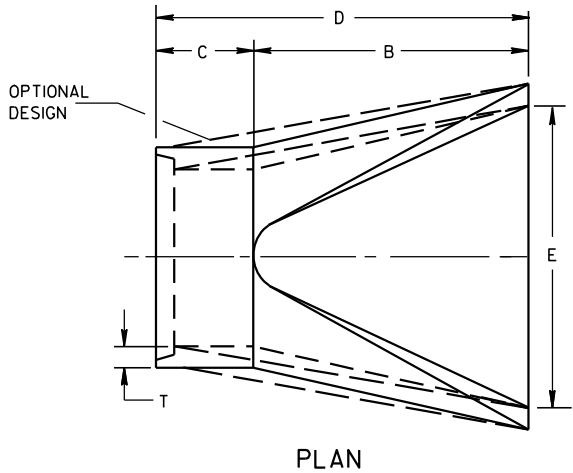
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



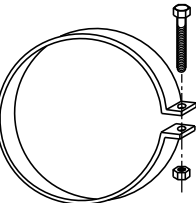
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1				
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1				
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1				
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1				
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1				
48	5	24	72	26	98	84	5	3 to 1				
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 1/2 to 1				
60	6	30-35	60	39	99	96	5	2 to 1				
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1				
72	7	24-36	78	21	99	108	6	2 to 1				
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1				
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1				
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1				

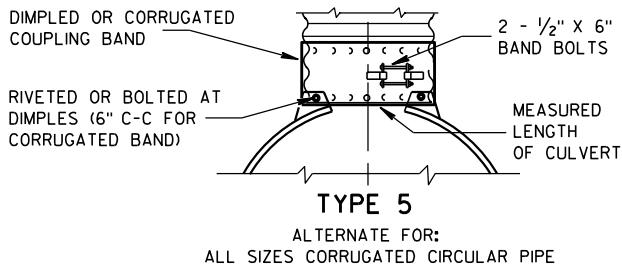
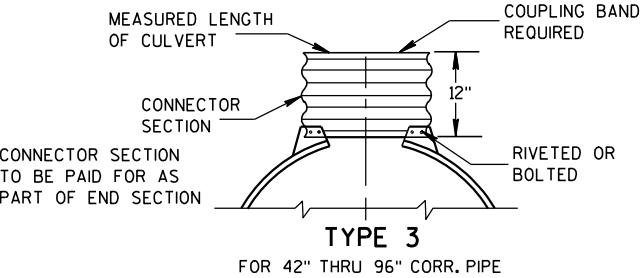
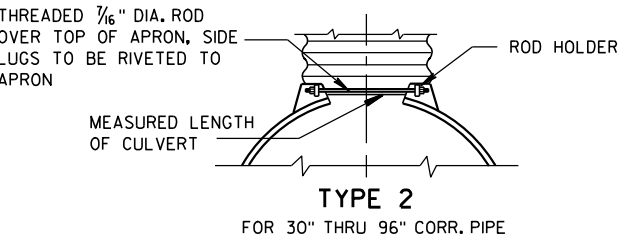
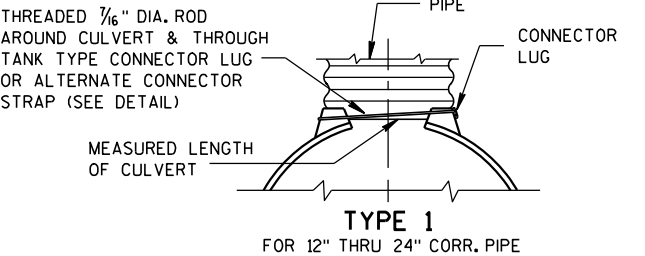
* MINIMUM
** MAXIMUM



1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



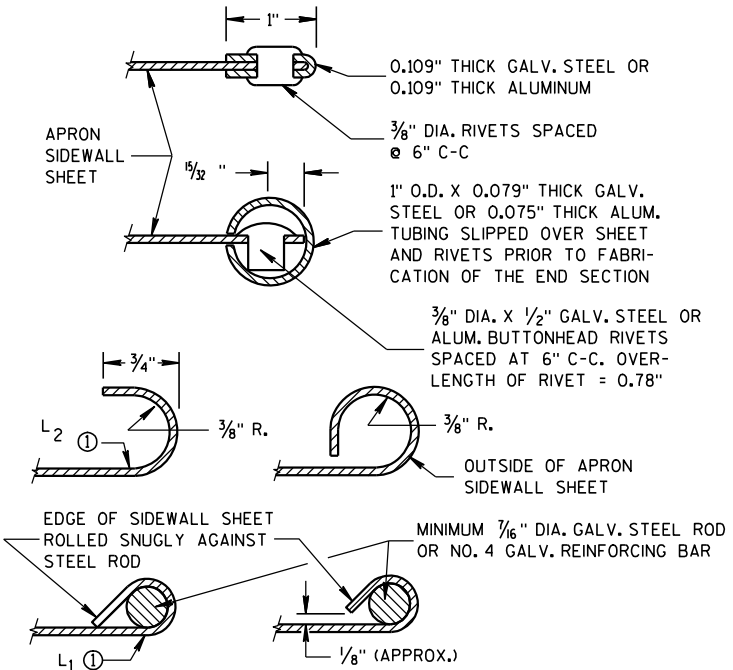
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

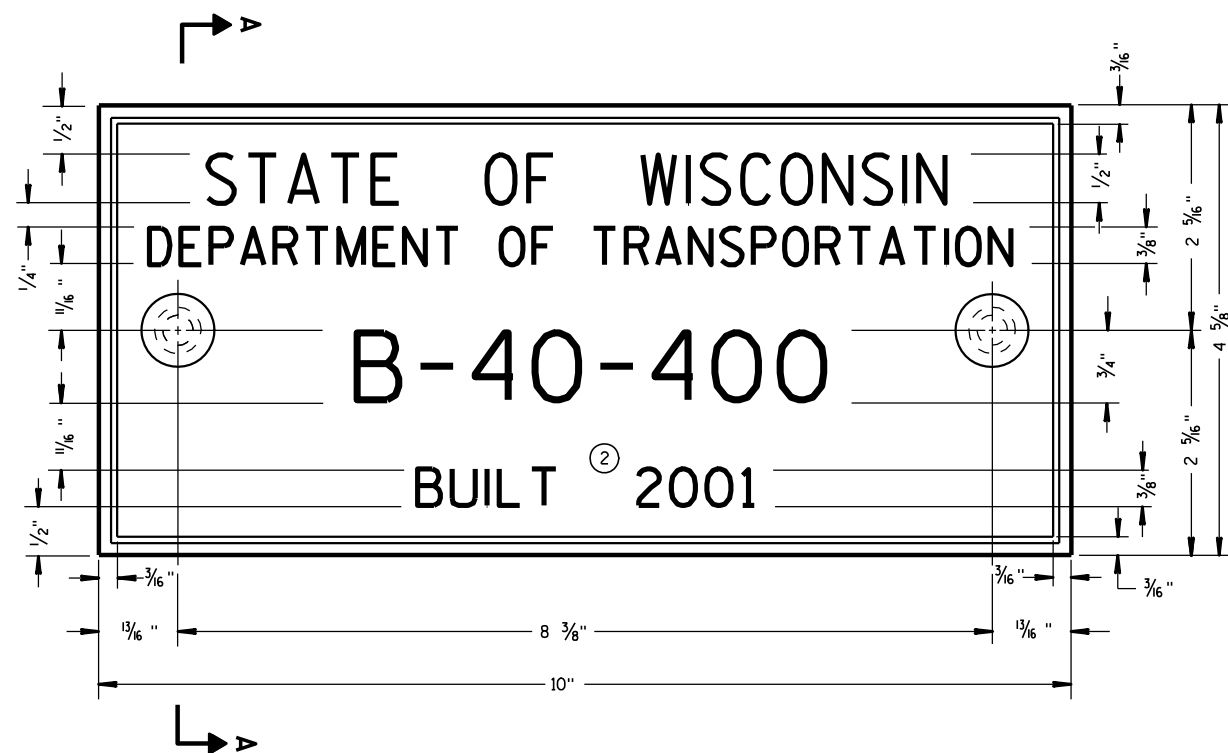
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

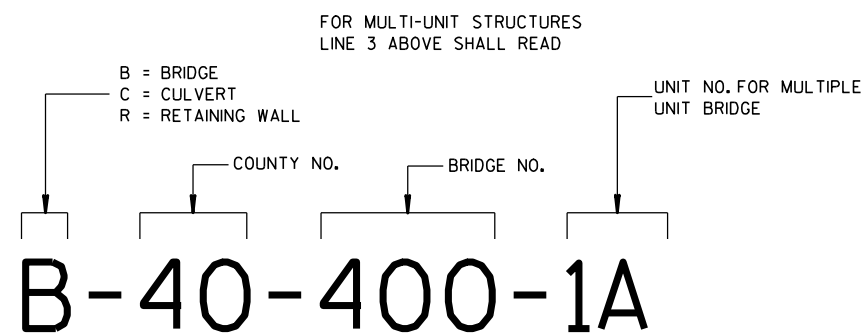
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



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



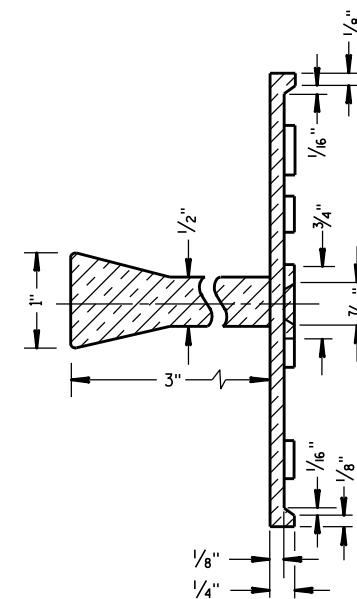
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

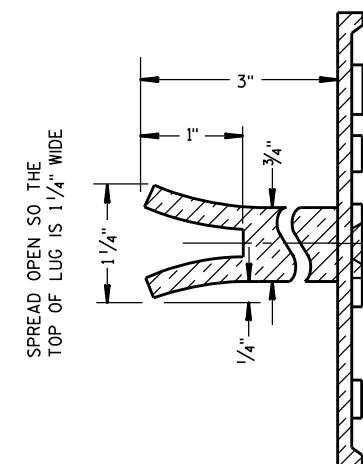
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

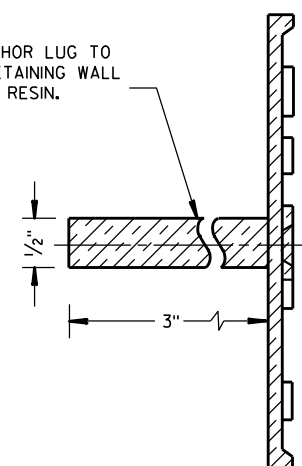


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

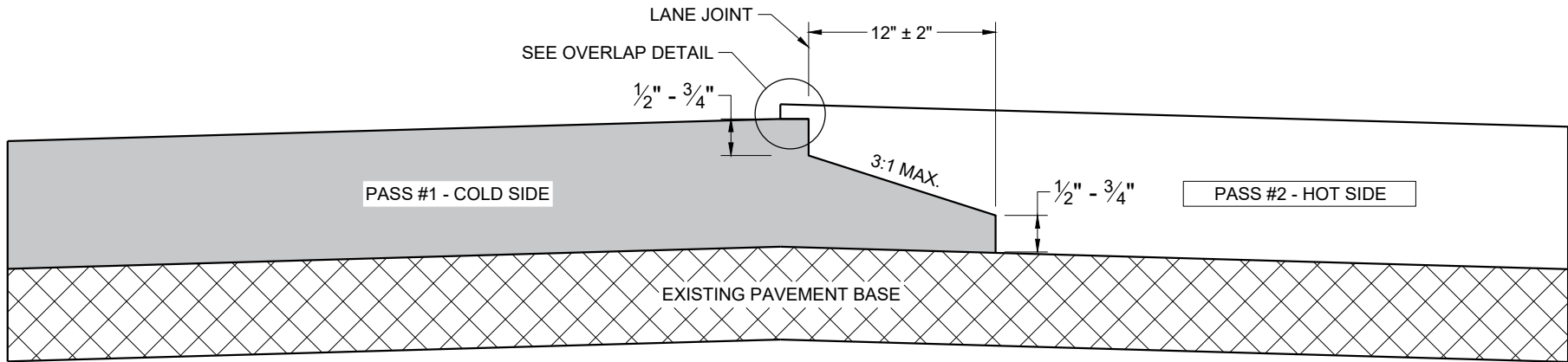
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

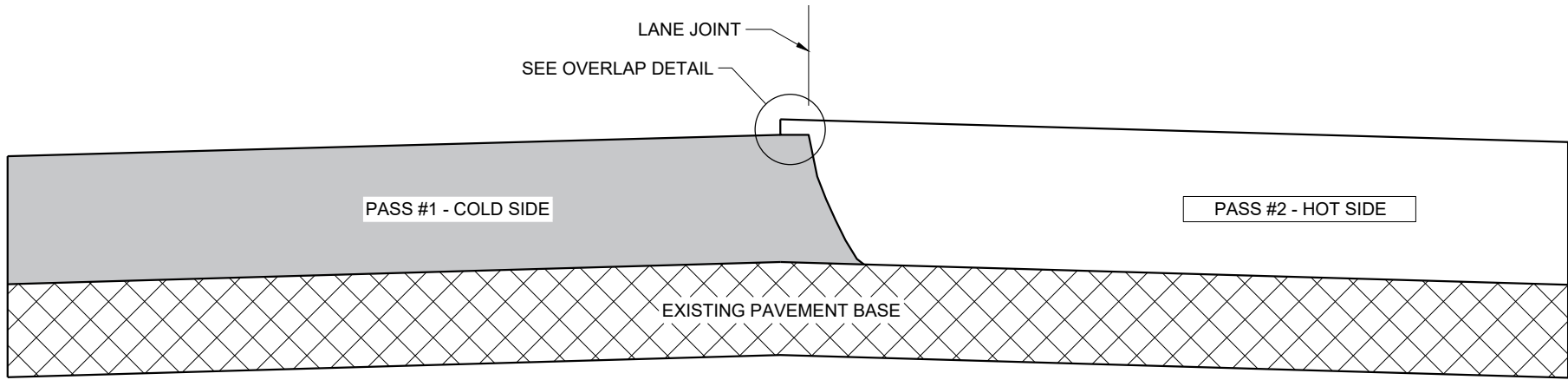
3/26/10
DATE

FHWA

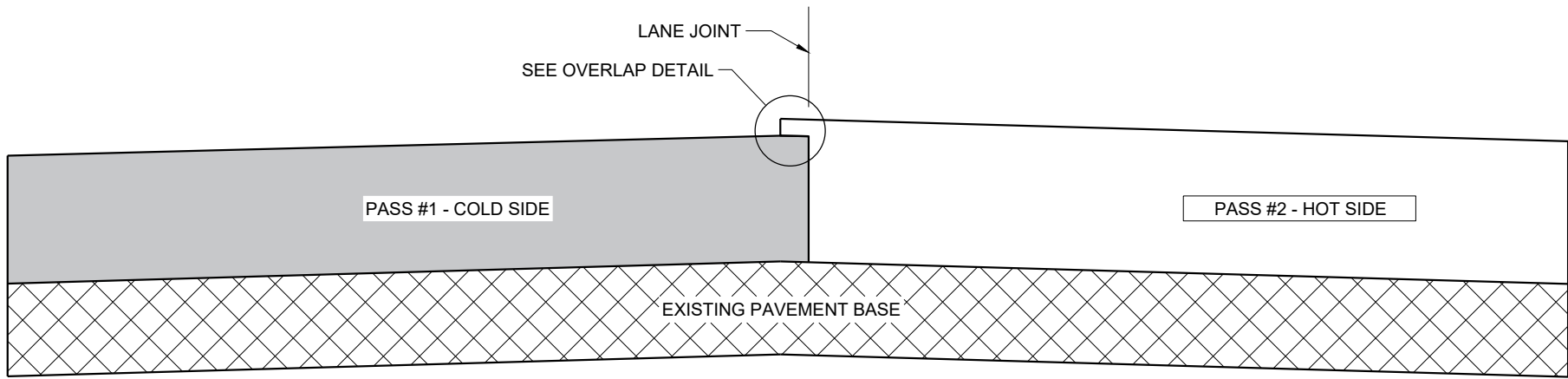
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

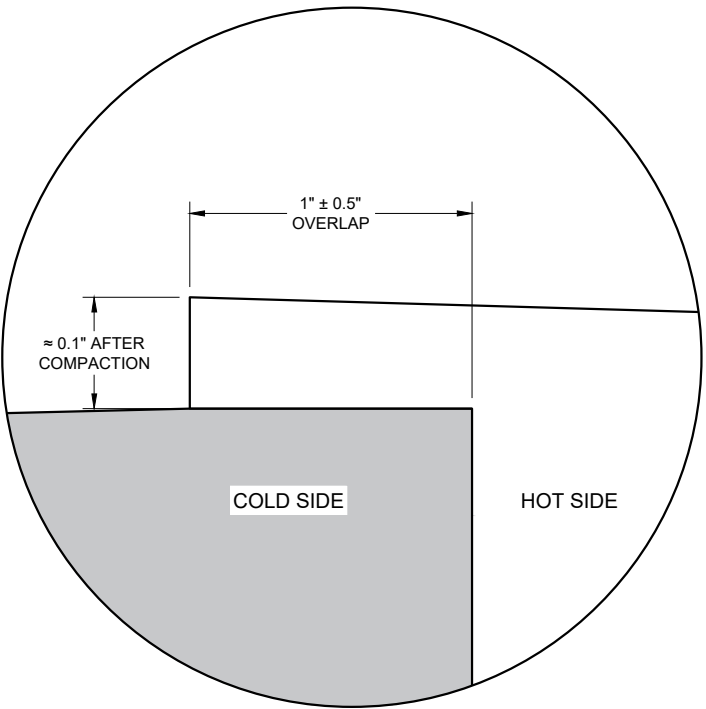
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

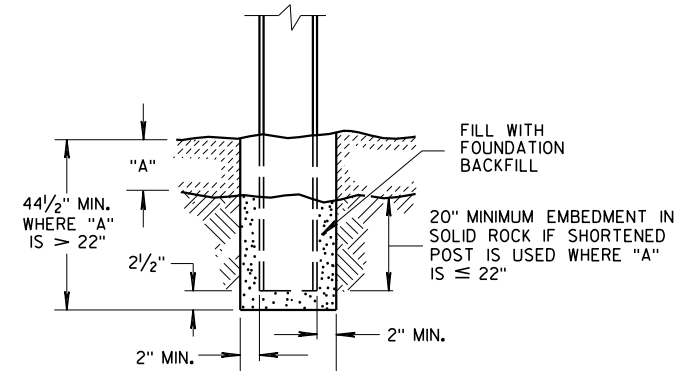
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGINEER
FHWA

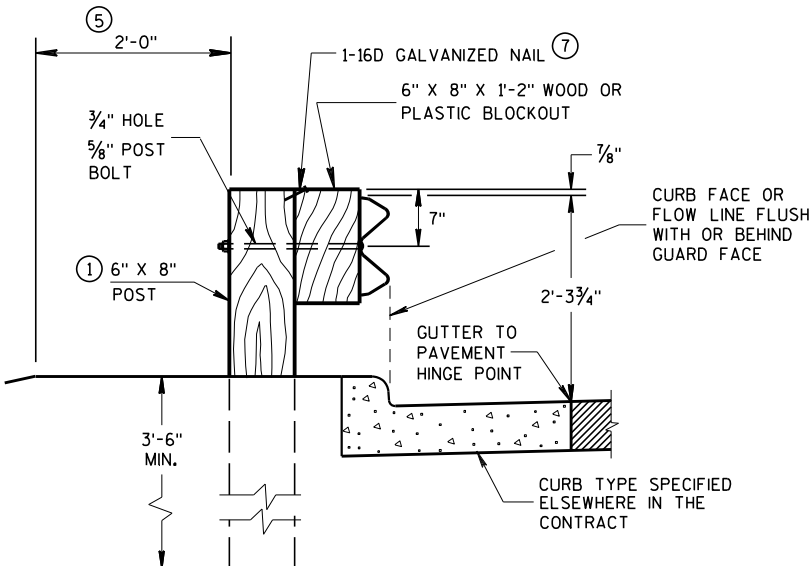
GENERAL NOTES

- W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS. DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.
- USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.
- INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
- IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
- IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY.
- WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

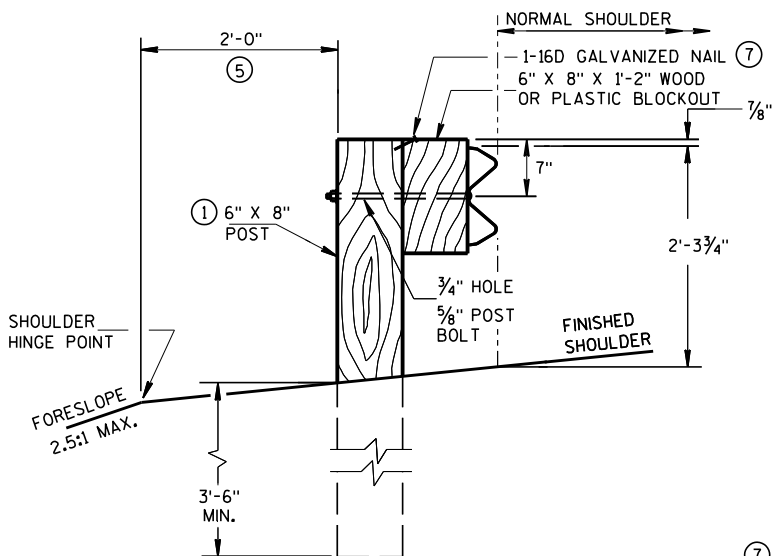
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



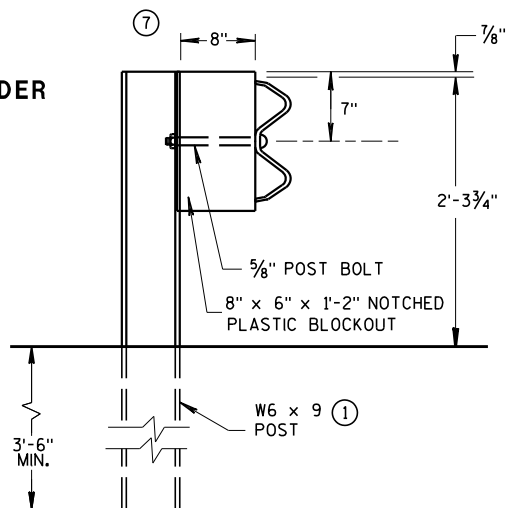
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥



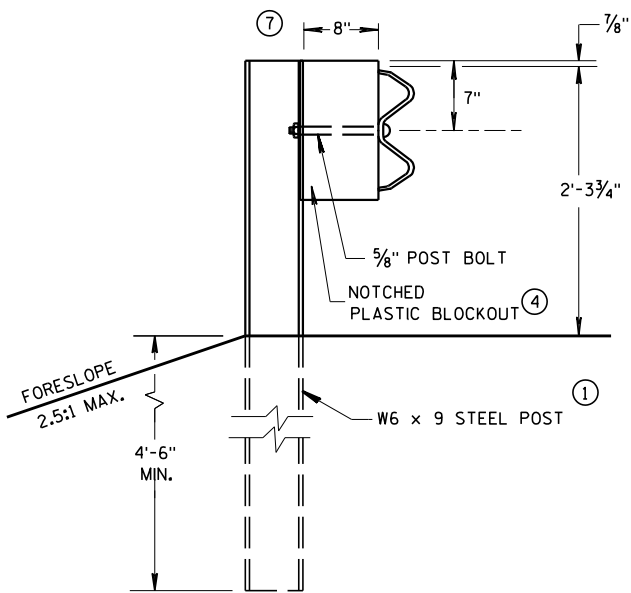
END VIEW
LOCATED ALONG A CURBED ROADWAY



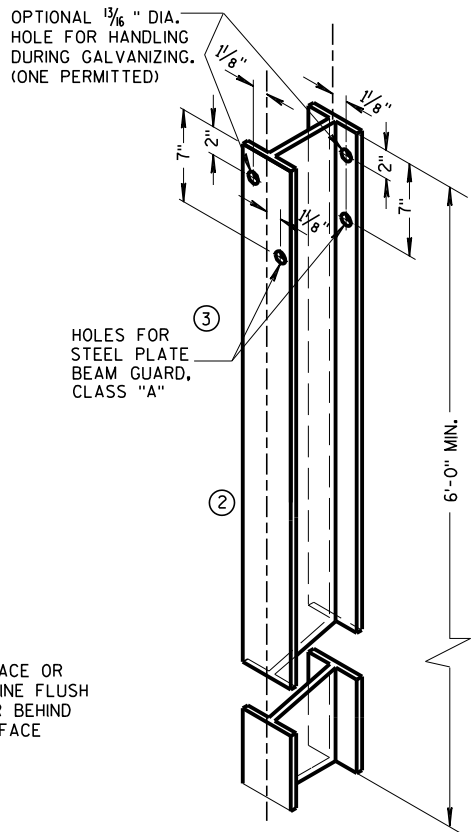
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



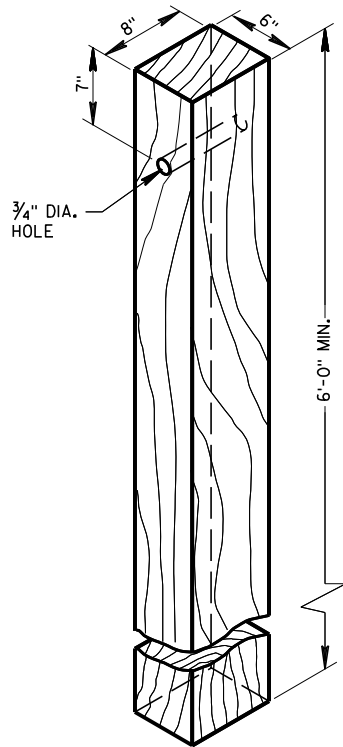
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



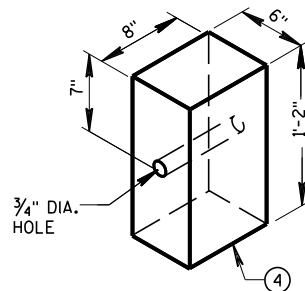
END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



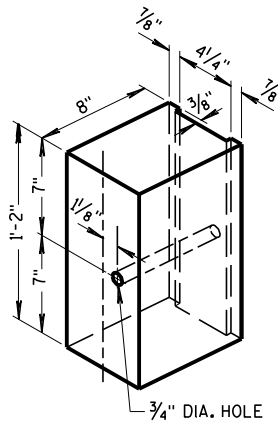
STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①
ALL HOLES 1/8" DIAMETER EXCEPT AS NOTED



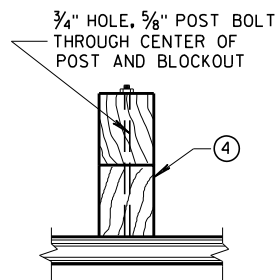
WOOD POST
(6" X 8") NOMINAL



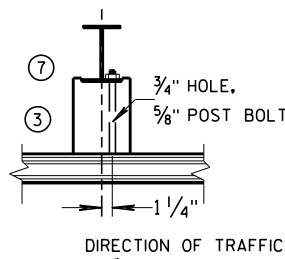
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS ①



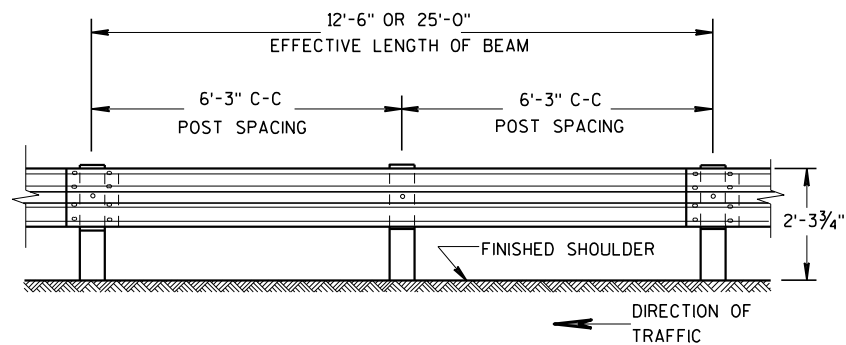
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

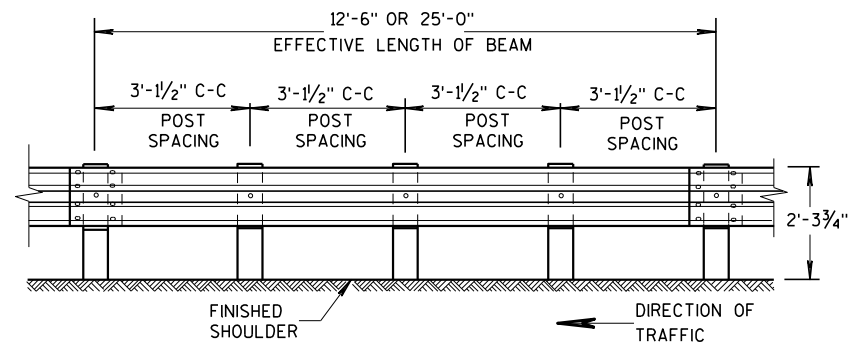
STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

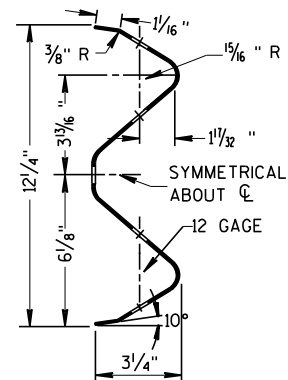


FRONT VIEW

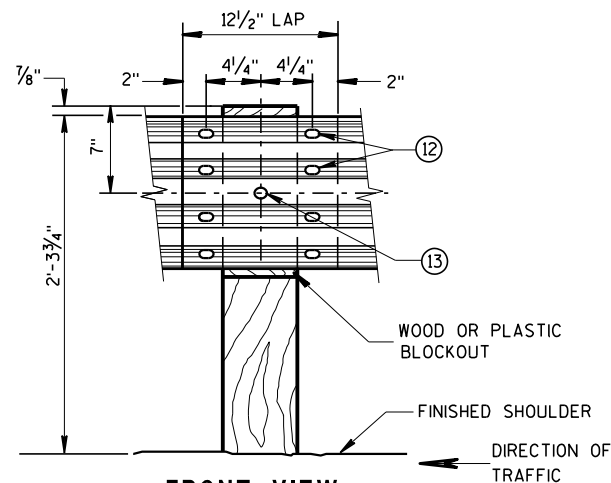
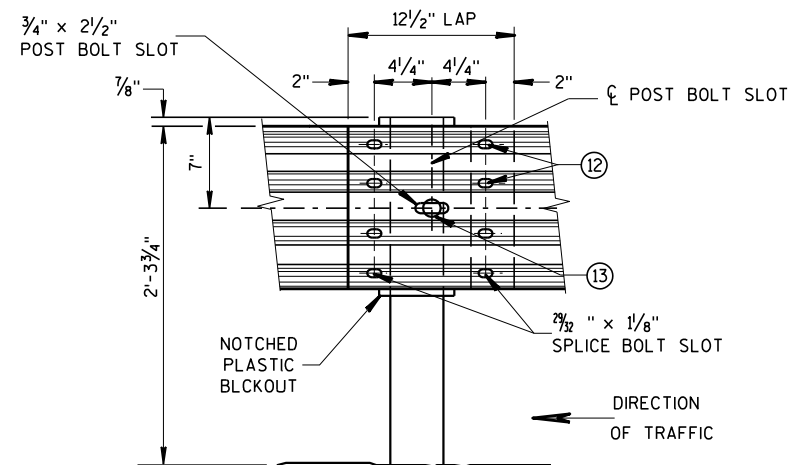
POST SPACING STANDARD INSTALLATION



FRONT VIEW

POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)

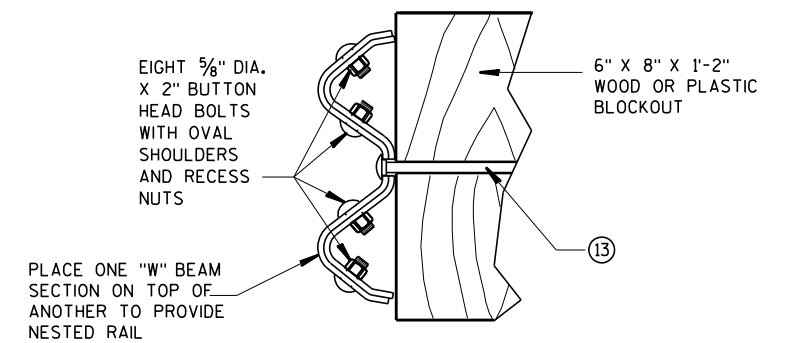
SECTION THRU W BEAM

FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAILFRONT VIEW
BEAM SPLICE AT STEEL POSTTYPICAL SPLICING DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

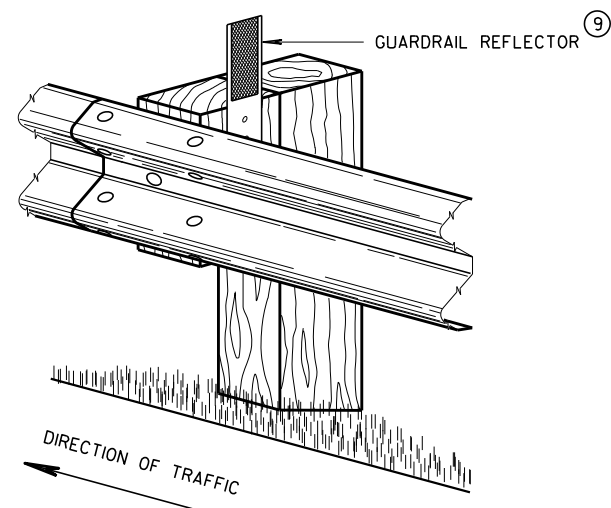
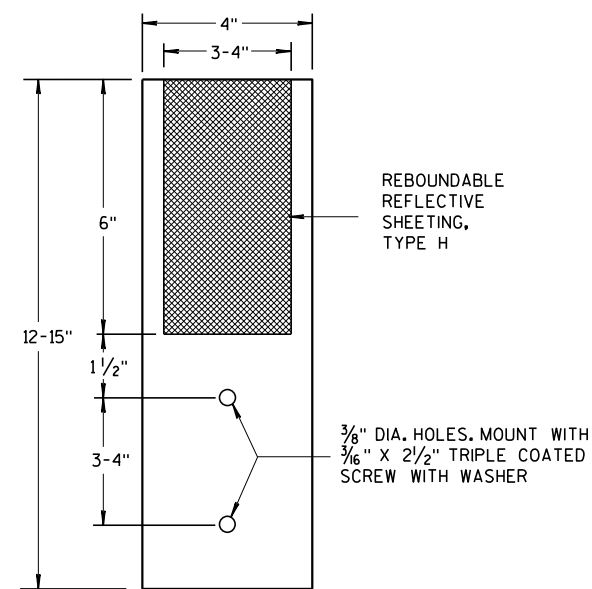
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



NESTED W BEAM (NW)

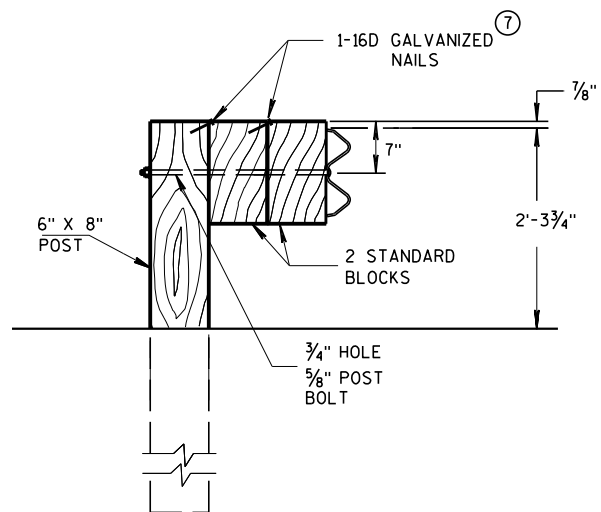
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUARDRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.

4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *

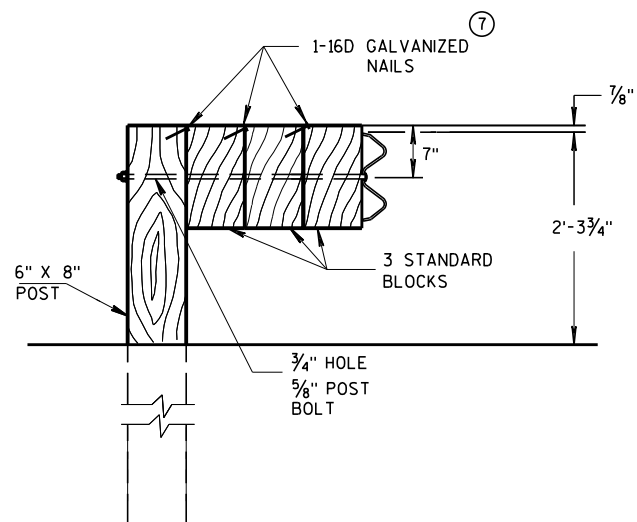
4"x 12" GUARDRAIL REFLECTOR

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTSSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS
WITHIN A BARRIER RUN IS UNLIMITED

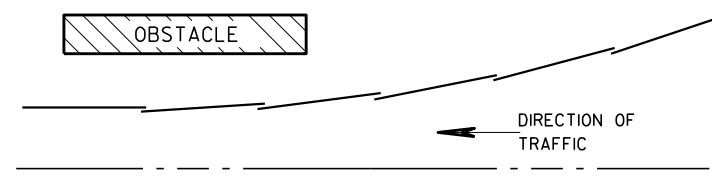


DETAIL FOR TRIPLE BLOCKS

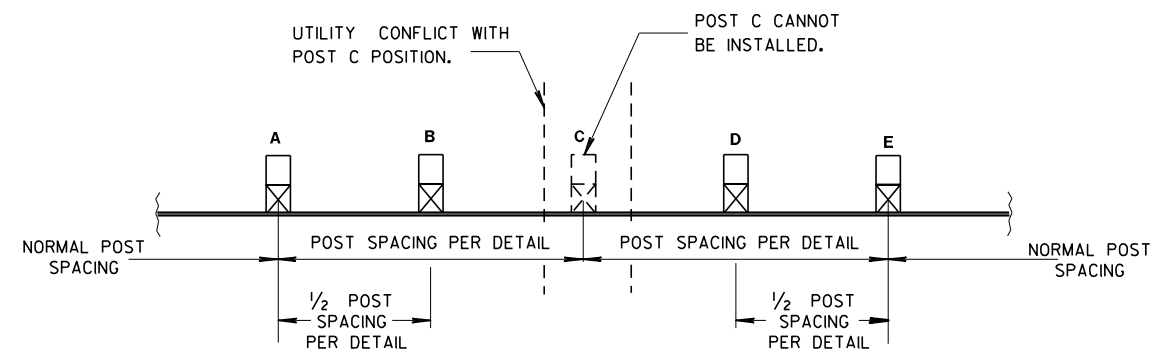
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES
PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.



PLAN VIEW BEAM LAPPING DETAIL

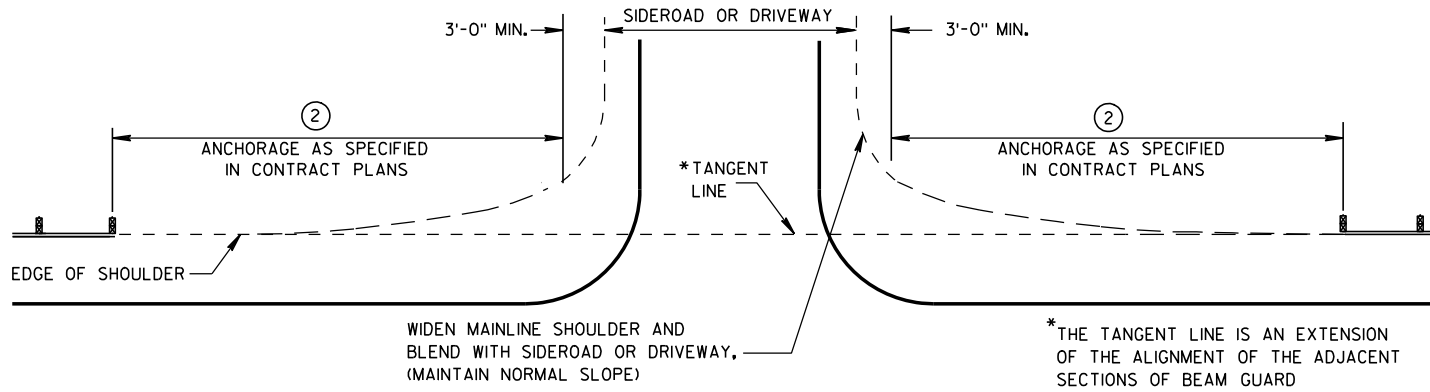


POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

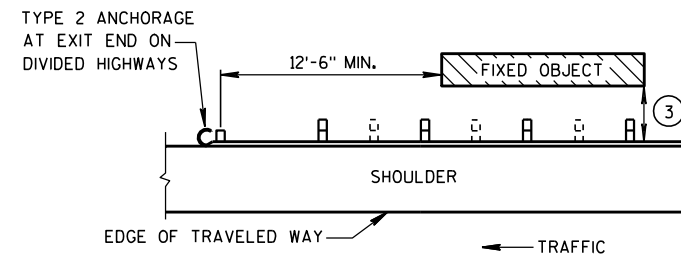
STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

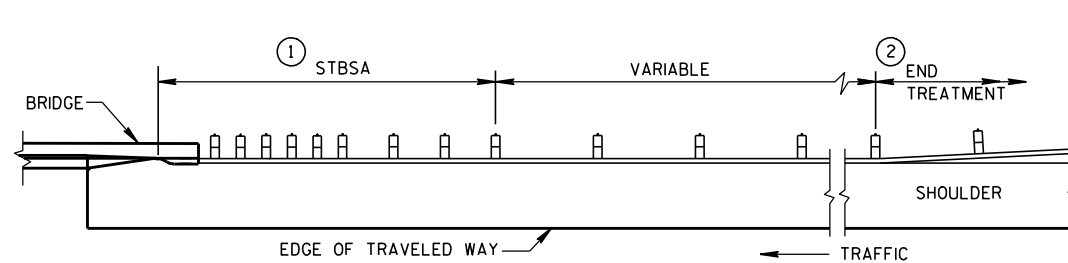
APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



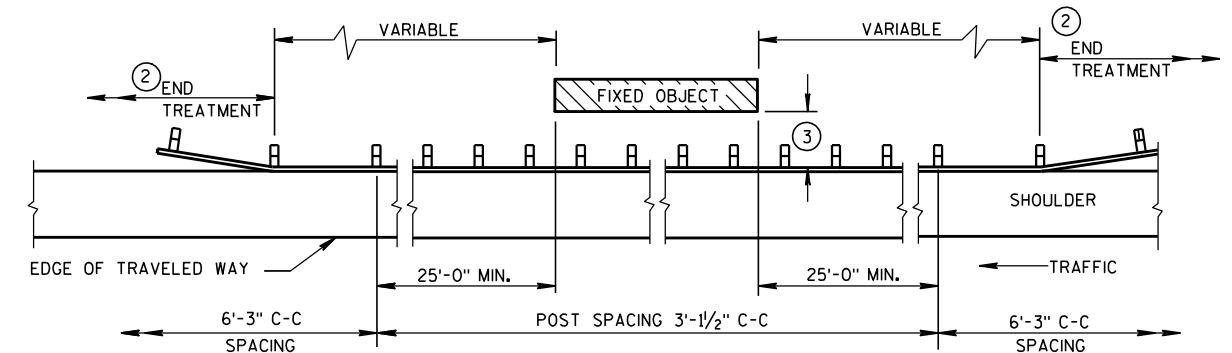
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC



BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

TABLE 1
FLARE RATES FOR BEAM
GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

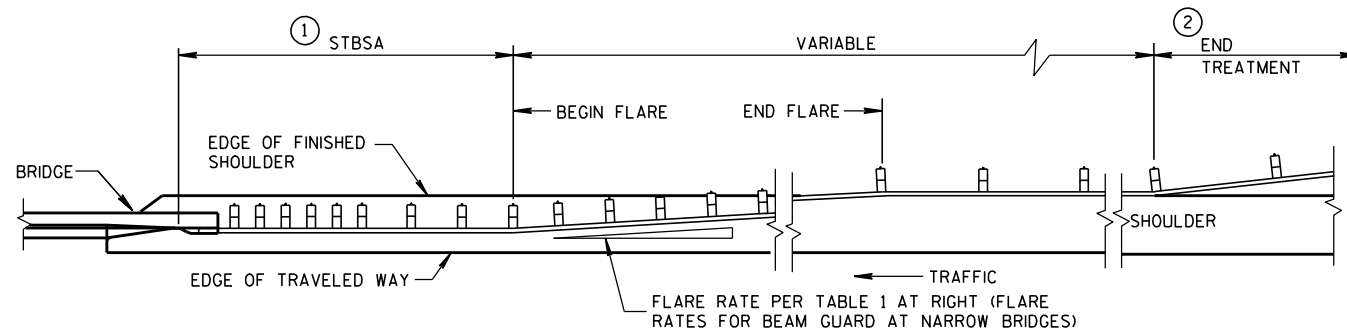
W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

- STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1 1/2"
4'-6"	6' - 3"

BEAM GUARD AT NARROW BRIDGES (FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)



STEEL PLATE BEAM GUARD
CLASS "A"
AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-21-07
DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

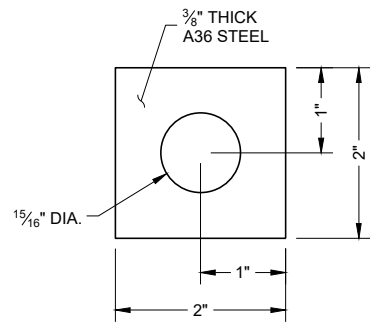
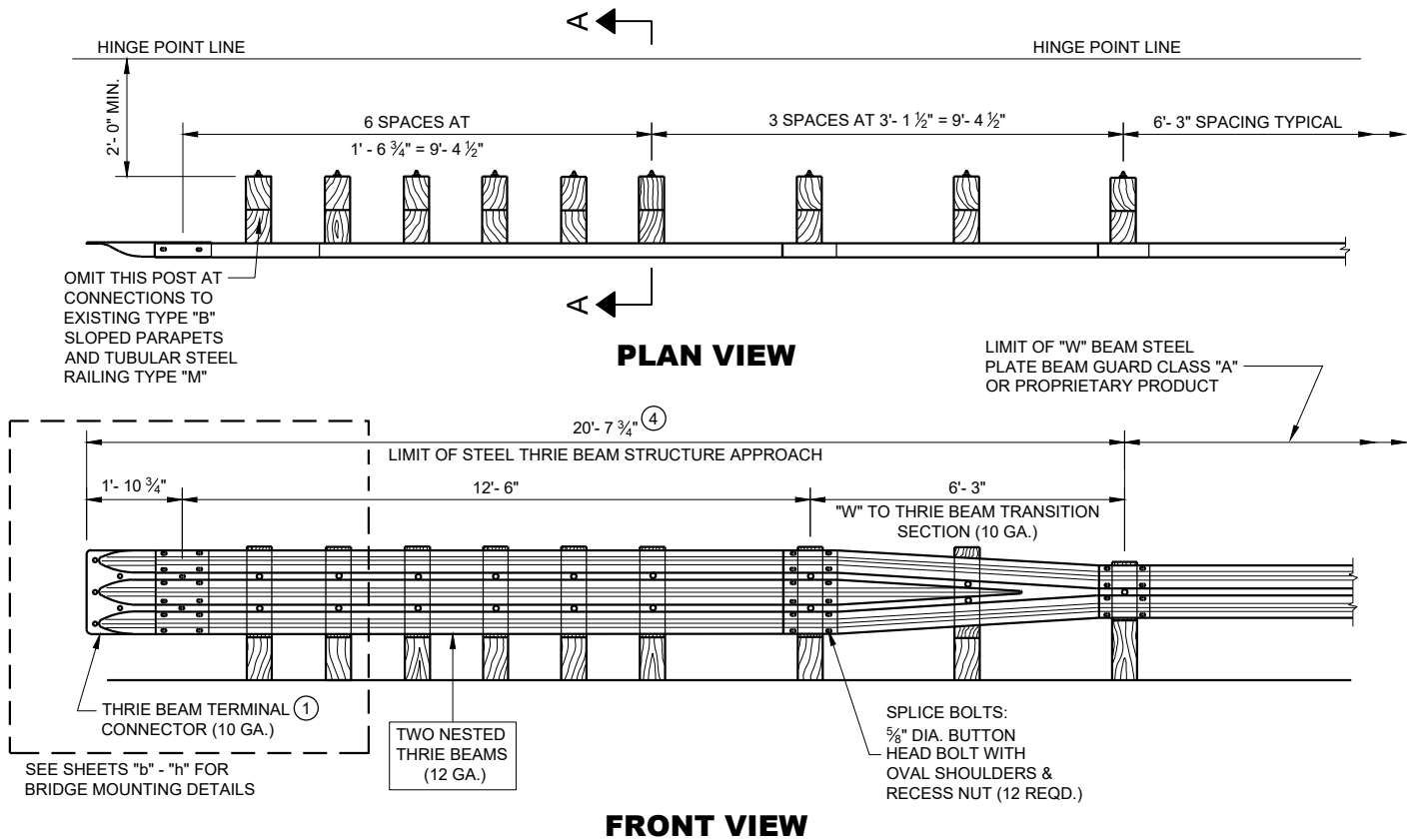


PLATE WASHER DETAIL

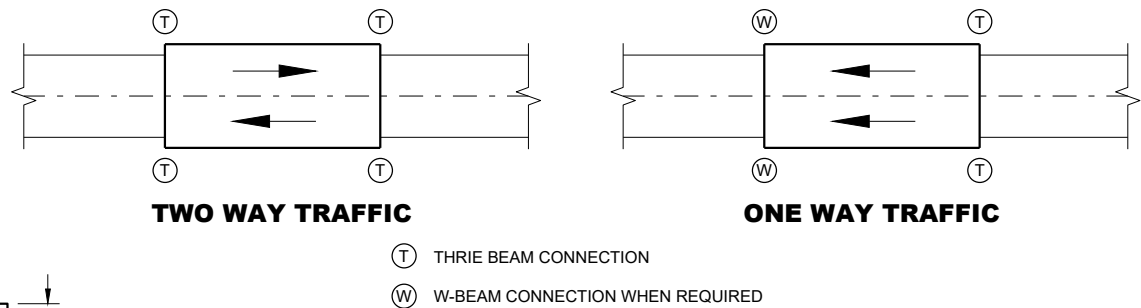
GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

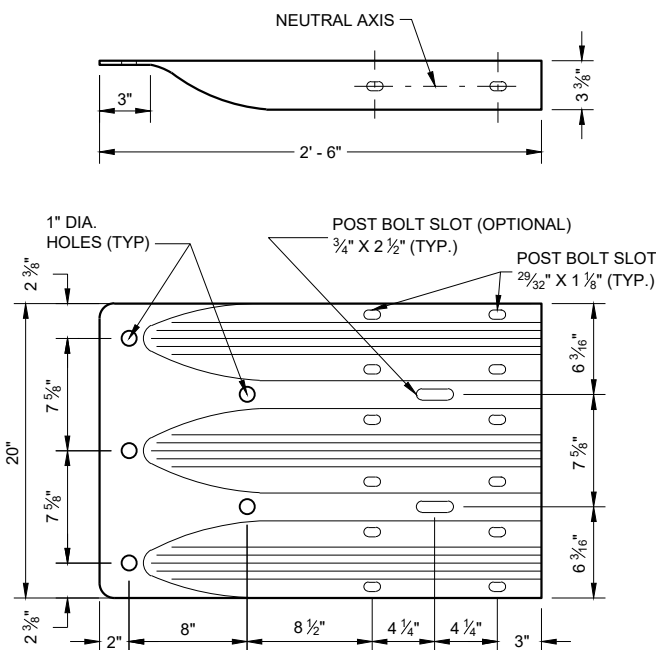
DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

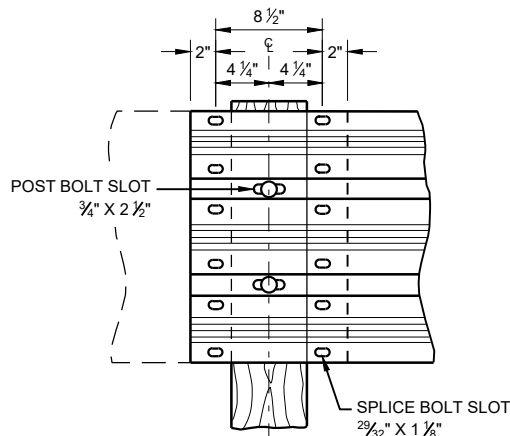
- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② MINIMUM EMBEDMENT SHALL BE 4'-0".
- ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
- ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



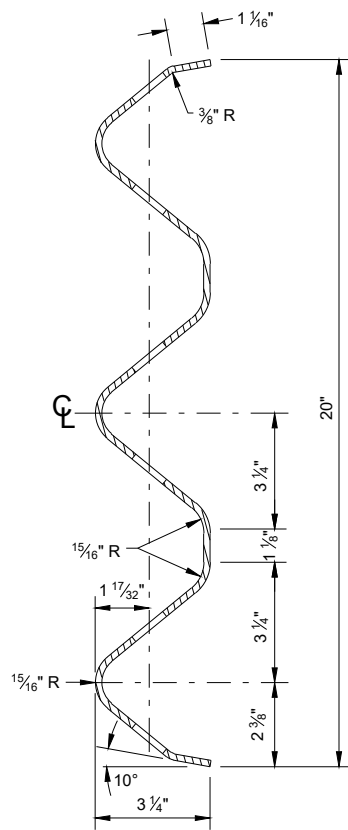
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



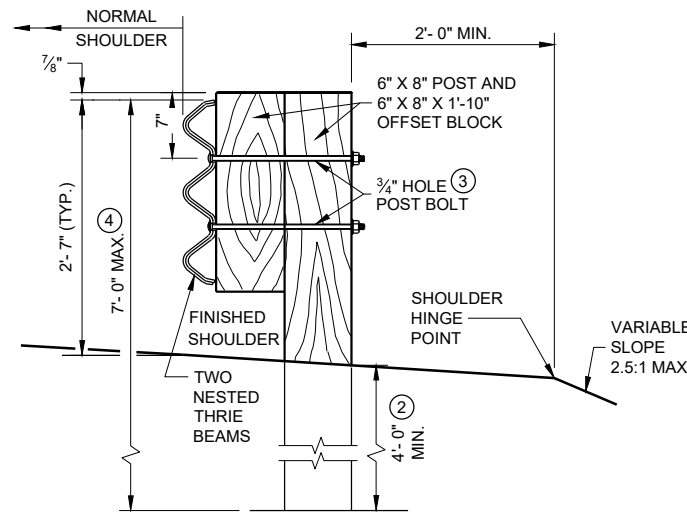
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU BEAM RAIL ELEMENT



SECTION A-A

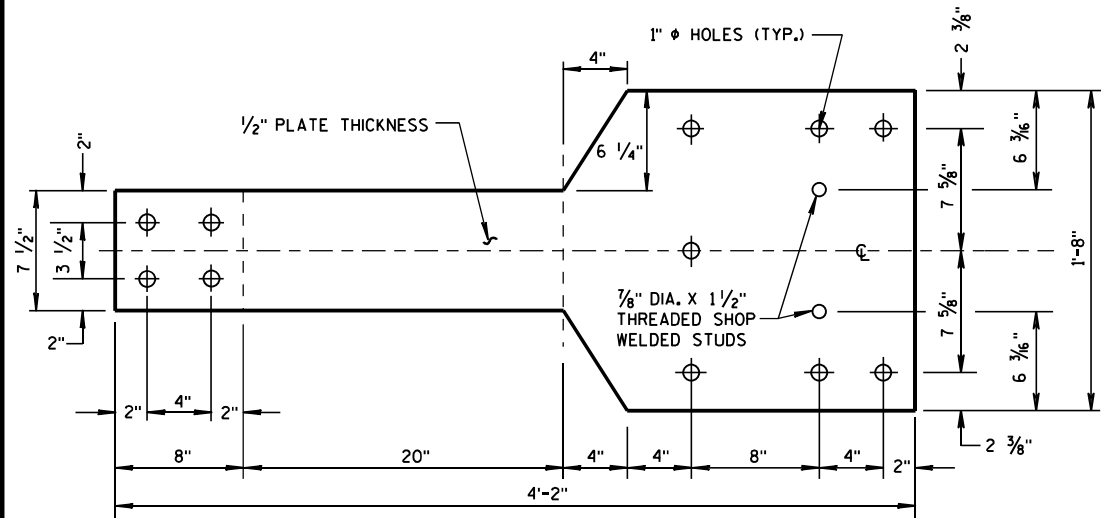
STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

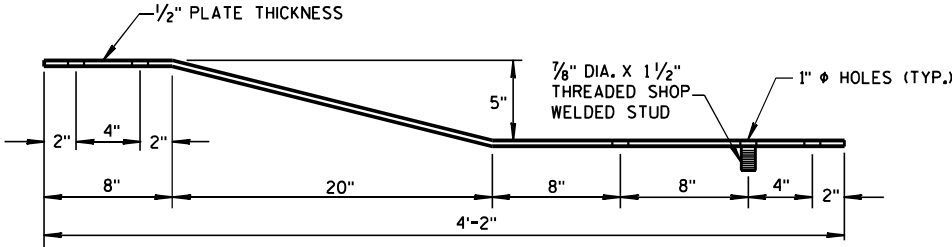
APPROVED
November 2022 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

GENERAL NOTES

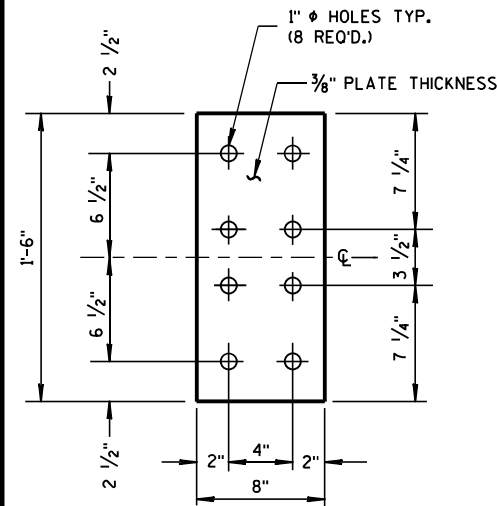
① VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL BE AS CLOSE AS FEASIBLE TO THE STEEL END POST.



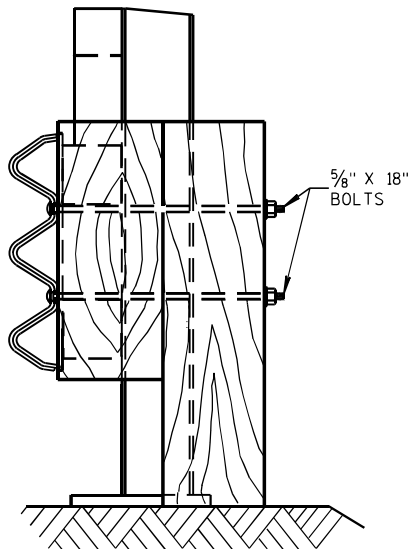
FRONT VIEW



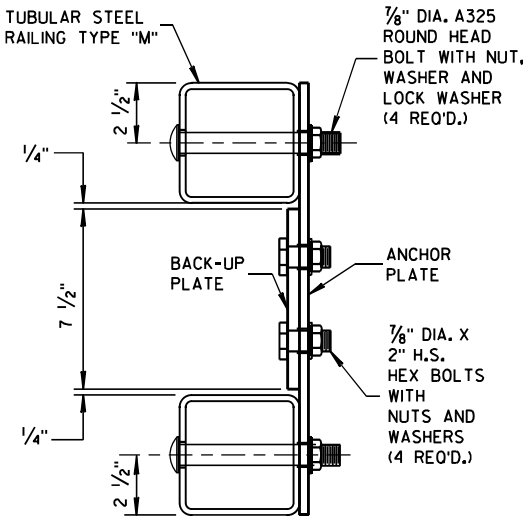
PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"



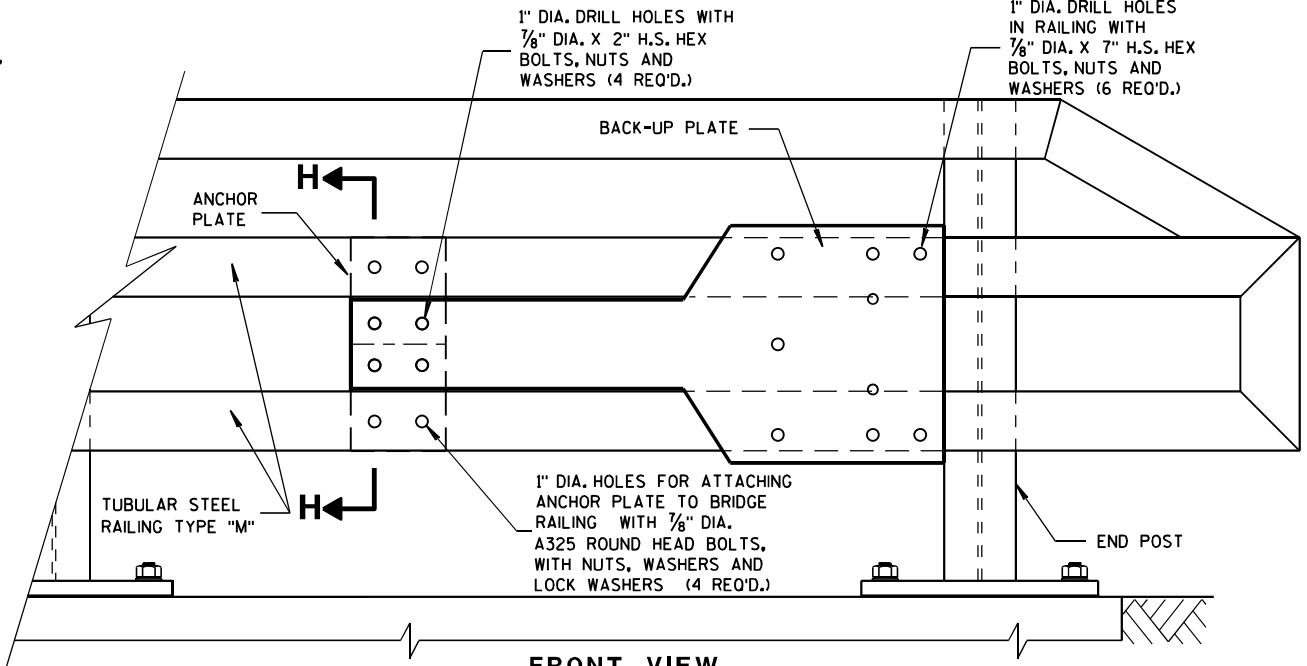
FRONT VIEW
ANCHOR
PLATE DETAIL,
TYPE "M"



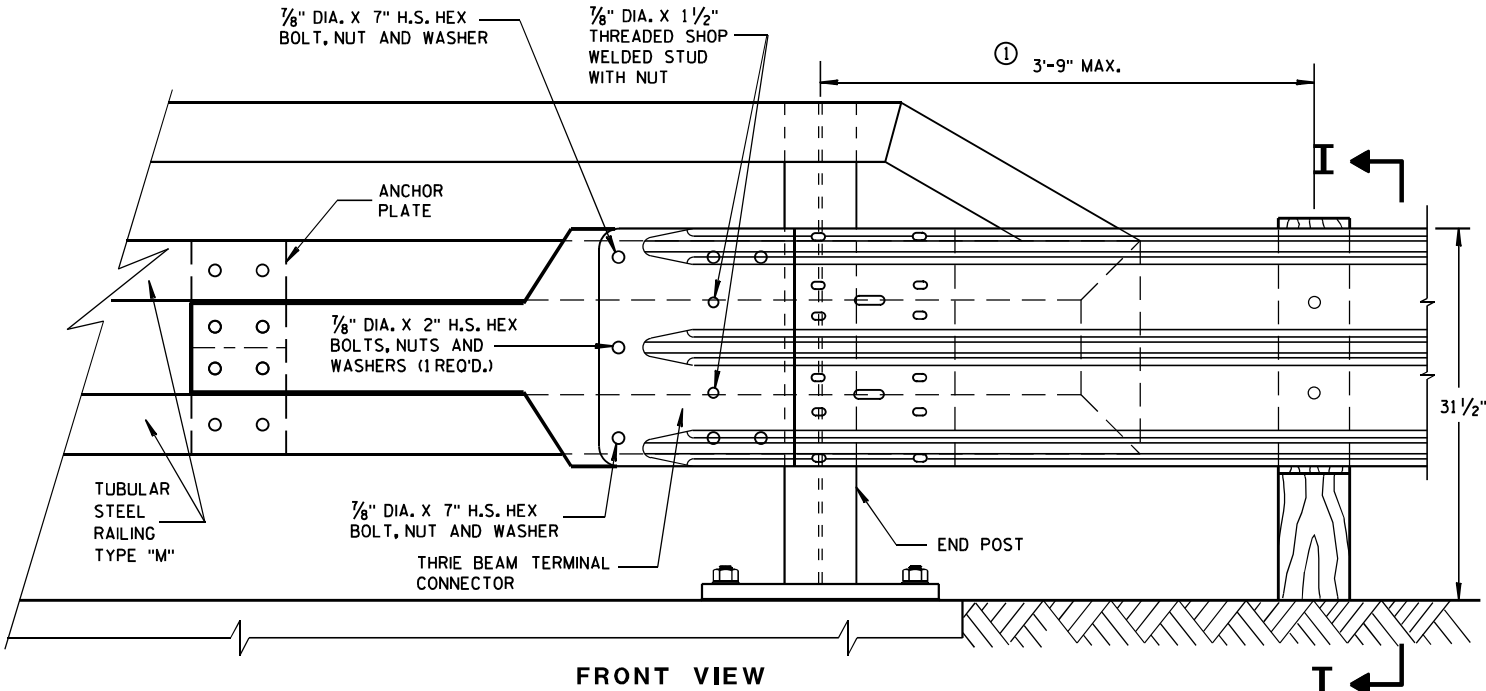
SECTION I-I



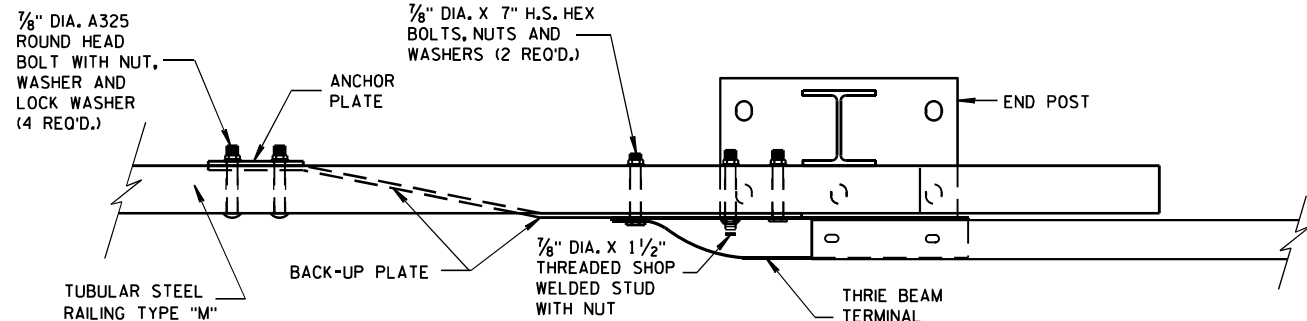
SECTION H-H



FRONT VIEW
ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



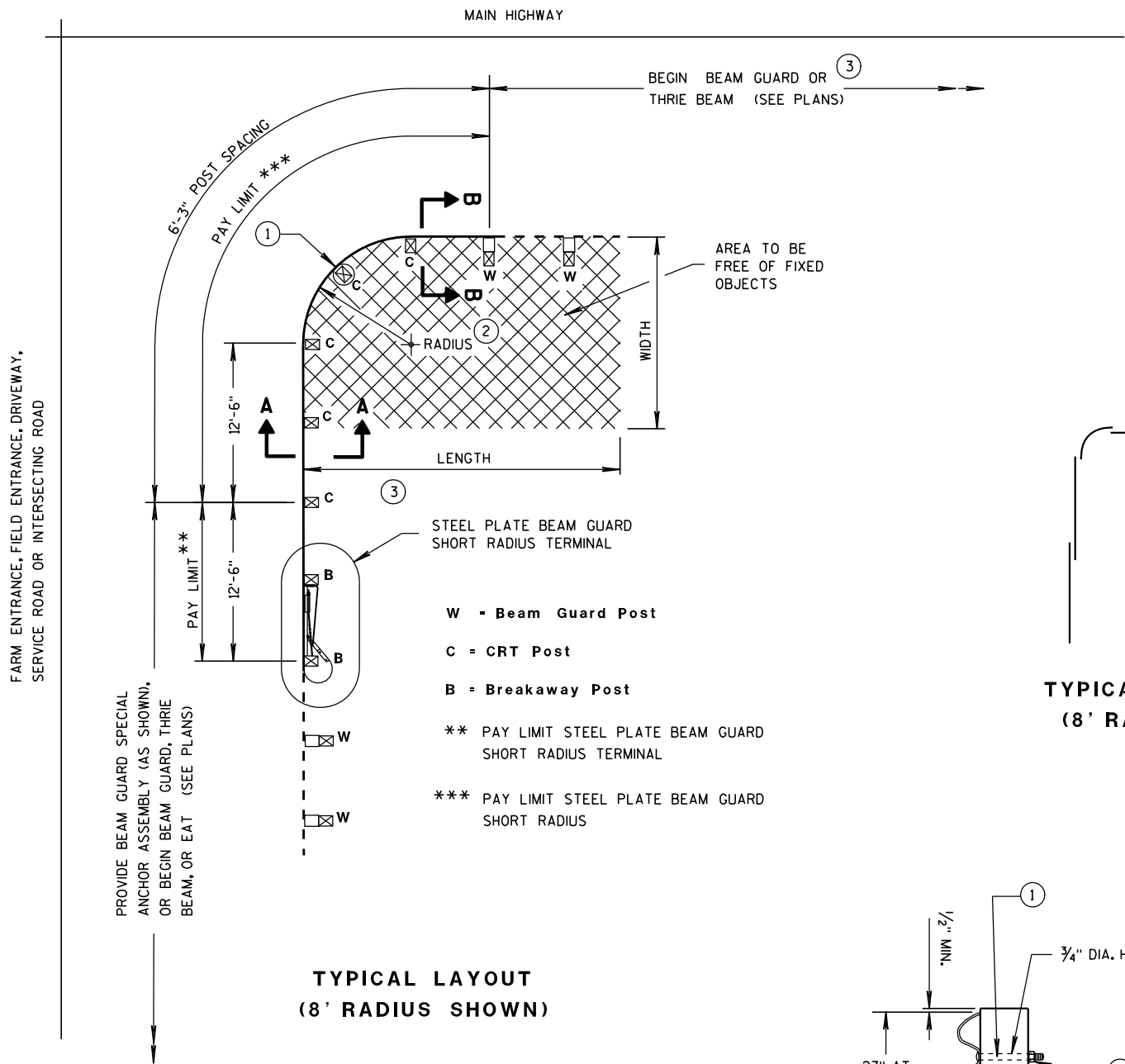
PLAN VIEW

THREE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

STEEL THREE BEAM STRUCTURE
APPROACH, CONNECTION TO
BRIDGE RAILING TYPE "M"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



TYPICAL LAYOUT
(8' RADIUS SHOWN)

W - Beam Guard Post
C = CRT Post
B = Breakaway Post

** PAY LIMIT STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
*** PAY LIMIT STEEL PLATE BEAM GUARD SHORT RADIUS

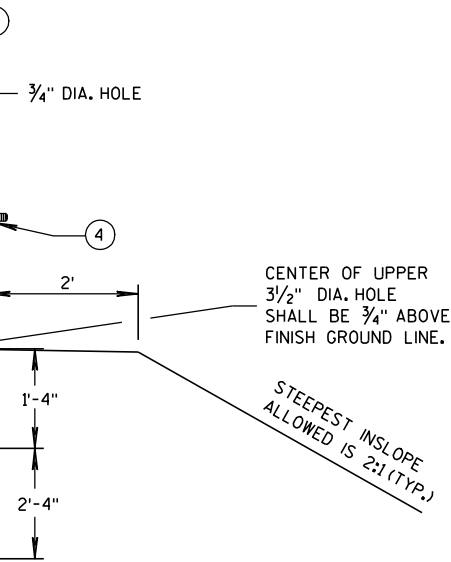
SLOPE SHALL BE 15:1 OR FLATTER (TYP.)

27" AT FACE OF RAIL

3 1/2" DIA. HOLES CENTERED IN SIDE OF POST

6"x8"x6'-0" WOOD POST MODIFIED AS SHOWN AND SHALL BE PRESERVATIVE TREATED AFTER DRILLING

SECTION A-A
(CRT POST)



CENTER OF UPPER 3 1/2" DIA. HOLE SHALL BE 3/4" ABOVE FINISH GROUND LINE.

STEEPEST INSLOPE ALLOWED IS 2:1 (TYP.)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2, UNLESS NOTED OTHERWISE.

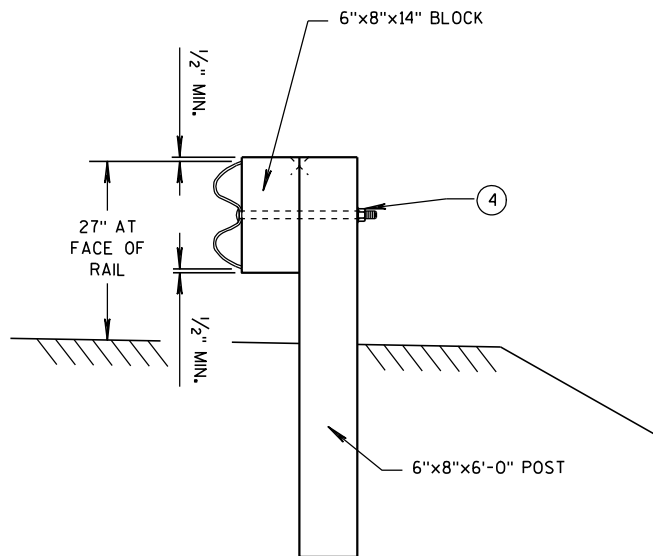
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

- 1 ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.
- 2 RADIUS FROM 8' - 36'. SEE PLAN.
- 3 HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.
- 4 5/8" Ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



SECTION B-B
(BEAM GUARD POST)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

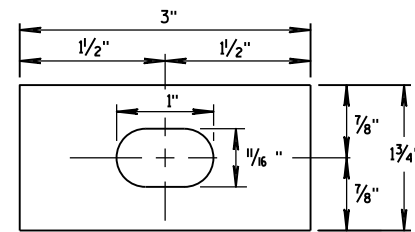
- 1 ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A 5/8" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.
- INSTALL GALVANIZED 3/4" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



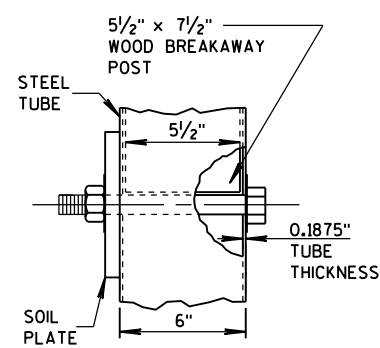
(BEAM GUARD AND TERMINAL
SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

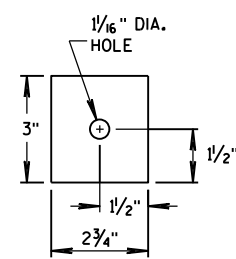
STATE OF WISCONSIN
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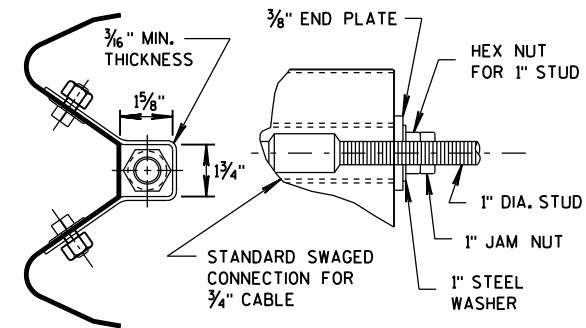
RECTANGULAR PLATE WASHER



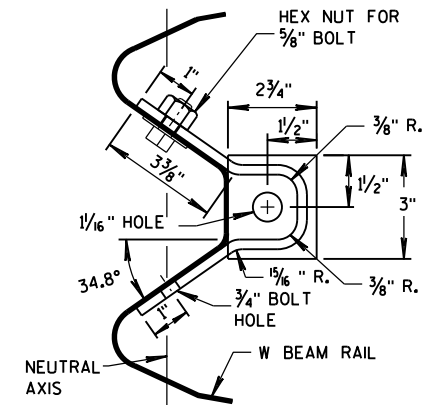
DETAIL D



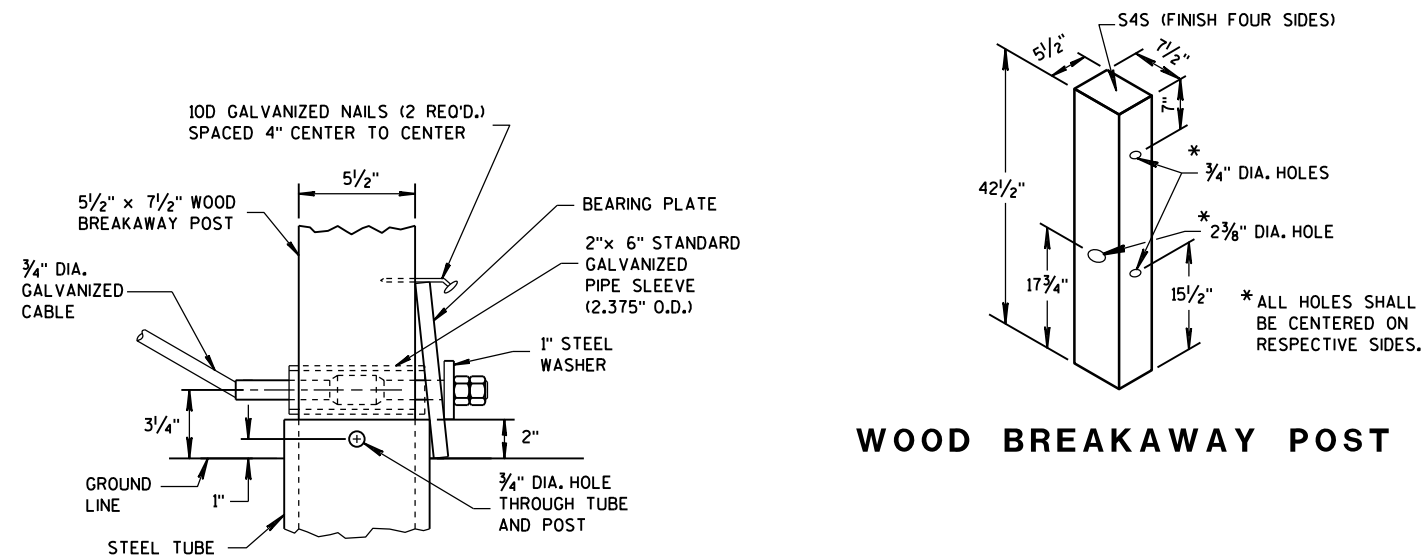
END PLATE



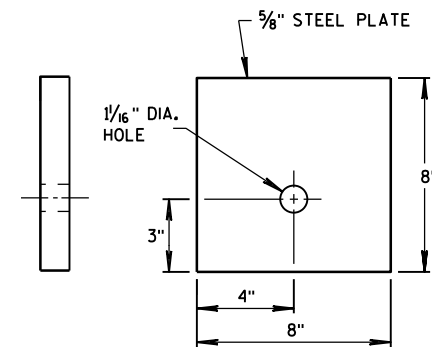
SECTION C-C
(END PLATE REMOVED)



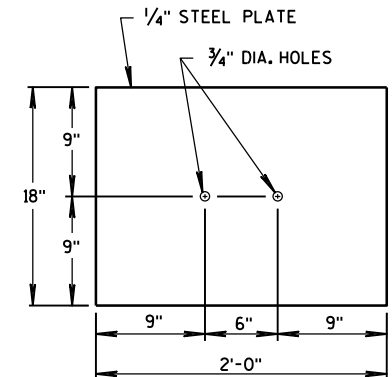
ANCHOR BRACKET



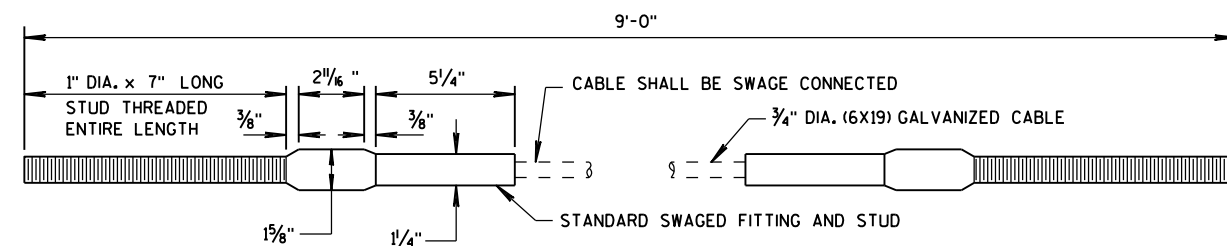
WOOD BREAKAWAY POST



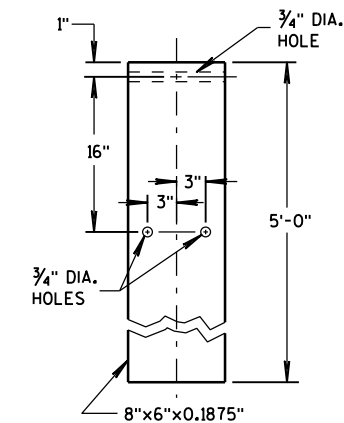
BEARING PLATE



SOIL PLATE



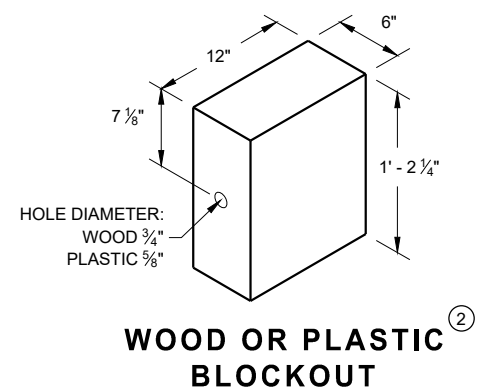
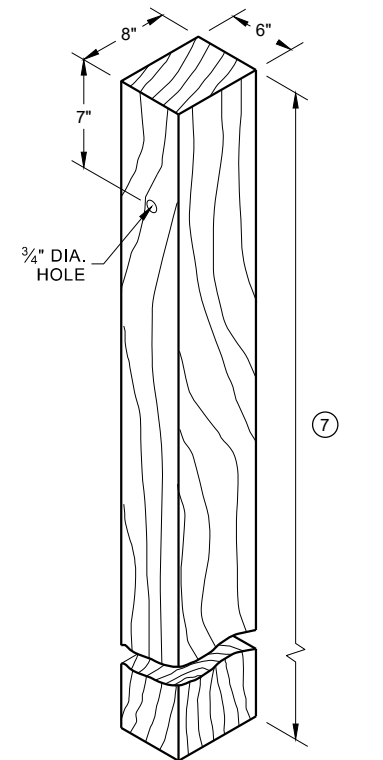
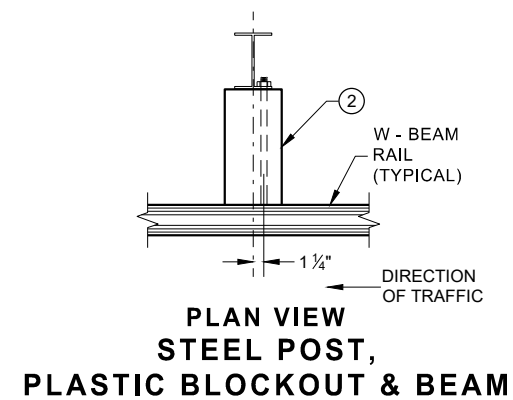
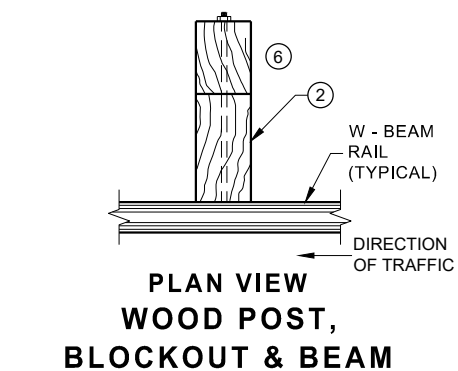
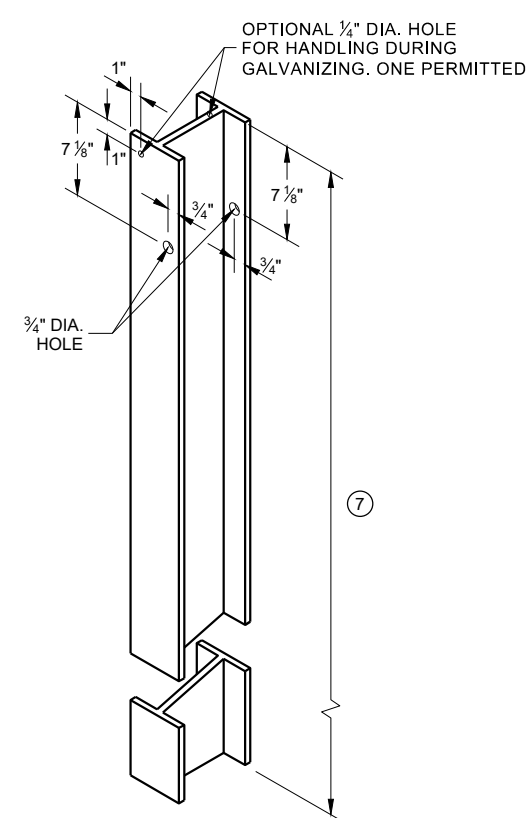
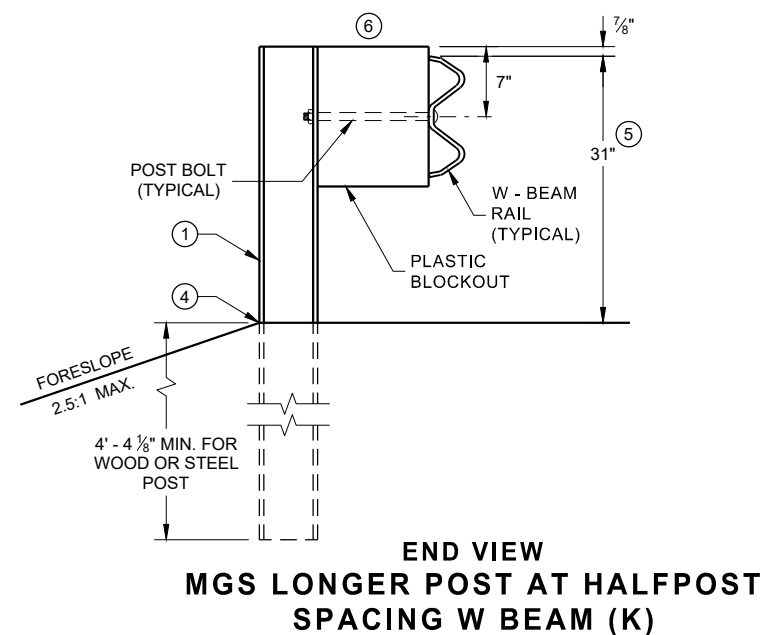
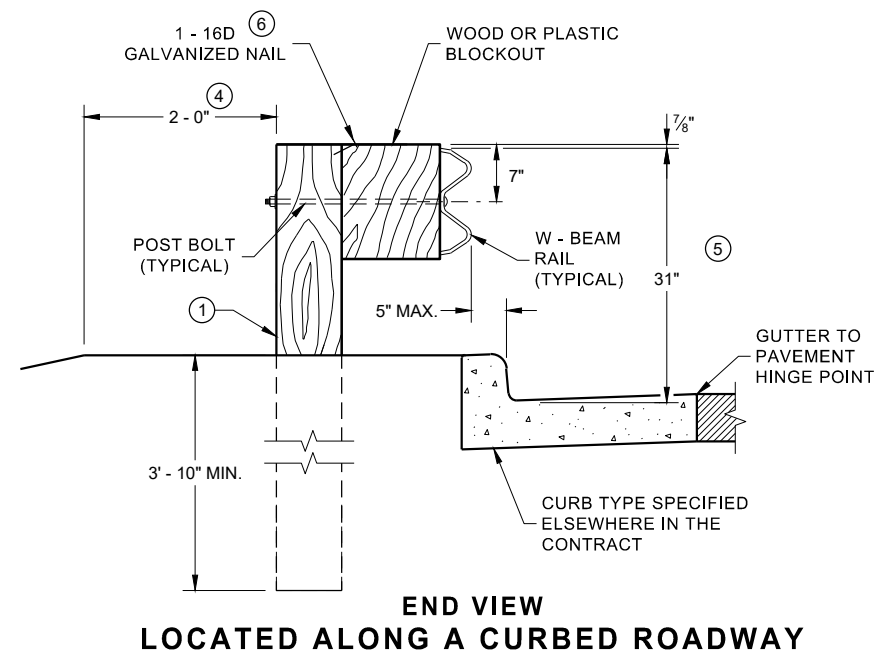
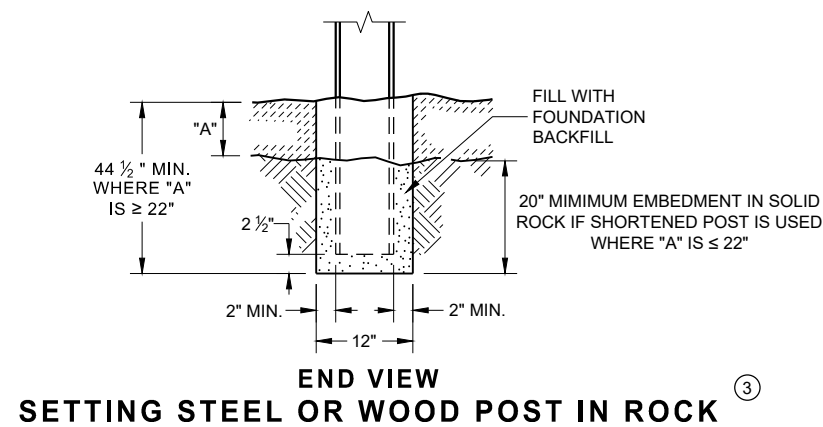
CABLE ASSEMBLY



STEEL TUBE

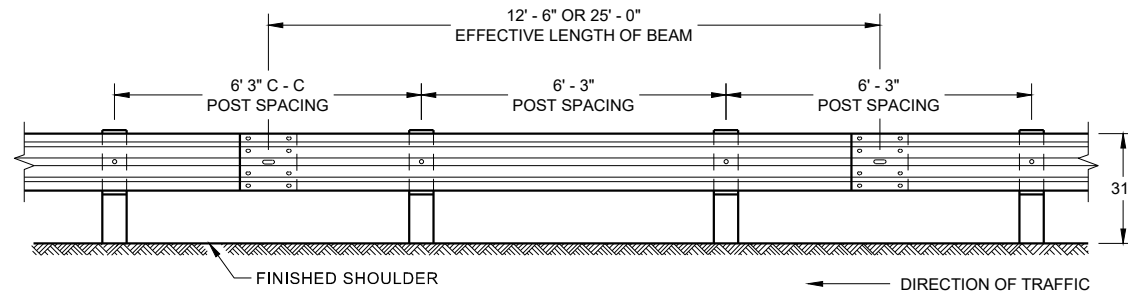
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 12/18/08 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

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

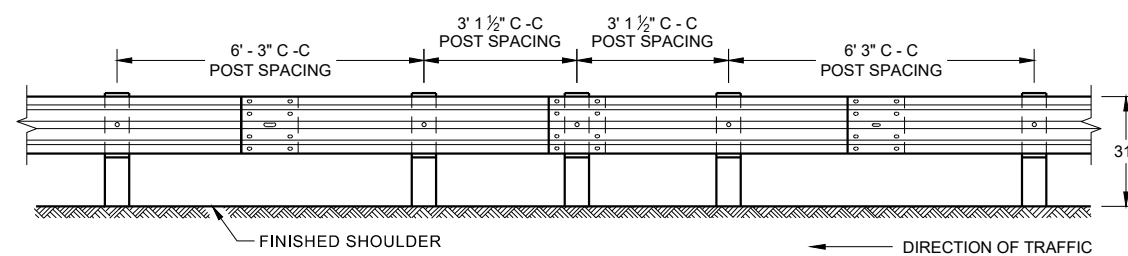


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

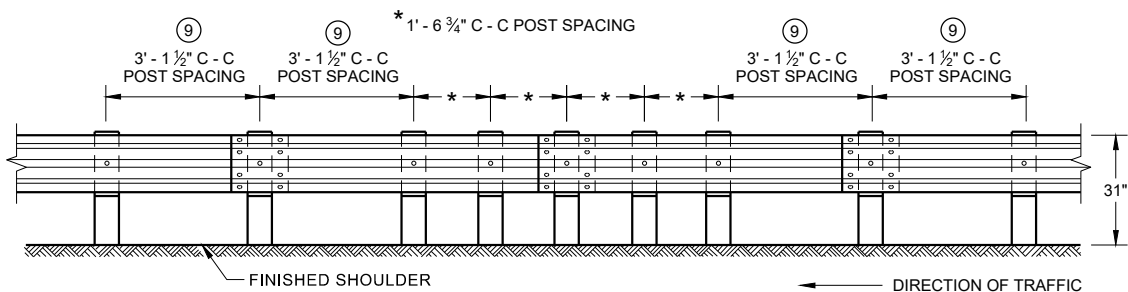
STATE OF WISCONSIN
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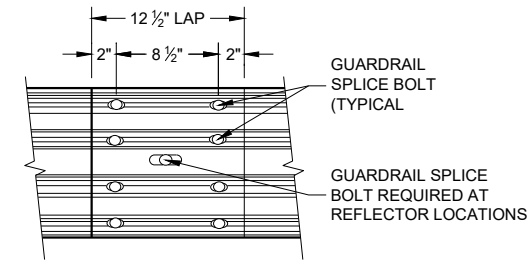
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



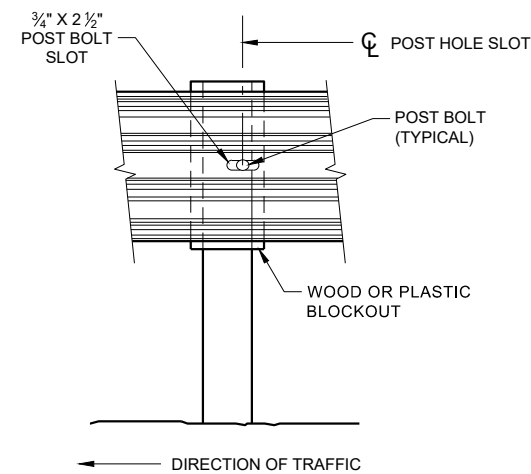
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



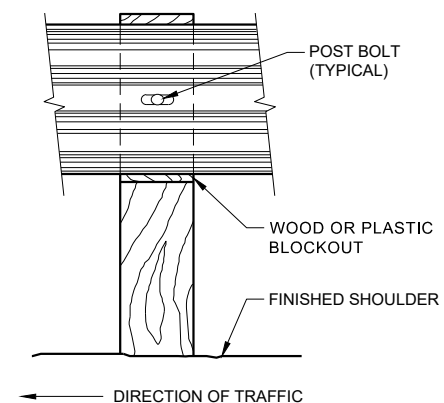
**FRONT VIEW
QUARTER POST SPACING (QS)**



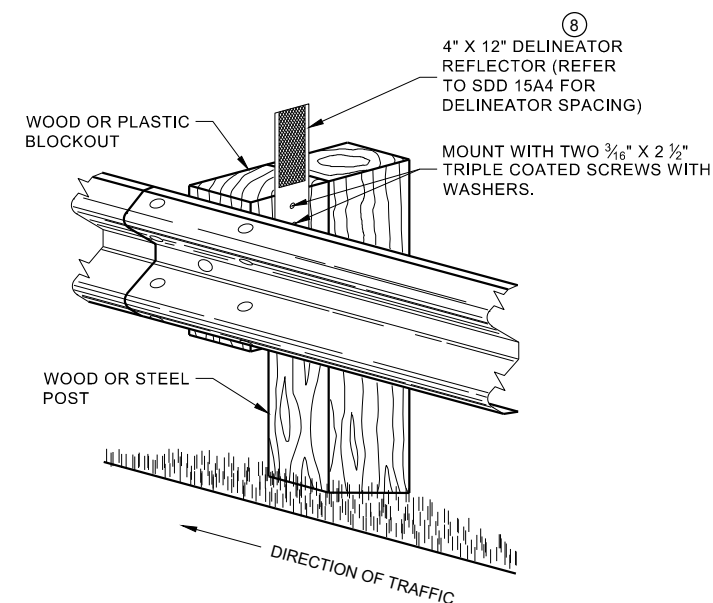
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



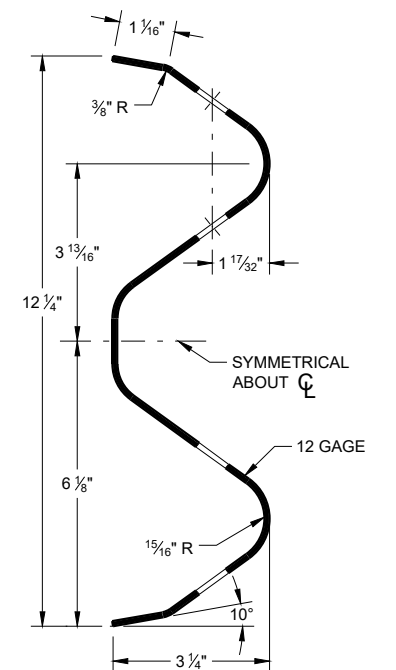
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/4" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/4" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

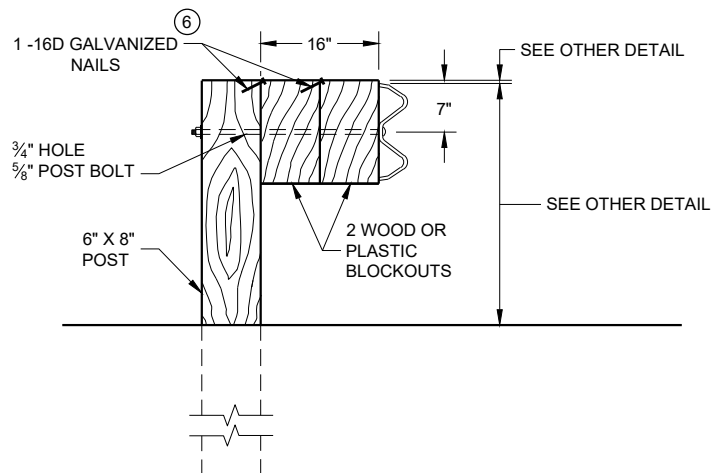
GUARD RAIL SPLICE BOLTS ARE A 3/4" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

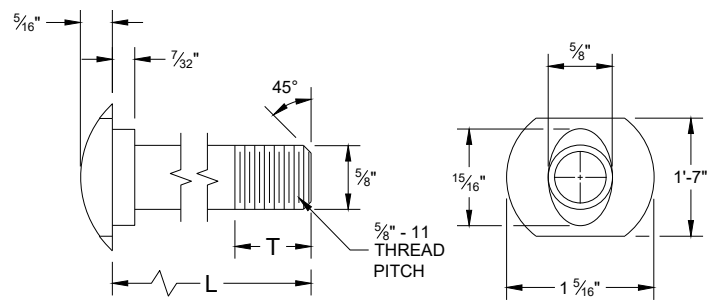
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DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

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

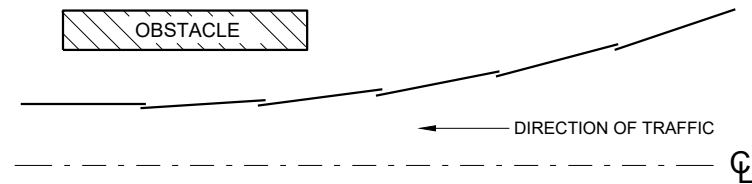
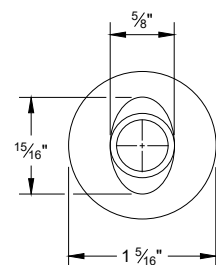
- NOTE:
1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF $\frac{3}{16}$ ".
 2. IF THE BOLT EXTENDS MORE THAN $\frac{1}{4}$ " FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.



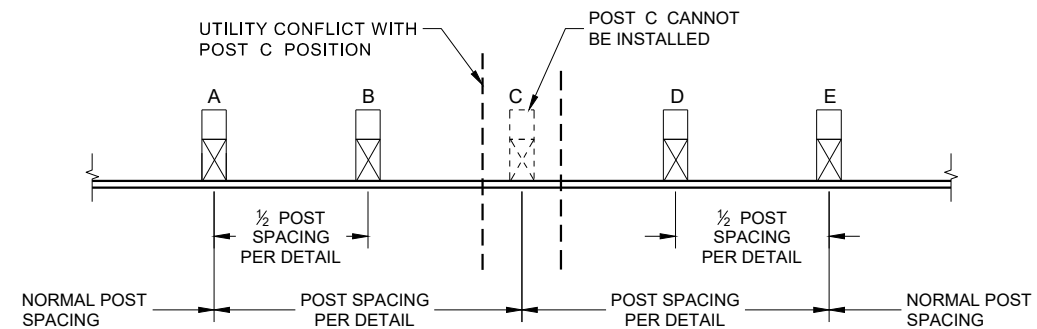
POST BOLT TABLE

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"

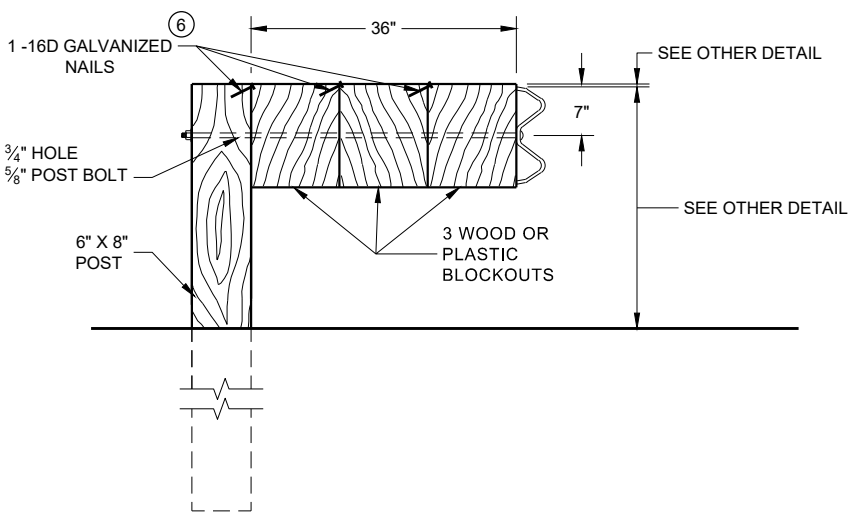
ALTERNATE BOLT HEAD



PLAN VIEW
BEAM LAPPING DETAIL

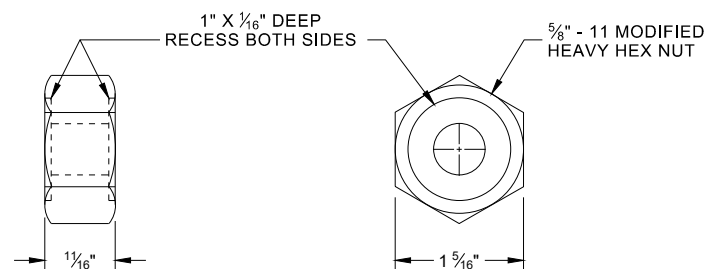


POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



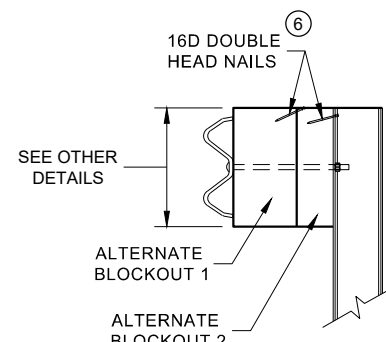
DETAIL FOR 36" BLOCKOUT DEPTH

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

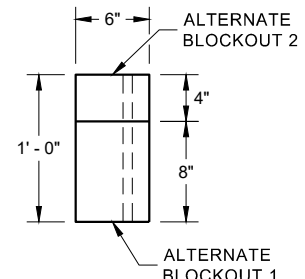


POST BOLT, SPLICE BOLT
AND RECESS NUT

- ⑥ WHEN USING STEEL POST AD 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.



SIDE VIEW

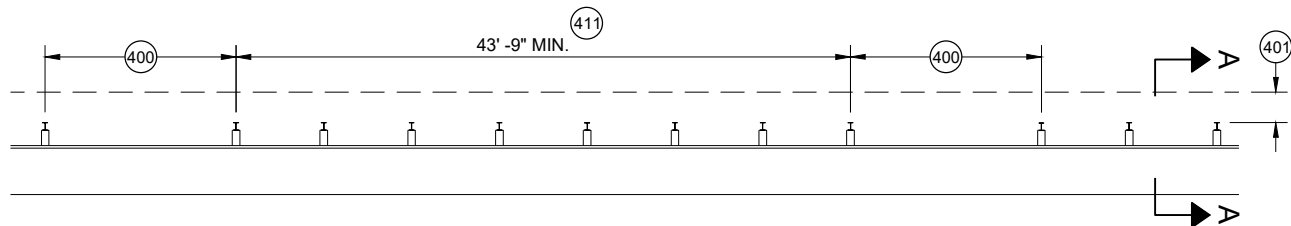


PLAN VIEW

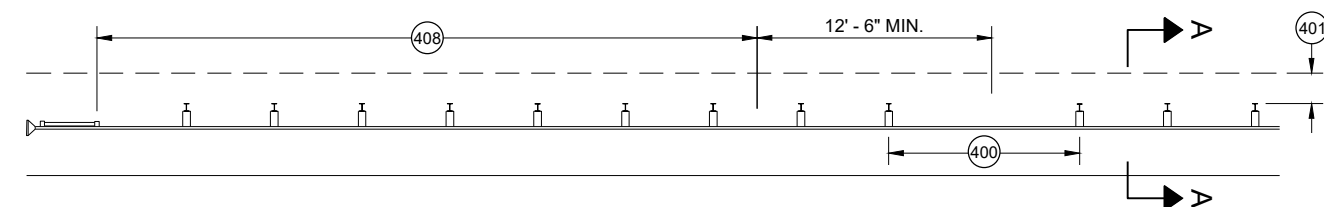
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

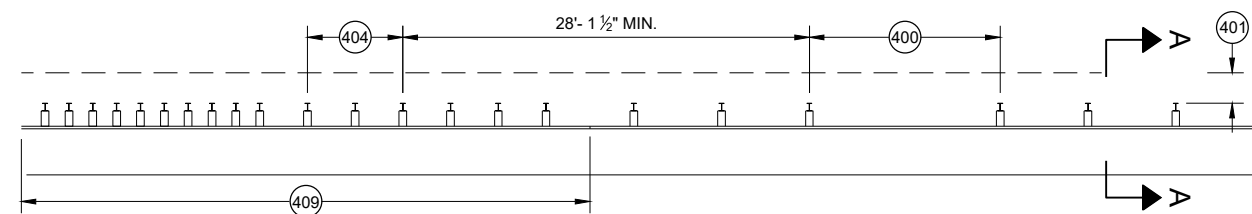
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DEPARTMENT OF TRANSPORTATION



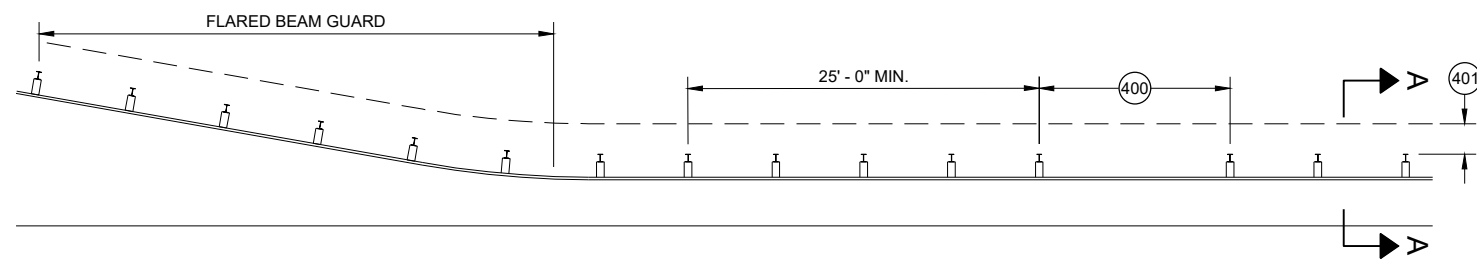
MISSING POST IN MGS GUARDRAIL



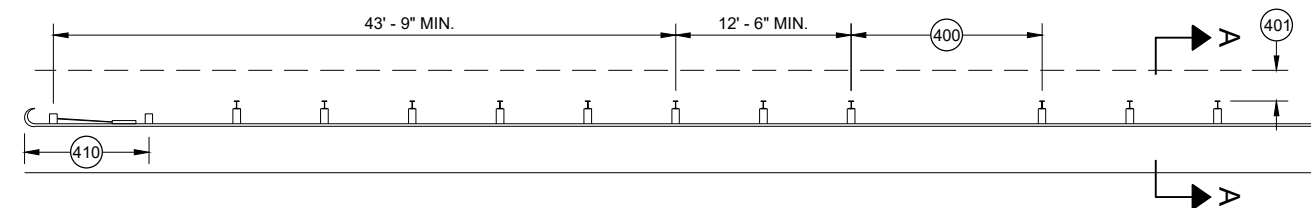
MISSING POST IN MGS GUARDRAIL NEAR EAT



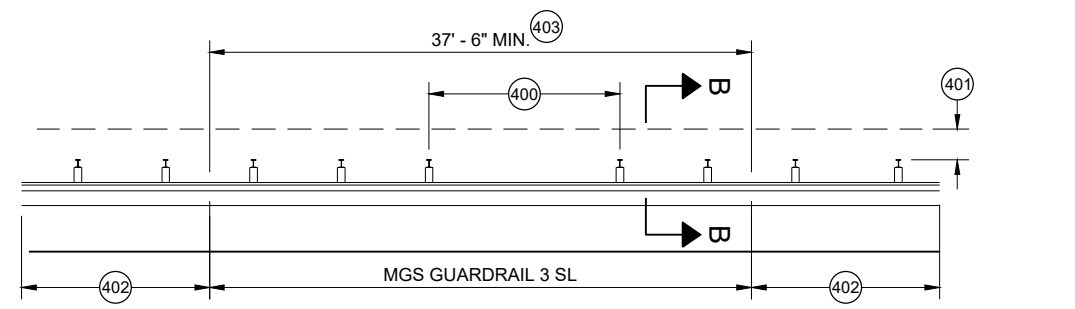
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

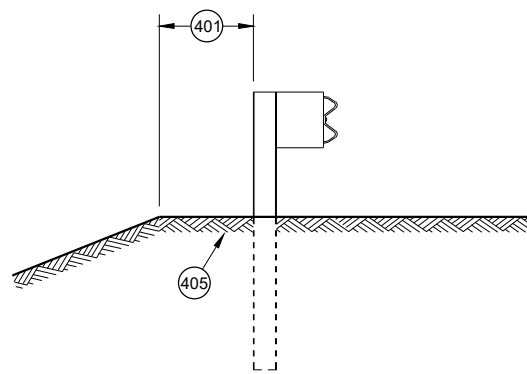


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

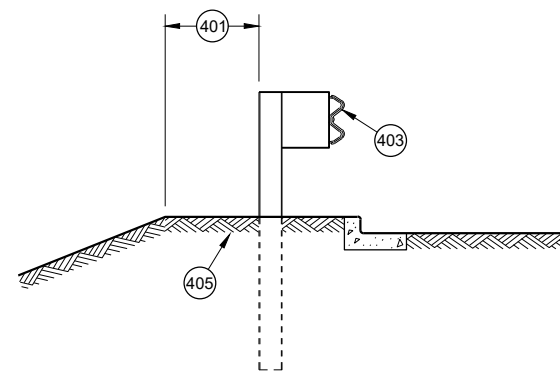


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

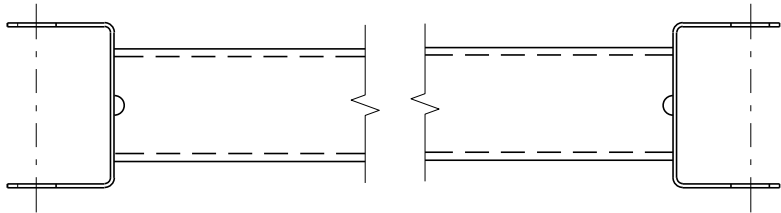
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

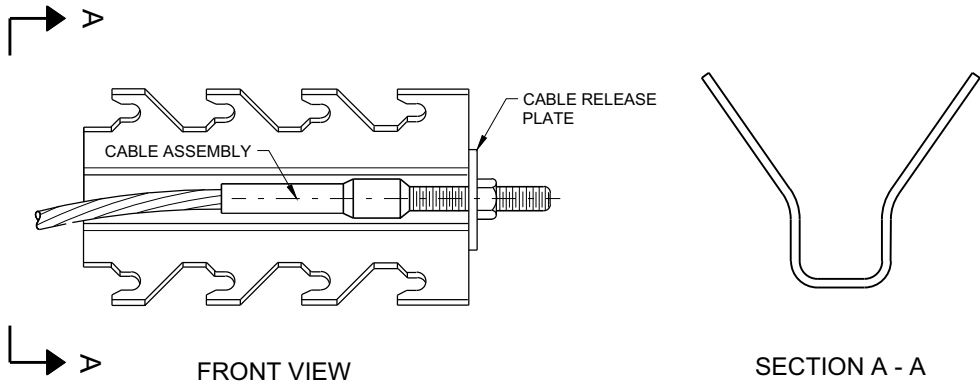


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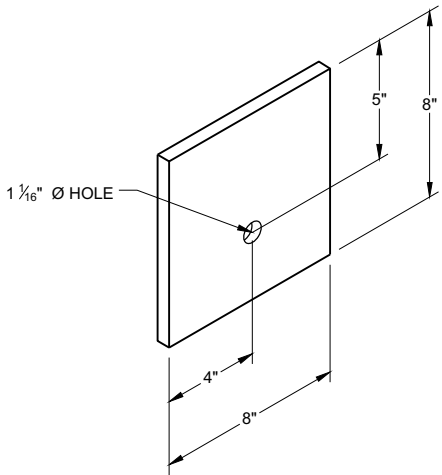


GENERIC GROUND STRUT⁹ ^E

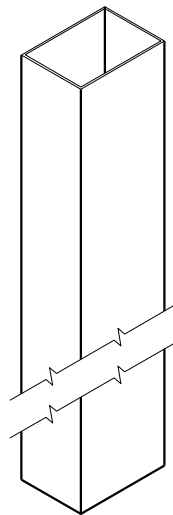
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED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



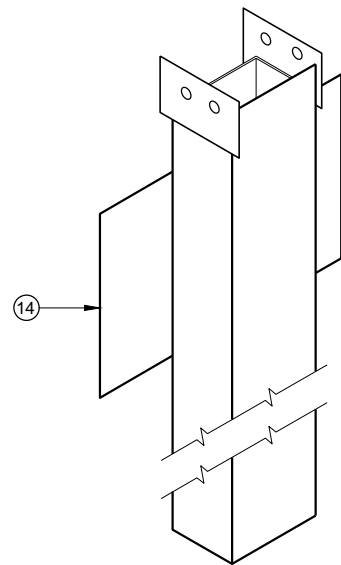
GENERIC ANCHOR CABLE BOX⁹ ^E



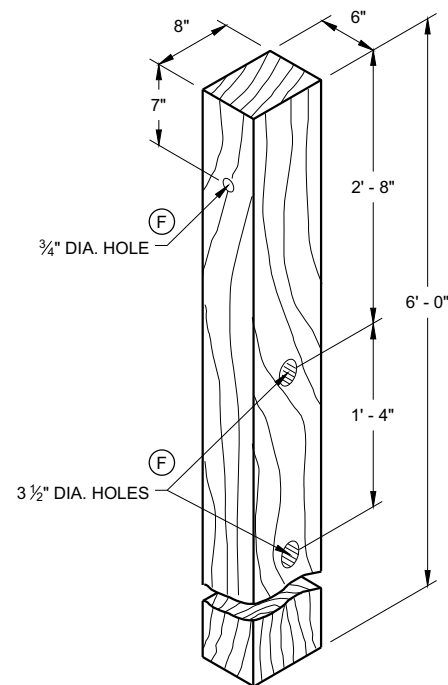
BEARING PLATE⁶ ^E



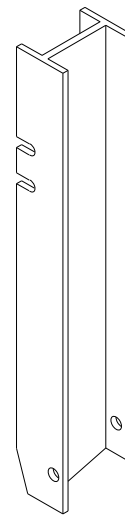
UPPER POST NO. 1^{(1) (E)}



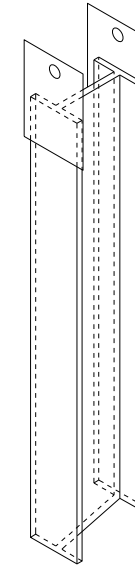
LOWER POST NO. 1^{(2) (E)}



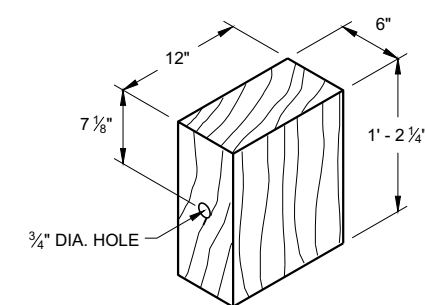
WOOD CRT POST^{(3) (E)}
POSTS NUMBER 3-9



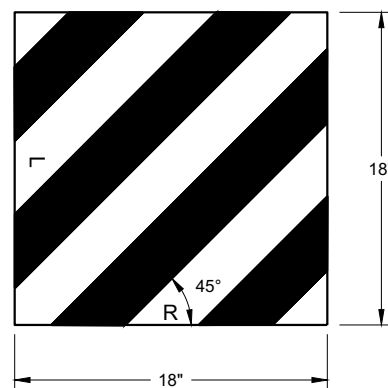
UPPER POST NO. 2^{(15) (E)}



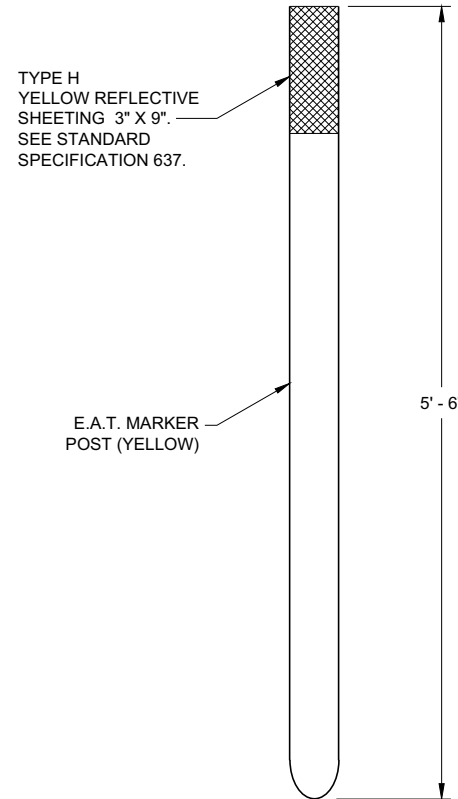
LOWER POST NO. 2^{(16) (E)}



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



REFLECTIVE SHEETING DETAIL^(E)

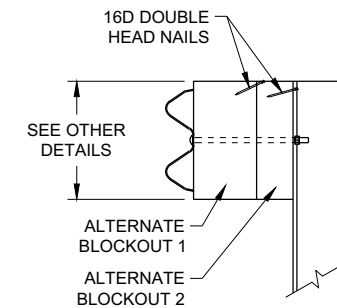


FRONT VIEW

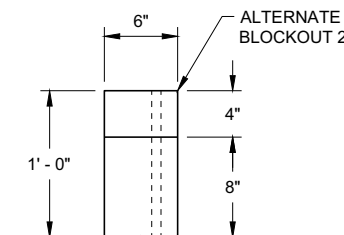


SIDE VIEW

E.A.T. MARKER POST⁽¹³⁾



SIDE VIEW



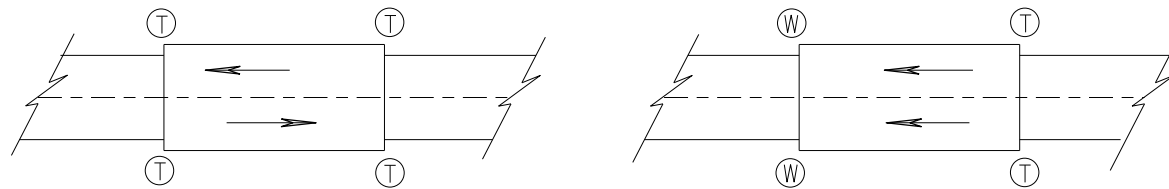
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TWO WAY TRAFFIC

ONE WAY TRAFFIC

T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

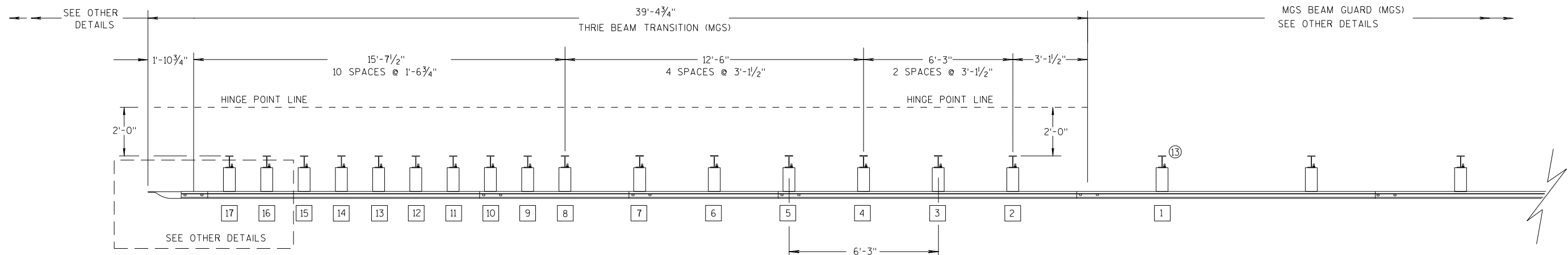
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

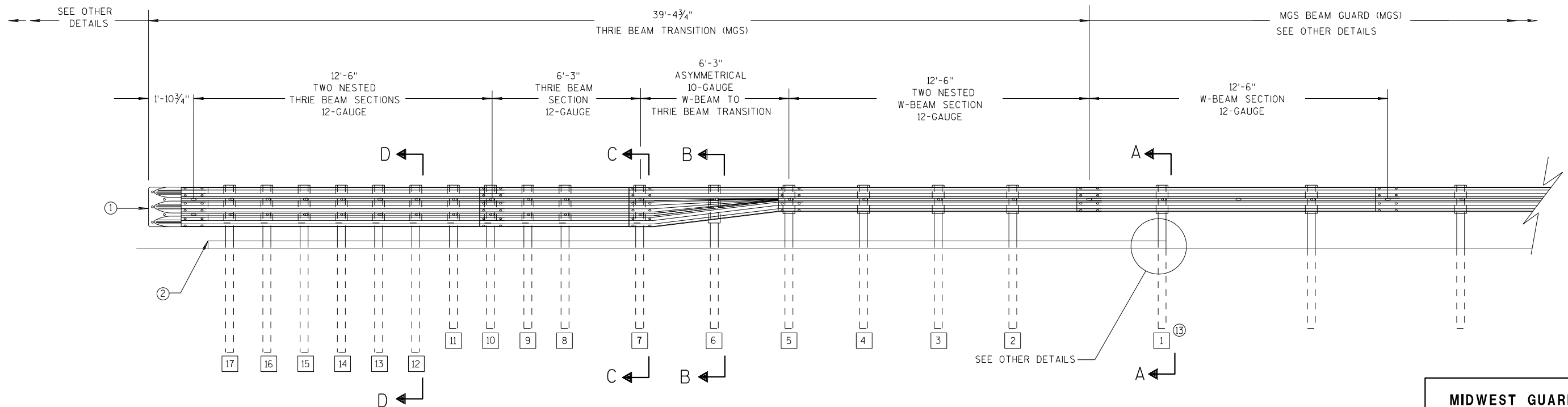
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

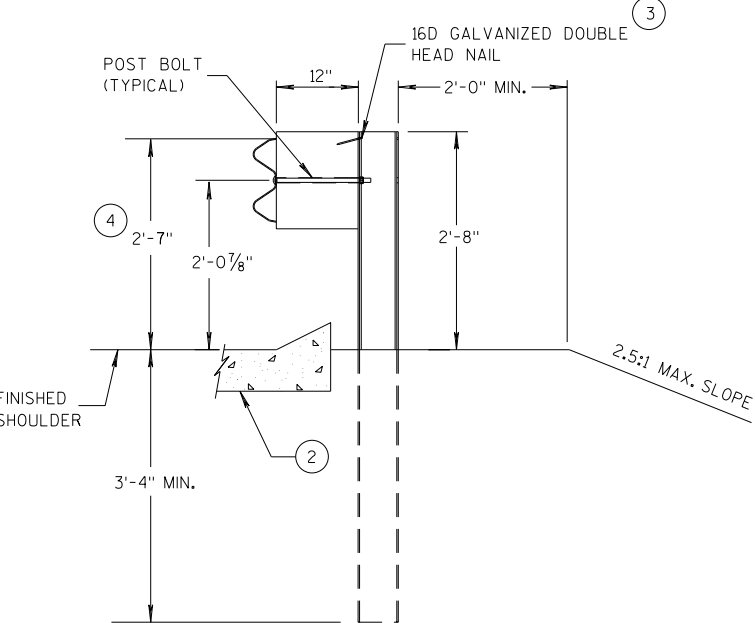
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

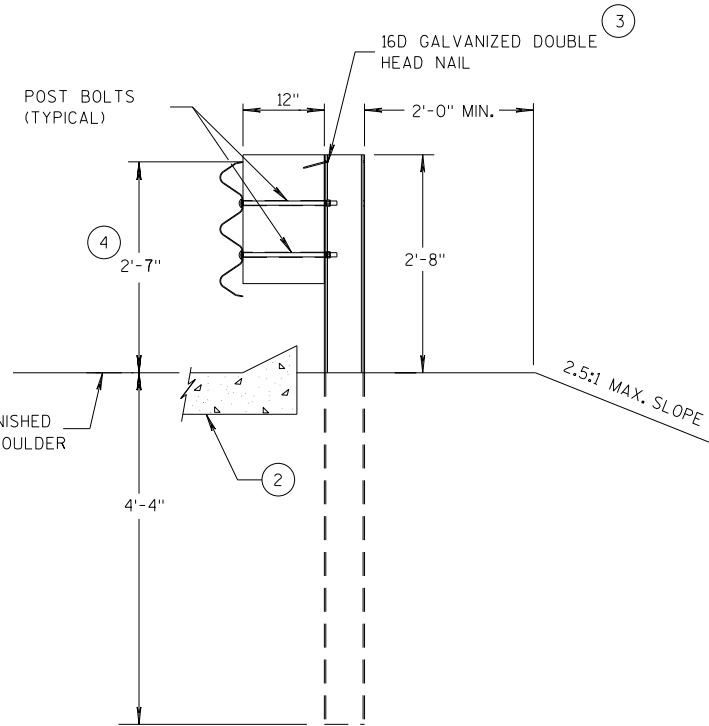
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

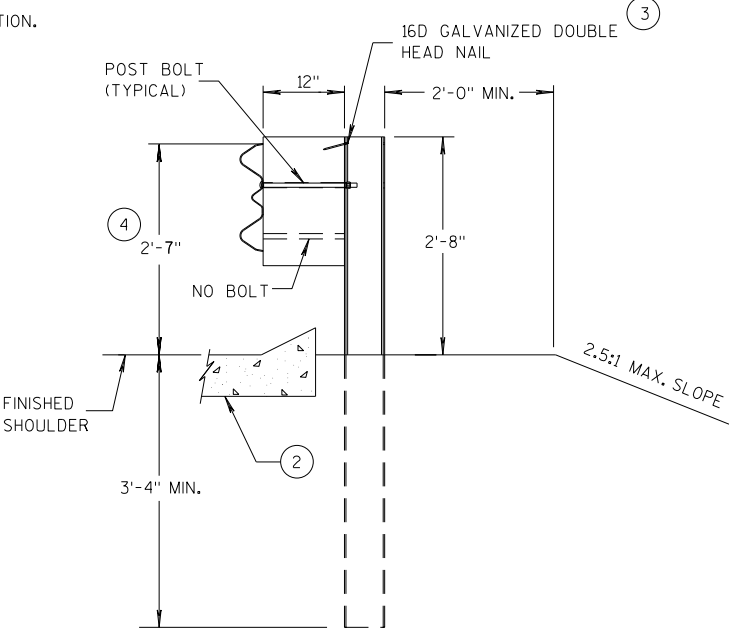
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



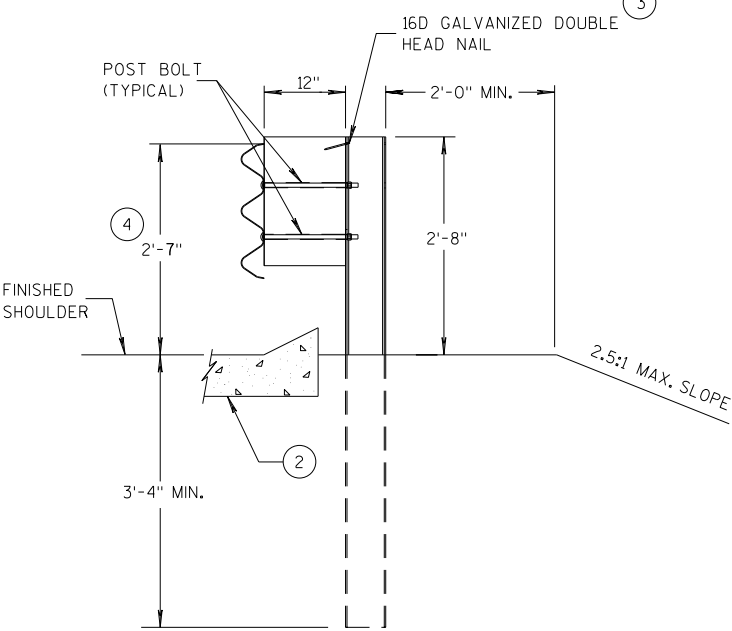
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

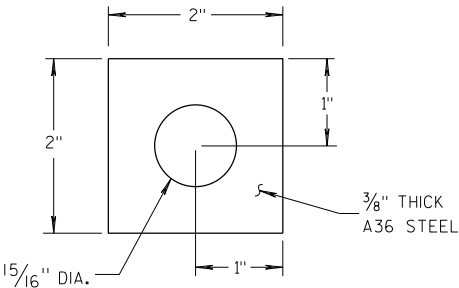
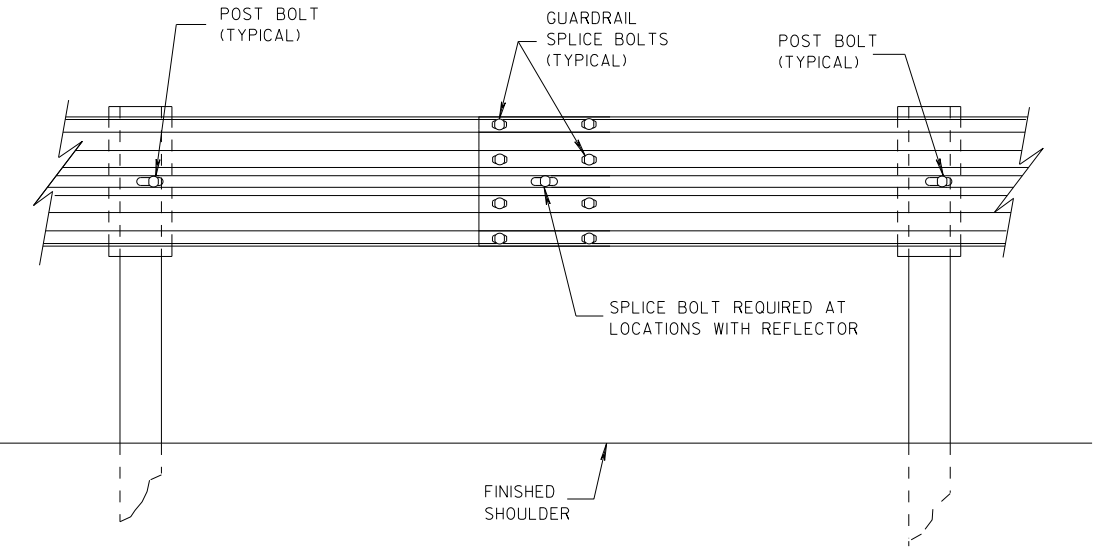
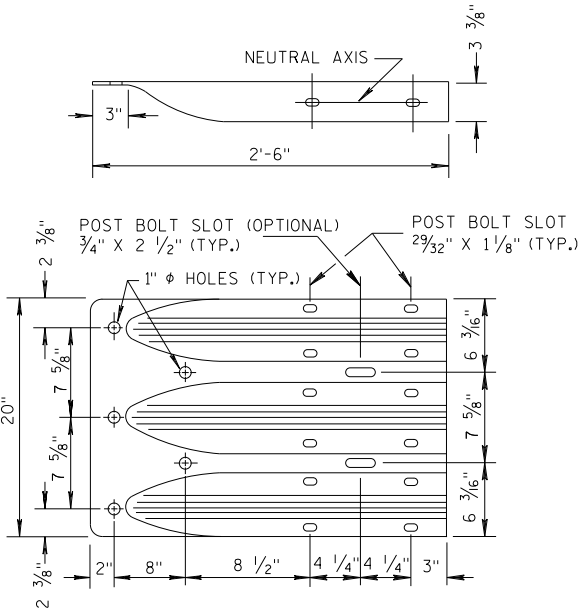


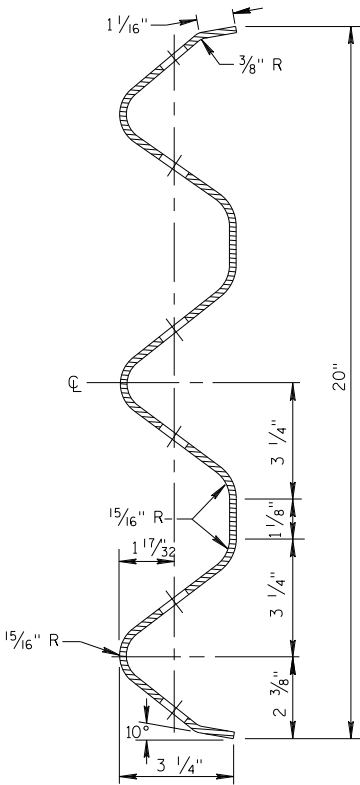
PLATE WASHER DETAIL



SPlice DETAIL



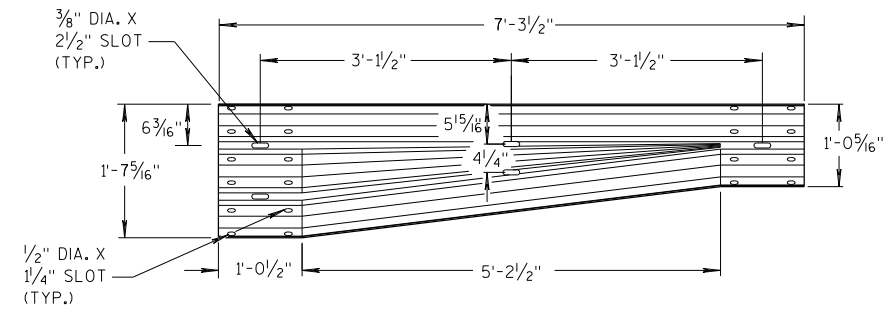
THRIE BEAM
TERMINAL CONNECTOR



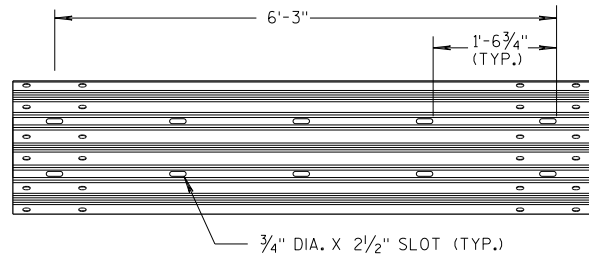
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

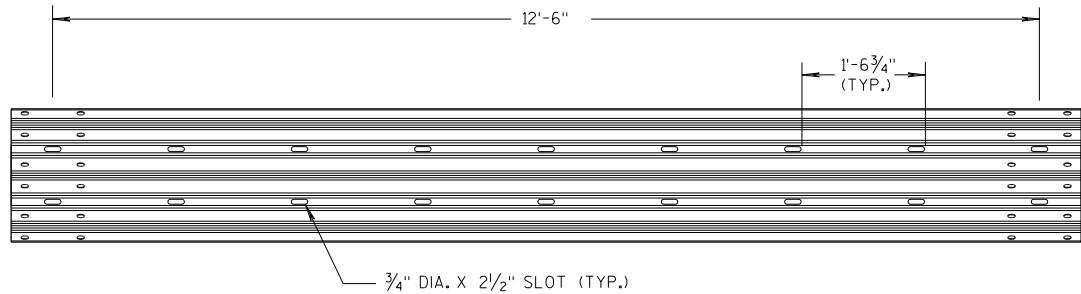
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



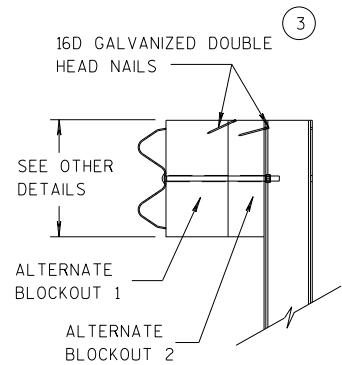
W-BEAM TO THRIE BEAM TRANSITION SECTION



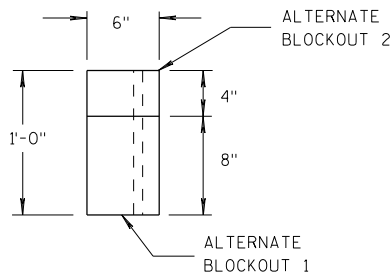
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

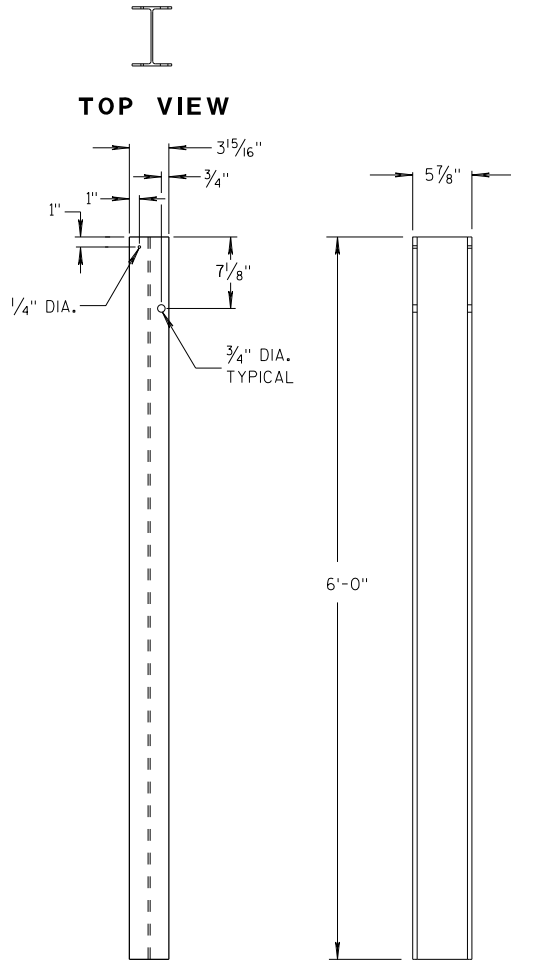


SIDE VIEW



TOP VIEW

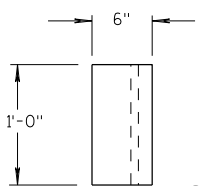
ALTERNATE WOOD BLOCKOUT DETAIL



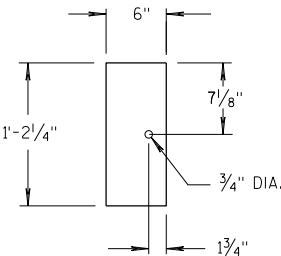
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

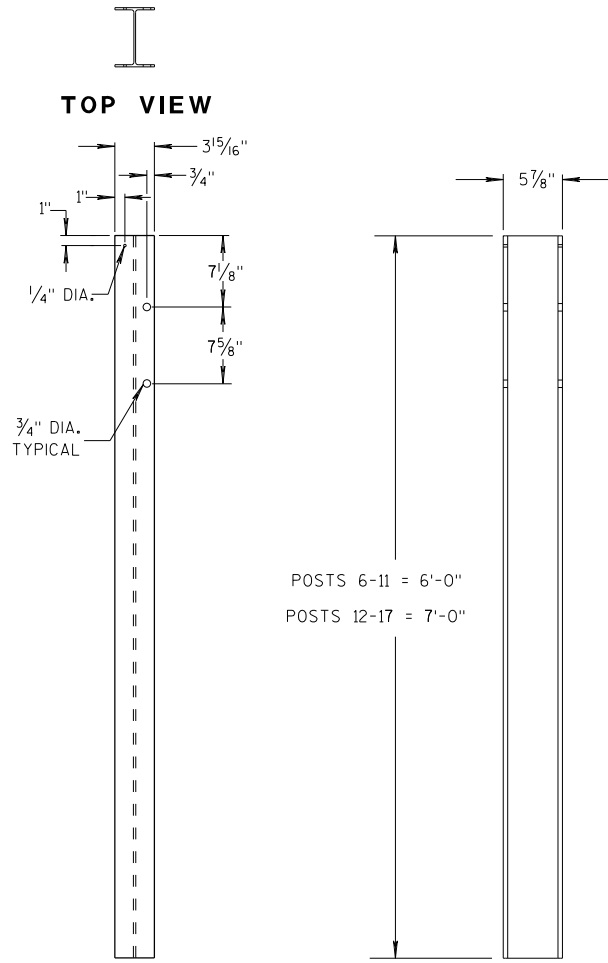


TOP VIEW



FRONT VIEW

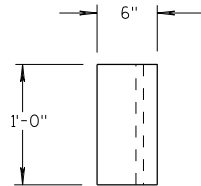
BLOCKOUT
POSTS 1-5



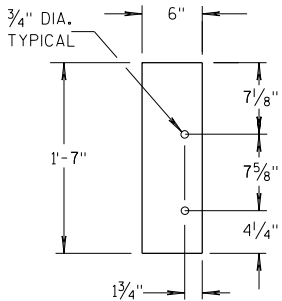
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT
POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

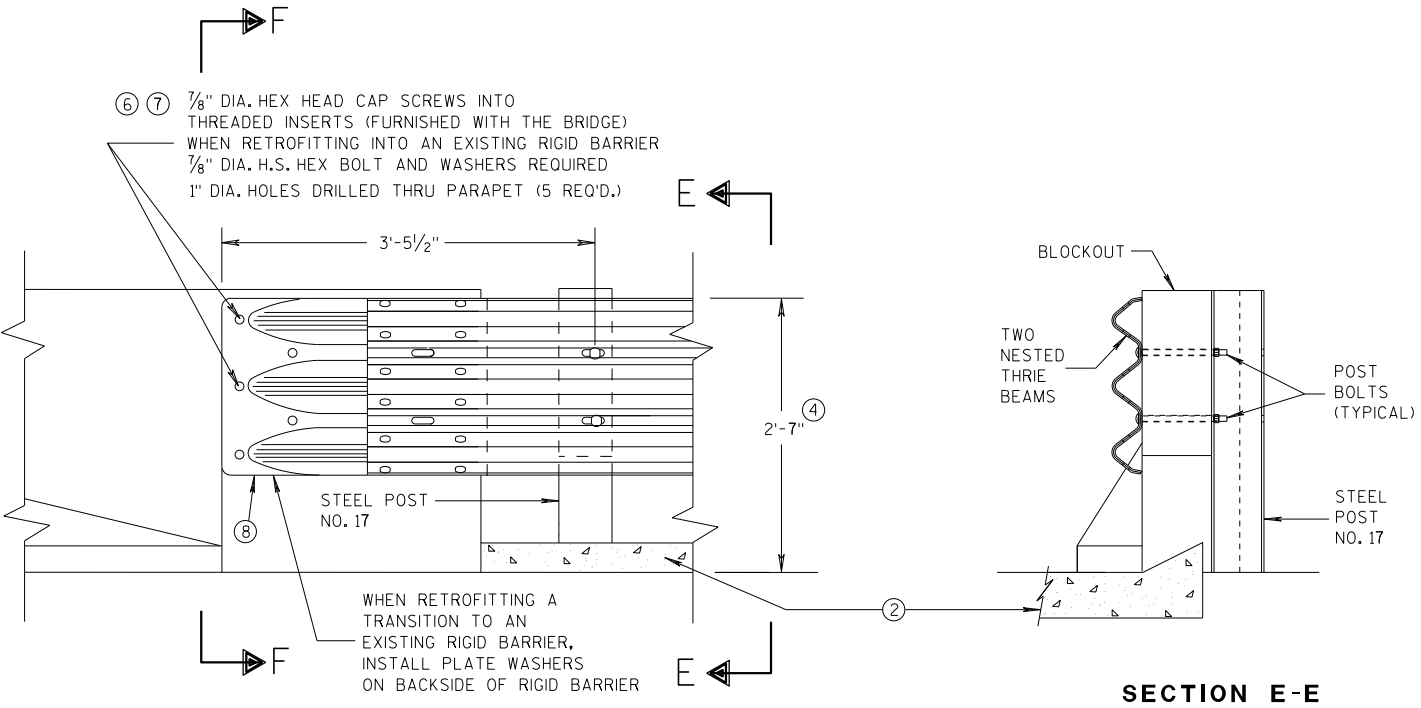
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

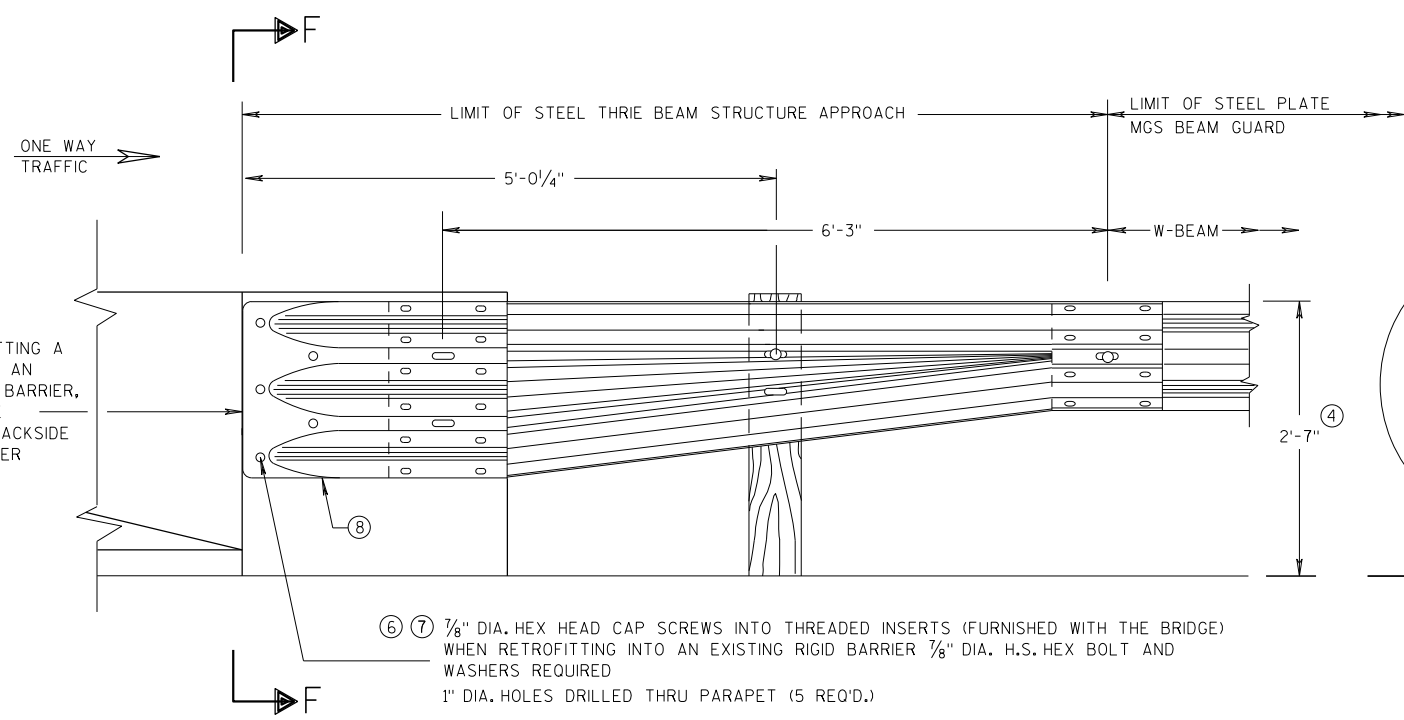
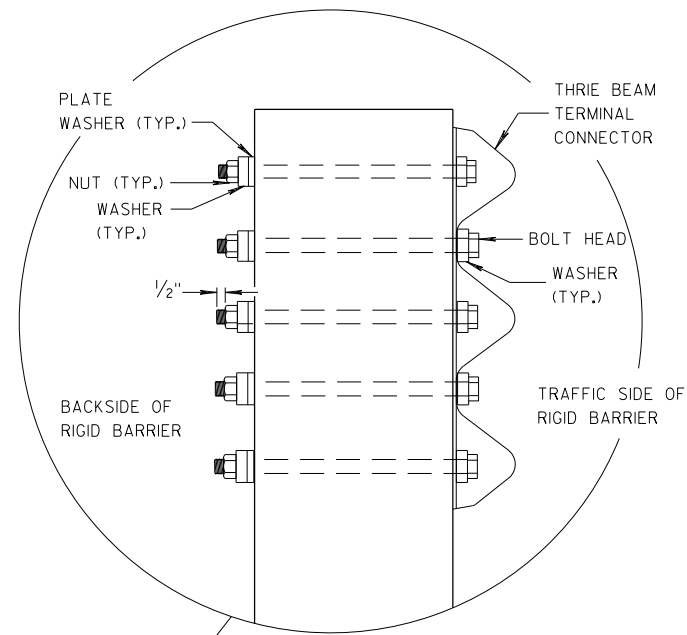
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

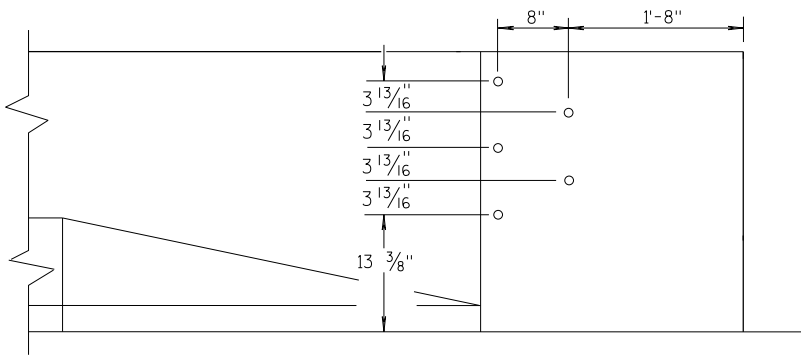


GENERAL NOTES

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



SECTION F-F



DRILL HOLE LOCATION

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

④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



6



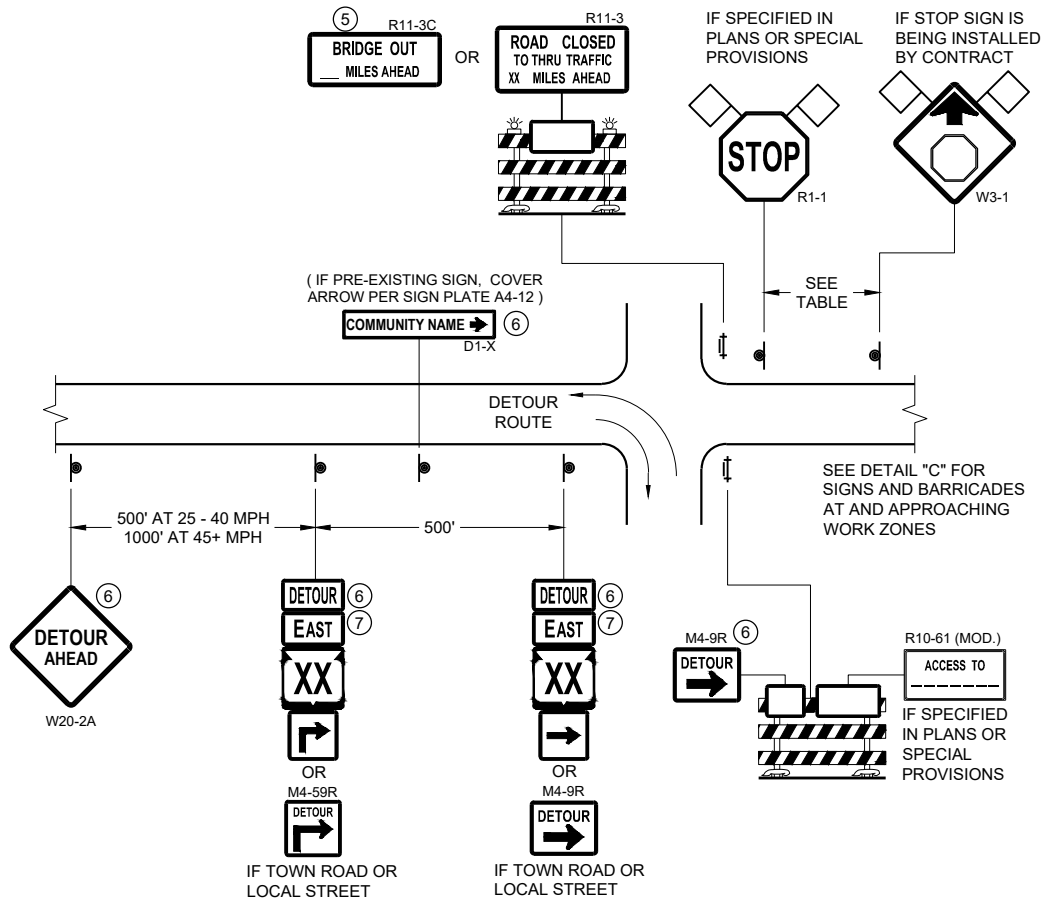
SECTION M-M



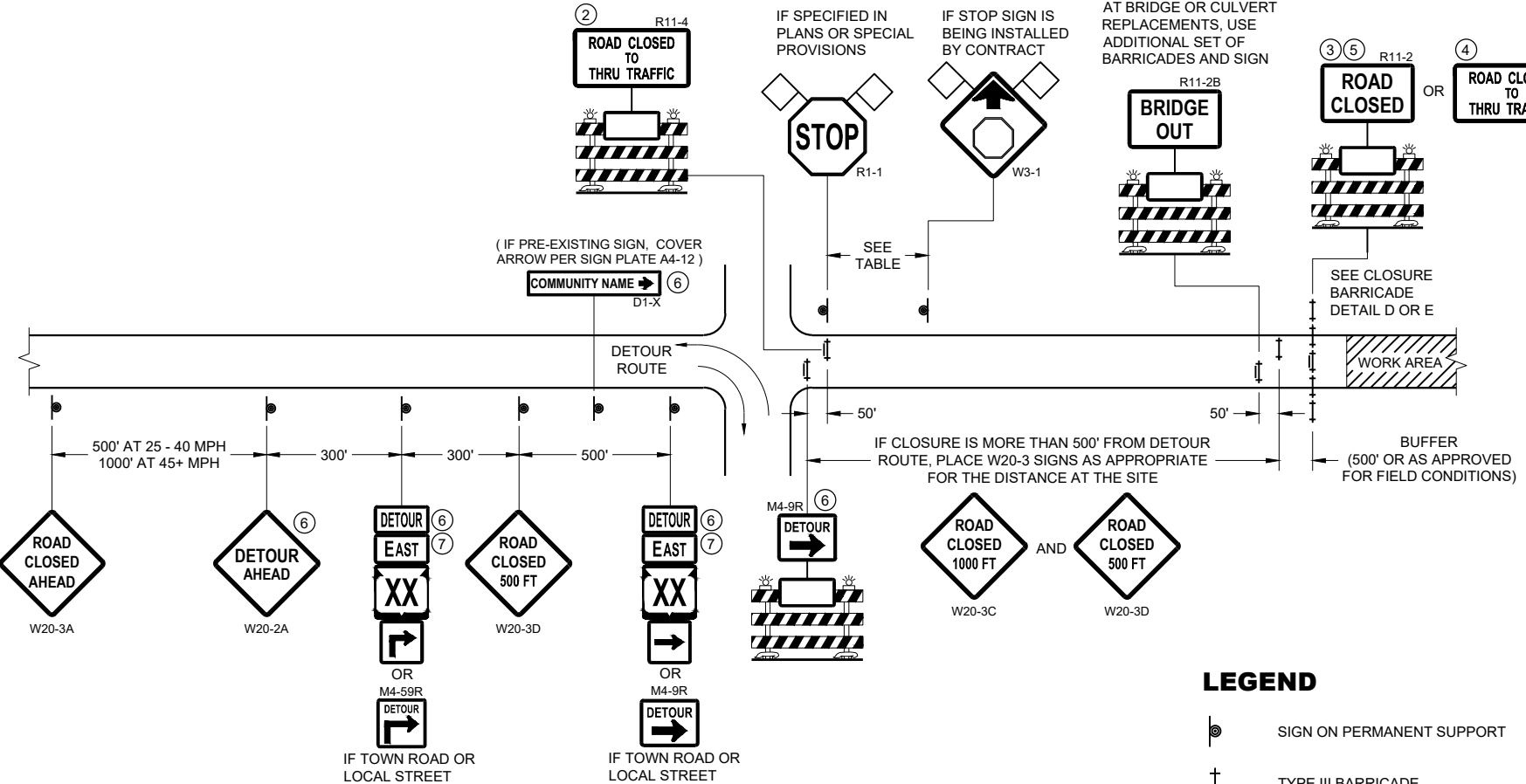
FRONT VIEW



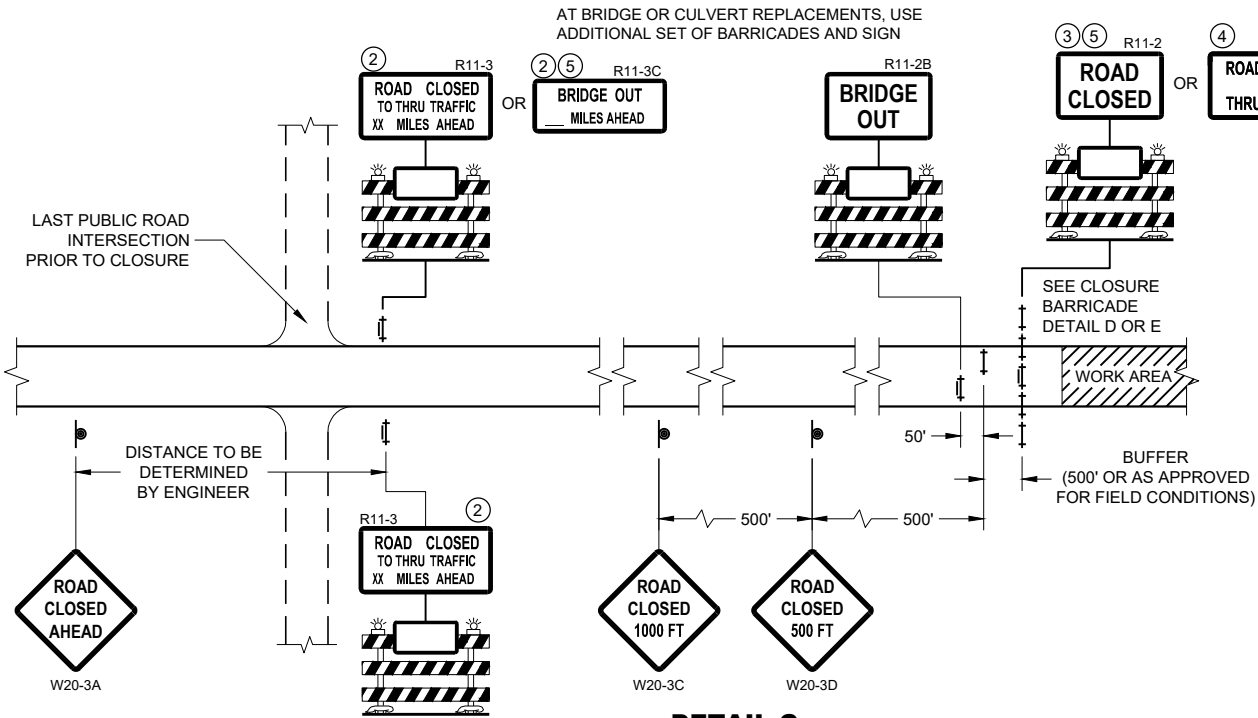
FHWA



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

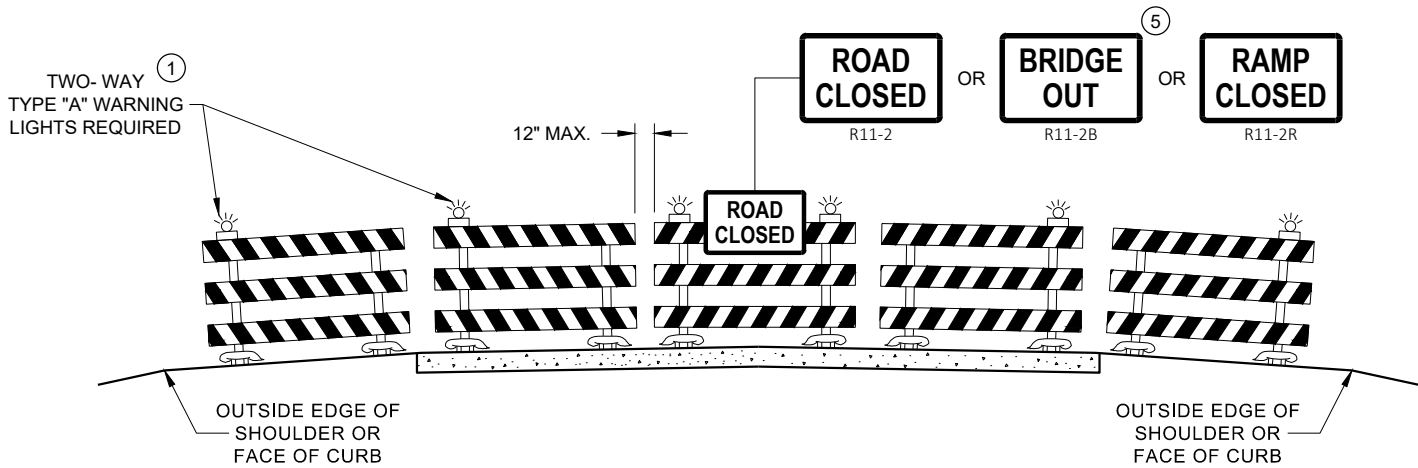
LEGEND

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

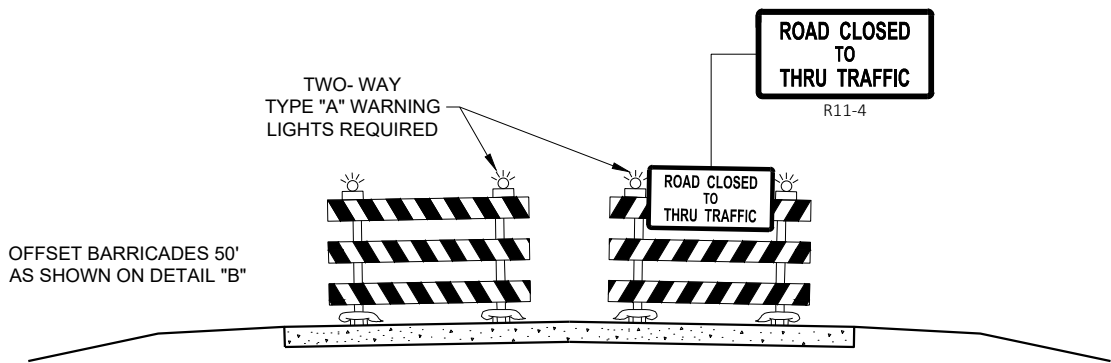
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

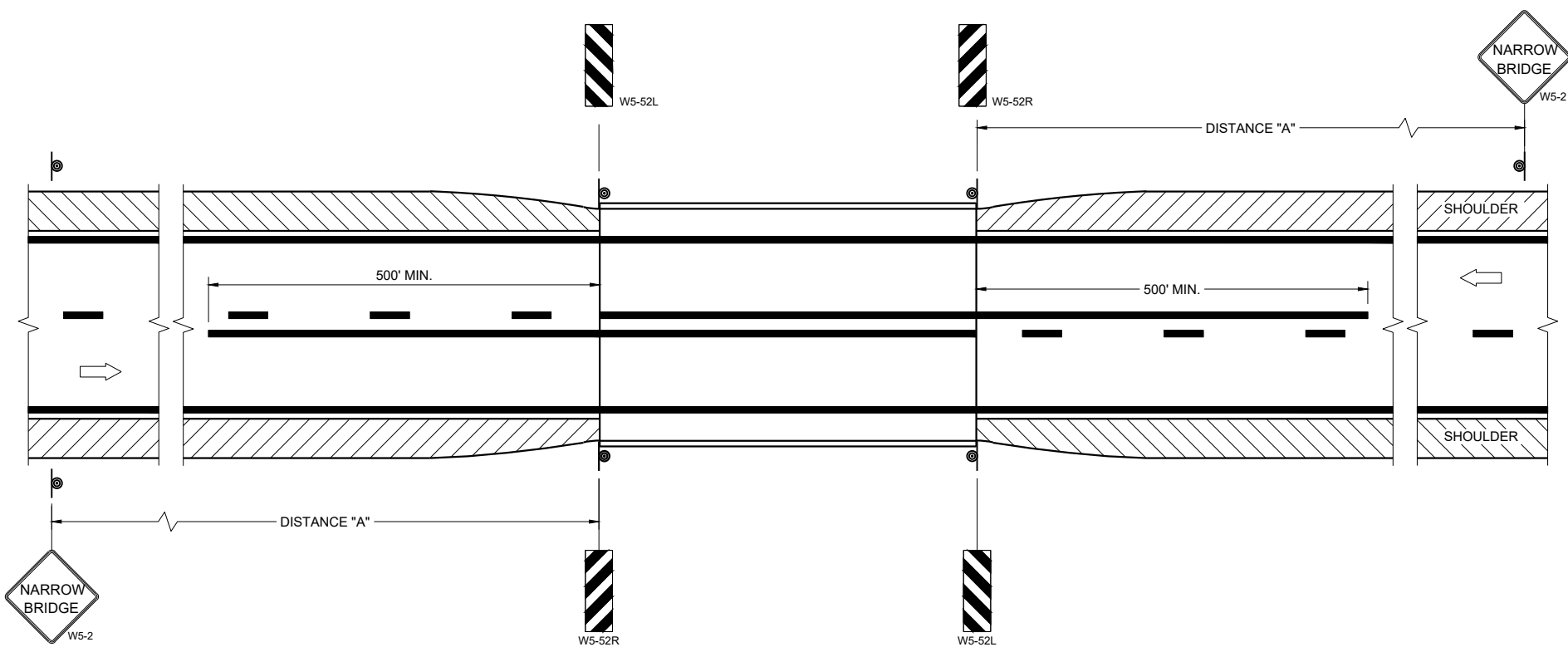
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES

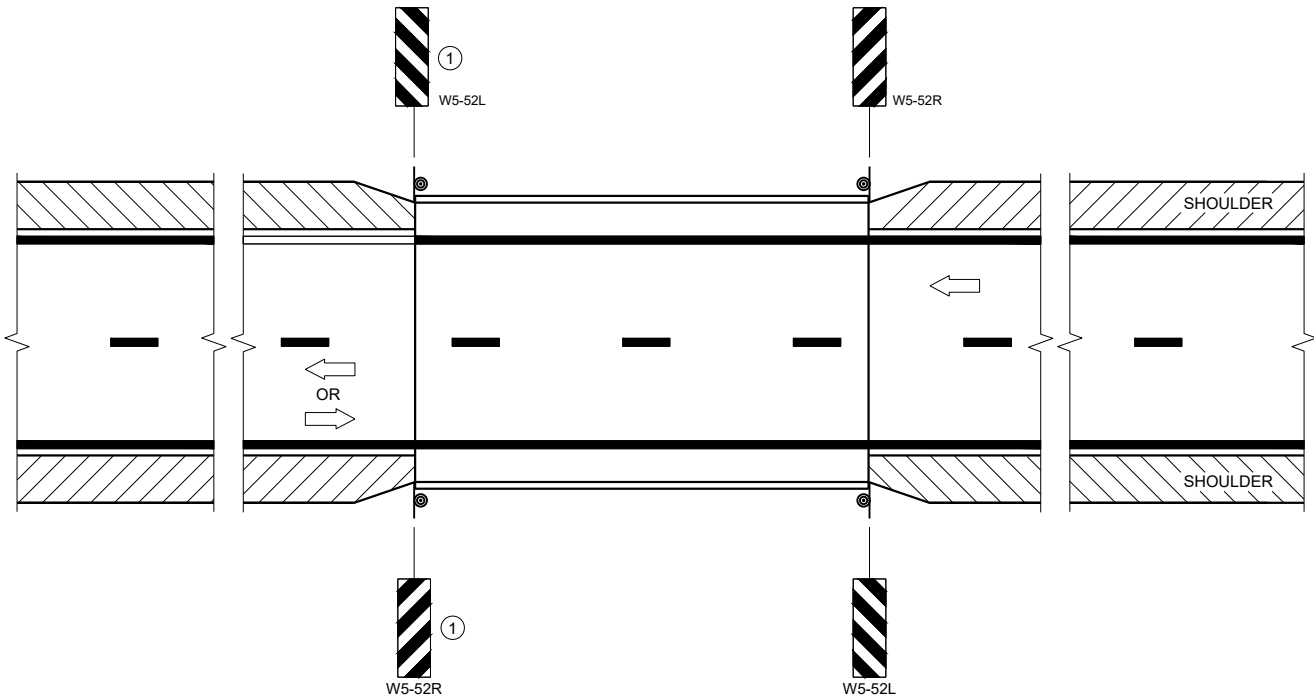
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



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



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

GENERAL NOTES

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

DISTANCE TABLE

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

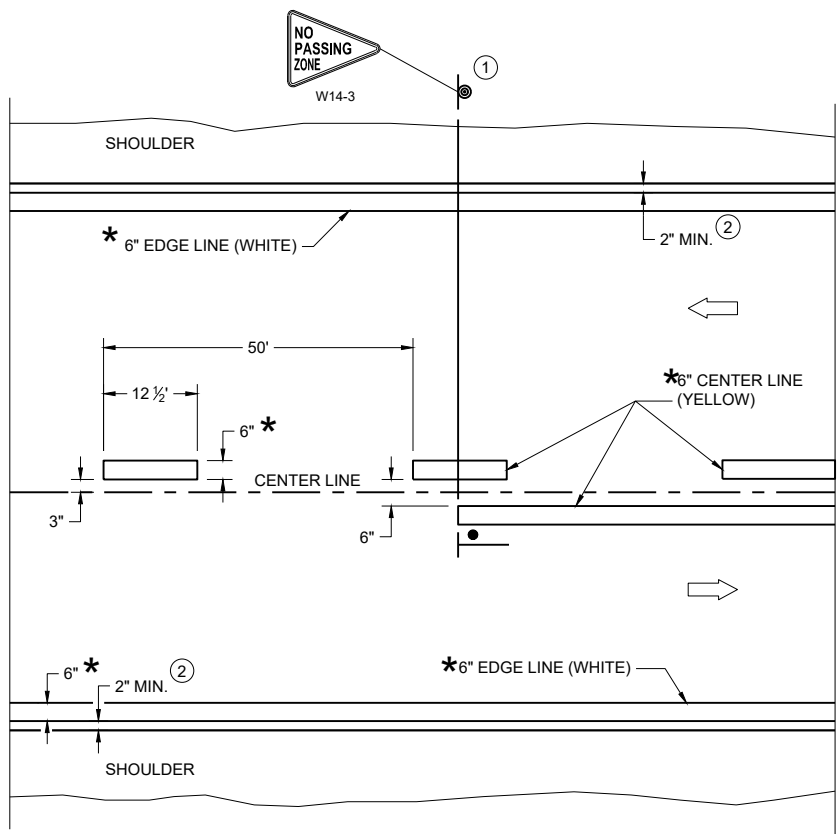
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

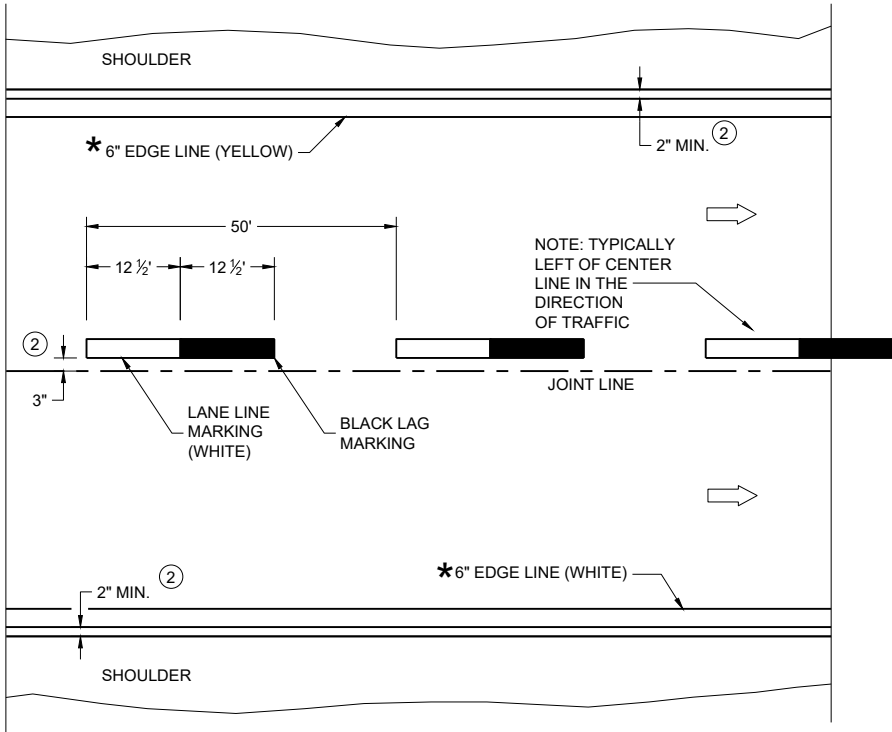
APPROVED
May 2023
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

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.

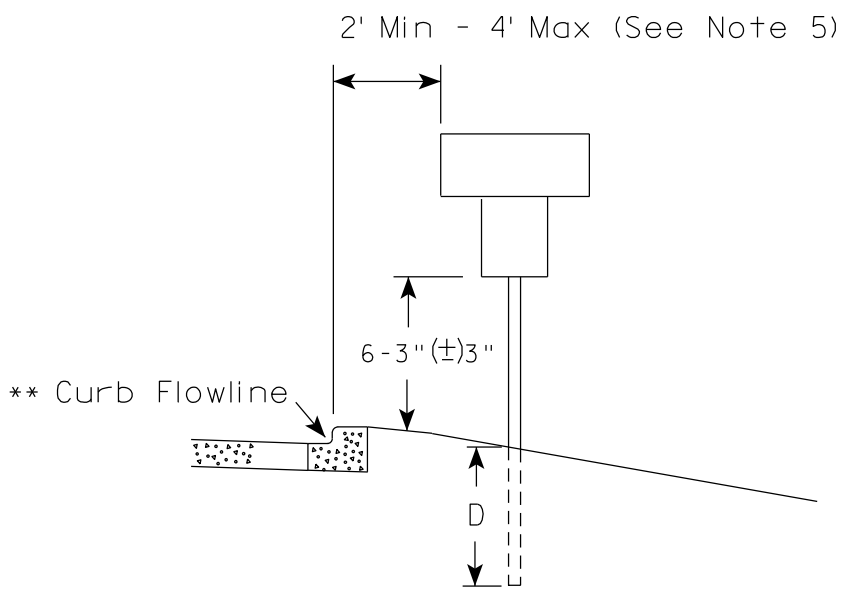
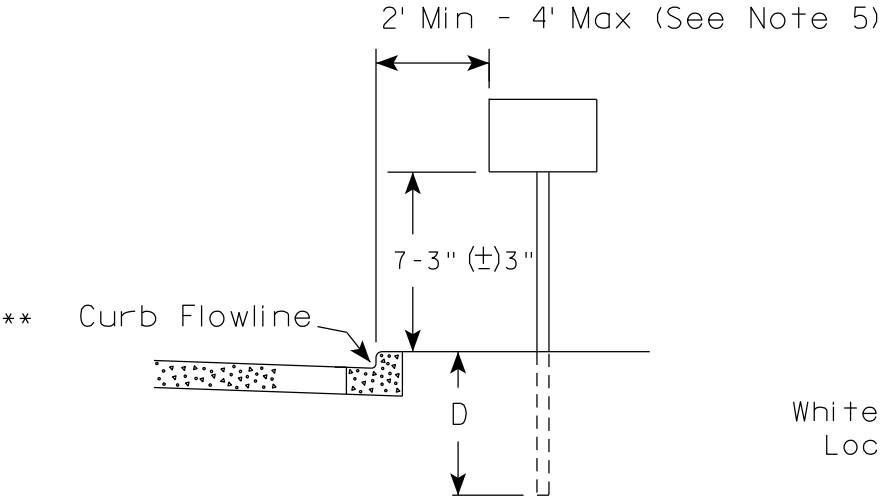
LEGEND

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

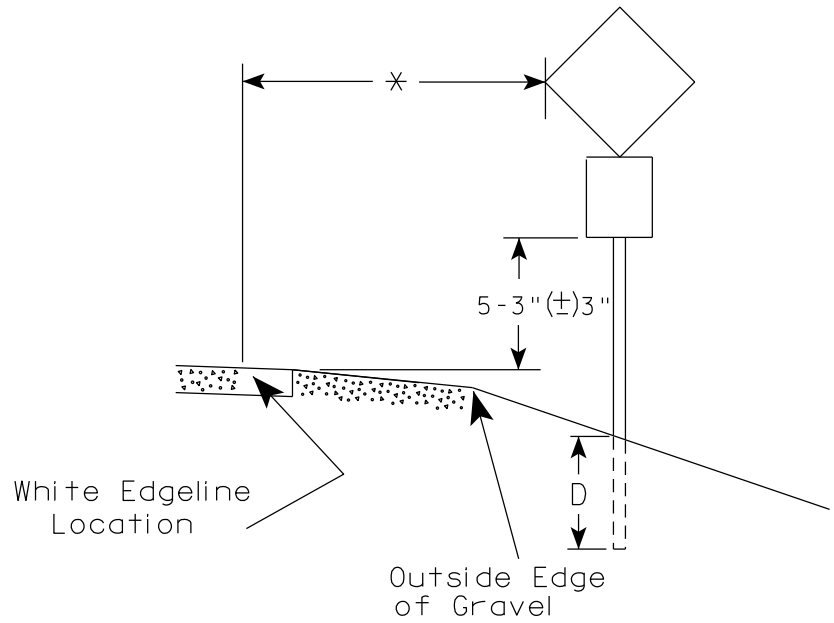
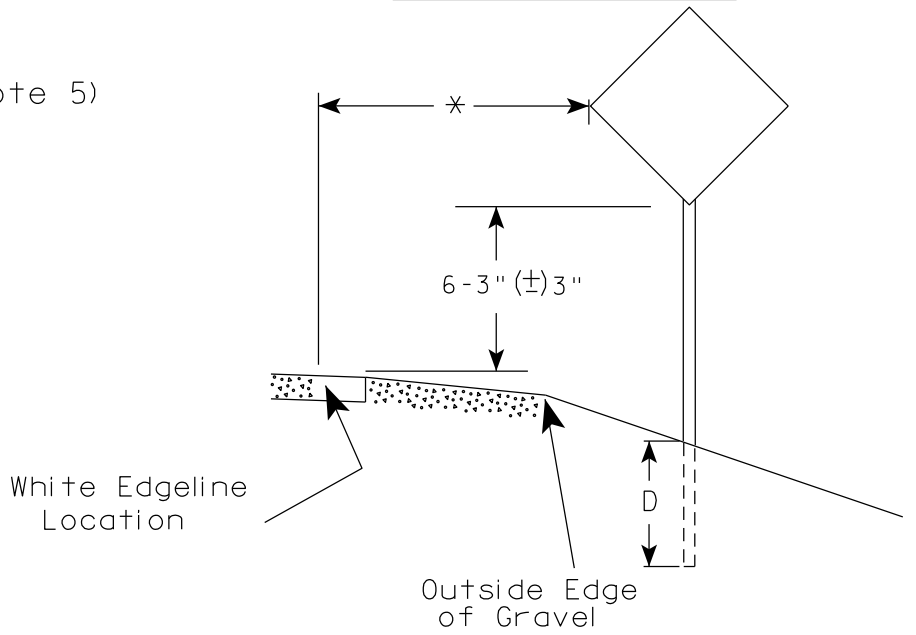
PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer

FHWA

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

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

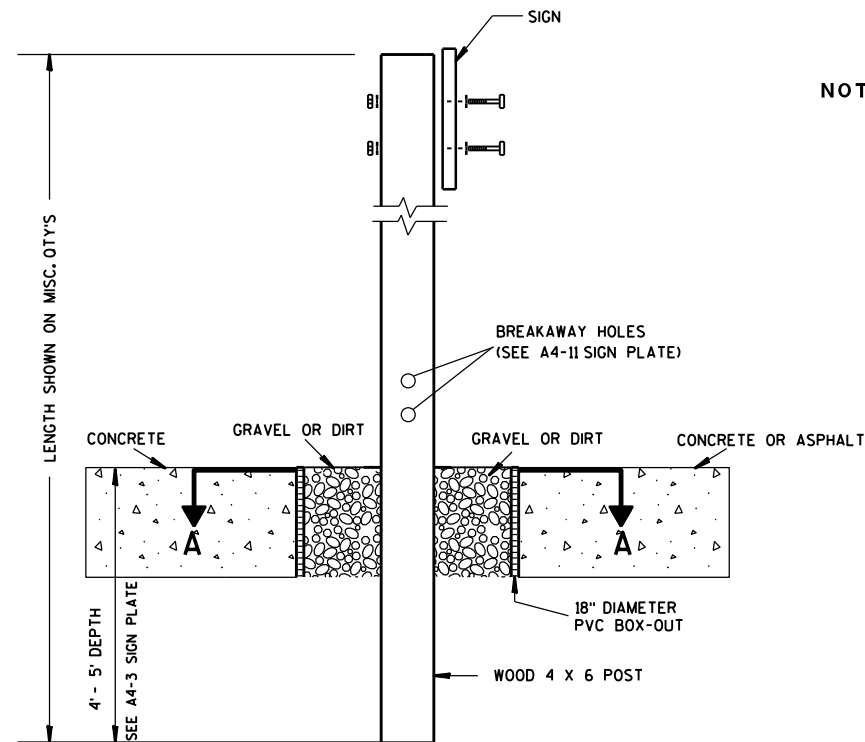
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED 
for State Traffic Engineer

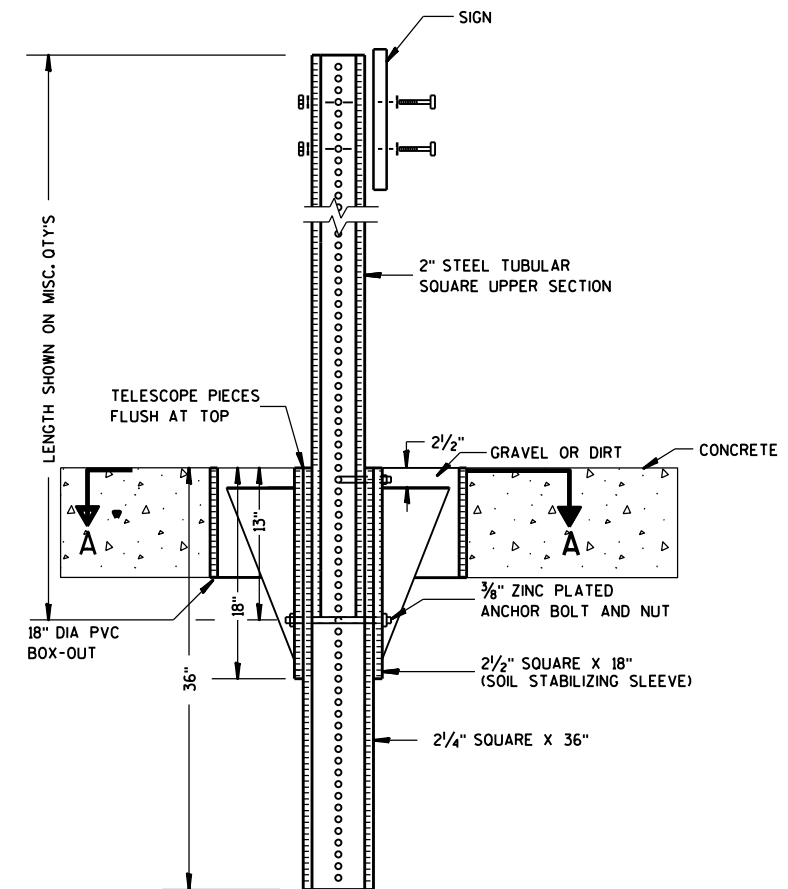
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

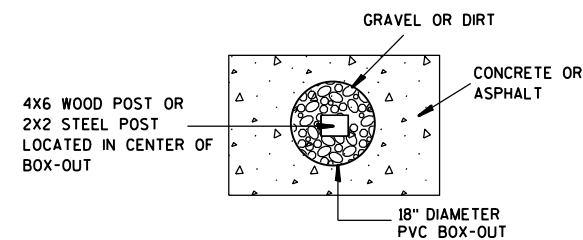
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

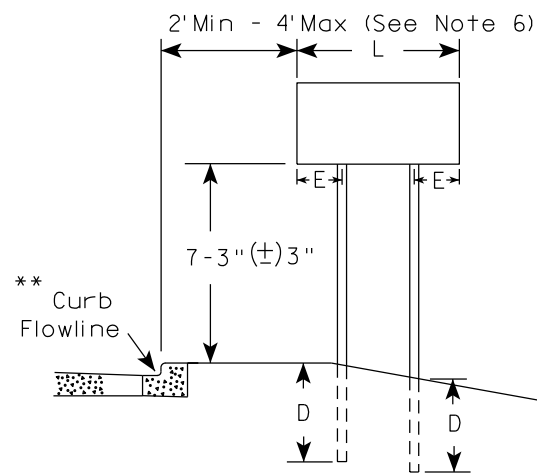
HWY:

COUNTY:

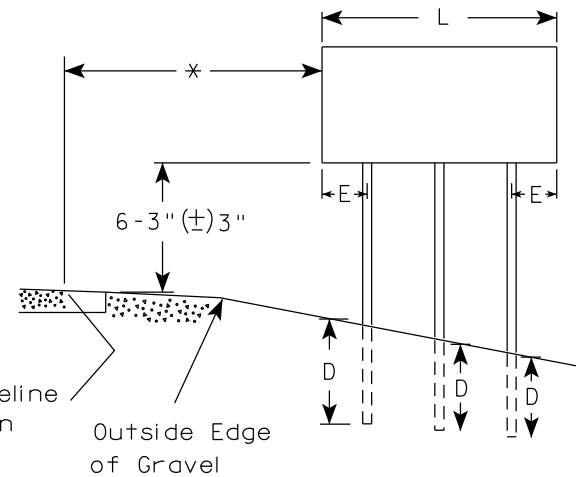
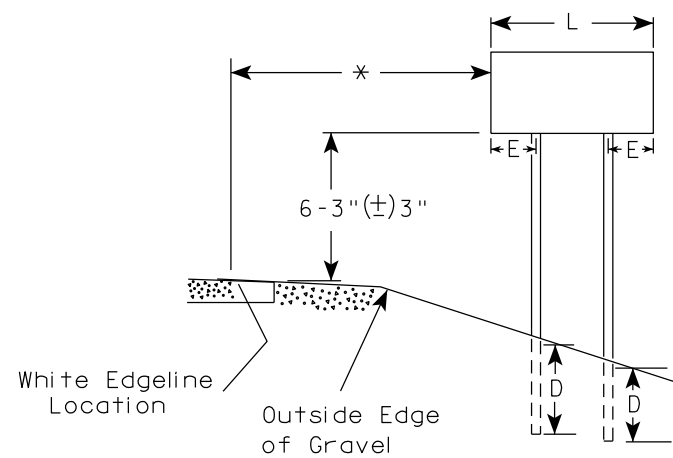
SHEET NO:

E

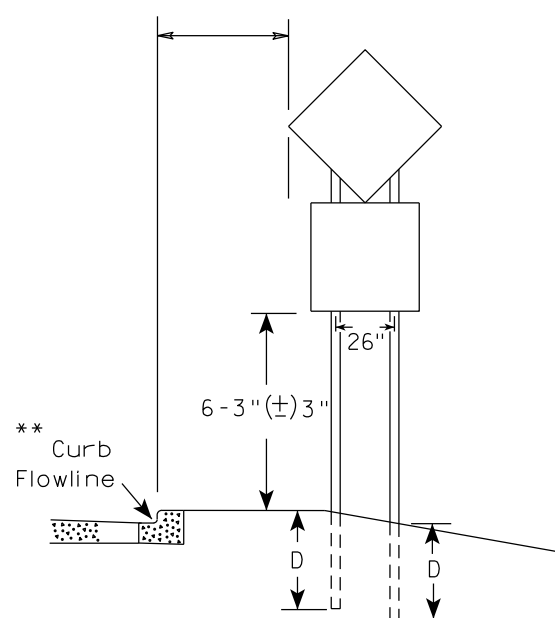
URBAN AREA



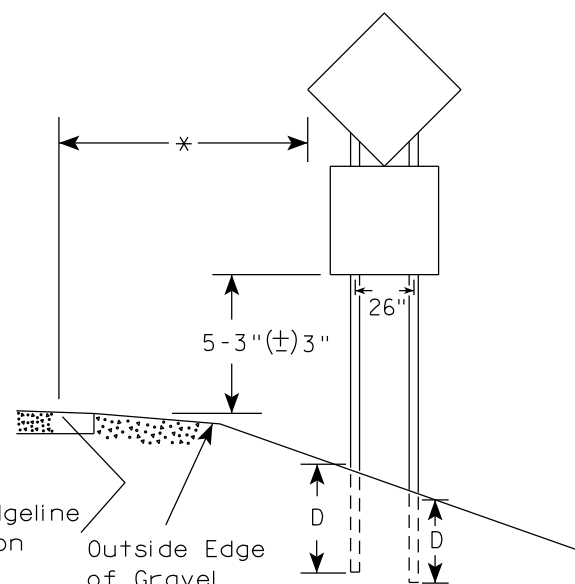
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16

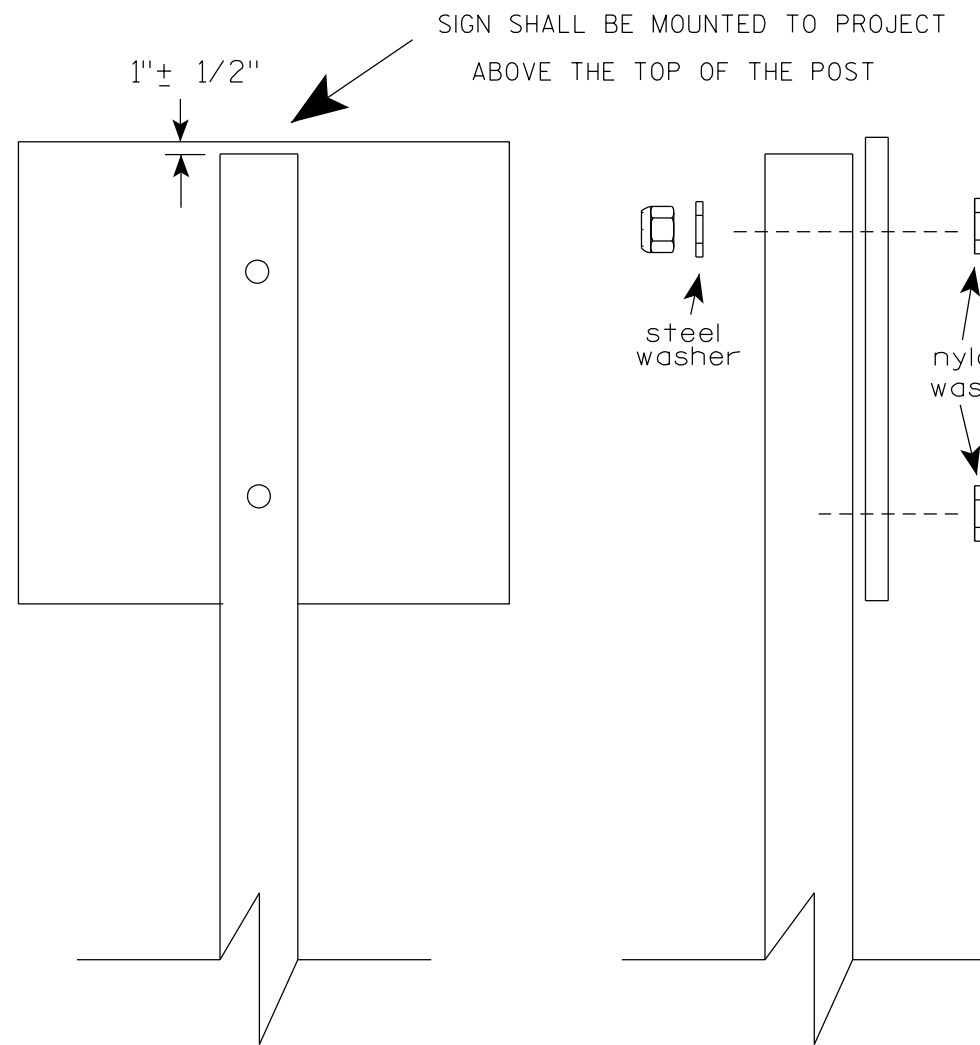
GENERAL NOTES

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" (±) 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.

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



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.

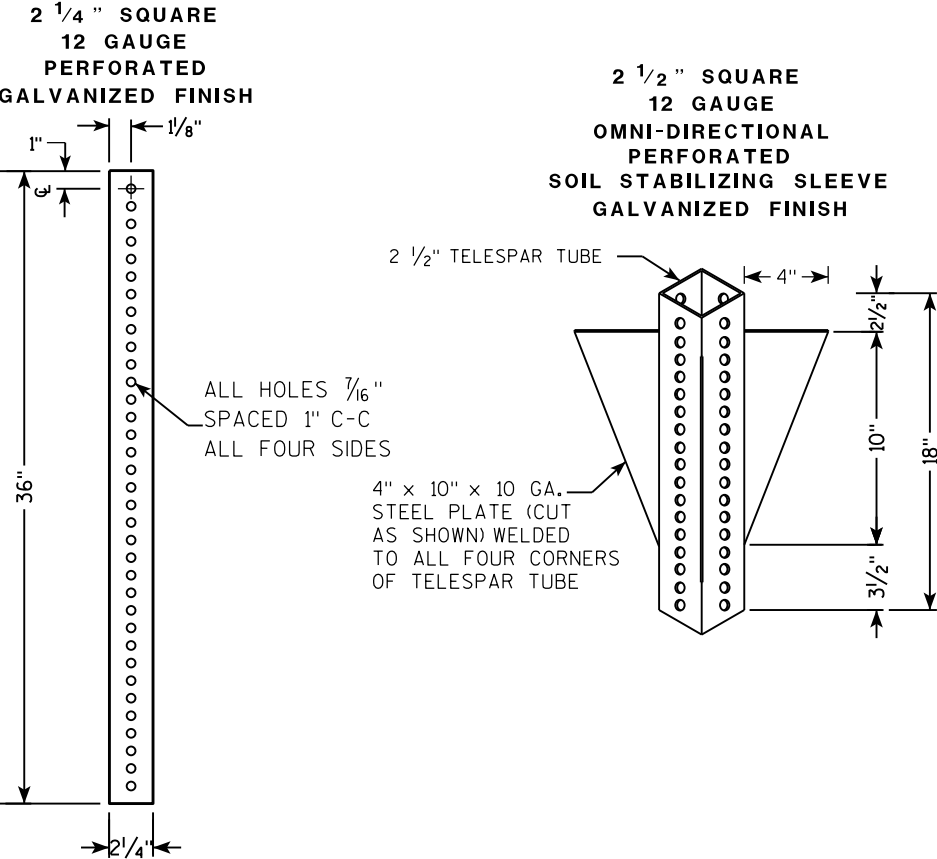
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

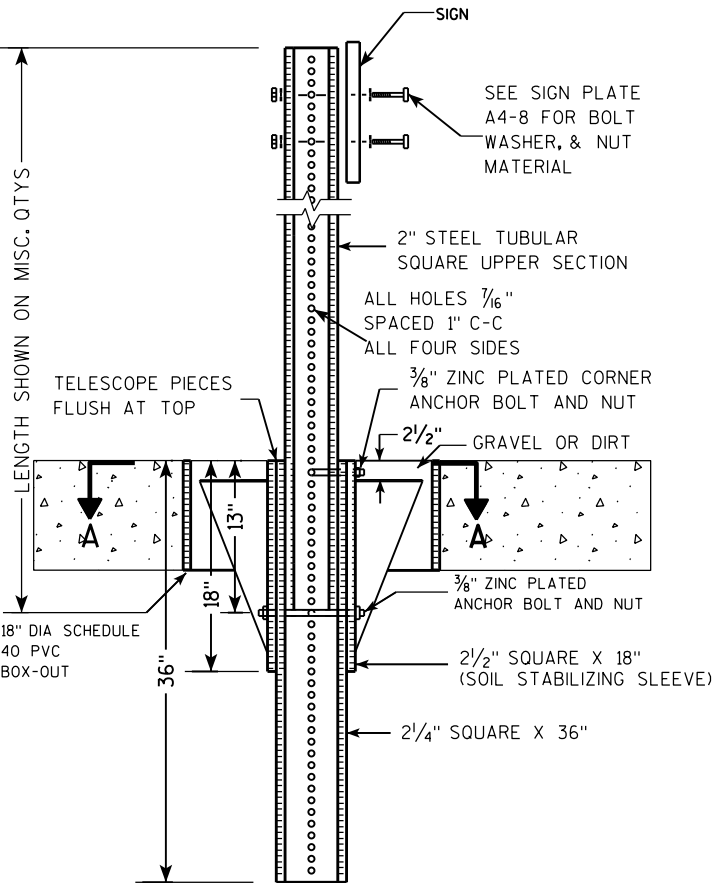
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

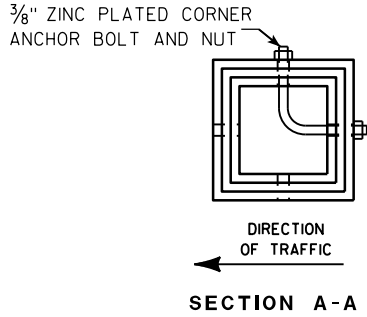
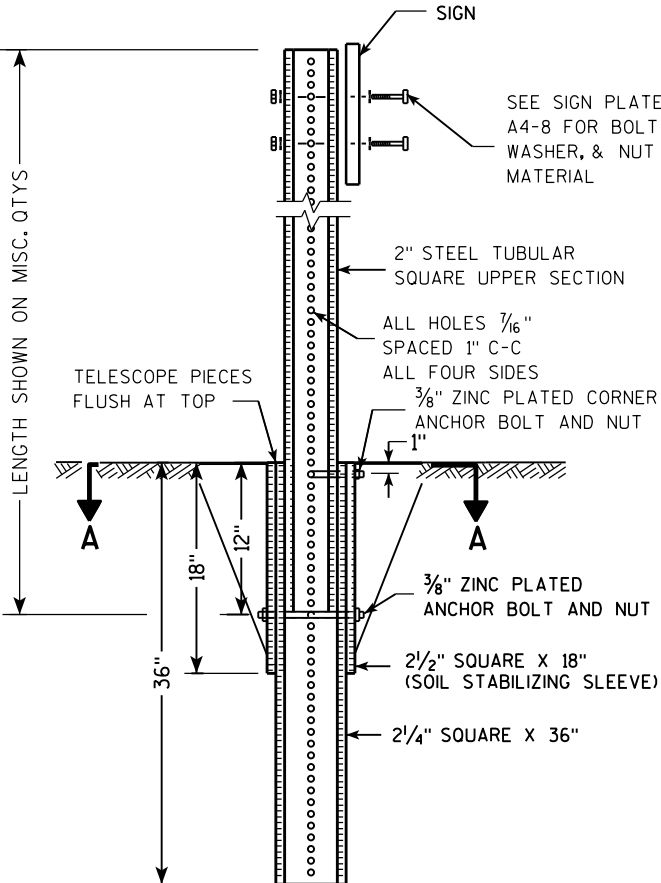
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

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

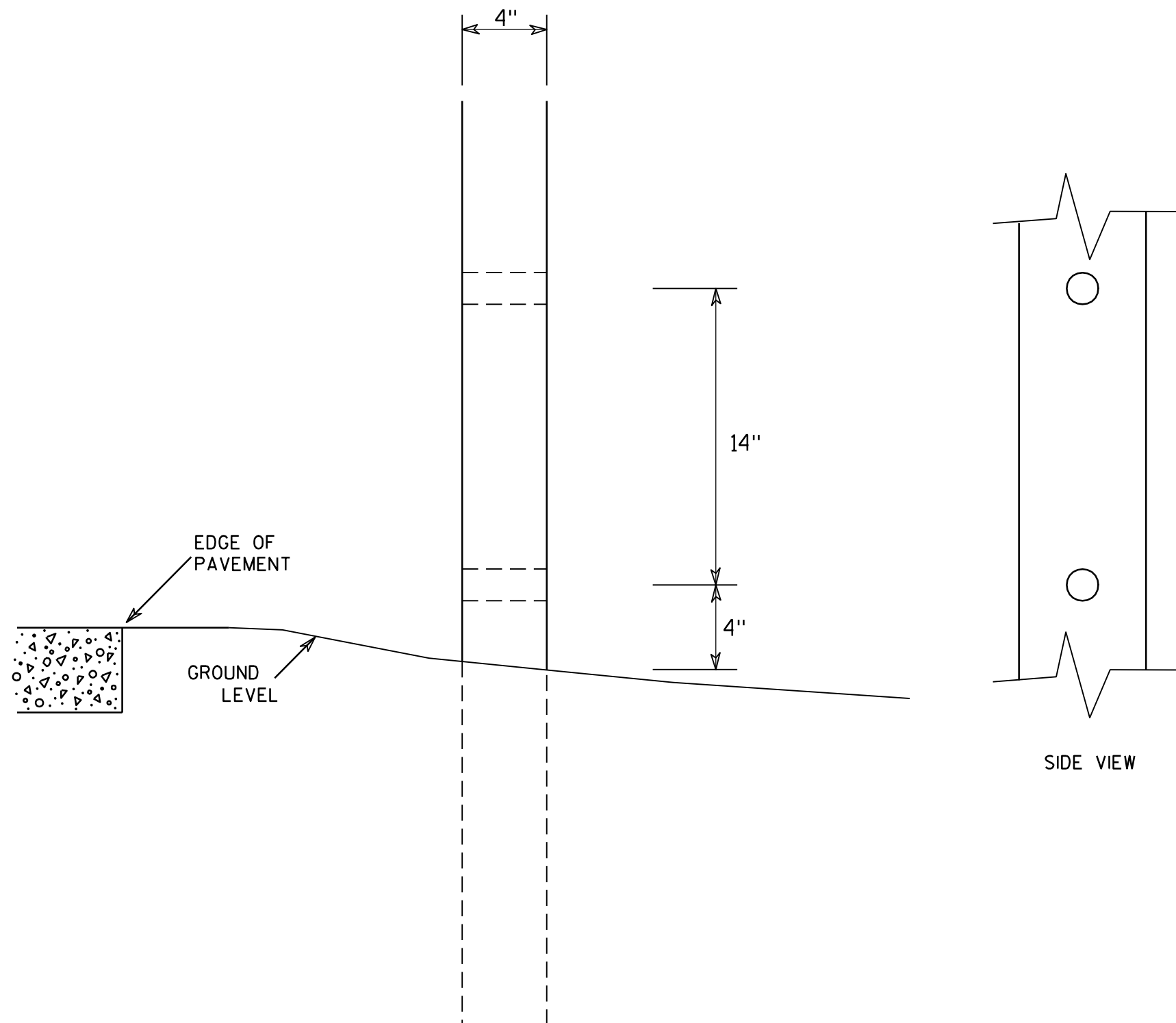
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

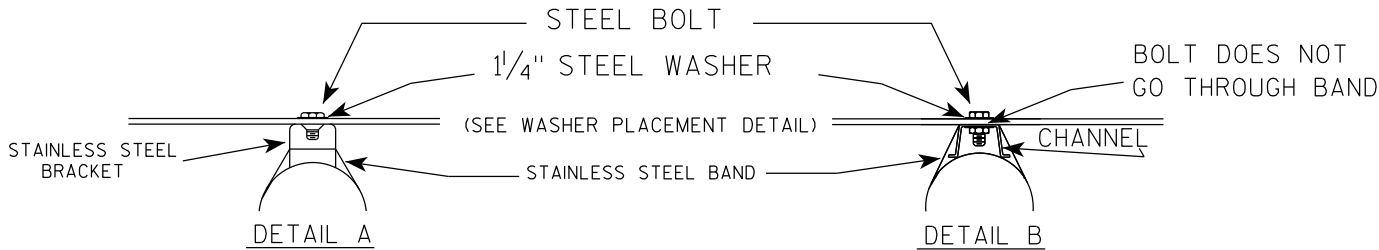
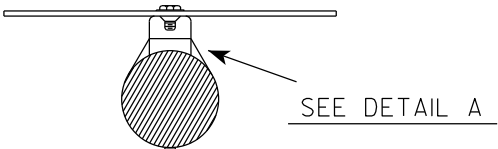
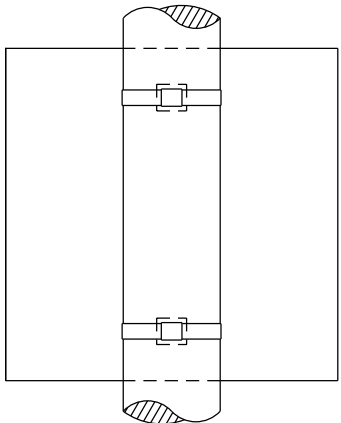
COUNTY:

SHEET NO:

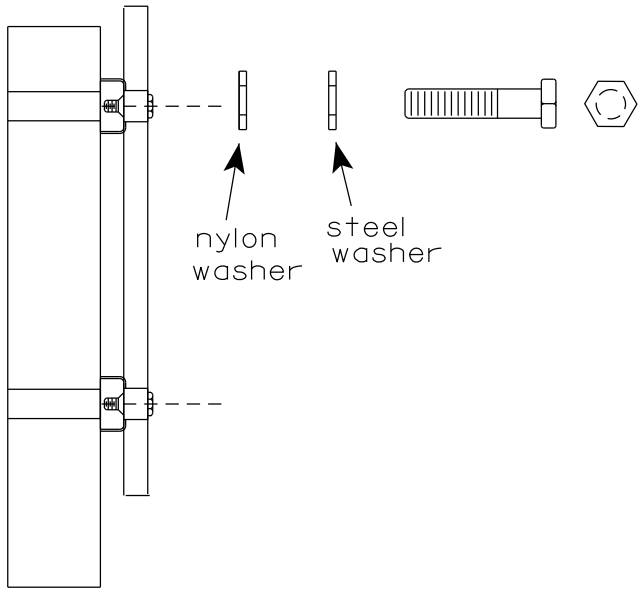
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

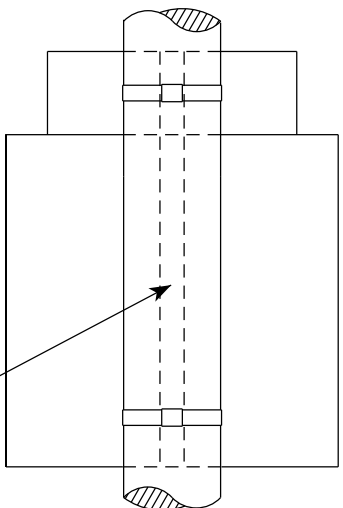


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

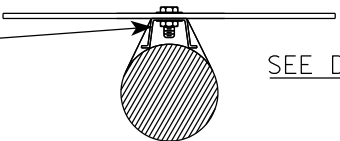
GENERAL NOTES

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 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



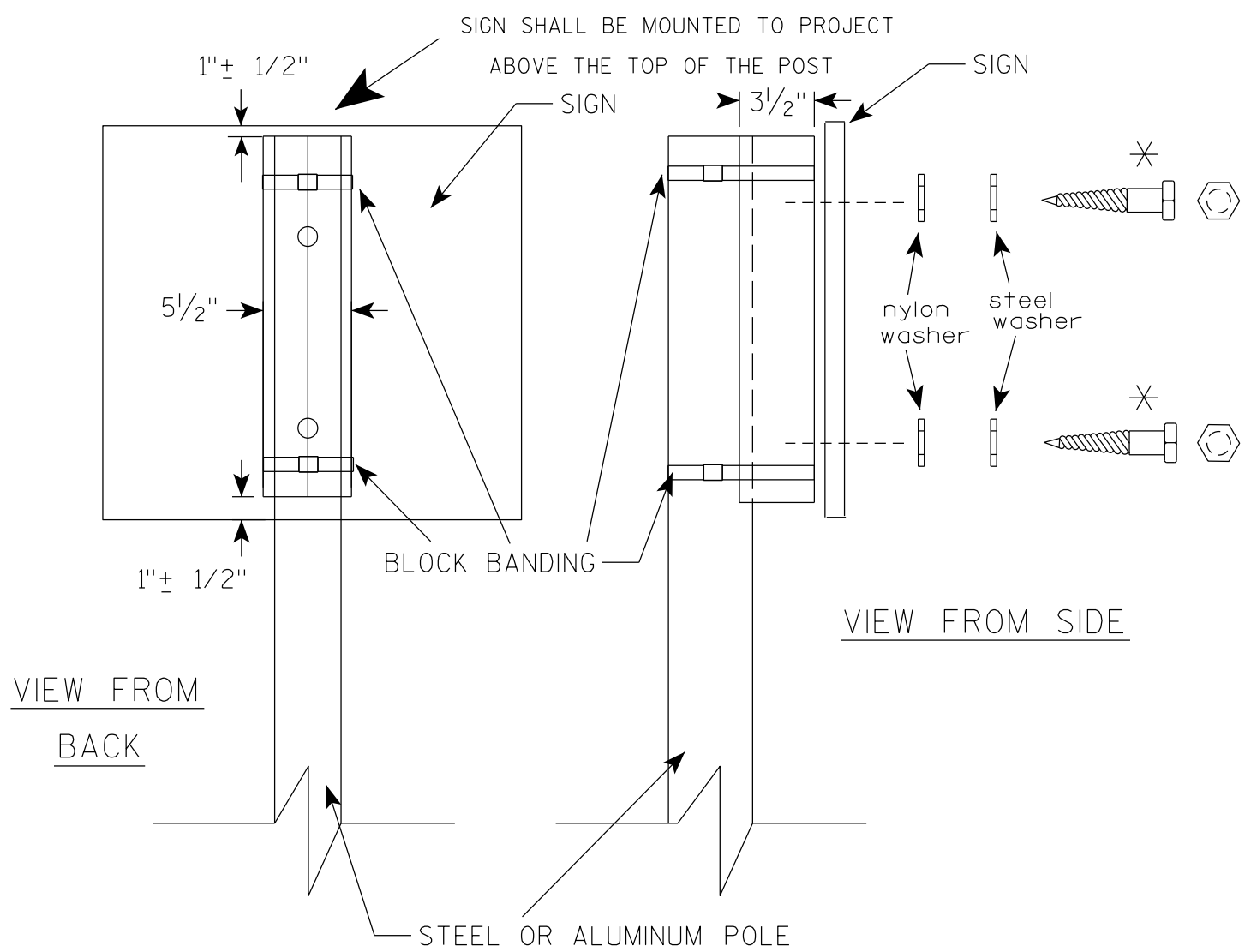
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

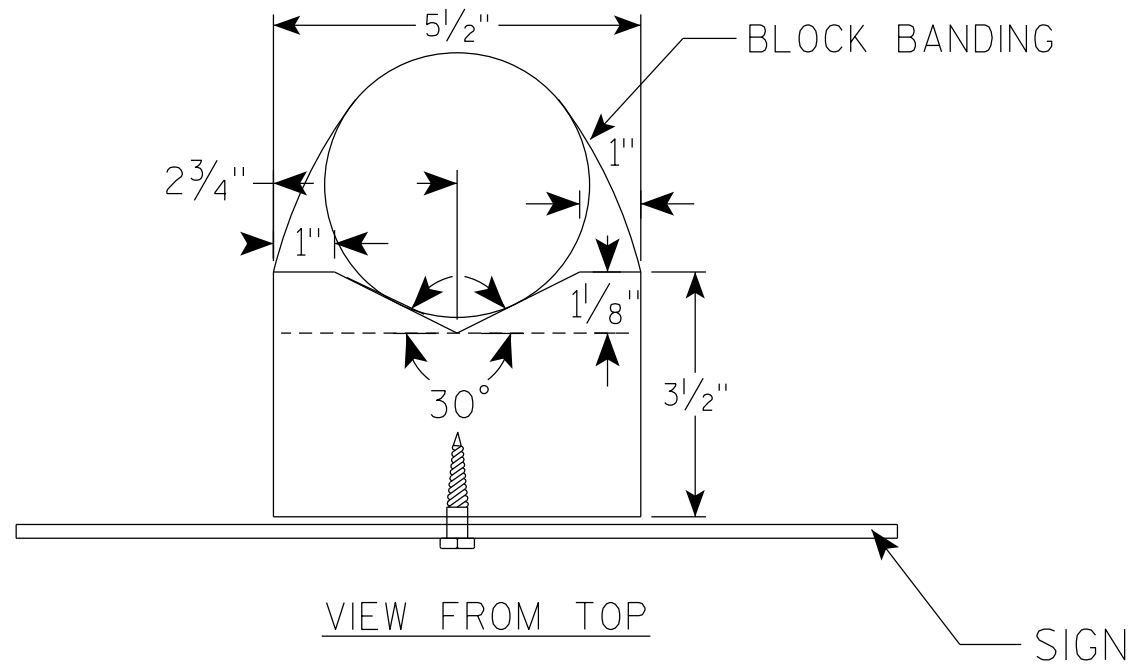
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM
BACK

VIEW FROM SIDE



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 NORMALLY 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 $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

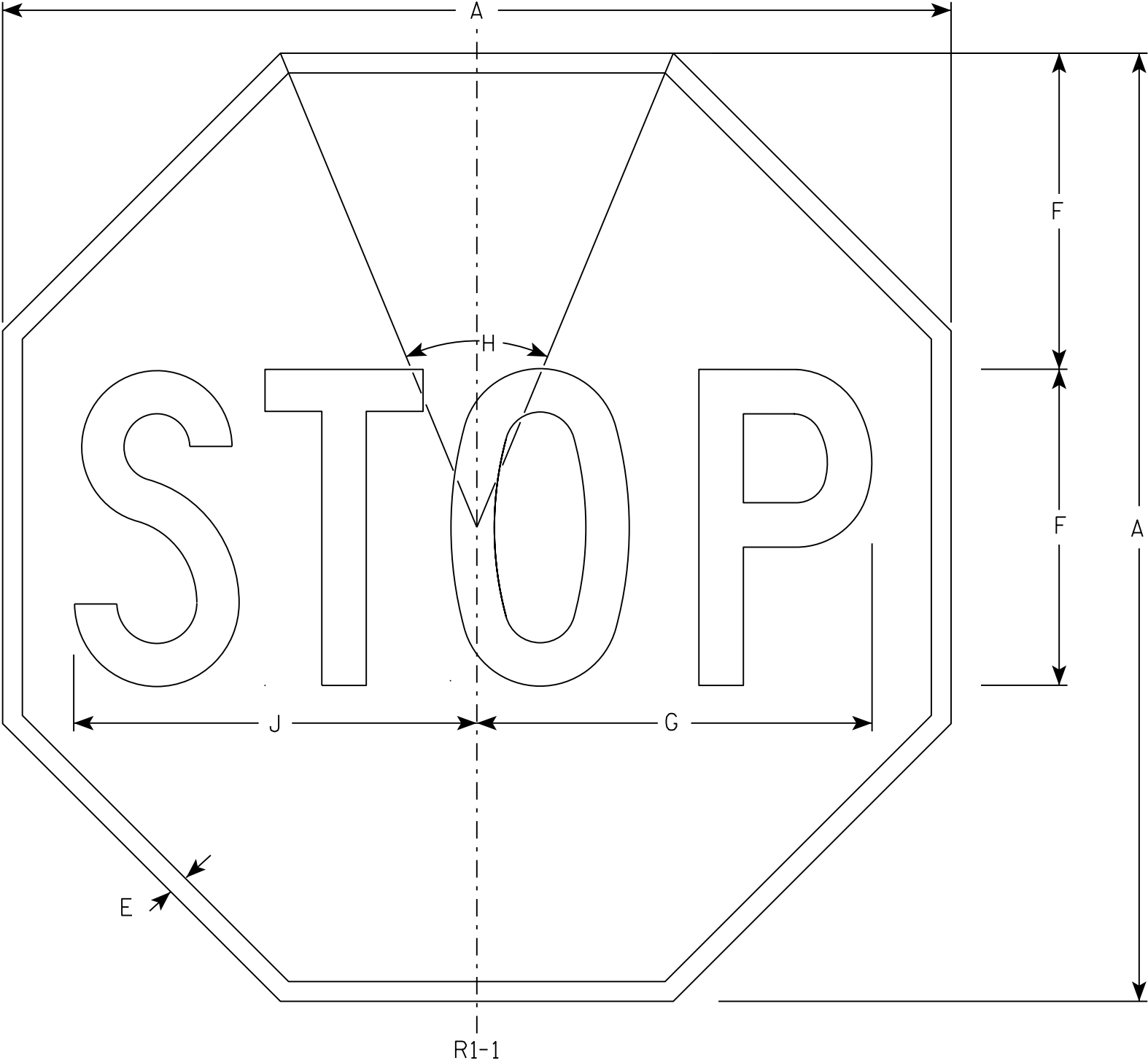
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO:

E

7



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Red
Message - White
- 3. Message Series - C

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

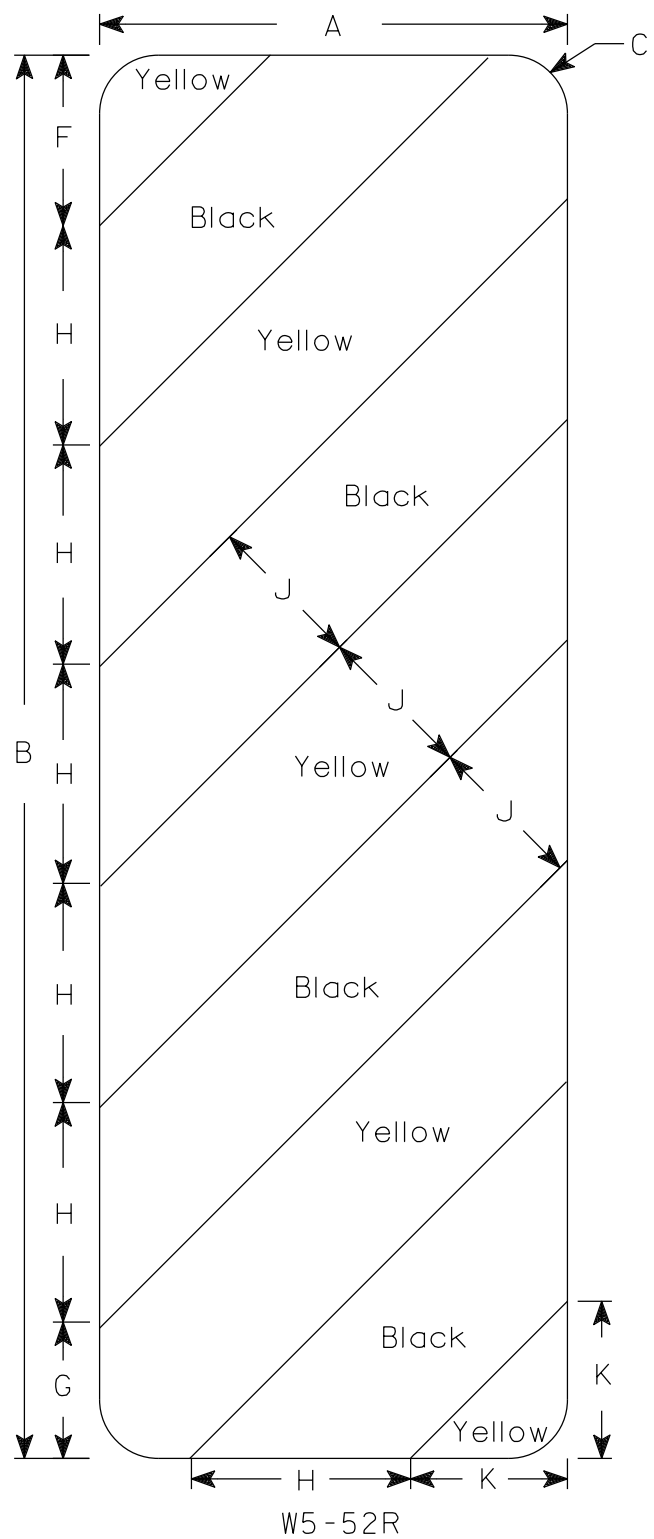
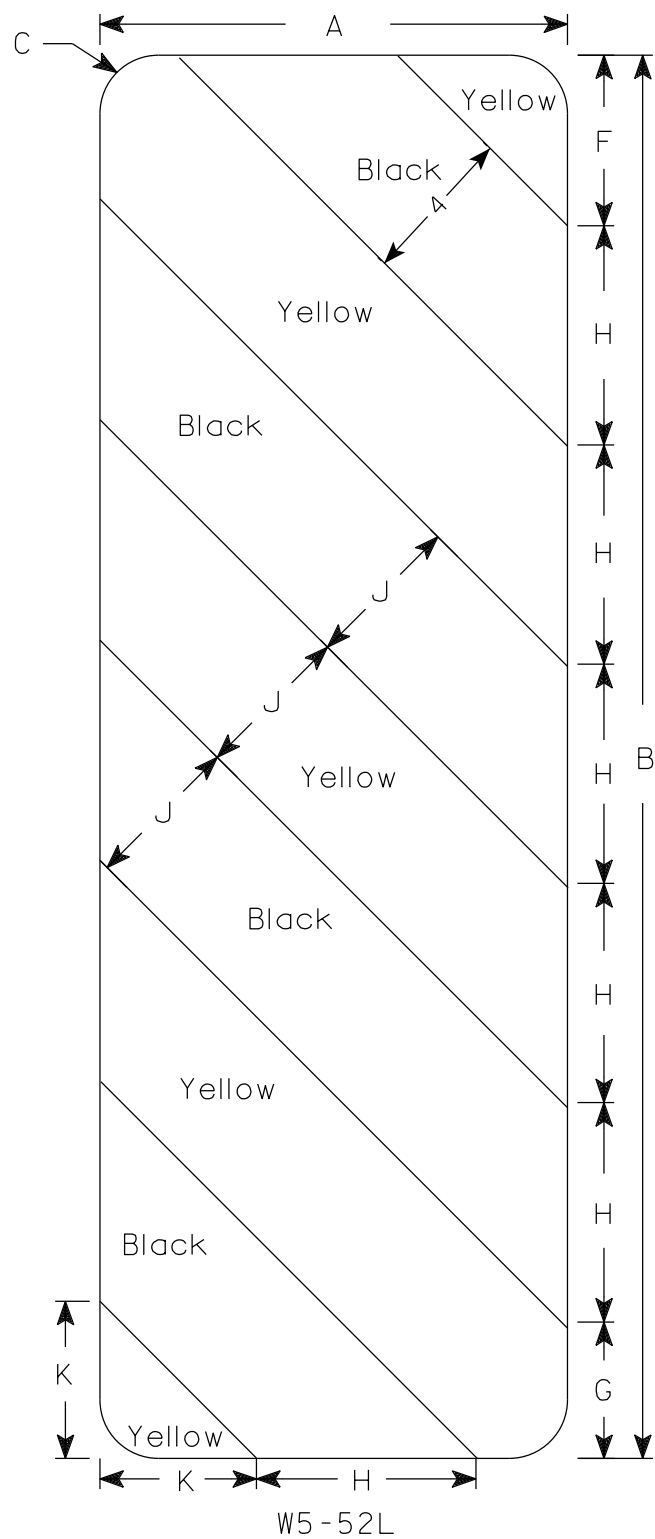
E

STANDARD SIGN
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Yellow
 - Message - Black
- 3. Alternate colors of stripes as shown.

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

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/4/2024 PLATE NO. W5-52.10



Varies
I3-1

* Minimum dimension is normally height of upper case letter.

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E except Size 1 is Series C



I3-1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	Varies	12	1 1/4		5/8	3 3/4	5	4	3 1/8	3 3/4	4 1/8	12 7/8		3				21									Varies
2	Varies	15	2 1/4		3/4	4 1/2	6	5	3 1/2	4	4 1/2	14 1/2		4				24									Varies
2M	Varies	15	2 1/4		3/4	4 1/2	6	5	3 1/2	4	4 1/2	14 1/2		4				24									Varies
3	Varies	21	3		1	6	8	7 1/8	6 1/4	6 1/4	7 1/2	21 3/4		5 7/8				36									Varies
4	Varies	21	3		1	6	8	7 1/8	6 1/4	6 1/4	7 1/2	21 3/4		5 7/8				36									Varies
5	Varies	21	3		1	6	8	7 1/8	6 1/4	6 1/4	7 1/2	21 3/4		5 7/8				36									Varies

STANDARD SIGN
I3-1

WISCONSIN DEPT OF TRANSPORTATION

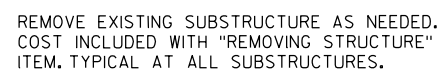
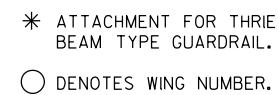
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/20/22 PLATE NO. I3-1.6

1. GENERAL PLAN
2. QUANTITIES, TYPICAL SECTION & NOTES
3. STRUCTURE DETAILS
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT
6. WEST ABUTMENT WING 1 DETAILS
7. WEST ABUTMENT WING 2 DETAILS
8. WEST ABUTMENT PILE LAYOUT & BILL OF BARS
9. EAST ABUTMENT
10. EAST ABUTMENT WING 3 DETAILS
11. EAST ABUTMENT WING 4 DETAILS
12. EAST ABUTMENT PILE LAYOUT & BILL OF BARS
13. PIER 1
14. PIER 2
15. STEEL DIAPHRAGM
16. 36W" PRESTRESSED GIRDER DETAILS
17. 36W" PRESTRESSED GIRDER DETAILS
18. SUPERSTRUCTURE
19. SUPERSTRUCTURE PLAN
20. SUPERSTRUCTURE DETAILS
21. SUPERSTRUCTURE ELEVATIONS AND BEARINGS
22. TUBULAR STEEL RAILING TYPE "M"



NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.ayresassociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED <u><i>[Signature]</i></u> SDR		11/05/24	
CHIEF STRUCTURES DESIGN ENGINEER		DATE	
STRUCTURE B-50-95			
CTH 0 OVER SOUTH FORK JUMP RIVER			
COUNTY	PRICE	TOWN/CITY/VILLAGE	OGEMA
DESIGN SPEC.			
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	ZSS	DESIGN CK'D.	NBE
DRAWN BY	CLP	PLANS CK'D.	DNS
GENERAL PLAN			SHEET 1 OF 22



CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

10/22/2024
PENTABLE:BRequ..shd_util.tbl

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	PIER 1	PIER 2	E. ABUT.	SUPER.	TOTAL
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-50-6	EACH	-----	-----	-----	-----	-----	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-50-95	EACH	-----	-----	-----	-----	-----	1
206.5001	COFFERDAMS B-50-95	EACH	-----	-----	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	170	-----	-----	170	-----	340
502.0100	CONCRETE MASONRY BRIDGES	CY	31.8	52.3	52.2	31.7	181.2	349
502.3200	PROTECTIVE SURFACE TREATMENT	SY	15	-----	-----	15	655	685
502.9000.S	UNDERWATER SUBSTRUCTURE INSPECTION B-50-95	EACH	-----	1	1	-----	-----	2
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	-----	-----	-----	-----	674	674
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,700	2,700	2,700	1,700	-----	8,800
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,710	30	30	1,710	37,800	41,280
506.2605	BEARING PADS ELASOMERIC NON-LAMINATED	EACH	-----	-----	-----	-----	24	24
506.4000	STEEL DIAPHRAGMS B-50-95	EACH	-----	-----	-----	-----	9	9
513.4061	RAILING TUBULAR TYPE M	LF	26.5	-----	-----	26.5	341.2	394.2
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	-----	-----	10	-----	20
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	-----	-----	-----	175	-----	175
550.0500	PILE POINTS	EACH	7	7	7	7	-----	28
550.1120	PIILING STEEL HP 12-INCH x 53 LB	LF	350	560	560	350	-----	1,820
606.0300	RIPRAP HEAVY	CY	125	-----	-----	120	-----	245
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100	-----	-----	100	-----	200
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	50	-----	-----	50	-----	100
645.0120	GEOTEXTILE TYPE HR	SY	235	-----	-----	230	-----	465
	NON-BID ITEMS							
	FILLER	SIZE	-----	-----	-----	-----	-----	1/2" & 3/4"

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.25
OPERATING RATING FACTOR: 1.62
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 "/S.F.

MATERIAL PROPERTIES:

CONCRETE MASONRY { SUPERSTRUCTURE f'c = 4,000 p.s.i.
ALL OTHER f'c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) fy = 60,000 p.s.i.

36W" PRESTRESSED GIRDER
CONCRETE MASONRY f'c = 8,000 p.s.i.
STRANDS - 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF = 270,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FREQUENCY

Q100 = 5,180 c.f.s.
VEL. = 4.1 f.p.s.
HW100 = EL. 1419.66
WATERWAY AREA = 1,267 sq. ft.
DRAINAGE AREA = 171 sq. mi.
SCOUR CRITICAL CODE = 5
DATUM = NAVD88 (2012)

2 YEAR FREQUENCY

Q2 = 1,550 c.f.s.
VEL. = 2.9 f.p.s.
HW2 = EL. 1414.22

FOUNDATION DATA:

WEST ABUTMENT TO BE SUPPORTED ON HP 12 x 53 STEEL PILING (WITH PILE POINTS)
DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS # PER PILE AS
DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED LENGTH 50'-0". ABUTMENT PILES TO EXTEND BELOW EL. 1393.00

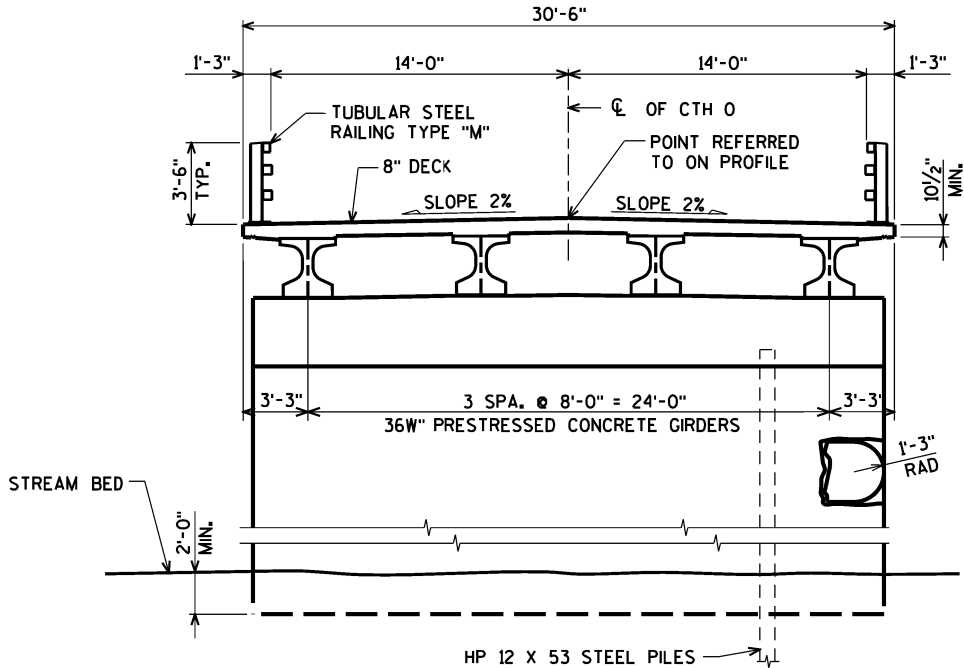
EAST ABUTMENT TO BE SUPPORTED ON HP 12 x 53 STEEL PILING (WITH PILE POINTS)
DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS # PER PILE AS
DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED LENGTH 50'-0". PILES TO BE PRE-BORED 25'-0" PRIOR TO DRIVING.
ABUTMENT PILES TO EXTEND BELOW EL. 1387.00.

PIERS TO BE SUPPORTED ON HP 12 x 53 STEEL PILING (WITH PILE POINTS)
DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS # PER PILE AS
DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED LENGTH 80'-0". PIER PILES TO EXTEND BELOW EL. 1383.00.

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

TRAFFIC DATA:

A.A.D.T. = 100 (2025)
A.A.D.T. = 140 (2045)
R.D.S. = 60 M.P.H.



TYPICAL SECTION THRU BRIDGE

GENERAL NOTES

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

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST
TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.
JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF
A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR
A.A.S.H.T.O. DESIGNATION M 213.

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

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES
BRIDGES B-50-95" SHALL BE THE EXISTING GROUNDLINE.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN
DETAIL ON SHEET 3. THE TOP AND EXTERIOR EXPOSED FACE OF WINGS,
AND FRONT FACE OF ABUTMENTS TO 1'-0" PAST THE EDGE OF DECK.
BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED
OTHERWISE.

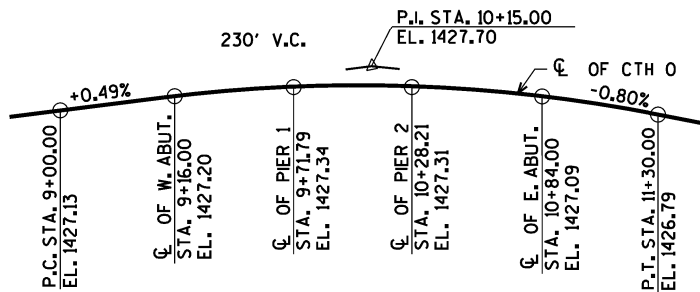
EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING
MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE
SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE
BOTTOM OF ABUTMENT.

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

EXISTING SUBSTRUCTURE LOCATIONS ARE BASED ON SURVEY AND
ORIGINAL PLANS. APPROXIMATE EXTENT OF BELOW GRADE SUBSTRUCTURES
ARE SHOWN ON PLAN. REMOVE EXISTING SUBSTRUCTURES AS NEEDED TO
BUILD NEW SUBSTRUCTURES. COST OF SUBSTRUCTURE REMOVAL IS INCLUDED
WITH "REMOVING STRUCTURE" BID ITEM.

CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE
IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE
HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAILS SHEET,
WHICH IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH THE
CONTRACTOR WILL BE PAID.

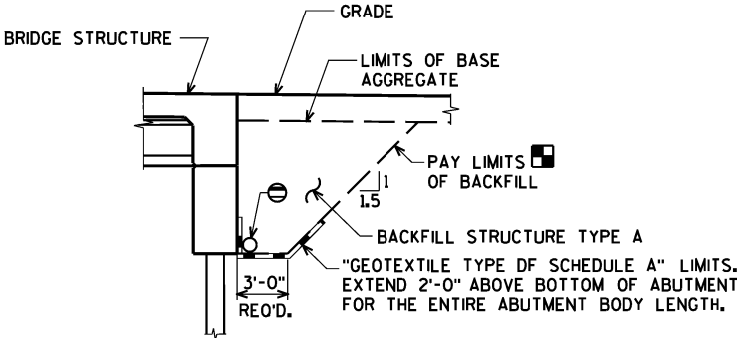


PROFILE GRADE LINE
(CTH 0)

BENCH MARK:

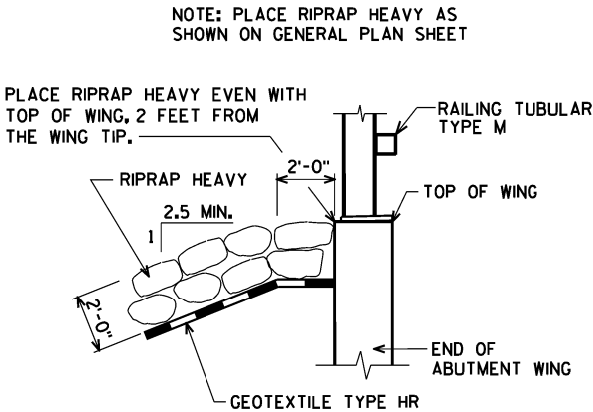
DISK, SW QUAD OF BRIDGE
STA. 9+12.3, 16.6' RT.
EL. 1426.52

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
	DRAWN BY	CLP	PLANS CK'D. ZSS
QUANTITIES, TYPICAL SECTION & NOTES		SHEET 2 OF 22	

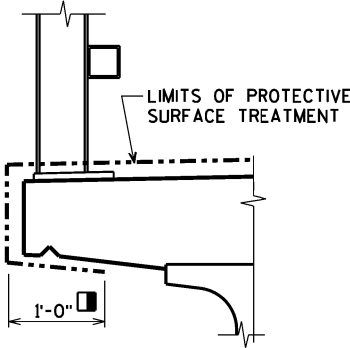


BACKFILL STRUCTURE LIMITS

- BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED 6-INCH, SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET.

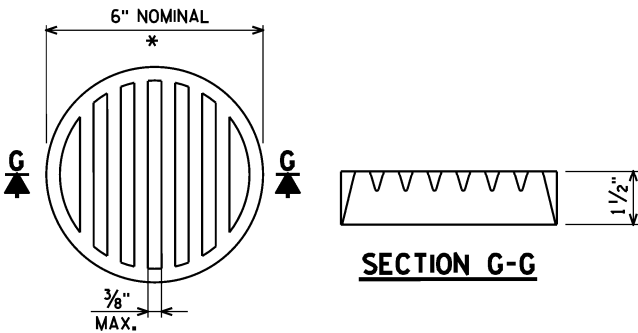


TYPICAL FILL SECTION AT WING TIPS



PROTECTIVE SURFACE TREATMENT DETAIL

- APPLY TO TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

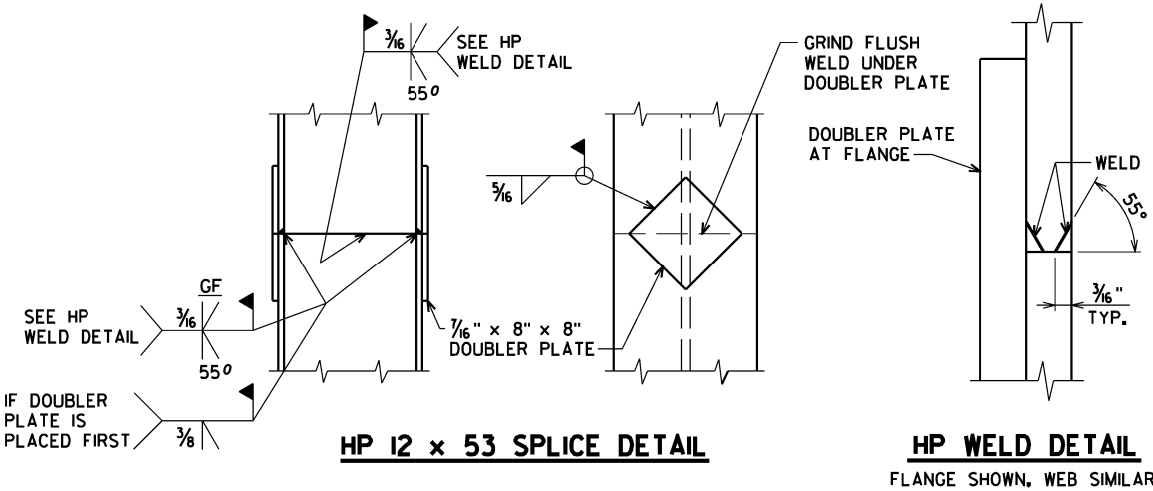


* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

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

RODENT SHIELD DETAIL



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
STRUCTURE DETAILS		SHEET 3 OF 22	

10/22/2024
PENTABLE:BReou_shd_util.tb1

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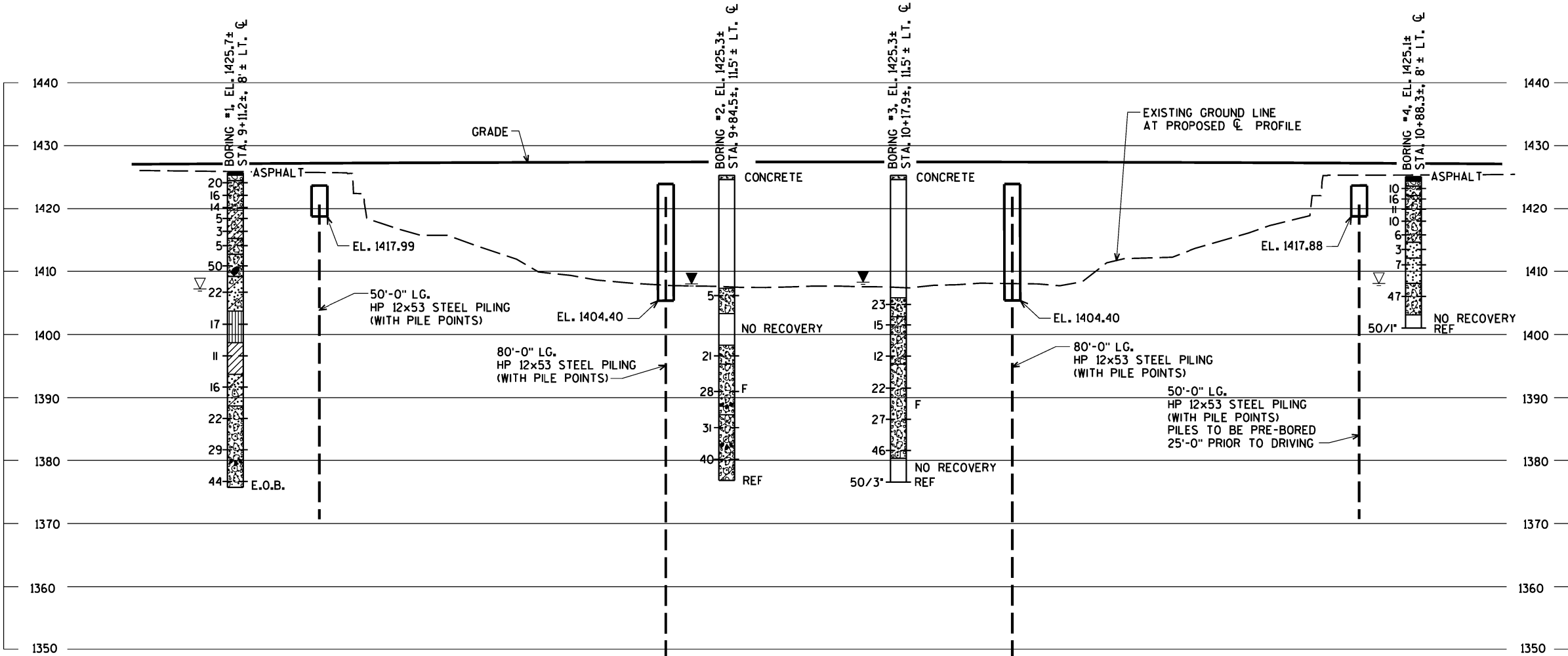
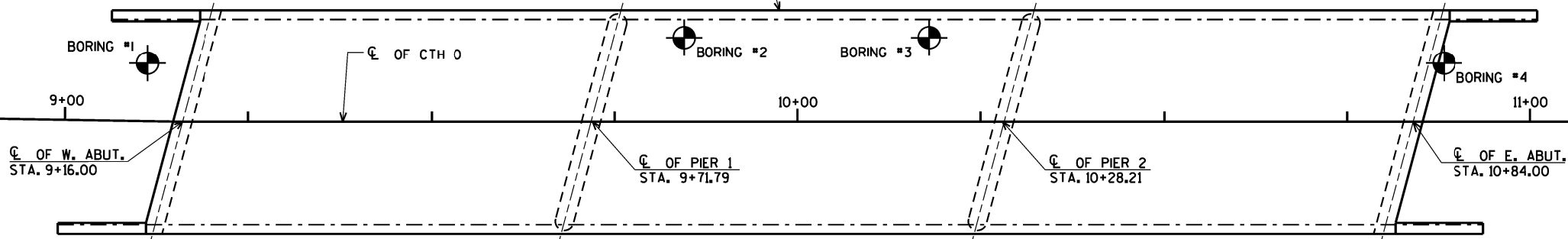
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	SEPT. 19, 2023	330853.68	762624.19
2	SEPT. 21, 2023	330857.88	762697.37
3	SEPT. 20, 2023	330858.19	762730.87
4	SEPT. 19, 2023	330855.32	762801.15

BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC
REPORT COMPLETED BY: ECS MIDWEST, LLC
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) PRICE COUNTY

SOUTH FORK
JUMP
RIVER



STRUCTURE B-50-95



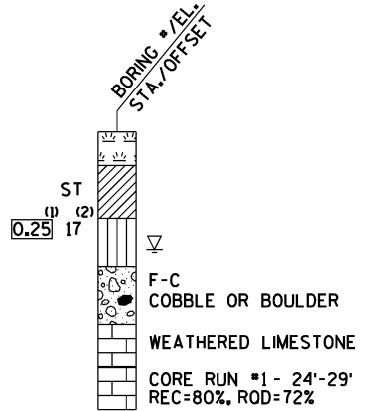
STATE PROJECT NUMBER

8700-00-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

▽	AT TIME OF DRILLING
▽	END OF DRILLING
▽	AFTER DRILLING

ABBREVIATIONS

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

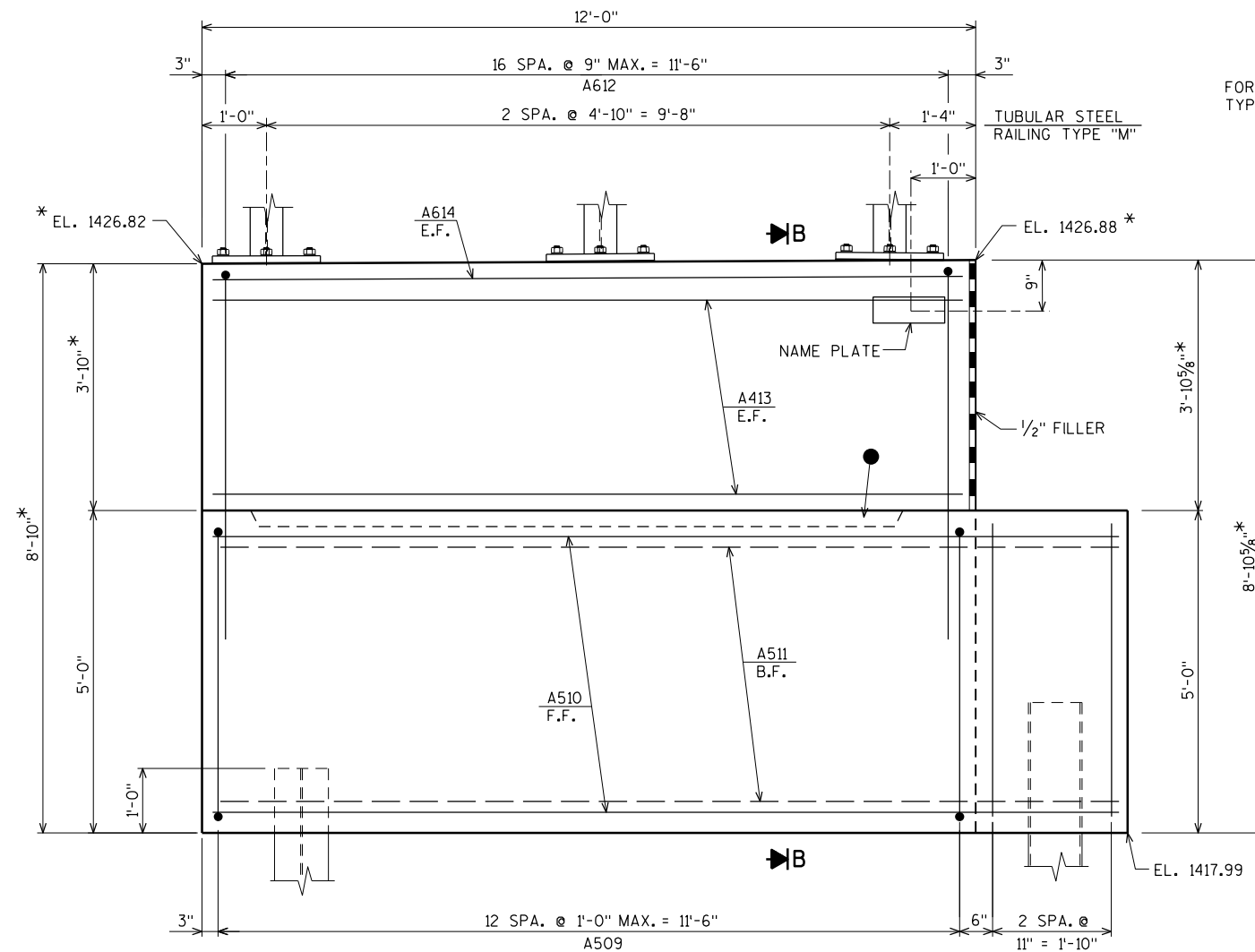
SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

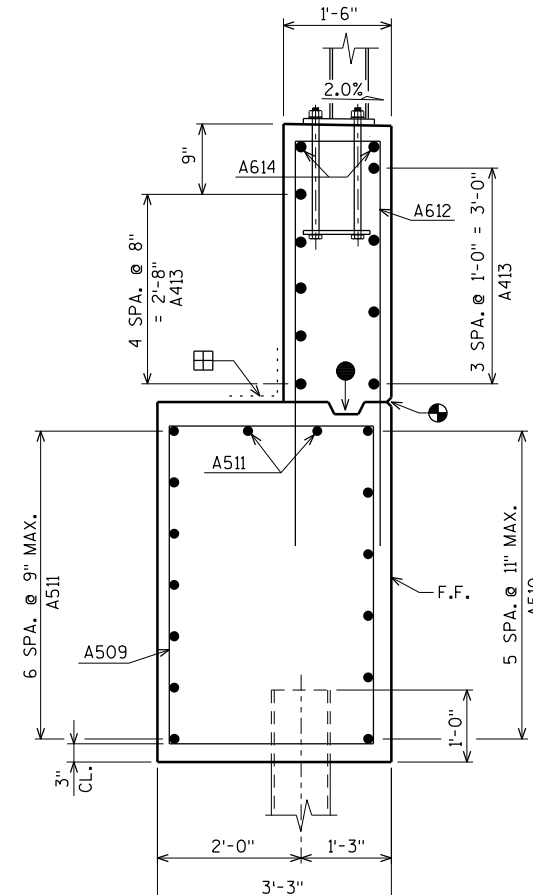
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
SUBSURFACE EXPLORATION		SHEET 4 OF 22	

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
WEST ABUTMENT		SHEET 5 OF 22	



ELEVATION - WING 1



SECTION B

* ELEVATIONS AND DIMENSIONS SHOWN ARE AT FRONT FACE OF WINGWALL.

3/4" "V" GROOVE ON FRONT FACE OF WINGWALL.

OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

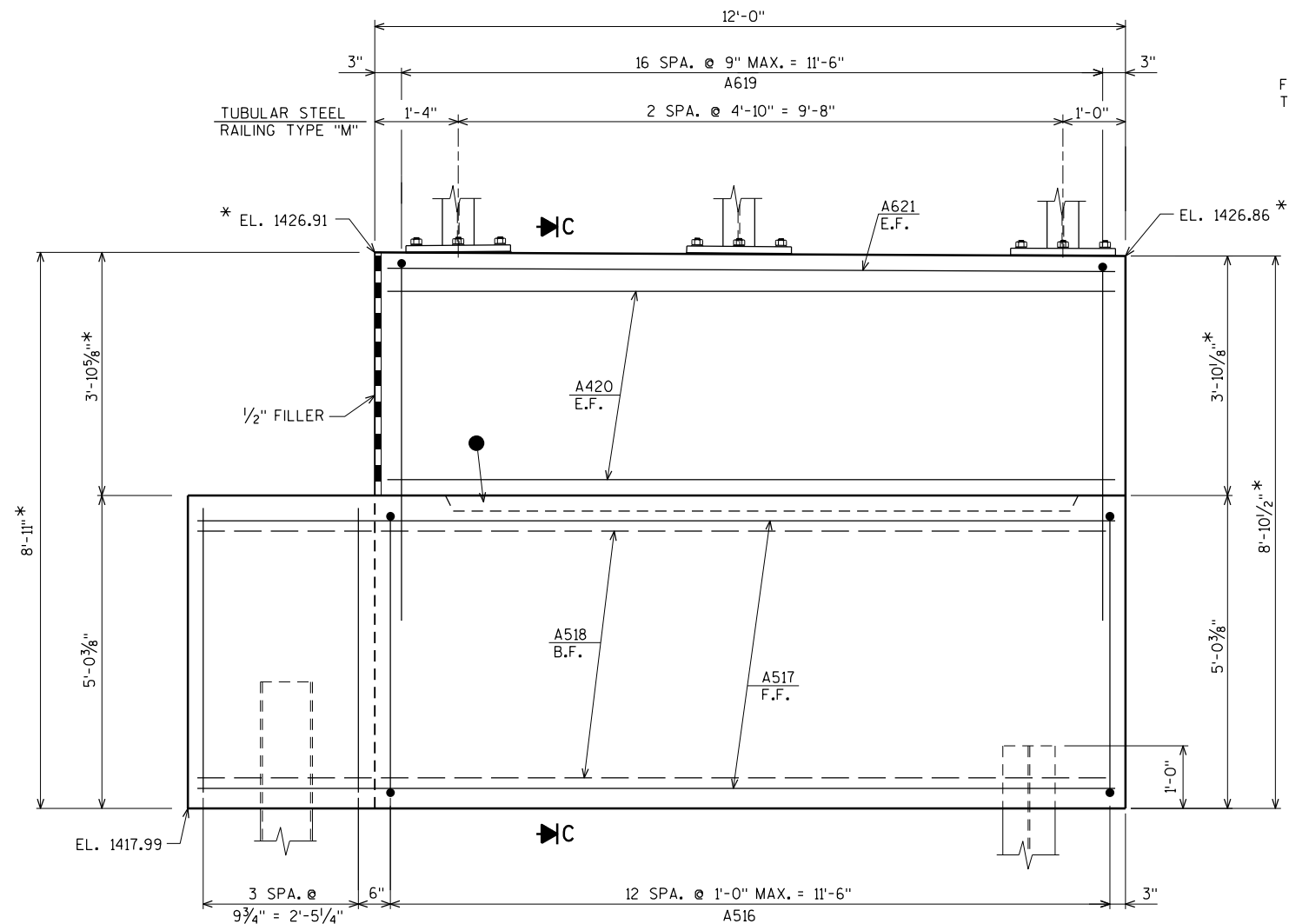
18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
WEST ABUTMENT WING 1 DETAILS			SHEET 6 OF 22

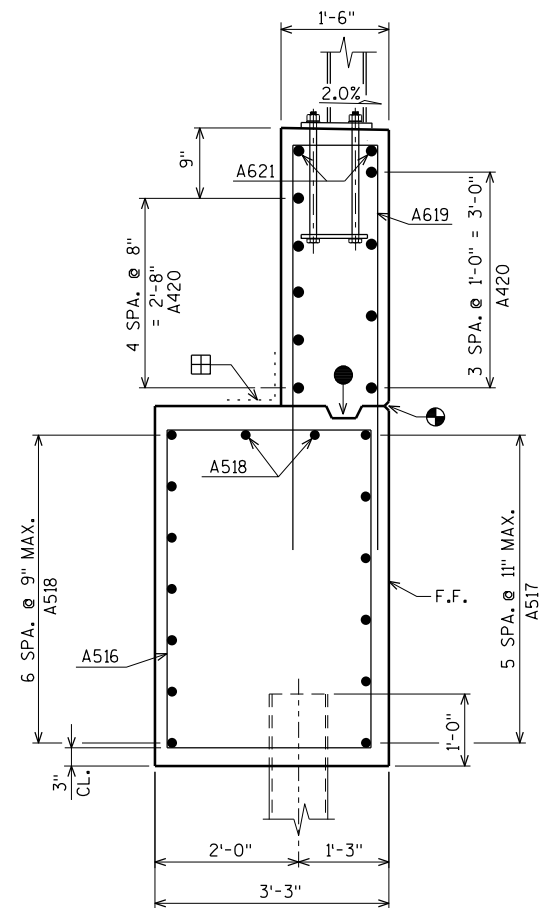
9/3/2024
PENTABLE:BReou_shd_util.tbl

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ELEVATION - WING 2

FOR TUBULAR STEEL RAILING
TYPE "M" SEE SHEET 22



SECTION C

* ELEVATIONS AND DIMENSIONS SHOWN
ARE AT FRONT FACE OF WINGWALL.

3/4" *V* GROOVE ON FRONT
FACE OF WINGWALL.

OPTIONAL CONST. JOINT FORMED
BY BEVELED 2" x 6" KEYWAY WITH
MEMBRANE ON BACKFACE.

18" RUBBERIZED MEMBRANE WATERPROOFING.
SEAL ALL HORIZONTAL AND VERTICAL JOINTS
ON BACKFACE.

FOR PILE SPLICE DETAIL SEE SHEET 3.

STATE PROJECT NUMBER

8700-00-70

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY	CLP	PLANS CK'D.	ZSS
WEST ABUTMENT WING 2 DETAILS			SHEET 7 OF 22

[illegible]

The image displays three technical drawings of standard hooks, each with its dimensions and part number.

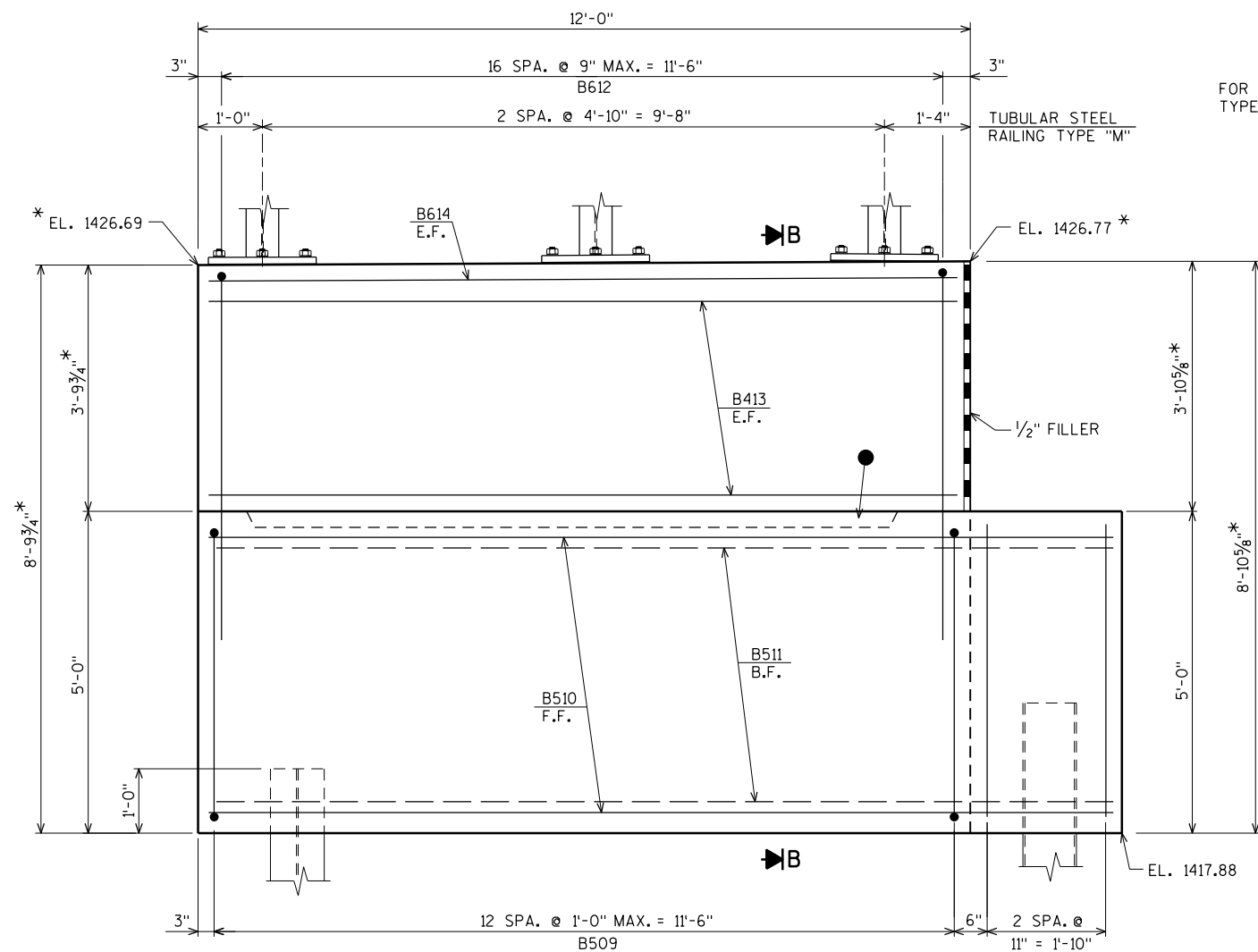
- A401:** A hook with a circular head and a threaded shank. The head diameter is 1'-9". The shank has a diameter of 6". The total length of the hook is 2'-0".
- A503:** A hook with a rectangular head and a threaded shank. The head width is 2'-2". The shank has a diameter of 2'-11". The total length of the hook is 4'-4". The shank is threaded for 4'-7" and has a 5/2" thread pitch.
- A705:** A hook with a rectangular head and a threaded shank. The head width is 11". The shank has a diameter of 1'-2". The total length of the hook is 12'-0". The shank is threaded for 5'-8" and has a 180° hook end.



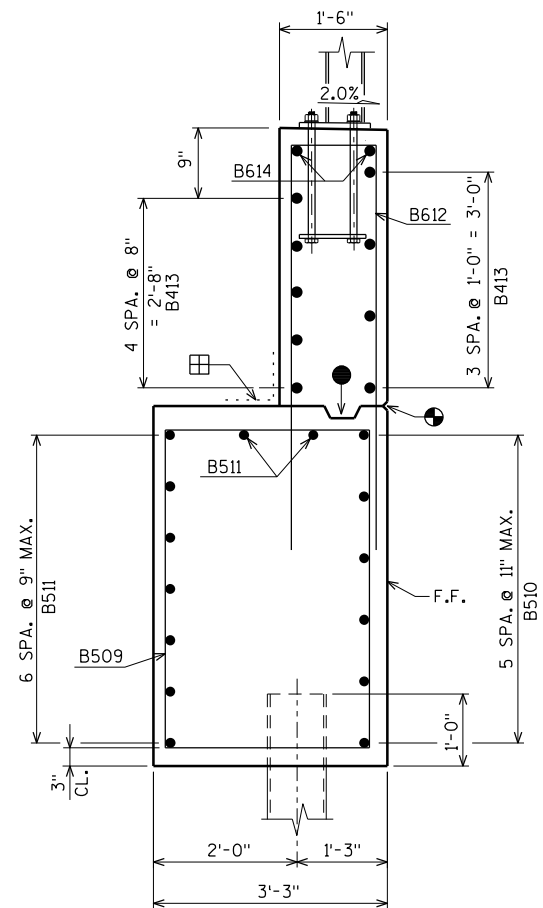
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
EAST ABUTMENT		SHEET 9 OF 22	

9/3/2024
PENTABLE:BReou_shd_util.tbl

8



ELEVATION - WING 3



SECTION B

* ELEVATIONS AND DIMENSIONS SHOWN ARE AT FRONT FACE OF WINGWALL.

3/4" "V" GROOVE ON FRONT FACE OF WINGWALL.

OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

FOR PILE SPLICE DETAIL SEE SHEET 3.

STATE PROJECT NUMBER

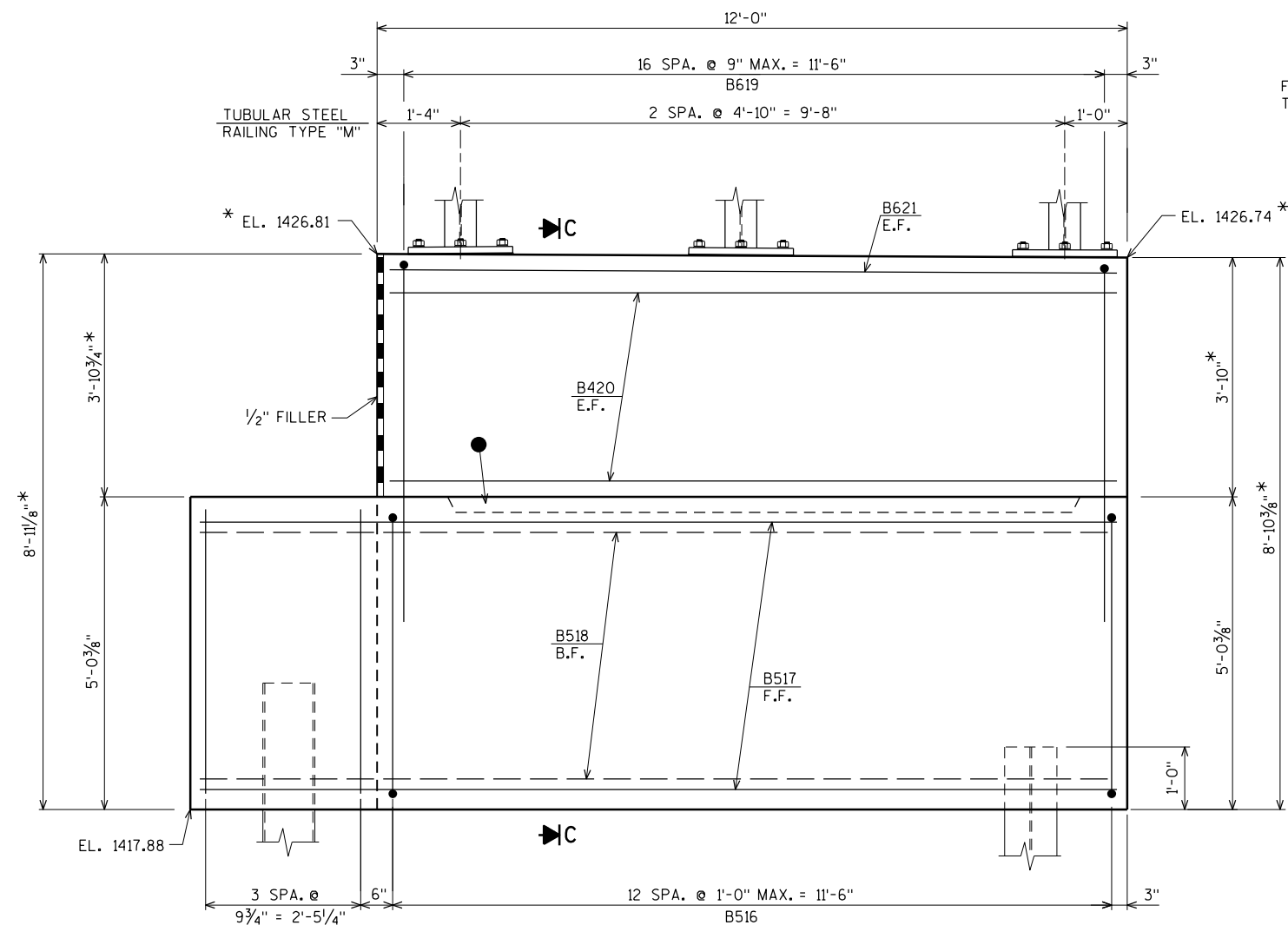
8700-00-70

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY	CLP	PLANS CK'D.	ZSS
EAST ABUTMENT WING 3 DETAILS			SHEET 10 OF 22

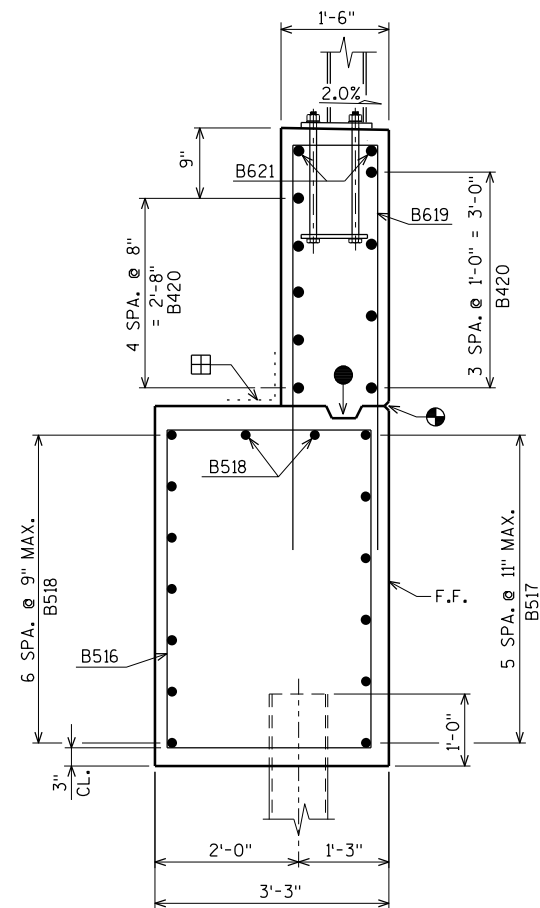
9/3/2024
PENTABLE:BReou_shd_util.tbl

8



ELEVATION - WING 4

FOR TUBULAR STEEL RAILING
TYPE "M" SEE SHEET 22



SECTION C

* ELEVATIONS AND DIMENSIONS SHOWN
ARE AT FRONT FACE OF WINGWALL.

3/4" *V" GROOVE ON FRONT
FACE OF WINGWALL.

OPTIONAL CONST. JOINT FORMED
BY BEVELED 2" x 6" KEYWAY WITH
MEMBRANE ON BACKFACE.

18" RUBBERIZED MEMBRANE WATERPROOFING.
SEAL ALL HORIZONTAL AND VERTICAL JOINTS
ON BACKFACE.

FOR PILE SPLICE DETAIL SEE SHEET 3.

STATE PROJECT NUMBER

8700-00-70

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY	CLP	PLANS CK'D.	ZSS
EAST ABUTMENT WING 4 DETAILS			SHEET 11 OF 22

8

[illegible]

Technical drawing showing two components with dimensions and part numbers:

- Left Component (Spring):**
 - Overall height: 2'-0"
 - Coil diameter: 1'-9"
 - Coil thickness: 6"
 - Part Number: B401
- Right Component (Rectangular Plate):**
 - Top width: 2'-2" (Part Number: B503)
 - Second width: 2'-11" (Part Number: B509)
 - Third width: 2'-11" (Part Number: B516)
 - Left height: 4'-4"
 - Second height: 4'-7"
 - Third height: 4'-7"
 - Bottom right corner: 5 1/2"

12'-0"

ST'D. 180° HOOK

B705

1'-3"

5'-8"

5'-8"

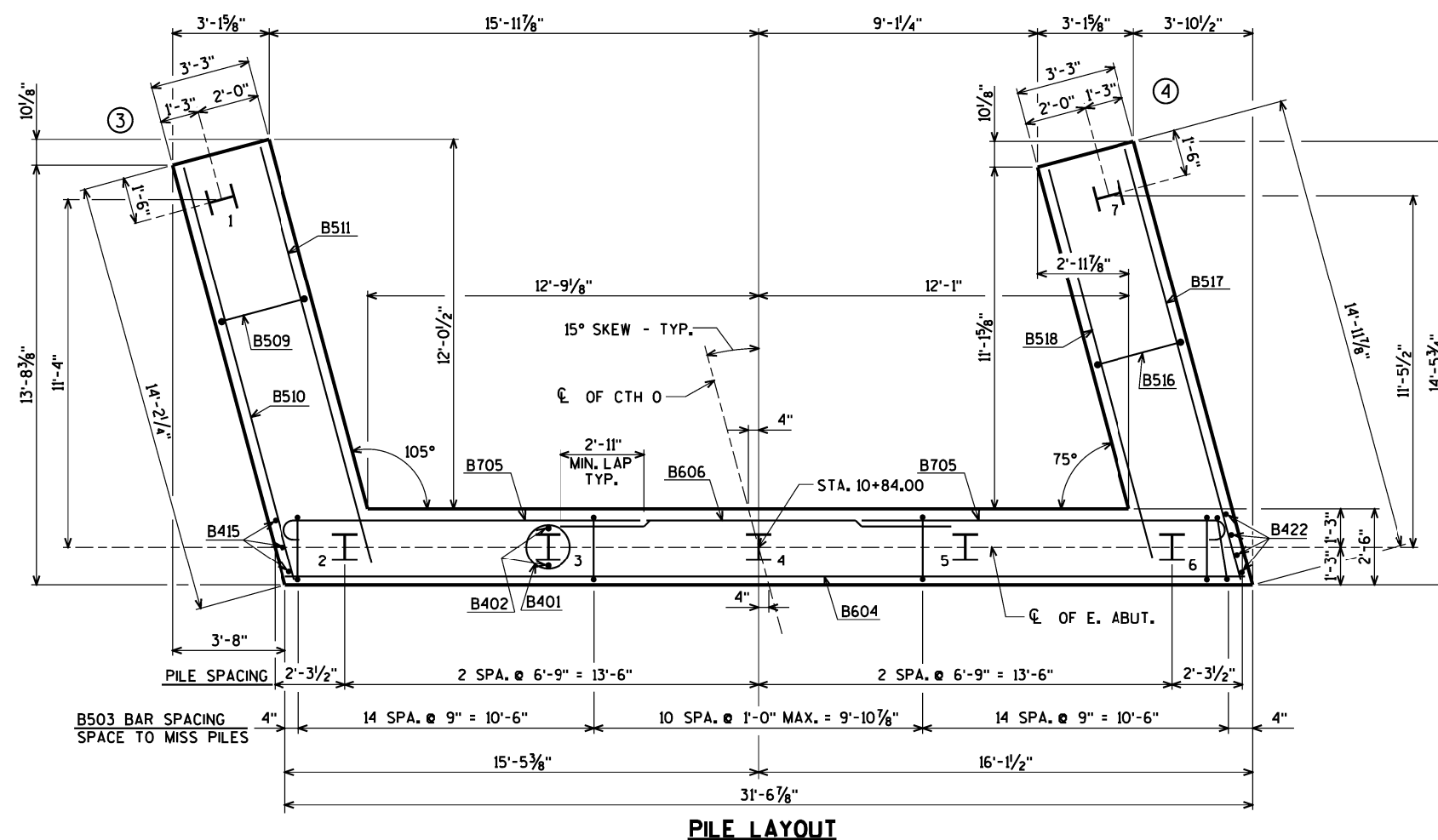
1"

B407

B612

B619

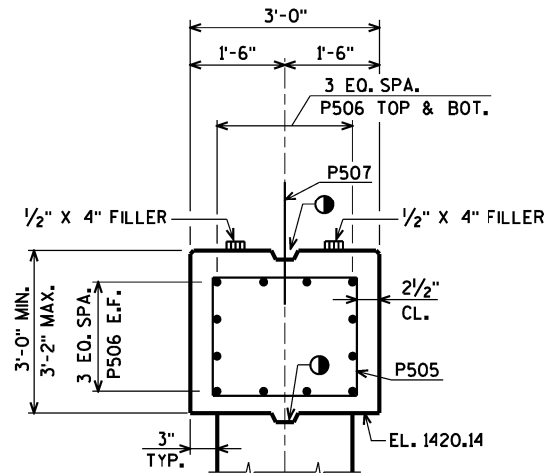
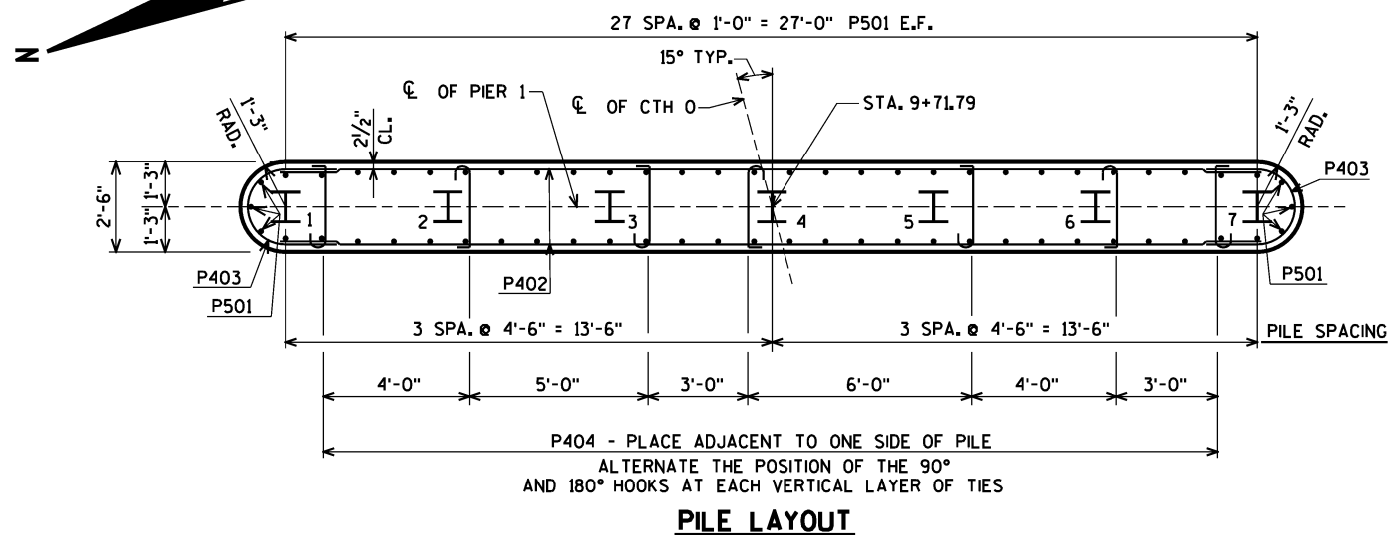
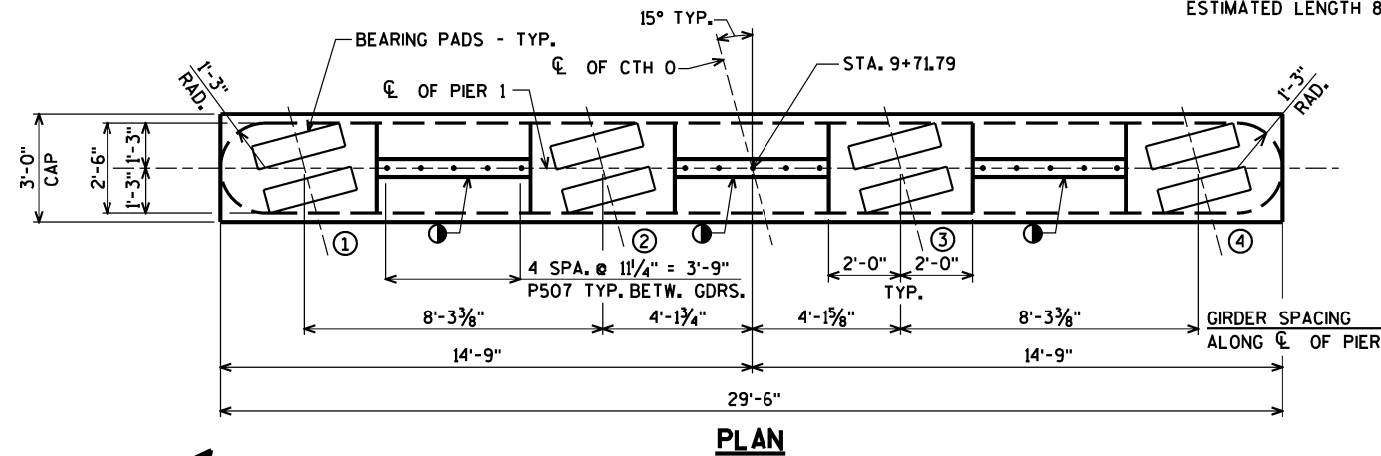
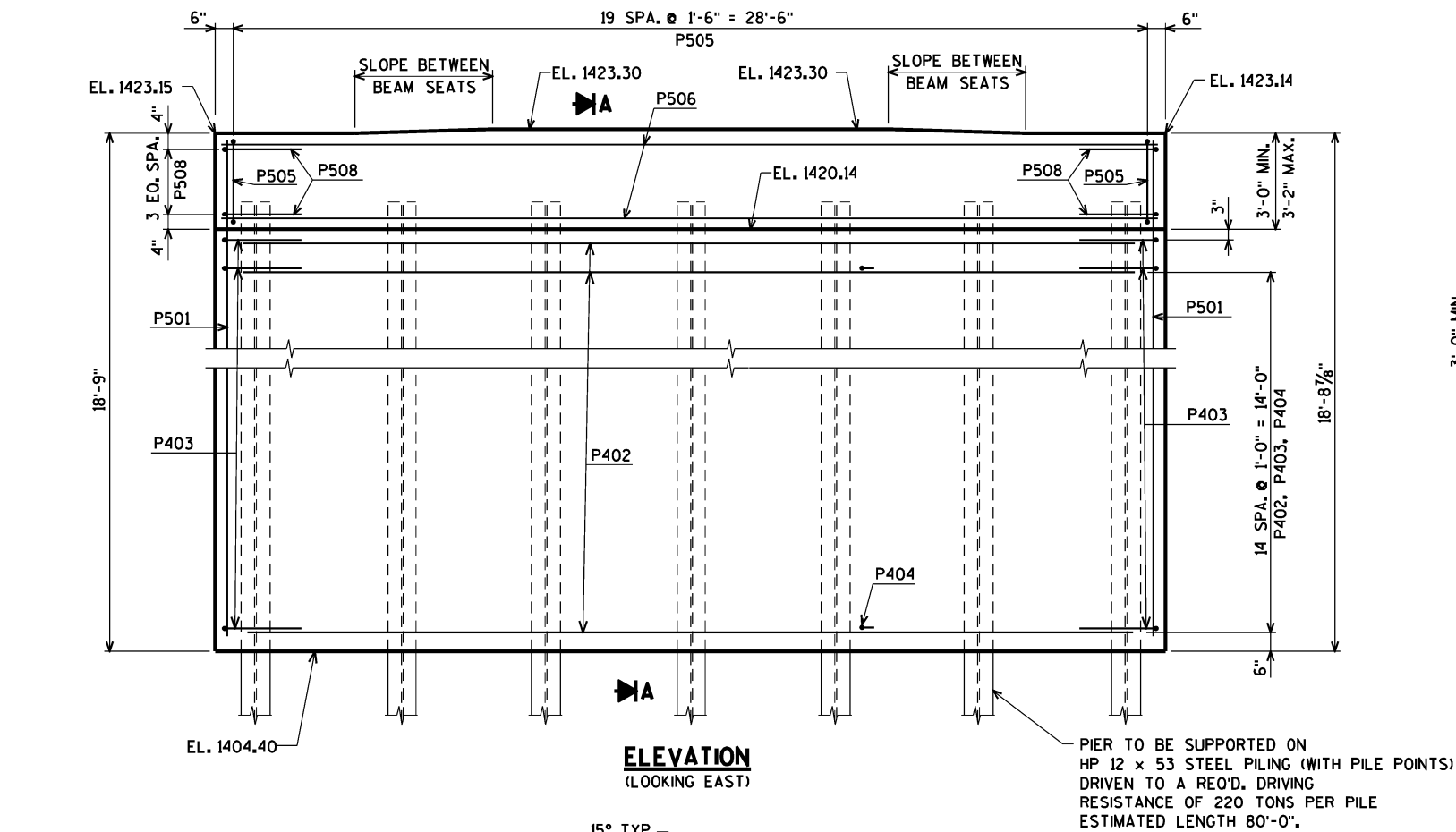
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
	DRAWN BY	CLP	PLANS CK'D. ZSS
EAST ABUTMENT PILE LAYOUT & BILL OF BARS			SHEET 12 OF 2



FOR PILE SPLICE DETAIL SEE SHEET 3.

10/22/2024
PENTABLE:BRou_shd_util.tbl

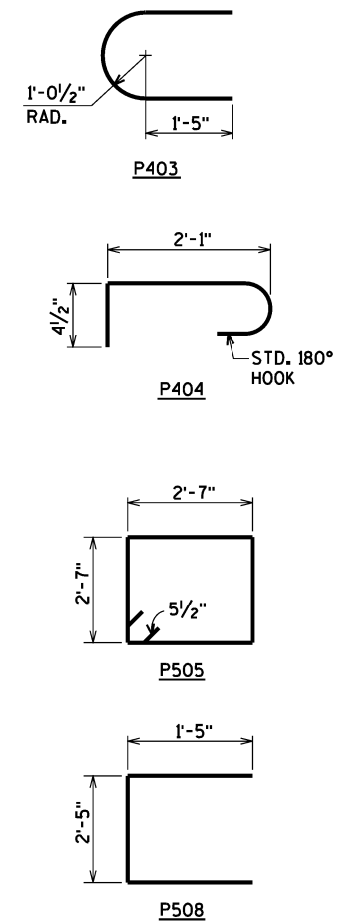
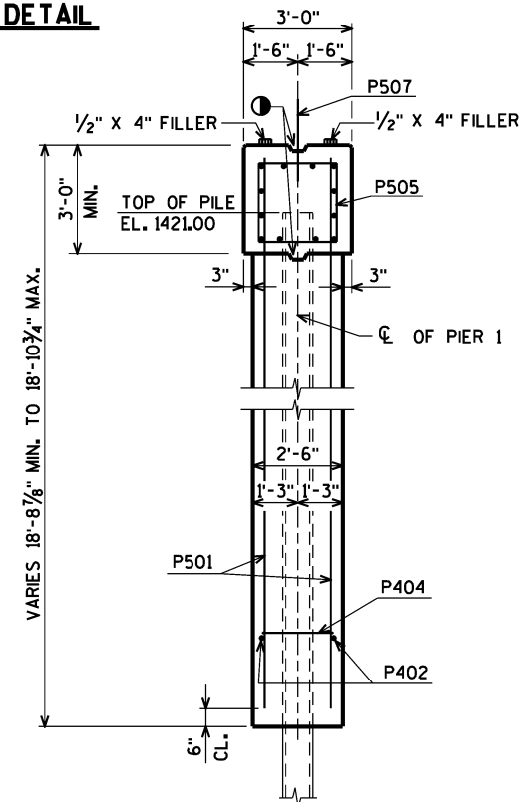
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BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	LOCATION
P501		62	18'-0"				COLUMN VERT. E.F.
P402		32	27'-0"				COLUMN HORIZ.
P403		32	6'-1"	X			COLUMN HORIZ. @ ENDS
P404		105	2'-10"	X			COLUMN TIES
P505		20	10'-11"	X			CAP STIRRUPS
P506		12	29'-1"				CAP HORIZ.
P507	X	15	2'-0"				CAP DOWELS
P508		8	5'-0"	X			CAP HORIZ. @ ENDS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



NOTE:

AT PIER, COFFERDAM REQUIRED. CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH STANDARD SPEC. 502.3.5.3 CONCRETE POURED UNDERWATER SHALL NOT EXCEED 10.0 FEET IN DEPTH, UNLESS APPROVED OTHERWISE.

KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

FOR PILE SPLICE DETAIL SEE SHEET 3.

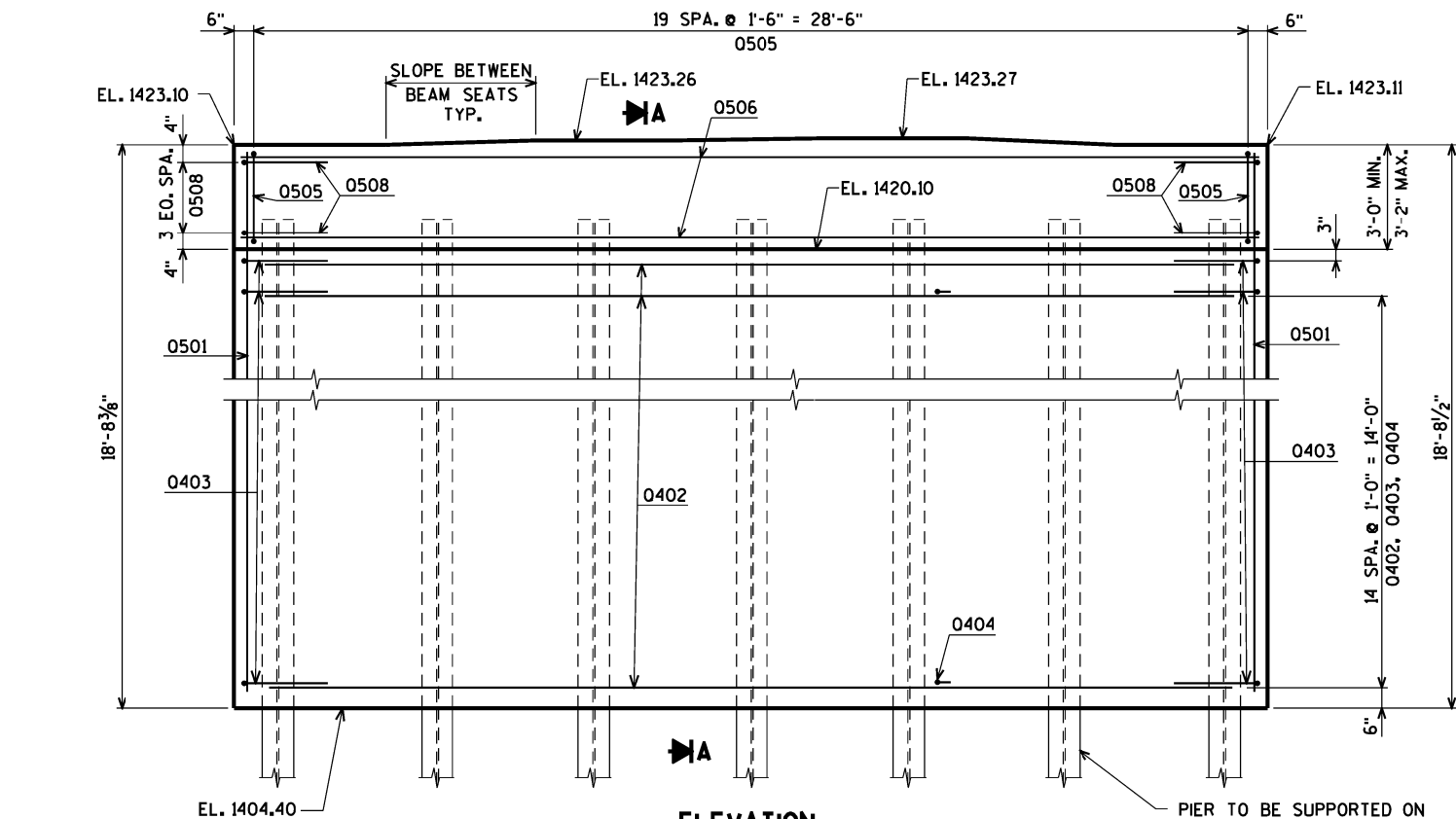
STATE PROJECT NUMBER

8700-00-70

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
PIER 1		SHEET 13 OF 22	

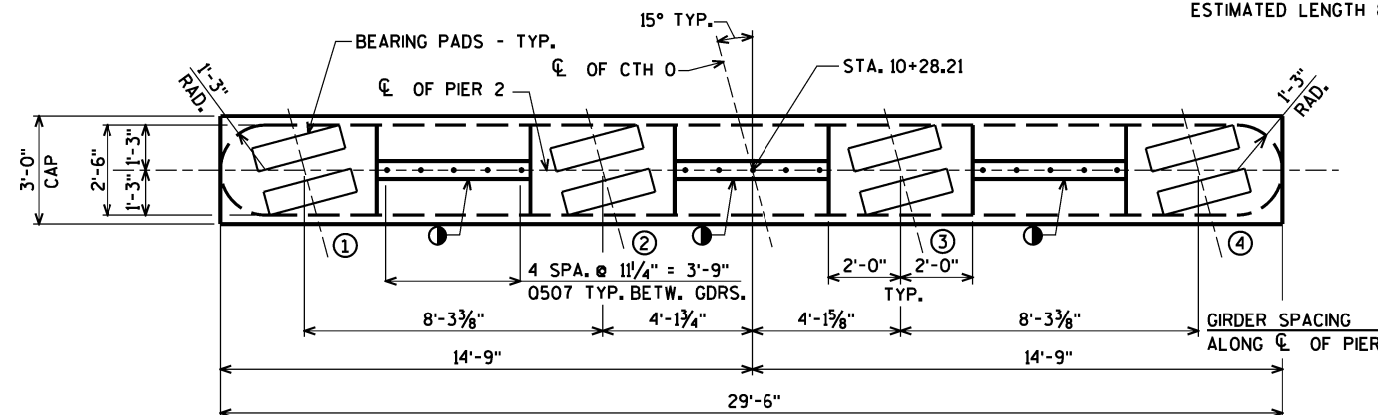
10/22/2024
PENTABLE:BRou_shd_util.tbl

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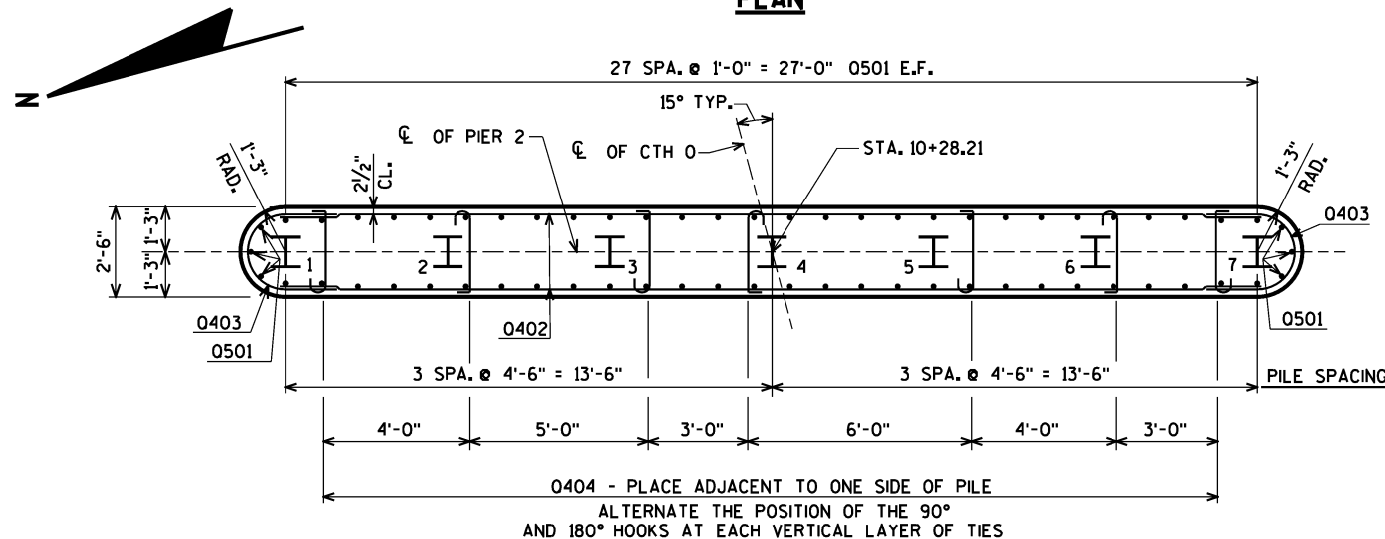


ELEVATION
(LOOKING EAST)

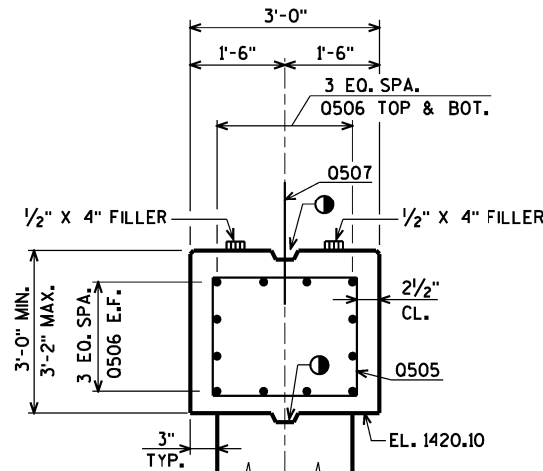
PIER TO BE SUPPORTED ON
HP 12 x 53 STEEL PILING (WITH PILE POINTS)
DRIVEN TO A REQ'D. DRIVING
RESISTANCE OF 220 TONS PER PILE
ESTIMATED LENGTH 80'-0\"/>



PLAN



PILE LAYOUT

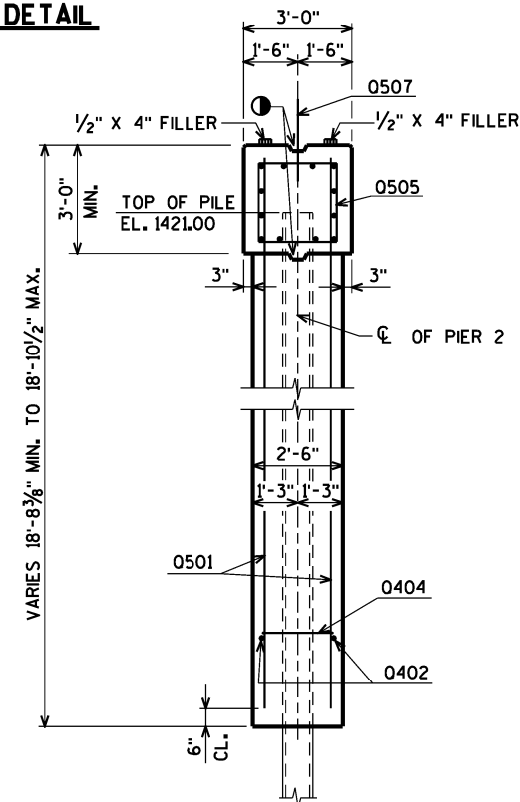


PIER CAP DETAIL

BILL OF BARS

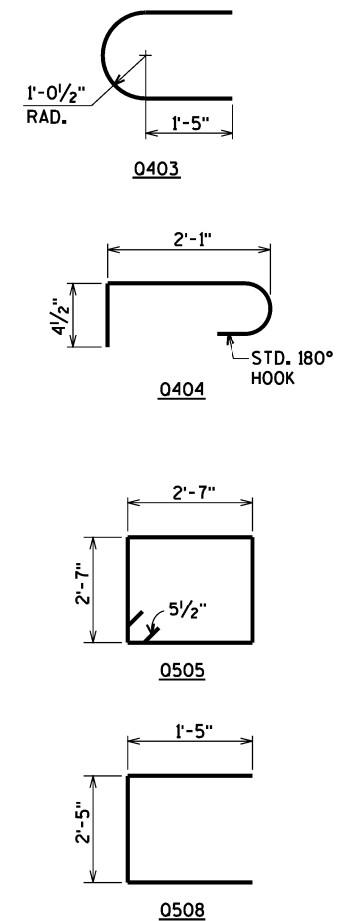
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	LOCATION
0501		62	18-0				COLUMN VERT. E.F.
0402		32	27-0				COLUMN HORIZ.
0403		32	6-1	X			COLUMN HORIZ. @ ENDS
0404		105	2-10	X			COLUMN TIES
0505		20	10-11	X			CAP STIRRUPS
0506		12	29-1				CAP HORIZ.
0507	X	15	2-0				CAP DOWELS
0508		8	5-0	X			CAP HORIZ. @ ENDS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



SECTION A

0507 BARS MAY BE
PLACED AFTER PIER
IS POURED BUT BEFORE
CONC. HAS SET. EMBED
BARS 1'-0\"/>



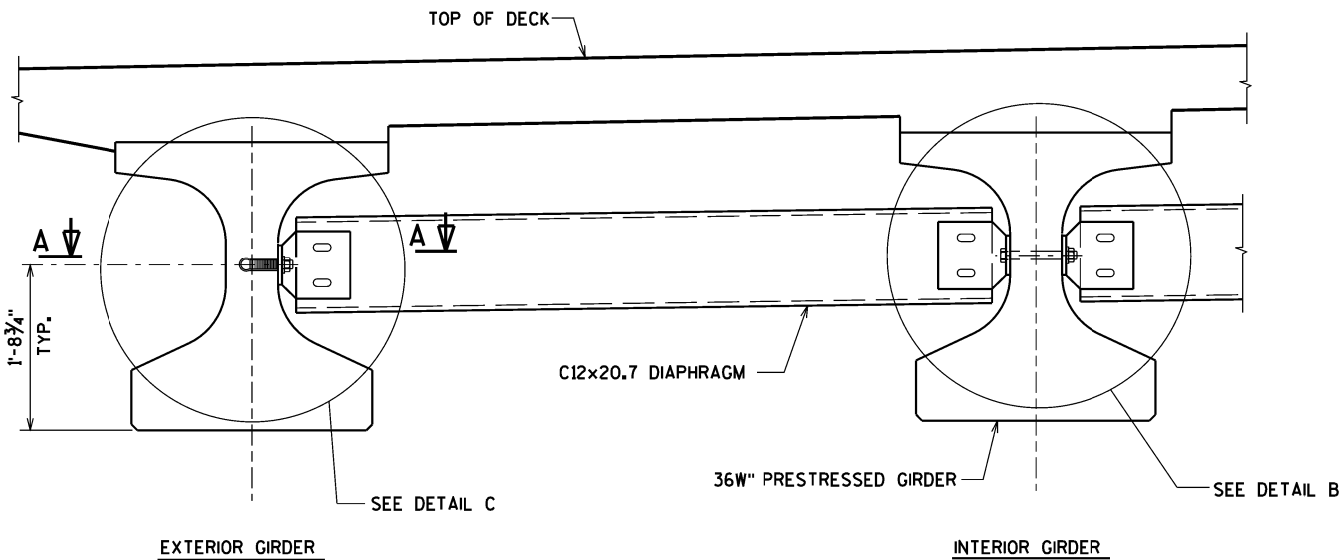
NOTE:

AT PIER, COFFERDAM REQUIRED. CONCRETE POURED UNDERWATER
WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH
STANDARD SPEC. 502.3.5.3 CONCRETE POURED UNDERWATER SHALL
NOT EXCEED 10.0 FEET IN DEPTH, UNLESS APPROVED OTHERWISE.

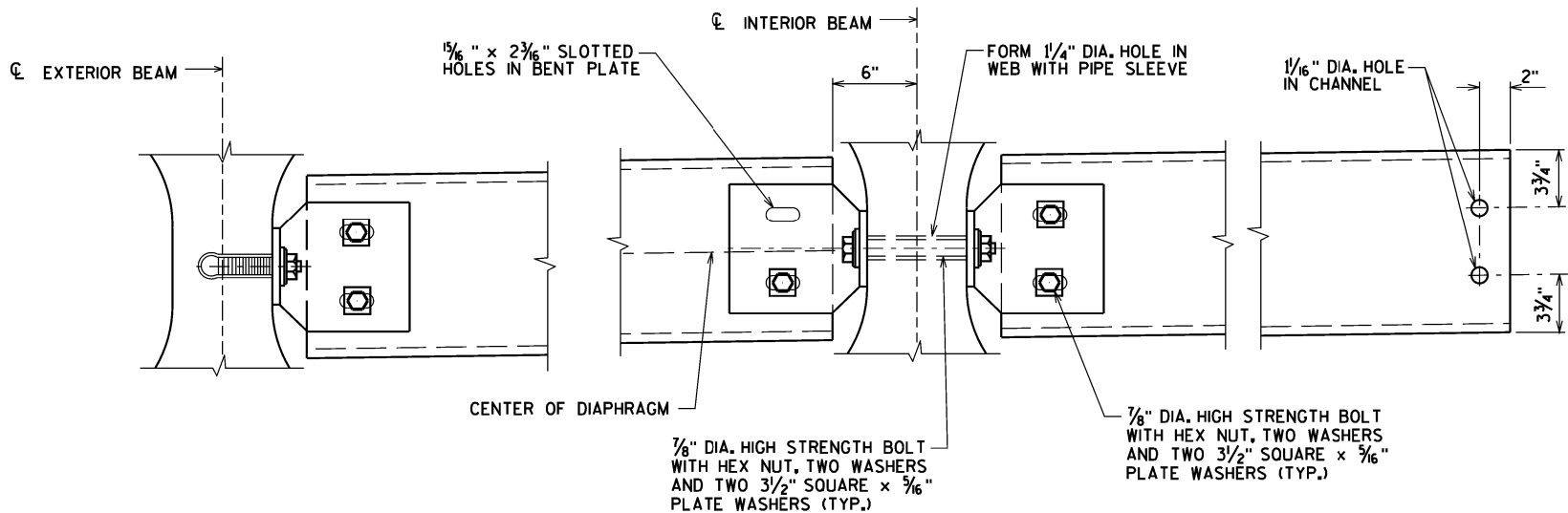
KEYED CONST. JOINT - FORMED
BY A BEVELED 2" x 6\"/>

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
PIER 2		SHEET 14 OF 22	

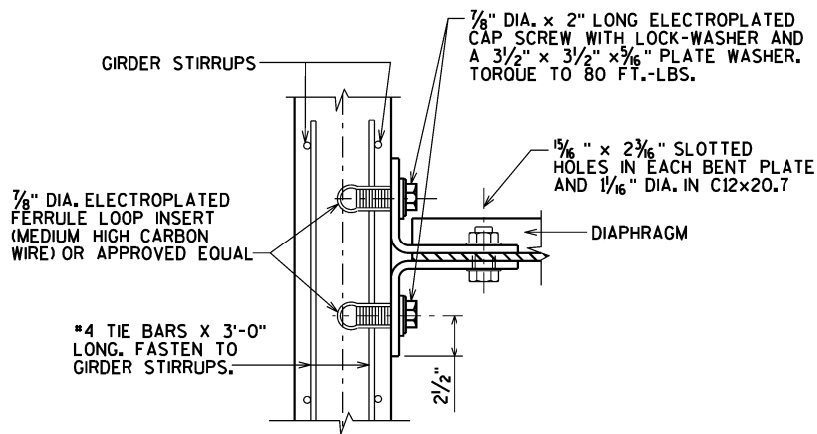


PART TRANSVERSE SECTION AT DIAPHRAGM

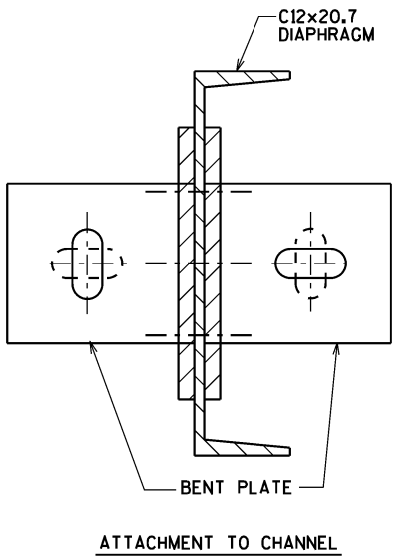
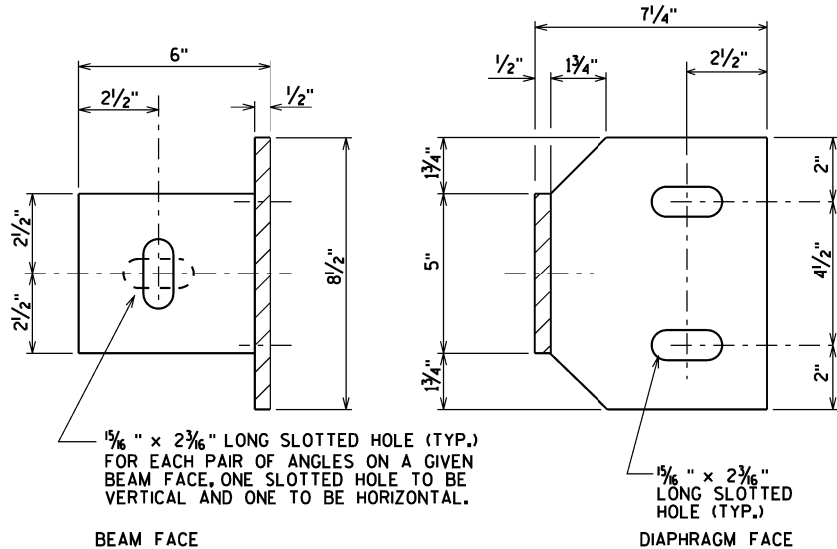


DETAIL C

DETAIL B



SECTION A-A
(FOR EXTERIOR ATTACHMENT)



NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-50-95", EACH.

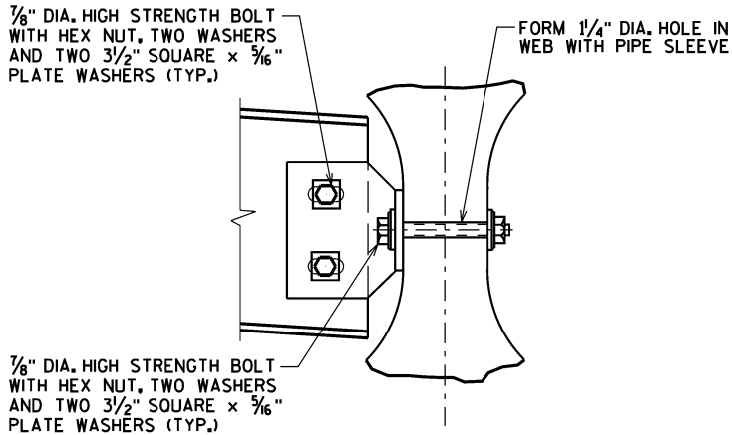
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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

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

FOR DIAPHRAGM SPACING SEE SHEET 19.



SECTION AT INTERIOR GIRDERS THRU
DIAPHRAGM FOR SKEW ANGLES > 10°

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
STEEL DIAPHRAGM		SHEET 15 OF 22	

NOTES

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

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

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

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

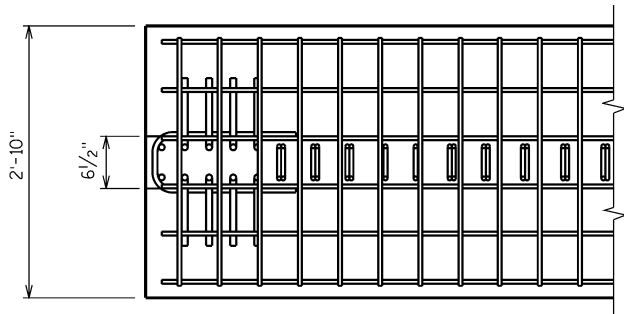
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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

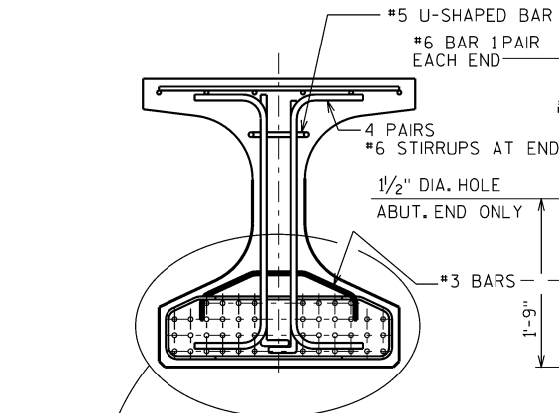
AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

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

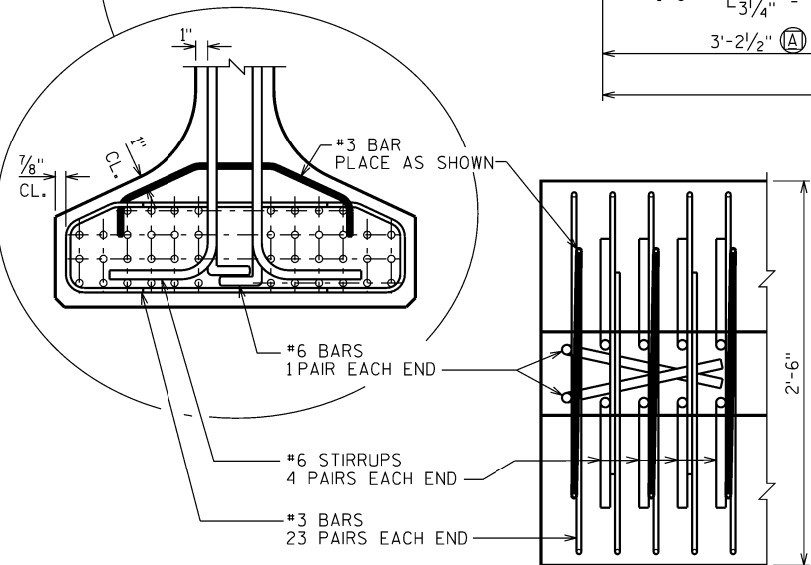
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



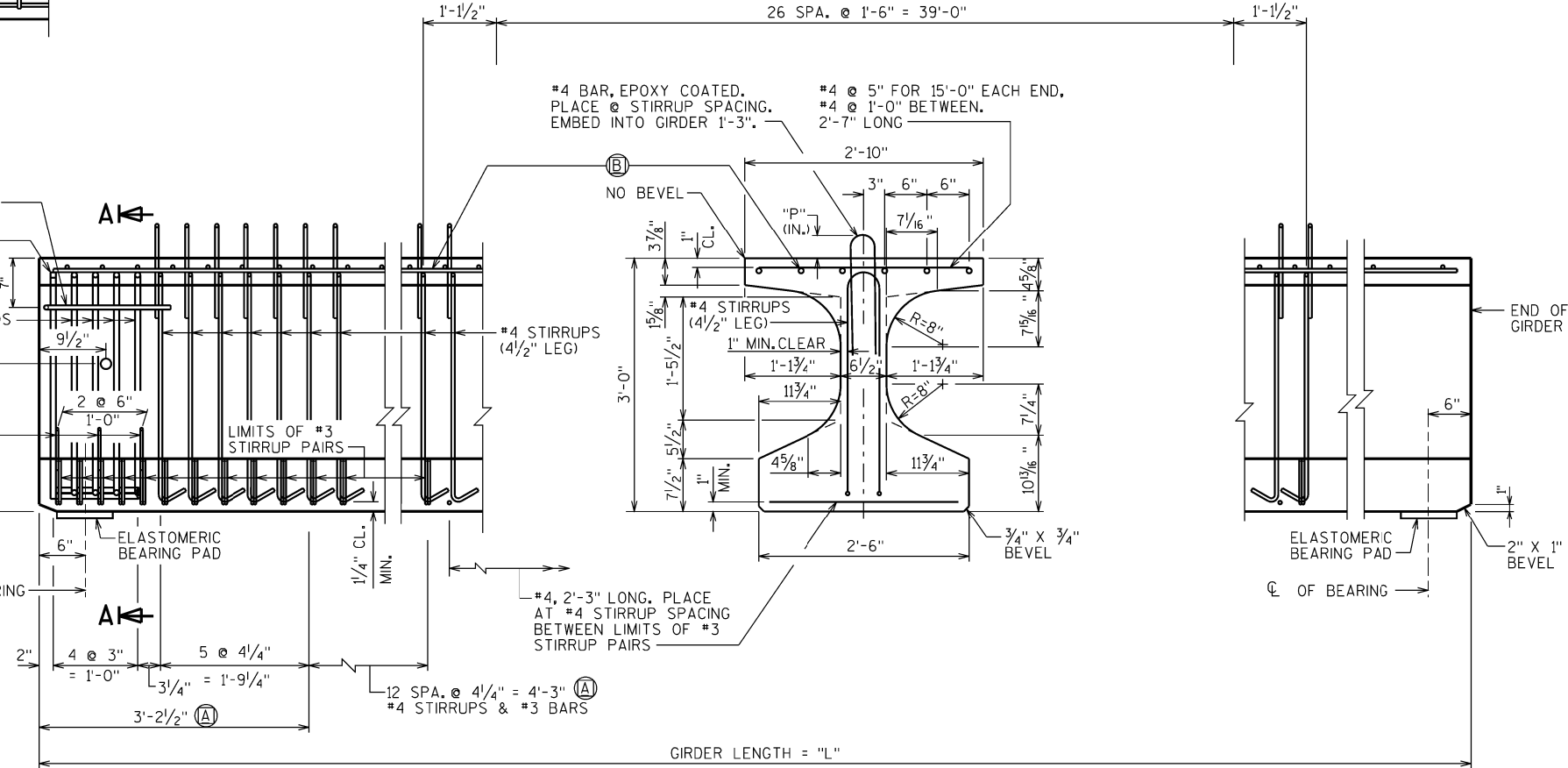
TOP FLANGE



SECTION A-A

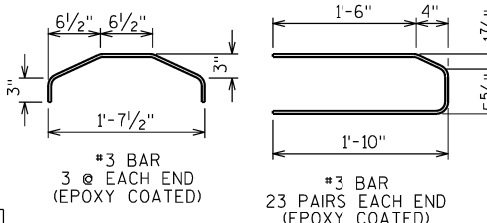
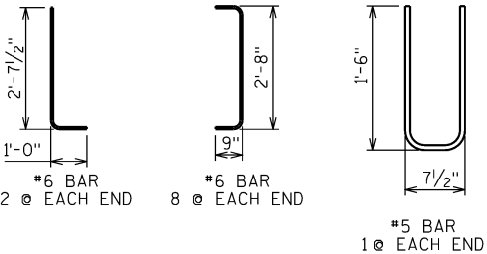


BOTTOM FLANGE



SIDE VIEW & TYPICAL SECTION IN SPAN

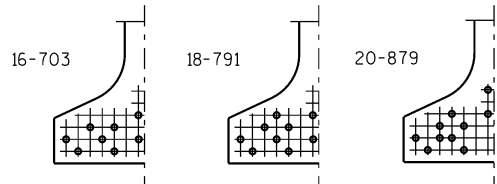
- (A) DETAIL TYP. AT EACH END
- (B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 2'-4"



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

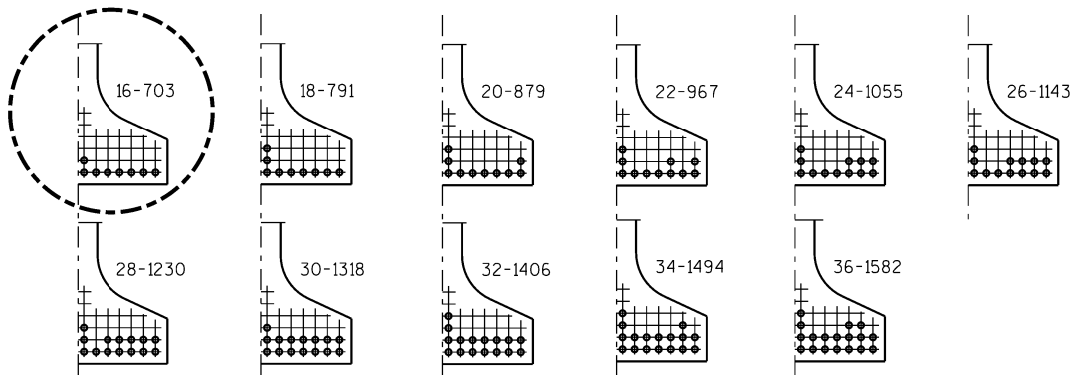
GIRDER DATA																							
SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	DEAD LOAD DEFL. (IN.)									CONC. STRGTH. f'c (P.S.I.)	"P" (IN.)			DIA. OF STRAND (IN.)	DRAPED PATTERN					UNDRAPED PATTERN	
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10		1ST 1/3 OF GIRDER	MID 1/3 OF GIRDER	END 1/3 OF GIRDER		TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.)				
																			"A"	"B" MIN.	"B" MAX.	"C"	
1	1 & 4	56'-2"	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	8,000	7"	7"	7"	0.6	16	6,400	33	10.5	13.5	3	
1	2 & 3	56'-2"	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.1	8,000	7"	7"	7"	0.6	16	6,400	33	10.5	13.5	3	
2	1 & 4	56'-2"	0.1	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.1	8,000	7"	7"	7"	0.6	16	6,400	33	10.5	13.5	3	
2	2 & 3	56'-2"	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.1	8,000	7"	7"	7"	0.6	16	6,400	33	10.5	13.5	3	
3	1 & 4	56'-2"	0.1	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.1	8,000	7"	7"	7"	0.6	16	6,400	33	10.5	13.5	3	
3	2 & 3	56'-2"	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.1	8,000	7"	7"	7"	0.6	16	6,400	33	10.5	13.5	3	

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
36W" PRESTRESSED GIRDER DETAILS		SHEET 16 OF 22	



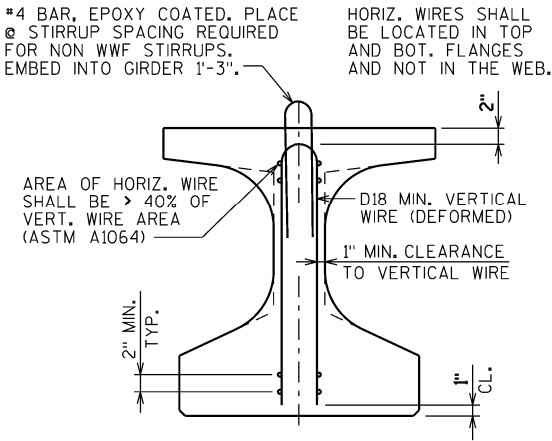
**STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY
TO AVOID DRAPING OF STRANDS**

0.6" DIA. STRANDS



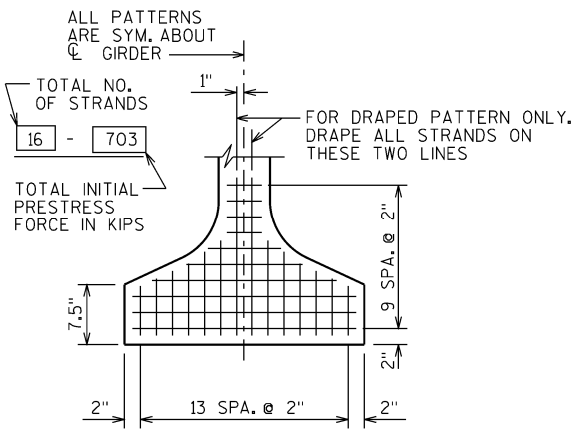
ARRANGEMENT AT $\frac{1}{4}$ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6" DIA. STRANDS

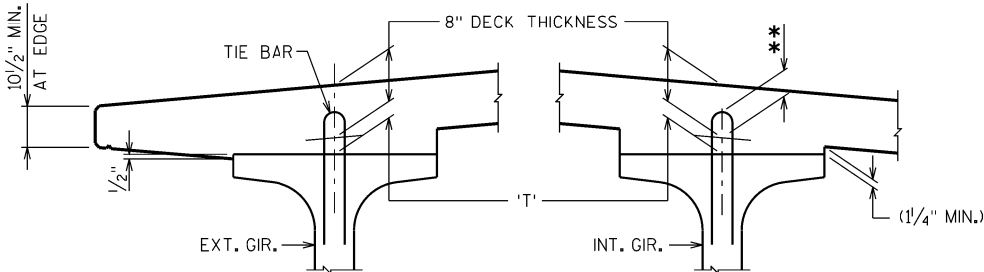


SECTION THRU GIRDER

SHOWING WELDED WIRE FABRIC (WWF) STIRRUPS
ASTM A1064 (FY = 70 KSI)



TYP. STRAND PATTERN



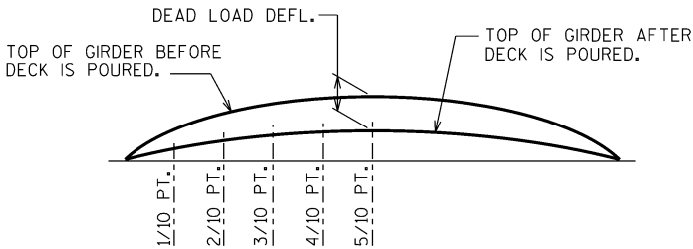
DECK HAUNCH DETAIL

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

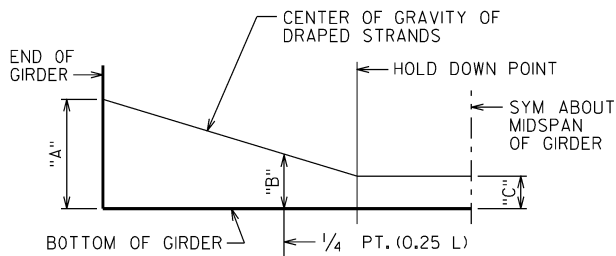
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT $\frac{1}{4}$ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

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

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



DEAD LOAD DEFLECTION DIAGRAM



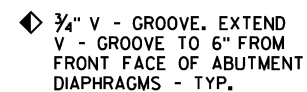
DRAPED STRAND PROFILE

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

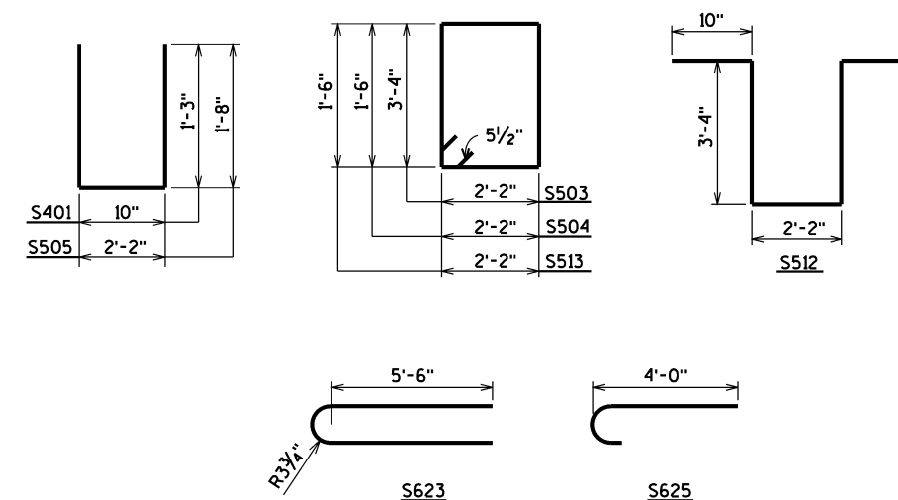
SPAN	CAMBER (IN.) *
1	1.0
2	1.0
3	1.0

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

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STRUCTURE B-50-95			
	DRAWN BY	CLP	PLANS CK'D. ZSS
36W" PRESTRESSED GIRDER DETAILS		SHEET 17 OF 22	



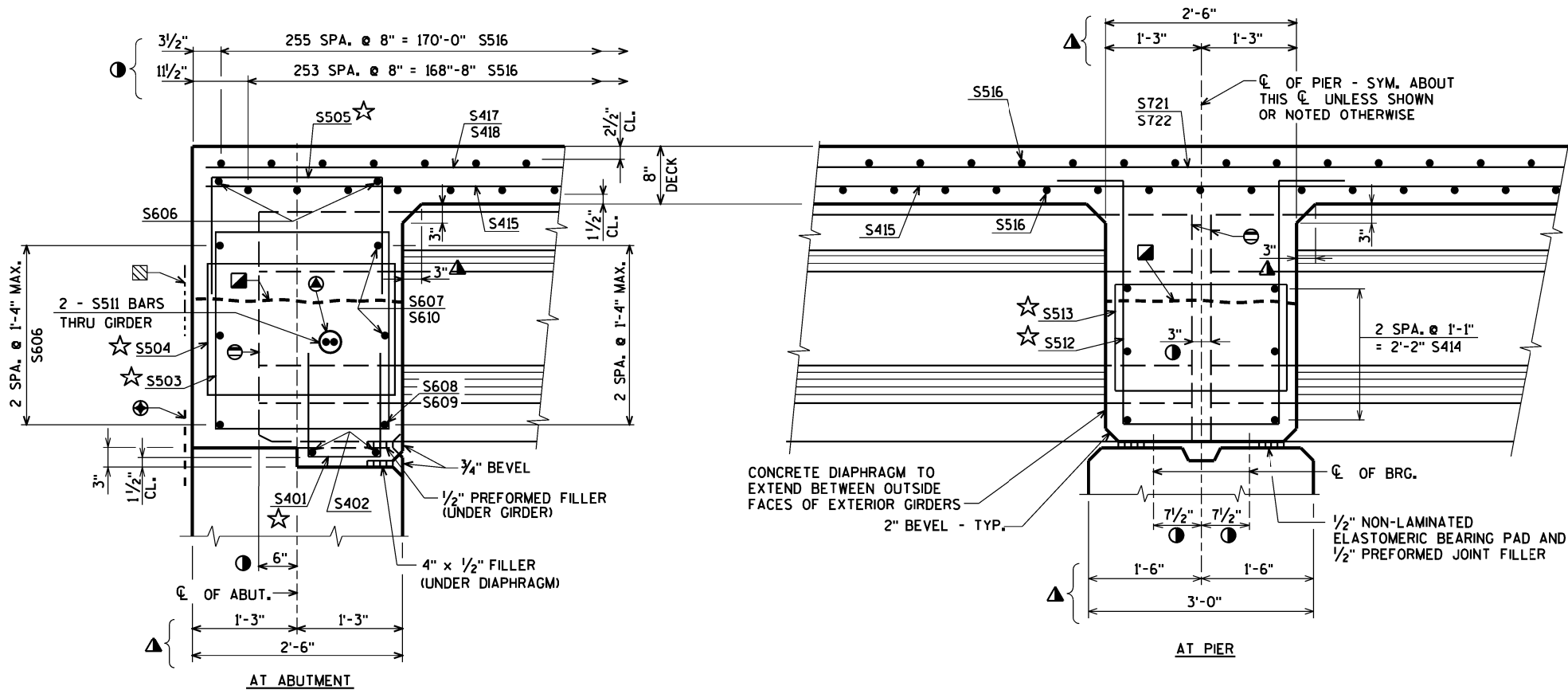
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



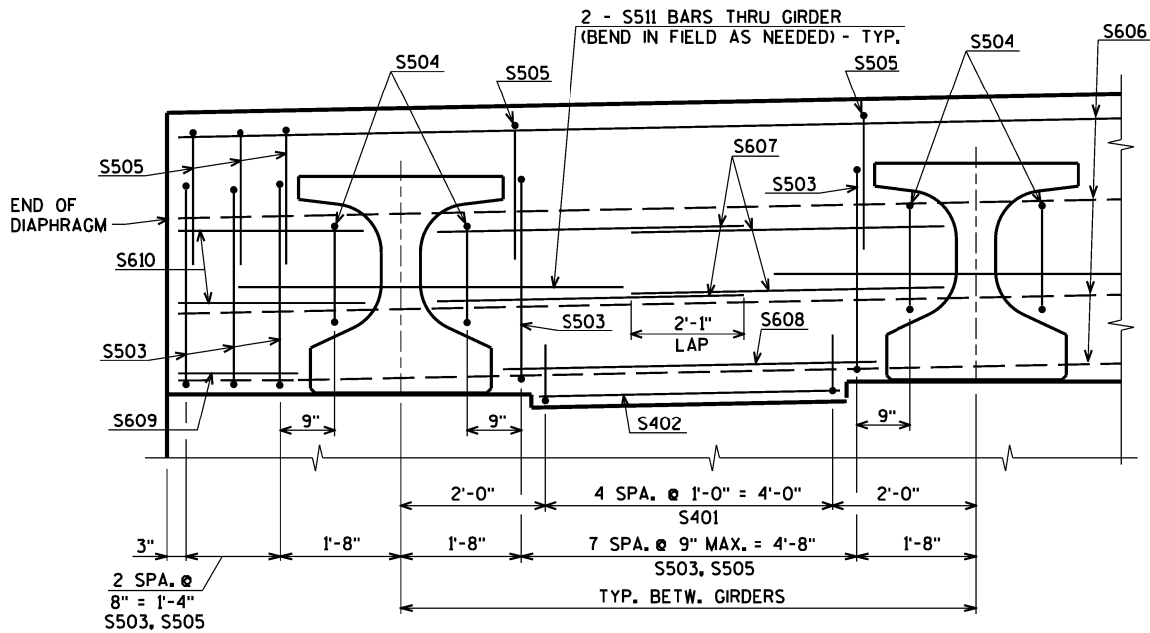
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
SUPERSTRUCTURE		SHEET 18 OF 2	



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
SUPERSTRUCTURE PLAN		SHEET 19 OF 22	



PART LONGITUDINAL SECTION



PART TRANSVERSE SECTION AT ABUTMENT DIAPHRAGM

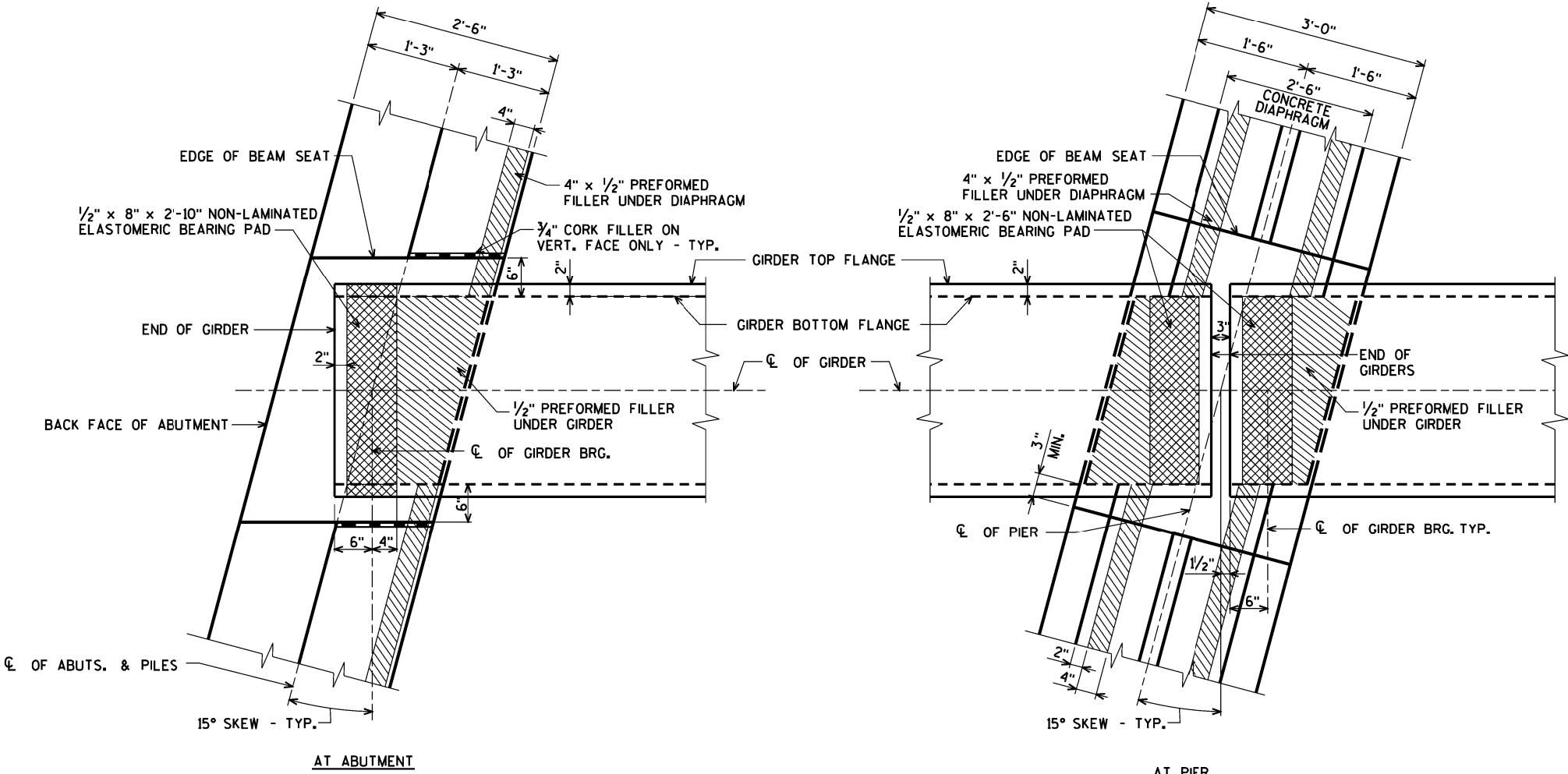
- 18" RUBBERIZED MEMBRANE WATERPROOFING
- DIMENSION IS TAKEN PARALLEL TO CL OF GIRDER.
- DIMENSIONS MEASURED NORMAL TO CL OF SUBSTRUCTURE UNIT.
- OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDER. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.
- 18" RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JT. IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES"
- 1- 1/2" DIA. HOLE IN WEB FOR S511 BARS. PLACE S511 BARS SYM. ABOUT CL OF GIRDERS. FIELD BEND ALONG SKEW.
- BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO CL OF GIRDERS.
- END OF GIRDER.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY	CLP	PLANS CK'D.	ZSS
SUPERSTRUCTURE DETAILS		SHEET 20 OF 22	

TOP OF DECK ELEVATIONS

	℄ OF W. ABUT.	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	℄ OF PIER 1	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	℄ OF PIER 2
N. EDGE OF DECK	1426.91	1426.93	1426.95	1426.97	1426.98	1427.00	1427.01	1427.02	1427.03	1427.04	1427.04	1427.04	1427.04	1427.04	1427.04	1427.04	1427.03	1427.03	1427.02	1427.01	1426.99
GIRDER 1	1426.97	1427.00	1427.01	1427.03	1427.05	1427.06	1427.07	1427.08	1427.09	1427.10	1427.10	1427.11	1427.11	1427.11	1427.11	1427.10	1427.10	1427.09	1427.08	1427.07	1427.06
GIRDER 2	1427.13	1427.15	1427.17	1427.19	1427.20	1427.22	1427.23	1427.24	1427.25	1427.26	1427.26	1427.27	1427.27	1427.27	1427.27	1427.27	1427.26	1427.25	1427.25	1427.24	1427.22
℄ OF CTH 0	1427.20	1427.22	1427.24	1427.26	1427.28	1427.29	1427.31	1427.32	1427.33	1427.34	1427.34	1427.35	1427.35	1427.35	1427.35	1427.35	1427.34	1427.34	1427.33	1427.32	1427.31
GIRDER 4	1427.12	1427.14	1427.16	1427.18	1427.20	1427.21	1427.22	1427.24	1427.25	1427.25	1427.26	1427.27	1427.27	1427.27	1427.27	1427.27	1427.26	1427.26	1427.25	1427.24	1427.23
GIRDER 5	1426.95	1426.97	1426.99	1427.01	1427.03	1427.05	1427.06	1427.07	1427.08	1427.09	1427.10	1427.10	1427.11	1427.11	1427.11	1427.11	1427.10	1427.10	1427.09	1427.08	1427.07
S. EDGE OF DECK	1426.88	1426.90	1426.92	1426.94	1426.96	1426.98	1426.99	1427.00	1427.02	1427.02	1427.03	1427.04	1427.04	1427.04	1427.04	1427.04	1427.04	1427.04	1427.03	1427.02	1427.01

	℄ OF PIER 2	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	℄ OF E. ABUT.
N. EDGE OF DECK	1426.99	1426.98	1426.96	1426.94	1426.92	1426.90	1426.88	1426.85	1426.83	1426.80	1426.77
GIRDER 1	1427.06	1427.04	1427.03	1427.01	1426.99	1426.97	1426.95	1426.92	1426.90	1426.87	1426.84
GIRDER 2	1427.22	1427.21	1427.19	1427.18	1427.16	1427.14	1427.12	1427.09	1427.07	1427.04	1427.01
℄ OF CTH 0	1427.31	1427.29	1427.28	1427.26	1427.24	1427.22	1427.20	1427.18	1427.15	1427.12	1427.09
GIRDER 4	1427.23	1427.22	1427.20	1427.18	1427.17	1427.15	1427.12	1427.10	1427.08	1427.05	1427.02
GIRDER 5	1427.07	1427.06	1427.05	1427.03	1427.01	1426.99	1426.97	1426.95	1426.93	1426.90	1426.87
S. EDGE OF DECK	1427.01	1427.00	1426.98	1426.97	1426.95	1426.93	1426.91	1426.89	1426.86	1426.84	1426.81

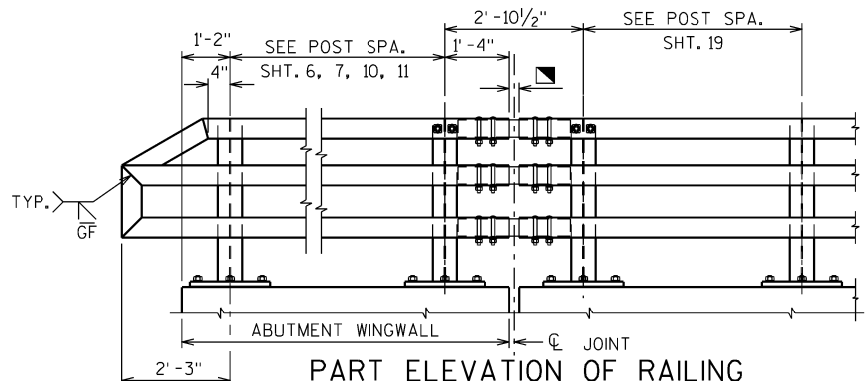


BEARING PAD DETAIL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
SUPERSTRUCTURE ELEVATIONS AND BEARINGS		SHEET 21 OF 22	

- ① W6 x 25 WITH 1/8" x 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1/4" x 13 3/4" x 1'-8" WITH 1 7/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- ③ ASTM A449 - 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED), 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-5" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
- ④ 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- ⑤ TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑤A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑥ 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" x 1 5/8" x 1 5/8" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- ⑦ 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" x 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- ⑨ SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- ⑩ 3/8" x 3 5/8" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- ⑩A 3/8" x 2 5/8" x 2'-4" PLATE USED IN NO. 5, 3/8" x 3 5/8" x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪ 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/8" x 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1 5/8" x 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A. PROVIDE 1 5/8" DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.
- ⑫ 7/8" DIA. x 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- ⑬ 3/8" x 8" x 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- ⑭ 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- ⑮ 1" DIA. HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

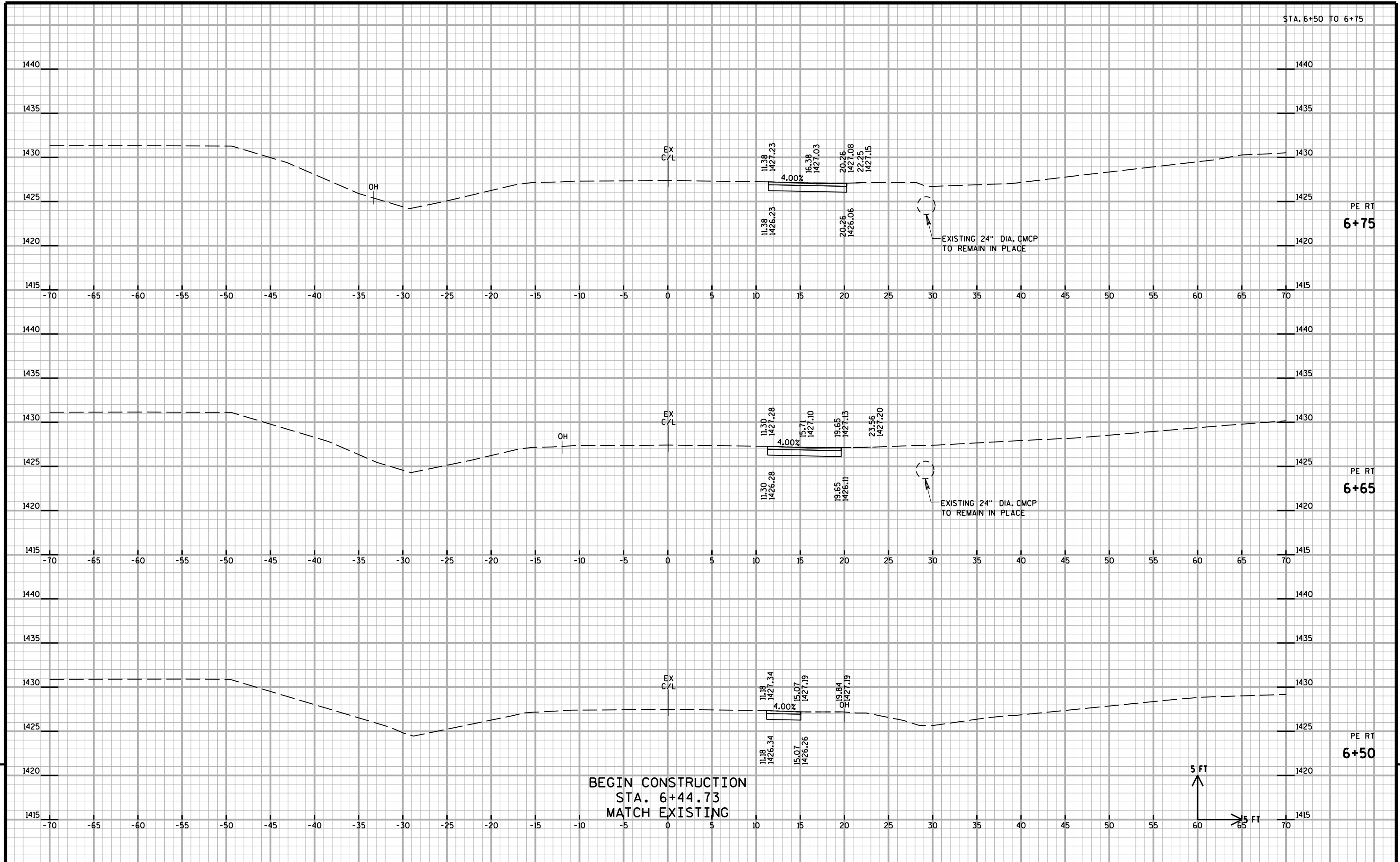
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL $\frac{1}{8}$ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO.2 AND CAULK AROUND PERIMETER OF PLATE NO.2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION, PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO.6 BLAST CLEANING BY SSPC SPECIFICATIONS.

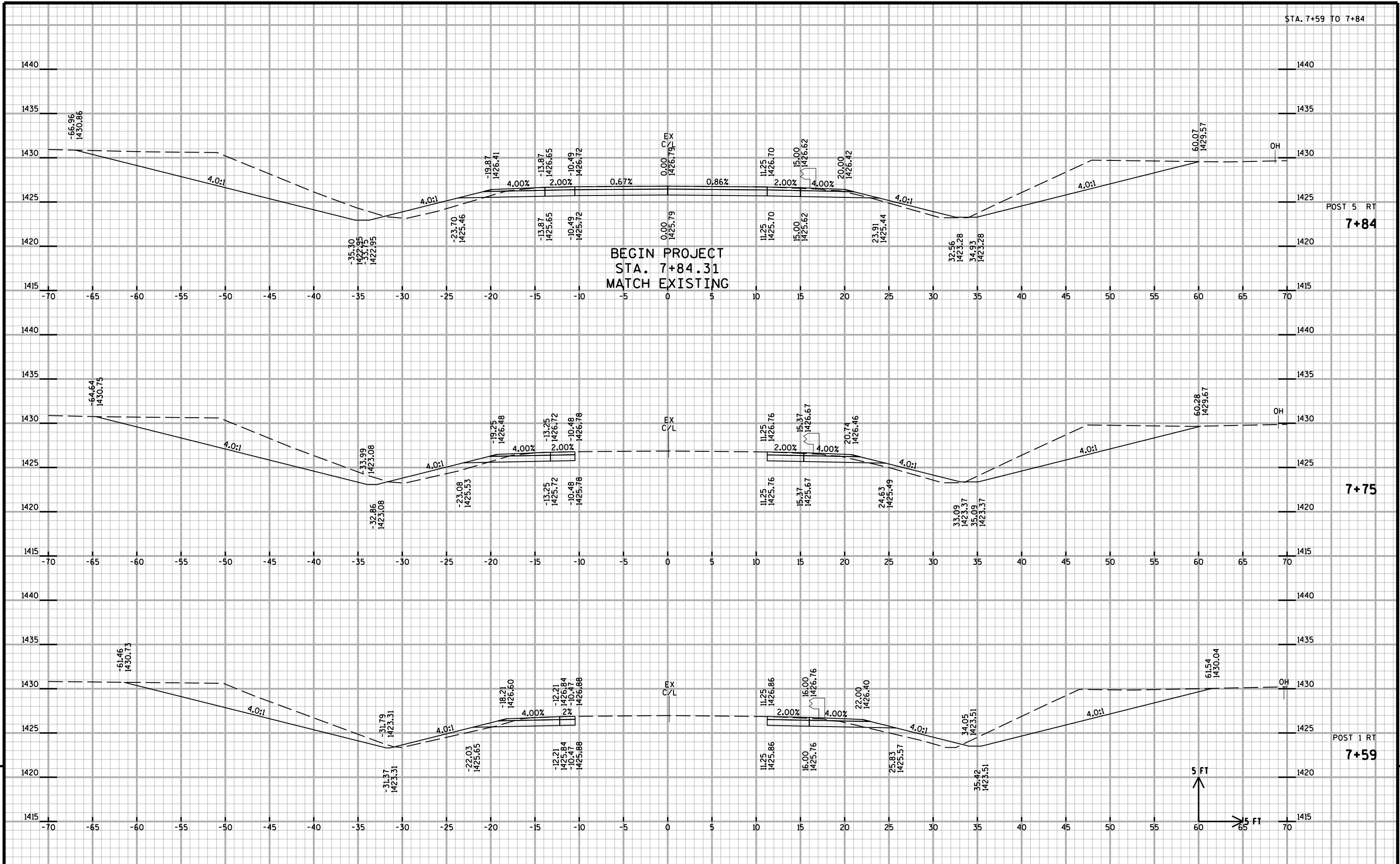


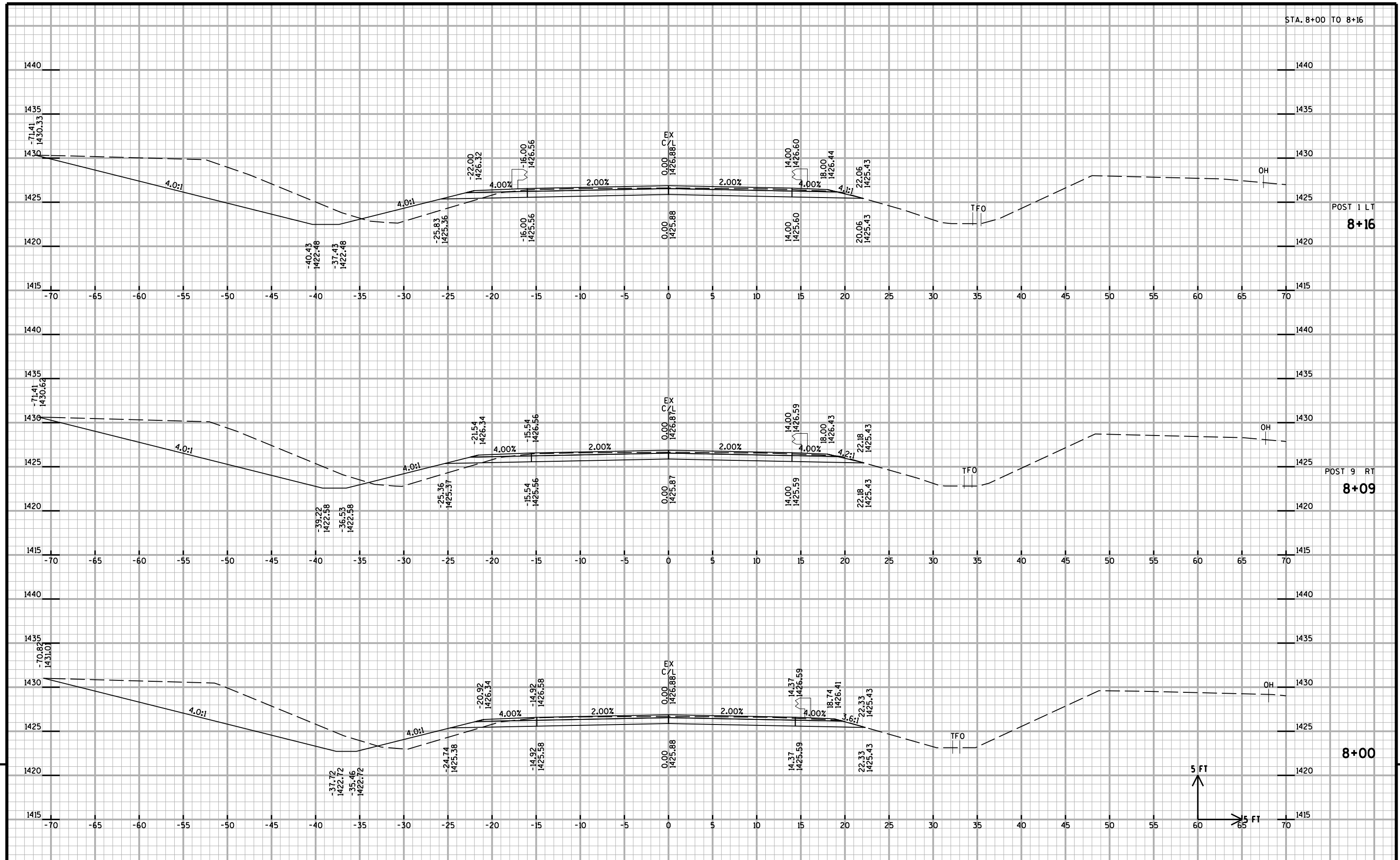
■ 1/4" TO 3/4" OPENING AT A1 ABUTMENTS.

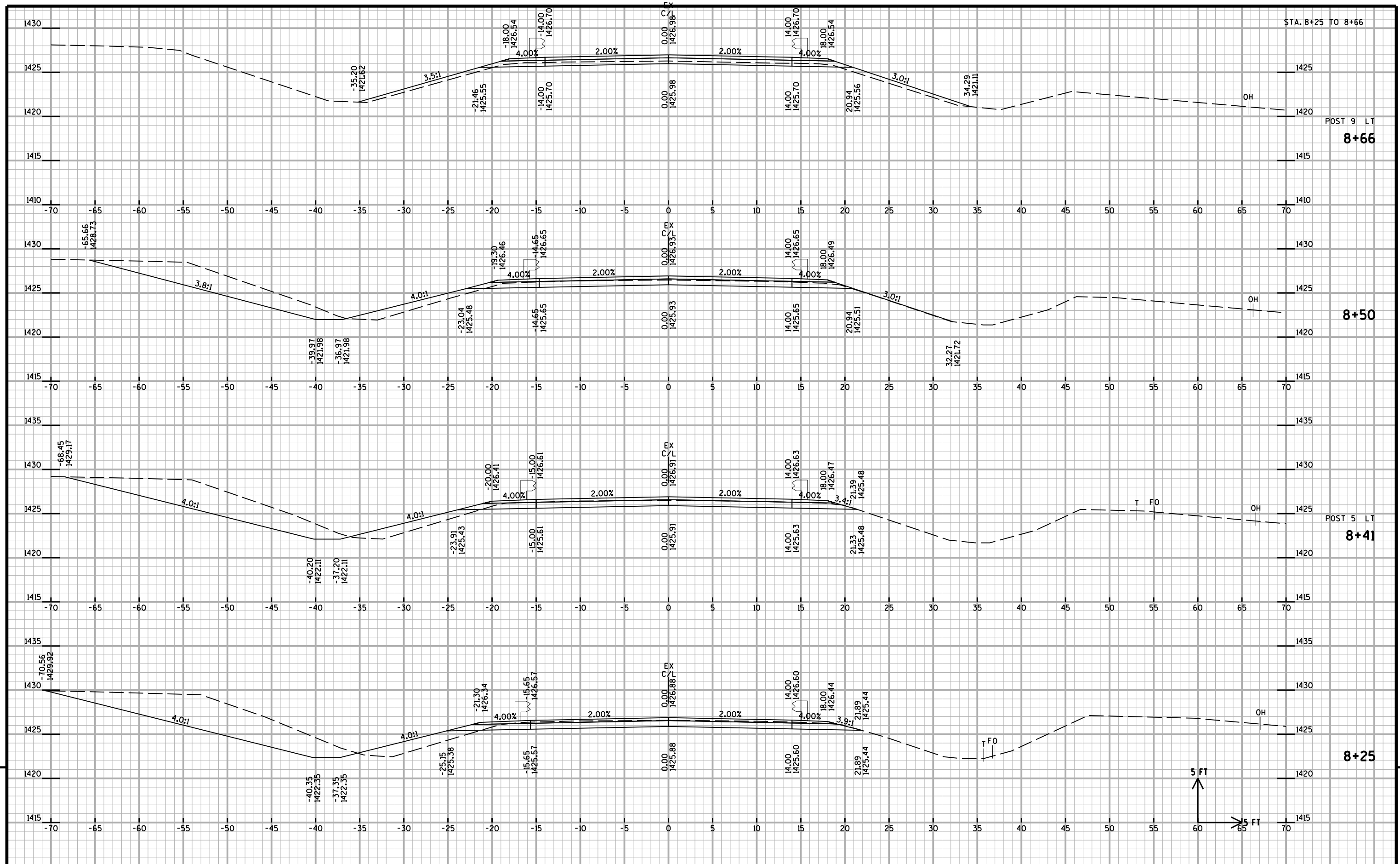
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-50-95			
DRAWN BY		CLP	PLANS CK'D. ZSS
TUBULAR STEEL RAILING TYPE 'M'		SHEET 22 OF 22	

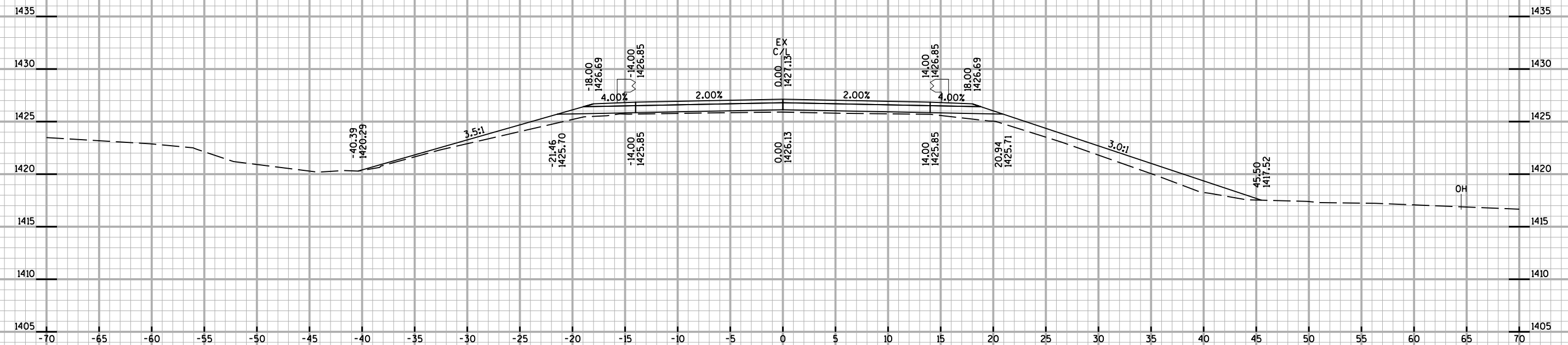
CTH O COMPUTER EARTHWORK										
Station	Distance	Area (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
		Cut	Unuseable Pavement Material	Fill	Salvaged /			Expanded		
					Cut	Unuseable Pavement Material	Fill	Cut 1.00	Fill 1.30	
6+44.73	--	3.8	0.0	0.0	--	--	--			
6+65	20.27	8.2	0.0	0.1	4	0	0	4	0	4
6+75	10.00	8.8	0.0	0.0	3	0	0	8	0	8
7+00	25.00	7.7	0.0	0.0	8	0	0	15	0	15
7+11.23	11.23	15.4	0.0	0.5	5	0	0	20	0	20
7+25	13.77	15.3	0.0	2.2	8	0	1	28	1	27
7+50	25.00	66.9	0.0	7.1	38	0	4	66	7	59
7+59.31	9.31	112.6	0.0	10.0	31	0	3	97	11	86
7+75	15.69	123.0	0.0	10.8	68	0	6	165	18	147
7+84.31	9.31	131.6	0.0	10.8	44	0	4	209	23	186
7+84.31	--	153.3	4.5	10.8	--	--	--	--	--	--
8+00	15.69	126.7	4.5	9.3	81	3	6	288	31	257
8+09.31	9.31	126.9	4.5	11.4	44	2	4	330	35	295
8+16.23	6.92	125.9	4.5	13.2	32	1	3	361	40	322
8+25	8.77	113.2	4.5	12.9	39	1	4	399	45	354
8+41.23	16.23	89.8	4.5	11.8	61	3	7	457	55	402
8+50	8.77	70.3	4.5	10.9	26	1	4	482	59	422
8+66.23	16.23	12.9	5.4	11.2	25	3	7	504	68	435
8+75	8.77	7.2	4.0	14.4	3	2	4	505	74	432
8+99	24.00	0.0	0.0	39.4	3	2	24	507	105	402
9+00.	1.00	0.0	0.0	39.7	0	0	1	507	106	400
9+06	6.00	0.0	0.0	43.2	0	0	9	507	118	388
9+14.71	8.71	0.0	0.0	43.2	0	0	14	507	137	370
8-50-95	--	--	--	--	--	--	--	--	--	--
10+85.29	--	0.0	0.0	89.0	--	--	--	--	--	--
10+94	8.71	0.0	0.0	89.0	0	0	29	507	174	333
11+00	6.00	0.0	0.0	82.5	0	0	19	507	199	308
11+01	1.00	0.0	0.0	81.2	0	0	3	507	203	304
11+25	24.00	0.0	0.0	43.2	0	0	55	507	274	232
11+50	25.00	0.0	0.0	18.4	0	0	28	507	312	195
11+75	25.00	10.6	4.5	14.0	5	2	15	510	331	179
11+90.92	15.92	18.4	4.4	13.5	9	3	8	515	341	174
12+00	9.08	22.1	4.4	31.4	7	1	8	521	351	170
12+16.06	16.06	26.2	4.6	77.8	14	3	32	532	393	139
12+25	8.94	28.8	4.6	79.9	9	2	26	540	427	113
12+41.2	16.20	29.8	4.6	75.4	18	3	47	555	488	67
12+50	8.80	31.6	4.6	62.9	10	1	23	563	517	46
12+54.89	4.89	34.9	4.5	53.7	6	1	11	569	531	38
12+54.89	--	13.0	0.0	53.7	--	--	--	--	--	--
12+75	20.11	6.1	0.0	39.5	7	0	35	576	576	0
13+00	25.00	6.4	0.0	26.6	6	0	31	581	616	-34
13+25	25.00	6.3	0.0	14.0	6	0	19	587	640	-53
13+46.2	21.20	6.2	0.0	0.0	5	0	5	592	647	-55
					625	33	498			



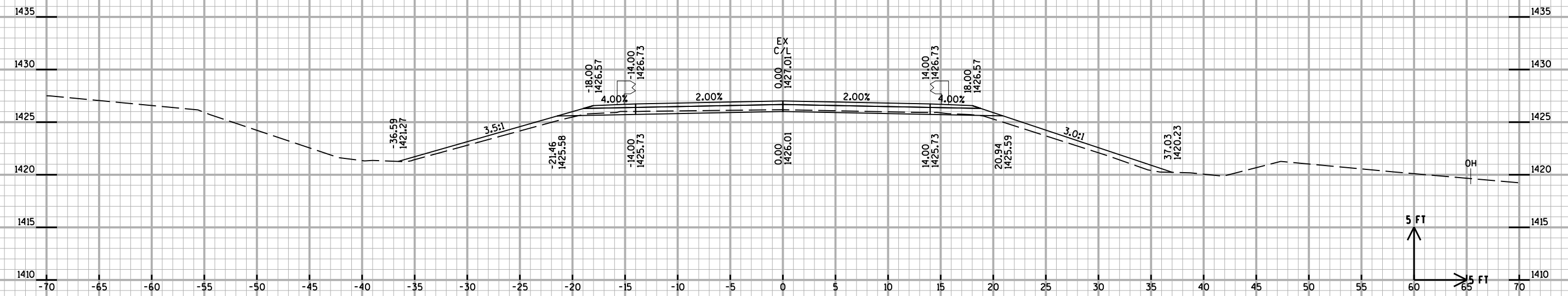








8+99



8+75

5 FT

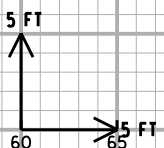
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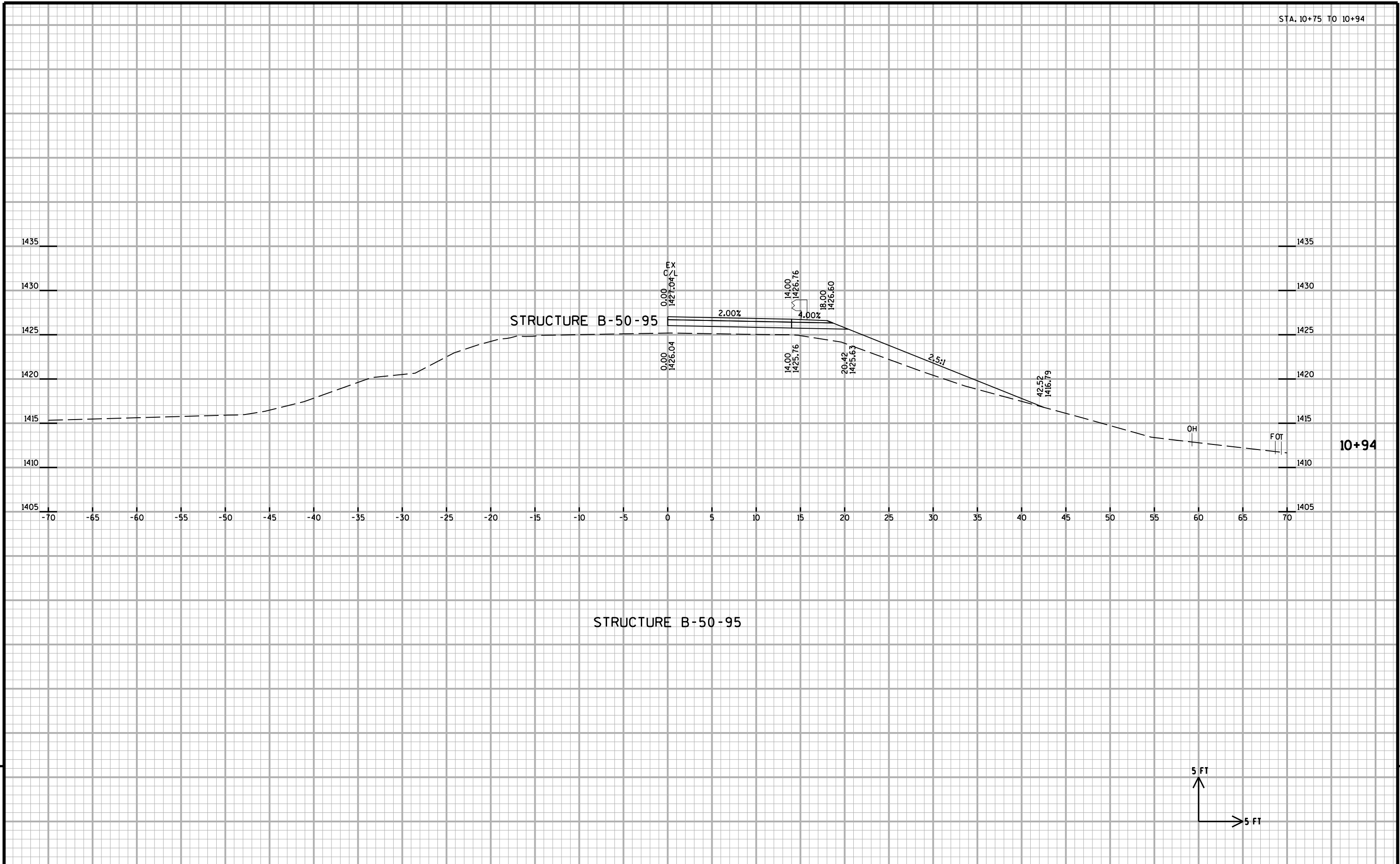
STRUCTURE B-50-95

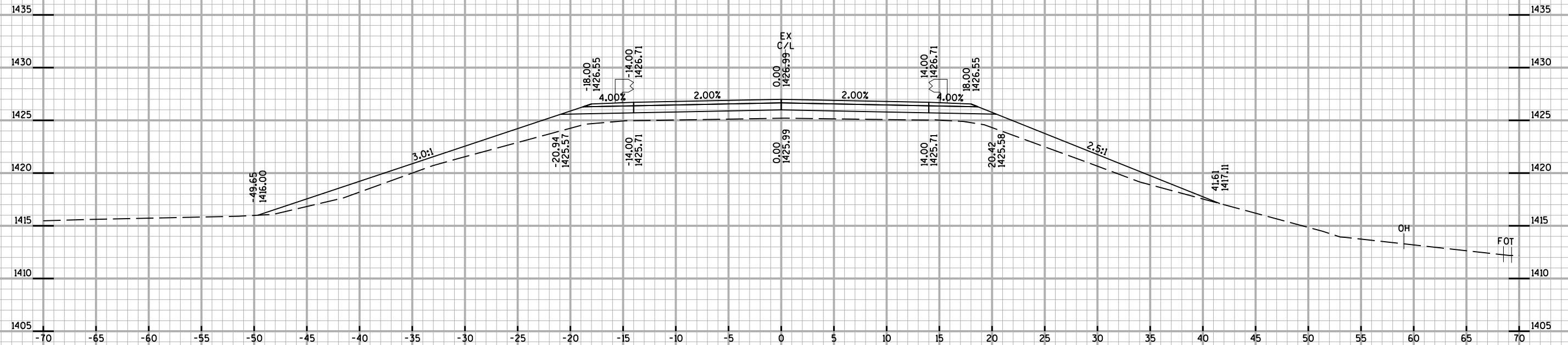
STRUCTURE B-50-95

9+06

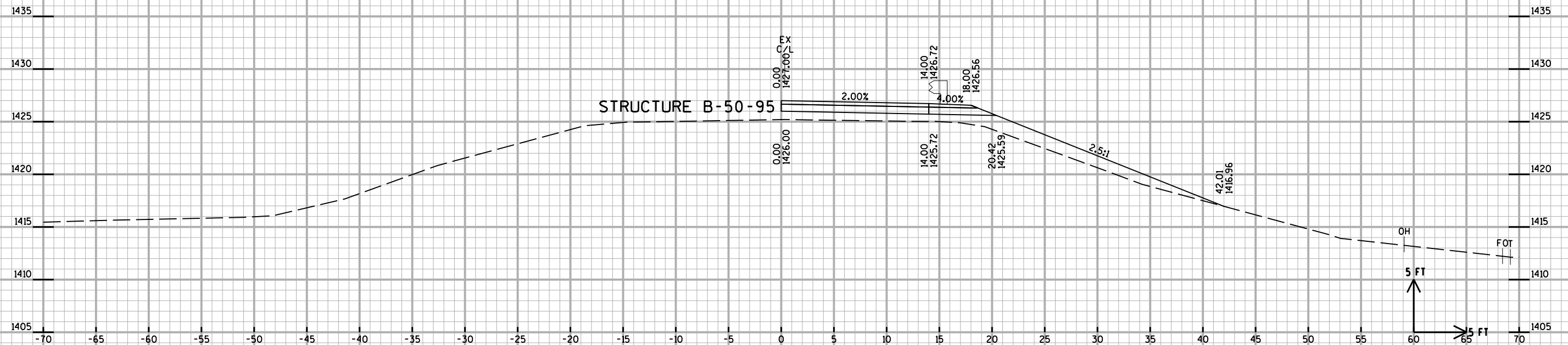
9+00



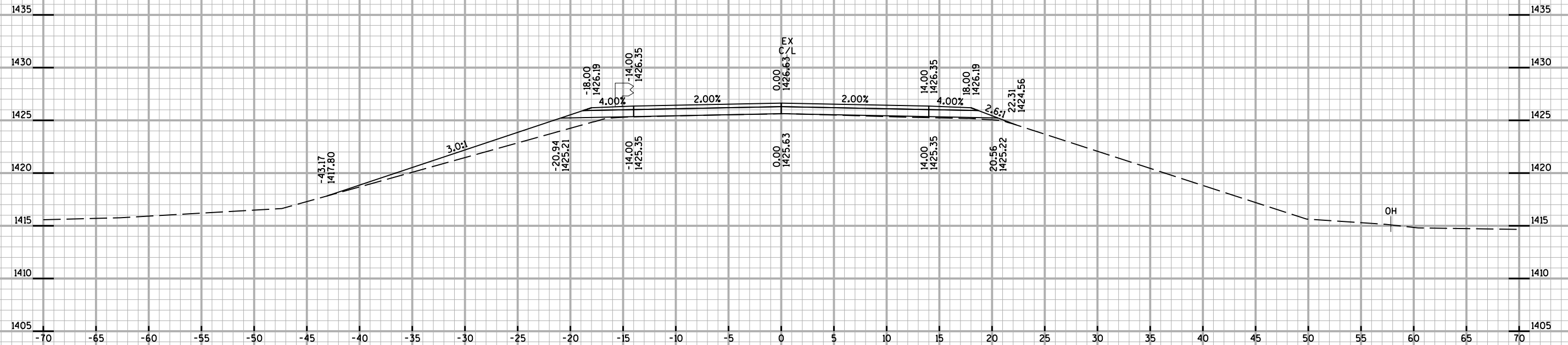




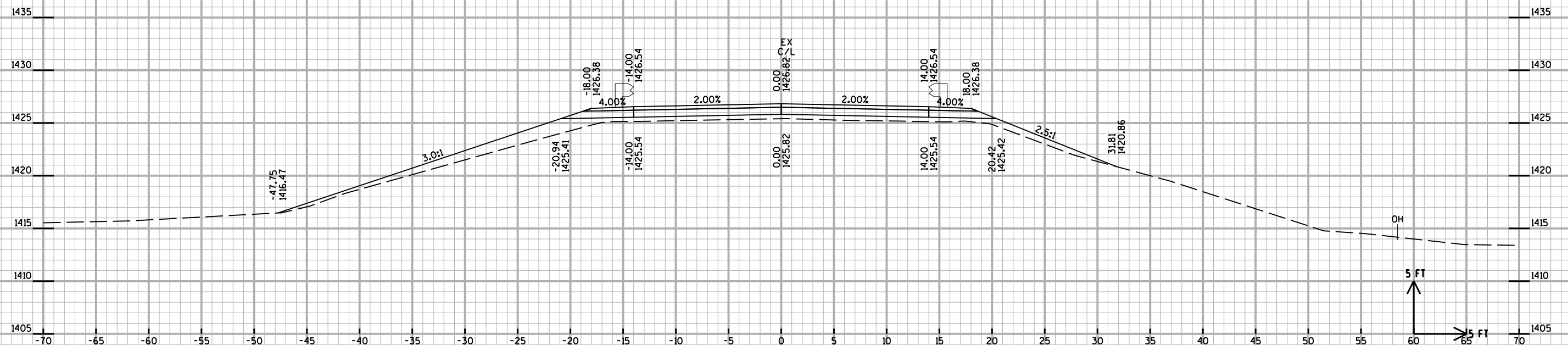
11+01



11+00

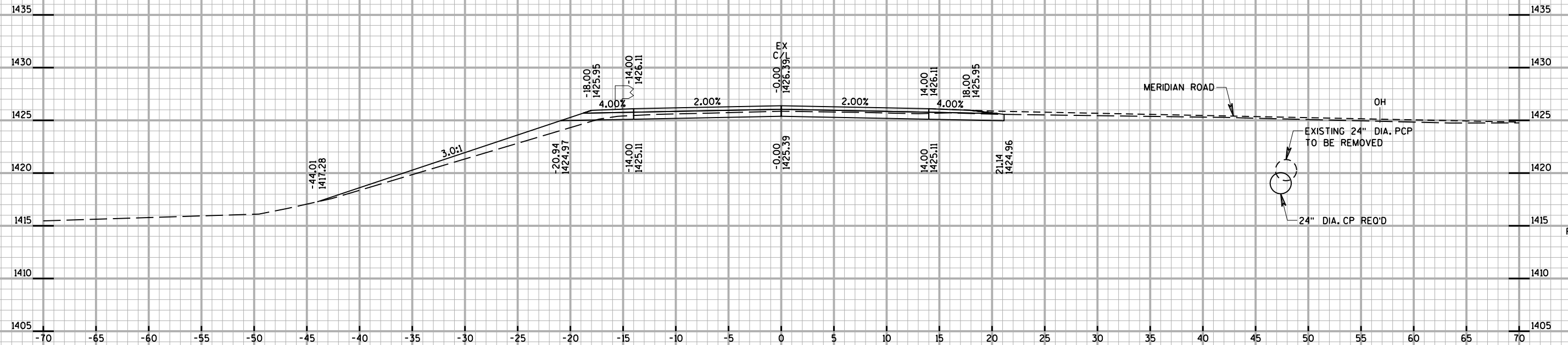


11+50

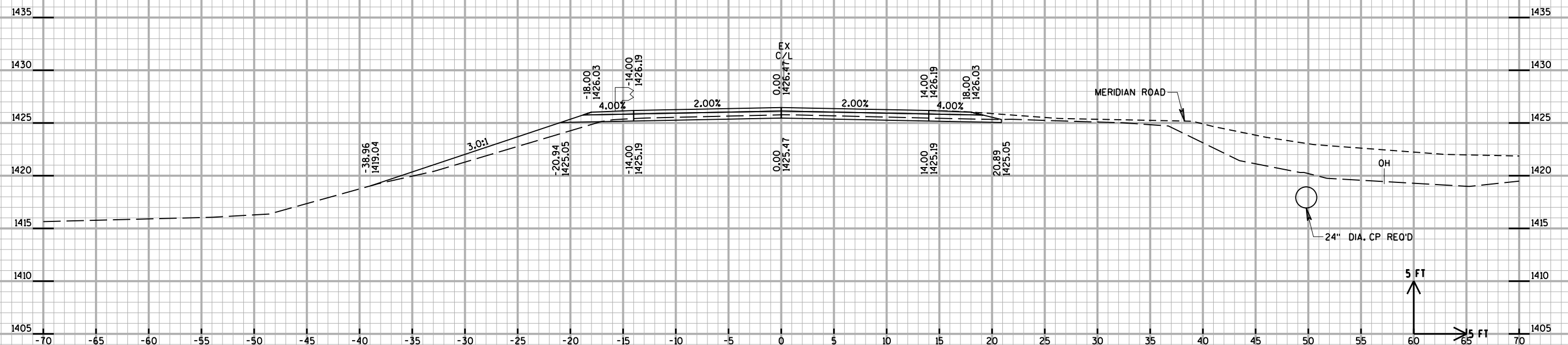


11+25

5 FT
5 FT

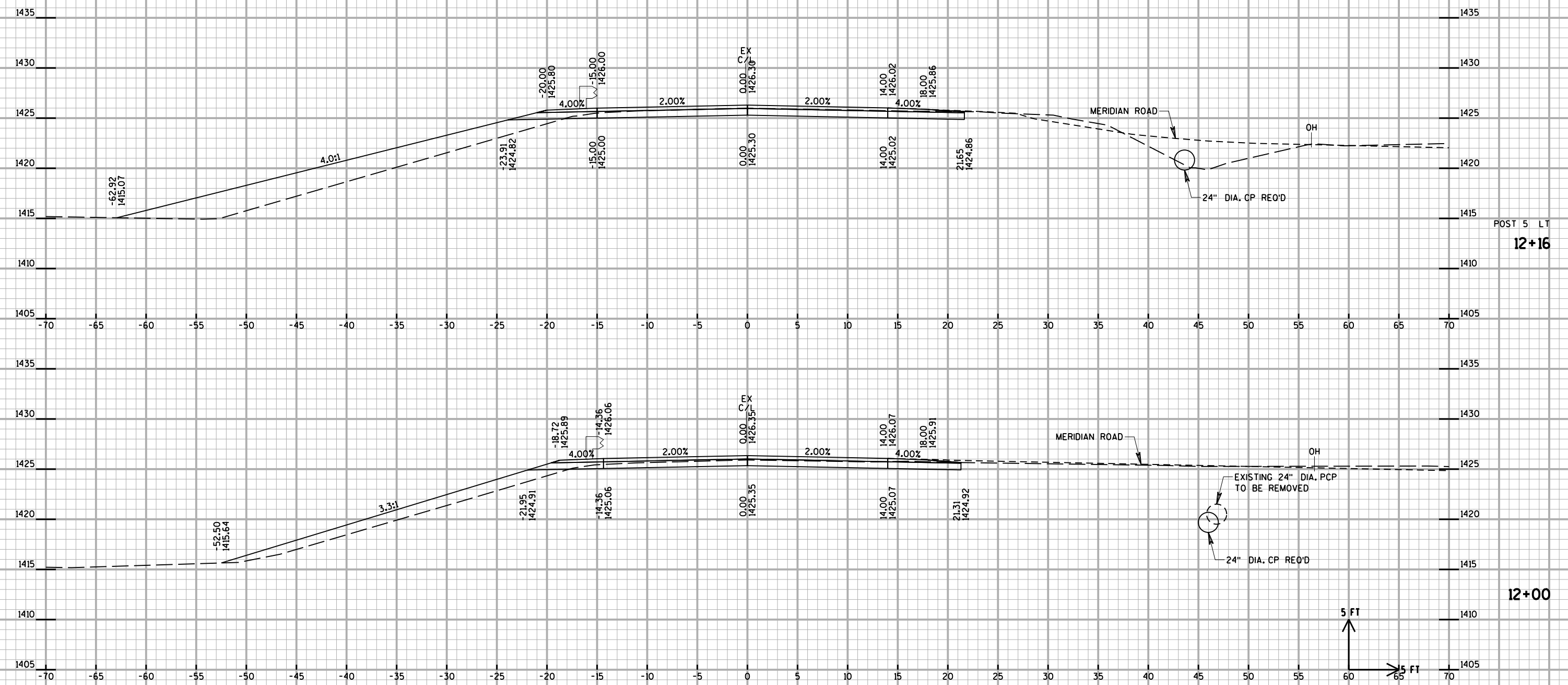


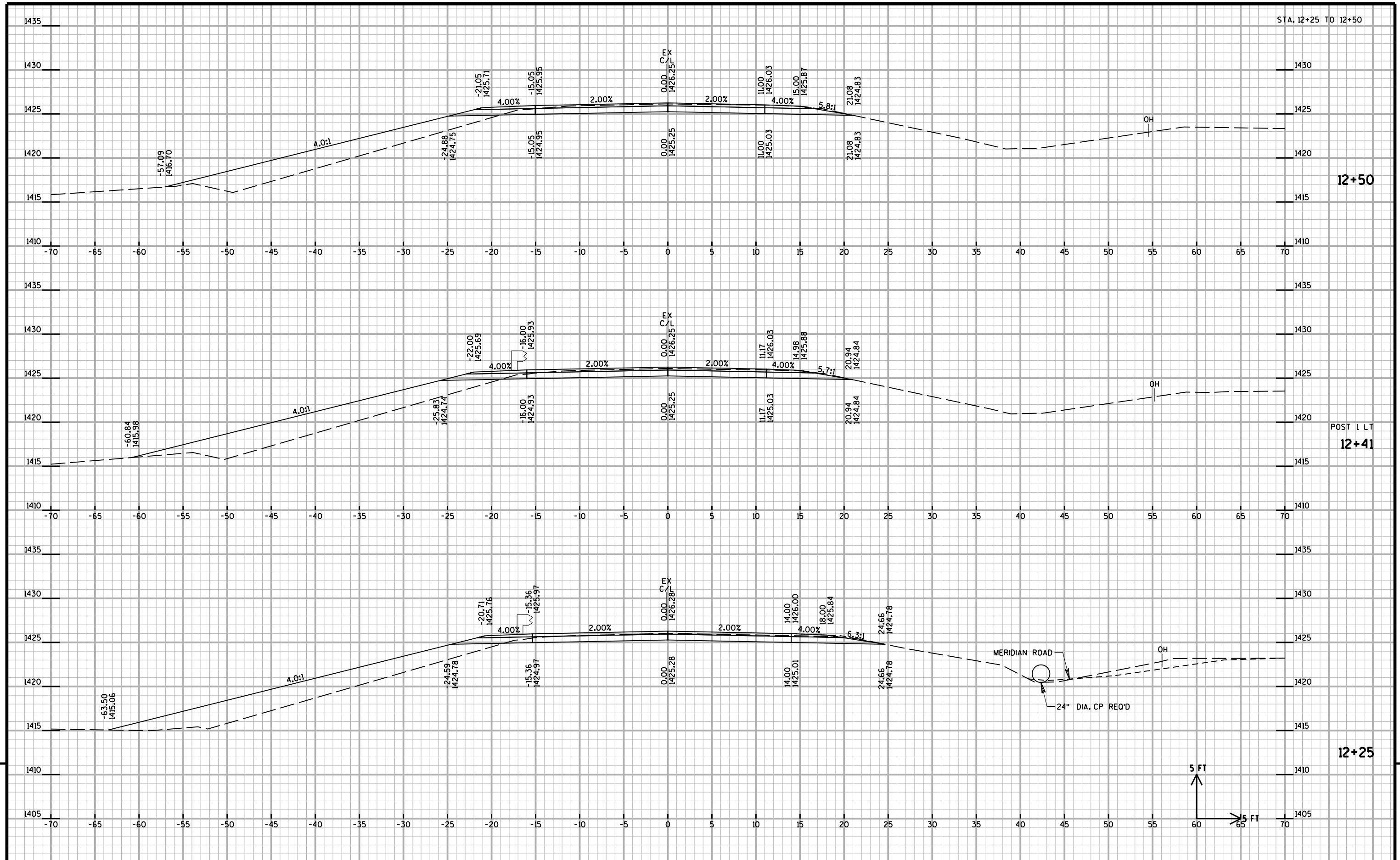
POST 9 LT
11+91

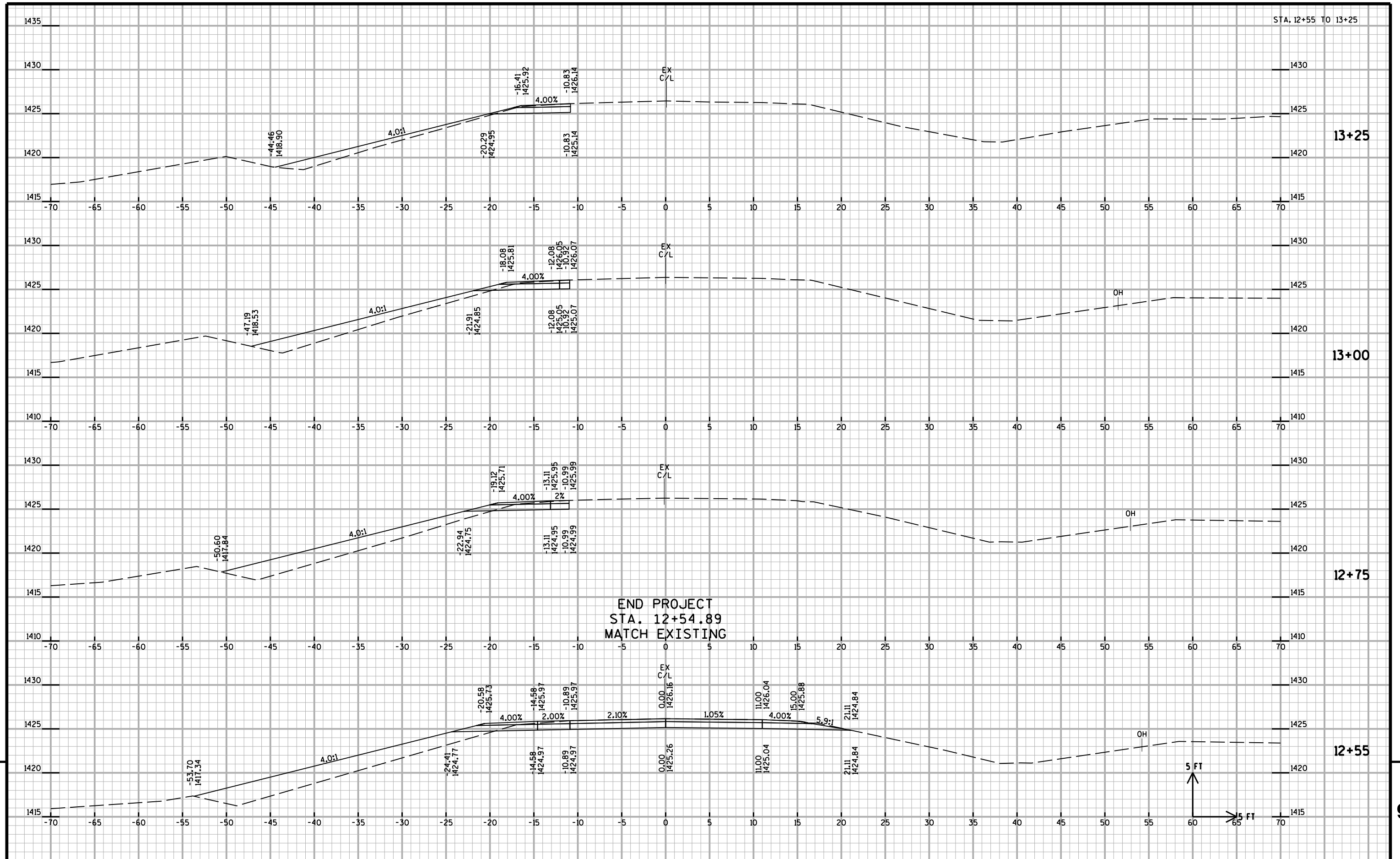


11+75

5 FT
5 FT

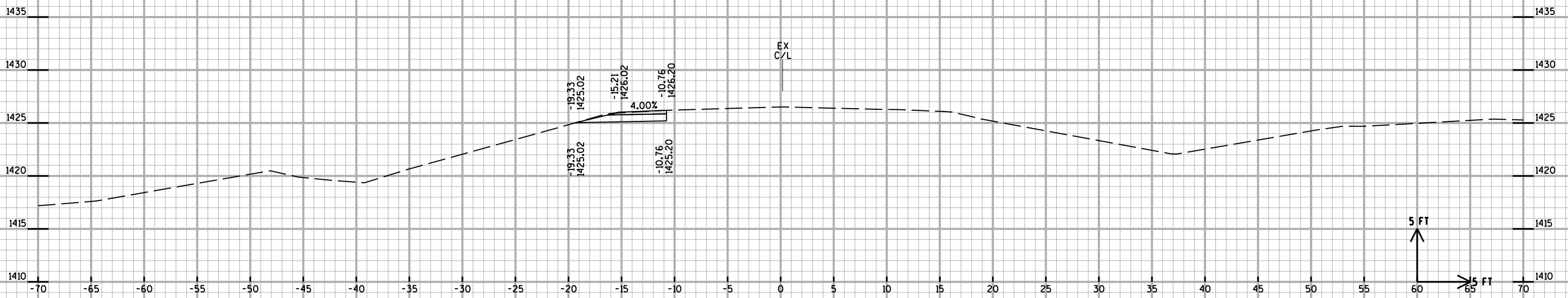






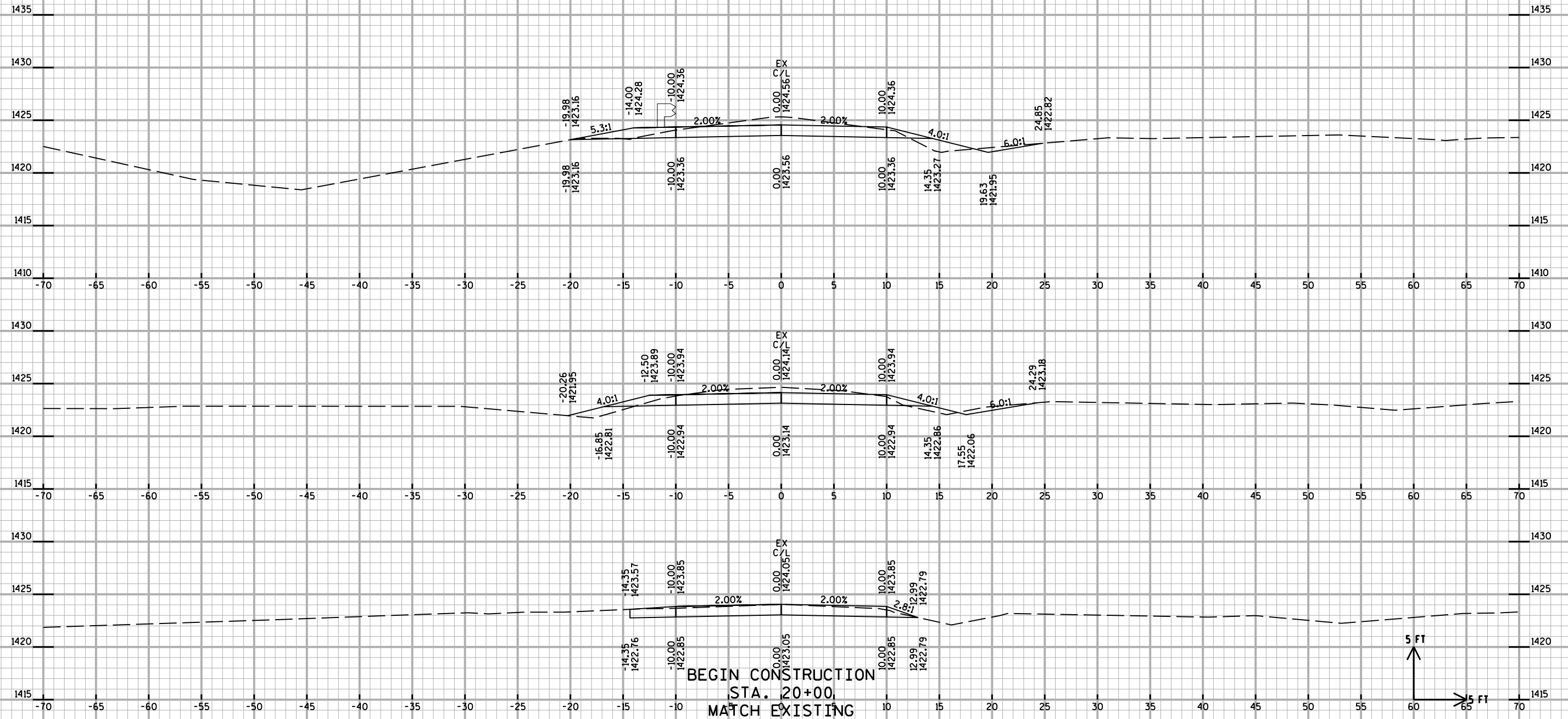
STA. 13+46

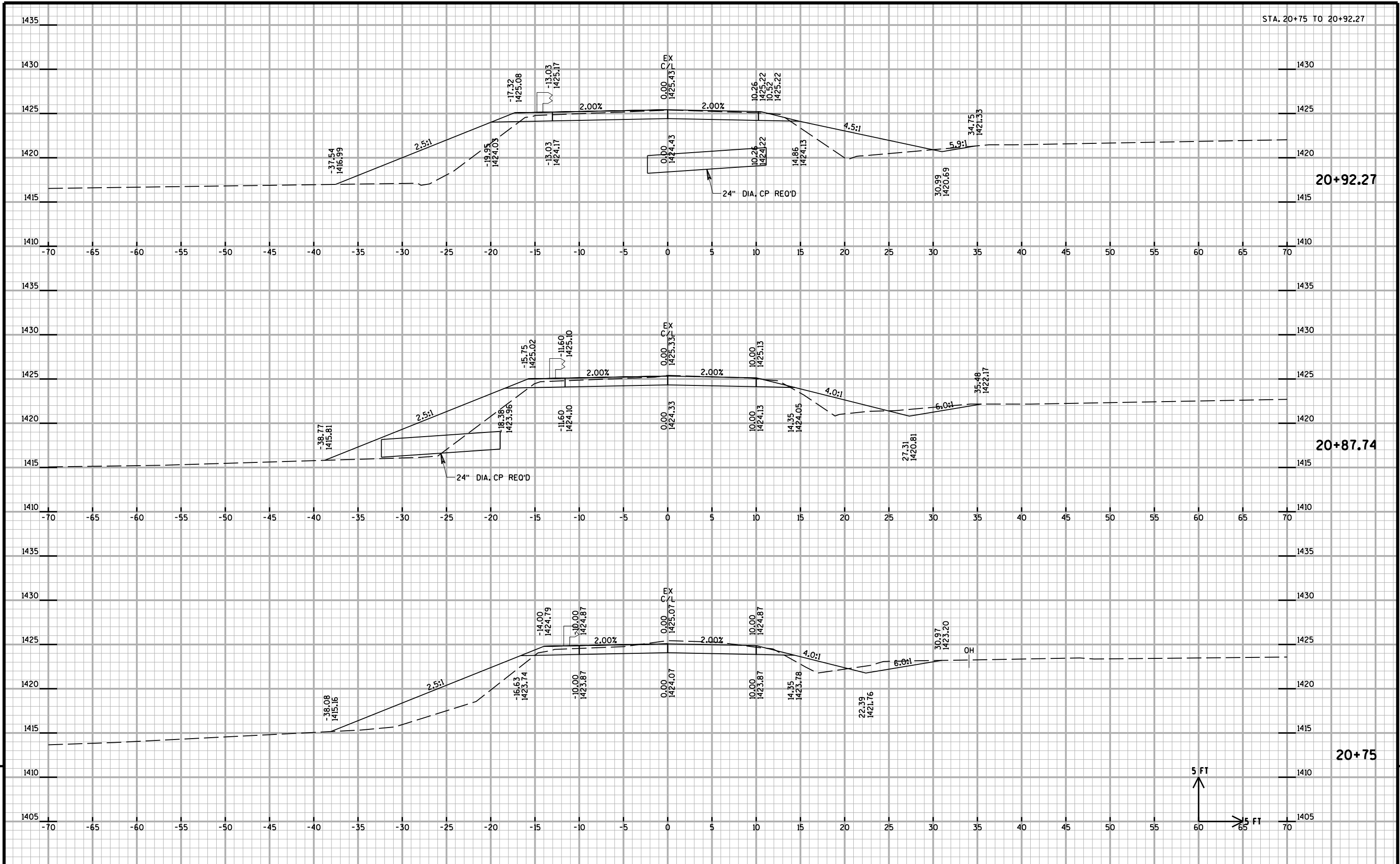
END CONSTRUCTION
STA. 13+46.20
MATCH EXISTING



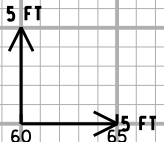
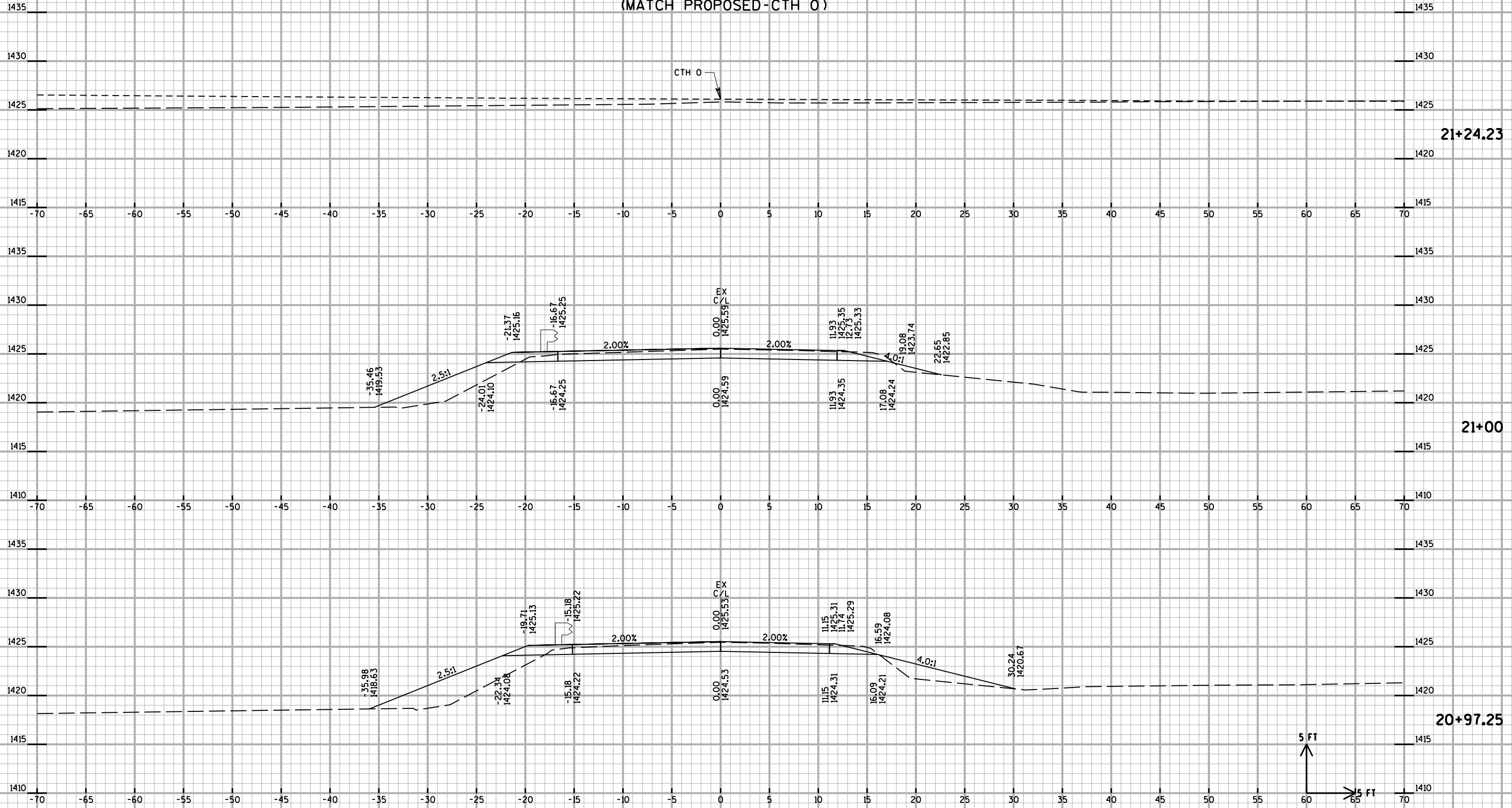
MERIDIAN ROAD COMPUTER EARTHWORK

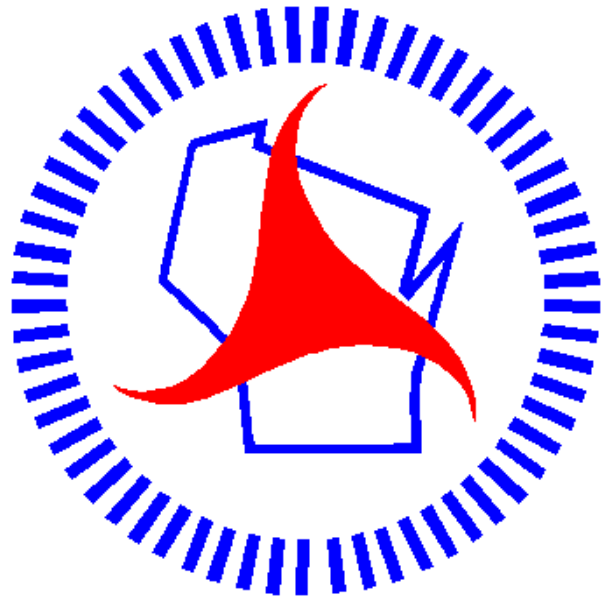
Station	Distance	Area (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
		Cut	Unuseable Pavement Material	Fill	Cut	Salvaged / Unuseable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.30	
					Note 1	Note 4	Note 2	Note 5		Note 3
20+00	--	22.4	0.0	0.0	--	--	--			
20+25	25.00	30.1	0.0	4.6	24	0	2	24	3	22
20+50	25.00	28.4	0.0	3.9	27	0	4	51	8	44
20+75	25.00	31.4	0.0	51.8	28	0	26	79	41	38
21+00	25.00	30.5	0.0	22.2	29	0	34	108	86	22
21+24.23	24.23	36.8	0.0	2.4	30	0	11	138	100	38
					138	0	77			





END CONSTRUCTION
STA. 21+24.23
(MATCH PROPOSED-CTH 0)





Wisconsin Department of Transportation

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through innovation and exceptional service.

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