

SUP MARCH 2021

PROJECT ID: 8773-00-73

WITH: N/A

COUNTY: SAWYER

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 Plat
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 66

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STH 27/70 - CTH B

COUDERAY RIVER BRIDGE B-57-0090

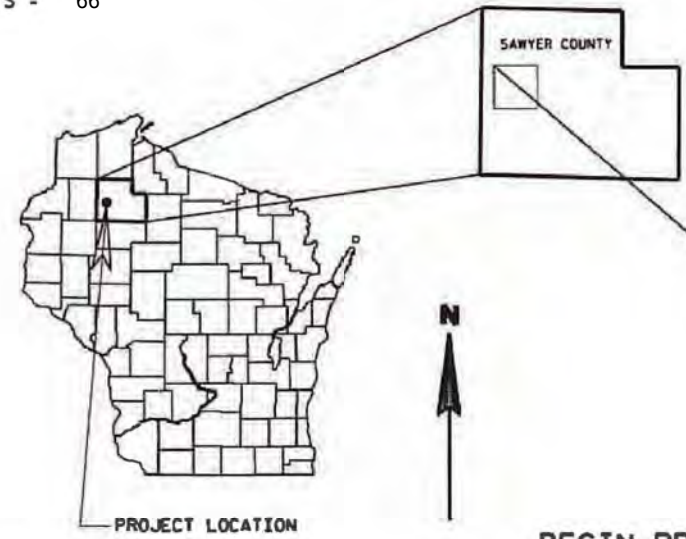
CTH E

SAWYER COUNTY

STATE PROJECT NUMBER

8773-00-73

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8773-00-73	WISC 2021244	1



DESIGN DESIGNATION

A.A.D.T. (2021)	= 840
A.A.D.T. (2040)	= 1130
D.H.V.	= 80
D.	= 50/50
T.	= 5%
DESIGN SPEED	= 35 MPH
ESALS	= 88,000

CONVENTIONAL SYMBOLS

CORPORATE LIMITS	PL + 58.1
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	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

BEGIN PROJECT

STA. 8+25

Y = 387206.45

X = 639725.49

END PROJECT

STA. 11+75

Y = 387177.91

X = 640074.32

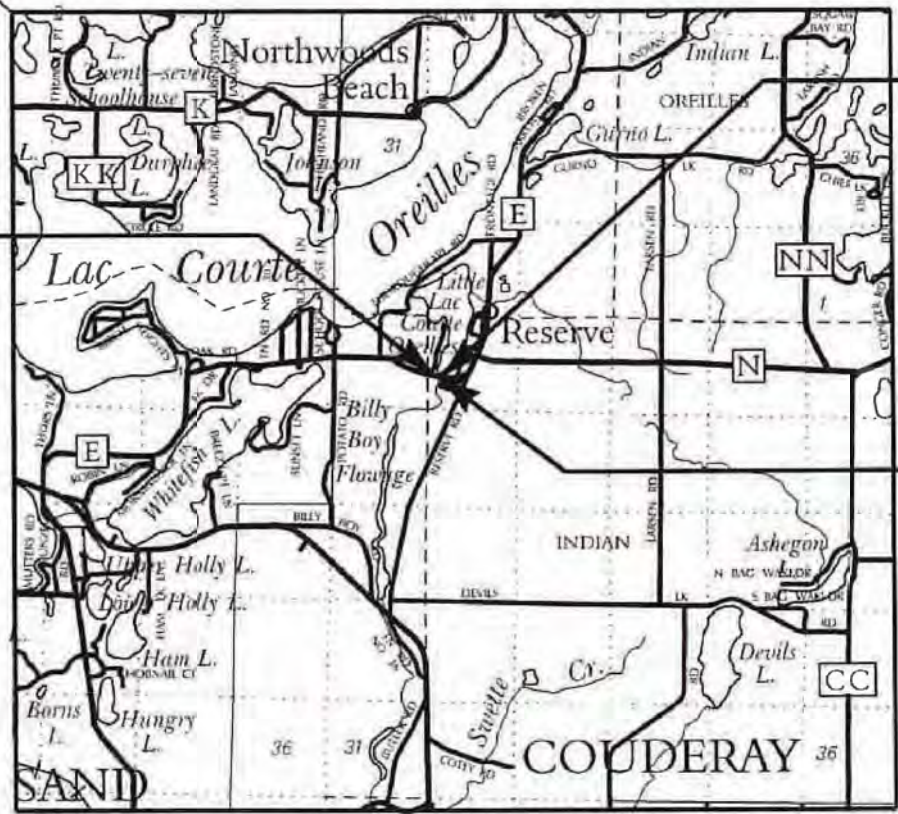
T-40-N

T-39-N

STRUCTURE B-57-90

T-39-N

T-38-N



R-9-W | R-8-E | R-8-E | R-7-E

LAYOUT

SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.066 MI.

SURVEY PERFORMED IN 2019.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), SAWYER COUNTY.

ACCEPTED FOR

County of Sawyer

Date 10/14/2020

Highway Commissioner

ORIGINAL PLANS PREPARED BY

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

PROFESSIONAL ENGINEER

DATE 10/15/2020

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor AYRES ASSOCIATES INC

Designer AYRES ASSOCIATES INC

Project Manager MATT VAN NATTA, P.E.

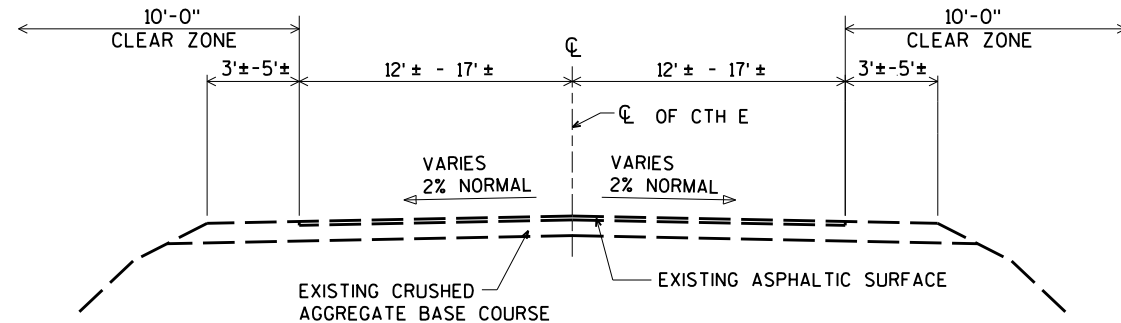
Regional Examiner TOU YANG, P.E.

Regional Supervisor ANDREW STENSLAND, P.E.

APPROVED FOR THE DEPARTMENT

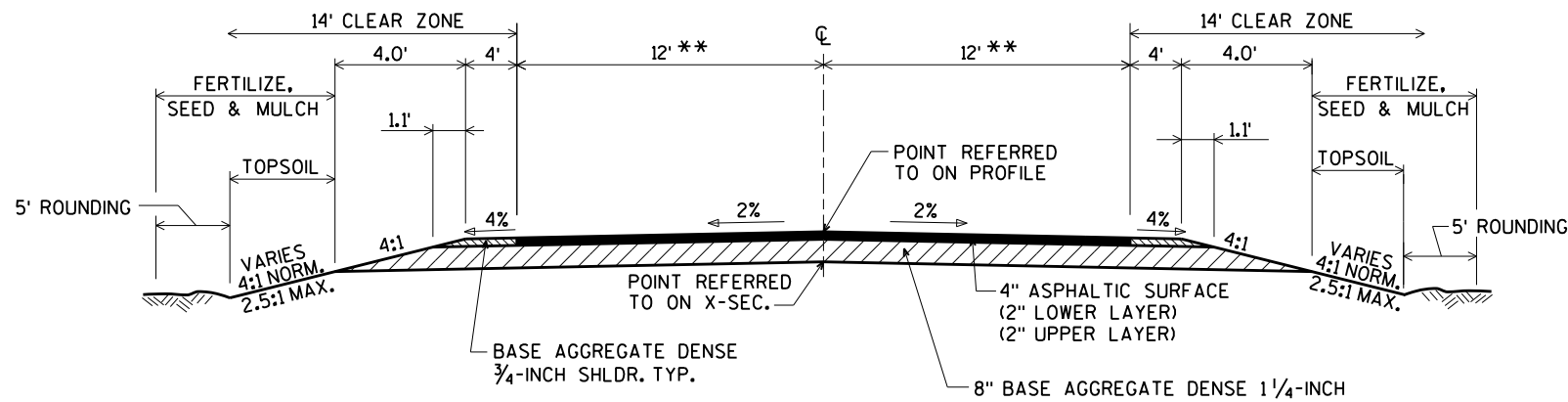
DATE: 10/28/2020

(Signature)



TYPICAL EXISTING SECTION

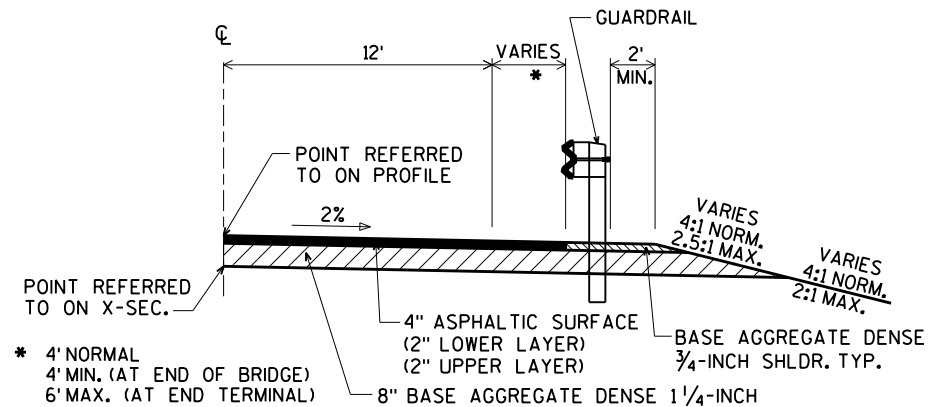
STA. 8+25 - STA. 9+74.8
STA. 10+25.2 - STA. 11+75



TYPICAL FINISHED SECTION

STA. 8+25 - STA. 9+69.75
STA. 10+30.25 - STA. 11+75

** THE ASPHALT SHALL BE PLACED 32 FEET WIDE AT THE ENDS OF THE BRIDGE AND FOLLOW THE FACE OF GUARDRAIL, AND TAPER TO MATCH EXISTING AT THE ENDS OF THE PROJECT.



TYPICAL FINISHED HALF SECTION WITH GUARDRAIL

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.

EXCAVATION FOR STRUCTURES SHALL INCLUDE FURNISHING, PLACEMENT AND COMPACTION OF ANY FILL MATERIAL REQUIRED TO PROVIDE A SUITABLE FOUNDATION FOR SUBSTRUCTURE UNITS.

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.

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

SEED MIXTURE NO.20, SEEDING TEMPORARY, AND FERTILIZER TYPE B SHALL BE USED IN THE PROJECT AND SHALL BE PLACED AS SHOWN IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.

ASPHALTIC SURFACE SHALL USE 12.5mm NOMINAL AGGREGATE SIZE.

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

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

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

UTILITIES

CENTURYLINK
20 S. WILSON
RICE LAKE, WI 54868
ATTN: KYLE SCHLAMPP
715-475-2029
715-292-0082 (cell)
kyle.schlammpp@lumen.com

SPECTRUM (FORMERLY CHARTER COMMUNICATIONS)
2304 SOUTH MAIN STREET
RICE LAKE, WI 54868
ATTN: JAMEY OLDEEN
715-719-0561
715-651-7488 (cell)
jamey.oldeen@charter.com

* * DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

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

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:

SHAWN HASELEU
810 W. MAPLE ST.
SPOONER, WI 54801
715-635-4228
shawn.haseleu@wisconsin.gov

DESIGNER

AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: CHRISTOPHER McMAHON, PE
715-834-3161
mcmahonc@ayresassociates.com

COUNTY CONTACT

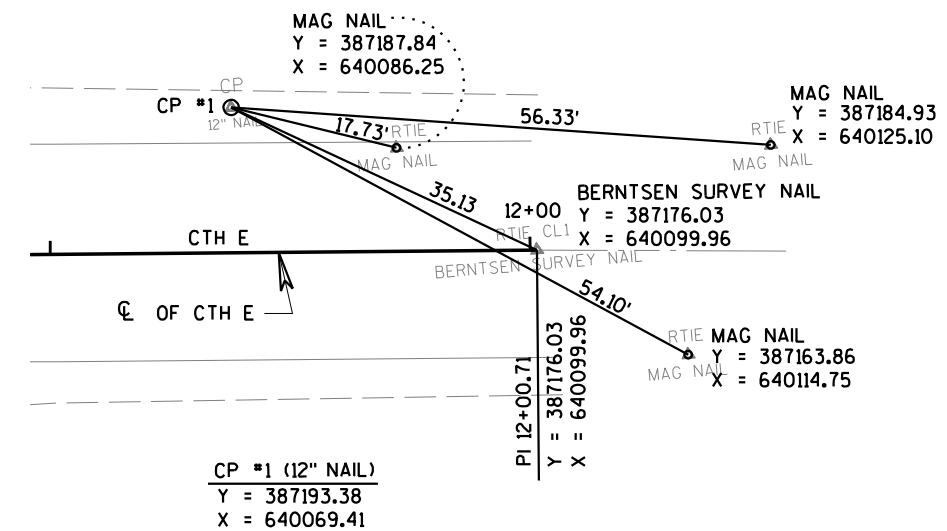
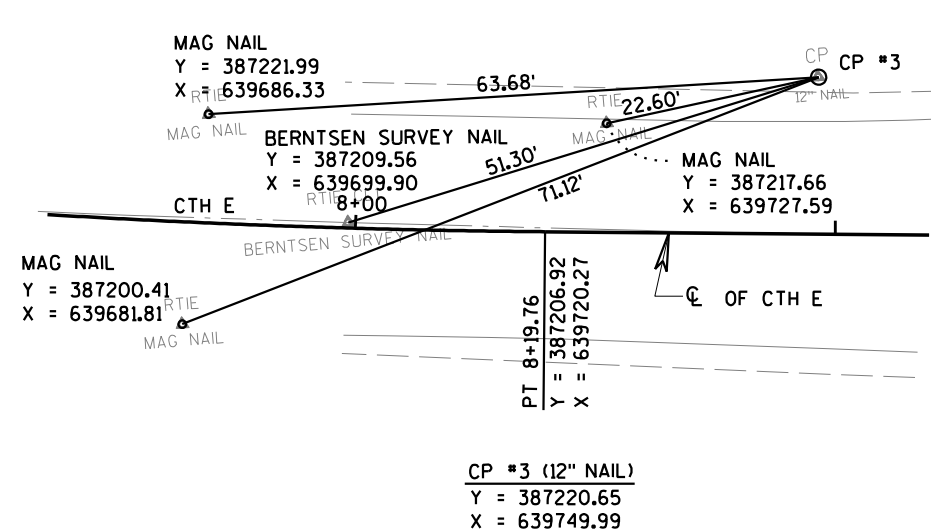
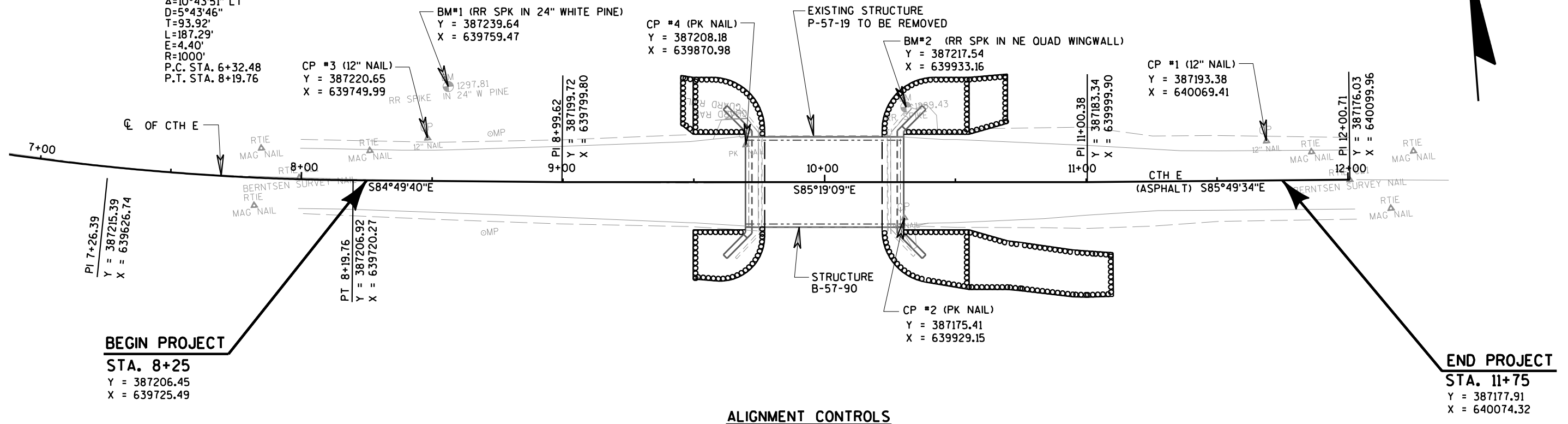
SAYWER COUNTY COMMISSIONER
14688 W. COUNTY ROAD B
HAYWARD, WI 54843
ATTN: GARY GEDART
715-634-2691
highway@sawyercountygov.org

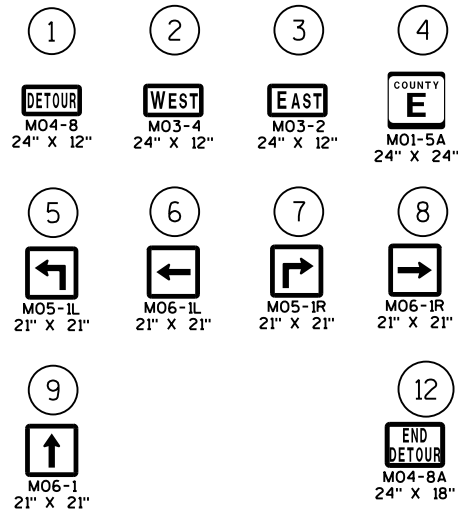
TRIBE CONTACT

LAC COURTE OREILLES
BAND OF LAKE SUPERIOR
CHIPPEWA INDIANS OF WI
TRIBAL OFFICE
13394 W. TREPANIA ROAD
HAYWARD, WI 54843
ATTN: BRIAN BISONETTE, THPO
715-634-8934
brian.bisonette@lco-nsn.gov

CURVE DATA

P.I. STA. 7+26.39
Y=387215.39
X=639626.74
 $\Delta=10^{\circ}43'51"$ LT
D=5 $^{\circ}43'46"$
T=93.92'
L=187.29'
E=4.40'
R=1000'
P.C. STA. 6+32.48
P.T. STA. 8+19.76





— ◆ — DETOUR ROUTE

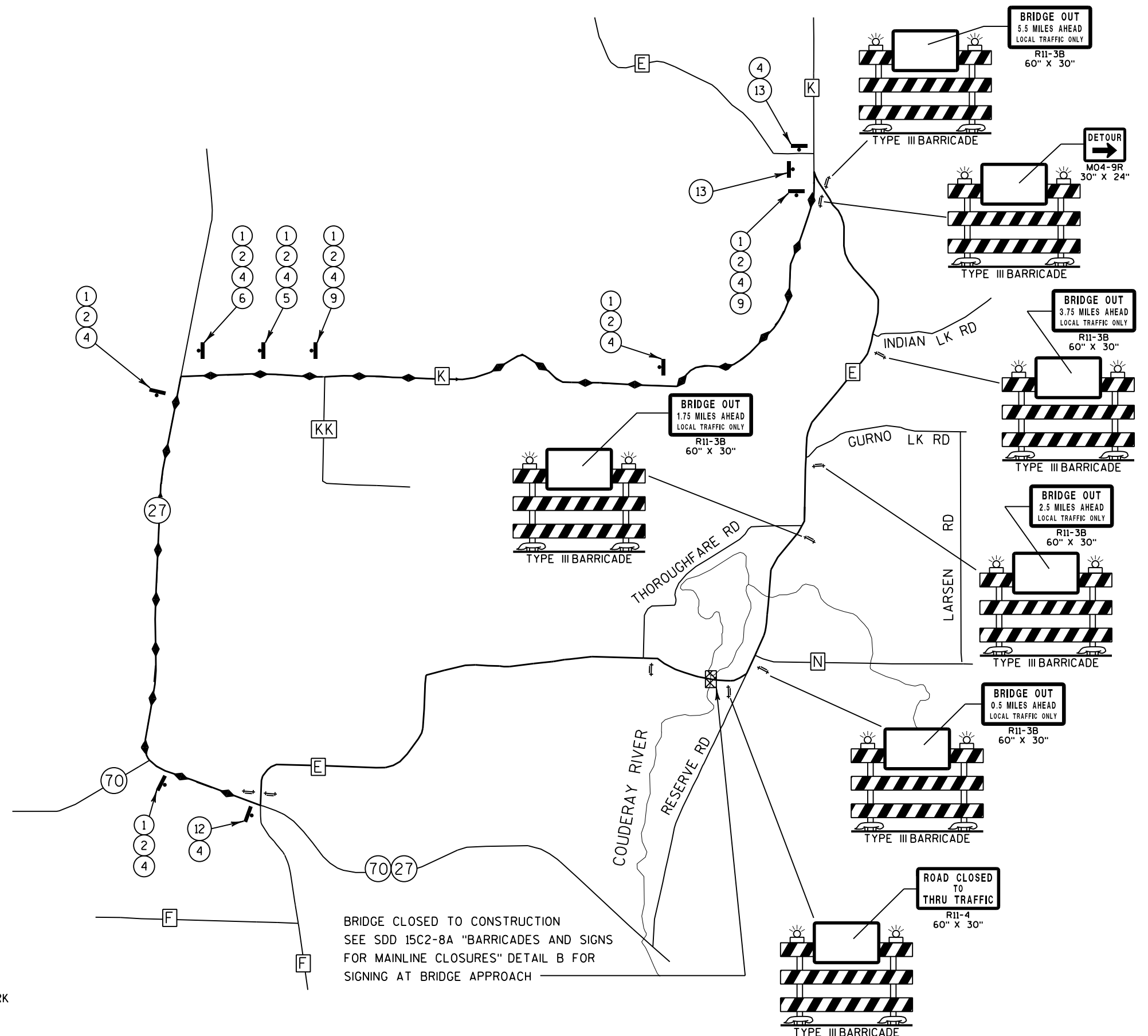
GENERAL NOTES

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

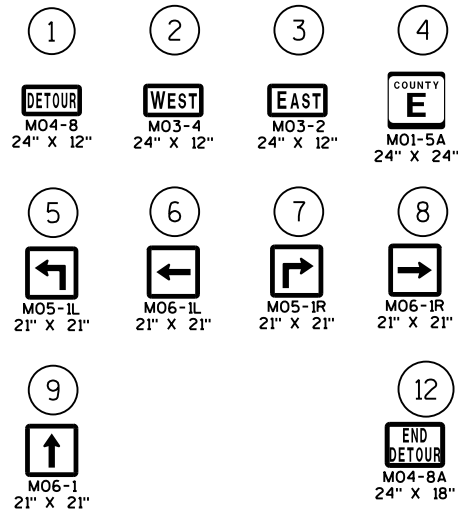
"W0" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SEE SDD 15C2-8A "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL B FOR SIGNING AT BRIDGE APPROACH AND ADVANCED AREAS LEADING TO THE WORK ZONE.



BRIDGE CLOSED TO CONSTRUCTION
SEE SDD 15C2-8A "BARRICADES AND SIGNS
FOR MAINLINE CLOSURES" DETAIL B FOR
SIGNING AT BRIDGE APPROACH



— ◆ — DETOUR ROUTE

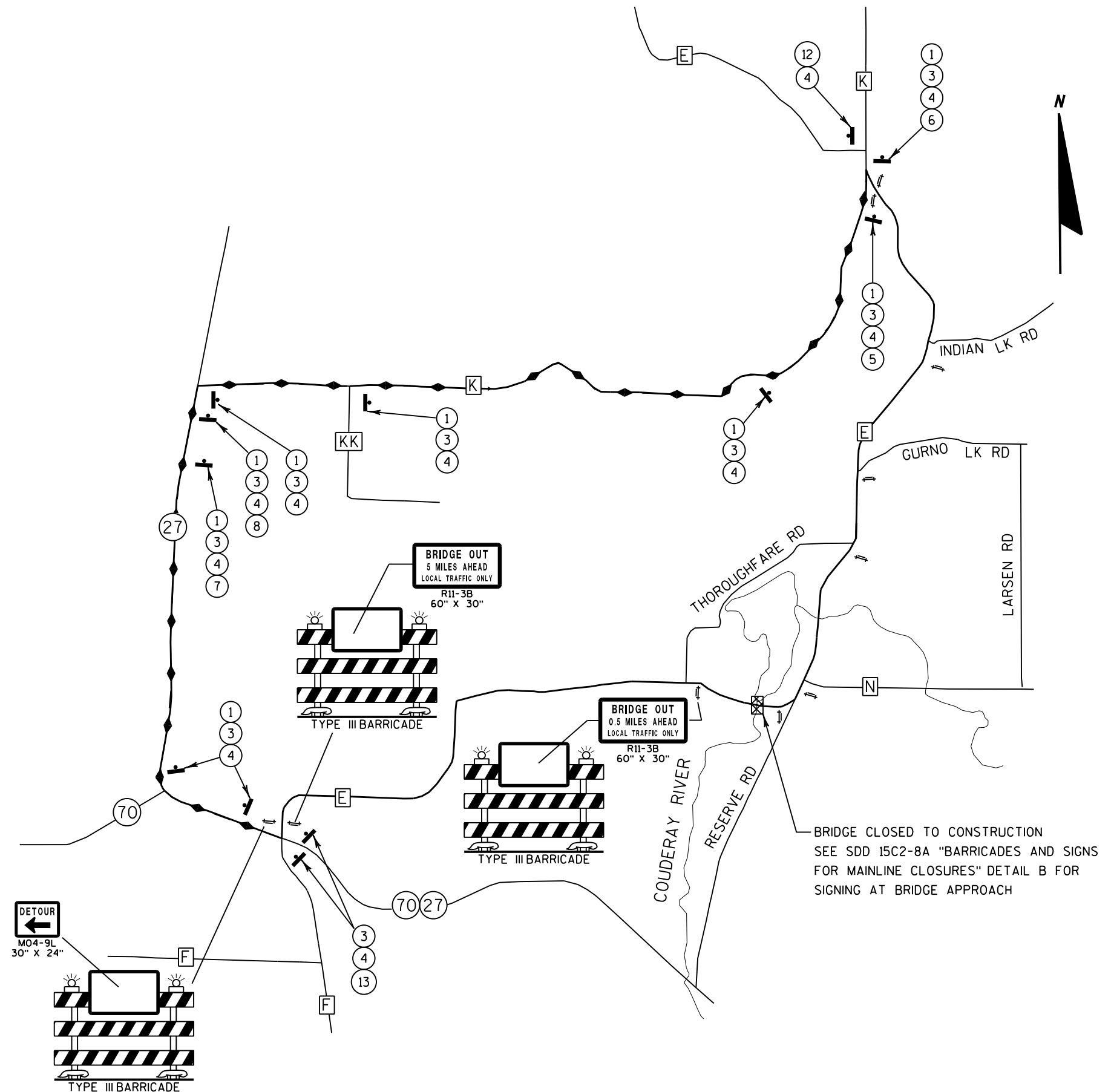
GENERAL NOTES

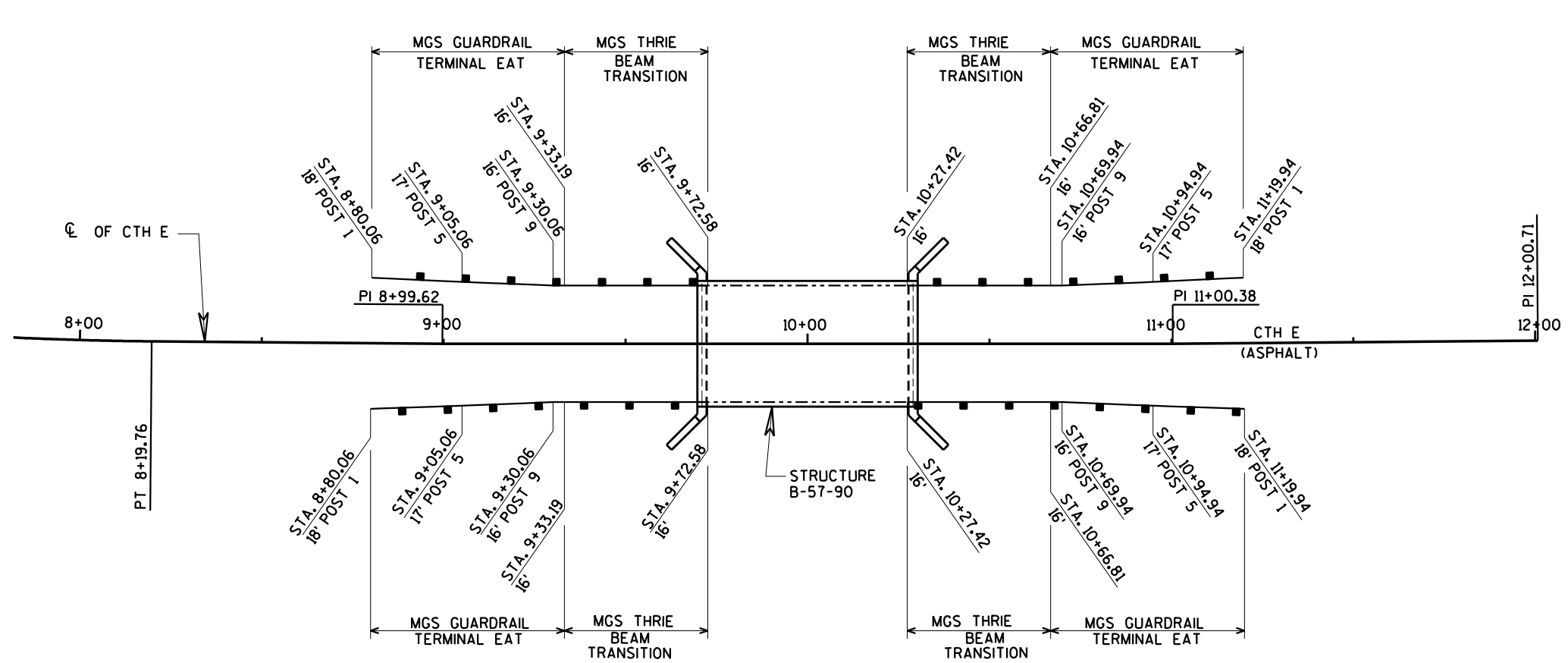
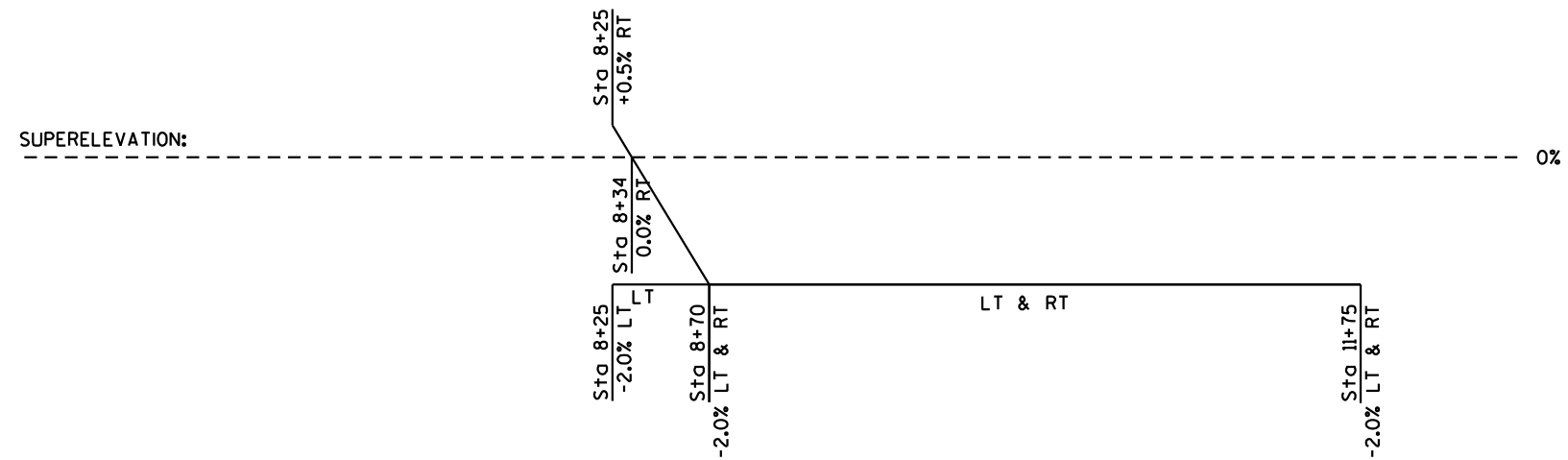
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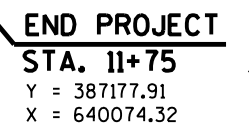
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GUARDRAIL LAYOUTSUPERELEVATION DIAGRAM



	EROSION MAT CLASS II TYPE C
	SILT FENCE
	TURBIDITY BARRIER
	RIPRAP HEAVY

E

Estimate Of Quantities

8773-00-73

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	4.000	4.000
0004	201.0205	Grubbing	STA	4.000	4.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00	LS	1.000	1.000
0008	205.0100	Excavation Common	CY	122.000	122.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-57-90	LS	1.000	1.000
0012	208.0100	Borrow	CY	620.000	620.000
0014	210.1500	Backfill Structure Type A	TON	890.000	890.000
0016	213.0100	Finishing Roadway (project) 01. 8773-00-73	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	85.000	85.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	665.000	665.000
0022	455.0605	Tack Coat	GAL	74.000	74.000
0024	465.0105	Asphaltic Surface	TON	230.000	230.000
0026	502.0100	Concrete Masonry Bridges	CY	172.000	172.000
0028	502.3200	Protective Surface Treatment	SY	255.000	255.000
0030	503.0128	Prestressed Girder Type I 28-Inch	LF	354.000	354.000
0032	505.0400	Bar Steel Reinforcement HS Structures	LB	5,480.000	5,480.000
0034	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	15,610.000	15,610.000
0036	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	12.000	12.000
0038	506.4000	Steel Diaphragms (structure) 01. B-57-90	EACH	5.000	5.000
0040	513.4061	Railing Tubular Type M	LF	125.000	125.000
0042	516.0500	Rubberized Membrane Waterproofing	SY	16.000	16.000
0044	550.0500	Pile Points	EACH	16.000	16.000
0046	550.2106	Piling CIP Concrete 10 3/4 X 0.365-Inch	LF	760.000	760.000
0048	606.0300	Riprap Heavy	CY	360.000	360.000
0050	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	170.000	170.000
0052	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0054	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0056	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8773-00-73	EACH	1.000	1.000
0058	619.1000	Mobilization	EACH	1.000	1.000
0060	624.0100	Water	MGAL	31.000	31.000
0062	625.0100	Topsoil	SY	750.000	750.000
0064	627.0200	Mulching	SY	400.000	400.000
0066	628.1504	Silt Fence	LF	555.000	555.000
0068	628.1520	Silt Fence Maintenance	LF	1,110.000	1,110.000
0070	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0072	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0074	628.2027	Erosion Mat Class II Type C	SY	715.000	715.000

Estimate Of Quantities

8773-00-73

Line	Item	Item Description	Unit	Total	Qty
0076	628.6005	Turbidity Barriers	SY	405.000	405.000
0078	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0080	629.0210	Fertilizer Type B	CWT	0.800	0.800
0082	630.0120	Seeding Mixture No. 20	LB	30.000	30.000
0084	630.0200	Seeding Temporary	LB	30.000	30.000
0086	630.0300	Seeding Borrow Pit	LB	4.000	4.000
0088	630.0500	Seed Water	MGAL	25.000	25.000
0090	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0092	637.2110	Signs Type II Non Reflective	SF	6.000	6.000
0094	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0096	638.2602	Removing Signs Type II	EACH	6.000	6.000
0098	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0100	642.5001	Field Office Type B	EACH	1.000	1.000
0102	643.0420	Traffic Control Barricades Type III	DAY	2,100.000	2,100.000
0104	643.0705	Traffic Control Warning Lights Type A	DAY	3,640.000	3,640.000
0106	643.0900	Traffic Control Signs	DAY	6,510.000	6,510.000
0108	643.5000	Traffic Control	EACH	1.000	1.000
0110	645.0111	Geotextile Type DF Schedule A	SY	120.000	120.000
0112	645.0120	Geotextile Type HR	SY	690.000	690.000
0114	646.1020	Marking Line Epoxy 4-Inch	LF	1,400.000	1,400.000
0116	650.4500	Construction Staking Subgrade	LF	290.000	290.000
0118	650.5000	Construction Staking Base	LF	290.000	290.000
0120	650.6500	Construction Staking Structure Layout (structure) 01. B-57-90	LS	1.000	1.000
0122	650.9910	Construction Staking Supplemental Control (project) 01. 8773-00-73	LS	1.000	1.000
0124	650.9920	Construction Staking Slope Stakes	LF	290.000	290.000
0126	690.0150	Sawing Asphalt	LF	46.000	46.000
0128	715.0502	Incentive Strength Concrete Structures	DOL	1,032.000	1,032.000
0130	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0132	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0134	SPV.0090	Special 01. Flashing Stainless Steel	LF	110.000	110.000

CTH E EARTHWORK SUMMARY

From/To Station	Location	Excavation Common (1) (item # 205.0100)	Salvaged / Unuseable Pavement Material (5)	Unexpanded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Waste	Borrow (item #208.0100)	Comment:
		Cut			Factor 1.30				
8+25 - 11+75	CTH E	122	89	502	653	-620	0	620	

- 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) Existing existing salvaged/unuseable asphalt pavement.

CLEARING AND GRUBBING

		201.0105		201.0205	
		CLEARING		GRUBBING	
STATION	TO	STATION	OFFSET	STA	STA
8+25	-	11+75	LT & RT	4	4
TOTALS				4	4

BASE & PAVEMENT QUANTITIES

			305.0110	305.0120	455.0605	465.0105
			BASE AGGREGATE	BASE AGGREGATE	TACK	ASPHALTIC
			DENSE 3/4-INCH	DENSE 1 1/4-INCH	COAT	SURFACE
STA	TO	STA	TON	TON	GAL	TON
8+25	--	9+69.75	40	320	35	110
10+30.25	--	11+75	40	315	35	110
UNDISTRIBUTED			5	30	4	10
TOTALS			85	665	74	230

FINISHING ROADWAY

ID 8773-00-73

		213.0100.01
LOCATION		EACH
CTH E		1
TOTAL		1

MGS GUARDRAIL

				614.2500	614.2610
				MGS THRIE	MGS
				BEAM	GUARDRAIL
				TRANSITION	TERMINAL EAT
STA	TO	STA	LOCATION	LF	EACH
8+80.06	--	9+33.19	RT	--	1
8+80.06	--	9+33.19	LT	--	1
9+33.19	--	9+72.58	RT	40	--
9+33.19	--	9+72.58	LT	40	--
10+27.42	--	10+66.81	RT	40	--
10+27.42	--	10+66.81	LT	40	--
10+66.81	--	11+19.94	RT	--	1
10+66.81	--	11+19.94	LT	--	1
TOTALS				160	4

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

MOBILIZATION	
	619.1000
CATEGORY	EACH
0010	0.3
0020	0.7
TOTAL	
	1

WATER	
	624.0100
PURPOSE	WATER MGAL
COMPACTION	11
DUST CONTROL	20
TOTAL	
	31

EROSION CONTROL ITEMS													
				625.0100	627.0200	628.1504	628.1520	628.2027	629.0210	630.0120	630.0200	630.0300	630.0500
				TOPSOIL	MULCHING	SILT FENCE	SILT FENCE MAINTENANCE	EROSION MAT CLASS II TYPE C	FERTILIZER TYPE B	SEEDING MIXTURE NO. 20	SEEDING TEMPORARY	SEEDING BORROW PIT	SEED WATER
STA	TO	STA	LOCATION	SY	SY	LF	LF	SY	CWT	LB	LB	LB	MGAL
8+25	--	9+69.75	RT	125	85	150	300	130	0.1	6	6	1	5
8+25	--	9+69.75	LT	125	80	120	240	120	0.1	5	5		4
10+30.25	--	11+75	RT	130	65	75	150	115	0.1	5	5	2	4
10+30.25	--	11+75	LT	220	90	100	200	210	0.2	8	8		7
UNDISTRIBUTED				150	80	110	220	140	0.3	6	6	1	5
TOTALS				750	400	555	1,110	715	0.8	30	30	4	25

EROSION CONTROL MOBILIZATION ITEMS

	628.1905	628.1910
	MOBILIZATIONS	MOBILIZATIONS
	EROSION	EMERGENCY
	CONTROL	EROSION
		CONTROL
LOCATION	EACH	EACH
ID 8773-00-73	4	4
TOTALS		
	4	4

TURBIDITY BARRIERS

	628.6005
LOCATION	SY
WEST ABUTMENT	110
EAST ABUTMENT	215
UNDISTRIBUTED	80
TOTAL	
	405

TEMPORARY DITCH CHECKS

	628.7504
LOCATION	LF
UNDISTRIBUTED	50
TOTAL	
	50

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

MAINTENANCE AND REPAIR OF HAUL ROADS

CATEGORY	PROJECT	618.0100 EACH
0030	8773-00-73	1
TOTAL		1

FIELD OFFICE TYPE B

	642.5001
CATEGORY	EACH
0010	0.3
0020	0.7
TOTAL	1

MARKING LINE EPOXY 4-INCH

					646.1020	
					YELLOW	WHITE
STA	TO	STA	LOCATION	DESCRIPTION	LF	
8+25	-	11+75	LT	EDGE LINE	--	350
8+25		11+75	RT	EDGE LINE	--	350
8+25	-	11+75	--	DOUBLE CENTER LINE	700	--
SUBTOTALS					700	700
TOTAL					1,400	

SIGNING ITEMS

		634.0612 POSTS WOOD 4X6-INCH X 12-FT	637.2230 SIGNS TYPE II REFLECTIVE F	638.2602 REMOVING SIGNS TYPE II	638.3000 REMOVING SMALL SIGN SUPPORTS	SIGNAGE TYPE
STATION	LOC	EACH	SF	EACH	EACH	
9+68	LT	1	3	--	--	W5-52L
9+68	RT	1	3	--	--	W5-52R
9+73	RT	--	--	1	1	WEIGHT LIMIT 10 TONS
9+73	LT	--	--	1	1	W5-52L
9+73	RT	--	--	1	1	W5-52R
10+26	LT	--	--	1	1	W5-52R
10+26	RT	--	--	1	1	W5-52L
10+26	LT	--	--	1	1	WEIGHT LIMIT 10 TONS
10+31	LT	1	3	--	--	W5-52R
10+31	RT	1	3	--	--	W5-52L
TOTALS		4	12	6	6	

TRAFFIC CONTROL ITEMS

LOCATION	DURATION DAYS	643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS TYPE A		643.0900 SIGNS	
		NO.	DAY	NO.	DAY	NO.	DAY
PER SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"	70	30	2,100	52	3,640	14	980
PER DETOUR PLAN	70	--	--	--	--	79	5,530
TOTALS			2,100		3,640		6,510

TRAFFIC CONTROL PLACEMENT SUBJECT TO ENGINEER APPROVAL

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

STAKING ITEMS

		650.4500	650.5000	650.9920
		CONSTRUCTION	CONSTRUCTION	CONSTRUCTION
		STAKING	STAKING	STAKING
		SUBGRADE	BASE	SLOPE
				STAKES
CATEGORY	LOCATION	LF	LF	LF
0010	8+25 - 11+75	290	290	290
TOTALS		290	290	290

SAWING ASPHALT

		690.0150
STATION	LOCATION	LF
8+25	LT & RT	23
11+75	LT & RT	23
TOTAL		46

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

TRANSPORTATION PROJECT PLAT NO: 8773-00-20-4.01

THAT PART OF LOT 5 OF CERTIFIED SURVEY MAP 8438 RECORDED IN VOLUME 36 ON PAGE 189 AS DOCUMENT NUMBER 421639, AND THAT PART OF LOT 2 OF CERTIFIED SURVEY MAP 8436 RECORDED IN VOLUME 36 ON PAGE 185 AS DOCUMENT NUMBER 421600, AND THAT PART OF LOTS 2 AND 3 OF CERTIFIED SURVEY MAP 8412 RECORDED IN VOLUME 36 ON PAGE 122 AS DOCUMENT NUMBER 420536 ALL LOCATED IN GOVERNMENT LOT 3 OF SECTION 8, TOWNSHIP 39 NORTH, RANGE 8 WEST, TOWN OF COUDERAY, SAWYER COUNTY, WISCONSIN.

RELOCATION ORDER STH 27/70 - CTH B COUDERAY RIVER BRIDGE B-57-90 CTH E, SAWYER COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WICRS), SAWYER COUNTY, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, OR FROM CENTERLINE OF EXISTING PAVEMENTS.

PARCEL AND UTILITY IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE TPP DETAIL PAGE.

ALL EXISTING IRON PINS ARE 5/8" SQUARE BARS UNLESS OTHERWISE NOTED.

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
CTH E: CSM 8438, CSM 8436, AND CSM 8412
JONANS ROAD: CSM 8438 AND CSM 8412

UTILITY INTERESTS REQUIRED

UTILITY NO.	OWNER(S)	INTEREST REQUIRED	EASEMENTS
100	SPECTRUM	RELEASE OF RIGHTS	NO EASEMENTS OF RECORD
101	CENTURYLINK	RELEASE OF RIGHTS	NO EASEMENTS OF RECORD

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NO.	OWNER(S)	INTEREST REQUIRED	R/W (ACRES)
1	WILLIAM E. O'SULLIVAN AND AUDREY L. O'SULLIVAN	PLE	0.03
2	RUGER TD LLC	PLE	0.04
3	JAMES J MEAD, MICHAEL J MEAD, AND JERRY R MEAD	PLE	0.07
4	COUSINS LLC	PLE	0.07

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE COUNTY.

PLE COURSE TABLE

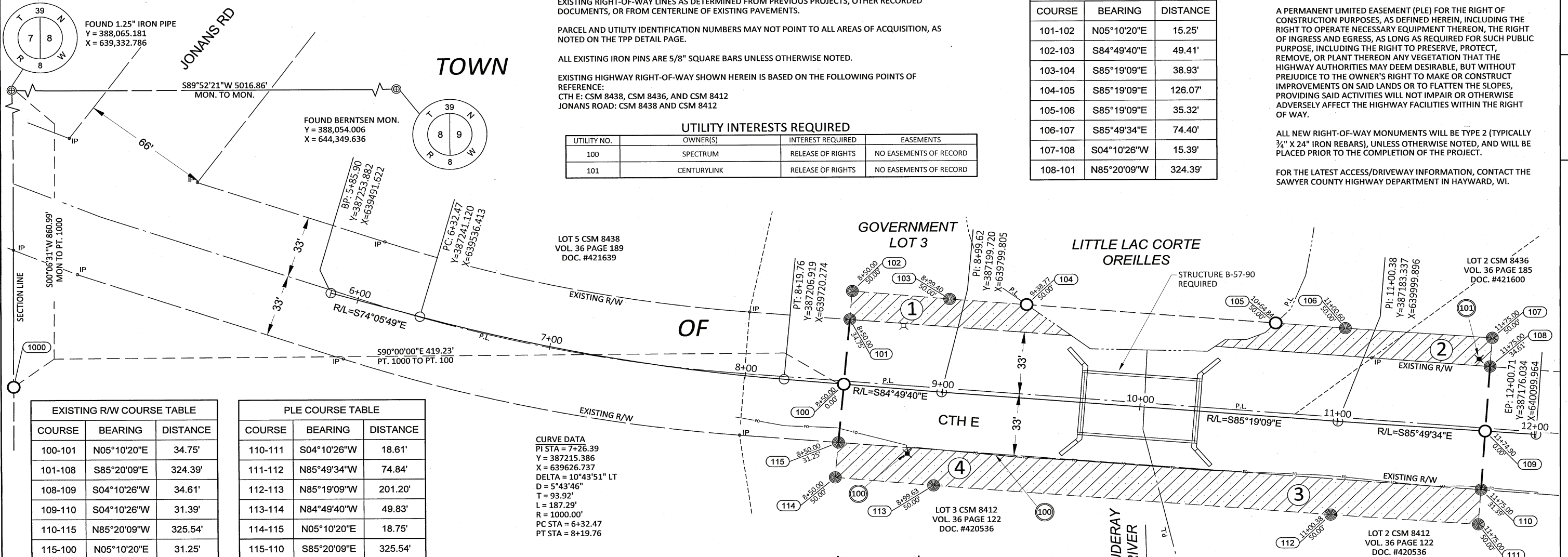
COURSE	BEARING	DISTANCE
101-102	N05°10'20"E	15.25'
102-103	S84°49'40"E	49.41'
103-104	S85°19'09"E	38.93'
104-105	S85°19'09"E	126.07'
105-106	S85°19'09"E	35.32'
106-107	S85°49'34"E	74.40'
107-108	S04°10'26"W	15.39'
108-101	N85°20'09"W	324.39'

NOTES:

A PERMANENT LIMITED EASEMENT (PLE) FOR THE RIGHT OF CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON, THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE, BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHT TO MAKE OR CONSTRUCT IMPROVEMENTS ON SAID LANDS OR TO FLATTEN THE SLOPES, PROVIDING SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES WITHIN THE RIGHT OF WAY.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE SAWYER COUNTY HIGHWAY DEPARTMENT IN HAYWARD, WI.



COURSE	BEARING	DISTANCE
100-101	N05°10'20"E	34.75'
101-108	S85°20'09"E	324.39'
108-109	S04°10'26"W	34.61'
109-110	S04°10'26"W	31.39'
110-115	N85°20'09"W	325.54'
115-100	N05°10'20"E	31.25'

COURSE	BEARING	DISTANCE
110-111	S04°10'26"W	18.61'
111-112	N85°49'34"W	74.84'
112-113	N85°19'09"W	201.20'
113-114	N84°49'40"W	49.83'
114-115	N05°10'20"E	18.75'
115-110	S85°20'09"E	325.54'

CURVE DATA
PT STA = 7+26.39
Y = 387215.386
X = 639626.737
DELTA = 10°43'51" LT
D = 5°43'46"
T = 93.92'
L = 187.29'
R = 1000.00'
PC STA = 6+32.47
PT STA = 8+19.76

CONVENTIONAL ABBREVIATIONS

ACCESS POINT/ DRIVEWAY CONNECTION	AP	RELEASE OF RIGHTS
ACCESS RIGHTS	AR	REMAINING
ACRES	AC.	RIGHT-OF-WAY
AND OTHERS	ET.AL.	SECTION
CENTERLINE	C/L	STATION
CERTIFIED SURVEY MAP CORNER	CSM	TEMPORARY LIMITED EASEMENT VOLUME
DOCUMENT	DOC.	
EASEMENT	EASE.	
HIGHWAY EASEMENT	H.E.	LONG CHORD
LAND CONTRACT	LC	LONG CHORD BEARING
MONUMENT	MON.	RADIUS
PAGE	P.	DEGREE OF CURVE
PERMANENT LIMITED EASEMENT	PLE	CENTRAL ANGLE OR DELTA
PROPERTY LINE	PL	LENGTH OF CURVE
RECORDED AS	(100')	TANGENT
REFERENCE LINE	R/L	

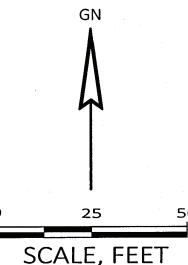
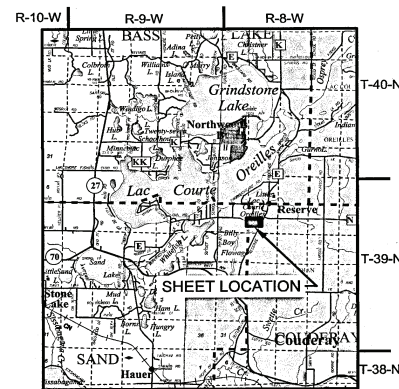
ROR	FOUND IRON PIPE/PIN	ROR
REM.	R/W MONUMENT	REM.
R/W	R/W STANDARD	R/W
SEC.	SIGN	SEC.
STA.	SECTION CORNER MONUMENT	STA.
TLE	SECTION CORNER SYMBOL	TLE
V.		V.
LCH	FEE (HATCH VARIES)	LCH
LCB	TEMPORARY LIMITED EASEMENT	LCB
R	PERMANENT LIMITED EASEMENT	R
D	R/W BOUNDARY POINT	D
DELTA	PARCEL NUMBER	DELTA
L	UTILITY PARCEL NUMBER	L
TAN	SIGN NUMBER (OFF PREMISE)	TAN
	BUILDING	

CONVENTIONAL SYMBOLS

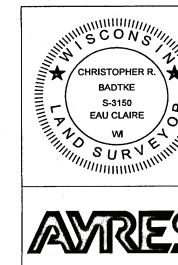
IP (1" UNLESS NOTED)	PROPOSED R/W LINE
• (SET)	EXISTING H.E. LINE
△ (SET)	PROPERTY LINE
ISIGN	LOT & TIE LINES
•	SLOPE INTERCEPTS
•	CORPORATE LIMITS
•	NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL)
•	NO ACCESS (BY ACQUISITION)
•	NO ACCESS (BY STATUTORY AUTHORITY)
•	SECTION LINE
•	QUARTER LINE
•	SIXTEENTH LINE
•	EXISTING CENTERLINE
•	PROPOSED REFERENCE LINE
•	PARALLEL OFFSET

CONVENTIONAL UTILITY SYMBOLS

WATER	W
GAS	G
TELEPHONE	T
OVERHEAD	OH
TRANSMISSION LINES	E
ELECTRIC	FO
CABLE TELEVISION	TV
FIBER OPTIC	FO
SANITARY SEWER	SAN
STORM SEWER	SS
NON COMPENSABLE	•
COMPENSABLE	•
POWER POLE	•
TELEPHONE POLE	•
TELEPHONE PEDESTAL	•
ELECTRIC TOWER	•



COUDERAY

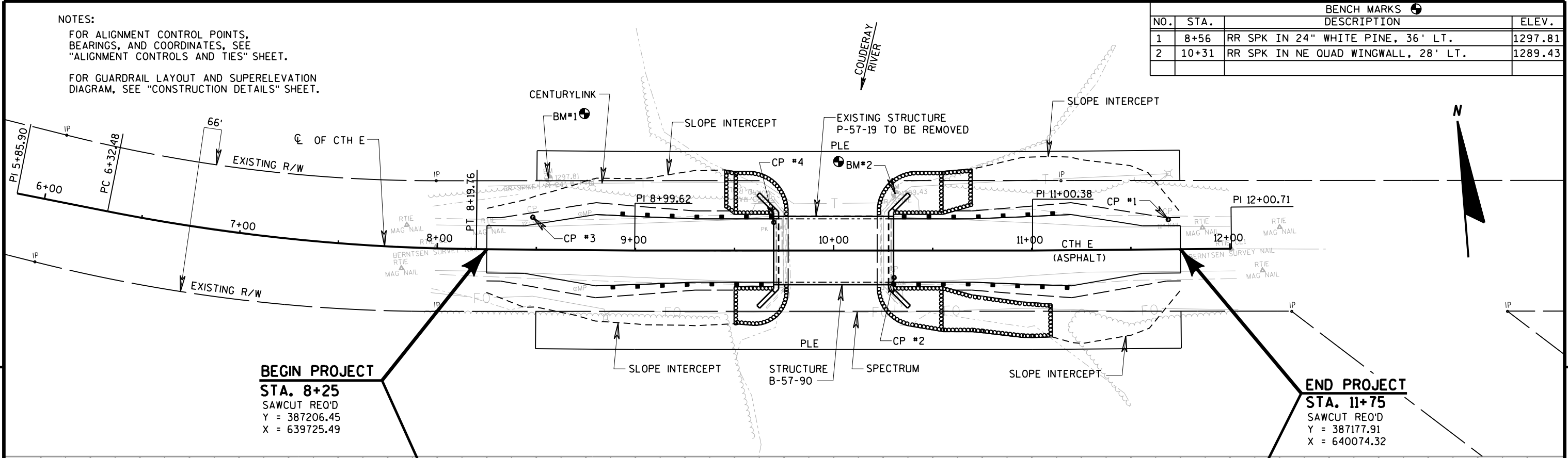


I, CHRISTOPHER R. BADTKE, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE SAWYER COUNTY HIGHWAY DEPARTMENT, I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.
CHRISTOPHER R. BADTKE
REGISTRATION NUMBER: S-3150
DATE: 07/09/2020
THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE SAWYER COUNTY HIGHWAY DEPARTMENT.
GARY GEORGE
DATE: 7/29/2020

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

FOR GUARDRAIL LAYOUT AND SUPERELEVATION
DIAGRAM, SEE "CONSTRUCTION DETAILS" SHEET.

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
1	8+56	RR SPK IN 24" WHITE PINE, 36' LT.	1297.81
2	10+31	RR SPK IN NE QUAD WINGWALL, 28' LT.	1289.43

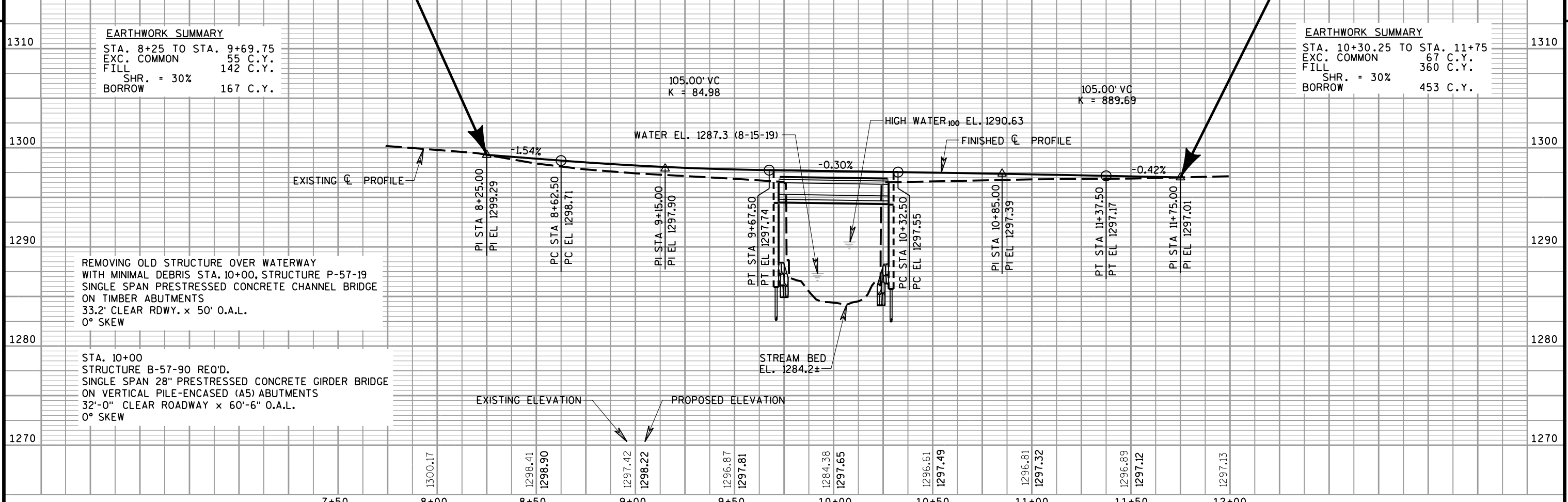


BEGIN PROJECT
STA. 8+25
SAWCUT REQ'D
Y = 387206.45
X = 639725.49

END PROJECT
STA. 11+75
SAWCUT REQ'D
Y = 387177.91
X = 640074.32

EARTHWORK SUMMARY
STA. 8+25 TO STA. 9+69.75
EXC. COMMON 55 C.Y.
FILL 142 C.Y.
SHR. = 30%
BORROW 167 C.Y.

EARTHWORK SUMMARY
STA. 10+30.25 TO STA. 11+75
EXC. COMMON 67 C.Y.
FILL 360 C.Y.
SHR. = 30%
BORROW 453 C.Y.

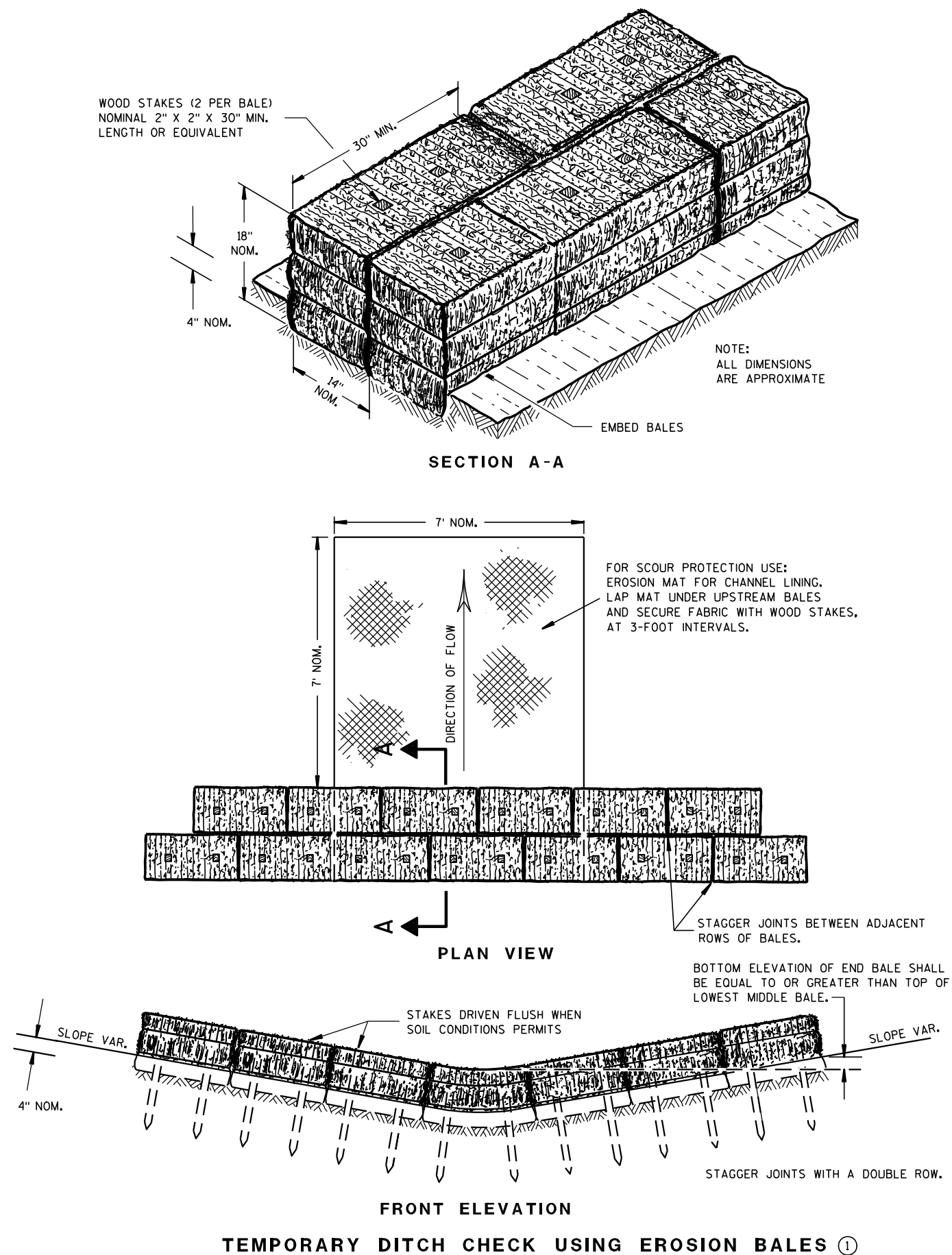


REMOVING OLD STRUCTURE OVER WATERWAY
WITH MINIMAL DEBRIS STA. 10+00, STRUCTURE P-57-19
SINGLE SPAN PRESTRESSED CONCRETE CHANNEL BRIDGE
ON TIMBER ABUTMENTS
33.2' CLEAR RDWY. x 50' O.A.L.
0° SKEW

STA. 10+00
STRUCTURE B-57-90 REQ'D.
SINGLE SPAN 28" PRESTRESSED CONCRETE GIRDER BRIDGE
ON VERTICAL PILE-ENCASED (A5) ABUTMENTS
32'-0" CLEAR ROADWAY x 60'-6" O.A.L.
0° SKEW

Standard Detail Drawing List

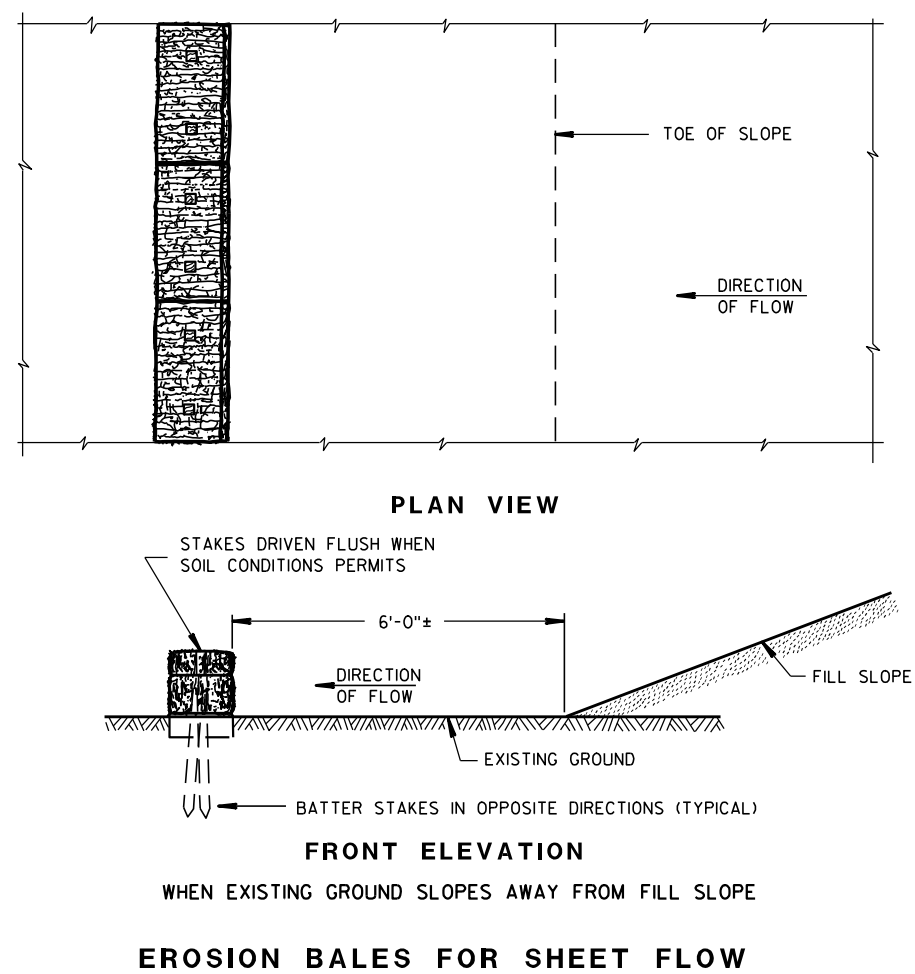
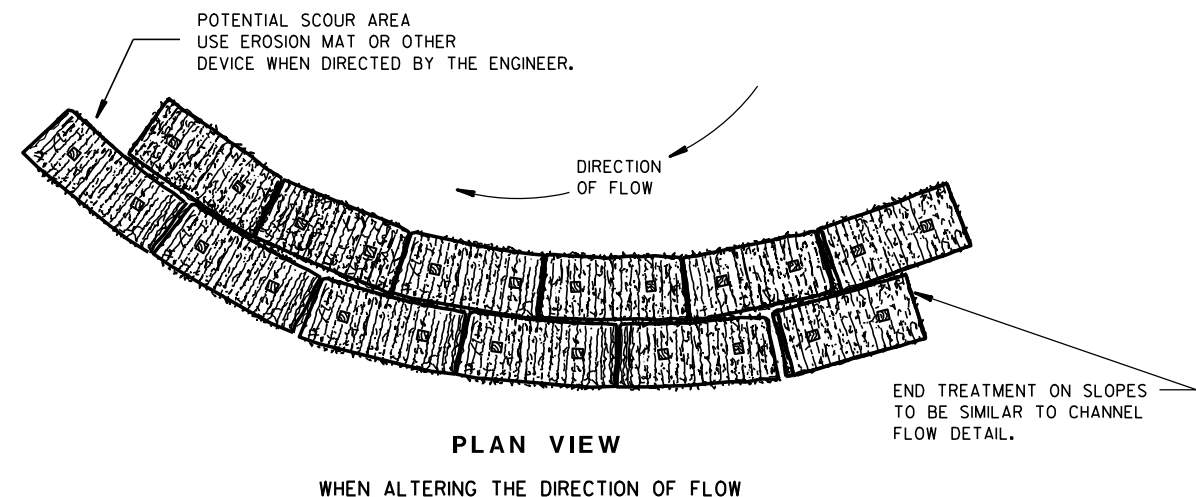
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	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)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



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

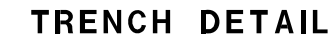
APPROVED

6/04/02
DATE/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

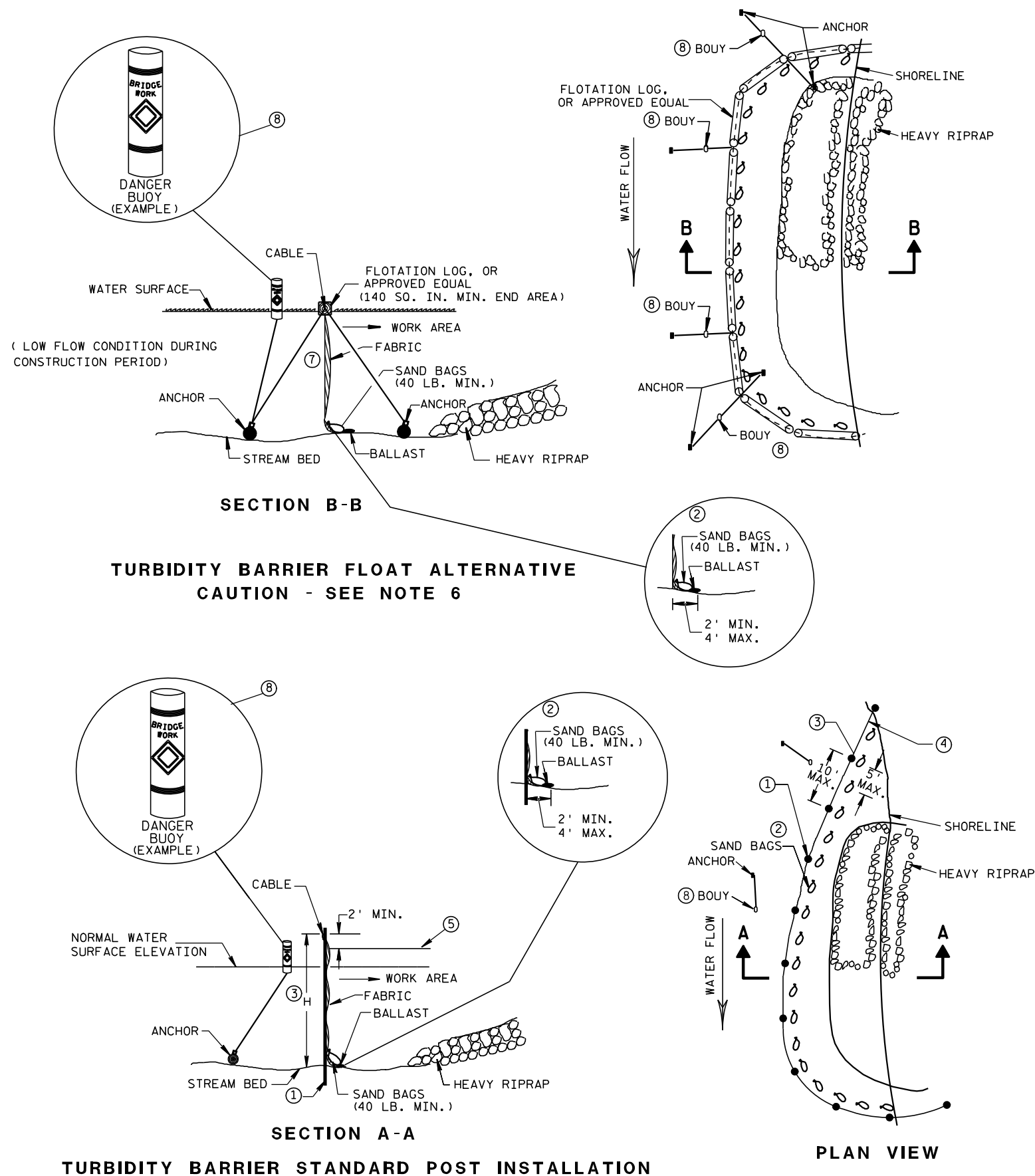
FHWA



- 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 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



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

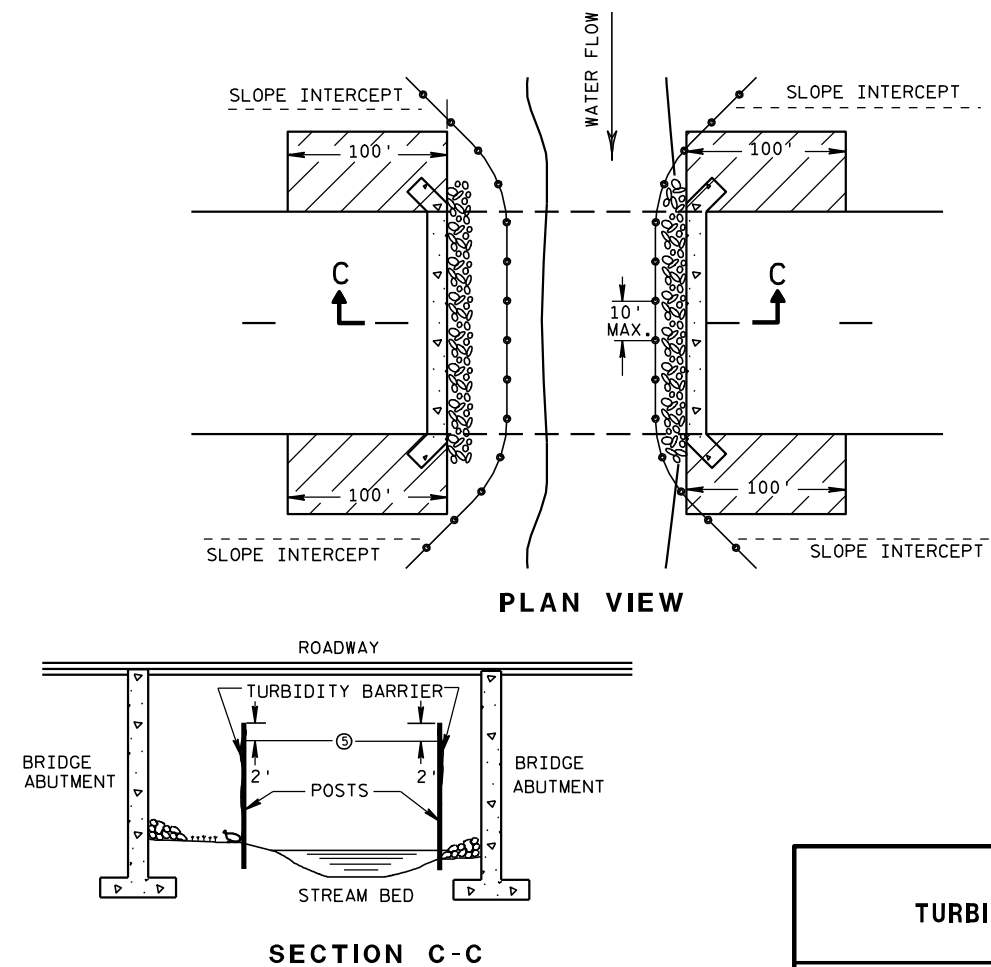


GENERAL NOTES

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

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

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

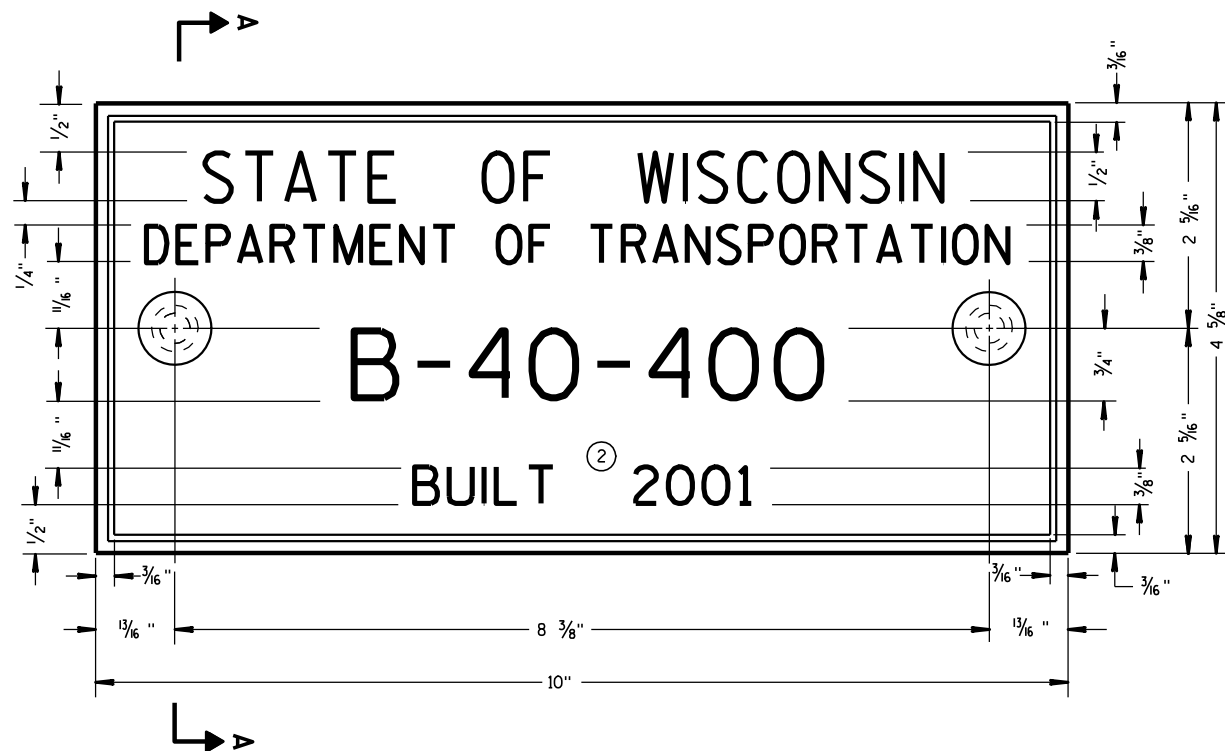
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

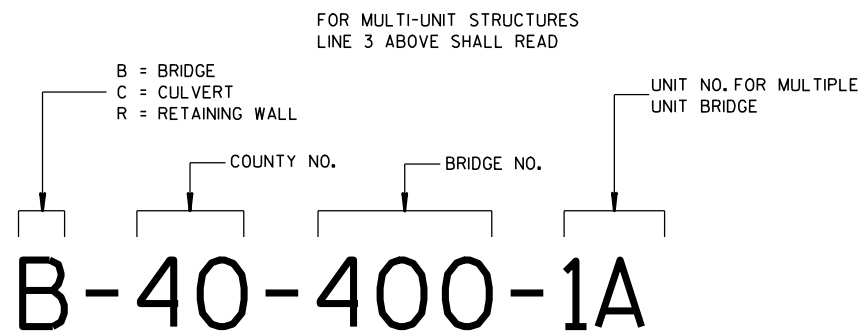
6/04/02
DATE

FHWA

/S/ Beth Connestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



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



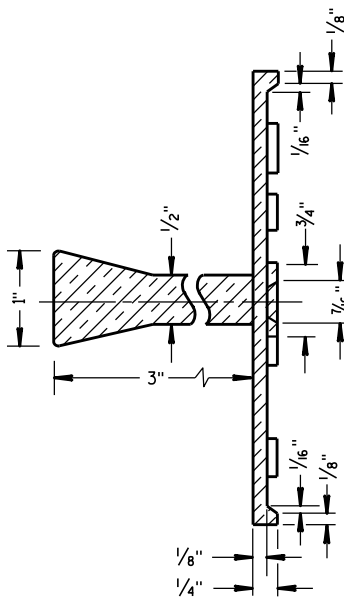
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

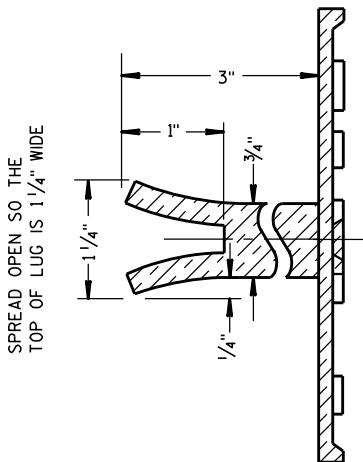
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

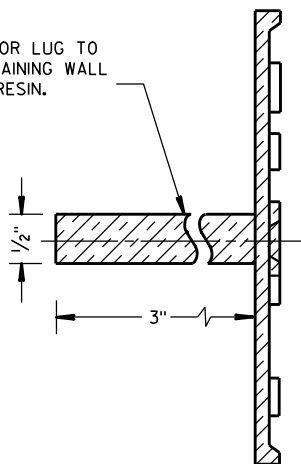


SECTION A-A



ALTERNATE LUG

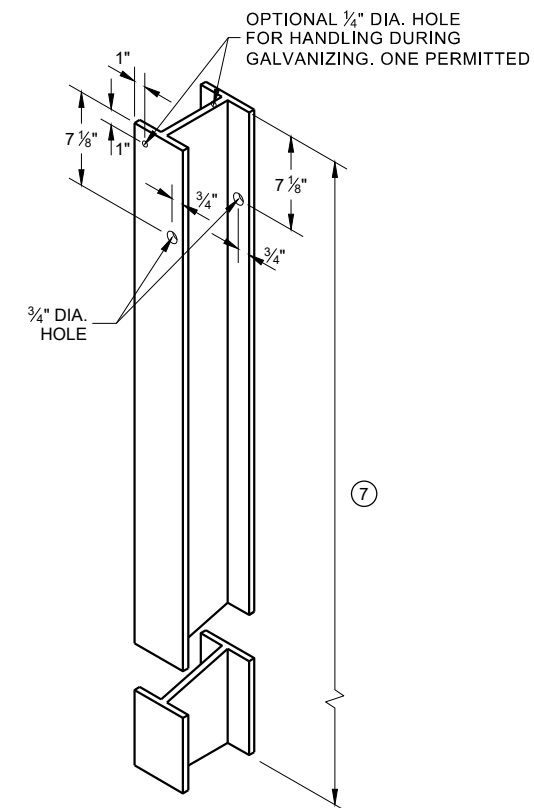
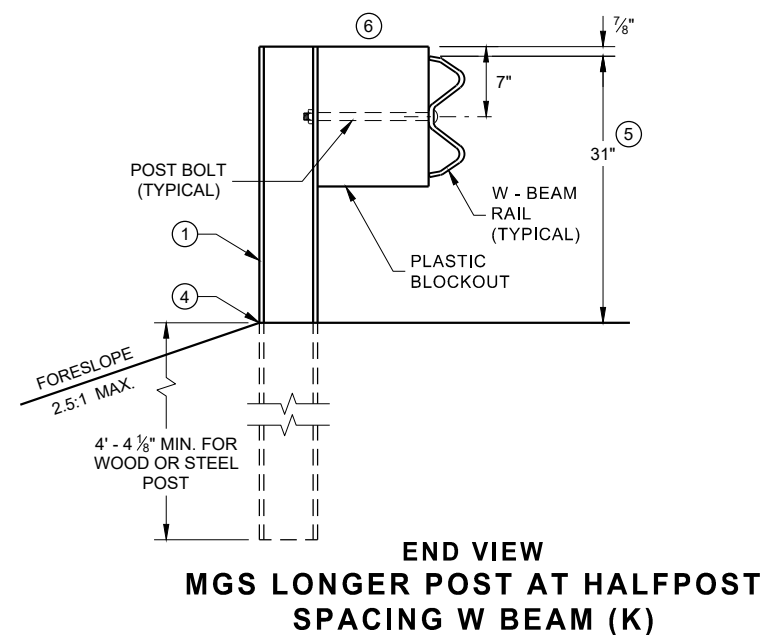
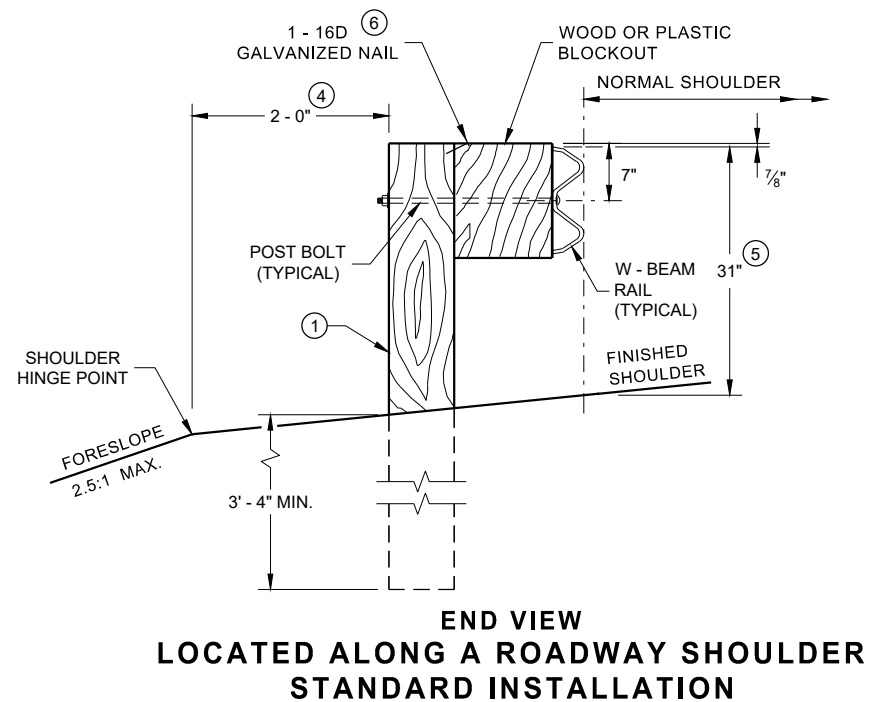
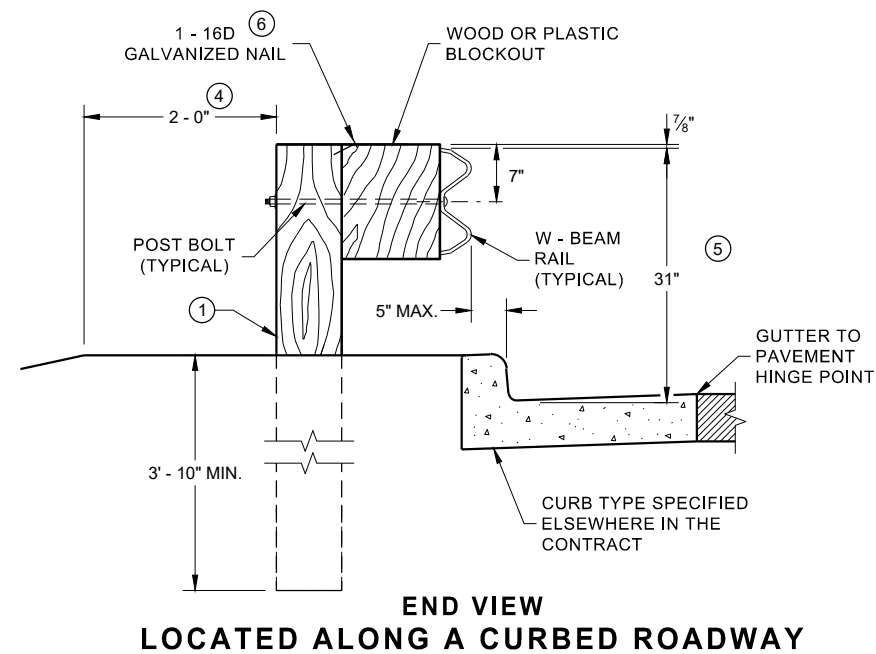
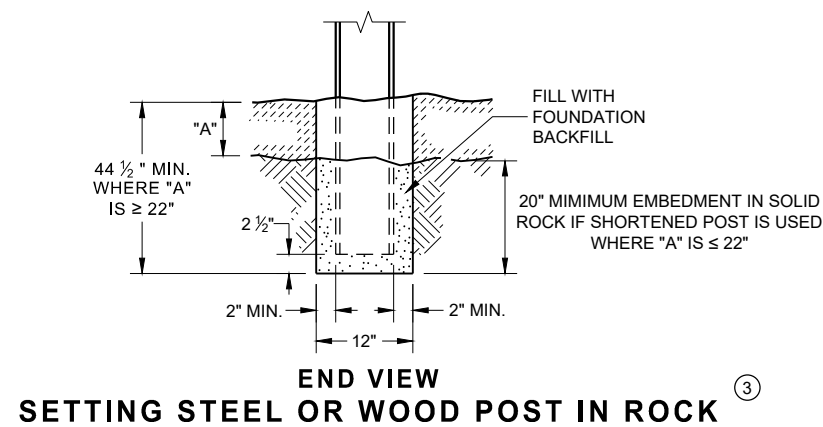
- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



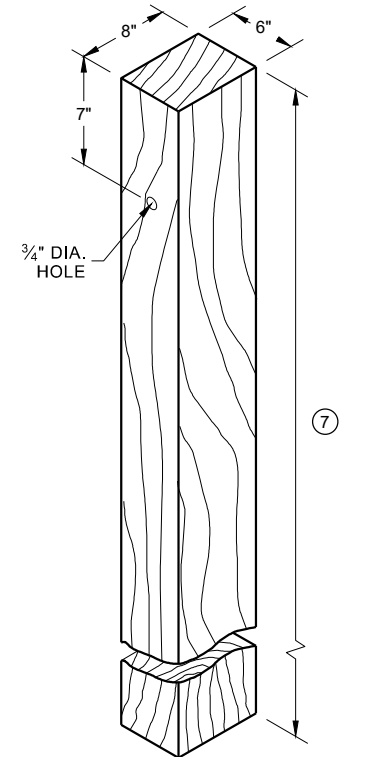
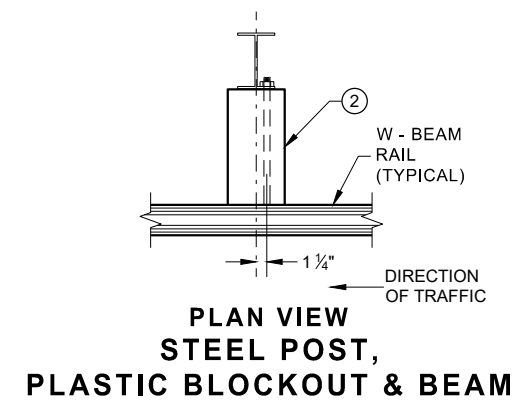
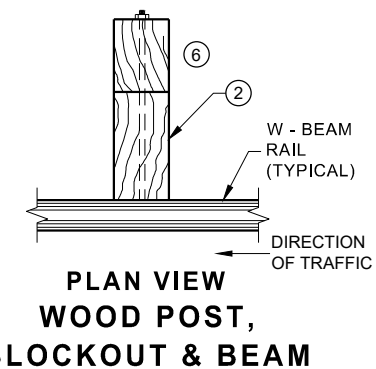
ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

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

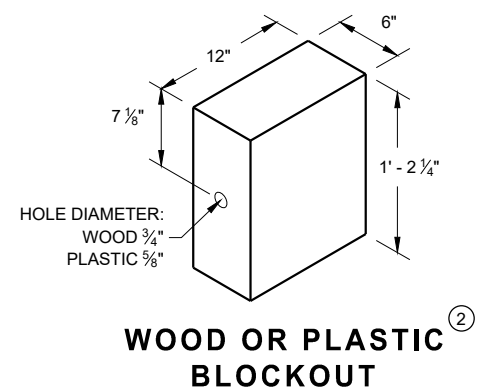
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL.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

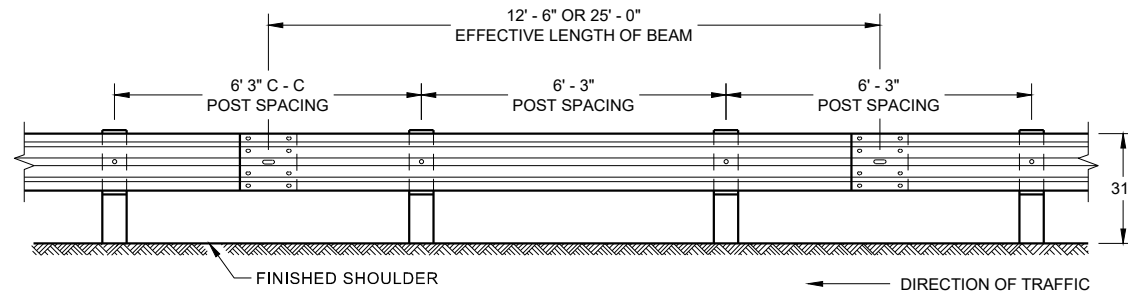


**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9) ①**

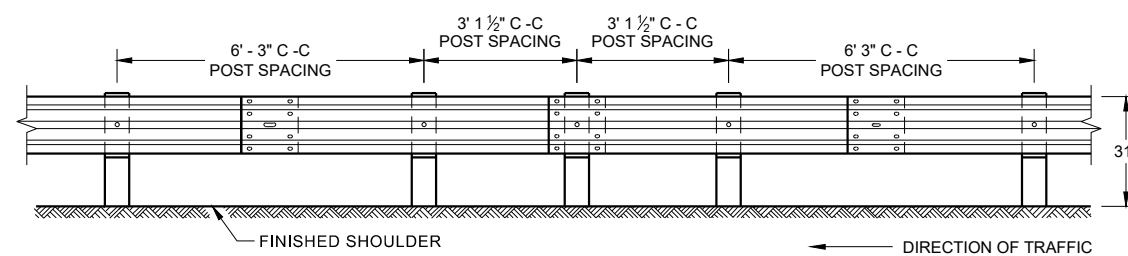


WOOD POST (6" X 8") NOMINAL ⁽¹⁾

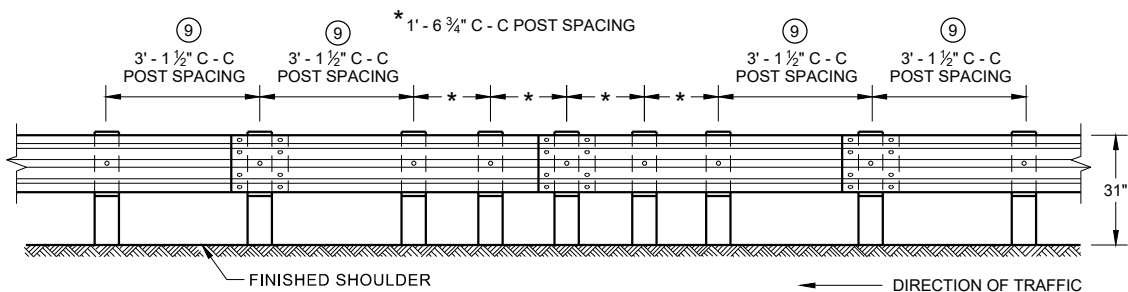




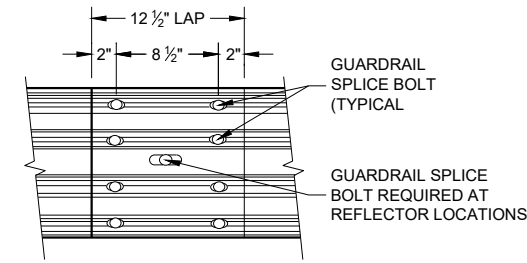
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



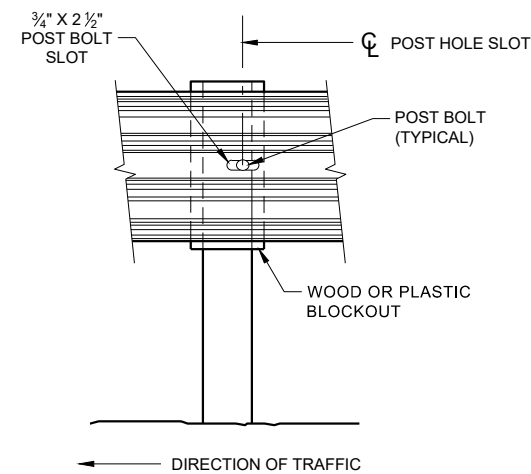
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



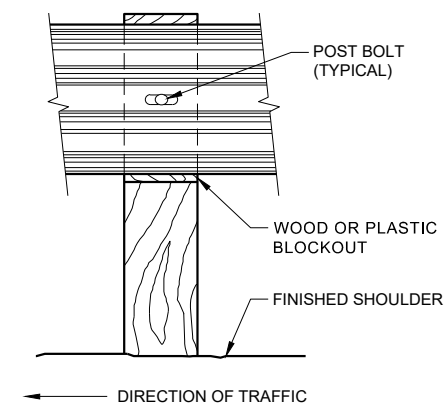
**FRONT VIEW
QUARTER POST SPACING (QS)**



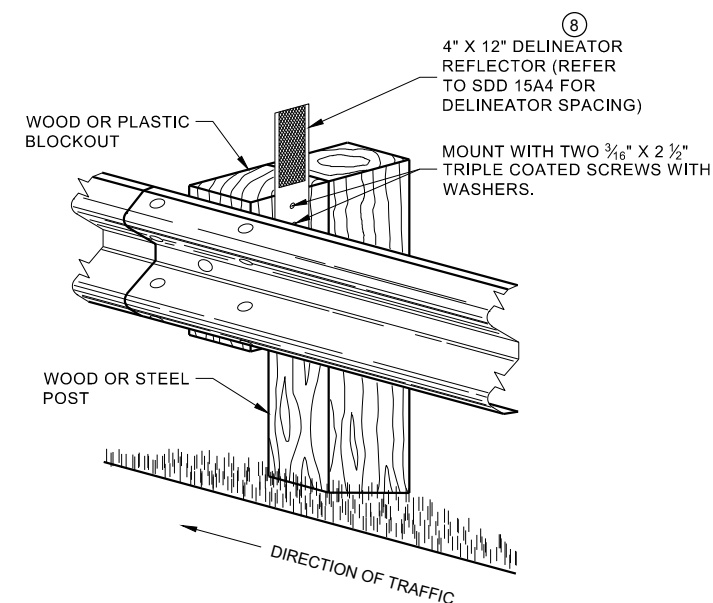
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



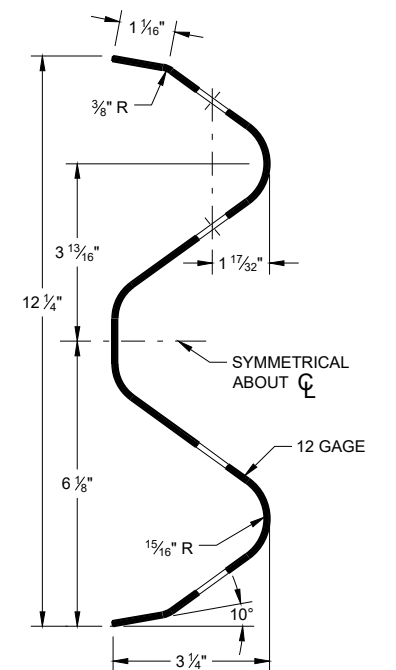
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

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 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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.

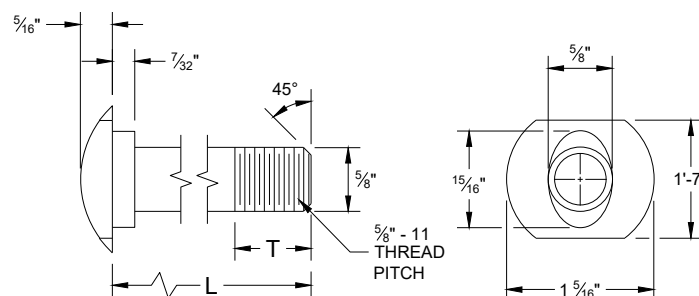


NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

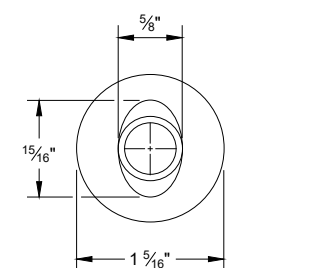
NOTE:

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

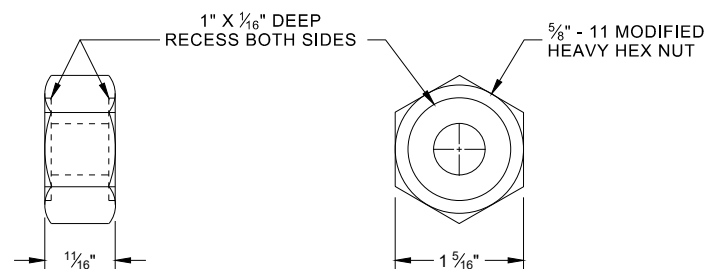


POST BOLT TABLE

L	T (MIN.)
1 ¼"	1 ½"
2"	1 ¾"
10"	4"
14"	4 ⅙"
18"	4"
21"	4 ⅙"
25"	4"

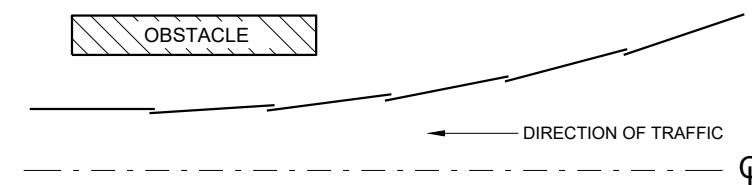


ALTERNATE BOLT HEAD

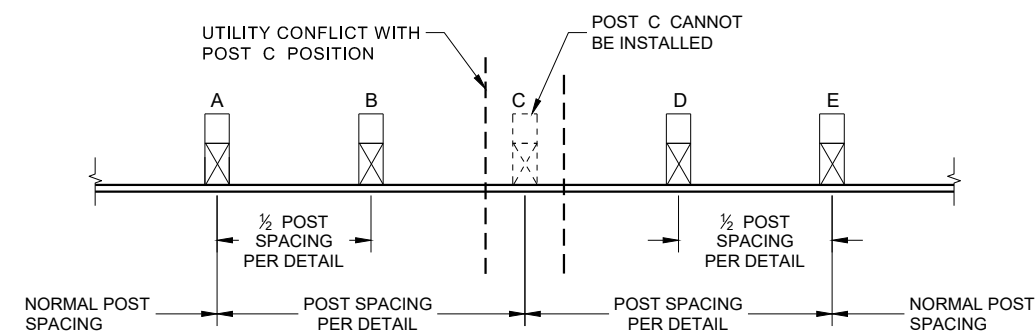


POST BOLT, SPLICE BOLT AND RECESS NUT

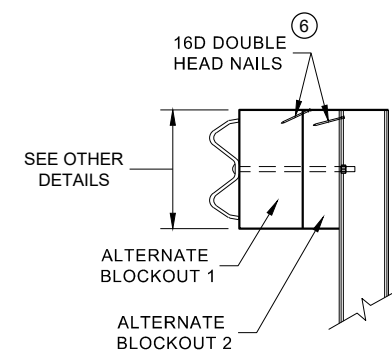
⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



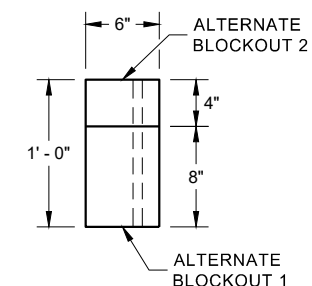
**PLAN VIEW
BEAM LAPPING DETAIL**



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

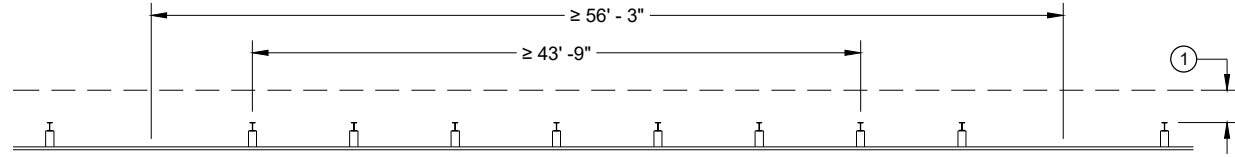


PLAN VIEW

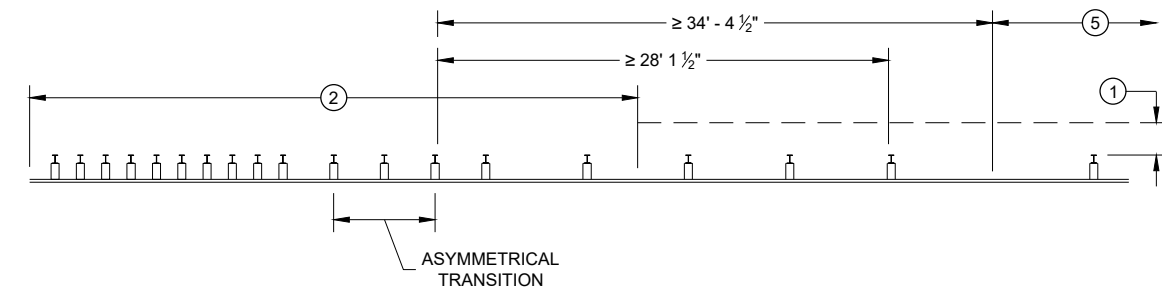
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

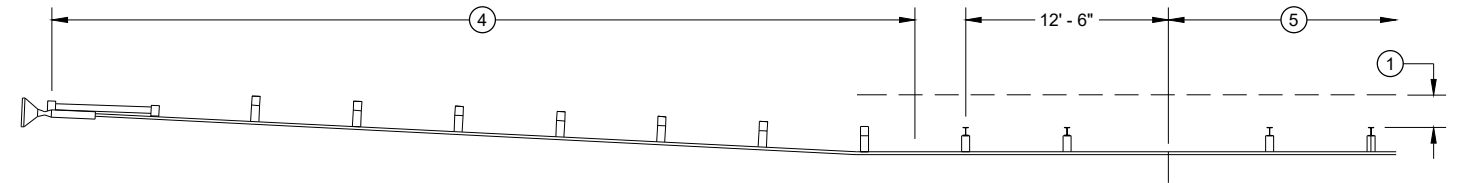
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



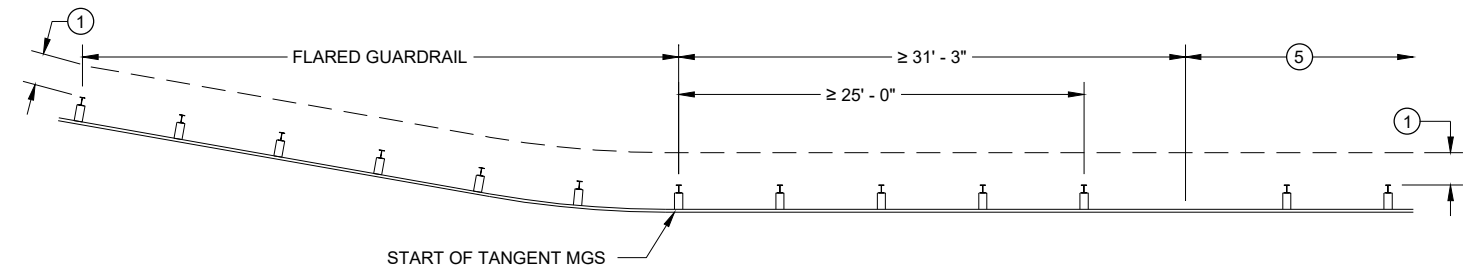
MISSING POST IN NORMAL BEAM GUARD RUN



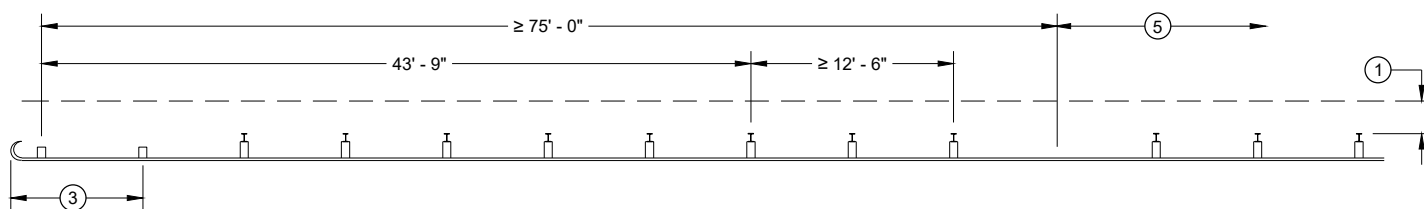
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



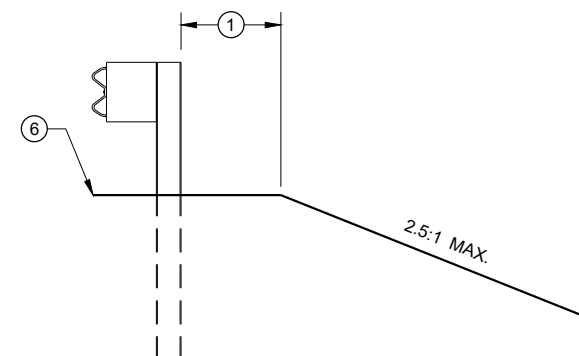
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

- (1) MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- (2) SEE SDD 14B45 FOR MORE DETAILS.
- (3) SEE SDD 14B47 FOR MORE DETAILS.
- (4) SEE SDD 14B44 FOR MORE DETAILS.
- (5) SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- (6) SEE PLAN FOR SHOULDER DESIGN.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

- (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.

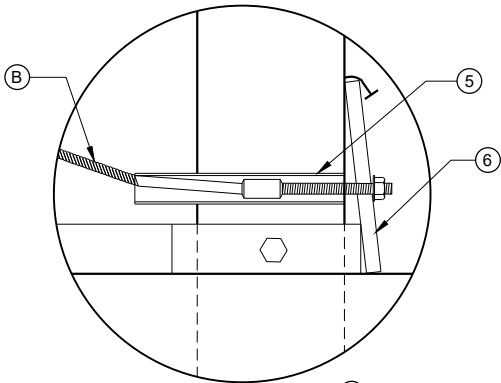
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

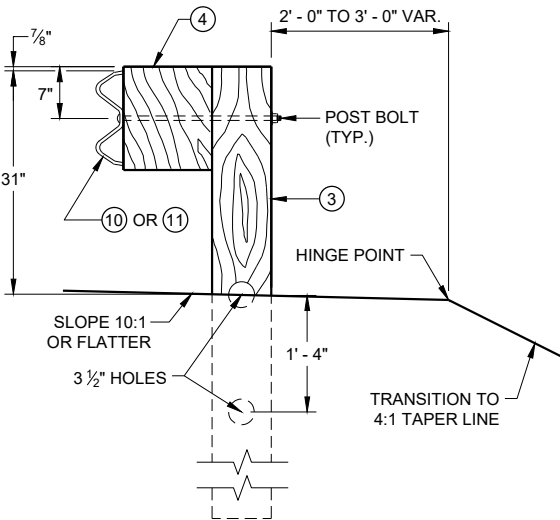
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

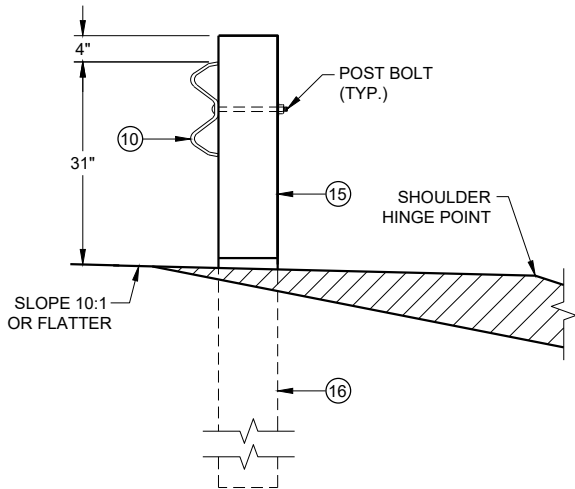
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



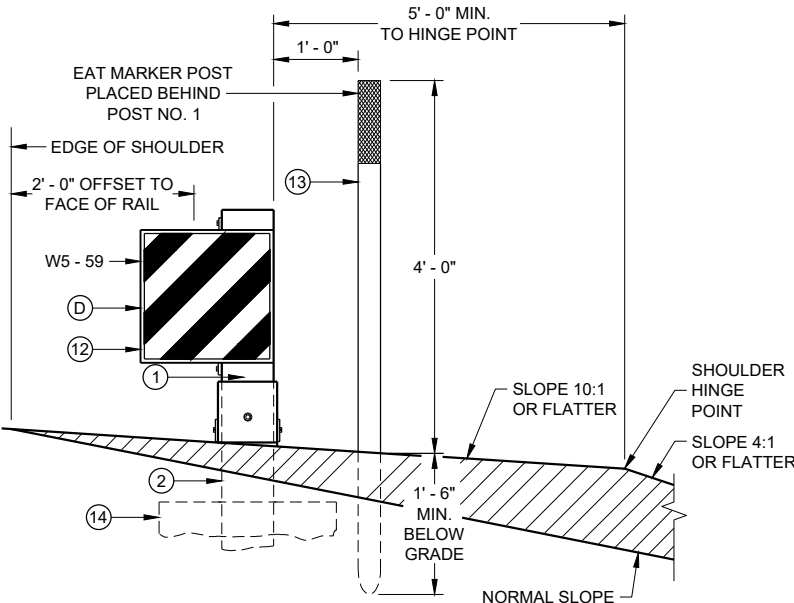
DETAIL "A"



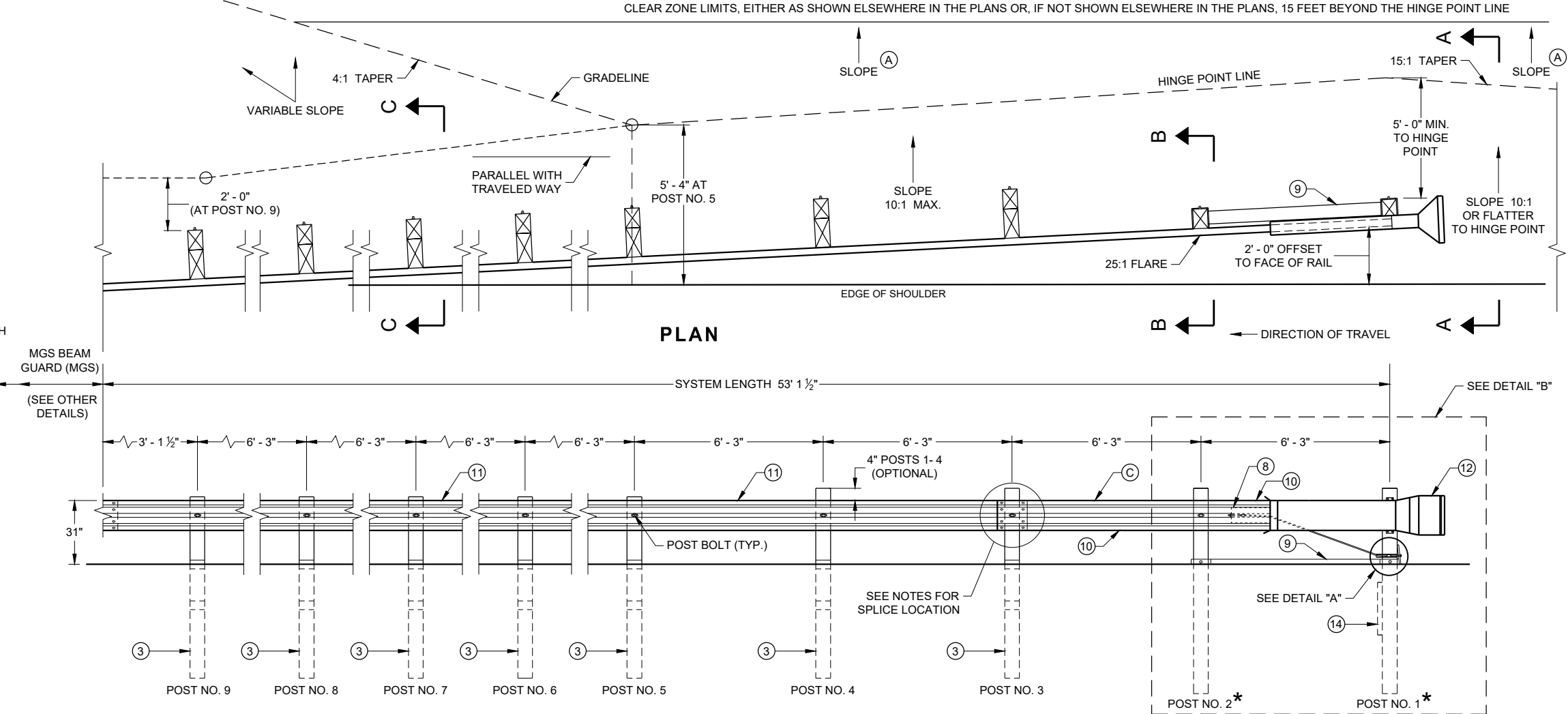
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*

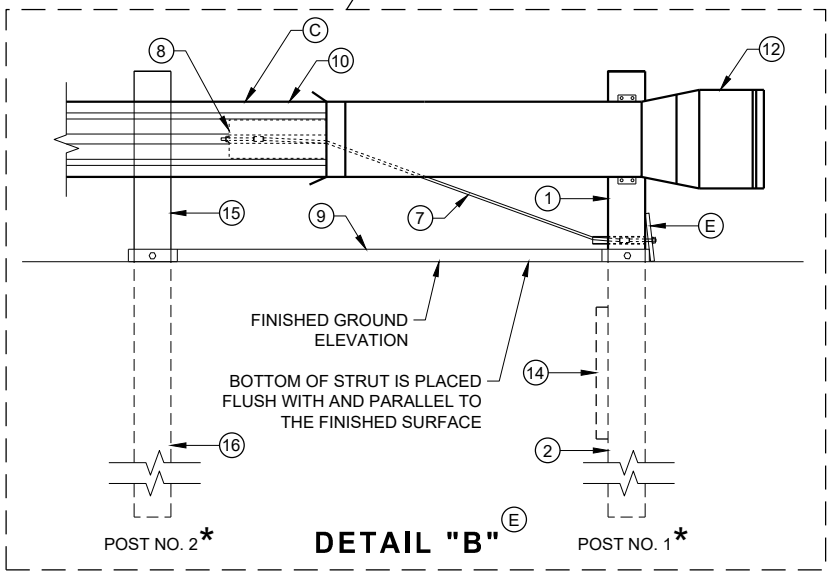


SECTION A - A
TYPICAL AT POST NO. 1*



PLAN

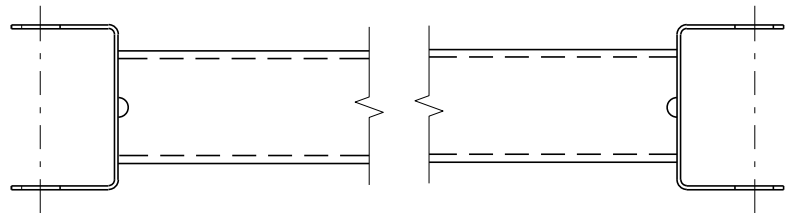
ELEVATION



DETAIL "B"

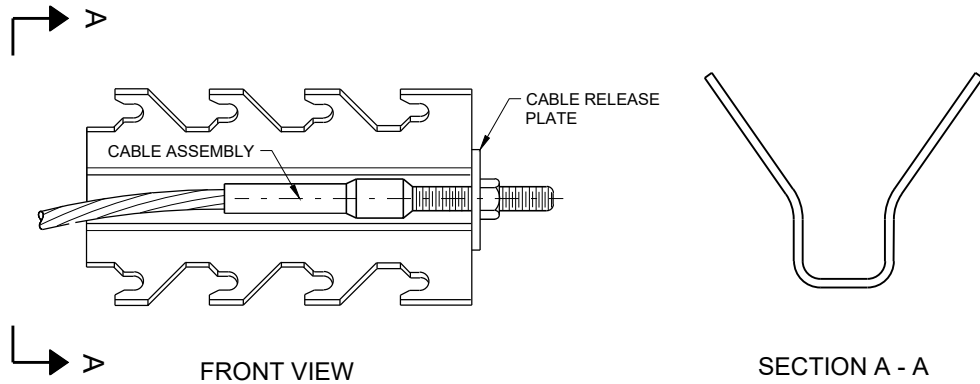
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

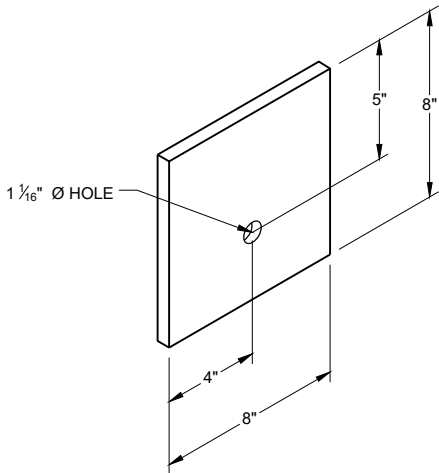


GENERIC GROUND STRUT⁹ ^E

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



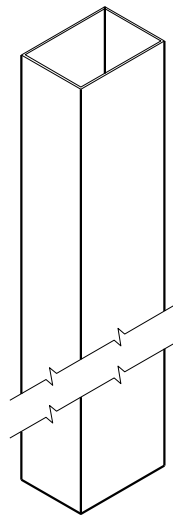
GENERIC ANCHOR CABLE BOX⁹ ^E



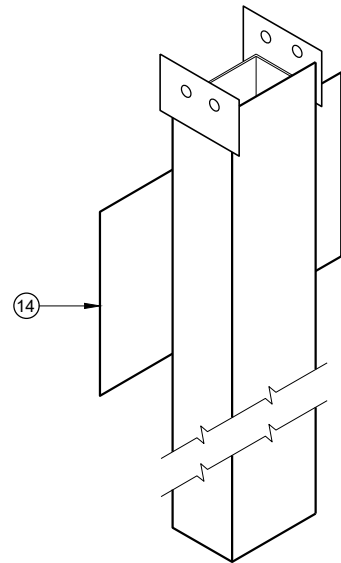
BEARING PLATE⁶ ^E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

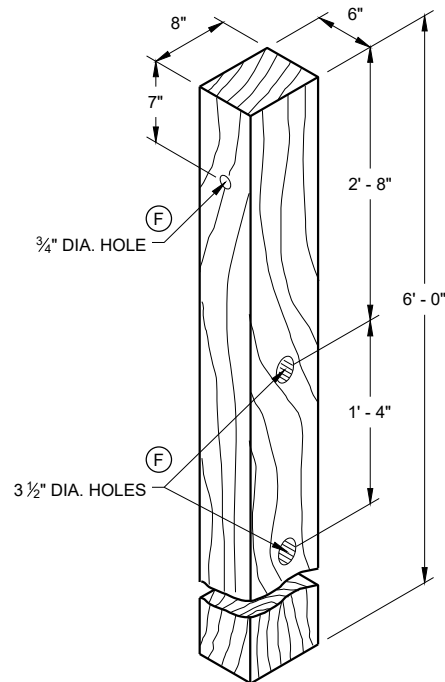
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



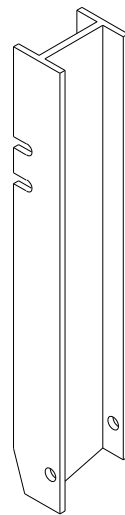
UPPER POST NO. 1 ⁽¹⁾ (E)



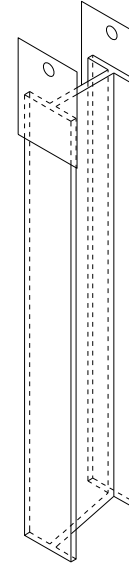
LOWER POST NO. 1 ⁽²⁾ (E)



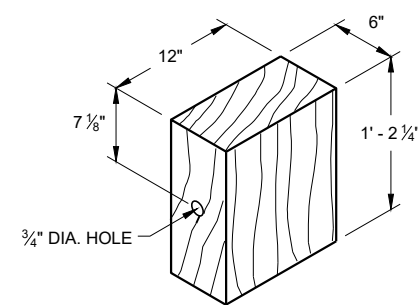
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



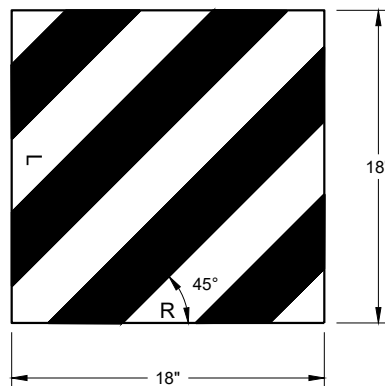
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



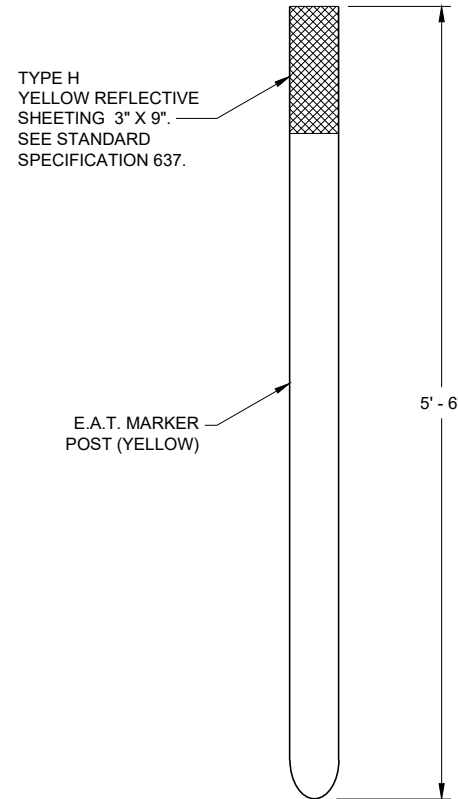
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



REFLECTIVE SHEETING DETAIL ^(E)
W5 - 59

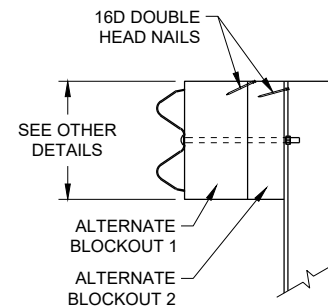


FRONT VIEW

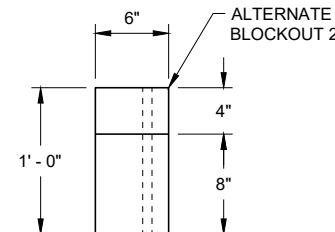


SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



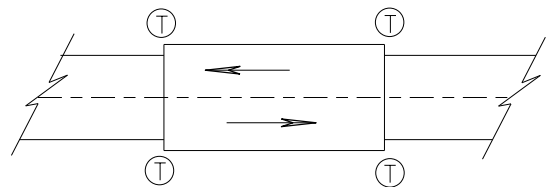
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

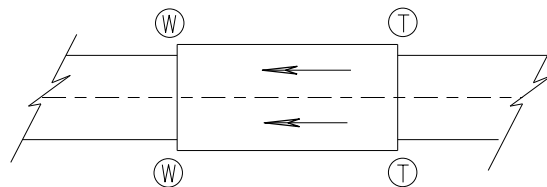
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

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

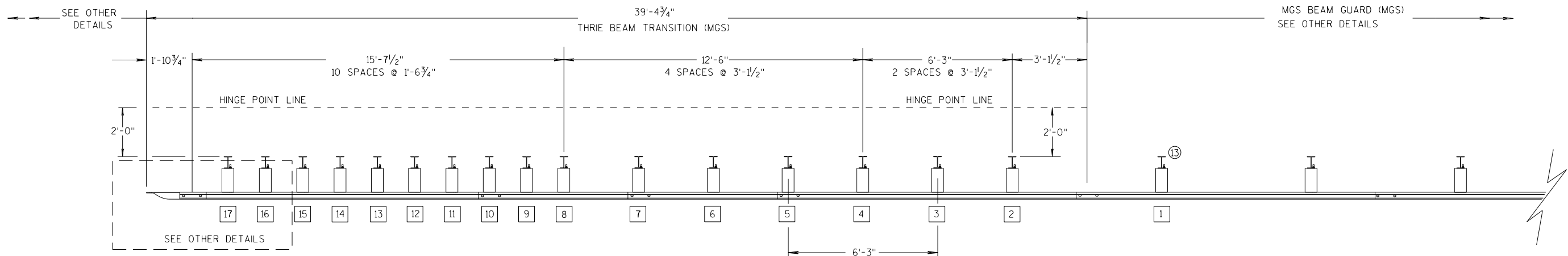
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

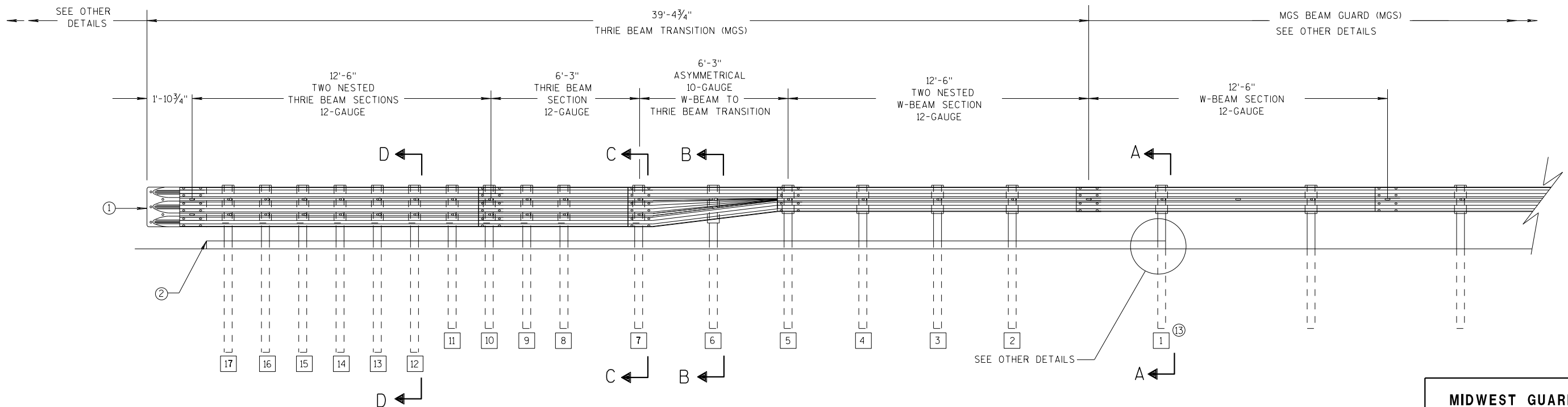
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

6

- S.D.D. 14 B 45-5b**

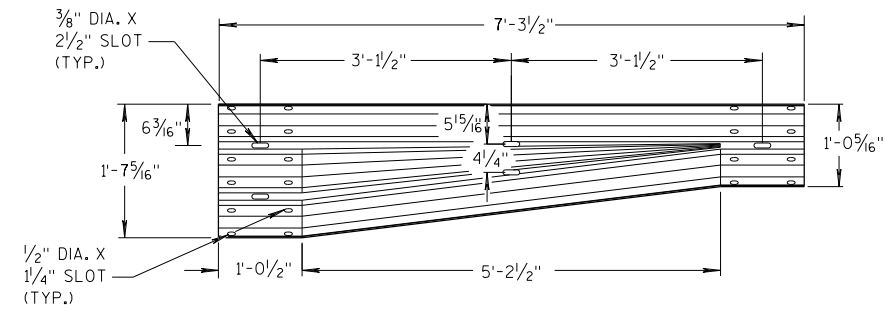


S.D.D. 14 B 45-5b

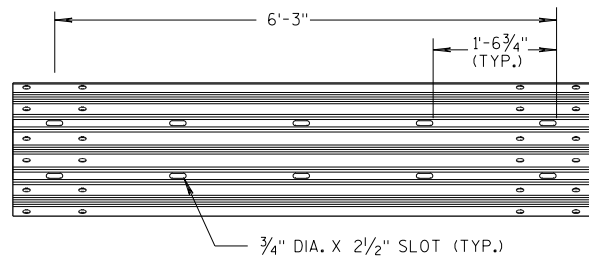


S.D.D. 14 B 45-5b

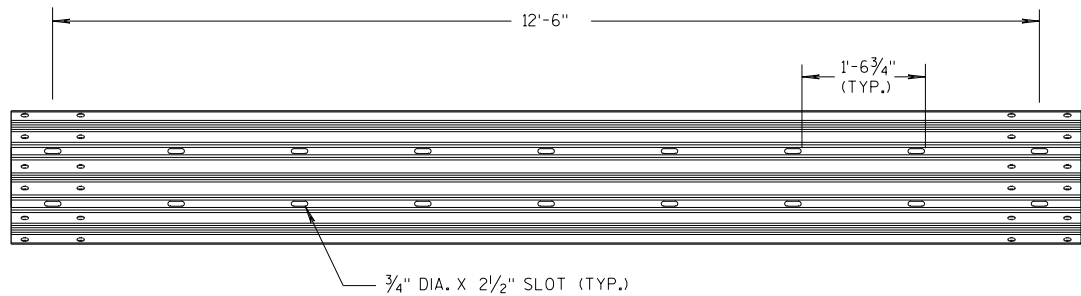




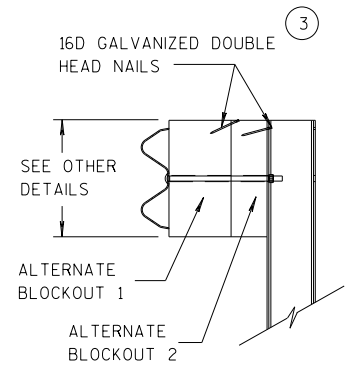
W-BEAM TO THRIE BEAM TRANSITION SECTION



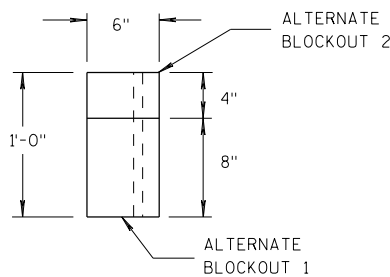
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

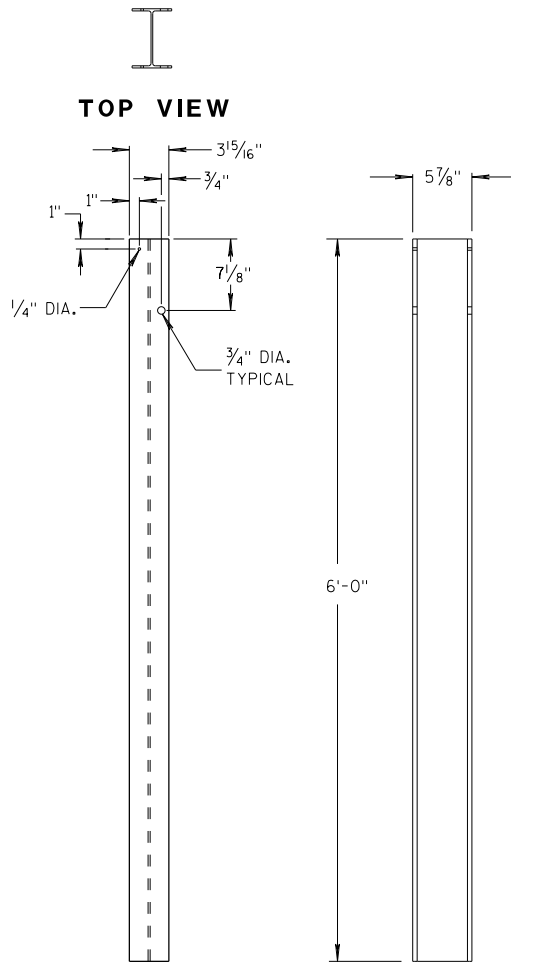


SIDE VIEW



TOP VIEW

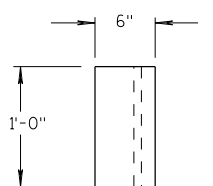
ALTERNATE WOOD BLOCKOUT DETAIL



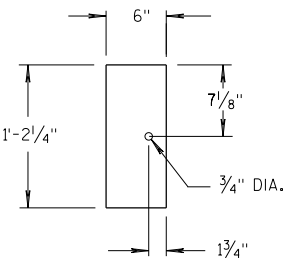
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

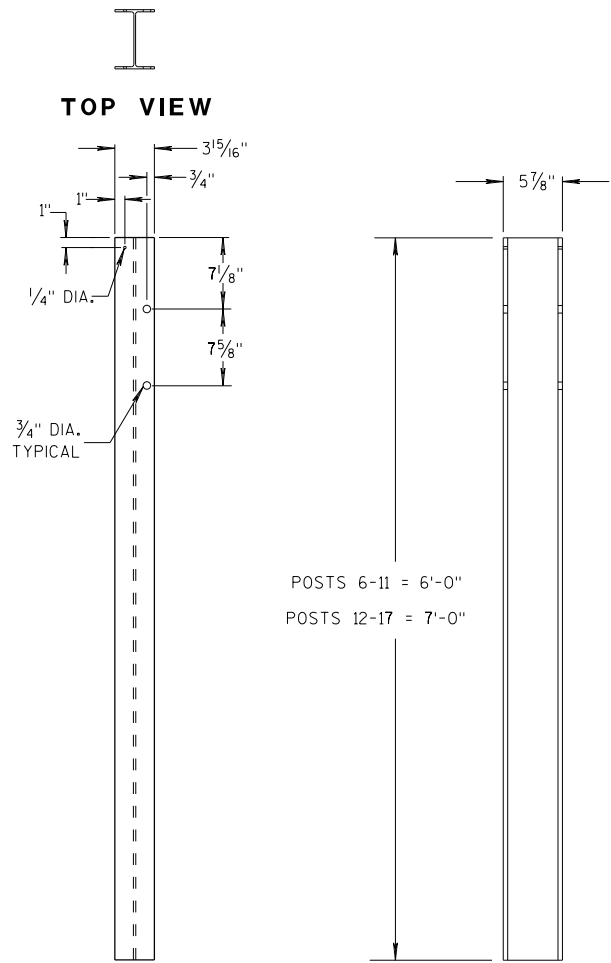


TOP VIEW



FRONT VIEW

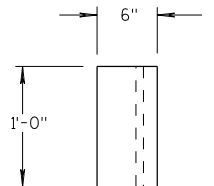
BLOCKOUT POSTS 1-5



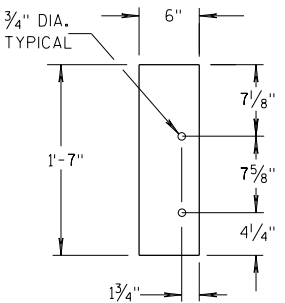
FRONT VIEW

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.

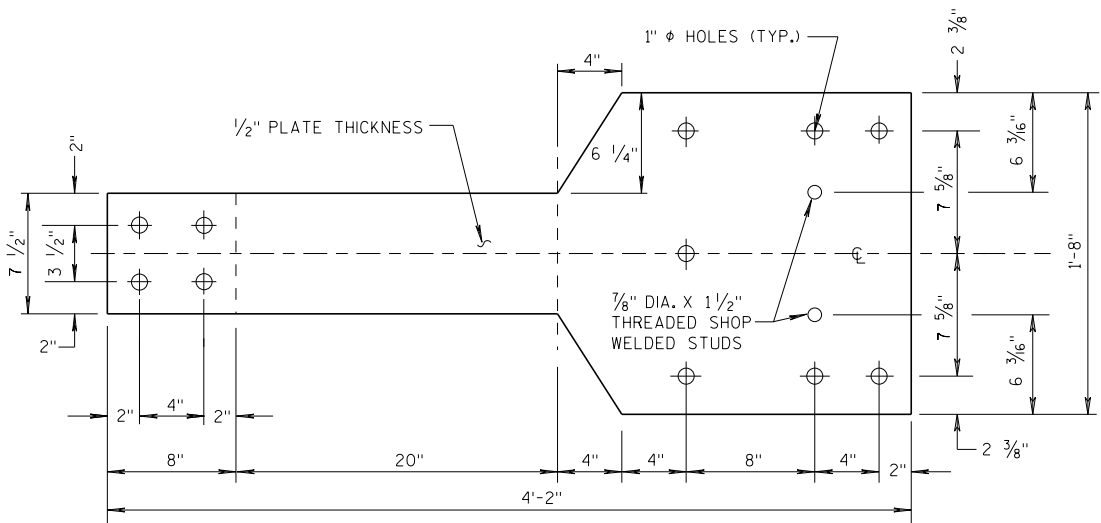
13 STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

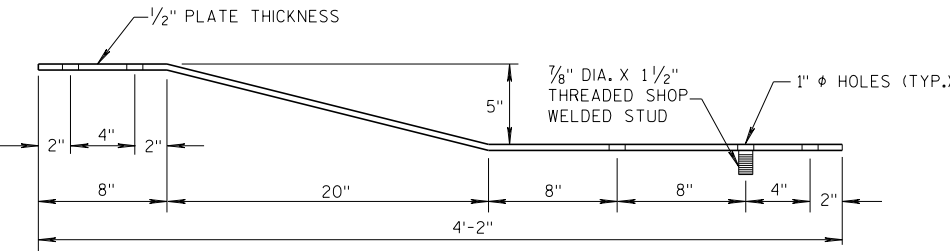
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

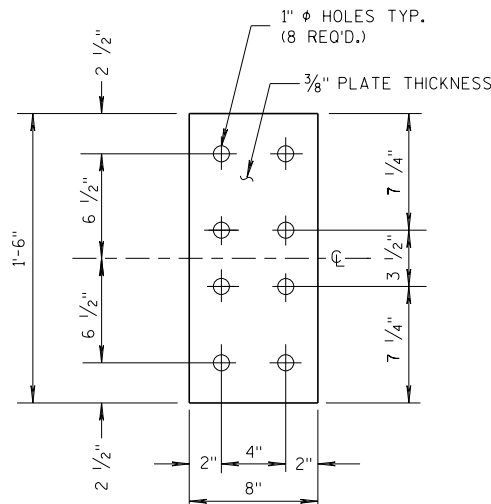
④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW

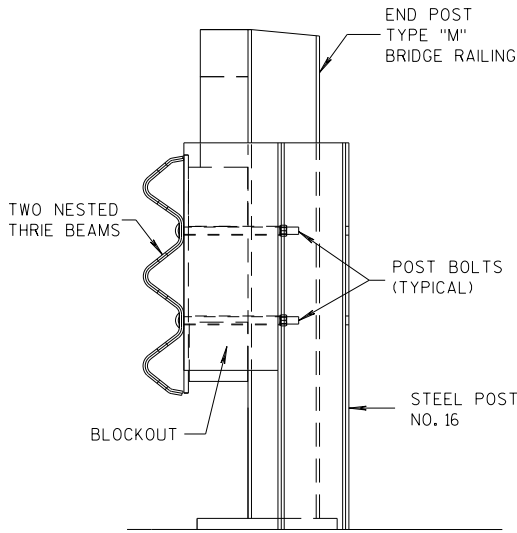


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

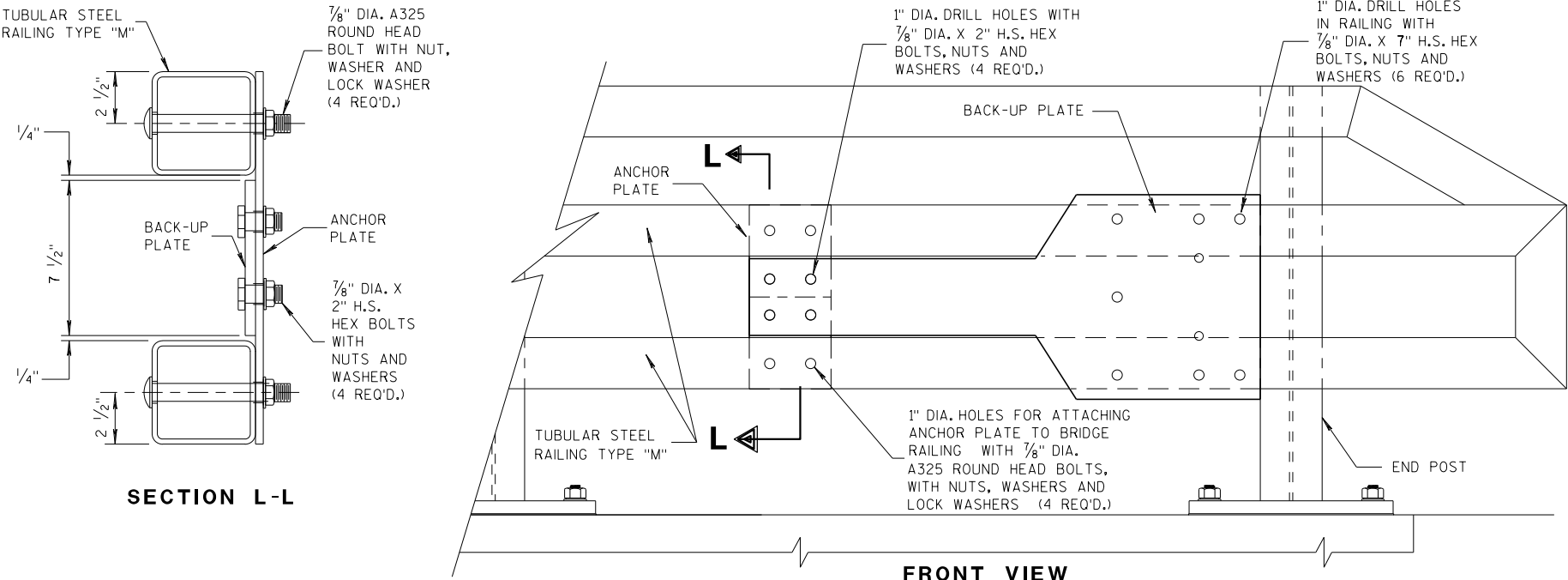


FRONT VIEW

ANCHOR
PLATE DETAIL,
TYPE "M"



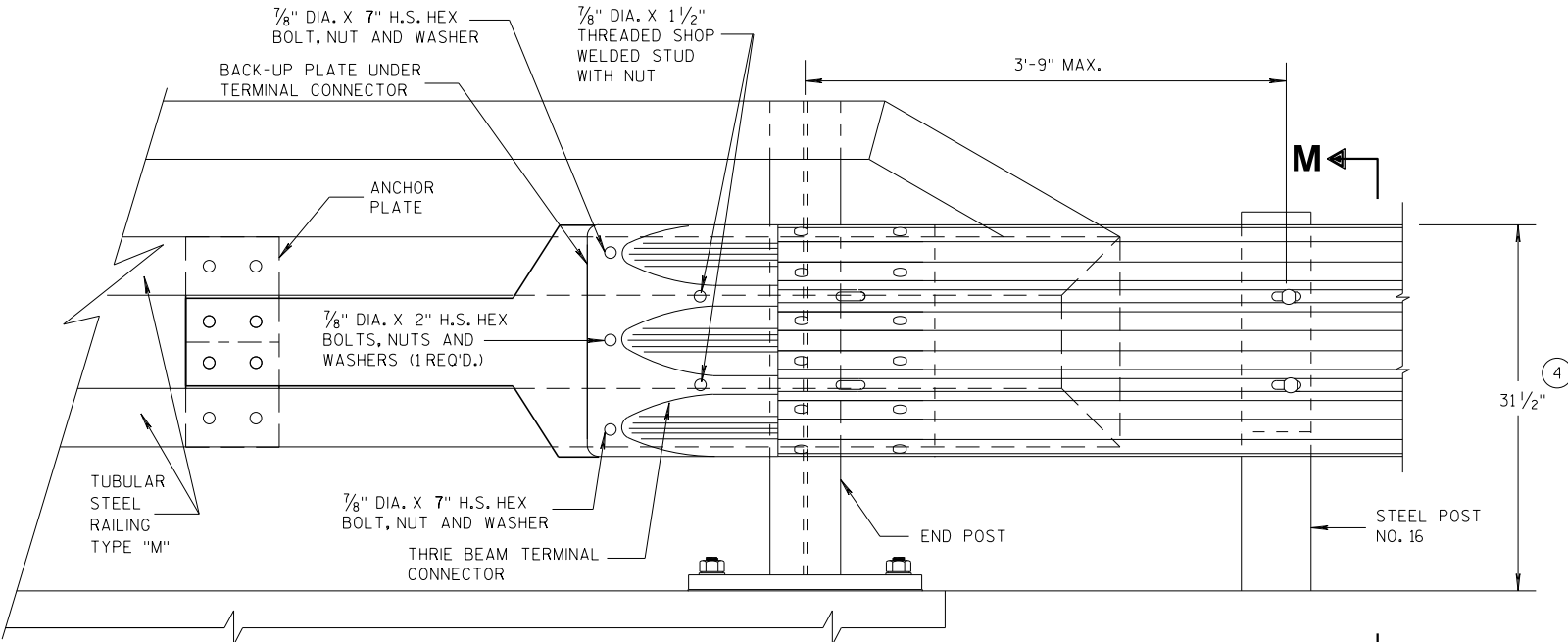
SECTION M-M



SECTION L-L

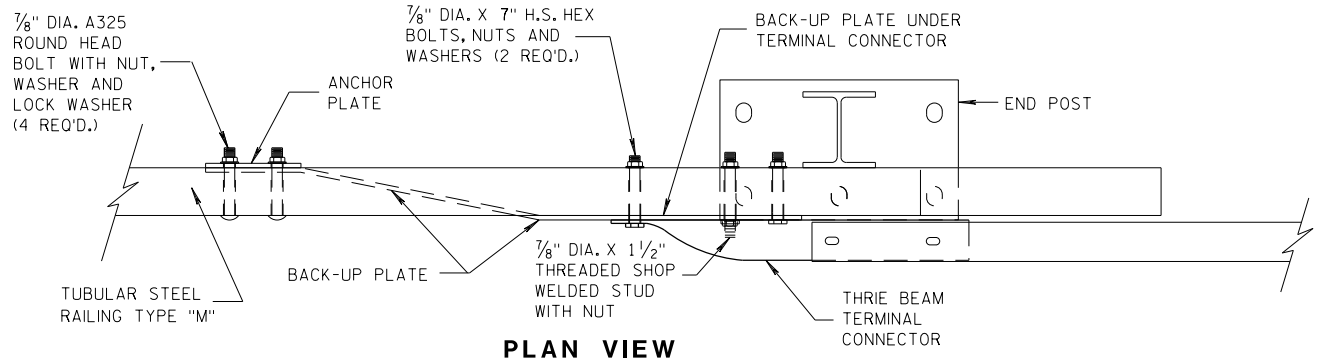
FRONT VIEW

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



FRONT VIEW

M



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

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



SEE SDD 15C2 - SHEET "a" FOR LEGEND

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:

LESS 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)

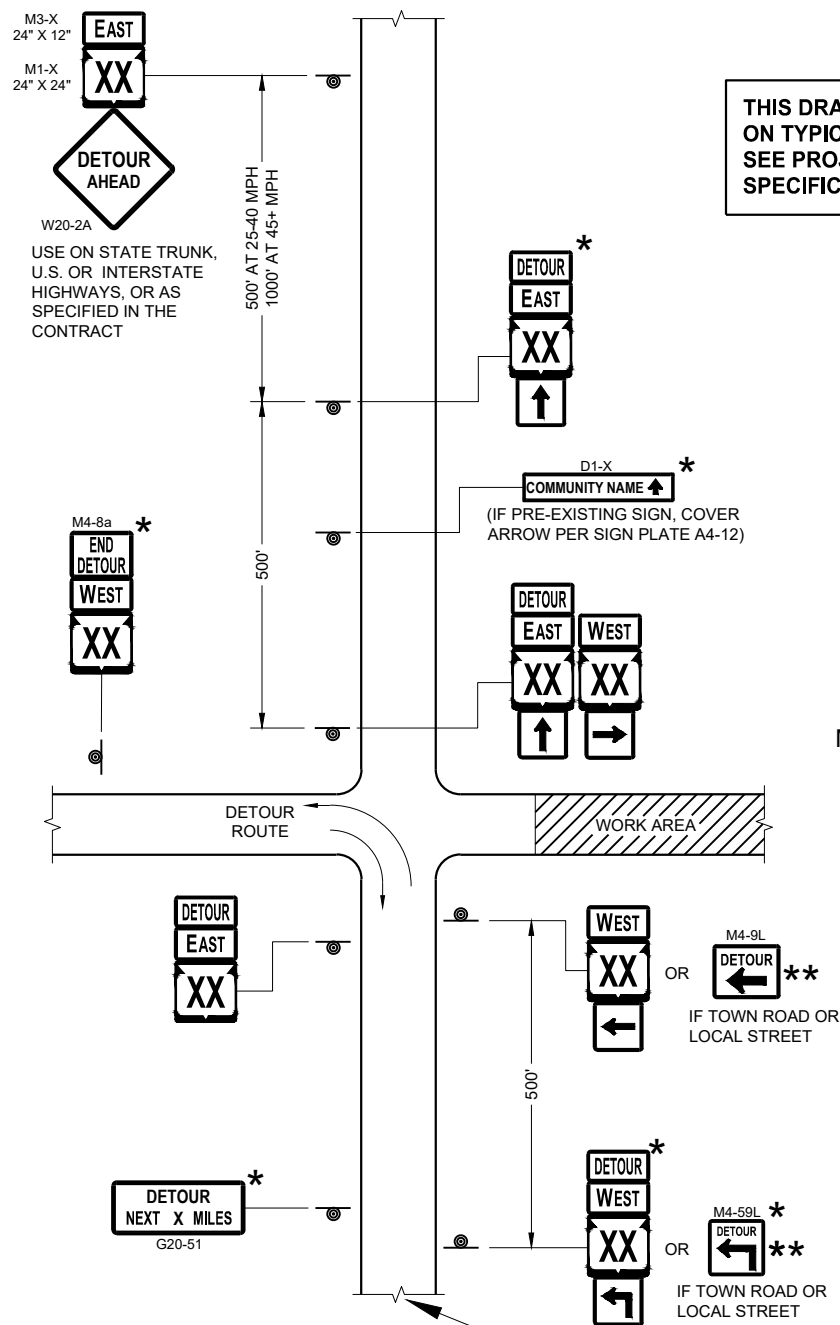
D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

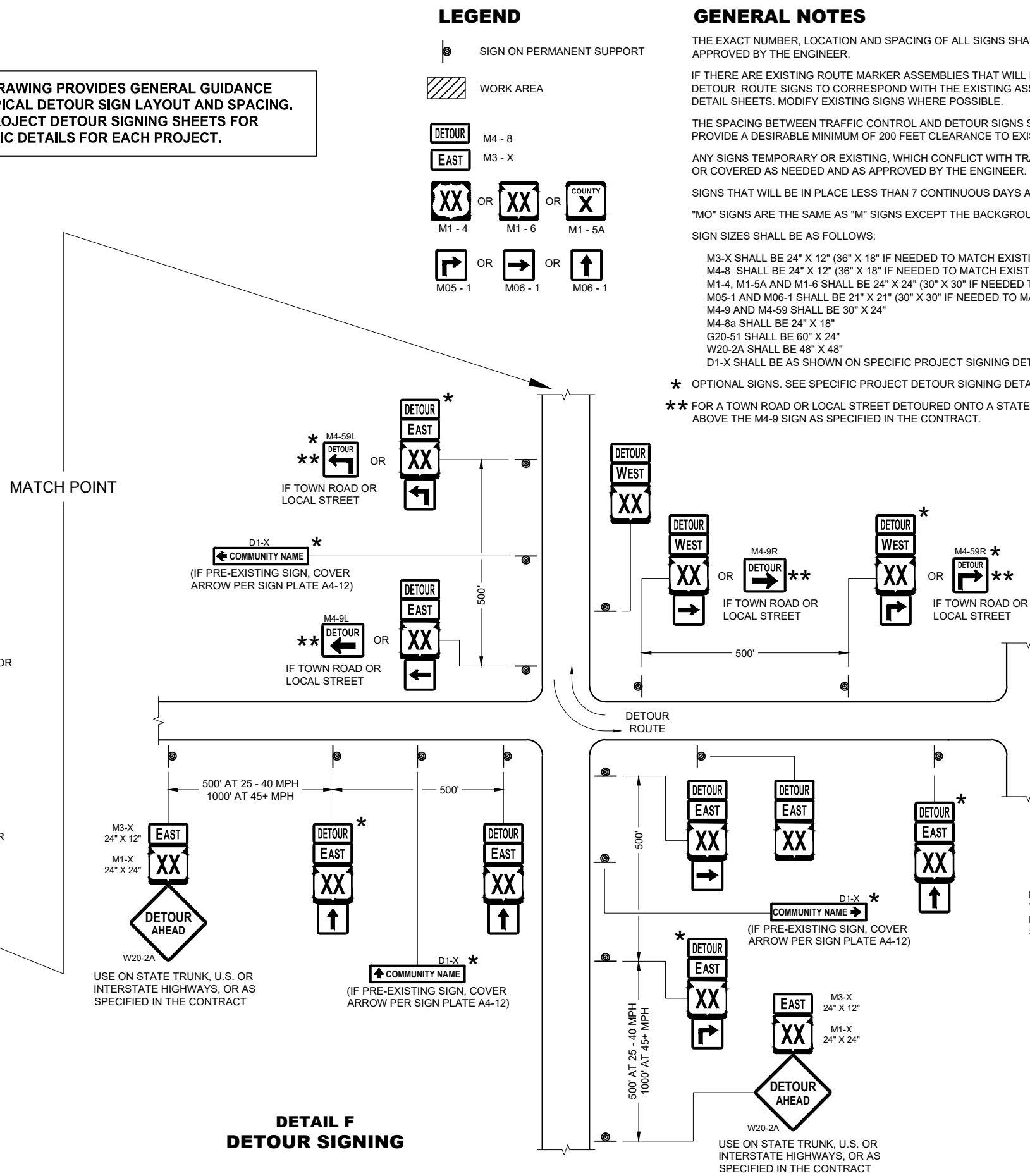
APPROVED
February 2020 /S/ Andrew Heidtk
DATE WORK ZONE ENGINEER



**THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.**

SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

SDD 15C02 - 08c



DETAIL F DETOUR SIGNING

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

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" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
M4-9 AND M4-59 SHALL BE 30" X 24"
M4-8a SHALL BE 24" X 18"
G20-51 SHALL BE 60" X 24"
W20-2A SHALL BE 48" X 48"
D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

**** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.**

PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING FOR MAINLINE CLOSURES

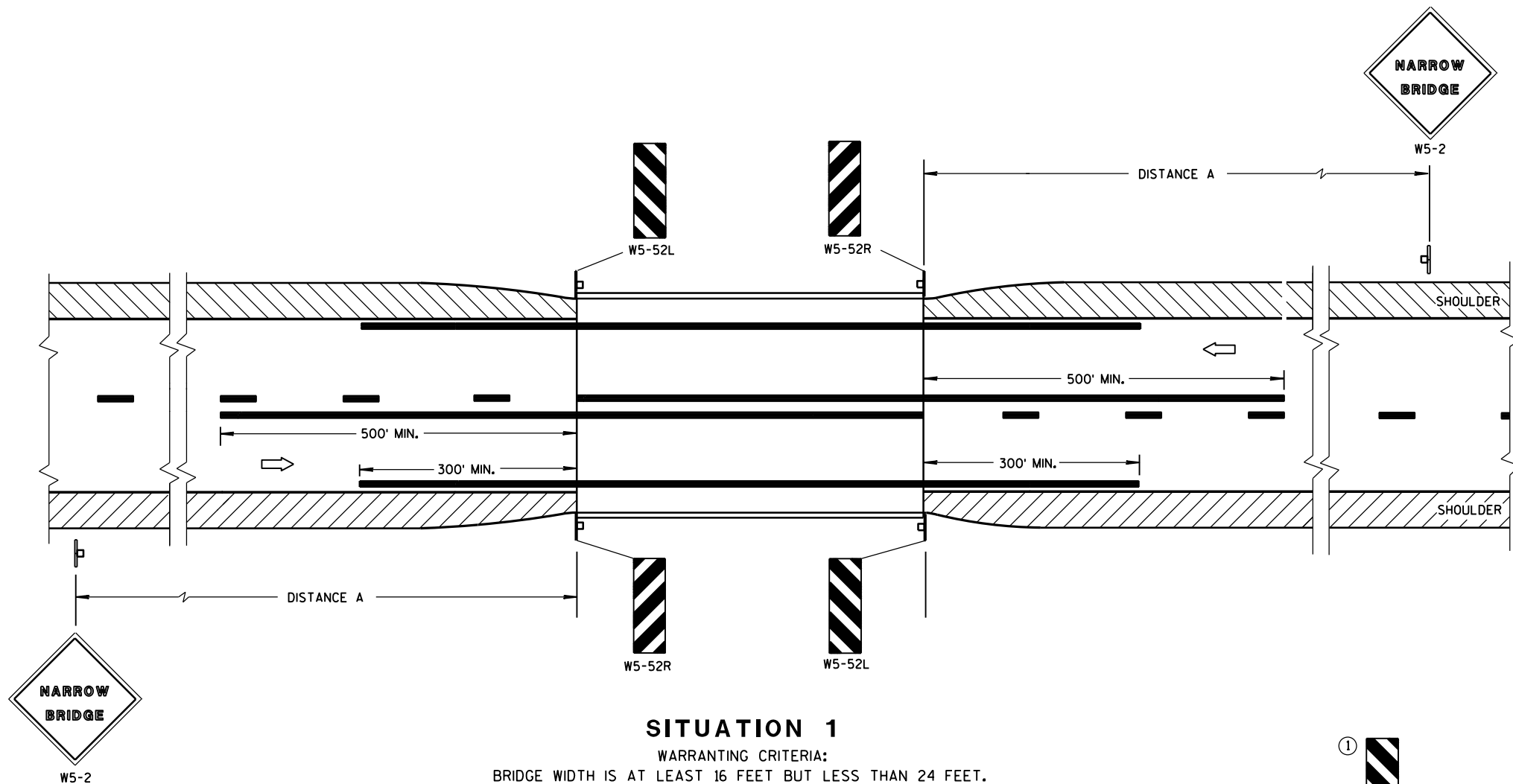
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtknecht
WORK ZONE ENGINEER

FHW

SDD15C02 - 08c



SITUATION 1

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

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

GENERAL NOTES

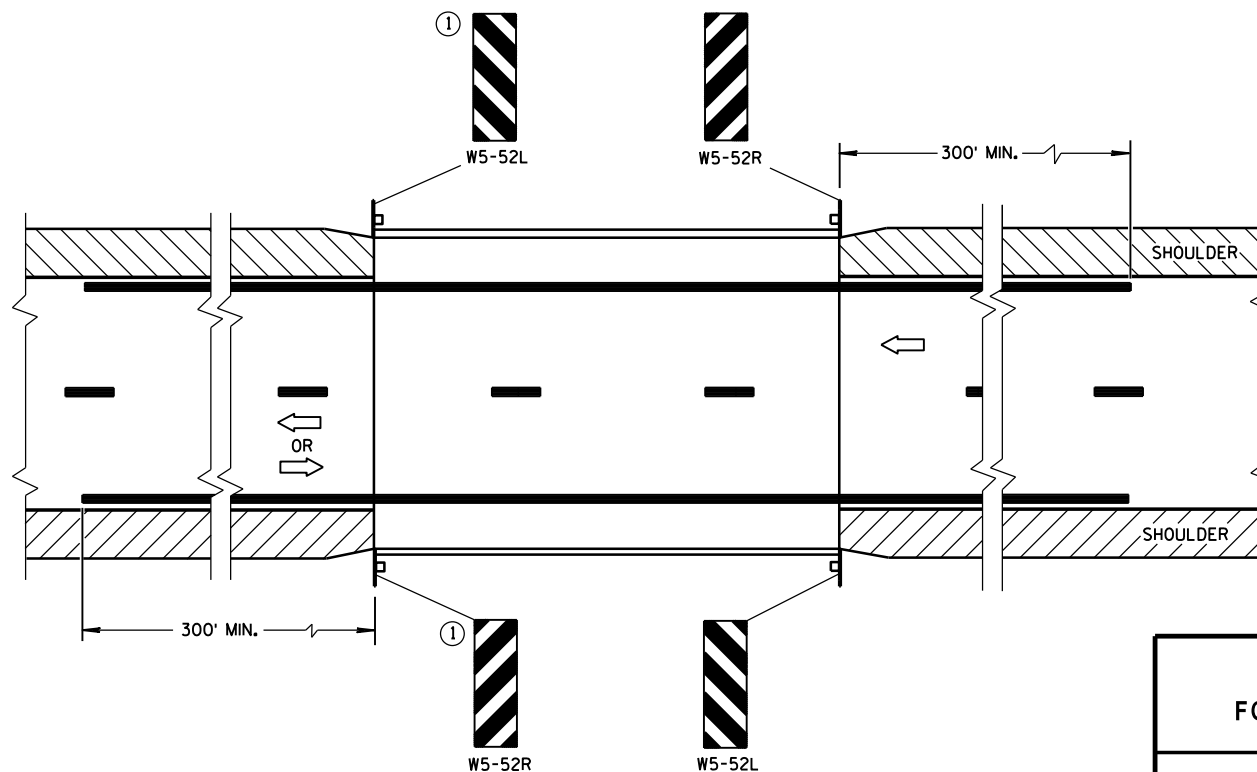
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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.

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 2

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

SIGNING & MARKING FOR TWO LANE BRIDGES

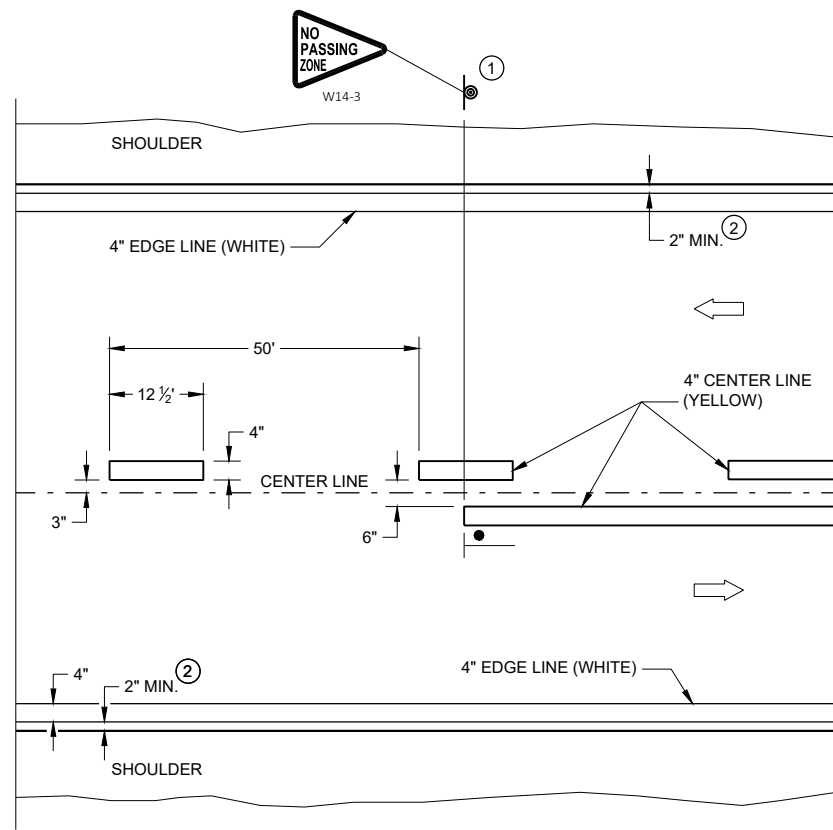
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

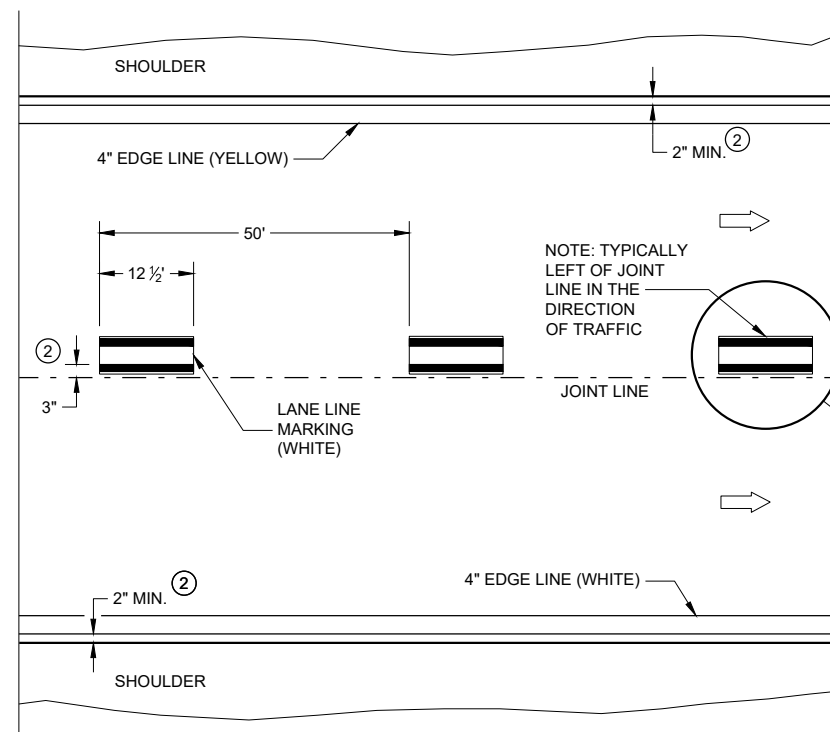
June 2017
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER

FHWA

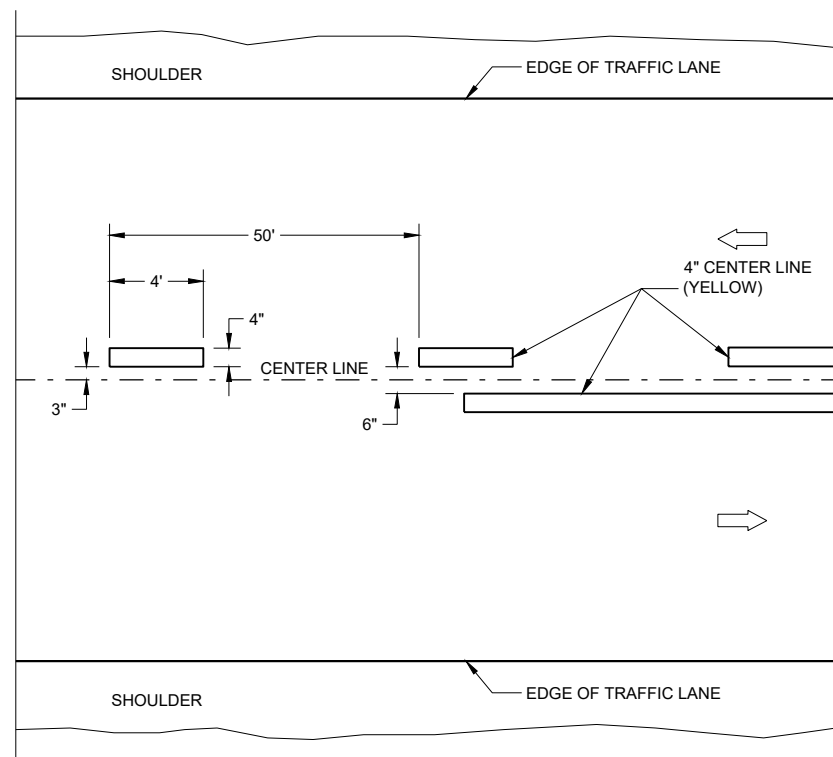


TWO WAY TRAFFIC

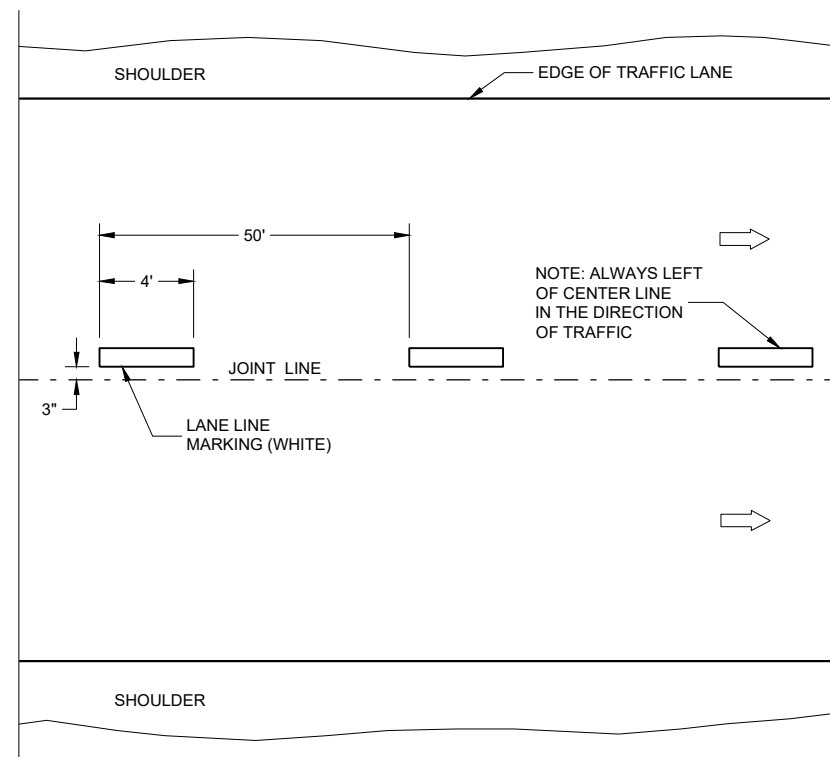


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

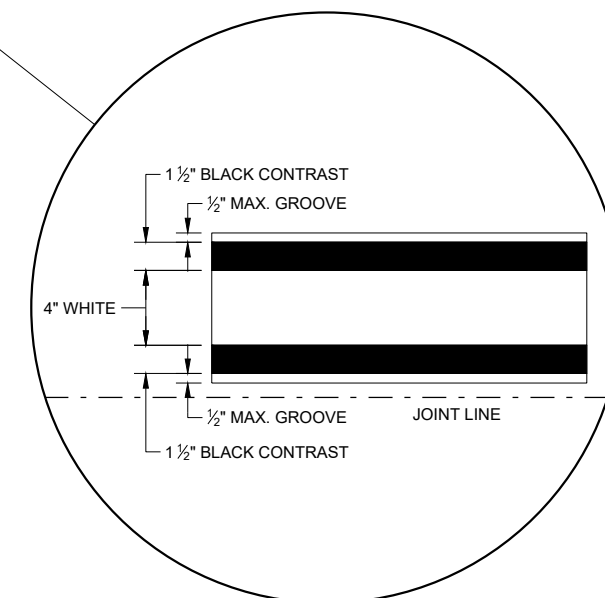
GENERAL NOTES

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITH 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

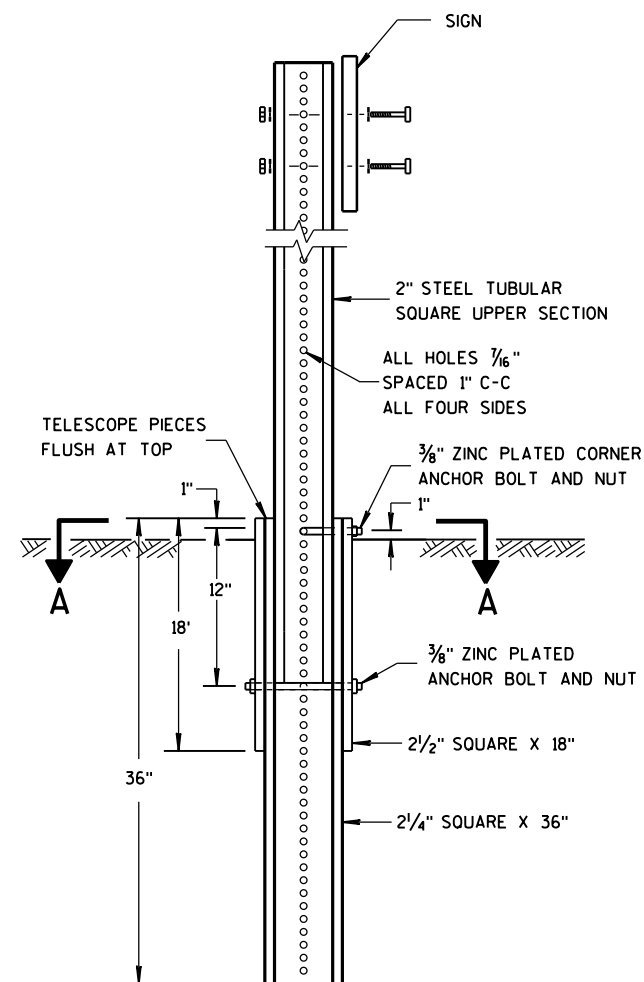


LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Matthew Rauch
STATEWIDE SIGNING AND MARKING
ENGINEER

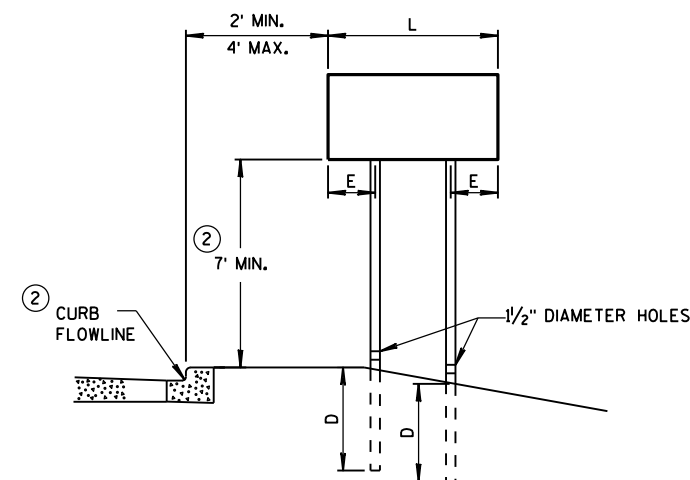
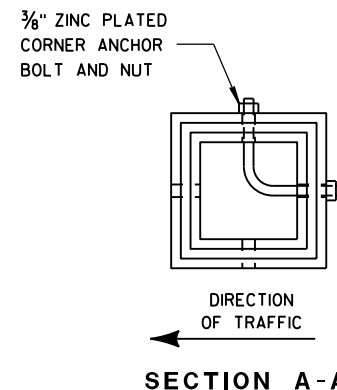


DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL 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

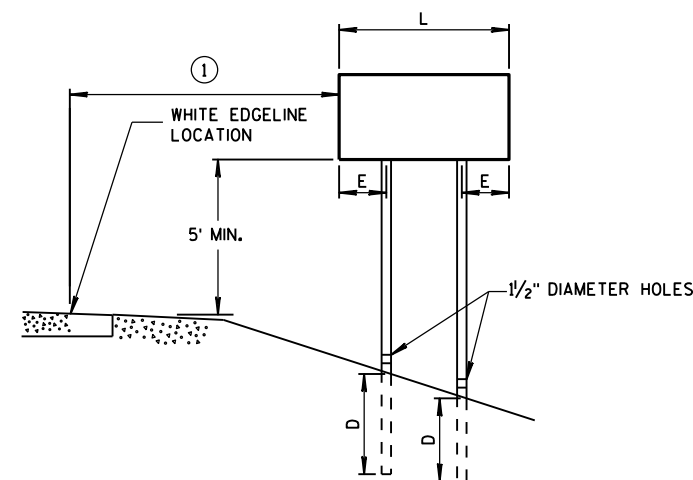
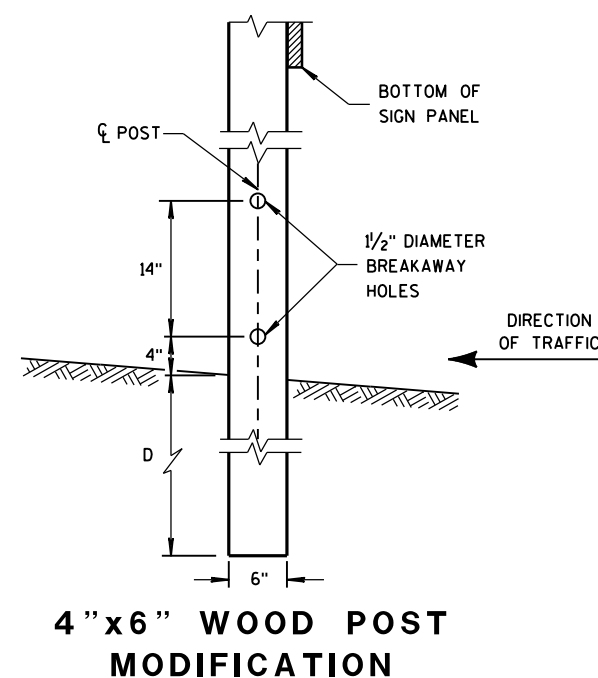
SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED
ON TUBULAR STEEL POSTS.



URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST EMBEDMENT DEPTH	
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



RURAL AREA

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

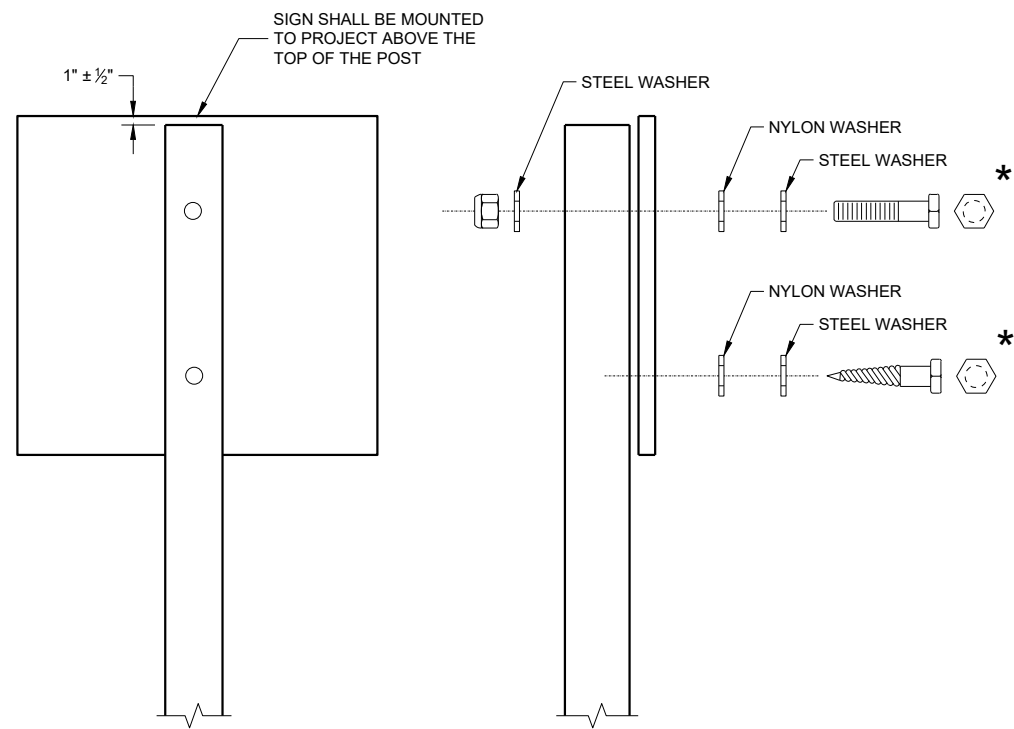
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② 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. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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.

WOOD POST (4" x 6")
LAG SCREWS - ¾" x 3"
MACHINE BOLTS - ⅝" x 6 ½" OR 7" LENGTH W/NUTS

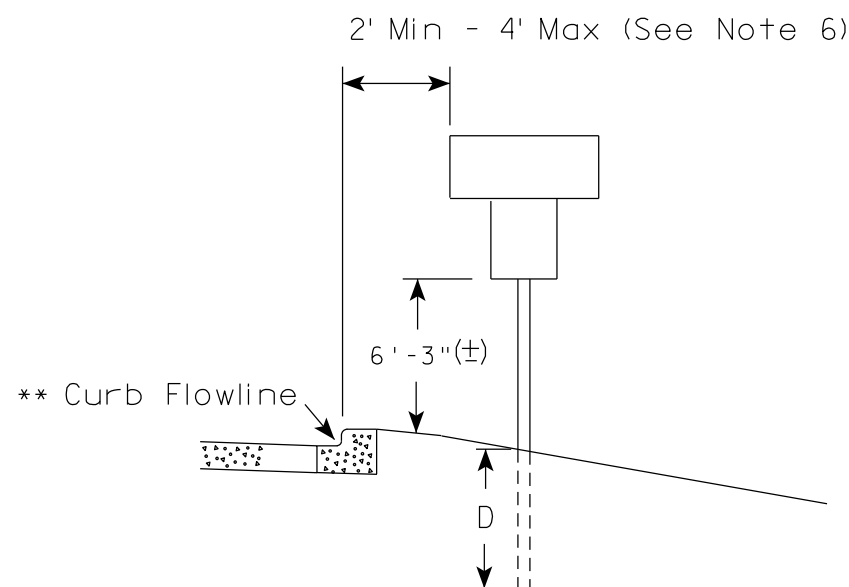
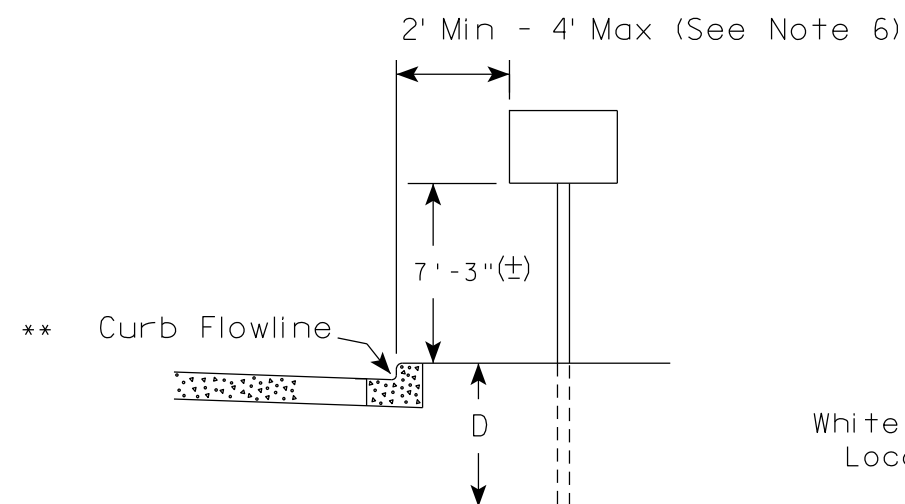
SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ¾" x 3 ¼" LENGTH W/NUTS
RIVETS - ⅝" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x ⅛" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

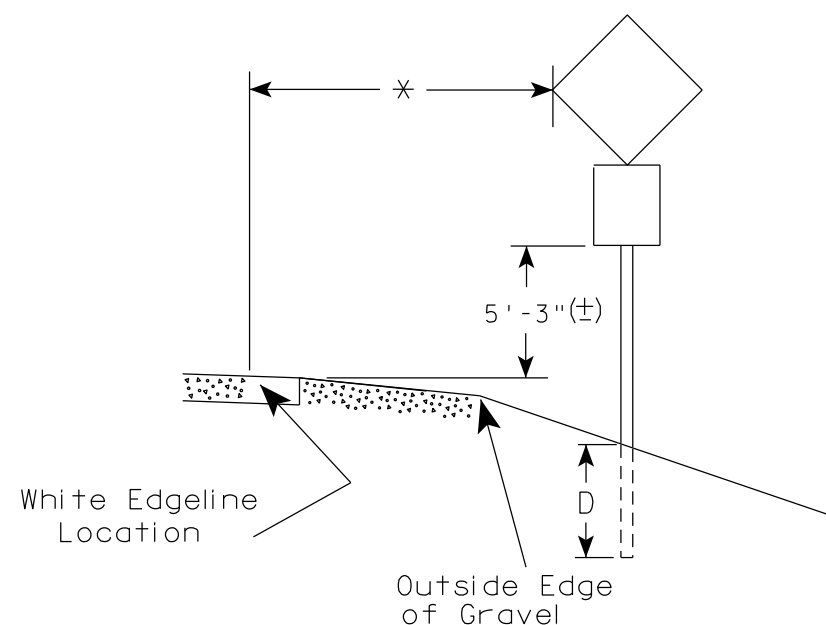
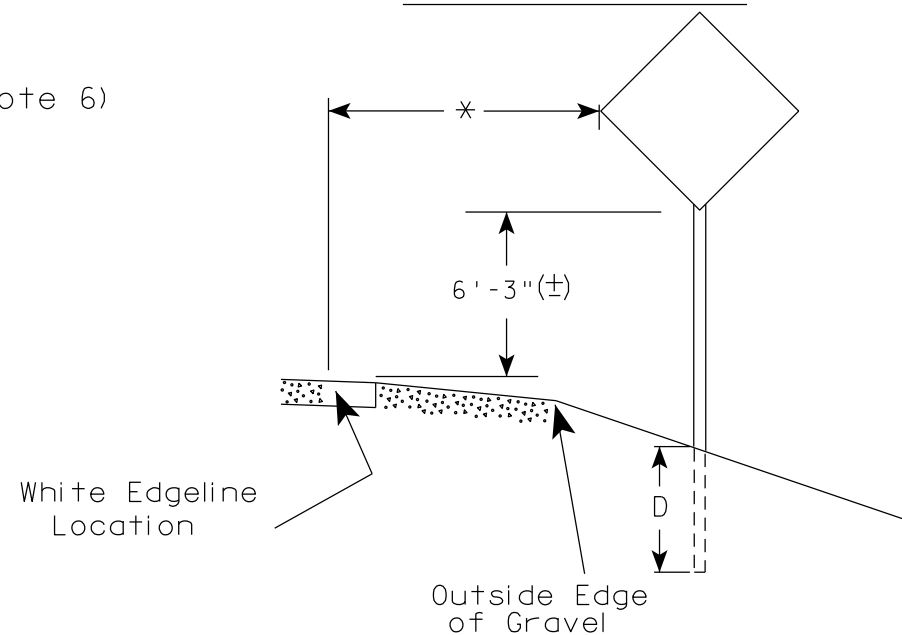
ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

URBAN AREA



✱✱ 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.

RURAL AREA (See Note 2)



✱ 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.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

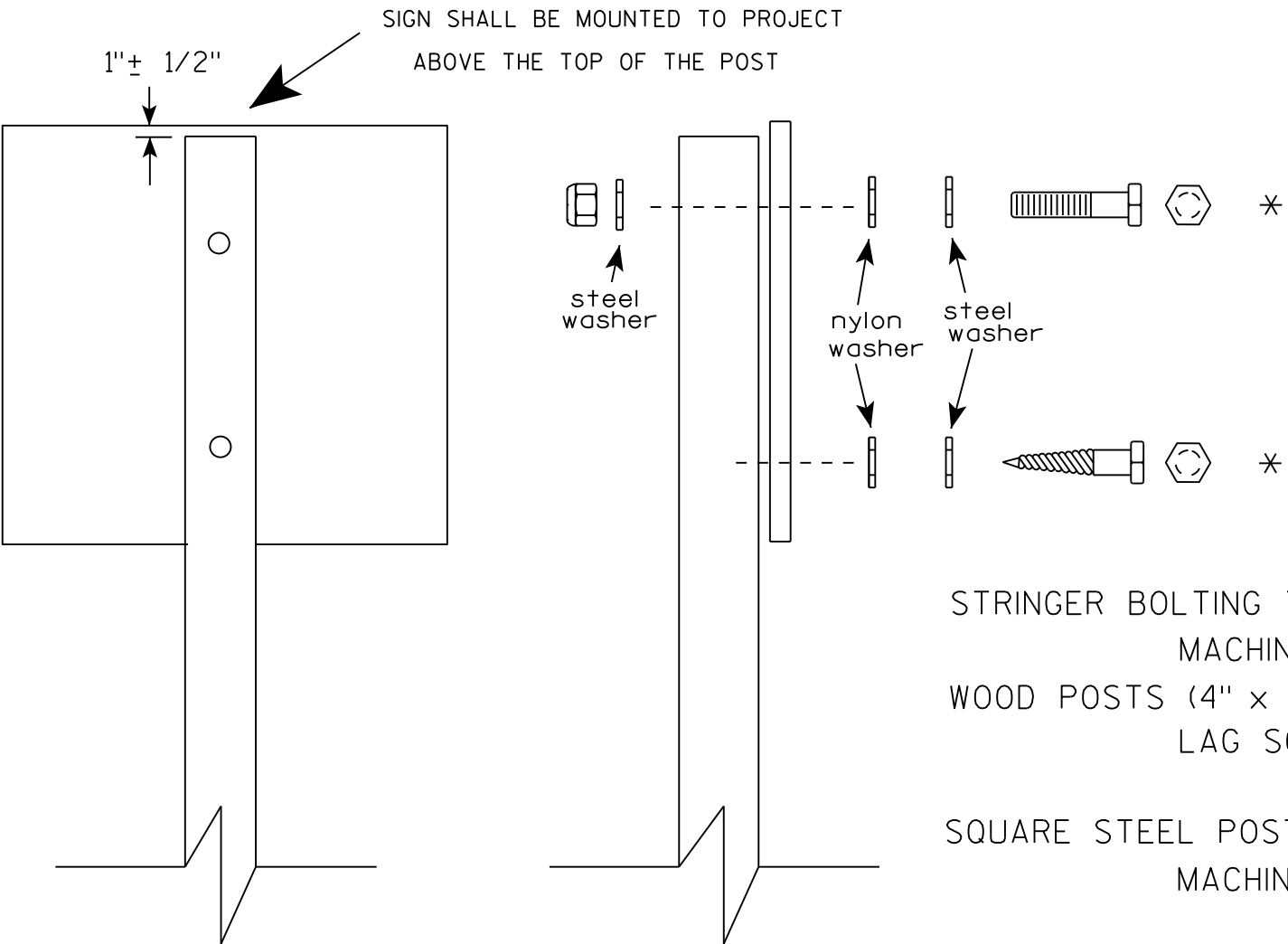
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

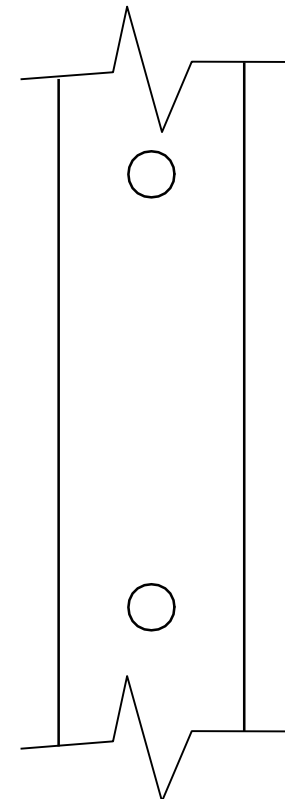
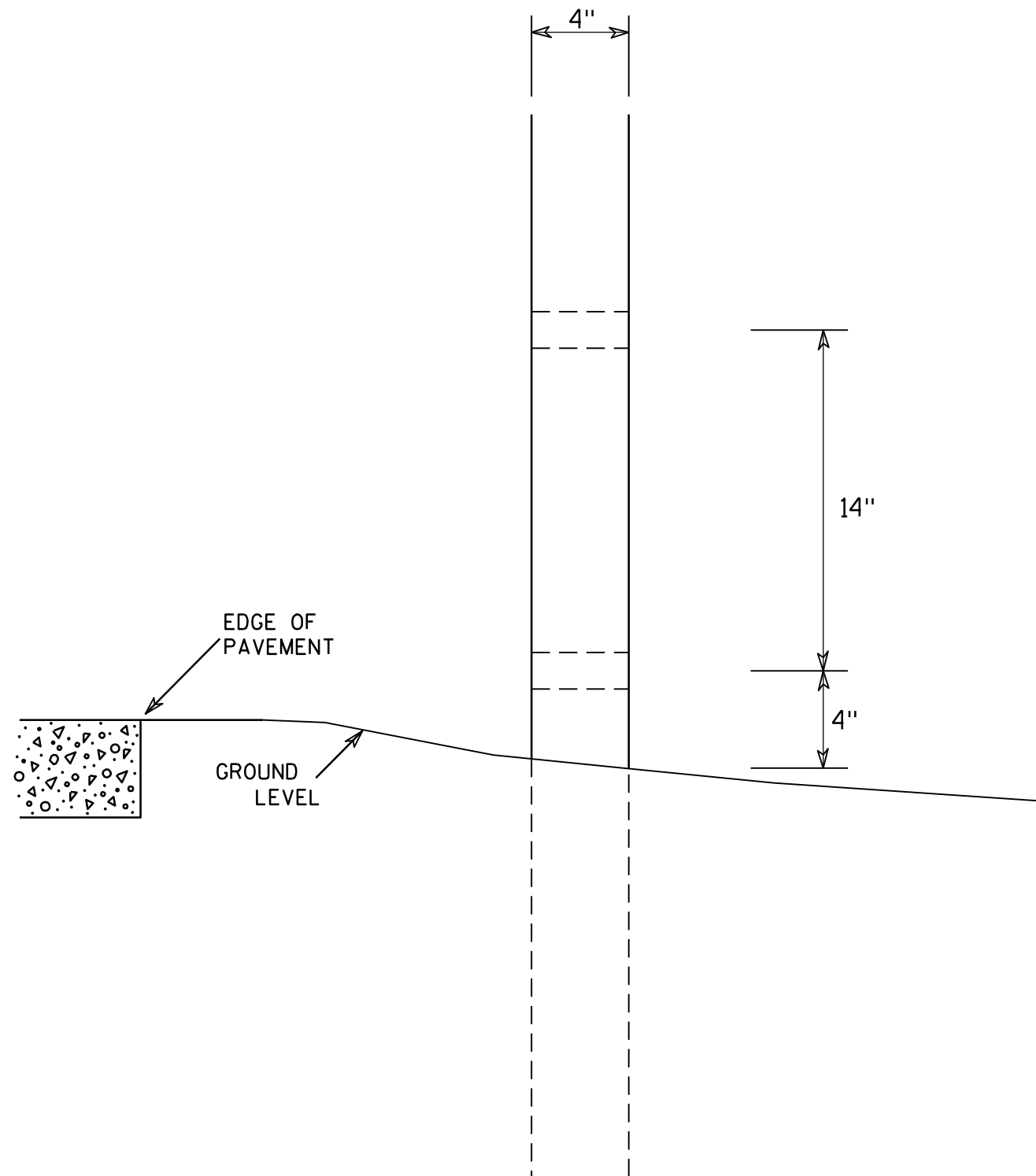
- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

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

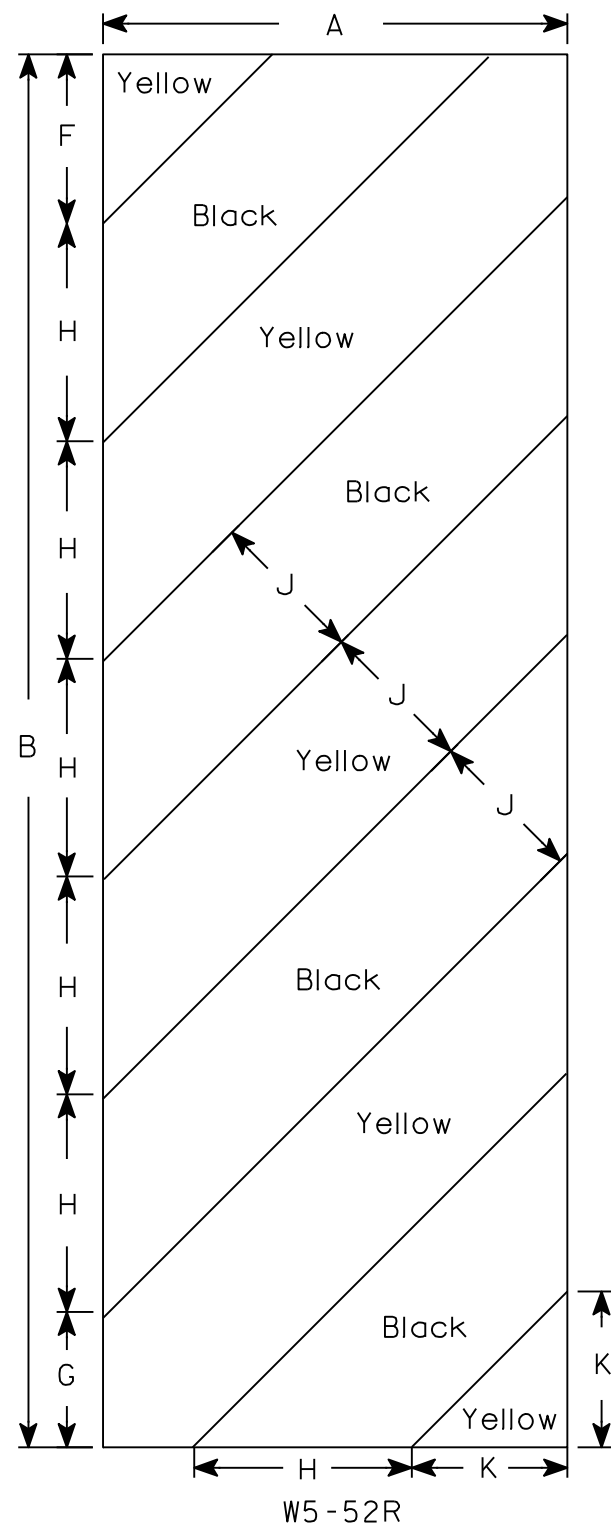
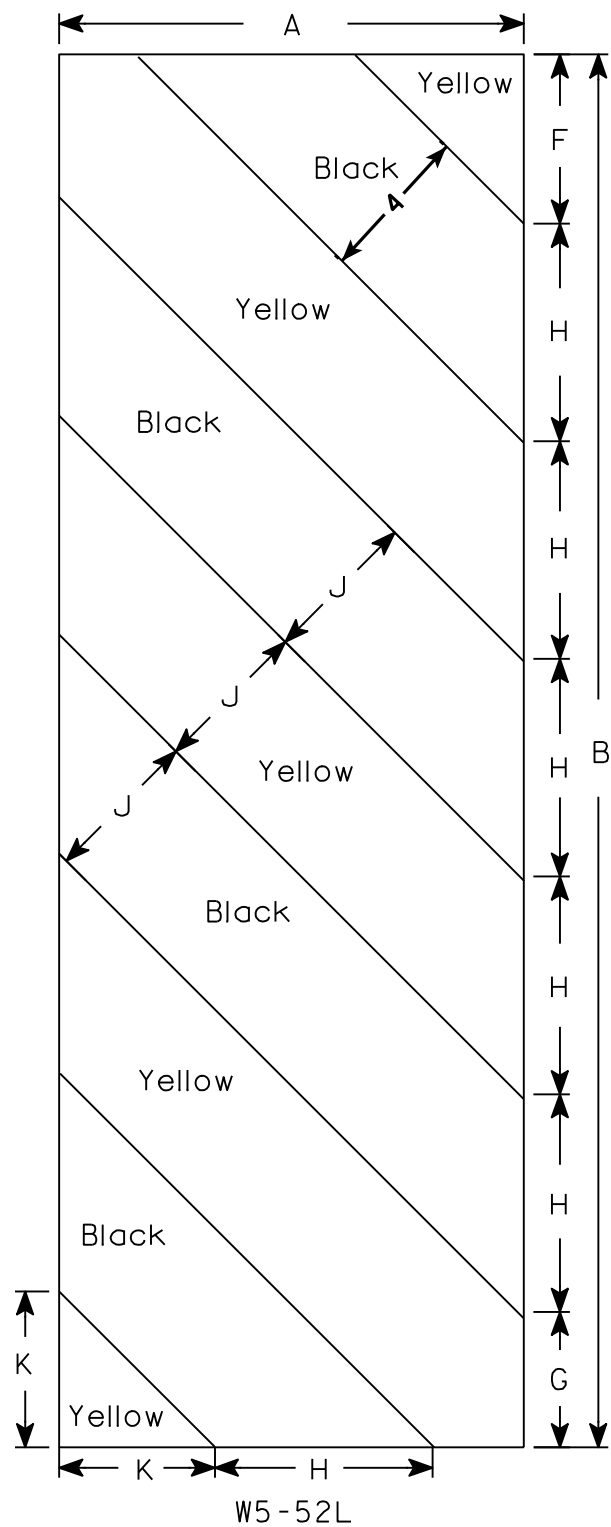
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

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

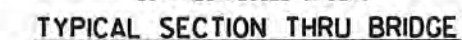
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
2M	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
3	18	54				6	5 1⁄2	8 1⁄2	45°	6	6 5⁄16																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



1. GENERAL PLAN
2. DESIGN DATA, QUANTITIES AND NOTES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT WINGS 1 & 2 DETAILS
6. WEST ABUTMENT DETAILS AND BILL OF BARS
7. EAST ABUTMENT
8. EAST ABUTMENT WINGS 3 & 4 DETAILS
9. EAST ABUTMENT DETAILS AND BILL OF BARS
10. 28" PRESTRESSED GIRDER DETAILS
11. STEEL DIAPHRAGM
12. SUPERSTRUCTURE
13. SUPERSTRUCTURE PLAN
14. RAILING TUBULAR TYPE M

FOR DESIGN DATA,
SEE SHEET 2



PROFILE GRADE LINE
(CTH E)

BENCHMARK:
RR SPK IN NE QUAD. WINGWALL
STA. 10+31, 28' LT.
EL. 1289.43



10/28/2020

BRIDGE OFFICE CONTACT:
AARON BONK
(608)-261-0261

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
		3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com	
STATE OF WISCONSIN			
DEPARTMENT OF TRANSPORTATION			
ACCEPTED			SDR 11/30/20
CHIEF STRUCTURES DESIGN ENGINEER		DATE	
STRUCTURE B-57-90			
CTH E OVER COUDERA RIVER			
COUNTY	SAWYER	TOWN/CITY/VILLAGE	COUDERA
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	JLB	DESIGN CK'D.	AEB
DRAWN BY		CJM/CLP	PLANS CK'D. CCM
GENERAL PLAN			SHEET 1 OF 1

10/28/2020
PENTABLE:BRequ..shd..util..tbl

TOTAL ESTIMATED QUANTITIES

STATE PROJECT NUMBER

8773-00-73

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTAL
** 203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-57-90	LS	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	445	445	-----	890
502.0100	CONCRETE MASONRY BRIDGES	CY	50	50	72	172
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	255	255
503.0128	PRESTRESSED GIRDER TYPE I 28-INCH	LF	-----	-----	354	354
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,740	2,740	-----	5,480
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,890	1,890	11,830	15,610
506.2605	BEARING PADS ELASOMERIC NON-LAMINATED	EACH	-----	-----	12	12
506.4000	STEEL DIAPHRAGMS B-57-90	EACH	-----	-----	5	5
513.4061	RAILING TUBULAR TYPE M	LF	-----	-----	125	125
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	8	8	-----	16
550.0500	PILE POINTS	EACH	8	8	-----	16
550.2106	PIILING CIP CONCRETE 10¾" X 0.365-INCH	LF	360	400	-----	760
606.0300	RIPRAP HEAVY	CY	110	250	-----	360
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	85	85	-----	170
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	60	60	-----	120
645.0120	GEOTEXTILE TYPE HR	SY	220	470	-----	690
● 637.2110	SIGNS TYPE II NON REFLECTIVE	SF	-----	-----	6	6
SPV.0090.01	FLASHING STAINLESS STEEL	LF	-----	-----	110	110
	NON-BID ITEMS					
	FILLER	SIZE	-----	-----	-----	½" & ¾"

● NEW 'NO WAKE' SIGNS TO BE INSTALLED ON NEW BRIDGE. ATTACHING THE SIGNS TO THE NEW BRIDGE IS INCLUDED IN THE CONTRACT UNIT PRICE FOR BID ITEM "SIGNS TYPE II NON REFLECTIVE". THE SIGN SUPPLIER IS RESPONSIBLE FOR PROVIDING CONNECTION DETAILS FOR THE SIGNS TO BE ATTACHED TO EITHER THE OUTSIDE OF THE BRIDGE RAILING OR THE TOPS OF THE ABUTMENTS. THE CONNECTION DETAILS WILL NEED TO BE APPROVED BY THE ENGINEER.

** REMOVING THE 'NO WAKE' SIGNS ON THE BRIDGE IS INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00"

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.56
OPERATING RATING FACTOR: 2.02
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.

28" 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

O₁₀₀ = 1,780 c.f.s.
VEL. = 8.1 f.p.s.
HW₁₀₀ = EL. 1290.63
WATERWAY AREA = 219 sq. ft.
DRAINAGE AREA = 89.3 sq. mi.
SCOUR CRITICAL CODE = 8
DATUM = NAVD88 (2012)

2 YEAR FREQUENCY

O₂ = 800 c.f.s.
VEL. = 6.4 f.p.s.
HW₂ = EL. 1288.40

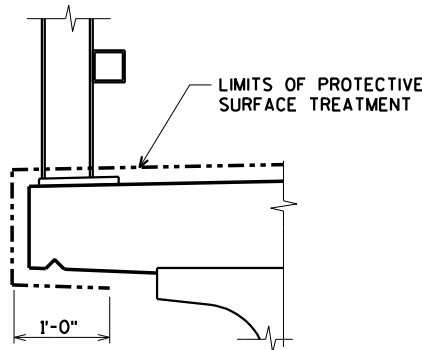
FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON 10¾" ϕ x 0.365" CIP CONCRETE PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 130 TONS * PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED LENGTH 45'-0" FOR WEST ABUT. AND 50'-0" FOR EAST ABUT.

* 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.

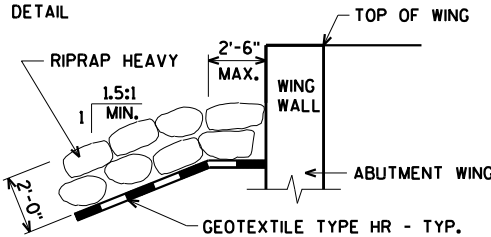
TRAFFIC DATA:

A.A.D.T. = 840 (2021)
A.A.D.T. = 1,130 (2041)
R.D.S. = 35 M.P.H.

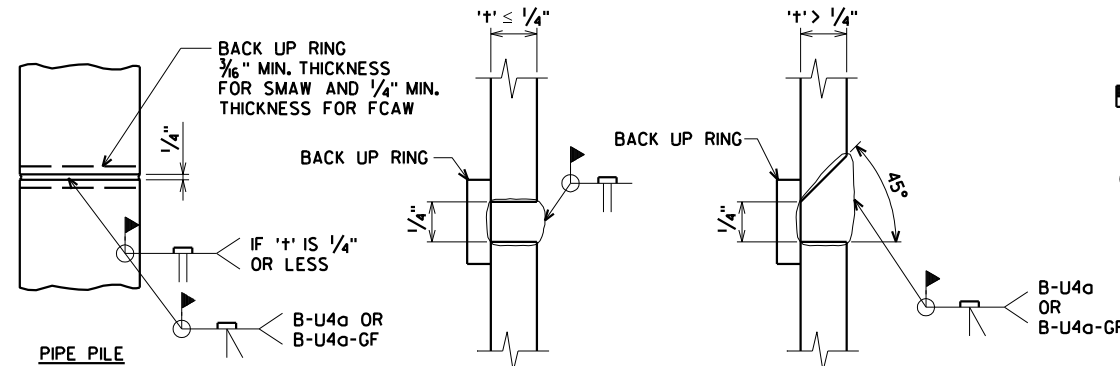


PROTECTIVE SURFACE
TREATMENT DETAIL

NOTE: PLACE RIPRAP HEAVY AS SHOWN IN WING ELEVATION DETAIL



TYPICAL FILL SECTION AT WING



PILE SPLICE DETAIL

CAST-IN-PLACE PILE SHELL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

CIP PILE WELD DETAIL

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-57-90" SHALL BE THE EXISTING GROUNDLINE.

THE EXISTING STRUCTURE, P-57-19, TO BE REMOVED, IS A SINGLE SPAN PRESTRESSED CONCRETE CHANNEL BRIDGE ON VERTICAL TIMBER ABUTMENTS, 50 FT. LONG WITH A 33.2 FT. CLEAR ROADWAY WIDTH.

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

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.

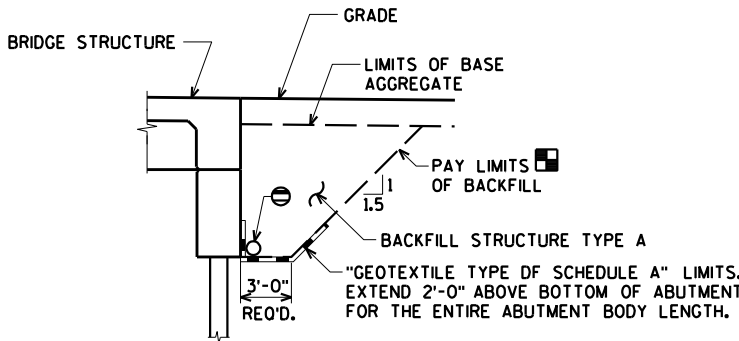
EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

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.

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.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

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



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 SHEET 5.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-57-90			
	DRAWN BY	CJM	PLANS CK'D. AEB
DESIGN DATA, QUANTITIES AND NOTES			SHEET 2 OF 14

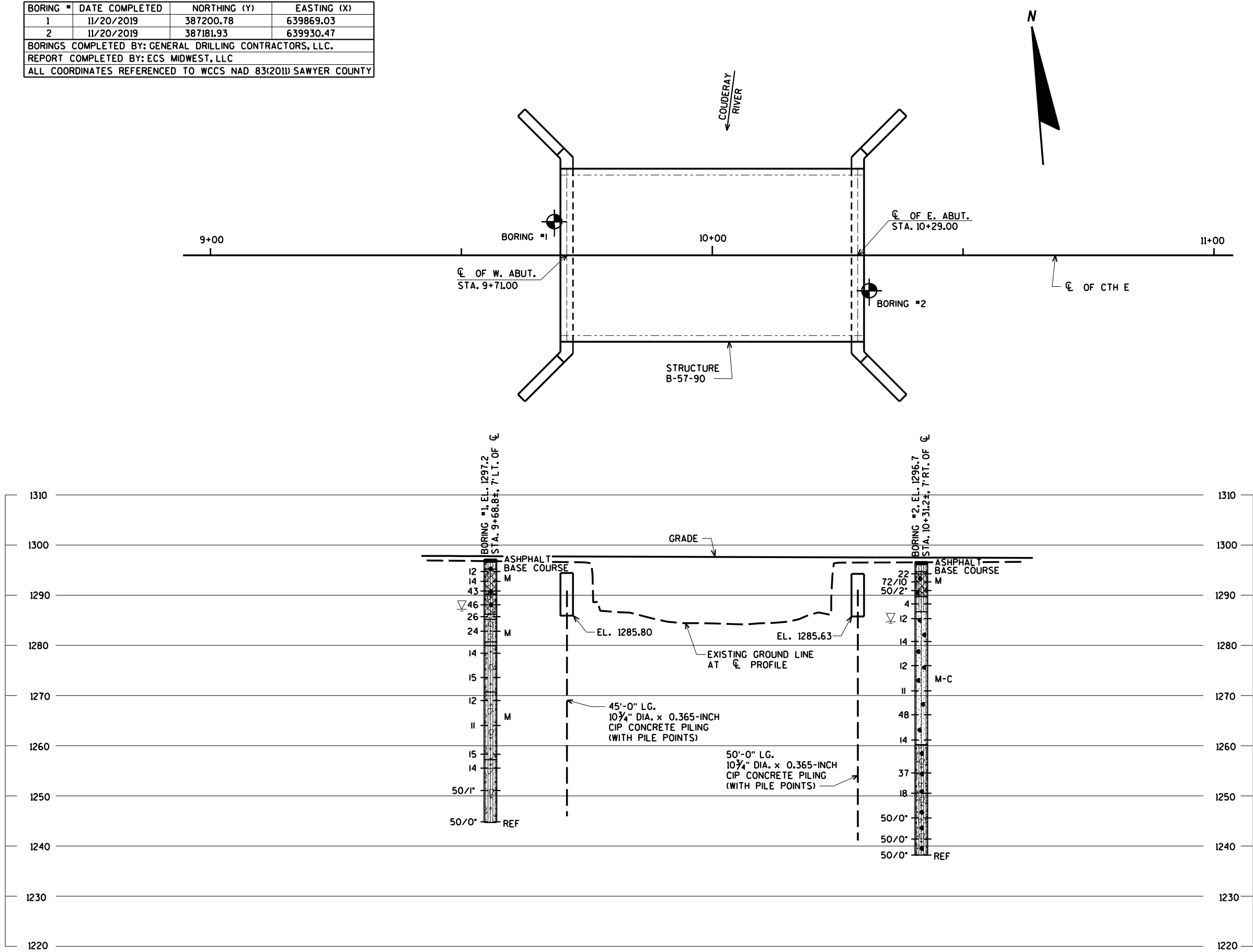
ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8/18/2020
PENTABLE:BRedu_shd_util.tbl

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	11/20/2019	387200.78	639869.03
2	11/20/2019	387181.93	639930.47

BORINGS COMPLETED BY: GENERAL DRILLING CONTRACTORS, LLC.
REPORT COMPLETED BY: ECS MIDWEST, LLC
ALL COORDINATES REFERENCED TO WCCS NAD 83(2011) SAWYER COUNTY



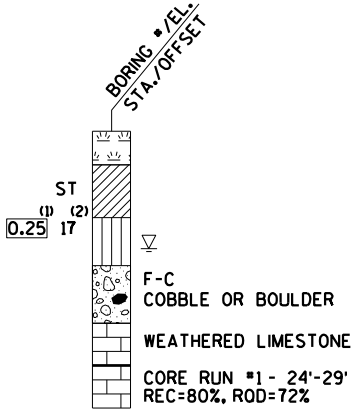
STATE PROJECT NUMBER

8773-00-73

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

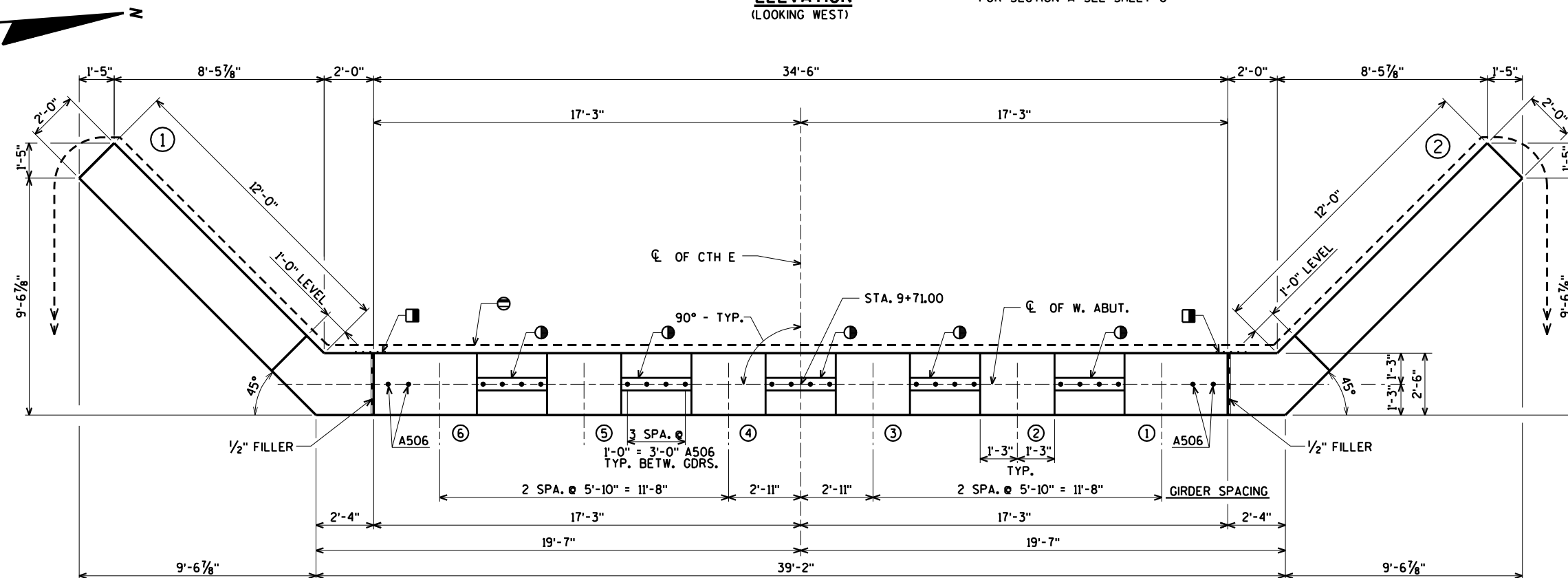
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT 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-57-90			
DRAWN BY		CJM	PLANS CK'D. AEB
SUBSURFACE EXPLORATION		SHEET 3 OF 14	

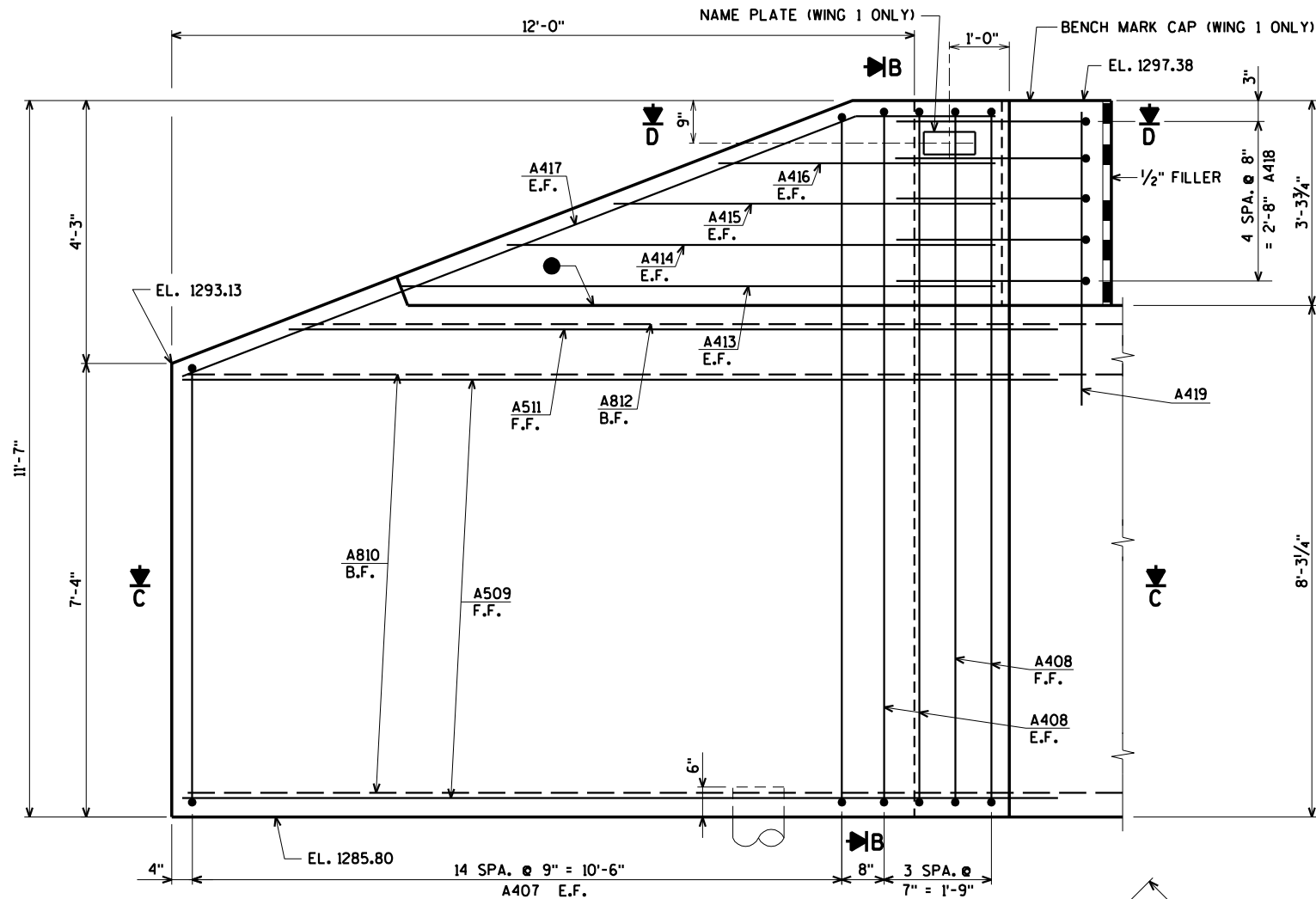
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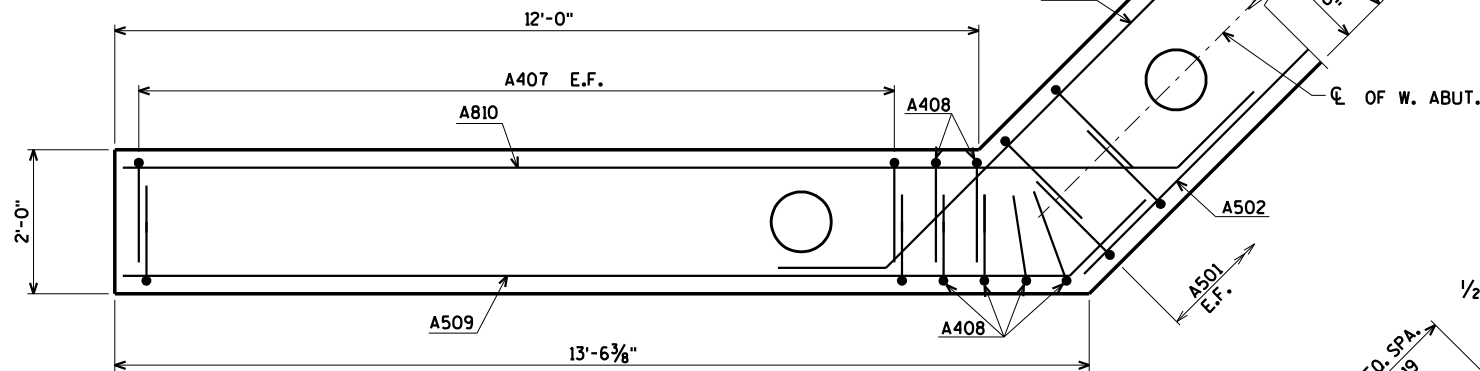
FOR SECTION A SEE SHEET 6



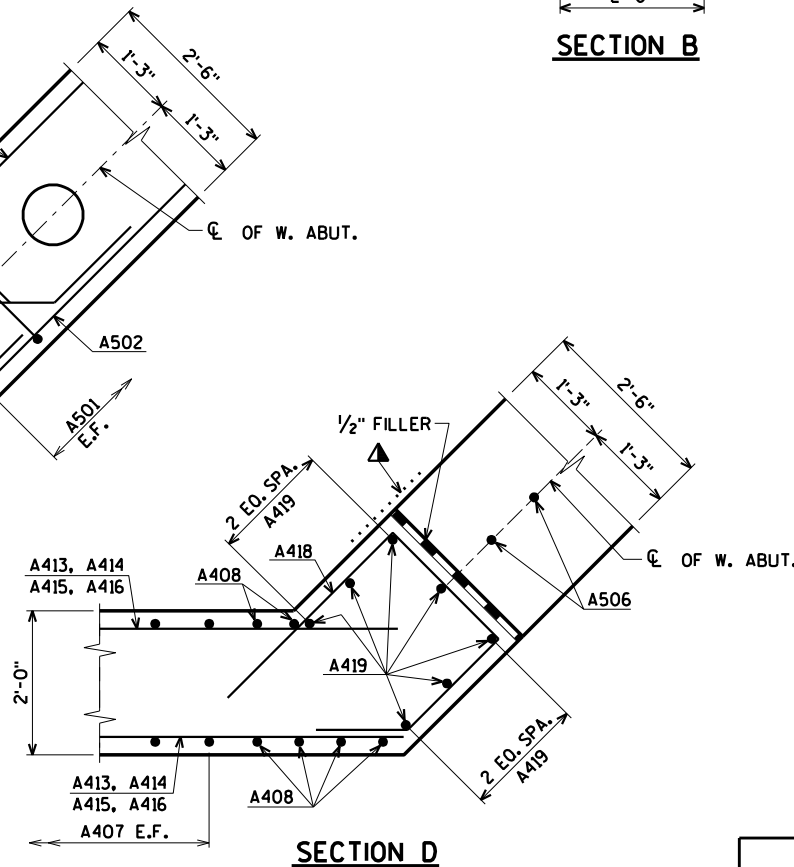
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-57-90			
DRAWN BY		CLP	PLANS CK'D. AEB
WEST ABUTMENT		SHEET 4 OF 1	



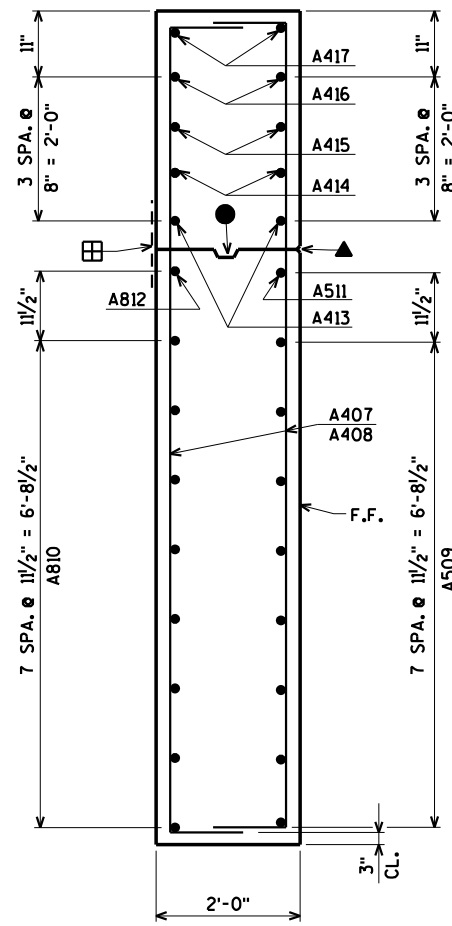
ELEVATION - WING 1
(WING 1 SHOWN, WING 2 SIMILAR)



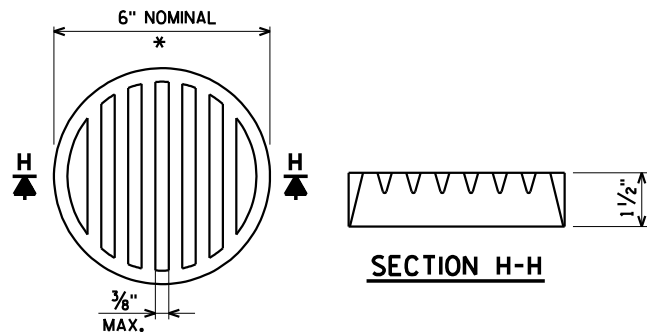
SECTION C



SECTION D



SECTION B



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

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

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

RODENT SHIELD DETAIL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-57-90			
DRAWN BY		CLP	PLANS CK'D. AEB
WEST ABUTMENT WINGS 1 & 2 DETAILS			SHEET 5 OF 14

ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	1,890 [±] COATED 2,740 [±] UNCOATED
							LOCATION
A501		78	9-4	X			BODY VERT. E.F.
A502		9	38-11				BODY HORIZ. F.F.
A803		18	25-8	X			BODY HORIZ. B.F.
A404		40	2-11	X			BODY TIES
A505		39	7-7	X			BODY VERT. TOP
A506	X	24	2-0				BODY DOWELS
A407	X	60	11-5	X		⊗	WINGS 1 & 2 VERT. E.F.
A408	X	12	13-8	X			WINGS 1 & 2 VERT. E.F.
A509	X	16	14-8	X			WINGS 1 & 2 HORIZ. F.F.
A810	X	16	16-6	X			WINGS 1 & 2 HORIZ. B.F.
A511	X	2	12-6	X			WINGS 1 & 2 HORIZ. F.F.
A812	X	2	14-4	X			WINGS 1 & 2 HORIZ. B.F.
A413	X	4	9-7				WINGS 1 & 2 HORIZ. E.F.
A414	X	4	7-10				WINGS 1 & 2 HORIZ. E.F.
A415	X	4	6-1				WINGS 1 & 2 HORIZ. E.F.
A416	X	4	4-4				WINGS 1 & 2 HORIZ. E.F.
A417	X	4	13-9	X			WINGS 1 & 2 DIAG. E.F.
A418	X	10	8-4	X			WINGS 1 & 2 HORIZ.
A419	X	14	5-3				WINGS 1 & 2 VERT.

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

BAR NO.	DIM. "A"	DIM. "B"
A803	1'-0 ³ / ₄ "	1'-0 ³ / ₄ "
A509	1'-0 ³ / ₄ "	1'-0 ³ / ₄ "
A810	1'-0 ³ / ₄ "	1'-0 ³ / ₄ "
A511	1'-0 ³ / ₄ "	1'-0 ³ / ₄ "
A812	1'-0 ³ / ₄ "	1'-0 ³ / ₄ "
A417	10'-10"	4'-2"

BAR MARK	NO REQ'D.	LENGTH
A407	4 SERIES OF 15	9' - 5" TO 13' - 5"

BUNDLE AND TAG EACH SERIES SEPARATELY.

SECTION A

PILE LAYOUT

① KEED CONST. JOINT - FORMED
BY A BEVELED 2" x 6".

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5%
MIN. TO SUITABLE DRAINAGE. ATTACH RODENT
SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL
ON SHEET 5.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING
BETWEEN WINGS.

FOR PILE SPLICE DETAIL SEE SHEET 2.

FOR LOCATION OF SECTION A
SEE SHEET 4.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

FOR PILE SPLICE DETAIL SEE SHEET 2.

FOR LOCATION OF SECTION A
SEE SHEET 4.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-57-90			
	DRAWN BY	CLP	PLANS CK'D. AEB
WEST ABUTMENT DETAILS AND BILL OF BARS		SHEET 6 OF	

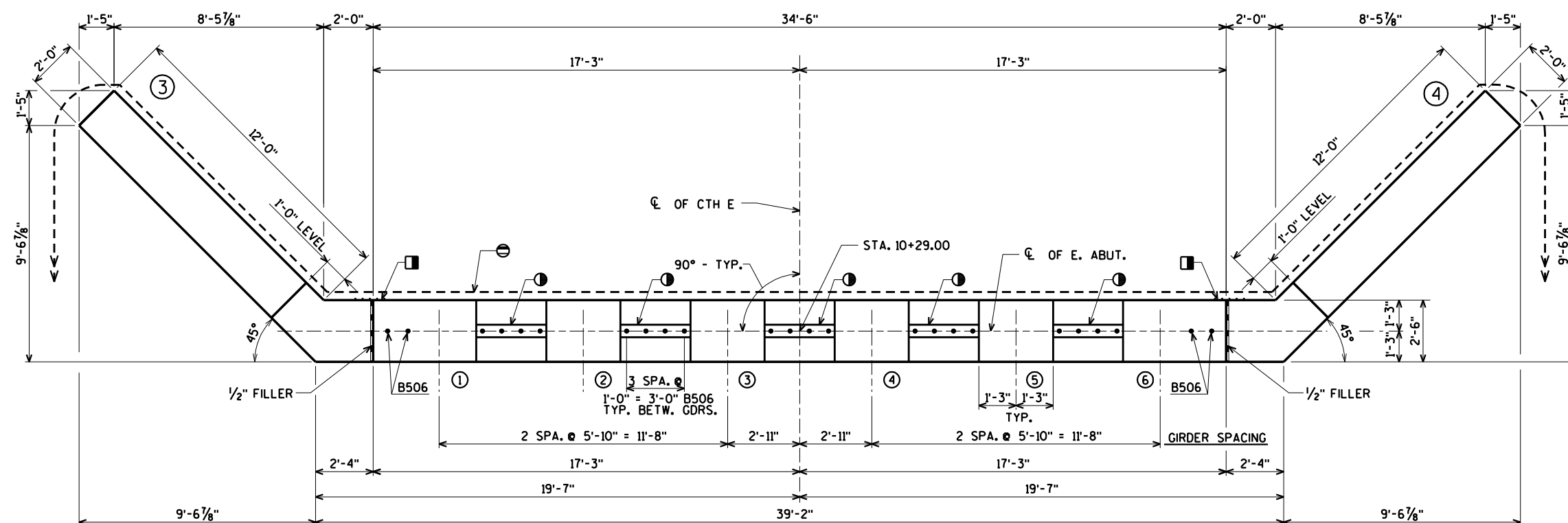
AVRES

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

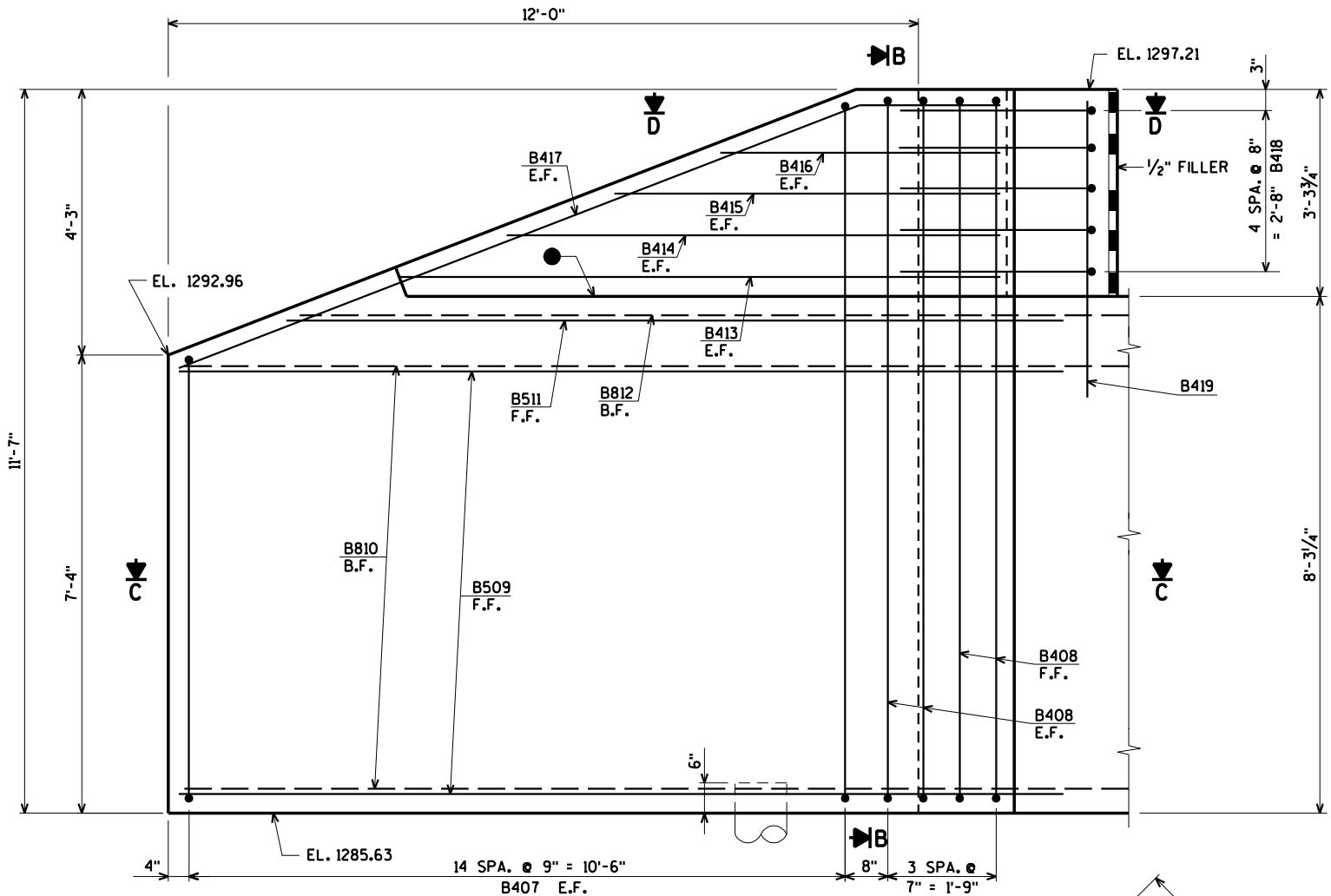
Elevation view of a bridge deck. The deck is shown with a sloped roof and a flat bottom. Key features include:

- Elevations:** EL. 1297.21 (top roof), EL. 1292.96 (side roof), EL. 1293.90 (top of 1/2" filler), EL. 1294.01 (top of beam), EL. 1294.13 (top of beam), EL. 1285.63 (bottom of beam).
- Dimensions:**
 - Vertical: 11'-7" (total height), 3'-3 3/4" (roof slope), 4'-3" (roof slope), 7'-4" (deck height), 8'-3 3/4" (deck height), 6" (bottom of beam), 6 7/8" (bottom of beam).
 - Horizontal: 9 SPA. @ 4'-0" = 36'-0" (beam spacing), 38 SPA. @ 1'-0" = 38'-0" (pile spacing), 7" (bottom of beam).
- Structural Details:**
 - 1/2" FILLER
 - SLOPE BETW. BEAM SEATS-TYP.
 - B505 (beam seat)
 - B501 E.F. (beam seat)
 - B502 F.F. (beam seat)
 - B803 B.F. (beam seat)
 - B404 (beam seat)
- Other Labels:**
 - EL. 1297.21
 - EL. 1292.96
 - EL. 1293.90
 - EL. 1294.01
 - EL. 1294.13
 - EL. 1285.63
 - B505
 - B501 E.F.
 - B502 F.F.
 - B803 B.F.
 - B404

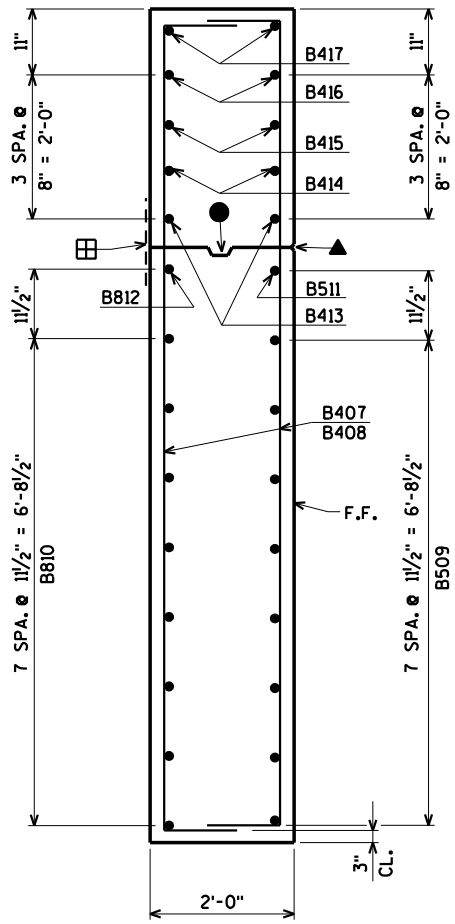
FOR SECTION A SEE SHEET 9



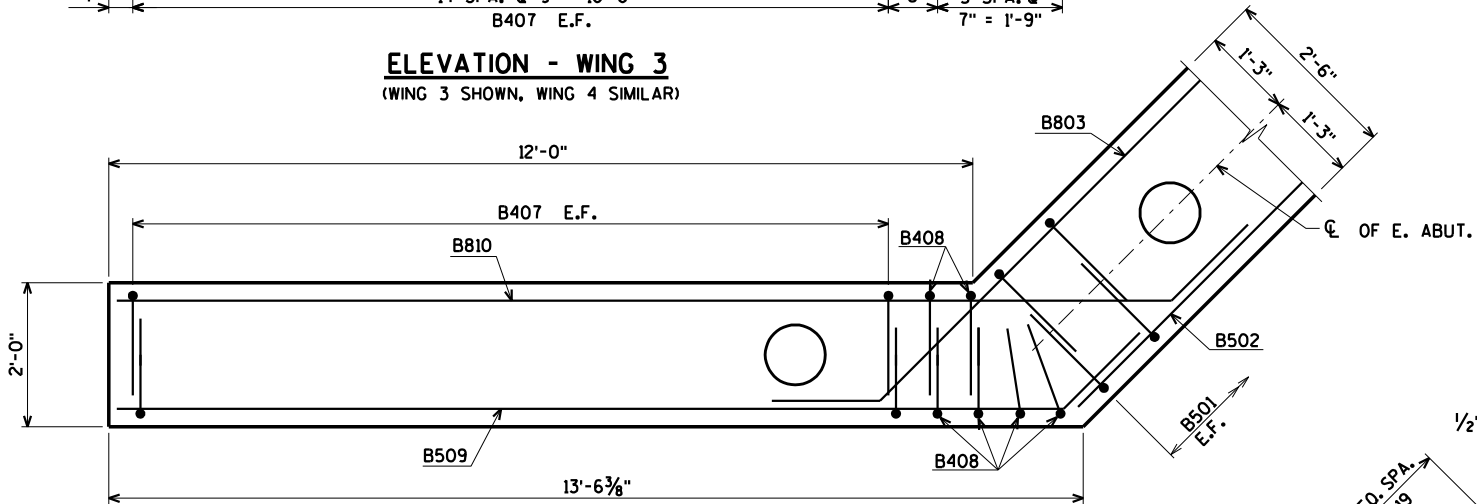
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-57-90			
DRAWN BY		CLP	PLANS CK'D. AEB
EAST ABUTMENT		SHEET 7 OF 1	



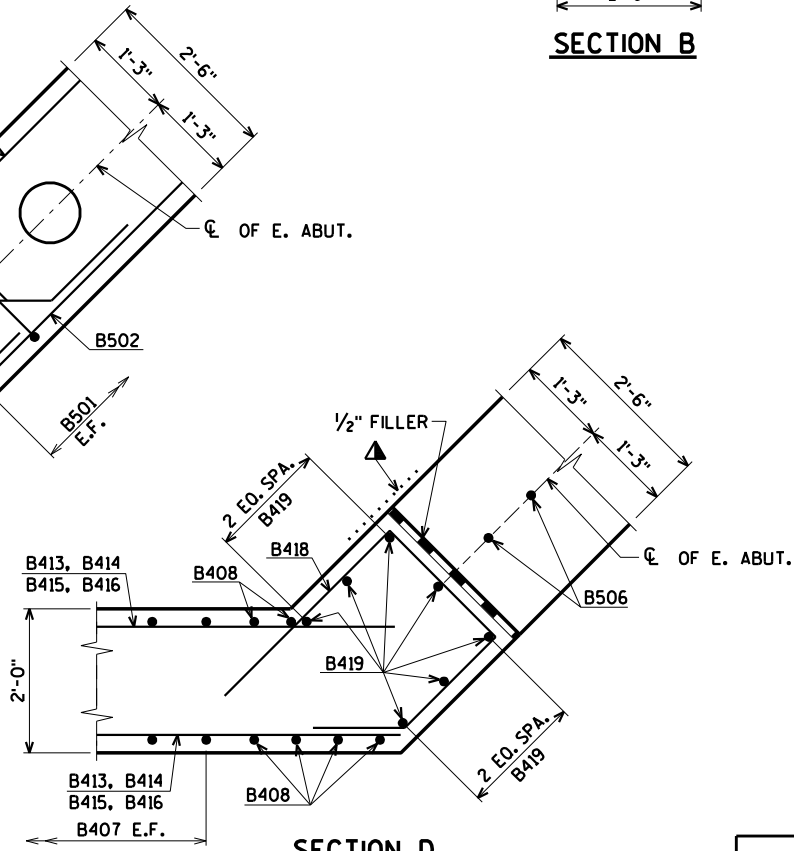
ELEVATION - WING 3
(WING 3 SHOWN, WING 4 SIMILAR)



SECTION B



SECTION C



SECTION D

- ▲ 3/4" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.
 - OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
 - ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BEAM SEAT TO TOP OF WINGWALL.
 - ▣ RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES")
- FOR PILE SPLICE DETAIL SEE SHEET 2.
- F.F. DENOTES FRONT FACE.
B.F. DENOTES BACK FACE.
E.F. DENOTES EACH FACE

8/18/2020
PENTABLE:BReau_shd_util.tbl

NO.	DATE	REVISION	BY
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STRUCTURE B-57-90			
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EAST ABUTMENT WINGS 3 & 4 DETAILS			SHEET 8 OF 14

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	1,890 [±] COATED 2,740 [±] UNCOATED
							LOCATION
B501		78	9-4	X			BODY VERT. E.F.
B502		9	38-11				BODY HORIZ. F.F.
B803		18	25-8	X			BODY HORIZ. B.F.
B404		40	2-11	X			BODY TIES
B505		39	7-7	X			BODY VERT. TOP
B506	X	24	2-0				BODY DOWELS
B407	X	60	11-5	X		⊗	WINGS 3 & 4 VERT. E.F.
B408	X	12	13-8	X			WINGS 3 & 4 VERT. E.F.
B509	X	16	14-8	X			WINGS 3 & 4 HORIZ. F.F.
B810	X	16	16-6	X			WINGS 3 & 4 HORIZ. B.F.
B511	X	2	12-6	X			WINGS 3 & 4 HORIZ. F.F.
B812	X	2	14-4	X			WINGS 3 & 4 HORIZ. B.F.
B413	X	4	9-7				WINGS 3 & 4 HORIZ. E.F.
B414	X	4	7-10				WINGS 3 & 4 HORIZ. E.F.
B415	X	4	6-1				WINGS 3 & 4 HORIZ. E.F.
B416	X	4	4-4				WINGS 3 & 4 HORIZ. E.F.
B417	X	4	13-9	X			WINGS 3 & 4 DIAG. E.F.
B418	X	10	8-4	X			WINGS 3 & 4 HORIZ.
B419	X	14	5-3				WINGS 3 & 4 VERT.

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

BAR NO.	DIM. "A"	DIM. "B"
B803	1'-0 $\frac{3}{4}$ "	1'-0 $\frac{3}{4}$ "
B509	1'-0 $\frac{3}{4}$ "	1'-0 $\frac{3}{4}$ "
B810	1'-0 $\frac{3}{4}$ "	1'-0 $\frac{3}{4}$ "
B511	1'-0 $\frac{3}{4}$ "	1'-0 $\frac{3}{4}$ "
B812	1'-0 $\frac{3}{4}$ "	1'-0 $\frac{3}{4}$ "
B417	10'-10"	4'-2"

BAR MARK	NO REQ'D.	LENGTH
B407	4 SERIES OF 15	9'-5" TO 13'-5"

BUNDLE AND TAG EACH SERIES SEPARATELY.

SECTION A

PILE LAYOUT

① KEED CONST. JOINT - FORMED
BY A BEVELED 2" x 6".

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5%
MIN. TO SUITABLE DRAINAGE. ATTACH RODENT
SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL
ON SHEET 5.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING
BETWEEN WINGS.

FOR PILE SPLICE DETAIL SEE SHEET 2.

FOR LOCATION OF SECTION A
SEE SHEET 7.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

FOR PILE SPLICE DETAIL SEE SHEET 2.

FOR LOCATION OF SECTION A
SEE SHEET 7.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-57-90			
DRAWN BY		CLP	PLANS CK'D. AEC
EAST ABUTMENT DETAILS AND BILL OF BARS		SHEET 9 OF	

NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH, AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 2" 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. 503.3.3 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.

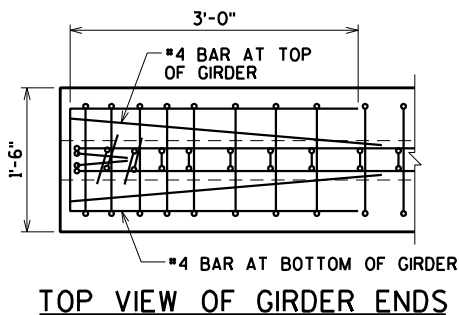
SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

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

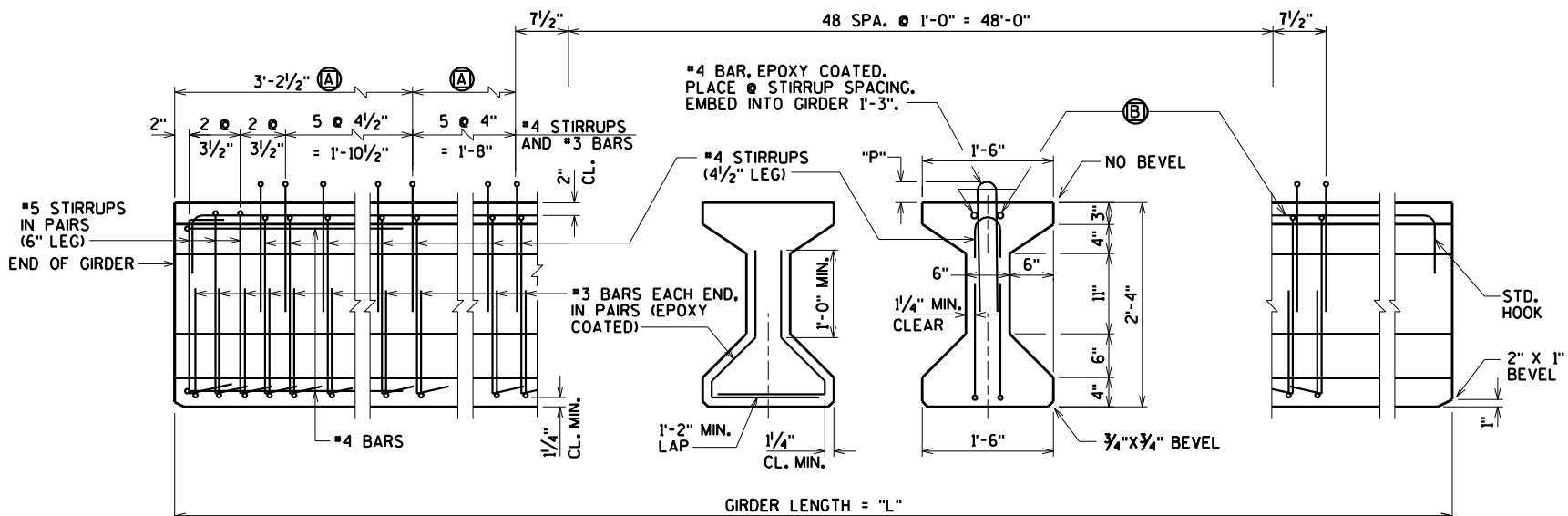
PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

BEND EACH END OF #4 STIRRUPS 4 1/2" AND #5 STIRRUPS 6".

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



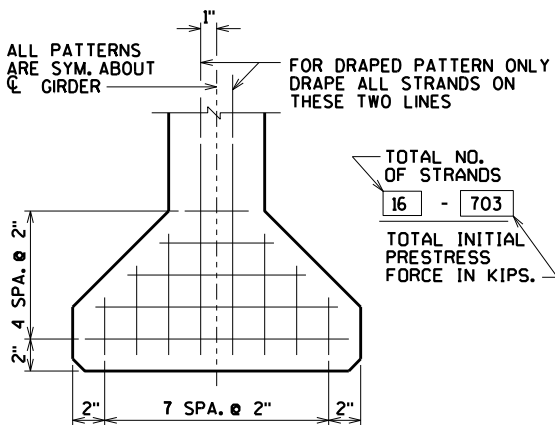
TOP VIEW OF GIRDER ENDS



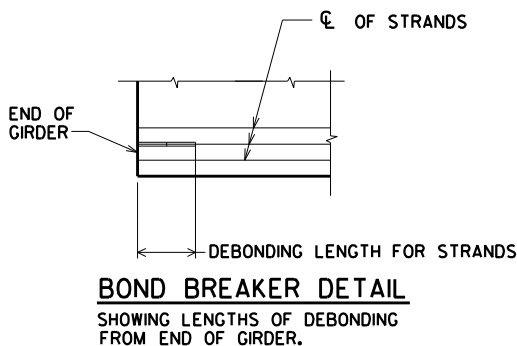
SIDE VIEW & TYPICAL SECTION IN SPAN

(A) DETAIL TYP. AT EACH END

(B) 2 #6 BARS, FULL LENGTH, MIN. LAP = 2'-11". STD. HOOK AT ENDS

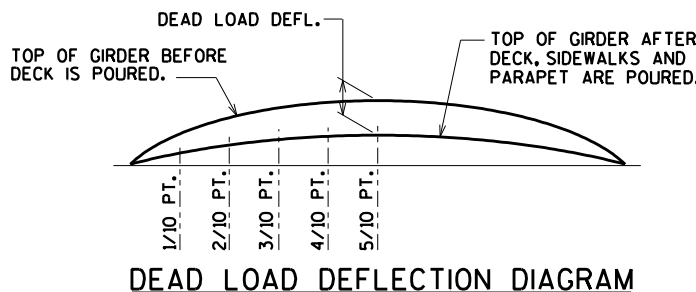


TYP. STRAND PATTERN



BOND BREAKER DETAIL

SHOWING LENGTHS OF DEBONDING FROM END OF GIRDER.

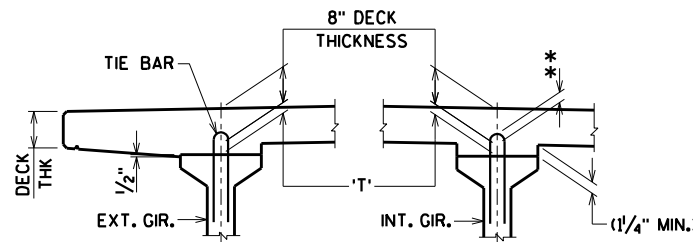


DEAD LOAD DEFLECTION DIAGRAM

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

SPAN	CAMBER (IN.) *
1	2.6

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



DECK HAUNCH DETAIL

IF 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 CL 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'

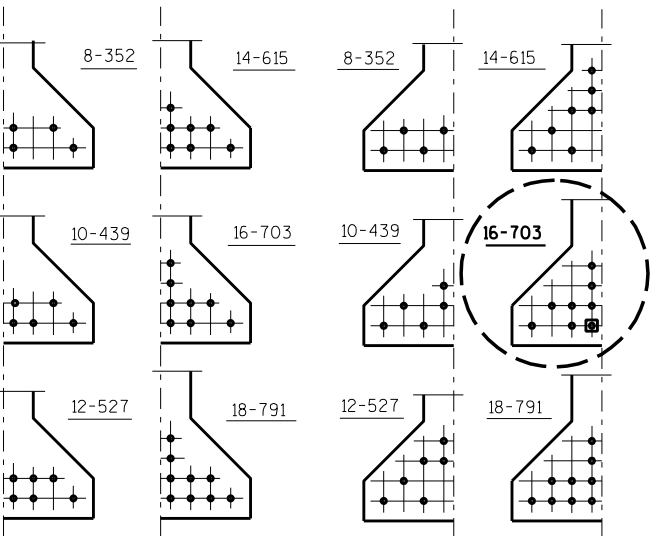
NOTE: AN AVERAGE HAUNCH ('T') OF 3" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

DEBONDING DETAIL SPAN 1

INDICATES STRAND TO BE DEBONDED. SEE "BOND BREAKER DETAIL"

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

GIRDER DATA																							
SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)									CONC. STRGTH. f'c (p.s.i.)	"P" 1ST 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN					UNDRAPED PATTERN	
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10						TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.)				TOTAL NO. OF STRANDS
																	"A"	"B" MIN.	"B" MAX.	"C"			
1	1 & 6	59'-0"	0.3	0.6	0.8	0.9	1.0	0.9	0.8	0.6	0.3	8000	9"	7"	9"	0.60					16	6450	
1	2-5	59'-0"	0.3	0.5	0.7	0.9	0.9	0.9	0.7	0.5	0.3	8000	9"	7"	9"	0.60							



DRAPED PATTERN

0.6" DIA. STRANDS

UNDRAPED PATTERN

0.6" DIA. STRANDS

ORIGINAL PLANS PREPARED BY
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3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-57-90			
DRAWN BY		CLP	PLANS CK'D. AEB
28" PRESTRESSED GIRDER DETAILS			SHEET 10 OF 14

NOTES

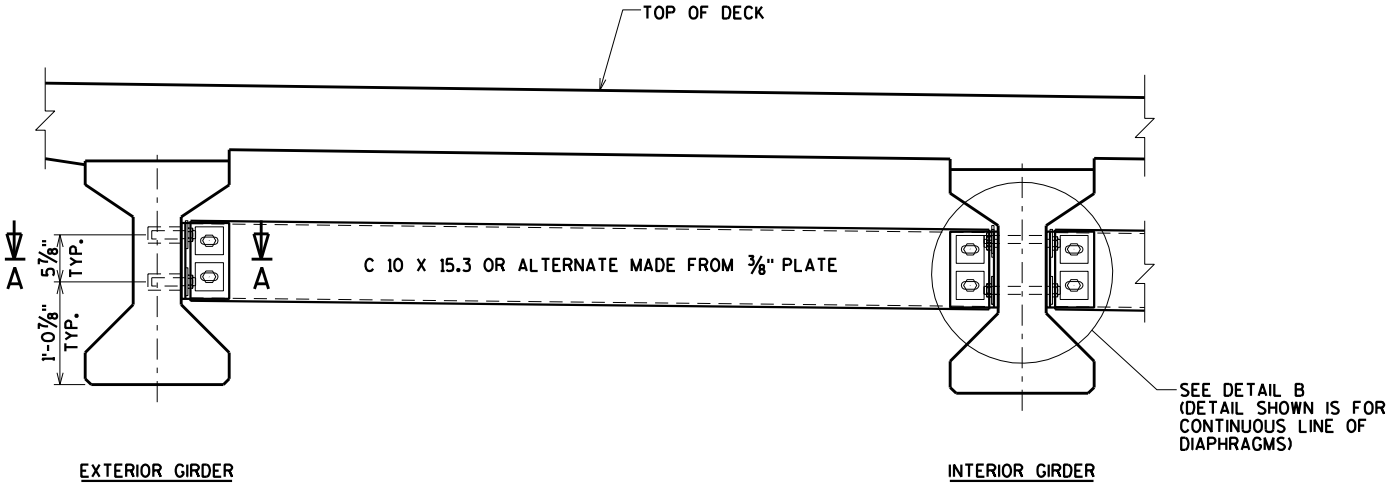
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-57-90", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

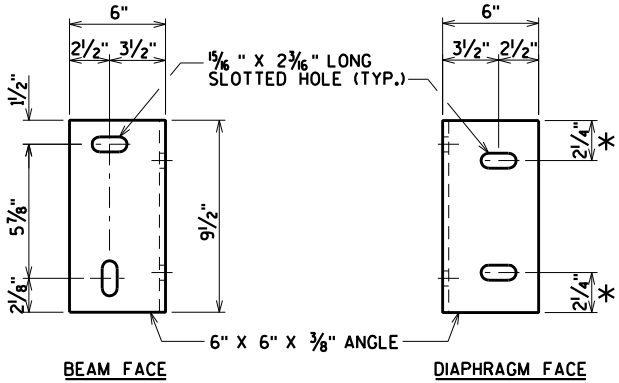
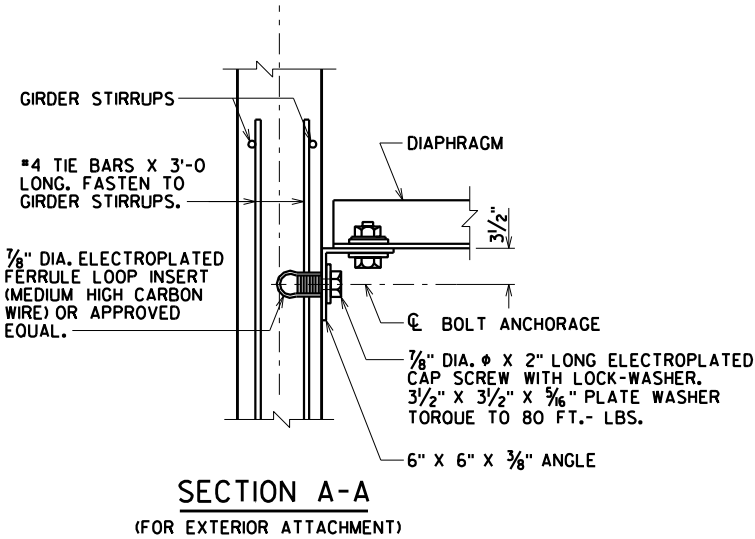
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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.

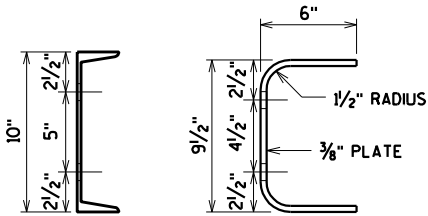


PART TRANSVERSE SECTION AT DIAPHRAGM



DIAPHRAGM SUPPORT

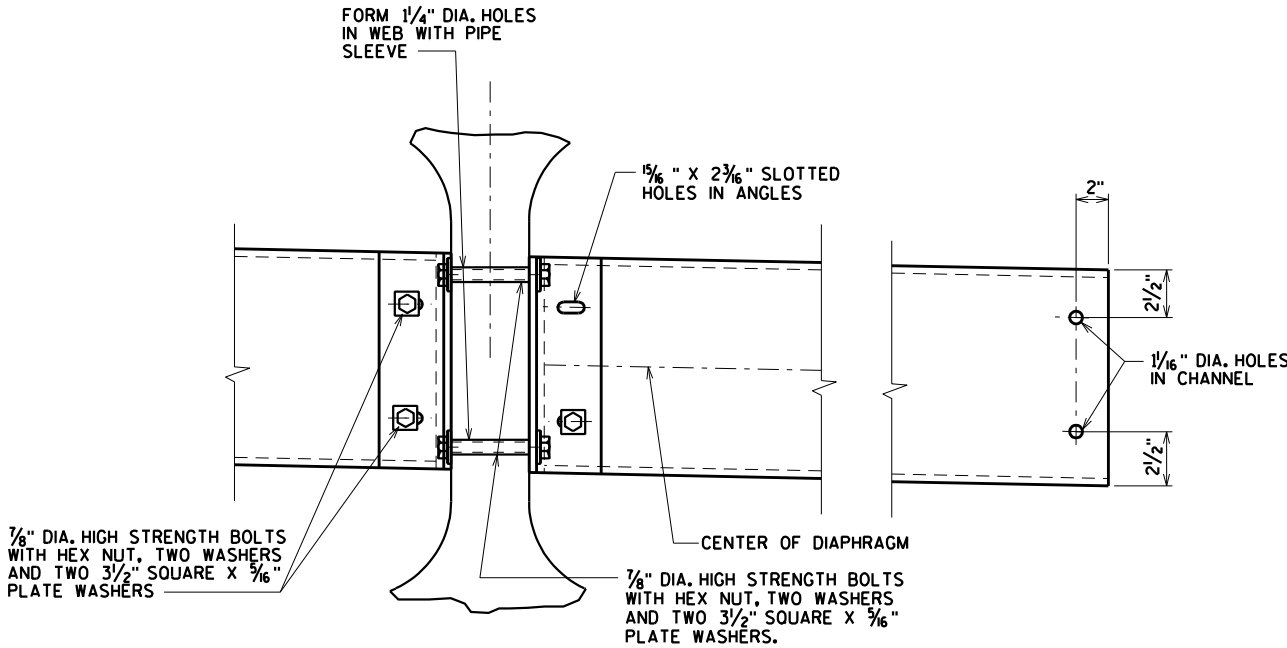
* 2 1/2\"



C10X15.3

ALTERNATE DIAPHRAGM

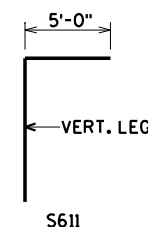
SECTION THRU DIAPHRAGM



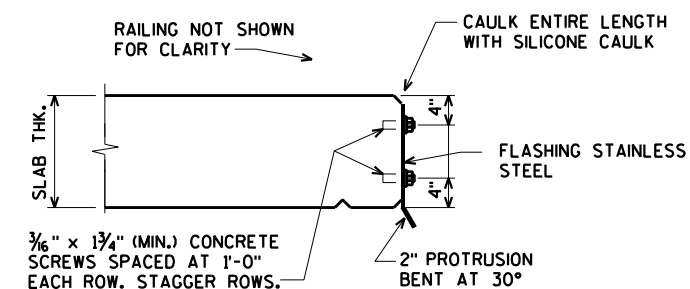
DETAIL B

ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-57-90			
DRAWN BY		CLP	PLANS CK'D. AEB
STEEL DIAPHRAGM			SHEET 11 OF 14



BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



THE BID ITEM "FLASHING STAINLESS STEEL" SHALL INCLUDE PROVIDING AND INSTALLING THE STAINLESS STEEL FLASHING, SILICONE CAULK, $\frac{3}{16}$ " CONCRETE SCREWS AND CLEANING THE EDGE OF THE DECK PRIOR TO ATTACHMENT OF THE FLASHING.

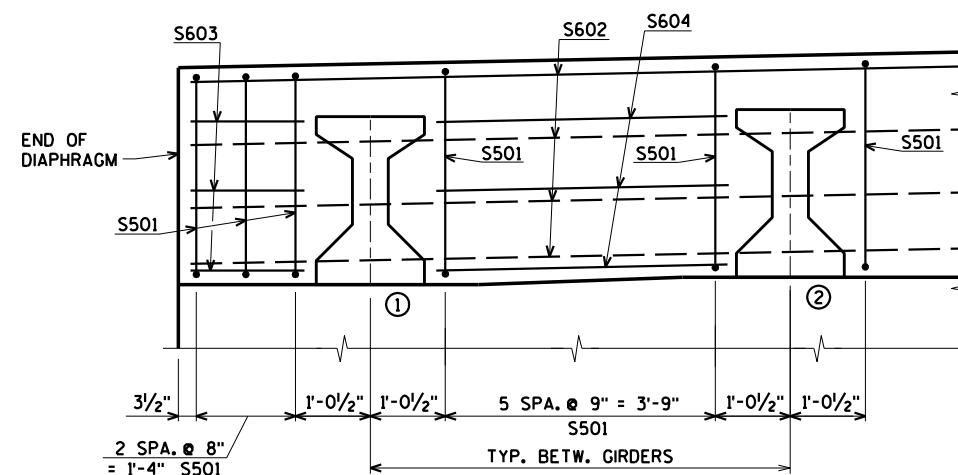
FLASHING TO BE INSTALLED AFTER PROTECTIVE
SURFACE TREATMENT APPLICATION.

CONCRETE SCREWS SHALL BE 410 STAINLESS STEEL.

EXTEND FLASHING TO B.F. OF ABUTMENT.

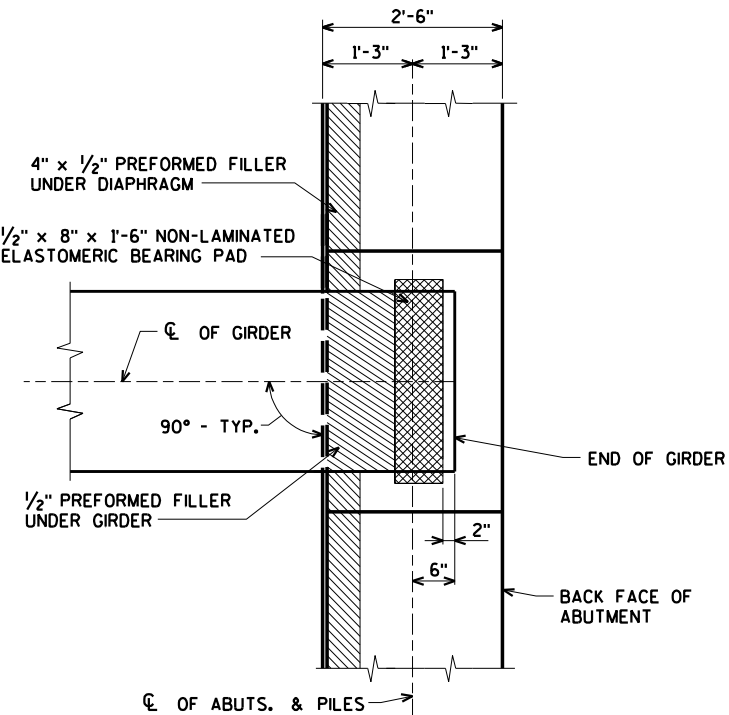
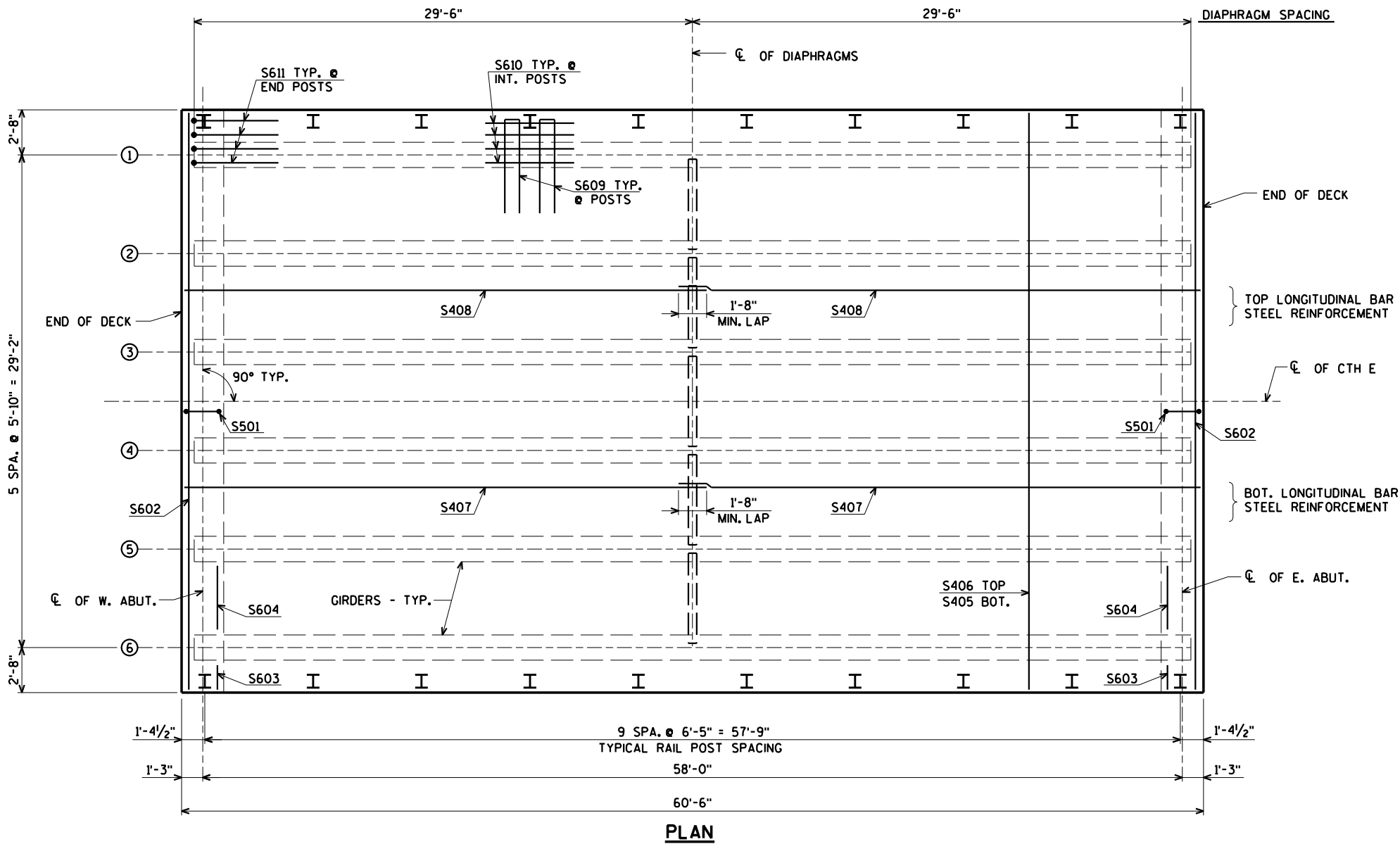
TOP OF FLASHING TO BEGIN APPROX. 1-INCH BELOW
TOP OF SLAB SURFACE.

THE FLASHING IS TO BE A CONSTANT HEIGHT BASED ON THE THINNEST SLAB DEPTH OVER THE BRIDGE LENGTH.



(GIRDERS 1 AND 2 SHOWN, REST ARE SIMILAR)

NO.	DATE	REVISION	BY
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STRUCTURE B-57-90			
DRAWN BY		CLP	PLANS CK'D. AEE
SUPERSTRUCTURE		SHEET 12 OF 1	



TOP OF DECK ELEVATIONS

	℄ OF BRG. 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 BRG. E. ABUT.
N. EDGE OF DECK	1297.38	1297.37	1297.35	1297.33	1297.31	1297.30	1297.28	1297.26	1297.25	1297.23	1297.21
GIRDER 1	1297.44	1297.42	1297.40	1297.39	1297.37	1297.35	1297.33	1297.32	1297.30	1297.28	1297.26
GIRDER 2	1297.55	1297.54	1297.52	1297.50	1297.48	1297.47	1297.45	1297.43	1297.42	1297.40	1297.38
GIRDER 3	1297.67	1297.65	1297.64	1297.62	1297.60	1297.58	1297.57	1297.55	1297.53	1297.51	1297.50
℄ CTH E	1297.73	1297.71	1297.69	1297.68	1297.66	1297.64	1297.63	1297.61	1297.59	1297.57	1297.56
GIRDER 4	1297.67	1297.65	1297.64	1297.62	1297.60	1297.58	1297.57	1297.55	1297.53	1297.51	1297.50
GIRDER 5	1297.55	1297.54	1297.52	1297.50	1297.48	1297.47	1297.45	1297.43	1297.42	1297.40	1297.38
GIRDER 6	1297.44	1297.42	1297.40	1297.39	1297.37	1297.35	1297.33	1297.32	1297.30	1297.28	1297.26
S. EDGE OF DECK	1297.38	1297.37	1297.35	1297.33	1297.31	1297.30	1297.28	1297.26	1297.25	1297.23	1297.21

BEARING PAD DETAILS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-57-90			
DRAWN BY		CLP	PLANS CK'D. AEB
SUPERSTRUCTURE PLAN			SHEET 13 OF 14

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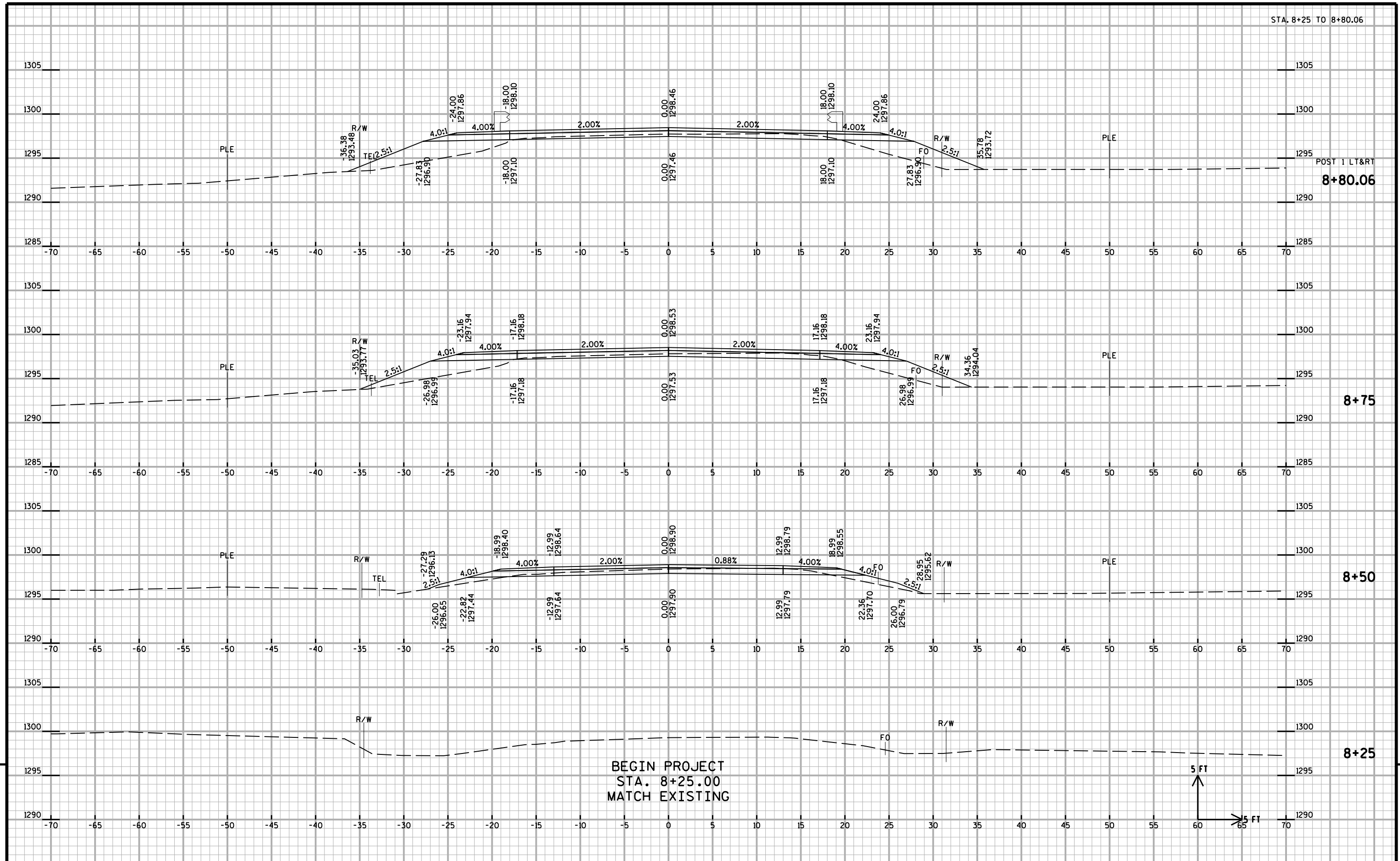
- ① W6 x 25 with 1 7/8" x 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR POST NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1 1/4" x 11 3/4" x 1'-8" WITH 1 1/2" x 1 1/2" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③ ASTM A449 - 1 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 ABOUT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS 16" USE 1'-3" 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 CONSTRUCTIBILITY.)~~
- ④ 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 1/2" 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, 3/8" x 1 5/8" x 1 5/8" 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" ϕ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 1/2" x 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND ~~5/8" x 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS~~ IN PLATE NO. 10A.
- 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" ϕ 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.

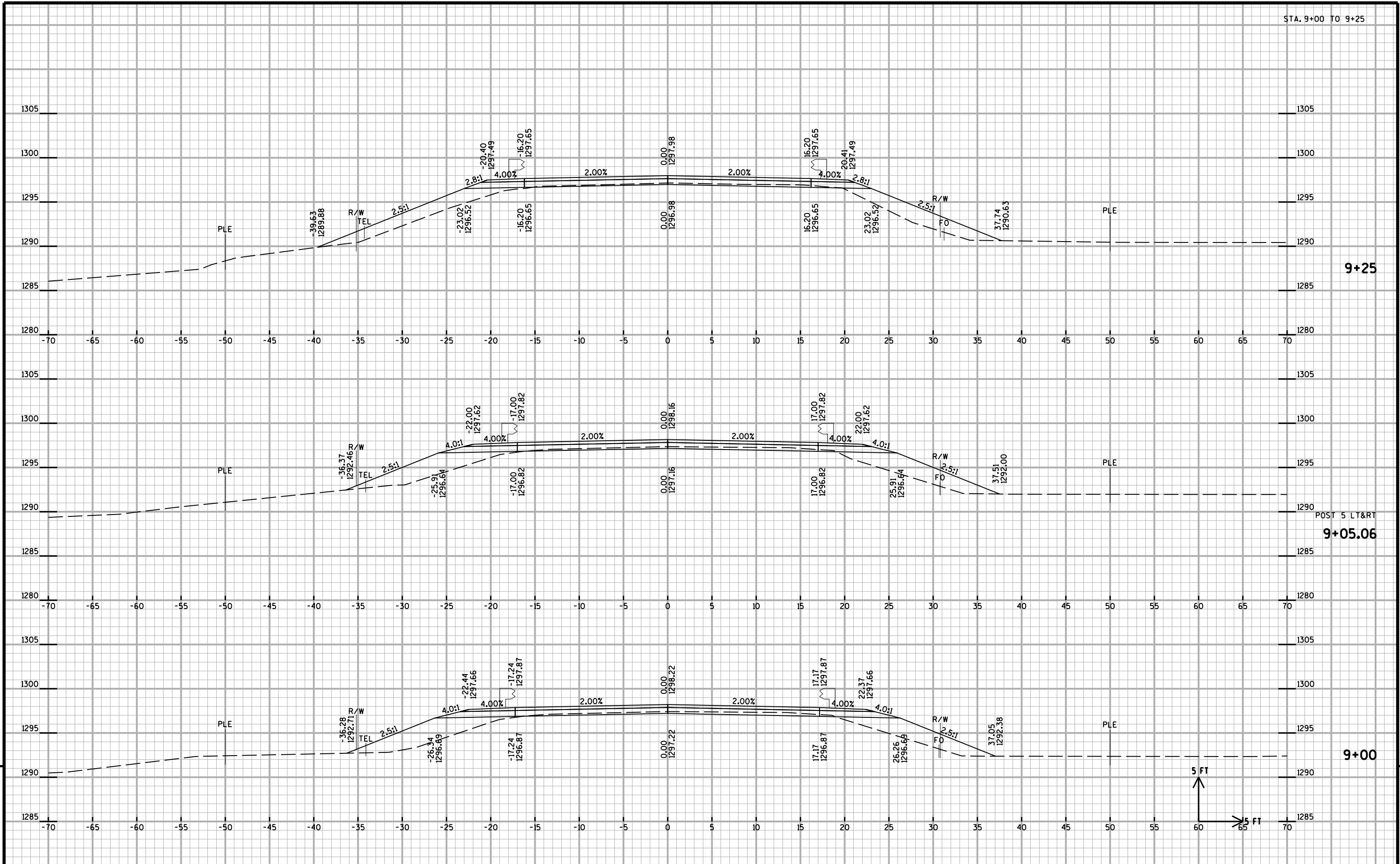
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI, ANCHOR PLATES, 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 S.S.P.C. SPECIFICATIONS.
10. ~~WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED THE COAT AND TOP COAT.~~

SECTION D

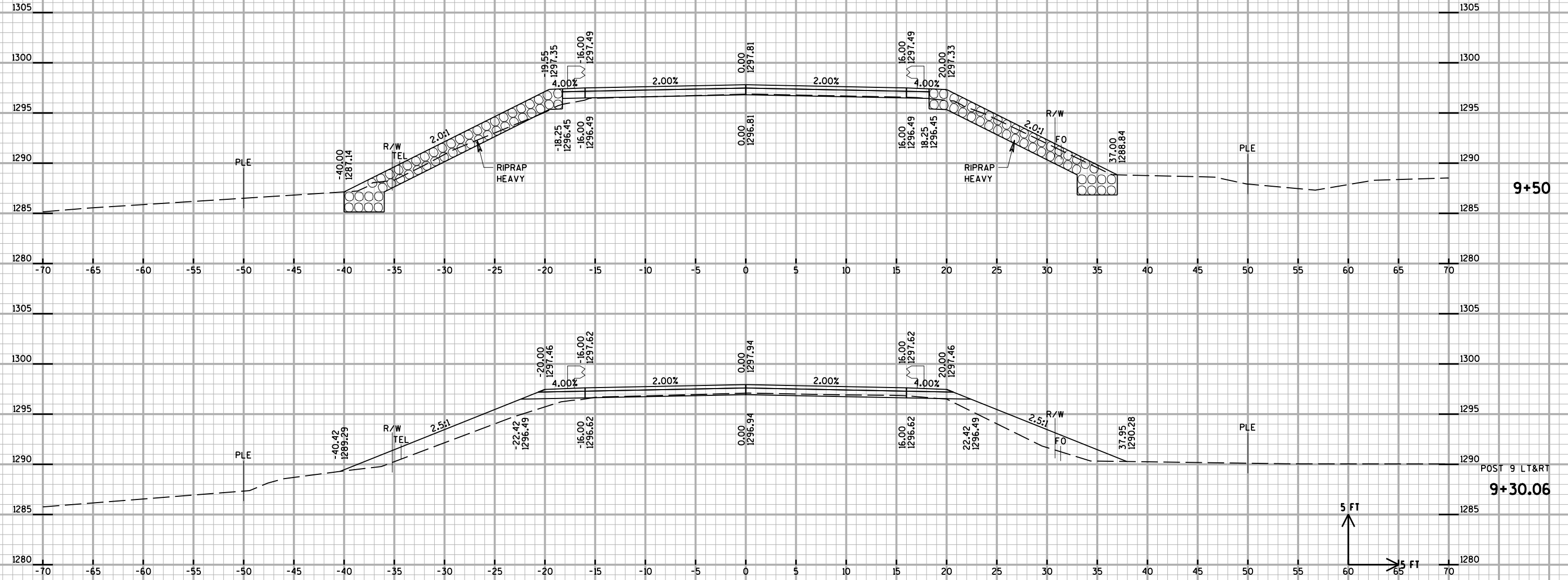
CTH E COMPUTER EARTHWORK										
Station	Distance	Area (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
		Cut	Unuseable Pavement Material	Fill	Cut	Salvaged / Unuseable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.30	
8+25	--	29.8	13.5	0.0						
8+50	25	16.8	11.9	8.0	22	12	4	10	5	5
8+75	25	12.8	9.1	35.0	14	10	20	15	31	-17
8+80.06	5	11.8	8.6	45.3	2	2	8	15	42	-27
9+00	20	8.0	6.4	50.8	7	6	35	16	87	-71
9+05.06	5	7.6	6.2	51.3	1	1	10	16	100	-84
9+25	20	5.4	4.6	49.5	5	4	37	17	148	-131
9+30.06	5	4.7	4.1	47.7	1	1	9	17	160	-143
9+50	20	1.6	1.4	1.2	2	2	18	17	183	-166
9+69.75	20	1.6	1.4	1.2	1	1	1	17	185	-167
B-57-90	--							--		
10+30.25	--	2.9	2.8	19.3				--		
10+50	20	2.9	2.8	19.3	2	2	14	17	203	-186
10+69.94	20	7.6	6.9	20.6	4	4	15	18	222	-205
10+75	5	9.0	8.0	57.7	2	1	7	18	231	-213
10+94.94	20	13.8	11.9	92.9	8	7	56	19	304	-285
11+00	5	14.7	12.5	100.8	3	2	18	20	328	-308
11+19.94	20	19.5	14.1	150.6	13	10	93	23	449	-426
11+25	5	20.4	13.8	136.9	4	3	27	24	484	-459
11+50	25	27.2	13.2	56.8	22	13	90	34	601	-567
11+75	20	28.0	13.2	0.0	9	10	40	33	653	-620
					122	89	502			

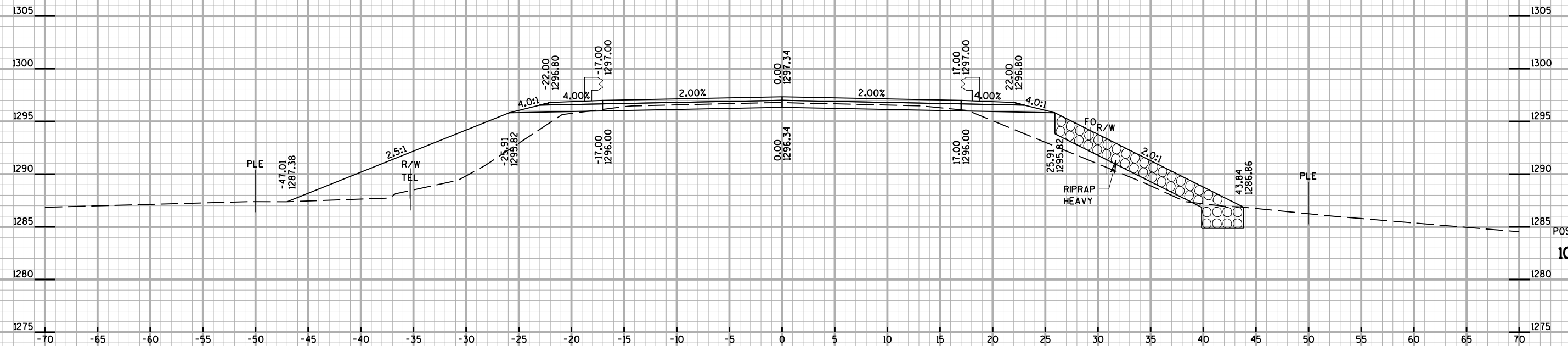
Note 1 - Cut	Cut includes existing asphalt pavement.
Note 2 - Fill	Volume needed to be filled.
Note 3 - Mass Ordinate	(Cut) - (Fill * 1.30)
Note 4 - Salvaged / Unuseable Pavement Material	Existing existing asphalt pavement to be removed from Cut.
Note 5 - Cut	Cut reduced by salvaged/unuseable asphaltic pavement



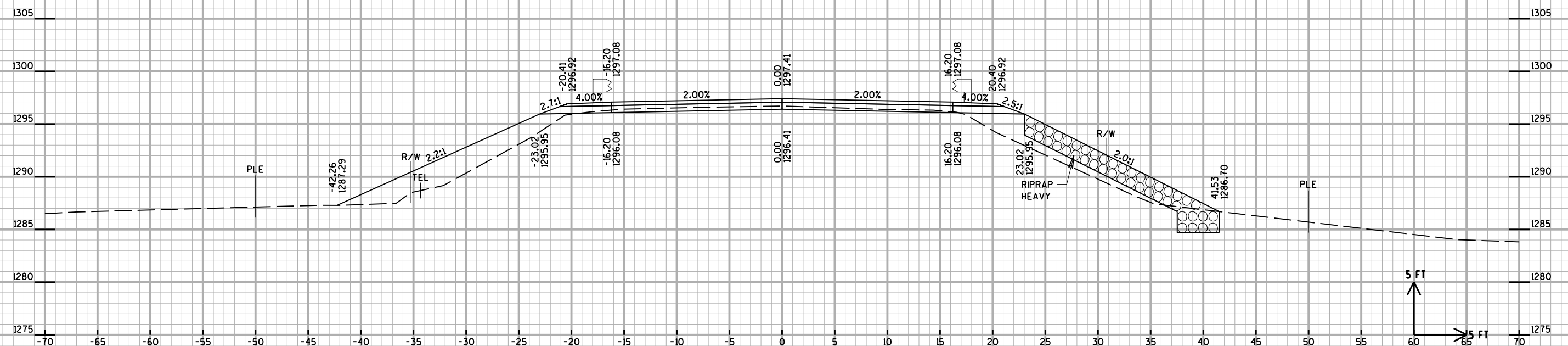


STRUCTURE B-57-90

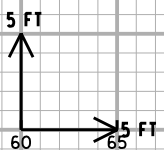


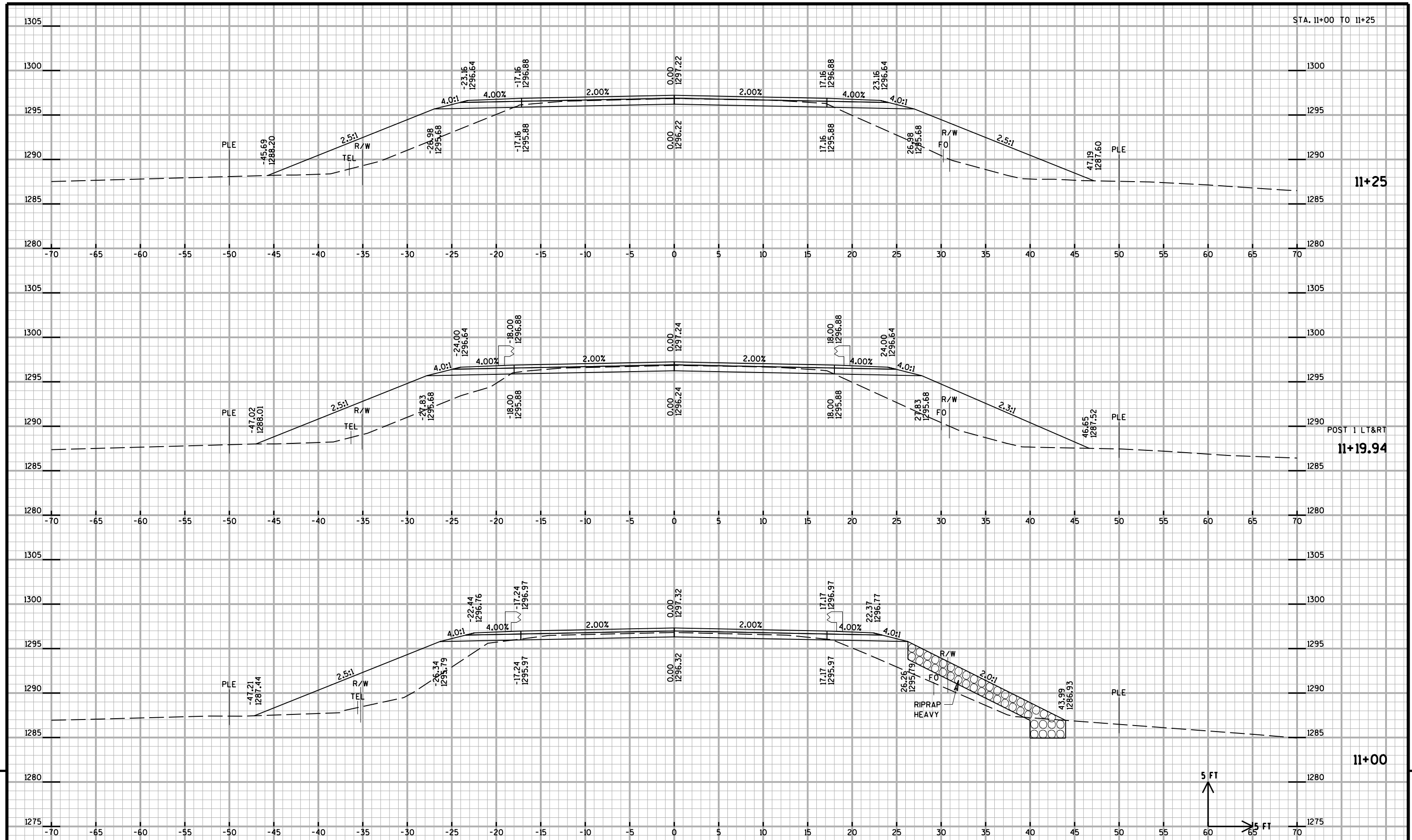


POST 5 LT&RT
10+94.94

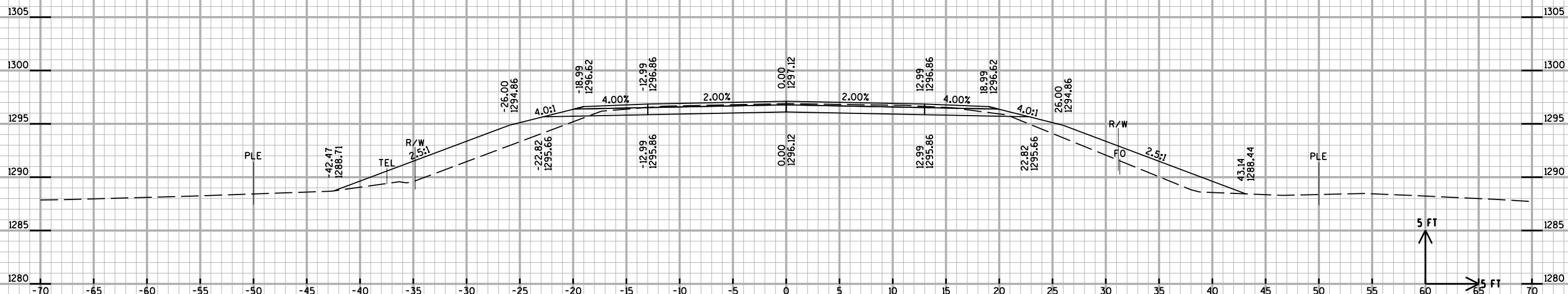
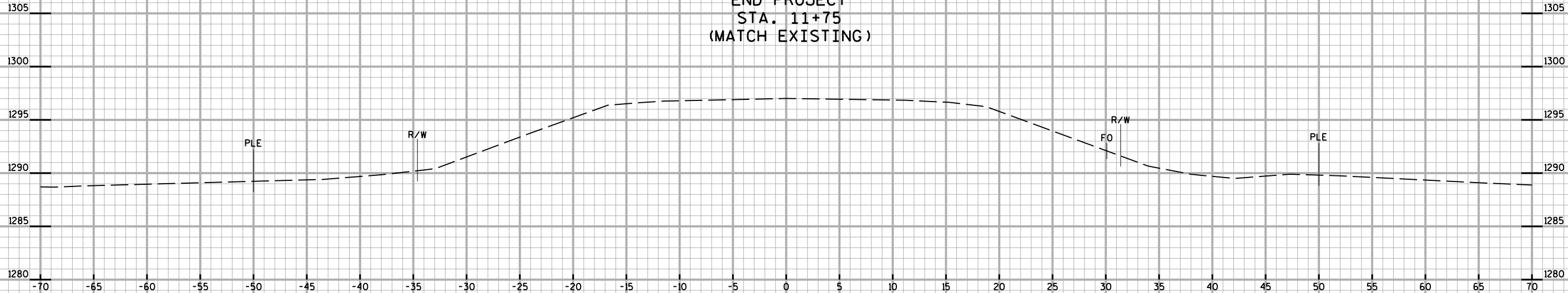


10+75





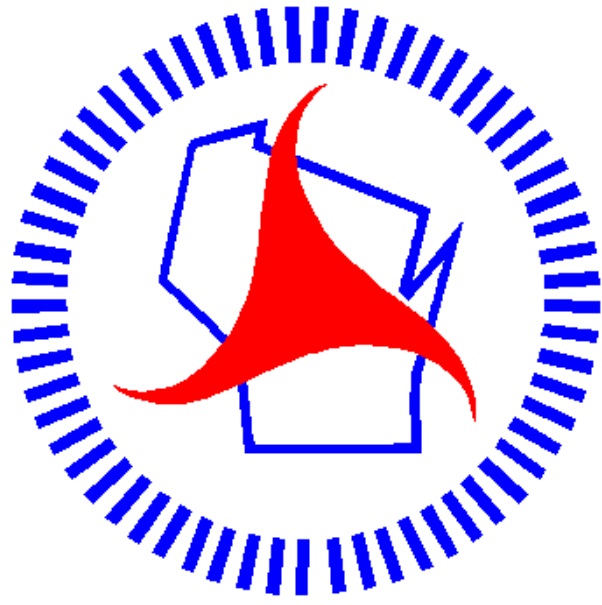
END PROJECT
STA. 11+75
(MATCH EXISTING)



9

9

Notes



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