

GRE

Jan 11, 2022

PROJECT ID:
WTH: 4199-02-71

4179-07-71

COUNTY:

SHEBOYGAN

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile (Includes Erosion Control Plan)
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 = 40



DESIGN DESIGNATION

A.A.D.T.	(2022)	=	55
A.A.D.T.	(2042)	=	85
D.H.V.	(2042)	=	7.6
D.D.		=	60/40
T.		=	10% (ASSUMED)
DESIGN SPEED		=	55 M.P.H.
ESALS		=	36,500

CONVENTIONAL SYMBOLS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T HOLLAND, RISSEEUW ROAD

HAND CREEK BRIDGE

LOC STR

SHEBOYGAN COUNTY

STATE PROJECT NUMBER
4198-07-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4198-07-71	WISC 2022120	1

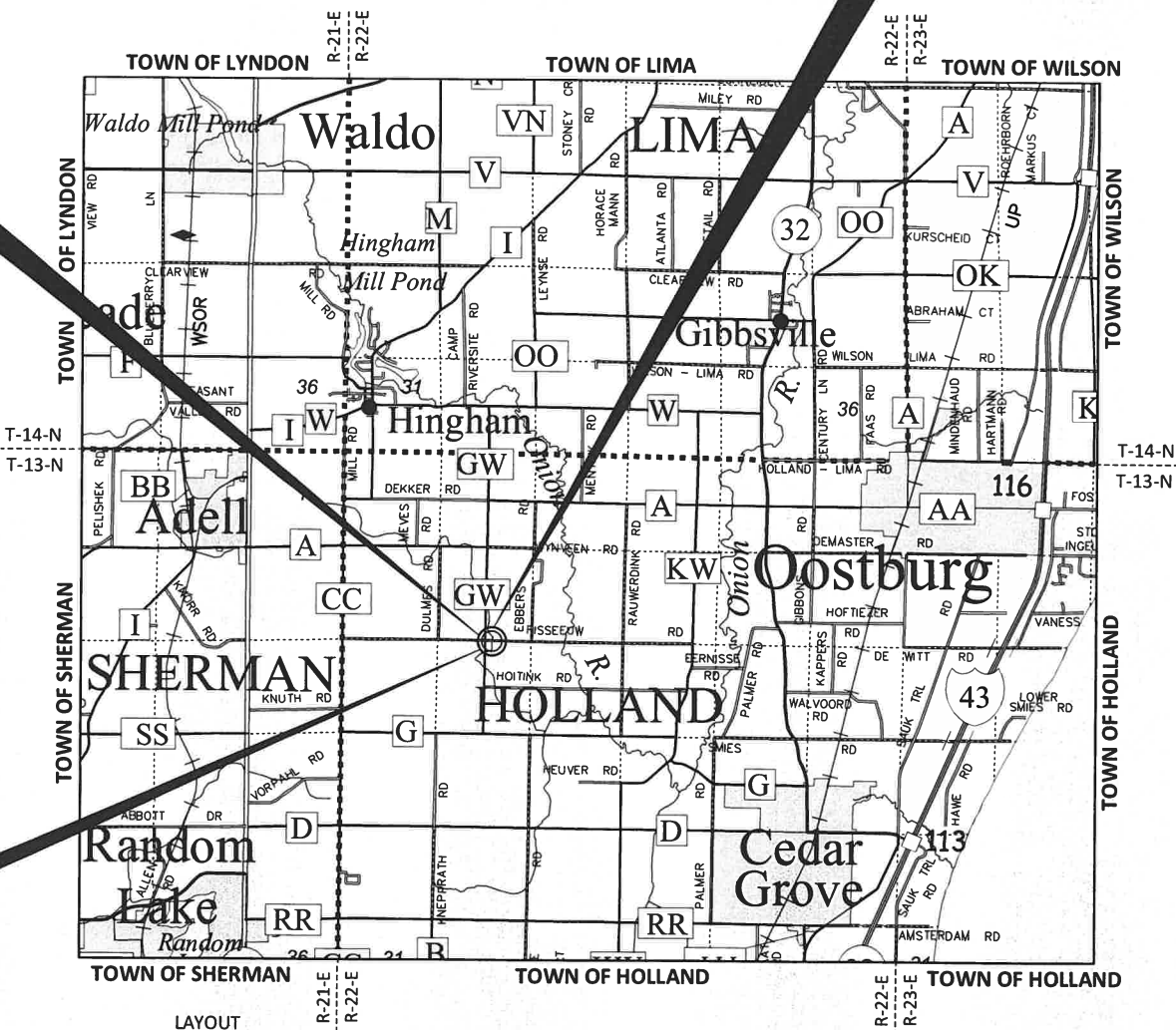
END PROJECT
STA. 12+30

STRUCTURE B-59-326

BEGIN PROJECT

STA. 11+00

Y = 122,272.14
X = 172,259.09



LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 0.025 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, SHEBOYGAN COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCE MAY BE USED AS GROUND DISTANCES.
ELEVATION SHOWN ON THIS PLAN ARE REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD (2012).

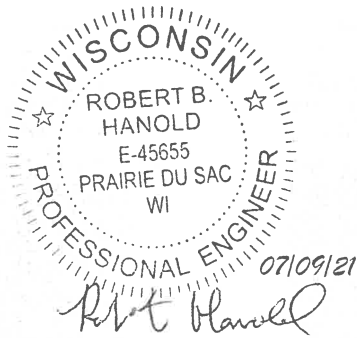
ACCEPTED FOR

COUNTY of SHEBOYGAN

7/13/2021
(Date) (Signature) (Transportation Director)

ORIGINAL PLANS PREPARED BY

JEWELL
associates engineers, inc
Engineers - Architects - Surveyors



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	JEWELL ASSOCIATES ENGINEERS, INC.
Surveyor	JEWELL ASSOCIATES ENGINEERS, INC.
Designer	TIMOTHY VERHAGEN, P.E.
Project Manager	NE REGION
Regional Examiner	BRIAN EDWARDS, P.E.
Regional Supervisor	

APPROVED FOR THE DEPARTMENT
DATE: 7/19/2021 (Signature)

E

GENERAL NOTES

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

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE, AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION. EXACT LOCATIONS OF EBS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

UNLESS SHOWN OTHERWISE, DISTURBED AREAS SHOWN WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEED MIX NO. 20), AND EROSION MATTED AS DIRECTED BY THE ENGINEER.

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

SILT FENCE SHALL BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER IN THE FIELD. SILT FENCE SHALL BE PLACED PRIOR TO CONSTRUCTION AND SHALL BE IN PLACE PRIOR TO STRUCTURE REMOVAL.

EROSION MAT ALL MAINLINE SLOPES AS DIRECTED BY THE ENGINEER IN THE FIELD.

FILL EXPANSION IS VARIABLE AND IS ESTIMATED AT 25%.

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

THE LOCATION OF ALL PERMANENT SIGNING SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD PRIOR TO PLACEMENT.

4-INCHES OF ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 2 ¾-INCH LOWER LAYER AND A 1 ¾-INCH UPPER LAYER.

ADJUST DITCH GRADING AS NECESSARY TO FIT FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER IN THE FIELD.

ASPHALTIC SURFACE QUANTITIES WERE CALCULATED USING 115 LB/SY/IN.

CONTACTS

SHEBOYGAN COUNTY
HIGHWAY DEPARTMENT:

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DESIGN CONSULTANT:

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SPRING GREEN, WI 53588
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TOWN OF GREENBUSH:

DONALD BECKER, CHAIRMAN
N144 COUNTY ROAD B
RANDOM LAKE, WI 53075
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EMAIL: townchair@townofholland.com

DNR LIAISON:

STATE OF WISCONSIN DNR NORTHEAST REGIONAL HQ
2984 SHAWANO AVE
GREEN BAY, WI 54313
ATTN: JAY SCHIEFELBEIN
PHONE: (920) 360-3784
EMAIL: jeremiah.schiefelbein@wisconsin.gov

UTILITIES

ELECTRIC

WE ENERGIES
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WEST ALLIS, WI 53214
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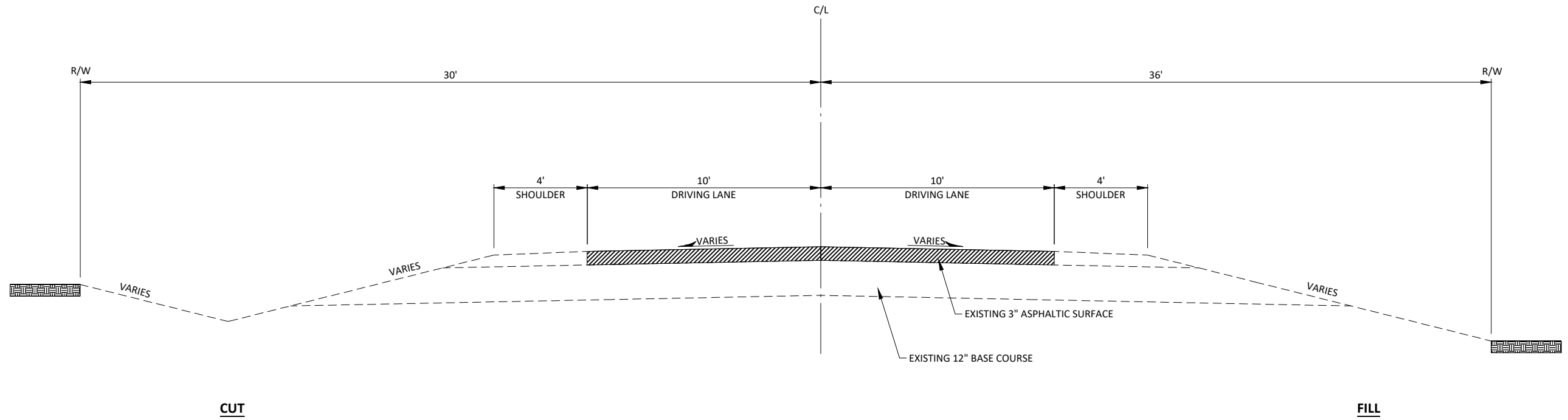
LIST OF STANDARD ABBREVIATIONS

ABUT	Abutment	INV	Invert	RDWY	Roadway
AC	Acre	IP	Iron Pipe or Pin	SALV	Salvaged
AGG	Aggregate	IRS	Iron Rod Set	SAN S	Sanitary Sewer
AH	Ahead	JT	Joint	SEC	Section
<	Angle	JCT	Junction	SHLDR	Shoulder
ASPH	Asphaltic	LHF	Left-Hand Forward	SHR	Shrinkage
AVG	Average	L	Length of Curve	SW	Sidewalk
ADT	Average Daily Traffic	LIN FT or LF	Linear Foot	S	South
BAD	Base Aggregate Dense	LC	Long Chord of Curve	SQ	Square
BK	Back	MH	Manhole	SF or SQ FT	Square Feet
BF	Back Face	MB	Mailbox	SY or SQ YD	Square Yard
BM	Bench Mark	ML or M/L	Match Line	STD	Standard
BR	Bridge	N	North	SDD	Standard Detail Drawings
C or C/L	Center Line	Y	North Grid Coordinate	STH	State Trunk Highways
CC	Center to Center	O.A.L.	Overall Length	STA	Station
CTH	County Trunk Highway	OD	Outside Diameter	SS	Storm Sewer
CR	Creek	PLE	Permanent Limited Easement	SG	Subgrade
CR	Crushed	PT	Point	SE	Superelevation
CY or CU YD	Cubic Yard	PC	Point of Curvature	SL or S/L	Survey Line
CP	Culvert Pipe	PI	Point of Intersection	SV	Septic Vent
C & G	Curb and Gutter	PRC	Point of Reverse Curvature	T	Tangent
D	Degree of Curve	PT	Point of Tangency	TEL	Telephone
DHV	Design Hour Volume	POC	Point On Curve	TEMP	Temporary
DIA	Diameter	POT	Point on Tangent	TI	Temporary Interest
E	East	PVC	Polyvinyl Chloride	TLE	Temporary Limited Easement
X	East Grid Coordinate	PCC	Portland Cement Concrete	t	Ton
ELEC	Electric (al)	LB	Pound	T or TN	Town
EL or ELEV	Elevation	PSI	Pounds Per Square Inch	TRANS	Transition
ESALS	Equivalent Single Axle Loads	PE	Private Entrance	TL or T/L	Transit Line
EBS	Excavation Below Subgrade	R	Radius	T	Trucks (percent of)
ESTR	Existing Sign to Remain	RR	Railroad	TYP	Typical
FF	Face to Face	R	Range	UNCL	Unclassified
FE	Field Entrance	RL or R/L	Reference Line	UG	Underground Cable
F	Fill	RP	Reference Point	USH	United States Highway
FG	Finished Grade	RCCP	Reinforced Concrete Culvert	VAR	Variable
FL or F/L	Flow Line		Pipe	V	Velocity or Design Speed
FT	Foot	REQ'D	Required	VERT	Vertical
FTG	Footing	RES	Residence or Residential	VC	Vertical Curve
GN	Grid North	RW	Retaining Wall	VOL	Volume
HT	Height	RT	Right	WM	Water Main
CWT	Hundredweight	RHF	Right-Hand Forward	WV	Water Valve
HYD	Hydrant	R/W	Right-of-Way	W	West
INL	Inlet	R	River	WB	Westbound
ID	Inside Diameter	RD	Road	YD	Yard

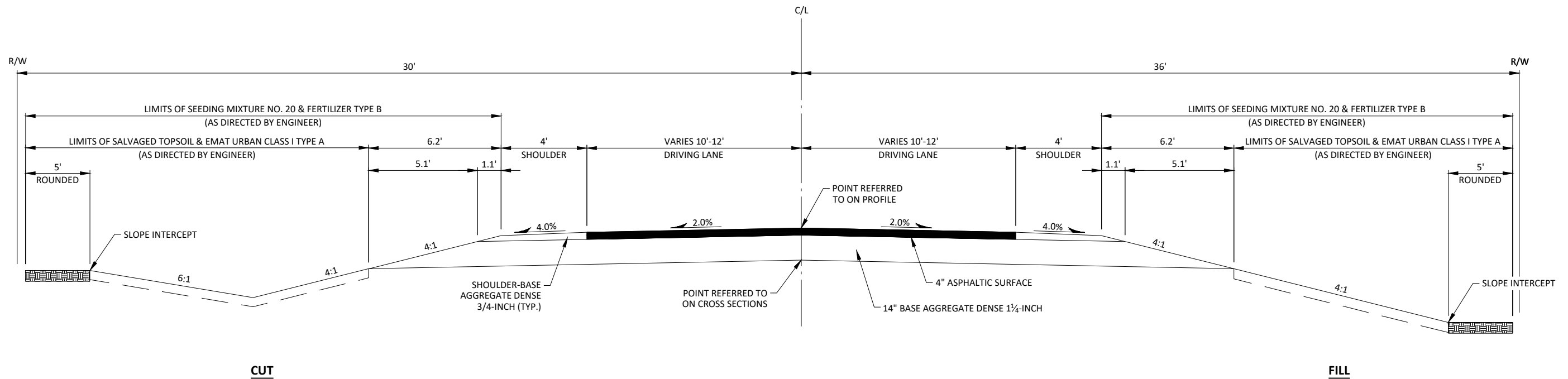


	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33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

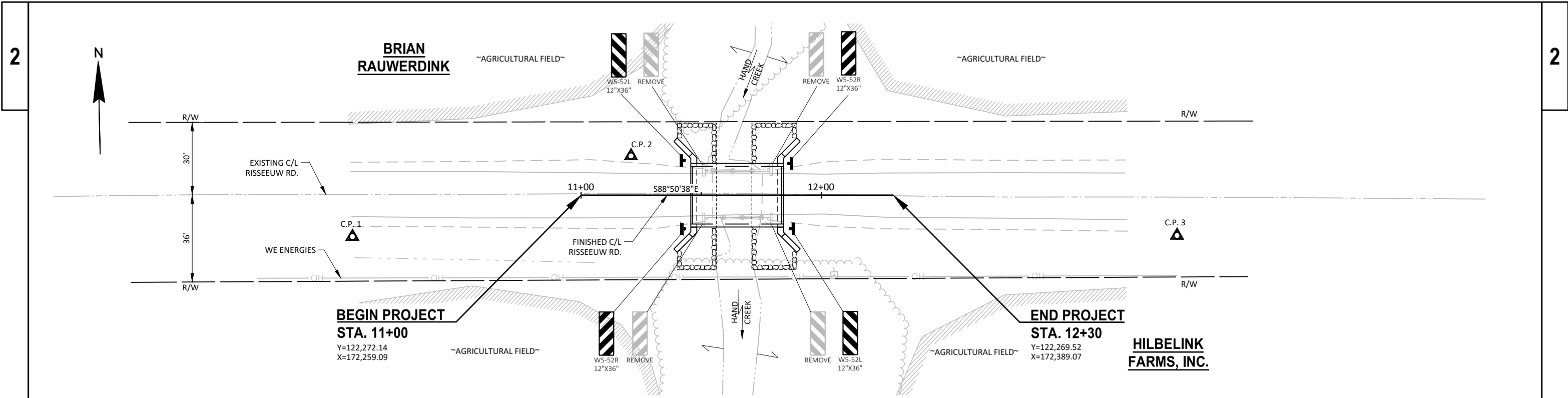
TOTAL PROJECT AREA= 0.20 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.14 ACRES



TYPICAL EXISTING SECTION
RISSEEUW ROAD



TYPICAL FINISHED SECTION
RISSEEUW ROAD

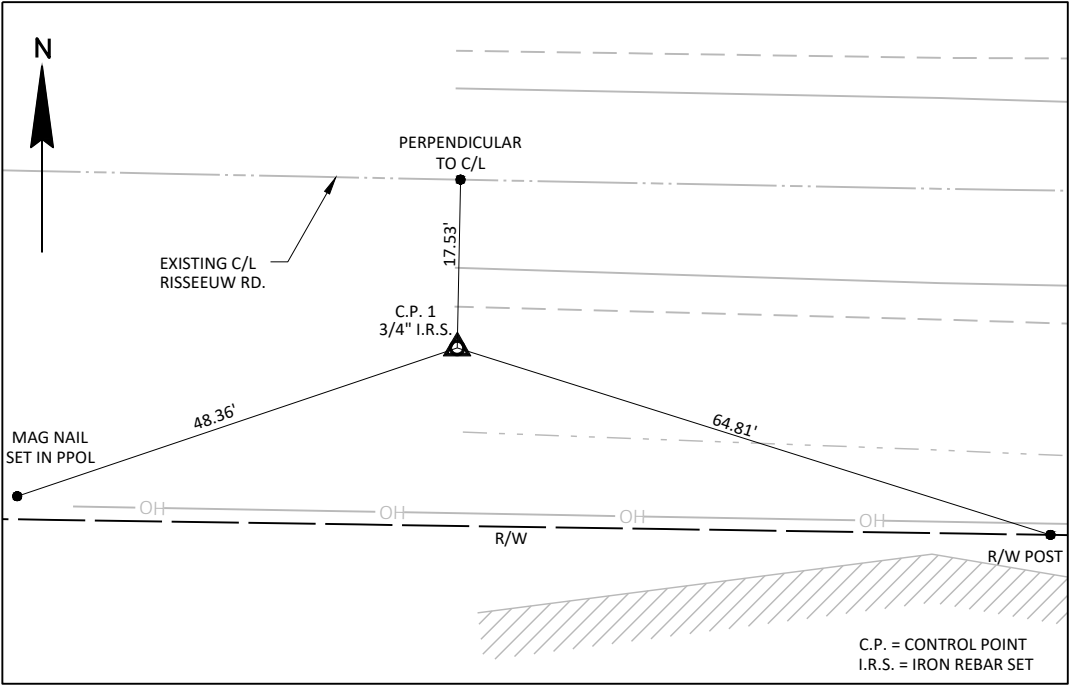


MAINLINE STATION LAYOUT

STATION	Y	X	COMMENTS
11+00	122,272.14	172,259.09	BEGIN PROJECT
11+46.34	122,271.21	172,305.42	END OF DECK
11+50	122,271.14	172,309.08	-
11+83.50	122,270.46	172,342.58	END OF DECK
12+00	122,270.13	172,359.07	-
12+30	122,269.52	172,389.07	END PROJECT

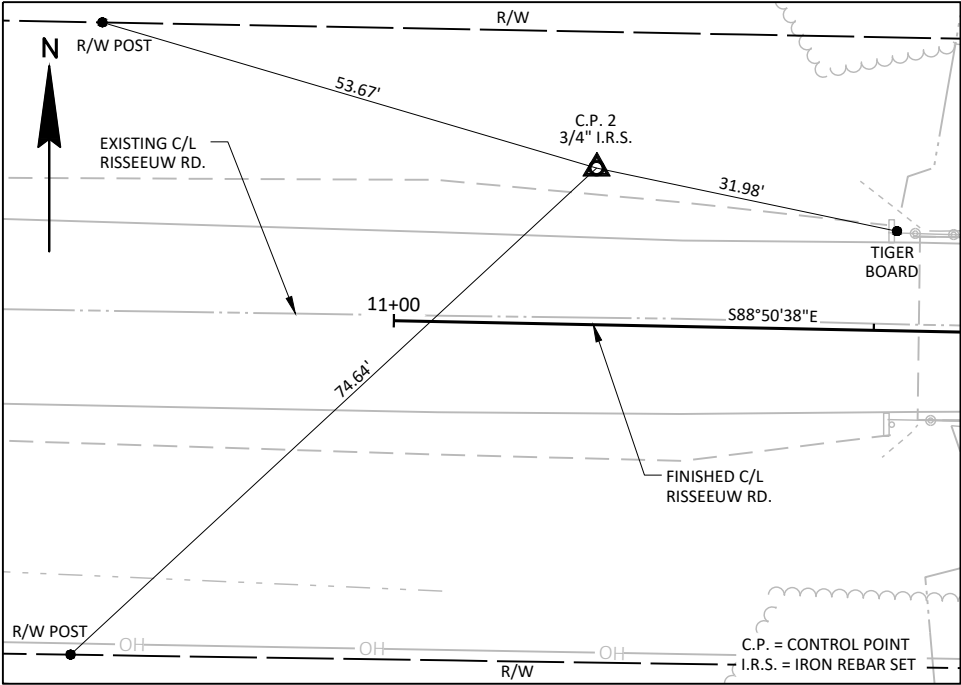
CONTROL POINTS

NO.	STA.	DESCRIPTION	Y	X
1	10+04.84	¾" IRON REBAR SET, 17.53' RT.	122,256.82	172,163.60
2	11+20.80	¾" IRON REBAR SET, 16.31' LT.	122,288.04	172,280.21
3	13+48.09	¾" IRON REBAR SET, 15.96' RT.	122,250.37	172,506.80



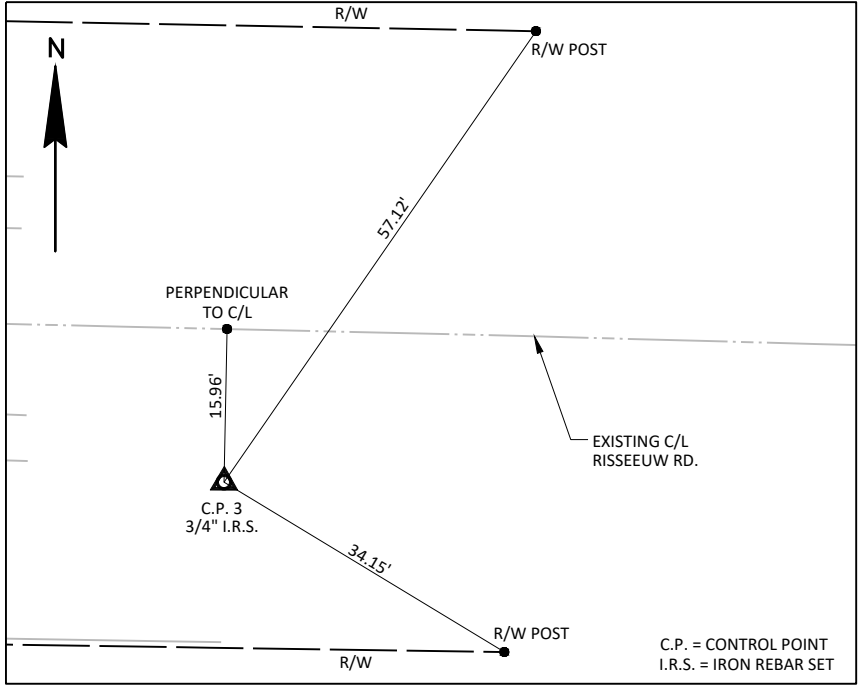
TIES TO C.P.#1

STA. 10+04.84; 17.53' RT.
Y = 122,256.82
X = 172,163.60



TIES TO C.P.#2

STA. 11+20.80; 16.31' LT.
Y = 122,288.04
X = 172,280.21



TIES TO C.P.#3

STA. 13+48.09; 15.96' RT.
Y = 122,250.37
X = 172,506.80

Estimate Of Quantities By Plan Sets

4198-07-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-59-925	EACH	1.000	1.000
0014	205.0100	Excavation Common	CY	110.000	110.000
0018	206.1000	Excavation for Structures Bridges (structure) 01. B-59-326	LS	1.000	1.000
0026	210.1500	Backfill Structure Type A	TON	282.000	282.000
0028	213.0100	Finishing Roadway (project) 01. 4198-07-71	EACH	1.000	1.000
0032	305.0110	Base Aggregate Dense 3/4-Inch	TON	28.000	28.000
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	320.000	320.000
0036	455.0605	Tack Coat	GAL	12.000	12.000
0038	465.0105	Asphaltic Surface	TON	56.000	56.000
0040	502.0100	Concrete Masonry Bridges	CY	117.000	117.000
0042	502.3200	Protective Surface Treatment	SY	170.000	170.000
0044	505.0400	Bar Steel Reinforcement HS Structures	LB	3,940.000	3,940.000
0046	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	16,670.000	16,670.000
0048	513.4061	Railing Tubular Type M	LF	82.000	82.000
0050	516.0500	Rubberized Membrane Waterproofing	SY	10.000	10.000
0052	550.0500	Pile Points	EACH	14.000	14.000
0054	550.2104	Piling CIP Concrete 10 3/4 X 0.25-Inch	LF	700.000	700.000
0056	606.0300	Riprap Heavy	CY	150.000	150.000
0058	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	142.000	142.000
0066	618.0100	Maintenance And Repair of Haul Roads (project) 01. 4198-07-71	EACH	1.000	1.000
0068	619.1000	Mobilization	EACH	0.400	0.400
0070	624.0100	Water	MGAL	6.000	6.000
0074	625.0500	Salvaged Topsoil	SY	270.000	270.000
0078	628.1504	Silt Fence	LF	310.000	310.000
0080	628.1520	Silt Fence Maintenance	LF	620.000	620.000
0082	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0084	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0086	628.2006	Erosion Mat Urban Class I Type A	SY	270.000	270.000
0092	628.6005	Turbidity Barriers	SY	200.000	200.000
0096	629.0210	Fertilizer Type B	CWT	1.000	1.000
0098	630.0120	Seeding Mixture No. 20	LB	12.000	12.000
0100	630.0200	Seeding Temporary	LB	12.000	12.000
0104	630.0500	Seed Water	MGAL	10.000	10.000
0106	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0108	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0110	638.2602	Removing Signs Type II	EACH	4.000	4.000
0112	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0114	642.5001	Field Office Type B	EACH	0.500	0.500
0116	643.0420	Traffic Control Barricades Type III	DAY	990.000	990.000
0118	643.0705	Traffic Control Warning Lights Type A	DAY	1,540.000	1,540.000
0120	643.0900	Traffic Control Signs	DAY	770.000	770.000
0122	643.5000	Traffic Control	EACH	0.500	0.500
0124	645.0111	Geotextile Type DF Schedule A	SY	58.000	58.000
0126	645.0120	Geotextile Type HR	SY	280.000	280.000
0128	646.1020	Marking Line Epoxy 4-Inch	LF	260.000	260.000
0130	650.4500	Construction Staking Subgrade	LF	92.000	92.000
0132	650.5000	Construction Staking Base	LF	92.000	92.000

Estimate Of Quantities By Plan Sets

4198-07-71					
Line	Item	Item Description	Unit	Total	Qty
0134	650.6500	Construction Staking Structure Layout (structure) 01. B-59-326	LS	1.000	1.000
0140	650.9910	Construction Staking Supplemental Control (project) 01. 4198-07-71	LS	1.000	1.000
0144	650.9920	Construction Staking Slope Stakes	LF	92.000	92.000
0146	690.0150	Sawing Asphalt	LF	40.000	40.000
0148	715.0502	Incentive Strength Concrete Structures	DOL	702.000	702.000
0150	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 11+65	EACH	1.000	1.000
0154	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0156	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0158	SPV.0090	Special 01. Flashing Stainless Steel	LF	67.000	67.000

3

CLEARING & GRUBBING				EARTHWORK SUMMARY								WATER									
STATION		LOCATION		201.0105 CLEARING (STA)	201.0205 GRUBBING (STA)	FROM/TO STA		LOCATION		205.0100 EXCAVATION COMMON CUT (CY)	AVAILABLE MATERIAL (CY) (1)	UNEXPANDED FILL (CY)	EXPANDED FILL (CY) FACTOR 1.25 (2)	MASS ORDINATE +/- (CY) (3)	WASTE (CY)						
11+00 - 12+30		MAINLINE		2	2	11+00 - 12+30		MAINLINE		110.0	110.0	4.8	6.0	104.0	104.0						
TOTALS =				2	2	TOTALS =				110.0	110.0	4.8	6.0	104.0	104.0						
NOTES: 1.) AVAILABLE MATERIAL = CUT 2.) EXPANDED FILL FACTOR 1.25: EXPANDED FILL = (UNEXPANDED FILL)*1.25 3.) THE MASS ORDINATE+ OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE CATEGORY. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE CATEGORY.																					
BASE AGGREGATE DENSE						ASPHALTIC SURFACE						SILT FENCE									
STATION - STATION		LOCATION		305.0110 BASE AGGREGATE DENSE 3/4-INCH (TON)	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON)	STATION - STATION		LOCATION		455.0605 TACK COAT (GAL)	465.0105 ASPHALTIC SURFACE (TON)	STATION - STATION		LOCATION		628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)				
11+00 - 11+46		MAINLINE		14	159	11+00 - 11+46		MAINLINE		6	28	11+00 - 11+57		MAINLINE, LT		59	118				
11+84 - 12+30		MAINLINE		14	161	11+84 - 12+30		MAINLINE		6	28	11+00 - 11+57		MAINLINE, RT		59	118				
TOTALS =				28	320	TOTALS =				12	56	11+71 - 12+30		MAINLINE, LT		63	126				
												11+71 - 12+30		MAINLINE, RT		66	132				
												-		UNDISTRIBUTED		63	126				
												TOTALS =		310		620					
FINISHING ITEMS																		MOBILIZATION EROSION CONTROL			
STATION - STATION		LOCATION		625.0500 SALVAGED TOPSOIL (SY)	628.2006 EROSION MAT URBAN CLASS I TYPE A (SY)	629.0210 FERTILIZER TYPE B (CWT)	630.0120 SEEDING MIXTURE NO. 20 (LB)	630.0200 SEEDING TEMPORARY (LB)	630.0500 SEED WATER (MGAL)	PROJECT		628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)								
11+00 - 11+46		MAINLINE		90	90	0.4	4.1	-	3.5	4198-07-71		4	2								
11+84 - 12+30		MAINLINE		127	127	0.4	5.5	-	4.5	TOTALS =				4	2						
-		UNDISTRIBUTED		53	53	0.2	2.4	12	2.0												
				TOTALS =	270	270	1.0	12.0	12	10.0											
TURBIDITY BARRIERS						TRAFFIC CONTROL						PAVEMENT MARKING									
STATION		LOCATION		628.6005 (SY)	643.0420 BARRICADES TYPE III (DAY)		643.0705 WARNING LIGHTS TYPE A (DAY)		643.0900 SIGNS (DAY)	643.5000 TRAFFIC CONTROL (EACH)	STATION - STATION		LOCATION		TYPE		646.1020 MARKING LINE EPOXY 4-INCH (L.F.)				
11+56		MAINLINE		80	990		1540		770	0.5	11+00 - 12+30		MAINLINE		DOUBLE YELLOW		260				
11+71		MAINLINE		80	TOTALS =		990		1540		770		0.5		TOTAL =		260				
-		UNDISTRIBUTED		40																	
				TOTAL =																	
PROJECT NO: 4198-07-71				HWY: RISSEEUW ROAD				COUNTY: SHEBOYGAN				MISCELLANEOUS QUANTITIES				SHEET 7					
FILE NAME : S:\PROJECTS\W11631 WISDOT - RISSEEUW ROAD BRIDGE SHEBOYGAN CO\SHEETS\PLAN\DETAILS\41980700_MISCELLANEOUS																		E			

3

PERMANENT SIGNING

APPROX. STATION	LOCATION	SIGN CODE	SIGN DESCRIPTION	SIGN SIZE	634.0612 POSTS WOOD 4X6- INCH X 12-FT (EACH)	637.2230 SIGNS TYPE II REFLECTIVE F (SF)	638.2602 REMOVING SIGNS TYPE II (EACH)	638.3000 REMOVING SMALL SIGN SUPPORTS (EACH)
11+42	MAINLINE, LT	W5-	BRIDGE HASH MARKS	12X36	1	3.00	---	---
11+42	MAINLINE, RT	W5-52L	BRIDGE HASH MARKS	12X36	1	3.00	---	---
11+51	MAINLINE, LT	W5-	BRIDGE HASH MARKS	12X36	---	---	1	1
11+51	MAINLINE, RT	W5-52L	BRIDGE HASH MARKS	12X36	---	---	1	1
11+78	MAINLINE, LT	52R	BRIDGE HASH MARKS	12X36	---	---	1	1
11+78	MAINLINE, RT	W5-52L	BRIDGE HASH MARKS	12X36	---	---	1	1
11+86	MAINLINE, LT	W5-	BRIDGE HASH MARKS	12X36	1	3.00	---	---
11+86	MAINLINE, RT	W5-52L	BRIDGE HASH MARKS	12X36	1	3.00	---	---
TOTALS =					4	12.00	4	4

ALL ITEMS 010 UNLESS OTHERWISE NOTED

CONSTRUCTION STAKING

STATION -STATION	LOCATION	650.4500 SUBGRADE (LF)	650.5000 BASE (LF)	*650.6500 STRUCTURE LAYOUT (B-59-326) (LS)	650.9910 SUPPLEMENTAL CONTROL (01. 4198-07-71) (LS)	650.9920 SLOPES STAKES (LF)
11+00 - 11+46	MAINLINE	46	46	-	-	46
11+84 - 12+30	MAINLINE	46	46	-	-	46
-	PROJECT	-	-	1	1	-
TOTALS =		92	92	1	1	92
*CATEGORY 020						

SAWING ASPHALT

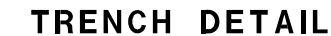
STATION	LOCATION	690.0150 (L.F.)
11+00	MAINLINE	20
12+30	MAINLINE	20
TOTAL =		40

Standard Detail Drawing List

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



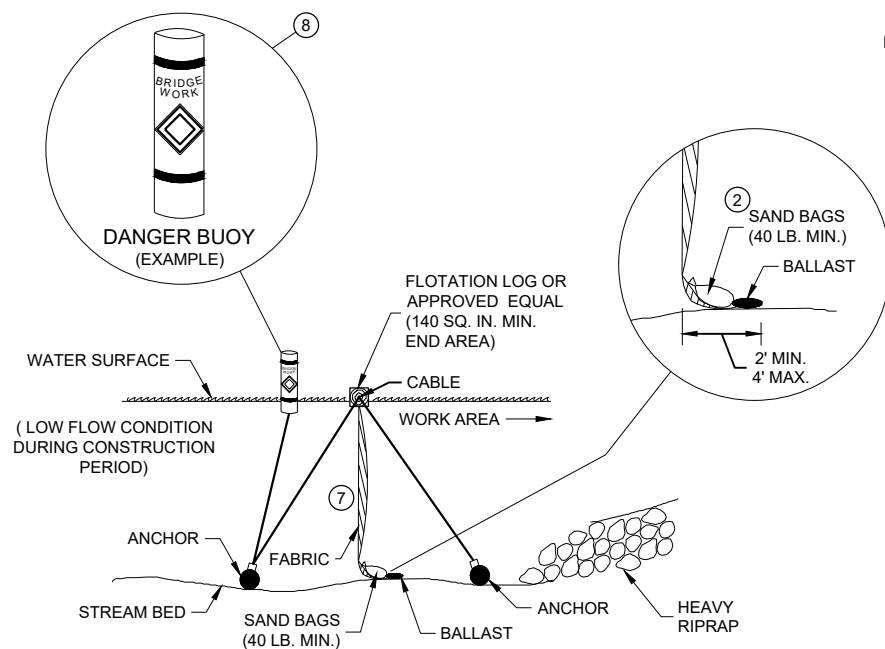
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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

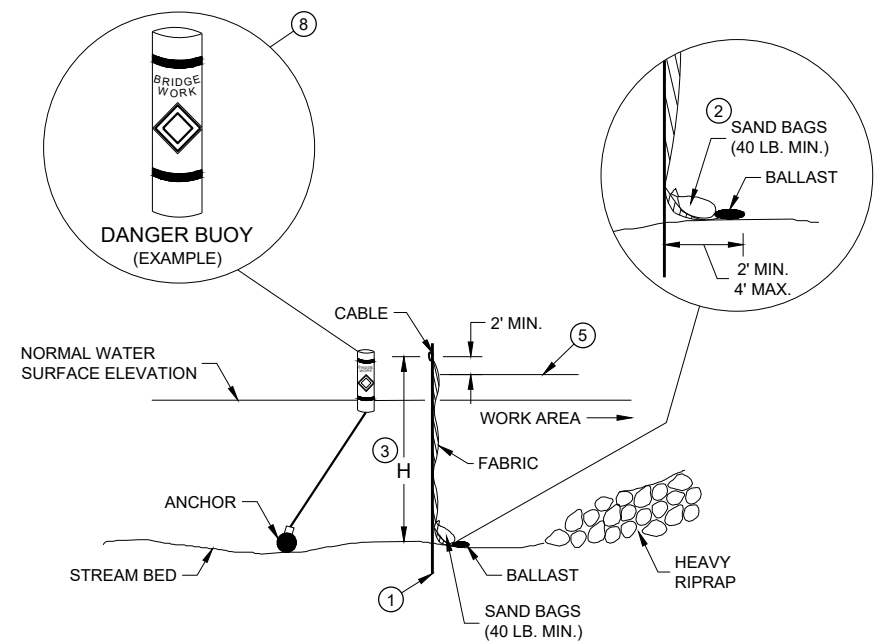
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE /S/ Beth Cannata
CHIEF ROADWAY DEVELOPMENT **11** INCHES
FHWA



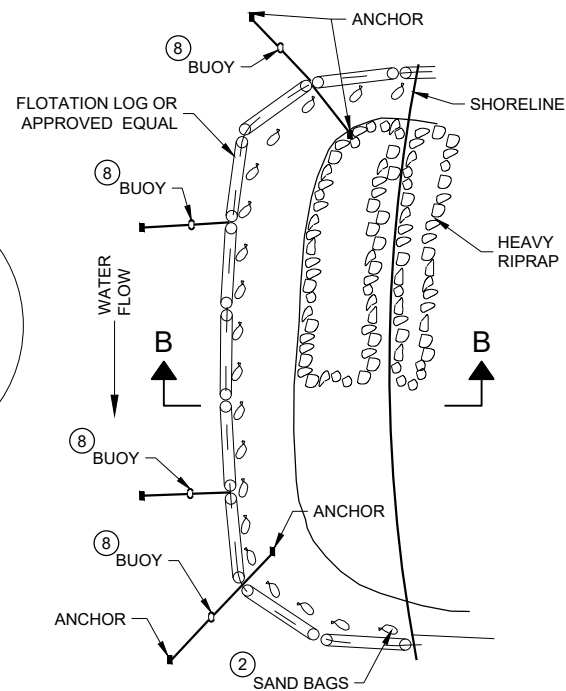
SECTION B - B

TURBIDITY BARRIER - FLOAT ALTERNATIVE CAUTION - SEE NOTE 6

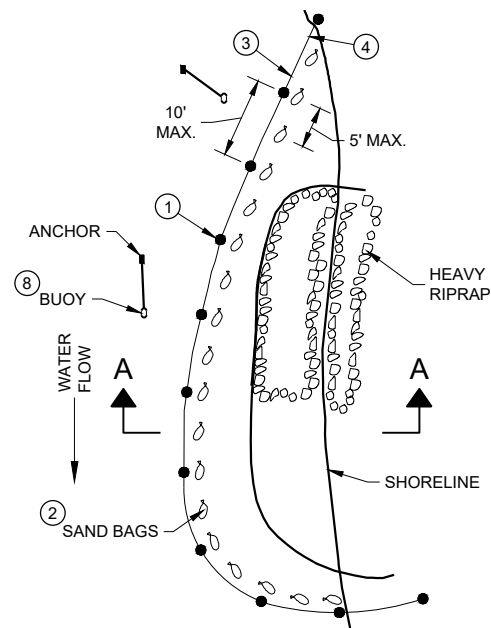


SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW



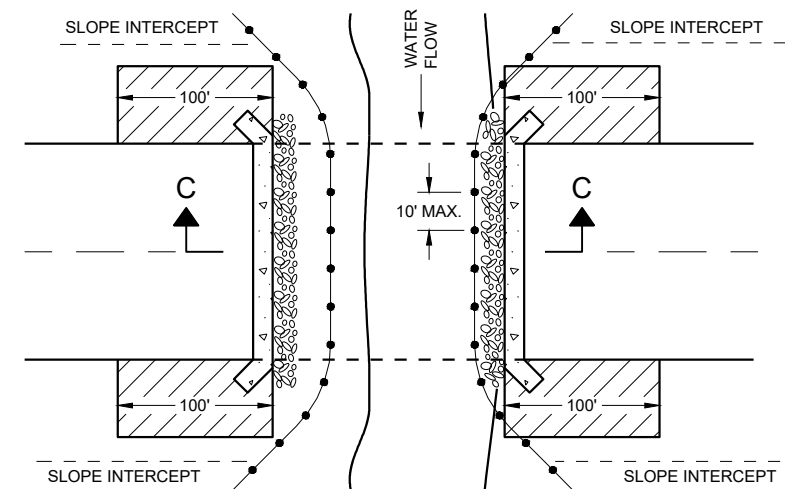
PLAN VIEW

GENERAL NOTES

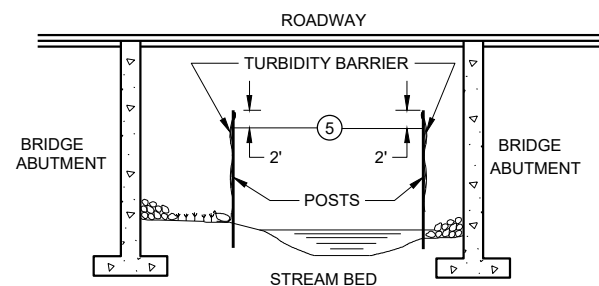
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



SECTION C - C

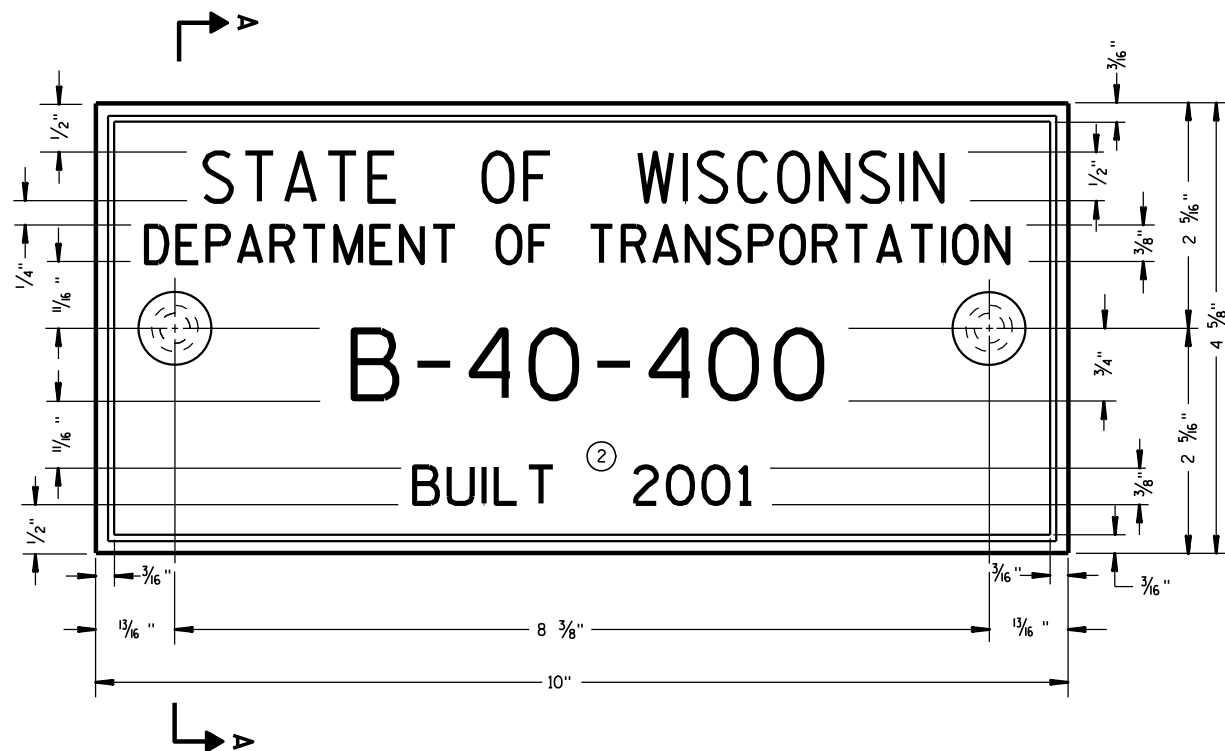
TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

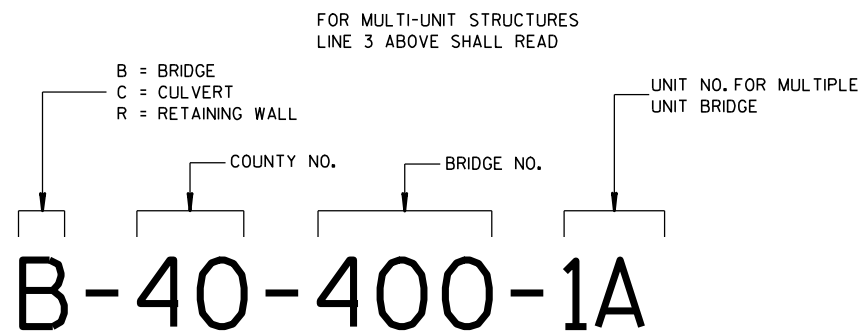
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/4/02 DATE /S/ Beth Cannestra
CHIEF ROADWAY DEVELOPER
ENGINEER 12

FHWA



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



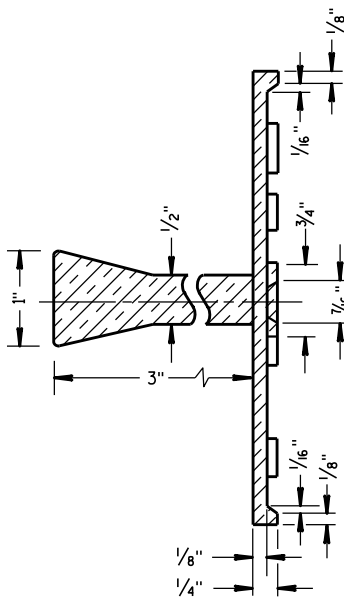
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

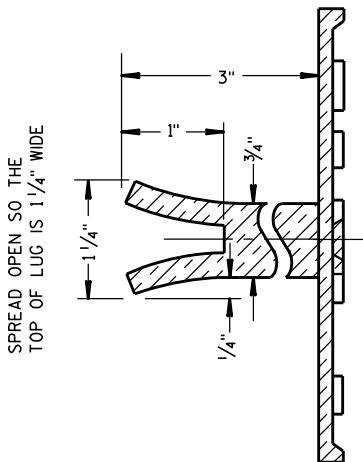
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

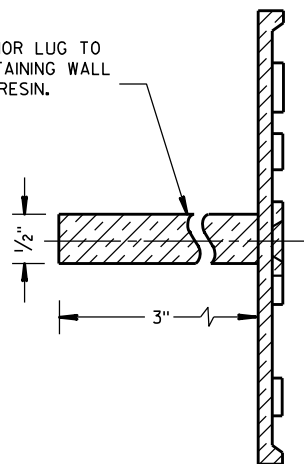


SECTION A-A



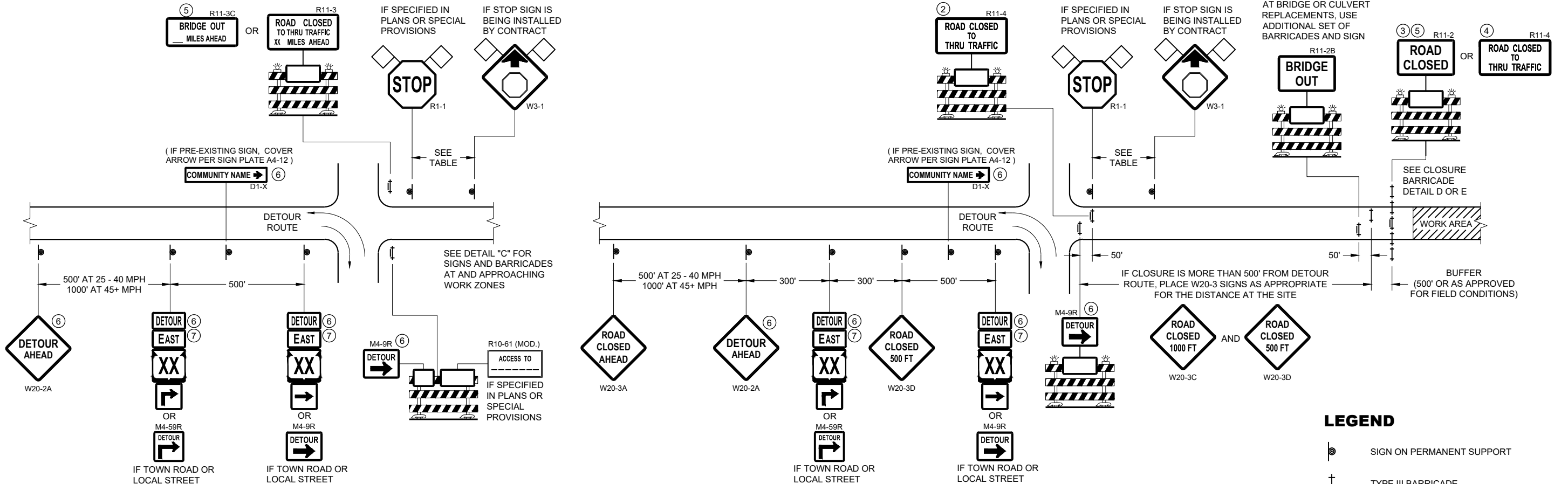
ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED DATE 3/26/10 FHWA	/S/ Scot Beck CHIEF STRUCTURAL DEVELOPER 13	JEER

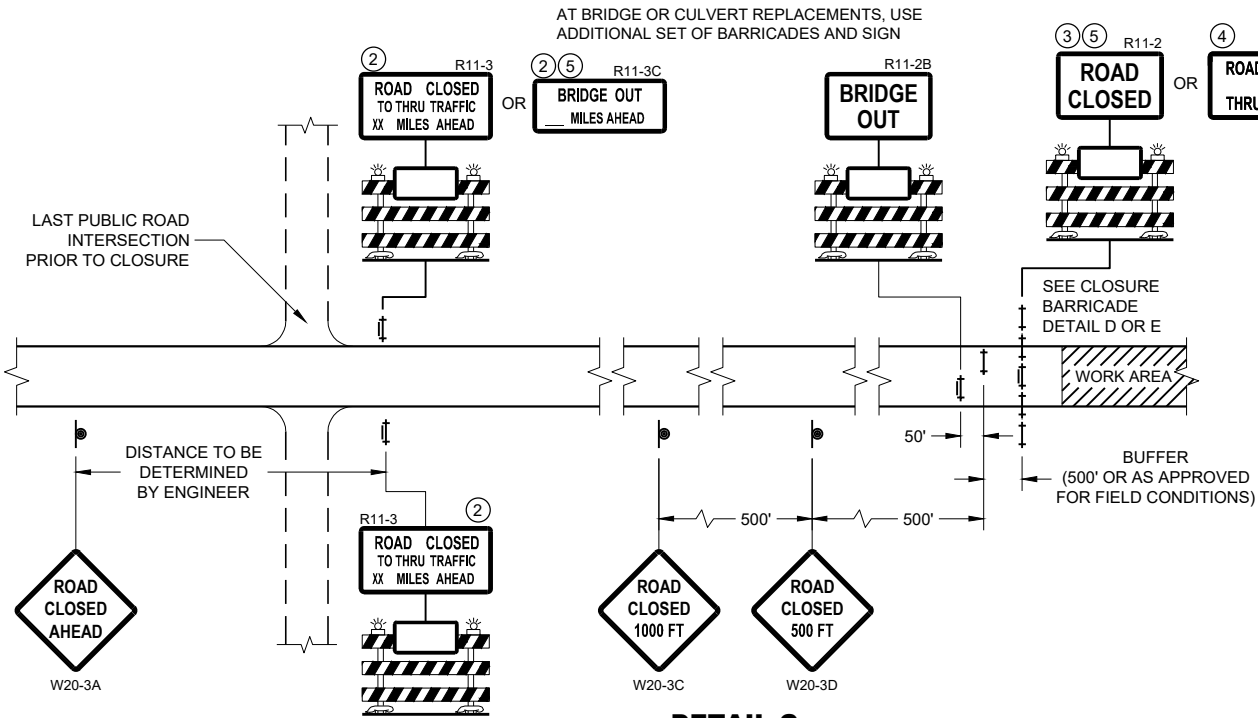


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

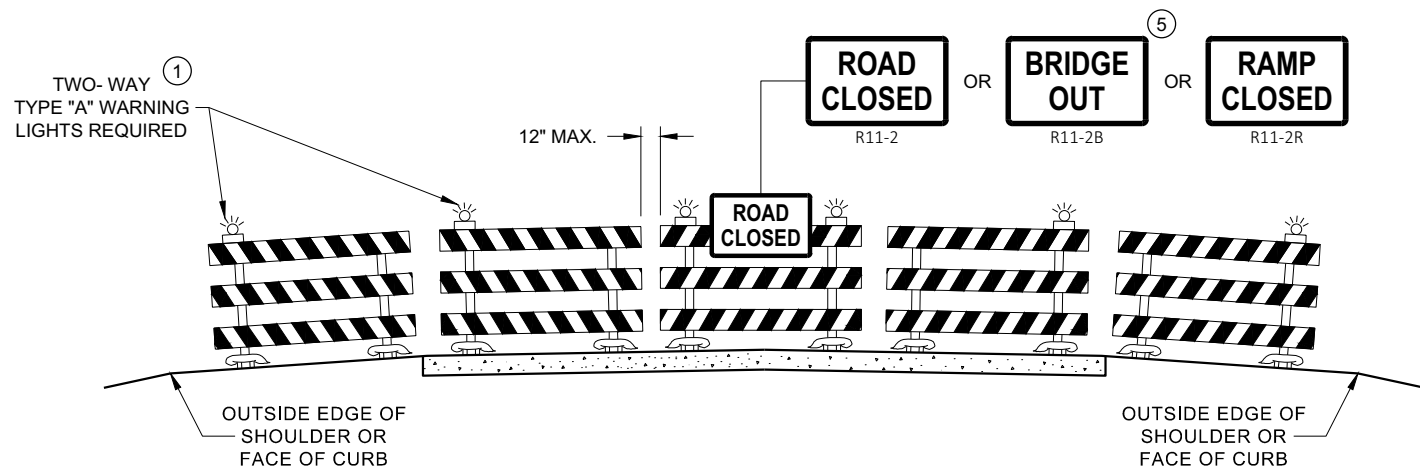
LEGEND

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

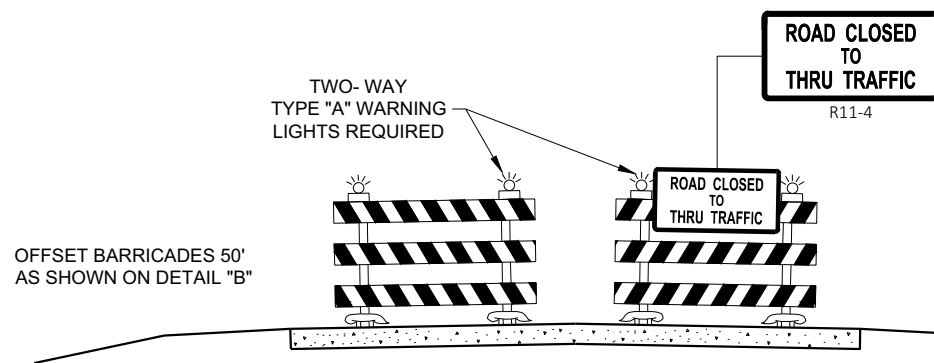
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 14
FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

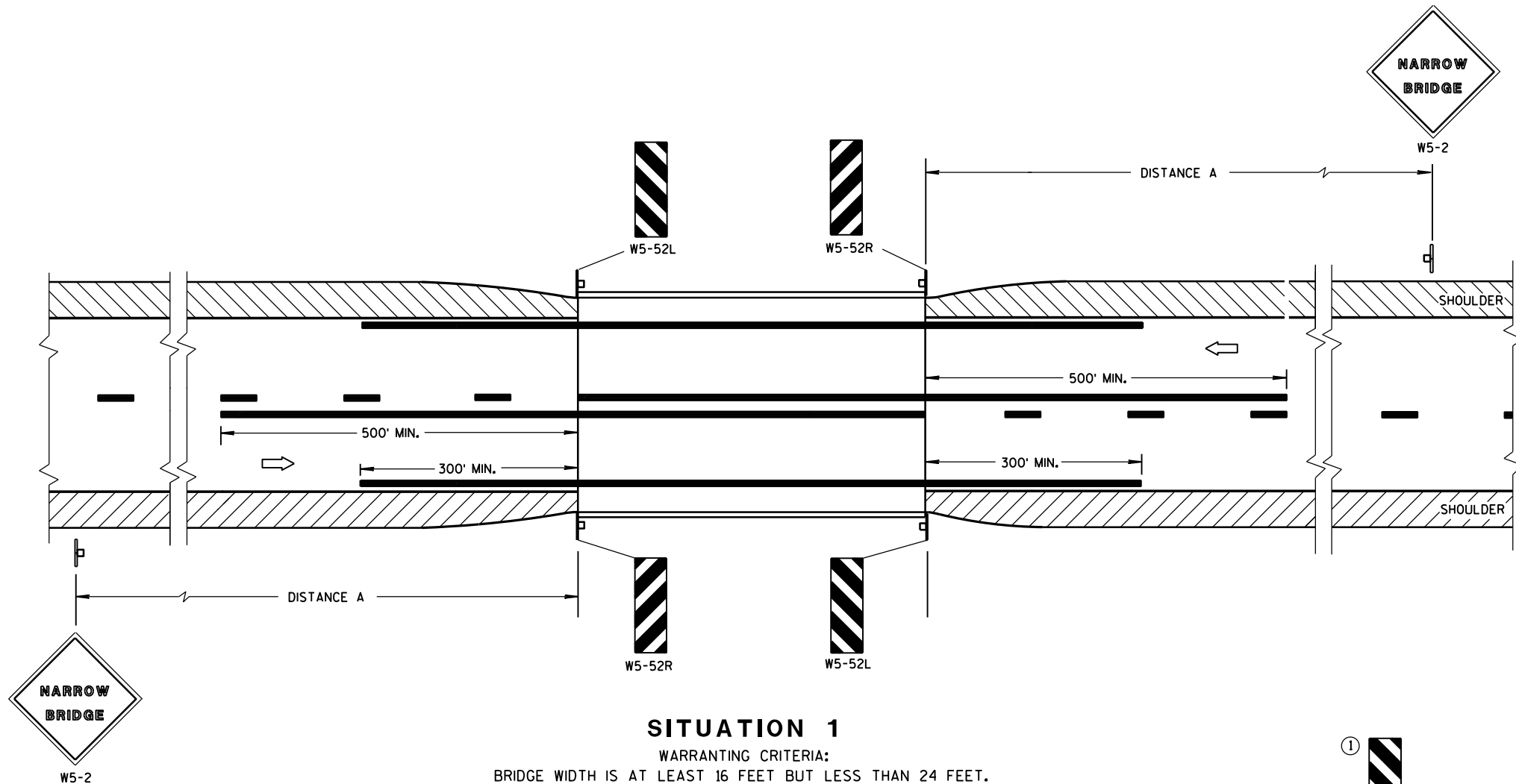
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE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

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 15
FHWA



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

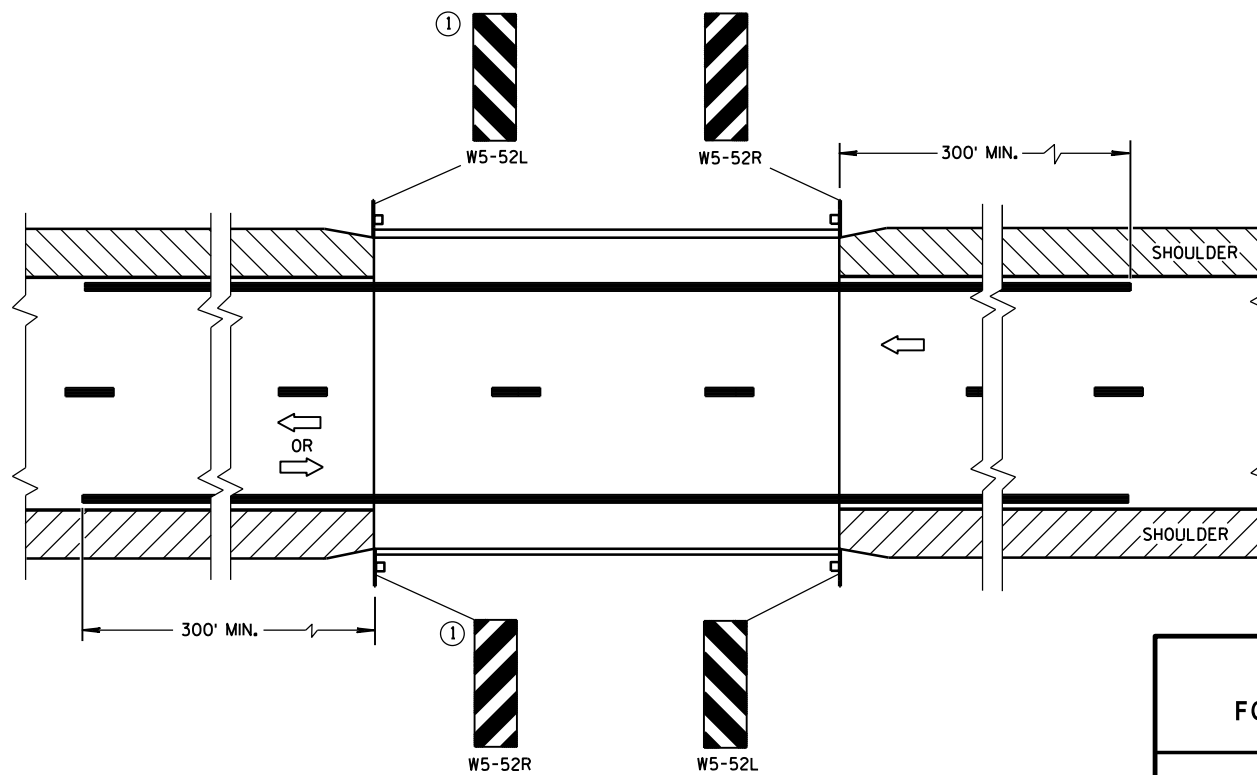
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

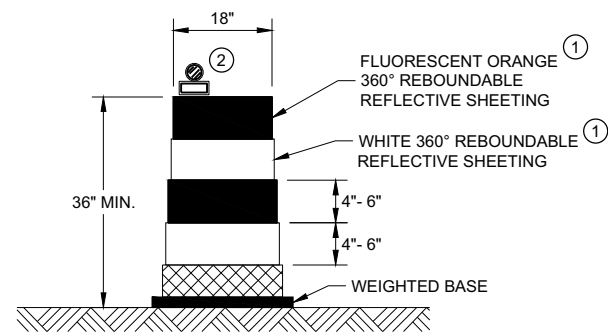


SIGNING & MARKING
FOR TWO LANE BRIDGES

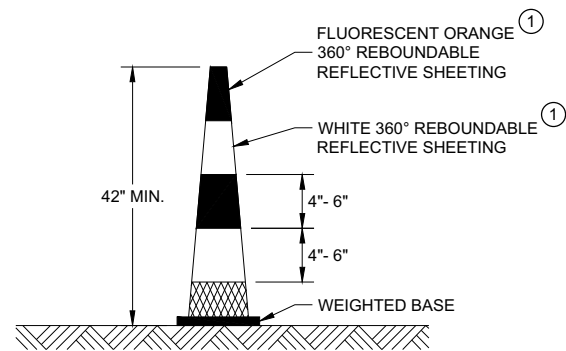
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 16 JEER
FHWA

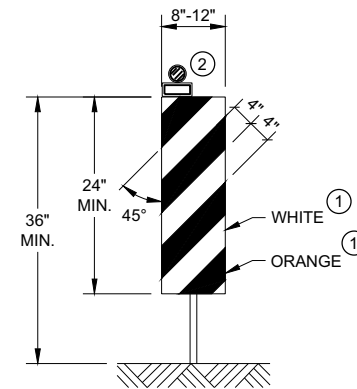


DRUM



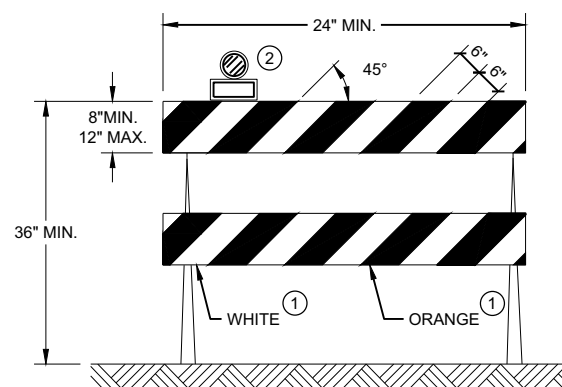
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



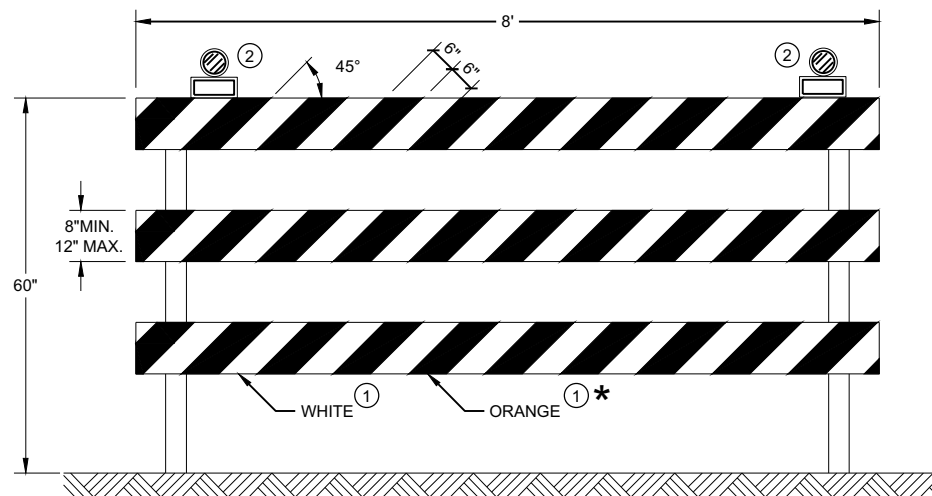
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

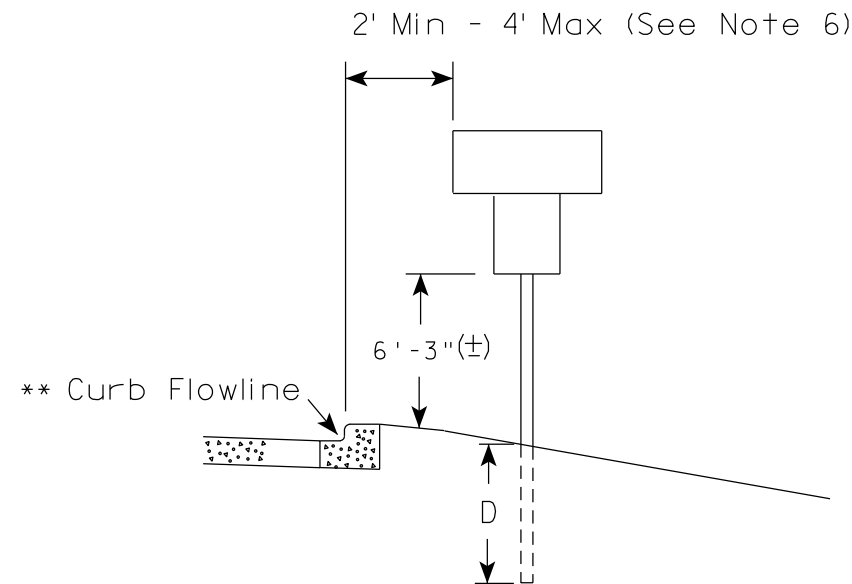
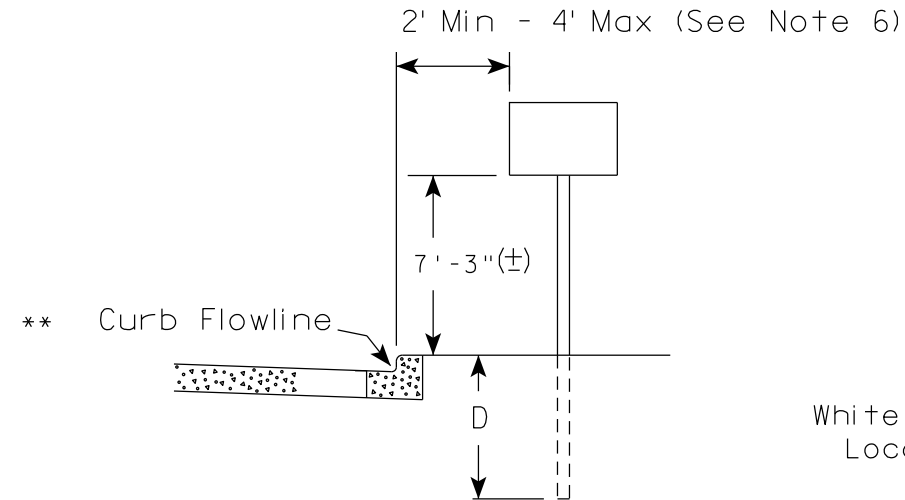
* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

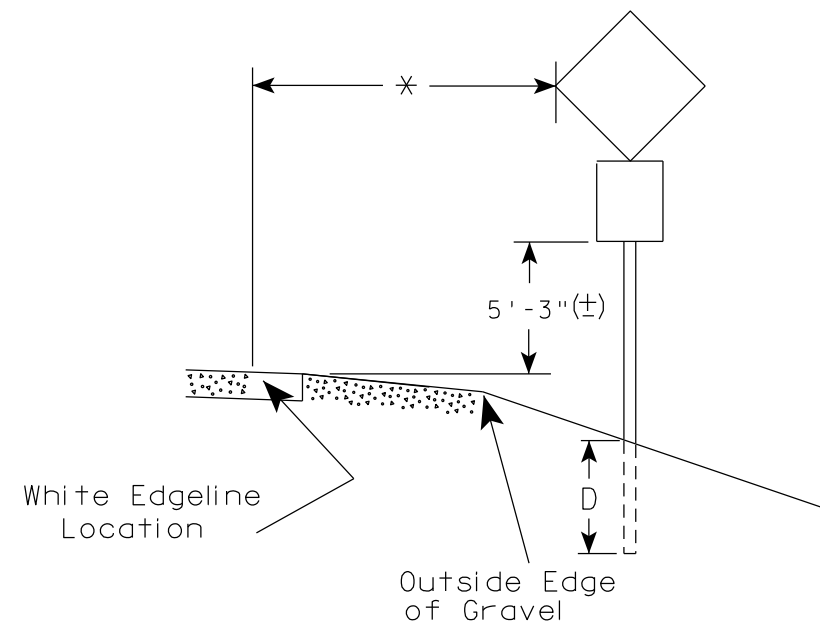
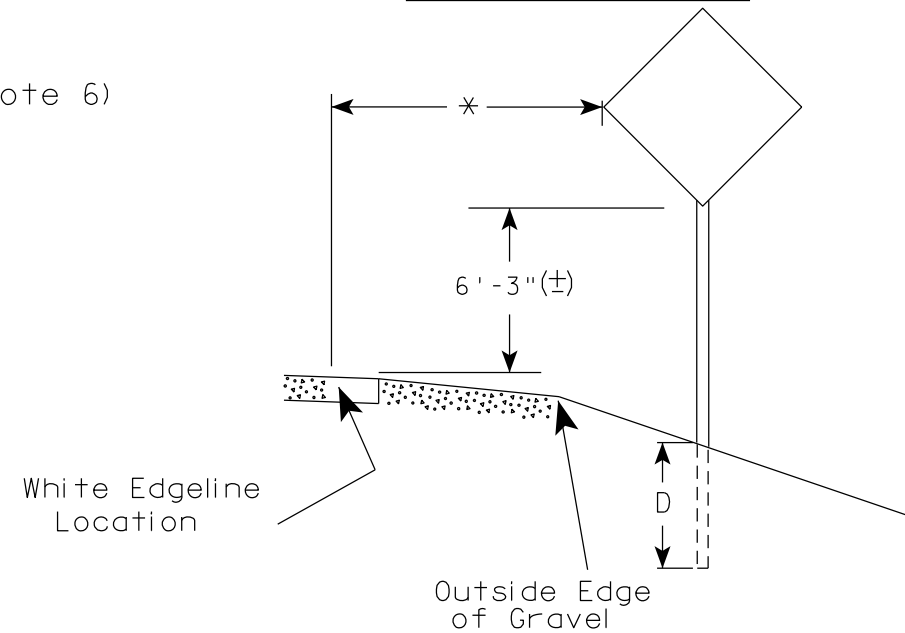
CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 17
FHWA	

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

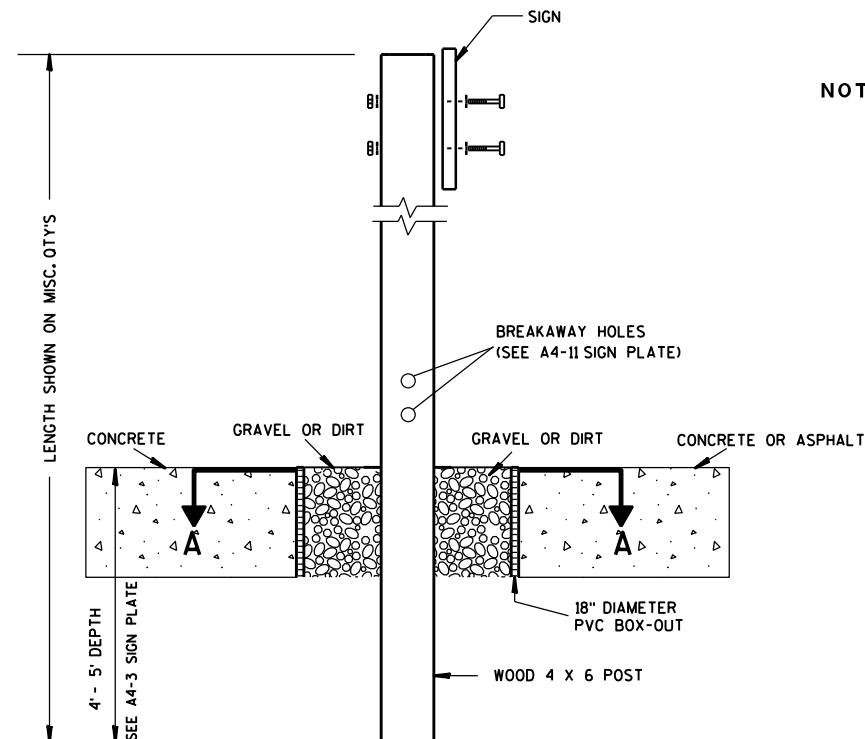
- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (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" (±).
- For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
- Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- The (±) tolerance for mounting height is 3 inches.
- 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

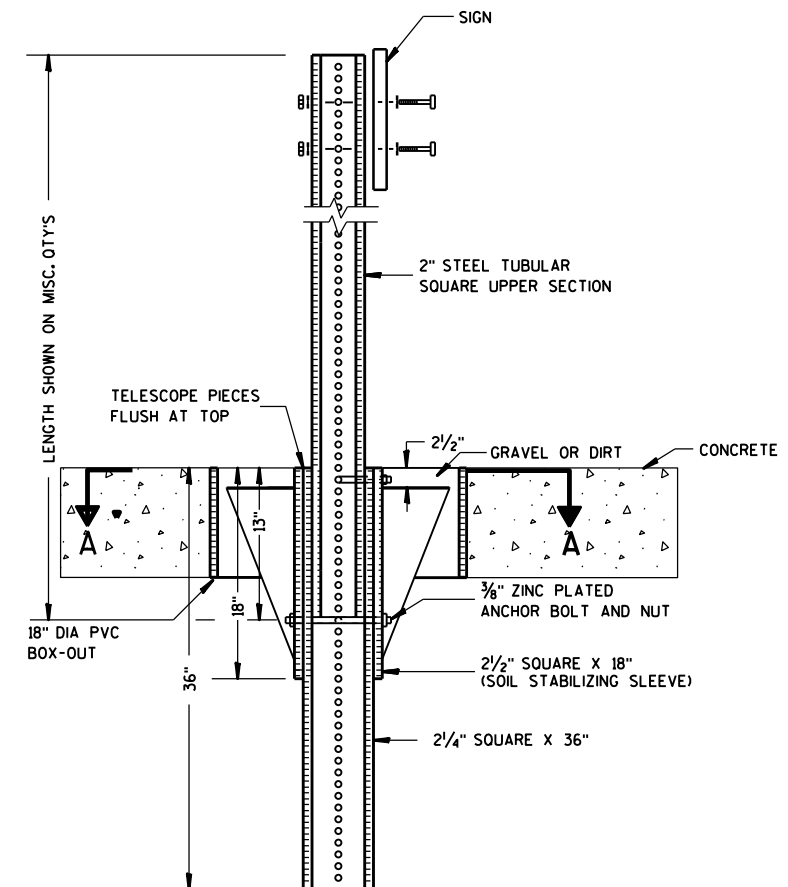
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

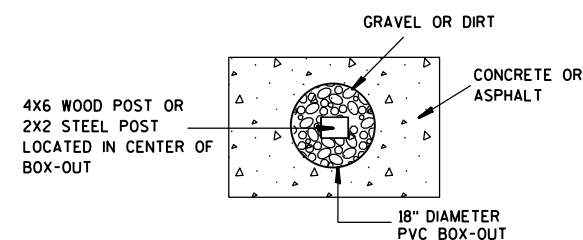
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 19 A4-3B.1

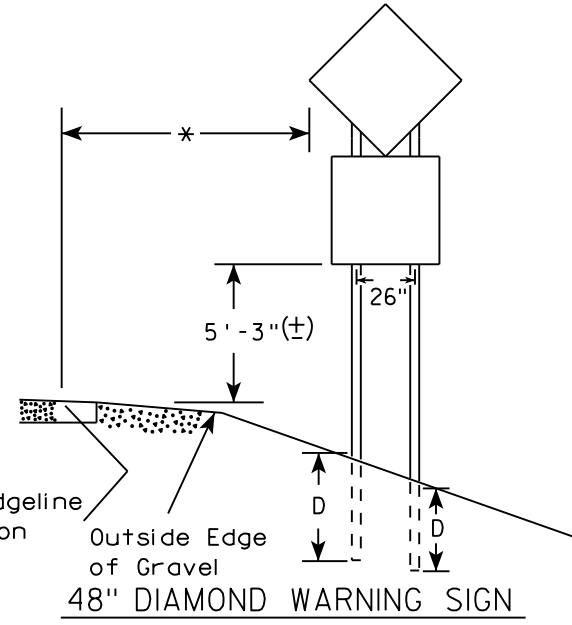
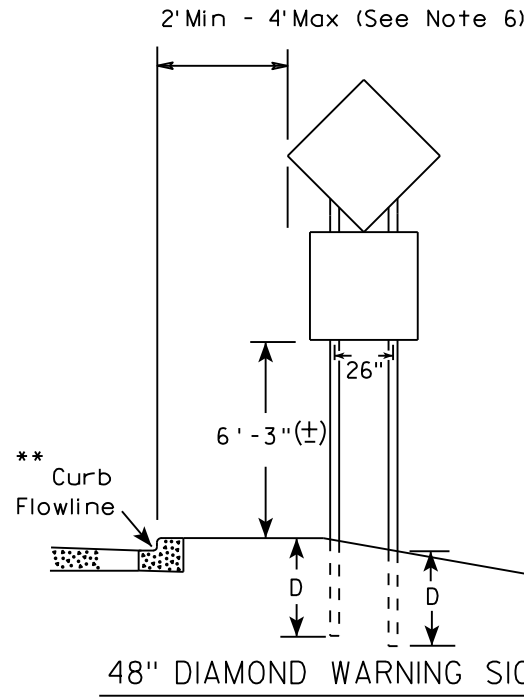
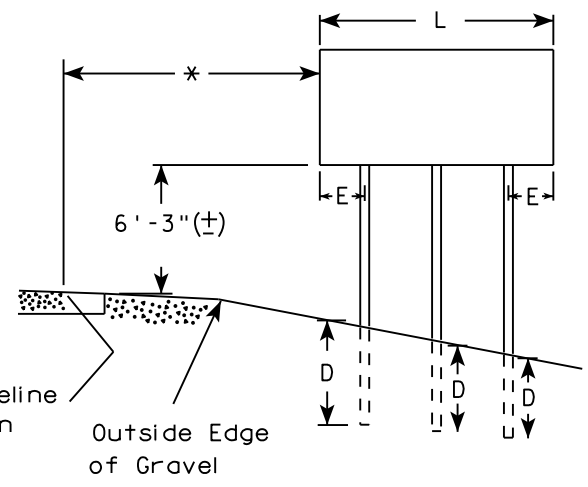
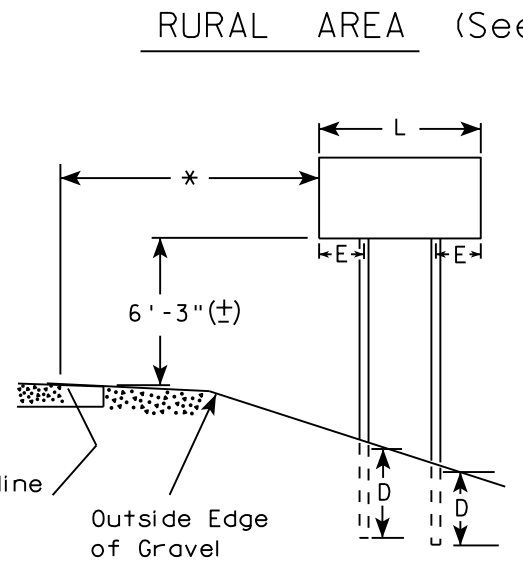
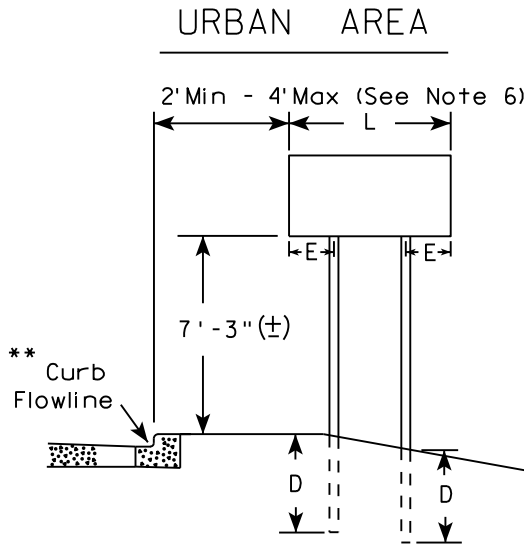
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



- GENERAL NOTES
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. J-Assemblies are considered to be one sign for mounting height.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

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

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

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

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

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

POST EMBEDMENT DEPTH

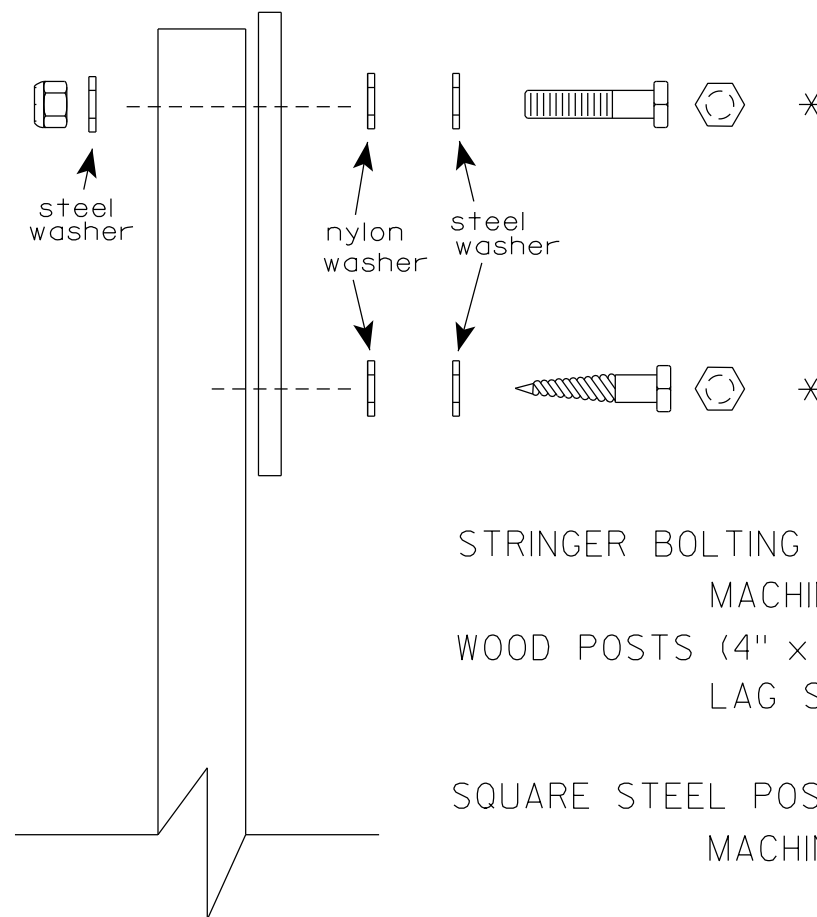
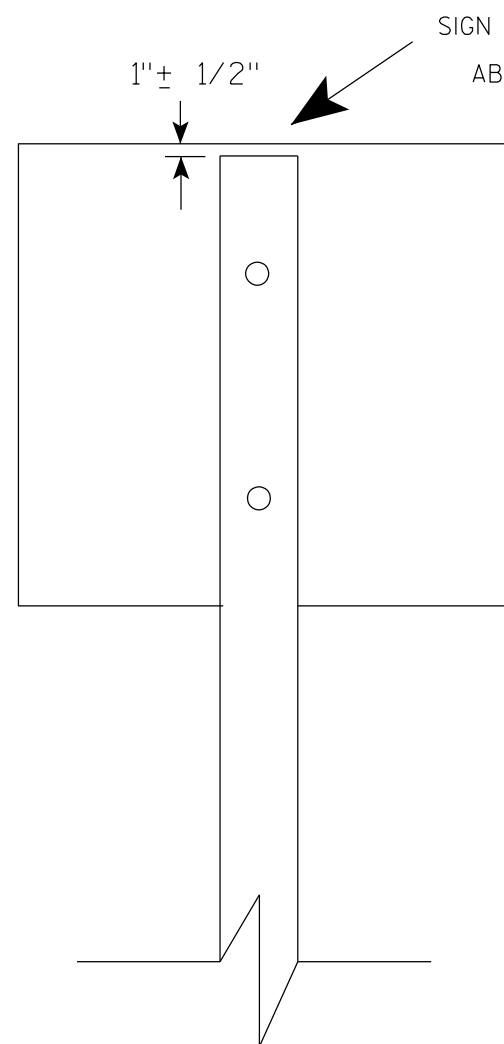
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

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

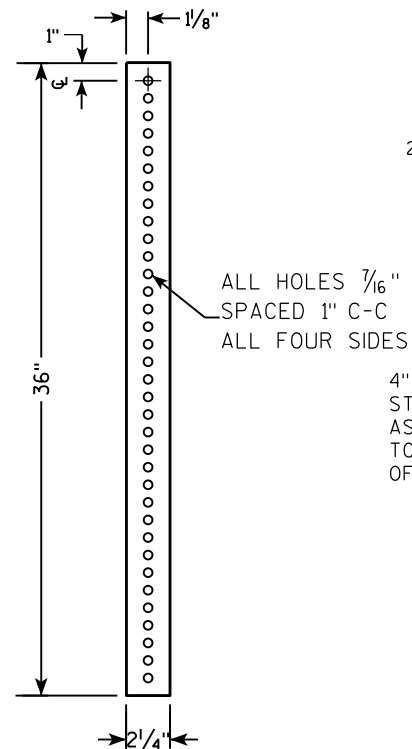
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

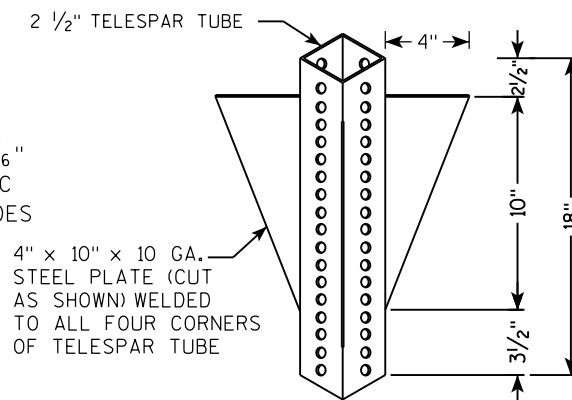
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



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



LENGTH SHOWN ON MISC. QTY'S

18" DIA SCHEDULE 40 PVC BOX-OUT

TELESCOPE PIECES FLUSH AT TOP

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

13"

18"

36"

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

SIGN

LENGTH SHOWN ON MISC. QTY'S

TELESCOPE PIECES FLUSH AT TOP

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

1"

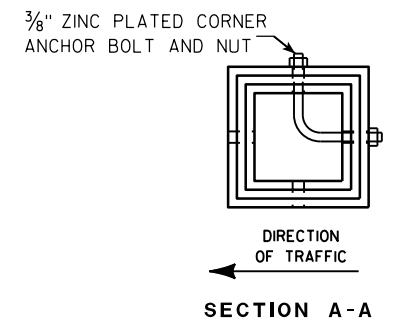
$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

SIGN



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

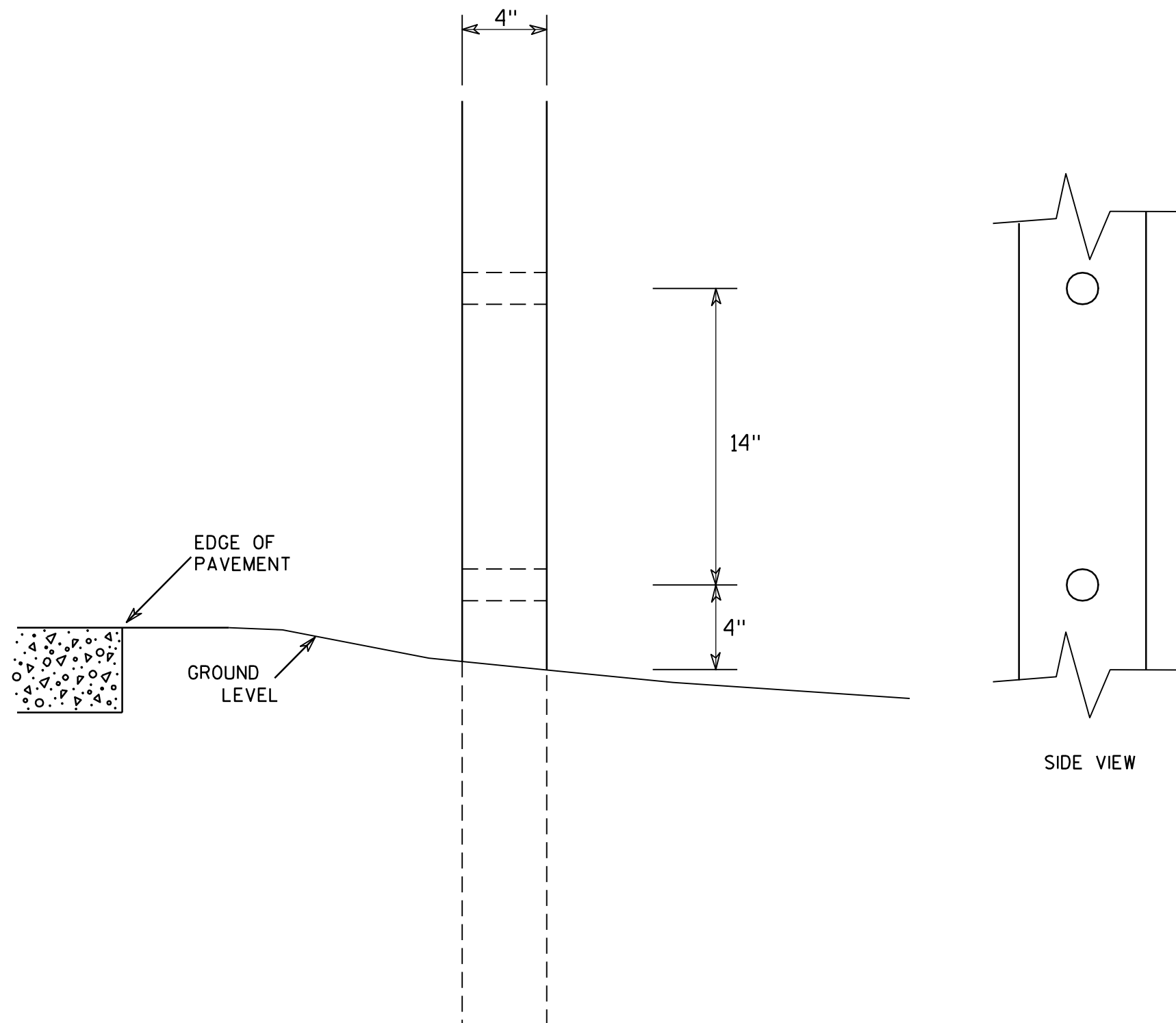
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
For State Traffic Engineer

DATE 2/05/15 PLAT 22 14-9.9

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

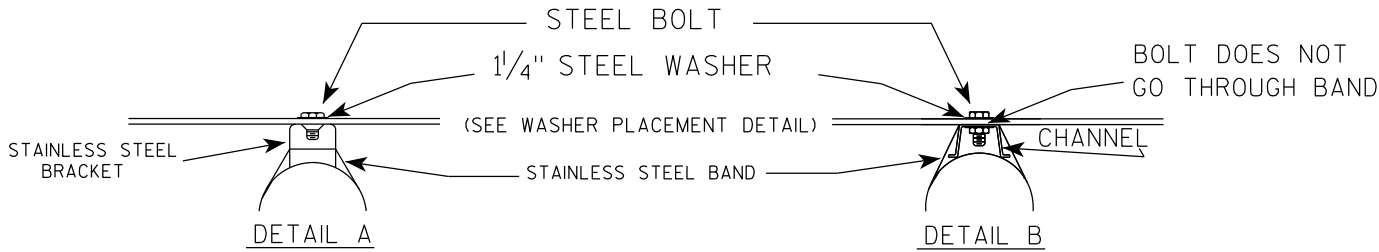
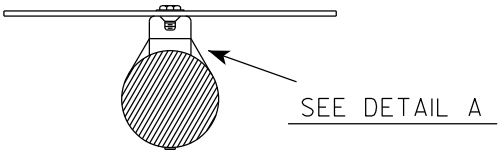
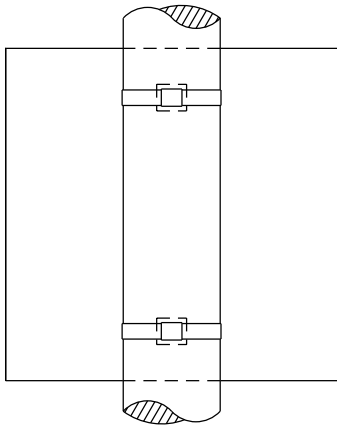
COUNTY:

SHEET NO: 23

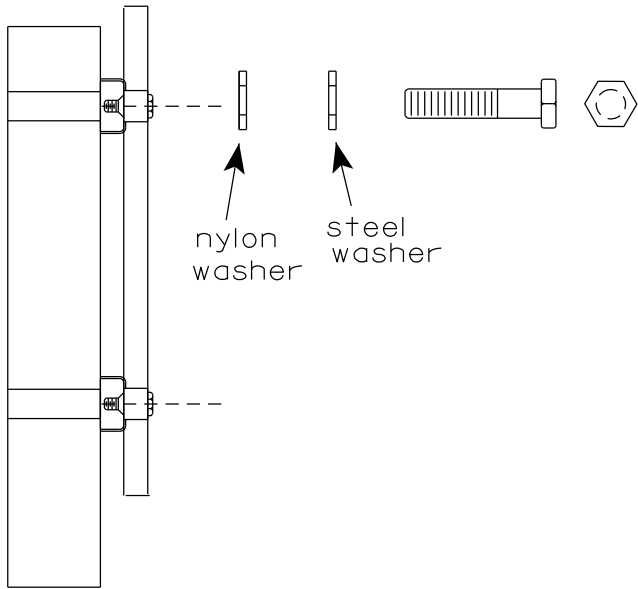
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

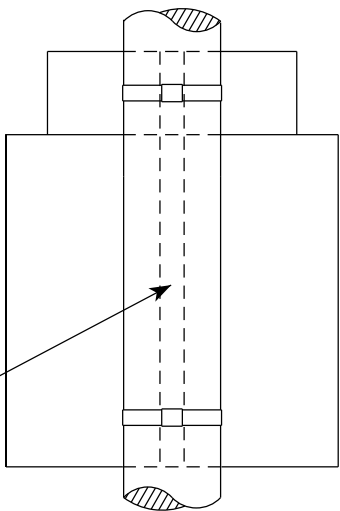


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

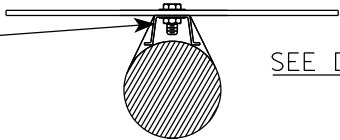
GENERAL NOTES

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

"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

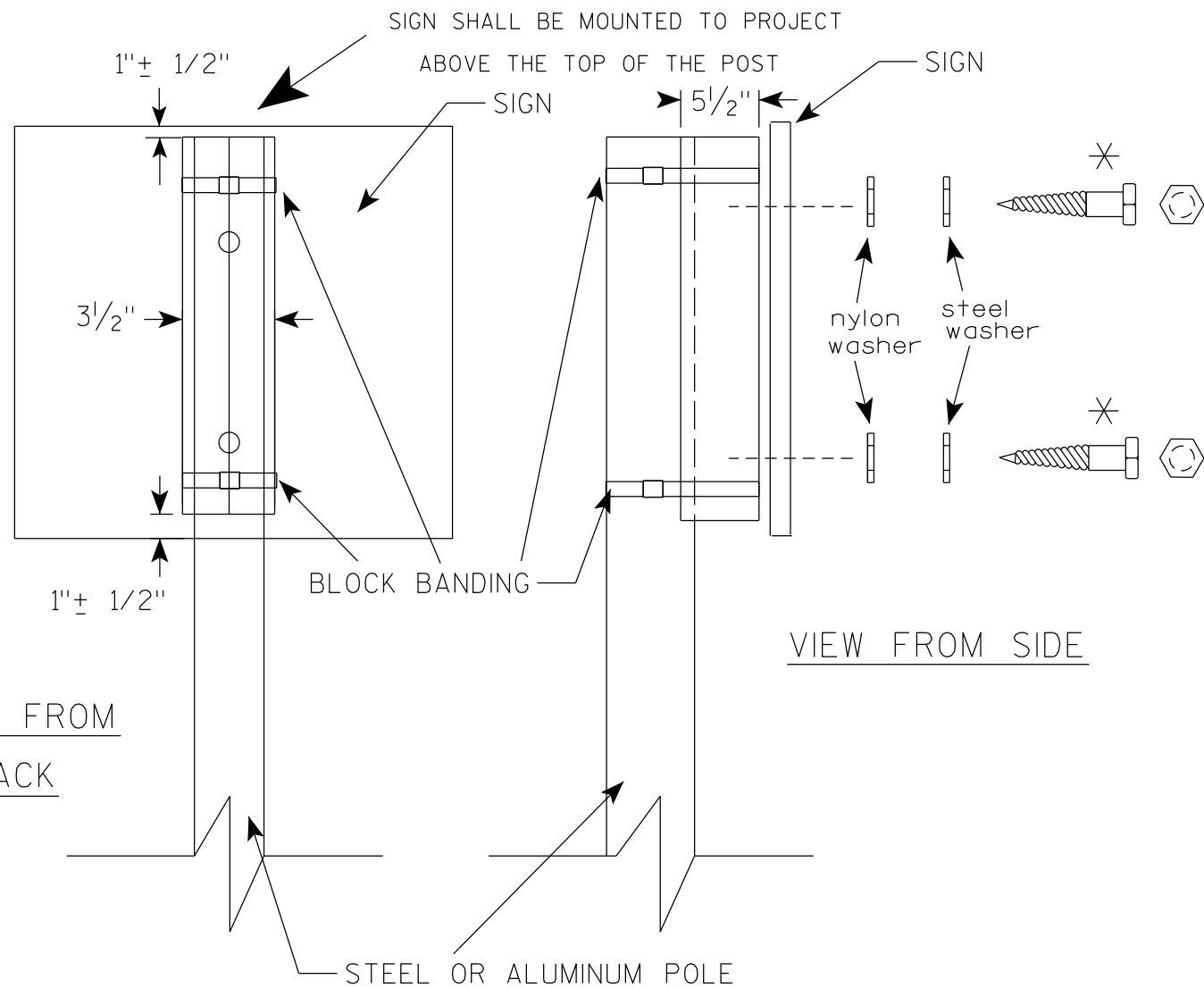


STANDARD SIGN
SIGN BANDING DETAILS

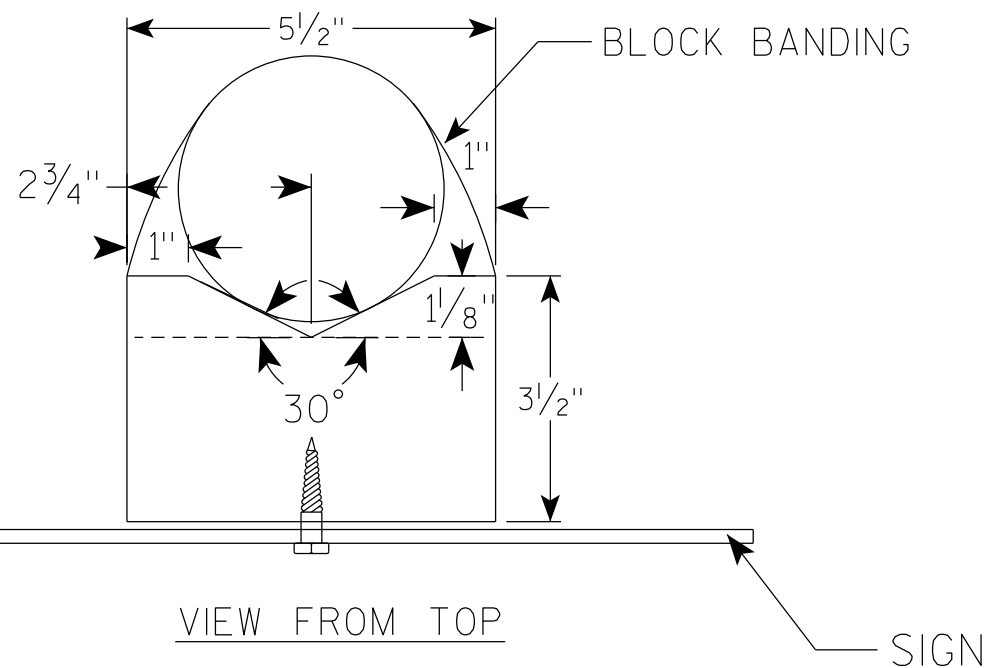
WISCONSIN DEPT OF TRANSPORTATION

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

VIEW FROM
BACK



VIEW FROM SIDE



GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $1\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $1\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

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

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
for State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:

SHEET NO: 25

E

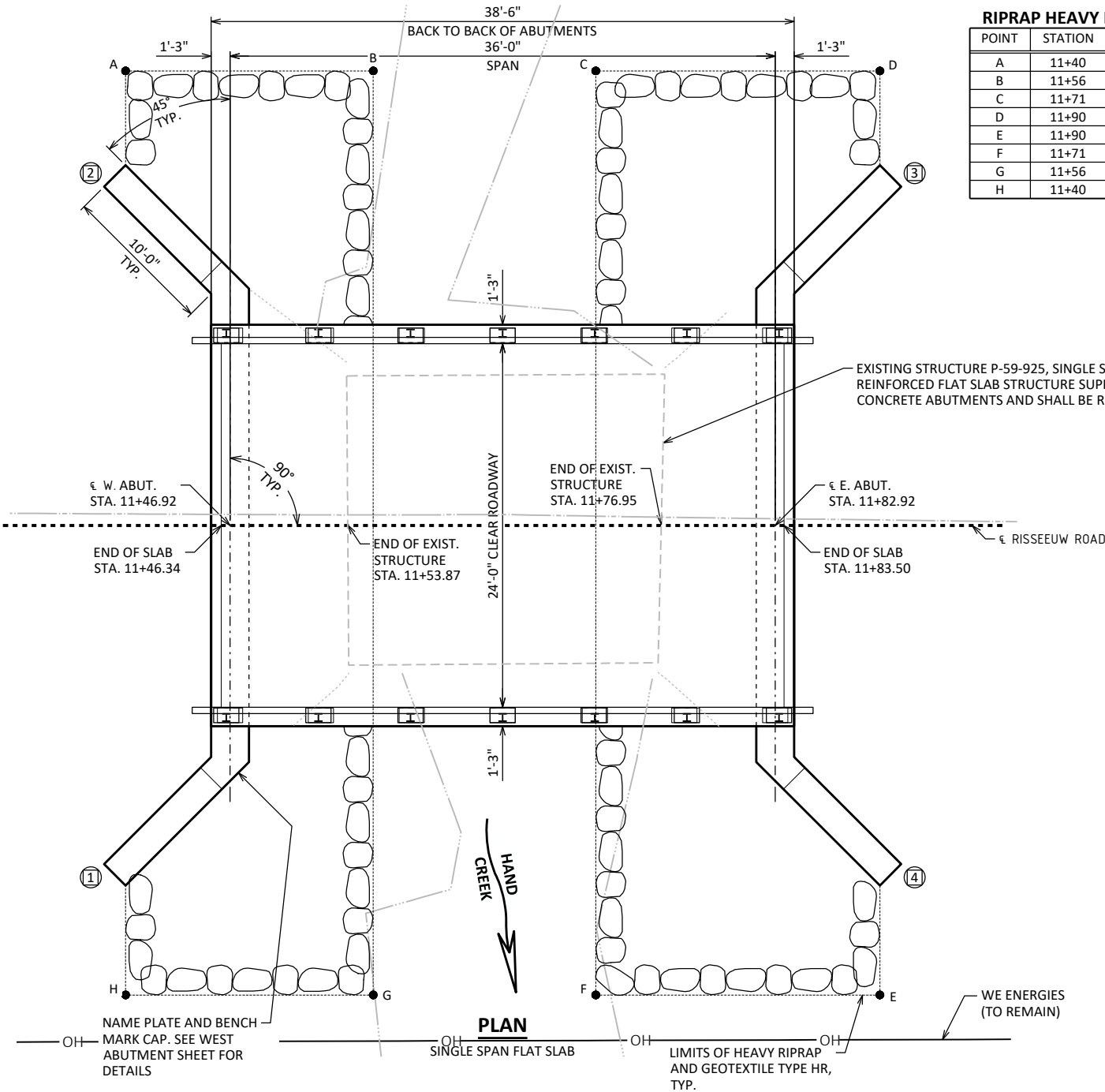
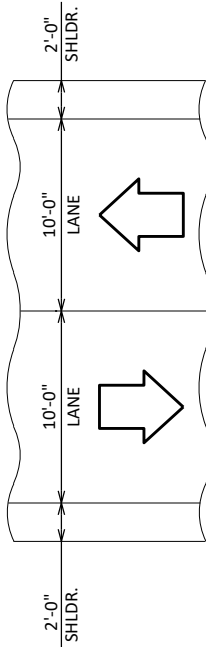


1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
 - Background - Yellow
 - Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base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

STANDARD SIGN	
W5-52L & W5-52R	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<u>Matthew R Rauch</u> for State Traffic Engineer
DATE 5/29/12	PLATE NO. <u>W5-52.9</u>

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 26	E
-------------	------	---------	--	--------------	----------

INDICATES WING NUMBER



RIPRAP HEAVY LAYOUT

POINT	STATION	OFFSET
A	11+40	30' LT.
B	11+56	30' LT.
C	11+71	30' LT.
D	11+90	30' LT.
E	11+90	31' RT.
F	11+71	31' RT.
G	11+56	31' RT.
H	11+40	31' RT.

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.12
OPERATING RATING FACTOR: RF = 1.45
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

MATERIAL PROPERTIES:

CONCRETE MASONRY: _____ f'c = 4,000 P.S.I.
SUPERSTRUCTURE _____ f'c = 3,500 P.S.I.
ALL OTHER _____

BAR STEEL REINFORCEMENT: _____ fy = 60,000 P.S.I.
GRADE 60 _____

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON CIP 10% X 0.25 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 130 TONS ++ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 50' LONG.

++ 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 VOLUME

RISSEEUW ROAD
ADT = 55 (2022)
ADT = 85 (2042)
R.D.S. = 55 M.P.H.

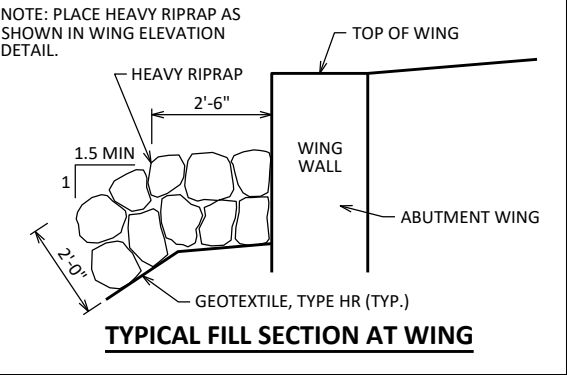
HYDRAULIC DATA

100 YEAR FREQUENCY

Q₁₀₀ = 550 C.F.S.
VEL₁₀₀ = 4.5 F.P.S.
HW₁₀₀ = EL. 753.84
WATERWAY AREA = 123.5 SQ. FT.
DRAINAGE AREA = 3.1 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

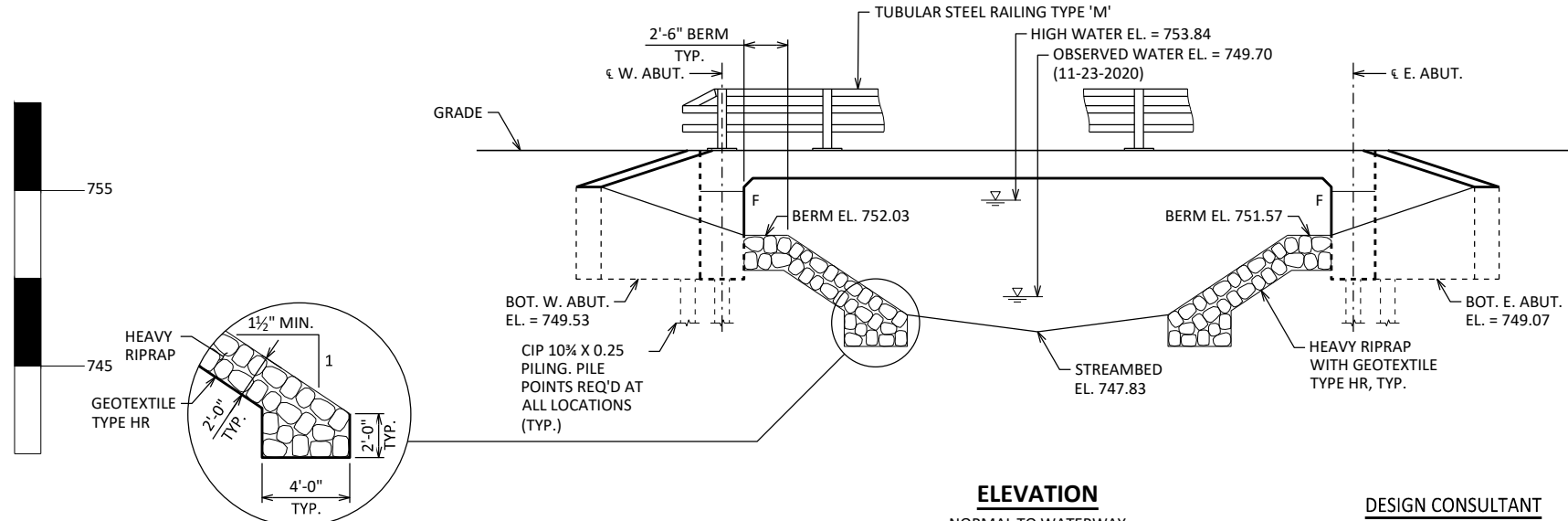
Q₂ = 130 C.F.S.
VEL₂ = 1.9 F.P.S.
HW₂ = EL. 751.95



LIST OF DRAWINGS

- GENERAL PLAN
- CROSS SECTION & QUANTITIES
- SUBSURFACE EXPLORATION
- WEST ABUTMENT
- WEST ABUTMENT DETAILS
- EAST ABUTMENT
- EAST ABUTMENT DETAILS
- SUPERSTRUCTURE
- SUPERSTRUCTURE DETAILS
- TUBULAR STEEL RAILING TYPE 'M'

8



ELEVATION

NORMAL TO WATERWAY

DESIGN CONSULTANT

ROBERT HANOLD, PE
(608) 588-7484

BRIDGE OFFICE CONTACT

AARON BONK, PE
(608) 261-0261

THESE PLANS ARE BASED UPON STANDARD BRIDGE PLANS DEVELOPED AND MAINTAINED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION THROUGH THE USE OF THE WISDOT STANDARD BRIDGE DESIGN TOOL. THE UNDERSIGNED DESIGNER CERTIFIES THE ACCURACY OF THE BRIDGE TYPE, SIZE AND LOCATION, HYDRAULICS AND FOUNDATION SUPPORT, AND INFORMATION IN THE PLANS THAT IS NOT PART OF THE STANDARD PLANS SUPPLIED BY THE DEPARTMENT. THE DESIGNER FURTHER CERTIFIES THAT USE OF THE STANDARD BRIDGE DESIGN TOOL FOR DEVELOPMENT OF THIS PLAN IS CONSISTENT WITH THE GUIDANCE PROVIDED IN THE WISDOT BRIDGE MANUAL.



NO.	DATE	REVISION	BY
JEWELL associates engineers, inc. Engineers - Architects - Surveyors			
560 SUNRISE DRIVE SPRING GREEN, WI 53588 OFFICE: (608) 588-7484 www.JewellAssoc.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	SDR 09/17/21		DATE
STRUCTURE B-59-326			
RISSEEUW ROAD OVER HAND CREEK			
COUNTY	SHEBOYGAN	TOWN	HOLLAND
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION			
DESIGNED BY	RBH	DESIGNED CK'D	PTB
DRAWN BY	RBH	PLANS CK'D	PTB
GENERAL PLAN			SHEET 1 OF 10 27

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-59-326 " SHALL BE THE EXISTING GROUNDLINE.

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

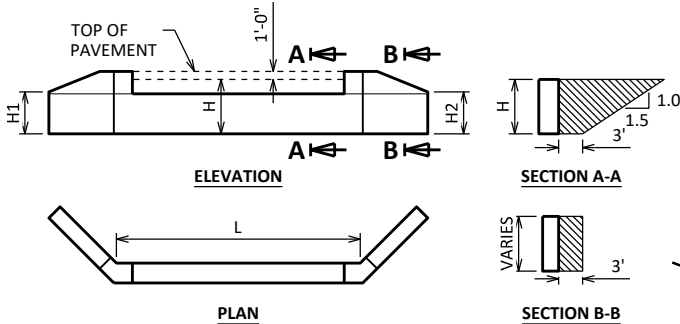
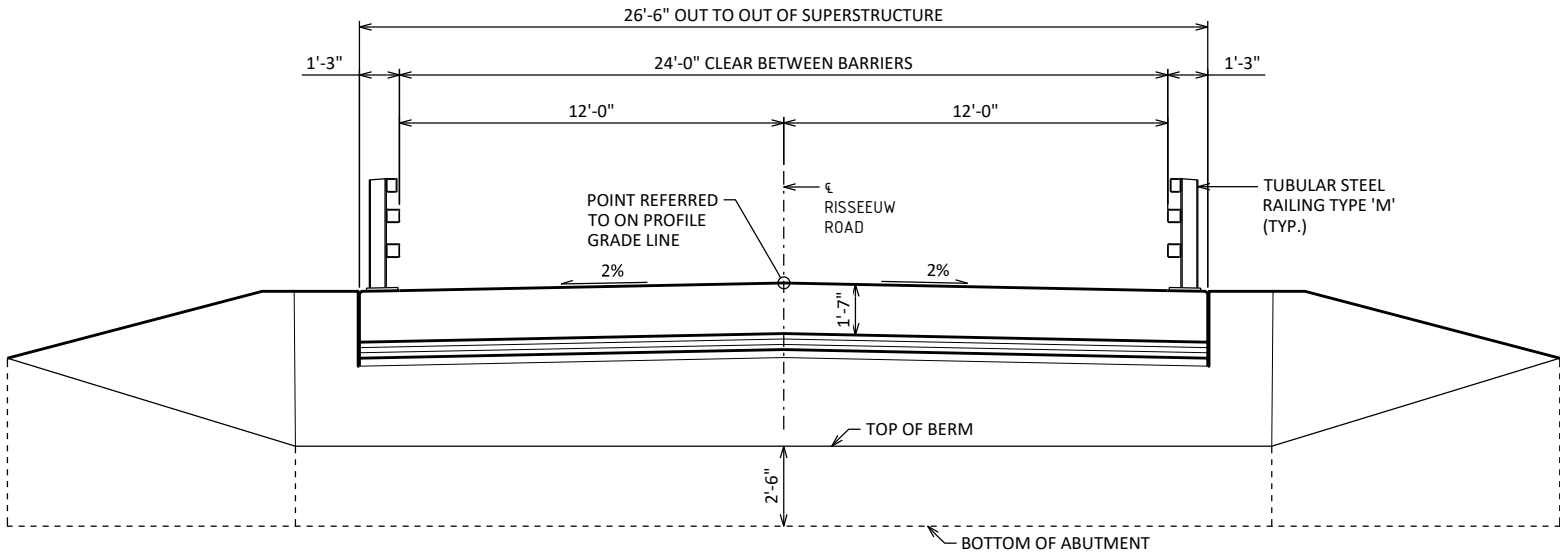
EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

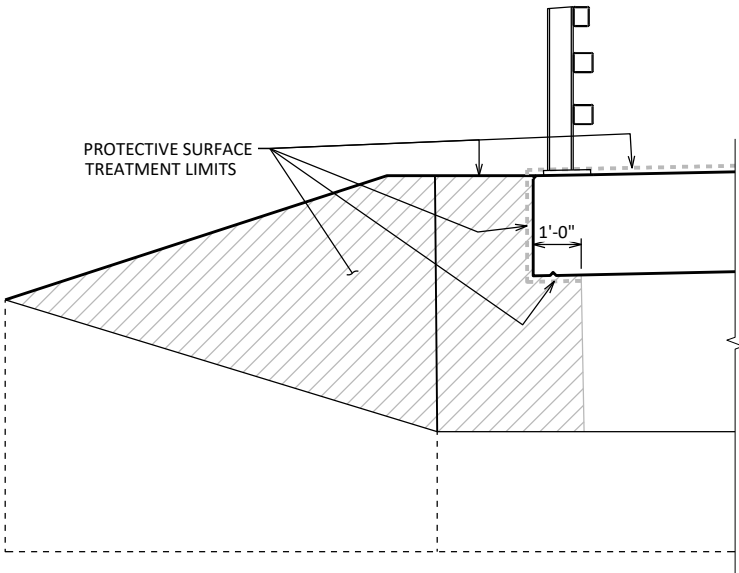
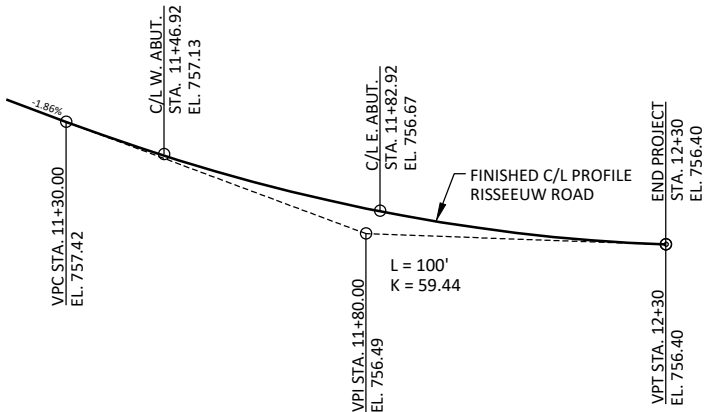
AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO ENTIRE EXPOSED TOP OF SLAB, INCLUDING THE SLAB EDGE AND 1'-0" UNDER THE SLAB, THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES, THE TOP AND EXTERIOR EXPOSED FACE OF WINGS AND FRONT FACE OF ABUTMENT TO 1'-0" PAST THE EDGE OF SLAB.



CROSS SECTION THRU ROADWAY

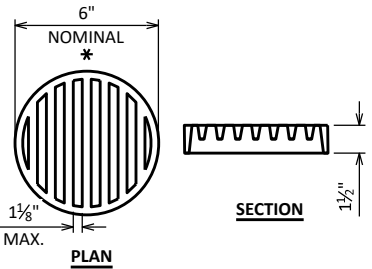
LOOKING UPSTATION
(PILING NOT SHOWN FOR CLARITY)



PROTECTIVE SURFACE
TREATMENT DETAILS

BENCH MARKS

NO.	STA.	DESCRIPTION	ELEV.
1	10+05	3/4" IRON REBAR SET, 17.5' RT.	759.33
2	11+21	3/4" IRON REBAR SET, 16.3' LT.	756.70
3	13+48	3/4" IRON REBAR SET, 16.0' RT.	756.23
5	12+05	COTTON GIN SPINDLE IN PP, 33.1', RT.	752.77



RODENT SHIELD DETAIL

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

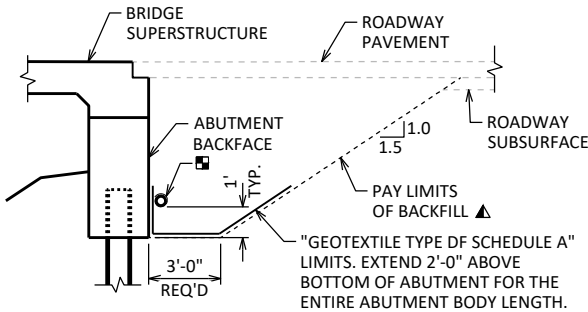
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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.

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	SUPER	W. ABUT.	E. ABUT.	TOTALS
203.0260	REMOVING OLD STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-59-925	EACH	--	--	--	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-59-326	LS	--	--	--	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	--	141	141	282
502.0100	CONCRETE MASONRY BRIDGES	CY	63	27	27	117
502.3200	PROTECTIVE SURFACE TREATMENT	SY	138	16	16	170
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	--	1,970	1,970	3,940
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	13,490	1,590	1,590	16,670
513.4061	RAILING TUBULAR TYPE M	LF	82	--	--	82
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	--	5	5	10
550.0500	PILE POINTS	EACH	--	7	7	14
550.2104	PILING CIP CONCRETE 10 3/4 X 0.25-INCH	LF	--	350	350	700
606.0300	RIPRAP HEAVY	CY	--	70	80	150
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	--	71	71	142
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	--	29	29	58
645.0120	GEOTEXTILE TYPE HR	SY	--	130	150	280
SPV.0090.01	FLASHING STAINLESS STEEL	LF	67	--	--	67
NON-BID ITEMS						
	FILLER	SIZE				1/2" & 3/4"
	NAME PLATE					

THIS SHEET WAS CREATED BY THE WISDOT BUREAU OF STRUCTURES STANDARD BRIDGE DESIGN TOOL VERSION 0.9



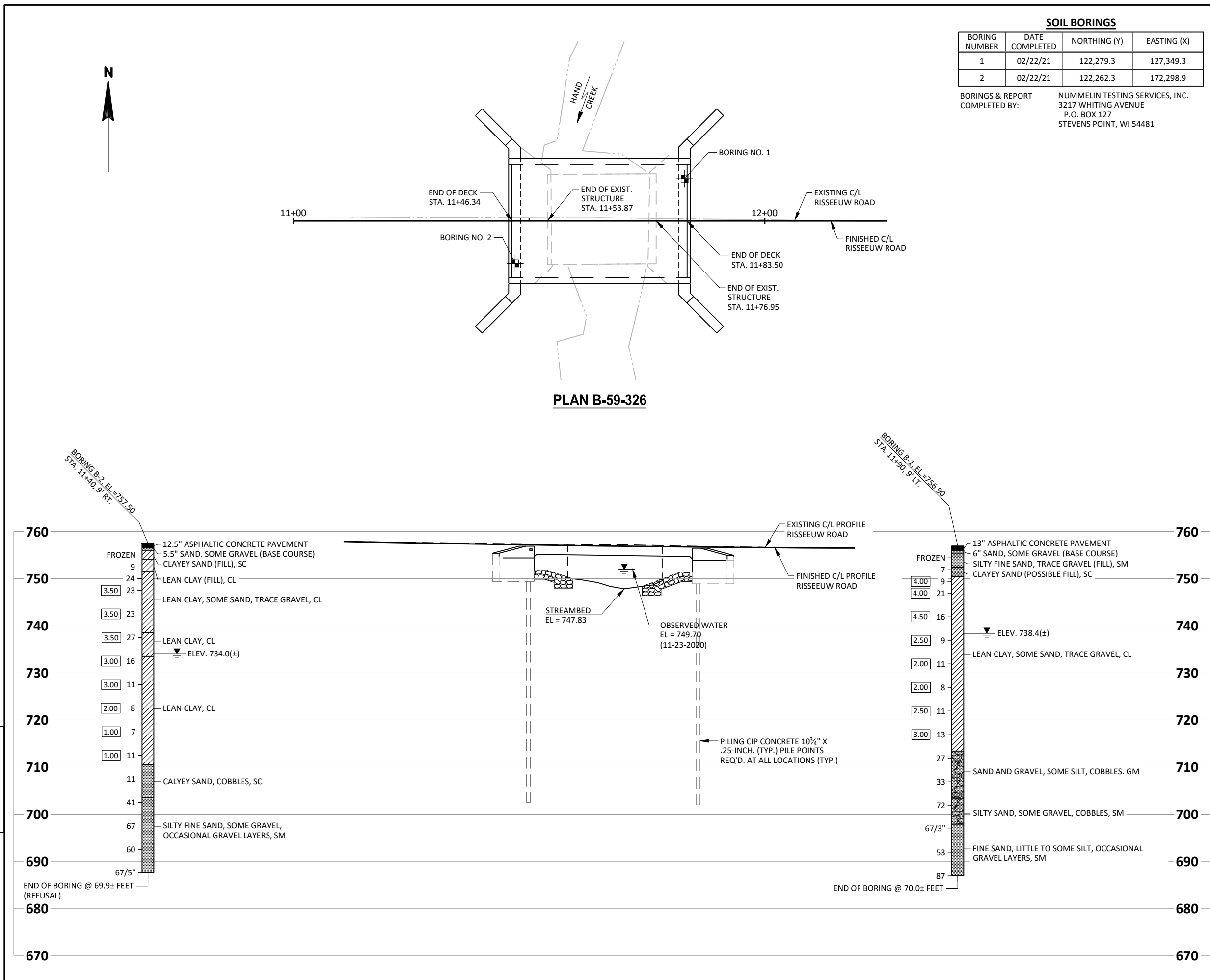
TYPICAL SECTION THRU ABUTMENT

▲ BACKFILL PAY LIMITS. BACKFILL BEYOND 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.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-59-326			
DRAWN BY		RBH	PLANS CK'D PTB
CROSS SECTION & QUANTITIES		SHEET 2 28	

SCALE =



<u>SOIL BORINGS</u>			
BORING NUMBER	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	02/22/21	122,279.3	127,349.3
2	02/22/21	122,262.3	172,298.9

BORINGS & REPORT
COMPLETED BY:

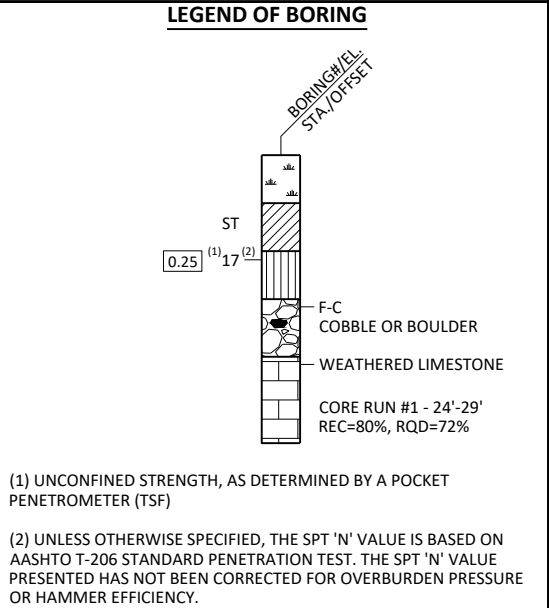
NUMMELIN TESTING SERVICES, INC.
3217 WHITING AVENUE
P.O. BOX 127
STEVENS POINT, WI 54481

STATE PROJECT NUMBER

4198-07-71

MATERIAL SYMBOLS

 Asphalt	 Topsoil	 Peat
 Concrete	 Fill	 Gravel
 Sand	 Clay	 Silt
 Boulders or Cobbles	 Limestone	 Bedrock (unknown)
 Shale	 Sandstone	 Igneous/ meta



GROUND WATER ELEVATIONS

	AT TIME OF DRILLING
	END OF DRILLING
	AFTER DRILLING

ABBREVIATIONS

F-FINE	M-MEDIUM	C-COURSE	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-59-326			
DRAWN BY		PMF	PLANS CK'D. RBH
SUBSURFACE EXPLORATION		SHEET 3 OF 10 29	



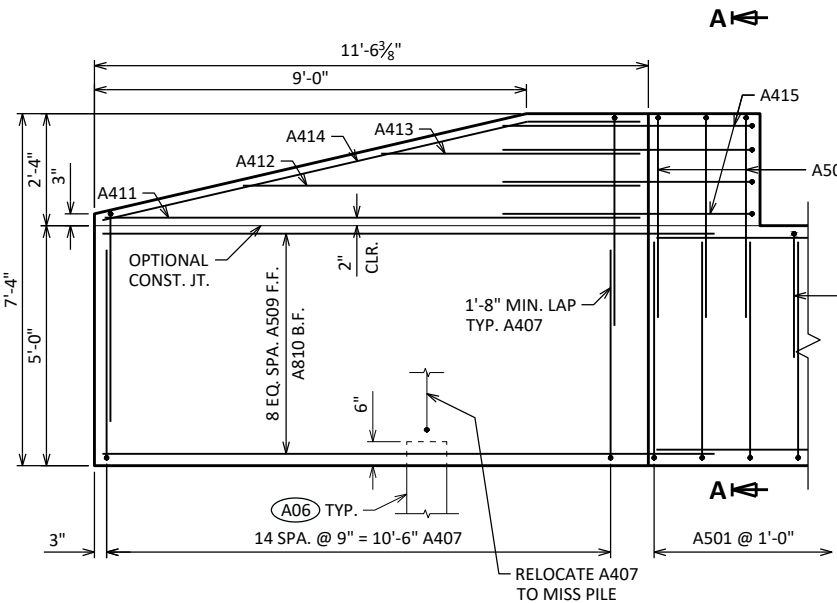
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|--|------|-----------------|----------------|
| NO. | DATE | REVISION | BY |
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION | | | |
| STRUCTURE | | B-59-326 | |
| DRAWN BY | | RBH | PLANS CK'D PTB |
| WEST
ABUTMENT | | SHEET 4 | |
| | | 30 | |

DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF
ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

BILL OF BARS

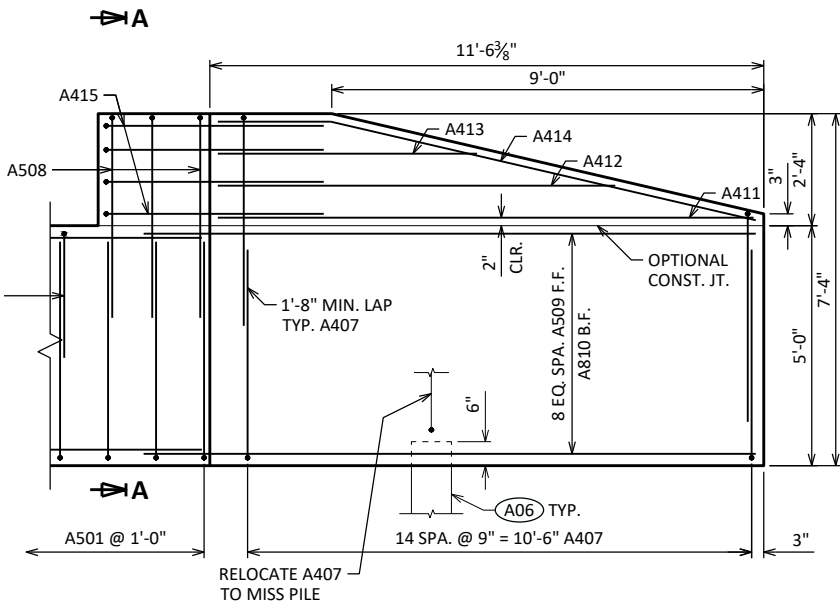
NOTE: THE FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
A501		64	6'-0"	X		ABUT BODY STIRRUPS
A502		26	7'-1"	X		ABUT BODY STIRRUPS - TOP U-BAR
A503		9	31'-3"			ABUT BODY HORIZ. - F.F.
A804		18	21'-6"	X		ABUT BODY HORIZ. - B.F.
A405		27	3'-0"	X		ABUT BODY TIE BARS
A506	X	25	2'-0"			ABUT BODY DOWEL BARS
A407	X	60	10'-2"	X		WING STIRRUPS
A508	X	6	10'-3"	X		WING CORNER STIRRUPS
A509	X	18	12'-9"	X		WING LOWER HORIZ. - F.F.
A810	X	18	14'-3"	X		WING LOWER HORIZ. - B.F.
A411	X	4	11'-1"			WING UPPER HORIZ.
A412	X	4	8'-2"			WING UPPER HORIZ.
A413	X	4	5'-4"			WING UPPER HORIZ.
A414	X	4	11'-7"	X		WING TOP HORIZ.
A415	X	4	8'-3"	X		WING 1 UPPER HORIZ. CORNER
A416	X	4	8'-3"	X		WING 2 UPPER HORIZ. CORNER



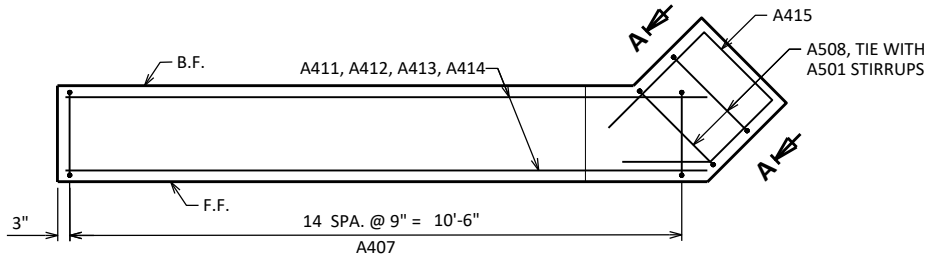
WING 1 ELEVATION

SHOWING F.F. WING



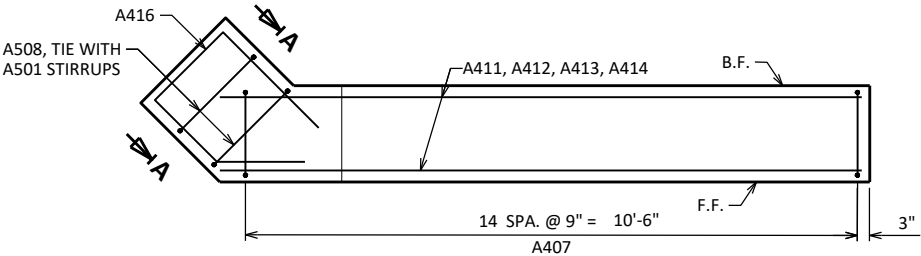
WING 2 ELEVATION

SHOWING F.F. WING



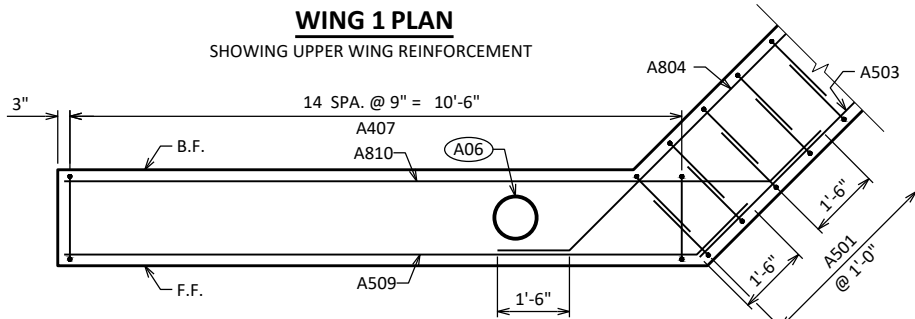
WING 1 PLAN

SHOWING UPPER WING REINFORCEMENT



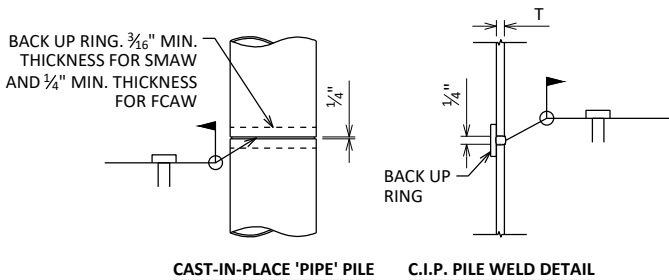
WING 2 PLAN

SHOWING UPPER WING REINFORCEMENT

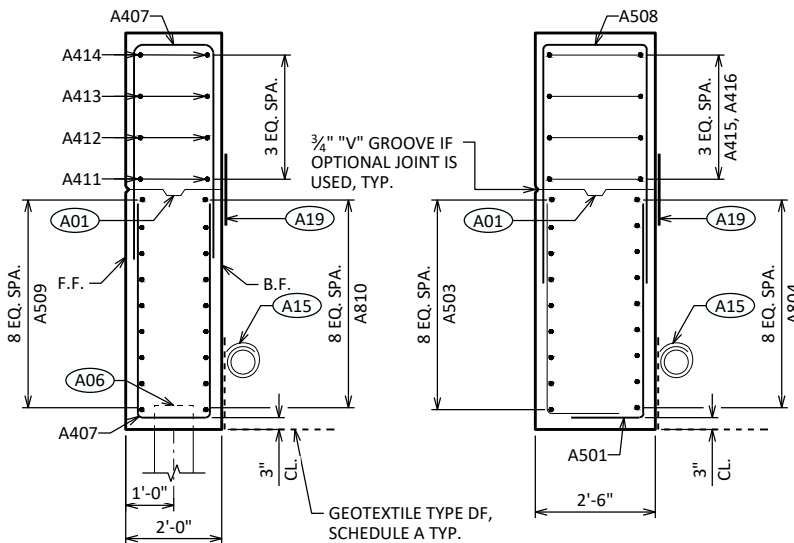


WING 1 PLAN

SHOWING LOWER WING REINFORCEMENT
WING 2 SIMILAR



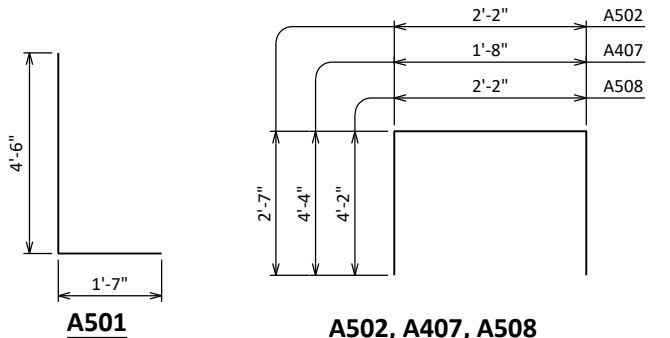
PILE SPlice DETAIL



SECTION THRU WING 1

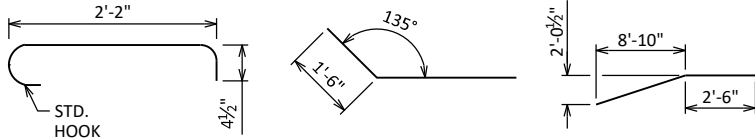
TYPICAL BOTH WINGS

SECTION A-A



A501

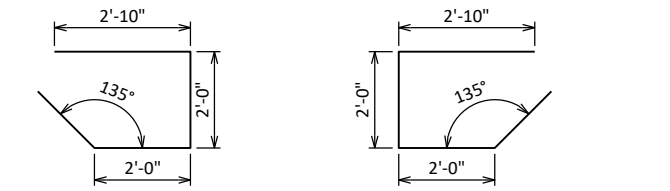
A502, A407, A508



A405

A804, A509, A810

A414

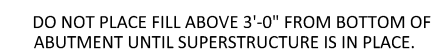


A415

A416

- (A01) OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
- (A06) SUPPORT ABUTMENT ON CIP 10% X 0.25 PILING, ESTIMATED 50' LONG WITH A REQUIRED DRIVING RESISTANCE OF 130TONS PER PILE. PILE POINTS REQ'D AT ALL LOCATIONS (TYP.)
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING, ONLY IF OPTIONAL CONSTRUCTION JOINT IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY STRUCTURES".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-59-326			
DRAWN BY		RBH	PLANS CK'D PTB
WEST ABUTMENT DETAILS		SHEET 5 31	

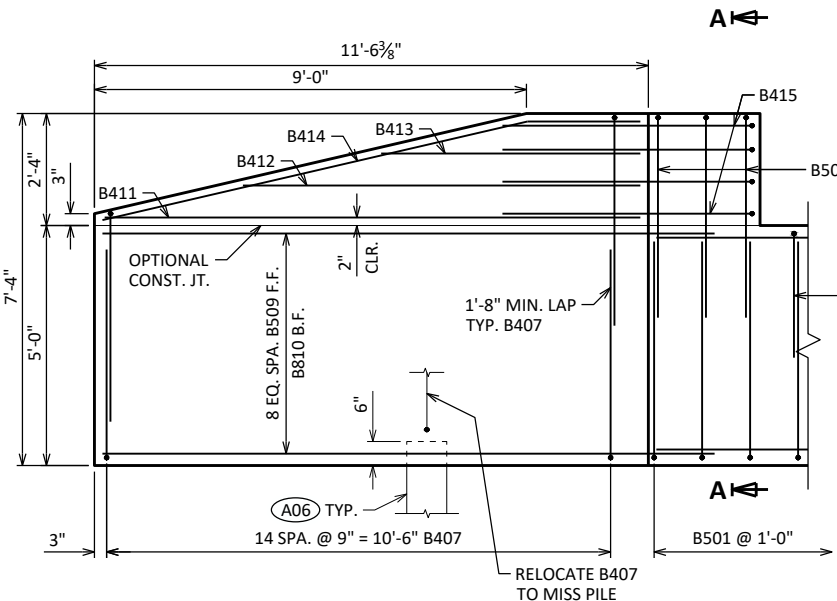


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|---|--|------|--|----------|--|----------------|--|
| NO. | | DATE | | REVISION | | BY | |
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION | | | | | | | |
| STRUCTURE | | | | B-59-326 | | | |
| DRAWN BY | | | | RBH | | PLANS CK'D PTB | |
| EAST
ABUTMENT | | | | SHEET 6 | | | |
| | | | | 32 | | | |

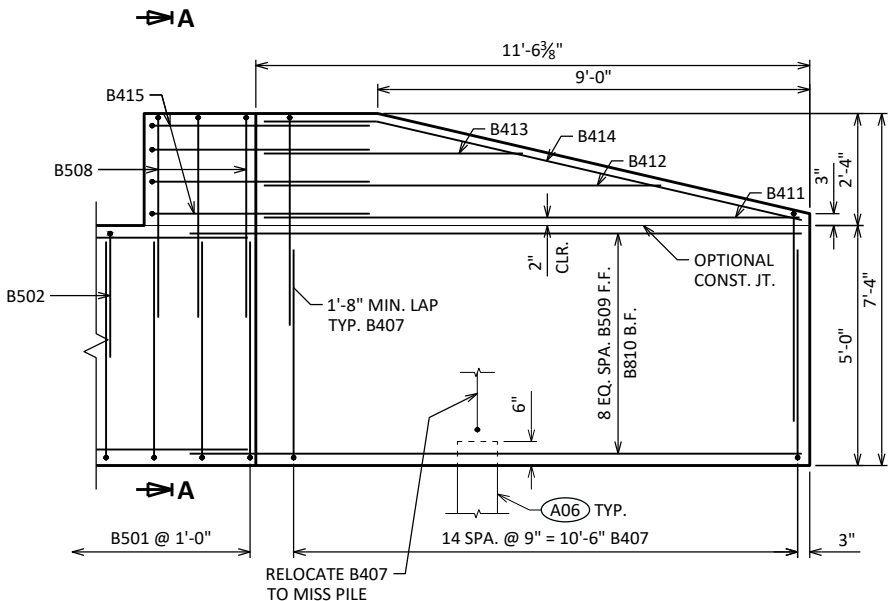
BILL OF BARS

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

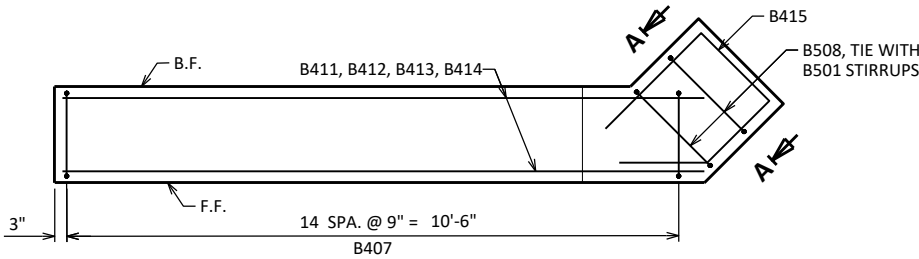
BAR MARK	COMT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
B501		64	6'-0"	X		ABUT BODY STIRRUPS
B502		26	7'-1"	X		ABUT BODY STIRRUPS - TOP U-BAR
B503		9	31'-3"			ABUT BODY HORIZ. - F.F.
B804		18	21'-6"	X		ABUT BODY HORIZ. - B.F.
B405		27	3'-0"	X		ABUT BODY TIE BARS
B506	X	25	2'-0"			ABUT BODY DOWEL BARS
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B509	X	18	12'-9"	X		WING LOWER HORIZ. - F.F.
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B411	X	4	11'-1"			WING UPPER HORIZ.
B412	X	4	8'-2"			WING UPPER HORIZ.
B413	X	4	5'-4"			WING UPPER HORIZ.
B414	X	4	11'-7"	X		WING TOP HORIZ.
B415	X	4	8'-3"	X		WING 3 UPPER HORIZ. CORNER
B416	X	4	8'-3"	X		WING 4 UPPER HORIZ. CORNER



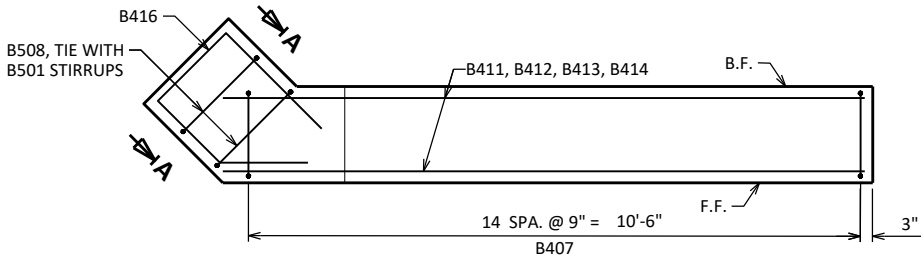
WING 3 ELEVATION
SHOWING F.F. WING



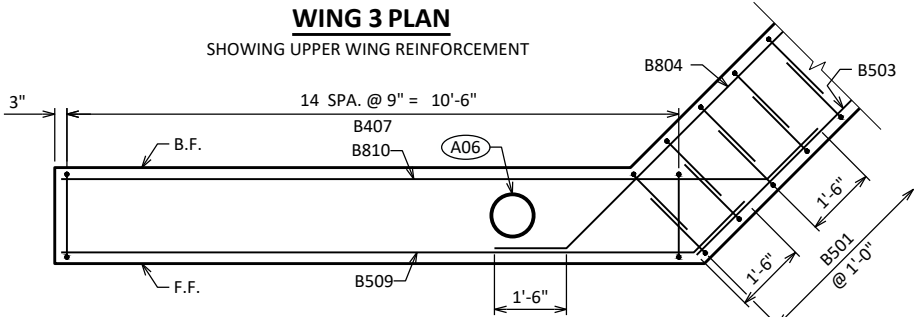
WING 4 ELEVATION
SHOWING F.F. WING



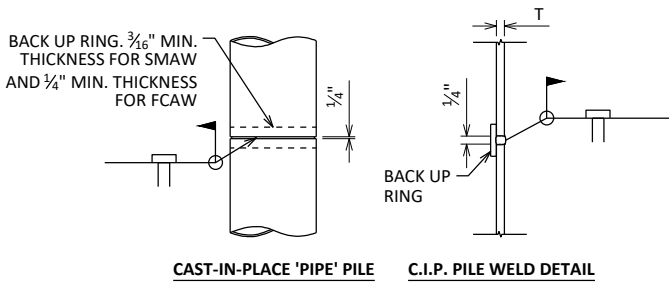
WING 3 PLAN
SHOWING UPPER WING REINFORCEMENT



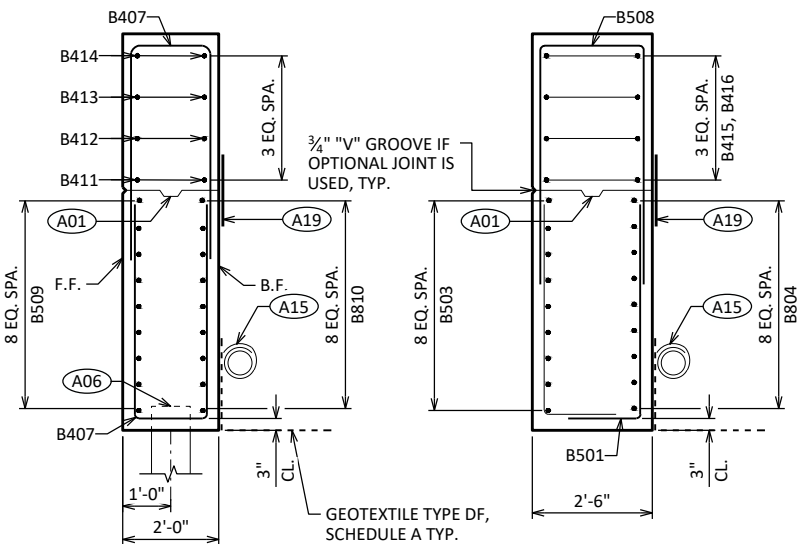
WING 4 PLAN
SHOWING UPPER WING REINFORCEMENT



WING 3 PLAN
SHOWING LOWER WING REINFORCEMENT
WING 4 SIMILAR

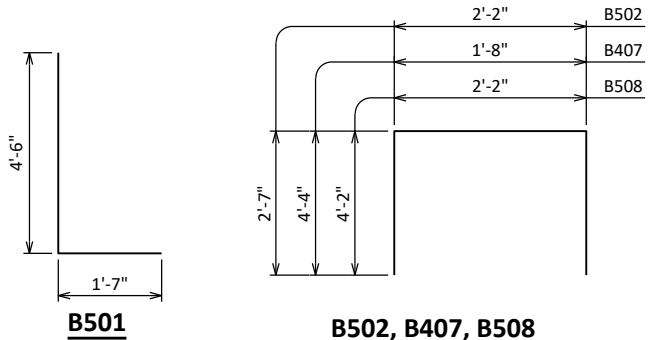


PILE SPLICE DETAIL

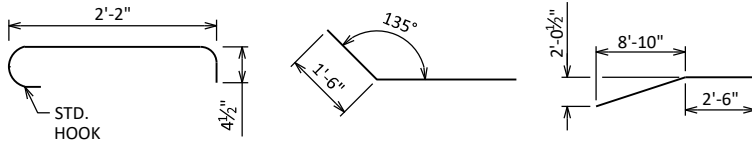


SECTION THRU WING 3
TYPICAL BOTH WINGS

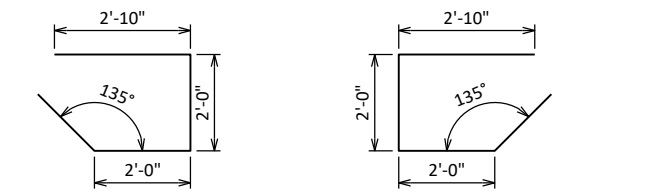
SECTION A-A



B501
B502, B407, B508



B405
B804, B509, B810
B414



B415
B416

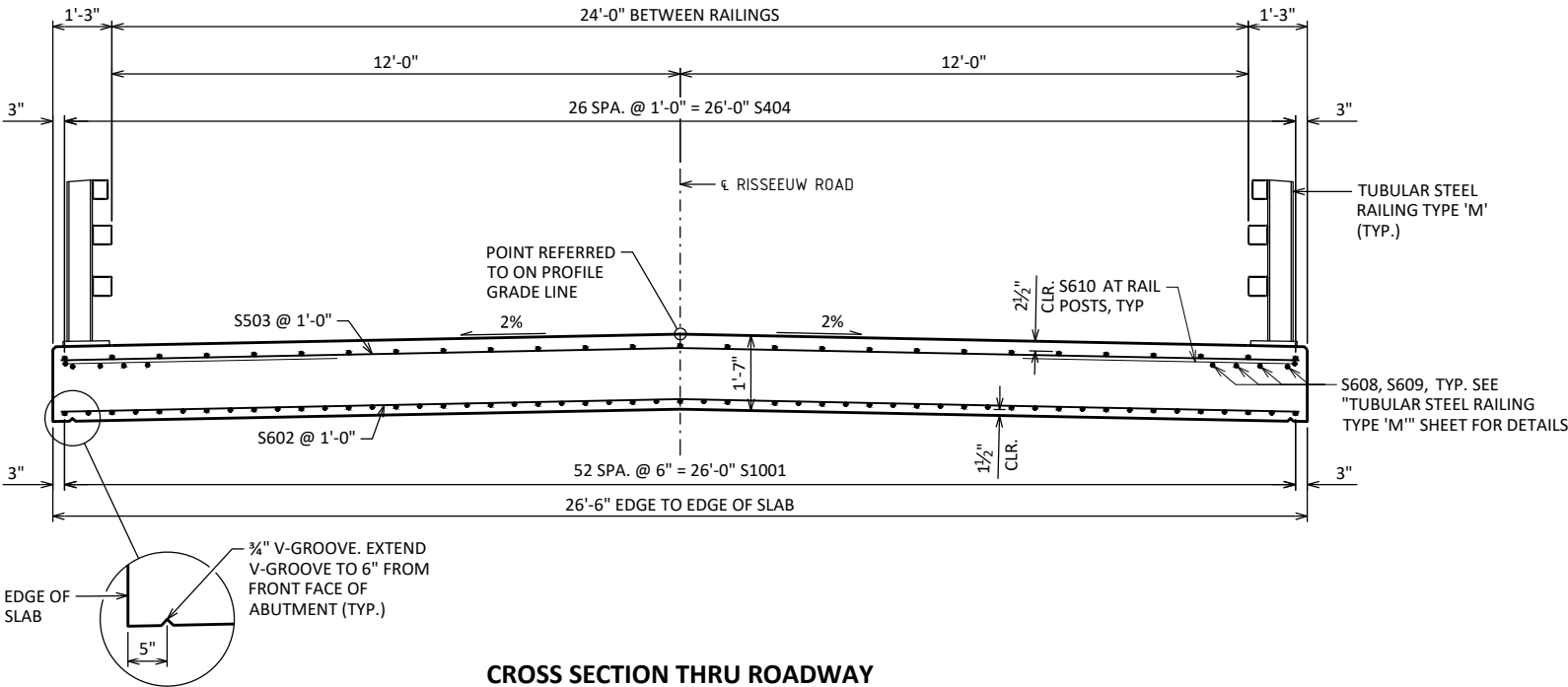
- A01 OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
- A06 SUPPORT ABUTMENT ON CIP 10% X 0.25 PILING, ESTIMATED 50' LONG WITH A REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE. PILE POINTS REQ'D AT ALL LOCATIONS (TYP.)
- A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-59-326			
DRAWN BY RBH		PLANS CK'D PTB	
EAST ABUTMENT DETAILS		SHEET 7	33

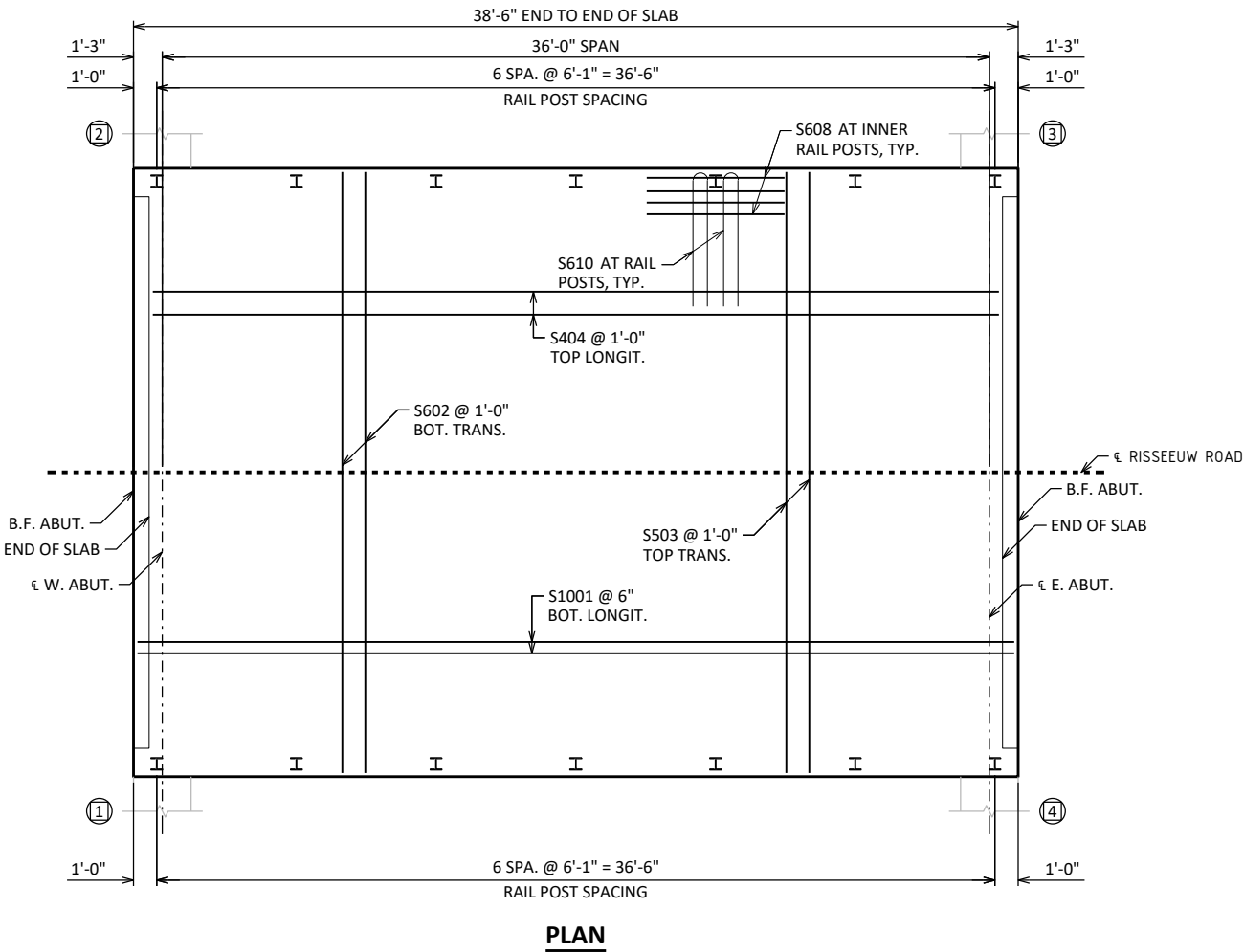
NOTES

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

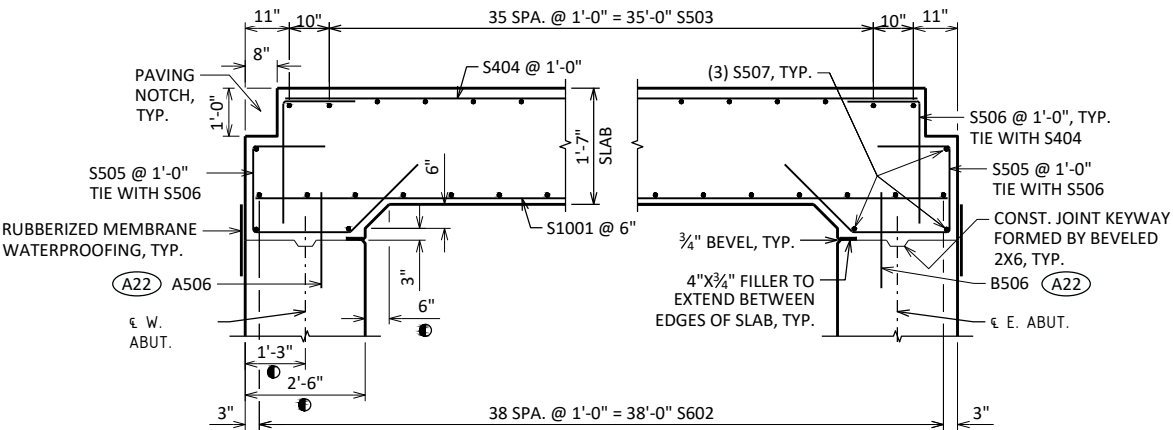
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).



CROSS SECTION THRU ROADWAY



PLAN

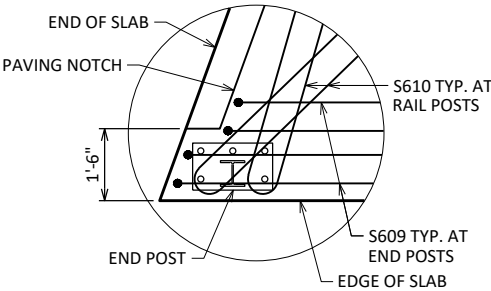


LONGITUDINAL SECTION

DIMENSIONS ARE GIVEN PARALLEL TO E ROADWAY UNLESS OTHERWISE NOTED.

MEASURED NORMAL TO THE E OF ABUTMENT. DIMENSIONS ARE TYPICAL FOR BOTH ABUTMENTS.

A22 A506, B506 BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)



END POST DETAILS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-59-326			
DRAWN BY RBH		PLANS CK'D PTB	
SUPERSTRUCTURE		SHEET 8	34

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

Figure 1: Typical cross-section of a bridge deck. The diagram shows a cross-section of a bridge deck with a total width of 38'-6". The deck is supported by a central pier. The top surface is cambered, with camber values ranging from 0.00 IN. at the edges to 1.17 IN. at the center. The bottom surface is flat, with a slab thickness of 19 IN. TYP. The deck is divided into 10 lanes, each 3'-10" wide. The camber values for each lane are: 0.00 IN., 0.38 IN., 0.73 IN., 1.00 IN., 1.17 IN., 1.23 IN., 1.17 IN., 1.00 IN., 0.73 IN., 0.38 IN., and 0.00 IN. The camber is labeled "CAMBER" with an arrow pointing to the top surface. The slab thickness is labeled "SLAB THICKNESS" with an arrow pointing to the bottom surface.

The diagram shows a composite shape. The top horizontal edge is labeled 1'-6". The left vertical edge is labeled 11". The bottom horizontal edge is labeled 2'-0". At the bottom right corner, there is an interior angle of 135° between the bottom horizontal edge and the rightmost slanted edge.

1'-6"

4'-0"

STD.
HOOK

Diagram illustrating a vertical wall penetration detail. The detail shows a 2" protrusion bent at 30°. The flashing is made of stainless steel and is 4" high. The entire length is caulked with silicone caulk. The detail is secured with 3/8" screws.

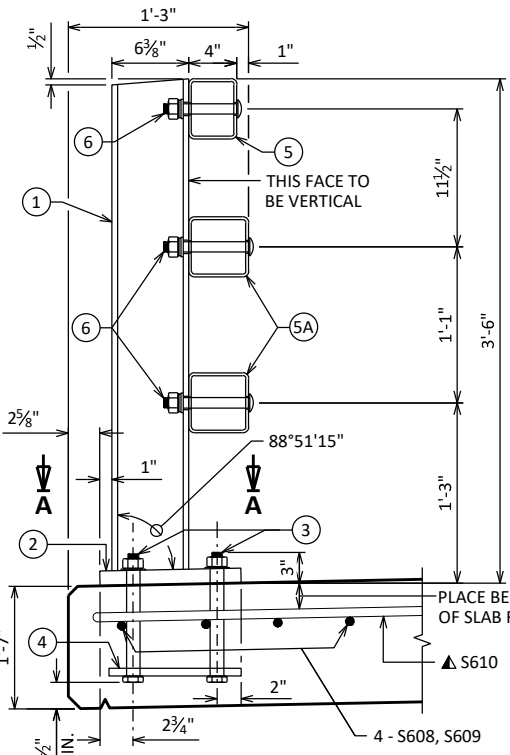
CALL -

LEGEND

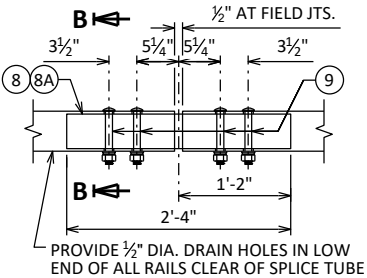
- 1 W6 x 25 WITH 1 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POSTS NORMAL TO GRADE LINE.
- 2 PLATE 1 3/4" x 11 3/4" x 1'-8" WITH 1 7/16" OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- 3 ASTM A449 - 1 5/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-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 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- 5 TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 5A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 6 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 1 5/8" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- 7 SPLICE SLEEVE FABRICATED FROM 3/4" PLATE. PROVIDE "SLIDING FIT".
- 8 3/8" X 3 5/8" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- 8A 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.
- 9 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/16" x 1 1/4" LONGIT. SLOTTED HOLES IN PLATE NO. 10A AT FIELD JOINTS AND 1 5/16" X 2 1/2" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 8A. PROVIDE 1 5/16" DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.

GENERAL NOTES

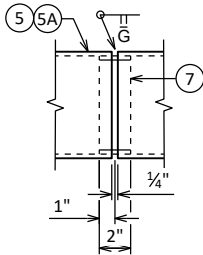
- 1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
- 2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES,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



SECTION THRU RAILING ON DECK

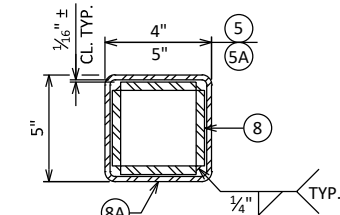


FIELD ERECTION JOINT DETAIL

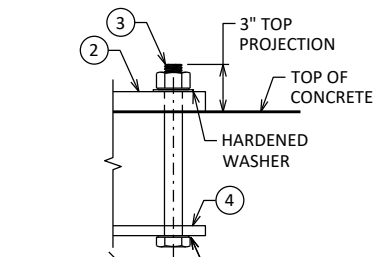


SHOP RAIL SPLICE DETAIL

LOCATION MUST BE SHOWN ON SHOP DRAWINGS

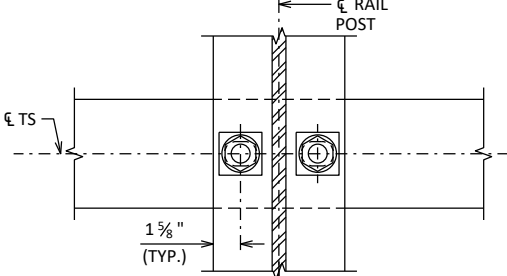


SECTION B-B

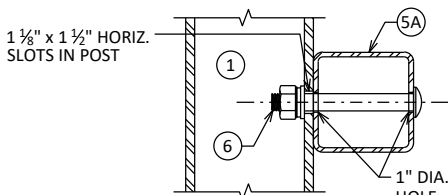


ANCHOR BOLTS

* ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.



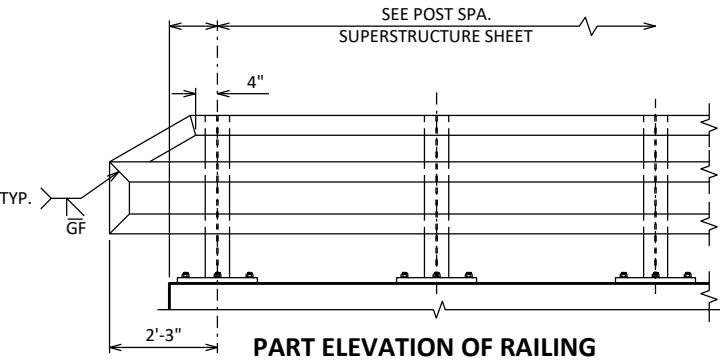
SECTION THRU POST WEB



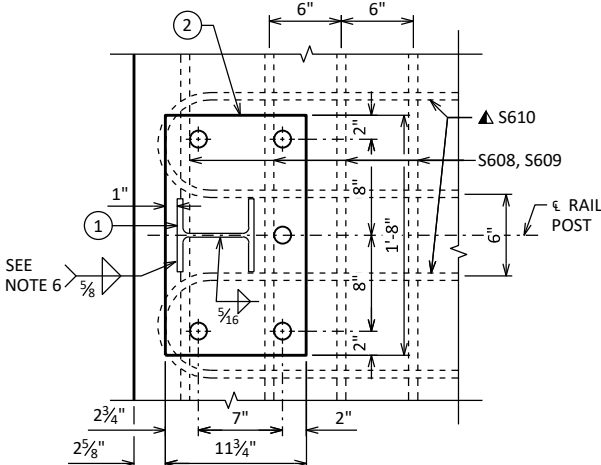
SECTION THRU RAIL

NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

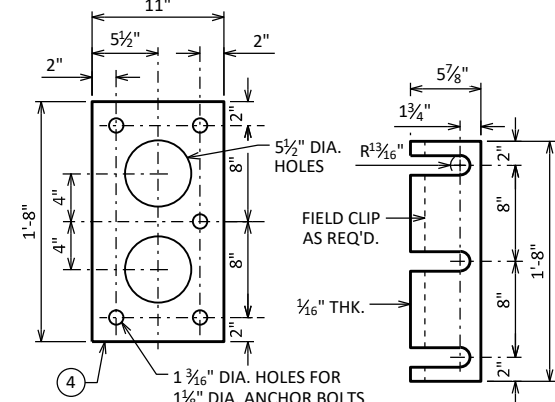
TYPICAL RAIL TO POST CONNECTIONS



PART ELEVATION OF RAILING



SECTION A-A



ANCHOR PLATE

AT RAIL TO DECK CONNECTION

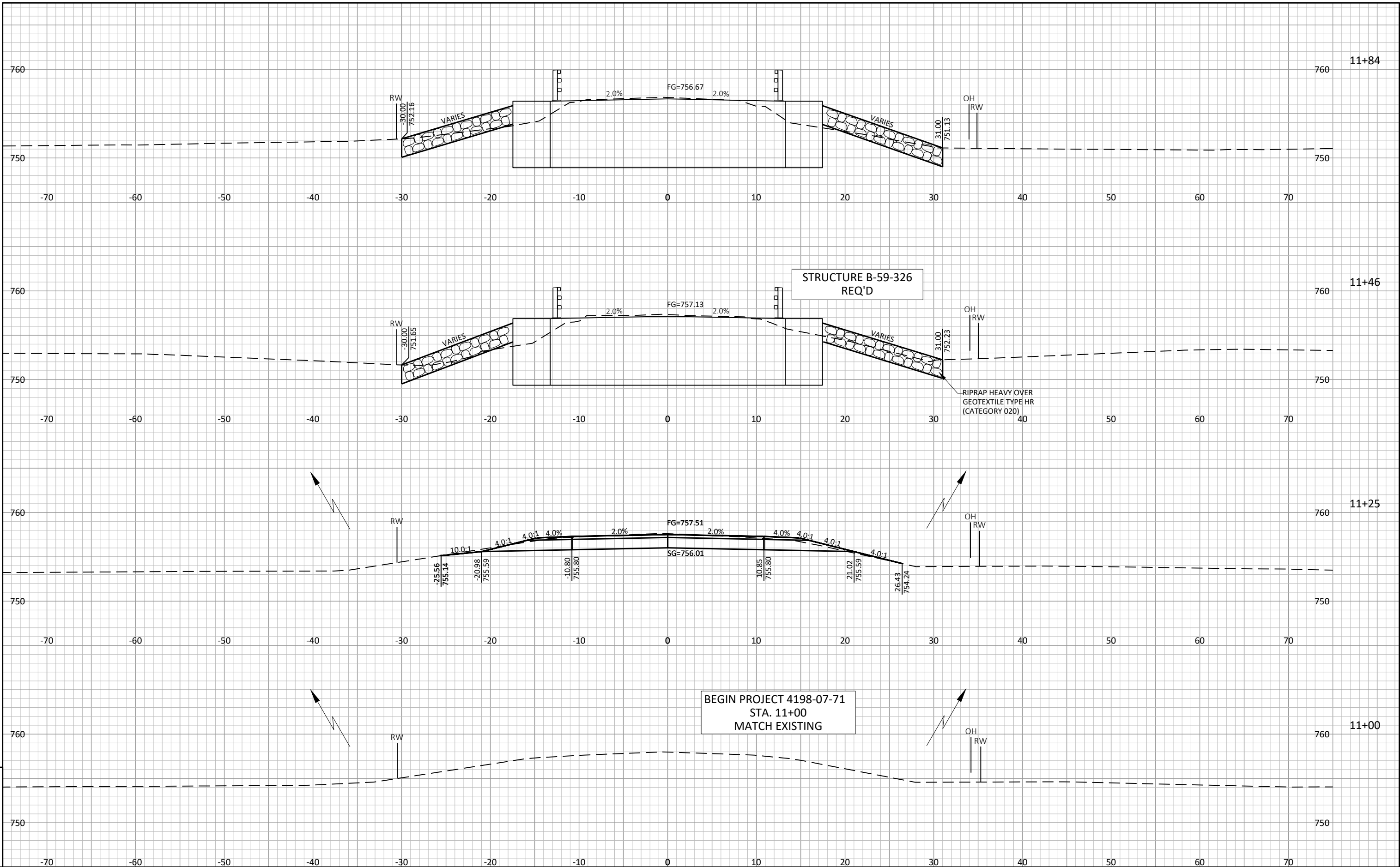
POST SHIM DETAIL

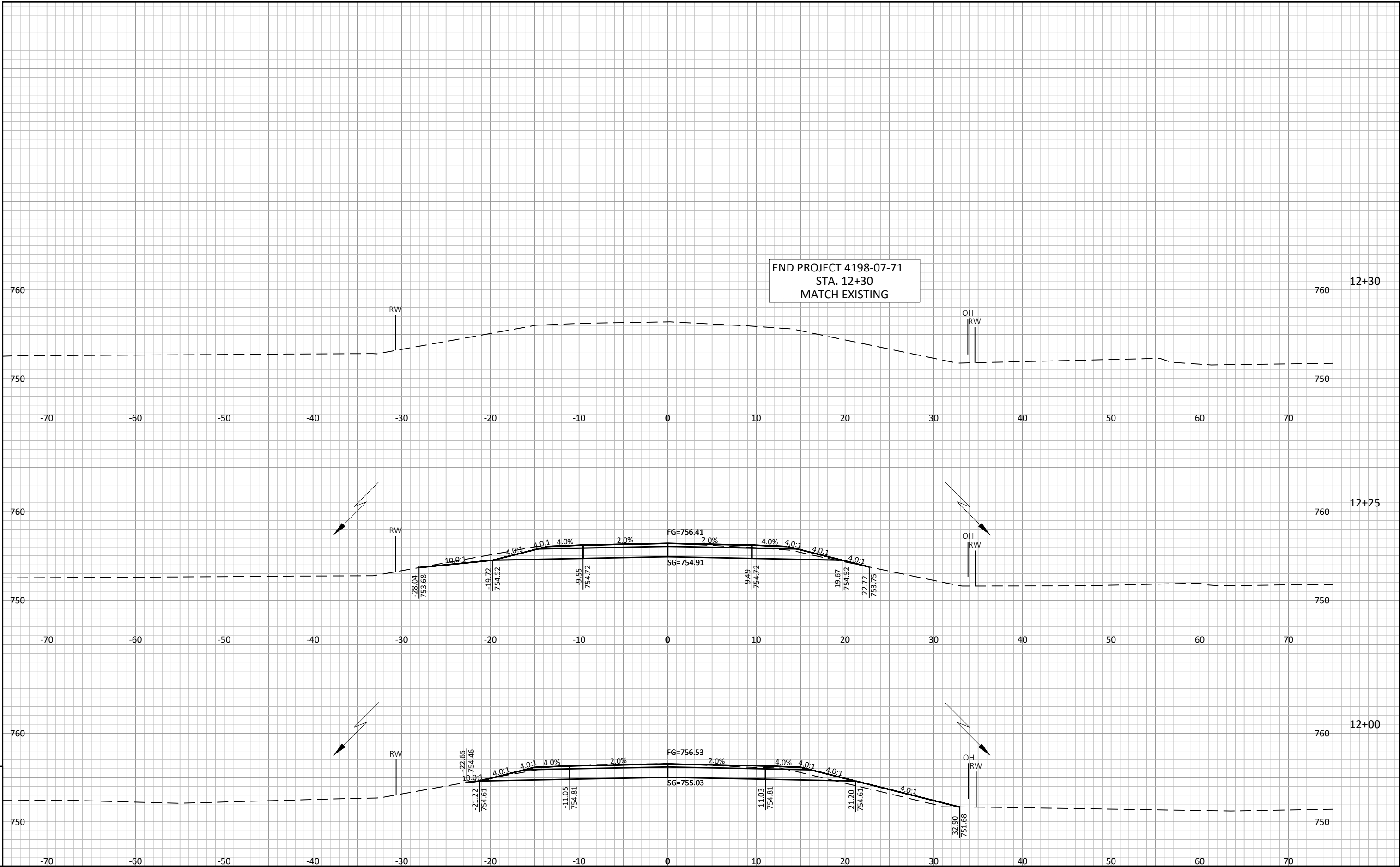
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-59-326			
DRAWN BY		RBH	PLANS CK'D PTB
TUBULAR STEEL RAILING TYPE 'M'		SHEET 10 36	

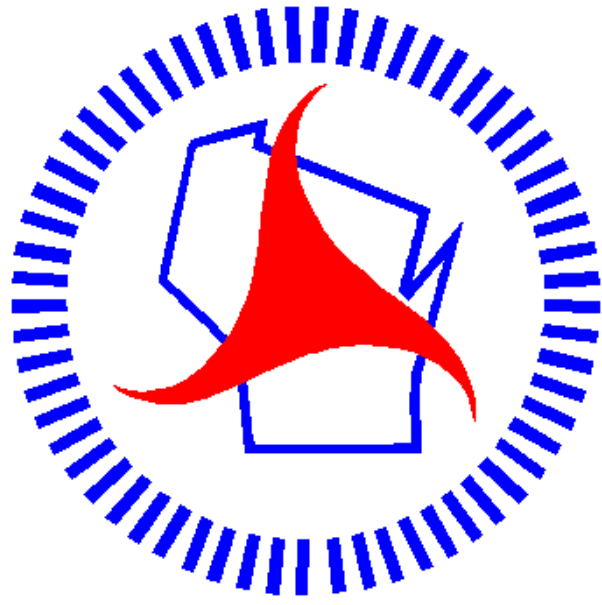
EARTHWORK-RISSEEUW ROAD

STATION	AREA (SF)		INCREMENTAL VOL (CY)			CUMMULATIVE VOLUME (CY)			
	CUT	FILL	CUT NOTE 1	FILL NOTE 2	FILL (25%) NOTE 3	CUT 1.00 NOTE 1	FILL	FILL (25%) NOTE 3	MASS ORDINATE NOTE 4
11+00	0	0	0	0	0	0	0	0	0
11+25	50	1	23	0	0	23	0	0	23
11+46	0	0	20	0	0	43	0	1	42
11+84	0	0	0	0	0	43	0	1	42
12+00	48	6	14	2	2	57	2	3	54
12+25	51	0	48	3	3	105	5	6	99
12+30	0	0	5	0	0	110	5	6	104
COLUMN TOTALS =			110	5	6	104			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
3 - FILL 25%	(UNEXPANDED FILL)*1.25
4 - MASS ORDINATE	CUT + ROCK (10%) + REDUCED MARSH (60%) - FILL (25%)







Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

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

Jan 11, 2022

4199-02-71

15

SHEBOYGAN

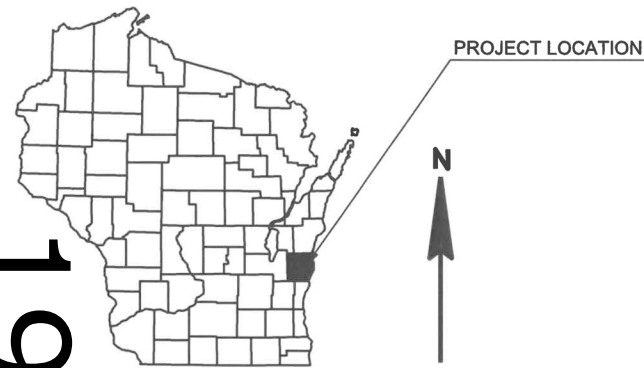
PLAN OF PROPOSED IMPROVEMENT

T LIMA, CTH W
TRIBUTARY TO ONION RIVER BRIDGE
CTH W
SHEBOYGAN COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4199-02-71	WISC 2022121	1

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way 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 = 80



DESIGN DESIGNATION

A.A.D.T.	(2022)	=	1,060
A.A.D.T.	(2042)	=	1,290
D.H.V.	(2042)	=	12.5%
D.D.		=	50/50
T.		=	4.7%
DESIGN SPEED		=	55 MPH
ESALS		=	116,800

CONVENTIONAL SYMBOLS

PLAN

CORPORATE LIMITS

PROPERTY LINE

LOT LINE

LIMITED HIGHWAY EASEMENT

EXISTING RIGHT OF WAY

PROPOSED OR NEW R/W LINE

SLOPE INTERCEPT

REFERENCE LINE

EXISTING CULVERT

PROPOSED CULVERT
(Box or Pipe)

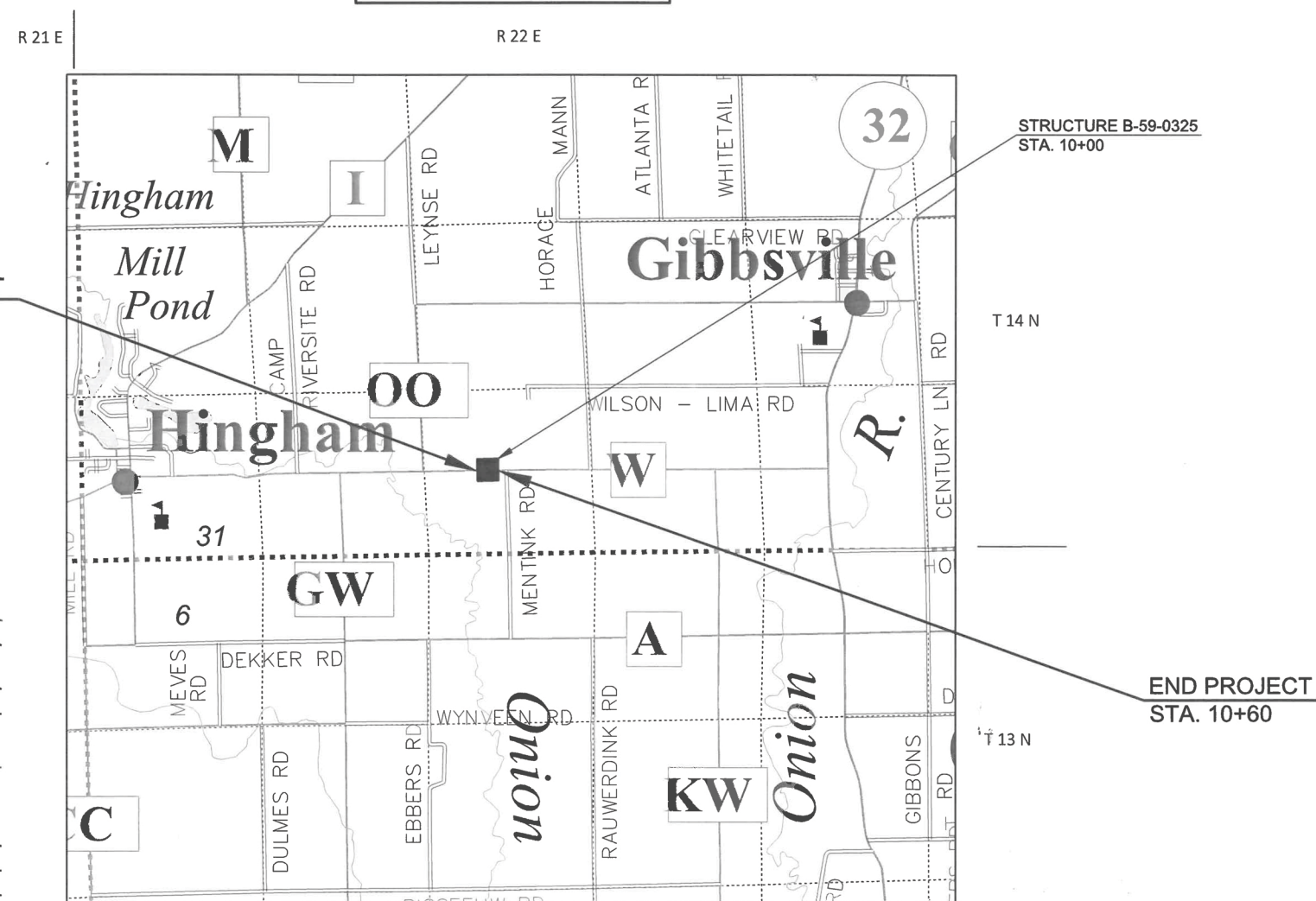
COMBUSTIBLE FLUIDS

MARSH AREA

WOODED OR SHRUB AREA

PROJECT LOCATION

BEGIN PROJECT
STA. 9+40
Y=135560.465
X=176929.906



LAYOUT

SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.023 MI

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

ACCEPTED FOR
SHEBOYGAN COUNTY

7/12/2021
DATE


COUNTY HIGHWAY DIRECTOR

ORIGINAL PLANS PREPARED BY

AYRES

7-8-21
(Date)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AYRES
Designer	AYRES
Project Manager	TIMOTHY VERHAGEN
Regional Examiner	
Regional Supervisor	BRIAN EDWARDS

APPROVED FOR THE DEPARTMENT

DATE: 7/20/2021 *Tim Verhagen*
(Signature)

FILE NAME : I:\45\450502 SHEBOYGAN CTH W\C3D\SHEETSPLAN\010101 TI.DWG

PLOT DATE : 7/8/2021 8:05 AM

PLOT BY : SCHAITEL, RYAN

PLOT NAME :

1

GENERAL NOTES

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

PROPERTY LINES AS SHOWN ARE APPROXIMATE.

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

BEARINGS SHOWN ON THIS PLAN ARE TRUE BEARINGS TO THE NEAREST SECOND.

ALL TIES ON THIS PLAN ARE HORIZONTAL UNLESS DESCRIBED OTHERWISE.

EROSION CONTROL LOCATIONS AS SHOWN ON THE EROSION CONTROL PLAN ARE APPROXIMATE. THE EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SUBGRADE SHOULDER POINTS ARE TO BE SEEDED AND EROSION MAT AS DIRECTED BY THE ENGINEER.

WISDOT WILL FURNISH A BENCHMARK MONUMENT TO BE SET BY THE CONTRACTOR.

SAW CUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD. THE LINE OF SUCH SAW CUTS WILL BE NEATLY DELINEATED THROUGH THE ASPHALT WITHOUT ANY DAMAGE TO THE REMAINING PORTION OF THE EXISTING PAVEMENT.

UTILITIES

* CHARTER

1320 N. MARTIN LUTHER KING JR DR
MILWAUKEE, WI 53212
ATTENTION: CHARLES BRASILE
E-MAIL: charles.brasile@charter.com

TELEPHONE 414-908-4822

CELL 414-433-5812

* FRONTIER COMMUNICATIONS

1700 INDUSTRIAL DR
GREEN BAY, WI 54302
ATTENTION: RUSS RYAN
E-MAIL: russell.w.ryan@ftr.com

TELEPHONE 920-583-3275

* WE ENERGIES - ELECTRICITY

500 S 116TH ST
WEST ALLIS, WI 53214
ATTENTION: GREGORY BOERNER
E-MAIL: gregory.boerner@we-energies.com

TELEPHONE 618-409-5861

*-MEMBER OF DIGGERS HOTLINE



RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA= 1.03 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.59 ACRES

SOIL GROUP D

STANDARD ABBREVIATIONS

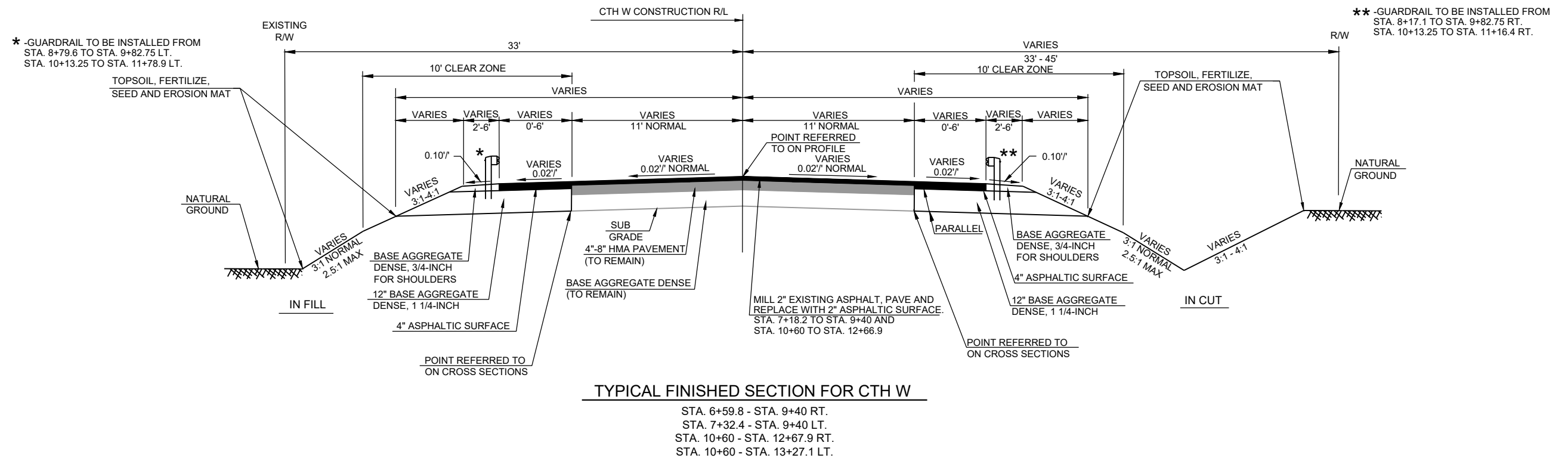
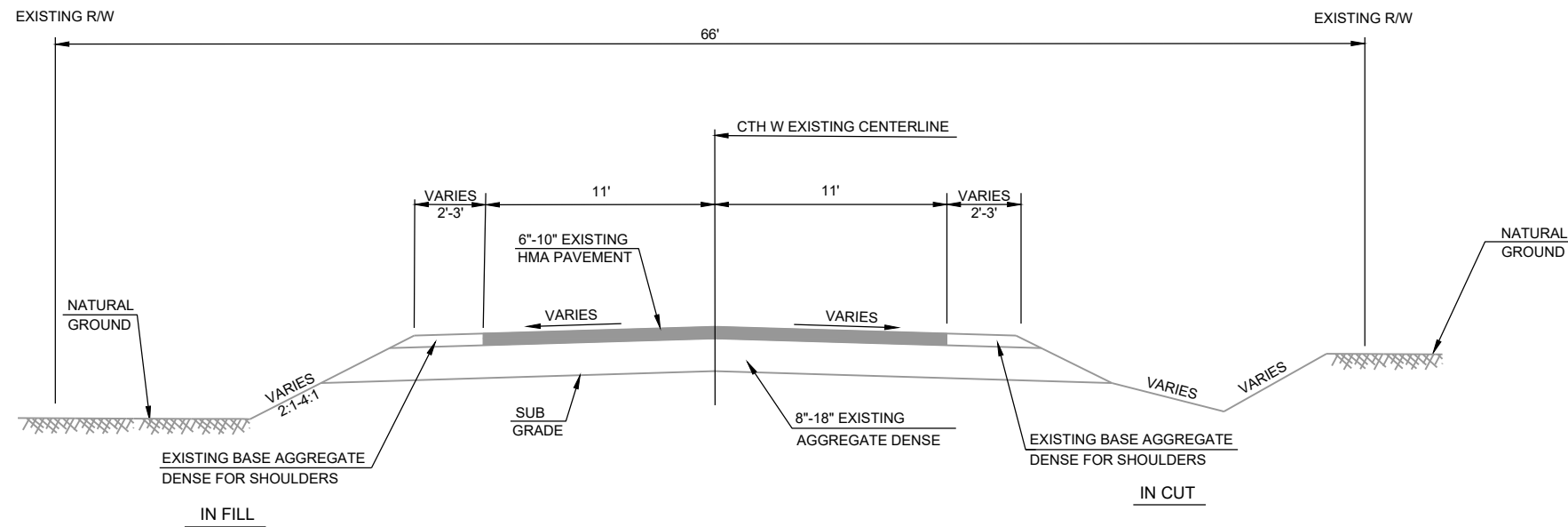
ADT	AVERAGE DAILY TRAFFIC	NC	NORMAL CROWN
AC	ASPHALT CEMENT	PT	POINT OF TANGENCY
AGG	AGGREGATE	PC	POINT OF CURVATURE
ASPH	ASPHALT	PI	POINT OF INTERSECTION
BM	BENCH MARK	PE	PRIVATE ENTRANCE
C/L	CENTERLINE	R	RADIUS
CONC	CONCRETE	REM	REMOVE
CMP	CORRUGATED METAL PIPE	R/L OR RL	REFERENCE LINE
CR.	CREEK	RCCP	REINFORCED CONCRETE CULVERT PIPE
D	DEGREE OF CURVE	RCPSS	REINFORCED CONCRETE PIPE STORM SEWER
DHV	DESIGN HOUR VOLUME	R.O.	RUNOUT
ESALS	EQUIVALENT SINGLE AXIS LOADS	R/W	RIGHT-OF-WAY
EXIST	EXISTING	STA	STATION
FE	FIELD ENTRANCE	SE	SUPER ELEVATION
HYD	HYDRANT	SS	STORM SEWER
IP	IRON PIPE OR PIN	T	TANGENT
L	LENGTH OF CURVE	TEL	TELEPHONE
LC	LONG CHORD OF CURVE	TLE	TEMPORARY LIMITED EASEMENT
LR	LENGTH OF RUNOFF	T	TRUCKS
MH	MANHOLE	VC	VERTICAL CURVE
		W	WELL

DEPARTMENT OF NATURAL RESOURCES

WDNR

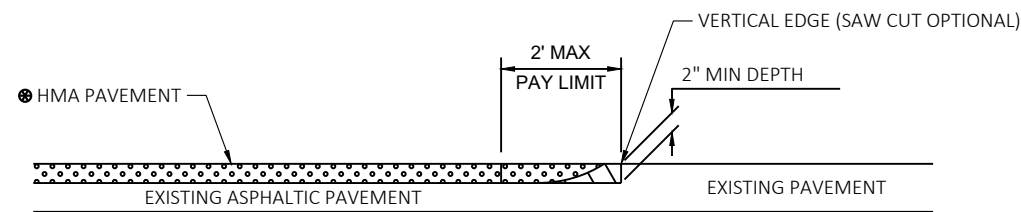
2984 SHAWANO AVE.
GREEN BAY, WISCONSIN 54313
ATTENTION: JAY SCHIEFELBEIN
E-MAIL: JEREMIAH.SCHIEFELBEIN@WISCONSIN.GOV

TELEPHONE 920-360-3784





STA. 9+40 - STA. 9+82.75
STA. 10+13.25 - STA. 10+60



SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

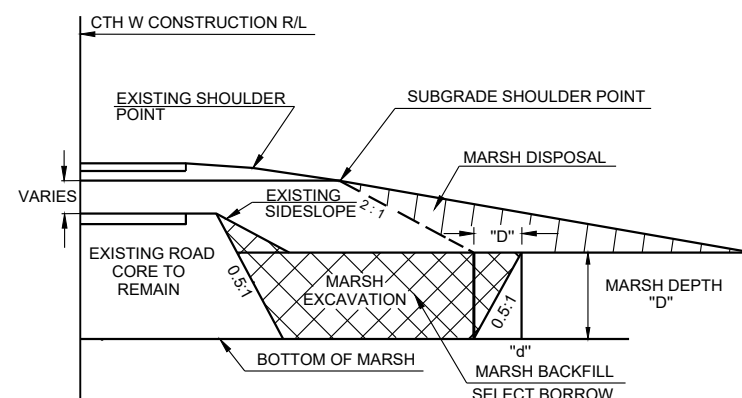


REMOVING ASPHALTIC SURFACE, MILLING



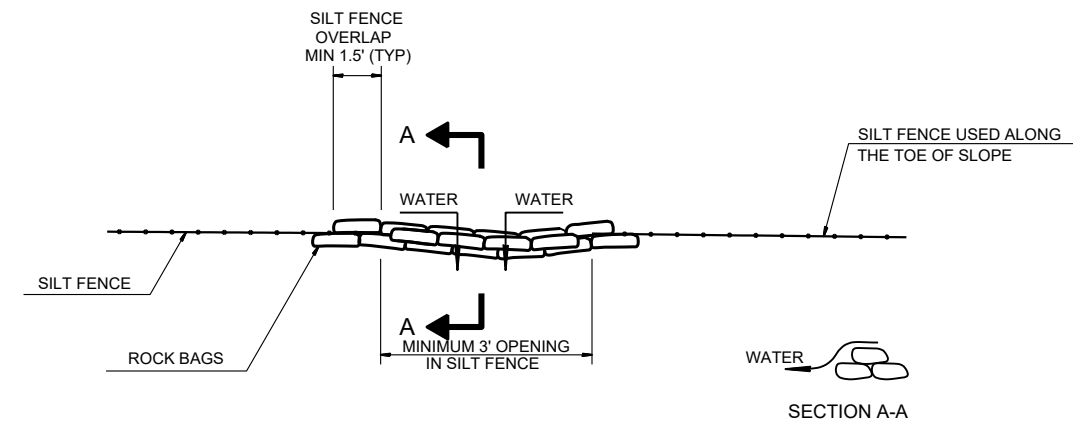
REMOVE ASPHALTIC SURFACE WEDGE AT BUTT JOINT TO CREATE VERTICAL EDGE

BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)



NOTE: BACKFILL QUANTITIES COMPUTED FROM POINT "d" TO COMPENSATE FOR PROBABLE DISPLACED MARSH AREA.

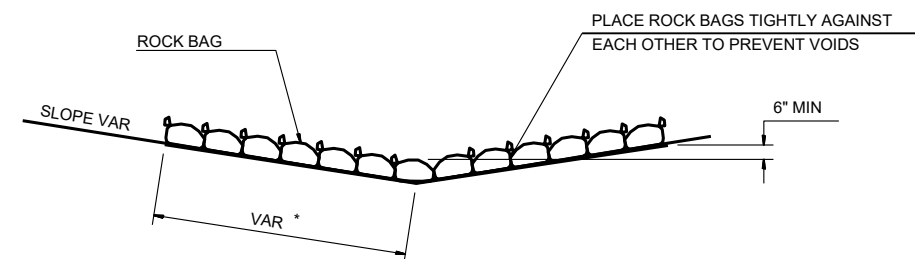
TYPICAL SECTION-MARSH EXCAVATION



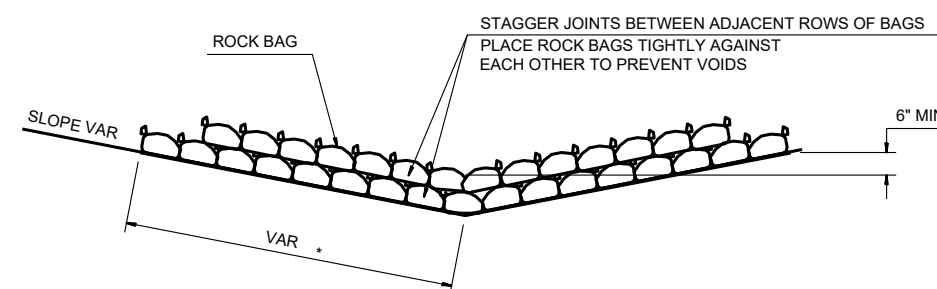
TOP VIEW

ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL

PAID AS ROCK BAGS
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)



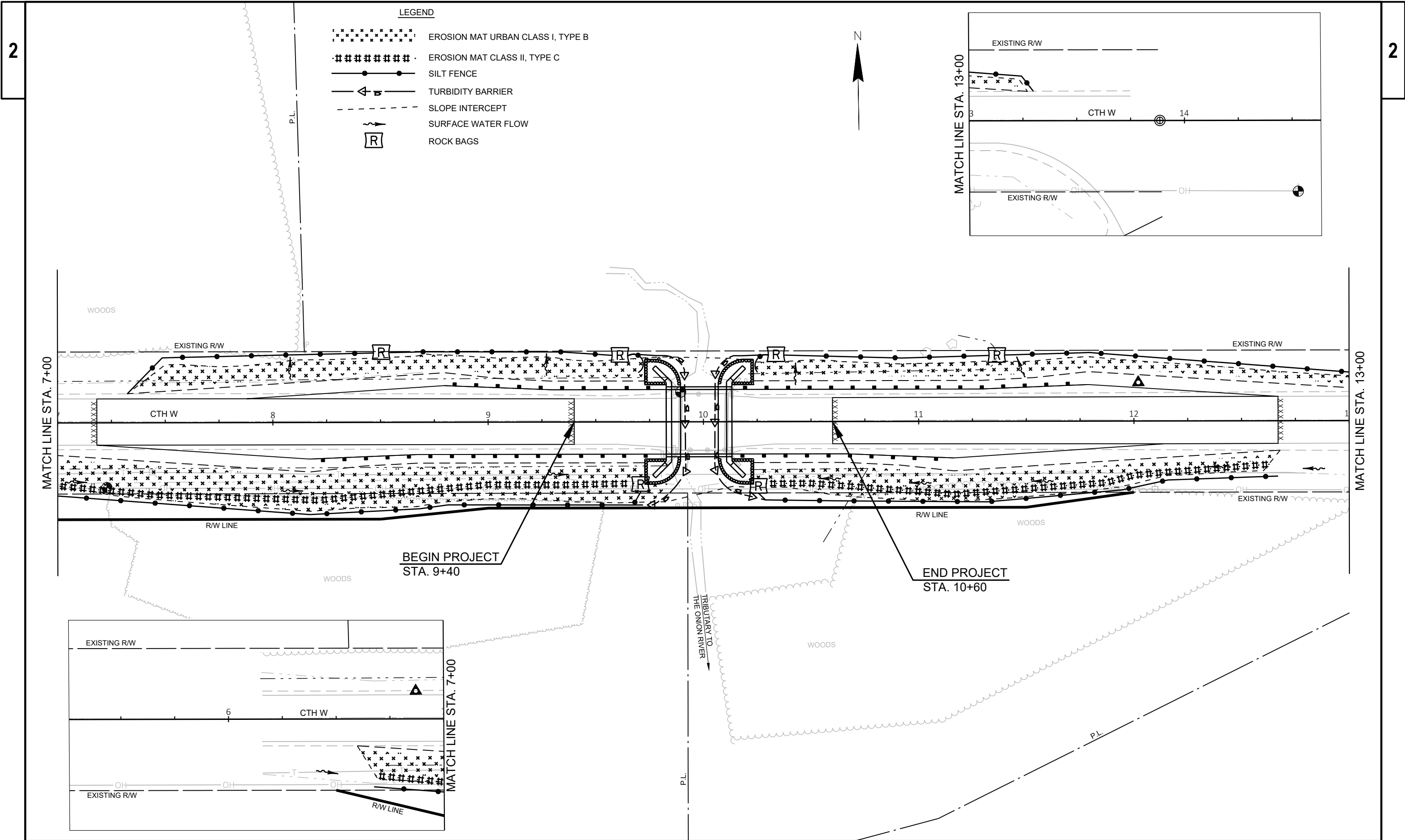
SIDE VIEW (SINGLE LAYER)



SIDE VIEW (MULTIPLE LAYER)

ROCK BAGS DITCH CHECK

PAID AS ROCK BAGS
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)





	SIGN NUMBER. REFER TO MISCELLANEOUS QUANTITY SHEET
	SIGN MOUNTED ON TYPE III BARRICADE
	POST MOUNTED SIGN

Estimate Of Quantities By Plan Sets

4199-02-71

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
0008	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 02. P-59-921	EACH	1.000	1.000
0010	204.0105	Removing Pavement Butt Joints	SY	10.000	10.000
0012	204.0120	Removing Asphaltic Surface Milling	SY	1,027.000	1,027.000
0014	205.0100	Excavation Common	CY	374.000	374.000
0016	205.0400	Excavation Marsh	CY	719.000	719.000
0020	206.1000	Excavation for Structures Bridges (structure) 02. B-59-0325	LS	1.000	1.000
0022	208.0100	Borrow	CY	364.000	364.000
0024	208.1100	Select Borrow	CY	1,079.000	1,079.000
0026	210.1500	Backfill Structure Type A	TON	340.000	340.000
0030	213.0100	Finishing Roadway (project) 02. 4199-02-71	EACH	1.000	1.000
0032	305.0110	Base Aggregate Dense 3/4-Inch	TON	135.000	135.000
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,080.000	1,080.000
0036	455.0605	Tack Coat	GAL	12.200	12.200
0038	465.0105	Asphaltic Surface	TON	205.000	205.000
0040	502.0100	Concrete Masonry Bridges	CY	111.000	111.000
0042	502.3200	Protective Surface Treatment	SY	125.000	125.000
0044	505.0400	Bar Steel Reinforcement HS Structures	LB	5,020.000	5,020.000
0046	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	12,870.000	12,870.000
0048	513.4061	Railing Tubular Type M	LF	64.800	64.800
0050	516.0500	Rubberized Membrane Waterproofing	SY	14.000	14.000
0054	550.2104	Piling CIP Concrete 10 3/4 X 0.25-Inch	LF	770.000	770.000
0056	606.0300	Riprap Heavy	CY	80.000	80.000
0058	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	160.000	160.000
0060	614.2300	MGS Guardrail 3	LF	176.000	176.000
0062	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0064	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0068	619.1000	Mobilization	EACH	0.600	0.600
0070	624.0100	Water	MGAL	14.000	14.000
0072	625.0100	Topsoil	SY	1,320.000	1,320.000
0076	627.0200	Mulching	SY	400.000	400.000
0078	628.1504	Silt Fence	LF	1,300.000	1,300.000
0080	628.1520	Silt Fence Maintenance	LF	2,500.000	2,500.000
0082	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0084	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0088	628.2008	Erosion Mat Urban Class I Type B	SY	1,010.000	1,010.000
0090	628.2027	Erosion Mat Class II Type C	SY	300.000	300.000
0092	628.6005	Turbidity Barriers	SY	114.000	114.000
0094	628.7570	Rock Bags	EACH	110.000	110.000
0096	629.0210	Fertilizer Type B	CWT	1.200	1.200
0098	630.0120	Seeding Mixture No. 20	LB	37.000	37.000
0100	630.0200	Seeding Temporary	LB	37.000	37.000
0102	630.0300	Seeding Borrow Pit	LB	11.000	11.000
0104	630.0500	Seed Water	MGAL	37.000	37.000
0106	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0108	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0110	638.2602	Removing Signs Type II	EACH	8.000	8.000
0112	638.3000	Removing Small Sign Supports	EACH	8.000	8.000

Estimate Of Quantities By Plan Sets

4199-02-71					
Line	Item	Item Description	Unit	Total	Qty
0114	642.5001	Field Office Type B	EACH	0.500	0.500
0116	643.0420	Traffic Control Barricades Type III	DAY	1,386.000	1,386.000
0118	643.0705	Traffic Control Warning Lights Type A	DAY	2,016.000	2,016.000
0120	643.0900	Traffic Control Signs	DAY	6,435.000	6,435.000
0122	643.5000	Traffic Control	EACH	0.500	0.500
0124	645.0111	Geotextile Type DF Schedule A	SY	110.000	110.000
0126	645.0120	Geotextile Type HR	SY	170.000	170.000
0128	646.1020	Marking Line Epoxy 4-Inch	LF	1,235.000	1,235.000
0130	650.4500	Construction Staking Subgrade	LF	637.000	637.000
0132	650.5000	Construction Staking Base	LF	637.000	637.000
0136	650.6500	Construction Staking Structure Layout (structure) 02. B-59-325	LS	1.000	1.000
0138	650.8000	Construction Staking Resurfacing Reference	LF	429.000	429.000
0142	650.9910	Construction Staking Supplemental Control (project) 02. 4199-02-71	LS	1.000	1.000
0144	650.9920	Construction Staking Slope Stakes	LF	637.000	637.000
0146	690.0150	Sawing Asphalt	LF	86.000	86.000
0148	715.0502	Incentive Strength Concrete Structures	DOL	666.000	666.000
0152	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 02. 10+00	EACH	1.000	1.000
0158	SPV.0090	Special 01. Flashing Stainless Steel	LF	61.000	61.000

CLEARING AND GRUBBING

STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
7+00	-	9+00	CTH W	2	2
10+00	-	12+00	CTH W	2	2
TOTALS				4	4

REMOVING PAVEMENT BUTT JOINTS

STATION	TO	STATION	LOCATION	204.0105 SY
7+18.2	-	7+20	CTH W	5
12+65	-	12+67	CTH W	5
TOTAL				10

MILLING

STATION	TO	STATION	LOCATION	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY
7+18.2	-	9+40	CTH W	527
10+60	-	12+67	CTH W	500
TOTAL				1,027

EARTHWORK SUMMARY

Division	From/To Station	Location	Common Excavation (item #205.0100)	Unusable Pavement Material (4)	Available Material (5)	Excavation Marsh (6)	Expanded Marsh Backfill (10) (item #208.1100)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Borrow	Comment:
			Cut (2)			(item #205.0400)	Factor 1.50		Factor 1.30		(item #208.0100)	
1	6+59.82 - 9+40	CTH W (SW SHOULDER)	99	0	99	234	351	150	195	-96	96	
	7+32.4 - 9+40	CTH W (NW SHOULDER)	25	0	25	231	347	123	160	-135	135	
	9+40 - 10+60	CTH W (MAINLINE)	144	53	91	165	248	114	148	-57	57	
	10+60 - 12+67.93	CTH W (SE SHOULDER)	61	0	61	14	21	76	99	-38	38	
	10+60 - 13+27.08	CTH W (NE SHOULDER)	45	0	45	75	113	64	83	-38	38	
Division 1 Totals			374	53	321	719	1,079	527	685	-364	364	

- 2) Unsuable Pavement Material is included in Cut
4) Unusable Pavement Material = Existing Asphaltic Pavement. Backfill any areas below subgrade w ith borrow .
5) Available Material = Cut - Unusable Pavement Material
6) Marsh Excavation. To be backfilled w ith Select Borrow Material as show n in cross sections.
10) Expanded Marsh Backfill - This is to be filled w ith Select Borrow material. Marsh Backfill Factor = 1.5. Item Number 208.1100
13) Expanded Fill. Factor = 1.3 Expanded Fill = Unexpanded Fill * Fill Factor
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material w ithin the Division. Minus indicates a shortage of material w ithin the Division.

BASE AGGREGATE DENSE & WATER

STATION	TO	STATION	LOCATION	305.0110 BASE AGG. 3/4-INCH TON	305.0120 BASE AGG. 1 1/4-INCH TON	624.0100 WATER MGAL
6+59.8	-	9+82.8	CTH W	-	540	5
6+59.8	-	9+82.8	CTH W, RT	37	-	1
7+32.4	-	9+82.8	CTH W, LT	30	-	1
10+13.3	-	13+27.1	CTH W	-	540	5
10+13.3	-	12+67.9	CTH W, RT	32	-	1
10+13.3	-	13+27.1	CTH W, LT	36	-	1
TOTALS				135	1,080	14

ASPHALTIC SURFACE

STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON	REMARKS
7+18.2	-	9+40	CTH W	3.6	61	MILLING AREA
7+18.2	-	9+82.8	CTH W	4.3	72	
10+13.3	-	12+66.9	CTH W	4.3	72	
10+60	-	12+66.9	CTH W	3.4	57	MILLING AREA
TOTALS				12.2	205	

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

GUARDRAIL

STATION	TO	STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
8+17.1	-	9+82.8	CTH W, RT	75.5	39.4	1
8+79.6	-	9+82.8	CTH W, LT	12.5	39.4	1
10+13.3	-	11+16.4	CTH W, RT	12.5	39.4	1
10+13.3	-	11+78.9	CTH W, LT	75.5	39.4	1
TOTALS				176.0	157.6	4

SILT FENCE

STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 MAINTENANCE
6+67.6	-	9+60.1	CTH W, RT	293	586
7+32.4	-	9+59.9	CTH W, LT	227	454
10+37.8	-	12+67.0	CTH W, RT	230	460
10+37.4	-	13+29.9	CTH W, LT	289	578
UNDISTRIBUTED				261	422
TOTAL				1,300	2,500

TURBIDITY BARRIERS

STATION	LOCATION	628.6005 SY
WEST ABUTMENT	CTH W	57
EAST ABUTMENT	CTH W	57
TOTAL		114

ROCK BAGS

STATION	LOCATION	628.7570 EACH
8+50	CTH W, LT	15
9+63	CTH W, LT & RT	30
10+34	CTH W, LT & RT	30
11+35	CTH W, LT	15
UNDISTRIBUTED	CTH W	20
TOTAL		110

TOPSOIL, FERTILIZER, AND SEED

STATION	TO	STATION	LOCATION	625.0100 TOPSOIL SY	627.0200 MULCH SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0300 SEEDING BORROW PIT LB	630.0500 SEED WATER MGAL
6+62.1	-	9+88.3	CTH W, RT	503	-	0.3	14	14	-	14
7+36.4	-	9+97.3	CTH W, LT	169	-	0.1	5	5	-	5
9+94.4	-	12+62.6	CTH W, RT	252	-	0.2	7	7	-	7
10+01.7	-	13+11.3	CTH W, LT	133	-	0.1	4	4	-	4
UNDISTRIBUTED				-	400	0.3	-	-	11	-
UNDISTRIBUTED				263	-	0.2	7	7	-	7
TOTALS				1,320	400	1.2	37	37	11	37

MOBILIZATIONS EROSION CONTROL

LOCATION	628.1905 MOBILIZATIONS EROSION CONROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
CTH W	5	3
	5	3

EROSION MAT

STATION	TO	STATION	LOCATION	EROSION MAT URBAN CLASS I TYPE B 628.2008 SY	EROSION MAT CLASS II TYPE C 628.2027 SY
6+74	-	9+37	CTH W, RT	469	34
7+54	-	9+90	CTH W, LT	169	-
10+10	-	12+95	CTH W, RT	38	213
10+30	-	13+77	CTH W, LT	132	-
UNDISTRIBUTED				202	53
TOTALS				1,010	300

REMOVING SIGNS & SUPPORTS

STATION	LOCATION	638.2602 SIGNS TYPE II EACH	638.3000 SMALL SIGN SUPPORTS EACH	REMARKS
9+82.1 9+87.6 9+87.9 10+12.1	WEST OF BRIDGE	1	1	NARROW BRIDGE
	CTH W, RT	1	1	BRIDGE LOAD POSTING
	CTH W, RT	1	1	BRIDGE SIGN
	CTH W, LT	1	1	BRIDGE SIGN
	CTH W, RT	1	1	BRIDGE SIGN
10+12.2	CTH W, LT	1	1	BRIDGE SIGN
10+18.6	CTH W, LT	1	1	BRIDGE LOAD POSTING
	EAST OF BRIDGE	1	1	NARROW BRIDGE
TOTALS		8	8	

SIGNS REFLECTIVE TYPE II AND WOOD POSTS

STATION	LOCATION	634.0612 WOOD POSTS 4"x6"x12' EACH	637.2230 SIGNS W5-52L SF	W5-52R SF
NW QUADRANT	CTH W	1	3	-
SW QUADRANT	CTH W	1	-	3
NE QUADRANT	CTH W	1	-	3
SE QUADRANT	CTH W	1	3	-
SUBTOTALS		4	6	6
TOTALS		4	12	

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE	NUMBER IN SERVICE	APPROX. SERVICE PERIOD DAYS	643.0900 SIGNS * DAYS	REMARKS
1	1500' W. OF CTH GW	M1-5A	24"x24"	1	63	63	W
	"	W020-2-A	48"x48"	1	63	63	
2	500' W. OF CTH GW	M4-8	24"x12"	1	63	63	
	"	M3-2	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
	"	MO5-1R	21"x21"	1	63	63	
3	CTH W W. OF CTH GW	M4-8	24"x12"	1	63	63	
	"	M3-2	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
	"	MO6-1	21"x21"	1	63	63	
4	CTH W/CTH GW INTERSECTION	R11-3B	60"x30"	1	63	63	1 MILE
	"	M4-9R	30"x24"	1	63	63	
5	MODIFY J13-1 (W-DOUBLE ARROW)	M1-5A	EXISTING				
		MO6-1	21"x21"	1	63	75	
6	100' S. CTH W	M4-8	24"x12"	1	63	63	
	"	M3-2	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	75	W
7	MODIFY J1-2 (JCT-W;END-GW)	M4-8A	24"x18"	1	63	63	
	"	M1-5A	EXISTING				
8	500' N. OF CTH GW/CTH A INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-2	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
	"	MO5-1L	21"x21"	1	63	63	
9	100' N. OF CTH GW/CTH A INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-4	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
10	50' N. OF CTH GW/CTH A INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-2	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
	"	MO6-1	21"x21"	1	63	63	
11	RT. OF J13-2	M4-8	24"x12"	1	63	63	
	"	M3-4	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
	"	MO6-1	21"x21"	1	63	63	
12	100' E. OF CTH A/CTH GW INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-2	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
13	500' E. OF CTH A/CTH GW INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-4	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
	"	MO5-1R	21"x21"	1	63	63	
14	100' W. OF CTH A/MENTINK RD. INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-4	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
	"	MO6-1	21"x21"	1	63	63	
	PAGE SUBTOTALS					2,733	

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

TRAFFIC CONTROL DETOUR SIGN SUMMARY (CONTINUED)

SIGN NO.	LOCATION	SIGN CODE	SIZE	NUMBER IN SERVICE	APPROX. SERVICE PERIOD DAYS	643.0900 SIGNS * DAYS	REMARKS
15	100' E. OF CTH A/MENTINK RD. INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-2	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
	"	MO6-1	21"x21"	1	63	63	
16	500' W. OF CTH A/CTH KW INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-2	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
	"	MO5-1L	21"x21"	1	63	63	
17	100' W. OF CTH A/CTH KW INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-4	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
18	100' W. OF CTH A/CTH KW INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-2	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
	"	MO6-1	21"x21"	1	63	63	
19	RT. OF R1-1	M4-8	24"x12"	1	63	63	
	"	M3-4	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
	"	MO6-1	21"x21"	1	63	63	
20	100' N. OF CTH KW/CTH A INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-2	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
21	500' N. OF CTH KW/CTH A INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-4	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
	"	MO5-1R	21"x21"	1	63	63	
22	MODIFY J1-2 (JCT-W;END-KW)	M4-8A	24"x18"	1	63	63	
	"	M1-5A	EXISTING				
23	100' S. OF CTH KW/CTH W INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-4	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	63	W
24	MODIFY J13-1 (W-DOUBLE ARROW)	M1-5A	EXISTING				
	"	MO6-1	21"x21"	1	63	75	
25	100' E. OF CTH W/CTH KW INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-4	24"x12"	1	63	75	
	"	M1-5A	24"x24"	1	63	75	
	"	MO6-1	21"x21"	1	63	63	
26	500' E. OF CTH W/CTH KW INTERSECTION	M4-8	24"x12"	1	63	63	
	"	M3-4	24"x12"	1	63	63	
	"	M1-5A	24"x24"	1	63	75	W
	"	MO5-1L	21"x21"	1	63	63	
27	1500' W. OF CTH W/CTH KW INTERSECTION	M1-5A	24"x24"	1	63	63	W
	"	WO20-2-A	48"x48"	1	63	63	
28	CTH W/CTH GW INTERSECTION	R11-3B	60"x30"	1	63	63	0.5 MILES
	"	M4-9L	30"x24"	1	63	63	
31	CTH W/CTH OO INTERSECTION	R11-3C	60"x24"	1	63	63	0.5 MILES
	PAGE SUBTOTALS					2,820	

PROJECT TOTALS5,553

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

TRAFFIC CONTROL SUMMARY

LOCATION	APPROXIMATE SERVICE DAYS	643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS TYPE A		643.0900 * SIGNS		REMARKS
		NO. IN SERVICE	DAYS	NO. IN SERVICE	DAYS	NO. IN SERVICE	DAYS	
CTH W / CTH GW	63	2	126	2	126	1	63	BRIDGE OUT 1 MILE AHEAD - SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL A SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL C SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL D SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL D SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL C
CTH W / CTH OO	63	4	252	8	504	6	378	
WEST WORK ZONE LIMITS	63	5	315	6	378	1	63	
EAST WORK ZONE LIMITS	63	5	315	6	378	1	63	
CTH W / MENTINK RD	63	4	252	8	504	4	252	
CTH W / CTH KW	63	2	126	2	126	1	63	BRIDGE OUT 1 MILE AHEAD - SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL A
TOTALS			1,386		2,016		882	

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

MARKING

STATION	TO	STATION	LOCATION	646.1020		REMARKS
				LINE EPOXY 4-INCH YELLOW LF	LINE EPOXY 4-INCH WHITE LF	
7+18.2	-	12+67	CTH W, RT & LT	-	1098	EDGE LINE
7+18.2	-	12+67	CTH W	137	-	CENTERLINE, YELLOW SKIPS
SUBTOTALS				137	1,098	
TOTAL					1,235	

SAWING ASPHALT

STATION	LOCATION	690.0150 LF
7+18.2	CTH W	22
9+40	CTH W	21
10+60	CTH W	21
12+67	CTH W	22
		86

CONSTRUCTION STAKING

CATEGORY	STATION	TO	STATION	LOCATION	650.4500	650.5000	650.6500	650.8000	650.9910	650.9920
					SUBGRADE	BASE	STRUCTURE	RESURFACING	SUPPLEMENTAL	SLOPE
							LAYOUT	REFERENCE	CONTROL	STAKES
					LF	LF	LS	LF	LS	LF
0010	6+59.8	-	9+82.8	CTH W	323	323	-	222	1	323
0010	10+13.3	-	13+27.1	CTH W	314	314	-	207	-	314
0010	SUBTOTALS				637	637	0	429	1	637
0020	10+00			B-59-0325	-	-	1	0	-	-
0020	SUBTOTALS				-	-	1	0	-	-
TOTALS					637	637	1	429	1	637

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W LINE
PROPERTY LINE
LOT, TIE, AND OTHER MINOR LINES
SLOPE INTERCEPT
CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC.)
FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)
TEMP. LIMITED EASEMENT AREA
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING
BUILDING (TO BE REMOVED)
BRIDGE

PARCEL NUMBER 25
PRW POINT NUMBER 100
SECTION CORNER
NOTATION FOR COMBUSTIBLE FLUIDS
NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES
ACCESS CONTROLLED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)
NO ACCESS (NEW HIGHWAY)
NATIONAL GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT
PARALLEL OFFSETS

UTILITY NUMBER 40
TLE POINT NUMBER 1150
R/W MONUMENT
NON-MONUMENTED R/W POINT
FOUND IRON PIN
VALVE (GAS, WATER, ETC.)
SIGN
OFF-PREMISE SIGN

CONVENTIONAL UTILITY SYMBOLS
WATER
GAS
TELEPHONE
OVERHEAD TRANSMISSION LINES
ELECTRIC
CABLE TELEVISION
FIBER OPTIC
SANITARY SEWER
STORM SEWER
ELECTRIC TOWER

CURVE DATA ABBREVIATIONS
LONG CHORD
LONG CHORD BEARING
RADIUS
DEGREE OF CURVE
CENTRAL ANGLE
LENGTH OF CURVE
TANGENT
DIRECTION AHEAD
DIRECTION BACK

CONVENTIONAL ABBREVIATIONS
ACCESS RIGHTS
ACRES
AHEAD
ALUMINUM
AND OTHERS
BACK
BLOCK
CENTERLINE
CERTIFIED SURVEY MAP
CONCRETE
COUNTY
COUNTY TRUNK HIGHWAY
DISTANCE
CORNER
DOCUMENT NUMBER
EASEMENT
EXISTING
GAS VALVE
GRID NORTH
HIGHWAY EASEMENT
IDENTIFICATION
LAND CONTRACT
LEFT
MONUMENT
NATIONAL GEODETIC SURVEY
NUMBER

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NO.	OWNER(S)	INTEREST REQUIRED	R/W (ACRES)			
			FEE	EXISTING	TOTAL	TLE
1	KENNETH C. AND JOAN J. BEARDSLEY	FEE	0.073	0.260	0.333	---
2	HAROLD AND DOROTHY TEN PAS FARM LLC	FEE	0.029	0.158	0.187	---
50	FRONTIER COMMUNICATIONS	RELEASE	---	---	---	---

R/W PROJECT NUMBER
4199-02-00

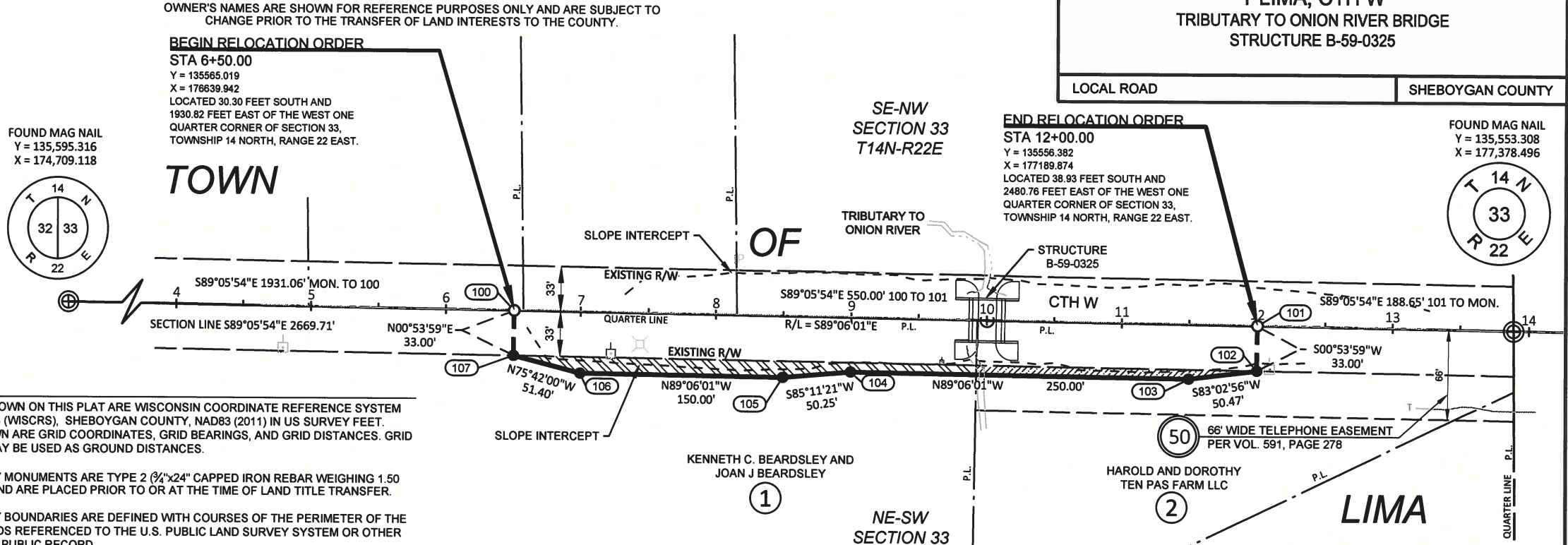
CONSTRUCTION PROJECT NUMBER
4199-02-71

SHEET NUMBER
4.01

TOTAL SHEETS
1

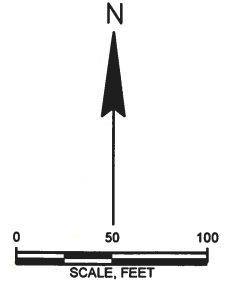
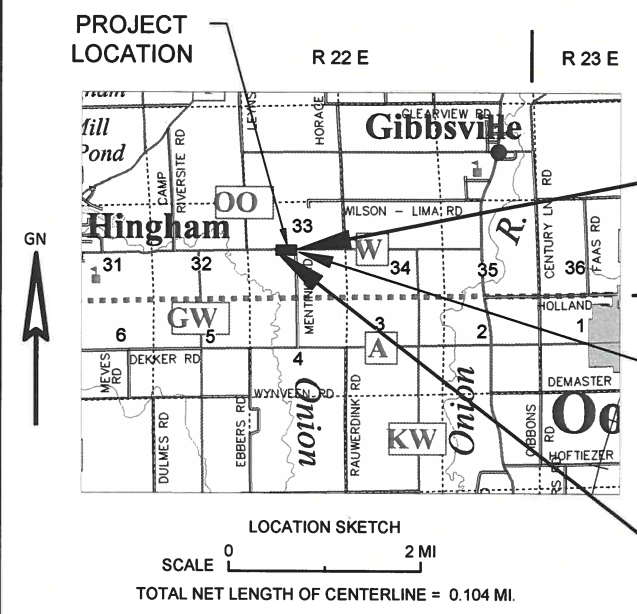
PLAT OF RIGHT OF WAY REQUIRED FOR
T LIMA, CTH W
TRIBUTARY TO ONION RIVER BRIDGE
STRUCTURE B-59-0325

LOCAL ROAD
SHEBOYGAN COUNTY



STATION & OFFSET TABLE

POINT	STATION	OFFSET	Y COORDS	X COORDS
100	6+50.00	0.09RT	135564.93	176639.94
101	12+00.00	0.11RT	135556.28	177189.87
102	12+00.00	33.11RT	135523.28	177189.35
103	11+50.00	40.00RT	135517.17	177139.25
104	9+00.00	40.00RT	135521.10	176889.28
105	8+50.00	45.00RT	135516.88	176839.21
106	7+00.00	45.00RT	135519.24	176689.23
107	6+50.00	33.09RT	135531.93	176639.42



APPROVED FOR
SHEBOYGAN COUNTY

5/20/2021
DATE

COUNTY HIGHWAY COMMISSIONER

PLAT PREPARED BY
AYRES

THE SURVEY IS PREPARED AT THE REQUEST OF THE SHEBOYGAN COUNTY.

THE FIELD SURVEY WAS PERFORMED IN AUGUST 2020.

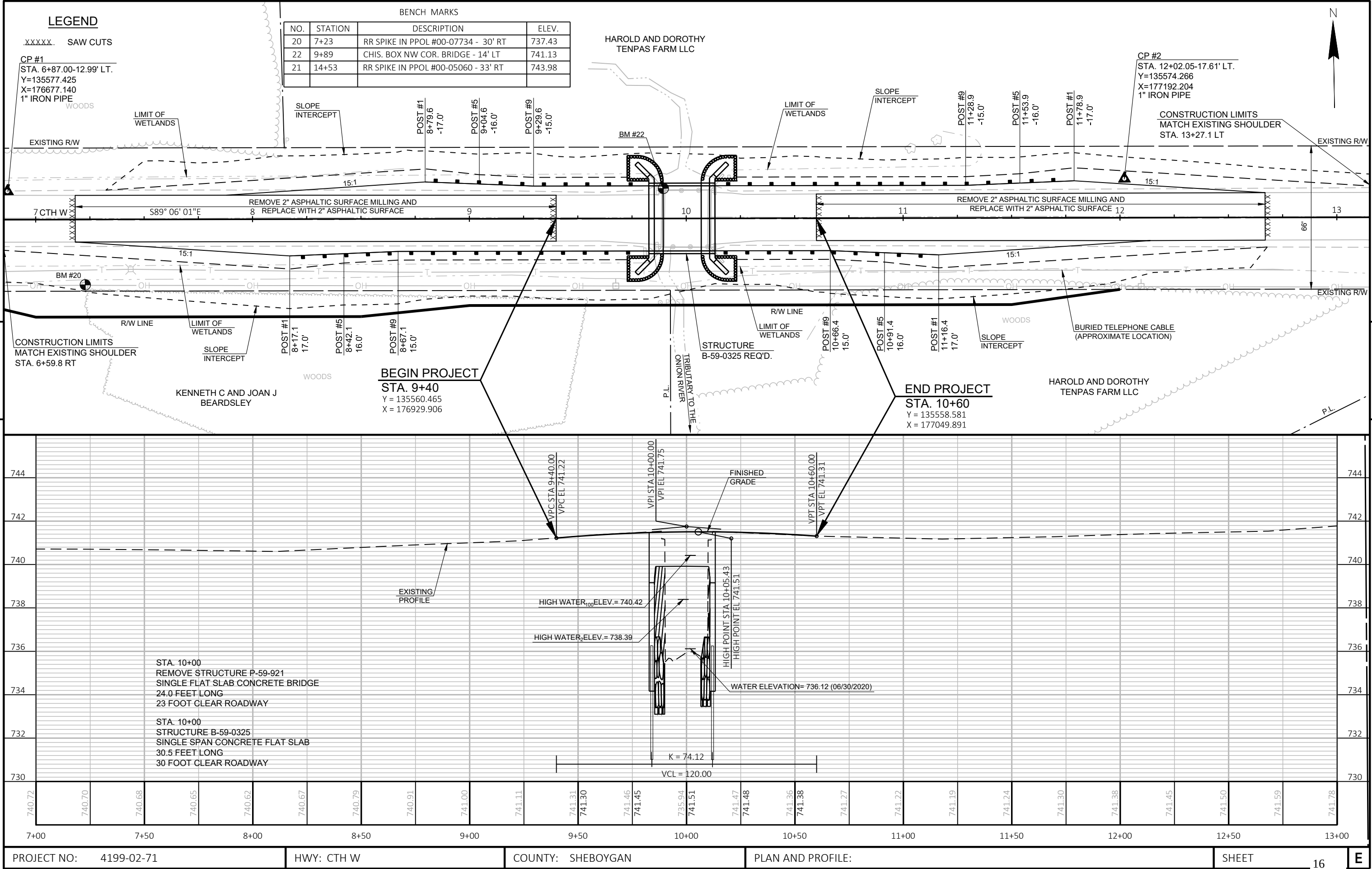
THIS SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WISCONSIN
JACOB S. JENSEN
S-2961
SURING, WI
LAND SURVEYOR

JACOB S. JENSEN, P.L.S.
S-2961

05/10/2021

15



Standard Detail Drawing List

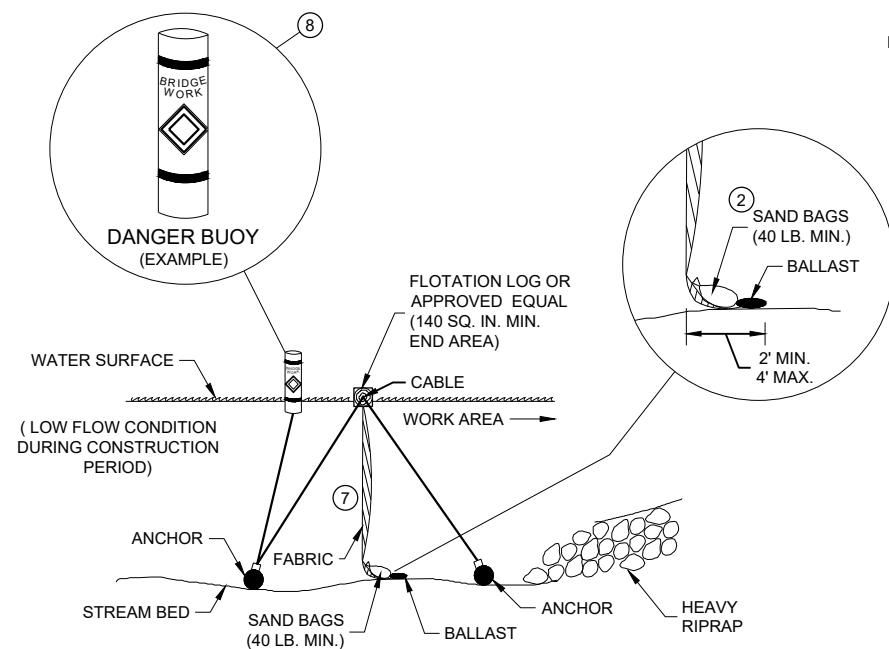
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM 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
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



- 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.

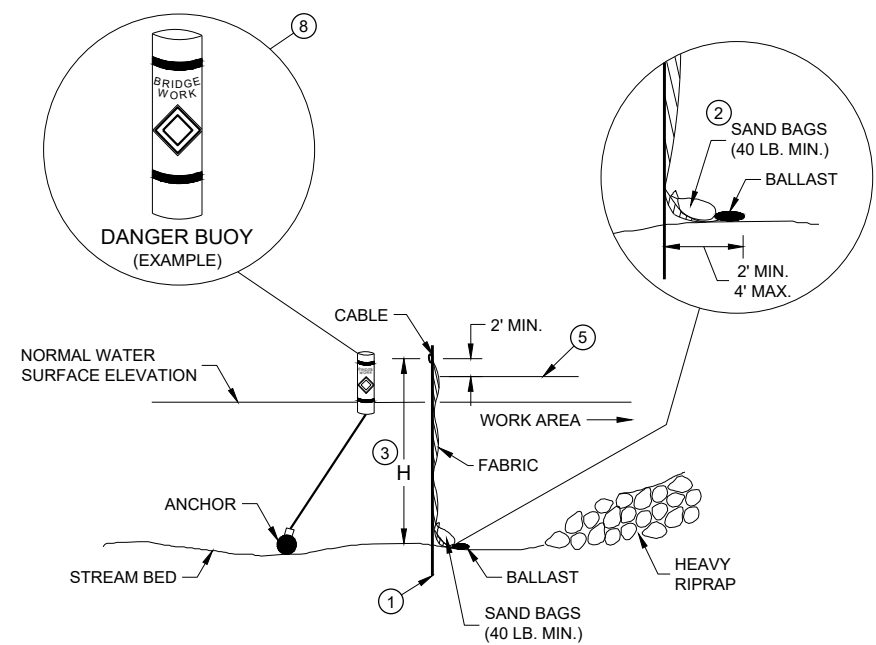


SILT FENCE
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED <u>4-29-05</u> DATE <u>/s/ Beth Cannata</u> CHIEF ROADWAY DEVELOP 18 ENGINEER FHWA



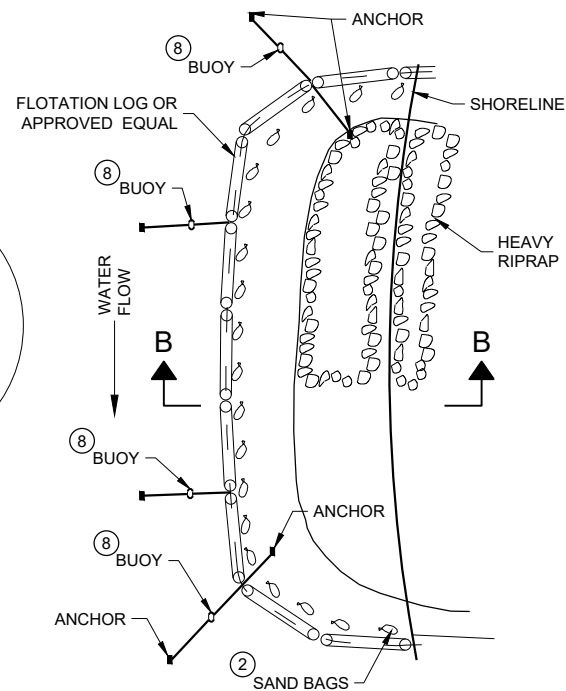
SECTION B - B

TURBIDITY BARRIER - FLOAT ALTERNATIVE CAUTION - SEE NOTE 6

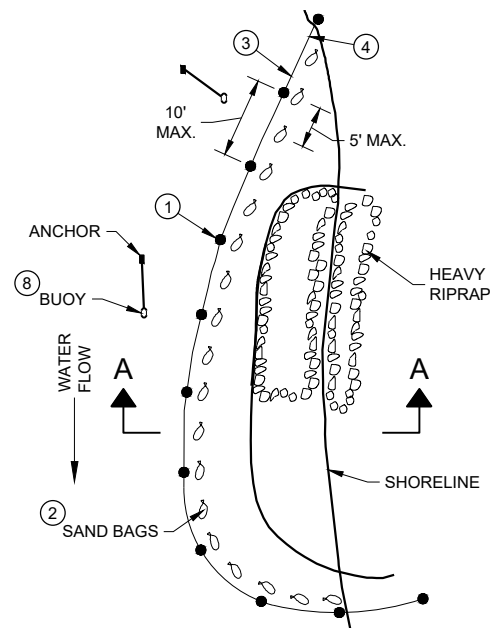


SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW



PLAN VIEW

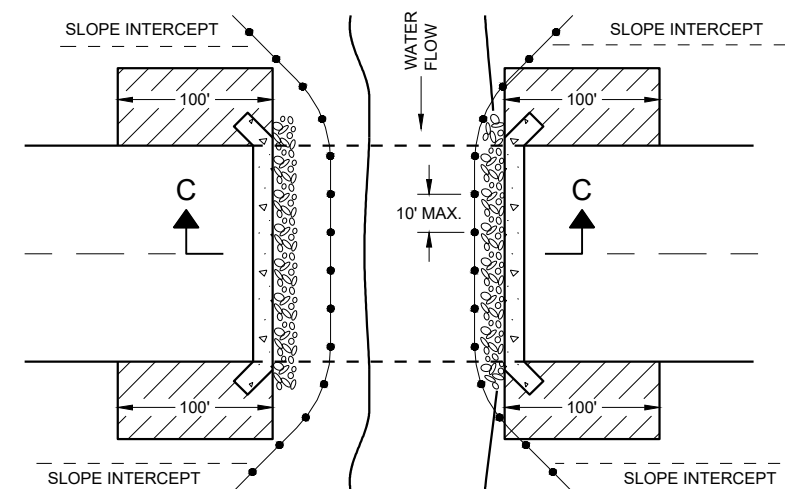
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

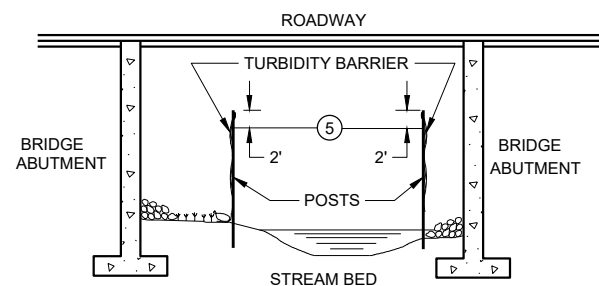
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



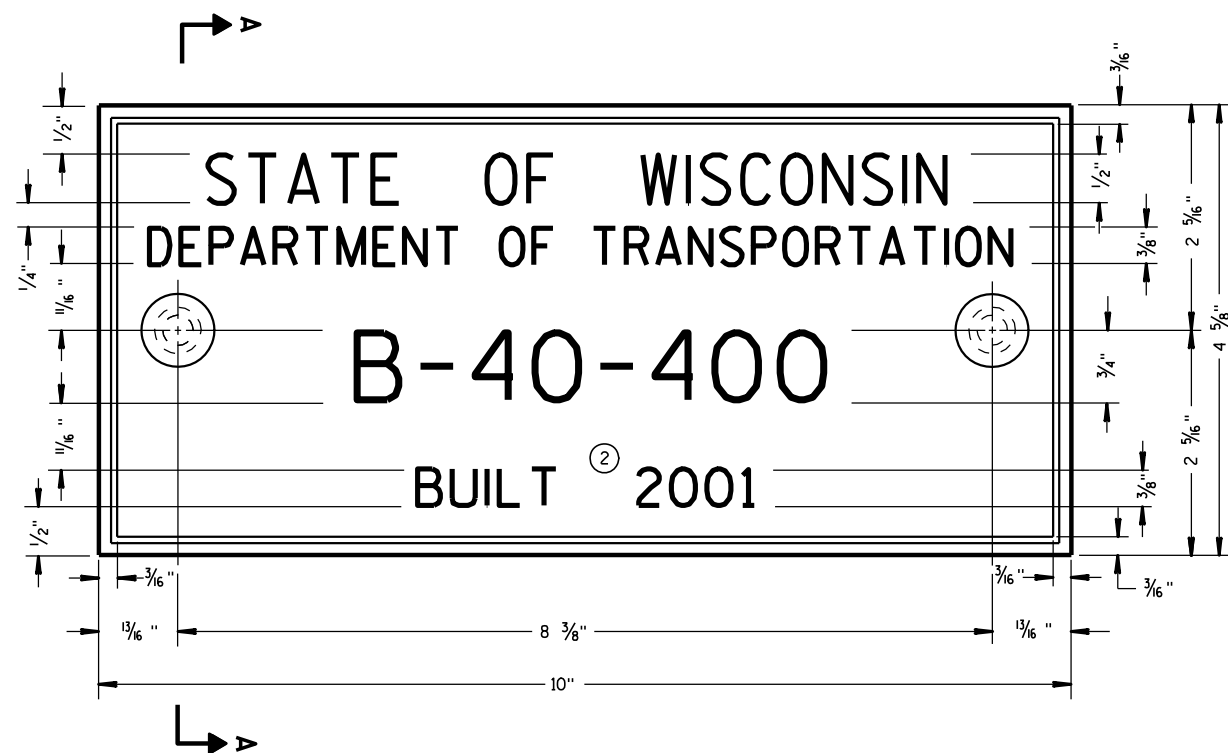
SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

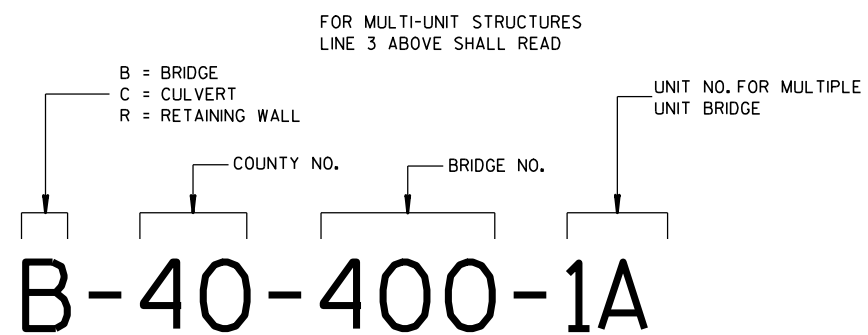
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/4/02 DATE /S/ Beth Cannestra
DATE CHIEF ROADWAY DEVELOPER
ENGINEER 19
FHWA



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



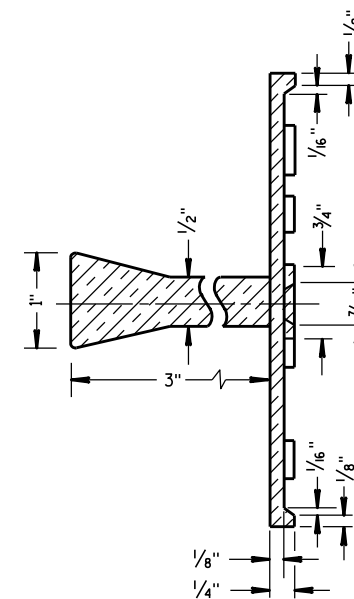
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

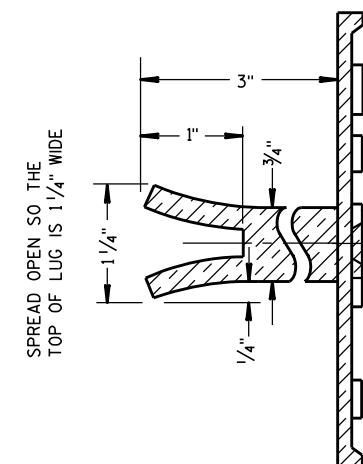
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

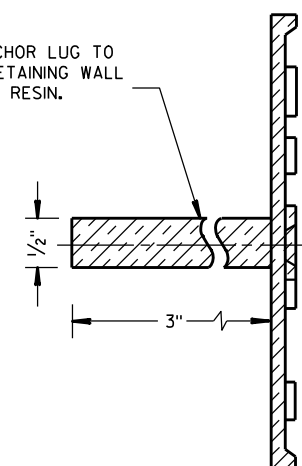


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

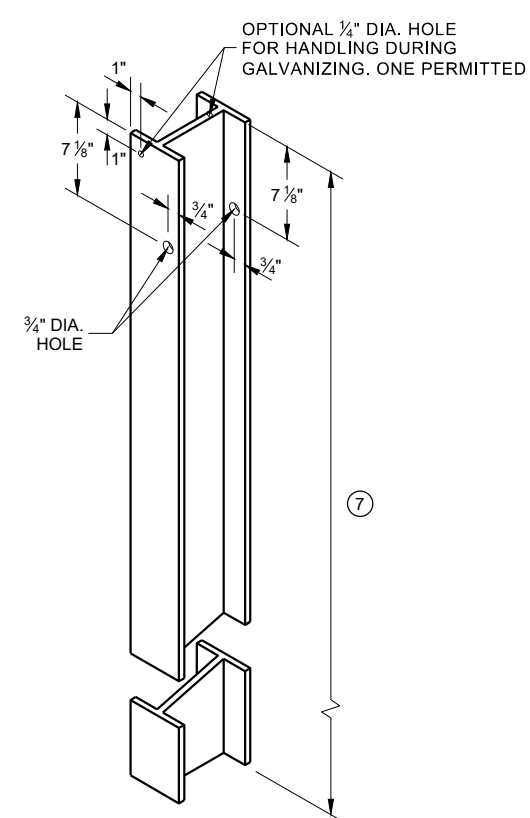
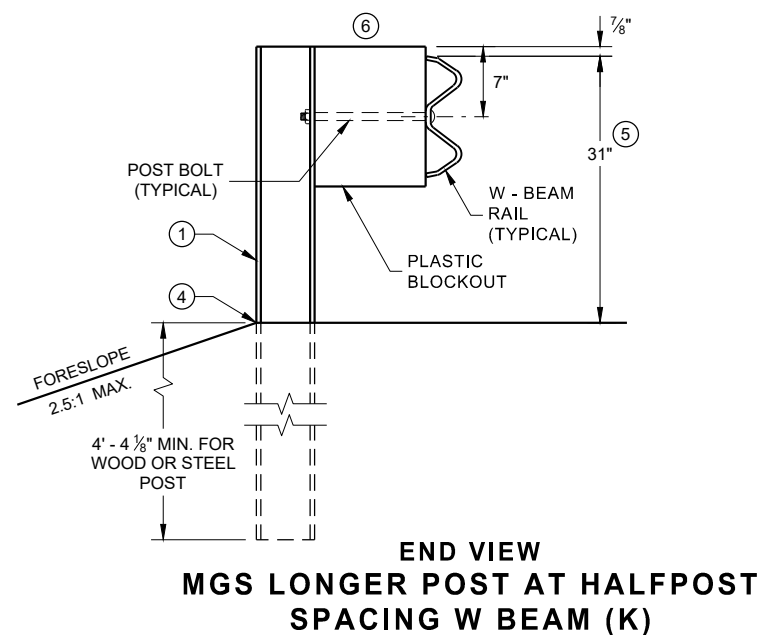
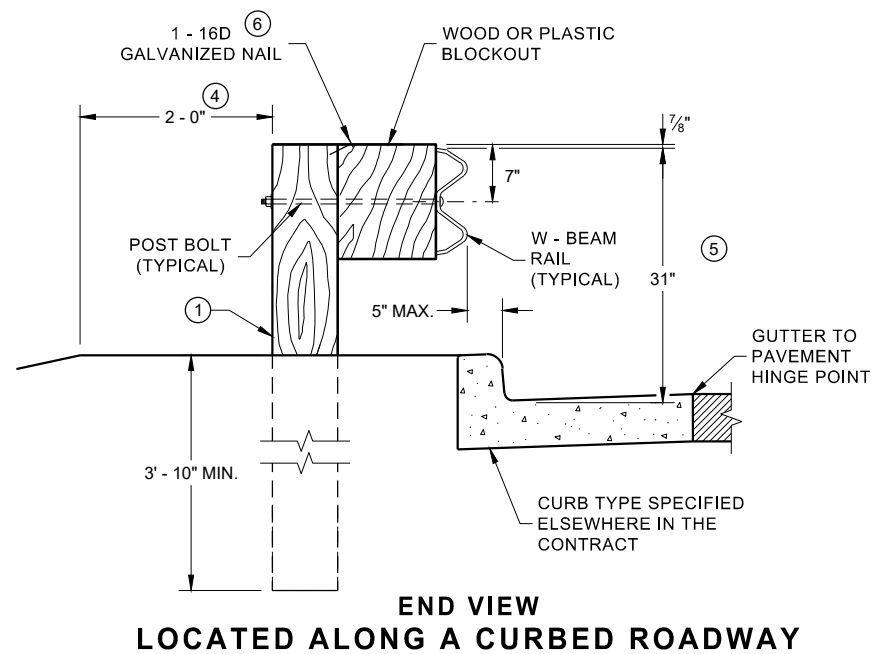
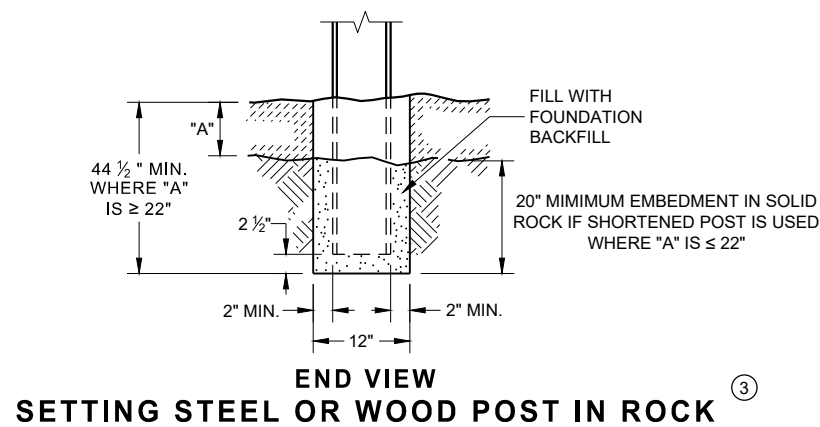
3/26/10
DATE

FHWA

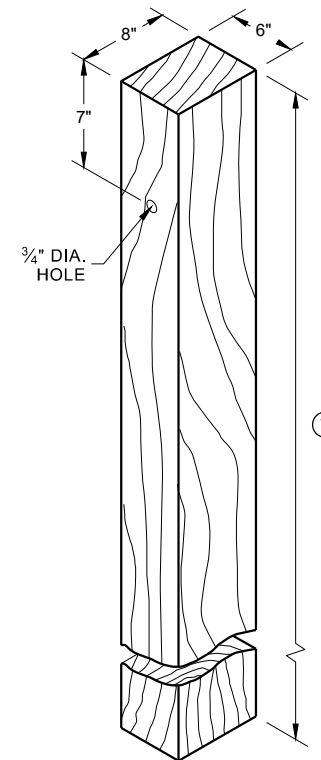
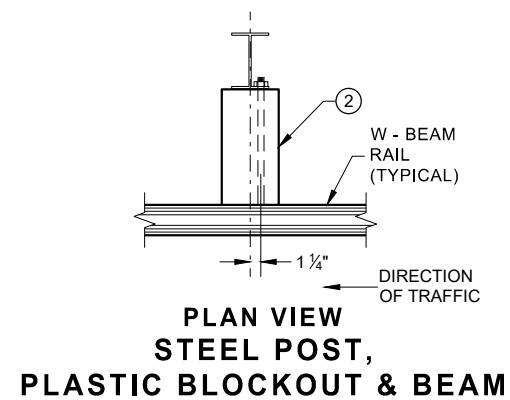
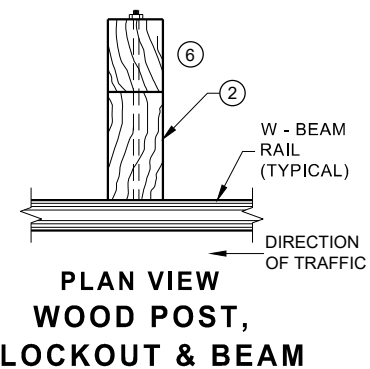
/S/ Scot Beck
CHIEF STRUCTURAL DEVELOPER

JEER

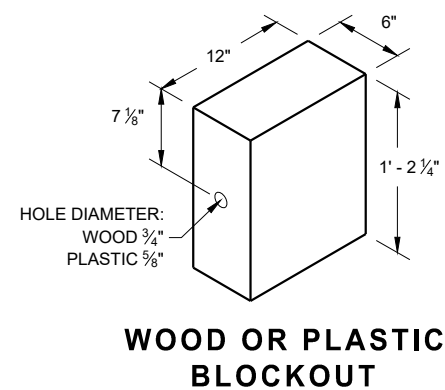
- 1 WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- 2 USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL.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



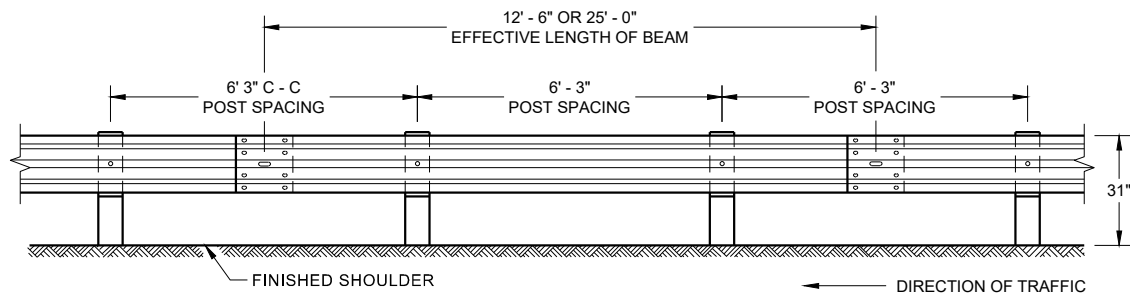
WOOD POST (6" X 8") NOMINAL ①



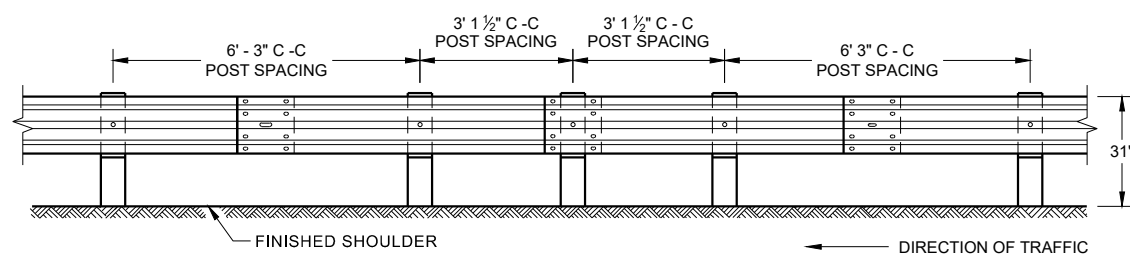
WOOD OR PLASTIC BLOCKOUT ②

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

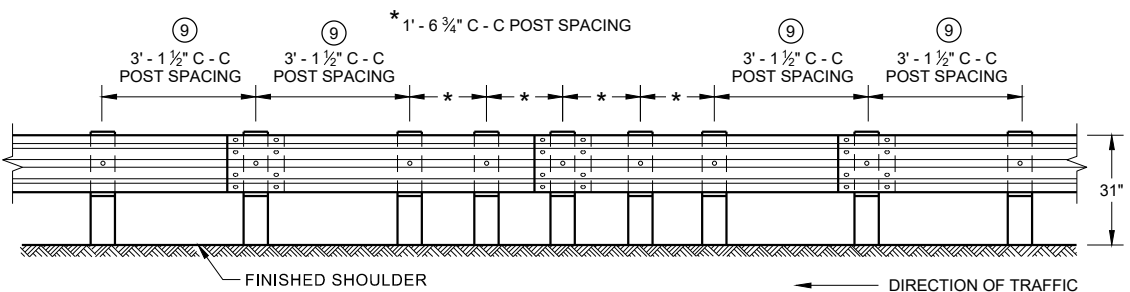
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



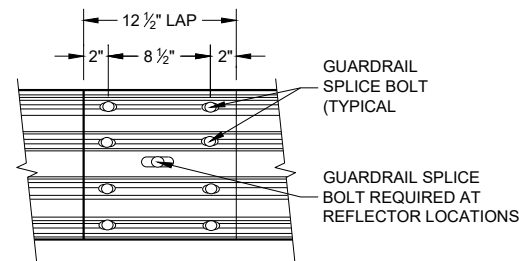
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



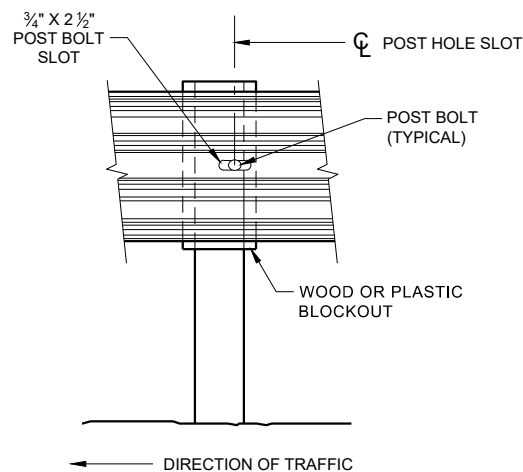
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



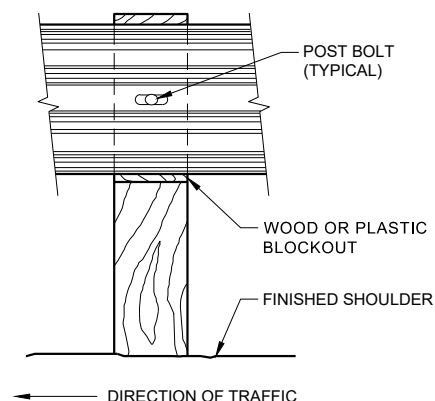
**FRONT VIEW
QUARTER POST SPACING (QS)**



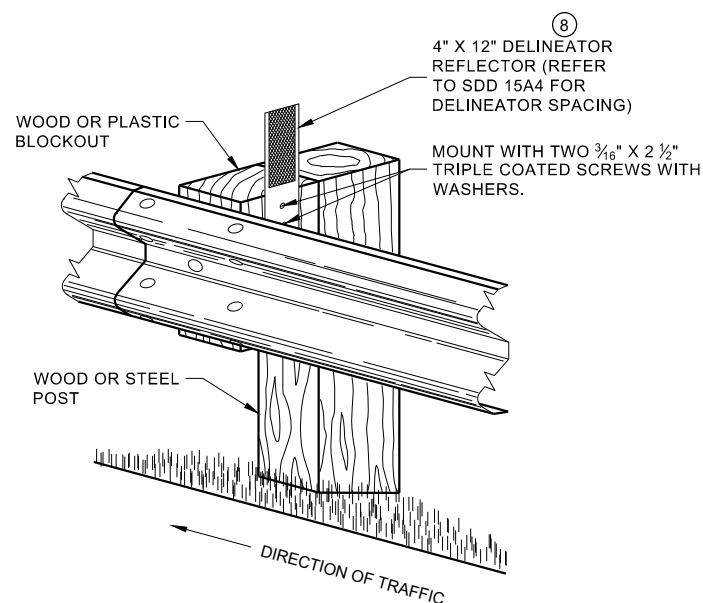
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



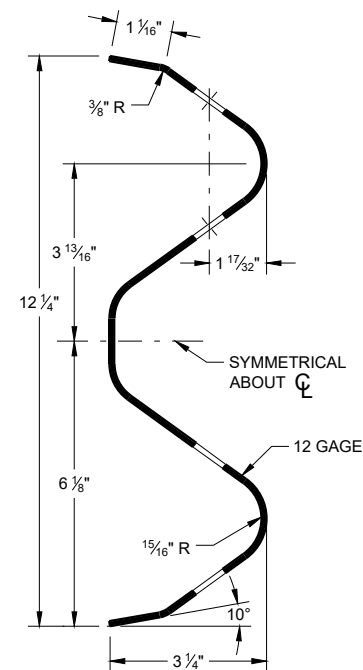
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

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



NOTE:

-

POST BOLT TABLE

Technical drawing of a circular object with concentric circles. The outermost circle has a diameter dimension of $1 \frac{5}{16}''$. Inside it is a smaller circle with a diameter dimension of $\frac{5}{8}''$. The distance between the top of the inner circle and the top of the outer circle is dimensioned as $\frac{15}{16}''$. The drawing includes a center crosshair for the inner circle.

ALTERNATE BOLT HEAD



1" X $\frac{1}{16}$ " DEEP
RECESS BOTH SIDES

$\frac{5}{8}$ " - 11 MODIFIED
HEAVY HEX NUT

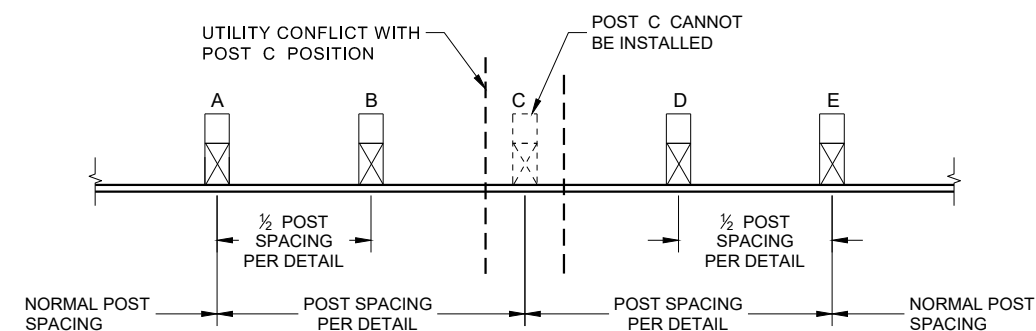
$\frac{1}{16}$ "

1 $\frac{5}{16}$ "

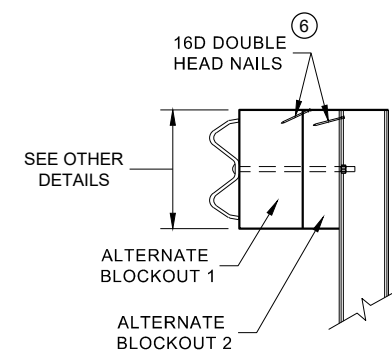
POST BOLT, SPLICE BOLT AND RECESS NUT

-
- The diagram shows a road with a dashed center line. A vehicle, represented by a rectangle with diagonal hatching, is moving from right to left, as indicated by an arrow labeled "DIRECTION OF TRAFFIC". The road surface is uneven, with a series of small bumps that increase in height as the vehicle approaches a larger rectangular obstacle labeled "OBSTACLE".

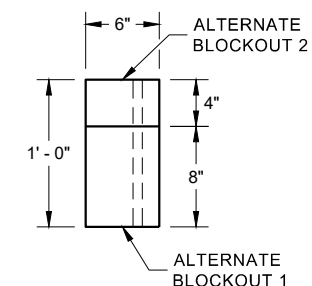
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

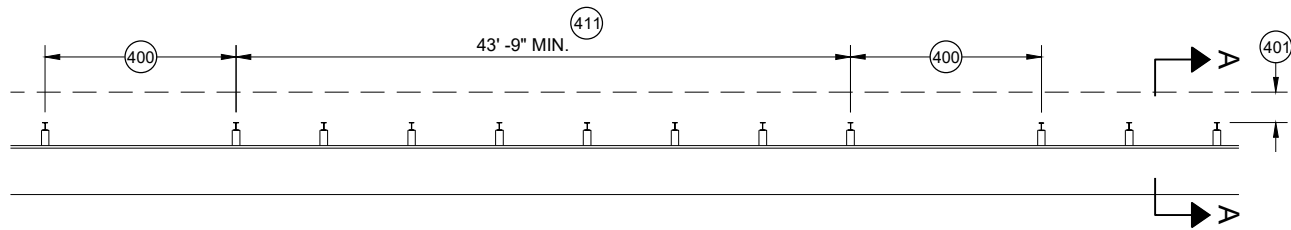


PLAN VIEW

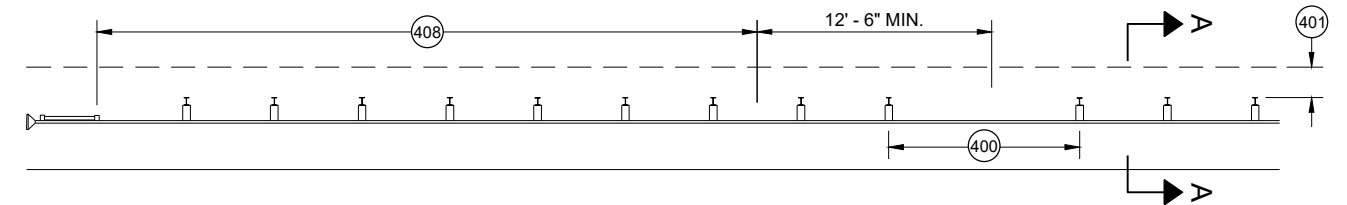
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

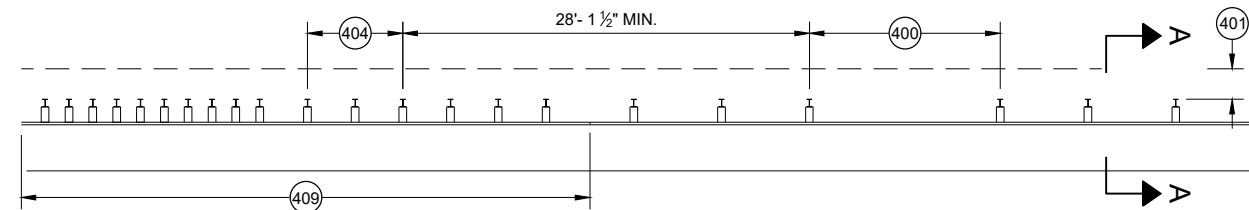
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 23



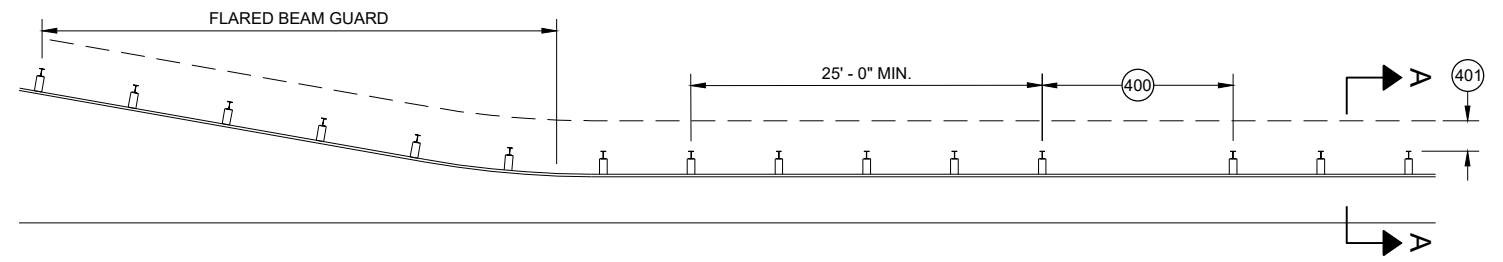
MISSING POST IN MGS GUARDRAIL



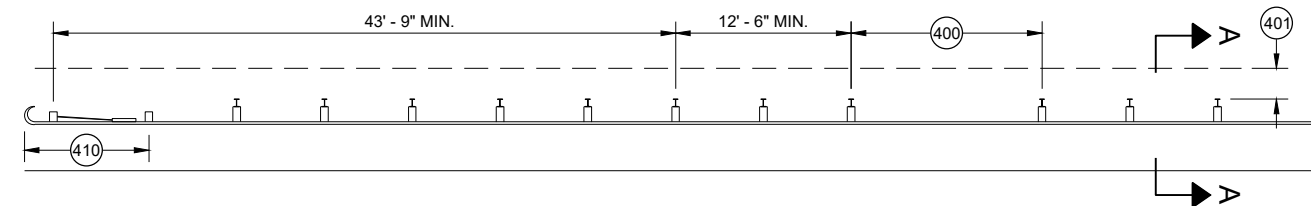
MISSING POST IN MGS GUARDRAIL NEAR EAT



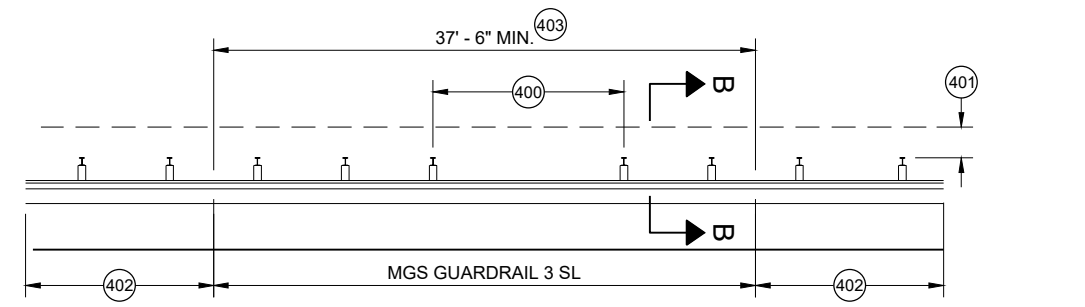
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

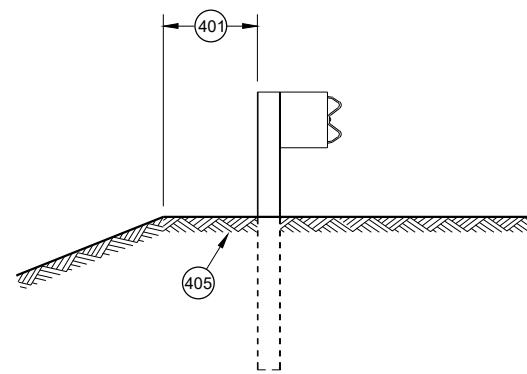


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

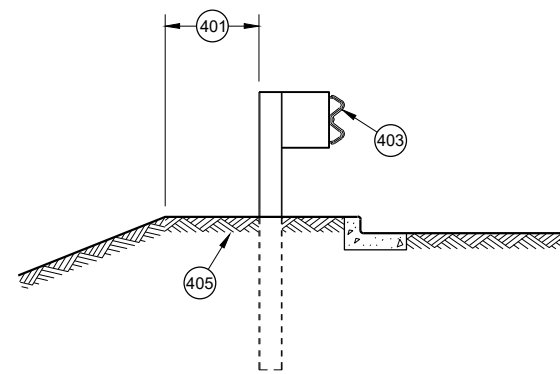


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

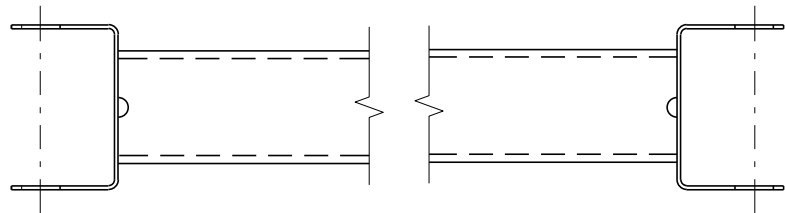
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

THE CENTER OF THE UPPER 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.

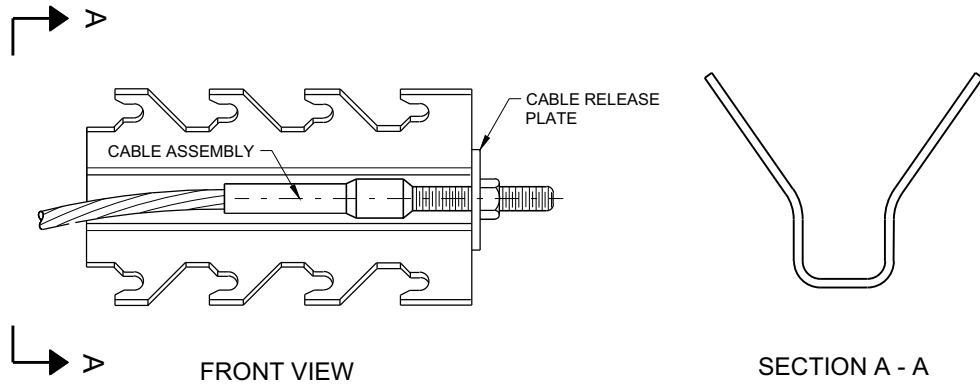


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 25

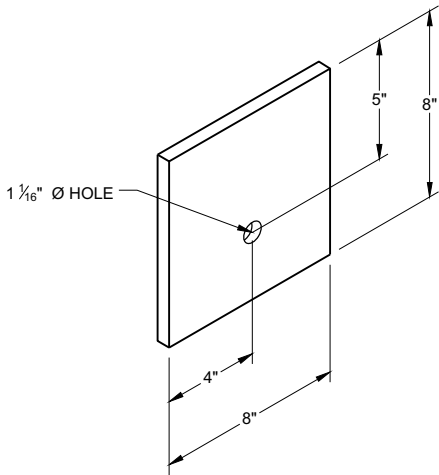


GENERIC GROUND STRUT⁹ (E)

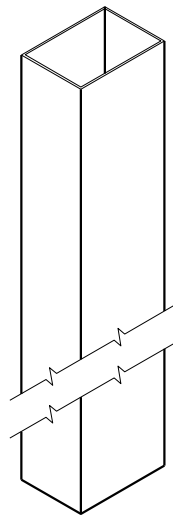
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED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



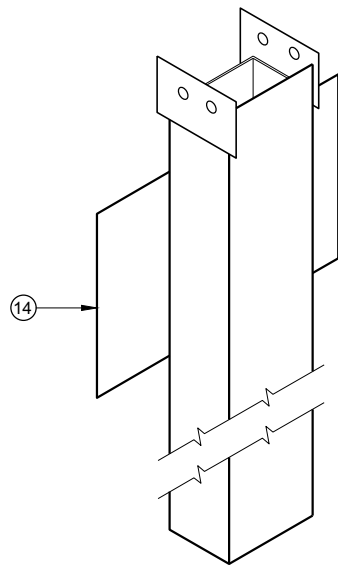
GENERIC ANCHOR CABLE BOX⁹ (E)



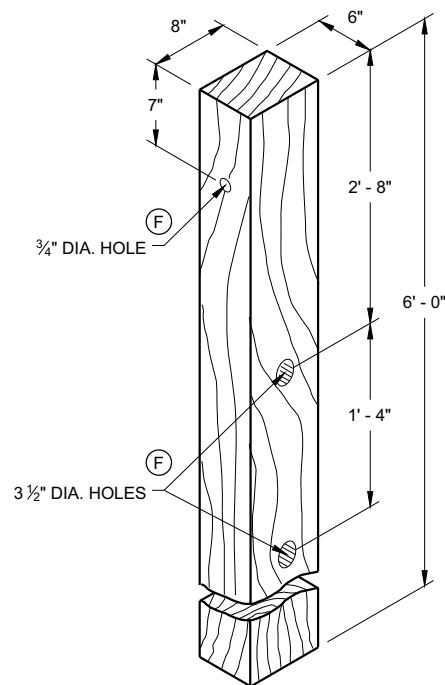
BEARING PLATE⁶ (E)



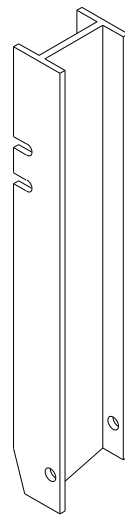
UPPER POST NO. 1 ⁽¹⁾ (E)



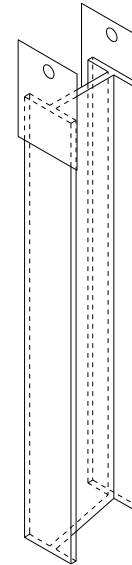
LOWER POST NO. 1 ⁽²⁾ (E)



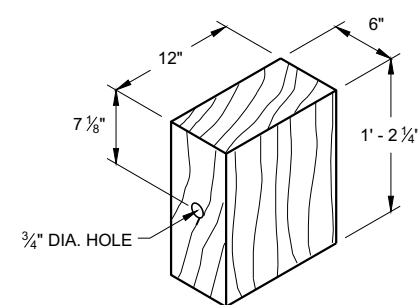
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



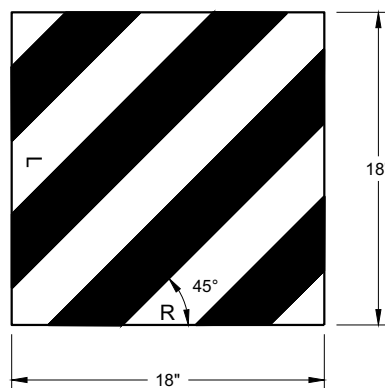
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



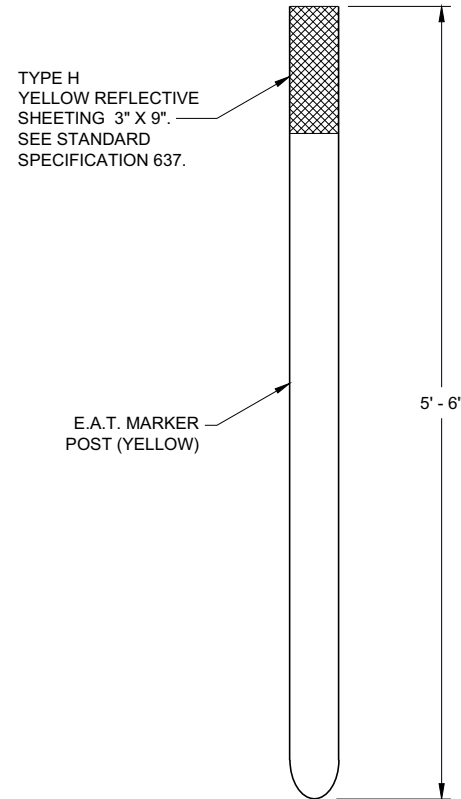
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

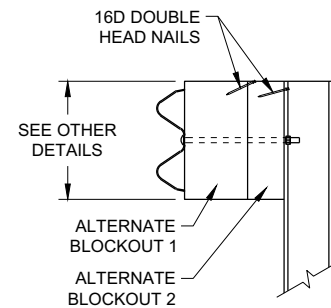


REFLECTIVE SHEETING DETAIL ^(E)



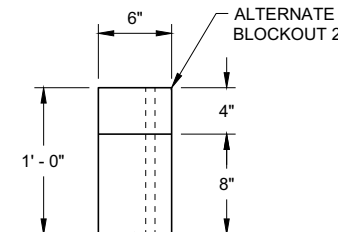
FRONT VIEW SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

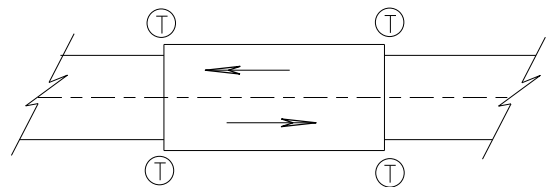


TOP VIEW

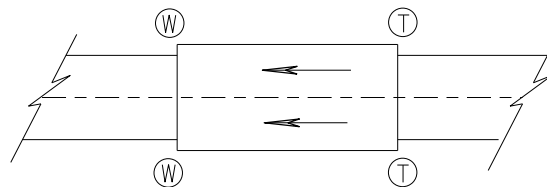
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR 27
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

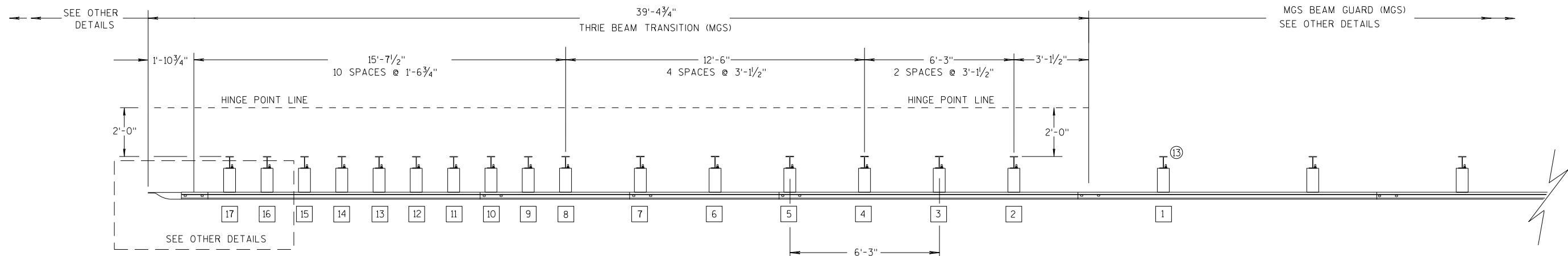
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

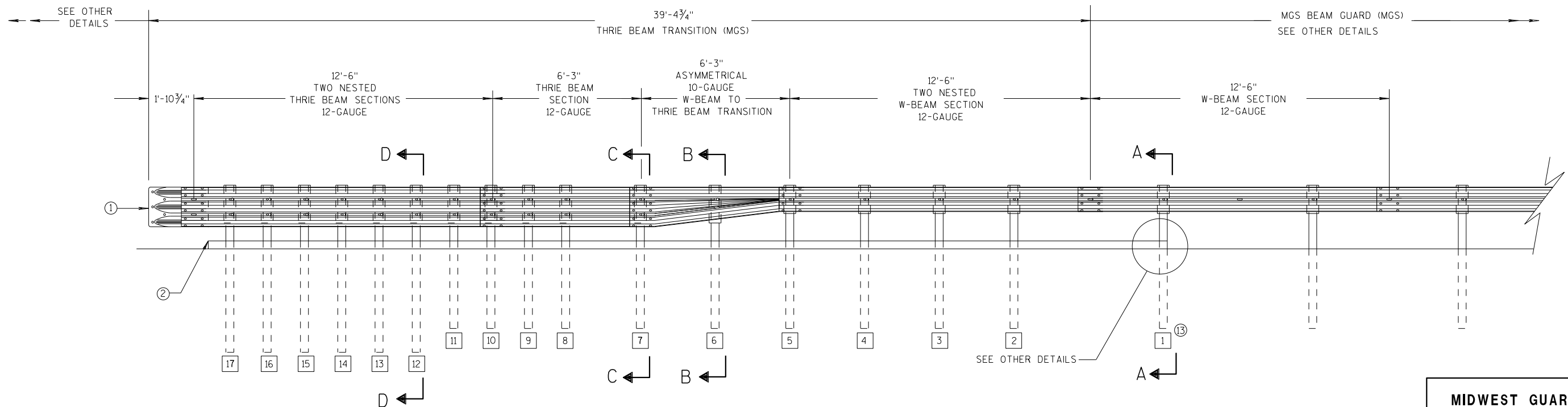
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



PLAN VIEW



ELEVATION VIEW

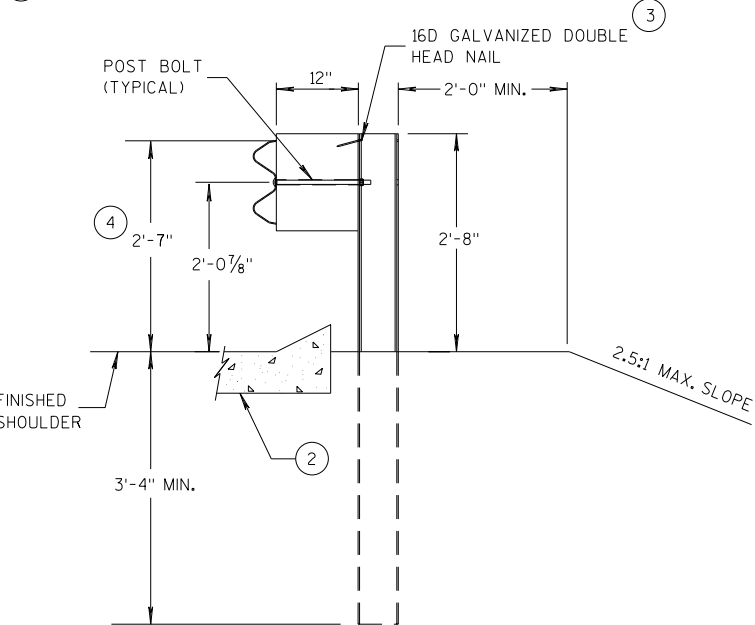
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

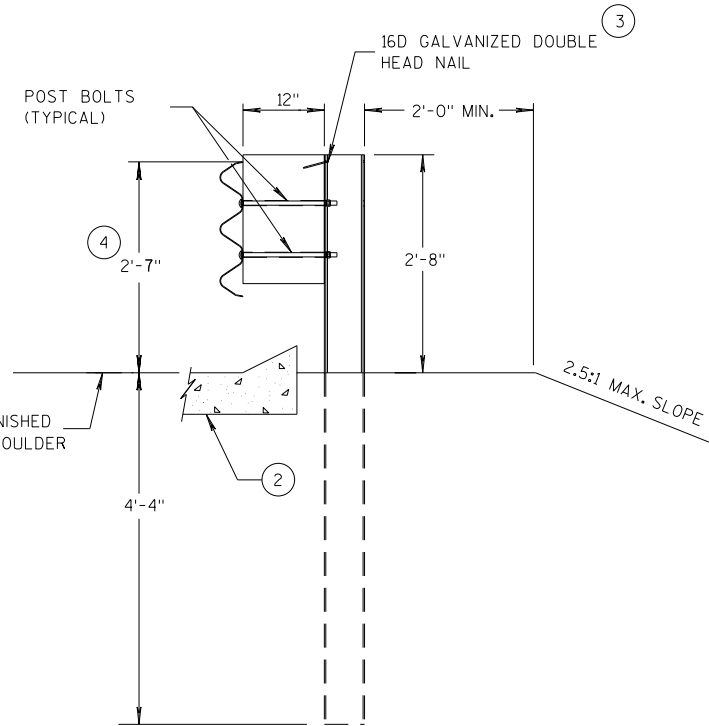
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

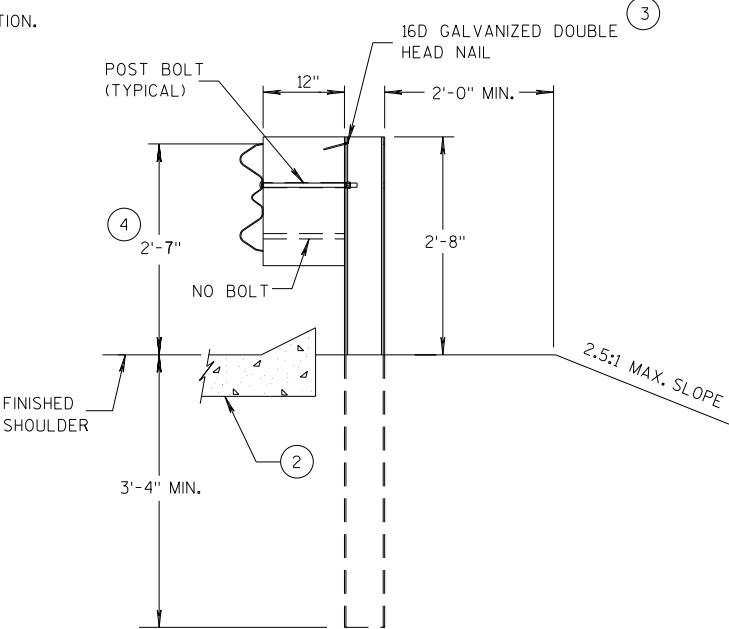
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



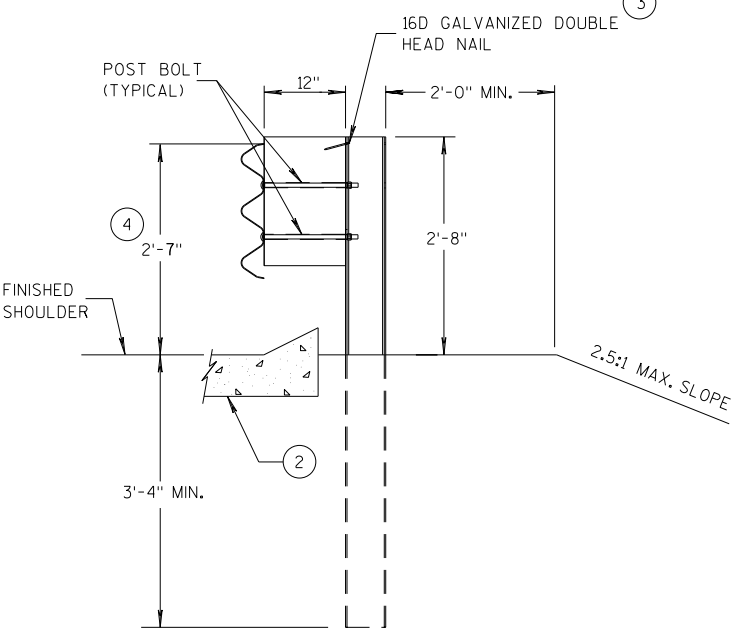
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

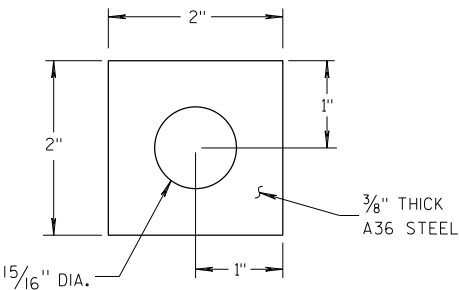
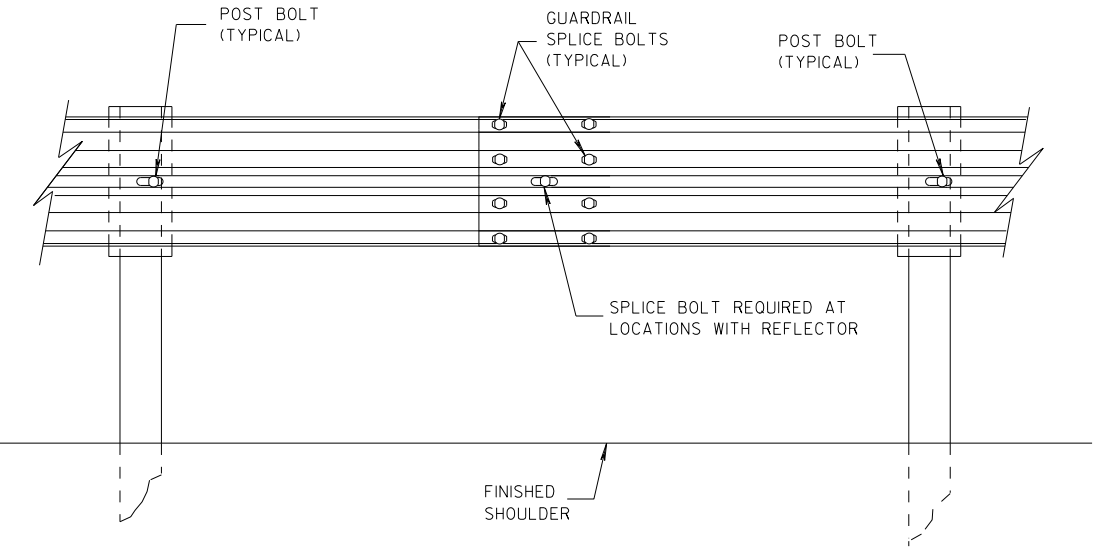
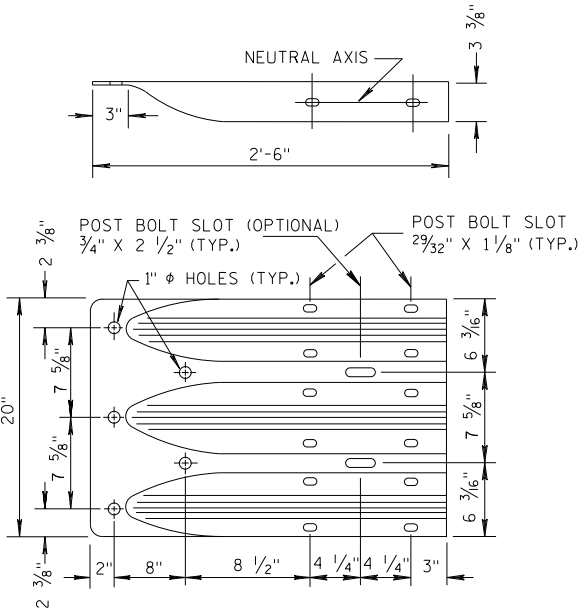


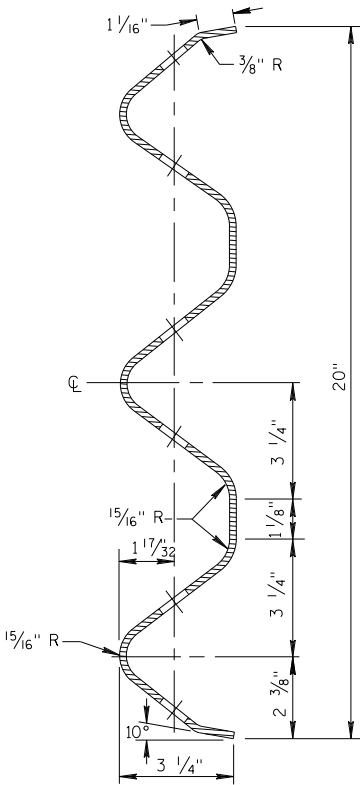
PLATE WASHER DETAIL



SPlice DETAIL



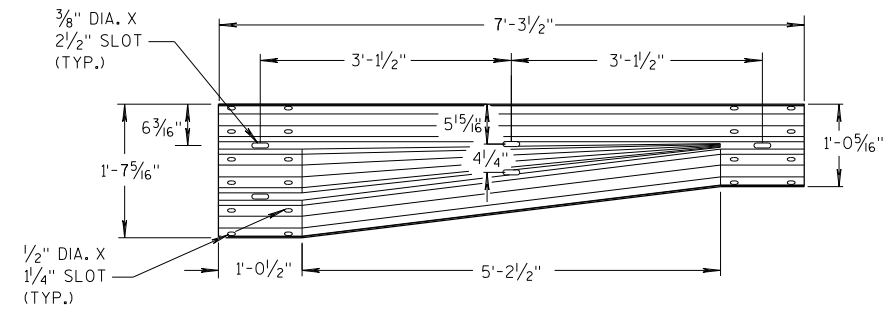
THRIE BEAM
TERMINAL CONNECTOR



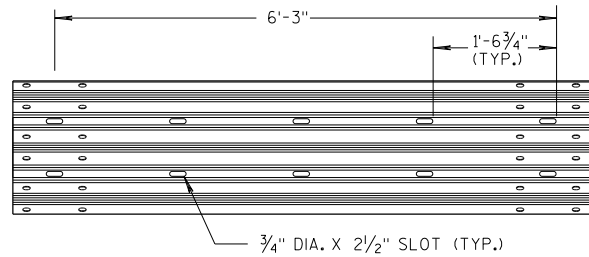
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

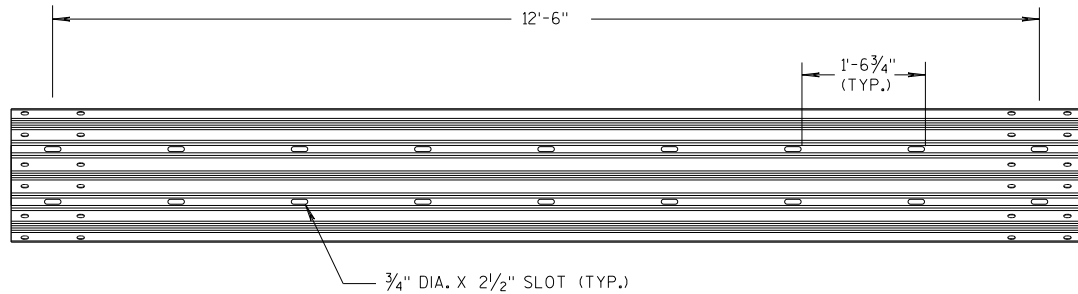
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



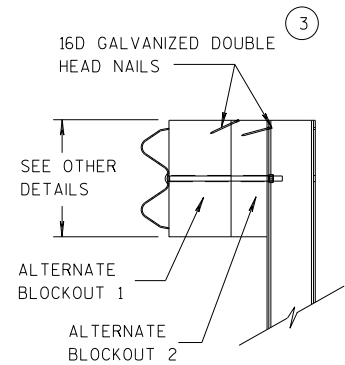
W-BEAM TO THRIE BEAM TRANSITION SECTION



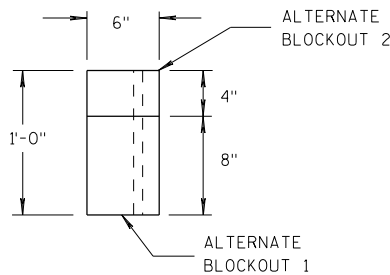
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

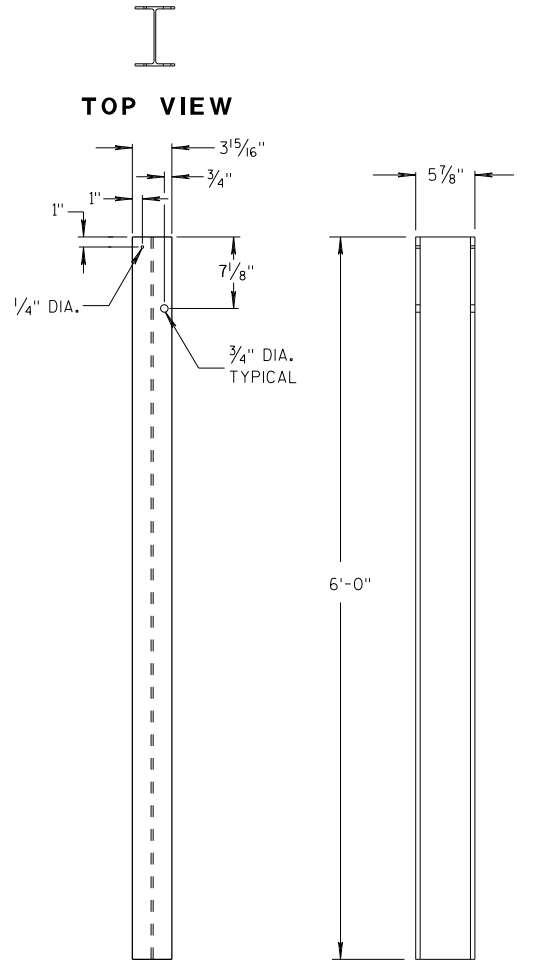


SIDE VIEW



TOP VIEW

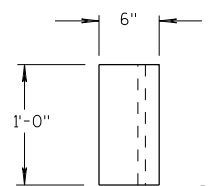
ALTERNATE WOOD BLOCKOUT DETAIL



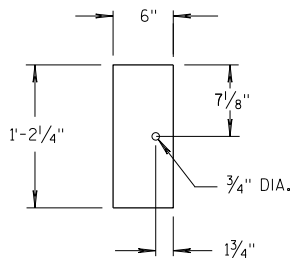
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

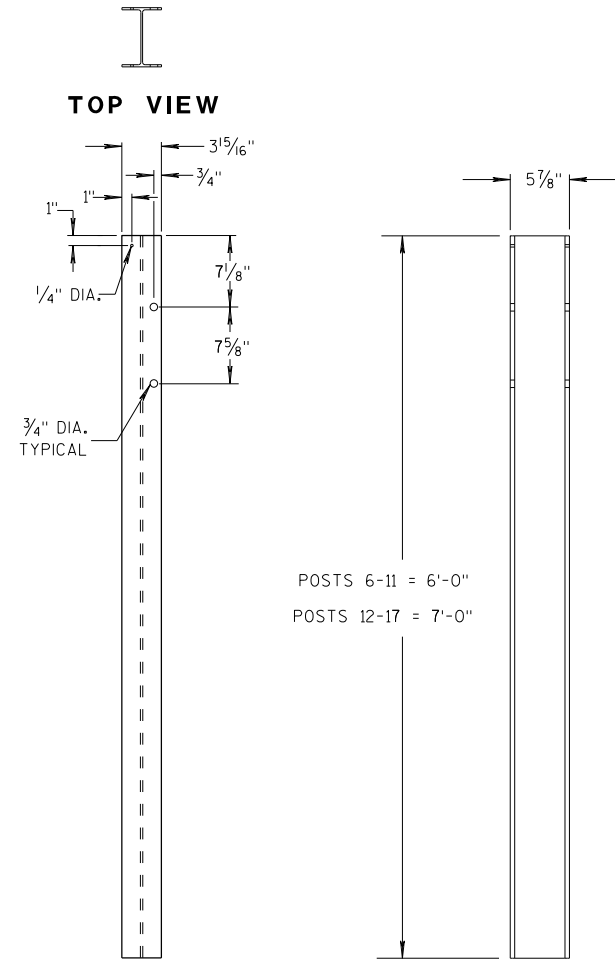


TOP VIEW



FRONT VIEW

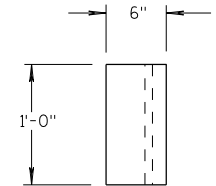
BLOCKOUT POSTS 1-5



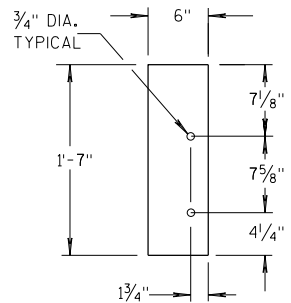
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

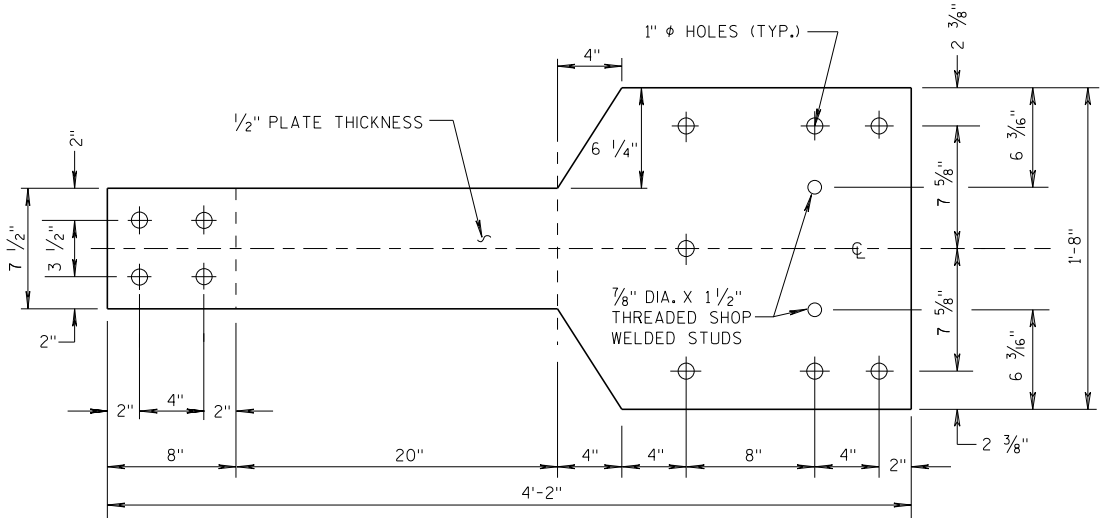
⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

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

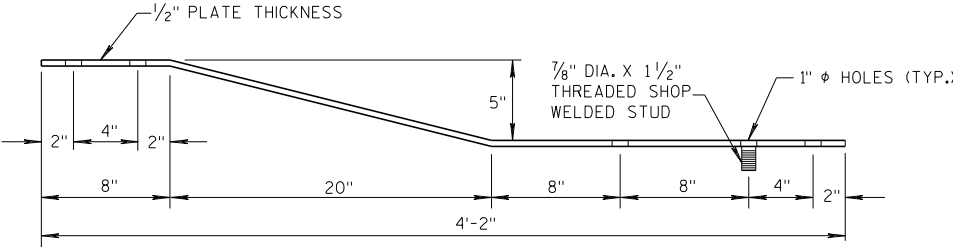
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

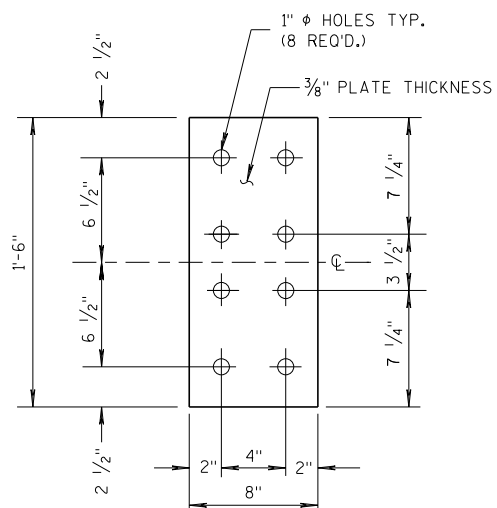
④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW

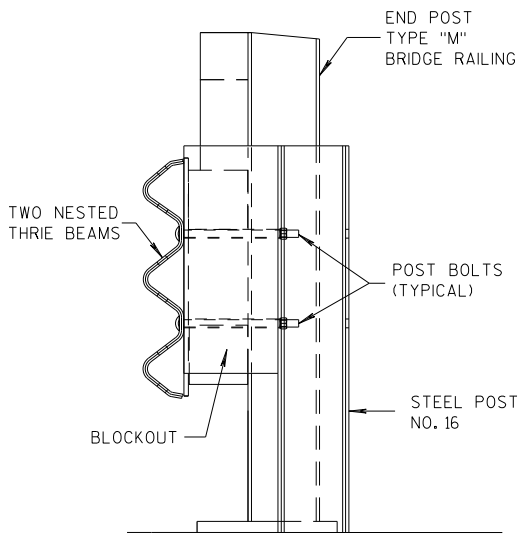


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

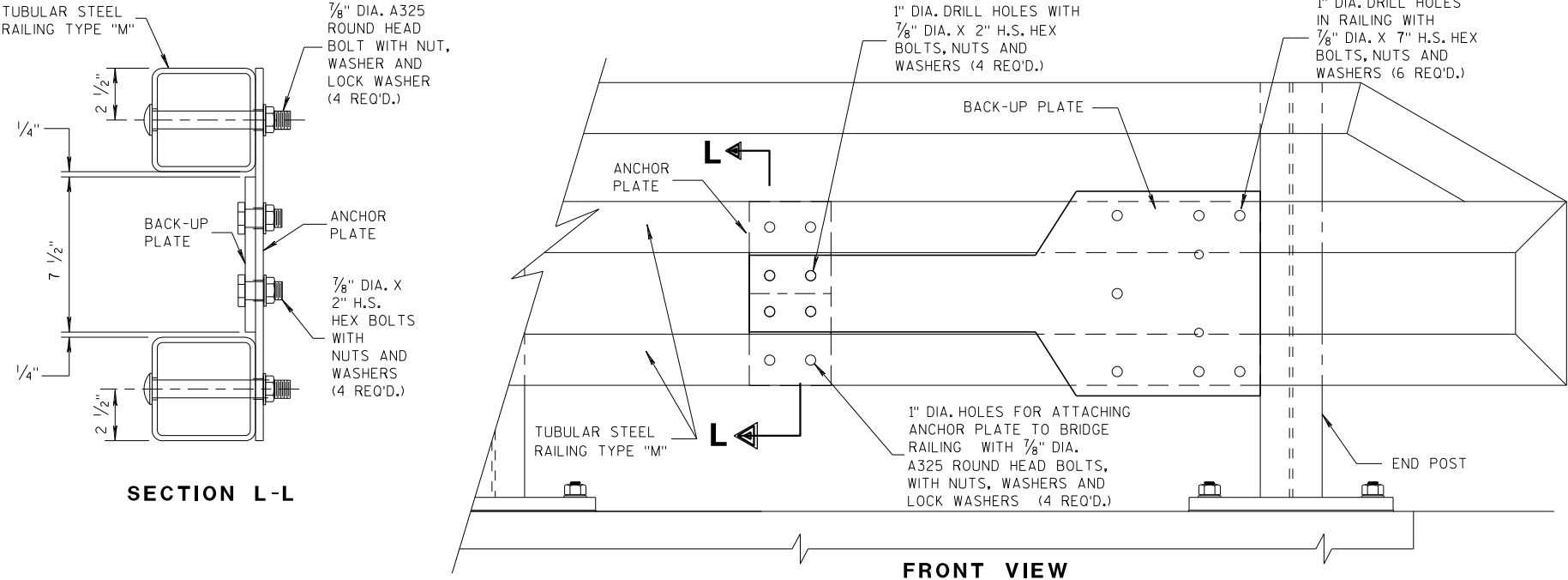


FRONT VIEW

ANCHOR
PLATE DETAIL,
TYPE "M"



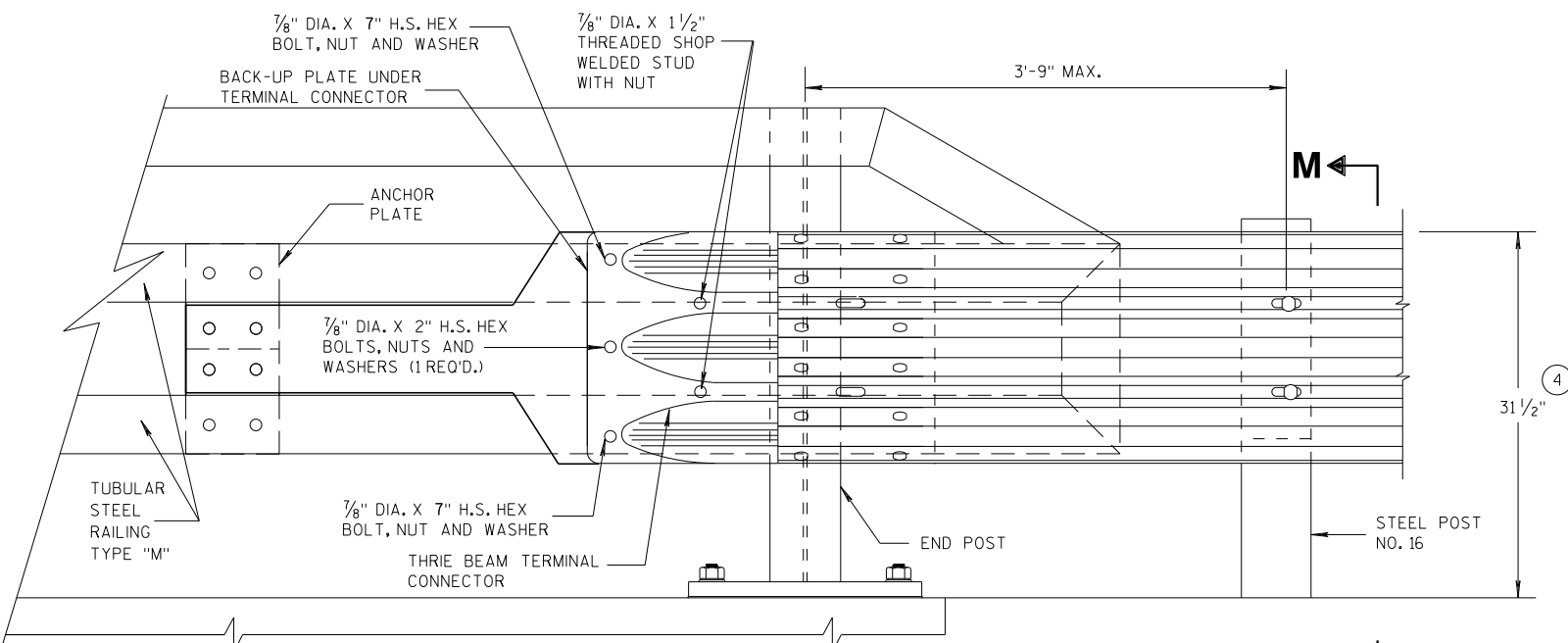
SECTION M-M



SECTION L-L

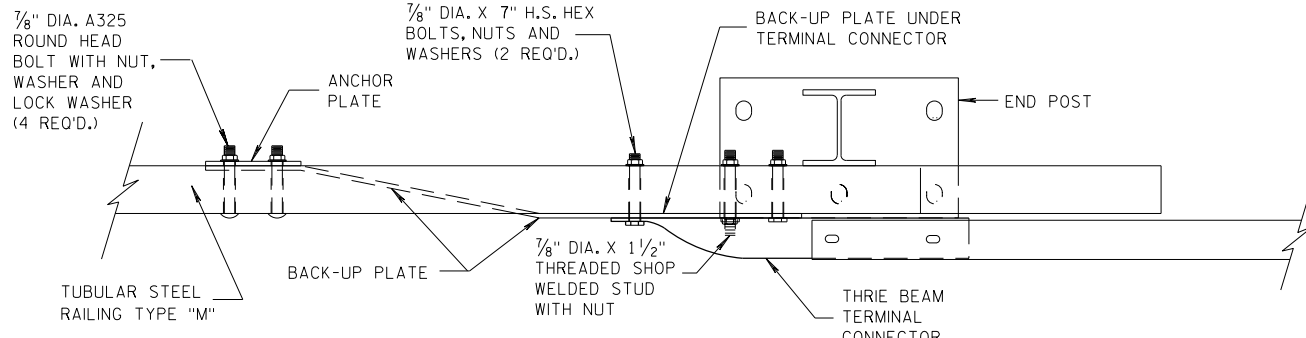
FRONT VIEW

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



FRONT VIEW

M



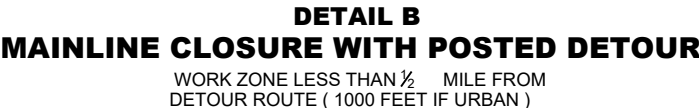
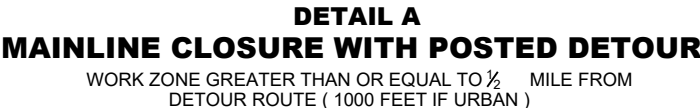
PLAN VIEW

THREE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THREE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

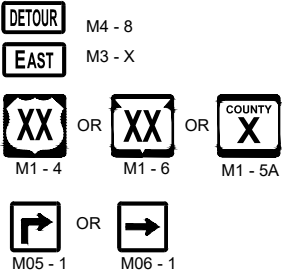


SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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



	SIGN ON PERMANENT SUPPORT
	TYPE III BARRICADE
	TYPE III BARRICADE WITH ATTACHED SIGN
	TYPE "A" WARNING LIGHT (FLASHING)
	WORK AREA
	FLAGS, 16" X 16" MIN. (ORANGE)



BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER 32



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.

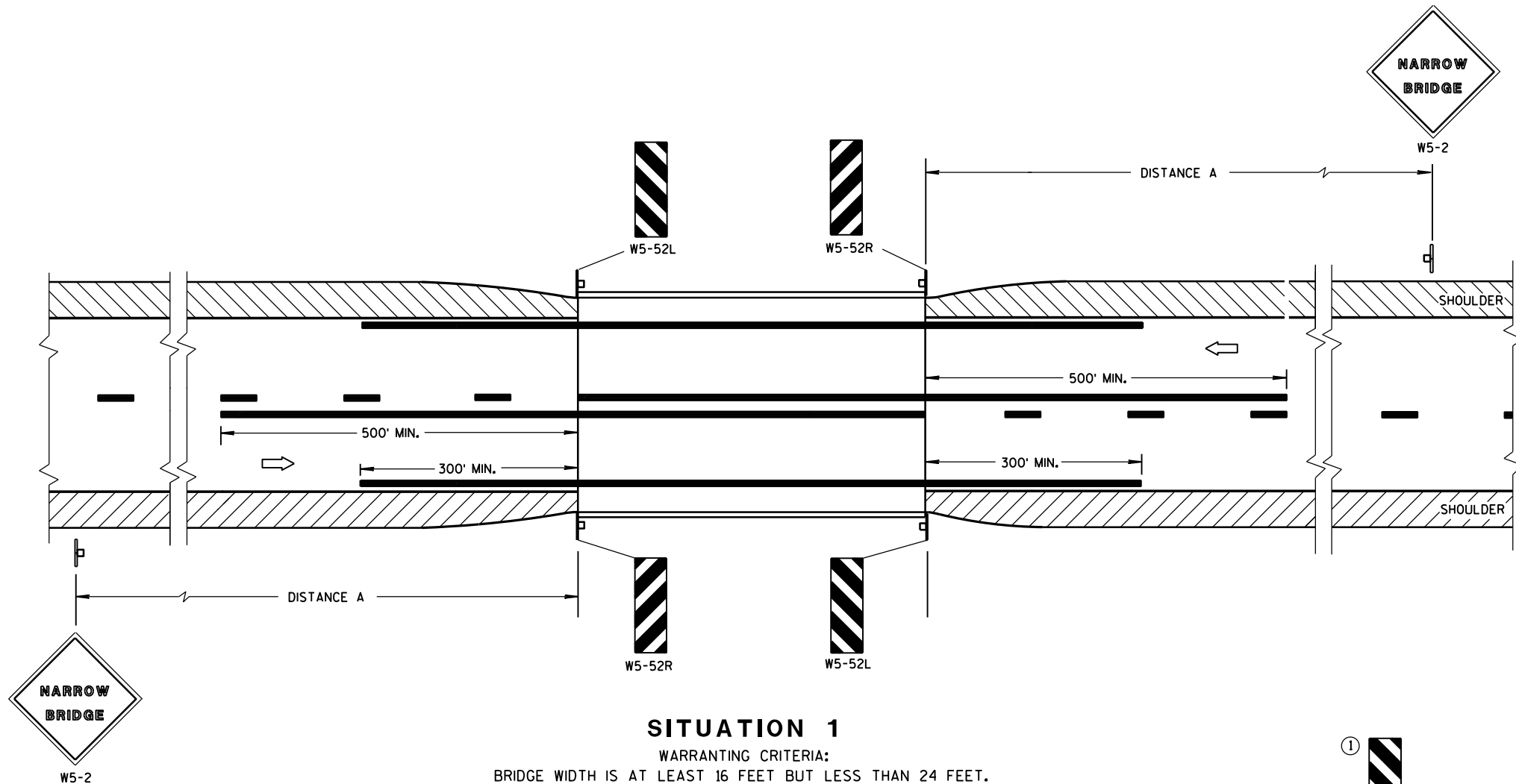
THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

"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:

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.



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

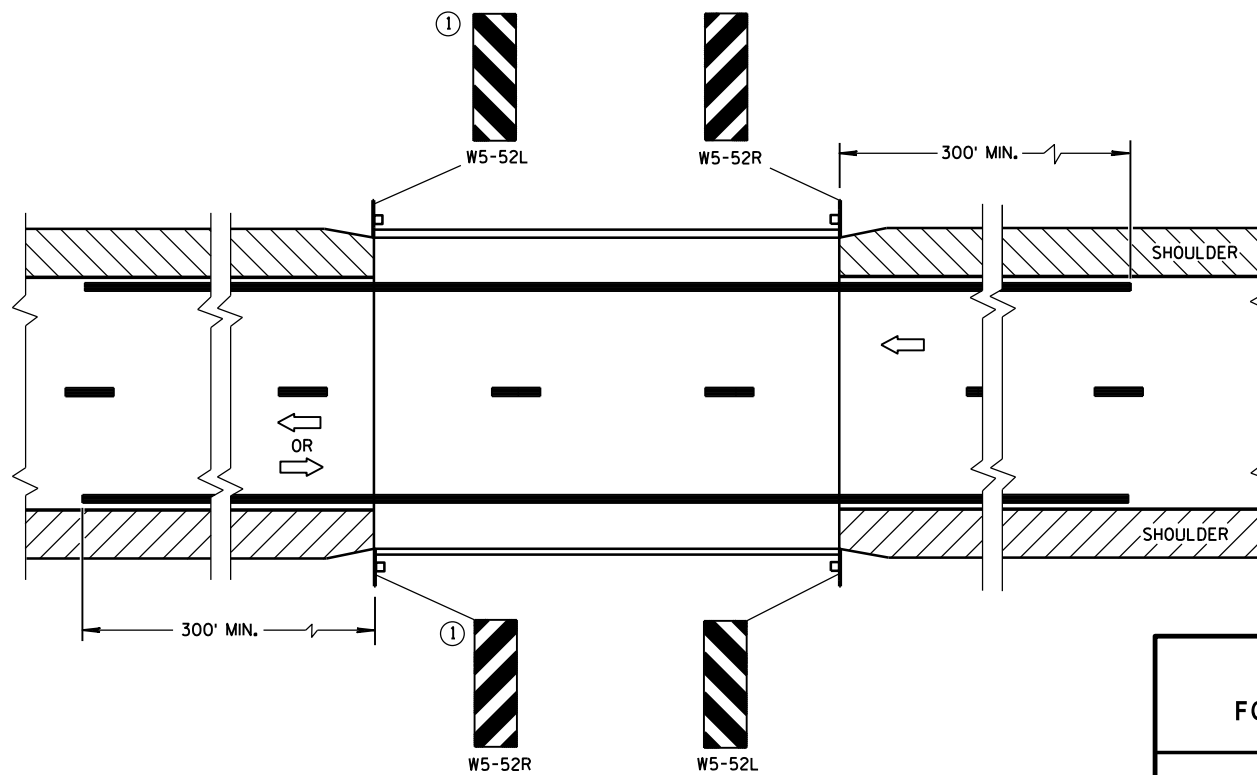
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

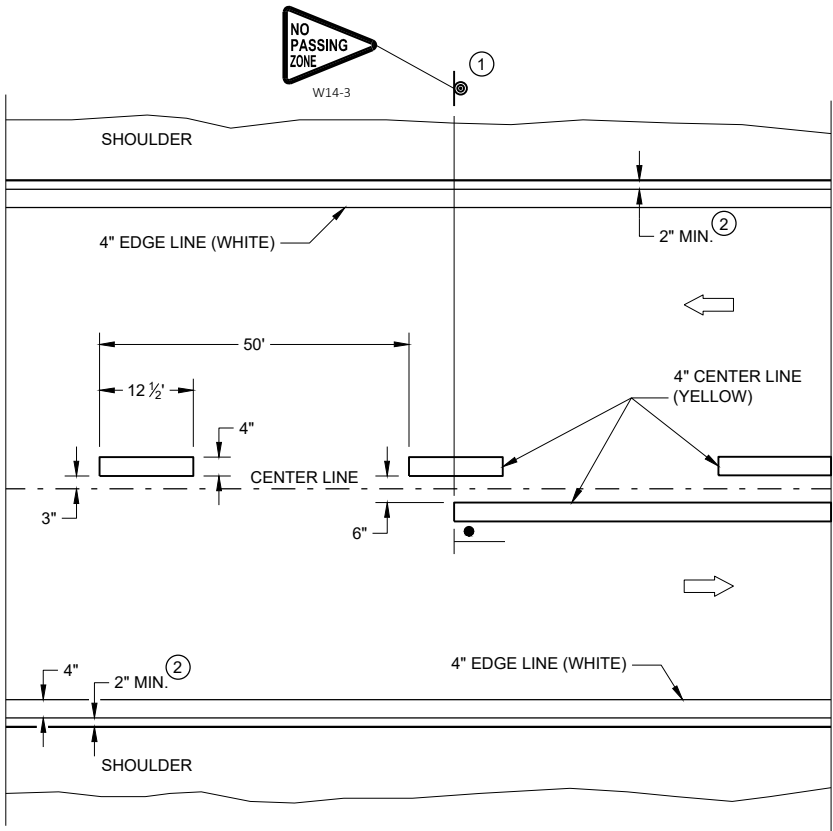
WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

SIGNING & MARKING FOR TWO LANE BRIDGES

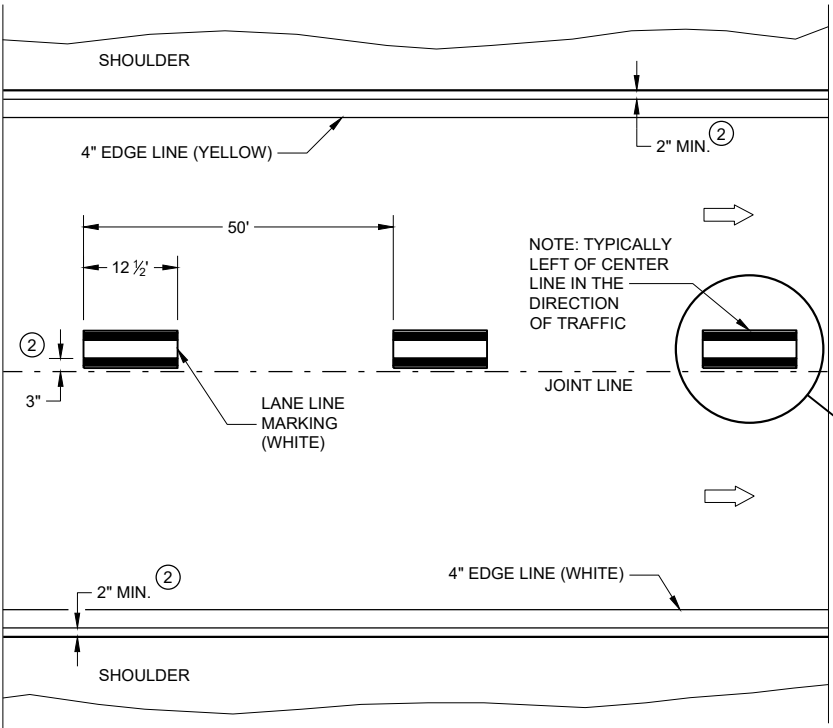
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 34 JEER
FHWA

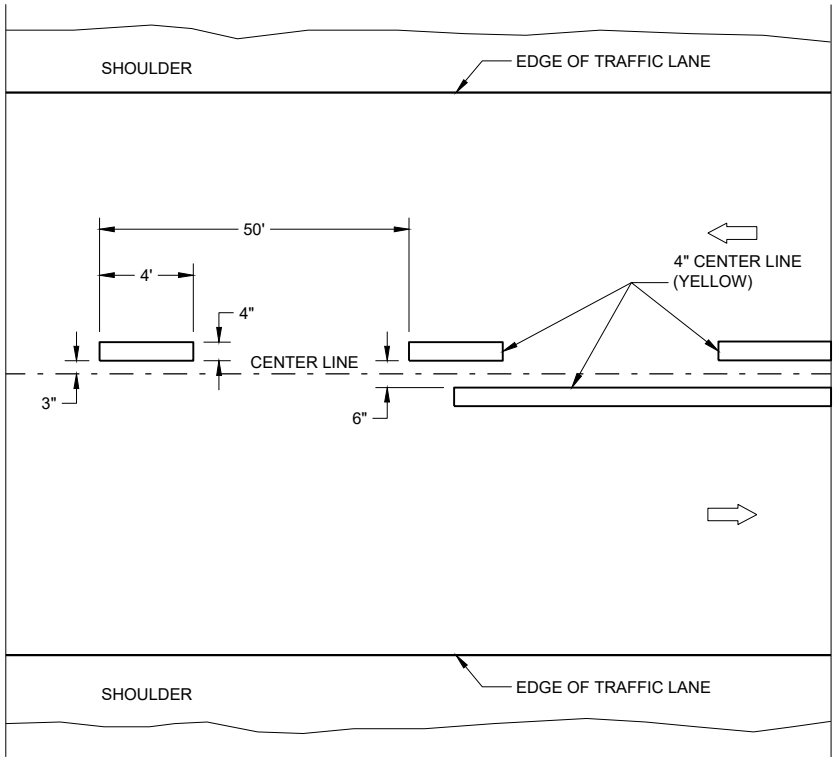


TWO WAY TRAFFIC

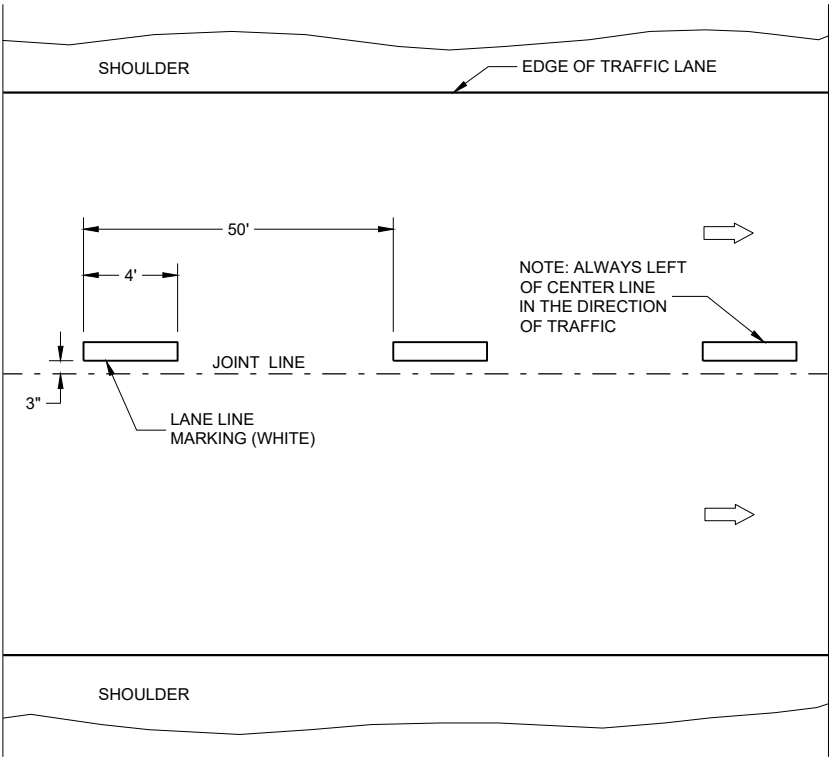


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

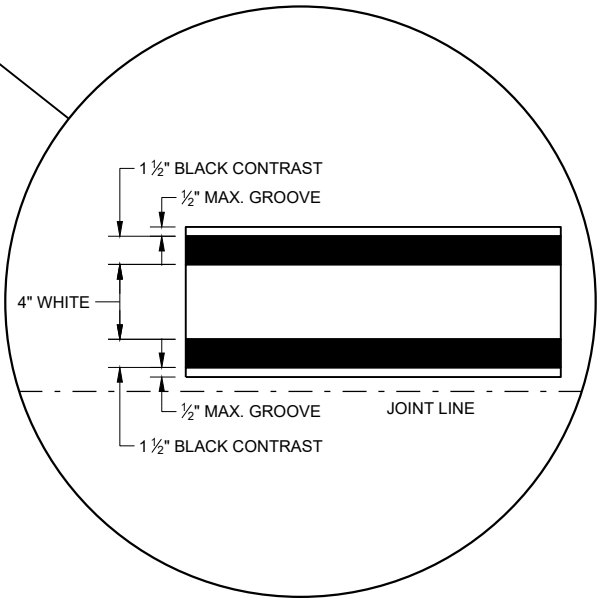
GENERAL NOTES

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 WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

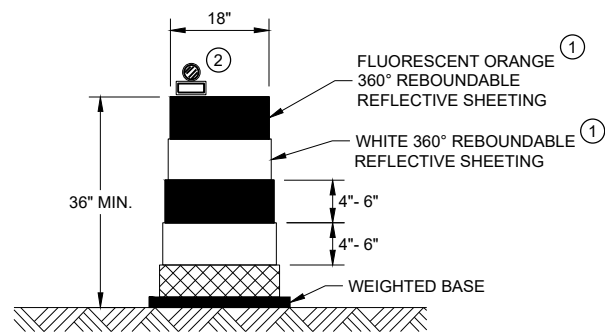
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



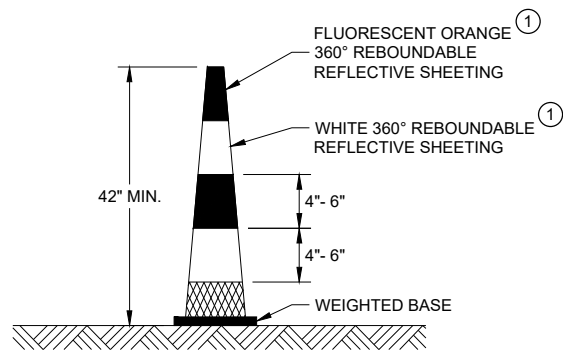
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Matthew Rauch
DATE STATEWIDE SIGNING AND MARKING ENGINEER 35
FHWA

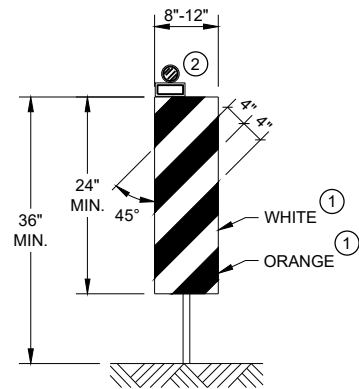


DRUM



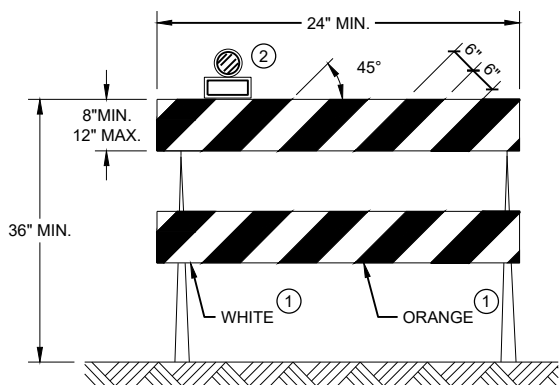
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



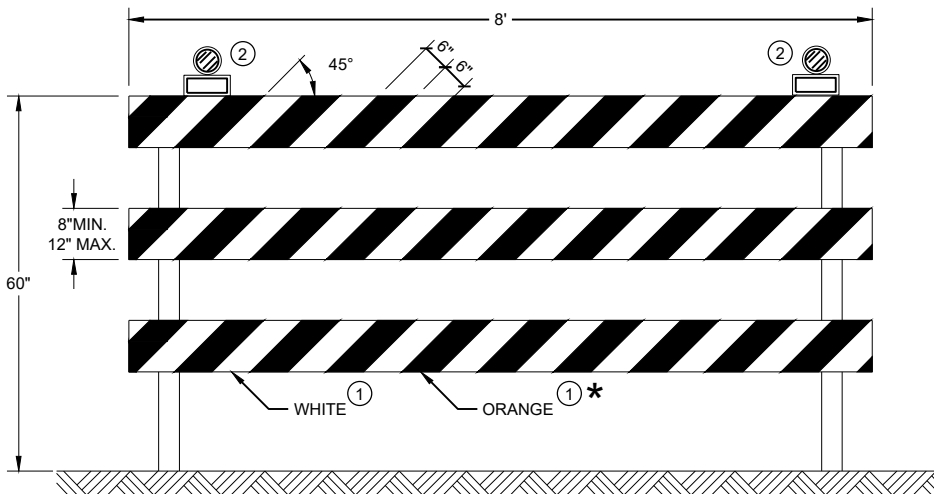
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

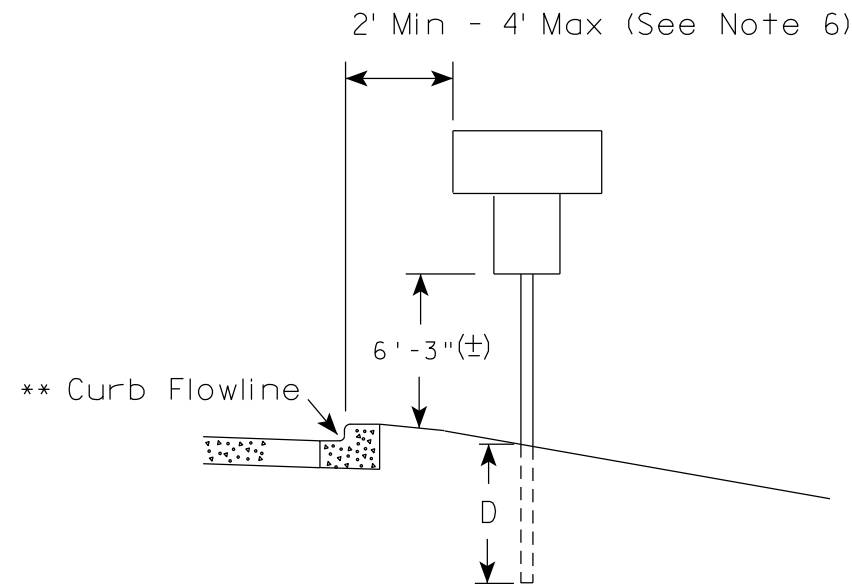
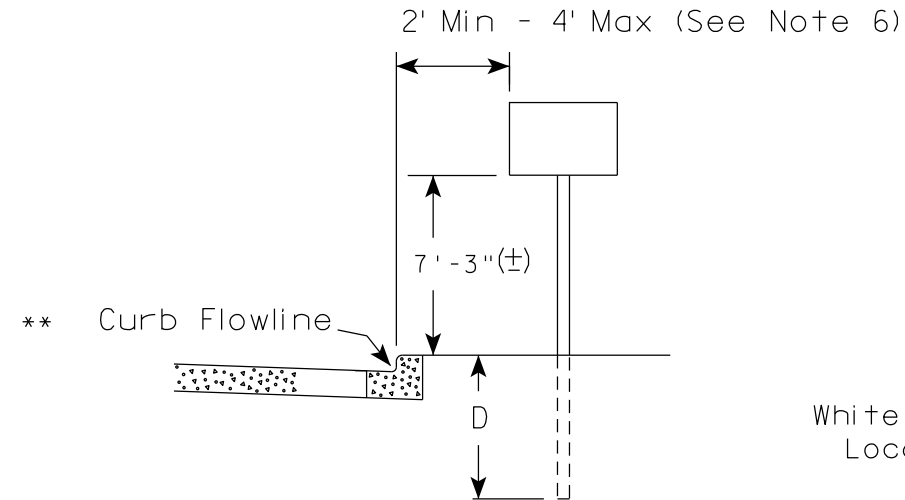
CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 36

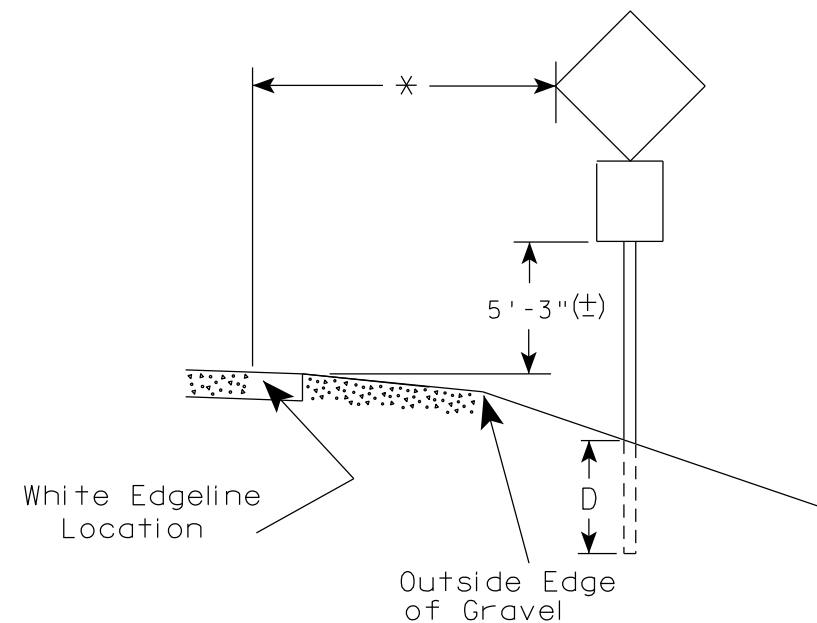
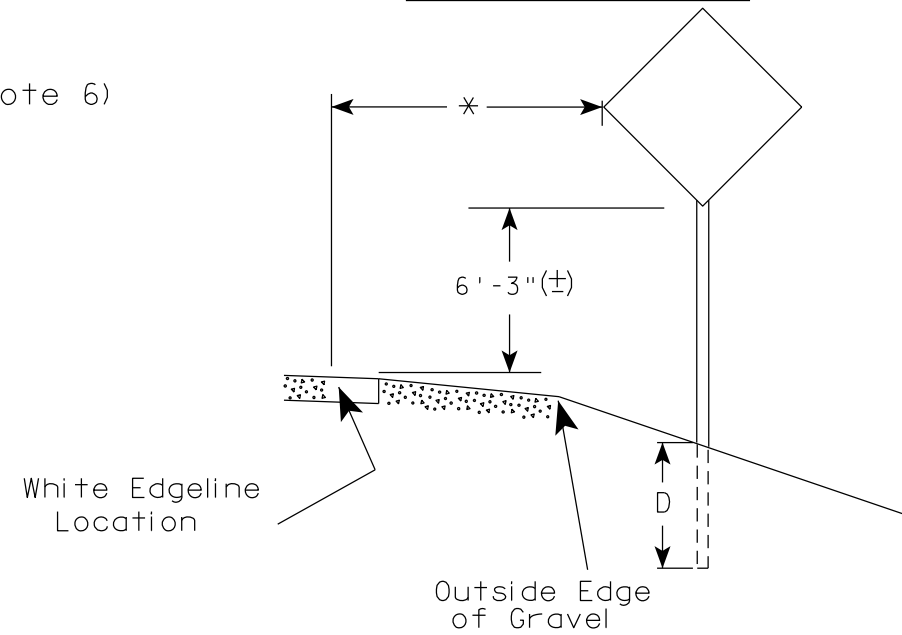
FHWA

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

- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- 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" (±).
- For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
- Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- The (±) tolerance for mounting height is 3 inches.
- 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

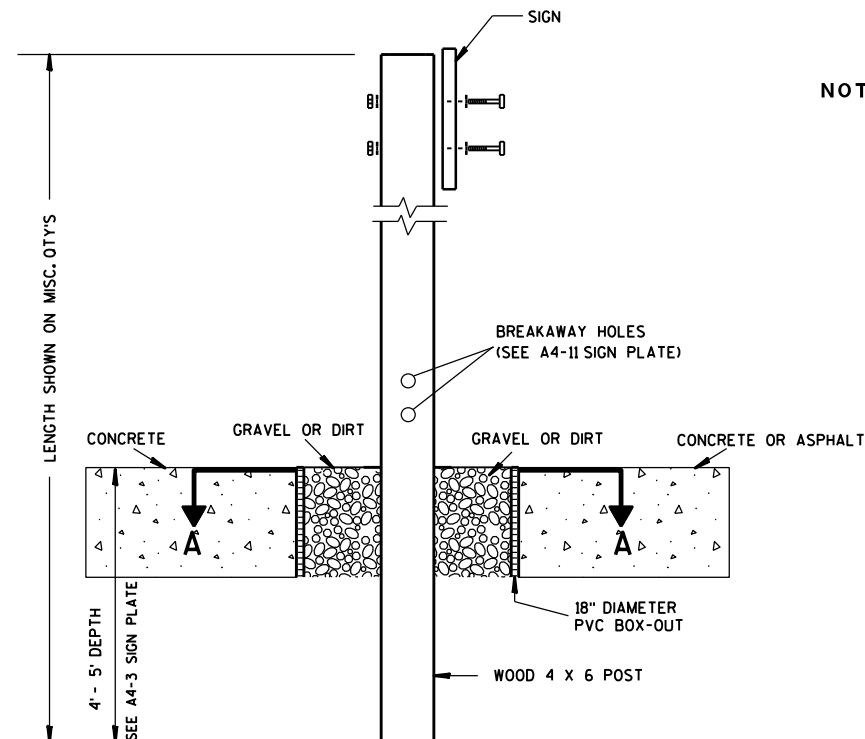
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 37

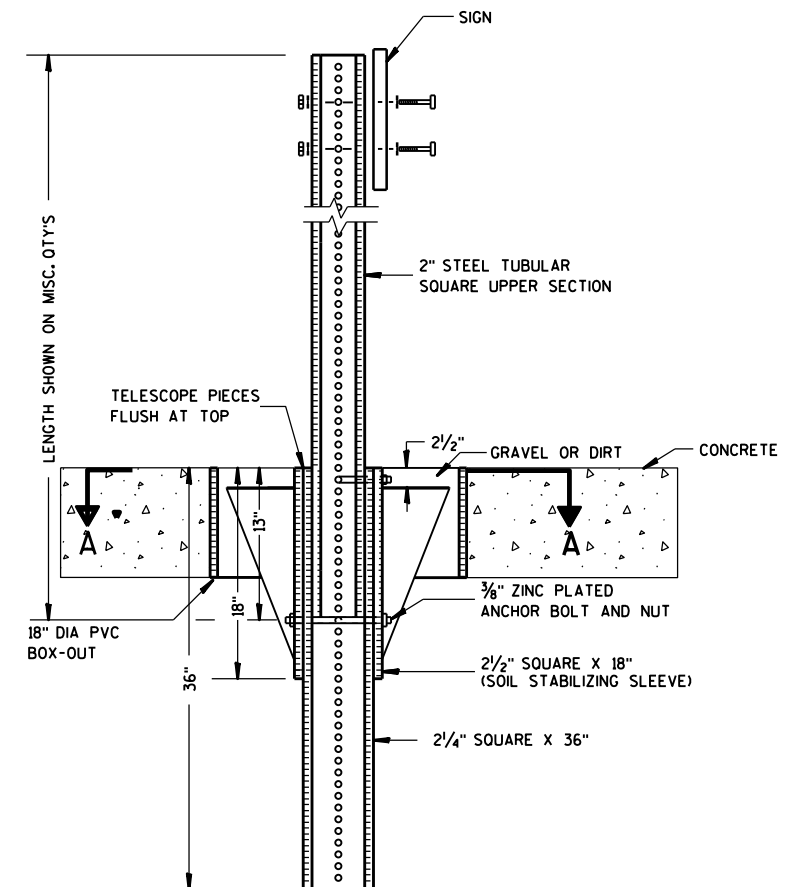
E



ELEVATION VIEW

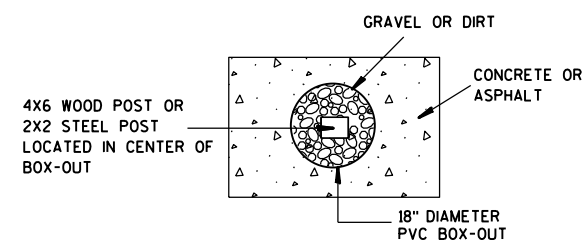
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 38 A4-3B.1

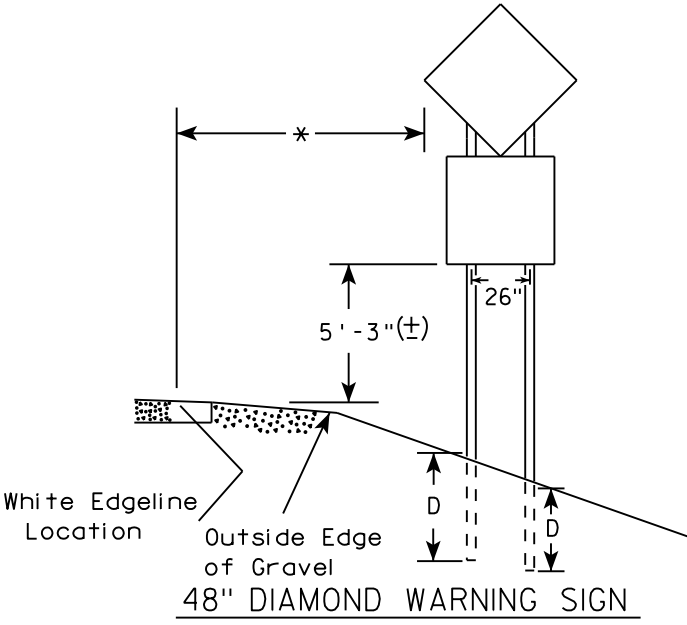
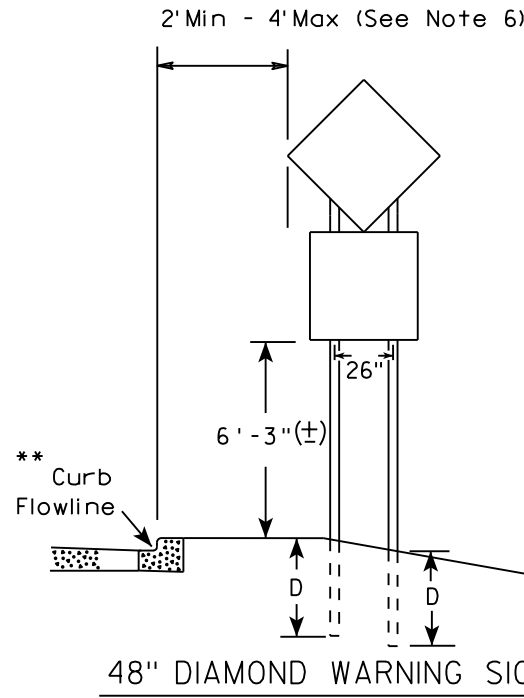
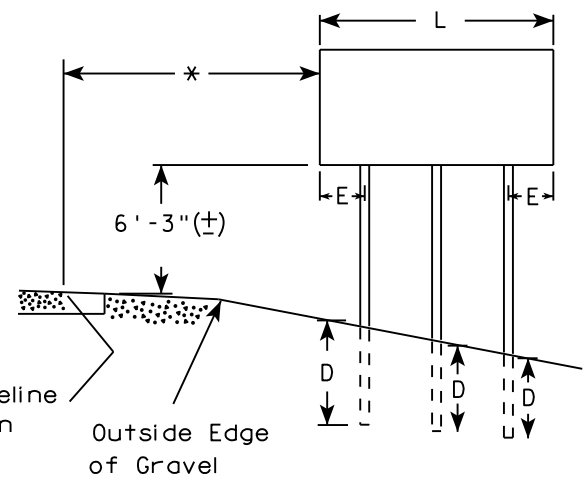
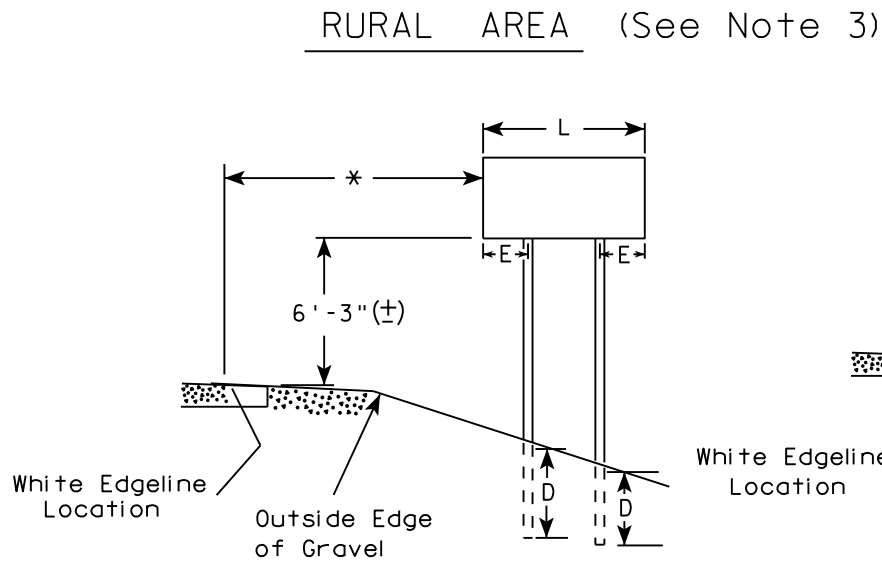
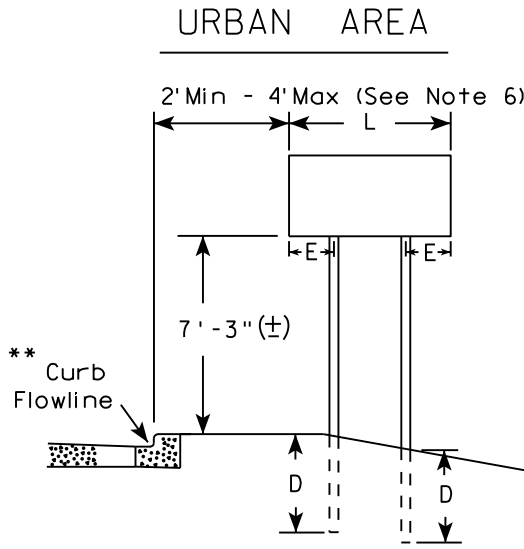
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

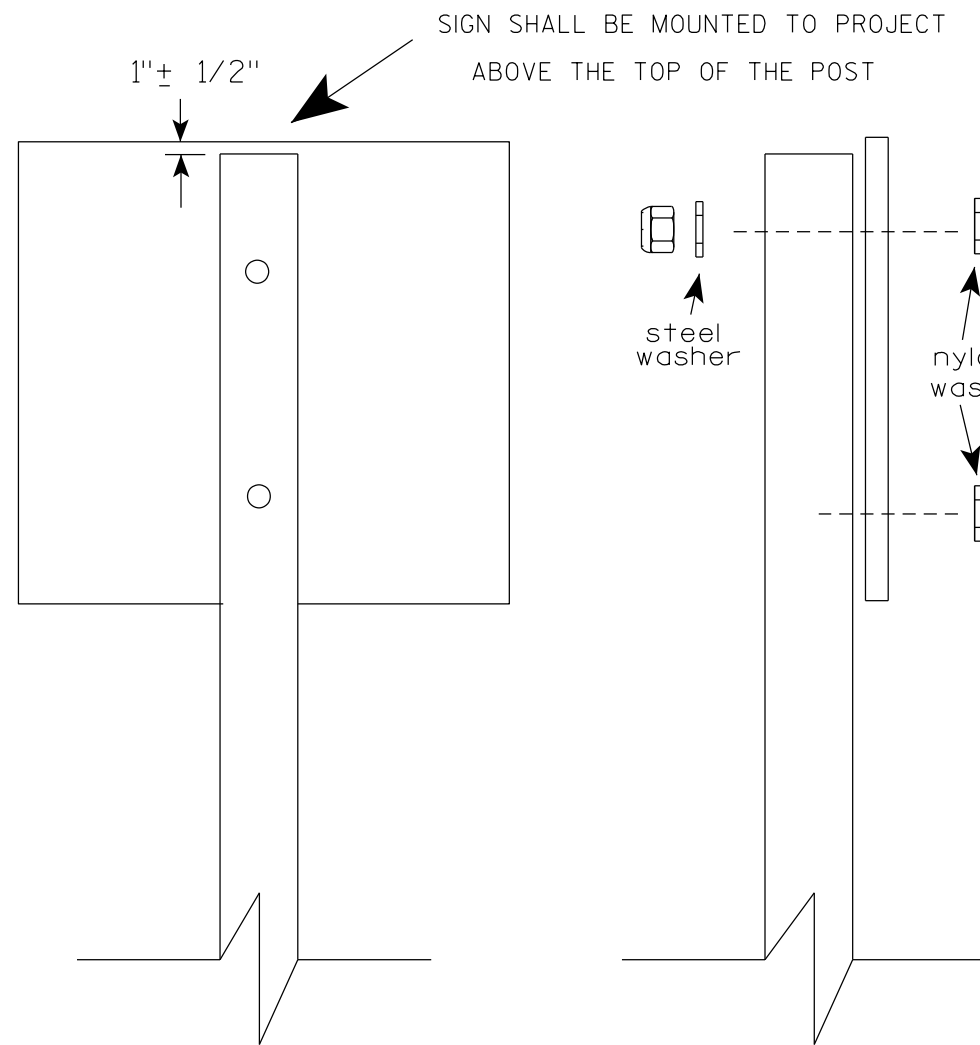
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

- GENERAL NOTES
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. J-Assemblies are considered to be one sign for mounting height.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

- * 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.
- ** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.
- *** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



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

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

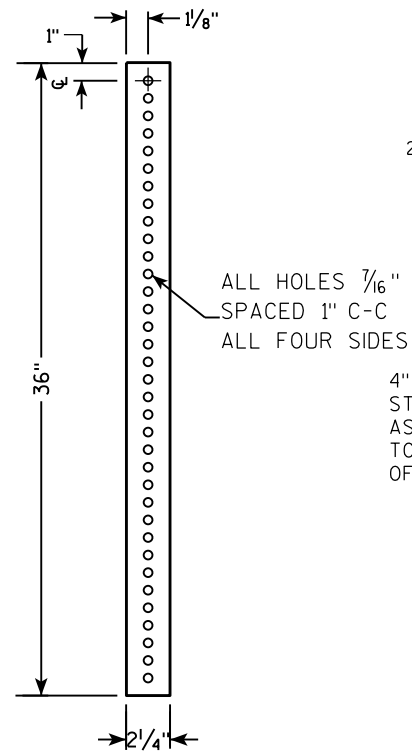
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

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

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

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



LENGTH SHOWN ON MISC. Q'TYS

18" DIA SCHEDULE 40 PVC BOX-OUT

TELESCOPE PIECES FLUSH AT TOP

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

SIGN

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

36"

18"

13"

LENGTH SHOWN ON MISC. QTY'S

TELESCOPE PIECES FLUSH AT TOP

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

1"

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

SIGN

DIRECTION
OF TRAFFIC

SECTION A-A

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

for State Traffic Engineer

DATE 2/05/15 PLAT 11 14-9.9

DATE 2/05/15 PLATI 11 14-9.9

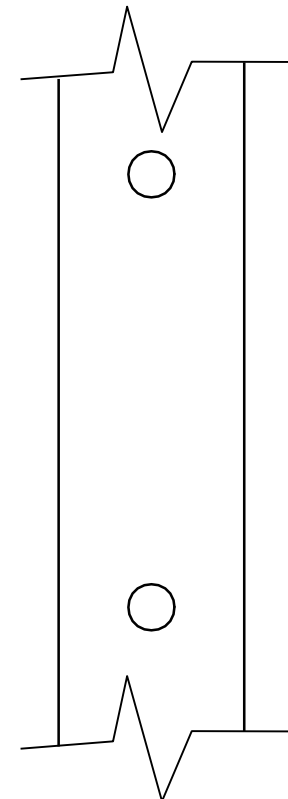
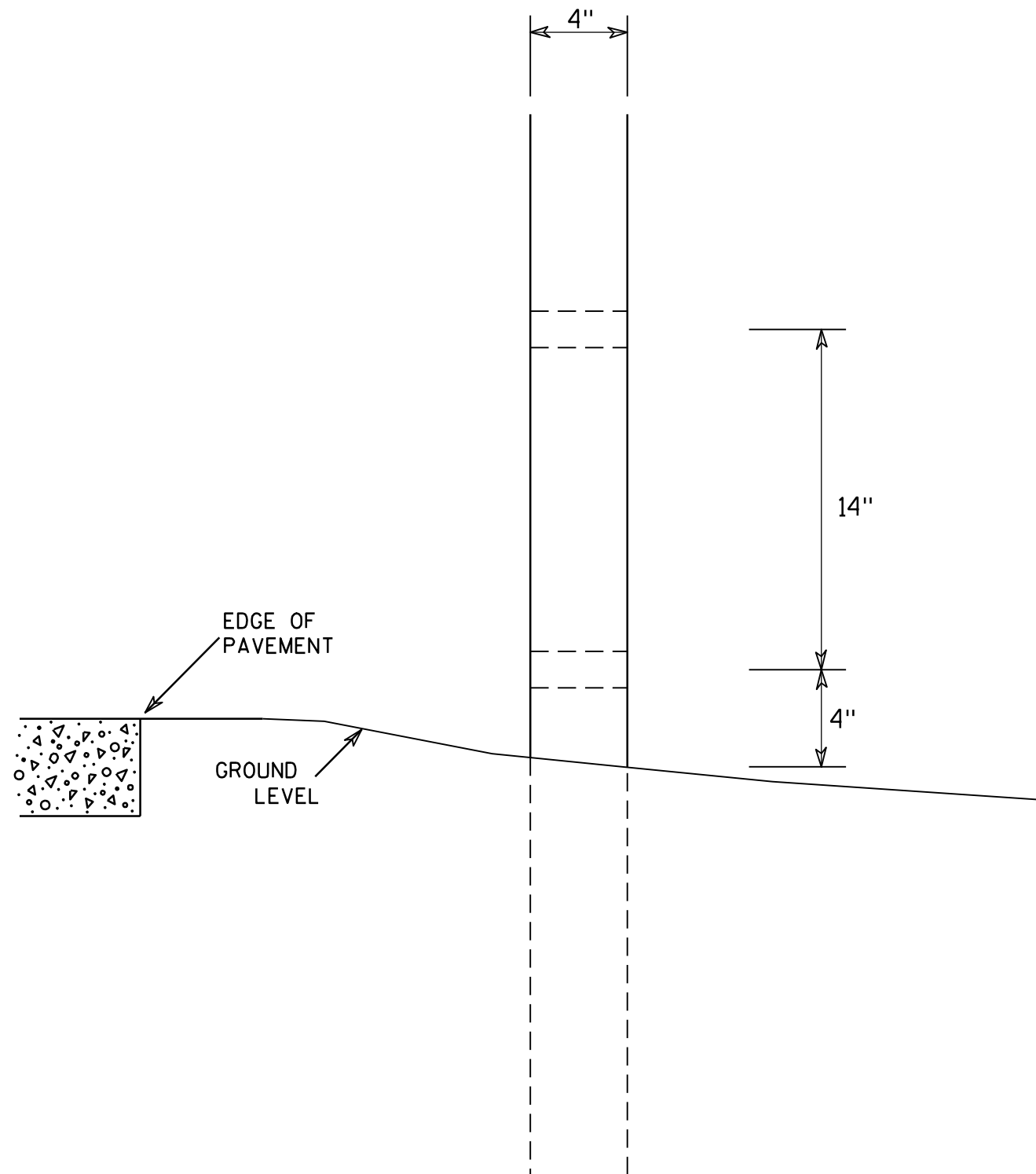
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

11



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:

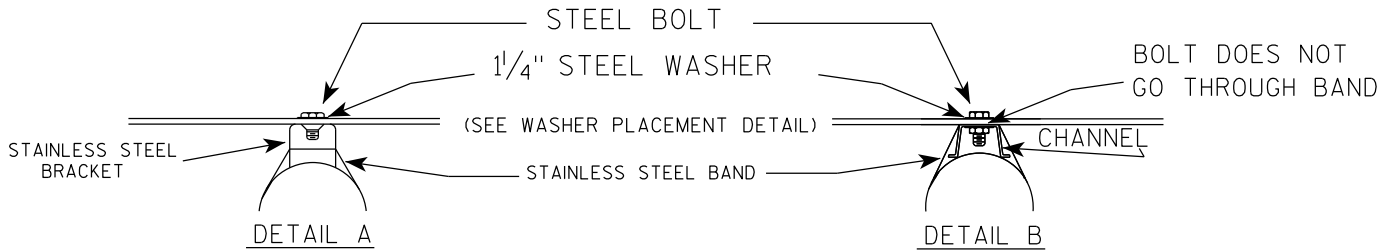
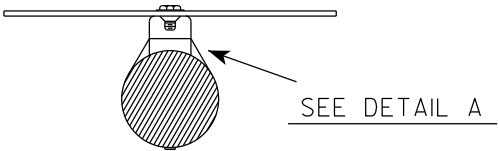
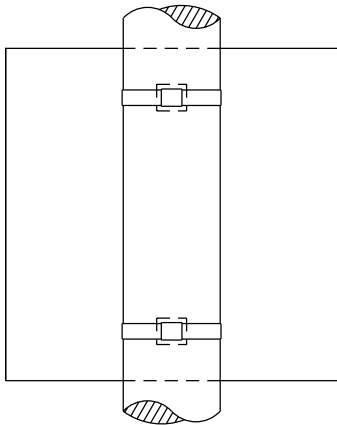
COUNTY:

SHEET NO: 42

E

BANDING

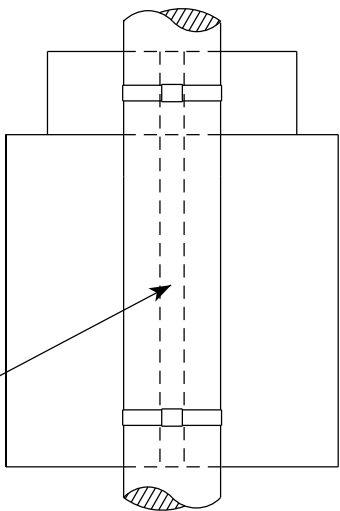
SINGLE SIGN



GENERAL NOTES

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

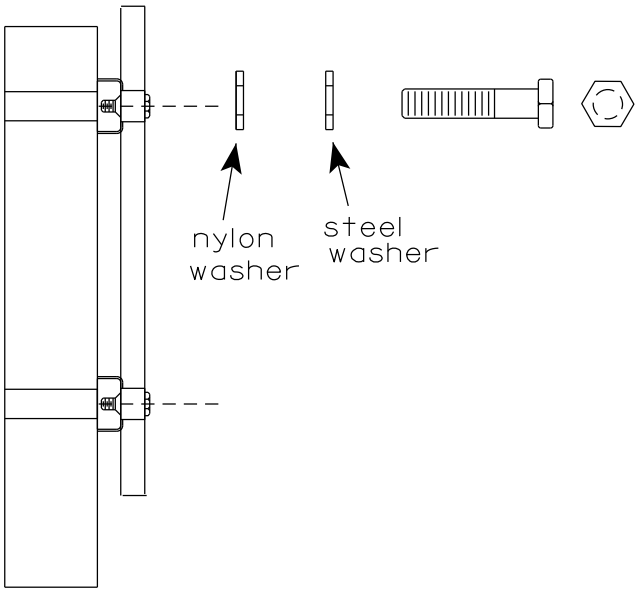
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

WASHER PLACEMENT



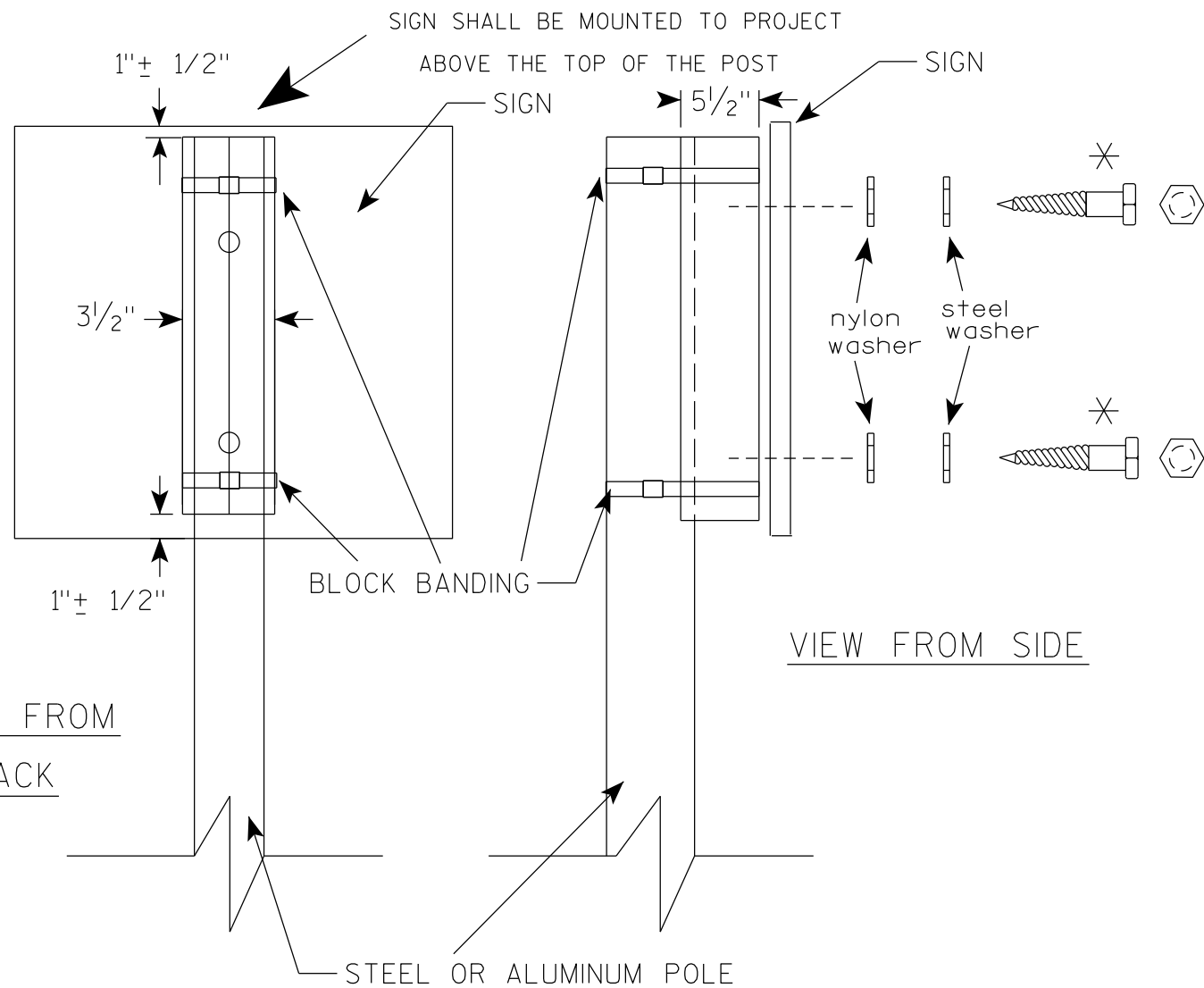
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

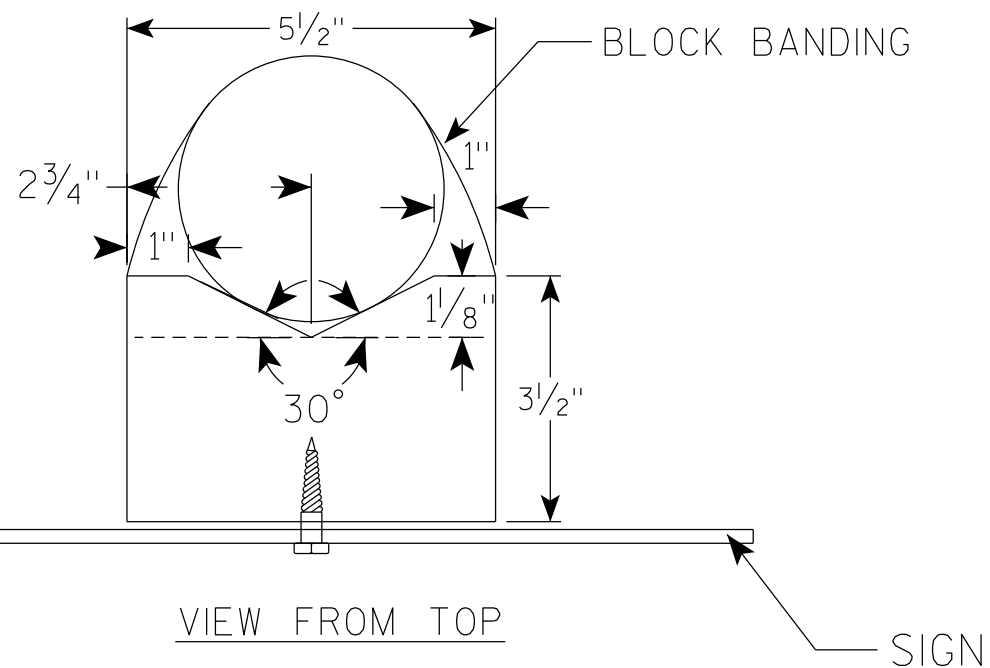
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4

VIEW FROM
BACK



VIEW FROM SIDE

VIEW FROM TOP



GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $1\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $1\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

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

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

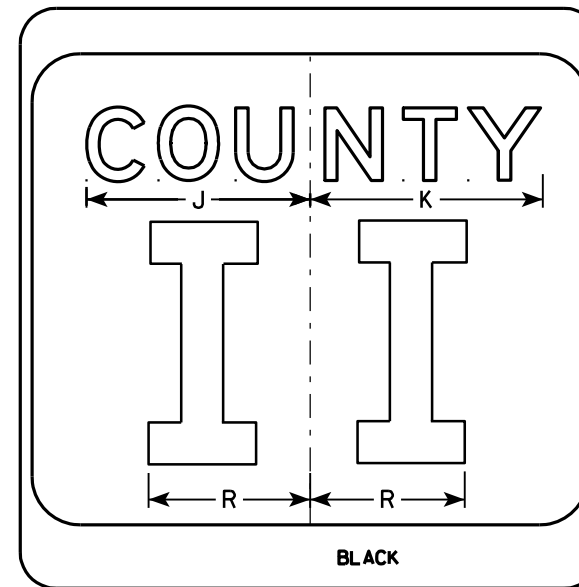
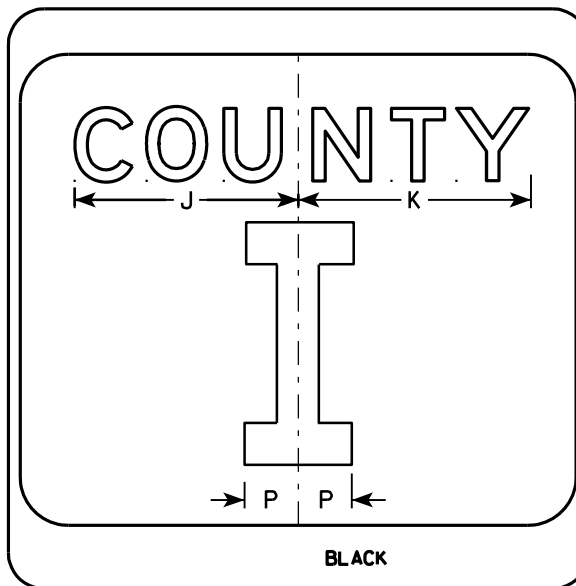
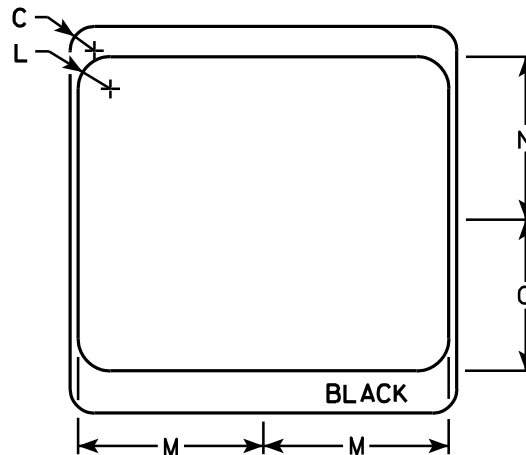
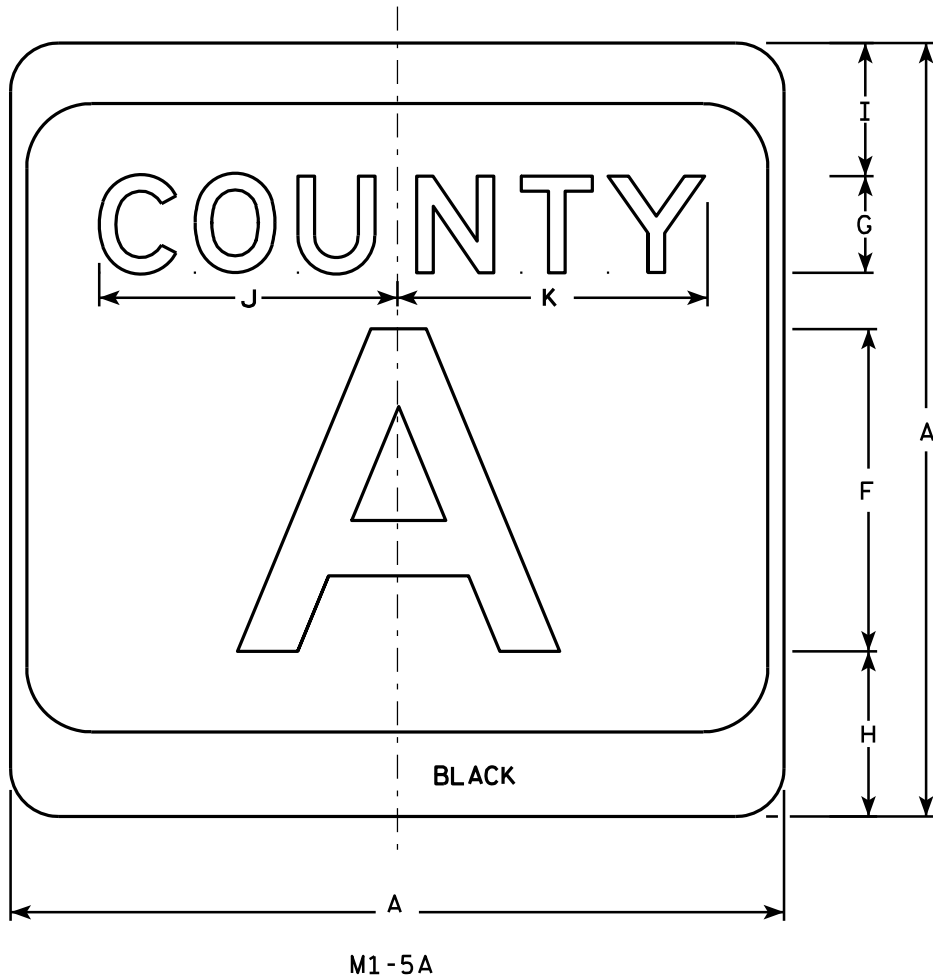
DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:

SHEET NO: 44

E

7

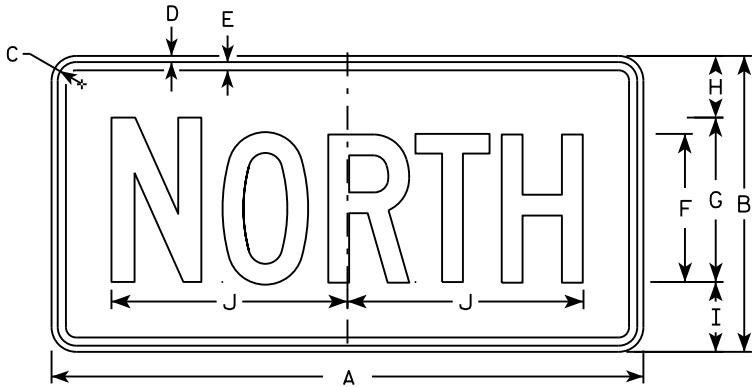


NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 7
Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective

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																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

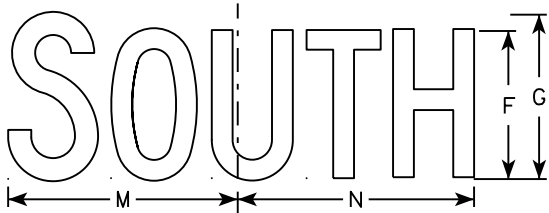
CTH MARKER	
M1-5A FOR ASSEMBLIES	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/27/11	PLATE NO. M1-5A.8



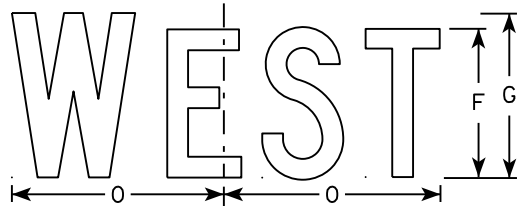
M3-1
MM3-1
MP3-1



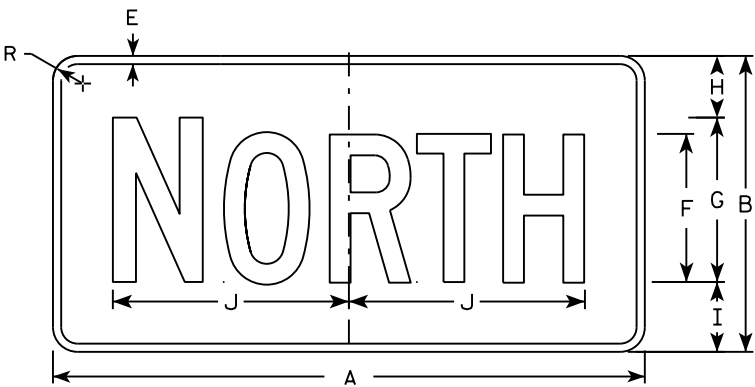
M3-2
MM3-2
MP3-2



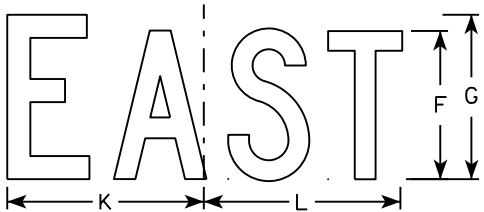
M3-3
MM3-3
MP3-3



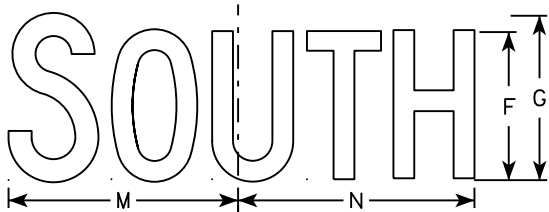
M3-4
MM3-4
MP3-4



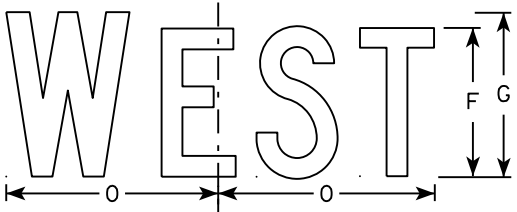
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

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																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thru M3-4
SERIES

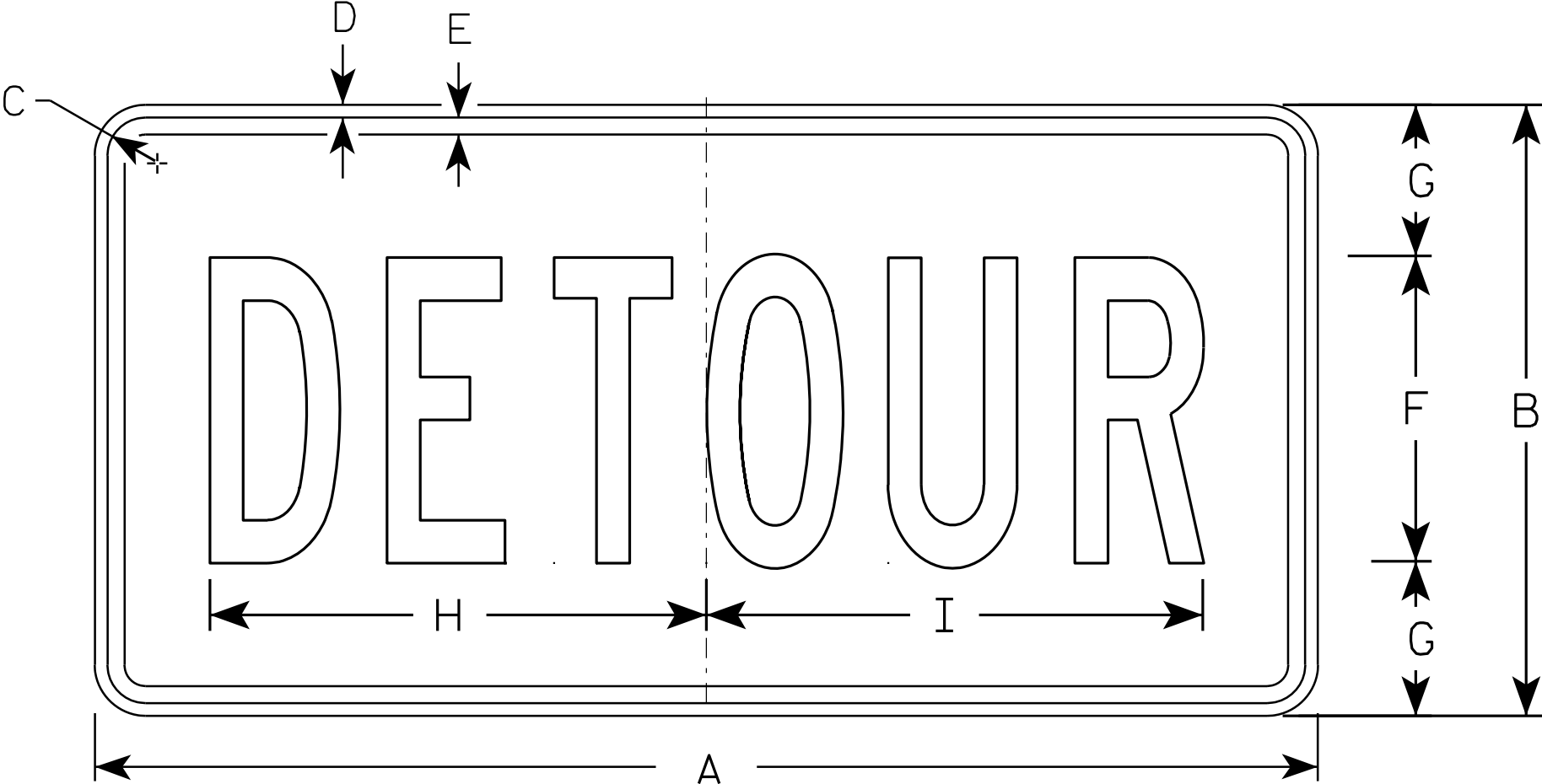
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 46 M3-1.14

NOTES

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



M4 - 8

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																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

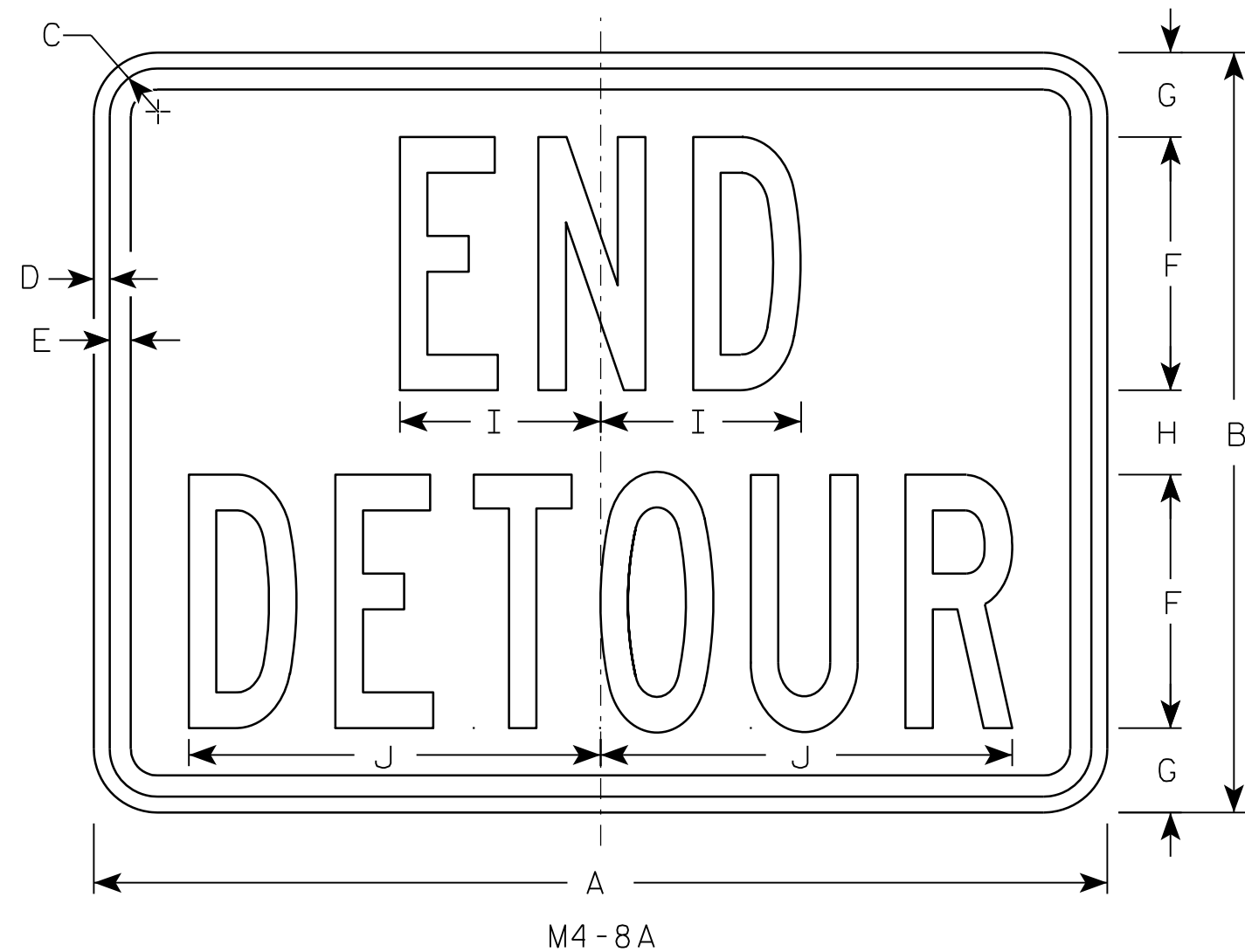
STANDARD SIGN
M4 - 8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

7



NOTES

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

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

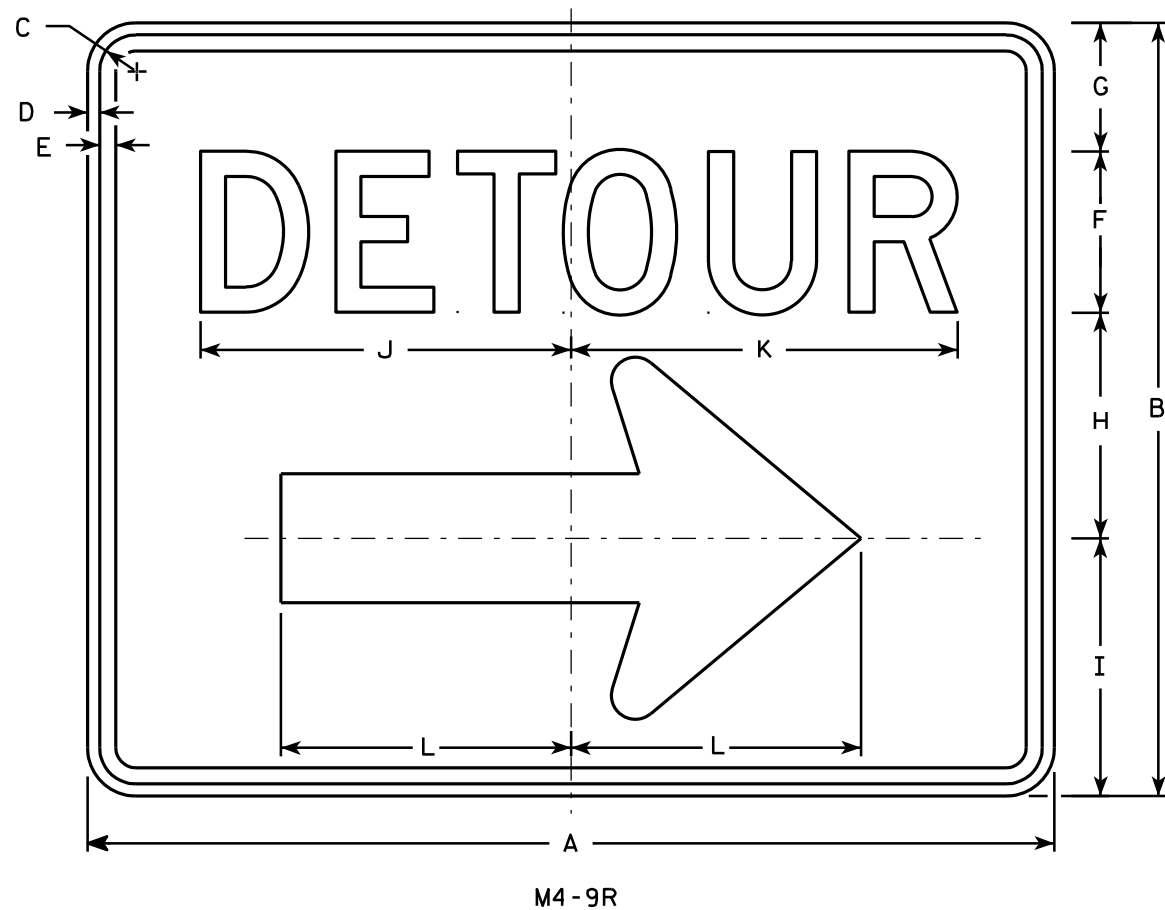
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 48	E
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STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

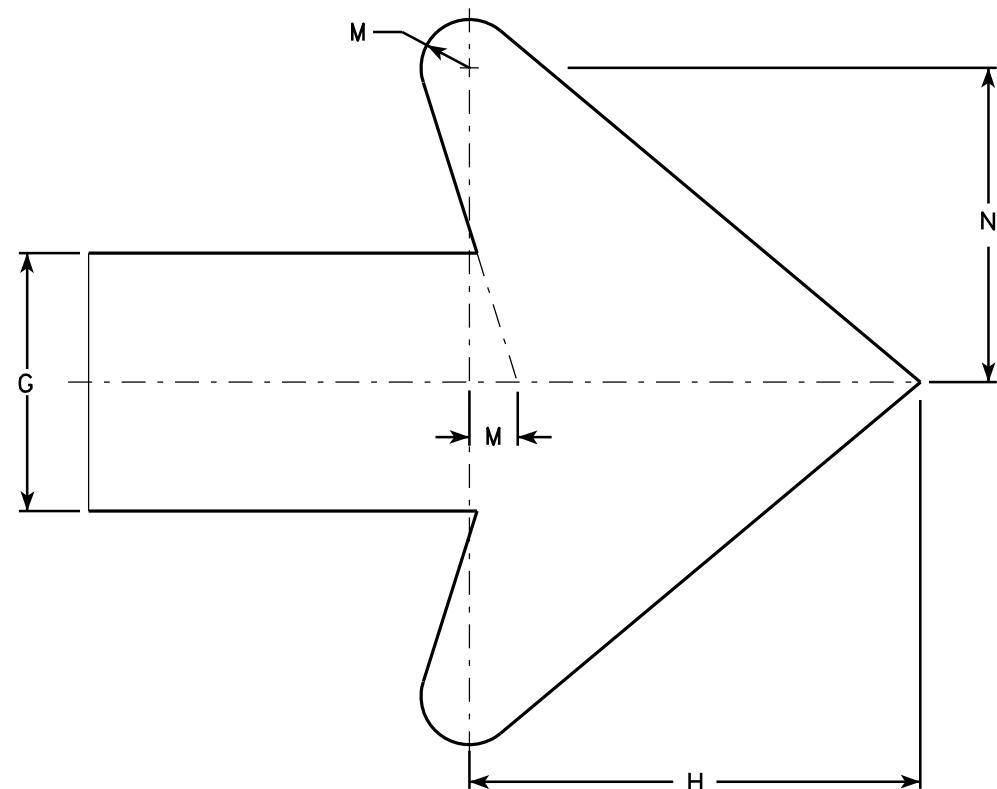
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

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																											
2	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

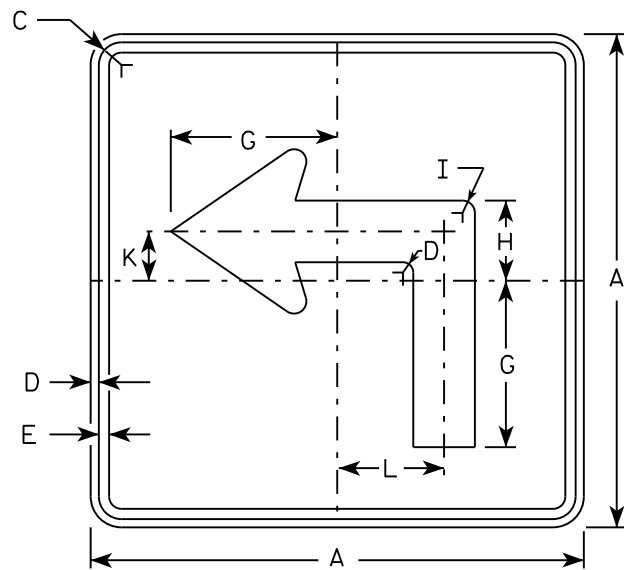
PROJECT NO:

HWY:

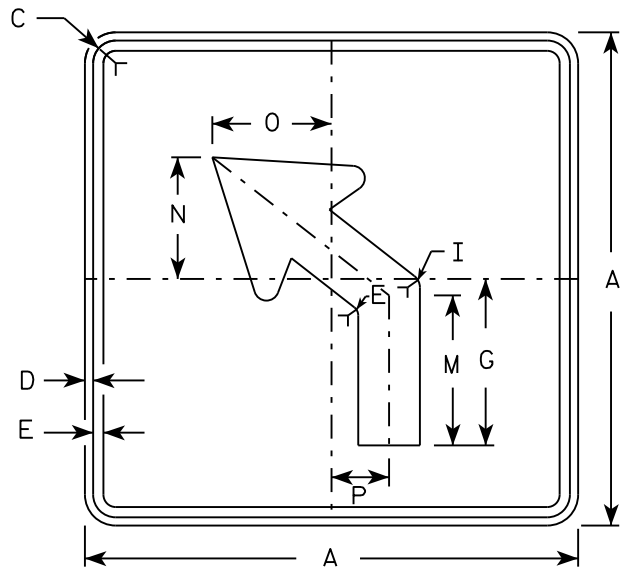
COUNTY:

SHEET NO: 49

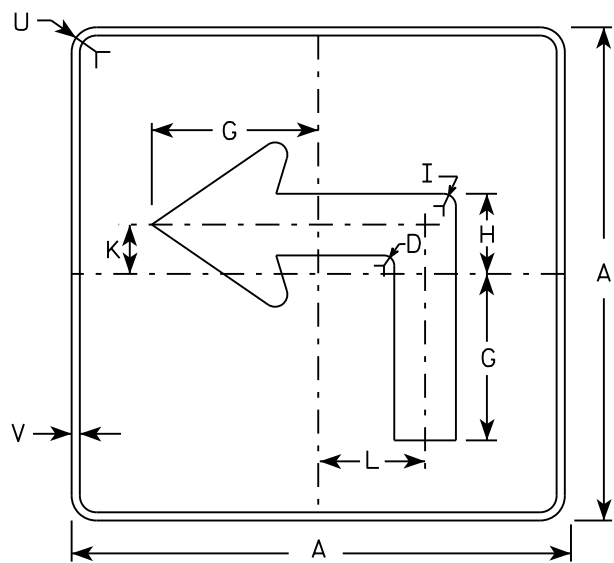
E



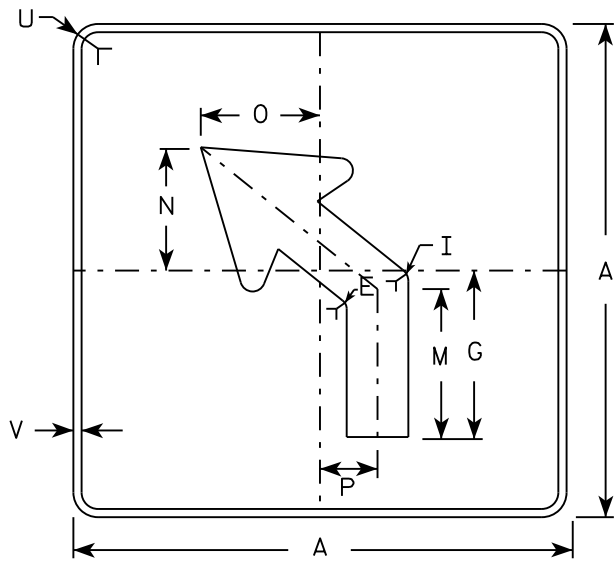
M5-1L
MM5-1L
M05-1L
MP5-1L



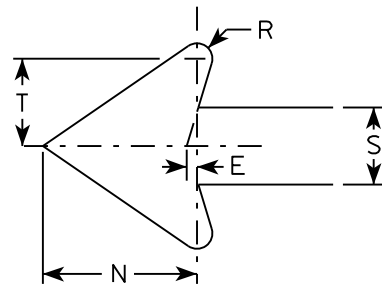
M5-2L
MM5-2L
M05-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- CornerRadius 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.
- | | |
|-----------------|---|
| M5-1 and M5-2 | Background - White |
| | Message - Black |
| MB5-1 and MB5-2 | Background - Blue |
| | Message - White |
| MK5-1 and MK5-2 | Background - Green |
| | Message - White |
| MM5-1 and MM5-2 | Background - White |
| | Message - Green |
| MN5-1 and MN5-2 | Background - Brown |
| | Message - White |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
| | Message - Black |
| MP5-1 and MP5-2 | Background - White - Type H Reflective |
| | Message - Blue |
| MR5-1 and MR5-2 | Background - Brown |
| | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

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																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

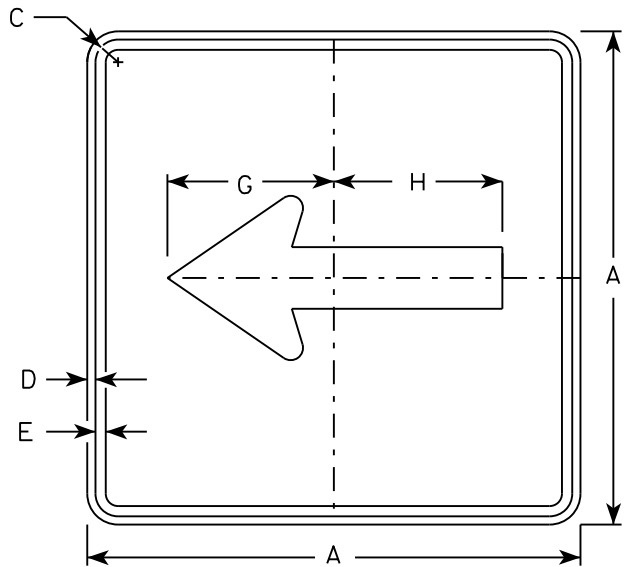
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M5-1 & M5-2

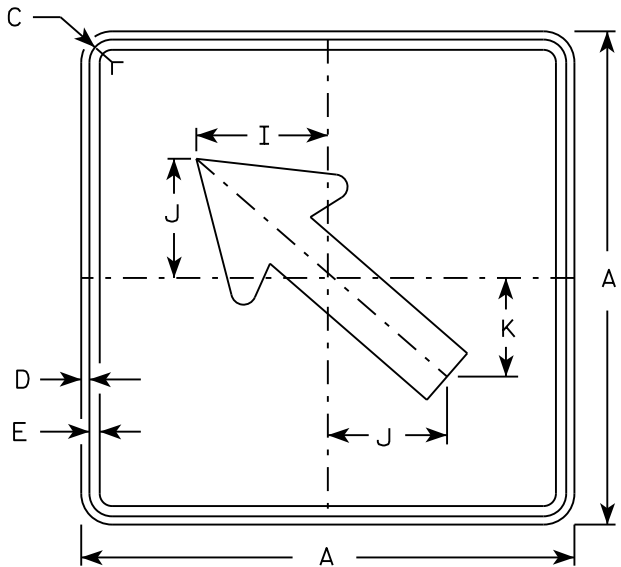
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

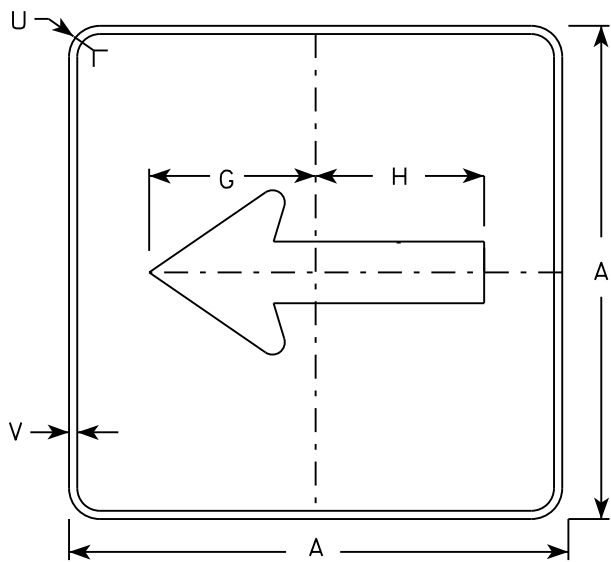
DATE 10/15/15 PLATE 50 M5-1.13



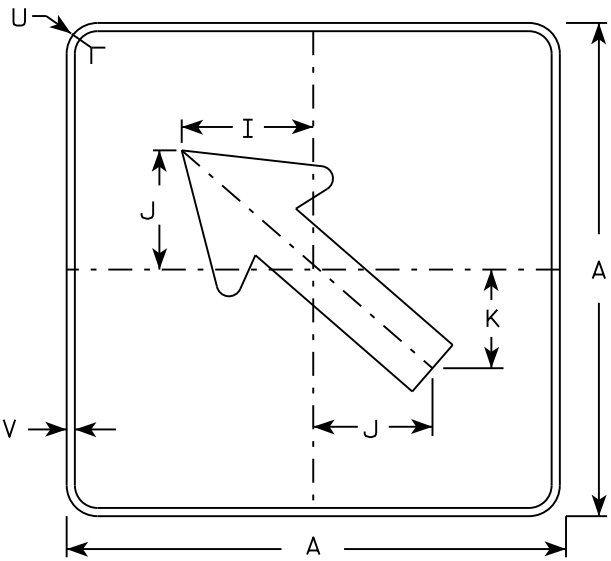
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



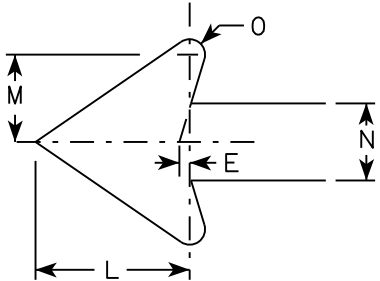
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



MB6 - 1
MK6 - 1
MN6 - 1
MR6 - 1



MB6 - 2
MK6 - 2
MN6 - 2
MR6 - 2



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

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																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

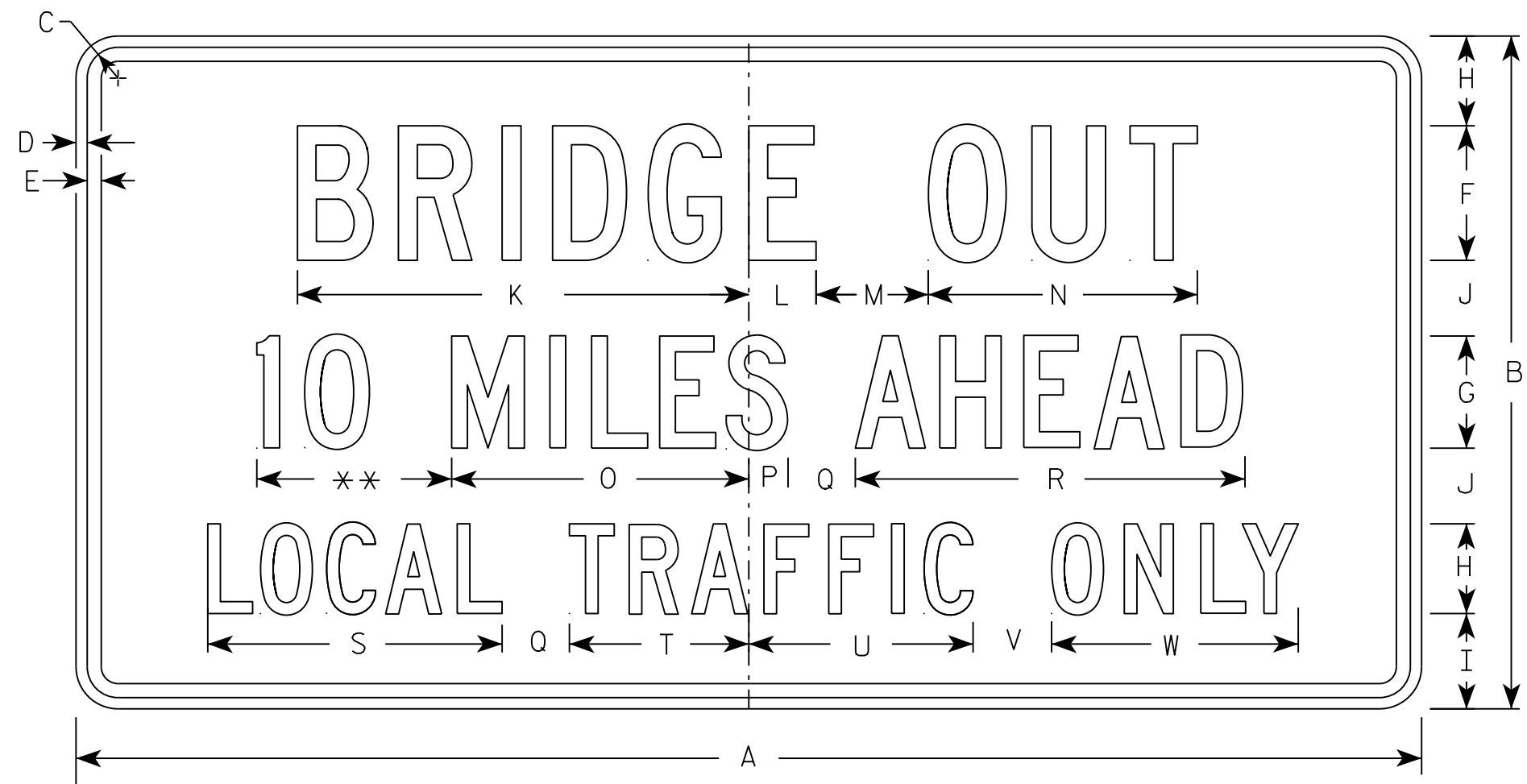
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLAT 51 M6-1.15

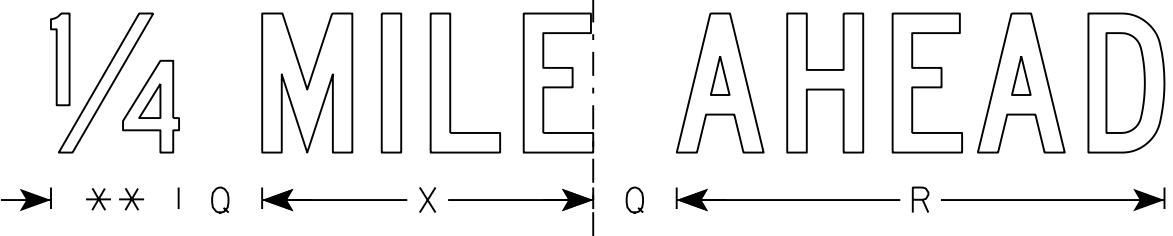
NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



** See Note 5

R11-3B



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	36	18	1 3⁄8	1⁄2	5⁄8	4	3	2 1⁄2	2	2	13 1⁄4	2 1⁄4	3	8	8	1 1⁄2	2	10 3⁄4	8 3⁄8	4 3⁄4	6 1⁄2	2	6 3⁄4	7 1⁄8			4.5
2S	60	30	1 3⁄8	1⁄2	5⁄8	6	5	4	4 1⁄4	3 3⁄8	20 1⁄8	3	5	12	13 1⁄4	1 3⁄4	3	17 3⁄8	13 1⁄8	8	10	3 1⁄2	11	11 7⁄8			12.5
2M	60	30	1 3⁄8	1⁄2	5⁄8	6	5	4	4 1⁄4	3 3⁄8	20 1⁄8	3	5	12	13 1⁄4	1 3⁄4	3	17 3⁄8	13 1⁄8	8	10	3 1⁄2	11	11 7⁄8			12.5
3																											
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 52

E

STANDARD SIGN
R11-3B

WISCONSIN DEPT OF TRANSPORTATION

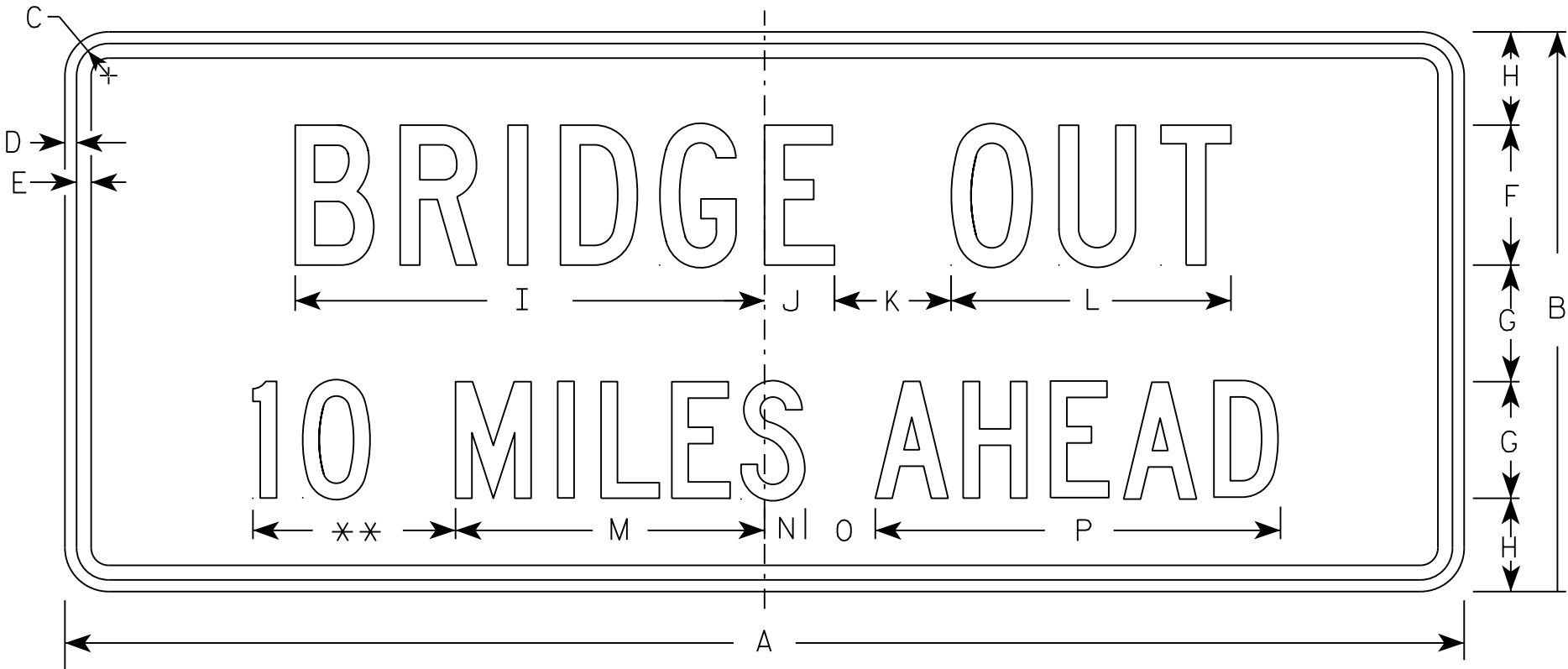
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/21/17

PLATE NO. R11-3B.3

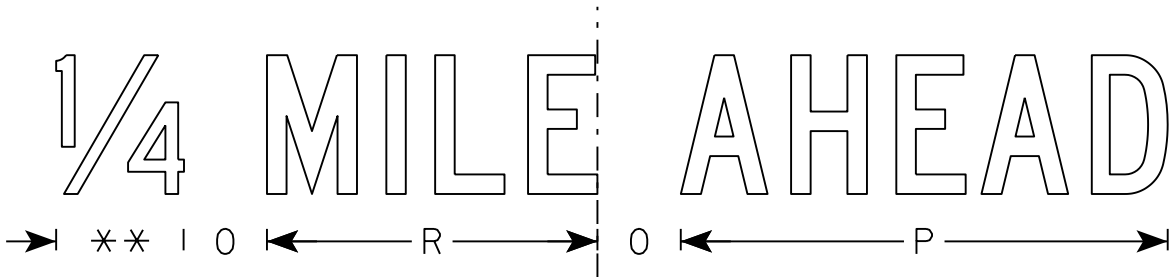
NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3C

** See Note 5



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	36	15	1 3/8	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4		7 1/8									3.75
2S	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
2M	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
3																											
4																											
5																											

STANDARD SIGN
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

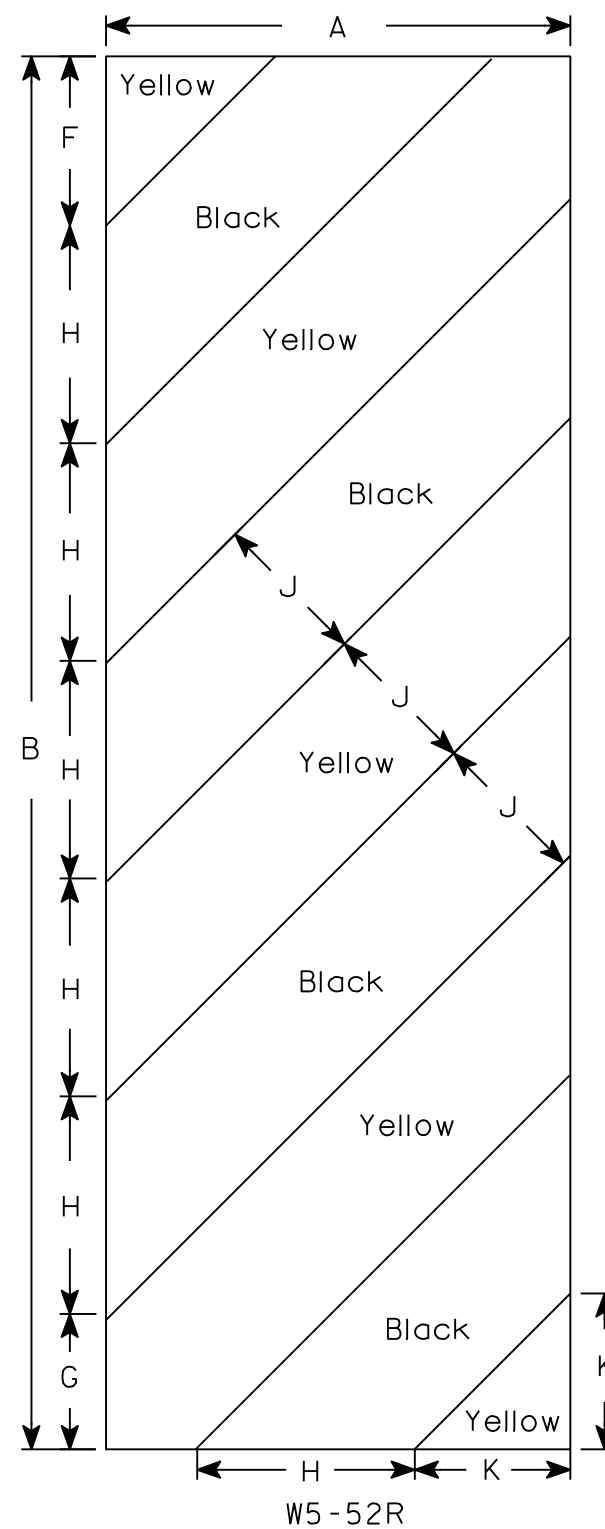
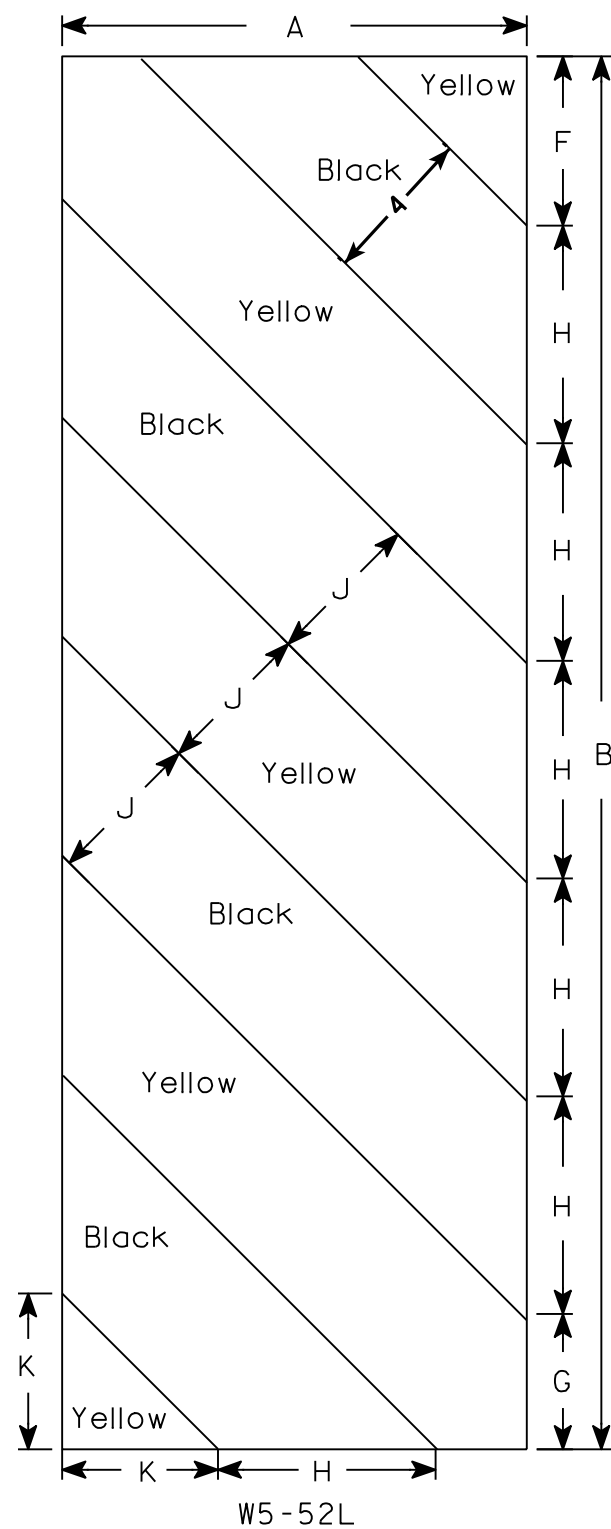
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 7/28/16 PLATE NO. R11-3C.3

PROJECT NO:

SHEET NO: 53

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.

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/29/12 PLATE NO. W5-52.9

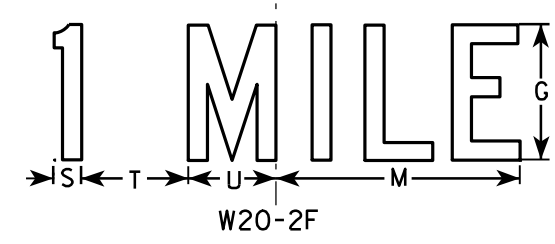
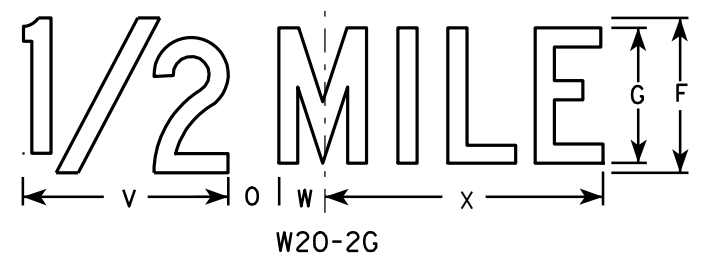
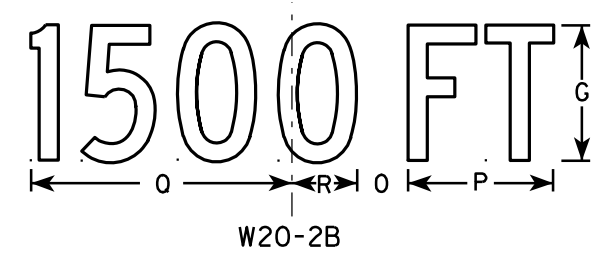
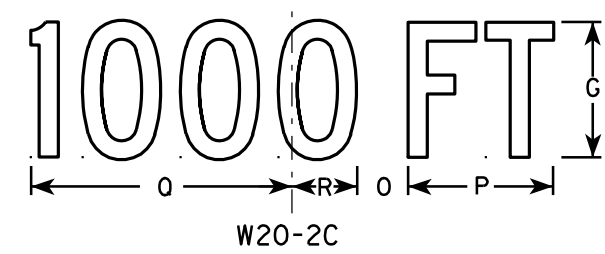
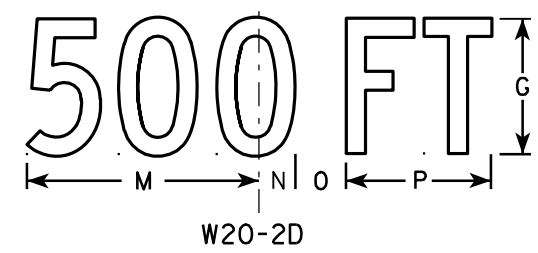
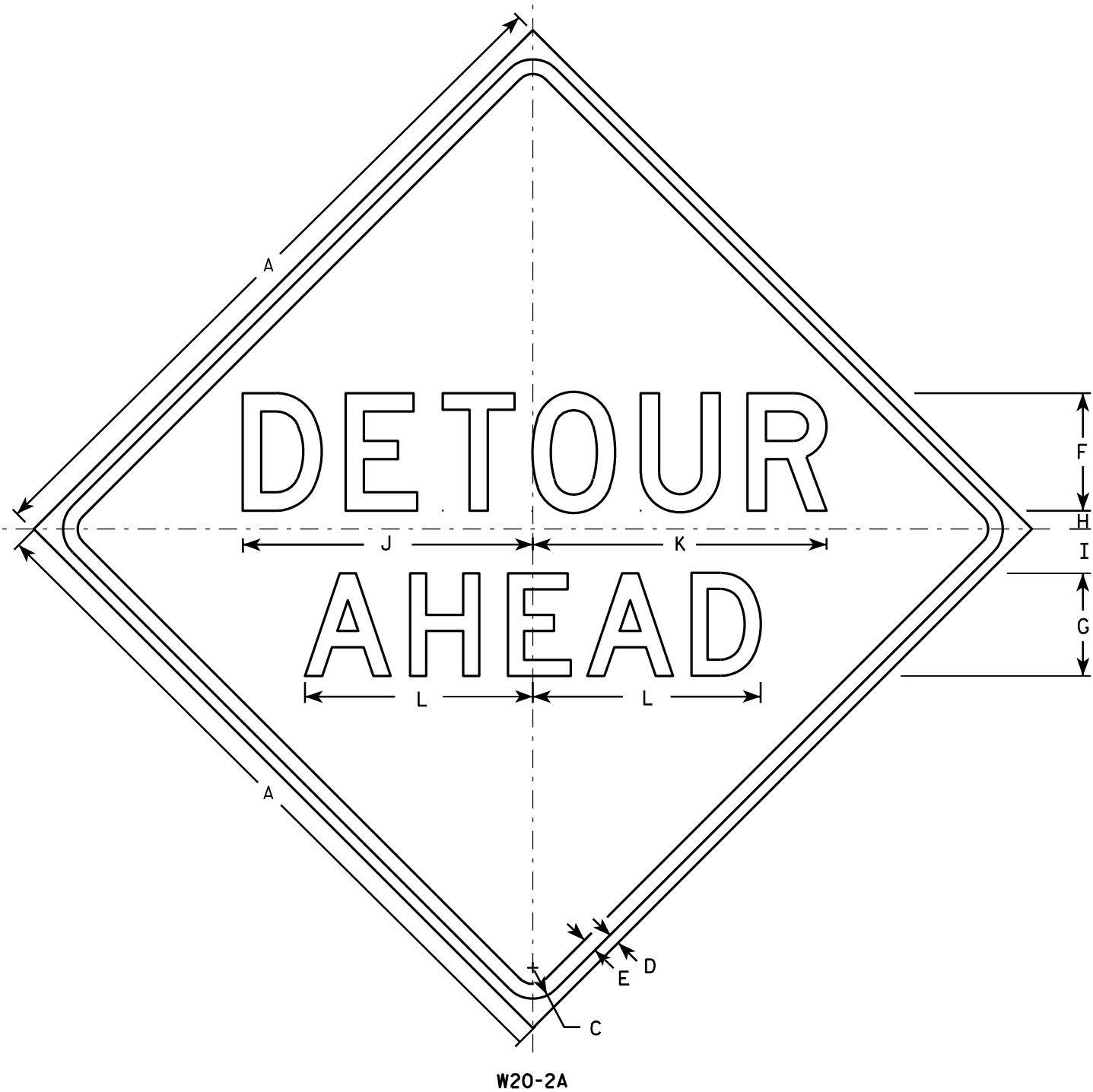
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 54

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 - Orange
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

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	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

PROJECT NO:

HWY:

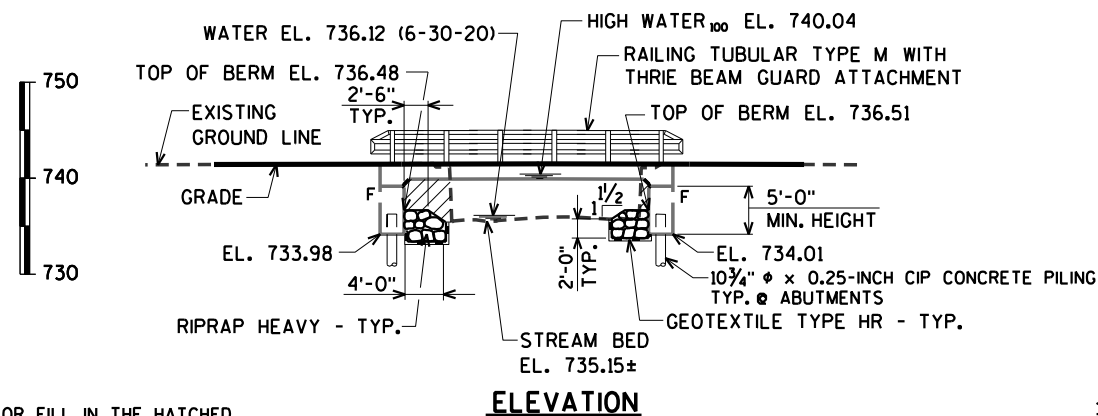
COUNTY:

SHEET NO: 55

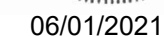
E



BENCH MARK:
CHIS. BOX NW CORNER EXIST. BRIDGE
STA. 9+89, 14' LT.
EL. 741.13

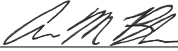


1. GENERAL PLAN
2. QUANTITIES AND NOTES
3. STRUCTURE DETAILS
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT
6. WEST ABUTMENT WING DETAILS
7. EAST ABUTMENT
8. EAST ABUTMENT WING DETAILS
9. ABUTMENT BILL OF BARS
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE DETAILS
12. TUBULAR STEEL RAILING TYPE 'M'



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

CONSULTANT CONTACT:
ARLEN BEAUDETTE
(715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	 CHIEF STRUCTURES DESIGN ENGINEER		SDR 08/25/20 DATE
STRUCTURE B-59-325			
CTH W OVER TRIBUTARY TO UNION RIVER			
COUNTY	SHEBOYGAN	TOWN/CITY/VILLAGE	LIM
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	ZSS	DESIGN CK'D. CJM	DRAWN BY CJM/CLP
GENERAL PLAN			SHEET 1 OF 1 56

5/26/2021
PENTABLE:BRequ..shd_util.tbi

STATE PROJECT NUMBER

4199-02-71

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTAL	CATEGORY 20	CATEGORY 30
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-59-921	EACH	-----	-----	-----	1	1	-----
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-59-325	LS	-----	-----	-----	1	1	-----
210.1500	BACKFILL STRUCTURE TYPE A	TON	170	170	-----	340	326	14
502.0100	CONCRETE MASONRY BRIDGES	CY	27	27	57	111	106	5
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	125	125	125	-----
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,510	2,510	-----	5,020	4,740	280
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,400	1,400	10,070	12,870	12,310	560
513.4061	RAILING TUBULAR TYPE M	LF	-----	-----	64.8	64.8	64.8	-----
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	7	7	-----	14	14	-----
550.2104	PILING CIP CONCRETE 10¾" X 0.25-INCH	LF	385	385	-----	770	770	-----
606.0300	RIPRAP HEAVY	CY	40	40	-----	80	80	-----
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	80	80	-----	160	160	-----
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	55	55	-----	110	106	4
645.0120	GEOTEXTILE TYPE HR	SY	85	85	-----	170	170	-----
SPV.0090.01	FLASHING STAINLESS STEEL	LF	-----	-----	61	61	61	-----
	NON-BID ITEMS							
	FILLER	SIZE	-----	-----	-----	1/2" & ¾"		

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.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATIVE METHOD IS APPROVED BY THE ENGINEER.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-59-325" SHALL BE THE EXISTING GROUNDLINE.

THE EXISTING STRUCTURE, P-59-921, TO BE REMOVED, IS A SINGLE SPAN CONCRETE FLAT SLAB BRIDGE ON CONCRETE ABUTMENTS, 22.9-FT. LONG WITH A 25.7-FT. CLEAR ROADWAY WIDTH.

AT THE BACK FACE 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.

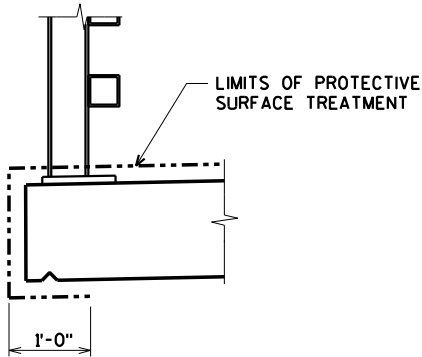
BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS NOTED OTHERWISE.

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

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

EXTENT OF BELOW GRADE SUBSTRUCTURES ARE NOT KNOWN. REMOVE EXISTING SUBSTRUCTURES AS NEEDED TO BUILD NEW SUBSTRUCTURES. COST OF SUBSTRUCTURE REMOVAL IS CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE" BID ITEM.

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



PROTECTIVE SURFACE TREATMENT DETAIL

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.11
OPERATING RATING FACTOR: 1.44
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.

HYDRAULIC DATA:

100 YEAR FREQUENCY

Q100 = 300 c.f.s.
VEL. = 3.6 f.p.s.
HW100 = EL. 740.04
WATERWAY AREA = 83 sq. ft.
DRAINAGE AREA = 3.1 sq. mi.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5
DATUM = NAVD88 (2012)

2 YEAR FREQUENCY

Q2 = 70 c.f.s.
VEL. = 1.6 f.p.s.
HW2 = EL. 738.26

FOUNDATION DATA:

WEST ABUTMENT TO BE SUPPORTED ON 10¾" ϕ x 0.25-INCH CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 100 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 55'-0".

EAST ABUTMENT TO BE SUPPORTED ON 10¾" ϕ x 0.25-INCH CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 100 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 55'-0".

*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. = 1,060 (2022)
A.A.D.T. = 1,290 (2042)
R.D.S. = 45 M.P.H.

8

8

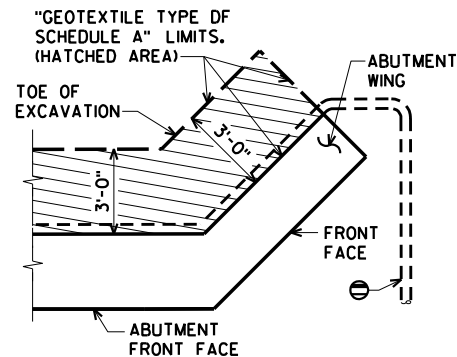
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-59-325			
	DRAWN BY	CJM	PLANS CK'D. AEB
QUANTITIES AND NOTES		SHEET 2 OF 12 57	

ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
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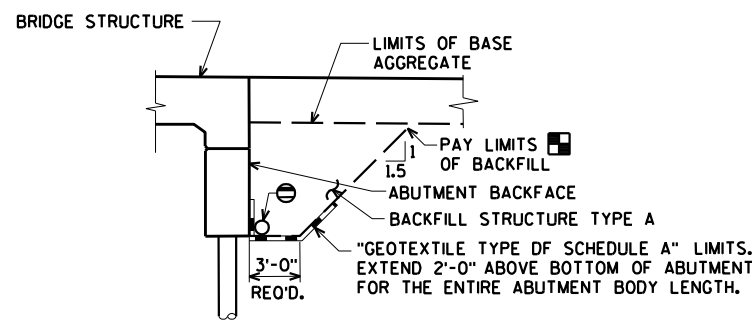
5/4/2021
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STATE PROJECT NUMBER

4199-02-71



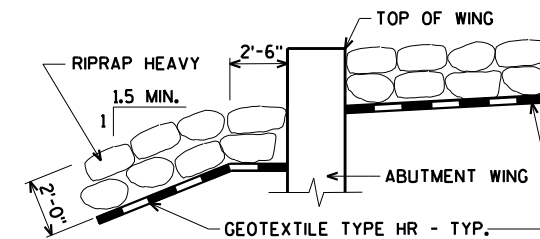
BACKFILL STRUCTURE LIMITS
ABUTMENT PLAN WITH WING



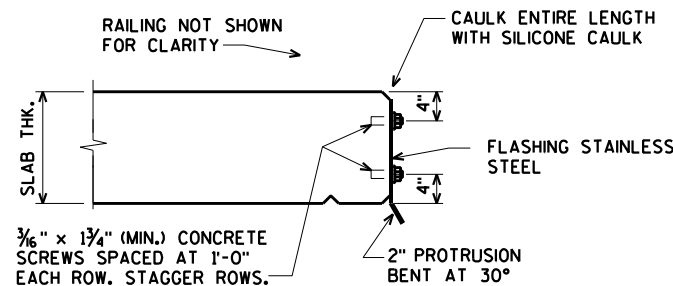
BACKFILL STRUCTURE LIMITS

- 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 9.

NOTE: PLACE RIPRAP HEAVY AS SHOWN IN WING ELEVATION DETAIL



TYPICAL FILL SECTION AT WING TIPS



FLASHING DETAIL FOR NEW BRIDGES WITH OPEN RAILING

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

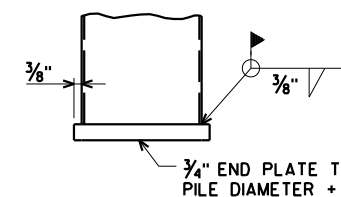
FLASHING TO BE INSTALLED AFTER PROTECTIVE SURFACE TREATMENT APPLICATION.

CONCRETE SCREWS SHALL BE 410 STAINLESS STEEL.

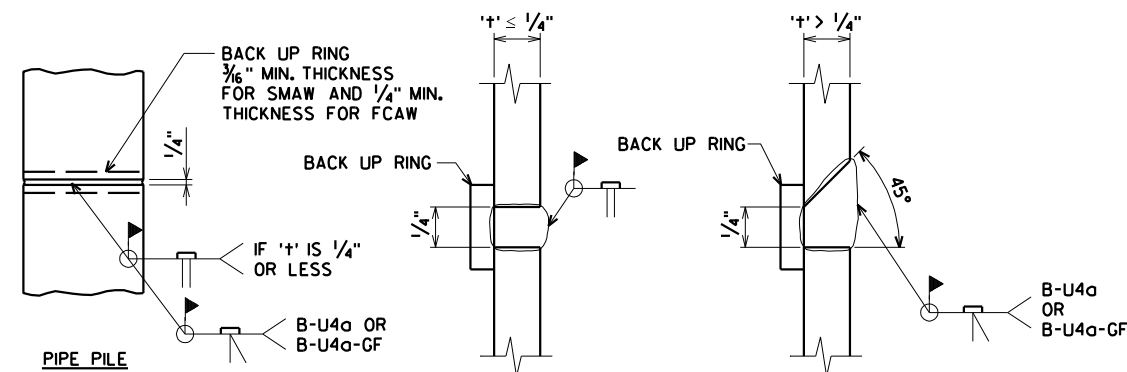
EXTEND FLASHING TO FRONT FACE OF ABUTMENT.

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.



END PLATE DETAIL FOR CIP PILING



PILE SPLICE DETAIL

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

CIP PILE WELD DETAIL

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-59-325			
DRAWN BY		CJM	PLANS CK'D. AEB
STRUCTURE DETAILS		SHEET 3 OF 12 58	

ORIGINAL PLANS PREPARED BY

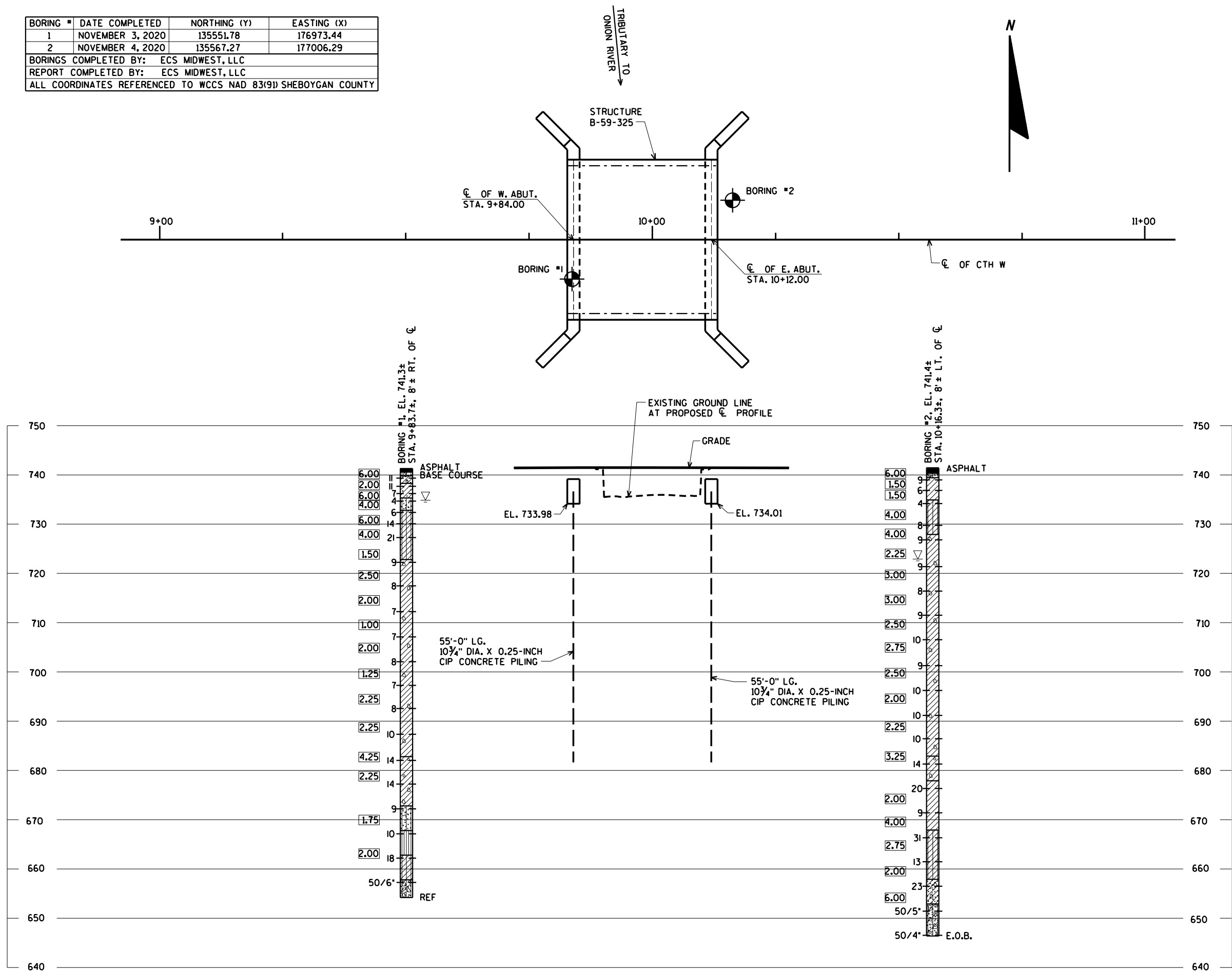
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8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	NOVEMBER 3, 2020	135551.78	176973.44
2	NOVEMBER 4, 2020	135567.27	177006.29
BORINGS COMPLETED BY: ECS MIDWEST, LLC			
REPORT COMPLETED BY: ECS MIDWEST, LLC			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) SHEBOYGAN COUNTY			



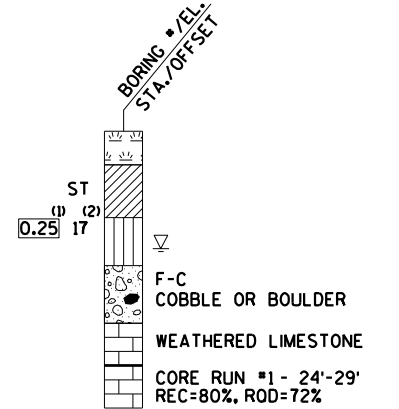
STATE PROJECT NUMBER

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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
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STRUCTURE B-59-325			
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SUBSURFACE EXPLORATION		SHEET 4 OF 12 59	

VARIES 5'-0" MIN. TO 5'-4" MAX.

18" RUBBERIZED MEMBRANE WATERPROOFING

CL. OF W. ABUT.

4"

A506

A508

4" x 3/4" FILLER

3/4" BEVEL

A507

A803

F.F.

A502

A505

2'-6"

TOP OF PILE EL. 737.00

TOP OF BERM EL. 736.48

2'-0"

2'-6"

1'-3"

1'-3"

2'-6"

3'-0"±

3" CL.

10"

2 SPA. Ø 1'-7 1/2" = 3'-3"

A404

7 SPA. Ø 6 1/2" = 3'-9 1/2"

A803 B.F.

1 1/2

2'-0"

2'-6"

7 SPA. Ø 6 1/2" = 3'-9 1/2"

A502 F.F.

RIPRAP HEAVY

GEOTEXTILE TYPE HR

A508 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. EMBED BARS 1'-0".

ABUTMENT TO BE SUPPORTED ON
10 $\frac{3}{4}$ " ϕ x 0.25" CIP CONCRETE PILING
DRIVEN TO A REQ'D. DRIVING
RESISTANCE OF 100 TONS PER PILE
ESTIMATED LENGTH 55'-0".

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 9. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

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

▲ 18" RUBBERIZED MEMBRANE WATERPROOFING
TO EXTEND FROM BRIDGE SEAT TO TOP OF
WING.

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-59-325

DRAWN BY	CLP	PLANS CK'D.	AEB
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WEST
ABUTMENT

SHEET 5 OF 12
60

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PLAN

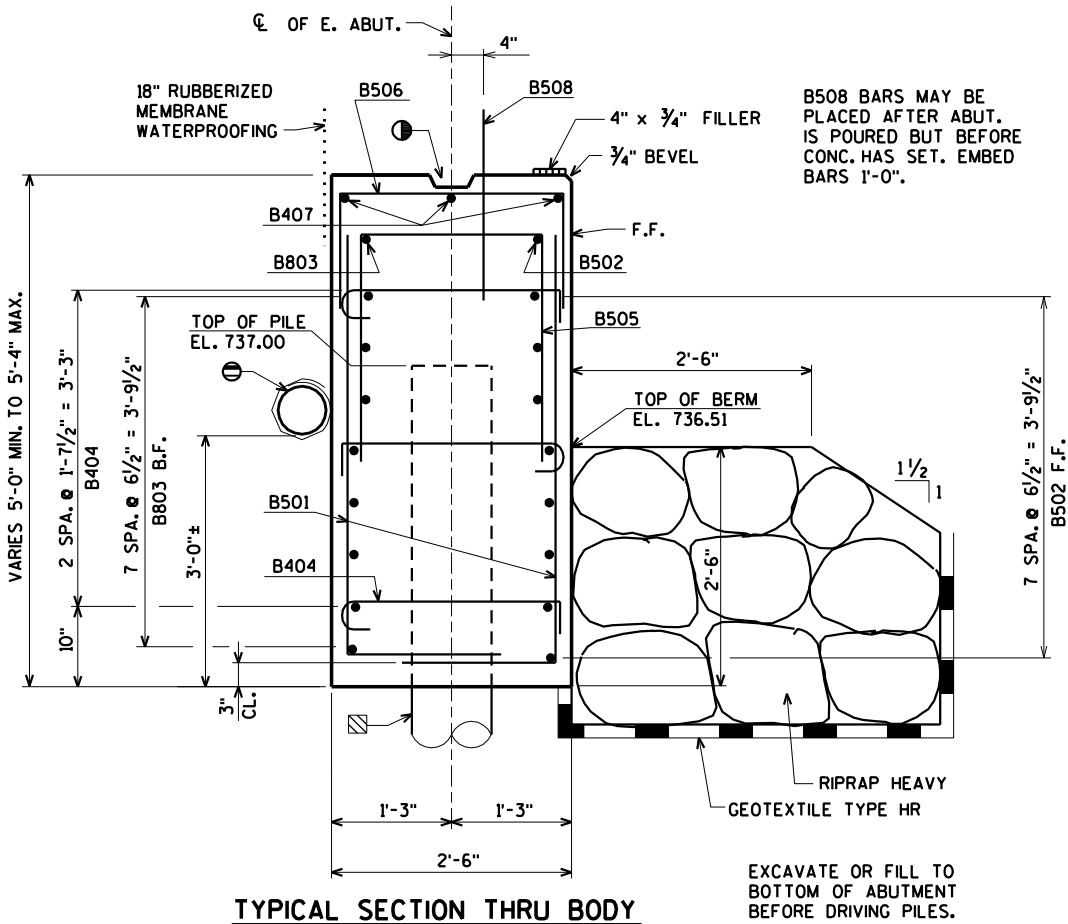
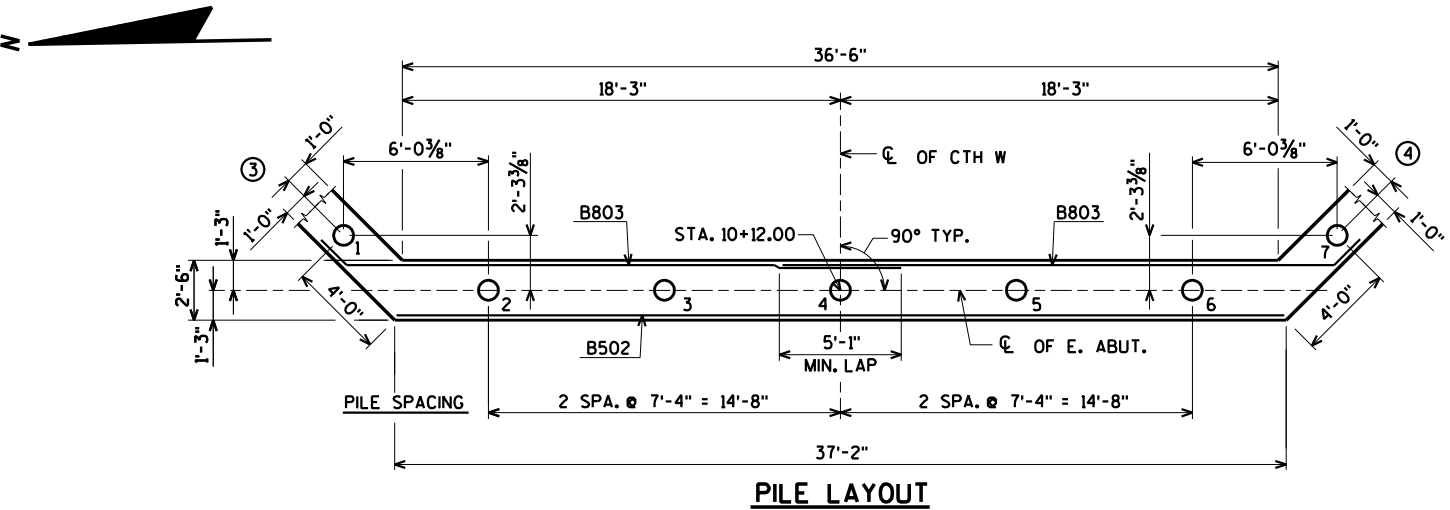
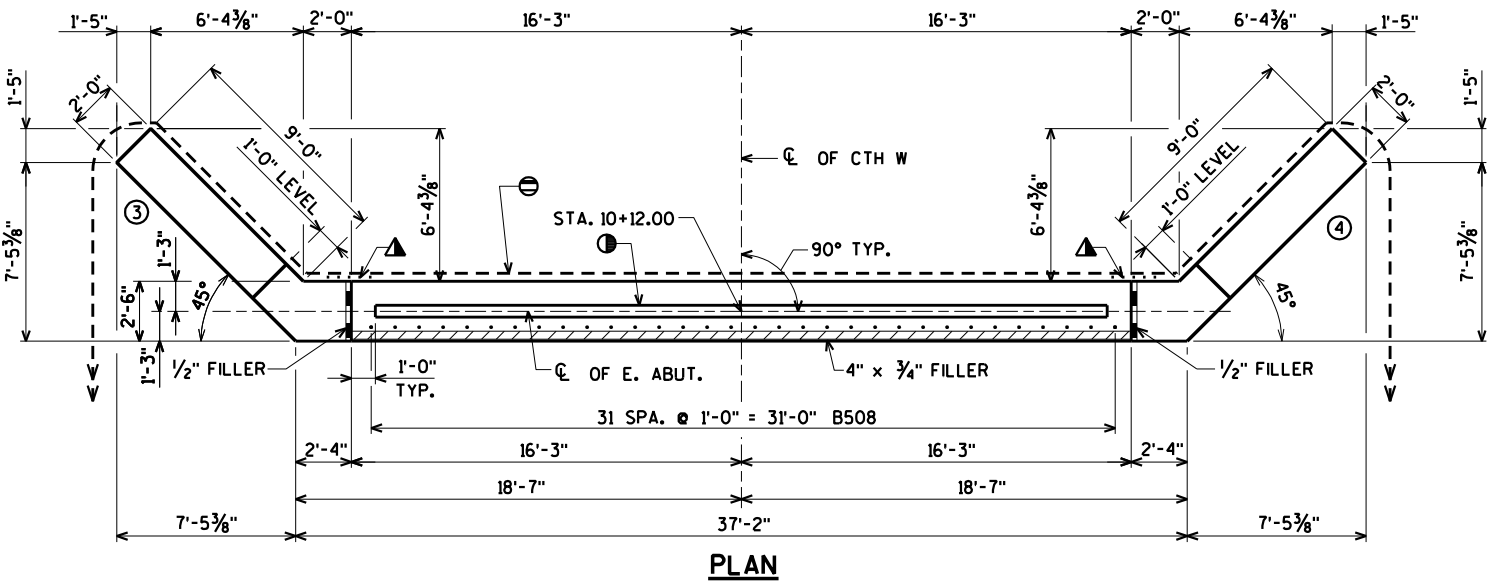
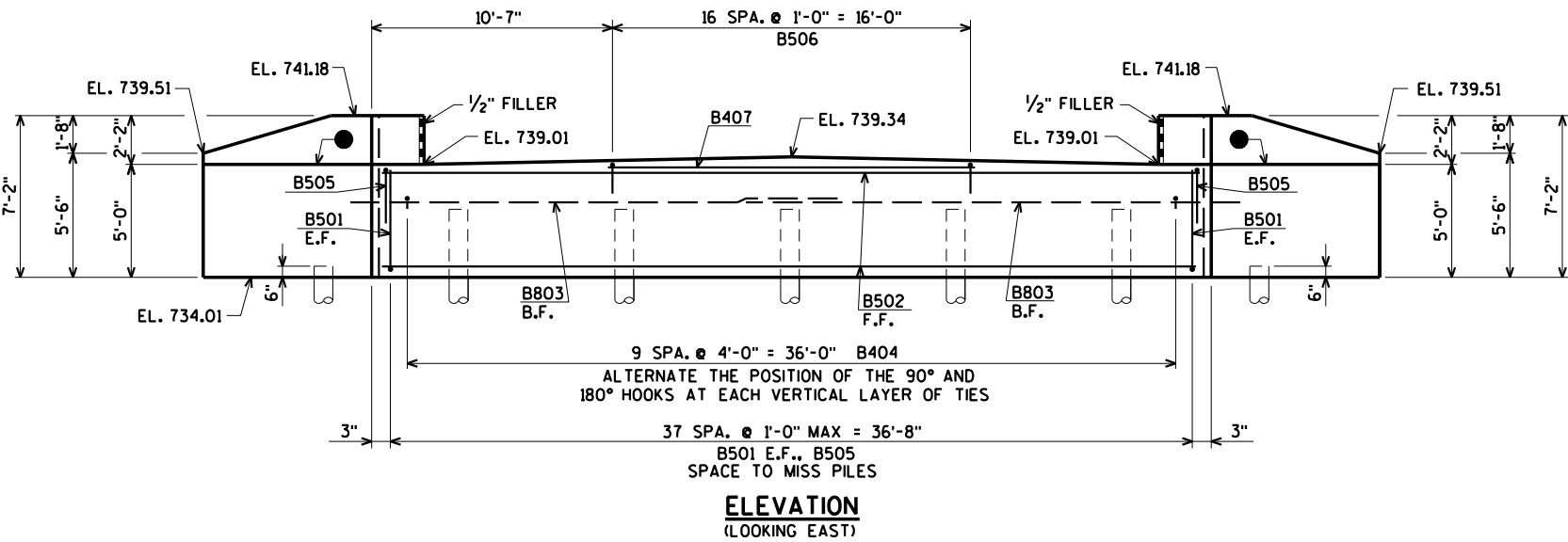
PILE LAYOUT



- 1 RUBBERIZED MEMBRANE WATERPROOFING
IF CONST. JOINT IS USED (COST INCIDENTAL
TO BID ITEM "CONCRETE MANSONRY BRIDGES")
 - 2 OPT. KEYED CONST. JOINT - FORMED BY A
SURFACED BEVELED 2" x 6" WITH RUBBERIZED
MEMBRANE WATERPROOFING ON B.F.
(RUBBERIZED MEMBRANE WATERPROOFING
INCIDENTAL TO BID ITEM "CONCRETE MANSONRY
BRIDGES" IF CONST. JOINT IS USED).
 - 3 3/4" V GROOVE ON F.F. OF WING WALL
NOT REQUIRED IF CONST. JT. IS NOT USED.
 - 4 18" RUBBERIZED MEMBRANE
WATERPROOFING TO EXTEND FROM
BRIDGE SEAT TO TOP OF WING.
- FOR PILE SPICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-59-325			
		DRAWN BY	CLP
		PLANS CK'D.	AEB
WEST ABUTMENT WING DETAILS		SHEET 6 OF 12 61	

NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)



PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 9. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

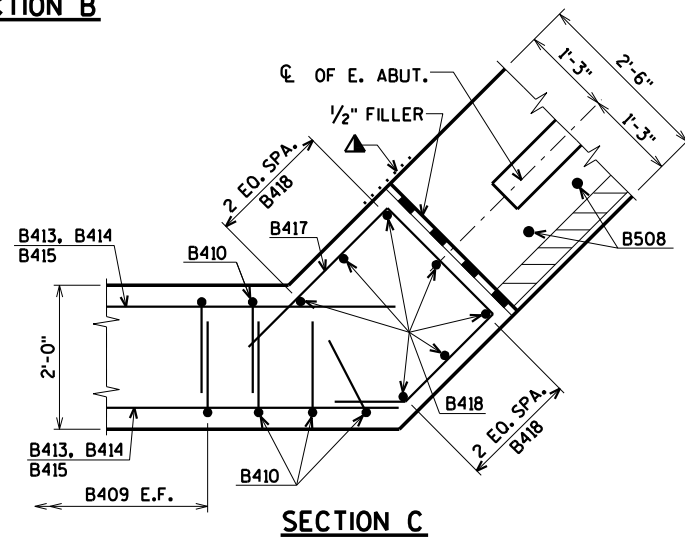
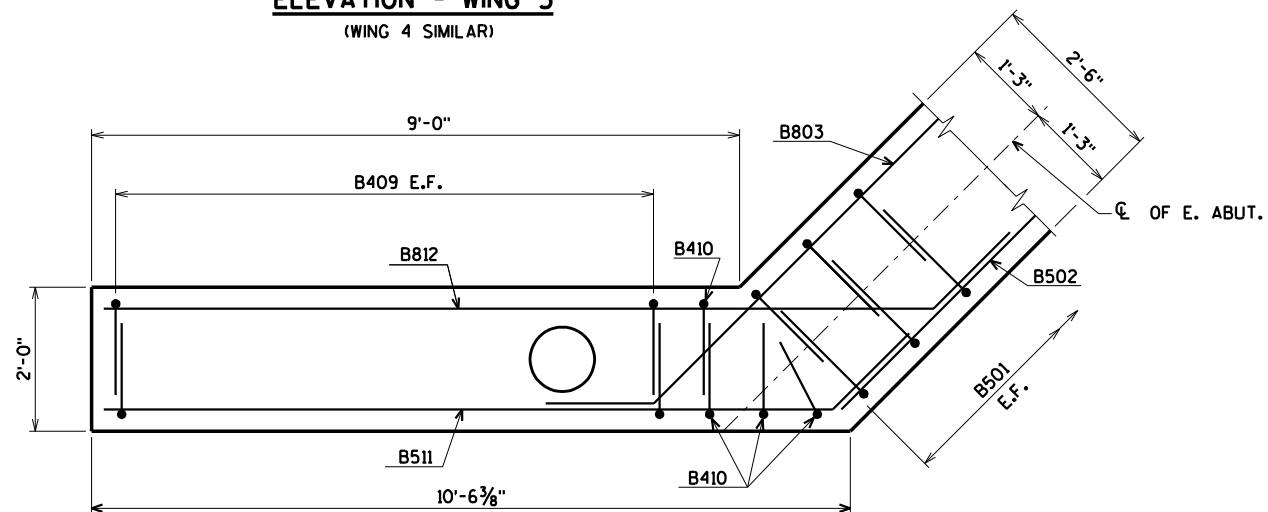
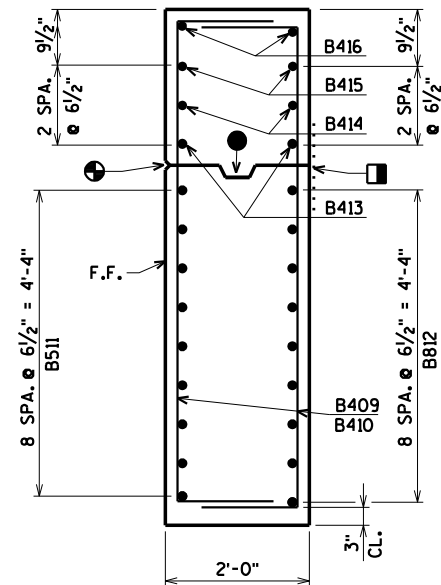
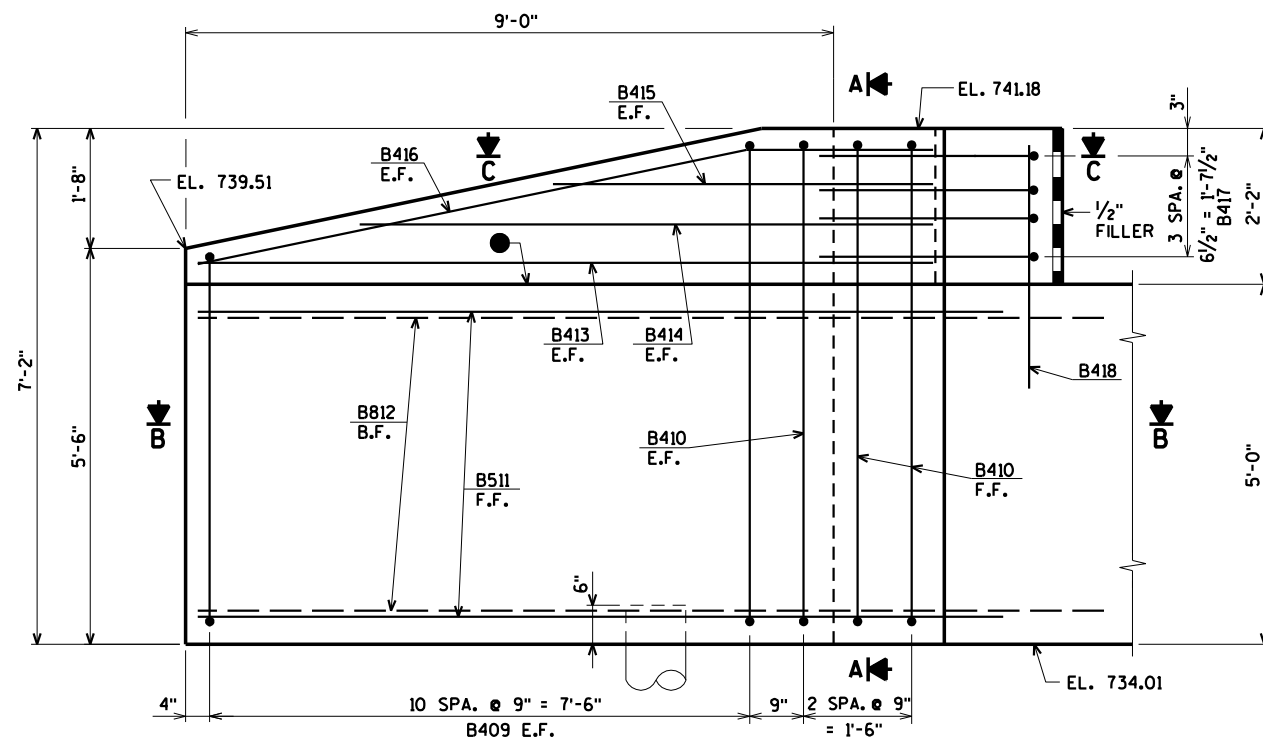
OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-59-325			
DRAWN BY		CLP	PLANS CK'D. AEB
EAST ABUTMENT		SHEET 7 OF 12 62	

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- RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MANSIONRY BRIDGES")
 - OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MANSIONRY BRIDGES" IF CONST. JOINT IS USED).
 - ⊕ 3/4" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.
 - ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
- FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-59-325			
DRAWN BY		CLP	PLANS CK'D. AEB
EAST ABUTMENT WING DETAILS			SHEET 8 OF 12 63

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BILL OF BARS - WEST ABUTMENT

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR BUNDLED	BAR SERIES	2,510* UNCOATED 1,400* COATED
LOCATION						
A501		76	5-11	X		BODY VERT. E.F.
A502		9	36-11			BODY HORIZ. F.F.
A803		18	24-7	X		BODY HORIZ. B.F.
A404		30	2-9	X		BODY TIES
A505		38	8-5	X		BODY VERT. TOP
A506		17	4-11	X		BODY VERT. TOP
A407		3	16-3			BODY HORIZ. TOP
A508	X	32	2-0			BODY DOWELS
A409	X	44	8-5	X	⊗	WINGS 1 & 2 VERT. E.F.
A410	X	8	9-3	X		WINGS 1 & 2 VERT. E.F.
A511	X	18	11-7	X		WINGS 1 & 2 HORIZ. F.F.
A812	X	18	13-5	X		WINGS 1 & 2 HORIZ. B.F.
A413	X	4	10-3			WINGS 1 & 2 HORIZ. E.F.
A414	X	4	8-0			WINGS 1 & 2 HORIZ. E.F.
A415	X	4	5-5			WINGS 1 & 2 HORIZ. E.F.
A416	X	4	10-4	X		WINGS 1 & 2 DIAC. E.F.
A417	X	8	8-8	X		WINGS 1 & 2 HORIZ.
A418	X	14	3-9			WINGS 1 & 2 VERT.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

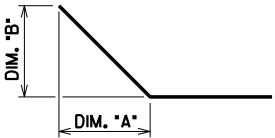
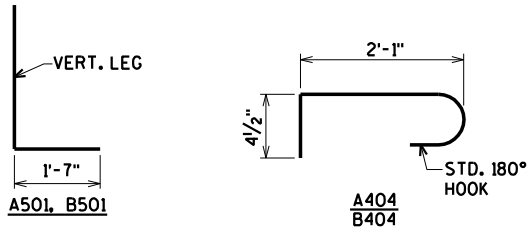
⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BILL OF BARS - EAST ABUTMENT

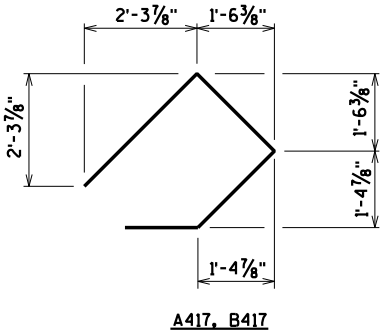
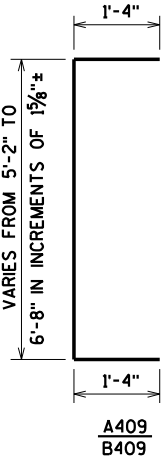
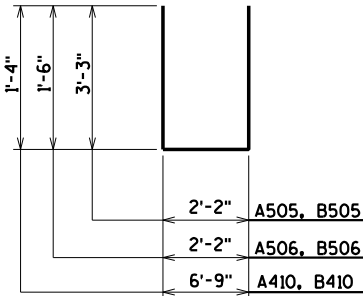
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR BUNDLED	BAR SERIES	2,510* UNCOATED 1,400* COATED
LOCATION						
B501		76	5-11	X		BODY VERT. E.F.
B502		9	36-11			BODY HORIZ. F.F.
B803		18	24-7	X		BODY HORIZ. B.F.
B404		30	2-9	X		BODY TIES
B505		38	8-5	X		BODY VERT. TOP
B506		17	4-11	X		BODY VERT. TOP
B407		3	16-3			BODY HORIZ. TOP
B508	X	32	2-0			BODY DOWELS
B409	X	44	8-5	X	⊗	WINGS 3 & 4 VERT. E.F.
B410	X	8	9-3	X		WINGS 3 & 4 VERT. E.F.
B511	X	18	11-7	X		WINGS 3 & 4 HORIZ. F.F.
B812	X	18	13-5	X		WINGS 3 & 4 HORIZ. B.F.
B413	X	4	10-3			WINGS 3 & 4 HORIZ. E.F.
B414	X	4	8-0			WINGS 3 & 4 HORIZ. E.F.
B415	X	4	5-5			WINGS 3 & 4 HORIZ. E.F.
B416	X	4	10-4	X		WINGS 3 & 4 DIAC. E.F.
B417	X	8	8-8	X		WINGS 3 & 4 HORIZ.
B418	X	14	3-9			WINGS 3 & 4 VERT.

STATE PROJECT NUMBER

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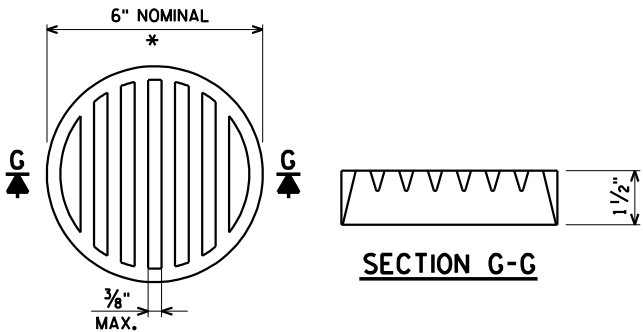
BAR NO.	DIM. "A"	DIM. "B"
A803	1'-0 3/4"	1'-0 3/4"
A511	1'-0 3/4"	1'-0 3/4"
A812	1'-0 3/4"	1'-0 3/4"
A416	7'-10"	1'-8"
B803	1'-0 3/4"	1'-0 3/4"
B511	1'-0 3/4"	1'-0 3/4"
B812	1'-0 3/4"	1'-0 3/4"
B416	7'-10"	1'-8"



BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
A409	4 SERIES OF 11	7'-8" TO 9'-2"
B409	4 SERIES OF 11	7'-8" TO 9'-2"

BUNDLE AND TAG EACH SERIES SEPARATELY.



* 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
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STRUCTURE B-59-325			
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ABUTMENT BILL OF BARS			SHEET 9 OF 12 64

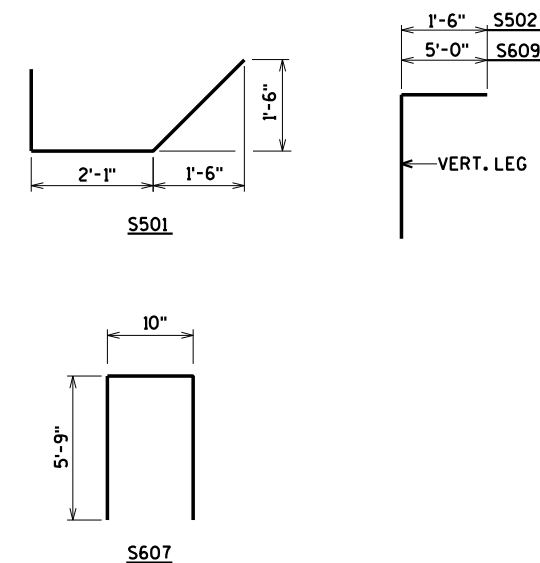
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TYPICAL SECTION THRU BRIDGE

[illegible]

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



PLAN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-59-325			
DRAWN BY		CLP	PLANS CK'D. AEB
SUPERSTRUCTURE		SHEET 10 OF 65	



TOP OF DECK ELEVATIONS

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

SURVEY TOP OF SLAB ELEVATIONS

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE C OF ABUTMENTS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR C. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-59-325			
DRAWN BY		CLP	PLANS CK'D. AEE
SUPERSTRUCTURE DETAILS		SHEET 11 OF 12 66	

LEGEND

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

GENERAL NOTES

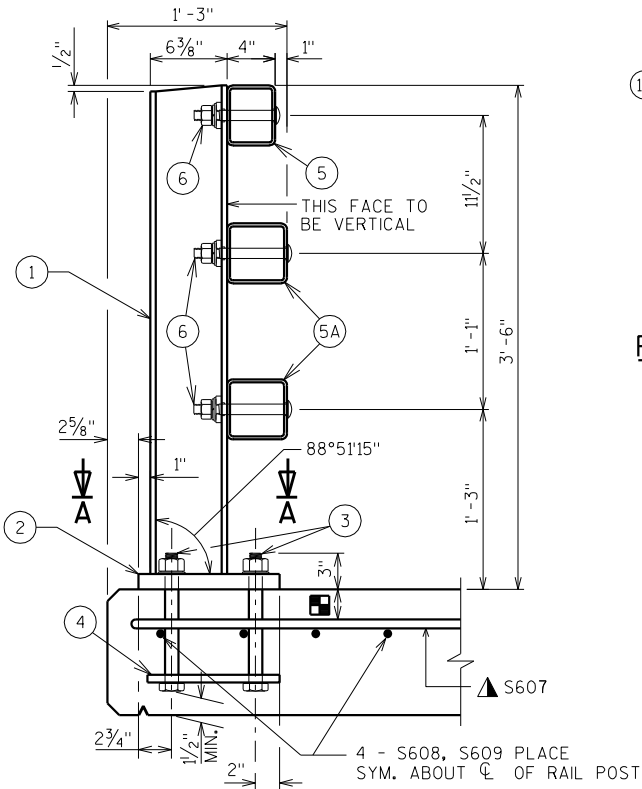
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES,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

▲ TIE TO TOP MAT OF STEEL.

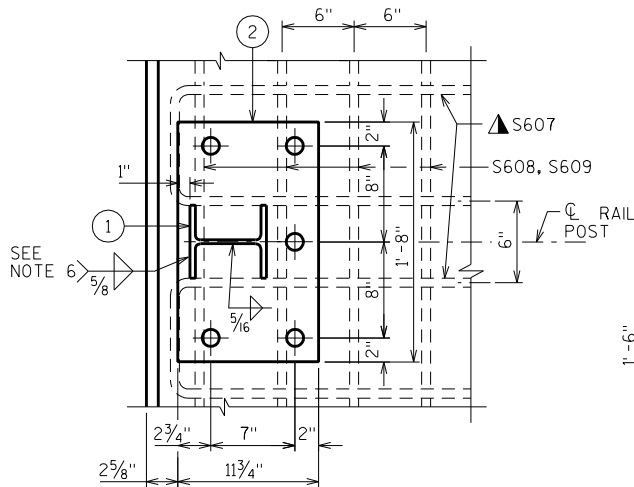
* ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.

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

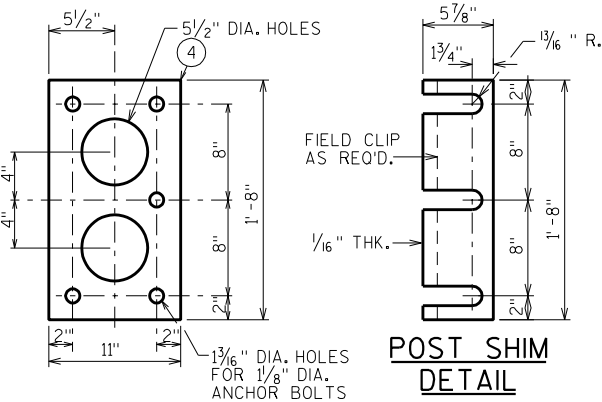
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-59-325			
DRAWN BY		CLP	PLANS CK'D. AEB
TUBULAR STEEL RAILING TYPE 'M'			SHEET 12 OF 12 67



SECTION THRU RAILING ON DECK

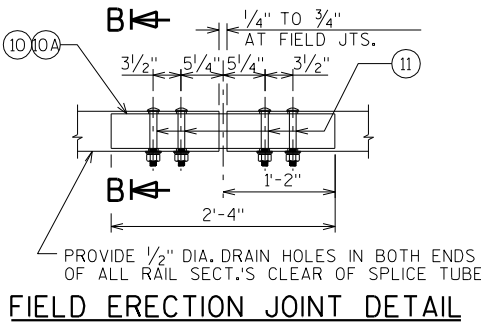


SECTION A-A

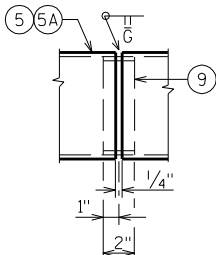


ANCHOR PLATE

AT RAIL TO DECK CONNECTION

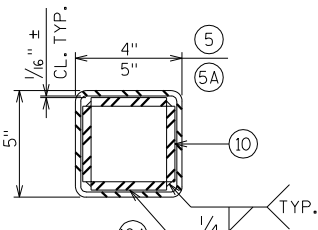


FIELD ERECTION JOINT DETAIL

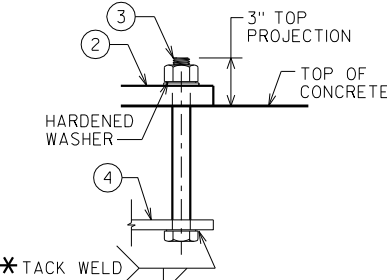


SHOP RAIL SPLICE DETAIL

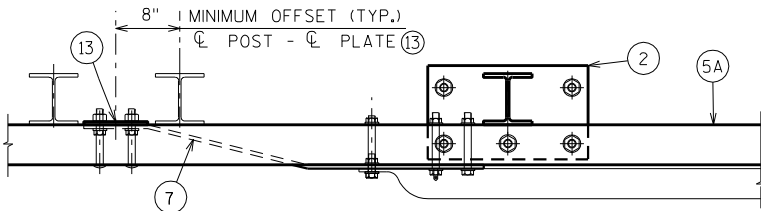
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



SECTION B-B

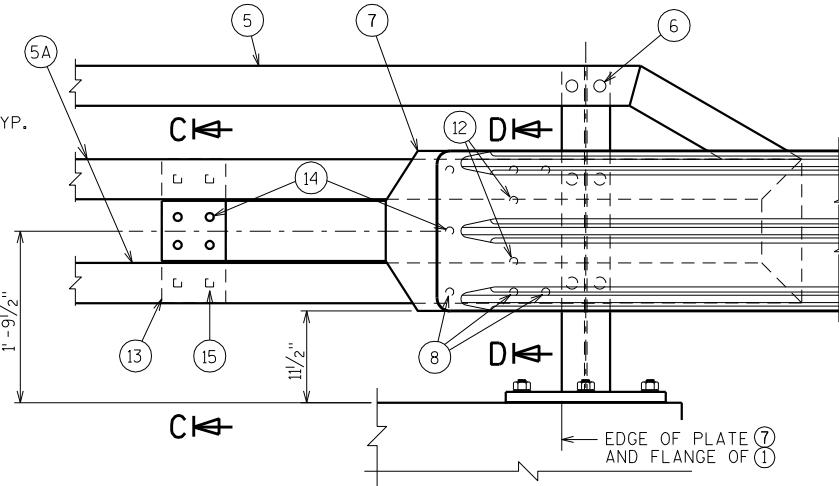


ANCHOR BOLTS



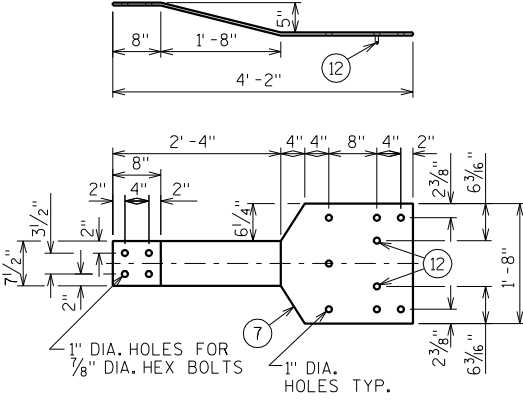
TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT



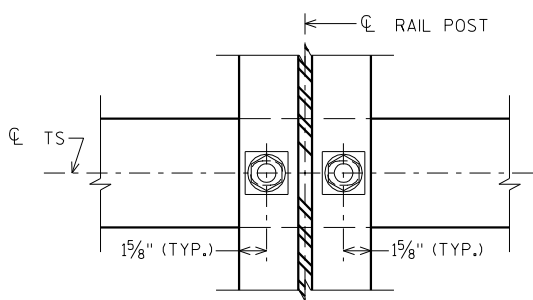
DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT

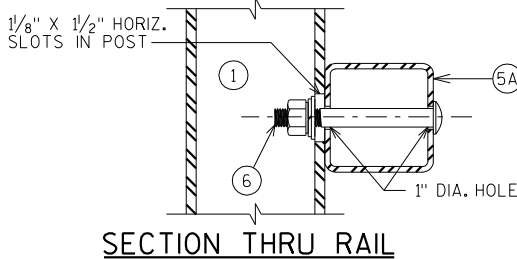


BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



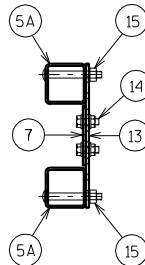
SECTION THRU POST WEB



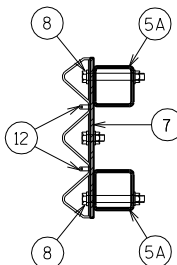
SECTION THRU RAIL

NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

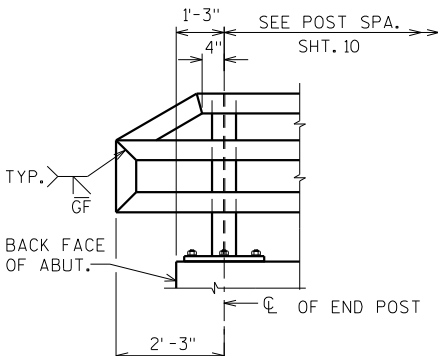
TYPICAL RAIL TO POST CONNECTIONS



SECTION C-C



SECTION D-D



PART ELEVATION OF RAILING

EARTHWORK - SW SHOULDER

STATION	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)			Mass Ordinate
	Cut	Unusable Pavement Material	Fill	Marsh Exc	Cut	Unusable Pavement Material	Fill	Marsh Exc	Cut 1.00	Expanded Fill 1.30	Expanded Marsh 1.50	
Note 1	Note 2	Note 3	Note 1	Note 4	Note 8							
6+59.8	4.28	0.00	5.46	0.00	0	0	0	0	0	0	0	0
7+00	4.29	0.00	8.64	0.00	6	0	10	0	6	13	0	-7
7+32.4	5.97	0.00	12.36	23.41	6	0	13	14	12	30	21	-18
7+50	7.61	0.00	15.28	28.88	4	0	9	17	16	42	47	-26
8+00	11.74	0.00	19.81	32.83	18	0	32	57	34	83	132	-49
8+17.1	12.87	0.00	21.76	34.92	8	0	13	21	42	100	164	-58
8+42.1	12.65	0.00	19.14	30.99	12	0	19	31	54	125	210	-71
8+50	12.90	0.00	18.91	29.98	4	0	6	9	58	133	224	-75
8+67.1	13.16	0.00	18.04	29.50	8	0	12	19	66	148	252	-82
8+79.6	11.63	0.00	14.46	25.58	6	0	8	13	72	159	272	-87
9+00	10.90	0.00	12.09	20.93	9	0	10	18	81	172	299	-91
9+04.6	11.00	0.00	12.00	23.47	2	0	2	4	83	174	305	-91
9+29.6	11.70	0.00	12.20	23.44	11	0	11	22	94	189	338	-95
9+40	11.67	0.00	12.51	21.51	5	0	5	9	99	195	351	-96
					99	0	150	234				

EARTHWORK - NW SHOULDER

STATION	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)			Mass Ordinate
	Cut	Unusable Pavement Material	Fill	Marsh Exc	Cut	Unusable Pavement Material	Fill	Marsh Exc	Cut 1.00 Note 1	Expanded Fill 1.30	Expanded Marsh 1.50 Note 4	
7+32.4	3.39	0.00	10.71	17.80	0	0	0	0	0	0	0	0
7+50	3.04	0.00	11.78	15.72	2	0	7	11	2	9	17	-7
8+00	2.28	0.00	15.11	27.78	5	0	25	40	7	42	77	-35
8+17.1	2.27	0.00	17.70	30.69	1	0	10	19	8	55	105	-47
8+42.1	3.13	0.00	16.95	35.33	3	0	16	31	11	75	152	-64
8+50	3.43	0.00	17.11	35.91	1	0	5	10	12	82	167	-70
8+67.1	4.11	0.00	18.89	38.20	2	0	11	23	14	96	201	-82
8+79.6	4.06	0.00	20.50	41.92	2	0	9	19	16	108	230	-92
9+00	4.03	0.00	15.85	38.97	3	0	14	31	19	126	276	-107
9+04.6	4.01	0.00	15.99	35.53	1	0	3	6	20	130	285	-110
9+29.6	3.83	0.00	19.10	29.32	4	0	16	30	24	151	330	-127
9+40	3.62	0.00	17.35	25.73	1	0	7	11	25	160	347	-135
					25	0	123	231				

Notes:	
1 - Cut	Cut includes Unusable Pavement material
2 - Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded Marsh Backfill	Will be backfilled with Granular Backfill
8 - Mass Ordinate	Cut - Unusable Pavt - (Fill * Fill Factor)
8 - Mass Ordinate	Mass Ordinate does not include Marsh Excavation

EARTHWORK - CTH W

STATION	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)			Mass Ordinate
	Cut	Unusable Pavement Material	Fill	Marsh Exc	Cut	Unusable Pavement Material	Fill	Marsh Exc	Cut	Expanded Fill	Expanded Marsh	
									1.00	1.30	1.50	
					Note 1	Note 2	Note 3		Note 1		Note 4	Note 8
9+40	43.72	14.00	30.25	47.24	0	0	0	0	0	0	0	0
09+50	42.19	14.00	30.31	42.07	16	5	11	17	16	14	26	-3
9+82.7	42.19	14.00	30.31	42.07	51	17	37	51	67	62	102	-17
B-59-325	0.00	0.00	0.00	0.00	0	0	0	0	67	62	102	-17
10+13.2	34.52	14.00	29.72	44.07	0	0	0	0	67	62	102	-17
10+50	34.52	14.00	29.72	44.07	64	26	55	82	131	134	225	-51
10+60	36.07	14.00	29.56	39.07	13	5	11	15	144	148	248	-57

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EARTHWORK - SE SHOULDER

STATION	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)			Mass Ordinate
	Cut	Unusable Pavement Material	Fill	Marsh Exc	Cut	Unusable Pavement Material	Fill	Marsh Exc	Cut	Expanded Fill	Expanded Marsh	
									1.00	1.30	1.50	
					Note 1	Note 2	Note 3		Note 1		Note 4	Note 8
10+60	4.99	0.00	16.20	15.56	0	0	0	0	0	0	0	0
10+66.4	6.56	0.00	15.94	20.98	1	0	4	4	1	5	6	-4
10+91.4	8.55	0.00	16.77	0.00	7	0	15	10	8	25	21	-17
11+00	9.35	0.00	17.08	0.00	3	0	5	0	11	31	21	-20
11+16.4	9.83	0.00	18.06	0.00	6	0	11	0	17	46	21	-29
11+28.9	9.94	0.00	16.44	0.00	5	0	8	0	22	56	21	-34
11+50	9.62	0.00	12.95	0.00	8	0	11	0	30	70	21	-40
11+53.9	9.53	0.00	12.30	0.00	1	0	2	0	31	73	21	-42
11+78.9	8.77	0.00	8.30	0.00	8	0	10	0	39	86	21	-47
12+00	6.45	0.00	4.66	0.00	6	0	5	0	45	92	21	-47
12+50	6.18	0.00	0.30	0.00	12	0	5	0	57	99	21	-42
12+67.9	7.28	0.00	0.00	0.00	4	0	0	0	61	99	21	-38

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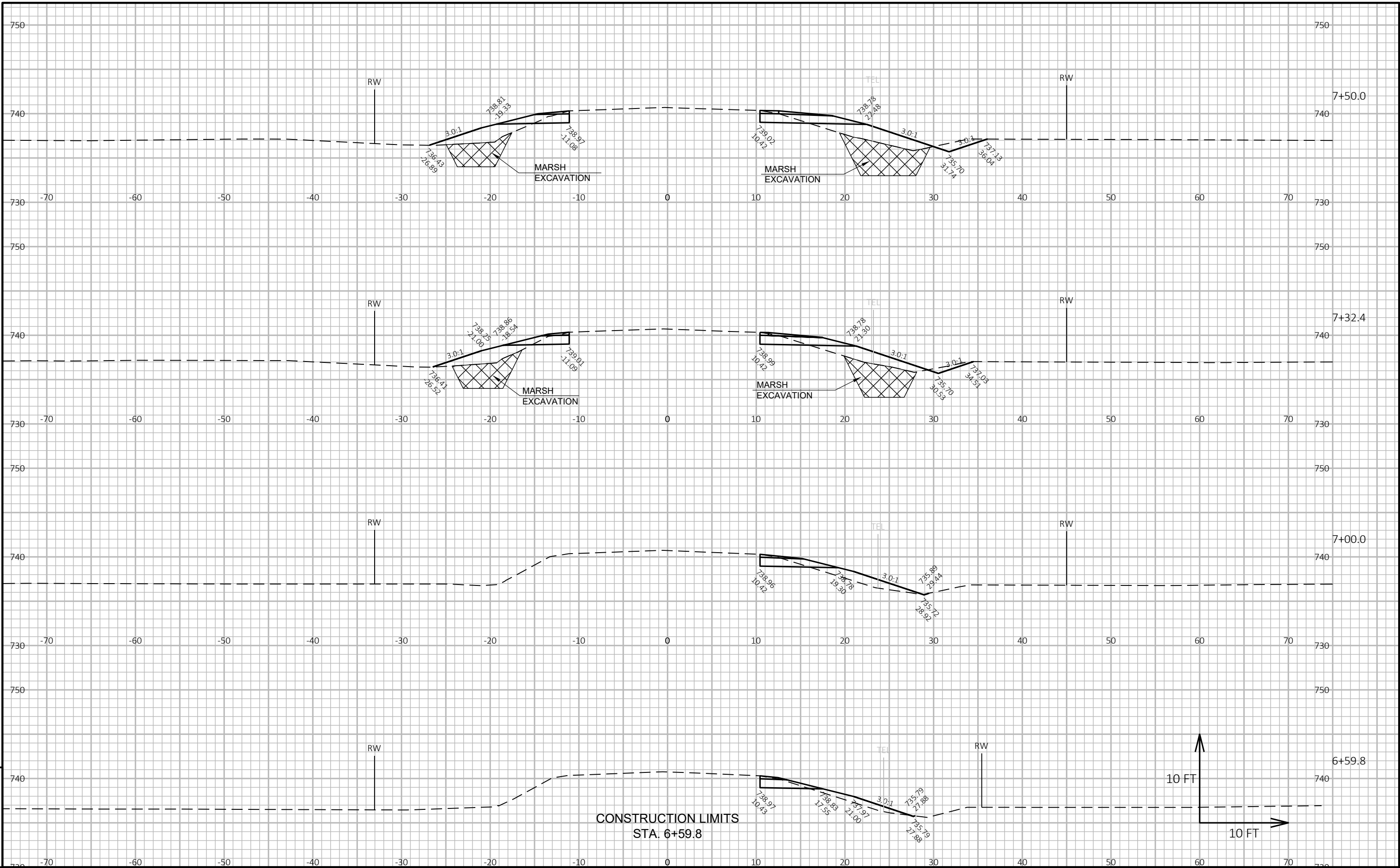
Notes:	
1 - Cut	Cut includes Unusable Pavement material This does not show up in cross sections Does not include Unusable Pavement Exc volume Will be backfilled with Granular Backfill Cut - Unusable Pavt - (Fill * Fill Factor) Mass Ordinate does not include Marsh Excavation
2 - Unusable Pavement Material	
3 - Fill	
4 - Expanded Marsh Backfill	
8 - Mass Ordinate	
8 - Mass Ordinate	

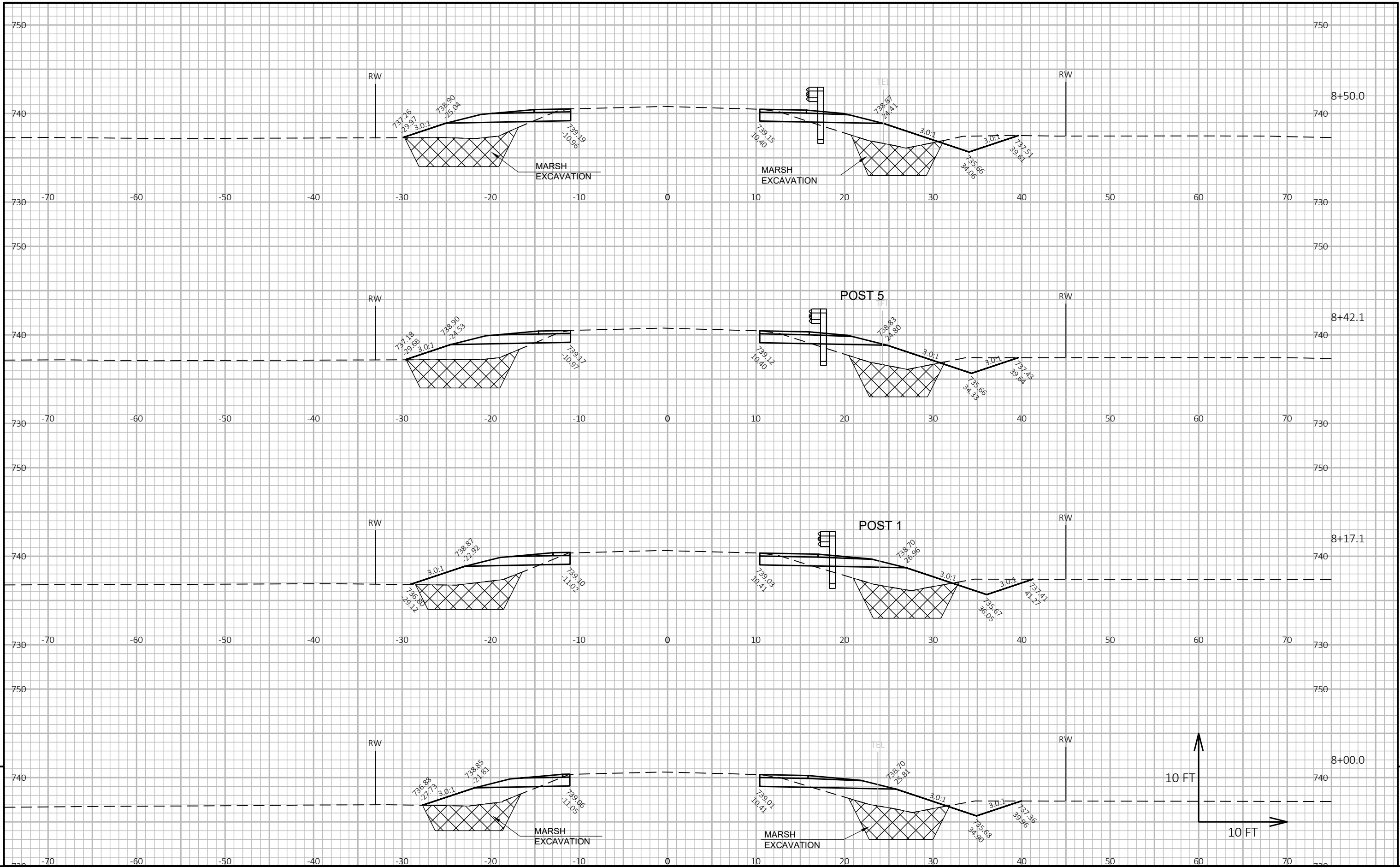
EARTHWORK - NE SHOULDER

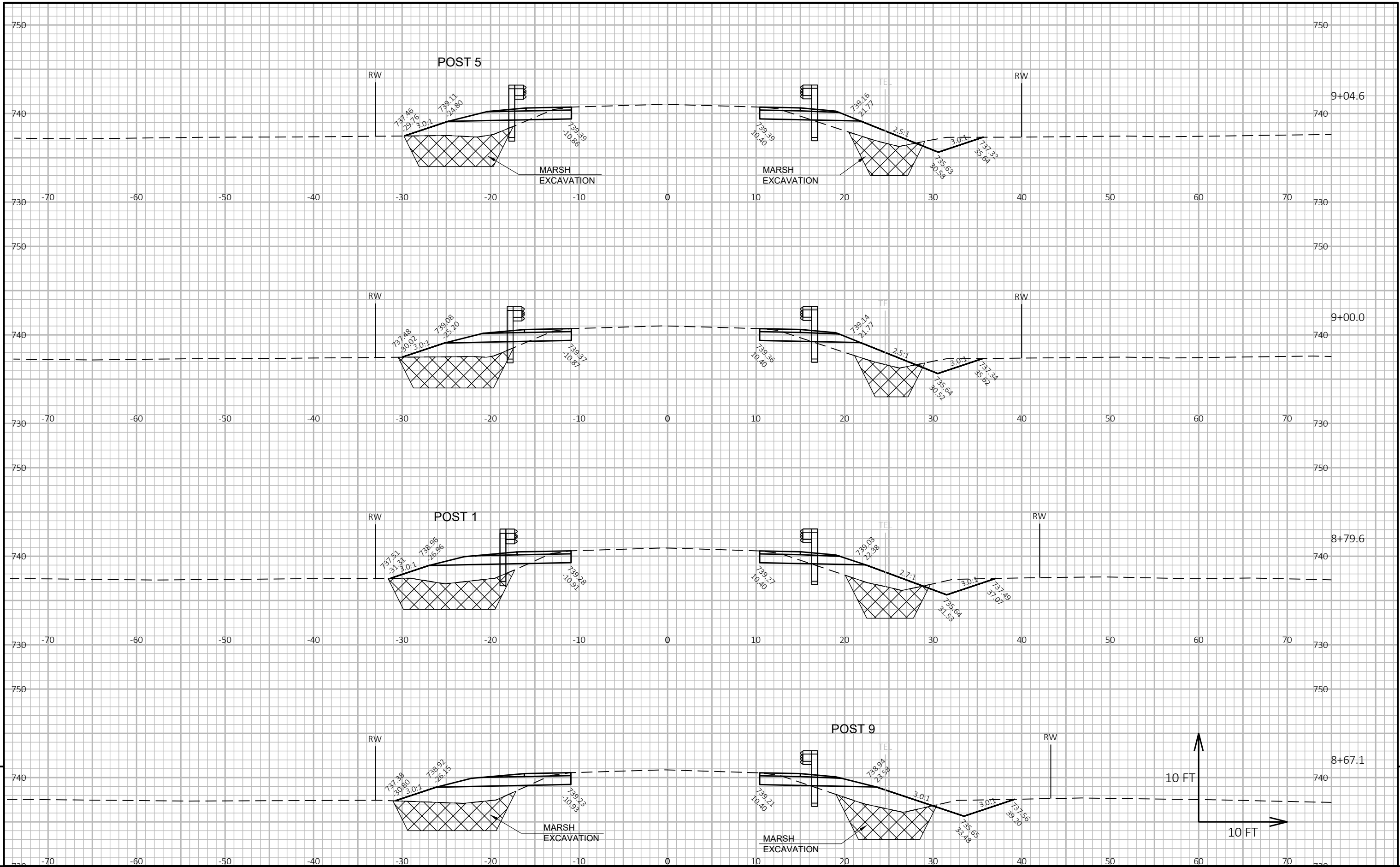
STATION	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)			Mass Ordinate
	Cut	Unusable Pavement Material	Fill	Marsh Exc	Cut	Unusable Pavement Material	Fill	Marsh Exc	Cut 1.00	Expanded Fill 1.30	Expanded Marsh 1.50	
10+60	3.36	0.00	13.35	20.42	0	0	0	0	0	0	0	0
10+66.4	3.59	0.00	11.72	20.14	1	0	3	5	1	4	8	-3
10+91.4	3.73	0.00	9.80	22.06	3	0	10	20	4	17	38	-13
11+00	3.77	0.00	9.60	23.32	1	0	3	7	5	21	48	-16
11+16.4	3.86	0.00	9.66	27.87	2	0	6	16	7	29	72	-22
11+28.9	3.99	0.00	10.37	33.71	2	0	5	14	9	35	93	-26
11+50	4.08	0.00	9.83	0.00	3	0	8	13	12	46	113	-34
11+53.9	4.12	0.00	10.11	0.00	1	0	1	0	13	47	113	-34
11+78.9	4.54	0.00	10.71	0.00	4	0	10	0	17	60	113	-43
12+00	4.82	0.00	6.53	0.00	4	0	7	0	21	69	113	-48
12+50	5.34	0.00	2.72	0.00	9	0	9	0	30	81	113	-51
12+67.9	5.37	0.00	1.77	0.00	4	0	1	0	34	82	113	-48
13+00	5.32	0.00	0.64	0.00	6	0	1	0	40	83	113	-43
13+27.1	5.33	0.00	0.10	0.00	5	0	0	0	45	83	113	-38

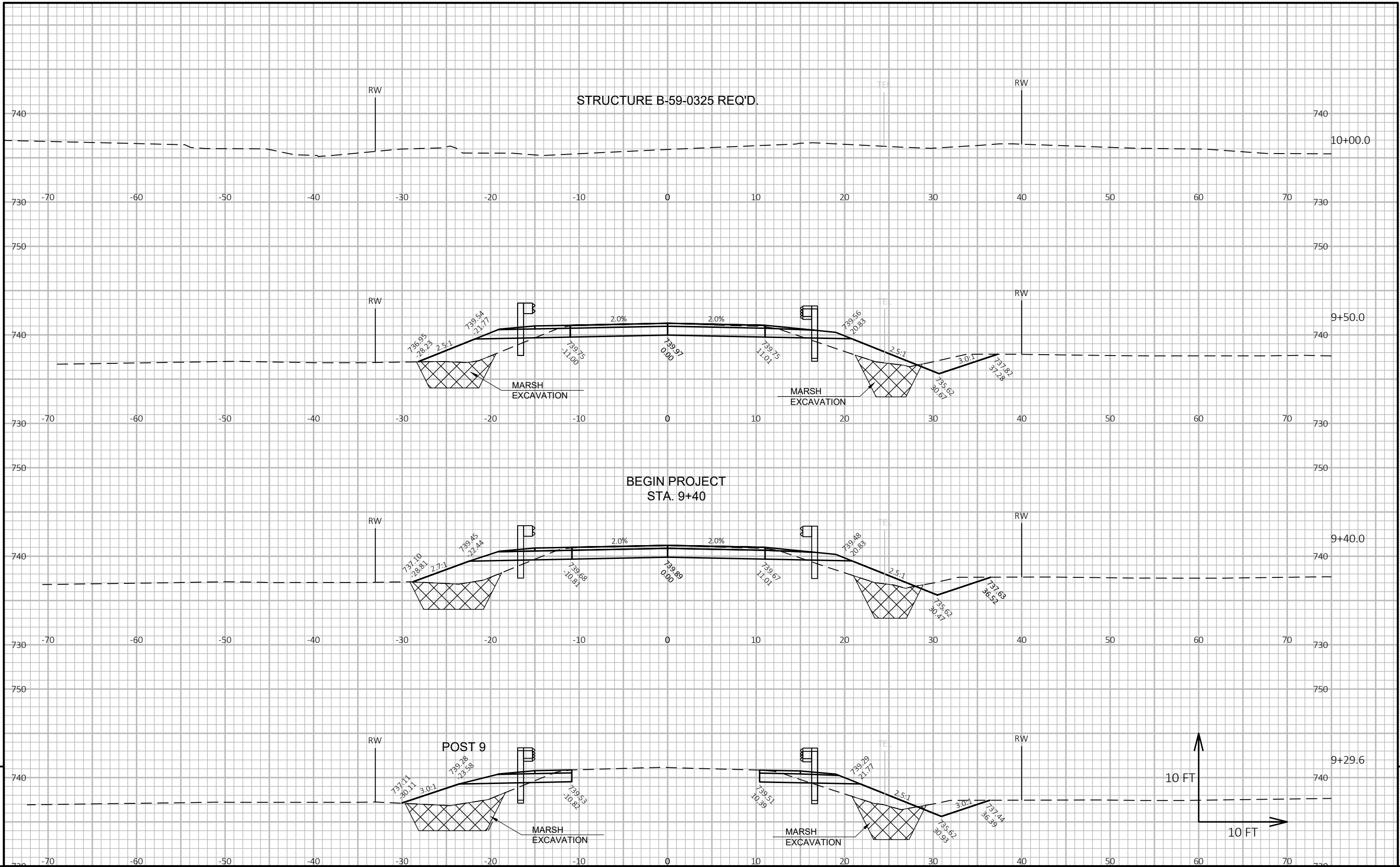
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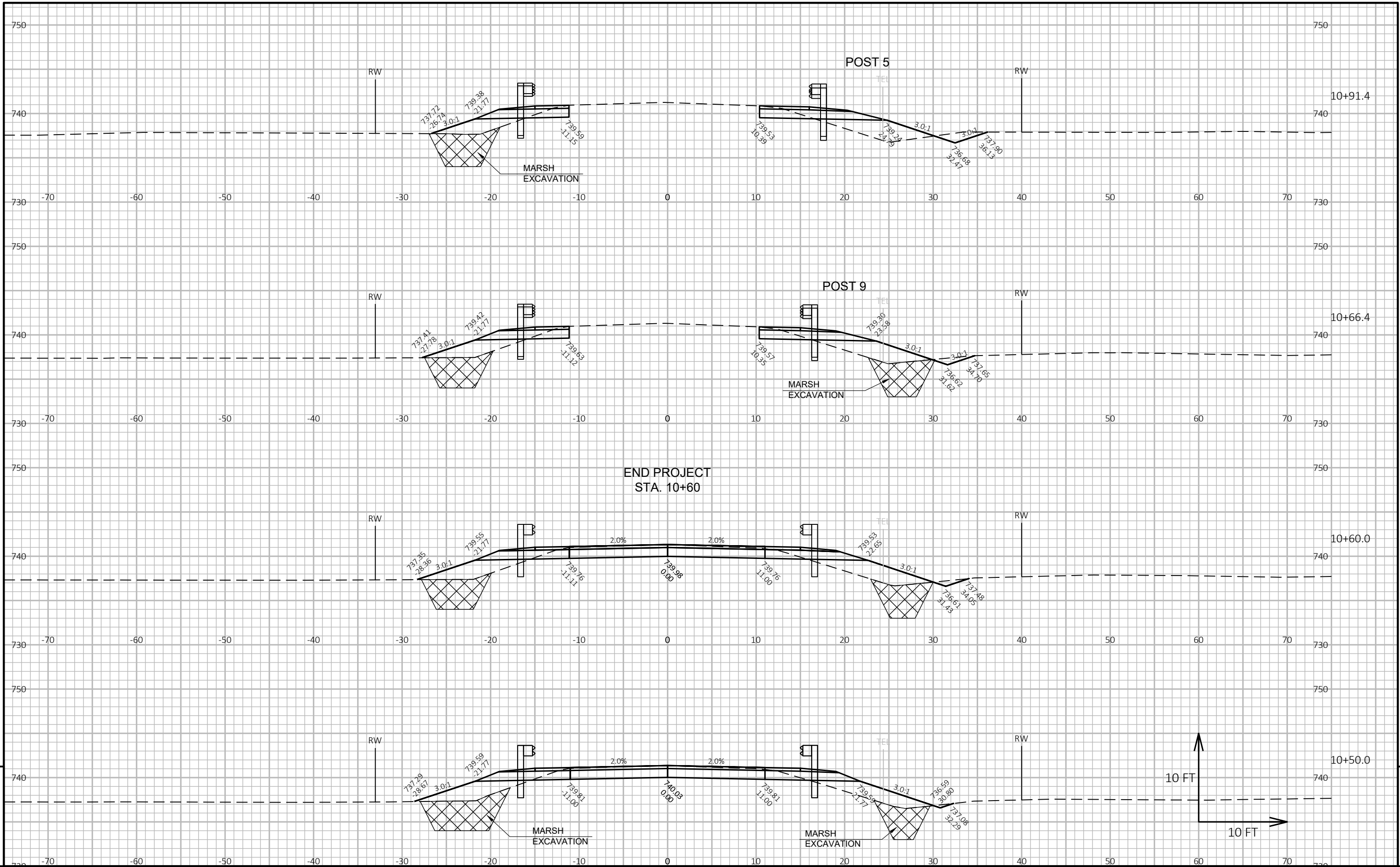
Notes:	
1 - Cut	Cut includes Unusable Pavement material
2 - Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded Marsh Backfill	Will be backfilled with Granular Backfill
8 - Mass Ordinate	Cut - Unusable Pavt - (Fill * Fill Factor)
8 - Mass Ordinate	Mass Ordinate does not include Marsh Excavation

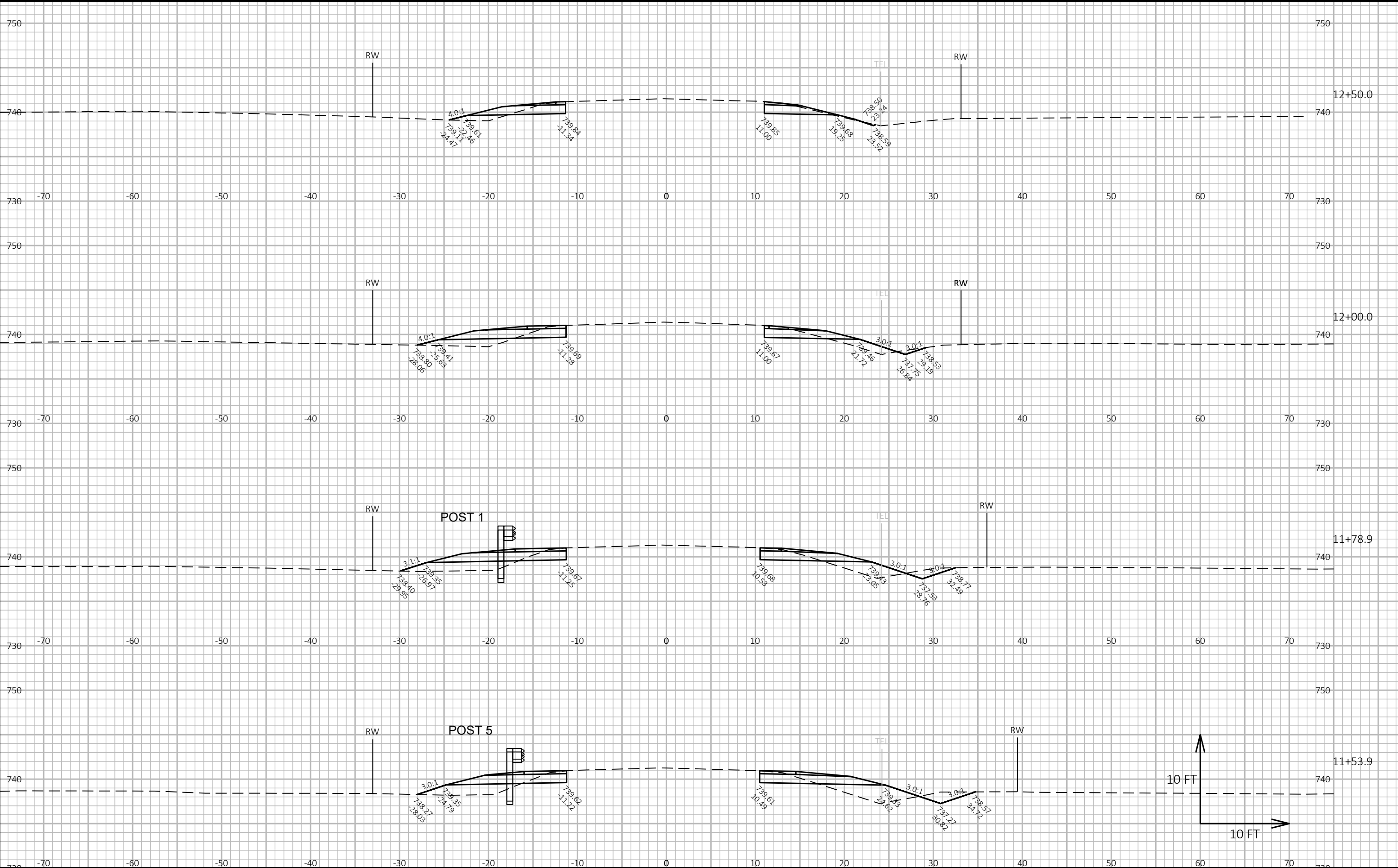


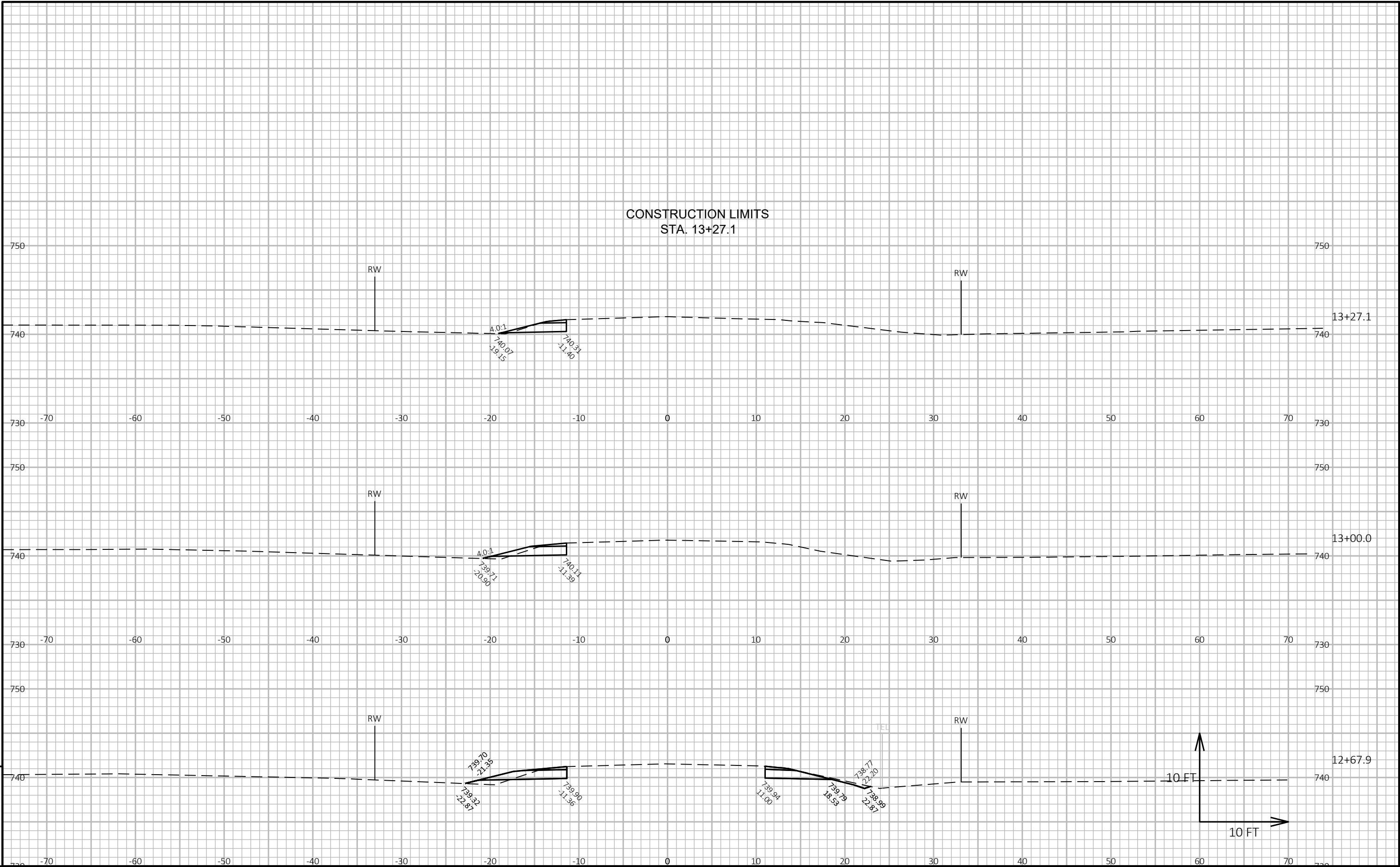




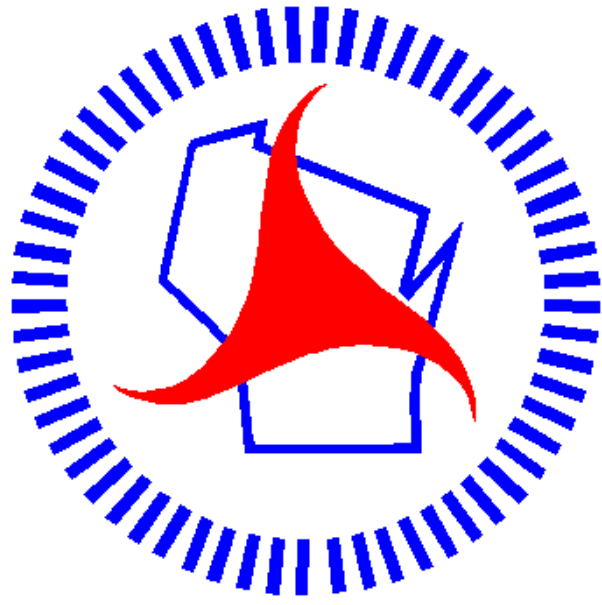








Notes



Wisconsin Department of Transportation

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