

GRE

PROJECT ID:
WITH: N/A

4570-24-71

COUNTY:

MANITOWOC

DECEMBER 2021
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
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 = 140



33

DESIGN DESIGNATION

A.A.D.T.	2023	=	4600
A.A.D.T.	2043	=	4800
D.H.V.		=	12.9
D.D.		=	64/36
T.		=	15.4
DESIGN SPEED		=	55 MPH
ESALS		=	1,600,000

CONVENTIONAL SYMBOLS

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



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

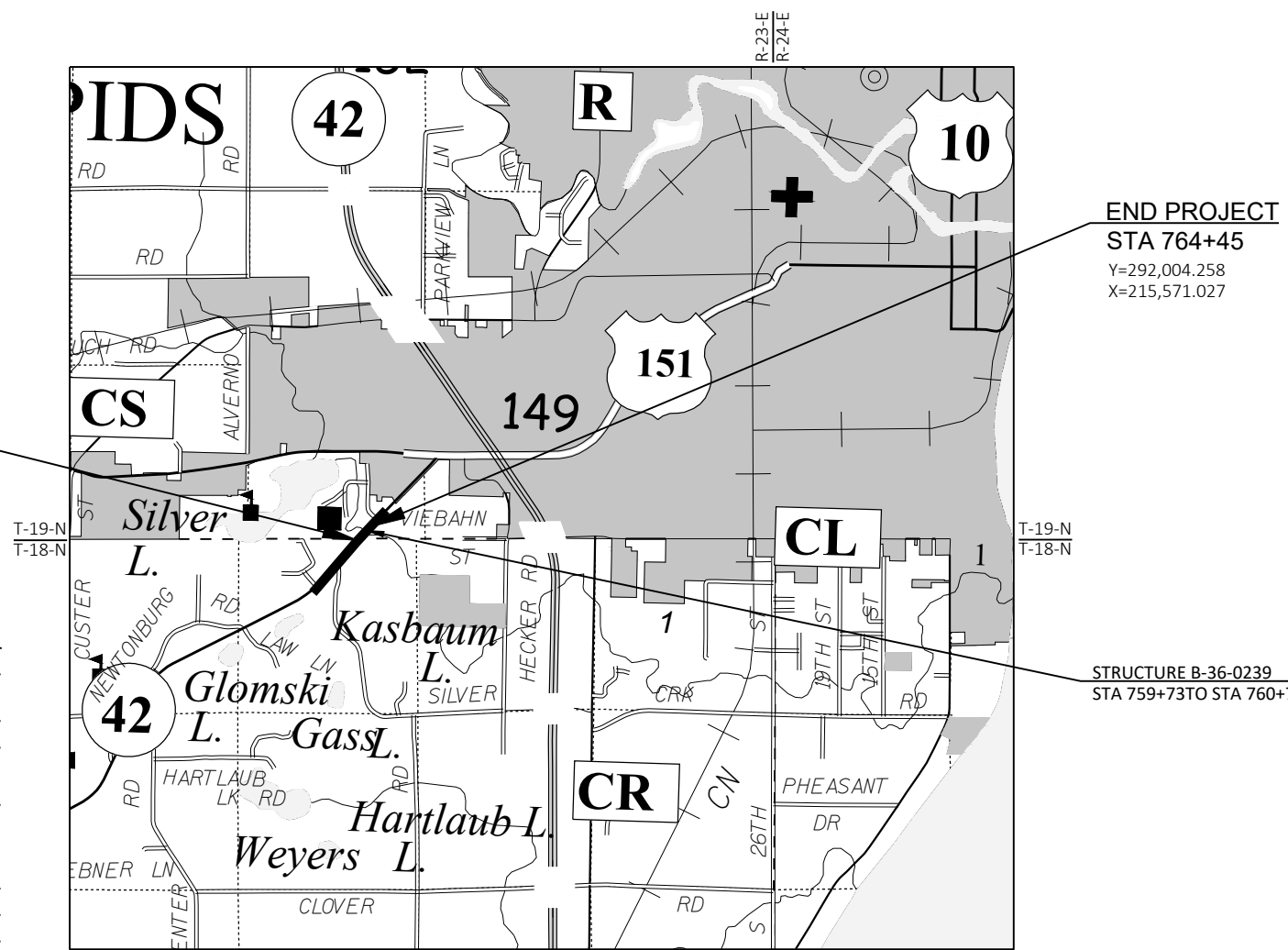
HOWARDS GROVE - MANITOWOC

SILVER CREEK BRIDGE

STH 42

MANITOWOC COUNTY

STATE PROJECT NUMBER
4570-24-71



END PROJECT
STA 764+45
Y=292,004.258
X=215,571.027

BEGIN PROJECT
STA 758+00
Y=291,528.524
X=215,135.605

STRUCTURE B-36-0239
STA 759+73 TO STA 760+71

LAYOUT
SCALE 0 1.0 MI
TOTAL NET LENGTH OF CENTERLINE = 0.122 MILES

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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4570-24-71	WISC 2022090	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	NE REGION
Designer	TRAVIS MAATTA
Project Manager	BRIAN HAEN
Regional Examiner	REGIONAL EXAMINER
Regional Supervisor	CHAD DEGRAVE

APPROVED FOR THE DEPARTMENT

DATE: 7/7/21

(Signature)

E

GENERAL NOTES

THE LOCATIONS 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.

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PLAN DETAILS
- TRAFFIC CONTROL
- DETOUR PLAN
- ALIGNMENT PLAN

DNR LIAISON

MATT SCHAEVE (NORTHEAST-CALUMET, DOOR,
KEWAUNEE, MANITOWOC, OUTAGAMIE)
2984 SHAWANO AVE.
GREEN BAY, WI 54313
(920) 366-1544
matthew.schaeve@wisconsin.gov

COUNTY HIGHWAY COMMISSIONER

GREGORY GROTEGUT
3500 STATE RD 310
MANITOWOC, WI 54220-9659
920-683-4345
gregorygrotegut@co.manitowoc.wi.us

NE REGION SURVEY COORDINATOR

CORMAC MCINNIS, RLS
944 VANDERPERREN WAY
GREEN BAY, WI 54304
(920)492-5638
cormac.mcinnis@dot.wi.gov

NE REGION DESIGN PROJECT MANAGER

BRIAN HAEN, PE
944 VANDERPERREN WAY
GREEN BAY, WI 54304
(920)492-5638
brian.haen@dot.wi.gov

UTILITIES CONTACTS

SHEA GORZELANCZYK
AT&T WISCONSIN - COMMUNICATION LINE
FIRST FLOOR ENGINEERING
205 S JEFFERSON ST
GREEN BAY, WI 54301
(920) 433-4250
SG2528@ATT.COM

SCOTT GAUGER
WISCONSIN PUBLIC SERVICE CORPORATION -
ELECTRICITY
2850 S ASHLAND AVE
GREEN BAY, WI 54307
(920) 617-5151
SCOTT.GAUGER@WISCONSINPUBLICSERVICE.COM

JON BURGETT
COMCAST - COMMUNICATION LINE
1614 WASHINGTON ST
P.O. BOX 429
MANITOWOC, WI 54221
(920) 629-2365
JON_BURGETT@CABLE.COMCAST.COM

JOEL SAWICKI
WISCONSIN PUBLIC SERVICE CORPORATION -
GAS/PETROLEUM
800 COLUMBUS STREET
P.O. BOX 236
TWO RIVERS, WI 54241-0236
(920) 657-1862
JOEL.SAWICKI@WISCONSINPUBLICSERVICE.COM

RICK VINCENT
NSIGHT TELSERVICES - COMMUNICATION LINE
470 SECURITY BLVD
GREEN BAY, WI 54307-9079
(920) 617-7316
RICK.VINCENT@NSIGHT.COM

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	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 = 1.39 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.62 ACRES





PROJECT NO: 4570-24-71	HWY: STH 42	COUNTY: MANITOWOC	PROJECT OVERVIEW	SHEET	E
------------------------	-------------	-------------------	------------------	-------	----------

FILE NAME : N:\PDS\C3D\45702400\SHEETSPLAN\020201-PO.DWG
LAYOUT NAME - 020201-po

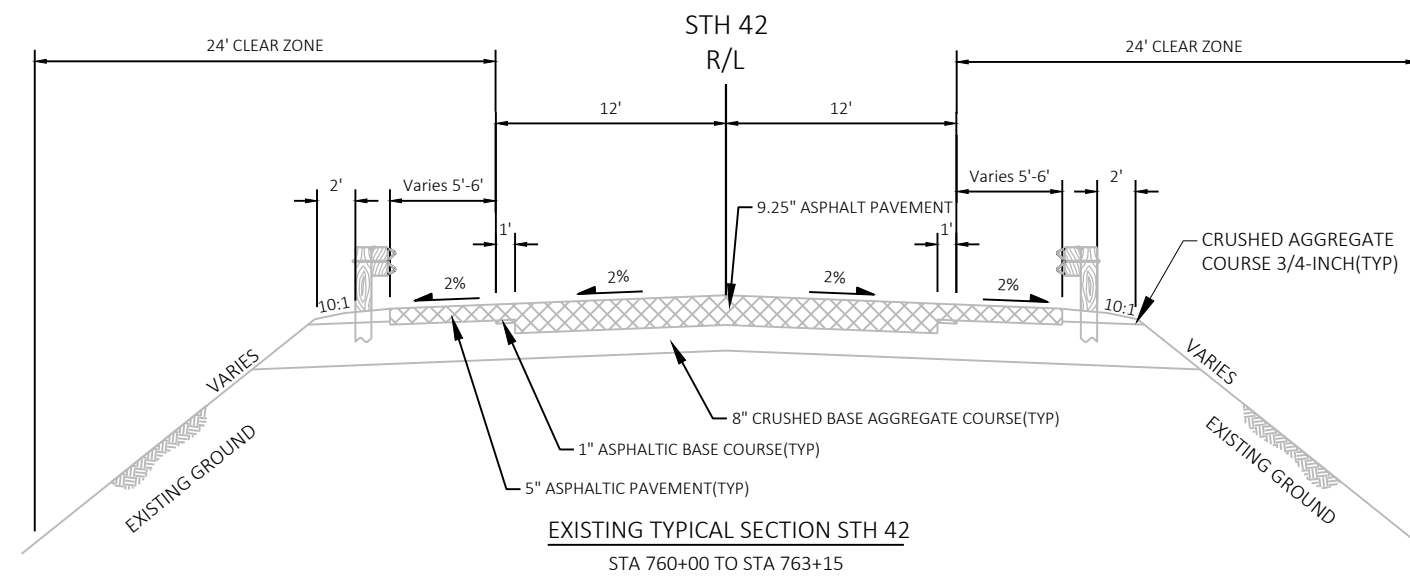
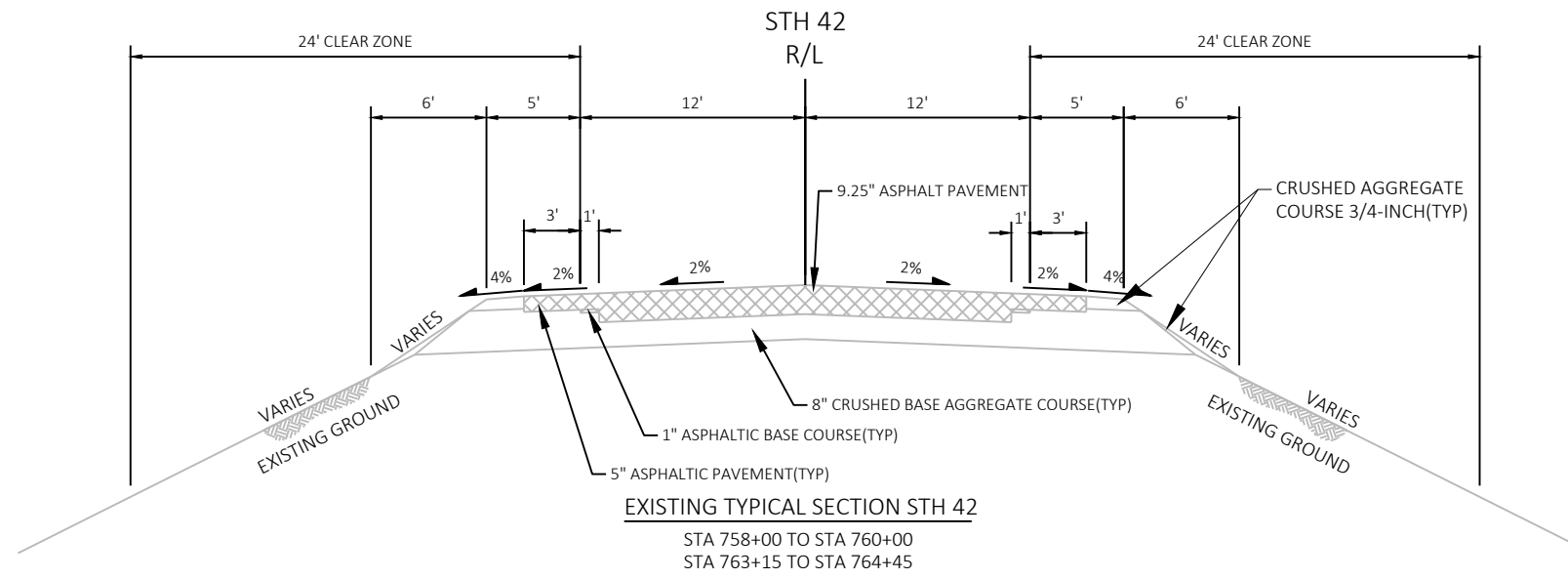
PLOT DATE : 1/12/2021 7:28 AM

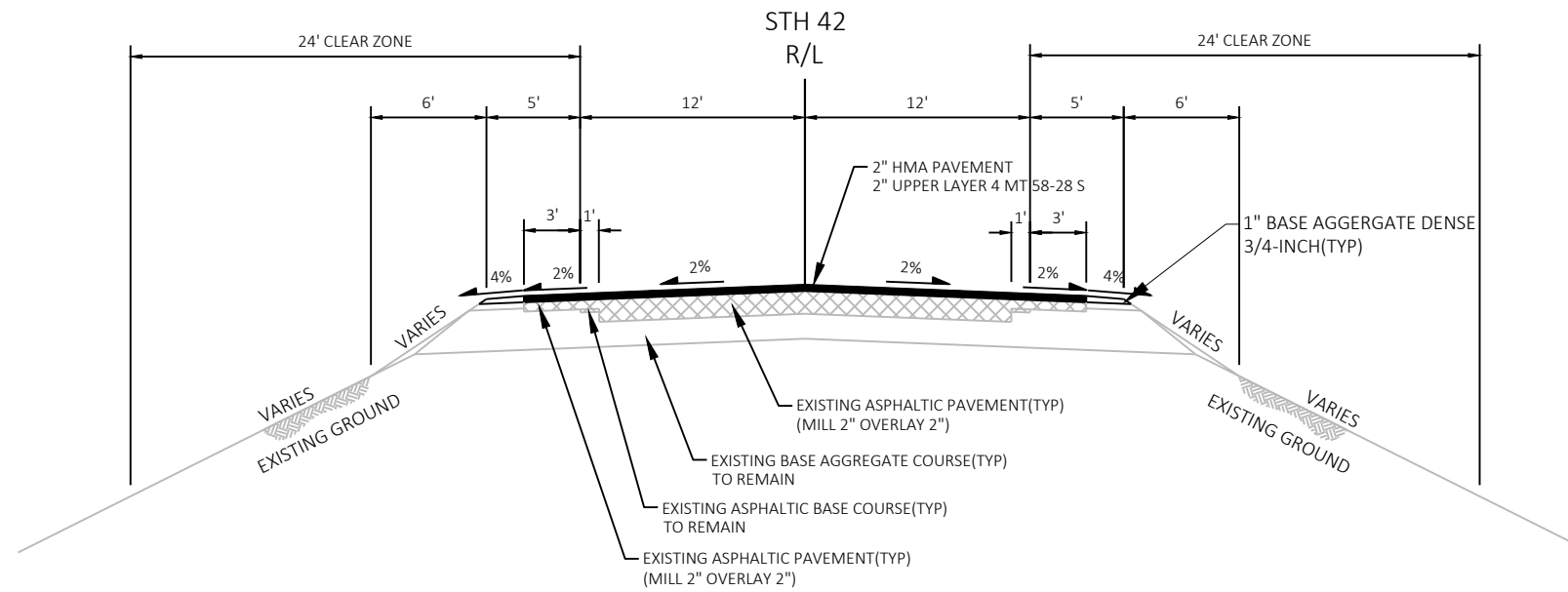
PLOT BY : CAMPSHURE, MICHAEL R

PLOT NAME :

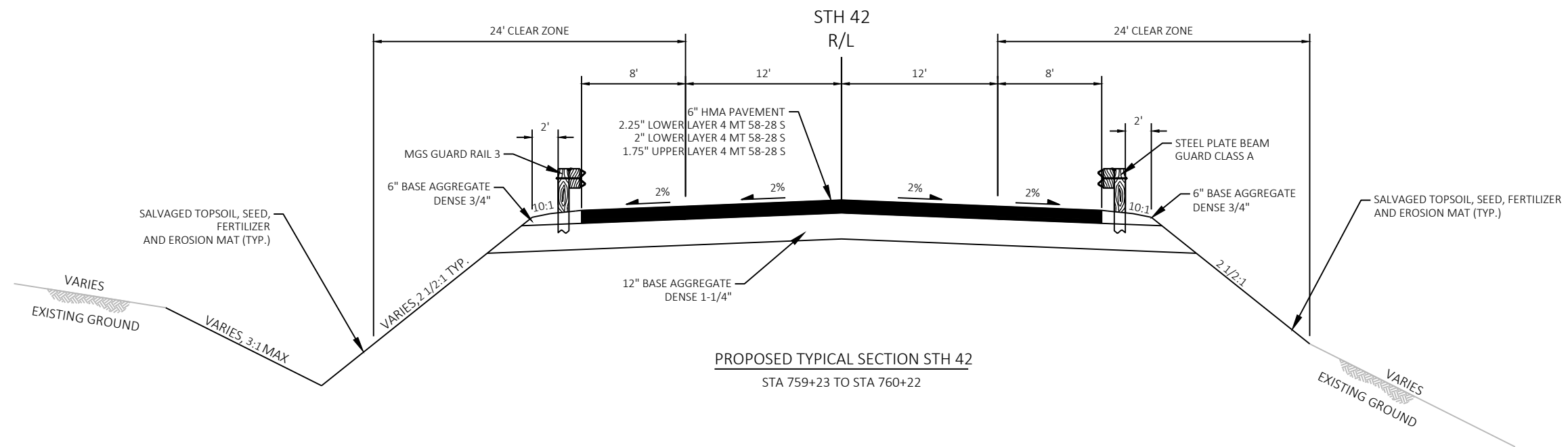
PLOT SCALE : 1 IN:100 FT

WISDOT/CADD SHEET 42

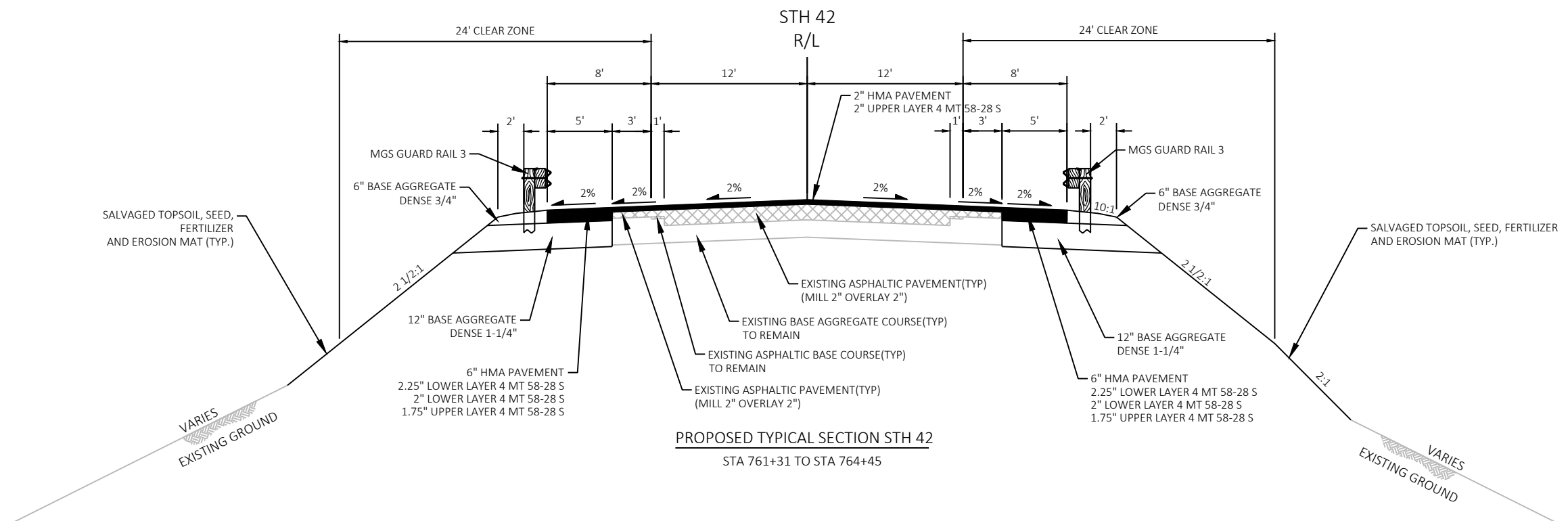
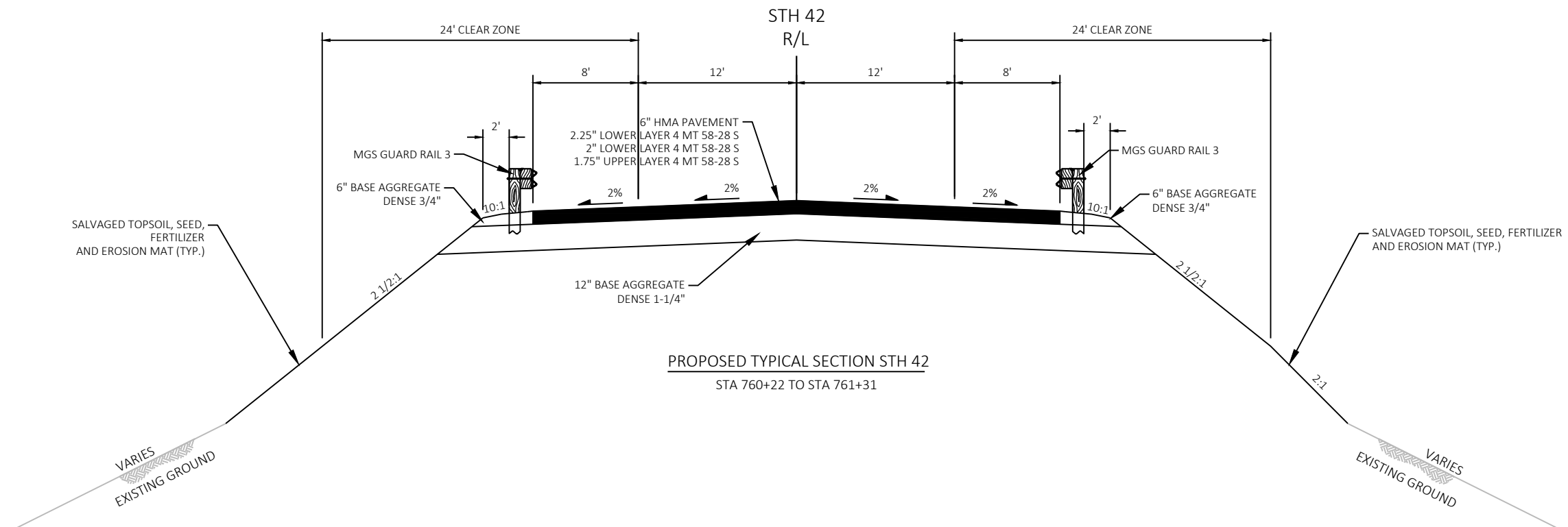


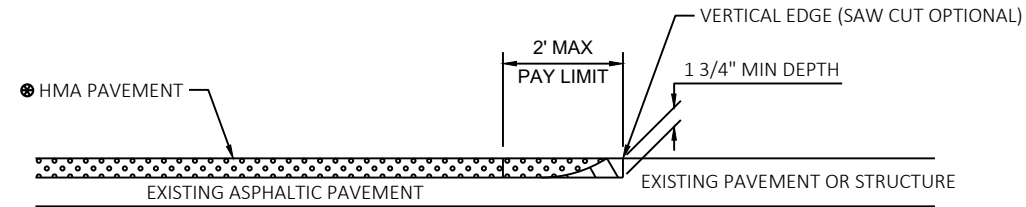


PROPOSED TYPICAL SECTION STH 42
STA 758+00 TO STA 759+23



PROPOSED TYPICAL SECTION STH 42
STA 759+23 TO STA 760+22

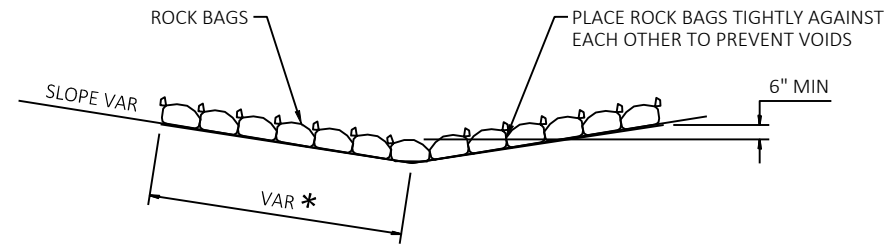




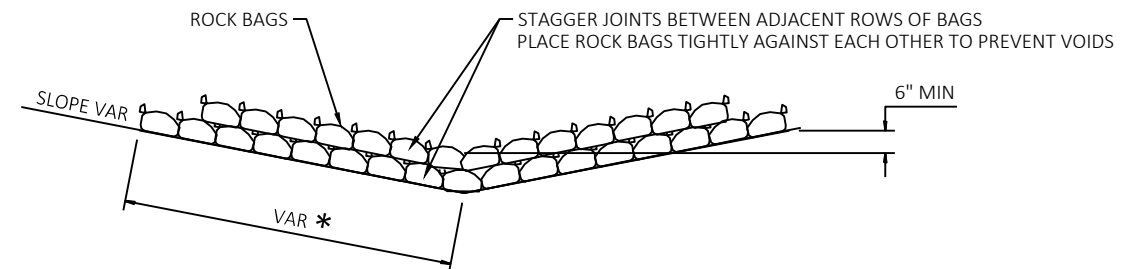
SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

- REMOVING ASPHALTIC SURFACE, MILLING
- REMOVE ASPHALTIC SURFACE WEDGE AT BUTT JOINT TO CREATE VERTICAL EDGE

BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)



SIDE VIEW (SINGLE LAYER)

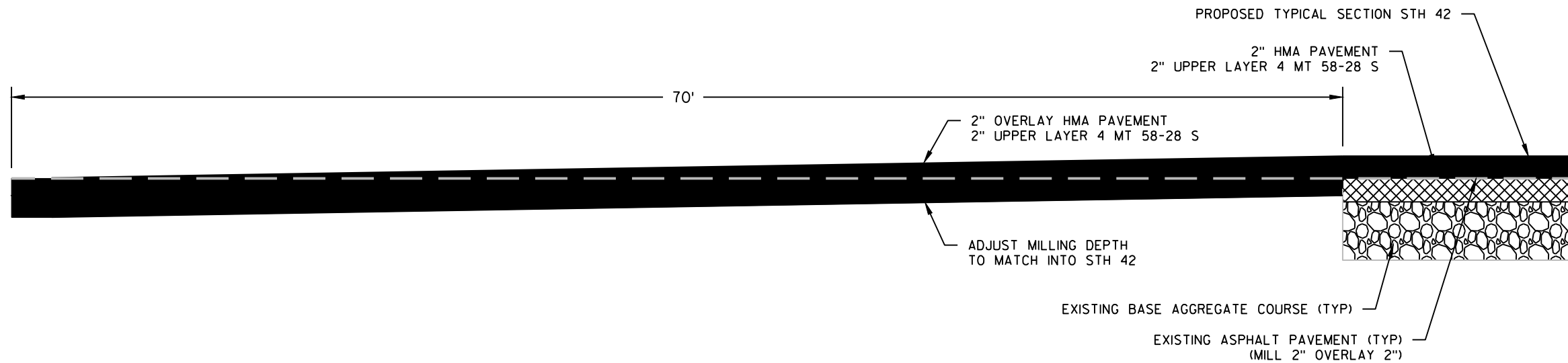


* LENGTH AND NUMBER OF BAGS MAY VARY DEPENDING ON DESIRED DEPTH OF WATER POOL

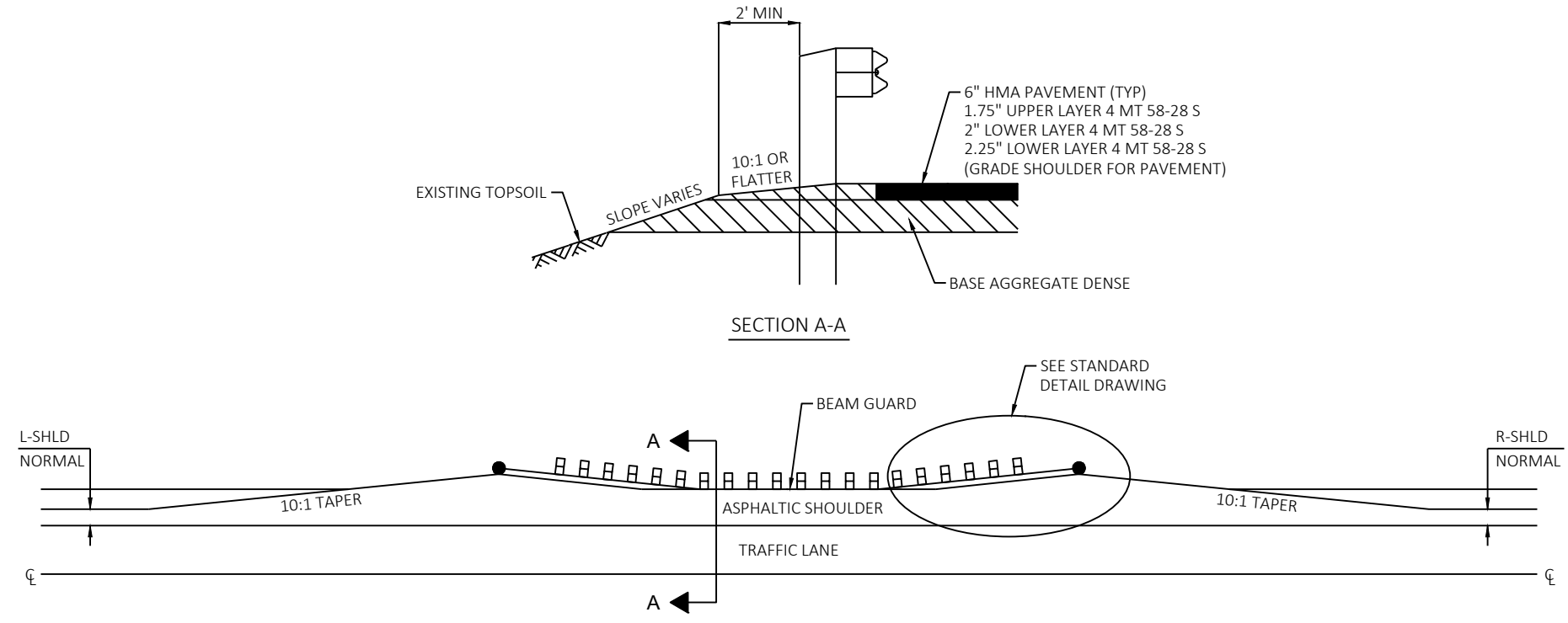
SIDE VIEW (MULTIPLE LAYER)

ROCK BAGS DITCH CHECK

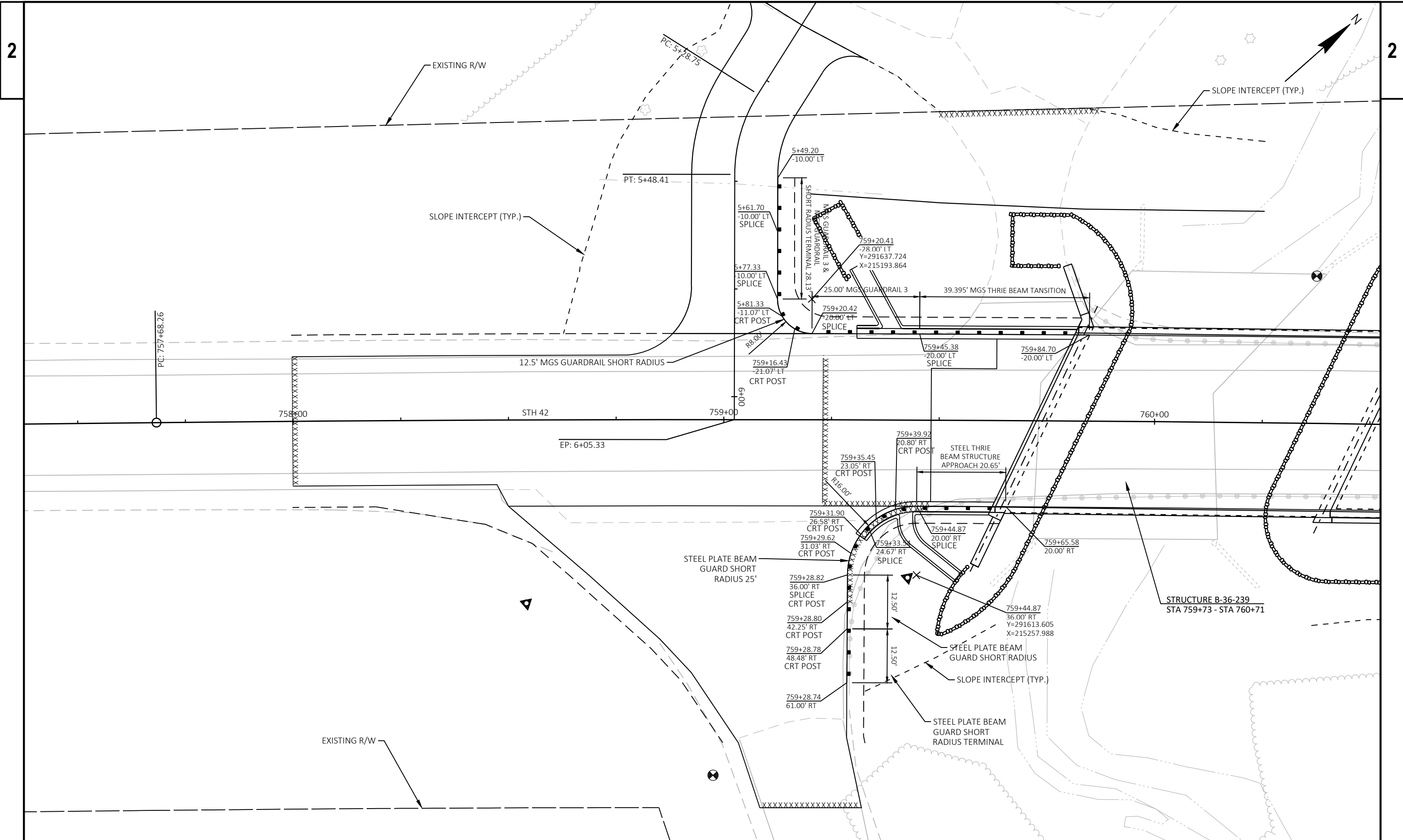
PAID AS ROCK BAGS

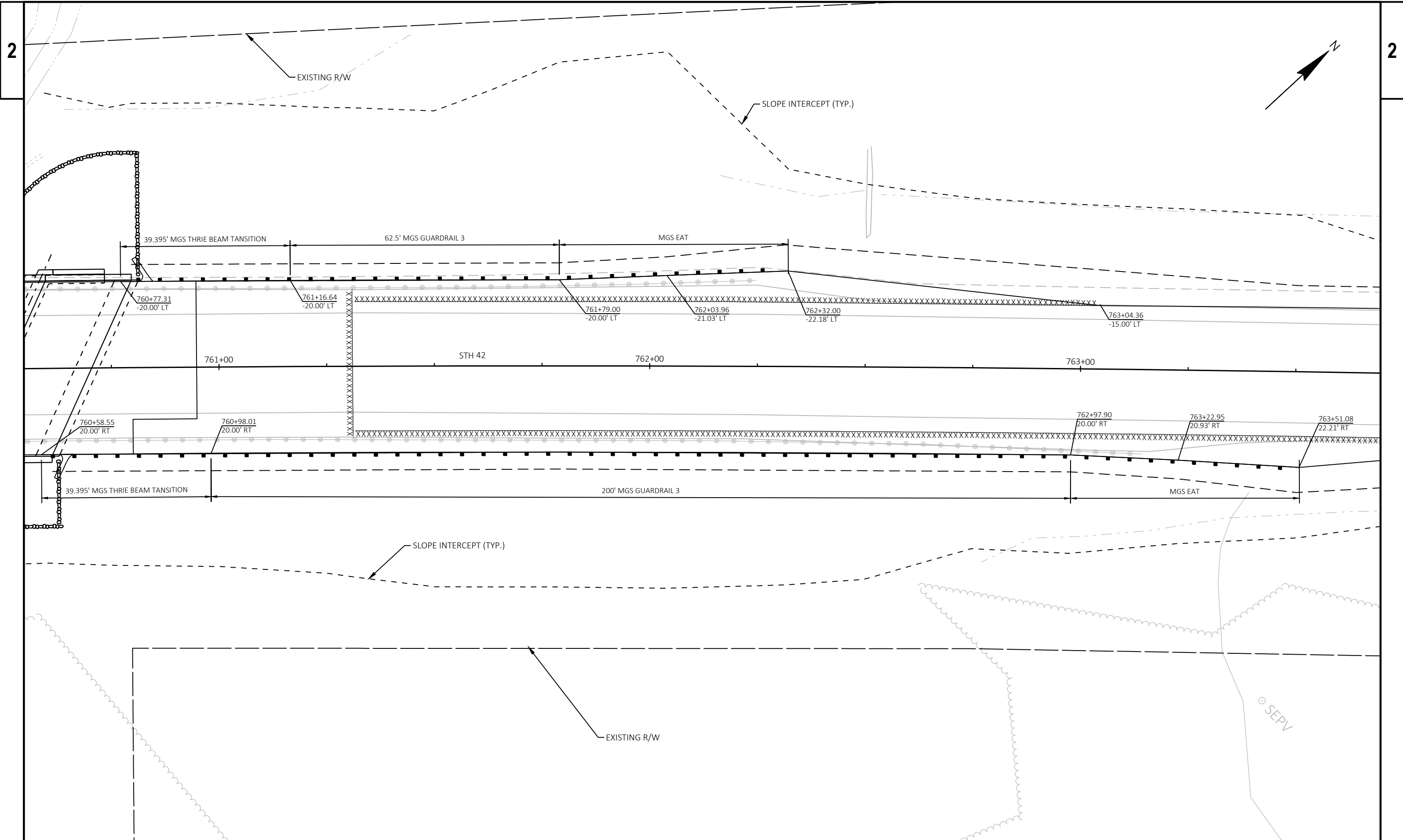


DETAIL FOR TRANSITION FROM FRICKE RD TO STH 42



DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD
 STA 760+77 LT - STA 762+32 LT
 STA 760+59 RT - STA 763+51 RT





PROJECT NO: 4570-24-71

HWY: STH 42

COUNTY: MANITOWOC

BEAM GUARD DETAILS

SHEET

E

FILE NAME : N:\PDS\C3D\45702400\SHEETSPLAN\021200-PD.DWG
LAYOUT NAME - 021202-pd

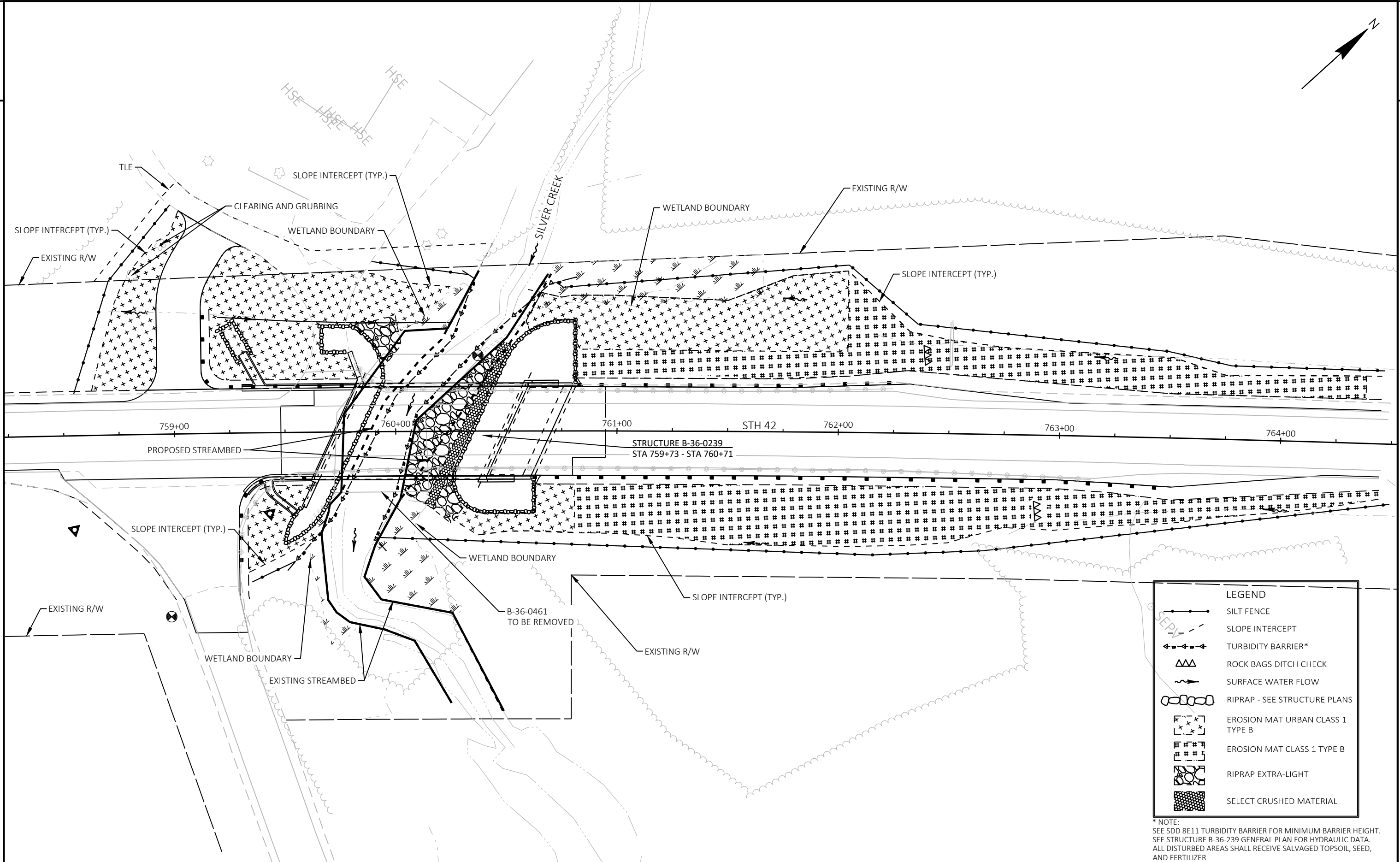
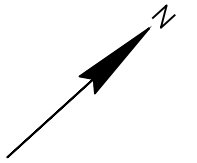
PLOT DATE : 10/12/2021 5:58 PM

PLOT BY : MAATTA, TRAVIS SHANE

PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADD SHEET 42



LEGEND

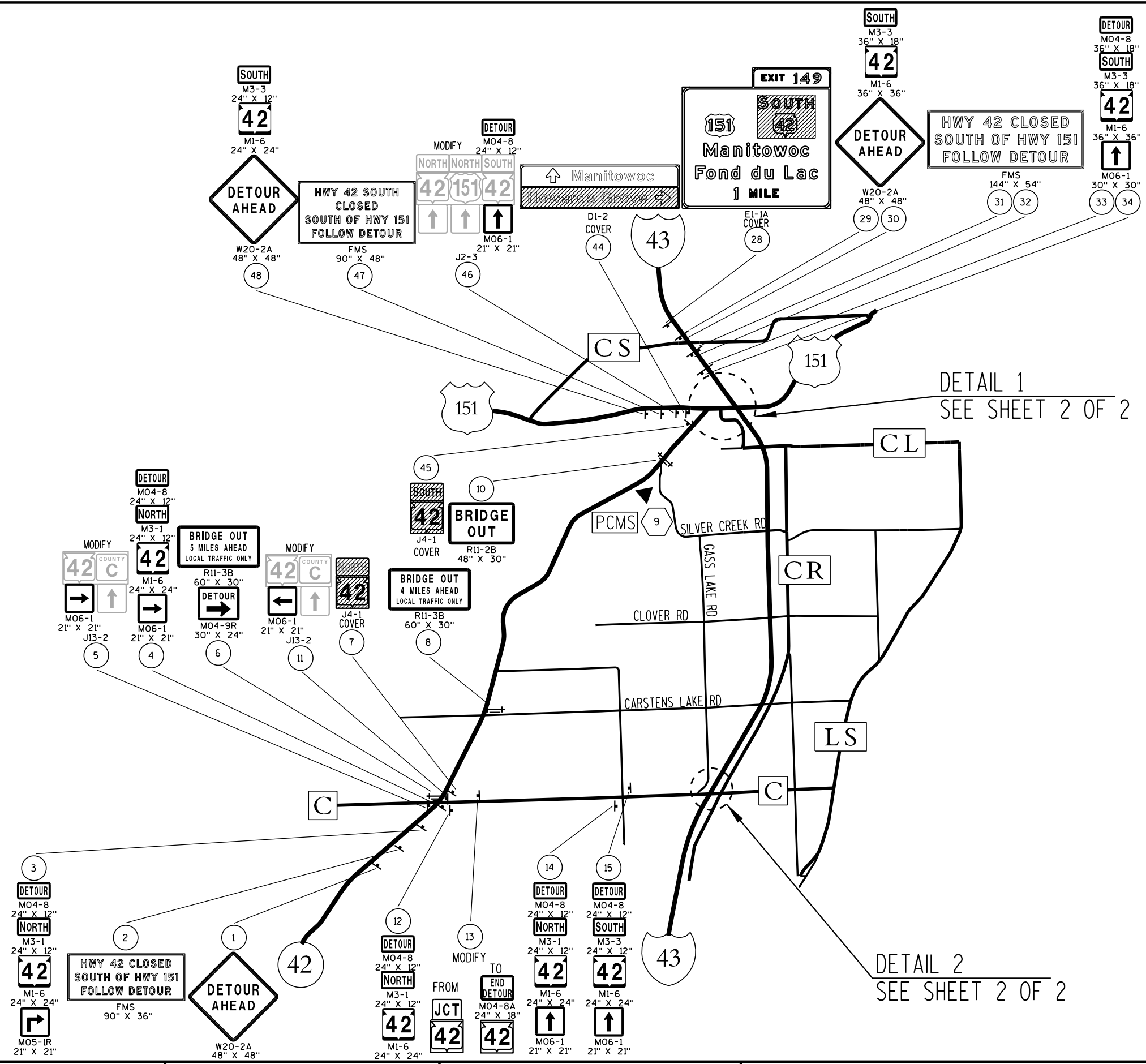
- SILT FENCE
- SLOPE INTERCEPT
- TURBIDITY BARRIER*
- ROCK BAGS DITCH CHECK
- SURFACE WATER FLOW
- RIPRAP - SEE STRUCTURE PLANS
- EROSION MAT URBAN CLASS 1 TYPE B
- EROSION MAT CLASS 1 TYPE B
- RIPRAP EXTRA-LIGHT
- SELECT CRUSHED MATERIAL

* NOTE:
 SEE SDD 8E11 TURBIDITY BARRIER FOR MINIMUM BARRIER HEIGHT.
 SEE STRUCTURE B-36-239 GENERAL PLAN FOR HYDRAULIC DATA.
 ALL DISTURBED AREAS SHALL RECEIVE SALVAGED TOPSOIL, SEED,
 AND FERTILIZER



LEGEND

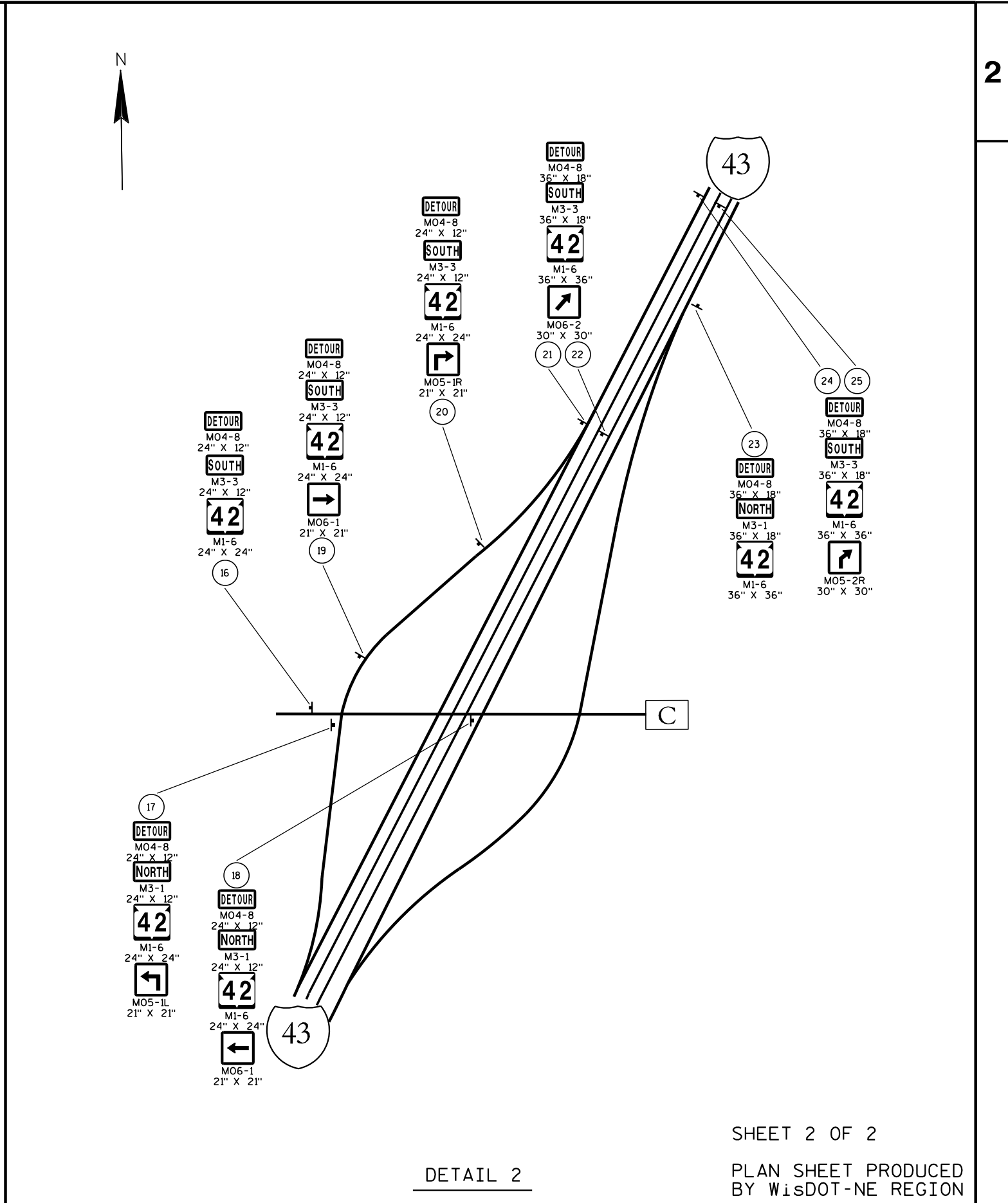
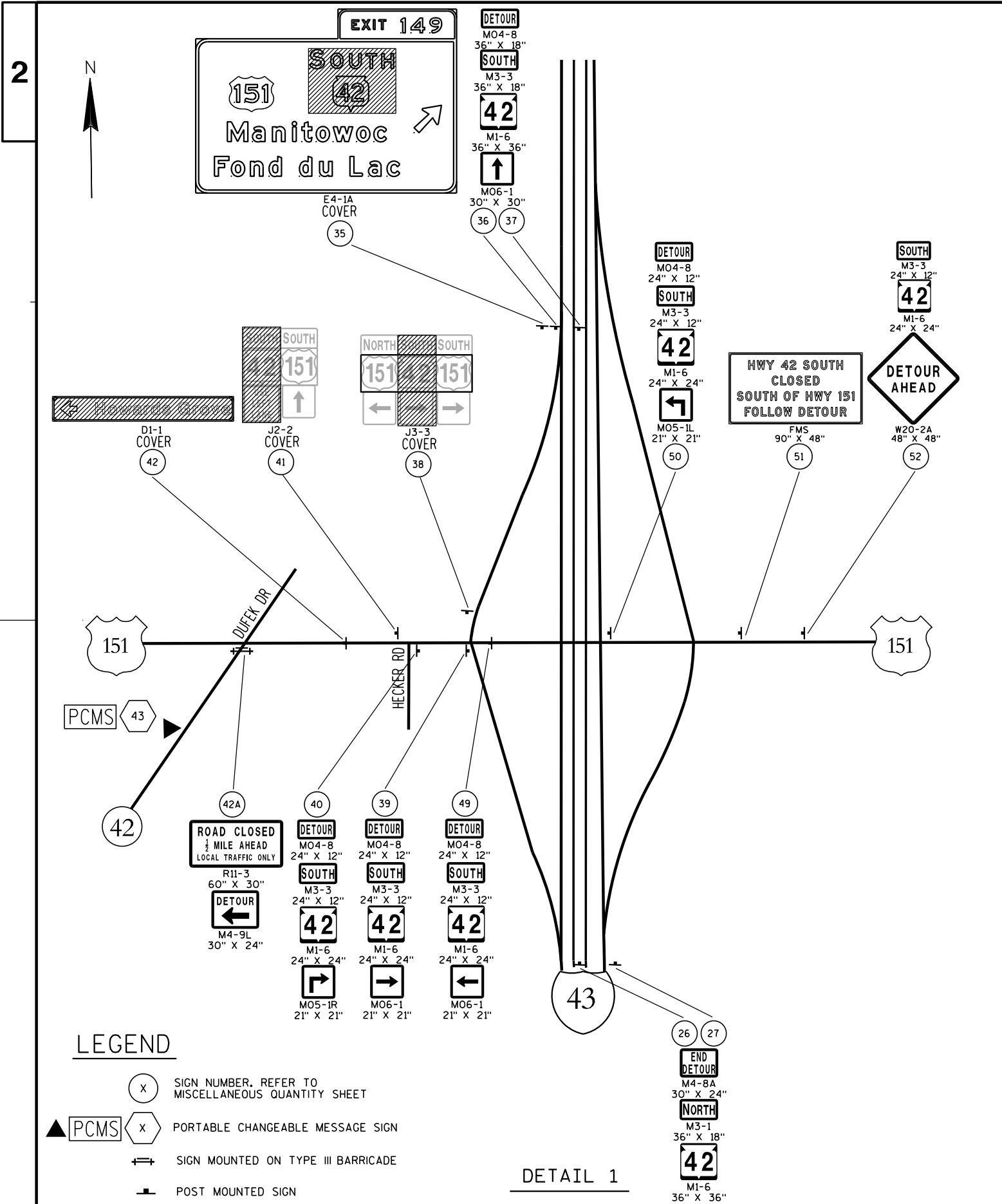
- (X) SIGN NUMBER. REFER TO MISCELLANEOUS QUANTITY SHEET
- ▲ PCMS (X) PORTABLE CHANGEABLE MESSAGE SIGN
- ⇄ SIGN MOUNTED ON TYPE III BARRICADE
- POST MOUNTED SIGN



DETAIL 1
SEE SHEET 2 OF 2

DETAIL 2
SEE SHEET 2 OF 2

SHEET 1 OF 2
 PLAN SHEET PRODUCED
 BY WISDOT-NE REGION



SHEET 2 OF 2
 PLAN SHEET PRODUCED BY WISDOT-NE REGION

Estimate Of Quantities

4570-24-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0120	Clearing	ID	20.000	20.000
0004	201.0220	Grubbing	ID	20.000	20.000
0006	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-36-0461	EACH	1.000	1.000
0008	204.0110	Removing Asphaltic Surface	SY	8.000	8.000
0010	204.0115	Removing Asphaltic Surface Butt Joints	SY	19.000	19.000
0012	204.0120	Removing Asphaltic Surface Milling	SY	1,838.000	1,838.000
0014	204.0165	Removing Guardrail	LF	670.000	670.000
0016	205.0100	Excavation Common	CY	806.000	806.000
0018	206.1000	Excavation for Structures Bridges (structure) 01. B-36-0239	LS	1.000	1.000
0020	208.0100	Borrow	CY	1,244.000	1,244.000
0022	210.1500	Backfill Structure Type A	TON	835.000	835.000
0024	213.0100	Finishing Roadway (project) 01. 4570-24-71	EACH	1.000	1.000
0026	305.0110	Base Aggregate Dense 3/4-Inch	TON	163.000	163.000
0028	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,048.000	1,048.000
0030	415.0060	Concrete Pavement 6-Inch	SY	54.000	54.000
0032	415.0410	Concrete Pavement Approach Slab	SY	125.000	125.000
0034	416.1010	Concrete Surface Drains	CY	6.000	6.000
0036	455.0605	Tack Coat	GAL	186.000	186.000
0038	460.2000	Incentive Density HMA Pavement	DOL	280.000	280.000
0040	460.6224	HMA Pavement 4 MT 58-28 S	TON	433.000	433.000
0042	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	31.000	31.000
0044	465.0315	Asphaltic Flumes	SY	2.000	2.000
0046	502.0100	Concrete Masonry Bridges	CY	360.000	360.000
0048	502.3200	Protective Surface Treatment	SY	460.000	460.000
0050	502.3210	Pigmented Surface Sealer	SY	97.000	97.000
0052	503.0137	Prestressed Girder Type I 36W-Inch	LF	380.000	380.000
0054	505.0400	Bar Steel Reinforcement HS Structures	LB	7,180.000	7,180.000
0056	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	39,340.000	39,340.000
0058	505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB	730.000	730.000
0060	506.2610	Bearing Pads Elastomeric Laminated	EACH	10.000	10.000
0062	506.4000	Steel Diaphragms (structure) 01. B-36-0239	EACH	4.000	4.000
0064	516.0500	Rubberized Membrane Waterproofing	SY	30.000	30.000
0066	550.0500	Pile Points	EACH	20.000	20.000
0068	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	2,045.000	2,045.000
0070	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	52.000	52.000
0072	601.0590	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBTT	LF	32.000	32.000
0074	606.0050	Riprap Extra-Light	CY	65.000	65.000
0076	606.0200	Riprap Medium	CY	5.000	5.000
0078	606.0300	Riprap Heavy	CY	250.000	250.000
0080	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	225.000	225.000
0082	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0084	614.0200	Steel Thrie Beam Structure Approach	LF	20.700	20.700
0086	614.0345	Steel Plate Beam Guard Short Radius	LF	37.500	37.500
0088	614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH	1.000	1.000
0090	614.2300	MGS Guardrail 3	LF	315.500	315.500
0092	614.2350	MGS Guardrail Short Radius	LF	12.500	12.500
0094	614.2500	MGS Thrie Beam Transition	LF	118.200	118.200
0096	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0098	614.2630	MGS Guardrail Short Radius Terminal	EACH	1.000	1.000

Estimate Of Quantities

4570-24-71

Line	Item	Item Description	Unit	Total	Qty
0100	618.0100	Maintenance And Repair of Haul Roads (project) 01. 4570-24-71	EACH	1.000	1.000
0102	619.1000	Mobilization	EACH	1.000	1.000
0104	624.0100	Water	MGAL	11.000	11.000
0106	625.0500	Salvaged Topsoil	SY	2,478.000	2,478.000
0108	628.1504	Silt Fence	LF	1,264.000	1,264.000
0110	628.1520	Silt Fence Maintenance	LF	1,264.000	1,264.000
0112	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0114	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0116	628.2004	Erosion Mat Class I Type B	SY	1,320.000	1,320.000
0118	628.2008	Erosion Mat Urban Class I Type B	SY	1,158.000	1,158.000
0120	628.6005	Turbidity Barriers	SY	414.000	414.000
0122	628.7570	Rock Bags	EACH	50.000	50.000
0124	629.0210	Fertilizer Type B	CWT	1.600	1.600
0126	630.0120	Seeding Mixture No. 20	LB	67.000	67.000
0128	630.0500	Seed Water	MGAL	111.000	111.000
0130	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	3.000	3.000
0132	638.2102	Moving Signs Type II	EACH	3.000	3.000
0134	638.3000	Removing Small Sign Supports	EACH	3.000	3.000
0136	642.5001	Field Office Type B	EACH	1.000	1.000
0138	643.0420	Traffic Control Barricades Type III	DAY	1,530.000	1,530.000
0140	643.0705	Traffic Control Warning Lights Type A	DAY	2,340.000	2,340.000
0142	643.0900	Traffic Control Signs	DAY	11,610.000	11,610.000
0144	643.0910	Traffic Control Covering Signs Type I	EACH	2.000	2.000
0146	643.0920	Traffic Control Covering Signs Type II	EACH	6.000	6.000
0148	643.1000	Traffic Control Signs Fixed Message	SF	190.500	190.500
0150	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0152	643.5000	Traffic Control	EACH	1.000	1.000
0154	645.0111	Geotextile Type DF Schedule A	SY	90.000	90.000
0156	645.0120	Geotextile Type HR	SY	464.000	464.000
0158	645.0130	Geotextile Type R	SY	195.000	195.000
0160	646.1020	Marking Line Epoxy 4-Inch	LF	1,835.000	1,835.000
0162	650.4500	Construction Staking Subgrade	LF	561.000	561.000
0164	650.5000	Construction Staking Base	LF	561.000	561.000
0166	650.6500	Construction Staking Structure Layout (structure) 01. B-36-0239	LS	1.000	1.000
0168	650.8000	Construction Staking Resurfacing Reference	LF	437.000	437.000
0170	650.9910	Construction Staking Supplemental Control (project) 01. 4570-24-71	LS	1.000	1.000
0172	650.9920	Construction Staking Slope Stakes	LF	515.000	515.000
0174	690.0150	Sawing Asphalt	LF	823.000	823.000
0176	715.0502	Incentive Strength Concrete Structures	DOL	2,160.000	2,160.000
0178	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	54.000	54.000
0180	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 760+00	EACH	1.000	1.000
0182	SPV.0195	Special 01. Select Crushed Material for Travel Corridor	TON	20.000	20.000

3

TRAFFIC CONTROL DETOUR SIGN SUMMARY

3

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 90 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 FIXED MESSAGE SIGNS SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
1	STH 42, S. OF CTH C, PLACE 1/2 MILE S. OF CTH C INTERSECTION	W 20-2A	48"x48"	1	90	90								
2	STH 42, S. OF CTH C, PLACE 1/4 MILE S. OF CTH C INTERSECTION	FMS	90"x36"	1					22.5					SEE SIGN DETAIL
3	STH 42, S. OF CTH C, PLACE 750' S. OF CTH C INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	MO 5-1R	21"x21"	1	90	90								
4	STH 42, AT CTH C, PLACE RIGHT OF EXISTING J13-1 SIGN AT CTH C INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	MO 6-1	21"x21"	1	90	90								RIGHT
5	CTH C, AT STH 42, MODIFY EXISTING J13-2 SIGN AS SHOWN	MO 6-1	21"x21"	1	90	90								RIGHT
6	STH 42, AT CTH C, PLACE ON RIGHT SHOULDER IN NE QUADRANT OF INTERSECTION	R 11-3B	60"x30"	1	90	90								5 MILES AHEAD
	"	MO 4-9R	30"x24"	1	90	90								
7	STH 42, N. OF CTH C, COVER EXISTING J4-1 SIGN AS SHOWN										1		1	
8	STH 42, AT CARSTENS LAKE RD, PLACE ON RIGHT SHOULDER IN NE QUADRANT OF INTERSECTION	R 11-3B	60"x30"	1	90	90	90	180						4 MILES AHEAD
9	STH 42, S. OF GASS LAKE RD, PLACE ON RIGHT SHOULDER, FIELD DETERMINED LOCATION	PCMS		1						7				
10	STH 42, N. OF GASS LAKE RD, PLACE IN ROADWAY PRIOR TO BRIDGE	R 11-2B	48"x30"	1	90	90	90	180						
11	CTH C, AT STH 42, MODIFY EXISTING J13-2 SIGN AS SHOWN	MO 6-1	21"x21"	1	90	90								LEFT
12	CTH C, E. OF STH 42, PLACE 150' E. OF STH 42 INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
13	CTH C, E. OF STH 42, MODIFY EXISTING J1-1 SIGN AS SHOWN	MO 4-8A	24"x18"	1	90	90								
14	CTH C, W. OF CENTER RD, PLACE 150' W. OF CENTER RD INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	MO 6-1	21"x21"	1	90	90								AHEAD
15	CTH C, E. OF CENTER RD, PLACE 150' E. OF CENTER RD INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	MO 6-1	21"x21"	1	90	90								AHEAD
16	CTH C, W. OF I-43 SB RAMP INTERSECTION, PLACE RIGHT OF EXISTING D1-2 SIGN	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
17	CTH C, AT I-43 SB RAMP INTERSECTION, PLACE ABOVE EXISTING J3-2 SIGN AS SHOWN	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	MO 5-1L	21"x21"	1	90	90								
18	CTH C, UNDER I-43, PLACE IN MEDIAN NEXT TO BRIDGE PIER FOR I-43 NB	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	MO 6-1	21"x21"	1	90	90								LEFT
19	I-43 OFF-RAMP TO CTH C, PLACE 150' PRIOR TO CTH C INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	MO 6-1	21"x21"	1	90	90								RIGHT
PAGE SUBTOTALS				44		3,780	180	360	22.5	7		0	1	

PLAN SHEET PRODUCED BY WisDOT - NE REGION

3

TRAFFIC CONTROL DETOUR SIGN SUMMARY

3

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 90 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 FIXED MESSAGE SIGNS SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
20	I-43 OFF-RAMP TO CTH C, PLACE 850' PRIOR TO CTH C INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	MO 5-1R	21"x21"	1	90	90								
21	I-43, AT CTH C OFF-RAMP, PLACE LEFT OF EXISTING TYPE I SIGN ON RIGHT SHOULDER	MO 4-8	36"x18"	1	90	90								
	"	M 3-3	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
	"	MO 6-2	30"x30"	1	90	90								TILT RIGHT
22	I-43, AT CTH C OFF-RAMP, PLACE ACROSS FROM SIGN #21 IN MEDIAN	MO 4-8	36"x18"	1	90	90								
	"	M 3-3	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
	"	MO 6-2	30"x30"	1	90	90								TILT RIGHT
23	I-43, N. OF CTH C, PLACE RIGHT OF EXISTING J4-1 SIGN	MO 4-8	36"x18"	1	90	90								
	"	M 3-1	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
24	I-43, N. OF CTH C, PLACE 1/4 MILE N. OF CTH C INTERCHANGE	MO 4-8	36"x18"	1	90	90								
	"	M 3-3	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
	"	MO 5-2R	30"x30"	1	90	90								
25	I-43, N. OF CTH C, PLACE 1/4 MILE N. OF CTH C INTERCHANGE	MO 4-8	36"x18"	1	90	90								
	"	M 3-3	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
	"	MO 5-2R	30"x30"	1	90	90								
26	I-43, S. OF US 151, PLACE IN MEDIAN ACROSS FROM SIGN #27	M 4-8A	30"x24"	1	90	90								
	"	M 3-1	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
27	I-43, S. OF US 151, PLACE LEFT OF EXISTING TYPE I SIGN ON RIGHT SHOULDER	M 4-8A	30"x24"	1	90	90								
	"	M 3-1	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
28	I-43, N. OF US 151, COVER EXISTING TYPE I SIGN AS SHOWN										1	1		COVER "SOUTH 42"
29	I-43, N. OF US 151, PLACE 3/4 MILE N. OF US 151 INTERCHANGE IN MEDIAN	M 3-3	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
	"	W 20-2A	48"x48"	1	90	90								
30	I-43, N. OF US 151, PLACE 3/4 MILE N. OF US 151 INTERCHANGE ON RIGHT SHOULDER	M 3-3	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
	"	W 20-2A	48"x48"	1	90	90								
31	I-43, N. OF US 151, PLACE 1/2 MILE N. OF US 151 INTERCHANGE IN MEDIAN	FMS	144"x54"	1					54					SEE SIGN DETAIL
32	I-43, N. OF US 151, PLACE 1/2 MILE N. OF US 151 INTERCHANGE ON RIGHT SHOULDER	FMS	144"x54"	1					54					SEE SIGN DETAIL
33	I-43, N. OF US 151, PLACE 1/4 MILE N. OF US 151 INTERCHANGE IN MEDIAN	MO 4-8	36"x18"	1	90	90								
	"	M 3-3	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
	"	MO 6-1	30"x30"	1	90	90								AHEAD
34	I-43, N. OF US 151, PLACE 1/4 MILE N. OF US 151 INTERCHANGE ON RIGHT SHOULDER	MO 4-8	36"x18"	1	90	90								
	"	M 3-3	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
	"	MO 6-1	30"x30"	1	90	90								AHEAD

PAGE SUBTOTALS

45

3,870

0

0

108

0

1

0

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

PROJECT NUMBER: 4570-24-71

HWY: STH 42

COUNTY: MAINTOWOC

MISCELLANEOUS QUANTITIES

SHEET

E

3

3

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 90 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 FIXED MESSAGE SIGNS SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
35	I-43, N. OF US 151, COVER EXISTING TYPE I SIGN AS SHOWN										1	1		COVER "SOUTH 42"
36	I-43, N. OF US 151, PLACE LEFT OF EXISTING TYPE I SIGN ON RIGHT SHOULDER	MO 4-8	36"x18"	1	90	90								
	"	M 3-3	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
	"	MO 6-1	30"x30"	1	90	90								AHEAD
37	I-43, N. OF US 151, PLACE ACROSS FROM SIGN #36 IN MEDIAN	MO 4-8	36"x18"	1	90	90								
	"	M 3-3	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								42
	"	MO 6-1	30"x30"	1	90	90								AHEAD
38	I-43 OFF-RAMP TO US 151, COVER EXISTING J3-3 SIGN AS SHOWN										1		1	COVER "S-42-RIGHT"
39	US 151, W. OF I-43 SB RAMP, PLACE 300' W. OF I-43 SB RAMP INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	MO 6-1	21"x21"	1	90	90								RIGHT
40	US 151, W. OF I-43 SB RAMP, PLACE LEFT OF EXISTING D1-72 SIGN	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	MO 5-1R	21"x21"	1	90	90								
41	US 151, W. OF HECKER RD, COVER EXISTING J2-2 SIGN AS SHOWN										1		1	COVER "S-42-USE LEFT LANE"
42	US 151, W. OF HECKER RD, COVER EXISTING D1-1 SIGN AS SHOWN										1		1	COVER ENTIRE SIGN
42A	STH 42, AT US 151, PLACE ON RIGHT SHOULDER IN SW QUADRANT OF INTERSECTION	R 11-3	60"x30"	1	90	90	90	180						1/2 MILE AHEAD
	"	M 4-9L	30"x24"	1	90	90								
43	STH 42, S. OF US 151, PLACE ON RIGHT SHOULDER, FIELD DETERMINE LOCATION	PCMS		1						7				
44	US 151, W. OF STH 42, COVER EXISTING D1-2 SIGN AS SHOWN										1		1	COVER "HOWARDS GROVE"
45	STH 42, S. OF US 151, COVER EXISTING J4-2 SIGN AS SHOWN										1		1	COVER ENTIRE SIGN
46	US 151, W. OF STH 42, MODIFY EXISTING J2-3 SIGN AS SHOWN	MO 4-8	24"x12"	1	90	90								
	"	MO 6-1	21"x21"	1	90	90								AHEAD
47	US 151, W. OF STH 42, PLACE 1000' W. OF STH 42 INTERSECTION	FMS	90"x48"	1					30					SEE SIGN DETAIL
48	US 151, W. OF STH 42, PLACE 1400' W. OF STH 42 INTERSECTION	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	W 20-2A	48"x48"	1	90	90								
49	US 151, BETWEEN I-43 RAMPS, PLACE IN MEDIAN	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	MO 6-1	21"x21"	1	90	90								LEFT
50	US 151, BETWEEN I-43 RAMPS, PLACE JUST E. OF I-43 STRUCTURE ON RIGHT SHOULDER	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	MO 5-1L	21"x21"	1	90	90								
51	US 151, E. OF I-43, PLACE ACROSS FROM J3-3 SIGN ON RIGHT SHOULDER	FMS	90"x48"	1					30					SEE SIGN DETAIL
52	US 151, E. OF I-43, PLACE 550' E. OF I-43 NB RAMP INTERSECTION	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								42
	"	W 20-2A	48"x48"	1	90	90								
PAGE SUBTOTALS				37		3,060	90	180	60	7		1	5	
PROJECT TOTALS				126		10,710	270	540	190.5	14		2	6	

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

CLEARING AND GRUBBING

CATEGORY	STATION	OFFSET	LOCATION	<u>201.0120</u>	<u>201.0220</u>	REMARKS
				CLEARING ID	GRUBBING ID	
0010	758+82	72 LT	STH 42	10	10	TREE ON SIDESLOPE OF PROPOSED D/WAY
0010	758+95	86 LT	STH 42	10	10	TREE ON SIDESLOPE OF PROPOSED D/WAY
TOTAL				20	20	

REMOVING ASPHALTIC SURFACE

CATEGORY	STATION	TO	STATION	LOCATION	<u>204.0110</u>	REMARKS
					REMOVING ASPHALTIC SURFACE SY	
0010	759+29	-	759+48	RT STH 42	8	N RADIUS OF FRICKE RD AND STH 42
TOTAL					8	

REMOVING ASPHALTIC SURFACE BUTT JOINTS

CATEGORY	STATION	TO	STATION	LOCATION	<u>204.0115</u>	REMARKS
					REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	
0010	758+00	-	758+02	STH 42	7	
0010	758+50	-	759+45	FRICKE RD	5	
0010	764+43	-	764+45	STH 42	7	
TOTAL					19	

REMOVING ASPHALTIC SURFACE MILLING

CATEGORY	STATION	TO	STATION	LOCATION	<u>204.0120</u>	REMARKS
					REMOVING ASPHALTIC SURFACE MILLING SY	
0010	758+00	-	759+23	STH 42	450	
0010	761+31	-	764+45	STH 42	1,047	
0010	758+50	-	759+45	STH 42	341	FRICKE RD INTERSECTION
TOTAL					1,838	

REMOVING GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	<u>204.0165</u>	REMARKS
					REMOVING GUARDRAIL LF	
0010	759+80	-	762+25	LT STH 42	254	
0010	759+29	-	763+15	RT STH 42	416	
TOTAL					670	

INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM (STATION) 01. 760+00

CATEGORY	STATION	LOCATION	<u>999.2000.S</u>	REMARKS
			INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM (STATION) 01. 760+00 EACH	
0020	760+00	STH 42	1	
TOTAL			1	

EARTHWORK SUMMARY

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION	SALVAGED/UNUSABLE PAVEMENT MATERIAL (2)	AVAILABLE MATERIAL (3)	UNEXPANDED FILL	EXPANDED FILL (4)	MASS ORDINATE +/- (5)	208.0100
			CUT (1)				FACTOR 1.25		BORROW
DIVISION 1									
QR-42	759+23/764+45	STH 42	806	201	605	1,158	1,448	-843	843
QR-DWY	05+10/05+90.347	STH 42	0	0	0	321	401	-401	401
DIVISION 1 SUBTOTAL			806	201	605	1,479	1,849	-1,244	1,244
GRAND TOTAL			806	201	605	1,479	1,849	-1,244	1,244
TOTAL COMMON EXC			806						

NOTES:

- (1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- (2) SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (3) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (4) EXPANDED FILL FACTOR = 1.25
- (5) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

BASE AGGREGATE DENSE

CATEGORY	STATION	TO	STATION	LOCATION	* * *			REMARKS
					<u>305.0110</u>	<u>305.0120</u>	<u>624.0100</u>	
					BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4- INCH TON	WATER MGAL	
0010	5+10	-	5+85	DRIVEWAY	8	112	1	
0010	758+00	-	759+35	STH 42	21	--	0.21	
0010	758+77	-	759+23	STH 42	--	4	0.04	
0010	759+23	-	759+73	STH 42	--	118	1	
0010	760+60	-	764+45	STH 42	135	616	8	
TOTAL					<u>163</u>	<u>850</u>	<u>10</u>	

*QUANTITIES SHOWN ELSEWHERE

ASPHALT

CATEGORY	STATION	TO	STATION	LOCATION	* * *			REMARKS
					<u>455.0605</u>	<u>460.6224</u>	<u>465.0120</u>	
					TACK COAT GAL	HMA PAVEMENT 4 MT 58-28 S TON	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	
0010	758+00	-	759+23	STH 42	34	63	--	MAINLINE RESURFACE
0010	758+77	-	759+23	STH 42	2	8	--	
0010	758+50	-	759+49	STH 42	24	52	--	FRICKE RD INTERSECTION
0010	759+23	-	759+73	STH 42	12	42	--	
0010	760+72	-	761+31	STH 42	17	60	--	
0010	761+31	-	764+45	STH 42	73	128	--	MAINLINE RESURFACE
0010	761+31	-	764+45	STH 42	23	81	--	SHOULDERS
0010	5+10	-	5+85	STH 42	--	--	31	DRIVEWAY
TOTAL					<u>186</u>	<u>433</u>	<u>31</u>	

MISC CONCRETE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	* 305.0120		415.0060		415.0410		416.1010		601.0588		601.0590		606.0200		* 624.0100		* 645.0120		REMARKS
					BASE AGGREGATE DENSE 1 1/4- INCH TON	CONCRETE PAVEMENT 6- INCH SY	CONCRETE PAVEMENT APPROACH SLAB SY	CONCRETE SURFACE DRAINS CY	CONCRETE CURB & GUTTER 4- INCH TYPE TBT LF	CONCRETE CURB & GUTTER 4- INCH TYPE TBTT LF	RIPRAP MEDIUM CY	WATER MGAL	GEOTEXTILE TYPE HR SY										
0010	759+20	-	459+42	STH 42 LT	--	--	--	3	--	--	5	--	14										
0010	759+28	-	759+63	STH 42 LT	--	--	--	--	35	--	--	--	--										
0010	759+63	-	759+81	STH 42 LT	--	--	--	--	--	18	--	--	--										
0010	759+32	-	759+48	STH 42 RT	--	--	--	--	17	--	--	--	--										
0010	759+48	-	759+62	STH 42 RT	--	--	--	--	--	14	--	--	--										
0010	759+40	-	759+55	STH 42 RT	--	--	--	3	--	--	--	--	--										
0010	759+48	-	759+72	STH 42	21	--	64	--	--	--	--	--	0.21										
0010	759+48	-	759+66	STH 42 RT	8	13	--	--	--	--	--	--	0.08										
0010	759+63	-	759+78	STH 42 LT	4	13	--	--	--	--	--	--	0.04										
0010	760+72	-	760+95	STH 42	20	--	61	--	--	--	--	--	0.20										
0010	760+66	-	760+80	STH 42 RT	5	14	--	--	--	--	--	--	0.05										
0010	760+77	-	760+95	STH 42 LT	5	14	--	--	--	--	--	--	0.05										
TOTAL					63	54	125	6	52	32	5	1	14										

*QUANTITIES SHOWN ELSEWHERE

ASPHALT FLUMES

CATEGORY	STATION	OFFSET	LOCATION	465.0315 ASPHALTIC FLUMES SY	REMARKS
0010	760+65	21.84'	STH 42 RT	1	
0010	760+83	20.00'	STH 42 LT	1	
TOTAL				2	

BEAM GUARD

CATEGORY	STATION	TO	STATION	LOCATION	<u>614.0200</u>	<u>614.0345</u>	<u>614.0390</u>	<u>614.2300</u>	<u>614.2350</u>	<u>614.2500</u>	<u>614.2610</u>	<u>614.2630</u>	REMARKS
					STEEL THRIE BEAM STRUCTURE APPROACH LF	STEEL PLATE BEAM GUARD SHORT RADIUS LF	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL EACH	MGS GUARDRAIL 3 LF	MGS GUARDRAIL SHORT RADIUS LF	MGS THRIE BEAM TRANSITION LF	MGS GUARDRAIL TERMINAL EAT EACH	MGS GUARDRAIL SHORT RADIUS TERMINAL EACH	
0010	759+28	-	759+28	RT STH 42	--	--	1	--	--	--	--	--	
0010	759+28	-	759+45	RT STH 42	--	37.5	--	--	--	--	--	--	
0010	759+45	-	759+66	RT STH 42	20.7	--	--	--	--	--	--	--	
0010	5+49	-	5+77	DRIVEWAY	--	--	--	28	--	--	--	--	1
0010	5+77	-	5+85	DRIVEWAY	--	--	--	--	12.5	--	--	--	--
0010	759+20	-	759+45	LT STH 42	--	--	--	25	--	--	--	--	--
0010	759+45	-	759+85	LT STH 42	--	--	--	--	--	39.4	--	--	--
0010	760+58	-	760+98	RT STH 42	--	--	--	--	--	39.4	--	--	--
0010	760+98	-	762+98	RT STH 42	--	--	--	200	--	--	--	--	--
0010	762+98	-	763+51	RT STH 42	--	--	--	--	--	--	1	--	--
0010	760+77	-	761+17	LT STH 42	--	--	--	--	--	39.4	--	--	--
0010	761+17	-	761+79	LT STH 42	--	--	--	62.5	--	--	--	--	--
0010	761+79	-	762+32	LT STH 42	--	--	--	--	--	--	1	--	--
TOTAL					20.7	37.5	1	315.5	12.5	118.2	2	1	

3

3

EROSION CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	<u>628.1504</u>	<u>628.1520</u>	<u>628.1905</u>	<u>628.1910</u>	<u>628.6005</u>	REMARKS
					SILT FENCE LF	SILT FENCE MAINTENANCE LF	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	TURBIDITY BARRIERS SY	
0010	758+54	-	759+00	LTSTH 42	98	98	--	--	--	
0010	759+34	-	759+55	RTSTH 42	22	22	--	--	--	
0010	759+89	-	760+34	LTSTH 42	45	45	--	--	--	
0010	760+22	-	764+50	RTSTH 42	458	458	--	--	--	
0010	760+72	-	764+47	LTSTH 42	388	388	--	--	--	
0010	759+51	-	760+36	STH 42	--	--	--	--	166	
0010	760+26	-	760+82	STH 42	--	--	--	--	165	
0010		UNDISTRIBUTED		4570-24-71	253	253	--	--	83	
0010		PROJECT WIDE		4570-24-71	--	--	4	2	--	
TOTAL					1,264	1,264	4	2	414	

RESTORATION

CATEGORY	STATION	TO	STATION	LOCATION	<u>625.0500</u>	<u>628.2004</u>	<u>628.2008</u>	<u>629.0210</u>	<u>630.0120</u>	<u>630.0500</u>	REMARKS
					SALVAGED TOPSOIL SY	EROSION MAT CLASS I TYPE B SY	EROSION MAT URBAN CLASS I TYPE B SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEED WATER MGAL	
0010	758+62	-	760+25	LTSTH 42	600	--	600	0.4	16	27	DO NOT FERTILIZE WITHIN 20' OF SILVER CREEK BANKS
0010	759+32	-	759+64	RTSTH 42	80	--	80	0.1	2	4	DO NOT FERTILIZE WITHIN 20' OF SILVER CREEK BANKS
0010	760+18	-	764+45	RTSTH 42	828	751	77	0.5	22	37	DO NOT FERTILIZE WITHIN 20' OF SILVER CREEK BANKS
0010	760+59	-	764+45	LTSTH 42	970	569	401	0.6	26	43	DO NOT FERTILIZE WITHIN 20' OF SILVER CREEK BANKS
TOTAL					2,478	1,320	1,158	1.6	67	111	

ROCK BAGS

CATEGORY	STATION	LOCATION	<u>628.7570</u>	REMARKS
			ROCK BAGS EACH	
0010	762+35	LTSTH 42	20	
0010	762+90	RTSTH 42	20	
0010	UNDISTRIBUTED	4570-24-71	10	
TOTAL			50	

SIGNS

CATEGORY	STATION	LOCATION	<u>634.0616</u>	<u>638.2102</u>	<u>638.3000</u>	REMARKS
			POSTS WOOD 4X6-INCH X 16- FT EACH	MOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
0010	759+29	LTSTH 42	1	1	1	STOP SIGN ALONG FRICKE
0010	759+63	LTSTH 42	1	1	1	NO PASSING ZONE
0010	762+25	RTSTH 42	1	1	1	NO PASSING ZONE
TOTAL			3	3	3	

TRAFFIC CONTROL

CATEGORY	STATION	LOCATION	APPROXIMATE SERVICE PERIOD DAYS	* <u>643.0420</u>		* <u>643.0705</u>		* <u>643.0900</u>		<u>643.5000</u>	REMARKS
				NO. IN SERVICE	III DAY	NO. IN SERVICE	WARNING LIGHTS TYPE A DAY	NO. IN SERVICE	TRAFFIC CONTROL SIGNS DAY	TRAFFIC CONTROL EACH	
0010	741+00	STH 42	90					1	90		W20-3A SIGN
0010	746+00	STH 42	90					1	90		W20-3C SIGN
0010	751+00	STH 42	90					1	90		W20-3D SIGN
0010	756+00	STH 42	90	1	90	2	180	1	90		R11-2B SIGN
0010	756+50	STH 42	90	1	90	2	180				---
0010	757+00	STH 42	90	5	450	6	540	1	90		R11-2B SIGN
0010	765+45	STH 42	90					1	90		W20-3A SIGN
0010	765+95	STH 42	90					1	90		W20-3C SIGN
0010	766+45	STH 42	90					1	90		W20-3D SIGN
0010	771+45	STH 42	90	1	90	2	180	1	90		R11-2B SIGN
0010	776+45	STH 42	90	1	90	2	180		0		---
0010	781+45	STH 42	90	5	450	6	540	1	90		R11-2B SIGN
0010	Project Wide	Project 4570-24-71								1	Project Wide
TOTAL					1,260		1,800		900		1

*QUANTITIES SHOWN ELSEWHERE, SEE TRAFFIC CONTROL DETOUR SUMMARY FOR ADDITIONAL QUANTITIES

SURVEY

CATEGORY	STATION	TO	STATION	LOCATION	<u>650.4500</u>	<u>650.5000</u>	<u>650.6500.01</u>	<u>650.8000</u>	<u>650.9910.01</u>	<u>650.9920</u>	REMARKS
					CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. B-36-0239) LS	CONSTRUCTION STAKING RESURFACING REFERENCE LF	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 4570-24-71) LS	CONSTRUCTION STAKING SLOPE STAKES LF	
0010	758+00	-	764+45	STH 42	--	--	--	--	1	--	
0010	758+00	-	759+23	STH 42	--	--	--	123	--	--	
0010	758+77	-	759+80	STH 42	103	103	--	--	--	57	
0010	759+73	-	760+71	STH 42	--	--	1	--	--	--	
0010	761+31	-	764+45	STH 42	--	--	--	314	--	--	
0010	760+62	-	764+45	STH 42	383	383	--	--	--	383	
0010	5+10	-	5+85	STH 42	75	75	--	--	--	75	
TOTAL					561	561	1	437	1	515	

PAVEMENT MARKING

CATEGORY	STATION	TO	STATION	LOCATION	<u>646.1020</u>	<u>646.1020</u>	REMARKS
					MARKING LINE EPOXY 4-INCH WHITE LF	MARKING LINE EPOXY 4-INCH YELLOW LF	
0010	758+00	-	764+45	STH 42	1290	545	
TOTAL					1,835		

SAWING ASPHALT

CATEGORY	STATION	TO	STATION	LOCATION	<u>690.0150</u>	REMARKS
					SAWING ASPHALT LF	
0010	758+00	-	758+00	STH 42	30	
0010	759+23	-	759+48	RT STH 42	25	
0010	759+09	-	759+32	RT STH 42	23	
0010	759+23	-	759+23	STH 42	35	
0010	759+29	-	759+49	RT STH 42	174	
0010	759+49	-	759+87	LT STH 42	38	
0010	761+31	-	761+31	STH 42	35	
0010	761+31	-	763+04	LT STH 42	173	
0010	761+31	-	764+21	RT STH 42	290	
0010	764+45	-	764+45	STH 42	30	
TOTAL					823	

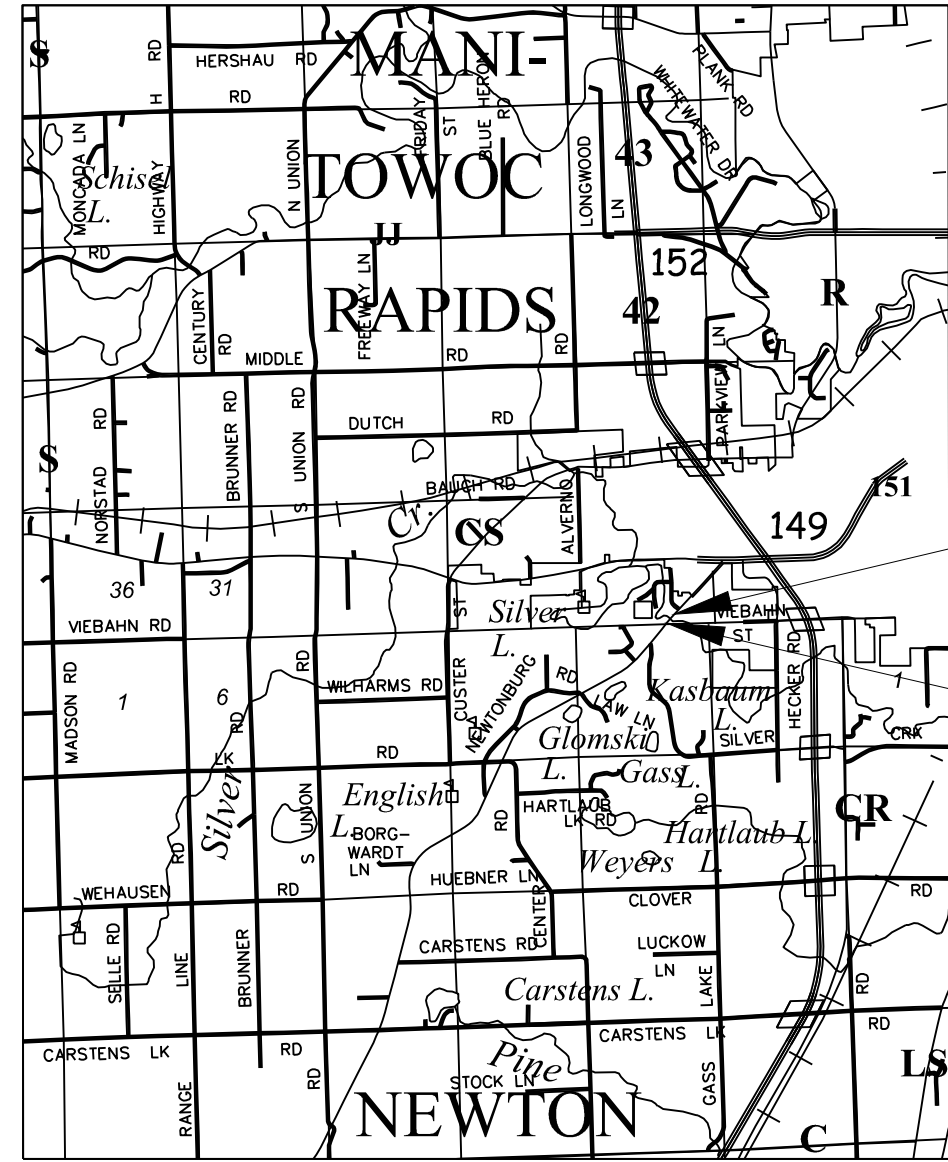
R/W PROJECT NUMBER 4570-24-21	SHEET NUMBER 4.1	TOTAL SHEETS 2
FEDERAL PROJECT NUMBER		
PLAT OF RIGHT-OF-WAY REQUIRED FOR HOWARDS GROVE - MANITOWOC SILVER CREEK BRIDGE		
STH 42		MANITOWOC COUNTY
CONSTRUCTION PROJECT NUMBER		

CONVENTIONAL ABBREVIATIONS AND SYMBOLS

ACRES	AC	CORPORATE LIMITS	//////
CHORD BEARING	CH BRG	EXISTING R/W	_____
CHORD DISTANCE	CH DIS	SECTION LINE	-----
DEED	(D)	QUARTER LINE	-----
DOCUMENT	DOC	SIXTEENTH LINE	-----
EAST BOUND	EB	PROPOSED OR NEW R/W LINE	=====
GAS VALVE	GV	PROPOSED EASEMENT LINE	-----
INLET	IL	PROPERTY LINE	-----
MANHOLE	MH	COMMUNICATION LINE	-----
MONUMENT	MON	BURIED GAS LINE	-----
NORTH BOUND	NB	OVERHEAD ELECTRIC LINE	-----
PAGE	PG	BURIED ELECTRIC LINE	-----
PRIVATE DRIVEWAY	PD	LOT, TIE AND OTHER	-----
PROPERTY LINE	PL	MINOR DASHED LINES	-----
RADIUS	RAD	ACCESS RESTRICTED	
REFERENCE LINE	R	(By Acquisition)	
REMAINING	REM	NO ACCESS	●●●●●●●●
RIGHT OF WAY	R/W	(By Statutory Authority)	●●●●●●●●
SECTION	SEC	ACCESS RESTRICTED	◆◆◆◆◆◆◆◆
SECTION LINE	S	(By Previous Project/Control)	◆◆◆◆◆◆◆◆
FOUND IRON PIPE	IP	LIMITED EASEMENT	▨▨▨▨▨▨▨▨
STATION	STA	(Temporary)	▨▨▨▨▨▨▨▨
TIE POINT	TIP	LIMITED EASEMENT	▨▨▨▨▨▨▨▨
VOLUME	VOL	(Permanent)	▨▨▨▨▨▨▨▨
FEE ACQUISITION	FA	PARCEL NUMBER	○
ADJOINING LANDS WITH SAME OWNER	AW	UTILITY NUMBER	○
BUILDING TO BE RAZED	BR	SECTION CORNER	○
PROPOSED R/W BOUNDARY POINT	PRW	SET R/W MONUMENT W/CAP	○
TEMPORARY LIMITED EASEMENT	TLE	(1" x 24" IRON PIPE, 113 LBS/FT)	○
PERMANENT LIMITED EASEMENT	PLE	SET P.K. NAIL	△
HIGHWAY EASEMENT	HE		

	COMPENSABLE	NON-COMPENSABLE
POWER POLE	■	□
TELEPHONE POLE	●	○
SIGN	⊥	⊥
TELEPHONE PEDESTAL	⊥	⊥

SECTION 34 T19N - R23E
TOWN OF MANITOWOC RAPIDS



LOCATION SKETCH
(NOT TO SCALE)



TOTAL NET LENGTH OF CENTERLINE = 645 FT.

END RELOCATION ORDER
PROJECT 4570-24-21
STATION 764+45

BEGIN RELOCATION ORDER
PROJECT 4570-24-21
STATION 758+00

NOTES

- POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, MANITOWOC COUNTY, NAD83 (1991) IN U.S. SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.
- RIGHT-OF-WAY MONUMENTS ARE TYPE 2 MONUMENTS (TYPICALLY 1" X 24" IRON PIPE) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.
- RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS OF PUBLIC RECORD".
- PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY LINES, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.
- EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
EXISTING HIGHWAY RIGHT-OF-WAY FOR STH 42 ESTABLISHED UNDER PROJECT(S): 3780
- DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO NEW REFERENCE LINES.
- THE REFERENCE LINE SHOWN ON THIS PLAT MAY NOT BE THE SAME AS THE REFERENCE LINE SHOWN ON THE CONSTRUCTION PLAN.
- A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. ALL TLES EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

REVISION DATE	DATE
-----	-----
-----	-----
-----	-----
-----	-----
-----	-----
-----	-----
-----	-----

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED FOR THE DEPARTMENT

DATE: 08-24-20 Curt Van Erem
(Signature)

CURT VAN EREM

E

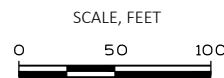
SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	*OWNER(S)	INTEREST REQUIRED	FEE R/W ACRES REQUIRED			T.L.E. ACRES
			NEW	EXISTING	TOTAL	
1	VANCE & SHELLEY HIGDON	TLE				0.072

*OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

STATION OFFSET FROM REFERENCE LINE

POINT	STATION	OFFSET	(Y) NORTHING	(X) EASTING
5	758+64.83	-69.40'	291623.132	215125.913
6	758+95.56	-106.95'	291671.176	215118.110
7	759+02.57	-114.20'	291681.273	215117.338
8	759+08.78	-108.09'	291681.940	215126.066
9	759+26.12	-98.12'	291688.461	215145.127
10	759+62.09	-81.96'	291704.850	215181.271
11	760+44.02	-84.75'	291768.168	215234.269
12	760+38.51	-74.54'	291757.212	215238.139



4

4

QUARTER LINE

TOWN

SW SE

SE SE

2" x 30" IRON PIPE
Y=291549.167
X=214395.618



OTR2

761.48'

N 89° 41' 23" E

1775.98'

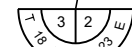
N 89° 43' 02" E
104.79'

2" x 30" IRON PIPE
Y=291563.425
X=217037.826



SEC3

SEC4



3/4" IRON ROD
Y=291562.908
X=216933.037

STH 42 REFERENCE LINE COURSE TABLE

OTR2	TO BP STA 737+26.27	S 21°01'24" W	1706.48'
BP STA 737+26.27	TO PC STA 757+68.26	N 40°41'44" E	2041.99'
PC STA 757+68.26	TO PT STA 764+66.48	SEE CURVE NOTE BELOW	
PT STA 764+66.48	TO EP STA 770+36.58	N 44°11'12" E	570.10'
EP STA 770+36.58	TO SEC4	S 50°38'09" E	1363.91'

CURVE NOTE

PI X: 215342.580 Y: 291769.260
Tangent: 349.218' Chord: 698.111' Course: N 42° 26' 28" E
Arc Length: 698.219' Radius: 11459.160' Delta: 3° 29' 28"

REFERENCE LINE COORDINATE VALUES

	(Y) NORTHING	(X) EASTING
BP STA 737+26.27	289956.280	213783.420
PC STA 757+68.26	291504.488	215114.876
PT STA 764+66.48	292019.675	215585.984
EP STA 770+36.58	292428.480	215983.343

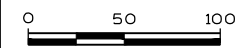
FRAC.
NW NE

FRAC.
NE NE

REVISION DATE _____

DATE 08-24-2020

SCALE, FEET



HWY: STH 42

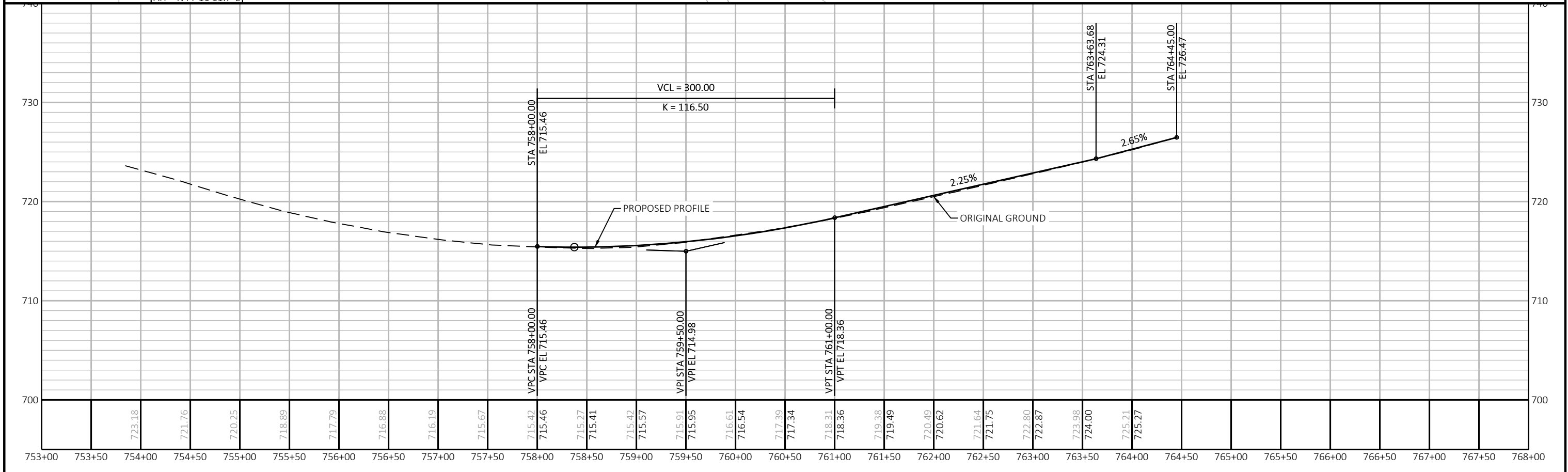
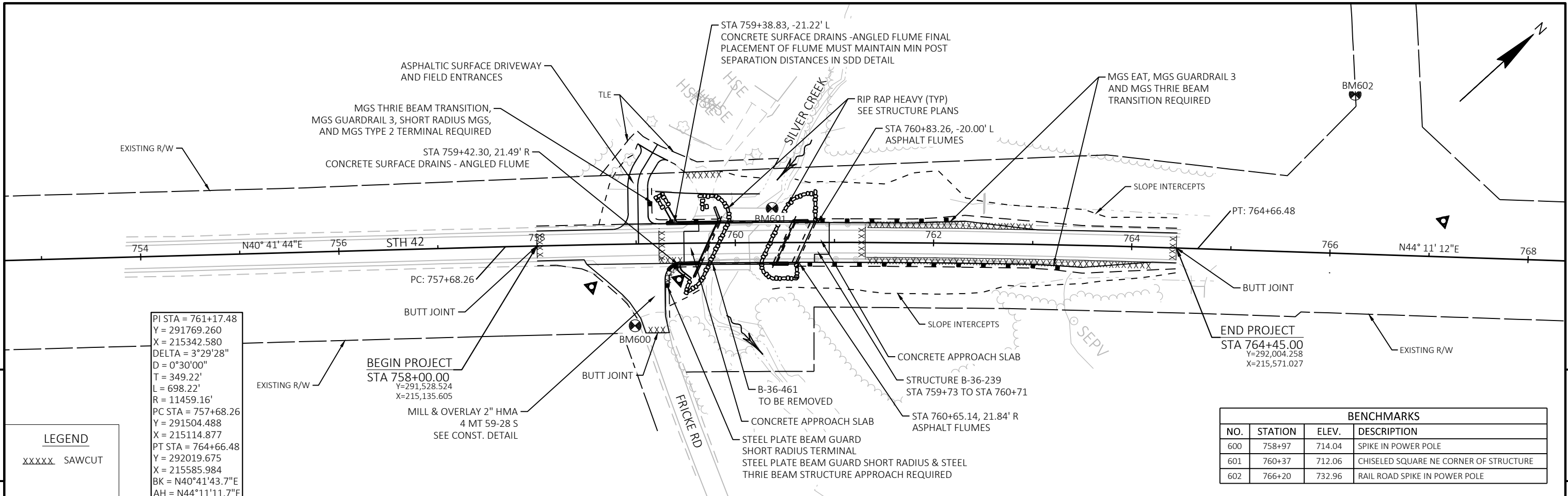
COUNTY: MANITOWOC

STATE R/W PROJECT NUMBER 4570-24-21

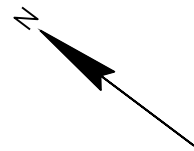
CONSTRUCTION PROJECT NUMBER

PLAT SHEET NO. 4.2

PS&E SHEET NO.



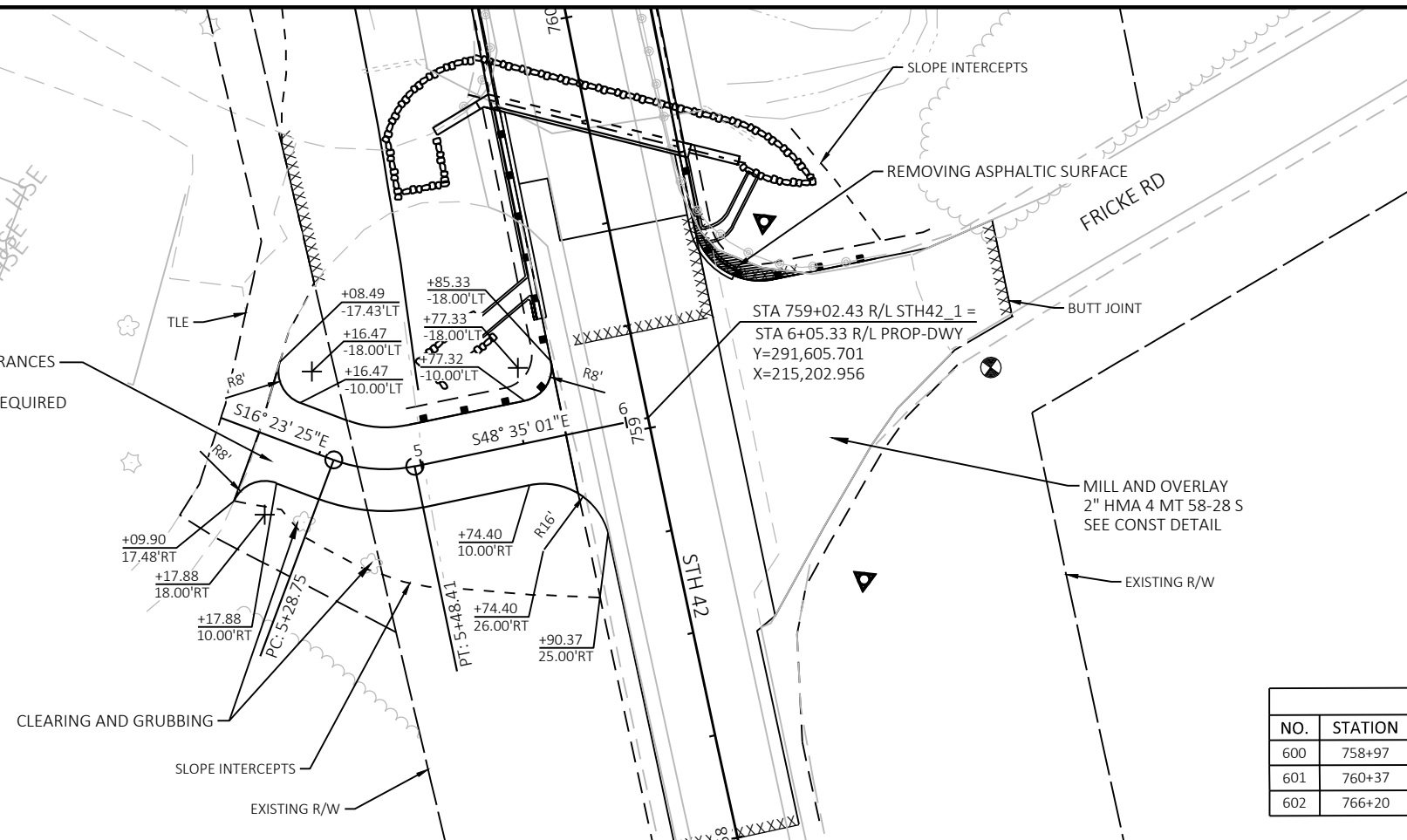
PROJECT NO: 4570-24-71 HWY: STH 42 COUNTY: MANITOWOC PLAN AND PROFILE: STH 42 SHEET E



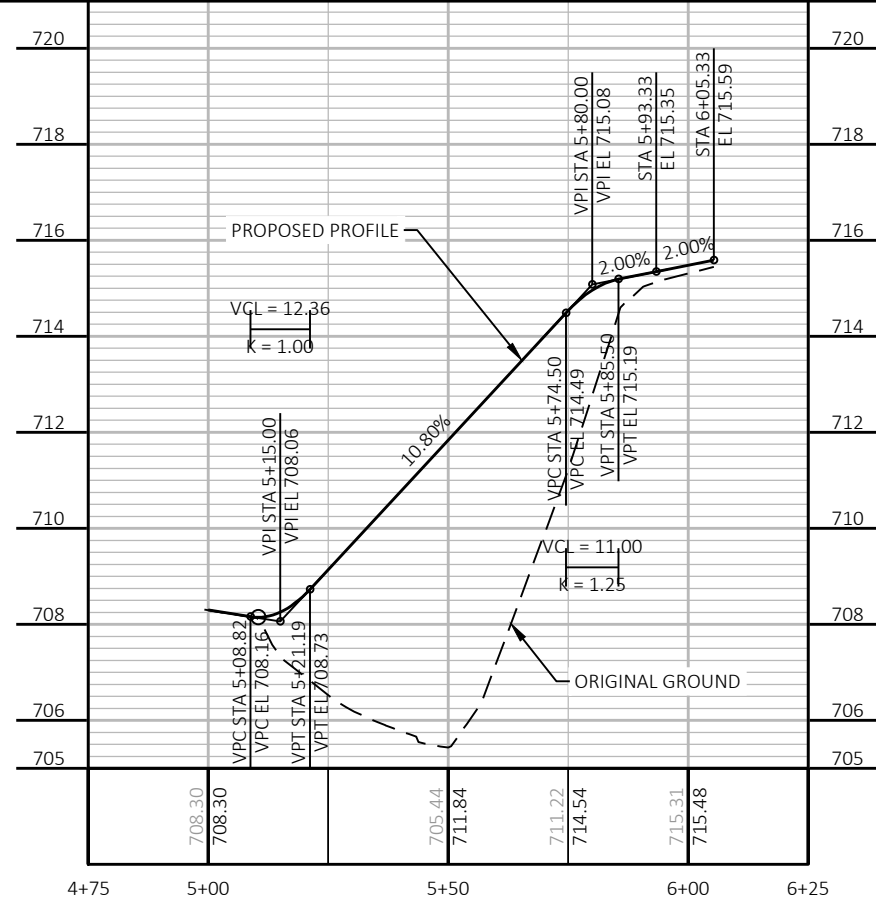
ASPHALTIC SURFACE DRIVEWAYS & FIELD ENTRANCES
 3-INCH HMA 4 MT 58-28 S
 6-INCH BASE AGGREGATE DENSE 1-1/4 INCH REQUIRED

PI STA = 5+38.85
 Y = 291650.034
 X = 215152.700
 DELTA = 32°11'37"
 D = 163°42'08"
 T = 10.10'
 L = 19.67'
 R = 35.00'
 PC STA = 5+28.75
 Y = 291659.723
 X = 215149.850
 PT STA = 5+48.41
 Y = 291643.352
 X = 215160.274
 BK = S16°23'24.8"E
 AH = S48°35'01.8"E

LEGEND
 XXXXX SAWCUT



BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
600	758+97	714.04	SPIKE IN POWER POLE
601	760+37	712.06	CHISELED SQUARE NE CORNER OF STRUCTURE
602	766+20	732.96	RAIL ROAD SPIKE IN POWER POLE



PROJECT NO: 4570-24-71

HWY: STH 42

COUNTY: MANITOWOC

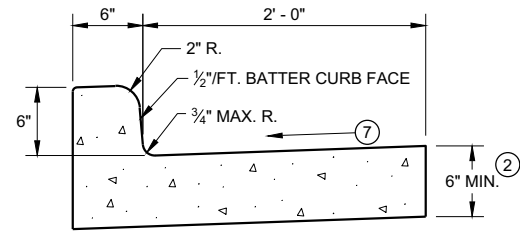
PLAN AND PROFILE: DRIVEWAY

SHEET

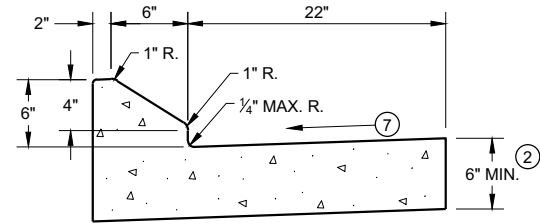
5

Standard Detail Drawing List

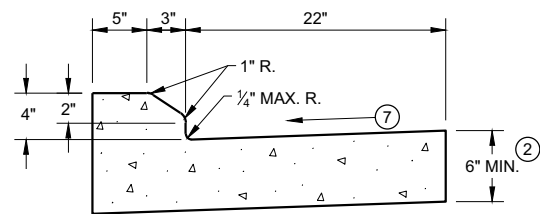
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-07A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13A03-06	CONCRETE PAVEMENT SHOULDERS
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13B02-09B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C19-03	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B16-04A	ANCHORAGE FOR STEEL PLATE BEAM GUARD TYPE 2
14B16-04B	ANCHORAGE FOR STEEL PLATE BEAM GUARD TYPE 2
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B20-11H	STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B53-01A	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01B	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01C	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01D	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01E	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01F	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01G	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01H	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01I	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-08B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING



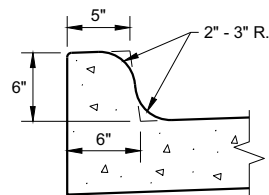
TYPES A¹ & D



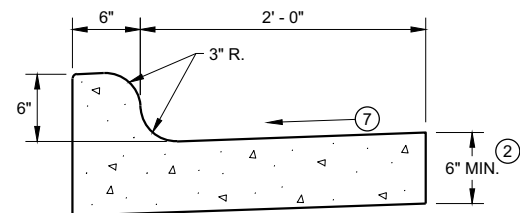
6" SLOPED CURB TYPES G¹ & J



4" SLOPED CURB TYPES G¹ & J

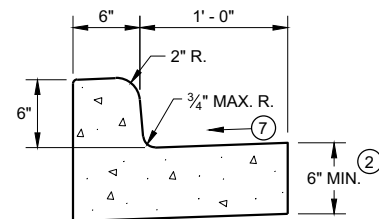


TYPES K¹ & L
(OPTIONAL CURB SHAPE)



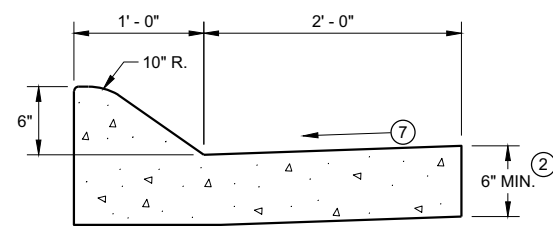
TYPES K¹ & L

CONCRETE CURB AND GUTTER 30"

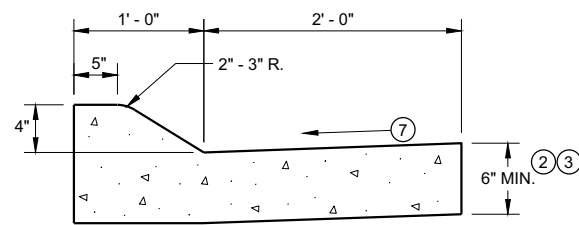


TYPES A¹ & D

CONCRETE CURB AND GUTTER 18"

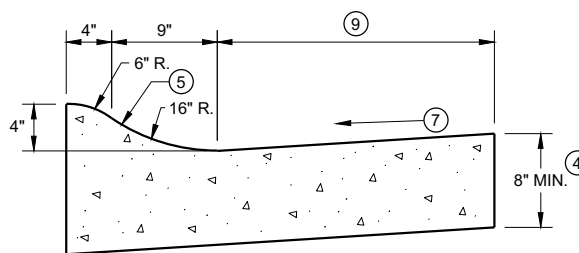


6" SLOPED CURB TYPES A¹ & D



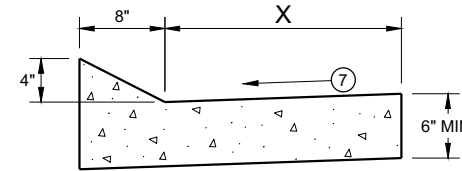
4" SLOPED CURB TYPES A¹ & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R¹ & T

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

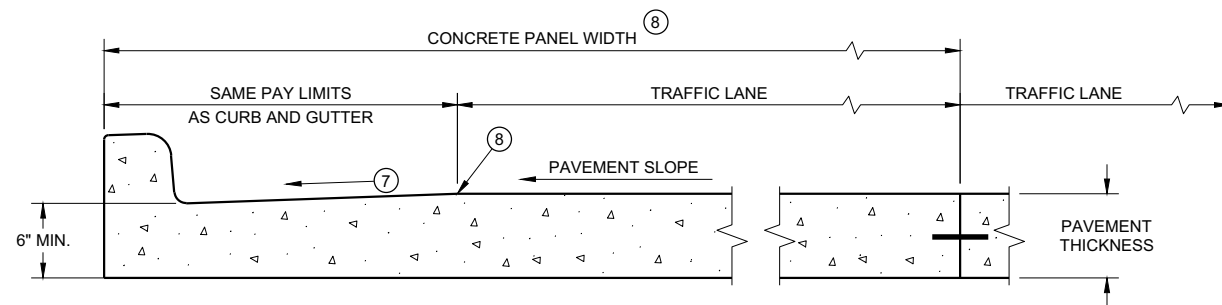


TYPES TBT & TBTT¹

CONCRETE CURB AND GUTTER

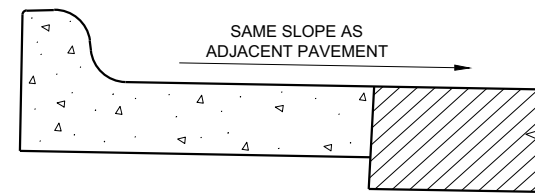
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER⁶
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

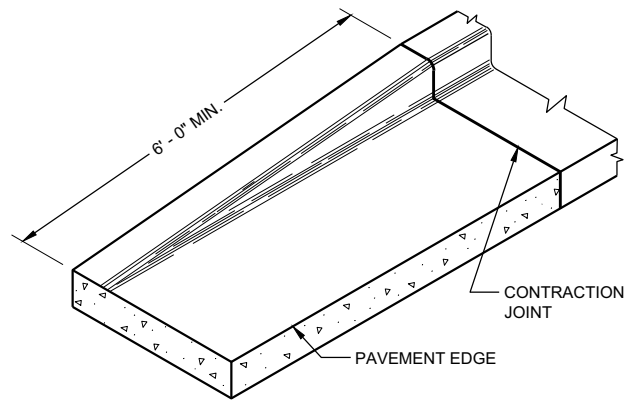
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

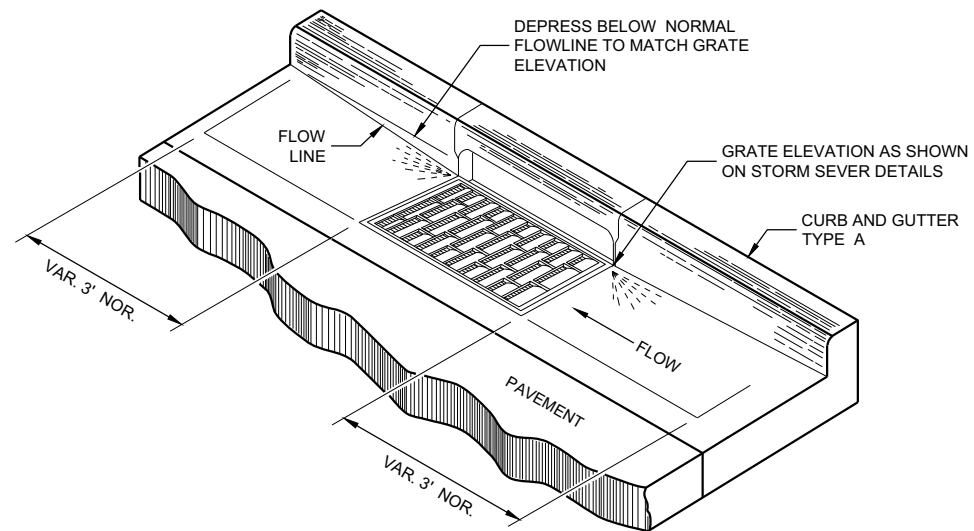
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

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



END SECTION CURB AND GUTTER



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

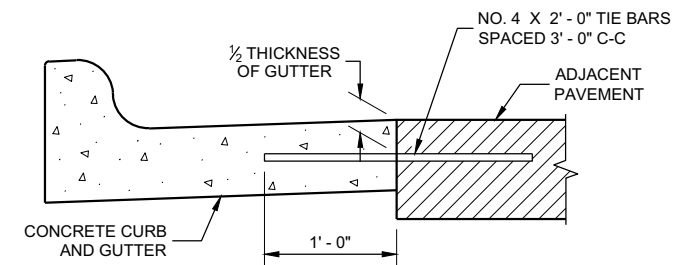
GENERAL NOTES

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

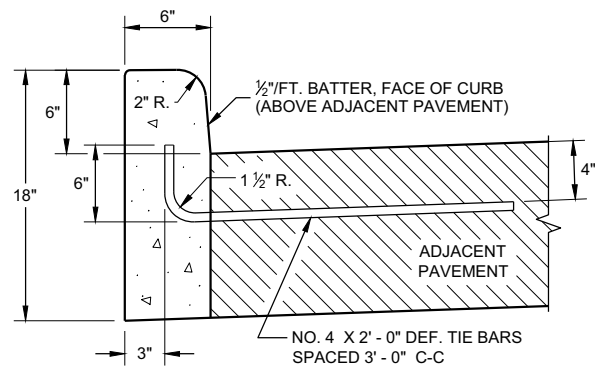
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

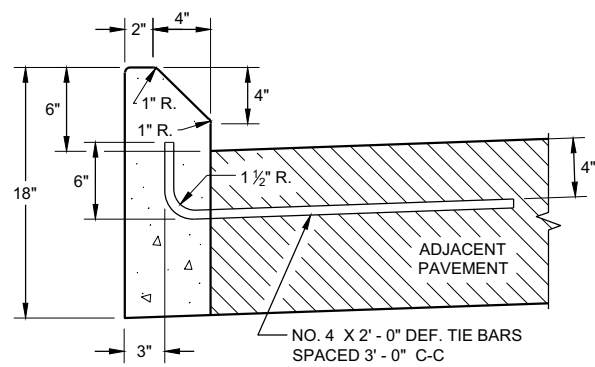
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL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



TYPICAL TIE BAR LOCATION ①

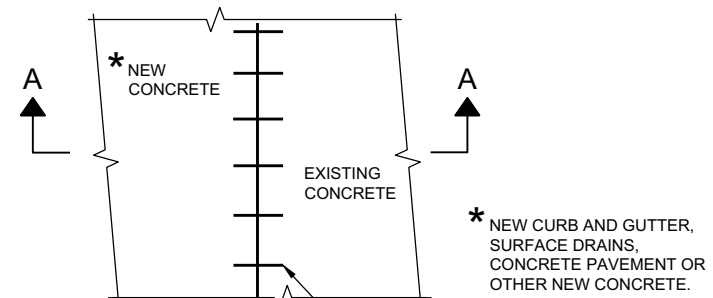


TYPES A ① & D

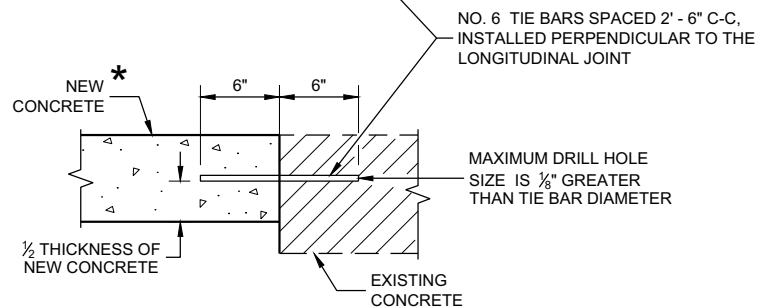


TYPES G ① & J

CONCRETE CURB

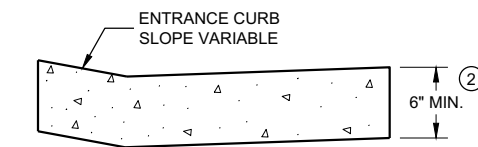


PLAN VIEW



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB ⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

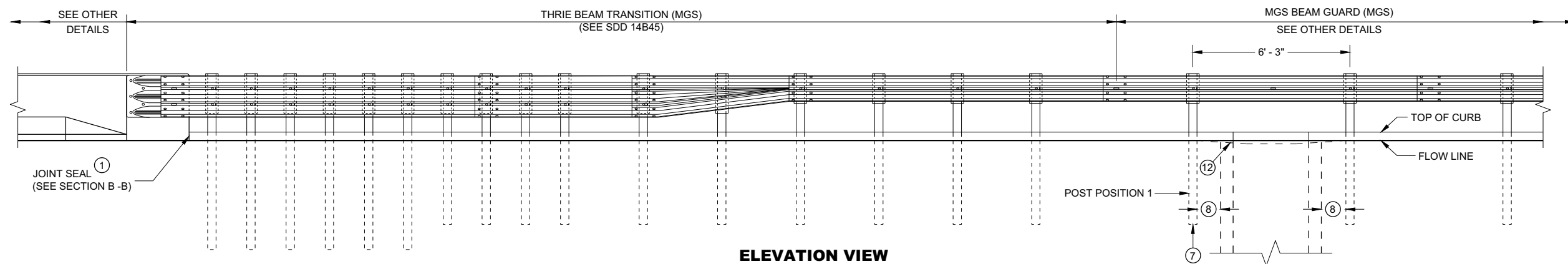
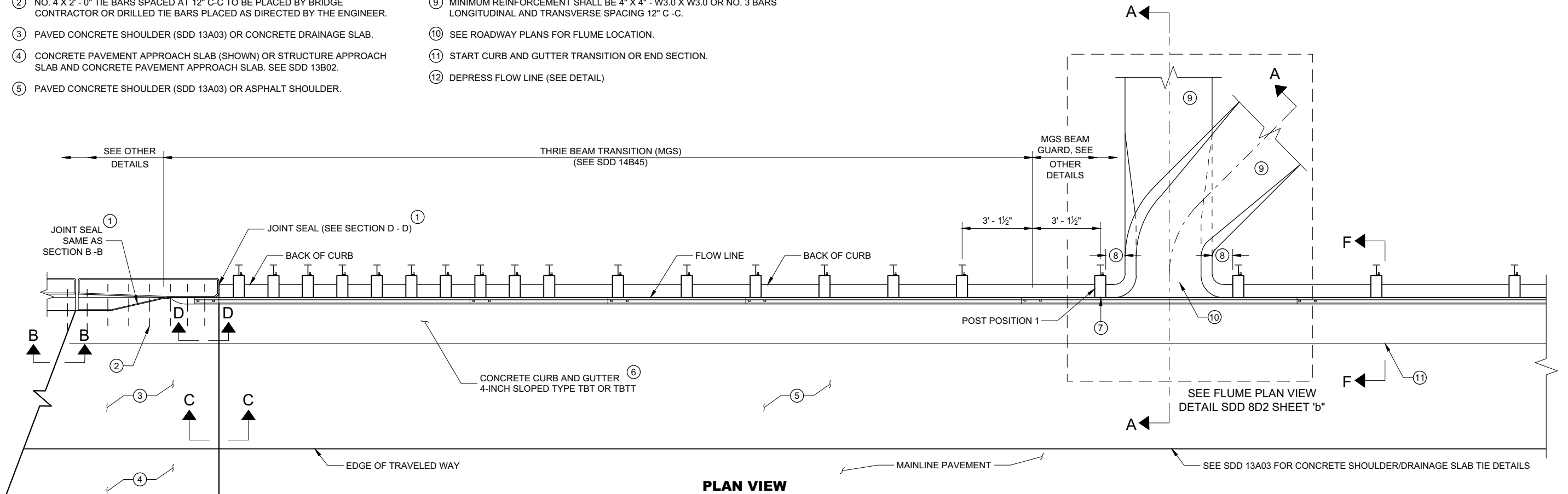
GENERAL NOTES

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

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

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

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



**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

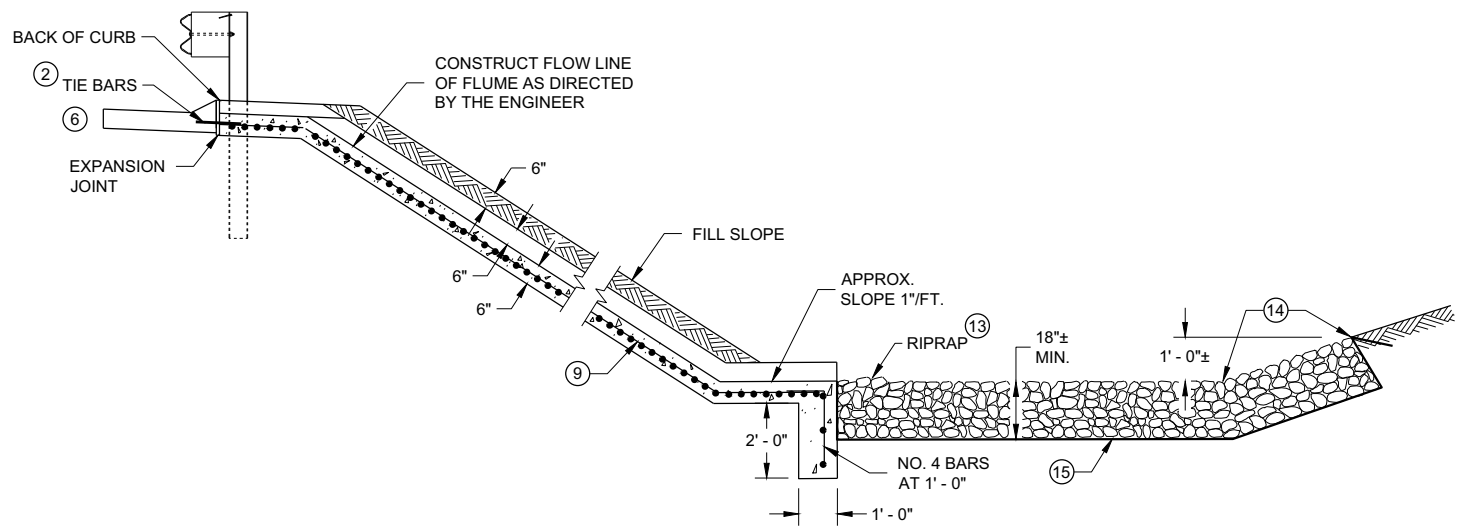
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

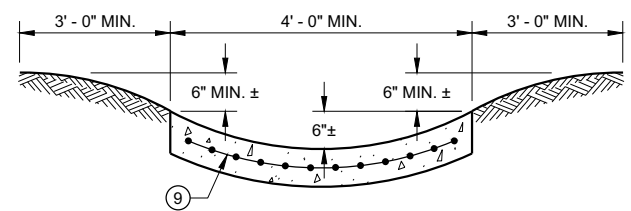
6

SDD 08D02 - 07a

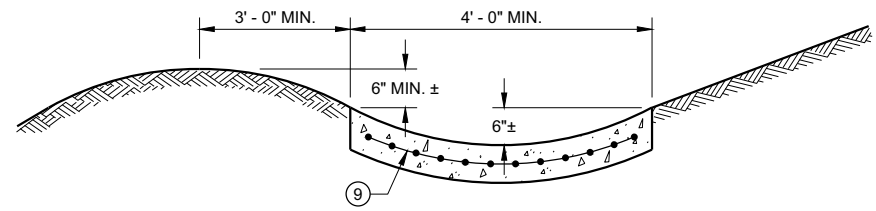
SDD 08D02 - 07a



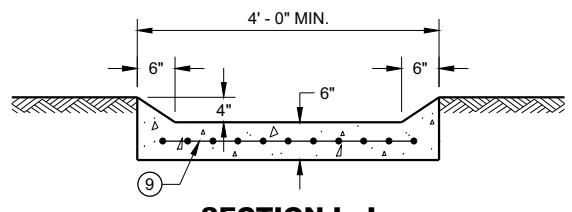
SECTION A - A



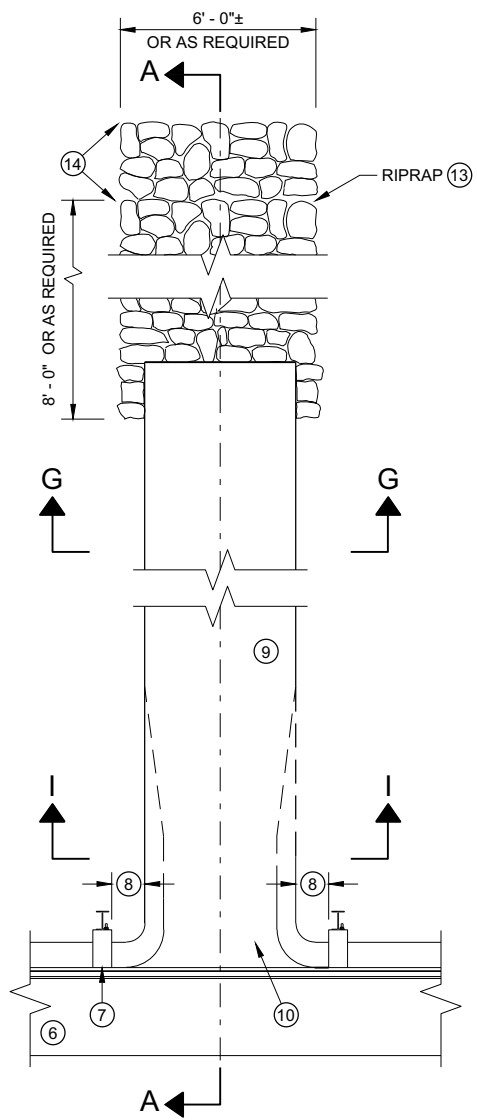
SECTION G - G



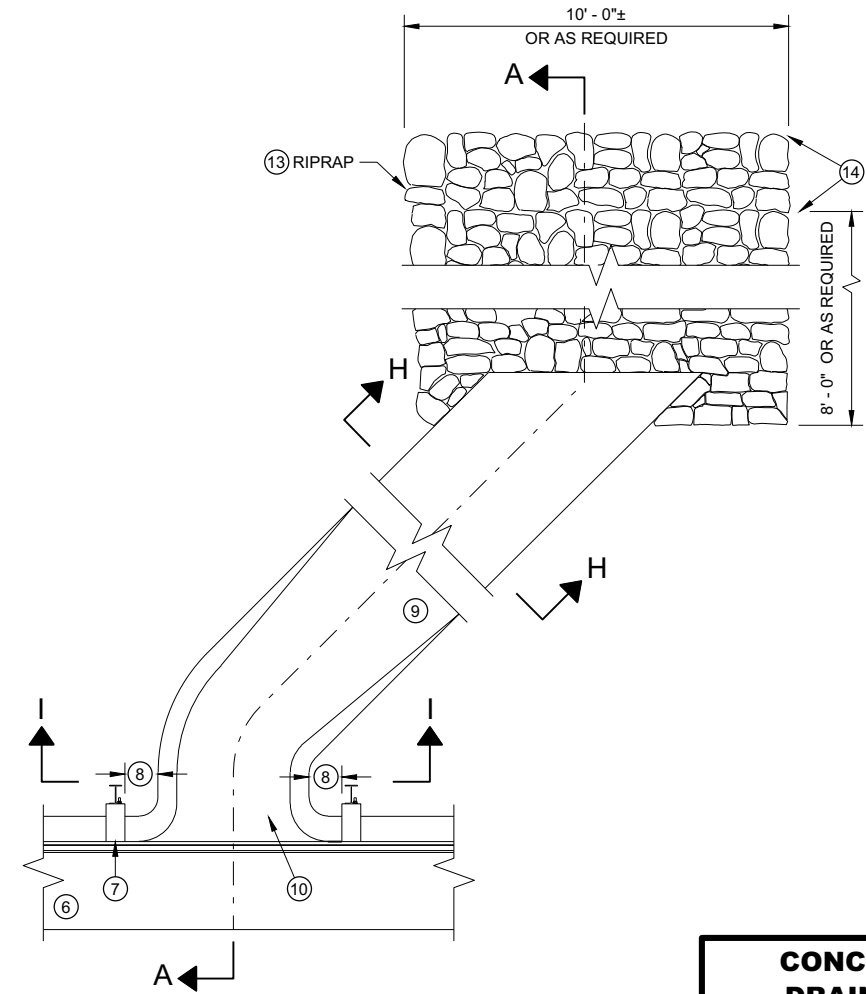
SECTION H - H



SECTION I - I



PLAN VIEW PERPENDICULAR FLUME



PLAN VIEW SKEWED FLUME

GENERAL NOTES

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

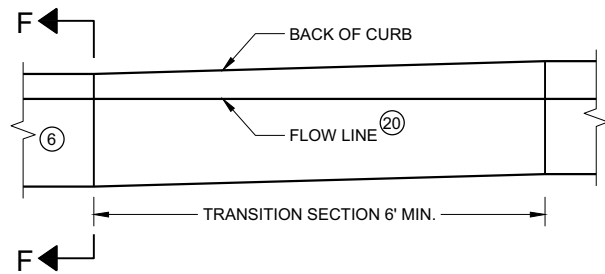
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

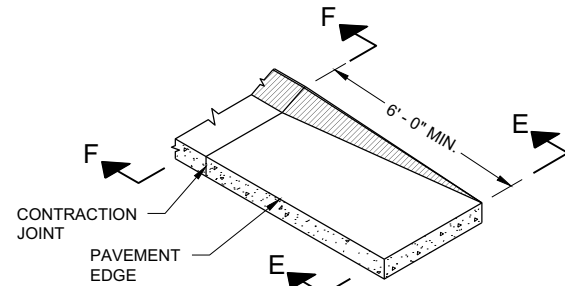
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS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

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

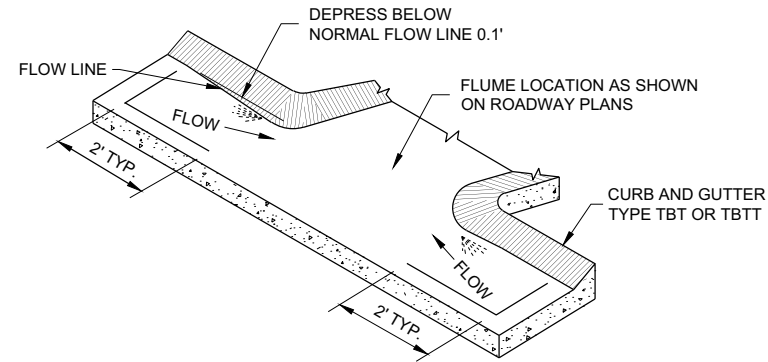
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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



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



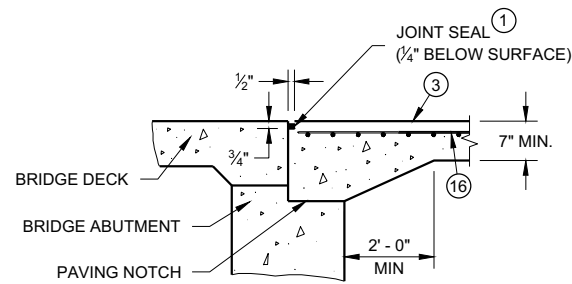
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**

GENERAL NOTES

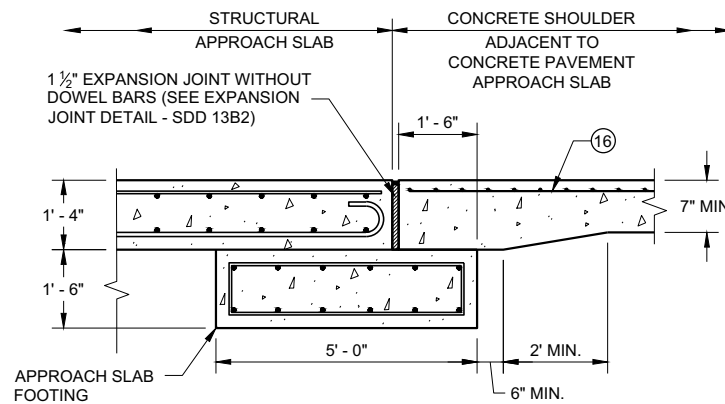
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

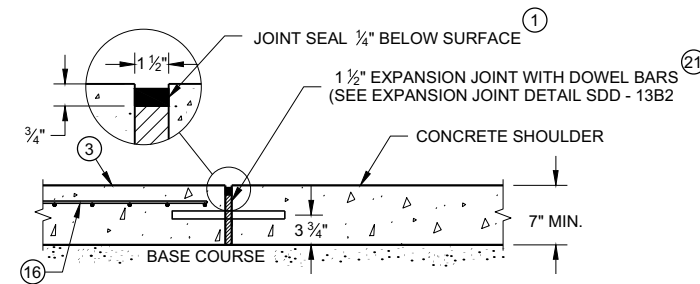
- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH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



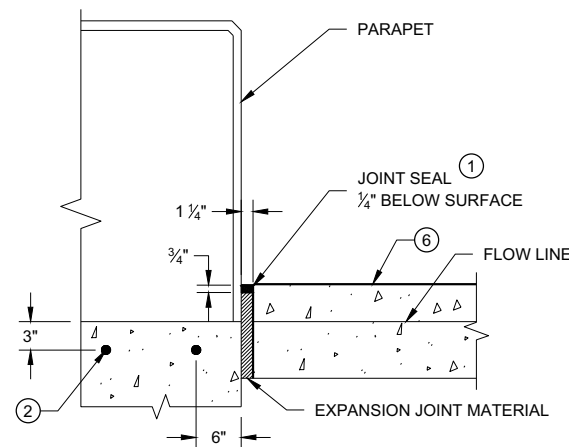
SECTION B-B



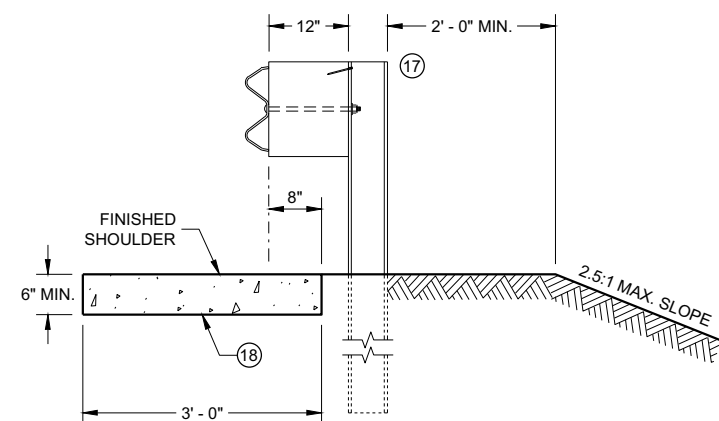
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



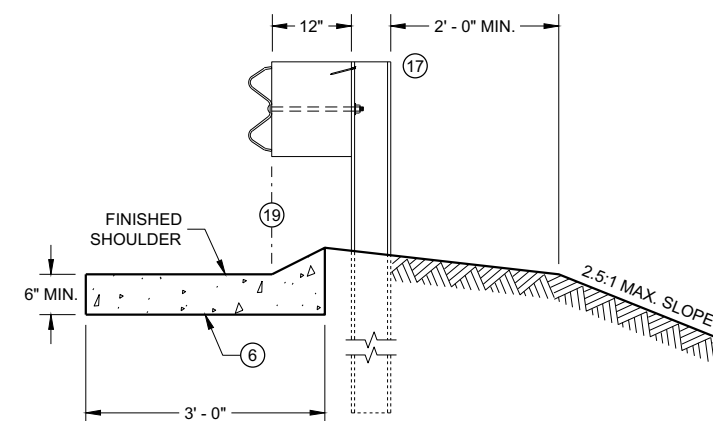
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

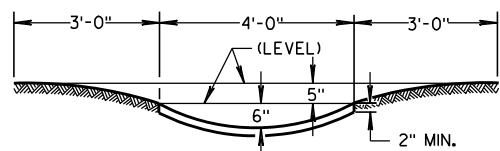
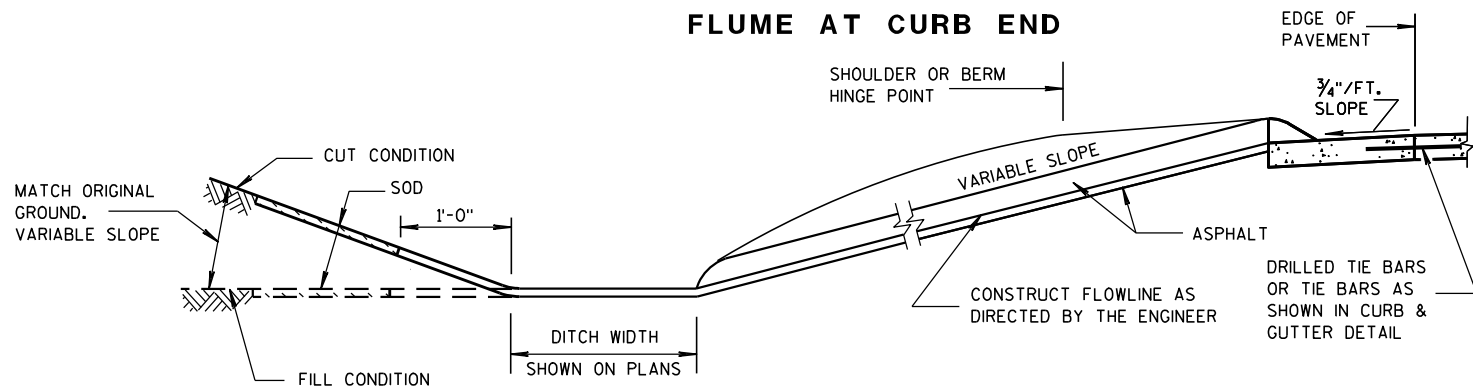
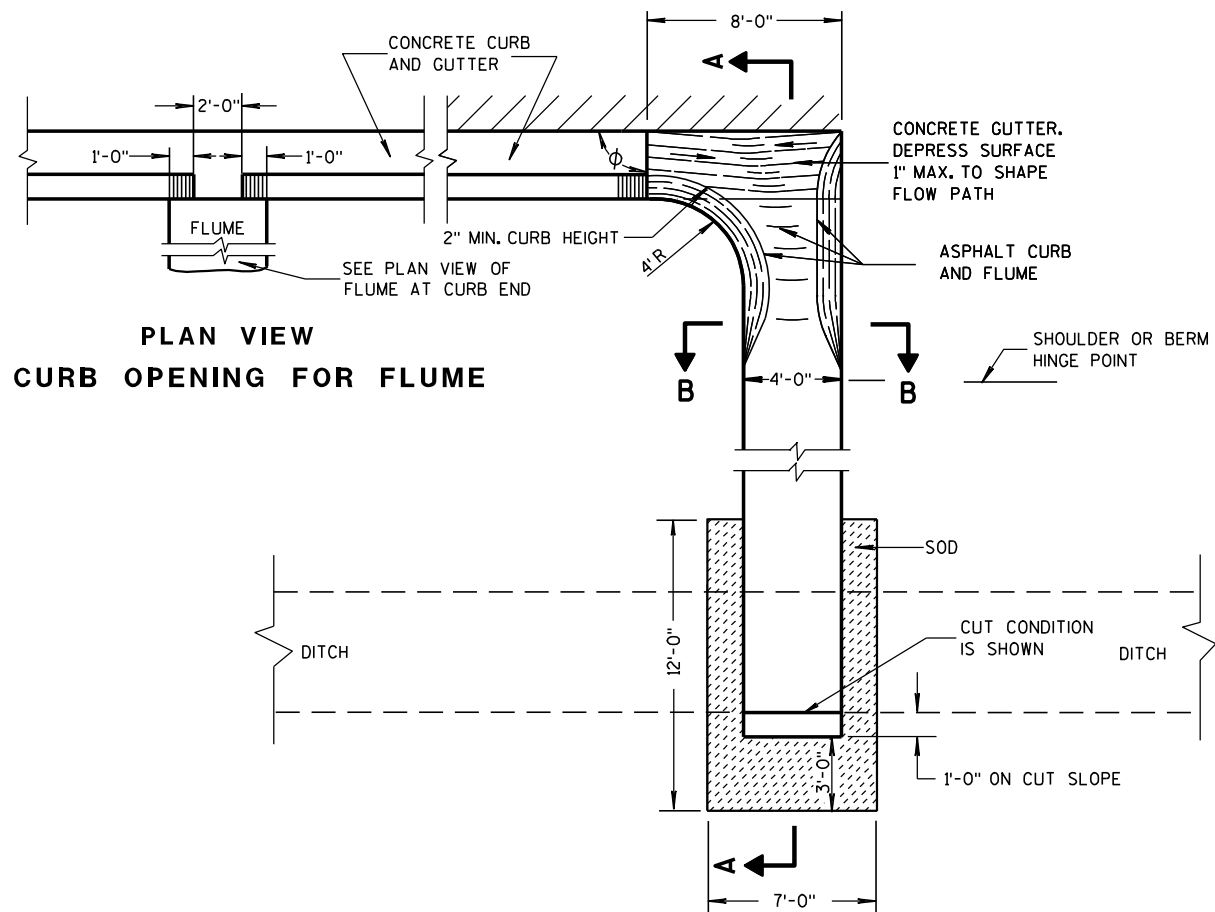
APPROVED
February 2020 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

ASPHALTIC FLUME

NOTE: TAPER CURB ENDS TO GUTTER IN 1'-0"

INCREASE ϕ FROM RIGHT ANGLE TO BEST FIT FIELD CONDITIONS



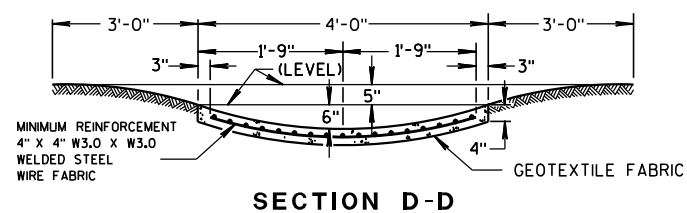
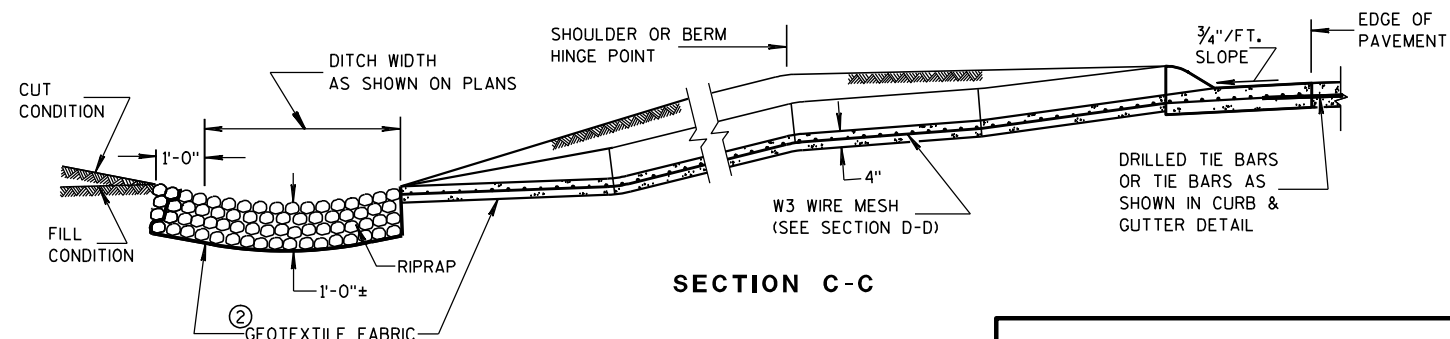
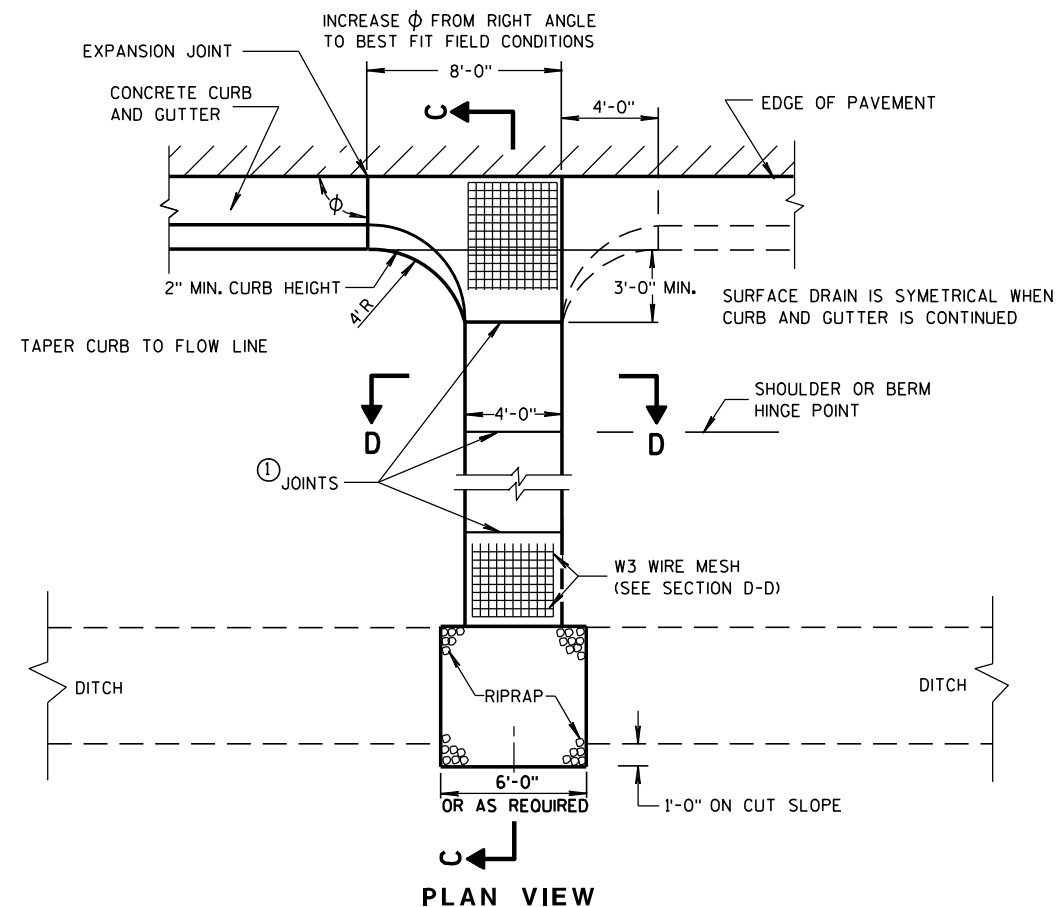
GENERAL NOTES

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

WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ① JOINTS SHALL BE 1/8 TO 1/4 INCH WIDE BY 1 1/2 INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

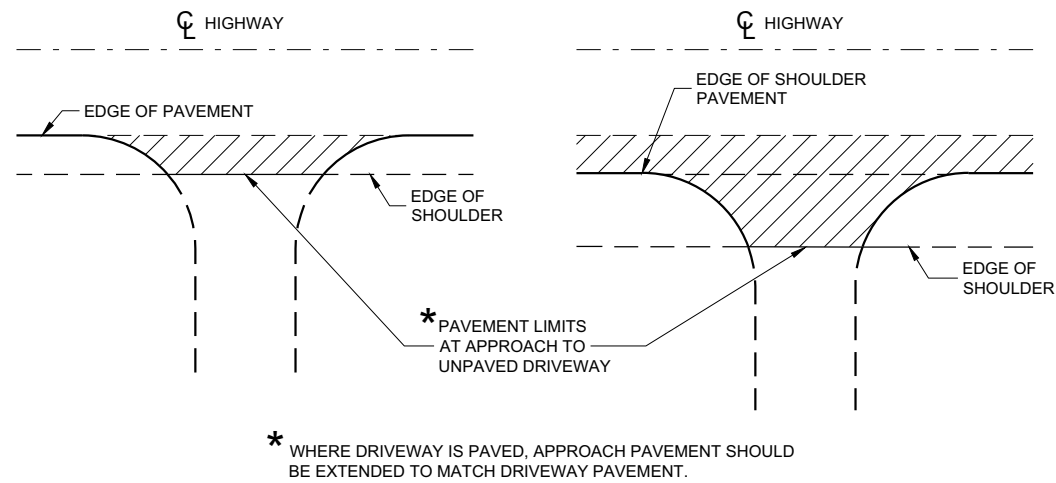
③ CONCRETE SURFACE DRAIN



CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



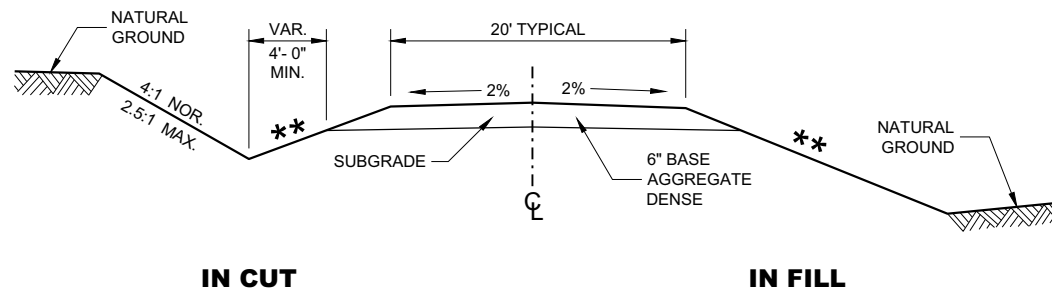
PLAN VIEW

(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW

(PAVED SHOULDER ON HIGHWAY)

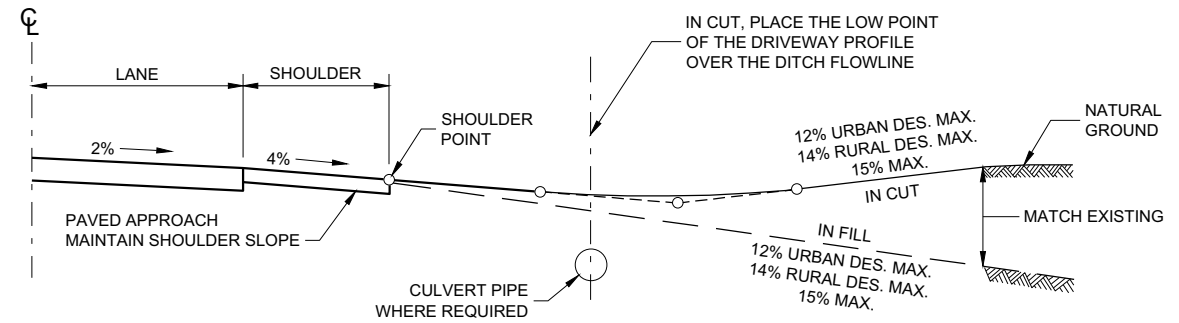
**RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB AND GUTTER OR SIDEWALK)**



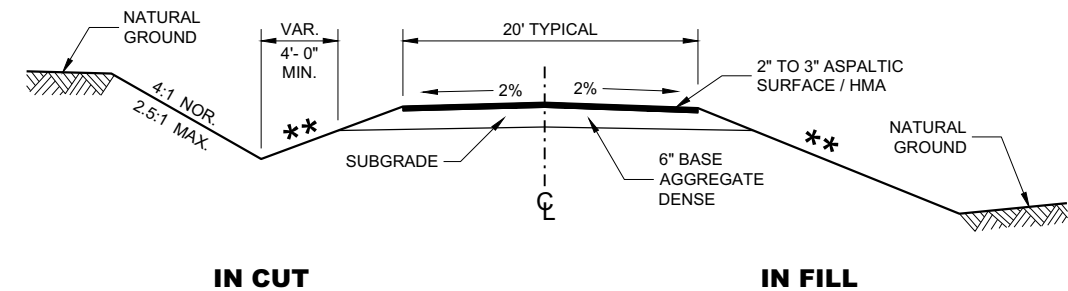
**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE**

** SLOPE CAN VARY WITH SPEED. SEE 11-45-30.6.2

POSTED SPEED MPH	MAX. SLOPE
<35	4:1
≥ 35 TO < 60	6:1
≥60	10:1

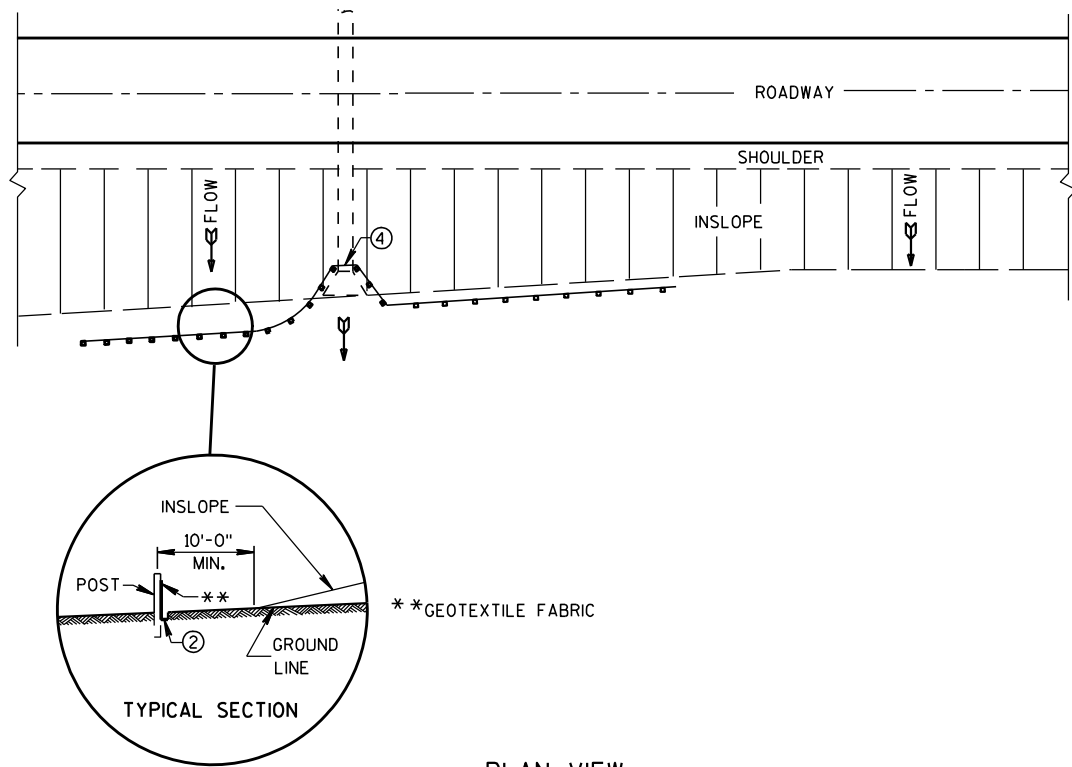


TYPICAL DRIVEWAY PROFILES

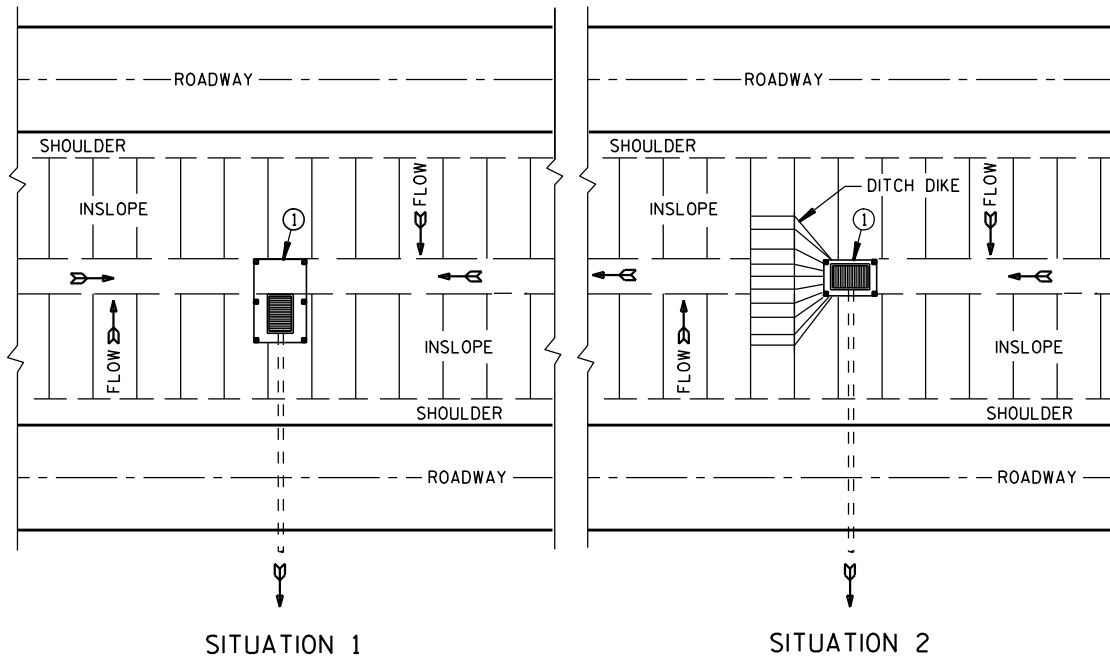


**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE**

DRIVEWAYS WITHOUT CURB AND GUTTER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2017 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

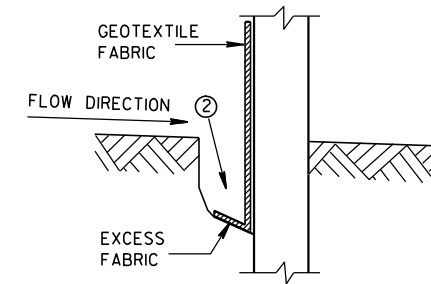


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

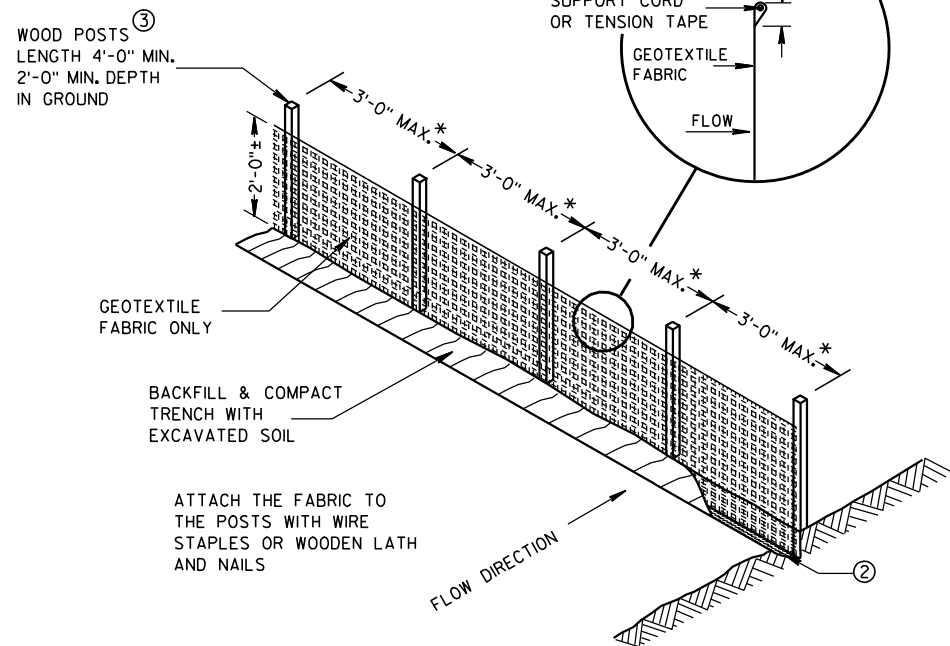
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



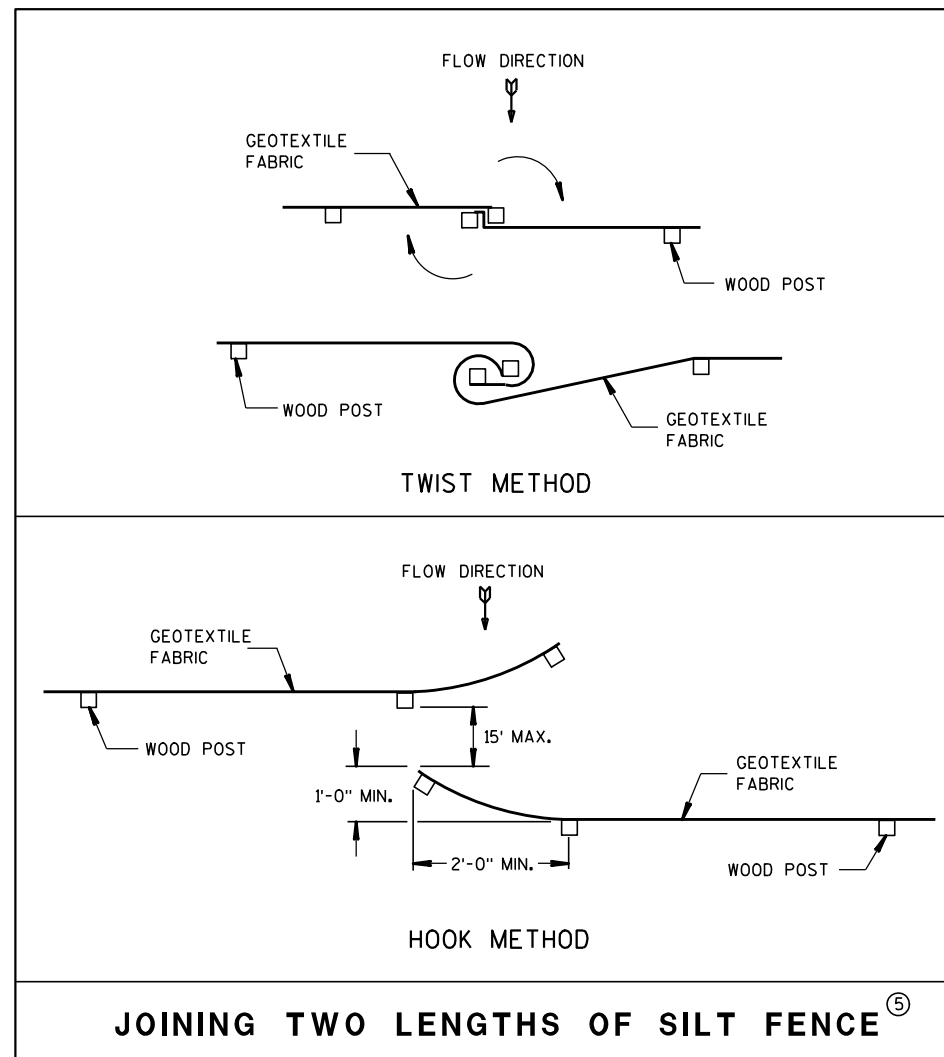
TRENCH DETAIL

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

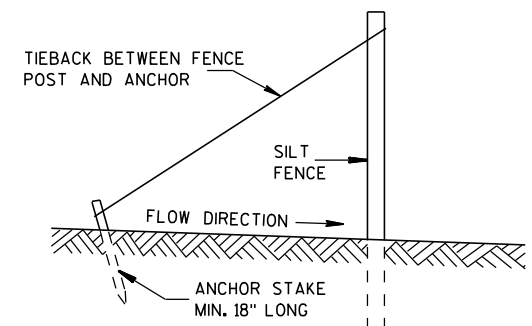


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤

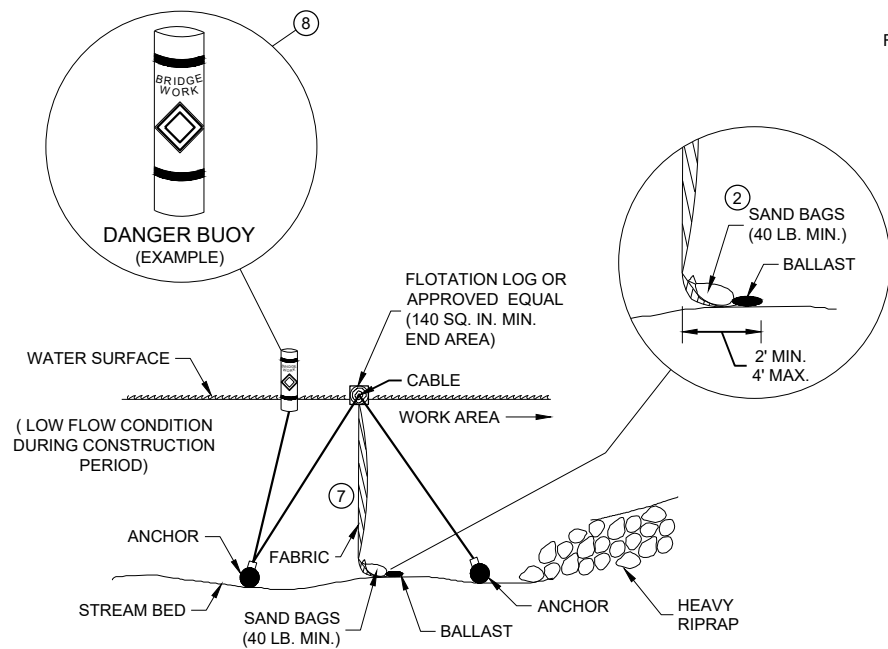


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

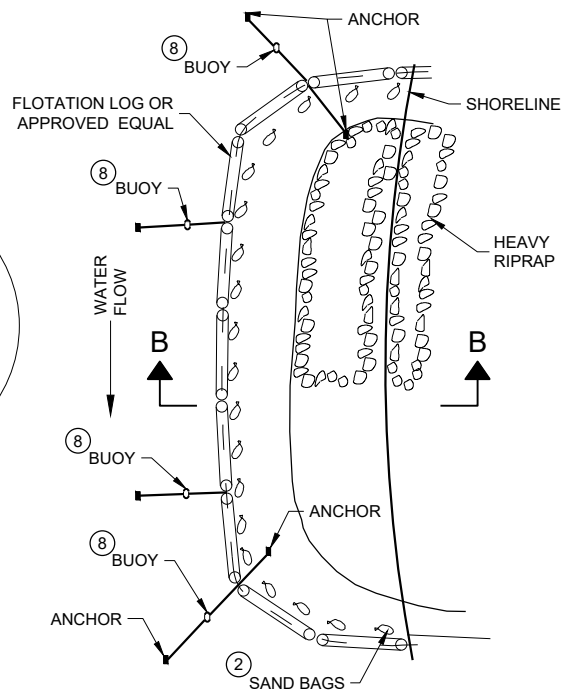
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

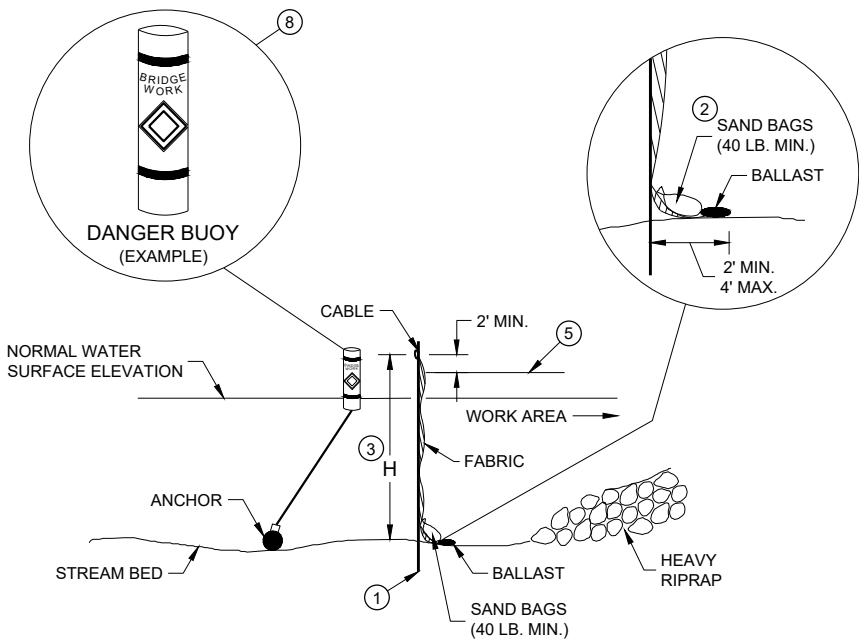


SECTION B - B

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

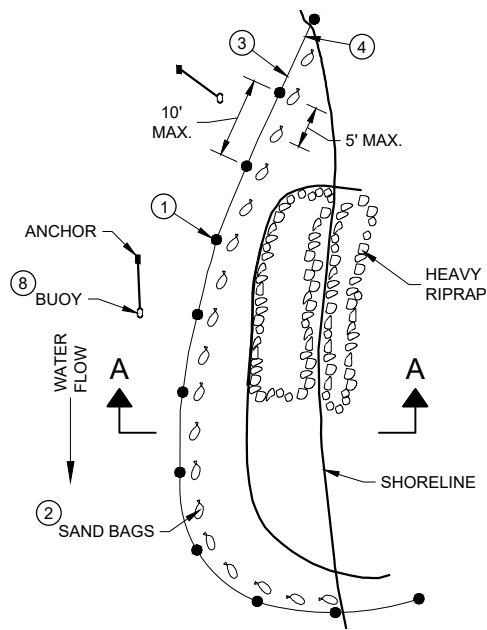


PLAN VIEW



SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW

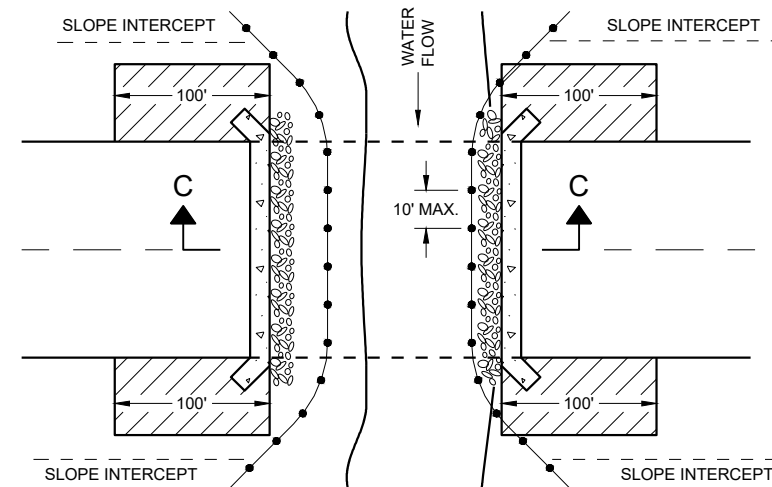
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

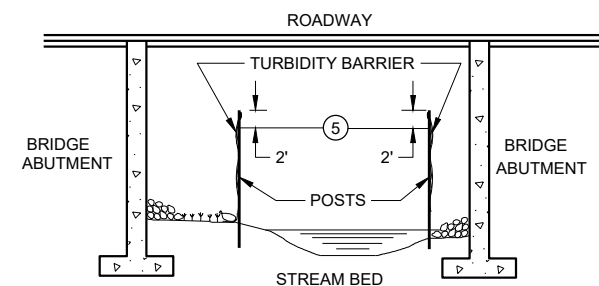
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



SECTION C - C

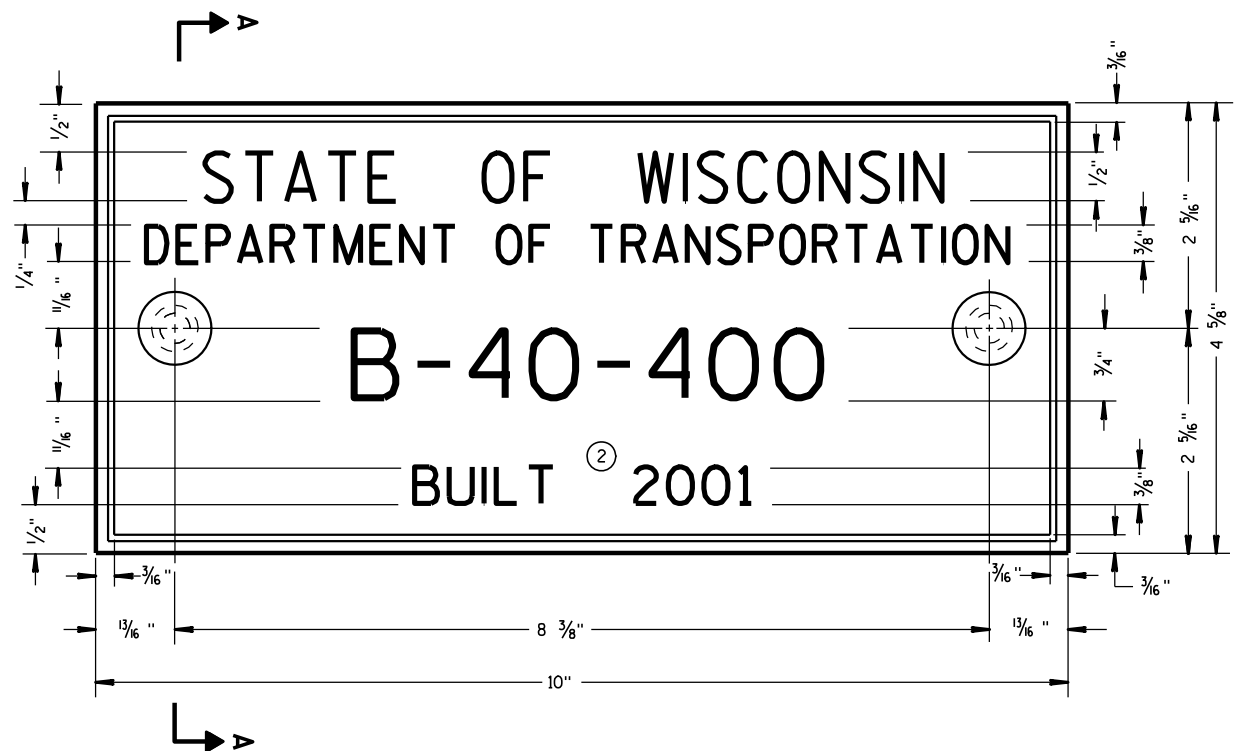
**TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES**

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



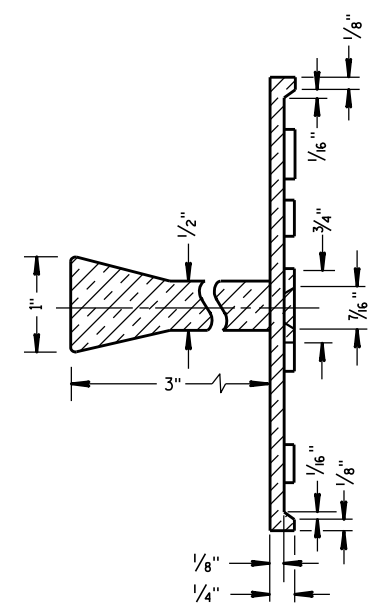
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

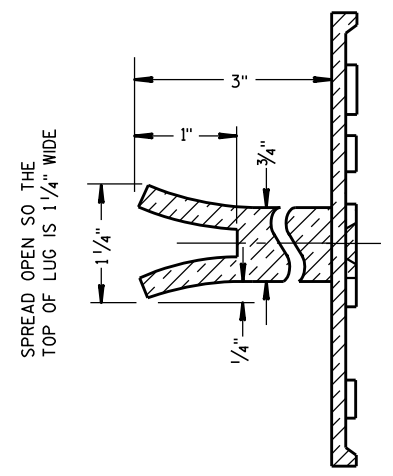
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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



SECTION A-A



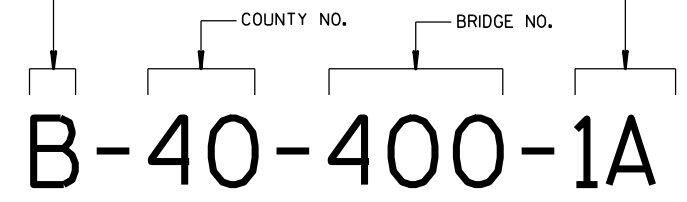
ALTERNATE LUG

6

6

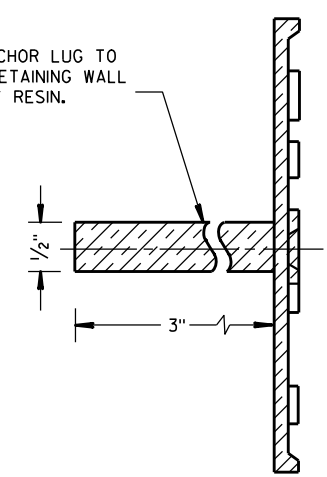
FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

- B = BRIDGE
- C = CULVERT
- R = RETAINING WALL
- UNIT NO. FOR MULTIPLE UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

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

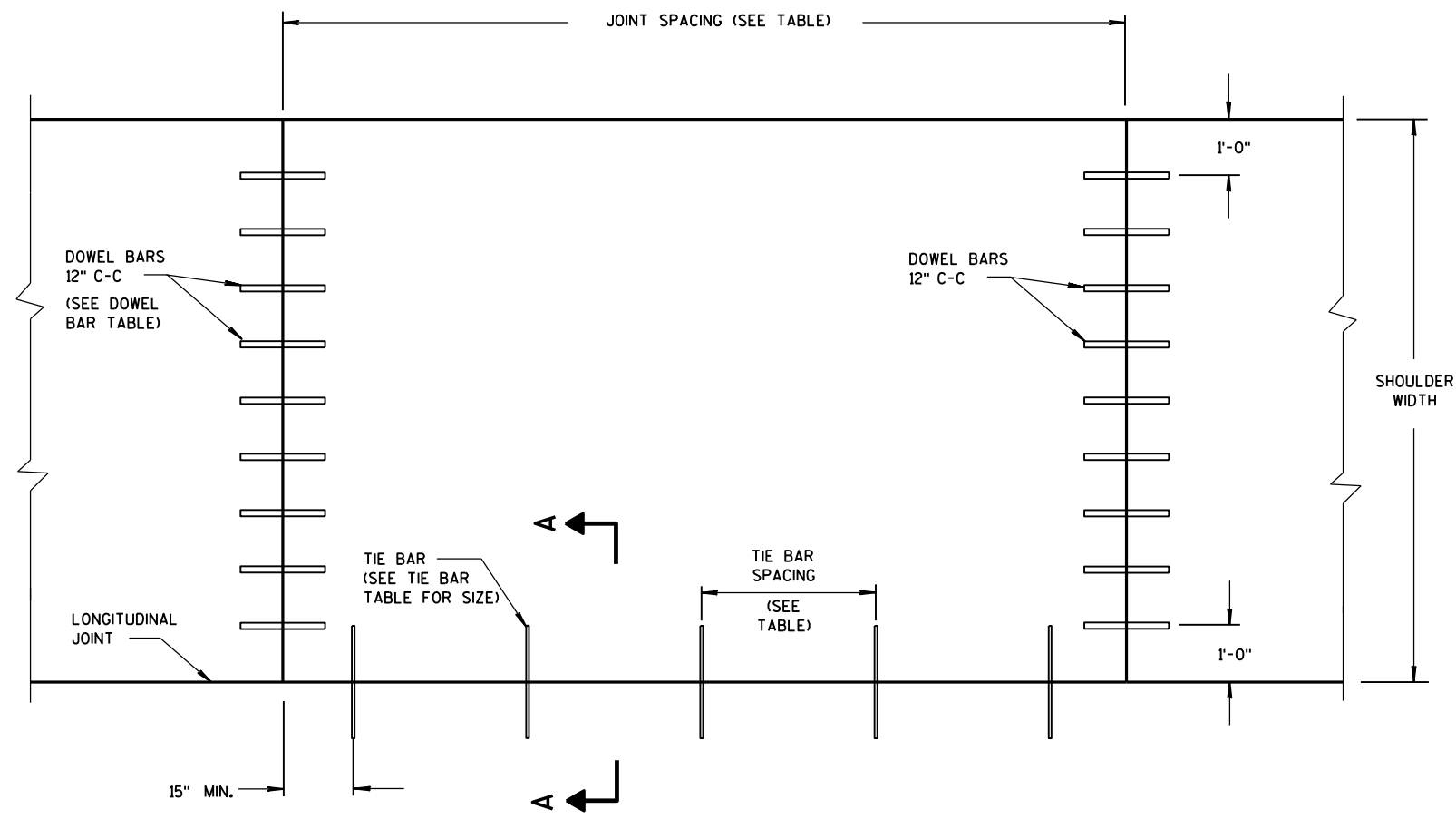


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

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



PLAN VIEW
CONCRETE PAVEMENT SHOULDER

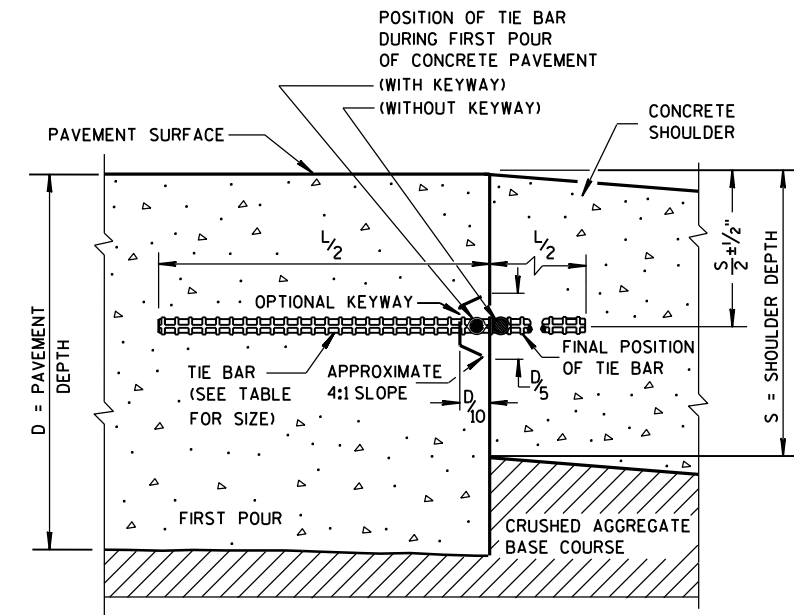
GENERAL NOTES

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.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

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



SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4*	30"	24" **

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

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

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

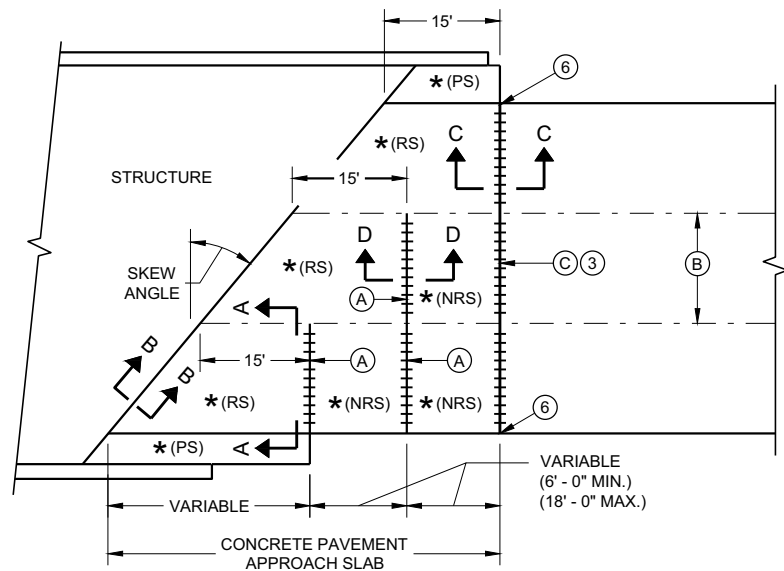
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER***	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

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

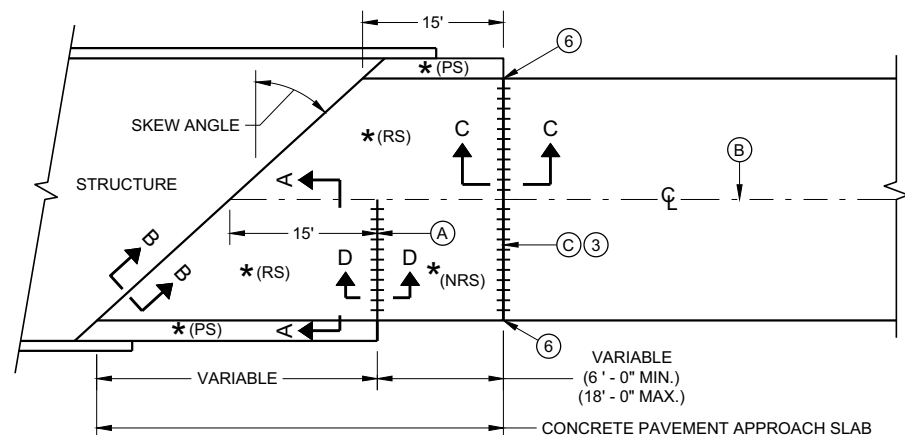
CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

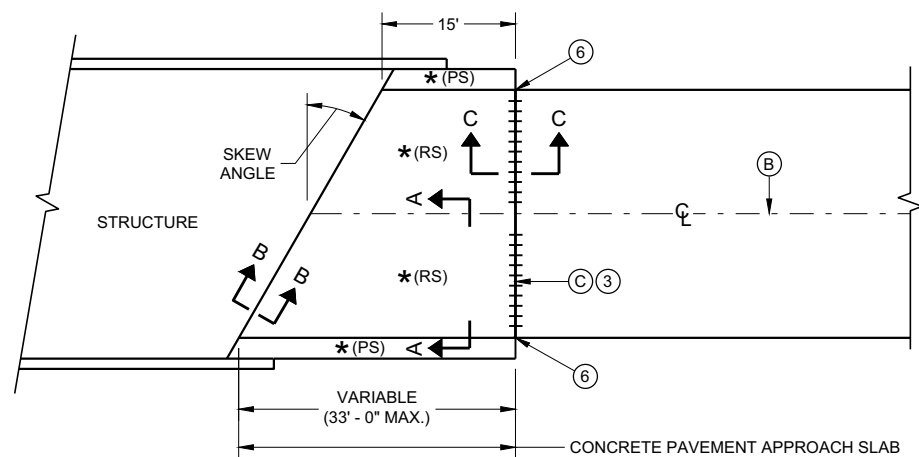
APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



**SKewed Approach
(Pavement more than two lanes)**

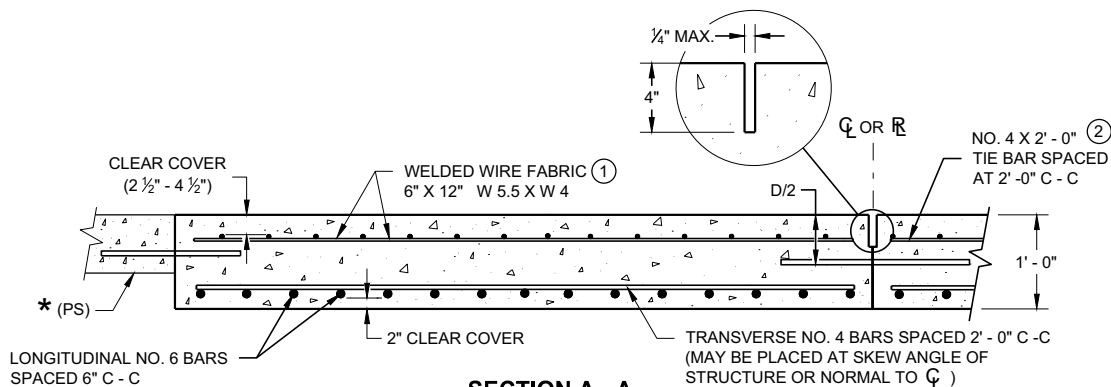


**SKews > 20°
(Pavement width ≤ 30')**

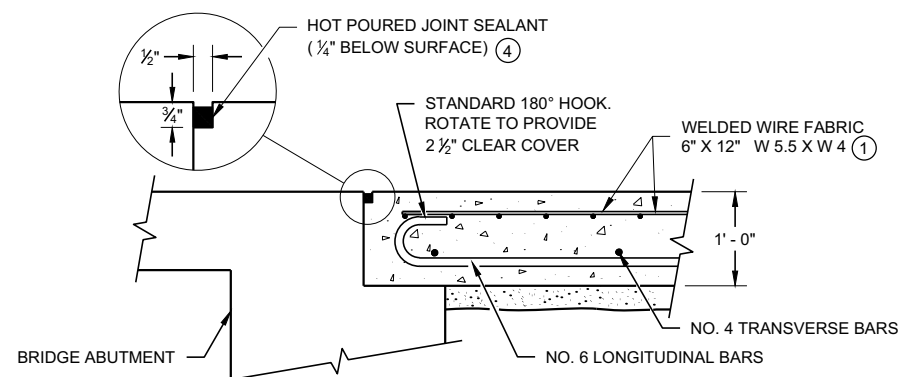


**SKews ≤ 20°
(Pavement width ≤ 30')**
Approach Slab and Adjacent Pavement

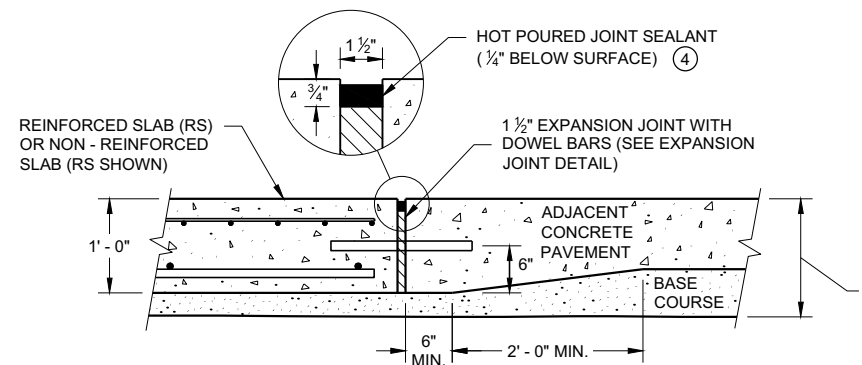
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



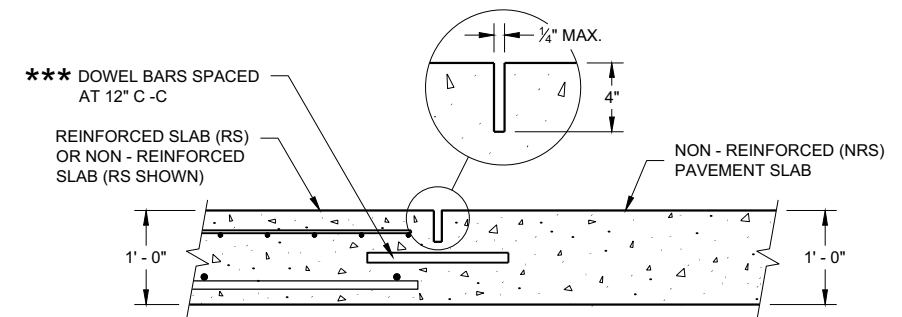
**SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT**



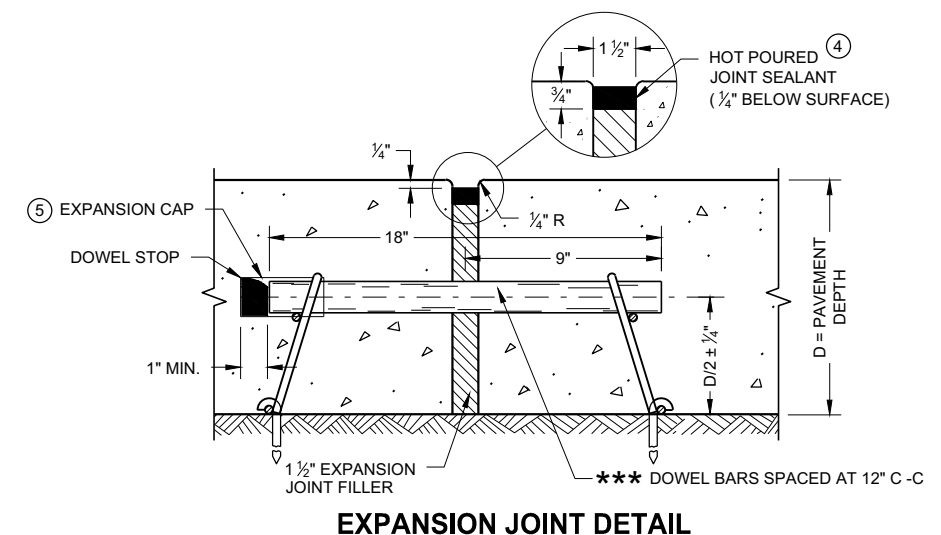
**SECTION C - C
TRANSITION DETAIL
Approach Slab to Adjacent Pavement**

GENERAL NOTES

- THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.
- TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.
- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
 - ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
 - ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
 - ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
 - ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
 - ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- (A) STANDARD CONTRACTION JOINT NORMAL TO C-C OR B-B.
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO C-C OR B-B.



**SECTION D - D
CONTRACTION JOINT**



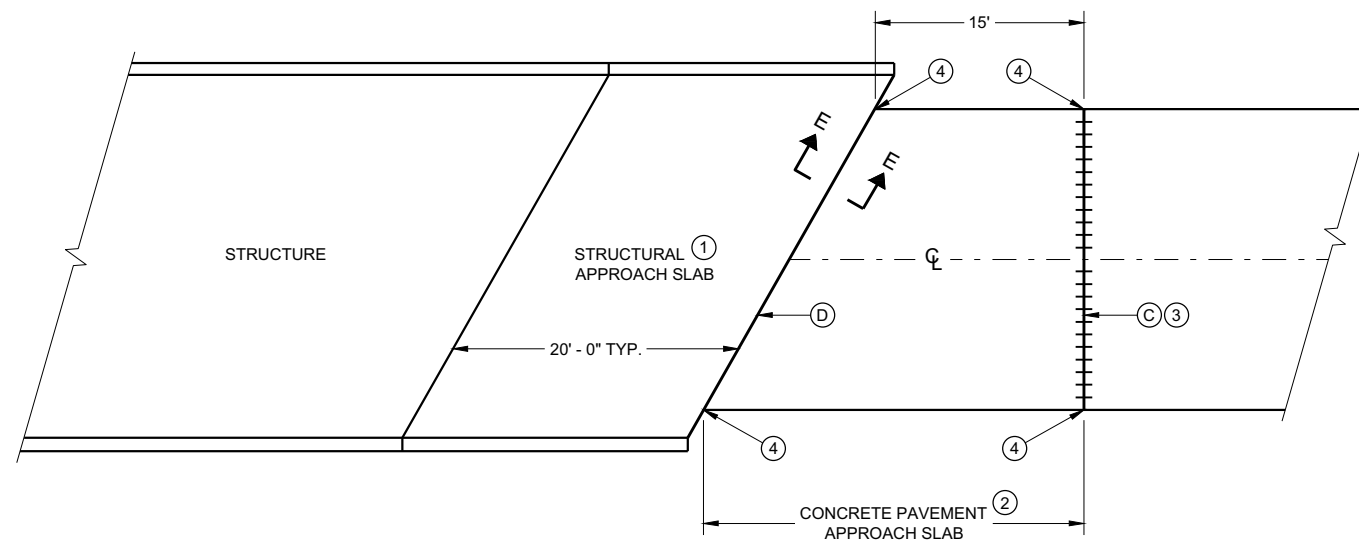
EXPANSION JOINT DETAIL

**CONCRETE PAVEMENT
Approach Slab**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Peter Kemp, P.E.
DATE /S/ PAVEMENT SUPERVISOR

FHWA

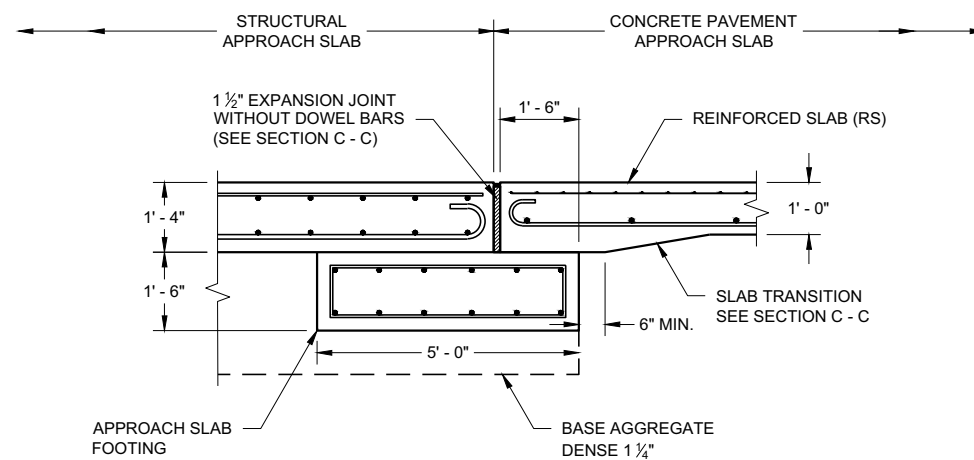


GENERAL NOTES

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

- ① SEE BRIDGE PLAN.
- ② CONFORM TO SDD 13B02 SHEET A FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO CL OR RL .
- Ⓓ 1½" EXPANSION JOINT (NO DOWELS)

BRIDGE APPROACHES

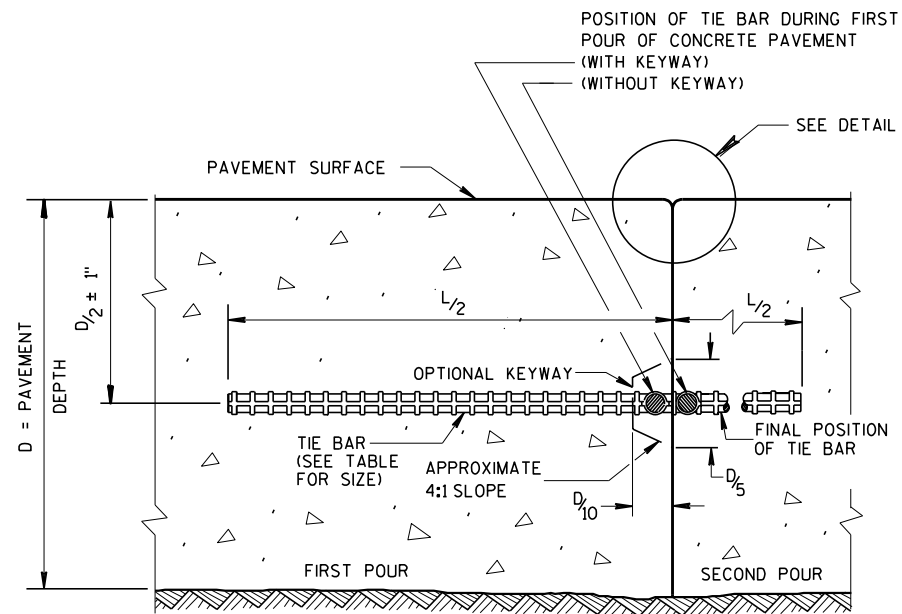


SECTION E - E
FOOTING DETAIL
STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

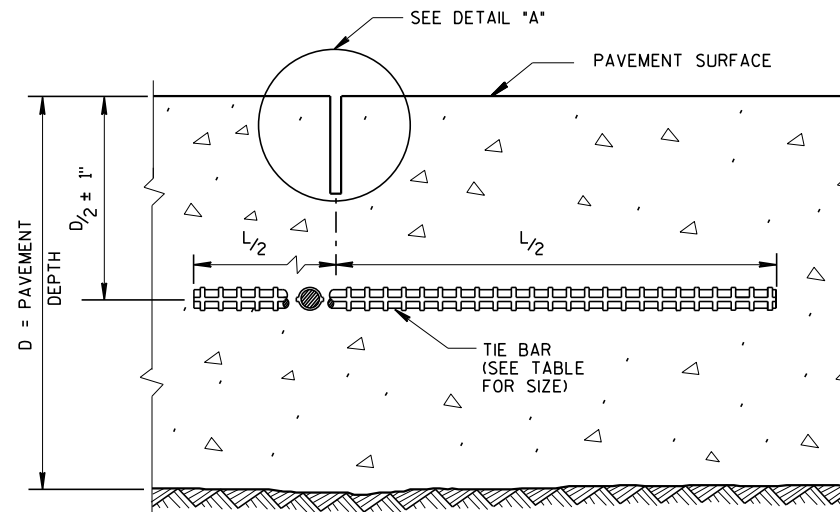
STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 November 2018 /S/ Peter Kemp P.E.
 DATE PAVEMENT SUPERVISOR
 FHWA



CONSTRUCTION JOINT



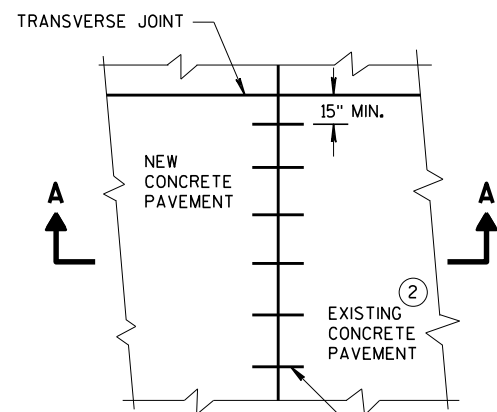
SAWED JOINT

GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

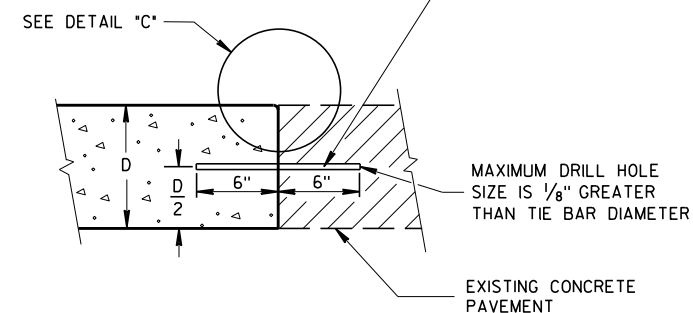
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

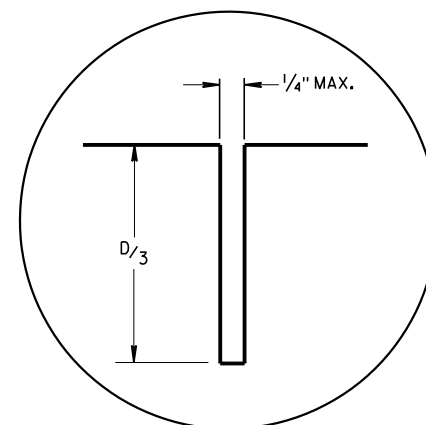


PLAN VIEW

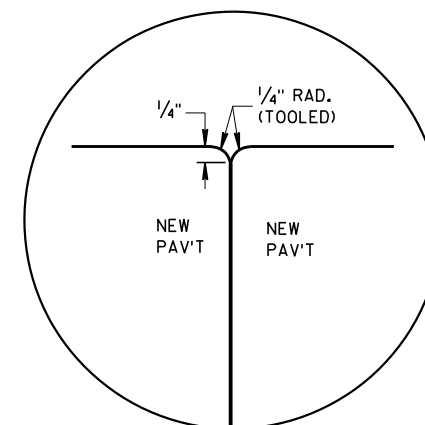
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



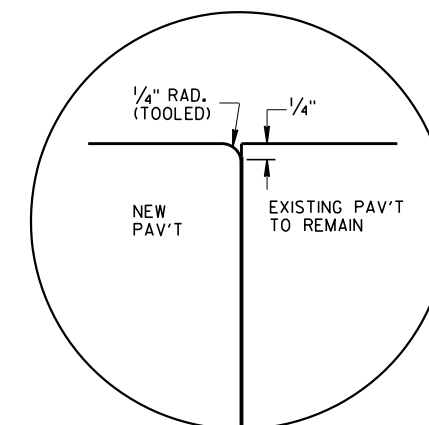
**SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT**



DETAIL "A"



DETAIL "B"



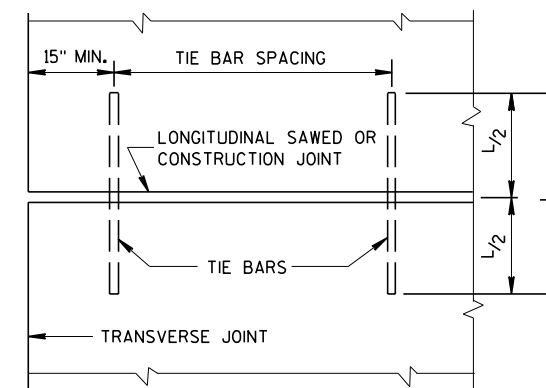
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

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

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

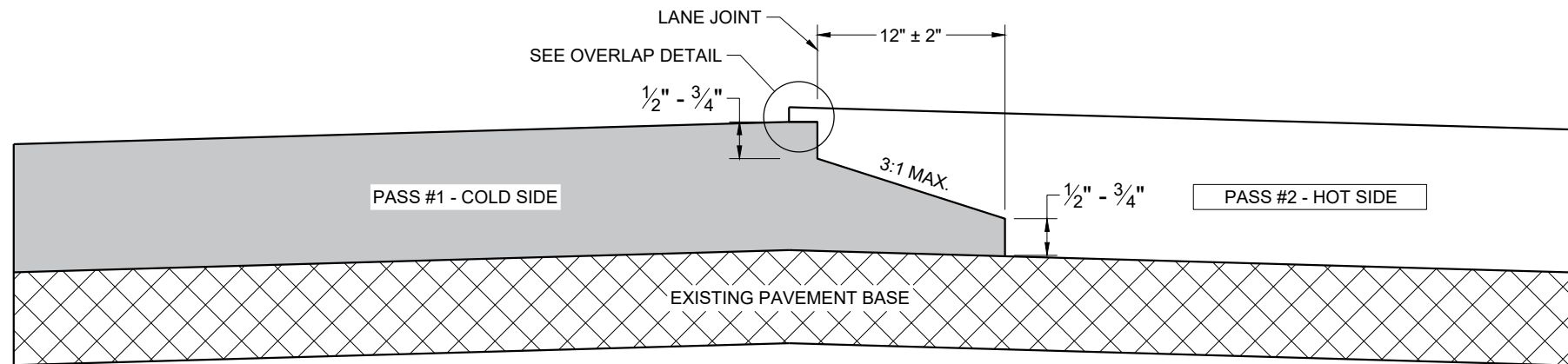


**PLAN VIEW
SHOWING LOCATION OF TIE BARS**

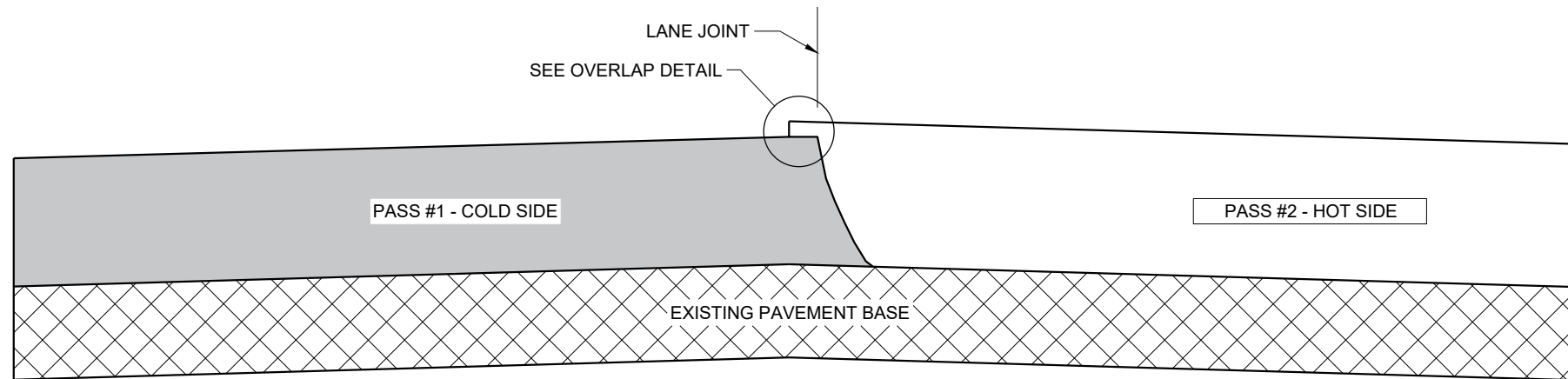
**CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

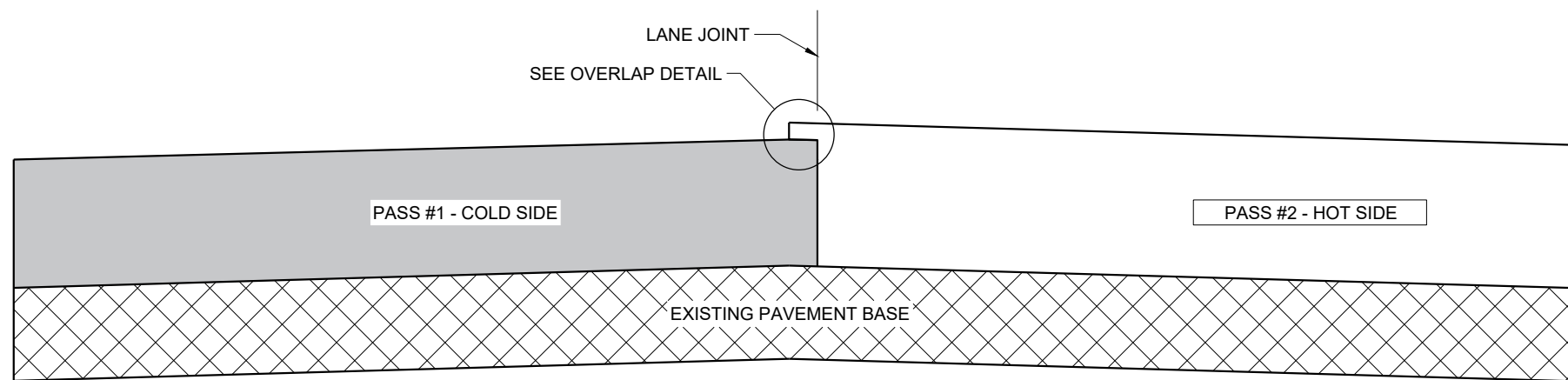
APPROVED
March 2018 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



TYPICAL PAVEMENT CROSS SECTION NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION VERTICAL JOINT (MILLED)

GENERAL NOTES

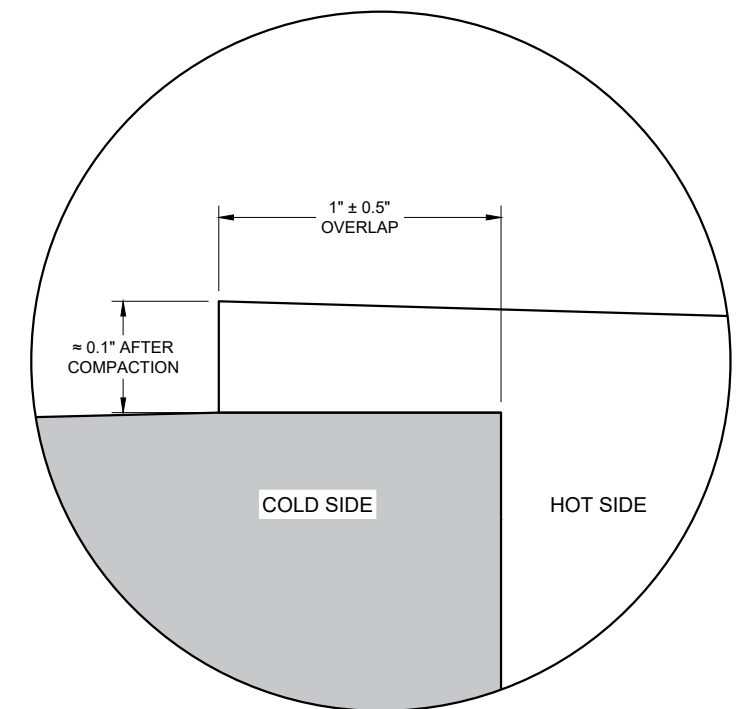
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

6

6

SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

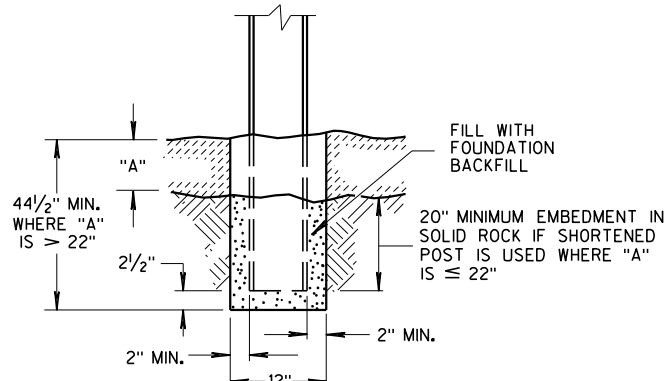
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

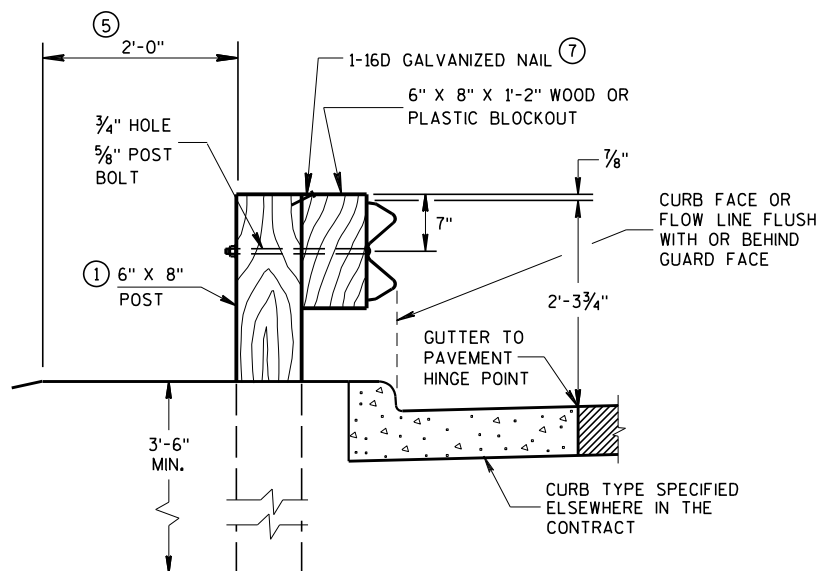
GENERAL NOTES

- ① W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS. DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.
- ② USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.
- ③ INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ④ USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
- ⑤ IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
- ⑥ IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY.
- ⑦ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

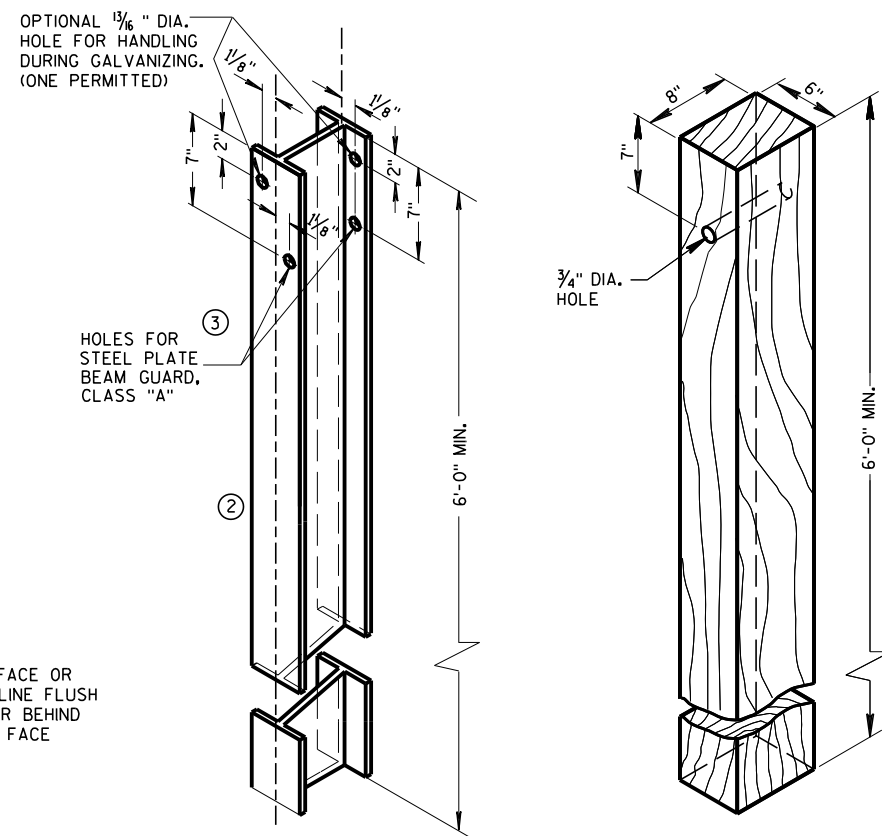
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



END VIEW SETTING STEEL OR WOOD POST IN ROCK ⑥

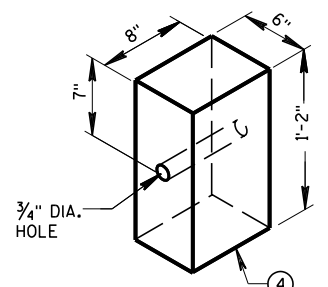


END VIEW LOCATED ALONG A CURBED ROADWAY

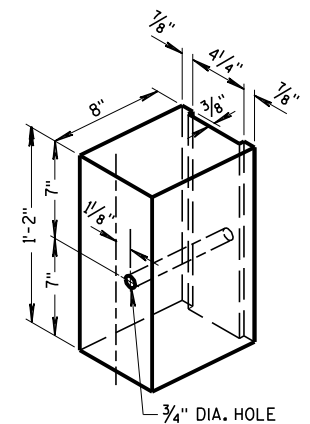


STEEL POST & HOLE PUNCHING DETAIL (W6 X 9) ①
ALL HOLES 3/8" DIAMETER EXCEPT AS NOTED

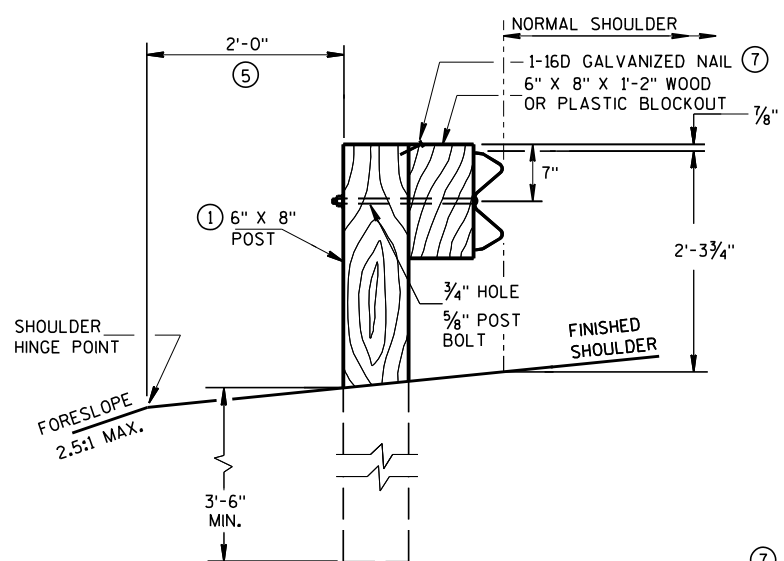
WOOD POST (6" X 8") NOMINAL



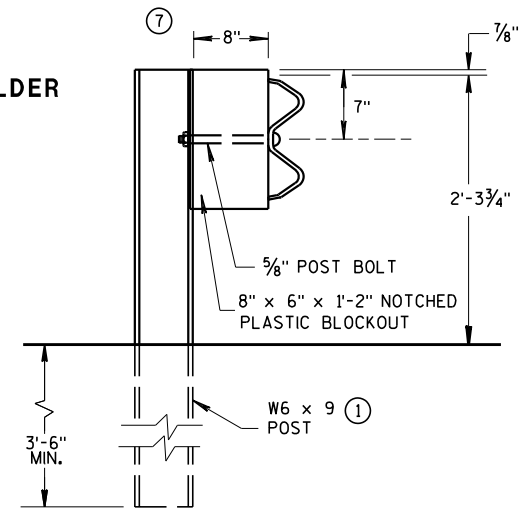
WOOD OR PLASTIC BLOCKOUT FOR WOOD POSTS



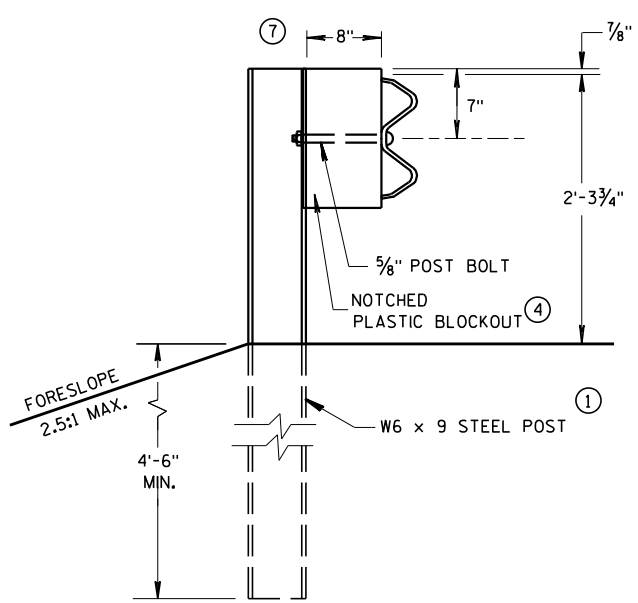
TYPICAL NOTCHED PLASTIC BLOCKOUT FOR STEEL POSTS ①



END VIEW LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION

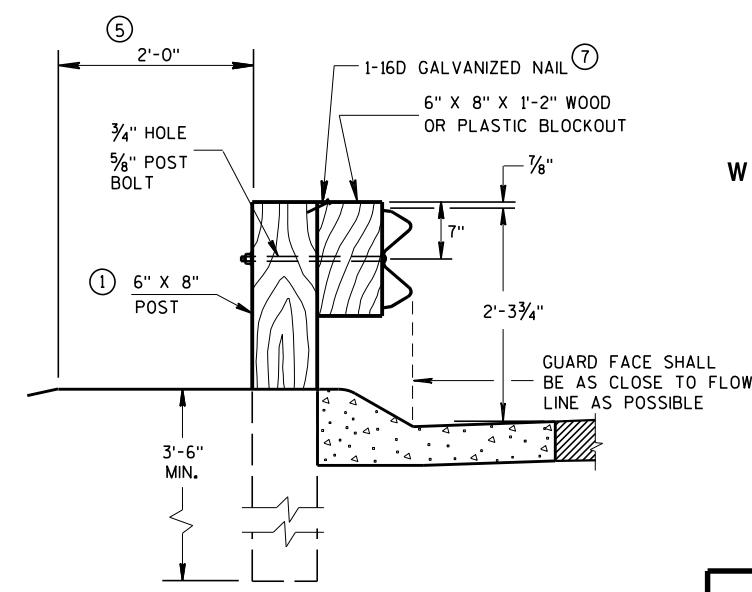


END VIEW STEEL POST & NOTCHED PLASTIC BLOCKOUT ALTERNATIVE STANDARD INSTALLATION

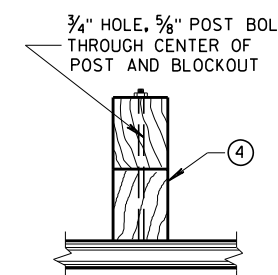


END VIEW LONGER POST AT HALF POST SPACING W BEAM (LHW)

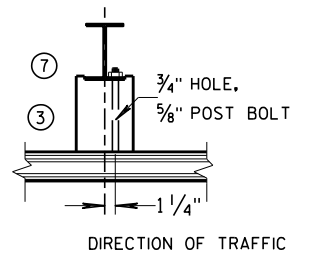
TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD



END VIEW LOCATED ALONG A MOUNTABLE CURBED ROADWAY



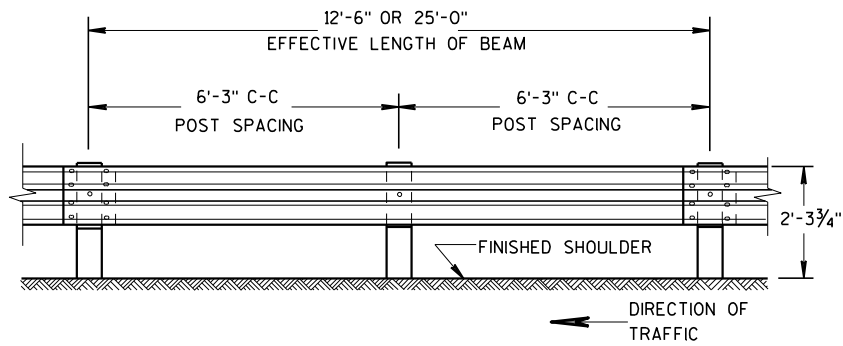
PLAN VIEW WOOD POST, BLOCKOUT & BEAM



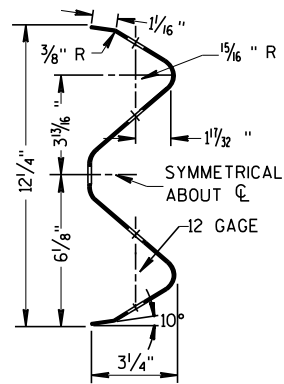
PLAN VIEW STEEL POST, NOTCHED PLASTIC BLOCKOUT & BEAM

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

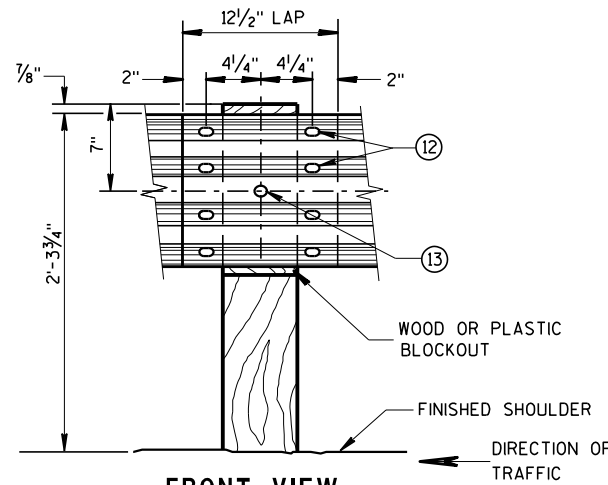
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



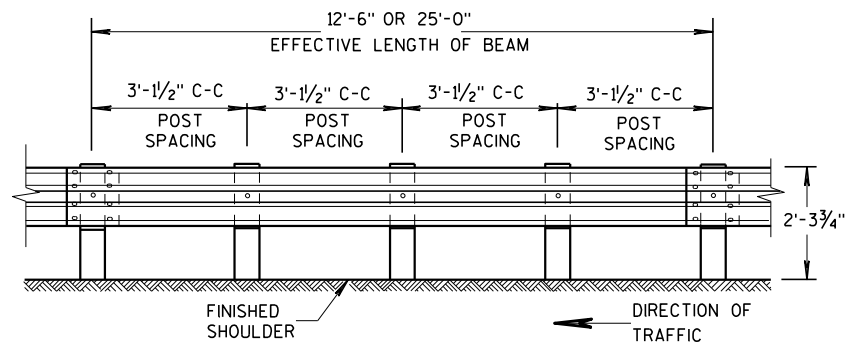
SECTION THRU W BEAM



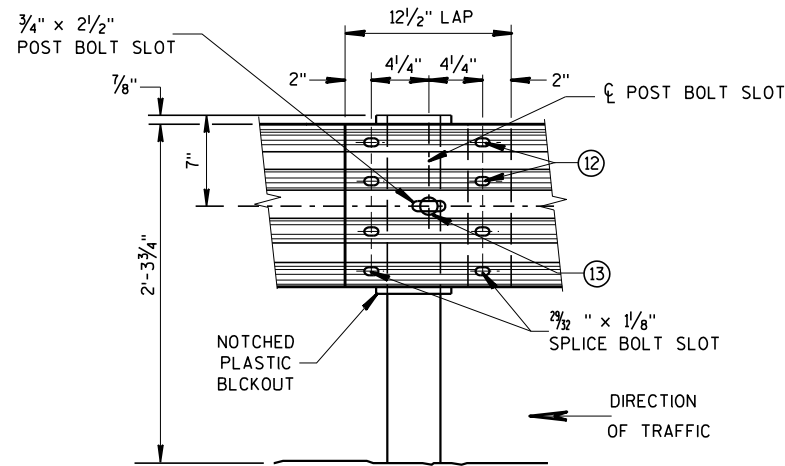
**FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL**

GENERAL NOTES

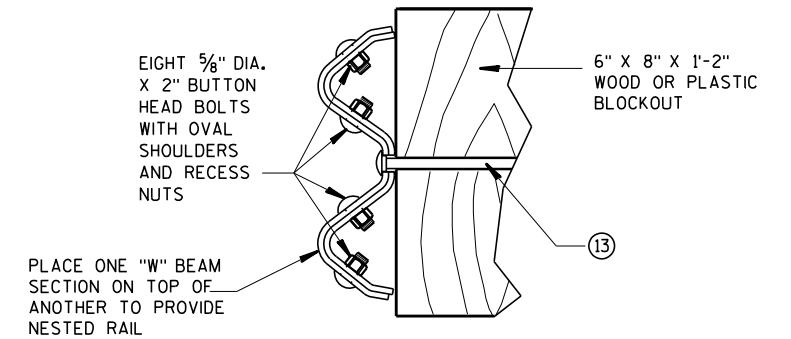
- FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
 - ⑫ 8 -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



**FRONT VIEW
POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)**

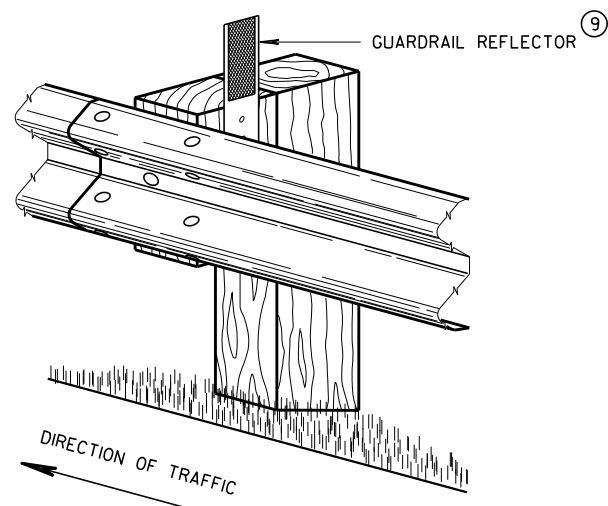


**FRONT VIEW
BEAM SPLICE AT STEEL POST
TYPICAL SPlicing DETAILS
OF STEEL PLATE BEAM GUARD**

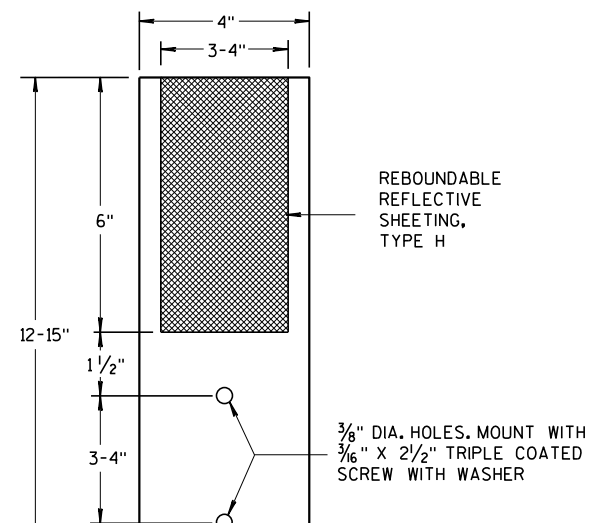


NESTED W BEAM (NW)
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

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



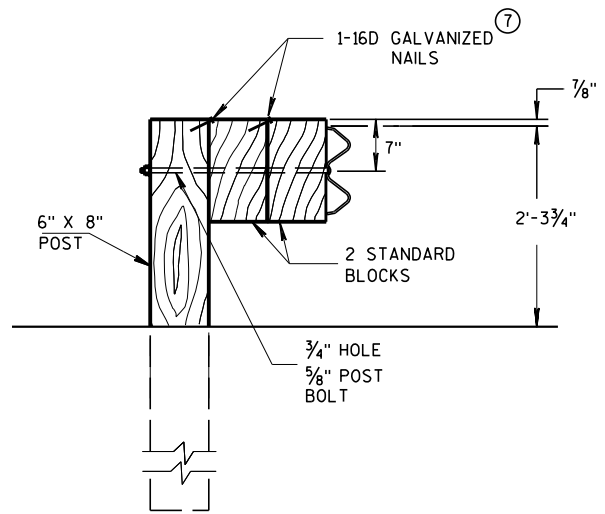
**4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION ***



4" x 12" GUARDRAIL REFLECTOR

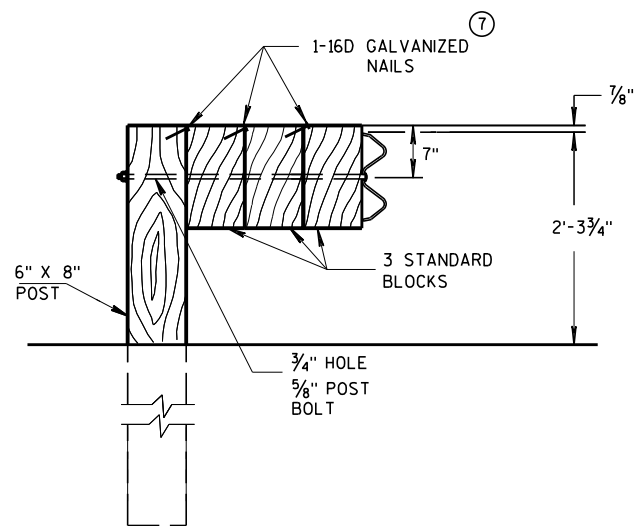
**STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

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

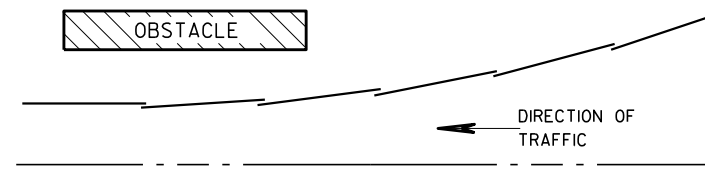


DETAIL FOR TRIPLE BLOCKS

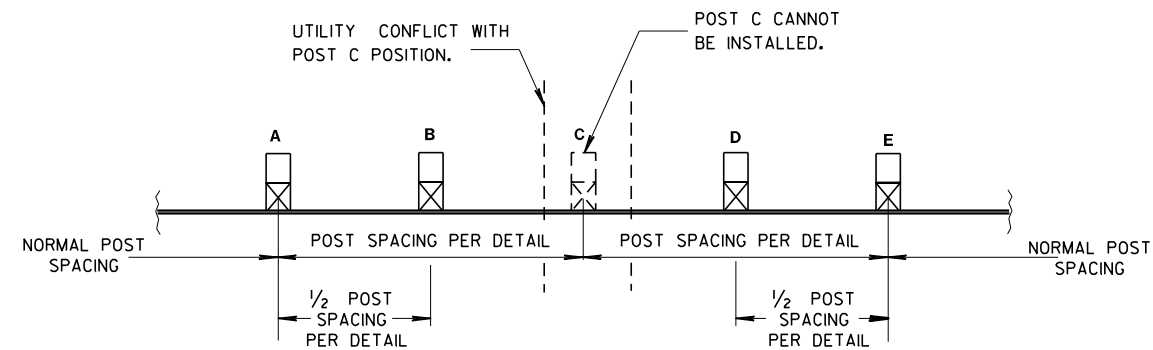
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

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

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

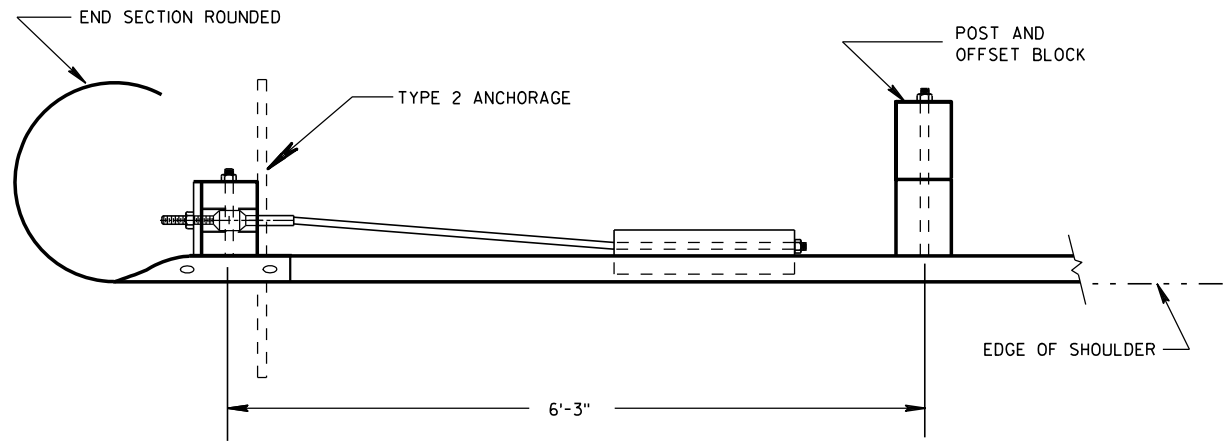


**PLAN VIEW
BEAM LAPPING DETAIL**

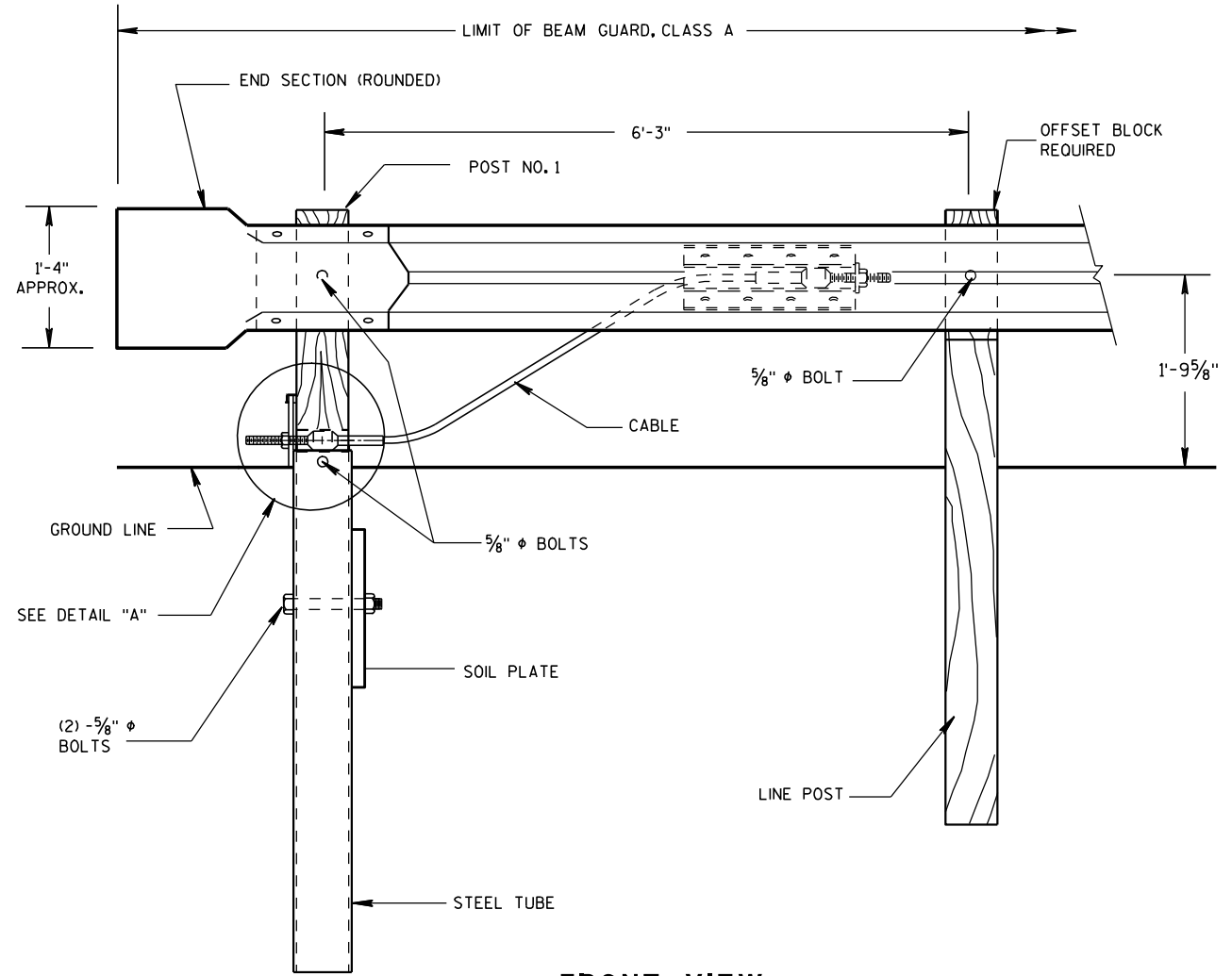


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017	/s/ Rodney Taylor
DATE	ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

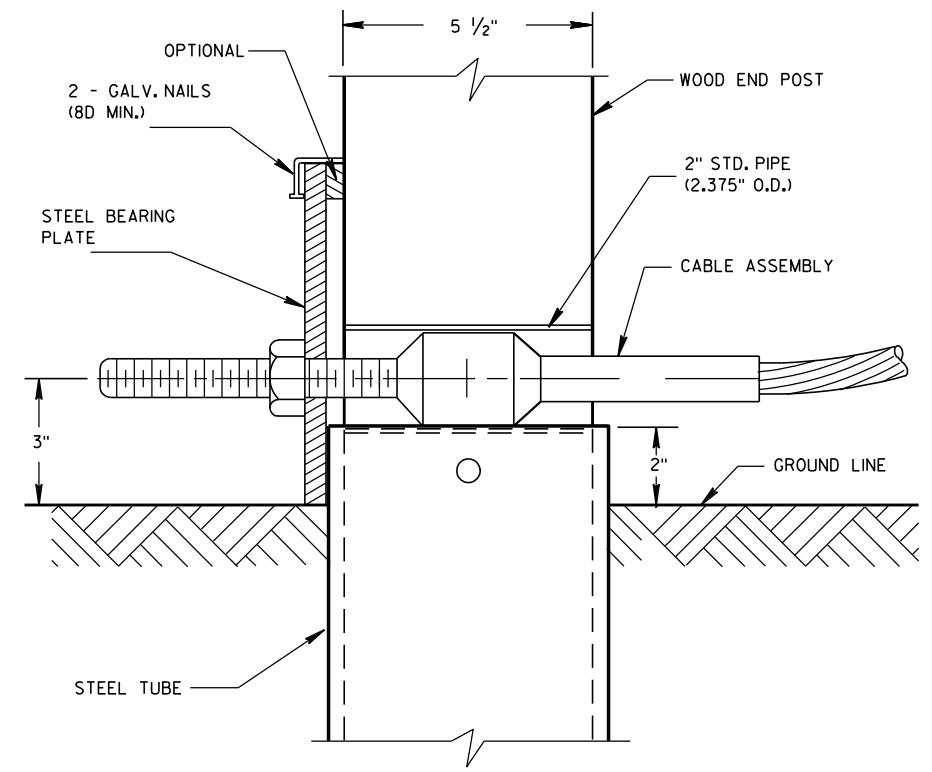


PLAN VIEW



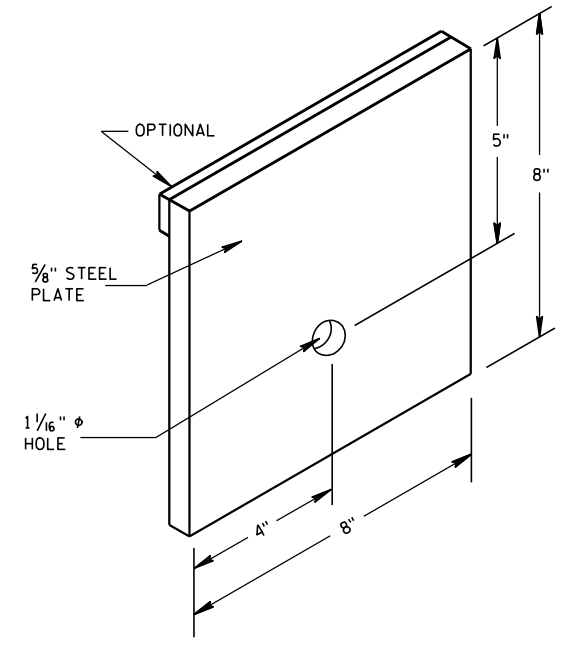
FRONT VIEW

END TREATMENT WITH TYPE 2 ANCHORAGE
(USE ON ONE-WAY ROADWAYS ONLY - DEPARTING END)



DETAIL "A"

POST NO. 1



STEEL BEARING PLATE

**ANCHORAGE FOR STEEL
PLATE BEAM GUARD
TYPE 2**

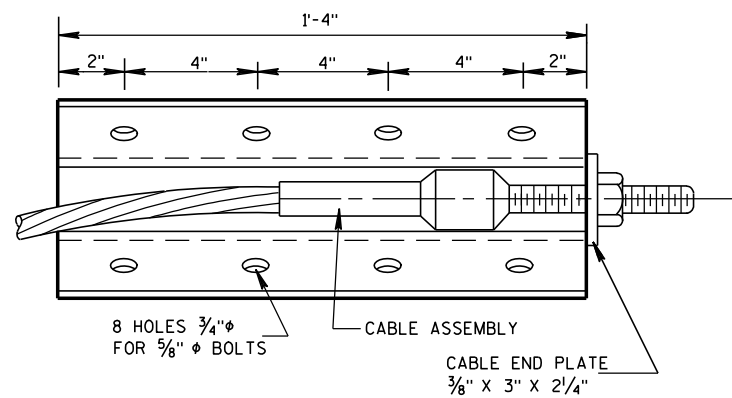
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

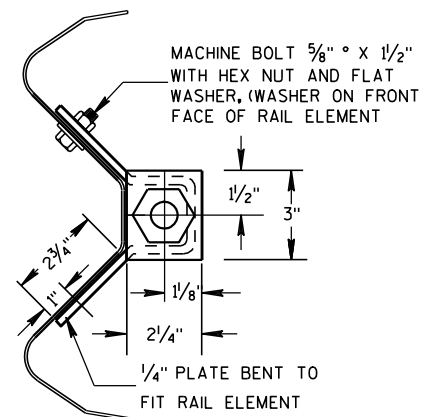
6

S.D.D. 14 B 16-4a

S.D.D. 14 B 16-4a

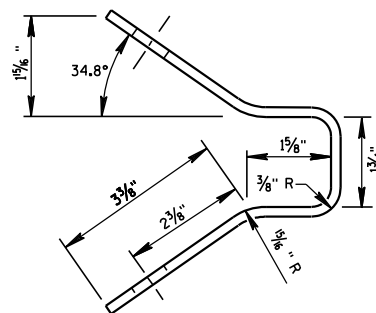


FRONT VIEW

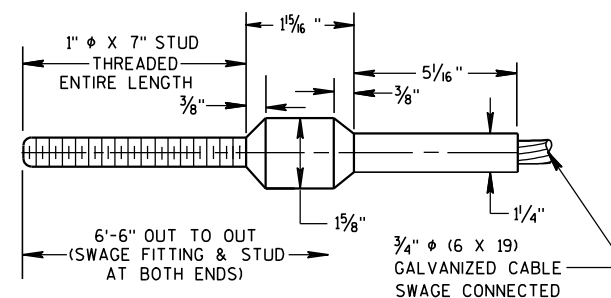


END VIEW

ANCHOR PLATE DETAIL



END VIEW OF BRACKET



CABLE ASSEMBLY

CABLE, SWAGE FITTING, STUD AND NUT SHALL DEVELOP A MINIMUM BREAKING STRENGTH OF 40,000 LB (TIGHTEN UNTIL TAUT)

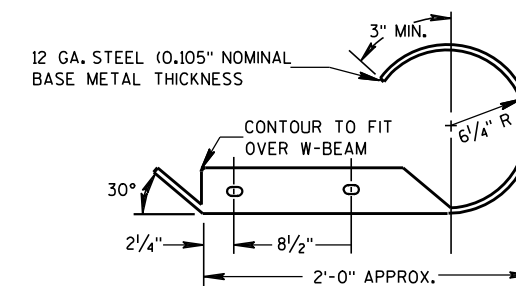
GENERAL NOTES

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.

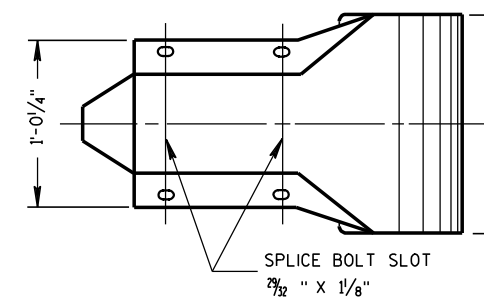
STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-500 GRADE B OR ASTM A-501.

POST NO. 1 SHALL BE WOOD BREAKAWAY POST INSERTED AND BOLTED INTO STEEL TUBE.

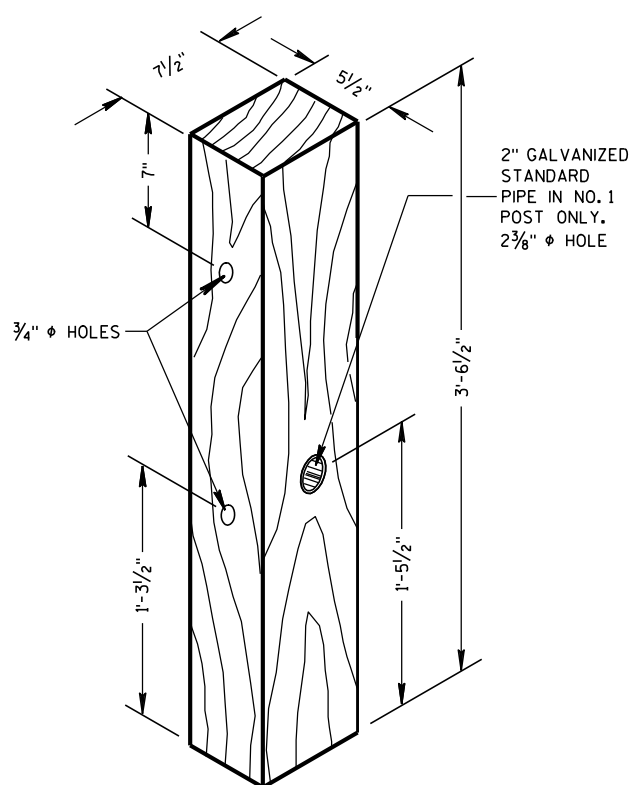
TYPE 2 ANCHORAGE SHALL CONSIST OF A STEEL TUBE, SOIL PLATE, WOOD BREAKAWAY POST, BEARING PLATE, ANCHOR PLATE, CABLE ASSEMBLY AND ALL ASSOCIATED HARDWARE. ALL STEEL PARTS SHALL BE GALVANIZED.



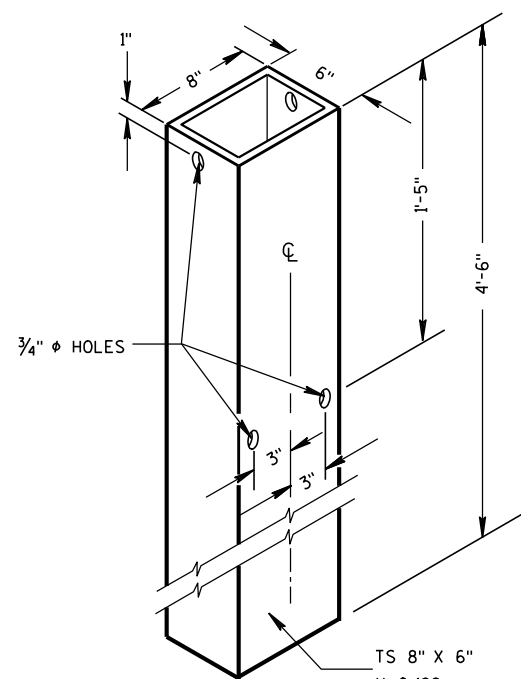
PLAN VIEW



FRONT VIEW
W BEAM END SECTION ROUNDED

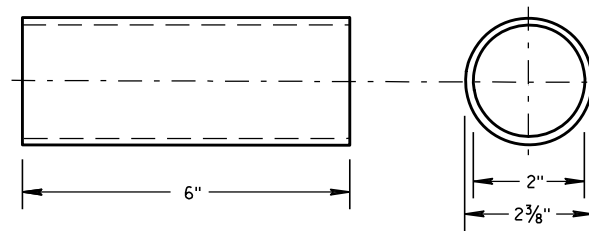


WOOD BREAKAWAY POST



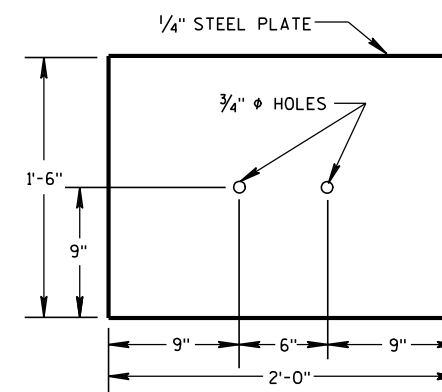
STEEL TUBE

STEEL TUBE SHALL CONFORM TO REQUIREMENTS OF ASTM A500



BREAKAWAY TERMINAL POST SLEEVE

GALVANIZED STANDARD STRENGTH STEEL PIPE, ASTM 53 GRADE "B"



SOIL PLATE

ANCHORAGE FOR STEEL PLATE BEAM GUARD TYPE 2

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/21/2007 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

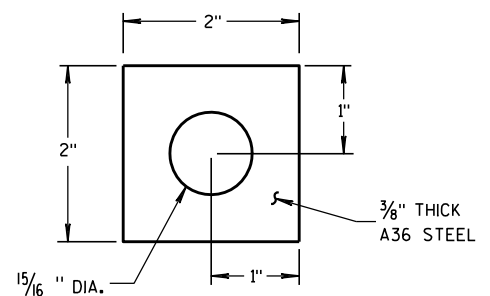
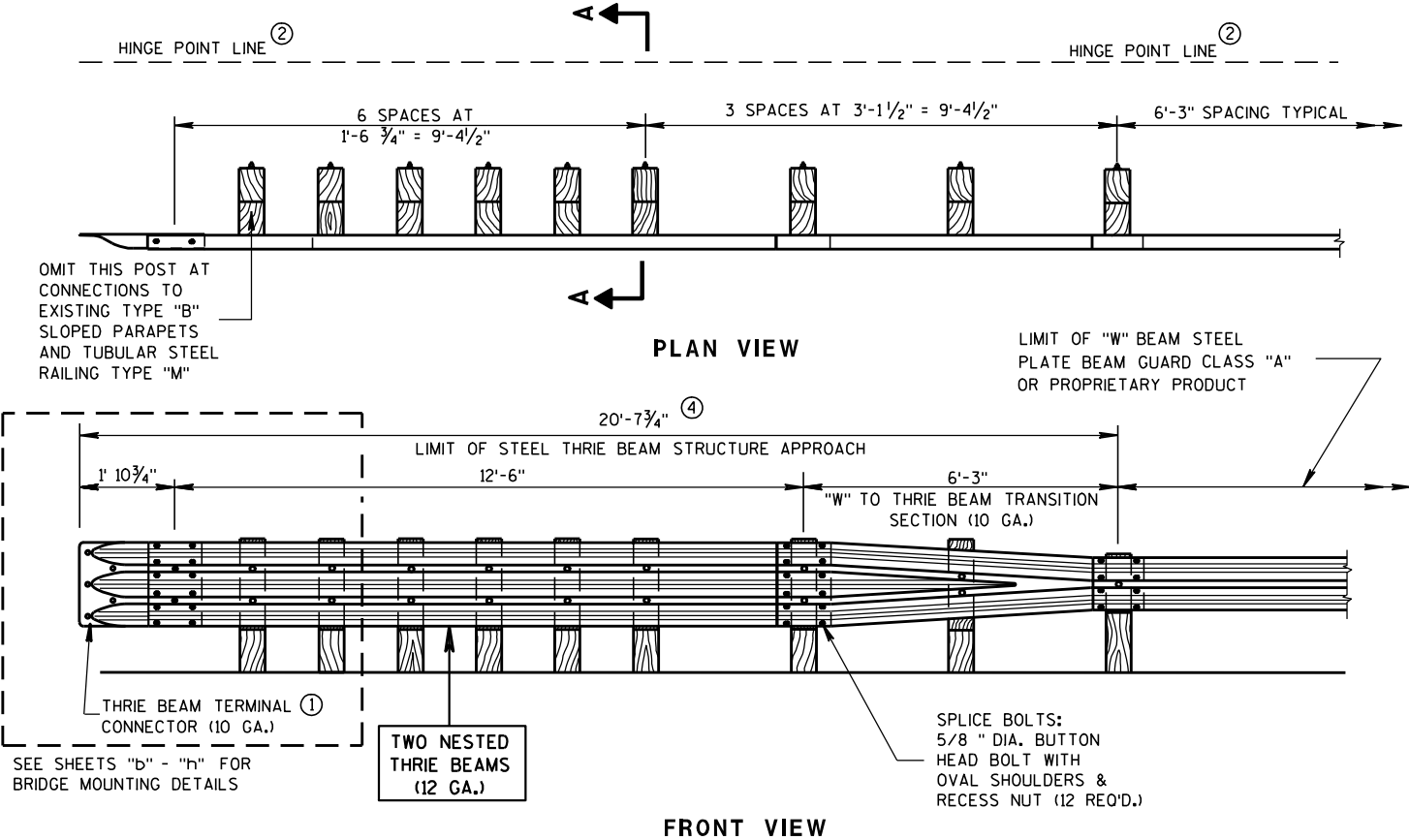
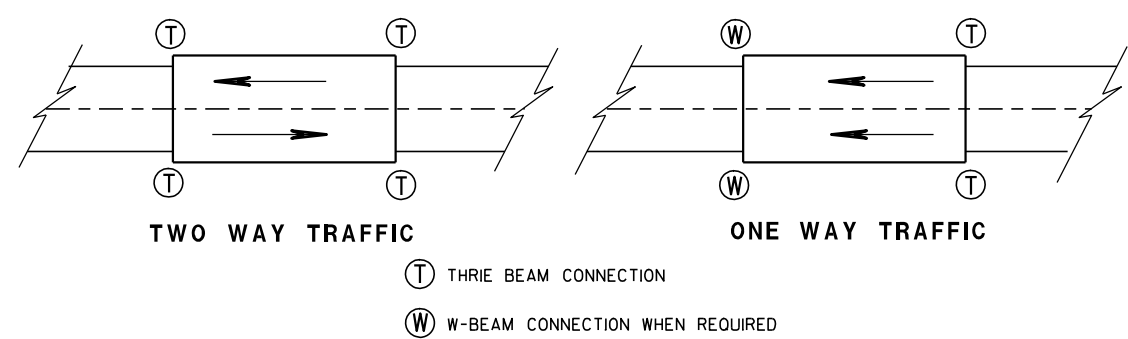


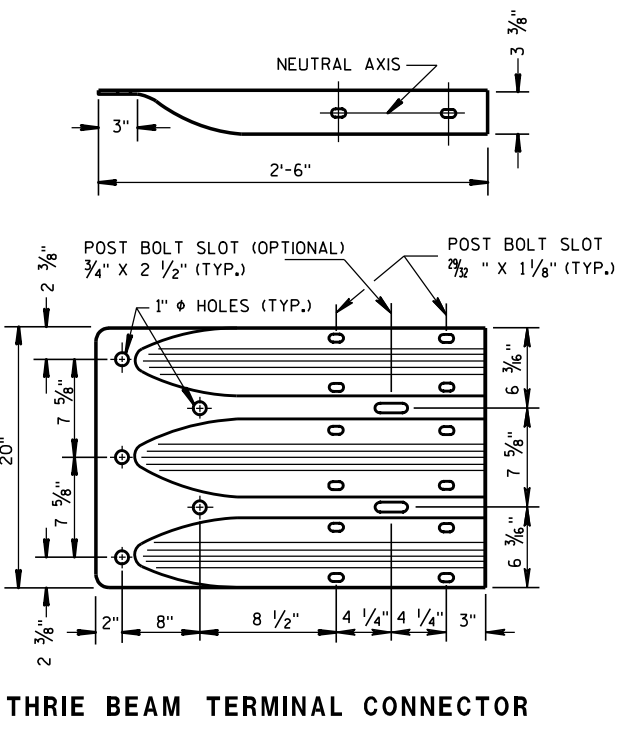
PLATE WASHER DETAIL

GENERAL NOTES

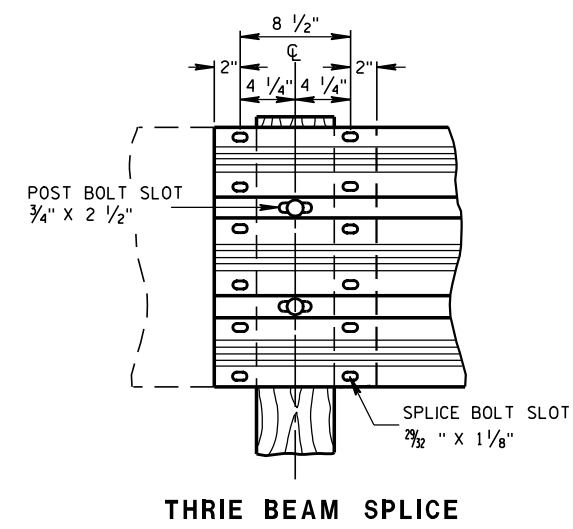
- BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS, DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".
 - DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.
 - IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.
- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
 - ② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.
 - ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
 - ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



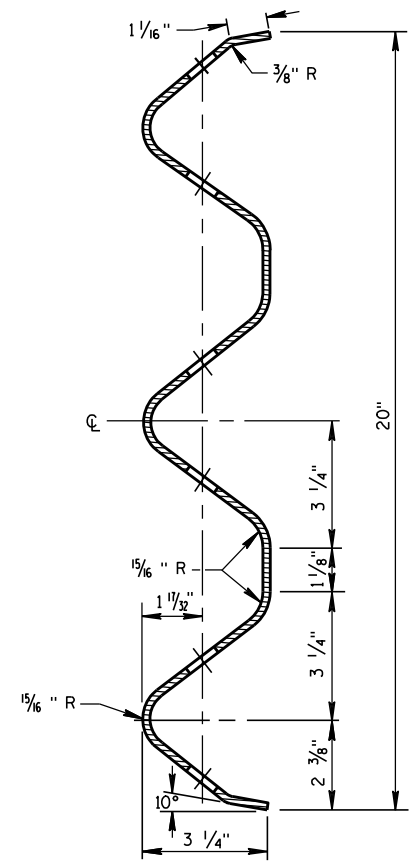
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



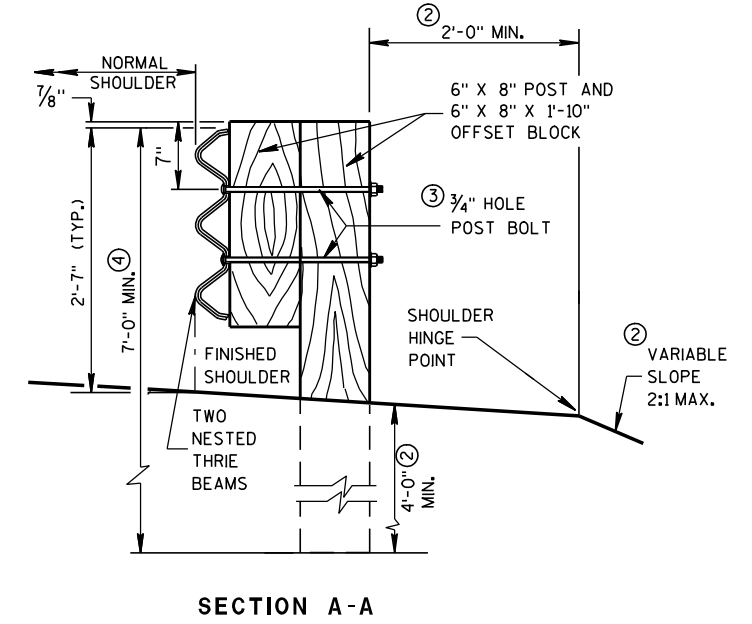
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU THRIE BEAM RAIL ELEMENT



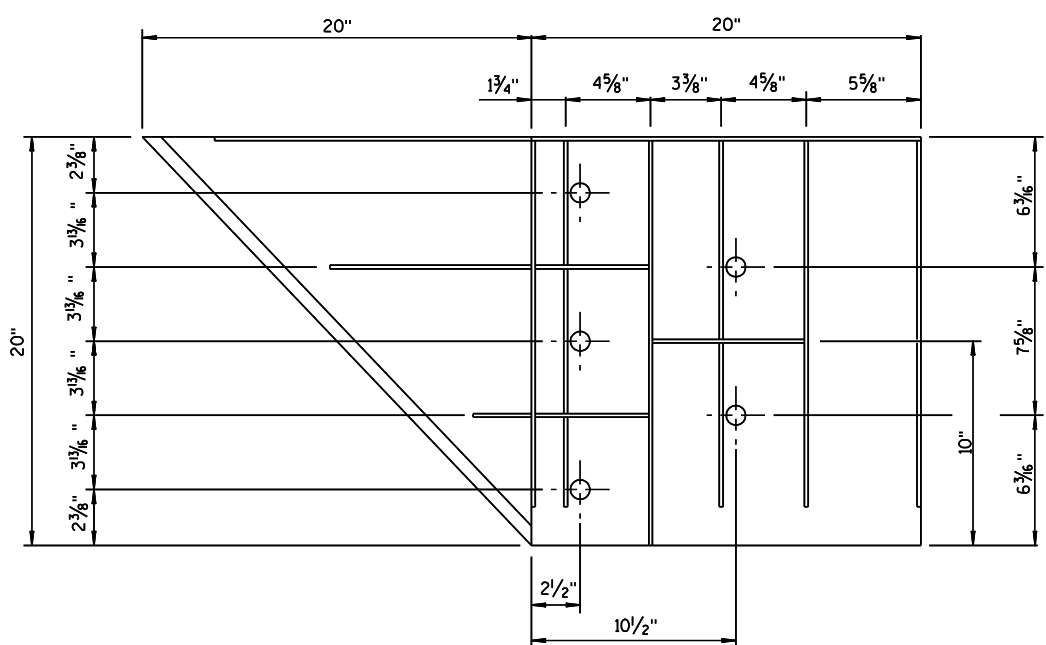
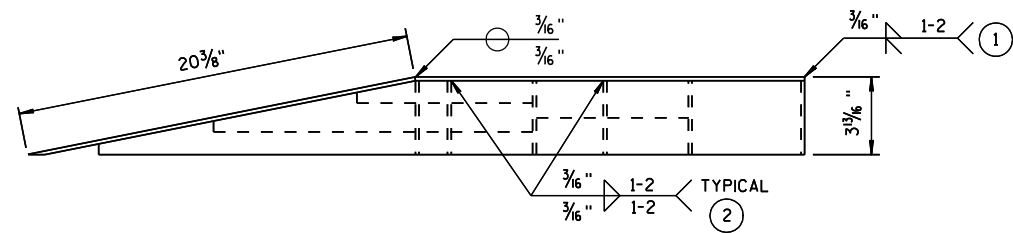
SECTION A-A

STEEL THRIE BEAM STRUCTURE APPROACH	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/31/2012 DATE	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

GENERAL NOTES

- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- ① STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- ② STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

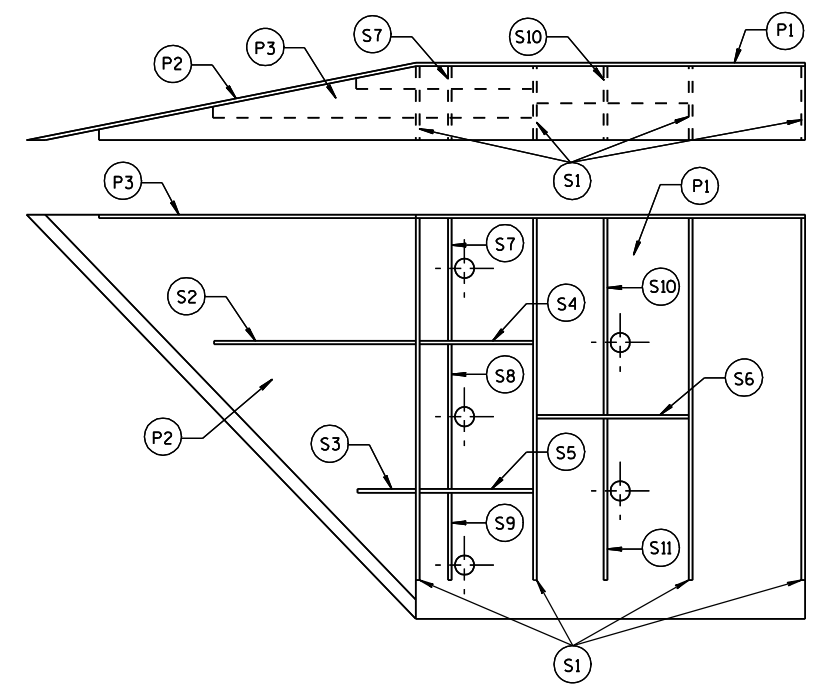


PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

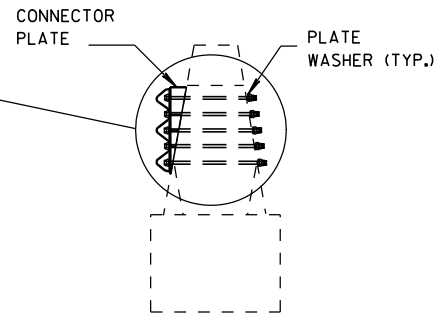
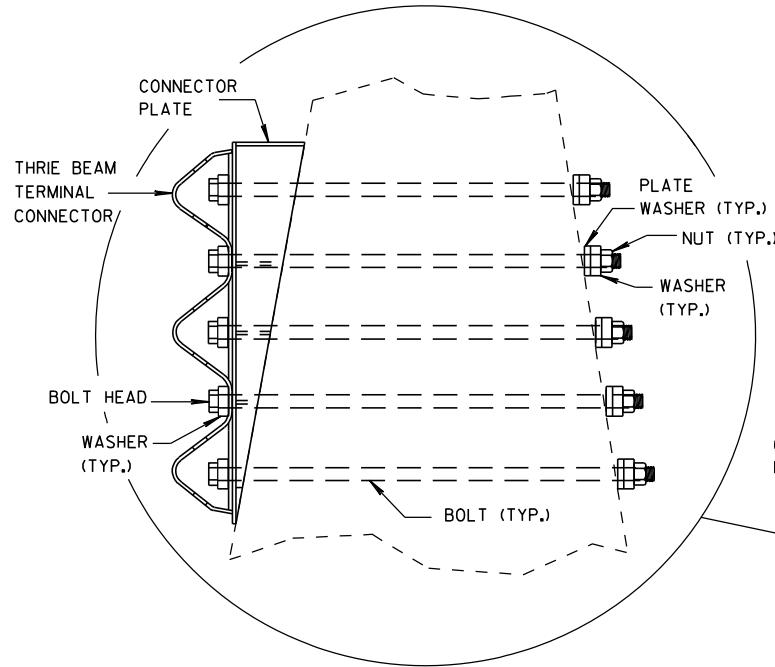
CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 3/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 1/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 1/16"	1/4"
S5	1		6 1/8" x 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 3/16" x 6" x 3 5/8" x 5 1/8"	1/4"
S8	1		1 3/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 1/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 1/16"	1/4"

STEEL THRIE BEAM STRUCTURE APPROACH

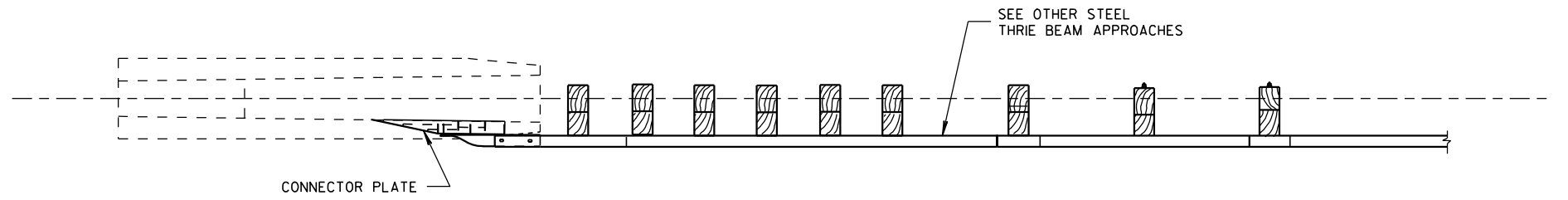
**STEEL THRIE BEAM
STRUCTURE APPROACH,
CONNECTOR PLATE DETAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

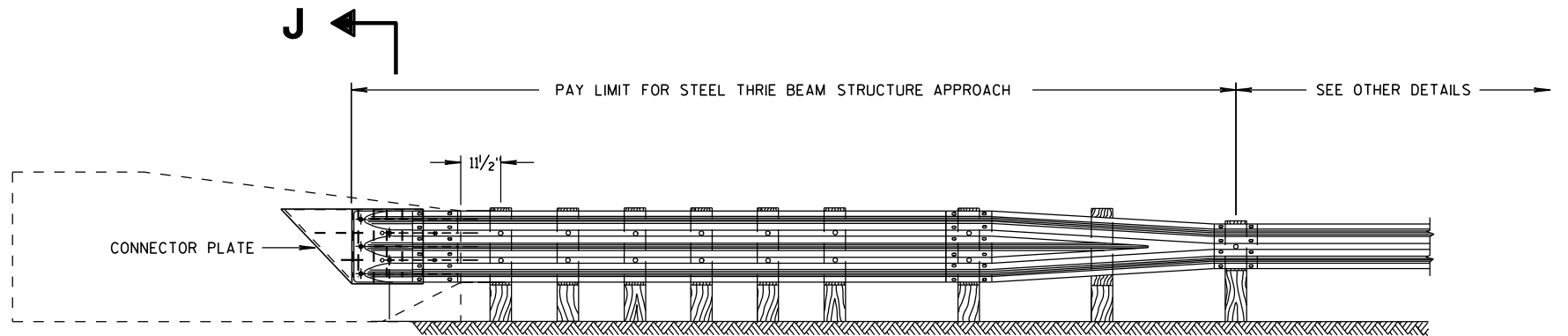
APPROVED
8/31/2012 DATE /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



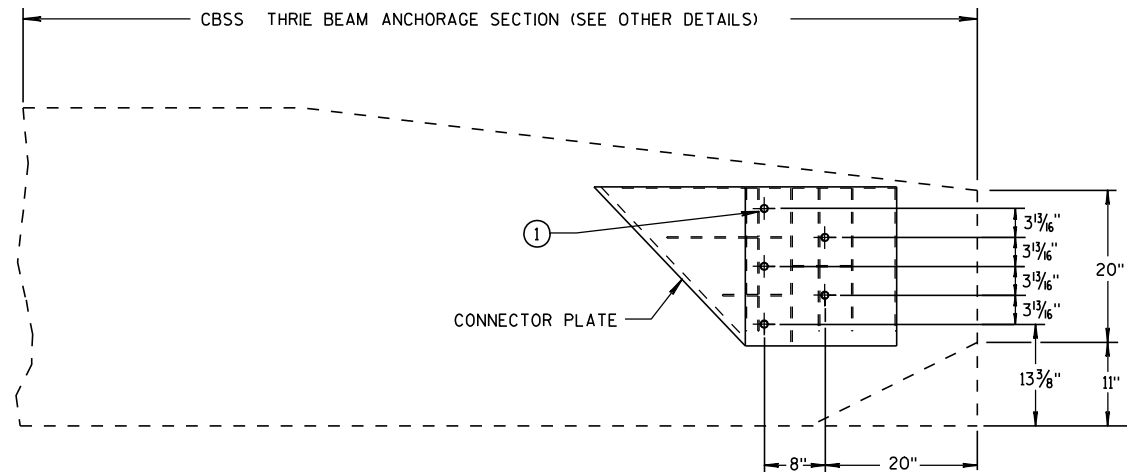
SECTION J-J



PLAN VIEW



FRONT VIEW



CONNECTOR PLATE LOCATION

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 614.

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

- ① BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

STEEL THRIE BEAM STRUCTURE APPROACH

**STEEL THRIE BEAM
STRUCTURE APPROACH.
SINGLE SLOPE ATTACHMENT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

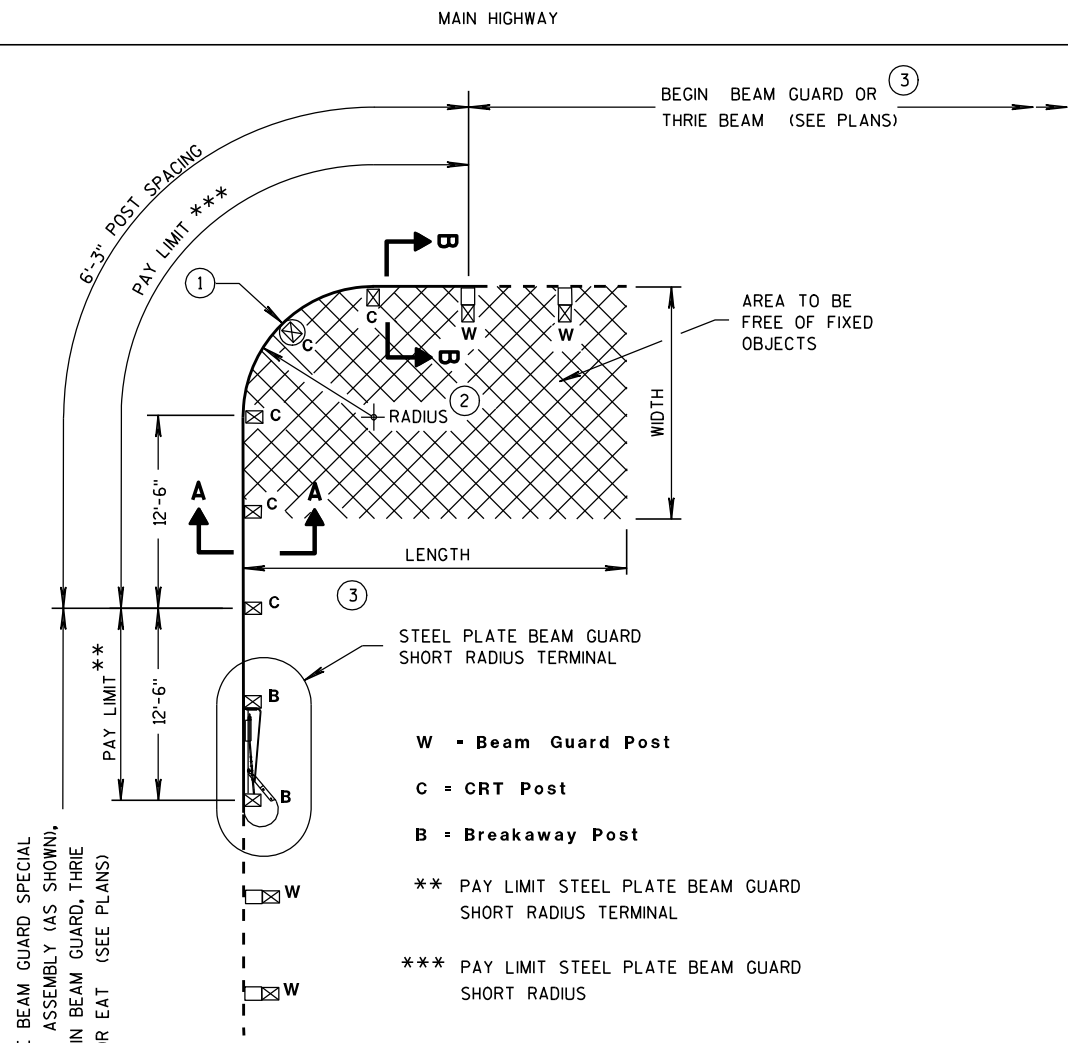
8/31/2012

DATE

FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FARM ENTRANCE, FIELD ENTRANCE, DRIVEWAY,
SERVICE ROAD OR INTERSECTING ROAD



TYPICAL LAYOUT (8' RADIUS SHOWN)

TYPICAL LAP SPLICES (8' RADIUS SHOWN)

GENERAL NOTES

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

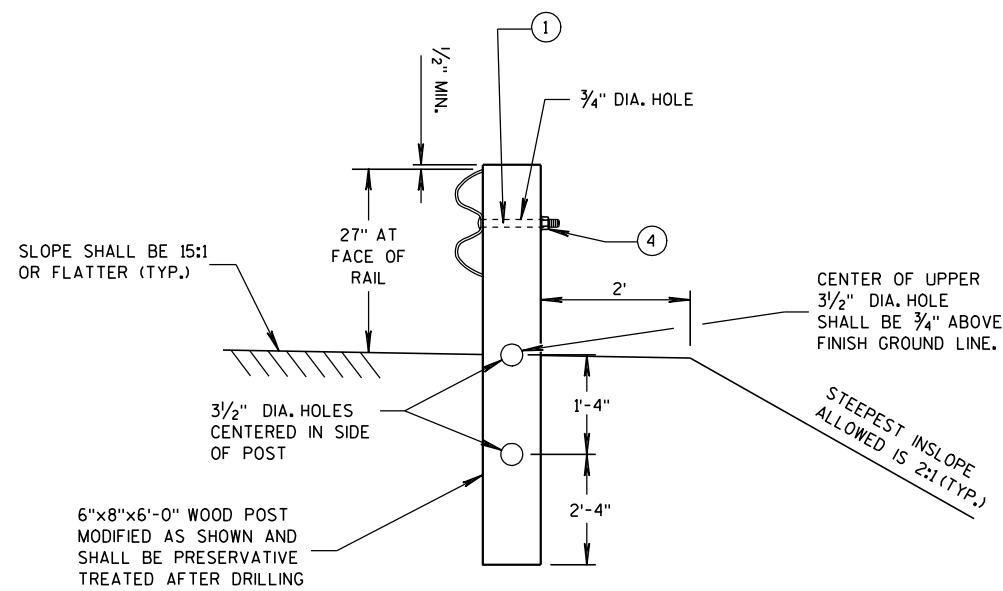
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

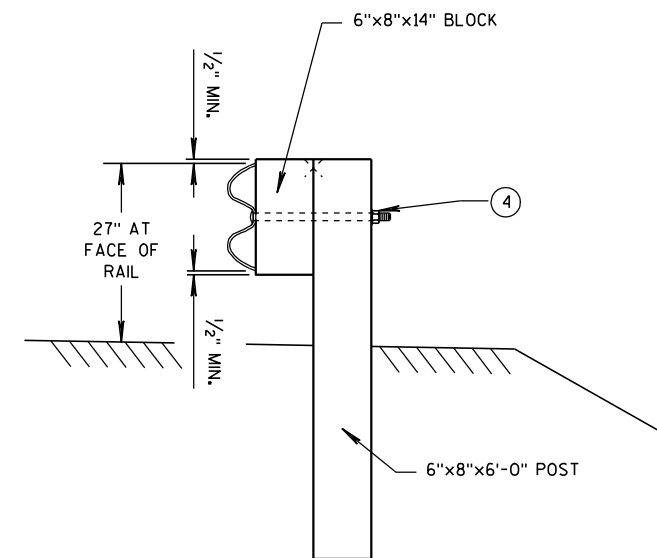
- ① ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.
- ② RADIUS FROM 8' - 36'. SEE PLAN.
- ③ HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.
- ④ 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

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

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



SECTION A-A (CRT POST)

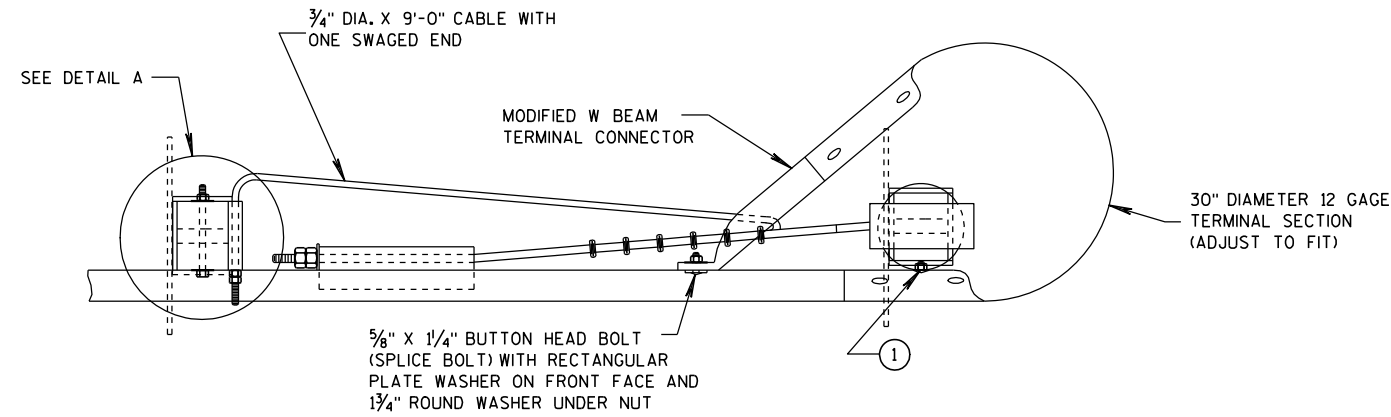


SECTION B-B (BEAM GUARD POST)

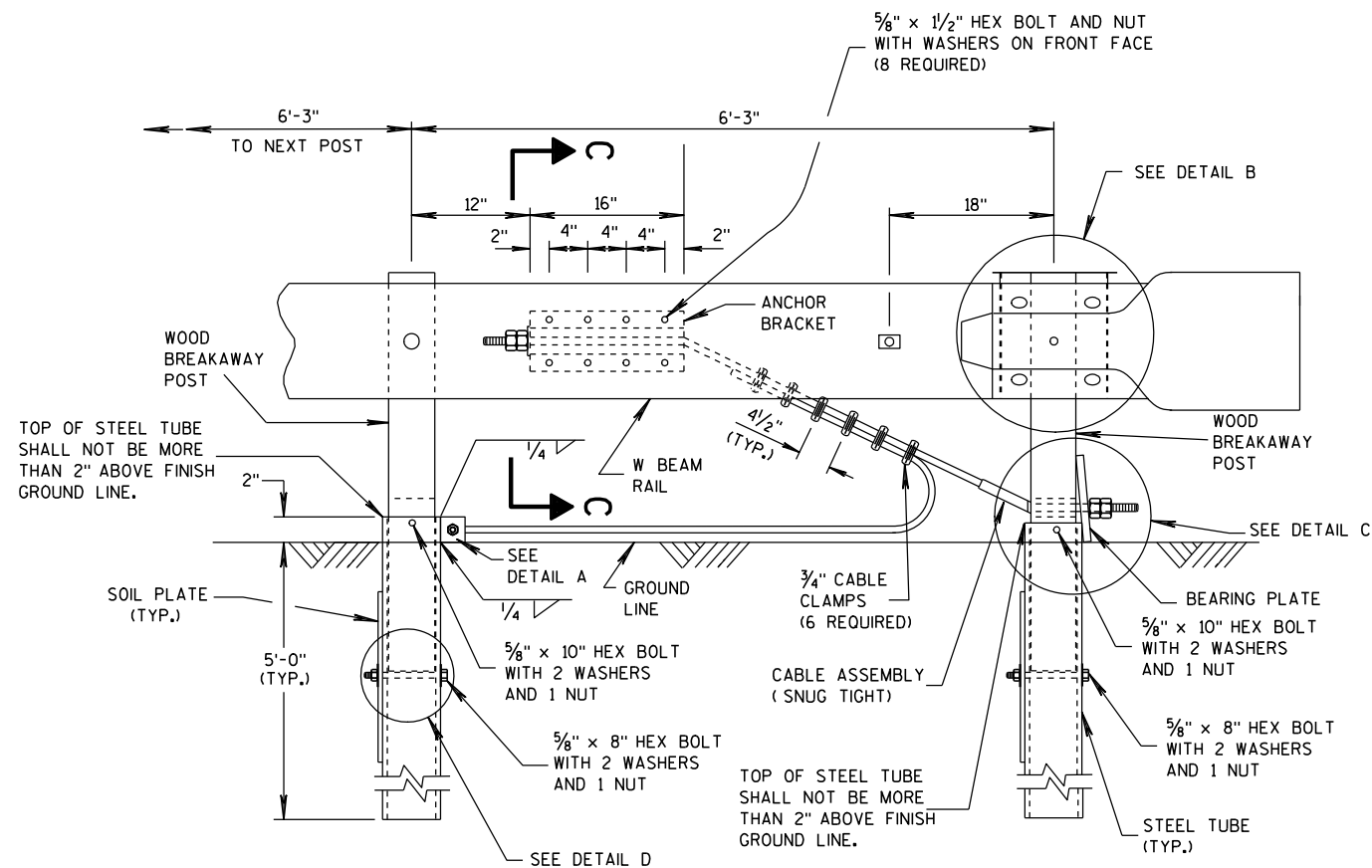
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



PLAN VIEW

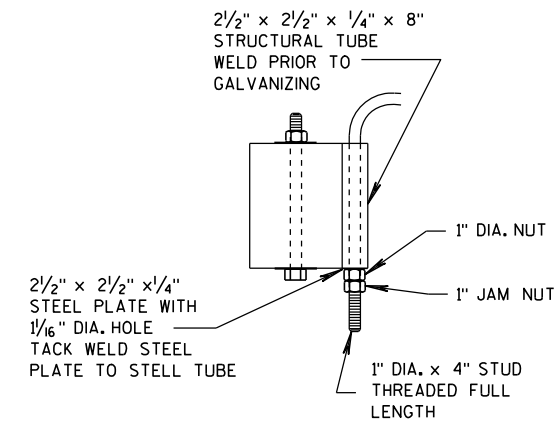


ELEVATION VIEW

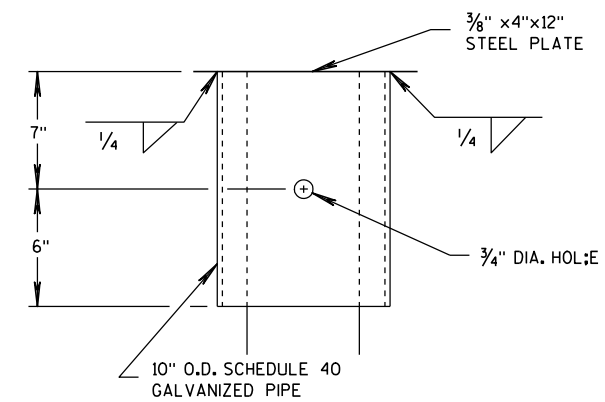
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

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



DETAIL A

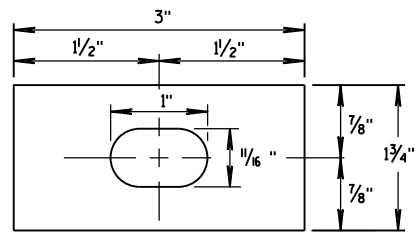


DETAIL B

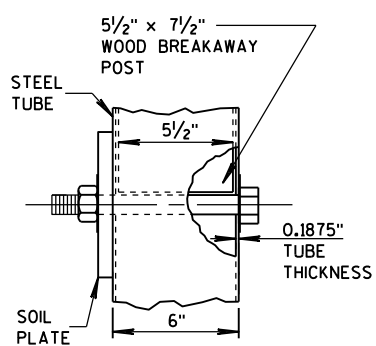
(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

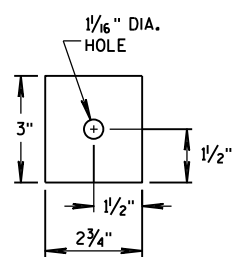
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



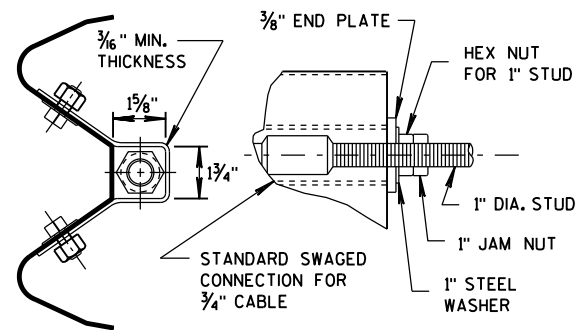
**RECTANGULAR
PLATE WASHER**



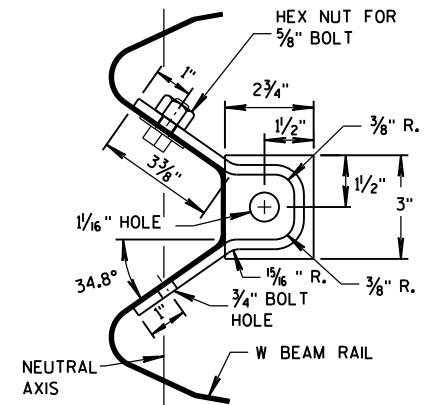
DETAIL D



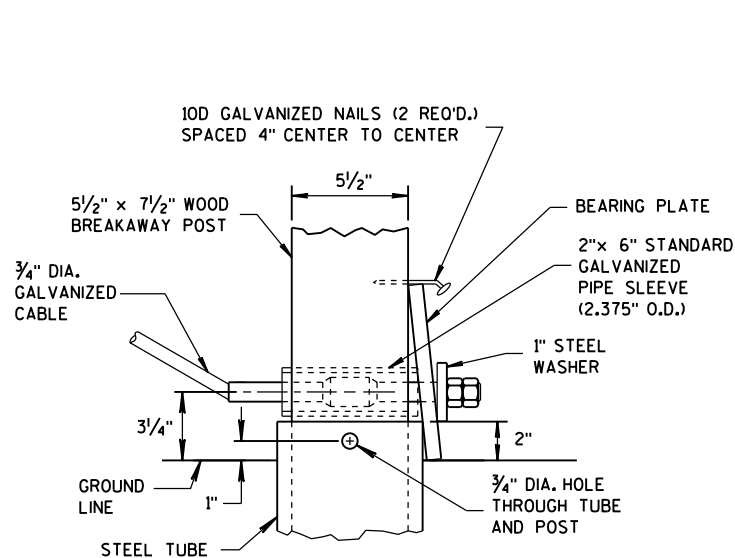
END PLATE



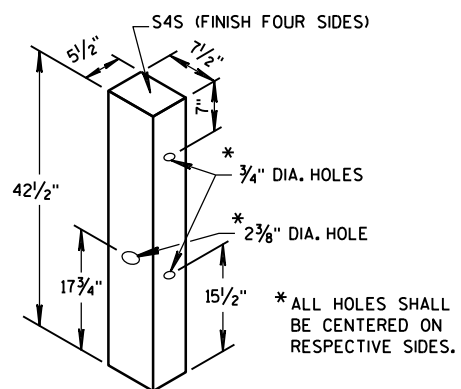
**SECTION C-C
(END PLATE REMOVED)**



ANCHOR BRACKET

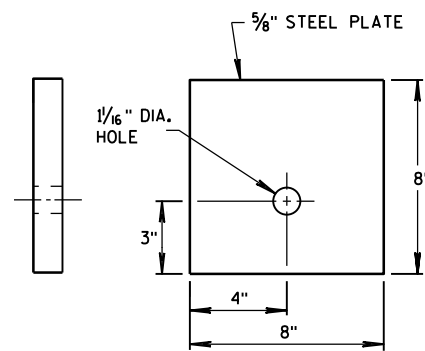


DETAIL C

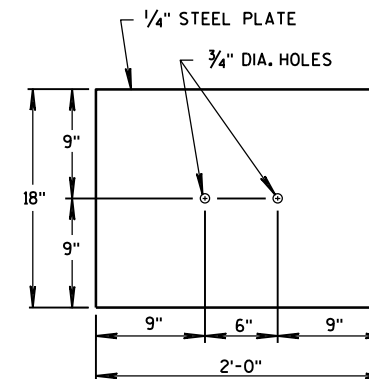


WOOD BREAKAWAY POST

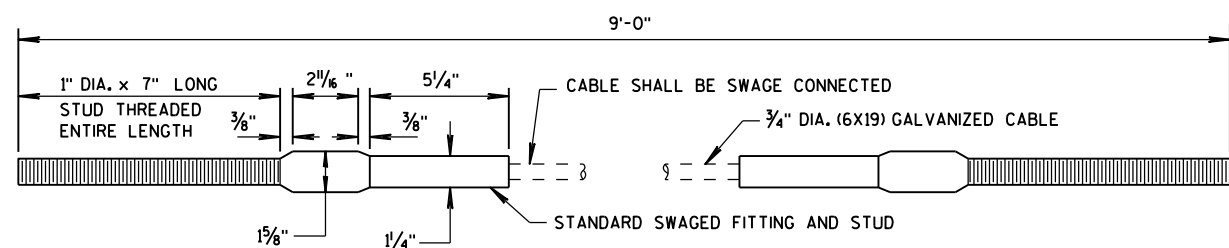
* ALL HOLES SHALL BE CENTERED ON RESPECTIVE SIDES.



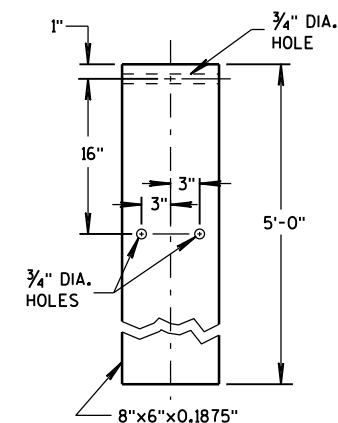
BEARING PLATE



SOIL PLATE



CABLE ASSEMBLY



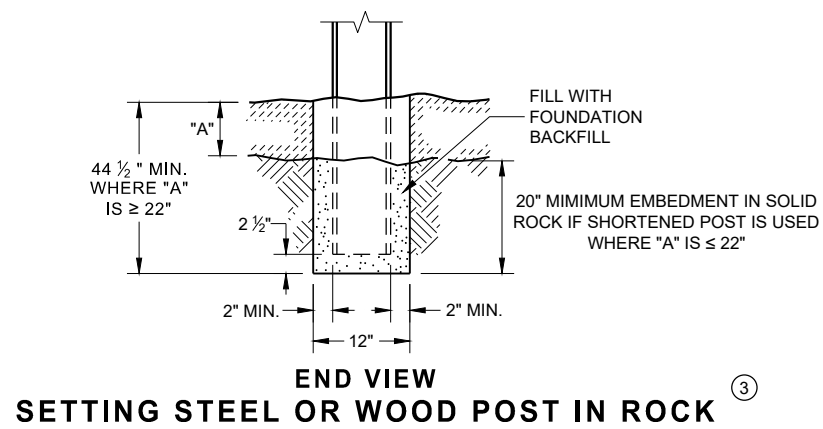
STEEL TUBE

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

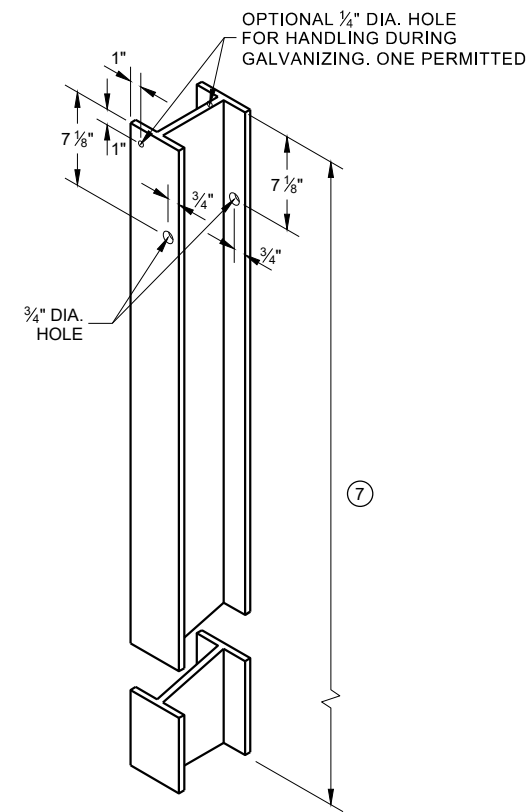
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/18/08 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

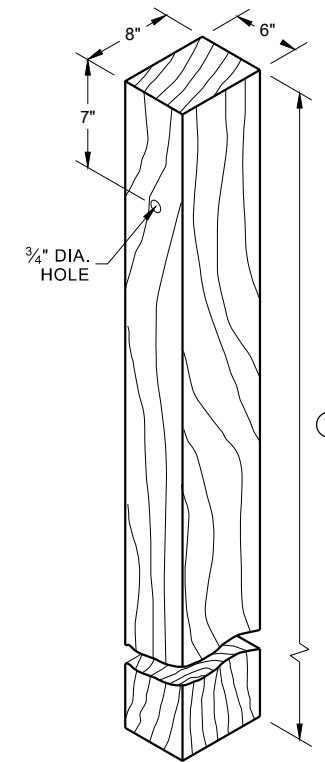
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL.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



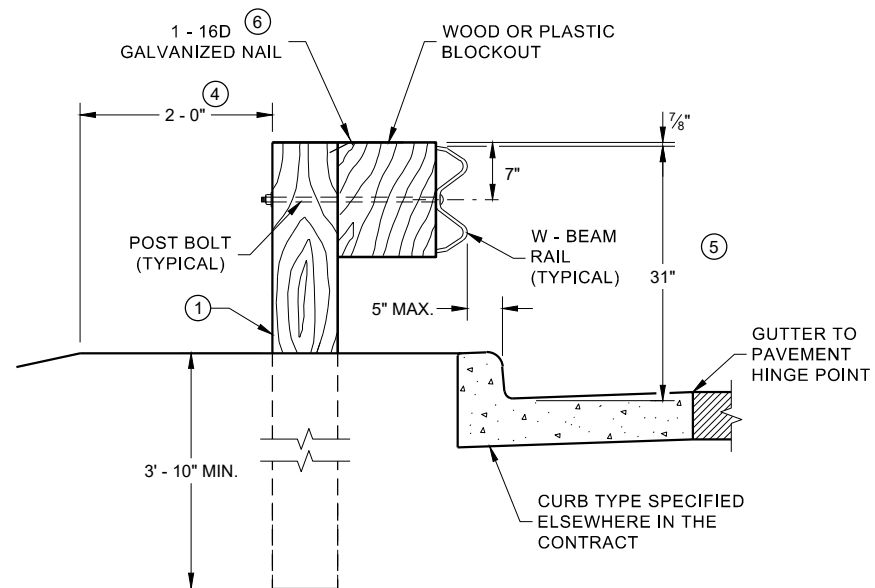
**END VIEW
SETTING STEEL OR WOOD POST IN ROCK** ③



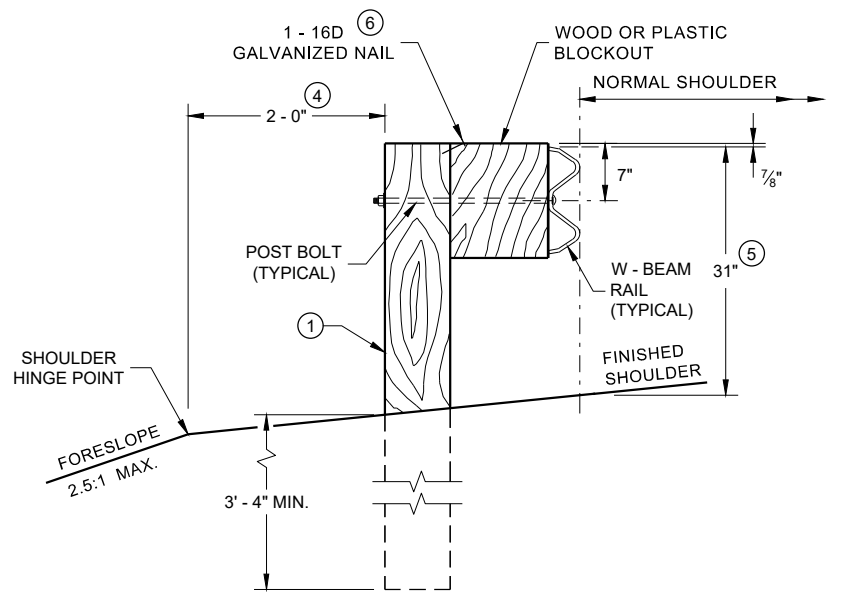
**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9)** ①



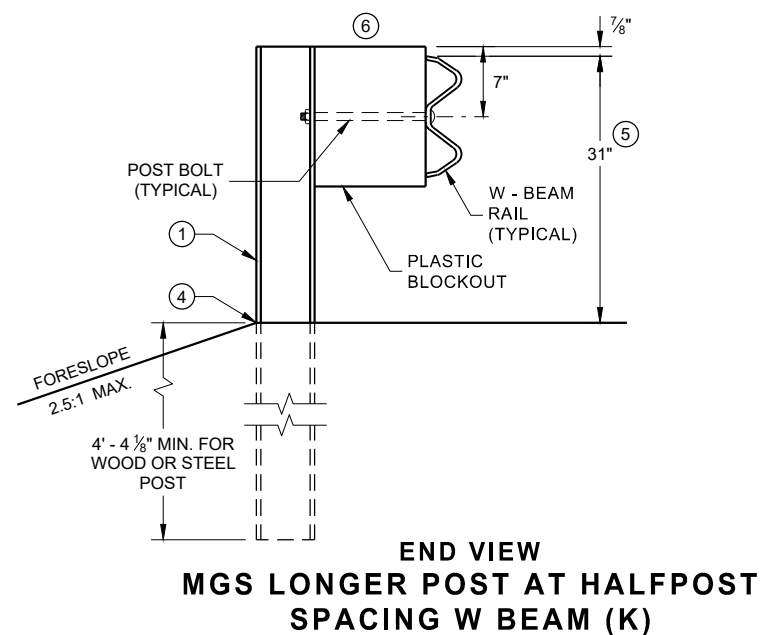
**WOOD POST
(6" X 8") NOMINAL** ①



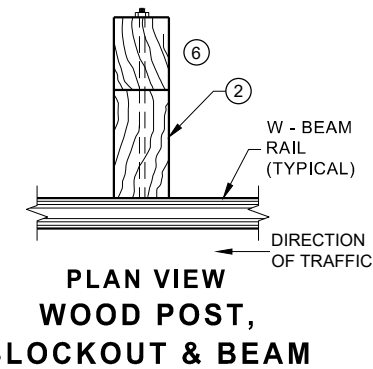
**END VIEW
LOCATED ALONG A CURBED ROADWAY**



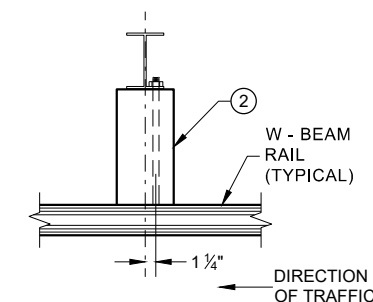
**END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION**



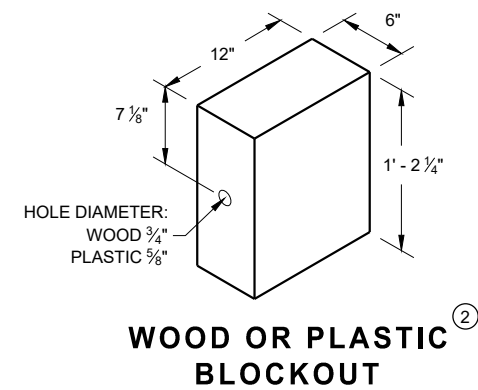
**END VIEW
MGS LONGER POST AT HALFPST
SPACING W BEAM (K)**



**PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM**



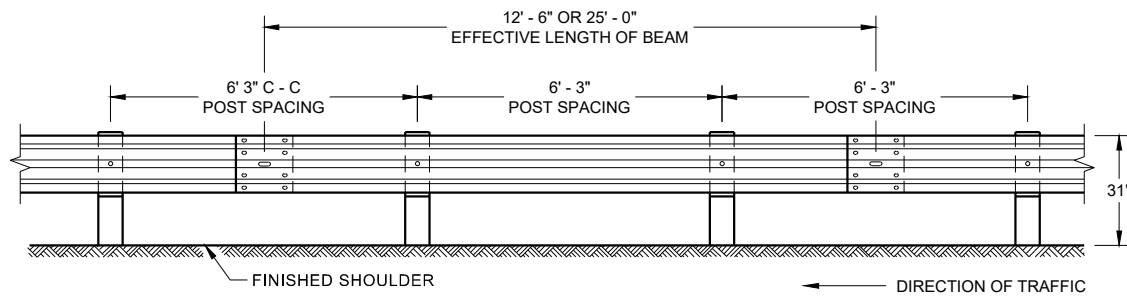
**PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM**



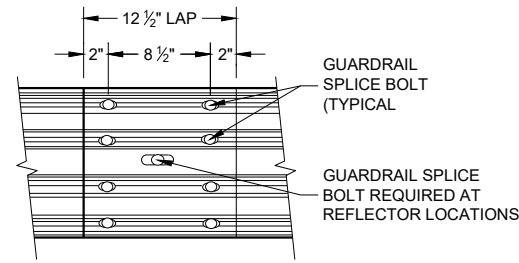
**WOOD OR PLASTIC
BLOCKOUT** ②

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



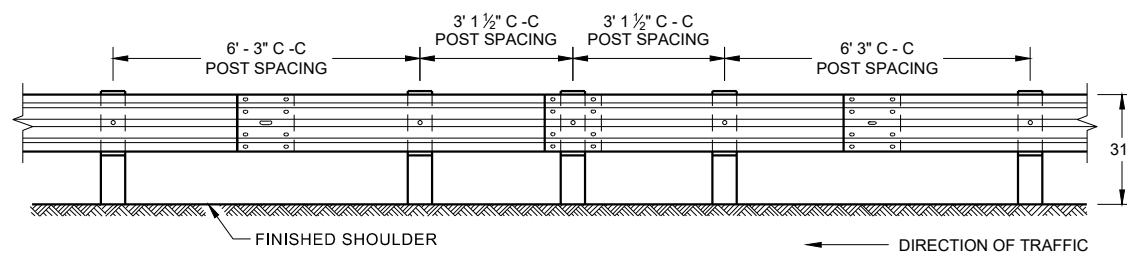
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



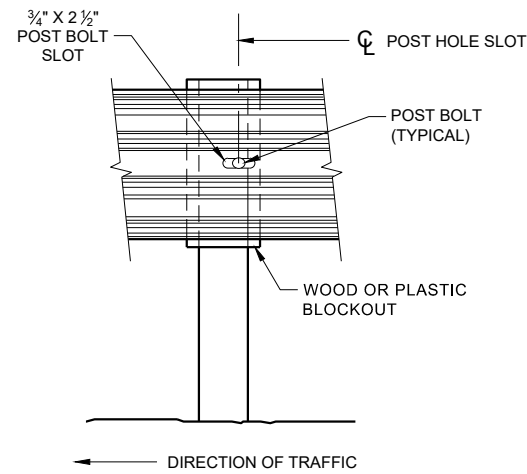
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

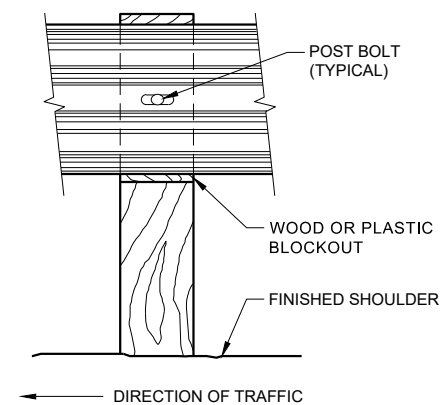
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER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



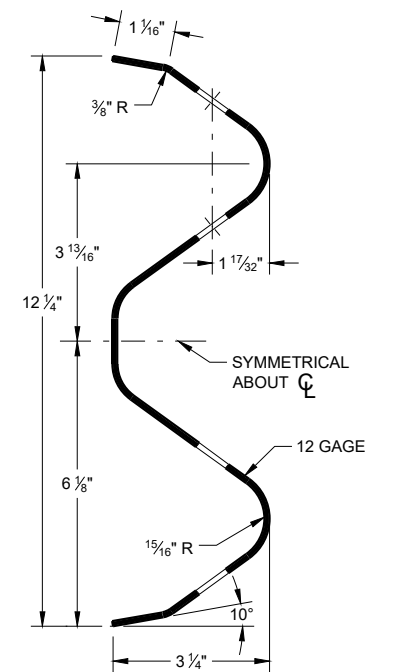
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



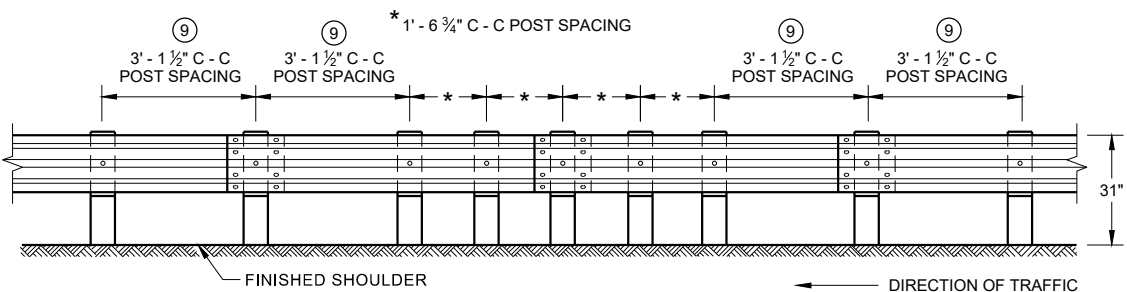
FRONT VIEW AT STEEL POST



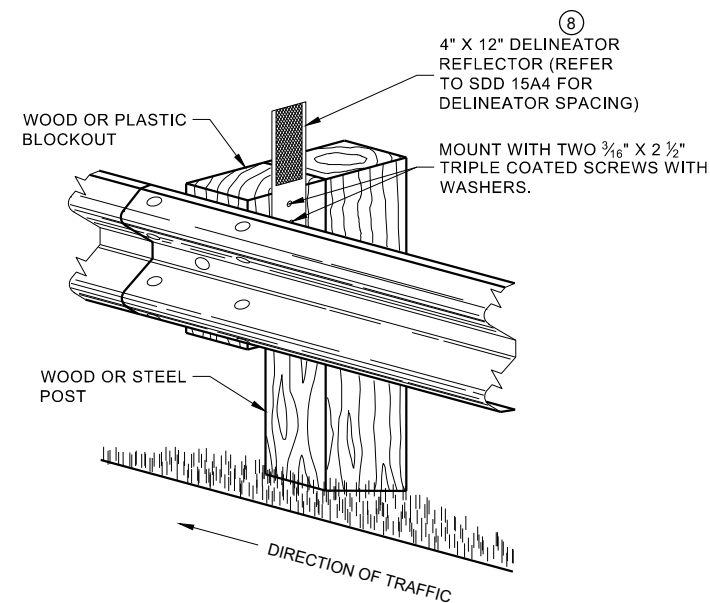
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



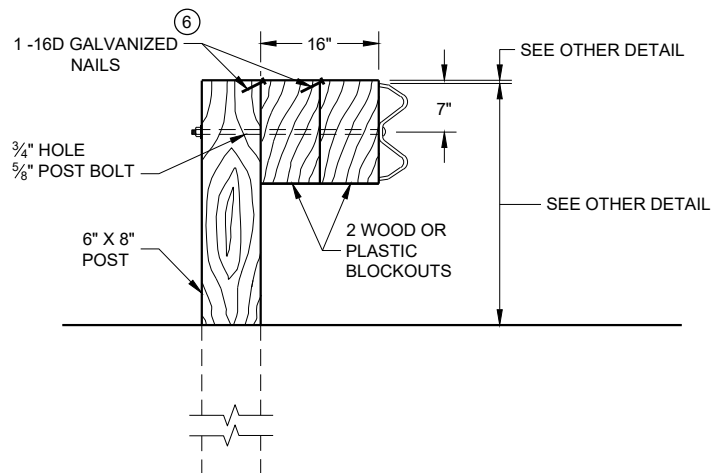
**FRONT VIEW
QUARTER POST SPACING (QS)**



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

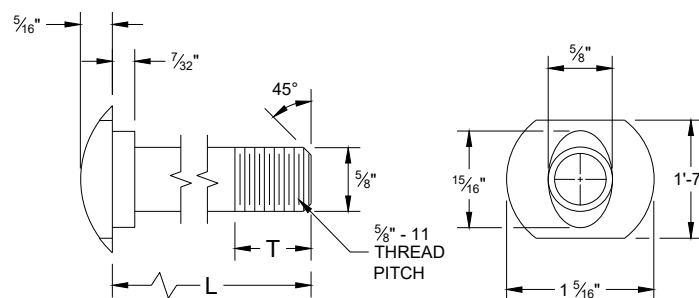


DETAIL FOR 16" BLOCKOUT DEPTH

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

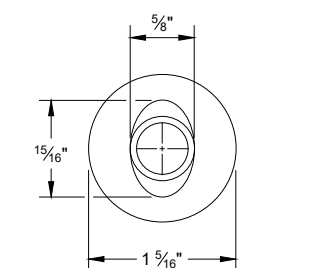
NOTE:

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

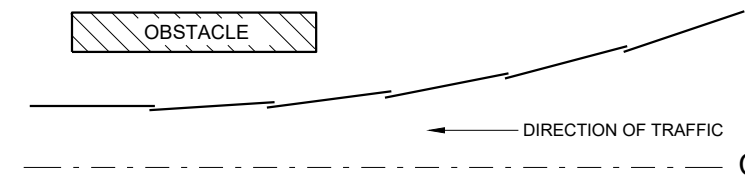


POST BOLT TABLE

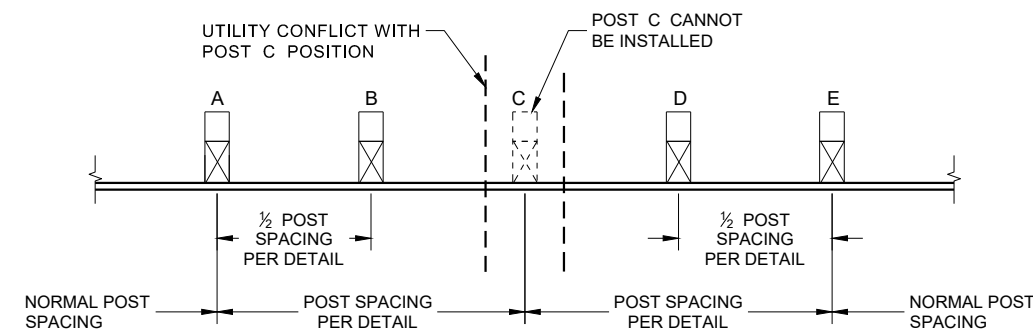
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



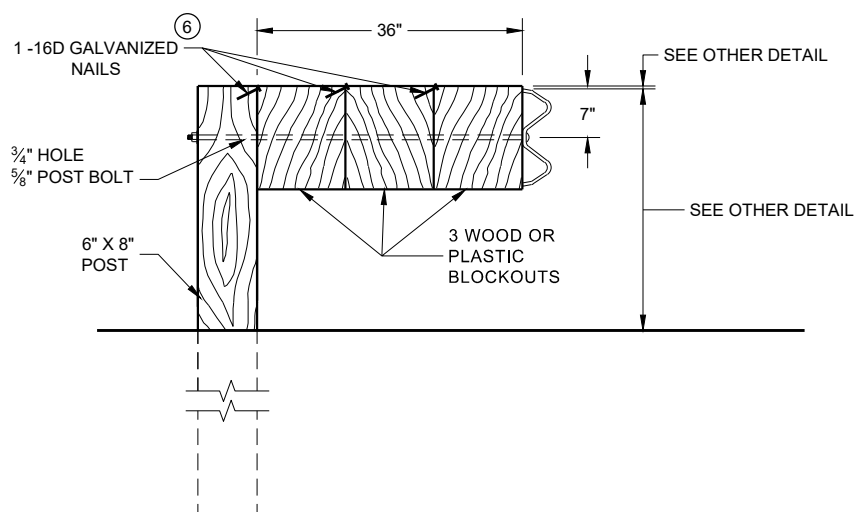
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

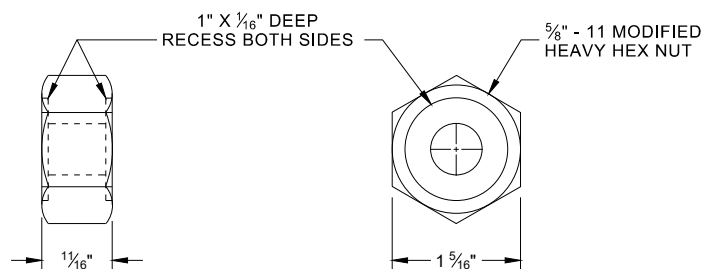


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

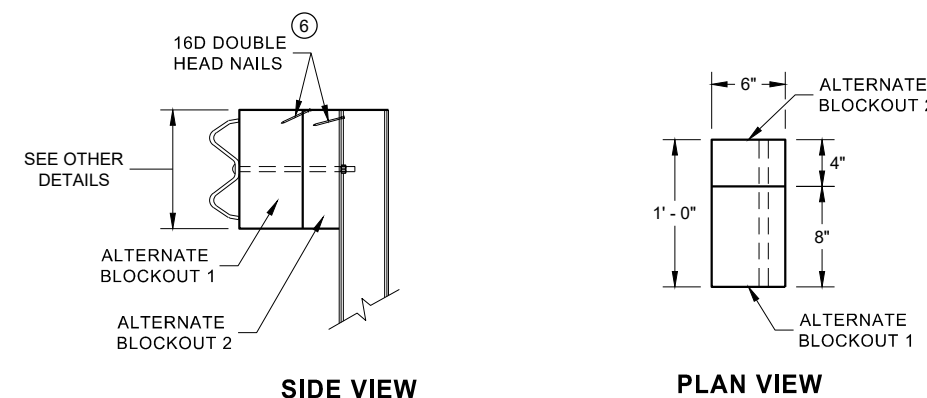


DETAIL FOR 36" BLOCKOUT DEPTH

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



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

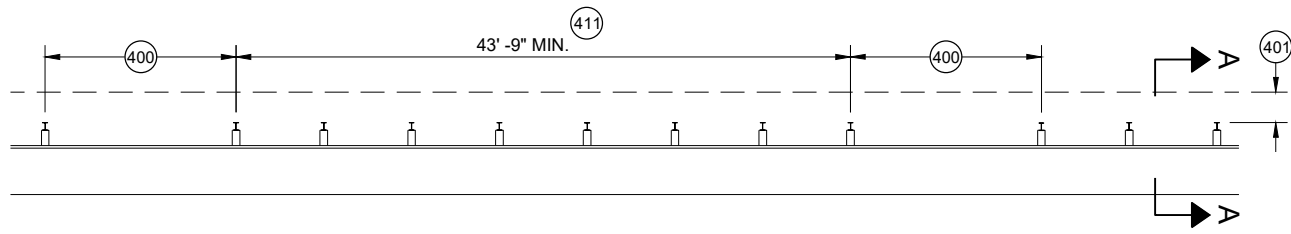


**ALTERNATE WOOD
BLOCKOUT DETAIL**

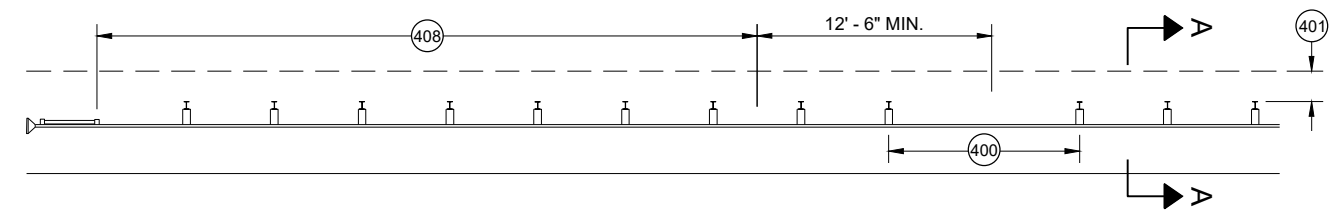
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

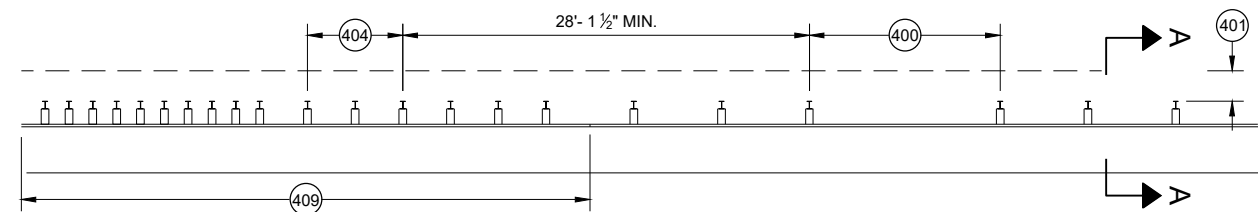
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



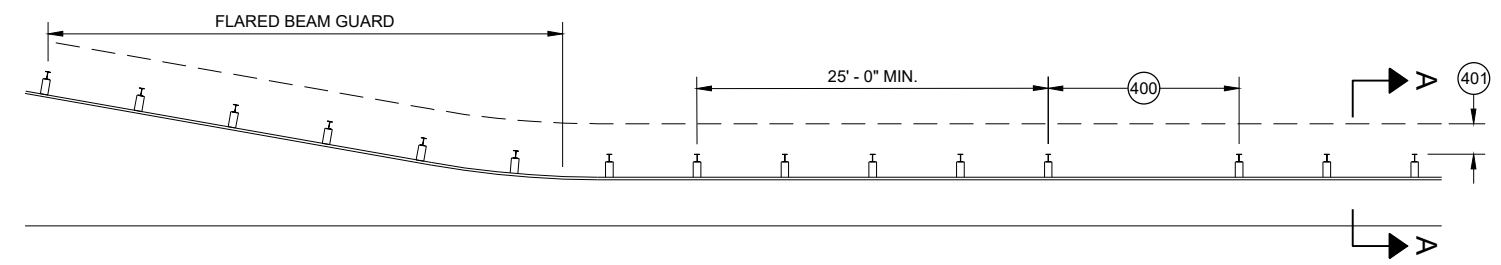
MISSING POST IN MGS GUARDRAIL



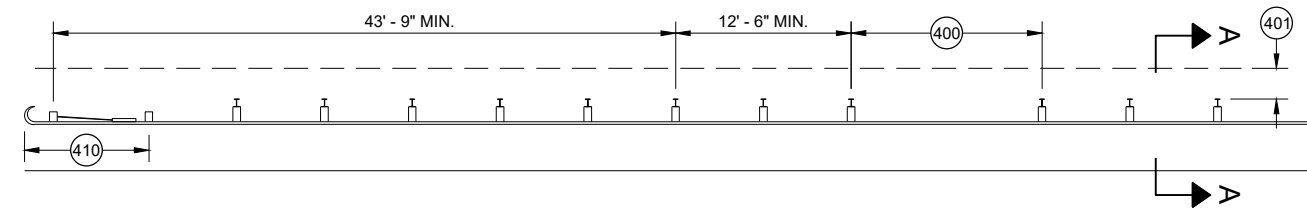
MISSING POST IN MGS GUARDRAIL NEAR EAT



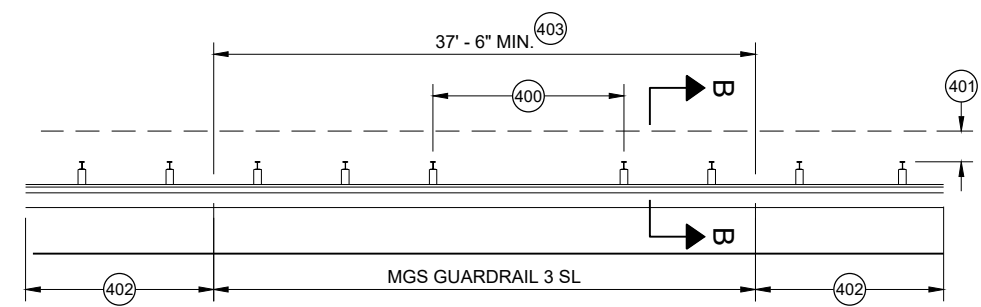
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

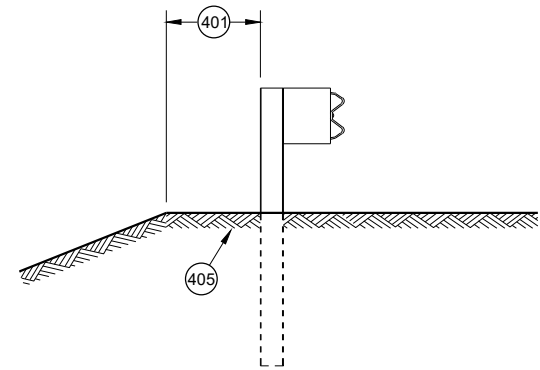


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

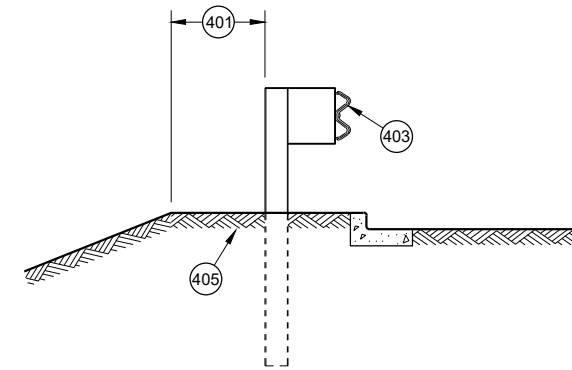


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

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

GENERAL NOTES

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

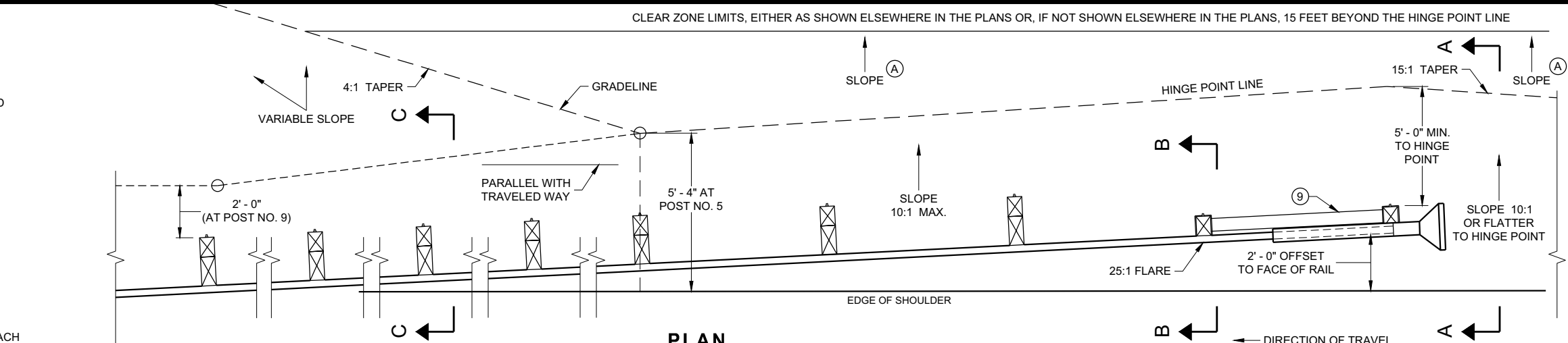
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

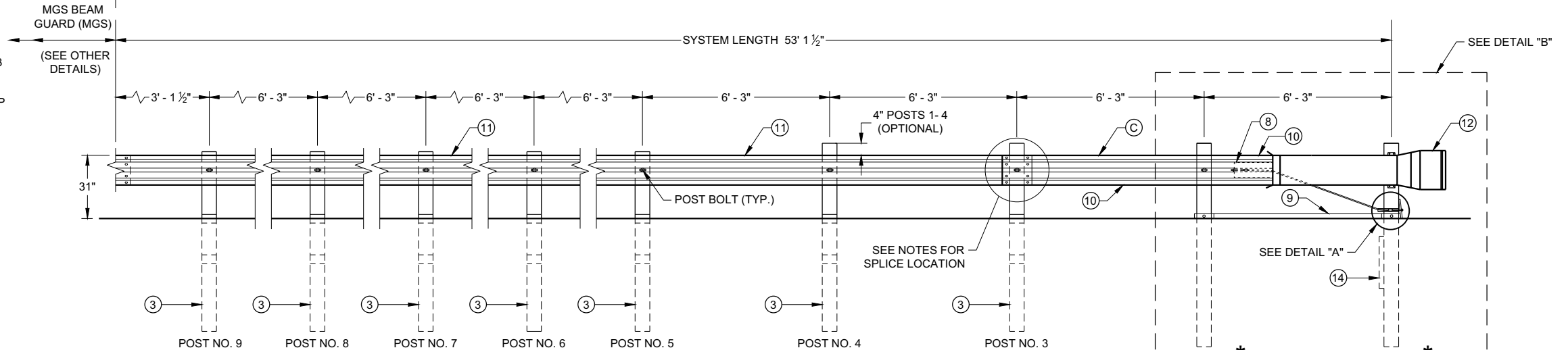
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

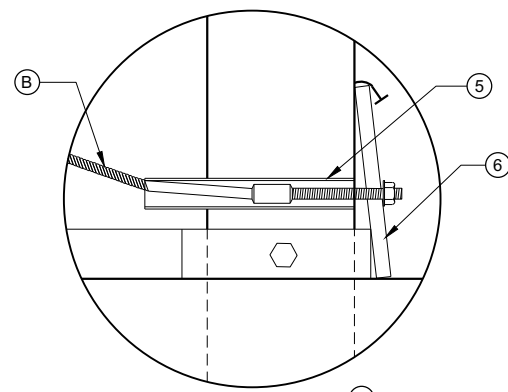
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



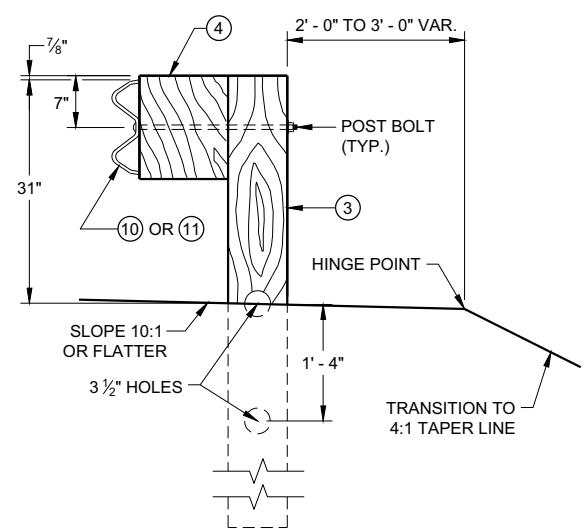
PLAN



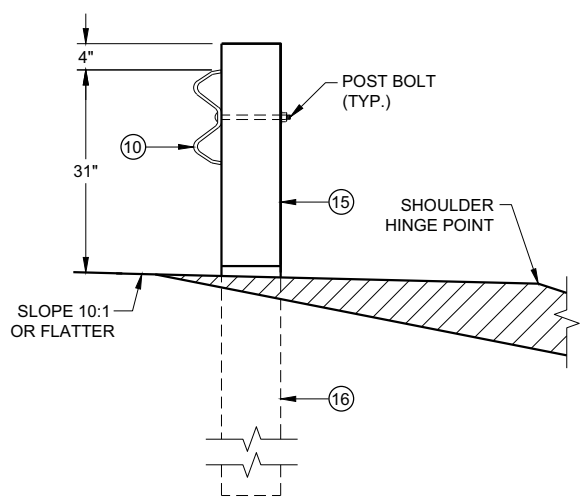
ELEVATION



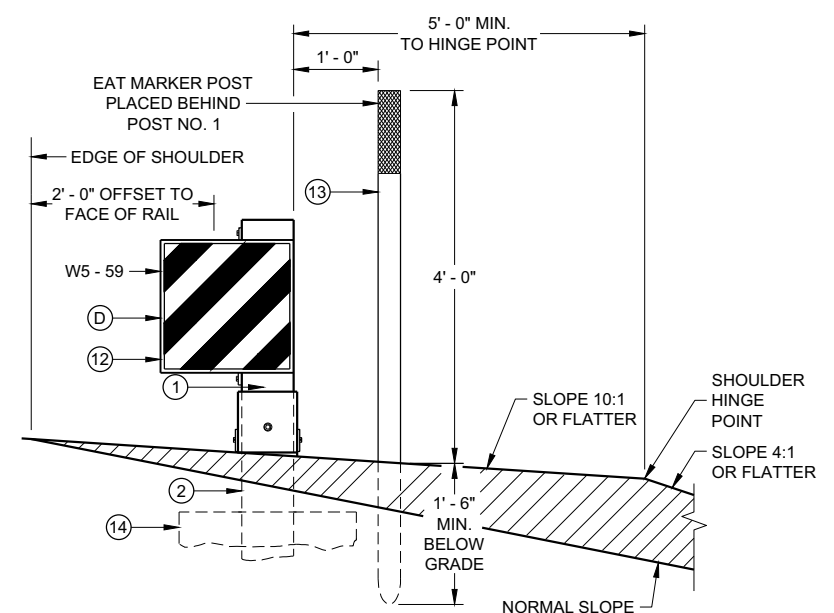
DETAIL "A"



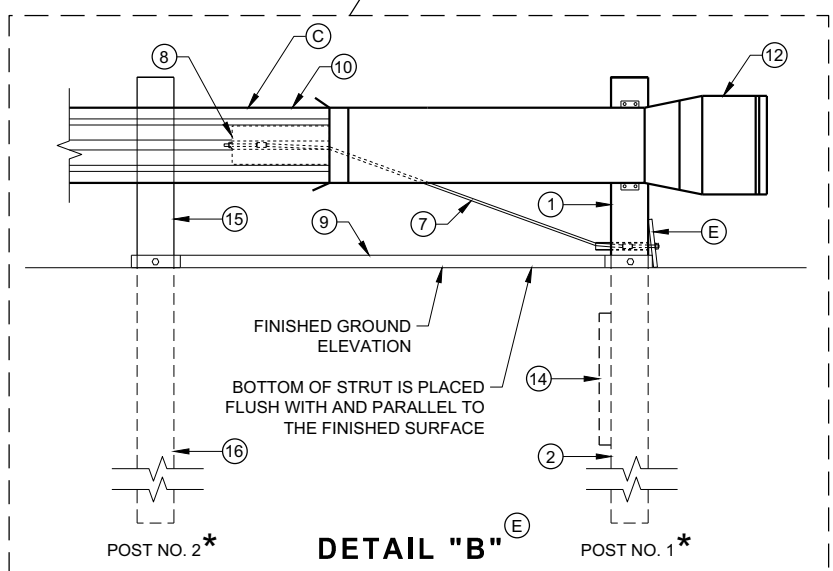
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



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



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



DETAIL "B"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

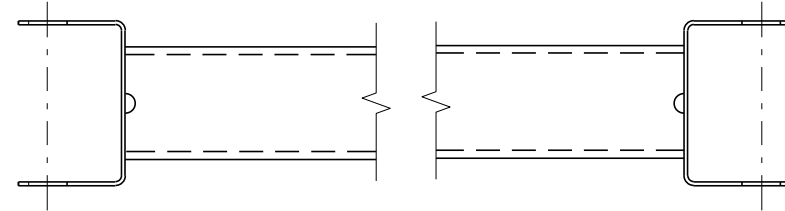
6

SDD 14B44 - 04a

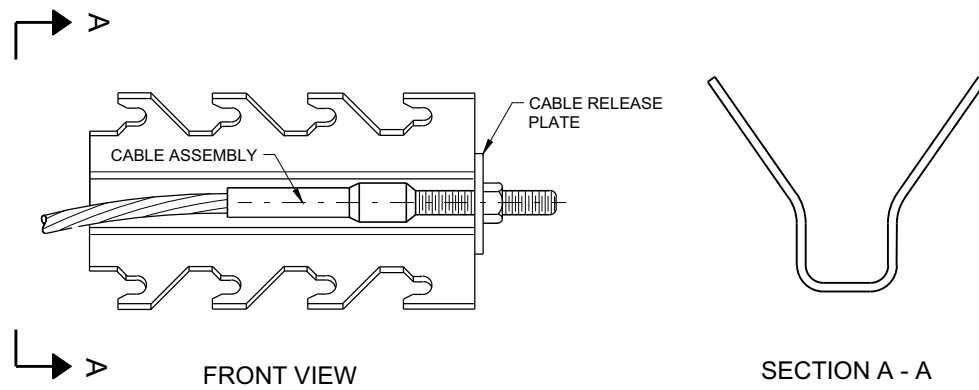
SDD 14B44 - 04a

BILL OF MATERIALS

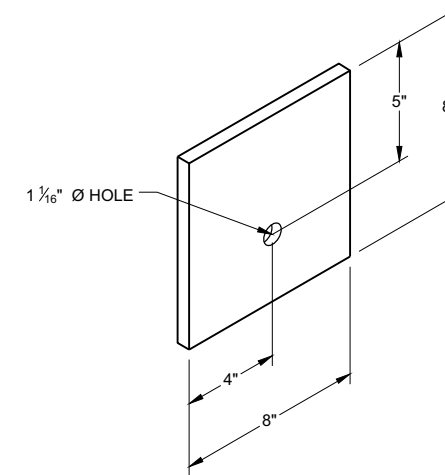
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL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



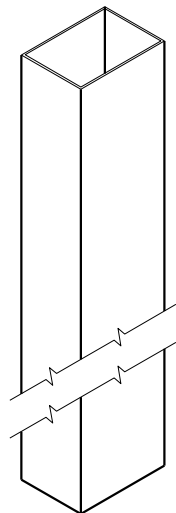
GENERIC GROUND STRUT ⑨ ⑤



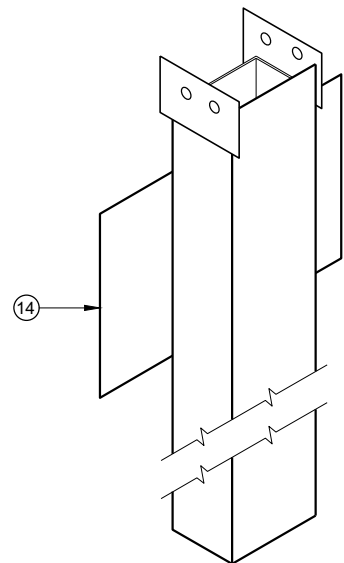
GENERIC ANCHOR CABLE BOX ⑨ ⑤



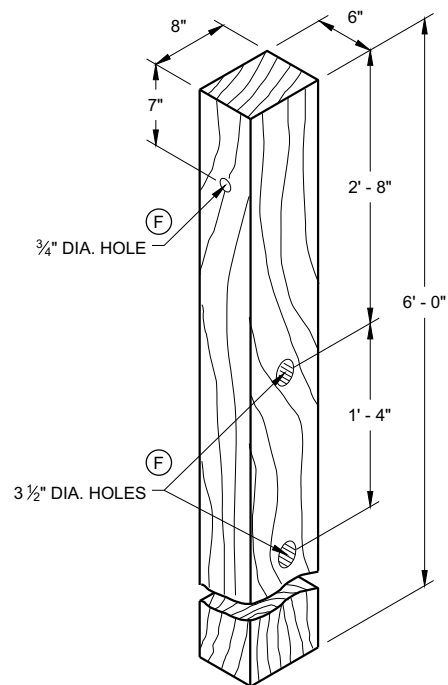
BEARING PLATE ⑥ ⑤



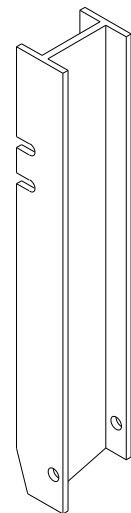
UPPER POST NO. 1 ⁽¹⁾ (E)



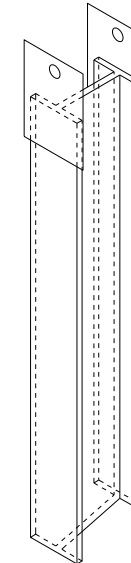
LOWER POST NO. 1 ⁽²⁾ (E)



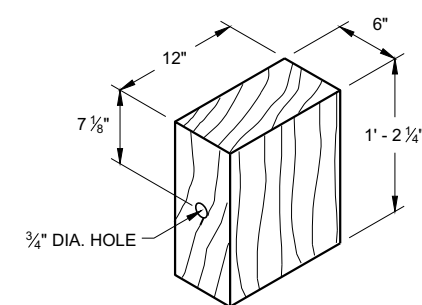
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

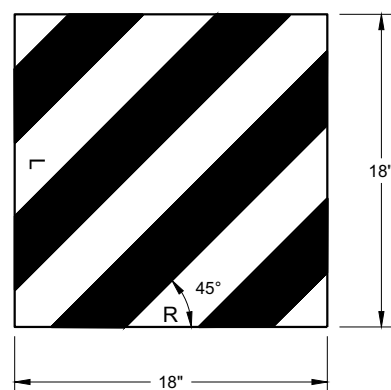


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

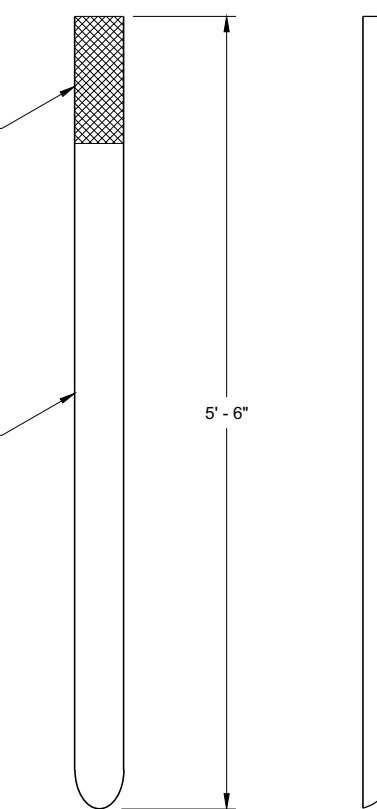
6



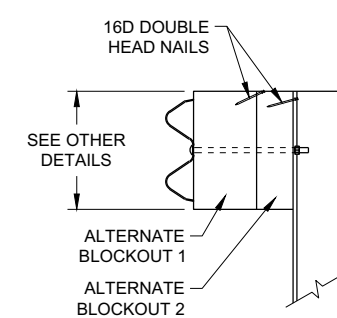
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)

TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.

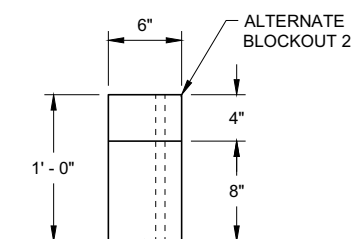
E.A.T. MARKER
POST (YELLOW)



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



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

6

SDD 14B44 - 04c

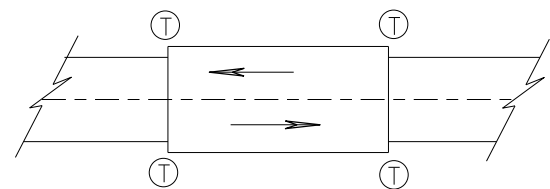
SDD 14B44 - 04c

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

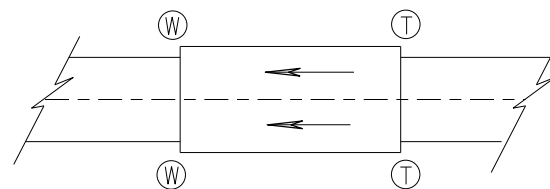
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

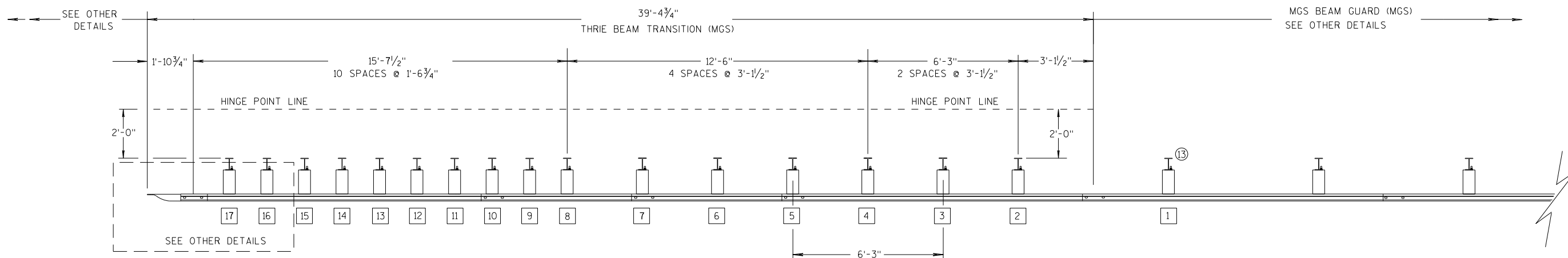
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

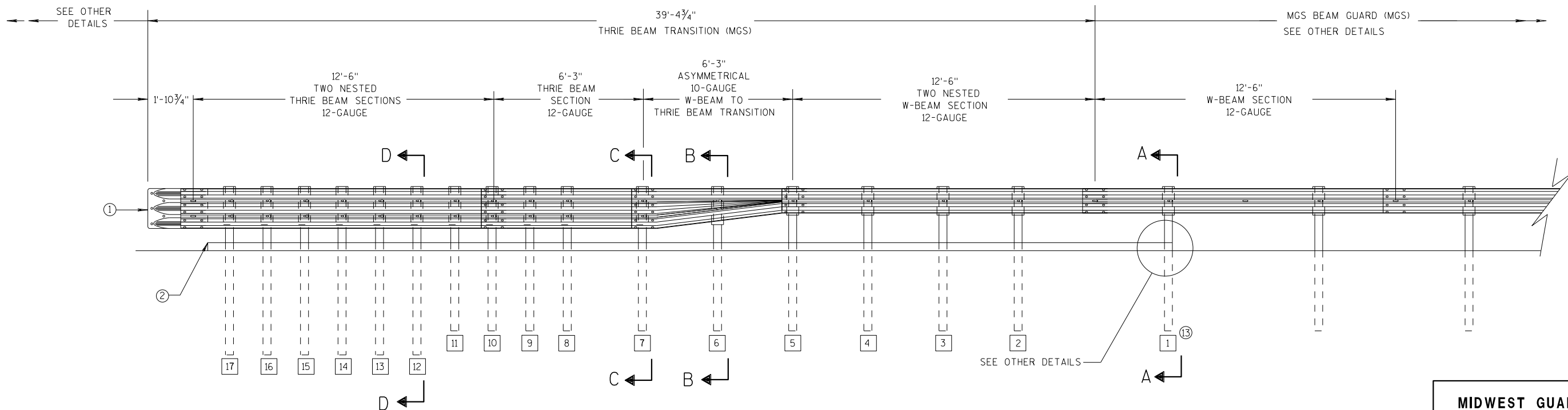
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



PLAN VIEW



ELEVATION VIEW

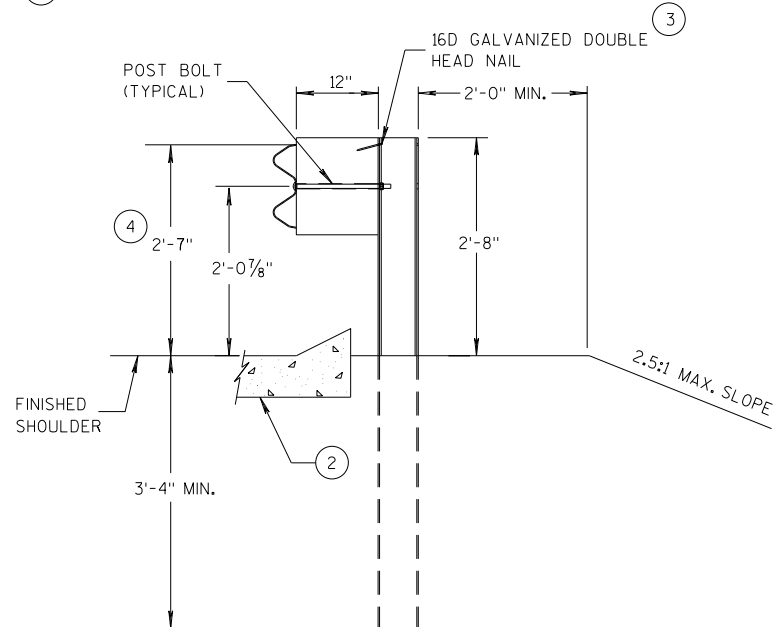
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

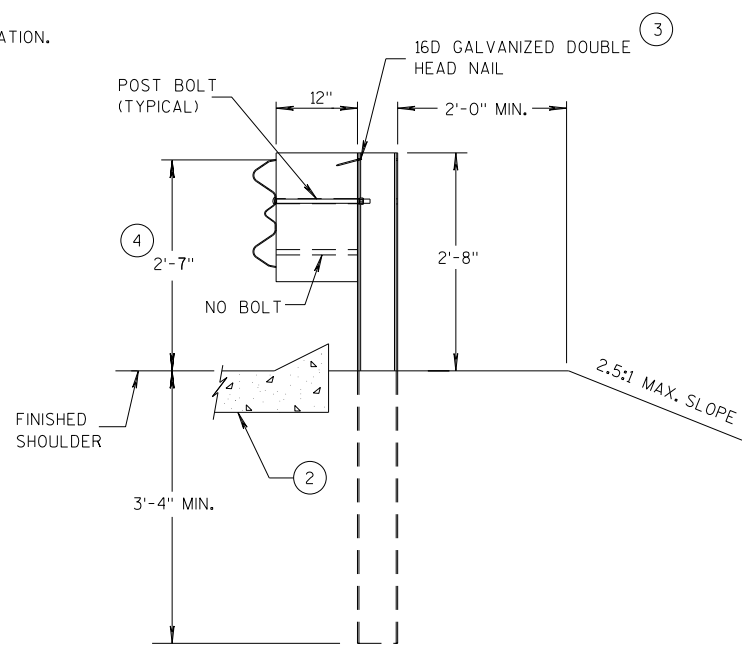
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

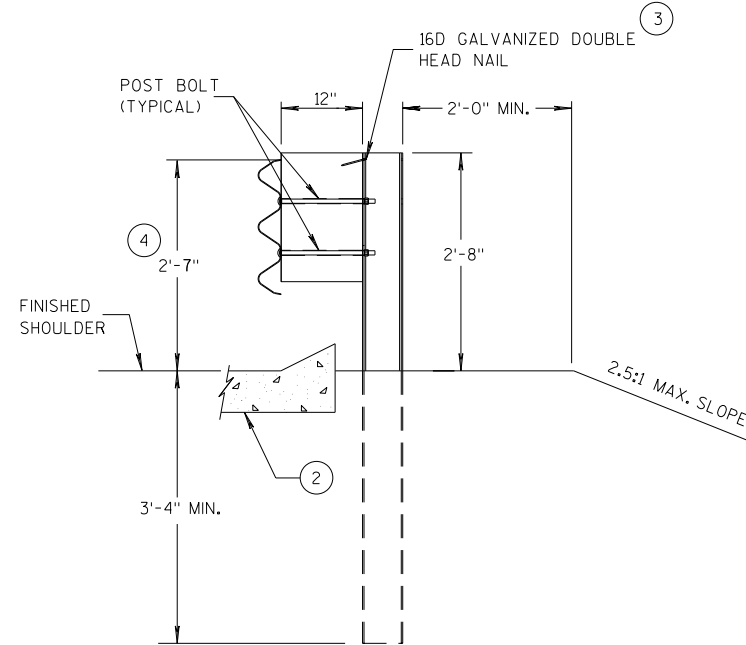
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



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



**SECTION B-B
POST 6**



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

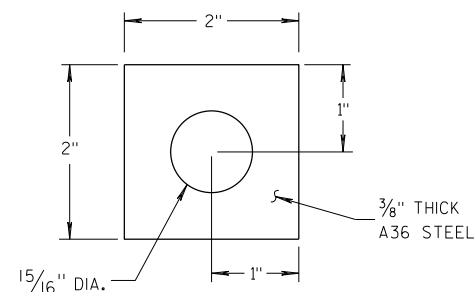
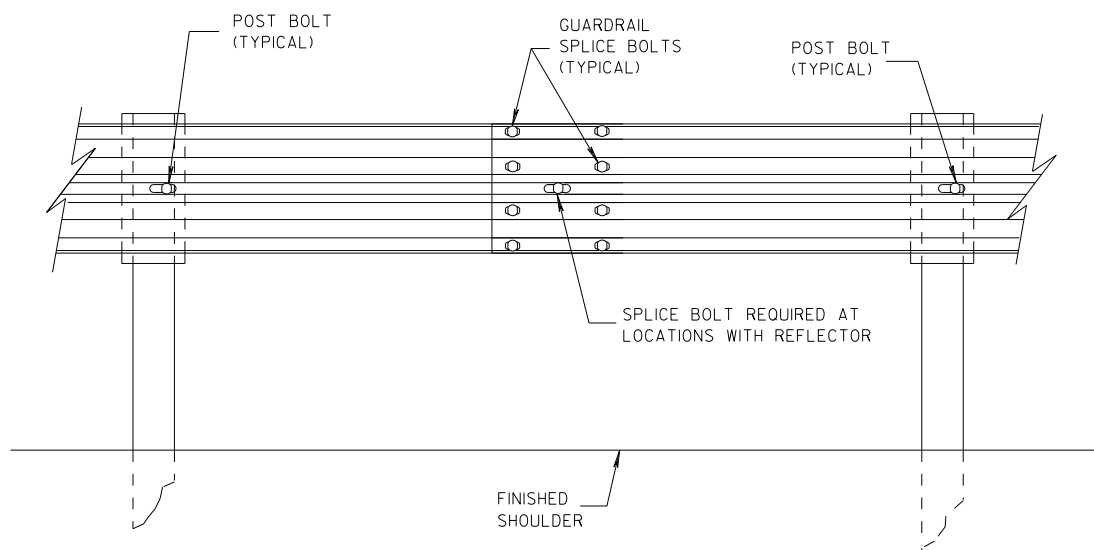
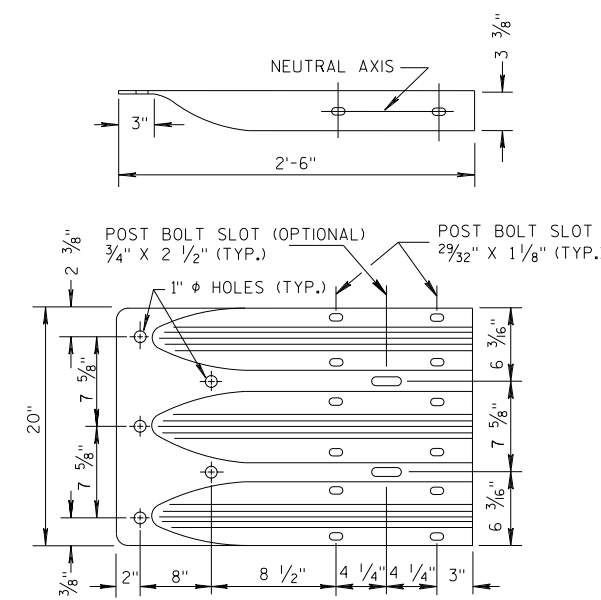


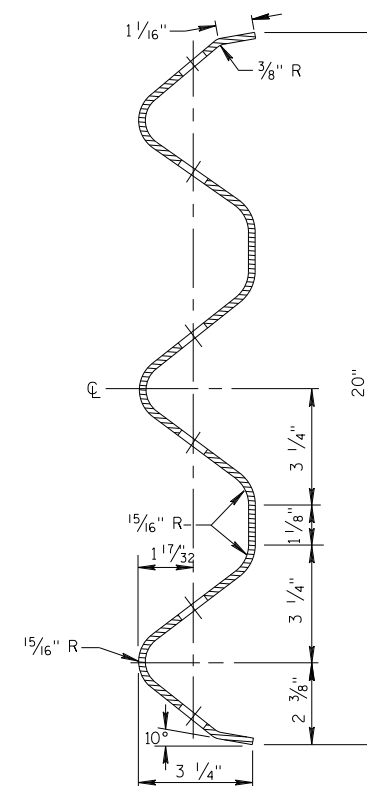
PLATE WASHER DETAIL



SPLICE DETAIL



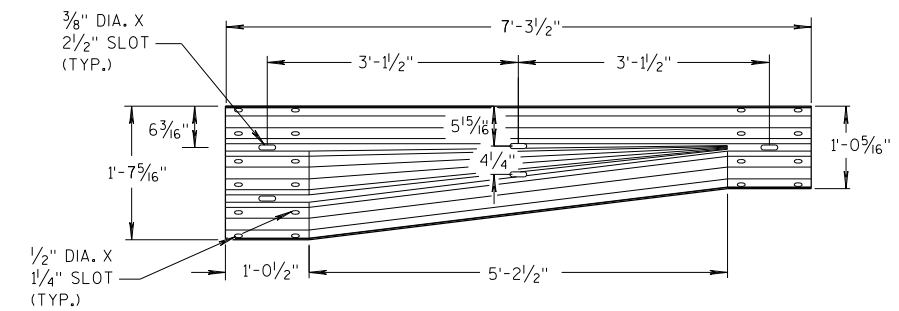
**THRIE BEAM
TERMINAL CONNECTOR**



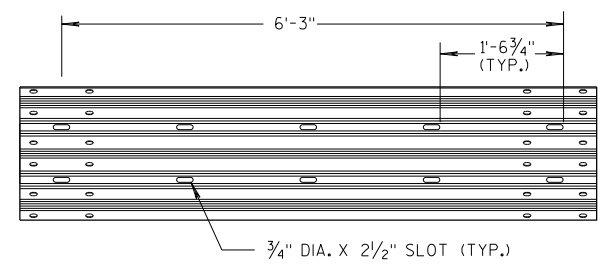
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

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

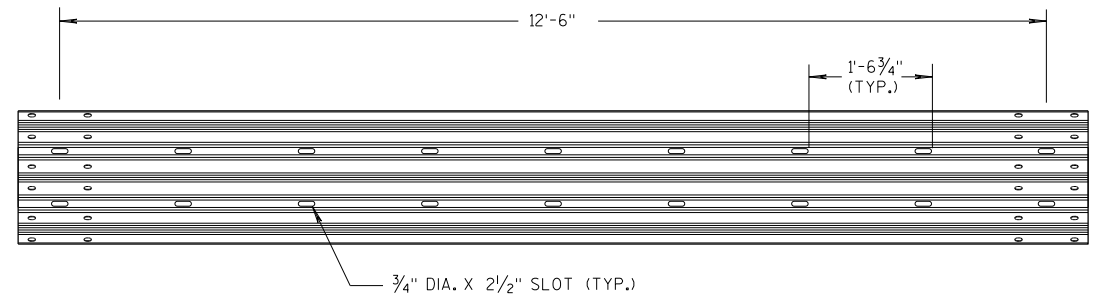
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



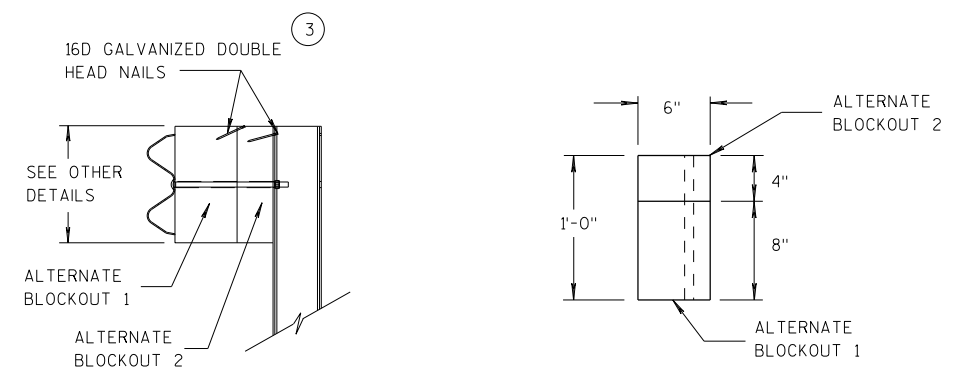
W-BEAM TO THRIE BEAM TRANSITION SECTION



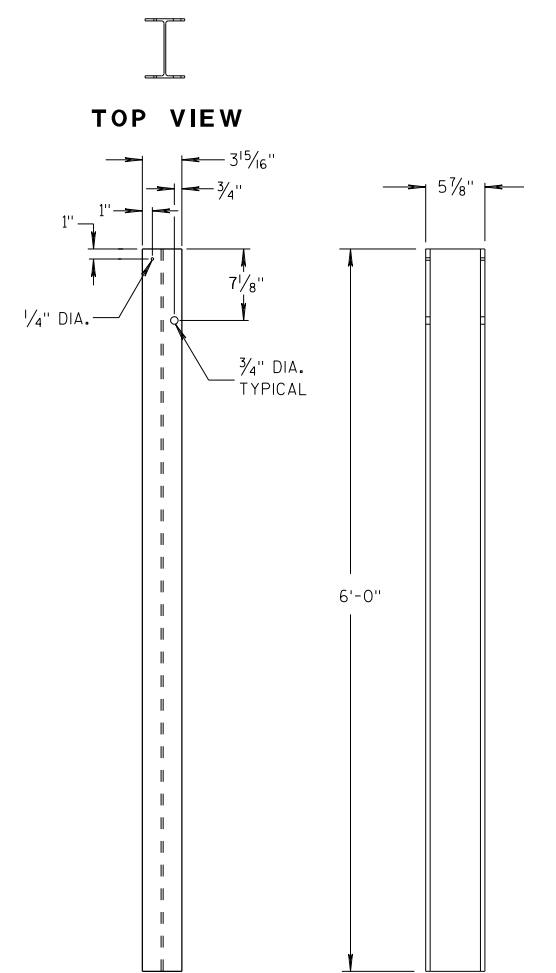
6'-3\"/>



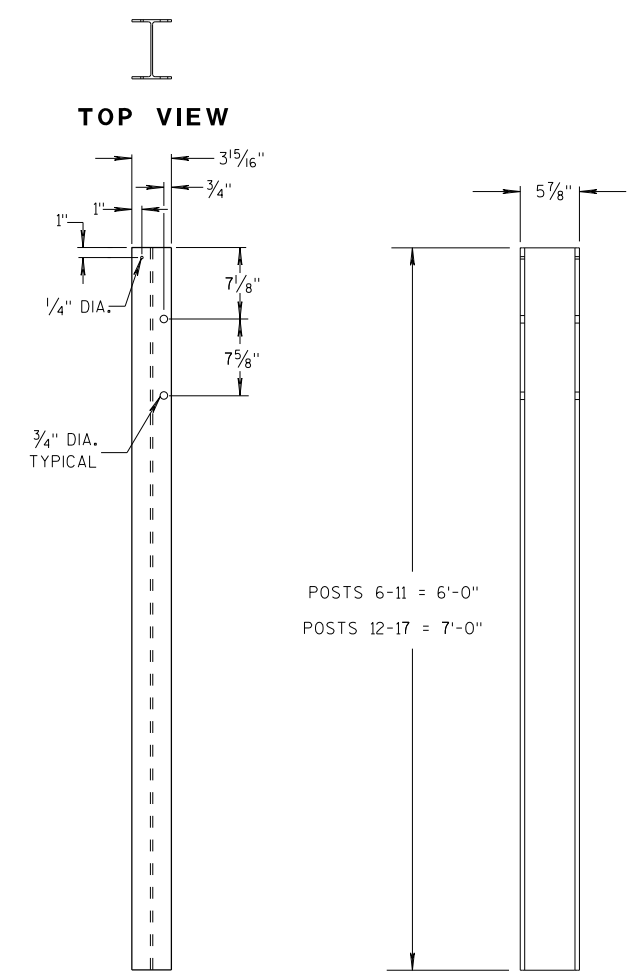
12'-6\"/>



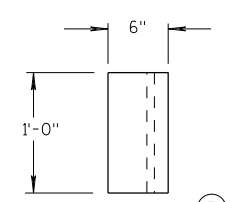
ALTERNATE WOOD BLOCKOUT DETAIL



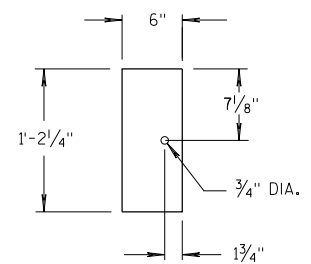
STEEL POSTS 1-5



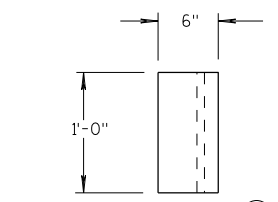
STEEL POSTS 6-17



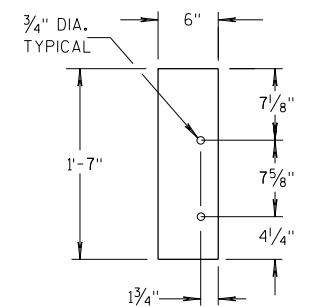
TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 1-5**



TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 6-17**

GENERAL NOTES

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

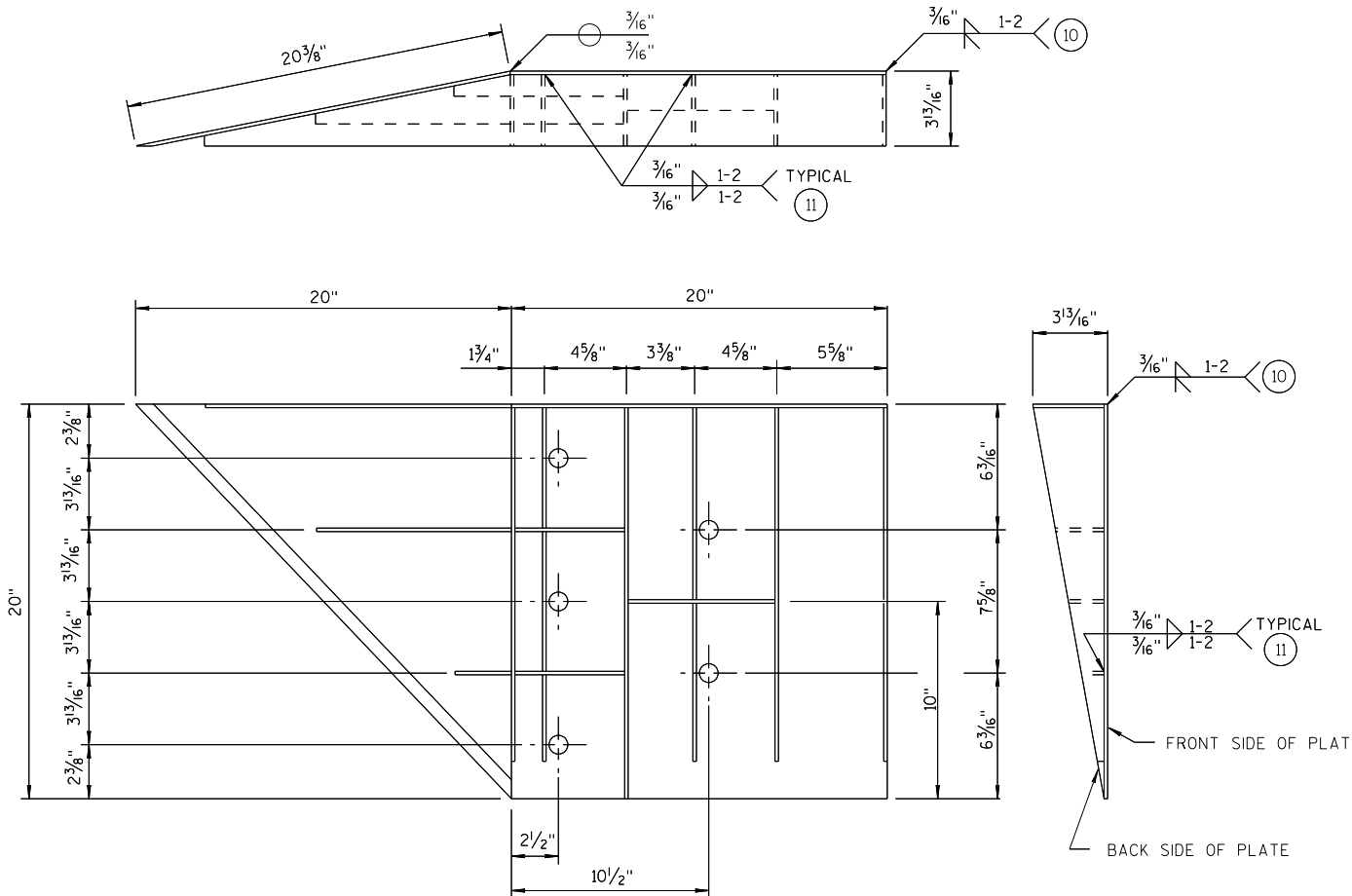
S.D.D. 14 B 45-5c

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

GENERAL NOTES

- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- (10) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- (11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

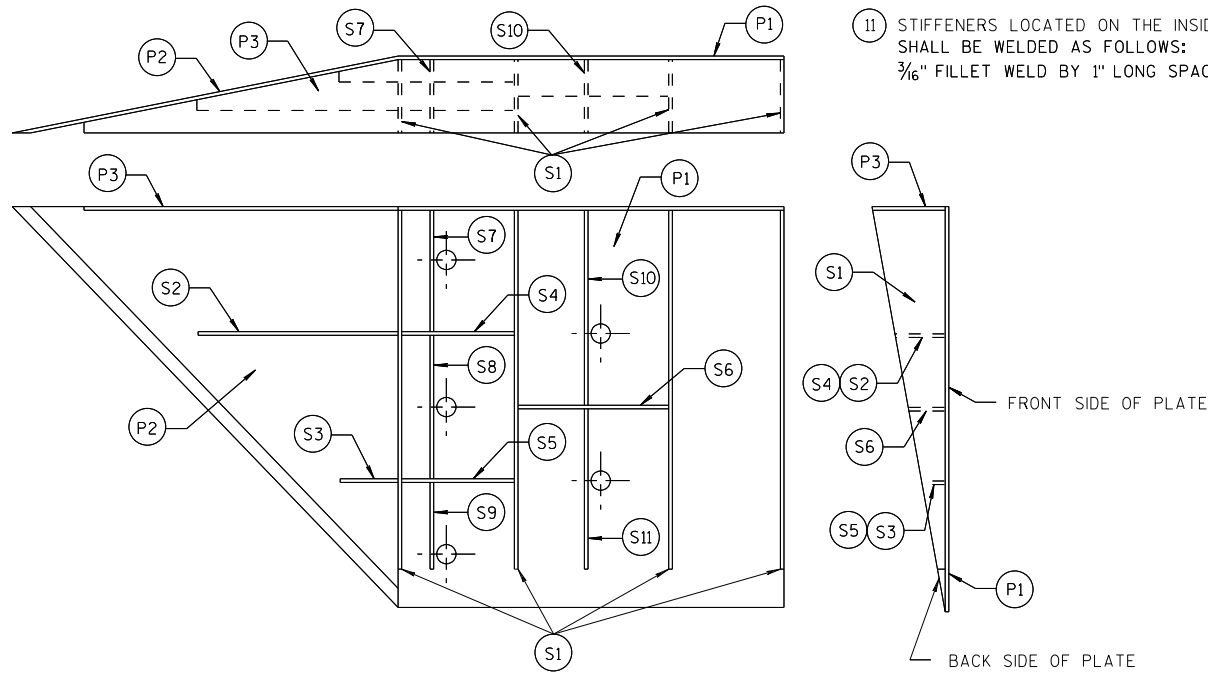


PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 3/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 3/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 1/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 3/16" x 6" x 3 5/8" x 5 1/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 3/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

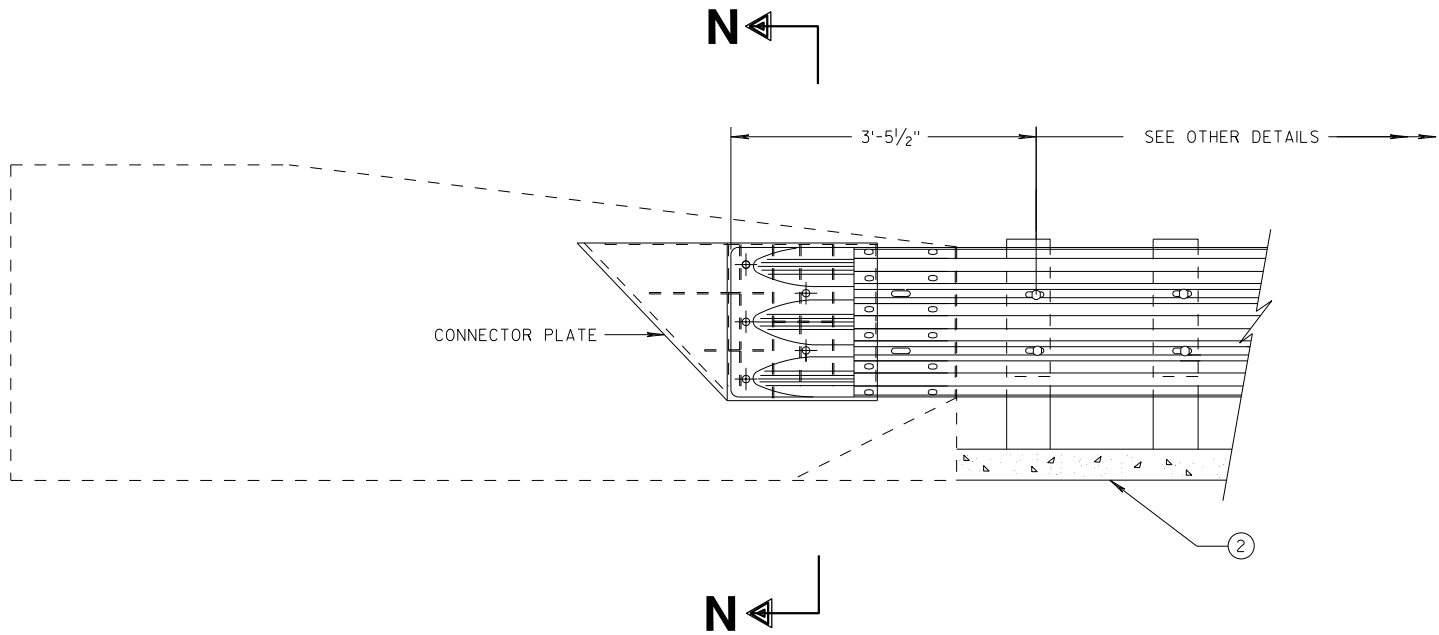
FHWA

GENERAL NOTES

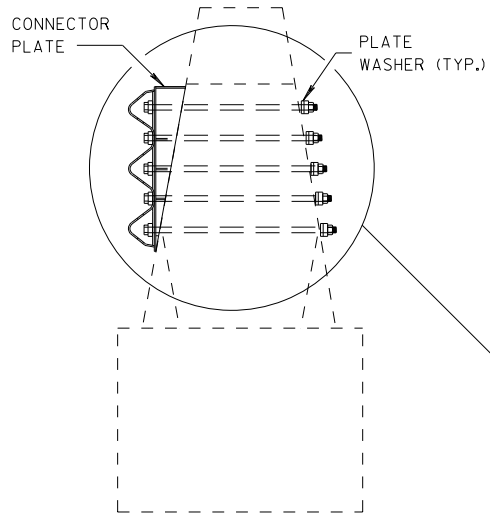
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

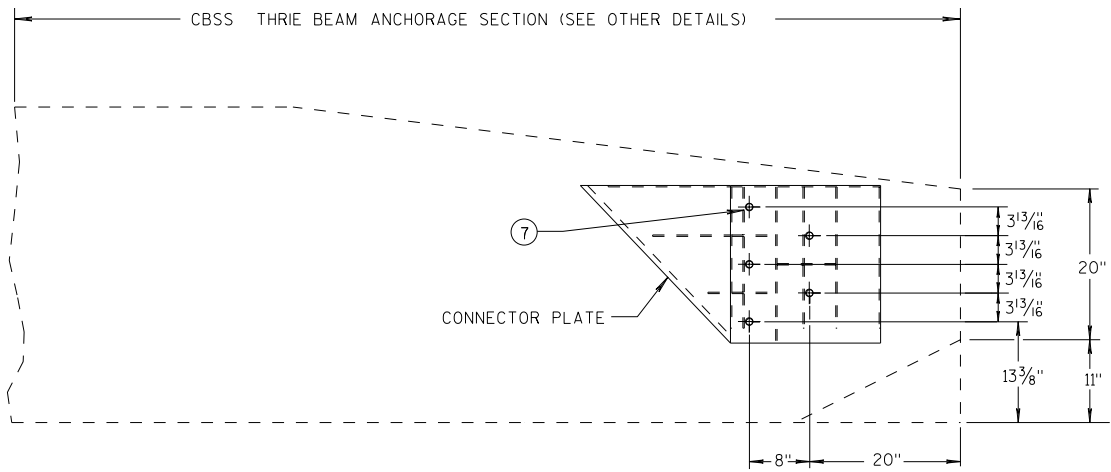
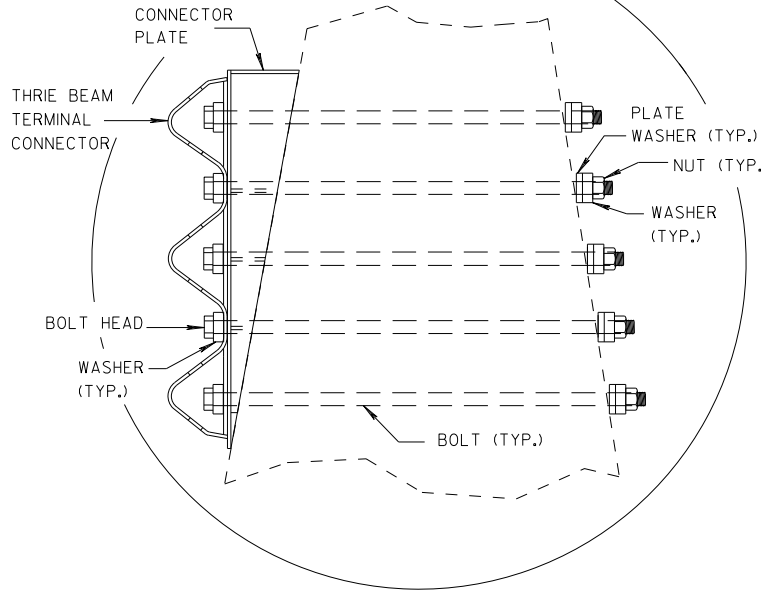
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTION PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



SECTION N-N

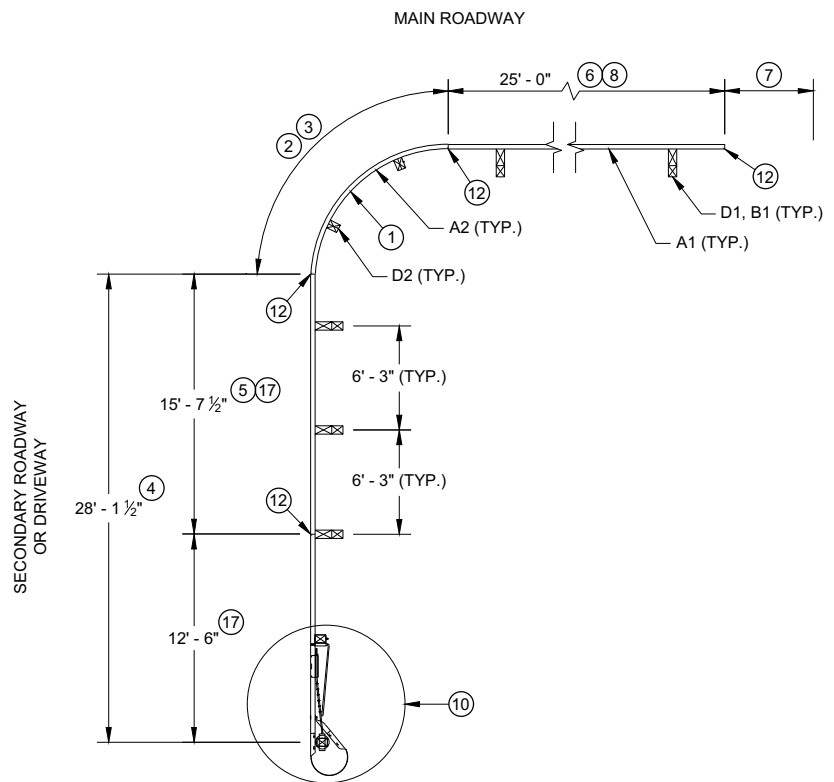


SINGLE SLOPE CONNECTION PLATE PLACEMENT

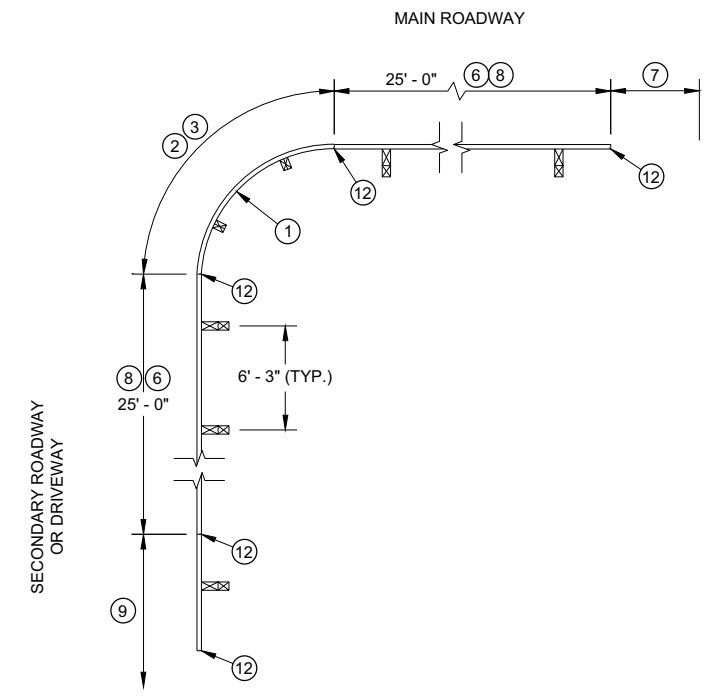
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



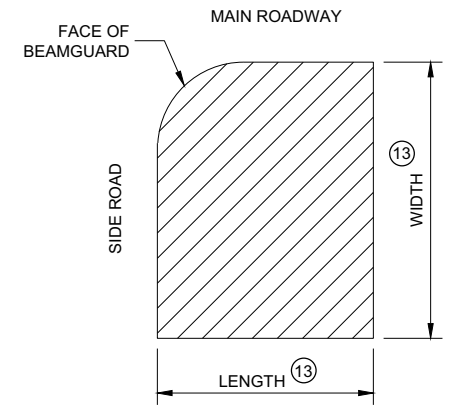
PLAN VIEW
SHORT RADIUS BEAM GUARD WITH
SHORT RADIUS TERMINAL ON
SECONDARY ROAD OR DRIVEWAY



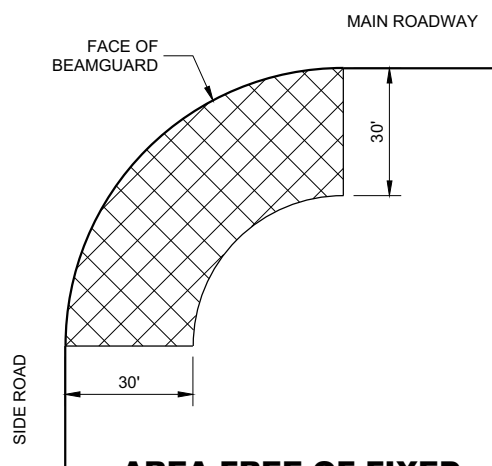
PLAN VIEW
SHORT RADIUS BEAM GUARD WITH
EAT, ADDITIONAL BEAM GUARD
OR
TRANSITION TO RIGID BARRIER ON
SECONDARY ROAD OR DRIVEWAY

TABLE FOR RADIUS OF 32' AND LESS

RADIUS (FT)	LENGTH (FT)	WIDTH (FT)
8	25	15
16	30	15
24	40	20
32	50	30



AREA FREE OF FIXED
OBJECTS FOR RADIUS
32' AND LESS

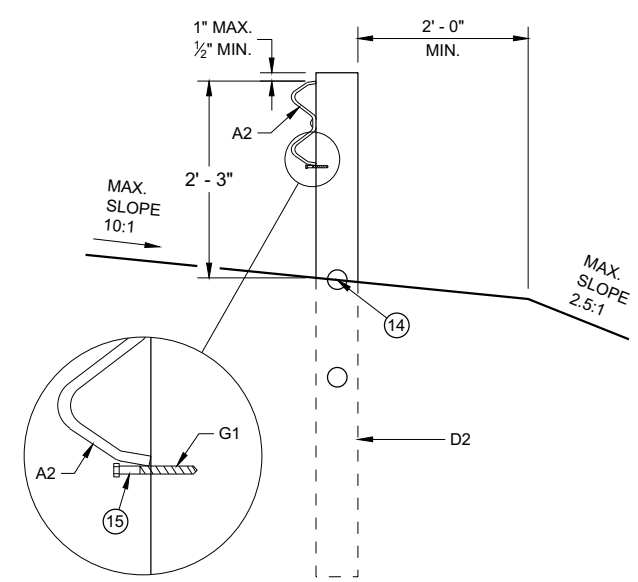


AREA FREE OF FIXED
OBJECTS FOR RADIUS
GREATER THAN 32'

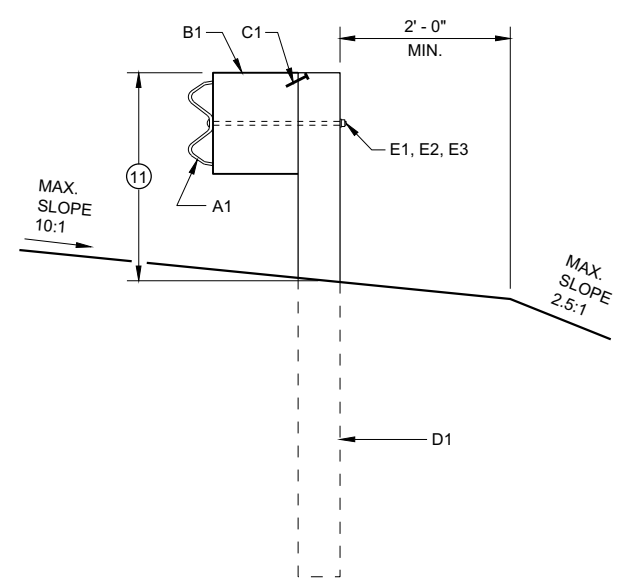
GENERAL NOTES

- SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.
- SEE SDD 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.
- GALVANIZE PARTS AFTER FABRICATION.
- WELDING TO FOLLOW CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI / AWS D1.1.
- UNLESS NOTED OTHERWISE, ALL PLATES ARE FLAT AND FREE OF WARP.
- UNLESS NOTED OTHERWISE, ALL EDGES ARE SMOOTH, STRAIGHT AND VERTICAL.
- ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUT.
- UNLESS NOTED OTHERWISE, CUT OR PROVIDE BOLTS THAT ARE 1/4" TO 1/2" BEYOND THE NUT.
- DRAWINGS ARE NOT TO SCALE.

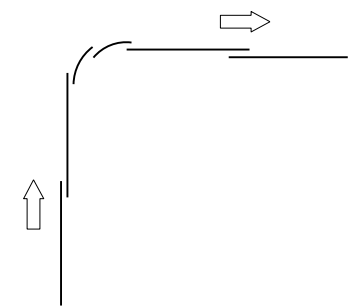
- ① RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.
- ② CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6' - 3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE (CRT) POSTS.
- ③ WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAIL IS RESTED ON TOP OF LAG SCREW.
- ④ MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID WITH BEAM GUARD ITEM.
- ⑤ ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.
- ⑥ MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TO TRANSITION TO RIGID BARRIER. ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.
- ⑦ BEAM GUARD, EAT, OR TRANSITION TO RIGID BARRIER. SEE PLAN.
- ⑧ TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.
- ⑨ ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.
- ⑩ SHORT RADIUS TERMINAL (SEE OTHER DETAILS).
- ⑪ HEIGHT VARIES. SEE NOTE ⑧ AND ⑧.
- ⑫ BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRES PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.
- ⑬ SEE TABLE FOR VALUES.
- ⑭ MAXIMUM HEIGHT FOR CENTER OF HOLE IS 3/4" ABOVE FINISHED GROUND ±1".
- ⑮ DRILL POST 1 5/8" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.
- ⑯ SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.
- ⑰ TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL (CRT).



CONTROLLED RELEASE
TERMINAL POST (CRT) IN RADIUS



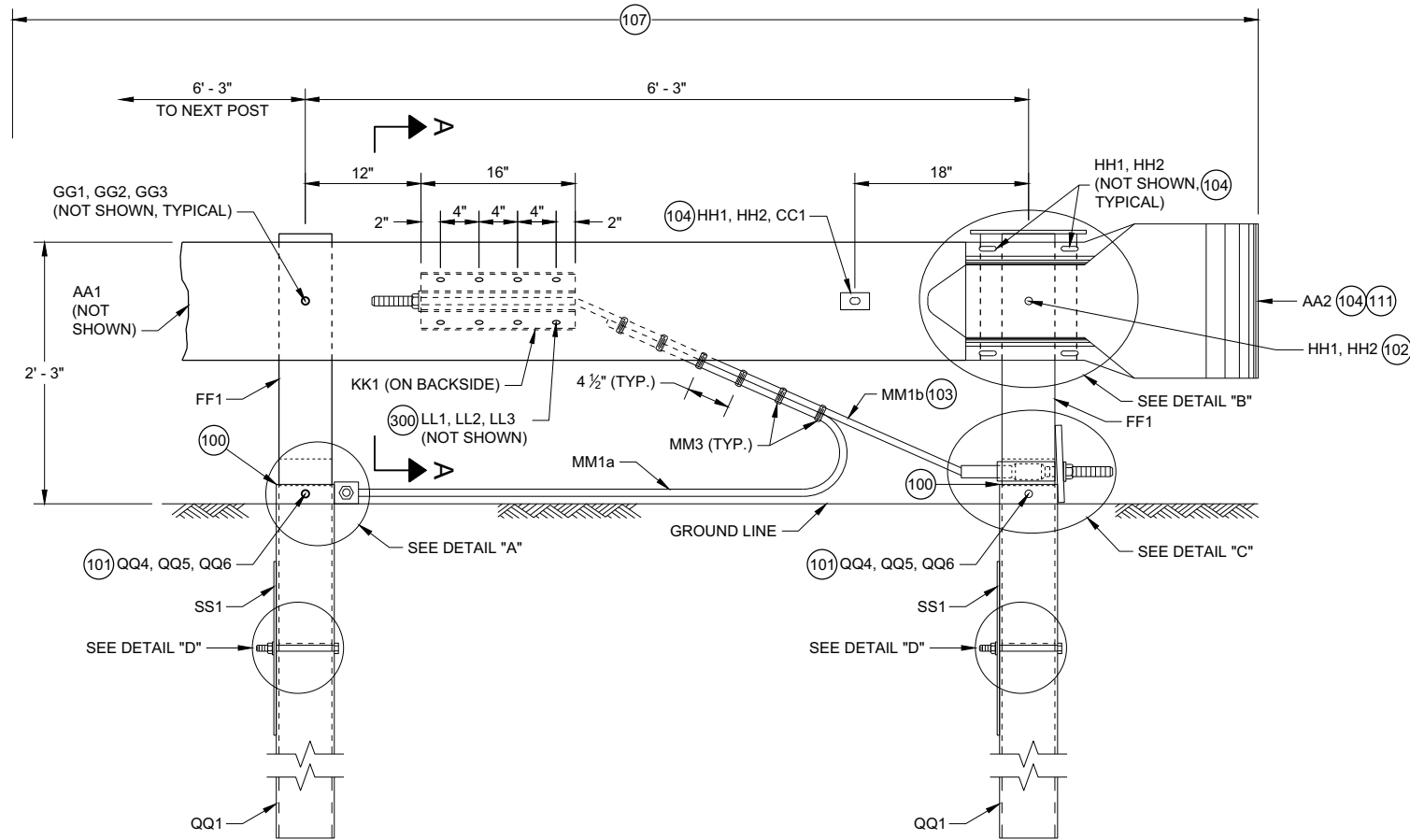
BEAM GUARD POSTS
IN HEIGHT TRANSITION



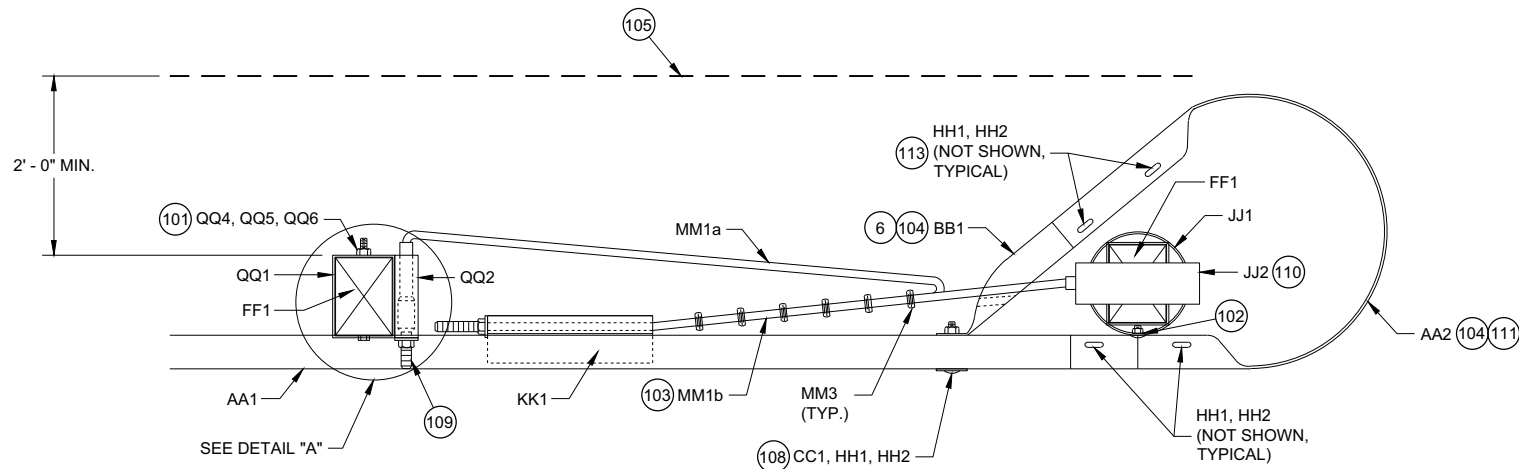
LAP SPLICE DETAIL

SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)

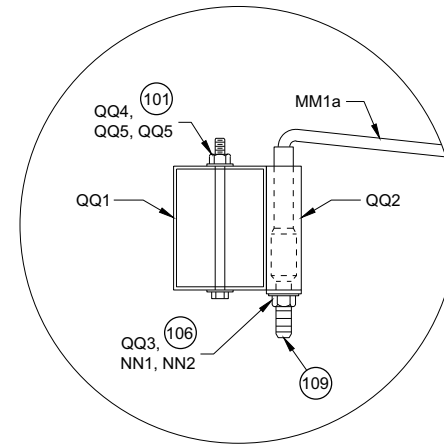
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION



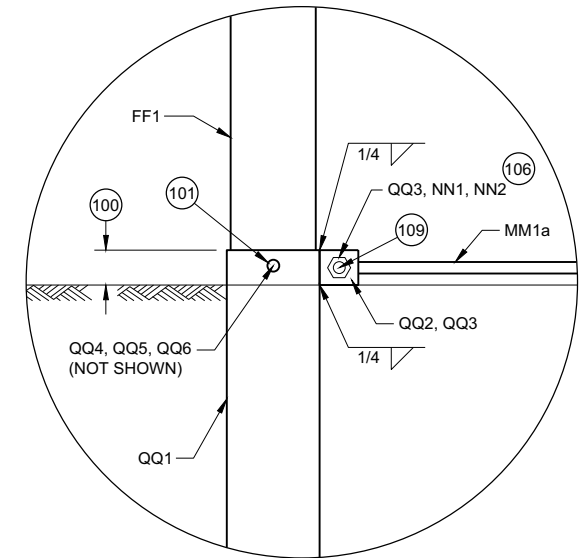
**PROFILE VIEW
SHORT RADIUS TERMINAL**



**TOP VIEW
SHORT RADIUS TERMINAL**



**TOP VIEW
DETAIL "A"
(WOOD BREAKAWAY AND BEAM
GUARD RAIL POSTS NOT SHOWN)**



**PROFILE VIEW
DETAIL "A"**

GENERAL NOTES

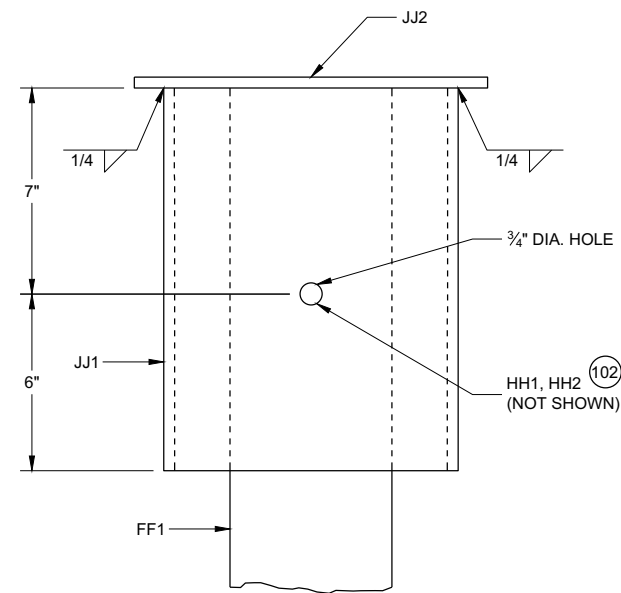
- 100 TOP OF FOUNDATION TUBE 2 INCHES MAXIMUM ABOVE FINISHED GROUND.
- 101 WASHERS REQUIRED BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.
- 102 SPLICE BOLT AND NUT CONNECTS BEAM GUARD RAIL, W-BEAM SECTION BUFFER, AND STEEL PIPE ASSEMBLY. NO WASHER REQUIRED. SEE DETAIL "B".
- 103 CABLE IS TAUT.
- 104 ADJUST AA2 AND BB1 TO FIT.
- 105 BREAK POINT OF SHOULDER.
- 106 TACK WELD CABLE CONNECTOR TUBE PLATE TO CABLE CONNECTION TUBE. SEE DETAIL "A" PROFILE VIEW.
- 107 PAY LIMIT FOR BEAM GUARD.
- 108 SQUARE WASHER BETWEEN HEAD OF BOLT AND TRAFFIC FACE OF BEAM GUARD. ROUND WASHER REQUIRED BETWEEN NUT AND BB1.
- 109 CUT OR PROVIDE THREADED STUD THAT IS FLUSH WITH FACE OF BEAM GUARD RAIL KK1 (PLUS OR MINUS 1/2" TOLERANCE). DEBURR AFTER CUTTING.
- 110 SEE STEEL PIPE ASSEMBLY DETAILS.
- 111 ATTACH UU2 WITH UU3. SHOP APPLY UU1 TO UU2.
- 112 FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA1 TO AA2.
- 113 FOUR (4) HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.

**SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)**

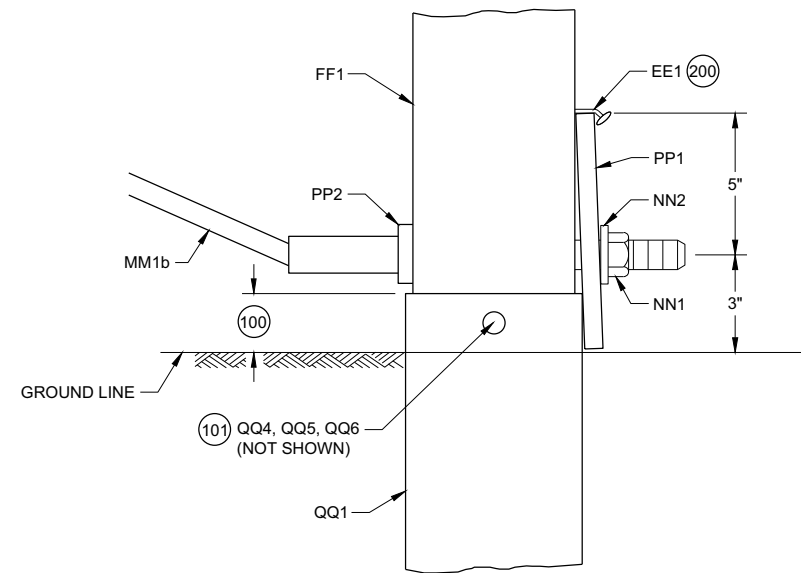
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

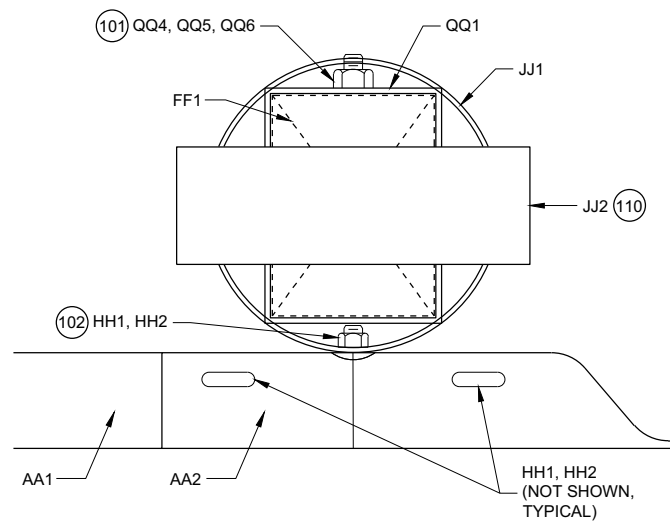
(200) TWO (2) NAILS SPACED 4 INCHES CENTER TO CENTER.



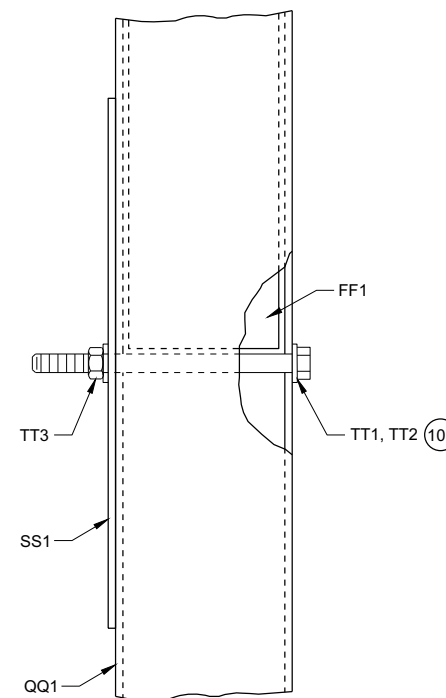
**PROFILE VIEW
DETAIL "B"
STEEL PIPE ASSEMBLY
(BEAM GUARD AND W BEAM
END SECTION NOT SHOWN)**



**PROFILE VIEW
DETAIL "C"**



**PLAN VIEW
DETAIL "B"
STEEL PIPE ASSEMBLY**



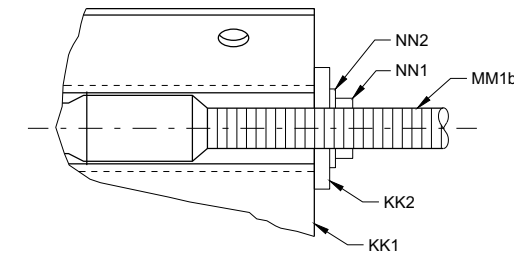
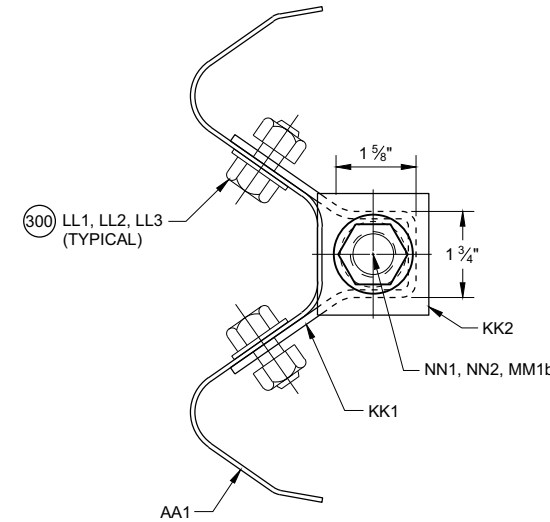
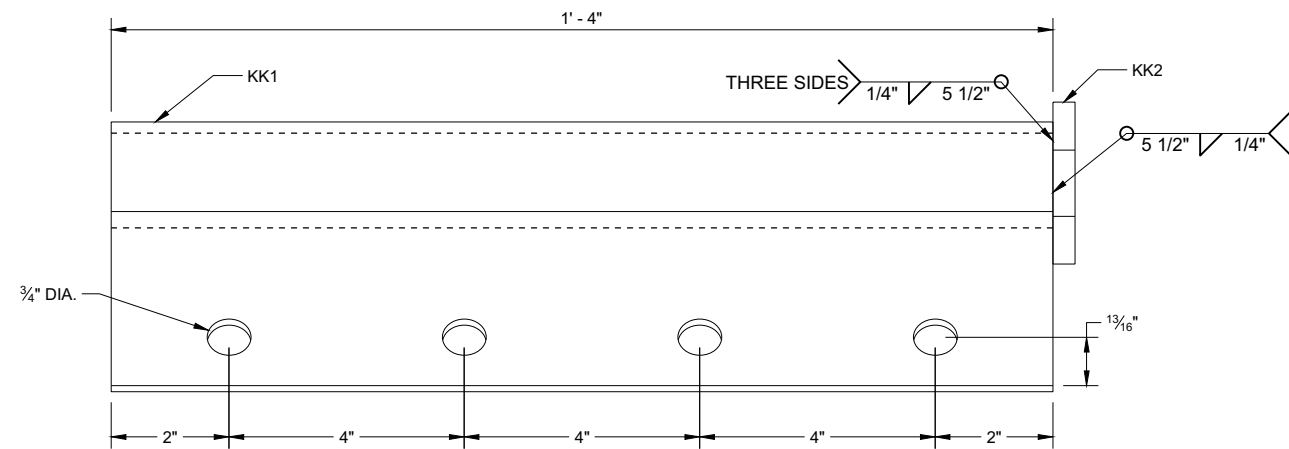
**PROFILE VIEW
DETAIL "D"**

**SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)**

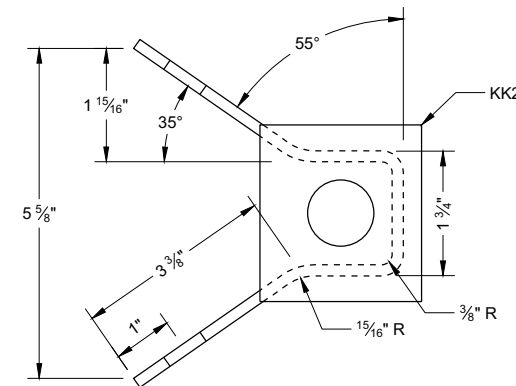
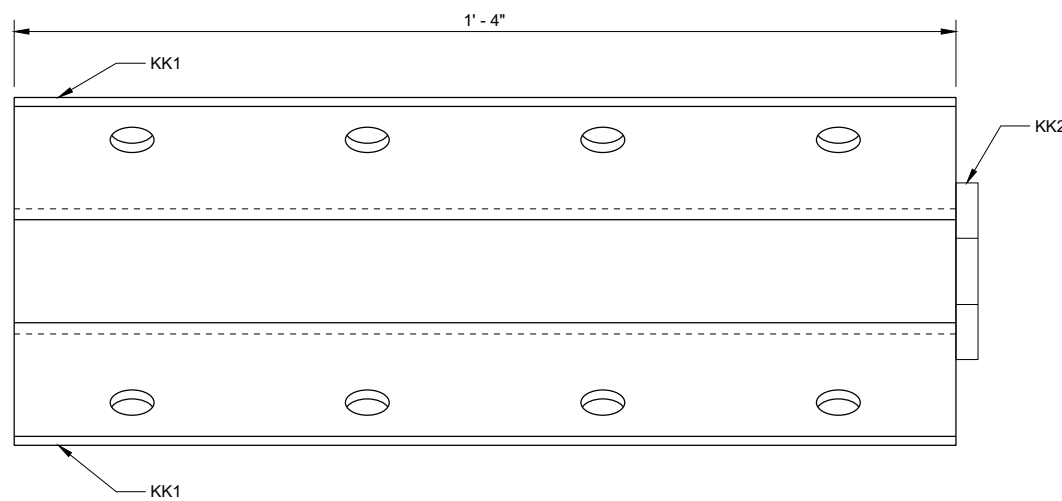
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

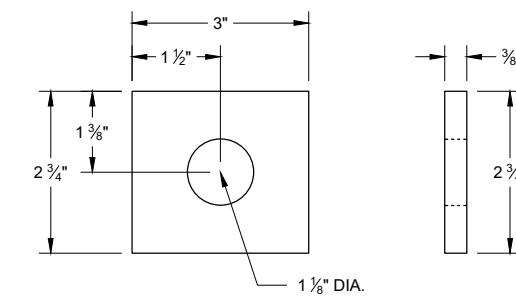
300 WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT (8) LL1 AND LL3 REQUIRED. SIXTEEN (16) LL2 REQUIRED.



SECTION A - A



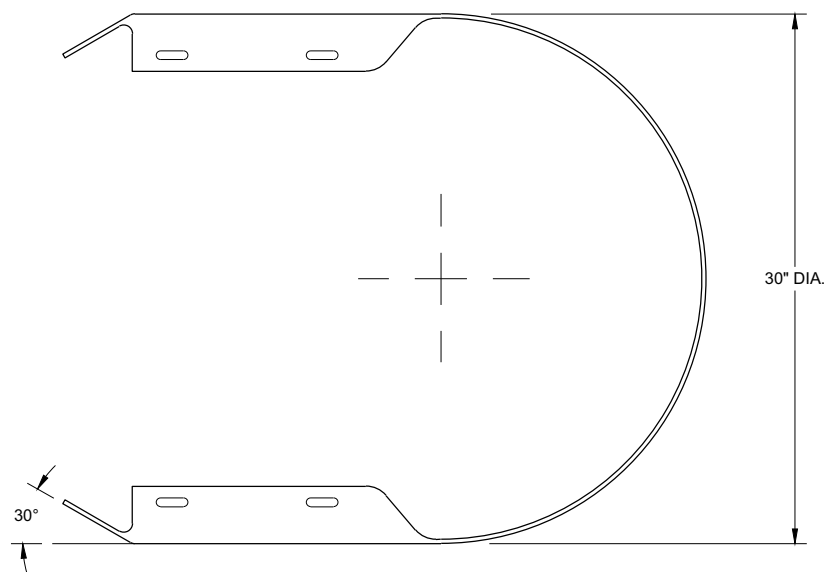
ANCHOR BRACKET BEARING PLATE (KK2)



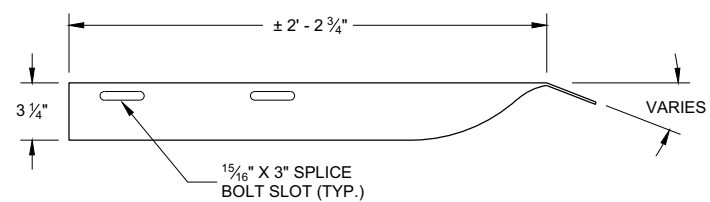
ANCHOR BRACKET (KK1, KK2)

**SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



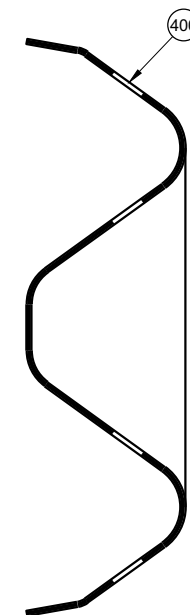
TOP VIEW



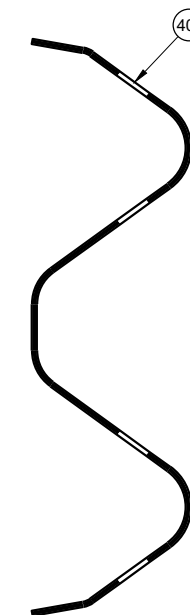
TOP VIEW

GENERAL NOTES

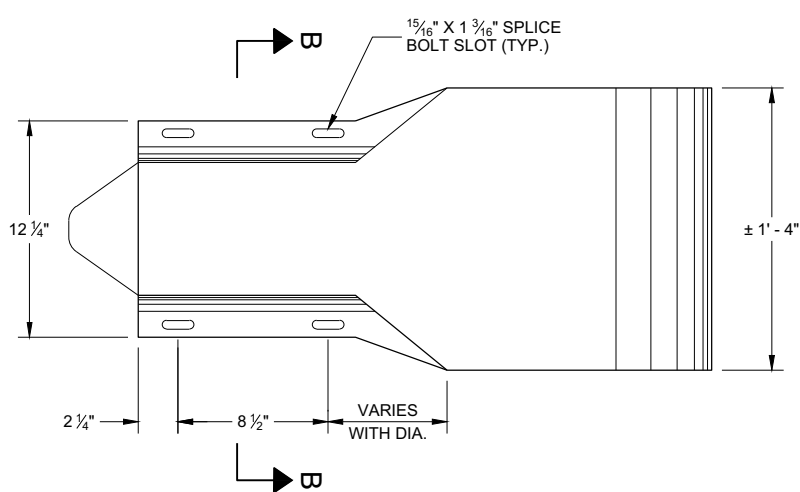
- (400) CROSS SECTION OF PART IS TO FIT OVER AA1 .
- (401) CROSS SECTION OF PART IS TO FIT OVER OR UNDER AA1 .



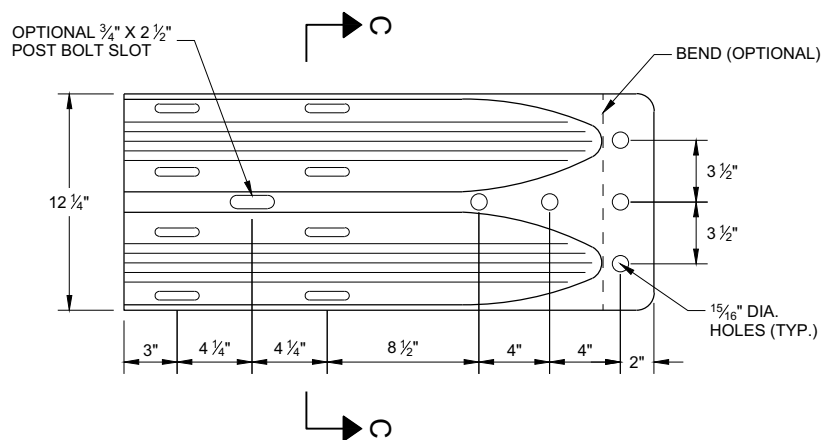
SECTION B - B



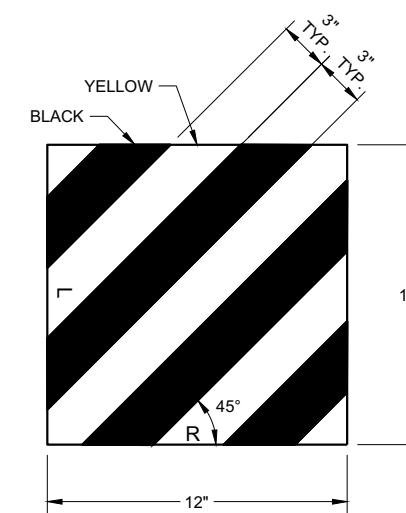
SECTION C - C



**PROFILE VIEW
W BEAM
END SECTION BUFFER (AA2)**



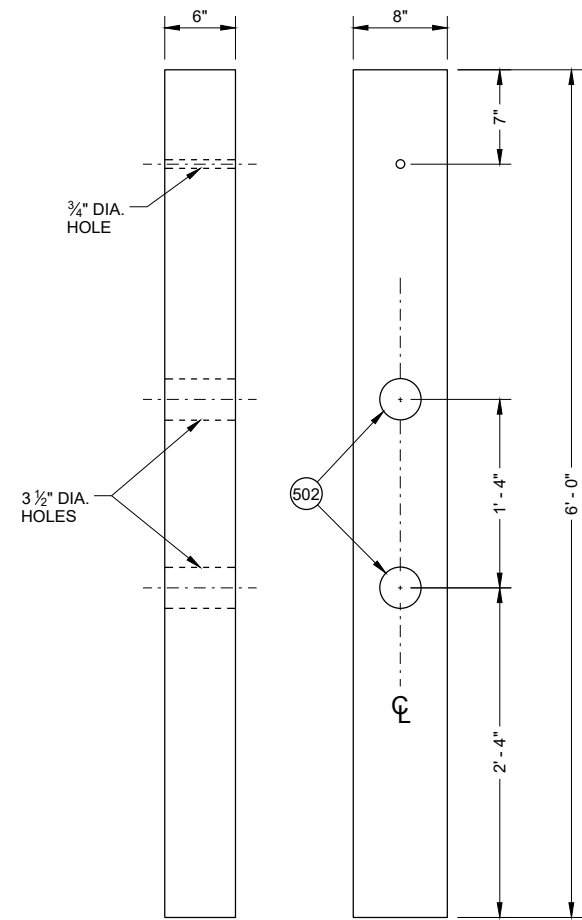
**PROFILE VIEW
W BEAM
TERMINAL CONNECTOR (BB1)**



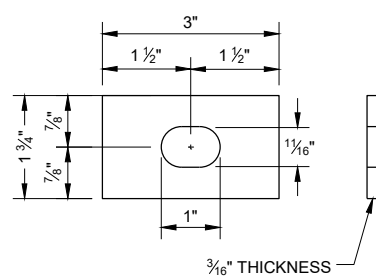
REFLECTIVE SHEETING (UU1, UU2)

**SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)**

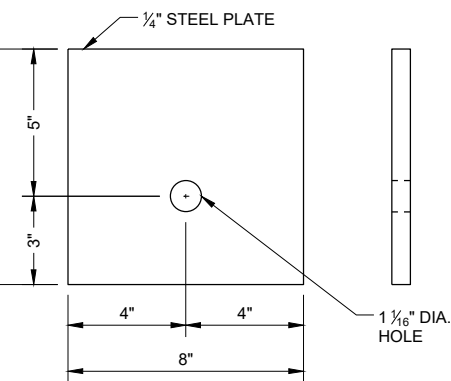
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



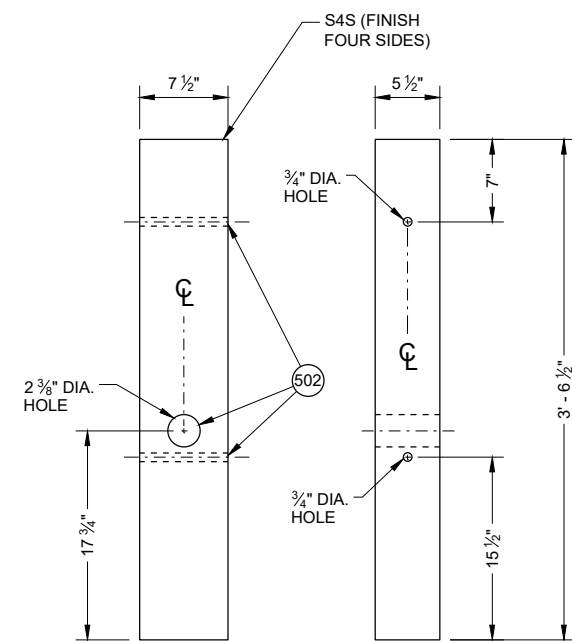
**FRONT VIEW SIDE VIEW
CONTROLLED RELEASE
POST (CRT) (DD2)**



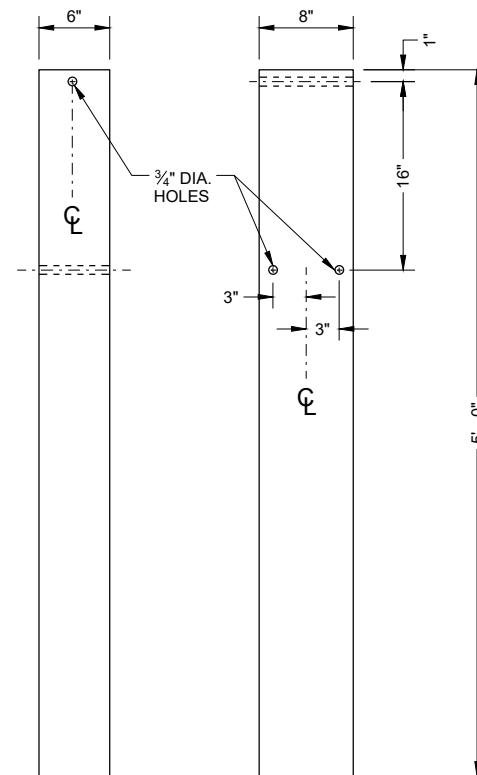
**RECTANGULAR PLATE
WASHER (CC1)**



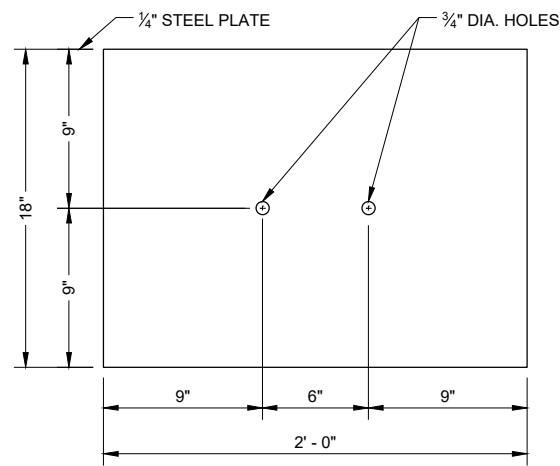
BEARING PLATE (PP1)



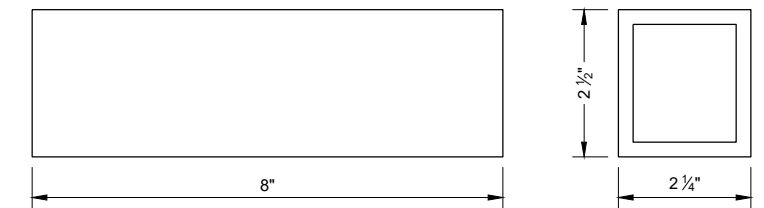
**FRONT VIEW SIDE VIEW
WOOD BREAKAWAY POST (FF1)**



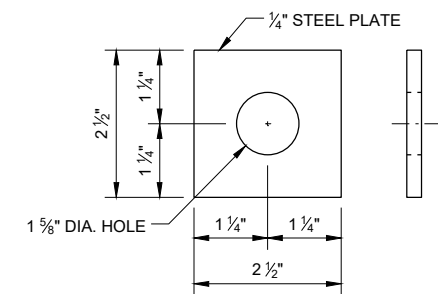
**FRONT VIEW SIDE VIEW
FOUNDATION TUBE (QQ1)**



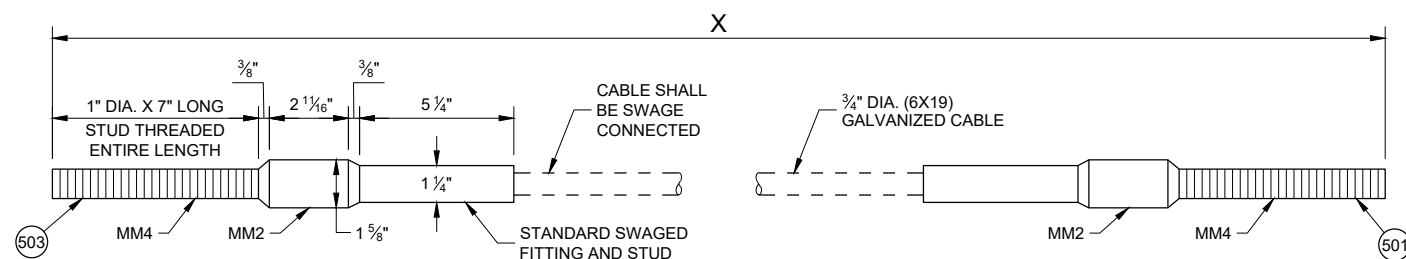
SOIL PLATE (SS1)



**FOUNDATION TUBE -
ANCHOR CABLE TUBE (QQ2)**



**ANCHOR CABLE TUBE
END PLATE (QQ3)**



CABLE ASSEMBLY (MM1a, MM1b)

"X" LENGTH

MM1b	9' - 0"
MM1b	6' - 8"

GENERAL NOTES

- (500) SEE DETAIL "D" FOR LOCATION AND ATTACHMENT OF SS1.
- (501) FOR MM1a THREADED STUD ONLY REQUIRED ON ONE END. SWAGED FITTING REQUIRED.
- (502) LOCATE HOLES ON THE CENTERLINE OF THE SIDE OF THE POST.
- (503) MM1a MAY HAVE ONE THREADED STUD 4 INCHES LONG. SEE NOTE (109).

**SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	BEAM GUARD RAIL	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
A2	BEAM GUARD RAIL - SHOP BENT	INDICATE ON BACK OF RAIL THE RADIUS THAT RAIL WAS BENT TO. SHOP BEND RADIUS IS TO THE NEAREST FOOT. FOLLOW AASHTO M180 ON HOW TO MARK RADIUS INFORMATION.	
		AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
B1	BLOCK - WOOD	WISDOT SPEC. 614	SEE SDD 14B42
C1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEAD)	
D1	POST-STRONG POST-WOOD	WISDOT SPEC. 614	SEE SDD 14B42
D2	POST-CRT-WOOD	WISDOT SPEC. 614	
E1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
E2	POST BOLT - WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
E3	POST BOLT - NUT	AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
F1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
F2	SPLICE BOLT - NUT	ASTM A563 GRADE A	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
G1	LAG SCREW	ASTM A308 GRADE A ASTM A153 CLASS D	1/2" DIA. 6" LONG
H1	DELINEATOR - BEAM GUARD		SEE SDD 14B42 FOR MORE INFORMATION
H2	DELINEATION - SHEETING	YELLOW OR WHITE	
		WISDOT SPEC 637 TYPE SH	
		APPROVED PRODUCT LIST	
J1	FOUNDATION BACKFILL	STANDARD SPEC. 614	
AA1	BEAM GUARD RAIL - PUNCHED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
AA2	BEAM GUARD RAIL - END SECTION BUFFER	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
BB1	BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
CC1	SHORT RADIUS - SQUARE WASHER	AASHTO M180	
		GALV. AASHTO M111 / ASTM A123	
EE1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)	
FF1	POST - BCT - WOOD	S4S FINISH ON 4 SIDES	
		WISDOT SPEC. 614	
GG1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
GG2	POST BOLT - WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329	

6

6

SDD 14B53 - 019

SDD 14B53 - 019

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
GG3	POST BOLT - NUT	ASTM A563 GRADE A	$\frac{3}{8}$ " DIA. SEE 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
ASTM A563 GRADE A HEAVY HEX HEAD			
HH1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	$\frac{3}{8}$ " DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180 HEAD GEOMETRY	
HH2	SPLICE BOLT - NUT	ASTM A563 GRADE A	$\frac{3}{8}$ " DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
JJ1	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	10" O.D.
JJ2	TOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS $\frac{3}{8}$ " X 4" X 1' - 0"
		GALV. AASHTO M111 / ASTM A123	
KK1	ANCHOR BRACKET	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
KK2	ANCHOR BRACKET - BEARING PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
LL1	ANCHOR BRACKET - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	$\frac{3}{8}$ " DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
LL2	ANCHOR BRACKET - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	$\frac{3}{8}$ " DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
LL3	ANCHOR BRACKET - NUT	ASTM A563 GRADE A	$\frac{3}{8}$ " DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
MM1a	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM1b	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM2	ANCHOR CABLE - SWAGE FITTING	ASTM A576 GRADE 1035	
		SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. WITH A BREAKING STRENGTH 40,000 LBS.	
		GALV. AASHTO M111 / ASTM A123	
		ASME B30.26 FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING INTO CONNECTION: NAME OF MANUFACTURER OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE.	
MM3	WIRE ROPE CABLE CLAMPS	FF-C-450D TYPE 1 CLASS 1	$\frac{3}{4}$ "
		ASTM A153 HOT DIP CLASS D	
MM4	ANCHOR CABLE - SWAGE FITTING - STUD	ASTM F3125 GRADE A325 TYPE 1 OR SAE GRADE 5 OR ASTM A449 TYPE 1 HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
NN1	ANCHOR CABLE - NUT	ASTM A563 GRADE A	1" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
NN2	ANCHOR CABLE - NUT - WASHER	UNC	1" DIA.
		ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	

6

6

SDD 14B53 - 01h

SDD 14B53 - 01h

**SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
PP1	BEARING PLATE AT POST	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
PP2	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	2" DIA. x 6" LONG
QQ1	FOUNDATION TUBE	ASTM A500 GRADE B	8" X 6" X 3/8"
		GALV. AASHTO M111 / ASTM A123	
QQ2	SHORT RADIUS - FOUNDATION TUBE - ANCHOR CABLE - TUBE	ASTM A500 GRADE B	DIMENSIONS 2 1/2" X 2 1/4" X 1/4" X 8"
		GALV. AASHTO M111 / ASTM A123	
QQ3	SHORT RADIUS - SOIL TUBE - ANCHOR CABLE - TUBE - END PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 2 1/2" X 2 1/2" X 1/4"
		GALV. AASHTO M111 / ASTM A123	
QQ4	GROUND STRUT AND YOKE - BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8 DIA.
		ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	
		UNC	
QQ5	GROUND PLATE AND YOKE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8 DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
QQ6	GROUND STRUT AND YOKE - NUT	HEAVY HEX	5/8 DIA.
		UNC	
		ASTM A563 GRADE A	
		OVER TAPPED NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
SS1	SOIL PLATE	ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / A123	
TT1	SOIL PLATE - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8 DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
TT2	SOIL PLATE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8 DIA.
		GALV. AASHTO M111 / ASTM A123 OR GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
TT3	SOIL PLATE - NUT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8 DIA.
UU1	OBJECT MARKER - SHEETING	MUTCD / WISDOT OBJECT MARKER TYPE 3	PATTERN AND COLOR FOR SHEETING. SHEETING TYPE FOR MARKER.
		WISDOT SPEC 637 TYPE F	
		APPROVED PRODUCT LIST	
UU2	OBJECT MARKER - ALUMINUM PLATE	WISDOT SPEC 637 ALUMINUM PLATE	MATERIAL AND THICKNESS OF MATERIALS
UU3	OBJECT MARKER - SCREWS	STAINLESS SELF-TAPPING SCREWS	
VV1	FOUNDATION BACKFILL	WISDOT SPEC 614	

6

6

SDD 14B53 - 01i

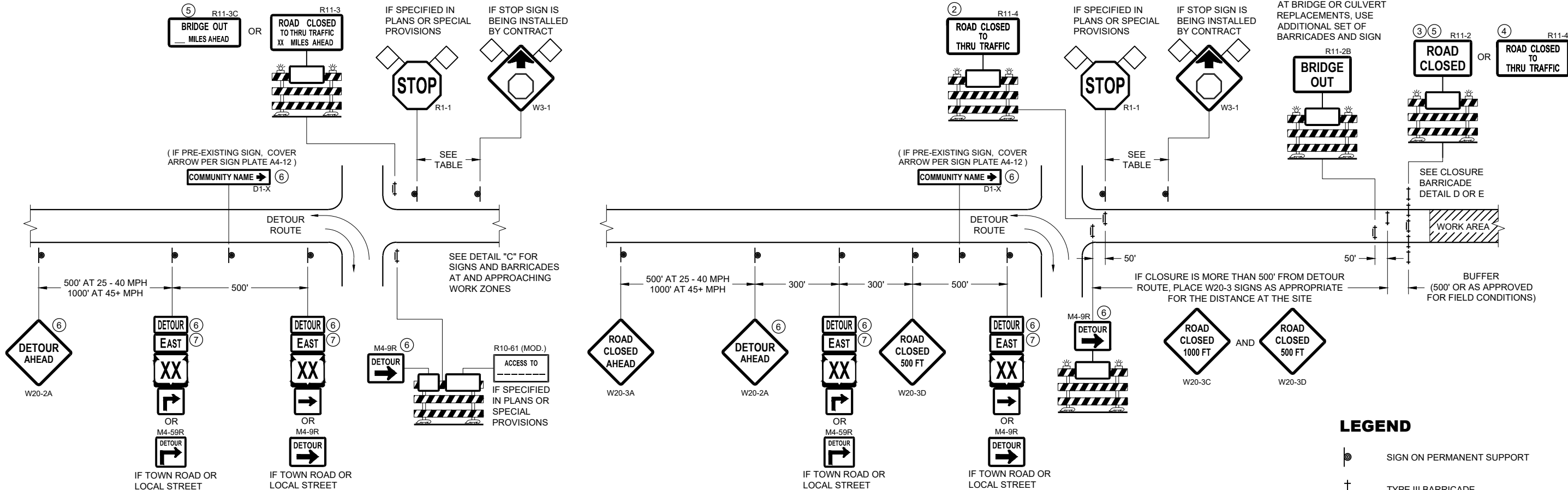
SDD 14B53 - 01i

**SHORT RADIUS BEAM
GUARD (MGS) SHORT
RADIUS TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

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

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

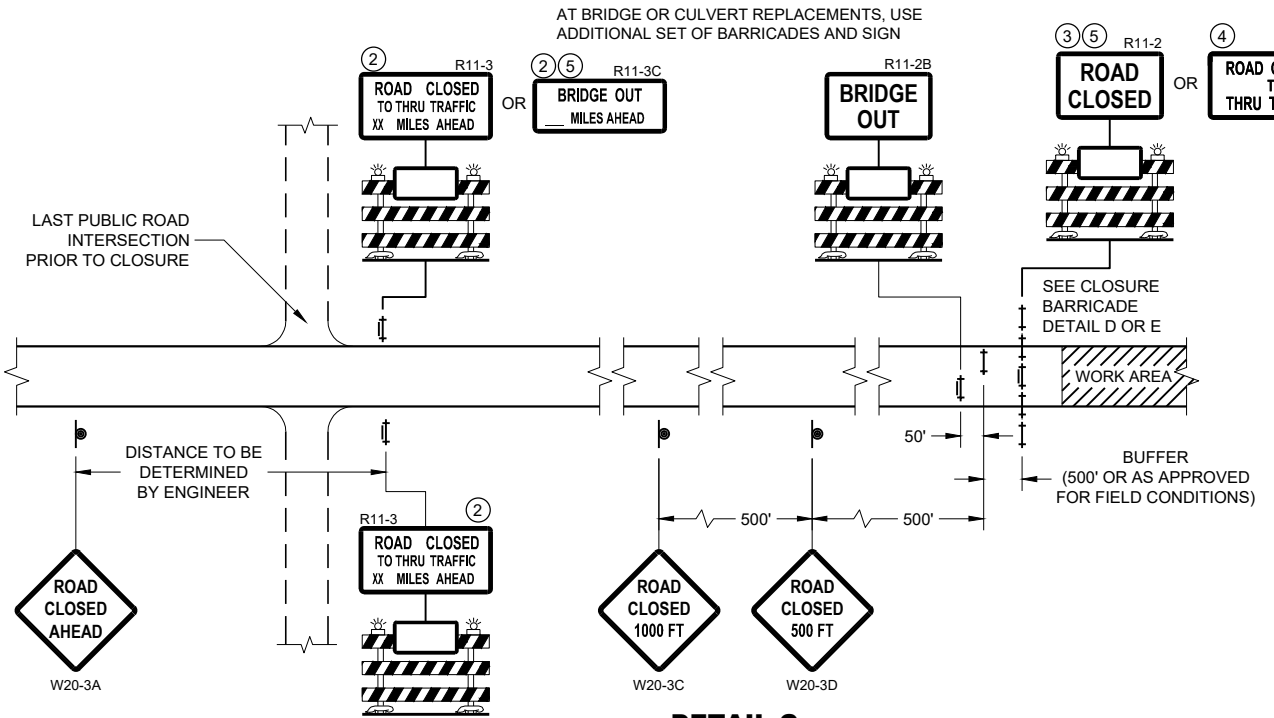
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

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

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

- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1



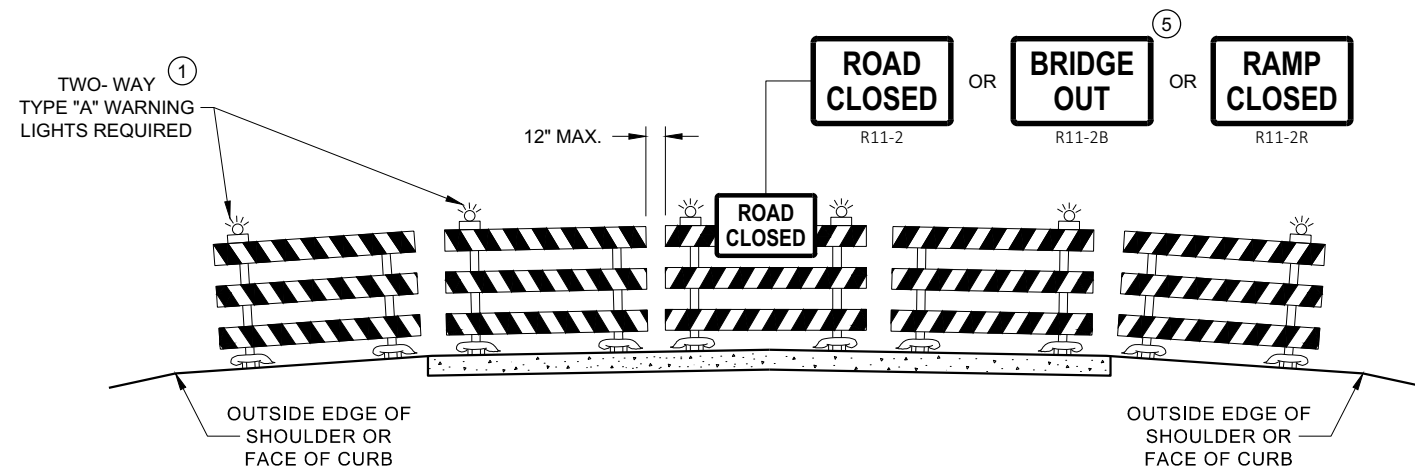
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

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

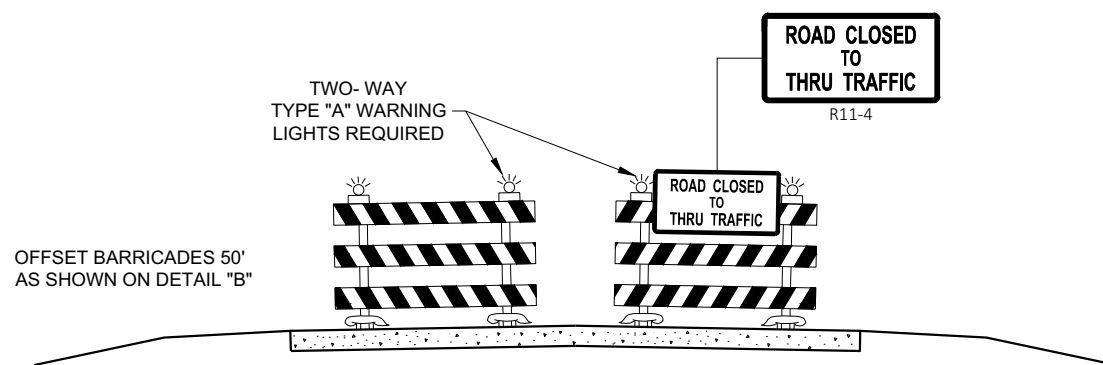
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



**DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW**



**DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

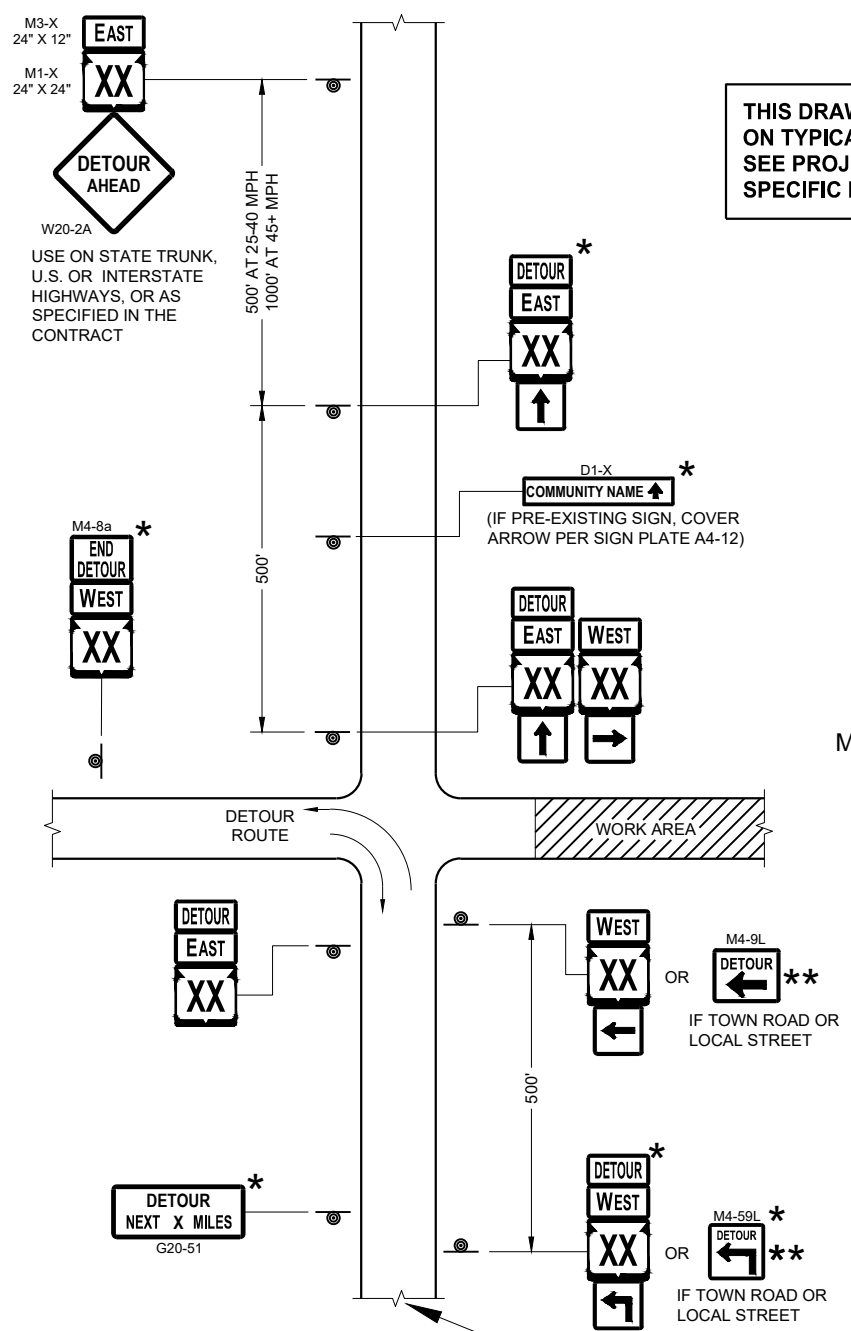
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS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

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

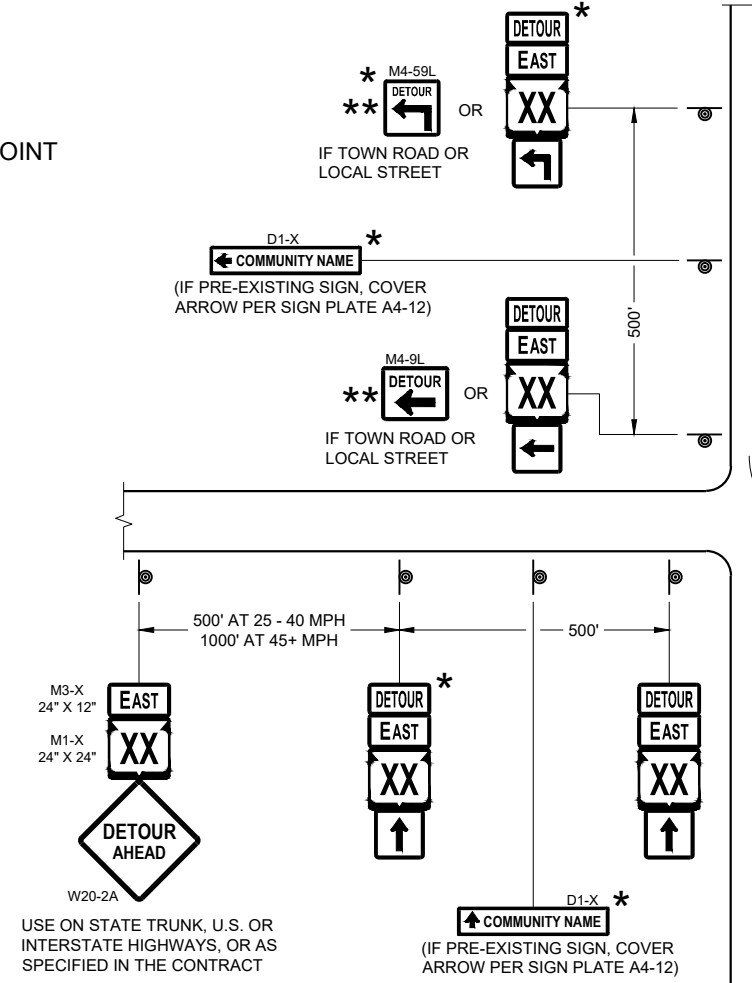
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

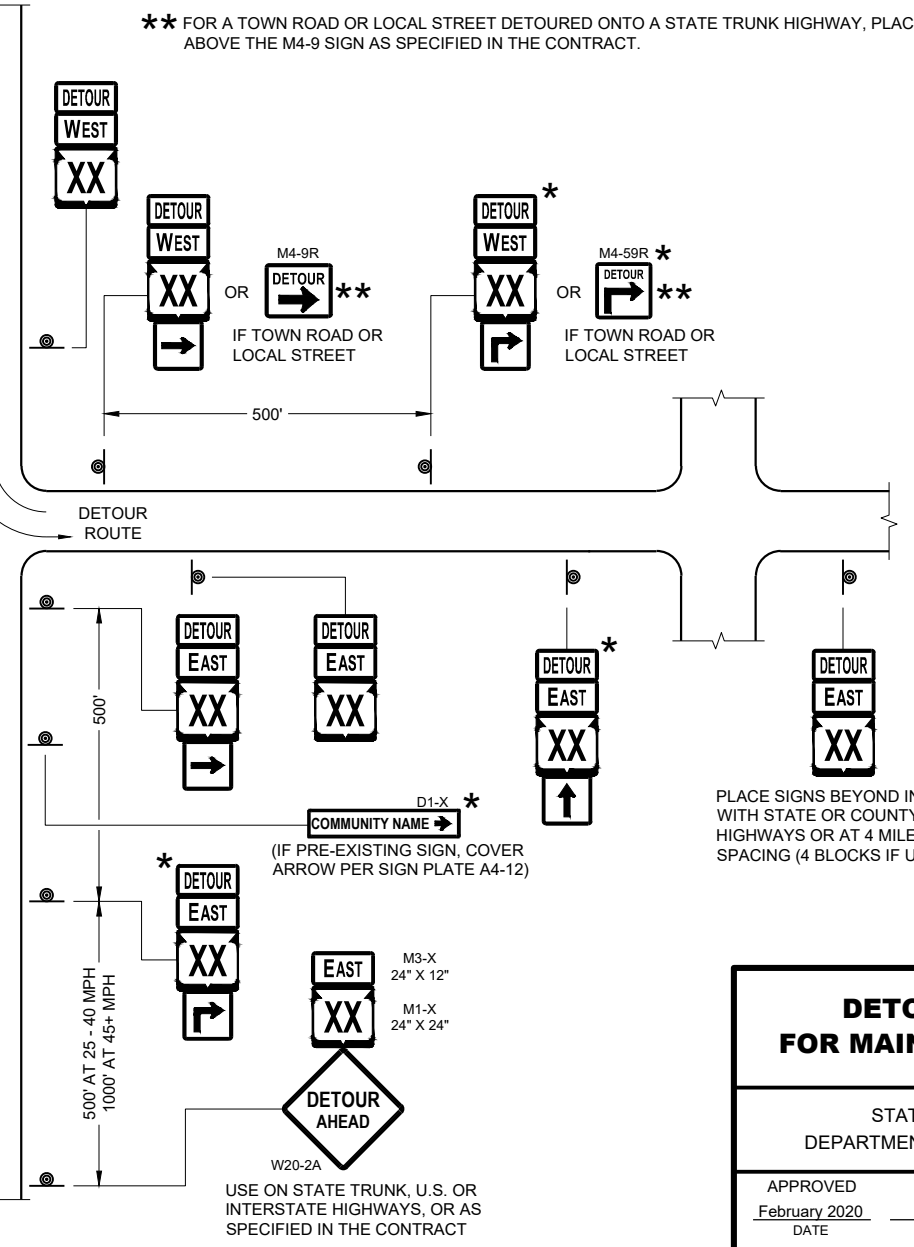
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

MATCH POINT



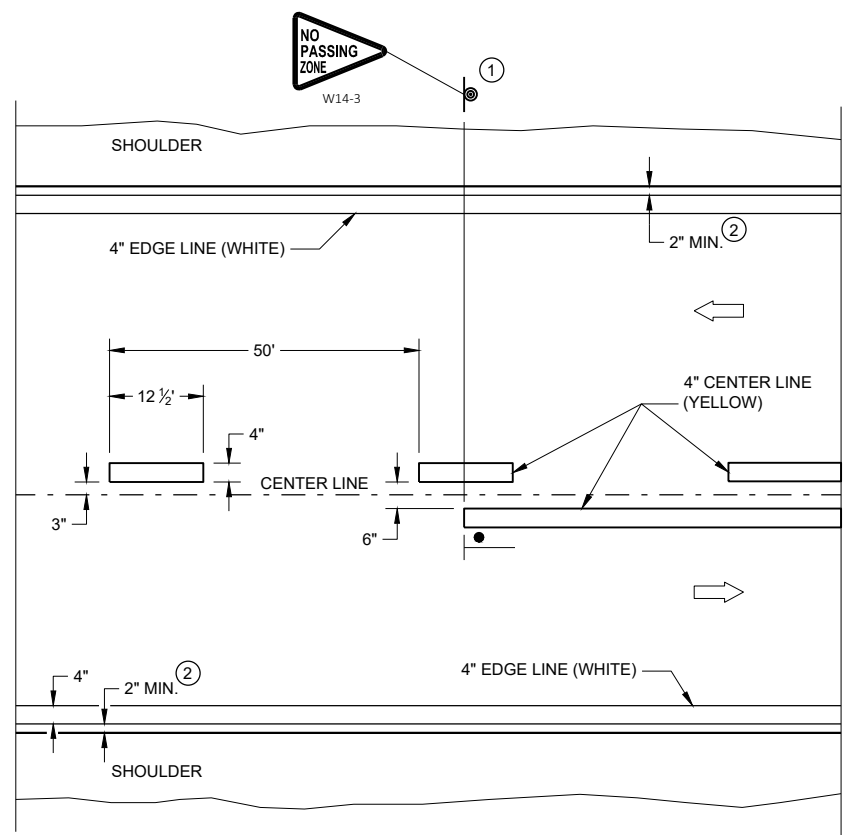
**DETAIL F
DETOUR SIGNING**



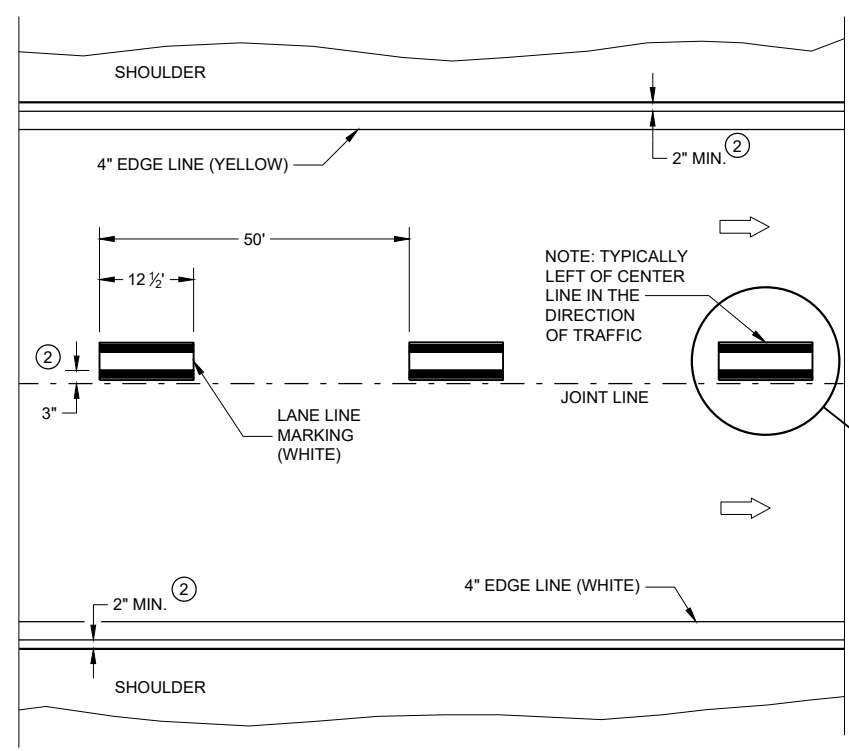
PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA)

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

DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2020 DATE	/s/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

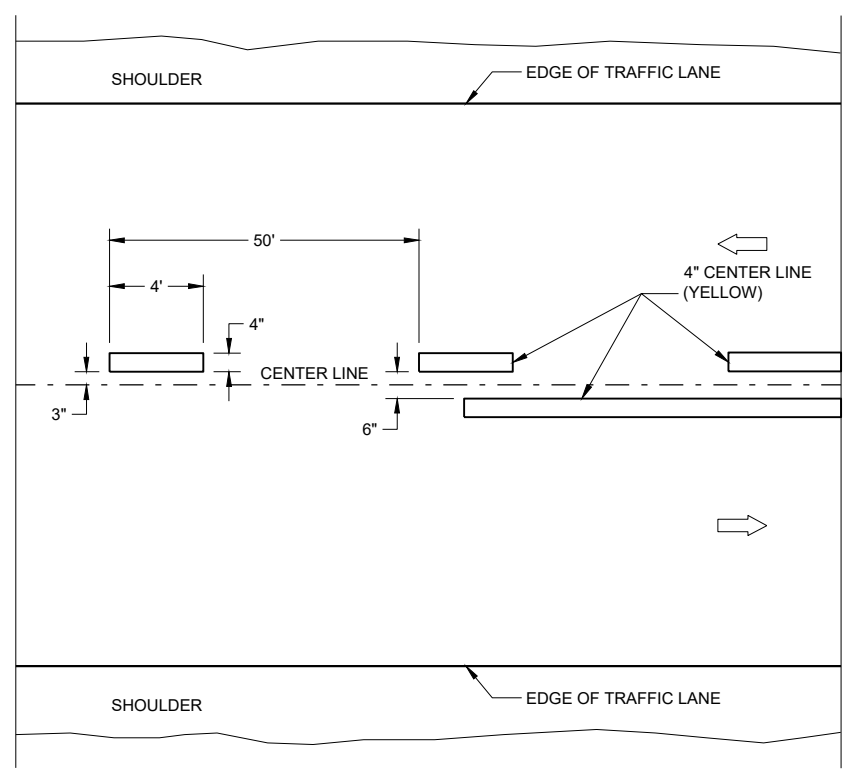


TWO WAY TRAFFIC

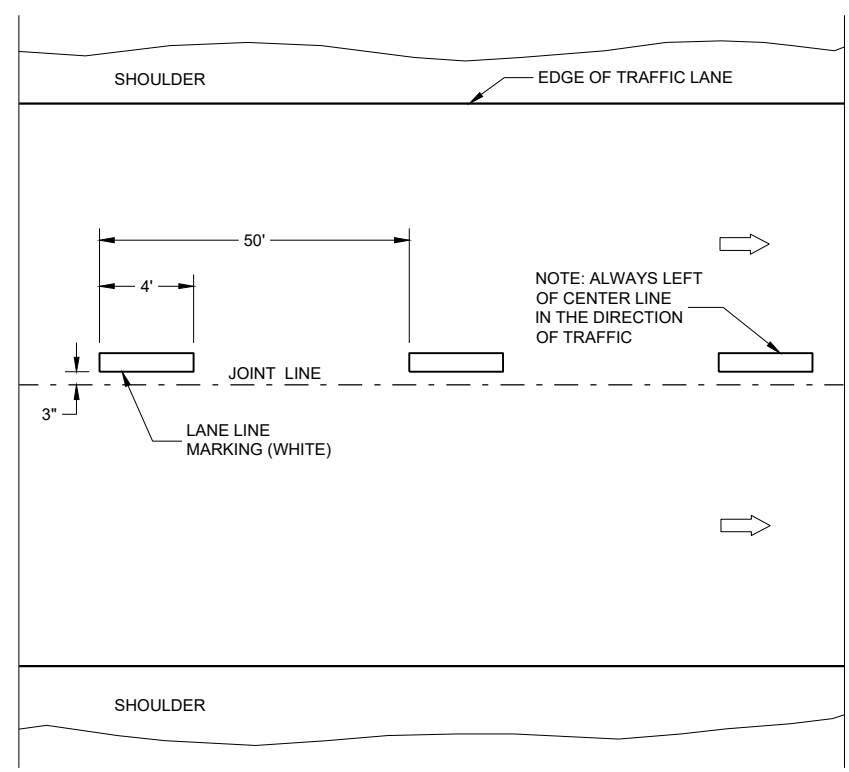


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

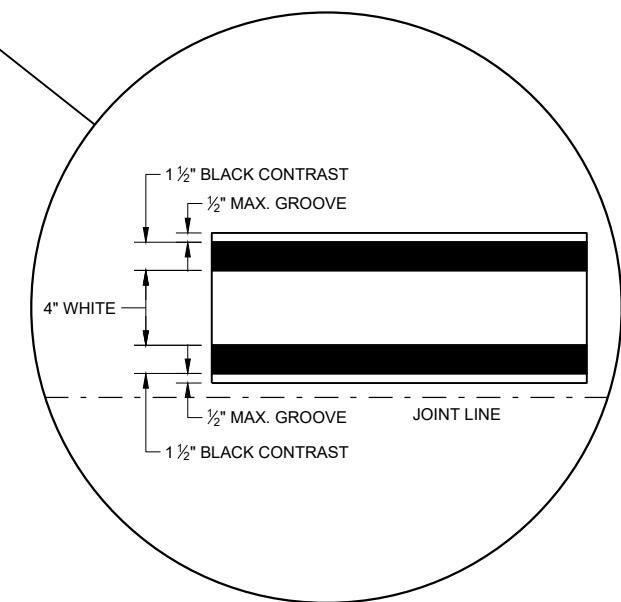
GENERAL NOTES

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN 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

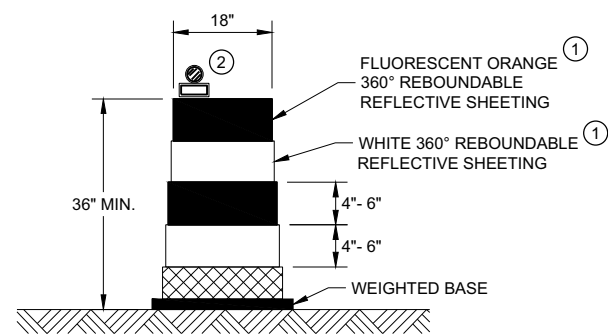
- |—"T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



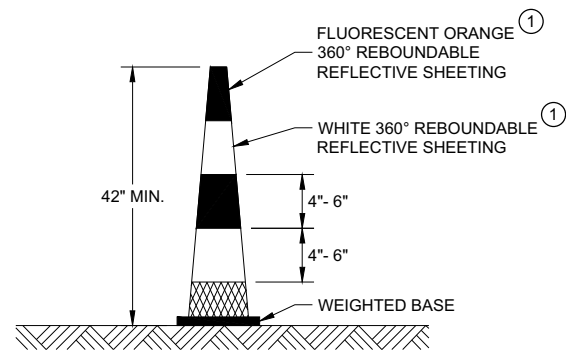
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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

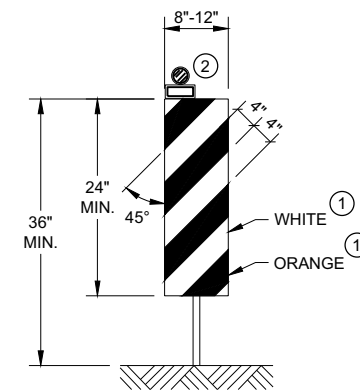


DRUM



42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

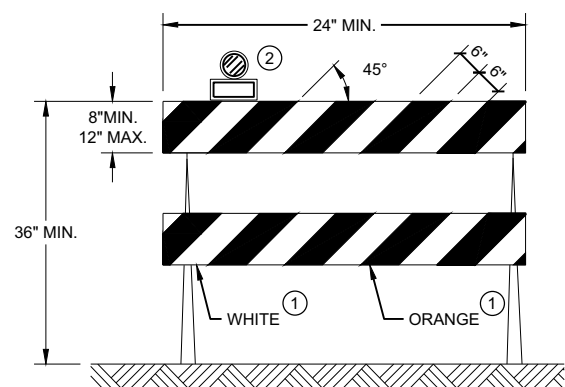


VERTICAL PANEL

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

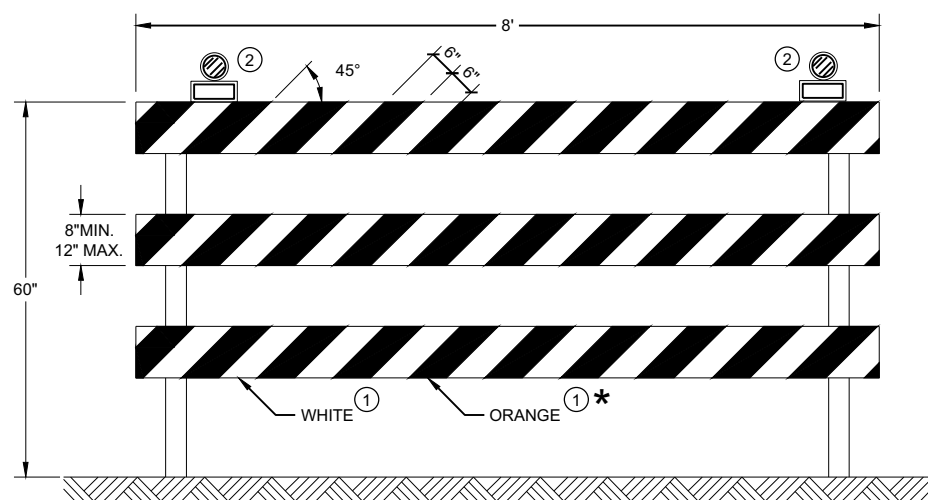
GENERAL NOTES

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



TYPE II BARRICADE

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

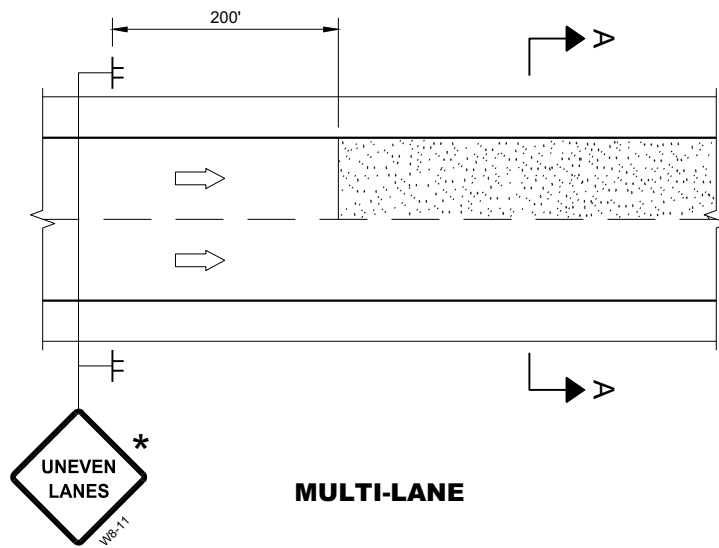


TYPE III BARRICADE

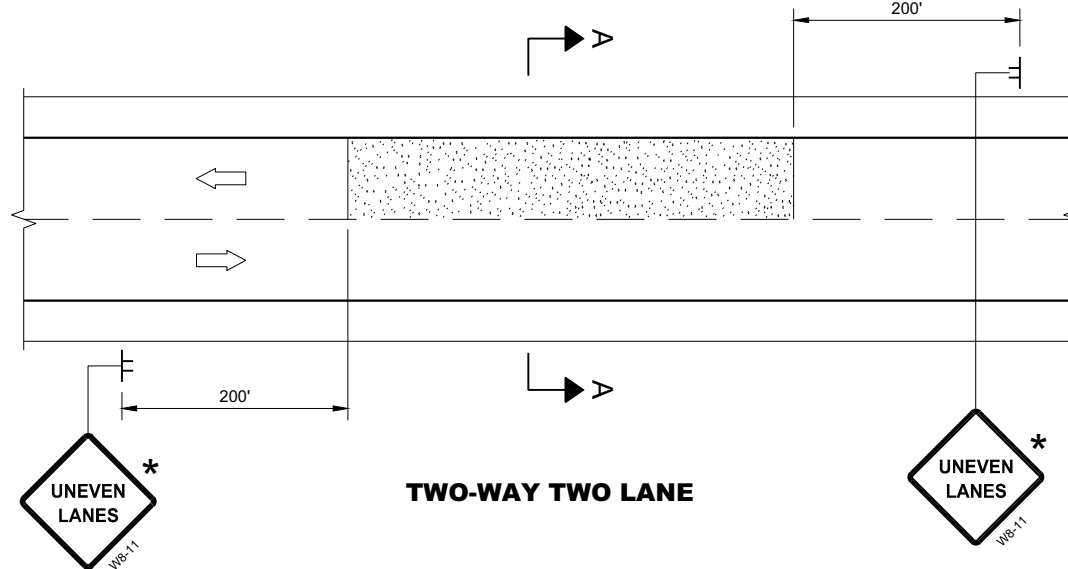
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

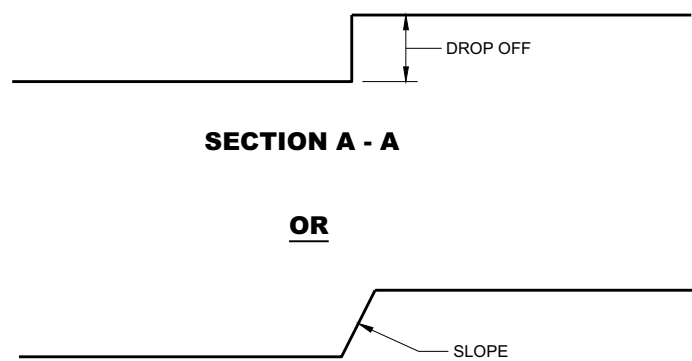
CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



MULTI-LANE



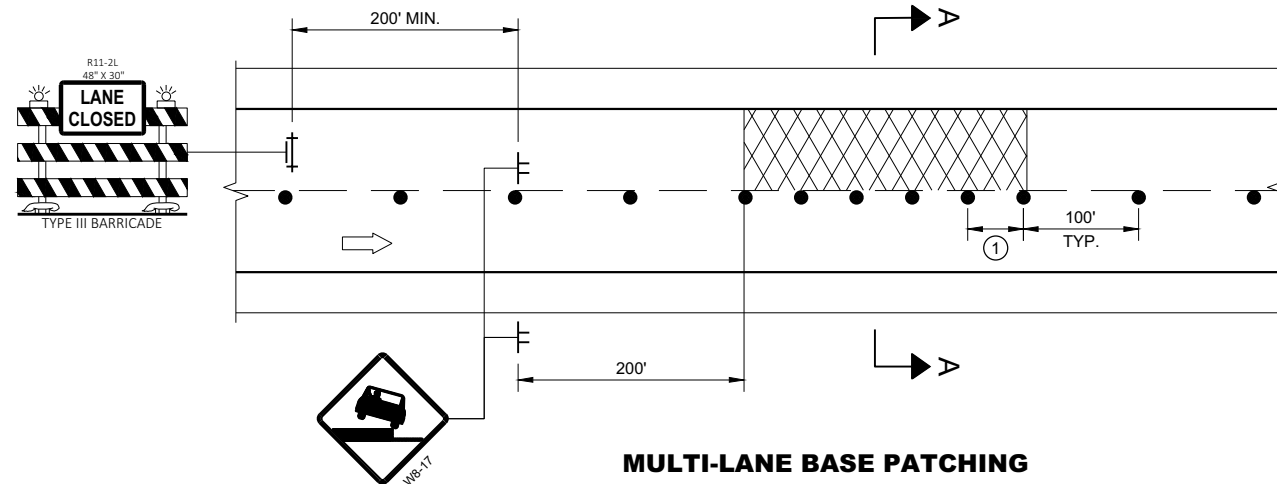
TWO-WAY TWO LANE



SECTION A - A

OR

SECTION A - A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

GENERAL NOTES

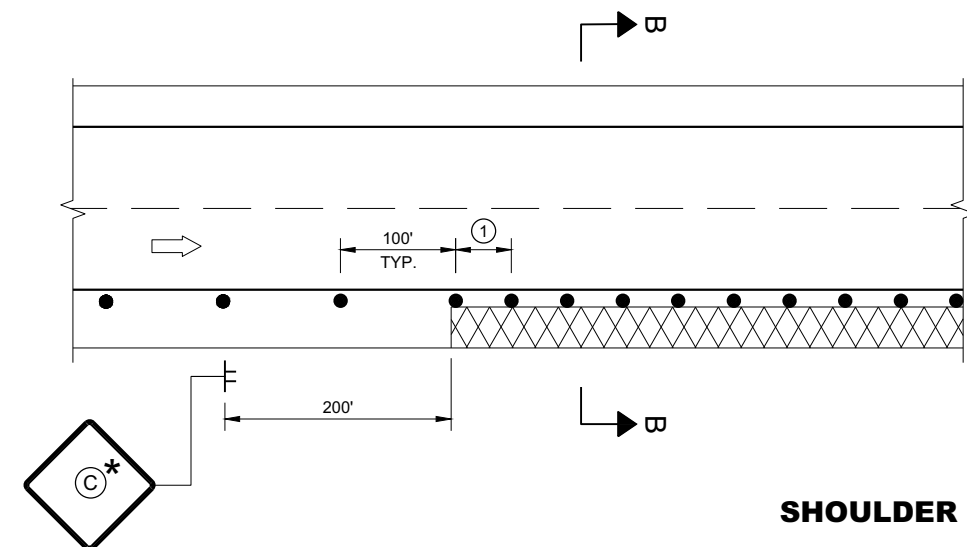
- FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
- * IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.
- ① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

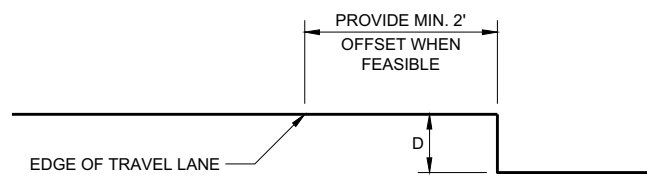
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

6

6



SHOULDER DROP-OFFS



SECTION B - B

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER WO8-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP - OFF W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

SDD 15D39 - 02

SDD 15D39 - 02

**TRAFFIC CONTROL,
DROP-OFF SIGNING**

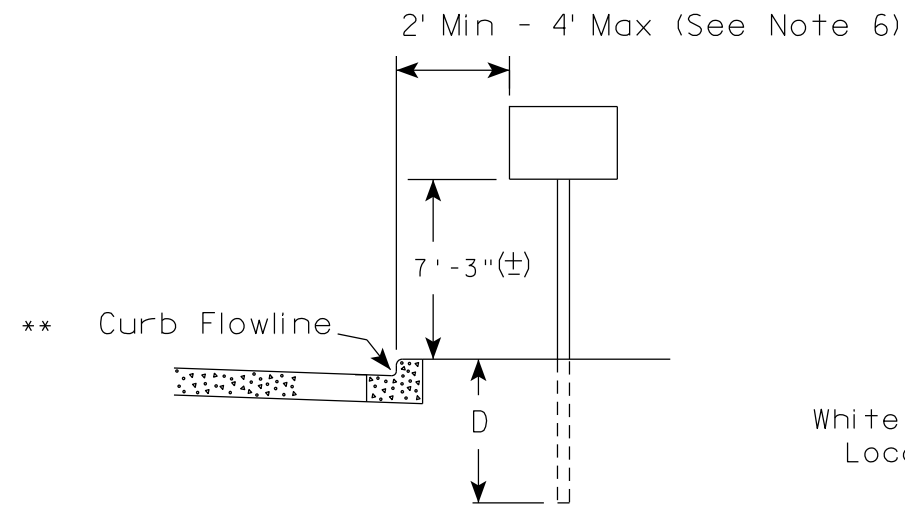
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Andrew Heidtke
DATE DATE WORK ZONE ENGINEER

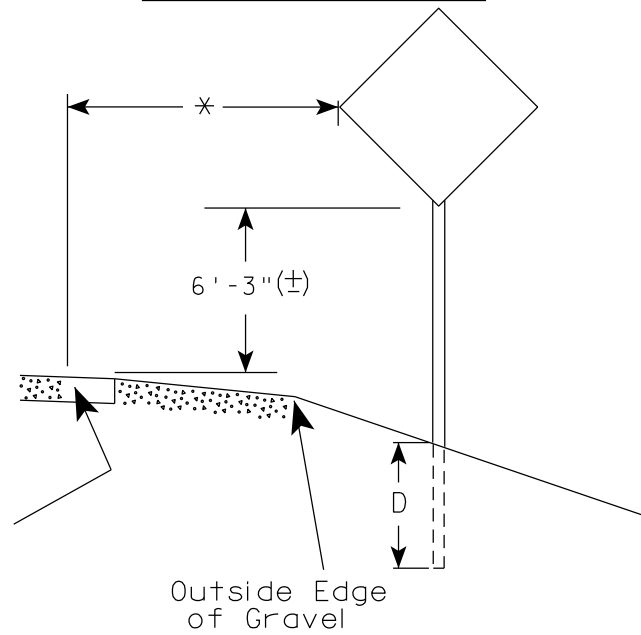
FHWA

URBAN AREA

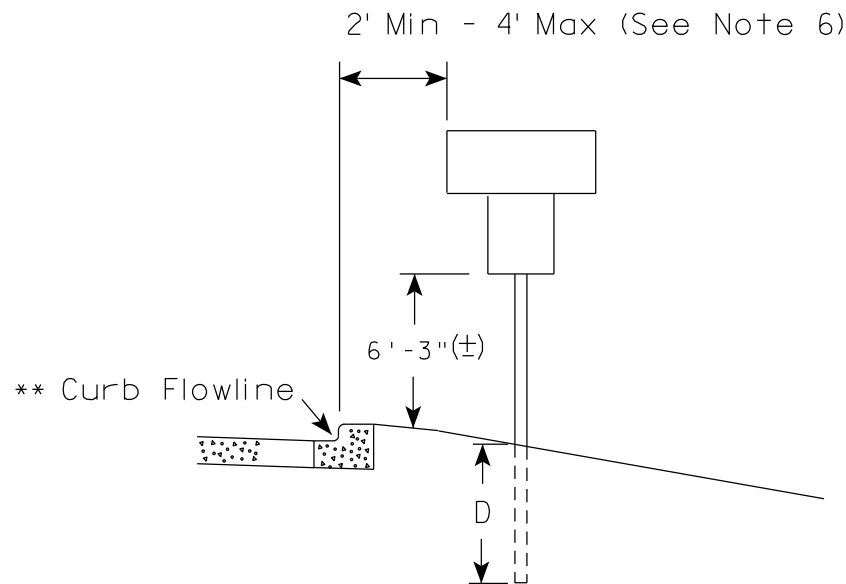
RURAL AREA (See Note 2)



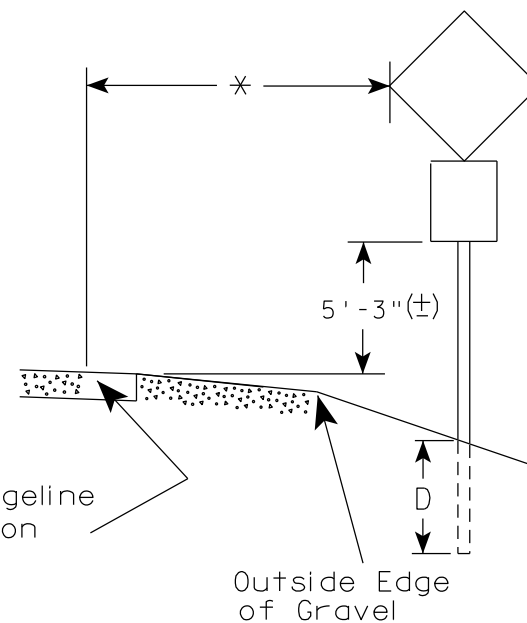
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

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

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



ELEVATION VIEW

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

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

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

WISCONSIN DEPT OF TRANSPORTATION

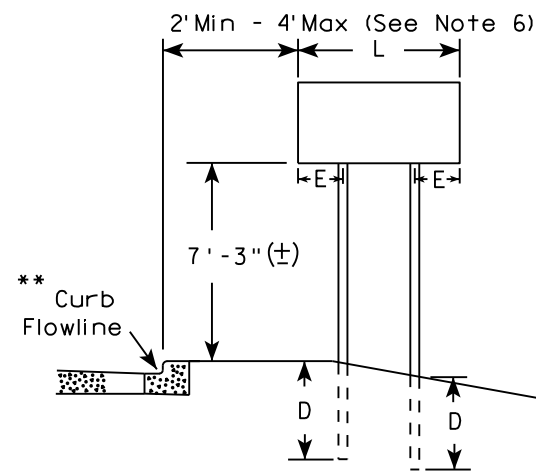
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

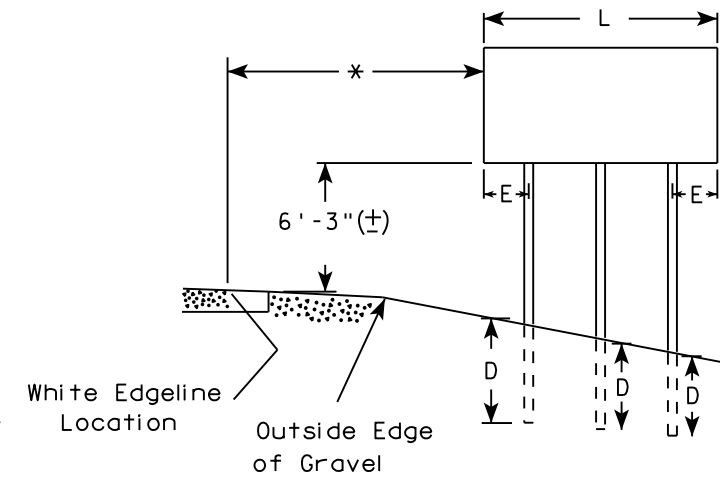
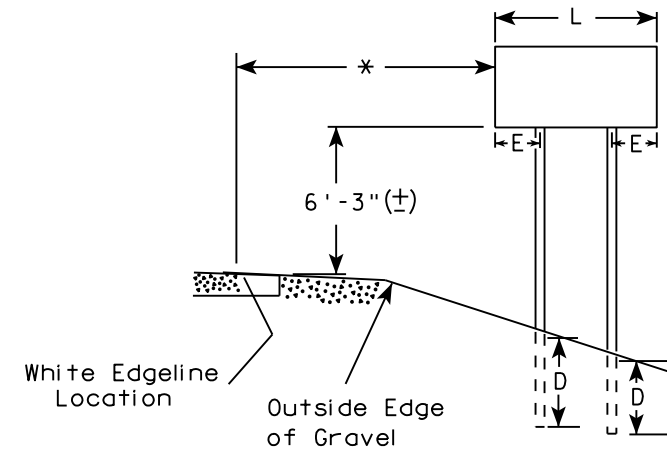
GENERAL NOTES

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

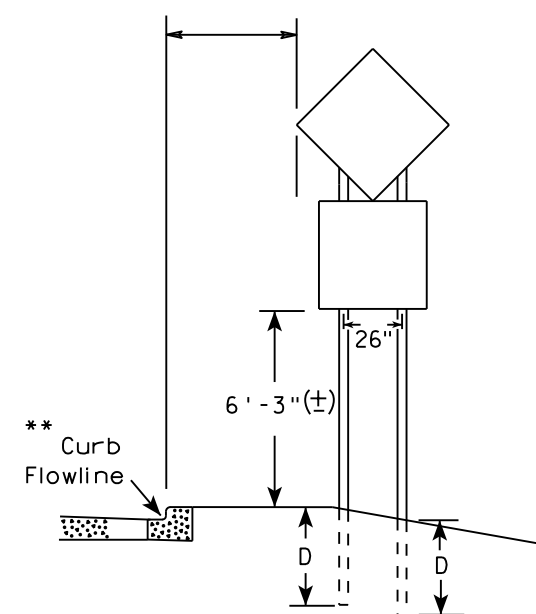
URBAN AREA



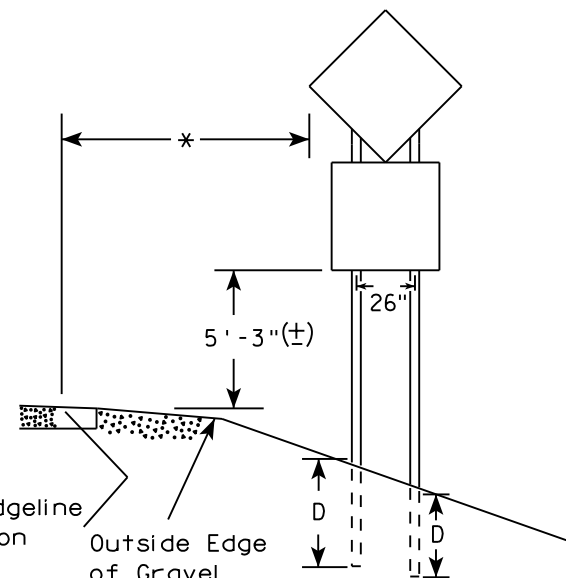
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

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

POST EMBEDMENT DEPTH

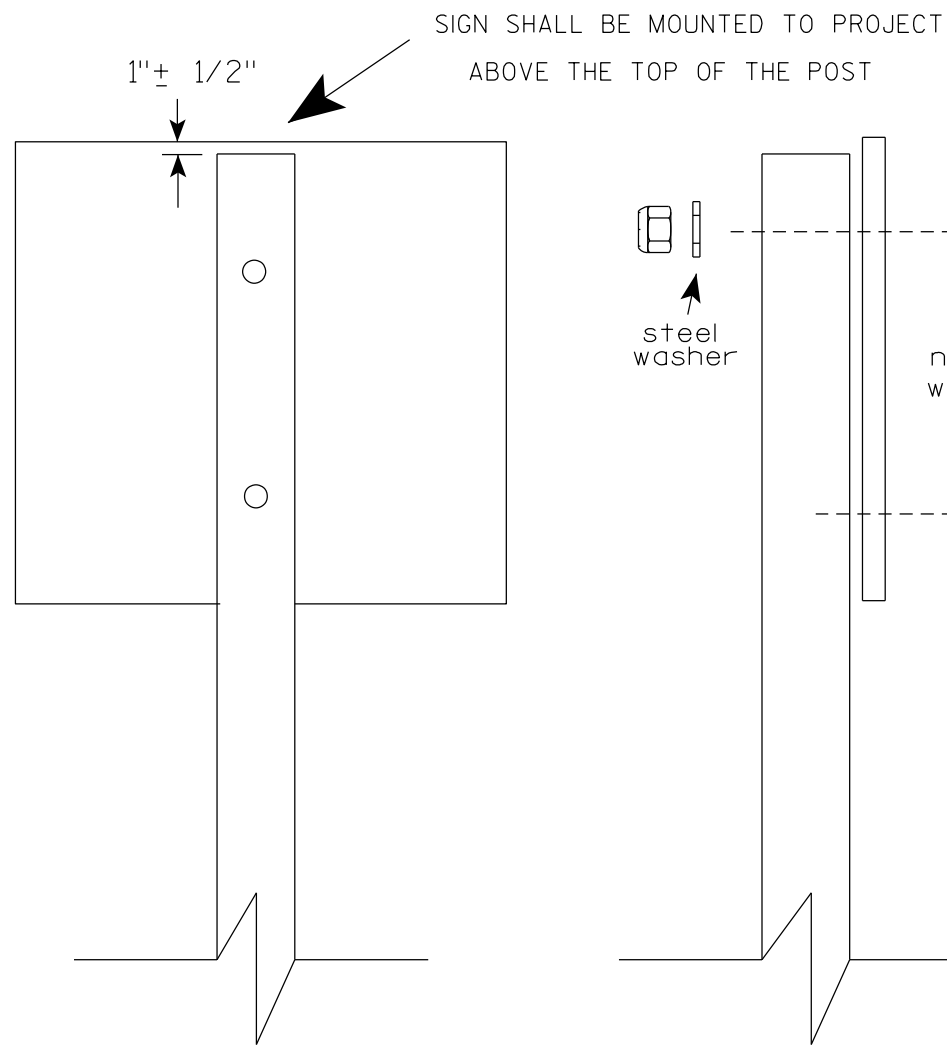
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

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

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS
TO POSTS

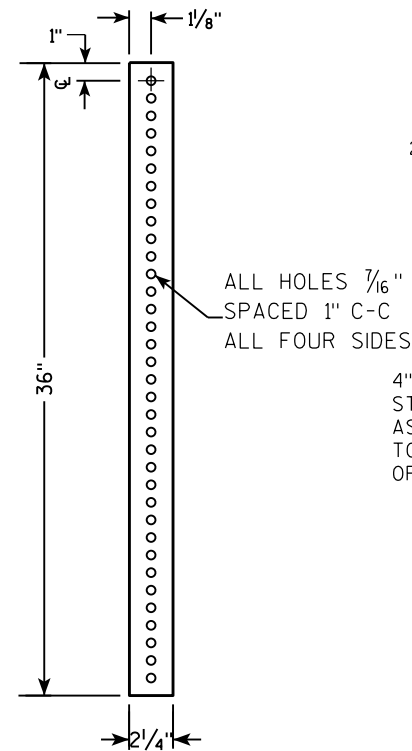
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

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

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

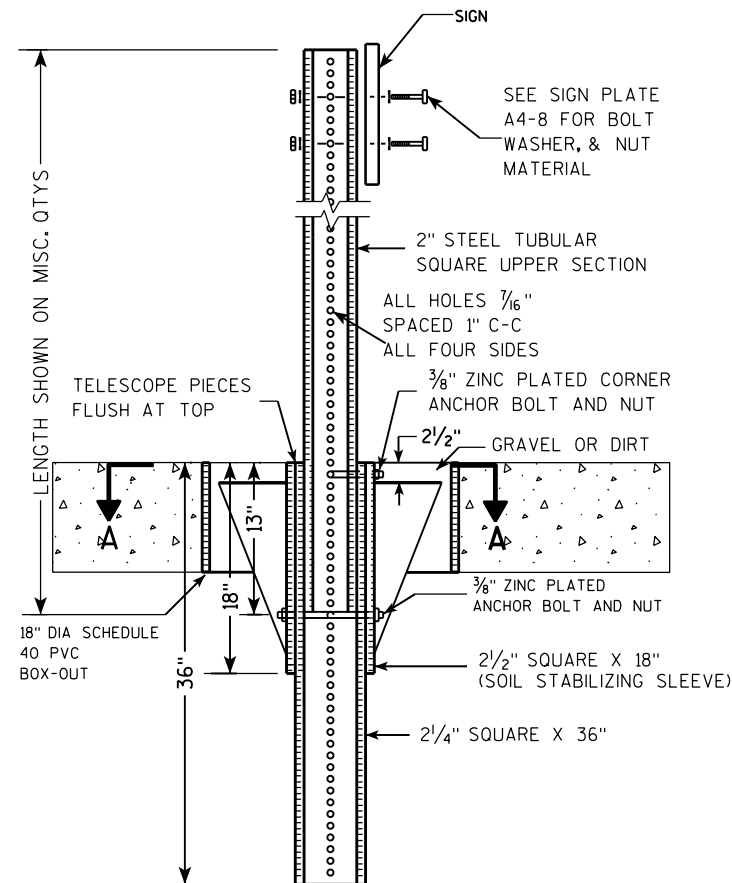
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



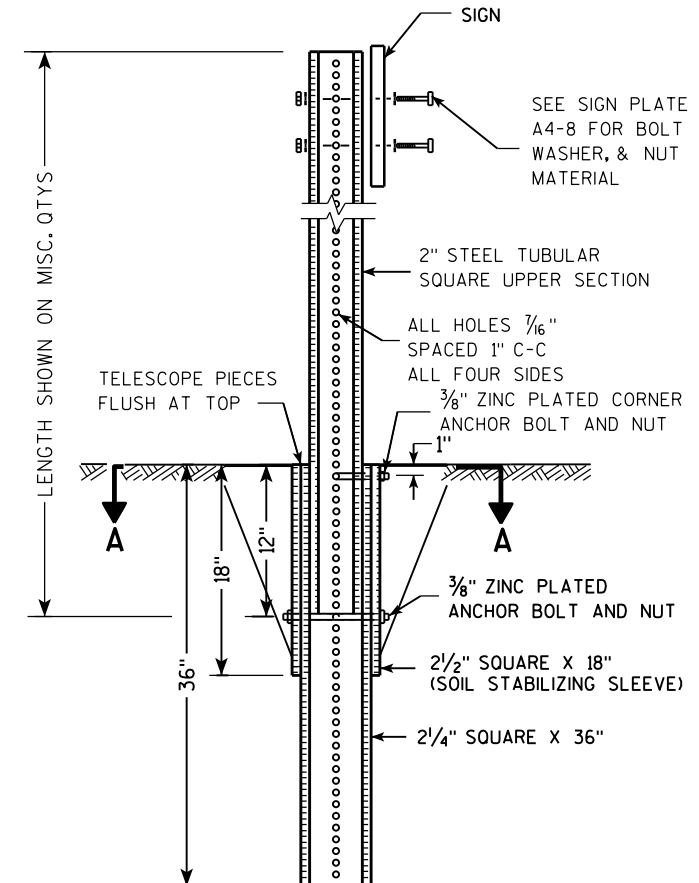
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



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



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



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

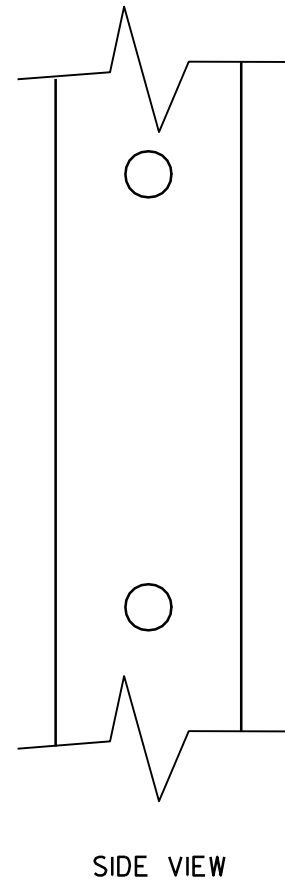
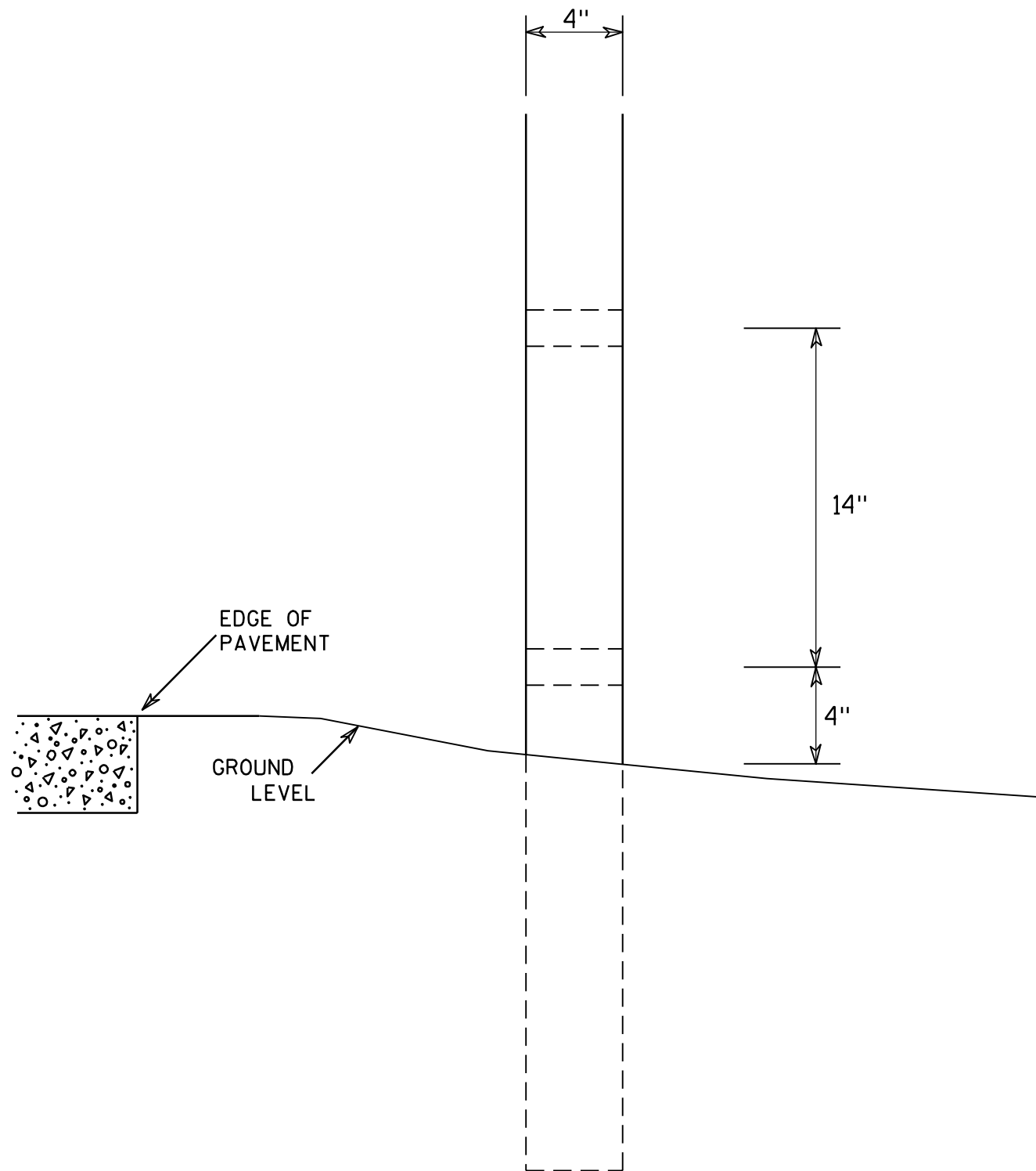
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



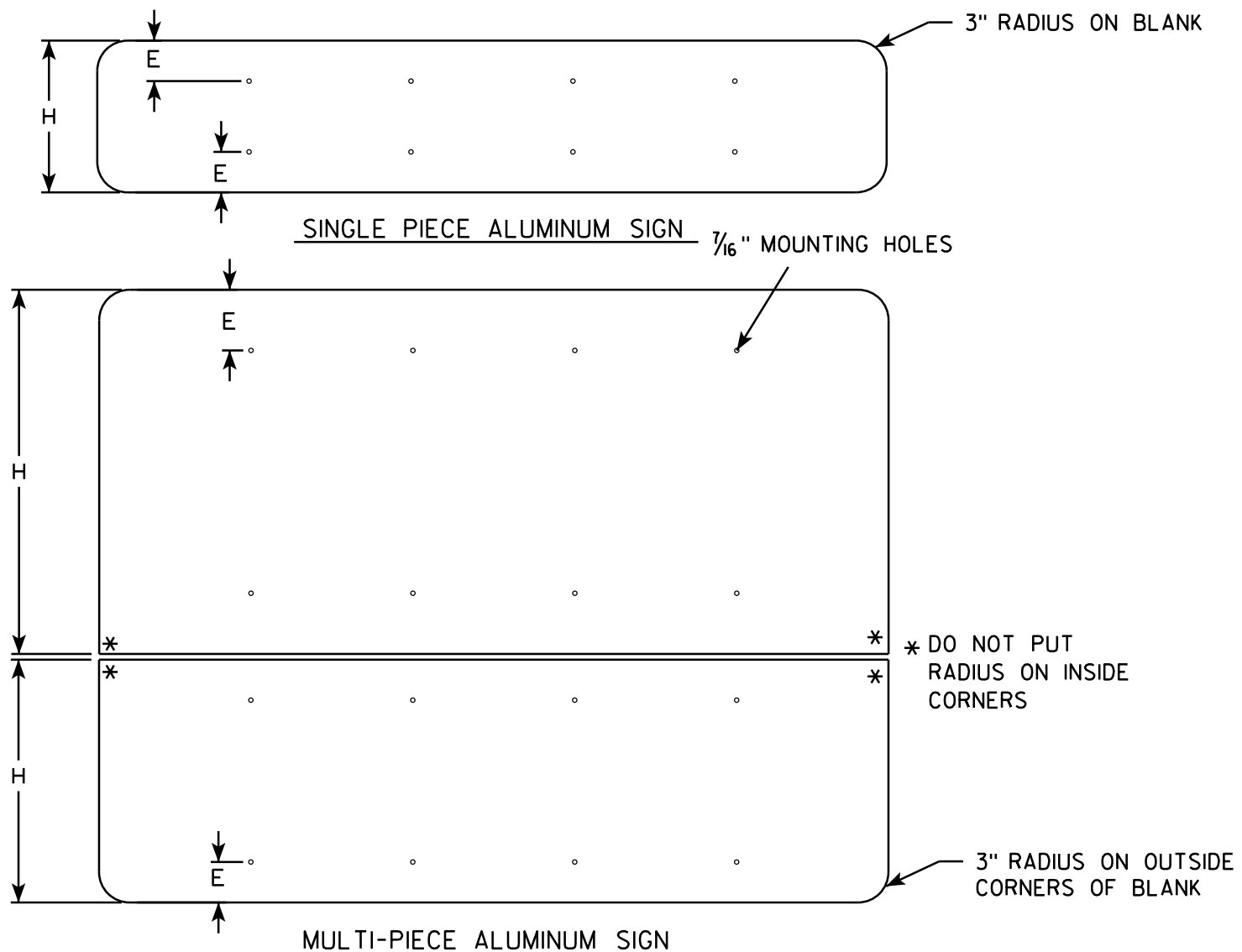
GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

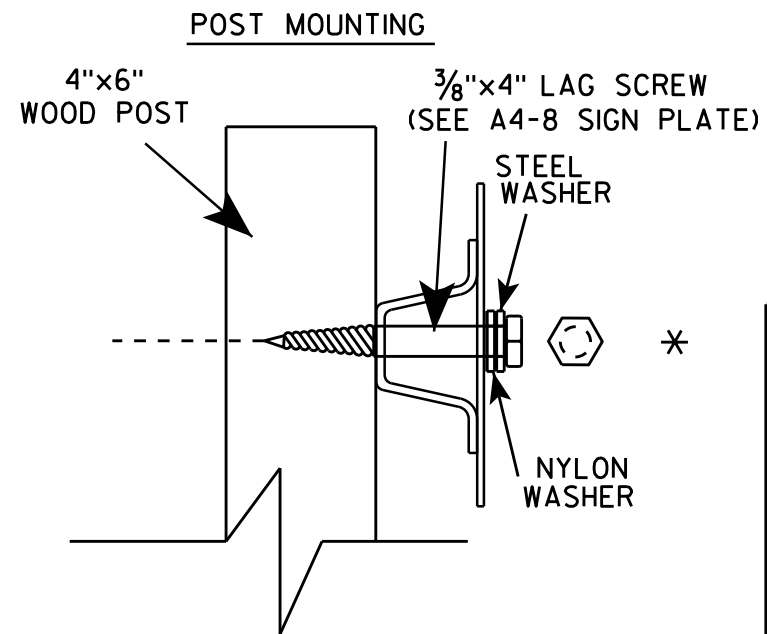
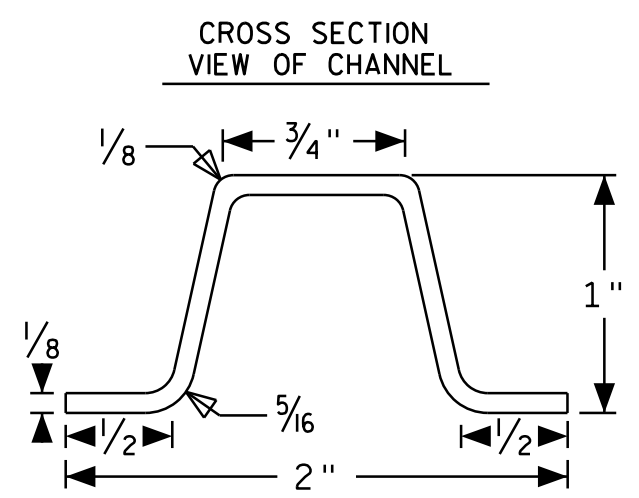
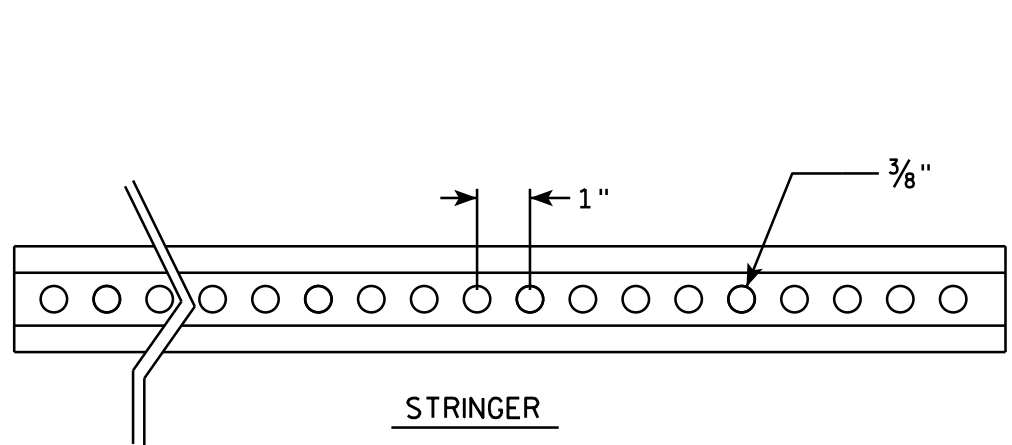


GENERAL NOTES

- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE $\frac{7}{16}$ " DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES
78"	72"	2	16"	15" 31" 47" 63"
84"	72"	2	17"	16 $\frac{1}{2}$ " 33 $\frac{1}{2}$ " 50 $\frac{1}{2}$ " 67 $\frac{1}{2}$ "
90"	72"	2	18"	18" 36" 54" 72"
96"	90"	2	19"	19 $\frac{1}{2}$ " 38 $\frac{1}{2}$ " 57 $\frac{1}{2}$ " 76 $\frac{1}{2}$ "
102"	90"	2	20"	21" 41" 61" 81"
108"	90"	2	21"	22 $\frac{1}{2}$ " 43 $\frac{1}{2}$ " 64 $\frac{1}{2}$ " 85 $\frac{1}{2}$ "
114"	108"	3	15"	12" 27" 42" 57" 72" 87" 102"
120"	108"	3	16"	12" 28" 44" 60" 76" 92" 108"
126"	108"	3	17"	12" 29" 46" 63" 80" 97" 114"
132"	126"	3	18"	12" 30" 48" 66" 84" 102" 120"
138"	126"	3	19"	12" 31" 50" 69" 88" 107" 126"
144"	126"	3	20"	12" 32" 52" 72" 92" 112" 132"

7



7

SIGN STRINGER MOUNTING REQUIREMENTS

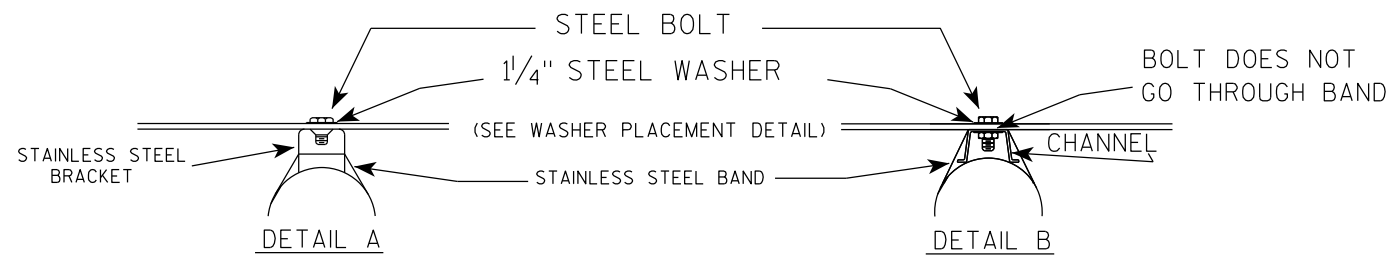
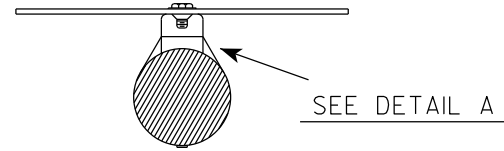
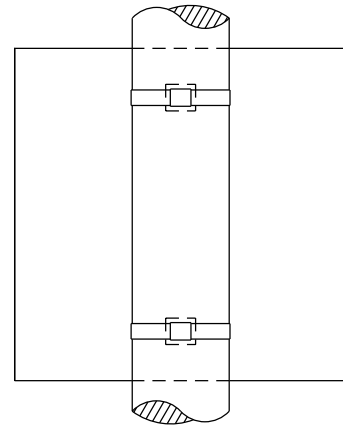
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

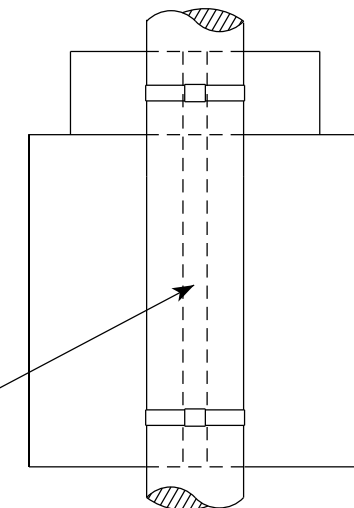
DATE 4/26/16 PLATE NO. A4-18.1

BANDING

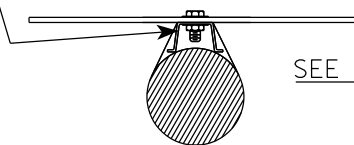
SINGLE SIGN



"J" ASSEMBLY

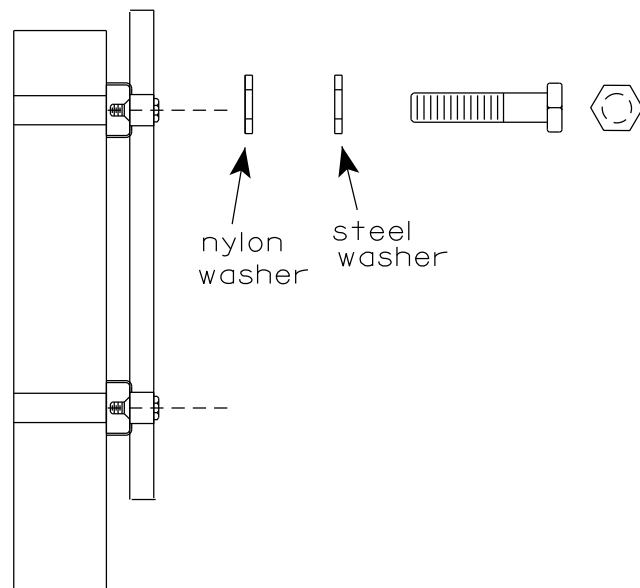


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



- 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

WASHER PLACEMENT



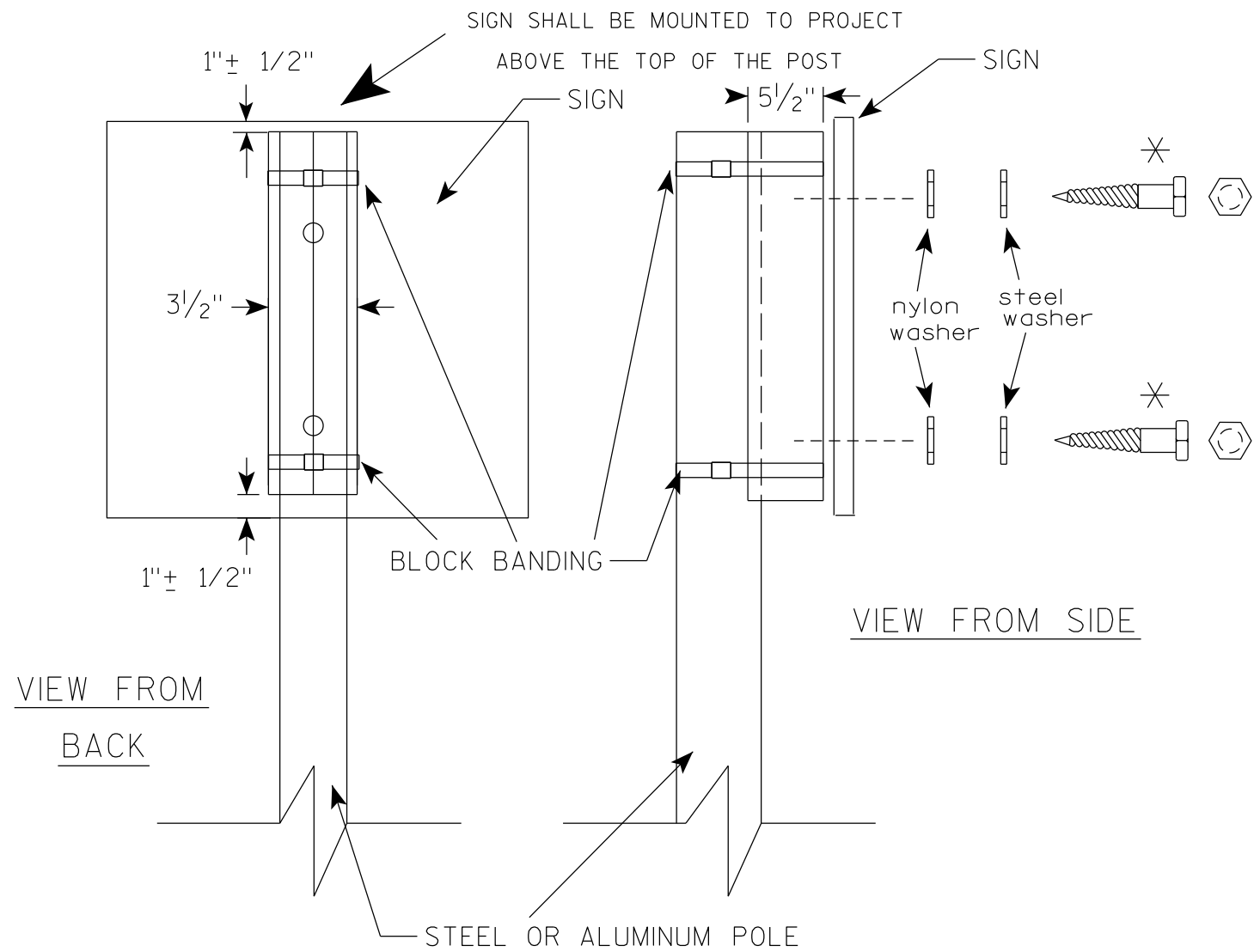
WASHERS (ALL POSTS) -
 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 1-1/4" O.D. X 3/8" I.D. X .080 NYLON
 FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

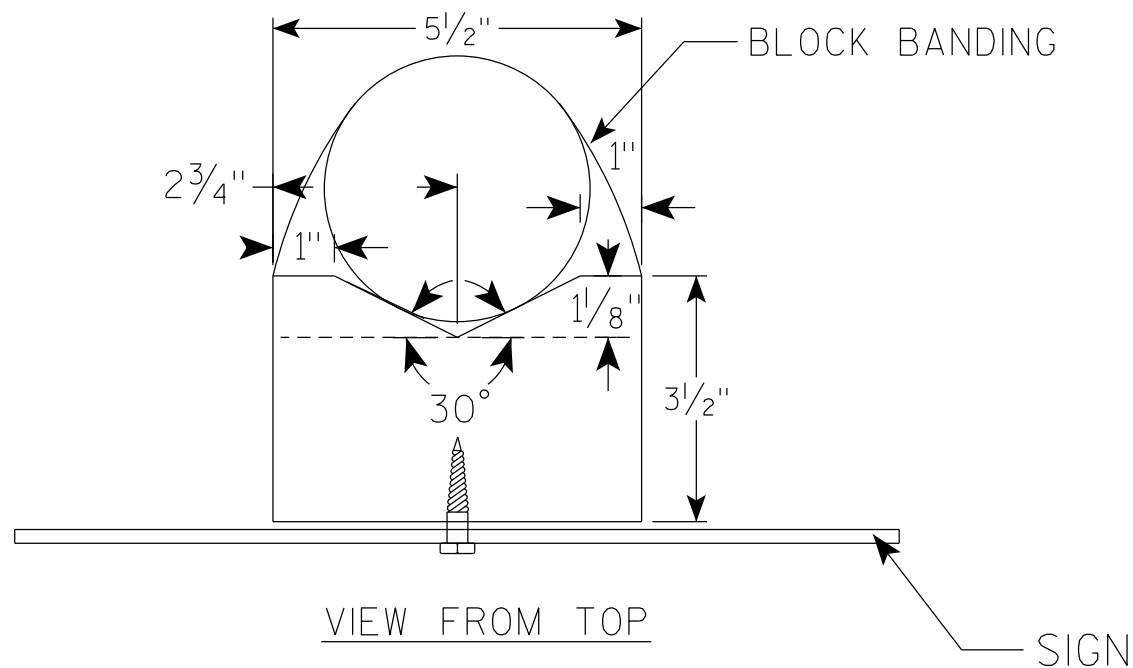
DATE 6/10/19 PLATE NO. A5-9.4



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, 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 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

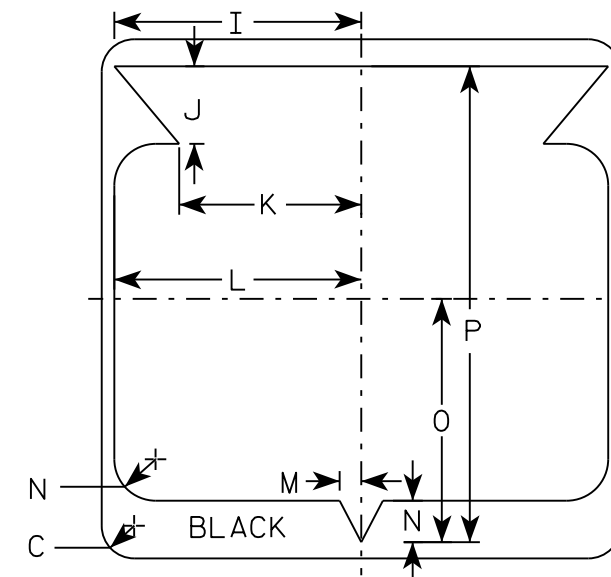
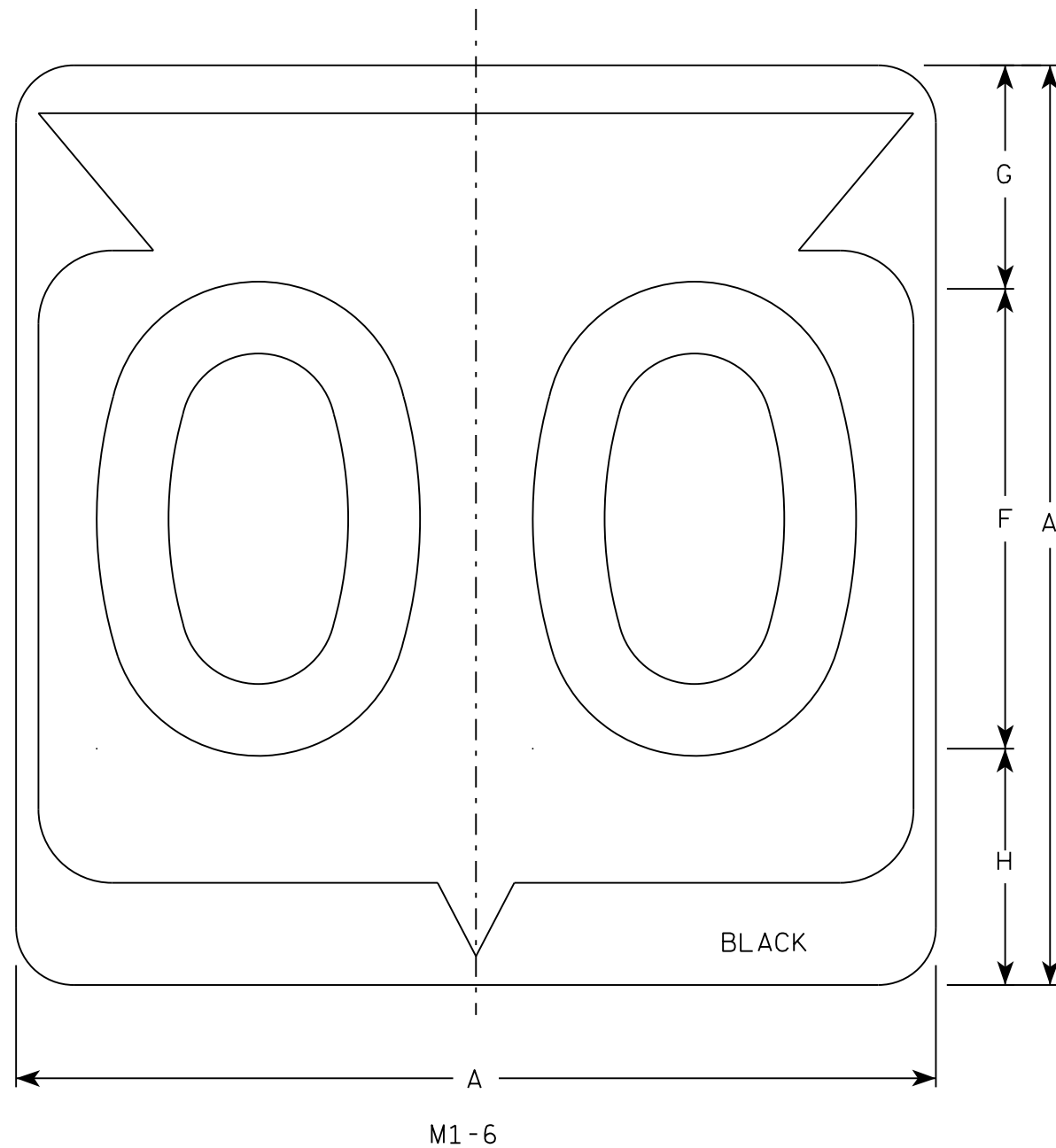
✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"



BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> for State Traffic Engineer
DATE <u>6/10/19</u>	PLATE NO. <u>A5-10.2</u>

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs 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.



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

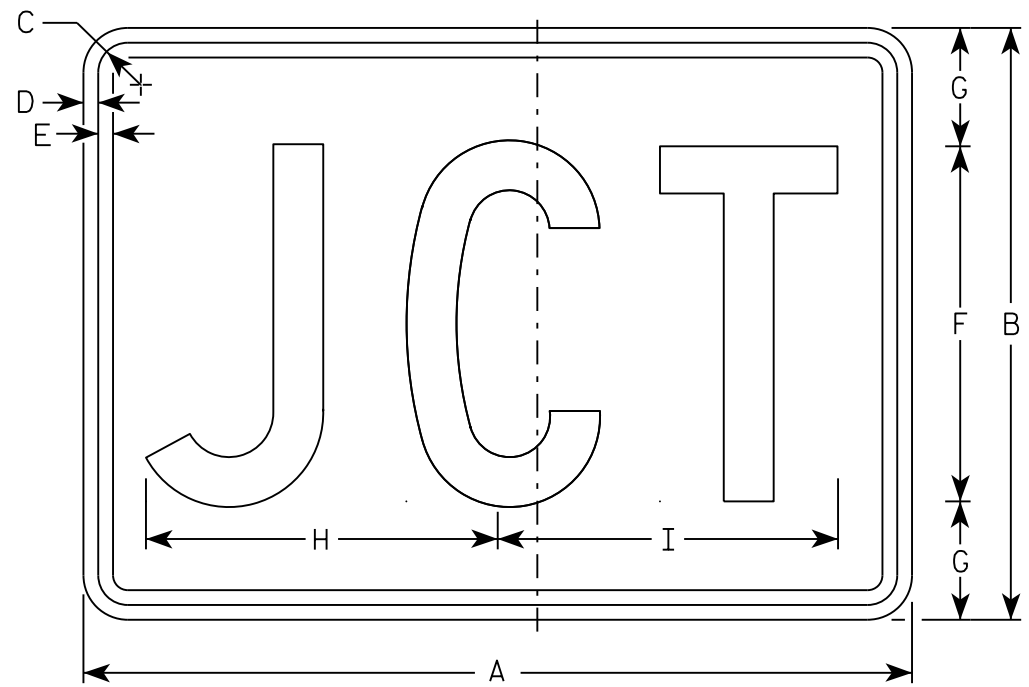
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-6.10

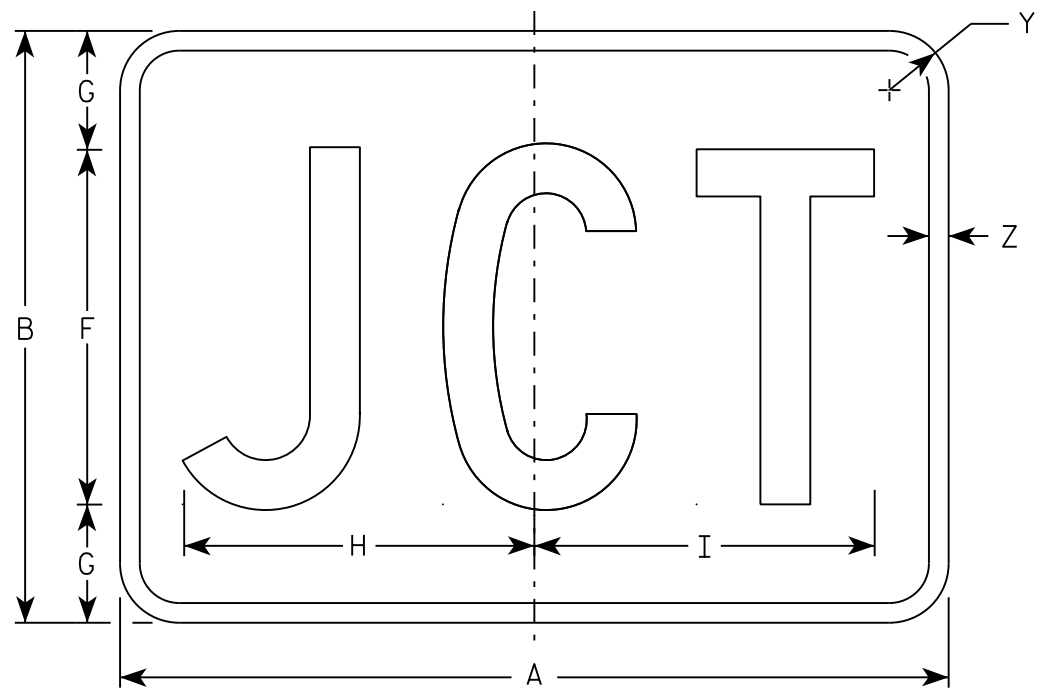
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

1. Sign is 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. M2-1 Background - White
 Message - Black
 MB2-1 Background - Blue
 Message - White
 MK2-1 Background - Green
 Message - White
 MM2-1 Background - White
 Message - Green
 MN2-1 Background - Brown
 Message - White
 MP2-1 Background - White
 Message - Blue
 MR2-1 Background - Brown
 Message - Yellow



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

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	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

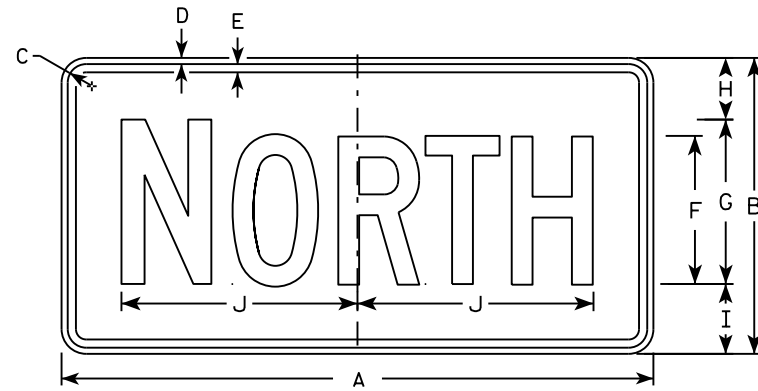
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/15/15 PLATE NO. M2-1.12

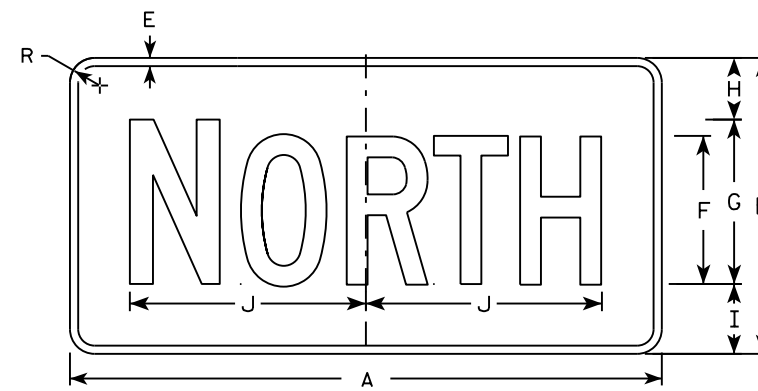
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

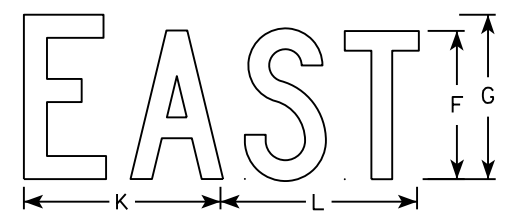
- All Signs Type II - Type H
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4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



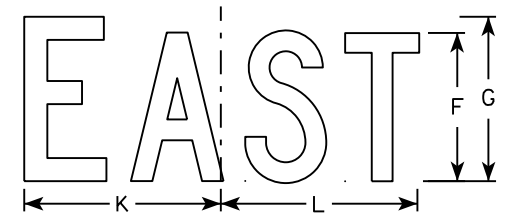
M3-1
MM3-1
MP3-1



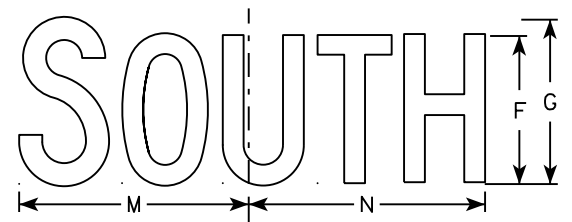
MB3-1
MK3-1
MN3-1



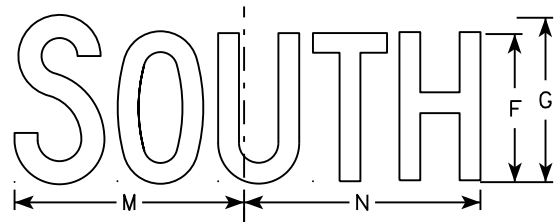
M3-2
MM3-2
MP3-2



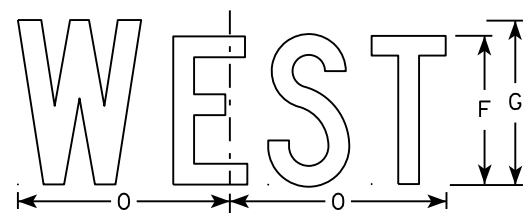
MB3-2
MK3-2
MN3-2



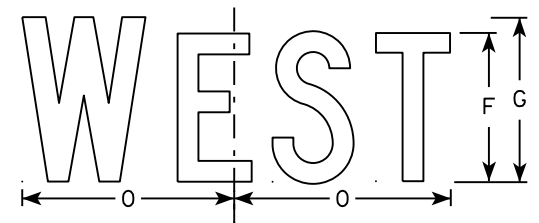
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

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	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

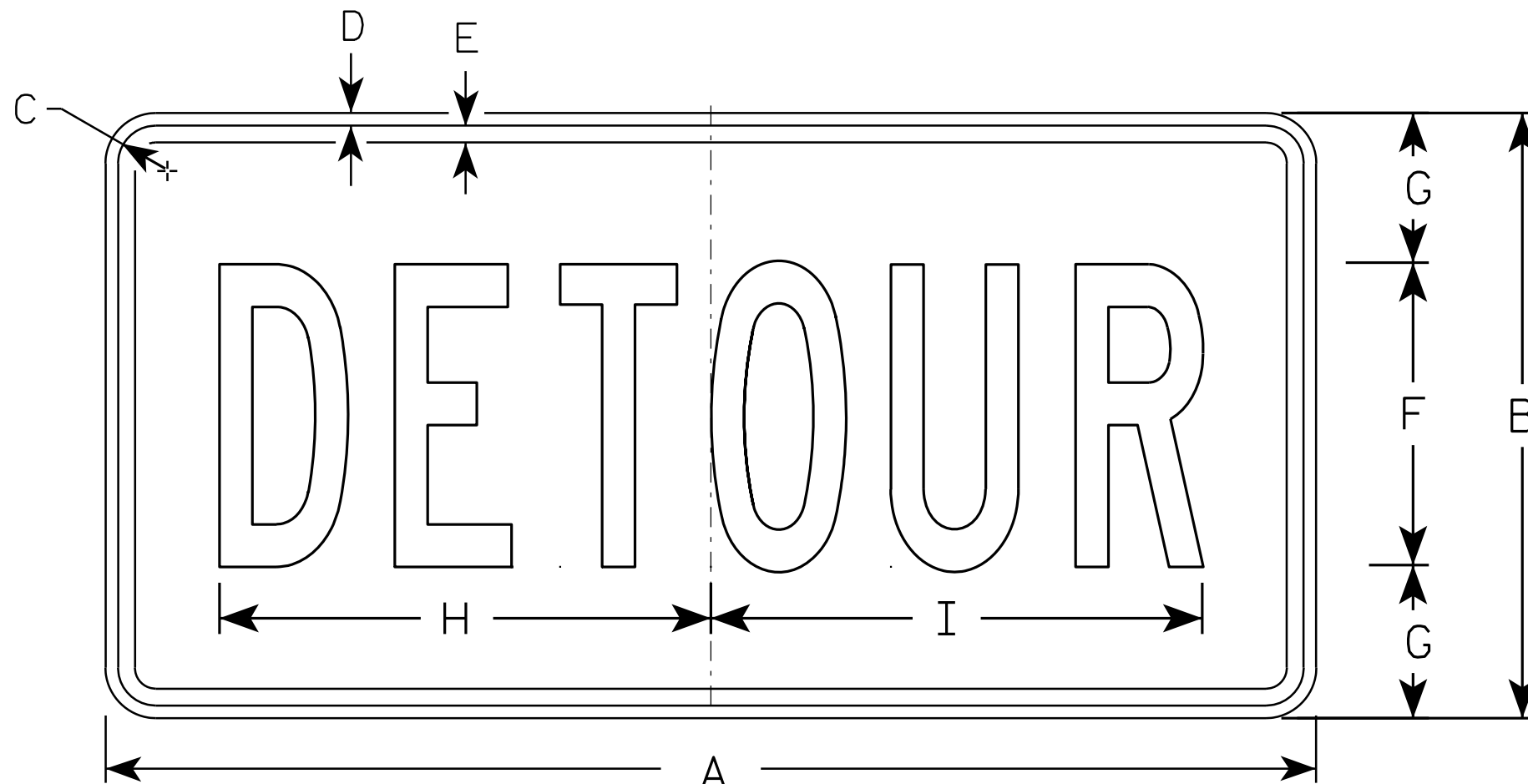
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 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

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
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

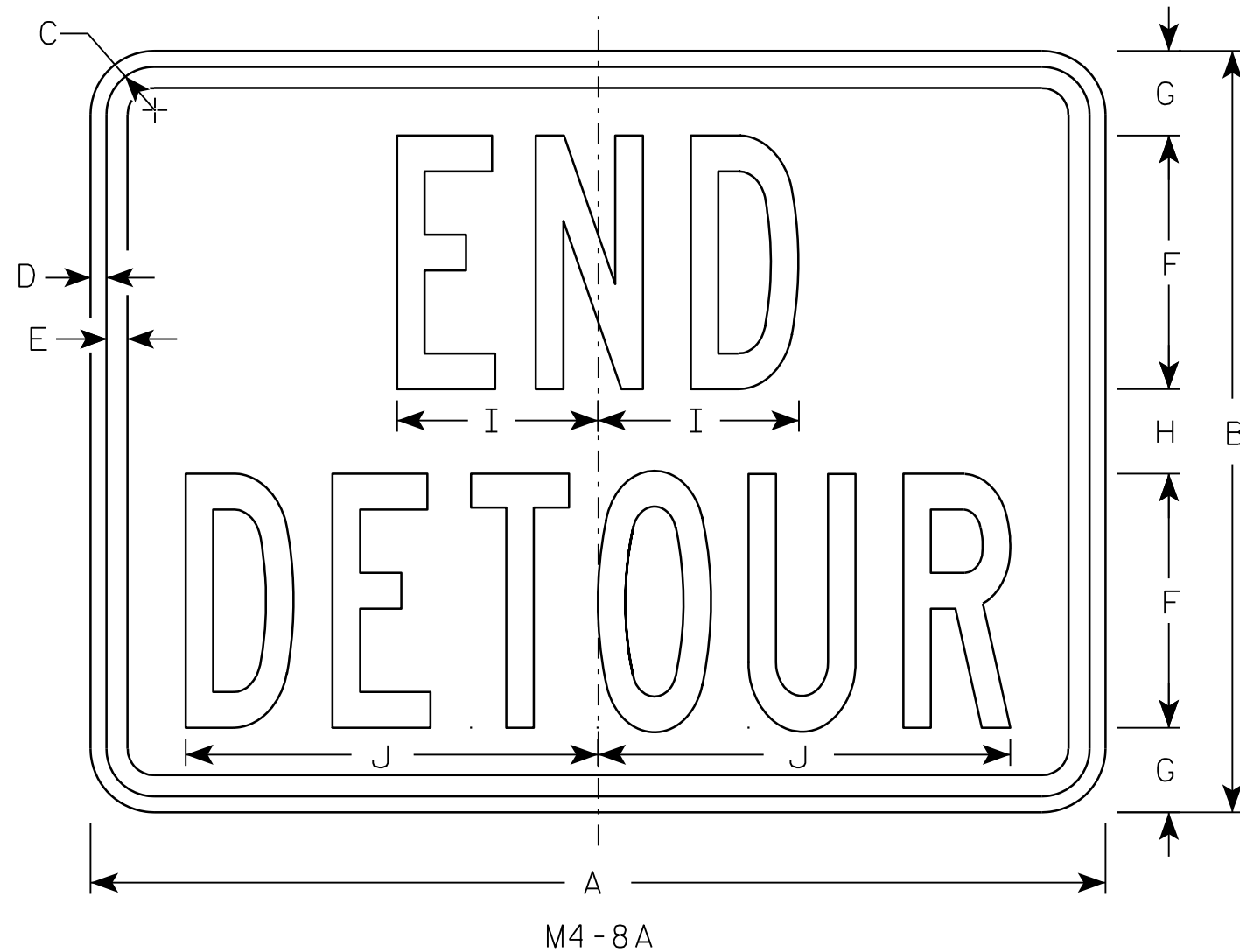
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - 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

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																											

STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

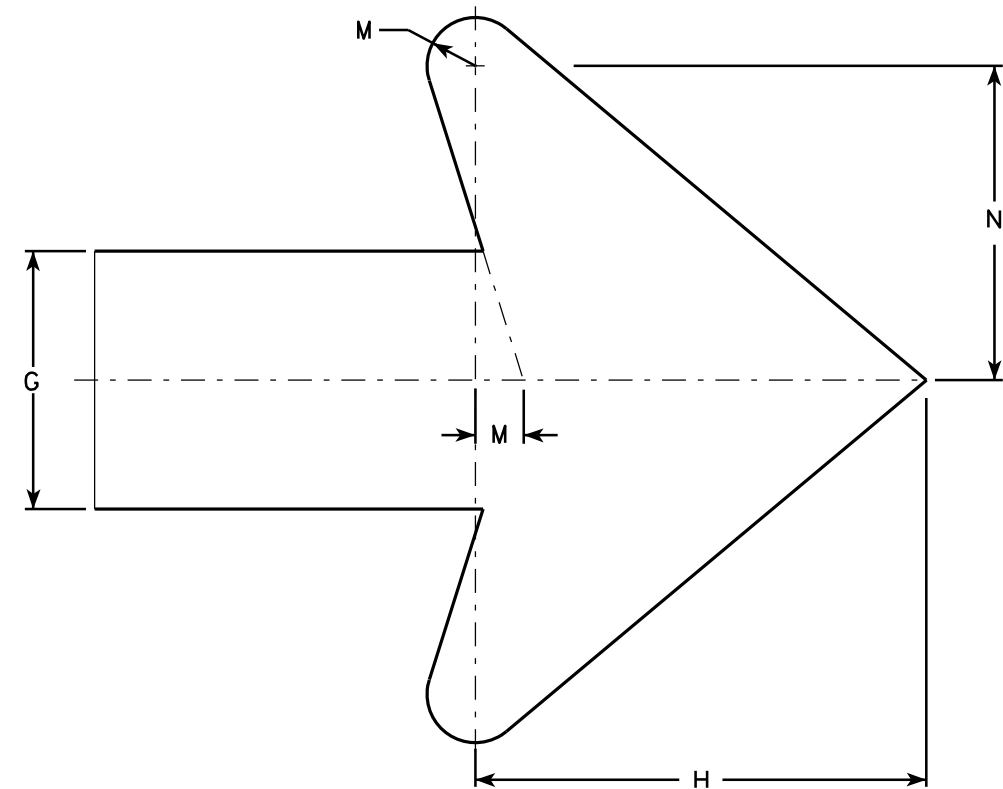
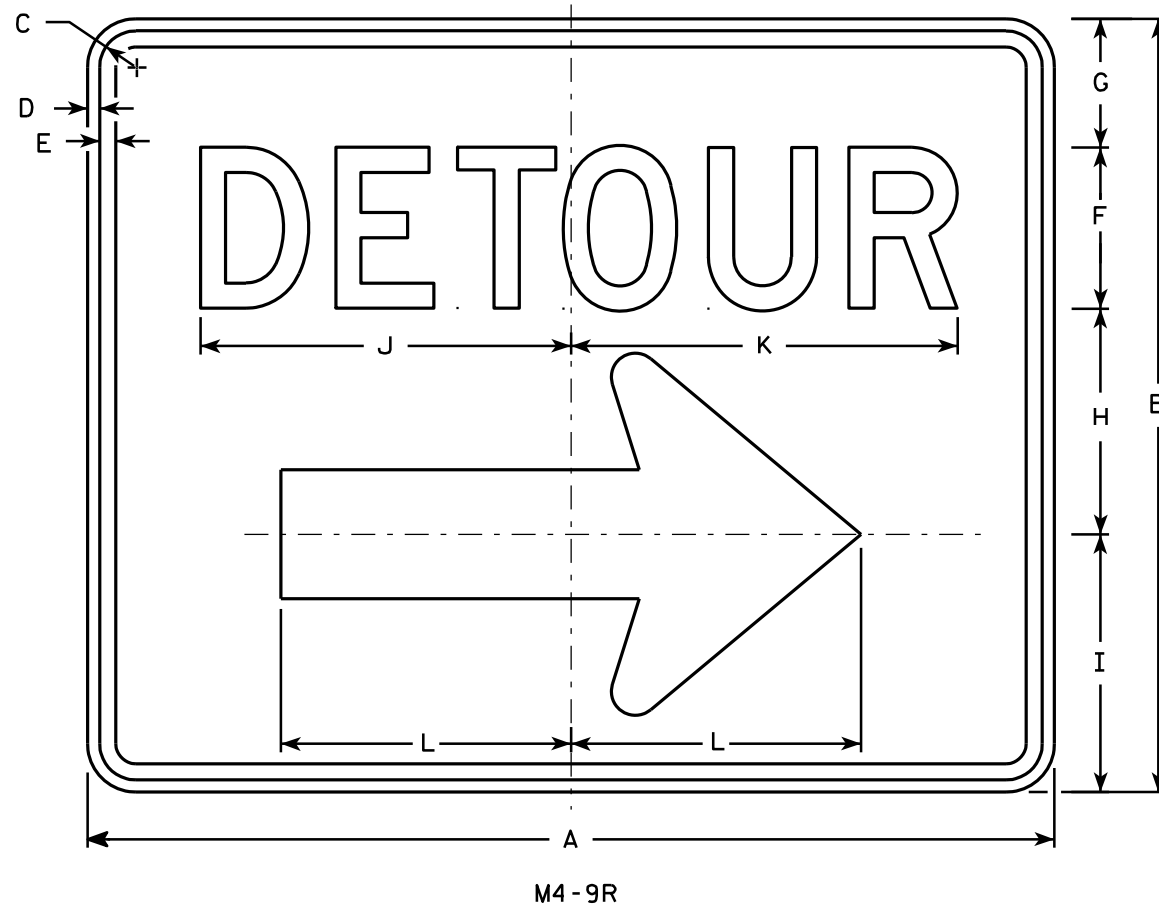
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - 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.



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

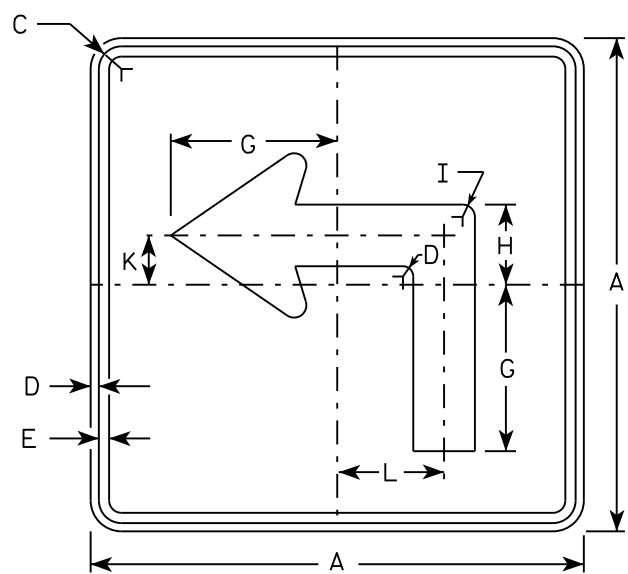
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

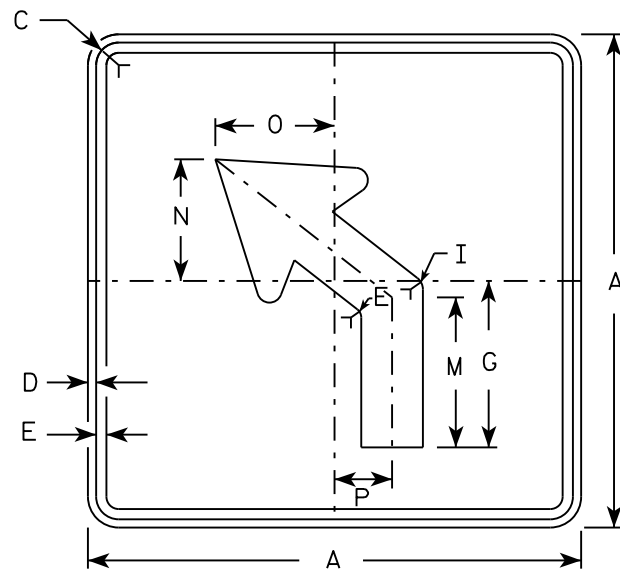
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

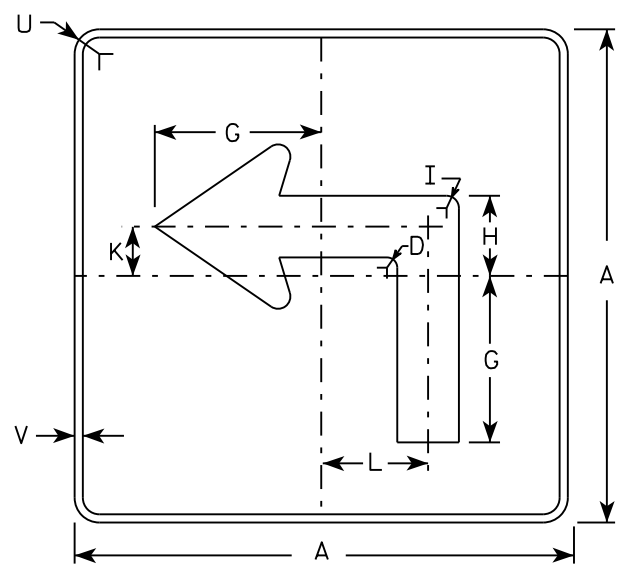
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



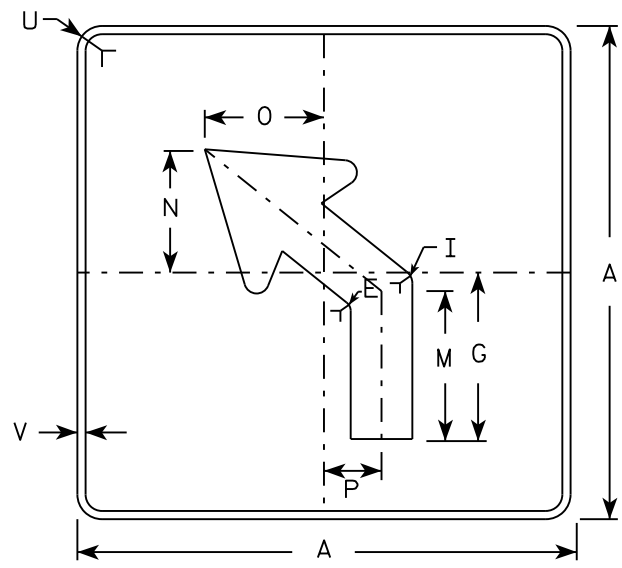
M5-1L
MM5-1L
M05-1L
MP5-1L



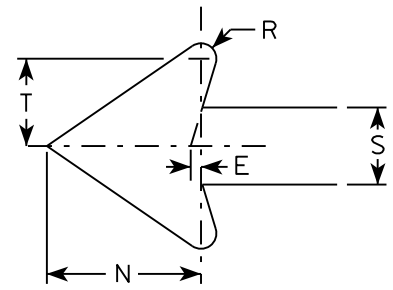
M5-2L
MM5-2L
M05-2L
MP5-2L



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
- 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.
- 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.

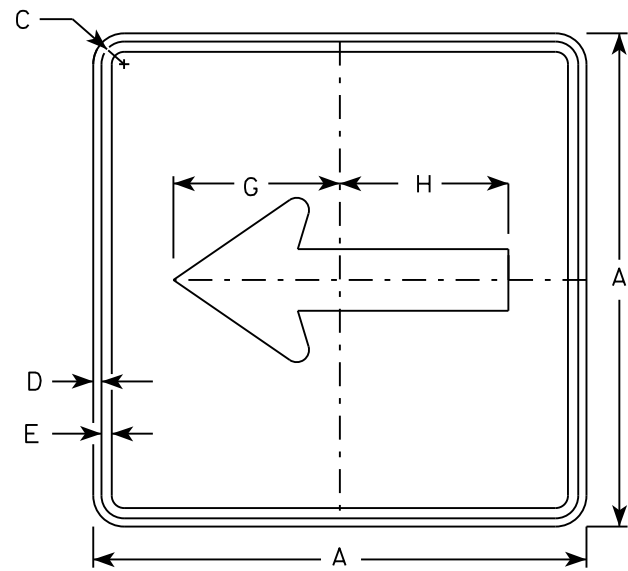
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
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

STANDARD SIGN
M5-1 & M5-2

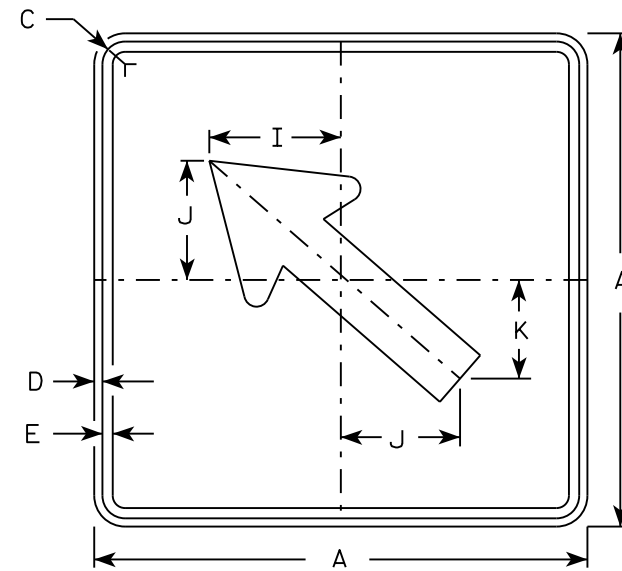
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

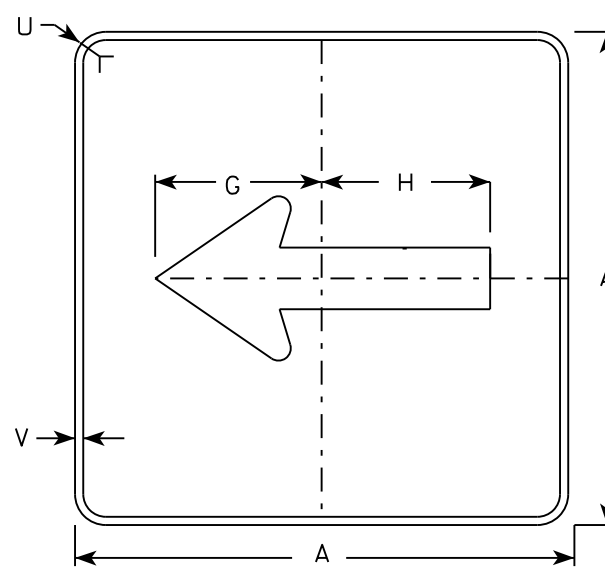
DATE 10/15/15 PLATE NO. M5-1.13



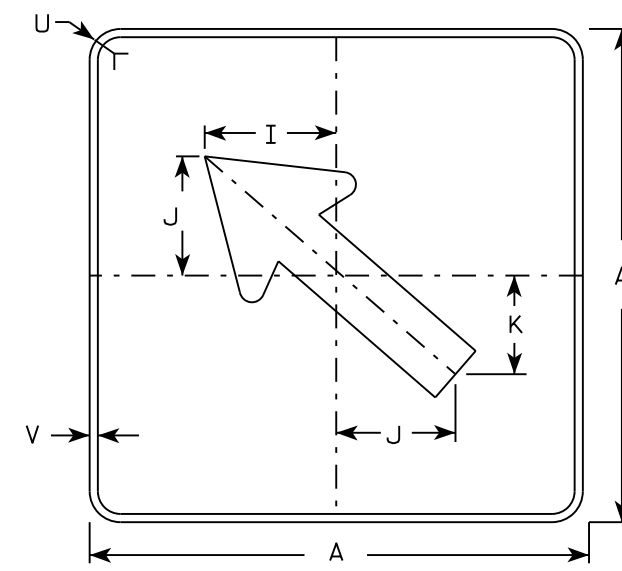
M6-1
MM6-1
M06-1
MP6-1



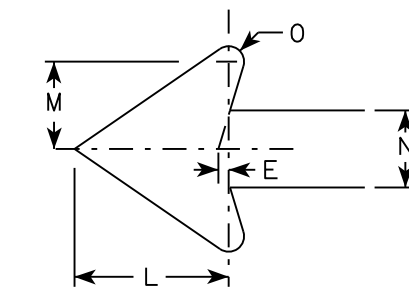
M6-2
MM6-2
M06-2
MP6-2



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

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	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

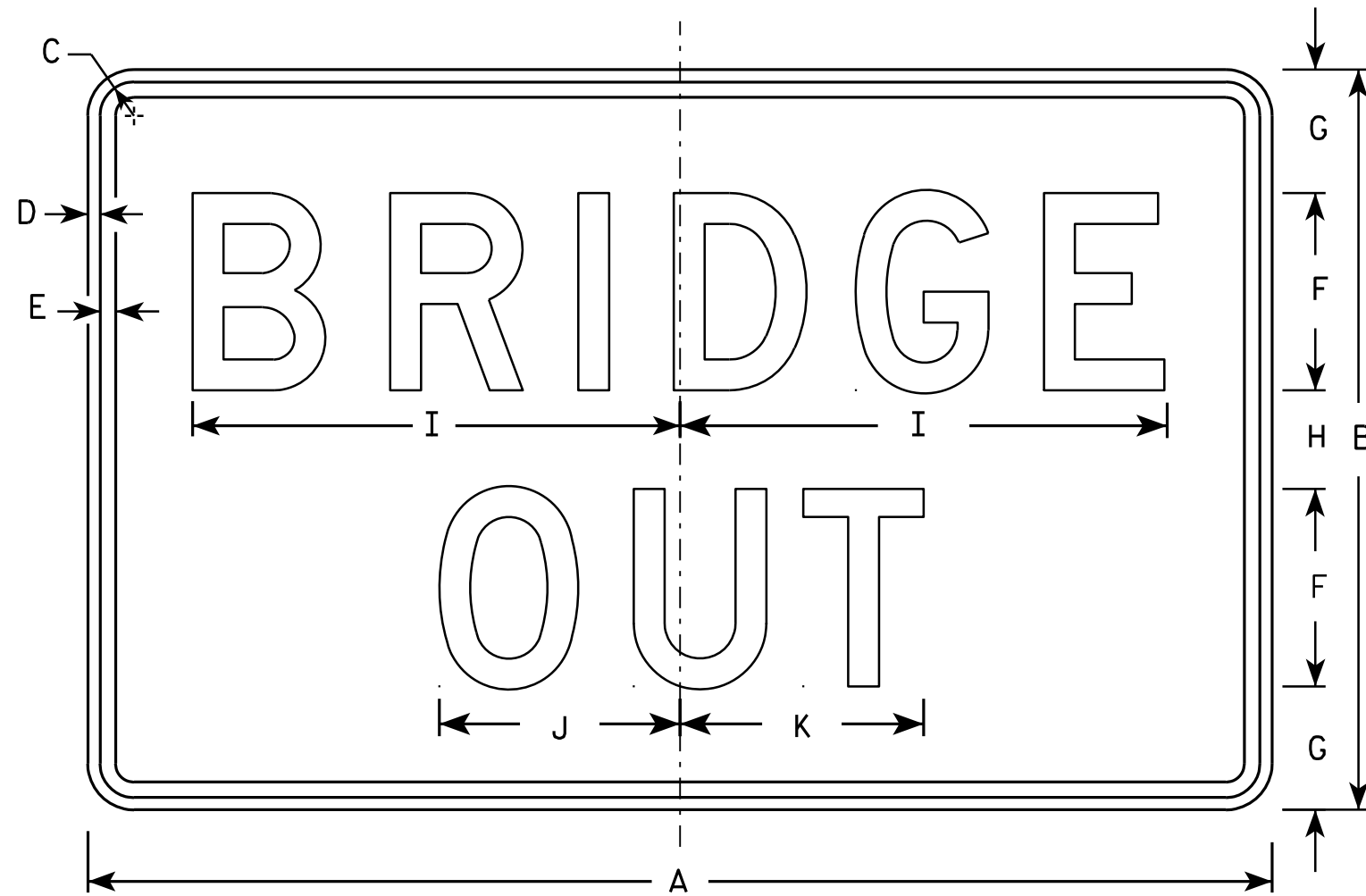
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-1.15

NOTES

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



R11-2B

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

STANDARD SIGN
R11-2B

WISCONSIN DEPT OF TRANSPORTATION

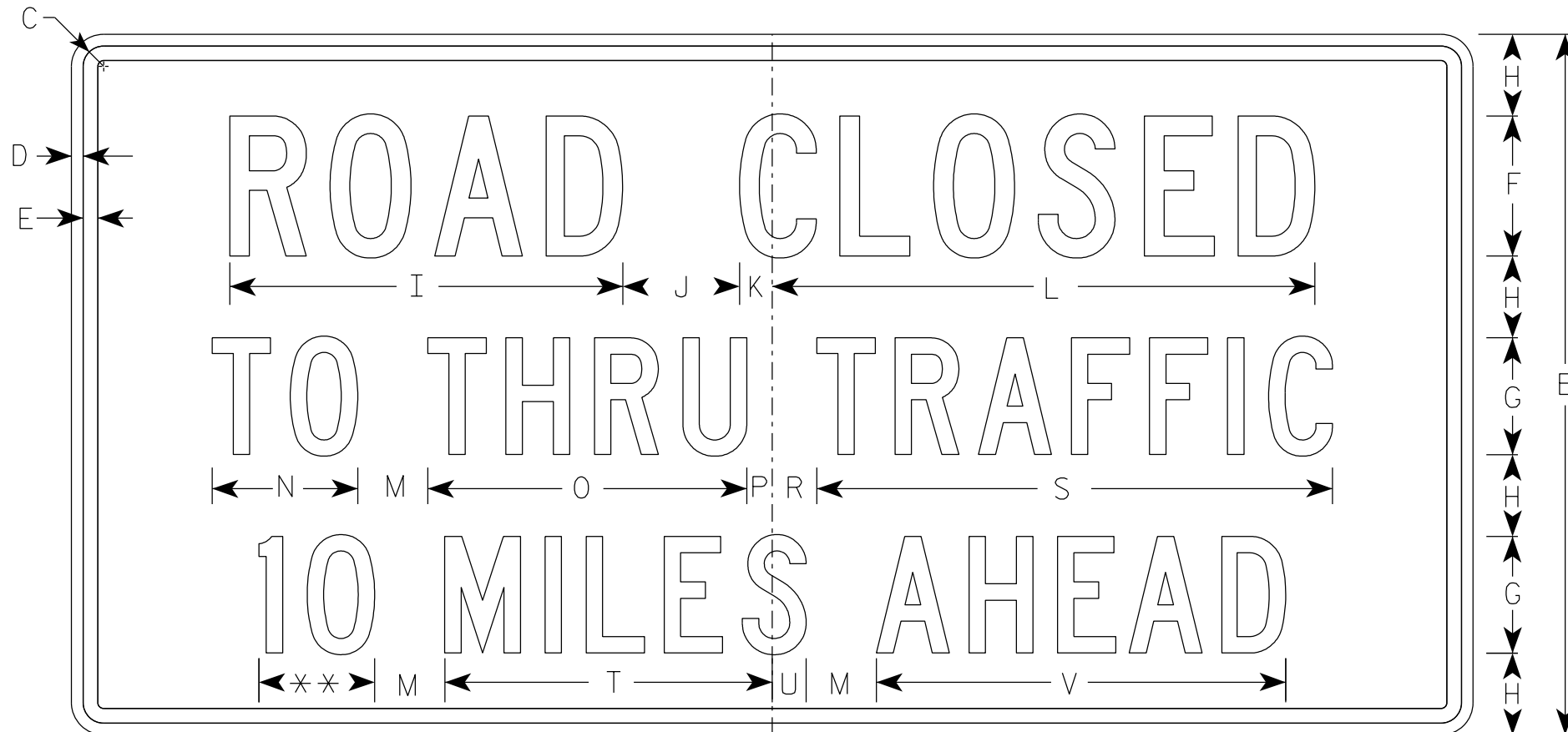
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2B.2

PROJECT NO: _____ SHEET NO: _____ E

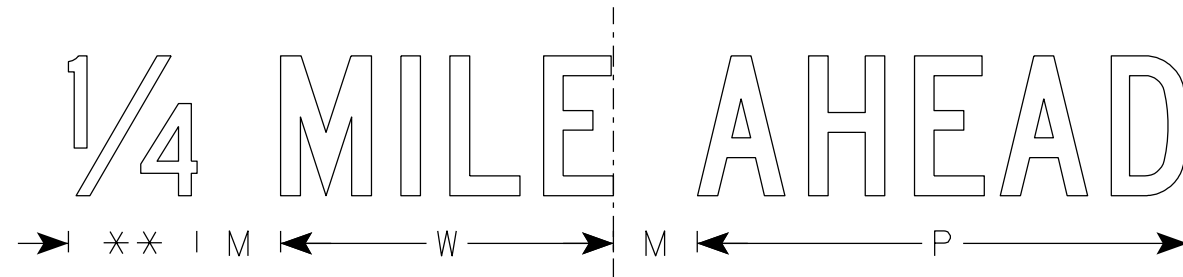
NOTES

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.



R11-3

** 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	18	1 1/4	3/8	3/8	4	3	2	11 1/4	3	1 1/8	15 3/8	2	3 3/4	8 1/4	5/8		1 3/8	13 1/4	8 3/8	7/8	10 1/2	7 1/8			4.5	
2S	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8			12.5	
2M	60	30	1 3/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8			12.5	
3																											
4																											
5																											

STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

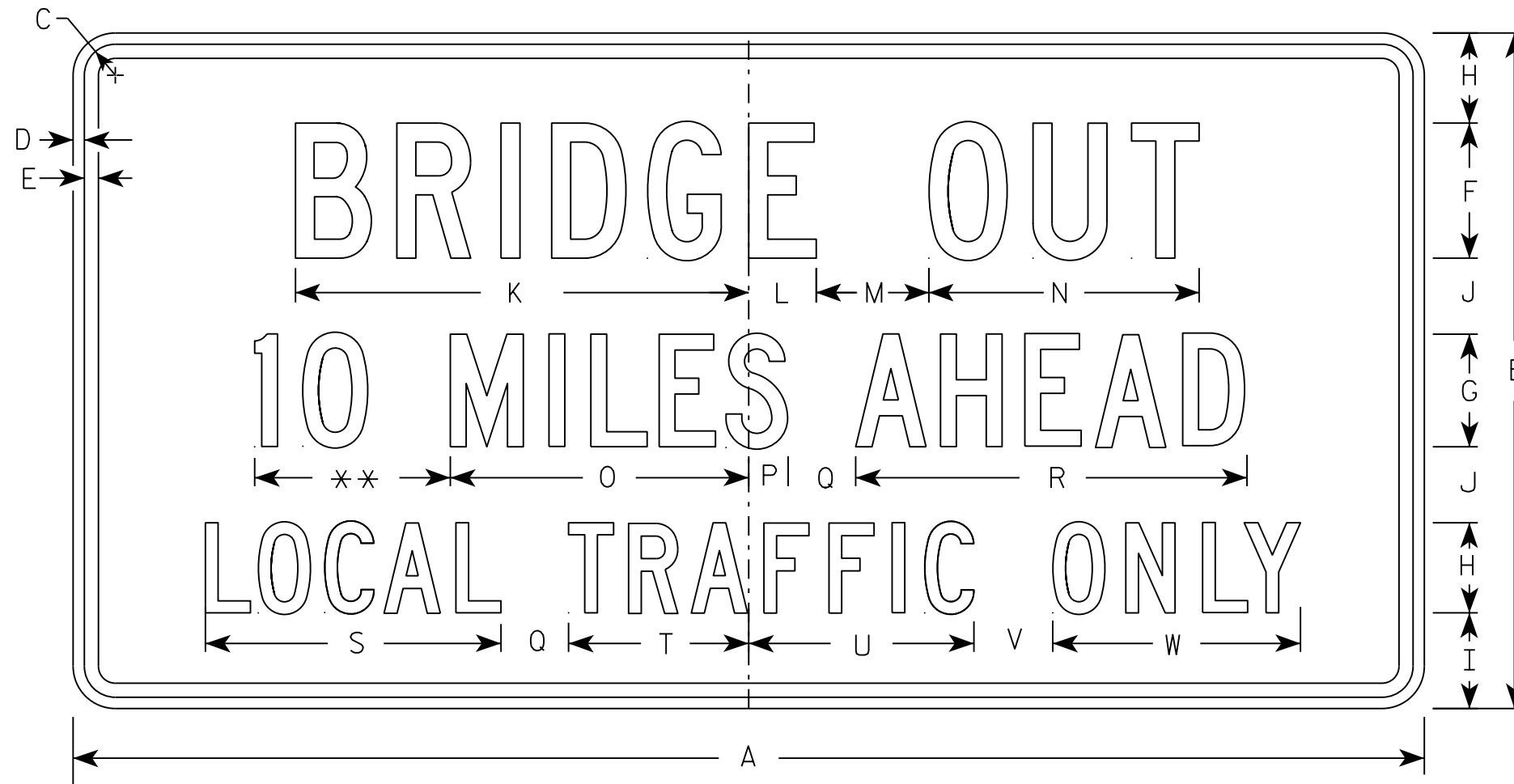
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/14/2021 PLATE NO. R11-3.9

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

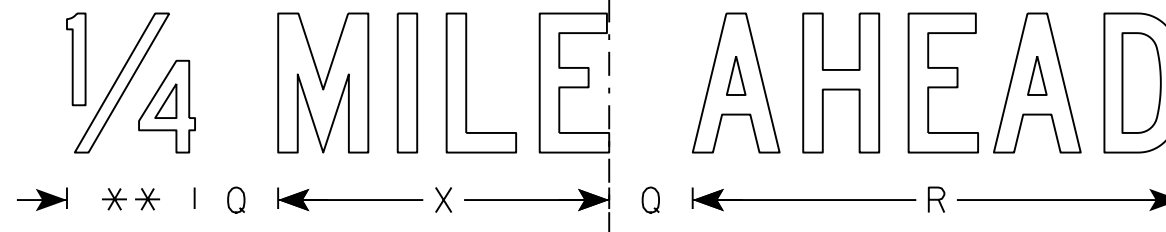
NOTES

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																											

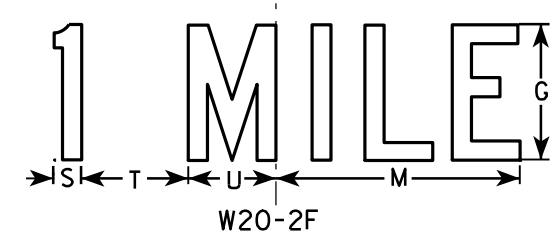
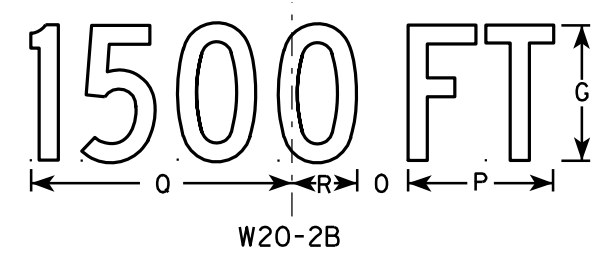
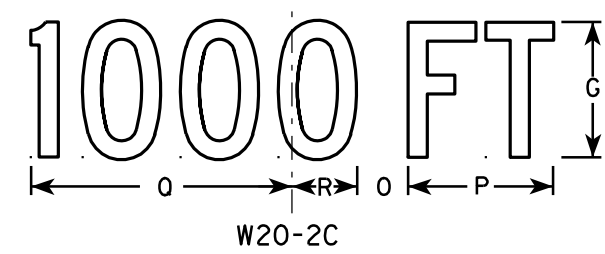
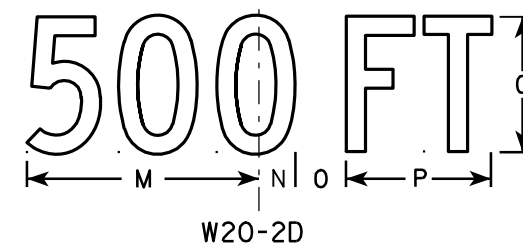
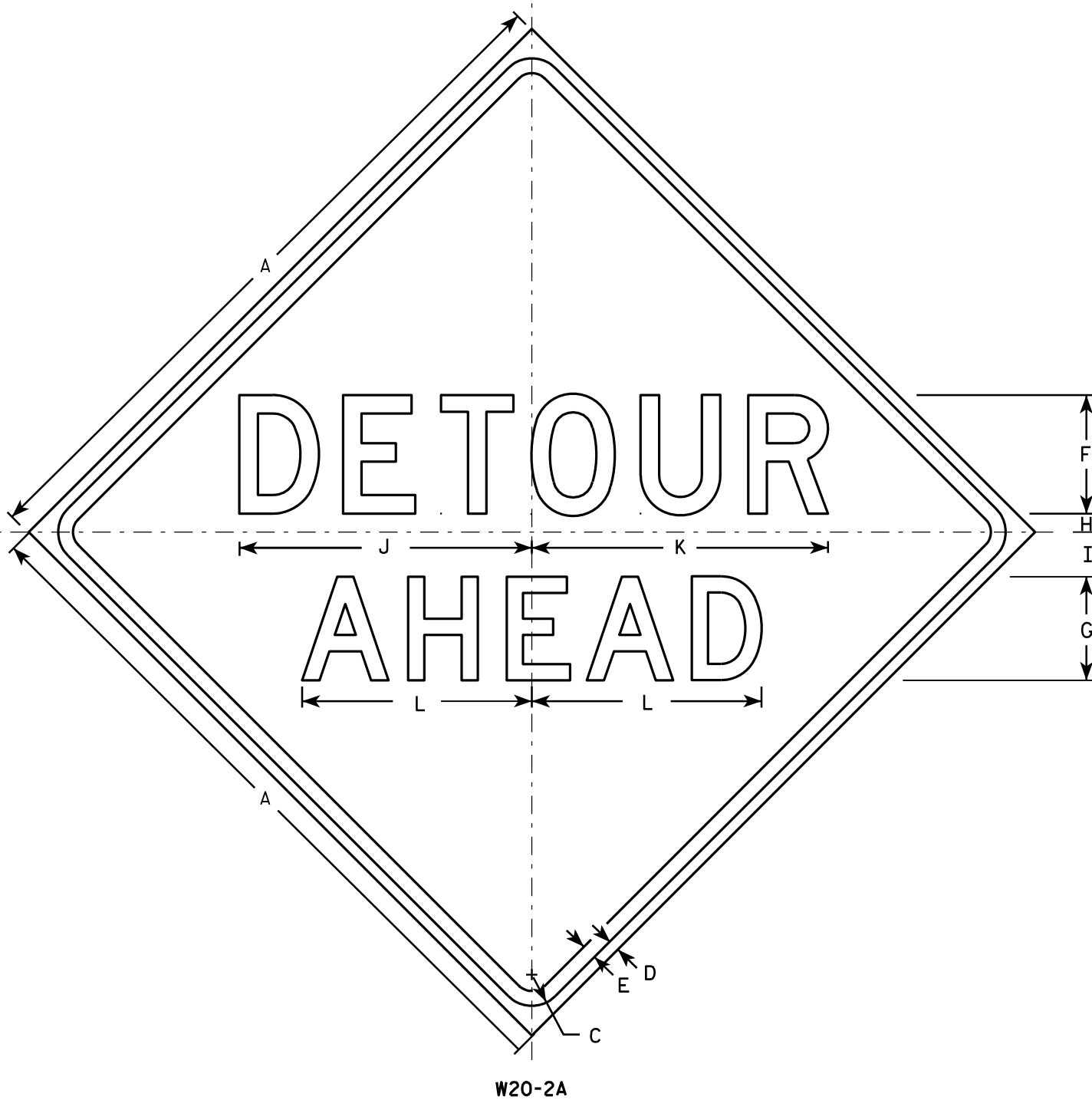
STANDARD SIGN
R11-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/21/17 PLATE NO. R11-3B.3

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - 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.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	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

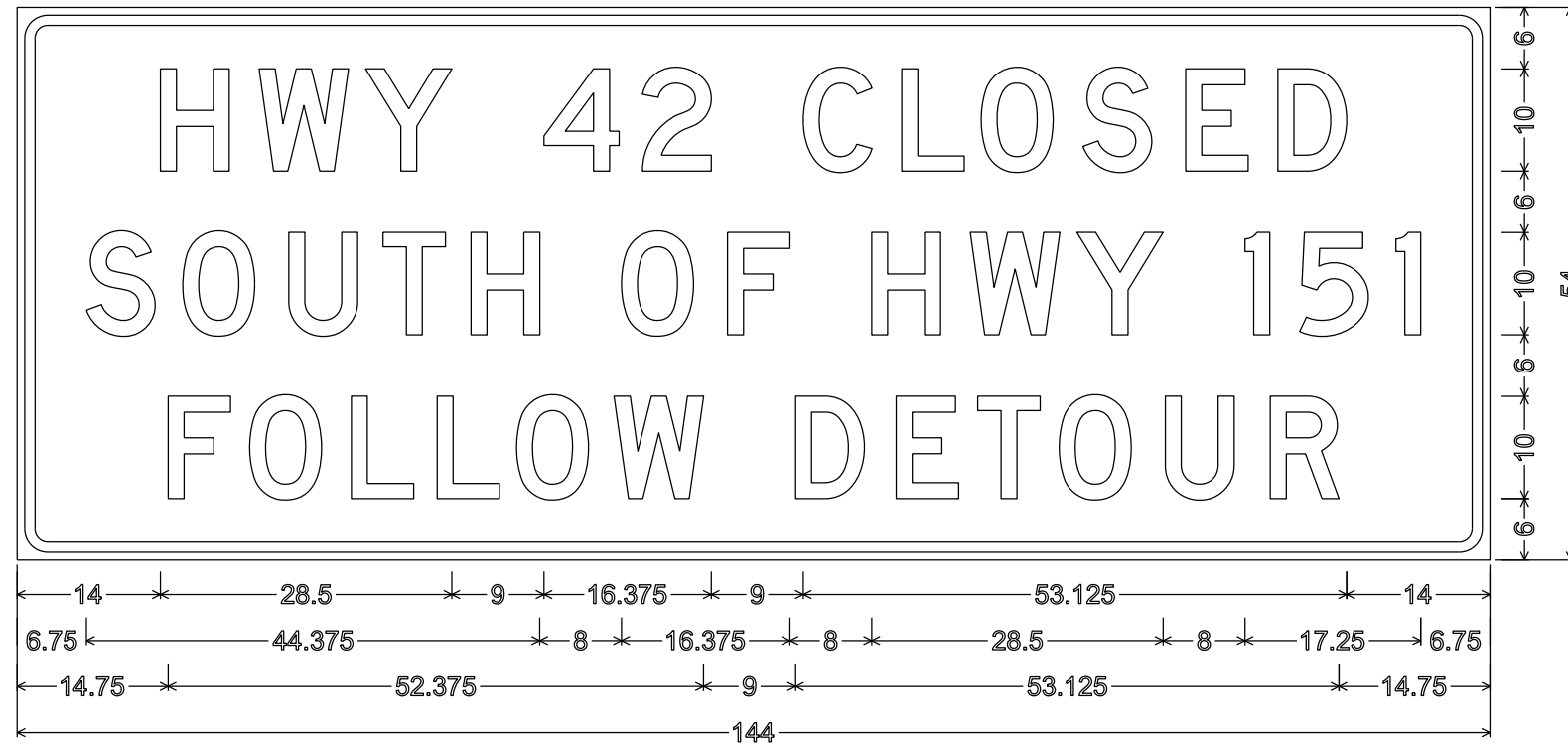
APPROVED *Matthew R. Raub*
for State Traffic Engineer

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

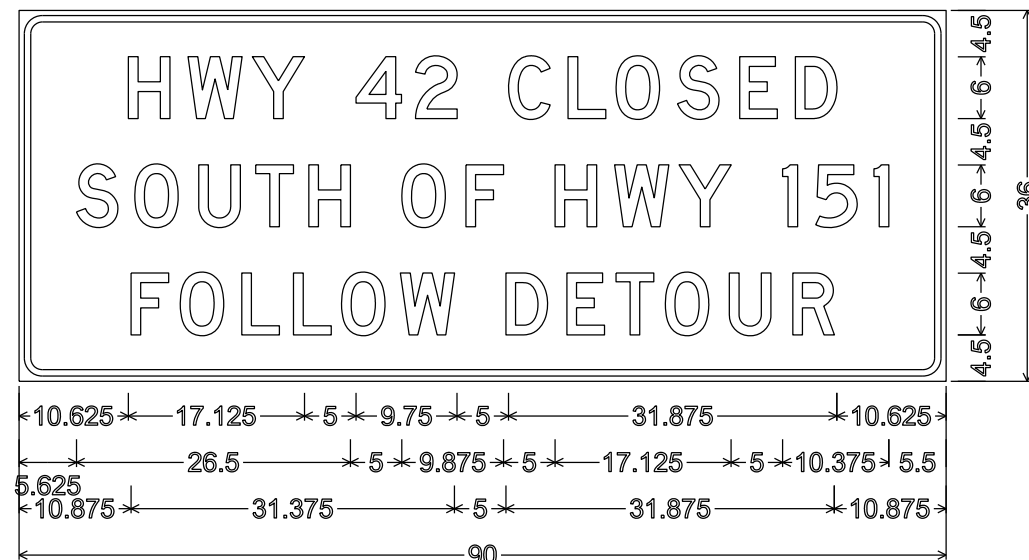
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

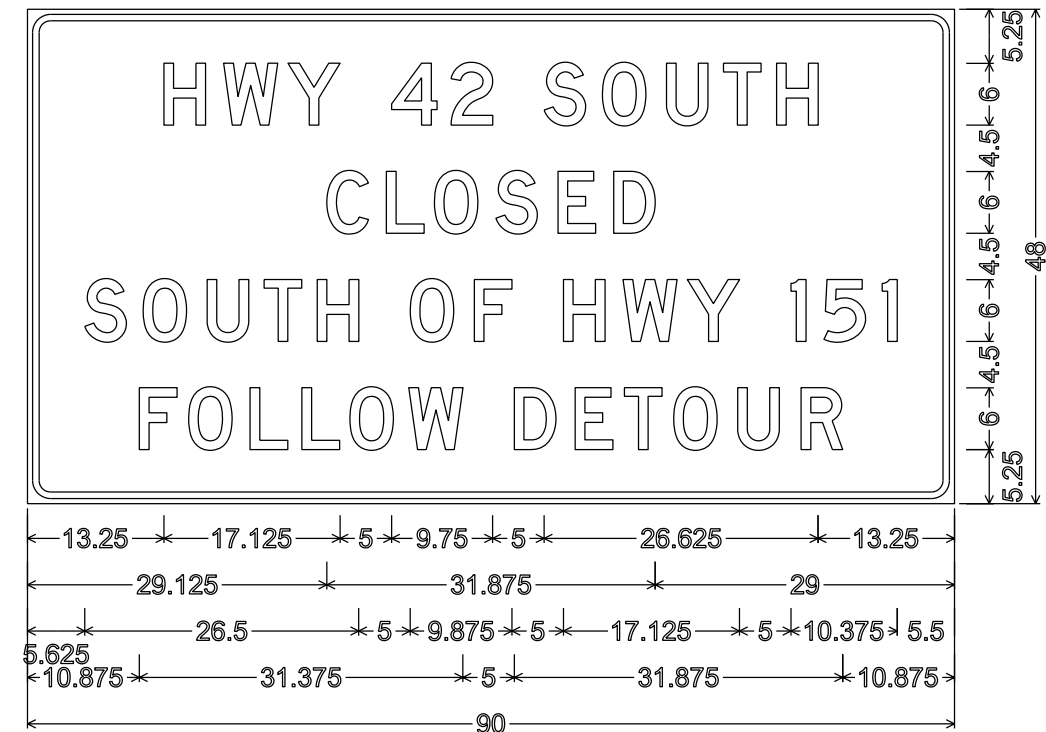
1. Fixed Message Type II Signs - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D



3.000" Radius, 1.000" Border, 0.750" Indent



2.250" Radius, 0.625" Border, 0.500" Indent



2.250" Radius, 0.625" Border, 0.500" Indent

7

7

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.15
OPERATING RATING FACTOR: RF = 1.54
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:
SUPERSTRUCTURE & STRUCTURAL APPROACH SLAB — f'c = 4,000 P.S.I.
ALL OTHER — f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT:

GRADE 60 — fy = 60,000 P.S.I.
STAINLESS, GRADE 60 — fy = 60,000 P.S.I.

36W" PRESTRESSED GIRDERS:

CONCRETE MASONRY — f'c = 8,000 P.S.I.
STRANDS: 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS * PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 105 FEET LONG AT WEST ABUTMENT. PILE POINTS REQUIRED. ESTIMATED 100 FEET LONG AT EAST ABUTMENT. PILE POINTS REQUIRED.

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

HYDRAULIC DATA

100 YEAR FREQUENCY

Q100 = 2,200 C.F.S.
VEL100 = 5.15 F.P.S.
HW100 = EL. 708.13
WATERWAY AREA = 427.18 SQ. FT.
DRAINAGE AREA = 18.5 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5

TRAFFIC VOLUME

STH 42

ADT = 4,960 (2037)
R.D.S. = 60 M.P.H.

CURVE DATA

CL STH 42

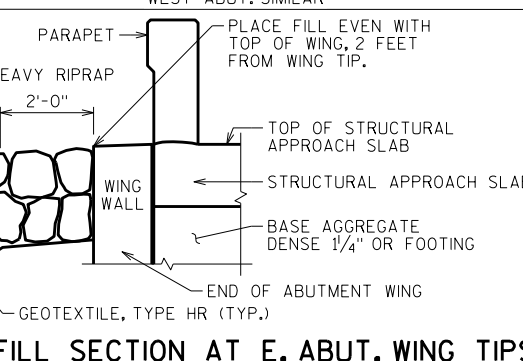
P.I. = STA. 761+17.48
Δ = 3°-29'-28"
D = 0°-30'-00"
T = 349.22'
L = 698.22'
R = 11459.16'
P.C. = STA. 757+68.26
P.T. = STA. 764+66.48

TANGENT LINE: TANGENT TO CL STH 42 @ STATION 760+50.00

TANGENT LINE: TANGENT TO CL STH 42 @ STATION 760+50.00

TANGENT LINE: TANGENT TO CL STH 42 @ STATION 760+50.00

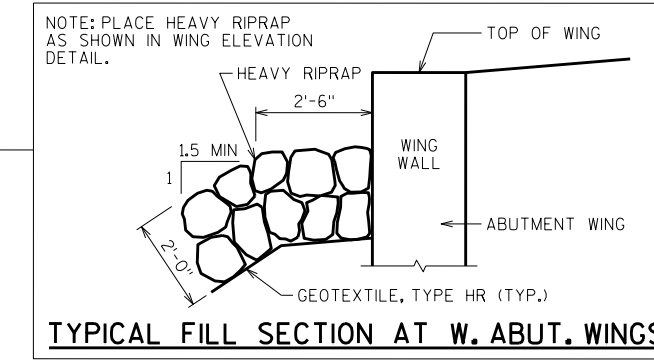
EAST ABUT. SHOWN WEST ABUT. SIMILAR



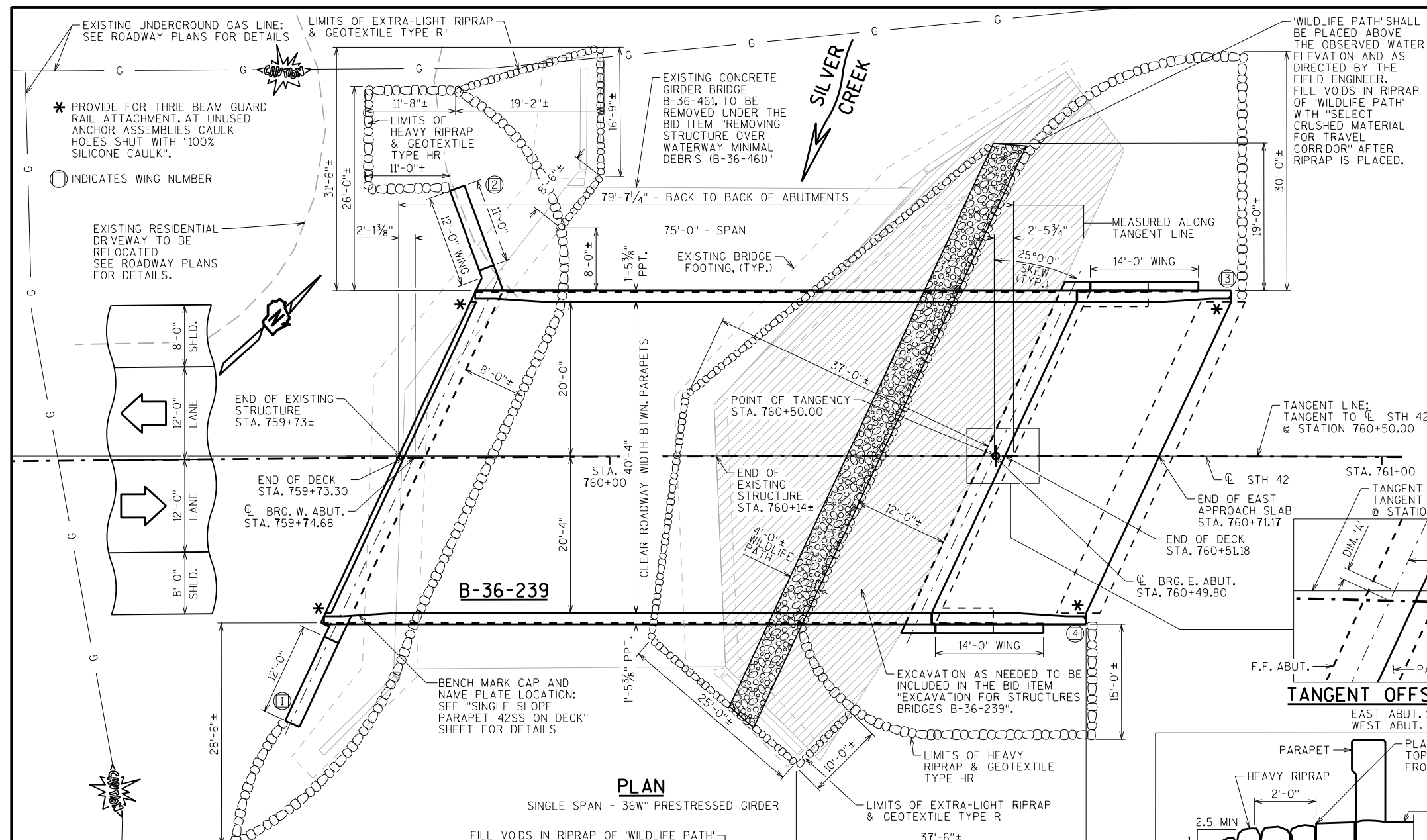
TYPICAL FILL SECTION AT E. ABUT. WING TIPS

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. 36W" PRESTRESSED GIRDER DETAILS 1
9. 36W" PRESTRESSED GIRDER DETAILS 2
10. STEEL DIAPHRAGM
11. SUPERSTRUCTURE CROSS SECTIONS
12. WEST ABUTMENT DIAPHRAGM DETAILS
13. EAST ABUTMENT DIAPHRAGM DETAILS
14. EAST ABUTMENT DIAPHRAGM CORNER DETAILS
15. SUPERSTRUCTURE PLAN
16. SINGLE SLOPE PARAPET 42SS ON DECK
17. SUPERSTRUCTURE BAR DETAILS
18. EAST STRUCTURAL APPROACH SLAB
19. EAST STRUCTURAL APPROACH SLAB CROSS SECTIONS
20. SINGLE SLOPE PARAPET 42SS ON APPROACH SLAB
21. EAST STRUCTURAL APPROACH SLAB BAR DETAILS
22. ALTERNATE CONSTRUCTION JOINT

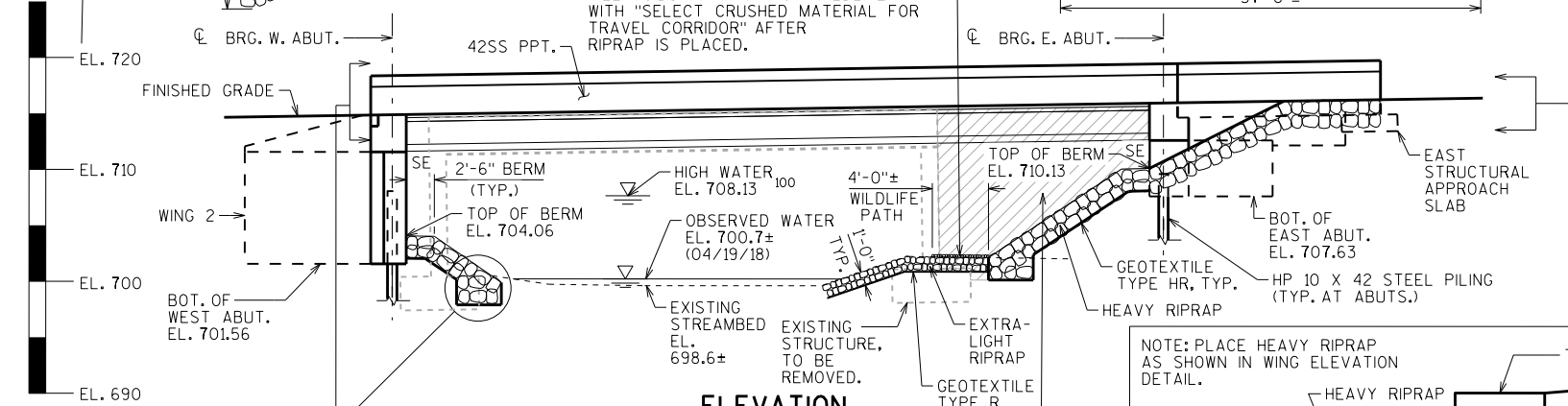


TYPICAL FILL SECTION AT W. ABUT. WINGS



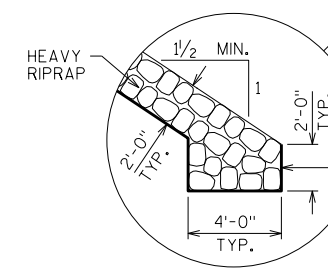
PLAN

SINGLE SPAN - 36W" PRESTRESSED GIRDER



ELEVATION

LOOKING NORTH (UPSTREAM)



HEAVY RIPRAP


LOCATION	DIM 'A'
W. ABUT.	3/4"
E. ABUT.	0"
END OF E. APPR. SLAB	1/4"

DIM 'A' = MEASUREMENT ALONG CL BRG. ABUT. BETWEEN CL STH 42 AND TANGENT LINE

STRUCTURE DESIGN CONTACTS:

JOHN SENDOR (608) 266-5163
DOMINIQUE BECHLE (608) 261-8205

NO.	DATE	REVISION	BY

ACCEPTED  08/17/21
CHIEF STRUCTURES DESIGN ENGINEER DATE

BUREAU OF STRUCTURES

STRUCTURE B-36-239

STH 42 OVER SILVER CREEK

COUNTY MANITOWOC TOWN MANITOWOC RAPIDS

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY JJS DESIGNED CK'D. SEW DRAWN BY JPH PLANS CK'D. JJS

GENERAL PLAN SHEET 1 OF 22

8

8

SCALE = 8:00

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 3/4" UNLESS OTHERWISE NOTED.

THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-36-239".

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. ALSO EXCLUDED IS THE "BASE AGGREGATE DENSE 1 1/4-INCH" AS DETAILED ON THE STRUCTURAL APPROACH SLAB SHEETS.

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.

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

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

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

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, HP 12X53 STEEL PILING MAY BE USED IN LIEU OF HP 10X42 STEEL PILING. PAYMENT SHALL BE BASED ON BID PRICE FOR HP 10X42 STEEL PILING.

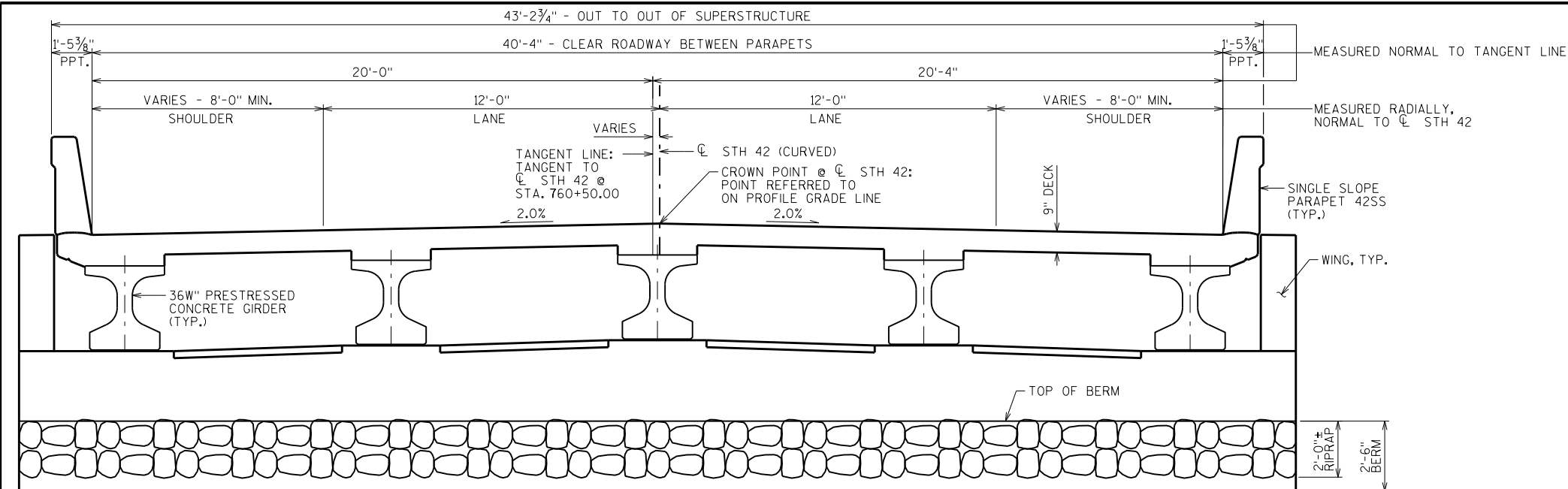
THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "36W PRESTRESSED GIRDER DETAILS 2" SHEET.

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.

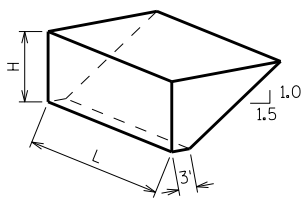
THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION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

ALL VOIDS BETWEEN EXTRA LIGHT RIPRAP IN WILDLIFE TRAVEL CORRIDOR SHALL BE FILLED USING SELECT CRUSHED MATERIAL. WORK SHALL BE PAID FOR UNDER "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR".

THE SLOPE OF THE FILL IN FRONT OF THE HEAVY RIPRAP SHALL BE COVERED WITH EXTRA LIGHT RIPRAP AND GEOTEXTILE FABRIC TYPE "R" TO THE EXTENT SHOWN ON THE "GENERAL PLAN" SHEET.

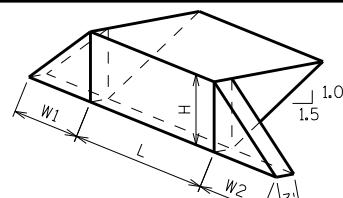


CROSS SECTION THRU ROADWAY LOOKING EAST



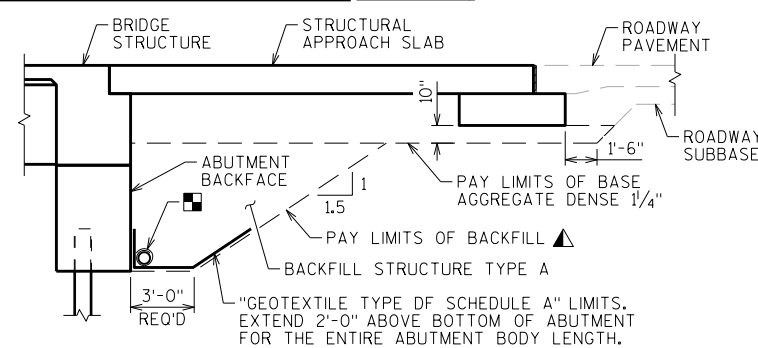
ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
 H = AVERAGE ABUTMENT FILL HEIGHT (FT)
 EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
 $V_{CF} = (L)(3.0)(H) + (L)(0.5)(1.5H)(H)$
 $V_{CY} = V_{CF} (EF) / 27$
 $V_{TON} = V_{CY} (2.0)$



ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ABUTMENT

L = OUT TO OUT OF ABUTMENT BODY (FT)
 H = AVERAGE ABUTMENT FILL HEIGHT (FT)
 W1 = WING 1 LENGTH (FT)
 W2 = WING 2 LENGTH (FT)
 EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
 $V_{CF} = (L)(3.0)(H) + (L)(0.5)(1.5H)(H) + (3.0)(0.5)(W1+W2)(H)$
 $V_{CY} = V_{CF} (EF) / 27$
 $V_{TON} = V_{CY} (2.0)$



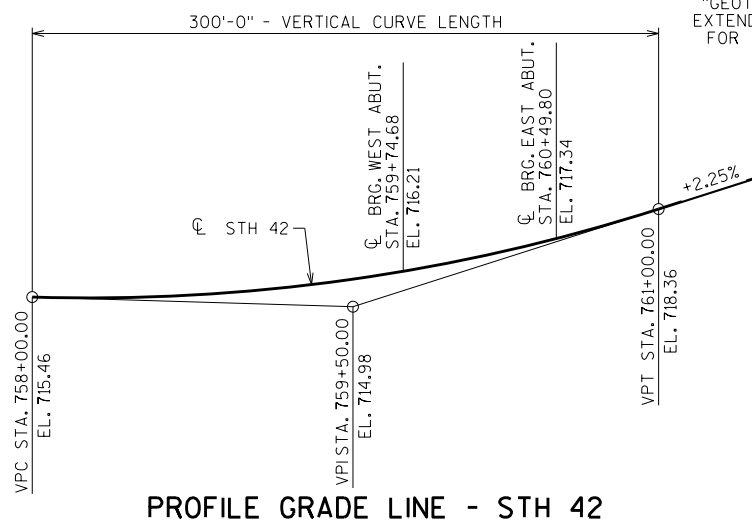
SECTION THRU EAST ABUTMENT

▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

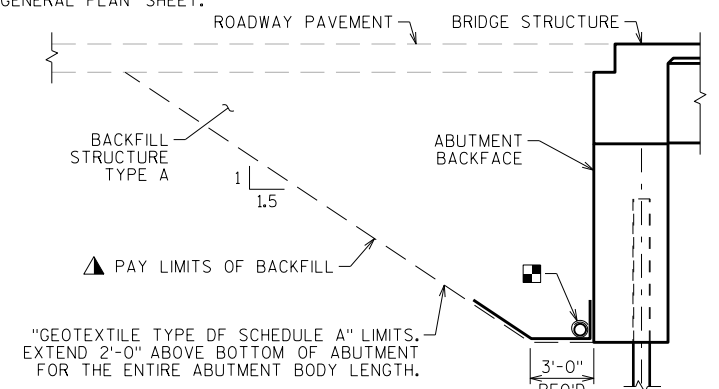
■ PIPE UNDERDRAIN WRAPPED (6 INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	E. STRUCT. APP. SLAB	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS (B-36-461)	EACH	—	—	—	—	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-36-239	LS	—	—	—	—	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	—	675	160	—	835
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	—	—	—	135	135
502.0100	CONCRETE MASONRY BRIDGES	CY	163	85	51	61	360
502.3200	PROTECTIVE SURFACE TREATMENT	SY	370	—	—	90	460
502.3210	PIGMENTED SURFACE SEALER	SY	77	—	—	20	97
503.0137	PRESTRESSED GIRDER TYPE 136W-INCH	LF	380	—	—	—	380
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	—	4,060	3,120	—	7,180
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	24,890	2,160	1,520	10,770	39,340
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	730	—	—	—	730
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	10	—	—	—	10
506.4000	STEEL DIAPHRAGMS B-36-239	EACH	4	—	—	—	4
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	16	14	—	30
550.0500	PILE POINTS	EACH	—	9	11	—	20
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	—	945	1,100	—	2,045
606.0050	RIPRAP EXTRA-LIGHT	CY	—	8	57	—	65
606.0300	RIPRAP HEAVY	CY	—	90	160	—	250
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	—	120	105	—	225
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	—	—	—	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	—	48	42	—	90
645.0120	GEOTEXTILE TYPE HR	SY	—	170	280	—	450
645.0130	GEOTEXTILE TYPE R	SY	—	25	170	—	195
SPV.0195	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	—	—	20	—	20
	NON-BID ITEMS						
	FILLER	SIZE	—	—	—	—	1/2", 3/4", 1 1/2"



PROFILE GRADE LINE - STH 42



SECTION THRU WEST ABUTMENT

▲ 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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-36-239

DRAWN BY: JPH PLANS CK'D: JJS

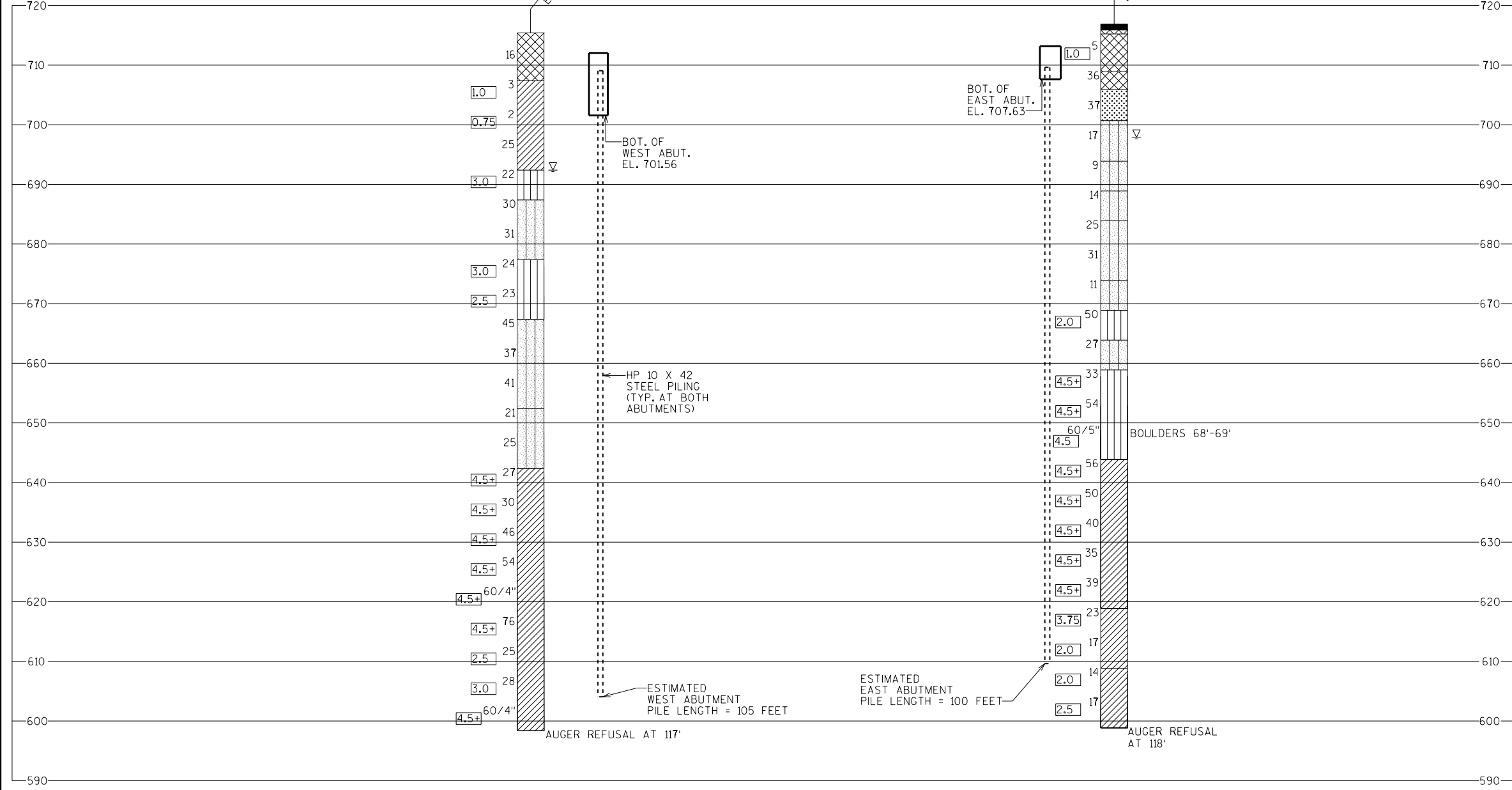
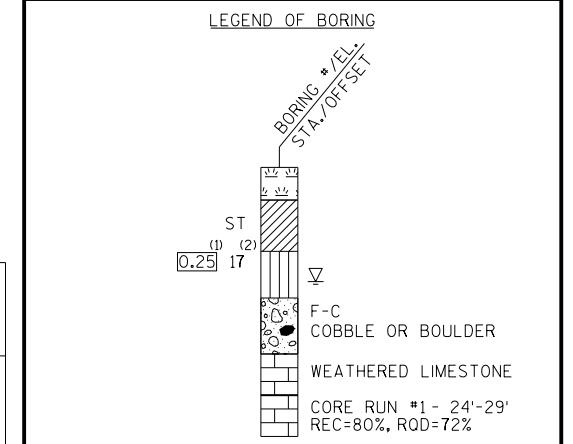
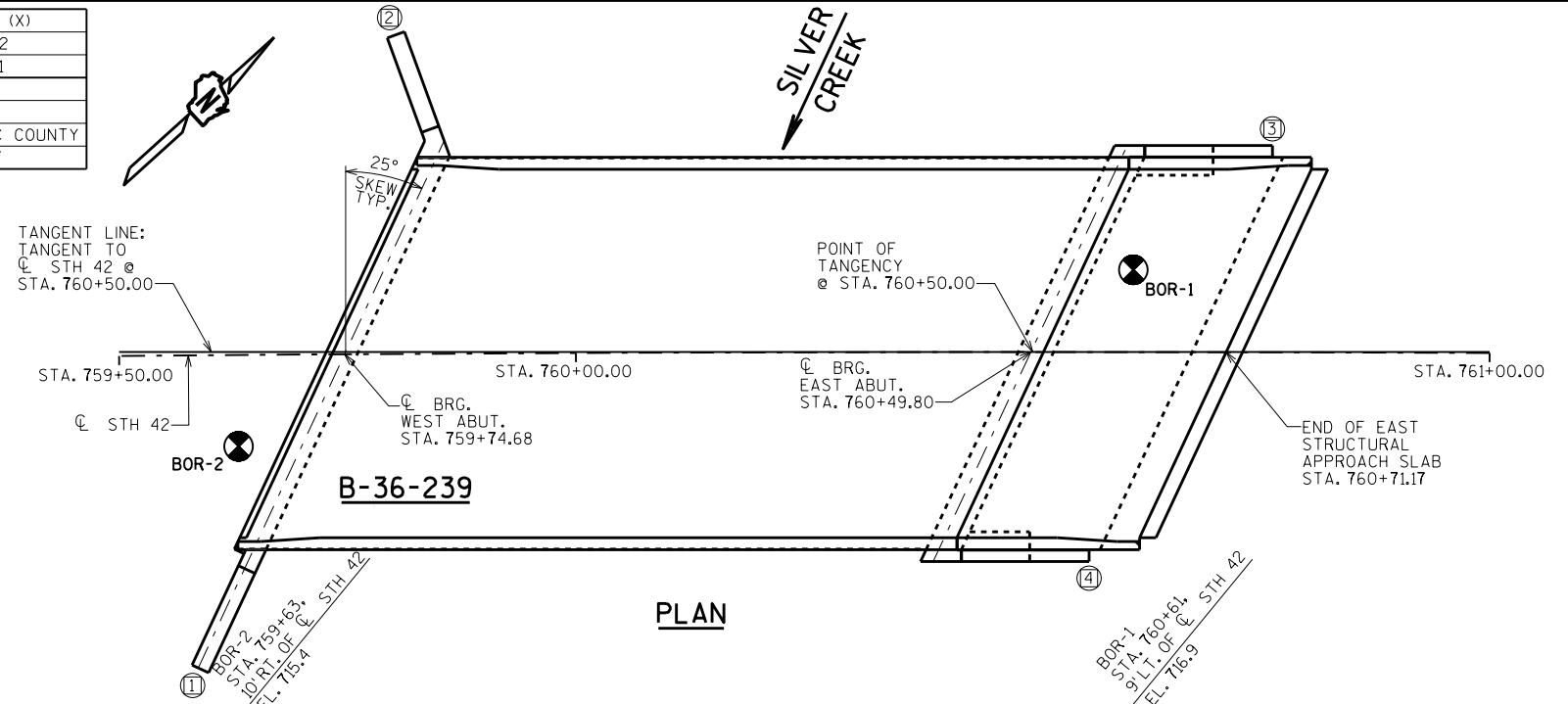
CROSS SECTION & QUANTITIES

SHEET 2

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	1/13/2021	291730	215302
2	1/14/2021	291645	215251

BORINGS COMPLETED BY: GESTRA
 REPORT COMPLETED BY: WISDOT
 ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MANITOWOC COUNTY
 COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT

STATE PROJECT NUMBER		
4570-24-71		
MATERIAL SYMBOLS		
	ASPHALT	
	CONCRETE	
	SAND	
	BOULDERS OR COBBLES	
	SHALE	
	PEAT	
	GRAVEL	
	BEDROCK (UNKNOWN)	



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

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

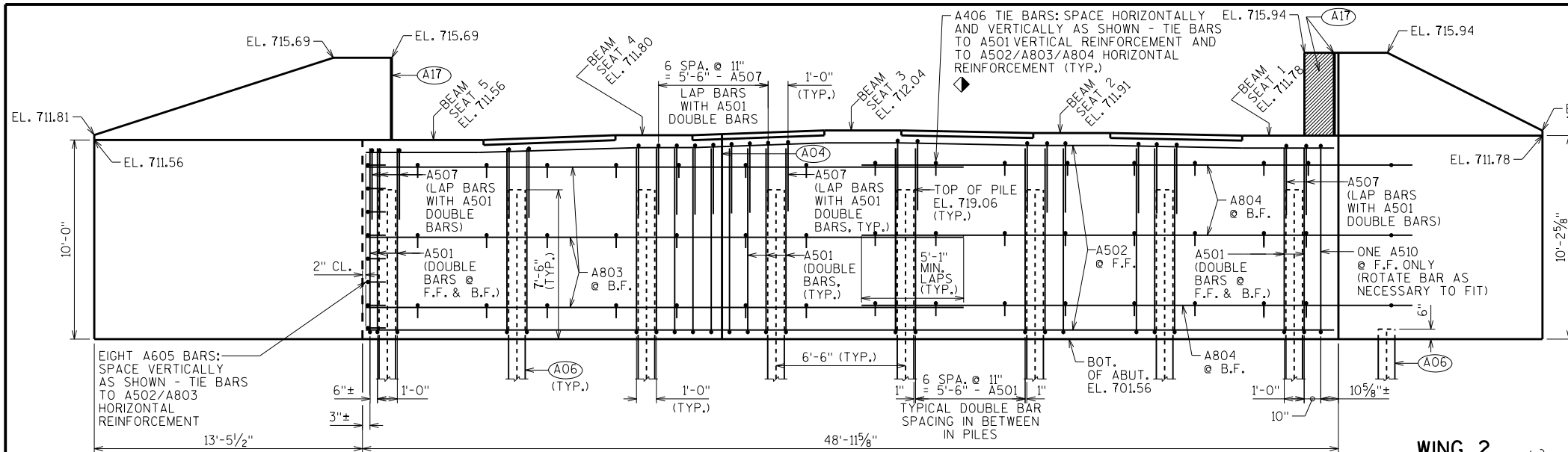
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT 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 STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CK'D. JJS	
SUBSURFACE EXPLORATION		SHEET 3	

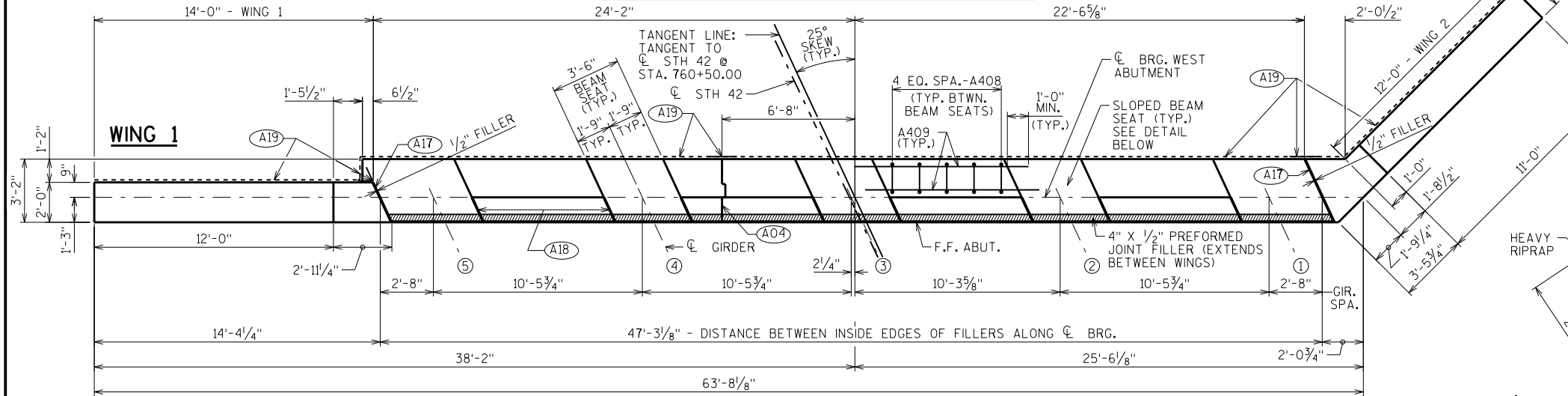
8

8

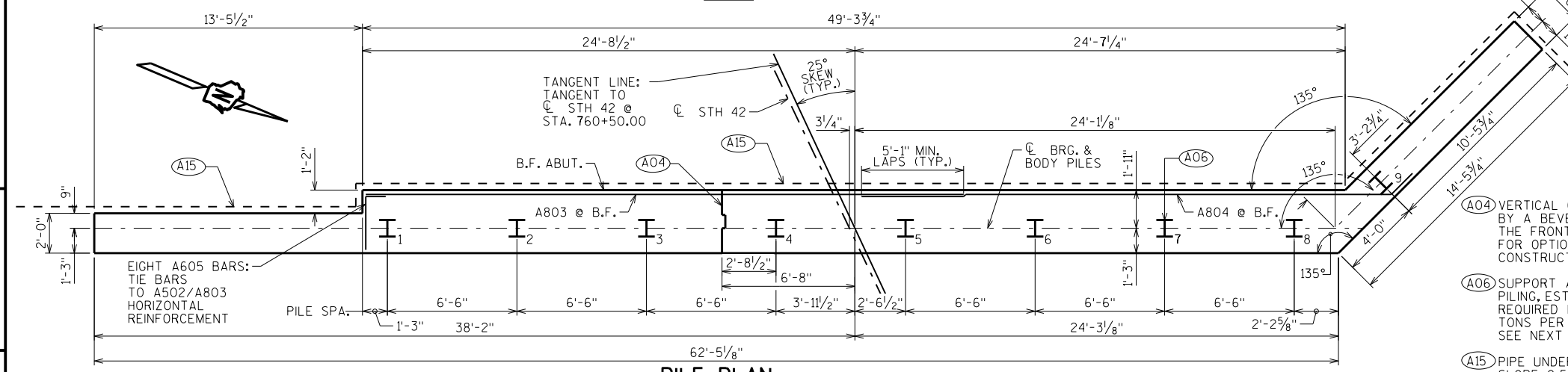
SCALE = 10.00



ELEVATION LOOKING WEST @ F.F. ABUT.



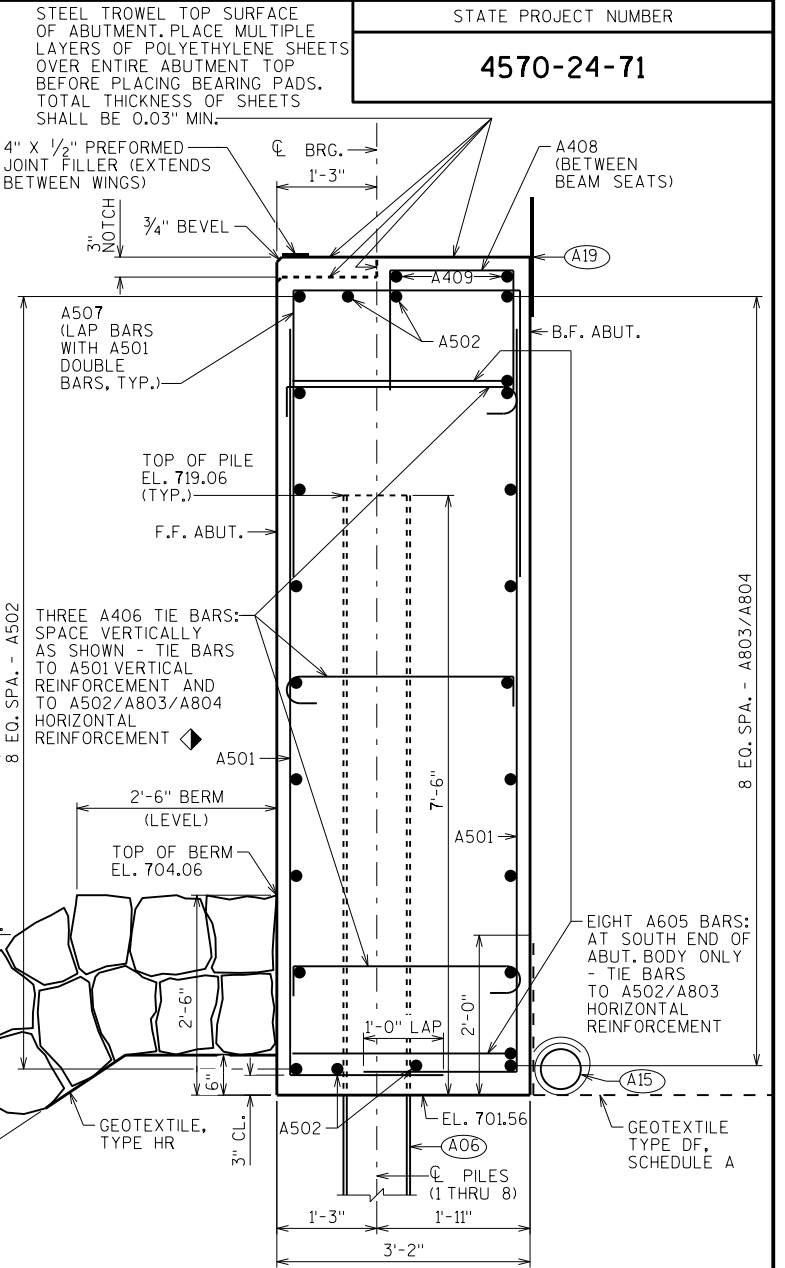
PLAN



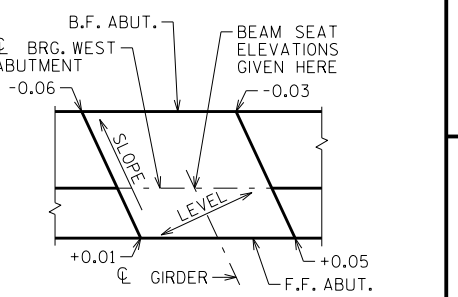
PILE PLAN

◊ ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIE BARS. ○ INDICATES GIRDER NUMBER

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



SECTION THRU BODY



SLOPED BEAM SEAT DETAIL

- (A04) VERTICAL CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2" x 8" 3/4" V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE. FOR OPTIONAL DETAILS - SEE "ALTERNATE CONSTRUCTION JOINT" SHEET.
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 105 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. PILE POINTS REQUIRED. SEE NEXT SHEET FOR "PILE DETAILS".
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE), EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CK'D. JJS	
WEST ABUTMENT			
SHEET 4			

BILL OF BARS

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

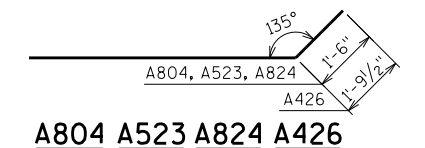
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		104	11'-1"	X		BODY-VERTICAL-F.F. & B.F.
A502		13	48'-7"			BODY-HORIZONTAL-TOP, BOTTOM & F.F.
A803		9	30'-0"			BODY-HORIZONTAL-B.F.-AT WING 1 END
A804		9	28'-0"	X		BODY-HORIZONTAL-B.F.-AT WING 2 END
A605		8	3'-7"	X		BODY END-HORIZ.-WING 1 END
A406		45	3'-8"	X		BODY-VERTICAL-TIE BARS
A507		52	9'-9"	X		BODY-TOP-VERTICAL
A408		20	4'-5"	X		BODY-TOP-VERT.-BETWEEN BEAM SEATS
A409		8	8'-9"			BODY-TOP-HORIZ.-BETWEEN BEAM SEATS
A510		1	13'-4"	X		BODY-VERT.-F.F.-AT WING 2 END
A411	X	24	14'-3"	X	▲	WING 1-VERT.-F.F. & B.F.
A412	X	4	16'-3"	X		WING 1-VERT.-F.F. & B.F.
A513	X	10	15'-1"			WING 1-HORIZ.-F.F.-LOWER WING
A914	X	9	17'-11"			WING 1-HORIZ.-F.F. & B.F.-LOWER WING
A415	X	4	7'-4"	X		WING 1-TOP-VERT.-F.F. & B.F.
A416	X	4	9'-7"	▲		WING 1-HORIZ.-F.F.-UPPER WING
A417	X	4	8'-10"	▲		WING 1-HORIZ.-B.F.-UPPER WING
A418	X	1	15'-0"	X		WING 1-TOP-VERT.-F.F.-UPPER WING
A419	X	1	14'-3"	X		WING 1-TOP-VERT.-B.F.-UPPER WING
A420	X	28	14'-5"	X	▲	WING 2-VERT.-F.F. & B.F.
A421	X	6	16'-6"	X		WING 2-VERT.-F.F. & B.F.
A522	X	6	17'-11"	X		WING 2/BODY-VERT.-F.F. & B.F.
A523	X	9	15'-8"	X		WING 2-HORIZ.-F.F.-LOWER WING
A824	X	9	17'-2"	X		WING 2-HORIZ.-B.F.-LOWER WING
A425	X	5	9'-7"	▲		WING 2-HORIZ.-F.F.-UPPER WING
A426	X	5	9'-0"	▲		WING 2-HORIZ.-B.F.-UPPER WING
A427	X	1	14'-10"	X		WING 2-TOP-VERT.-F.F.-UPPER WING
A428	X	1	14'-4"	X		WING 2-TOP-VERT.-B.F.-UPPER WING

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

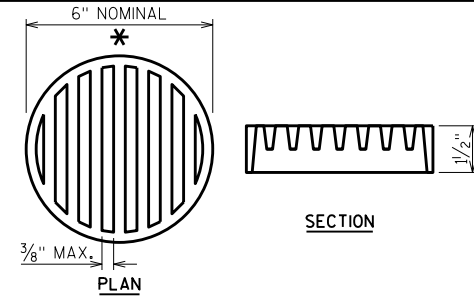
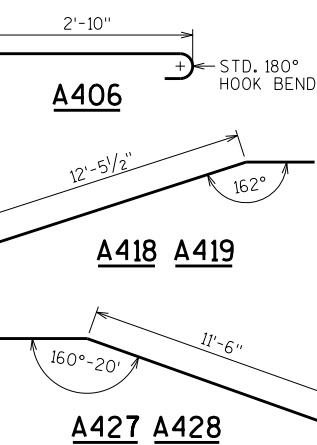
BAR SERIES TABLE

BAR MARK	NUMBER REQUIRED	TOTAL BAR LENGTHS
A411	2 SERIES OF 12 BARS	12'-5" TO 16'-0"
A416	1 SERIES OF 4 BARS	5'-3" TO 13'-10"
A417	1 SERIES OF 4 BARS	4'-6" TO 13'-2"
A420	2 SERIES OF 14 BARS	12'-8" TO 16'-1"
A425	1 SERIES OF 5 BARS	5'-4" TO 13'-9"
A426	1 SERIES OF 5 BARS	4'-9" TO 13'-2"

BUNDLE AND TAG EACH SERIES SEPARATELY.



- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" X 6". (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 105 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. PILE POINTS REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.



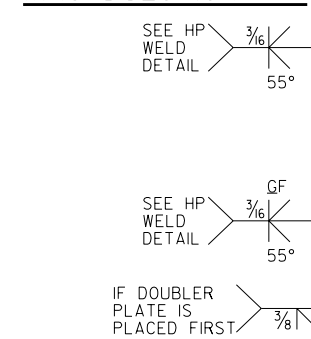
RODENT SHIELD DETAIL

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

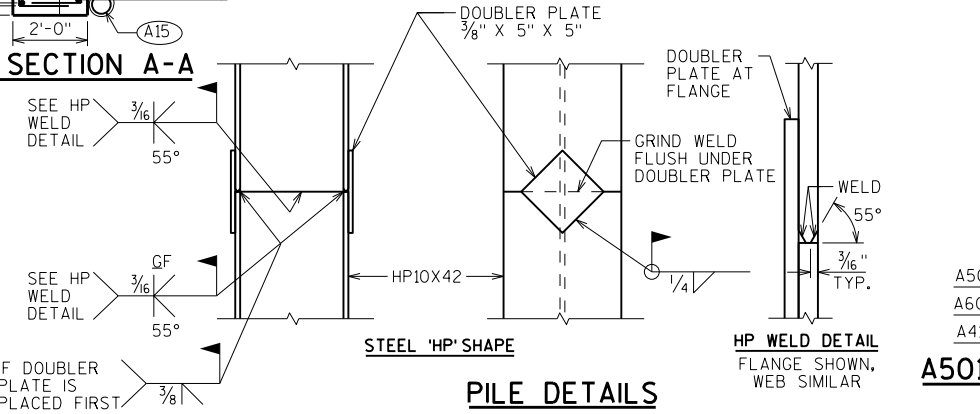
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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.

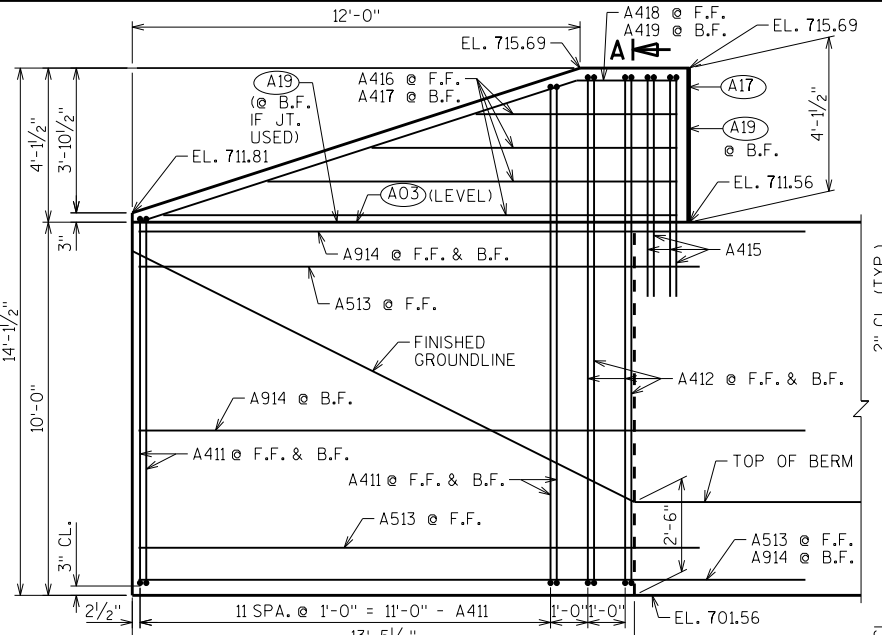
WING 1 SECTION A-A



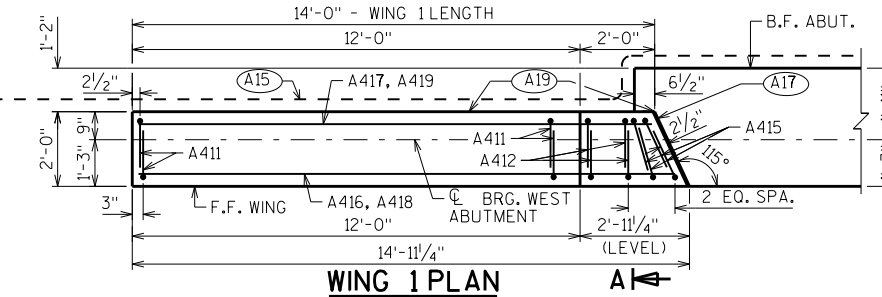
PILE DETAILS



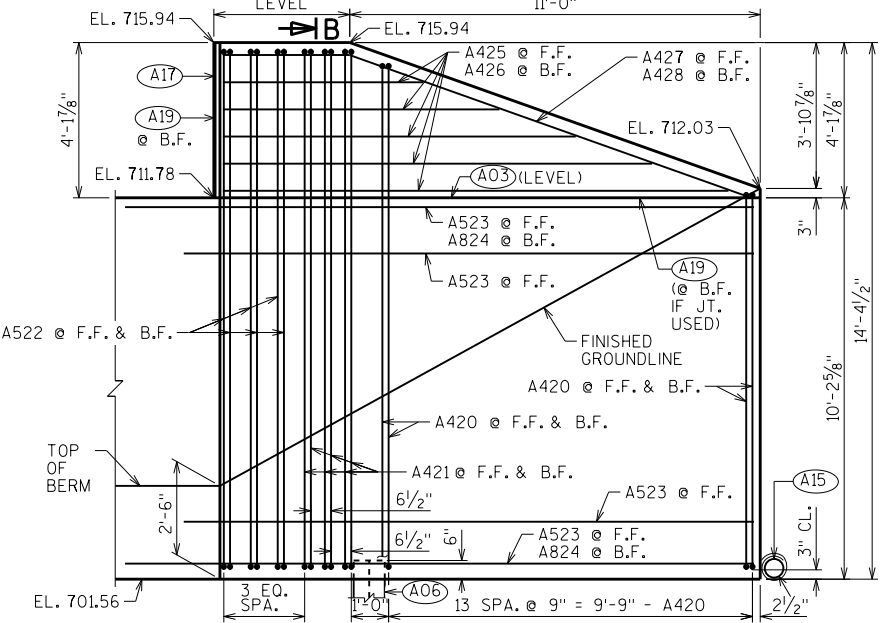
A501 A605 A415



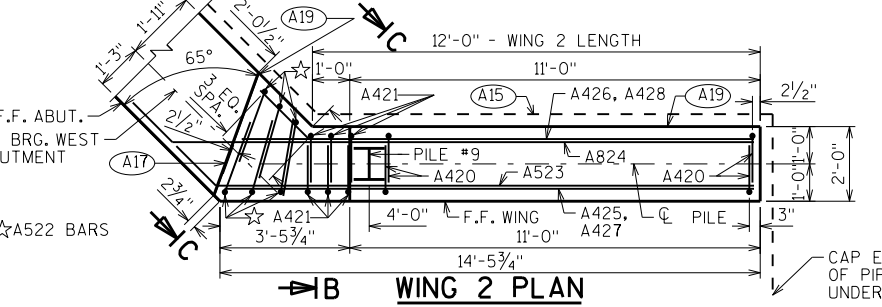
WING 1 ELEVATION LOOKING AT F.F. WING



WING 1 PLAN

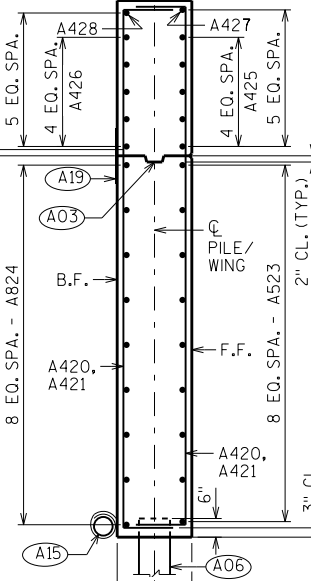


WING 2 ELEVATION LOOKING AT F.F. WING

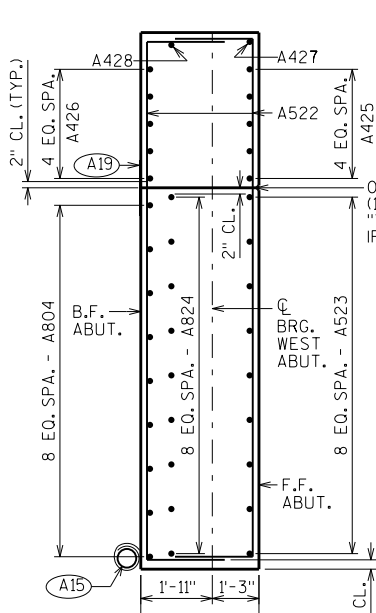


WING 2 PLAN

WING 2 SECTION B-B



SECTION C-C



A510 A411
A412 A420
A421 A522

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

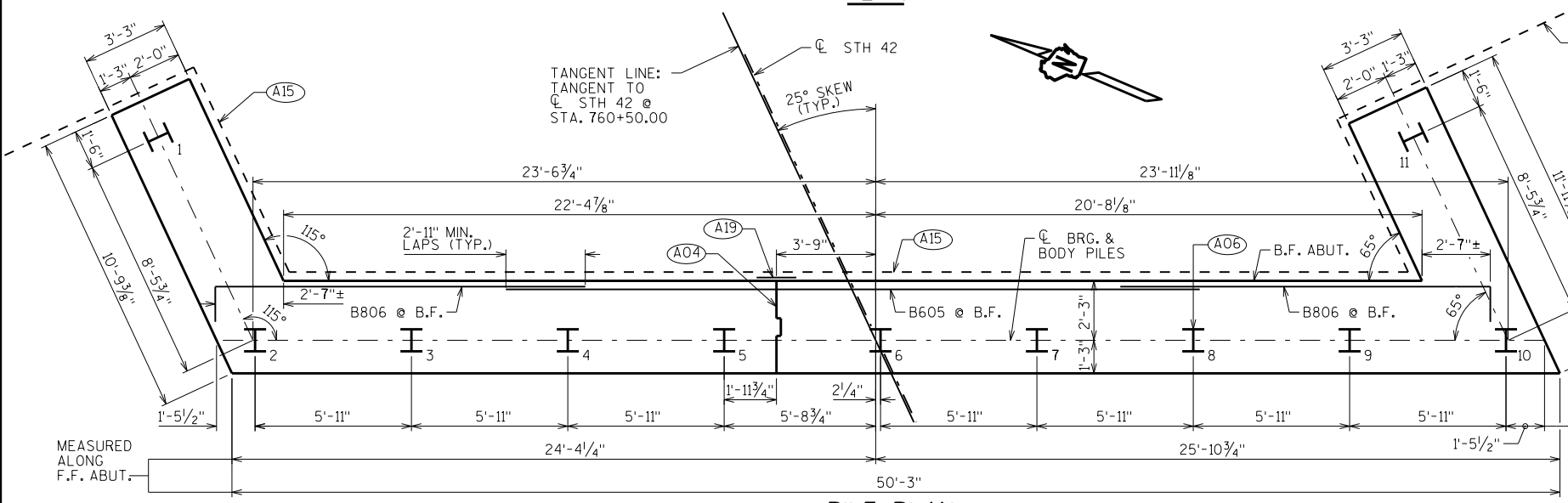
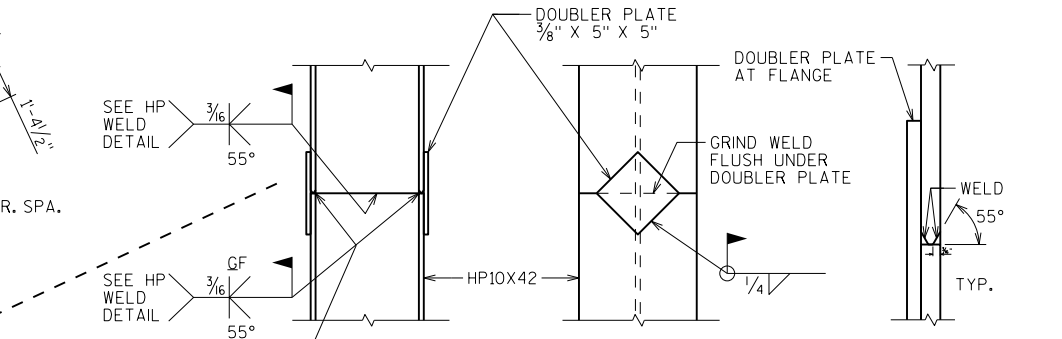
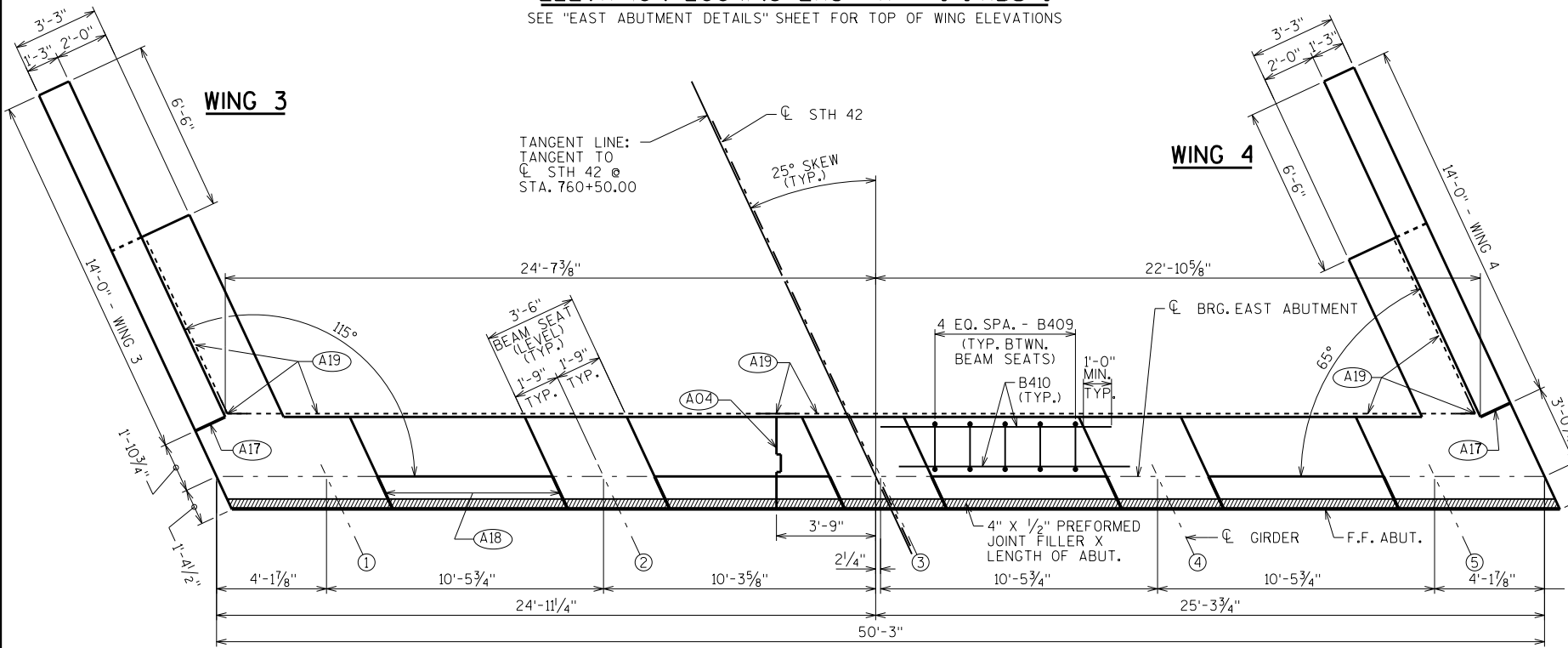
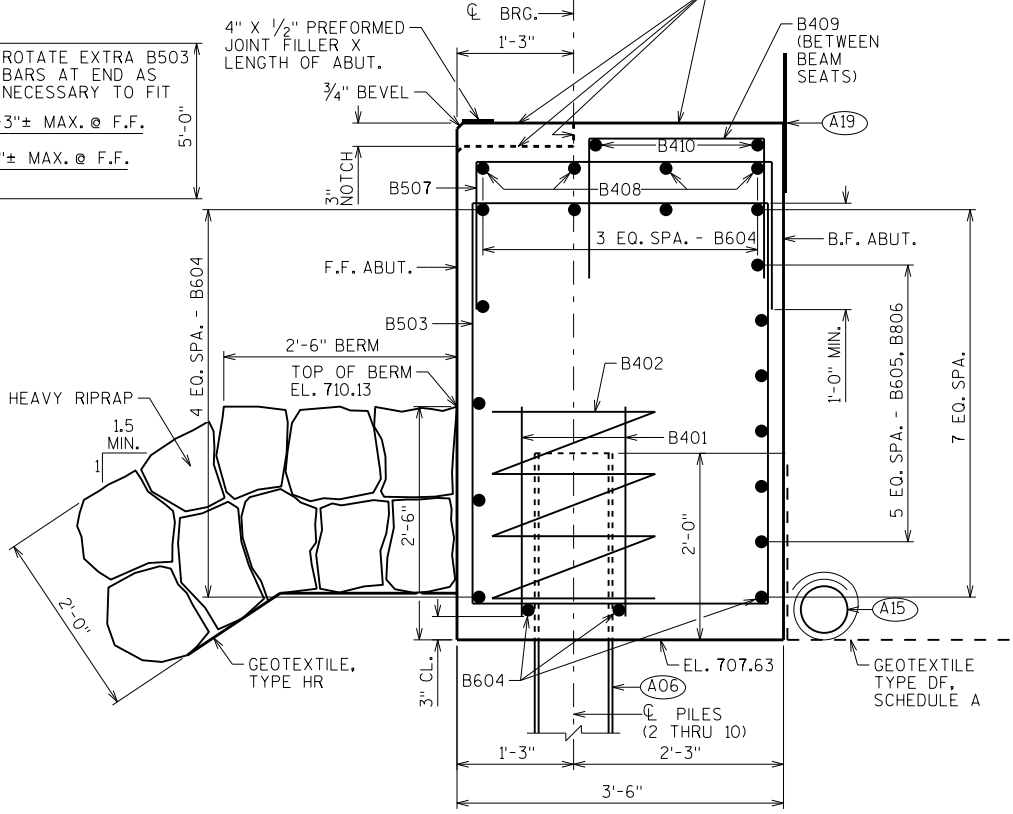
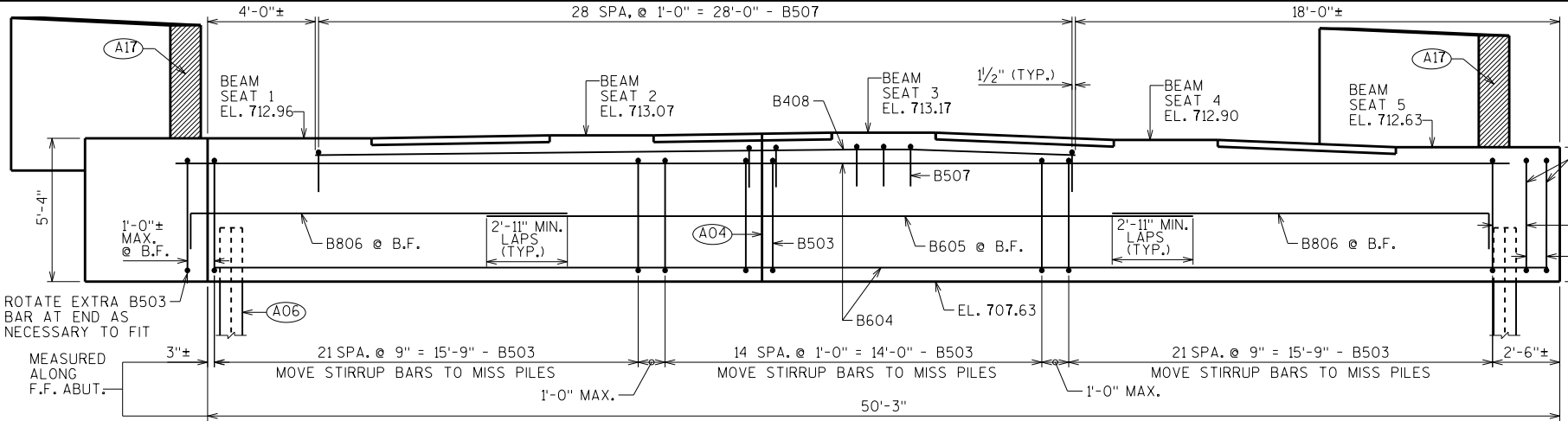
STRUCTURE B-36-239

DRAWN BY JPH PLANS CK'D. JJS

WEST ABUTMENT DETAILS

SHEET 5

STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE 0.03" MIN.



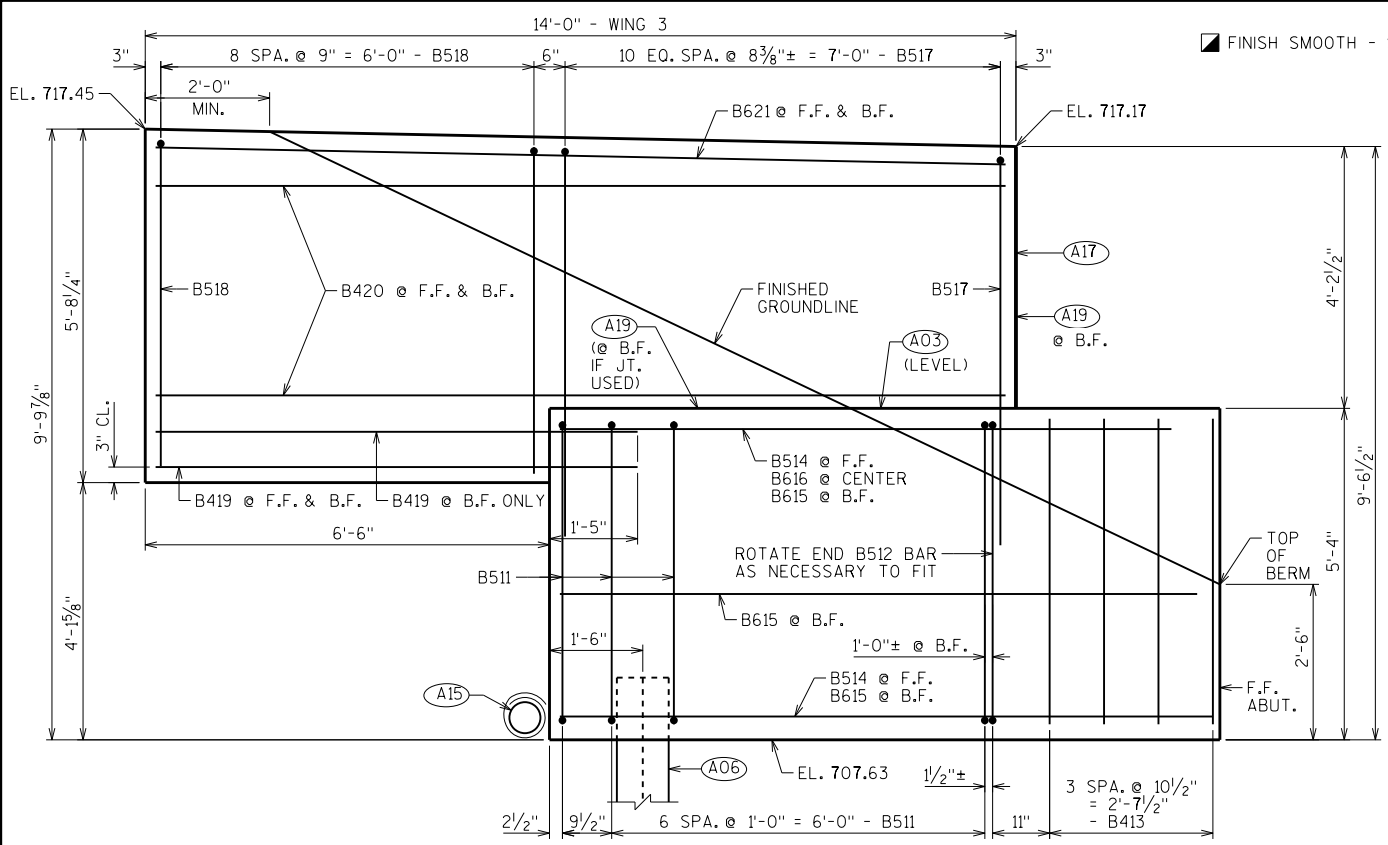
- (A04) VERTICAL CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2" x 8", 3/4" V GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE. FOR OPTIONAL DETAILS - SEE "ALTERNATE CONSTRUCTION JOINT" SHEET.
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 100 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. PILE POINTS REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CKD. JJS	
EAST ABUTMENT			SHEET 6

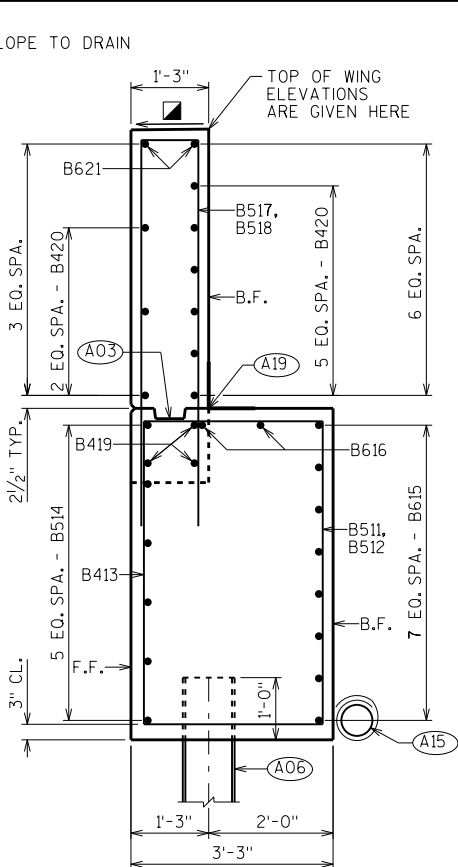
BILL OF BARS

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

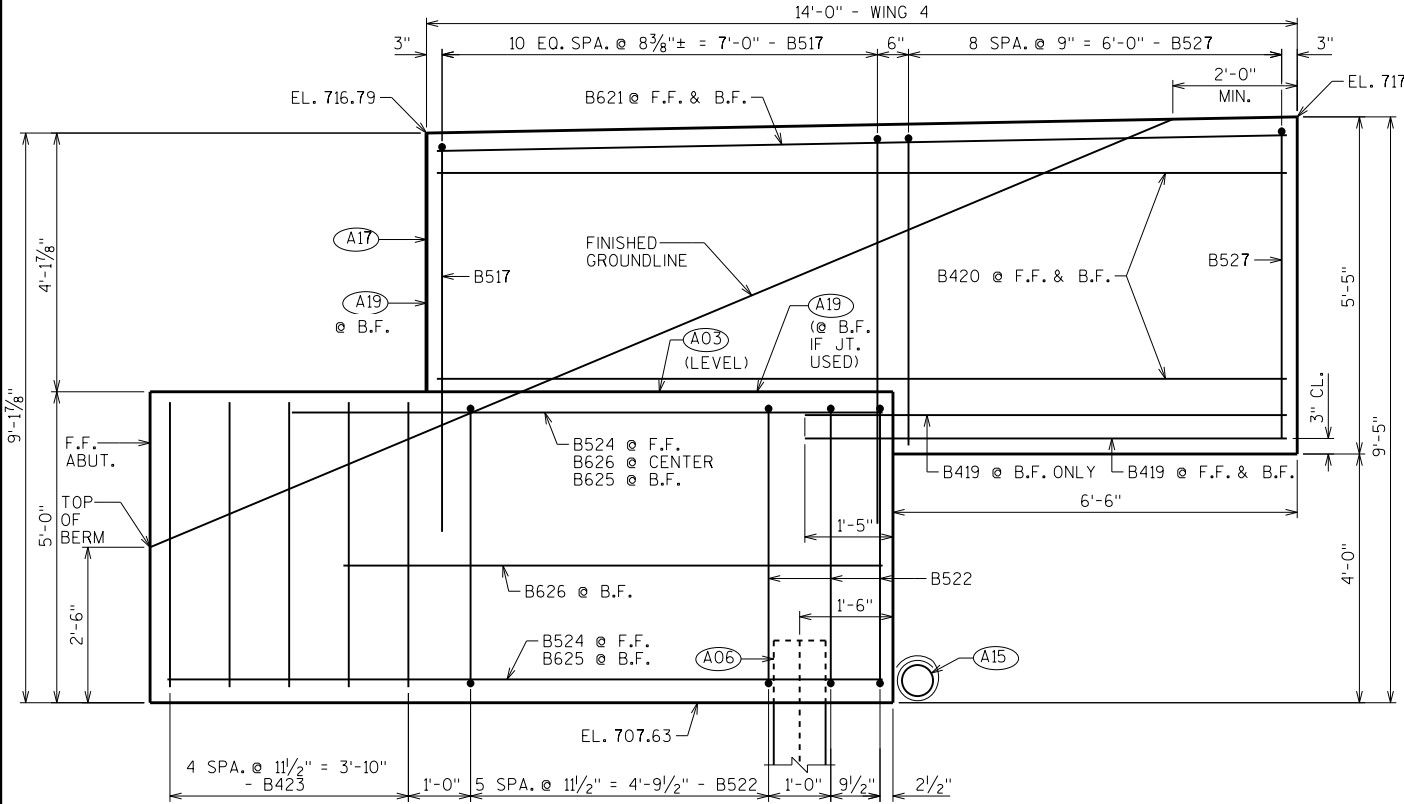
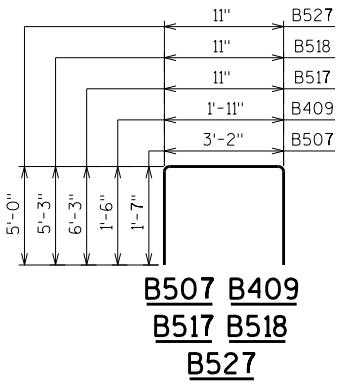
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
B401		18	2'-3"		BODY-BOTTOM-2 PER BODY PILE-VERTICAL
B402		9	28'-0"	X	BODY-BOT.-SPIRAL-1 PER BODY PILE-VERT.
B503		62	15'-7"	X	BODY-STIRRUPS-VERT.
B604		11	49'-7"		BODY-HORIZONTAL
B605		6	26'-3"		BODY-HORIZONTAL-B.F.-AT CENTER
B806		12	15'-2"	X	BODY-HORIZONTAL-B.F.-AT BOTH ENDS
B507		29	6'-1"	X	BODY-TOP-VERT.-UNDER BEAM SEATS 1-3
B408		4	28'-3"		BODY-TOP-HORIZ.-UNDER BEAM SEATS 1-3
B409		20	4'-9"	X	BODY-TOP-VERT.-BETWEEN BEAM SEATS
B410		8	8'-9"		BODY-TOP-HORIZ.-BETWEEN BEAM SEATS
B511	X	8	16'-3"	X	WING 3-BOT.-STIRRUP-VERT.
B512	X	1	16'-6"	X	WING 3-BOT.-STIRRUP-VERT.-AT B.F. ABUT.
B413	X	4	4'-11"		WING 3 F.F./BODY END-BOT.-VERT.
B514	X	6	10'-6"		WING 3-BOT.-HORIZONTAL-F.F.
B615	X	8	10'-3"		WING 3-BOT.-HORIZONTAL-B.F.
B616	X	2	9'-10"		WING 3-BOT.-HORIZONTAL-CENTER
B517	X	22	13'-2"	X	WINGS 3&4-TOP-VERTICAL
B518	X	9	11'-2"	X	WING 3-TOP-VERTICAL-AT END
B419	X	6	7'-9"		WINGS 3&4-HORIZONTAL-BOT.-B.F. & F.F.
B420	X	18	13'-8"		WINGS 3&4-TOP-HORIZONTAL-B.F. & F.F.
B621	X	4	13'-8"		WINGS 3&4-TOP-HORIZONTAL-B.F. & F.F.
B522	X	8	15'-7"	X	WING 4-BOT.-STIRRUP-VERT.
B423	X	5	4'-7"		WING 4 F.F./BODY END-BOT.-VERT.
B524	X	6	11'-6"		WING 4-BOT.-HORIZONTAL-F.F.
B625	X	8	8'-8"		WING 4-BOT.-HORIZONTAL-B.F.
B626	X	2	9'-6"		WING 4-BOT.-HORIZONTAL-CENTER
B527	X	9	10'-8"	X	WING 4-TOP-VERTICAL-AT END



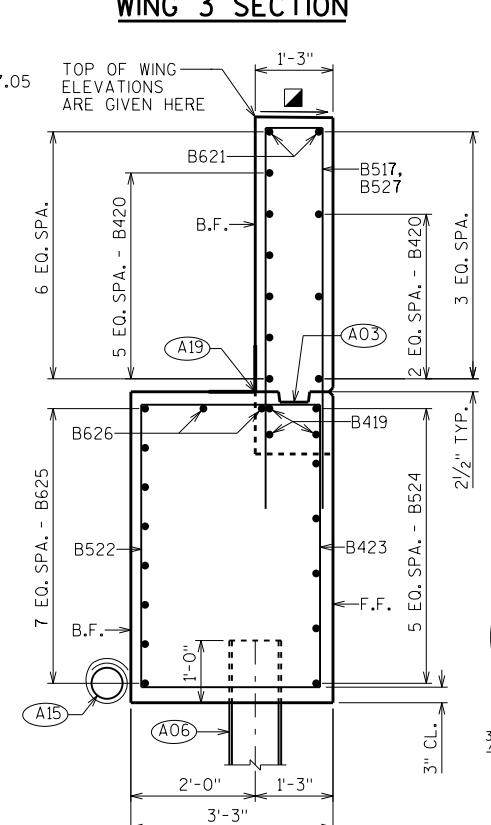
WING 3 ELEVATION LOOKING @ F.F. WING



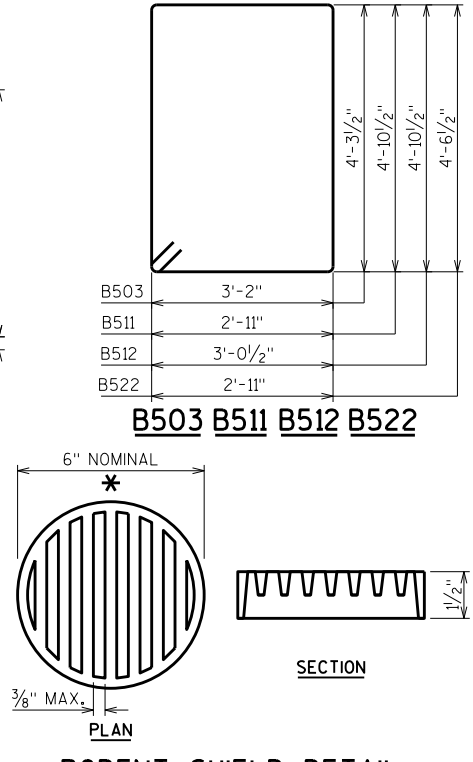
WING 3 SECTION



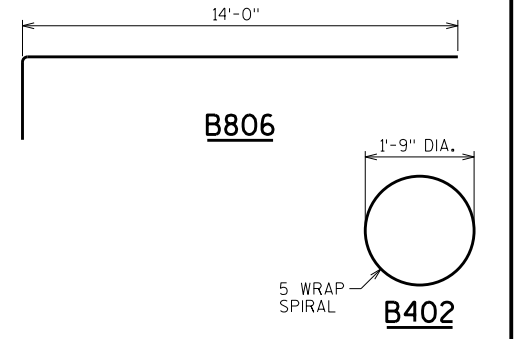
WING 4 ELEVATION LOOKING @ F.F. WING



WING 4 SECTION



RODENT SHIELD DETAIL



- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" x 6". (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 100 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. PILE POINTS REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

* 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.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CK'D. JJS	
EAST ABUTMENT DETAILS			SHEET 7

NOTES

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

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

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECT. 503.3.3 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

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

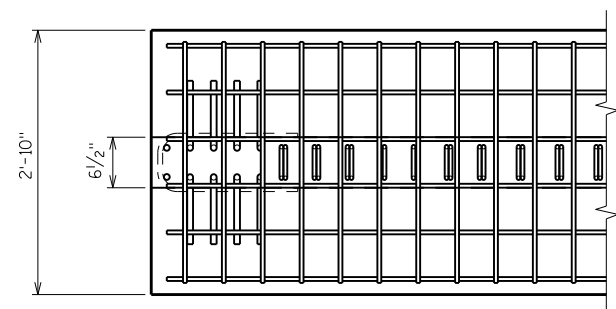
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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

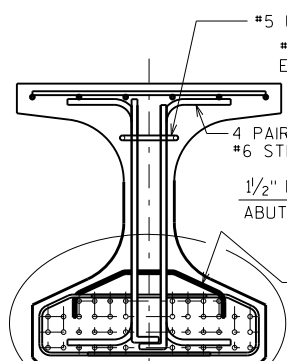
AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON ACCEPTANCE OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING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

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

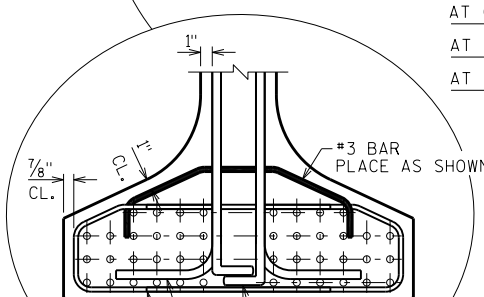
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



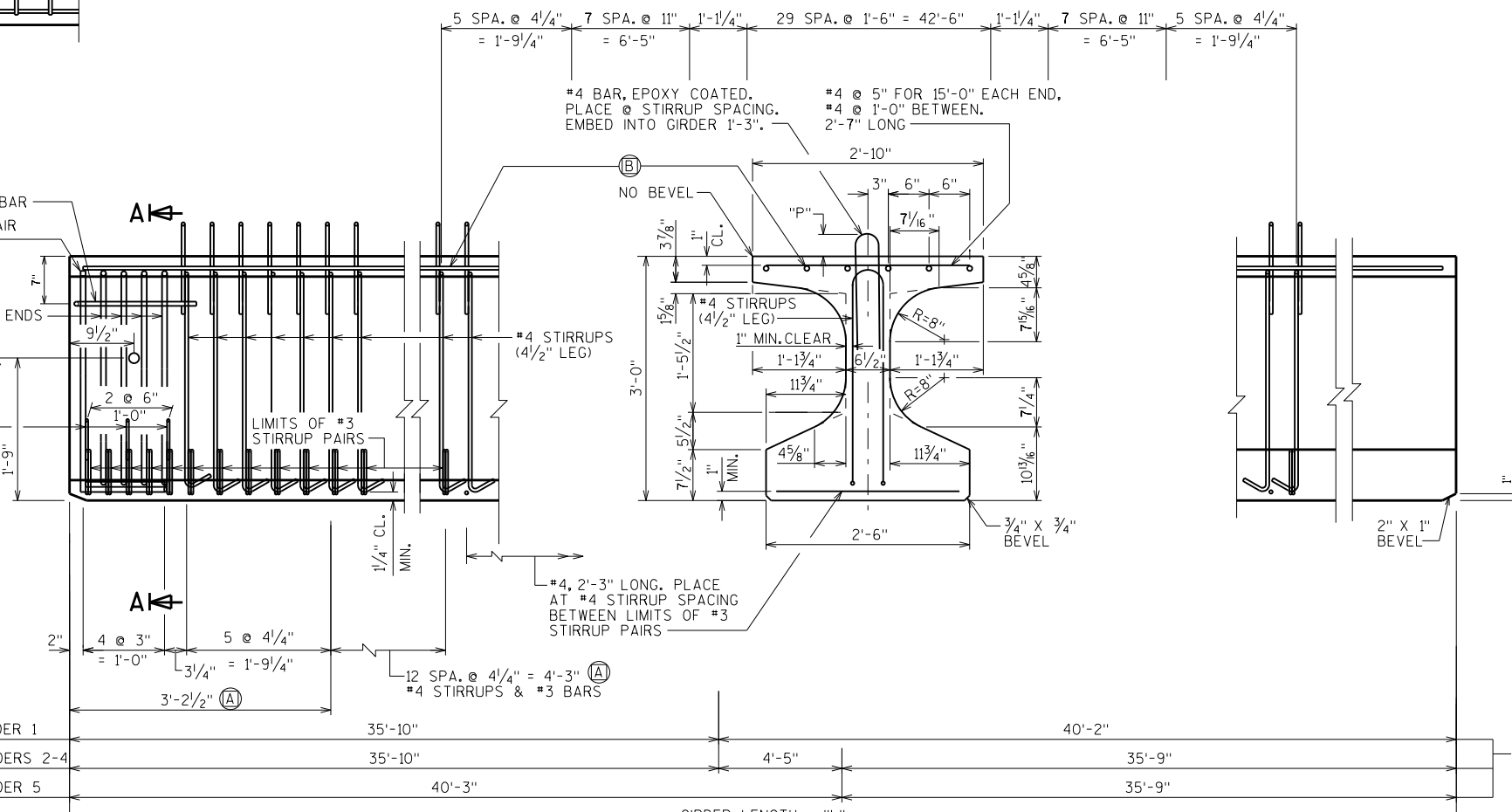
TOP FLANGE



SECTION A-A

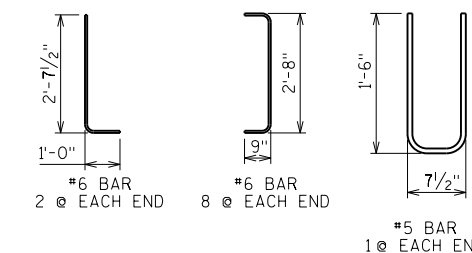


BOTTOM FLANGE

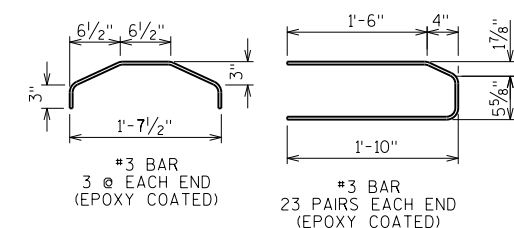


SIDE VIEW & TYPICAL SECTION IN SPAN

- (A) DETAIL TYP. AT EACH END
- (B) SIX #4 BARS @ FULL LENGTH WITH 1'-11" MIN. LAPS



HOLE SPACING DIMENSIONS FOR STEEL DIAPHRAGMS TO GIRDER WEB CONNECTIONS. ALSO SEE "SUPERSTRUCTURE PLAN" SHEET FOR MORE DETAILS.

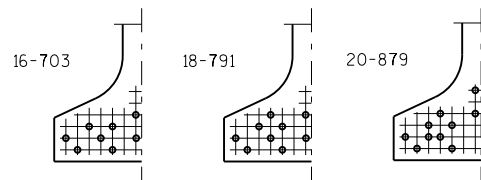


* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

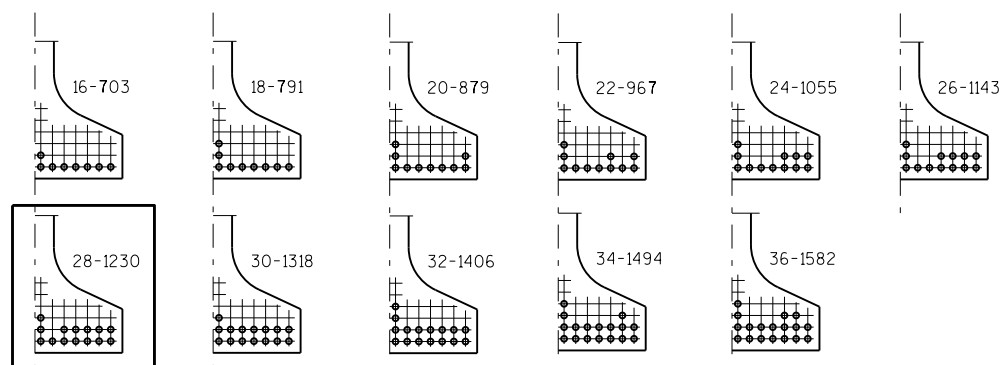
SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	DEAD LOAD DEFL. (IN.)										CONC. STRGTH. f'c (P.S.I.)	"P" (IN.)			DRAPED PATTERN (IN.)					UNDRAPED PATTERN		
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	10/10		1ST 1/3 OF GIRDER	MID 1/3 OF GIRDER	END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	"A"	"B" MIN.	"B" MAX.	"C"	TOTAL NO. OF STRANDS
1	1-5	76.00	0.4	0.8	1.2	1.3	1.4	1.3	1.2	0.8	0.4	8,000	7.0	7.0	7.0	0.6	28	6,400	32	11	14	4		

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CKD. JJS	
36W" PRESTRESSED GIRDER DETAILS 1		SHEET 8	



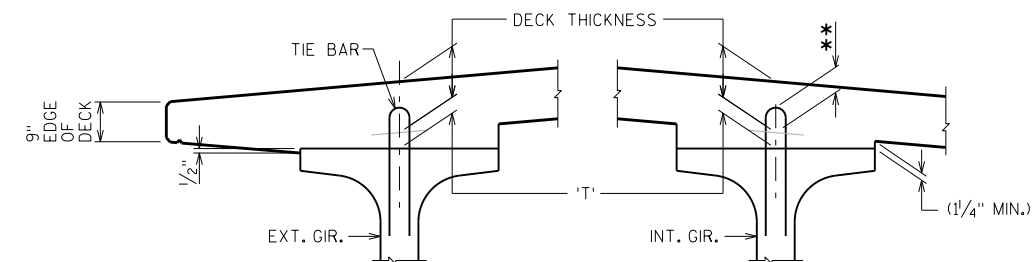
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6" DIA. STRANDS



ARRANGEMENT AT \bar{C} SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6" DIA. STRANDS



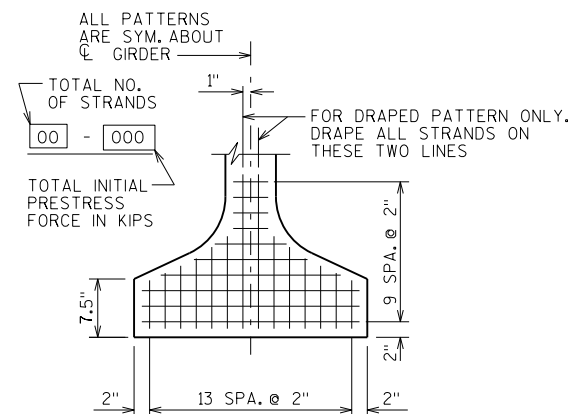
DECK HAUNCH DETAIL

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

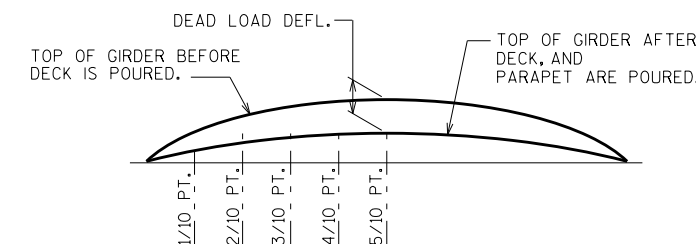
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT \bar{C} OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

$$\begin{aligned} & \text{TOP OF DECK ELEV. AT FINAL GRADE} \\ & - \text{TOP OF GIRDER ELEVATION} \\ & + \text{DEAD LOAD DEFLECTION} \\ & - \text{DECK THICKNESS} \\ & \hline & = \text{HAUNCH HEIGHT 'T'} \end{aligned}$$

NOTE:
AN AVERAGE HAUNCH HEIGHT ('T') OF 3.5" WAS USED FOR COMPUTING THE QUANTITY "CONCRETE MASONRY BRIDGES" FOR THE SUPERSTRUCTURE.

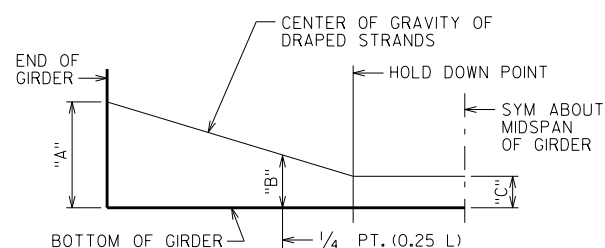


TYP. STRAND PATTERN



DEAD LOAD DEFLECTION DIAGRAM

8



DRAPED STRAND PROFILE

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

SPAN	CAMBER (IN.) *
1	2.73

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

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CK'D. JJS	
36W" PRESTRESSED GIRDER DETAILS 2		SHEET 9	

SCALE = 1:00

NOTES

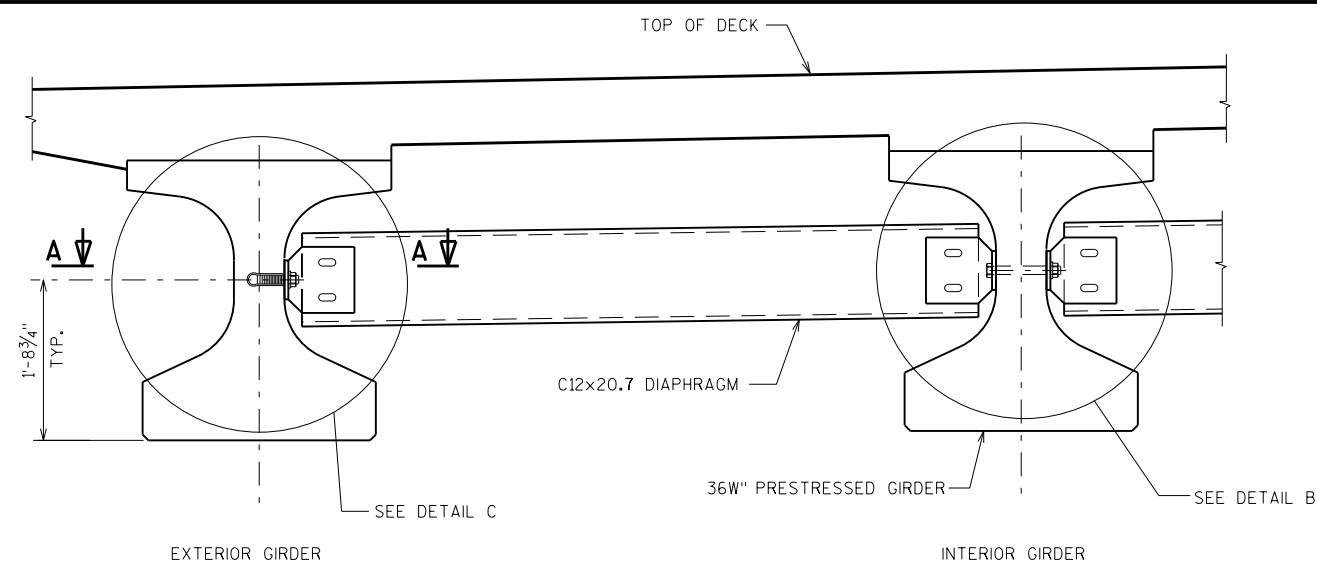
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-36-239", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

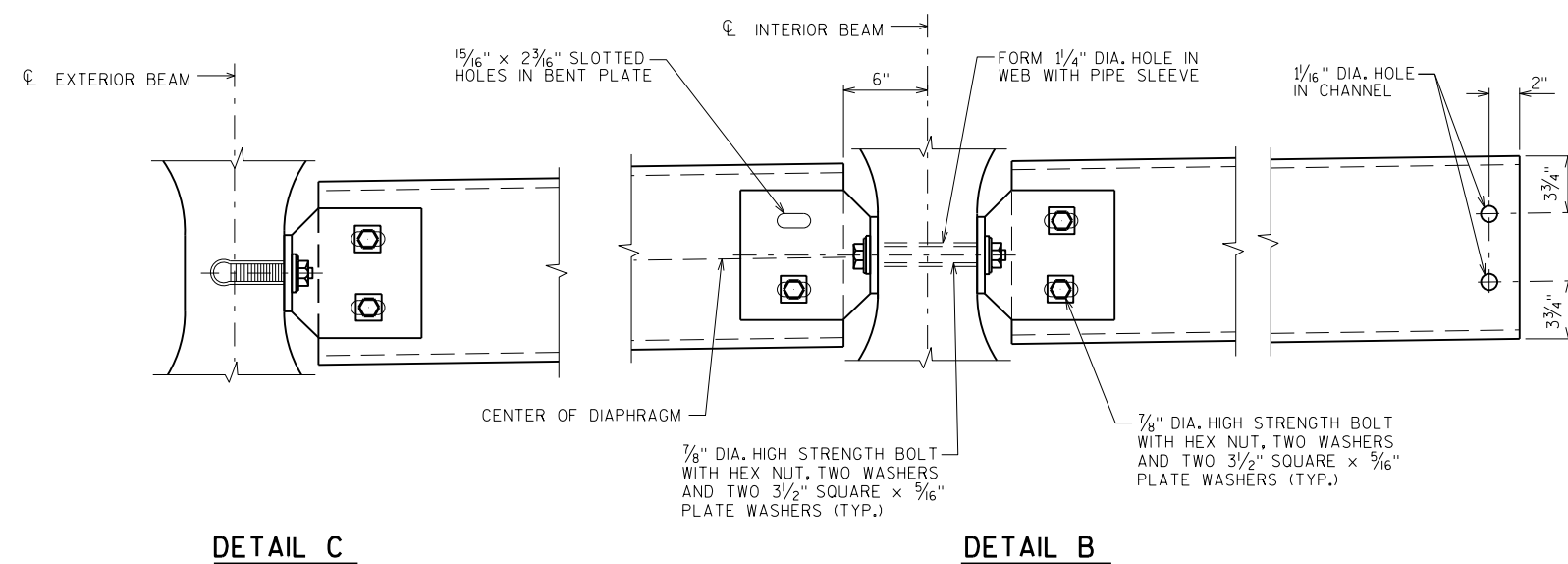
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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

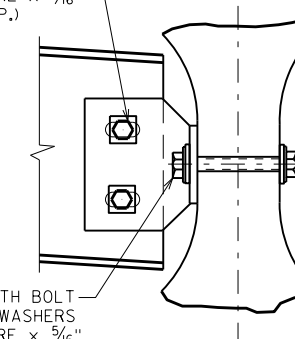
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.



PART TRANSVERSE SECTION AT DIAPHRAGM



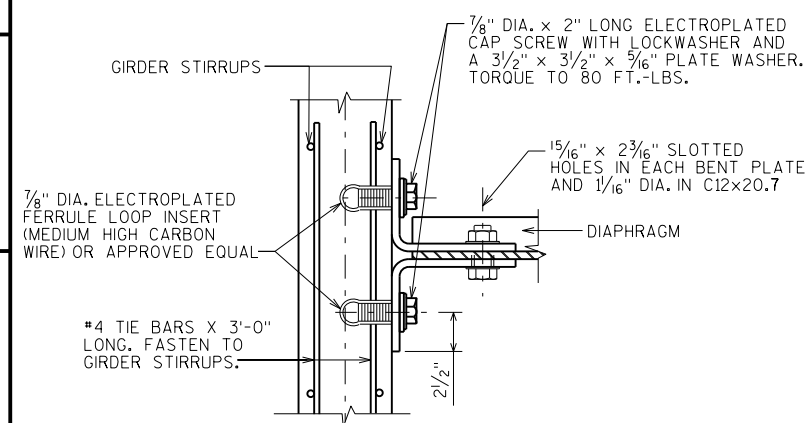
7/8" DIA. HIGH STRENGTH BOLT WITH HEX NUT, TWO WASHERS AND TWO 3/2" SQUARE x 5/16" PLATE WASHERS (TYP.)



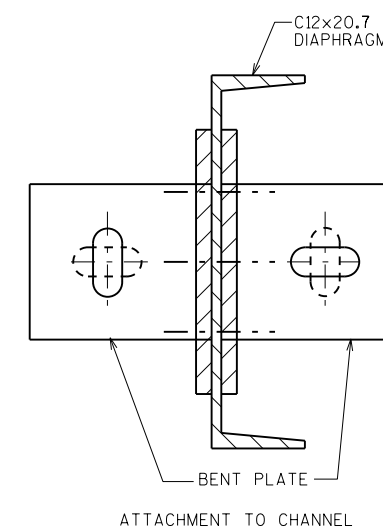
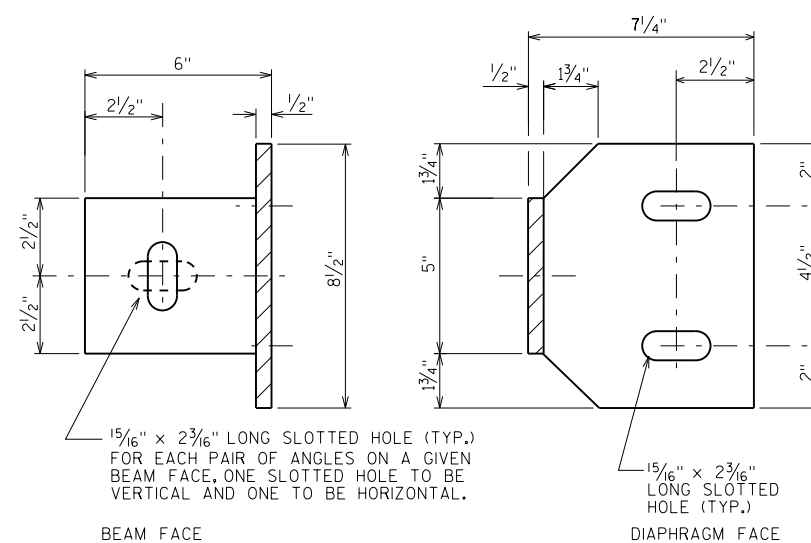
7/8" DIA. HIGH STRENGTH BOLT WITH HEX NUT, TWO WASHERS AND TWO 3/2" SQUARE x 5/16" PLATE WASHERS (TYP.)

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

8

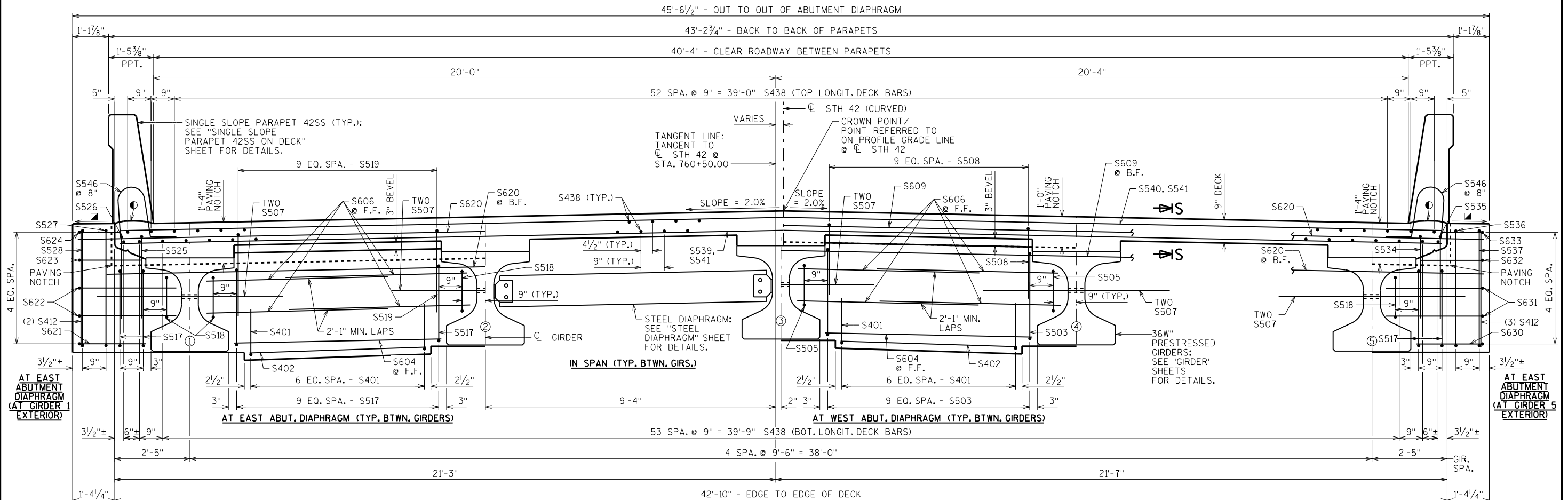


SECTION A-A
(FOR EXTERIOR ATTACHMENT)

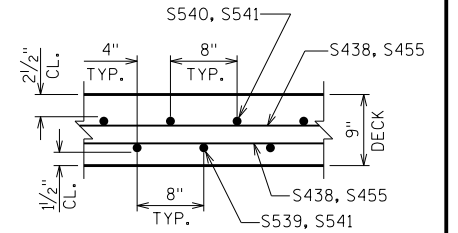


8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY		JPH	PLANS CK'D. JJS
STEEL DIAPHRAGM			SHEET 10

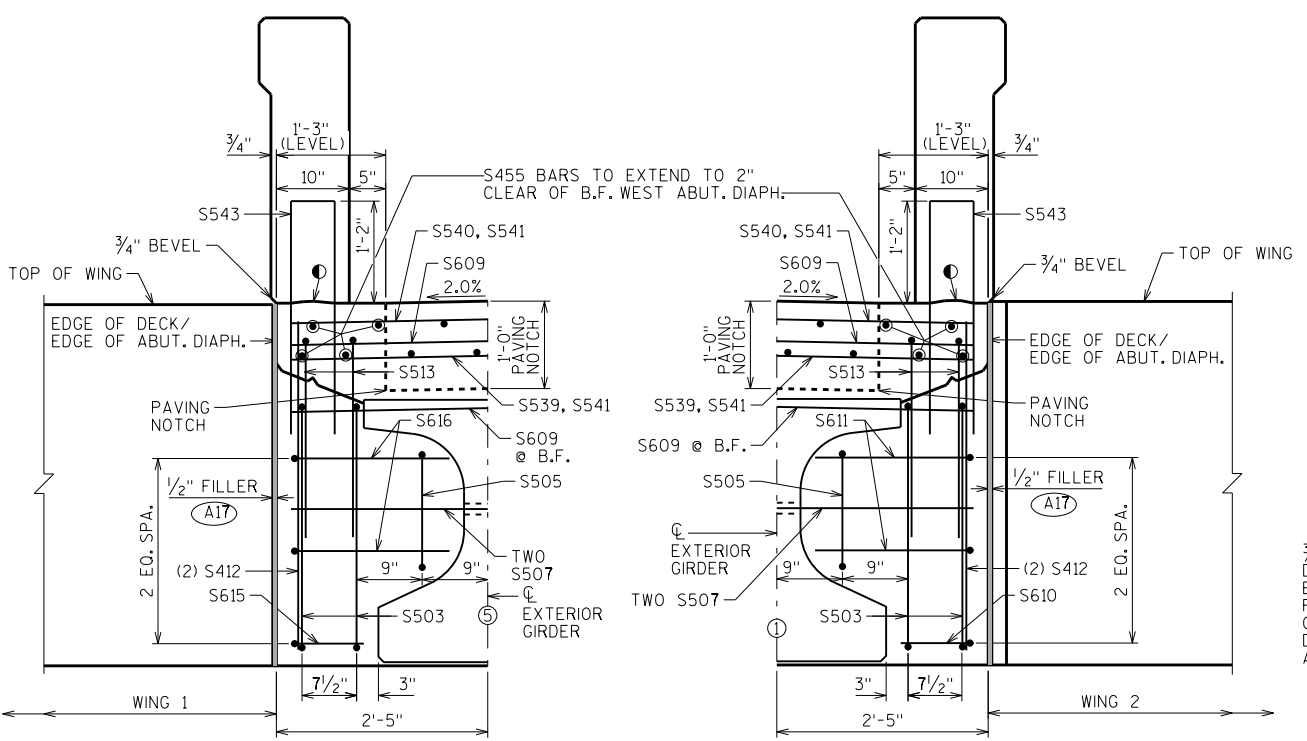


CROSS SECTION THRU BRIDGE LOOKING EAST

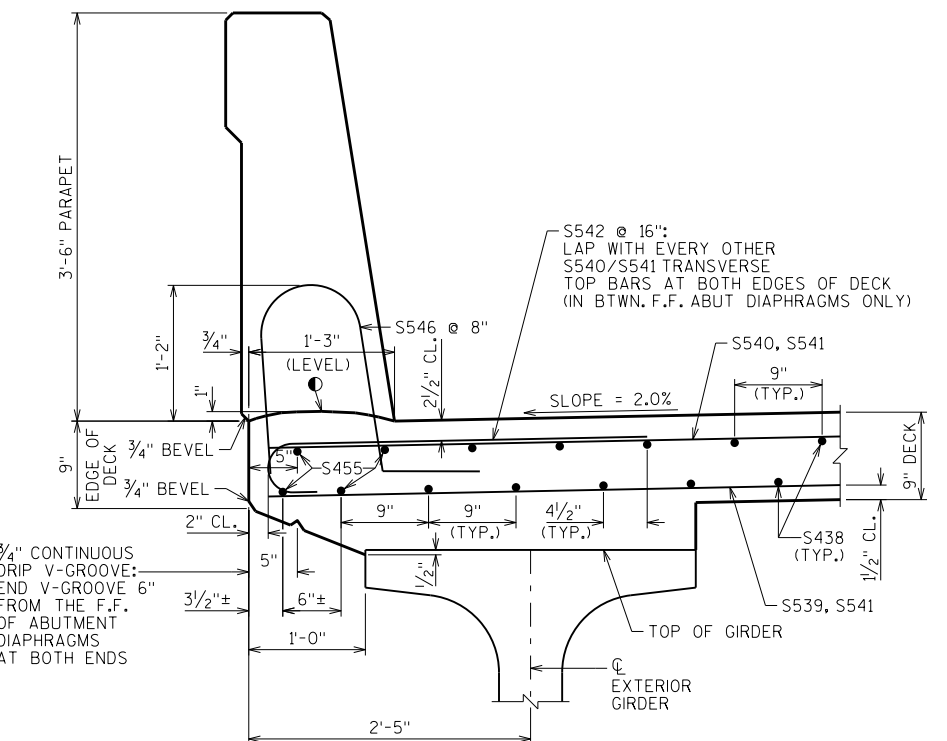


SECTION S-S

- INDICATES GIRDER NUMBER
 - FINISH SURFACE SMOOTH - SLOPE DOWN 1% TO DRAIN
 - HORIZ. CONST. JOINT: STRIKE OFF AND LEAVE ROUGH AS SHOWN
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.



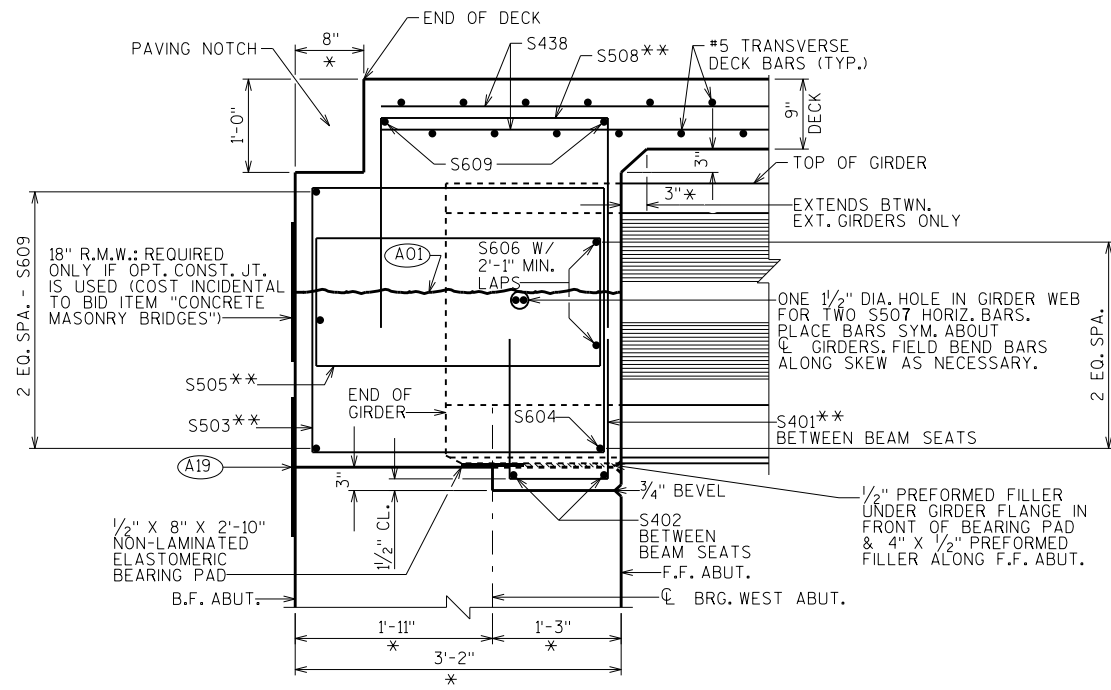
PARTIAL CROSS SECTION THRU BRIDGE LOOKING WEST



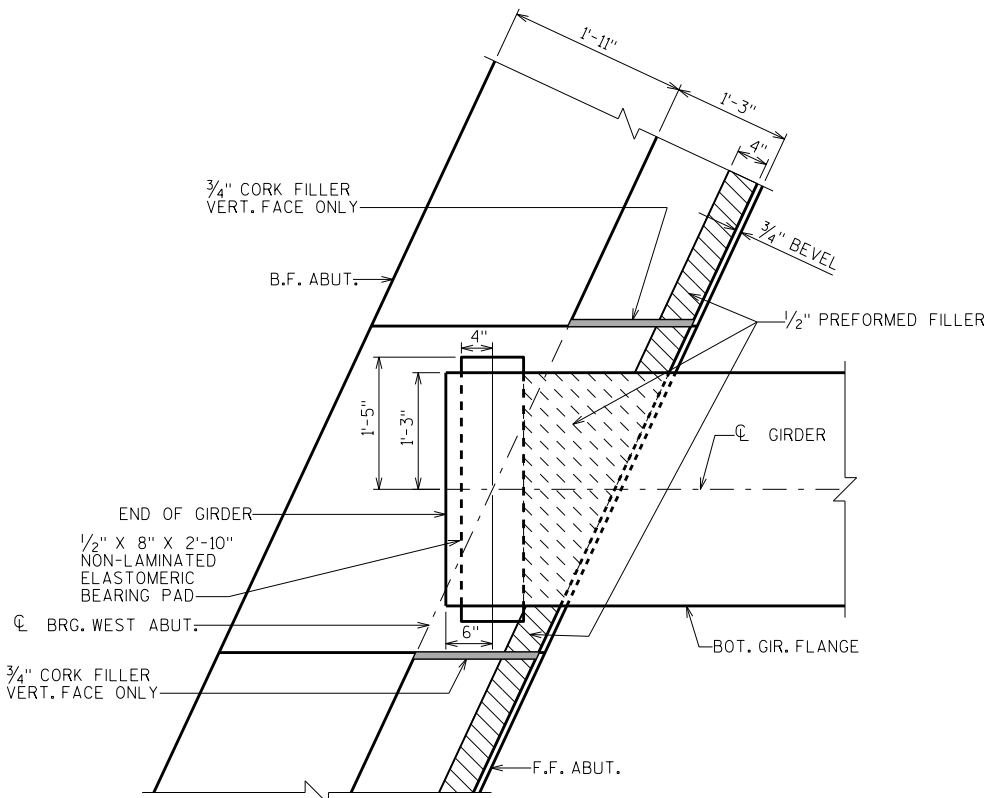
EDGE OF DECK DETAIL (TYP. @ BOTH SIDES)

NOTE: FOR THE SECTIONS THRU THE ABUTMENT DIAPHRAGMS AND CORNER DETAILS SEE THE 'ABUTMENT DIAPHRAGM' SHEETS.

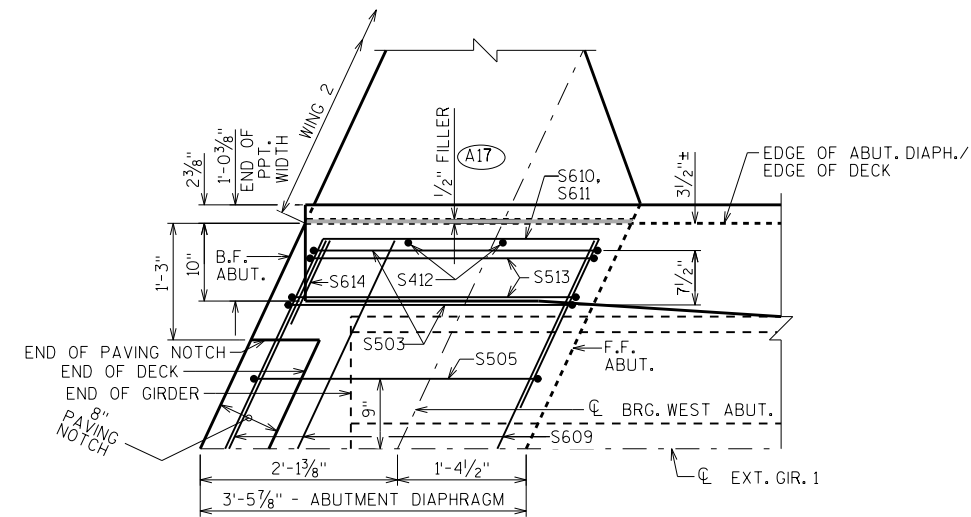
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CK'D. JJS	
SUPERSTRUCTURE CROSS SECTIONS			SHEET 11



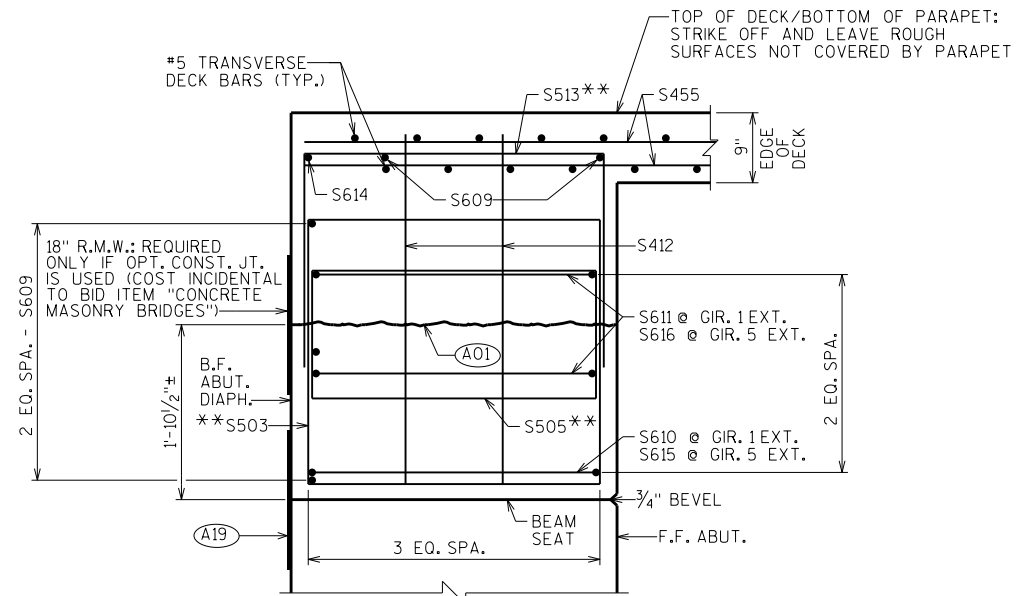
CROSS SECTION THRU WEST ABUTMENT DIAPHRAGMS BETWEEN EXTERIOR GIRDERS



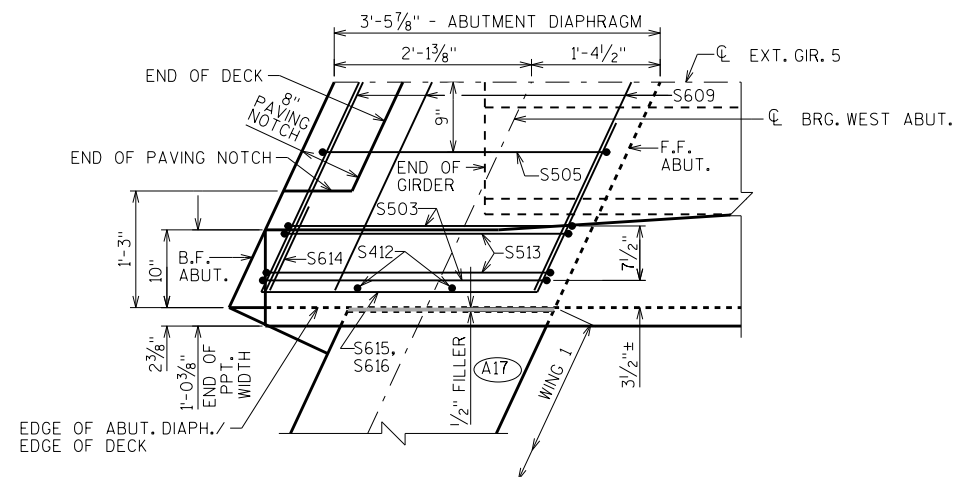
PLAN VIEW AT WEST ABUTMENT



WEST ABUTMENT DIAPHRAGM CORNER DETAIL - PLAN VIEW AT GIRDER 1 EXTERIOR



CROSS SECTION THRU WEST ABUTMENT DIAPHRAGMS AT BOTH GIRDER EXTERIORS



WEST ABUTMENT DIAPHRAGM CORNER DETAIL - PLAN VIEW AT GIRDER 5 EXTERIOR

*DIMENSION IS TAKEN PERPENDICULAR TO CL BRG ABUTMENTS.

**DIMENSION IS TAKEN PARALLEL TO CL GIRDERS. BARS PLACED PARALLEL TO CL GIRDERS AND SPACED PERPENDICULAR TO CL GIRDERS

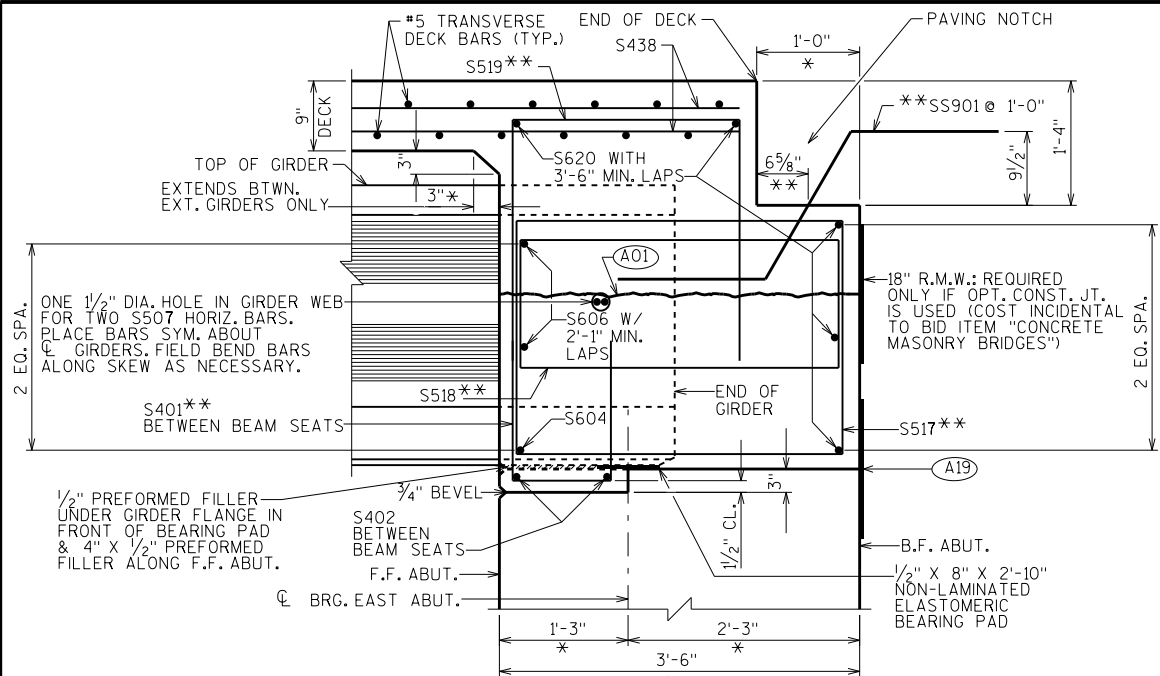
(A01) OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDER. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

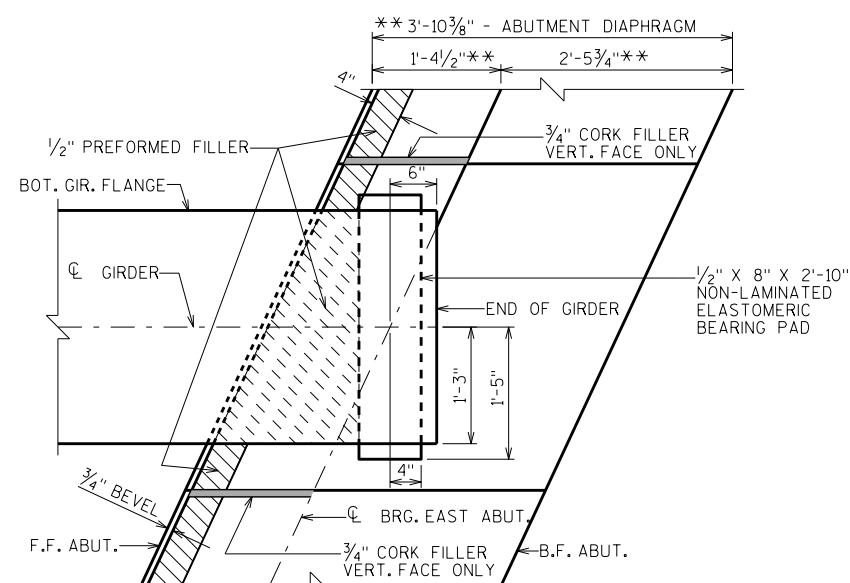
(A19) 18" (R.M.W.) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NOTE: SEE "SUPERSTRUCTURE BAR DETAILS" SHEET FOR THE 'BILL OF BARS' AND BAR DETAILS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY		JPH	PLANS CK'D. JJS
WEST ABUTMENT DIAPHRAGM DETAILS		SHEET 12	



**CROSS SECTION THRU EAST ABUTMENT DIAPHRAGMS
BETWEEN EXTERIOR GIRDERS**



PLAN VIEW AT EAST ABUTMENT

* DIMENSION IS TAKEN PERPENDICULAR TO ϕ BRG ABUTMENTS.

** DIMENSION IS TAKEN PARALLEL TO ϕ GIRDERS. BARS PLACED PARALLEL TO ϕ GIRDERS AND SPACED PERPENDICULAR TO ϕ GIRDERS

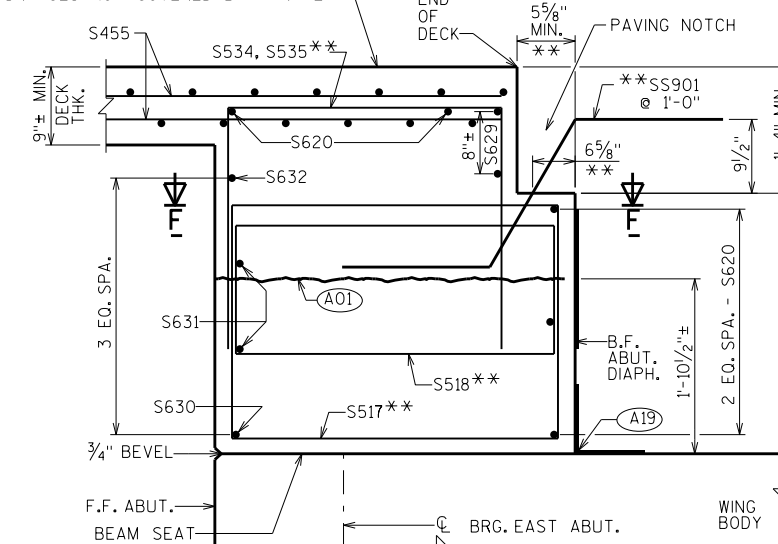
(A01) OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDER. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.

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

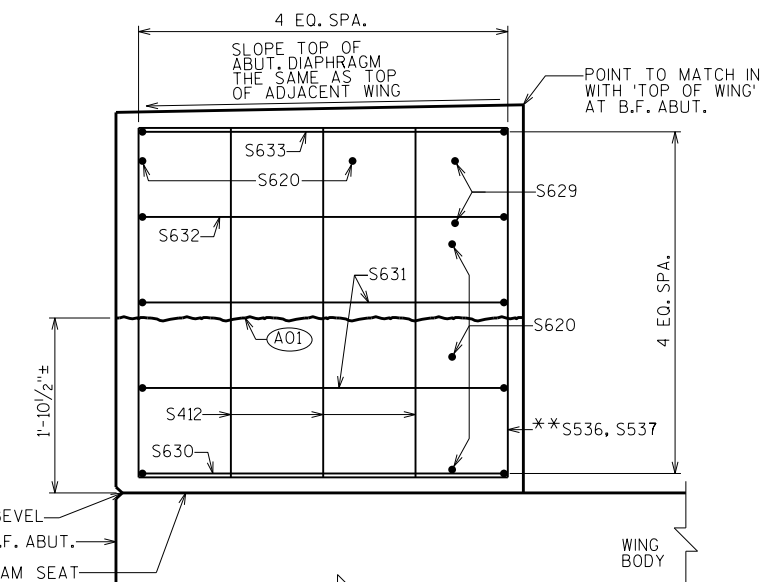
NOTE:
SEE "SUPERSTRUCTURE BAR DETAILS" SHEET FOR THE 'BILL OF BARS' AND BAR DETAILS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CK'D. JJS	
EAST ABUTMENT DIAPHRAGM DETAILS		SHEET 13	

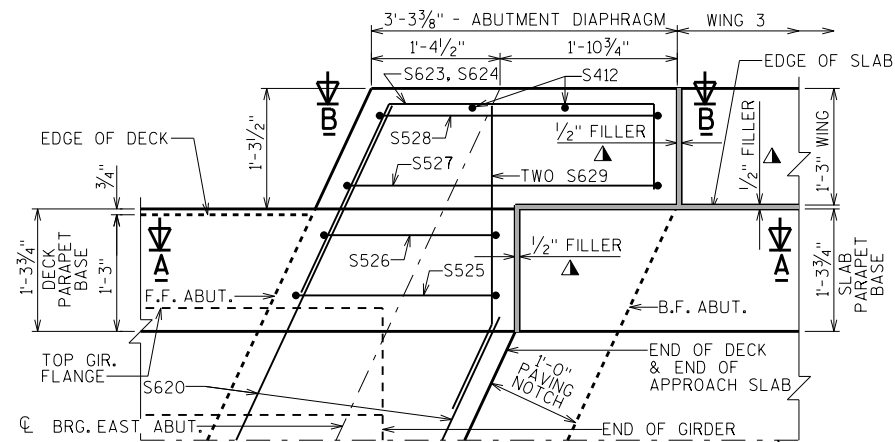
TOP OF DECK/BOTTOM OF PARAPET:
STRIKE OFF AND LEAVE ROUGH
SURFACES NOT COVERED BY PARAPET



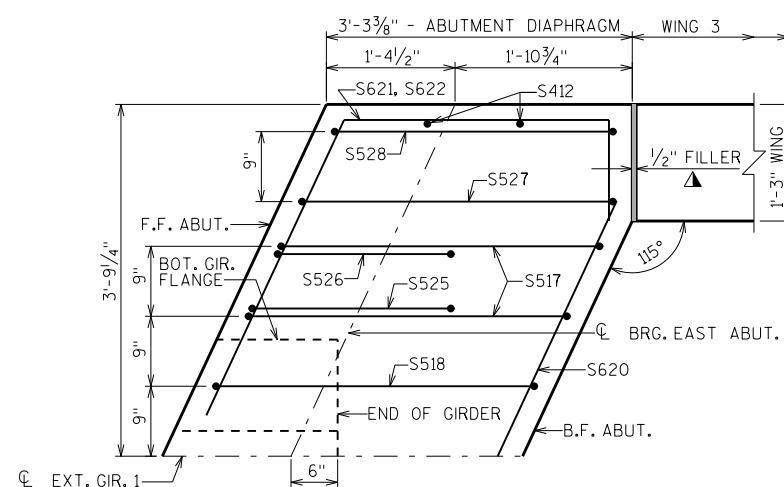
SECTION C-C
SECTION THRU ABUTMENT DIAPHRAGM AT WING 4,
AT GIRDER 5 EXTERIOR (UNDER DECK)



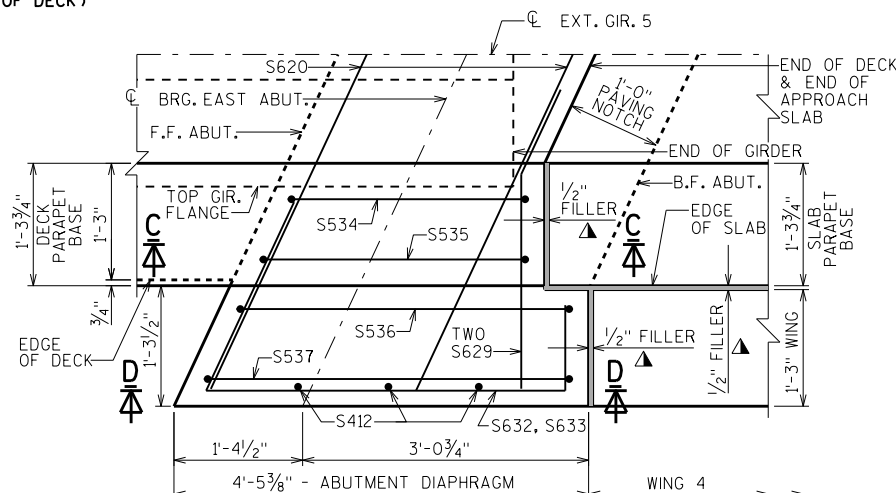
SECTION D-D
SECTION THRU ABUTMENT DIAPHRAGM AT WING 4,
AT GIRDER 5 EXTERIOR (OUTSIDE 'EDGE OF DECK')



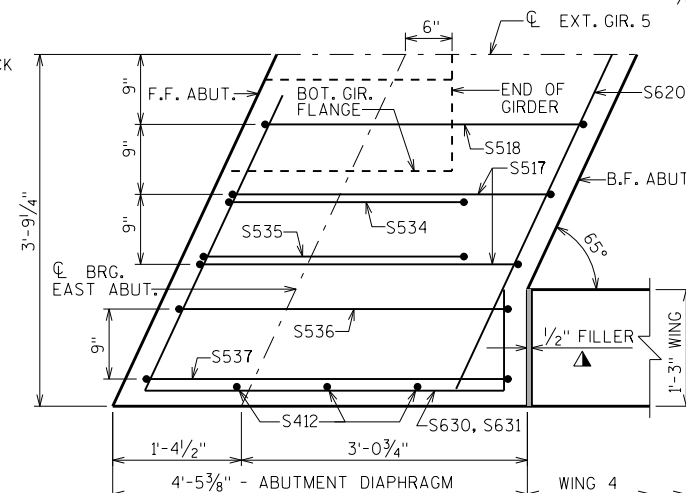
**EAST ABUTMENT DIAPHRAGM CORNER DETAIL -
PLAN VIEW AT GIRDER 1 EXTERIOR**



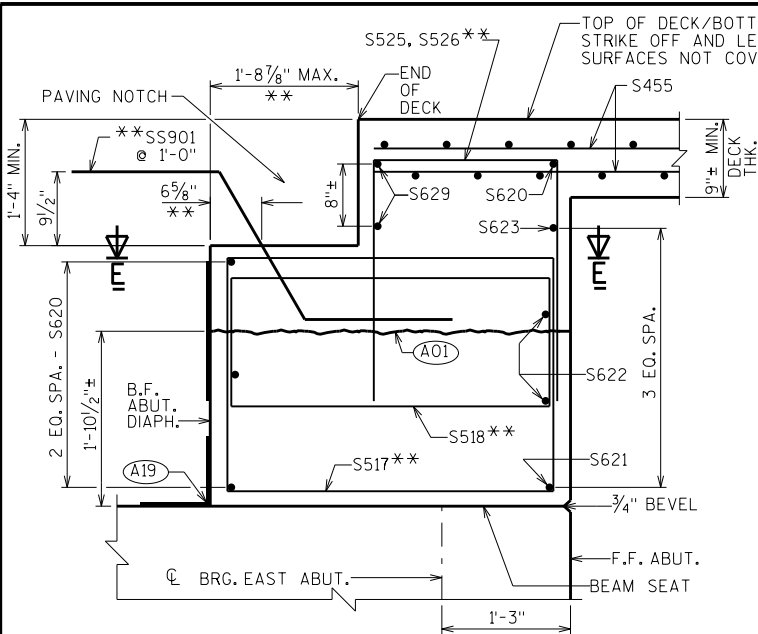
SECTION E-E
DIAPHRAGM CORNER DETAIL AT WING 3
(SECTION BELOW PAVING NOTCH)



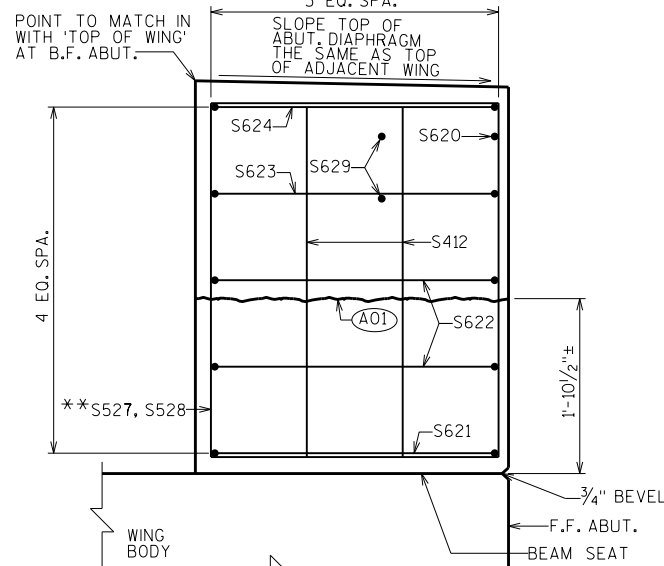
**EAST ABUTMENT DIAPHRAGM CORNER DETAIL -
PLAN VIEW AT GIRDER 5 EXTERIOR**



SECTION F-F
DIAPHRAGM CORNER DETAIL AT WING 4
(SECTION BELOW PAVING NOTCH)



SECTION A-A
SECTION THRU ABUTMENT DIAPHRAGM AT WING 3,
AT GIRDER 1 EXTERIOR (UNDER DECK)



SECTION B-B
SECTION THRU ABUTMENT DIAPHRAGM AT WING 3,
AT GIRDER 1 EXTERIOR (OUTSIDE 'EDGE OF DECK')

*DIMENSION IS TAKEN PERPENDICULAR TO BRG ABUTMENTS.

**DIMENSION IS TAKEN PARALLEL TO GIRDERS. BARS PLACED PARALLEL TO GIRDERS AND SPACED PERPENDICULAR TO GIRDERS

(A01) OPTIONAL CONSTRUCTION JOINT 1-2" BELOW TOP OF GIRDER. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.

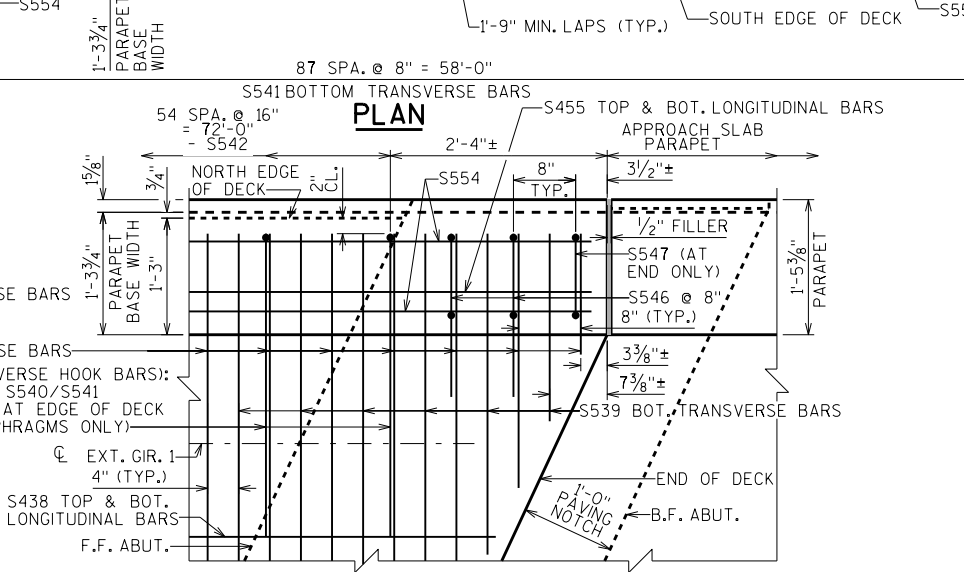
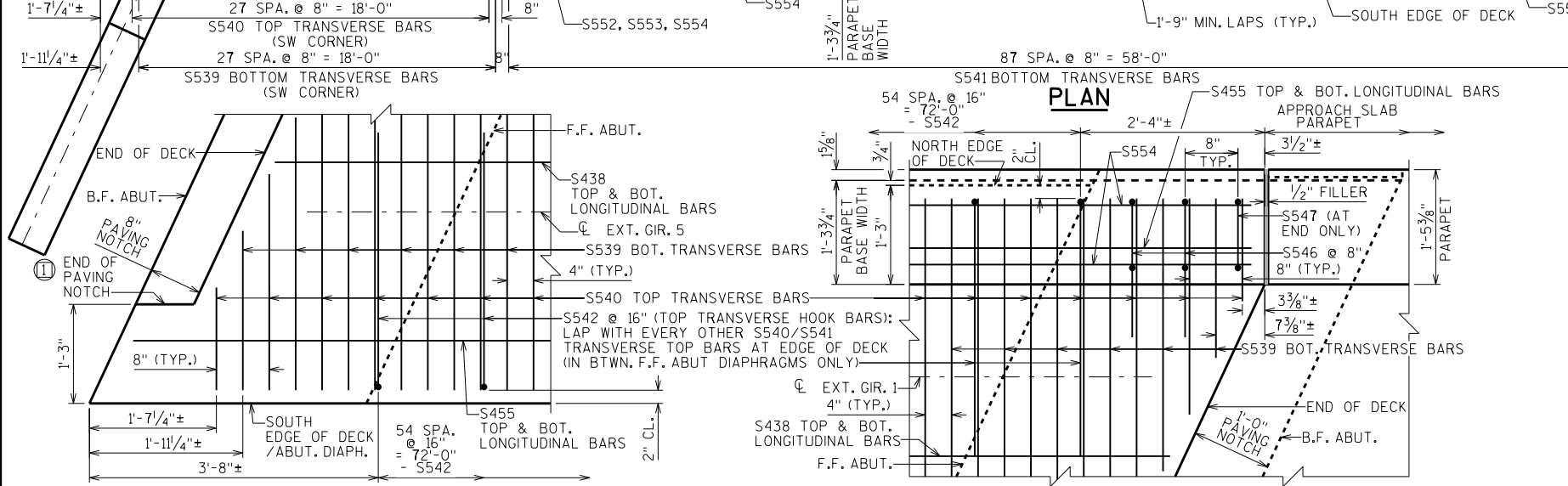
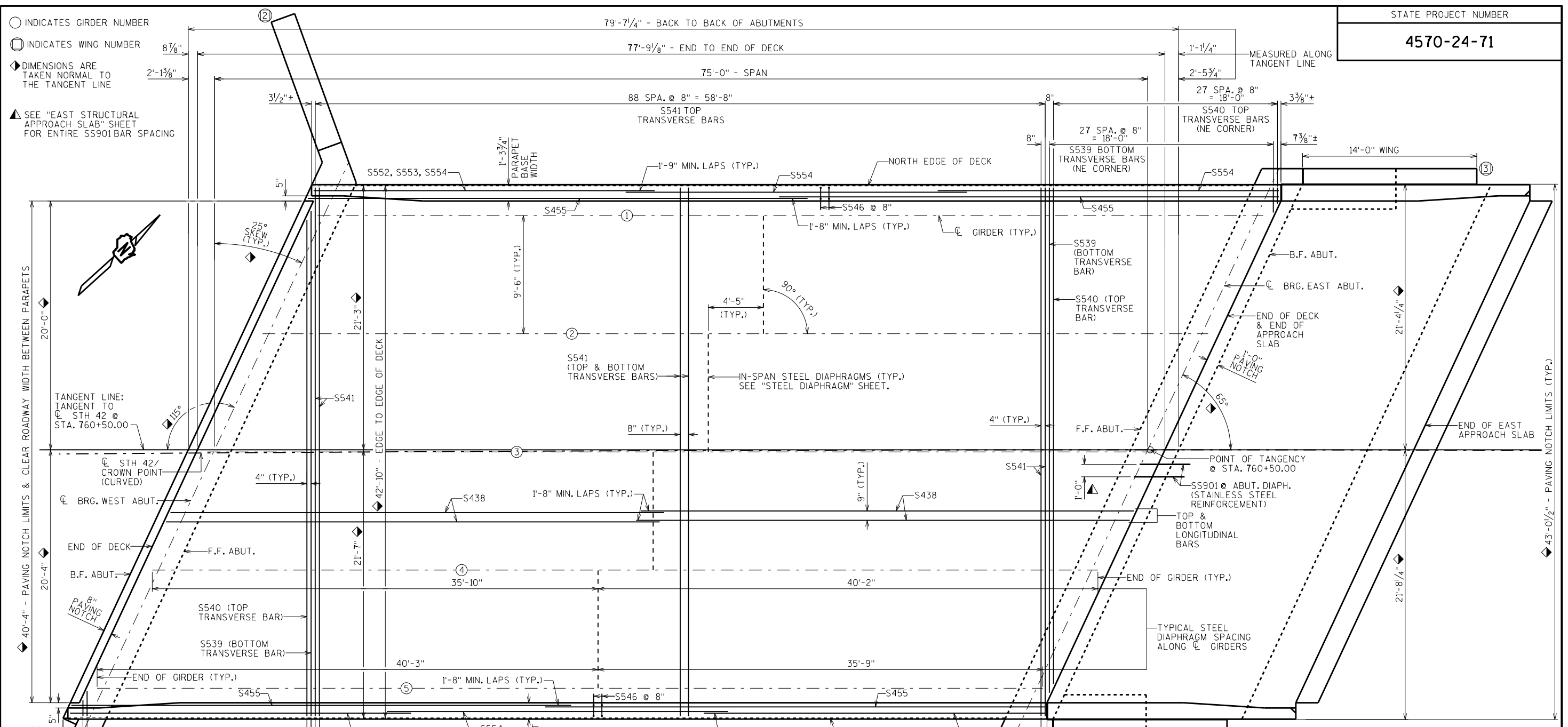
(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NOTE: SEE "SUPERSTRUCTURE BAR DETAILS" SHEET FOR THE 'BILL OF BARS' AND BAR DETAILS.

▲ SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY AND NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CK'D. JJS	
EAST ABUTMENT DIAPHRAGM CORNER DETAILS			SHEET 14

- INDICATES GIRDER NUMBER
- ⊙ INDICATES WING NUMBER
- ◊ DIMENSIONS ARE TAKEN NORMAL TO THE TANGENT LINE
- ▲ SEE "EAST STRUCTURAL APPROACH SLAB" SHEET FOR ENTIRE SS901 BAR SPACING



TOP OF DECK ELEVATIONS EOD = EDGE OF DECK

LOCATION	BRG. W. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	BRG. E. ABUT.
NORTH EOD	715.94	716.03	716.14	716.24	716.35	716.47	716.59	716.72	716.85	716.99	717.13
CL GIRDER 1	715.94	716.04	716.14	716.25	716.36	716.47	716.60	716.72	716.85	716.99	717.13
CL GIRDER 2	716.08	716.17	716.27	716.37	716.48	716.60	716.71	716.84	716.96	717.10	717.23
TANGENT LINE	716.21	716.30	716.40	716.50	716.60	716.71	716.83	716.95	717.07	717.20	717.34
CL STH 42/CROWN PT.	716.21	716.30	716.40	716.50	716.61	716.72	716.83	716.95	717.08	717.20	717.34
CL GIRDER 3	716.21	716.30	716.40	716.50	716.60	716.71	716.83	716.95	717.07	717.20	717.33
CL GIRDER 4	715.97	716.06	716.15	716.25	716.35	716.46	716.57	716.69	716.81	716.93	717.06
CL GIRDER 5	715.73	715.81	715.90	716.00	716.10	716.20	716.31	716.43	716.54	716.67	716.80
SOUTH EOD	715.69	715.78	715.87	715.96	716.06	716.16	716.27	716.39	716.50	716.63	716.75

PARTIAL PLAN VIEW OF SW CORNER DECK REINFORCEMENT PARTIAL PLAN VIEW OF NE CORNER DECK & PARAPET REINFORCEMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-36-239

DRAWN BY: JPH PLANS CKD: JJS

SUPERSTRUCTURE PLAN SHEET 15

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	56	3'-10"	X		ABUT. DIAPHS.-F.F.-BOT.-VERT.-BTWN. BEAM SEATS
S402	X	16	6'-3"			ABUT. DIAPHS.-F.F.-BOT.-HORIZ.-BTWN. BEAM SEATS
S503	X	44	12'-7"	X		WEST ABUT. DIAPH.-VERTICAL
S604	X	8	7'-4"			ABUT. DIAPHS.-F.F.-BOT.-HORIZ.-BTWN. GIRS ONLY
S505	X	10	9'-8"	X		WEST ABUT. DIAPH.-VERT.-UNDER GIR. TOP FLANGES
S606	X	32	5'-10"			ABUT. DIAPHS.-F.F.-HORIZ.-BTWN. GIRS ONLY
S507	X	20	6'-0"			ABUT. DIAPHS.-HORIZ.-THRU GIRDERS
S508	X	40	6'-9"	X		WEST ABUT. DIAPH./DECK-VERT.-BETWEEN EXT. GIRDERS ONLY
S609	X	5	46'-10"			WEST ABUT. DIAPH. B.F. & DECK-HORIZ.
S610	X	1	7'-2"	X		WEST ABUT. DIAPH.-BOT.-HORIZ.-AT GIR. 1 EXTERIOR CORNER ONLY
S611	X	2	8'-3"	X		WEST ABUT. DIAPH.-HORIZ.-AT GIR. 1 EXTERIOR CORNER ONLY
S412	X	9	3'-9"			ABUT. DIAPHS.-VERT.-AT ALL FOUR GIR. EXTERIOR CORNERS
S513	X	4	7'-6"	X		WEST ABUT. DIAPH./DECK-VERT.-AT GIR. 1&5 EXTERIOR CORNERS ONLY
S614	X	2	1'-0"			WEST ABUT. DIAPH. B.F./DECK-TOP-HORIZ.-AT GIR. 1&5 EXTERIOR CORNERS ONLY
S615	X	1	7'-2"	X		WEST ABUT. DIAPH.-BOT.-HORIZ.-AT GIR. 5 EXTERIOR CORNER ONLY
S616	X	2	8'-3"	X		WEST ABUT. DIAPH.-HORIZ.-AT GIR. 5 EXTERIOR CORNER ONLY
S517	X	44	12'-8"	X		EAST ABUT. DIAPH.-VERTICAL-UNDER PAVING NOTCHES
S518	X	10	10'-5"	X		EAST ABUT. DIAPH.-VERT.-UNDER GIR. TOP FLANGES
S519	X	40	7'-5"	X		EAST ABUT. DIAPH./DECK-VERT.-BETWEEN EXT. GIRDERS ONLY
S620	X	10	26'-9"			EAST ABUT. DIAPH. B.F. & DECK-HORIZ.
S621	X	1	6'-1"	X		EAST ABUT. DIAPH.-BOT.-HORIZ.-AT GIR. 1 EXTERIOR CORNER ONLY
S622	X	2	7'-2"	X		EAST ABUT. DIAPH.-HORIZ.-AT GIR. 1 EXTERIOR CORNER ONLY
S623	X	1	5'-9"	X		EAST ABUT. DIAPH.-HORIZ.-AT GIR. 1 EXTERIOR CORNER ONLY
S624	X	1	5'-0"	X		EAST ABUT. DIAPH.-TOP-HORIZ.-AT GIR. 1 EXTERIOR CORNER ONLY
S525	X	1	7'-3"	X		EAST ABUT. DIAPH./DECK-VERT.-AT GIR. 1 EXTERIOR CORNER ONLY
S526	X	1	6'-11"	X		EAST ABUT. DIAPH./DECK-VERT.-AT GIR. 1 EXTERIOR CORNER ONLY
S527	X	1	15'-1"	X		EAST ABUT. DIAPH.-VERTICAL-AT GIR. 1 EXTERIOR CORNER ONLY
S528	X	1	14'-5"	X		EAST ABUT. DIAPH.-VERTICAL-AT GIR. 1 EXTERIOR CORNER ONLY
S629	X	4	3'-4"	X		EAST ABUT. DIAPH./DECK-TOP-HORIZ.-AT BOTH GIR. EXTERIOR CORNERS
S630	X	1	7'-0"	X		EAST ABUT. DIAPH.-BOT.-HORIZ.-AT GIR. 5 EXTERIOR CORNER ONLY
S631	X	2	8'-1"	X		EAST ABUT. DIAPH.-HORIZ.-AT GIR. 5 EXTERIOR CORNER ONLY
S632	X	1	6'-8"	X		EAST ABUT. DIAPH.-HORIZ.-AT GIR. 5 EXTERIOR CORNER ONLY
S633	X	1	5'-11"	X		EAST ABUT. DIAPH.-TOP-HORIZ.-AT GIR. 5 EXTERIOR CORNER ONLY
S534	X	1	7'-7"	X		EAST ABUT. DIAPH./DECK-VERT.-AT GIR. 5 EXTERIOR CORNER ONLY
S535	X	1	7'-10"	X		EAST ABUT. DIAPH./DECK-VERT.-AT GIR. 5 EXTERIOR CORNER ONLY
S536	X	1	15'-6"	X		EAST ABUT. DIAPH.-VERTICAL-AT GIR. 5 EXTERIOR CORNER ONLY
S537	X	1	16'-2"	X		EAST ABUT. DIAPH.-VERTICAL-AT GIR. 5 EXTERIOR CORNER ONLY
S438	X	214	39'-8"			DECK-TOP & BOTTOM-HORIZONTAL-LONGITUDINAL-BETWEEN PARAPETS ONLY
S539	X	56	21'-4"		▲	DECK-BOTTOM-HORIZONTAL-TRANSVERSE-AT SW & NE CORNERS ONLY
S540	X	56	20'-7"		▲	DECK-TOP-HORIZONTAL-TRANSVERSE-AT SW & NE CORNERS ONLY
S541	X	177	42'-6"			DECK-TOP & BOTTOM-HORIZONTAL-TRANSVERSE
S542	X	110	4'-4"	X		DECK-TOP-VERTICAL-TRANSVERSE-AT BOTH EDGES OF DECK-IN BTWN. F.F. ABUT. DIAPHS.
S543	X	10	5'-7"	X		PARAPETS/DECK-VERTICAL-TRANSVERSE-AT WEST ENDS ONLY
S544	X	24	4'-4"	X		PARAPETS/DECK-VERTICAL-TRANSVERSE-AT WEST ENDS ONLY
S545	X	24	2'-9"	X		PARAPETS/DECK-INSIDE FACE-VERTICAL-TRANSVERSE-AT WEST ENDS ONLY
S546	X	208	4'-5"	X		PARAPETS/DECK-VERTICAL-TRANSVERSE
S547	X	1	5'-10"	X		NORTH PARAPET/DECK/ABUT. DIAPH.-VERTICAL-TRANSVERSE-AT EAST END ONLY
S548	X	14	5'-8"	X	▲	PARAPETS-UNDER TAPER-VERTICAL-TRANSVERSE-AT WEST ENDS ONLY
S549	X	8	6'-5"	X		PARAPETS-VERTICAL-TRANSVERSE-AT WEST ENDS ONLY
S550	X	12	6'-6"	X		PARAPETS-VERTICAL-TRANSVERSE-AT WEST ENDS ONLY
S551	X	209	6'-8"	X		PARAPETS-VERTICAL-TRANSVERSE
S552	X	2	27'-4"	X		PARAPETS-BOT.-INSIDE FACE-HORIZONTAL-LONGITUDINAL-AT WEST ENDS ONLY
S553	X	4	27'-4"	X		PARAPETS-TOP-BOTH FACES-VERTICAL-LONGITUDINAL-AT WEST ENDS ONLY
S554	X	42	27'-4"			PARAPETS-BOTH FACES-HORIZ.-LONGIT.-END TO END
S455	X	16	40'-2"			DECK-TOP & BOTTOM-HORIZONTAL-LONGITUDINAL-UNDER PARAPETS ONLY

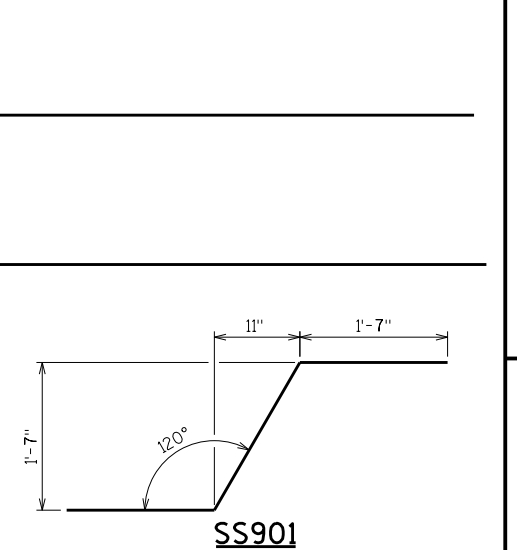
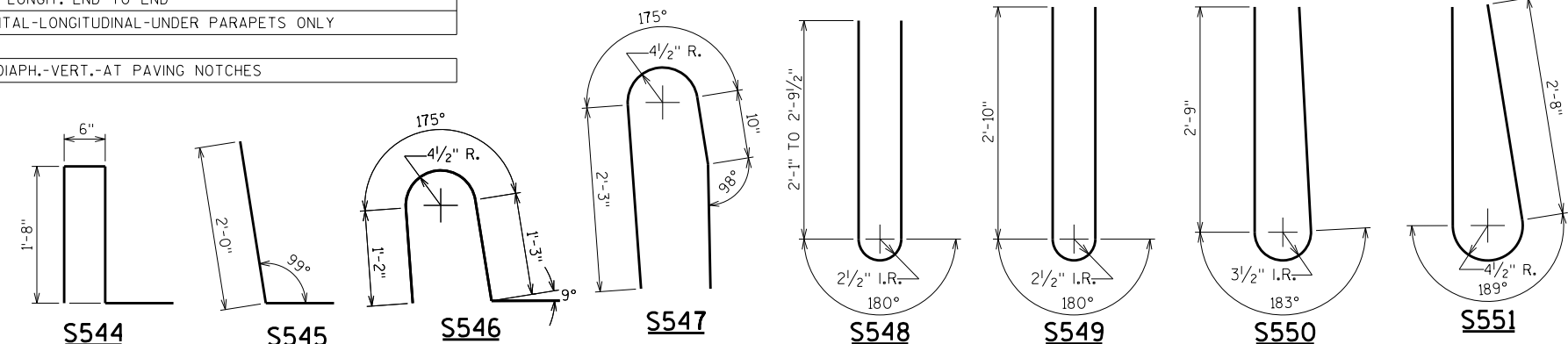
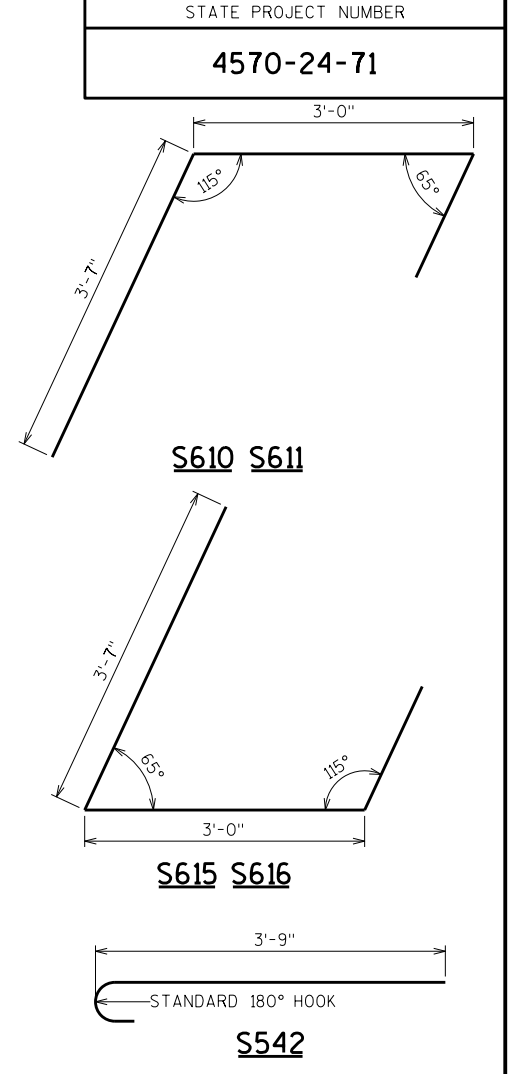
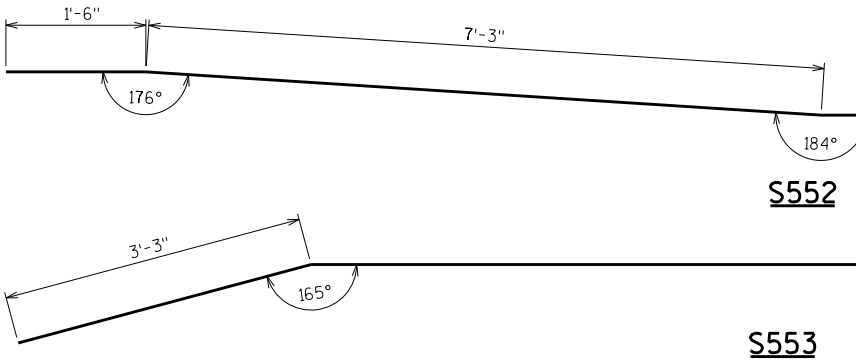
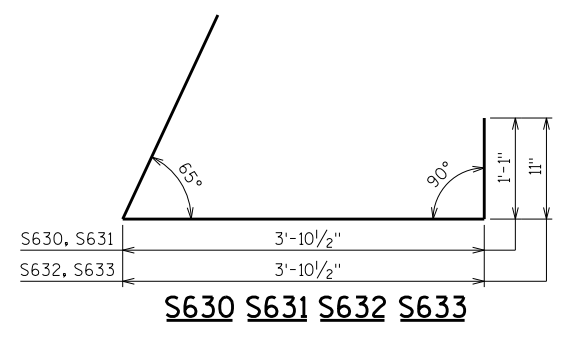
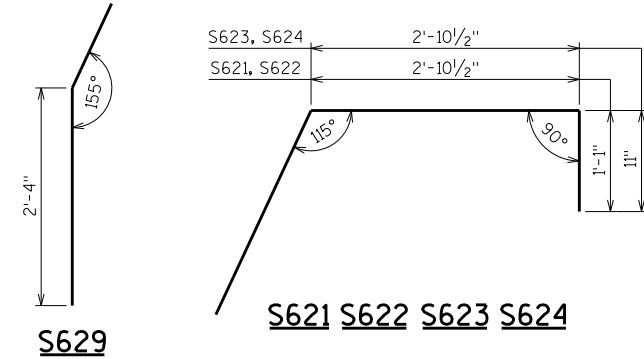
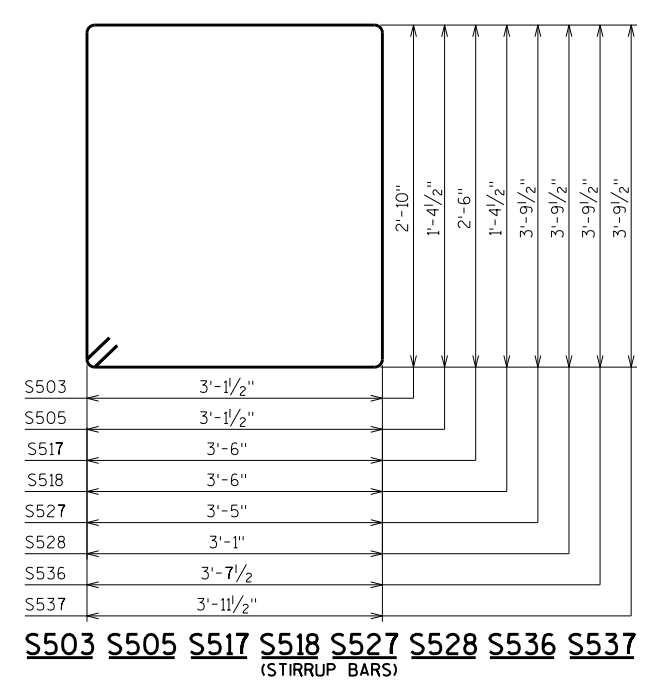
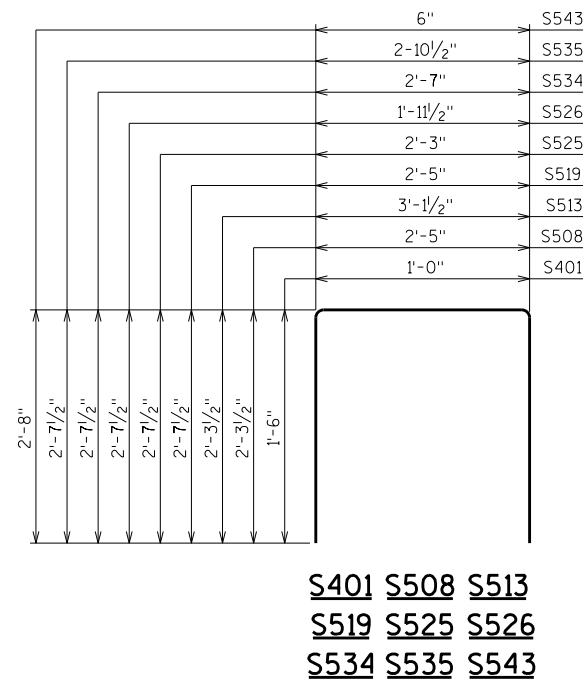
SS901 43 5'-0" X EAST APPROACH SLAB/ABUT. DIAPH.-VERT.-AT PAVING NOTCHES

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

BAR SERIES TABLE

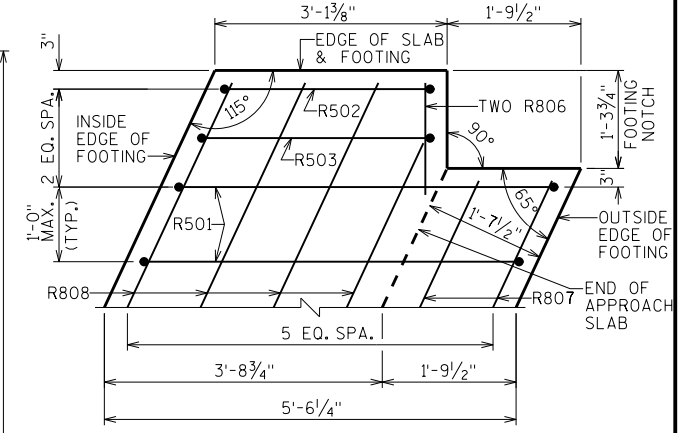
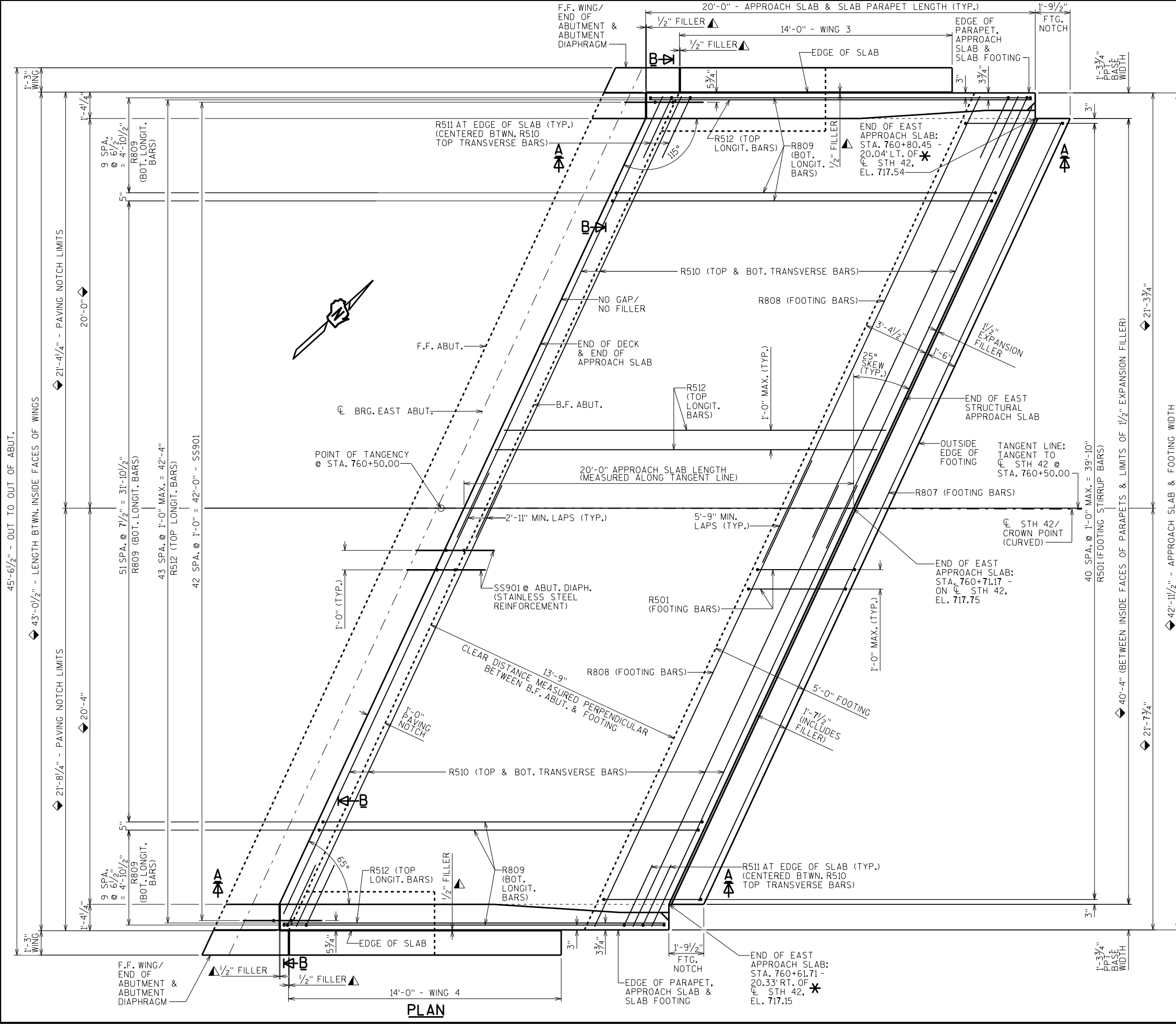
BAR MARK	NUMBER REQUIRED	TOTAL BAR LENGTH
S539	2 SERIES OF 28 BARS	2'-0" TO 40'-8"
S540	2 SERIES OF 28 BARS	1'-3" TO 39'-11"
S548	2 SERIES OF 7 BARS	4'-11" TO 6'-4"

BUNDLE AND TAG EACH SERIES SEPARATELY.

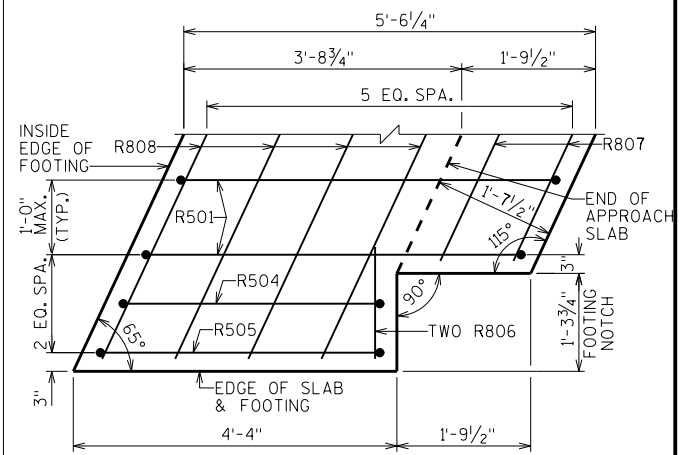


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY		PLANS CK'D.	JJS
SUPERSTRUCTURE BAR DETAILS		SHEET 17	

SCALE = 1:100



SLAB FOOTING PLAN DETAIL @ NE CORNER



SLAB FOOTING PLAN DETAIL @ SE CORNER

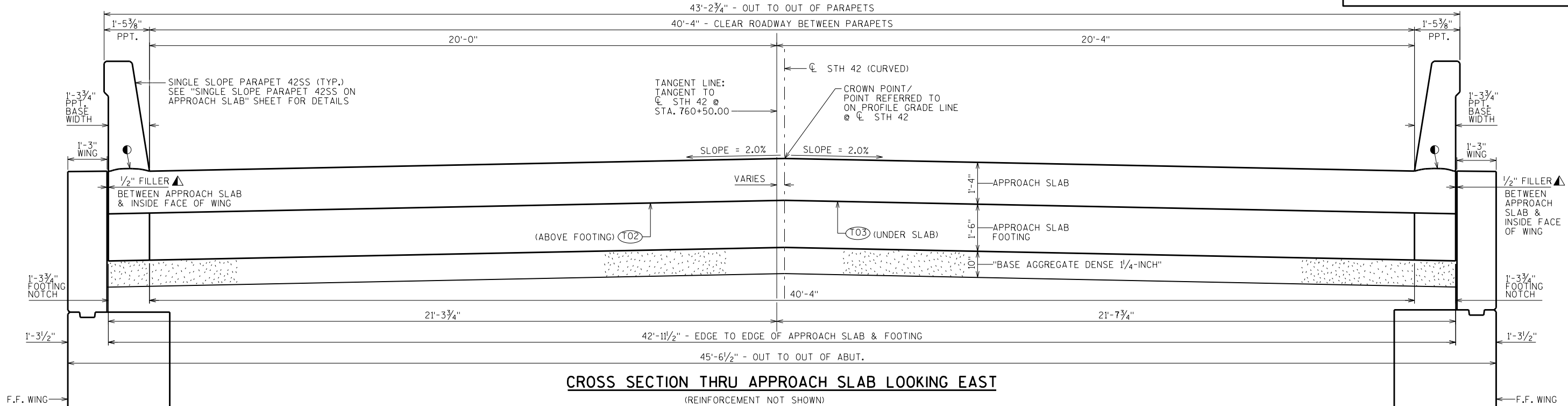
NOTE:
SEE NEXT SHEET FOR SECTION A-A AND SECTION B-B CROSS SECTION DETAILS AT STRUCTURAL APPROACH SLAB

- * OFFSETS TAKEN NORMAL TO ϕ STH 42
- ◊ DIMENSIONS ARE TAKEN NORMAL TO THE TANGENT LINE
- ▲ 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). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CK'D. JJS	
EAST STRUCTURAL APPROACH SLAB			SHEET 18

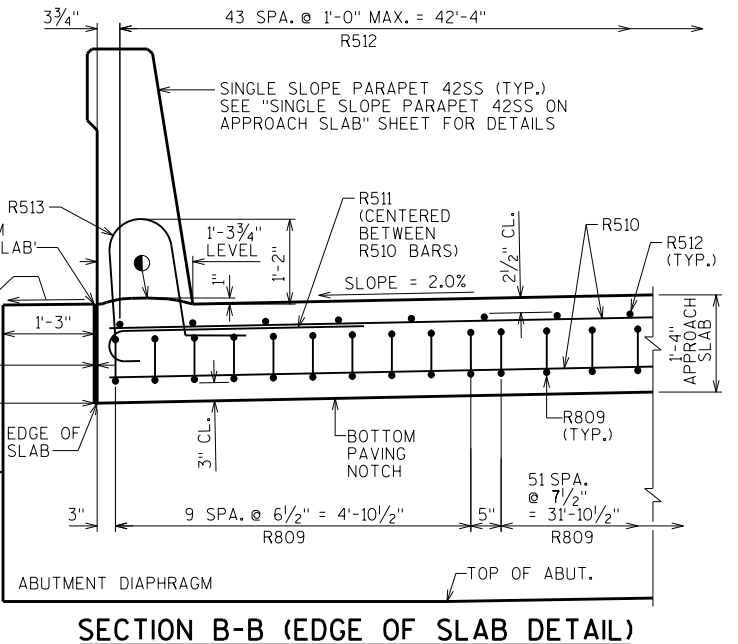
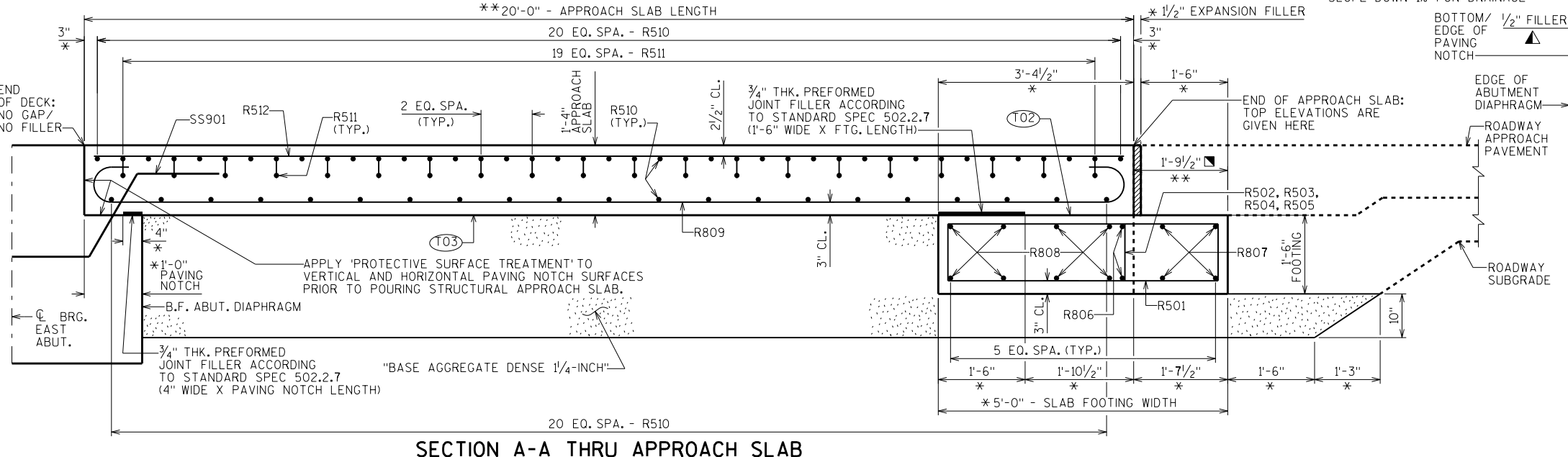
8

8



NOTES:
SEE "EAST STRUCTURAL APPROACH SLAB BAR DETAILS" SHEET FOR THE 'BILL OF BARS' AND BAR DETAILS.
TRANSVERSE BARS SHALL BE PLACED PARALLEL TO ϕ BRG. ABUTMENTS.
LONGITUDINAL BARS SHALL BE PLACED PARALLEL TO "TANGENT LINE".
*DIMENSION IS TAKEN NORMAL TO ϕ BRG. ABUTMENTS.
**DIMENSION IS TAKEN PARALLEL TO "TANGENT LINE".

- ▲ 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). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- INCLUDES 1/2" EXPANSION FILLER
- HORIZ. CONST. JOINT: STRIKE OFF AND LEAVE ROUGH AS SHOWN
- (T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE FOOTING.
- (T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.

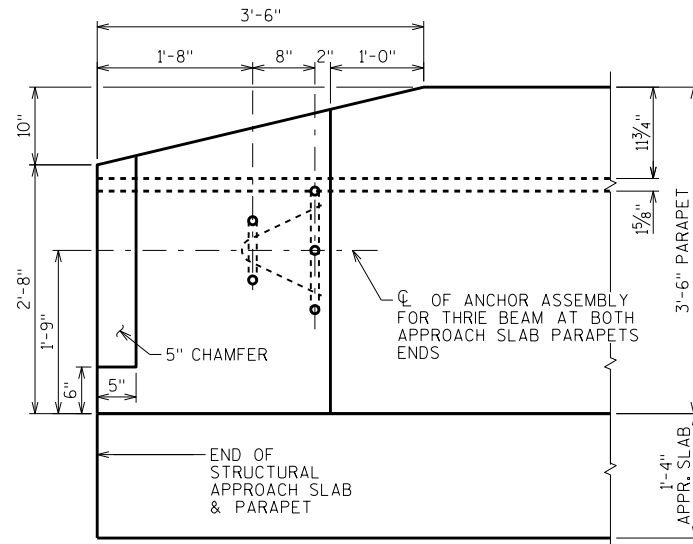


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CK'D. JJS	
EAST STRUCTURAL APPROACH SLAB CROSS SECTIONS			SHEET 19

NOTES:

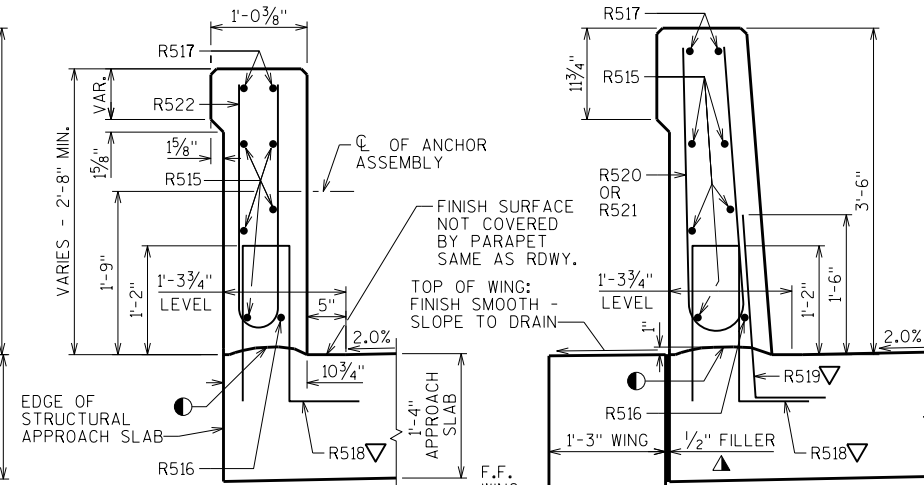
SEE THE "EAST STRUCTURAL APPROACH SLAB BAR DETAILS" SHEET FOR THE BILL OF BARS AND BAR DETAILS FOR THE SLAB PARAPET R-BARS.

SEE THE "SUPERSTRUCTURE BAR DETAILS" SHEET FOR THE BILL OF BARS AND BAR DETAILS FOR THE DECK PARAPET S-BARS.

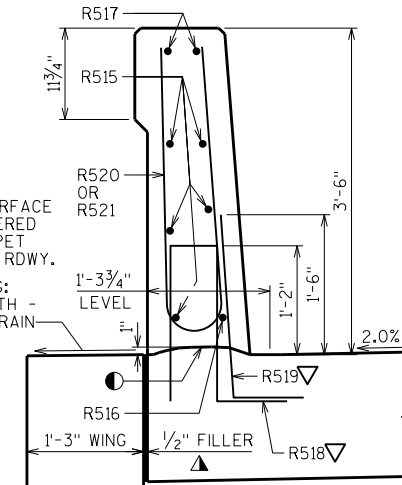


PARAPET END TREATMENT DETAIL

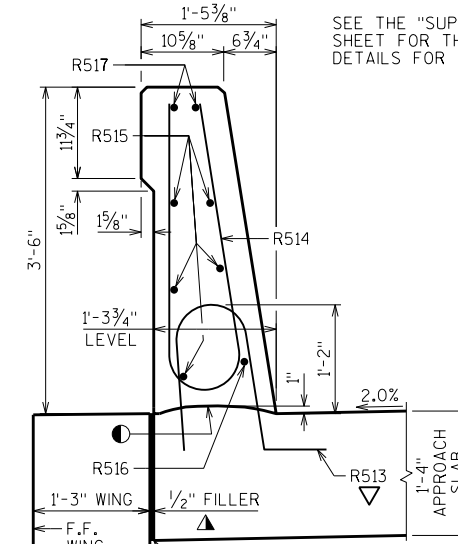
WINGS 4 CORNER SHOWN, WING 3 CORNER SIMILAR (LOOKING AT INSIDE FACE)



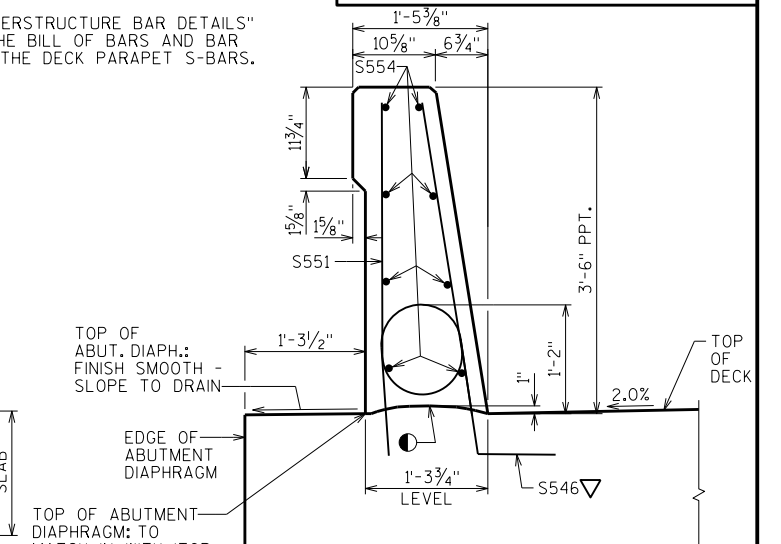
SECTION A-A



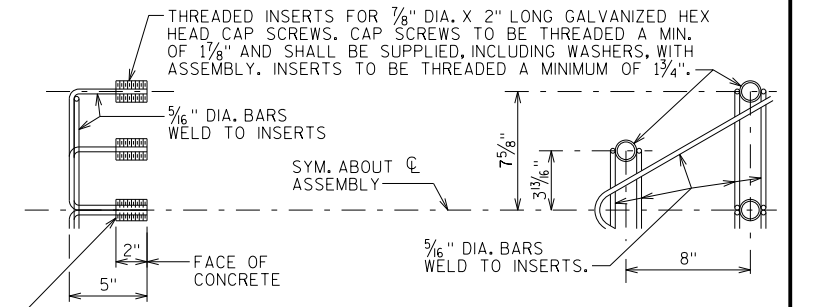
SECTION B-B



SECTION C-C



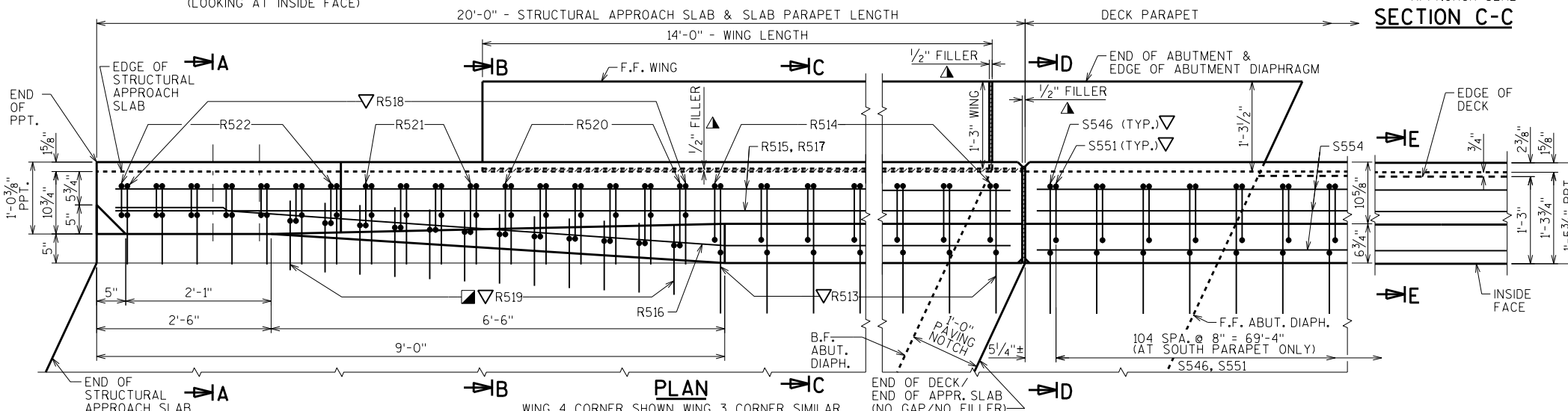
SECTION D-D (OVER EAST ABUT. DIAPH.)



DETAIL OF ANCHOR ASSEMBLY

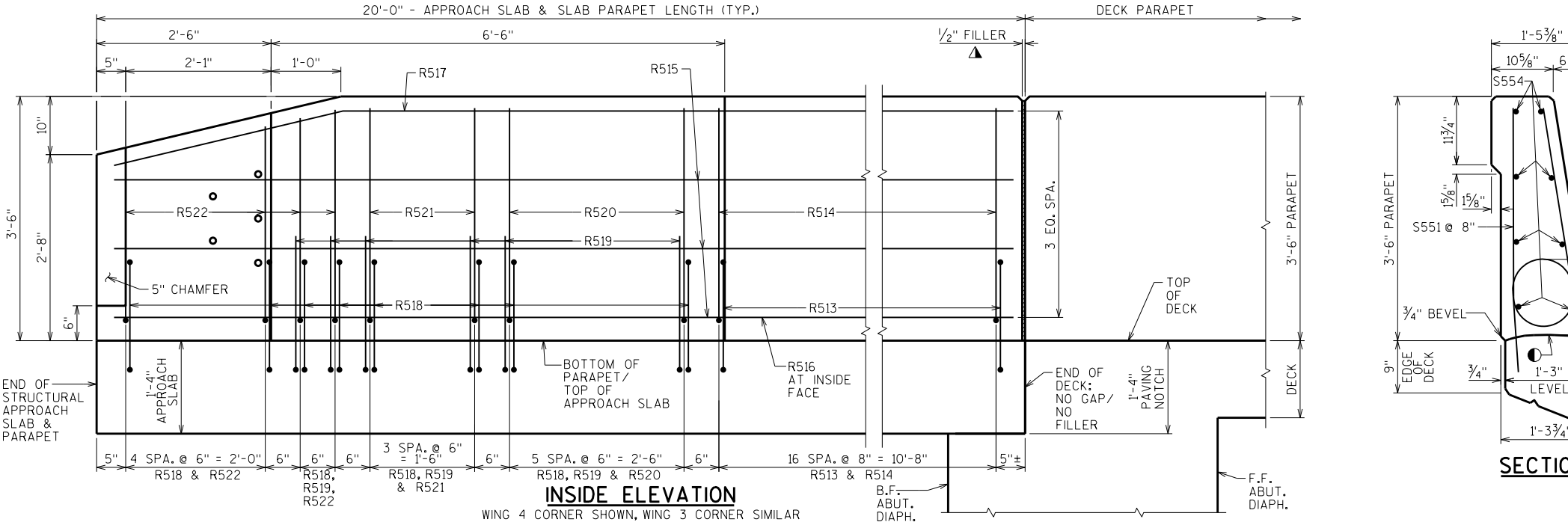
NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.



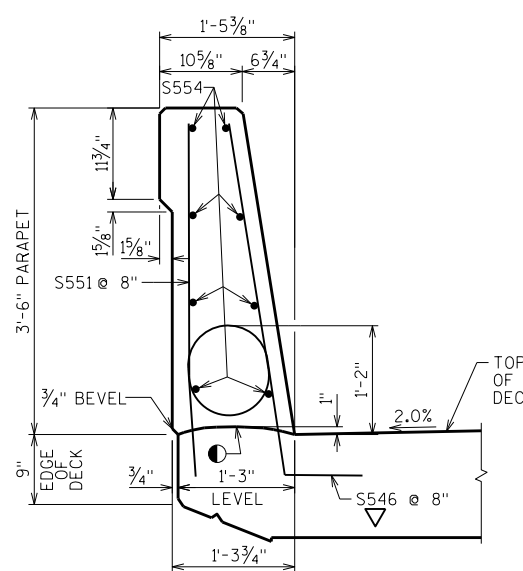
PLAN

WING 4 CORNER SHOWN, WING 3 CORNER SIMILAR



INSIDE ELEVATION

WING 4 CORNER SHOWN, WING 3 CORNER SIMILAR



SECTION E-E (ON DECK)

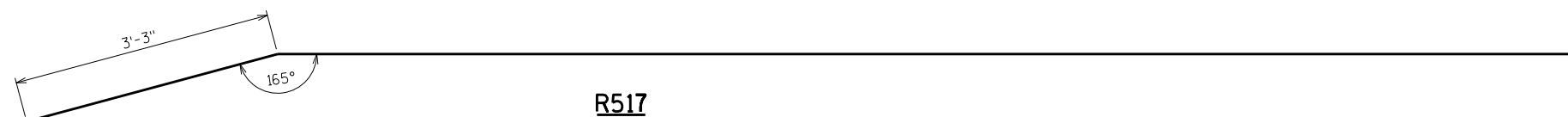
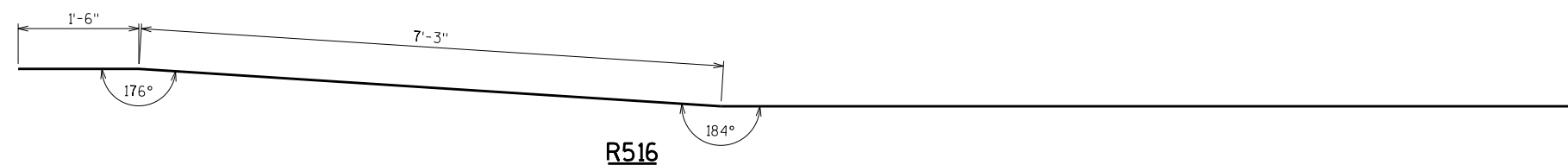
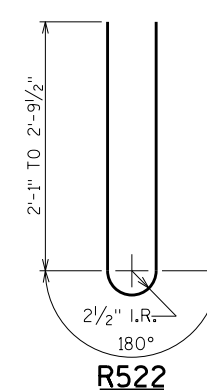
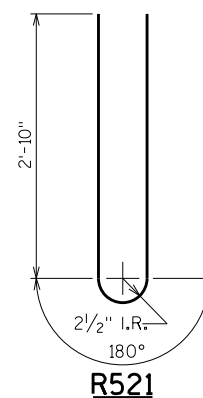
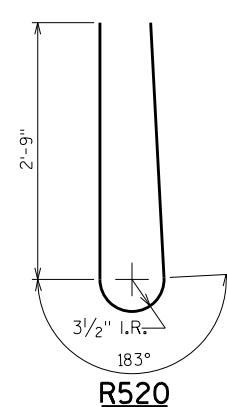
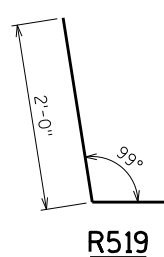
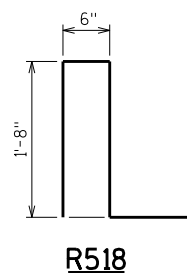
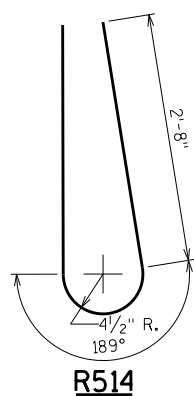
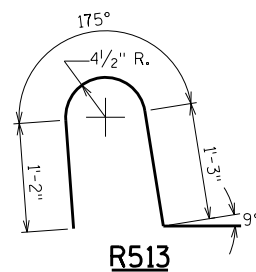
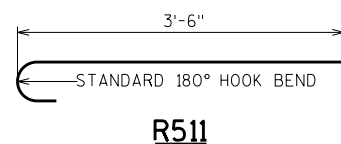
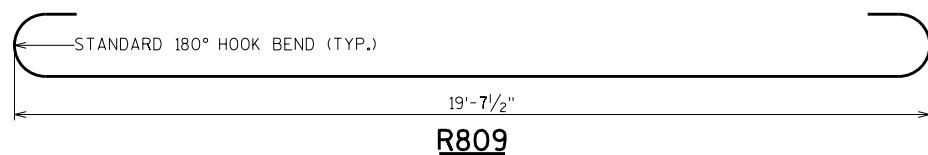
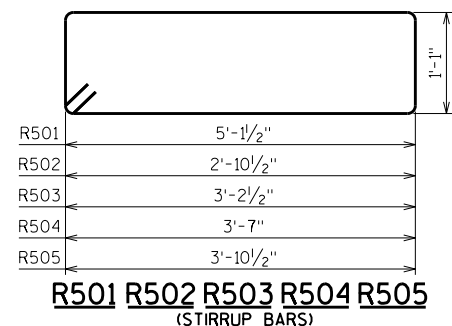
▲ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE), EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

● HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

■ USE CARE TO PLACE R519 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R513, R518, R519 & S546 PARAPET BARS TO BE TIED TO SLAB OR DECK STEEL BEFORE SLAB OR DECK IS POURED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CK'D. JJS	
SINGLE SLOPE PARAPET 42SS ON APPROACH SLAB			SHEET 20



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

BILL OF BARS

BAR MARK	CO. QTY	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	41	13'-1"	X		FOOTING-VERTICAL-LONGITUDINAL-BETWEEN PARAPETS
R502	X	1	8'-7"	X		FOOTING-VERTICAL-LONGITUDINAL-AT NORTH END ONLY
R503	X	1	9'-3"	X		FOOTING-VERTICAL-LONGITUDINAL-AT NORTH END ONLY
R504	X	1	10'-0"	X		FOOTING-VERTICAL-LONGITUDINAL-AT SOUTH END ONLY
R505	X	1	10'-7"	X		FOOTING-VERTICAL-LONGITUDINAL-AT SOUTH END ONLY
R806	X	4	1'-5"			FOOTING-TOP & BOTTOM-HORIZONTAL-TRANSVERSE-AT BOTH ENDS ONLY
R807	X	4	44'-1"			FOOTING-TOP & BOTTOM-HORIZONTAL-TRANSVERSE-AT OUTSIDE FACE
R808	X	16	26'-5"			FOOTING-TOP & BOTTOM-HORIZONTAL-TRANSVERSE-AT INSIDE FACE
R809	X	72	21'-6"	X		SLAB-BOTTOM-VERTICAL-LONGITUDINAL
R510	X	84	25'-0"			SLAB-TOP & BOTTOM-HORIZONTAL-TRANSVERSE
R511	X	40	4'-1"	X		SLAB-TOP-VERTICAL-TRANSVERSE-AT BOTH EDGES
R512	X	44	19'-8"			SLAB-TOP-HORIZONTAL-LONGITUDINAL
R513	X	34	4'-5"	X		PARAPETS/SLAB-VERTICAL-TRANSVERSE-AT BOTH PPT. ENDS
R514	X	34	6'-8"	X		PARAPETS-VERTICAL-TRANSVERSE-AT BOTH PPT. ENDS
R515	X	10	19'-6"			PARAPETS-BOTH FACES-HORIZONTAL-LONGITUDINAL-AT BOTH PPT. ENDS
R516	X	2	19'-6"	X		PARAPETS-BOT.-INSIDE FACE-HORIZONTAL-LONGITUDINAL-AT BOTH PPT. ENDS
R517	X	4	19'-6"	X		PARAPETS-TOP-BOTH FACES-VERTICAL-LONGITUDINAL-AT BOTH PPT. ENDS
R518	X	34	4'-4"	X		PARAPETS/SLAB-VERTICAL-TRANSVERSE-AT BOTH PPT. ENDS
R519	X	24	2'-9"	X		PARAPETS/SLAB-INSIDE FACE-VERTICAL-TRANSVERSE-AT BOTH PPT. ENDS
R520	X	12	6'-6"	X		PARAPETS-VERTICAL-TRANSVERSE-AT BOTH PPT. ENDS
R521	X	8	6'-5"	X		PARAPETS-VERTICAL-TRANSVERSE-AT BOTH PPT. ENDS
R522	X	14	5'-8"	X	▲	PARAPETS-END TAPER-VERTICAL-TRANSVERSE-AT BOTH PPT. ENDS

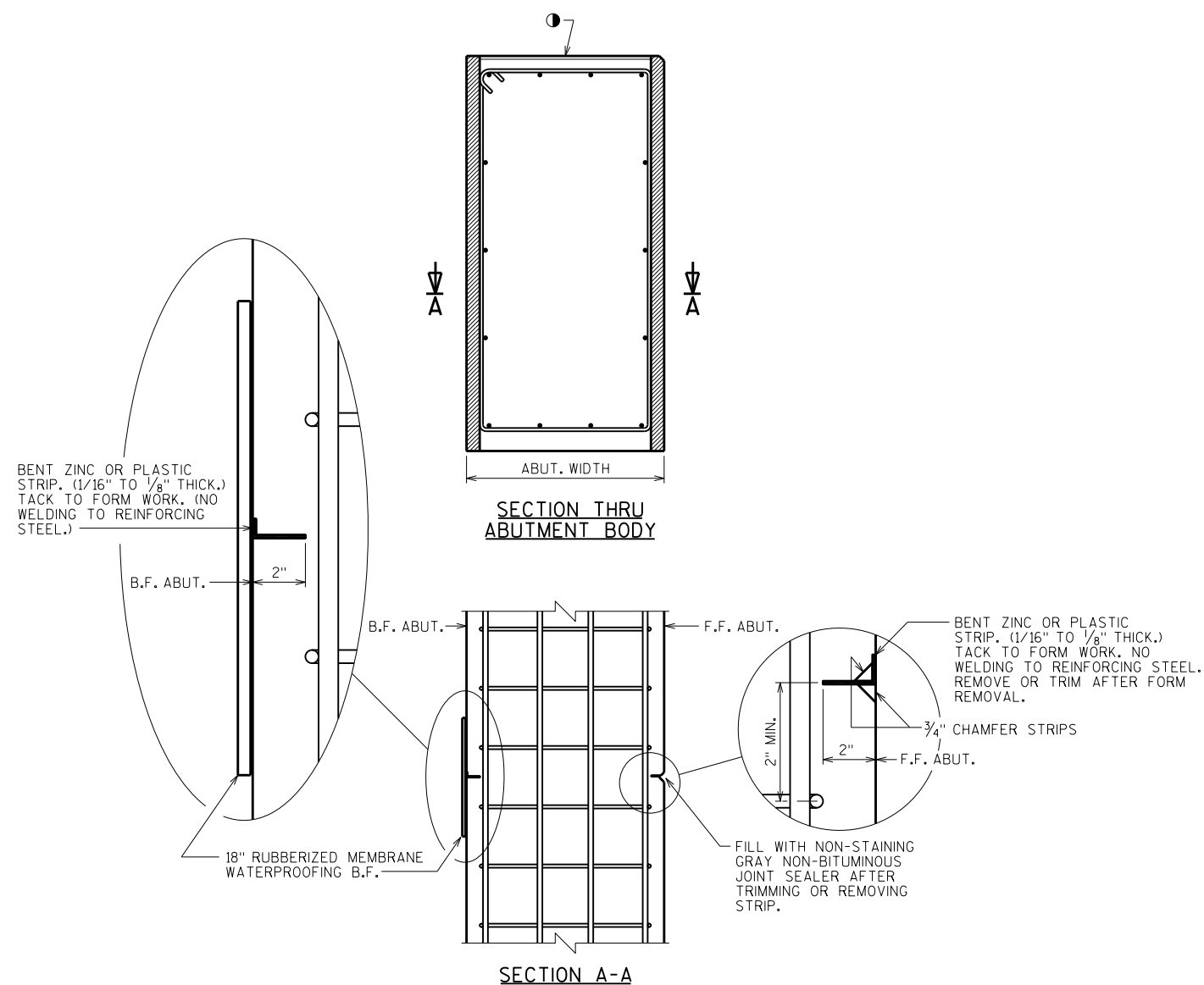
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL BAR LENGTHS.

BAR SERIES TABLE

BAR MARK	NUMBER REQUIRED	TOTAL BAR LENGTH
R522	2 SERIES OF 7 BARS	4'-11" TO 6'-4"

BUNDLE AND TAG EACH SERIES SEPARATELY.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY JPH		PLANS CK'D. JJS	
EAST STRUCTURAL APPROACH SLAB BAR DETAILS			SHEET 21



ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

SAW CUTTING JOINT IS NOT ALLOWED.

● USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-36-239			
DRAWN BY		JPH	PLANS CK'D. JJS
ALTERNATE CONSTRUCTION JOINT			SHEET 22

EARTHWORK STH 42

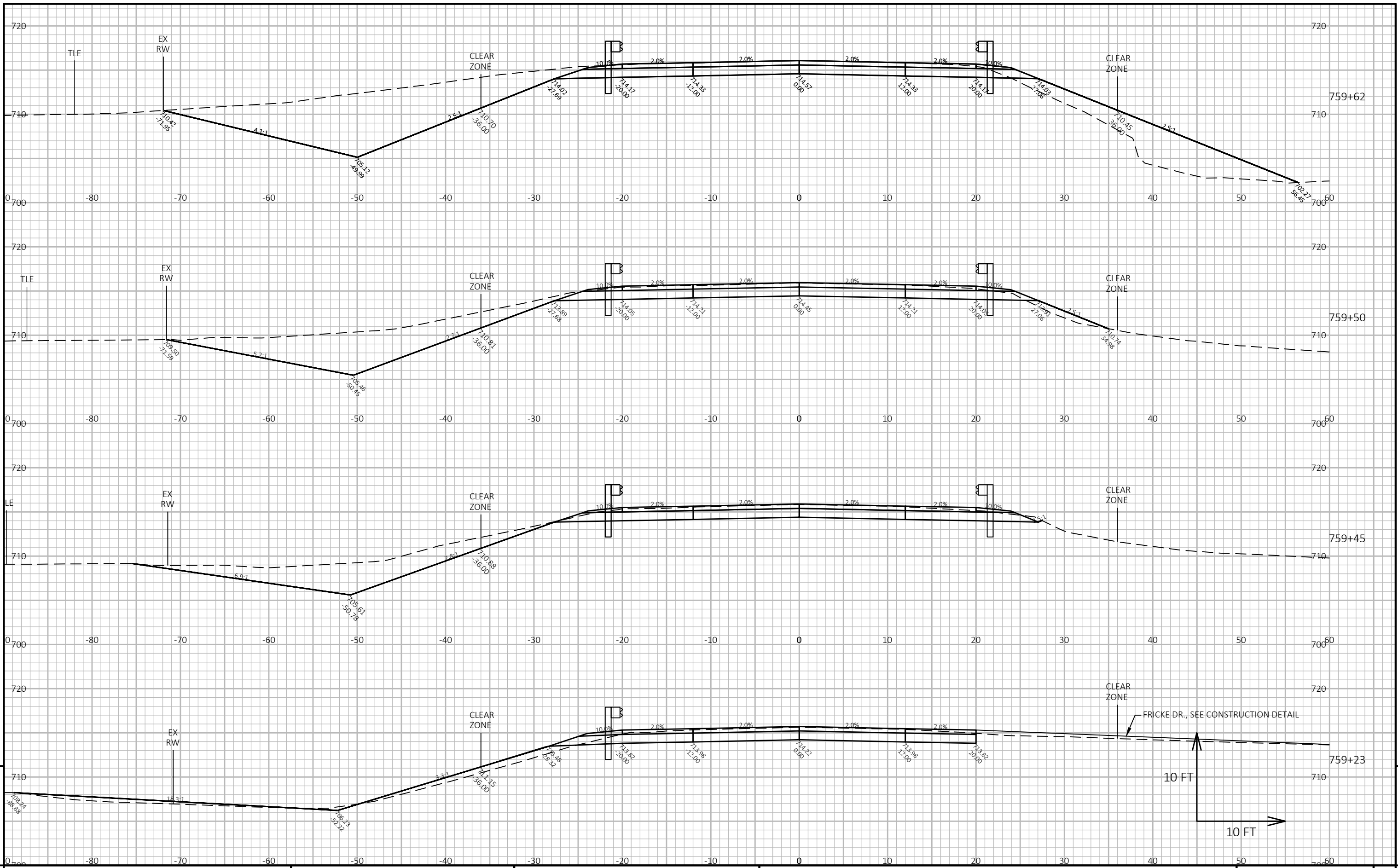
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 4
759+23	0.00	27.77	21.50	0.00	0	0	0	0	0	0
759+25	2.00	57.10	21.50	14.95	3	2	1	3	1	0
759+29.16	4.16	154.65	21.50	11.64	16	3	2	19	4	10
759+33	3.84	192.91	21.50	6.46	25	3	1	44	5	31
759+37	4.00	112.75	21.50	1.86	23	3	1	67	6	50
759+45	8.00	139.41	21.71	0.01	37	6	0	104	6	81
759+62	17.00	241.47	32.96	75.05	120	17	24	224	36	154
759+82	20.00	189.99	32.96	0.00	160	24	28	384	71	255
759+98	16.00	44.19	21.71	84.32	69	16	25	453	103	277
760+25	27.00	0.00	21.71	0.82	22	22	43	475	156	223
760+37	0.00	0.00	21.71	44.30	0	0	0	475	156	223
760+50	13.00	0.00	21.71	37.07	0	10	20	475	181	188
760+61.5	11.50	0.01	21.71	34.18	0	9	15	475	200	160
760+75	13.50	43.87	21.71	73.67	11	11	27	486	234	126
761+00	25.00	64.00	21.71	116.07	50	20	88	536	344	46
761+31	31.00	60.91	21.71	121.70	72	25	136	608	514	-77
761+50	19.00	17.05	2.92	132.18	27	9	89	635	625	-170
761+75	25.00	18.22	2.92	174.71	16	3	142	651	803	-335
762+00	25.00	20.66	2.92	164.52	18	3	157	669	999	-516
762+25	25.00	30.70	2.92	94.41	24	3	120	693	1,149	-645
762+50	25.00	17.19	2.92	67.16	22	3	75	715	1,243	-720
762+75	25.00	17.85	2.92	37.40	16	3	48	731	1,303	-767
763+00	25.00	20.38	1.25	34.45	18	2	33	749	1,344	-792
763+25	25.00	20.23	1.25	23.85	19	1	27	768	1,378	-808
763+51.08	26.08	13.91	1.25	26.37	16	1	24	784	1,408	-823
763+75	23.92	4.38	1.25	13.68	8	1	18	792	1,430	-838
764+00	25.00	4.91	0.00	6.79	4	1	9	796	1,441	-846
764+25	25.00	6.63	0.00	1.64	5	0	4	801	1,446	-846
764+45	20.00	7.64	0.00	0.01	5	0	1	806	1,448	-843

Notes:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDINATE	PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION

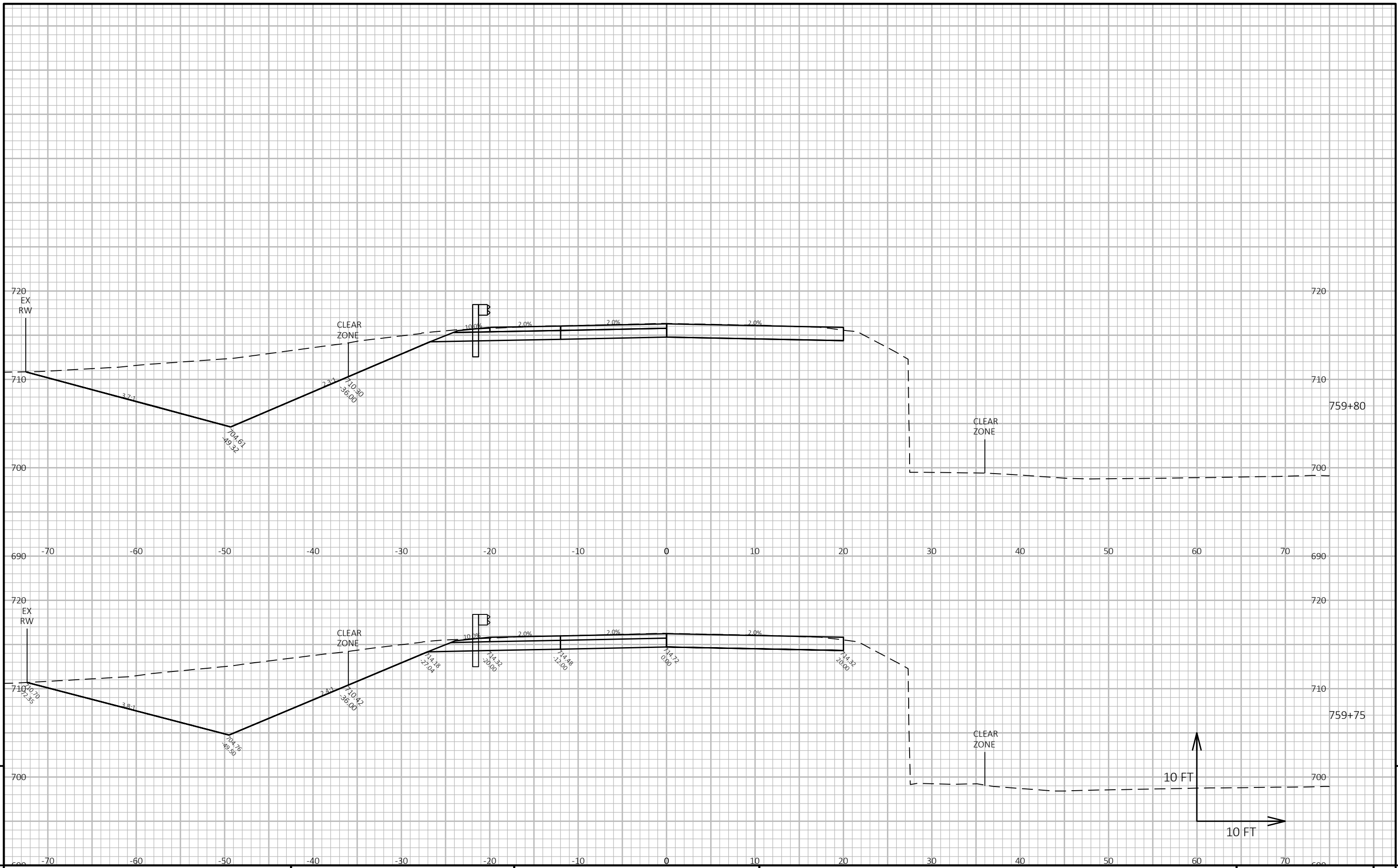
EARTHWORK DRIVEWAY

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 4
05+10	0.00	0.00	0.00	3.53	0	0	0	0	0	0
05+25	15.00	0.00	0.00	50.74	0	0	15	0	19	-19
05+50	25.00	0.00	0.00	217.10	0	0	124	0	174	-174
05+75	25.00	0.01	0.00	95.87	0	0	145	0	355	-355
05+90.35	15.35	0.00	0.00	33.75	0	0	37	0	401	-401

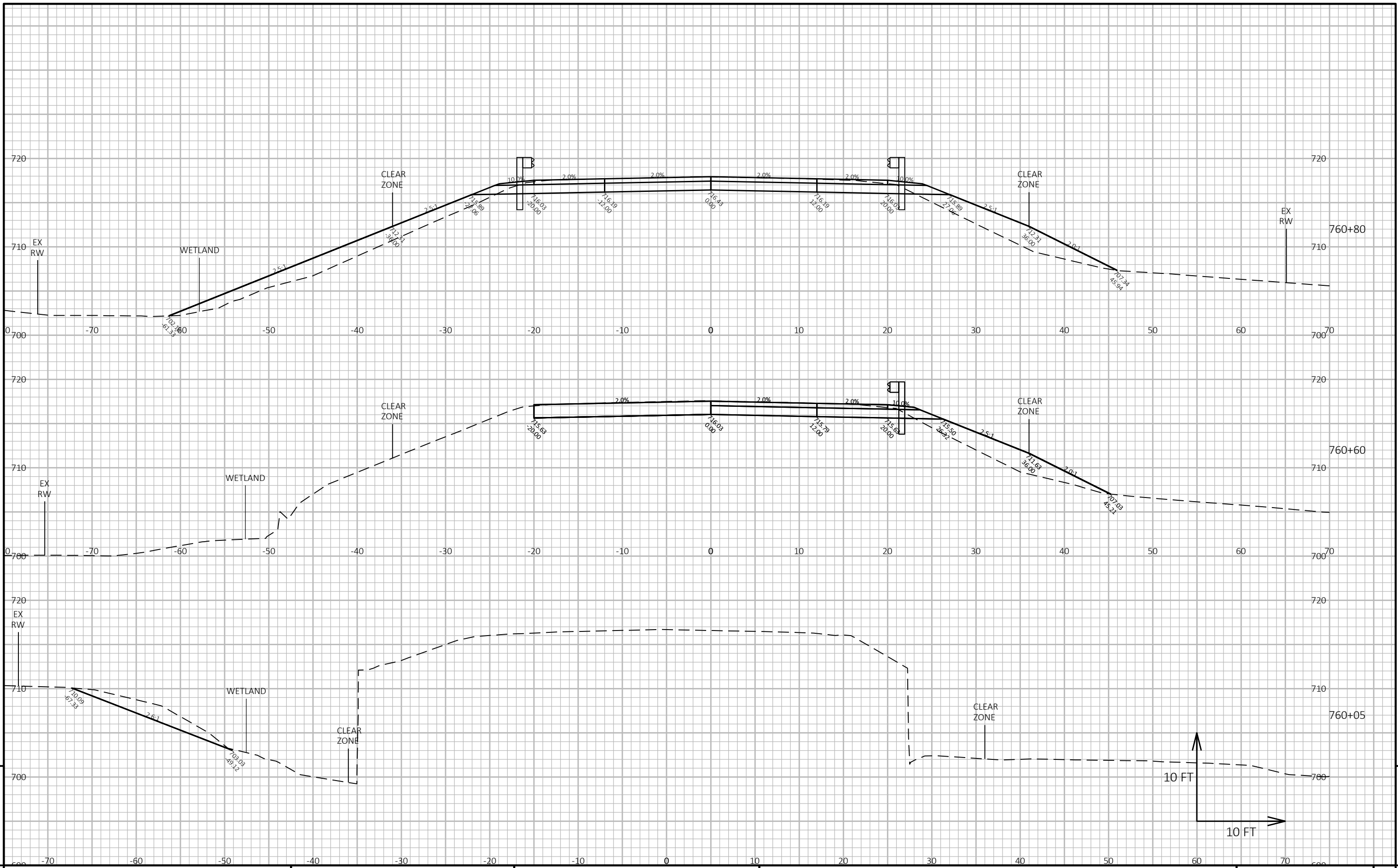
Notes:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDINATE	PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION



PROJECT NO: 4570-24-71	HWY: STH 42	COUNTY: MANITOWOC	CROSS SECTIONS: CROSS SECTIONS	SHEET	E
------------------------	-------------	-------------------	--------------------------------	-------	---



PROJECT NO: 4570-24-71 HWY: STH 42 COUNTY: MANITOWOC CROSS SECTIONS: CROSS SECTIONS SHEET E



9

9

PROJECT NO: 4570-24-71	HWY: STH 42	COUNTY: MANITOWOC	CROSS SECTIONS: CROSS SECTIONS	SHEET	E
------------------------	-------------	-------------------	--------------------------------	-------	---

FILE NAME : N:\PDS\C3D\45702400\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090203-xs

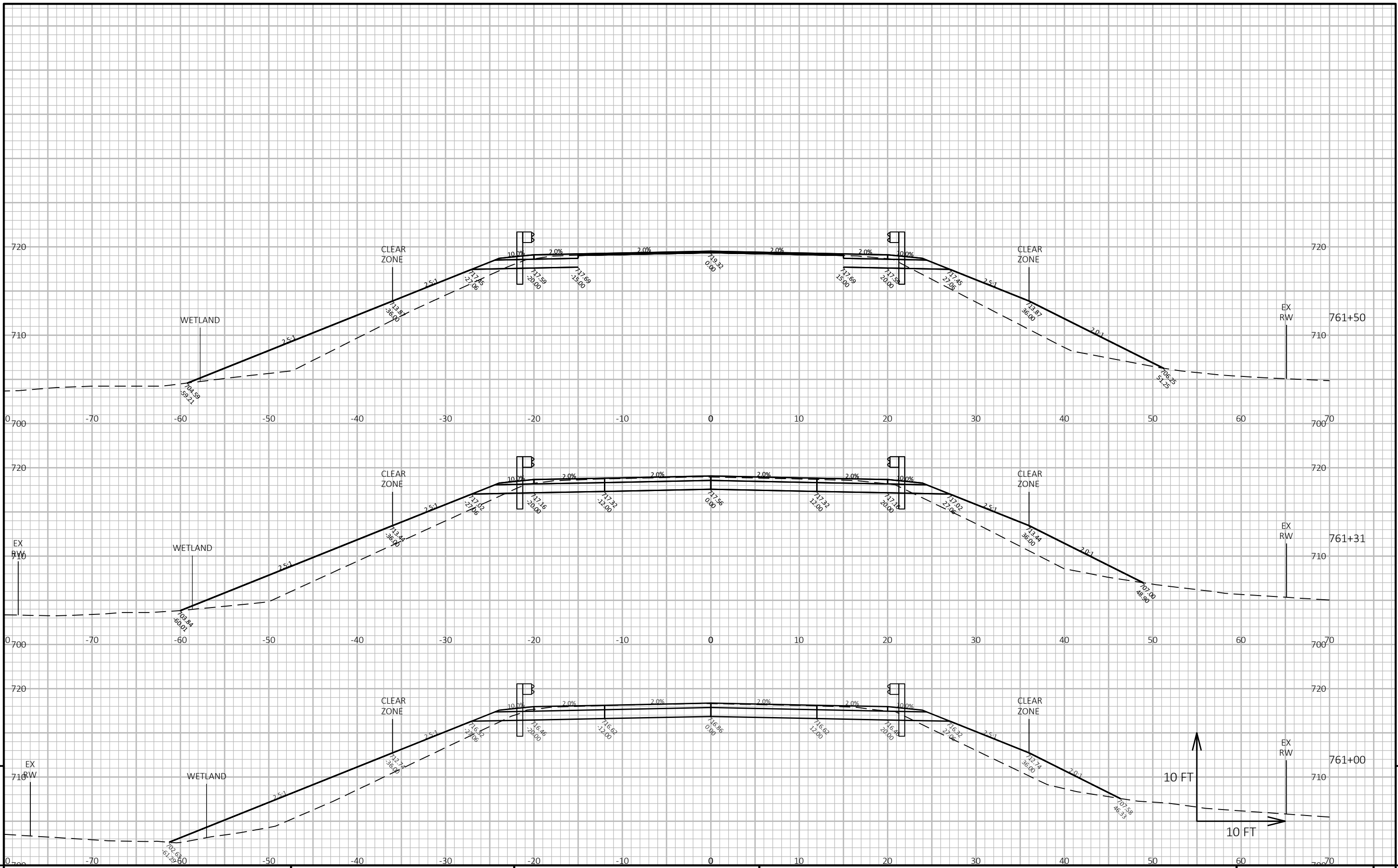
PLOT DATE : 3/9/2021 12:57 PM

PLOT BY : MAATTA, TRAVIS SHANE

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADD SHEET 49



PROJECT NO: 4570-24-71

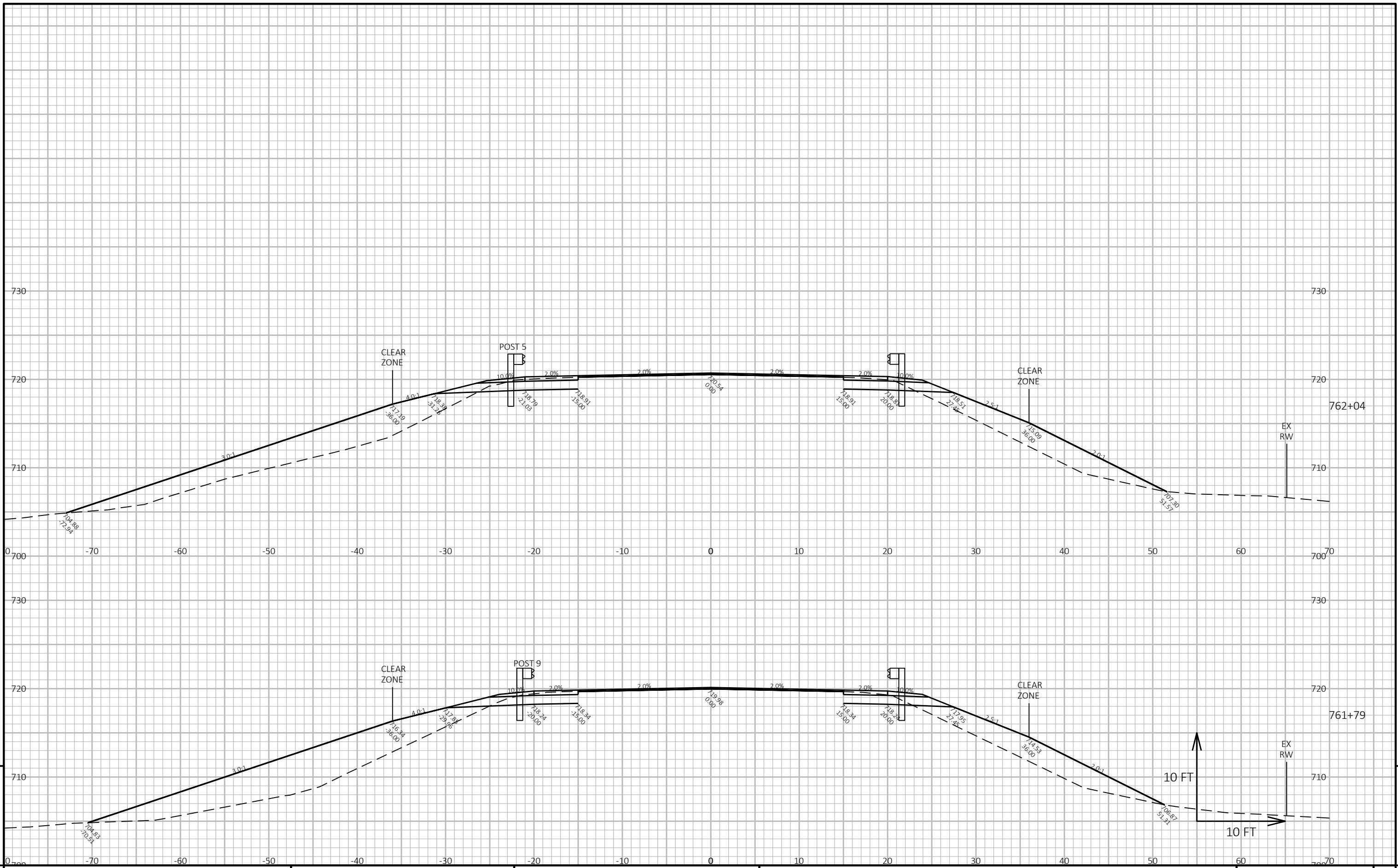
HWY: STH 42

COUNTY: MANITOWOC

CROSS SECTIONS: CROSS SECTIONS

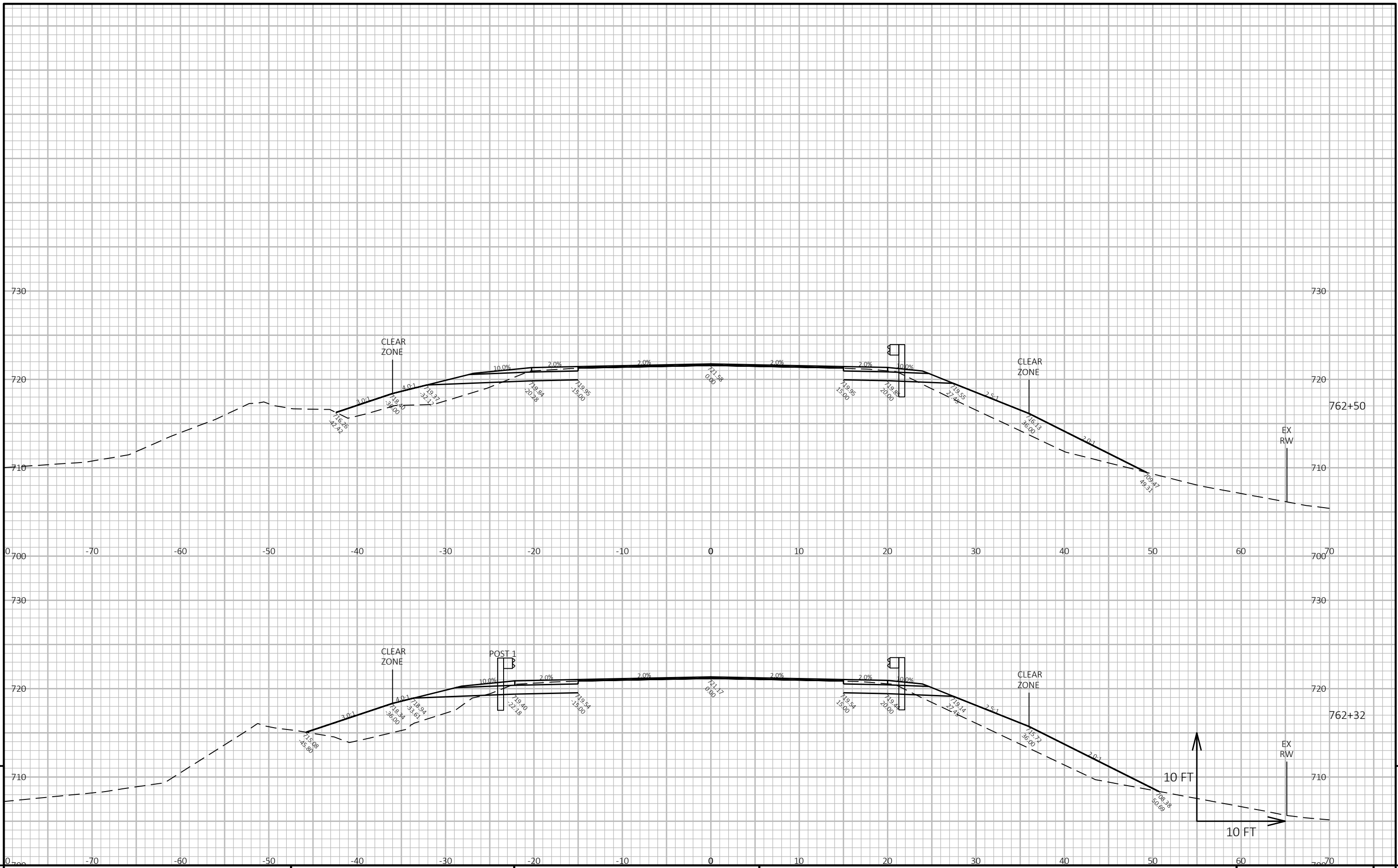
SHEET

E



PROJECT NO: 4570-24-71	HWY: STH 42	COUNTY: MANITOWOC	CROSS SECTIONS: CROSS SECTIONS	SHEET
------------------------	-------------	-------------------	--------------------------------	-------

9



PROJECT NO: 4570-24-71

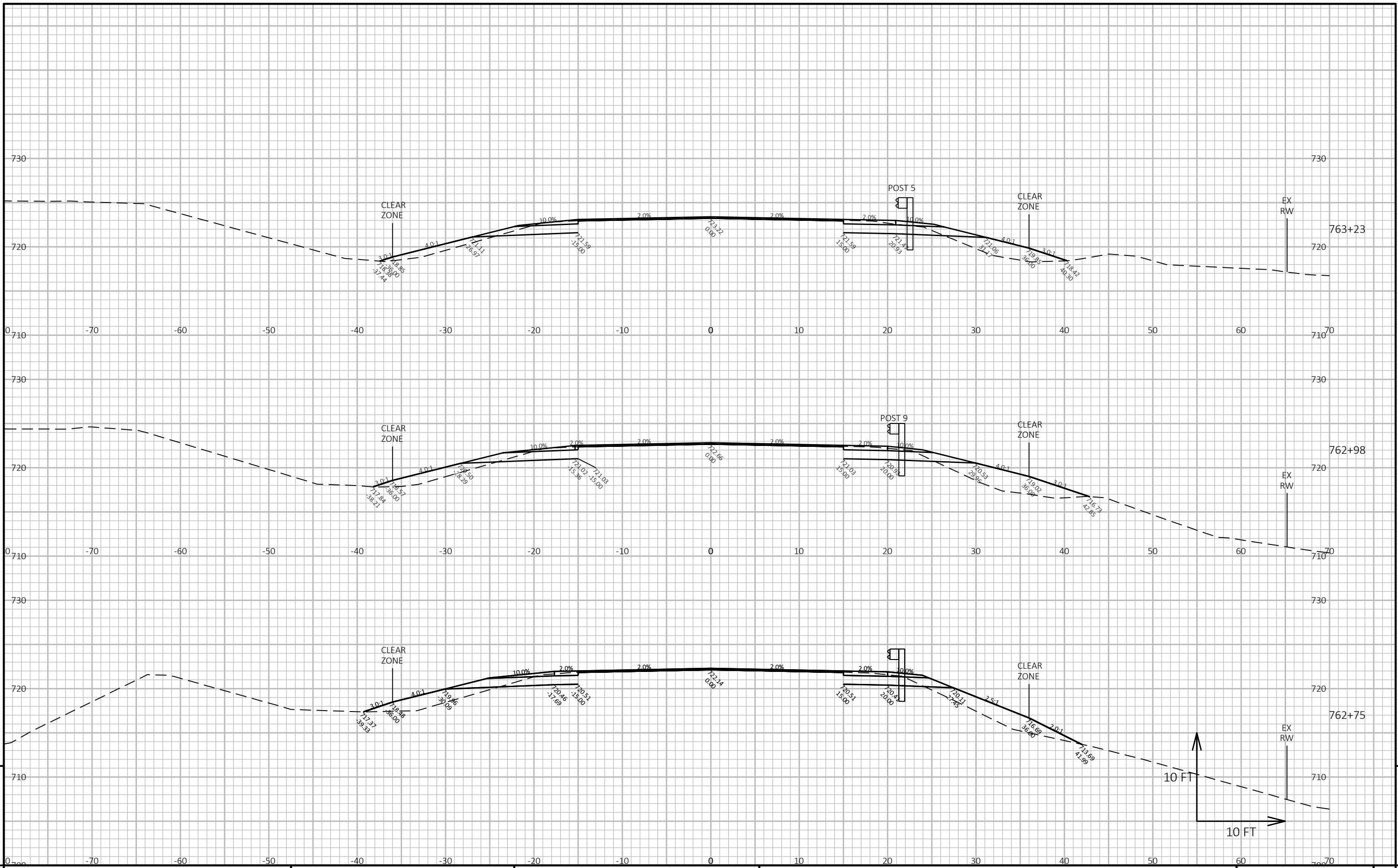
HWY: STH 42

COUNTY: MANITOWOC

CROSS SECTIONS: CROSS SECTIONS

SHEET

E



PROJECT NO: 4570-24-71

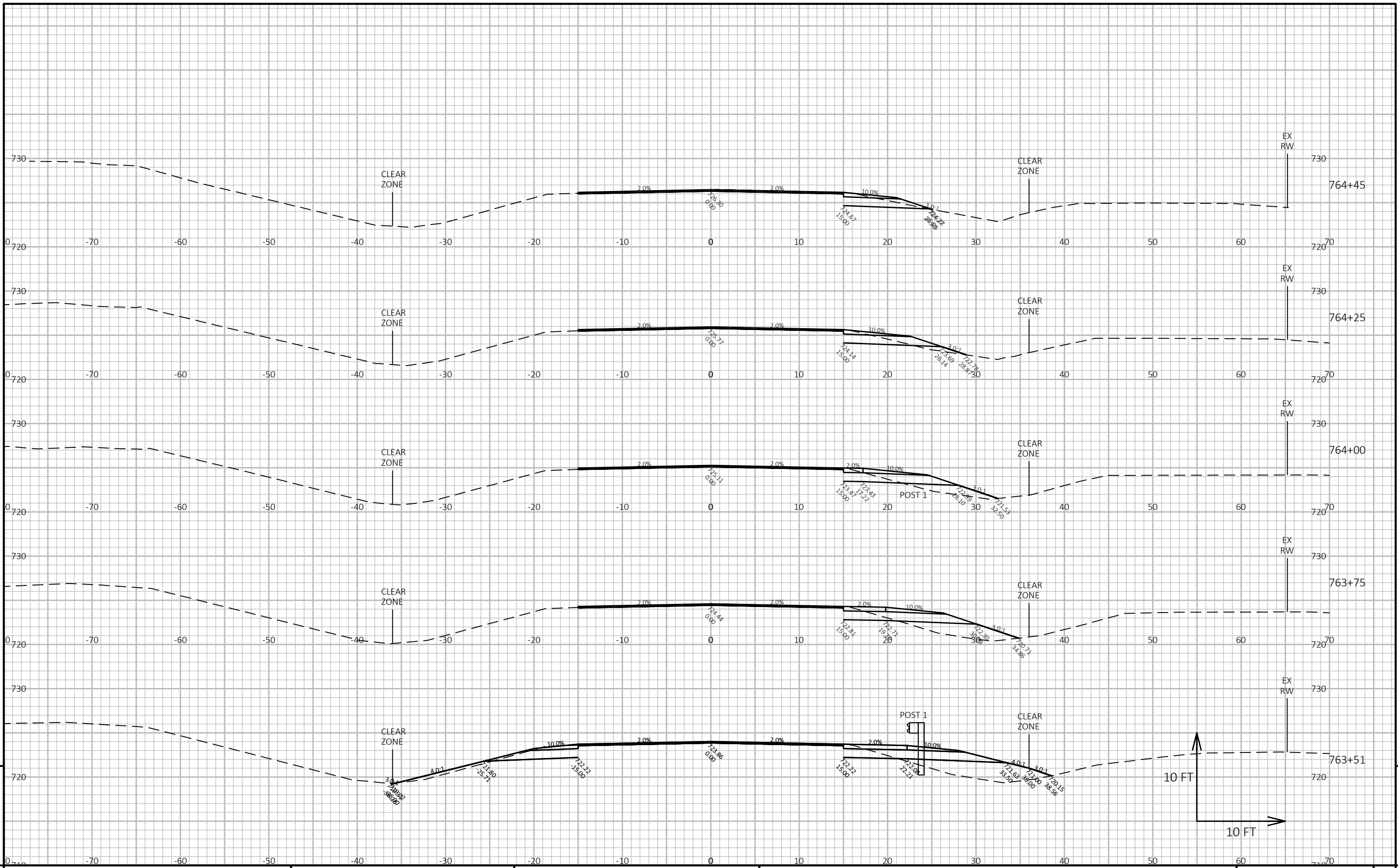
HWY: STH 42

COUNTY: MANITOWOC

CROSS SECTIONS: CROSS SECTIONS

SHEET

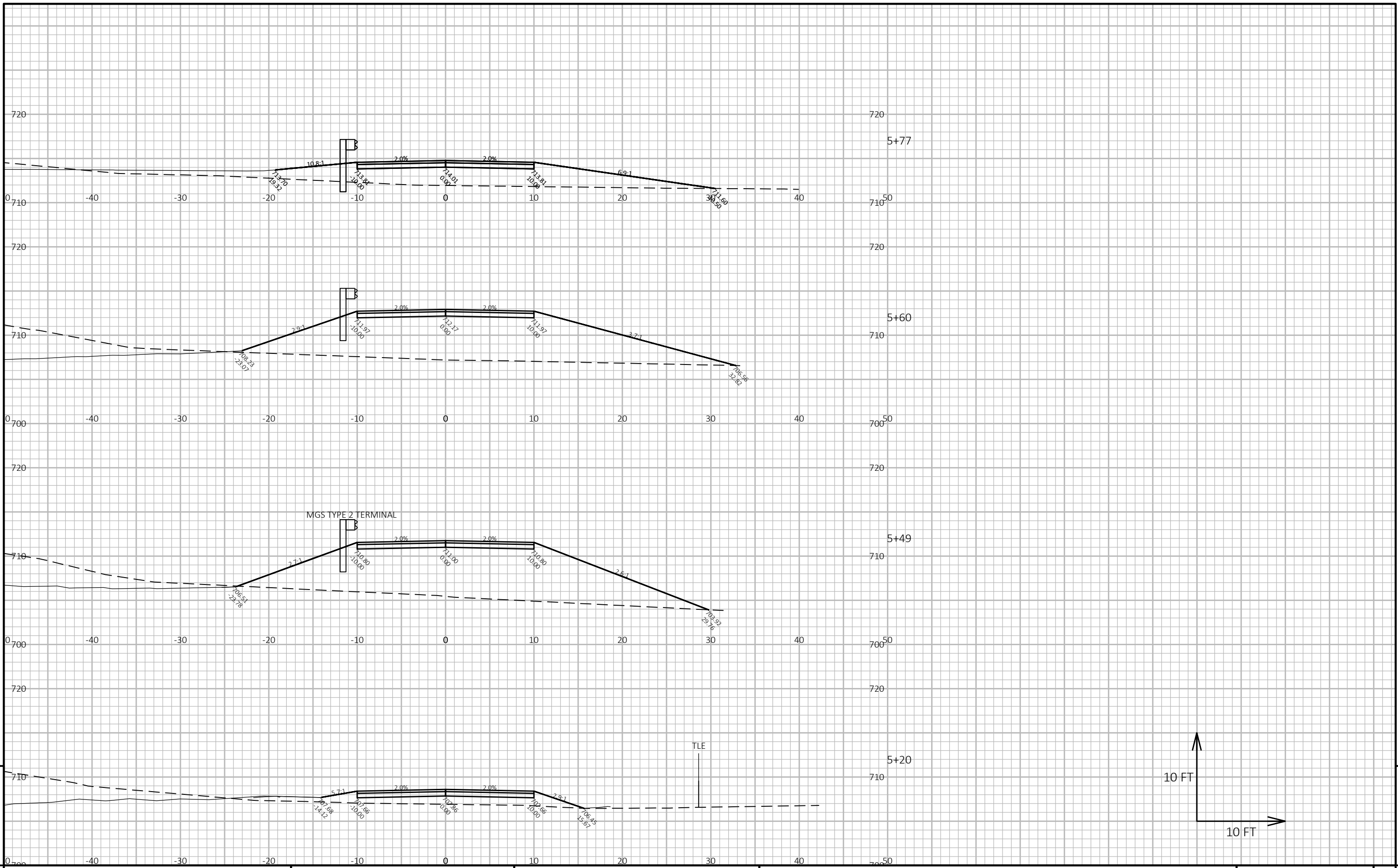
E



9

9

PROJECT NO: 4570-24-71	HWY: STH 42	COUNTY: MANITOWOC	CROSS SECTIONS: CROSS SECTIONS	SHEET	E
------------------------	-------------	-------------------	--------------------------------	-------	---



MGS TYPE 2 TERMINAL

TLE

9

9



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

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