

WKE

WITH: N/A

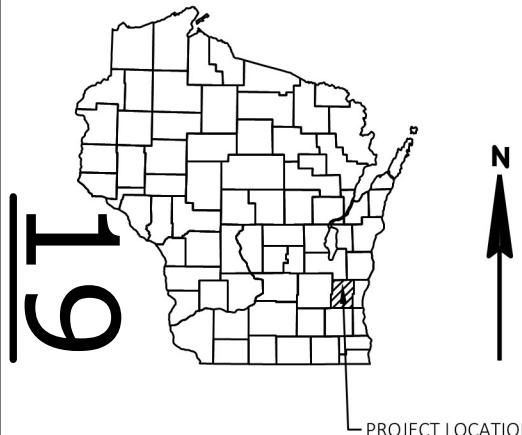
4824-03-72

COUNTY: WASHINGTON

MARCH 2026  
ORDER OF SHEETS

Section No. 1 Title  
 Section No. 2 Typical Sections and Details  
 Section No. 3 Estimate of Quantities  
 Section No. 3 Miscellaneous Quantities  
 Section No. 4 Right of Way Plat  
 Section No. 5 Plan and Profile (Includes Erosion Control Details)  
 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 = 74



DESIGN DESIGNATION  
 A.A.D.T. (2026) = 460  
 A.A.D.T. (2046) = 500  
 D.H.V. = 67  
 D.D. = 62/38  
 T. = 9.4%  
 DESIGN SPEED = 50 MPH  
 ESALS = 81,000

## CONVENTIONAL SYMBOLS

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

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

## PLAN OF PROPOSED IMPROVEMENT

## T KEWASKUM, TOWNLINE RD

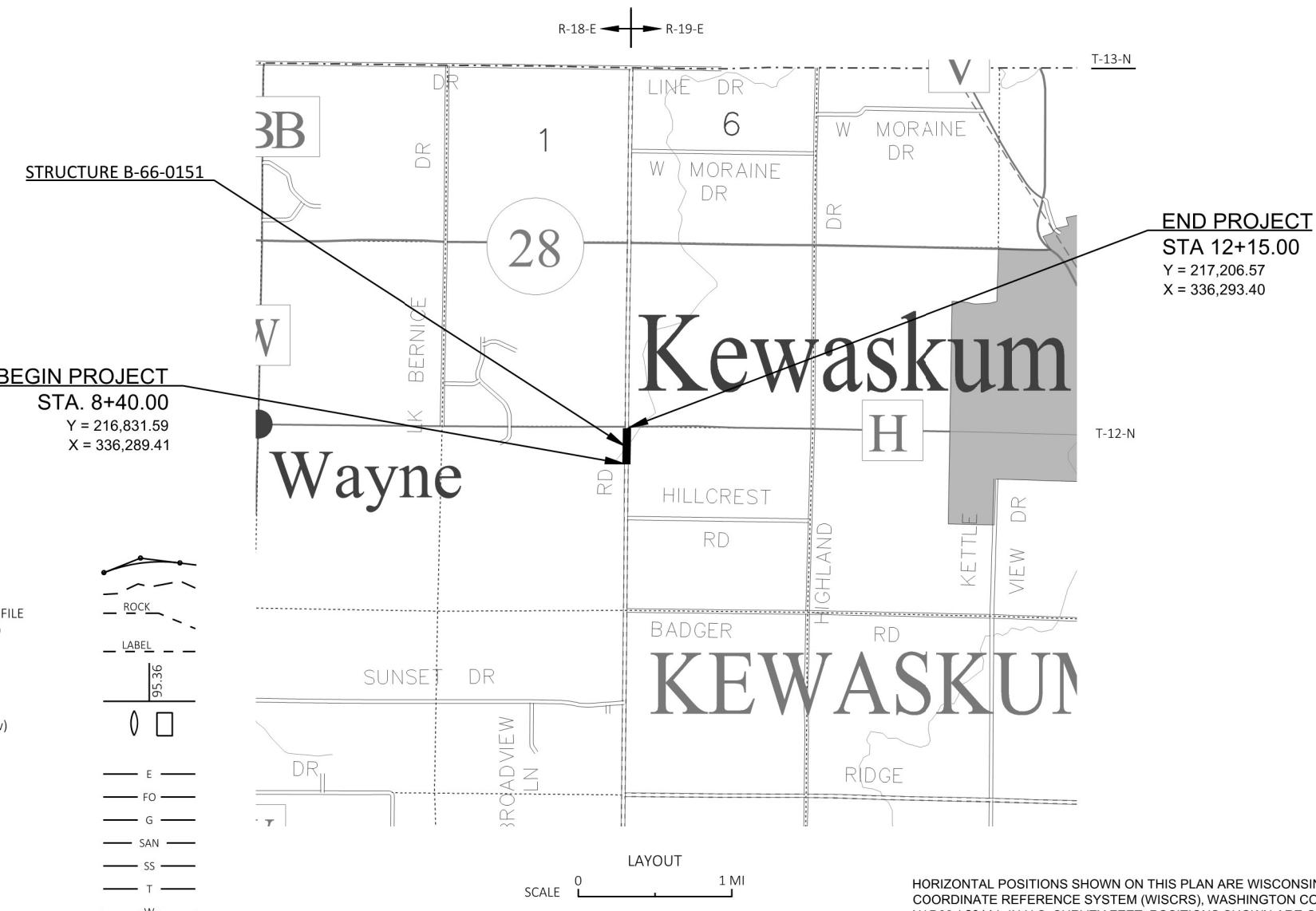
TRIBUTARY MILWAUKEE RIVER P-66-911

LOC STR  
WASHINGTON COUNTY

STATE PROJECT NUMBER  
**4824-03-72**

R-18-E ← R-19-E

T-13-N



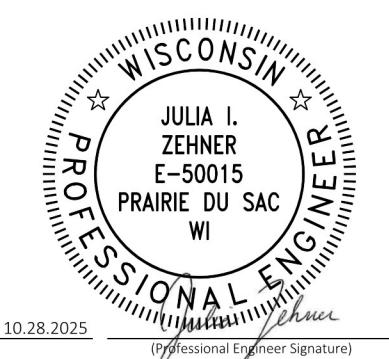
HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), WASHINGTON COUNTY, NAD83 ( 2011 ), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 ( 2012 ). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4824-03-72	_____	_____

ACCEPTED FOR  
 TOWN OF KEWASKUM  
 Date 10.28.2025  
 TIMOTHY A. HAYES, PE, PLS  
 HAYES ENGINEERING CO.  
 TOWN ENGINEER, TOWN OF KEWASKUM

ORIGINAL PLANS PREPARED BY  
**MSA**  
 1230 SOUTH BOULEVARD, BARABOO WI 53913  
 608-356-2771 1-800-362-4505 Fax: 608-807-5148



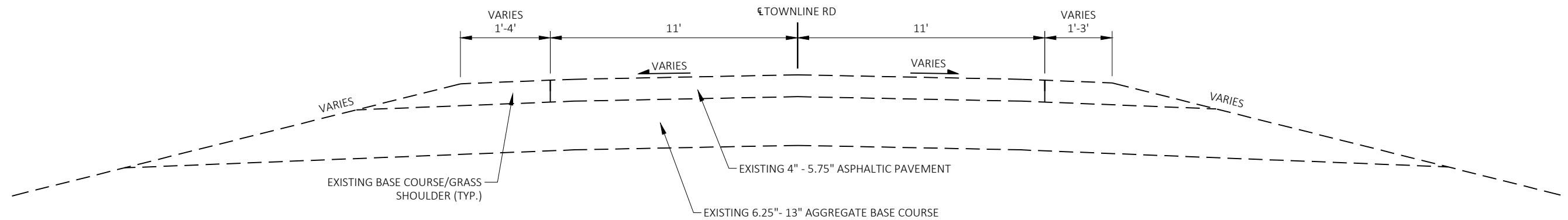
DATE: 10.28.2025  
 (Professional Engineer Signature)

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

PREPARED BY  
 Surveyor MSA PROFESSIONAL SERVICES, INC.  
 Designer MSA PROFESSIONAL SERVICES, INC.  
 Project Manager JOSEPH C. JELACIC, P.E.  
 Regional Examiner REGIONAL EXAMINER  
 Regional Supervisor AMY TAETSCH, P.E.

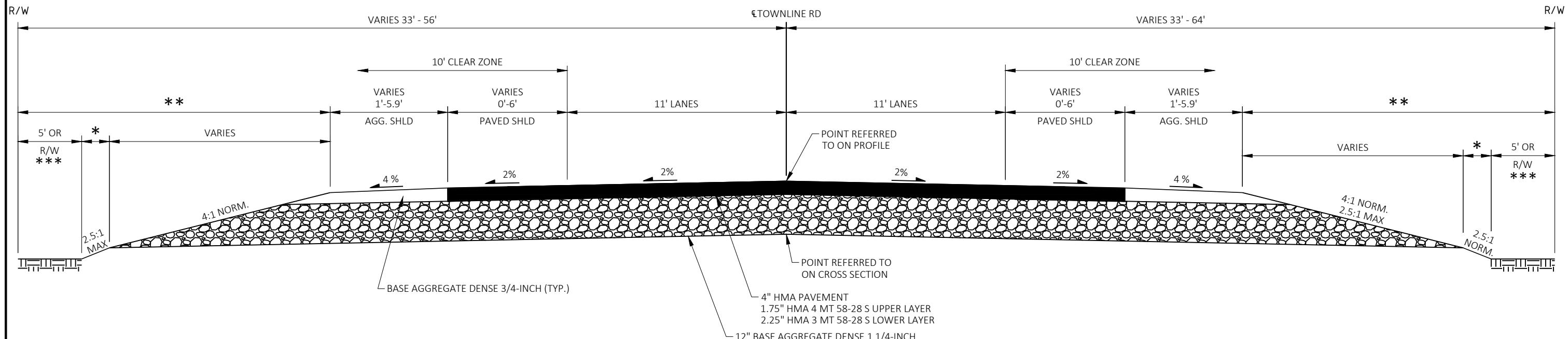
APPROVED FOR THE DEPARTMENT  
 Joseph C Jelacic  
 DATE: 10/30/25  
 (Signature)

<p><b>2</b></p> <p><b>UTILITIES CONTACTS</b></p> <p>WE ENERGIES OVERHEAD ELECTRIC JOE FELLENZ W140 N9100 LILLY ROAD MENOMONEE FALLS, WI 53051 PHONE: 414-322-8928 EMAIL: JOSEPH.FELLENZ@WE-ENERGIES.COM</p> <p>FRONTIER COMMUNICATIONS OVERHEAD COMMUNICATIONS THOMAS REKOWSKI 118 DIVISION ST PLYMOUTH, WI 53073 PHONE: 608-844-0980 EMAIL: THOMAS.REKOWSKI@FTR.COM</p> <p>CHARTER COMMUNICATIONS OVERHEAD COMMUNICATIONS NICK FRASE 1515 WASHINGTON DR WEST BEND, WI 53095 PHONE: 920-304-6797 EMAIL: NICK.FRASE@CHARTER.COM</p>	<p><b>WISCONSIN DNR LIAISON</b></p> <p>RYAN PAPPAS DEPARTMENT OF NATURAL RESOURCES 1027 WEST PAUL AVE MILWAUKEE, WI 53233 PHONE: 414-750-7495 EMAIL: RYAN.PAPPAS@WISCONSIN.GOV</p> <p><b>TOWN OF KEWASKUM CONTACT</b></p> <p>TIM HAYES, P.E., PLS TOWN ENGINEER 9019 KETTLE MORaine DRIVE KEWASKUM, WI 53040 PHONE: 414-477-9000 EMAIL: TIM@HAYESENGR.COM</p>	<p><b>DESIGN CONTACT</b></p> <p>JULIA ZEHNER, P.E. MSA PROFESSIONAL SERVICES, INC. 1230 SOUTH BOULEVARD BARABOO, WI 53913 PHONE: 608-355-8878 EMAIL: JZEHNER@MSA-PS.COM</p> <p><b>WASHINGTON COUNTY CONTACT</b></p> <p>SCOTT M. SCHMIDT, P.E., PLS WASHINGTON COUNTY ENGINEER/SURVEYOR WASHINGTON COUNTY HIGHWAY COMMISSIONER VEHICLE MAINTENANCE STORAGE FACILITY 900 LAND STREET WEST BEND, WI 53090 PHONE: 262-335-6881 EMAIL: SCOTT.SCHMIDT@CO.WASHINGTON.WI.US</p>	<p><b>GENERAL NOTES</b></p> <p>THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.</p> <p>HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LBS/SY/IN.</p> <p>NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.</p> <p>RIGHT OF WAY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE.</p> <p>EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT APPROXIMATE LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND APPROVED BY THE ENGINEER. MAINTAIN EROSION CONTROL MEASURES UNTIL SUCH A TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY</p> <p>TRAFFIC CONTROL DEVICES AS SHOWN IN THE STANDARD DETAILS DRAWINGS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.</p> <p>DO NOT DRIVE OR STORE EQUIPMENT, OR STORE CONSTRUCTION MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS OR WATERWAYS.</p> <p>CONTACT THE PROJECT ENGINEER AND SCOTT M. SCHMIDT, WASHINGTON COUNTY SURVEYOR, AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.</p>																																																																																																																																																																																																																										
<p><b>DIGGERS HOTLINE</b></p> <p>Dial <b>811</b> or (800)242-8511</p> <p><a href="http://www.DiggersHotline.com">www.DiggersHotline.com</a></p> <p>* DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS</p>																																																																																																																																																																																																																													
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<p>TOTAL PROJECT AREA = <u>0.62</u> ACRES TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = <u>0.49</u> ACRES</p>																																																																																																																																																																																																																													
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### EXISTING TYPICAL SECTION

STA 8+40 - STA 12+15



### FINISHED TYPICAL SECTION

#### NOTES:

\* SALVAGED TOPSOIL (6" MIN.) AND EROSION MAT URBAN CLASS I, TYPE B LIMITS

\*\* SEEDING MIXTURE #20, SEEDING TEMPORARY, & FERTILIZER TYPE B LIMITS

\*\*\* MULCHING

PROJECT NO: 4824-03-72

HWY: LOC STR

COUNTY: WASHINGTON

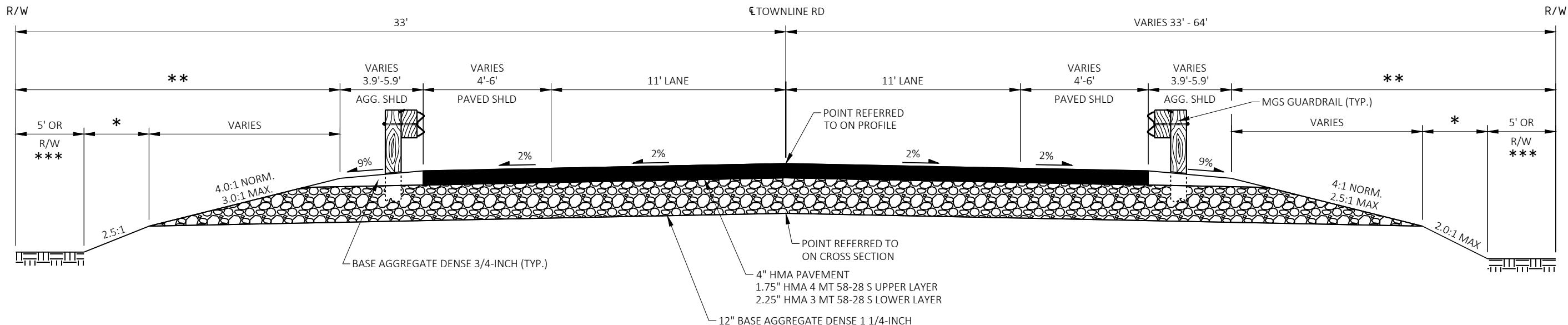
TYPICAL SECTIONS

SHEET

E

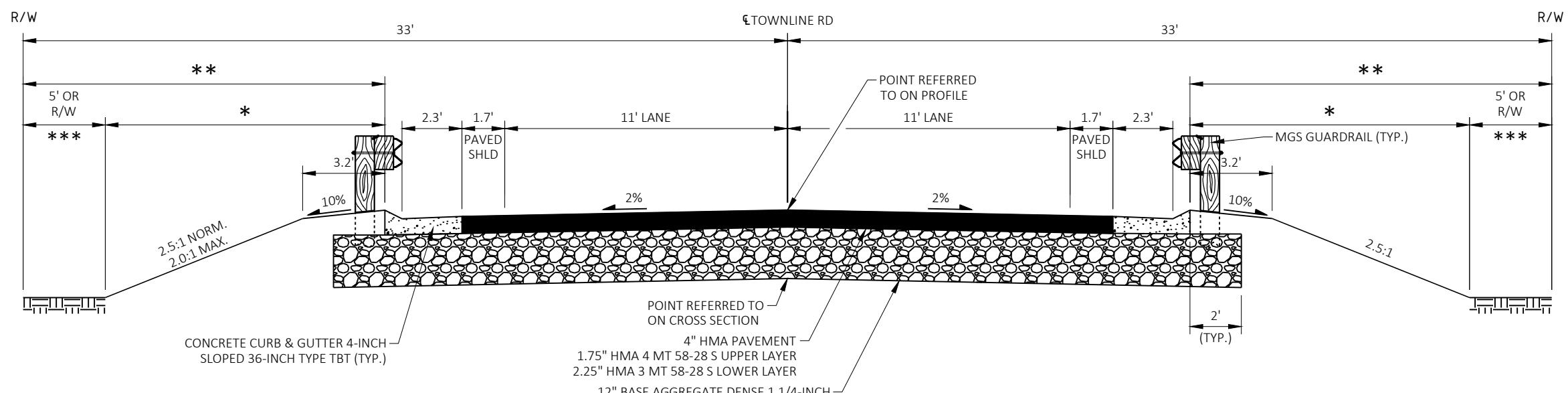
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2



### FINISHED TYPICAL SECTION

STA 8+88 LT - STA 9+19 LT  
STA 8+94 RT - STA 9+25 RT  
STA 10+16 LT - STA 11+06 L  
STA 10+22 RT - STA 11+75 R



## NOTES:

\* SALVAGED TOPSOIL (6" MIN.) AND EROSION MAT URBAN CLASS I, TYPE B, LIMITS

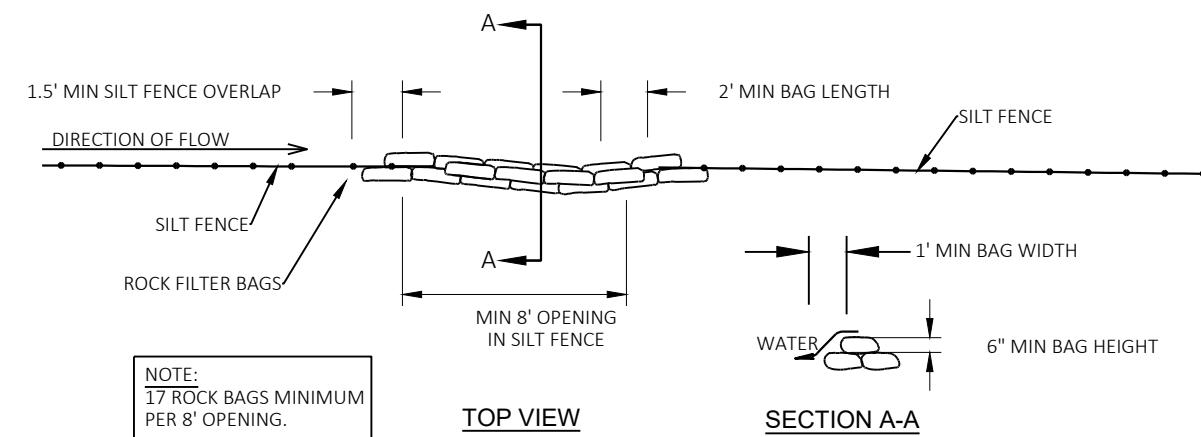
\*\* SEEDING MIXTURE #30, SEEDING TEMPORARY, & FERTILIZER TYPE B LIMITS

## \*\*\* MULCHING

## FINISHED TYPICAL SECTION

STA 9+19 LT - STA 9+78 LT  
STA 9+25 RT - STA 9+84 RT

PROJECT NO: 4824-03-72	HWY: LOC STR	COUNTY: WASHINGTON	TYPICAL SECTIONS		SHEET 4
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### ROCK BAGS USED FOR SILT FENCE RELIEF

INCIDENTAL TO SILT FENCE ITEMS  
INSTALL AT LOW POINTS IN SILT FENCE AND AS DIRECTED BY THE ENGINEER IN THE FIELD

PI STA = 7+00.00  
Y = 216,691.60  
X = 336,287.78

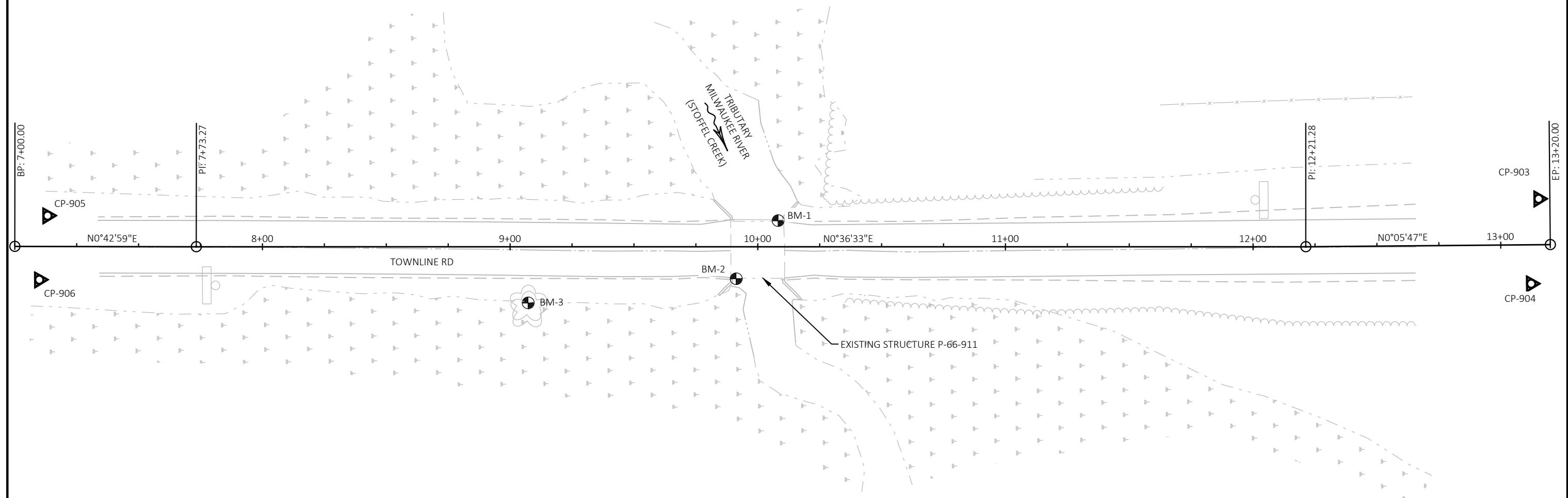
PI STA = 7+73.27  
Y = 216,764.87  
X = 336,288.70

PI STA = 12  
Y = 217,212  
X = 336,293

+21.28 PI STA = 13+20.0  
2.85 Y = 217,311.57  
3.46 X = 336,293.63

2

2



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CONTROL B

CONTROL POINTS				
NO.	STATION, OFFSET	DESCRIPTION	Y	X
903	13+15.45, 18.55' LT	3/4 IRON ROD W/ CAP	217,307.05	336,275.07
904	13+12.15, 15.71' RT	3/4 IRON ROD W/ CAP	217,303.70	336,309.32
905	7+13.20, 12.46' LT	3/4 IRON ROD W/ CAP	216,705.95	336,275.50
906	7+09.91, 13.41' RT	3/4 IRON ROD W/ CAP	216,701.34	336,304.32

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## BENCH MARKS

BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
1	10+08.21	1029.166	CHISELED SQUARE IN WINGWALL, 10.56' LT
2	9+91.25	1029.116	CHISELED SQUARE IN WINGWALL, 12.88' RT
3	9+07.25	1027.820	RR SPIKE IN TREE, 22.65' RT

PROJECT NO: 4824-03-72

HWY: LOC S

COUNTY: WASHINGTON

ALIGNMENT DIAGRAM - SURVEY CONTROL

SHEET

E

FILE NAME : C:\USERS\CGIRLEN\DC\ACCDOS\MSA PROFESSIONAL SVCS\TOWNLINE ROAD BRIDGE REPLACEMENT\PROJECT FILES\CADD\SheetsPlan\027201-AD.DWG  
| LAYOUT NAME - 027201-ad

PLOT DATE : 7/25/2025 10:53 AM

PLOT BY : CONNOR GIBSON

PILOT NAME: \_\_\_\_\_

PLOT SCALE : 1 IN:40 FT

0

## Estimate Of Quantities

4824-03-72

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	2.000	2.000
0004	201.0220	Grubbing	ID	10.000	10.000
0006	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-66-911	EACH	1.000	1.000
0008	205.0100	Excavation Common	CY	374.000	374.000
0010	206.1001	Excavation for Structures Bridges (structure) 01. B-66-151	EACH	1.000	1.000
0012	208.0100	Borrow	CY	66.000	66.000
0014	210.1500	Backfill Structure Type A	TON	406.000	406.000
0016	213.0100	Finishing Roadway (project) 01. 4824-03-72	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	55.000	55.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,037.000	1,037.000
0022	455.0605	Tack Coat	GAL	55.000	55.000
0024	460.2000	Incentive Density HMA Pavement	DOL	160.000	160.000
0026	460.6223	HMA Pavement 3 MT 58-28 S	TON	136.000	136.000
0028	460.6224	HMA Pavement 4 MT 58-28 S	TON	106.000	106.000
0030	502.0100	Concrete Masonry Bridges	CY	152.000	152.000
0032	502.3200	Protective Surface Treatment	SY	162.000	162.000
0034	502.3210	Pigmented Surface Sealer	SY	38.000	38.000
0036	505.0400	Bar Steel Reinforcement HS Structures	LB	4,840.000	4,840.000
0038	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	24,000.000	24,000.000
0040	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0042	550.0020	Pre-Boring Rock or Consolidated Materials	LF	280.000	280.000
0044	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	350.000	350.000
0046	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	118.000	118.000
0048	602.3010	Concrete Surface Drains	CY	2.000	2.000
0050	606.0200	Riprap Medium	CY	6.000	6.000
0052	606.0300	Riprap Heavy	CY	103.000	103.000
0054	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	150.000	150.000
0056	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0058	614.2300	MGS Guardrail 3	LF	62.500	62.500
0060	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0062	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0064	618.0100	Maintenance and Repair of Haul Roads (project) 01. 4824-03-72	EACH	1.000	1.000
0066	619.1000	Mobilization	EACH	1.000	1.000
0068	624.0100	Water	MGAL	19.000	19.000
0070	625.0500	Salvaged Topsoil	SY	582.000	582.000
0072	627.0200	Mulching	SY	312.000	312.000
0074	628.1504	Silt Fence	LF	942.000	942.000
0076	628.1520	Silt Fence Maintenance	LF	942.000	942.000
0078	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0080	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0082	628.2008	Erosion Mat Urban Class I Type B	SY	582.000	582.000
0084	628.6005	Turbidity Barriers	SY	189.000	189.000
0086	629.0210	Fertilizer Type B	CWT	0.500	0.500
0088	630.0120	Seeding Mixture No. 20	LB	40.200	40.200
0090	630.0200	Seeding Temporary	LB	24.300	24.300
0092	630.0500	Seed Water	MGAL	20.300	20.300
0094	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0096	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	2.000	2.000
0098	637.2230	Signs Type II Reflective F	SF	26.000	26.000

## Estimate Of Quantities

4824-03-72

Line	Item	Item Description	Unit	Total	Qty
0100	642.5001	Field Office Type B	EACH	1.000	1.000
0102	643.0420	Traffic Control Barricades Type III	DAY	1,360.000	1,360.000
0104	643.0705	Traffic Control Warning Lights Type A	DAY	2,380.000	2,380.000
0106	643.0900	Traffic Control Signs	DAY	1,530.000	1,530.000
0108	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0110	643.5000	Traffic Control	EACH	1.000	1.000
0112	645.0111	Geotextile Type DF Schedule A	SY	96.000	96.000
0114	645.0120	Geotextile Type HR	SY	231.000	231.000
0116	650.4500	Construction Staking Subgrade	LF	337.000	337.000
0118	650.5000	Construction Staking Base	LF	337.000	337.000
0120	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	118.000	118.000
0122	650.6501	Construction Staking Structure Layout (structure) 01. B-61-0151	EACH	1.000	1.000
0124	650.9911	Construction Staking Supplemental Control (project) 01. 4824-03-72	EACH	1.000	1.000
0126	650.9920	Construction Staking Slope Stakes	LF	337.000	337.000
0128	690.0150	Sawing Asphalt	LF	44.000	44.000
0130	715.0502	Incentive Strength Concrete Structures	DOL	912.000	912.000
0132	SPV.0060	Special 01. Salvage Signs	EACH	6.000	6.000
0134	SPV.0195	Special 01. Select Crushed Material for Travel Corridor	TON	49.000	49.000

EARTHWORK SUMMARY

<u>GRUBBING</u>						
				201.0205 GRUBBING	201.0220 GRUBBING	
CATEGORY	STATION	TO	STATION	LOCATION	STA	ID
0010	-	9+07	RT		---	6
0010	-	9+08	RT		---	4
0010	10+25	-	12+15	LT/RT	2	---
				TOTAL 0010	2	10

CATEGORY	STATION	TO	STATION	LOCATION	205.0100 EXCAVATION COMMON	208.0100 EXPANDED FILL FILL WASTE BORROW			
					CY	CY(1)	CY(1)(2)	CY(1)	CY
0010	8+40	-	9+79	TOWNLINE RD	195	115	151	44	-44
0010	10+21	-	12+15	TOWNLINE RD	179	148	193	-14	14
0010	8+40	-	12+15	UNUSABLE PAVEMENT	---	---	---	---	96
				TOTAL 0010	374				66

(1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY.

(2) - FILL EXPANSION 30%

(3) - EXISTING PAVEMENT IS INCLUDED IN EXCAVATION COMMON TOTALS. SEE EARTHWORK TABLE.

BASE AGGREGATE ITEMS

				305.0110	305.0120	624.0100
				BASE	AGGREGATE	
				AGGREGATE	DENSE 1 1/4-	
CATEGORY	STATION	TO	STATION	LOCATION	TON	TON
0010	8+40	-	9+79	TOWNLINE RD	---	411
0010	10+21	-	12+15	TOWNLINE RD	---	626
0010	8+40	-	9+79	LT/RT	16	---
0010	10+21	-	12+15	LT/RT	39	---
				TOTAL 0010	55	1,037
						19

ASPHALT ITEMS

				455.0605	460.6223	460.6224
				HMA PAVEMENT	HMA PAVEMENT	
				TACK COAT	3 MT 58-28 S	4 MT 58-28 S
CATEGORY	STATION	TO	STATION	LOCATION	GAL	TON
0010	8+40	-	9+80	TOWNLINE RD	22	55
0010	10+19	-	12+15	TOWNLINE RD	33	81
				TOTAL 0010	55	136
						106

CONCRETE ITEMS

				601.0588	602.3010	650.5500
				CONCRETE CURB & GUTTER 4-	CONSTRUCTION STAKING CURB	
				INCH SLOPED 36-	CONCRETE GUTTER AND	
CATEGORY	STATION	TO	STATION	LOCATION	LF	CY
0010	9+19	-	9+78	LT	59	1
0010	9+25	-	9+83	RT	59	1
				TOTAL 0010	118	2
						118

RIPRAP ITEMS

				606.0200	645.0120	
				GEOTEXTILE TYPE	RIPRAP MEDIUM	
CATEGORY	STATION	LOCATION		CY	HR	
0010	9+35	LT		3	11	
0010	9+40	RT		3	11	
				TOTAL 0010	6	22

GUARDRAIL ITEMS

				614.2300	614.2500	614.2610
				MGS GUARDRAIL	BEAM	
				3	TRANSITION	MGS GUARDRAIL
CATEGORY	STATION	TO	STATION	LOCATION	LF	EACH
0010	8+88	-	9+80	LT	---	39.4
0010	8+94	-	9+86	RT	---	39.4
0010	10+14	-	11+07	LT	---	39.4
0010	10+20	-	11+75	RT	62.5	39.4
				TOTAL 0010	62.5	157.6
						4

RESTORATION ITEMS

	625.0500	627.0200	628.2008 EROSION MAT	629.0210	630.0120	630.0200	630.0500
	SALVAGED TOPSOIL	MULCHING SY	URBAN CLASS I TYPE B SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEEDING TEMPORARY LB	SEED WATER MGAL
CATEGORY	STATION	TO	STATION	LOCATION			
0010	8+40	-	9+78	LT	116	43	0.1
0010	8+40	-	9+84	RT	114	41	0.1
0010	10+18	-	12+15	LT	82	99	0.1
0010	10+26	-	12+15	RT	153	66	0.1
0010	---	-	---	UNDISTRIBUTED	117	63	0.1
	TOTAL 0010				582	312	0.5
					40.2	24.3	20.3

EROSION CONTROL ITEMS

					628.1504	628.1520	628.6005 TURBIDITY BARRIERS
					SILT FENCE LF	MAINTENANCE LF	
CATEGORY	STATION	TO	STATION	LOCATION			
0010	8+20	-	9+68	LT	151	151	---
0010	8+25	-	9+95	RT	174	174	---
0010	9+67	-	10+00	MILWAUKEE RIVER TRIBUTARY	---	---	71
0010	9+99	-	10+26	MILWAUKEE RIVER TRIBUTARY	---	---	80
0010	10+26	-	12+34	LT	211	211	---
0010	10+22	-	12+34	RT	217	217	---
0010	---	-	---	UNDISTRIBUTED	189	189	38
	TOTAL 0010				942	942	189

TOTAL 0010 942 942 189

SIGNING ITEMSMOBILIZATIONS EROSION CONTROL

	628.1905	628.1910		
	MOBILIZATIONS	MOBILIZATIONS	EMERGENCY	
	MOBILIZATIONS	EROSION	EROSION	
	EROSION	CONTROL	CONTROL	
CATEGORY	LOCATION	EACH	EACH	
0010	PROJECT4824-03-72	4	3	
	TOTAL 0010	4	3	

634.0612 634.0614 637.2230 SPV.0060.01

	POSTS WOOD 4X6-INCH X 12-	POSTS WOOD 4X6-INCH X 14-		
	FT EACH	FT EACH	SIGNS TYPE II REFLECTIVE F SF	SPECIAL (01. SALVAGE SIGNS) EACH
CATEGORY	STATION	TO	STATION	LOCATION
0010	---	-	7+81	RT
0010	9+88	-	10+11	LT/RT
0010	9+77	-	10+23	LT/RT
0010	---	-	12+00	LT
	TOTAL 0010		4	2
			26	6

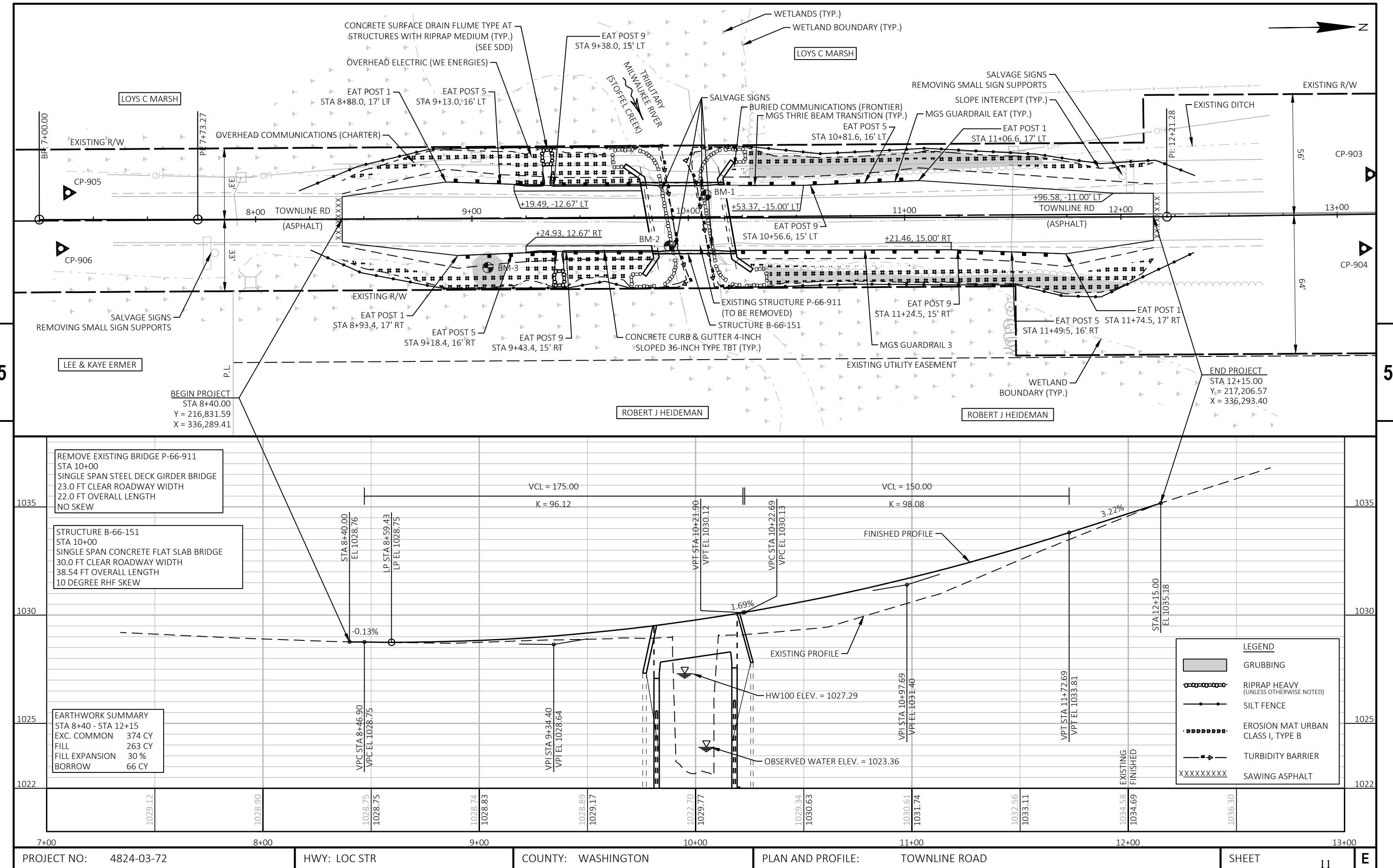
CONSTRUCTION STAKING ITEMS

	643.0420	643.0705			643.0900	643.1050	
	TRAFFIC CONTROL BARRICADES	TRAFFIC CONTROL BARRICADES	TRAFFIC CONTROL WARNING	TRAFFIC CONTROL WARNING	TRAFFIC CONTROL SIGNS	TRAFFIC CONTROL SIGNS	
	TYPE III BARRICADES	TYPE III DAY	LIGHTS TYPE A	LIGHTS TYPE A	TRAFFIC CONTROL SIGNS DAY	TRAFFIC CONTROL SIGNS DAY	
CATEGORY	LOCATION	DAY	EACH	EACH	EACH	EACH	
0010	NORTH LIMITS	7	--	--	--	1	7
0010	SOUTH LIMITS	7	--	--	--	1	7
0010	NORTH APPROACH / CTH H	85	7	595	14	935	--
0010	SOUTH APPROACH	85	9	765	14	595	--
	TOTAL 0010		1,360		2,380		14

SAWING ASPHALT

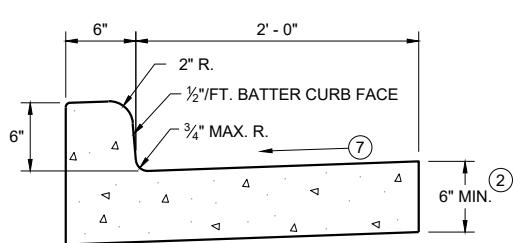
	650.4500	650.5000	650.9920
	CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING SLOPE
	LF	LF	LF
CATEGORY	STATION	TO	STATION
0010	8+40	-	9+81
0010	10+19	-	12+15
	TOTAL 0010		337
			337
			337

	690.0150	SAWING ASPHALT
	CATEGORY	STATION
	LOCATION	LF
0010	8+40	TOWNLINE RD
0010	12+15	TOWNLINE RD
	TOTAL 0010	
		44

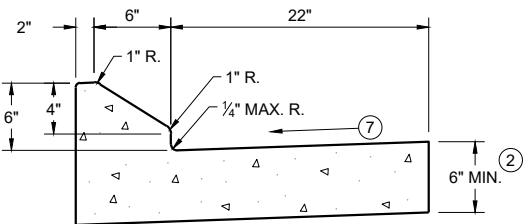


## Standard Detail Drawing List

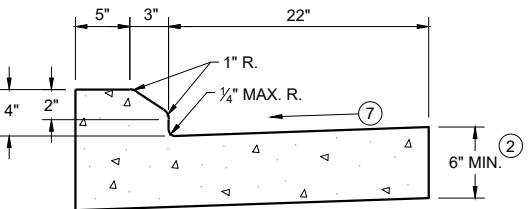
08D01-24A	CONCRETE CURB & GUTTER
08D01-24B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-08A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



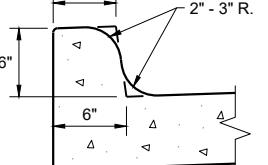
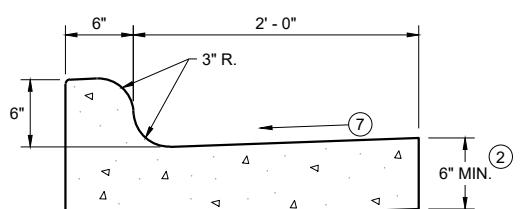
TYPES A (1) &amp; D



6" SLOPED CURB TYPES G (1) &amp; J

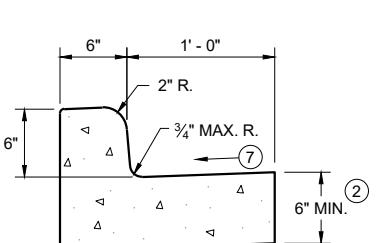


4" SLOPED CURB TYPES G (1) &amp; J

TYPES K (1) & L  
(OPTIONAL CURB SHAPE)

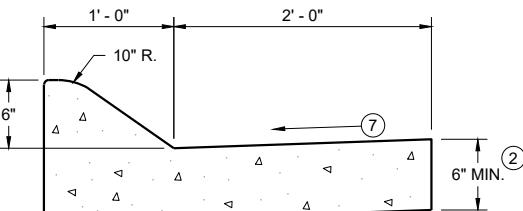
TYPES K (1) &amp; L

CONCRETE CURB AND GUTTER 30"

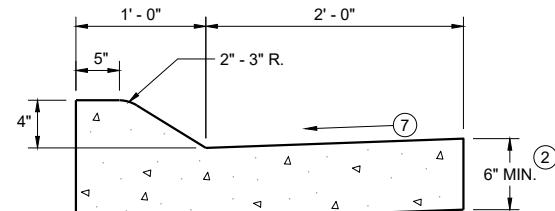


TYPES A (1) &amp; D

## CONCRETE CURB AND GUTTER 18"

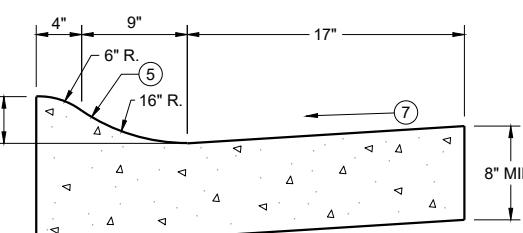


6" SLOPED CURB TYPES A (1) &amp; D

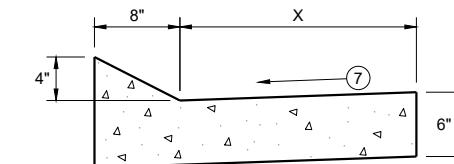


4" SLOPED CURB TYPES A (1) &amp; D

## CONCRETE CURB AND GUTTER 36"

4" SLOPED CURB TYPES R (1) & T  
CONCRETE CURB AND GUTTER 30"

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

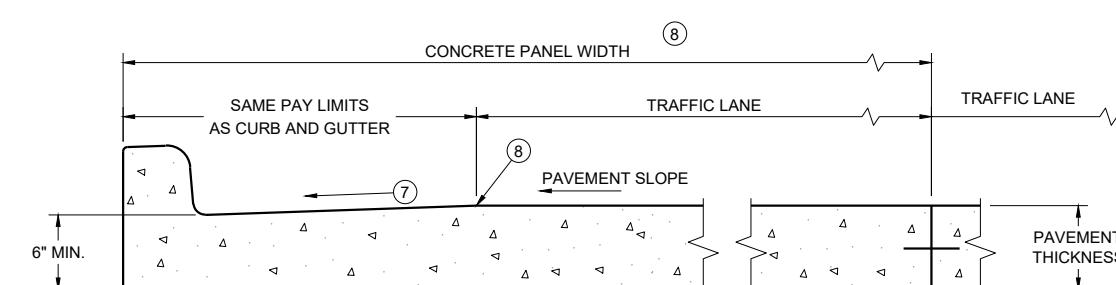


TYPES TBT &amp; TBTT (1)

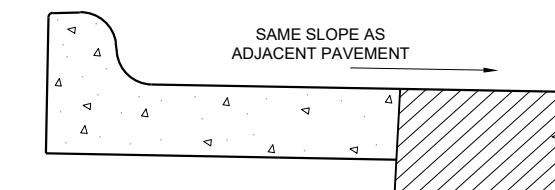
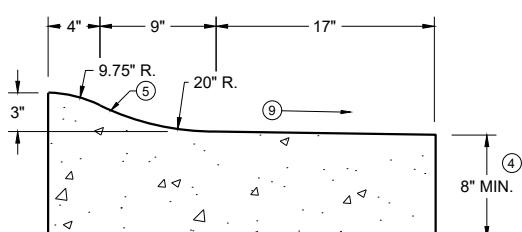
## CONCRETE CURB AND GUTTER

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 GUTTER  
(TYPICAL FOR ALL CURB & GUTTER TYPES) (6)

3" SLOPED CURB TYPES R (1) &amp; T

## CONCRETE CURB AND GUTTER

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

## GENERAL NOTES

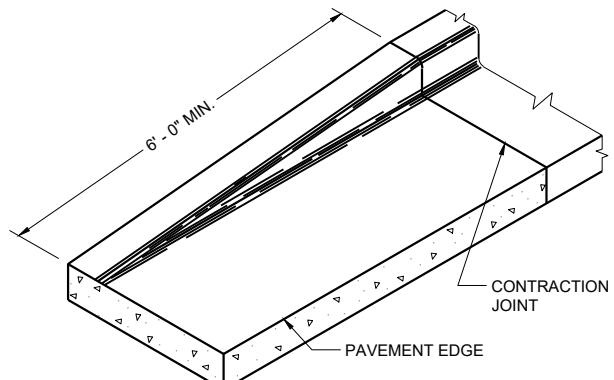
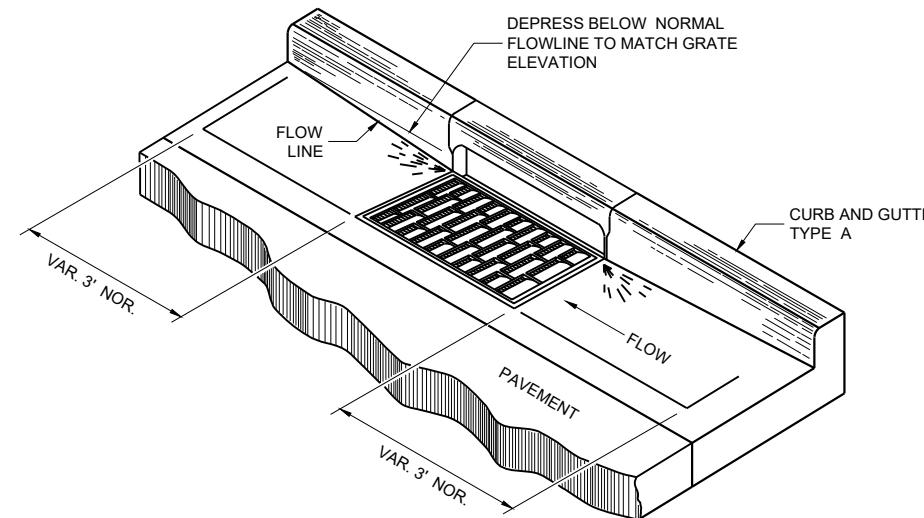
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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 SLOPE TO BE REVERSE SLOPE MATCHING THE SLOPE OF THE PAVEMENT AND THE CIRCULATORY ROADWAY

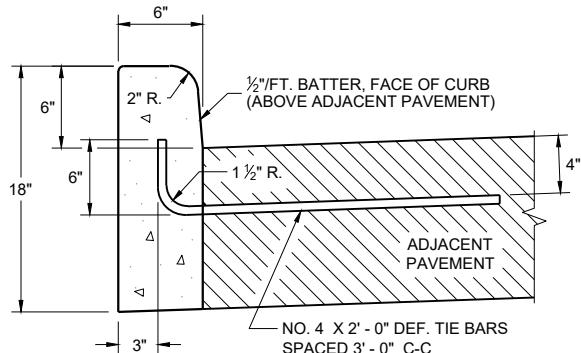
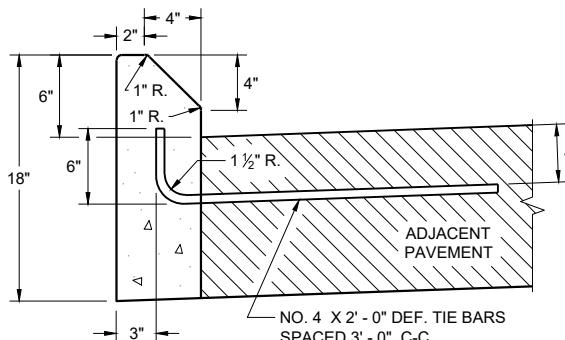
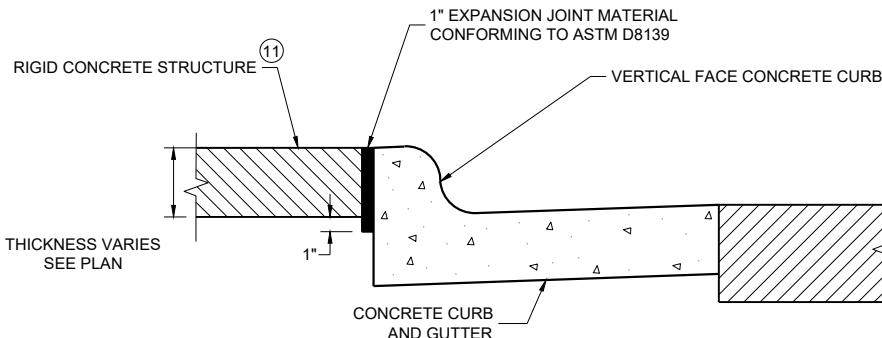
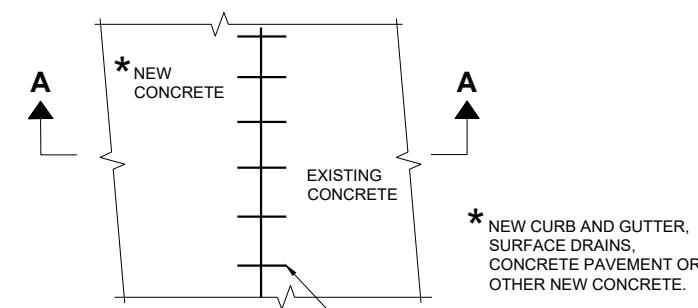
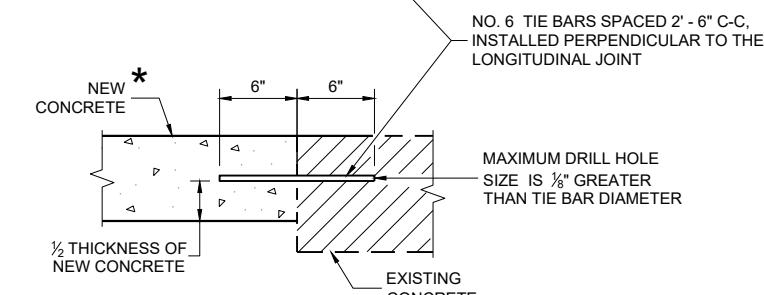
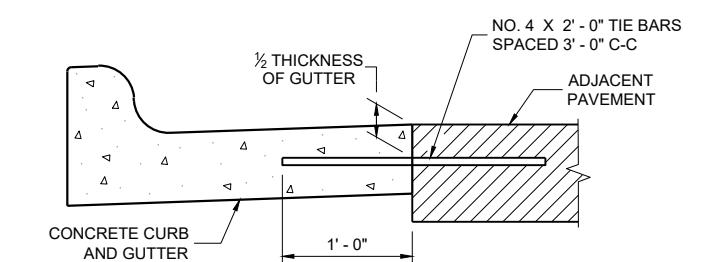
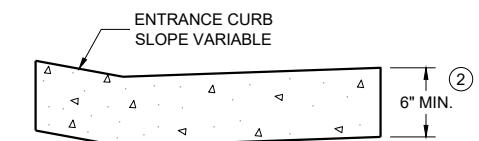
**END SECTION CURB AND GUTTER****GENERAL NOTES**

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.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.
- ⑪ PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANIS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.

**TYPES A (1) & D****CONCRETE CURB****EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE (11)****PLAN VIEW****SECTION A - A**  
**TIE BARS DRILLED INTO EXISTING PAVEMENT****TYPICAL TIE BAR LOCATION****DRIVEWAY ENTRANCE CURB**

(WHEN DIRECTED BY THE ENGINEER)

**CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS**

 STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

 APPROVED  
 February 2025  
 DATE  
 /S/ Rodney Taylor  
 FHWA  
 ROADWAY STANDARDS DEVELOPMENT  
 UNIT SUPERVISOR

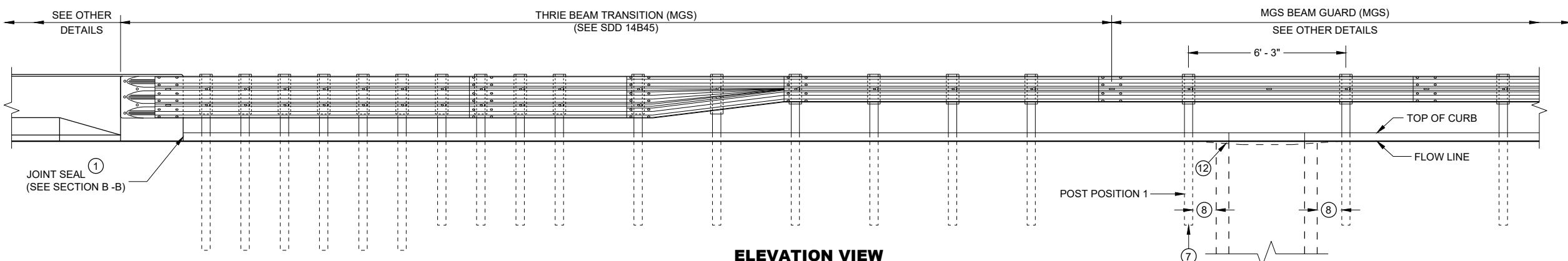
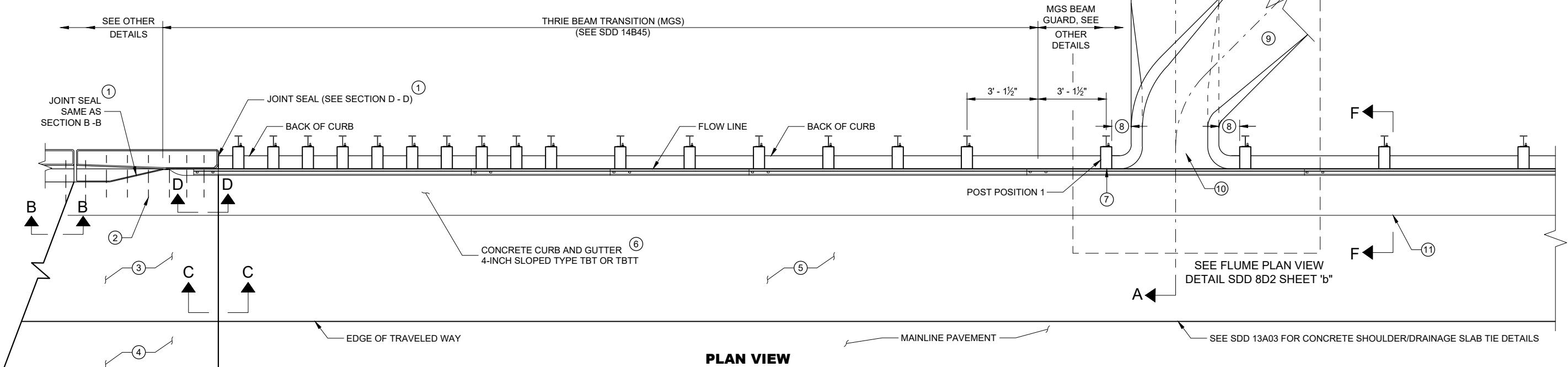
## GENERAL NOTES

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.

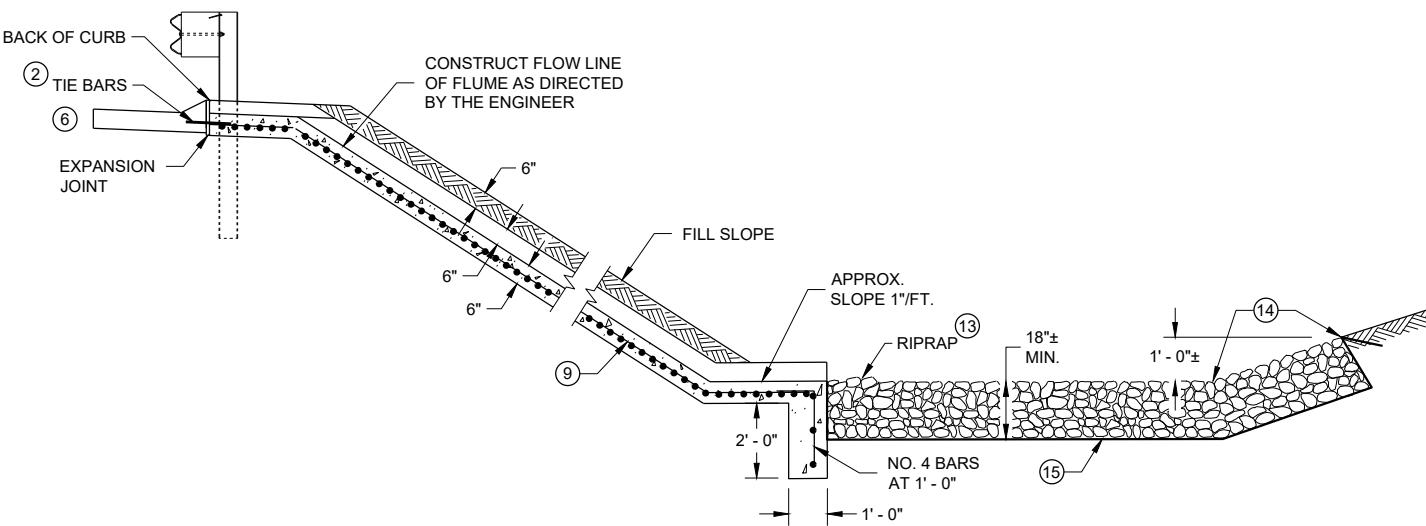
- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH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

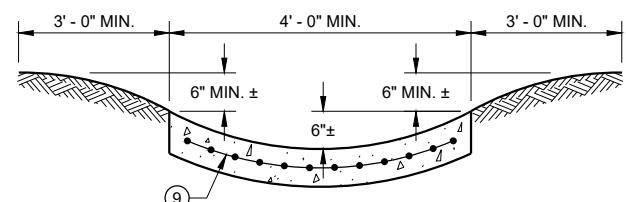


**CONCRETE SURFACE  
DRAINS FLUME TYPE  
AT STRUCTURES**

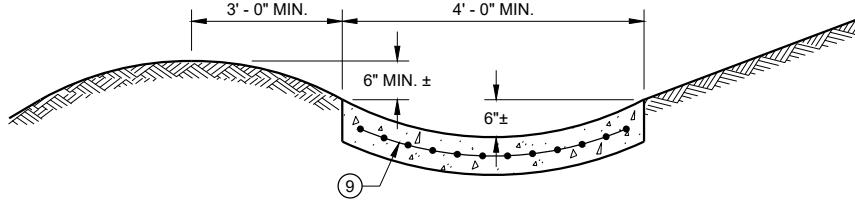
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



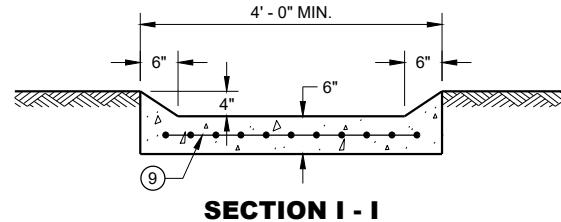
SECTION A - A



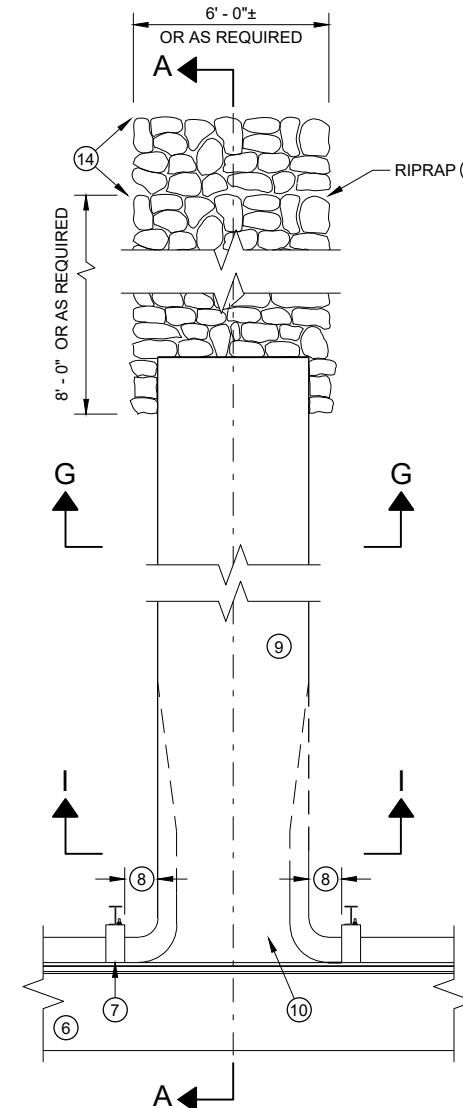
SECTION G - G



SECTION H - H



SECTION I - I

PLAN VIEW  
PERPENDICULAR FLUME

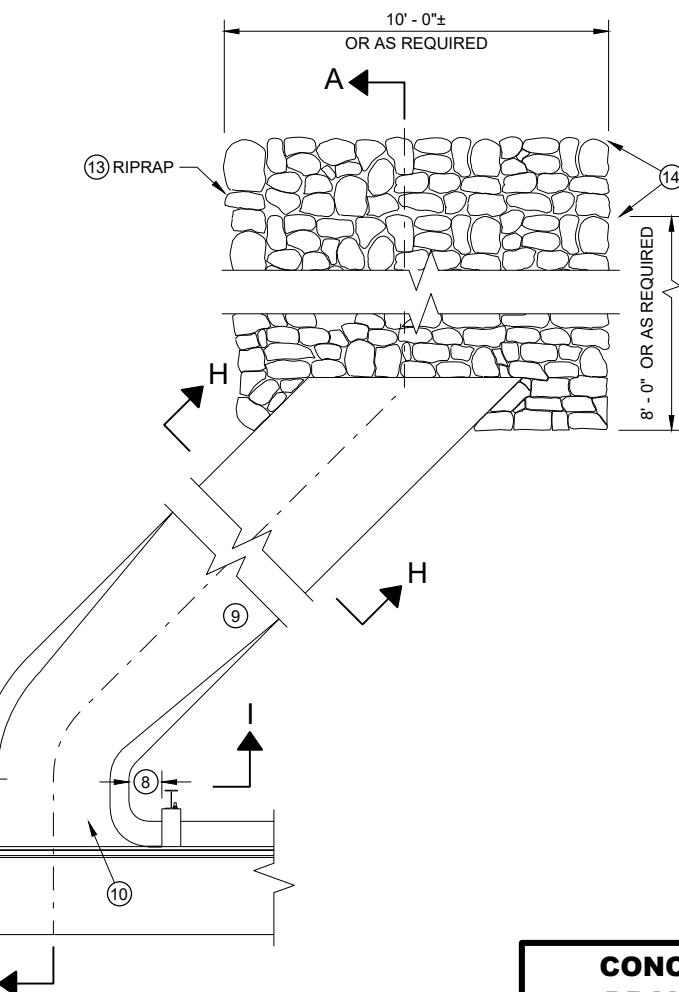
## GENERAL NOTES

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.

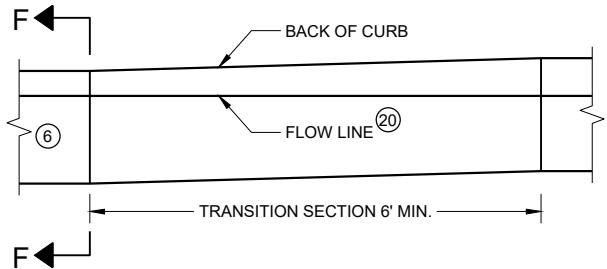
- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH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

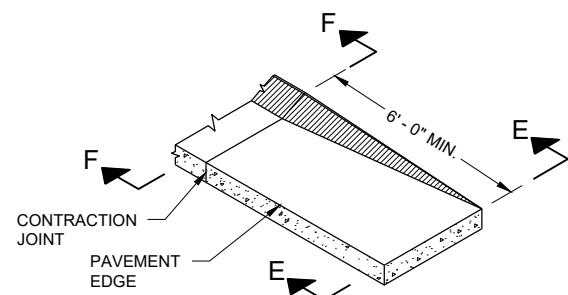
PLAN VIEW  
SKEWED FLUME

**CONCRETE SURFACE  
DRAINS FLUME TYPE  
AT STRUCTURES**

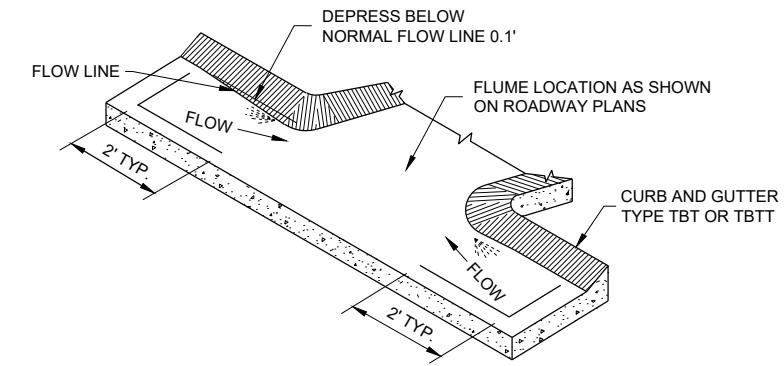
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



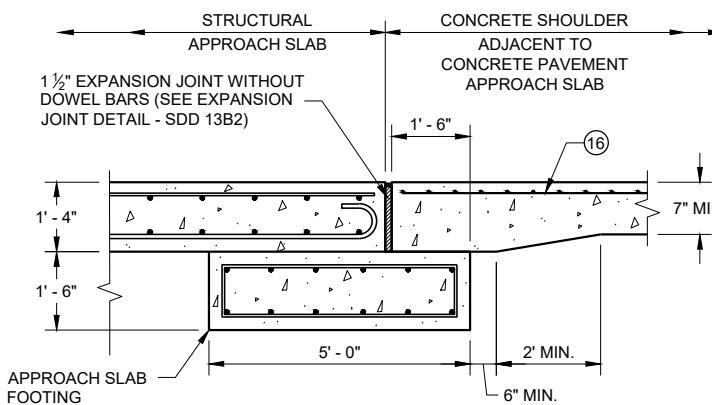
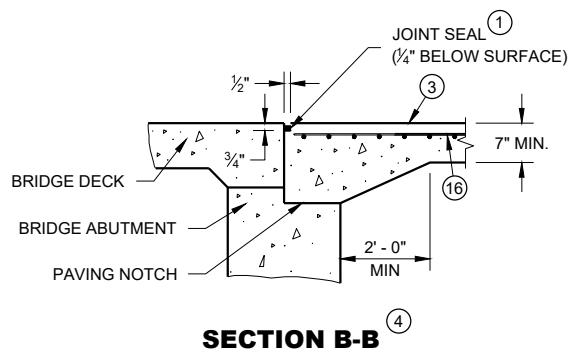
**CURB AND GUTTER TRANSITION SECTION  
CONCRETE CURB AND GUTTER 4-INCH SLOPED  
36 INCH TYPE TBT OR TBTT**



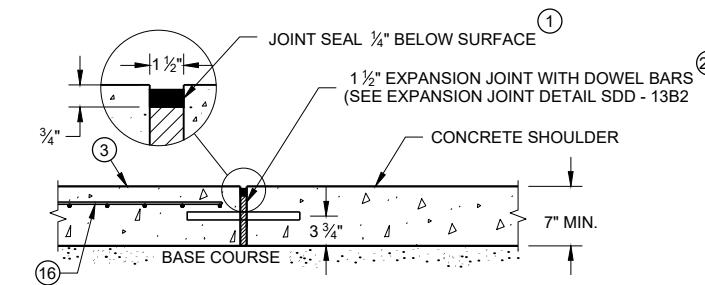
**CURB AND GUTTER END SECTION  
CONCRETE CURB AND GUTTER 4-INCH SLOPED  
36 INCH TYPE TBT OR TBTT**



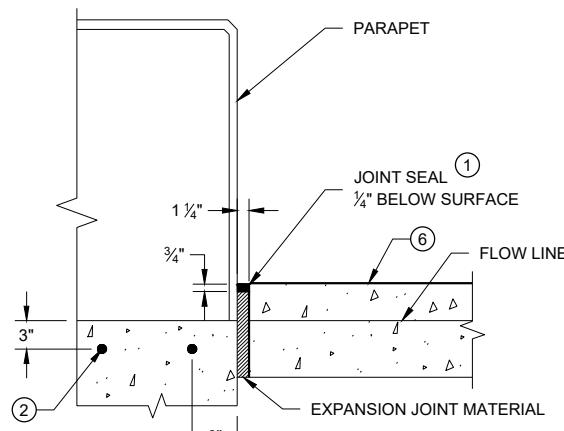
**CURB AND GUTTER FLOW LINE DEPRESSION  
AT FLUMES CONCRETE CURB AND GUTTER  
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



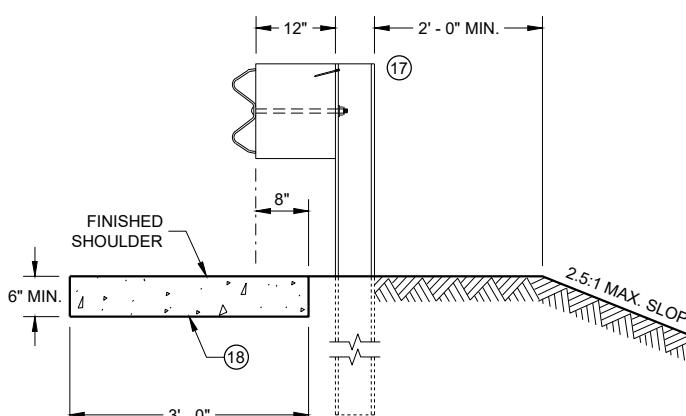
**SECTION C - C  
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL  
APPROACH SLAB AND CONCRETE APPROACH SLAB**



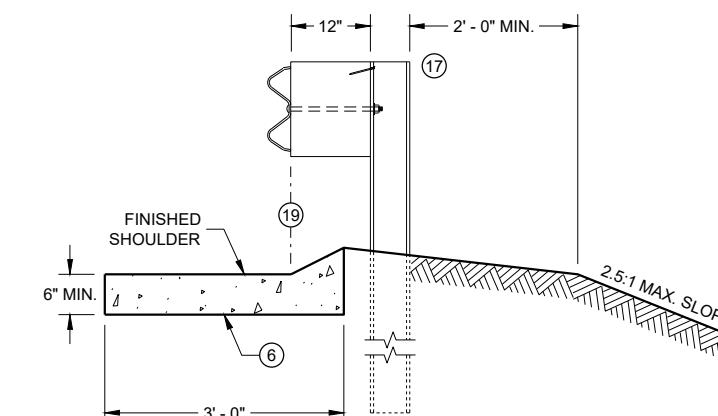
**SECTION C - C  
JOINT DETAIL FOR BRIDGE APPROACH  
WITH CONCRETE SHOULDER**



**SECTION D - D**



**SECTION E - E**



**SECTION F - F**

## 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.

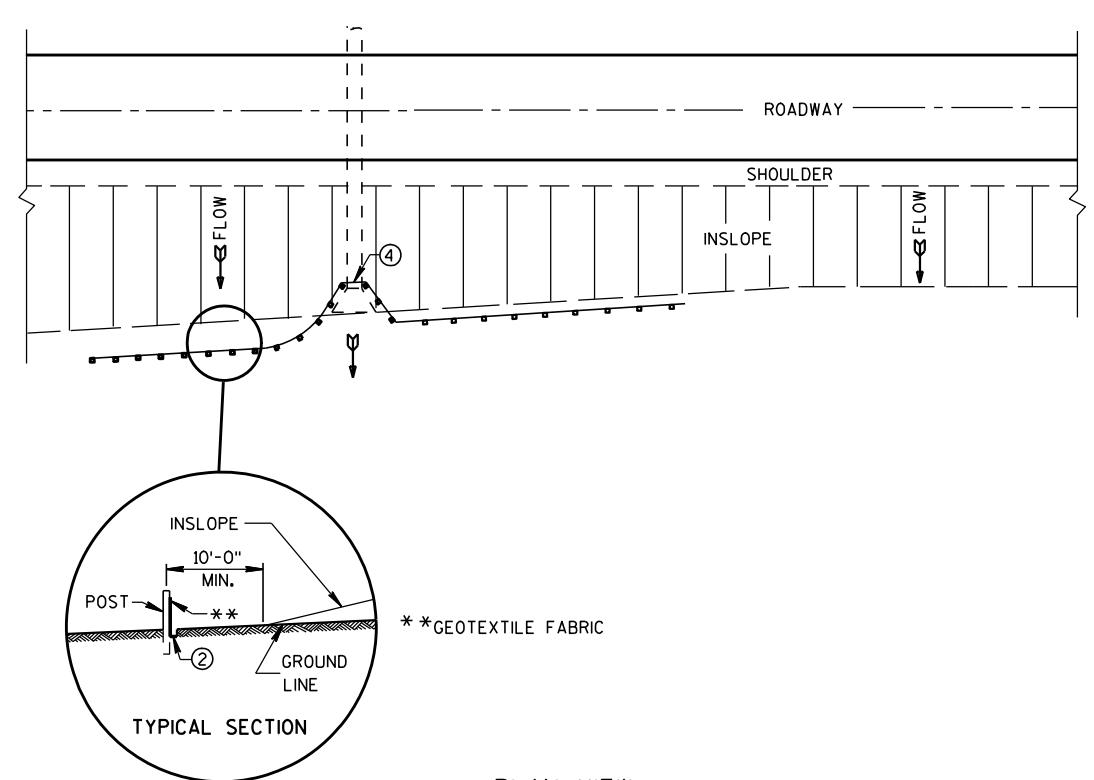
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- 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 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.

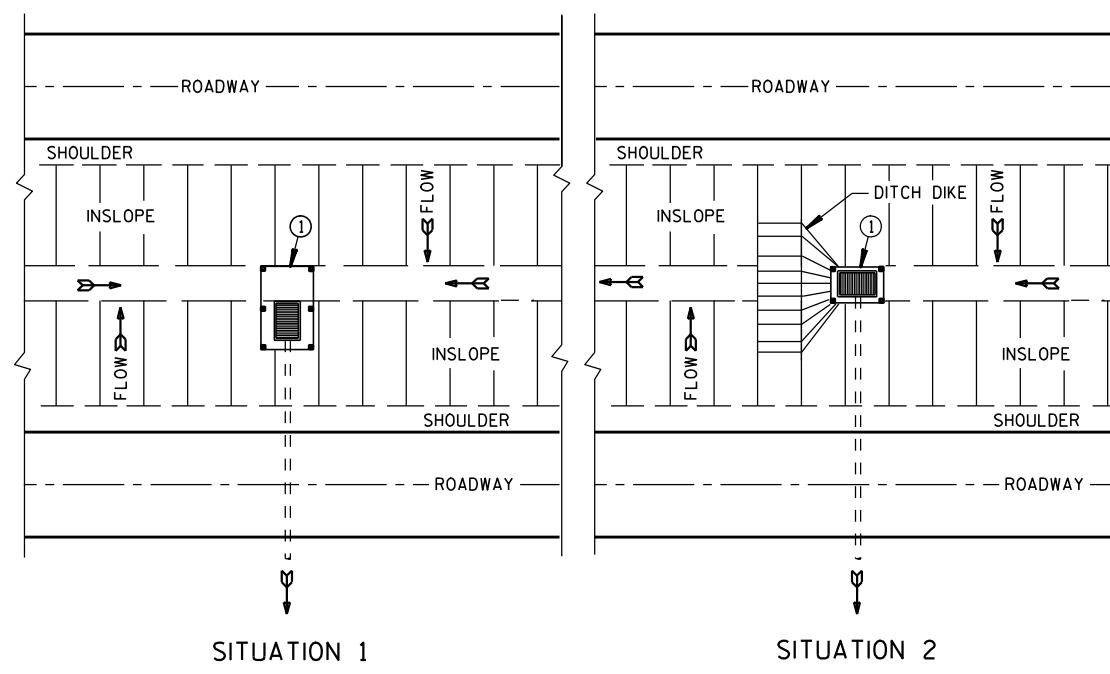
## CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

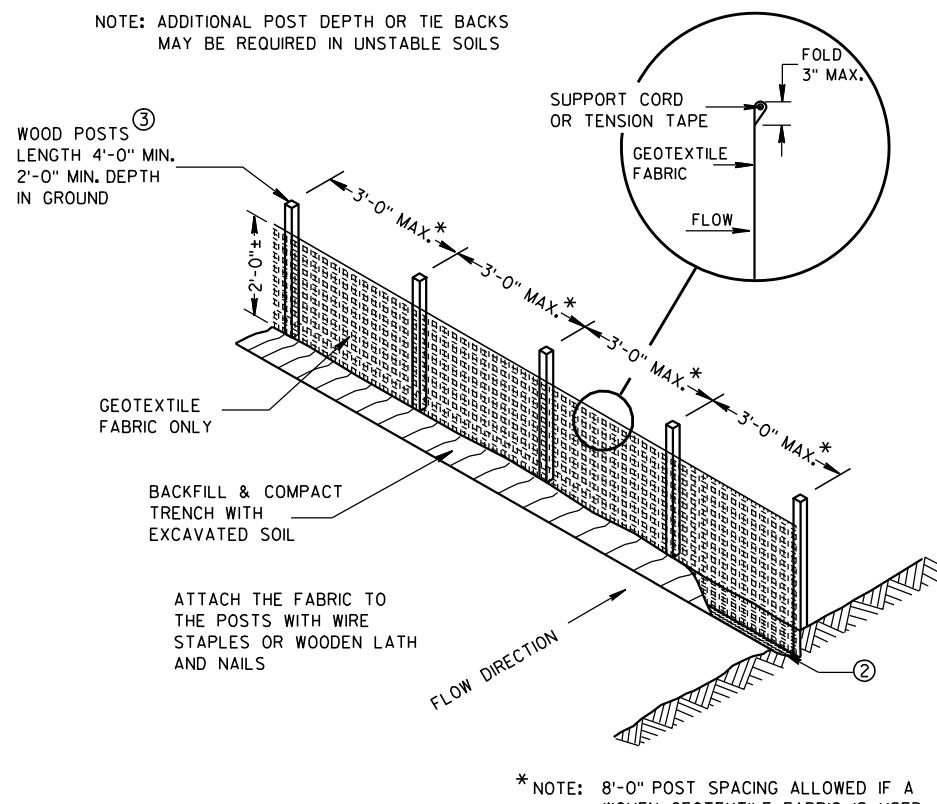
APPROVED  
May 2023 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVE  
ENGINEER FHWA 17



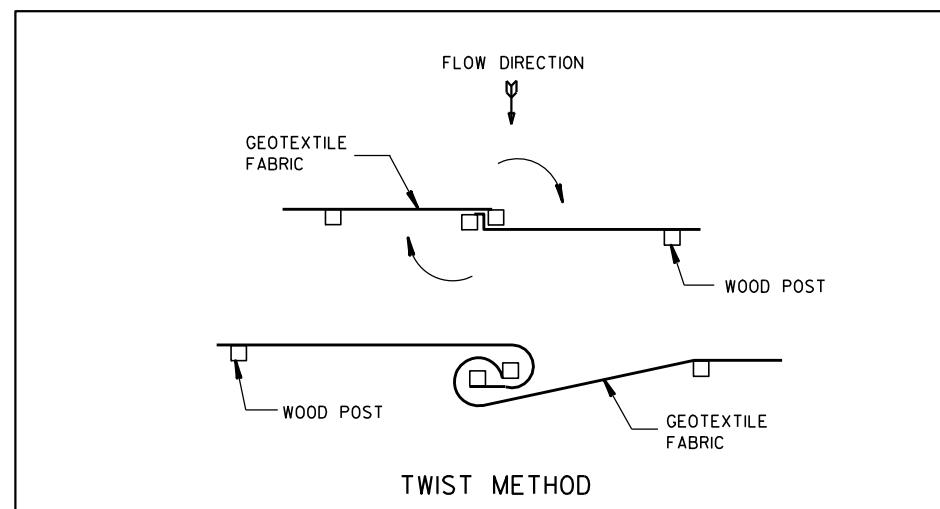
PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE



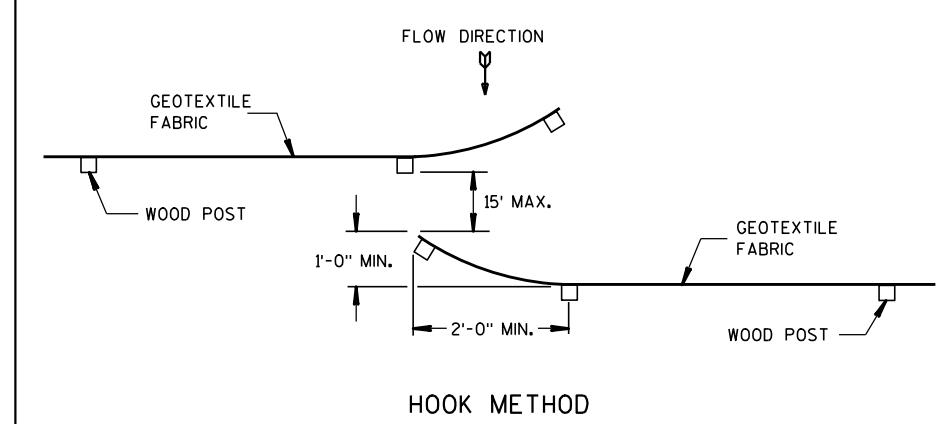
### SILT FENCE AT MEDIAN SURFACE DRAINS



SILT FENCE



TWIST METHOD

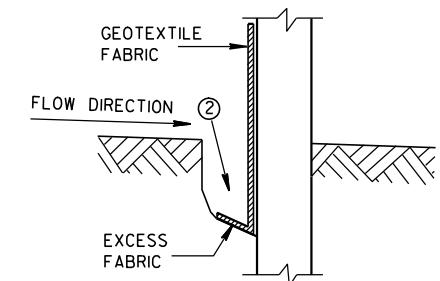


JOINING TWO LENGTHS OF SILT FENCE<sup>⑤</sup>

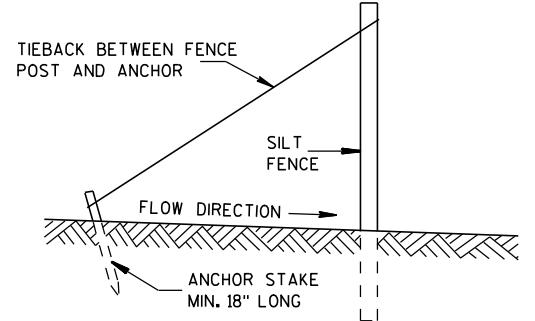
### GENERAL NOTES

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 1/8" X 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.

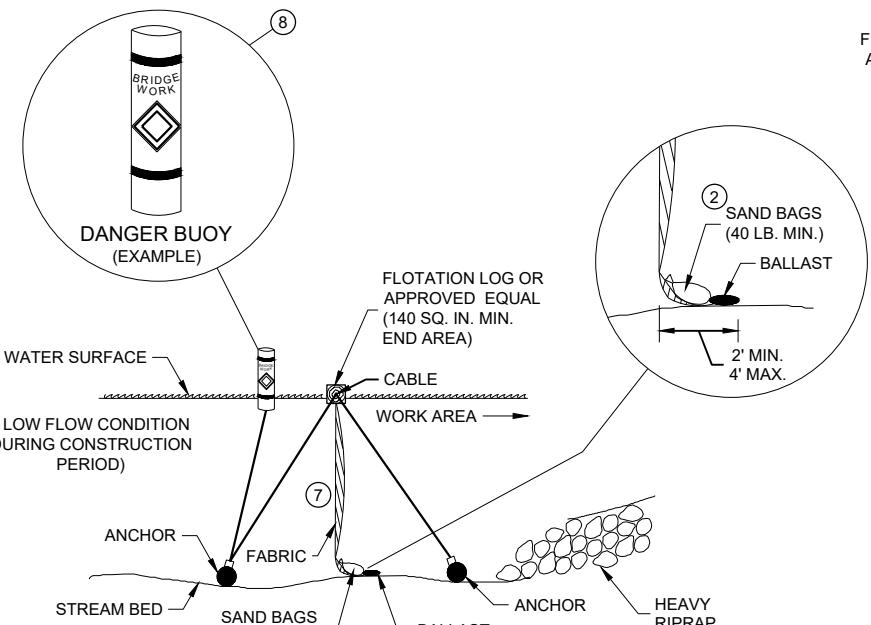


TRENCH DETAIL

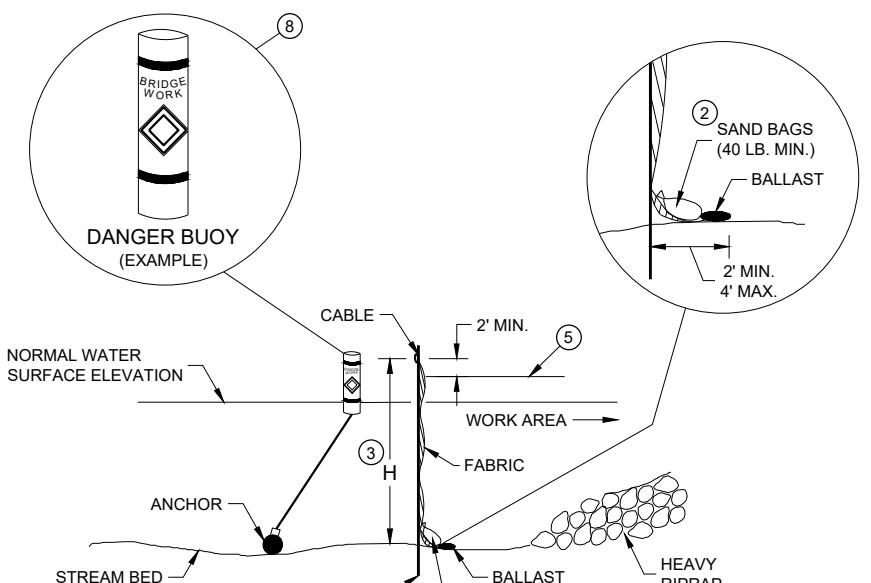


SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

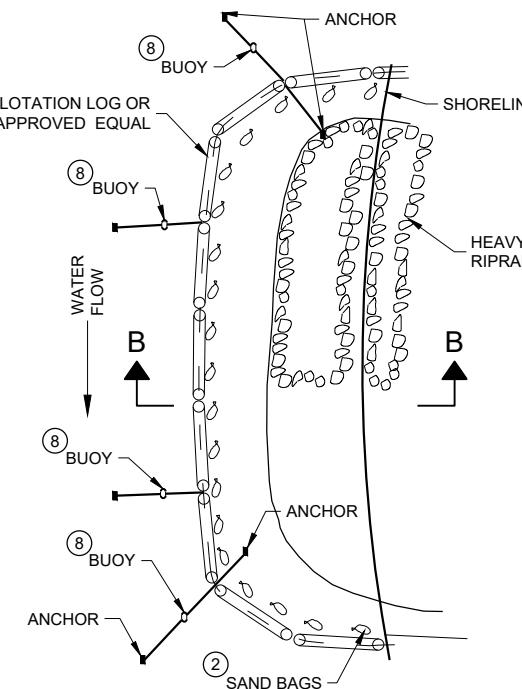
SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	/S/ Beth Cannon
4-29-05	DATE
CHIEF ROADWAY DEVELOP 18	
FHWA	



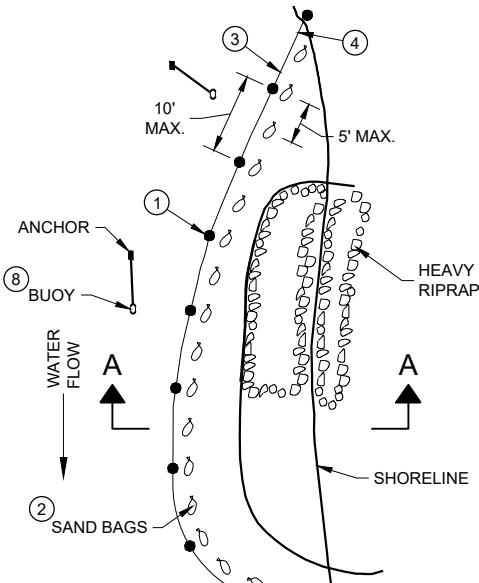
SECTION B - B

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


SECTION A - A

**TURBIDITY BARRIER - STANDARD POST INSTALLATION**
**TURBIDITY BARRIER PLACEMENT DETAILS**


PLAN VIEW



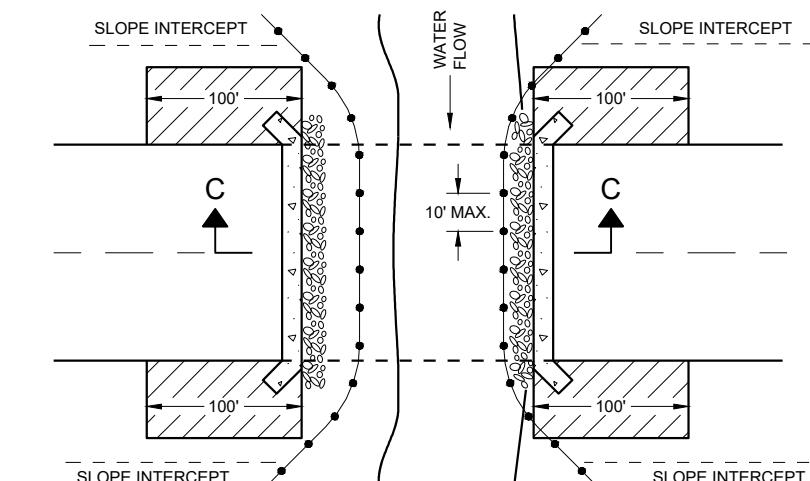
PLAN VIEW

**GENERAL NOTES**

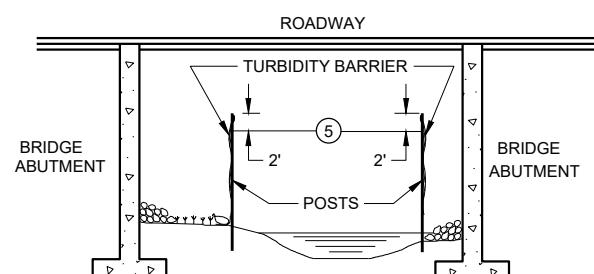
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



SECTION C - C

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

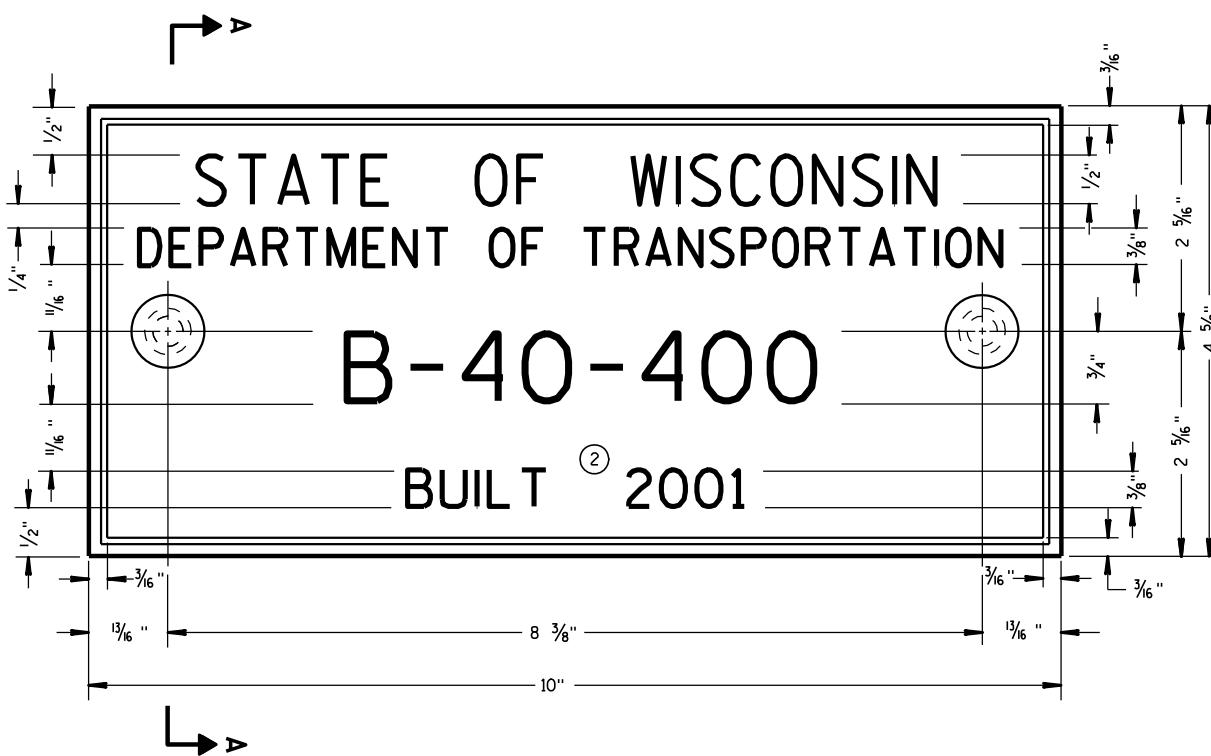
APPROVED  
6/4/02 /S/ Beth Cannestra  
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER  
FHWA 19

## 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.

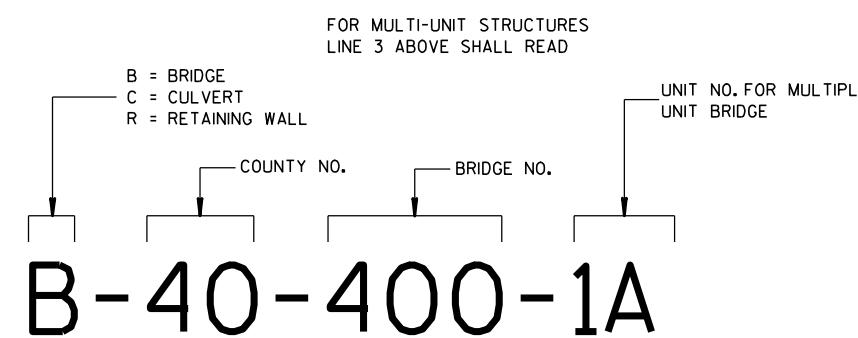
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- 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.



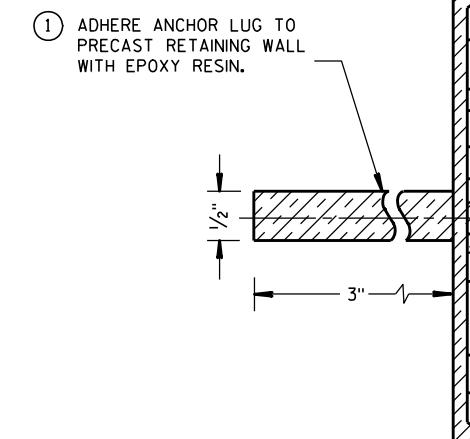
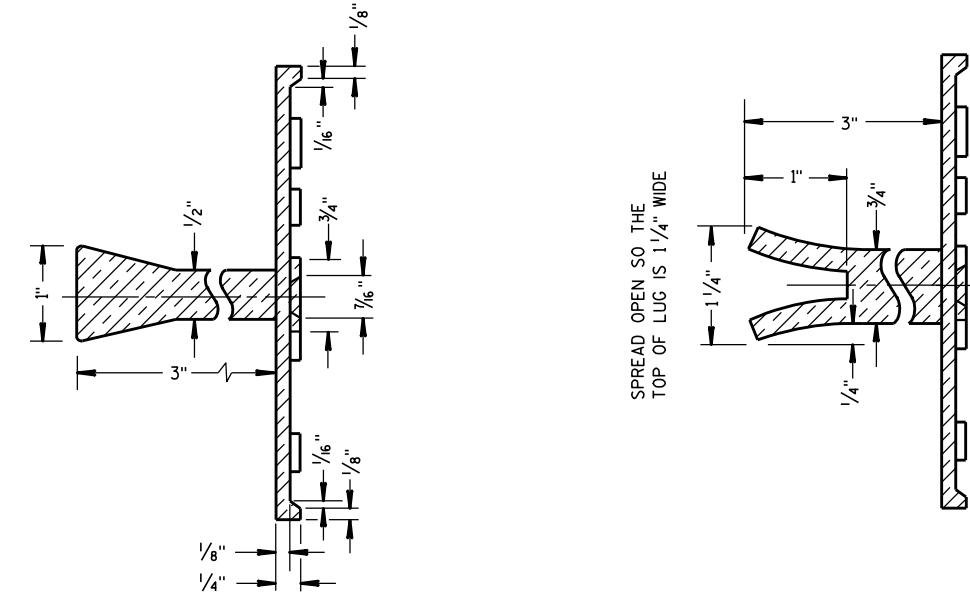
**TYPICAL NAME PLATE**  
(BRIDGES, CULVERTS, AND RETAINING WALLS)

6



**NUMBERING DESIGNATION**  
**MULTI-UNIT STRUCTURES**

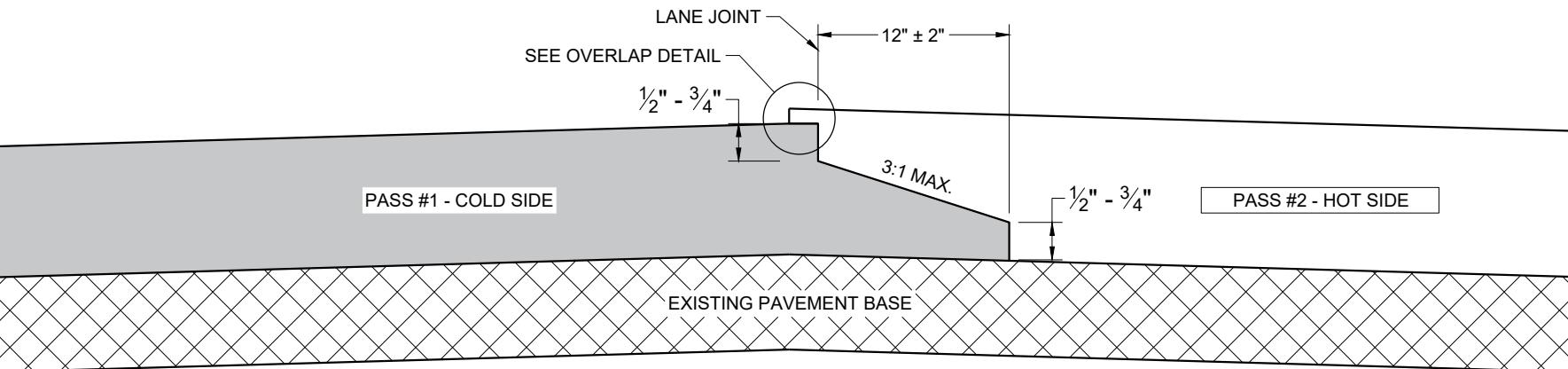
S.D.D. 12 A 3-10



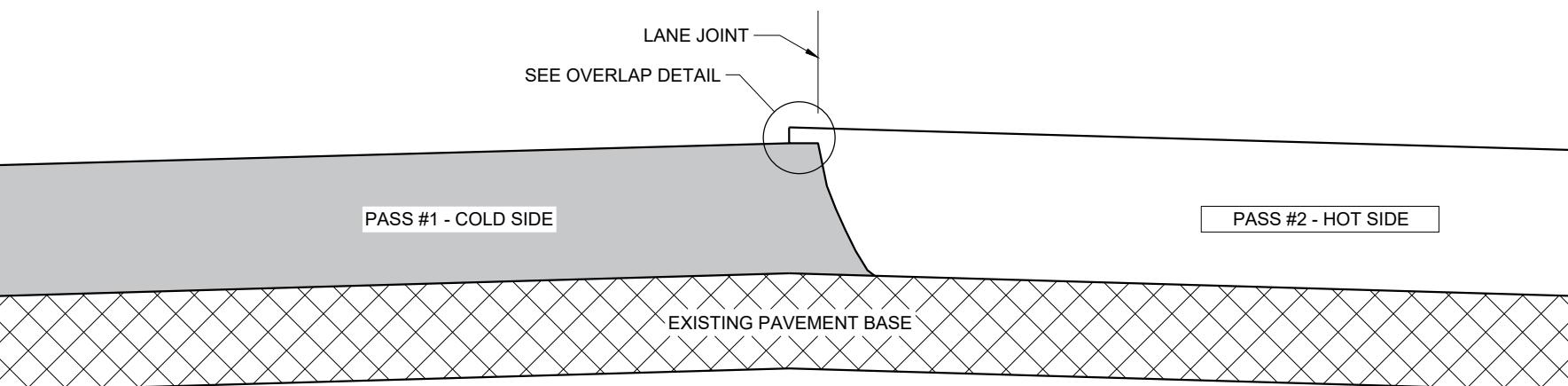
**ALTERNATE LUG**  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED 3/26/10 /S/ Scot Beck DATE CHIEF STRUCTURAL DEVELOP 20 FHWA

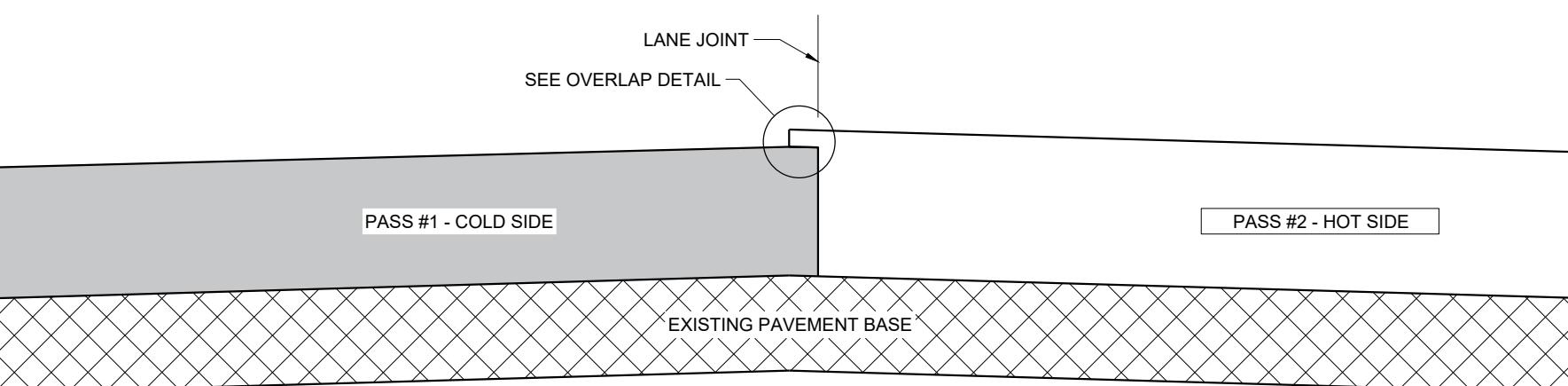
S.D.D. 12 A 3-10



**TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT (MILLED)**

## GENERAL NOTES

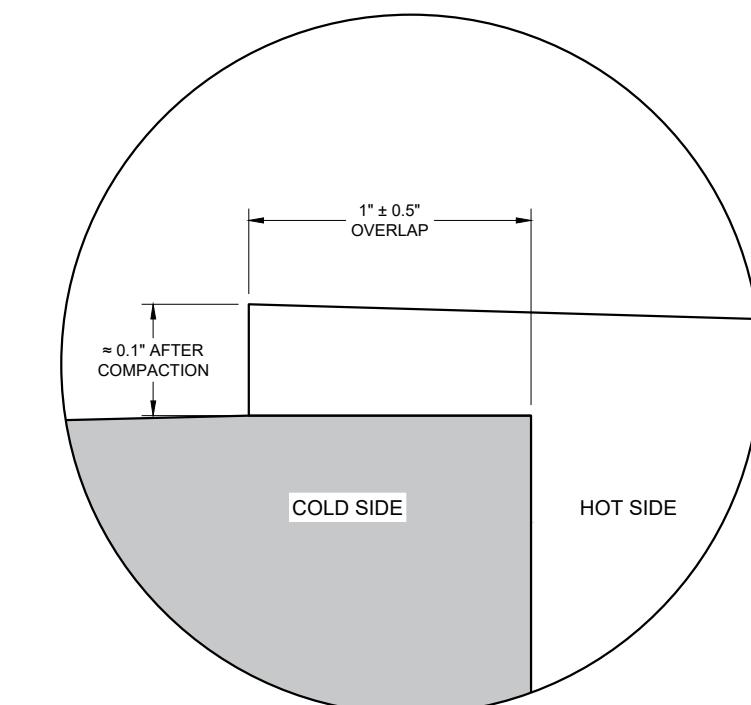
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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 AS THE ENGINEER DIRECTS.



**OVERLAP DETAIL (TYPICAL)**

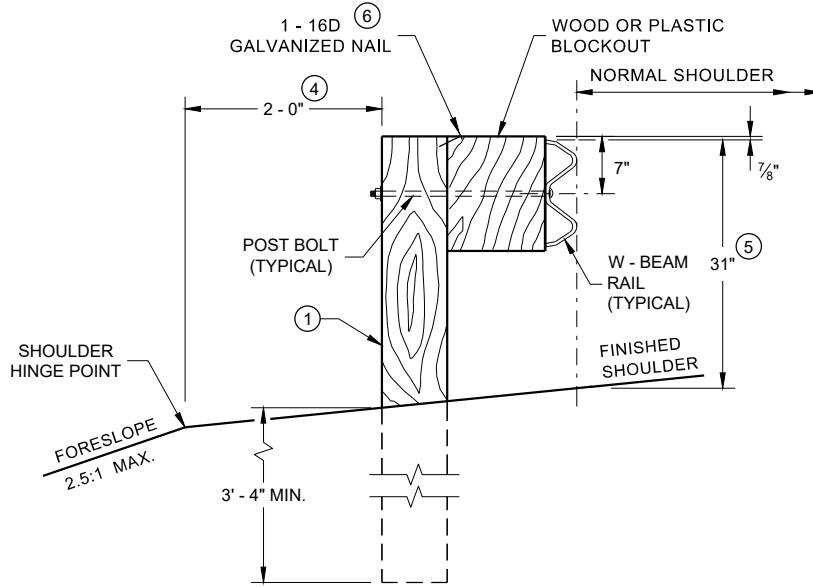
## HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

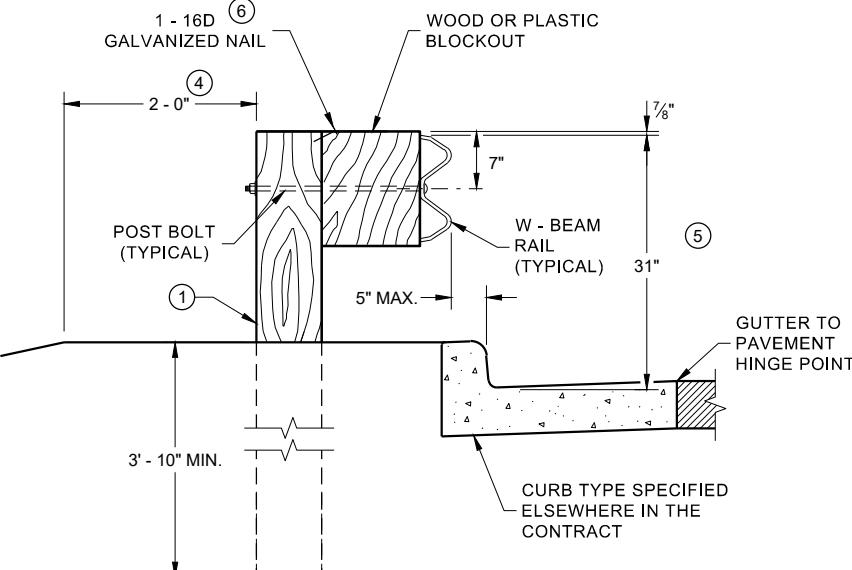
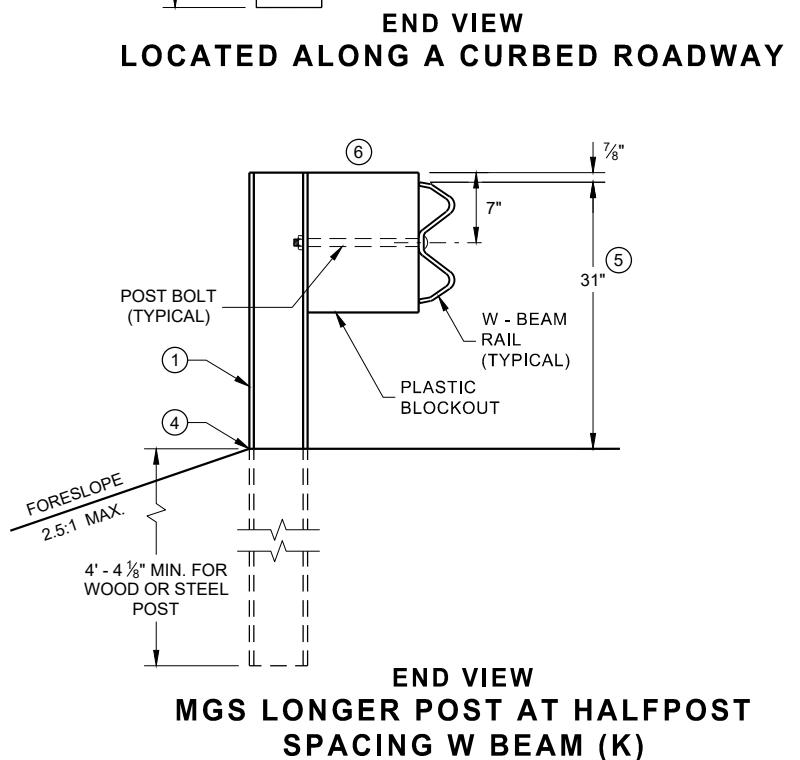
APPROVED  
November 2020 /S/ Steven Hefel  
DATE  
FHWA

HMA PAVEMENT ENGIN 21

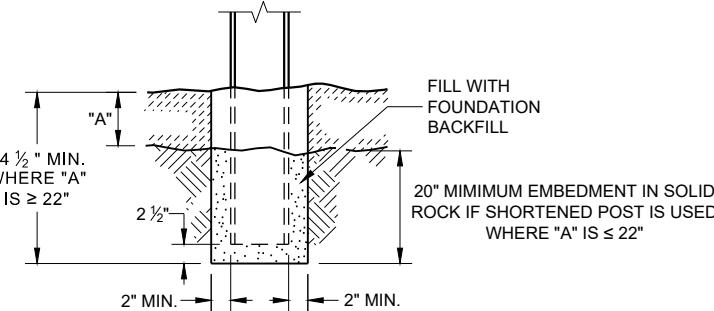
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. 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  $27 \frac{3}{4}"$  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  
**LOCATED ALONG A ROADWAY SHOULDER  
STANDARD INSTALLATION**

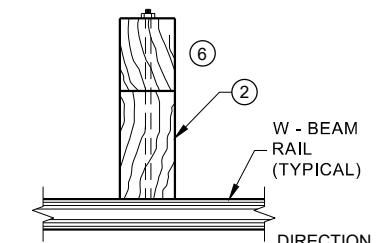


END VIEW  
**SETTING STEEL OR WOOD POST IN ROCK** (3)

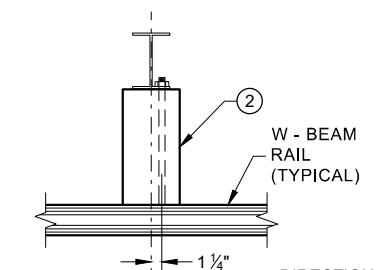


Technical drawing of a vertical metal panel assembly. The panel is 7 1/8" wide and 7 1/8" high. It features a top flange with a thickness of 1", a bottom flange with a thickness of 1", and a central vertical section. A horizontal slot is located 3/4" from the top edge. A 3/4" diameter hole is positioned 3/4" from the left edge. A 3/4" diameter hole is also present on the left side. A 1/4" diameter hole is located at the top edge for handling during galvanizing. A small bracket is attached to the bottom flange. A callout (7) is shown on the right side.

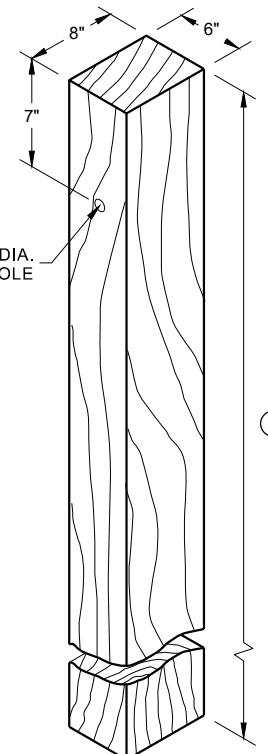
## STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) ①



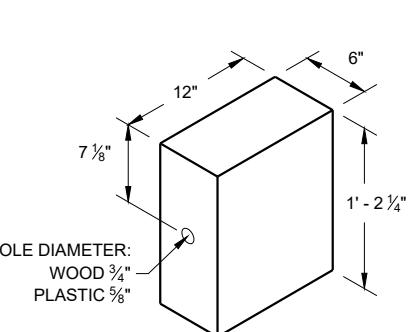
**PLAN VIEW  
WOOD POST,  
BLOCKOUT & BEAM**



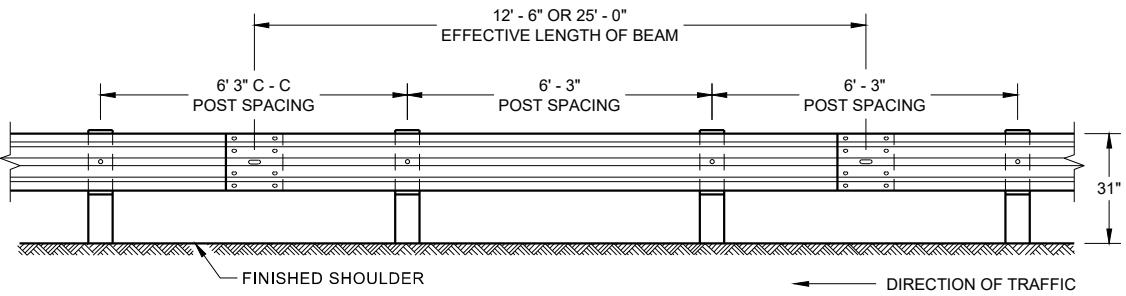
PLAN VIEW  
OF TRAFFIC  
STEEL POST,  
PLASTIC BLOCKOUT & BEAM



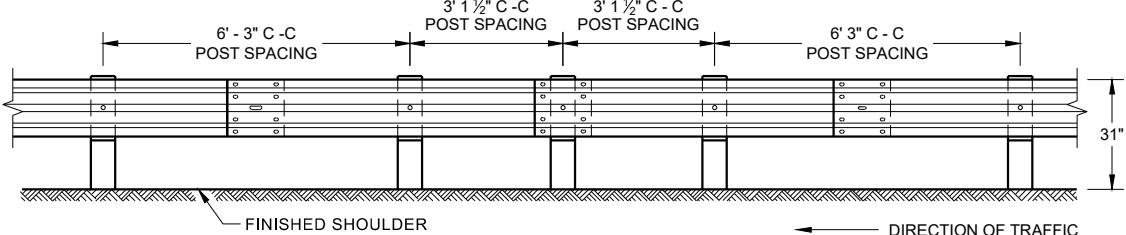
**WOOD POST  
(6" X 8") NOMINAL** ①



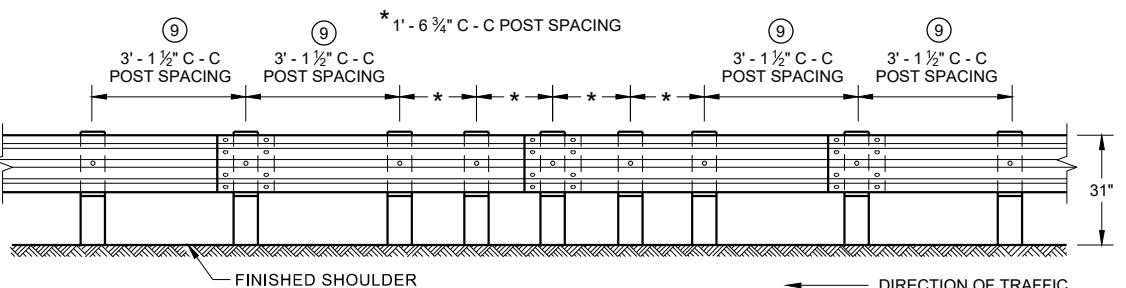
## WOOD OR PLASTIC BLOCKOUT



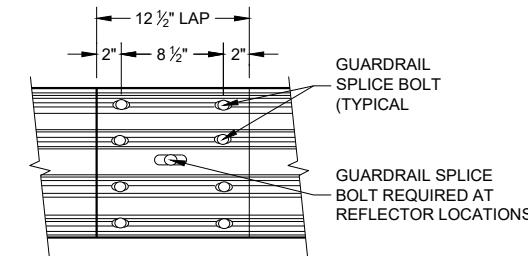
**FRONT VIEW**  
**POST SPACING STANDARD INSTALLATION**



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



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



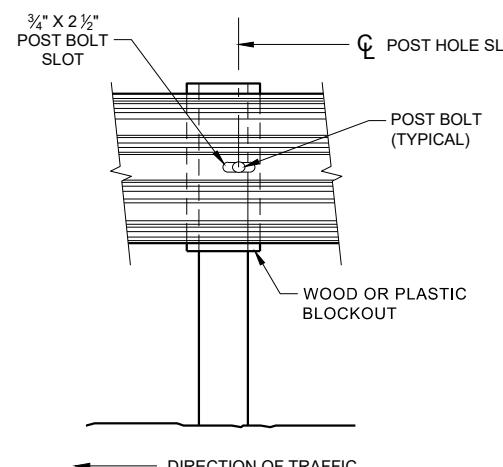
**FRONT VIEW**  
**MID-SPAN BEAM SPLICE**

## GENERAL NOTES

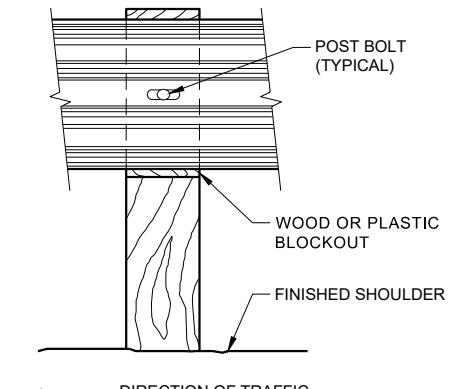
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A  $\frac{1}{2}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES  $\frac{1}{2}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND  $\frac{1}{2}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

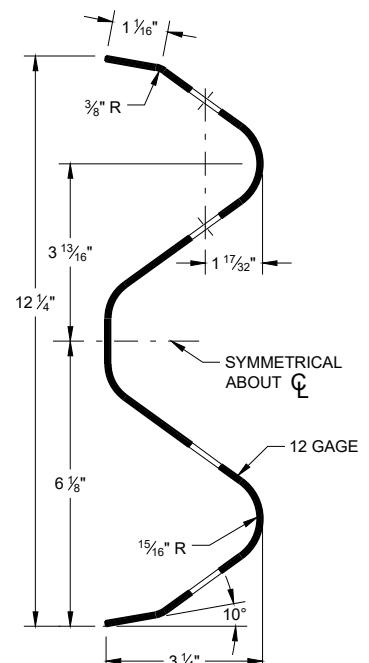
GUARD RAIL SPLICE BOLTS ARE A  $\frac{1}{2}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES  $\frac{1}{2}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



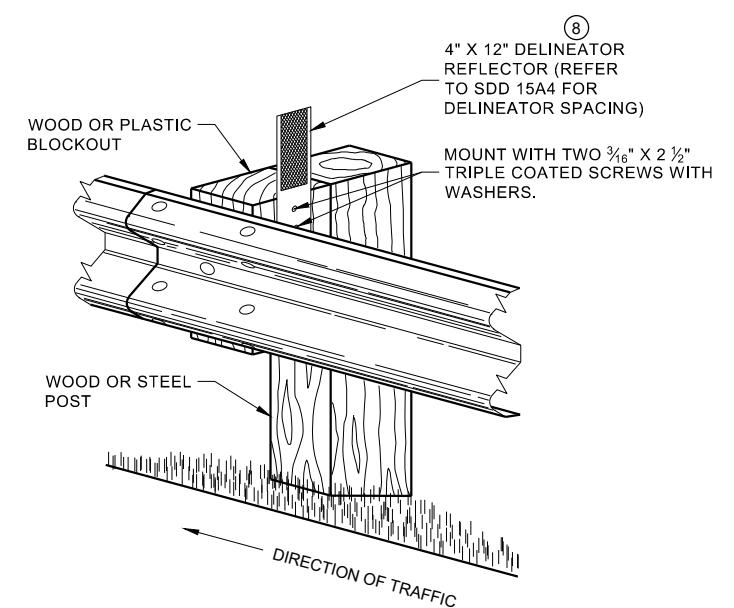
#### FRONT VIEW AT STEEL POST



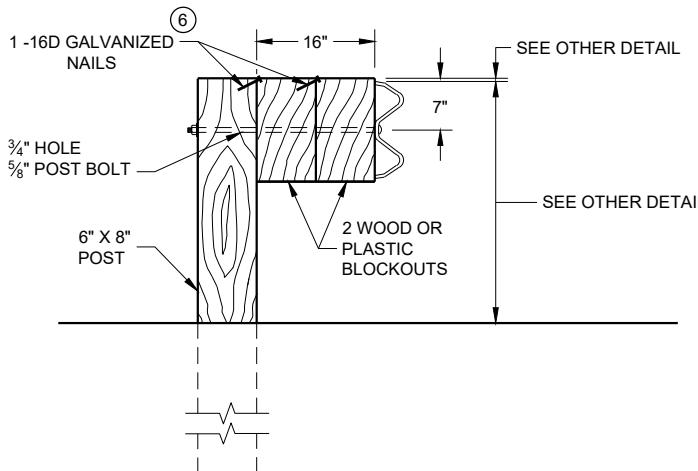
#### FRONT VIEW AT WOOD POST



## SECTION THRU W-BEAM RAII

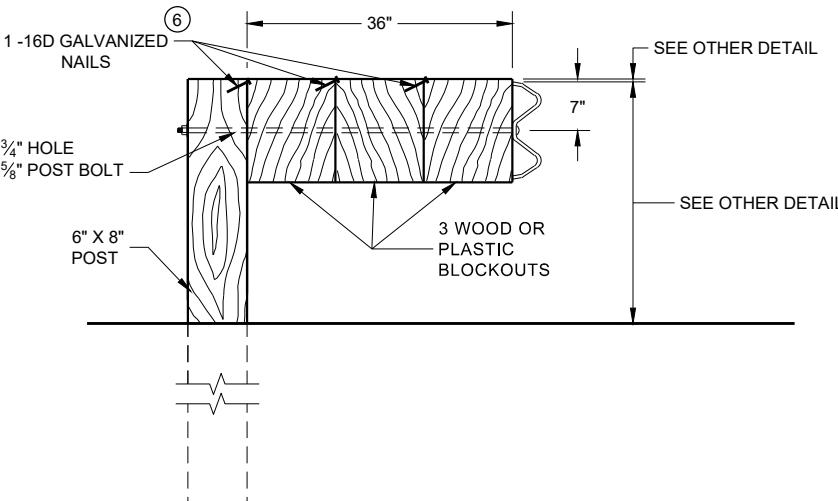


## ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION



#### DETAIL FOR 16" BLOCKOUT DEPTH

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

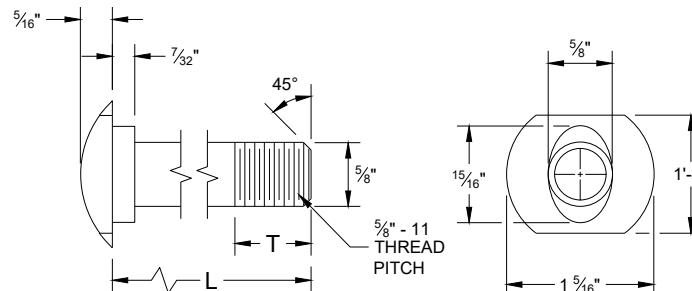


#### DETAIL FOR 36" BLOCKOUT DEPTH

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

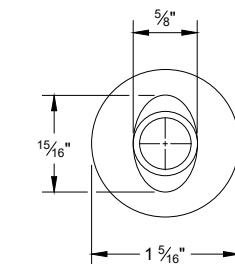
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

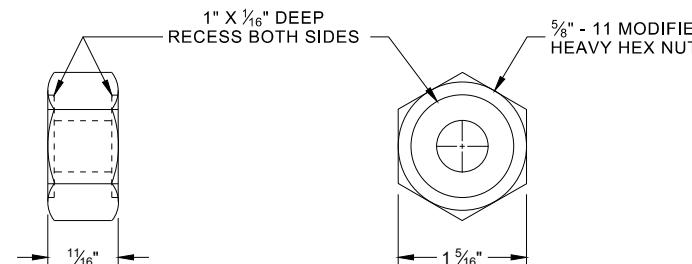


#### POST BOLT TABLE

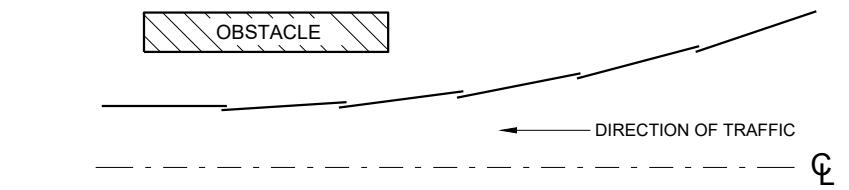
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



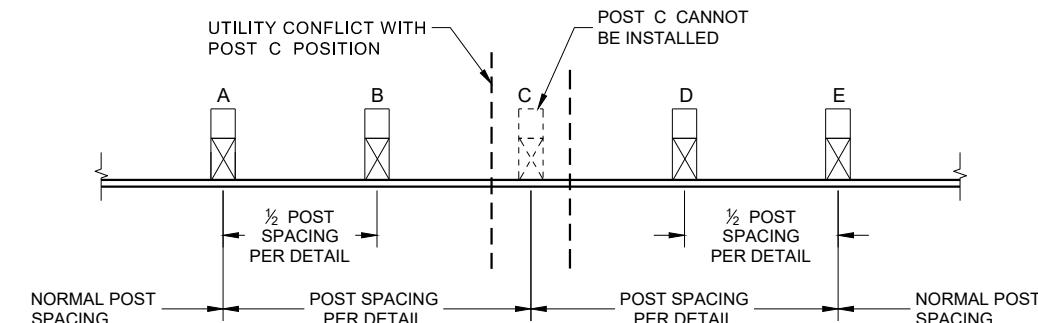
#### ALTERNATE BOLT HEAD



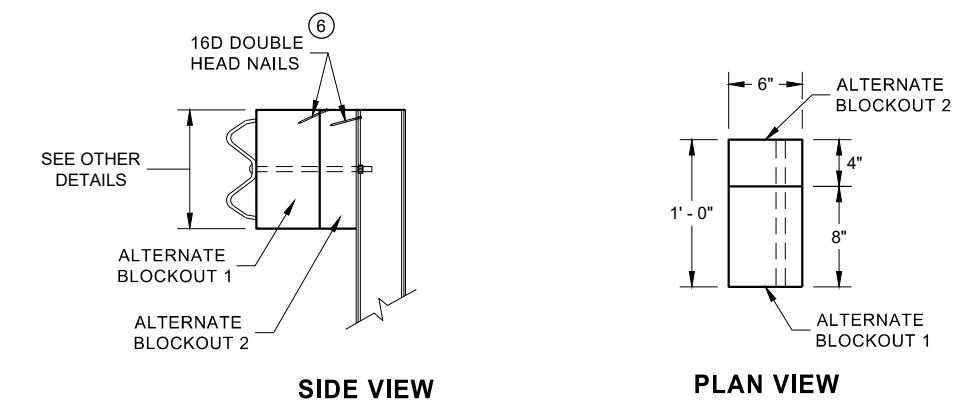
#### POST BOLT, SPLICE BOLT AND RECESS NUT



#### PLAN VIEW BEAM LAPPING DETAIL



#### POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



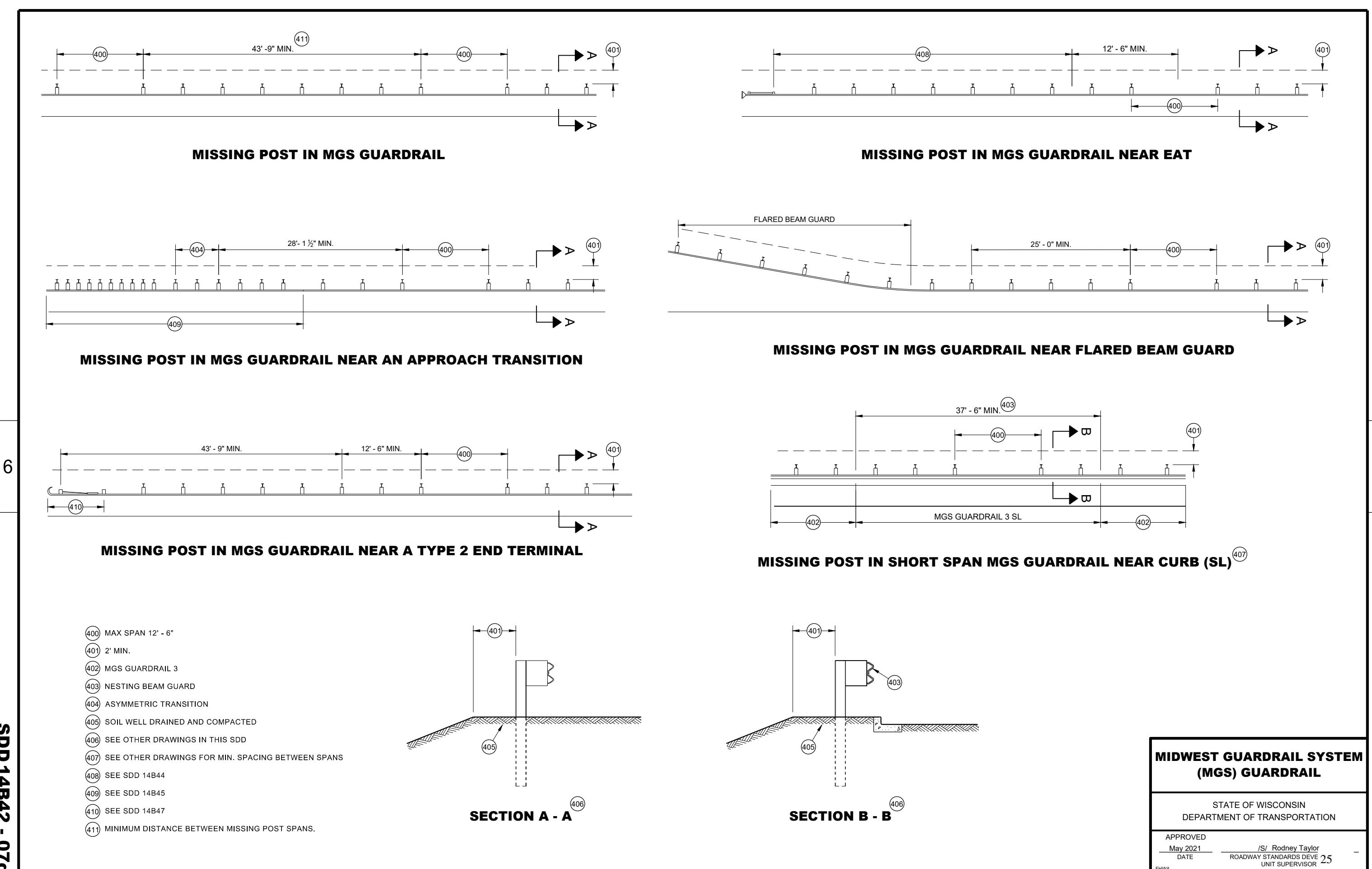
#### SIDE VIEW

#### PLAN VIEW

#### ALTERNATE WOOD BLOCKOUT DETAIL

**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



## GENERAL NOTES

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

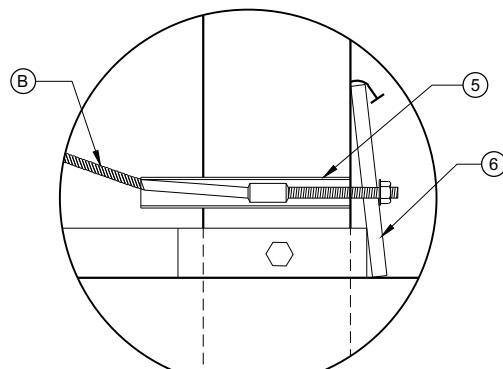
SEE SDD 14B42 FOR MORE INFORMATION.

\* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

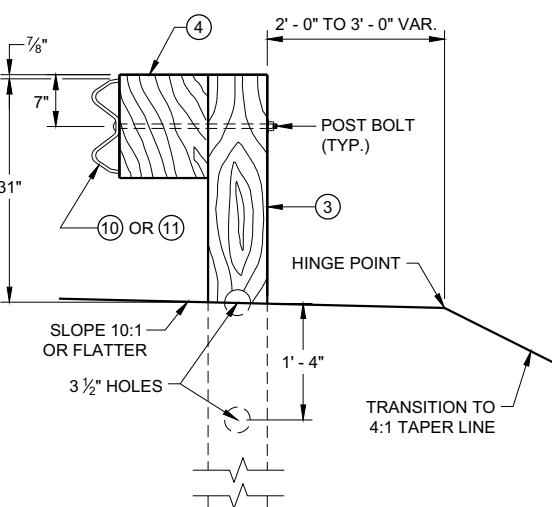
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

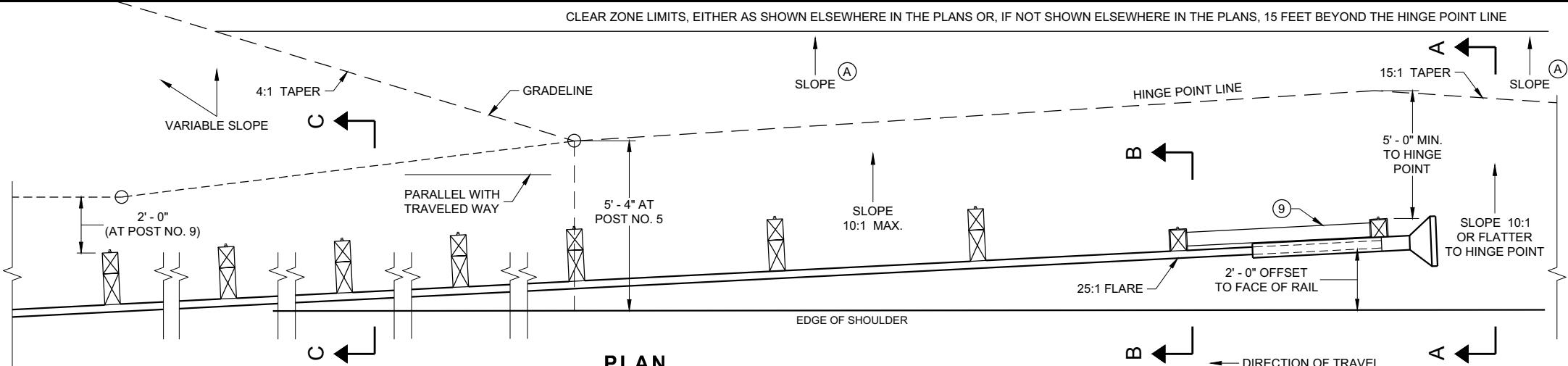
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



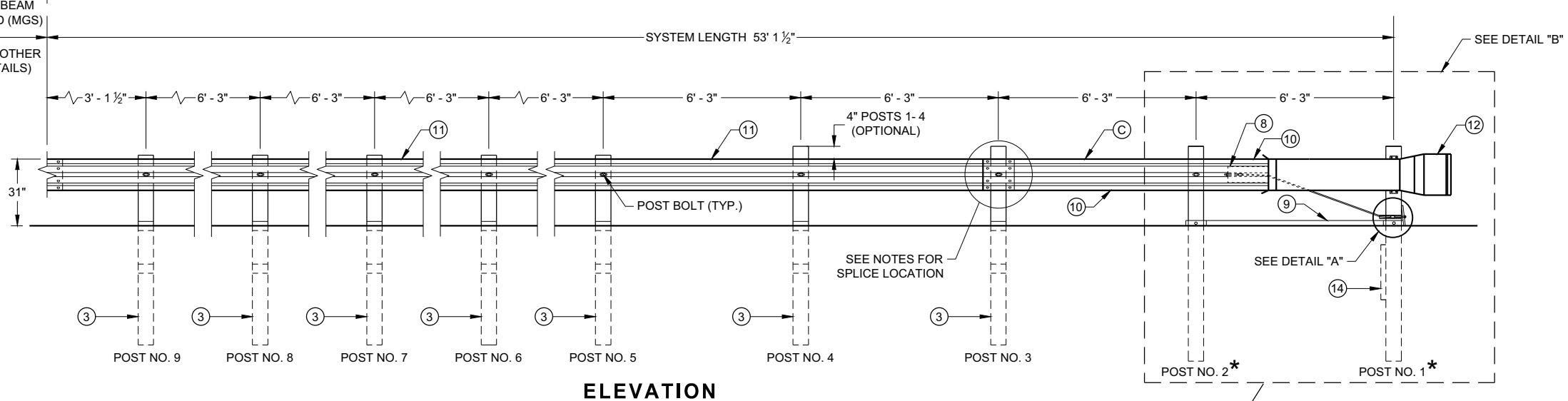
DETAIL "A" (E)



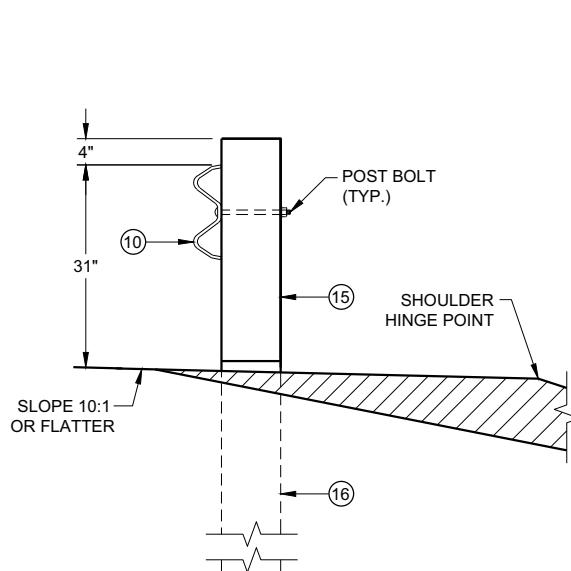
SECTION C - C  
TYPICAL AT POST NOS. 3 - 9



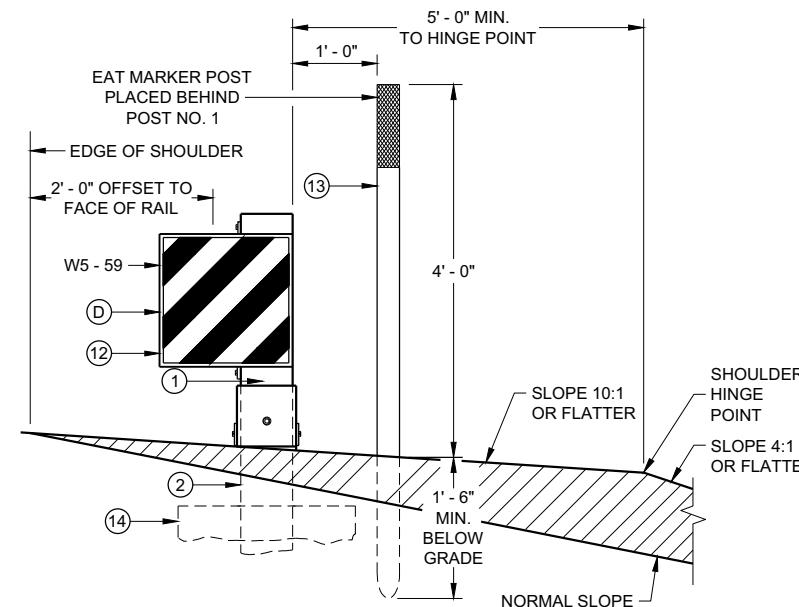
PLAN



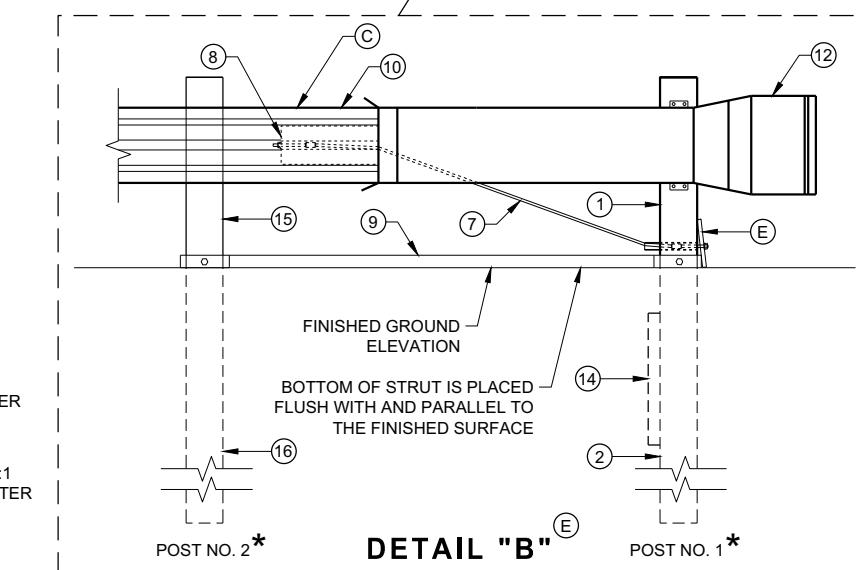
ELEVATION



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



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



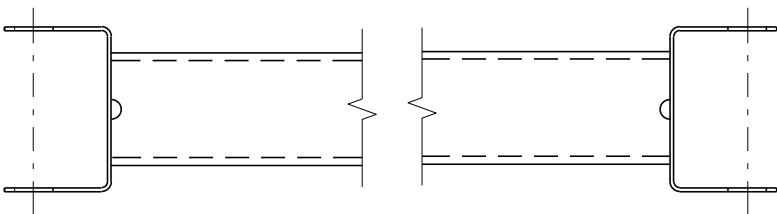
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)

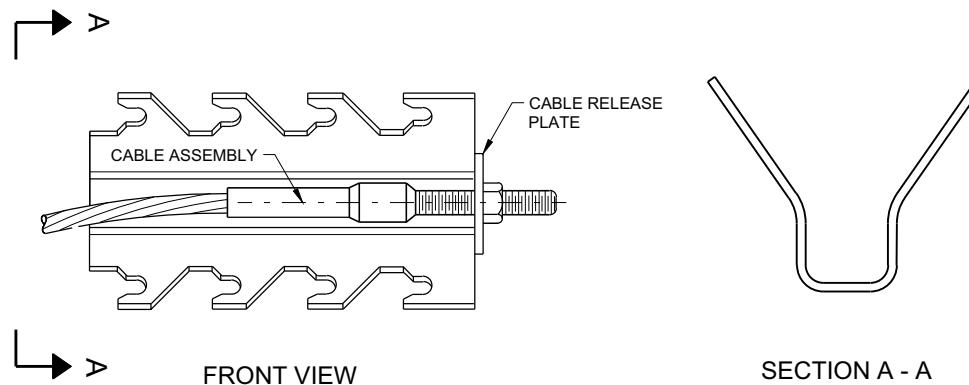
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

## 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

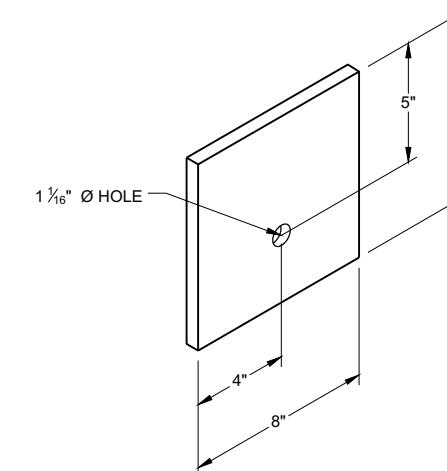


GENERIC GROUND STRUT <sup>⑨ (E)</sup>

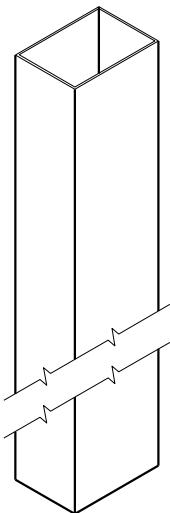
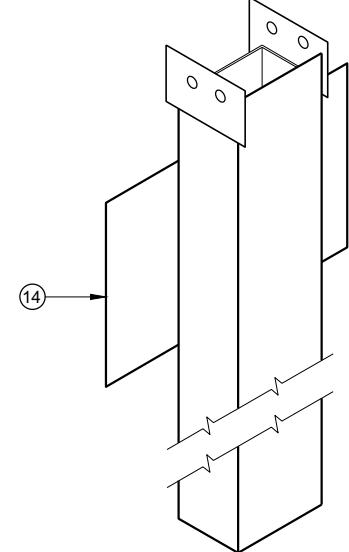
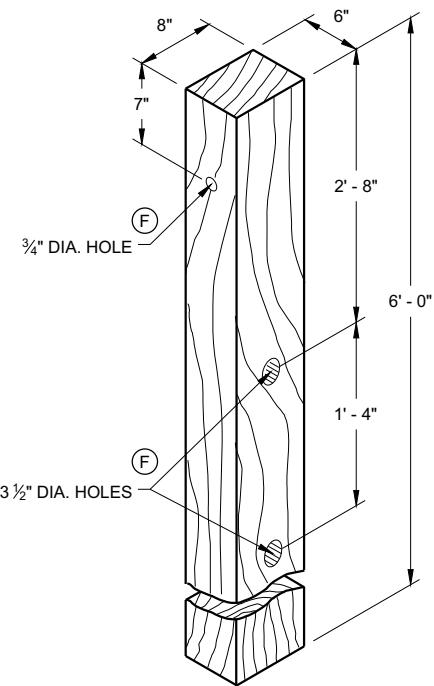
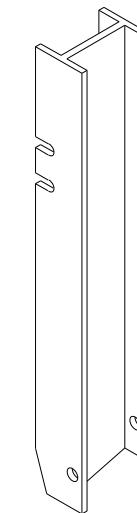
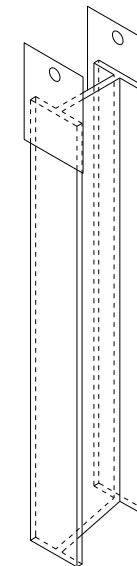
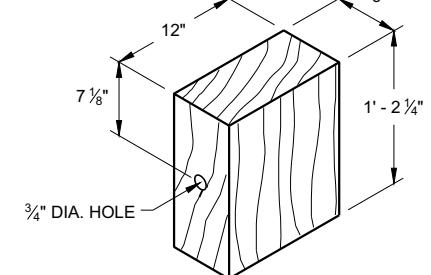


GENERIC ANCHOR CABLE BOX <sup>⑨ (E)</sup>

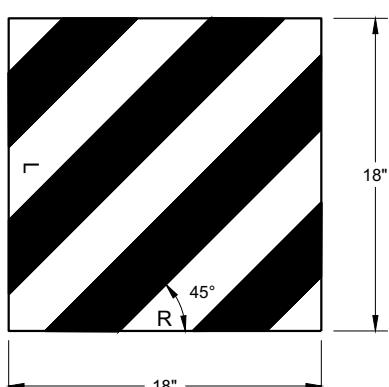
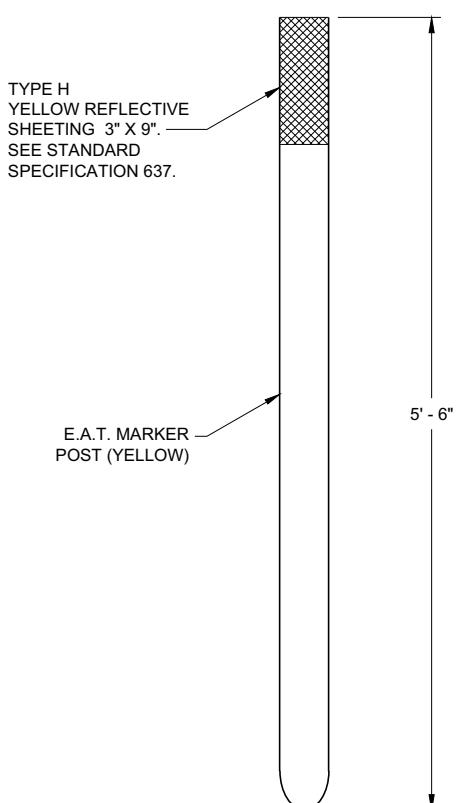
SECTION A - A



BEARING PLATE <sup>⑯ (E)</sup>

UPPER POST NO. 1 <sup>①</sup><sub>(E)</sub>LOWER POST NO. 1 <sup>②</sup><sub>(E)</sub>WOOD CRT POST  
POSTS NUMBER 3-9 <sup>③</sup><sub>(E)</sub>UPPER POST NO. 2 <sup>⑯</sup><sub>(E)</sub>LOWER POST NO. 2 <sup>⑯</sup><sub>(E)</sub>WOOD BLOCKOUT <sup>④</sup>

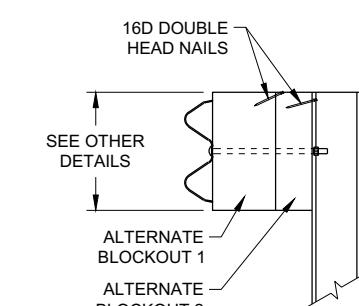
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 &amp; 2

REFLECTIVE SHEETING DETAIL <sup>(E)</sup>

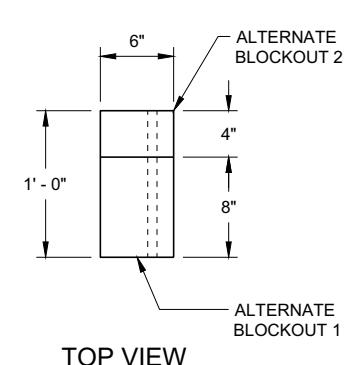
FRONT VIEW



SIDE VIEW

E.A.T. MARKER POST <sup>⑯</sup>

SIDE VIEW



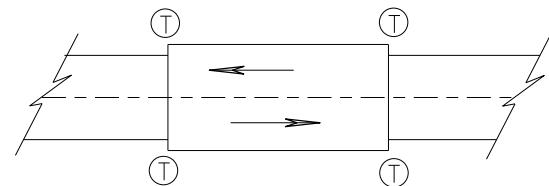
TOP VIEW

ALTERNATE WOOD  
BLOCKOUT DETAIL

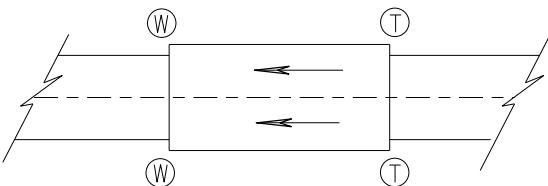
**MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
7/2018 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVE  
FHWA UNIT SUPERVISOR 28



**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

① THRIE BEAM CONNECTION

② 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 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

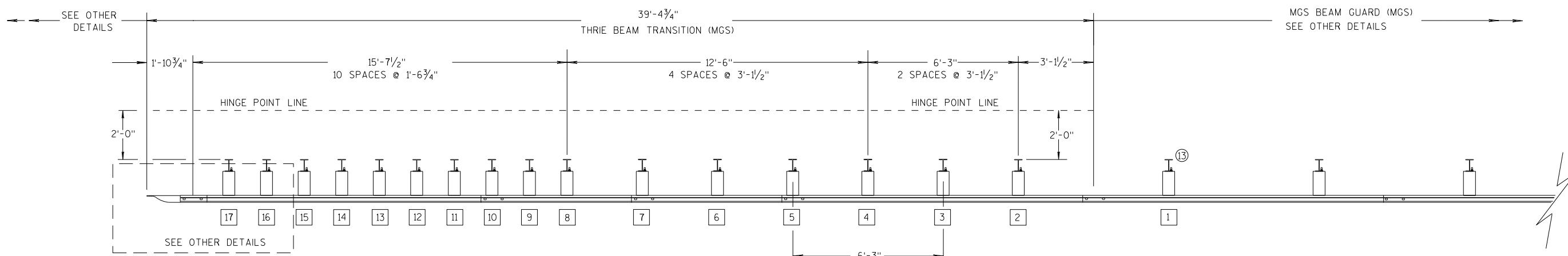
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

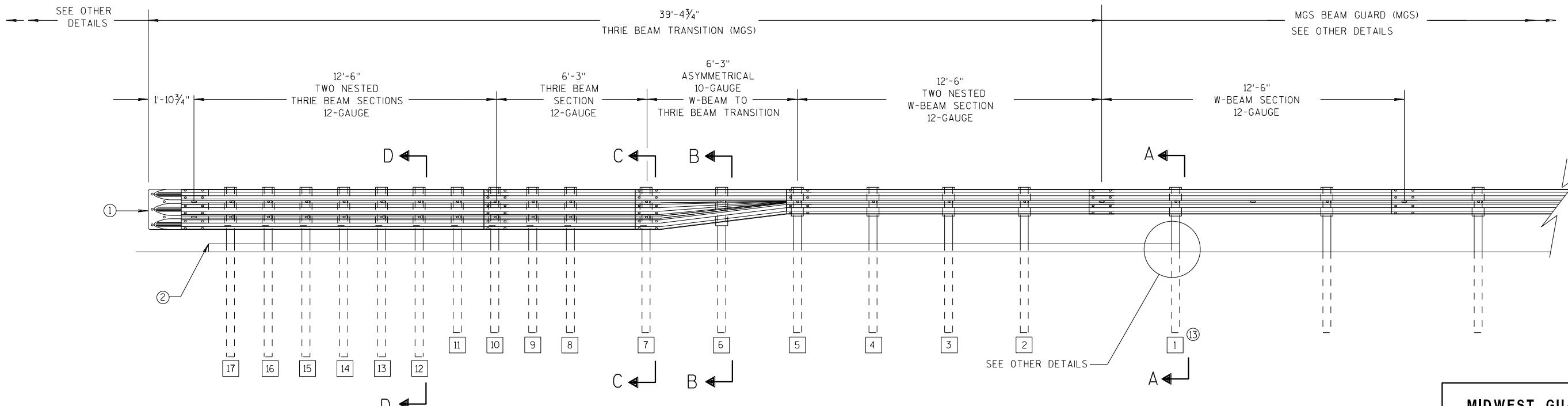
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



**PLAN VIEW**



**ELEVATION VIEW**

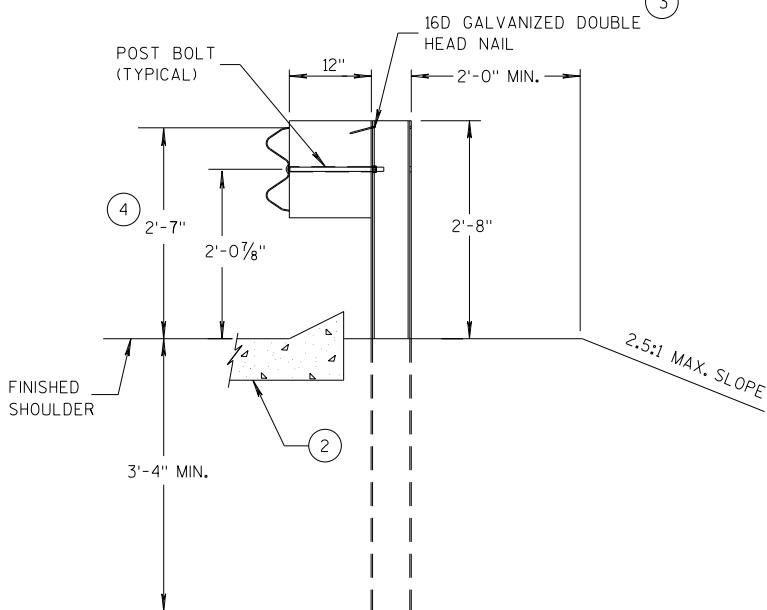
**MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION**

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

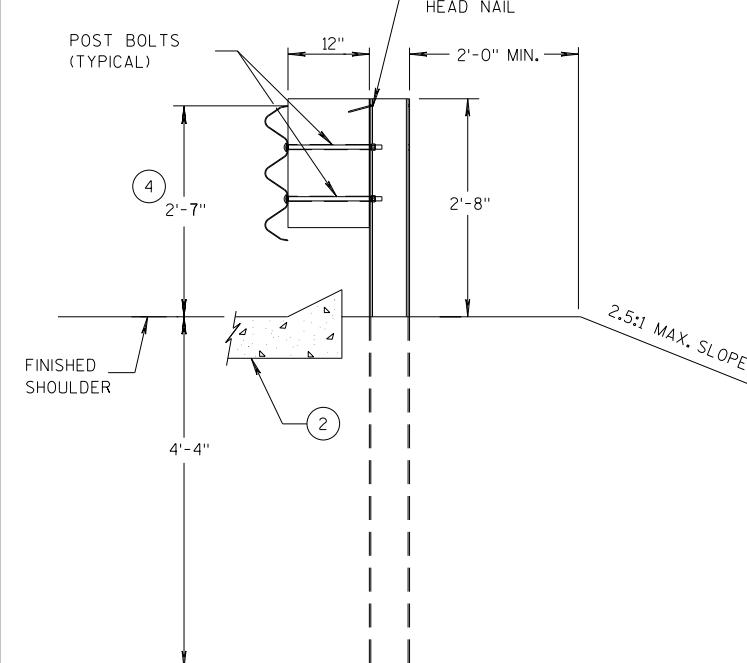
## GENERAL NOTES

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



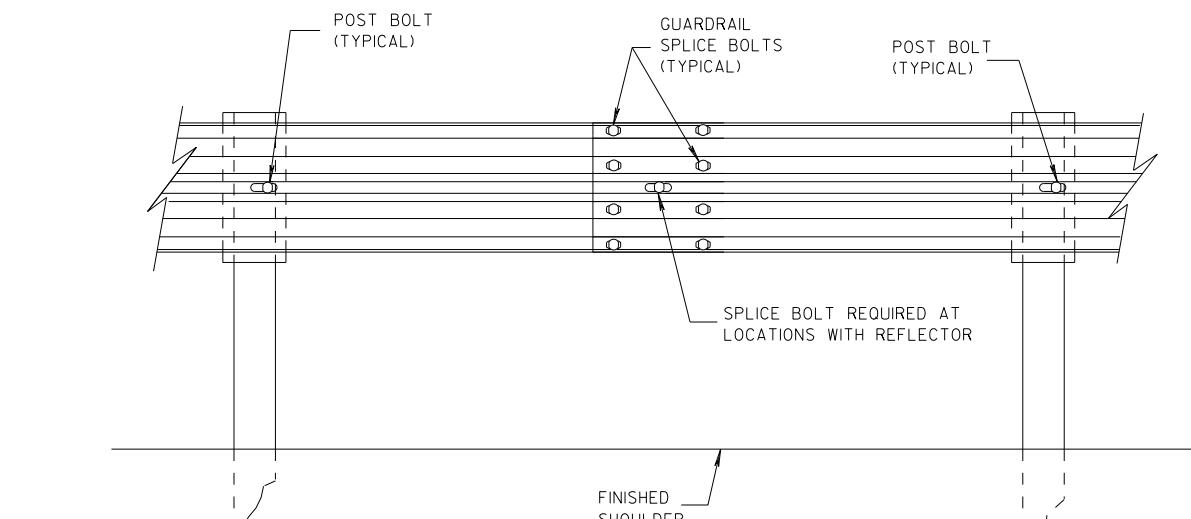
**SECTION A-A**  
**POSTS 1-5**

6



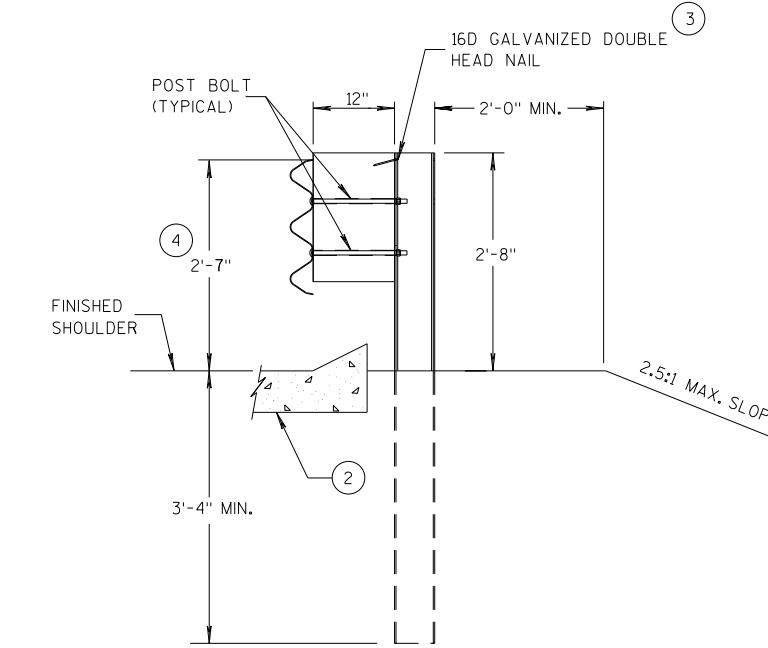
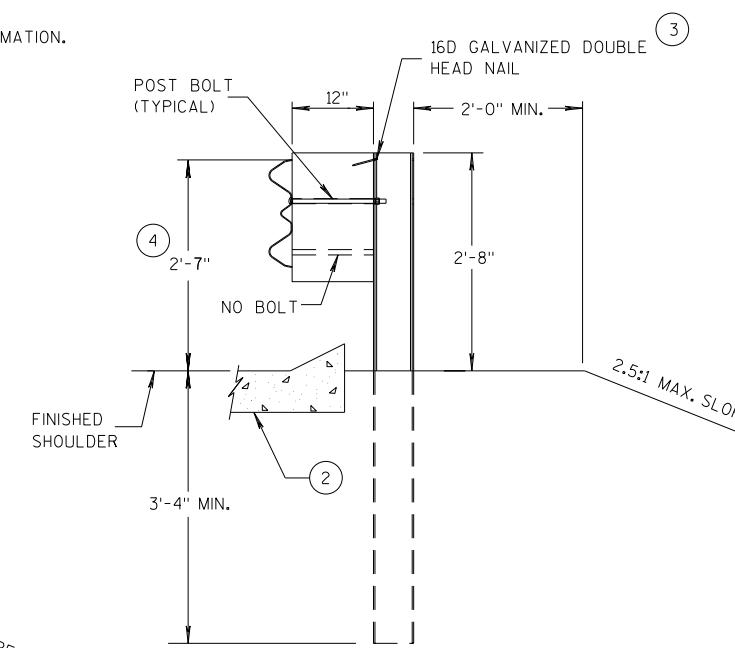
**SECTION D-D**  
**POSTS 12-17**

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

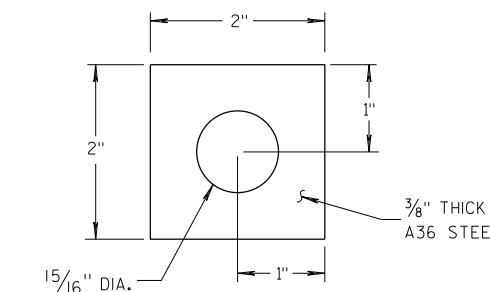


**SPICE DETAIL**

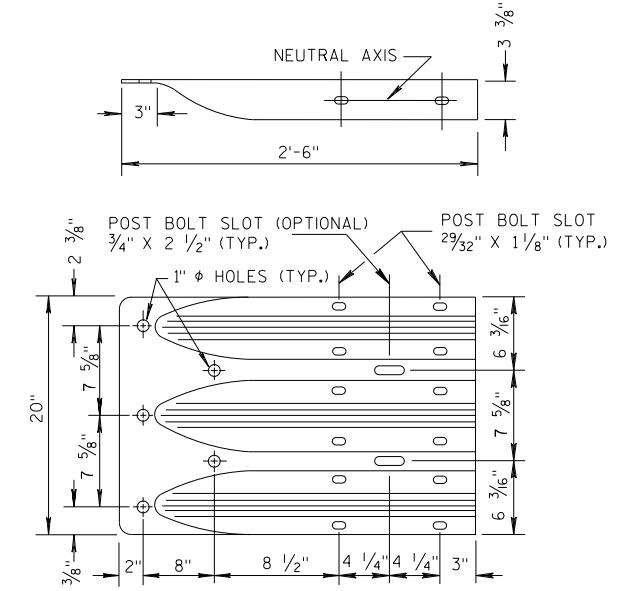
**SECTION B-B**  
**POST 6**



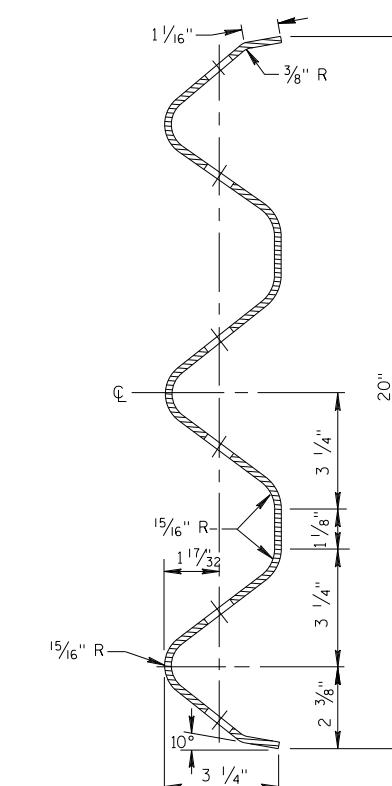
**SECTION C-C**  
**POSTS 7-11**



**PLATE WASHER DETAIL**



**THRIE BEAM  
TERMINAL CONNECTOR**



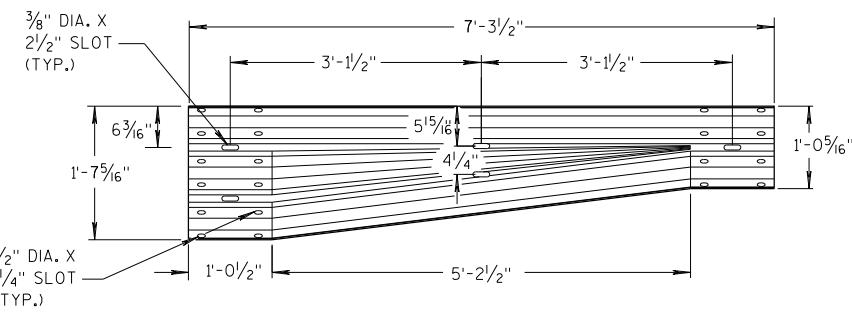
**SECTION THRU THRIE  
BEAM RAIL ELEMENT**

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

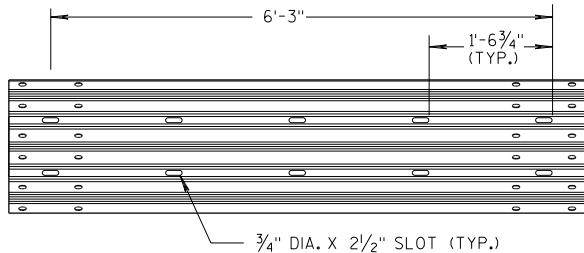
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

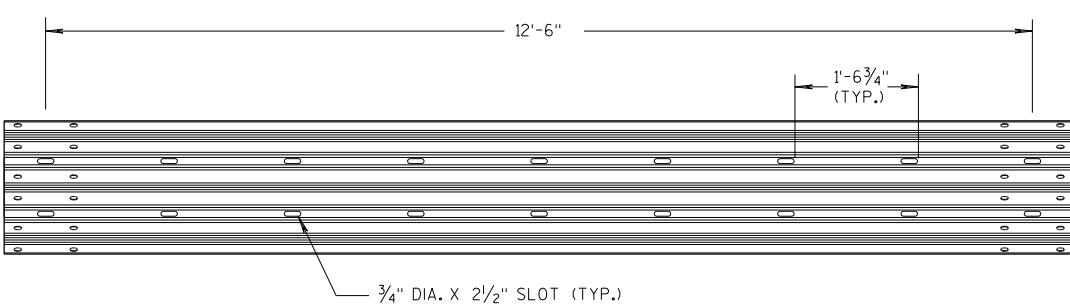
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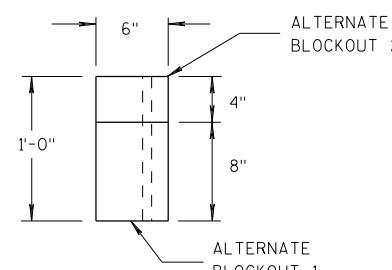
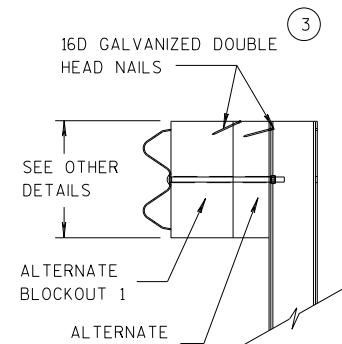
## W-BEAM TO THRIE BEAM TRANSITION SECTION



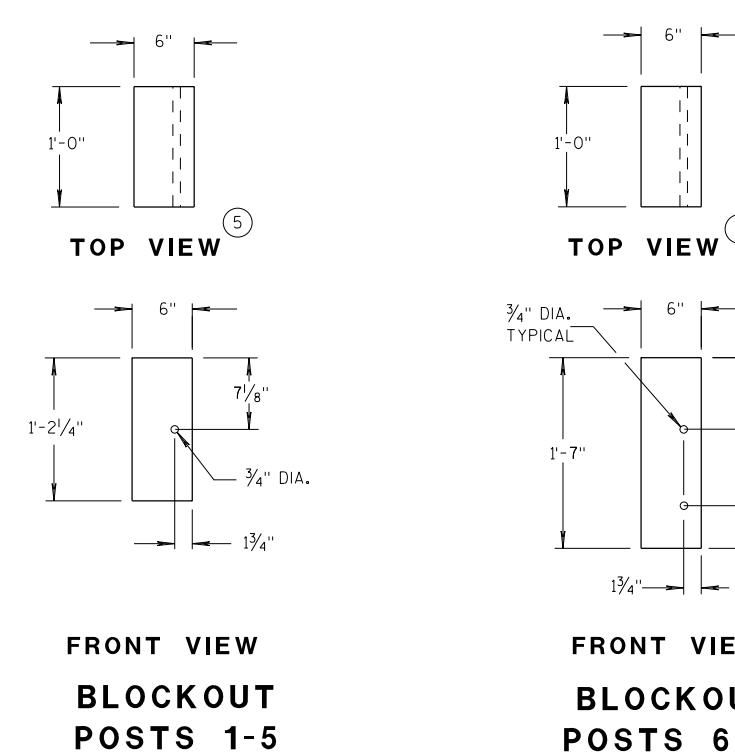
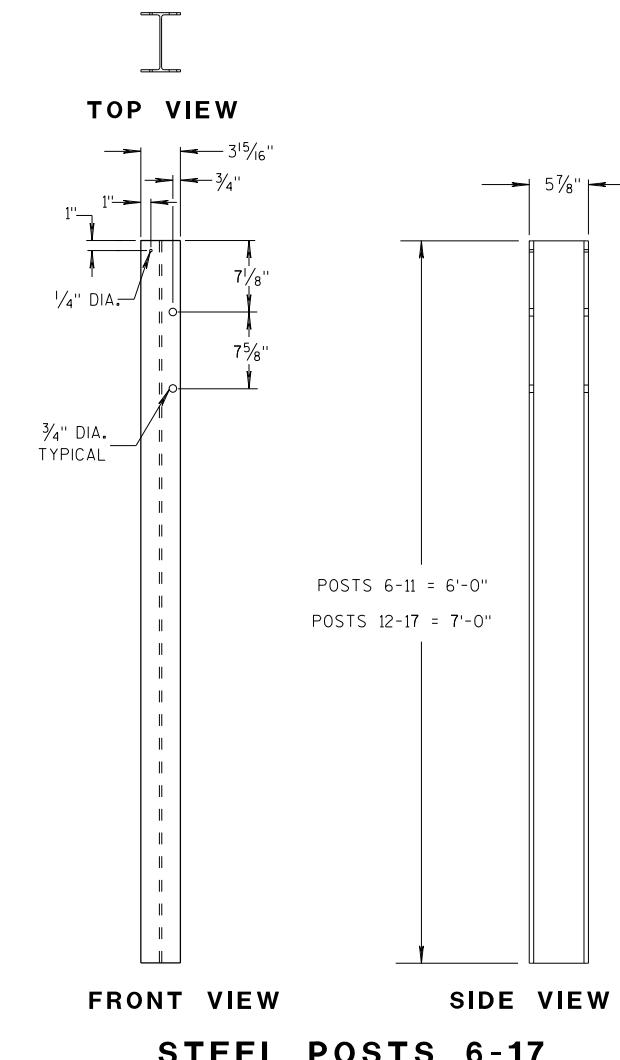
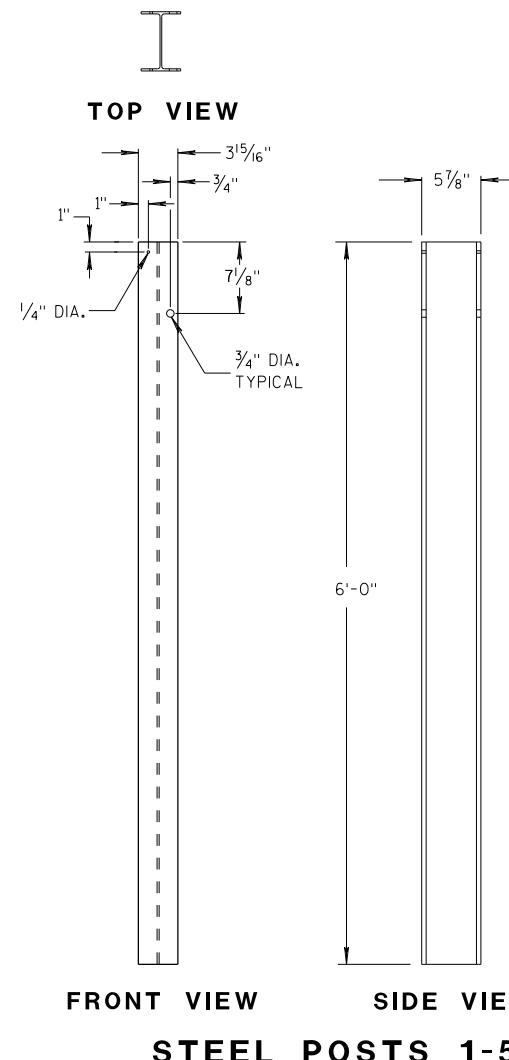
## 6'-3" THRIE BEAM SECTION



## 12'-6" THRIE BEAM SECTION



## ALTERNATE WOOD BLOCKOUT DETAIL



## GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

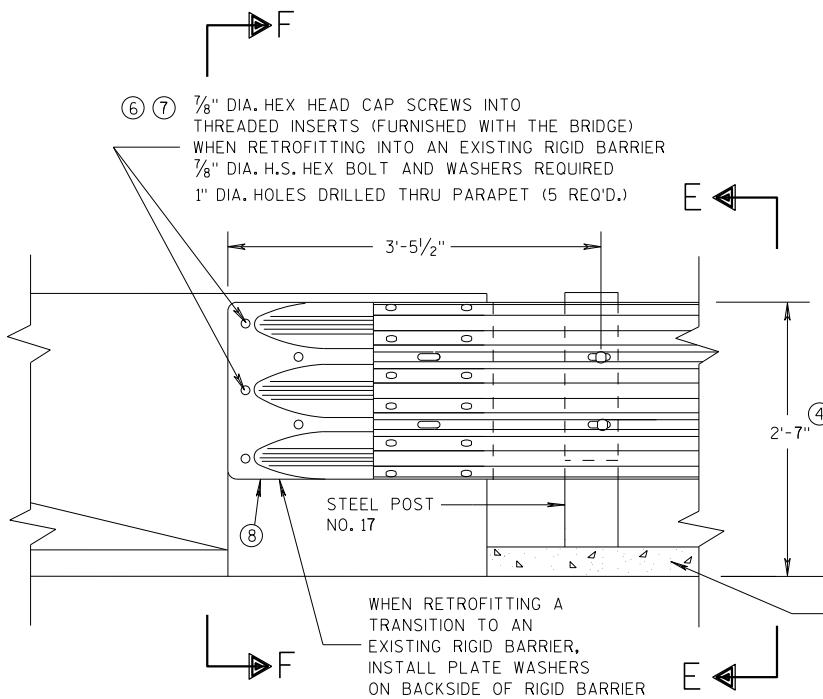
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

(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.

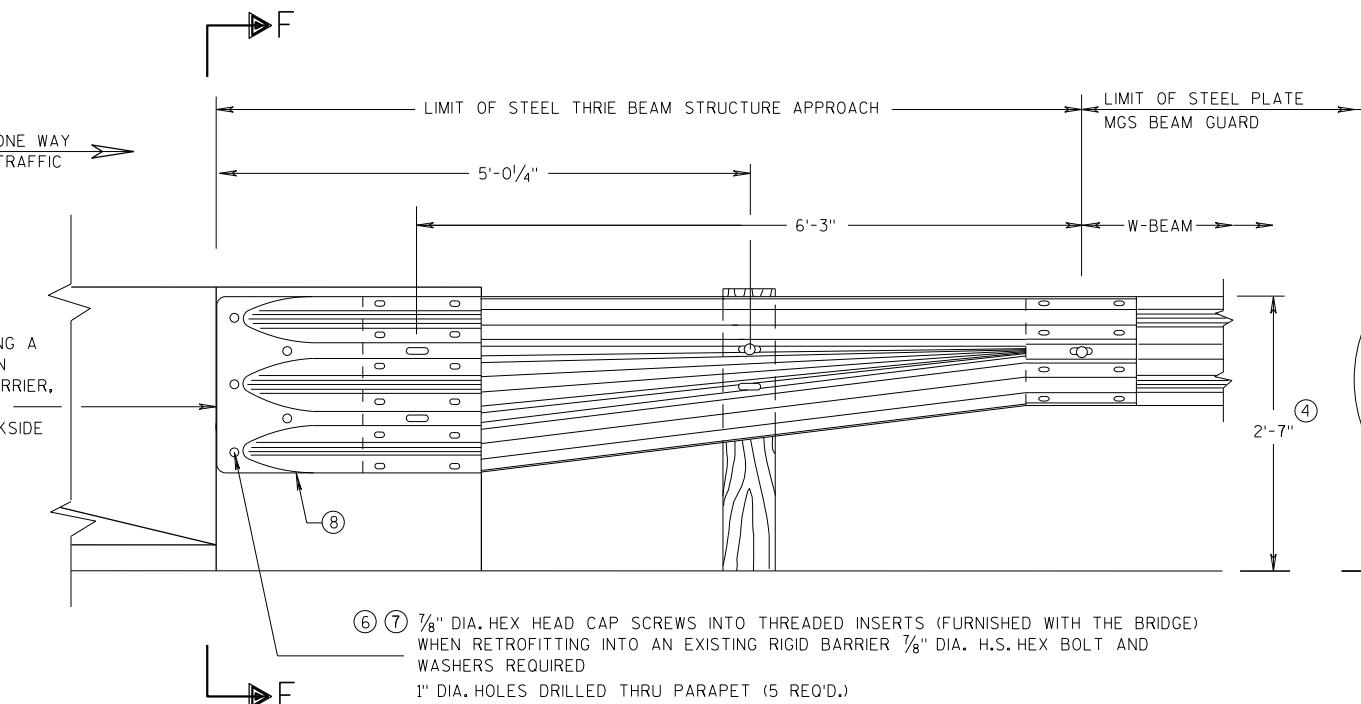
MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



FRONT VIEW

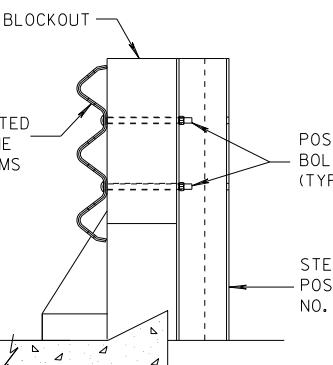
### THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW

### W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

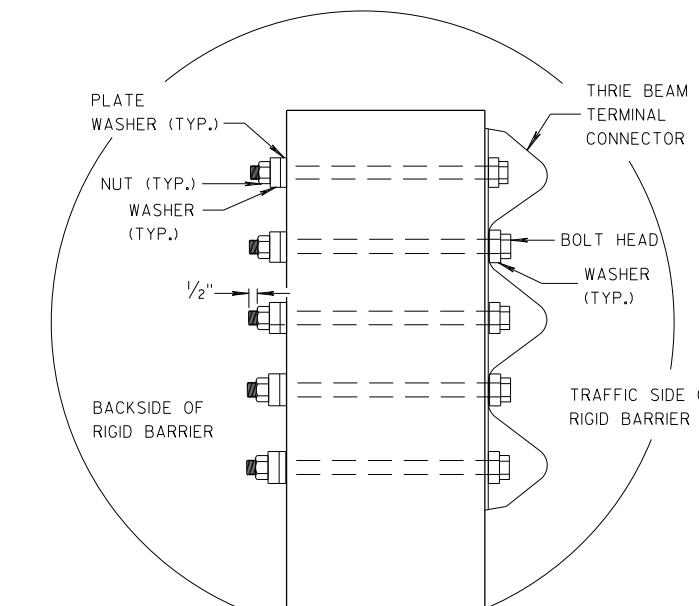


SECTION E-E

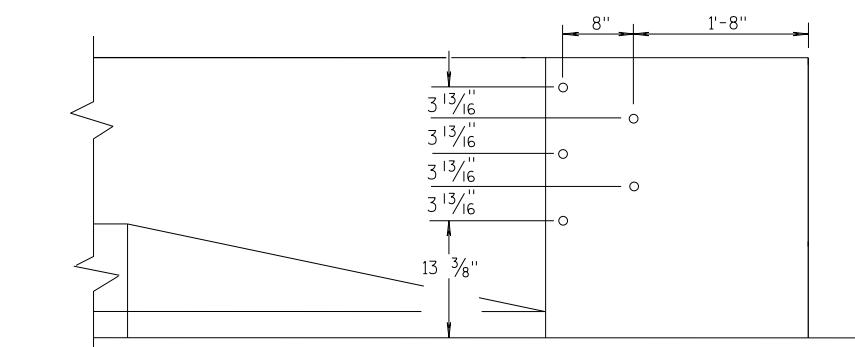
### GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

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



SECTION F-F



DRILL HOLE LOCATION

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

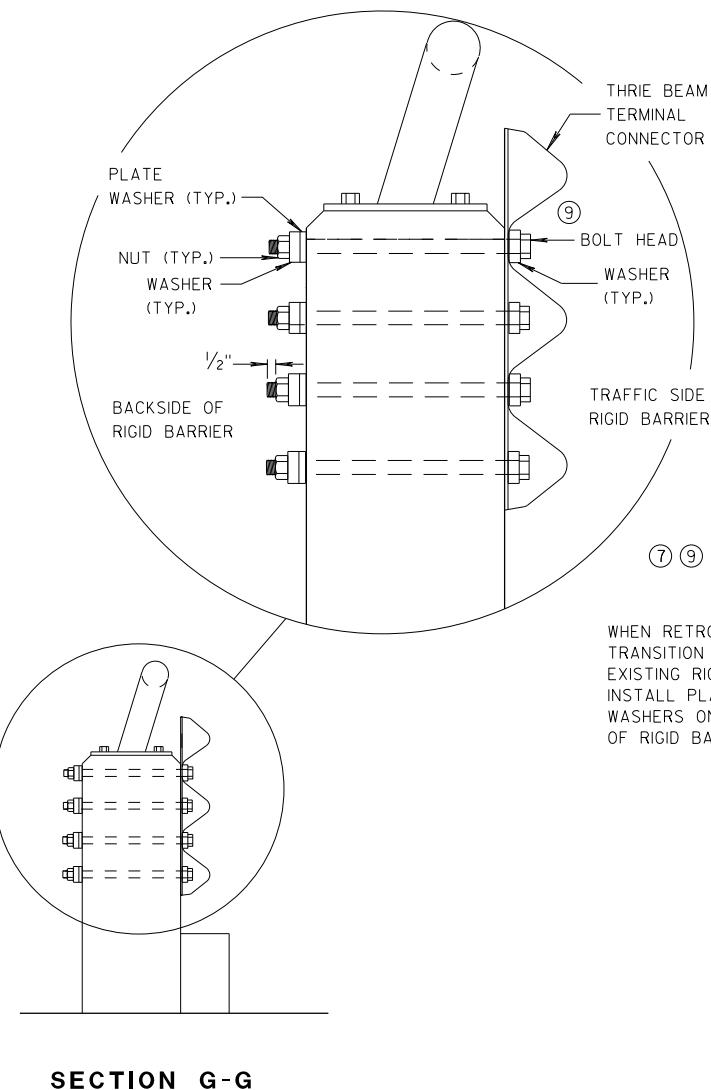
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DATE  
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FHWA

ROADWAY STANDARDS UNIT SUPERVISOR  
32  
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## GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

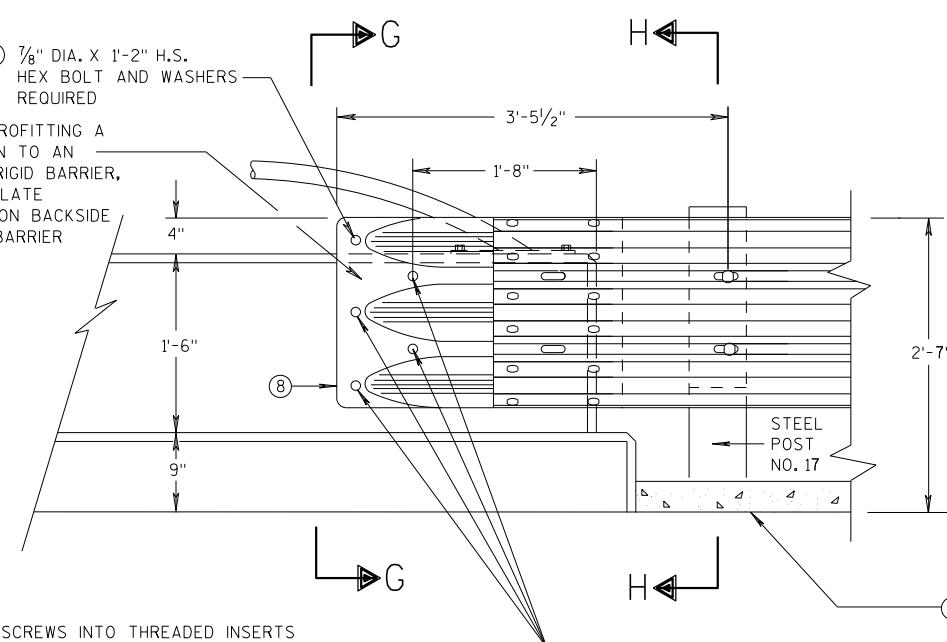
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ⑨ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PARAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.



SECTION G-G

⑥ ⑦ 7/8" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER 7/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED  
1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)

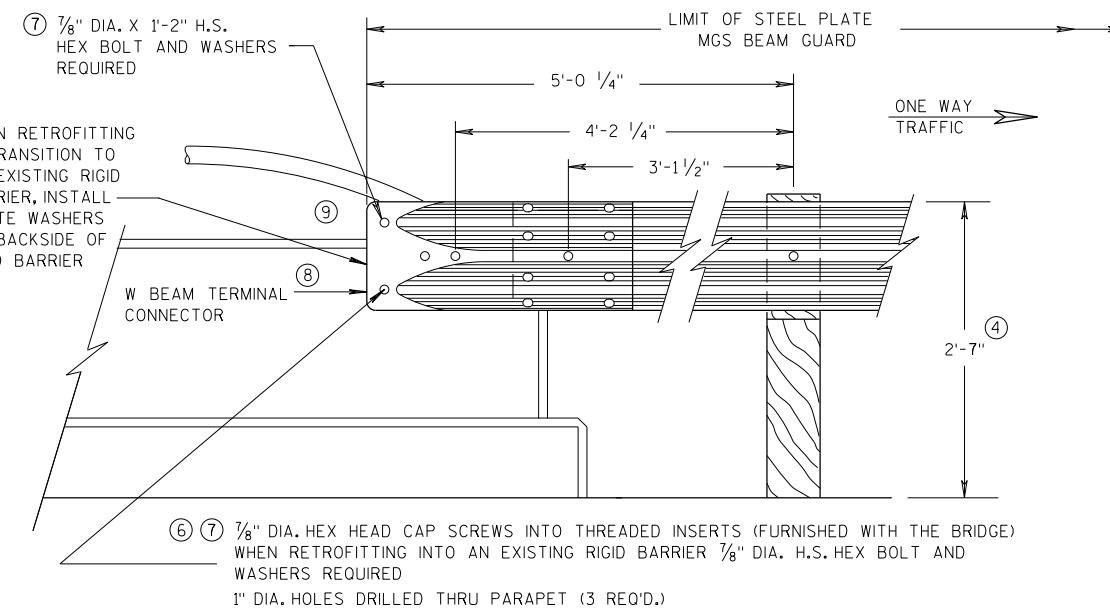
## THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



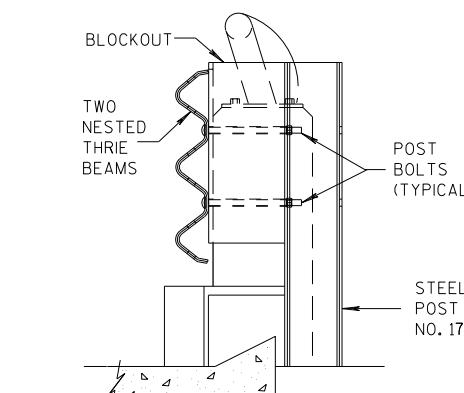
FRONT VIEW

## W BEAM CONNECTION TO VERTICAL FACE PARAPET

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



FRONT VIEW



SECTION H-H

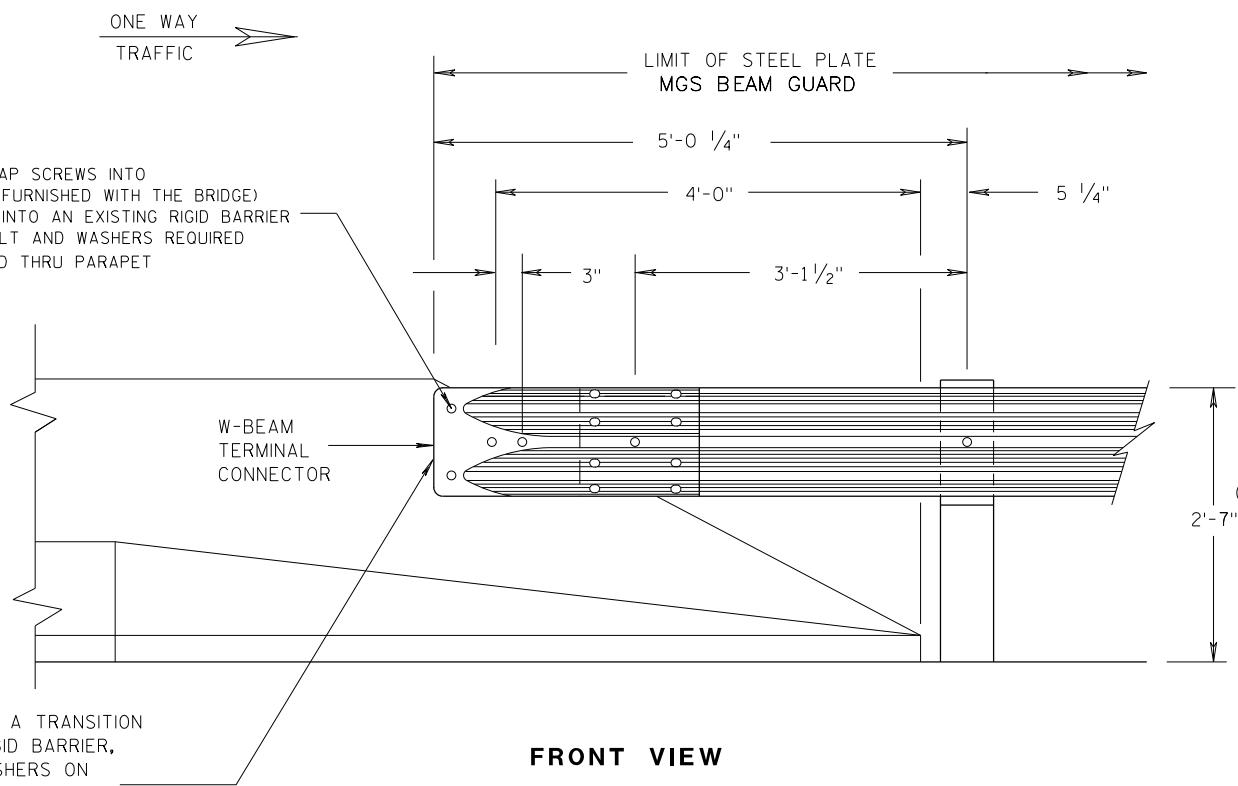
MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

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07/2018 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS UNIT SUPERVISOR  
FHWA UNIT SUPERVISOR 33

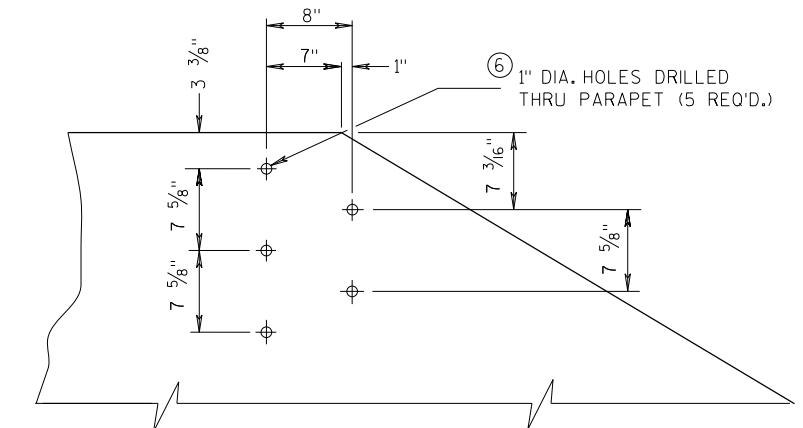
## GENERAL NOTES

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



FRONT VIEW

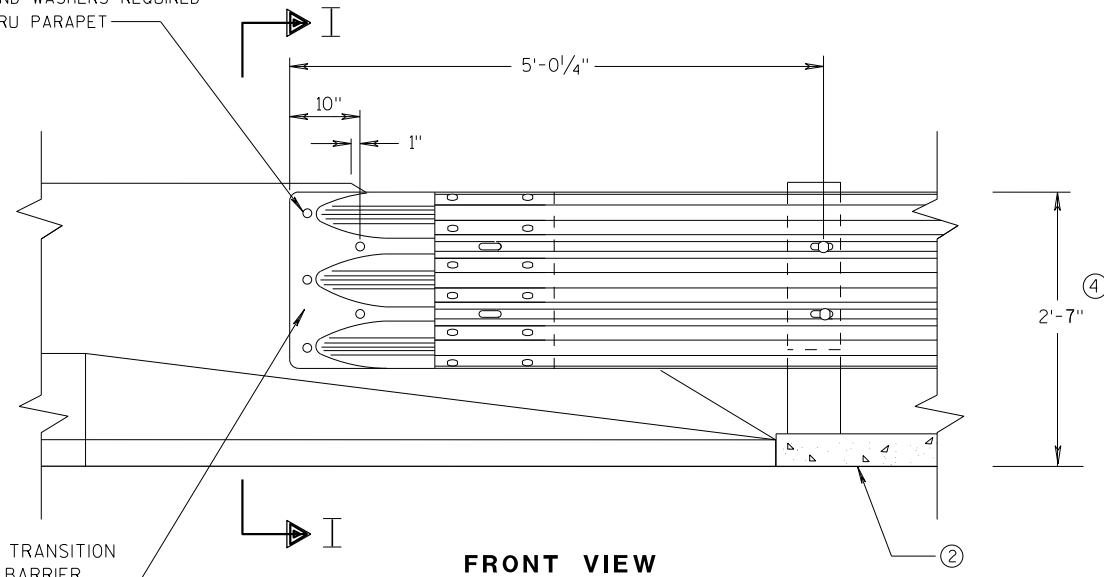
### W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS (USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)



DRILL HOLE LOCATION AND PATTERN  
FOR THRIE BEAM CONNECTION

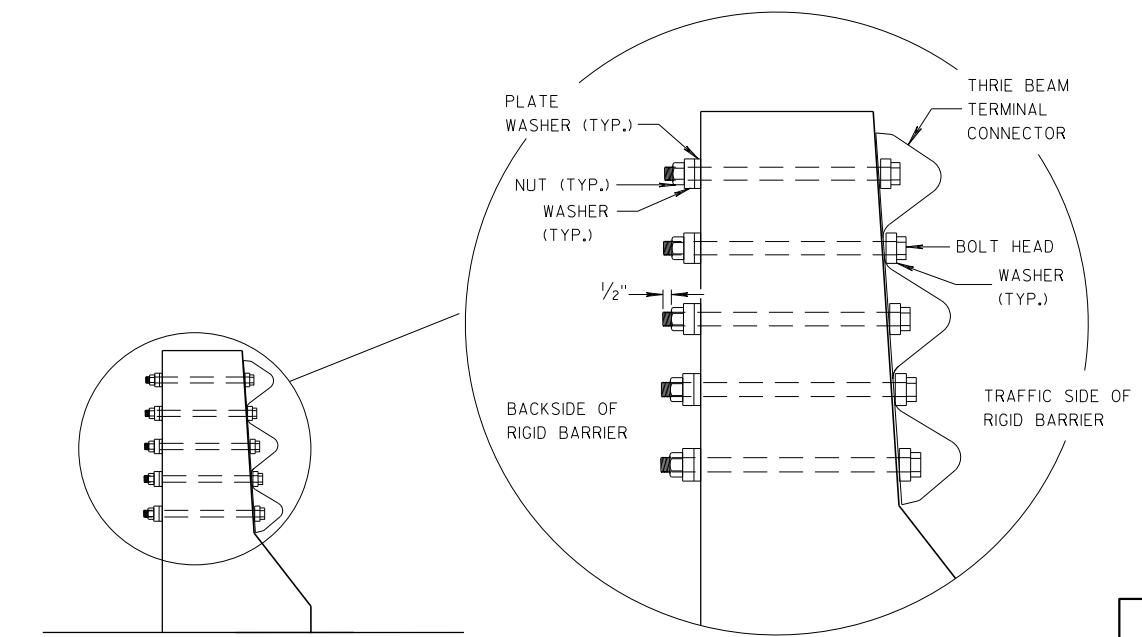
6

- ⑥ ⑦ 7/8" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE)  
WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER  
7/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED  
1" DIA. HOLES DRILLED THRU PARAPET  
(5 REQ'D.)



FRONT VIEW

### THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS



SECTION I-I

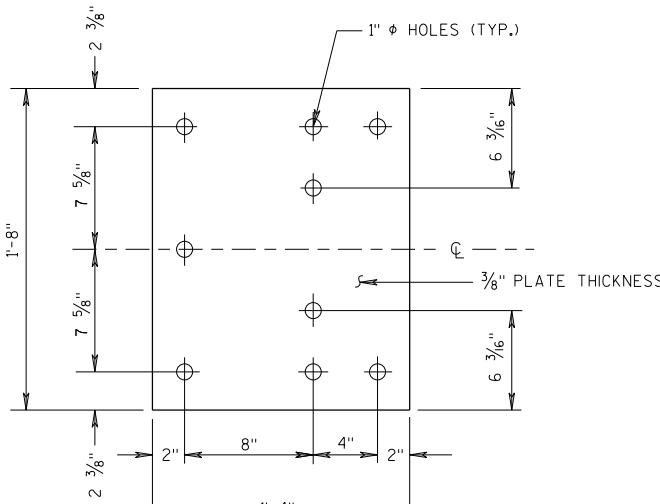
S.D.D. 14 B 45-5f

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

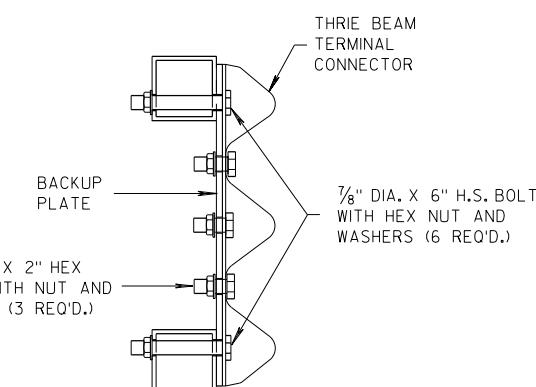
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DATE ROADWAY STANDARDS UNIT SUPERVISOR  
FHWA 34 ENT

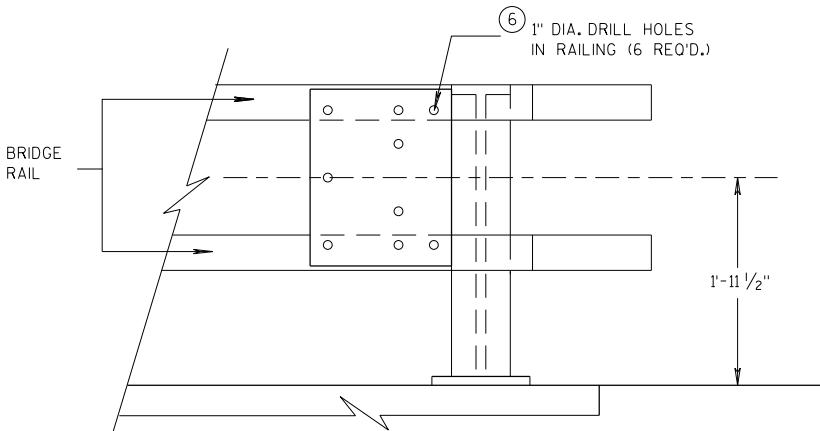
S.D.D. 14 B 45-5f



**BACK-UP PLATE DETAIL**



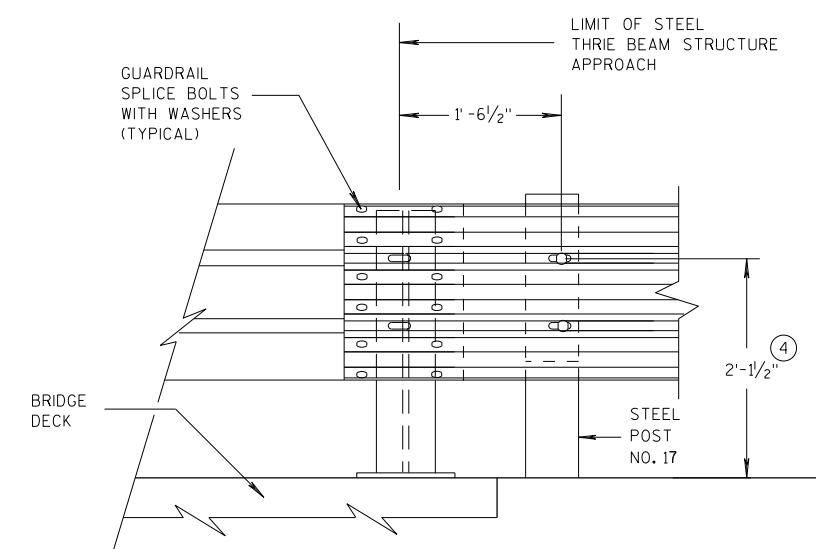
**SECTION J-J**



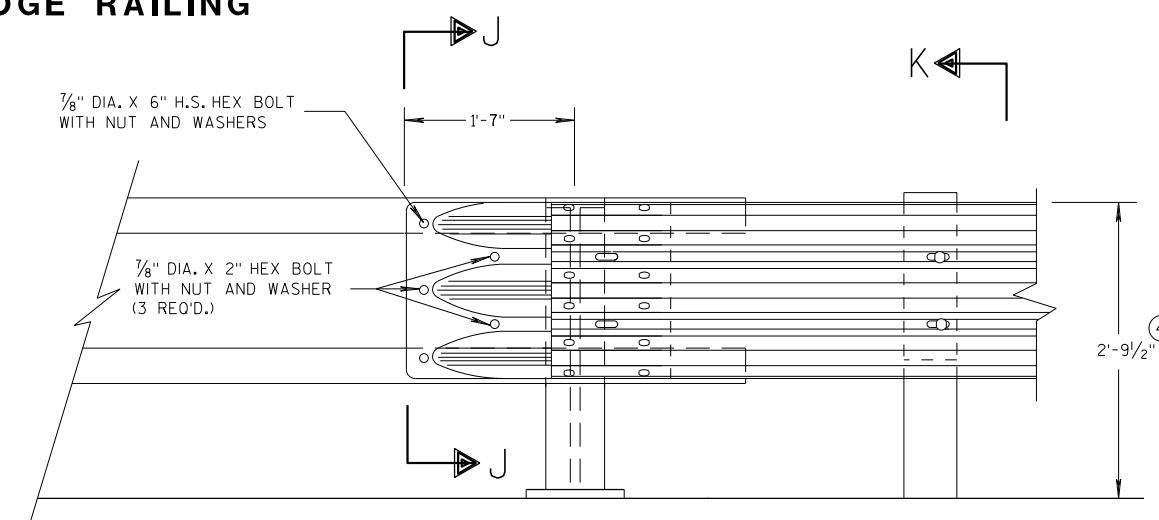
**BACK-UP PLATE MOUNTING  
ONTO BRIDGE RAILING**

**GENERAL NOTES**

- ④ TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .
- ⑥ DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

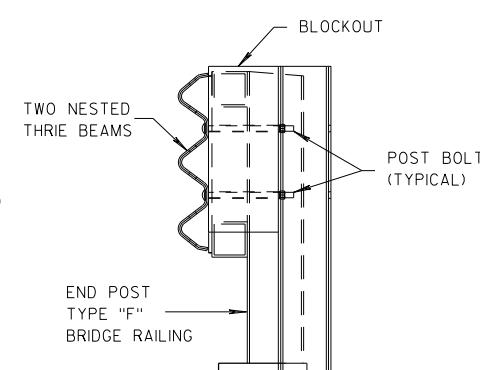


**FRONT VIEW**  
**THRIE BEAM CONNECTION TO  
STEEL RAILING TYPE "W"**



**FRONT VIEW**

**THRIE BEAM CONNECTION TO  
TUBULAR RAILING TYPE "F"**



**SECTION K-K**

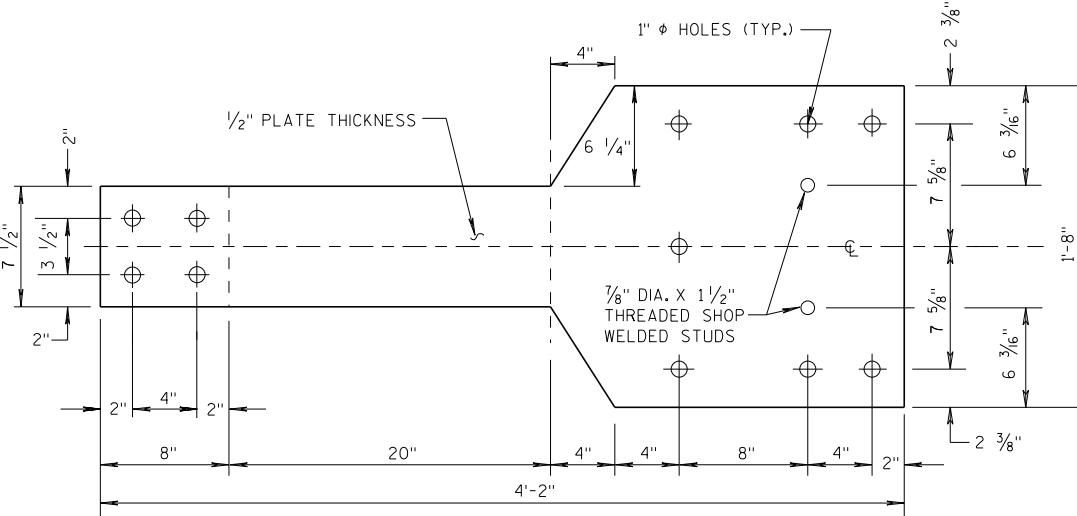
**MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

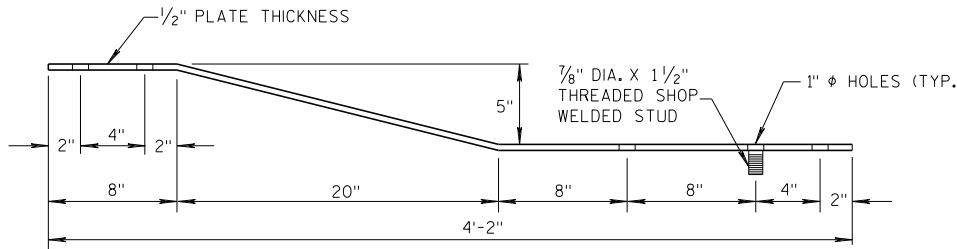
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/S/ Rodney Taylor 35  
DATE  
ROADWAY STANDARDS DEVELOPMENT  
UNIT SUPERVISOR  
FHWA

## GENERAL NOTES

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

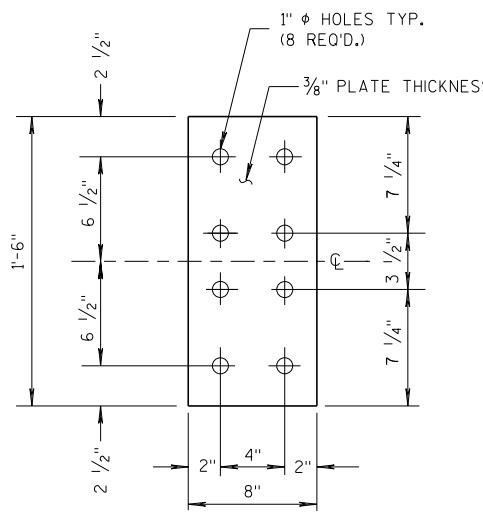


FRONT VIEW



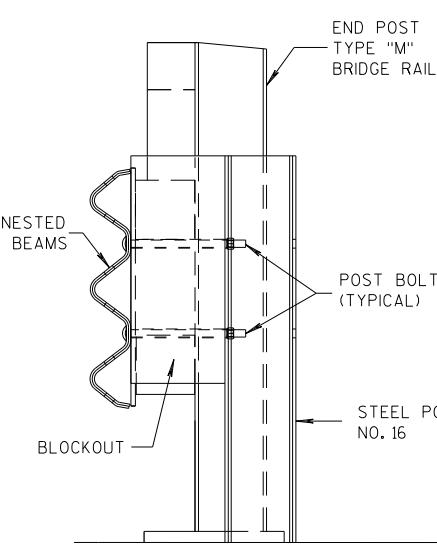
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

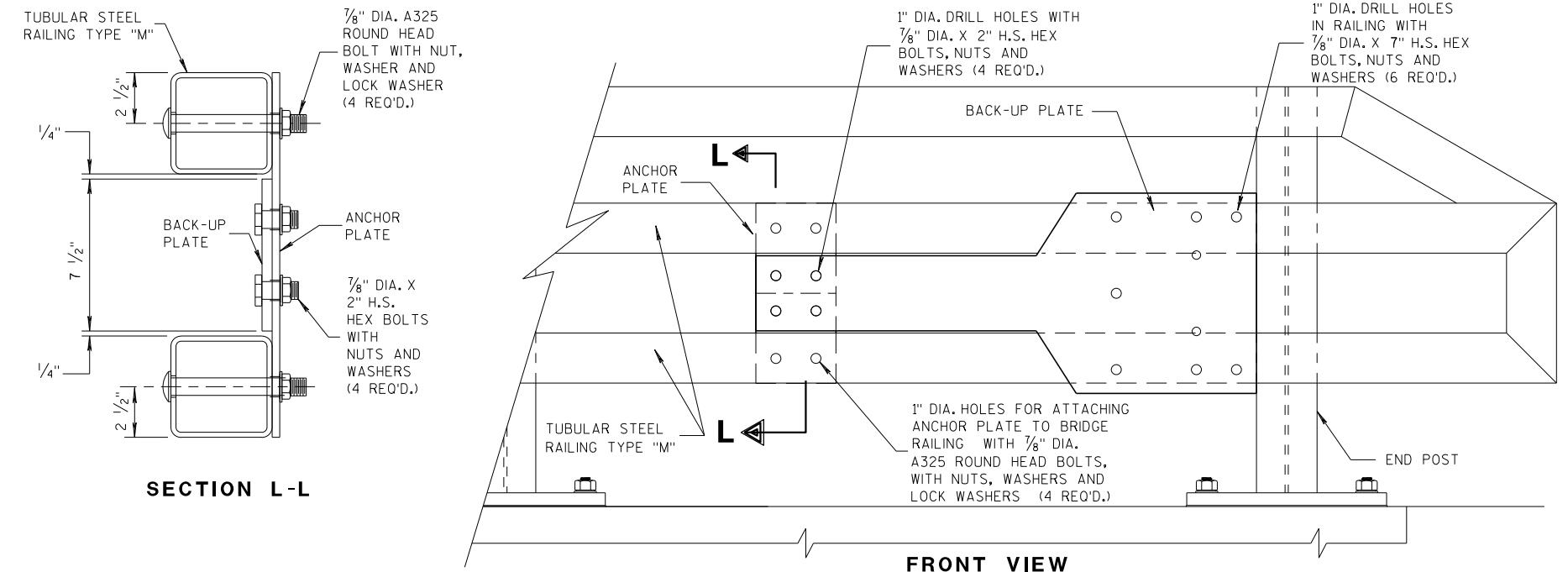


FRONT VIEW

ANCHOR PLATE DETAIL, TYPE "M"

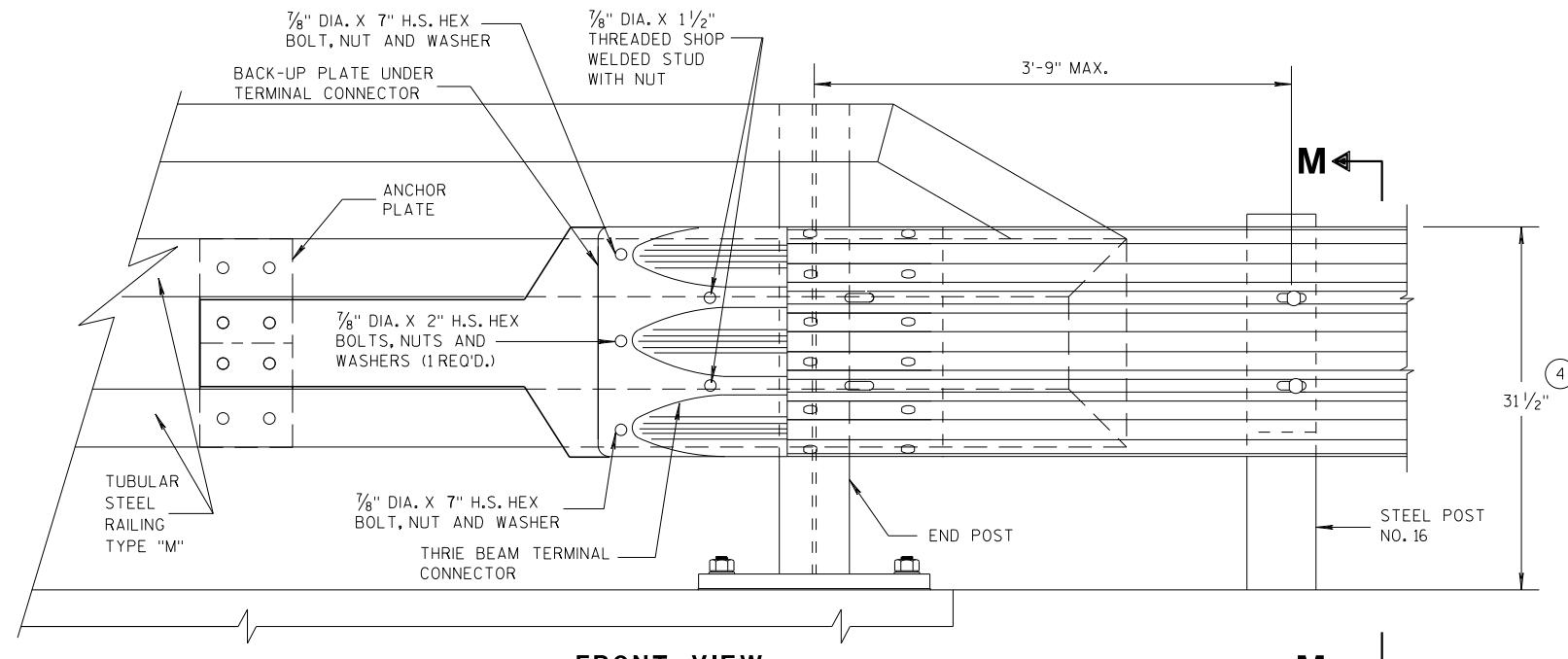


SECTION M-M

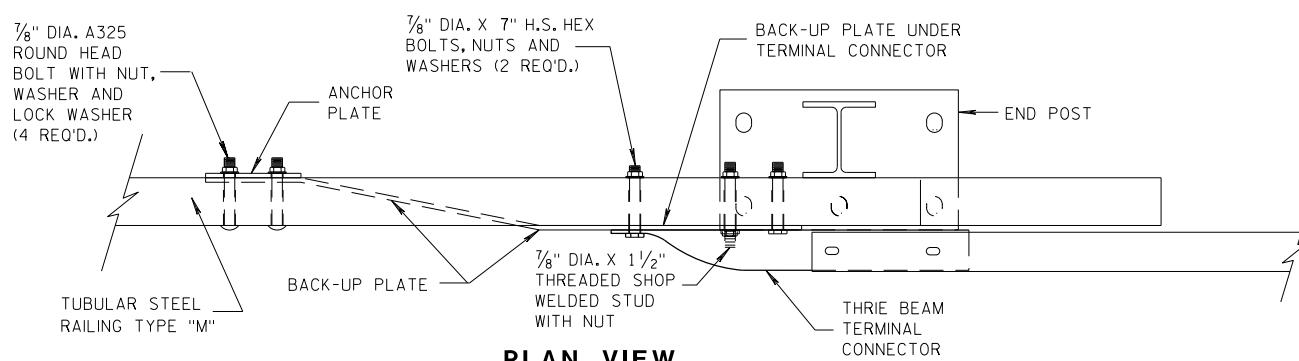


FRONT VIEW

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



FRONT VIEW



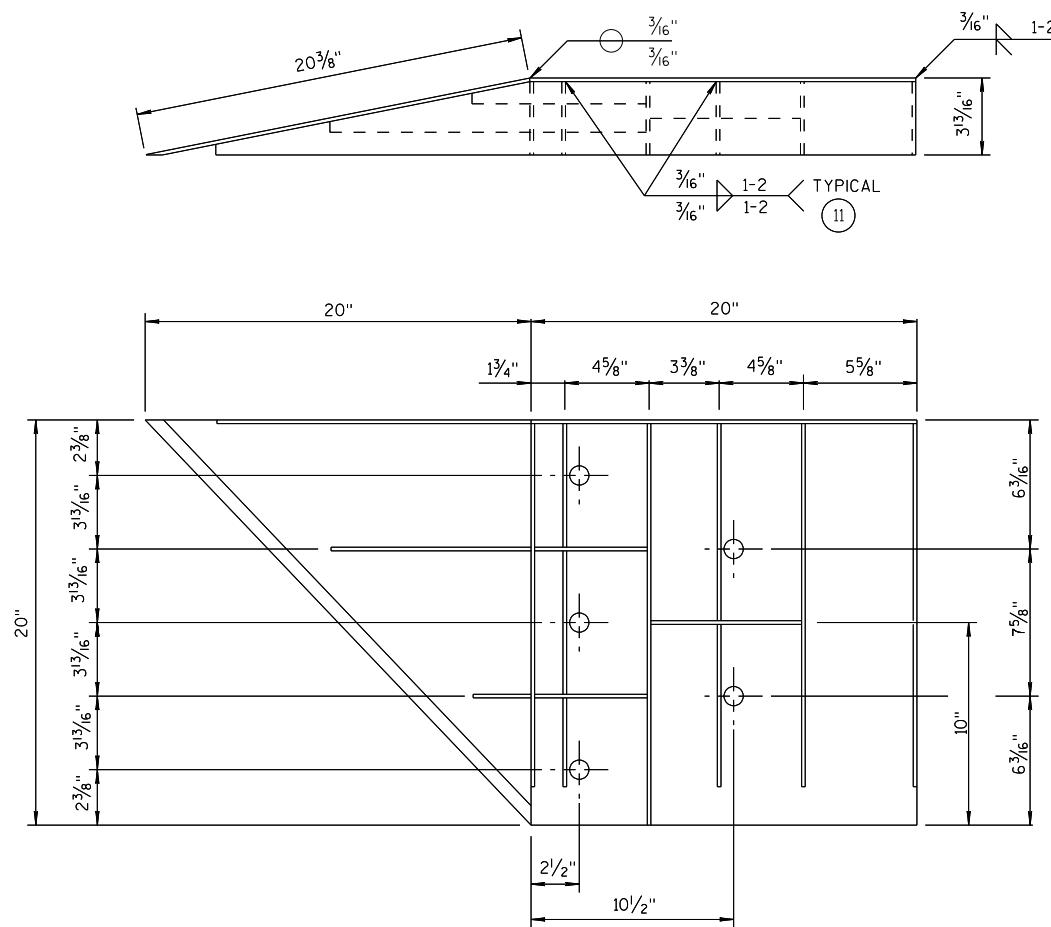
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

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### WELDING INSTRUCTION

(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 9/16"	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 7/16" x 10 3/16" 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 7/16"	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 9/16" x 6" x 3 5/8" x 5 7/8"	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 1/32"	1/4"
S10	1		1 7/8" x 9 7/16" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 1/32"	1/4"

### SINGLE SLOPE CONNECTION PLATE

### 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.

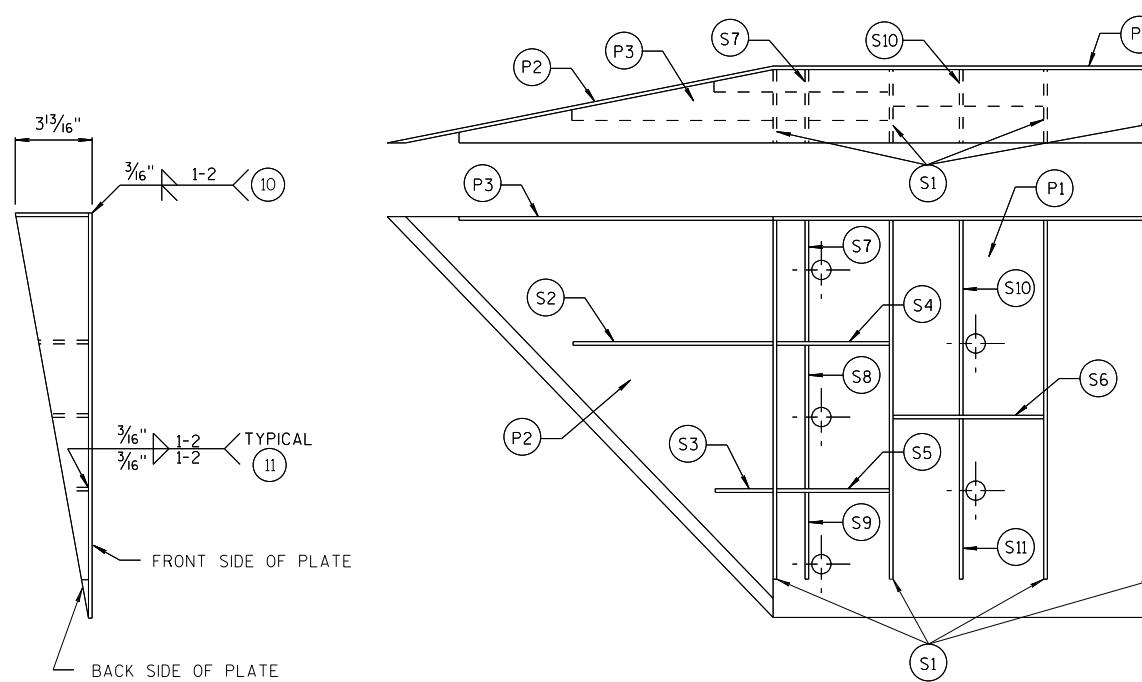
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

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".



### PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

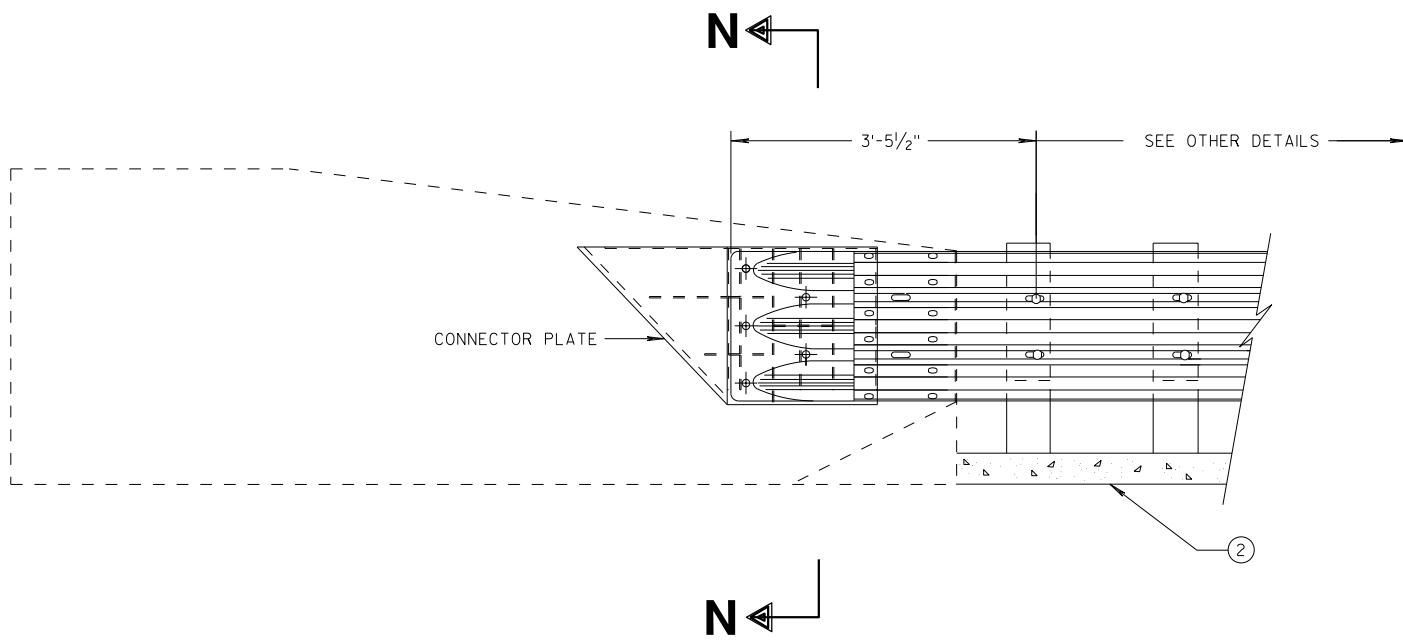
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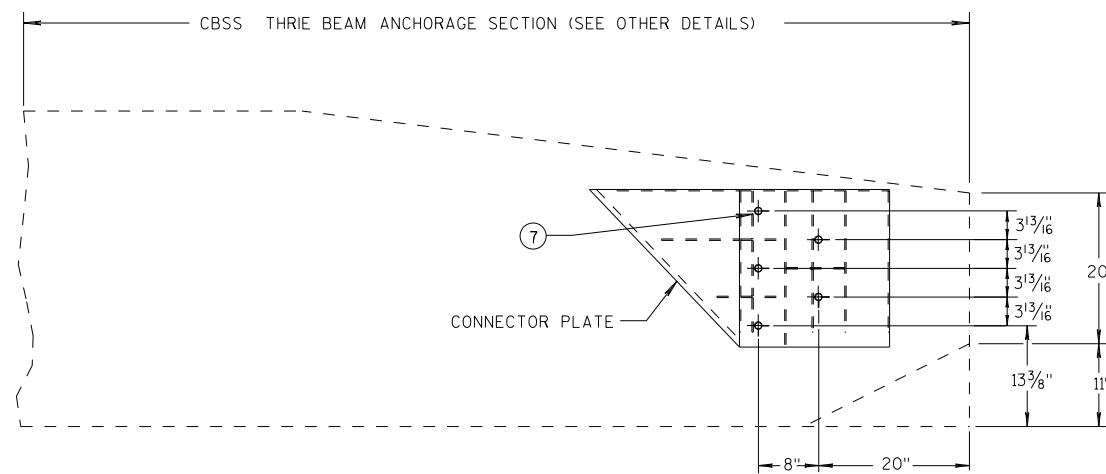
## GENERAL NOTES

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

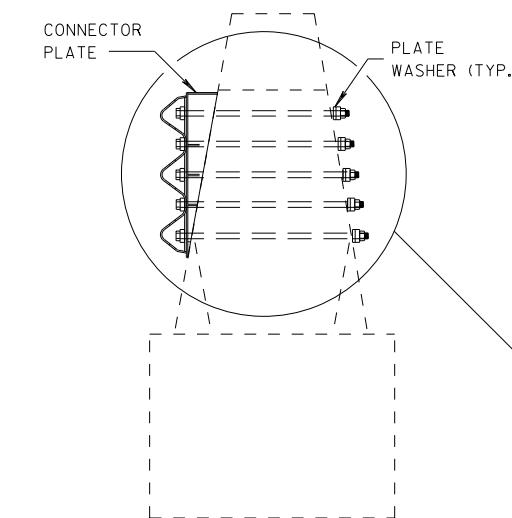
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH.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



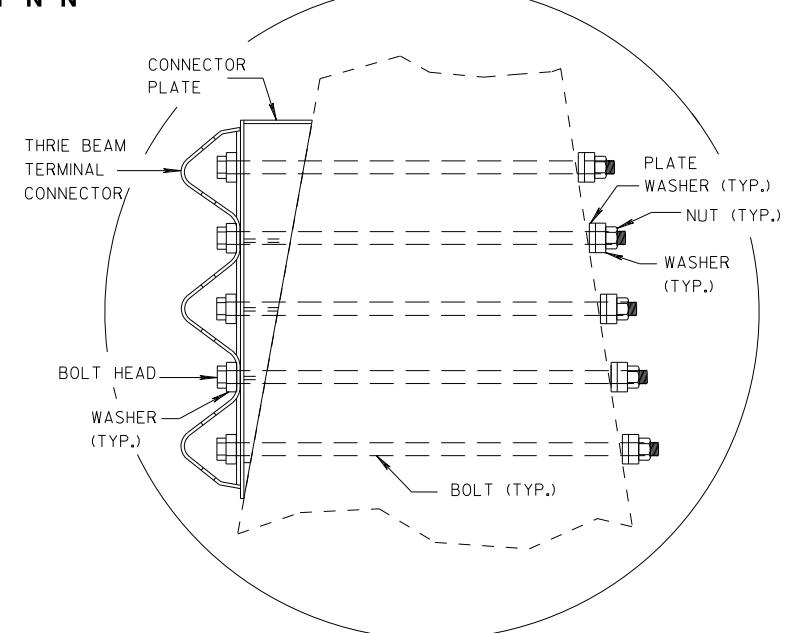
THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



SINGLE SLOPE CONNECTION PLATE PLACEMENT



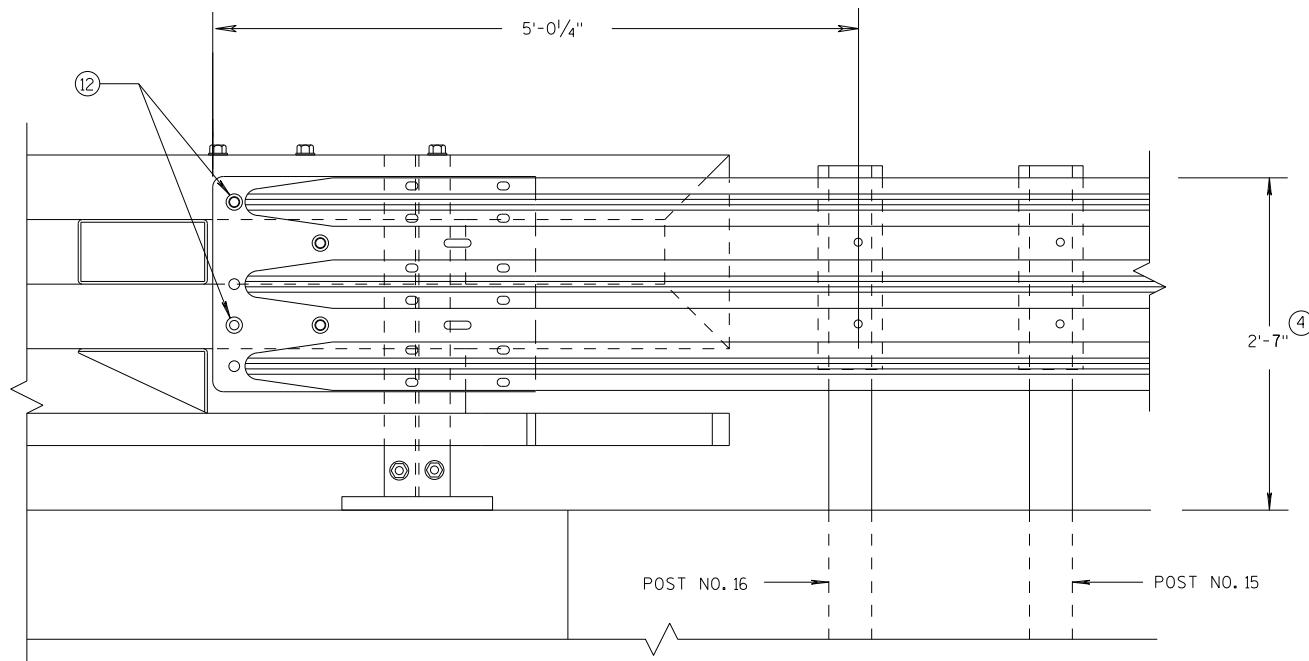
SECTION N-N



MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

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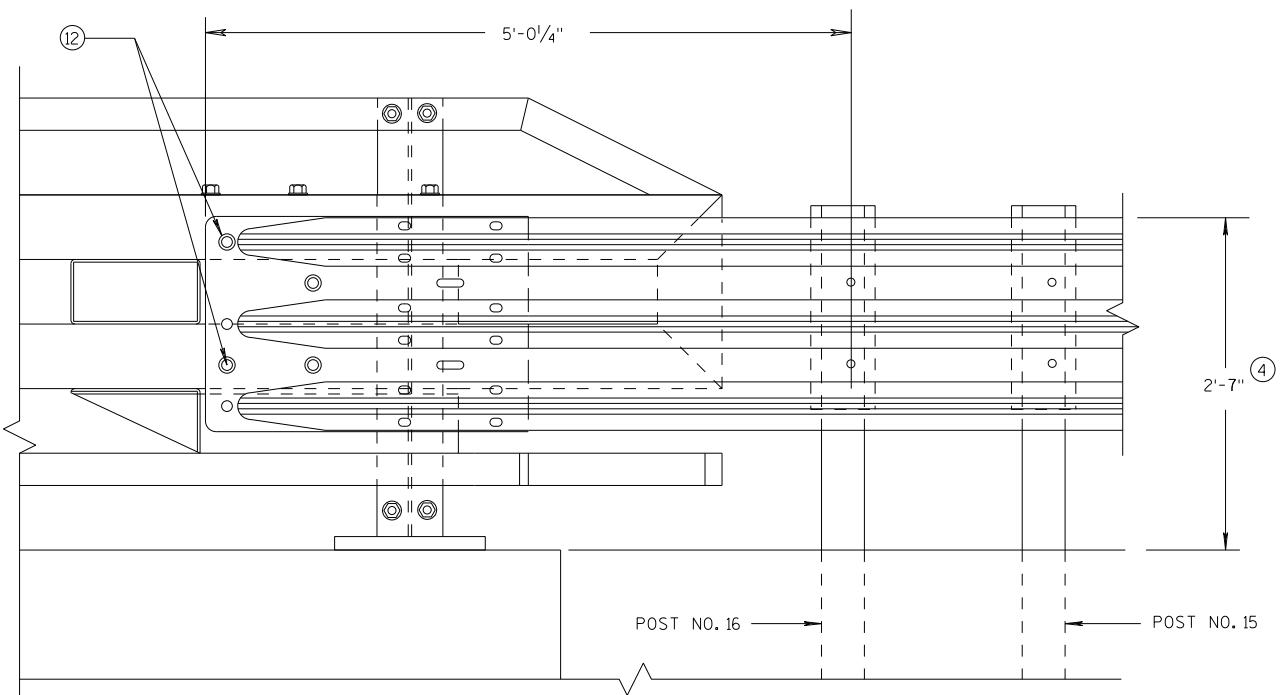
**ELEVATION OF DETAIL AT NY3 END POST**

**THRIE BEAM RAIL ATTACHMENT**

**GENERAL NOTES**

(4) TOLERANCE FOR TOP OF BEAM IS  $\pm 1$ ".

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREAD LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND  $\frac{1}{2}$ -INCH BEYOND NUT.



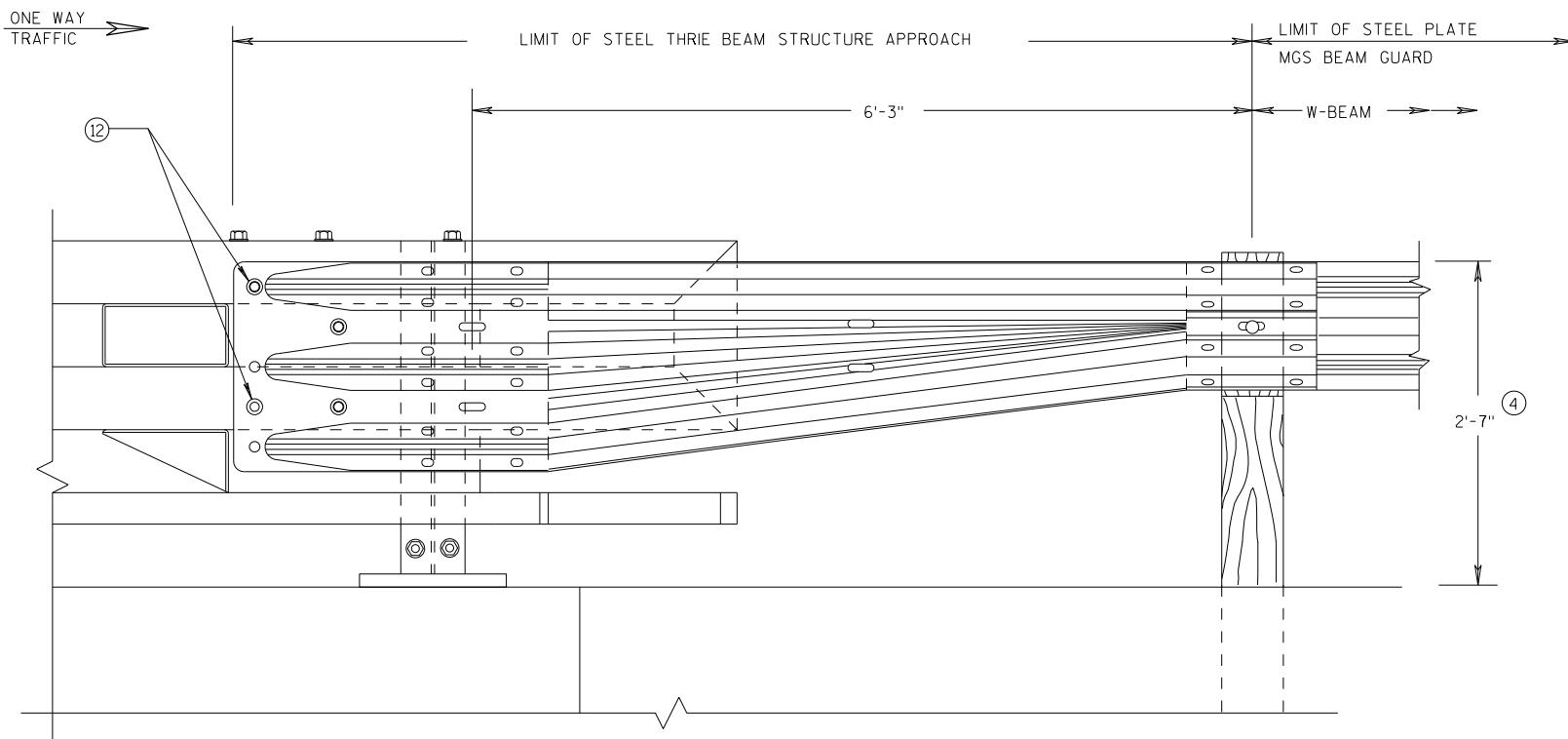
**ELEVATION OF DETAIL AT NY4 END POST**

**THRIE BEAM RAIL ATTACHMENT**

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

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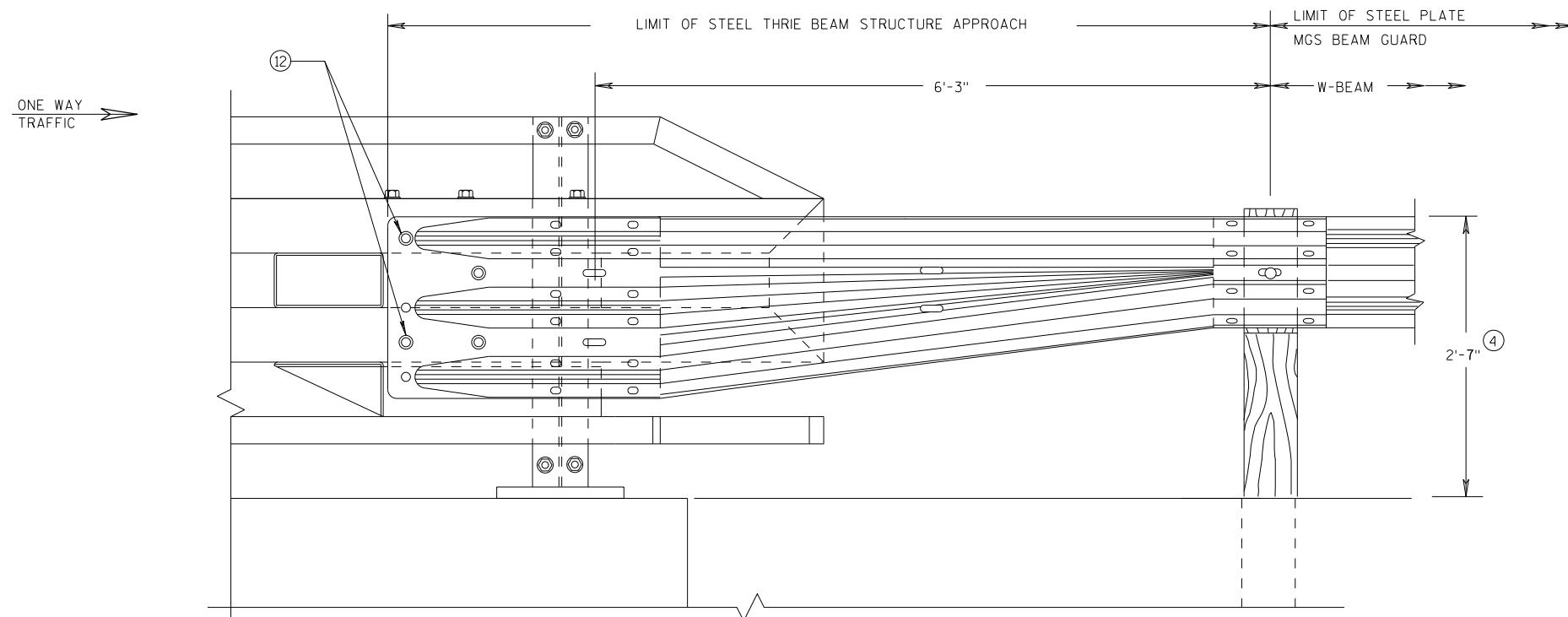
FRONT VIEW

**W BEAM TRANSITION AND  
CONNECTION TO BRIDGE RAILING TYPE "NY3"**  
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

**GENERAL NOTES**

(4) TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND  $\frac{1}{2}$ -INCH BEYOND NUT.

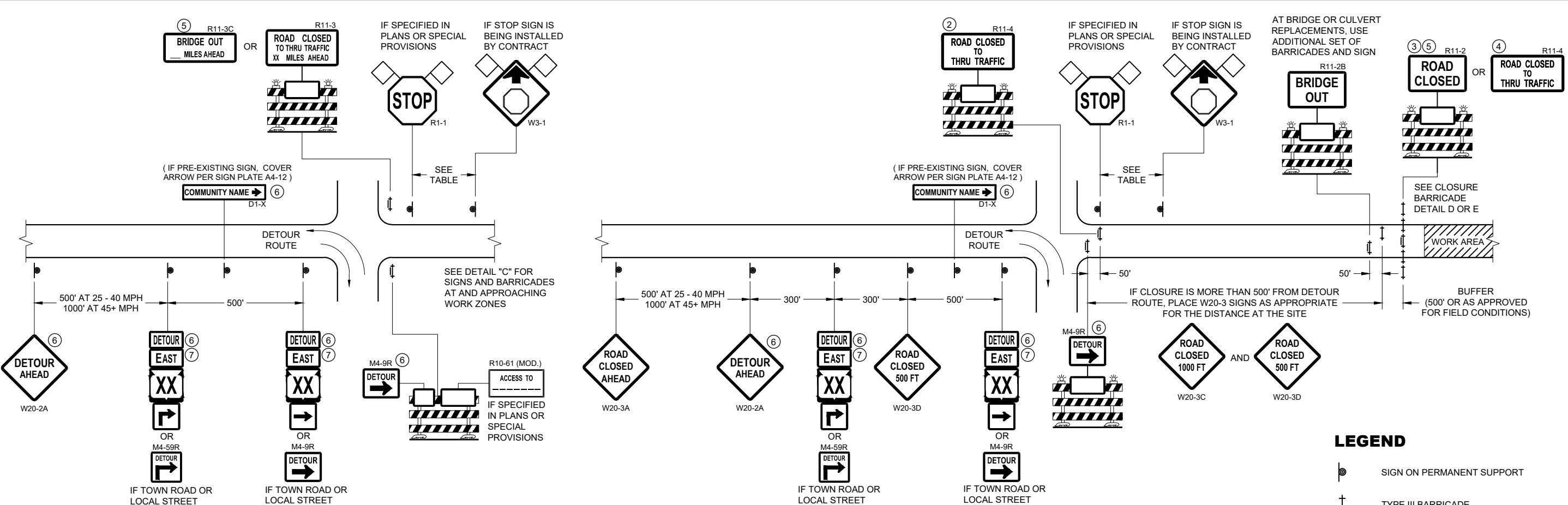


FRONT VIEW  
**W BEAM TRANSITION AND  
CONNECTION TO BRIDGE RAILING TYPE "NY4"**  
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
7/2018 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS C 40  
FHWA UNIT SUPERVISOR

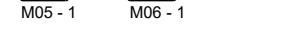
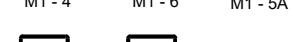
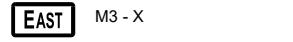
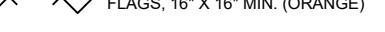
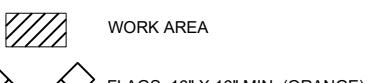


**DETAIL B**  
**MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE LESS THAN  $\frac{1}{2}$  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)



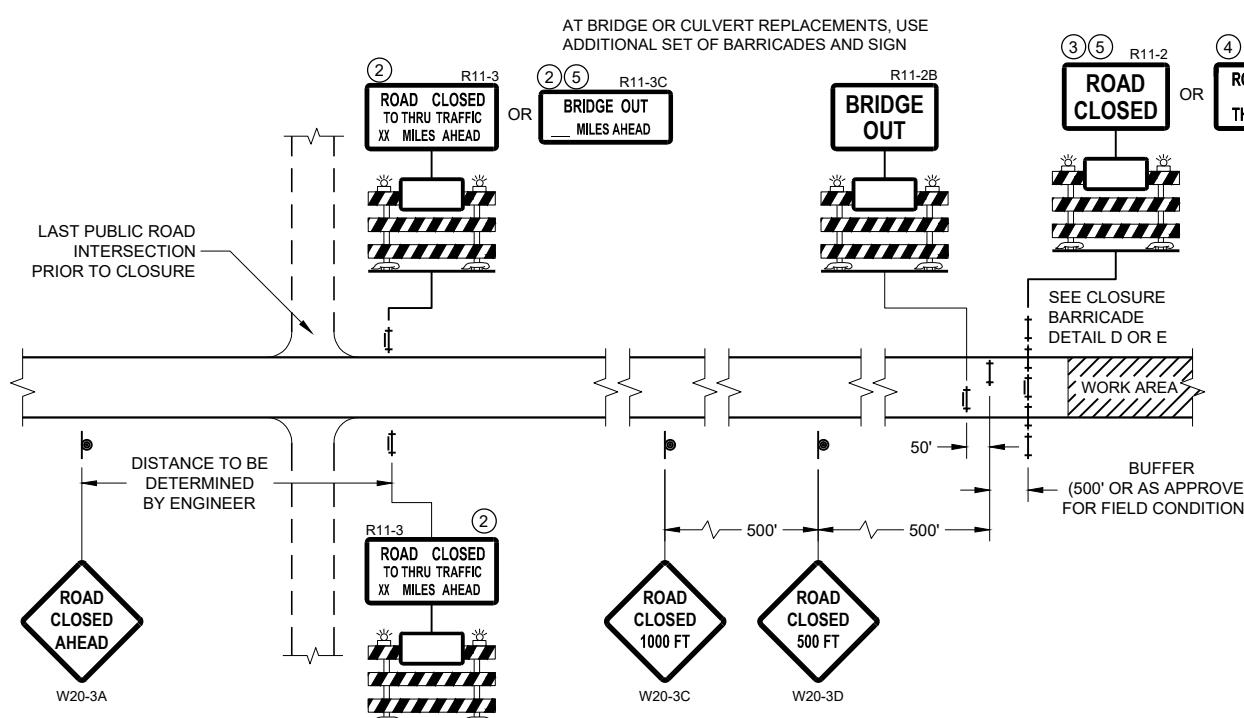
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

**BARRICADES AND SIGNS FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Andrew Heidke  
DATE  
FHWA  
WORK ZONE ENGINEER 41



## 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)

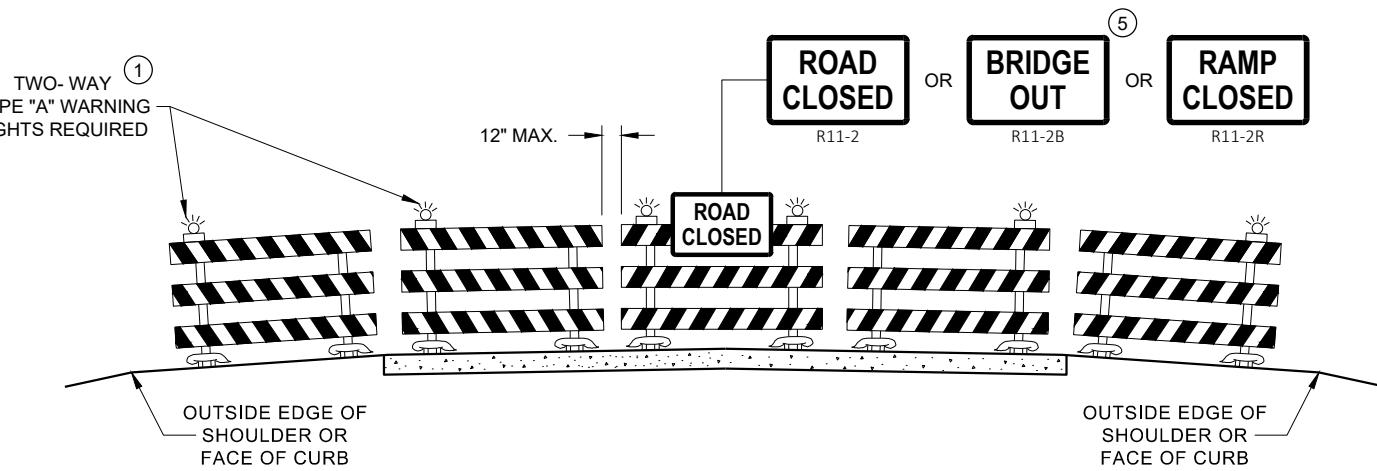
M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)

M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)

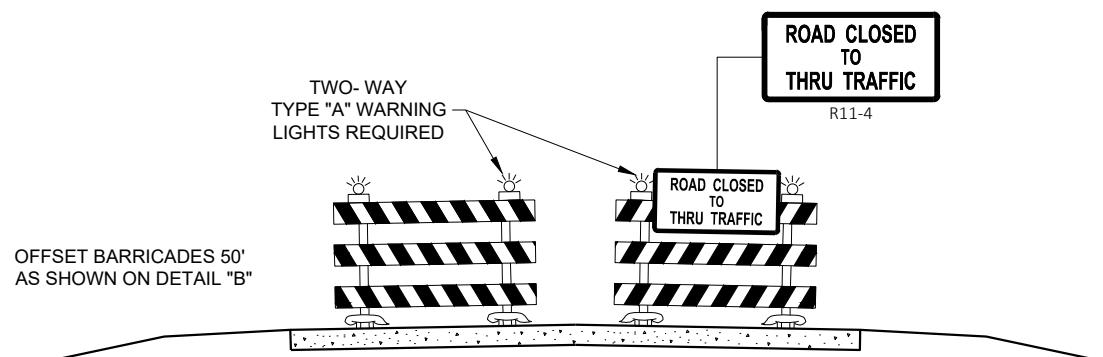
M05 - 1 AND M06 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)

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

R1 - 1 SHALL BE 36" X 36"



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

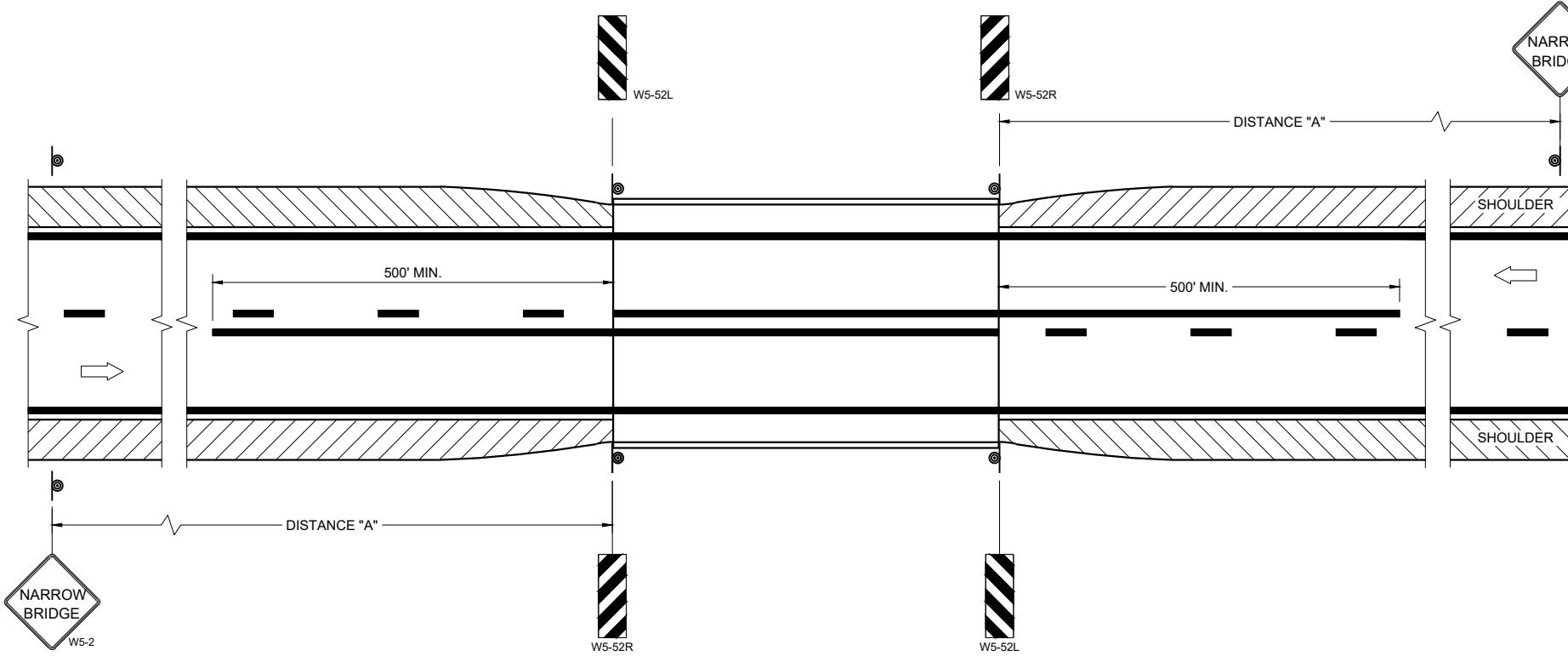
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS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

## BARRICADES AND SIGNS FOR VARIOUS CLOSURES

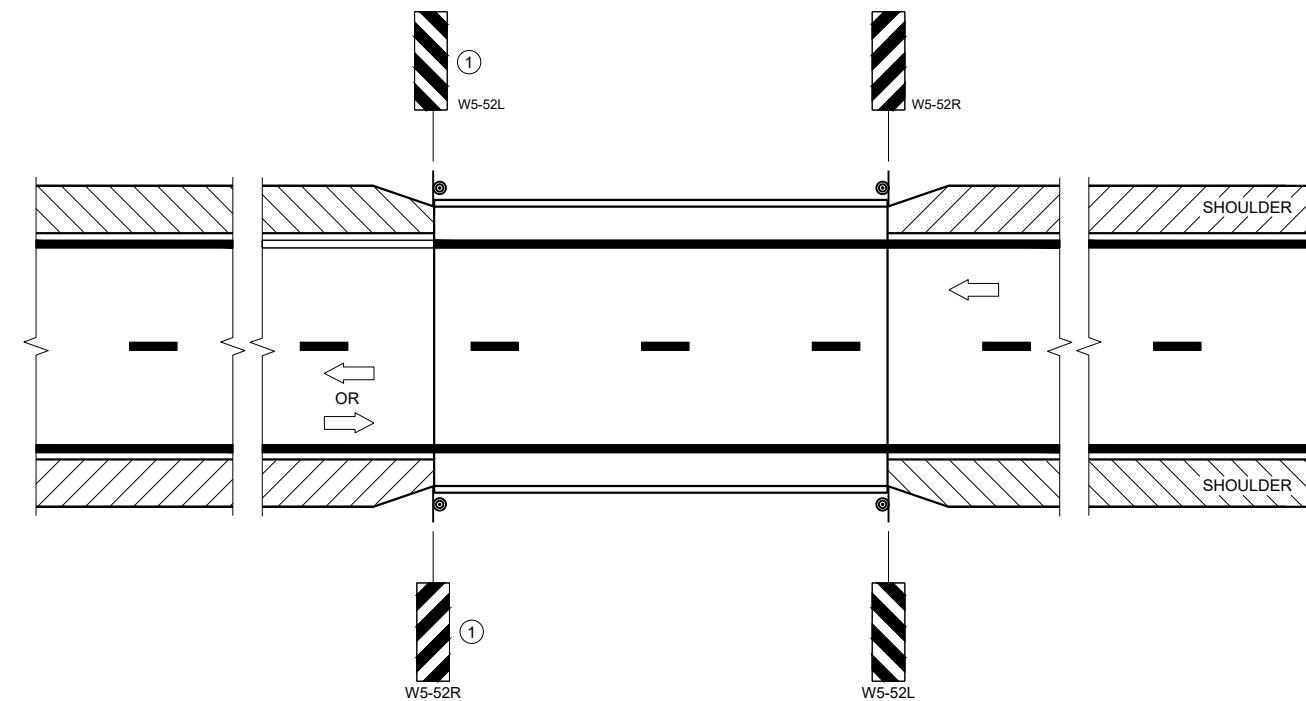
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023  
DATE  
FHWA

/S/ Andrew Heidke  
WORK ZONE ENGINEER 42

**SITUATION 1**

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

**SITUATION 2**

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

**GENERAL NOTES**

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

**LEGEND**

Ⓐ SIGN ON PERMANENT SUPPORT

→ DIRECTION OF TRAFFIC

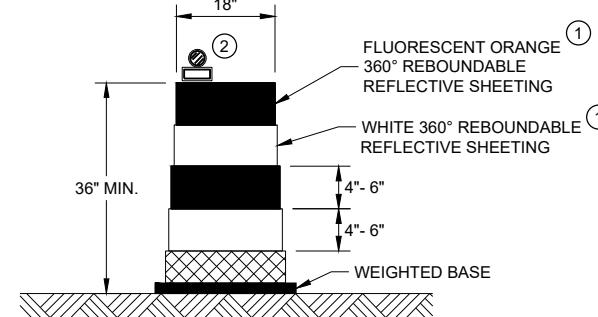
**DISTANCE TABLE**

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

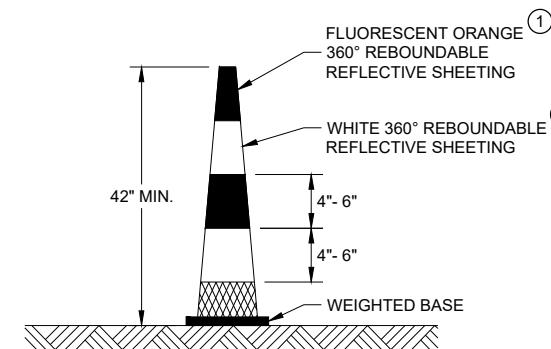
**SIGNING AND MARKING  
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Jeannie Silver  
DATE  
FHWA  
Statewide Pavement Marking Engineer

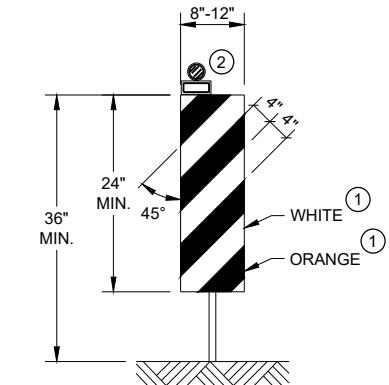
**DRUM**

BALLAST WIDTHS  
RANGE FROM 24"-36"

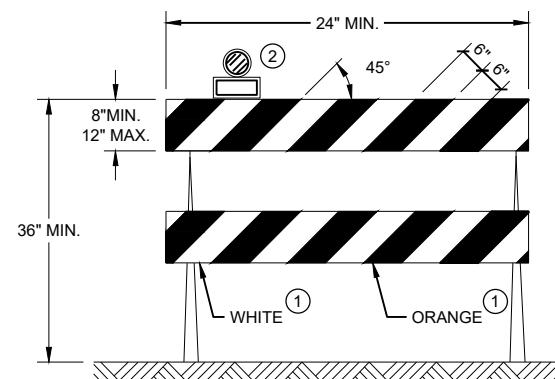
**42" CONE**

DO NOT USE IN TAPERS  
 $\frac{1}{2}$  SPACING OF DRUMS

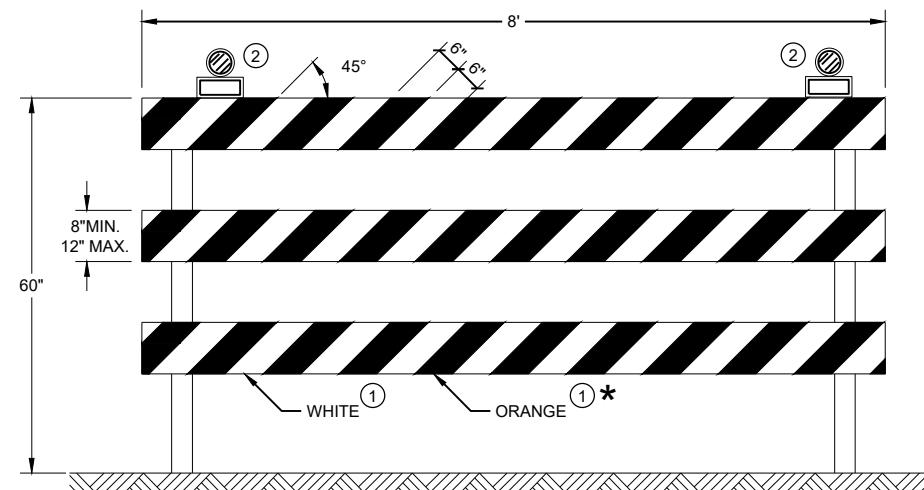
BALLAST WIDTHS  
RANGE FROM 14"-20"

**VERTICAL PANEL**

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

**TYPE II BARRICADE**

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

**TYPE III BARRICADE**

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

\* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

**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.

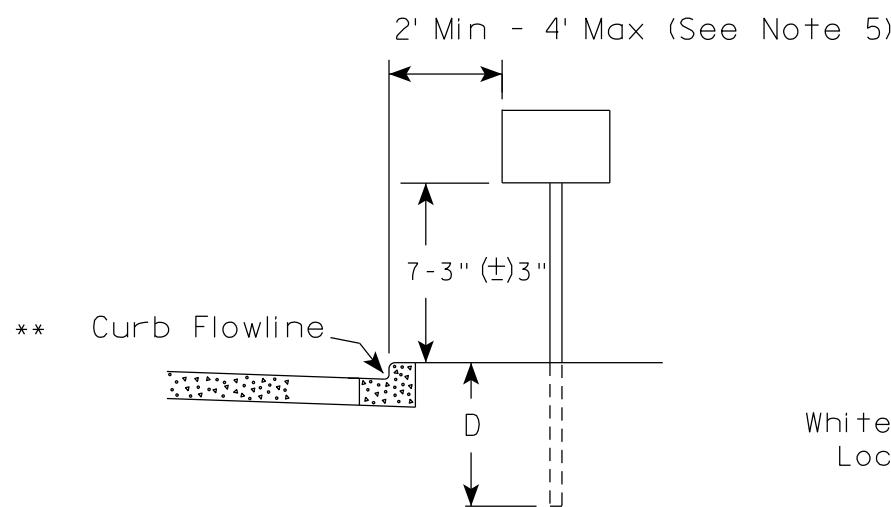
<b>CHANNELIZING DEVICES</b>
<b>DRUMS, CONES, BARRICADES</b>
<b>AND VERTICAL PANELS</b>

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

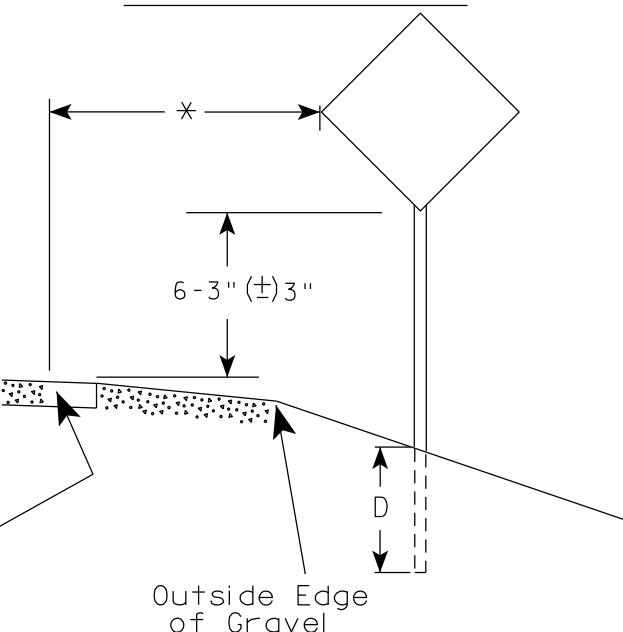
APPROVED  
November 2022 /S/ Andrew Heidtke  
DATE  
FHWA

WORK ZONE ENGINEER 44

## URBAN AREA



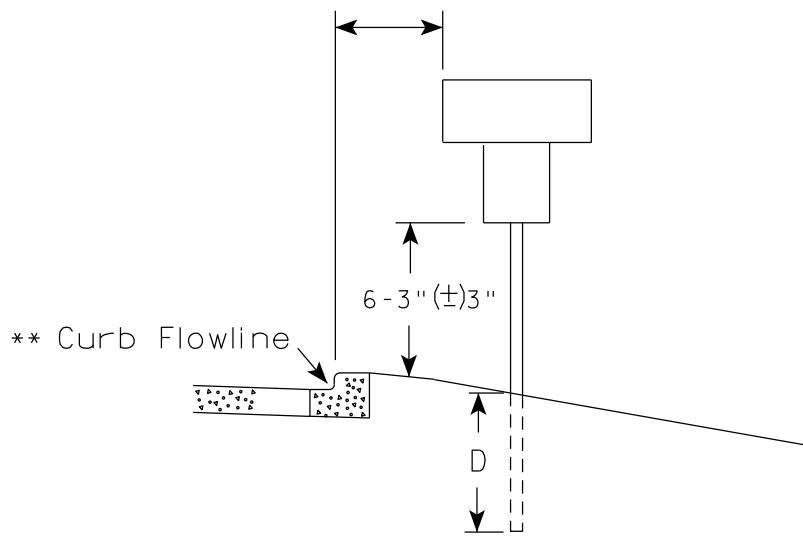
## RURAL AREA (See Note 2)



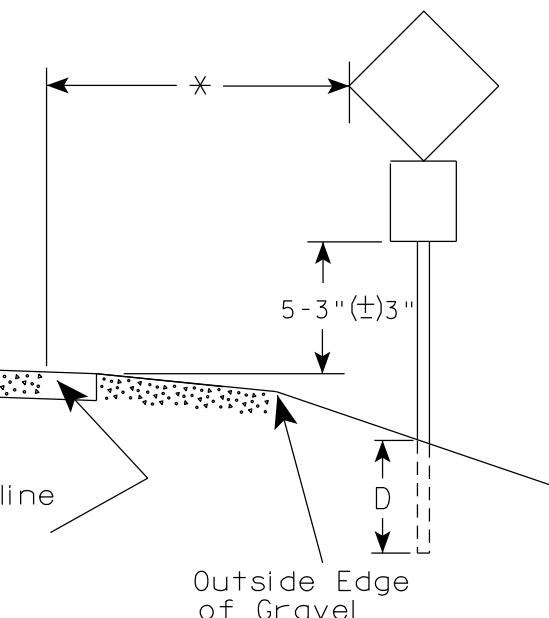
### GENERAL NOTES

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

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



White Edgeline Location



\*\* 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.

### POST EMBEDMENT DEPTH

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

\* 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 P. Rauch*  
for State Traffic Engineer

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

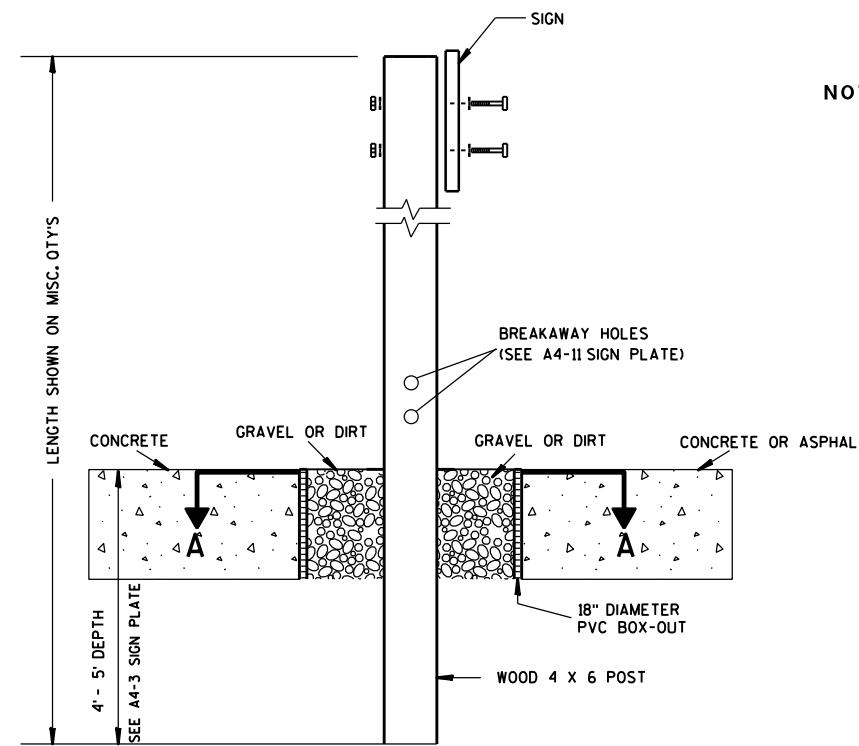
PROJECT NO:

HWY:

COUNTY:

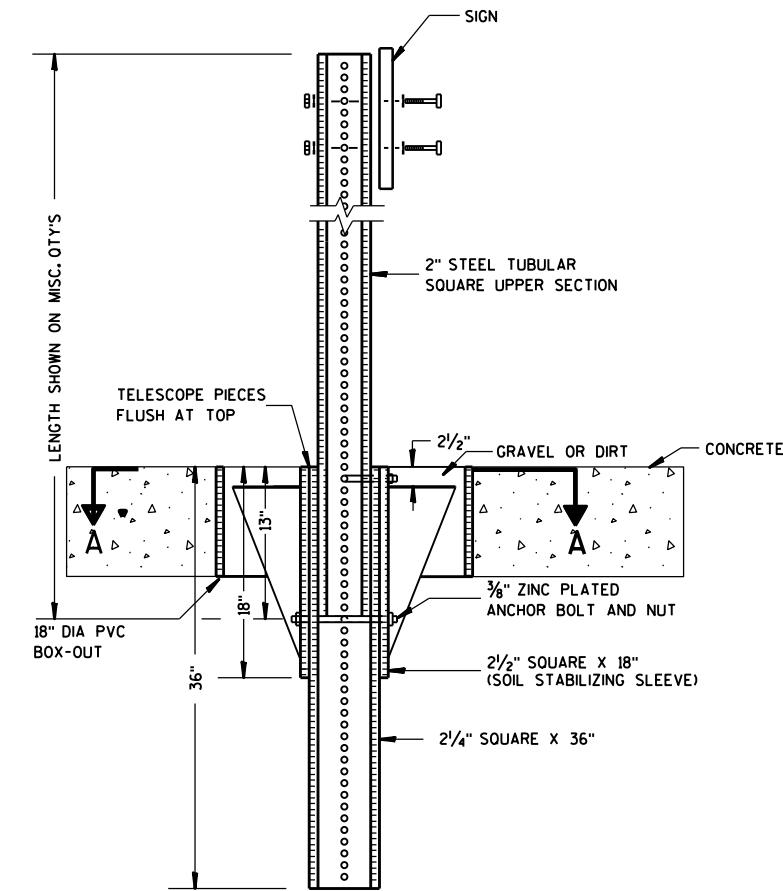
SHEET NO: 45

E



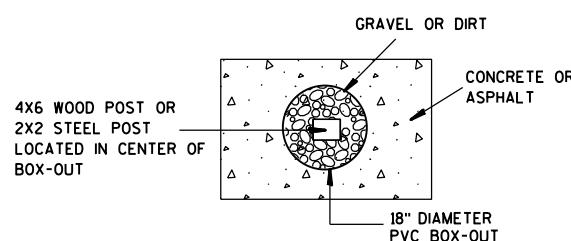
**ELEVATION VIEW**

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



**ELEVATION VIEW**

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



**PLAN VIEW**

**FOR NEW CONCRETE/ASPHALT INSTALLATIONS**

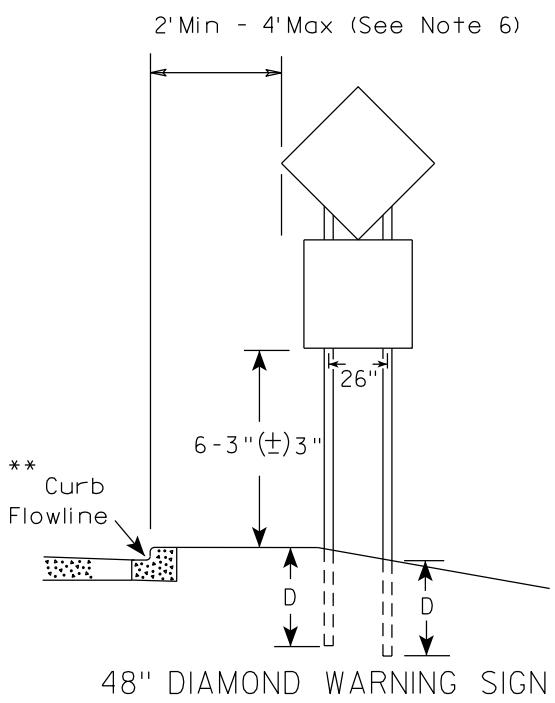
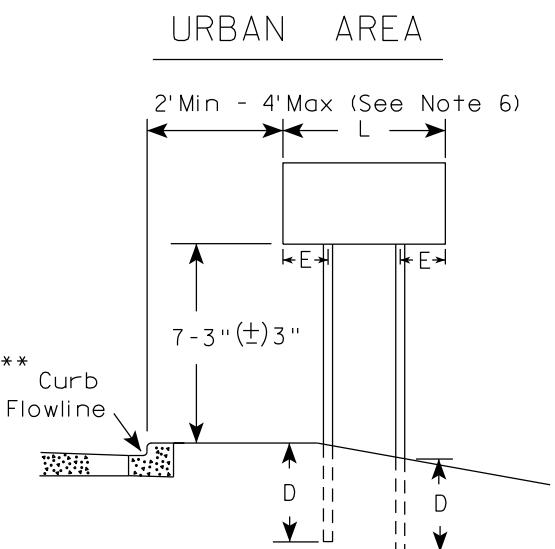
**SIGN POST  
BOX-OUTS  
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

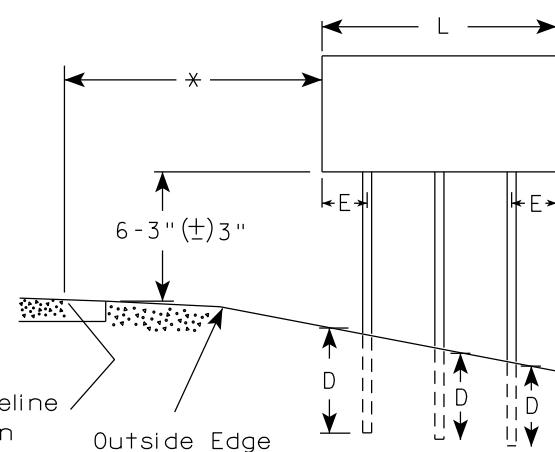
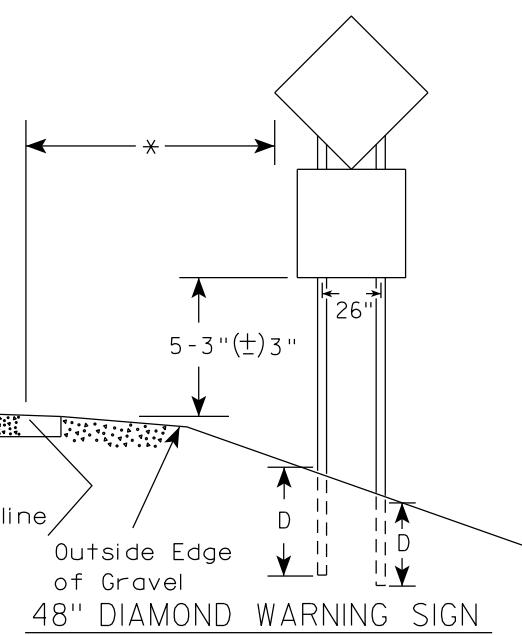
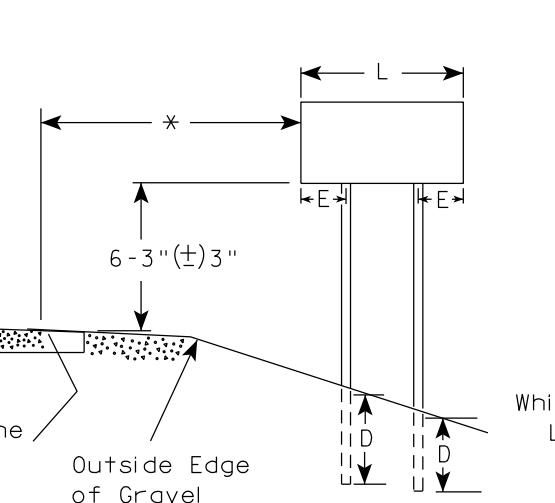
APPROVED  
*Matthew P. Rauch*  
for State Traffic Engineer  
DATE 1/27/14 PLATF 46 A4-3B.1

### GENERAL NOTES

- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" ( $\pm$  3") or 6'-3" ( $\pm$  3") depending upon existence of sub-sign.
- The ( $\pm$ ) tolerance for mounting height is 3 inches.
- J-Assemblies are considered to be one sign for mounting height.
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" ( $\pm$  3") or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" ( $\pm$  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" ( $\pm$  3").



### RURAL AREA (See Note 3)



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

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

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

**SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)**

L	E
Greater than 48"	12"
Less than 60"	
60" to 108"	L/5

**SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)**

L	E
Greater than 108" to 144"	12"

### POST EMBEDMENT DEPTH

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

### TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Matthew R. Rauch*  
for State Traffic Engineer

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

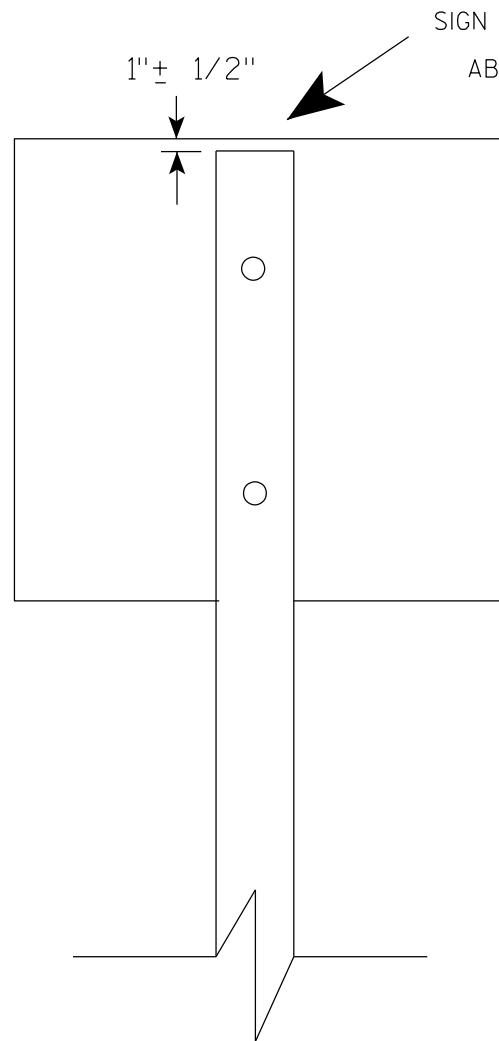
PROJECT NO:

HWY:

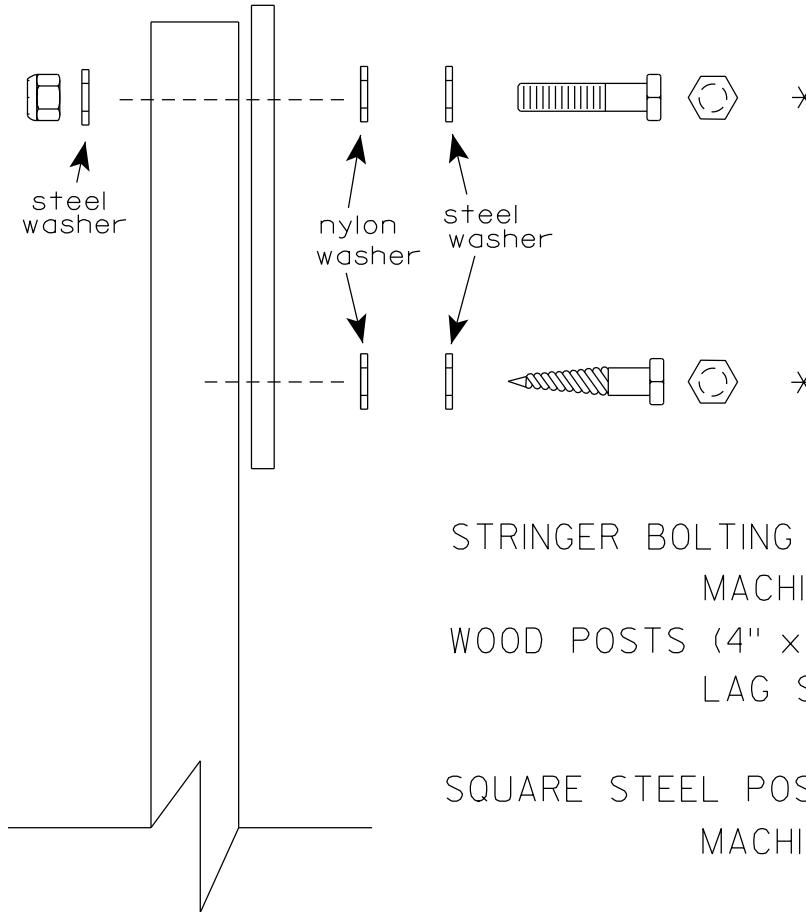
COUNTY:

SHEET NO: 47

**E**



SIGN SHALL BE MOUNTED TO PROJECT  
ABOVE THE TOP OF THE POST



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

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

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

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

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

#### WOOD POSTS (4" x 6")

LAG SCREWS -  $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)  
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)

#### SQUARE STEEL POSTS (2" x 2")

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

RIVETS -  $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL

O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

#### WASHERS (ALL POSTS) -

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

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

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

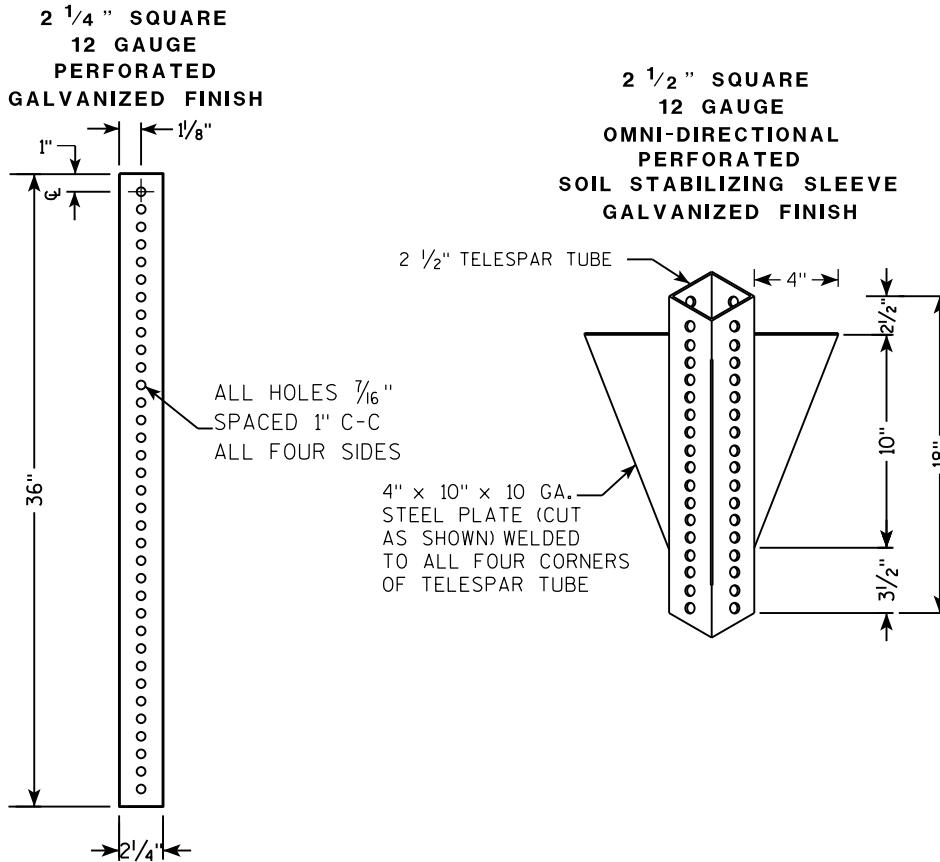
#### ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
for State Traffic Engineer

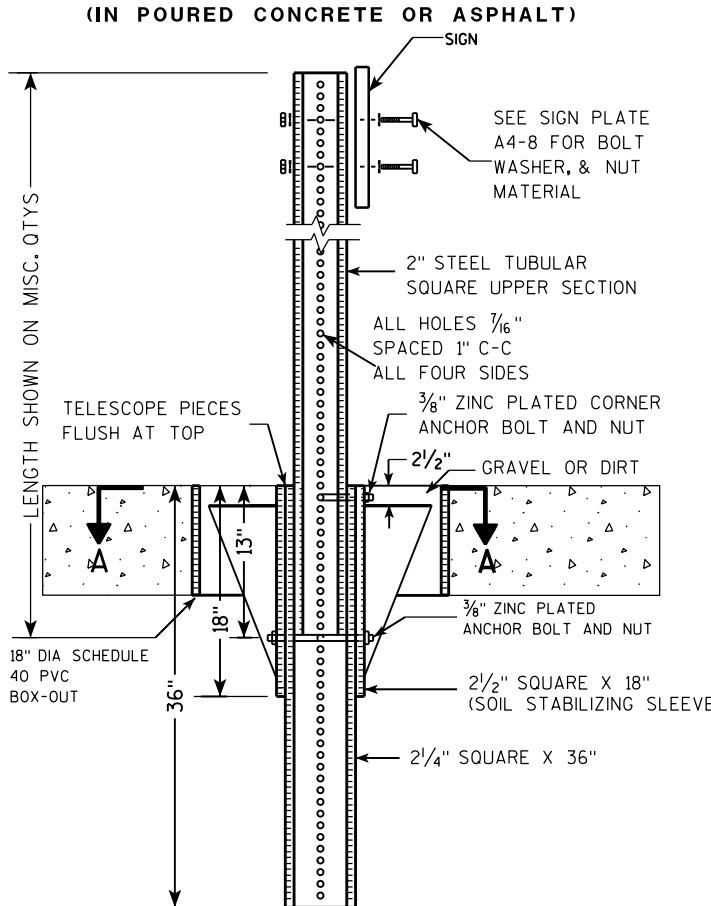
DATE 4/1/2020 PLATE NO. A4-8.9

### TELESCOPIC TUBING ANCHORS TWO PIECE SYSTEM



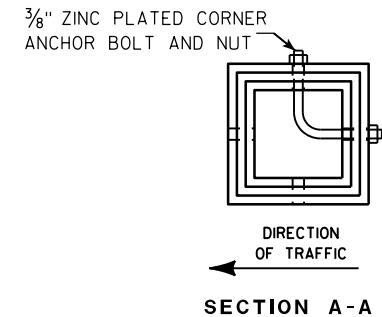
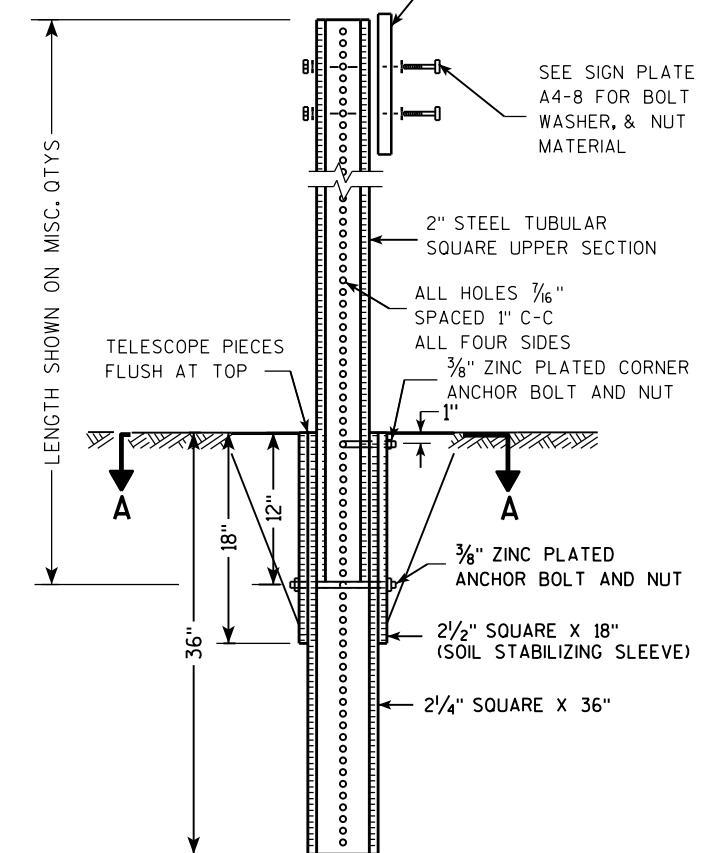
7

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



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)



7

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 P. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATI 49 14-9.9

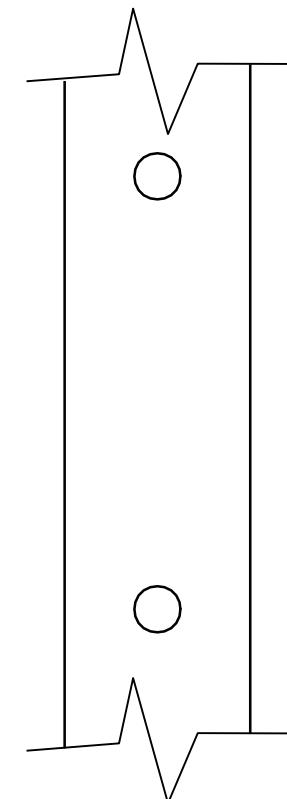
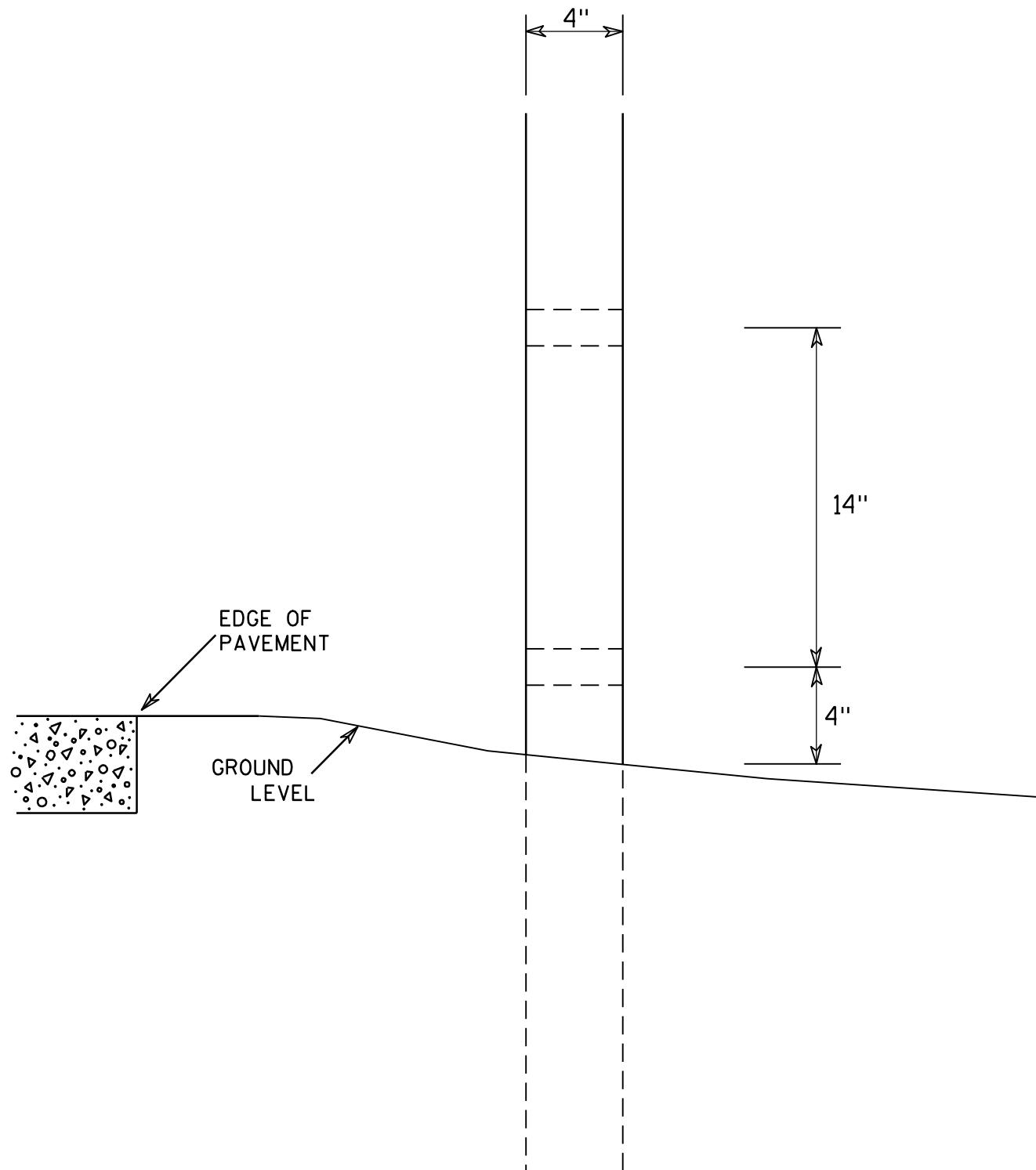
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

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

4 X 6 WOOD POST  
MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Cheska J. Spangler*  
for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 50

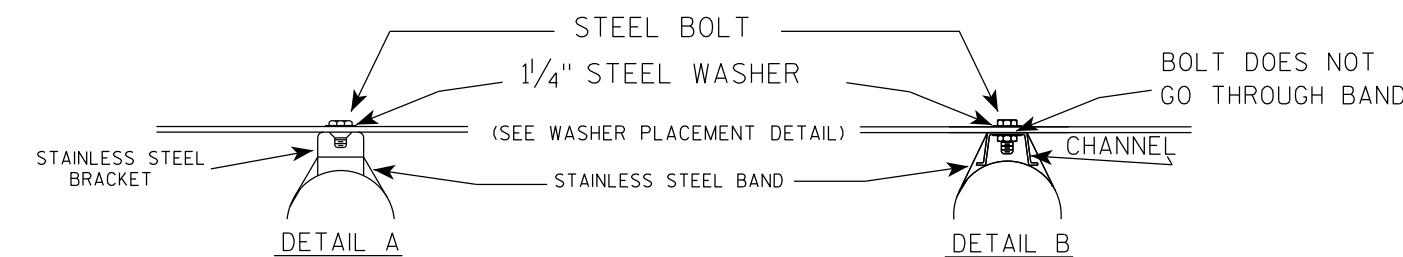
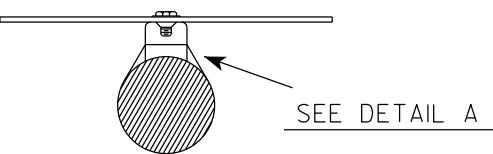
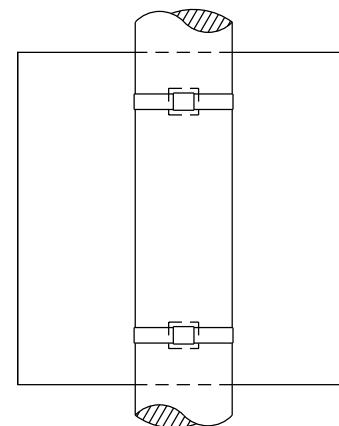
E

# BANDING

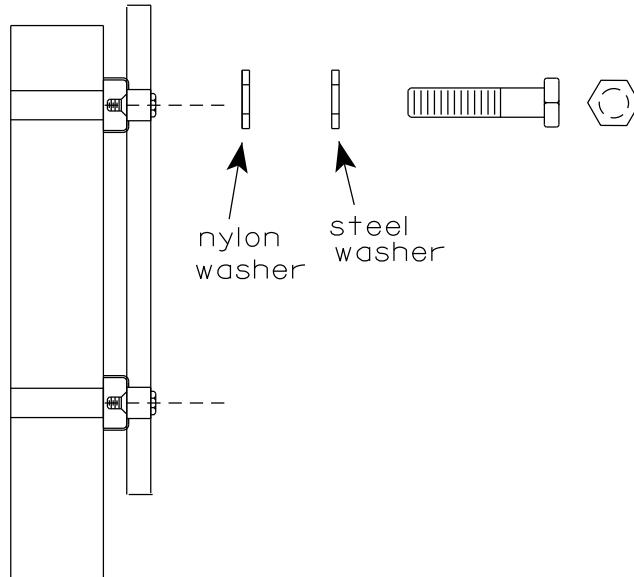
## GENERAL NOTES

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

## SINGLE SIGN

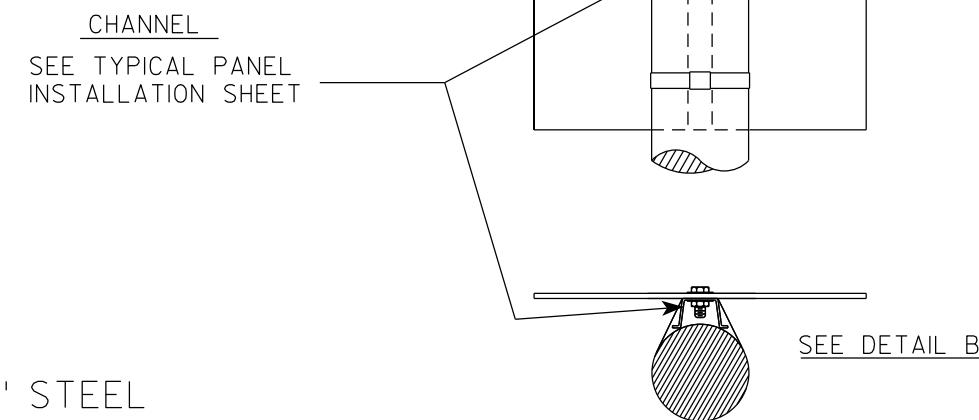


## WASHER PLACEMENT



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

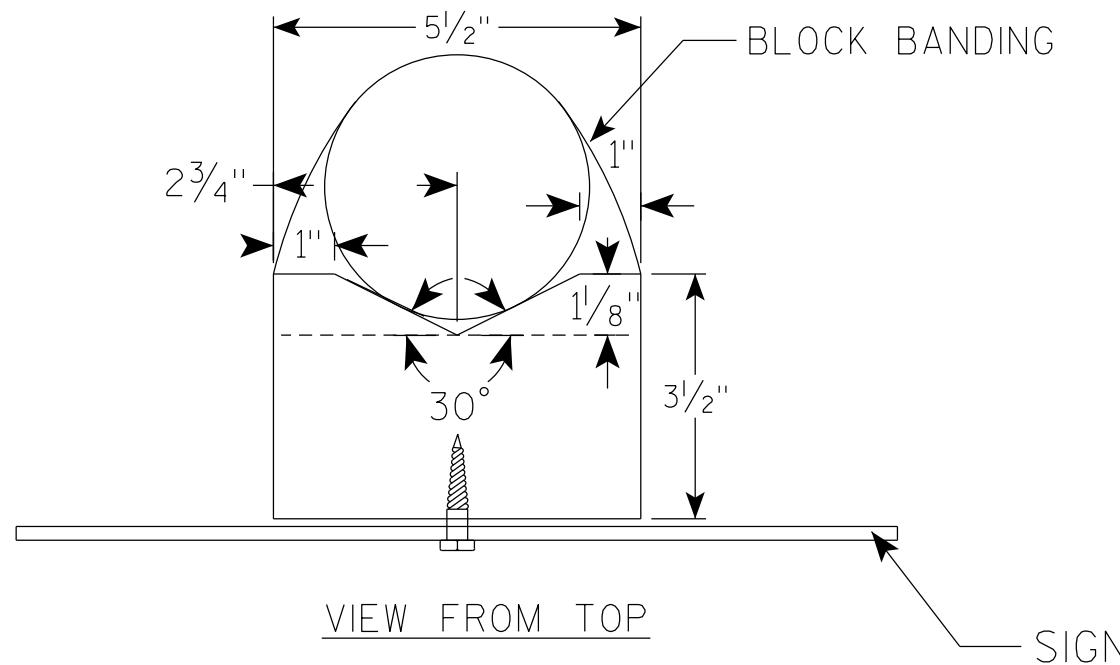
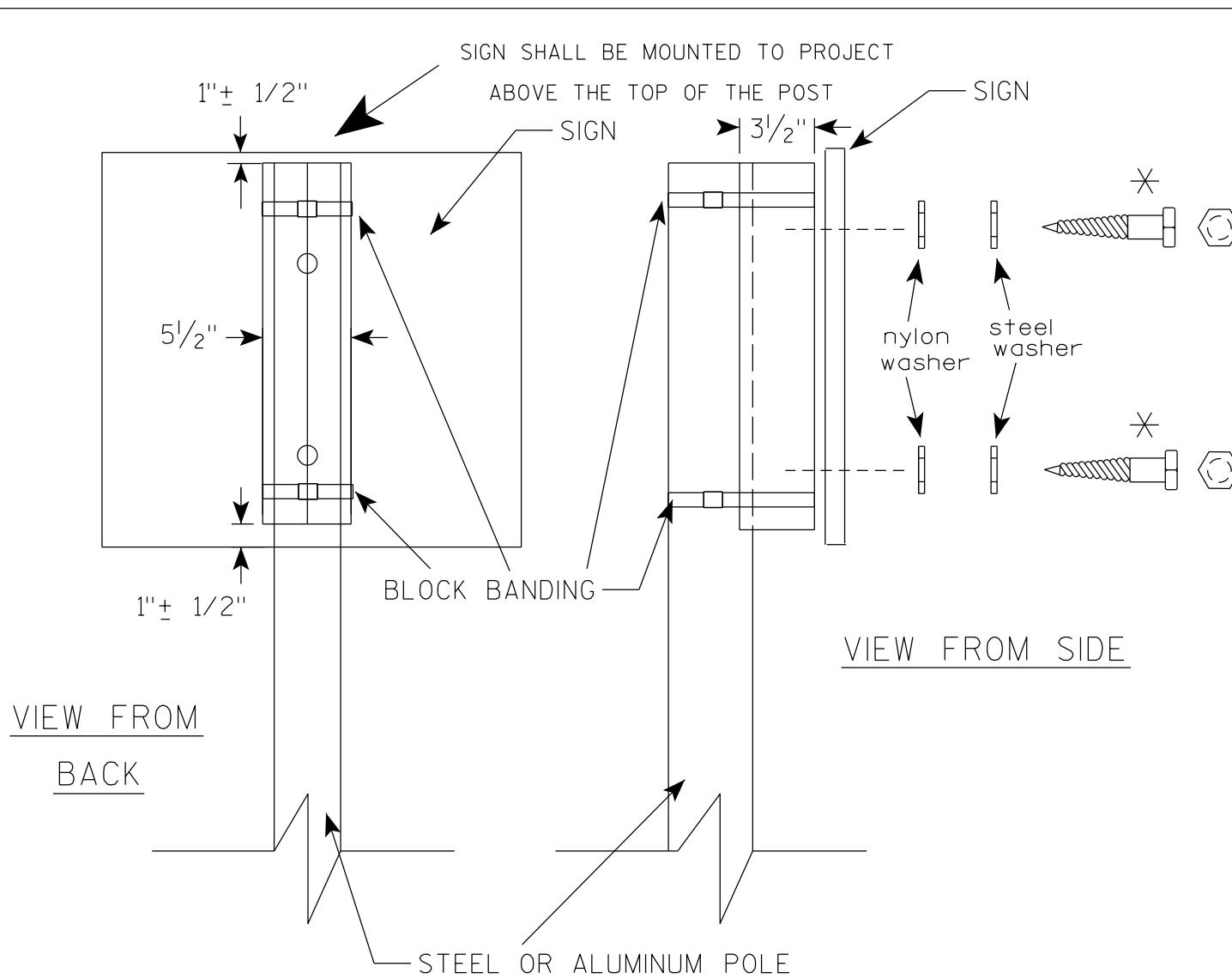
## "J" ASSEMBLY



## STANDARD SIGN SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

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

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

7

7

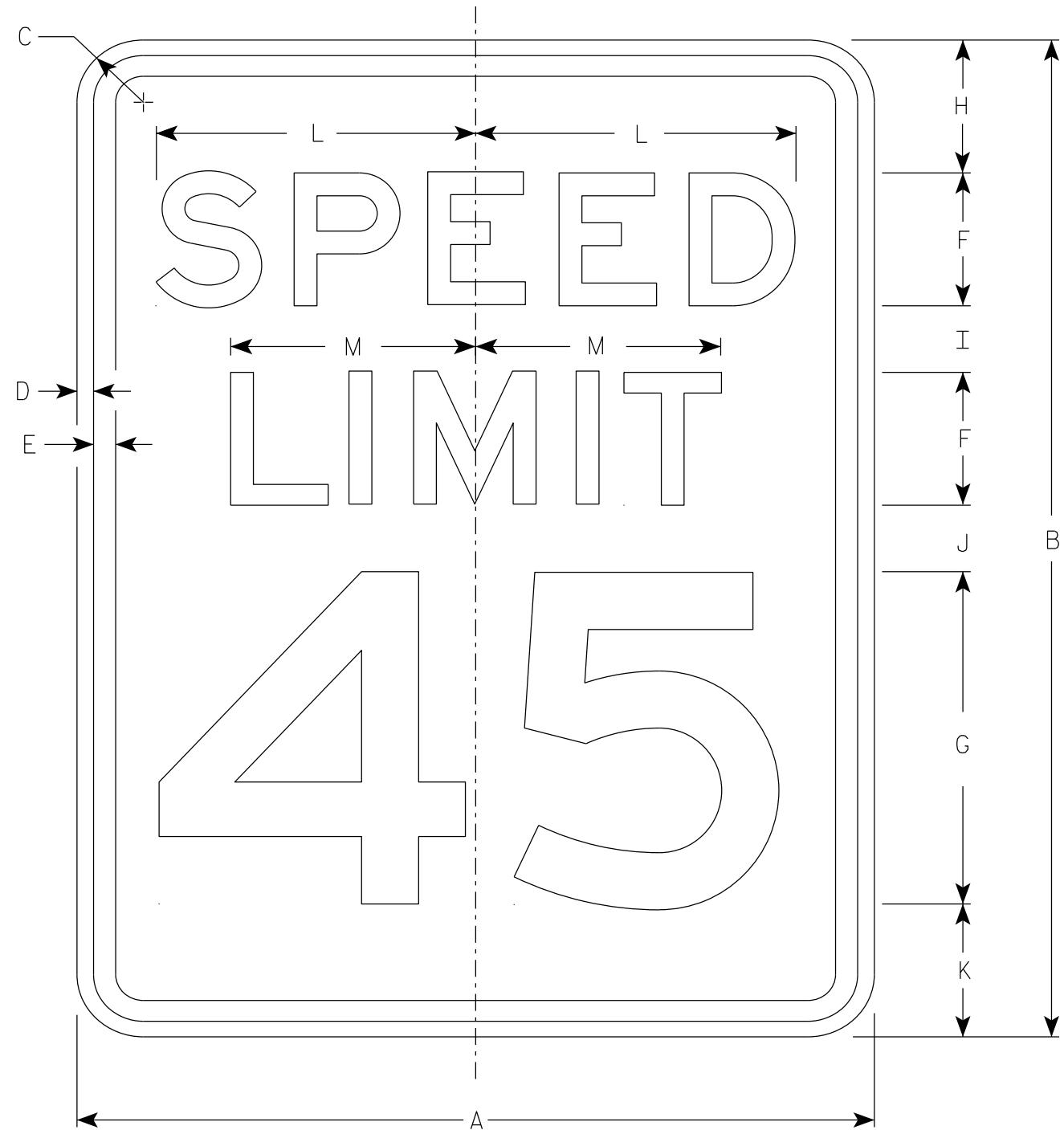
BLOCK BANDING DETAIL  
( V-BLOCK OPTION )

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
for State Traffic Engineer  
DATE 4/19/2022 PLATE NO. A5-10.3

NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - E
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.



R2-1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/2	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2												3.0		
2S	24	30	1 1/2	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8												5.0		
2M	30	36	1 7/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4												7.5		
3	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11												12.0		
4	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11												12.0		
5	48	60	3	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8												20.0		

PROJECT NO:

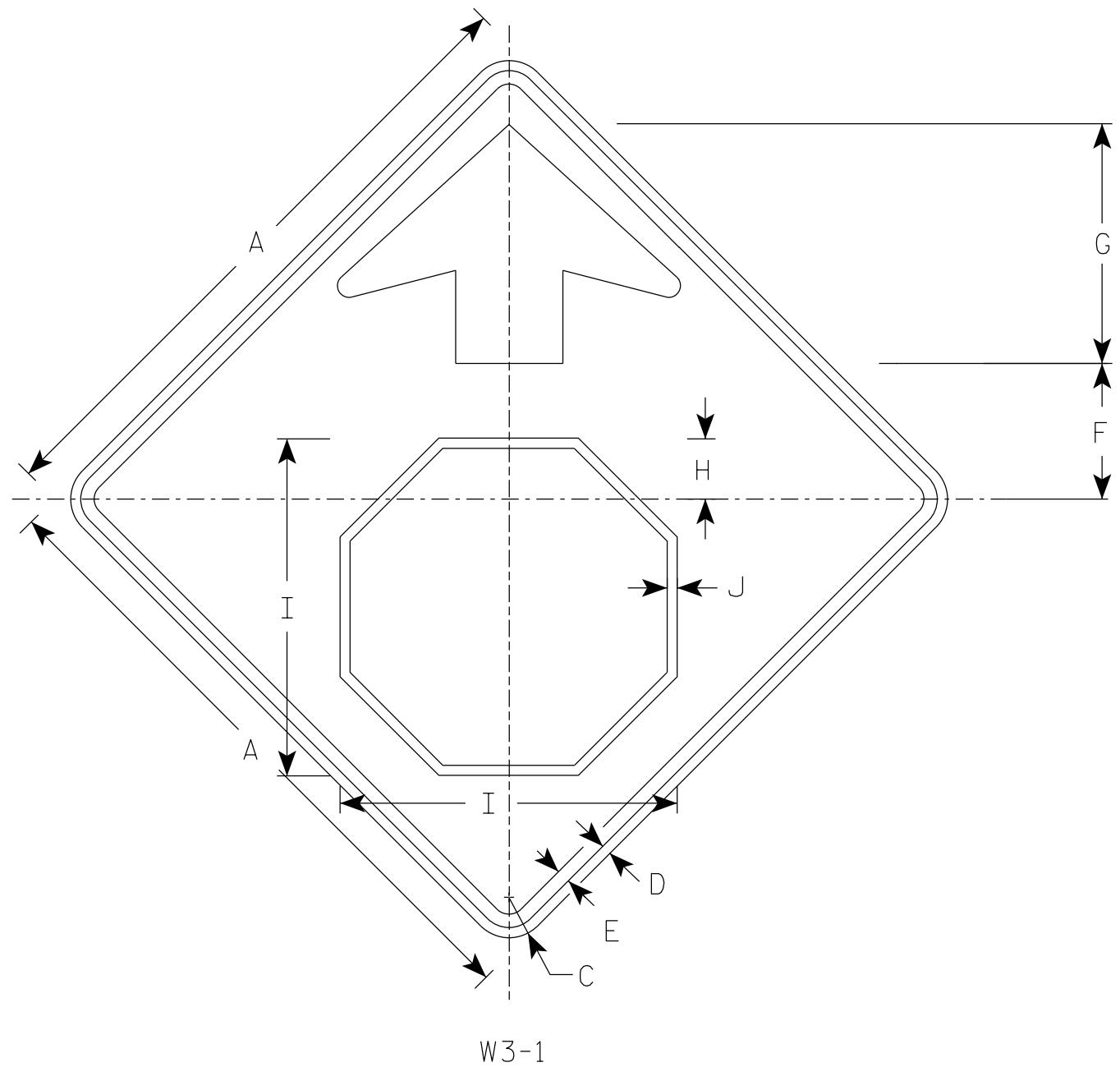
HWY:

COUNTY:

STANDARD SIGN	
R2-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew P Rauch</i> State Traffic Engineer
DATE	2/1/23
PLATE NO.	R2-1.14

SHEET NO: 53

E



7

W3-1

### NOTES

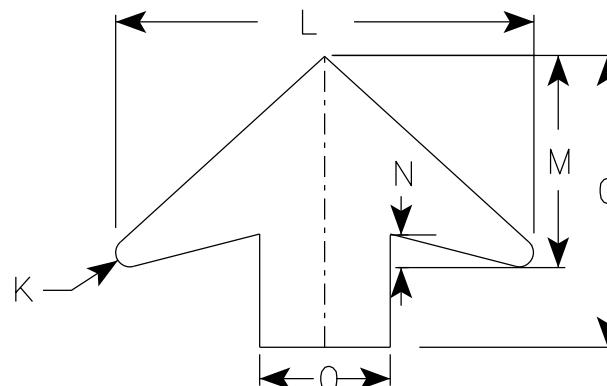
1. Sign is Type II - Type F Reflective

2. Color:

Background - Yellow

Arrow & Border - Black

Stop Symbol - White Border on Red Background



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 7/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5											6.25	
2S	36		2 1/4	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6											9.0	
2M	36		2 1/4	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6											9.0	
3	36		2 1/4	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6											9.0	
4	48		3	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8											16.0	
5	48		3	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8											16.0	

PROJECT NO:

FILE NAME : C:\CAEfiles\Project\tr\_stdplate\W31.dgn

PLOT DATE : 17-AUG 2023 2:30

PLOT BY : dotc4c

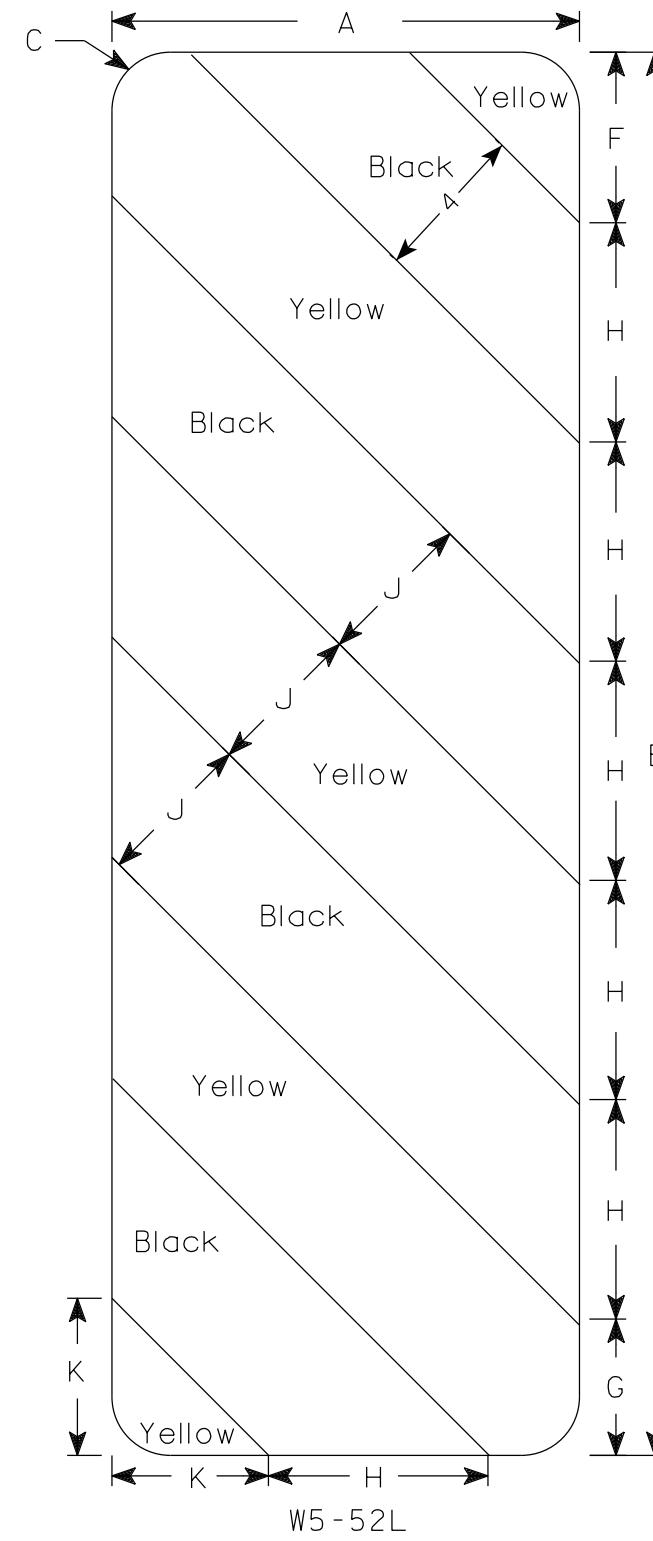
STANDARD SIGN  
W3-1  
WISCONSIN DEPT OF TRANSPORTATION  
APPROVED *Matthew P Rauch*  
for State Traffic Engineer  
DATE 8/17/2023 PLATE NO. W3-1.13

SHEET NO: 54

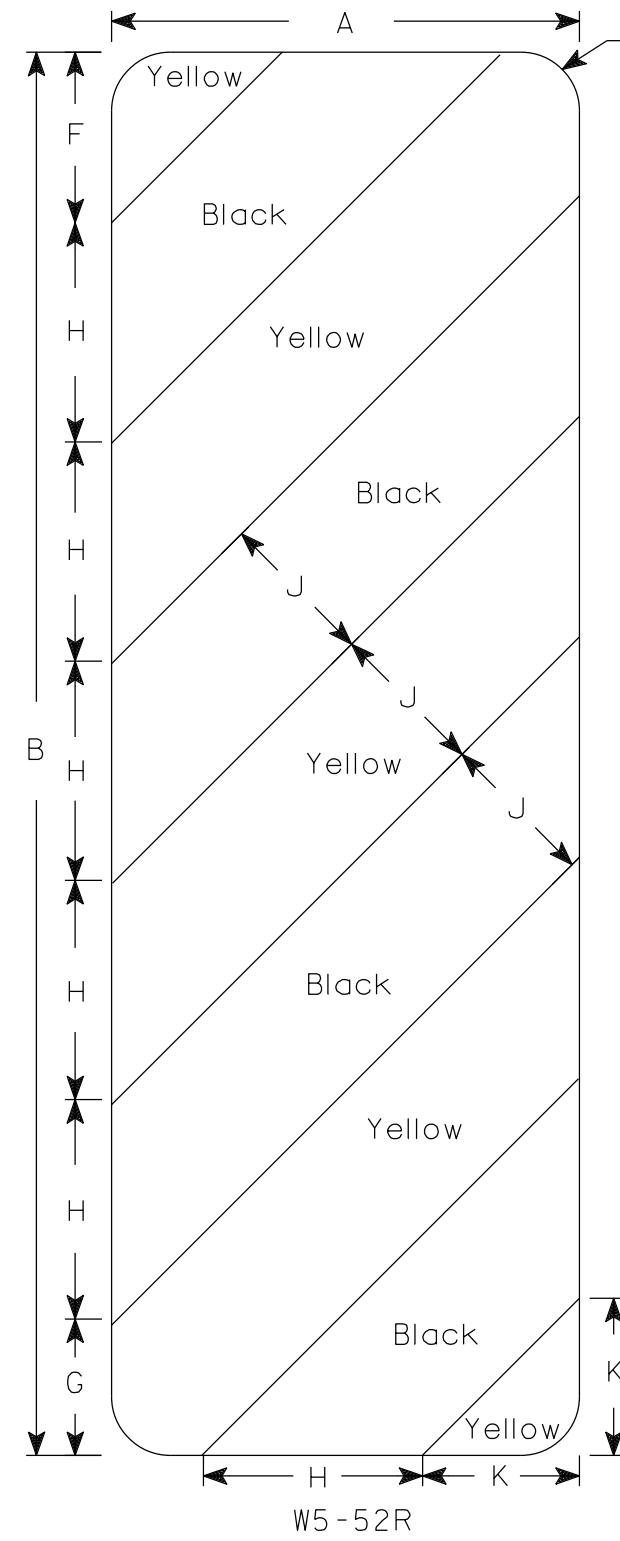
E

WISDOT/CADDS SHEET 42

7



W5-52L



W5-52R

NOTES

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

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

FILE NAME : C:\CAEfiles\Projects\tr\_stdplate\_W552.dgn

PLOT DATE : 4-MARCH 2024 11:57

PLOT BY : dotc4c

PLOT NAME :

PLOT SCALE : \$\$.....plotscale....\$\$. WISDOT/CADD'S SHEET 42

STANDARD SIGN  
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*

for State Traffic Engineer

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



## 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  $\frac{3}{4}$ " UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-66-151" SHALL BE THE EXISTING GROUNDLINE.

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

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

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

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

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

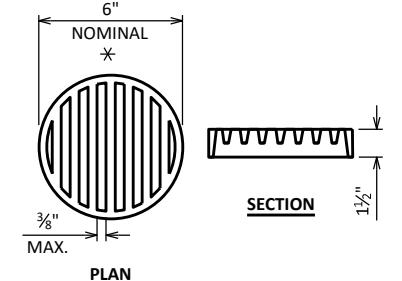
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO ENTIRED EXPOSED TOP OF SLAB, THE TOP AND EXTERIOR EXPOSED FACE OF WINGS AND FRONT FACE OF ABUTMENT TO 1'-0" PAST THE EDGE OF SLAB.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF PARAPET.

## BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
1	10+08.21	CHISELED SQUARE IN WINGWALL, 10.56' LT	1029.166
2	9+91.25	CHISELED SQUARE IN WINGWALL, 12.88' RT	1029.116
3	9+07.25	RR SPIKE, 22.65' RT	1027.820



## 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 COMMERCIALLY 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			

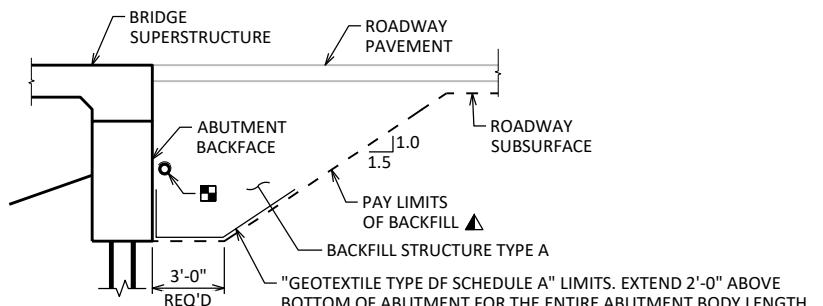
## STRUCTURE B-66-151

DRAWN BY	PLANS CK'D	NRT
EKK		

## CROSS SECTION &amp; QUANTITIES

SHEET 2	57
SCALE = 6.0	

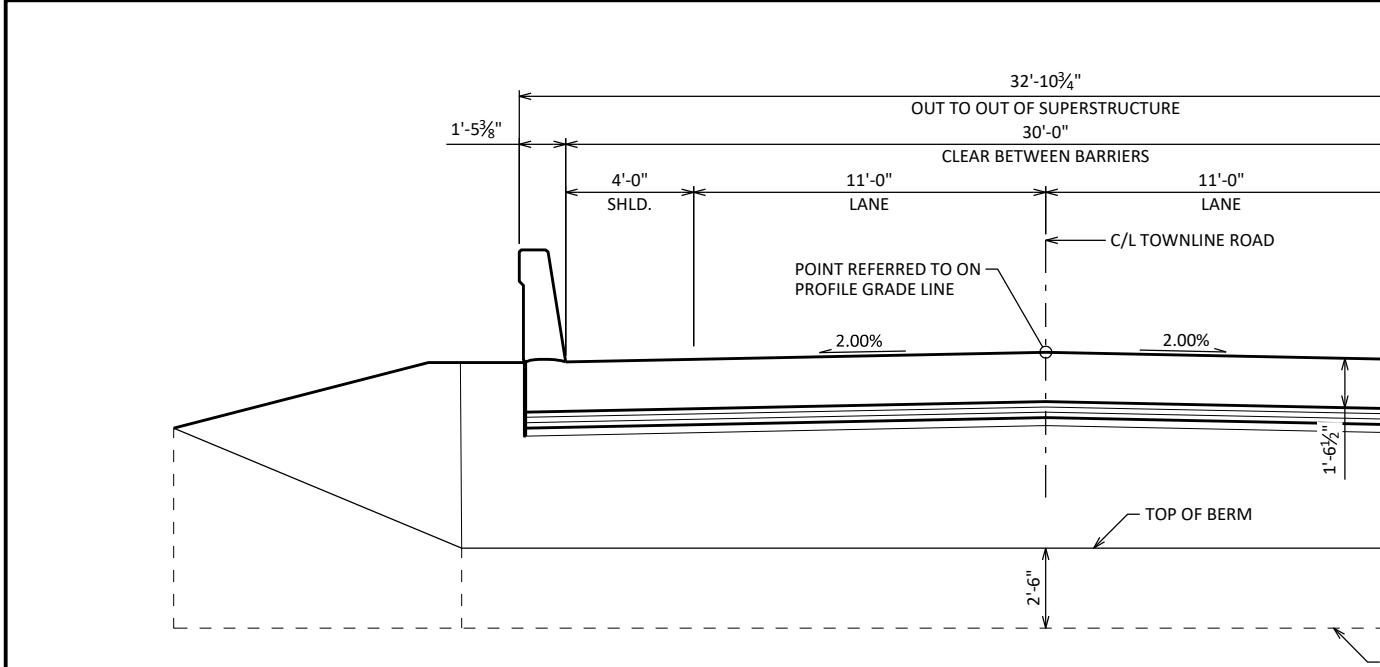
## PROTECTIVE SURFACE TREATMENT DETAILS



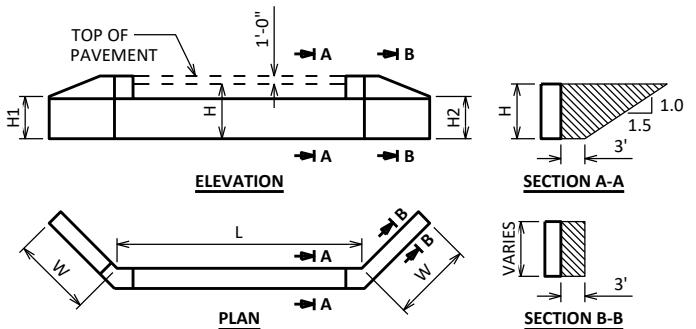
## TYPICAL SECTION THRU ABUTMENT

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

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



## CROSS SECTION THRU ROADWAY



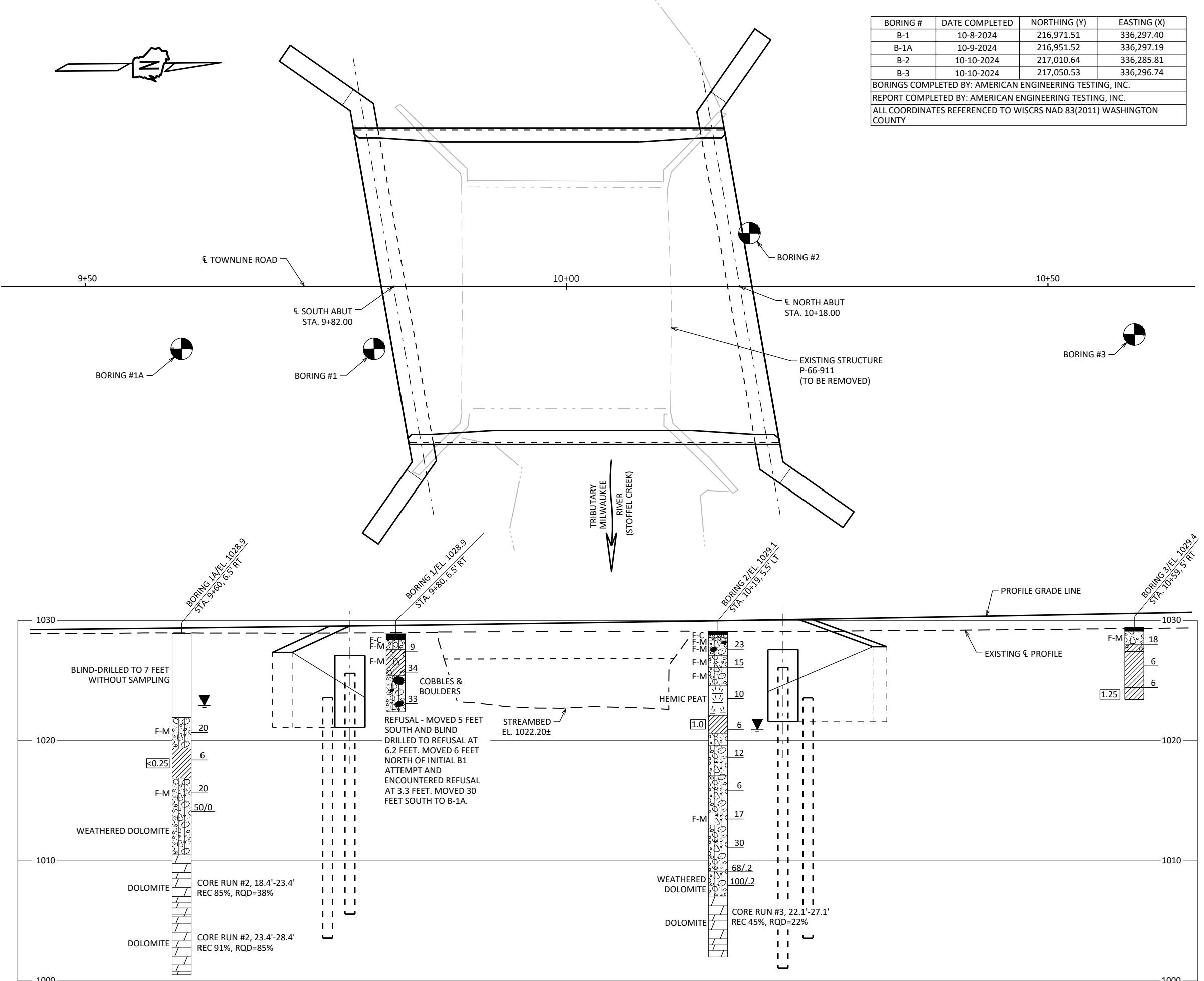
## ABUTMENT BACKFILL DIAGRAM

L = ABUTMENT BODY LENGTH AT BACKFACE (FT)  
H = AVERAGE ABUTMENT FILL HEIGHT (FT)  
H1 = WING 1 HEIGHT AT TIP (FT)  
H2 = WING 2 HEIGHT AT TIP (FT)  
W = WING LENGTH (FT)  
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)  
 $V_{CF} = (L)(3.0)(H) + (L)(0.5)(1.5H)(H) + (3')(0.5)(H1+H2+H+H)(W)$   
 $V_{CY} = V_{CF}(EF)/27$   
 $V_{TON} = V_{CY}(2.0)$

## TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	S ABUT.	N ABUT.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS P-66-911	EACH	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-66-151	EACH	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	---	203	203	406
502.0100	CONCRETE MASONRY BRIDGES	CY	86	33	33	152
502.3200	PROTECTIVE SURFACE TREATMENT	SY	128	17	17	162
502.3210	PIGMENTED SURFACE SEALER	SY	38	---	---	38
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	---	2,420	2,420	4,840
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	20,920	1,540	1,540	24,000
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---	6	6	12
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	---	120	160	280
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	---	160	190	350
606.0300	RIPRAP HEAVY	CY	---	50	53	103
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	---	75	75	150
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	---	---	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	---	48	48	96
645.0120	GEOTEXTILE TYPE HR	SY	---	101	108	209
SPV.0195	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	---	24	25	49
NON-BID ITEMS		SIZE				$\frac{1}{2}'' \text{, } \frac{3}{4}''$
FILLER						

THIS SHEET WAS CREATED BY THE WISDOT BUREAU OF STRUCTURES STANDARD BRIDGE DESIGN TOOL VERSION 1.1.0.0



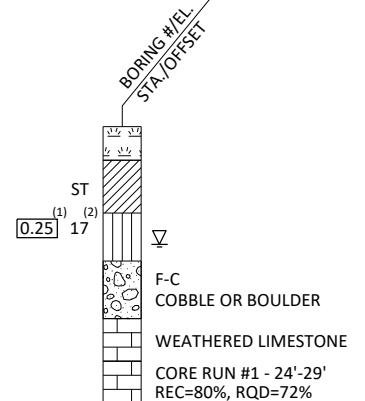
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-1	10-8-2024	216,971.51	336,297.40
B-1A	10-9-2024	216,951.52	336,297.19
B-2	10-10-2024	217,010.64	336,285.81
B-3	10-10-2024	217,050.53	336,296.74
BORINGS COMPLETED BY: AMERICAN ENGINEERING TESTING, INC.			
REPORT COMPLETED BY: AMERICAN ENGINEERING TESTING, INC.			
ALL COORDINATES REFERENCED TO WISCRS NAD 83(2011) WASHINGTON COUNTY			

**STATE PROJECT NUMBER**

4824-03-72

## MATERIAL SYMBOLS

## LEGEND OF BORING



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

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

## GROUND WATER ELEVATION

▽ AT TIME OF DRILLING

▼ END OF DRILLING

#### **▼ AFTER DRILLING**

## **ABBREVIATIONS**

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

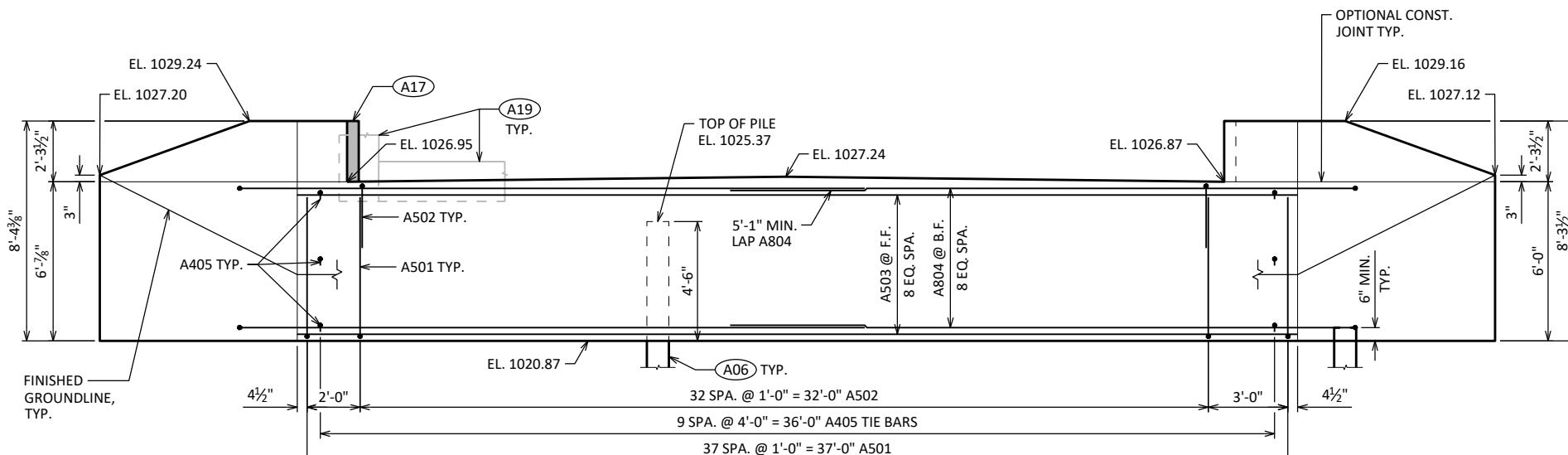
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT 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.

O.	DATE	REVISION	BY
<b>STATE OF WISCONSIN</b> <b>DEPARTMENT OF TRANSPORTATION</b>			

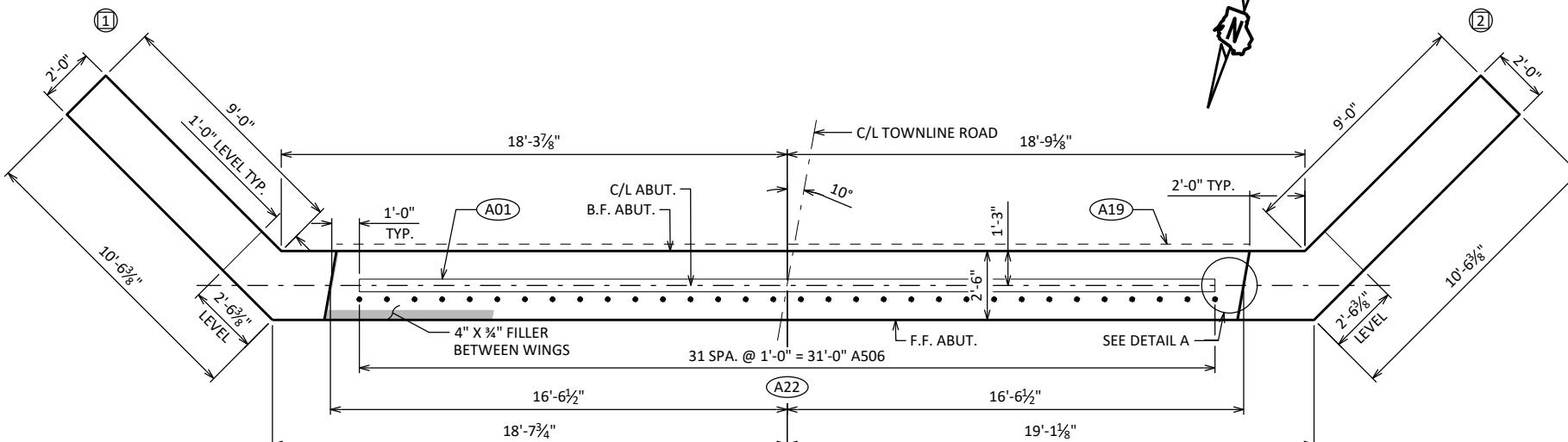
STRUCTURE B-66-151

	DRAWN BY	EKK	PLANS CK'D	NRT
--	-------------	-----	---------------	-----

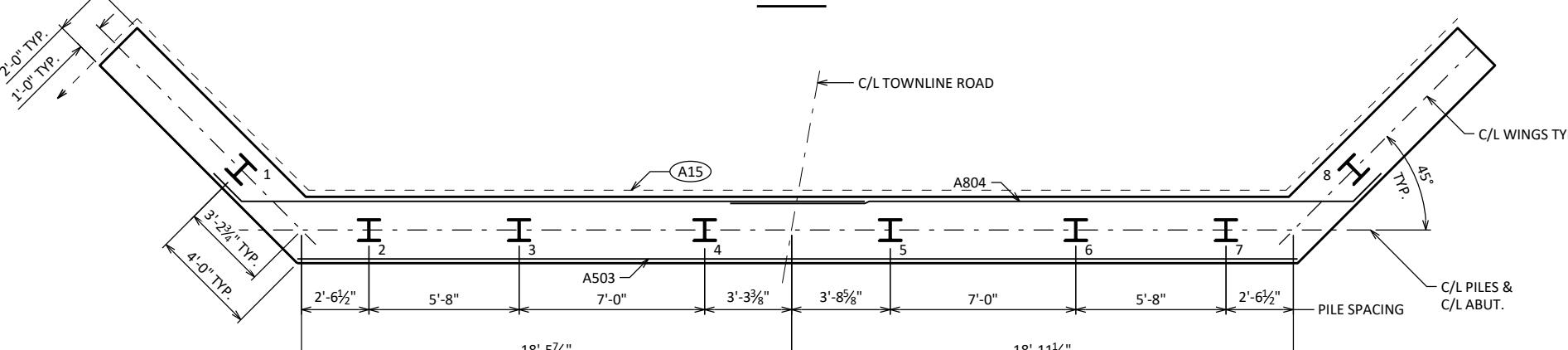
# SUBSURFACE EXPLORATION



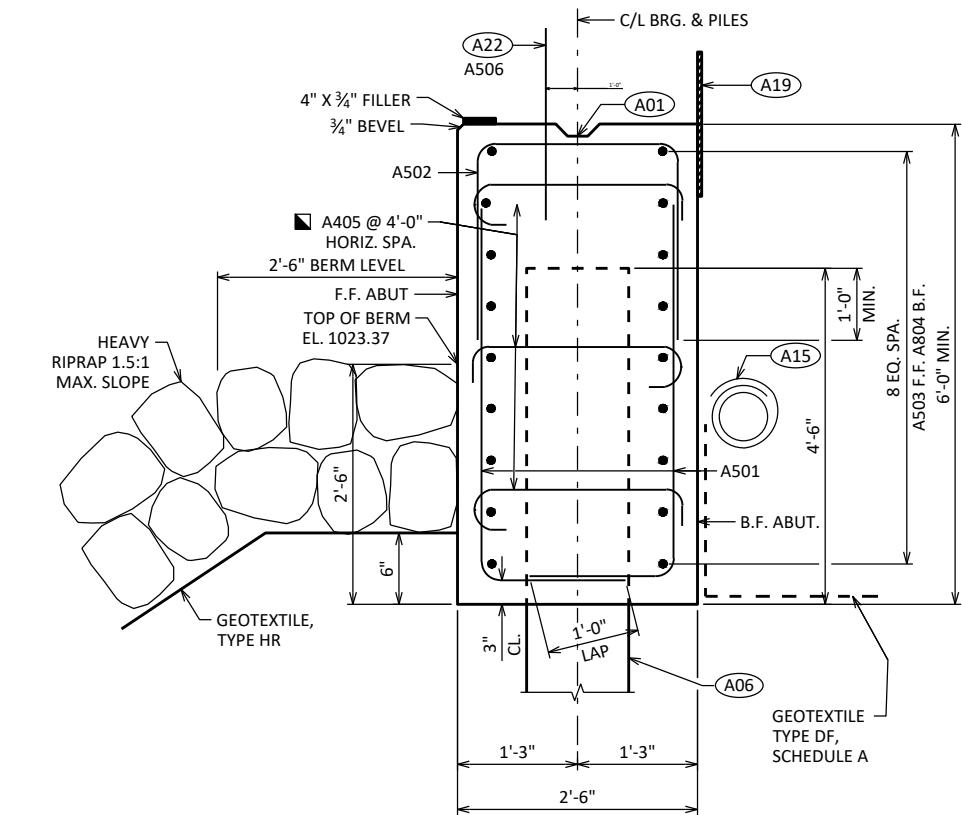
# ELEVATION LOOKING DOWNSTATION



## PLAN



## PILE PLAN



## SECTION THRU BODY

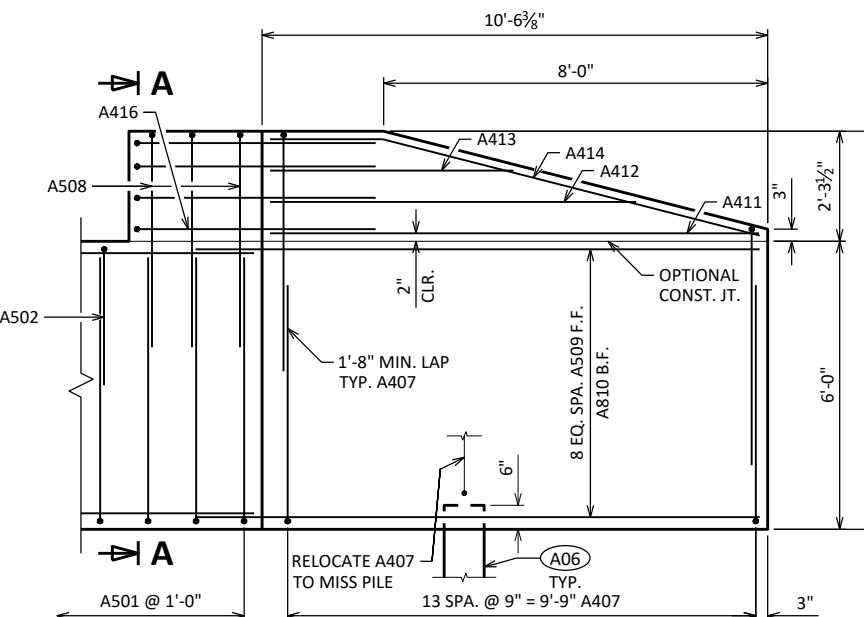
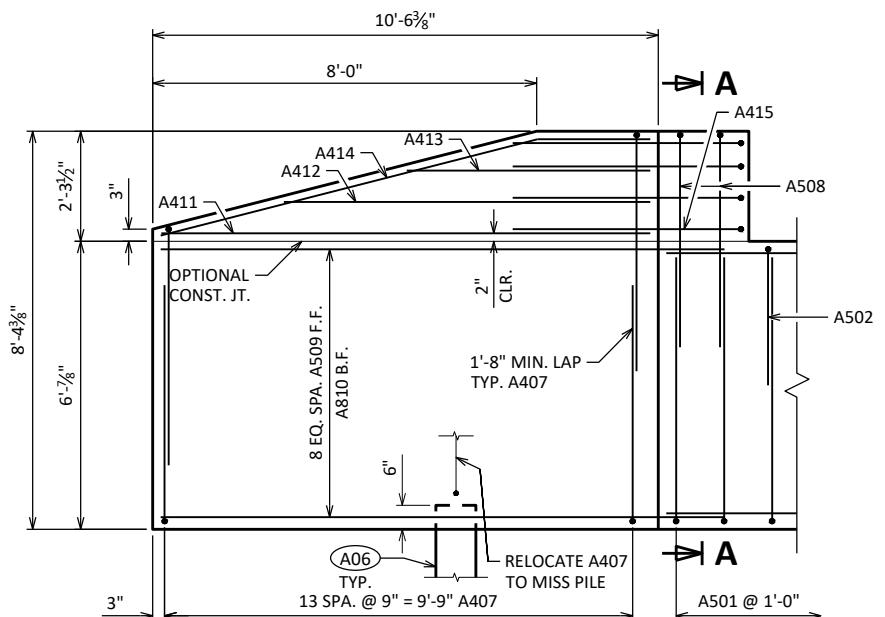
- (A01) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6.
- (A06) SUPPORT ABUTMENT BODY AND WINGS ON HP 10 x 42 PILING, ESTIMATED 20 FT LONG SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO SOUND BEDROCK. PILE DRIVING IS NOT REQUIRED. THE FACTORED AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR DESIGN IS 180 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17)  $\frac{1}{2}$ " FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF  $\frac{1}{2}$ " FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD  $\frac{1}{8}$ " BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A22) A506 BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-66-151</b>			
	DRAWN BY	PLANS CK'D	NRT
<b>SOUTH ABUTMENT</b>		SHEET 4 59	

## BILL OF BARS

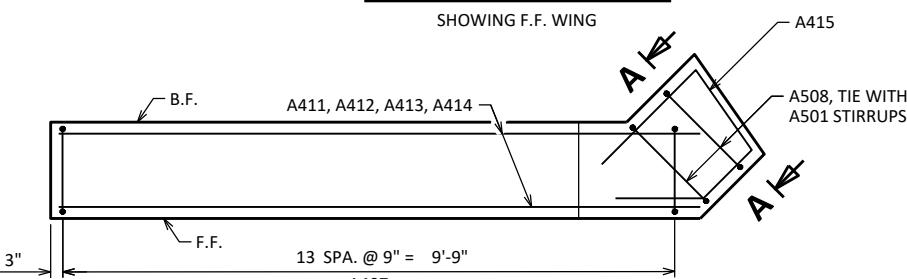
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		76	7'-0"	X		ABUT BODY STIRRUPS
A502		33	7'-7"	X		ABUT BODY STIRRUPS - TOP U-BAR
A503		9	37'-9"			ABUT BODY HORIZ. - F.F.
A804		18	24'-10"	X		ABUT BODY HORIZ. - B.F.
A405		30	3'-0"	X		ABUT BODY TIE BARS
A506	X	32	2'-0"			ABUT BODY DOWEL BARS
A407	X	56	11'-4"	X		WING STIRRUPS
A508	X	5	10'-9"	X		WING CORNER STIRRUPS
A509	X	18	11'-9"	X		WING LOWER HORIZ. - F.F.
A810	X	18	13'-3"	X		WING LOWER HORIZ. - B.F.
A411	X	4	10'-1"			WING UPPER HORIZ.
A412	X	4	7'-6"			WING UPPER HORIZ.
A413	X	4	5'-0"			WING UPPER HORIZ.
A414	X	4	9'-8"	X		WING TOP HORIZ.
A415	X	4	7'-11"	X		WING 1 UPPER HORIZ. CORNER
A416	X	4	8'-11"	X		WING 2 UPPER HORIZ. CORNER



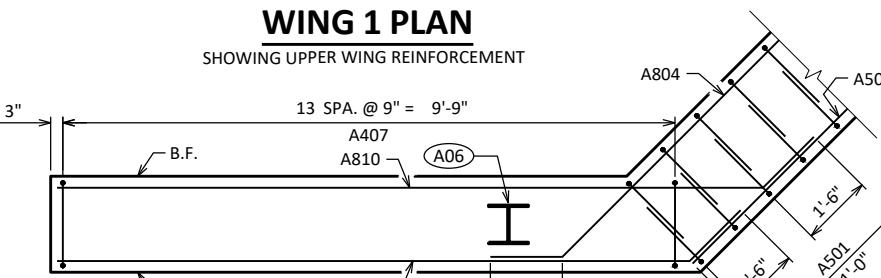
WING 1 ELEVATION

SHOWING F.F. WING

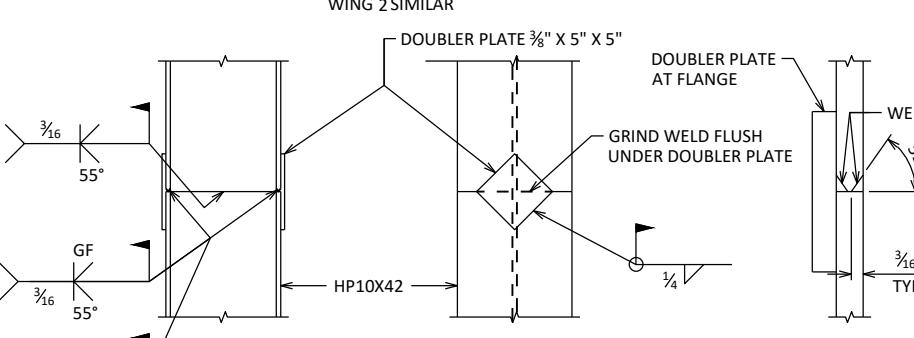


WING 1 PLAN

SHOWING UPPER WING REINFORCEMENT



WING 1 PLAN

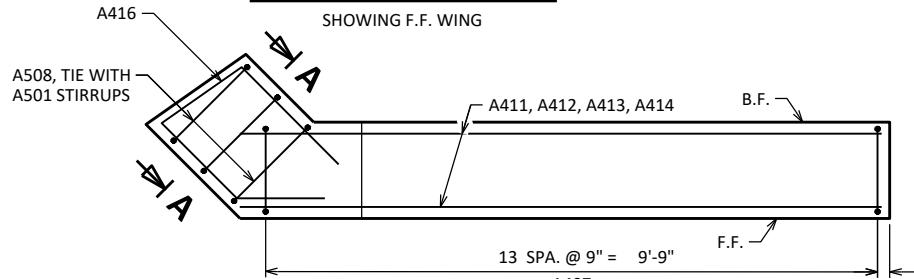
SHOWING LOWER WING REINFORCEMENT  
WING 2 SIMILAR

'HP' PILE DETAILS

THIS SHEET WAS CREATED BY THE WISDOT BUREAU OF STRUCTURES STANDARD BRIDGE DESIGN TOOL VERSION 1.1.0.0

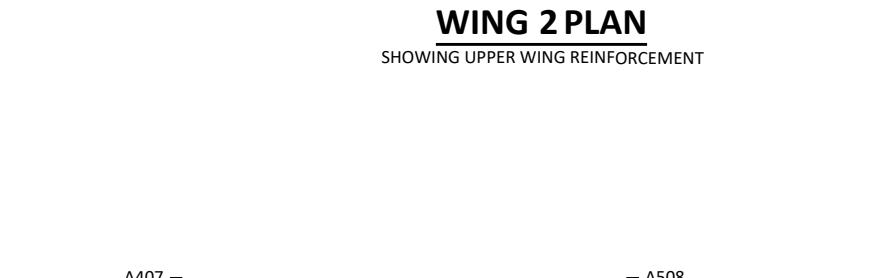
WING 2 ELEVATION

SHOWING F.F. WING

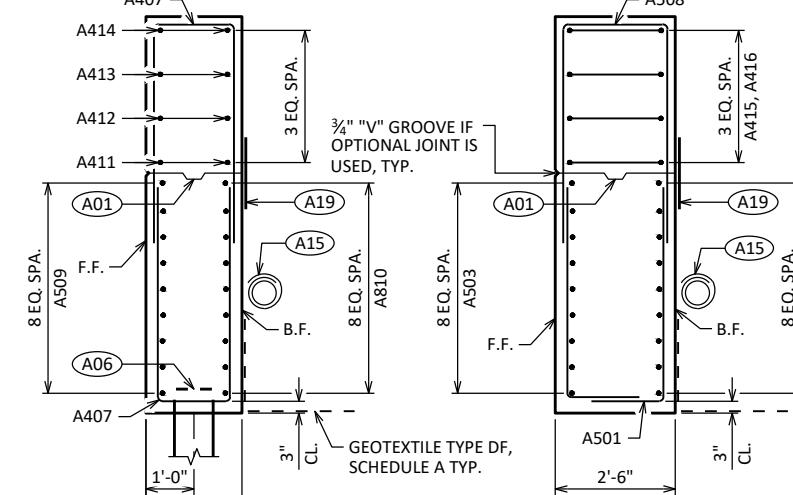


WING 2 PLAN

SHOWING UPPER WING REINFORCEMENT



WING 2 PLAN

SHOWING LOWER WING REINFORCEMENT  
WING 1 SIMILARSECTION THRU WING 1  
TYPICAL BOTH WINGS

SECTION A-A

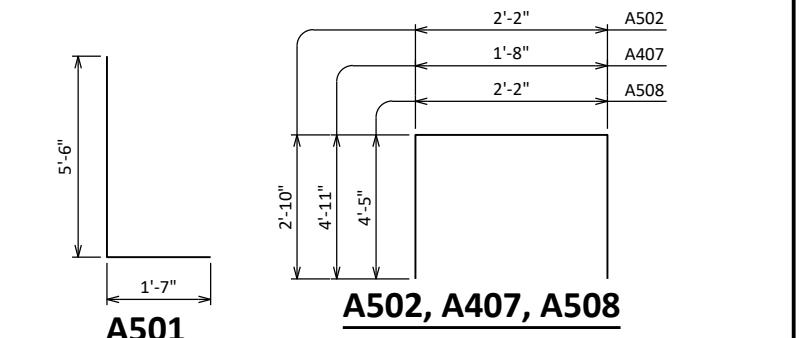
(A01) OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE  $\frac{3}{4}$ " "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.

(A06) SUPPORT ABUTMENT BODY AND WINGS ON HP 10 x 42 PILING, ESTIMATED 20 FT LONG SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO SOUND BEDROCK. PILE DRIVING IS NOT REQUIRED. THE FACTORED AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR DESIGN IS 180 TONS PER PILE.

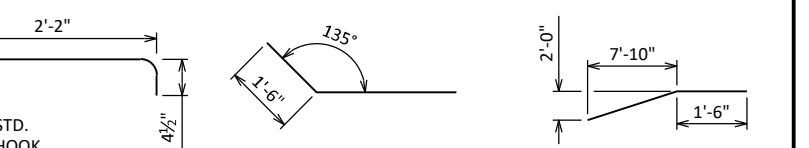
(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A19) 18" RUBBERIZED MEMBRANE WATERPROOFING, ONLY IF OPTIONAL CONSTRUCTION JOINT IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY STRUCTURES".

NO.	DATE	REVISION	BY
			STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
<b>STRUCTURE B-66-151</b>			
DRAWN BY	EKK	PLANS CK'D	NRT
SHEET 5	60	SCALE =	

SOUTH  
ABUTMENT DETAILS

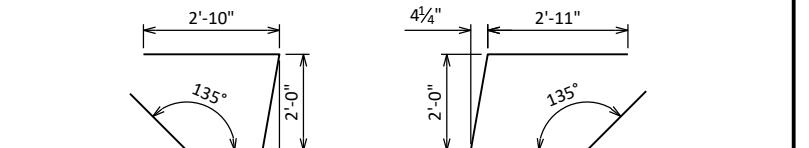
A501



A405

A804, A509, A810

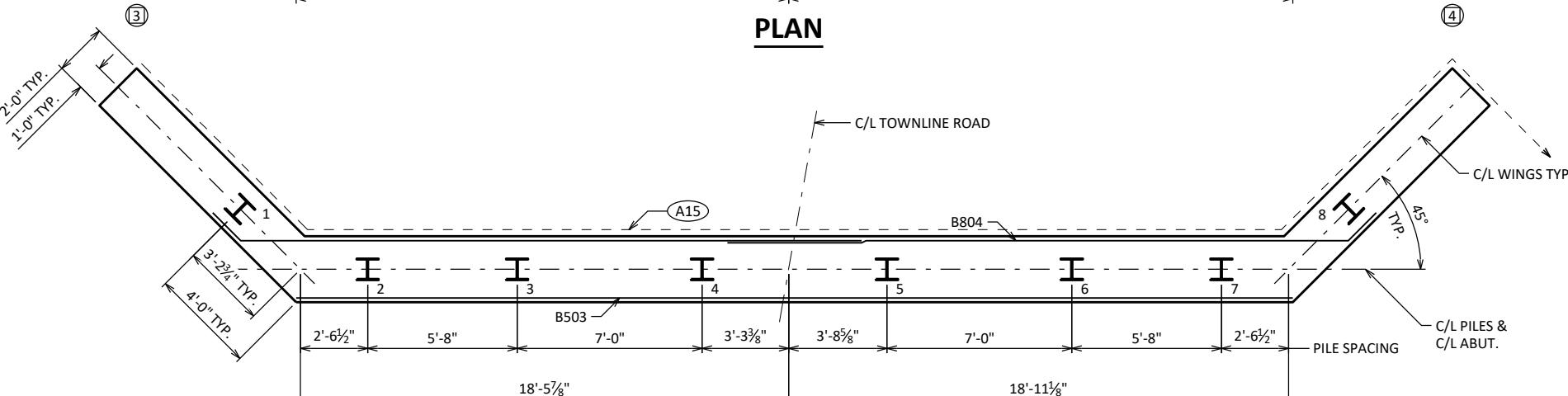
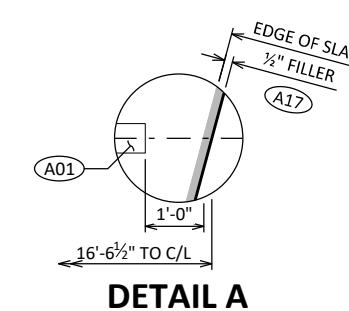
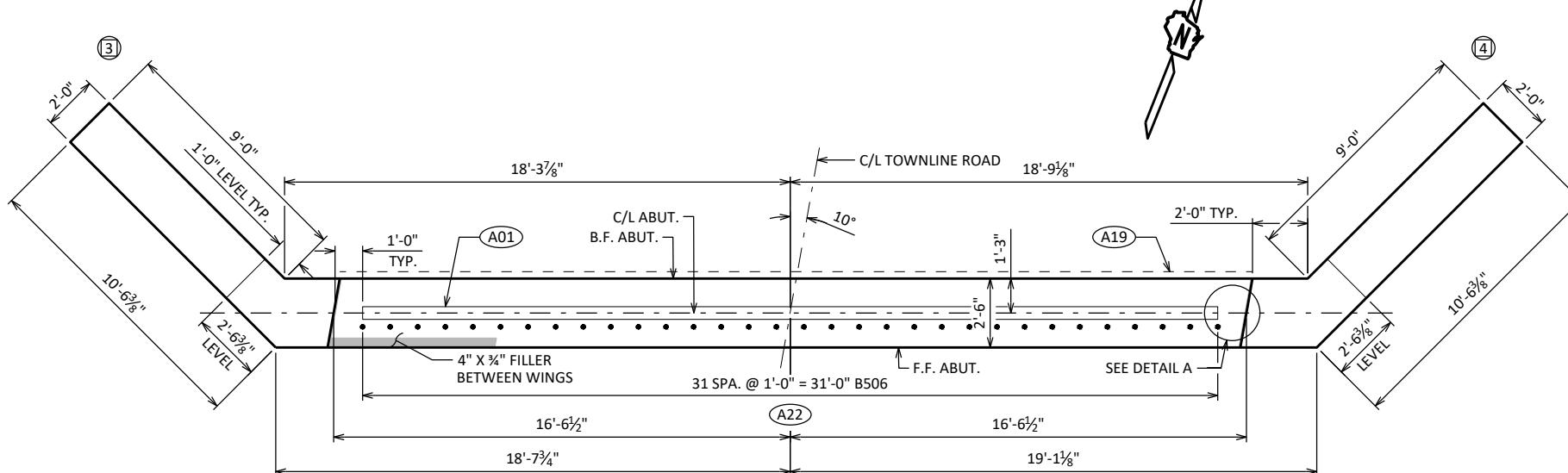
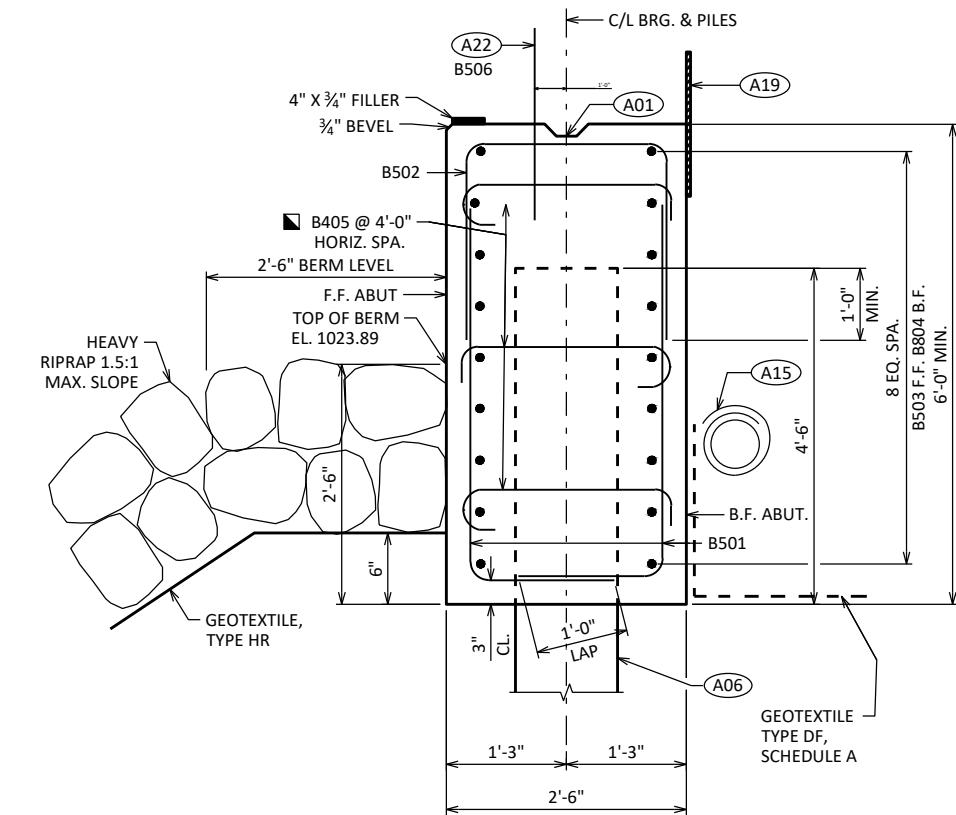
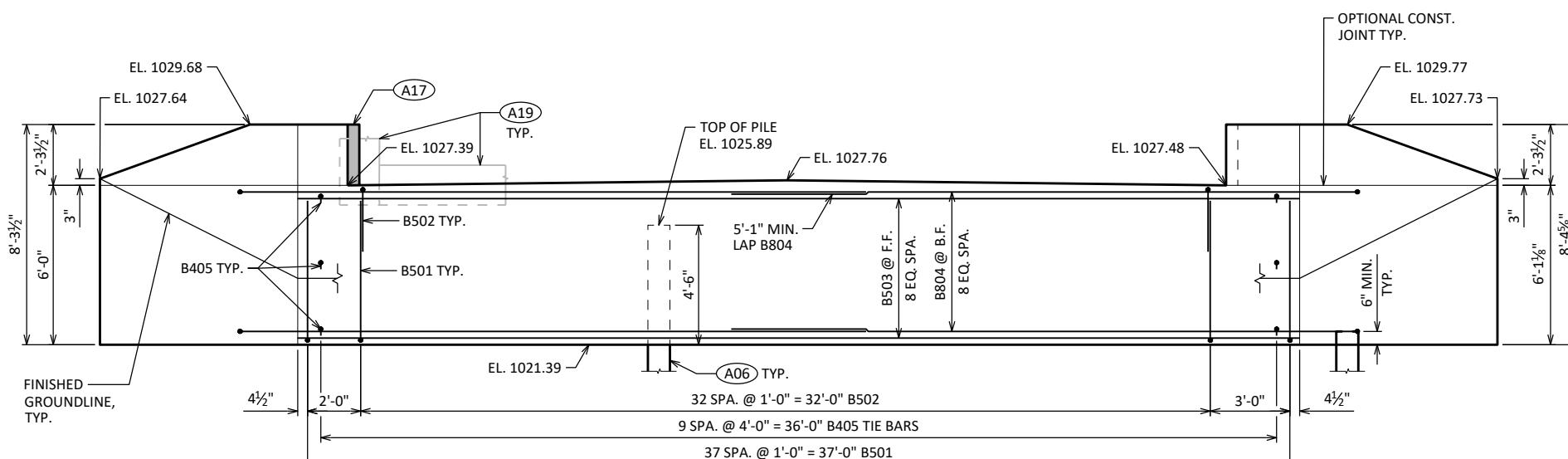
A414



A415

A416

8



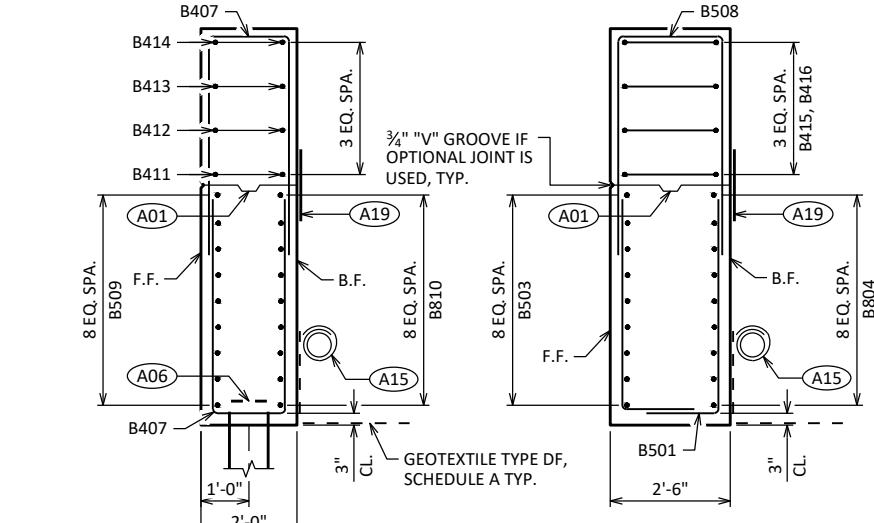
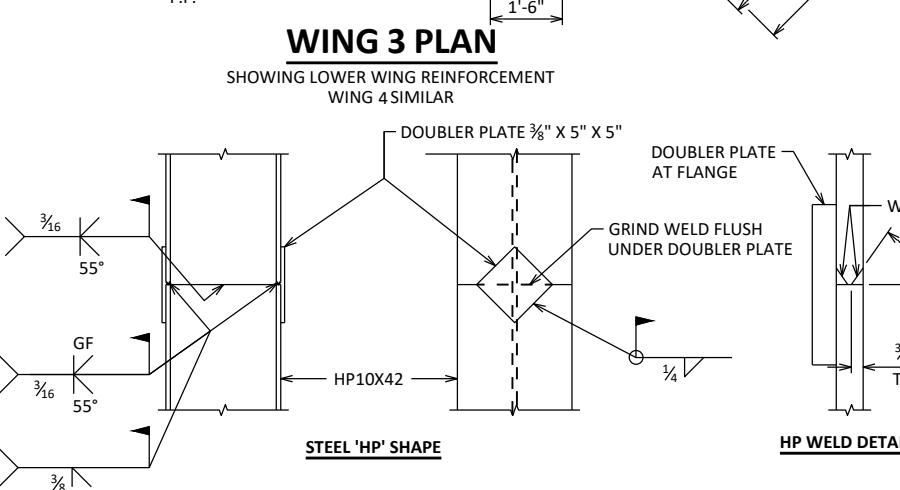
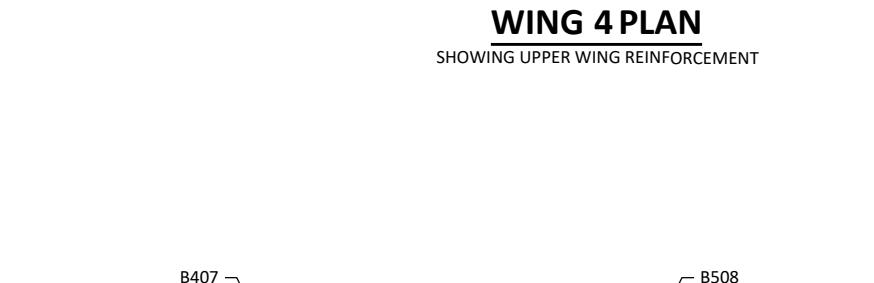
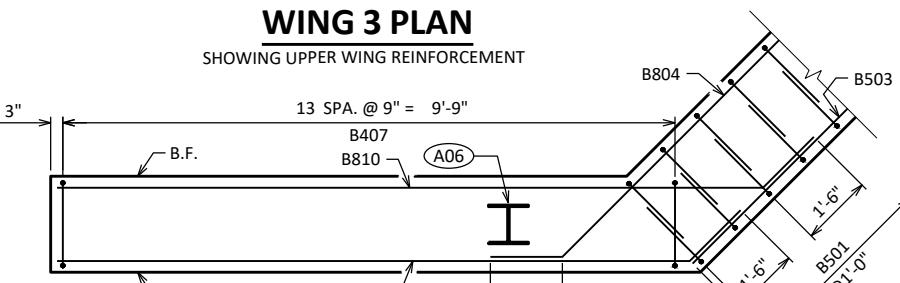
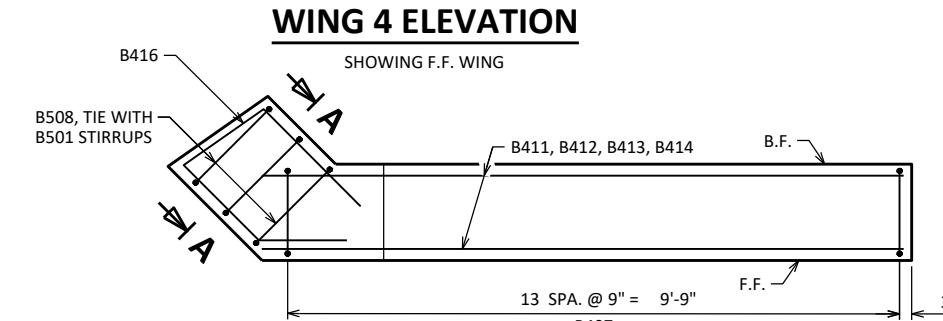
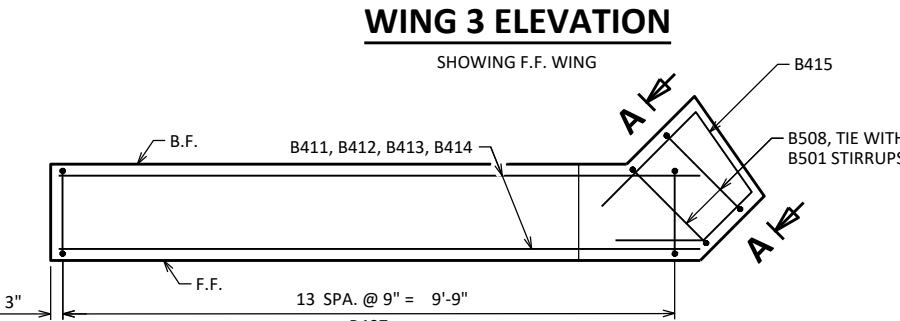
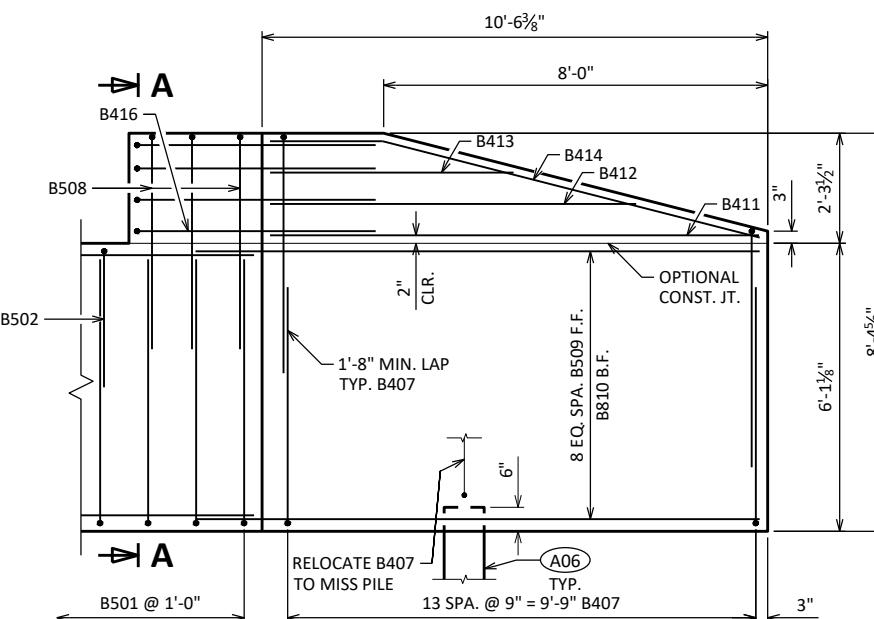
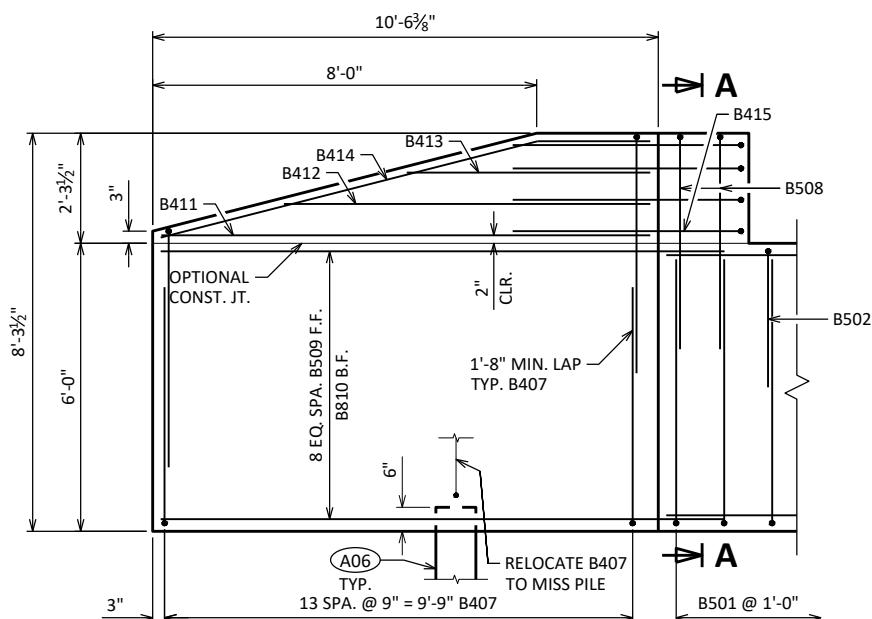
- (A01) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6.
- (A06) SUPPORT ABUTMENT BODY ON HP 10 x 42 PILING, ESTIMATED 25 FT LONG SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO SOUND BEDROCK. PILE DRIVING IS NOT REQUIRED. THE FACTORED AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR DESIGN IS 180 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17)  $\frac{1}{2}$ " FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF  $\frac{1}{2}$ " FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD  $\frac{1}{8}$ " BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A22) B506 BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-66-151</b>			
DRAWN BY	EKK	PLANS CK'D	NRT
NORTH ABUTMENT		SHEET 6	61
		SCALE =	

## BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		76	7'-0"	X		ABUT BODY STIRRUPS
B502		33	7'-7"	X		ABUT BODY STIRRUPS - TOP U-BAR
B503		9	37'-9"			ABUT BODY HORIZ. - F.F.
B804		18	24'-10"	X		ABUT BODY HORIZ. - B.F.
B405		30	3'-0"	X		ABUT BODY TIE BARS
B506	X	32	2'-0"			ABUT BODY DOWEL BARS
B407	X	56	11'-4"	X		WING STIRRUPS
B508	X	5	10'-9"	X		WING CORNER STIRRUPS
B509	X	18	11'-9"	X		WING LOWER HORIZ. - F.F.
B810	X	18	13'-3"	X		WING LOWER HORIZ. - B.F.
B411	X	4	10'-1"			WING UPPER HORIZ.
B412	X	4	7'-6"			WING UPPER HORIZ.
B413	X	4	5'-0"			WING UPPER HORIZ.
B414	X	4	9'-8"	X		WING TOP HORIZ.
B415	X	4	7'-11"	X		WING 3 UPPER HORIZ. CORNER
B416	X	4	8'-11"	X		WING 4 UPPER HORIZ. CORNER

SECTION THRU WING 3  
TYPICAL BOTH WINGSSECTION A-A  
TYPICAL BOTH WINGS

THIS SHEET WAS CREATED BY THE WISDOT BUREAU OF STRUCTURES STANDARD BRIDGE DESIGN TOOL VERSION 1.1.0.0

(A01) OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE  $\frac{3}{4}$ " "V" GROOVE ON F.F. OF WING WALL IF JOINT IS USED.

(A06) SUPPORT ABUTMENT WINGS ON HP 10 x 42 PILING, ESTIMATED 20 FT LONG SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO SOUND BEDROCK. PILE DRIVING IS NOT REQUIRED. THE FACTORED AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR DESIGN IS 180 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

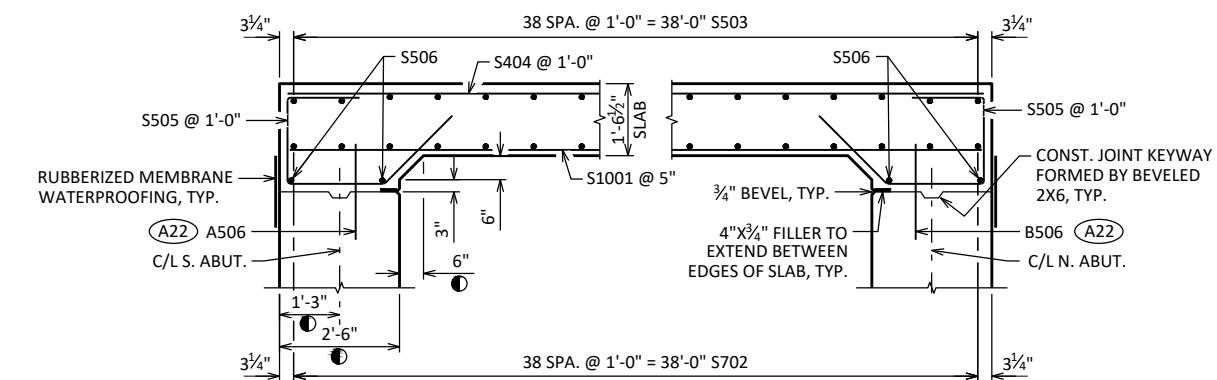
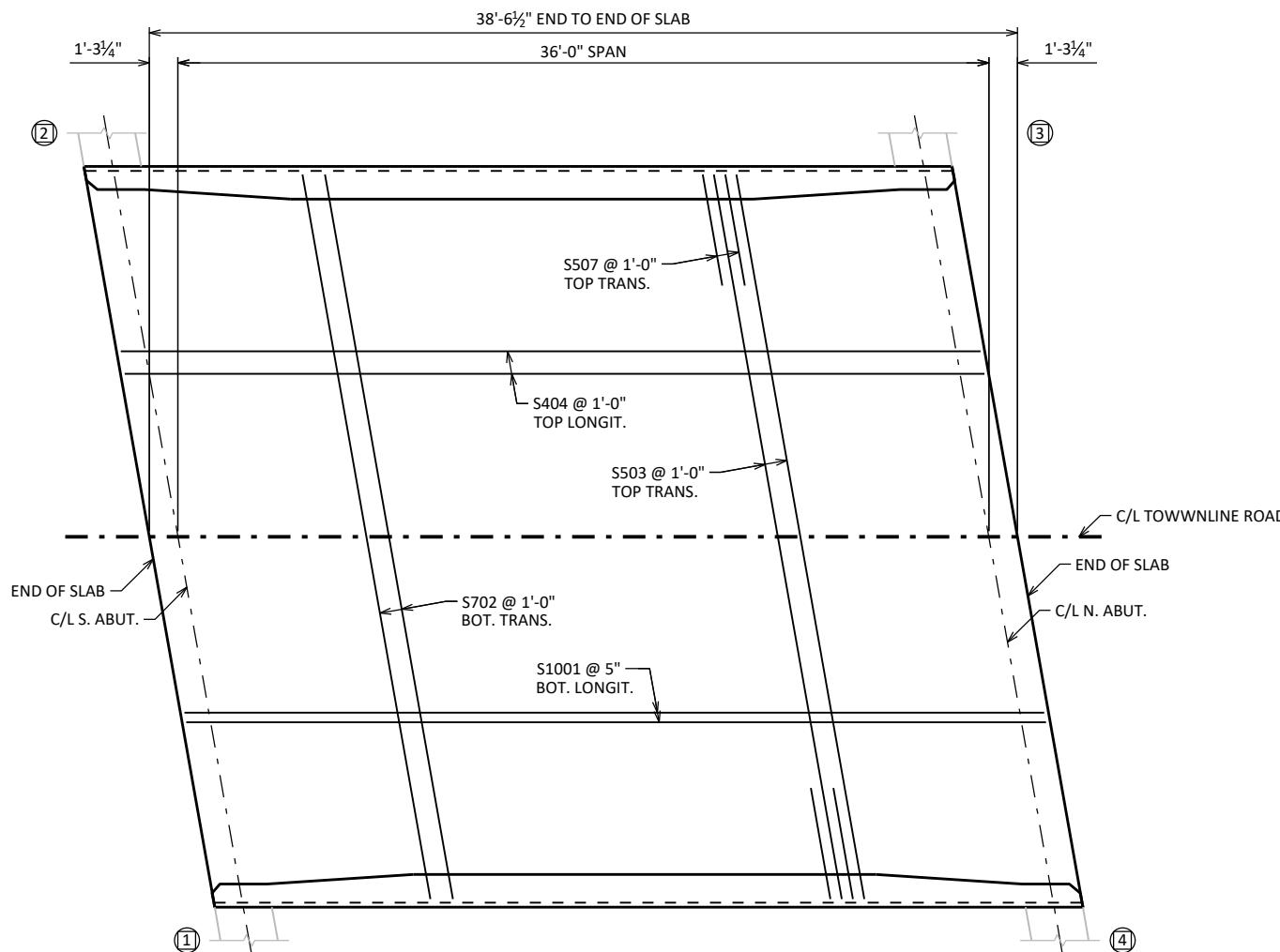
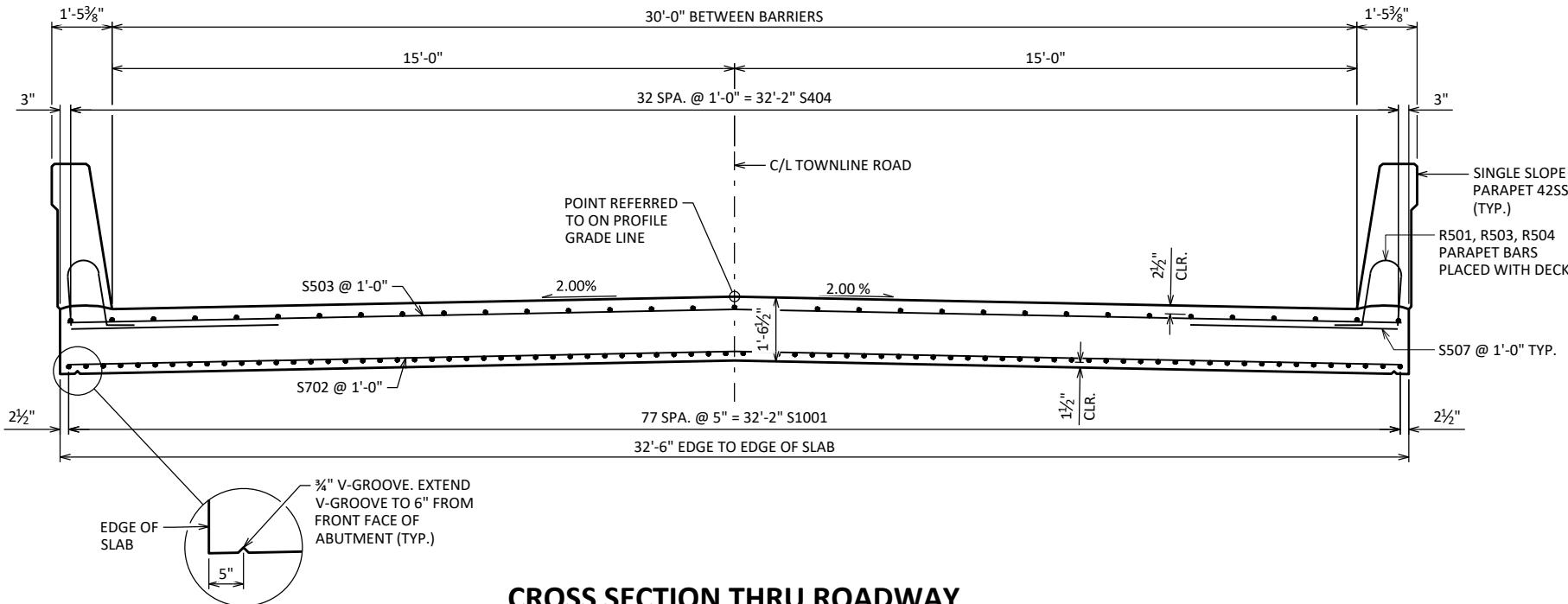
(A19) 18" RUBBERIZED MEMBRANE WATERPROOFING, ONLY IF OPTIONAL CONSTRUCTION JOINT IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY STRUCTURES".

NO. DATE REVISION BY  
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-66-151

DRAWN BY EKK PLANS CK'D NRT

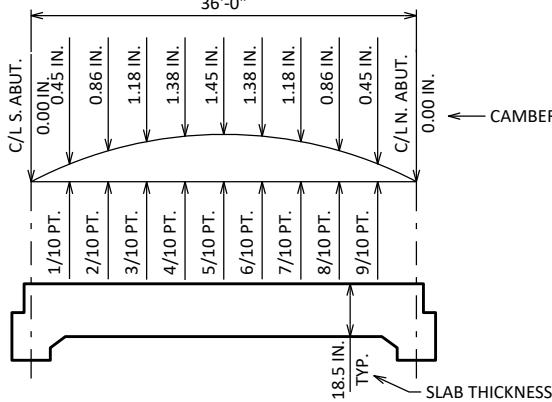
NORTH ABUTMENT DETAILS SHEET 7  
62



DIMENSIONS ARE GIVEN PARALLEL TO THE ROADWAY UNLESS OTHERWISE NOTED.

- ① MEASURED NORMAL TO THE END OF ABUTMENT. DIMENSIONS ARE TYPICAL FOR BOTH ABUTMENTS.
- ② A506, B506 BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-66-151</b>			
DRAWN BY	EKK	PLANS CK'D	NRT
<b>SUPERSTRUCTURE</b>			
SHEET 8	63	SCALE	



### CAMBER AND SLAB THICKNESS DIAGRAM

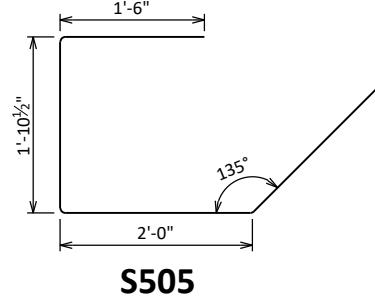
CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. PARAPETS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED, EXCEPT FOR STAGED CONSTRUCTION.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE FOLLOW THIS PROCEDURE:

LESS	TOP OF SLAB ELEVATION AT FINAL GRADE
PLUS	SLAB THICKNESS
PLUS	CAMBER
EQUALS	FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
	TOP OF SLAB FALSEWORK ELEVATION

### TOP OF SLAB ELEVATIONS

LOCATION	C/L BRG. S. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	C/L BRG. N. ABUT.
E. EDGE OF SLAB	1029.22	1029.27	1029.32	1029.37	1029.42	1029.47	1029.52	1029.58	1029.63	1029.69	1029.75
CROWN	1029.52	1029.57	1029.62	1029.67	1029.72	1029.77	1029.82	1029.88	1029.93	1029.99	1030.05
W. EDGE OF SLAB	1029.22	1029.27	1029.32	1029.37	1029.42	1029.47	1029.52	1029.58	1029.63	1029.69	1029.75



### 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
S1001	X	78	38'-2"			SLAB BOTTOM LONGITUDINAL
S702	X	39	32'-8"			SLAB BOTTOM TRANSVERSE
S503	X	39	32'-8"			SLAB TOP TRANSVERSE
S404	X	33	38'-2"			SLAB TOP LONGITUDINAL
S505	X	66	7'-2"	X		ABUTMENT DIAPHRAGM STIRRUPS
S506	X	4	32'-8"			ABUTMENT DIAPHRAGM LONGITUDINAL
S507	X	76	5'-0"			SLAB TOP EDGE TRANSVERSE

### SURVEY TOP OF SLAB ELEVATIONS

LOCATION	ABUTMENT	5/10 PT.	ABUTMENT
W. GUTTER			
CROWN OR R/L			
E. GUTTER			

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

### NOTES

FILL IN THE TABLE OF "SURVEY TOP OF SLAB ELEVATIONS" FOR EACH SPAN ON AS BUILT PLANS.

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

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-66-151			
DRAWN BY	EKK	PLANS CK'D	NRT
SUPERSTRUCTURE DETAILS		SHEET 9	64

# **BILL OF BARS**

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

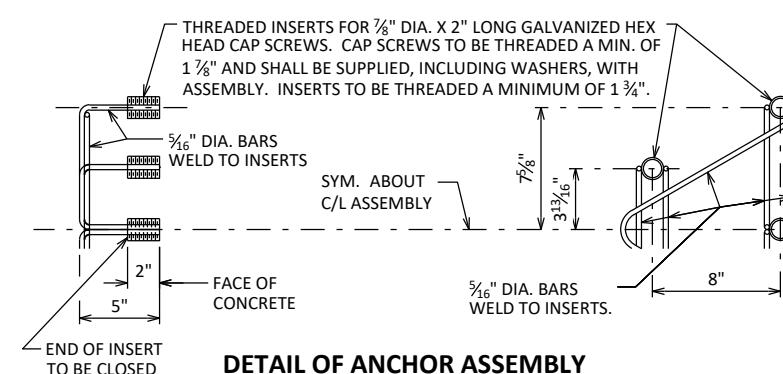
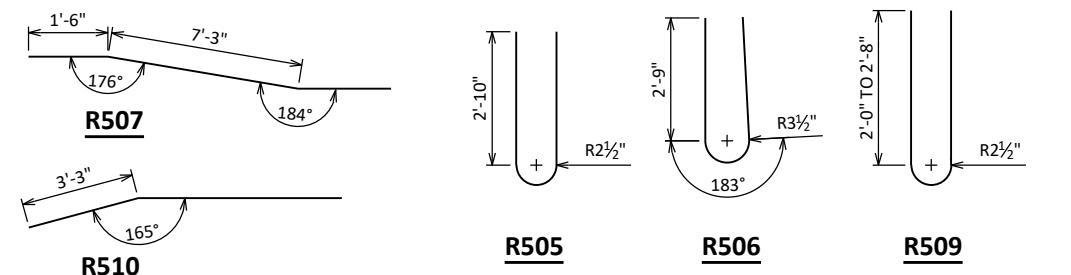
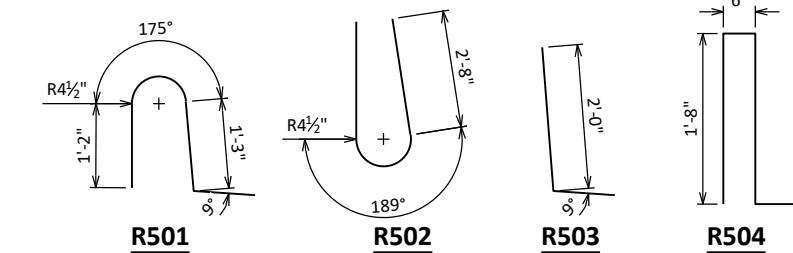
WORK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
01	X	64	4'-5"	X		PARAPET VERT.
02	X	64	6'-8"	X		PARAPET VERT.
03	X	48	2'-9"	X		PARAPET VERT.
04	X	68	4'-4"	X		PARAPET VERT.
05	X	20	6'-5"	X		PARAPET VERT.
06	X	24	6'-6"	X		PARAPET VERT.
07	X	4	13'-3"	X		PARAPET HORIZ.
08	X	20	13'-3"			PARAPET HORIZ.
09	X	24	5'-5"	X	▲	PARAPET VERT.
10	X	8	13'-3"	X		PARAPET HORIZ.
11	X	16	15'-3"			PARAPET HORIZ.

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

## BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY.

BAR MARK	NO. REQ'D.	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"



## 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.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-66-151</b>			
DRAWN BY		PLANS CK'D	NRT
<b>SINGLE SLOPE PARAPET 42SS</b>		SHEET 10 65	
SCALE			

**STRUCTURE** B-66-151

	DRAWN BY	EKK	PLANS CK'D	NRT
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## SINGLE SLOPE PARAPET 42SS

SHEET

S

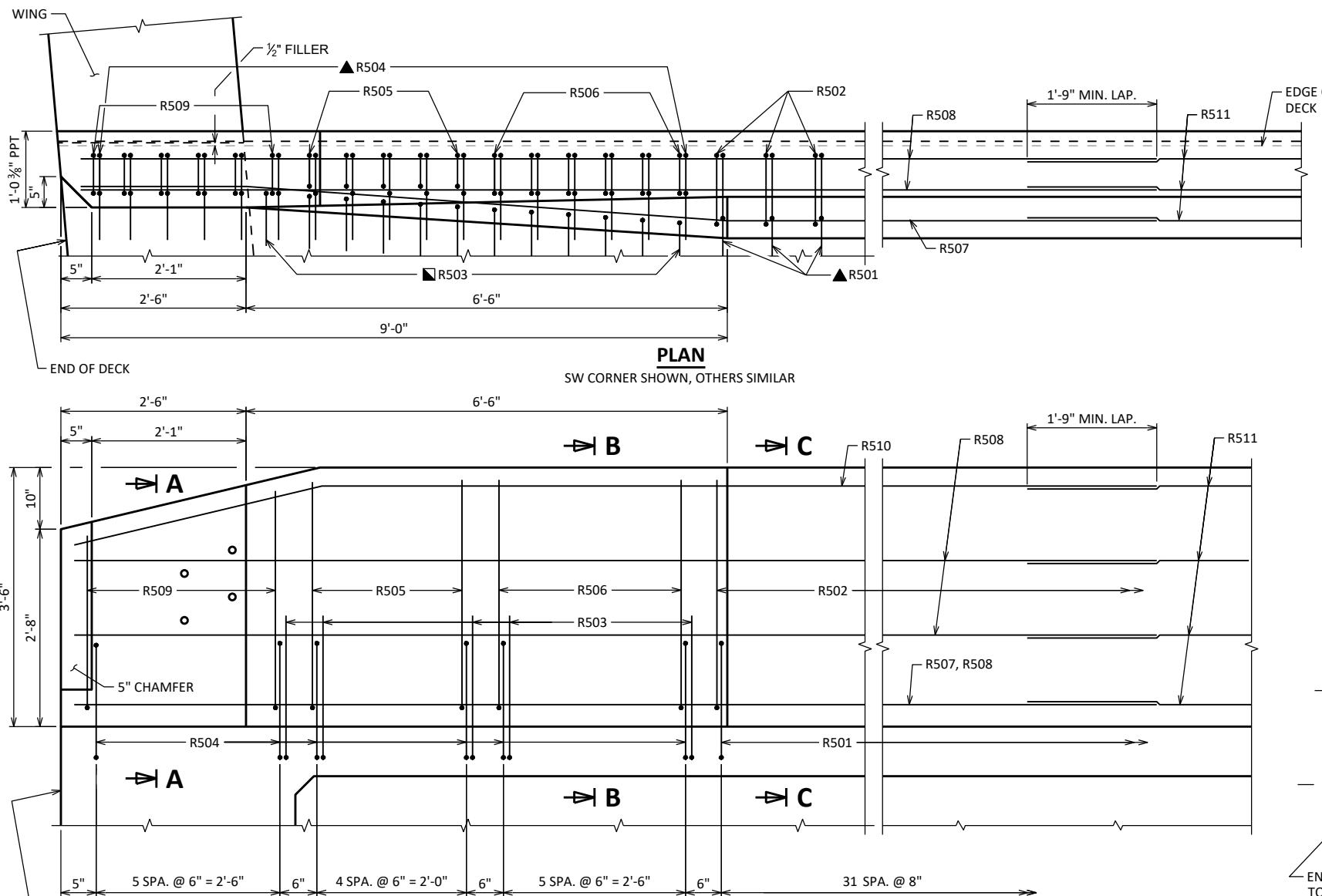
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## SECTION B-B

## SECTION C-C

## **PARAPET END TREATMENT DETAIL**

LOOKING AT INSIDE FACE OF PARAPET



THIS SHEET WAS CREATED BY THE WISDOT BUREAU OF STRUCTURES STANDARD BRIDGE DESIGN TOOL VERSION 1.1.0.0

CONTINUED FROM PREVIOUS COLUMN

## PROJECT I.D. 4824-03-72 EARTHWORK SUMMARY

## TOWNLINE ROAD

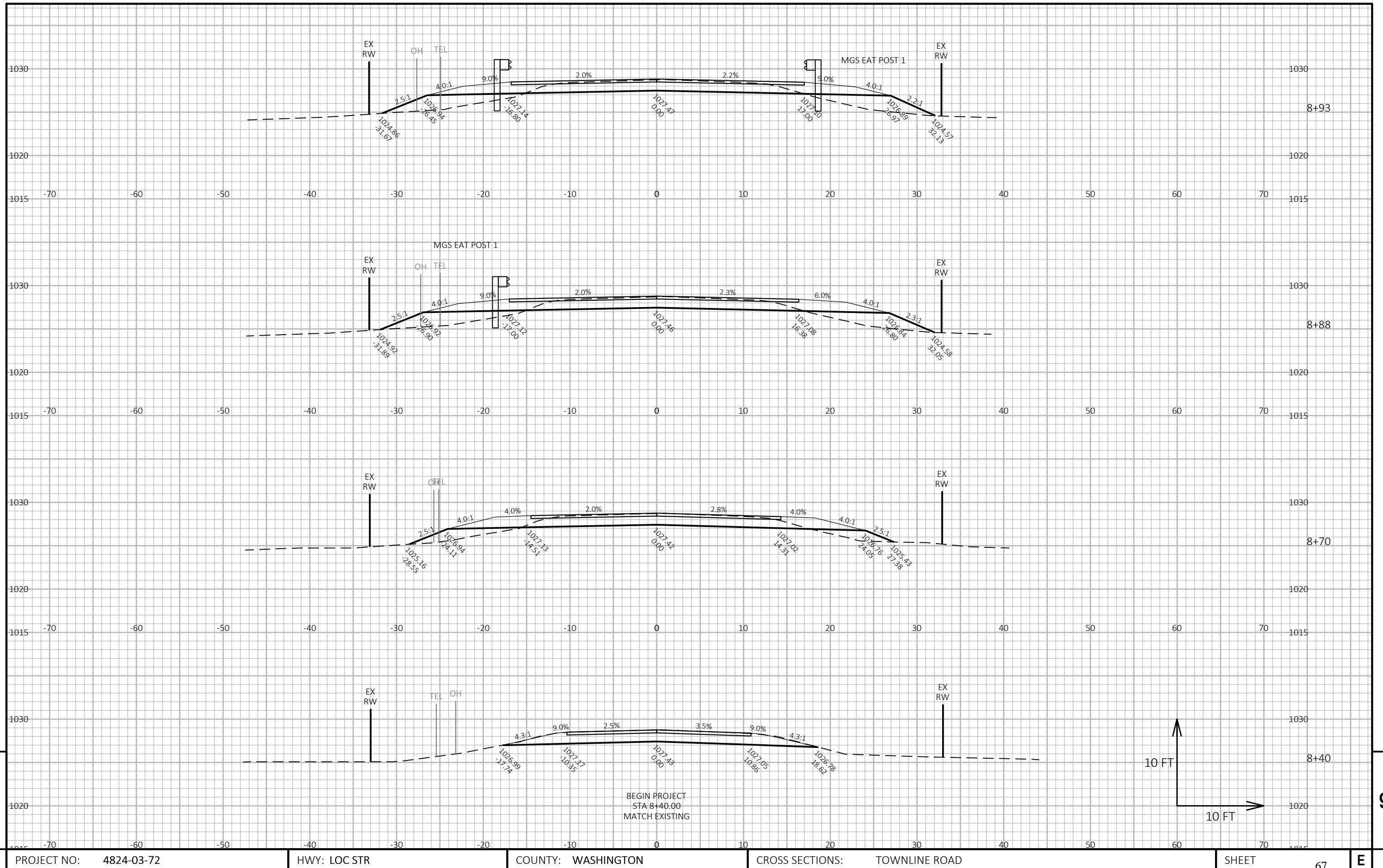
STA	EXCAVATION		EXPANDED			BORROW CY
	COMMON CY	FILL (1) CY	FILL (1)(2) CY	WASTE (1) CY		
<b>8+40.00</b>	51	9	12	39	-39	
<b>8+70.00</b>	29	16	21	8	-8	
<b>8+87.99</b>	8	6	8	0	0	
<b>8+93.43</b>	30	22	29	1	-1	
<b>9+12.99</b>	8	6	8	0	0	
<b>9+18.43</b>	28	23	30	-2	2	
<b>9+37.99</b>	7	6	8	-1	1	
<b>9+43.43</b>	9	7	9	0	0	
<b>9+50.00</b>	25	20	26	-1	1	
<b>9+70.14</b>						
<b>BRIDGE STRUCTURE B-66-151</b>						

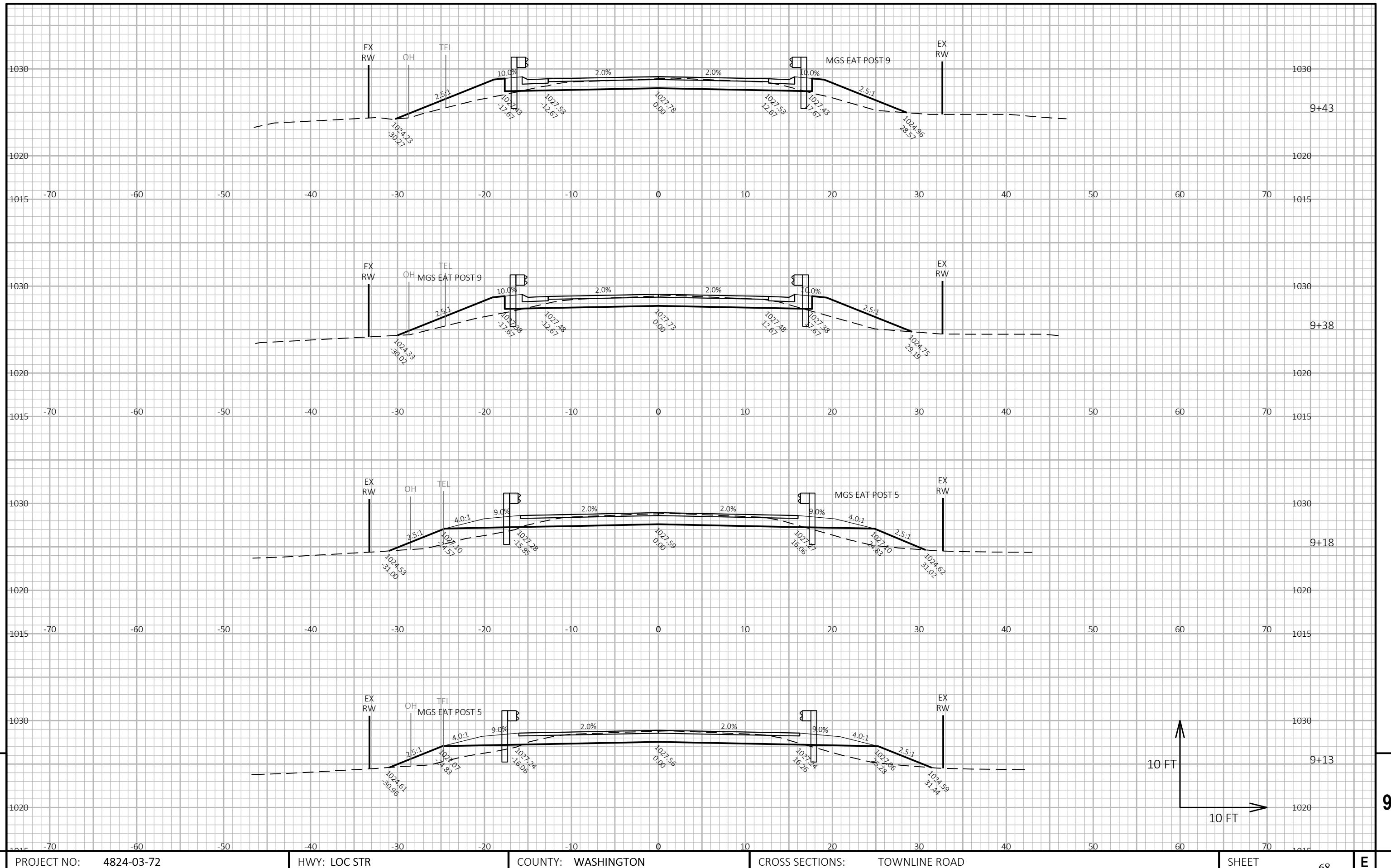
CONTINUED IN NEXT COLUMN

## PROJECT I.D. 4824-03-72 EARTHWORK SUMMARY

## TOWNLINE ROAD

STA	EXCAVATION		EXPANDED			BORROW CY
	COMMON CY	FILL (1) CY	FILL (1)(2) CY	WASTE (1) CY		
<b>BRIDGE STRUCTURE B-66-151</b>						
<b>10+29.86</b>						
	7	19	25	-18	18	
<b>10+45.00</b>						
	4	14	18	-14	14	
<b>10+56.57</b>						
	10	26	34	-24	24	
<b>10+81.57</b>						
	12	24	31	-19	19	
<b>11+06.57</b>						
	12	16	21	-9	9	
<b>11+24.51</b>						
	24	18	23	1	-1	
<b>11+49.51</b>						
	35	17	22	13	-13	
<b>11+74.51</b>						
	45	12	16	29	-29	
<b>12+00.00</b>						
	30	2	3	27	-27	
<b>12+15.00</b>						
<b>SUBTOTALS</b>						
SOUTH APPROACH	195	115	151	44	-44	
NORTH APPROACH	179	148	193	-14	14	
<b>UNUSABLE PAVEMENT (3)</b>						
TOTALS	374	263	344	30	66	
(1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY.						
(2) - FILL EXPANSION 30%						
(3) - EXISTING PAVEMENT BASED ON AVE THK OF 4.5"						





PROJECT NO: 4824-03-72

HWY: LOC ST

COUNTY: WASHINGTON

CROSS SECTIONS: TOWNLINE ROAD

SHEET

E

FILE NAME : C:\USERS\CGIRTE\DC\ACCDOS\MSA PROFESSIONAL SVCS\TOWNLINE ROAD BRIDGE REPLACEMENT\PROJECT FILES\CADD\SheetsPlan\090201-XS.DWG  
LAYOUT NAME - 090202-XS

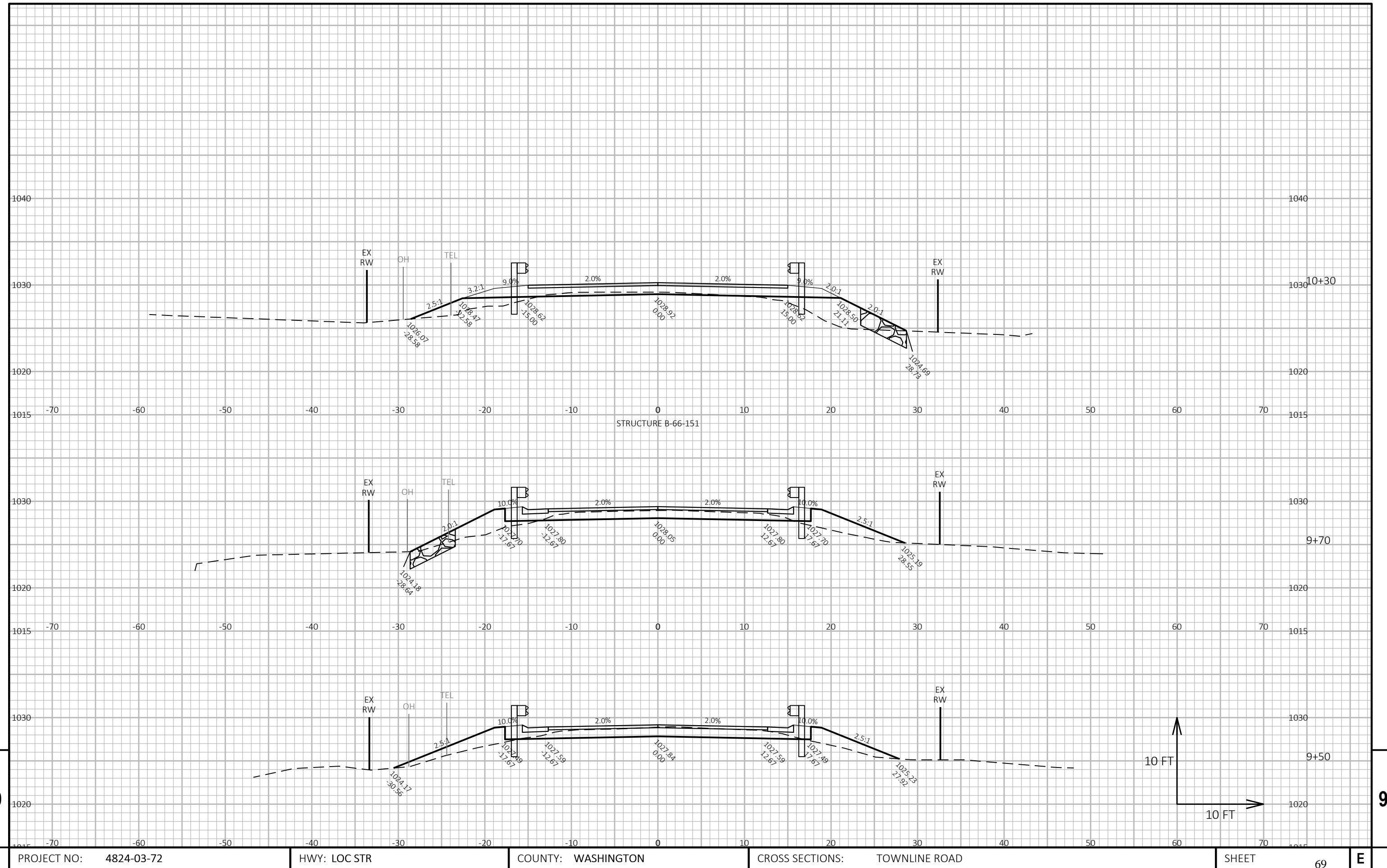
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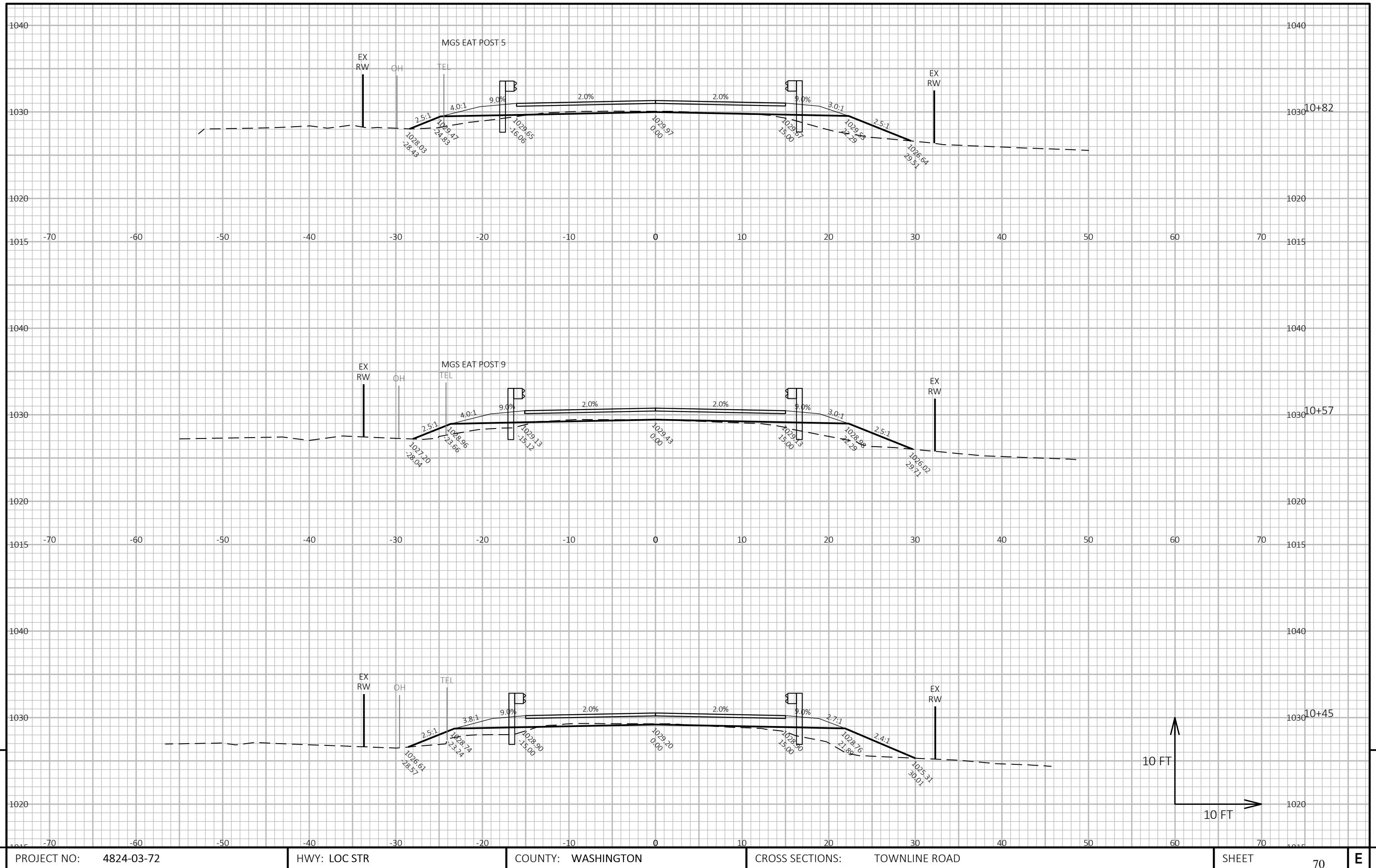
PLOT BY : CONNOR GIRTEN

PLOT NAME :

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

CDOT/CADD/C





PROJECT NO: 4824-03-72

HWY: LOC ST

COUNTY: WASHINGTON

CROSS SECTIONS: TOWNLINE ROAD

SHEET

FILE NAME : C:\USERS\CGIRTE\DC\ACCDOS\MSA PROFESSIONAL SVCS\TOWNLINE ROAD BRIDGE REPLACEMENT\PROJECT FILES\CADD\SHEETSPLAN\090201-XS.DWG  
LAYOUT NAME - 090204-xs

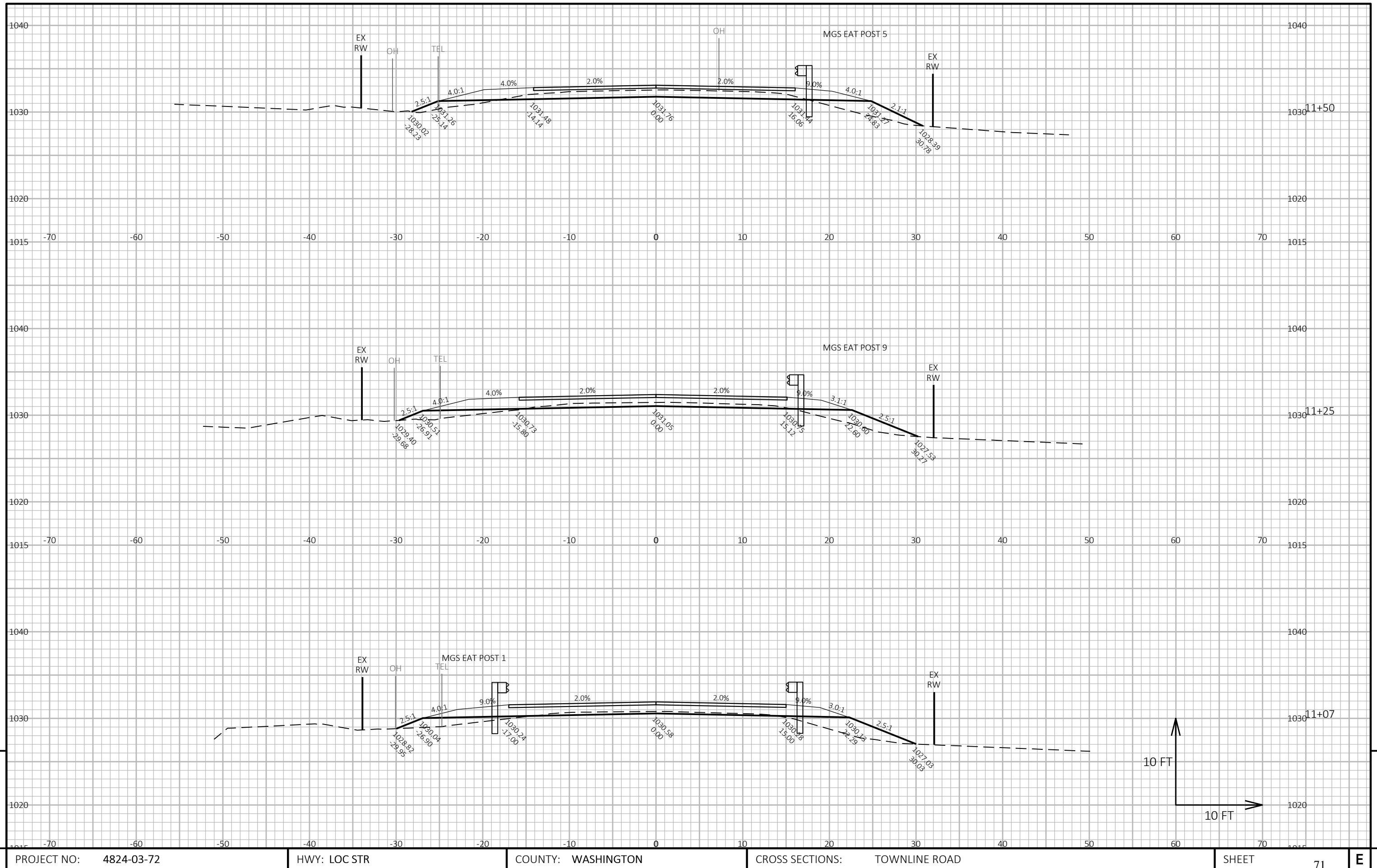
PLOT DATE : 7/25/2025 10:25 AM

PLOT BY : CONNOR GIRTEN

PLOT NAME :

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

WISDOT/CADDE SHEET 49



PROJECT NO: 4824-03-72

HWY: LOC ST

COUNTY: WASHINGTON

CROSS SECTIONS: TOWNLINE ROAD

SHEET

FILE NAME : C:\USERS\CGIRLEN\DC\ACCDOS\MSA PROFESSIONAL SVCS\TOWNLINE ROAD BRIDGE REPLACEMENT\PROJECT FILES\CADD\SheetsPlan\090201-XS.DWG  
LAYOUT NAME - 090205-XS

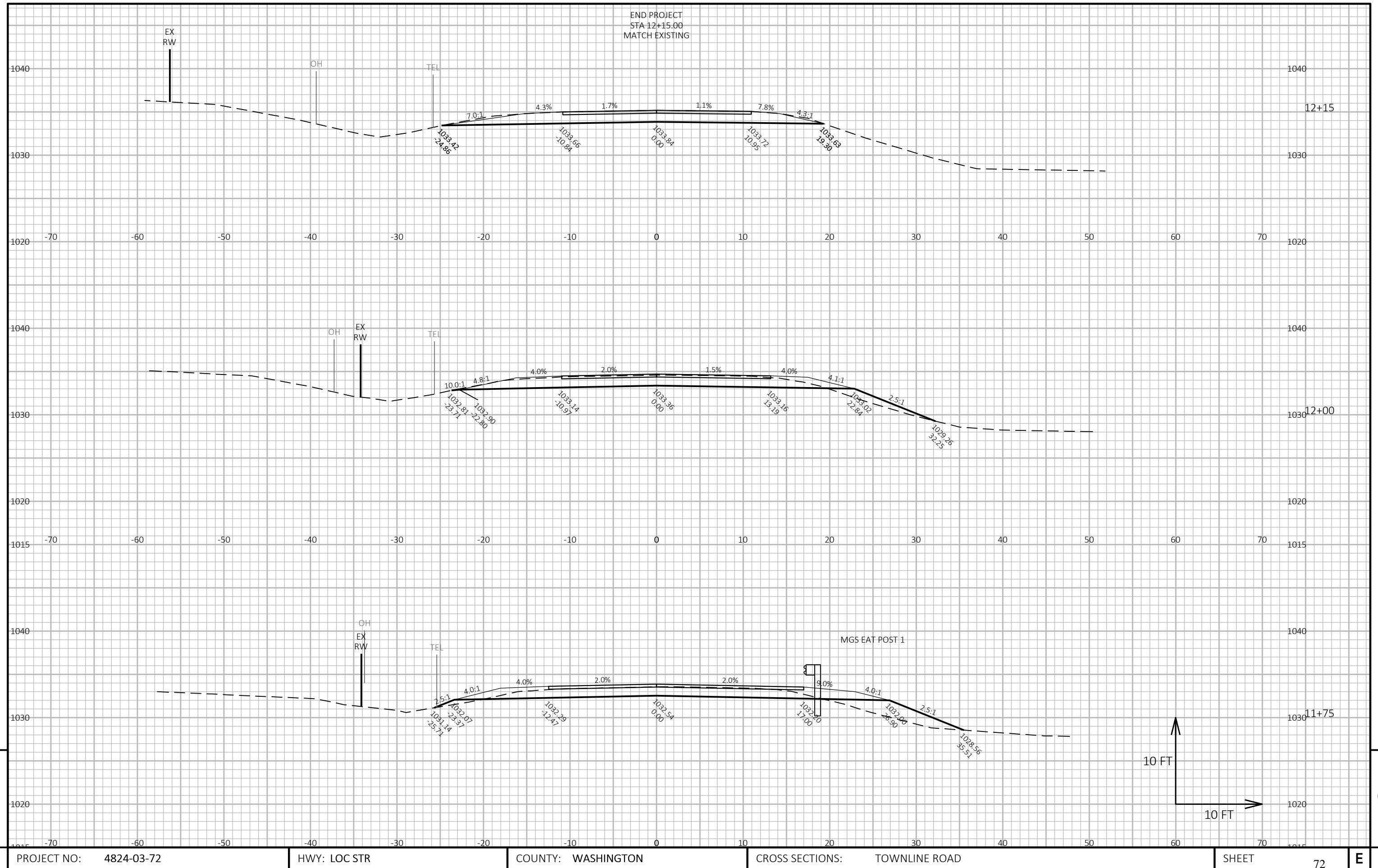
PLOT DATE : 7/25/2025 10:25 AM

PLOT BY : CONNOR GIRTEN

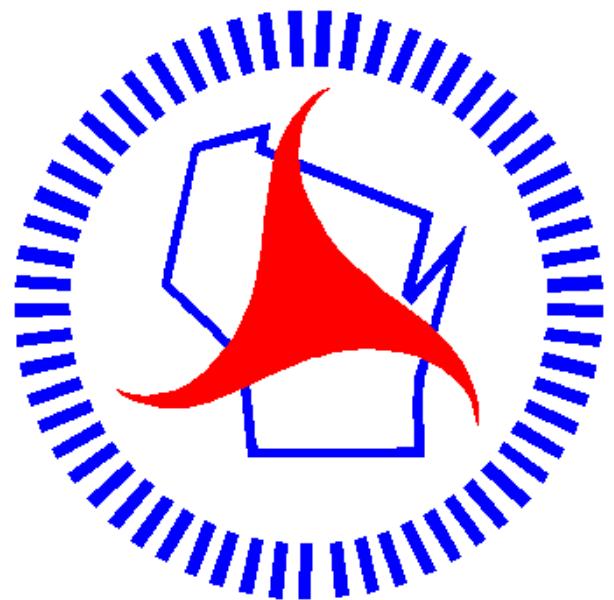
PLOT NAME :

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

WIEDOT/CARRE S.



# Notes



## ***Wisconsin Department of Transportation***

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