

WKE
PROJECT ID:
WITH: N/A

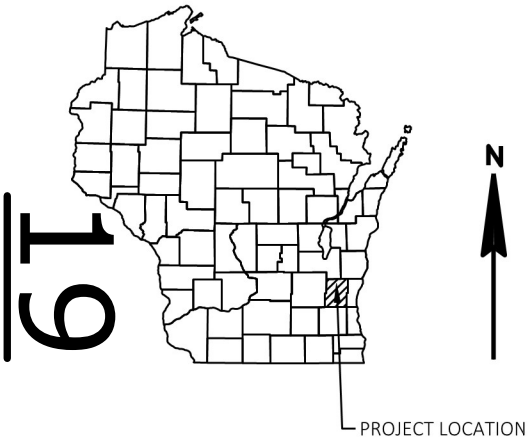
4824-03-72

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

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

PROFILE

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

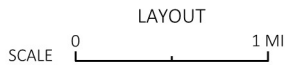
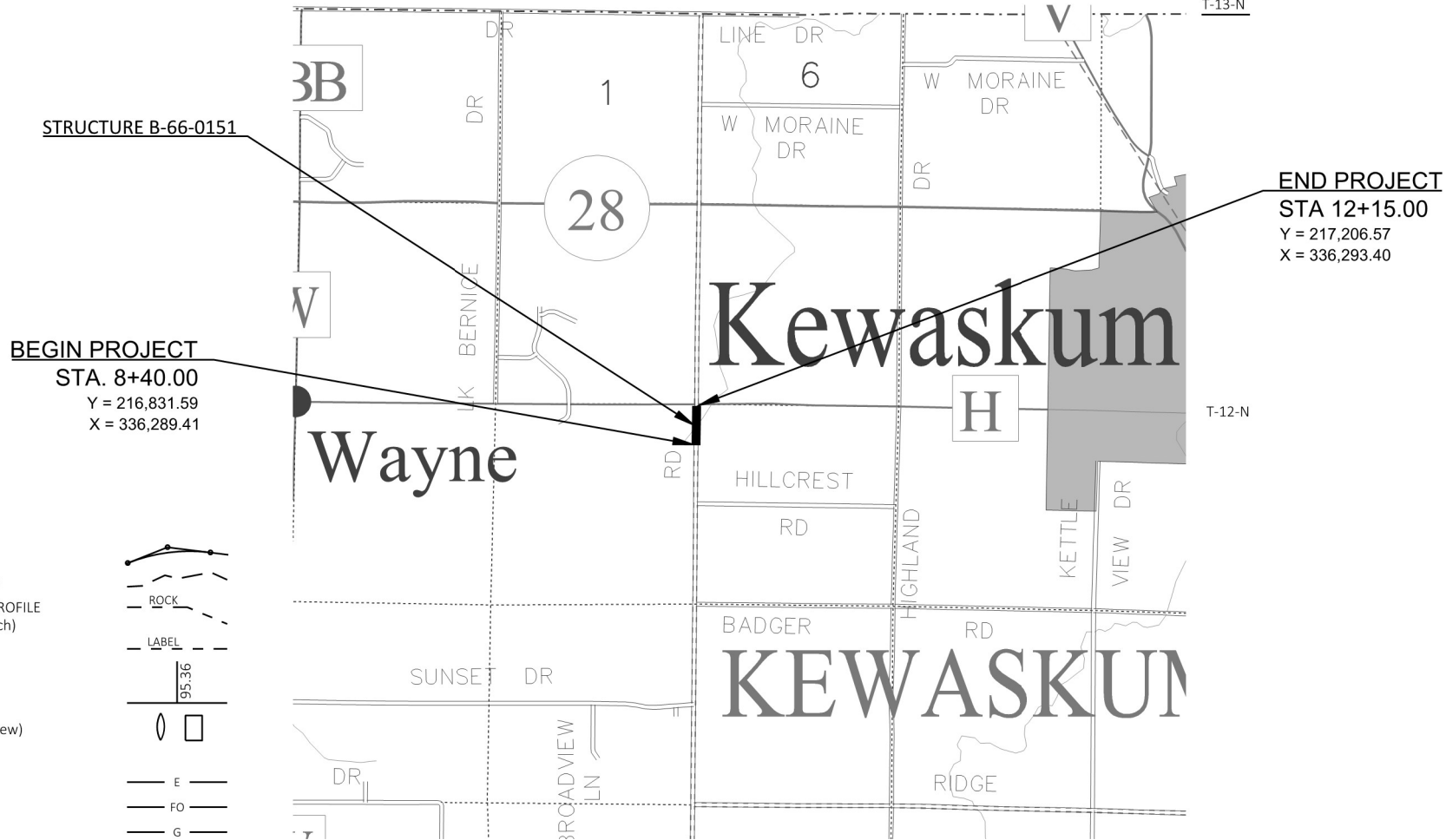
T KEWASKUM, TOWNLINE RD

TRIBUTARY MILWAUKEE RIVER P-66-911

LOC STR

WASHINGTON COUNTY

STATE PROJECT NUMBER
4824-03-72



TOTAL NET LENGTH OF CENTERLINE = 0.071 MI

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



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

DATE: 10/30/25

Joseph C. Jelacic
(Signature)

E

UTILITIES CONTACTS

WE ENERGIES
OVERHEAD ELECTRIC
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MENOMONEE FALLS, WI 53051
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EMAIL: JOSEPH.FELLEENZ@WE-ENERGIES.COM

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OVERHEAD COMMUNICATIONS
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EMAIL: THOMAS.REKOWSKI@FTR.COM

CHARTER COMMUNICATIONS
OVERHEAD COMMUNICATIONS
NICK FRASE
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WEST BEND, WI 53095
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EMAIL: NICK.FRASE@CHARTER.COM

DIGGERS



HOTLINE

Dial  or (800)242-8511

www.DiggersHotline.com

* DENOTES UTILITIES THAT ARE NOT
DIGGERS HOTLINE MEMBERS

WISCONSIN DNR LIAISON

RYAN PAPPAS
DEPARTMENT OF NATURAL RESOURCES
1027 WEST PAUL AVE
MILWAUKEE, WI 53233
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TOWN OF KEWASKUM CONTACT

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KEWASKUM, WI 53040
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WASHINGTON COUNTY CONTACT

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

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- ALIGNMENT DIAGRAM

TOWNLINE ROAD 4-INCHES HMA PAVEMENT		
LAYER	THICKNESS	TYPE
UPPER	1.75-INCHES	4 MT 58-28 S
LOWER	2.25-INCHES	3 MT 58-28 S

GENERAL NOTES

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.

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LBS/SY/IN.

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

RIGHT OF WAY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE.

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

TRAFFIC CONTROL DEVICES AS SHOWN IN THE STANDARD DETAILS DRAWINGS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

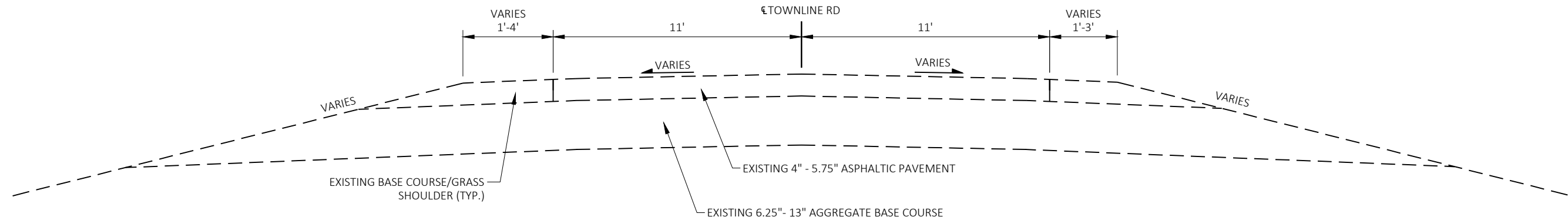
DO NOT DRIVE OR STORE EQUIPMENT, OR STORE CONSTRUCTION MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS OR WATERWAYS.

CONTACT THE PROJECT ENGINEER AND SCOTT M. SCHMIDT, WASHINGTON COUNTY SURVEYOR, AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

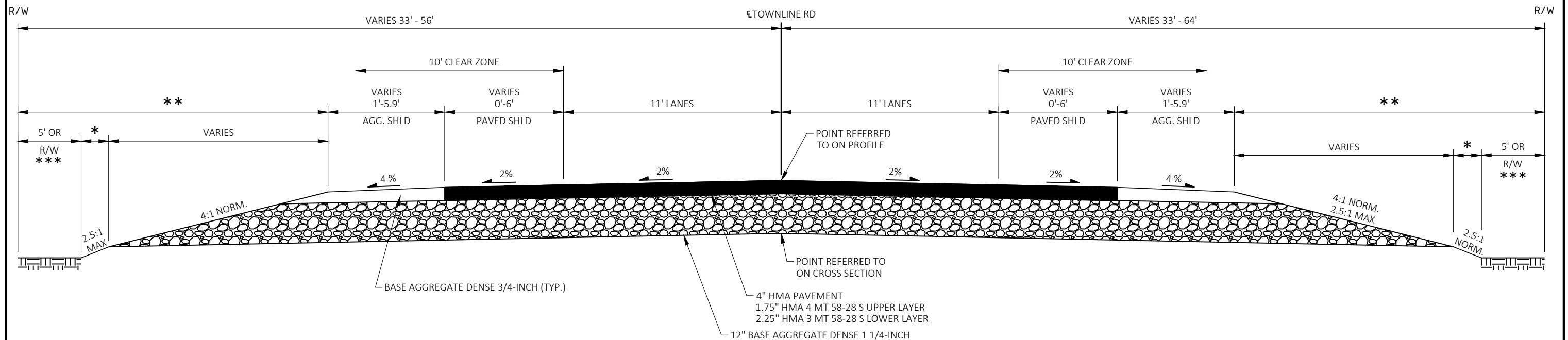
RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 0.62 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.49 ACRES

**EXISTING TYPICAL SECTION**

STA 8+40 - STA 12+15

**FINISHED TYPICAL SECTION**STA. 8+40, LT - STA. 8+88, LT
STA. 8+40, RT - STA. 8+94, RT
STA. 11+06, LT - STA. 12+15, LT
STA. 11+75, RT - STA. 12+15, RT**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

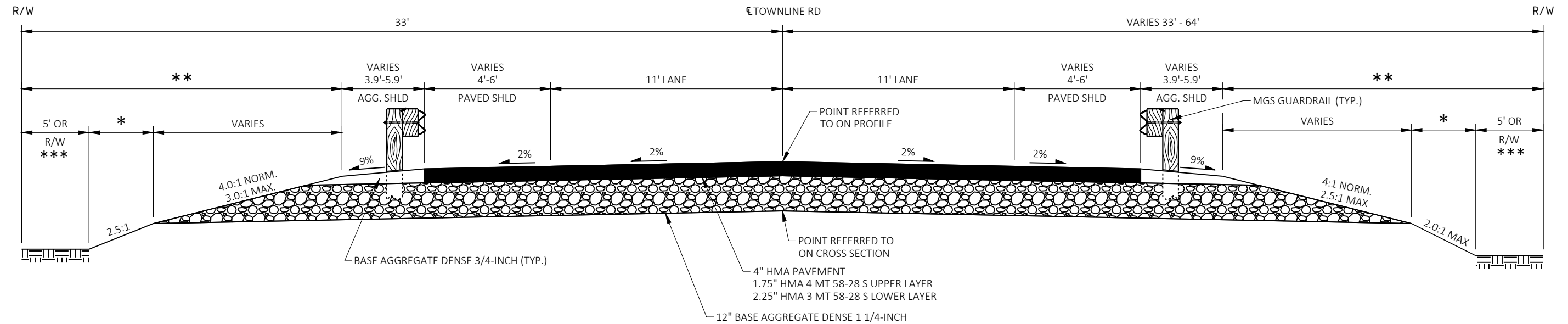
COUNTY: WASHINGTON

TYPICAL SECTIONS

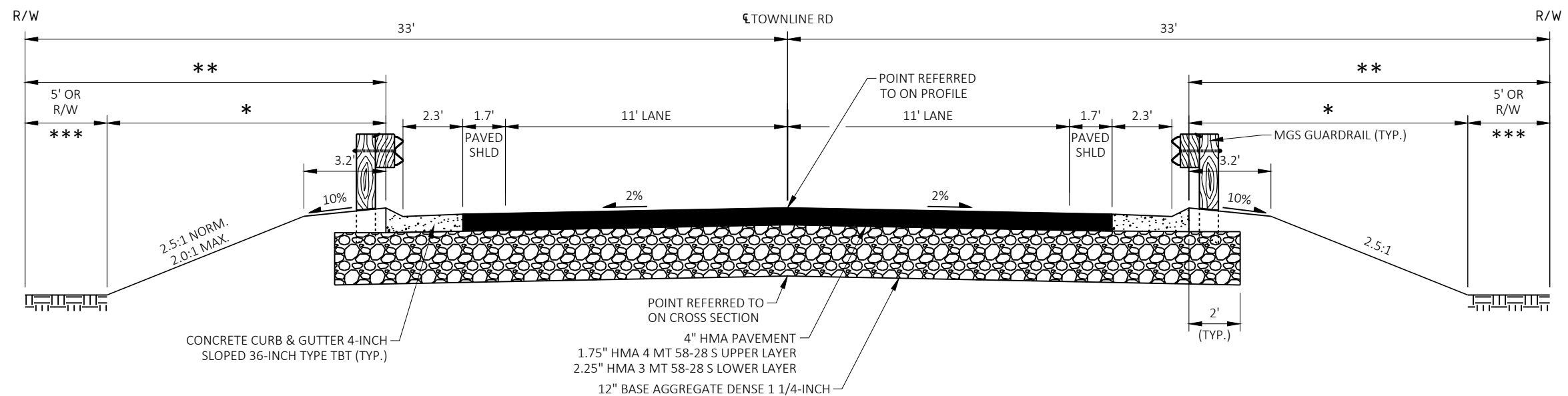
SHEET

3

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**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 LT
STA 10+22 RT - STA 11+75 RT

**FINISHED TYPICAL SECTION**

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

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

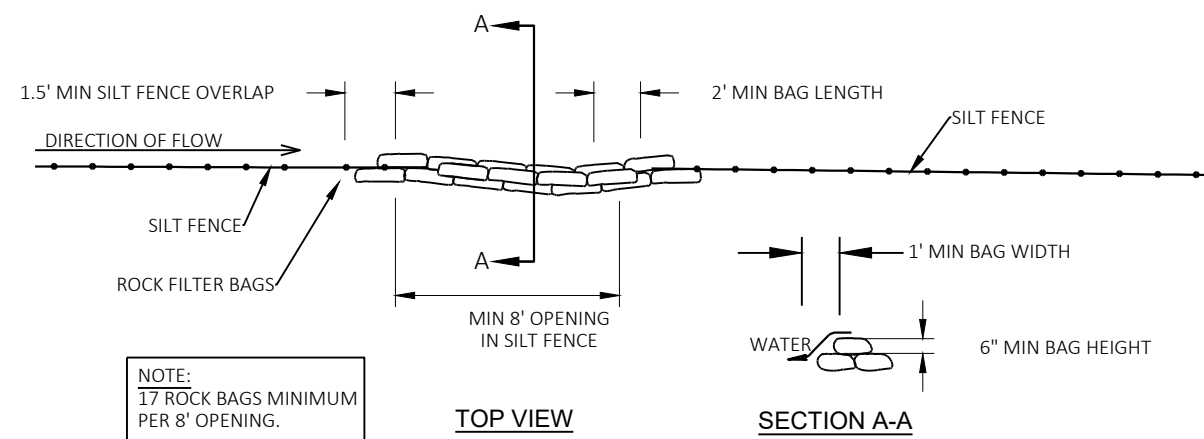
COUNTY: WASHINGTON

TYPICAL SECTIONS

SHEET

4

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ROCK BAGS USED FOR SILT FENCE RELIEF

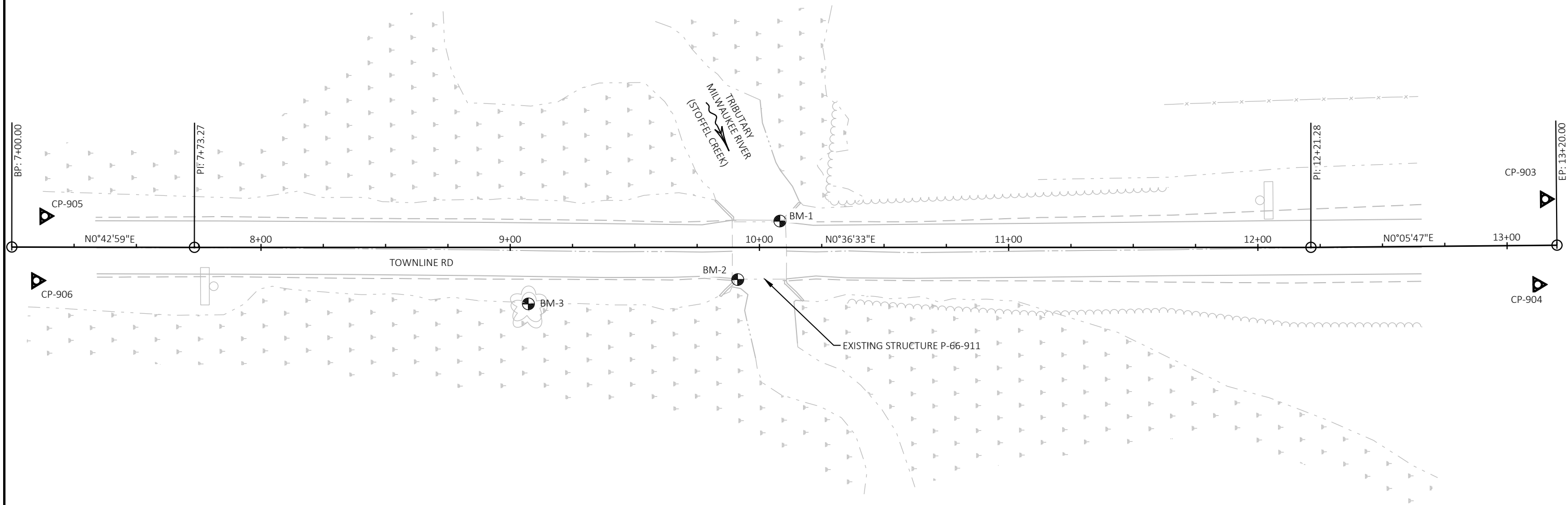
INCIDENTAL TO SILT FENCE ITEMS
INSTALL AT LOW POINTS IN SILT FENCE AND AS DIRECTED BY THE ENGINEER IN THE FIELD


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+21.28
Y = 217,212.85
X = 336,293.46

PI STA = 13+20.00
Y = 217,311.57
X = 336,293.63



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

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

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

GRUBBING						
CATEGORY	STATION	TO	STATION	LOCATION	201.0205	201.0220
					GRUBBING	GRUBBING
					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	EXPANDED		208.0100
					EXCAVATION	FILL	FILL	BORROW
					COMMON	CY (1)	CY (1) (2)	WASTE
					CY			CY (1)
0010	8+40	-	9+79	TOWNLINE RD	195	115	151	44
0010	10+21	-	12+15	TOWNLINE RD	179	148	193	-14
0010	8+40	-	12+15	UNUSABLE PAVEMENT	---	---	---	---
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

CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	624.0100
					BASE	BASE	
					AGGREGATE	AGGREGATE	
					DENSE 3/4-INCH	DENSE 1 1/4-INCH	WATER
					TON	TON	MGAL
0010	8+40	-	9+79	TOWNLINE RD	---	411	7
0010	10+21	-	12+15	TOWNLINE RD	---	626	10
0010	8+40	-	9+79	LT/RT	16	---	1
0010	10+21	-	12+15	LT/RT	39	---	1
TOTAL 0010					55	1,037	19

ASPHALT ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	455.0605	460.6223	460.6224
					TACK COAT	HMA PAVEMENT	HMA PAVEMENT
					GAL	3 MT 58-28 S	4 MT 58-28 S
						TON	TON
0010	8+40	-	9+80	TOWNLINE RD	22	55	43
0010	10+19	-	12+15	TOWNLINE RD	33	81	63
TOTAL 0010					55	136	106

CONCRETE ITEMS

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

RIPRAP ITEMS

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

GUARDRAIL ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	614.2300	614.2500	614.2610
					MGS GUARDRAIL	MGS THRIE	
					3	BEAM	MGS GUARDRAIL
					LF	TRANSITION	TERMINAL EAT
						LF	EACH
0010	8+88	-	9+80	LT	---	39.4	1
0010	8+94	-	9+86	RT	---	39.4	1
0010	10+14	-	11+07	LT	---	39.4	1
0010	10+20	-	11+75	RT	62.5	39.4	1
TOTAL 0010					62.5	157.6	4

RESTORATION ITEMS											
CATEGORY	STATION	TO	STATION	LOCATION	625.0500	627.0200	628.2008	629.0210	630.0120	630.0200	630.0500
					SALVAGED	MULCHING	EROSION MAT	FERTILIZER TYPE	SEEDING	SEEDING	SEED WATER
					TOPSOIL	SY	URBAN CLASS I	B	MIXTURE NO. 20	TEMPORARY	MGAL
					SY	SY	TYPE B	CWT	LB	LB	MGAL
0010	8+40	-	9+78	LT	116	43	116	0.1	7.1	4.3	3.6
0010	8+40	-	9+84	RT	114	41	114	0.1	7.0	4.2	3.5
0010	10+18	-	12+15	LT	82	99	82	0.1	8.1	4.9	4.1
0010	10+26	-	12+15	RT	153	66	153	0.1	9.9	6.0	5.0
0010	---	-	---	UNDISTRIBUTED	117	63	117	0.1	8.1	4.9	4.1
TOTAL 0010					582	312	582	0.5	40.2	24.3	20.3

EROSION CONTROL ITEMS							
CATEGORY	STATION	TO	STATION	LOCATION	628.1504	628.1520	628.6005
					SILT FENCE	SILT FENCE	TURBIDITY
					LF	MAINTENANCE	BARRIERS
					LF	LF	SY
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

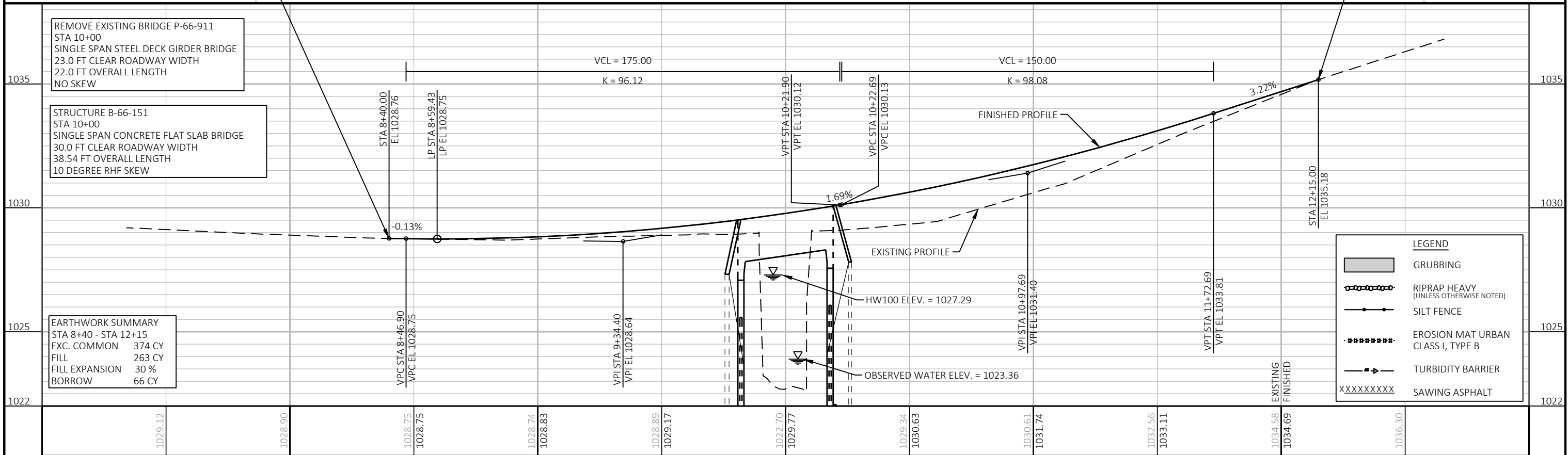
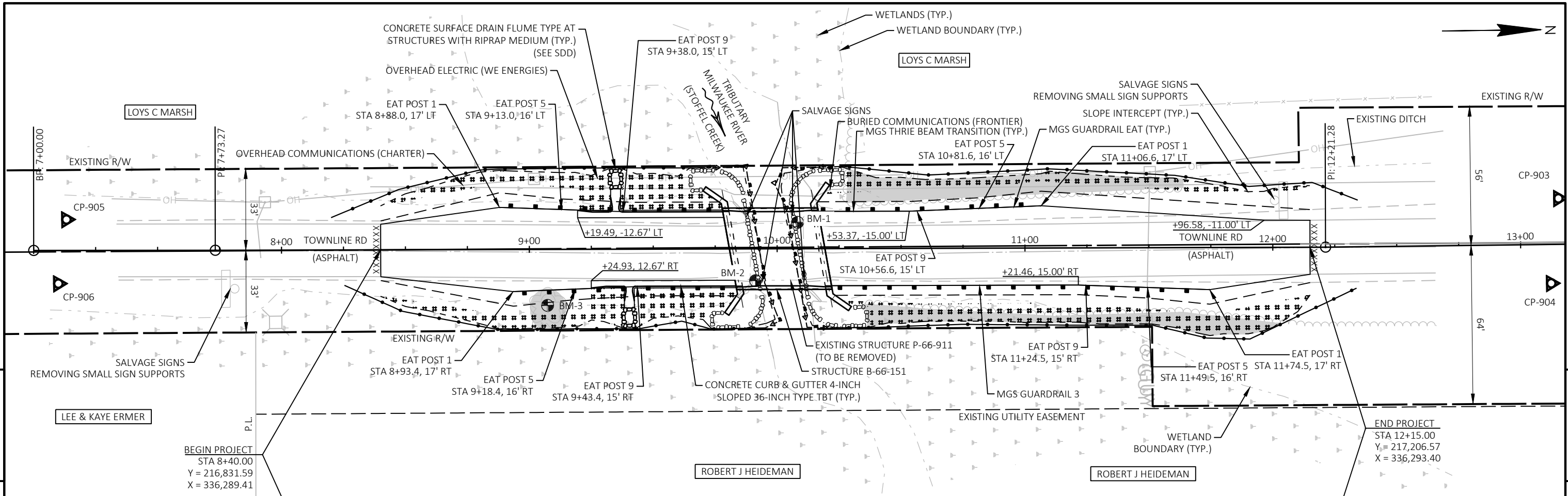
MOBILIZATIONS EROSION CONTROL			
CATEGORY	LOCATION	628.1905	628.1910
		MOBILIZATIONS	MOBILIZATIONS
		EROSION	EROSION
		CONTROL	CONTROL
		EACH	EACH
0010	PROJECT 4824-03-72	4	3
TOTAL 0010		4	3

CATEGORY	STATION	TO	STATION	LOCATION	634.0612	634.0614	637.2230	SPV.0060.01	REMARKS
					POSTS WOOD	POSTS WOOD	SIGNS TYPE II REFLECTIVE F	SPECIAL (01. SALVAGE SIGNS)	
					4X6-INCH X 12-	4X6-INCH X 14-			
					FT	FT			
					EACH	EACH			
0010	---	-	7+81	RT	---	1	9	1	STOP AHEAD (W3-1)
0010	9+88	-	10+11	LT/RT	---	---	---	4	EXISTING BRIDGE HASH MARKERS
0010	9+77	-	10+23	LT/RT	4	---	12	---	BRIDGE HASH MARKERS W5-52R / W5-52L
0010	---	-	12+00	LT	---	1	5	1	SPEED LIMIT 45
TOTAL 0010					4	2	26	6	

TRAFFIC CONTROL ITEMS										
CATEGORY	LOCATION	DAYS	643.0420		643.0705		643.0900		643.1050	
			TRAFFIC	TRAFFIC	TRAFFIC	TRAFFIC			TRAFFIC	TRAFFIC
			CONTROL	CONTROL	CONTROL	CONTROL			CONTROL	CONTROL
			BARRICADES	BARRICADES	WARNING	WARNING	TRAFFIC	TRAFFIC	CONTROL SIGNS	CONTROL SIGNS
			TYPE III	TYPE III	LIGHTS TYPE A	LIGHTS TYPE A	CONTROL SIGNS	CONTROL SIGNS	PCMS	PCMS
			EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY
0010	NORTH LIMITS	7	---	---	---	---	---	---	1	7
0010	SOUTH LIMITS	7	---	---	---	---	---	---	1	7
0010	NORTH APPROACH / CTH H	85	7	595	14	1190	11	935	---	---
0010	SOUTH APPROACH	85	9	765	14	1190	7	595	---	---
TOTAL 0010			1,360		2,380		1,530		14	

CONSTRUCTION STAKING ITEMS							
CATEGORY	STATION	TO	STATION	LOCATION	650.4500	650.5000	650.9920
					CONSTRUCTION	CONSTRUCTION	CONSTRUCTION
					STAKING	STAKING	STAKING
					SUBGRADE	BASE	SLOPE
					LF	LF	LF
0010	8+40	-	9+81	TOWNLINE RD	141	141	141
0010	10+19	-	12+15	TOWNLINE RD	196	196	196
TOTAL 0010					337	337	337

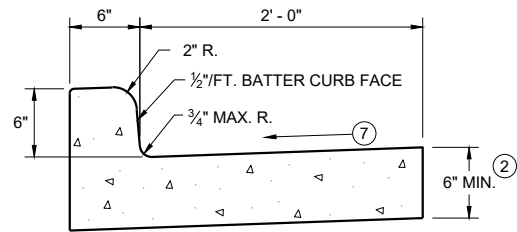
SAWING ASPHALT			
CATEGORY	STATION	LOCATION	LF
0010	8+40	TOWNLINE RD	22
0010	12+15	TOWNLINE RD	22
TOTAL 0010			44



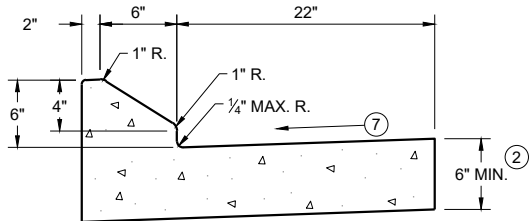
PROJECT NO:	4824-03-72	HWY:	LOC STR	COUNTY:	WASHINGTON	PLAN AND PROFILE:	TOWNLINE ROAD	SHEET	11	E
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Standard Detail Drawing List

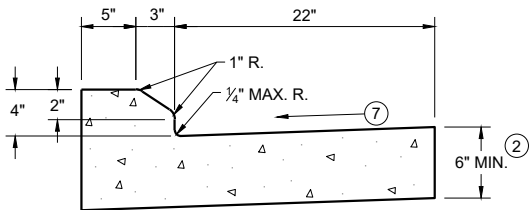
08D01-24A	CONCRETE CURB & GUTTER
08D01-24B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-08A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E09-06	SILT FENCE
08E11-02	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



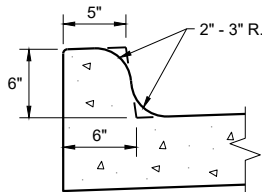
TYPES A^① & D



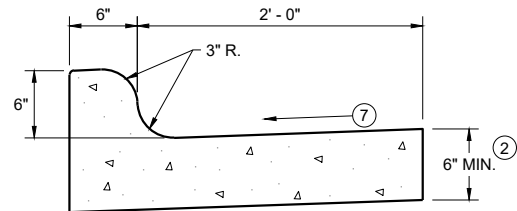
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

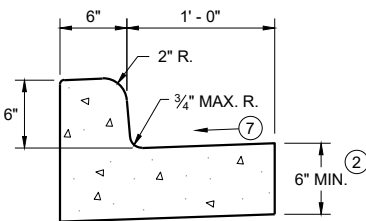


TYPES K^① & L
(OPTIONAL CURB SHAPE)



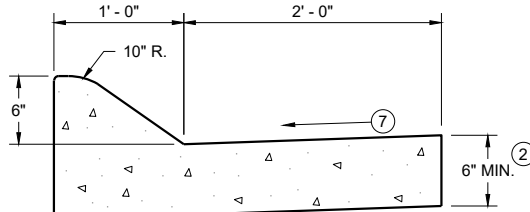
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

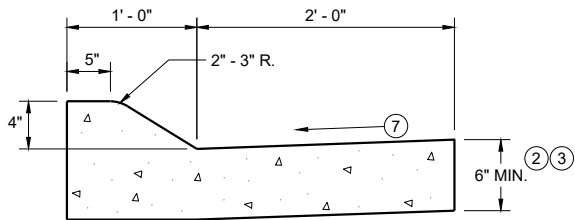


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

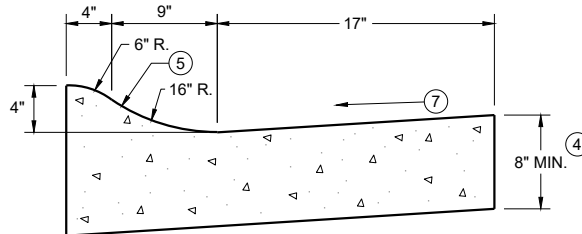


6" SLOPED CURB TYPES A^① & D



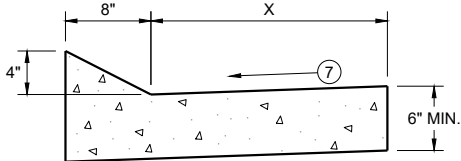
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



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

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

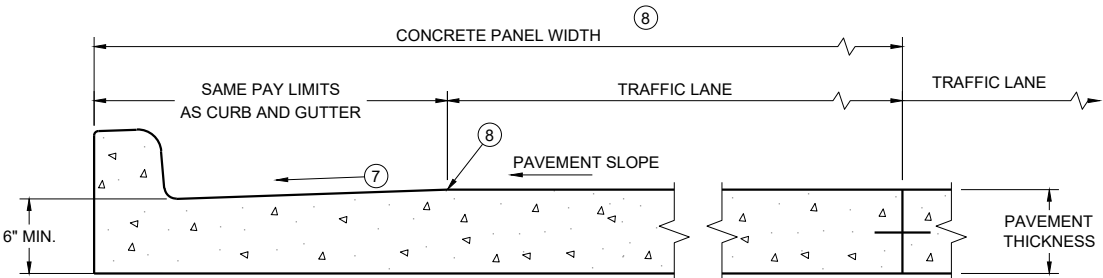


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

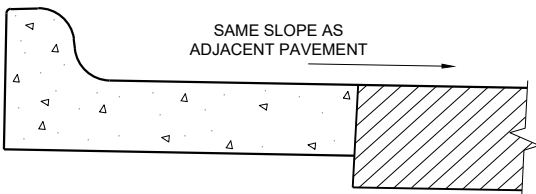
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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

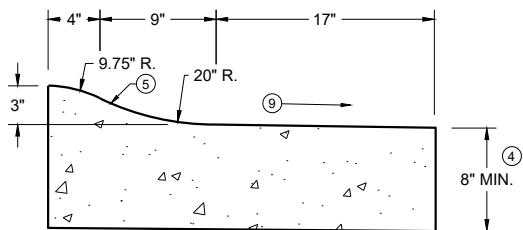


PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)



3" SLOPED CURB TYPES R^① & T

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

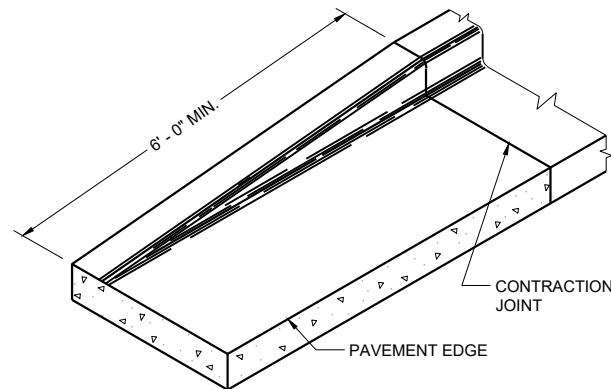
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

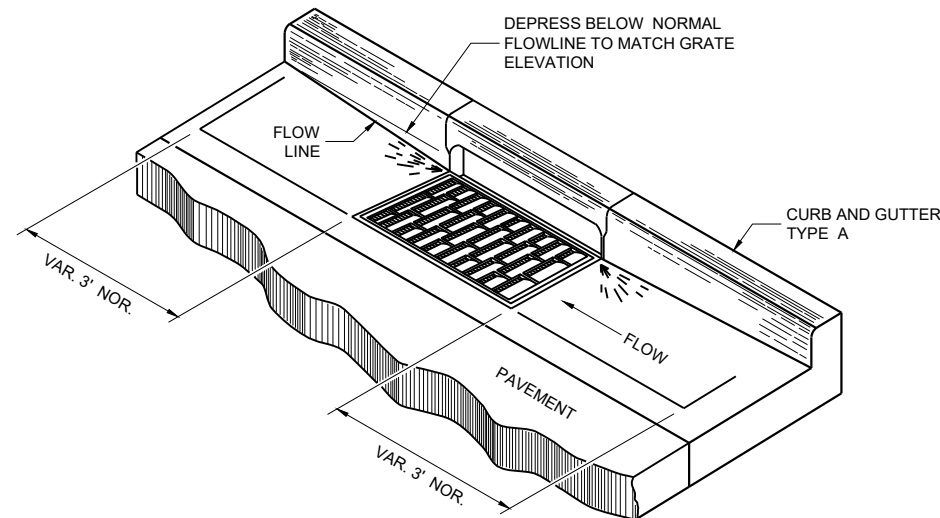
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

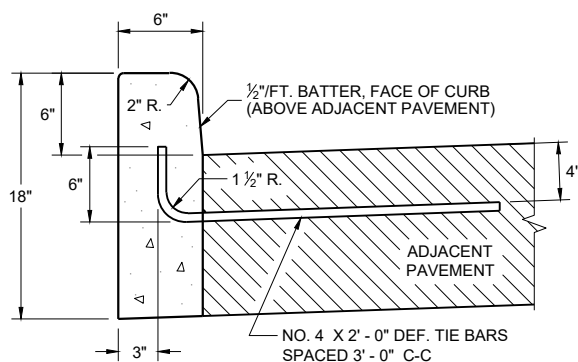


END SECTION CURB AND GUTTER

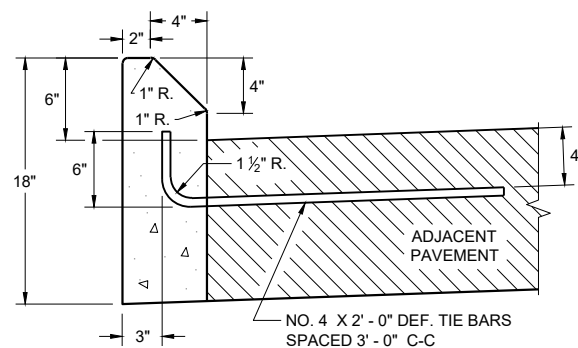


DETAIL OF CURB AND GUTTER AT INLETS

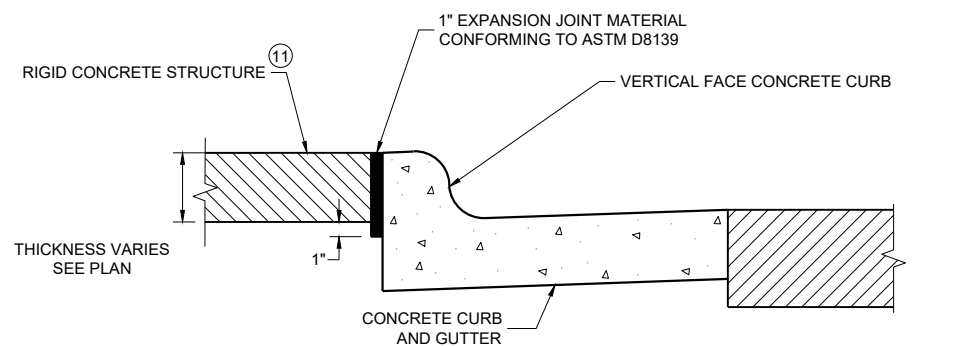
(TYPICAL H INLET COVER SHOWN)



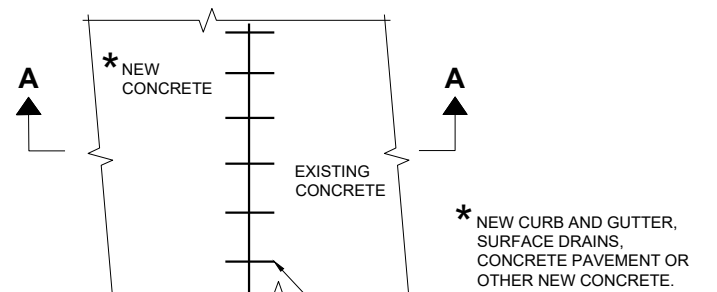
TYPES A^① & D



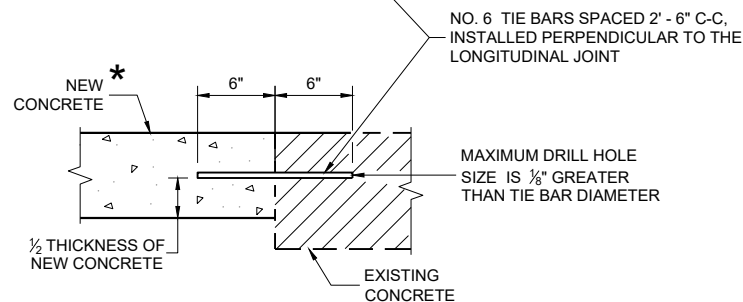
TYPES G^① & J
CONCRETE CURB



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE^⑪



PLAN VIEW



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT

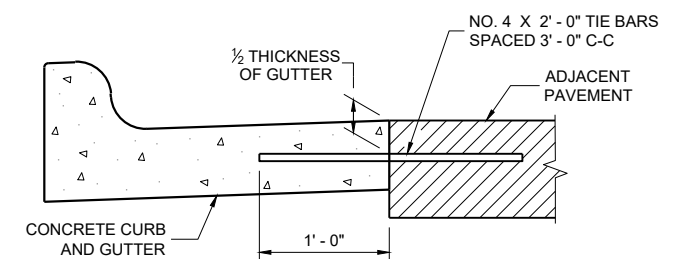
GENERAL NOTES

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

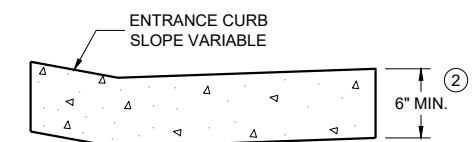
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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 MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑩
(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
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

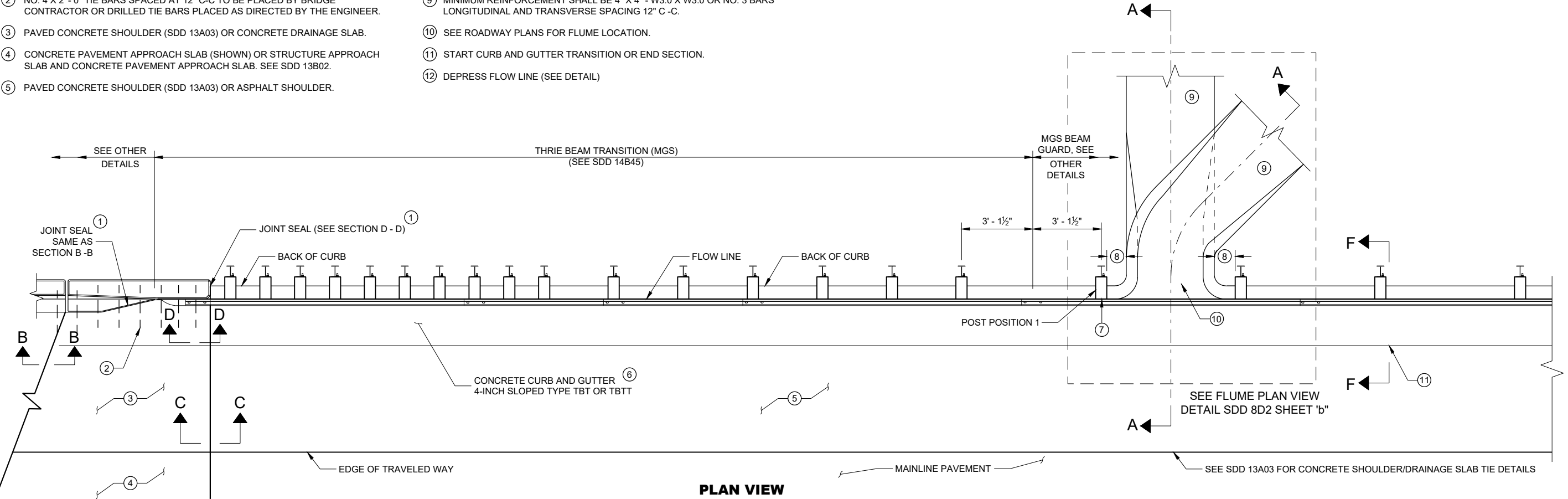
GENERAL NOTES

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

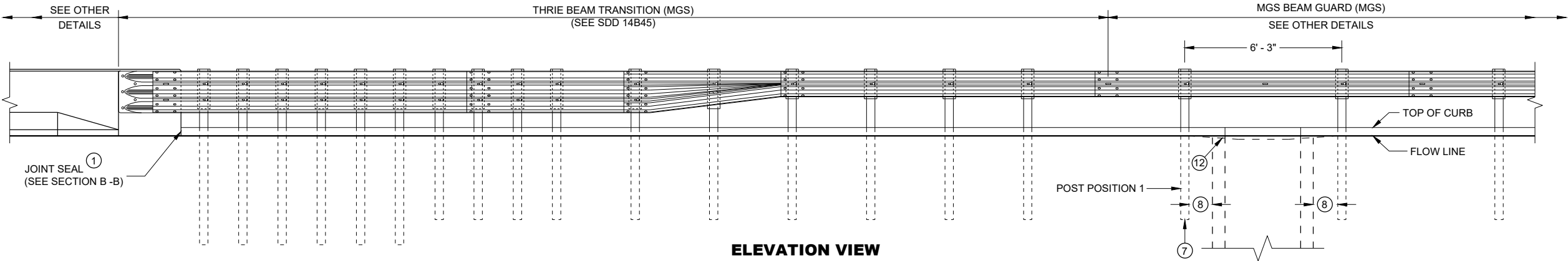
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

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



PLAN VIEW

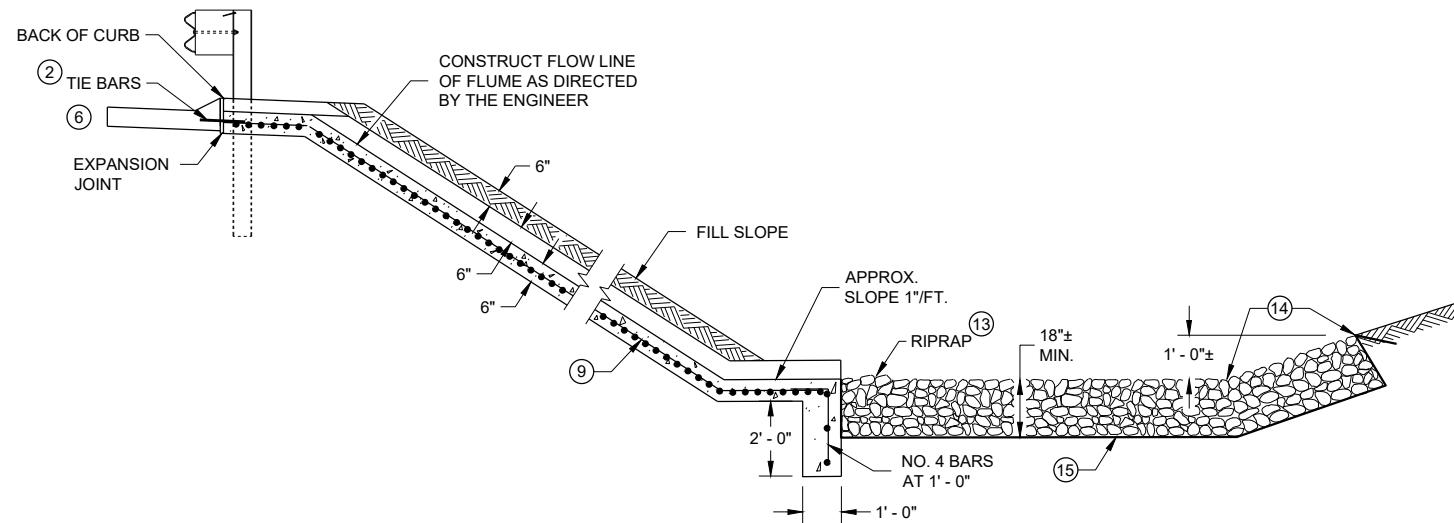


ELEVATION VIEW

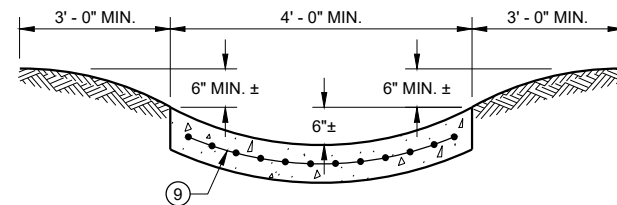
CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

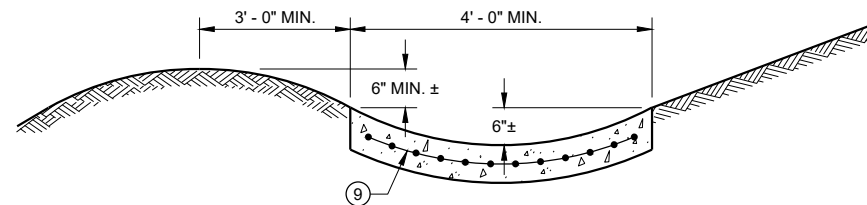
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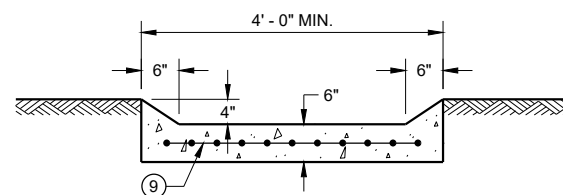
SECTION A - A



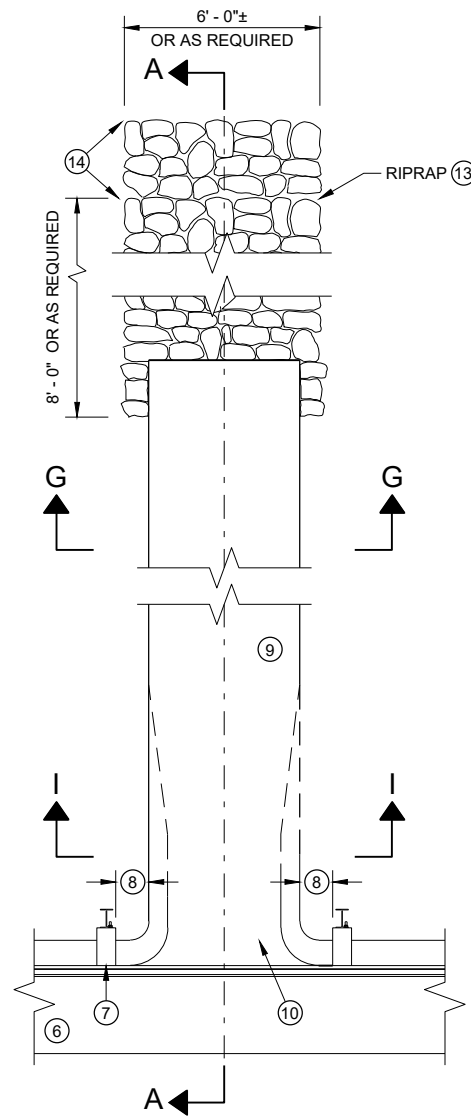
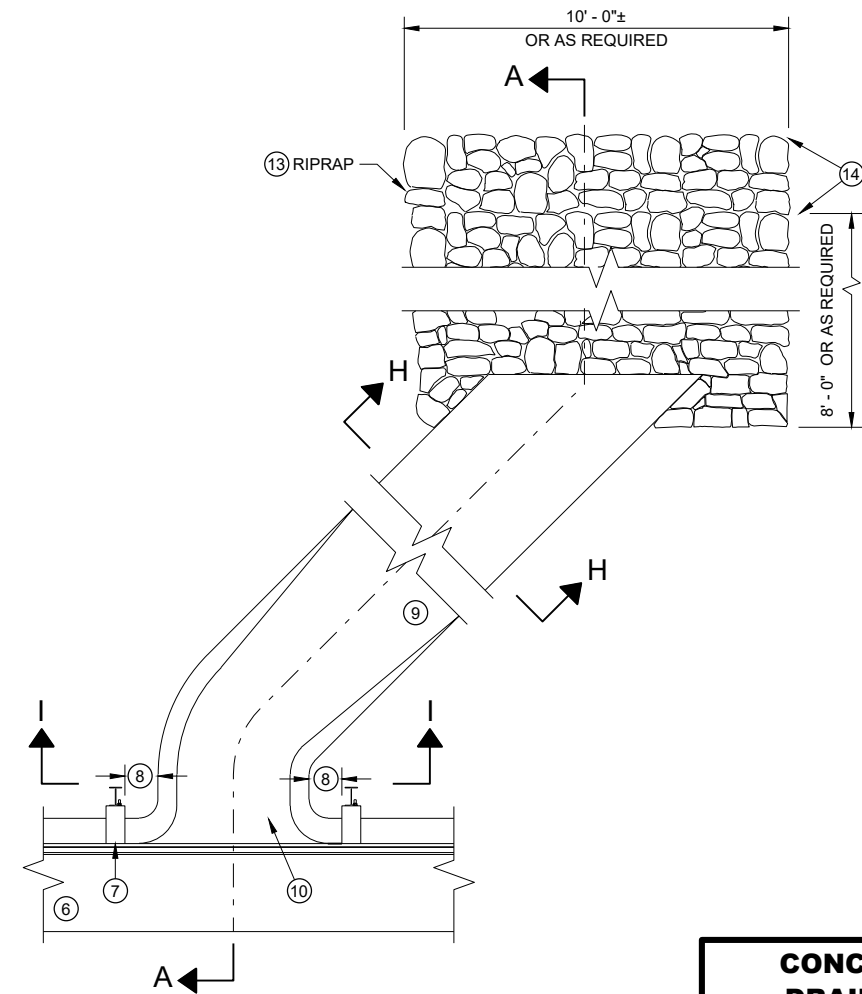
SECTION G - G



SECTION H - H



SECTION I - I

PLAN VIEW
PERPENDICULAR FLUMEPLAN VIEW
SKEWED FLUME

GENERAL NOTES

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

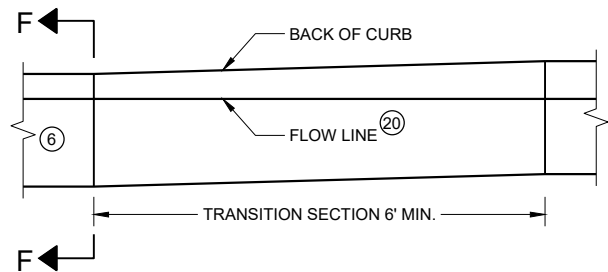
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

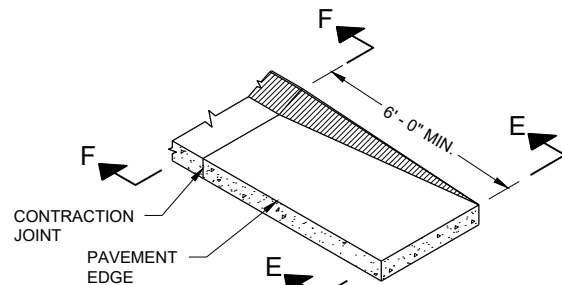
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑩ SEE ROADWAY 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.

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

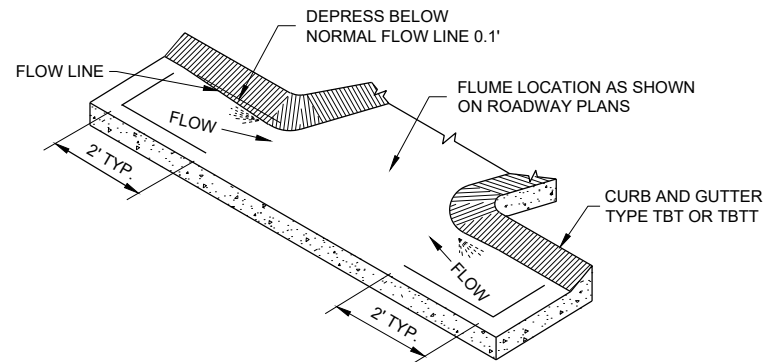
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 16



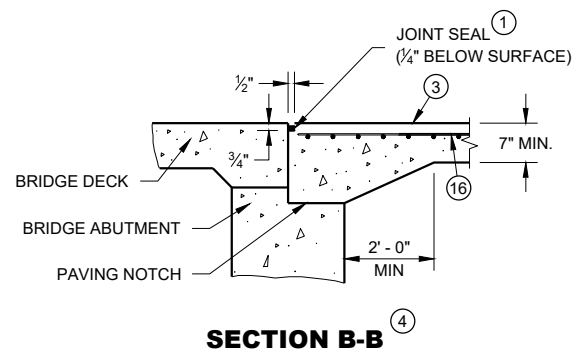
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



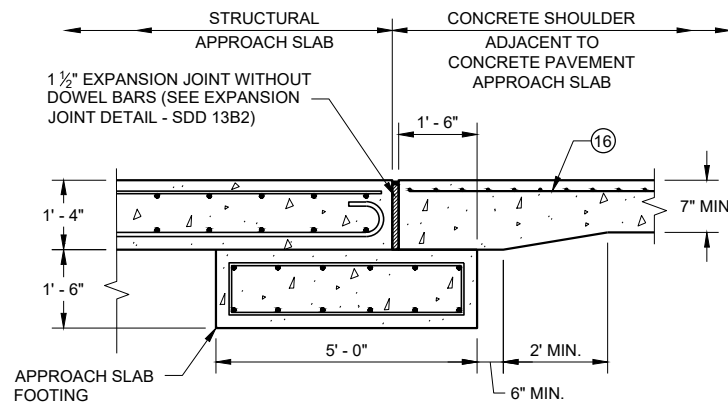
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



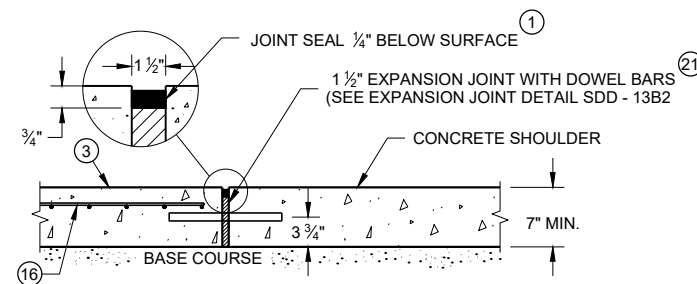
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



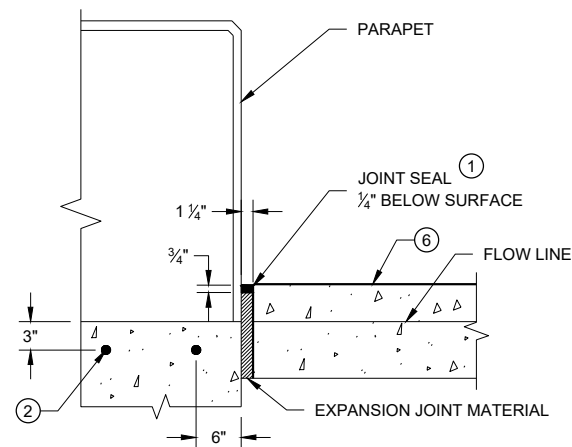
SECTION B-B



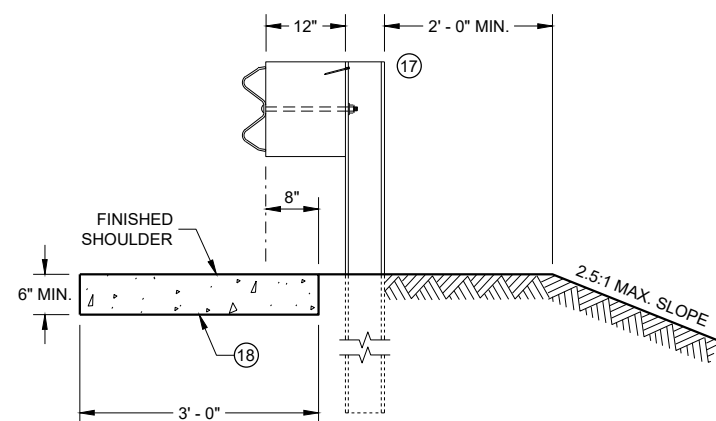
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



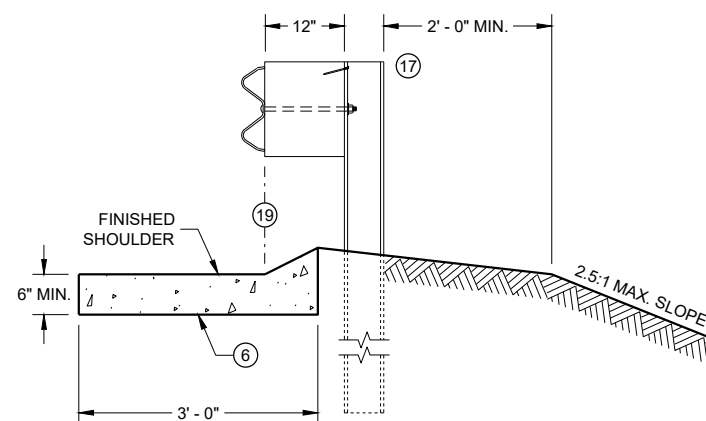
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

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

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



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

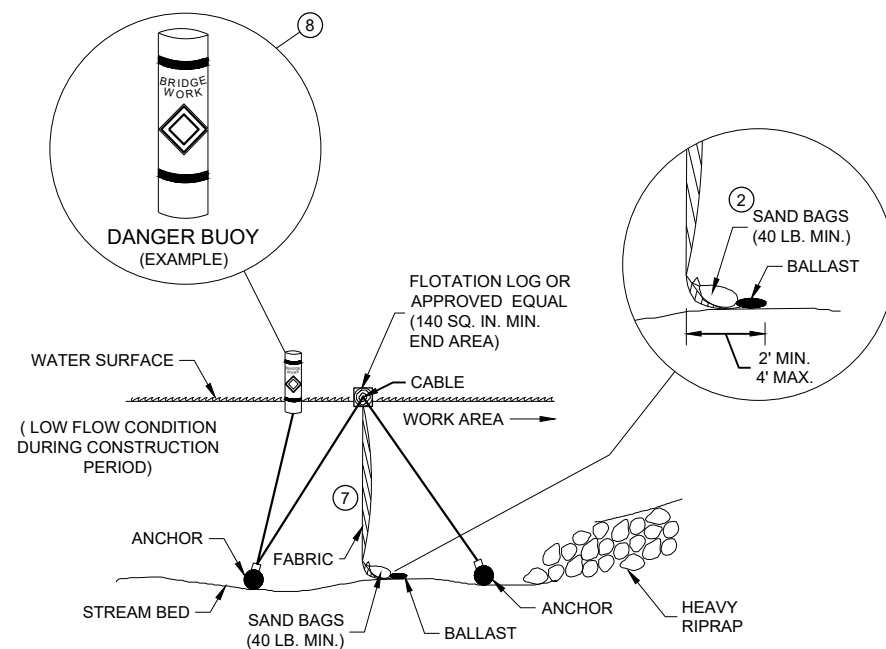


SILT FENCE

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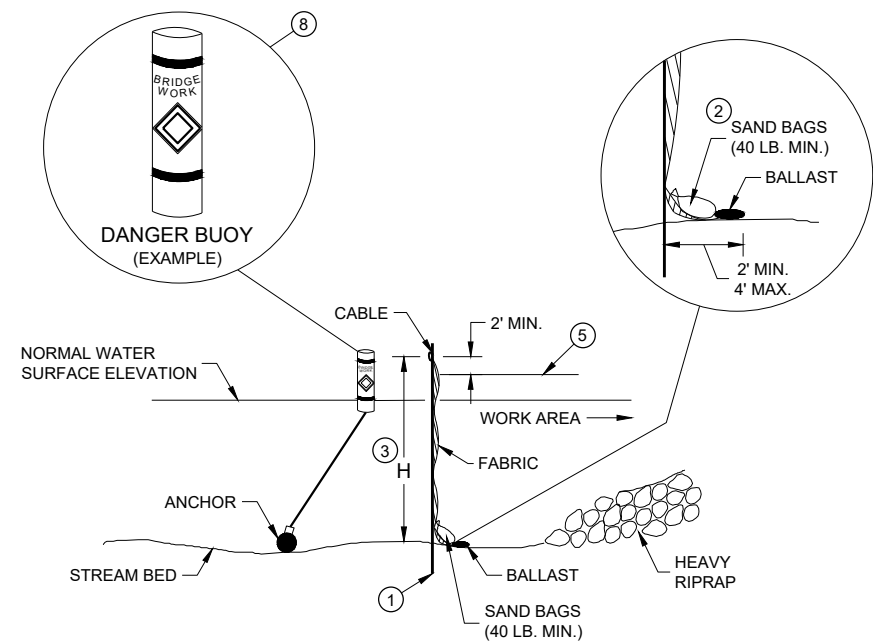
APPROVED
4-29-05 /S/ Beth Connolly
DATE CHIEF ROADWAY DEVELOPER 18 INCHES

FHWA



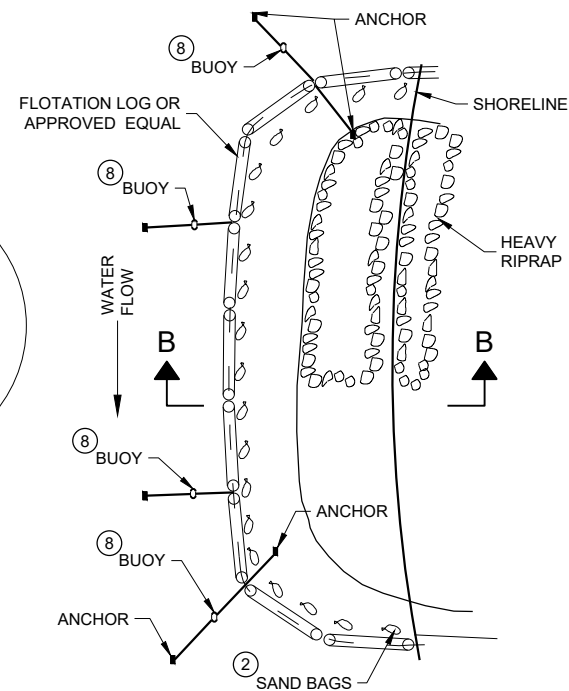
SECTION B - B

TURBIDITY BARRIER - FLOAT ALTERNATIVE CAUTION - SEE NOTE 6

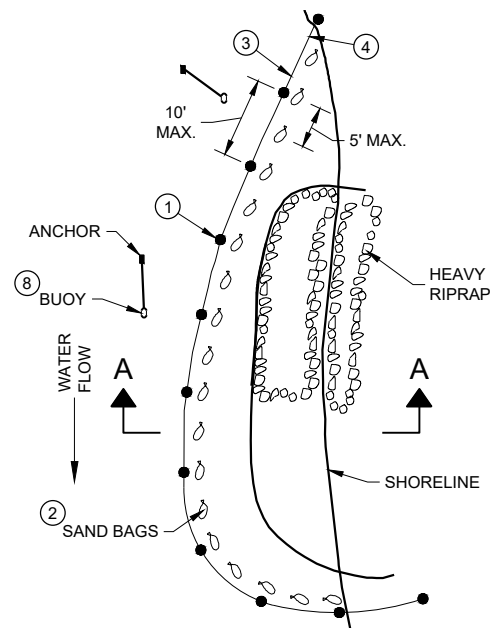


SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW



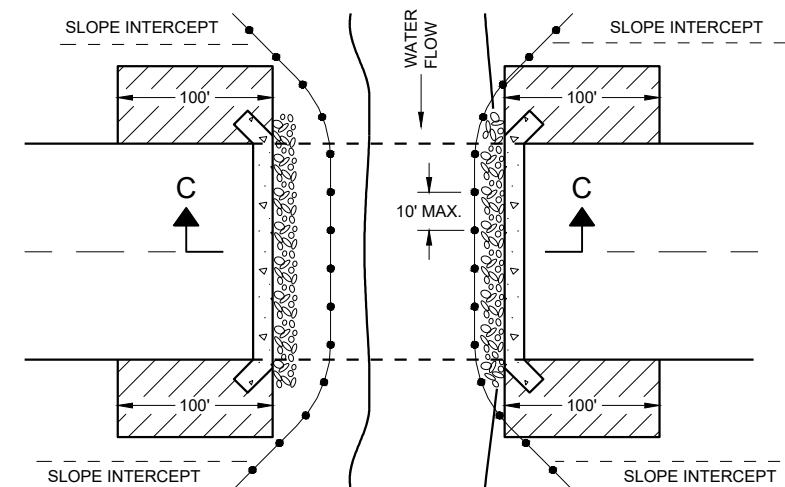
PLAN VIEW

GENERAL NOTES

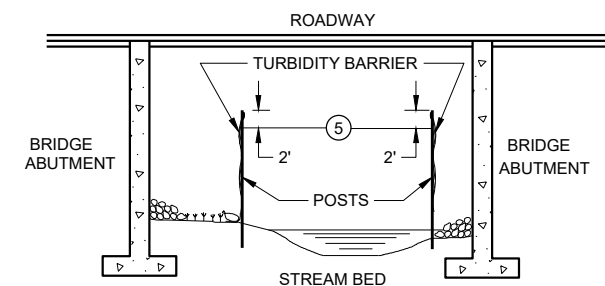
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

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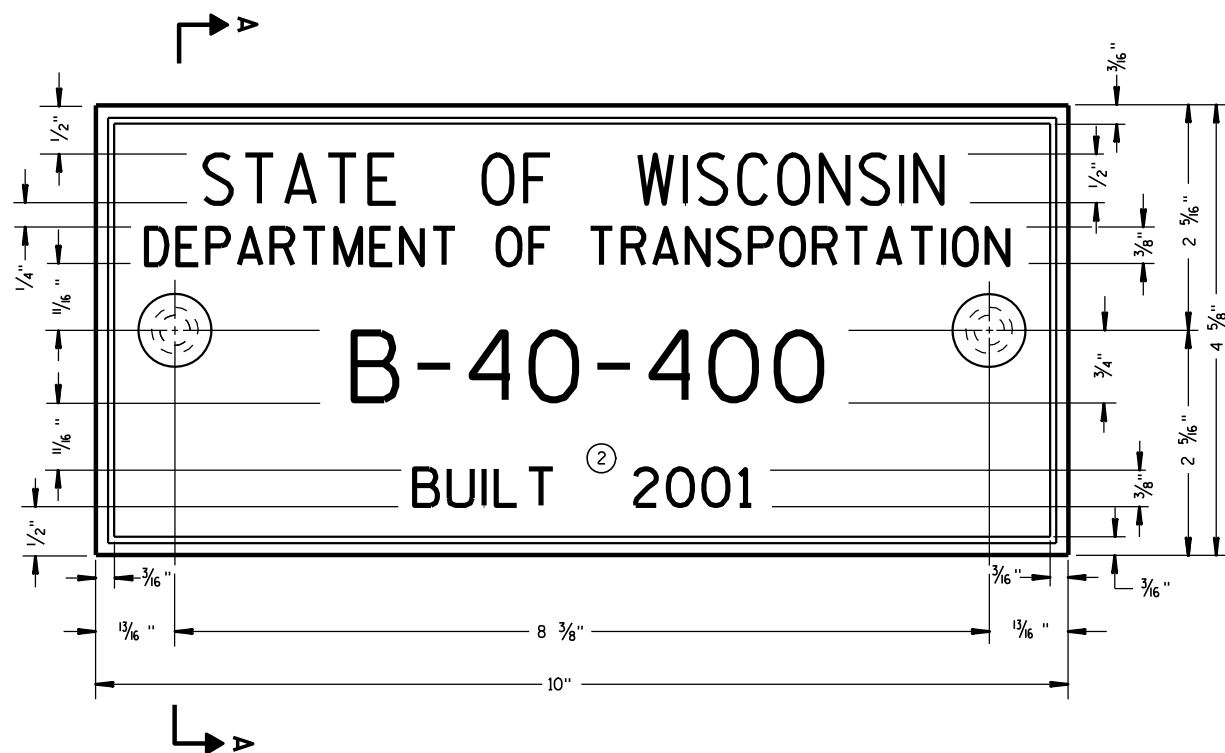
APPROVED

6/4/02
DATE

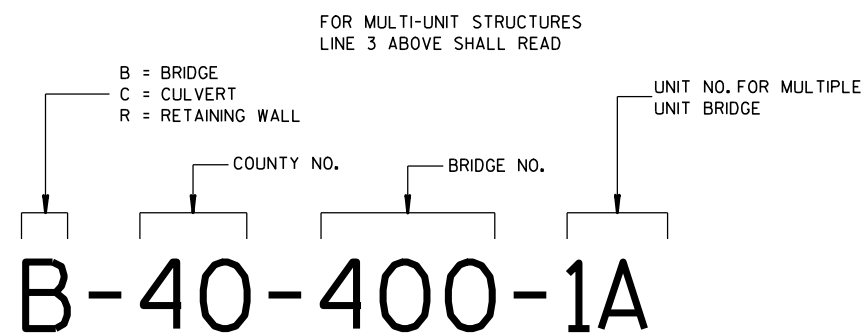
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPER
ENGINEER

19

FHWA



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



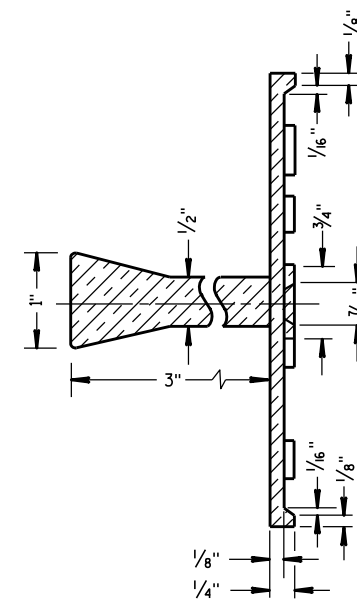
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

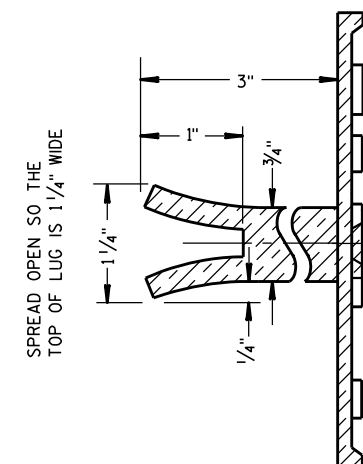
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

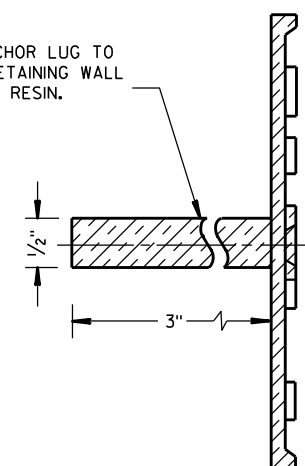


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

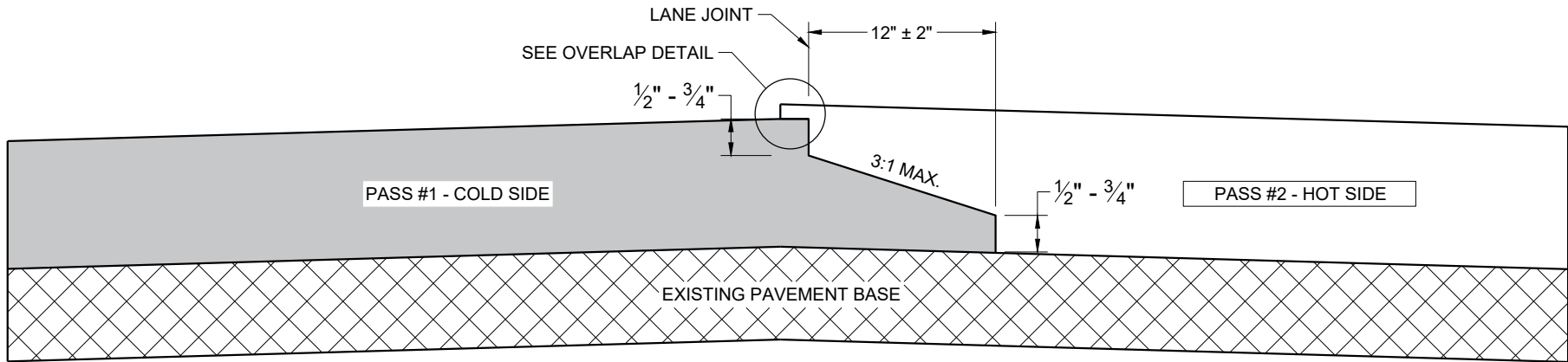
APPROVED

3/26/10
DATE

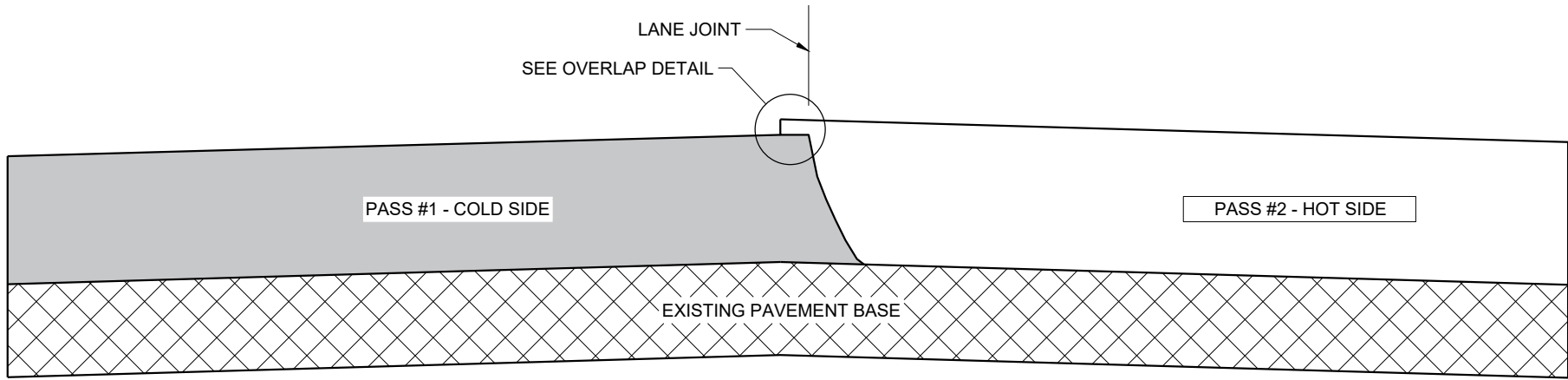
FHWA

/S/ Scot Beck
CHIEF STRUCTURAL DEVELOPER

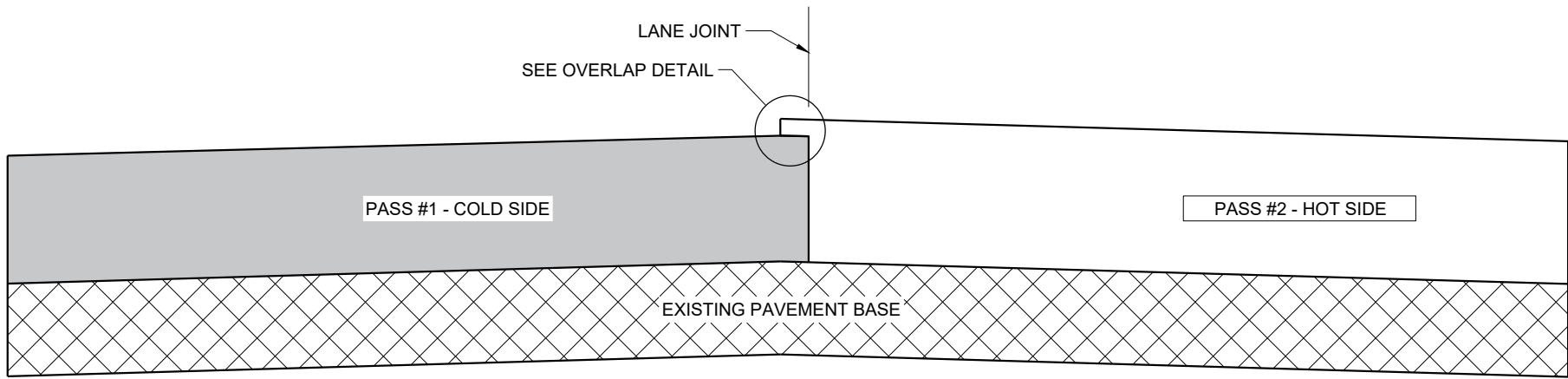
JEER



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

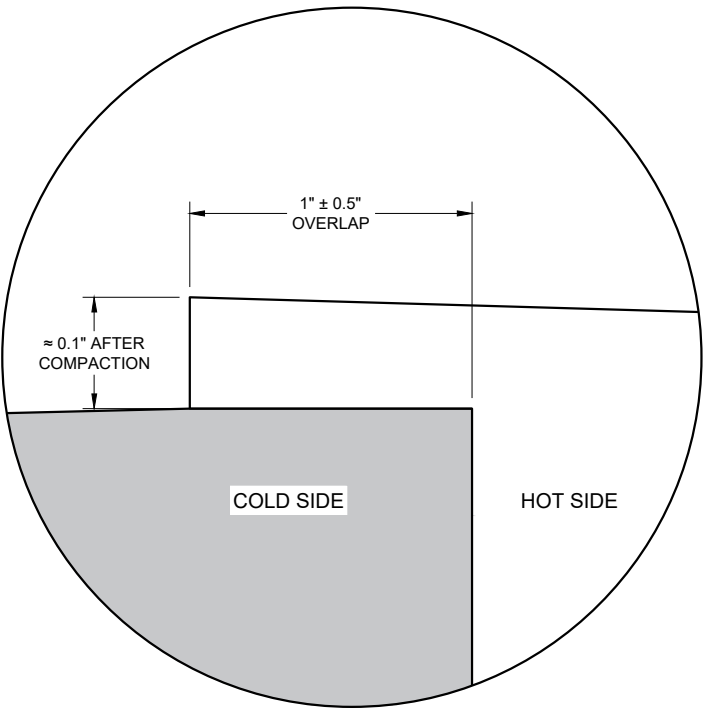
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



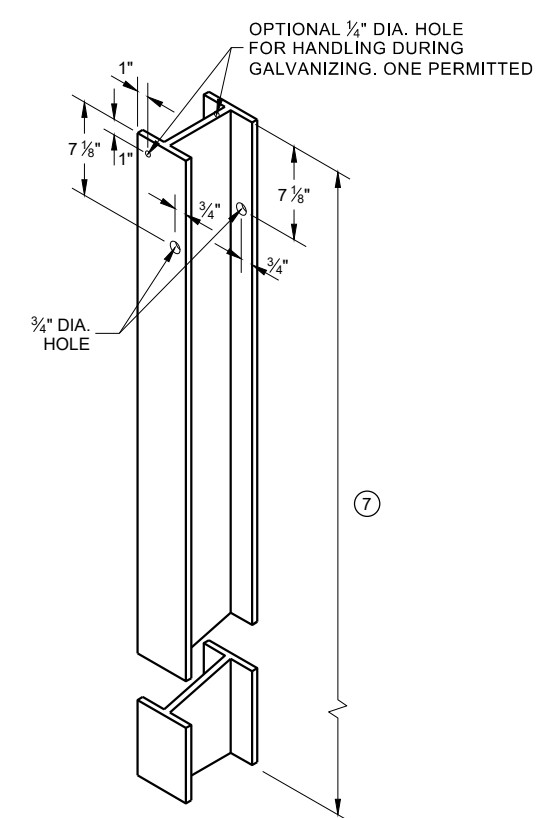
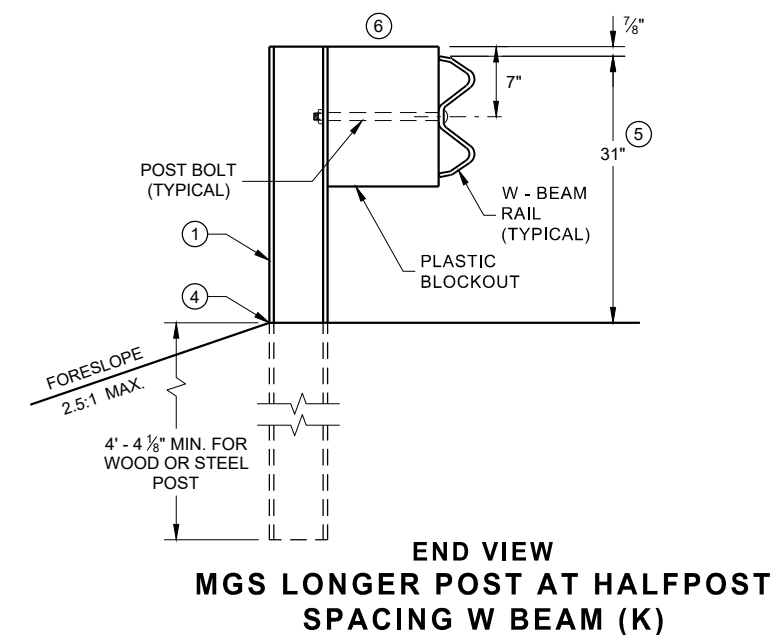
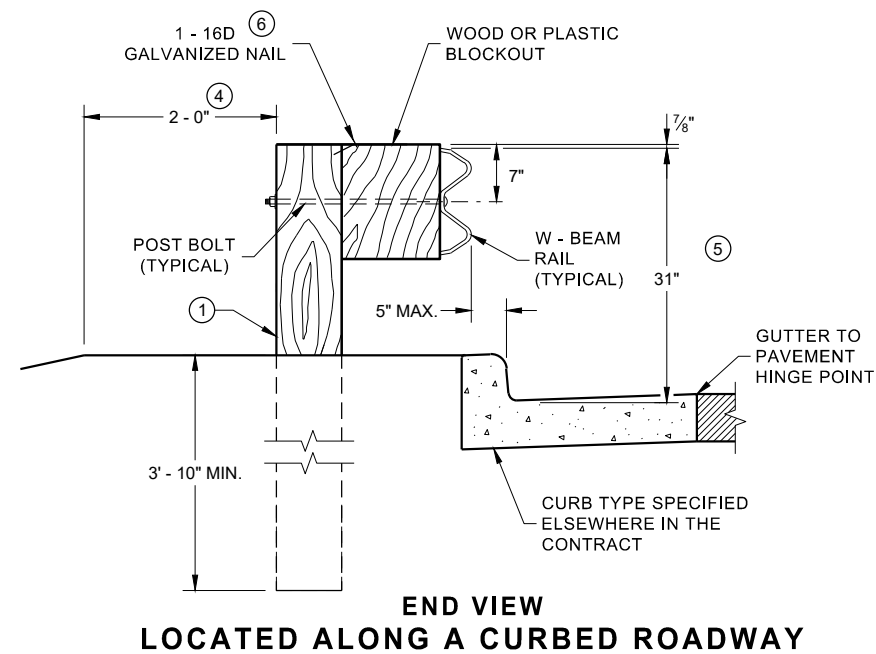
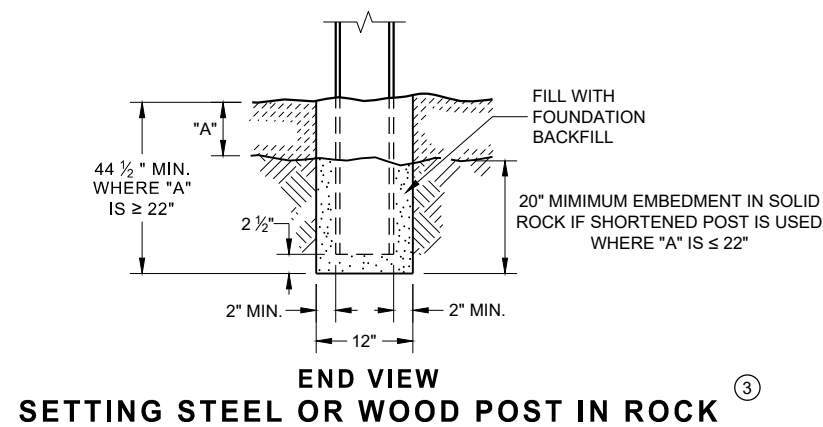
OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

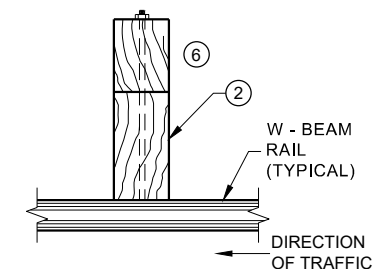
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 21
FHWA

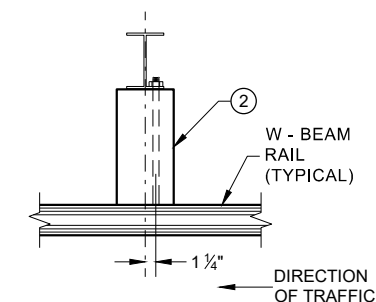
- WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS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



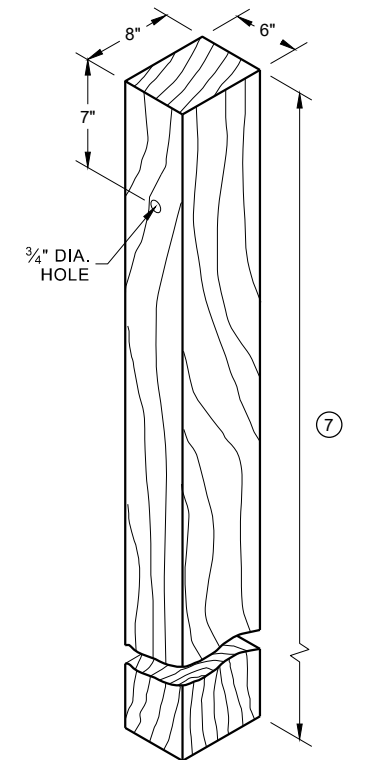
STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9)



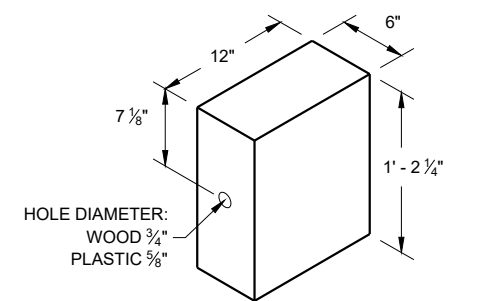
PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM



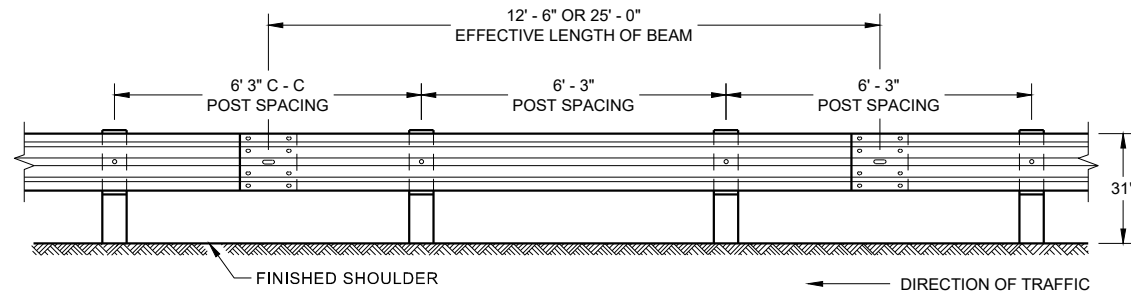
WOOD POST
(6" X 8") NOMINAL



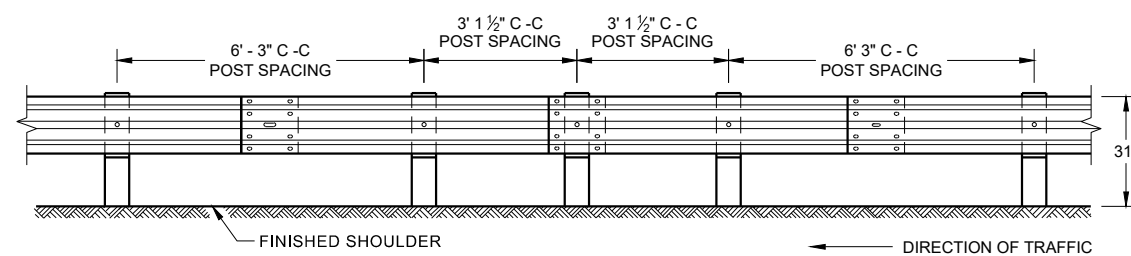
WOOD OR PLASTIC
BLOCKOUT

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

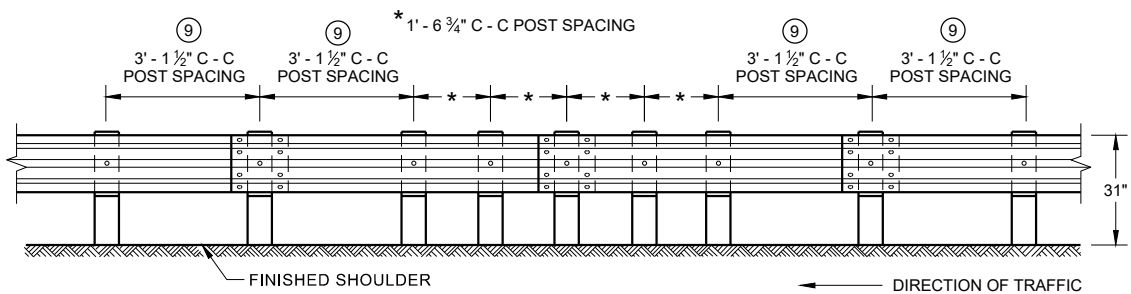
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



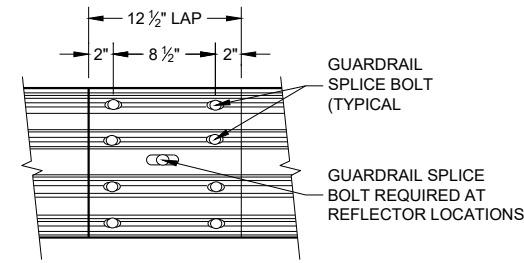
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



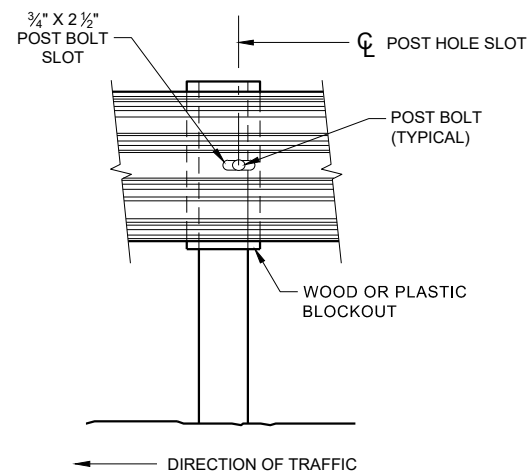
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



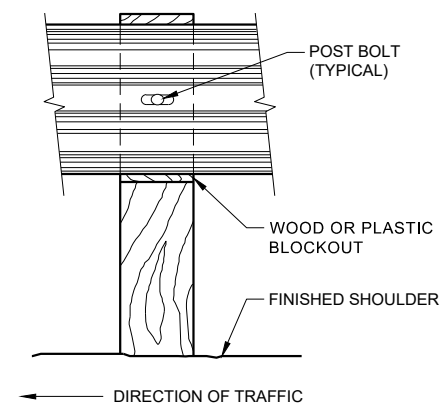
**FRONT VIEW
QUARTER POST SPACING (QS)**



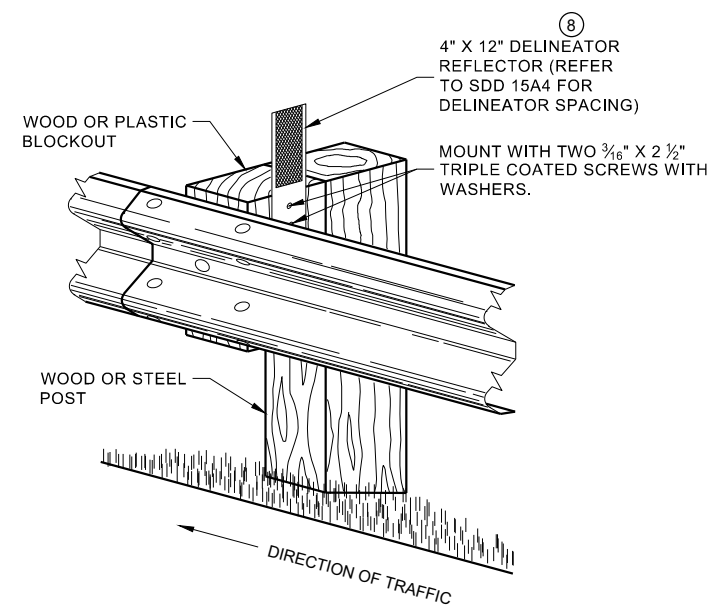
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



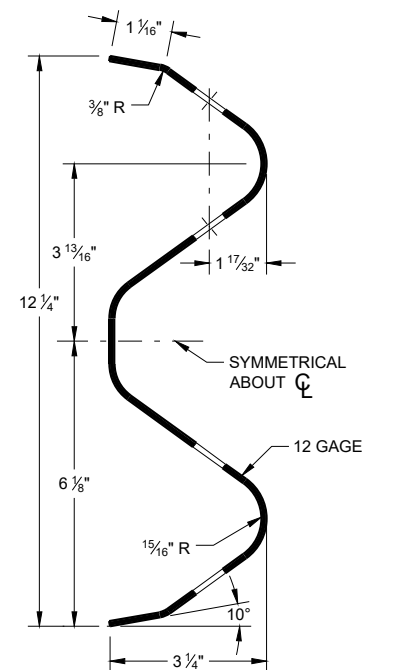
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

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

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

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



SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

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

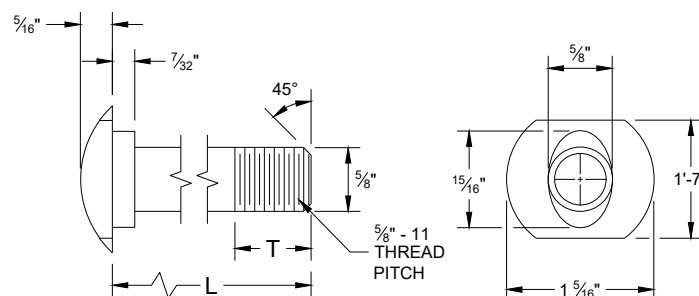


NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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

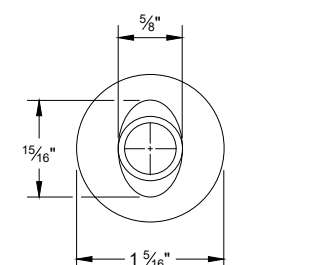
NOTE:

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

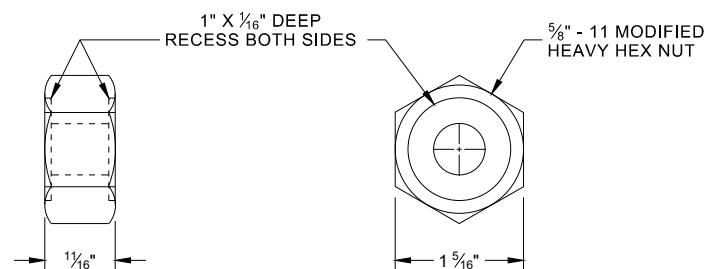


POST BOLT TABLE

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

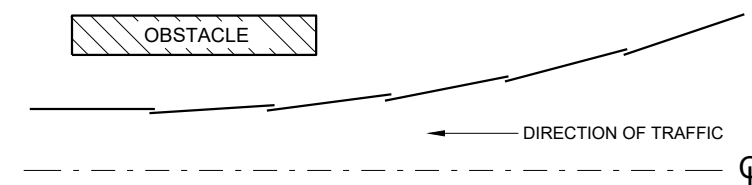


ALTERNATE BOLT HEAD

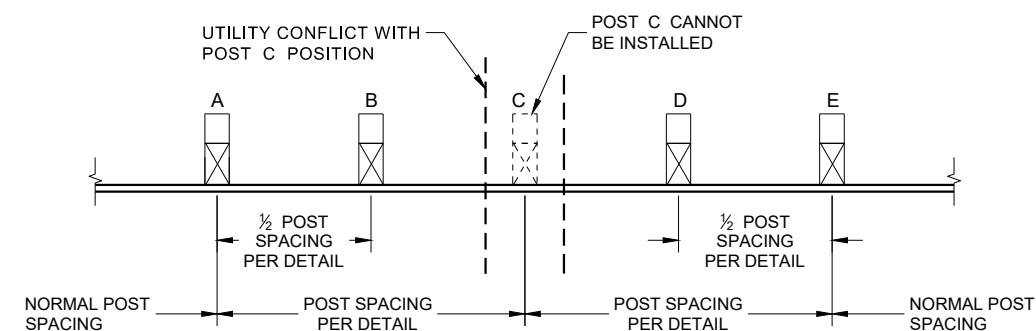


POST BOLT, SPLICE BOLT AND RECESS NUT

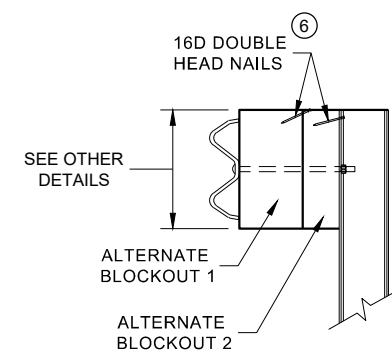
⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



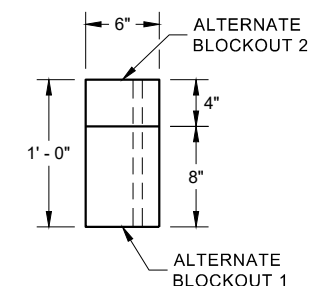
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

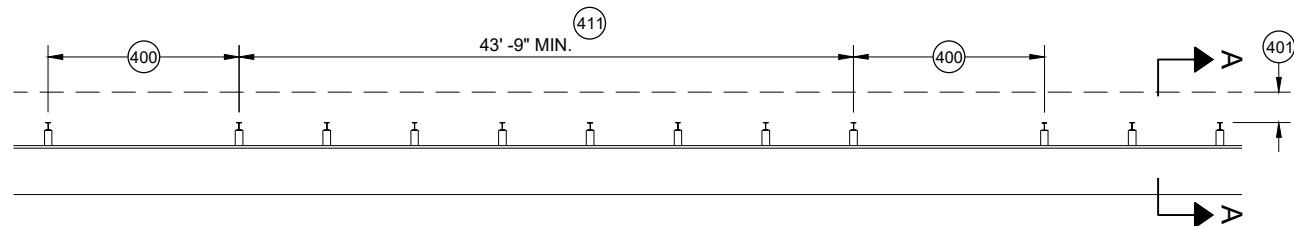


PLAN VIEW

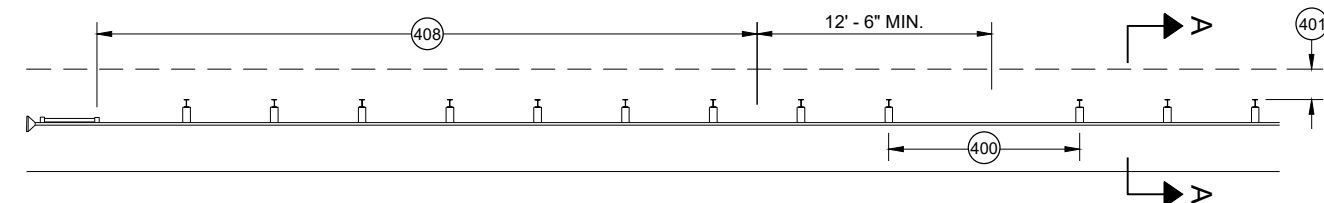
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

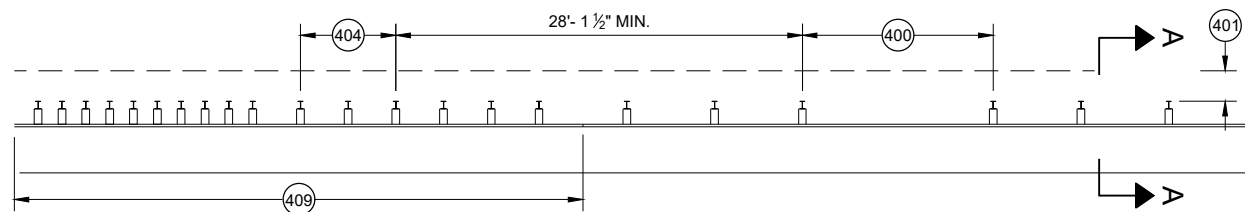
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 24



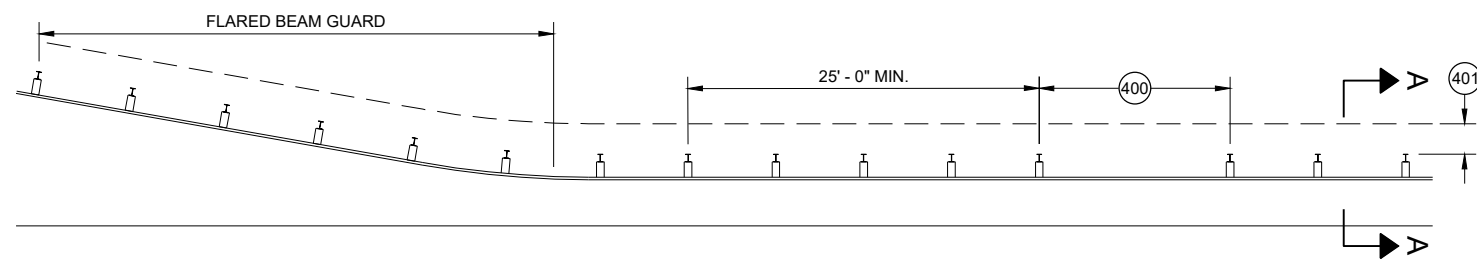
MISSING POST IN MGS GUARDRAIL



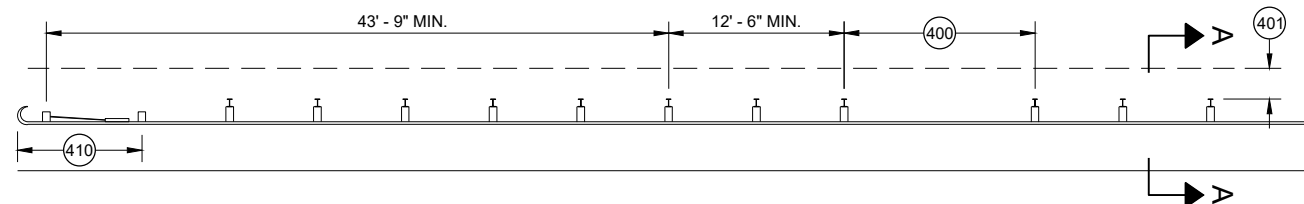
MISSING POST IN MGS GUARDRAIL NEAR EAT



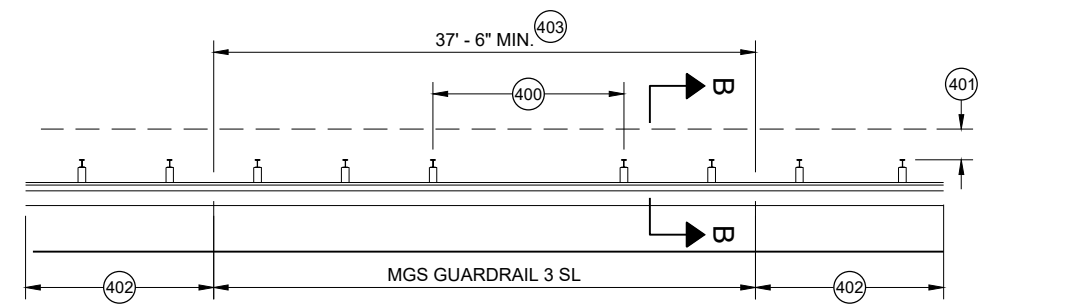
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

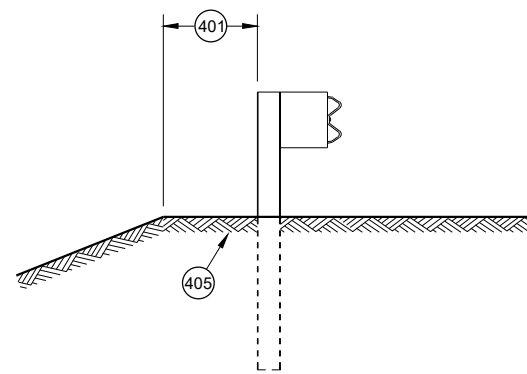


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

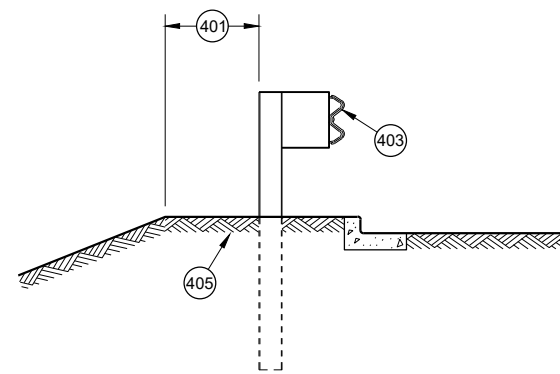


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR 25

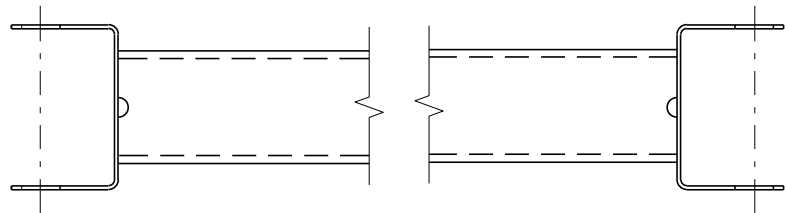
FHWA

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

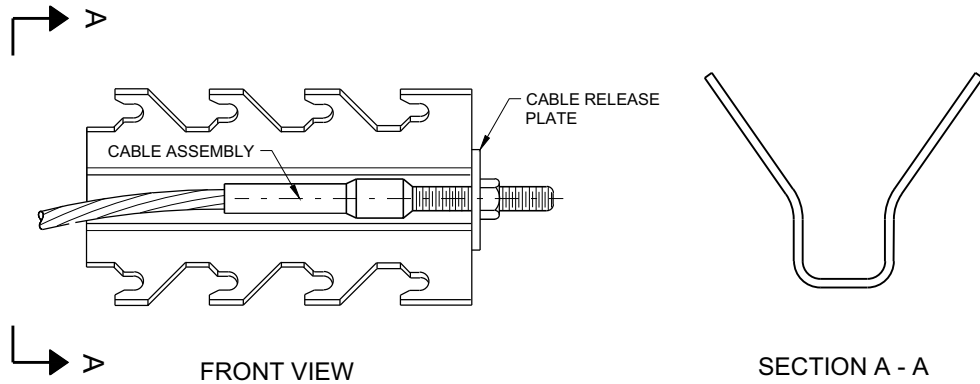
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 26

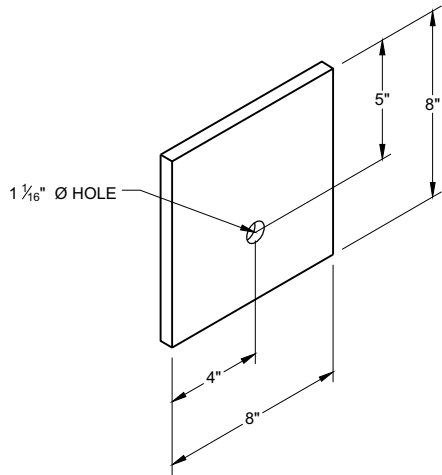


GENERIC GROUND STRUT⁹ ^E

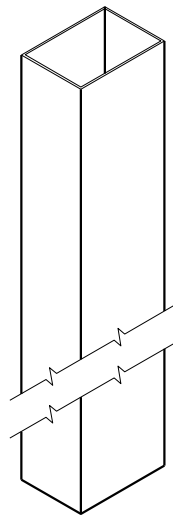
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED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



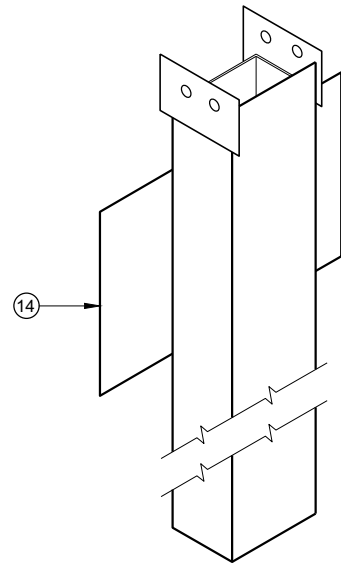
GENERIC ANCHOR CABLE BOX⁹ ^E



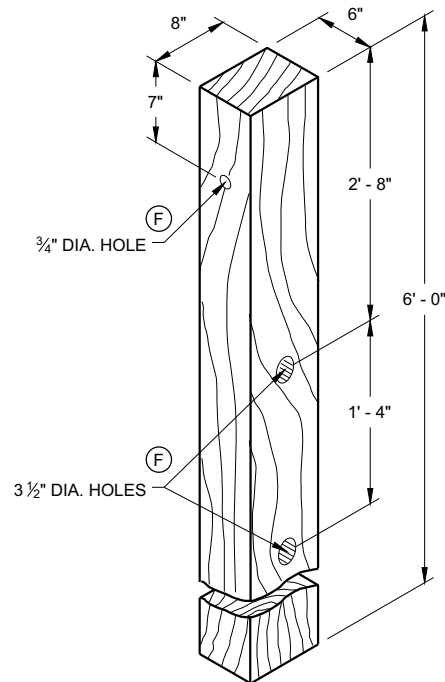
BEARING PLATE⁶ ^E



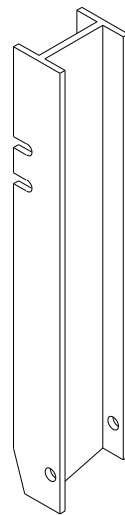
UPPER POST NO. 1 ⁽¹⁾ (E)



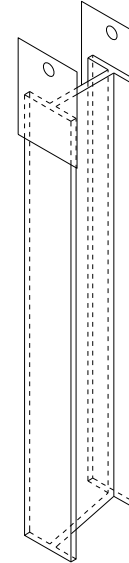
LOWER POST NO. 1 ⁽²⁾ (E)



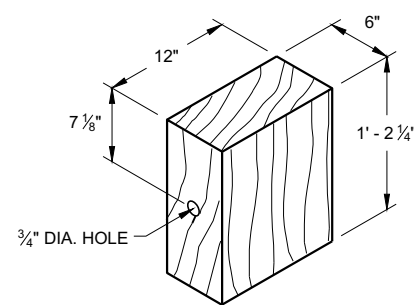
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



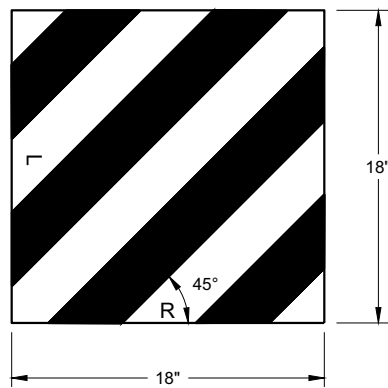
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



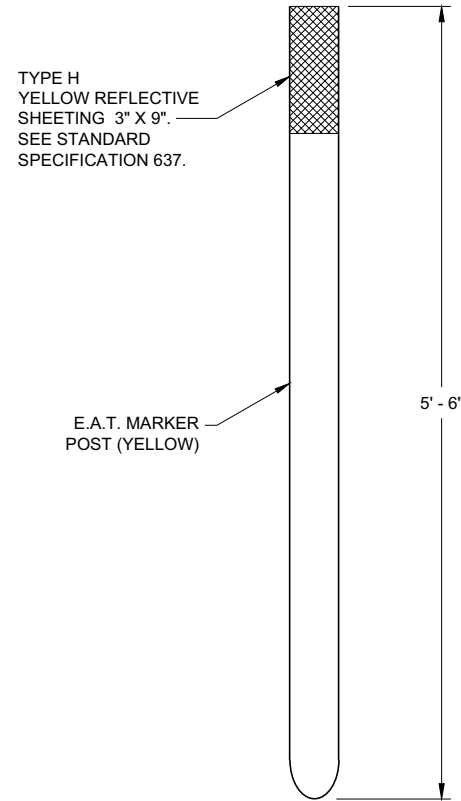
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



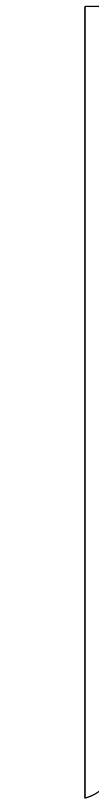
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



REFLECTIVE SHEETING DETAIL ^(E)

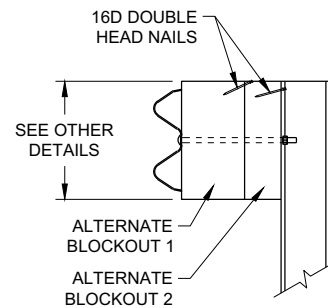


FRONT VIEW

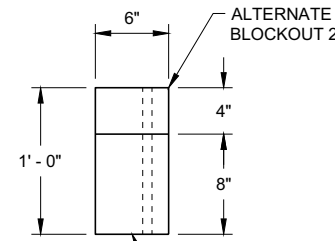


SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

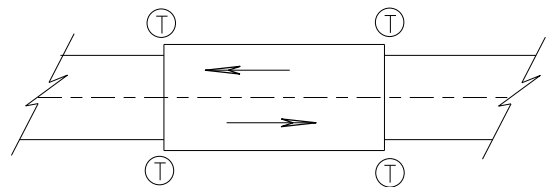
ALTERNATE WOOD
BLOCKOUT DETAIL

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

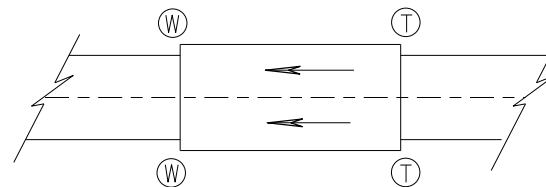
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

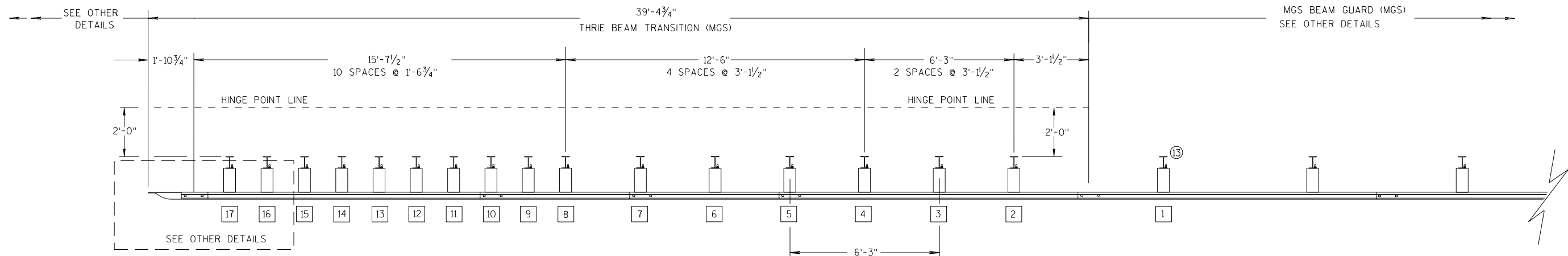
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

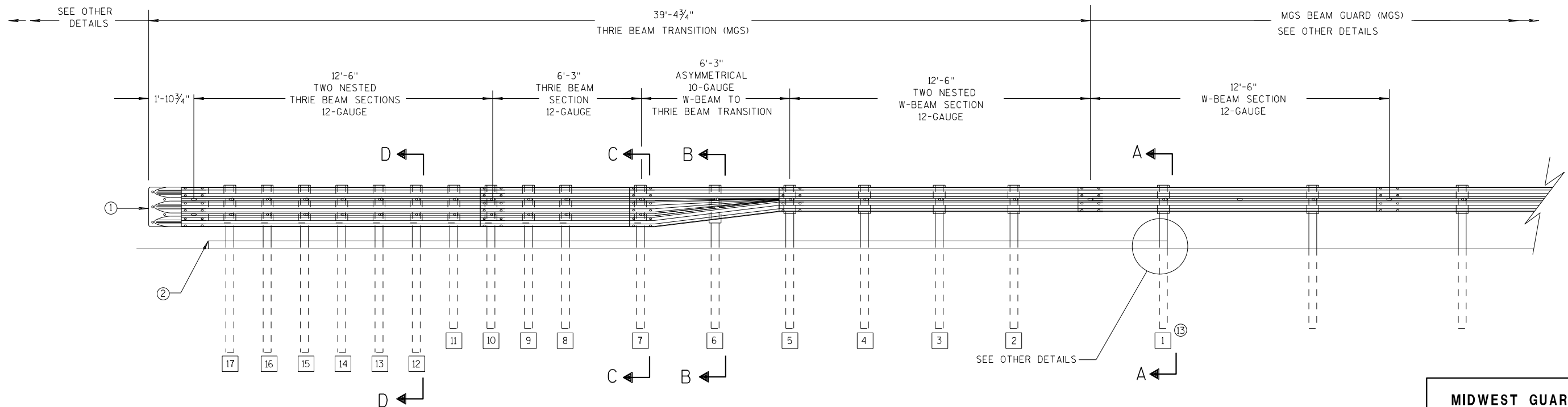
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



PLAN VIEW



ELEVATION VIEW

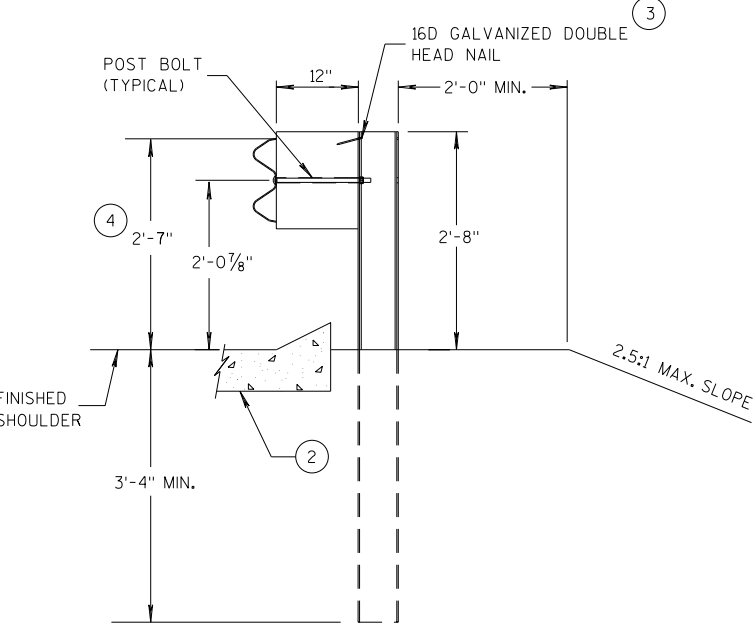
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

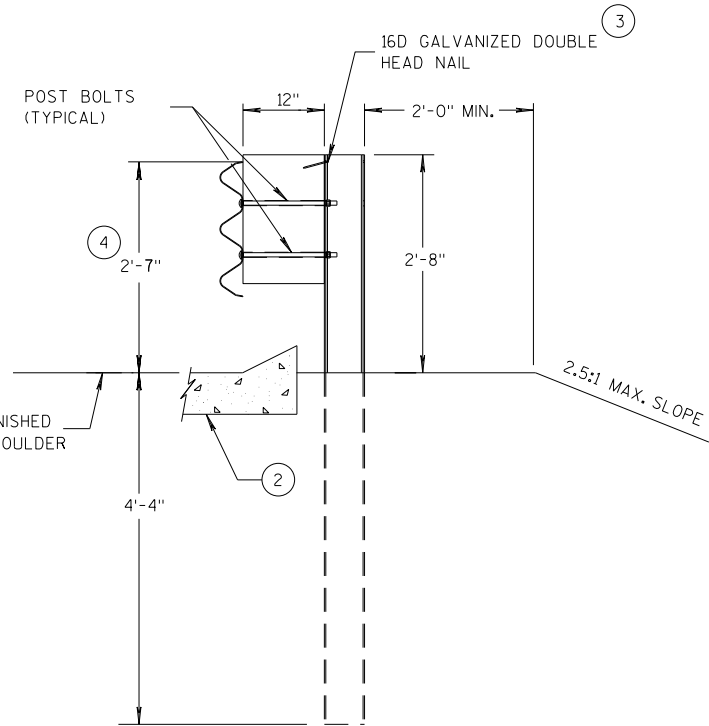
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

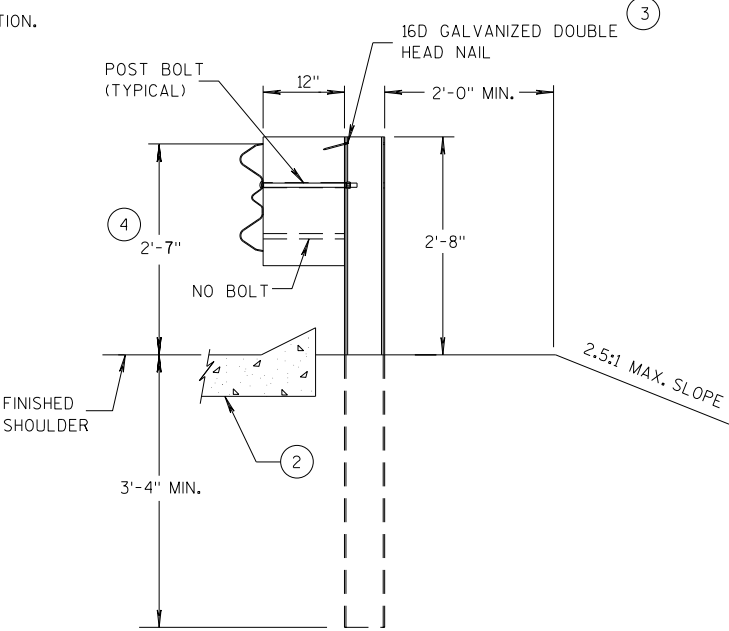
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



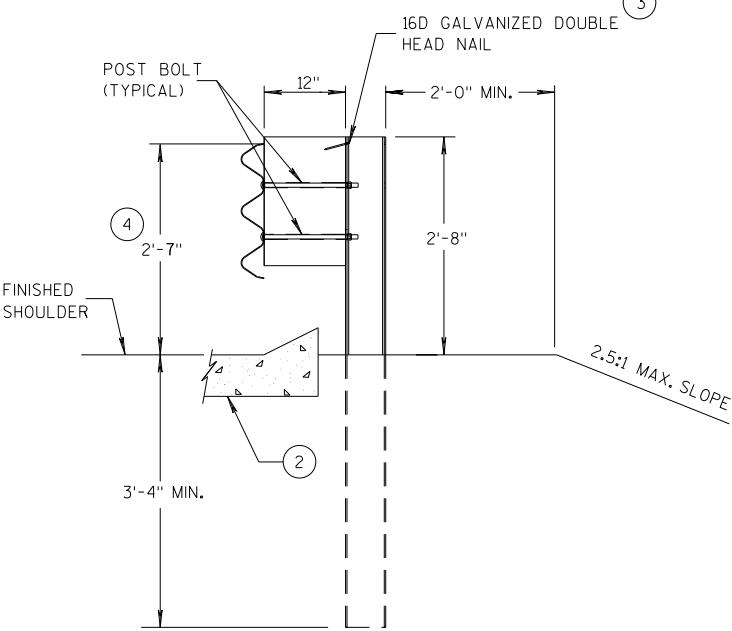
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

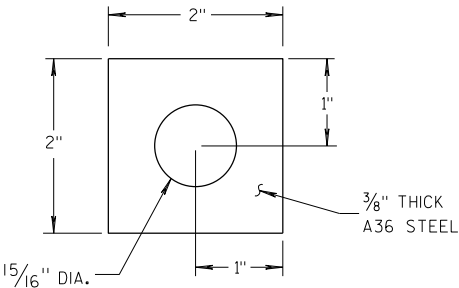
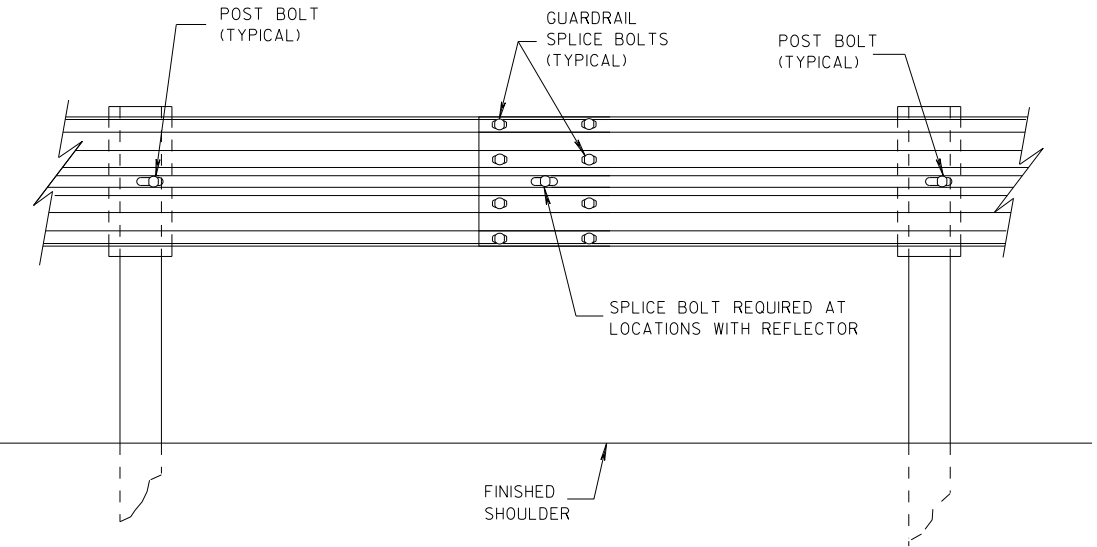
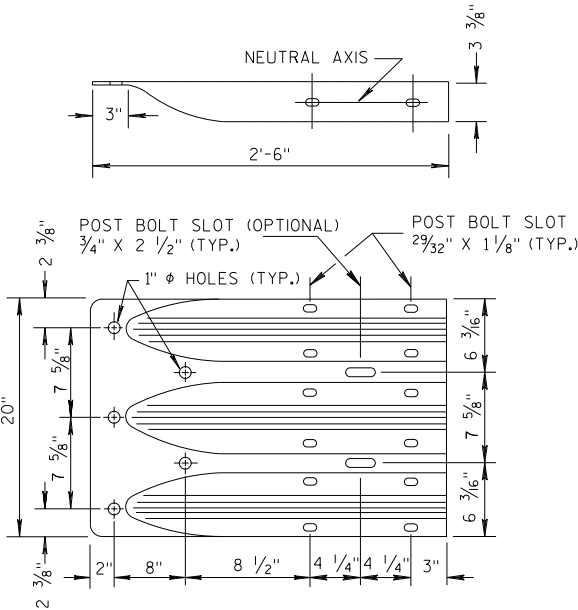


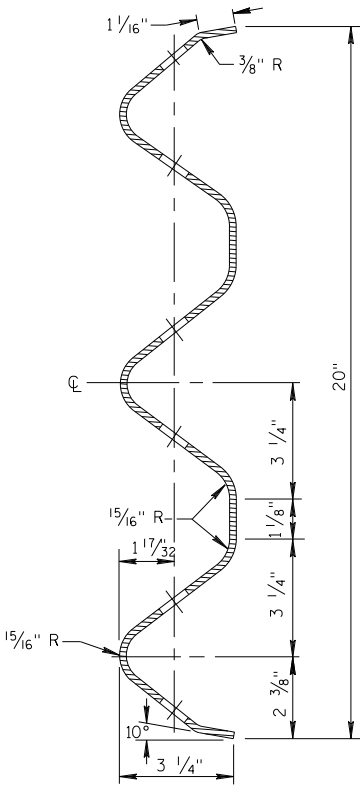
PLATE WASHER DETAIL



SPLICE DETAIL



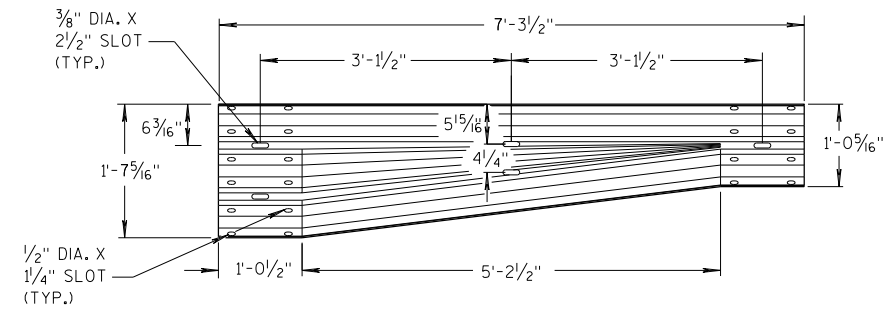
THRIE BEAM
TERMINAL CONNECTOR



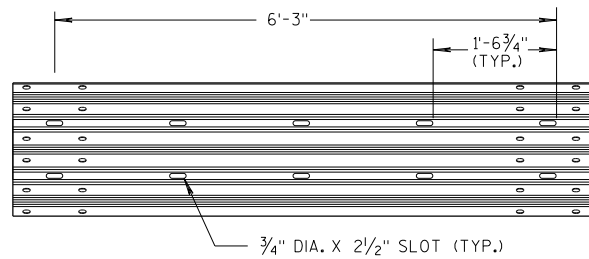
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

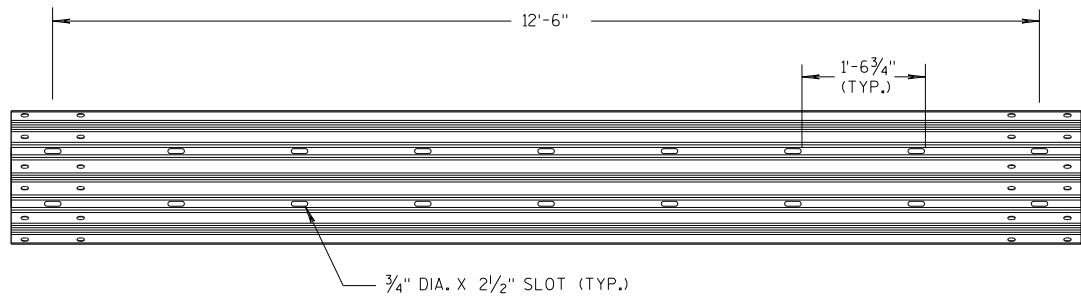
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



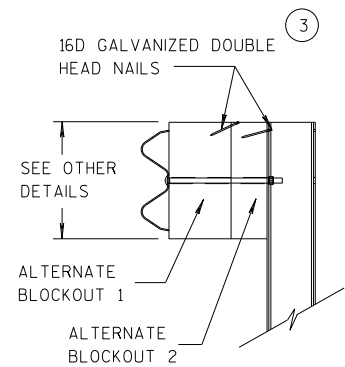
W-BEAM TO THRIE BEAM TRANSITION SECTION



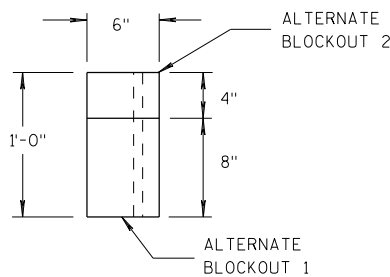
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

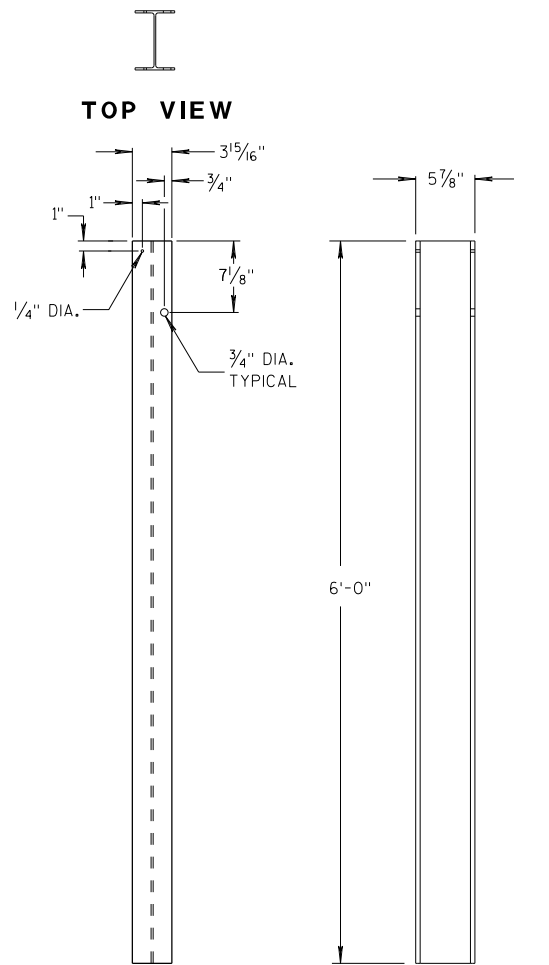


SIDE VIEW



TOP VIEW

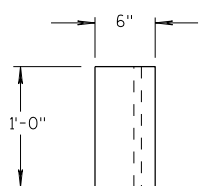
ALTERNATE WOOD BLOCKOUT DETAIL



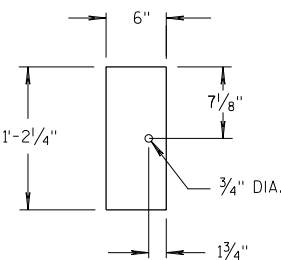
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

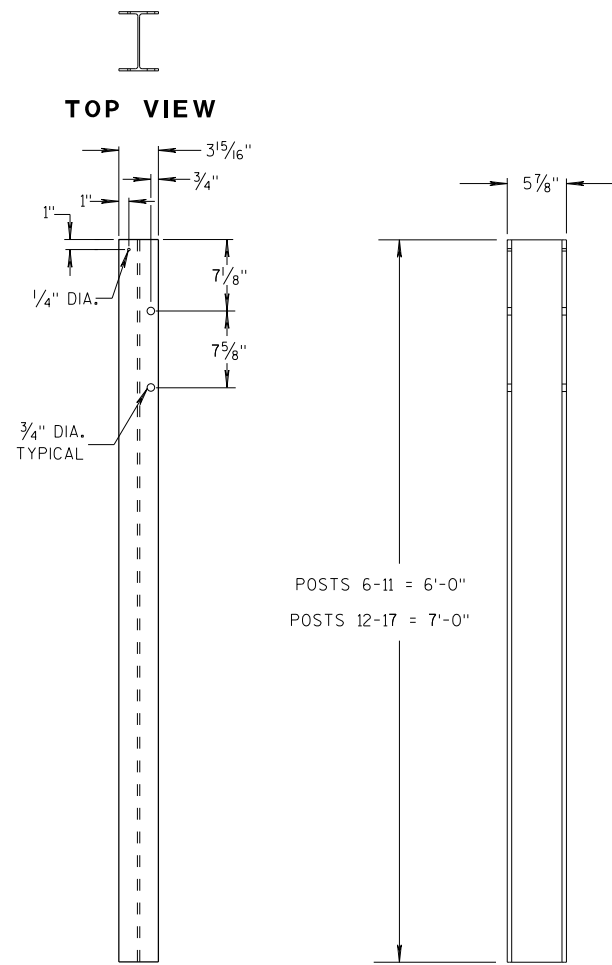


TOP VIEW



FRONT VIEW

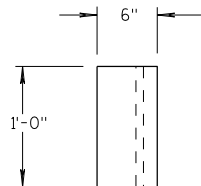
BLOCKOUT POSTS 1-5



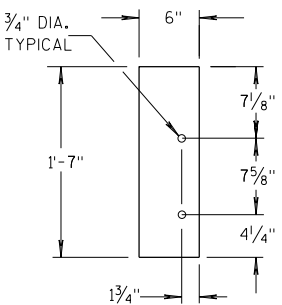
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

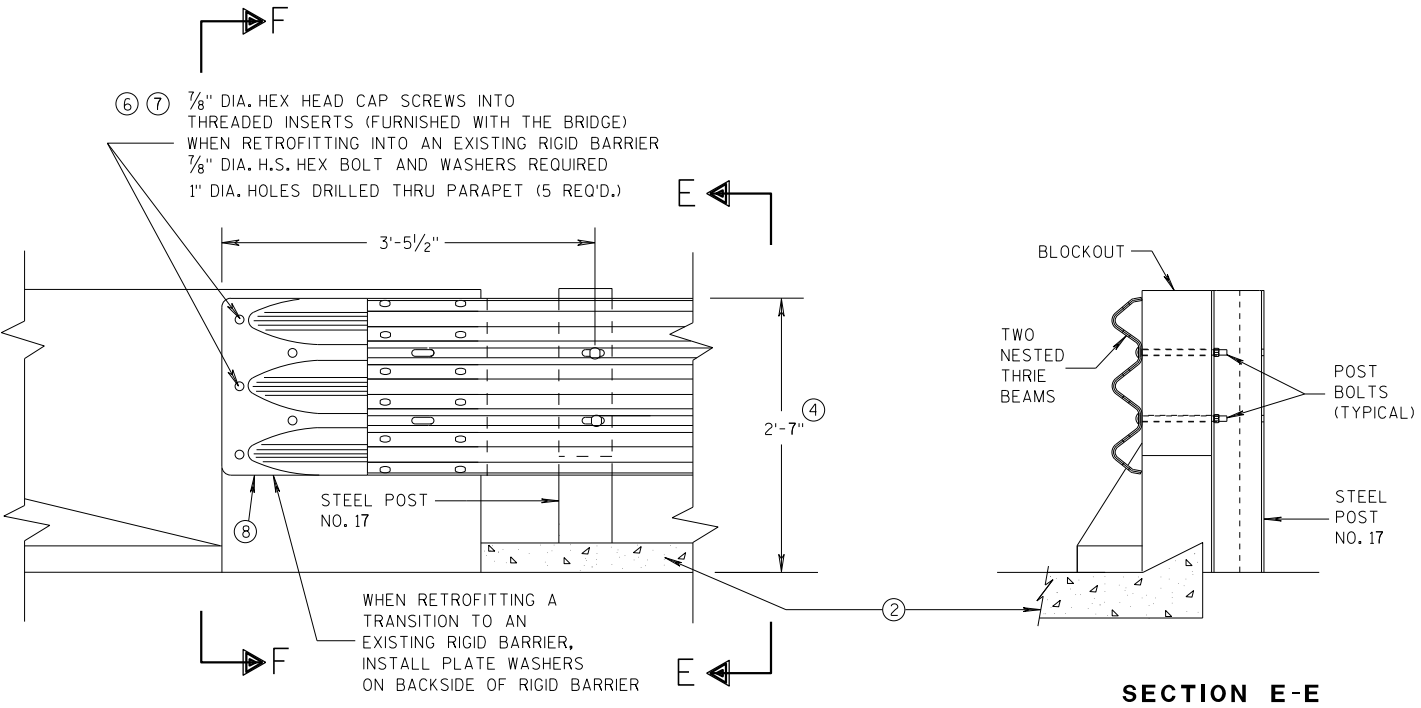
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

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

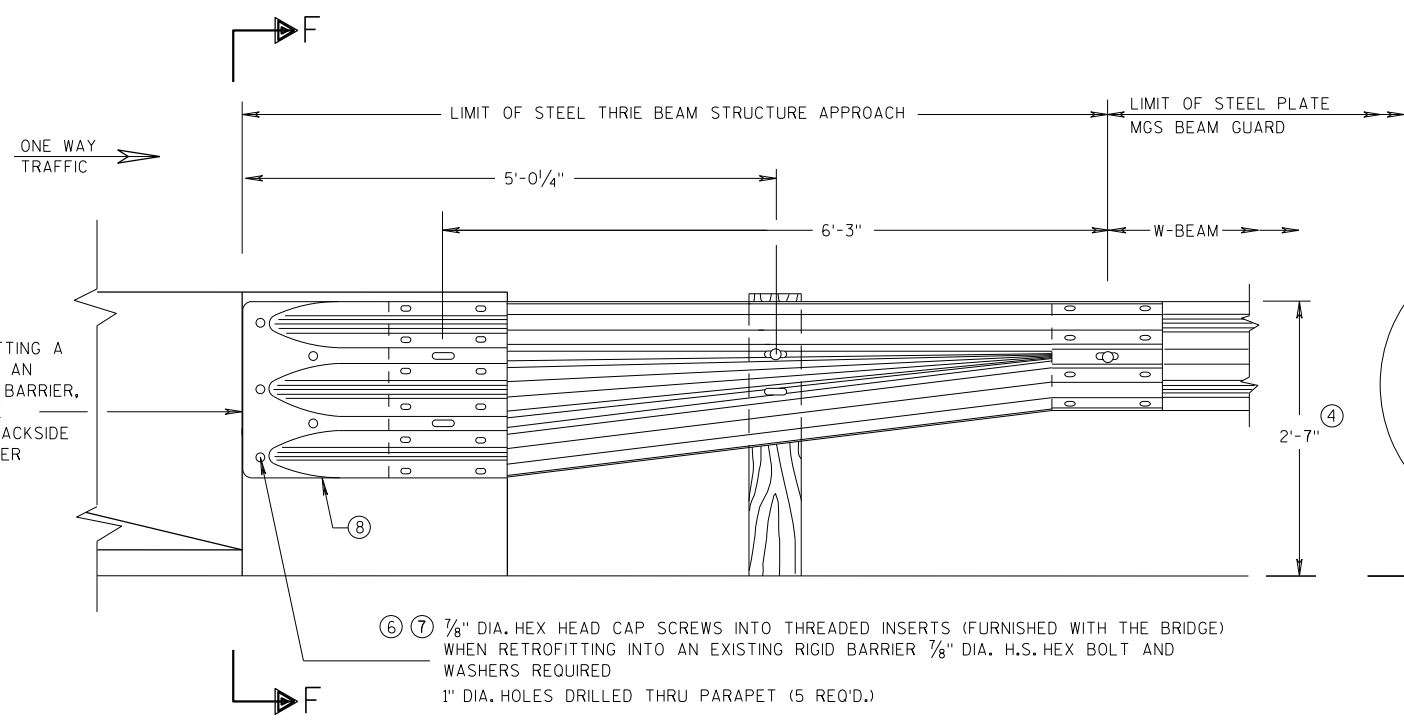
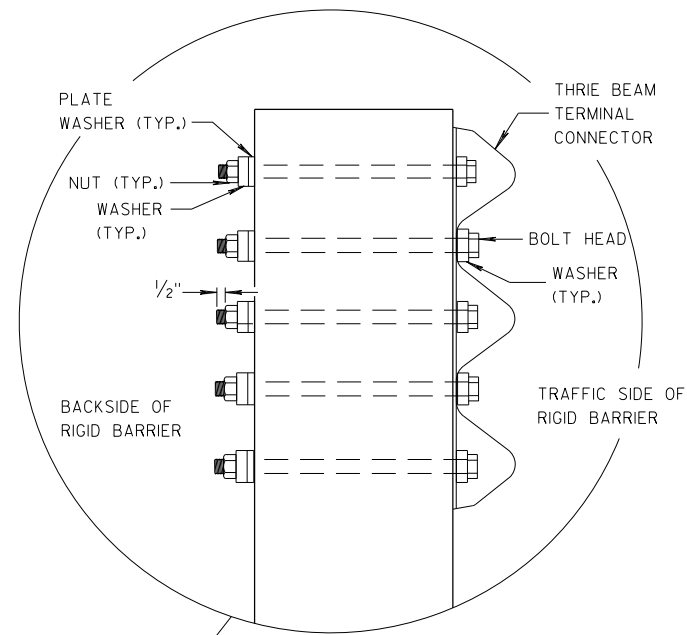
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

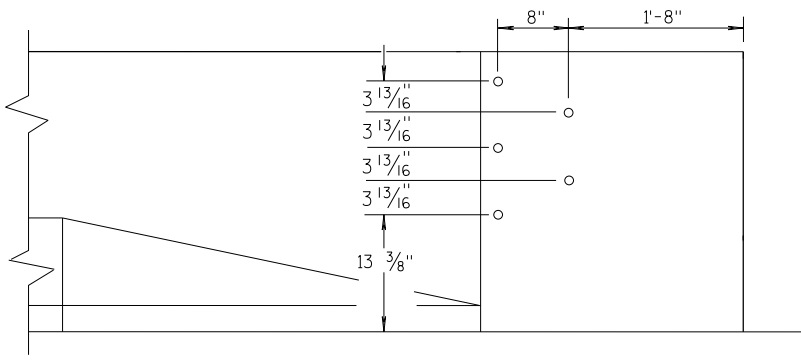


GENERAL NOTES

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



SECTION F-F



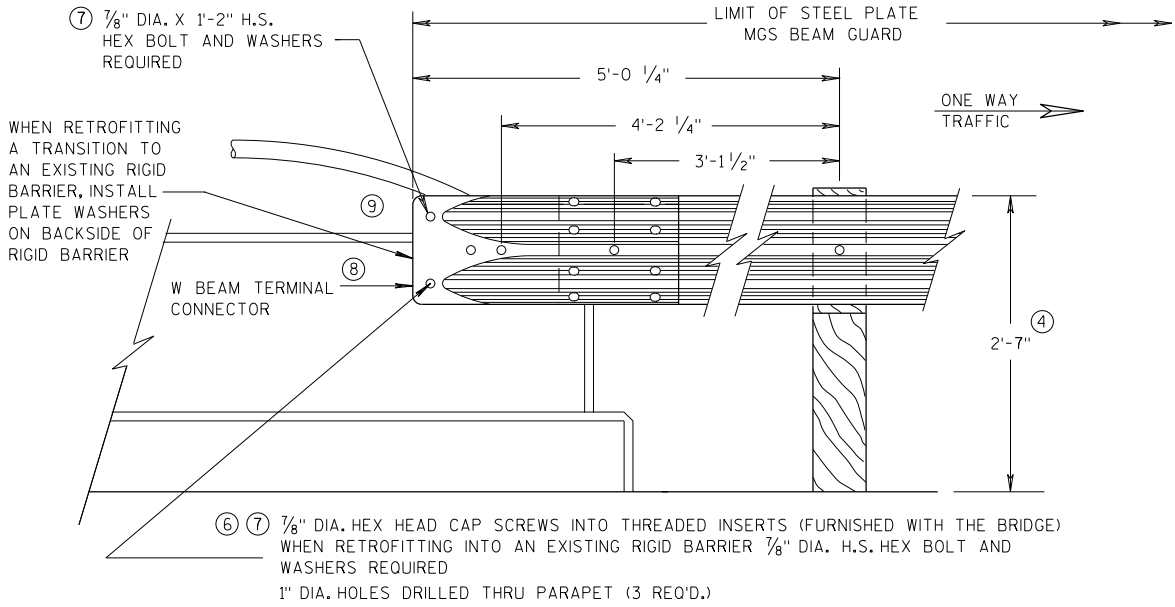
DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS UNIT SUPERVISOR		
FHWA	32	NT	

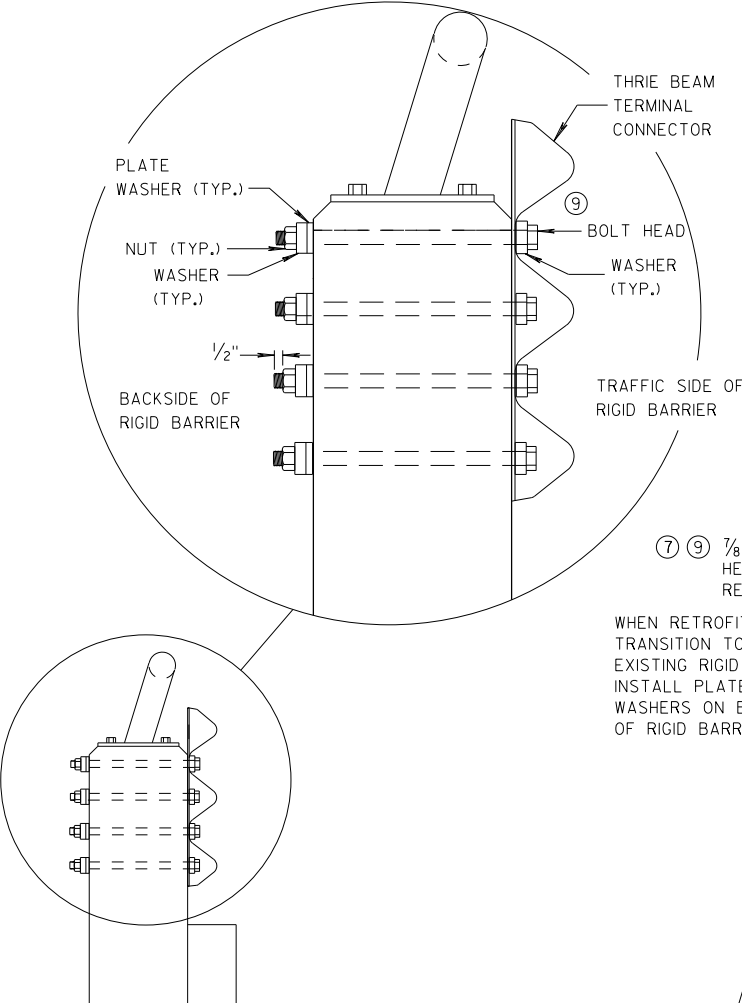
GENERAL NOTES

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

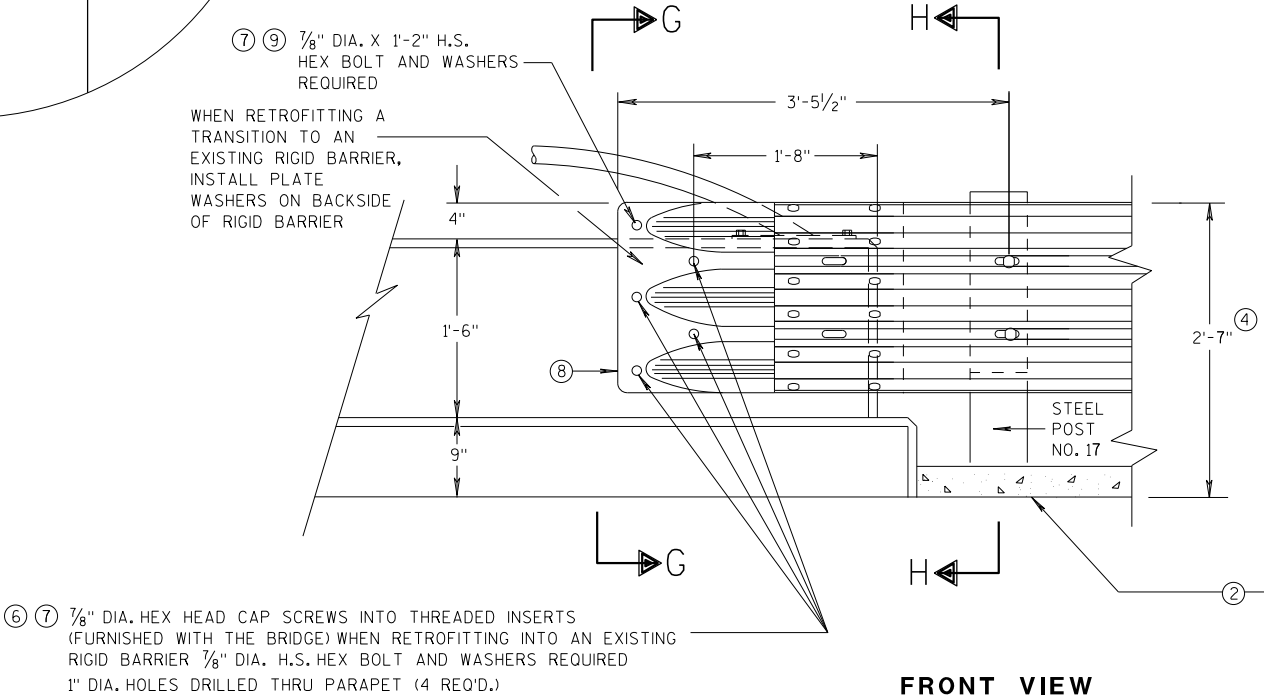
- ②
- OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④
- TOLERANCE FOR TOP OF BEAM IS ± 1".
- ⑥
- DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦
- BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH 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 PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.



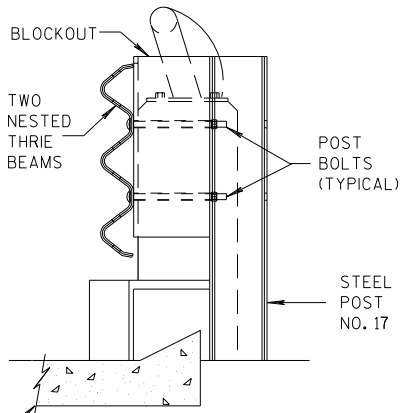
FRONT VIEW
W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION G-G



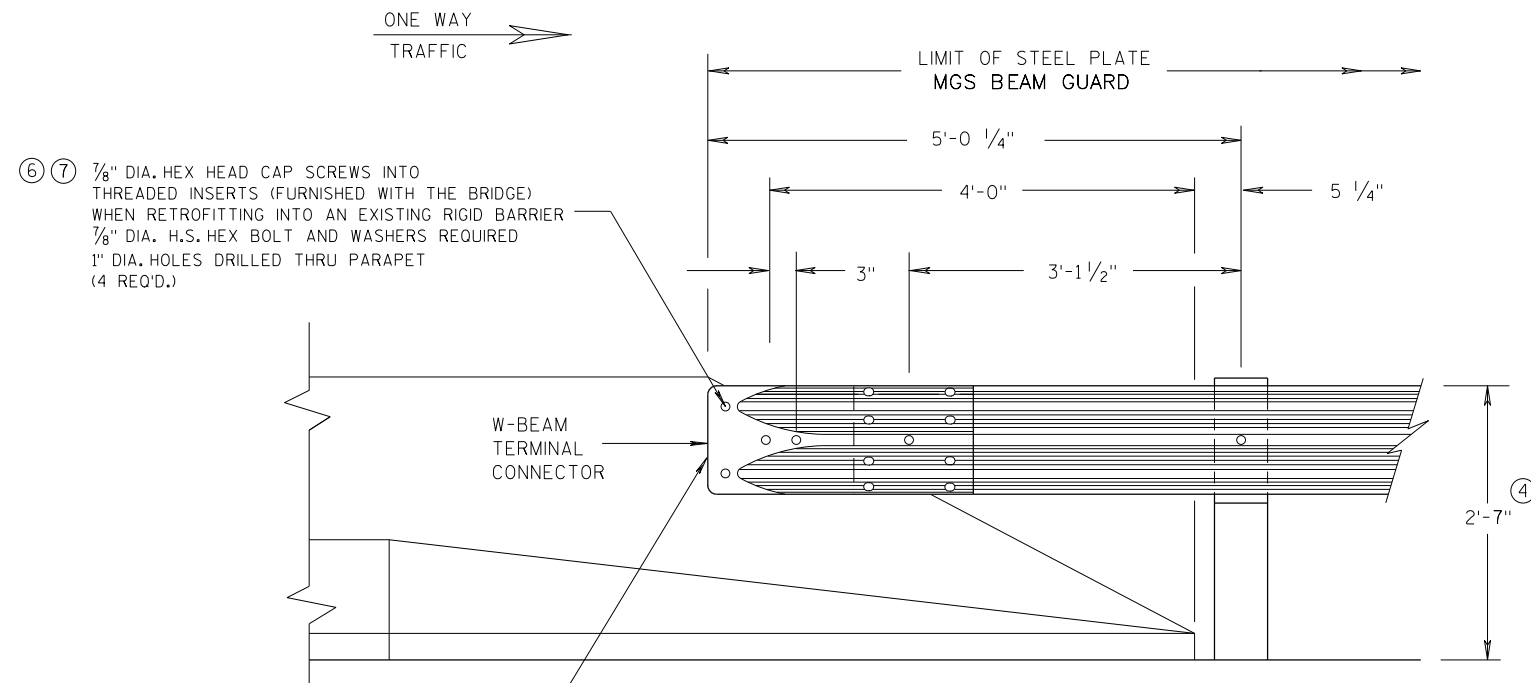
FRONT VIEW



SECTION H-H

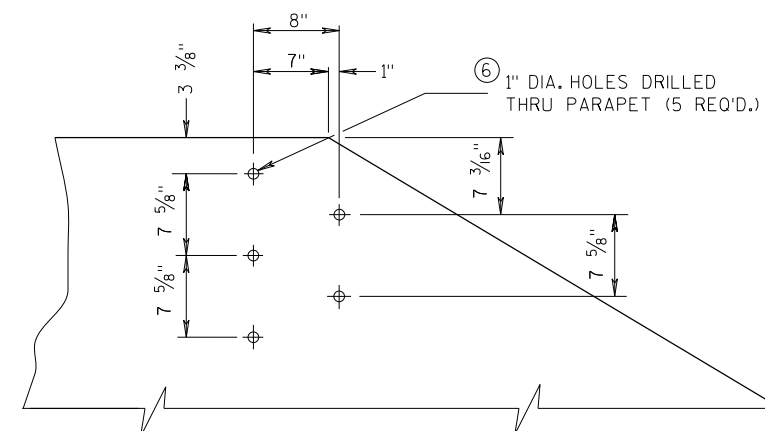
THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018	/S/ Rodney Taylor		
DATE	ROADWAY STANDARDS	33	INT
FHWA	UNIT SUPERVISOR		

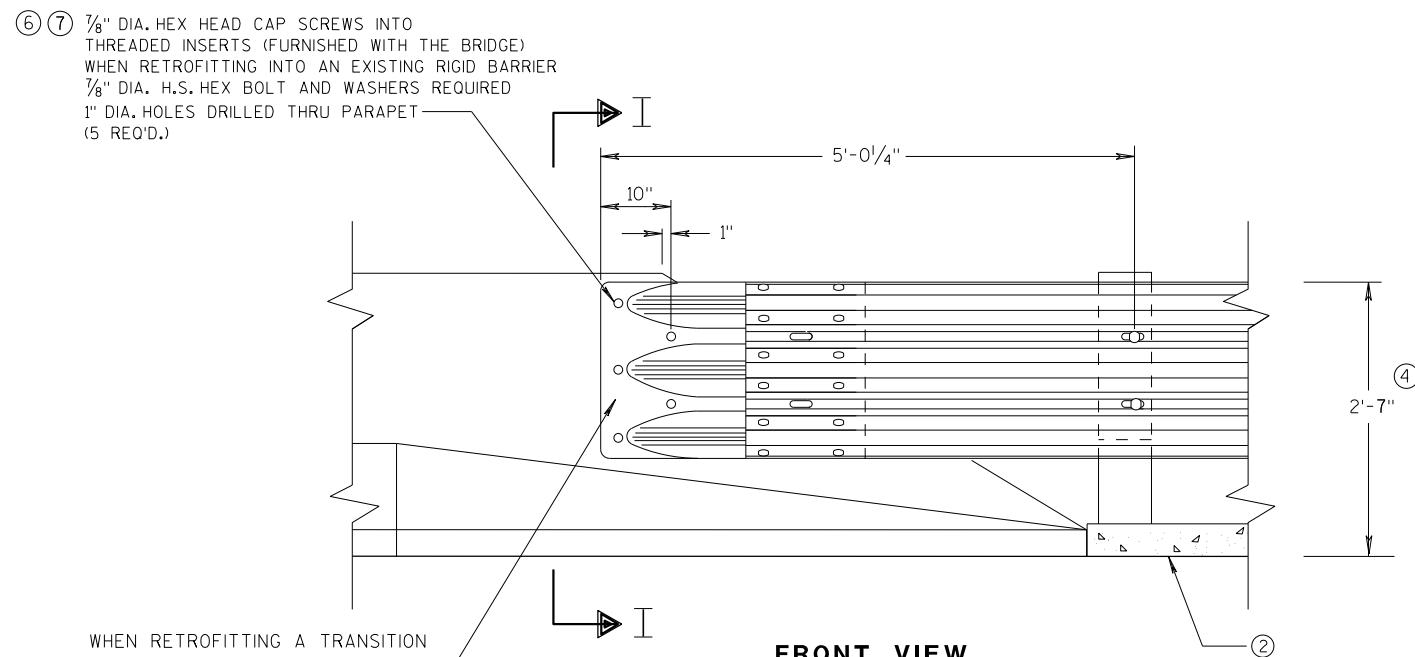


FRONT VIEW

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

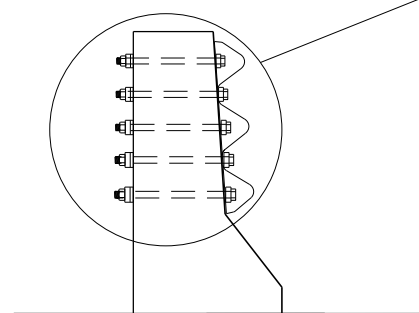


**DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION**

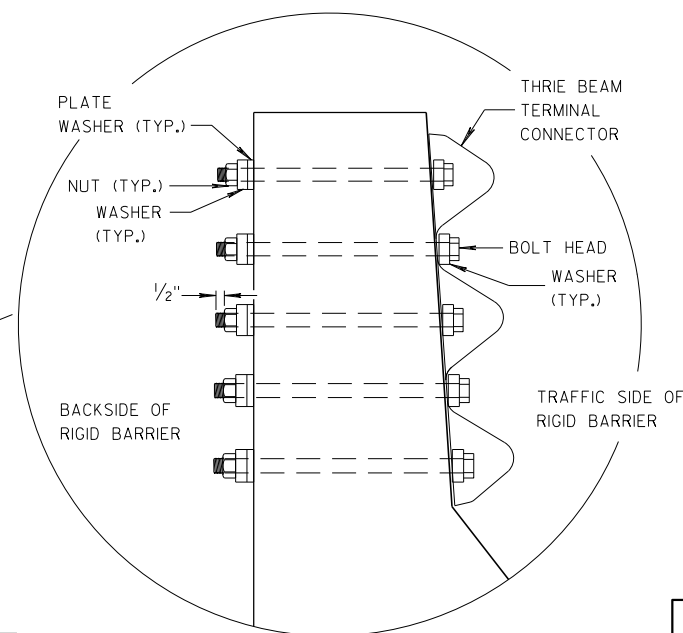


FRONT VIEW

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



SECTION I-I

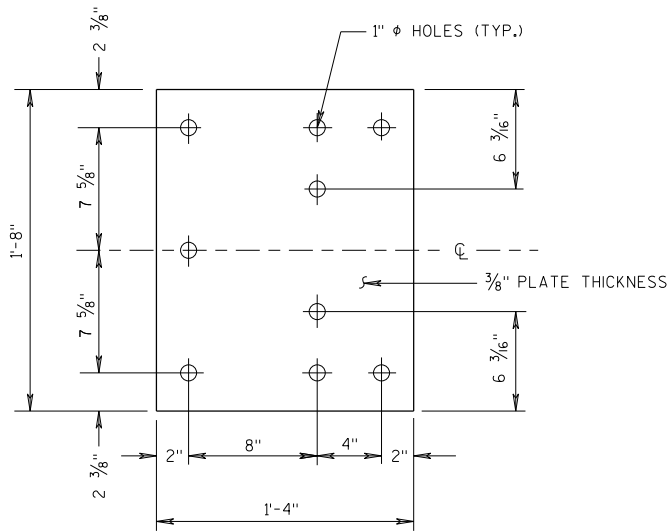
**GENERAL NOTES**

- 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.

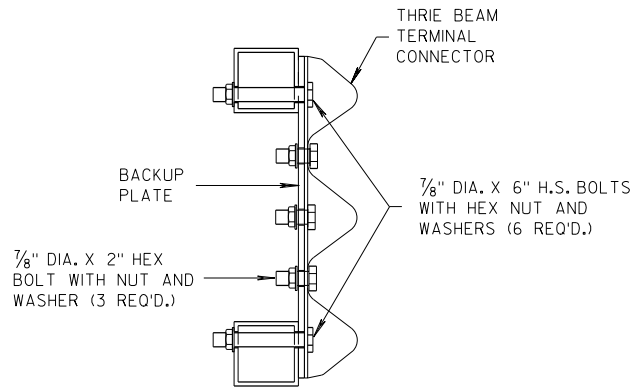
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

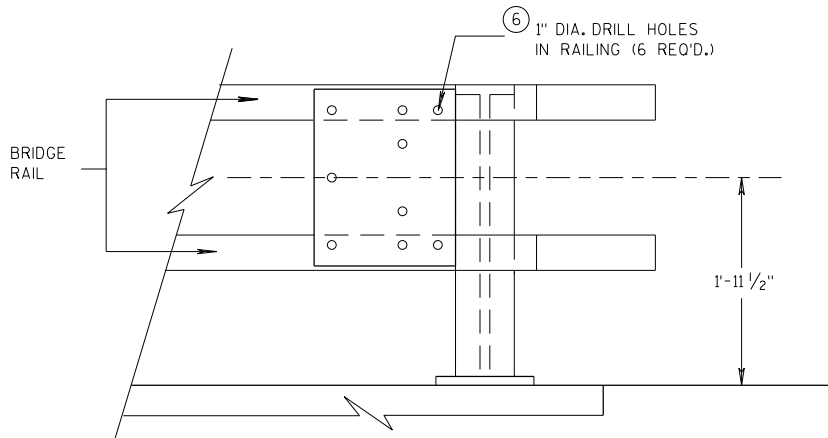
APPROVED
DATE 07/2018 /S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR 34
FHWA



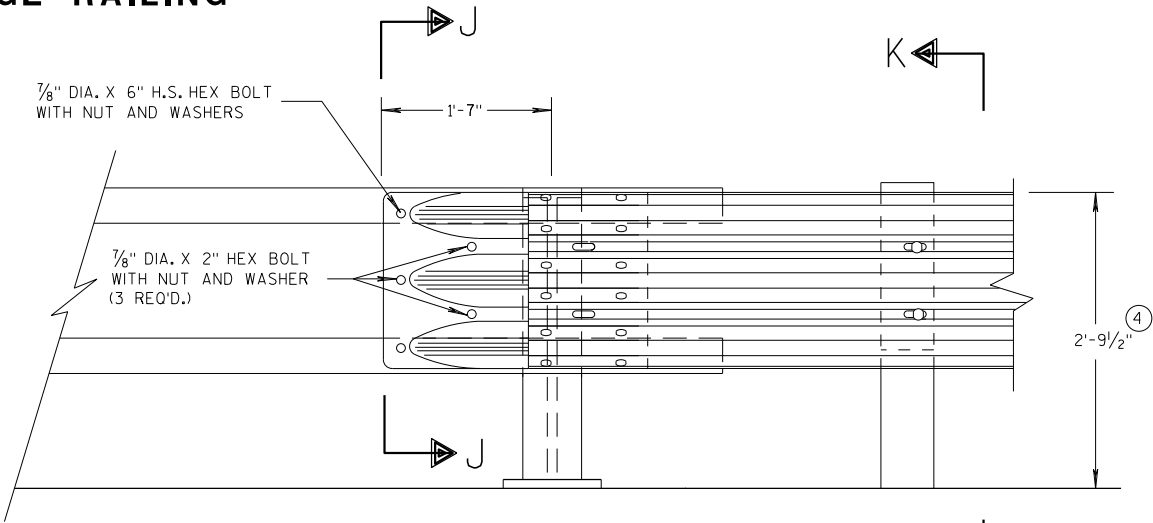
BACK-UP PLATE DETAIL



SECTION J-J

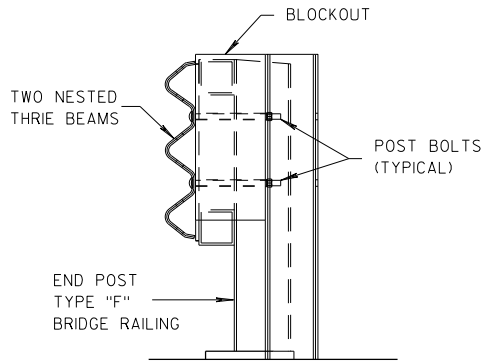


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

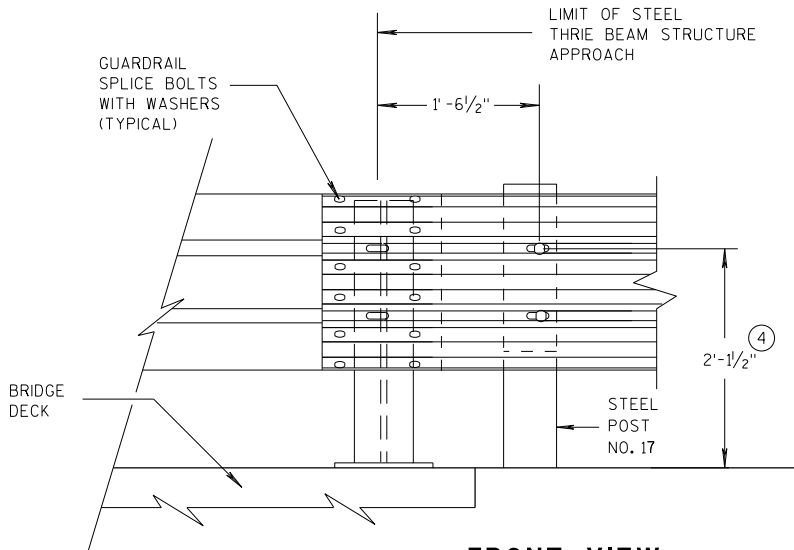
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

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



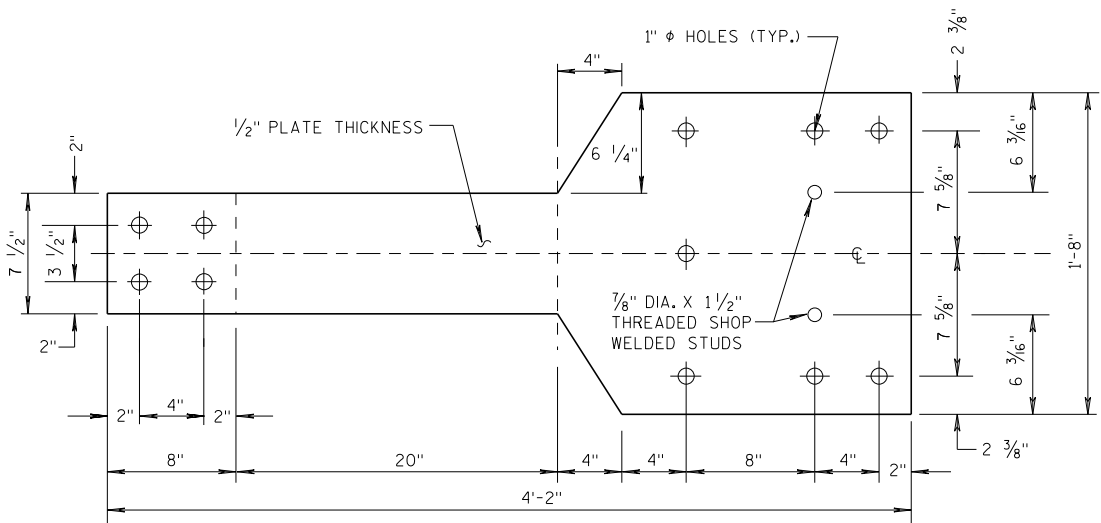
FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

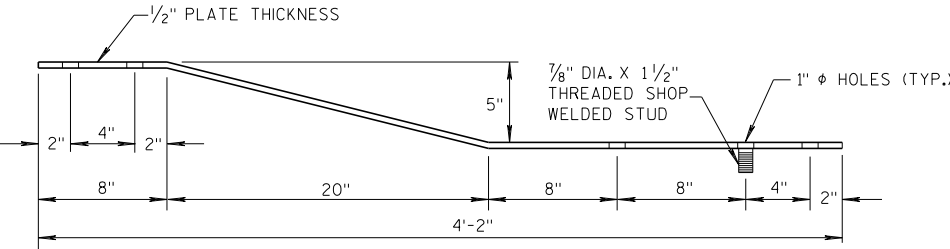
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 07/2018	/S/ Rodney Taylor	35
DATE	ROADWAY STANDARDS DEVELOPMENT	UNIT SUPERVISOR
FHWA		

GENERAL NOTES

④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

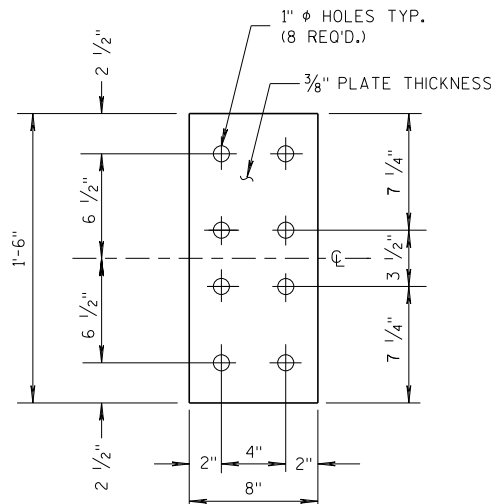


FRONT VIEW



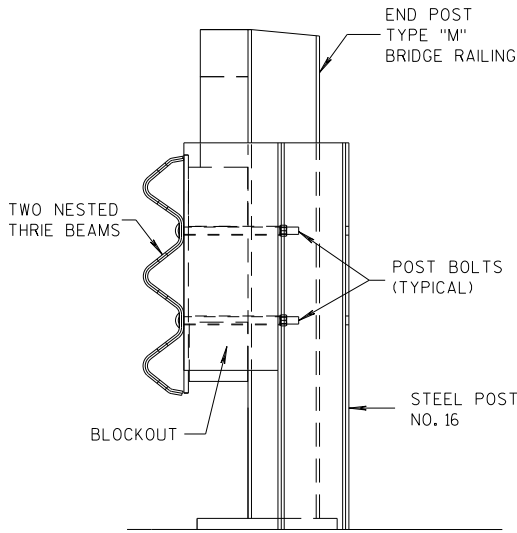
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

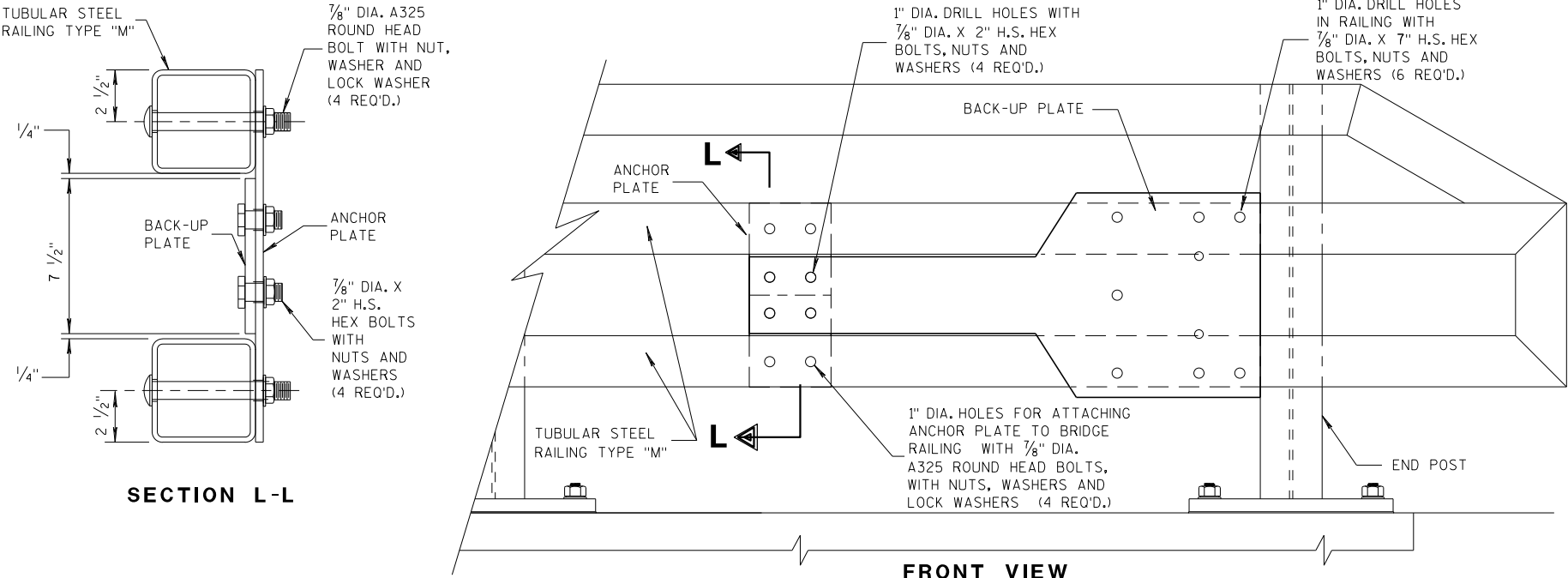


FRONT VIEW

ANCHOR PLATE DETAIL, TYPE "M"



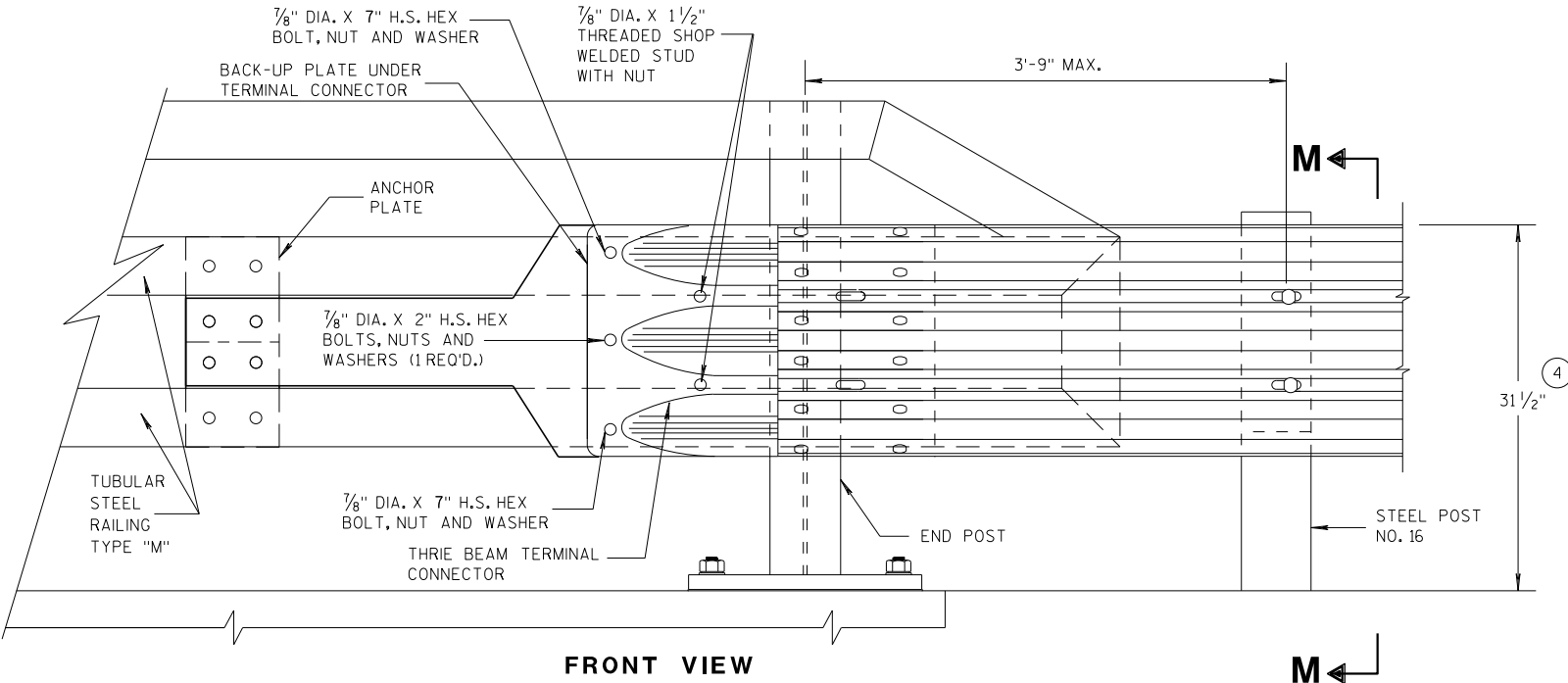
SECTION M-M



SECTION L-L

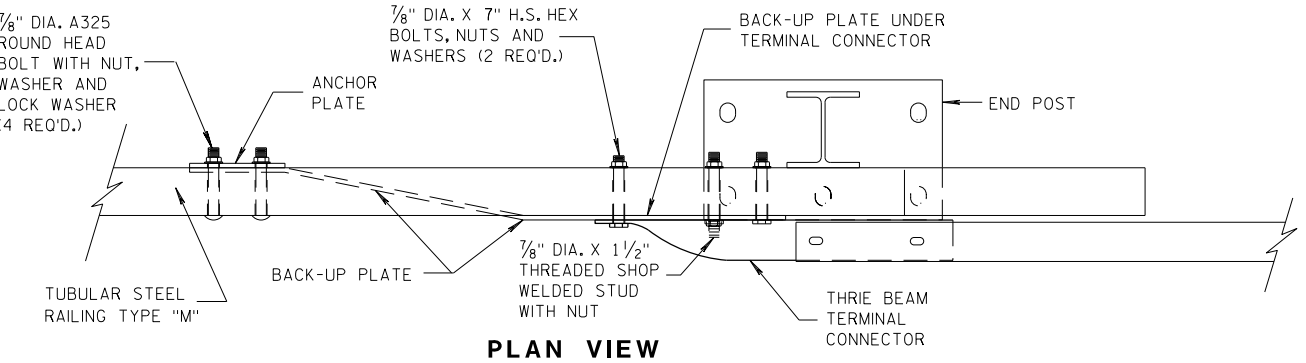
FRONT VIEW

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



FRONT VIEW

M



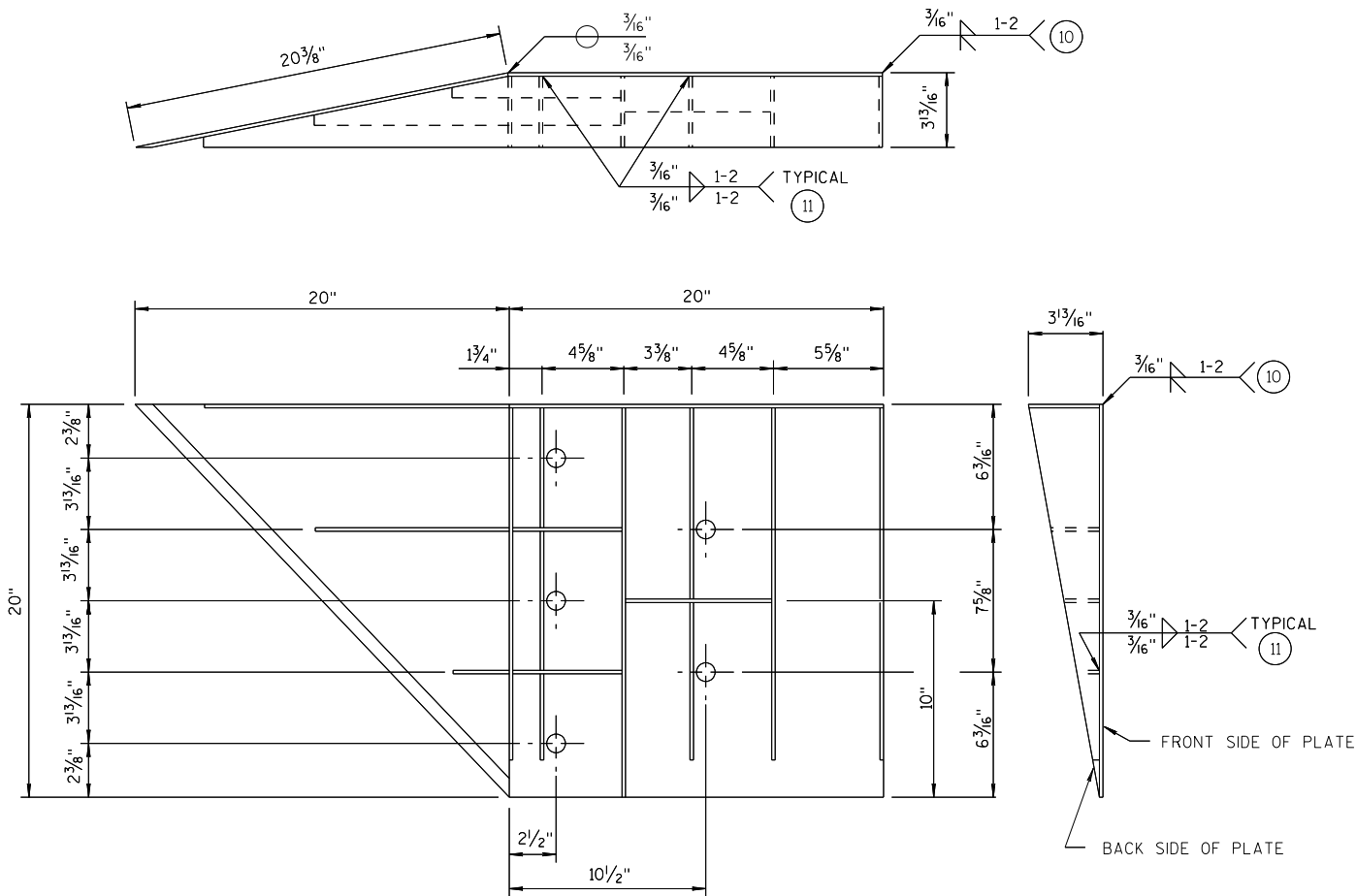
PLAN VIEW

THREE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THREE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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DATE ROADWAY STANDARDS UNIT SUPERVISOR
FHWA 36 ENT



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 3/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 3/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 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 3/16" 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 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 3/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

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".

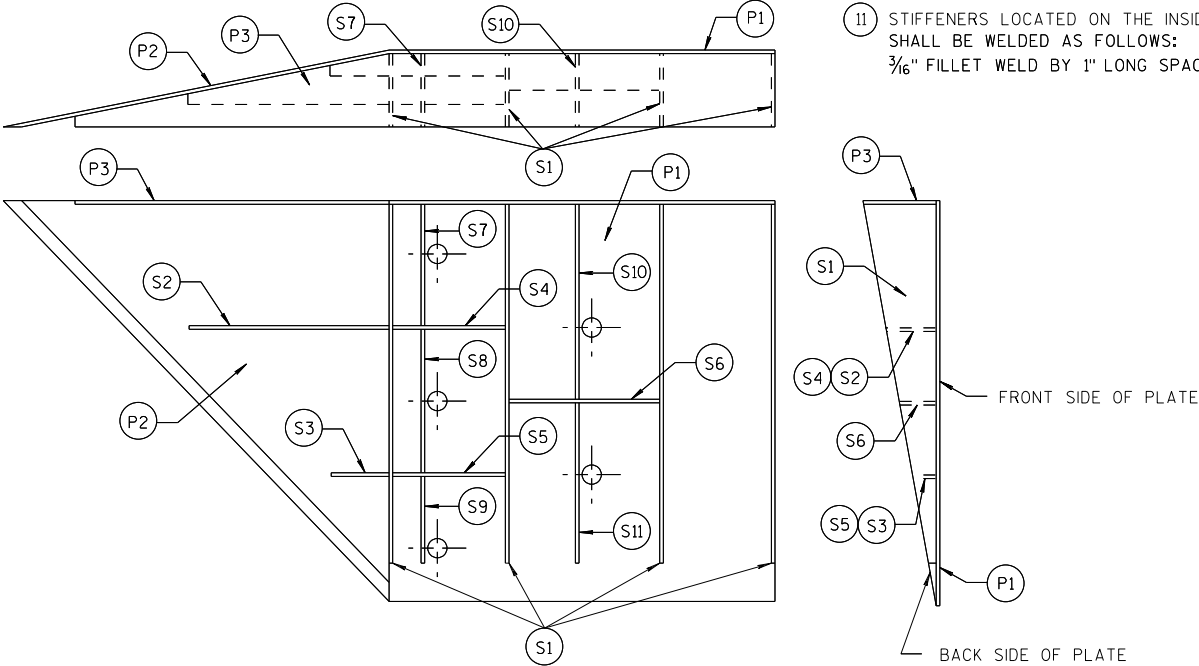


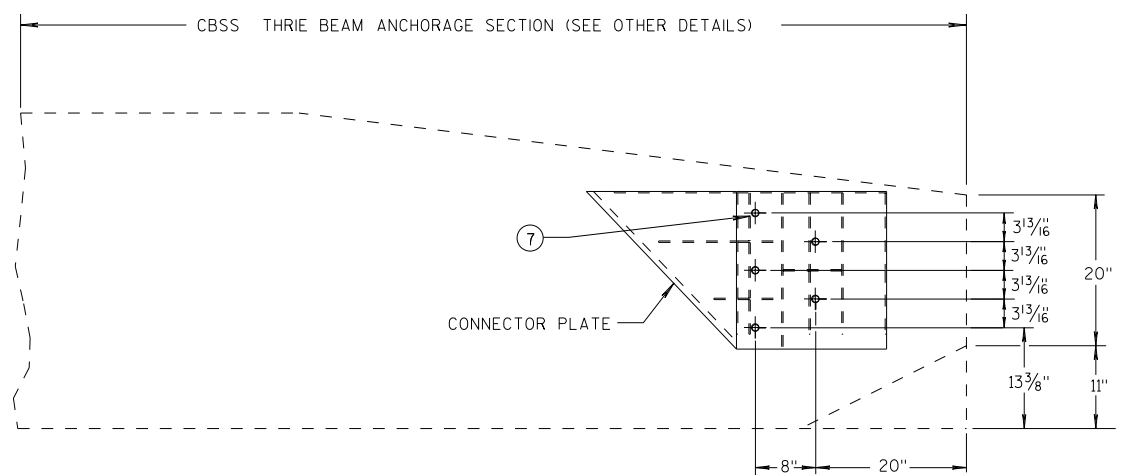
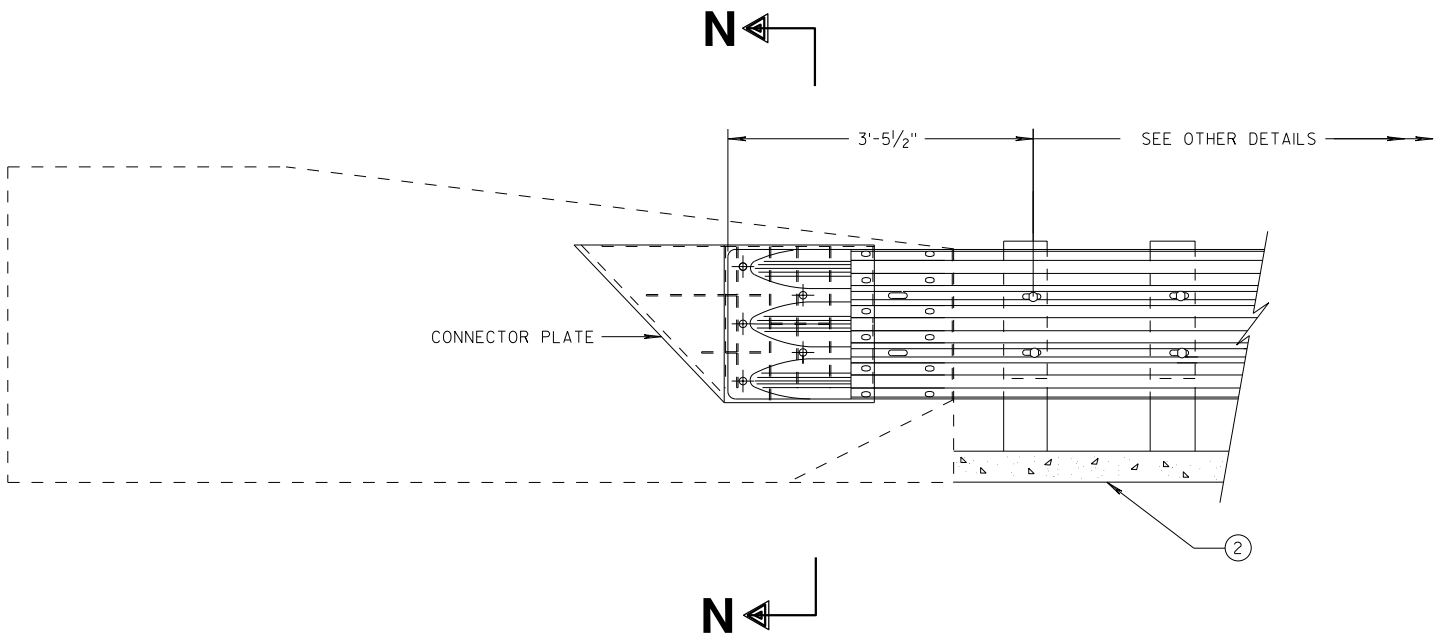
PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
37
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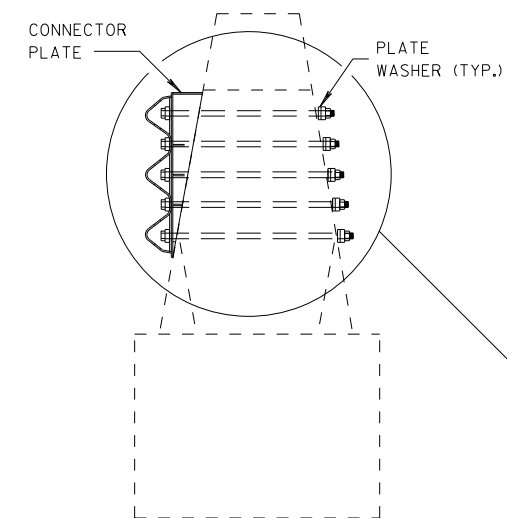
THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



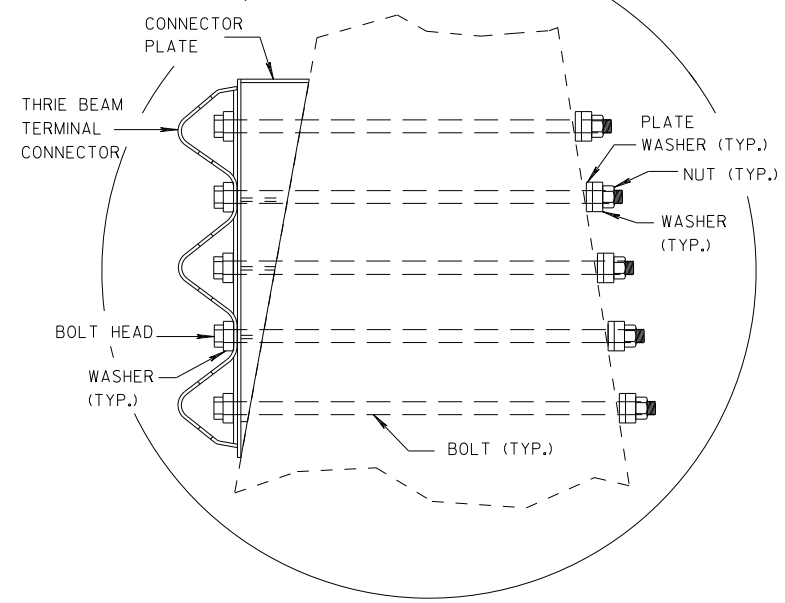
SINGLE SLOPE CONNECTION PLATE PLACEMENT

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.



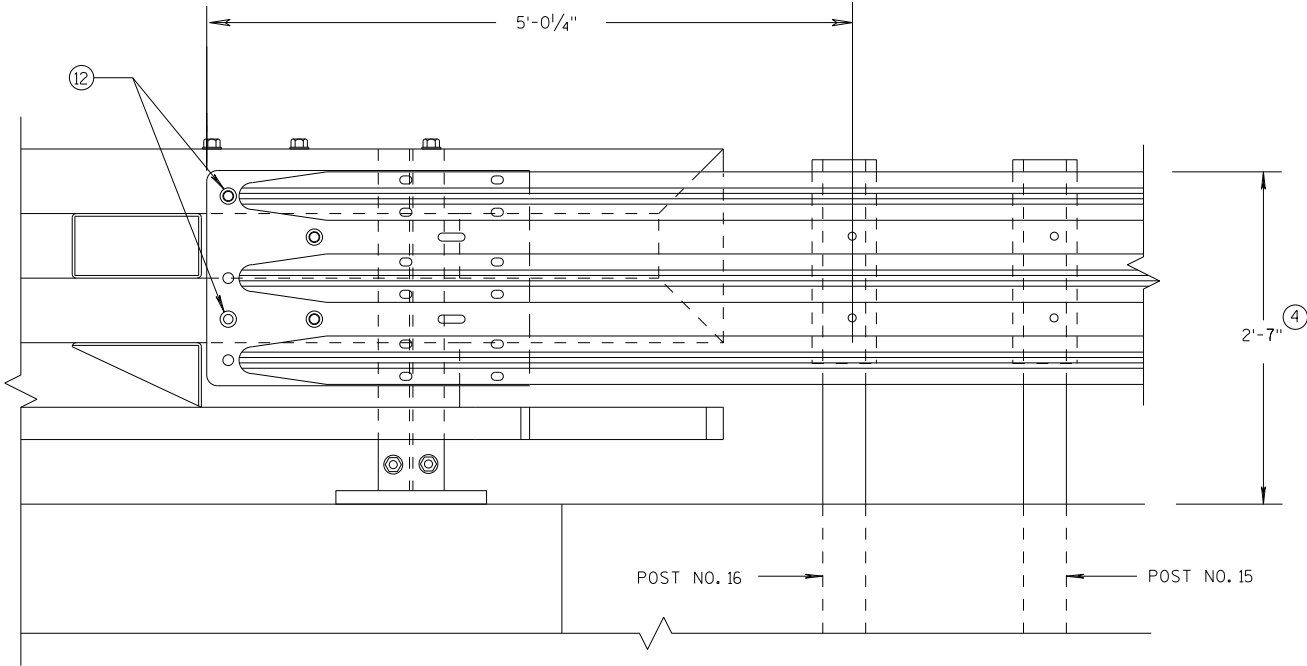
SECTION N-N



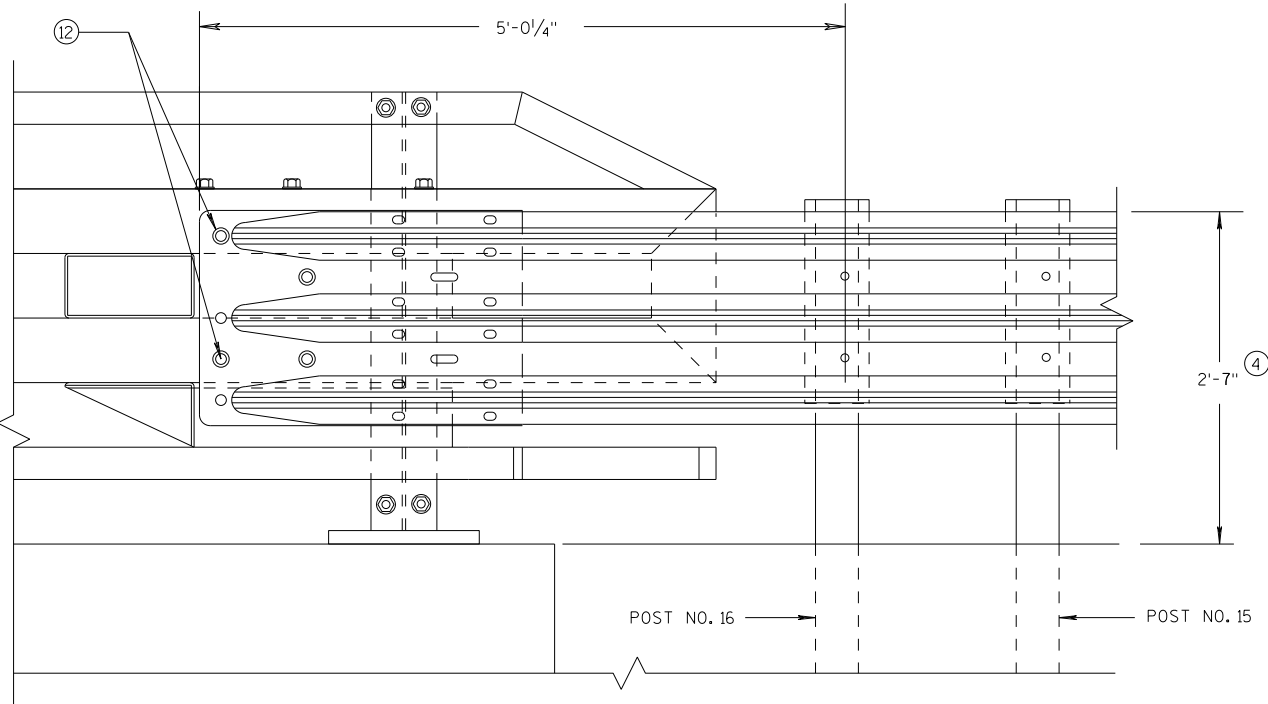
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 7/2018	/S/ Rodney Taylor		
DATE	ROADWAY STANDARDS DIVISION	38	UNIT SUPERVISOR
FHWA			

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.



ELEVATION OF DETAIL AT NY3 END POST
THRIE BEAM RAIL ATTACHMENT

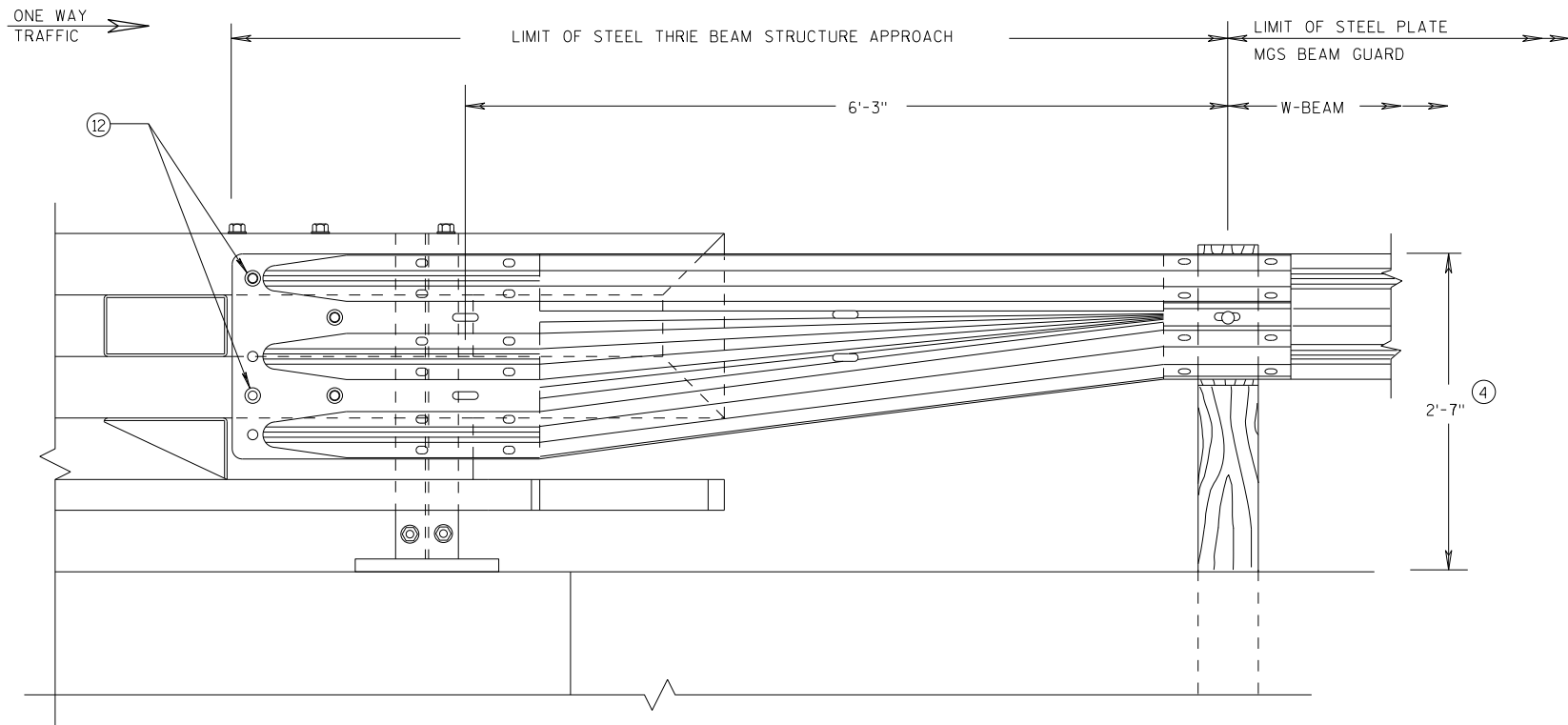


ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 7/2018 /S/ Rodney Taylor
FHWA ROADWAY STANDARDS UNIT SUPERVISOR 39 NT



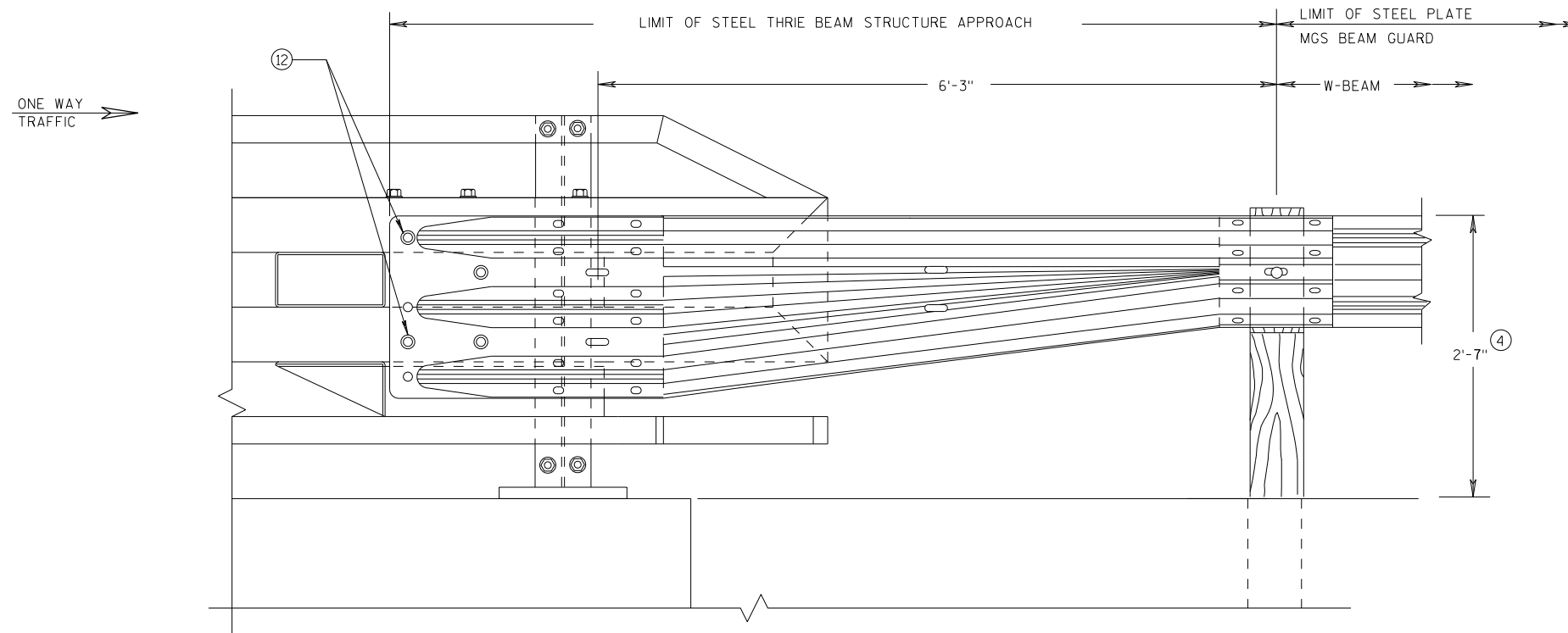
GENERAL NOTES

(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 "NY3" (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



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

DATE

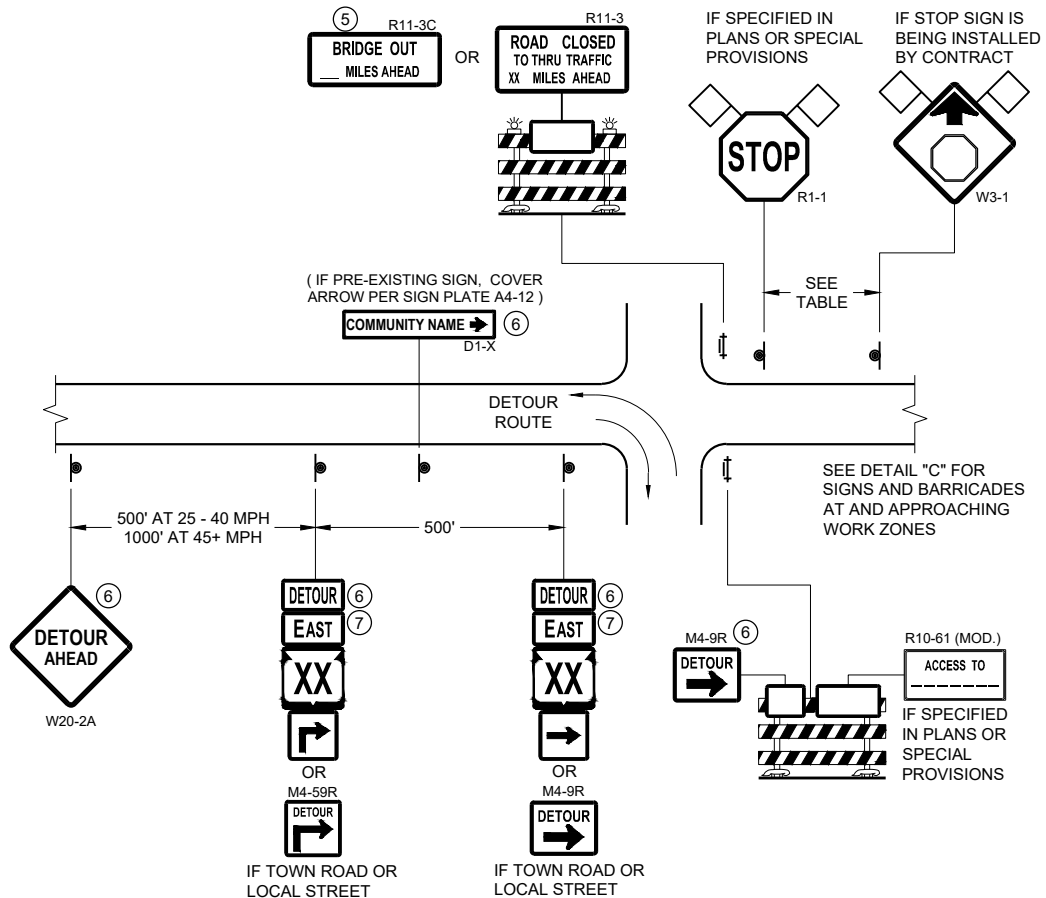
FHWA

/S/ Rodney Taylor

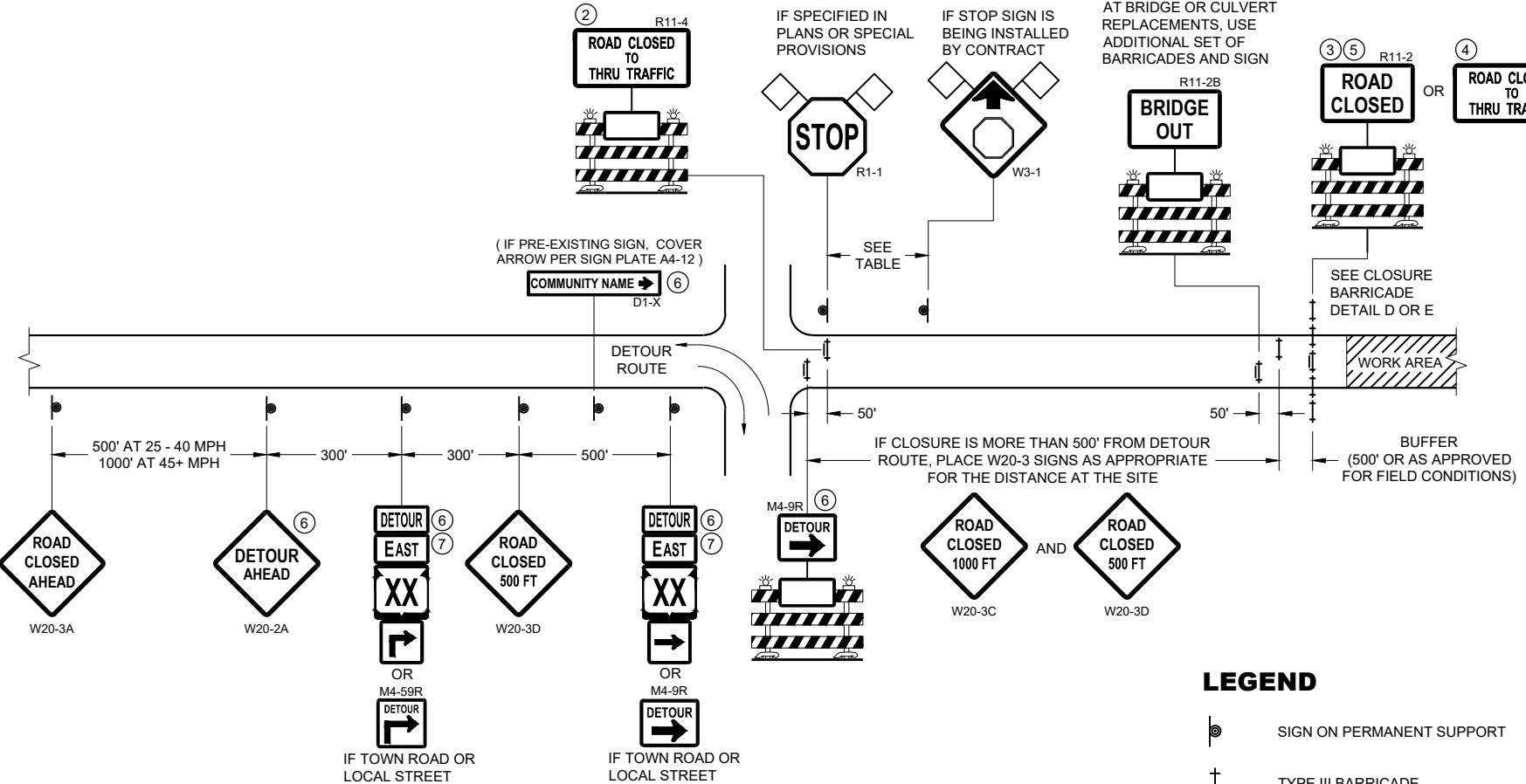
ROADWAY STANDARDS C 40

UNIT SUPERVISOR

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



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



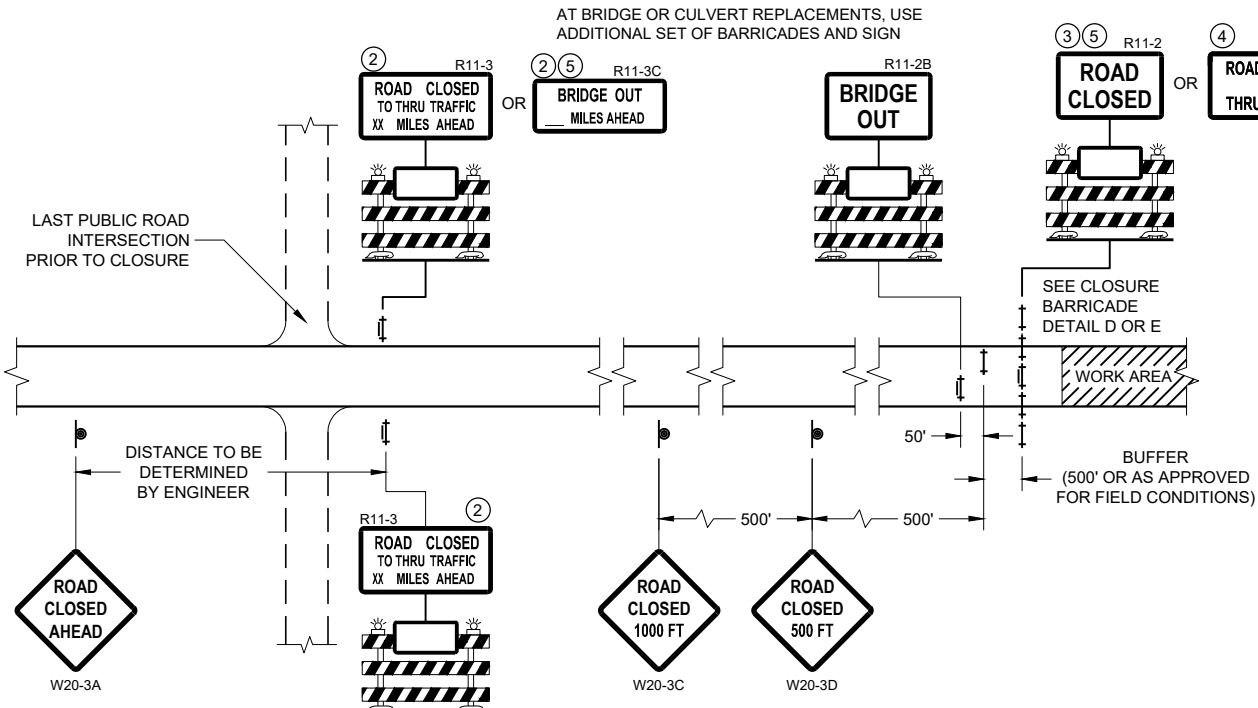
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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

- DETOUR M4 - 8
- EAST M3 - X
- XX M1 - 4 OR XX M1 - 6 OR COUNTY M1 - 5A
- OR M05 - 1 OR M06 - 1

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 41

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GENERAL NOTES

LESS OTHERWISE NOTED BELOW:

R11 - 2 SHALL BE 48" X 30"

R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"

M4 - 9 SHALL BE 30" X 24"

M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)

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

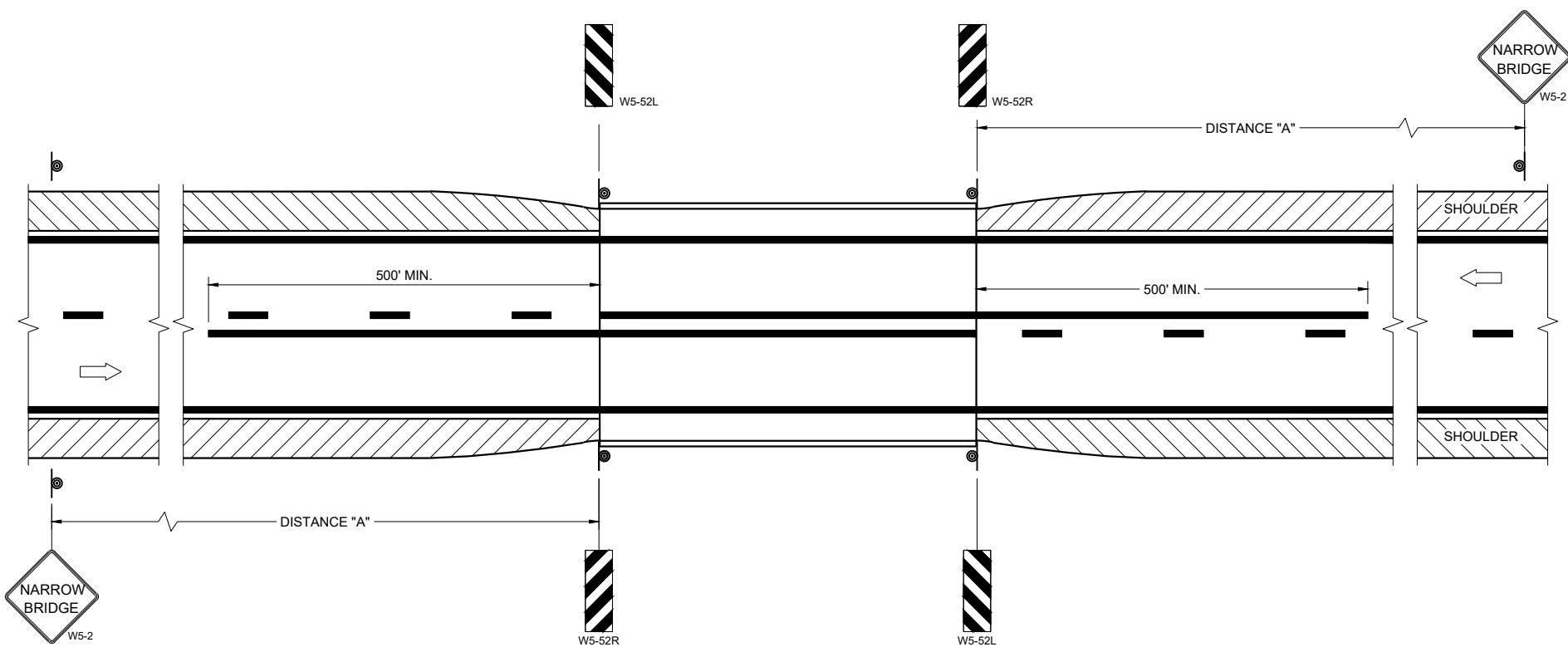
M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)

MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)

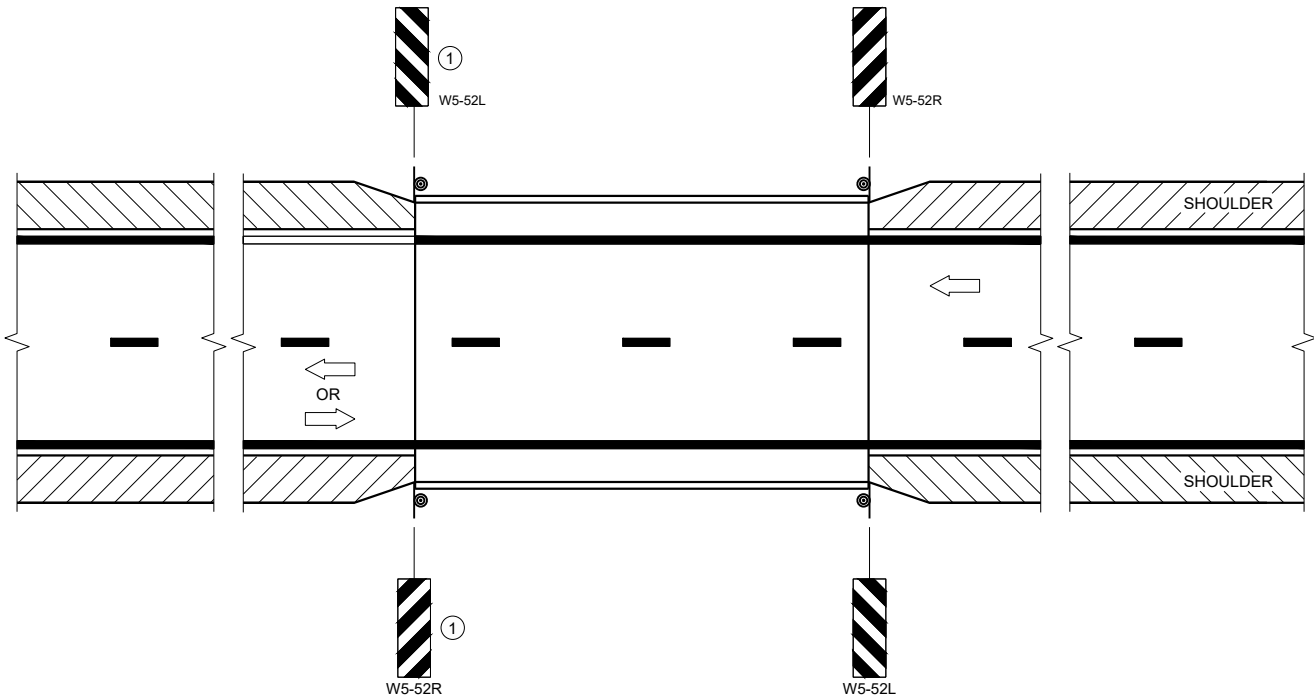
D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

R1 - 1 SHALL BE 36" X 36"

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



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



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

GENERAL NOTES

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

DISTANCE TABLE

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

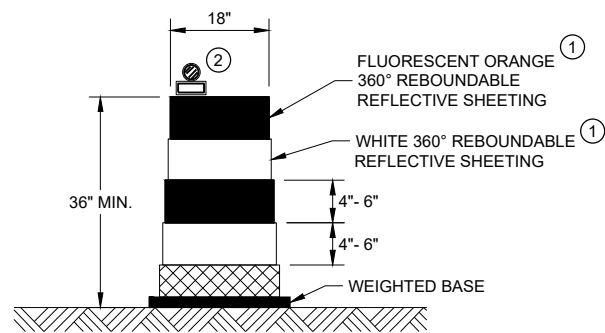
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

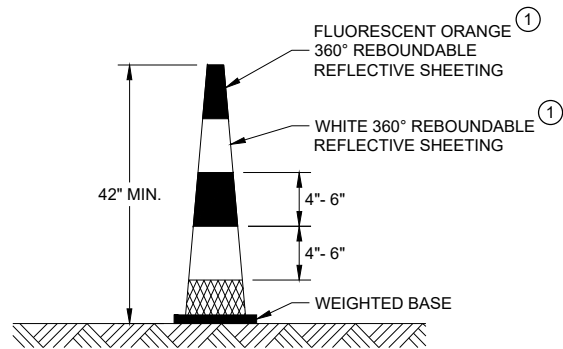
/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA



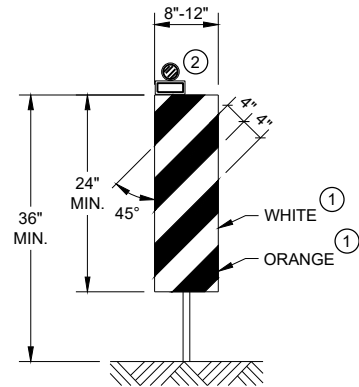
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



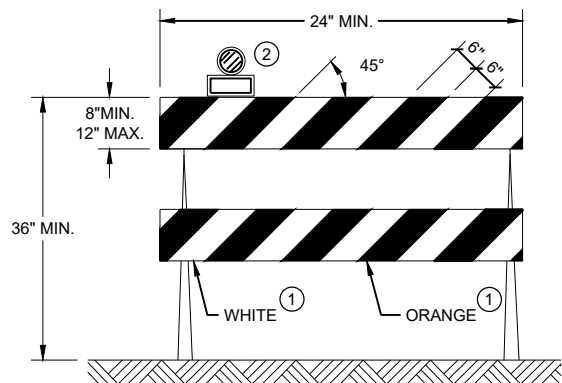
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



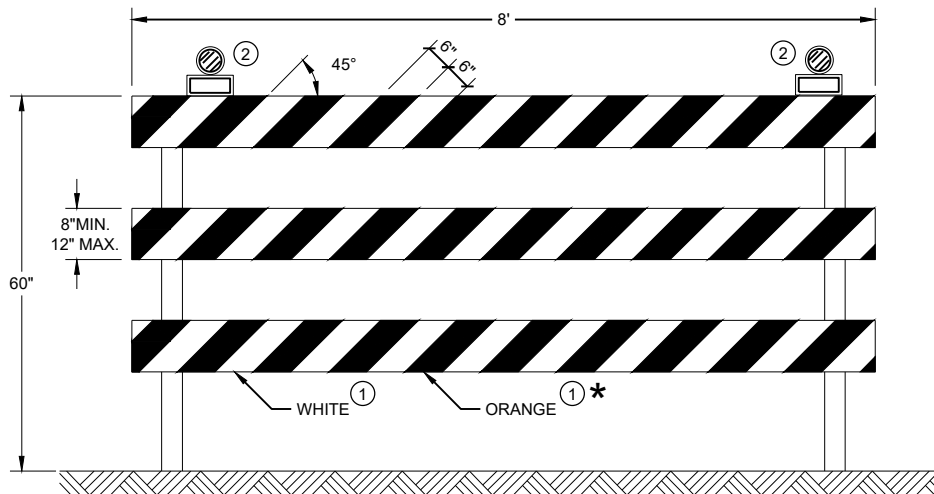
VERTICAL PANEL

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.

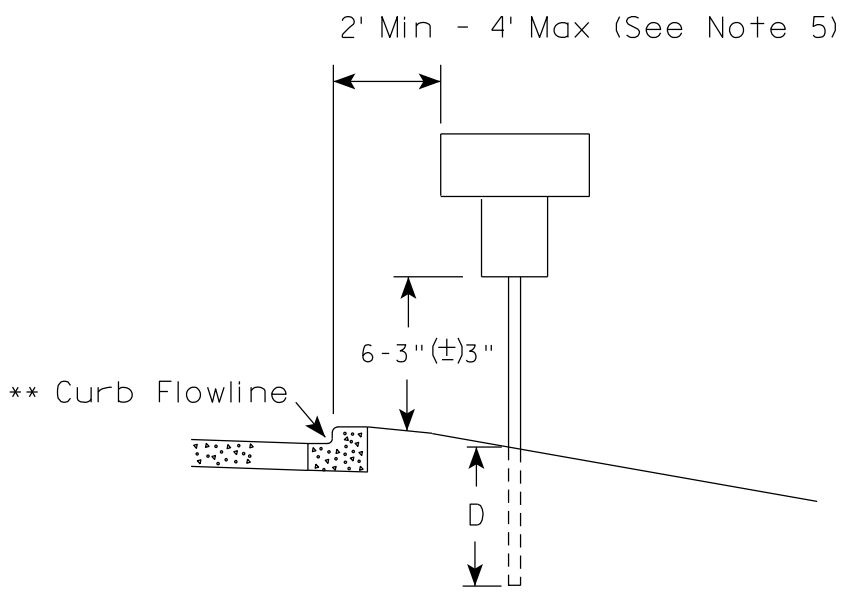
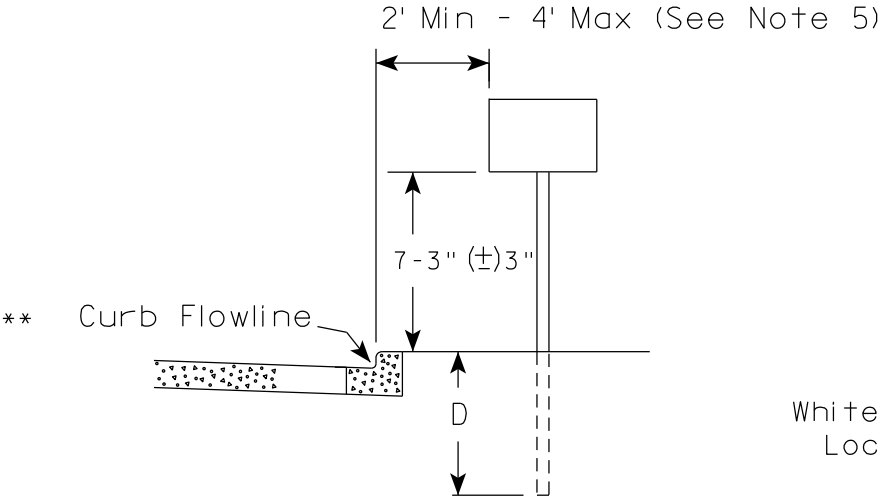
**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

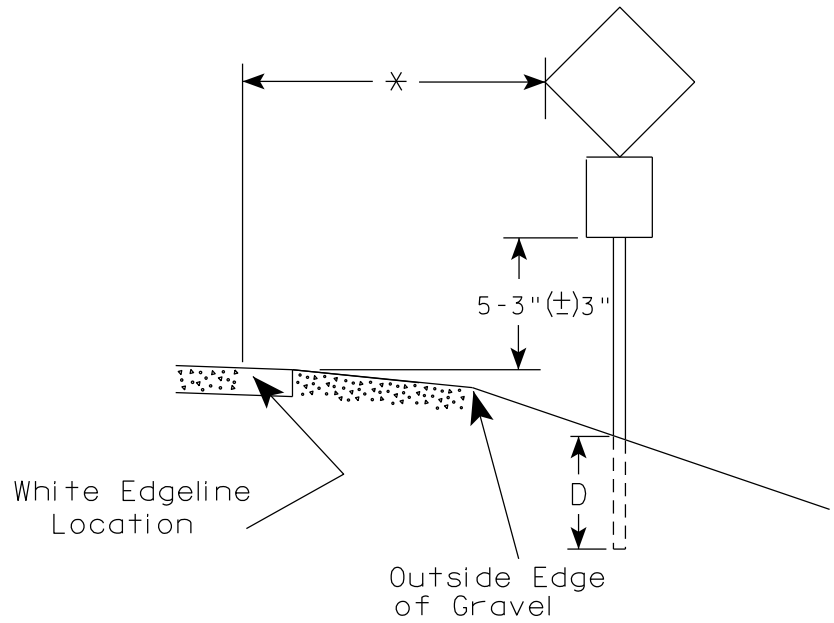
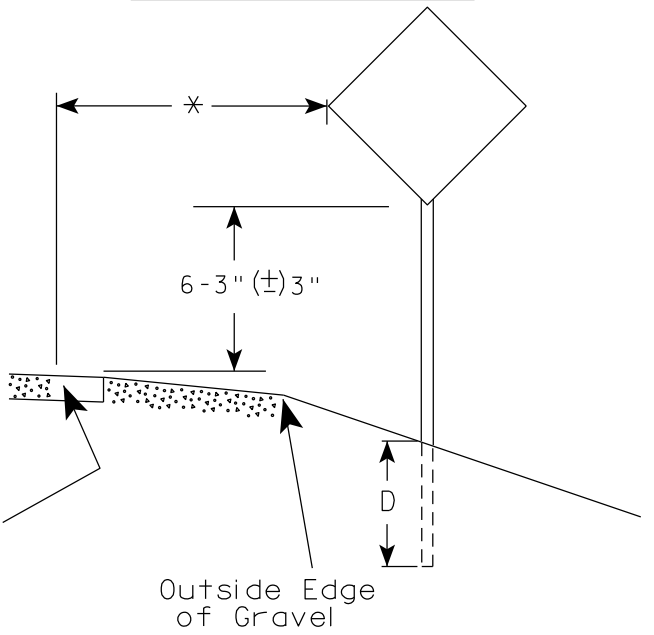
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November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 44

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URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

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

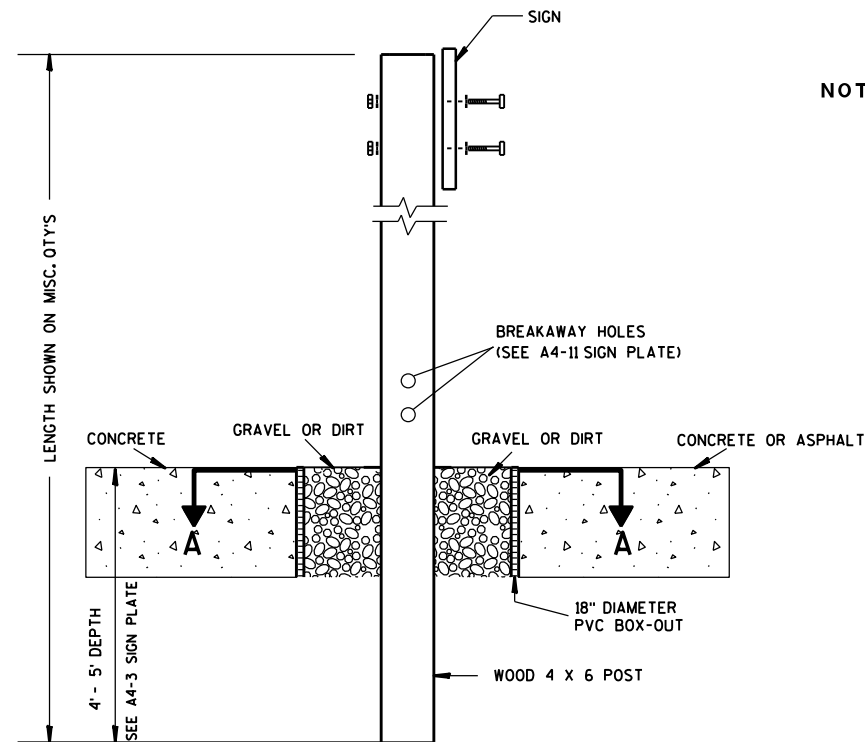
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

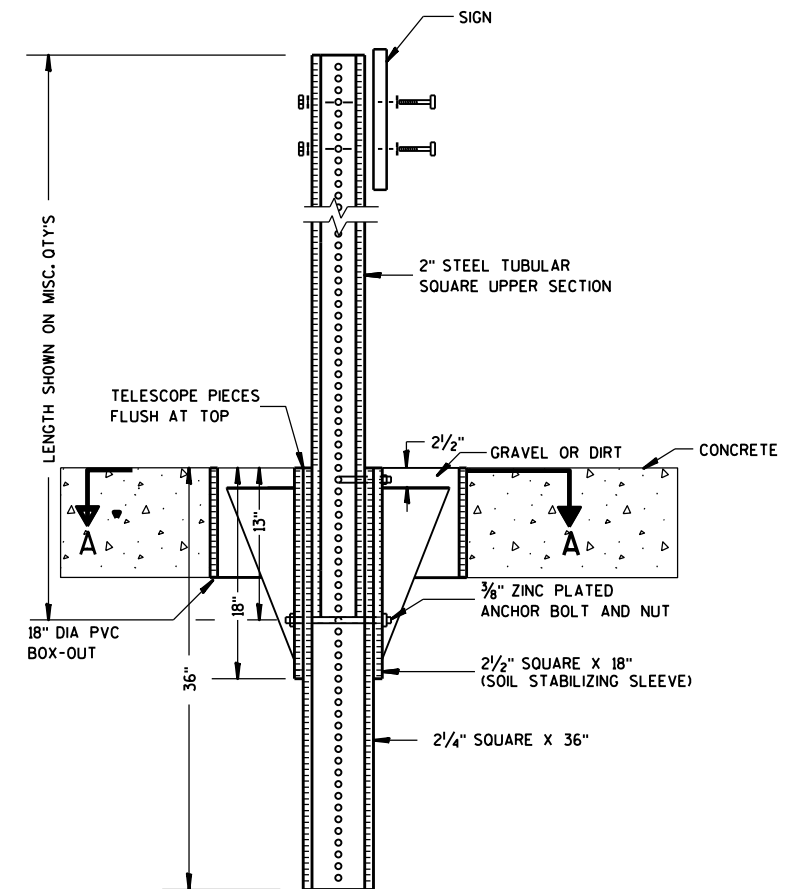
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

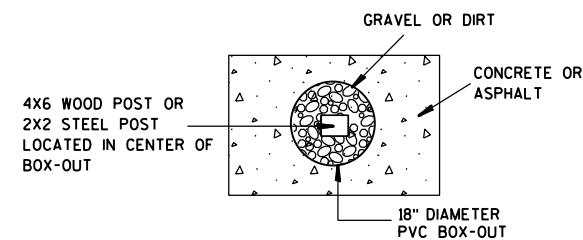
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 46 A4-3B.1

PROJECT NO:

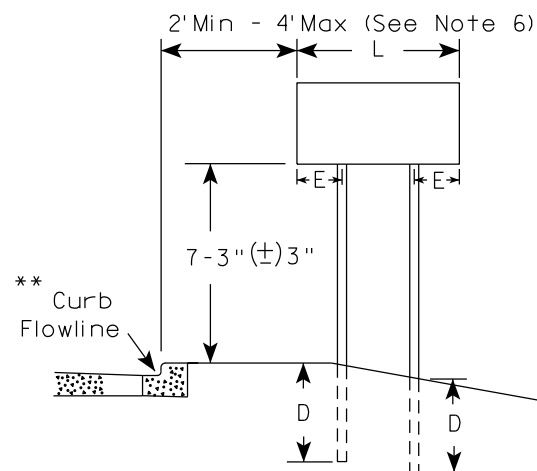
HWY:

COUNTY:

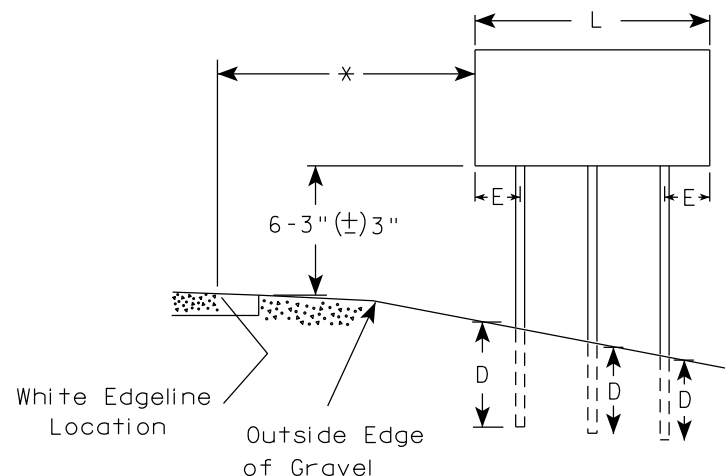
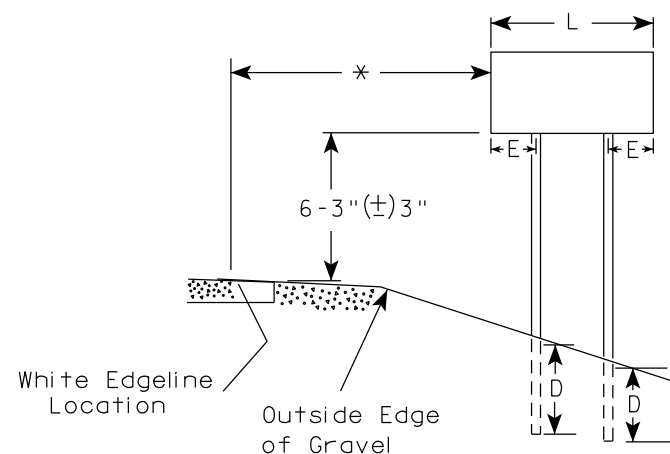
SHEET NO:

E

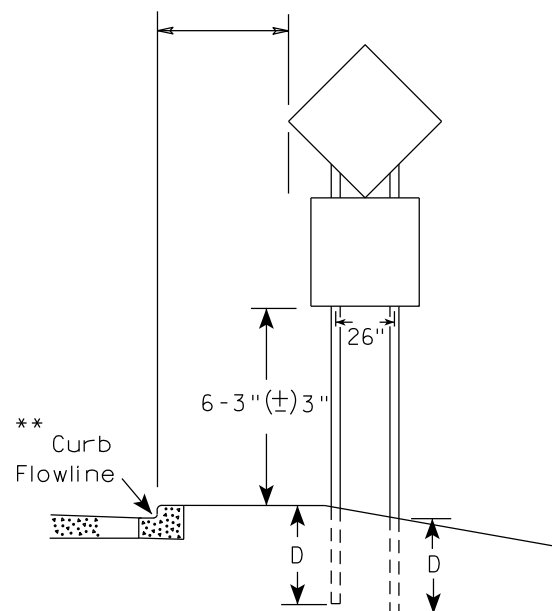
URBAN AREA



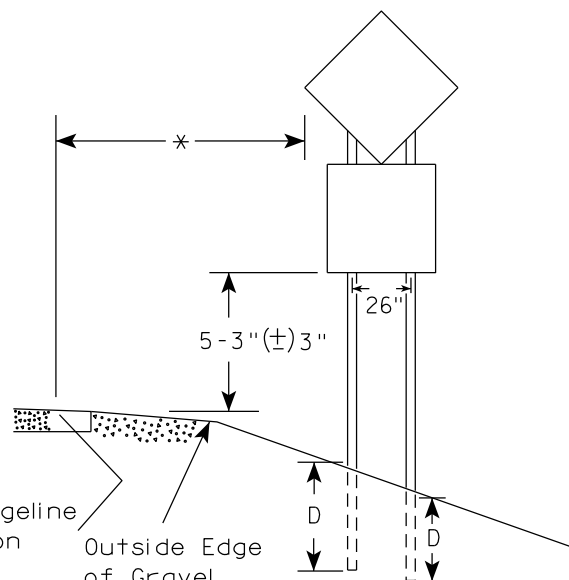
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

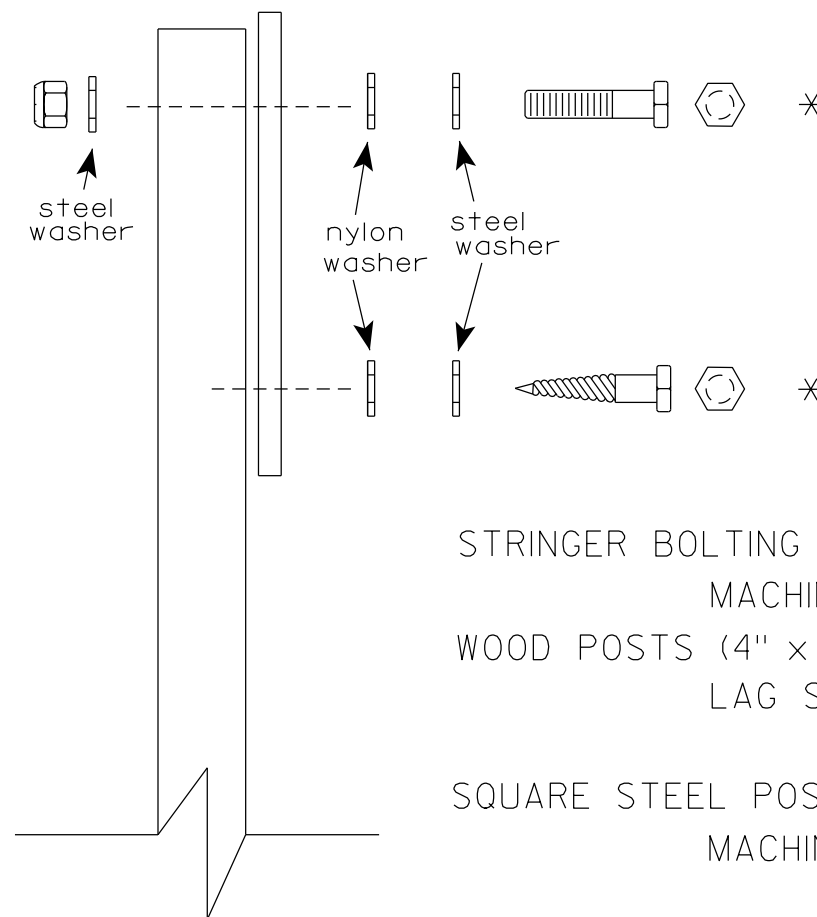
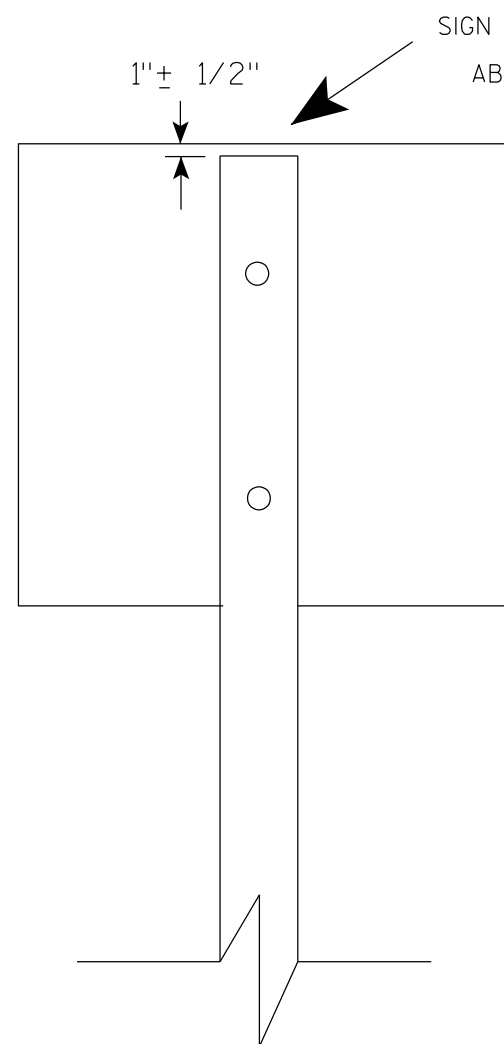
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

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

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

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


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

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

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

1" $\frac{1}{8}$ "

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

4" x 10" x 10 GA. — 
STEEL PLATE (CUT
AS SHOWN) WELDED
TO ALL FOUR CORNERS
OF TELESPAR TUBE

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

LENGTH SHOWN ON MISC. QTY'S

18" DIA SCHEDULE 40 PVC BOX-OUT

36"

18"

13"

2 1/2"

2 1/4" SQUARE X 36"

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

3/8" ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT

ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES

2" STEEL TUBULAR SQUARE UPPER SECTION

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

SIGN

TELESCOPE PIECES FLUSH AT TOP

LENGTH SHOWN ON MISC. QTY'S

SIGN

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

2" STEEL TUBULAR SQUARE UPPER SECTION

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

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

TELESCOPE PIECES FLUSH AT TOP

1"

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

2 $\frac{1}{2}$ " SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 $\frac{1}{4}$ " SQUARE X 36"

36"

18"

12"

A

B

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT

DIRECTION
OF TRAFFIC

SECTION A-A

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

TUBULAR STEEL
SIGN POST
A4-9

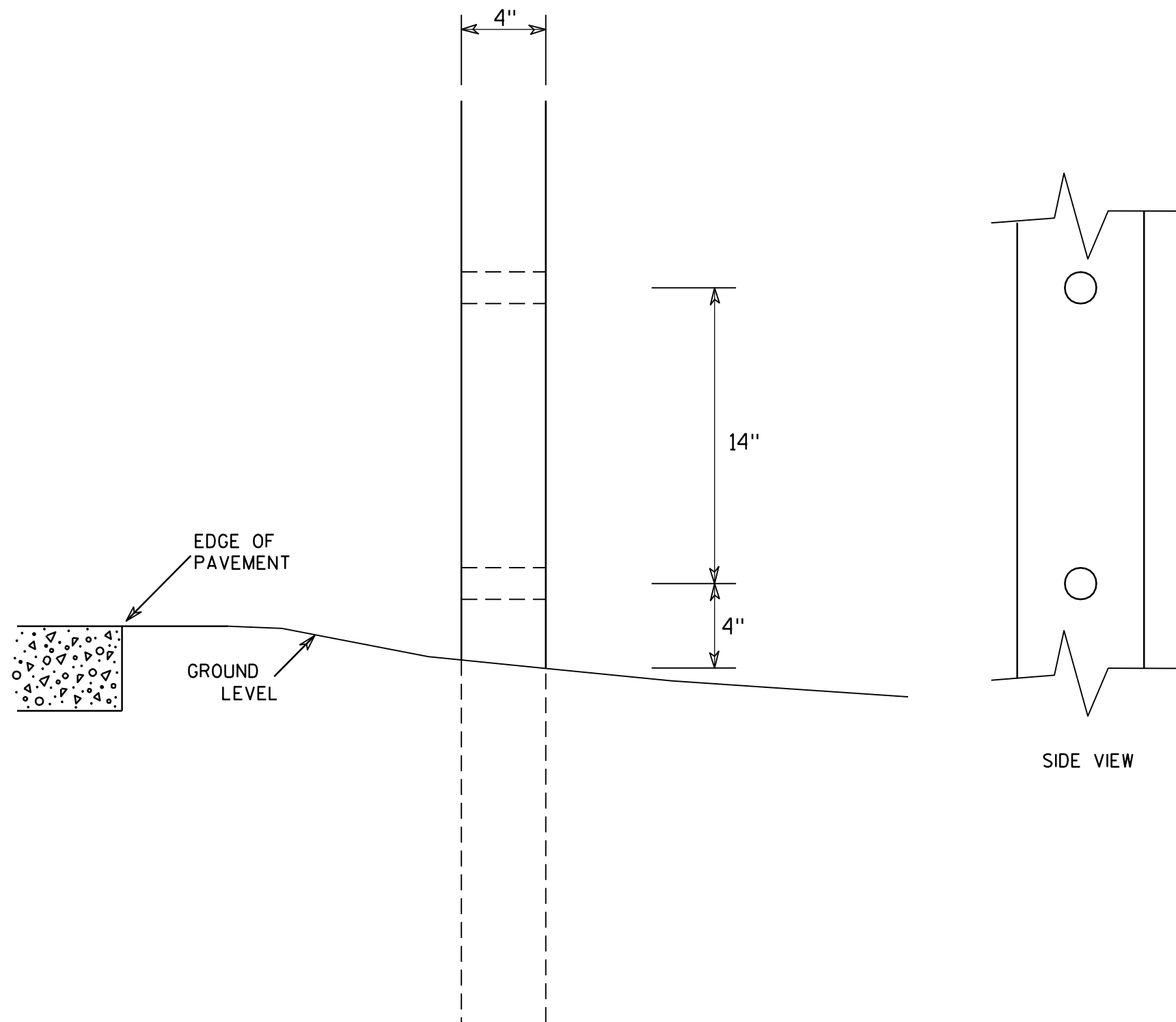
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
For State Traffic Engineer

DATE 2/05/15 PLAT 49 14-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:		E
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7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

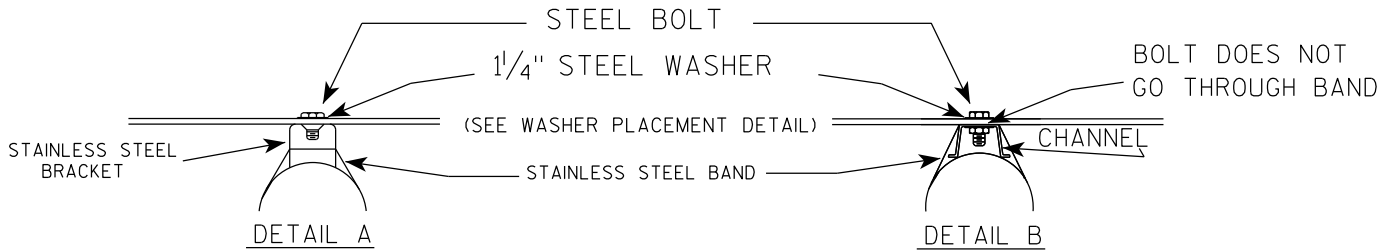
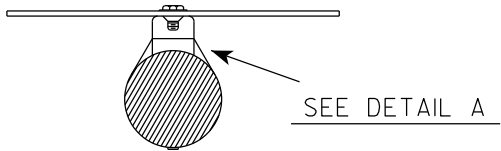
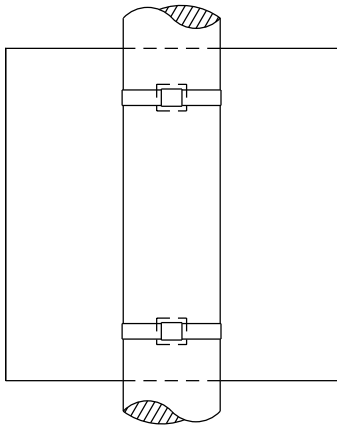
COUNTY:

SHEET NO: 50

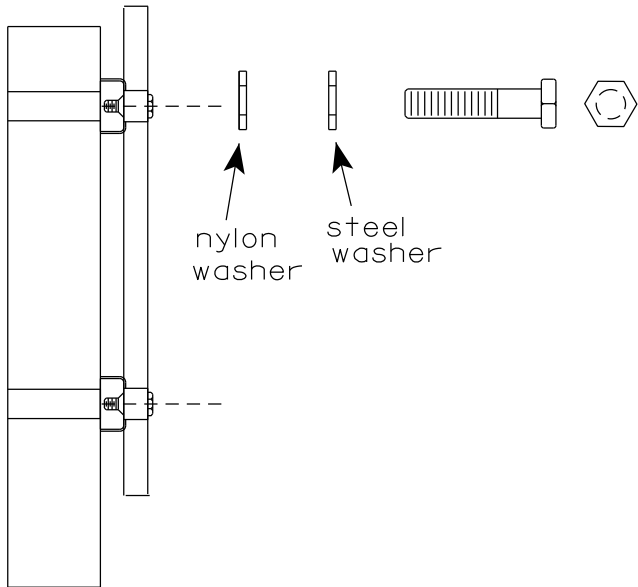
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

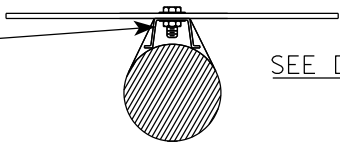
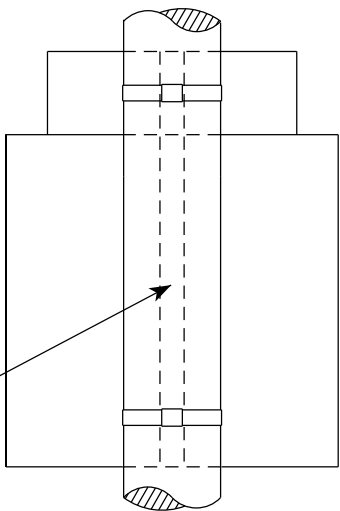


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

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

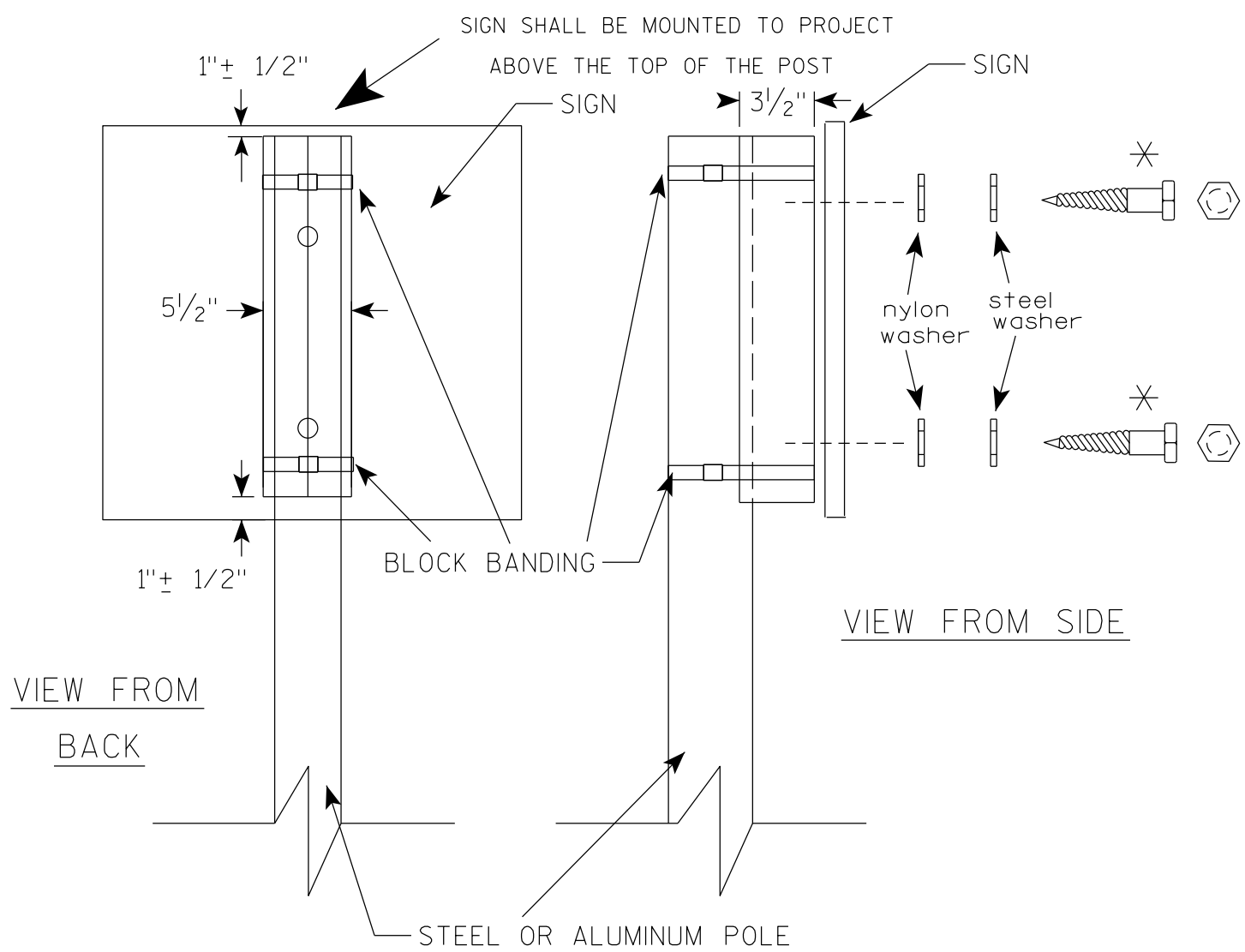
"J" ASSEMBLY



STANDARD SIGN
SIGN BANDING DETAILS

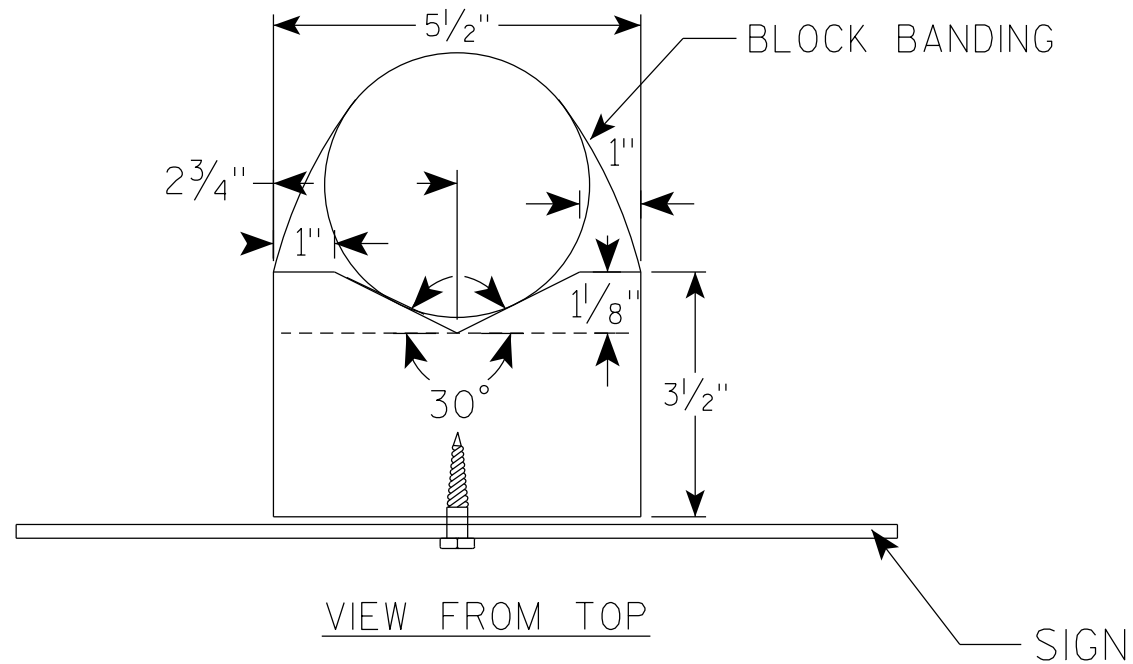
WISCONSIN DEPT OF TRANSPORTATION

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



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

GENERAL NOTES

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

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

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

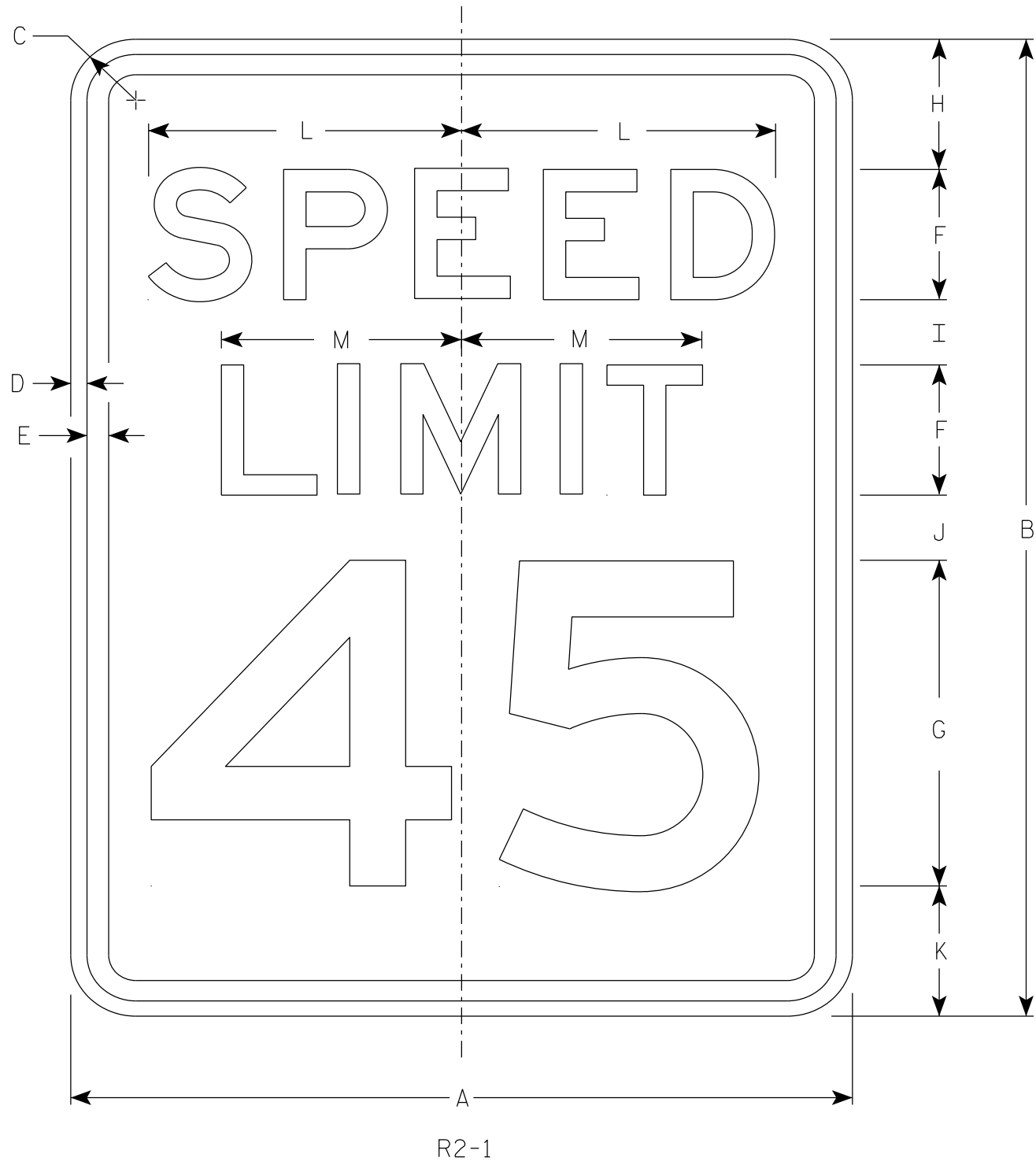
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO: 52

E

7



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.

7

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

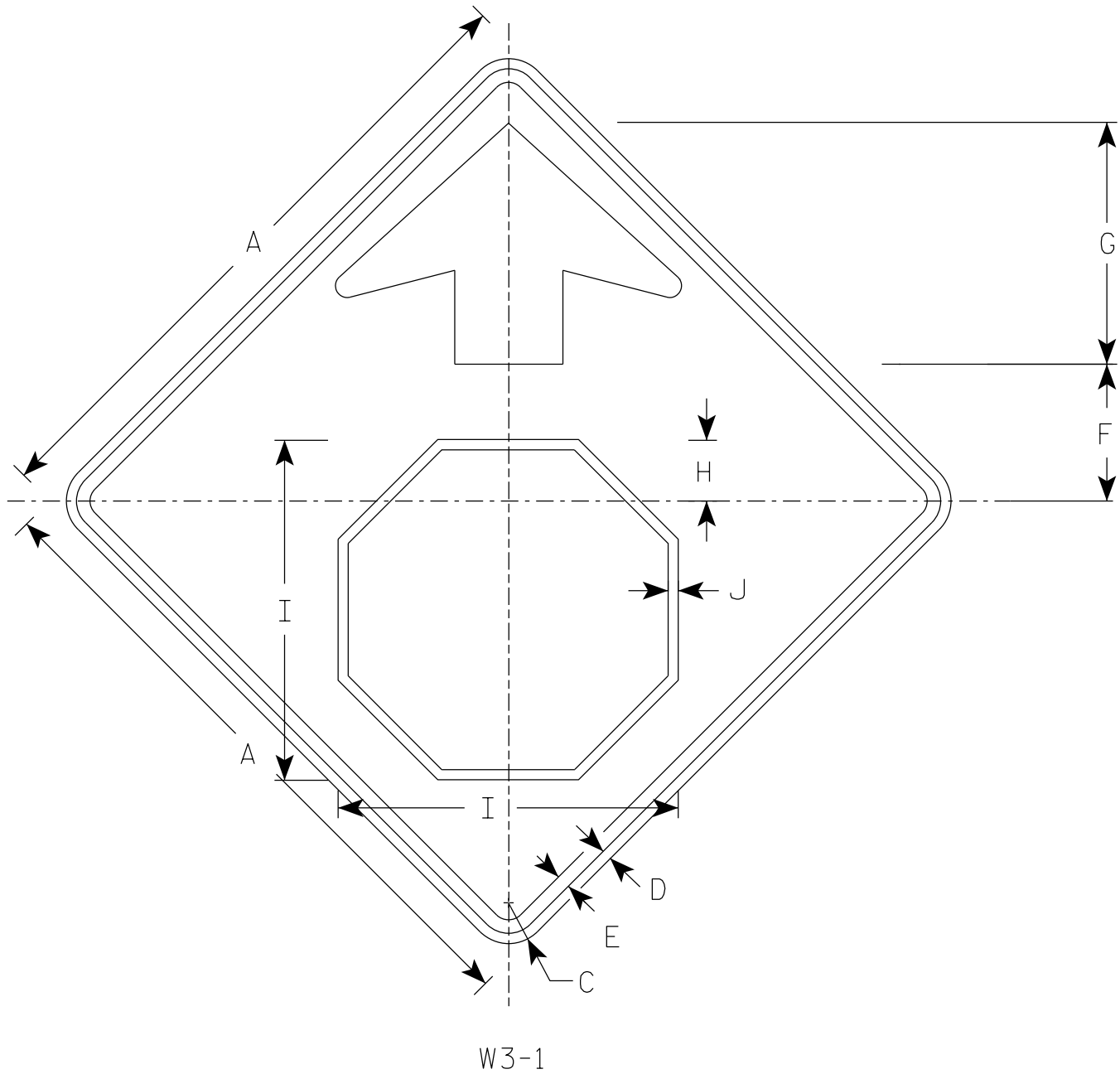
STANDARD SIGN
R2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/1/23 PLATE NO. R2-1.14

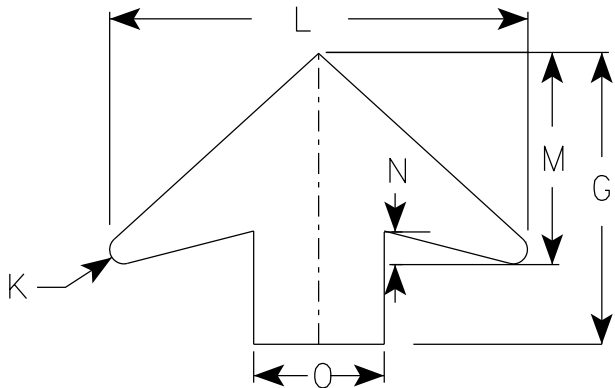
7



W3-1

NOTES

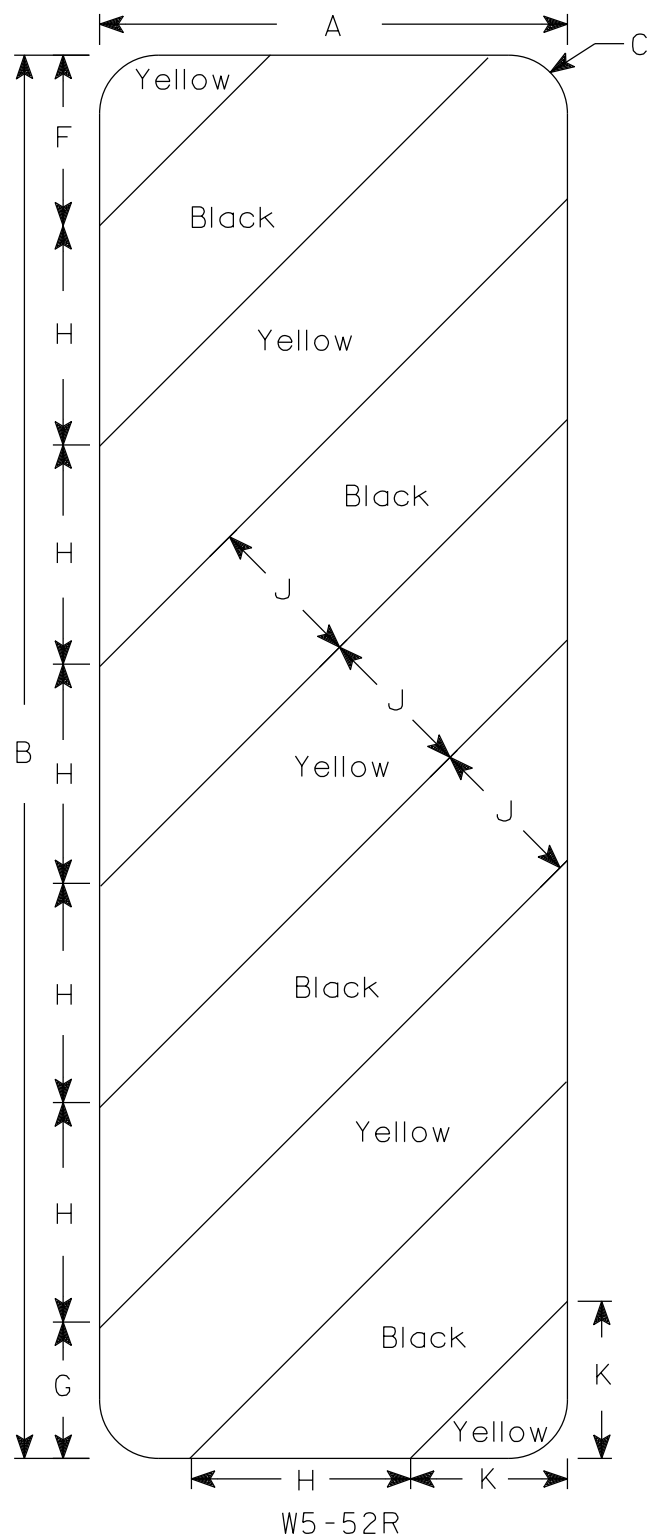
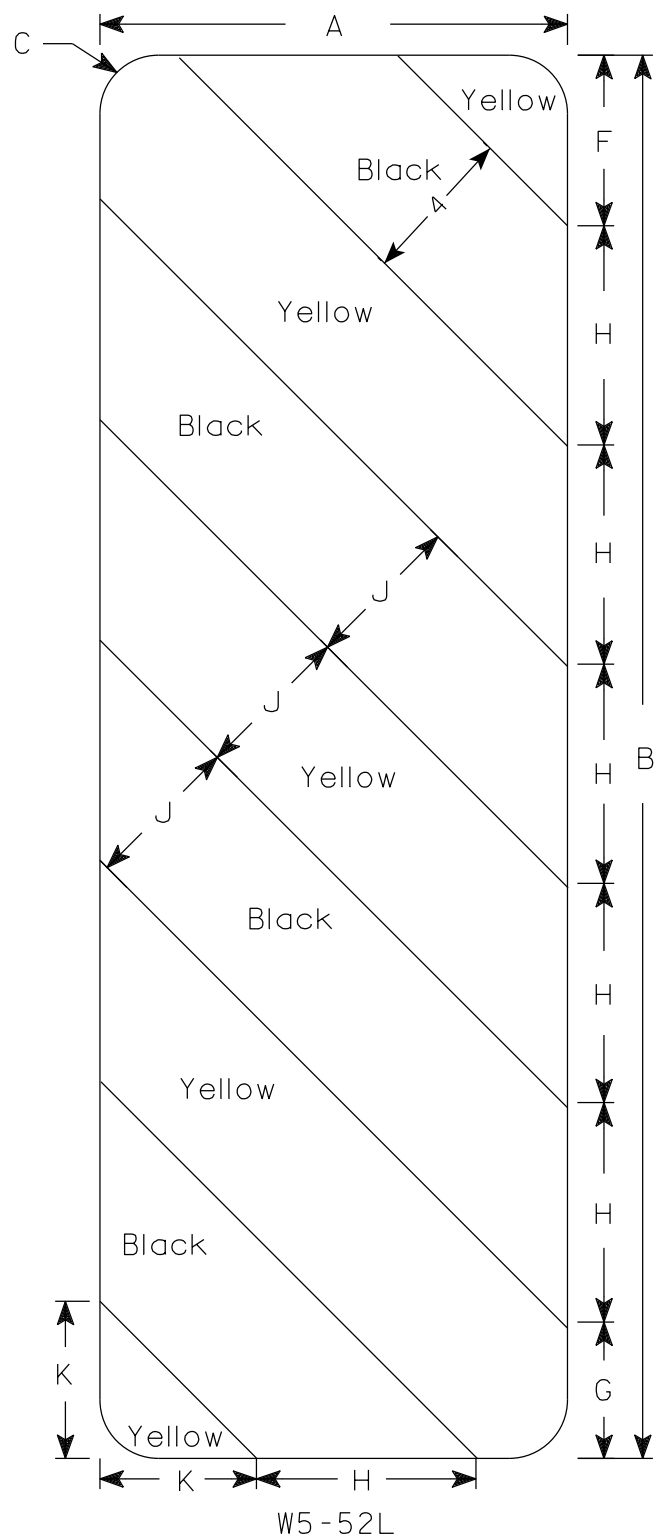
- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Yellow
 - Arrow & Border - Black
 - Stop Symbol - White Border on Red Background



ARROW DETAIL

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 7/8	1/2	5/8	6 1/4	11 1/4	2 3/8	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



NOTES

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

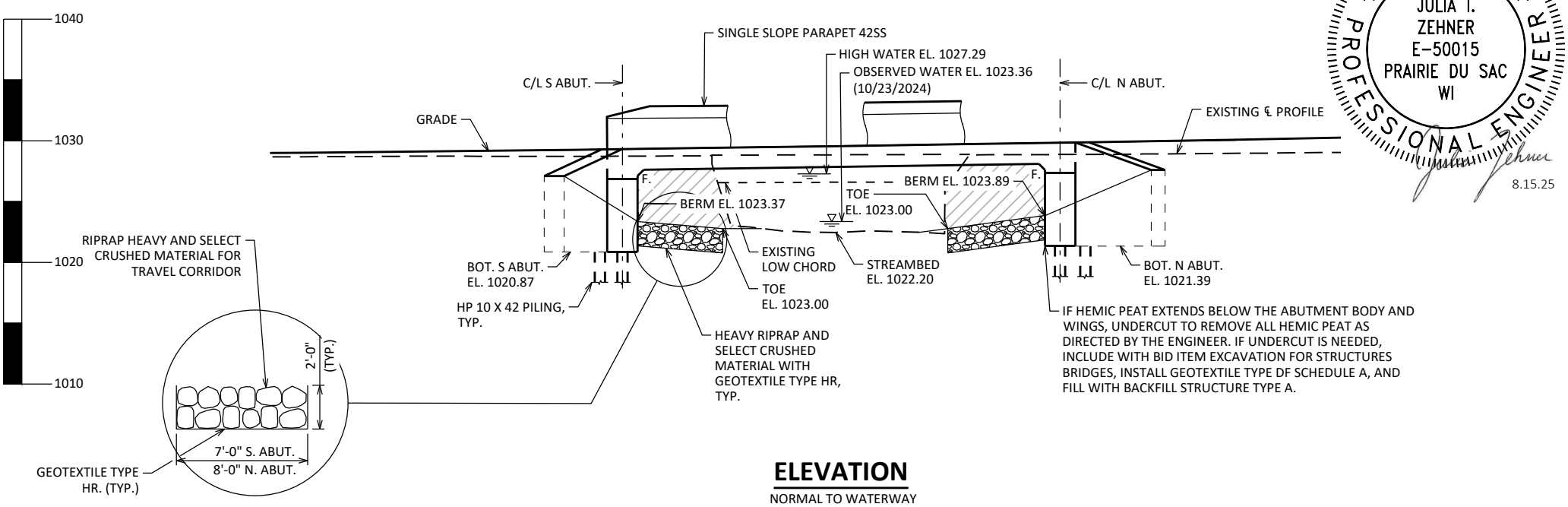
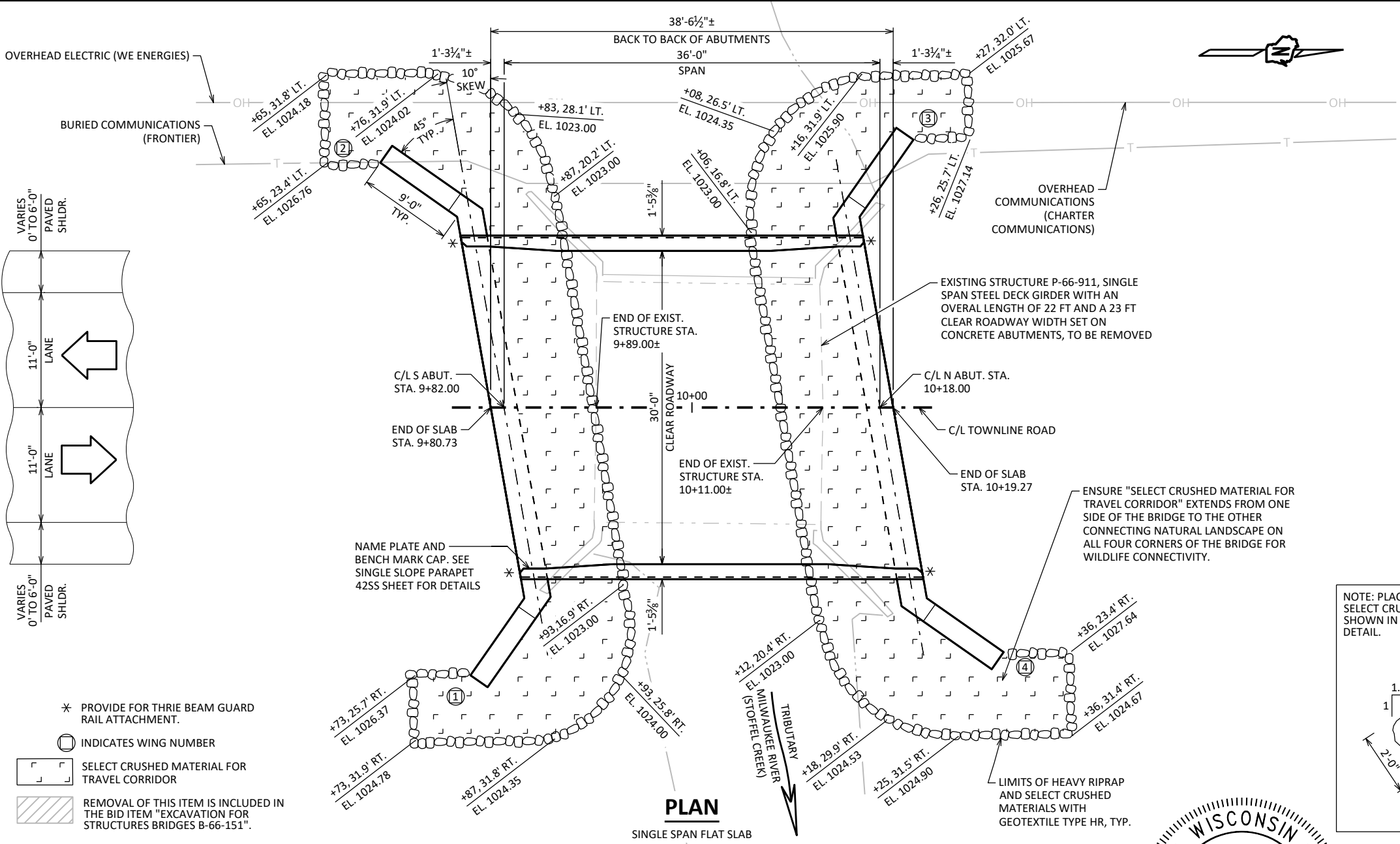
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54	1 1/2			6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4													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

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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



DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.10
OPERATING RATING FACTOR: RF = 1.43
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

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

MATERIAL PROPERTIES:

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

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

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 PILING 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 AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 15'-0" PREBORED, 20'-0" PILES AT THE S. ABUT., AND 20'-0" PILES IN WINGS 1 & 2. ESTIMATED 20'-0" PREBORED, 25'-0" PILES AT THE N. ABUT., AND 20'-0" PILES IN WINGS 3 & 4. (PREBORE DEPTHS & PILE LENGTHS MAY VARY)

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

TRAFFIC VOLUME

TOWNLINER ROAD
ADT (2026) = 460
ADT (2046) = 500
R.D.S. = 50 M.P.H.

HYDRAULIC DATA

100 YEAR FREQUENCY

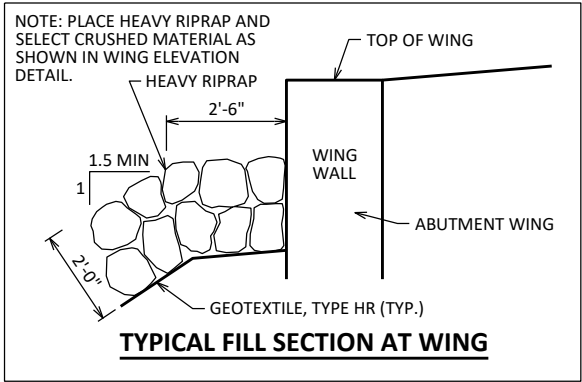
Q₁₀₀ = 360 C.F.S.
VEL. = 2.66 F.P.S.
HW₁₀₀ = EL. 1027.29
WATERWAY AREA = 135 SQ. FT.
DRAINAGE AREA = 7.11 SQ. MI.
ROADWAY OVERTOPPING = NA
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

Q₂ = 110 C.F.S.
VEL. = 1.56 F.P.S.
HW₂ = EL. 1025.19

LIST OF DRAWINGS

- GENERAL PLAN
- CROSS SECTION & QUANTITIES
- SUBSURFACE EXPLORATION
- SOUTH ABUTMENT
- SOUTH ABUTMENT DETAILS
- NORTH ABUTMENT
- NORTH ABUTMENT DETAILS
- SUPERSTRUCTURE
- SUPERSTRUCTURE DETAILS
- SINGLE SLOPE PARAPET 42SS



TYPICAL FILL SECTION AT WING

STRUCTURE DESIGN CONTACTS:

JULIA ZEHNER 608-355-8878
AARON BONK 608-261-0261

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

NO.	DATE	REVISION	BY
MSA ENGINEERING ARCHITECTURE SURVEYING FUNDING PLANNING ENVIRONMENTAL 1230 SOUTH BOULEVARD, BARABOO WI 53913 (608) 356-2771 www.msa-ps.com © MSA Professional Services, Inc.			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	JLR 12/02/25		DATE
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-66-151			
TOWNLINER ROAD OVER TRIBUTARY MILWAUKEE RIVER			
COUNTY	WASHINGTON	TOWN/CITY/VILLAGE	KEWASKUM
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION			
DESIGNED BY	DESIGNED CK'D	DRAWN BY	PLANS CK'D
NRT	JZ	EKK	NRT
GENERAL PLAN			SHEET 1 OF 10 56

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 ENTIRE 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.

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



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

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

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

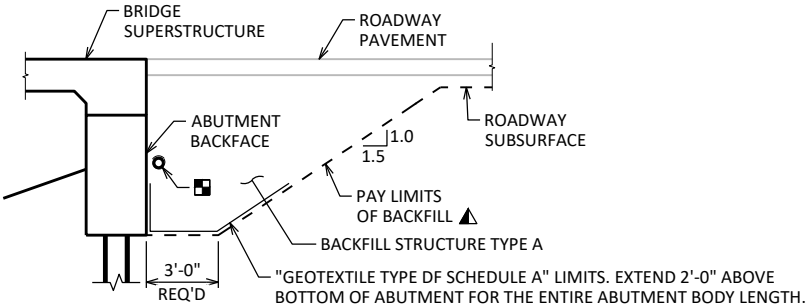
NO.	DATE	REVISION		BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION				
STRUCTURE B-66-151				
		DRAWN BY	EKK	PLANS CK'D NRT
CROSS SECTION & QUANTITIES			SHEET 2	
			57	



LOOKING UPSTATION
(PILING NOT SHOWN FOR CLARITY)



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)
 $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3')(0.5)(H1+H2+H+H)(W)$
 $V_{CY} = V_{CF}(EF)/27$
 $V_{TON} = V_{CY}(2.0)$



⚠ 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.

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	PIILING 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					
	FILLER	SIZE				1/2", 3/4"

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			

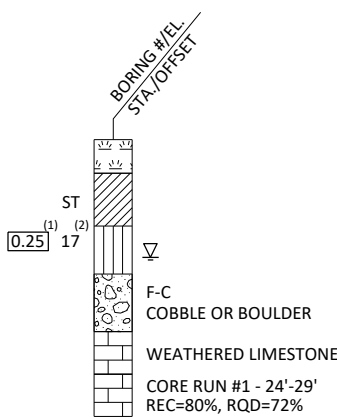
STATE PROJECT NUMBER

4824-03-72

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
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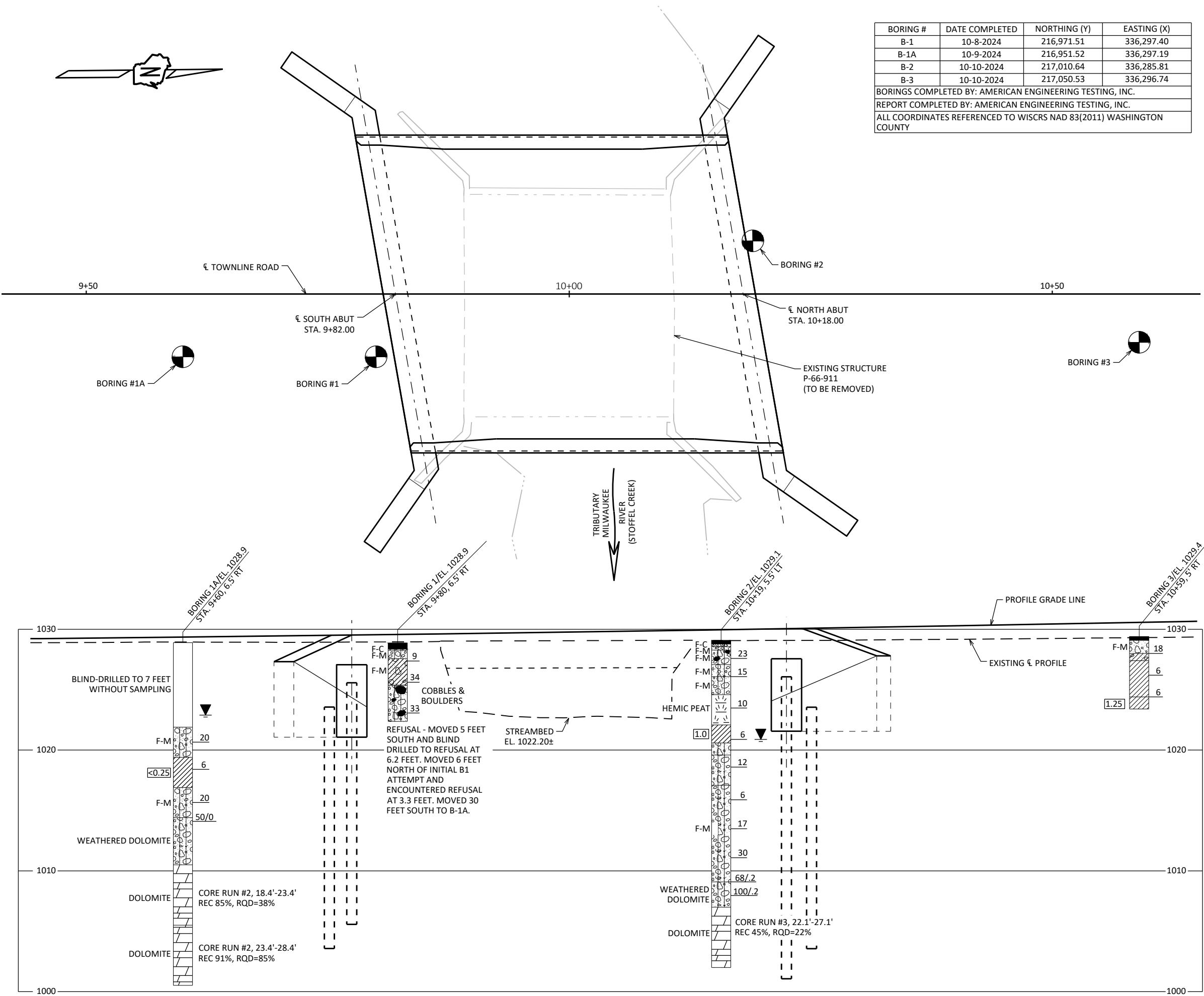
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

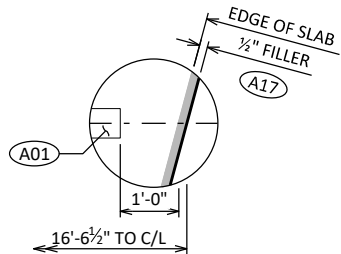
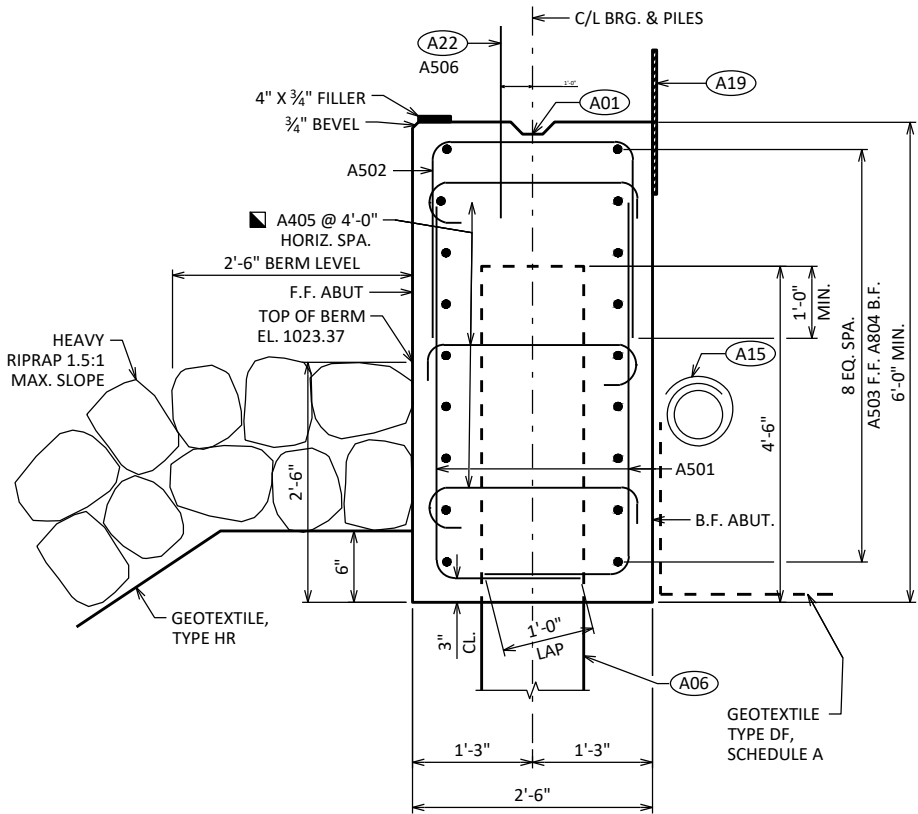
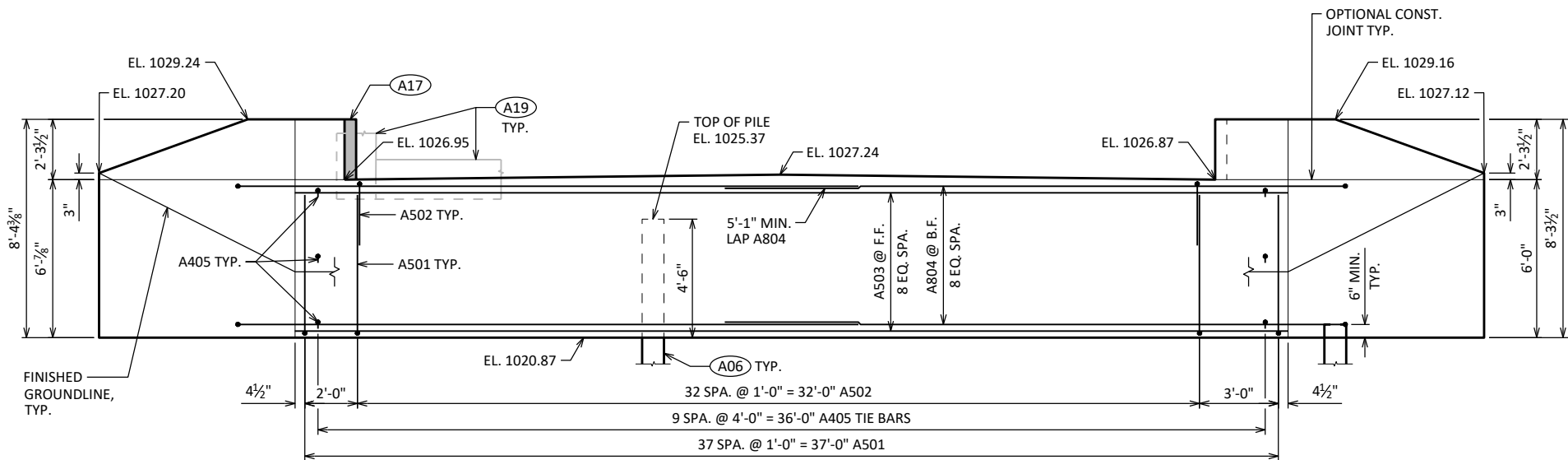
STRUCTURE B-66-151

DRAWN BY	EKK	PLANS CK'D	NRT
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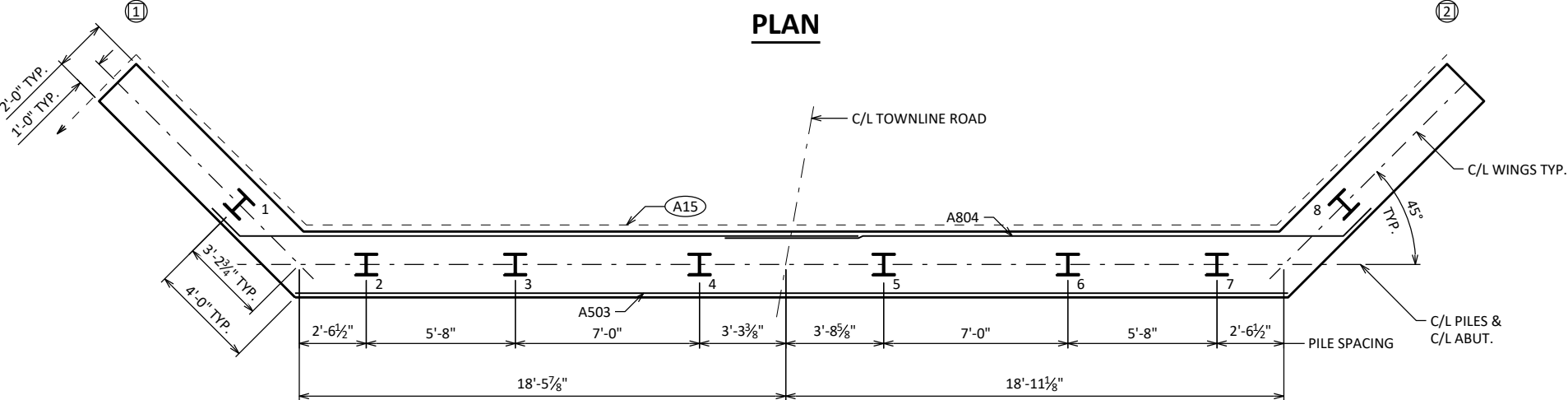
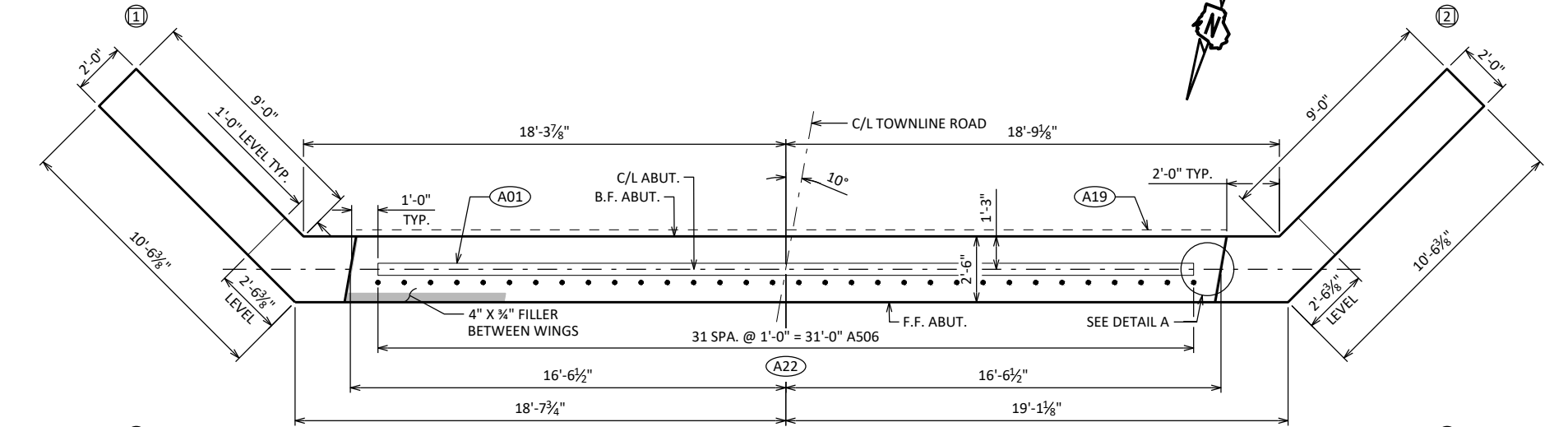
SUBSURFACE
EXPLORATION

SHEET 3
58





- 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** 1/2" FILLER: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 3/8" 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.

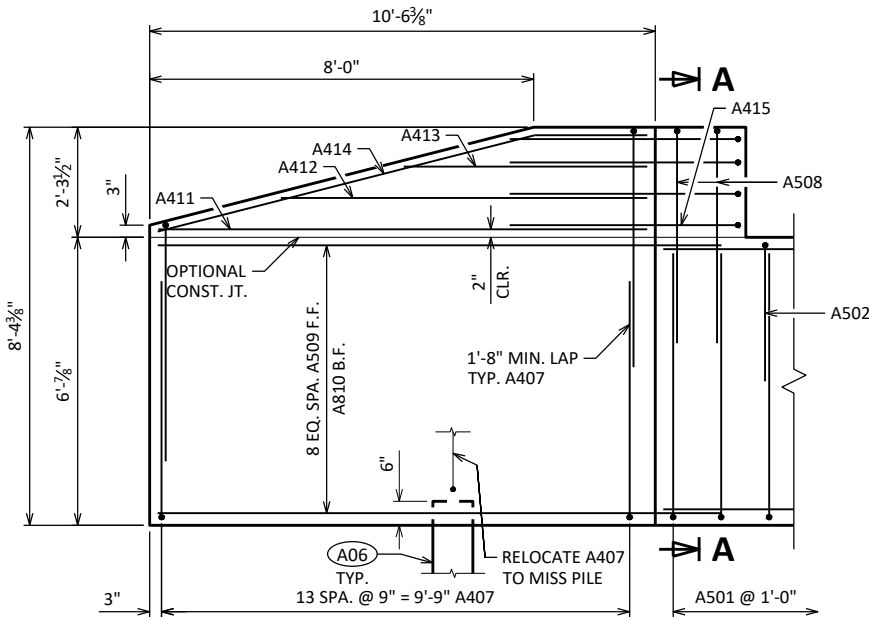


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-66-151			
DRAWN BY		EKK	PLANS CK'D NRT
SOUTH ABUTMENT		SHEET 4 59	

BILL OF BARS

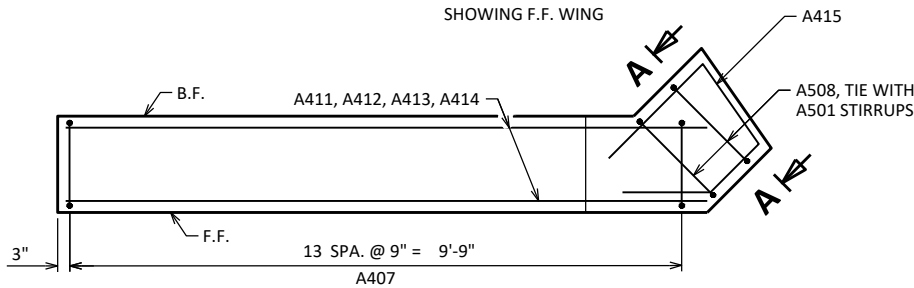
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

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



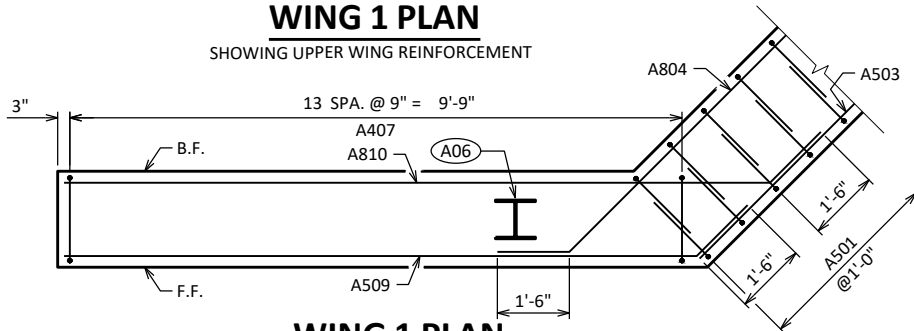
WING 1 ELEVATION

SHOWING F.F. WING



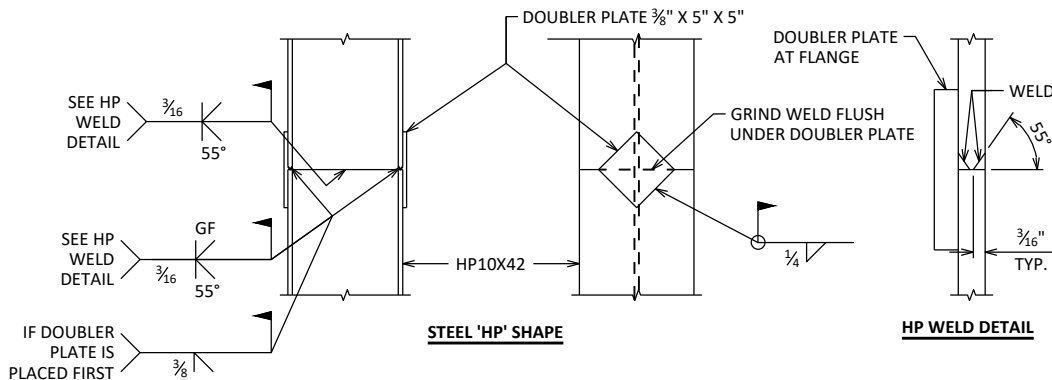
WING 1 PLAN

SHOWING UPPER WING REINFORCEMENT

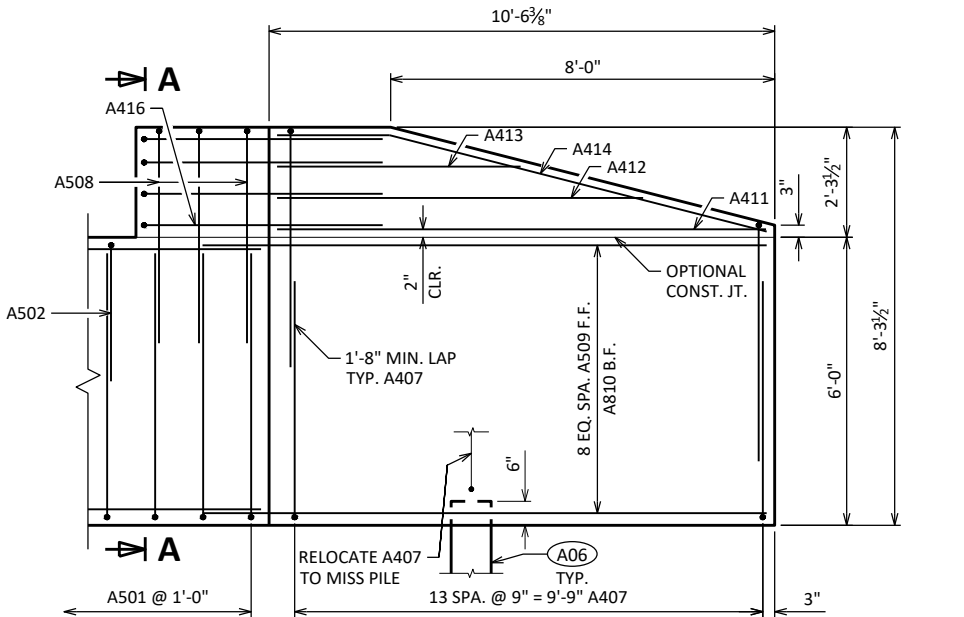


WING 1 PLAN

SHOWING LOWER WING REINFORCEMENT
WING 2 SIMILAR

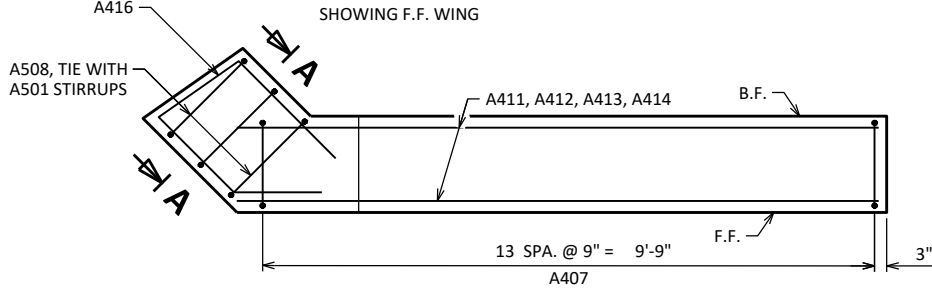


'HP' PILE DETAILS



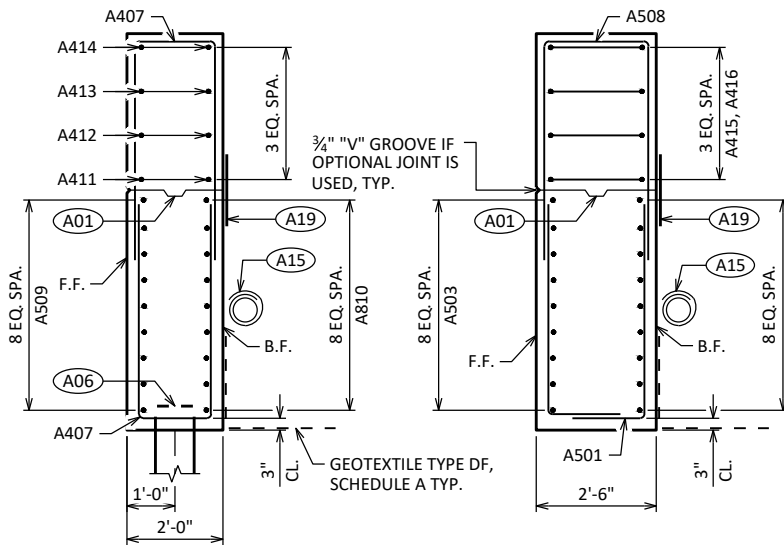
WING 2 ELEVATION

SHOWING F.F. WING



WING 2 PLAN

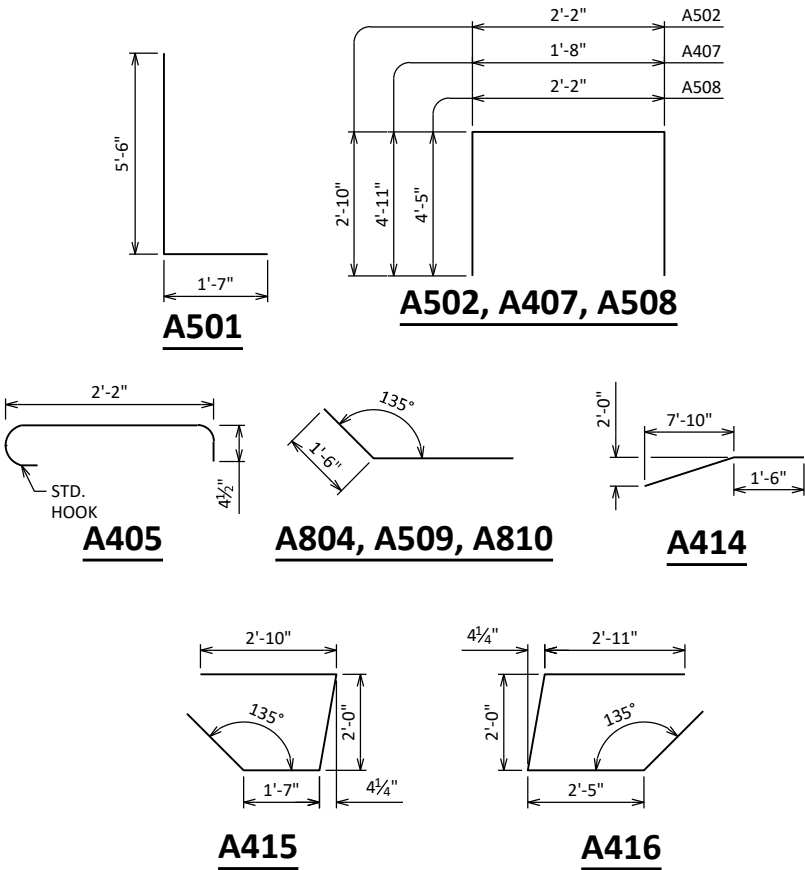
SHOWING UPPER WING REINFORCEMENT



SECTION THRU WING 1

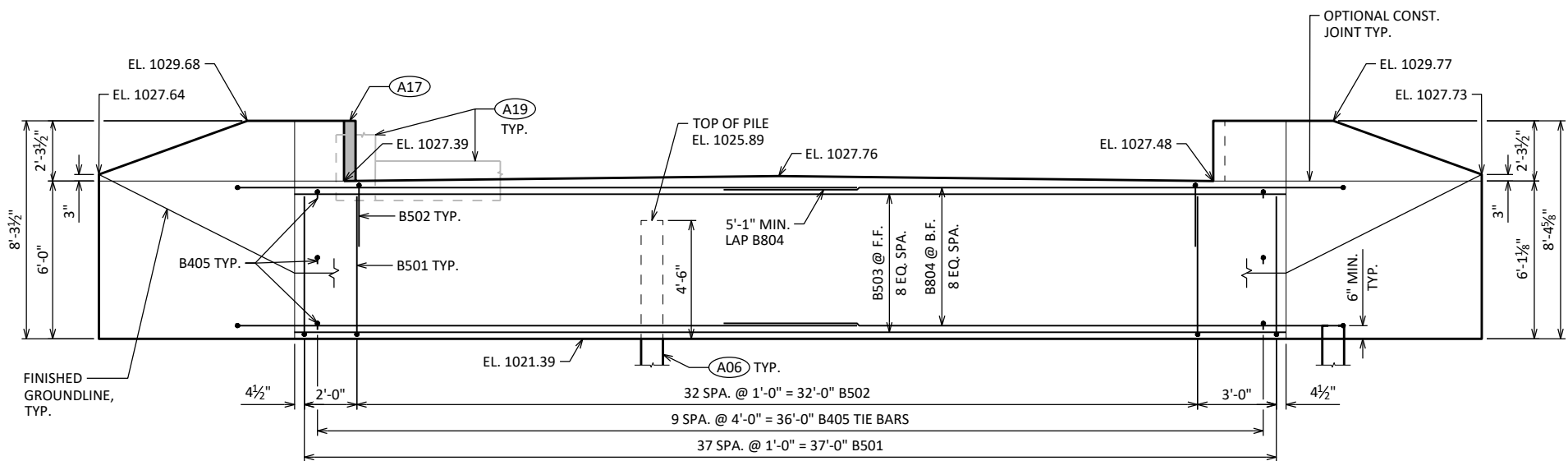
TYPICAL BOTH WINGS

SECTION A-A

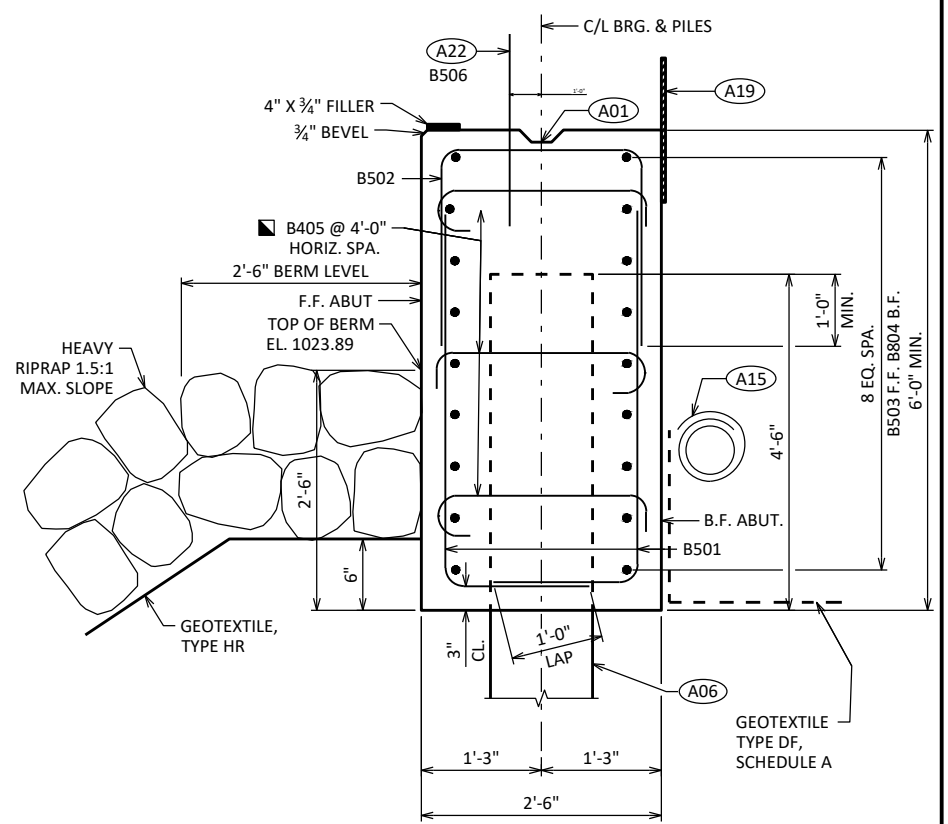


- (A01) OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
- (A06) SUPPORT ABUTMENT BODY AND WINGS ON HP 10 x 42 PILING, ESTIMATED 20 FT LONG SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO SOUND BEDROCK. PILE DRIVING IS NOT REQUIRED. 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".

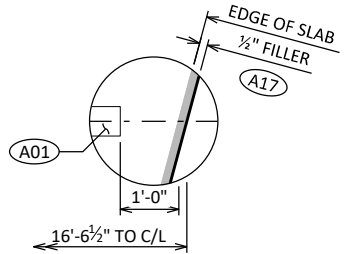
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-66-151			
DRAWN BY		EKK	PLANS CK'D NRT
SOUTH ABUTMENT DETAILS		SHEET 5 60	



ELEVATION
LOOKING UPSTATION

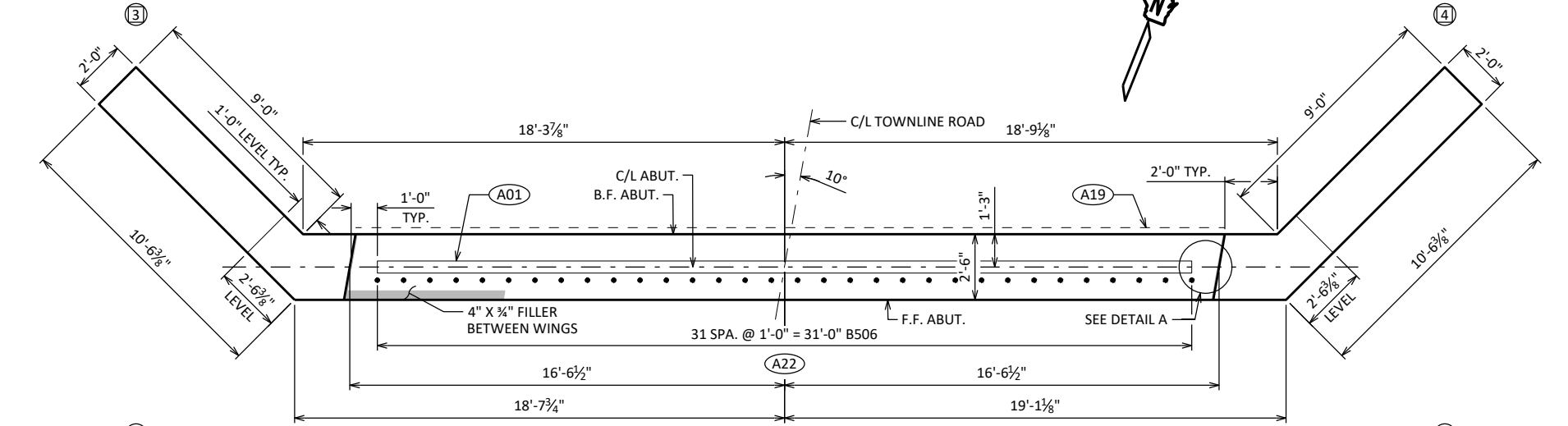


SECTION THRU BODY

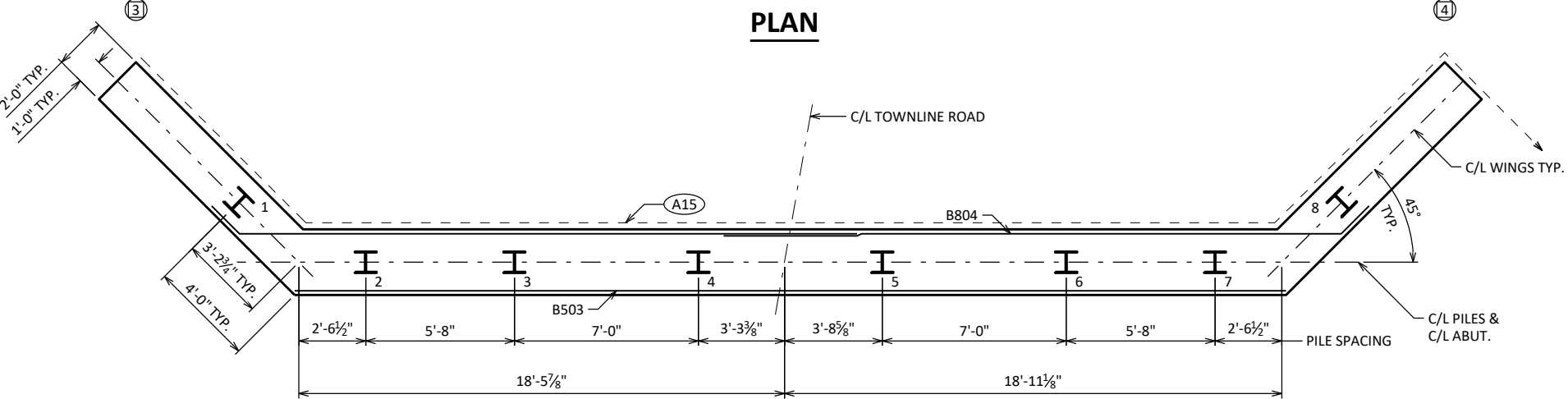


DETAIL A

- 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.
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- 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.



PLAN



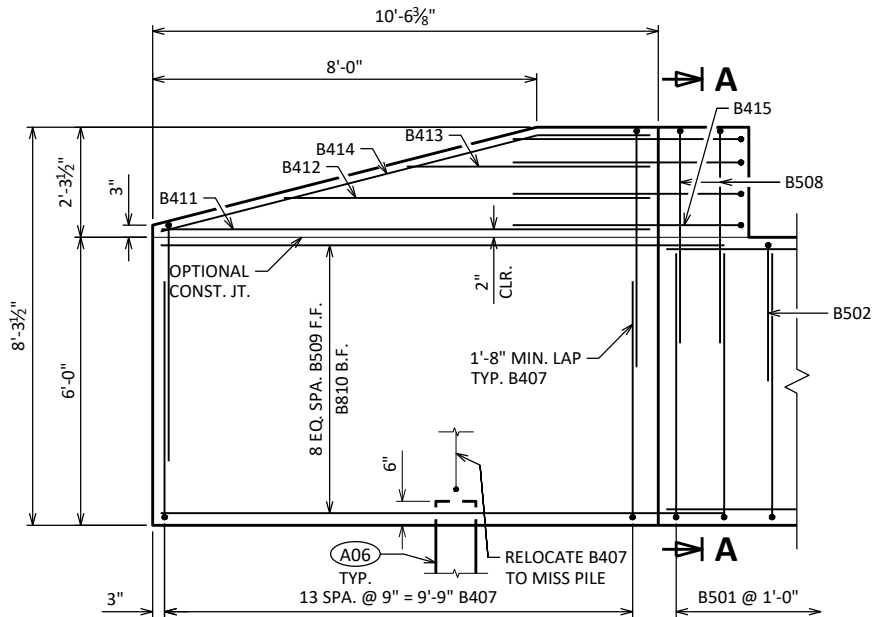
PILE PLAN

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

BILL OF BARS

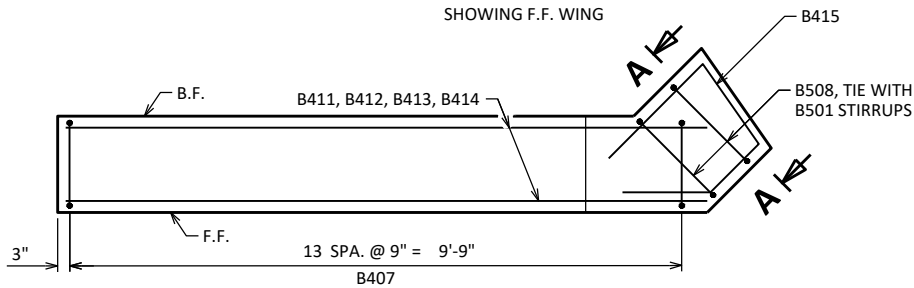
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
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B502		33	7'-7"	X		ABUT BODY STIRRUPS - TOP U-BAR
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B415	X	4	7'-11"	X		WING 3 UPPER HORIZ. CORNER
B416	X	4	8'-11"	X		WING 4 UPPER HORIZ. CORNER



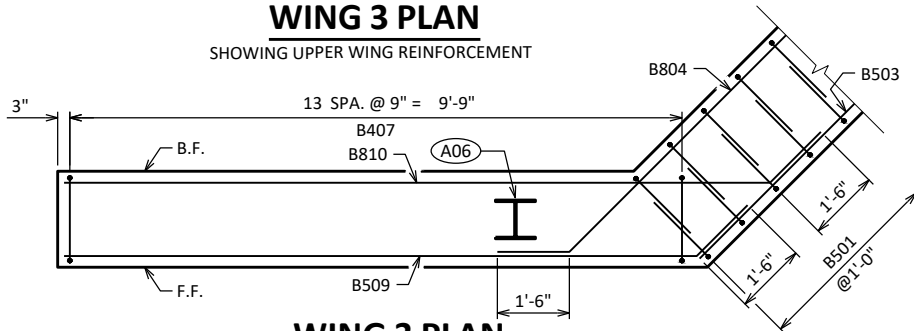
WING 3 ELEVATION

SHOWING F.F. WING



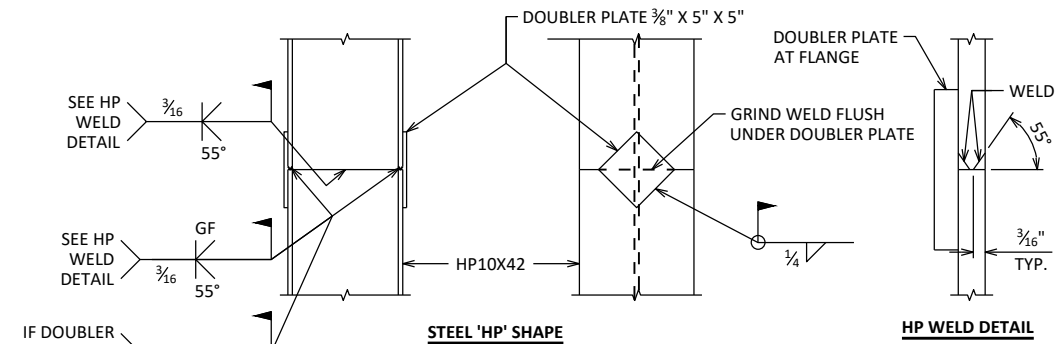
WING 3 PLAN

SHOWING UPPER WING REINFORCEMENT



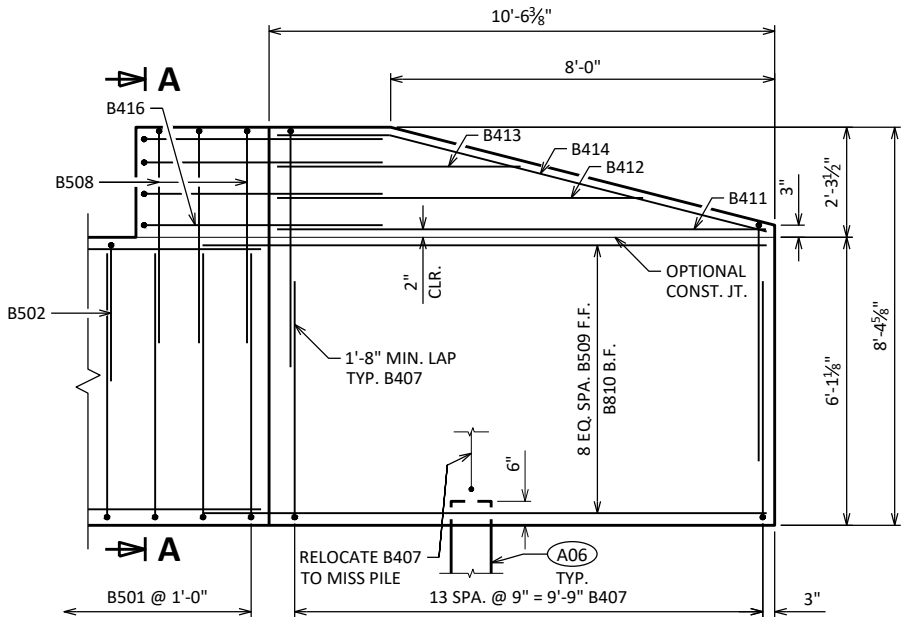
WING 3 PLAN

SHOWING LOWER WING REINFORCEMENT
WING 4 SIMILAR



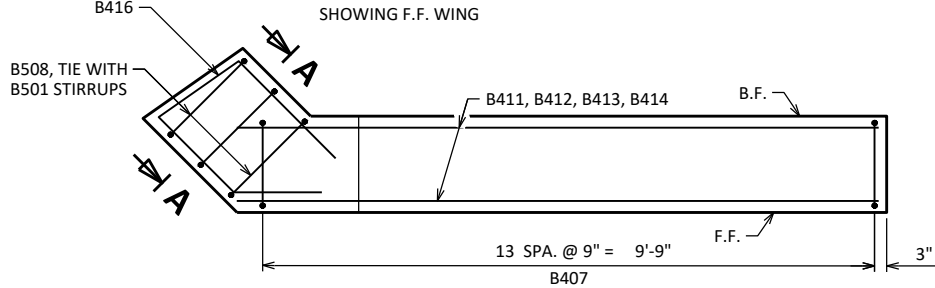
'HP' PILE DETAILS

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



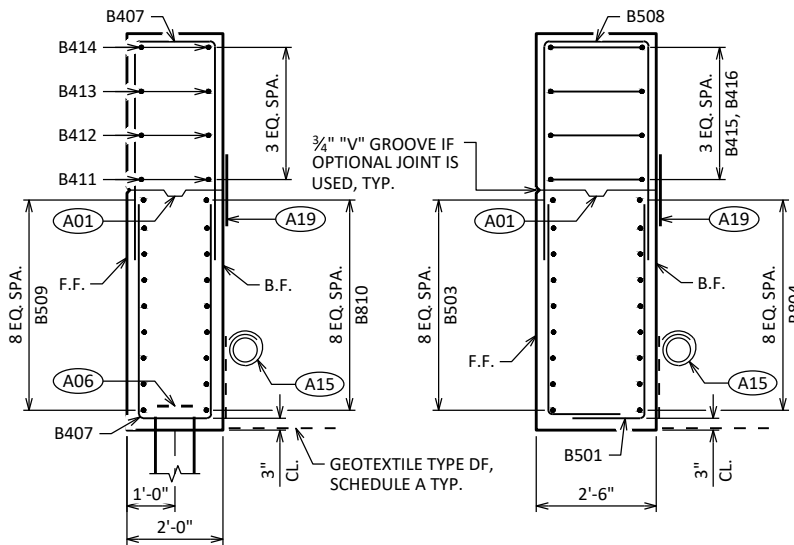
WING 4 ELEVATION

SHOWING F.F. WING



WING 4 PLAN

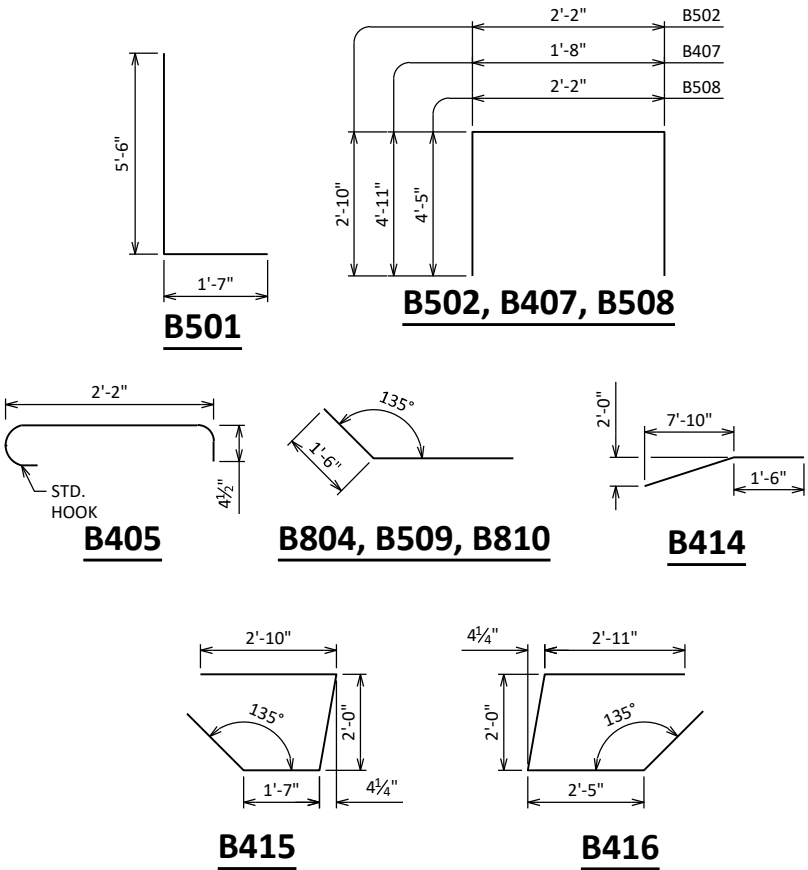
SHOWING UPPER WING REINFORCEMENT



SECTION THRU WING 3

TYPICAL BOTH WINGS

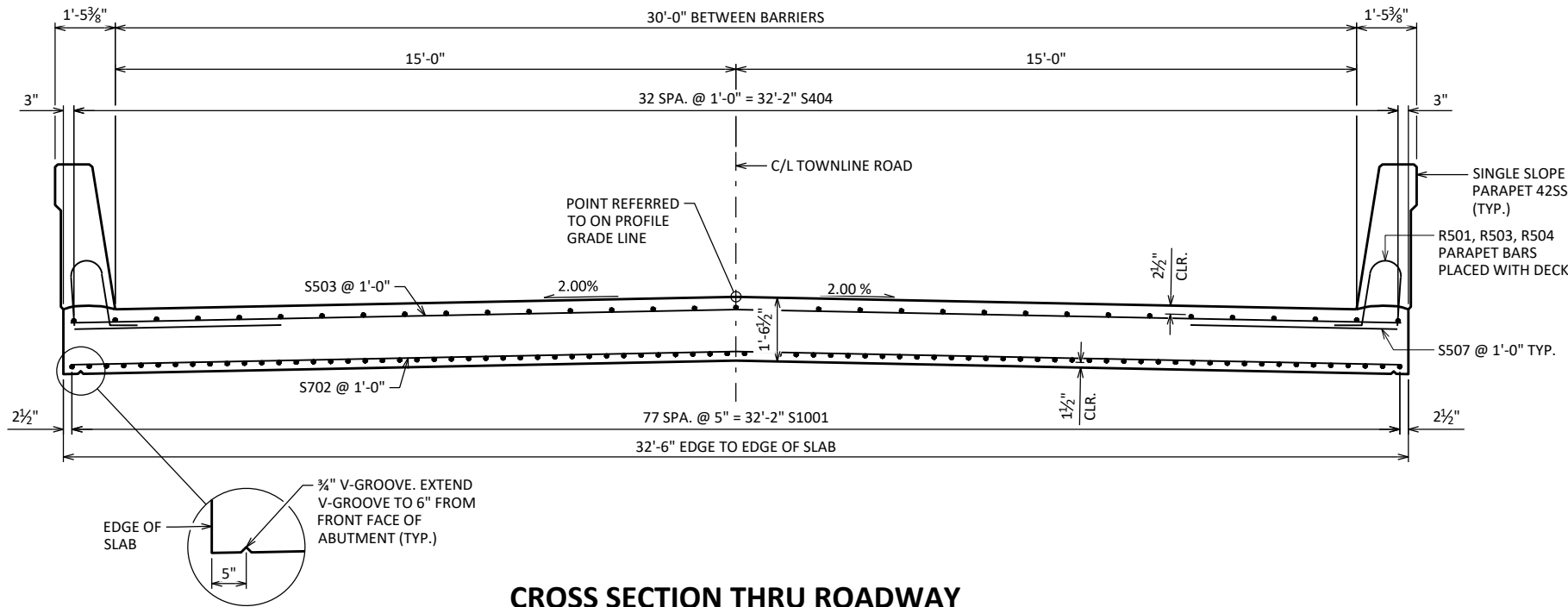
SECTION A-A



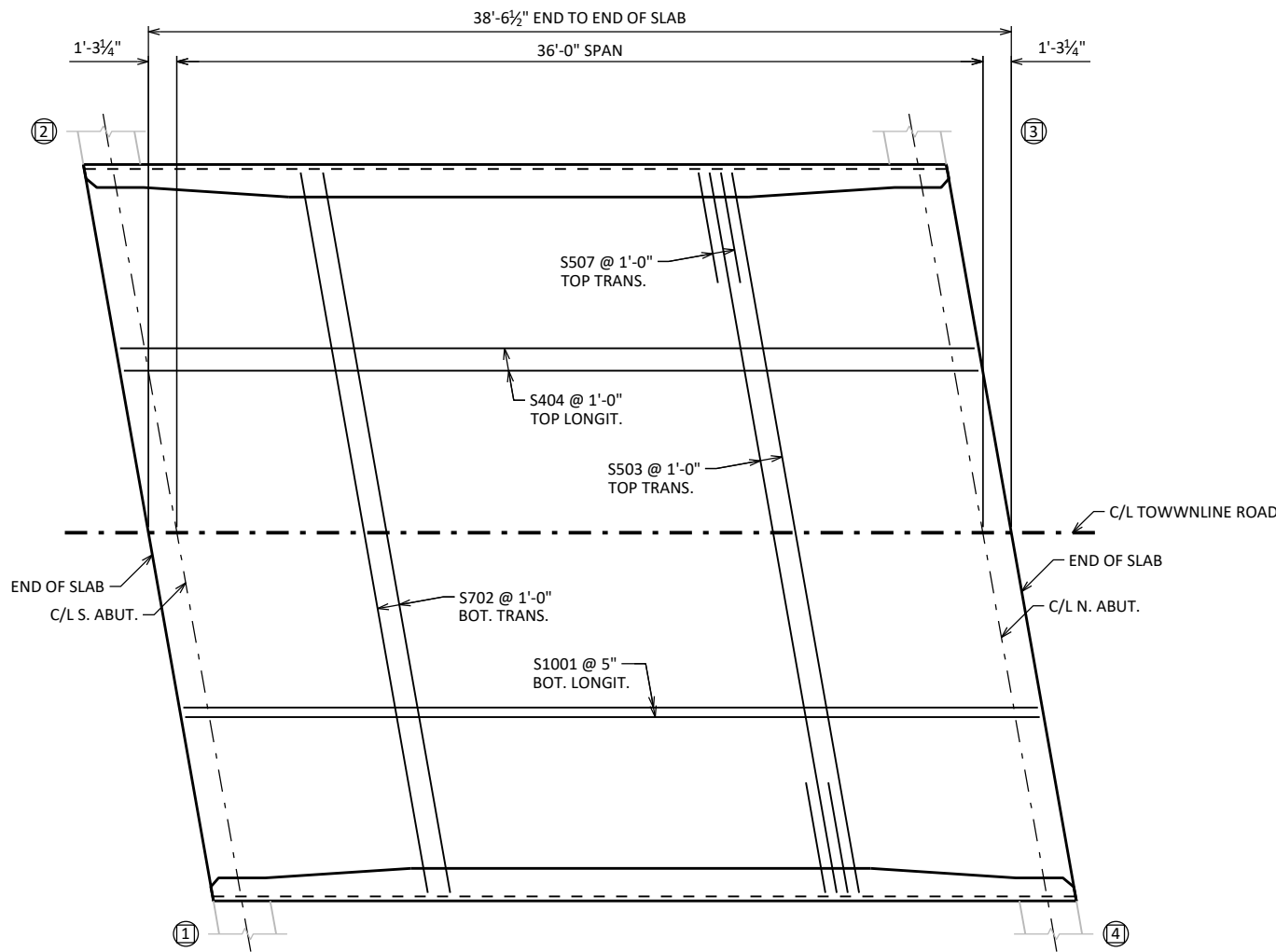
- (A01) OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
- (A06) SUPPORT ABUTMENT WINGS ON HP 10 x 42 PILING, ESTIMATED 20 FT LONG SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO SOUND BEDROCK. PILE DRIVING IS NOT REQUIRED. THE FACTORED 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.
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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	

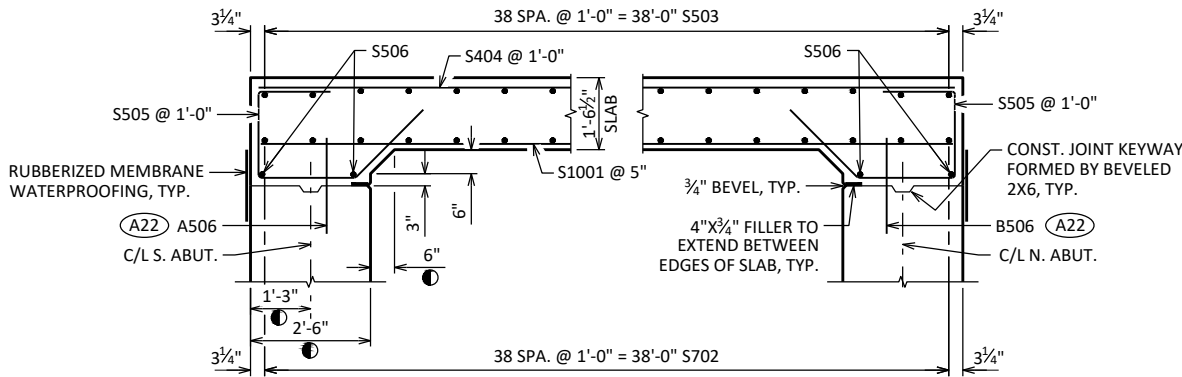
SCALE =



CROSS SECTION THRU ROADWAY



PLAN



LONGITUDINAL SECTION

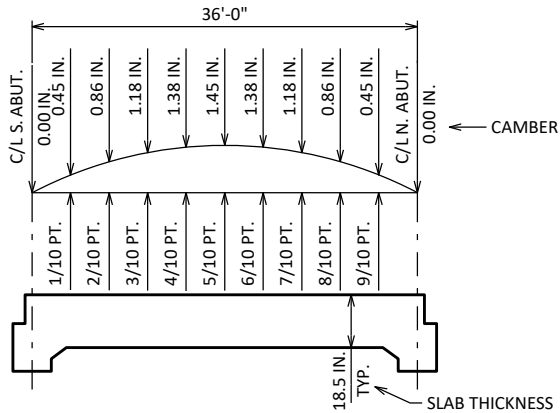
DIMENSIONS ARE GIVEN PARALLEL TO THE ROADWAY UNLESS OTHERWISE NOTED.

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

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



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CAMBER AND SLAB THICKNESS DIAGRAM

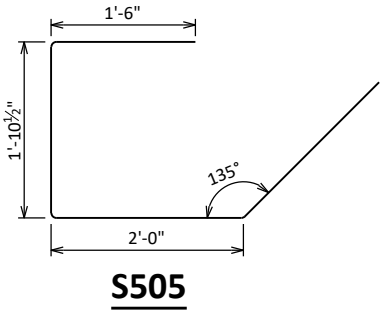
CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. PARAPETS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED, EXCEPT FOR STAGED CONSTRUCTION.

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
PLUS	FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS	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 (+).

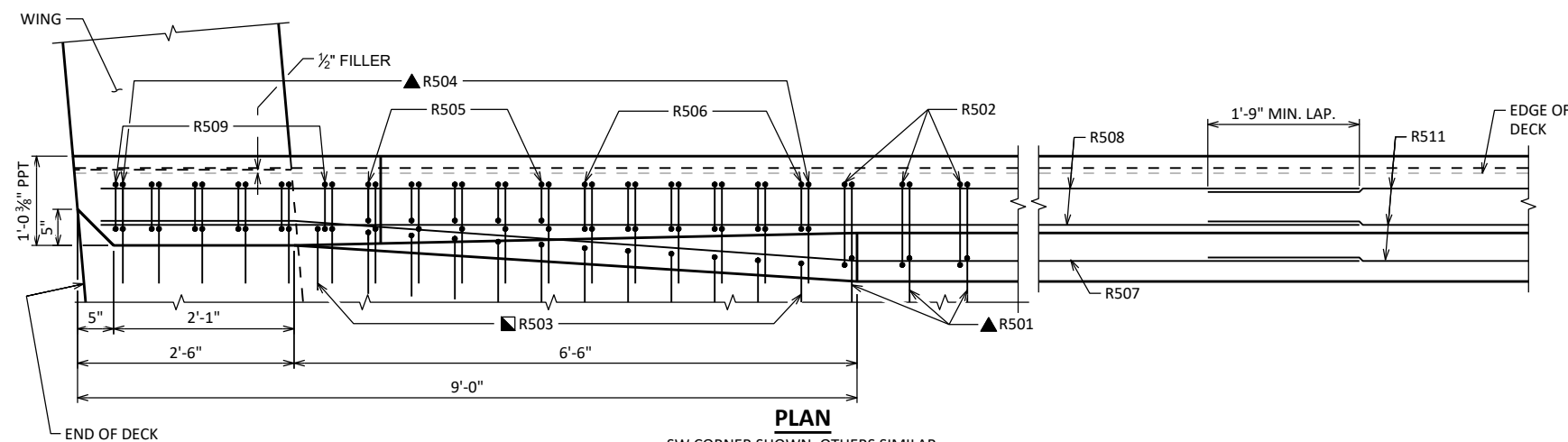
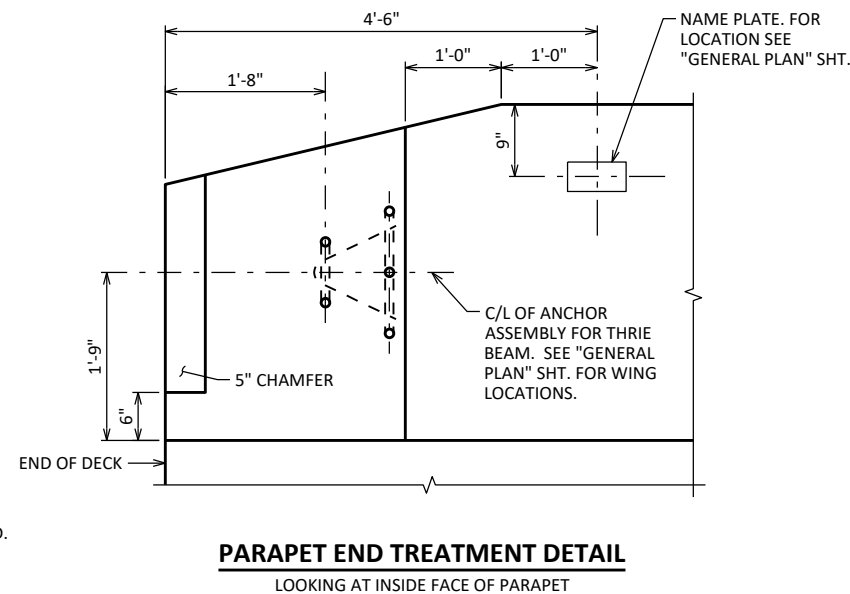
STATE PROJECT NUMBER
4824-03-72

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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-66-151			
		DRAWN BY	PLANS CK'D NRT
SUPERSTRUCTURE DETAILS		SHEET 9 64	

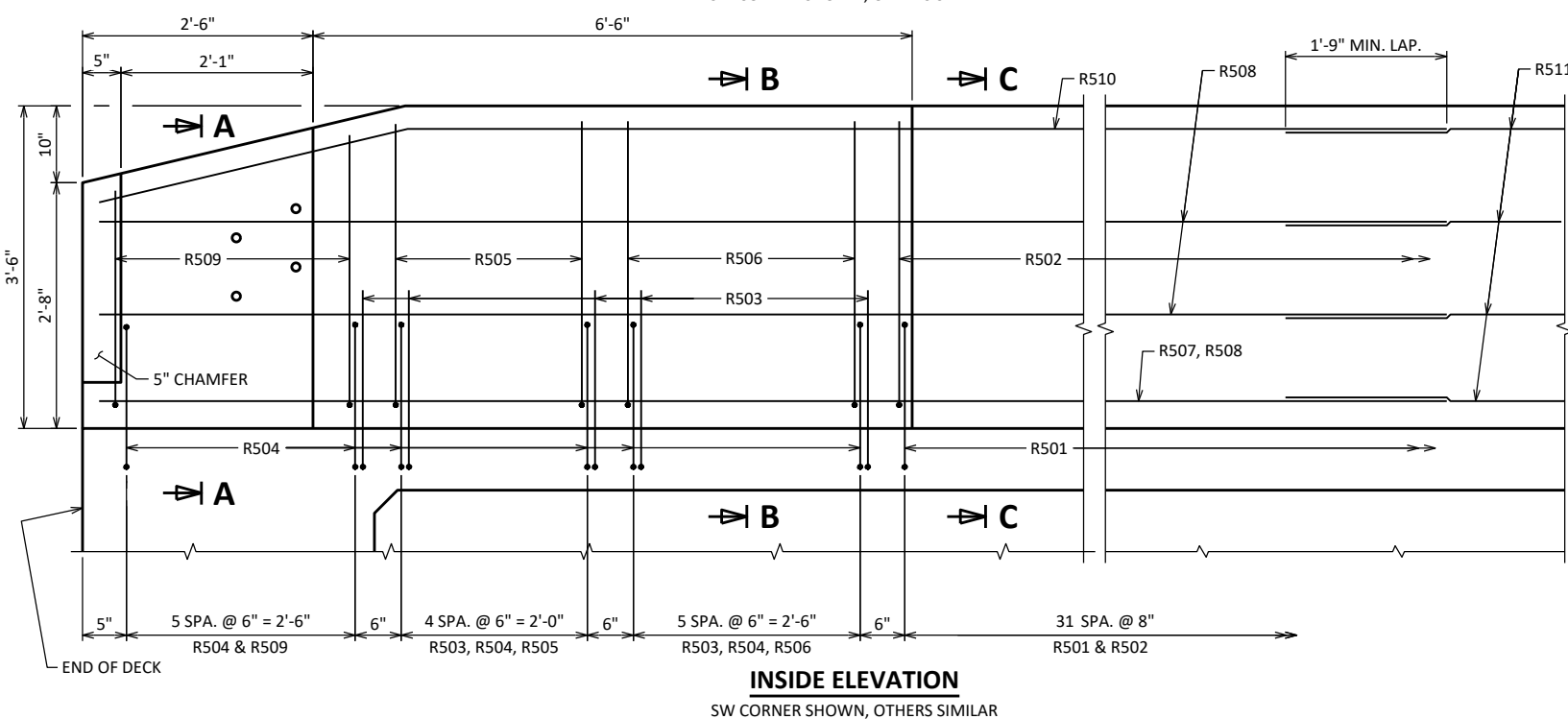
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

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

BUNDLE AND TAG EACH SERIES SEPARATELY.

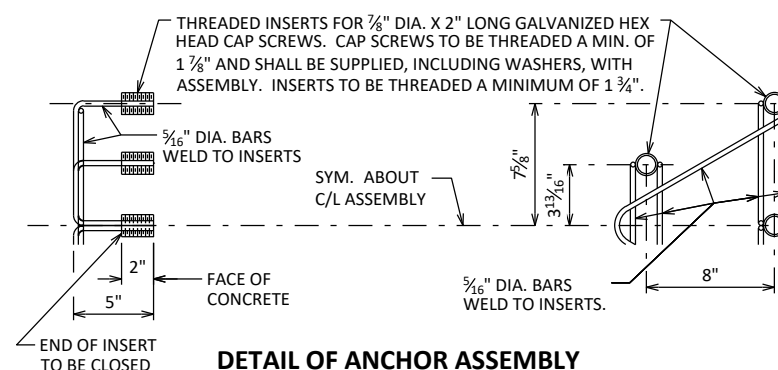
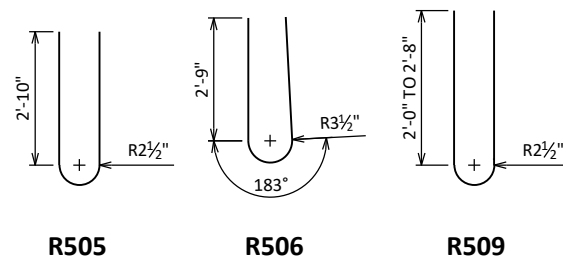
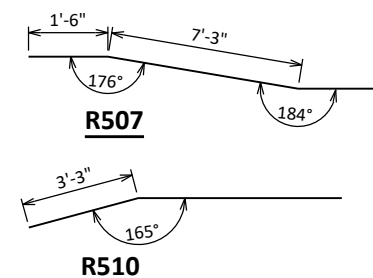
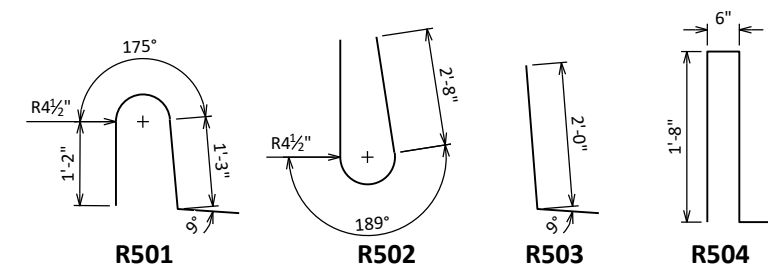


PLAN
SW CORNER SHOWN, OTHERS SIMILAR



INSIDE ELEVATION

SW CORNER SHOWN, OTHERS SIMILAR



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.

- ⦿ CONST. JOINT - STRIKE OFF AS SHOWN
- ▣ USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.
- ▲ R501, R503, AND R504 BARS TO BE TIED TO SUPERSTRUCTURE STEEL BEFORE SUPERSTRUCTURE IS POURED.

NO.	DATE	REVISION	BY
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STRUCTURE		B-66-151	
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SINGLE SLOPE PARAPET 42SS		SHEET 10	
		65	

PROJECT I.D. 4824-03-72 EARTHWORK SUMMARY
TOWNLINE ROAD

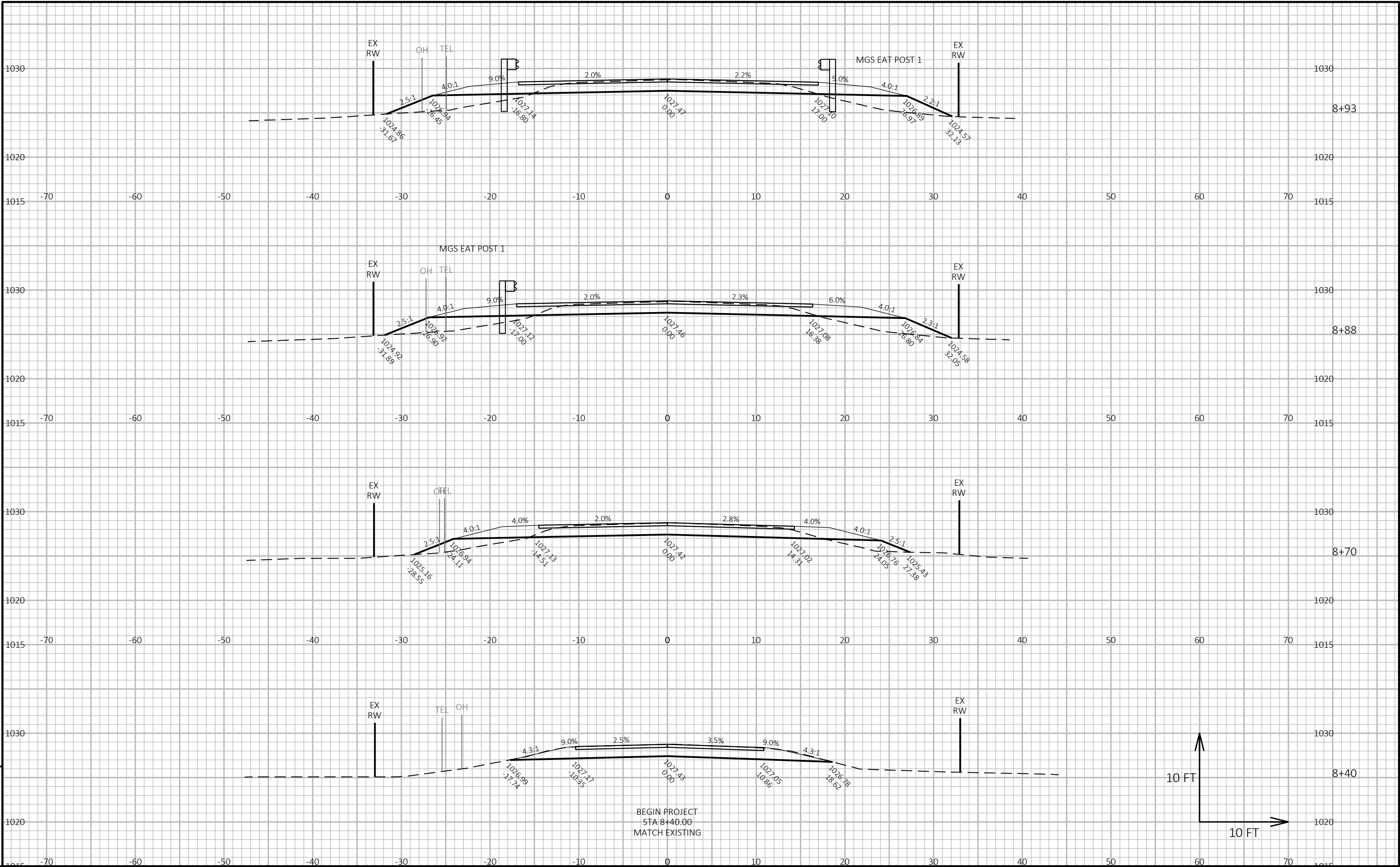
STA	EXCAVATION	FILL (1) CY	EXPANDED		BORROW CY
	COMMON CY		FILL (1)(2) CY	WASTE (1) CY	
8+40.00					
	51	9	12	39	-39
8+70.00					
	29	16	21	8	-8
8+87.99					
	8	6	8	0	0
8+93.43					
	30	22	29	1	-1
9+12.99					
	8	6	8	0	0
9+18.43					
	28	23	30	-2	2
9+37.99					
	7	6	8	-1	1
9+43.43					
	9	7	9	0	0
9+50.00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

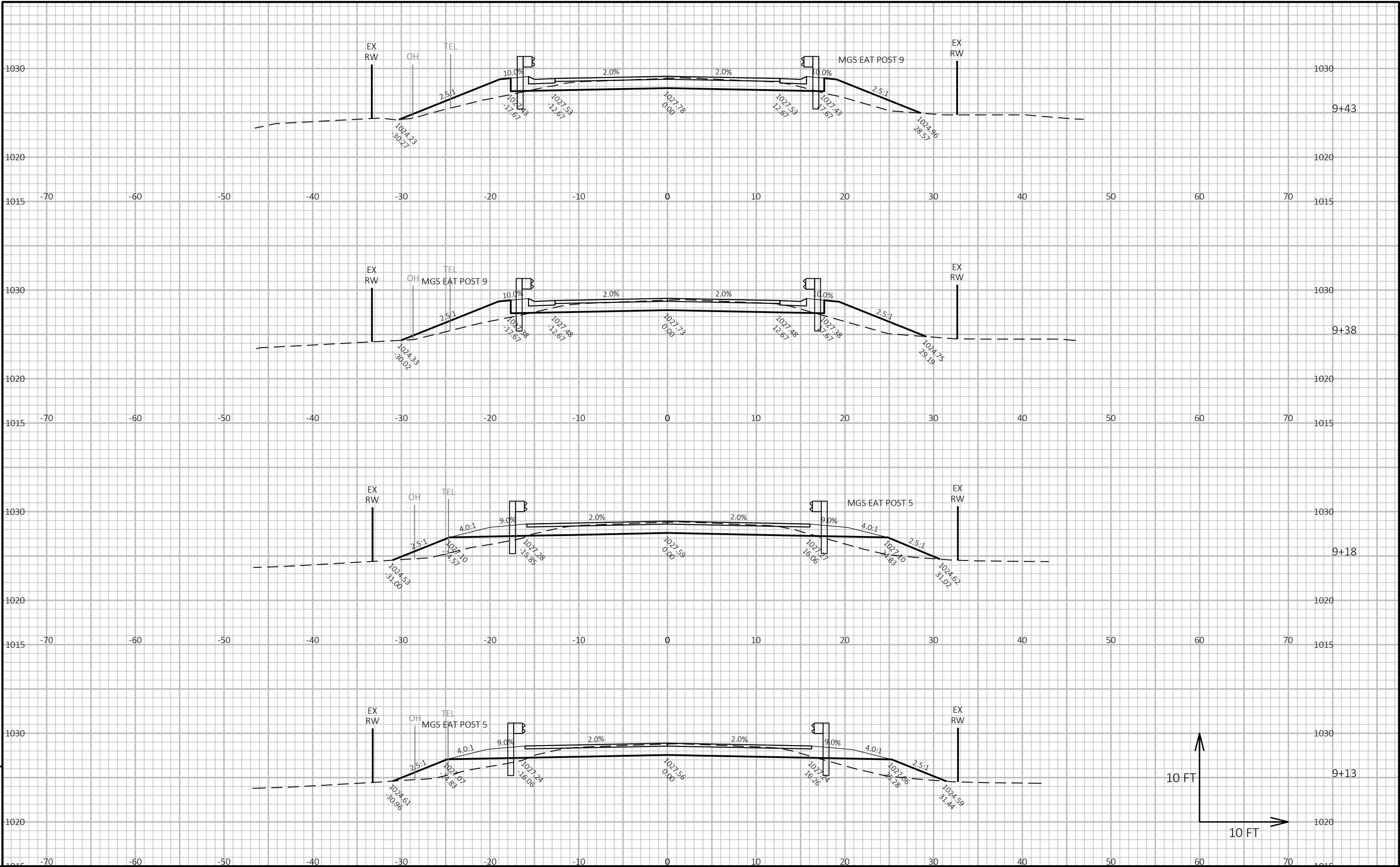
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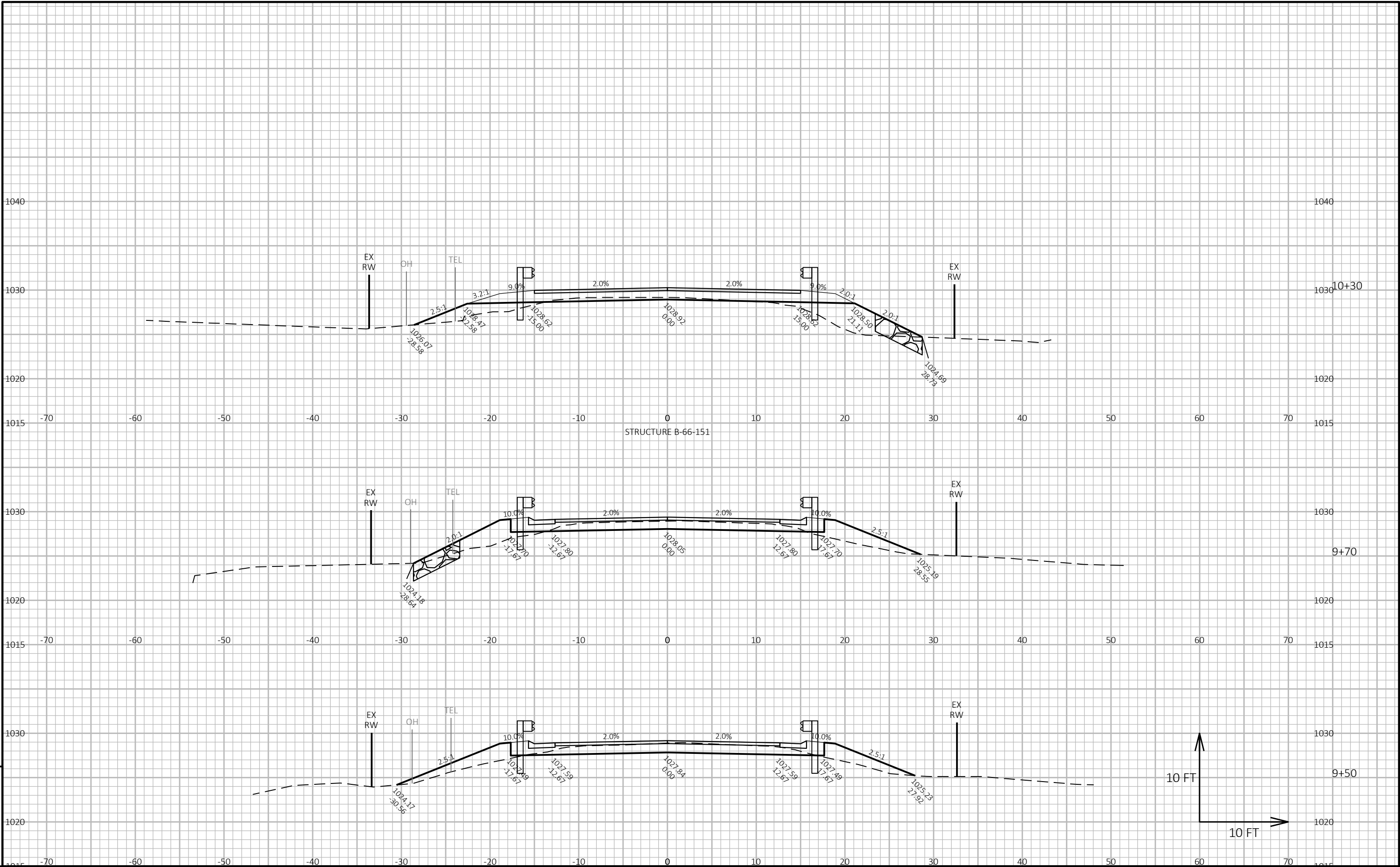
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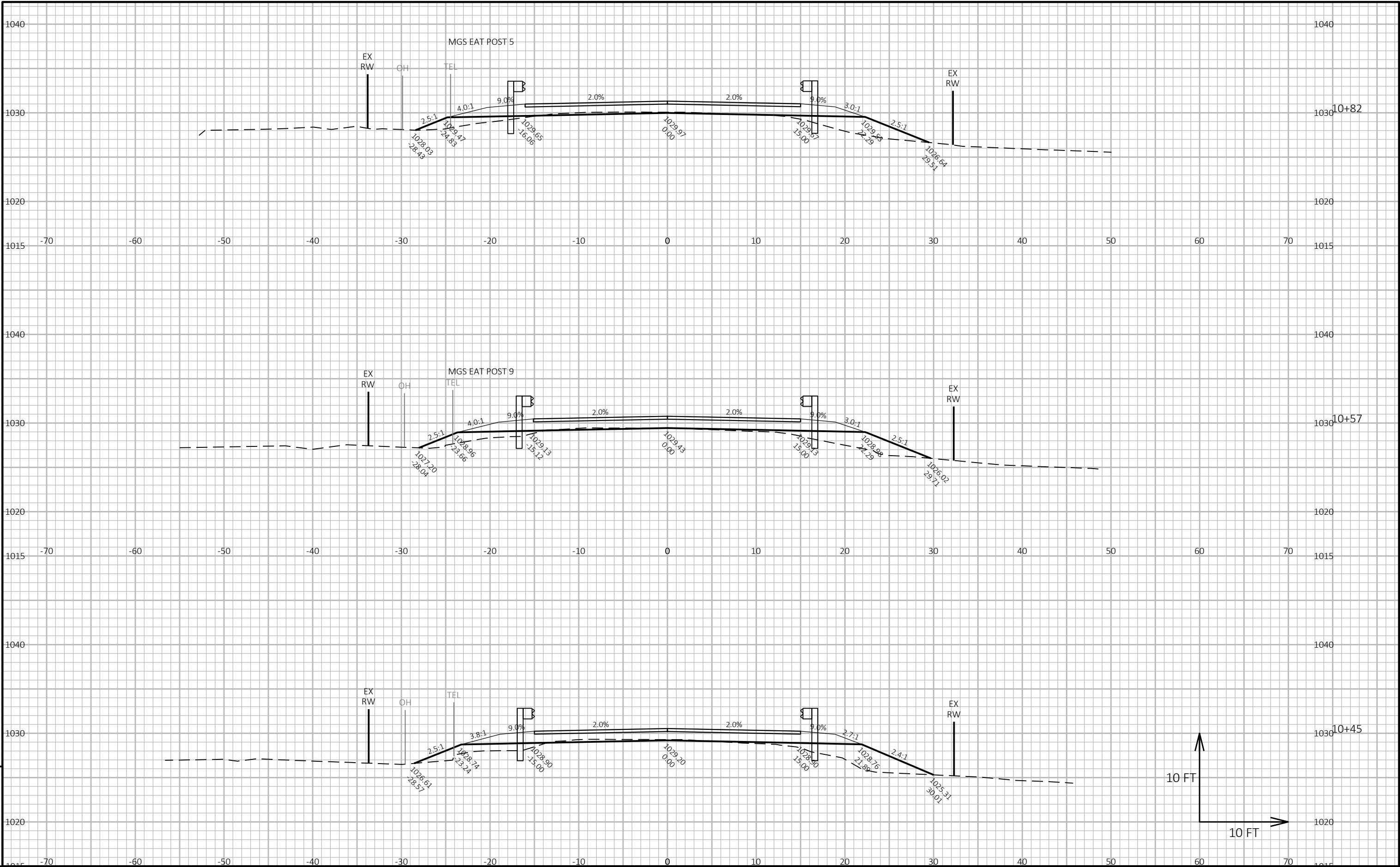
PROJECT I.D. 4824-03-72 EARTHWORK SUMMARY
TOWNLINE ROAD

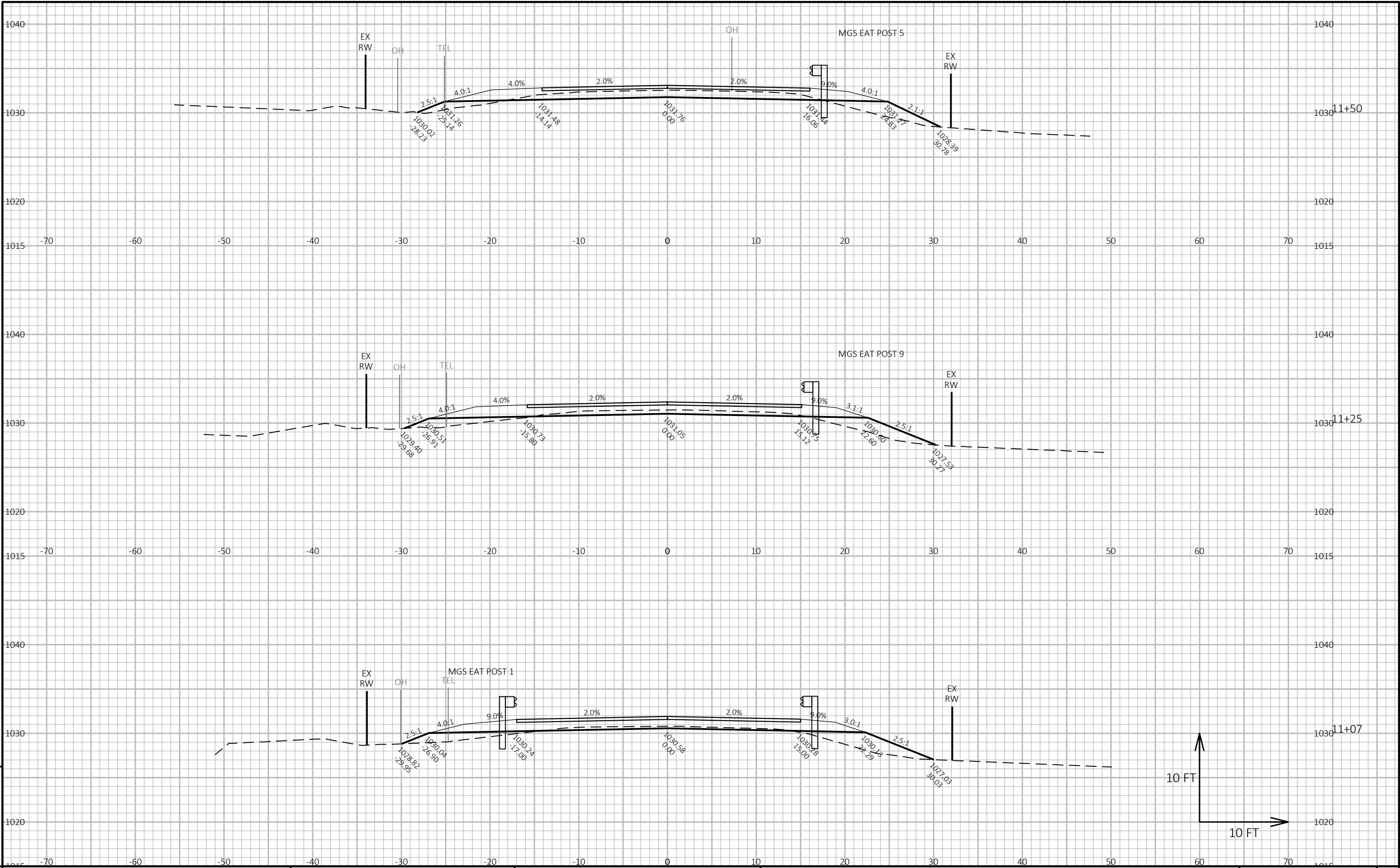
STA	EXCAVATION	FILL (1) CY	EXPANDED	WASTE (1) CY	BORROW
	COMMON CY		FILL (1)(2) CY		CY
BRIDGE STRUCTURE B-66-151					
10+29.86					
	7	19	25	-18	18
10+45.00					
	4	14	18	-14	14
10+56.57					
	10	26	34	-24	24
10+81.57					
	12	24	31	-19	19
11+06.57					
	12	16	21	-9	9
11+24.51					
	24	18	23	1	-1
11+49.51					
	35	17	22	13	-13
11+74.51					
	45	12	16	29	-29
12+00.00					
	30	2	3	27	-27
12+15.00					
SUBTOTALS					
SOUTH APPROACH	195	115	151	44	-44
NORTH APPROACH	179	148	193	-14	14
UNUSABLE PAVEMENT (3)					96
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"					

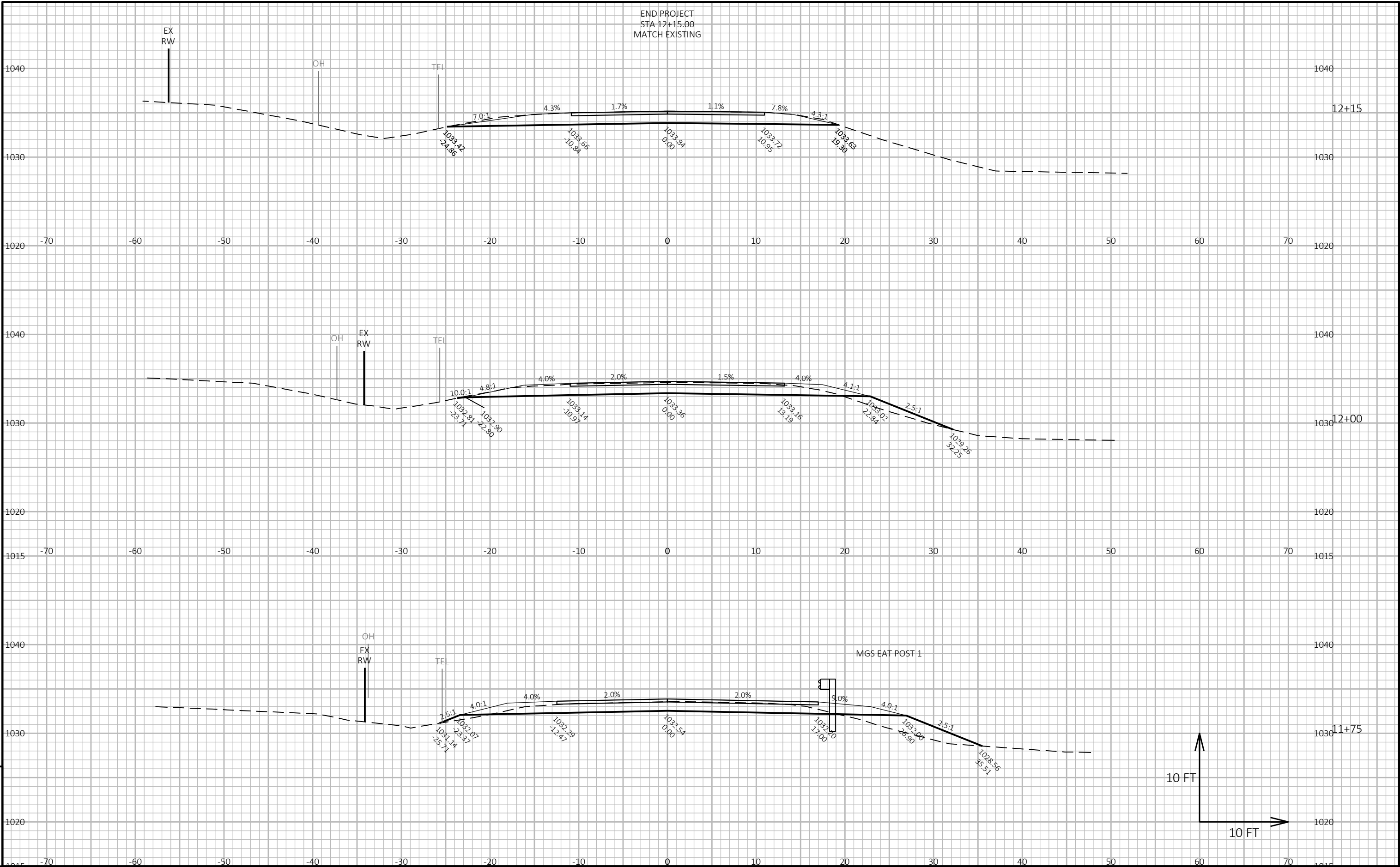












Notes



Wisconsin Department of Transportation

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