

MKE
PROJECT ID:
WITH: N/A

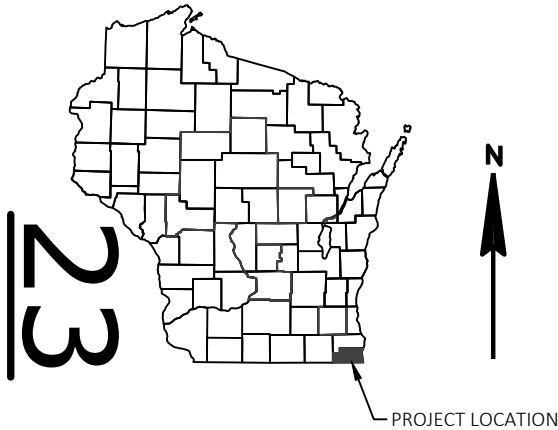
3765-05-70

COUNTY:
KENOSHA

November 2024
ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right-of-Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 76



DESIGN DESIGNATION 3765-05-00

A.A.D.T.	2025	=	1928
A.A.D.T.	2045	=	2065
D.H.V.		=	265
D.D.		=	62/38
T.		=	7.7%
DESIGN SPEED		=	50 MPH
ESALS		=	330,000

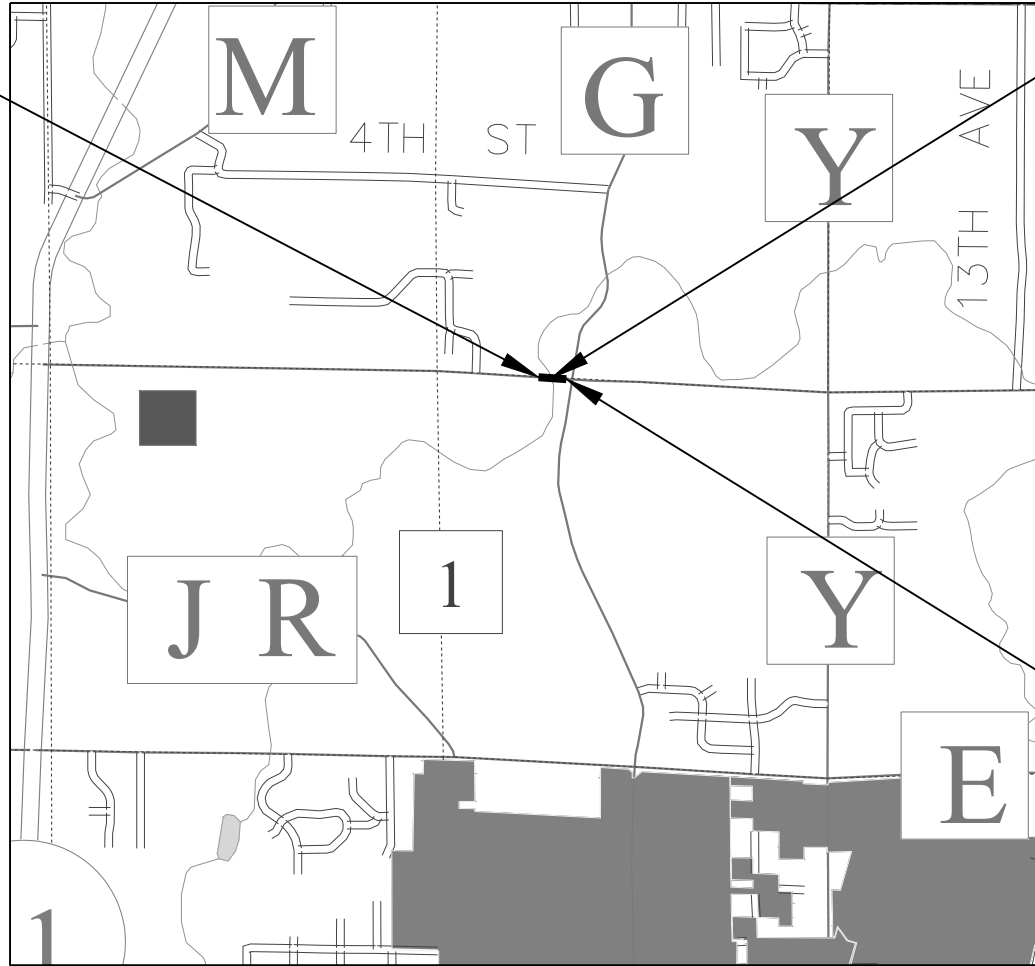
CONVENTIONAL SYMBOLS

<u>PLAN</u>	
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	

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

BEGIN PROJECT
STA. 12+20
Y = 245 744.927
X = 2 546 571.759

T-2-N



R-22-E R-23-E

STRUCTURE
P-30-0021

END PROJECT
STA. 15+36

LAYOUT
SCALE 0 0.5 MI

TOTAL NET LENGTH OF CENTERLINE = 0.060 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN STATE PLANE COORDINATE SYSTEM GRID, SOUTH-ZONE 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 OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

V SOMERS, 7TH ST

PIKE RIVER BRIDGE P30-021

CTH A
KENOSHA COUNTY

STATE PROJECT NUMBER
3765-05-70

STATE PROJECT

3765-05-70

FEDERAL PROJECT

PROJECT

WISC 2025037

CONTRACT

1

ACCEPTED FOR

KENOSHA COUNTY

7/23/2024
Date

Gregory J. Boldt, PE
(Signature and Title of Official)

Highway Commissioner

ORIGINAL PLANS PREPARED BY

WESTBROOK
Associated Engineers, Inc.
619 EAST HOXIE STREET
P.O. BOX 429
SPRING GREEN, WISCONSIN 53588
PHONE (608) 588-7866
FAX (608) 588-7954



DATE: 7/17/24
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	WESTBROOK ASSOCIATED ENGINEERS, INC.
Designer	WESTBROOK ASSOCIATED ENGINEERS, INC.
Project Manager	GREG HAFEMAN, P.E.
Regional Examiner	SE REGION
Regional Supervisor	BRIAN BOOTHBY, P.E.

APPROVED FOR THE DEPARTMENT
DATE: 07/23/2023
(Signature)

E

STANDARD ABBREVIATIONS

ABUT	ABUTMENT	CWT	HUNDRED WEIGHT	STH	STATE TRUNK HIGHWAY
AC	ACRE	IN DIA	INCH DIAMETER	STA	STATION
AGG	AGGREGATE	INL	INLET	SE	SUPERELEVATION
AH	AHEAD	ID	INSIDE DIAMETER	SL OR S/L	SURVEY LINE
∠	ANGLE	INTERS	INTERSECTION	TEMP	TEMPORARY
AADT	ANNUAL AVERAGE DAILY TRAFFIC	IH	INTERSTATE HIGHWAY	TI	TEMPORARY INTEREST
AEW	APRON ENDWALL	INV	INVERT	TLE	TEMPORARY LIMITED EASEMENT
ASPH	ASPHALTIC	JT	JOINT	TC	TOP OF CURB
BK	BACK	LT	LEFT	TL OR T/L	TRANSIT LINE
BC	BACK OF CURB	LHF	LEFT HAND FORWARD	T	TRUCKS (PERCENT OF)
BAD	BASE AGGREGATE DENSE	L	LENGTH OF CURVE	TYP	TYPICAL
BL OR B/L	BASE LINE	LF	LINEAR FOOT	USH	UNITED STATES HIGHWAY
BM	BENCH MARK	LC	LONG CHORD OF CURVE	VAR	VARIABLE
CB	CATCH BASIN	LS	LUMP SUM	VC	VERTICAL CURVE
CL OR C/L	CENTER LINE	MGAL	ONE THOUSAND GALLONS	VPC	VERTICAL POINT OF CURVATURE
Δ	CENTRAL ANGLE OR DELTA	MH	MANHOLE	VPI	VERTICAL POINT OF INTERSECTION
CE	COMMERCIAL ENTRANCE	ML OR M/L	MATCH LINE	VPT	VERTICAL POINT OF TANGENCY
CONC	CONCRETE	NOM	NOMINAL	W	WEST
CSW	CONCRETE SIDEWALK	NC	NORMAL CROWN	WB	WESTBOUND
CONST	CONSTRUCTION	NB	NORTHBOUND		
CP	CONTROL POINT	NO	NUMBER		
CO	COUNTY	OD	OUTSIDE DIAMETER		
CTH	COUNTY TRUCK HIGHWAY	PAVT	PAVEMENT		
CY	CUBIC YARD	PLE	PERMANENT LIMITED EASEMENT		
CP	CULVERT PIPE	PC	POINT OF CURVATURE		
C & G	CURB AND GUTTER	PI	POINT OF INTERSECTION		
D	DEGREE OF CURVE	PT	POINT OF TANGENCY		
DHV	DESIGN HOUR VOLUME	PCC	PORTLAND CEMENT CONCRETE		
DIA	DIAMETER	LB	POUND		
DD	DIRECTIONAL DISTRIBUTION	PSI	POUNDS PER SQUARE INCH		
DE	DRAINAGE EASEMENT	PE	PRIVATE ENTRANCE		
DWY	DRIVEWAY	PROJ	PROJECT		
EA	EACH	PL	PROPERTY LINE		
EB	EASTBOUND	PRW	PROPOSED RIGHT OF WAY		
EL OR ELEV	ELEVATION	R	RADIUS		
EMB	EMBANKMENT	RL OR R/L	REFERENCE LINE		
EW	ENDWALL	REQD	REQUIRED		
EAT	ENERGY ABSORBING TERMINAL	RT	RIGHT		
ESALS	EQUIVALENT SINGLE AXLE LOADS	RHF	RIGHT HAND FORWARD		
EXC	EXCAVATION	R/W	RIGHT OF WAY		
EBS	EXCAVATION BELOW SUBGRADE	RD	ROAD		
EXIST	EXISTING	RDWY	ROADWAY		
FERT	FERTILIZER	SHLDR	SHOULDER		
FE	FIELD ENTRANCE	SW	SIDEWALK		
FL OR F/L	FLOW LINE	SB	SOUTHBOUND		
FT	FOOT	SPECS	SPECIFICATIONS		
FTMS	FREE TRAFFIC MANAGEMENT SYSTEM	SF	SQUARE FEET		
HES	HIGH EARLY STRENGTH	SY	SQUARE YARD		
HE	HIGHWAY EASEMENT	SDD	STANDARD DETAIL DRAWINGS		

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 = 0.50 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.31 ACRES

WISCONSIN DNR LIAISON

BENTON STELZEL
SOUTH EAST REGION
141 NW BARSTOW ST # 180
WAUKESHA, WI 53188
PHONE: (262) 623-0194
EMAIL: benton.stelzel@wisconsin.gov

DESIGN CONSULTANT

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KENOSHA COUNTY

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CIVIL ENGINEER
19600 75TH STREET
BRISTOL, WI 53104
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VILLAGE OF SOMERS

JASON PETERS
VILLAGE ADMINISTRATOR
7511 12TH STREET
KENOSHA, WI 53144
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EMAIL: jpeters@somers.org

UTILITIES CONTACTS

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MICHAEL VANBOVEN
411 7TH STREET
RACINE, WI 53403
PHONE: (262) 676-3958
EMAIL: MV3658@att.com

CHARTER COMMUNICATIONS
COMMUNICATIONS
MIKE GAETHKE
1320 NORTH DR. MARTIN LUTHER KING JR. DRIVE
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PHONE: (414) 430-9354
EMAIL: Michael.Gaethke@charter.com

WE ENERGIES
ELECTRIC
JASON CHAPIN
7815 NORTHWESTERN AVE
RACINE, WI 53406
PHONE: (262) 884-6706
EMAIL: Jason.Chapin@we-energies.com

WE ENERGIES
GAS
SHAWN NILES
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PHONE: (262) 365-6446
EMAIL: Shawn.Niles@we-energies.com

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.

THE CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY OPERATIONS OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

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

APPLY TACK COAT BETWEEN LAYERS OF HMA PAVEMENT AT A RATE OF 0.07 GAL/SY.

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

RIGHT OF WAY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE.

CONTACT THE PROJECT ENGINEER AND THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION (SEWRPC), AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE, SUBBASE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYERS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

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.

SLOPES STEEPER THAN 3:1 REQUIRE EROSION MAT.

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

THE CONTRACTOR'S PAVING OPERATION SHALL BE CONSISTENT WITH THE TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, PASSING, OR PARKING LANE.

THE 5-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED USING TWO (2) 2.5-INCH LAYERS. THE PREFERRED LOWER LAYER IS 2.5-INCHES OF 3 MT 58-28 S. THE PREFERRED UPPER LAYER IS 2.5-INCHES OF 4 MT 58-28 H.

THE PROPOSED SHOULDER WIDTH SHOWN IN THE TYPICAL SECTIONS ARE MINIMUM WIDTH. PERPETUATE EXISTING SHOULDERS THAT ARE WIDER THAN WHAT IS SHOWN IN THE TYPICAL SECTIONS.

SAWCUTS, AS SHOWN ON THE PLANS, ARE SUGGESTED LOCATIONS AND MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER TO BETTER SUIT FIELD CONDITIONS.

PRIOR TO PLACEMENT OF BEAM GUARD THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED.

THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES EXCEPT WHEN PAVING OR PIPE LAYING OPERATIONS REQUIRE THE DRIVEWAY TO BE CLOSED. ACCESS TO DRIVEWAYS SHALL BE RE-ESTABLISHED IMMEDIATELY AFTER OPERATIONS ARE COMPLETED. ACCESS SHALL BE PROVIDED DURING ALL NON-WORKING HOURS.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

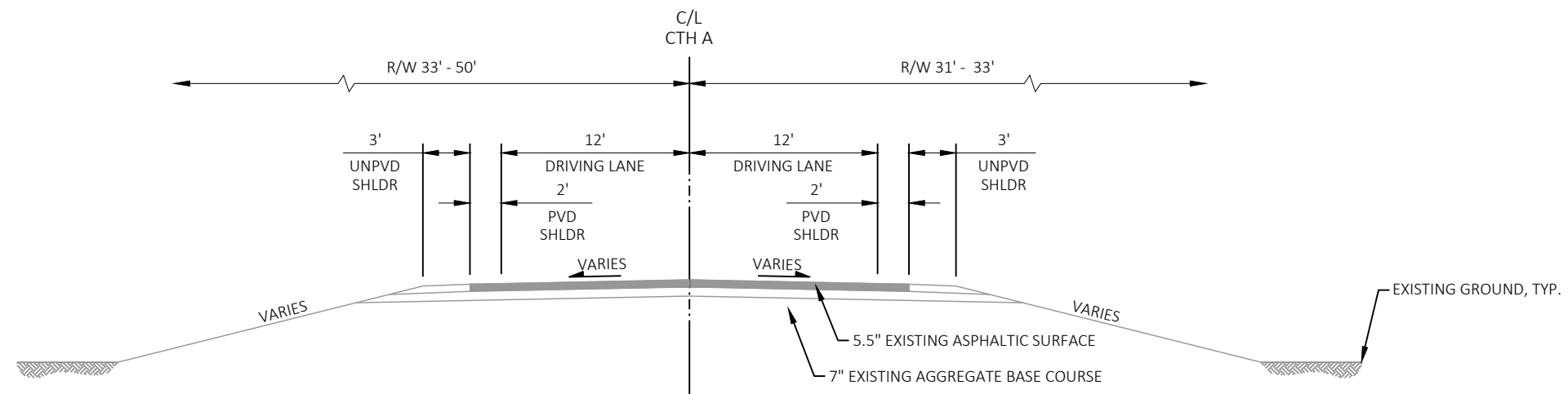
DO NOT DRIVE OR STORE EQUIPMENT, OR STORE CONSTRUCTION MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS OR WATERWAYS.

ORDER OF SECTION 2 DETAIL SHEETS

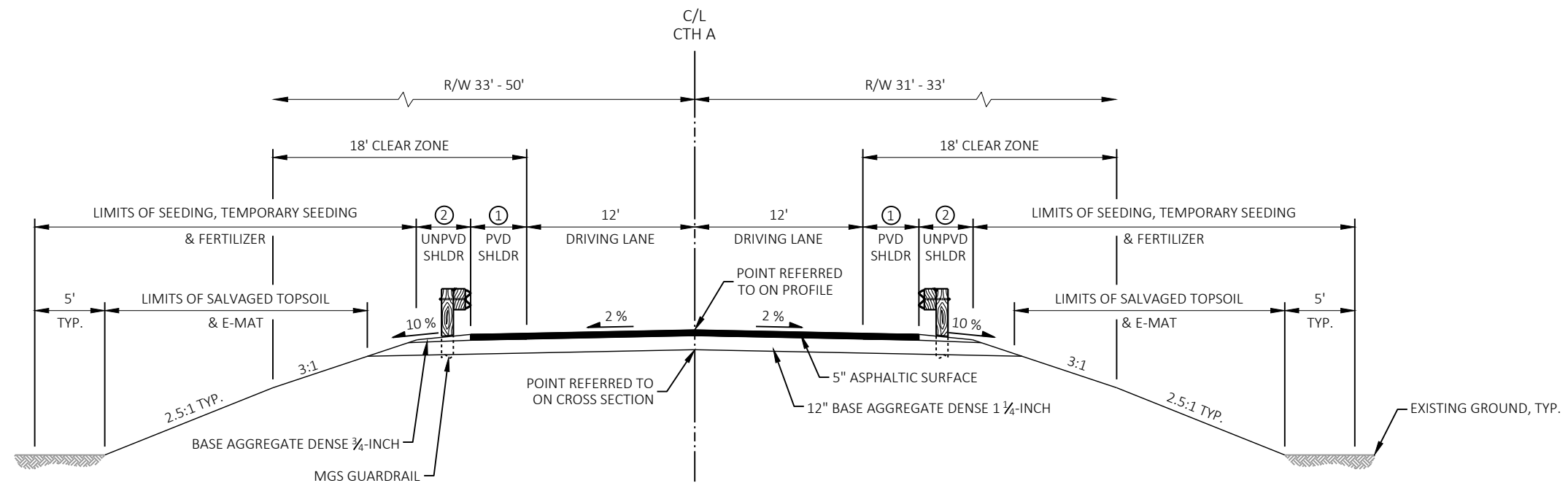
GENERAL NOTES
TYPICAL SECTIONS
BEAM GUARD DETAILS
PERMANENT SIGNING AND PAVEMENT MARKING
DETOUR ROUTE
ALIGNMENT DETAILS



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

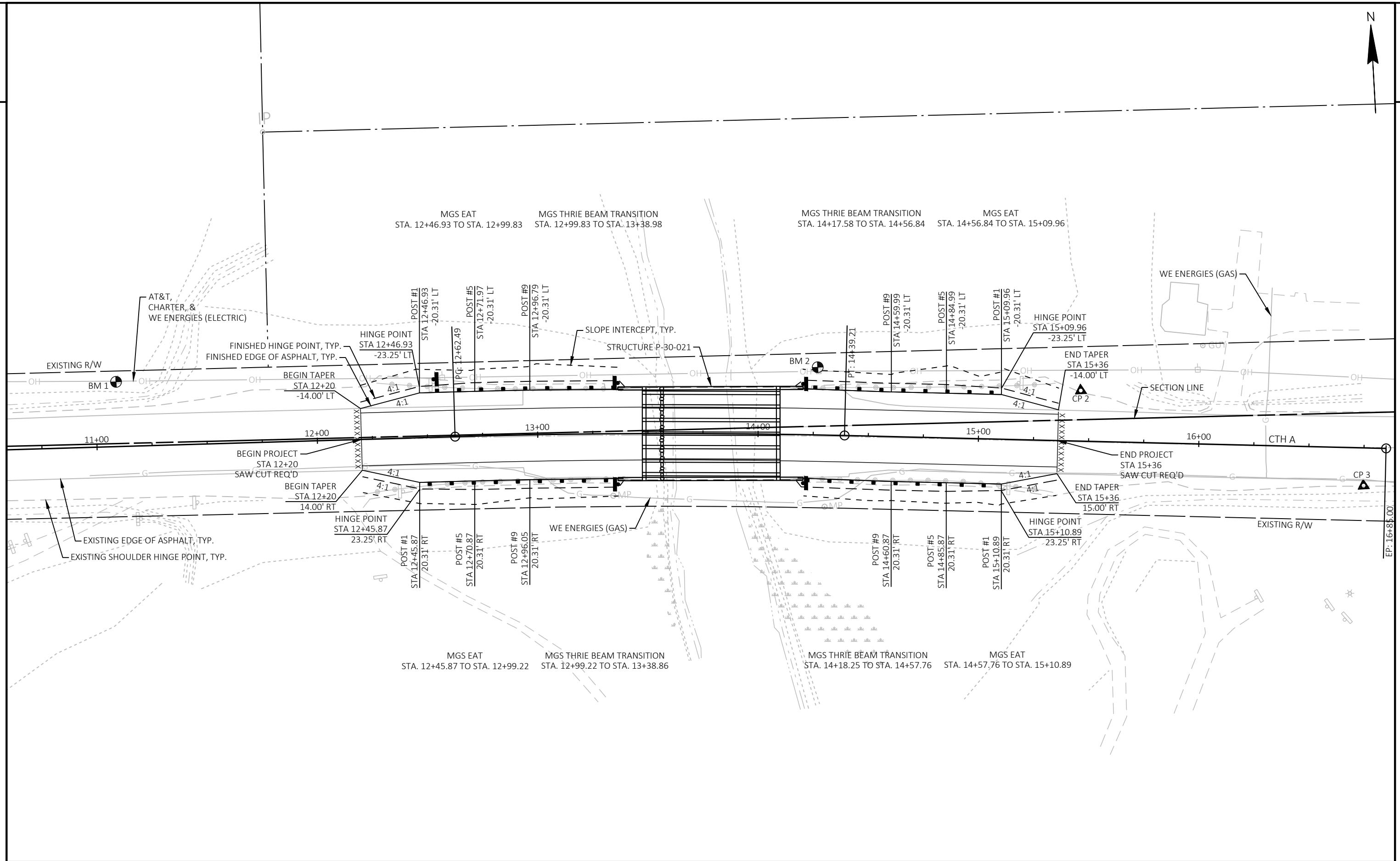


EXISTING TYPICAL SECTION
STA 12+20 - STA 15+36

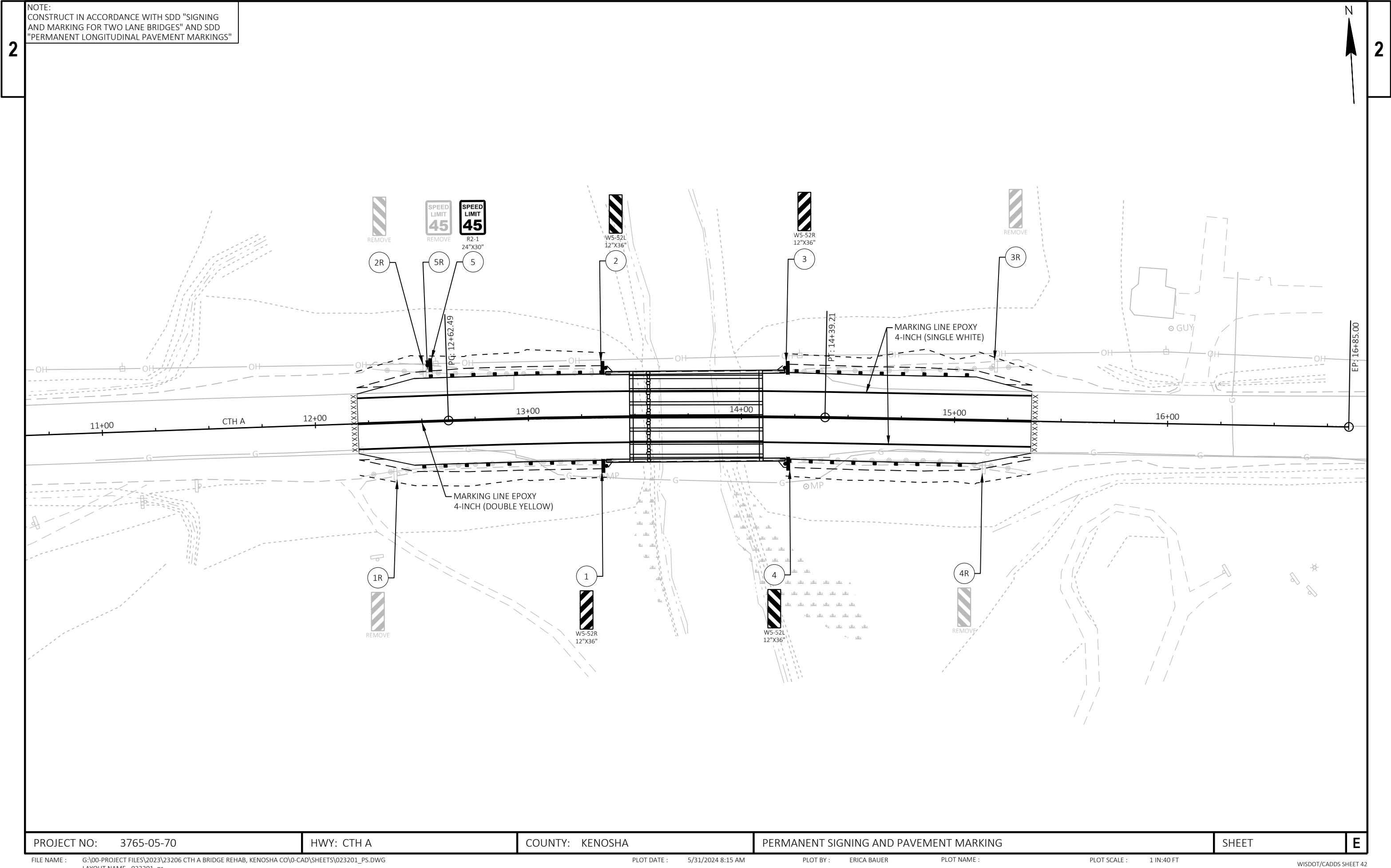


FINISHED TYPICAL SECTION
STA 12+20 - STA 15+36

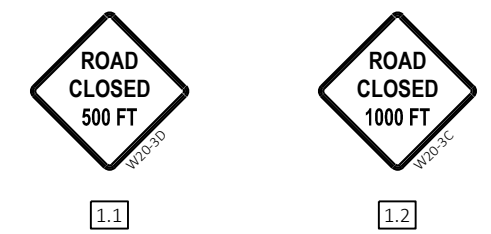
- ① 2' TYP.; PAVE TO FRONT FACE OF BEAM GUARD.
② VARIES FROM 3' TO 3' 11" WITH BEAM GUARD GRADING TAPER.

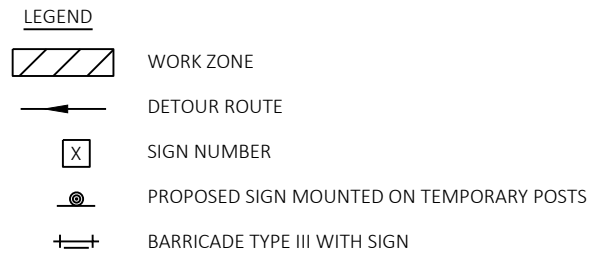


PROJECT NO: 3765-05-70	HWY: CTH A	COUNTY: KENOSHA	BEAM GUARD DETAILS	SHEET E
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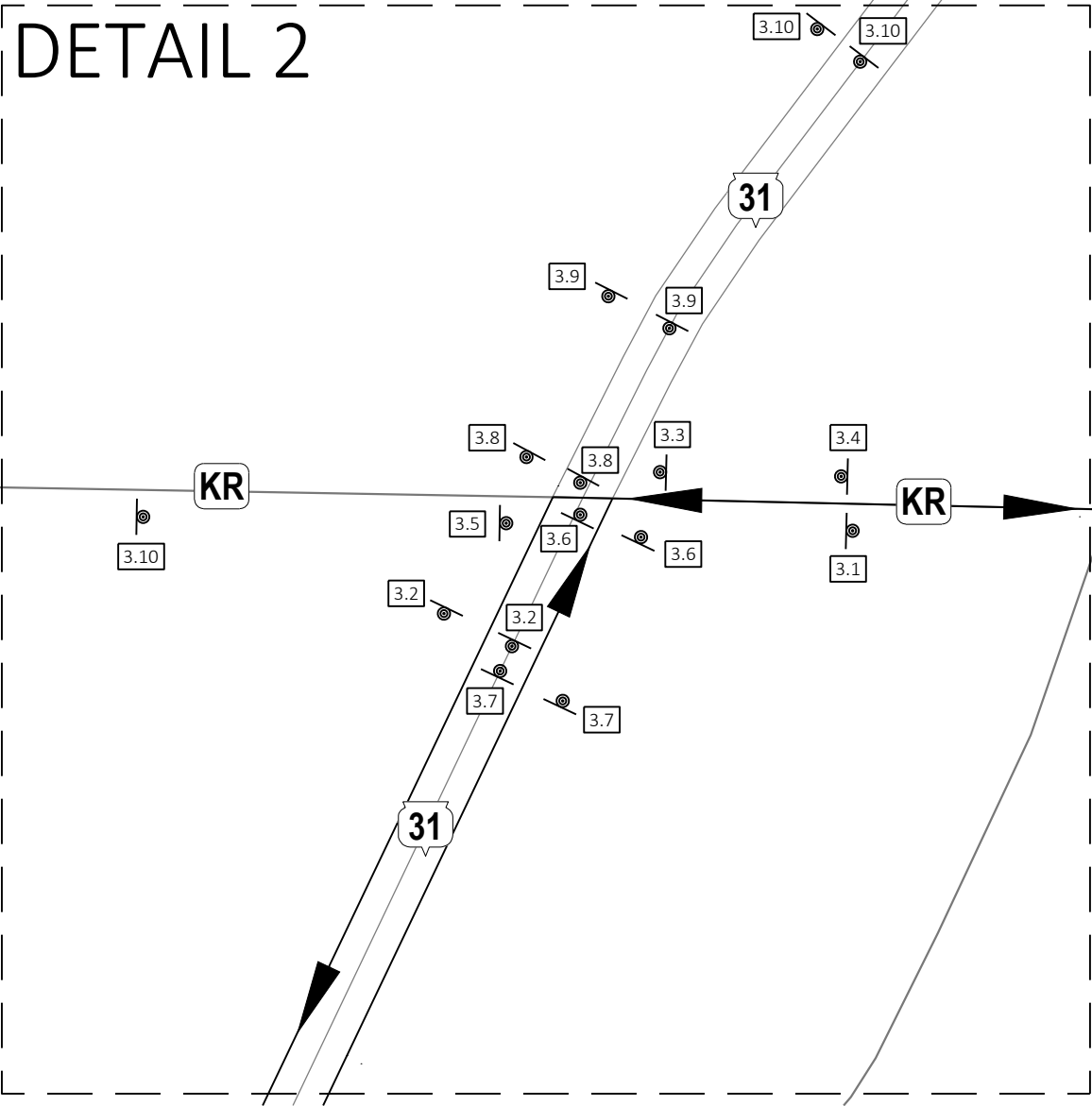
NOTE:
CONSTRUCT IN ACCORDANCE WITH SDD "SIGNING
AND MARKING FOR TWO LANE BRIDGES" AND SDD
"PERMANENT LONGITUDINAL PAVEMENT MARKINGS"





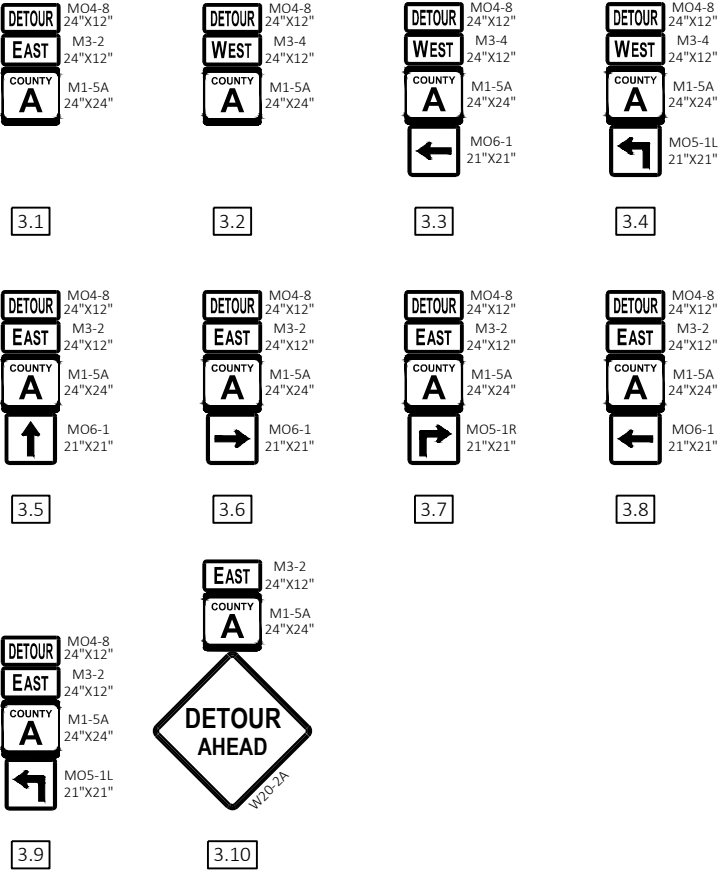
- ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND WSDOT SDD 15C2 "BARRICADES AND SIGNS FOR MAINLINE, DETOUR, ON RAMP, OFF RAMP CLOSURES AND ADVANCED WIDTH RESTRICTION".
- EXACT NUMBER, LOCATION AND SPACING OF SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
- SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS, UNLESS OTHERWISE PROVIDED IN THE PLAN.
- SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED AS DIRECTED BY THE ENGINEER AND PAID FOR UNDER THE ITEM "TRAFFIC CONTROL COVERING SIGNS".
- USE SIGN SIZE 3 ON FREEWAY, USE SIGN SIZE 2 ON LOCAL HIGHWAYS AND RAMPS.
- IF THERE ARE EXISTING ROUTE MARKERS THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR SIGNS TO CORRESPOND WITH EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE.





- LEGEND
- WORK ZONE
 - DETOUR ROUTE
 - SIGN NUMBER
 - PROPOSED SIGN MOUNTED ON TEMPORARY POSTS
 - BARRICADE TYPE III WITH SIGN

- NOTES
- ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND WISDOT SDD 15C2 "BARRICADES AND SIGNS FOR MAINLINE, DETOUR, ON RAMP, OFF RAMP CLOSURES AND ADVANCED WIDTH RESTRICTION".
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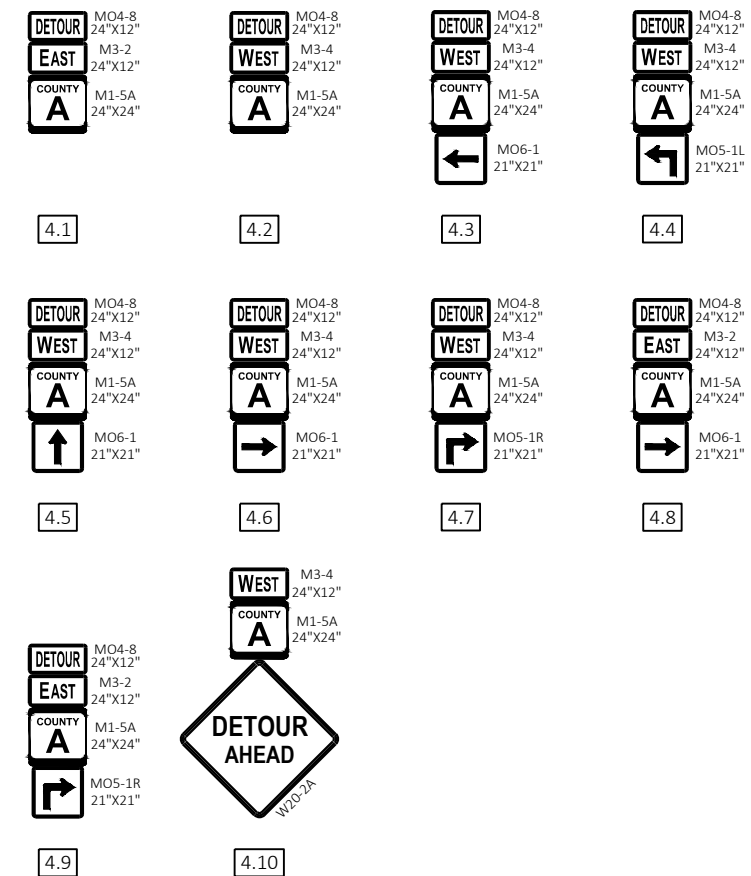
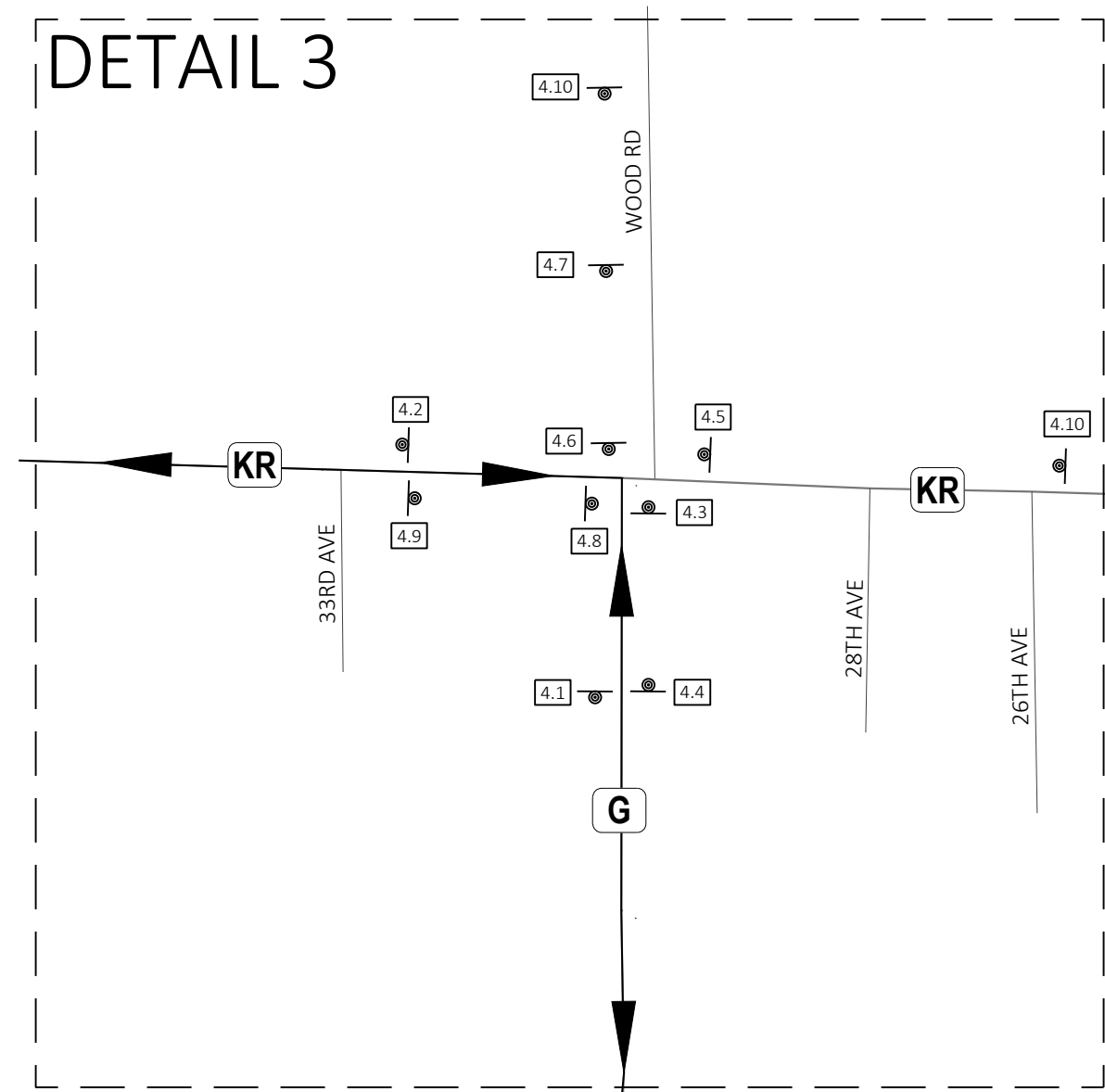


LEGEND

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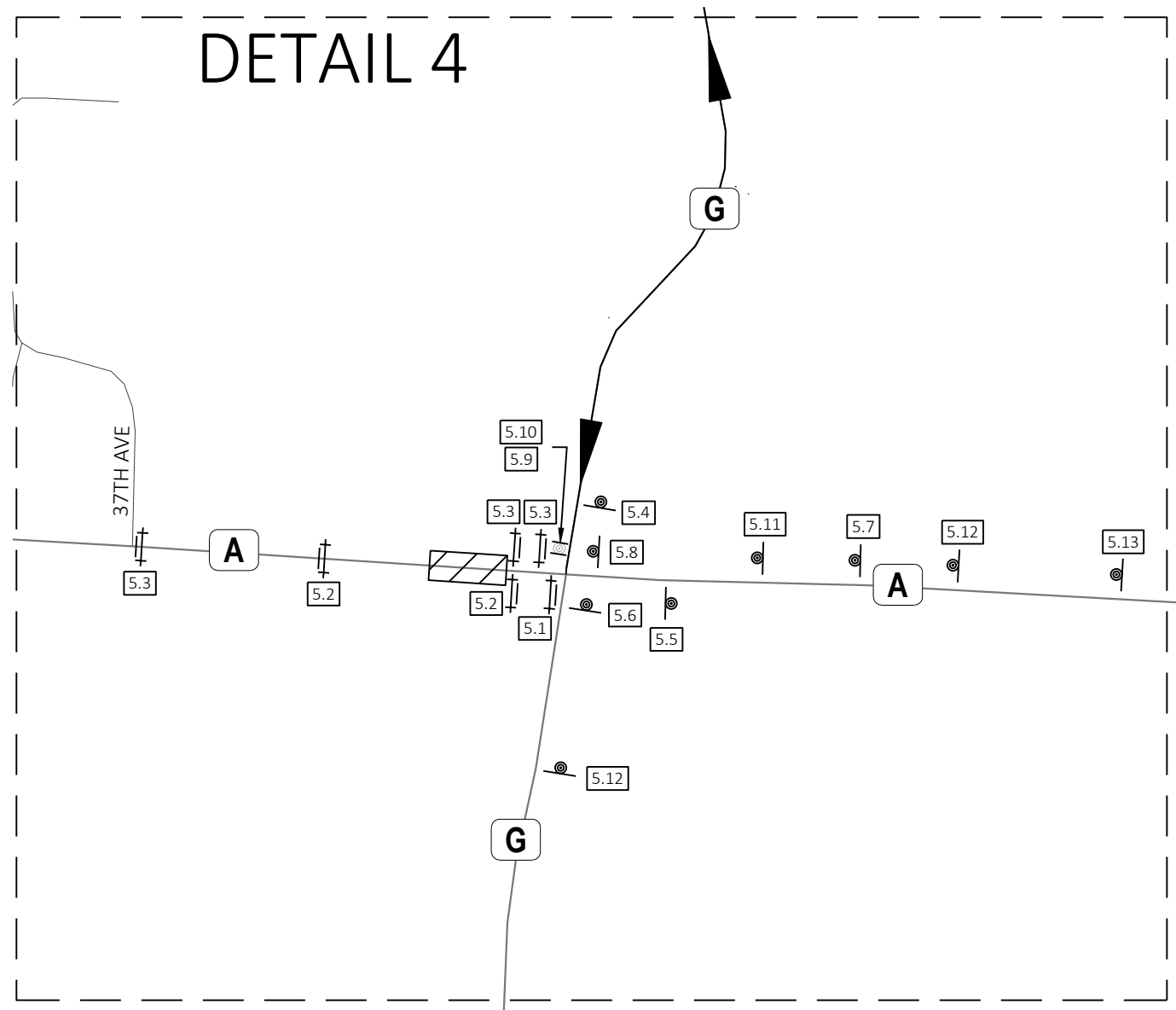


LEGEND

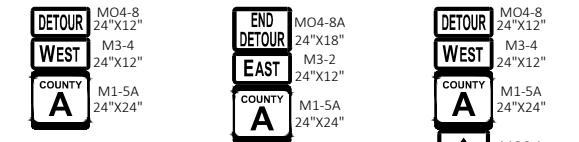
- WORK ZONE
- DETOUR ROUTE
- SIGN NUMBER
- PROPOSED SIGN MOUNTED ON TEMPORARY POSTS
- BARRICADE TYPE III WITH SIGN
- COVER EXISTING SIGNS
- PROPOSED SIGN MOUNTED ON EXISTING POSTS

NOTES

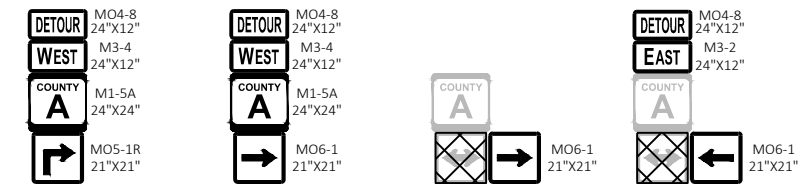
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5.1 5.2 5.3



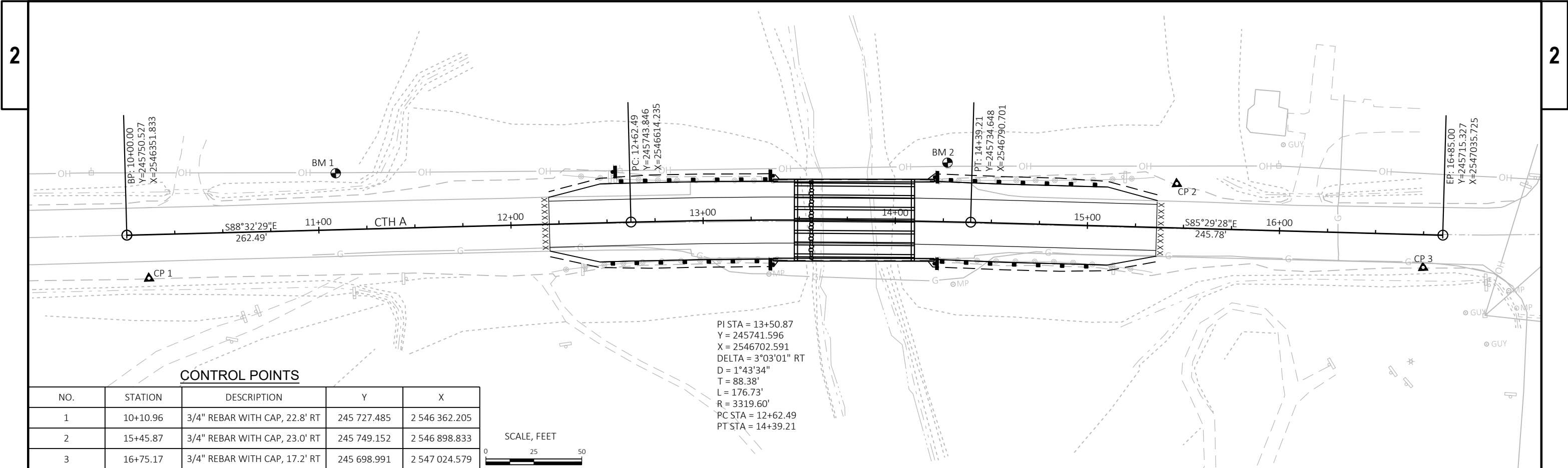
5.4 5.5 5.6



5.7 5.8 5.9 5.10



5.11 5.12 5.13



Estimate Of Quantities

3765-05-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-30-021	EACH	1.000	1.000
0004	204.0165	Removing Guardrail	LF	475.000	475.000
0006	205.0100	Excavation Common	CY	479.000	479.000
0008	206.1001	Excavation for Structures Bridges (structure) 01. P-30-021	EACH	1.000	1.000
0010	209.0200.S	Backfill Controlled Low Strength	CY	4.000	4.000
0012	210.1500	Backfill Structure Type A	TON	140.000	140.000
0014	213.0100	Finishing Roadway (project) 01. 3765-05-70	EACH	1.000	1.000
0016	305.0110	Base Aggregate Dense 3/4-Inch	TON	64.000	64.000
0018	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	960.000	960.000
0020	455.0605	Tack Coat	GAL	78.000	78.000
0022	465.0105	Asphaltic Surface	TON	311.000	311.000
0024	502.0100	Concrete Masonry Bridges	CY	116.000	116.000
0026	502.3200	Protective Surface Treatment	SY	276.000	276.000
0028	502.3210	Pigmented Surface Sealer	SY	84.000	84.000
0030	502.4205	Adhesive Anchors No. 5 Bar	EACH	118.000	118.000
0032	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	21,730.000	21,730.000
0034	506.4000	Steel Diaphragms (structure) 01. P-30-021	EACH	6.000	6.000
0036	509.1500	Concrete Surface Repair	SF	22.000	22.000
0038	516.0500	Rubberized Membrane Waterproofing	SY	38.000	38.000
0040	606.0200	Riprap Medium	CY	24.000	24.000
0042	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	170.000	170.000
0044	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0046	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0048	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0050	618.0100	Maintenance and Repair of Haul Roads (project) 01. 3765-05-70	EACH	1.000	1.000
0052	619.1000	Mobilization	EACH	1.000	1.000
0054	624.0100	Water	MGAL	10.400	10.400
0056	625.0500	Salvaged Topsoil	SY	160.000	160.000
0058	628.1504	Silt Fence	LF	750.000	750.000
0060	628.1520	Silt Fence Maintenance	LF	1,210.000	1,210.000
0062	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0064	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0066	628.2008	Erosion Mat Urban Class I Type B	SY	160.000	160.000
0068	628.6005	Turbidity Barriers	SY	145.000	145.000
0070	629.0210	Fertilizer Type B	CWT	0.500	0.500
0072	630.0130	Seeding Mixture No. 30	LB	15.000	15.000
0074	630.0200	Seeding Temporary	LB	20.000	20.000
0076	630.0500	Seed Water	MGAL	11.000	11.000
0078	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0080	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	1.000	1.000
0082	637.2210	Signs Type II Reflective H	SF	5.000	5.000
0084	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0086	638.2602	Removing Signs Type II	EACH	5.000	5.000
0088	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0090	642.5001	Field Office Type B	EACH	1.000	1.000
0092	643.0420	Traffic Control Barricades Type III	DAY	1,224.000	1,224.000
0094	643.0705	Traffic Control Warning Lights Type A	DAY	2,448.000	2,448.000
0096	643.0900	Traffic Control Signs	DAY	14,670.000	14,670.000
0098	643.0920	Traffic Control Covering Signs Type II	EACH	4.000	4.000

Estimate Of Quantities

3765-05-70

Line	Item	Item Description	Unit	Total	Qty
0100	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0102	643.5000	Traffic Control	EACH	1.000	1.000
0104	645.0111	Geotextile Type DF Schedule A	SY	76.000	76.000
0106	646.1020	Marking Line Epoxy 4-Inch	LF	1,264.000	1,264.000
0108	650.4500	Construction Staking Subgrade	LF	253.000	253.000
0110	650.5000	Construction Staking Base	LF	253.000	253.000
0112	650.9911	Construction Staking Supplemental Control (project) 01. 3765-05-70	EACH	1.000	1.000
0114	650.9920	Construction Staking Slope Stakes	LF	253.000	253.000
0116	690.0150	Sawing Asphalt	LF	57.000	57.000
0118	715.0502	Incentive Strength Concrete Structures	DOL	696.000	696.000
0120	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 13+78.57	EACH	1.000	1.000
0122	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	200.000	200.000
0124	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	200.000	200.000

3

REMOVING GUARDRAIL				
STATION	TO	STATION	LOCATION	204.0165 LF
12+20	-	13+41	WEST APPROACH, RT	121
12+27	-	13+42	WEST APPROACH, LT	115
14+15	-	15+35	EAST APPROACH, LT	120
14+16	-	15+35	EAST APPROACH, RT	119
TOTAL				475

DIVISION	FROM/TO STATION	205.0100 COMMON EXCAVATION	SALVAGED/UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL (2)	UNEXPANDED FILL	EXPANDED FILL (3)	MASS ORDINATE +/- (4)	WASTE (5)
		CUT (1)				FACTOR 1.25		
DIVISION 1								
WEST APPROACH	12+20 - 13+48	214	66	148	28	35	113	113
DIVISION 1 SUBTOTAL		214	66	148	28	35	113	113
DIVISION 2								
EAST APPROACH	14+10 - 15+36	265	60	205	9	11	194	194
DIVISION 2 SUBTOTAL		265	60	205	9	11	194	194
GRAND TOTAL		479	126	353	37	46	307	307

NOTES:

(1) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

(2) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL

(3) EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR

(4) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

(5) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

3

BASE AGGREGATE DENSE					
STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH
				TON	TON
12+20	-	13+48	WEST APPROACH	32	480
14+10	-	15+36	EAST APPROACH	32	480
TOTAL				64	960
					624.0100 WATER MGAL
					5.2
					10.4

ASPHALTIC SURFACE				
STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL
				465.0105 ASPHALTIC SURFACE TON
12+20	-	13+48	WEST APPROACH	39
14+10	-	15+36	EAST APPROACH	39
TOTAL				78
				156
				155
				311

MGS GUARDRAIL				
STATION	TO	STATION	LOCATION	614.2500 MGS THRIE BEAM TRANSITION LF
				614.2610 MGS GUARDRAIL TERMINAL EAT EACH
12+45.87	-	13+38.86	WEST APPROACH, RT	39.40
12+46.93	-	13+38.98	WEST APPROACH, LT	39.40
14+17.58	-	15+09.96	EAST APPROACH, RT	39.40
14+18.25	-	15+10.89	EAST APPROACH, LT	39.40
TOTAL				157.60
				1
				1
				1
				4

FINISHING ITEMS									
				625.0500	628.2008	629.0210	630.0130	630.0200	630.0500
				SALVAGED	EROSION MAT	FERTILIZER	SEEDING	SEEDING	SEED
				TOPSOIL	URBAN CLASS I	TYPE B	MIXTURE	TEMPORARY	WATER
STATION	TO	STATION	LOCATION	SY	SY	CWT	NO. 30	LB	MGAL
12+20	-	13+48	WEST APPROACH, RT	29	29	0.10	3	4	2.1
12+20	-	13+48	WEST APPROACH, LT	43	43	0.10	3	4	2.3
14+10	-	15+36	EAST APPROACH, LT	33	33	0.10	3	4	2.5
14+10	-	15+36	EAST APPROACH, RT	22	22	0.10	3	4	2.1
UNDISTRIBUTED				33	33	0.10	3	4	2.0
TOTAL				160	160	0.50	15	20	11.0

SILT FENCE				
STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF
				628.1520 SILT FENCE MAINTENANCE LF
12+16	-	13+61	WEST APPROACH, LT	145
12+16	-	13+61	WEST APPROACH, RT	145
13+87	-	15+47	EAST APPROACH, LT	160
13+90	-	15+45	EAST APPROACH, RT	155
UNDISTRIBUTED				145
TOTAL				750
				290
				290
				320
				310

				1,210

MOBILIZATION EROSION CONTROL		
LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT	3	2
TOTAL	3	2

TURBIDIDTY BARRIERS	
LOCATION	628.6005 SY
WEST APPROACH	57
EAST APPROACH	58
UNDISTRIBUTED	30
TOTAL	145

PROJECT NO: 3765-05-70	HWY: CTH A	COUNTY: KENOSHA	MISCELLANEOUS QUANTITIES	SHEET	E
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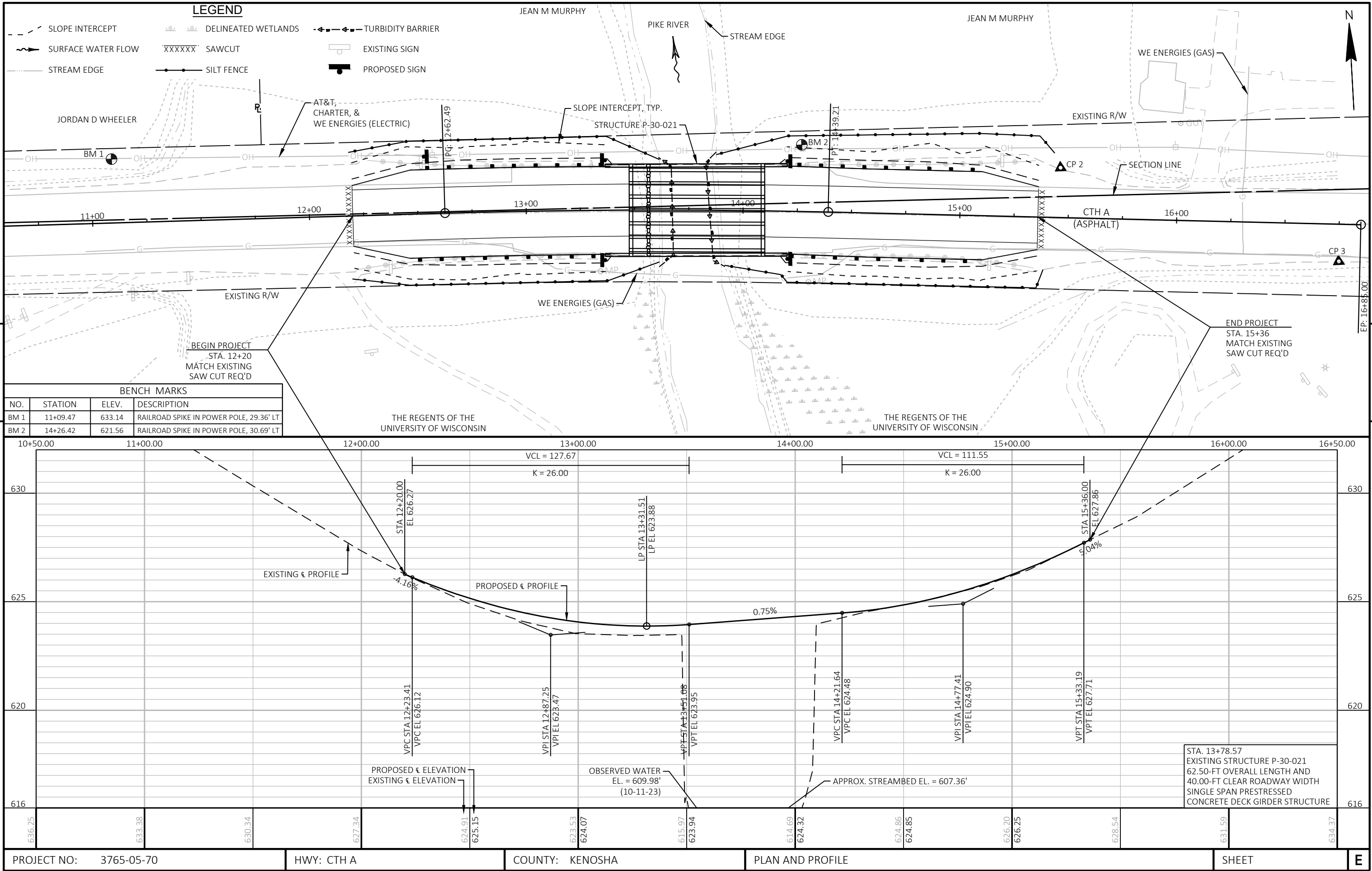
PERMANENT SIGNING													
		634.0612 POSTS WOOD 4X6-INCH X 12-FT		634.0614 POSTS WOOD 4X6-INCH X 14-FT		637.2210 SIGNS TYPE II REFLECTIVE H		637.2230 SIGNS TYPE II REFLECTIVE F		638.2602 REMOVING SIGNS TYPE II		638.3000 REMOVING SMALL SIGN SUPPORTS	
STATION	LOCATION	SIGN NUMBER	SIGN CODE	EACH	EACH	SF	SF	SF	SF	EACH	EACH	REMARKS	
12+38	RT	1R	---	---	---	---	---	---	---	1	1	BRIDGE HASH MARKS	
12+53	LT	2R	---	---	---	---	---	---	---	1	1	BRIDGE HASH MARKS	
12+53	LT	3R	---	---	---	---	---	---	---	1	---	SPEED LIMIT 45 MPH	
12+53	LT	3	R2-1	---	1	5	---	---	---	---	---	SPEED LIMIT 45 MPH	
13+36	RT	4	W5-52R	1	---	---	3	---	---	---	---	BRIDGE HASH MARKS	
13+36	LT	5	W5-52L	1	---	---	3	---	---	---	---	BRIDGE HASH MARKS	
14+20	LT	6	W5-52R	1	---	---	3	---	---	---	---	BRIDGE HASH MARKS	
14+21	RT	7	W5-52L	1	---	---	3	---	---	---	---	BRIDGE HASH MARKS	
15+13	RT	8R	---	---	---	---	---	---	---	1	1	BRIDGE HASH MARKS	
15+18	LT	9R	---	---	---	---	---	---	---	1	1	BRIDGE HASH MARKS	
TOTAL				4	1	5	12			5	4		

TRAFFIC CONTROL													
		643.0420		643.0705		643.0900		643.0920		643.1050		643.5000	
		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL COVERING SIGNS TYPE II		TRAFFIC CONTROL SIGNS PCMS		TRAFFIC CONTROL	
LOCATION	DURATION DAY	(NO.)	(DAY)	(NO.)	(DAY)	(NO.)	(DAY)	EACH		(NO.)	(DAY)	EACH	
CLOSURE	63	14	882	28	1764	9	567	---		---	---	---	
DETOUR	63	2	126	4	252	181	11403	2		---	---	---	
UNDISTRIBUTED PROJECT	---	4	216	8	432	50	2700	2		---	---	---	
	7	---	---	---	---	---	---	---		2	14	---	1
TOTAL		20	1224	40	2448	240	14670	4		2	14	---	1

MARKING LINE EPOXY 4-INCH					
STATION	TO	STATION	LOCATION	646.1020 LF	REMARKS
12+20	-	15+36	LANE EDGE	316	WHITE EDGELINE
12+20	-	15+36	LANE EDGE	316	WHITE EDGELINE
12+20	-	15+36	CENTERLINE	632	DOUBLE YELLOW
TOTAL				1,264	

				CONSTRUCTION STAKING			
				650.4500	650.5000	650.9911.01	650.9920
				CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL 01. 3765-05-70	CONSTRUCTION STAKING SLOPE STAKES
STATION	TO	STATION	LOCATION	LF	LF	EACH	LF
12+20	-	13+47	WEST APPROACH	127	127	---	127
14+10	-	15+36	EAST APPROACH	126	126	---	126
PROJECT				---	---	1	---
TOTAL				253	253	1	253

SAWING ASPHALT		
STATION	LOCATION	690.0150 LF
12+20	WEST APPROACH	28
15+36	EAST APPROACH	29
TOTAL		57



Standard Detail Drawing List

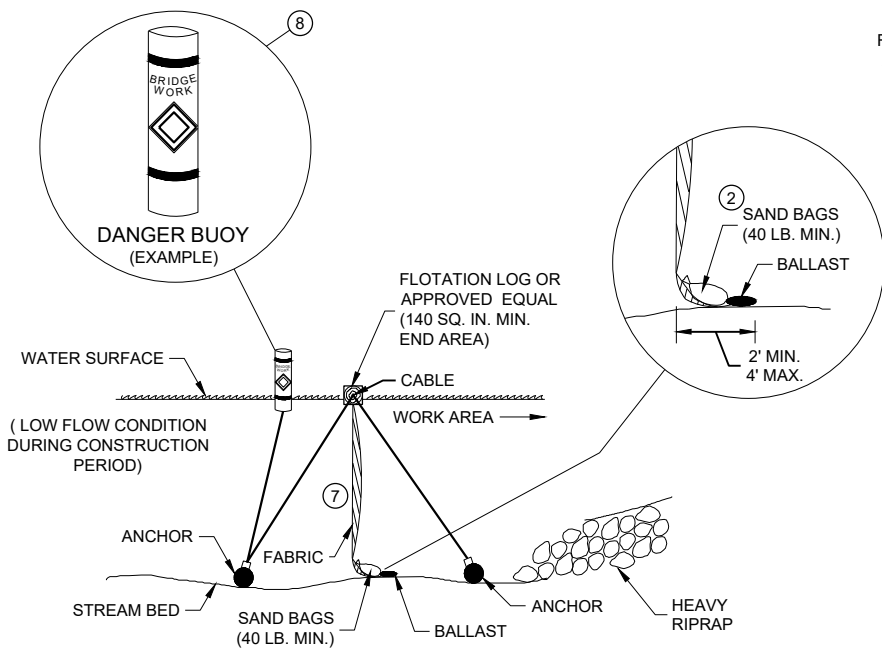
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



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

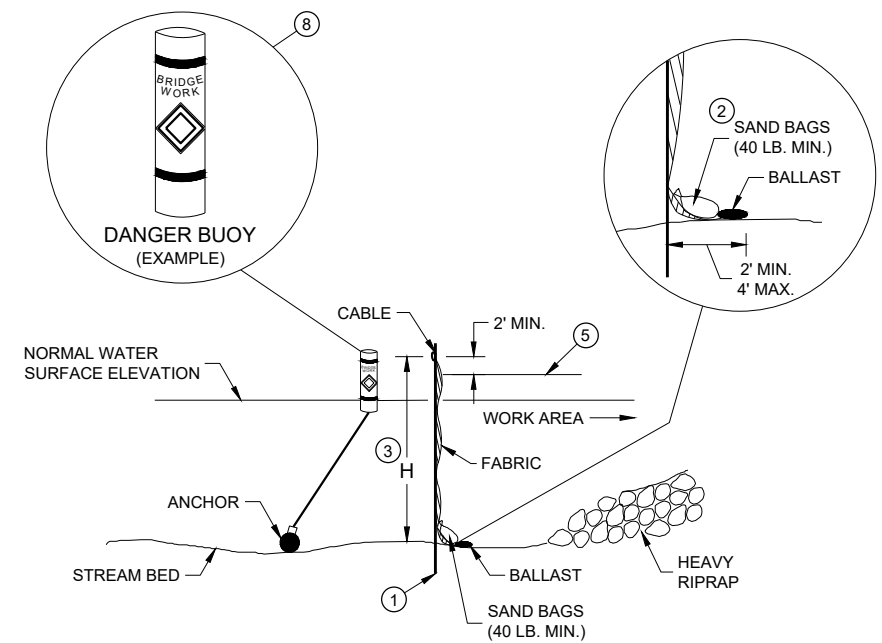


SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/s/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER



SECTION B - B

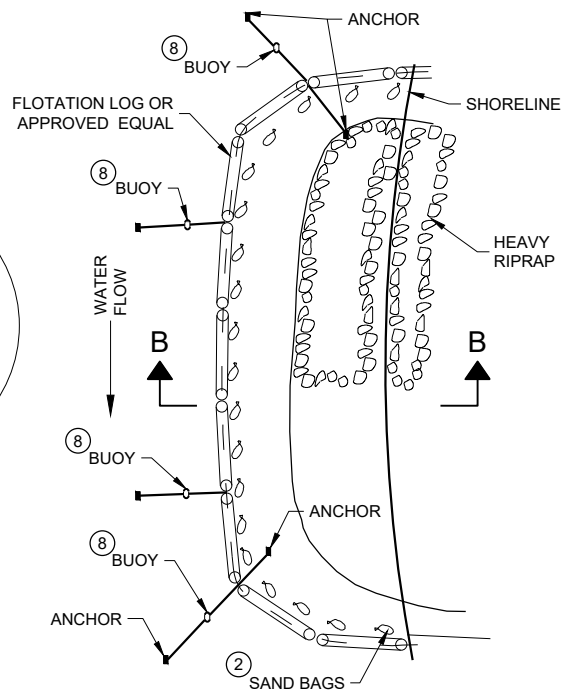
TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



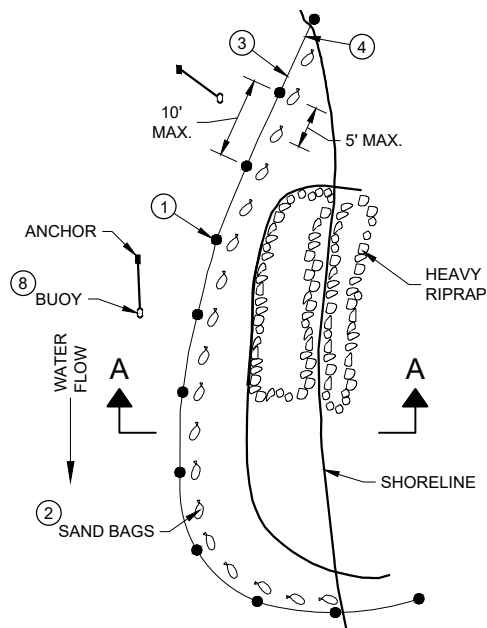
SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS



PLAN VIEW



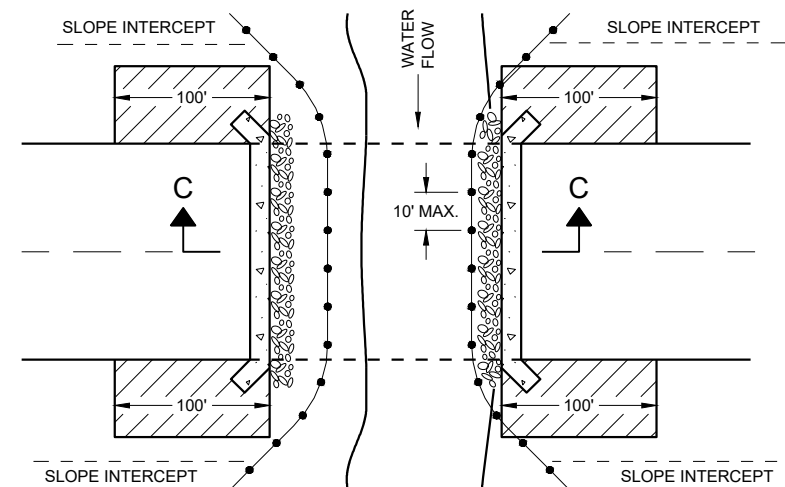
PLAN VIEW

GENERAL NOTES

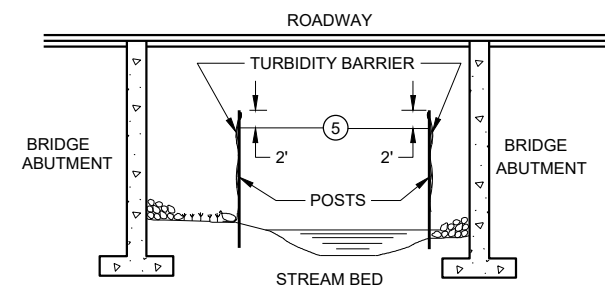
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



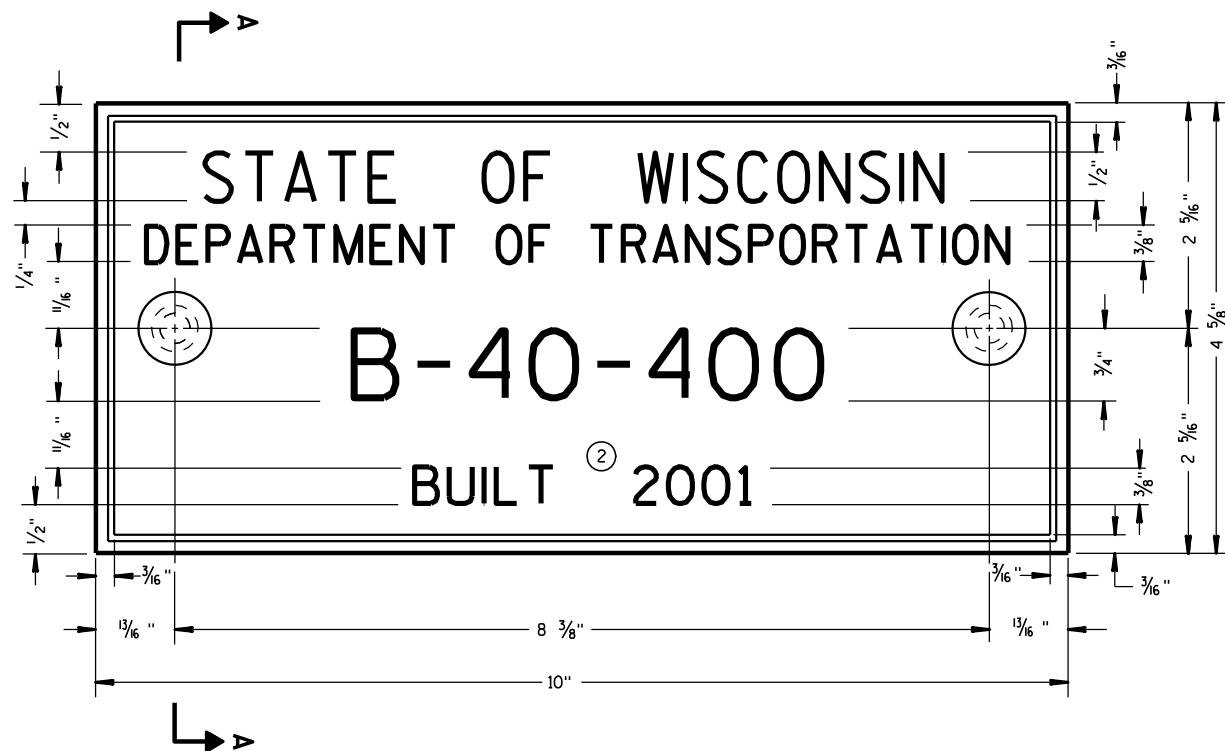
SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES

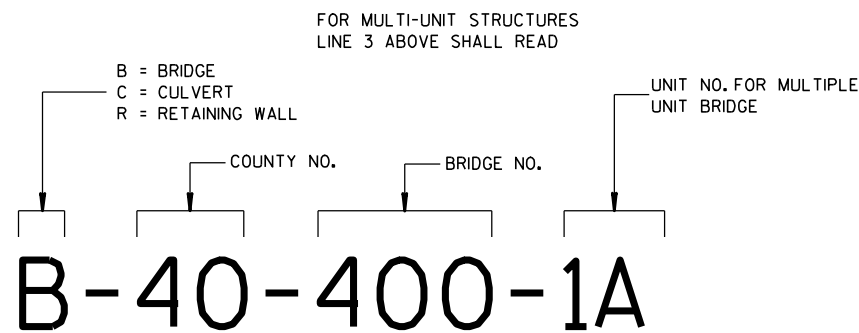
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



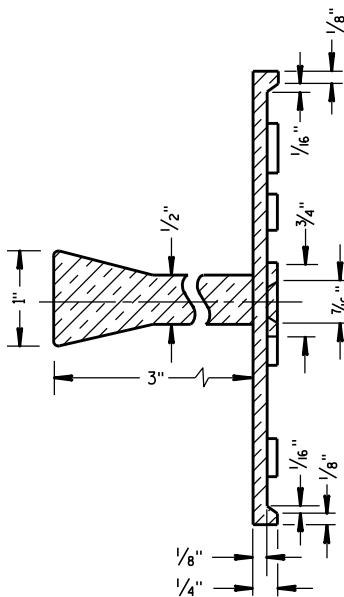
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

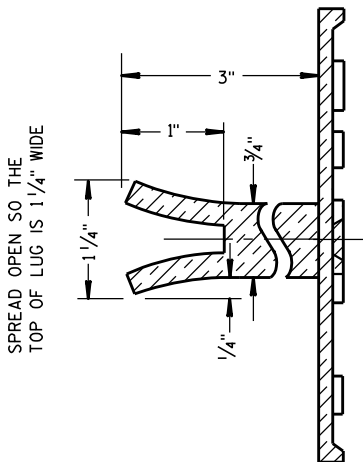
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

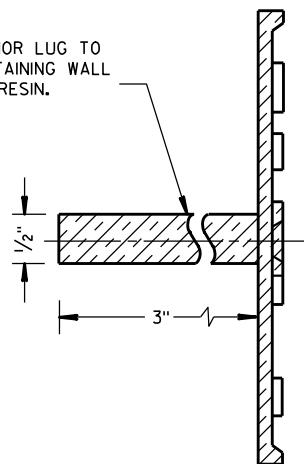


SECTION A-A



ALTERNATE LUG

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



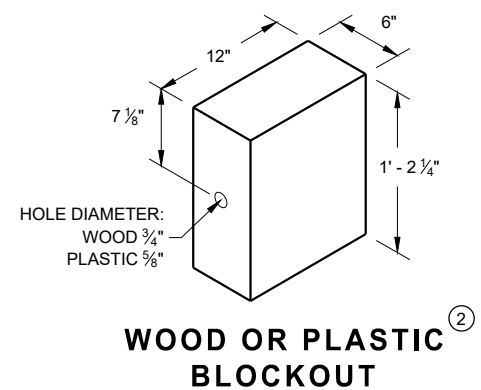
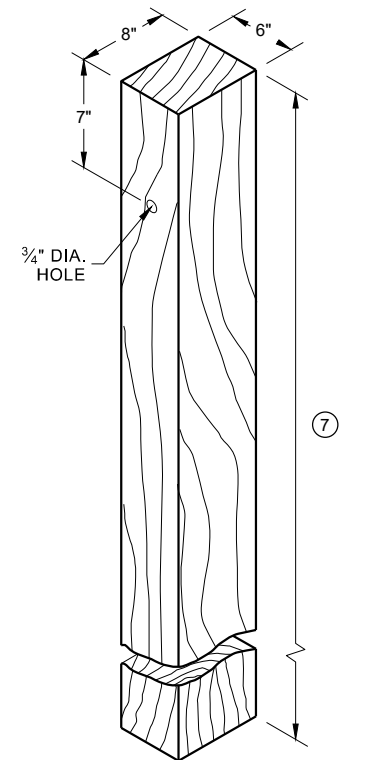
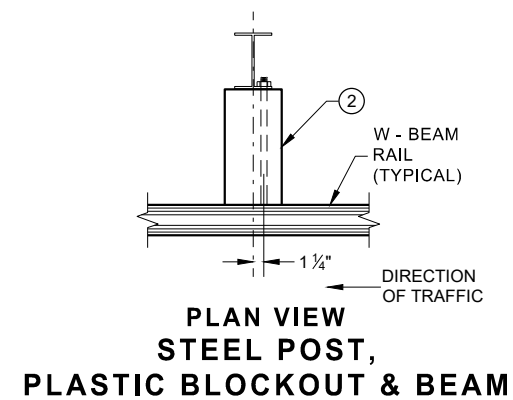
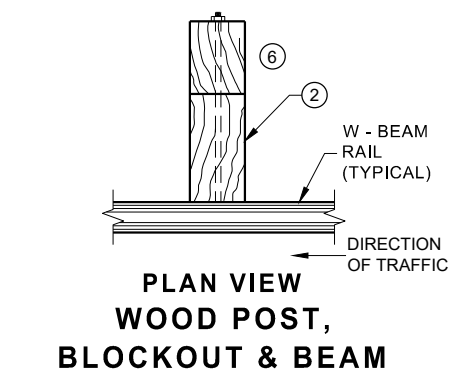
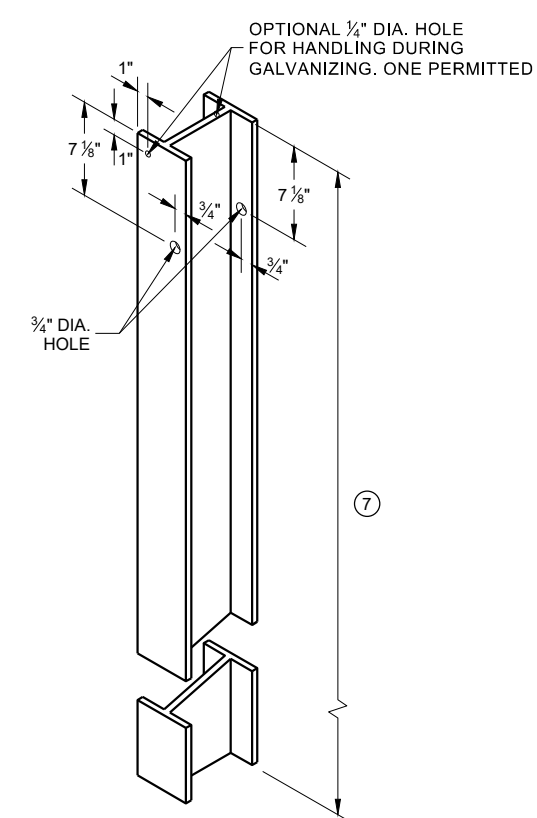
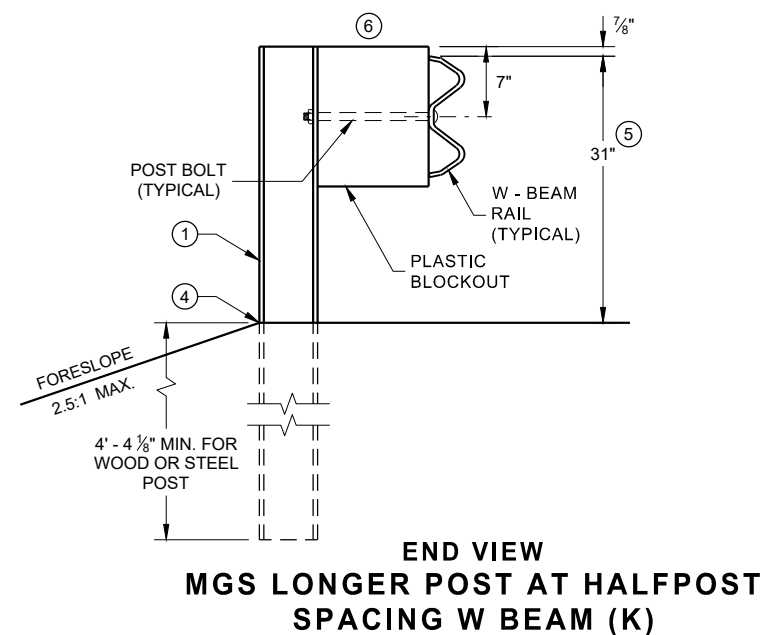
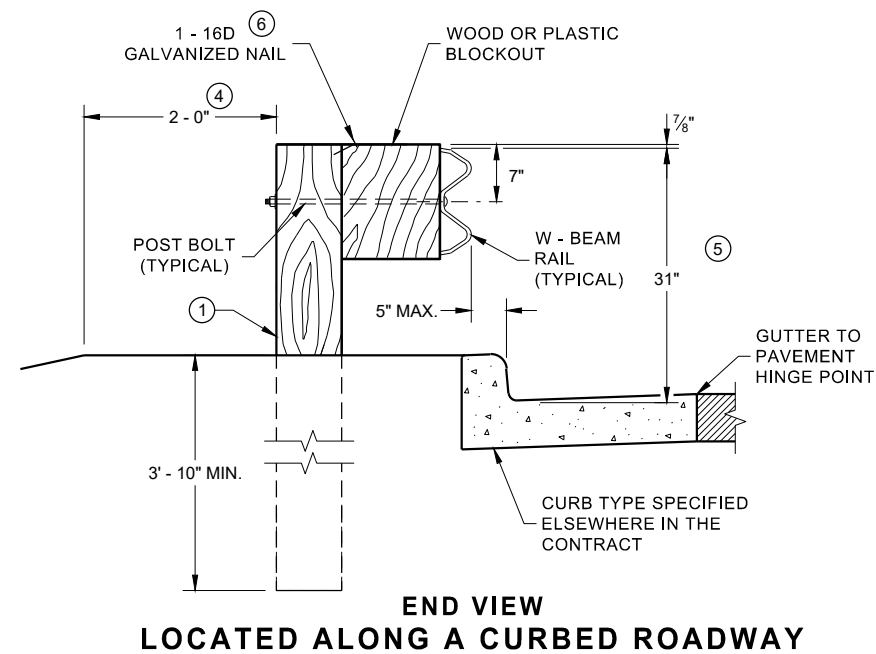
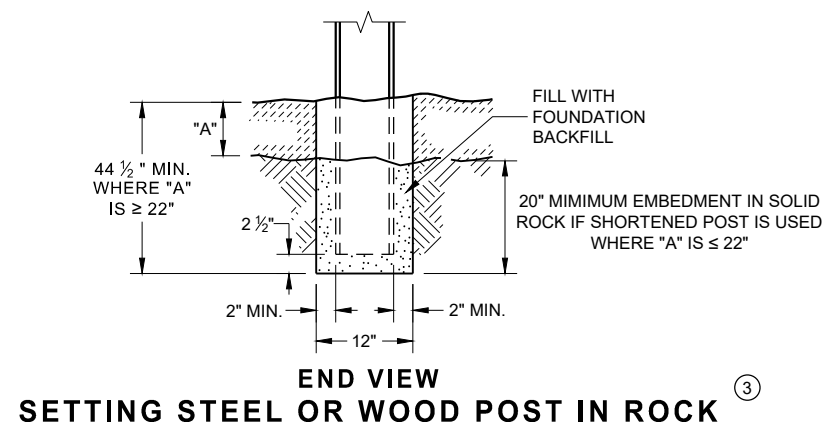
ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

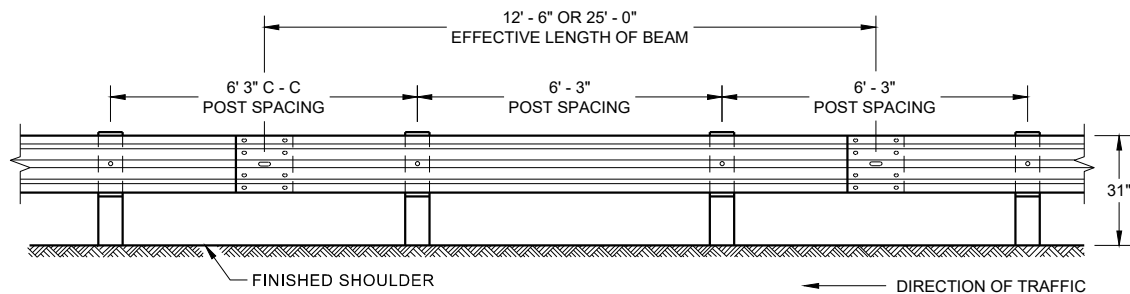
APPROVED
3/26/10
DATE
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA

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

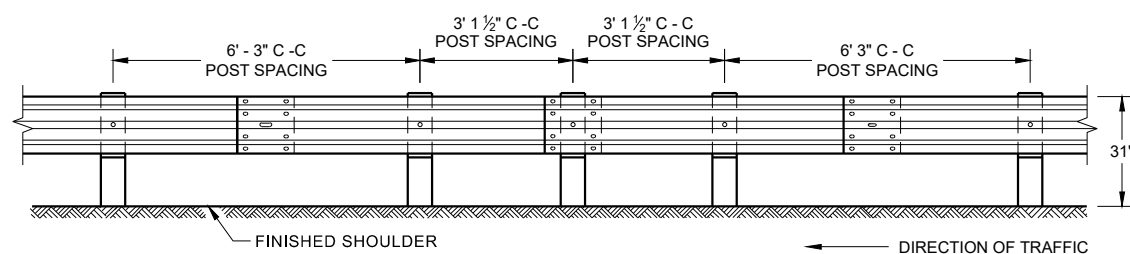


MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

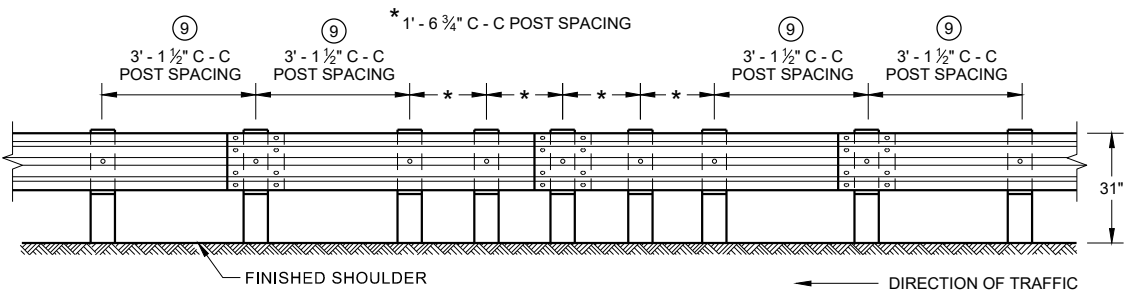
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



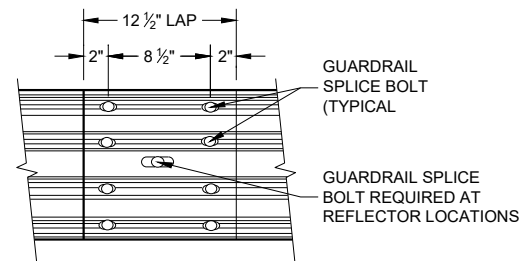
FRONT VIEW
POST SPACING STANDARD INSTALLATION



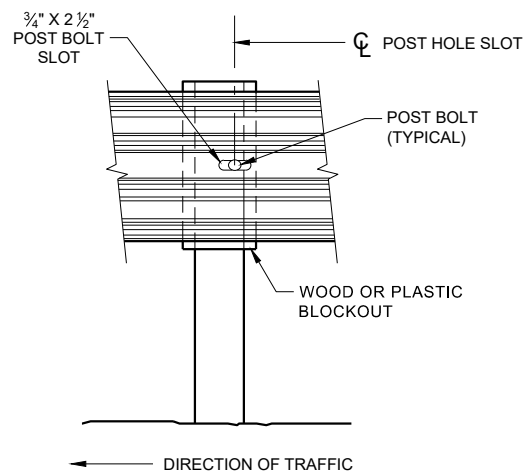
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



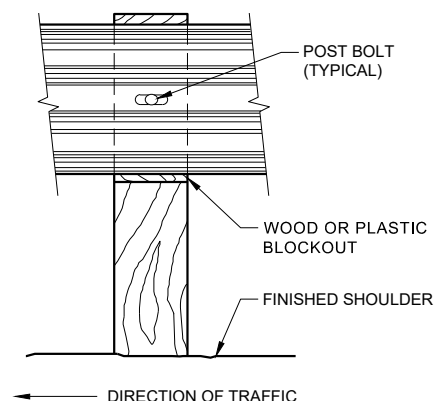
FRONT VIEW
QUARTER POST SPACING (QS)



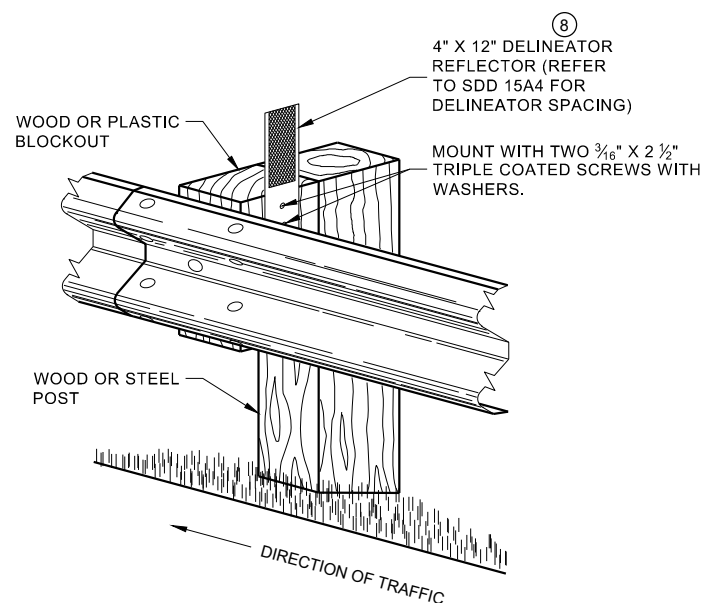
FRONT VIEW
MID-SPAN BEAM SPLICE



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



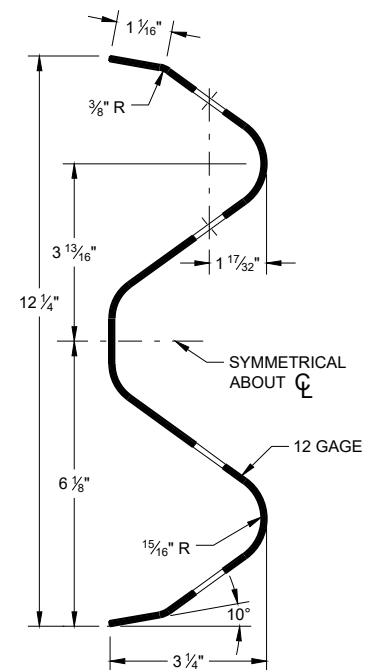
ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

GENERAL NOTES

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

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

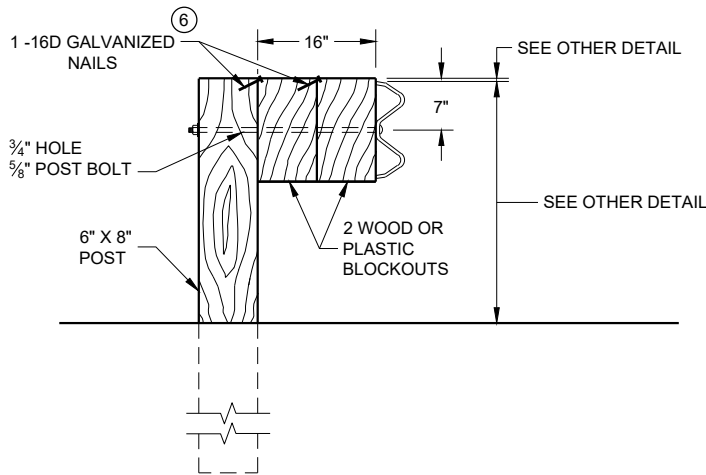
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

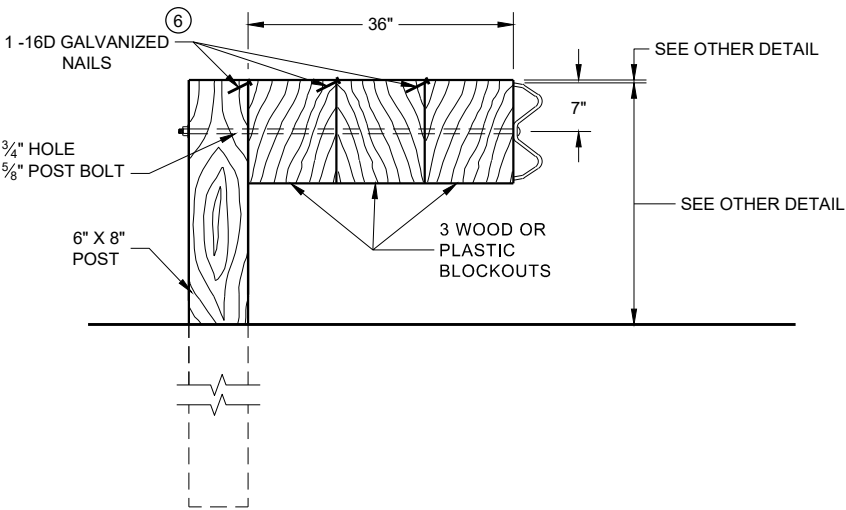
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

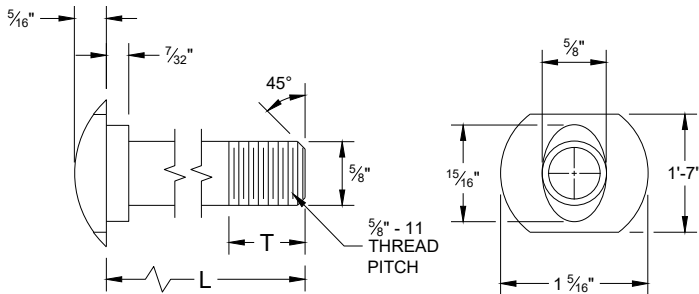
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

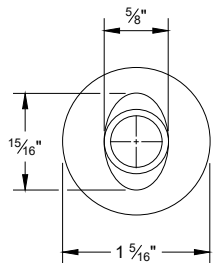
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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

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

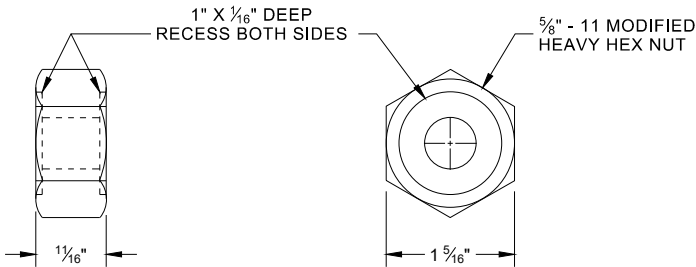


POST BOLT TABLE

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

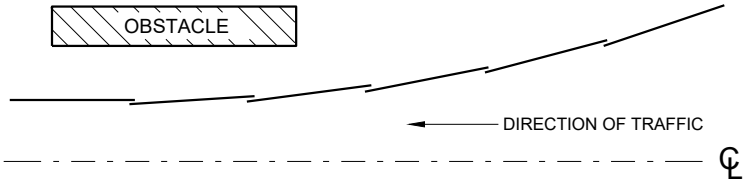


ALTERNATE BOLT HEAD

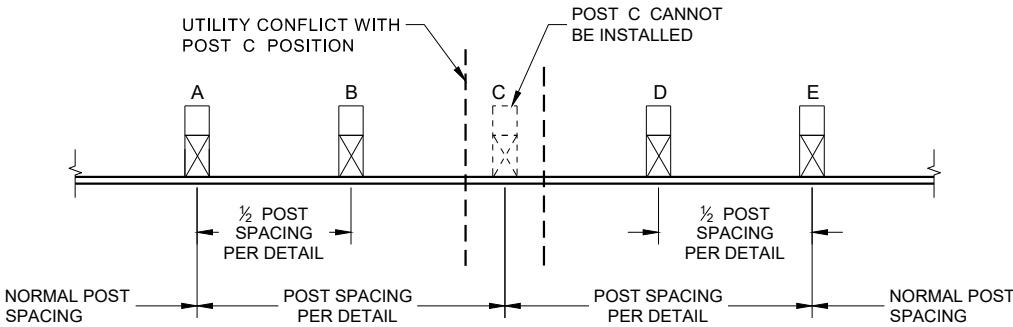


POST BOLT, SPLICE BOLT
AND RECESS NUT

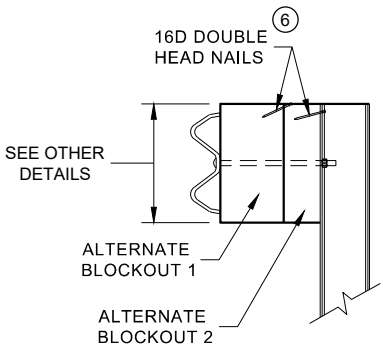
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



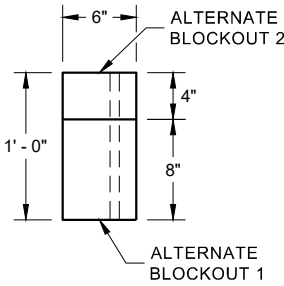
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

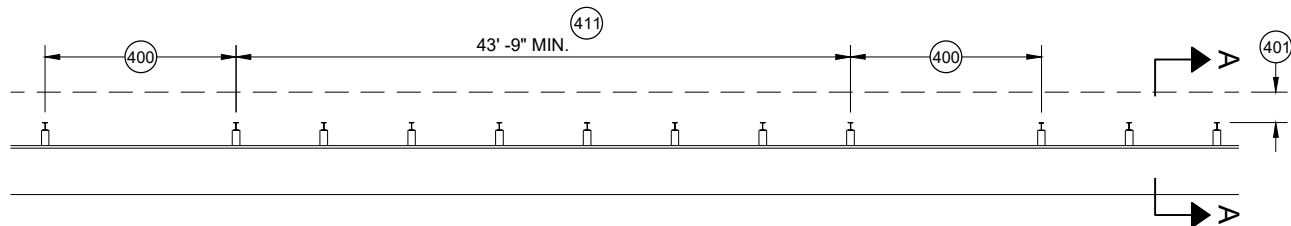


PLAN VIEW

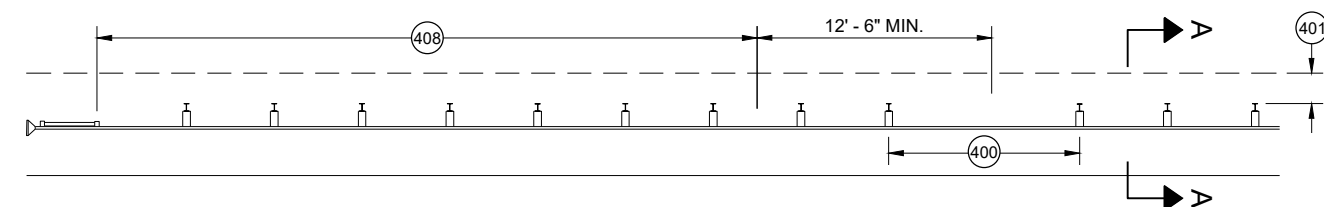
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

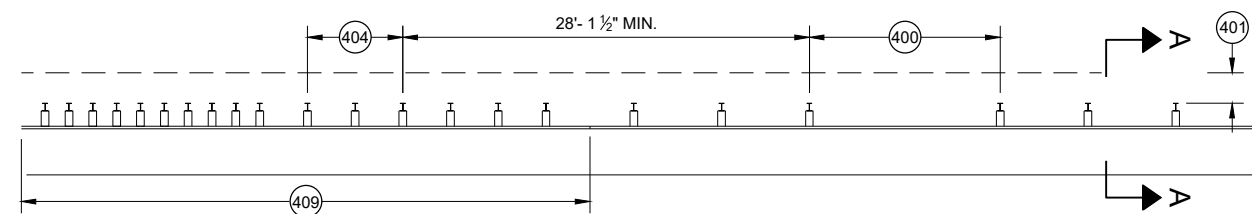
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



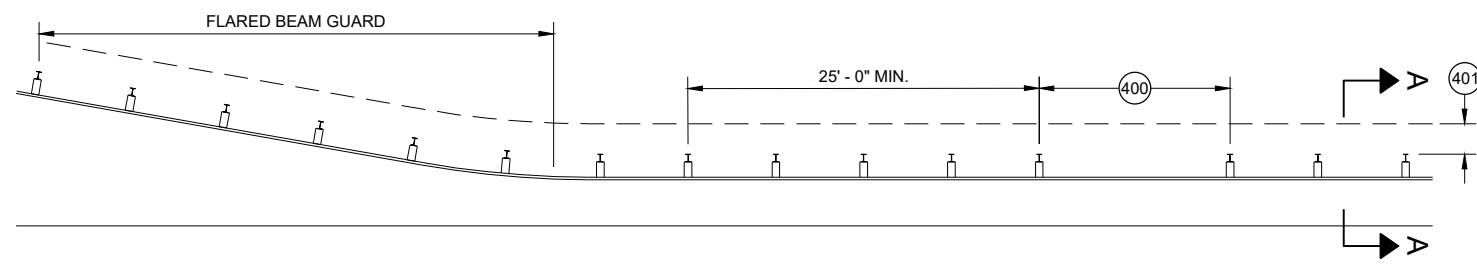
MISSING POST IN MGS GUARDRAIL



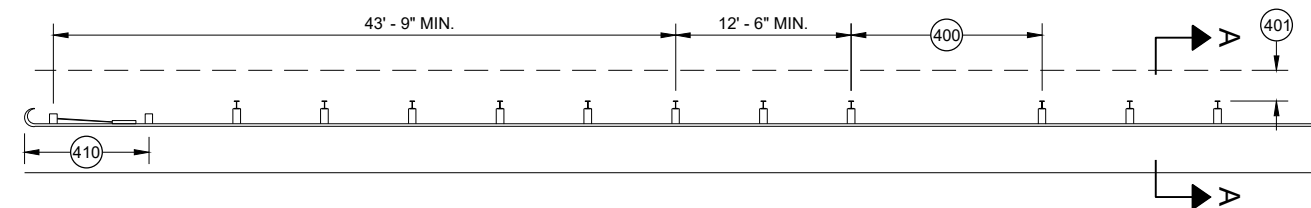
MISSING POST IN MGS GUARDRAIL NEAR EAT



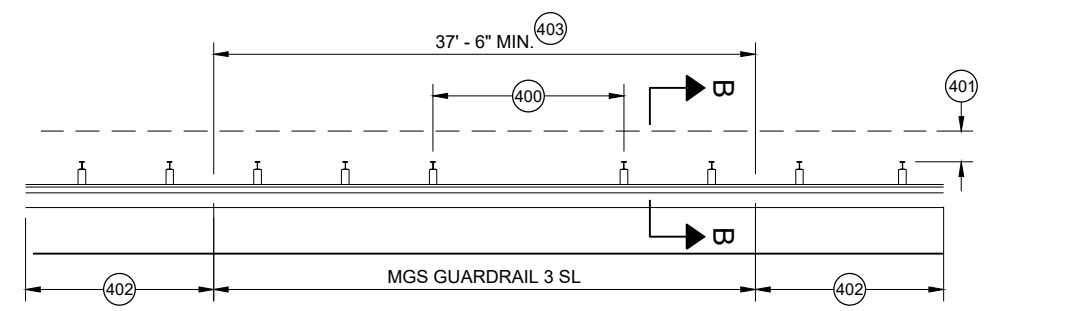
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

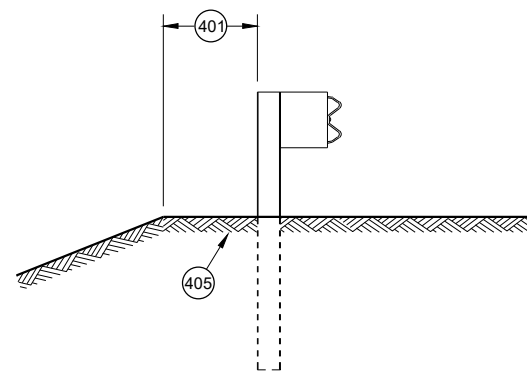


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

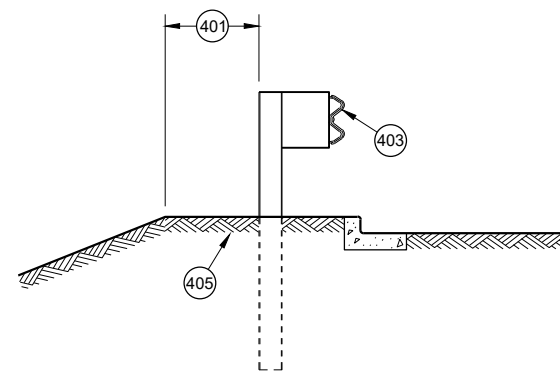


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



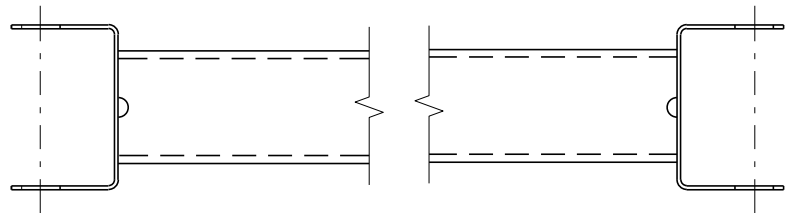
SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

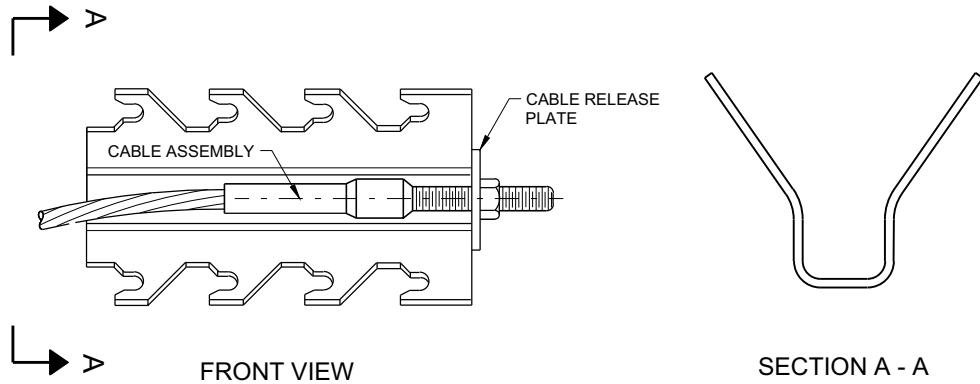
APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

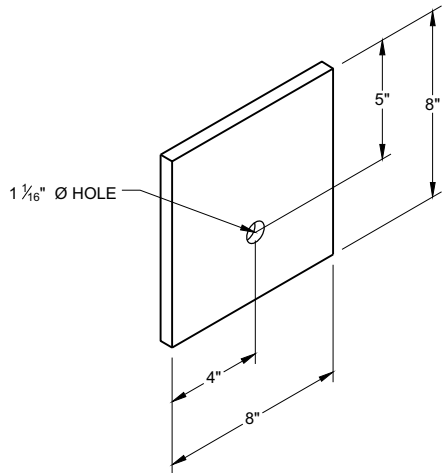


GENERIC GROUND STRUT⁹ ^E

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



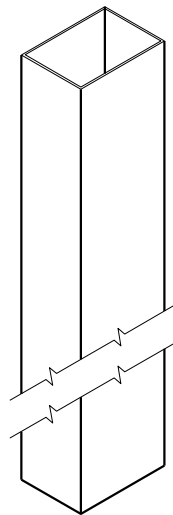
GENERIC ANCHOR CABLE BOX⁹ ^E



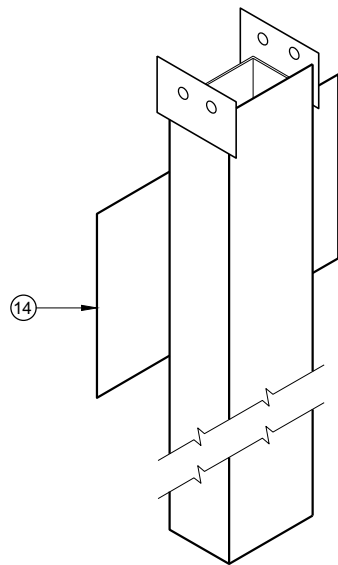
BEARING PLATE⁶ ^E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

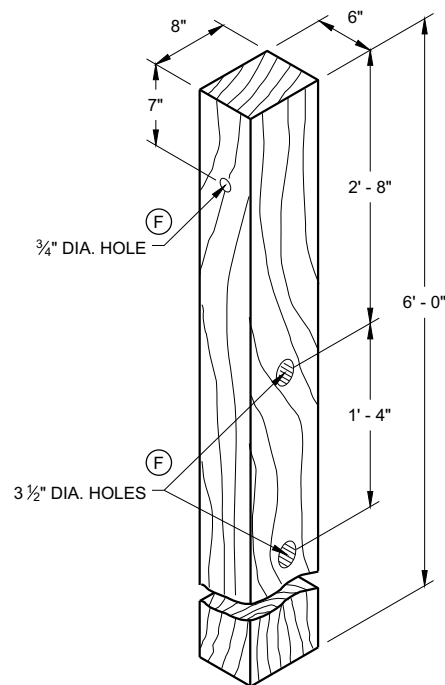
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



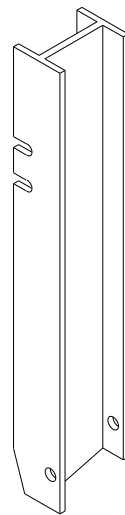
UPPER POST NO. 1 ⁽¹⁾ (E)



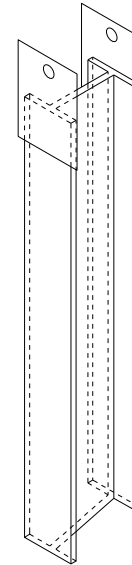
LOWER POST NO. 1 ⁽²⁾ (E)



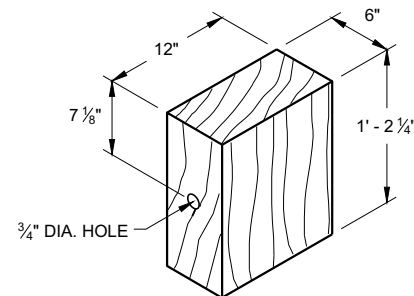
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



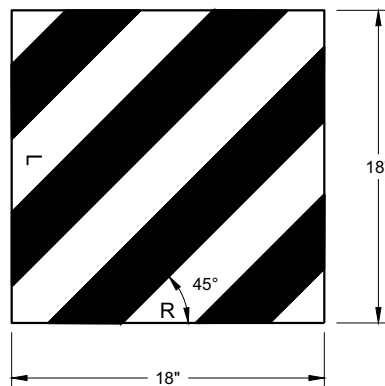
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



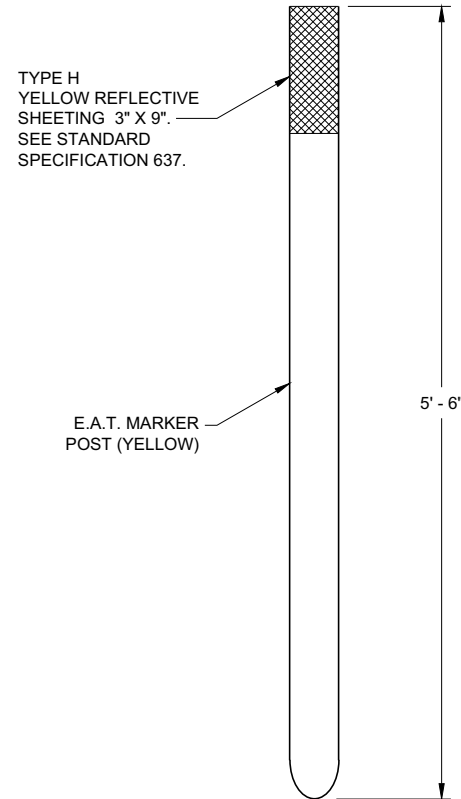
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



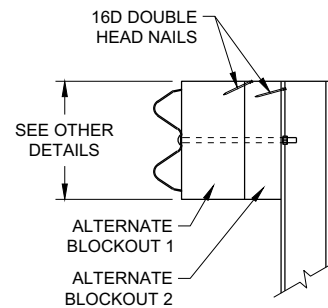
REFLECTIVE SHEETING DETAIL ^(E)



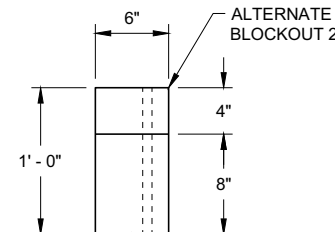
FRONT VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



SIDE VIEW



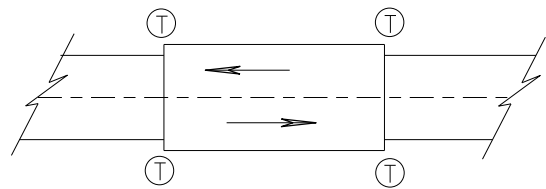
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

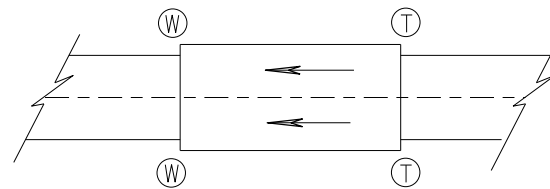
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

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

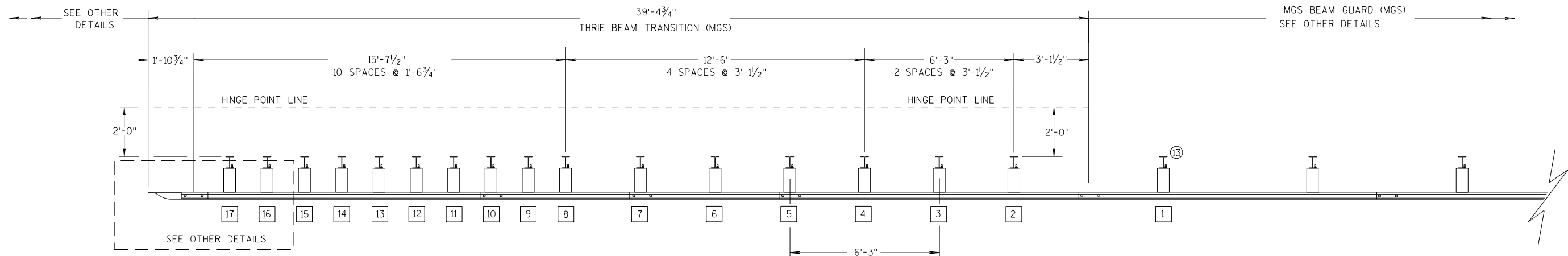
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

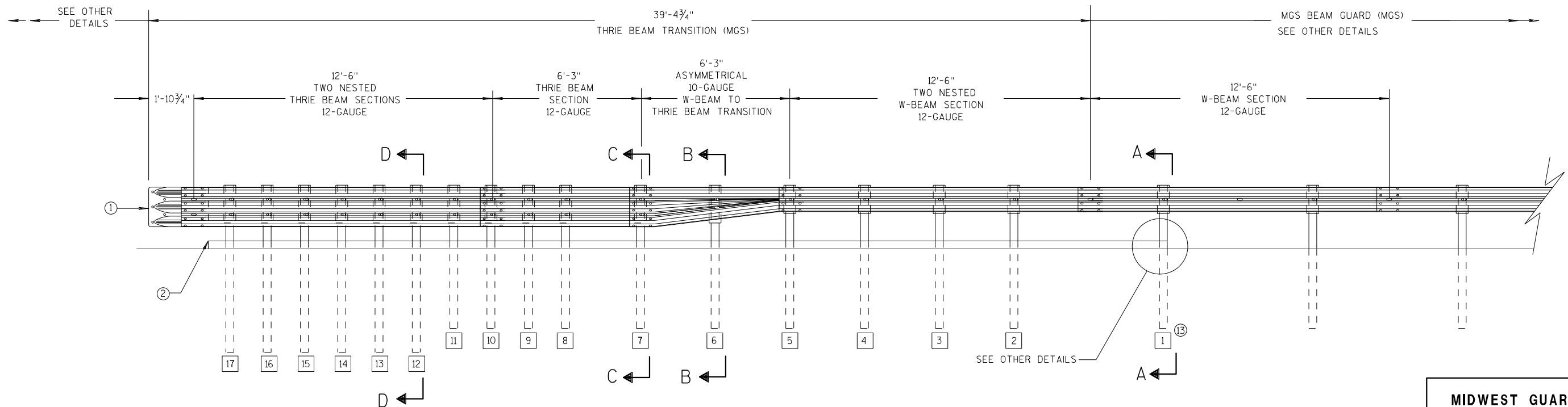
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

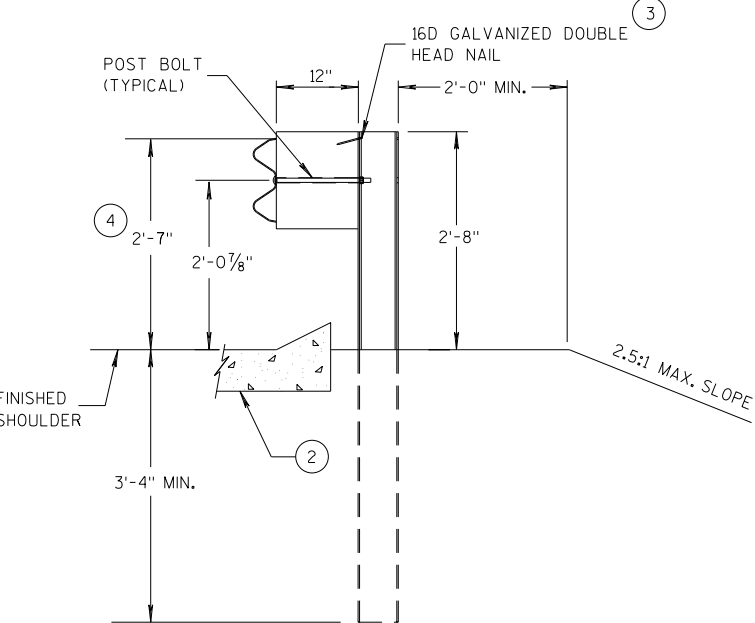
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

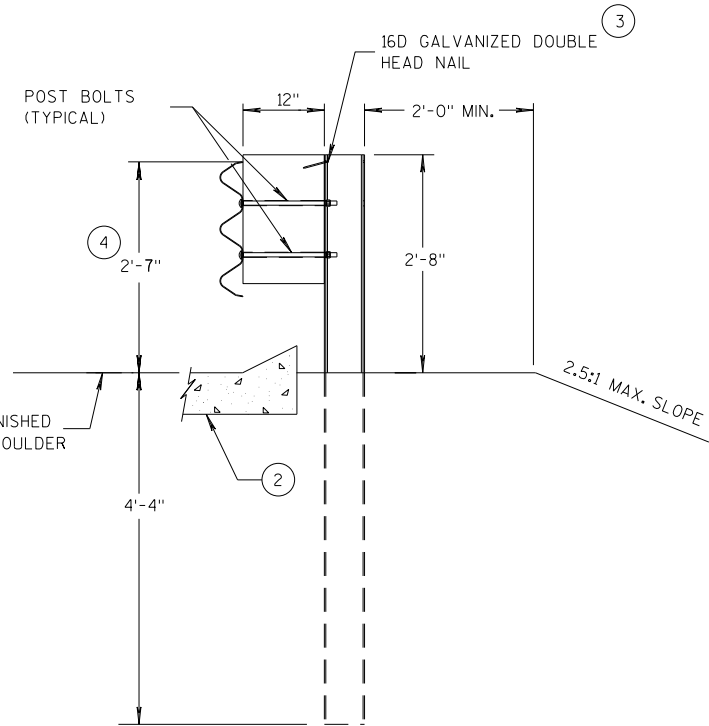
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

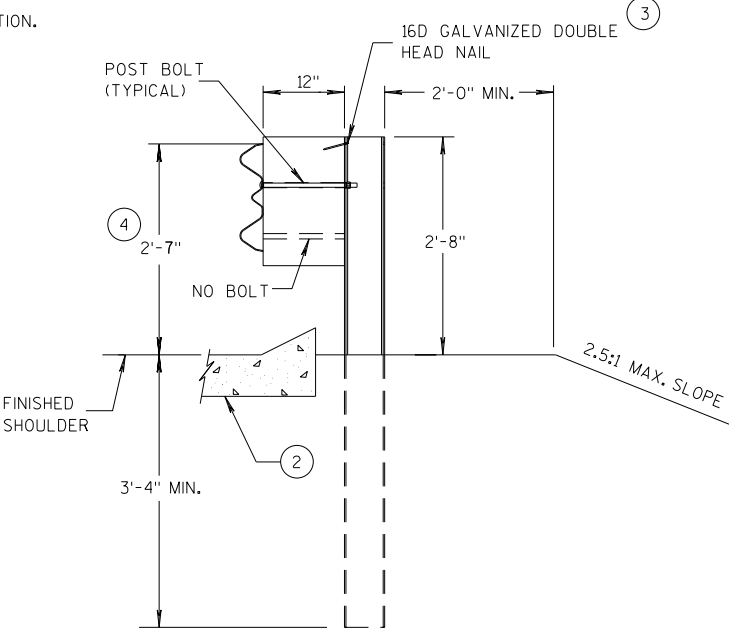
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



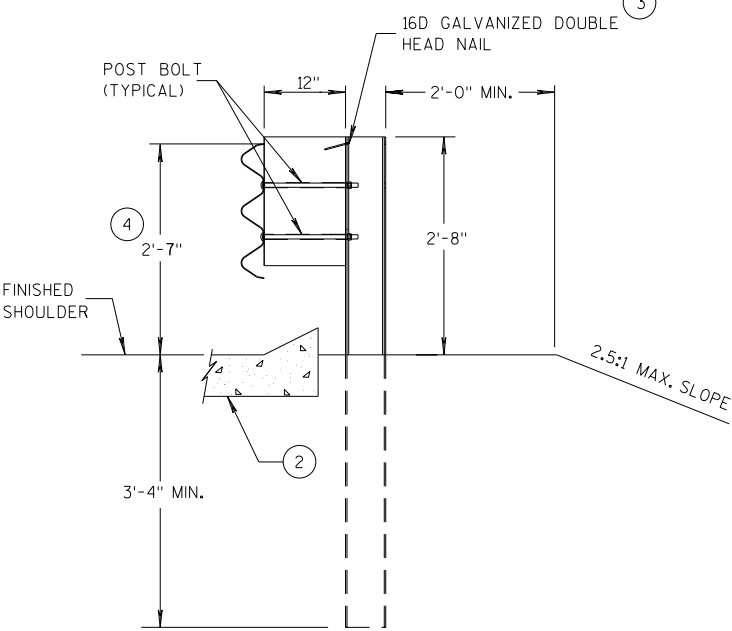
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

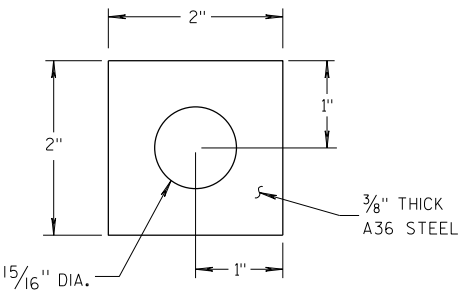
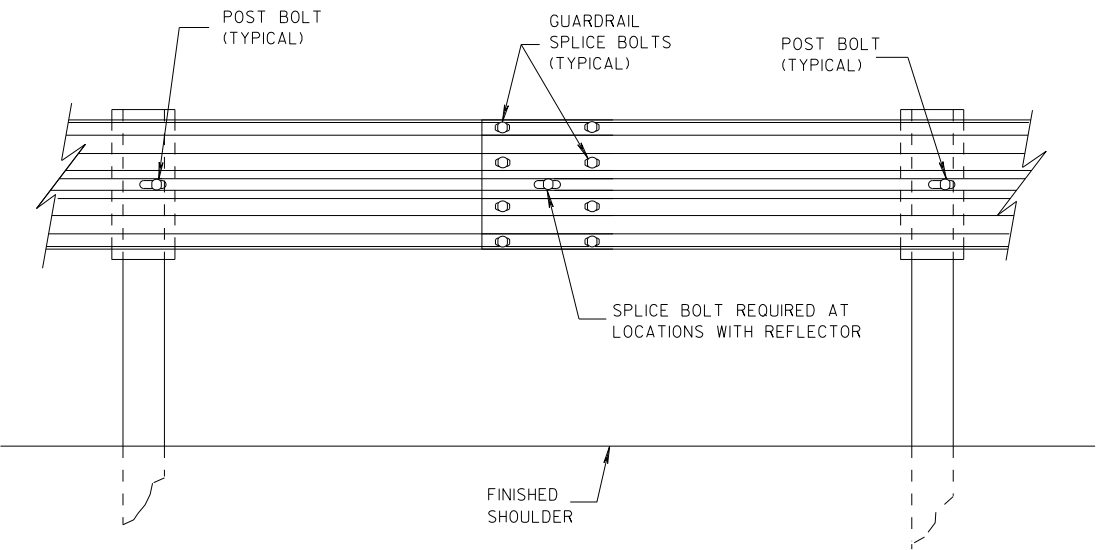
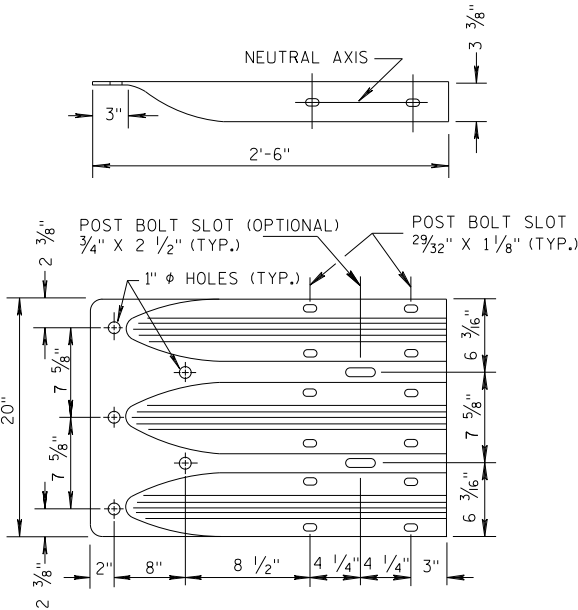


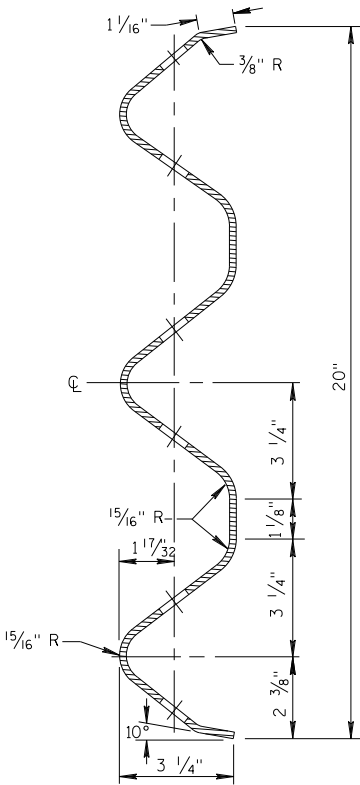
PLATE WASHER DETAIL



SPLICE DETAIL



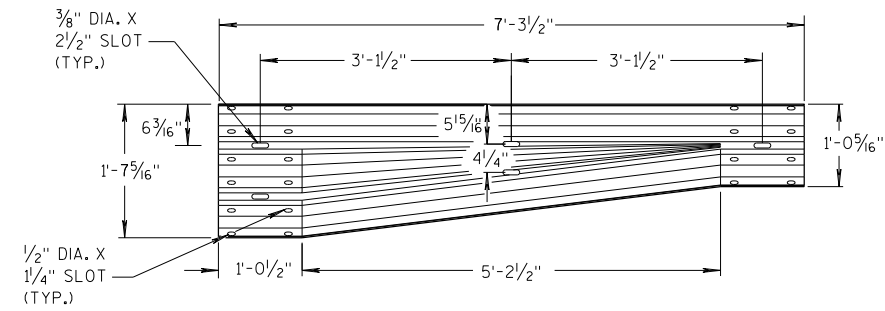
THRIE BEAM
TERMINAL CONNECTOR



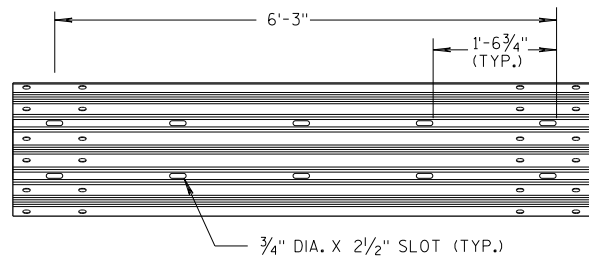
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

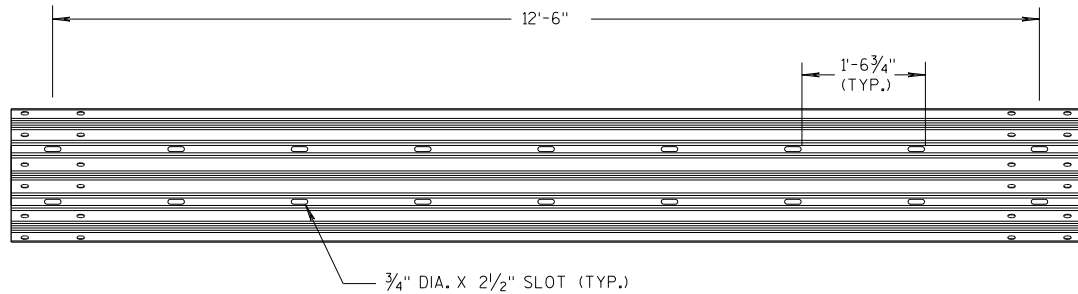
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



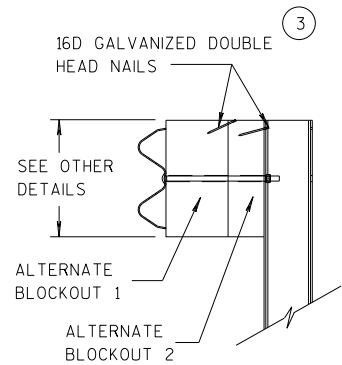
W-BEAM TO THRIE BEAM TRANSITION SECTION



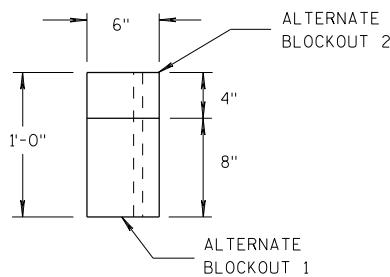
6'-3\"/>



12'-6\"/>

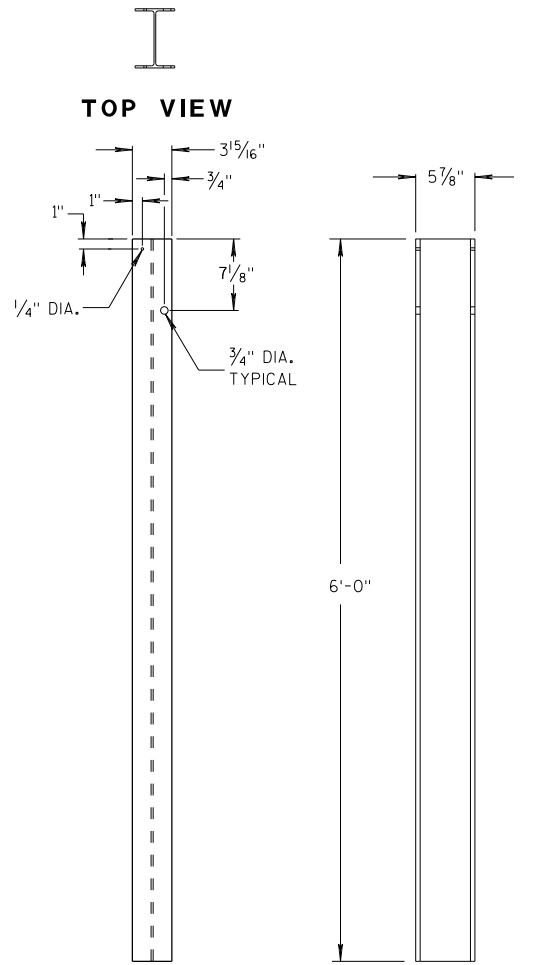


SIDE VIEW



TOP VIEW

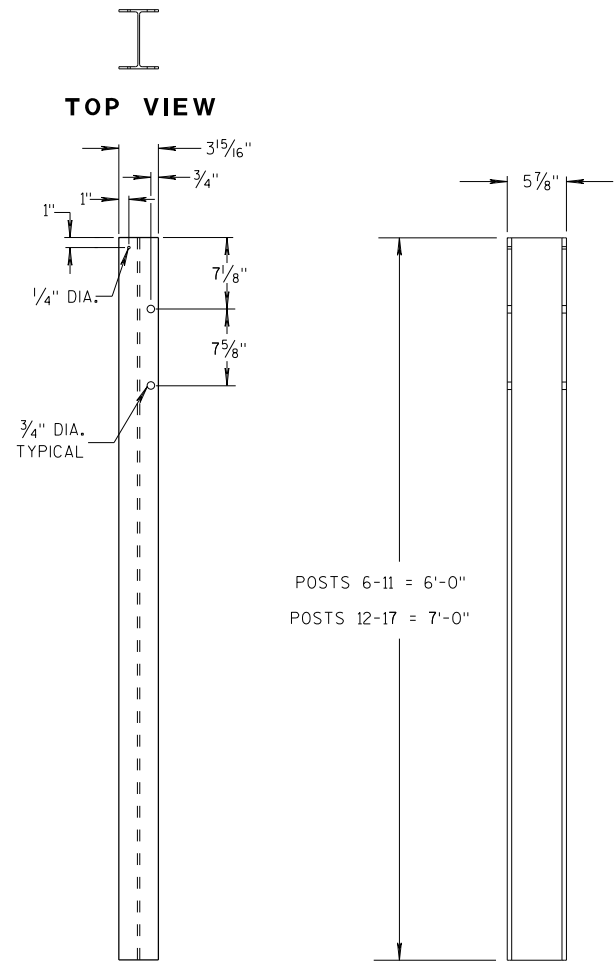
ALTERNATE WOOD BLOCKOUT DETAIL



FRONT VIEW

SIDE VIEW

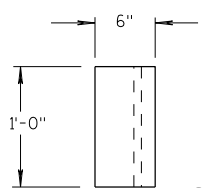
STEEL POSTS 1-5



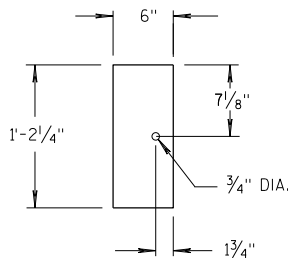
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17

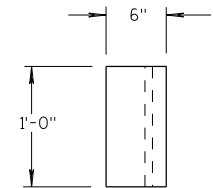


TOP VIEW

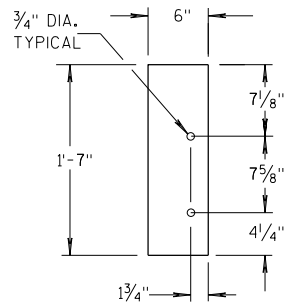


FRONT VIEW

BLOCKOUT POSTS 1-5



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

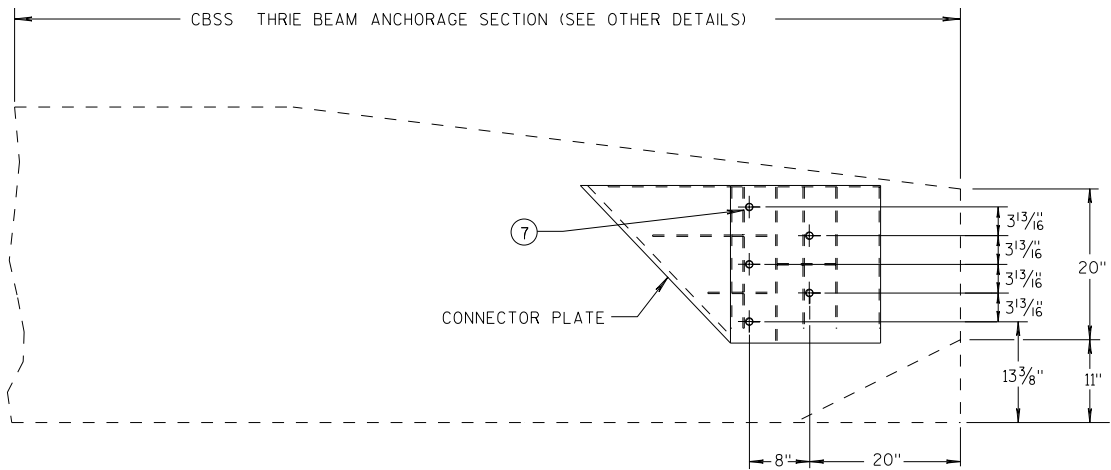
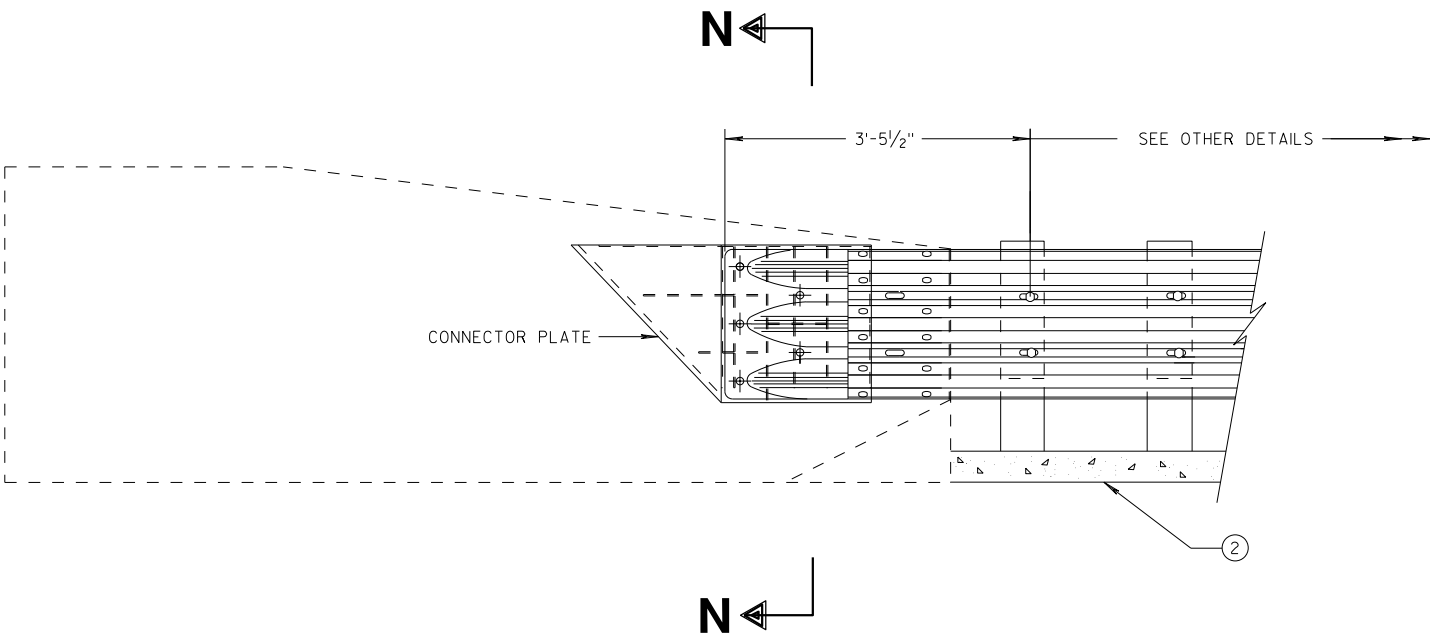
⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



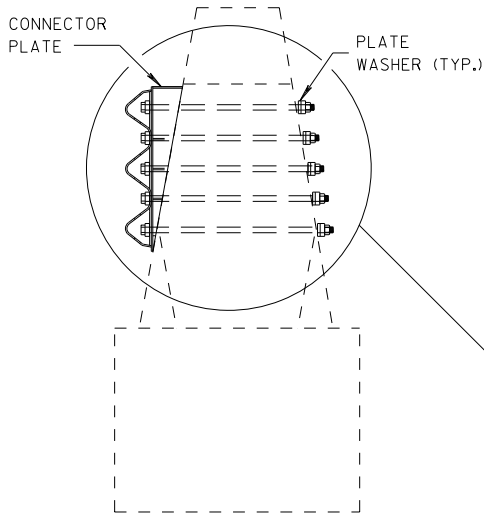
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

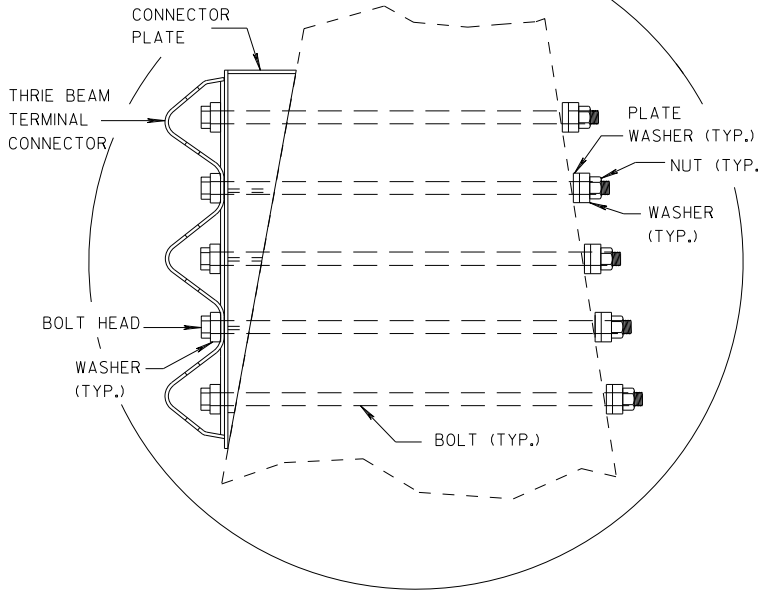
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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 CONNECTION PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



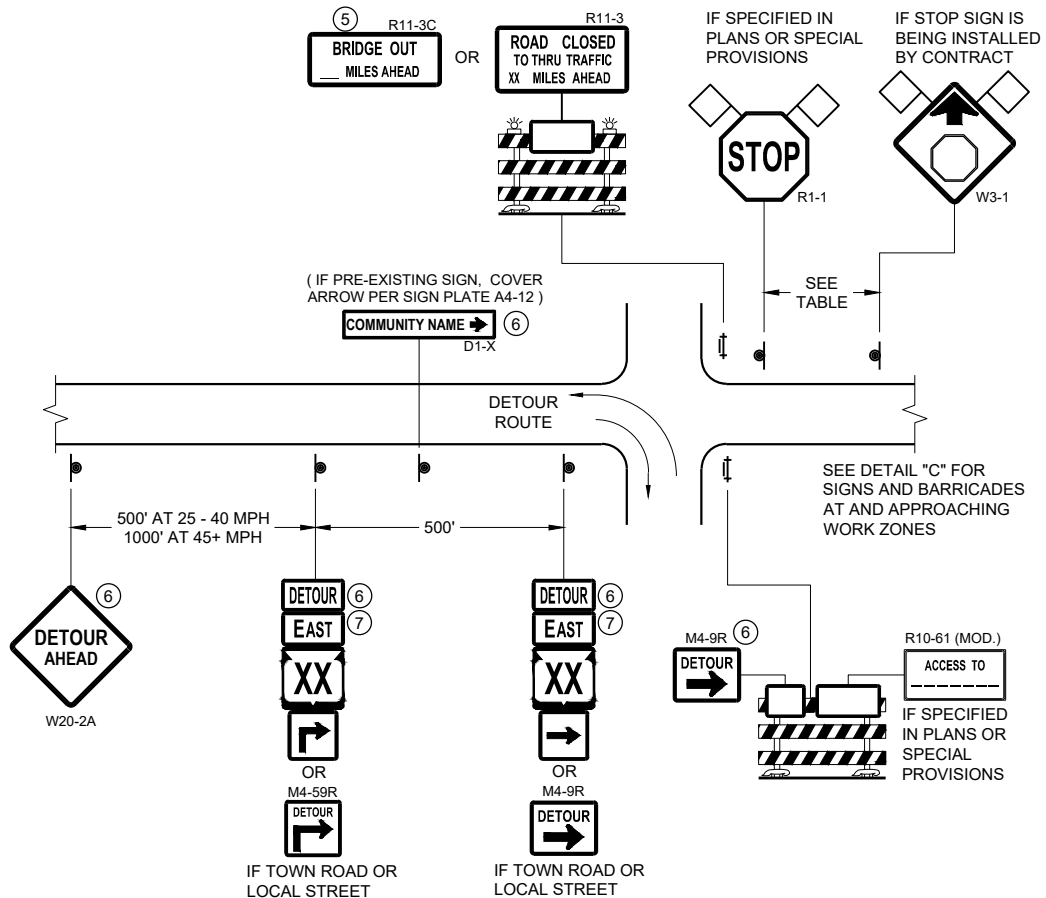
SECTION N-N



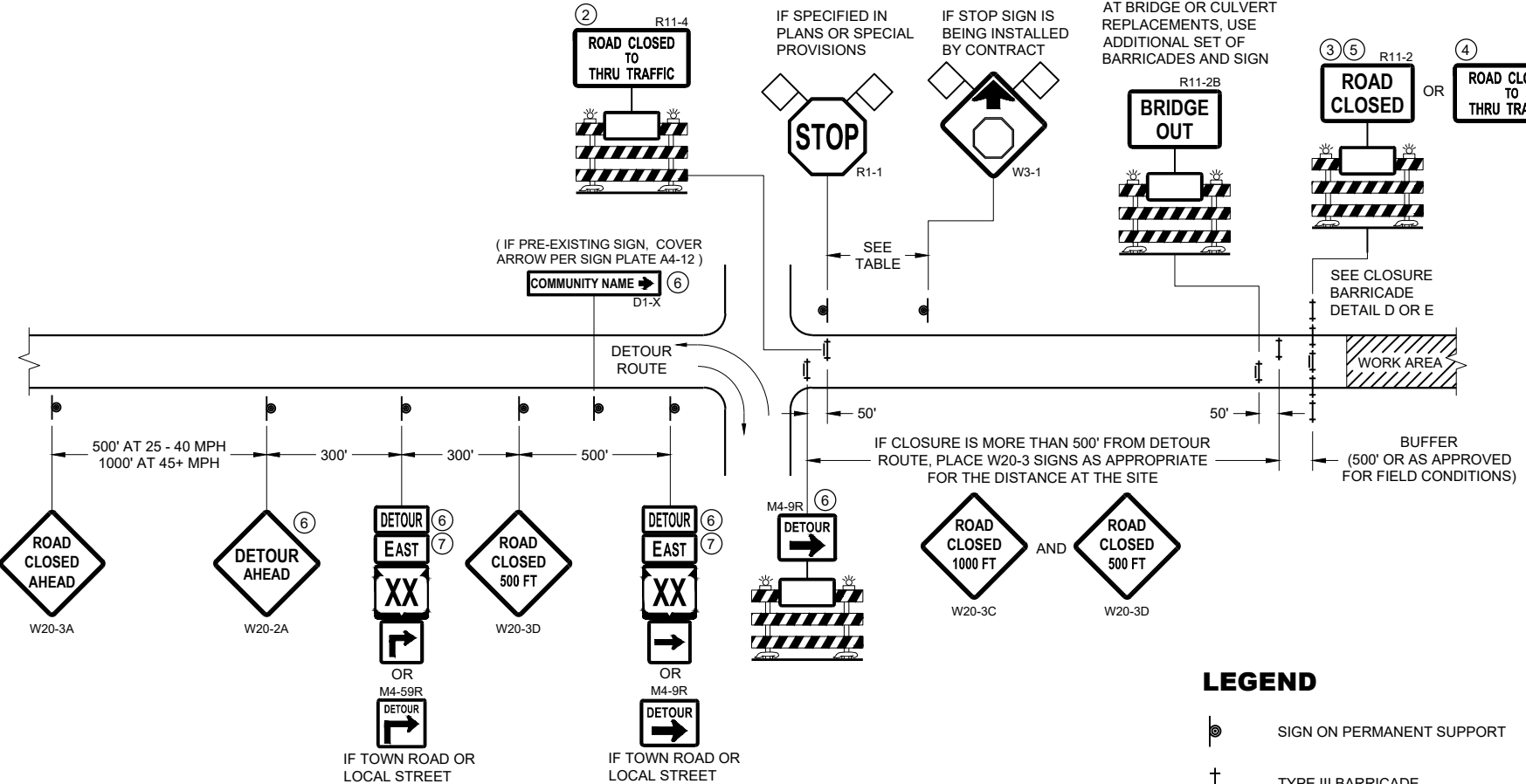
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



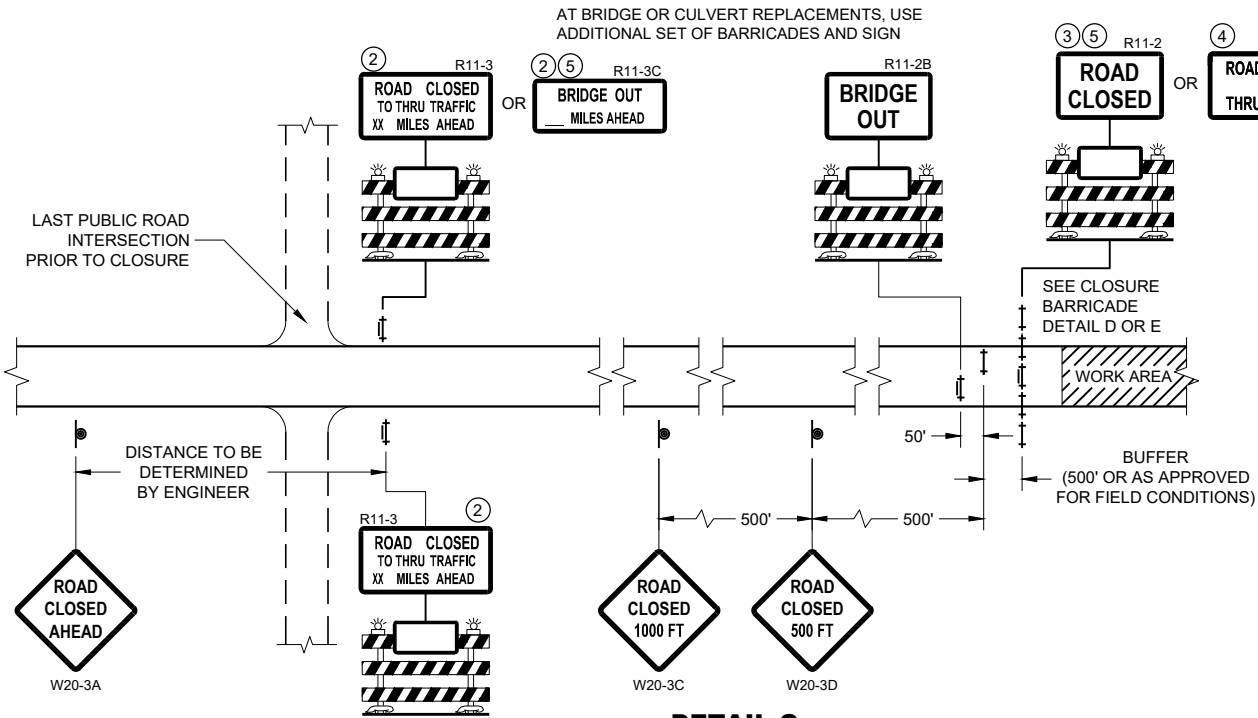
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

- 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
- 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



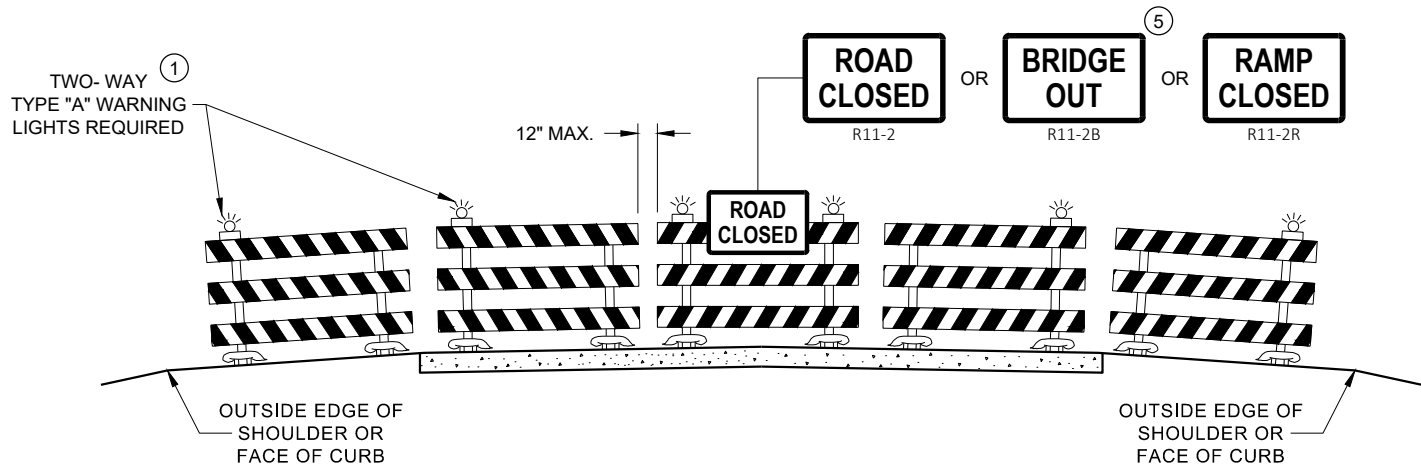
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

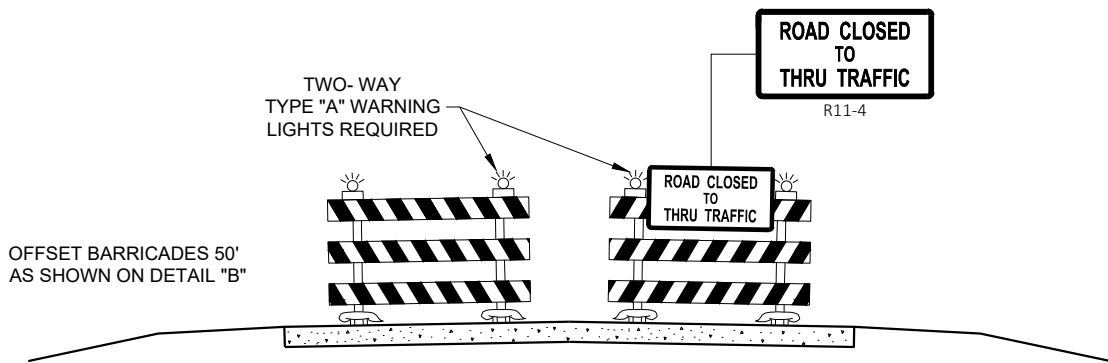
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

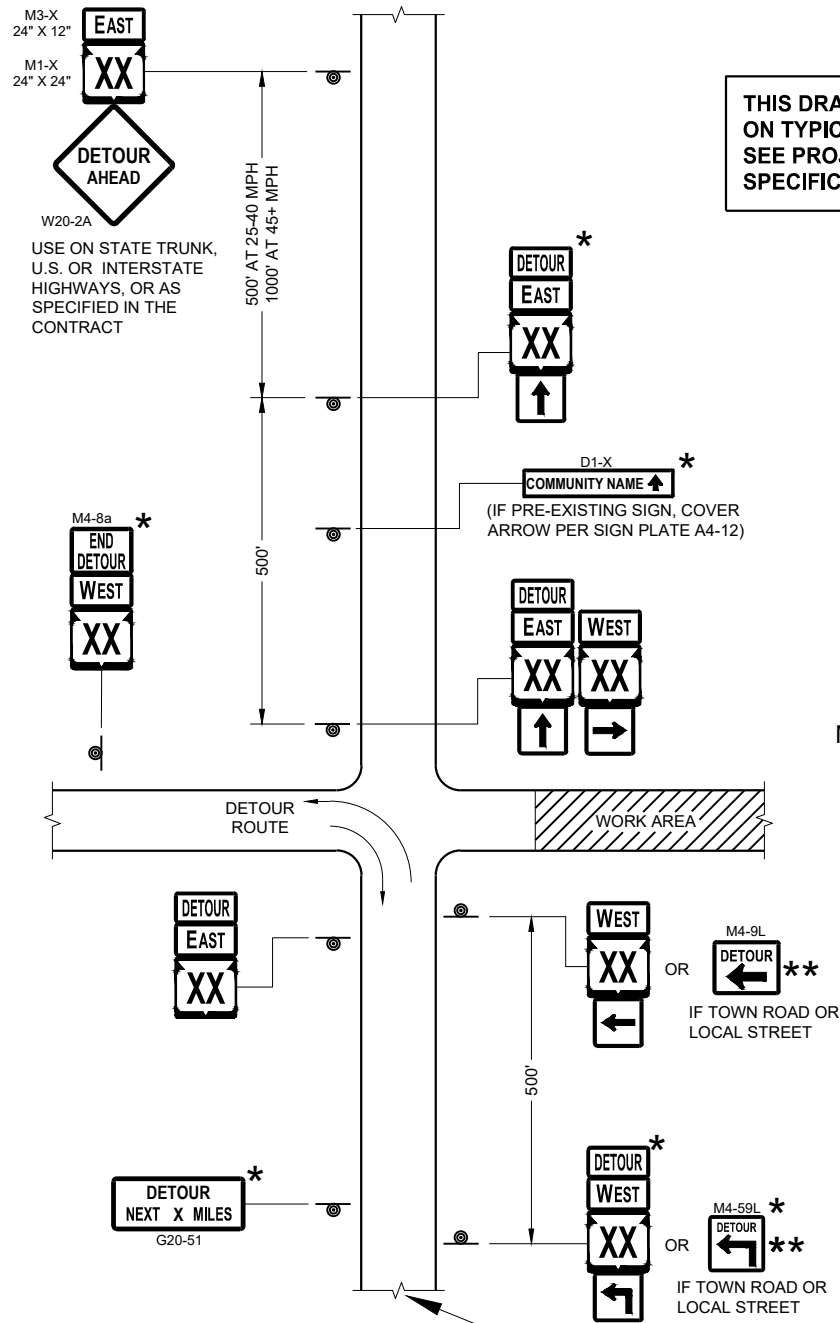
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

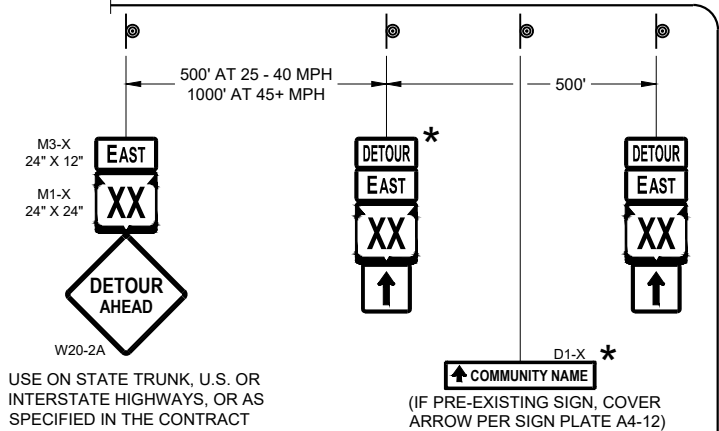
FHWA



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

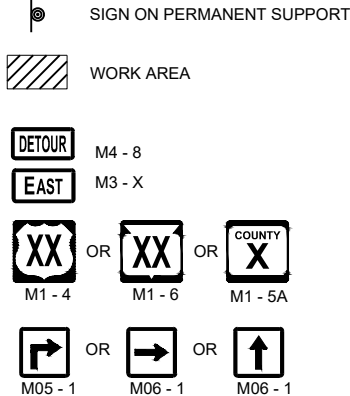
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND



GENERAL NOTES

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

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

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

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

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

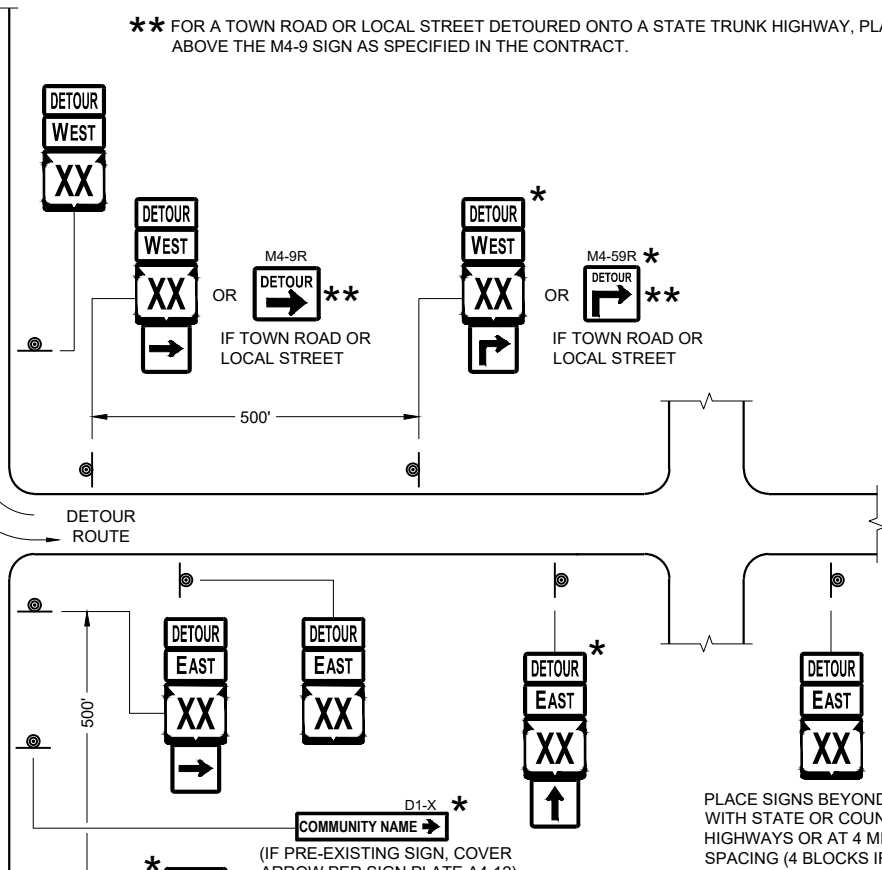
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

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

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

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



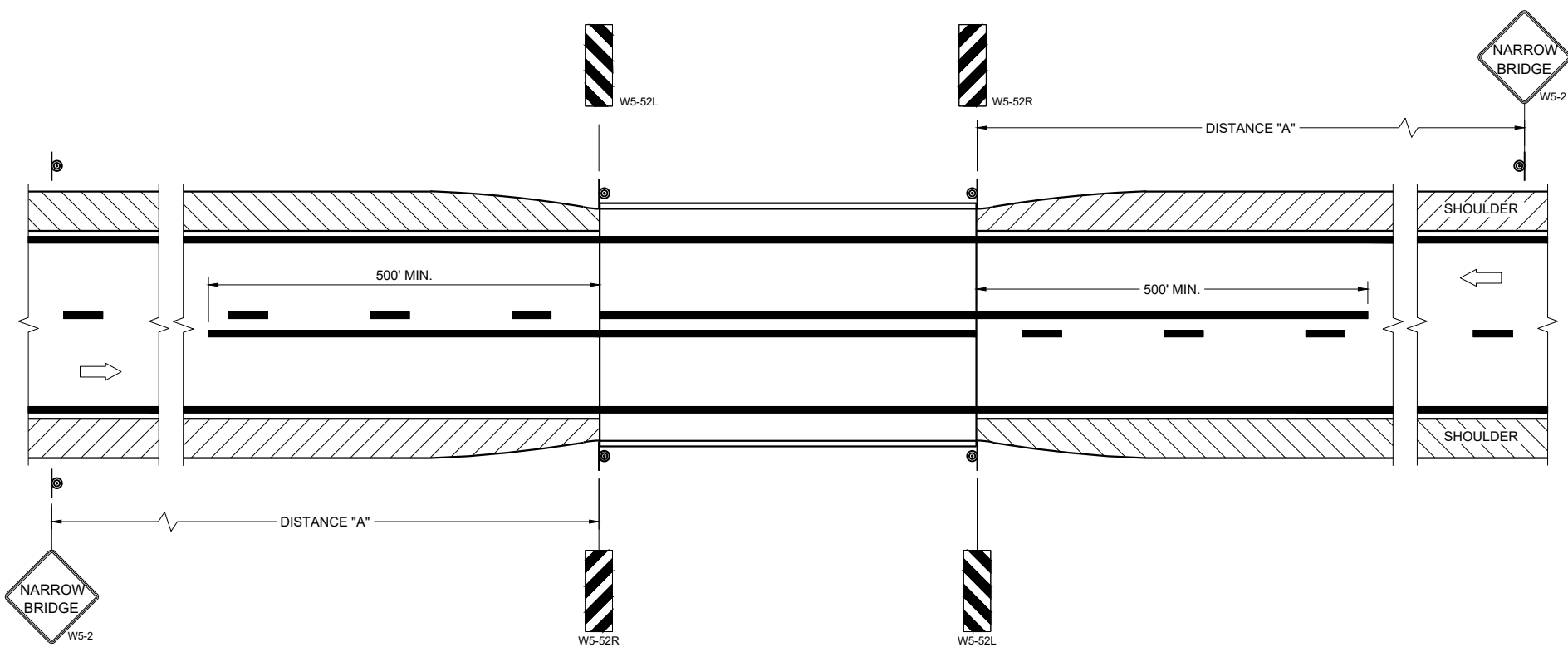
PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING
FOR MAINLINE CLOSURES

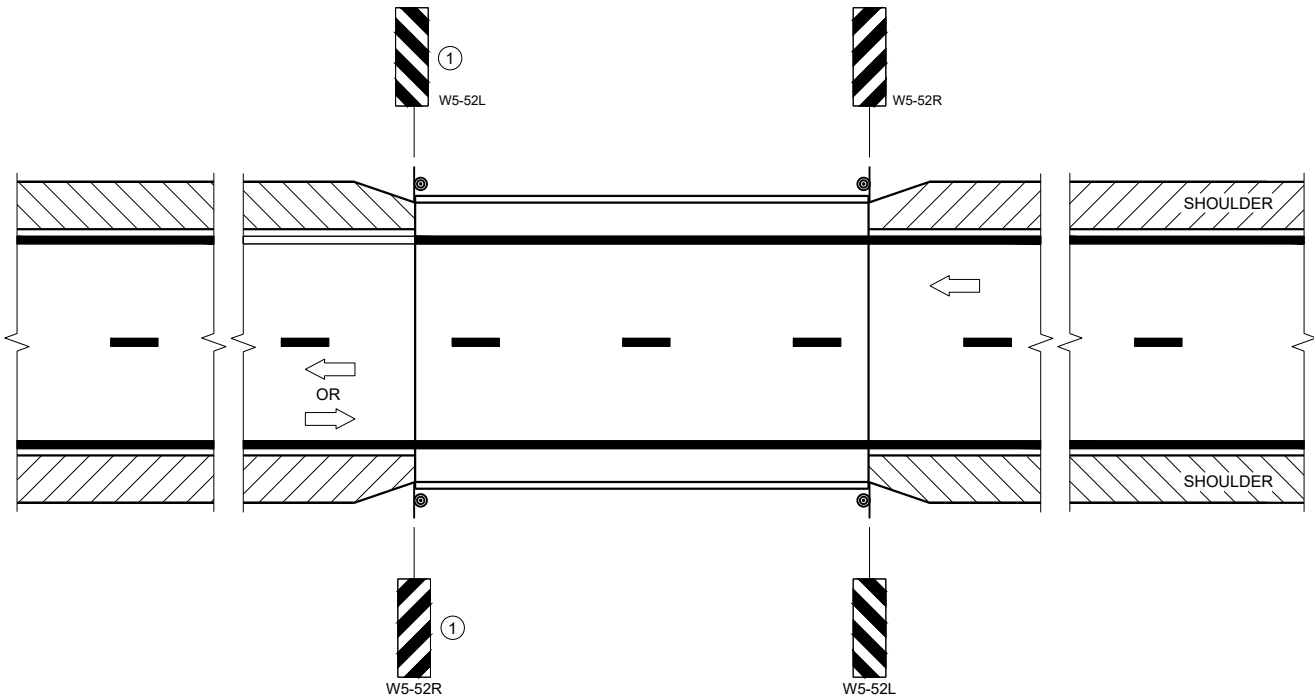
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



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'

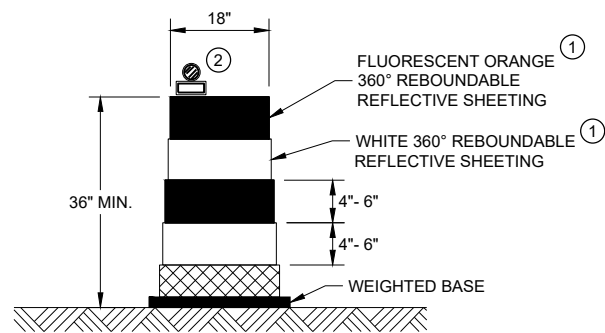
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

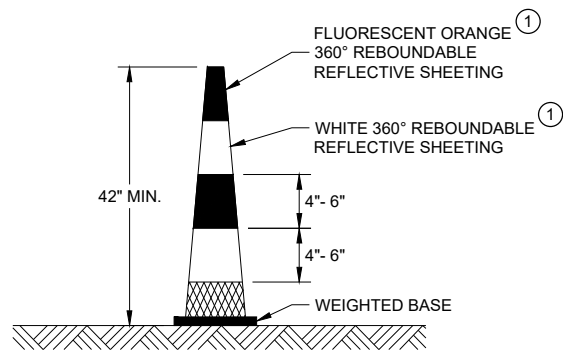


 "T" MARKING
 SIGN ON PERMANENT SUPPORT
 DIRECTION OF TRAFFIC



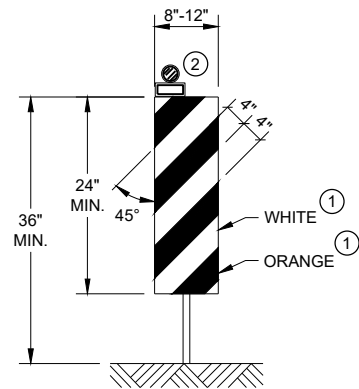
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



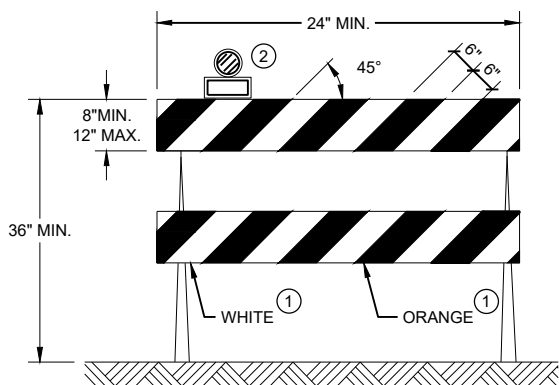
42" CONE

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



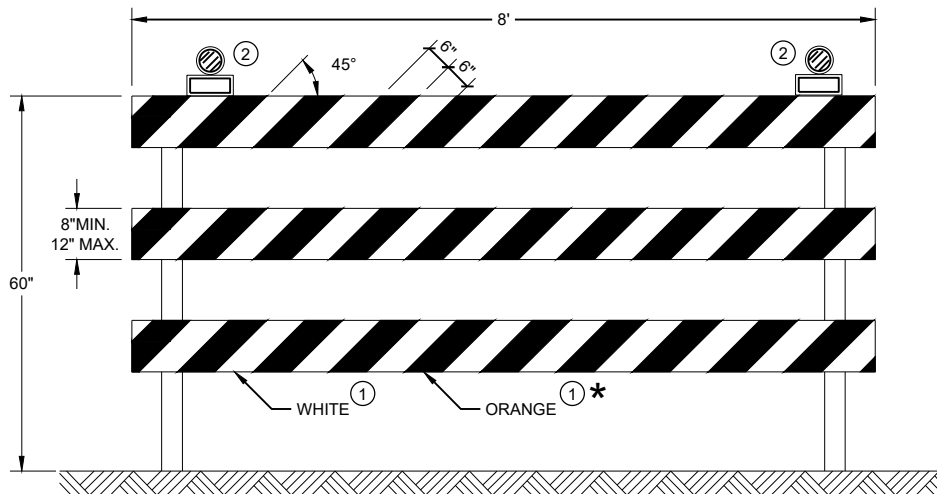
VERTICAL PANEL

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.

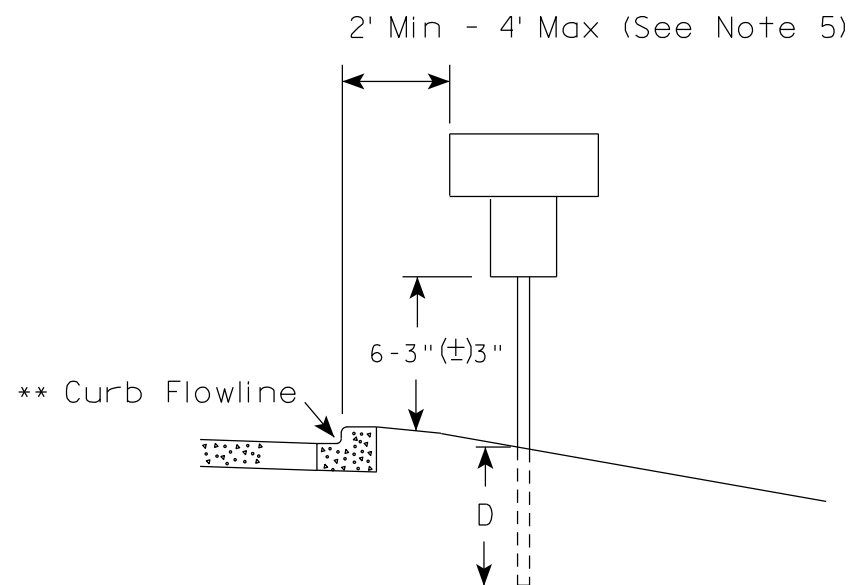
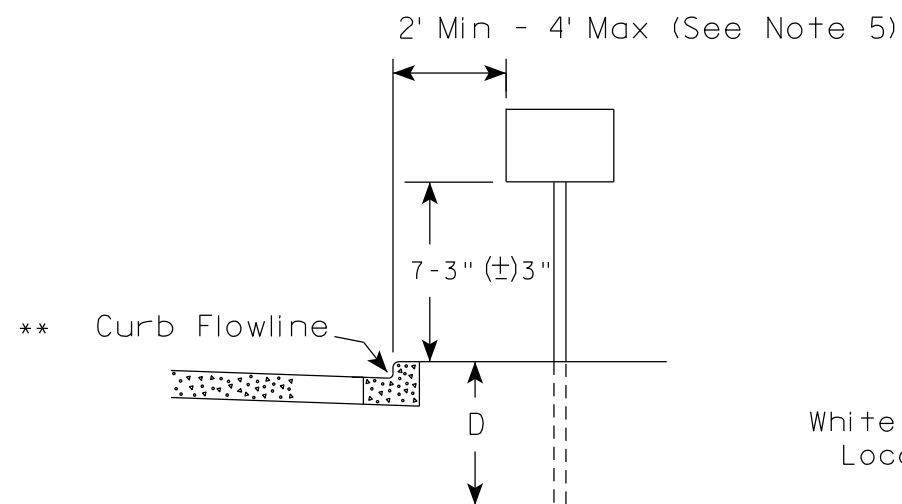
**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

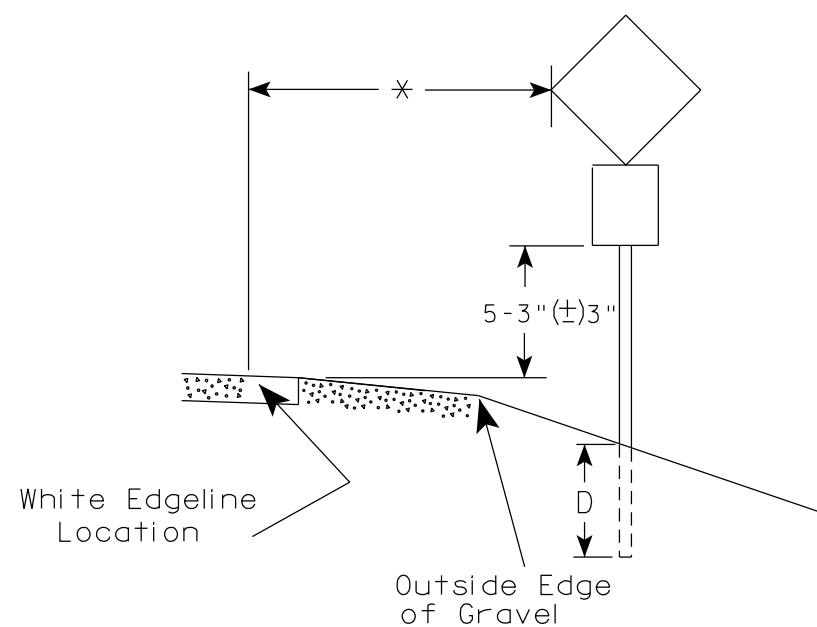
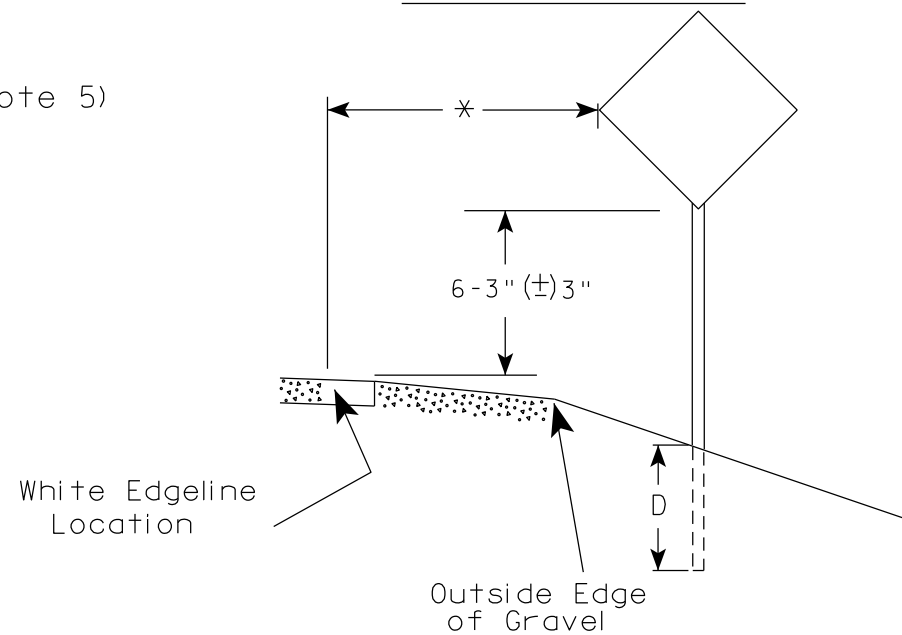
APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

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

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

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

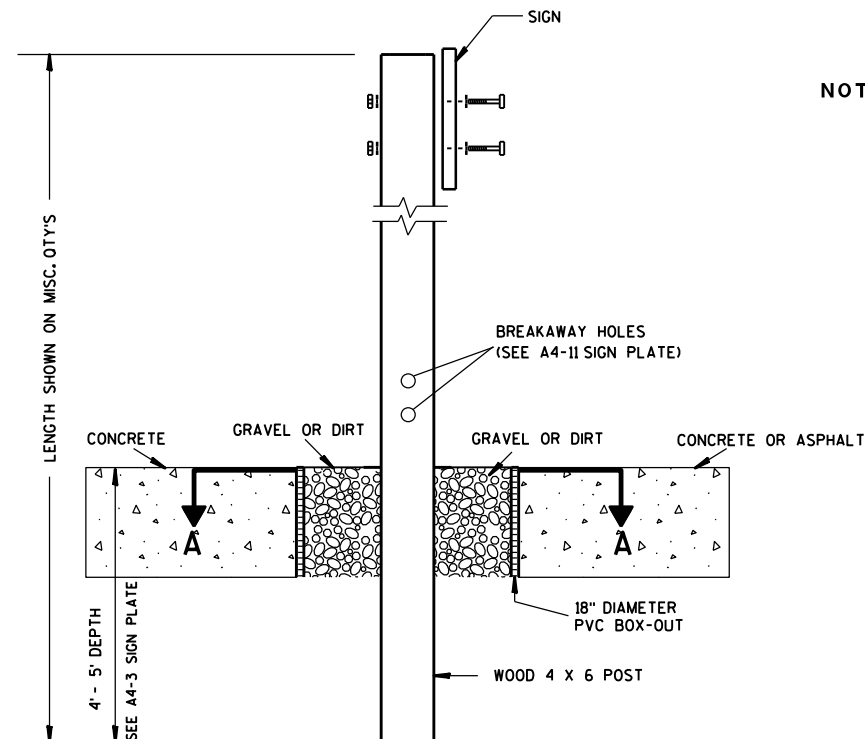
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

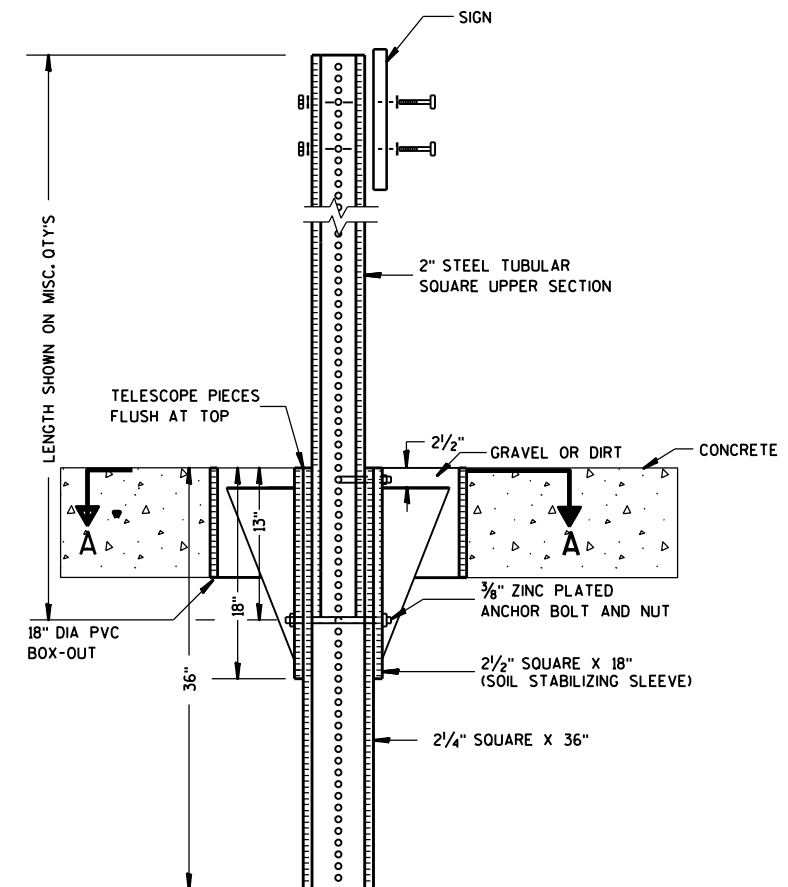
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

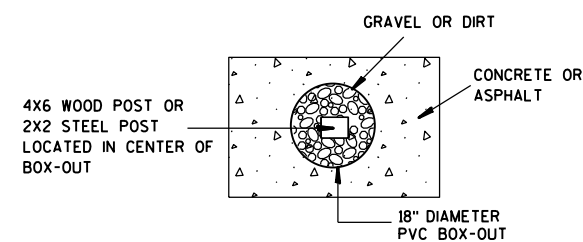
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 PLATE NO. A4-3B.1

PROJECT NO:

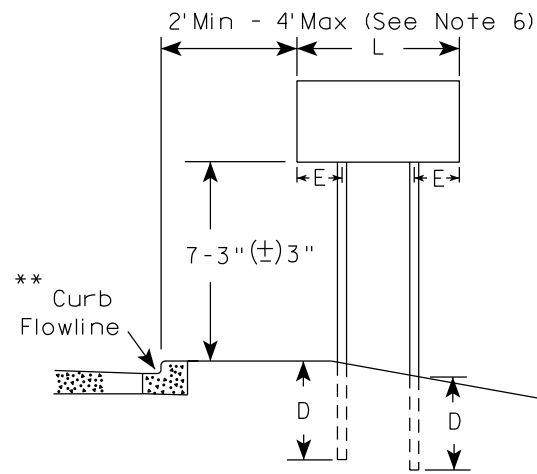
HWY:

COUNTY:

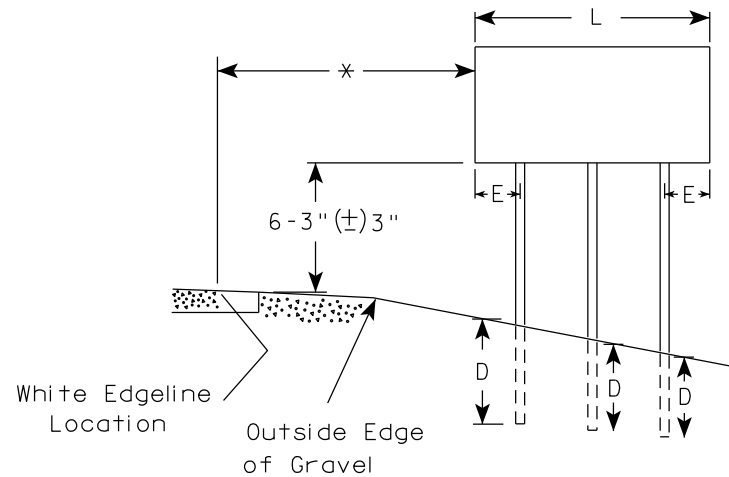
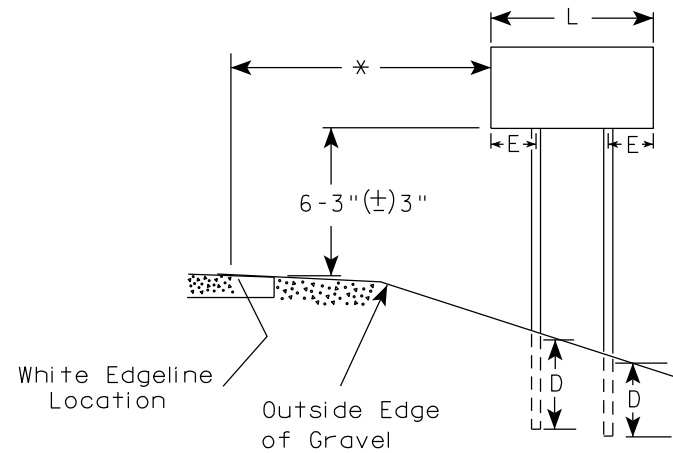
SHEET NO:

E

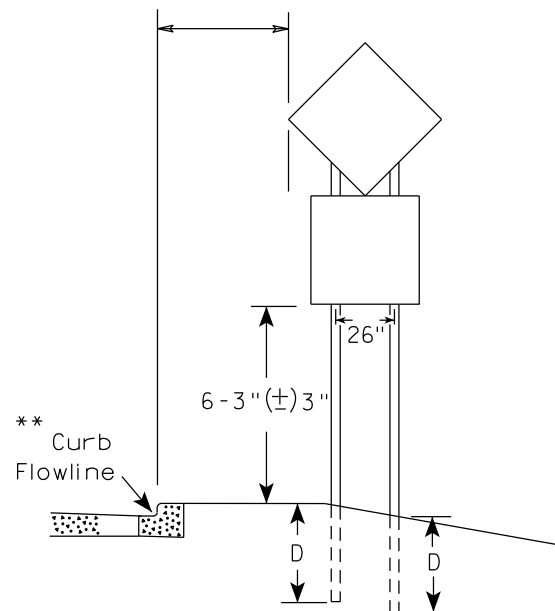
URBAN AREA



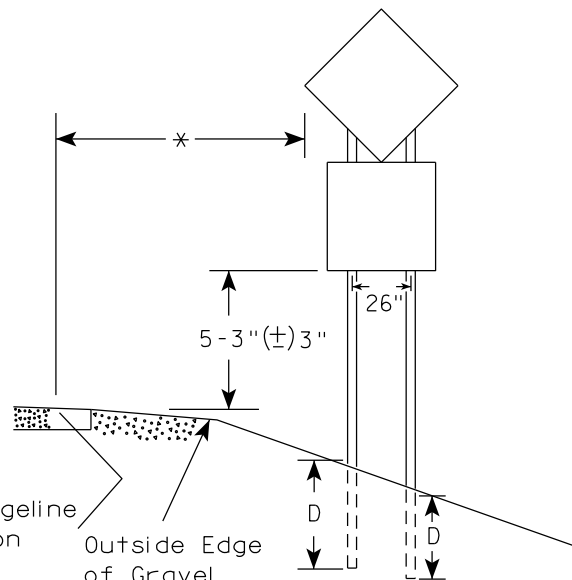
RURAL AREA (See Note 3)



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

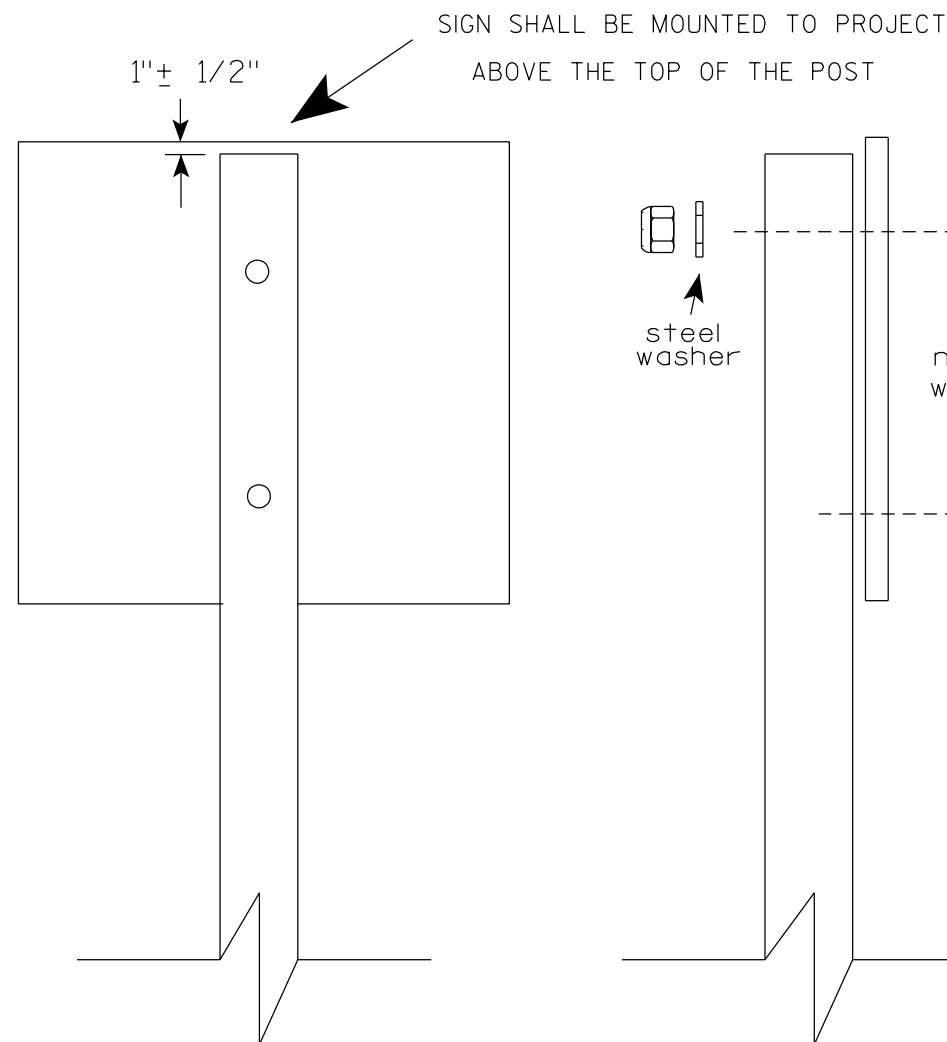
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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.

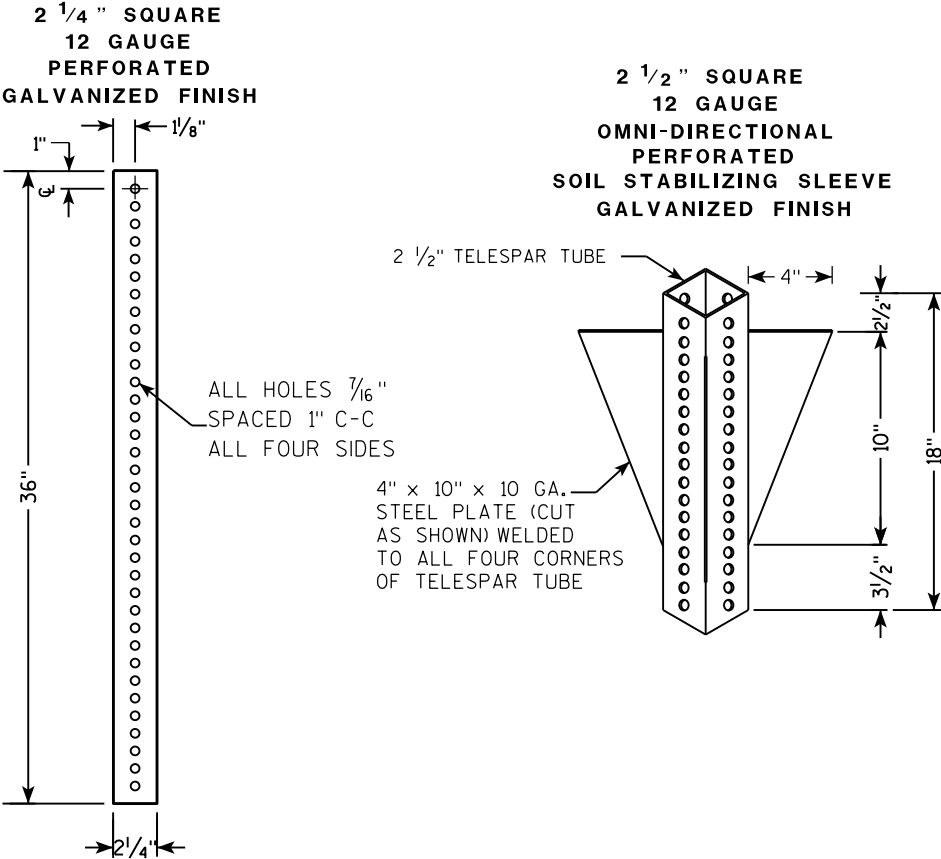
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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

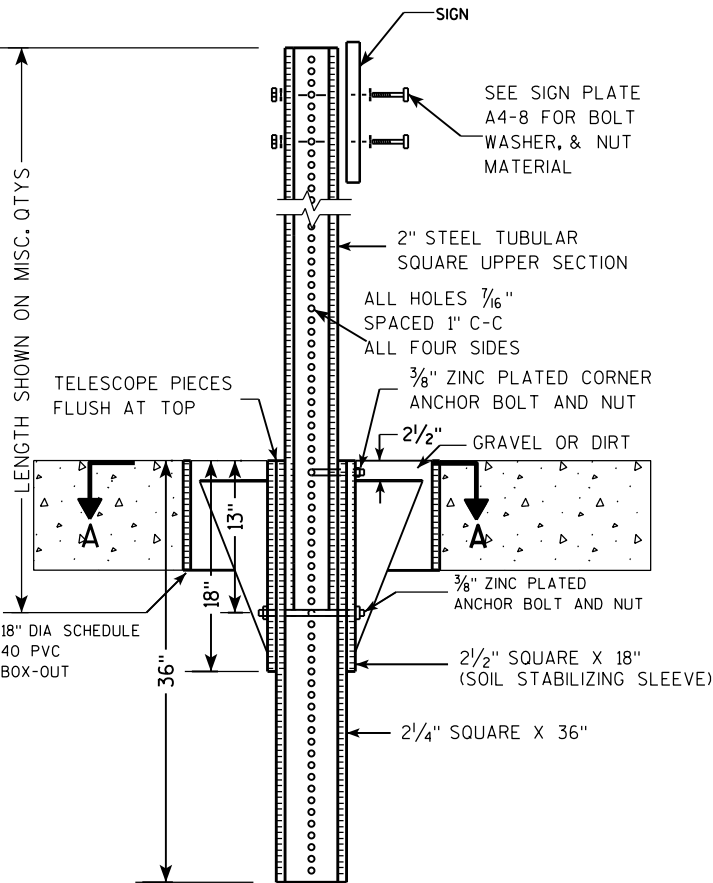
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

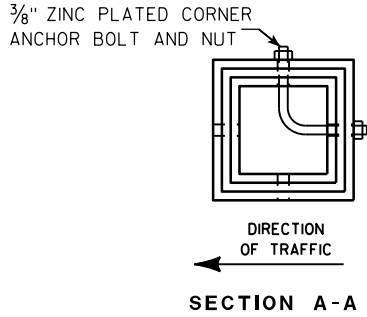
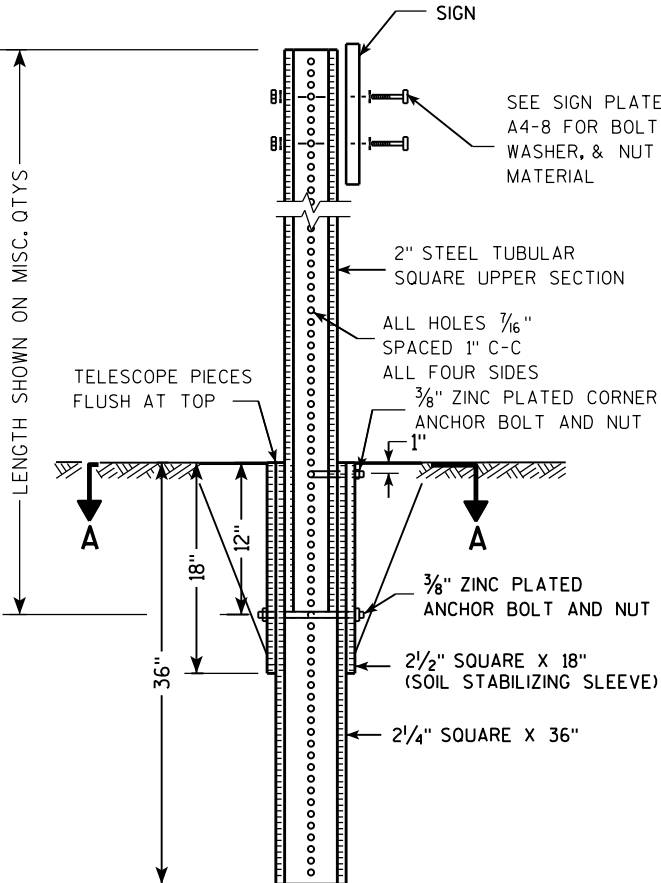
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

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

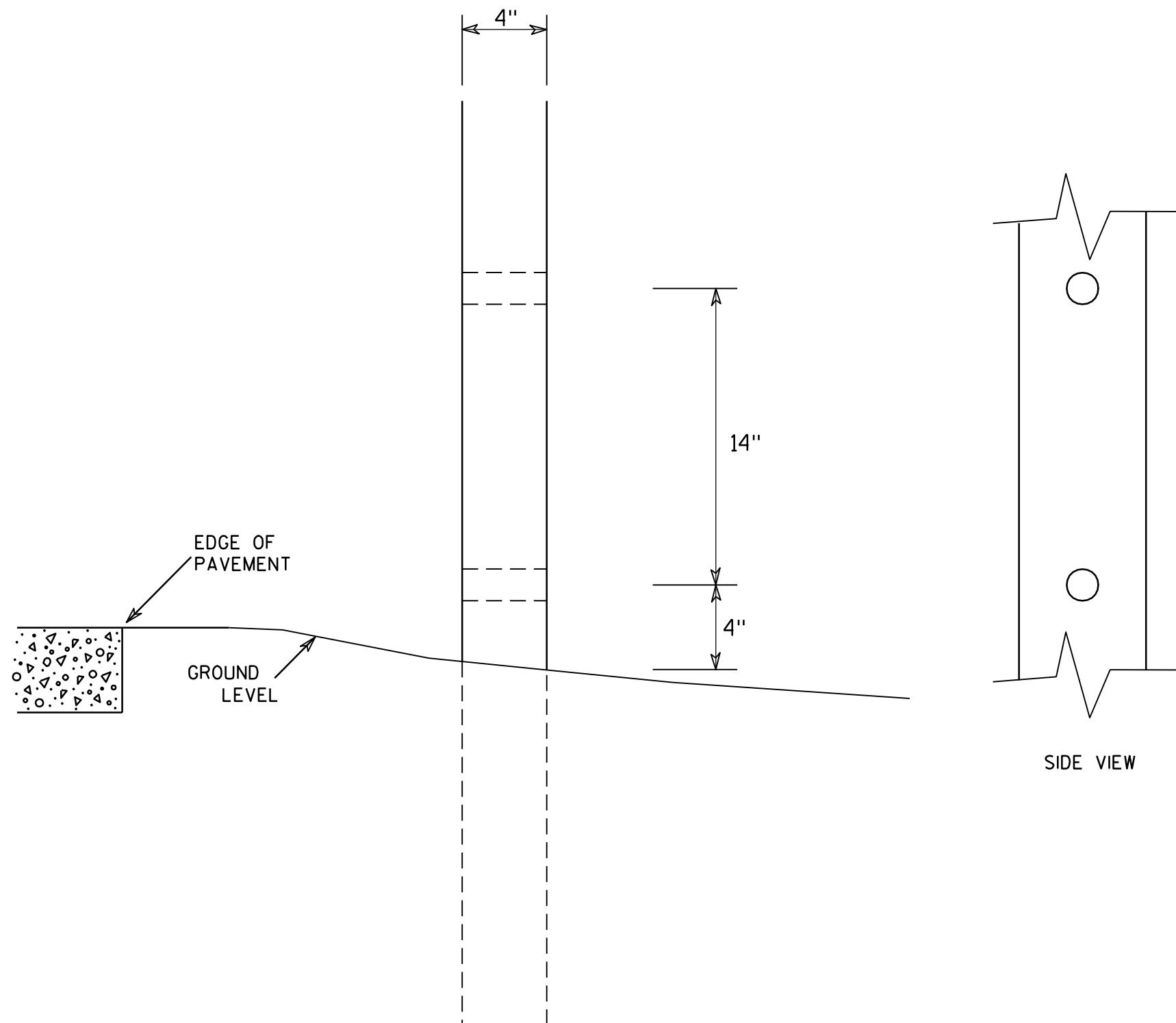
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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:

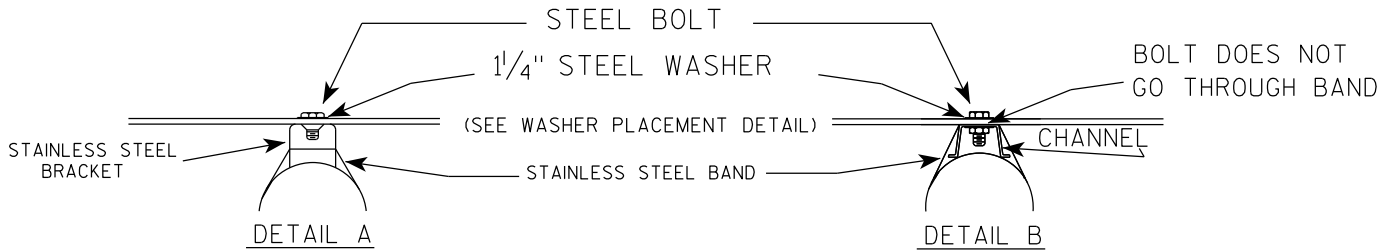
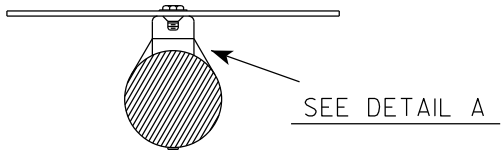
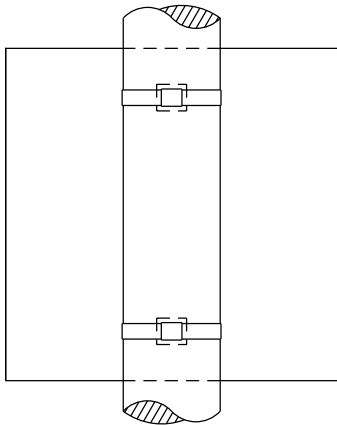
COUNTY:

SHEET NO:

E

BANDING

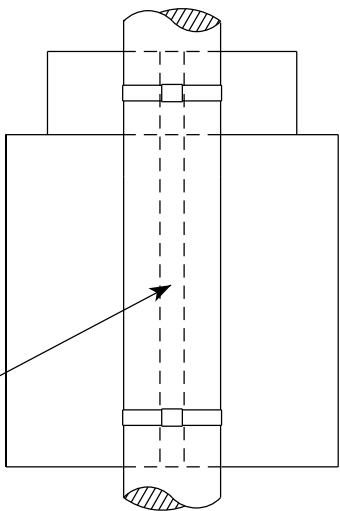
SINGLE SIGN



GENERAL NOTES

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

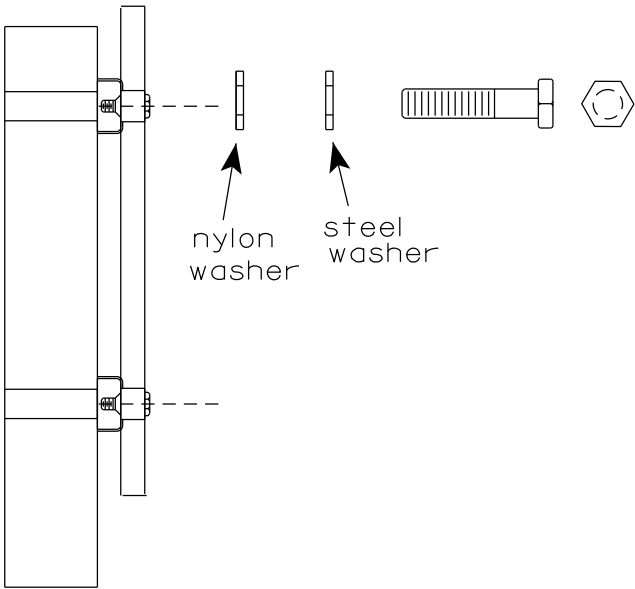
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

WASHER PLACEMENT

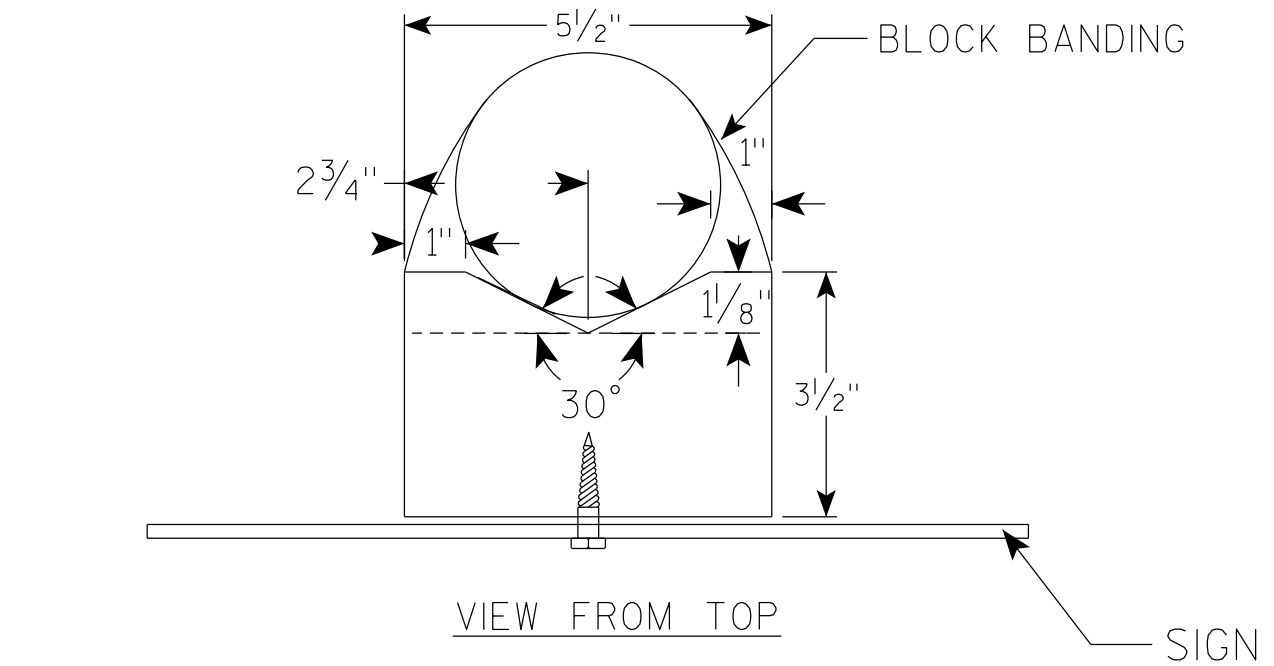
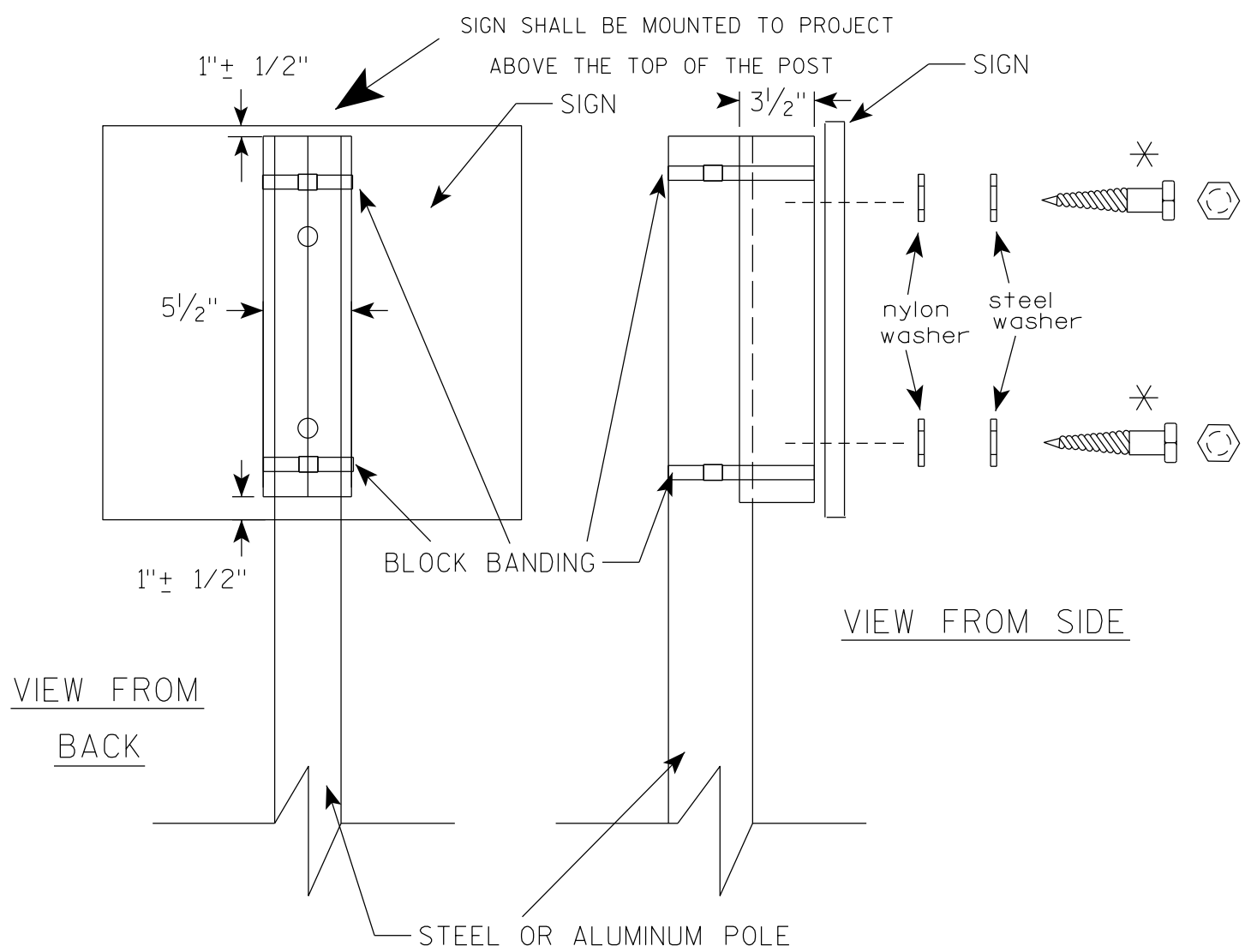


WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

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



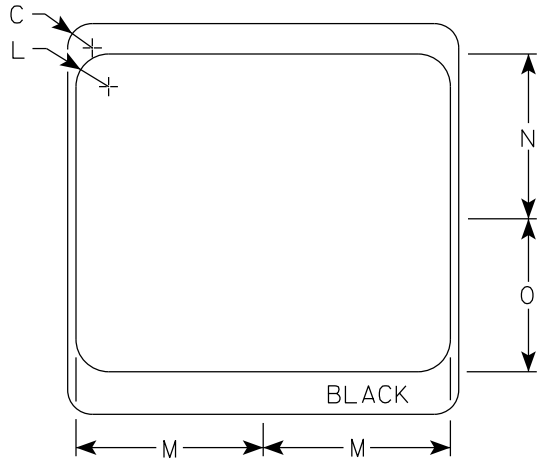
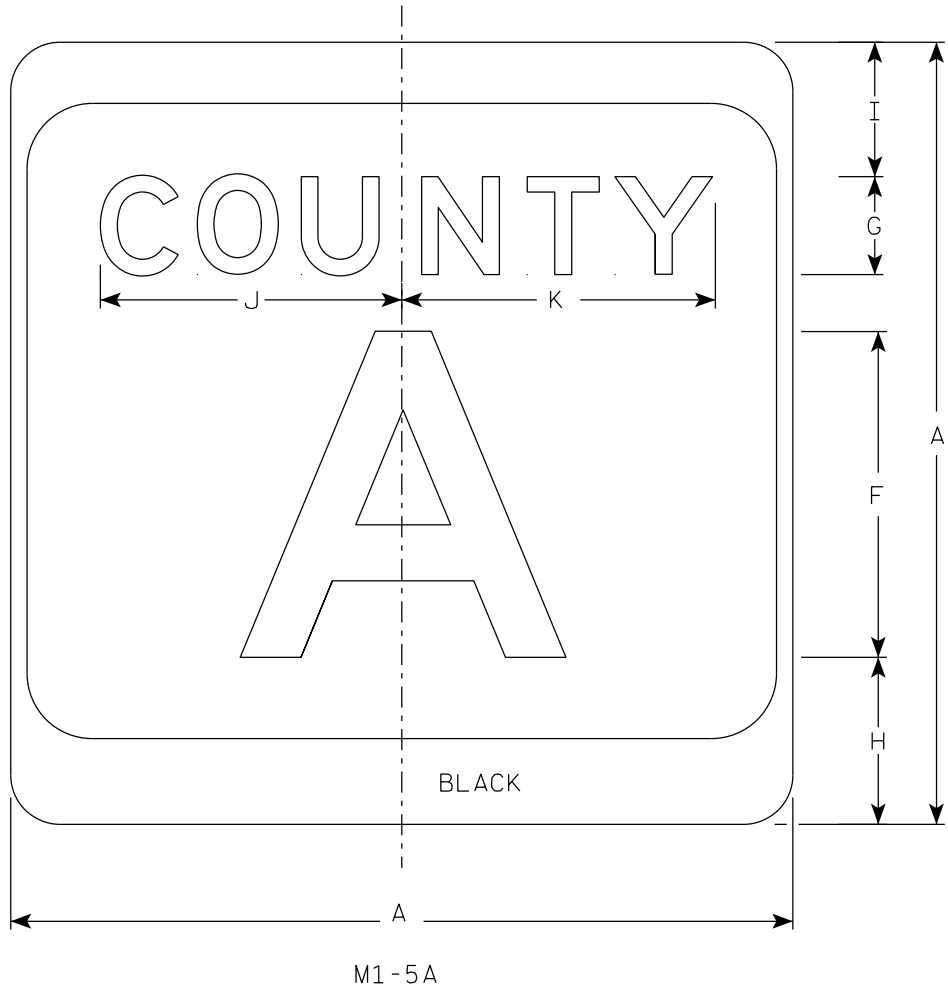
GENERAL NOTES

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 $2\frac{1}{2}$ "

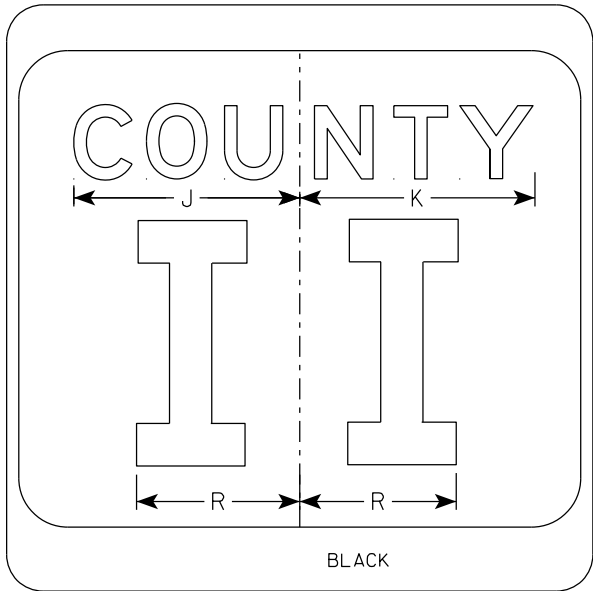
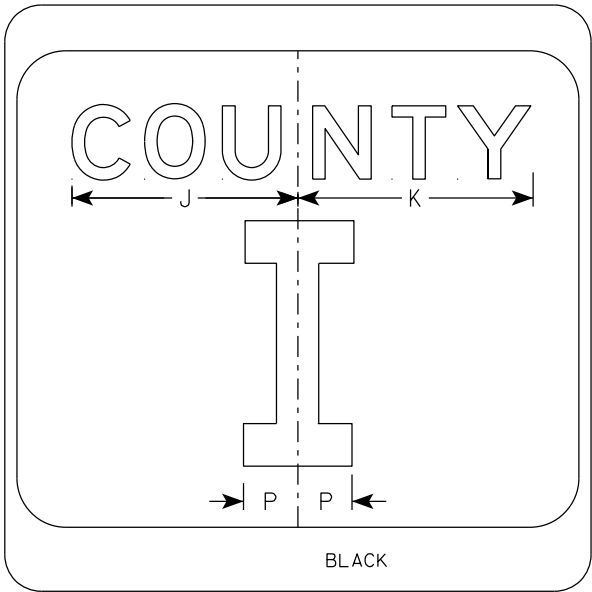
BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/19/2022	PLATE NO. A5-10.3

7



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White & Black
Message - Black
3. Message Series - see Note 4
4. Message Series E for 1 letter.
Message Series D for 2 letters unless
message is too big then Series C.
Message Series C for 3 letters unless
message is too big then Series B.
5. Substitute appropriate letters & optically
center to achieve proper balance.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
2M	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/8/2022 PLATE NO. M1-5A.9

PROJECT NO:

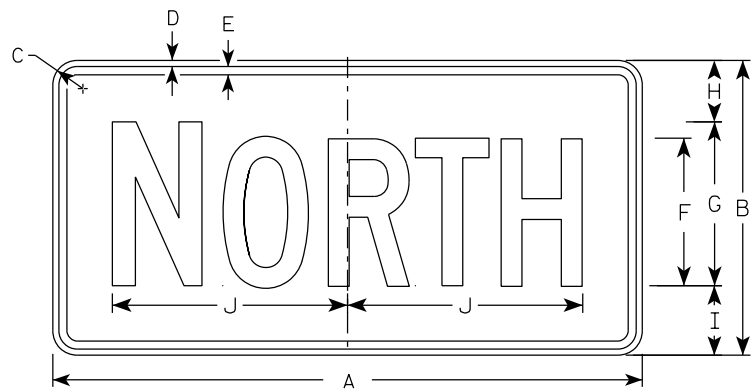
HWY:

COUNTY:

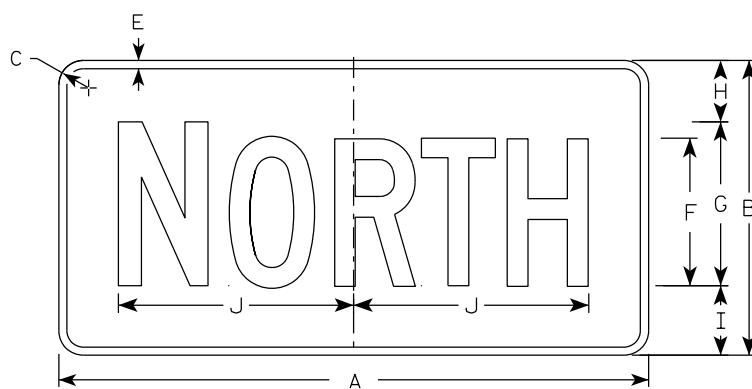
SHEET NO:

E

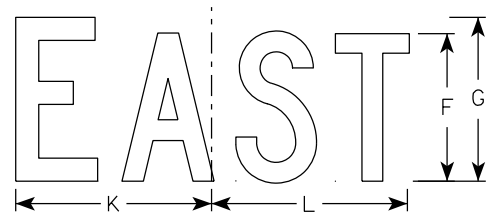
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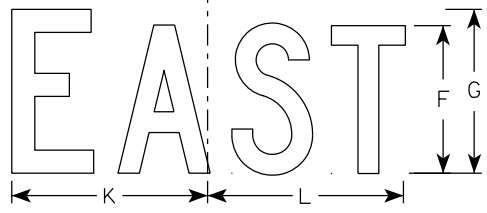
M3-1
MM3-1
MP3-1



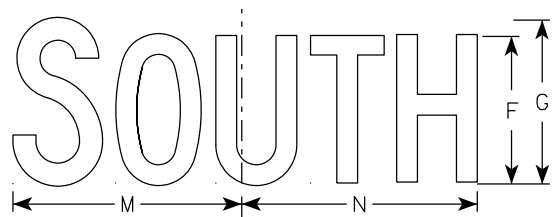
MB3-1
MK3-1
MN3-1



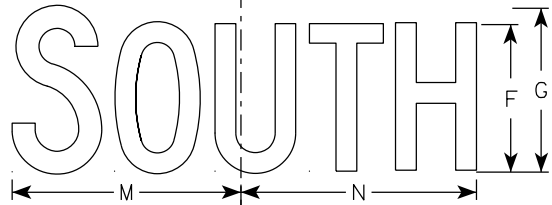
M3-2
MM3-2
MP3-2



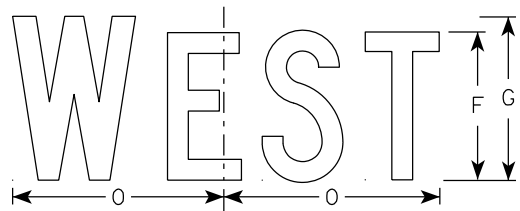
MB3-2
MK3-2
MN3-2



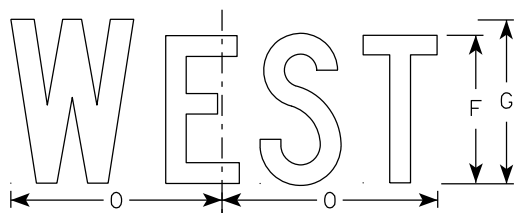
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

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

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
2M	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
3	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
4	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
5	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5

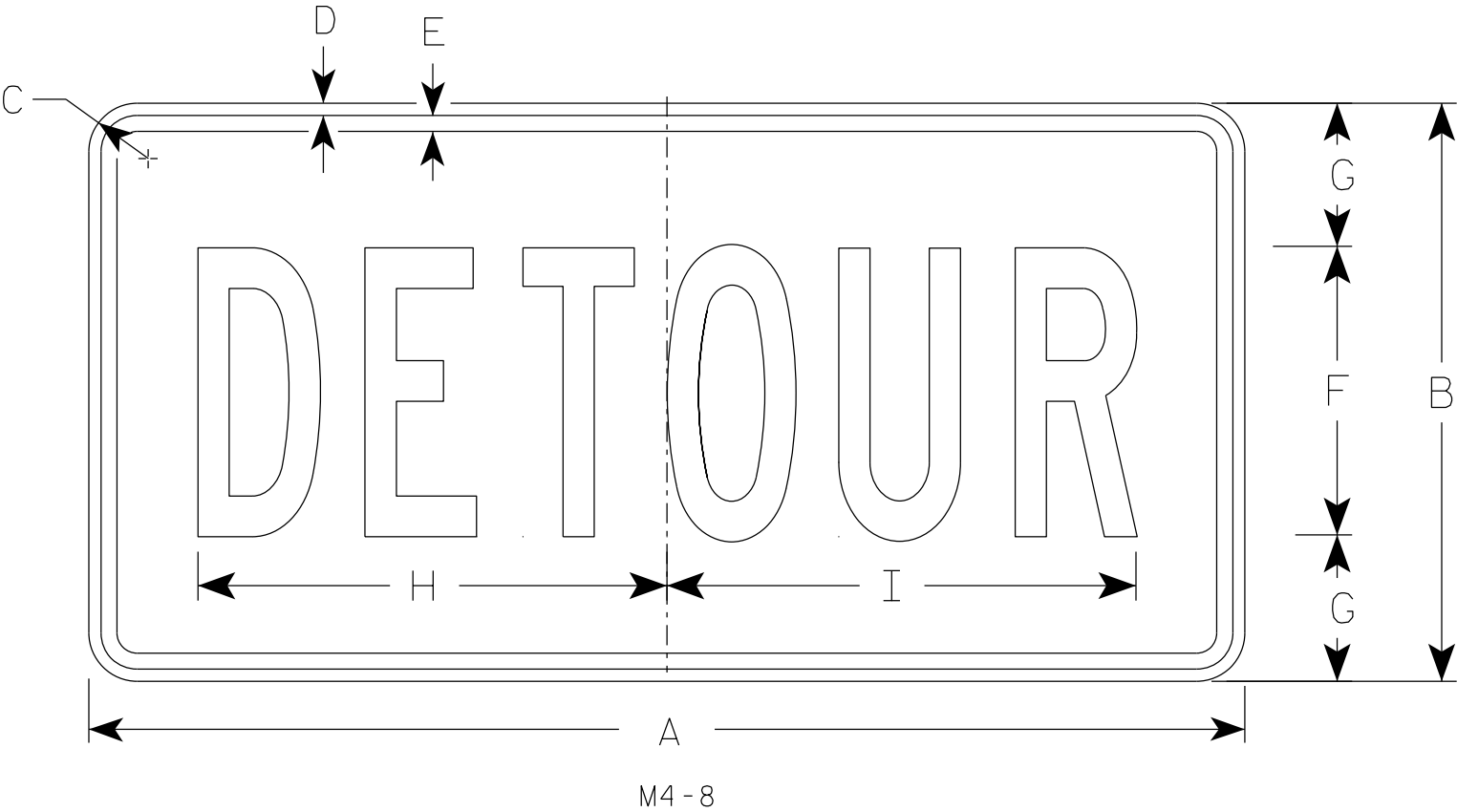
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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7

7

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - B
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/2	3/8	3/8	6	3	10	10 1/4																		2.0
2M	24	12	1 1/2	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
5	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5

STANDARD SIGN

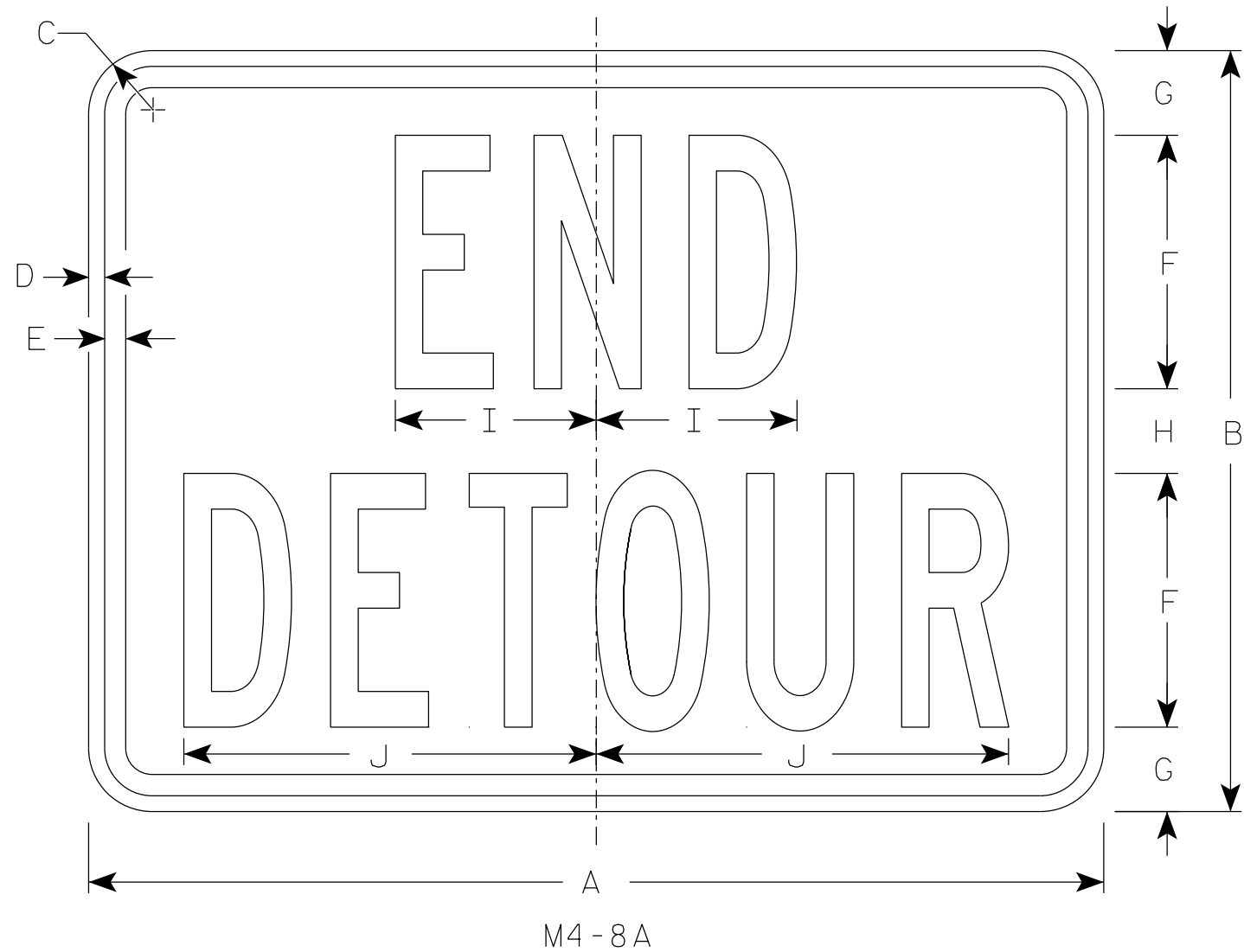
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8.4

7



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

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

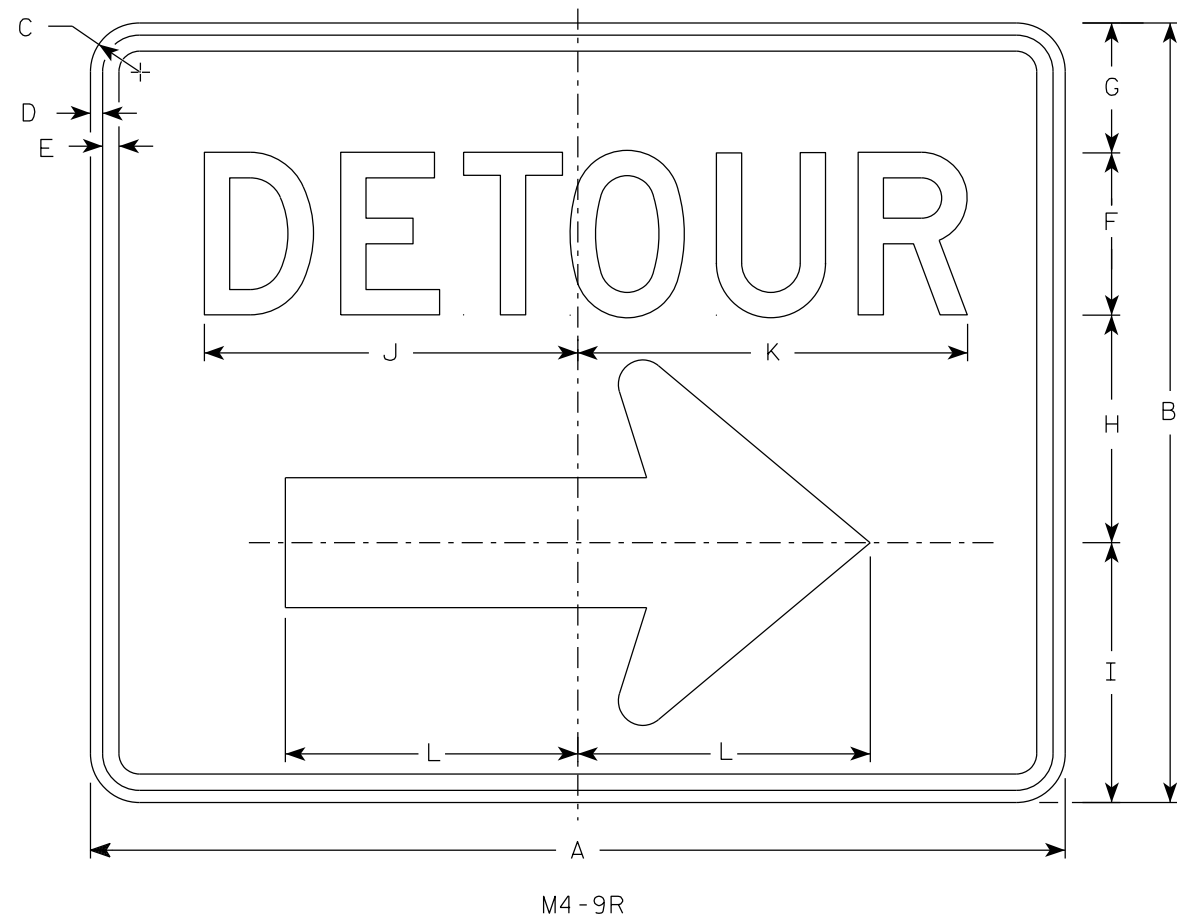
STANDARD SIGN

M4-8A

WISCONSIN DEPT OF TRANSPORTATION

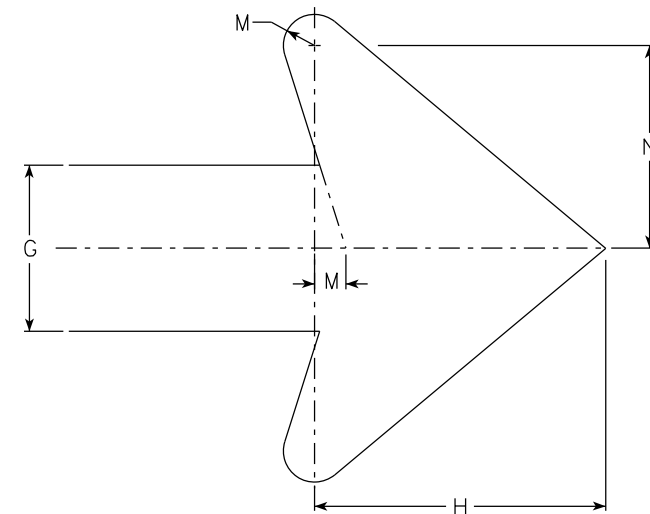
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8A.4



NOTES

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



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
2M	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 7/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 7/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

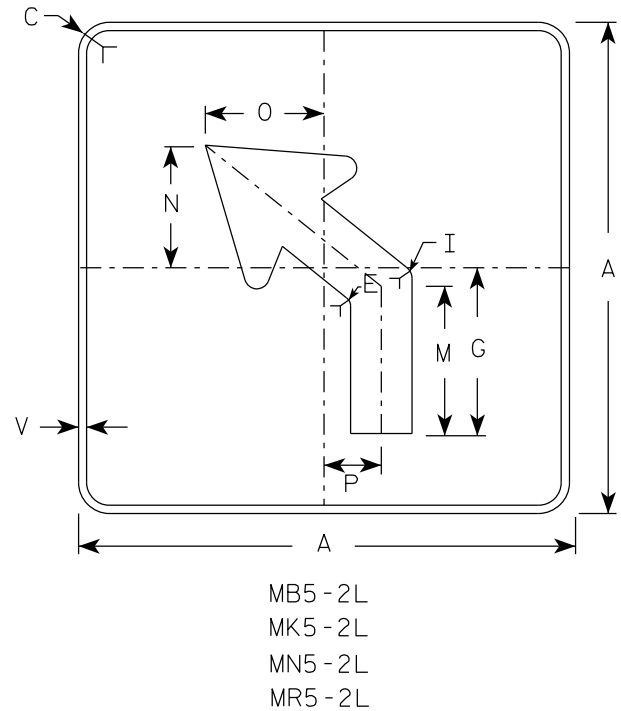
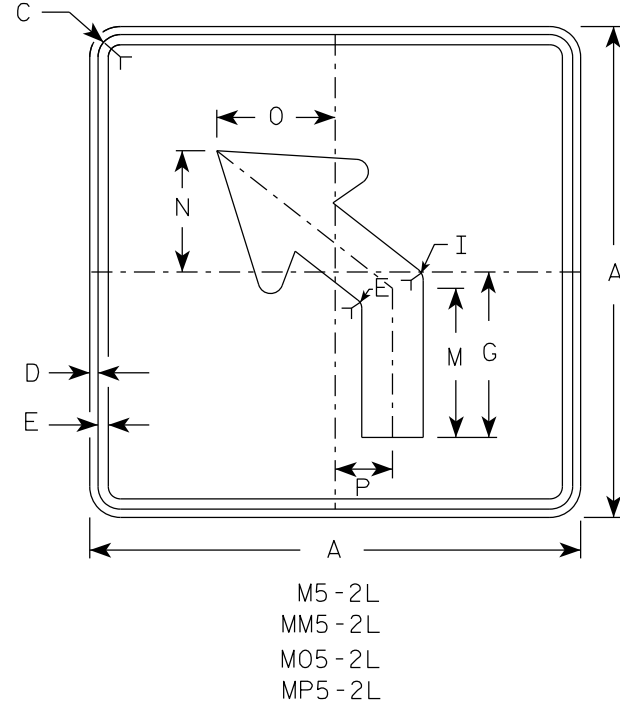
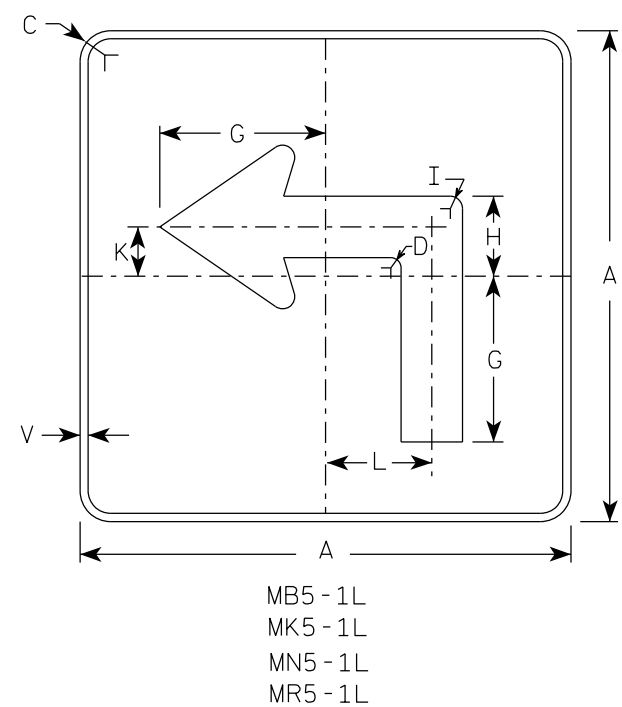
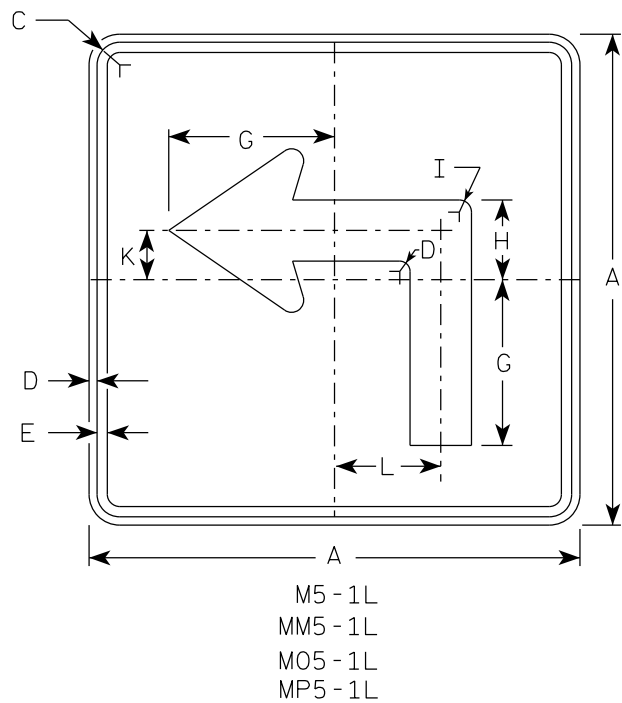
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-9R.6

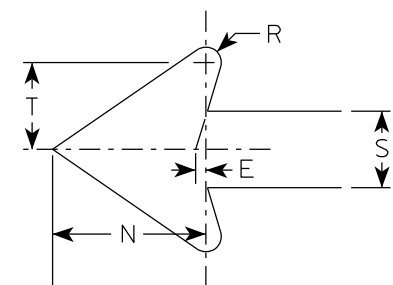
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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NOTES

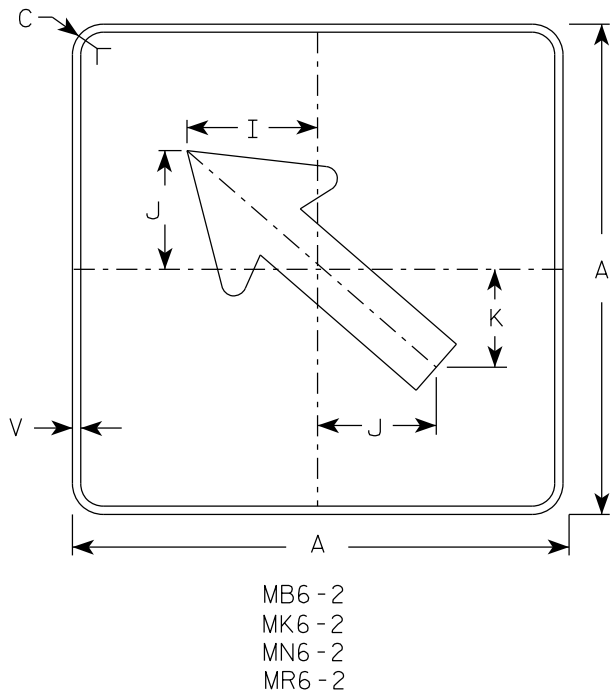
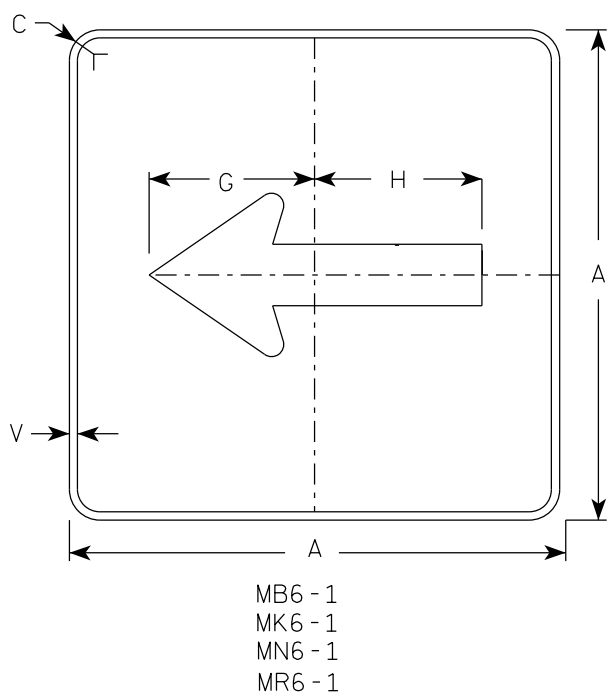
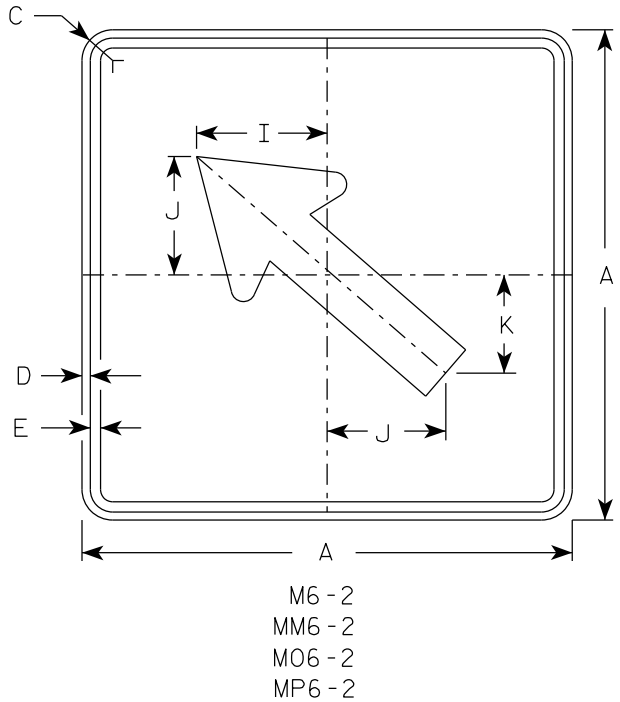
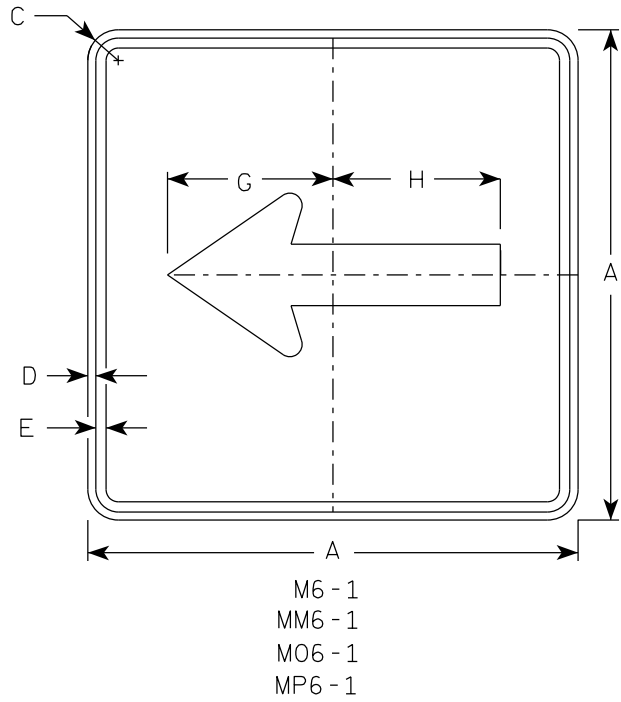
- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | | |
|-----------|-------|---|
| M5-1 and | M5-2 | Background - White |
| | | Message - Black |
| MB5-1 and | MB5-2 | Background - Blue |
| | | Message - White |
| MK5-1 and | MK5-2 | Background - Green |
| | | Message - White |
| MM5-1 and | MM5-2 | Background - White |
| | | Message - Green |
| MN5-1 and | MN5-2 | Background - Brown |
| | | Message - White |
| M05-1 and | M05-2 | Background - Orange - Type F Reflective |
| | | Message - Black |
| MP5-1 and | MP5-2 | Background - White |
| | | Message - Blue |
| MR5-1 and | MR5-2 | Background - Brown |
| | | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

ARROW DETAIL

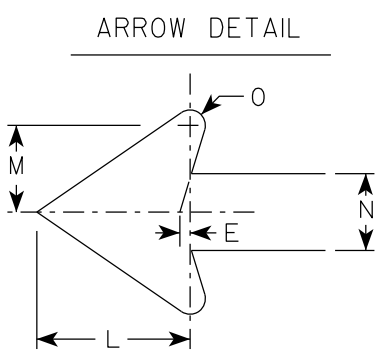


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2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

PROJECT NO:		HWY:		COUNTY:		SHEET NO:		E
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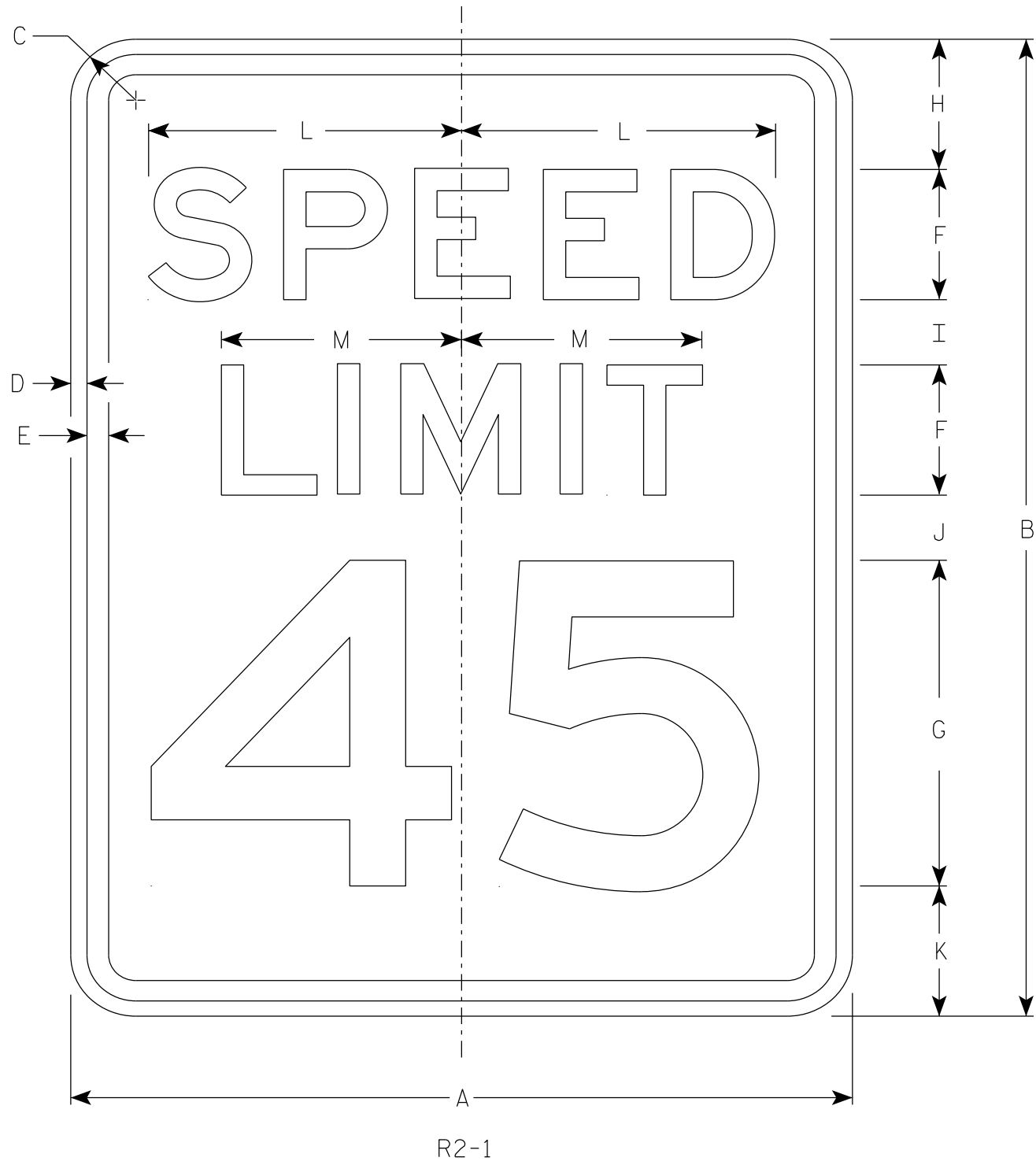


- NOTES
- Signs are Type II - Type H Reflective except as Shown
 - Color:
Background - See note 4
Message - See note 4
 - Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 - M6-1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



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

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

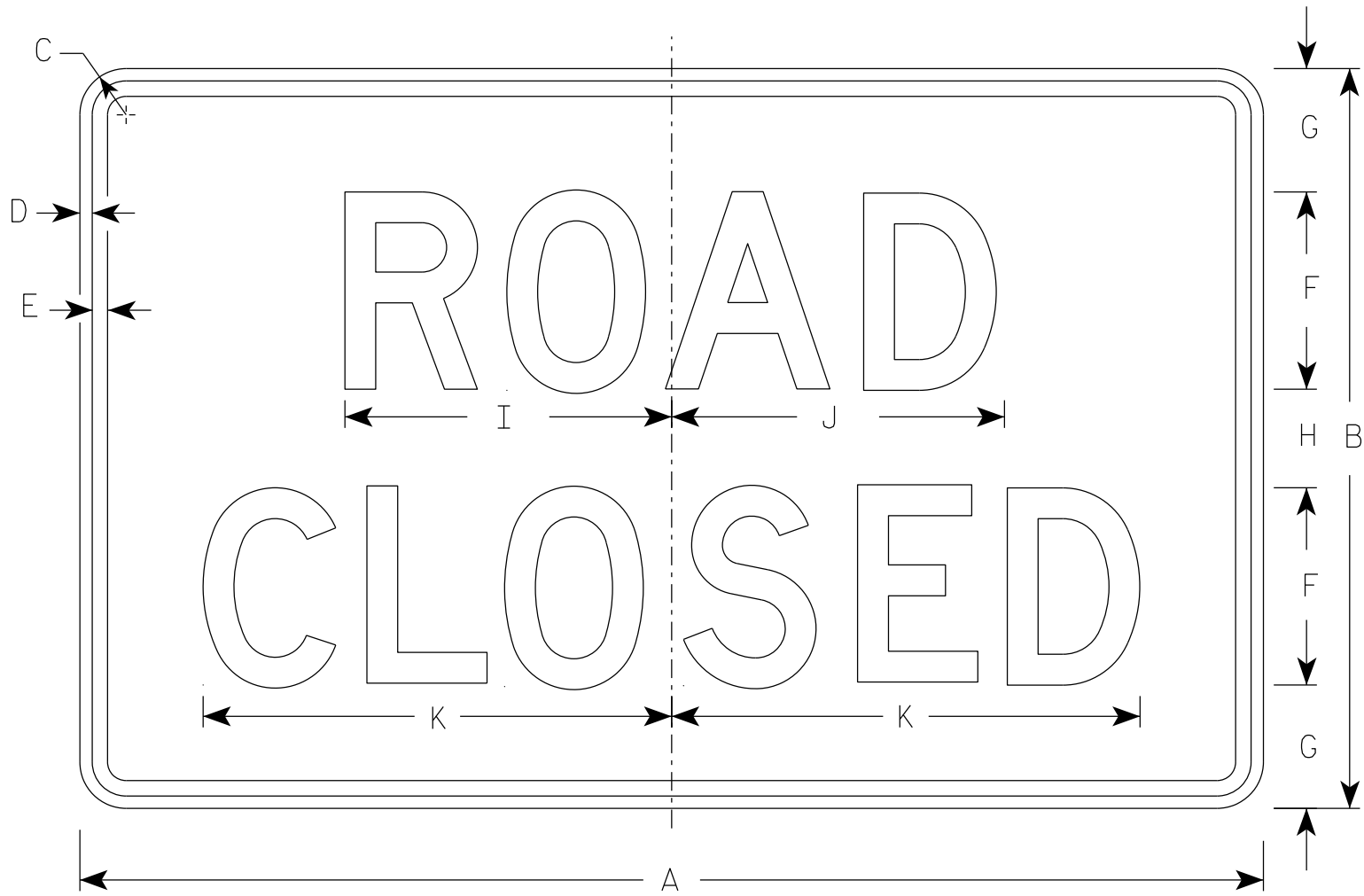
STANDARD SIGN

R2 - 1

WISCONSIN DEPT OF TRANSPORTATION

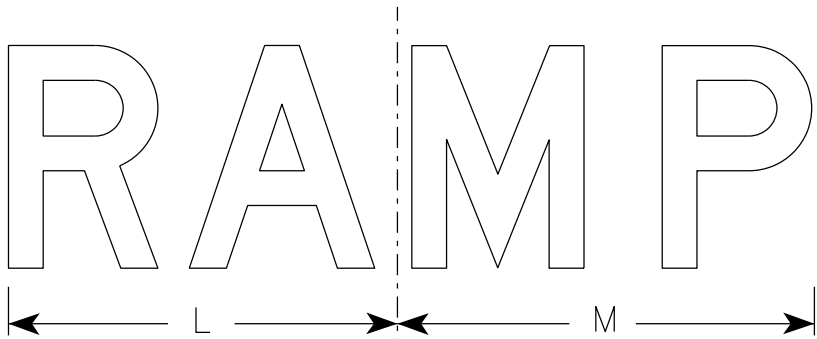
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

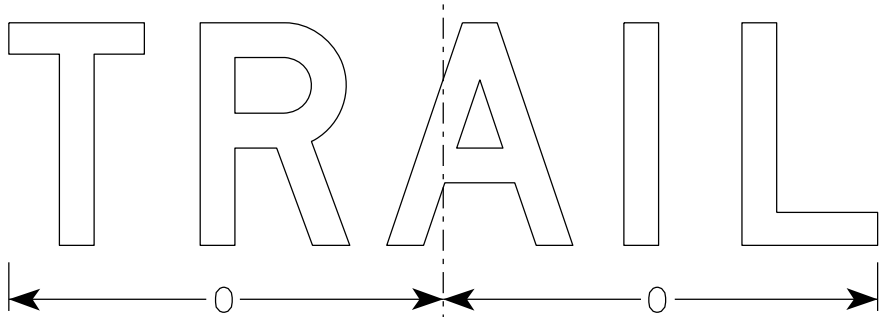


R11-2

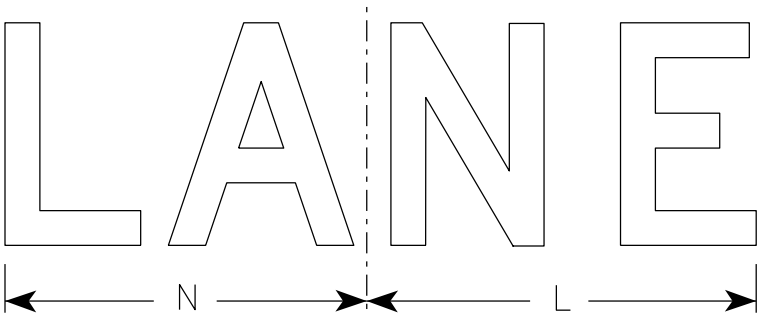
- NOTES
1. Sign is Type II - Type H Reflective
 2. Color:
Background - White
Message - Black
 3. Message Series - D
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 5. Modify the message as required.



R11-2R



R11-2T

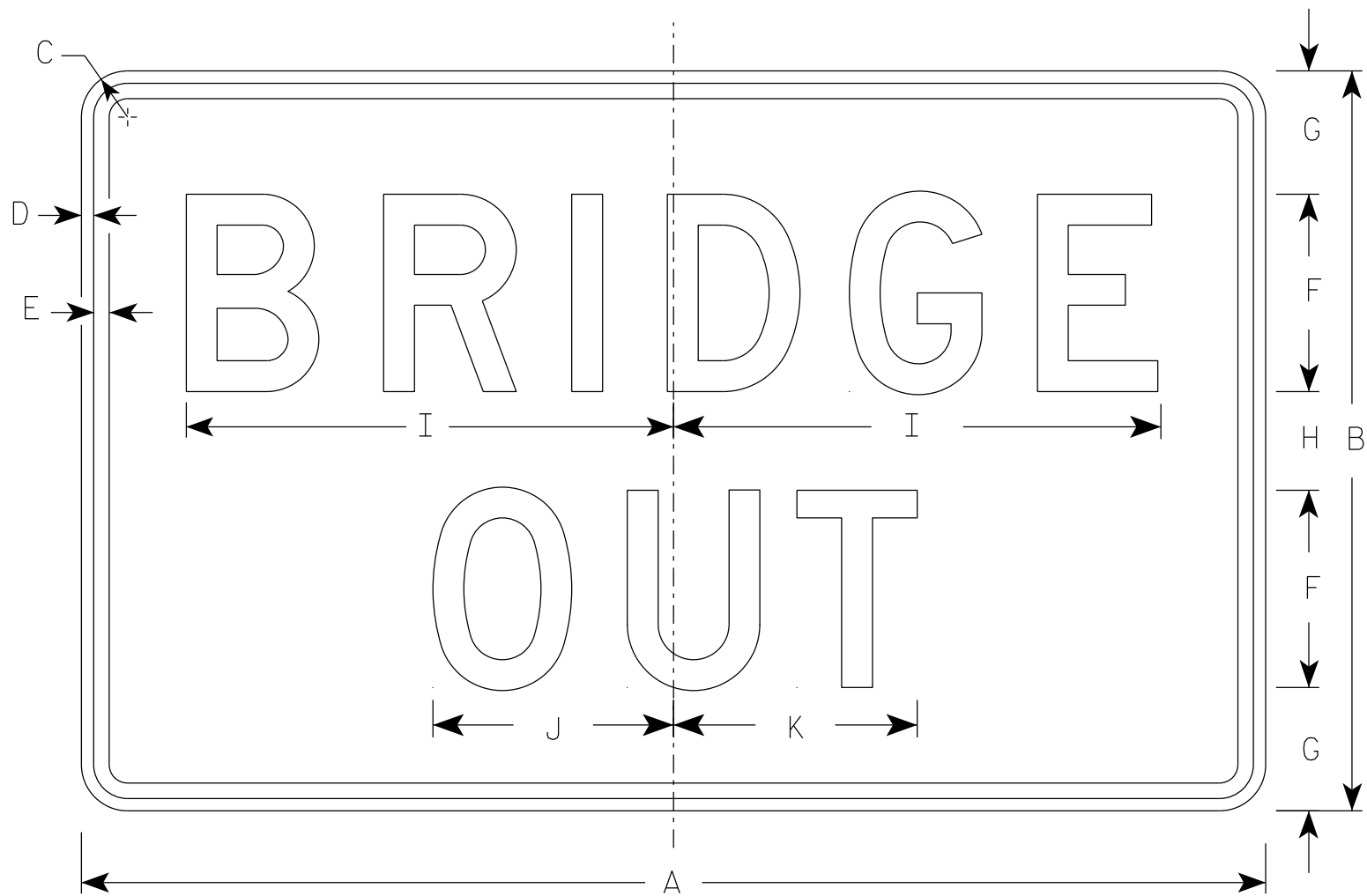


R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
2M	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
3	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
4	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
5	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0

STANDARD SIGN R11-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 2/5/24	PLATE NO. R11-2.12

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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R11-2B

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - Message - Black
- 3. Message Series - D
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

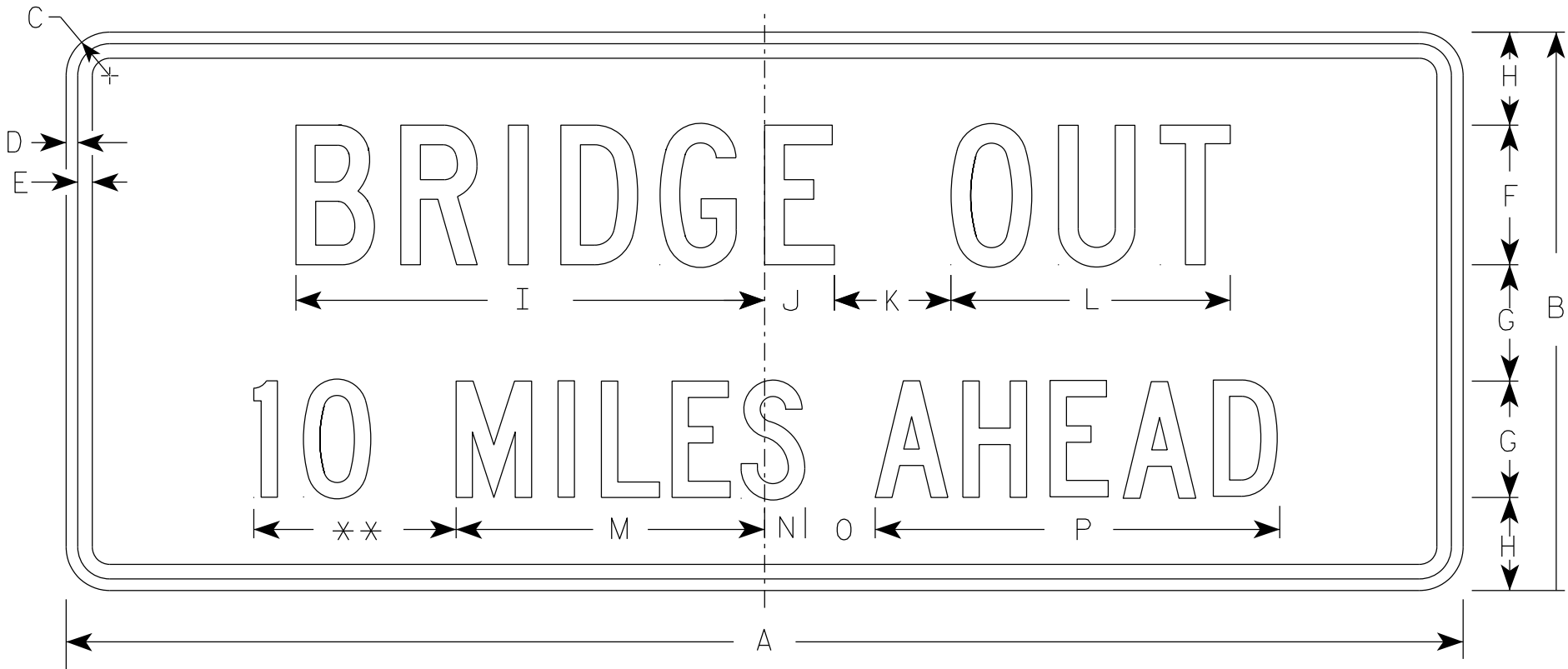
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0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

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

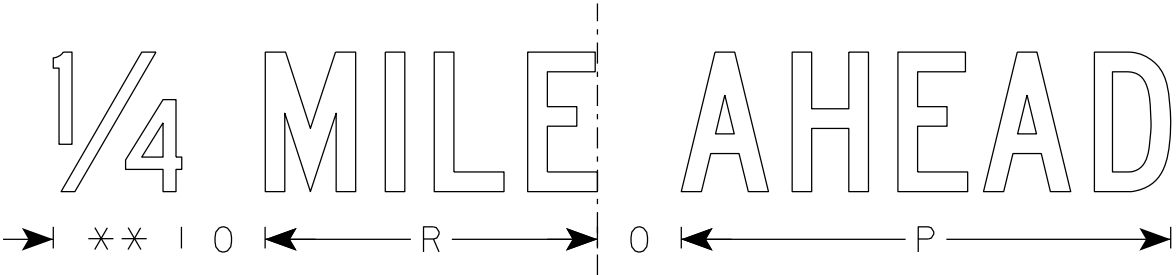
Background - White

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



R11-3C

** See Note 5



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	15	1 1/2	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4		7 1/8									3.75
2S	60	24	1 7/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
2M	60	24	1 7/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
3																											
4																											
5																											

STANDARD SIGN
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

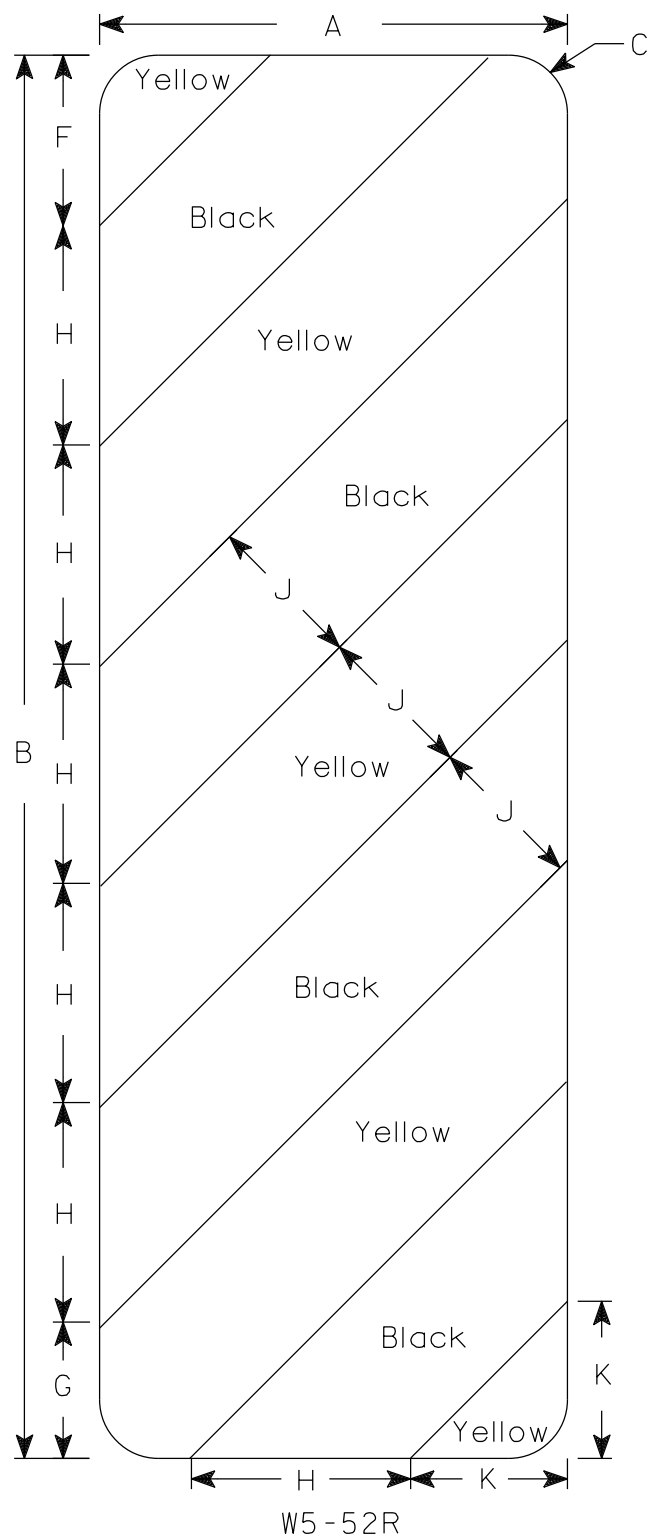
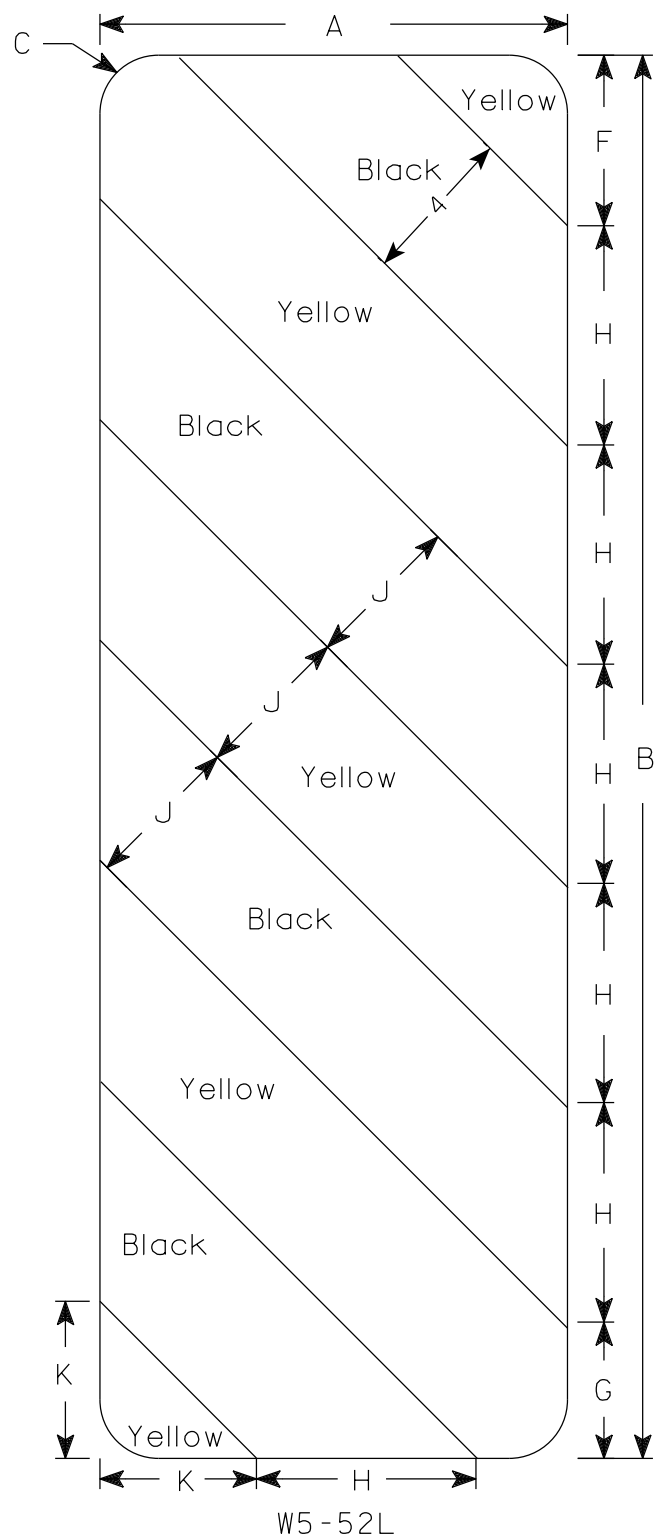
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 2/5/24 PLATE NO. R11-3C.4

PROJECT NO:

SHEET NO:

E



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

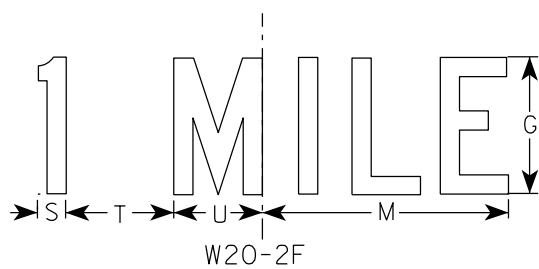
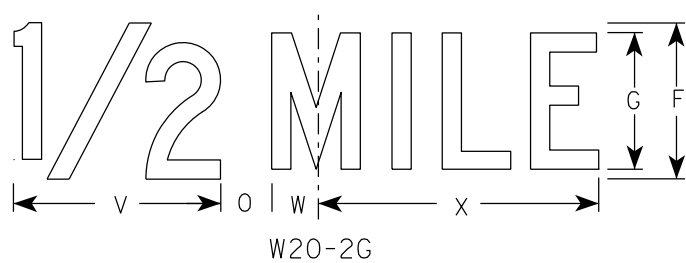
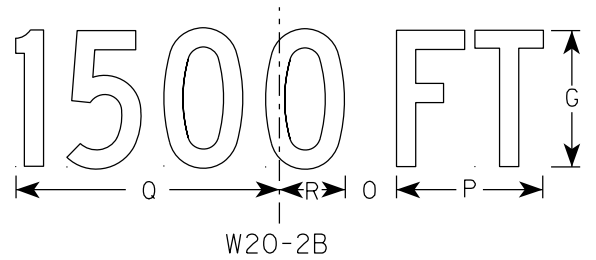
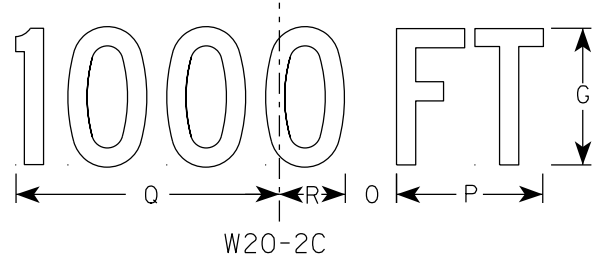
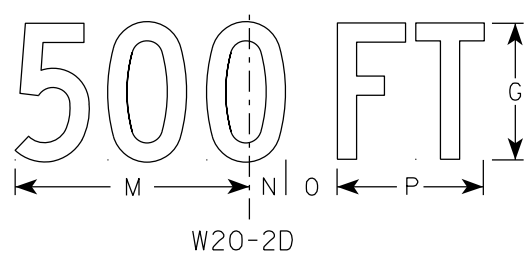
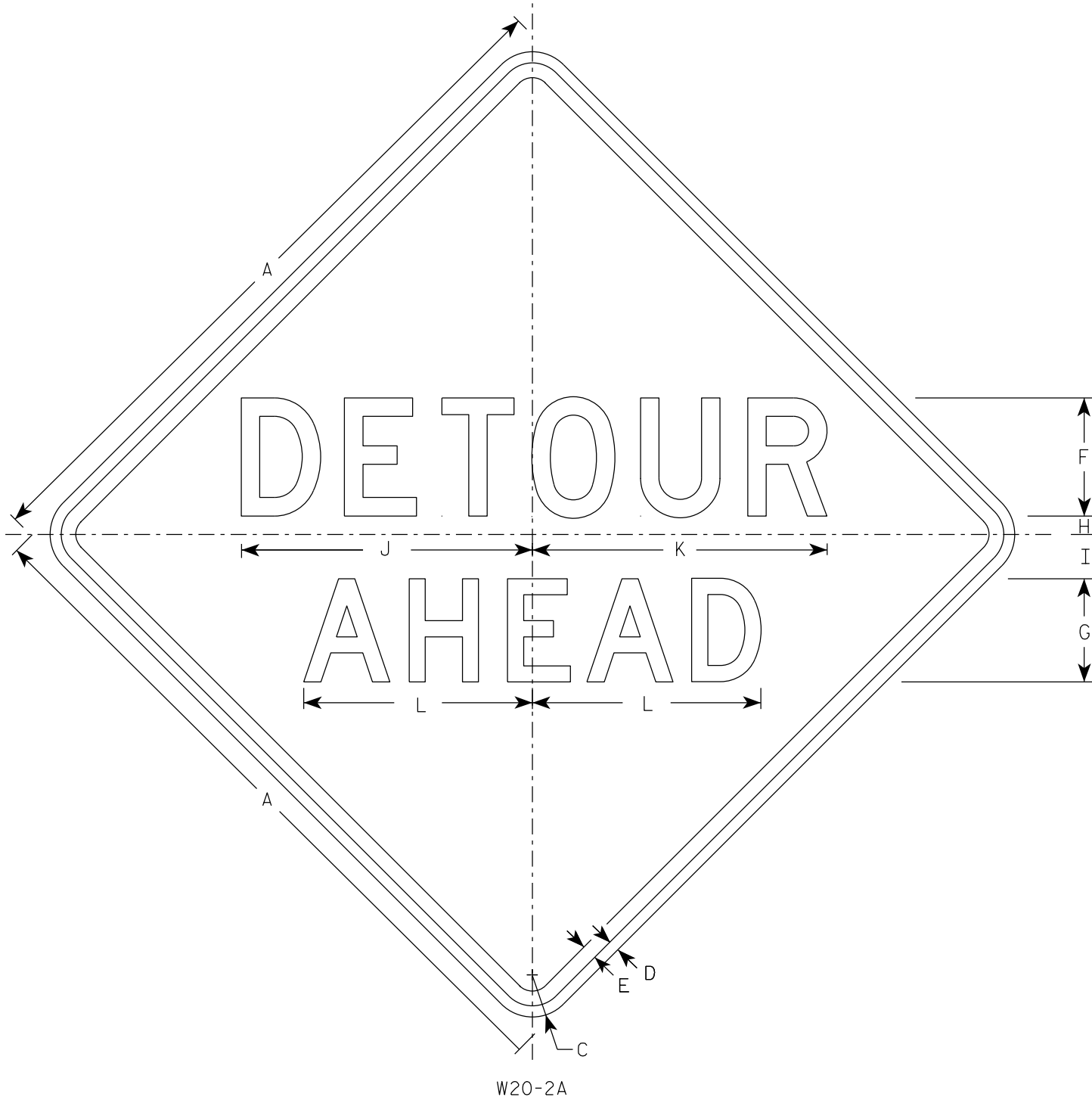
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



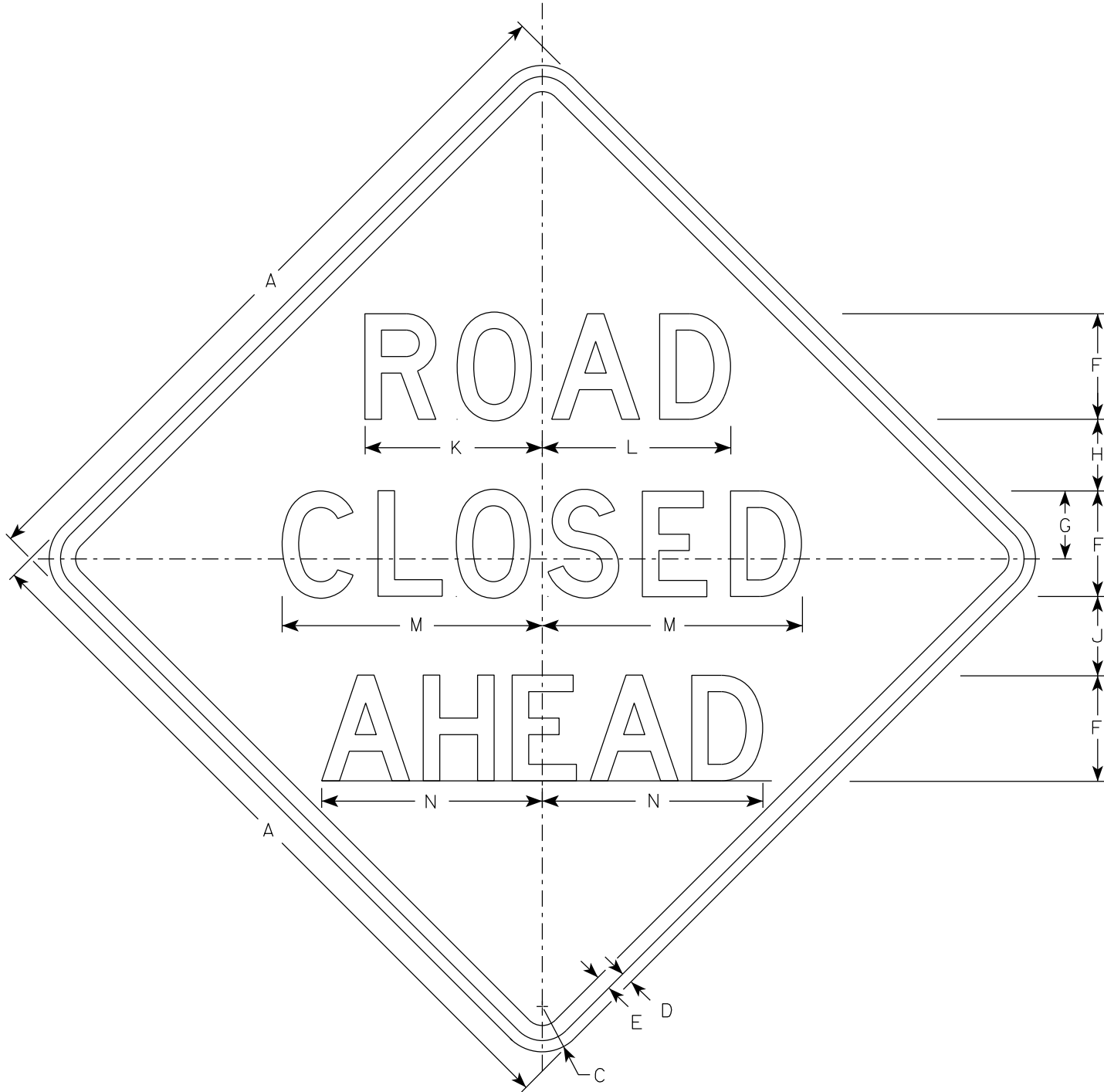
NOTES

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

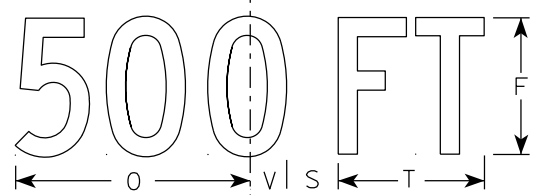
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	w	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN W20-2A,B,C,D,F & G	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 1/10/2024	PLATE NO. W20-2.7

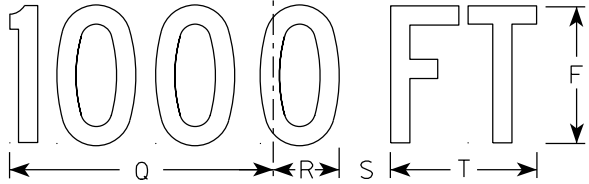
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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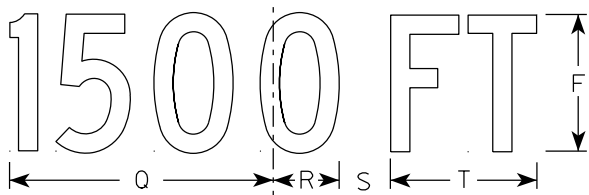
W20-3A



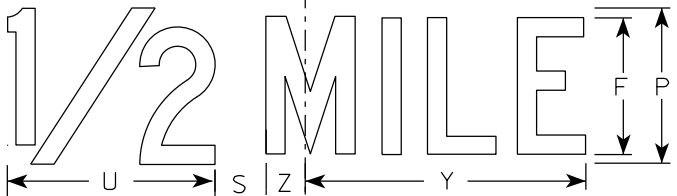
W20-3D



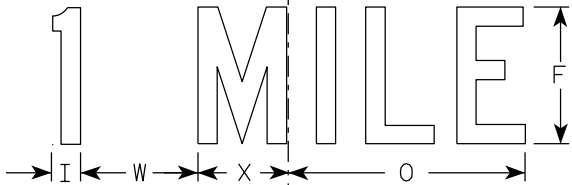
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-3.8

DESIGN DATA

LIVE LOAD:

DESIGN LOADING _____ HS20
INVENTORY RATING _____ HS19
OPERATING RATING _____ HS37
WISCONSIN STANDARD PERMIT
VEHICLE RATING (WIS.-SPV): _____ 250 KIPS

MATERIAL PROPERTIES - DECK REPLACEMENT:

CONCRETE MASONRY _____
DECK & PARAPETS _____ $f'_c = 4,000$ P.S.I.
ALL OTHERS _____ $f'_c = 3,500$ P.S.I.
HIGH-STRENGTH BAR STEEL _____
REINFORCEMENT _____ $f_y = 60,000$ P.S.I.

TRAFFIC DATA:

CTH A
A.A.D.T. (2025) _____ 1,928
A.A.D.T. (2045) _____ 2,065
DESIGN SPEED _____ 50 M.P.H.

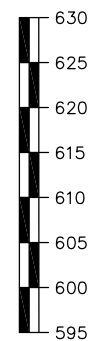


CURVE DATA

☐ CTH A
P.I. STA. 13+50.87
 $\Delta = 3'3'1''$
D. = $1'43'34''$
T. = 88.38'
R. = 3319.60'
L. = 176.73'
P.C. STA. 12+62.49
P.T. STA. 14+39.21

PROFILE GRADE

LINE, ☐ CTH A



ELEVATION

(THRU PIKE RIVER, LOOKING NORTH)

BENCH MARKS

NO.	STATION/OFFSET	DESCRIPTION	ELEVATION
BM 1	14+26.42, 30.69' LT.	RR SPIKE IN POWER POLE	621.56

HORIZONTAL DATUM AND ADJUSTMENT: NAD 83 (2011)

VERTICAL DATUM AND ADJUSTMENT: NAVD 88 (2012)

COORDINATE REFERENCE SYSTEM: WISCONSIN STATE PLANE COORDINATE SYSTEM GRID. SOUTH-ZONE

NOTES

(G01) NAME PLATE REQUIRED AND BENCH MARK CAP (WHEN SUPPLIED). FOR LOCATION SEE "SINGLE SLOPE PARAPET 42SS" SHEET.

(G02) FILL VOIDS OF EXISTING RIPRAP TO RESTORE ORIGINAL GROUNDLINE.

* LOCATION OF BEAM GUARD ATTACHMENT

☐ INDICATES WING NUMBER

▨ LIMITS OF REMOVAL

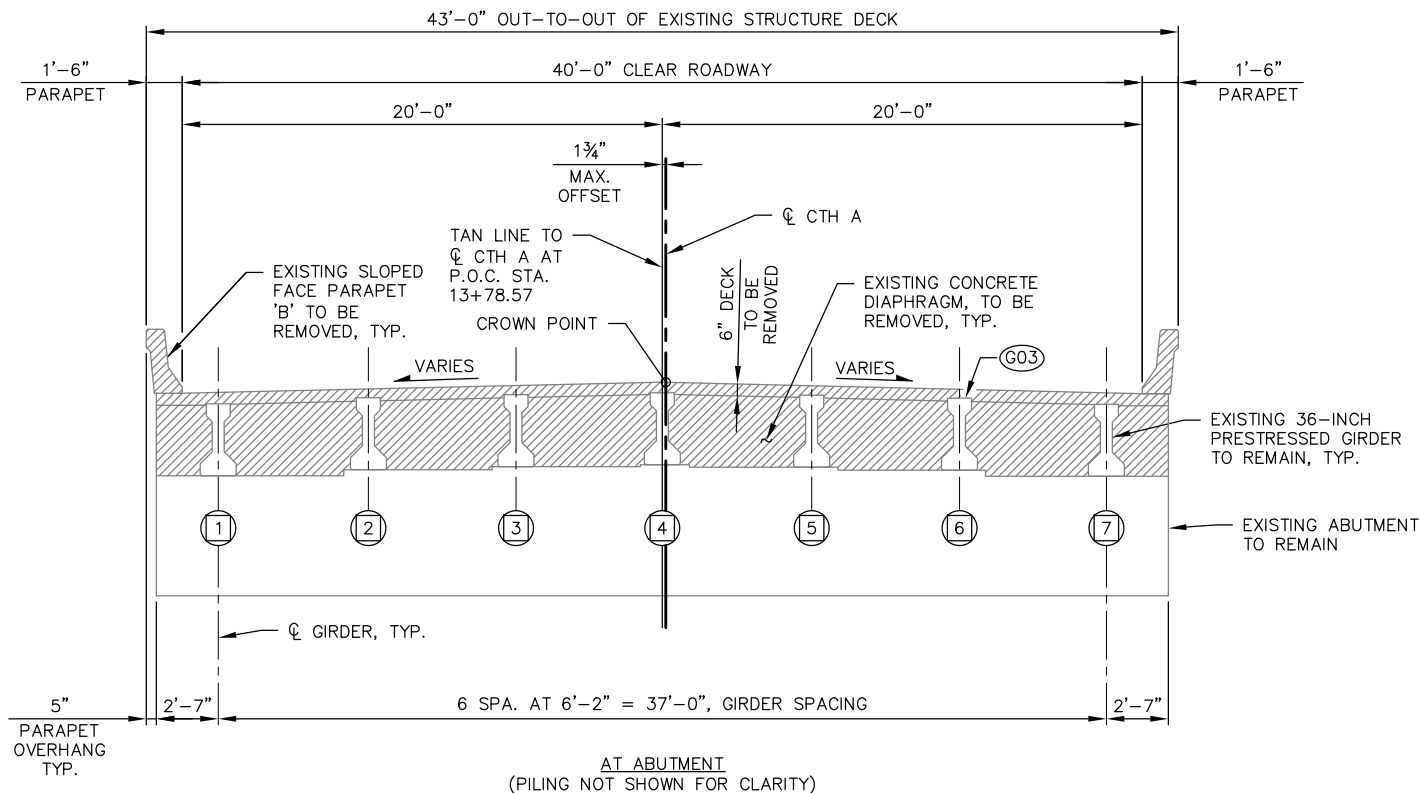
LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTIONS, GENERAL NOTES AND QUANTITIES
3. CROSS SECTIONS AND PROFILE
4. ABUTMENT SURFACE REPAIR
5. ABUTMENT WING DETAILS
6. STEEL DIAPHRAGMS
7. SUPERSTRUCTURE
8. SUPERSTRUCTURE DETAILS
9. SUPERSTRUCTURE REINFORCEMENT
10. SINGLE SLOPE PARAPET 42SS

BRIDGE OFFICE CONTACT
AARON BONK, P.E.
(608) 261-0261

CONSULTANT CONTACT
ANDY KNUTSON, P.E., S.E.
(608) 588-7866

NO.	DATE	REVISION	BY
619 EAST HOXIE STREET P.O. BOX 429 SPRING GREEN, WI 53588 PHONE (608) 588-7866 FAX (608) 588-7954			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED SDR 08/20/24 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE P-30-21			
CTH A OVER PIKE RIVER			
COUNTY	KENOSHA	TOWN/CITY/VILLAGE	SOMERS
DESIGN SPEC.	REHABILITATION N/A		
DESIGNED BY	JDO	DESIGN CK'D.	CDS
DRAWN BY	JDO	PLANS CK'D.	ACK
GENERAL PLAN			SHEET 1 OF 10

**CROSS SECTION THRU ROADWAY – REMOVAL STAGE**

(LOOKING EAST)

NOTES

(G03) CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE EXISTING GIRDER, INCLUDING SHEAR STIRRUPS. SAW CUTTING OF THE EXISTING SHEAR STIRRUPS IS NOT ALLOWED. FIELD ENGINEER WILL INSPECT GIRDERS PRIOR TO PLACING NEW DECK.

(G04) COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS. PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO ENTIRE EXPOSED TOP OF DECK.

(G05) APPLY PIGMENTED SURFACE SEALER TO INSIDE AND TOP FACES OF PARAPET ACROSS THE LENGTH OF THE BRIDGE. TYPICAL FOR EACH PARAPET.

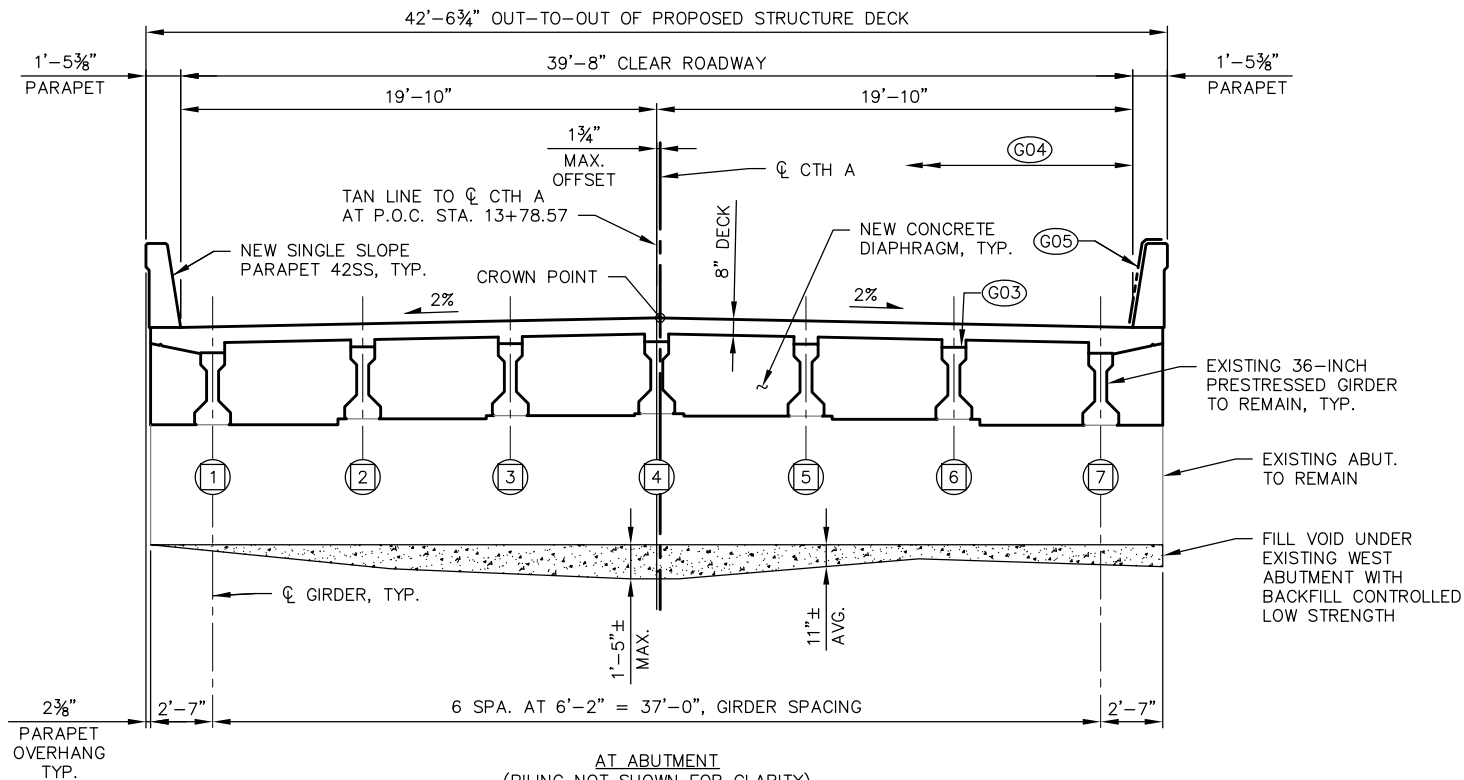
INDICATES GIRDER LINE DESIGNATION

LIMITS OF REMOVAL

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-30-21	EACH	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES P-30-21	EACH	---	---	---	1
209.0200.S	BACKFILL CONTROLLED LOW STRENGTH	CY	4	---	---	4
210.1500	BACKFILL STRUCTURE TYPE A	TON	70	70	---	140
502.0100	CONCRETE MASONRY BRIDGES	CY	5.2	4.9	105.1	116
502.3200	PROTECTIVE SURFACE TREATMENT	SY	---	---	276	276
502.3210	PIGMENTED SURFACE SEALER	SY	11	11	62	84
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	30	28	60	118
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1130	1090	19510	21730
506.4000	STEEL DIAPHRAGMS P-30-21	EACH	---	---	6	6
509.1500	CONCRETE SURFACE REPAIR	SF	14	8	---	22
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	12	12	14	38
606.0200	RIPRAP MEDIUM	CY	24	---	---	24
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	85	85	---	170
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	2	---	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	38	38	---	76
(NON-BID ITEM)	FILLER	SIZE				½" & ¾"

ADHESIVE ANCHORS NO. 5 BAR QUANTITY FROM ABUTMENT WINGS INCLUDED WITH ABUTMENT QUANTITIES. ADHESIVE ANCHORS NO. 5 BAR QUANTITY FROM ABUTMENT DIAPHRAGMS INCLUDED WITH SUPERSTRUCTURE QUANTITIES.

**CROSS SECTION THRU ROADWAY – FINAL CONDITION**

(LOOKING EAST)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON EXISTING FIELD SURVEY FROM 2023.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

THE FIRST DIGIT OF A THREE DIGIT OR FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR OF 1978.

THE PROJECT CONSISTS OF REHABILITATING EXISTING STRUCTURE, P-30-21, A SINGLE SPAN 36-INCH PRESTRESSED CONCRETE GIRDER BRIDGE, 62'-6"± FEET LONG AND HAS A CLEAR ROADWAY WIDTH OF 40'-0" AND AN OVERALL WIDTH OF 43'-0". THE EXISTING DECK, INTERMEDIATE CONCRETE DIAPHRAGMS, ABUTMENT CONCRETE DIAPHRAGMS, CONCRETE PARAPETS, AND TOP 2'-0" OF WINGS TO BE REMOVED. SALVAGE EXISTING PRESTRESSED GIRDERS AND REMAINING PORTIONS OF ABUTMENTS.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

THE UPPER LIMIT OF "EXCAVATION FOR STRUCTURES BRIDGES P-30-21" SHALL BE THE EXISTING GROUNDLINE.

TAKE NECESSARY PRECAUTIONS WHILE REMOVING DETERIORATED CONCRETE TO PRESERVE EXISTING REINFORCING STEEL. CLEAN, REALIGN, AND RETIE EXISTING REINFORCING STEEL, AS THE ENGINEER CONSIDERS NECESSARY.

REMOVE CONCRETE TO SOUND CONCRETE OR TO ONE INCH BEHIND THE EXISTING REINFORCING STEEL, WHICHEVER DEPTH IS GREATER, AT LOCATIONS THE PLANS SHOW OR AS THE FIELD ENGINEER DIRECTS. NOTIFY THE DESIGN ENGINEER IF SOUND CONCRETE IS NOT ENCOUNTERED WITHIN 1'-0" FROM THE SURFACE OF THE EXISTING CONCRETE.

ROUGHEN SURFACE OF CONCRETE ¼" MIN. DEEP AT ALL CONCRETE AREAS OF NEW TO EXISTING CONCRETE CONTACT.

THE HAUNCH CONCRETE QUANTITY IS BASED ON AN AVERAGE DEPTH OF 3.2" WHICH IS THE MAXIMUM HAUNCH FOR WHICH THE CONTRACTOR WILL BE PAID.

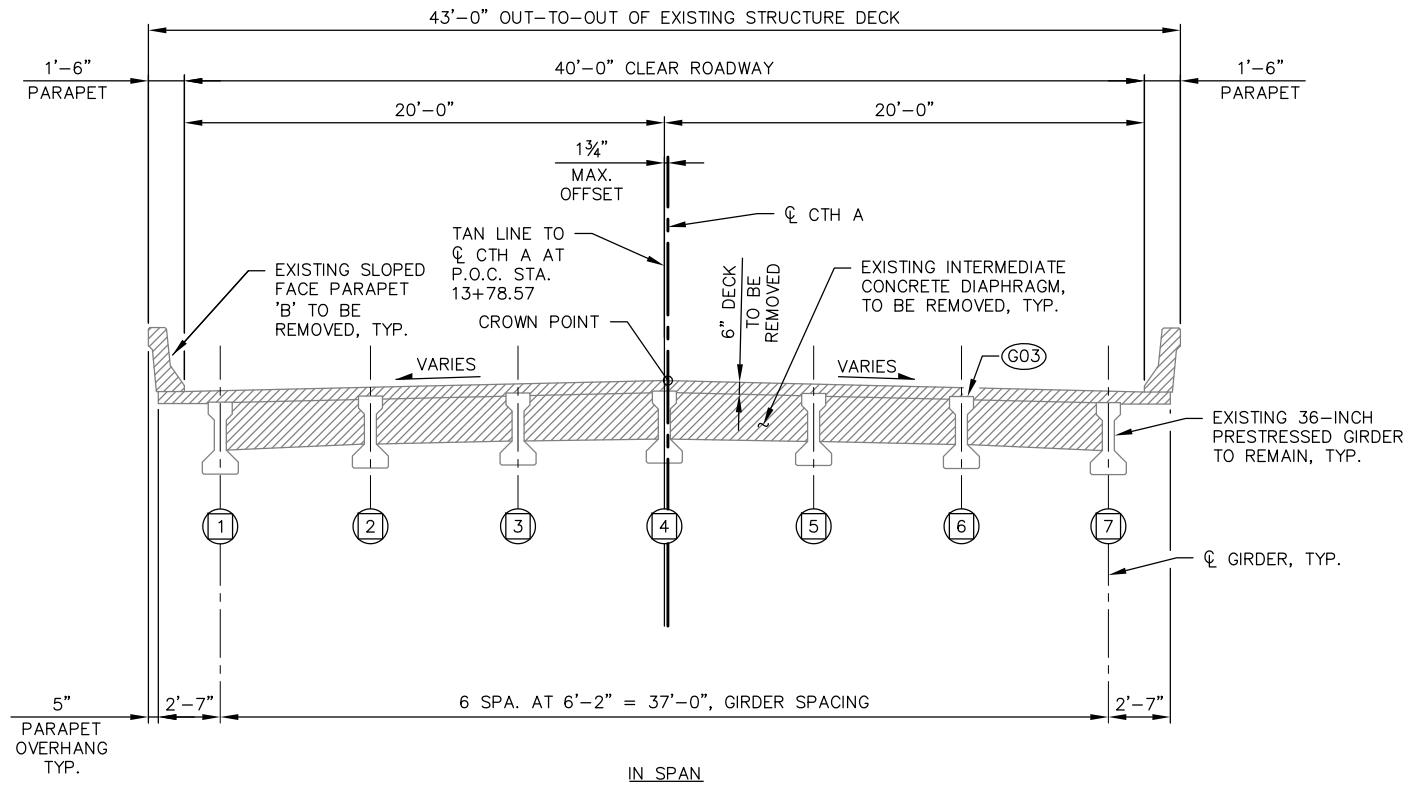
VARIATIONS OF THE NEW GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCLUDED WITH THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES P-30-21". SEE DETAIL ON "CROSS SECTION AND PROFILE" SHEET.

FILL VOIDS IN EXISTING RIPRAP WITH MEDIUM RIPRAP TO THE EXTENT SHOWN ON THE "GENERAL PLAN" SHEET.

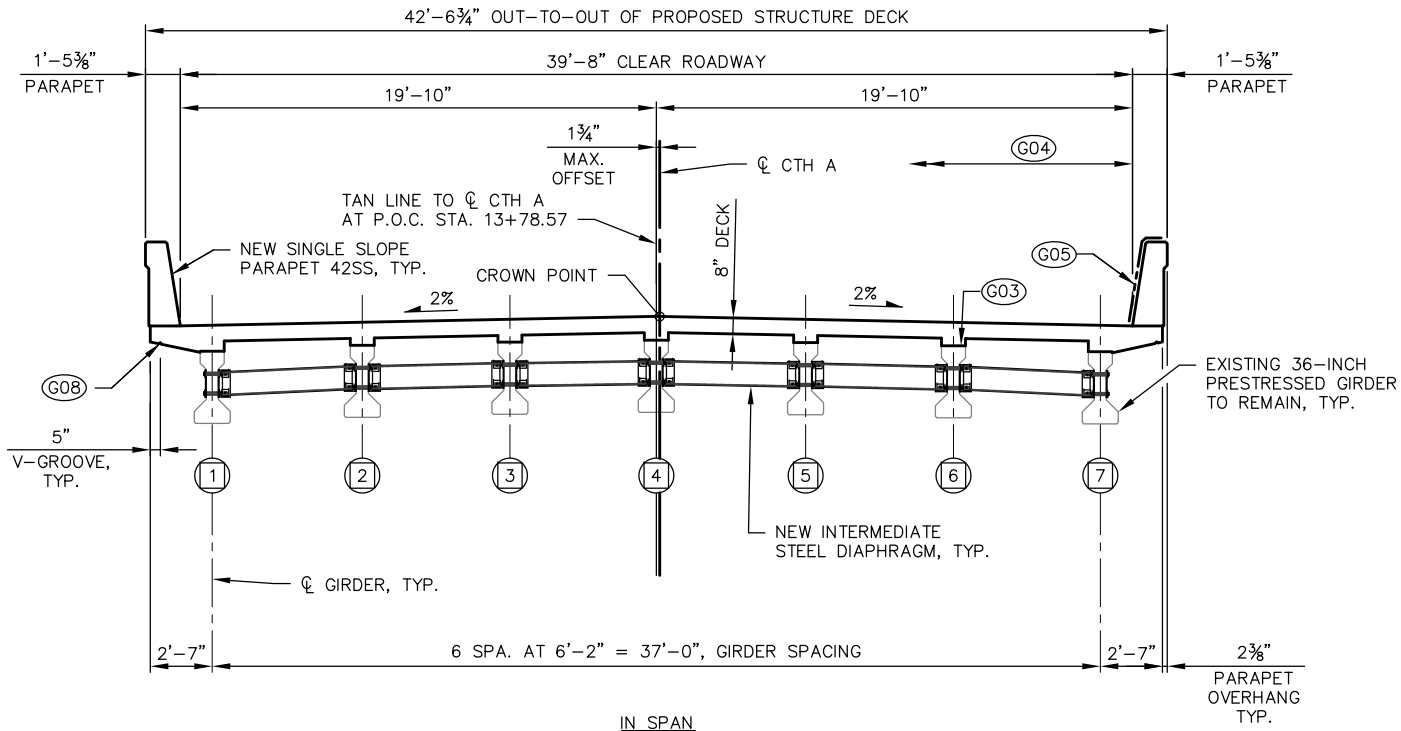
FILL VOID UNDER THE EXISTING WEST ABUTMENT WITH BACKFILL CONTROLLED LOW STRENGTH UP TO THE EXISTING BOTTOM OF CONCRETE ELEVATION. REPAIR VOID UNDER ABUTMENT PRIOR TO REPAIR OF RIPRAP IN FRONT OF ABUTMENT.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-30-21			
DRAWN BY JDO		PLANS CK'D	ACK
CROSS SECTIONS, GENERAL NOTES, AND QUANTITIES			SHEET 2 OF 10



CROSS SECTION THRU ROADWAY - REMOVAL STAGE

(LOOKING EAST)

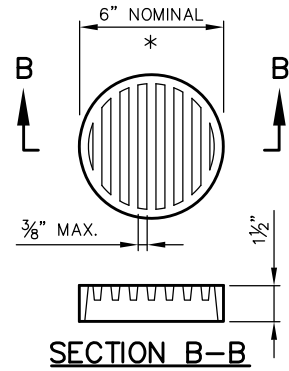


CROSS SECTION THRU ROADWAY - FINAL CONDITION

(LOOKING EAST)

NOTES

- LIMITS OF REMOVAL
- G03 CARE SHALL BE TAKEN TO AVOID DAMAGE TO EXISTING GIRDER, INCLUDING SHEAR STIRRUPS. SAW CUTTING OF THE EXISTING SHEAR STIRRUPS IS NOT ALLOWED. FIELD ENGINEER WILL INSPECT GIRDERS PRIOR TO PLACING NEW DECK.
- G04 COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS. PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO ENTIRE EXPOSED TOP OF DECK.
- G05 APPLY PIGMENTED SURFACE SEALER TO INSIDE AND TOP FACES OF PARAPET ACROSS THE LENGTH OF THE BRIDGE. TYPICAL FOR EACH PARAPET.
- G06 BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCLUDED WITH THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES P-30-21". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- G07 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET.
- G08 3/4" V-GROOVE. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM. V-GROOVE ARE REQUIRED.
- INDICATES GIRDER LINE DESIGNATION

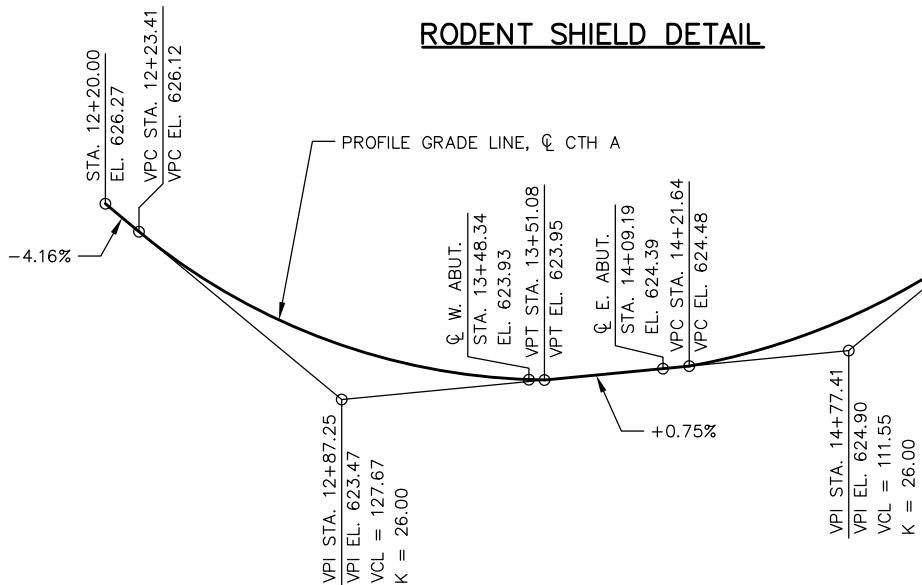


RODENT SHIELD DETAIL

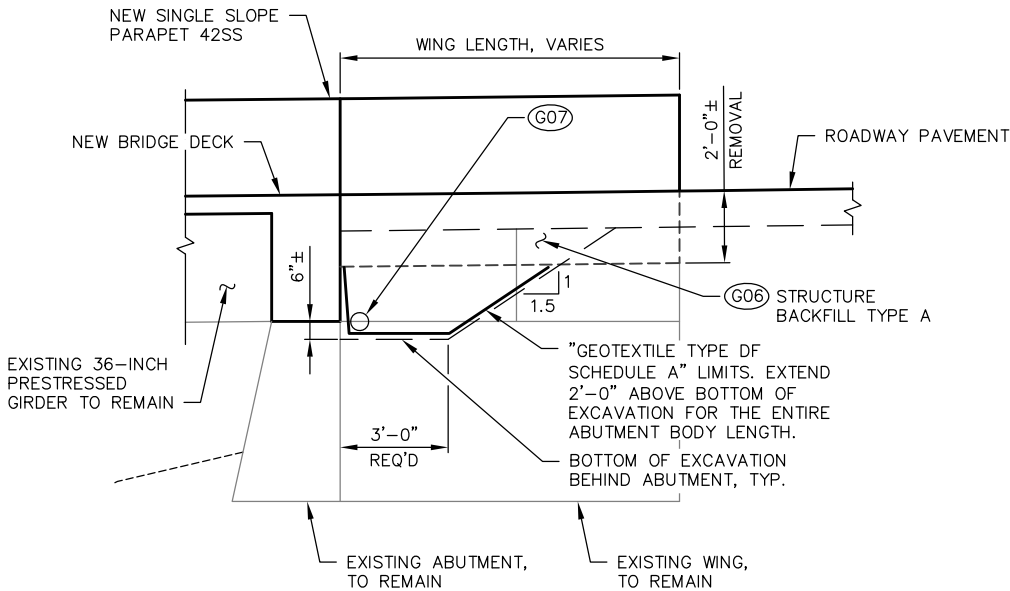
* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SHIELD SO SLOTS ARE VERTICAL.

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.

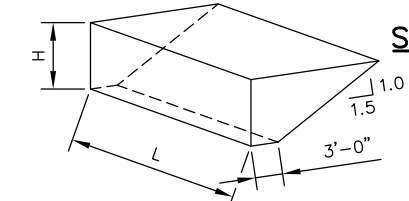
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".



PROFILE GRADE LINE, CTH A



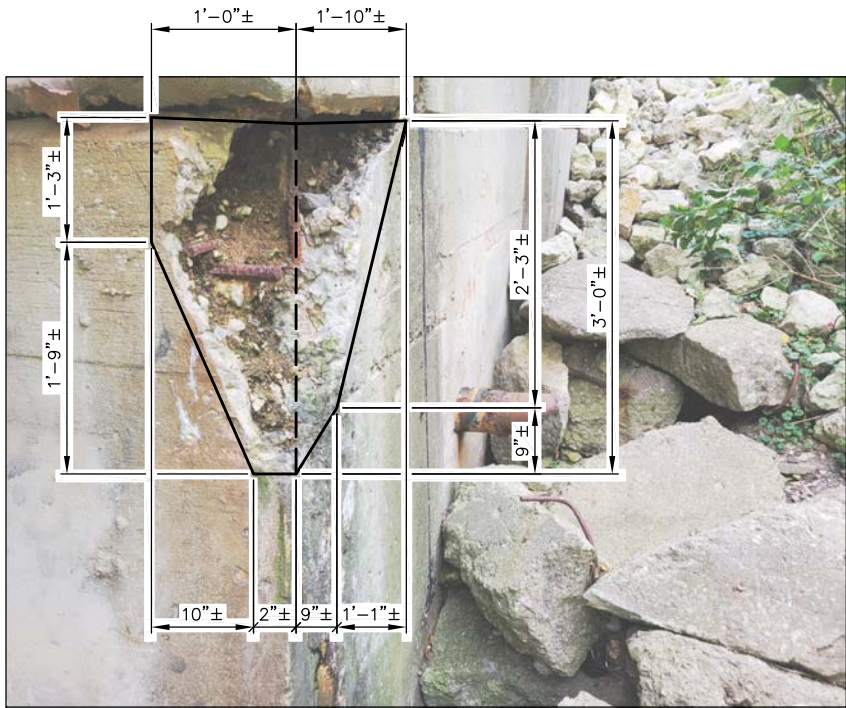
STRUCTURAL BACKFILL DETAIL



ABUTMENT BACKFILL DIAGRAM

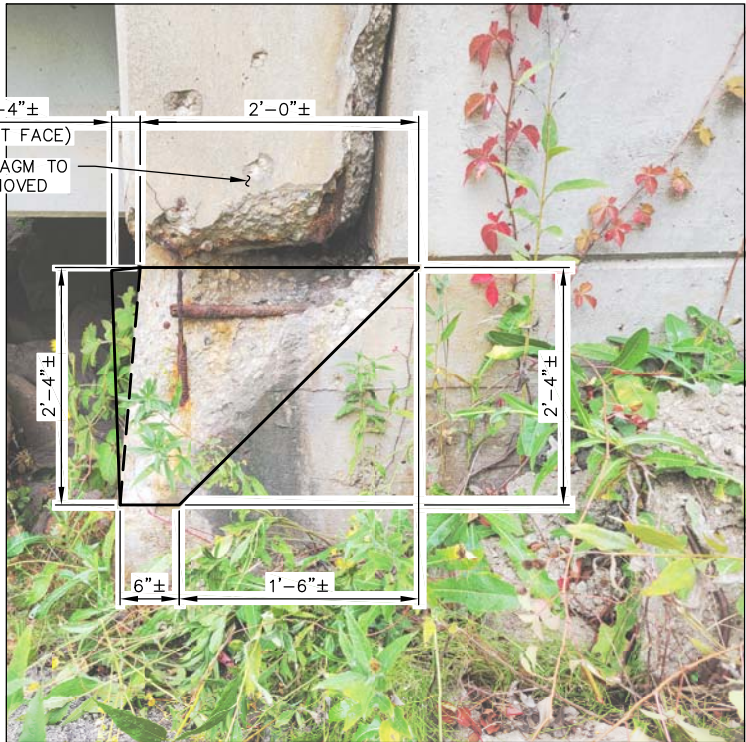
L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
 $V_{CF} = (L)(3.0')(H) + (L)(0.5')(1.5H)(H)$
 $V_{CY} = V_{CF}(EF)/27$
 $V_{TON} = V_{CY}(2.0)$

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-30-21			
DRAWN BY JDO		PLANS CK'D ACK	
CROSS SECTIONS AND PROFILE			SHEET 3 OF 10



WEST ABUTMENT CONCRETE SURFACE REPAIR

(NW CORNER OF ABUTMENT)
(NEAR WING 2)

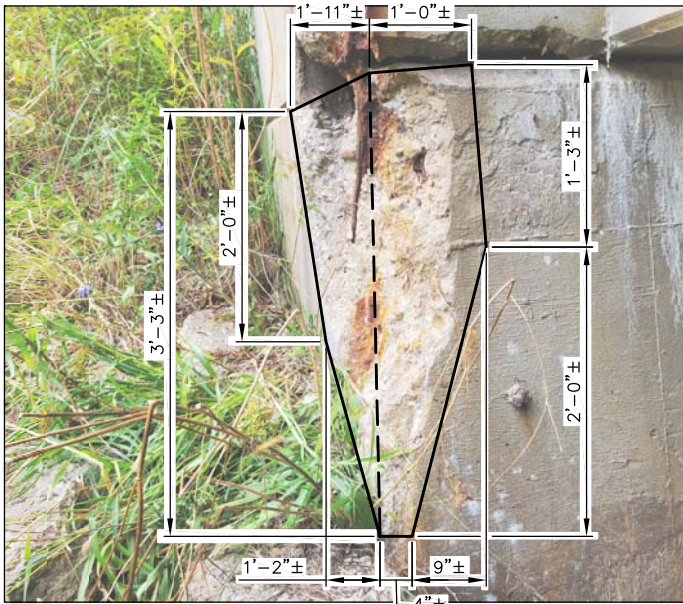


EAST ABUTMENT CONCRETE SURFACE REPAIR

(SE CORNER OF ABUTMENT)
(NEAR WING 4)

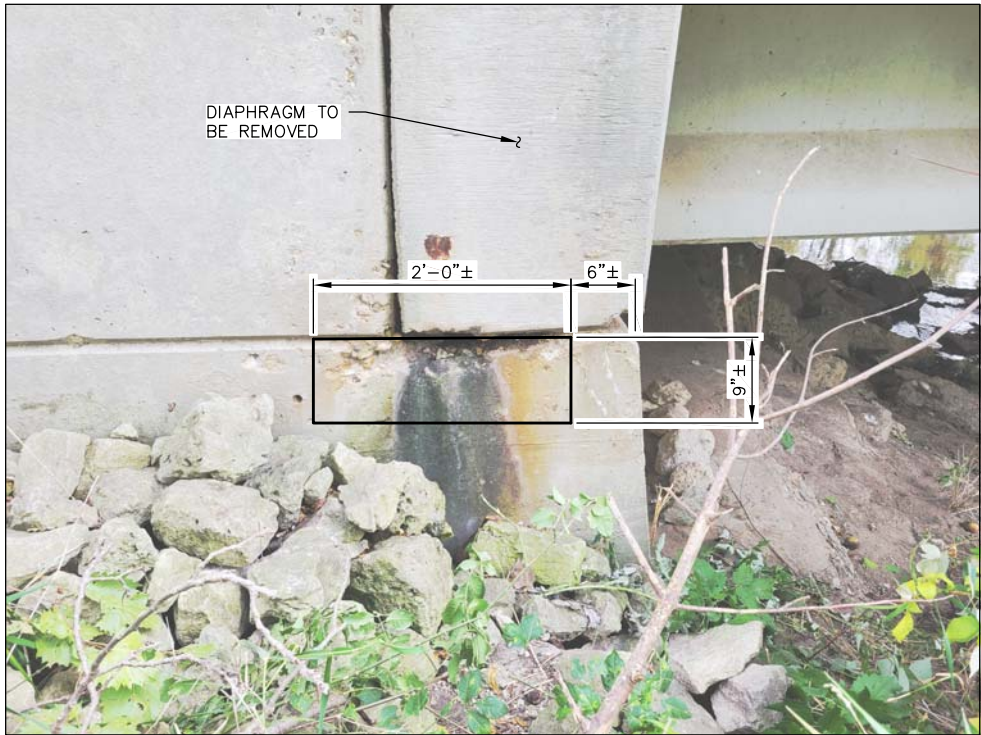
NOTE

CONCRETE SURFACE REPAIR LIMITS. THE LIMITS ARE APPROXIMATE. FIELD CONDITIONS MAY VARY. CONCRETE SURFACE REPAIR AS DIRECTED BY THE FIELD ENGINEER.



WEST ABUTMENT CONCRETE SURFACE REPAIR

(SW CORNER OF ABUTMENT)
(NEAR WING 1)



EAST ABUTMENT CONCRETE SURFACE REPAIR

(NE CORNER OF ABUTMENT)
(NEAR WING 3)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-30-21			
DRAWN BY JDO		PLANS CK'D	ACK
ABUTMENT SURFACE REPAIR			SHEET 4 OF 10

BILL OF BARS
ALL WINGS

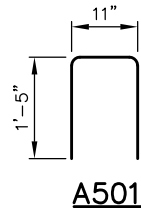
COATED = 720 LBS.

MARK	COATED	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
		W. ABUT.	E. ABUT.				
A501	X	60	56	3'-6"			ALL WINGS - U BAR STIRRUP VERT.
A402	X	12	-	10'-8"			WINGS 1 & 2 - F.F. & B.F. HORIZ.
A403	X	-	12	10'-0"			WINGS 3 & 4 - F.F. & B.F. HORIZ.
A504	X	30	28	2'-0"			ALL WINGS - ANCHORS VERT.

THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

BUNDLE EACH ABUTMENT BARS SEPARATELY



A501

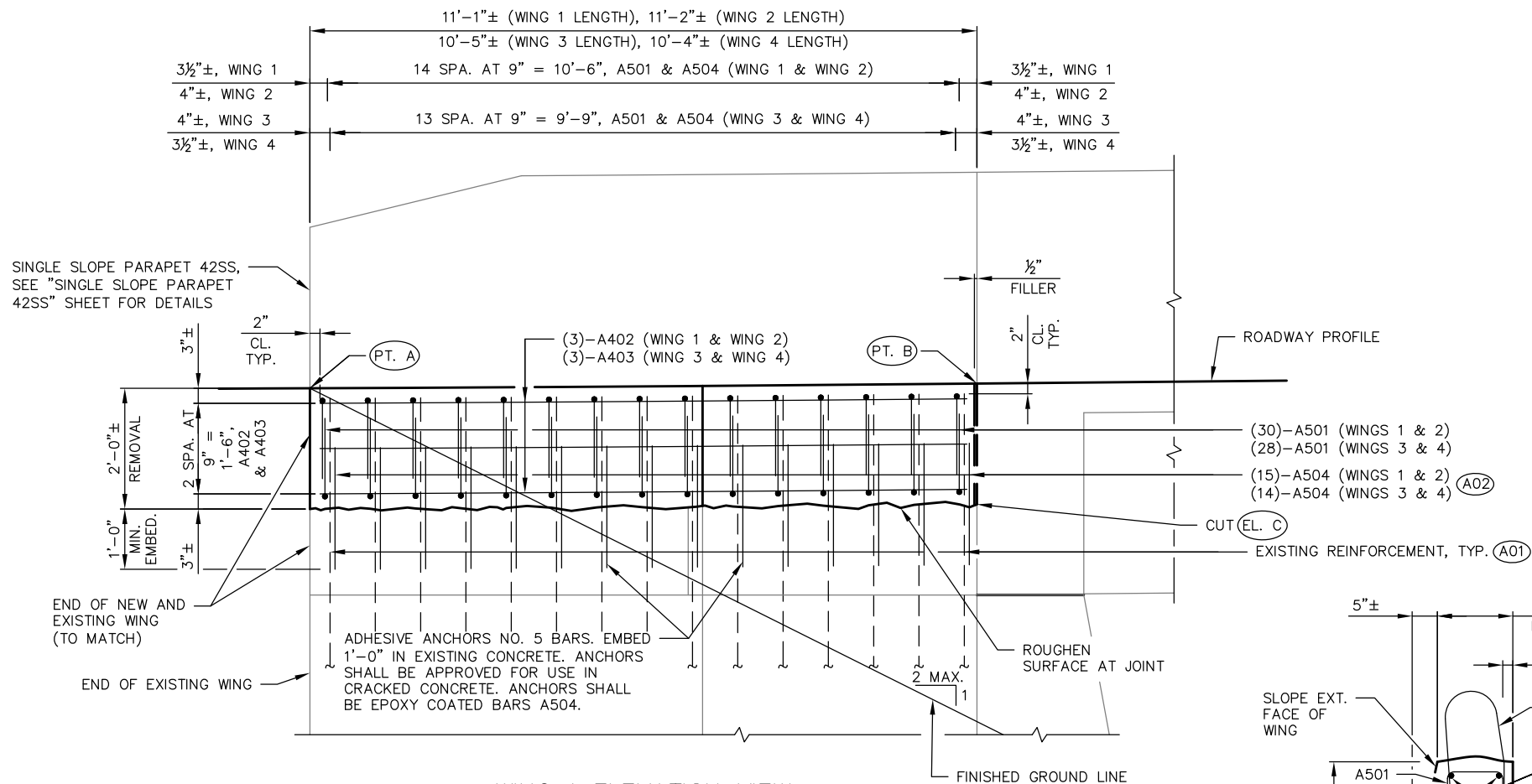
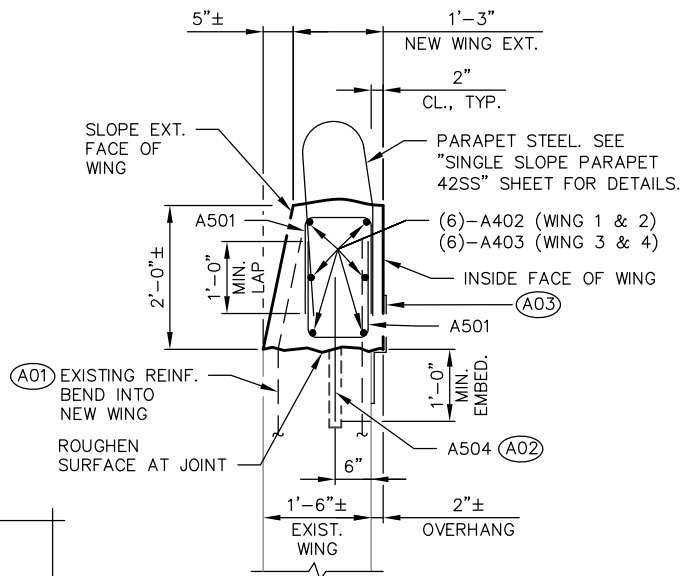
NOTES

ROUGHEN SURFACE OF CONCRETE $\frac{1}{4}$ " DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

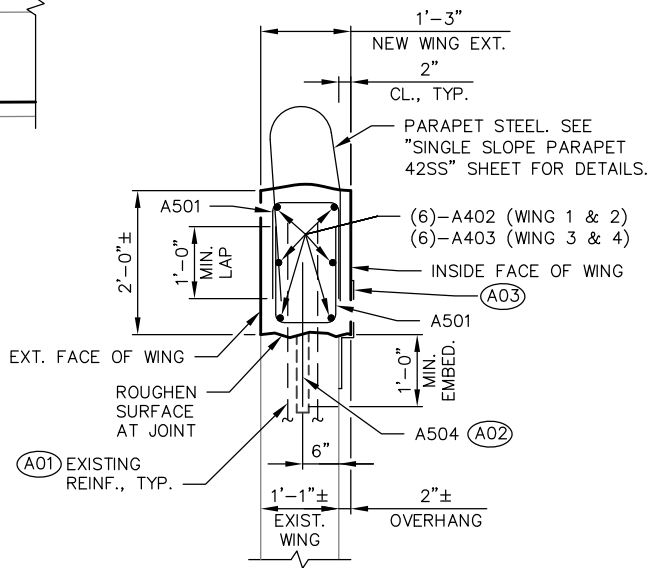
(A01) UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE. EXISTING REINFORCEMENT SHOWN IS APPROXIMATE. ACTUAL SIZE AND QUANTITY MAY VARY AND WILL BE DETERMINED IN THE FIELD.

(A02) ADHESIVE ANCHORS NO. 5 BARS EMBED 1'-0" IN TO EXISTING CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. ANCHORS SHALL BE EPOXY COATED BARS A504.

(A03) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

WING 1 ELEVATION VIEW
(WING 1 SHOWN, ALL OTHER WINGS SIMILAR)

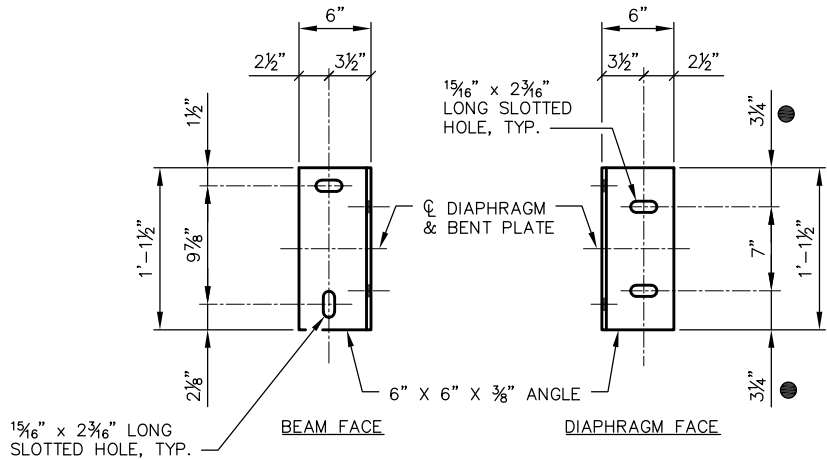
SECTION A-A



SECTION B-B

	PT. A	PT. B	CUT EL. C
WING 1	STA. 13+36.34, 19.88' RT. EL. 623.48	STA. 13+47.45, 19.91' RT. EL. 623.53	EL. 621.48±
WING 2	STA. 13+36.50, 19.75' LT. EL. 623.48	STA. 13+47.57, 19.72' RT. EL. 623.54	EL. 621.48±
WING 3	STA. 14+20.08, 20.49' LT. EL. 624.06	STA. 14+09.70, 20.29' LT. EL. 623.98	EL. 621.98±
WING 4	STA. 14+20.75, 19.24' RT. EL. 624.08	STA. 14+10.34, 19.44' RT. EL. 624.01	EL. 622.01±

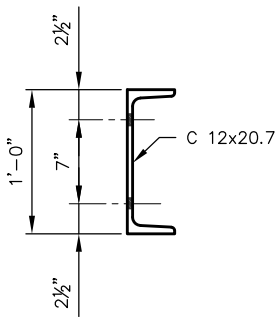
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-30-21			
DRAWN BY JDO		PLANS CK'D	ACK
ABUTMENT WING DETAILS			SHEET 5 OF 10



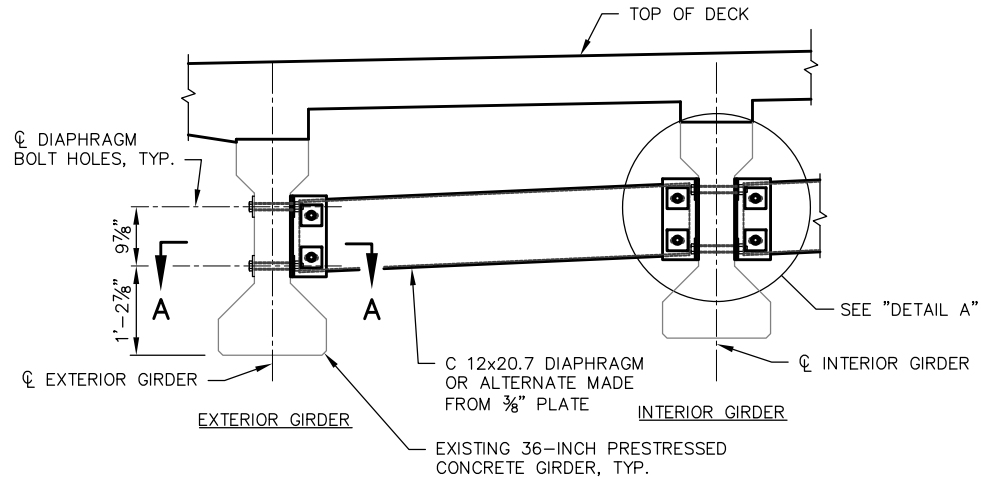
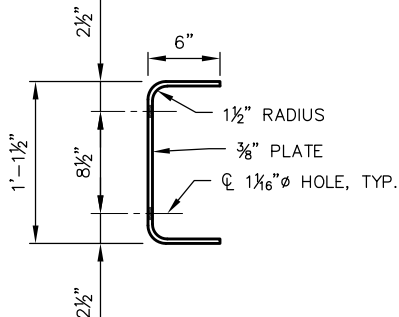
DIAPHRAGM SUPPORT

● DIMENSION CHANGES TO 2 1/2" WHEN ALTERNATE PLATE DIAPHRAGM IS USED.

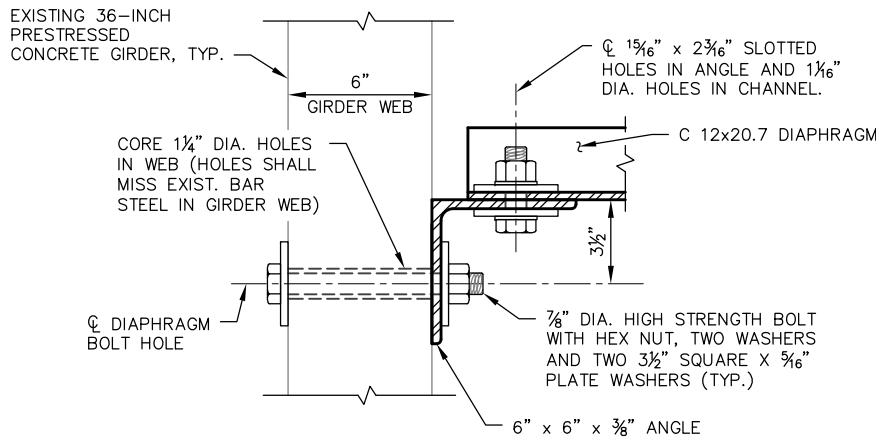
SECTION THROUGH DIAPHRAGM



SECTION THROUGH ALTERNATE DIAPHRAGM

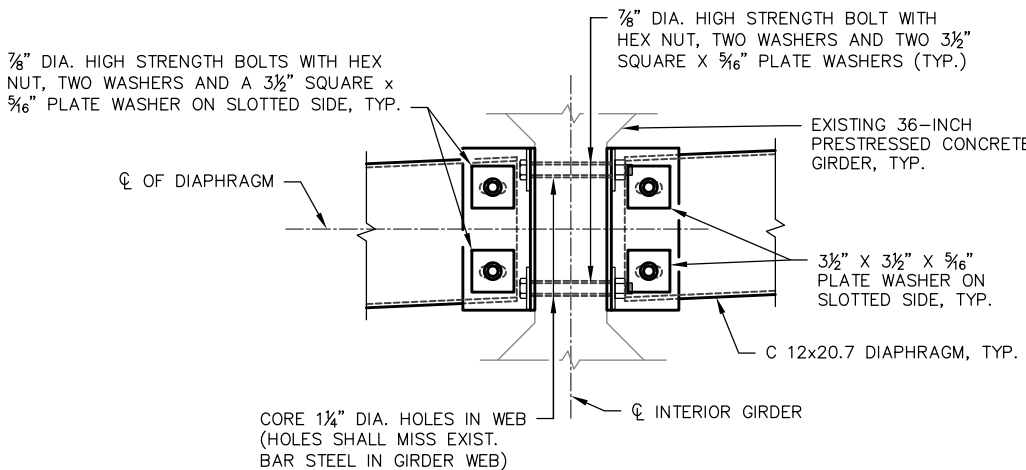


PART TRANSVERSE SECTION AT DIAPHRAGM

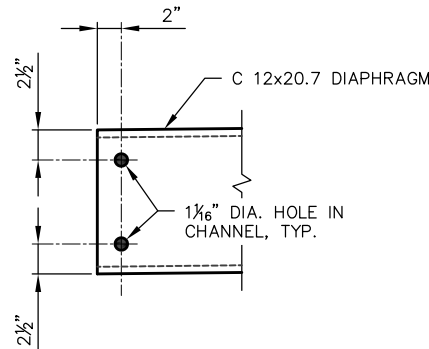


SECTION A-A

(EXTERIOR GIRDER SHOWN, INTERIOR GIRDER SIMILAR)



DETAIL A



CHANNEL DETAIL

NOTES

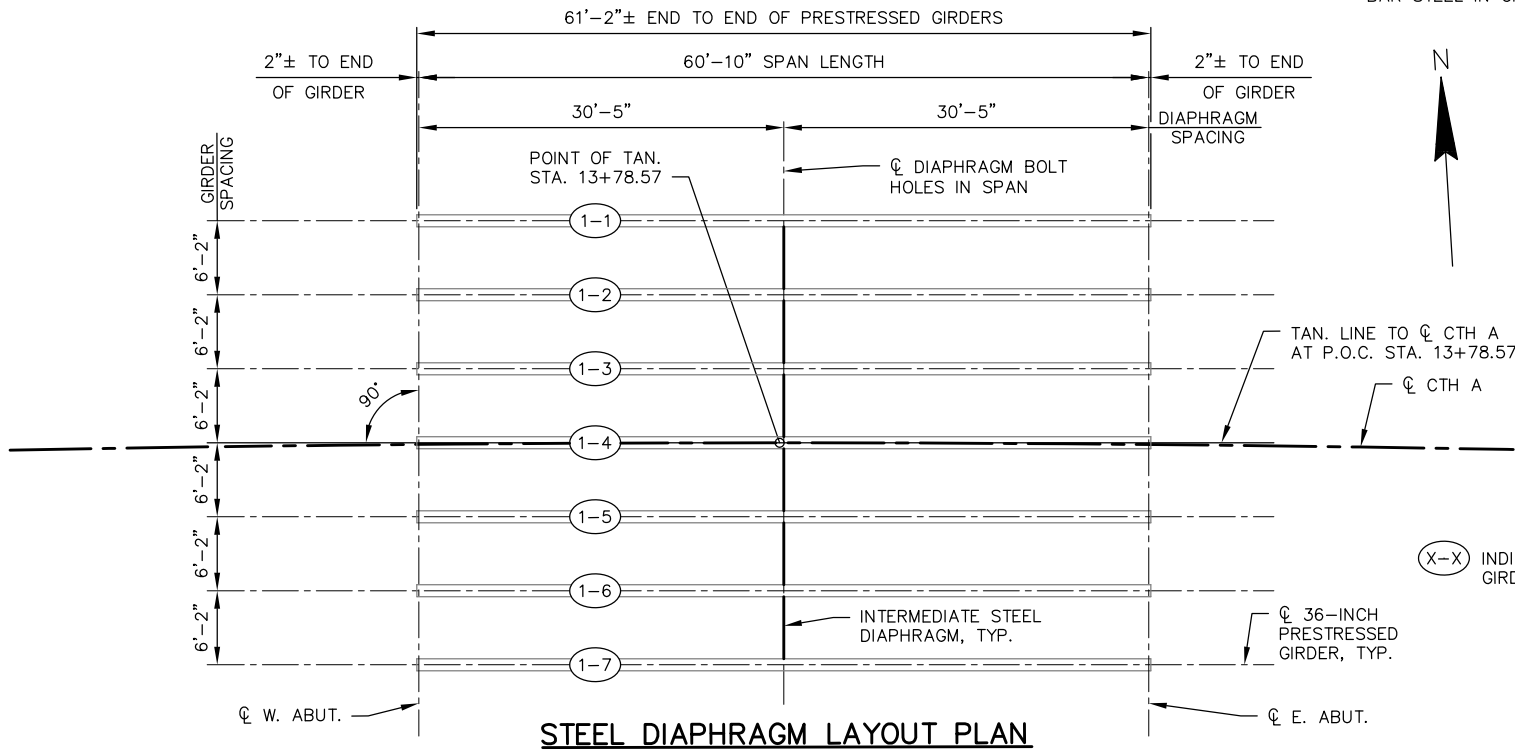
ALL DIAPHRAGM MATERIAL SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS P-30-21", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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

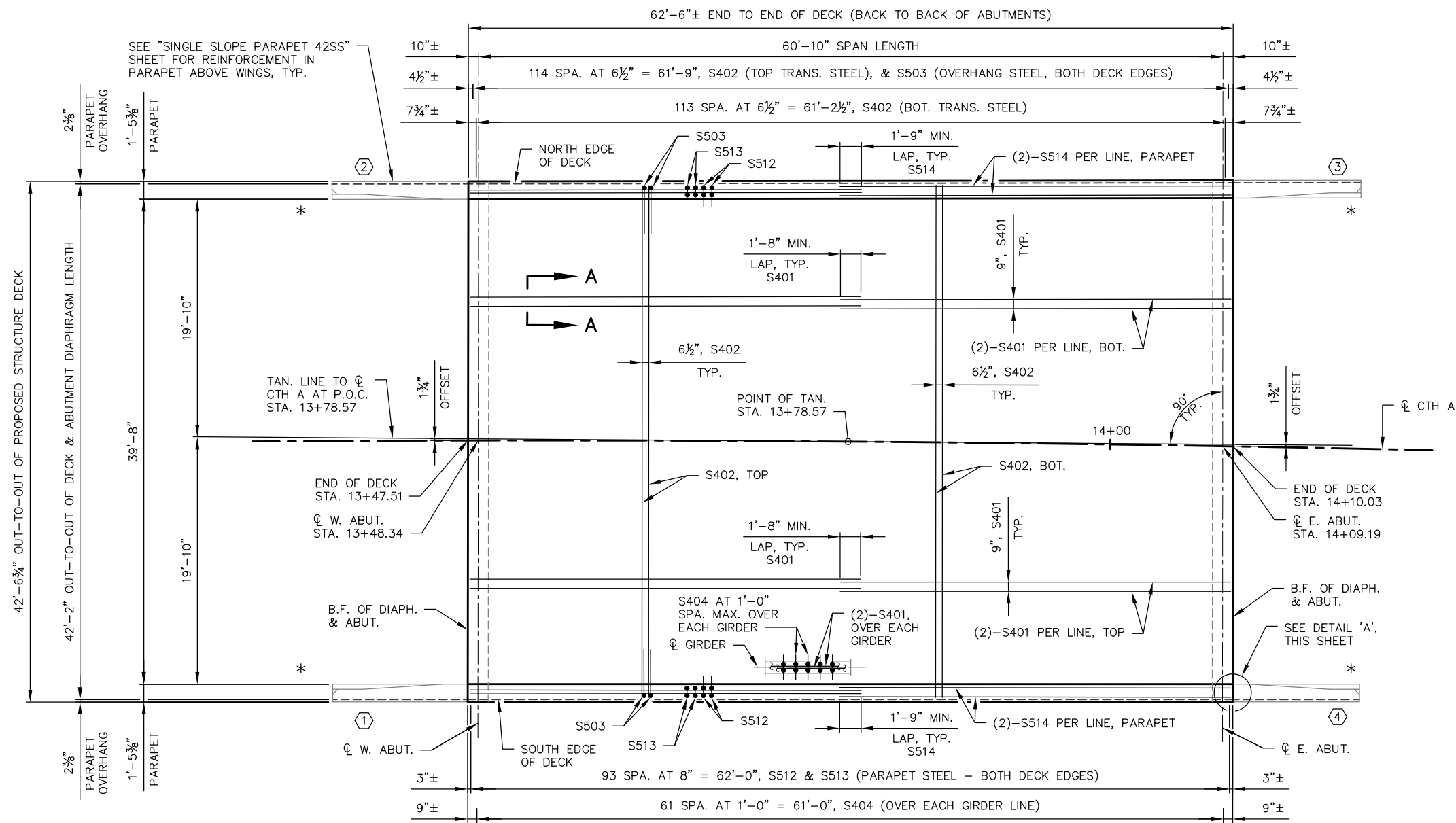
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.



STEEL DIAPHRAGM LAYOUT PLAN

(X-X) INDICATES SPAN NUMBER AND GIRDER LINE DESIGNATION

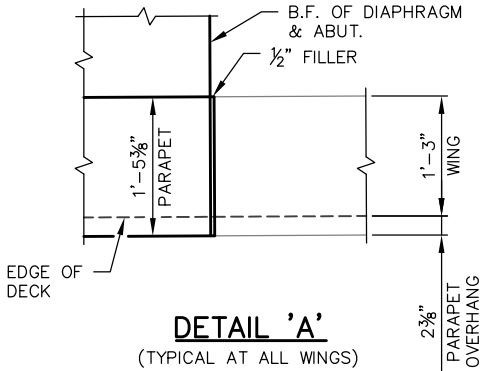
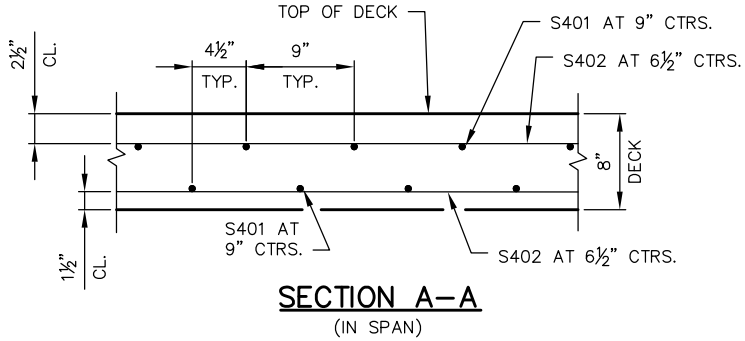
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-30-21			
DRAWN BY JDO		PLANS CK'D	ACK
STEEL DIAPHRAGMS			SHEET 6 OF 10



PLAN VIEW

TOP OF DECK ELEVATIONS

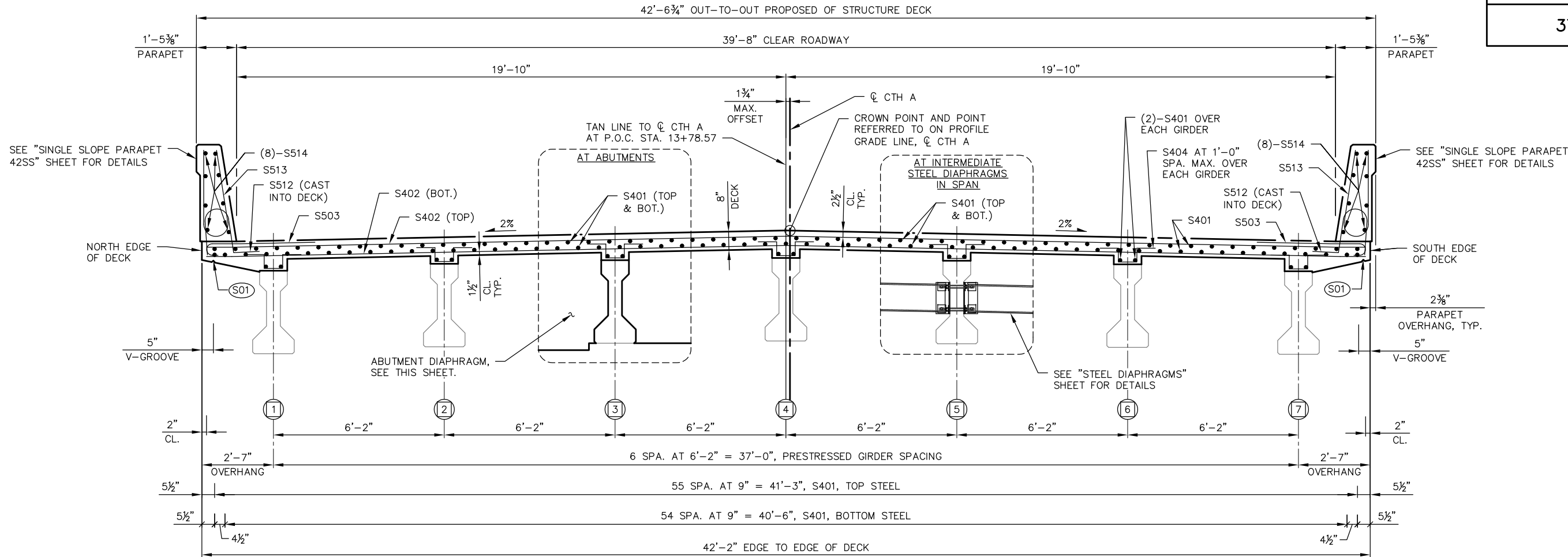
	CL. W. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL. E. ABUT.
NORTH DECK EDGE	623.53	623.58	623.62	623.67	623.71	623.76	623.80	623.85	623.90	623.94	623.99
GIRDER 1	623.56	623.61	623.65	623.70	623.74	623.79	623.83	623.88	623.93	623.97	624.02
GIRDER 2	623.68	623.73	623.77	623.82	623.86	623.91	623.95	624.00	624.05	624.09	624.14
GIRDER 3	623.81	623.86	623.90	623.95	623.99	624.04	624.08	624.13	624.18	624.22	624.27
GIRDER 4/ CROWN POINT	623.93	623.98	624.02	624.07	624.11	624.16	624.20	624.25	624.30	624.34	624.39
GIRDER 5	623.81	623.86	623.90	623.95	623.99	624.04	624.08	624.13	624.18	624.22	624.27
GIRDER 6	623.68	623.73	623.77	623.82	623.86	623.91	623.95	624.00	624.05	624.09	624.14
GIRDER 7	623.56	623.61	623.65	623.70	623.74	623.79	623.83	623.88	623.93	623.97	624.02
SOUTH DECK EDGE	623.53	623.58	623.62	623.67	623.71	623.76	623.80	623.85	623.90	623.94	623.99



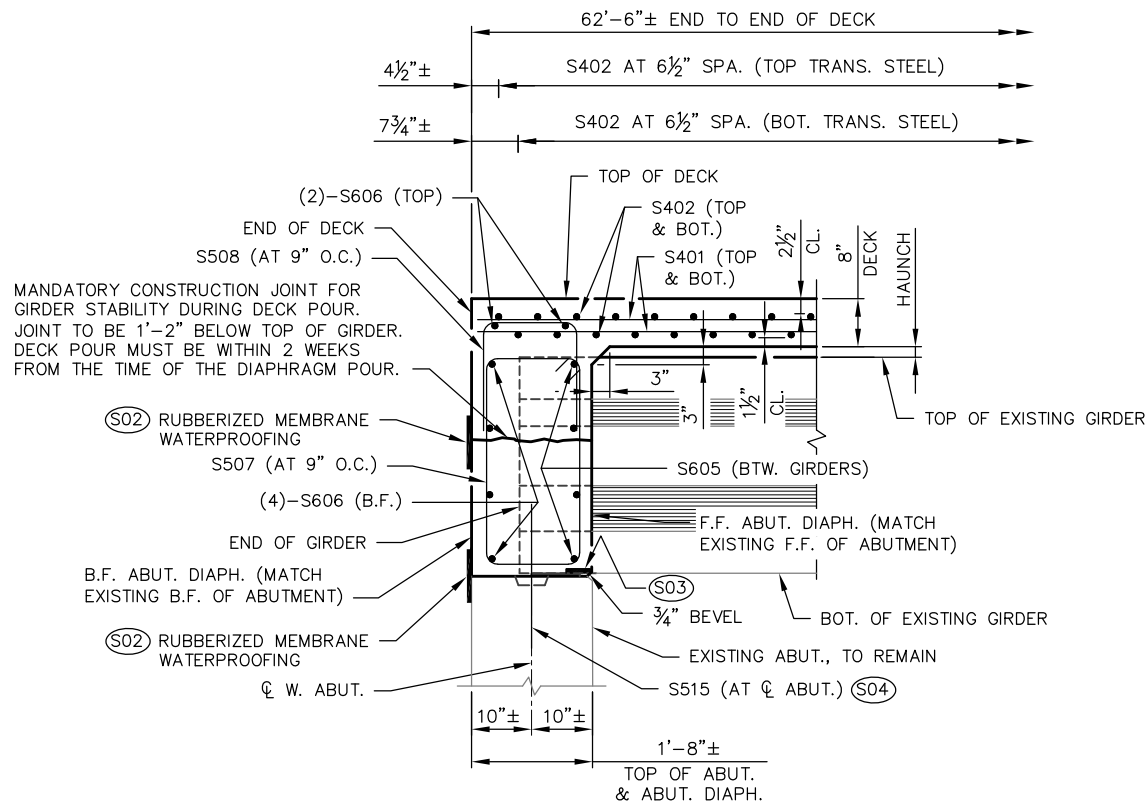
NOTES

- * LOCATION OF BEAM GUARD ATTACHMENT
- ⬡ INDICATES WING NUMBER

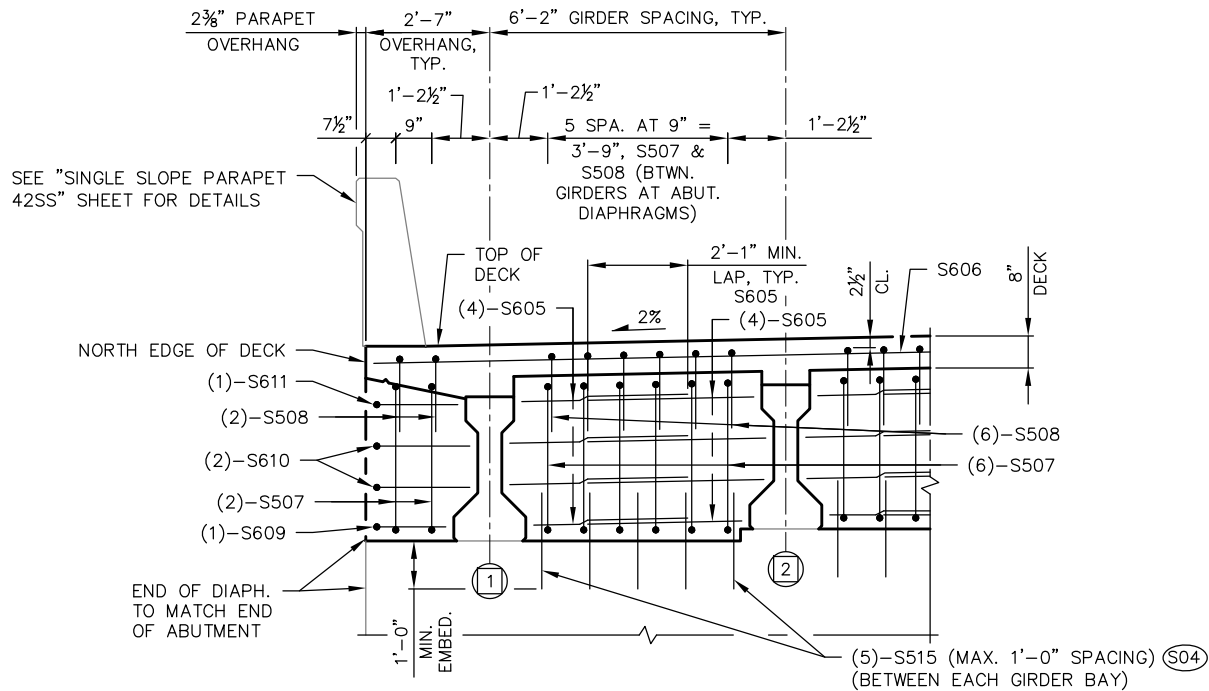
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-30-21			
DRAWN BY JDO		PLANS CK'D	ACK
SUPERSTRUCTURE		SHEET 7 OF 10	



CROSS SECTION THRU ROADWAY
(LOOKING EAST)



SECTION THRU DIAPHRAGM AT ABUTMENT
(WEST ABUTMENT SHOWN, LOOKING NORTH. EAST ABUTMENT SIMILAR)



CROSS SECTION AT ABUTMENT
(EAST ABUTMENT SHOWN, LOOKING EAST. WEST ABUTMENT SIMILAR)

NOTES

EXISTING GIRDER BEARING PADS ARE NOT TO BE REPLACED UNLESS FIELD ENGINEER DEEMS THE BEARING PAD DEFICIENT AND IN NEED OF REPLACEMENT BASED ON OBSERVED CONDITION.

(S01) 3/4" V-GROOVE REQ'D. EXTEND TO 6" FROM F.F. OF ABUT. DIAPH.

(S02) 18" RUBBERIZED MEMBRANE WATERPROOFING (R.M.W.), SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENTS.

(S03) 3/4" x 4" PREFORMED FILLER, RUN ALONG F.F. OF DIAPHRAGM FULL LENGTH FROM (WING TO WING) BETWEEN GIRDER BOTTOM FLANGES.

(S04) ADHESIVE ANCHORS NO. 5 BARS EMBED 1'-0" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. ANCHORS SHALL BE EPOXY COATED BARS S515.

(S01) INDICATES GIRDER LINE DESIGNATION

F.F. - FRONT FACE
B.F. - BACK FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-30-21			
DRAWN BY JDO		PLANS CK'D	ACK
SUPERSTRUCTURE DETAILS			SHEET 8 OF 10

BILL OF BARS
SUPERSTRUCTURE

COATED = 19,510 LBS.

F.F. - FRONT FACE
B.F. - BACK FACE

STATE PROJECT NUMBER

3765-05-70

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
S401	254		32'-0"			DECK - TOP & BOTTOM LONGIT.
S402	229		41'-10"			DECK - TOP & BOTTOM TRANS.
S503	230		4'-6"	X		DECK - TOP - OVERHANG STEEL TRANS.
S404	434		2'-4"	X		DECK - TOP STIRRUPS OVER GIRDERS TRANS.
S605	96		3'-9"			ABUT. - DIAPHRAGM AT F.F. (BTWN. GIRDERS) HORIZ.
S606	12		41'-10"			ABUT. - DIAPHRAGM AT B.F. & TOP HORIZ.
S507	80		9'-4"	X		ABUT. - DIAPHRAGM - STIRRUP VERT.
S508	80		4'-5"	X		ABUT. - DIAPHRAGM - STIRRUP (TOP) VERT.
S609	4		3'-11"	X		ABUT. - DIAPHRAGM - END STIRRUP NEAR WINGS HORIZ.
S610	8		4'-11"	X		ABUT. - DIAPHRAGM - END STIRRUP NEAR WINGS HORIZ.
S611	4		4'-5"	X		ABUT. - DIAPHRAGM - END STIRRUP NEAR WINGS HORIZ.
S512	188		4'-5"	X		PARAPET STEEL VERT.
S513	188		6'-8"	X		PARAPET STEEL VERT.
S514	32		32'-0"			PARAPET STEEL HORIZ.
S515	60		2'-0"			ABUT. - DIAPHRAGM - DOWELS VERT.

(S04)

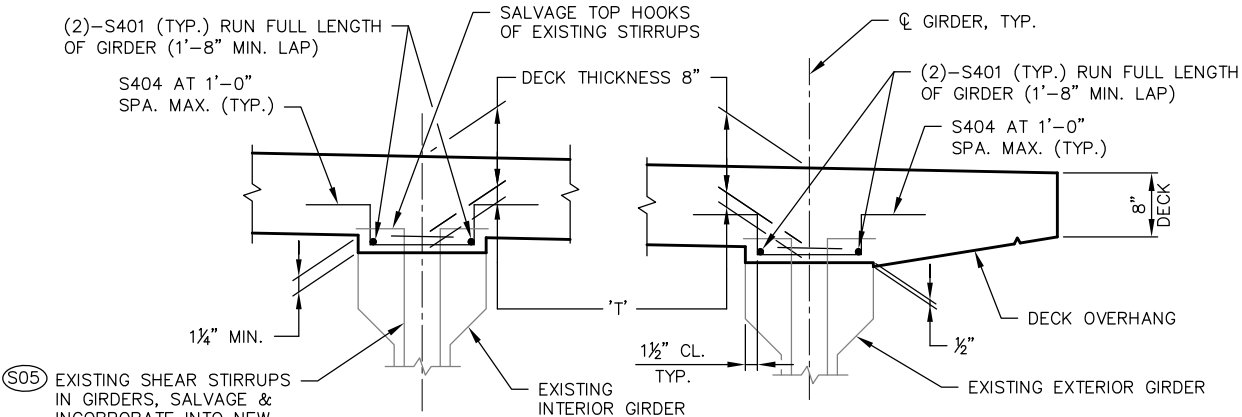
THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

NOTES

(S04) ADHESIVE ANCHORS NO. 5 BARS EMBED 1'-0" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. ANCHORS SHALL BE EPOXY COATED BARS S515.

(S05) CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE EXISTING GIRDER, INCLUDING SHEAR STIRRUPS. SAW CUTTING OF THE EXISTING SHEAR STIRRUPS IS NOT ALLOWED. FIELD ENGINEER WILL INSPECT GIRDERS PRIOR TO PLACING NEW DECK.



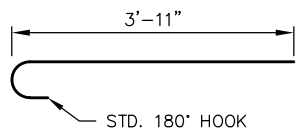
DECK HAUNCH DETAIL

IF 1 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE DESIGN ENGINEER IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/4".

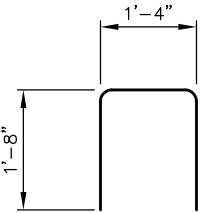
TO DETERMINE 'T', ELEVATIONS OF TOP OF GIRDERS AT CL OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEVATION AT FINAL GRADE (SEE "SUPERSTRUCTURE" SHEET)
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS
= HAUNCH HEIGHT 'T'

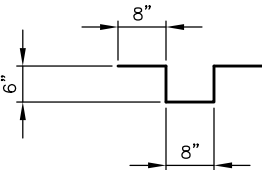
NOTE: AN AVERAGE HAUNCH ('T') OF 3.2" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



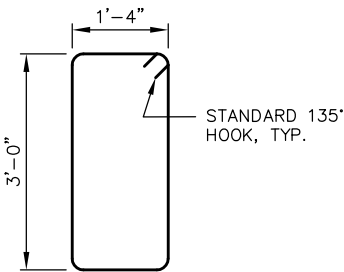
S503



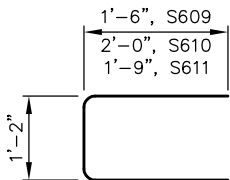
S508



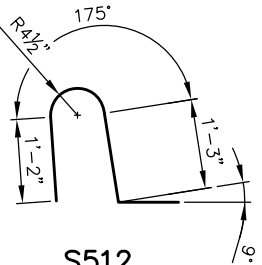
S404



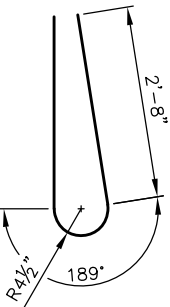
S507



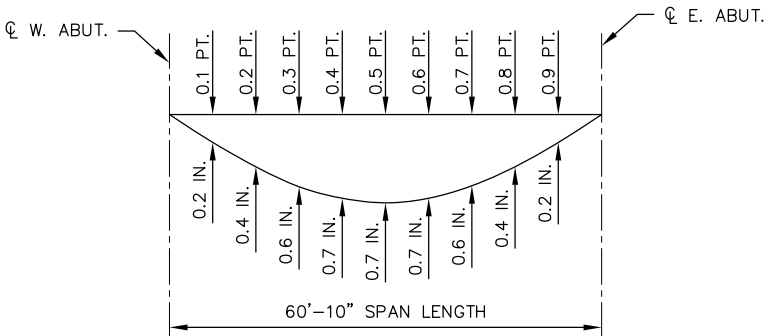
S609, S610,
& S611



S512



S513



DEAD LOAD
DEFLECTION DIAGRAM

* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.0 FOR THE ANTICIPATED CAMBER REBOUND HEIGHTS FOLLOWING THE REMOVAL OF THE EXISTING CONCRETE DECK.

SPAN	CAMBER REBOUND (IN.)*
1	1.7

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-30-21			
DRAWN BY	JDO	PLANS CK'D	ACK
SUPERSTRUCTURE REINFORCEMENT		SHEET 9 OF 10	

I.D. 3765-05-70

PLOT DATE: Jul 24, 2024

FILE: 07_09_P300021_super.dwg
PLOT SCALE:

BAR MARK	COAT	NO. REQ'D.		LENGTH	BENT	BAR SERIES	LOCATION	
		WING 1 & 2	WING & 4					
R501	X	7	6	5'-10"	X		PARAPET (ALL WINGS)	VERT.
R502	X	7	6	6'-8"	X		PARAPET (ALL WINGS)	VERT.
R503	X	24	24	3'-0"	X		PARAPET (ALL WINGS)	VERT.
R504	X	34	34	5'-7"	X		PARAPET (ALL WINGS)	VERT.
R505	X	10	10	6'-5"	X		PARAPET (ALL WINGS)	VERT.
R506	X	12	12	6'-6"	X		PARAPET (ALL WINGS)	VERT.
R507	X	2	--	10'-8"	X		PARAPET (WING 1 & 2)	HORIZ.
R508	X	10	--	10'-8"			PARAPET (WING 1 & 2)	HORIZ.
R509	X	12	12	5'-5"	X	▲	PARAPET (ALL WINGS)	VERT.
R510	X	4	--	10'-8"	X		PARAPET (WING 1 & 2)	HORIZ.
R511	X	--	2	10'-0"	X		PARAPET (WING 3 & 4)	HORIZ.
R512	X	--	10	10'-0"			PARAPET (WING 3 & 4)	HORIZ.
R513	X	--	4	10'-0"	X		PARAPET (WING 3 & 4)	HORIZ.

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

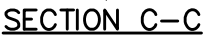
(R08) 8"± (WING 1), 5"± (WING 2), 4"± (WING 3) & 3"± (WING 4)



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



OUTSIDE ELEVATION OF PARAPET



ARD", EACH.

(R08) 8 ± (WING 1), 5 ± (WING 2), 4 ± (WING 3) & 5 ± (WING 4)

R501

R502

R503

R504

R505

R506

R507 & R511

R508

R509

R510 & R513

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			

BUNDLE AND TAG EACH SERIES SEPARATELY.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-30-21			
DRAWN BY		JDO	PLANS CK'D ACK
SINGLE SLOPE PARAPET 42SS			SHEET 10 OF 10

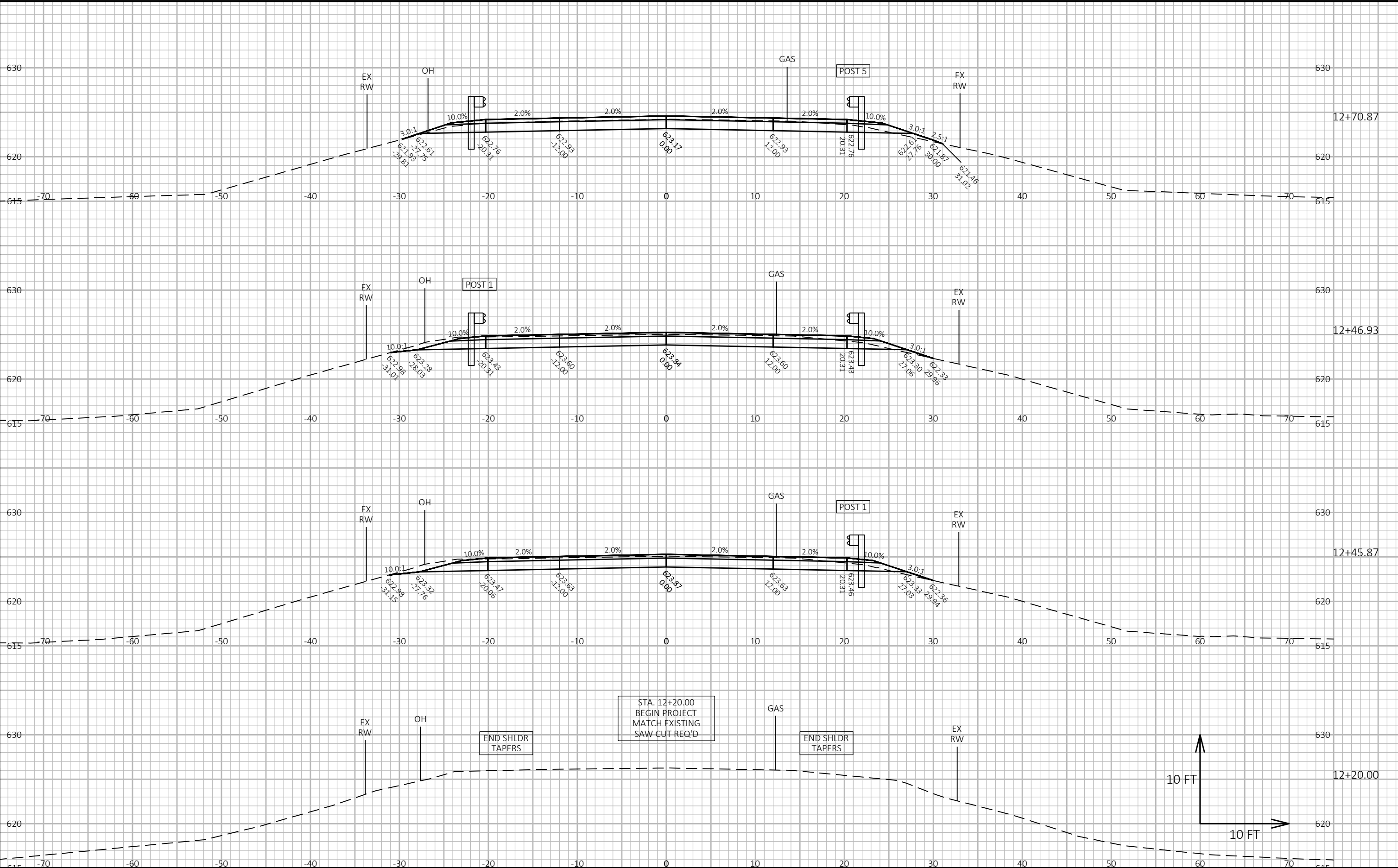
DIVISION 1 - WEST APPROACH

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 4
12+20.00	0.00	65.11	12.91	0.00	0	0	0	0	0	0
12+45.87	25.87	62.17	12.89	0.72	61	12	0	61	0	49
12+46.93	1.06	61.44	12.89	0.71	2	1	0	63	0	50
12+70.87	23.94	49.19	12.98	1.44	49	11	1	112	1	87
12+71.97	1.10	48.52	12.98	1.57	2	1	0	114	1	88
12+96.05	24.08	41.69	17.81	1.87	40	14	2	154	4	111
12+96.79	0.74	41.22	17.88	1.88	1	0	0	155	4	112
13+00.00	3.21	39.69	18.19	3.10	5	2	0	160	4	115
13+37.07	37.07	39.59	18.58	33.54	54	25	25	214	35	113
STRUCTURE P-30-021										
DIVISION 1 TOTALS					214	66	28			

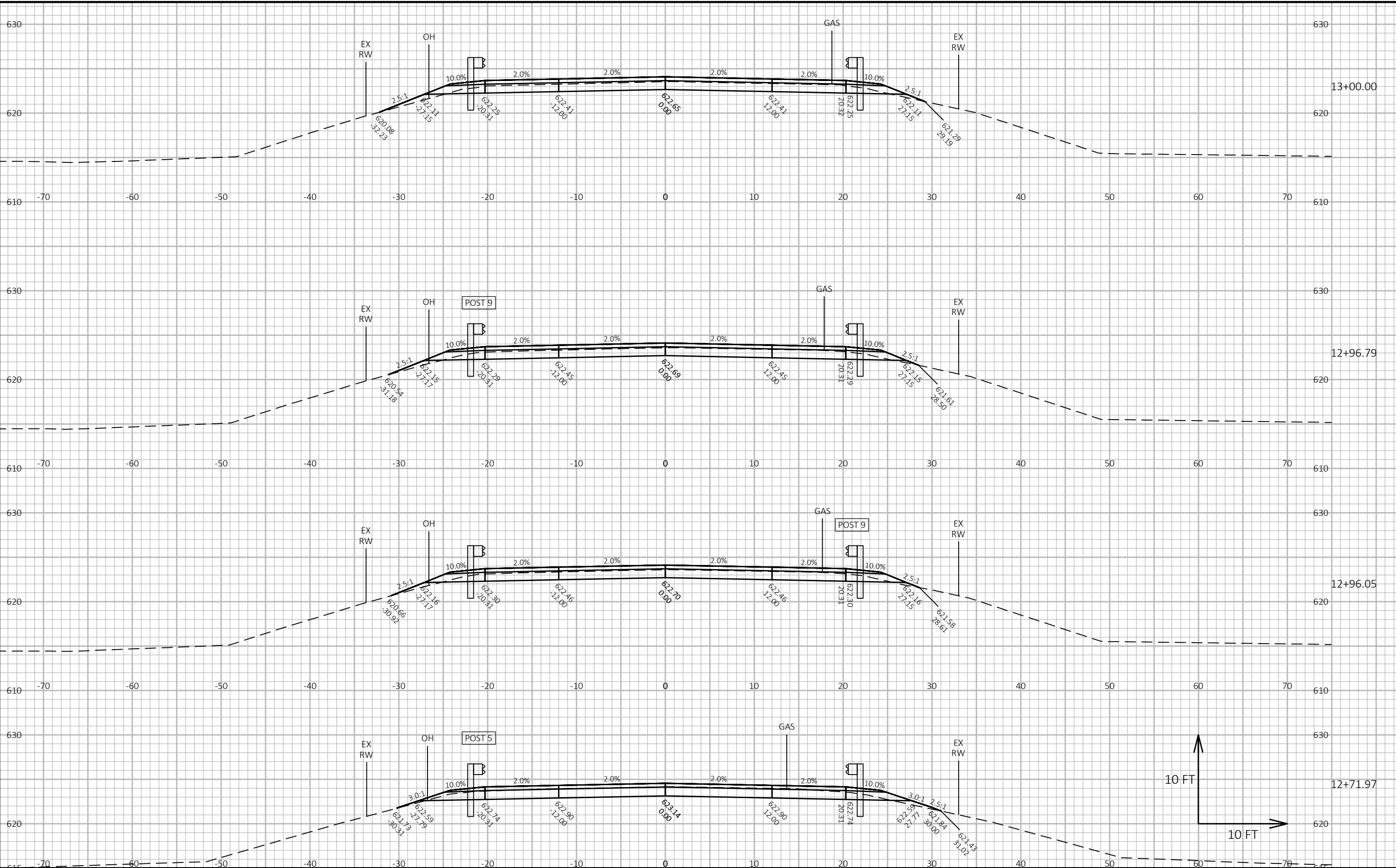
DIVISION 2 - EAST APPROACH

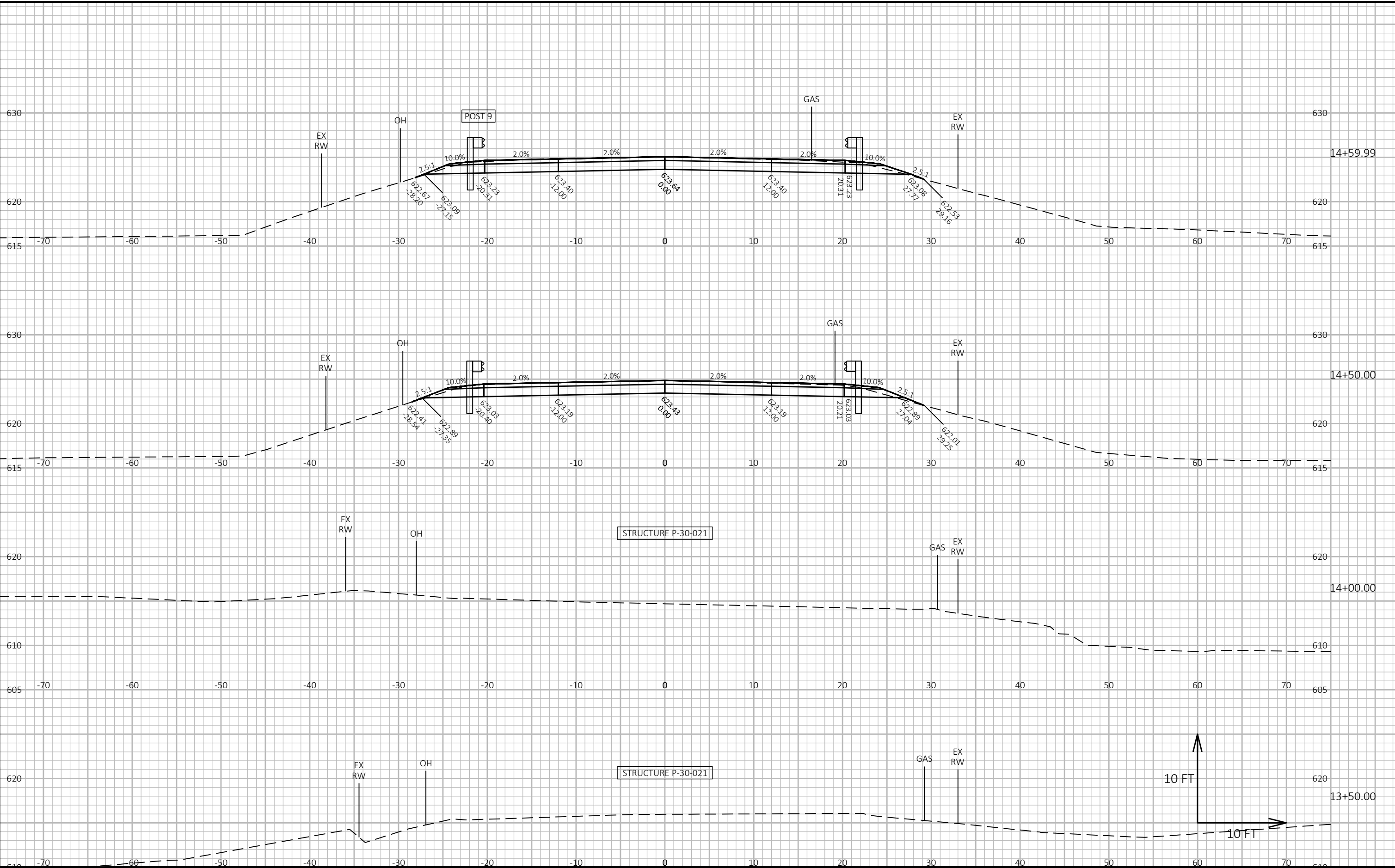
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 4
STRUCTURE P-30-021										
14+20.02	0.00	48.64	18.68	16.14	0	0	0	0	0	0
14+50.00	29.98	65.66	14.82	0.53	63	19	9	63	11	33
14+59.99	9.99	66.88	13.60	0.26	25	5	0	88	11	53
14+60.87	0.88	66.81	13.57	0.29	2	0	0	90	11	55
14+84.99	24.12	63.64	13.36	0.70	58	12	0	148	11	101
14+85.87	0.88	63.49	13.36	0.77	2	0	0	150	11	103
15+00.00	14.13	64.22	13.36	0.14	33	7	0	183	11	129
15+09.96	9.96	62.72	13.37	0.18	23	5	0	206	11	147
15+10.89	0.93	63.00	13.36	0.11	2	0	0	208	11	149
15+36.00	25.11	60.17	13.29	0.00	57	12	0	265	11	194
			DIVISION 2 TOTALS		265	60	9			
			PROJECT TOALS		479	126	37			

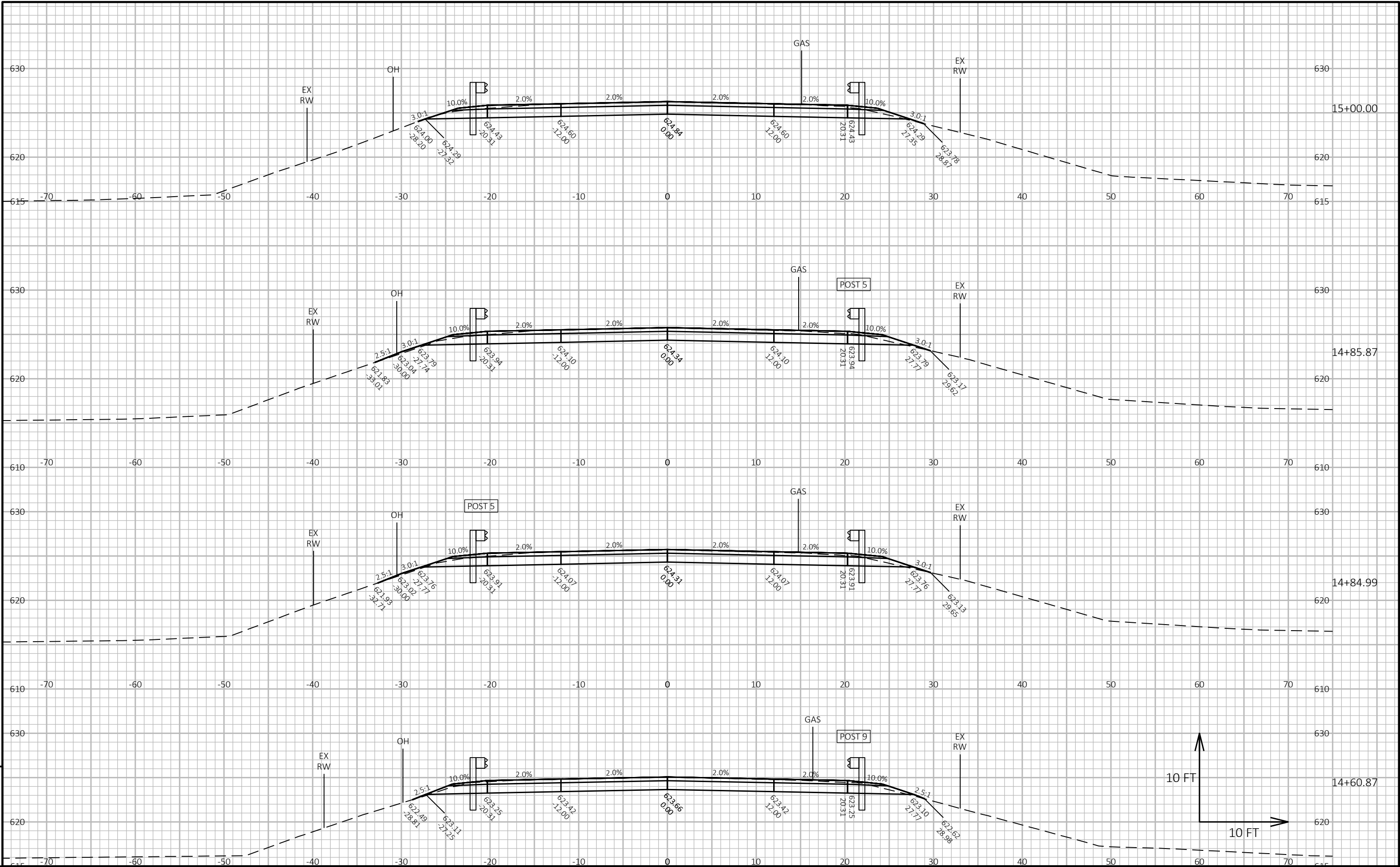
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDINATE	[(CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL) - (FILL * FILL FACTOR)]
	PLUS QUANTITY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

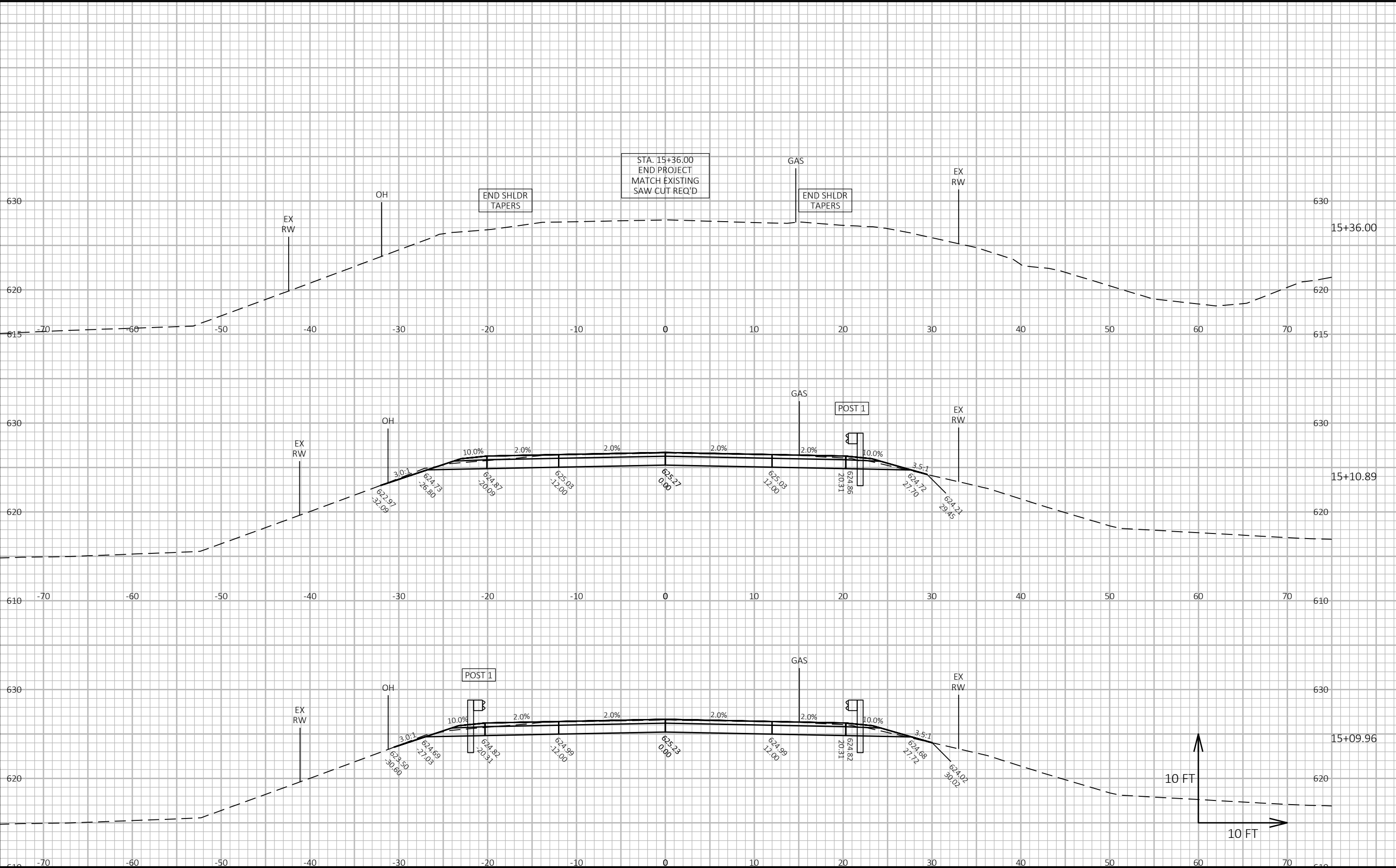


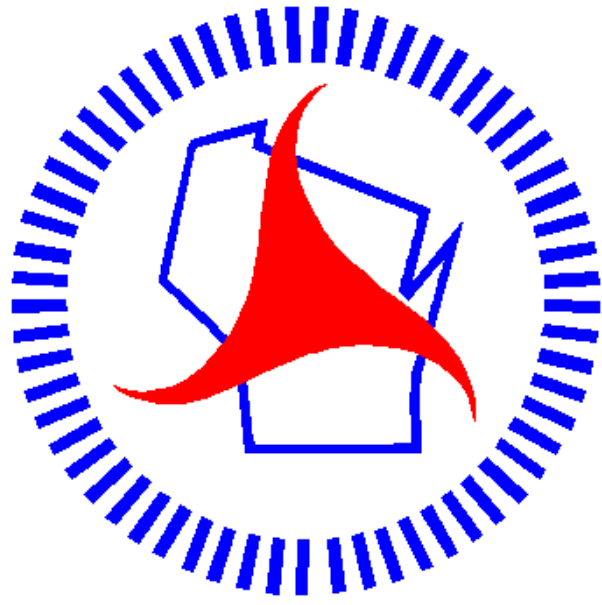
PROJECT NO: 3765-05-70	HWY: CTH A	COUNTY: KENOSHA	CROSS SECTIONS	SHEET	E
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