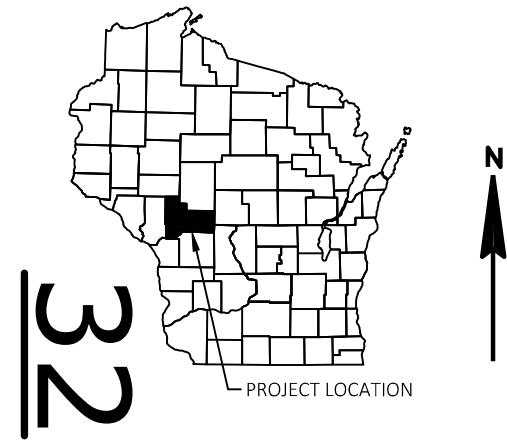


EAU PROJECT ID: 7550-00-77 WITH: N/A COUNTY: JACKSON

NOVEMBER 2026 ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
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 = 114



DESIGN DESIGNATION 7550-00-07

A.A.D.T.	2027	=	2700
A.A.D.T.	2047	=	3120
D.H.V.		=	369
D.D.		=	60/40
T.		=	15.2%
DESIGN SPEED		=	60 MPH
ESALS		=	750,000

CONVENTIONAL SYMBOLS

PLAN

CORPORATE LIMITS

PROPERTY LINE

LOT LINE

LIMITED HIGHWAY EASEMENT

EXISTING RIGHT OF WAY

PROPOSED OR NEW R/W LINE

SLOPE INTERCEPT

REFERENCE LINE

EXISTING CULVERT

PROPOSED CULVERT (Box or Pipe)

COMBUSTIBLE FLUIDS

MARSH AREA

WOODED OR SHRUB AREA

PROFILE

GRADE LINE

ORIGINAL GROUND

MARSH OR ROCK PROFILE (To be noted as such)

SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES

ELECTRIC

FIBER OPTIC

GAS

SANITARY SEWER

STORM SEWER

TELEPHONE

WATER

UTILITY PEDESTAL

POWER POLE

TELEPHONE POLE

ROCK

LABEL

95.36

E

FO

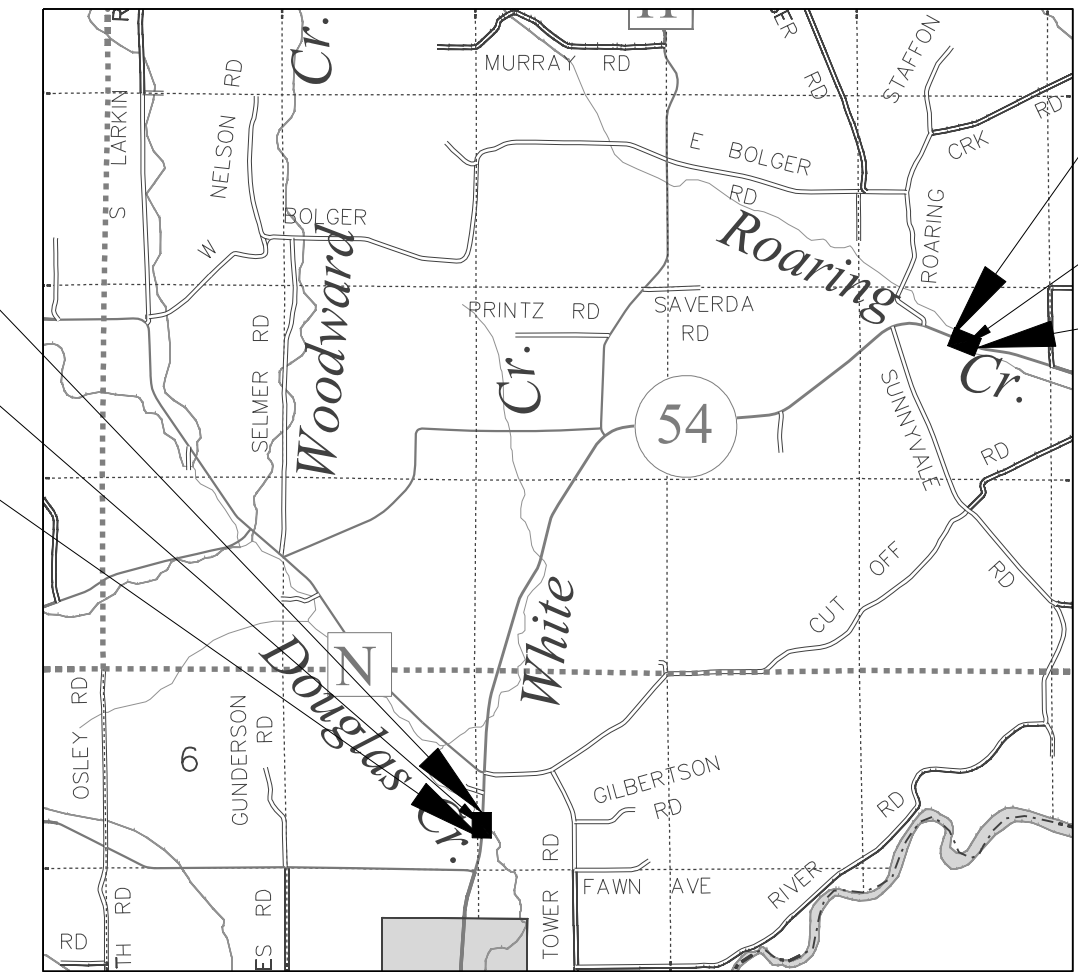
G

SAN

SS

T

W



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION PLAN OF PROPOSED IMPROVEMENT MELROSE - BLACK RIVER FALLS ROARING CK B27076, DOUGLAS CK B27016 STH 54 JACKSON COUNTY

STATE PROJECT NUMBER
7550-00-77

BEGIN CONSTRUCTION STA 332+60 Y: 56 514.005 X: 62 674.796

STRUCTURE B-27-76

END PROJECT STA 334+30

LAYOUT SCALE 0 1 MI TOTAL NET LENGTH OF CENTERLINE = 0.079 MILES

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

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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7550-00-77	WISC 2027048	1

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

WISCONSIN
AARON B. PALMER
E-35695
RICHLAND CENTER, WI
PROFESSIONAL ENGINEER

DATE: 7/13/2026 (Professional Engineer Signature)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WESTBROOK ASSOCIATED ENGINEERS, INC.
Designer	WESTBROOK ASSOCIATED ENGINEERS, INC.
Project Manager	JEFF SMITH, P.E.
Regional Examiner	NW REGION
Regional Supervisor	JAMES KOENIG, P.E.

APPROVED FOR THE DEPARTMENT

DATE: Jeffrey D Smith (Signature)

Digitally signed by Jeffrey D Smith Date: 2026.07.13 10:58:11-05'00'

E

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

UTILITIES CONTACTS

BRIGHTSPEED
COMMUNICATION
BRIAN STELPLUGH
1905 WARD AVENUE
LA CROSSE, WI 54601
PHONE: (608) 780-1238
EMAIL: BRIAN.STELPLUGH@BRIGHTSPEED.COM

BUG TUSSEL
COMMUNICATION
ERIC WICHMANN
417 PINE STREET
GREEN BAY, WI 54305
PHONE: (920) 940-0112
EMAIL: ERIN.WICHMANN@BTUSSEL.COM

XCEL ENERGY
ELECTRIC - DISTRIBUTION
JOHN KELSER
1400 WESTERN AVENUE
EAU CLAIRE, WI 54703
PHONE: (715) 737-6020
EMAIL: JOHN.KELSER@XCELENERGY.COM

XCEL ENERGY
ELECTRIC - TRANSMISSION
JOSH TOMLINSON
414 NICOLLET MALL
MINNEAPOLIS, MN 55401
PHONE: (719) 355-9126
EMAIL: JOSHUA.TOMLINSON@XCELENERGY.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 0.05 GAL/SY.

RIGHT OF WAY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE.

SLOPES STEEPER THAN 3:1 REQUIRE EROSION MAT.

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.

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.

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

WISCONSIN DNR LIAISON

BRAD BETTHAUSER
BLACK RIVER FALLS DNR SERVICE
910 HWY 54 E
BLACK RIVER FALLS, WI 53233
PHONE: (715) 213-9064
EMAIL: BRADLEY.BETTHAUSER@WISCONSIN.GOV

DESIGN PROJECT MANAGER

JEFF SMITH, P.E.
NORTHWEST REGION
2101 WRIGHT STREET
MADISON, WI 53704
PHONE: (608) 246-7906
EMAIL: JEFF.SMITH3@DOT.WI.GOV

DESIGN CONSULTANT

AARON PALMER, P.E.
WESTBROOK ASSOCIATED ENGINEERS, INC.
619 EAST HOXIE ST
SPRING GREEN, WI 53588
PHONE: (608) 588-7866
EMAIL: APALMER@WESTBROOKENG.COM

ORDER OF SECTION 2 DETAIL SHEETS

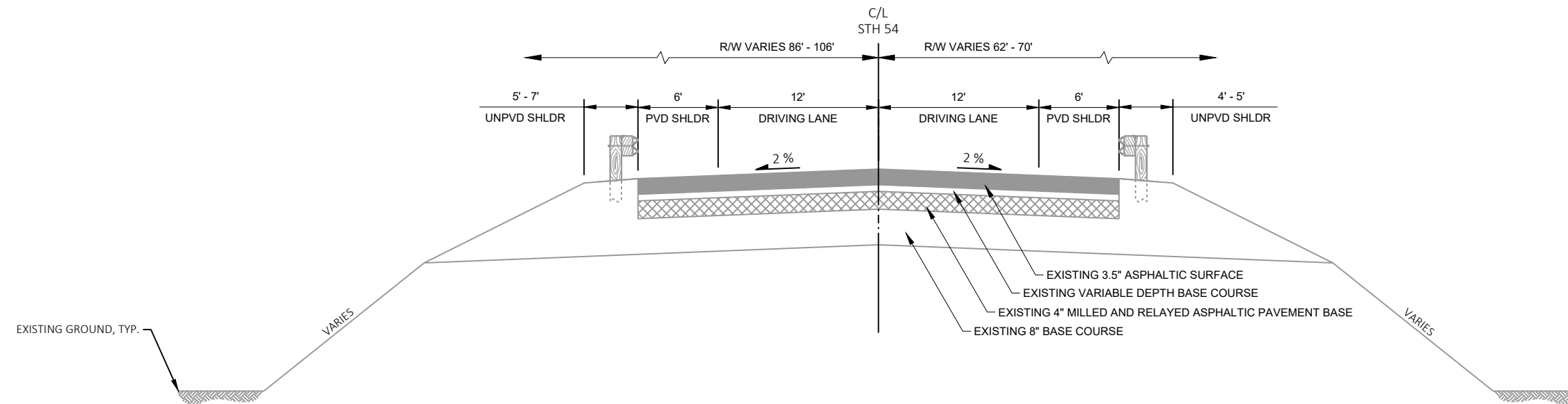
GENERAL NOTES
TYPICAL SECTIONS
CONSTRUCTION DETAILS
BEAM GUARD DETAILS
PERMANENT SIGNING AND PAVEMENT MARKING
DETOUR ROUTE
TRAFFIC CONTROL PLAN
ALIGNMENT DETAILS

RUNOFF COEFFICIENT TABLE

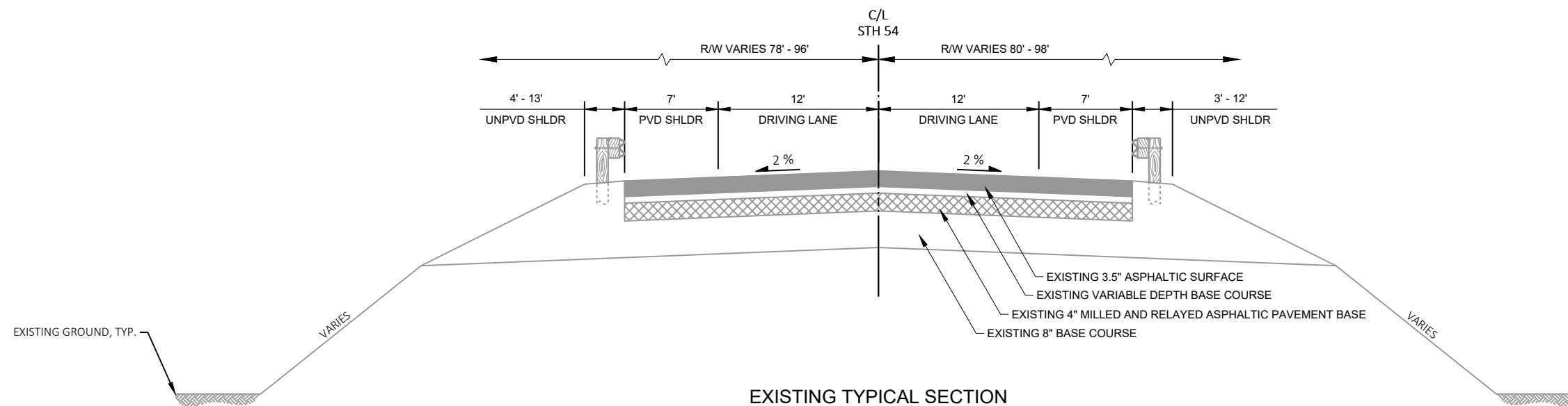
LAND USE:	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS:	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.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 = 3.26 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.78 ACRES

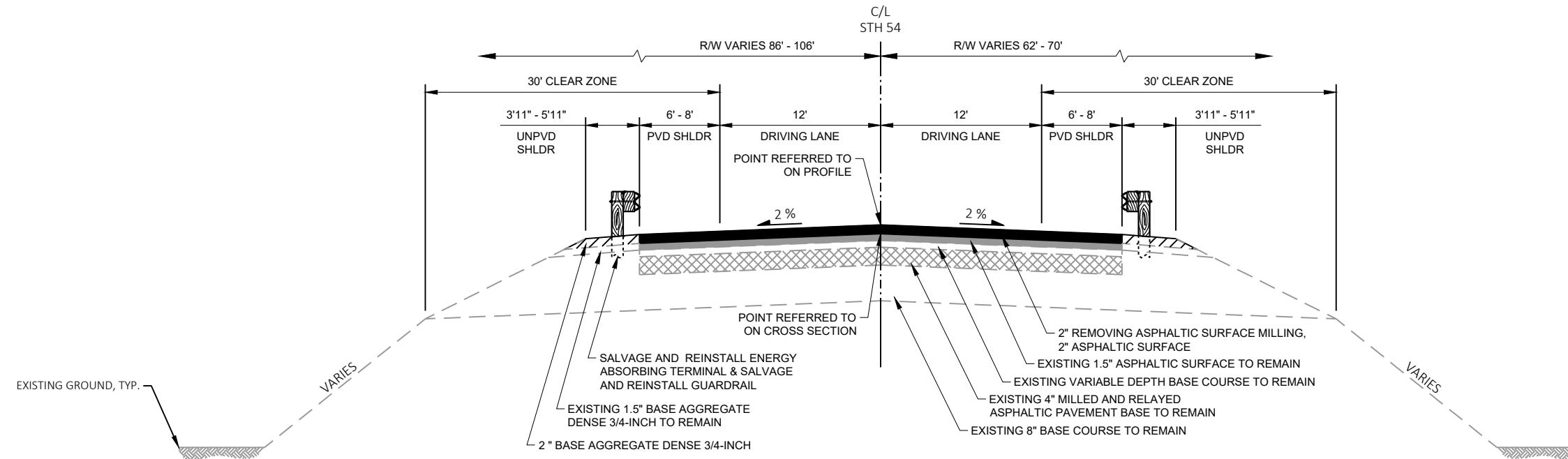




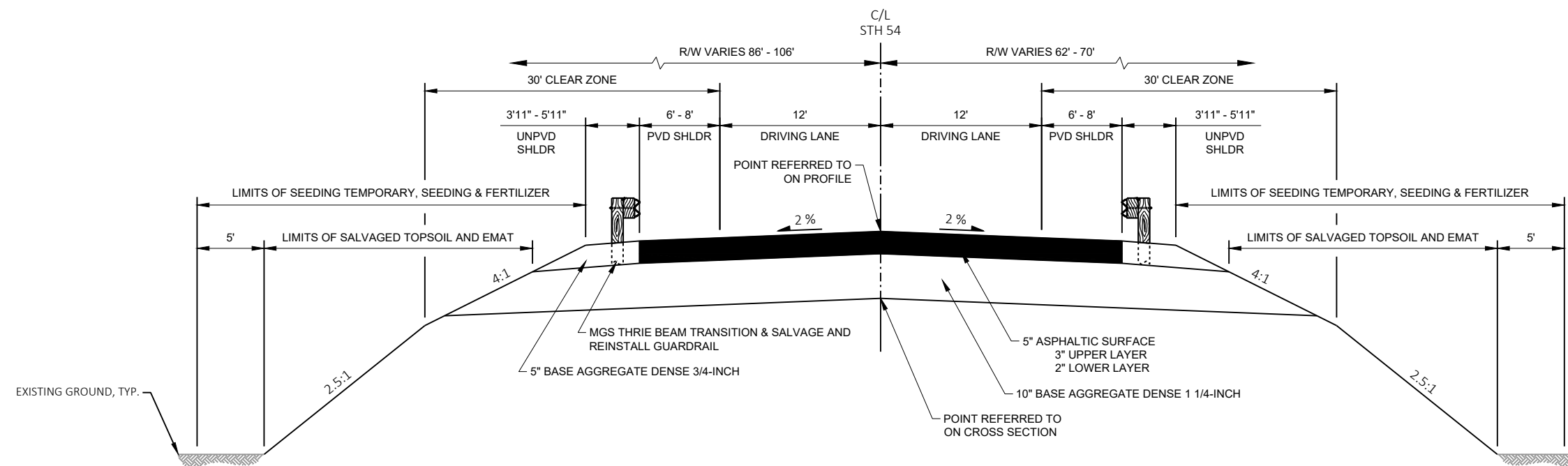
EXISTING TYPICAL SECTION
STA 108+22 - STA 111+67



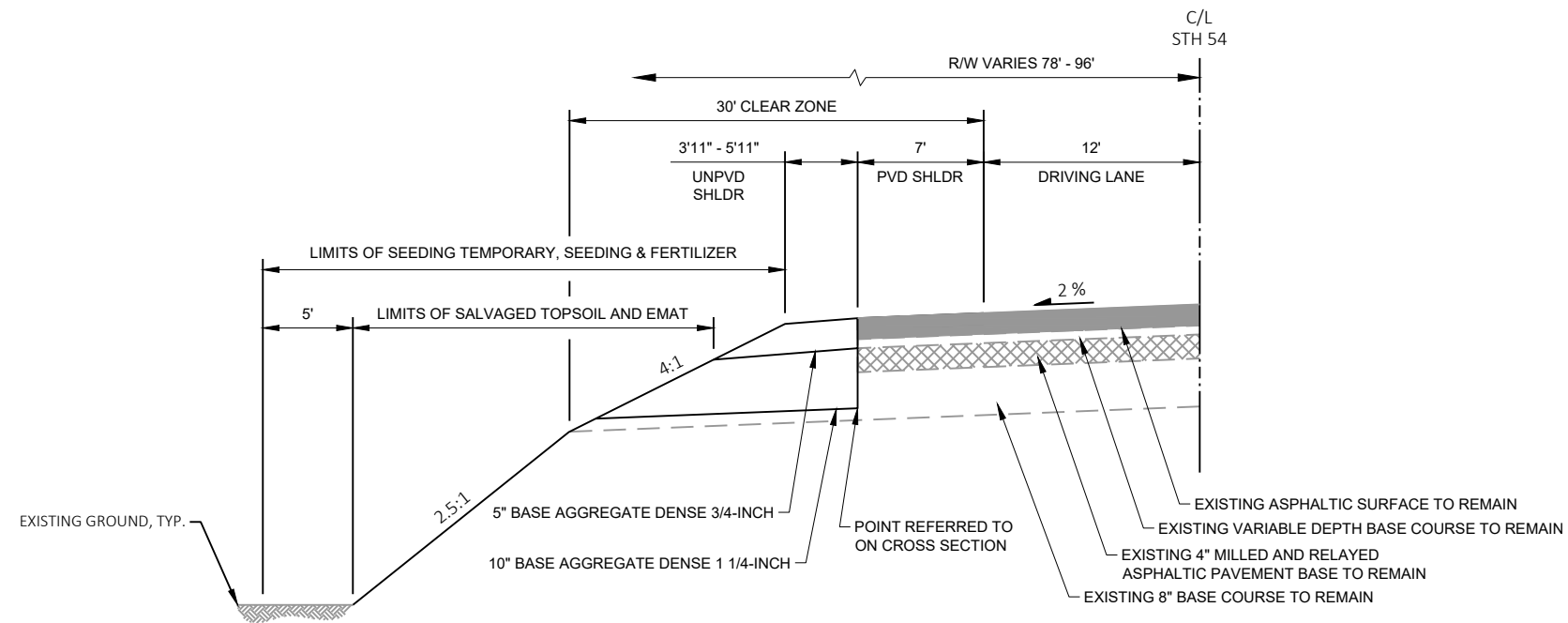
EXISTING TYPICAL SECTION
STA 332+60 - STA 334+30

**PROPOSED TYPICAL SECTION**

STA 108+22 - STA 108+72
STA 111+17 - STA 111+67

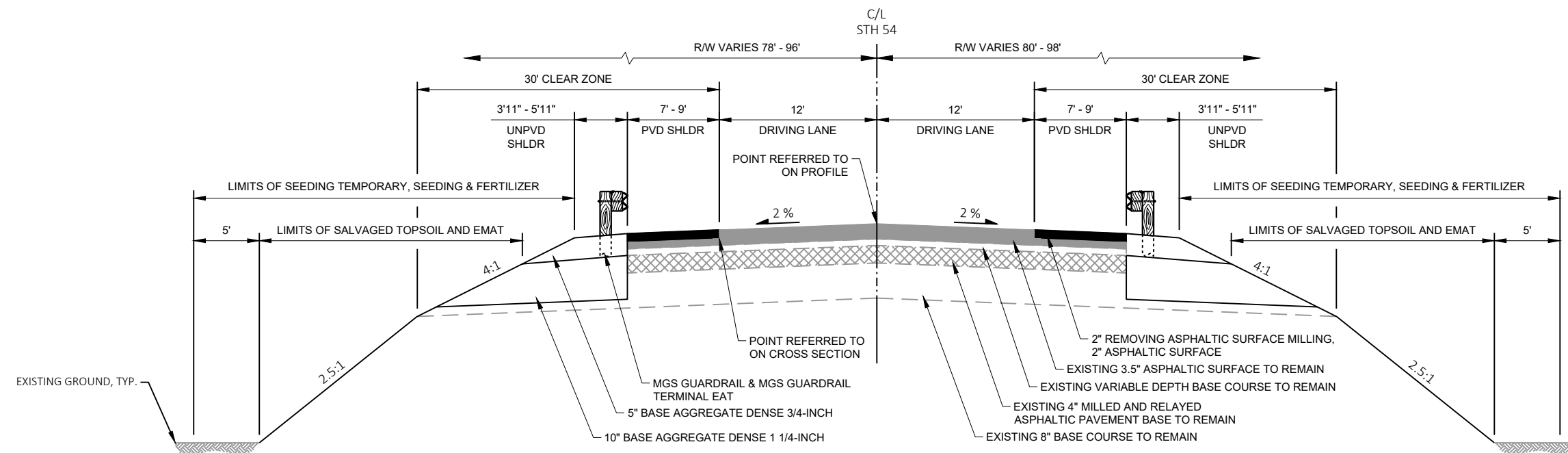
**PROPOSED TYPICAL SECTION**

STA 108+72 - STA 109+22
STA 110+67 - STA 111+17



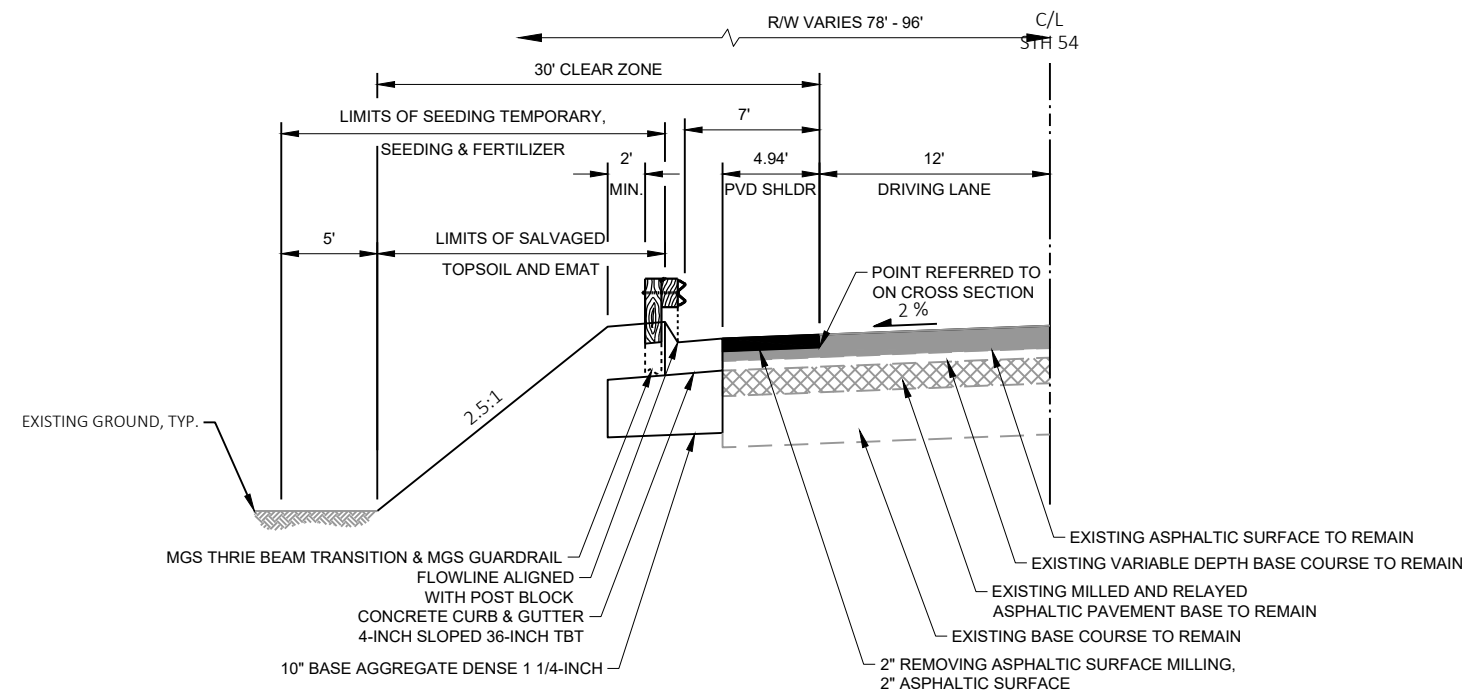
PROPOSED TYPICAL HALF SECTION

STA 330+64 - STA 331+10, LT
STA 330+69 - STA 331+10, RT
STA 335+80 - STA 335+88, LT
STA 335+80 - STA 335+80, RT

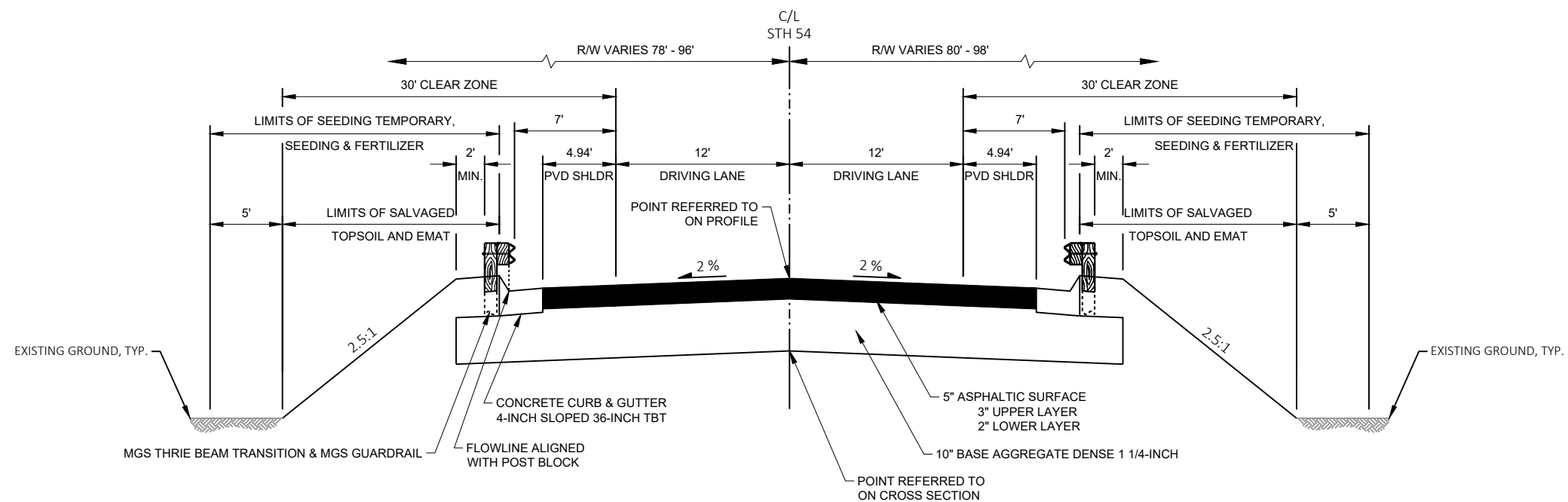


PROPOSED TYPICAL SECTION

STA 331+10 - STA 332+60
STA 334+30 - STA 335+80

**PROPOSED TYPICAL HALF SECTION**

STA 332+46.46 - STA 332+60, LT
STA 332+63.46 - STA 332+60, RT
STA 334+30 - STA 334+27.19, LT
STA 334+30 - STA 334+43.99, RT

**PROPOSED TYPICAL SECTION**

STA 332+60 - STA 332+89.15
STA 334+01.50 - STA 334+30

PROJECT NO: 7550-00-77

HWY: STH 54

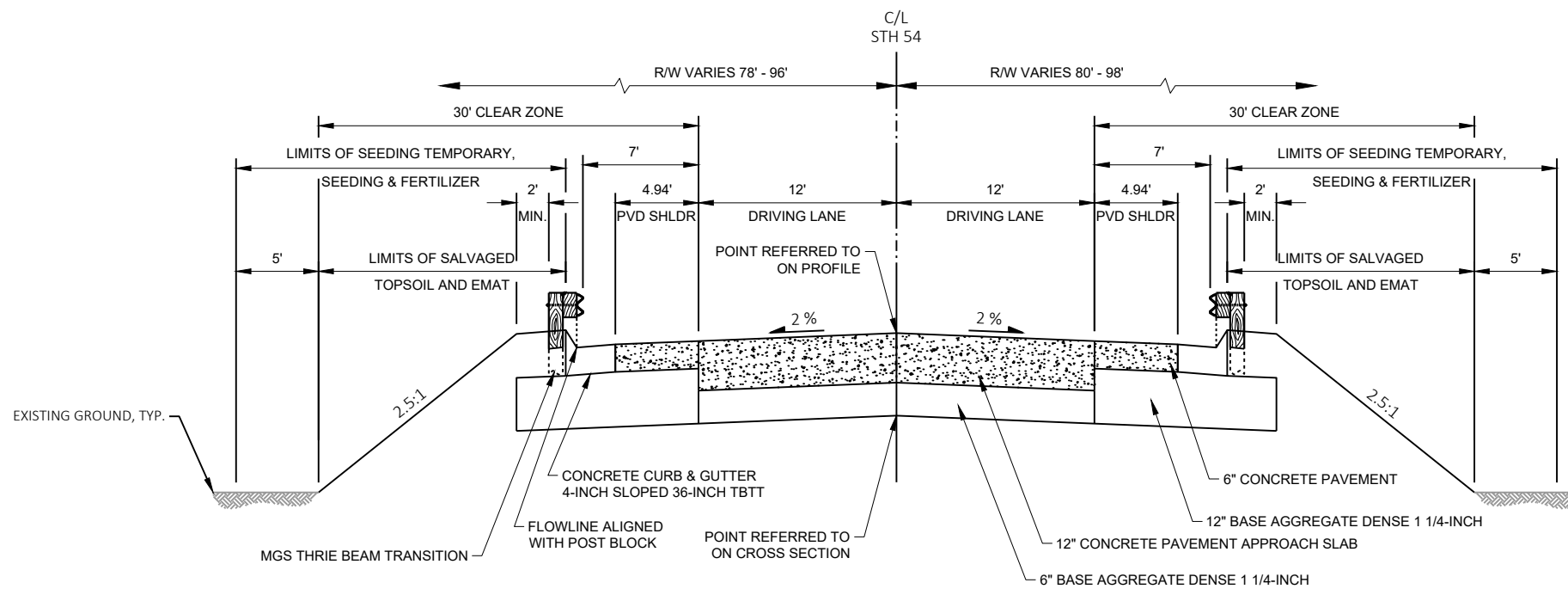
COUNTY: JACKSON

TYPICAL SECTIONS

SHEET

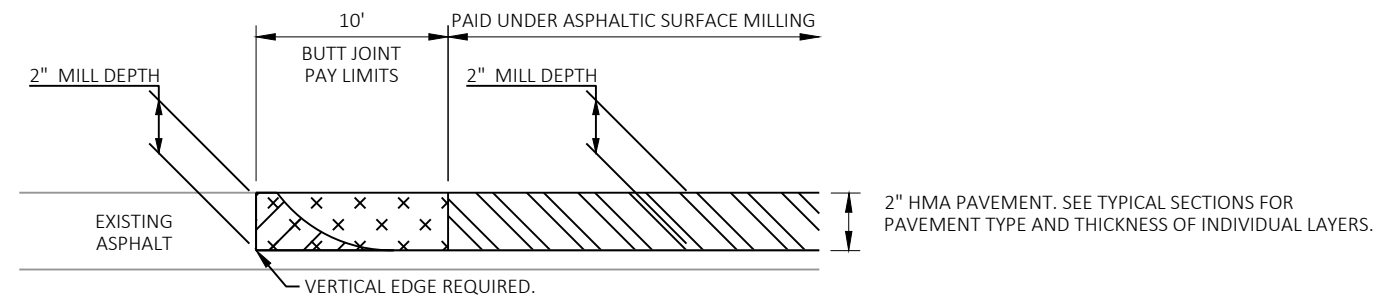
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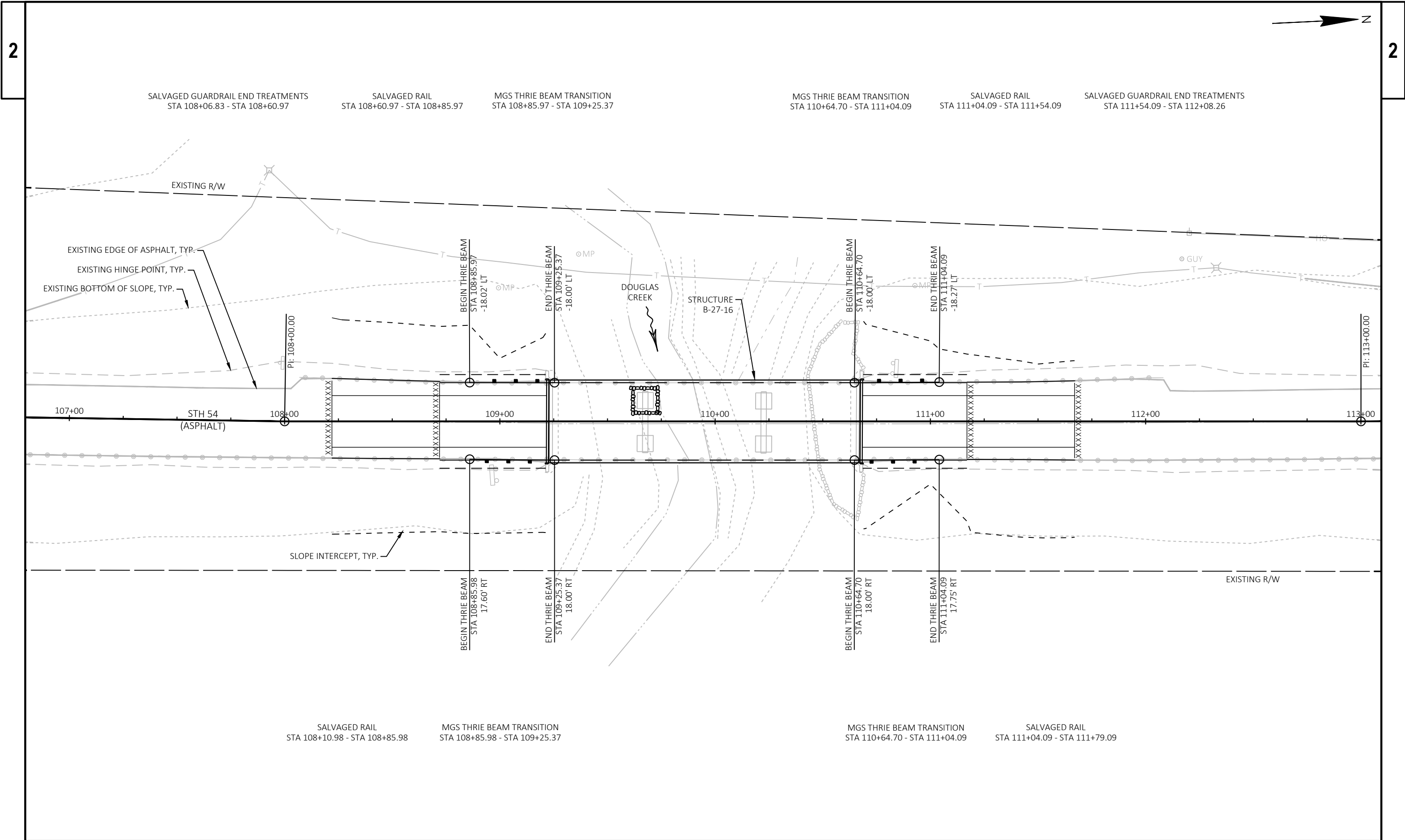
PROPOSED TYPICAL SECTION

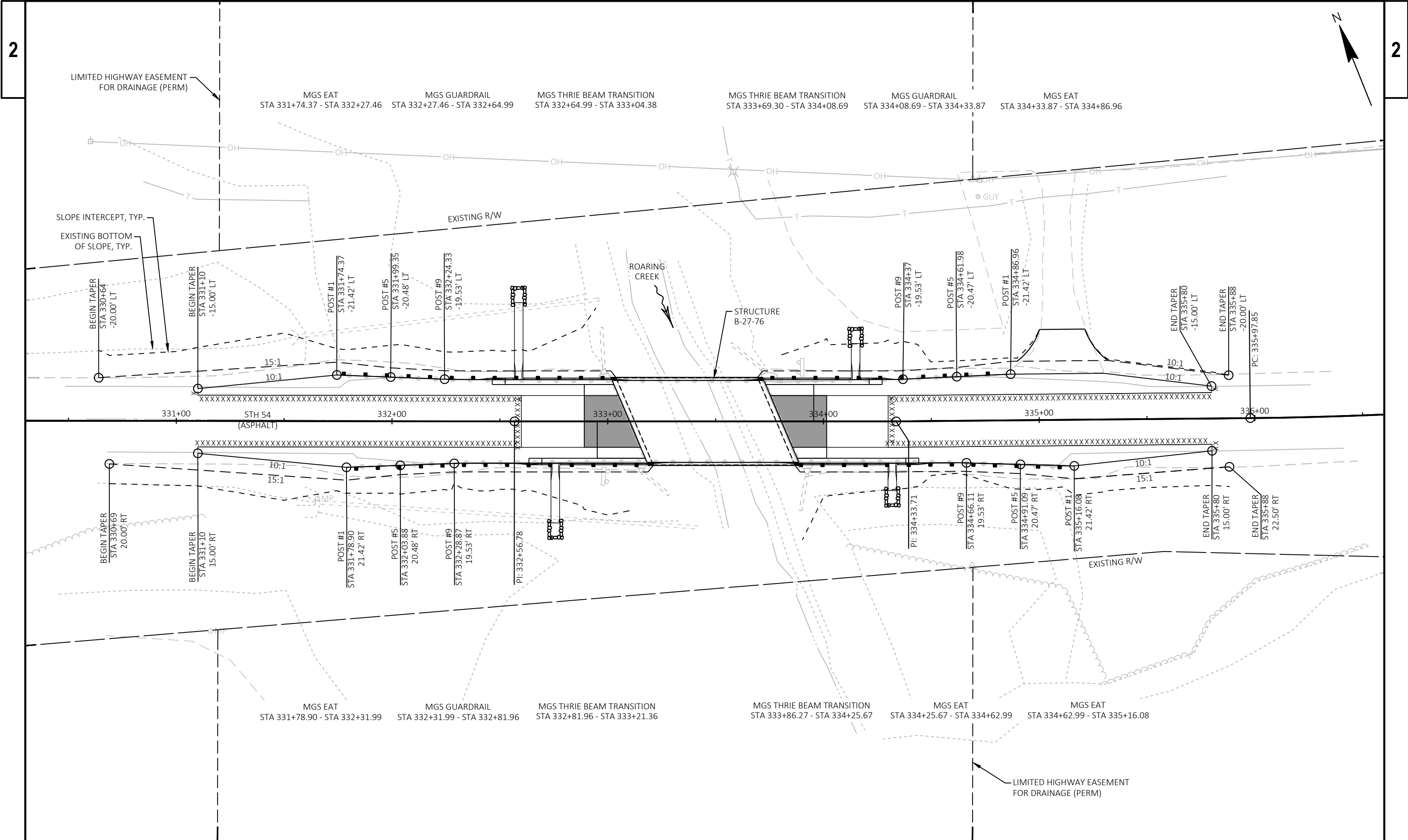
STA 332+89.15 - STA 333+10.15
STA 333+80.50 - STA 334+01.50

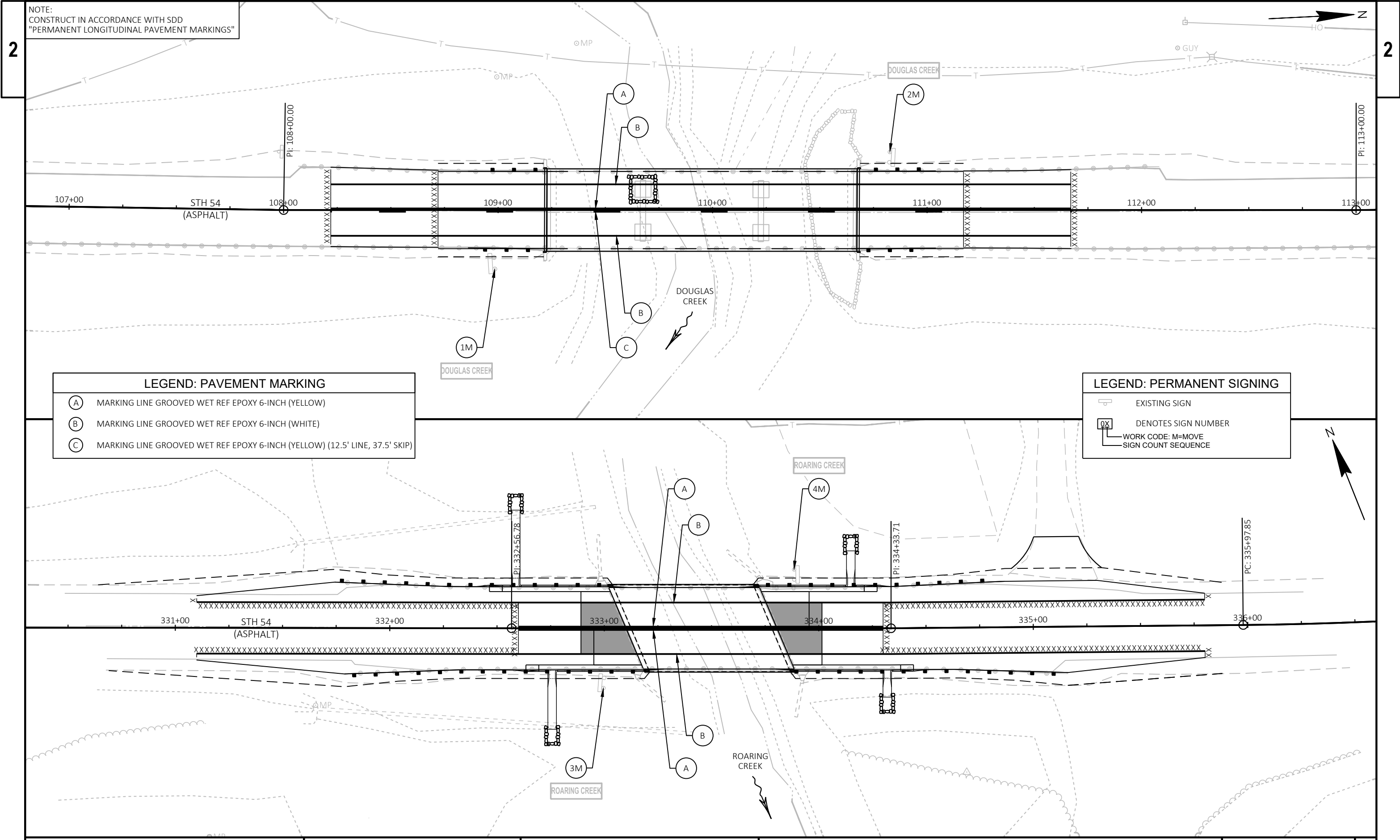


NOTE: ANY SAWCUT USED IN THIS OPERATION
CONSIDERED INCIDENTAL TO REMOVING
ASPHALTIC SURFACE BUTT JOINTS.

BUTT JOINT DETAIL







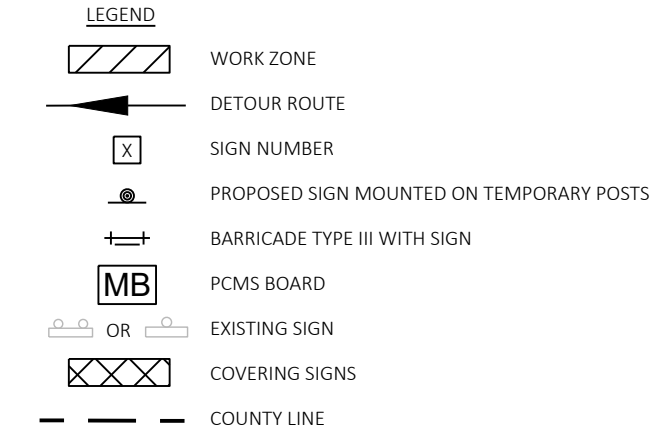
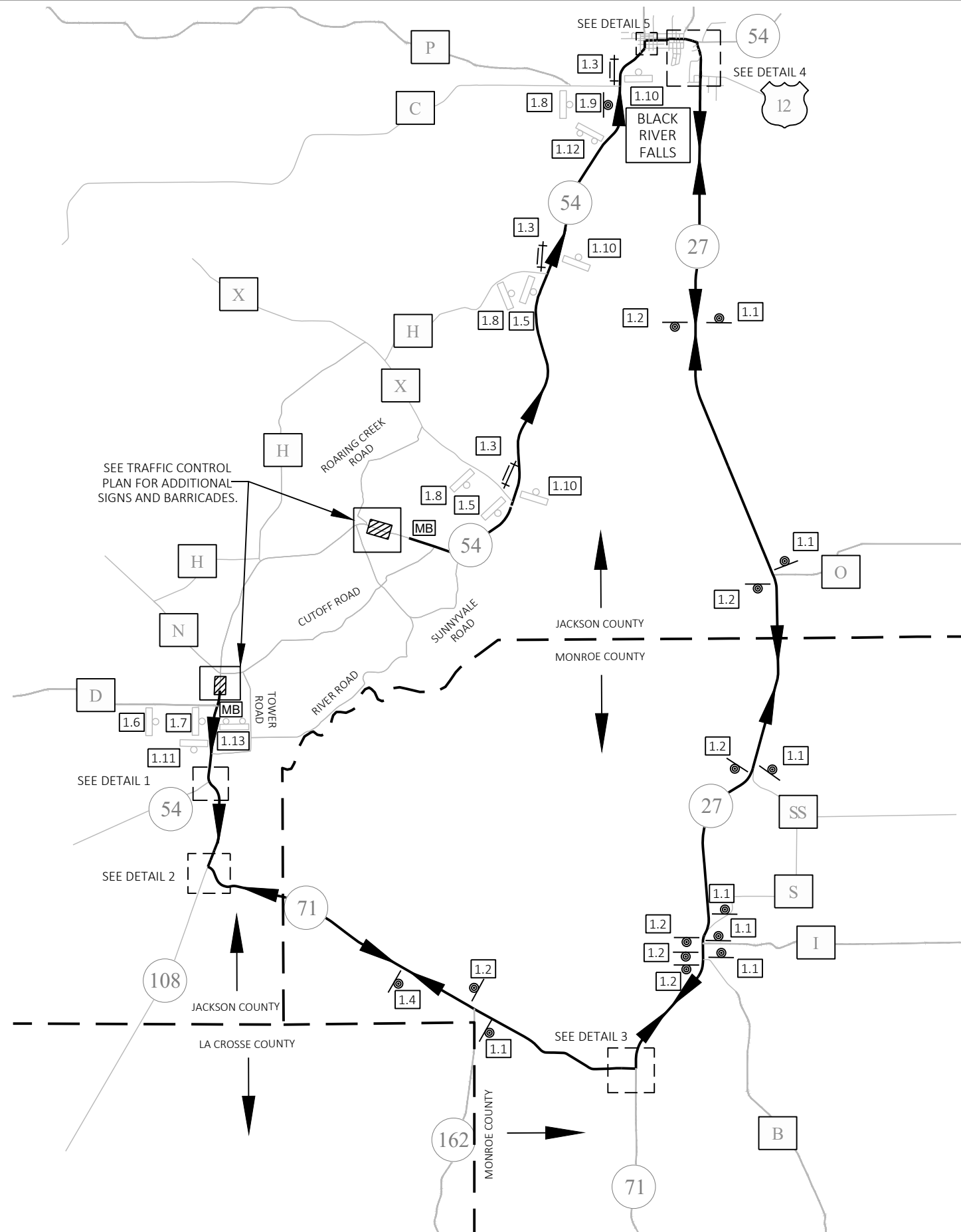
NOTE:
CONSTRUCT IN ACCORDANCE WITH SDD
"PERMANENT LONGITUDINAL PAVEMENT MARKINGS"

LEGEND: PAVEMENT MARKING

- (A) MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
- (B) MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
- (C) MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW) (12.5' LINE, 37.5' SKIP)

LEGEND: PERMANENT SIGNING

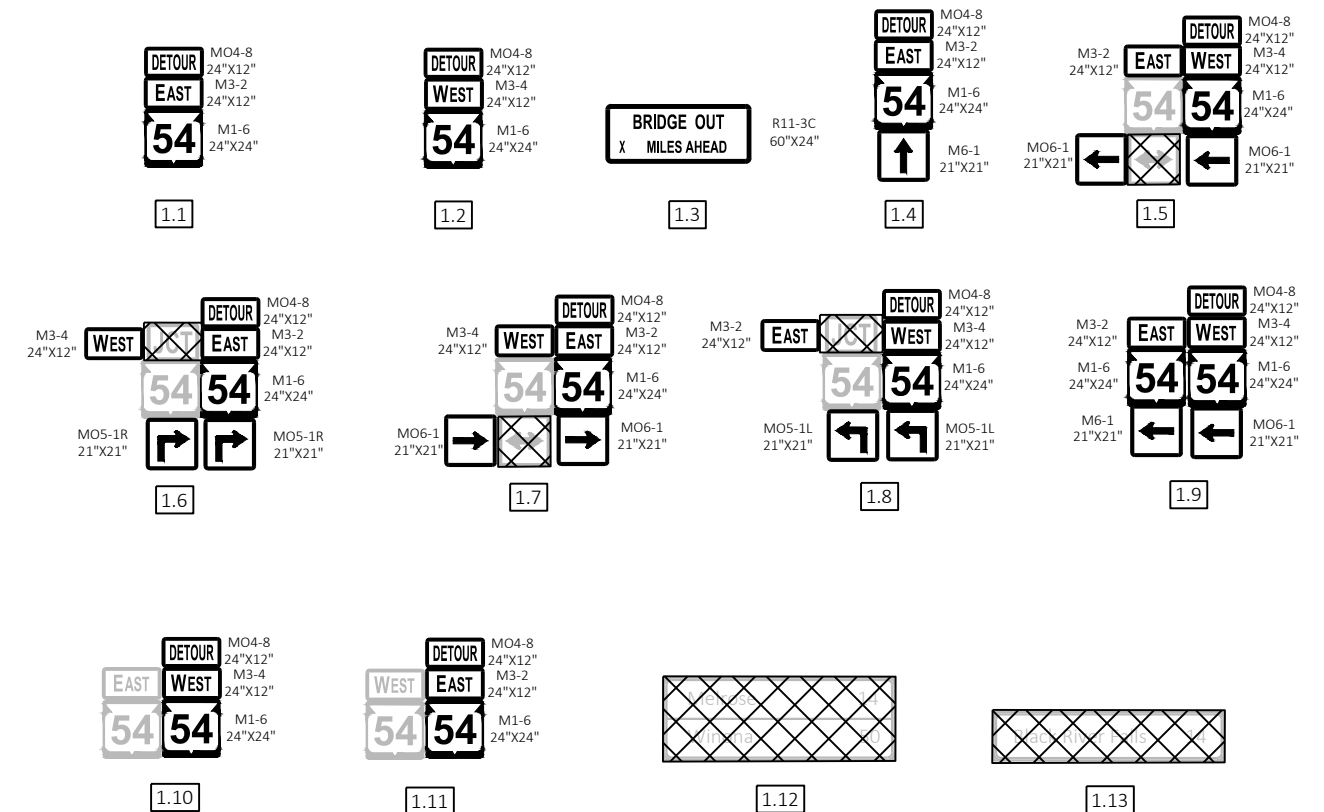
- EXISTING SIGN
- OX DENOTES SIGN NUMBER
- WORK CODE: M=MOVE
- SIGN COUNT SEQUENCE

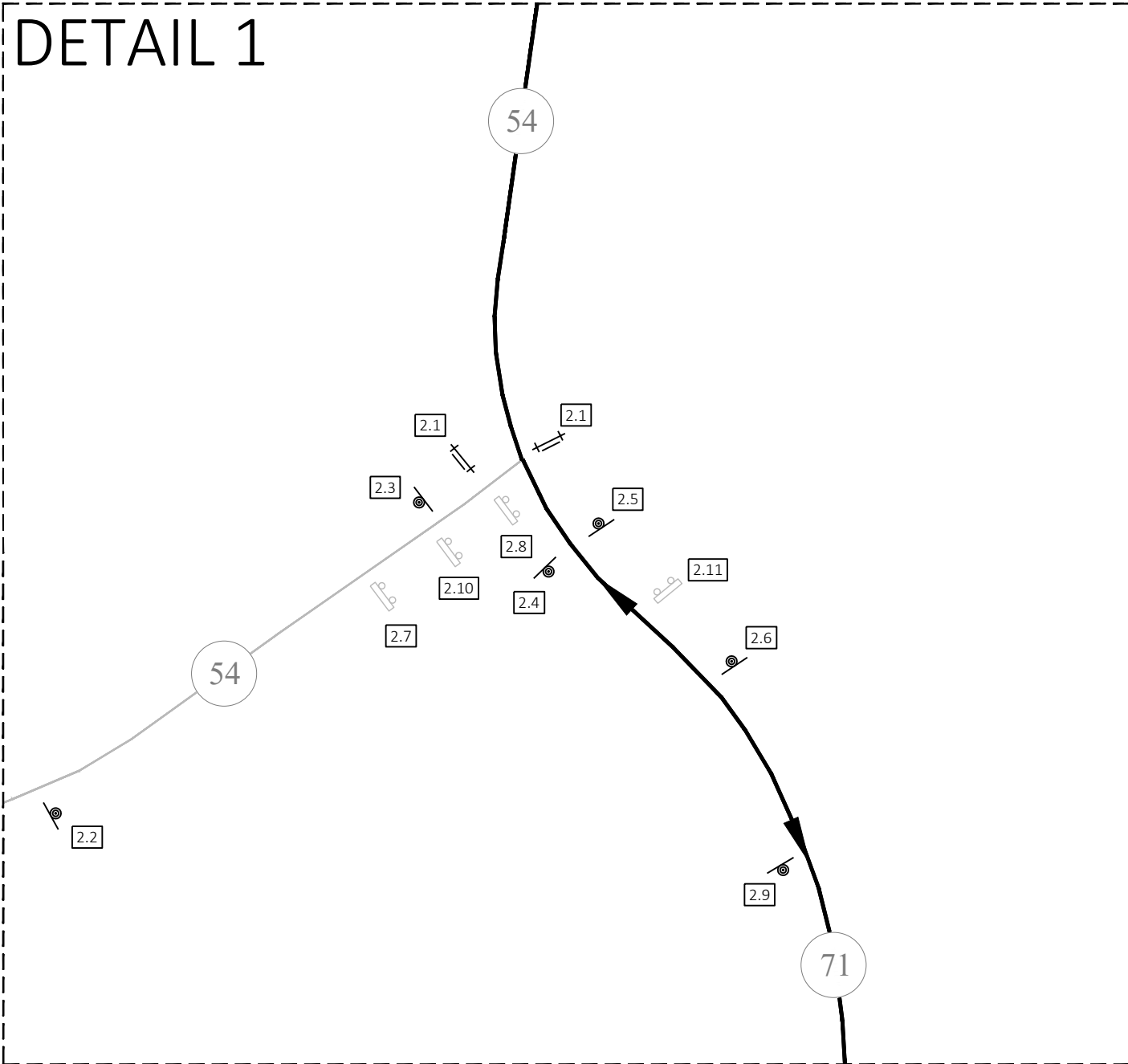


PCMS MESSAGE	
7 DAYS PRIOR TO CONSTRUCTION	
PHASE 1	HWY 54 CLOSED
PHASE 2	STARTING XX/XX/XXXX

NOTES

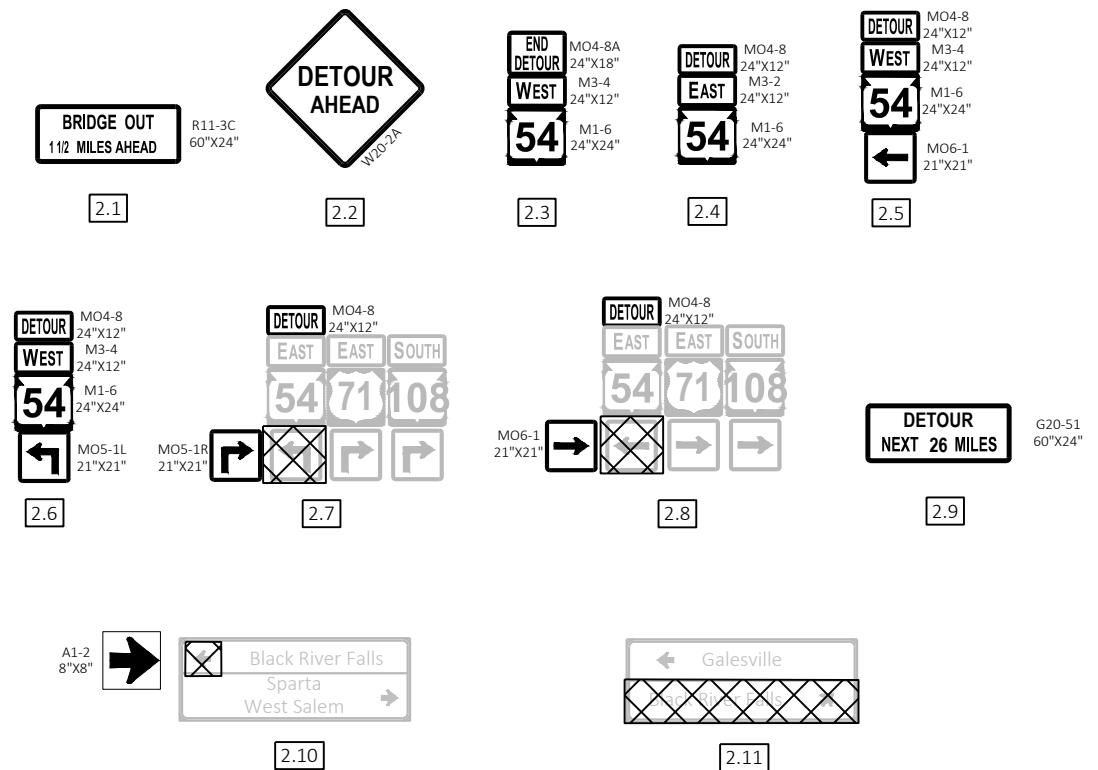
- SEE THE FOLLOWING STANDARD DETAIL DRAWINGS FOR ADDITIONAL INFORMATION NOT SHOWN ON DETOUR SHEETS INCLUDING SIGN CODES, SIGN SIZES, AND SPACING REQUIREMENTS:
 - SDD 15C2-A "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
 - SDD 15C2-B "BARRICADES AND SIGNS FOR VARIOUS MAINLINE CLOSURES"
 - SDD 15C2-C "DETOUR SIGNING FOR MAINLINE CLOSURES"
- 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 RAMP.
- 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.
- COORDINATE THE CONSTRUCTION SCHEDULE WITH WISDOT SOUTHWEST REGION TO ASSURE THEY ARE AWARE OF ROADWAYS AFFECTED BY CONSTRUCTION WORK.





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

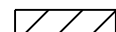
- NOTES
- SEE THE FOLLOWING STANDARD DETAIL DRAWINGS FOR ADDITIONAL INFORMATION NOT SHOWN ON DETOUR SHEETS INCLUDING SIGN CODES, SIGN SIZES, AND SPACING REQUIREMENTS:
 - SDD 15C2-A "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
 - SDD 15C2-B "BARRICADES AND SIGNS FOR VARIOUS MAINLINE CLOSURES"
 - SDD 15C2-C "DETOUR SIGNING FOR MAINLINE CLOSURES"
 - EXACT NUMBER, LOCATION AND SPACING OF SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
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 - USE SIGN SIZE 3 ON FREEWAY, USE SIGN SIZE 2 ON LOCAL HIGHWAYS AND RAMP.
 - 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.



DETAIL 2

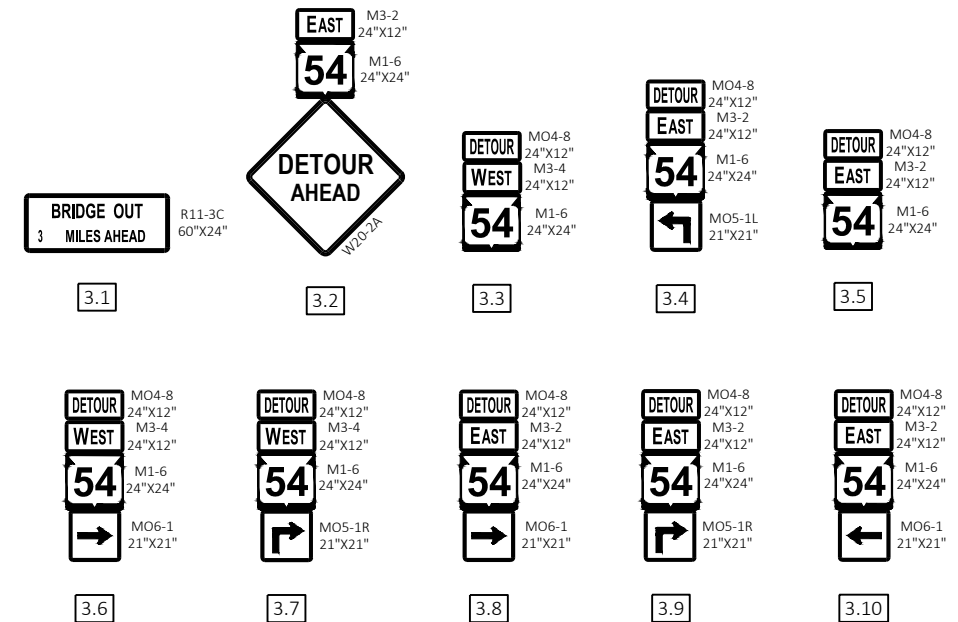
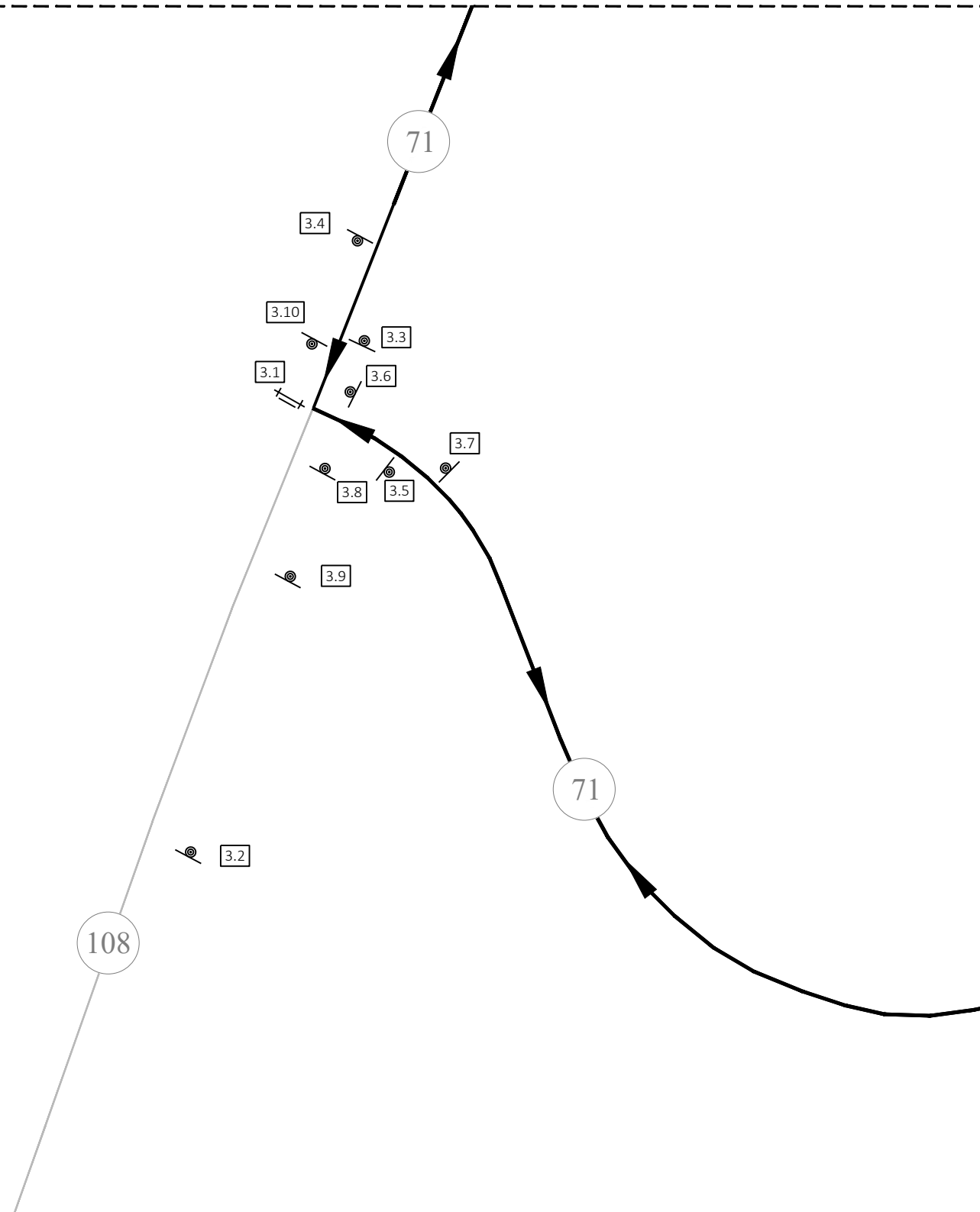


LEGEND

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

NOTES

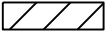
- SEE THE FOLLOWING STANDARD DETAIL DRAWINGS FOR ADDITIONAL INFORMATION NOT SHOWN ON DETOUR SHEETS INCLUDING SIGN CODES, SIGN SIZES, AND SPACING REQUIREMENTS:
 - SDD 15C2-A "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
 - SDD 15C2-B "BARRICADES AND SIGNS FOR VARIOUS MAINLINE CLOSURES"
 - SDD 15C2-C "DETOUR SIGNING FOR MAINLINE CLOSURES"
- 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.



DETAIL 3

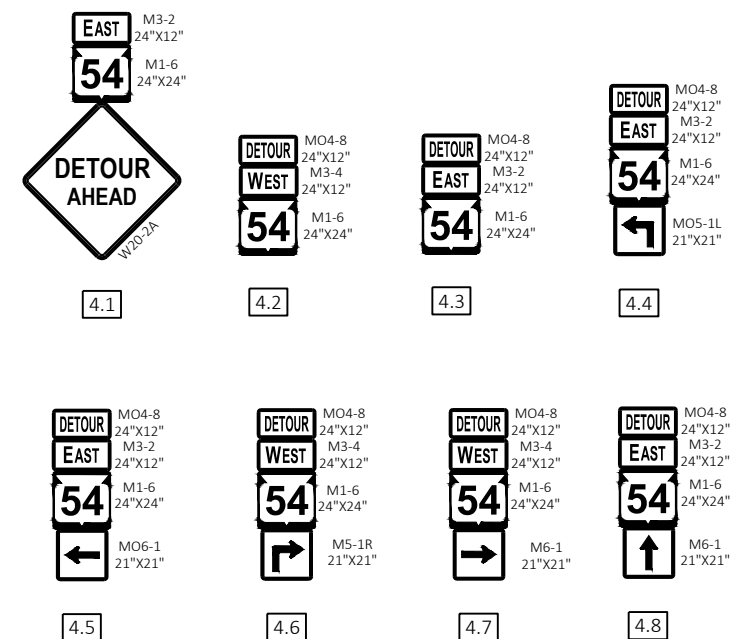


LEGEND

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

NOTES

- SEE THE FOLLOWING STANDARD DETAIL DRAWINGS FOR ADDITIONAL INFORMATION NOT SHOWN ON DETOUR SHEETS INCLUDING SIGN CODES, SIGN SIZES, AND SPACING REQUIREMENTS:
 - SDD 15C2-A "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
 - SDD 15C2-B "BARRICADES AND SIGNS FOR VARIOUS MAINLINE CLOSURES"
 - SDD 15C2-C "DETOUR SIGNING FOR MAINLINE CLOSURES"
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- 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 RAMP.
- 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.



PROJECT NO: 7550-00-77

HWY: STH 54

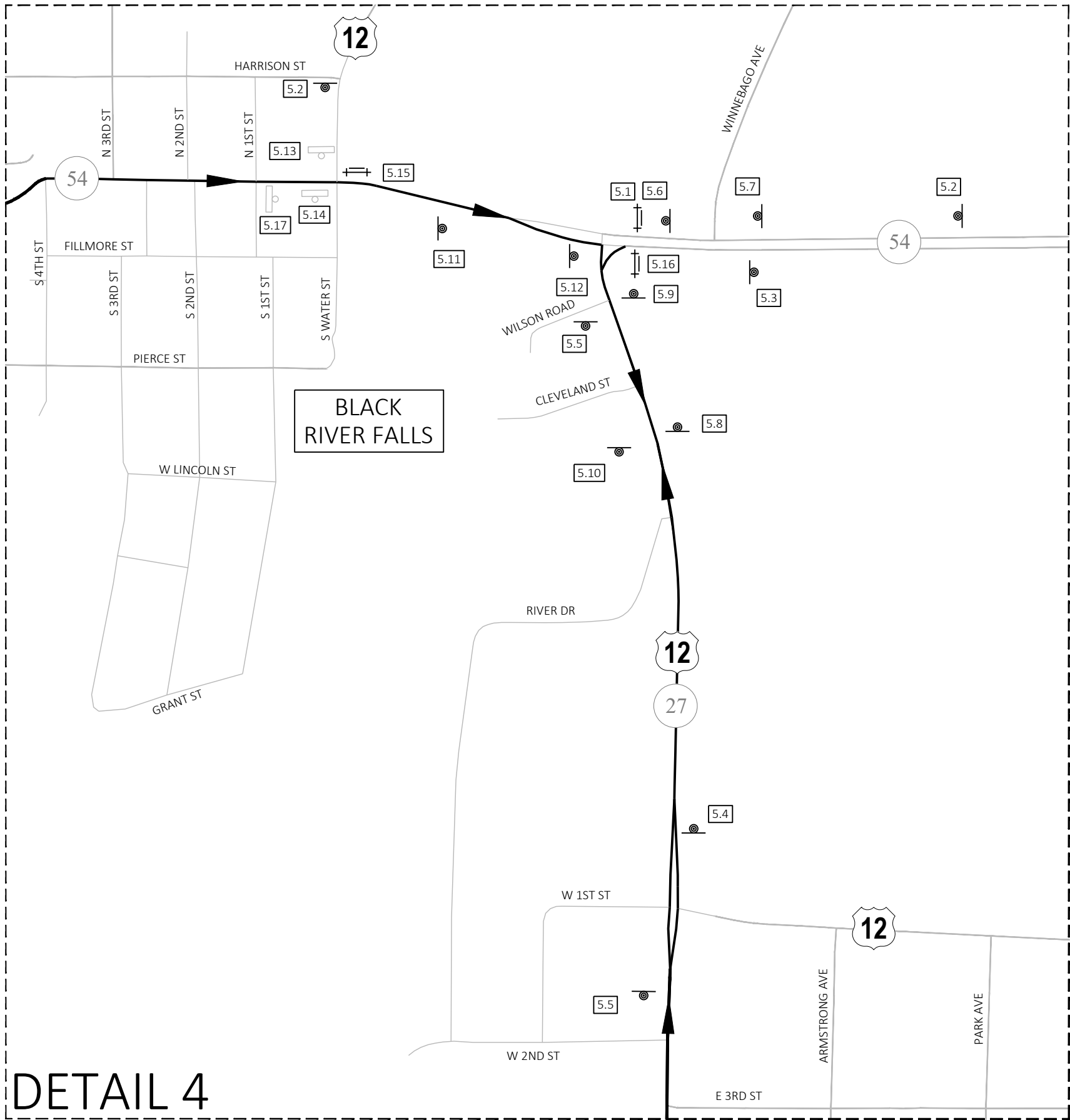
COUNTY: STH 54

DETOUR ROUTE

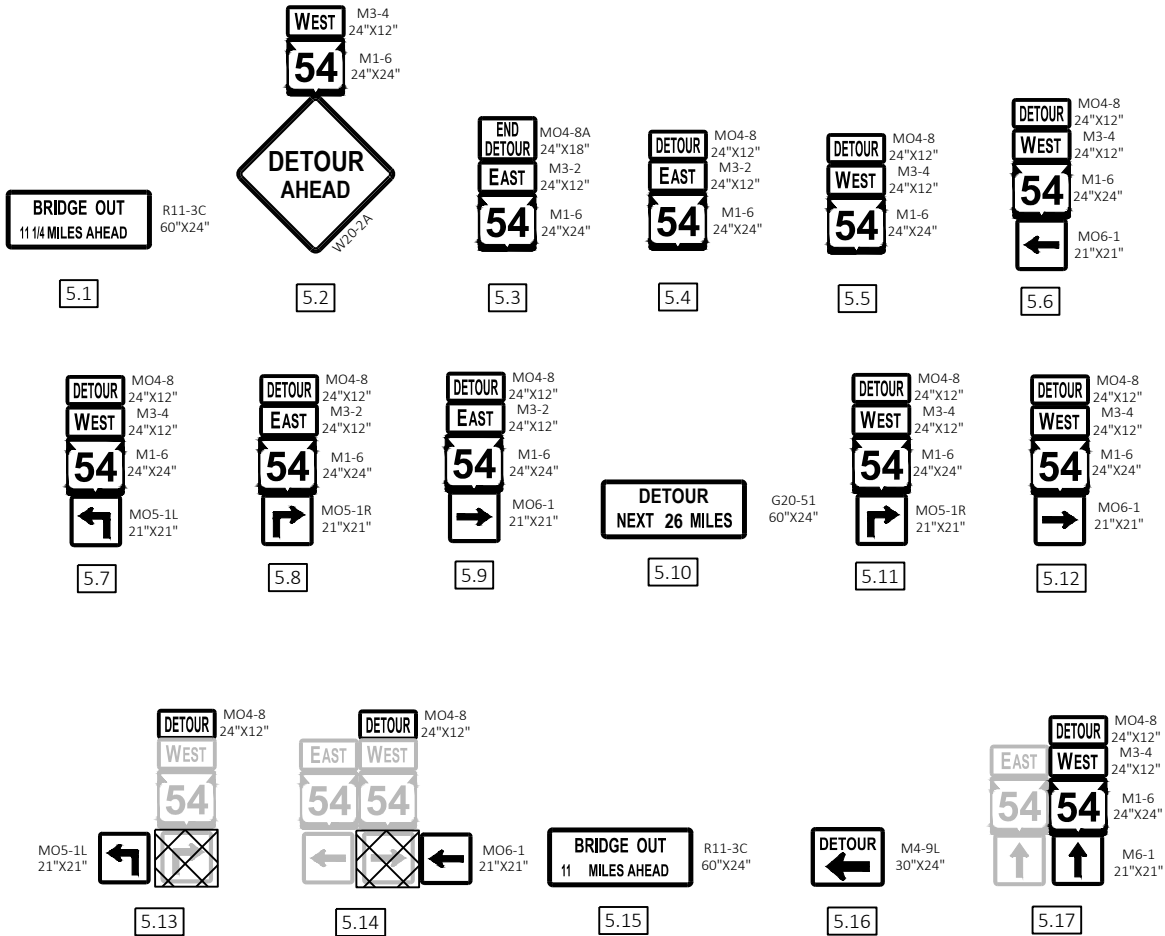
SHEET

15

E

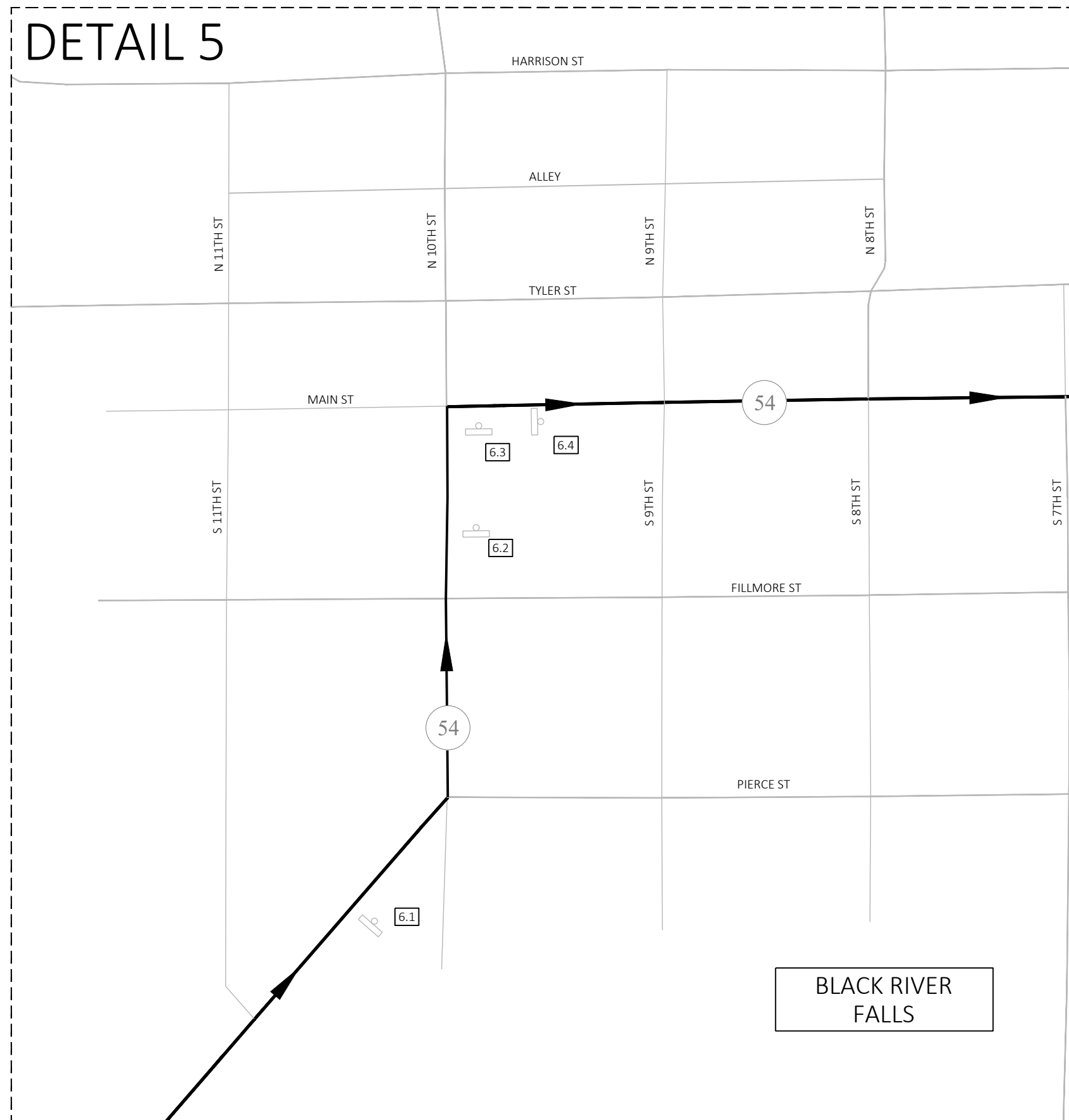


- LEGEND**
- WORK ZONE
 - DETOUR ROUTE
 - SIGN NUMBER
 - PROPOSED SIGN MOUNTED ON TEMPORARY POSTS
 - BARRICADE TYPE III WITH SIGN
 - COVER EXISTING SIGNS
 - EXISTING SIGNS
- NOTES**
- SEE THE FOLLOWING STANDARD DETAIL DRAWINGS FOR ADDITIONAL INFORMATION NOT SHOWN ON DETOUR SHEETS INCLUDING SIGN CODES, SIGN SIZES, AND SPACING REQUIREMENTS:
 - SDD 15C2-A "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
 - SDD 15C2-B "BARRICADES AND SIGNS FOR VARIOUS MAINLINE CLOSURES"
 - SDD 15C2-C "DETOUR SIGNING FOR MAINLINE CLOSURES"
 - 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 RAMP.
 - 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.

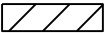
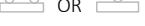


DETAIL 4

DETAIL 5

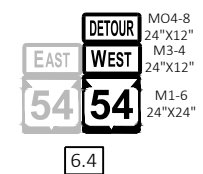
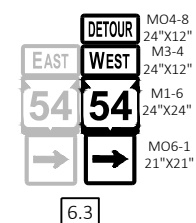
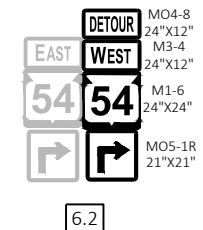
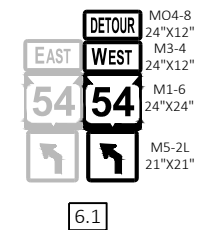


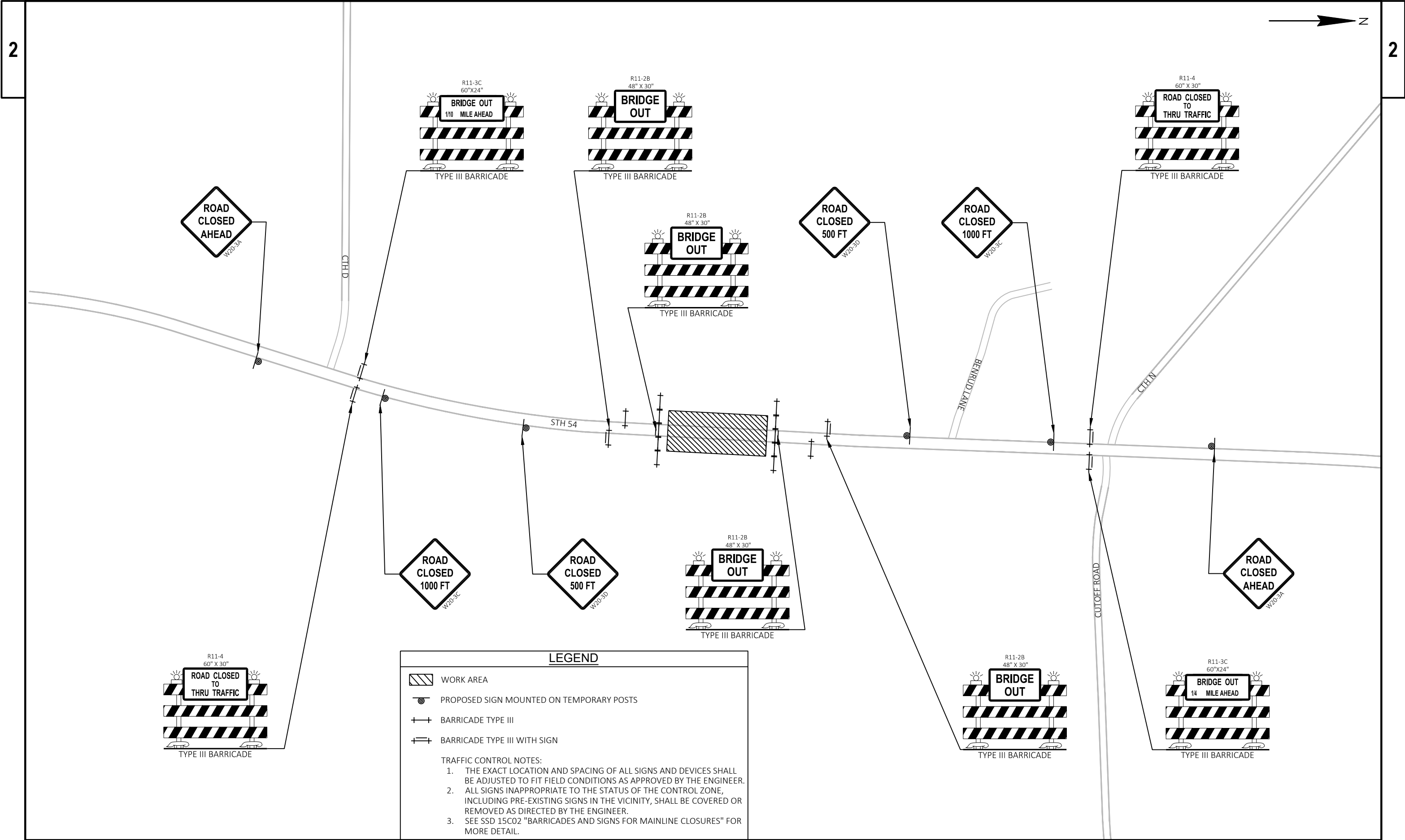
LEGEND

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

NOTES

- SEE THE FOLLOWING STANDARD DETAIL DRAWINGS FOR ADDITIONAL INFORMATION NOT SHOWN ON DETOUR SHEETS INCLUDING SIGN CODES, SIGN SIZES, AND SPACING REQUIREMENTS:
 - SDD 15C2-A "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
 - SDD 15C2-B "BARRICADES AND SIGNS FOR VARIOUS MAINLINE CLOSURES"
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PROJECT NO: 7550-00-77

HWY: STH 54

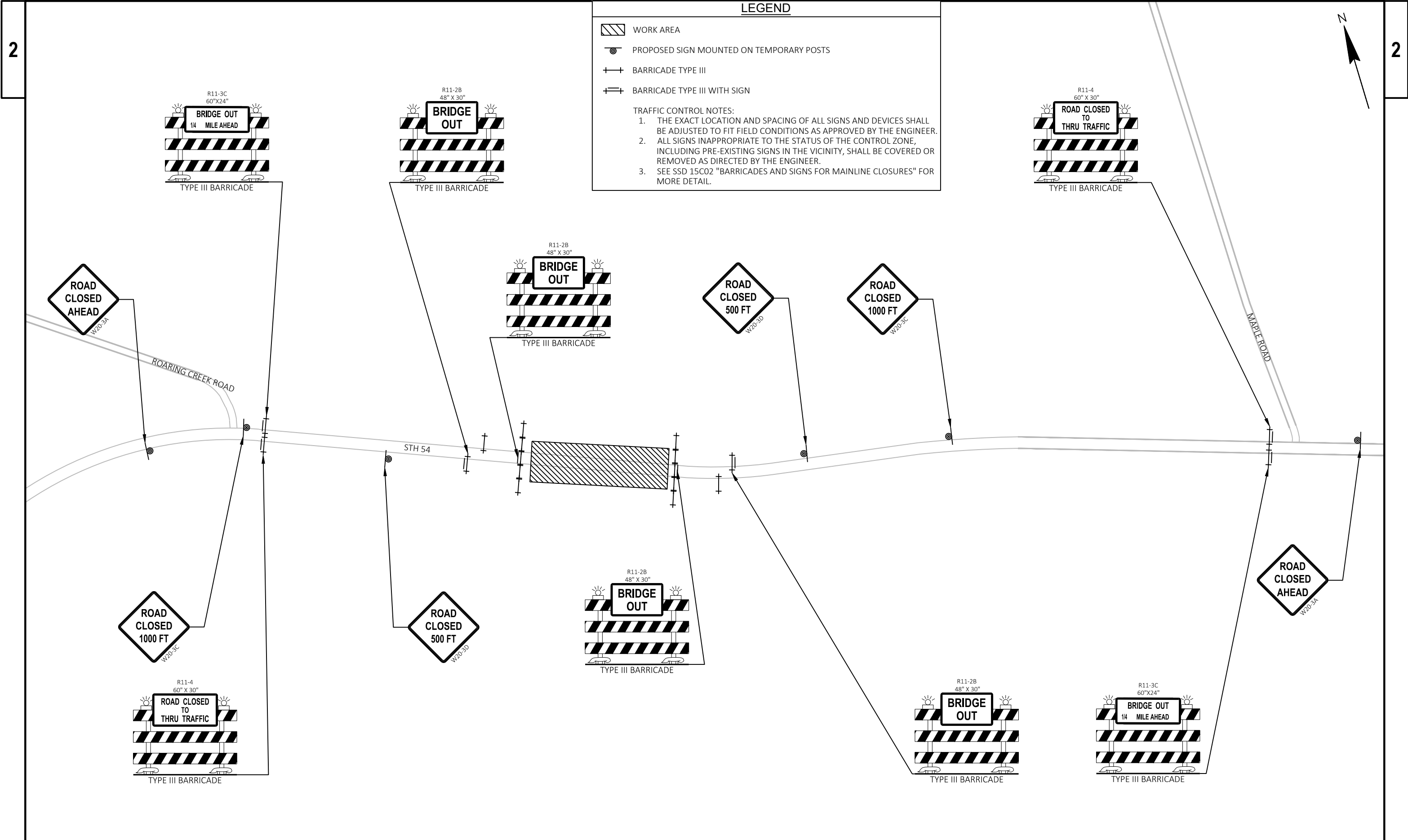
COUNTY: JACKSON

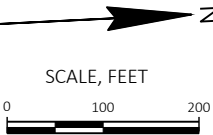
TRAFFIC CONTROL PLAN: B-27-16

SHEET

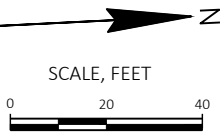
18

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NO.	STATION	DESCRIPTION	Y	X
CP 1	109+19.50	3/4" REBAR SET, 71.5' LT	43 210.476	49 360.365
CP 2	112+61.72	3/4" REBAR SET, 43.9' LT	43 550.924	49 404.734
CP 3	114+94.95	1" IRON PIPE, 50.2' RT	43 779.819	49508.3390



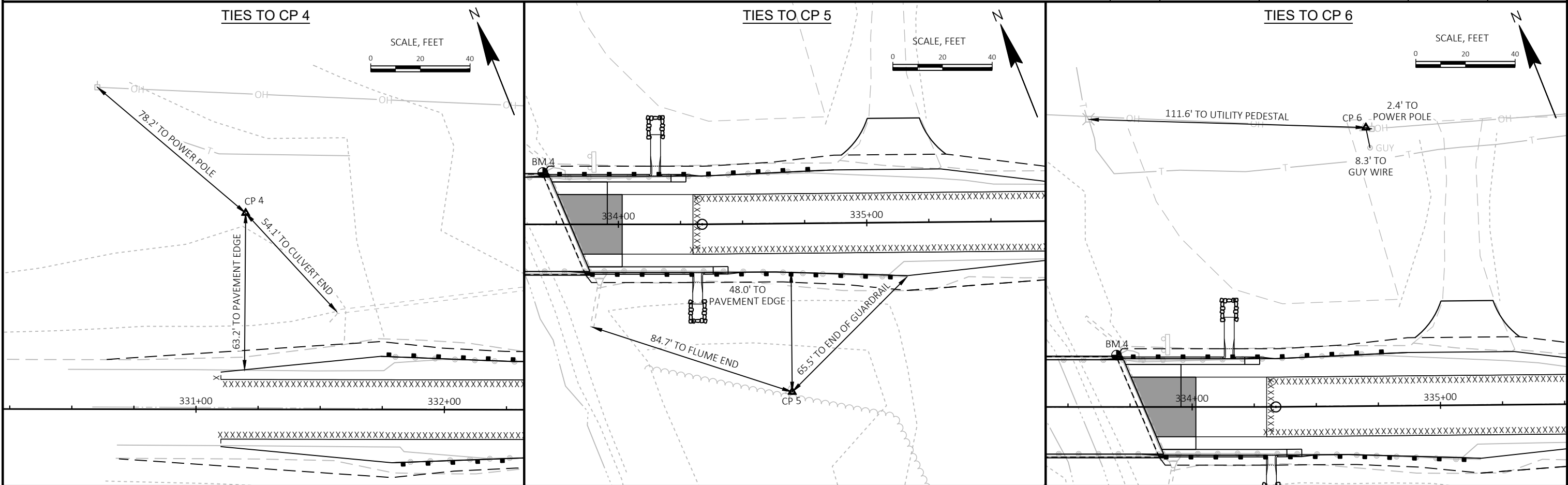
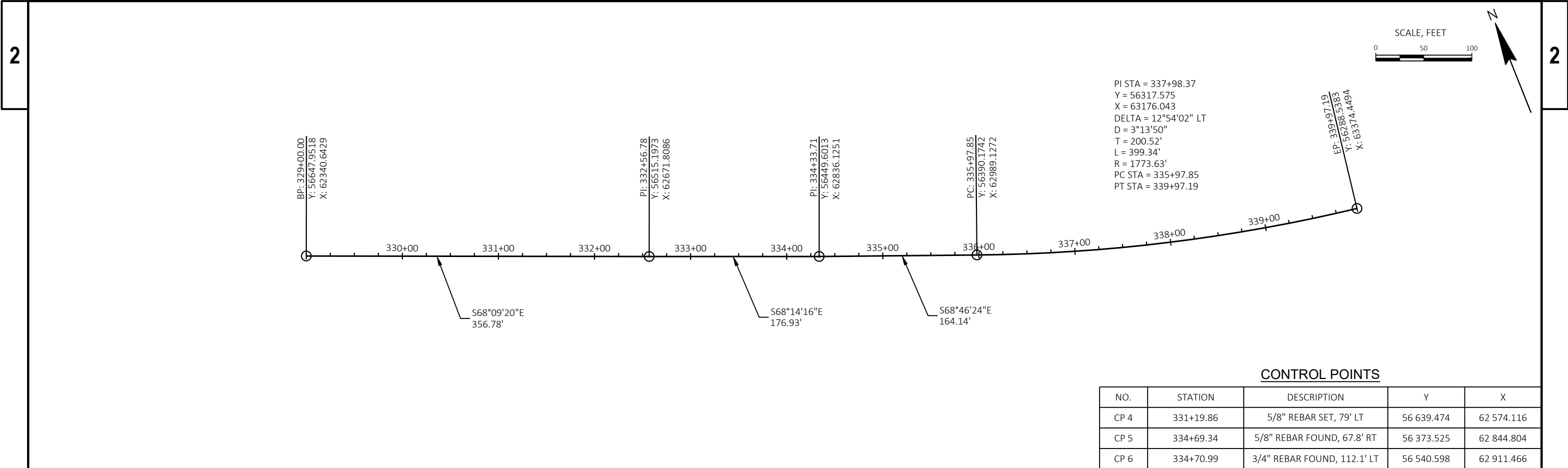
SCALE, FEET



A horizontal scale bar with tick marks at 0, 20, and 40. The text "SCALE, FEET" is centered above the bar.

SCALE, FEET





Estimate Of Quantities

7550-00-77					
Line	Item	Item Description	Unit	Total	Qty
0002	203.0270	Removing Structure Over Waterway Debris Capture (structure) 01. B-27-76	EACH	1.000	1.000
0004	203.0270	Removing Structure Over Waterway Debris Capture (structure) 02. B-27-16	EACH	1.000	1.000
0006	204.0115	Removing Asphaltic Surface Butt Joints	SY	97.000	97.000
0008	204.0120	Removing Asphaltic Surface Milling	SY	684.000	684.000
0010	204.0165	Removing Guardrail	LF	675.000	675.000
0012	205.0100	Excavation Common	CY	481.000	481.000
0014	206.1001	Excavation for Structures Bridges (structure) 01. B-27-76	EACH	1.000	1.000
0016	206.1001	Excavation for Structures Bridges (structure) 02. B-27-16	EACH	1.000	1.000
0018	208.0100	Borrow	CY	106.000	106.000
0020	210.1500	Backfill Structure Type A	TON	200.000	200.000
0022	213.0100	Finishing Roadway (project) 01. 7550-00-77	EACH	1.000	1.000
0024	305.0110	Base Aggregate Dense 3/4-Inch	TON	126.000	126.000
0026	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,080.000	1,080.000
0028	415.0060	Concrete Pavement 6-Inch	SY	42.000	42.000
0030	415.0410	Concrete Pavement Approach Slab	SY	112.000	112.000
0032	416.0610	Drilled Tie Bars	EACH	22.000	22.000
0034	455.0605	Tack Coat	GAL	110.000	110.000
0036	465.0105	Asphaltic Surface	TON	277.000	277.000
0038	465.0560	Asphaltic Rumble Strips, Centerline	LF	208.000	208.000
0040	502.0100	Concrete Masonry Bridges	CY	253.000	253.000
0042	502.3101	Expansion Device	LF	77.000	77.000
0044	502.3200	Protective Surface Treatment	SY	1,029.000	1,029.000
0046	502.3210	Pigmented Surface Sealer	SY	69.000	69.000
0048	502.4106	Adhesive Anchors 3/4-Inch	EACH	5.000	5.000
0050	502.4205	Adhesive Anchors No. 5 Bar	EACH	86.000	86.000
0052	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	75,610.000	75,610.000
0054	506.4000	Steel Diaphragms (structure) 01. B-27-76	EACH	4.000	4.000
0056	509.1500	Concrete Surface Repair	SF	14.000	14.000
0058	513.4061	Railing Tubular Type M	LF	294.000	294.000
0060	516.0500	Rubberized Membrane Waterproofing	SY	4.000	4.000
0062	517.0901.S	Preparation and Coating of Top Flanges (structure) 01. B-27-16	EACH	1.000	1.000
0064	517.4001.S	Containment and Collection of Waste Materials (structure) 01. B-27-16	EACH	1.000	1.000
0066	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	150.000	150.000
0068	601.0590	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBTT	LF	74.000	74.000
0070	602.3010	Concrete Surface Drains	CY	22.000	22.000
0072	606.0100	Riprap Light	CY	3.000	3.000
0074	606.0200	Riprap Medium	CY	12.000	12.000
0076	606.0300	Riprap Heavy	CY	11.000	11.000
0078	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	140.000	140.000
0080	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0082	614.2300	MGS Guardrail 3	LF	150.000	150.000
0084	614.2500	MGS Thrie Beam Transition	LF	315.200	315.200
0086	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0088	618.0100	Maintenance and Repair of Haul Roads (project) 01. 7550-00-77	EACH	1.000	1.000
0090	619.1000	Mobilization	EACH	1.000	1.000
0092	624.0100	Water	MGAL	12.500	12.500
0094	625.0500	Salvaged Topsoil	SY	1,660.000	1,660.000
0096	628.1504	Silt Fence	LF	1,850.000	1,850.000
0098	628.1520	Silt Fence Maintenance	LF	2,960.000	2,960.000

Estimate Of Quantities

7550-00-77

Line	Item	Item Description	Unit	Total	Qty
0100	628.1905	Mobilizations Erosion Control	EACH	10.000	10.000
0102	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0104	628.2008	Erosion Mat Urban Class I Type B	SY	1,660.000	1,660.000
0106	628.6005	Turbidity Barriers	SY	45.000	45.000
0108	628.7555	Culvert Pipe Checks	EACH	10.000	10.000
0110	629.0210	Fertilizer Type B	CWT	2.000	2.000
0112	630.0130	Seeding Mixture No. 30	LB	150.000	150.000
0114	630.0200	Seeding Temporary	LB	85.000	85.000
0116	630.0500	Seed Water	MGAL	70.000	70.000
0118	638.2102	Moving Signs Type II	EACH	4.000	4.000
0120	642.5001	Field Office Type B	EACH	1.000	1.000
0122	643.0300	Traffic Control Drums	DAY	760.000	760.000
0124	643.0420	Traffic Control Barricades Type III	DAY	4,140.000	4,140.000
0126	643.0705	Traffic Control Warning Lights Type A	DAY	8,280.000	8,280.000
0128	643.0900	Traffic Control Signs	DAY	51,060.000	51,060.000
0130	643.0920	Traffic Control Covering Signs Type II	EACH	25.000	25.000
0132	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0134	643.5000	Traffic Control	EACH	1.000	1.000
0136	645.0111	Geotextile Type DF Schedule A	SY	84.000	84.000
0138	645.0120	Geotextile Type HR	SY	64.000	64.000
0140	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	2,402.000	2,402.000
0142	650.4500	Construction Staking Subgrade	LF	200.000	200.000
0144	650.5000	Construction Staking Base	LF	158.000	158.000
0146	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	150.000	150.000
0148	650.6501	Construction Staking Structure Layout (structure) 01. B-27-016	EACH	1.000	1.000
0150	650.6501	Construction Staking Structure Layout (structure) 02. B-27-076	EACH	1.000	1.000
0152	650.7000	Construction Staking Concrete Pavement	LF	42.000	42.000
0154	650.8000	Construction Staking Resurfacing Reference	LF	454.000	454.000
0156	650.9911	Construction Staking Supplemental Control (project) 01. 7550-00-77	EACH	1.000	1.000
0158	650.9920	Construction Staking Slope Stakes	LF	654.000	654.000
0160	690.0150	Sawing Asphalt	LF	732.000	732.000
0162	715.0502	Incentive Strength Concrete Structures	DOL	1,560.000	1,560.000
0164	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0166	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. Station 110+00	EACH	1.000	1.000
0168	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 02. Station 333+50	EACH	1.000	1.000
0170	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0172	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0174	SPV.0060	Special 01. Salvage and Reinstall Energy Absorbing Terminal	EACH	2.000	2.000
0176	SPV.0060	Special 02. Cleaning and Painting Bearings	EACH	20.000	20.000
0178	SPV.0090	Special 01.Salvage and Reinstall Guardrail	LF	225.000	225.000
0180	SPV.0090	Special 02. Flashing Stainless Steel	LF	289.000	289.000

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ALL ITEMS CATEGORY 0010 UNLESS NOTED OTHERWISE									
DIVISION	FROM/TO STATION	205.0100 EXCAVATION COMMON CY (1) CUT (2)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (3)	AVAILABLE MATERIAL (4)	UNEXPANDED FILL	EXPANDED FILL (5) FACTOR 1.25	MASS ORDINATE +/- (6)	WASTE (7)	208.0100 BORROW CY
B-27-016									
SOUTH APPROACH	108+22.00\109+21.28	68	15	53	115	144	-91	---	91
NORTH APPROACH	110+68.93\111+67.00	84	15	69	67	84	-15	---	15
B-27-016 SUBTOTAL		152	30	122	182	228	-106	---	106
B-27-076									
WEST APPROACH	330+64.00\333+10.15	157	11	146	139	174	-28	-28	---
EAST APPROACH	333+80.50\335+88.00	172	12	160	11	14	146	146	---
B-27-076 SUBTOTAL		329	23	306	150	188	119	119	---
GRAND TOTAL		481	53	428	332	415	13	119	106
NOTES: (1) EXCAVATION COMMON IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100 (2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT. (3) SALVAGED/UNUSABLE PAVEMENT MATERIAL INCLUDES EXISTING PAVEMENT (4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL (5) EXPANDED FILL FACTOR = 1.25 (6) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION. (7) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.									
REMOVING ASPHALTIC SURFACE									
REMOVING GUARDRAIL									
204.0165									
STATION TO STATION LOCATION LF									
108+86 - 109+25 SOUTH APPROACH, LT 40									
108+86 - 109+25 SOUTH APPROACH, RT 40									
110+65 - 111+04 NORTH APPROACH, LT 40									
110+65 - 111+04 NORTH APPROACH, RT 40									
SUBTOTAL 160									
331+80 - 333+05 WEST APPROACH, LT 140									
331+75 - 333+21 WEST APPROACH, RT 130									
333+70 - 334+85 EAST APPROACH, LT 115									
333+86 - 335+16 EAST APPROACH, RT 130									
SUBTOTAL 515									
TOTAL 675									
BASE AGGREGATE DENSE									
APPROACH SLABS									
ASPHALTIC SURFACE									
ASPHALTIC RUMBLE STRIPS, CENTERLINE									
465.0560									
STATION TO STATION LOCATION LF									
108+22 - 108+97 CENTERLINE 75									
110+92 - 111+67 CENTERLINE 75									
SUBTOTAL 150									
332+60 - 332+89 CENTERLINE 29									
334+01 - 334+30 CENTERLINE 29									
SUBTOTAL 58									
TOTAL 208									
CONCRETE CURB AND GUTTER									
CONCRETE SURFACE DRAINS									
RIPRAP AND GEOTEXTILE FABRIC									
602.3010									
STATION LOCATION CY									
332+58 WEST APPROACH, LT 8									
332+75 WEST APPROACH, RT 7									
334+15 EAST APPROACH, LT 4									
334+32 EAST APPROACH, RT 3									
TOTAL 22									
STATION LOCATION CY									
332+58 WEST APPROACH, LT 3									
332+75 WEST APPROACH, RT 3									
334+15 EAST APPROACH, LT 3									
334+32 EAST APPROACH, RT 3									
TOTAL 12									
STATION LOCATION									
332+58 WEST APPROACH, LT 6									
332+75 WEST APPROACH, RT 6									
334+15 EAST APPROACH, LT 6									
334+32 EAST APPROACH, RT 6									
TOTAL 24									
PROJECT NO: 7550-00-77		HWY: STH 54		COUNTY: JACKSON		MISCELLANEOUS QUANTITIES		SHEET 24	

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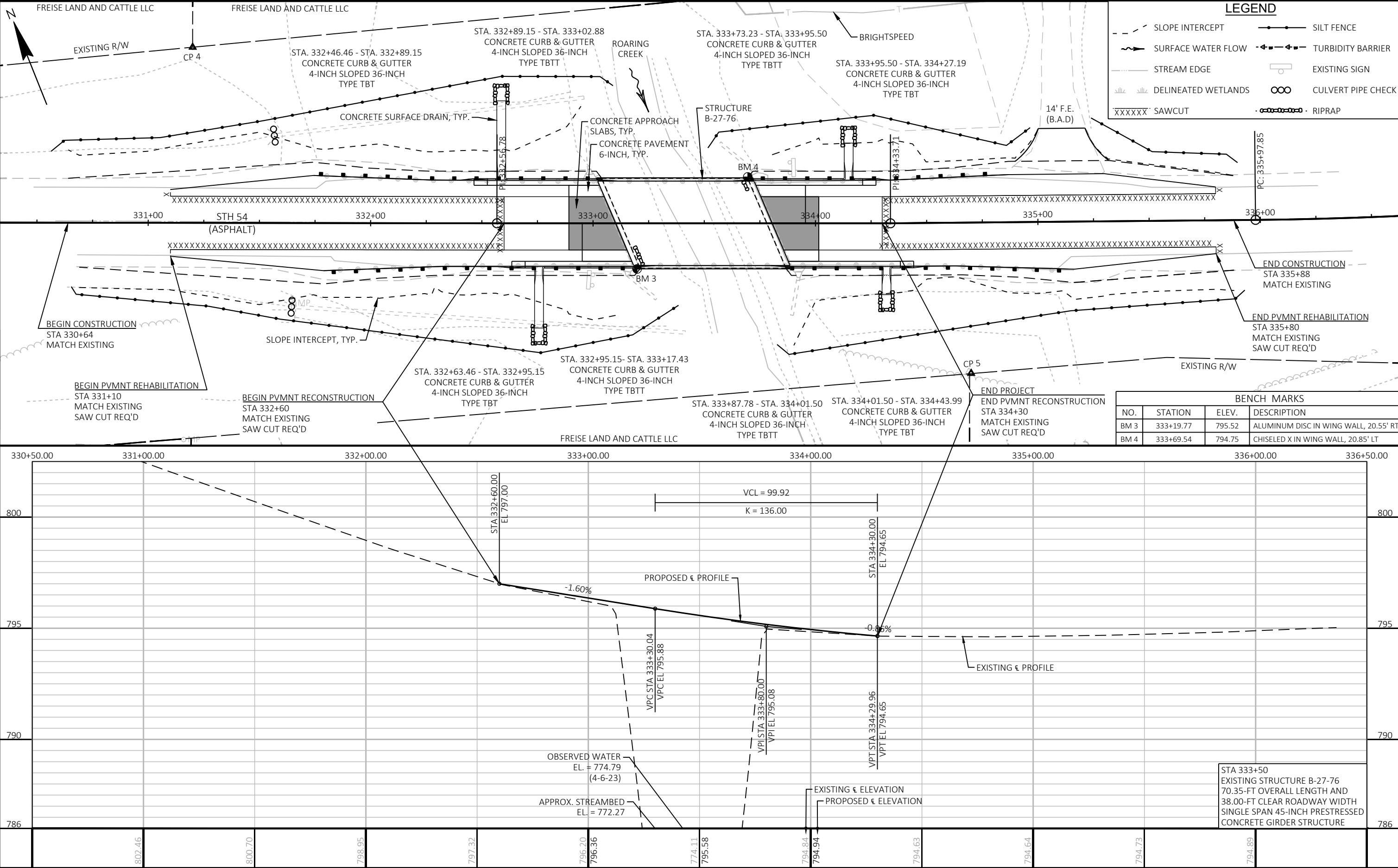
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				CONSTRUCTION STAKING								
				650.4500	650.5000	*	**	650.9911	650.5500	650.7000	650.8000	650.9920
				CONSTRUCTION	CONSTRUCTION	650.6501	650.6501	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION
				STAKING	STAKING	CONSTRUCTION	CONSTRUCTION	STAKING	STAKING	STAKING	STAKING	STAKING
				SUBGRADE	BASE	STAKING	STAKING	SUPPLEMENTAL	CURB GUTTER	CONCRETE	RESURFACING	SLOPE STAKES
				LF	LF	STRUCTURE	STRUCTURE	CONTROL	AND CURB &	PAVEMENT	REFERENCE	
						LAYOUT	LAYOUT	01.7550-00-77	GUTTER			
						01. B-27-016	02. B-27-076	EACH				
						EACH	EACH		LF	LF	LF	LF
STATION	TO	STATION	LOCATION									
108+20	-	109+20	SOUTH APPROACH	50	50	---	---	---	---	---	50	100
110+65	-	111+65	NORTH APPROACH	50	50	---	---	---	---	---	50	100
			SUBTOTAL	100	100	---	---	---	---	---	100	200
330+64	-	333+10	WEST APPROACH	50	29	---	---	---	75	21	196	240
333+80	-	335+88	EAST APPROACH	50	29	---	---	---	75	21	158	208
			SUBTOTAL	100	58	---	---	---	150	42	354	454
			PROJECT	---	---	1	1	1	---	---	---	---
			SUBTOTAL	---	---	1	1	1	---	---	---	---
			TOTAL	200	158	1	1	1	150	42	454	654
* CATEGORY 0020												
** CATEGORY 0030												

3

SAWING ASPHALT

				690.0150
				LF
STATION	TO	STATION	LOCATION	
108+72	-	108+72	SOUTH APPROACH	36
111+17	-	111+17	NORTH APPROACH	36
			SUBTOTAL	72
331+10	-	332+60	WEST APPROACH	330
334+30	-	335+80	EAST APPROACH	330
			SUBTOTAL	660
			TOTAL	732

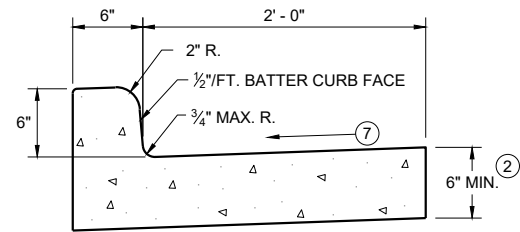


LEGEND			
- - -	SLOPE INTERCEPT	—●—	SILT FENCE
~	SURFACE WATER FLOW	—◄—◄—	TURBIDITY BARRIER
---	STREAM EDGE	◯	EXISTING SIGN
	DELINEATED WETLANDS	◯◯	CULVERT PIPE CHECK
XXXXXX	SAWCUT	—◉—◉—	RIPRAP

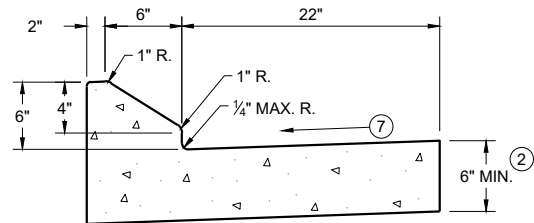
BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
BM 3	333+19.77	795.52	ALUMINUM DISC IN WING WALL, 20.55' RT
BM 4	333+69.54	794.75	CHISELED X IN WING WALL, 20.85' LT

Standard Detail Drawing List

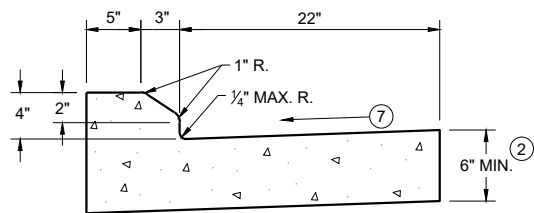
08D01-24A	CONCRETE CURB AND GUTTER
08D01-24B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-08A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E15-01	CULVERT PIPE CHECK
09A14-01	DRIVEWAYS WITHOUT CURB AND GUTTER
12A03-10	NAME PLATE (STRUCTURES)
13A11-04A	CENTERLINE RUMBLE STRIPS - ASPHALT
13A11-04D	CENTERLINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAILROADS
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13B02-09B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C19-03	HMA LONGITUDINAL JOINTS
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-10A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-10B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-10C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-12	SIGNING AND MARKING FOR TWO LANE BRIDGES
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C11-11B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



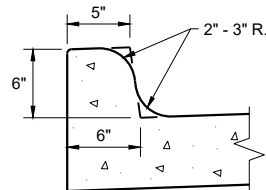
TYPES A^① & D



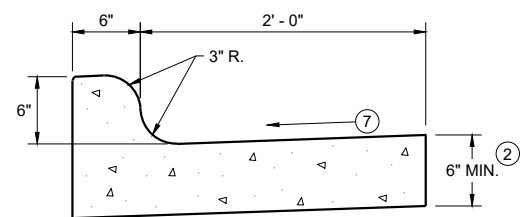
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

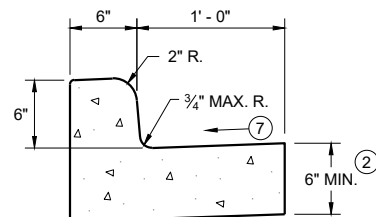


TYPES K^① & L
(OPTIONAL CURB SHAPE)



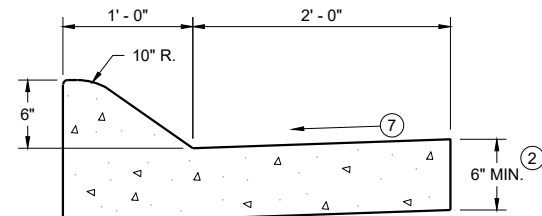
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

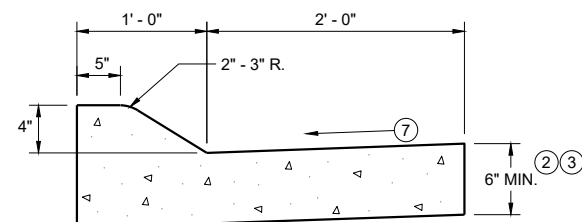


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

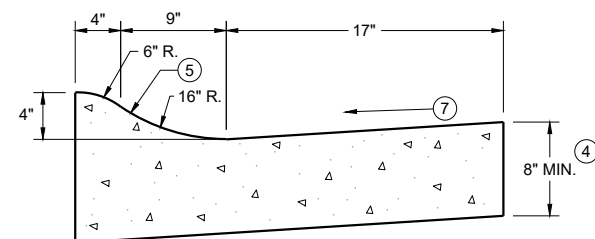


6" SLOPED CURB TYPES A^① & D



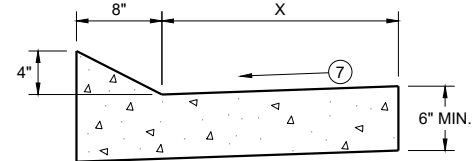
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



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

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

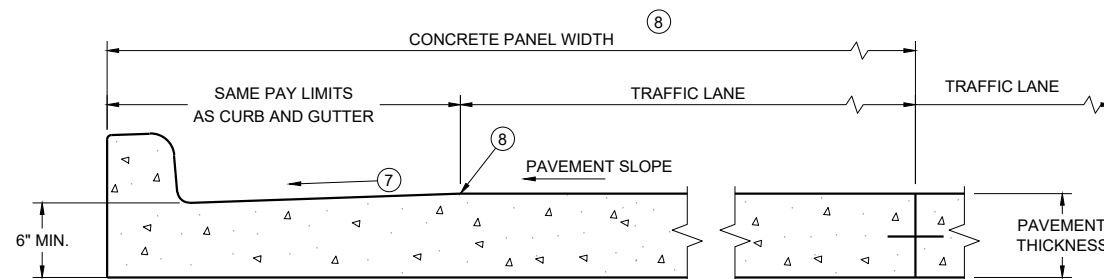


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

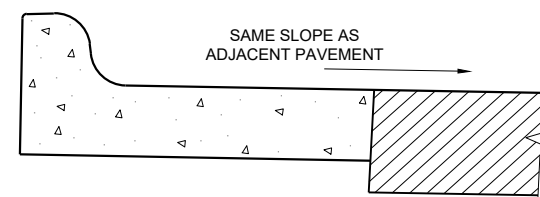
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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

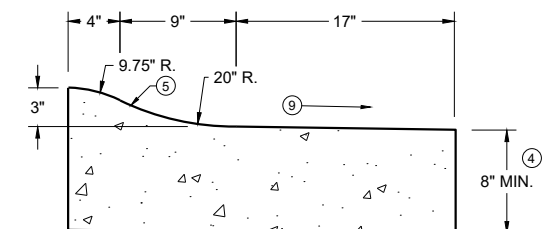


PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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



3" SLOPED CURB TYPES R^① & T

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

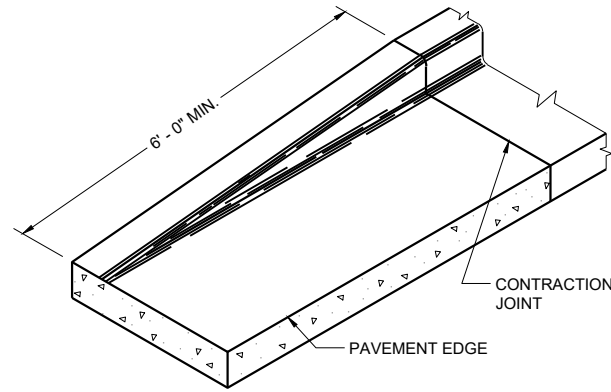
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

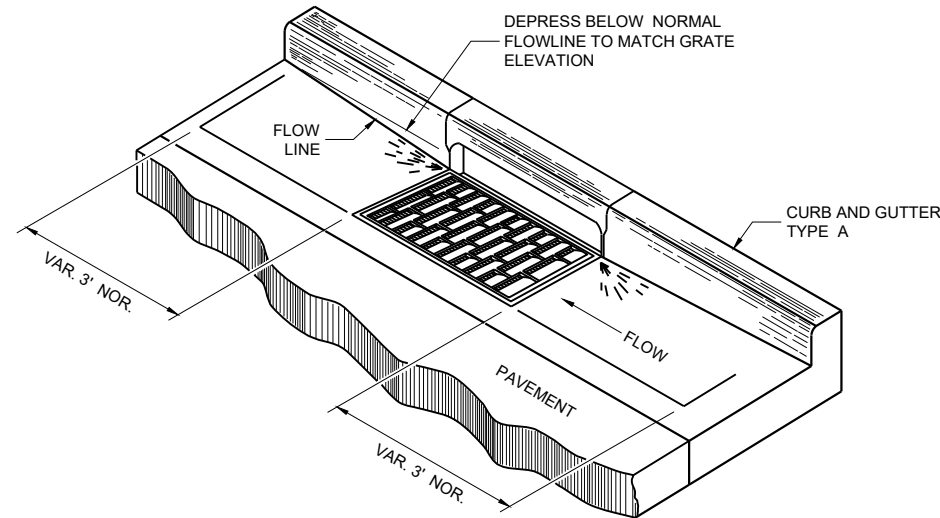
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

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

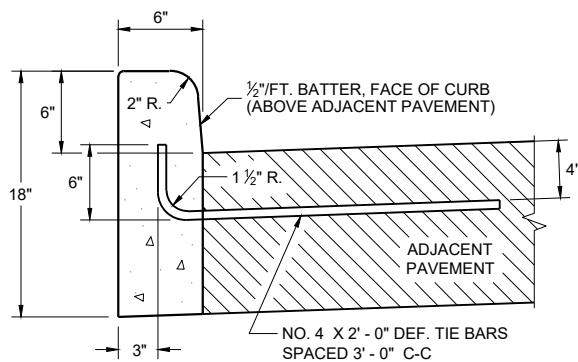


END SECTION CURB AND GUTTER

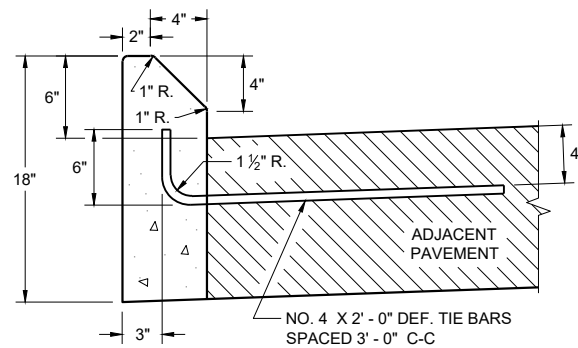


DETAIL OF CURB AND GUTTER AT INLETS

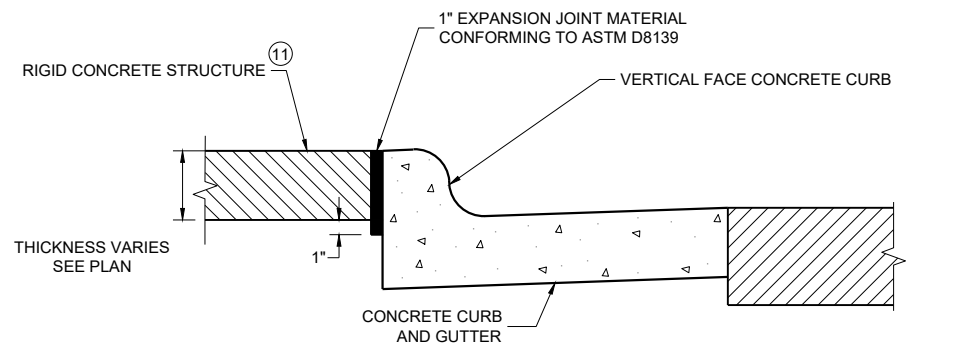
(TYPICAL H INLET COVER SHOWN)



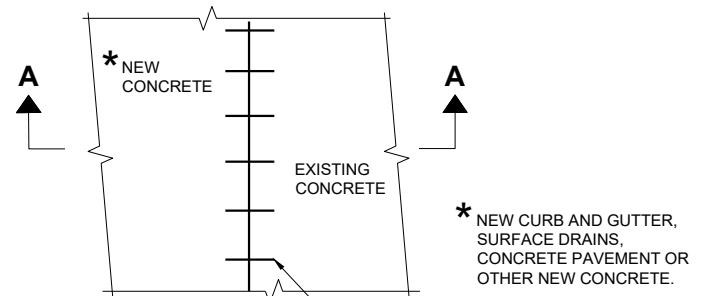
TYPES A^① & D



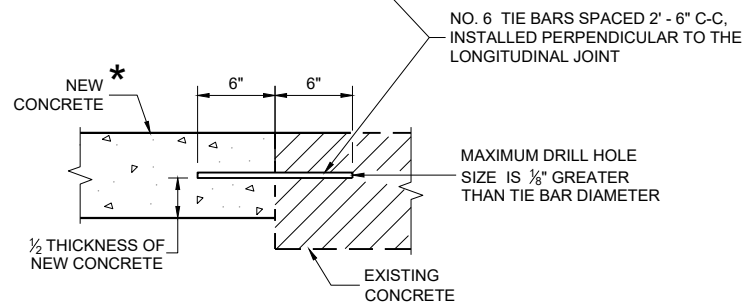
TYPES G^① & J
CONCRETE CURB



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



PLAN VIEW



SECTION A - A
TIE BARS DRILLED INTO EXISTING PAVEMENT

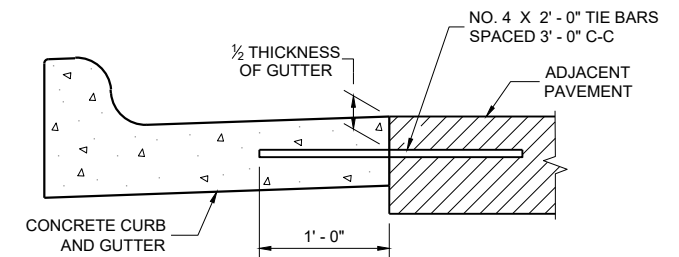
GENERAL NOTES

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

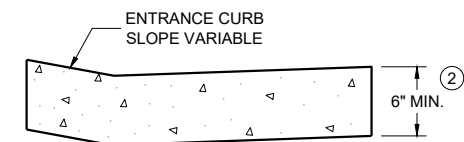
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.
- ⑪ PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑩
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES
AND CURB AND GUTTER
APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

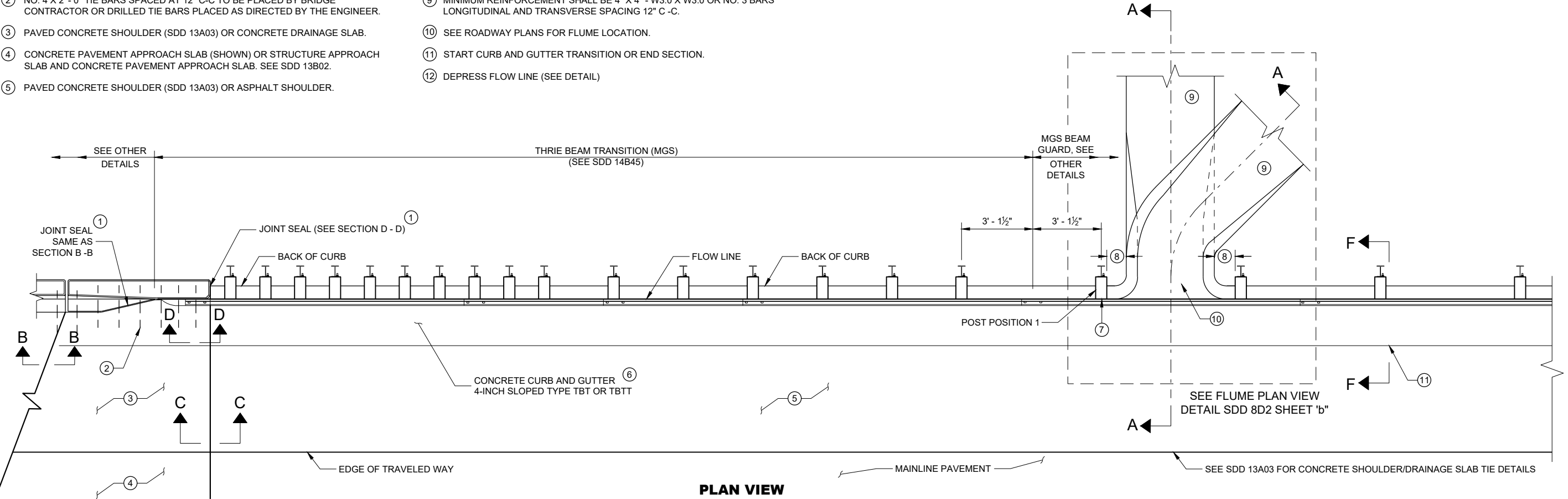
GENERAL NOTES

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

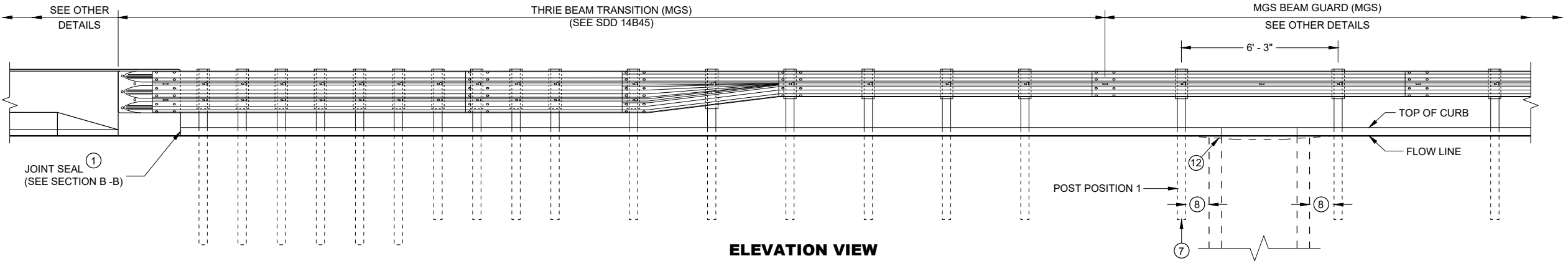
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

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



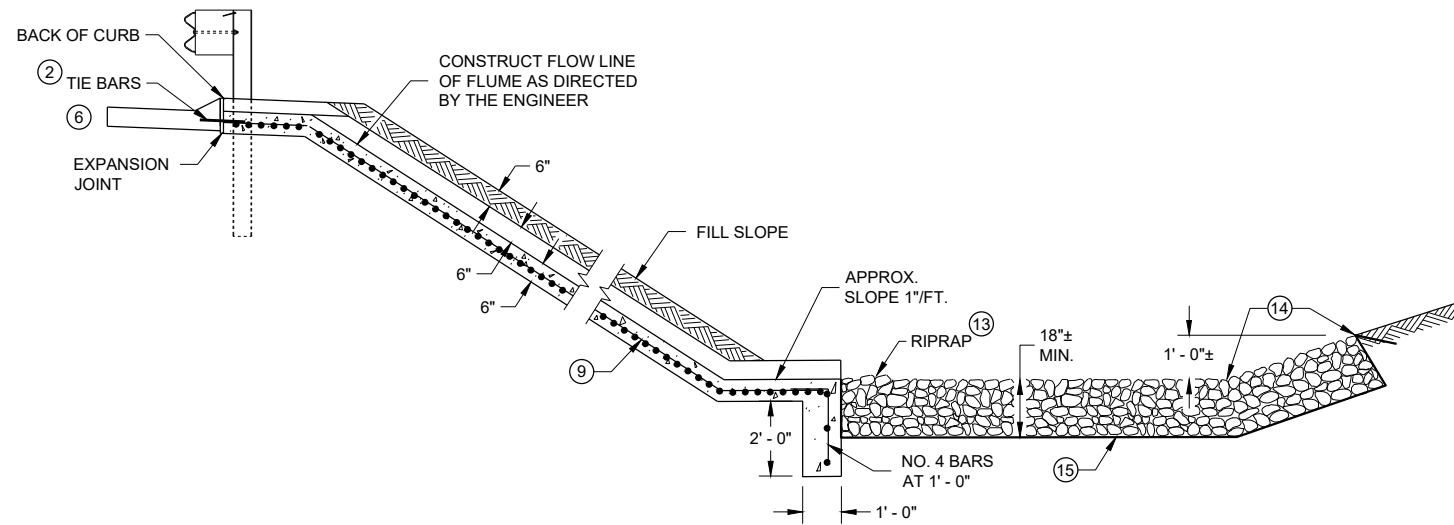
PLAN VIEW



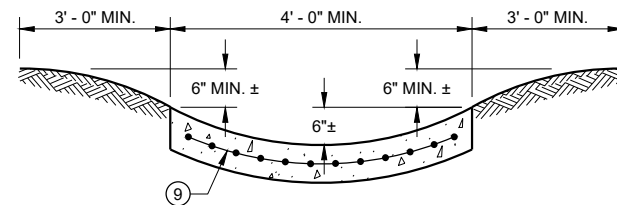
ELEVATION VIEW

CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES

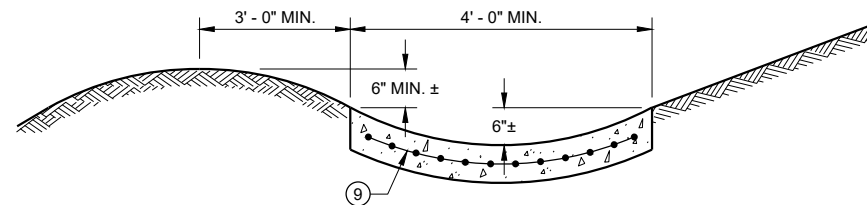
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



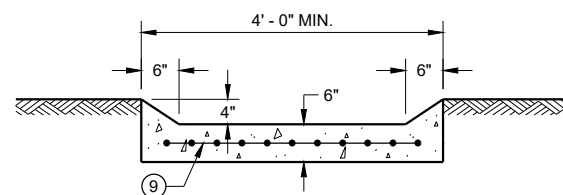
SECTION A - A



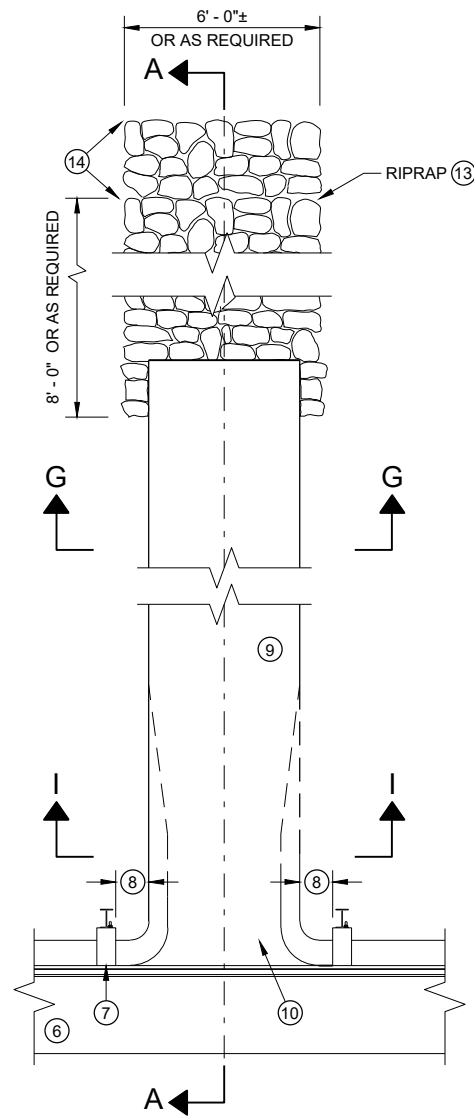
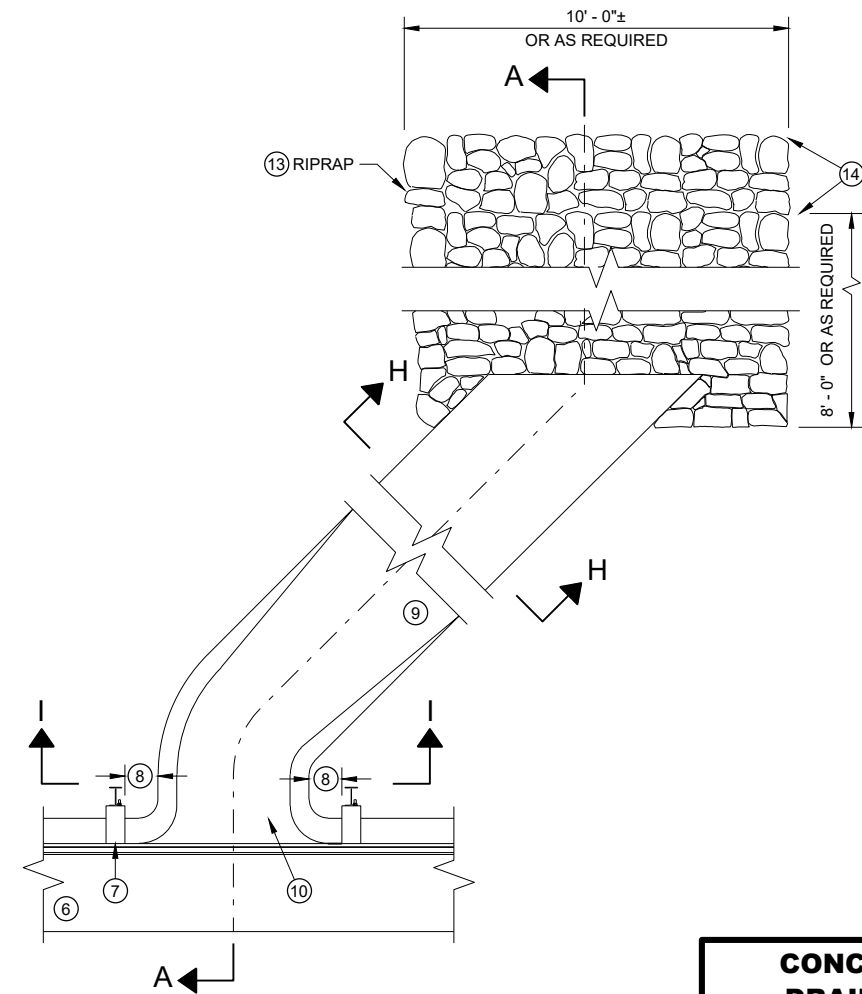
SECTION G - G



SECTION H - H



SECTION I - I

PLAN VIEW
PERPENDICULAR FLUMEPLAN VIEW
SKEWED FLUME

GENERAL NOTES

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

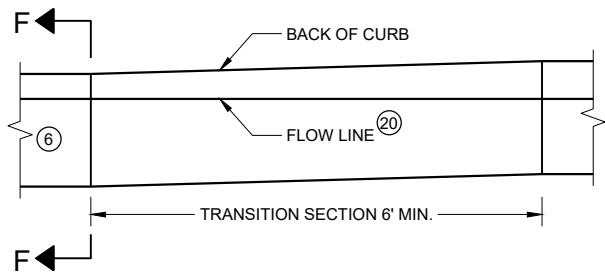
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

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

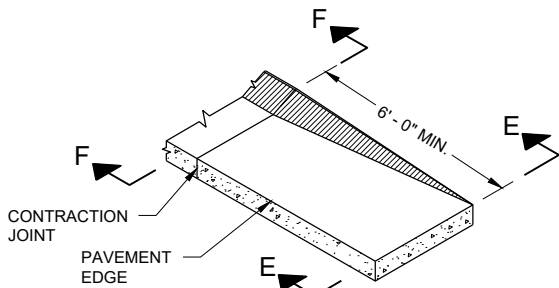
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑩ SEE ROADWAY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

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

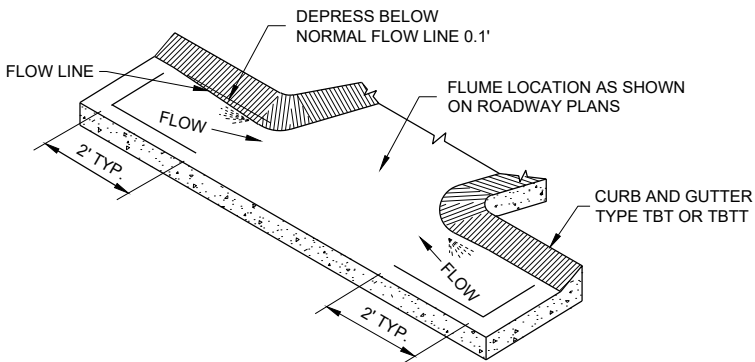
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 33



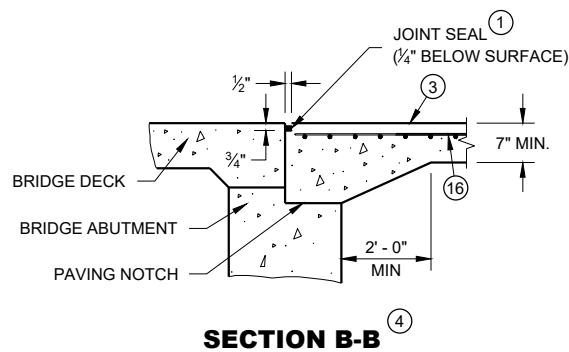
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



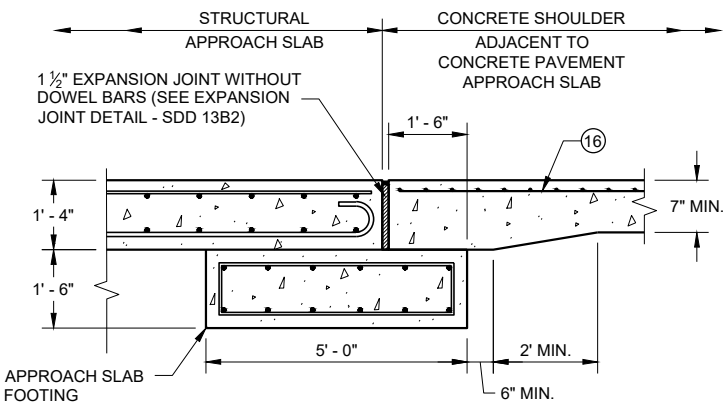
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



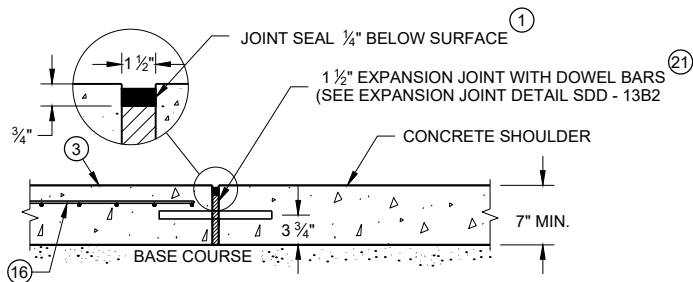
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



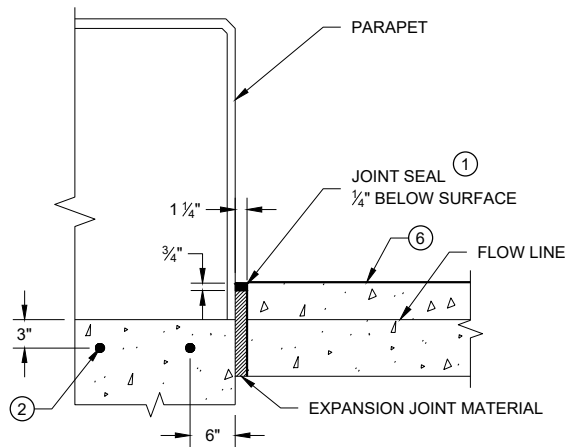
SECTION B-B



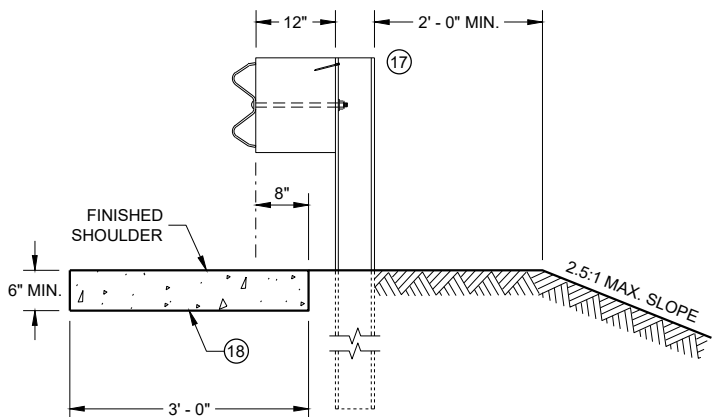
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



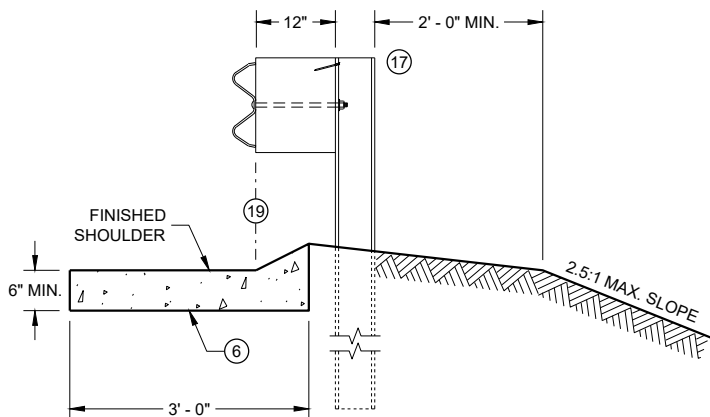
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

GENERAL NOTES

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

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

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

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 34
FHWA



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" 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.

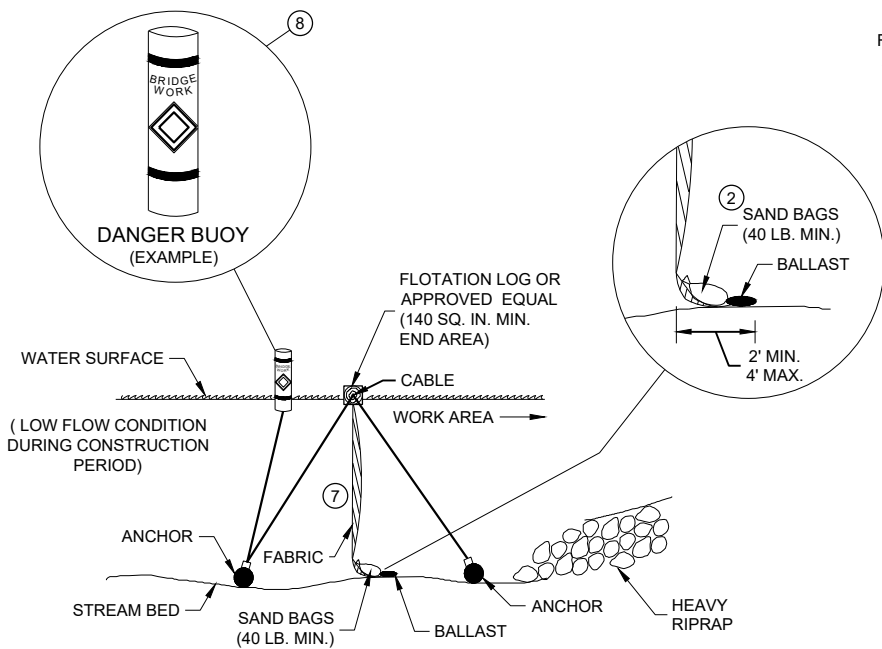


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

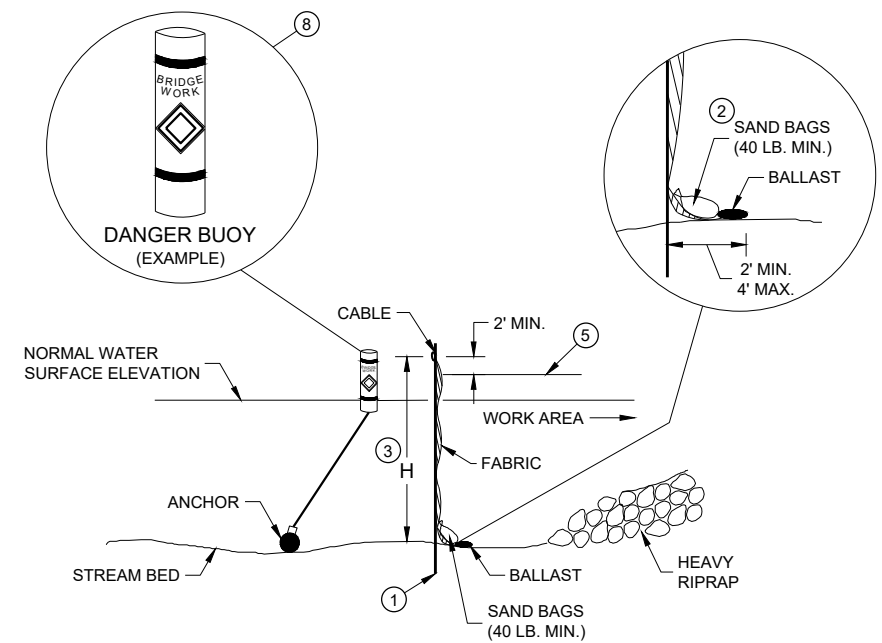
APPROVED
4-29-05 /S/ Beth Connolly
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



SECTION B - B

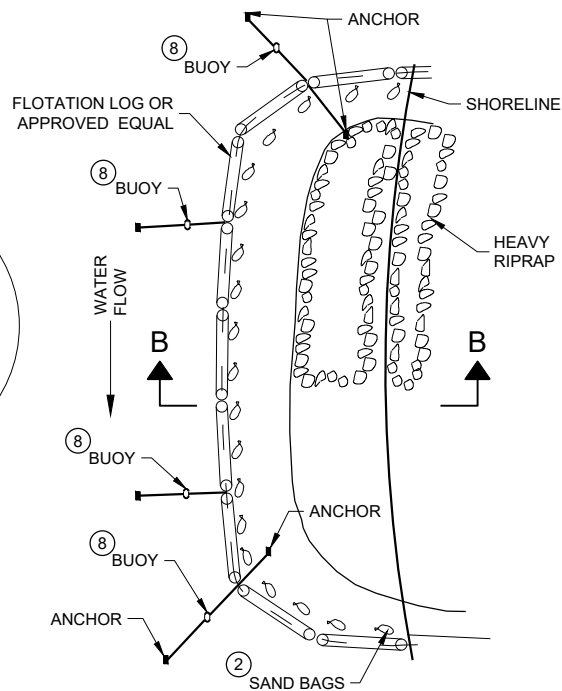
TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



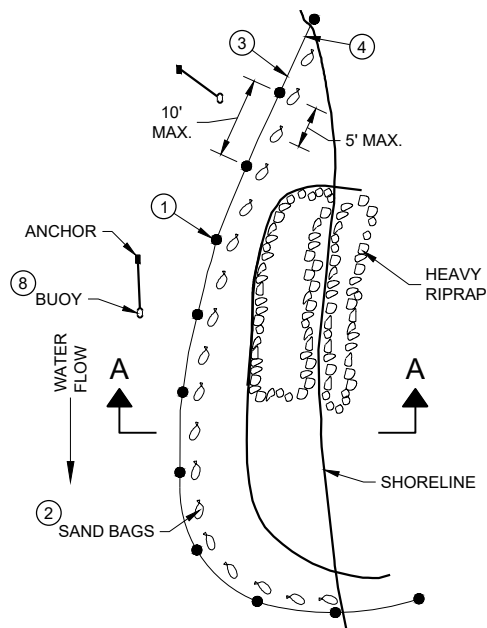
SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS



PLAN VIEW



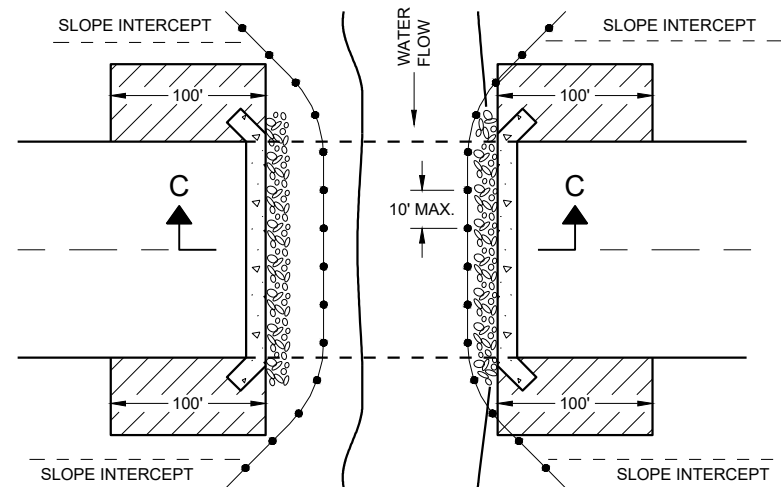
PLAN VIEW

GENERAL NOTES

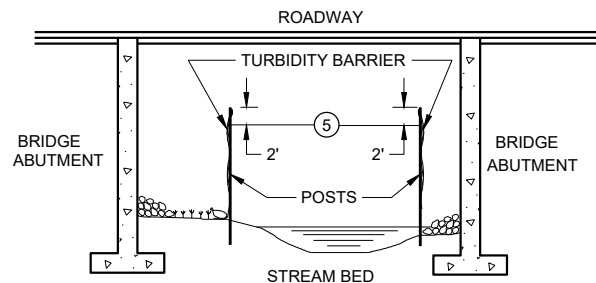
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



SECTION C - C

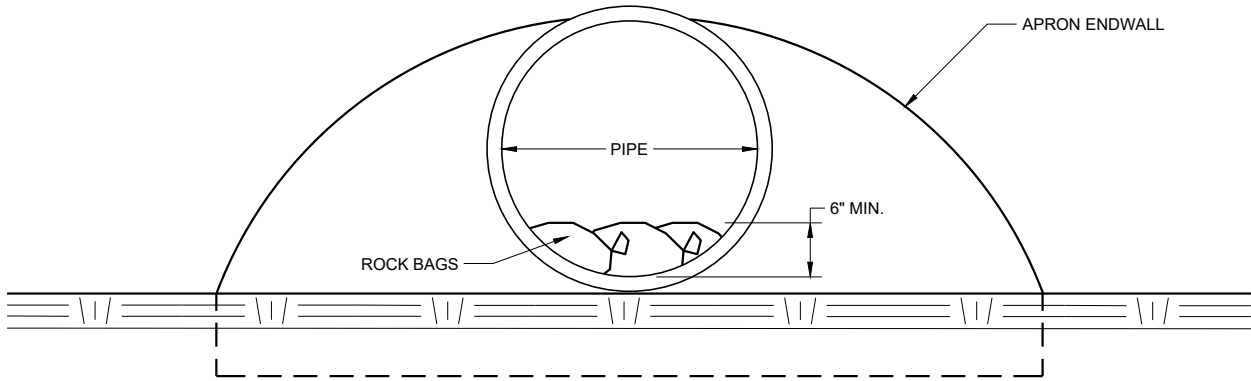
TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

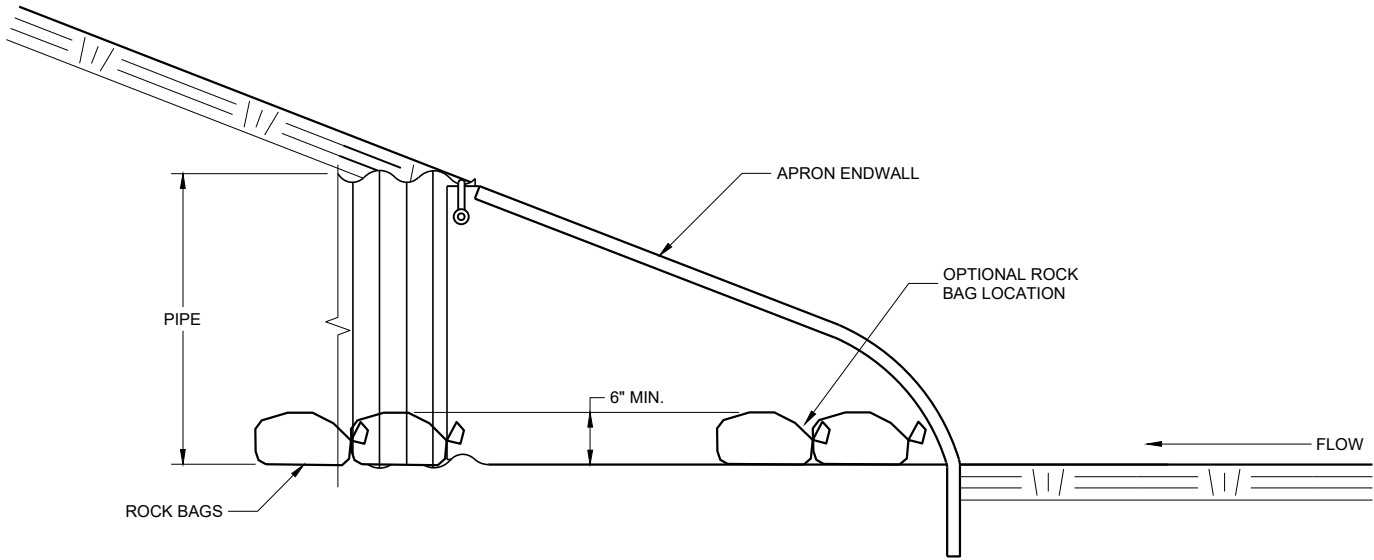
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/4/02 DATE /S/ Beth Cannestra
CHIEF ROADWAY DEVELOPER
ENGINEER 36

FHWA



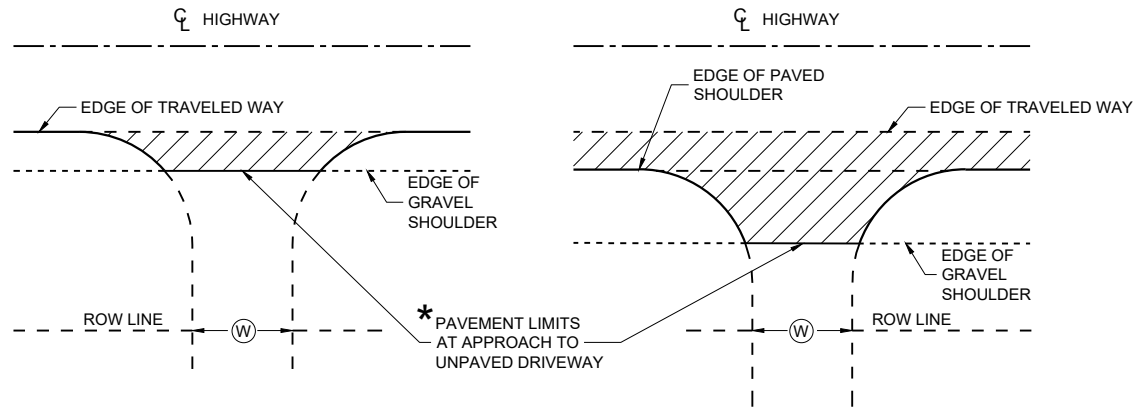
END VIEW



SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI 37
FHWA	

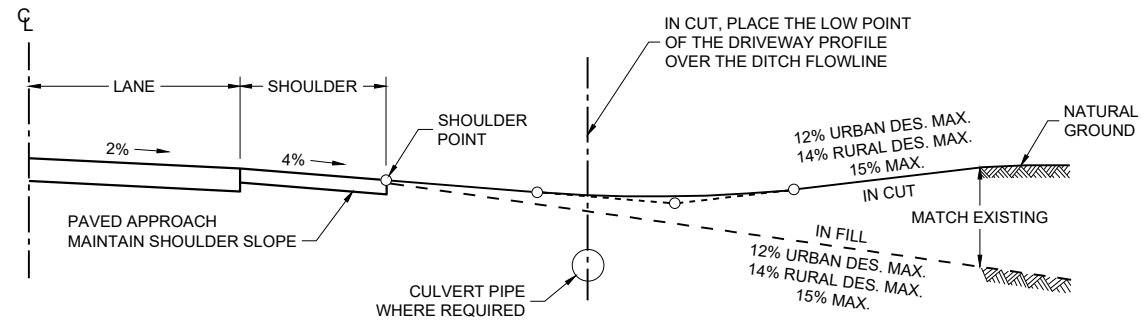


* WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

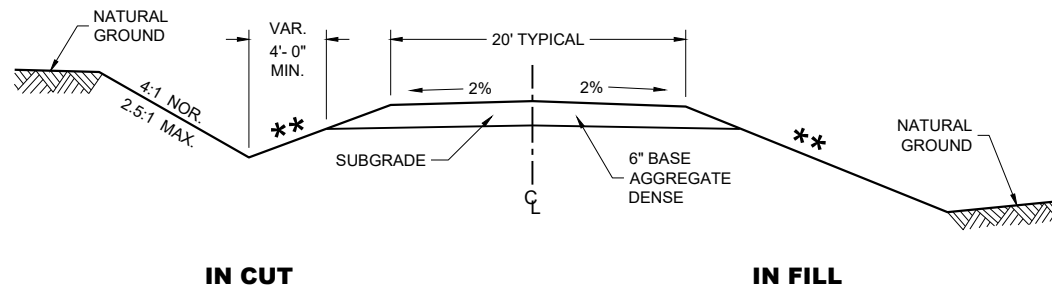
PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

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



TYPICAL DRIVEWAY PROFILES

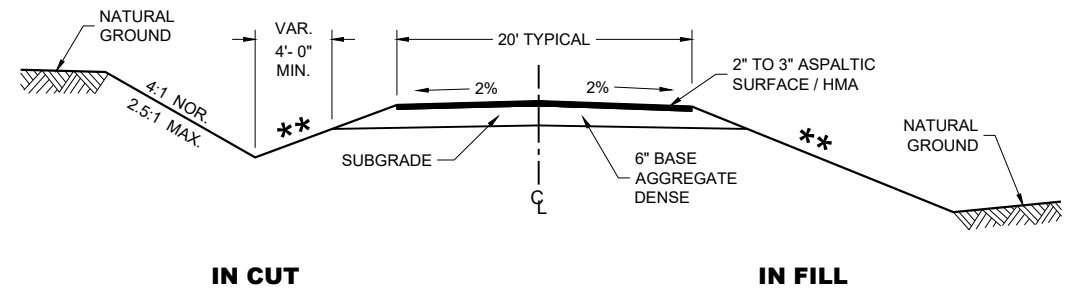
Ⓢ : DRIVEWAY WIDTHS (MEASURED AT ROW LINE)
 ~ COMMERCIAL & INDUSTRIAL 16' MIN. - 35' MAX.
 ~ RESIDENTIAL & AGRICULTURAL 16' MIN. - 24' MAX.
 (NONCOMMERCIAL)



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

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

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

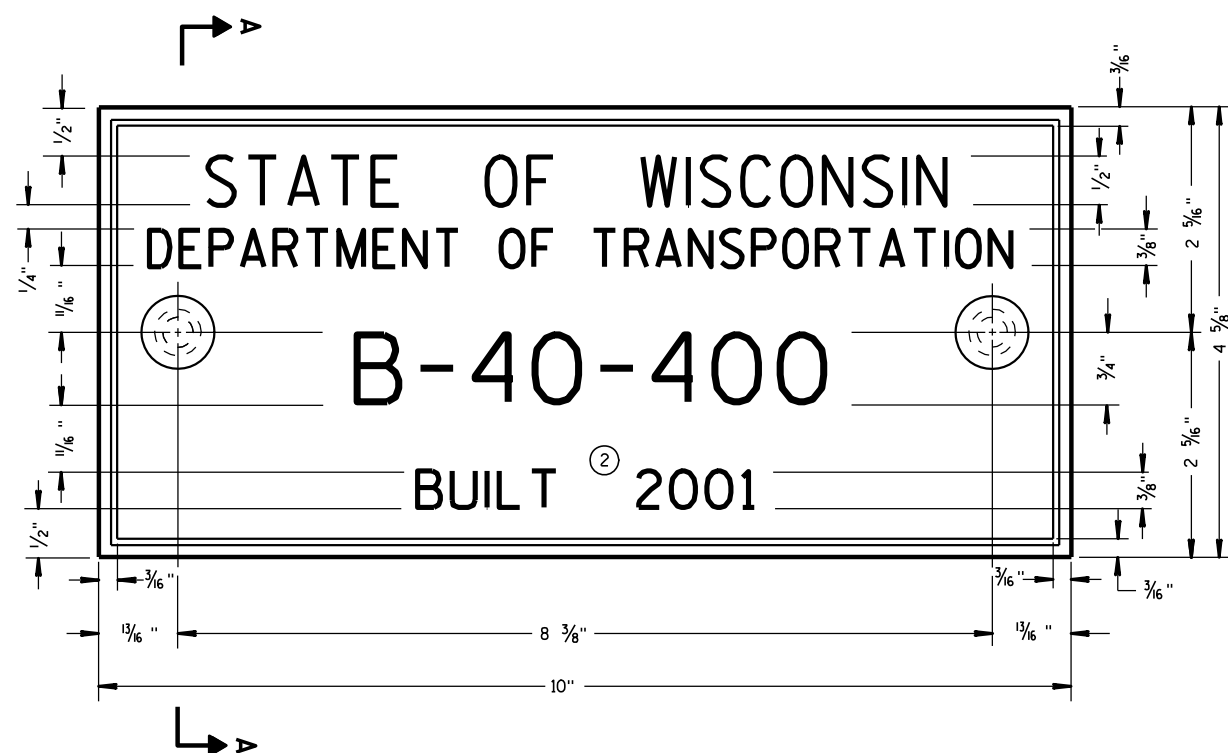


**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
ASPALTIC SURFACE**

**DRIVEWAYS WITHOUT
CURB AND GUTTER**

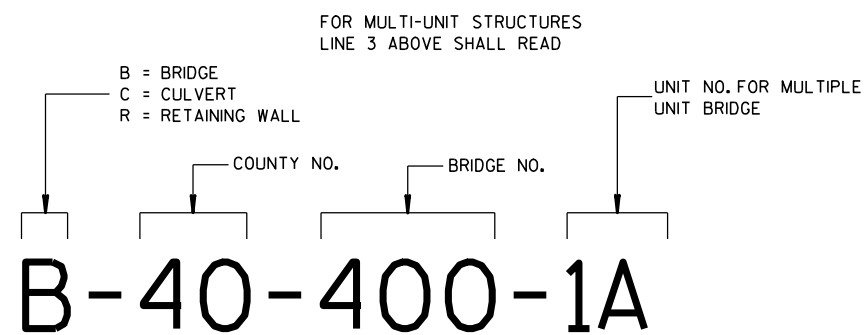
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



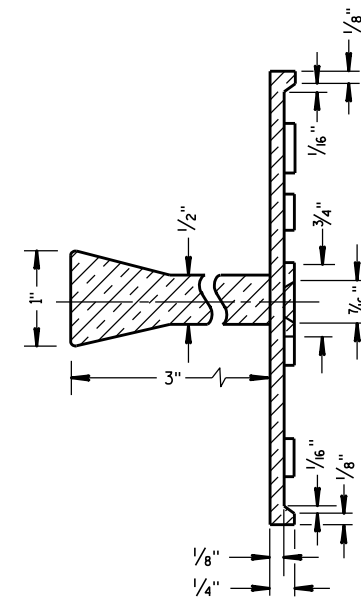
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

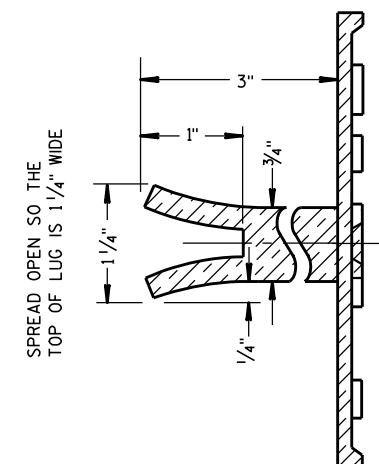
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

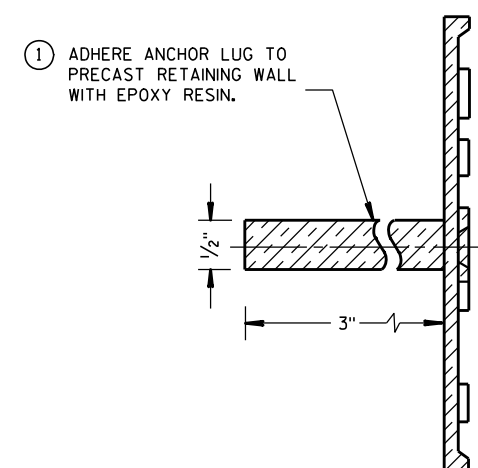
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



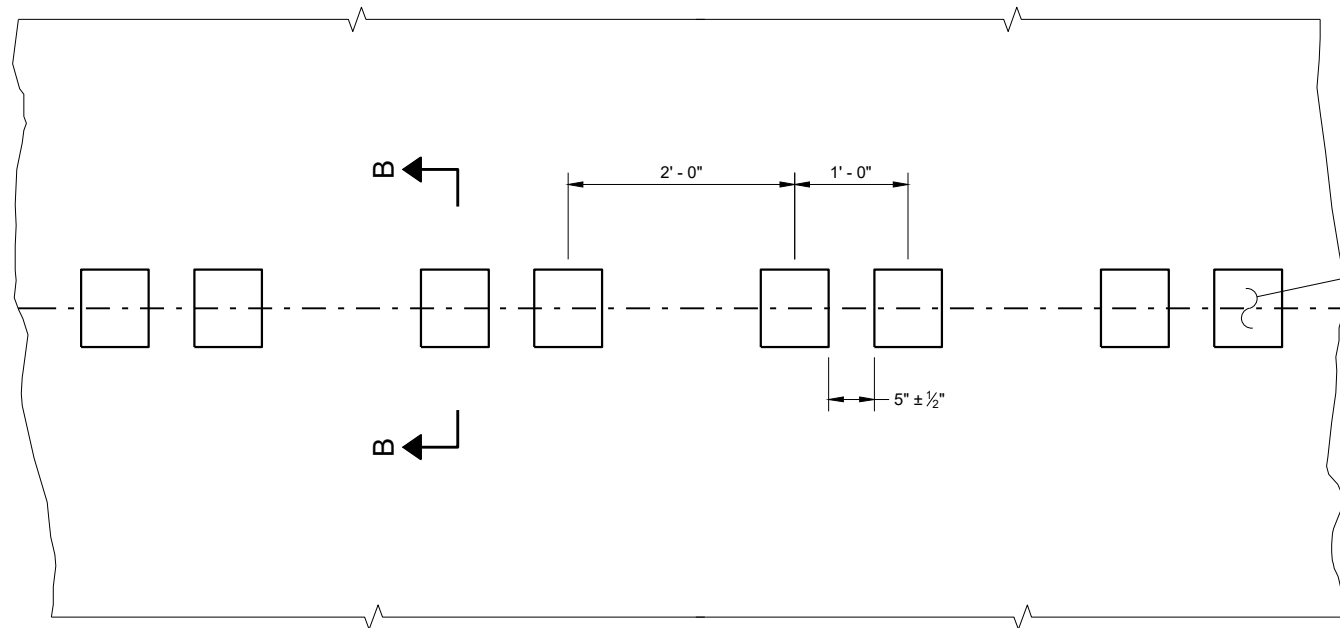
ALTERNATE LUG



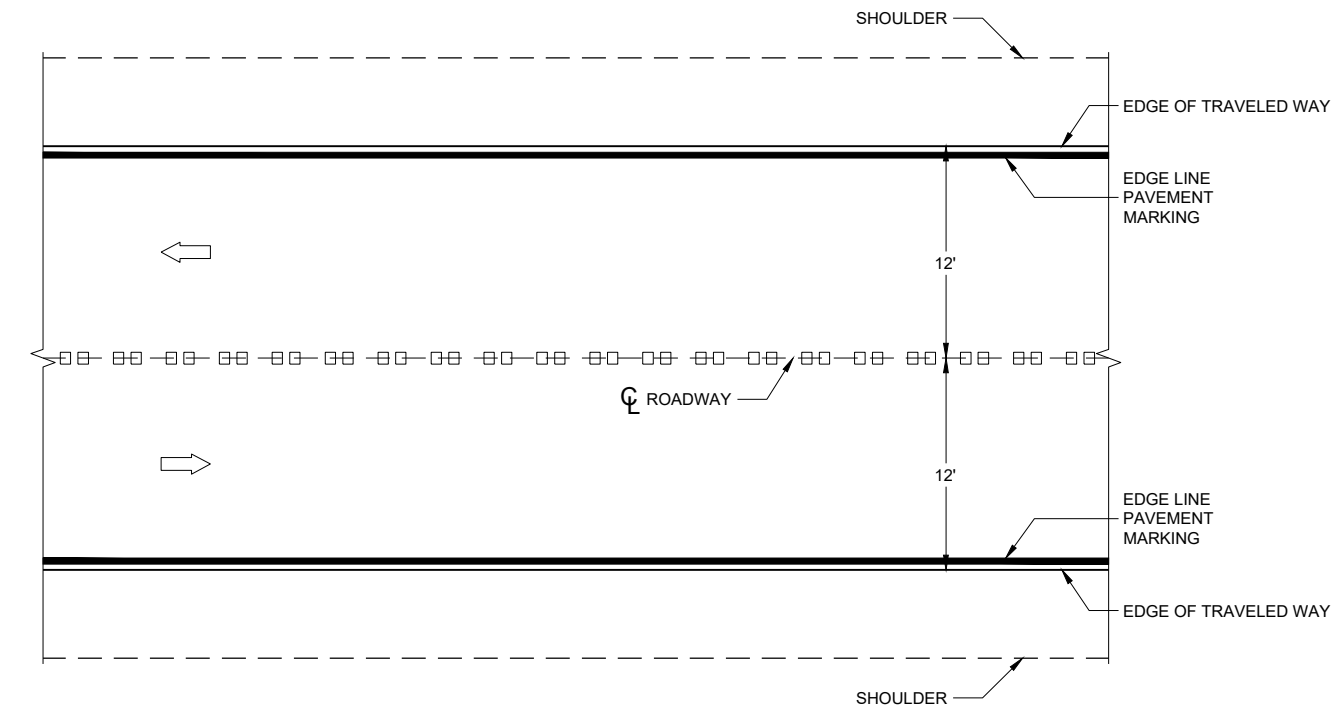
ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>3/26/10</u> DATE	<u>/s/ Scot Beck</u> CHIEF STRUCTURAL DEVELOPER

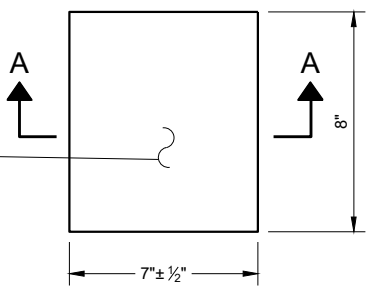


PLAN DETAIL VIEW

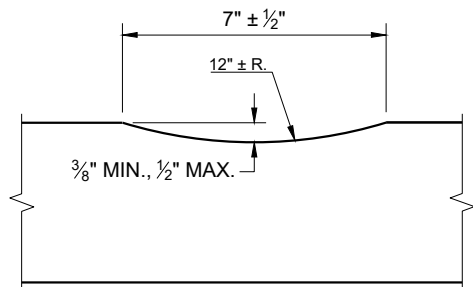


PLAN VIEW

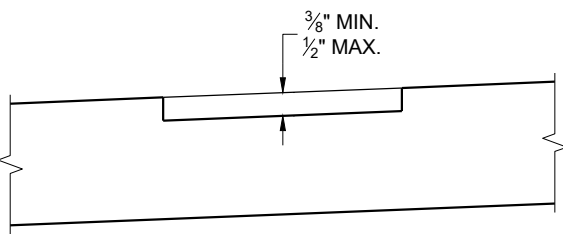
CENTERLINE RUMBLE STRIPS - ASPHALT



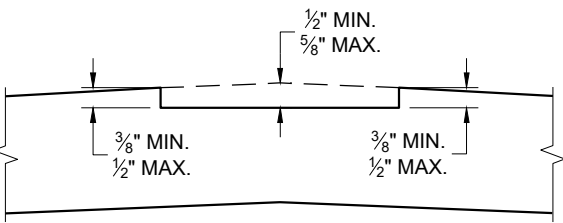
PLAN VIEW
(SINGLE GROOVE)



SECTION A - A



SECTION B - B
SUPERELEVATED ROADWAY

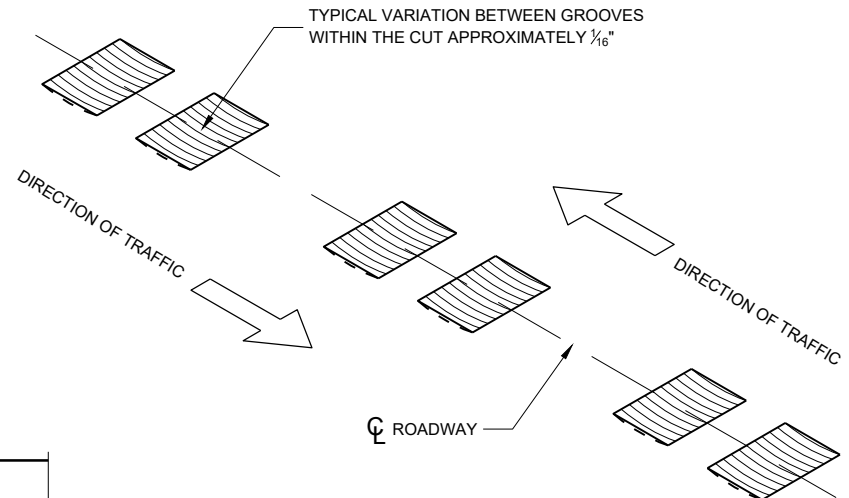


SECTION B - B
CROWNED ROADWAY

GENERAL NOTES

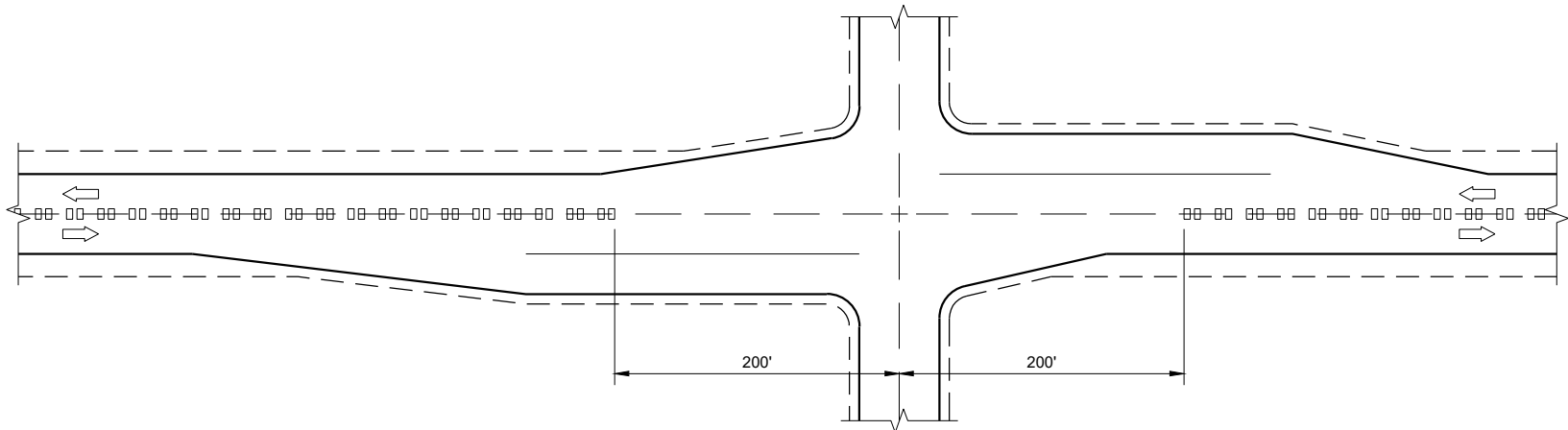
DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A11 SHEETS "d" AND "e".

CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.

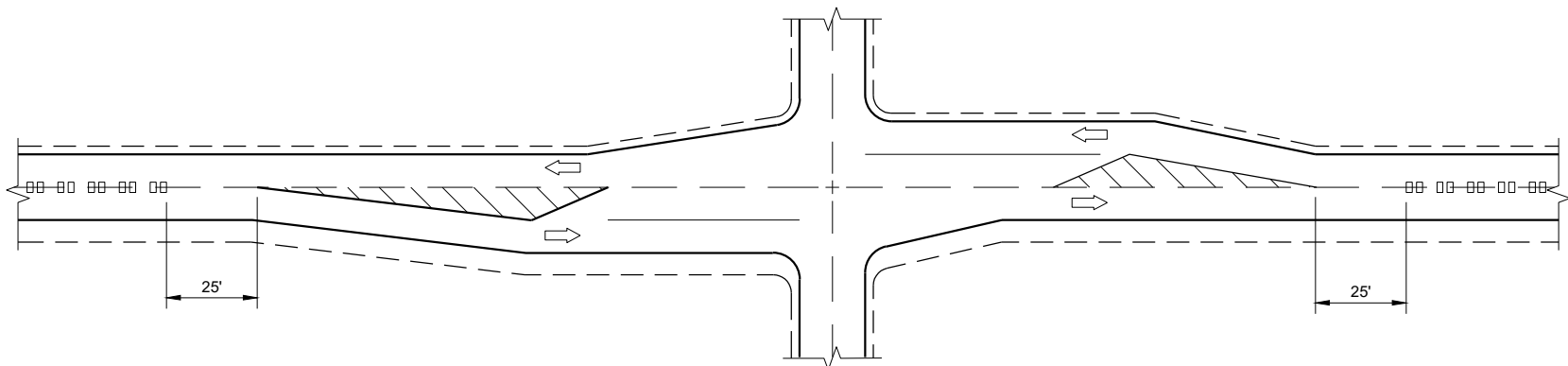


CENTERLINE RUMBLE STRIPS - ASPHALT

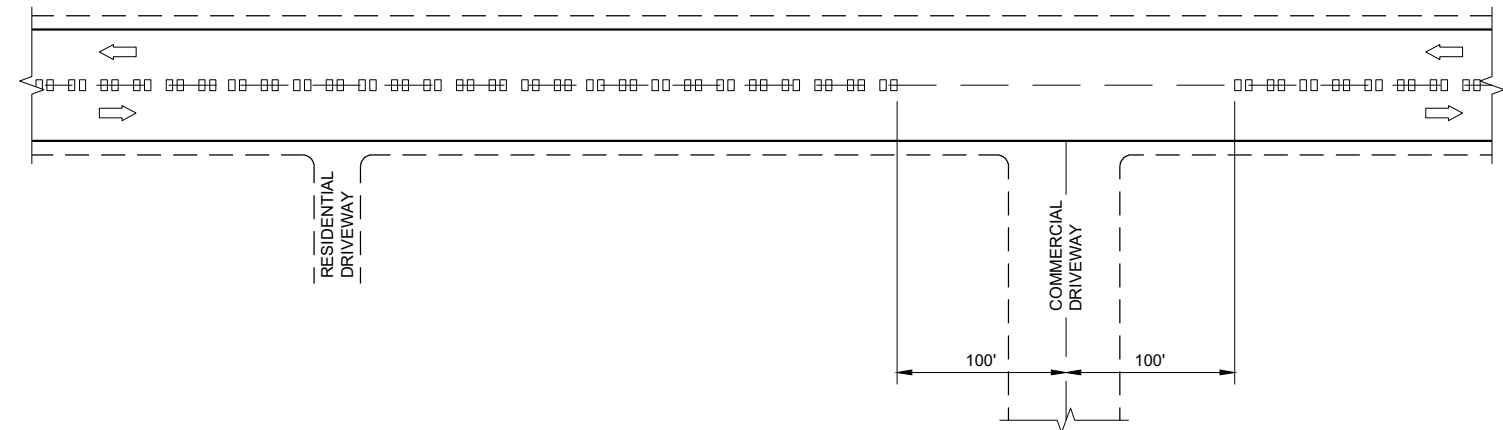
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



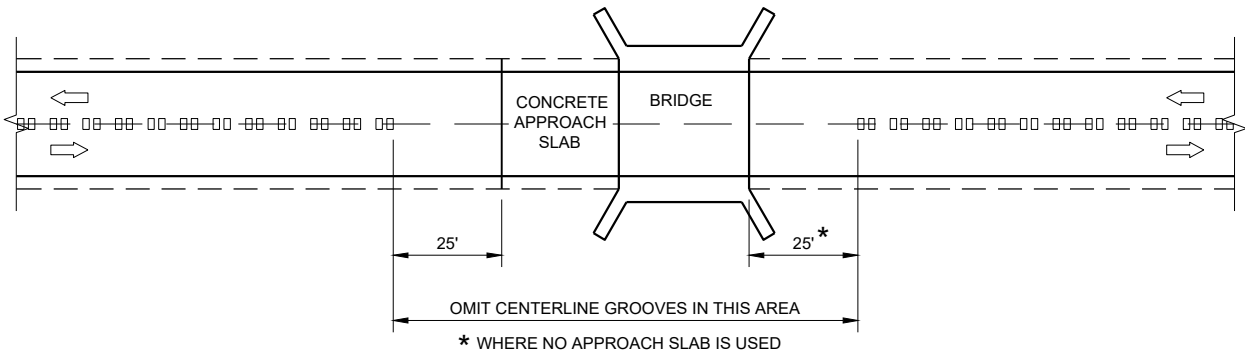
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



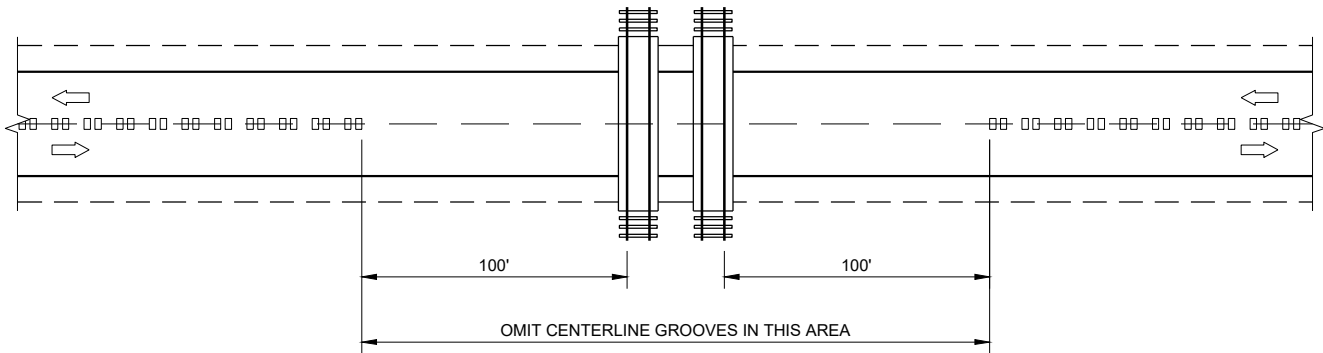
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



CENTERLINE GROOVES AT BRIDGES

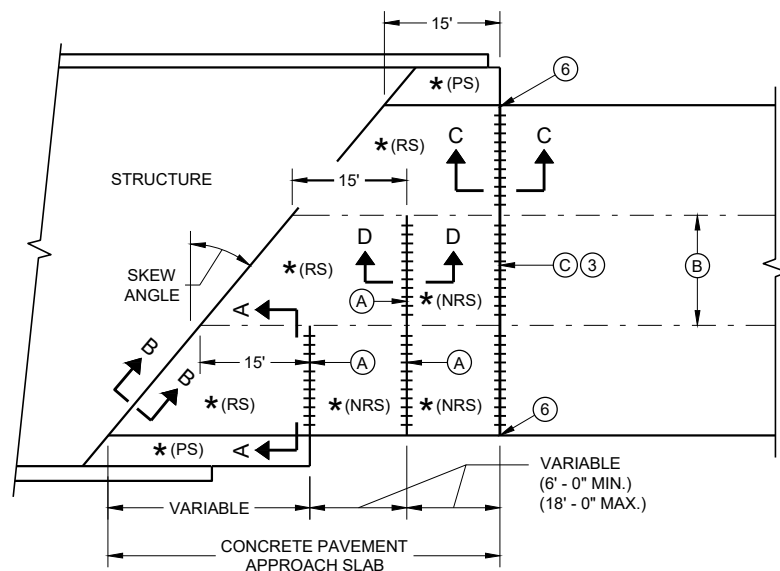


CENTERLINE GROOVES AT RAILROADS

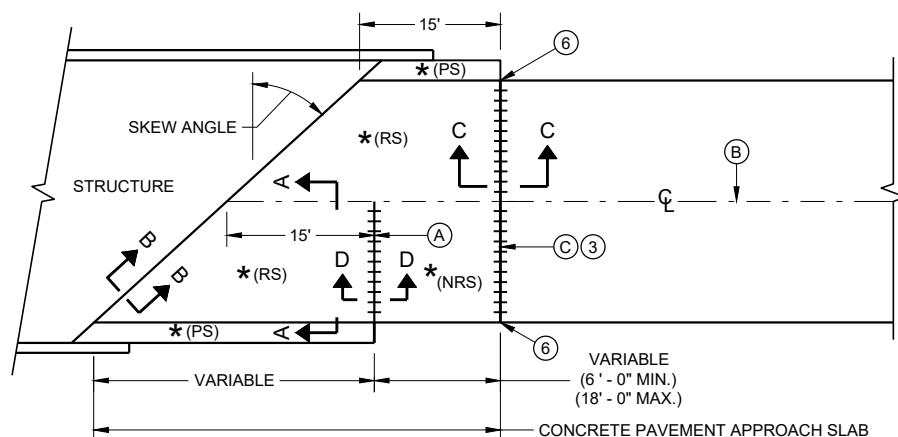
CENTER LINE
RUMBLE STRIPS -
INTERSECTIONS, DRIVEWAYS,
BRIDGES, RAIL ROADS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

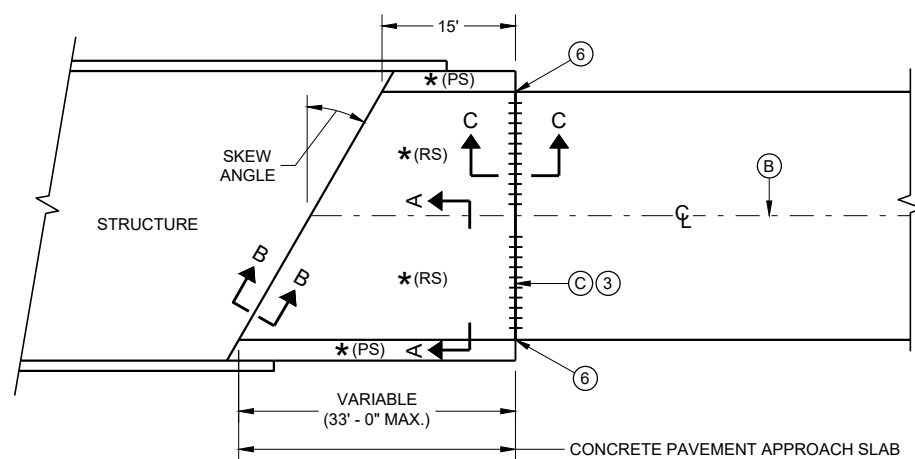
APPROVED
May 2023
DATE
/S/ John Jenkins
ROADWAY STANDARDS DEVELOPMENT ENGINEER
41
FHWA



**SKewed APPROACH
(PAVEMENT MORE THAN TWO LANES)**



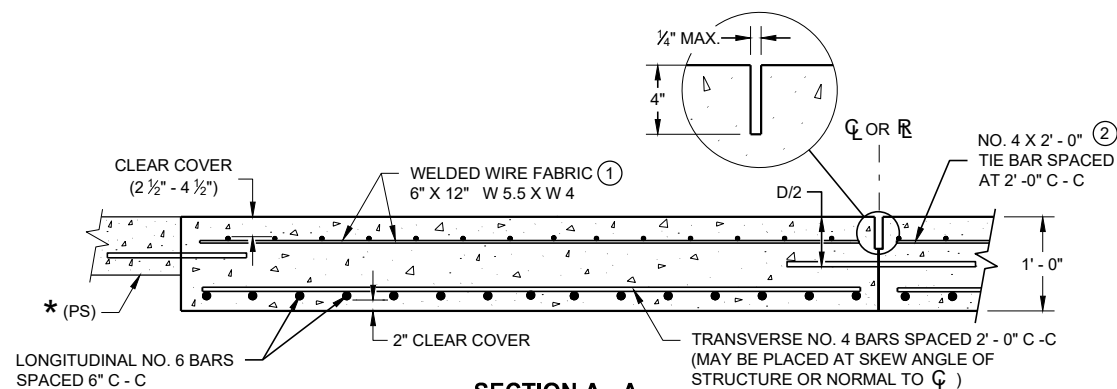
**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**



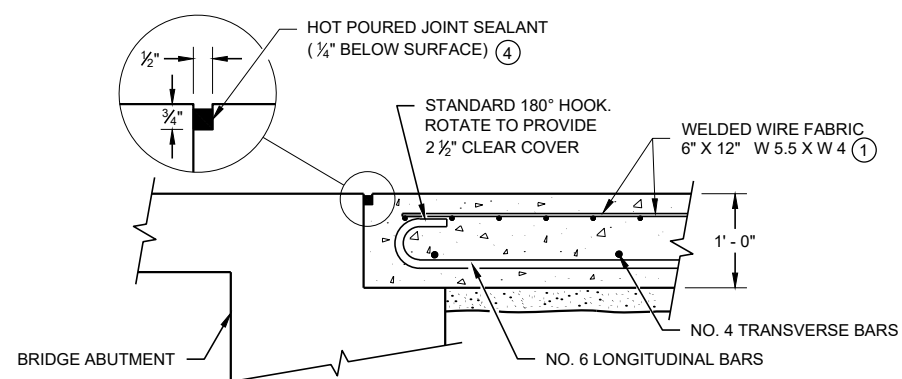
**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**

APPROACH SLAB AND ADJACENT PAVEMENT

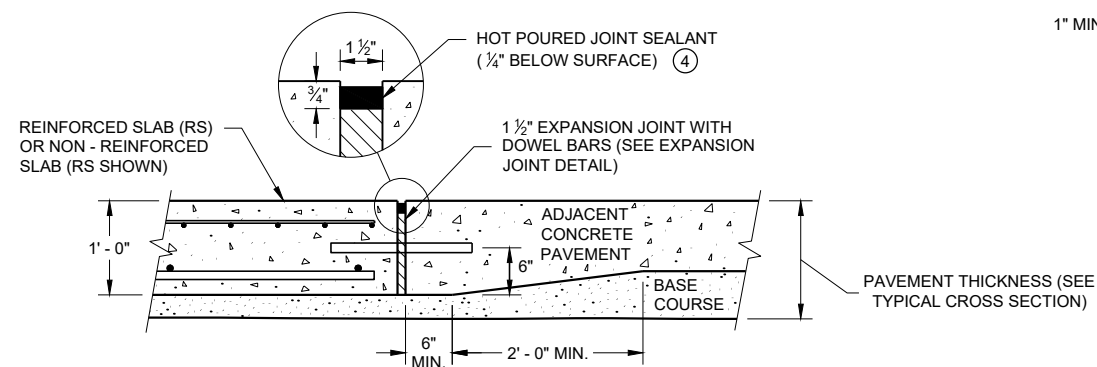
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



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



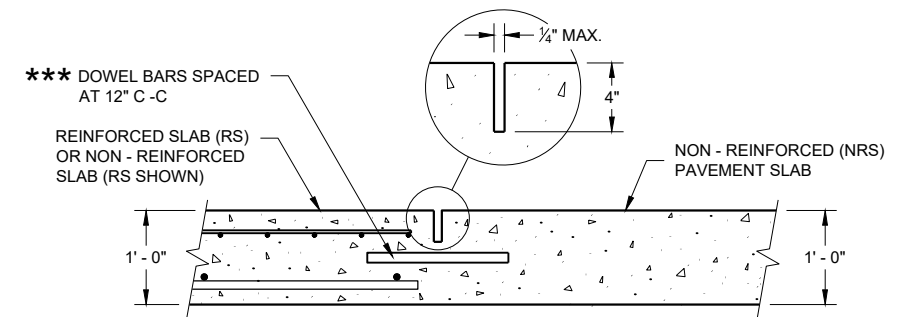
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

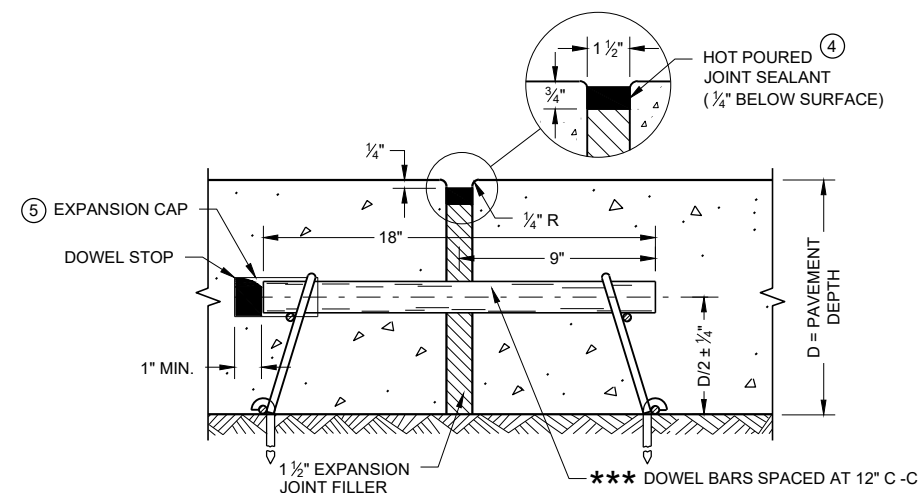
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
- ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- (A) STANDARD CONTRACTION JOINT NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.
- (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.



**SECTION D - D
CONTRACTION JOINT**

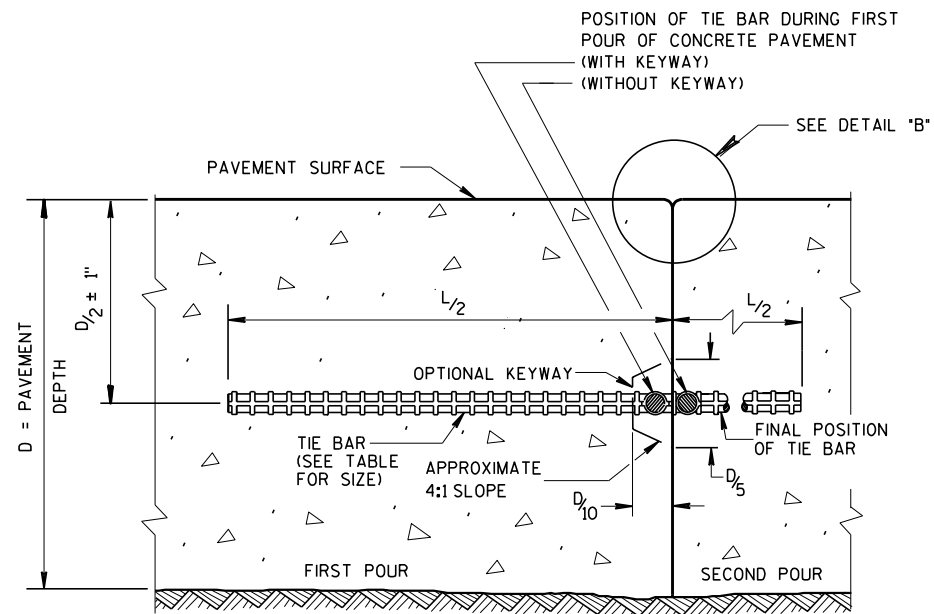


EXPANSION JOINT DETAIL

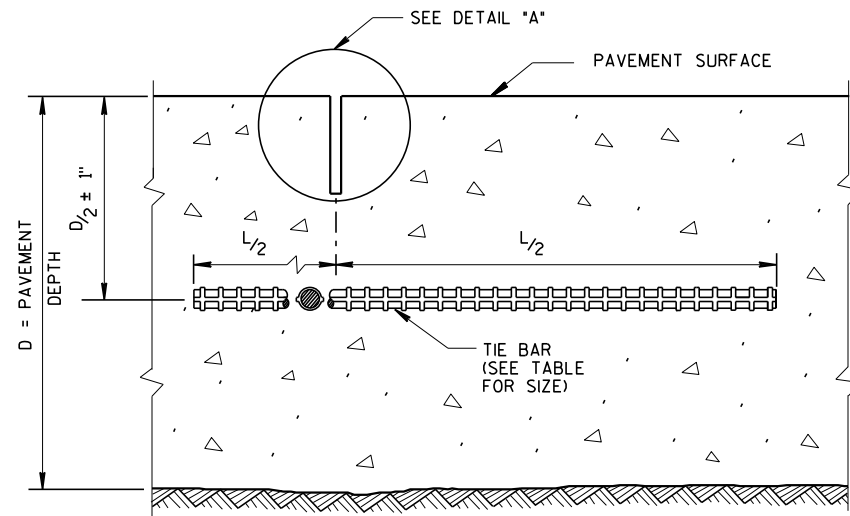
CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR 42
FHWA



CONSTRUCTION JOINT



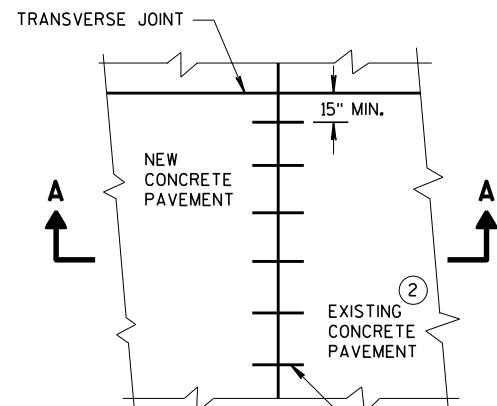
SAWED JOINT

GENERAL NOTES

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

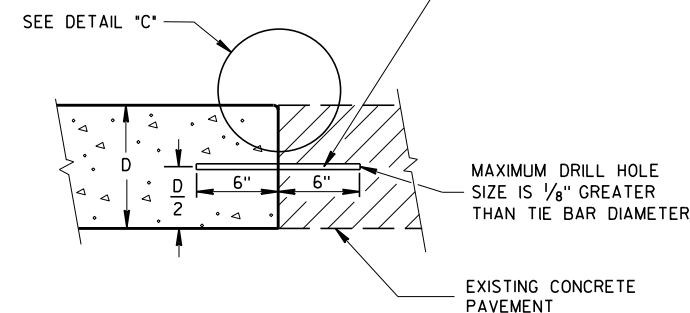
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

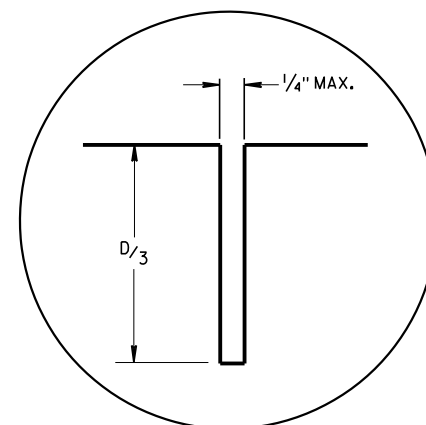


PLAN VIEW

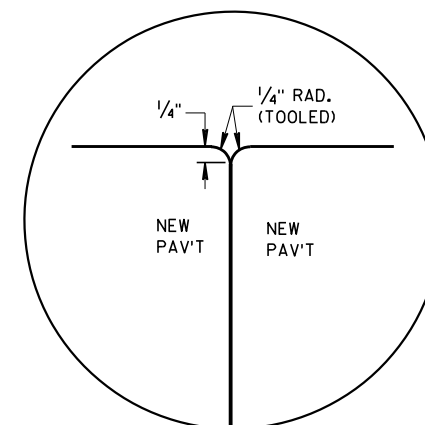
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



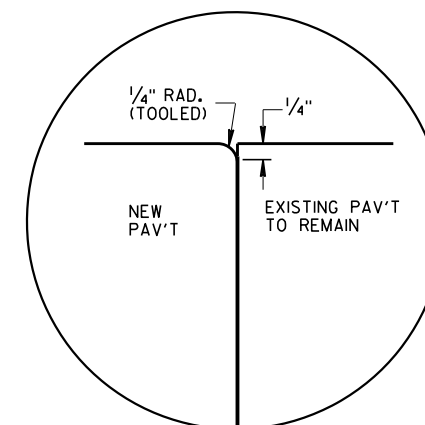
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



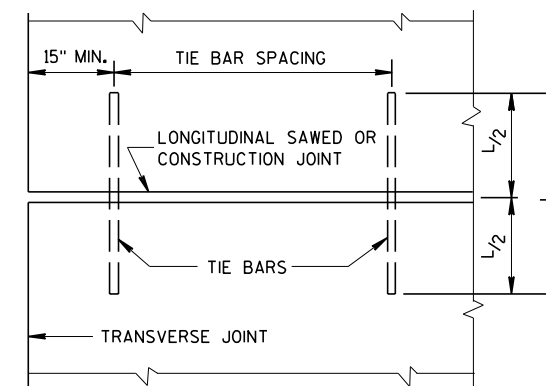
DETAIL "C"

TIE BAR TABLE

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

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

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

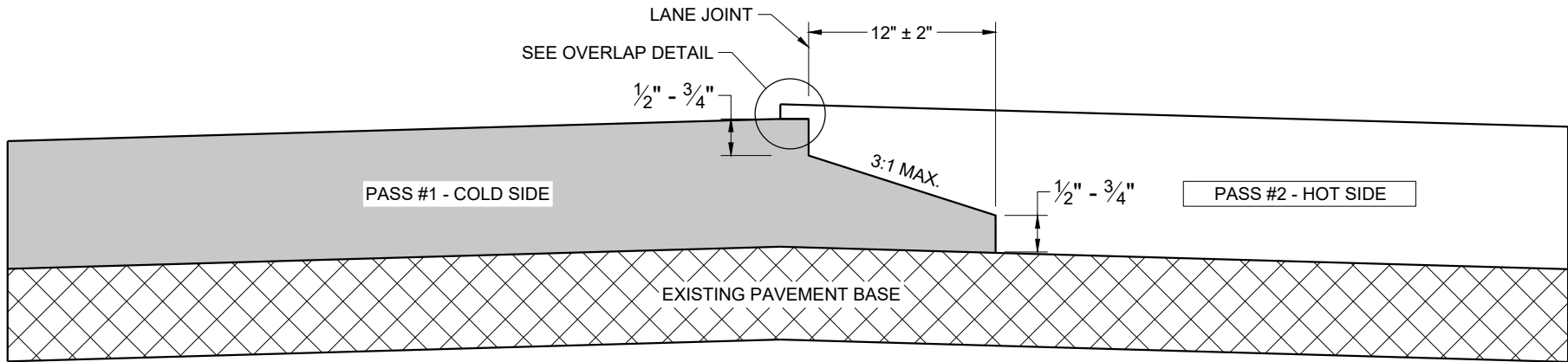


PLAN VIEW
SHOWING LOCATION OF TIE BARS

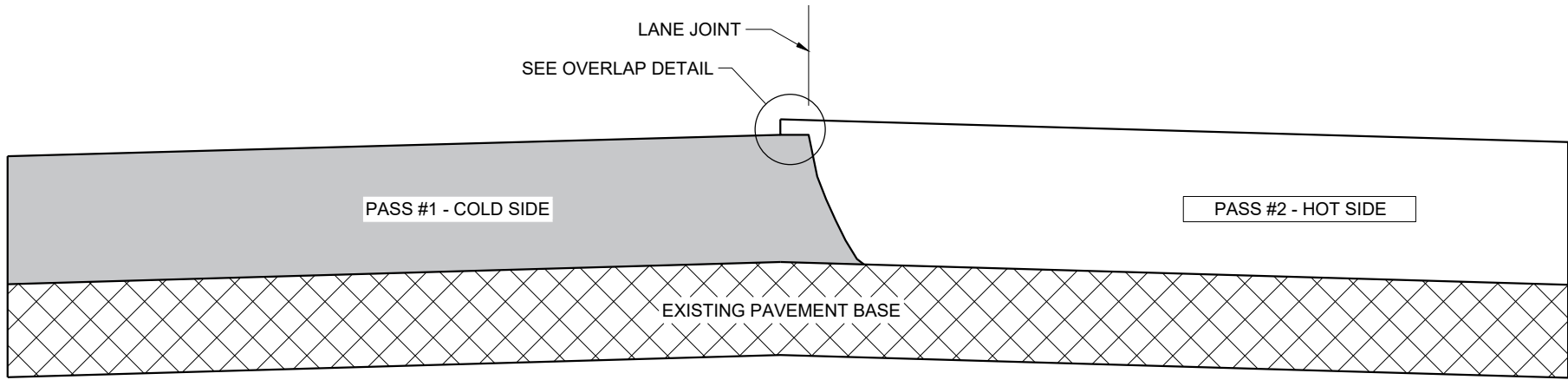
CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

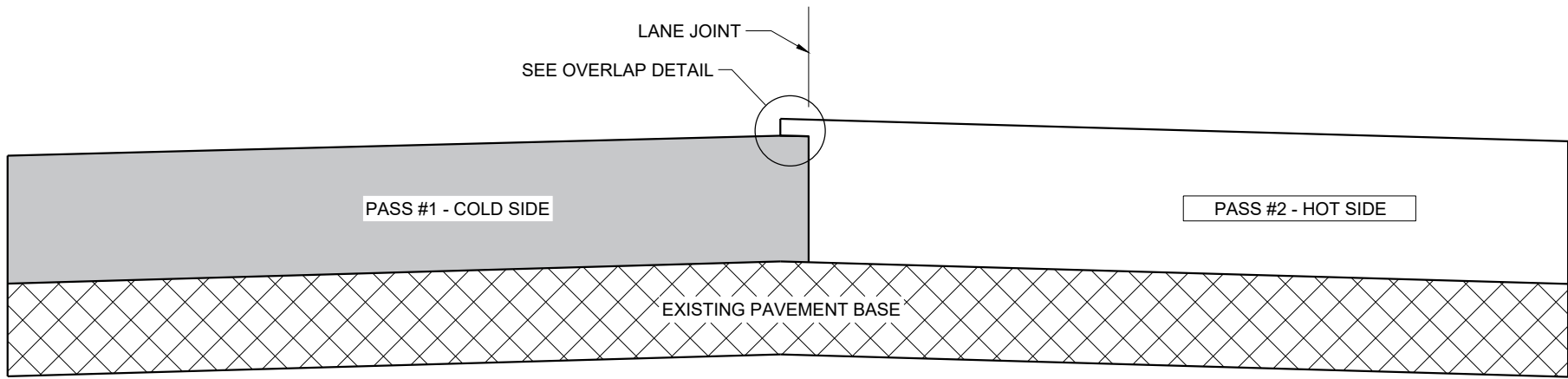
APPROVED
March 2018 /S/ Peter Kern
DATE PAVEMENT SUPE 44
FHWA



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



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

GENERAL NOTES

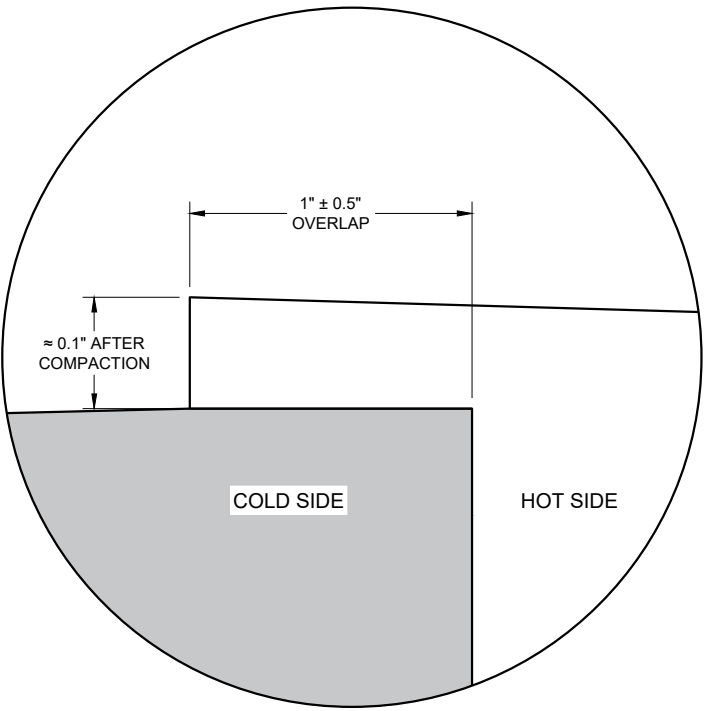
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

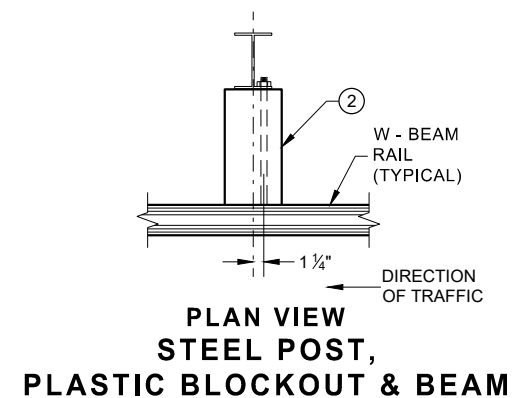
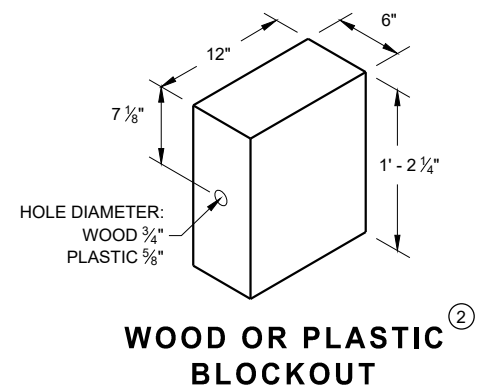
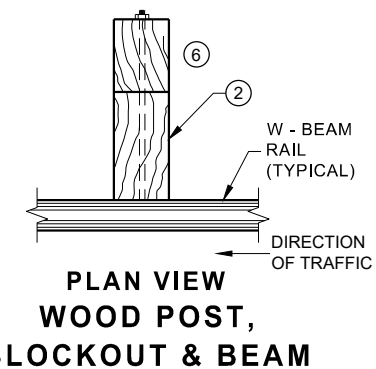
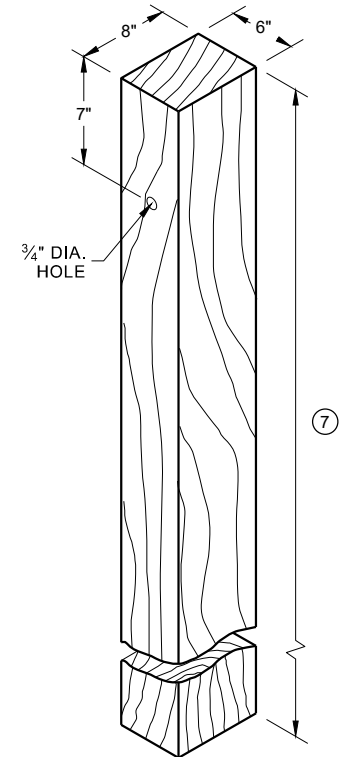
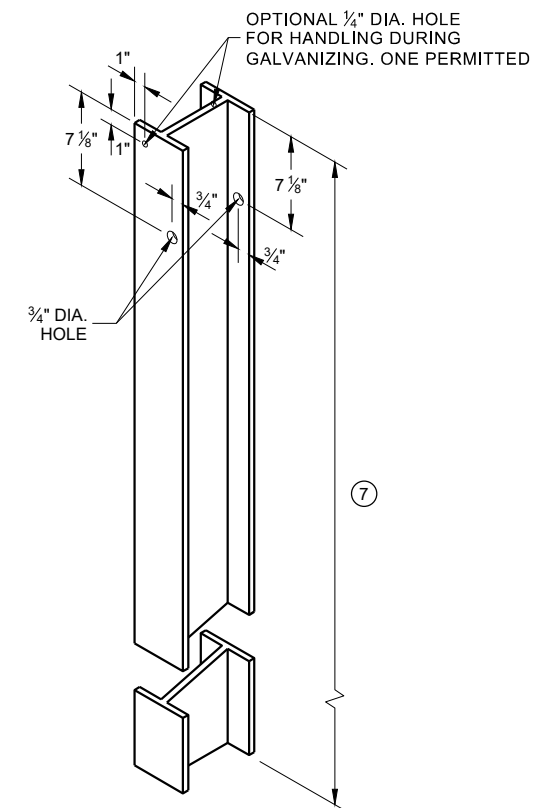
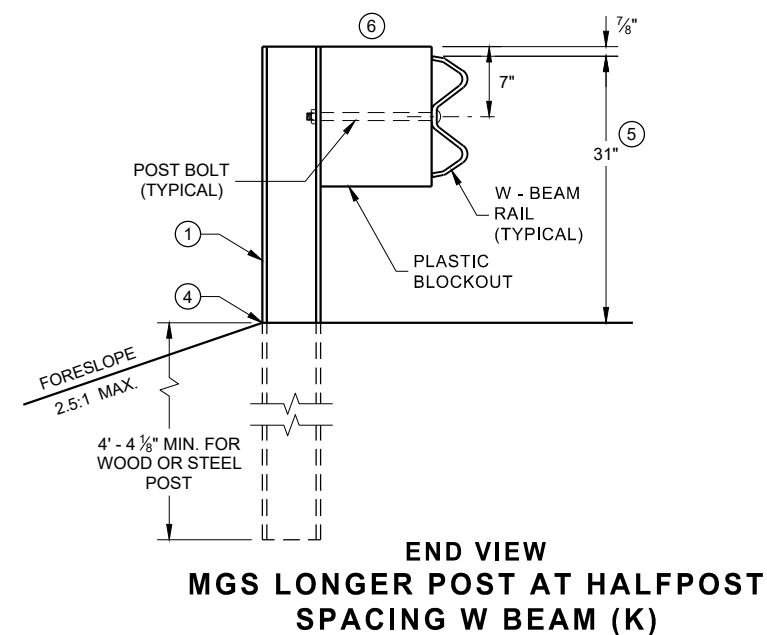
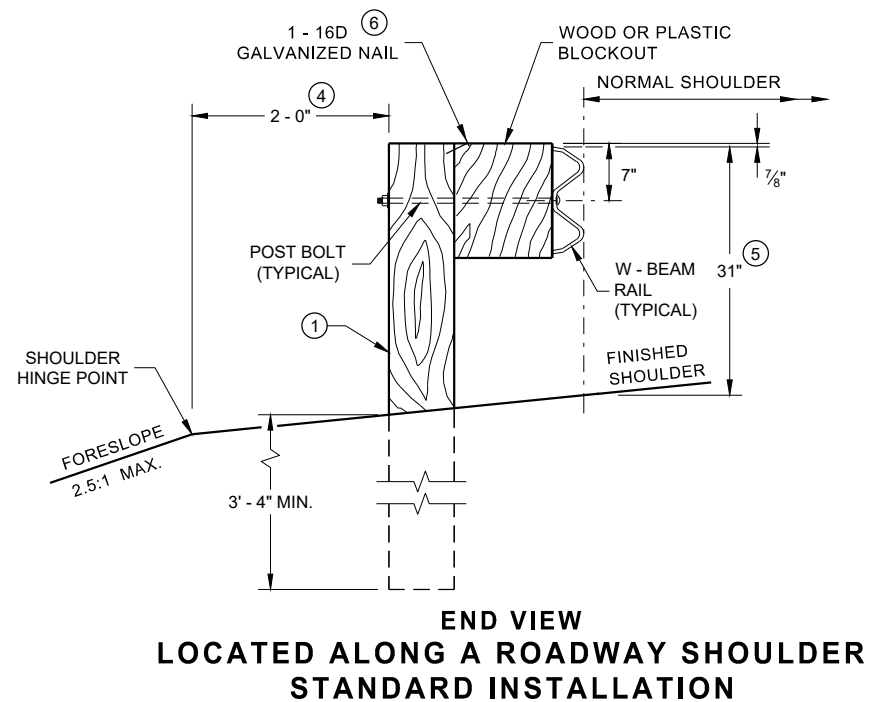
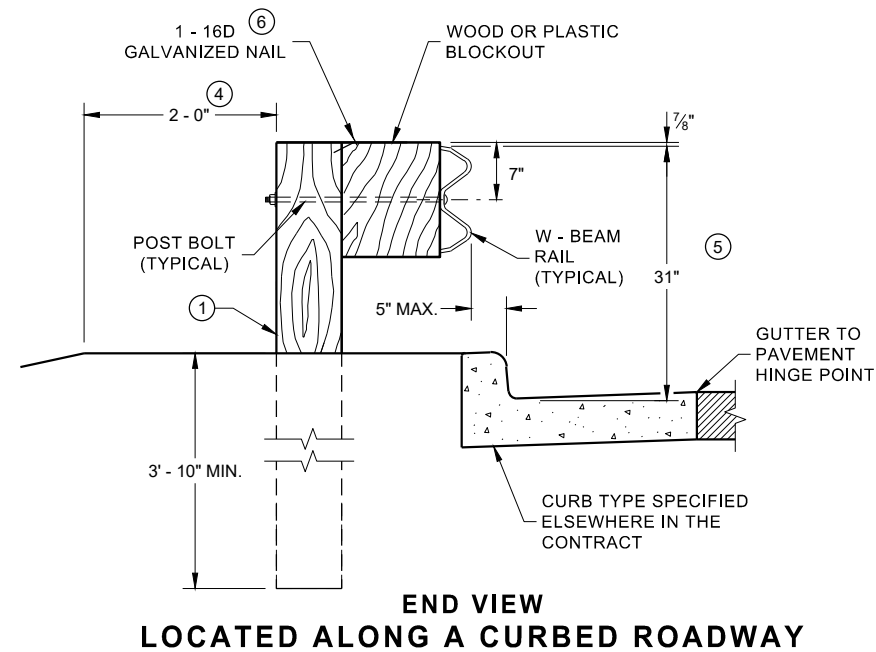
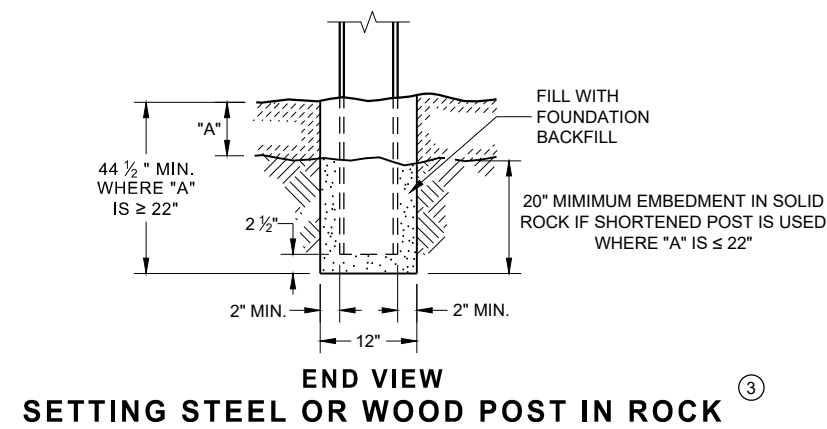
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 45

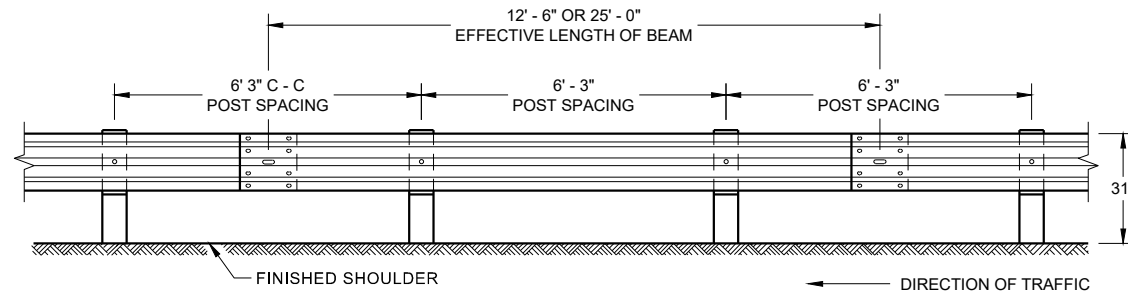
FHWA

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

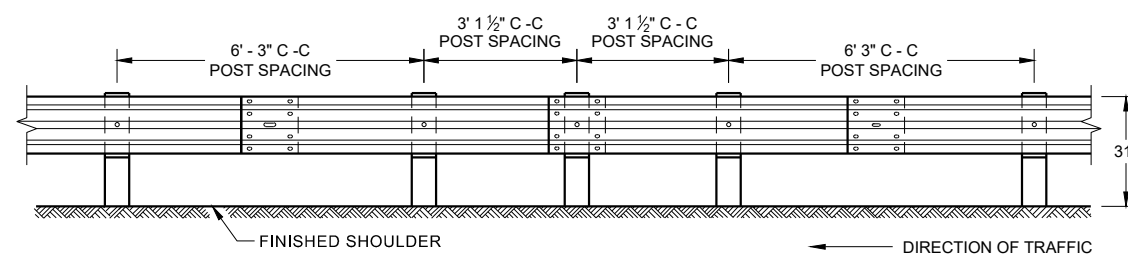


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

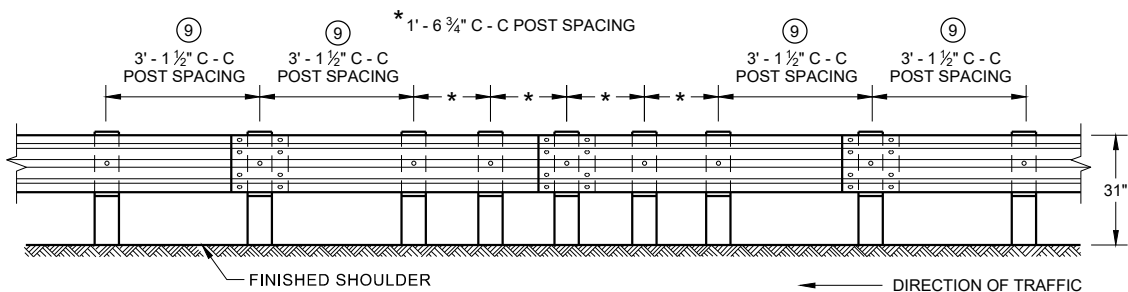
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 46



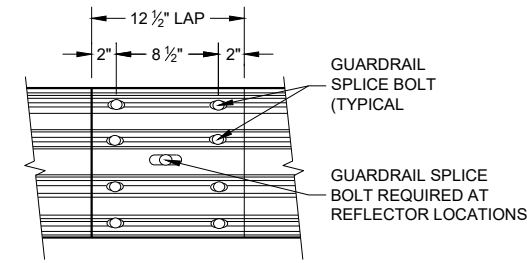
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



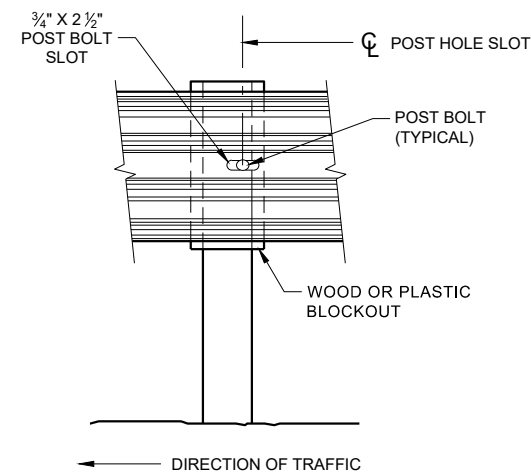
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



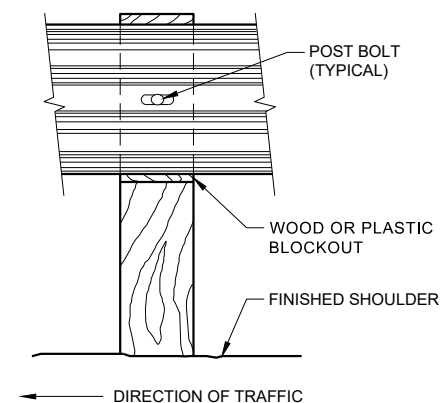
**FRONT VIEW
QUARTER POST SPACING (QS)**



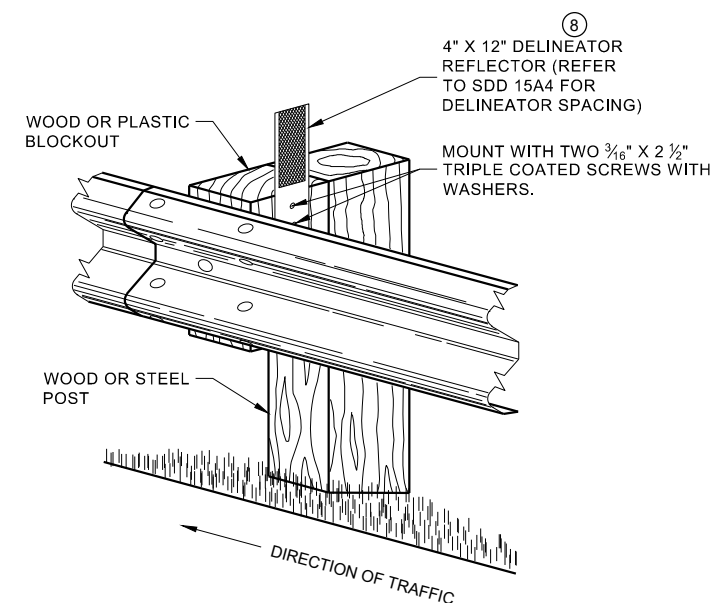
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



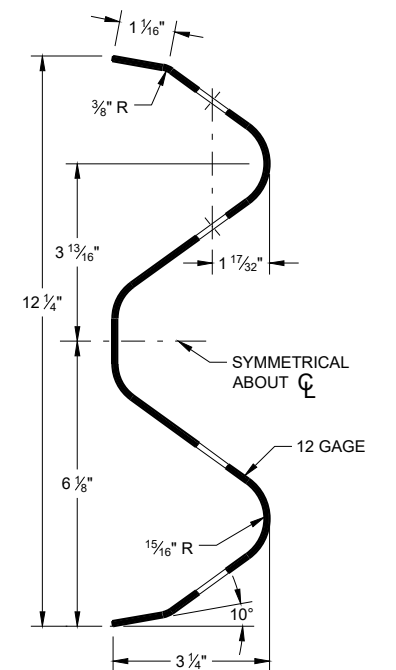
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

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 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

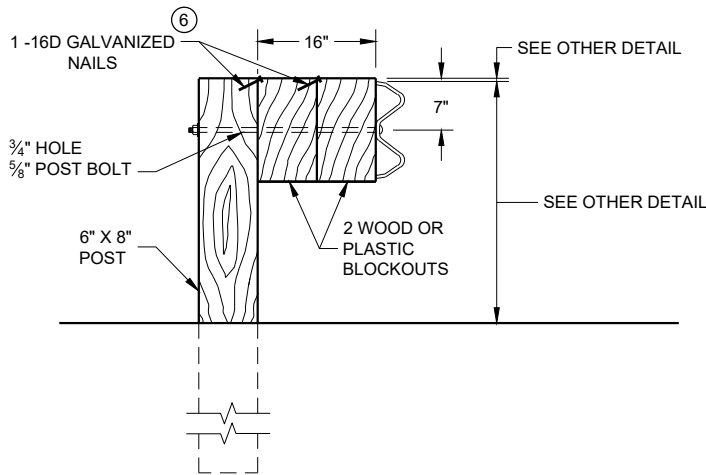
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

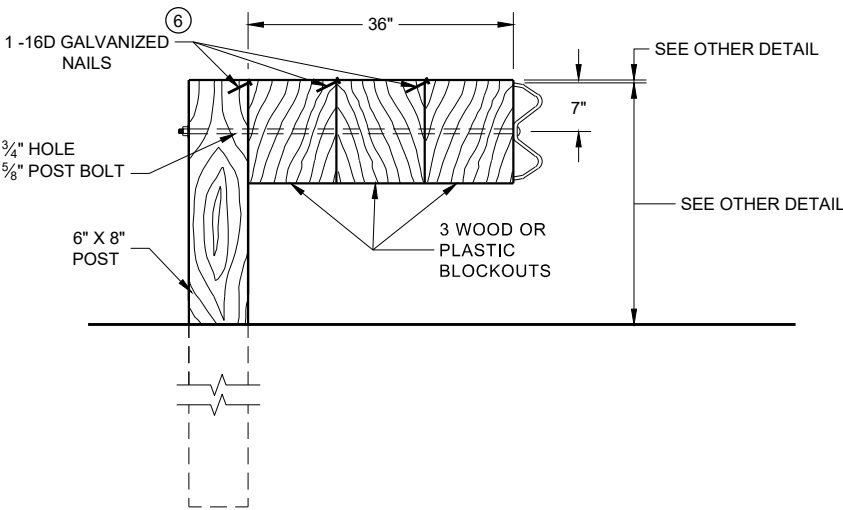
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 47



DETAIL FOR 16" BLOCKOUT DEPTH

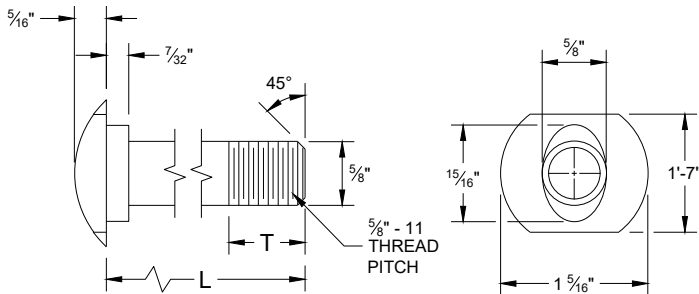
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

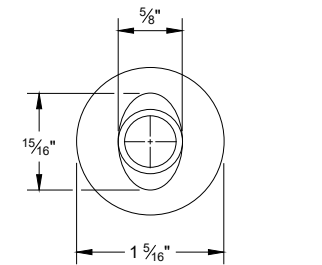
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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

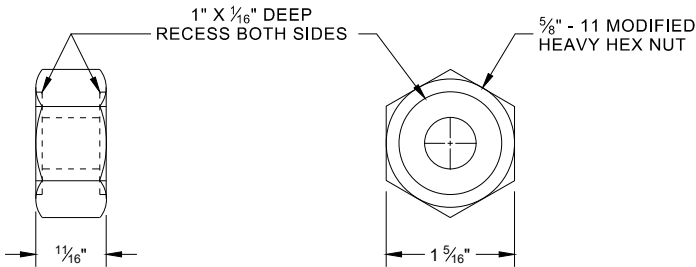


POST BOLT TABLE

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"

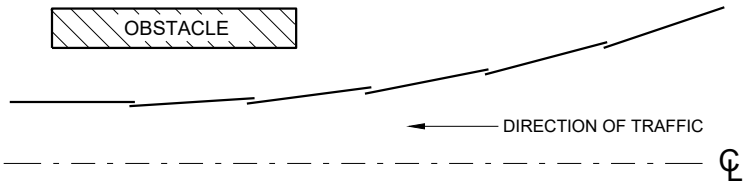


ALTERNATE BOLT HEAD

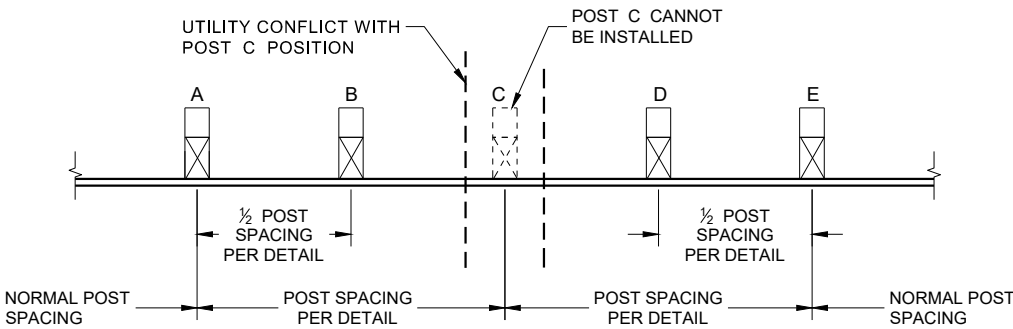


POST BOLT, SPLICE BOLT AND RECESS NUT

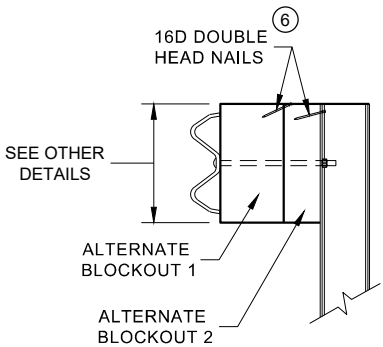
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



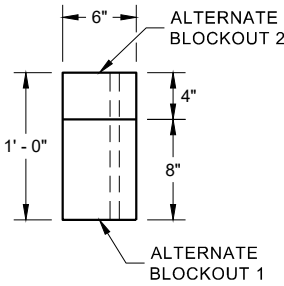
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

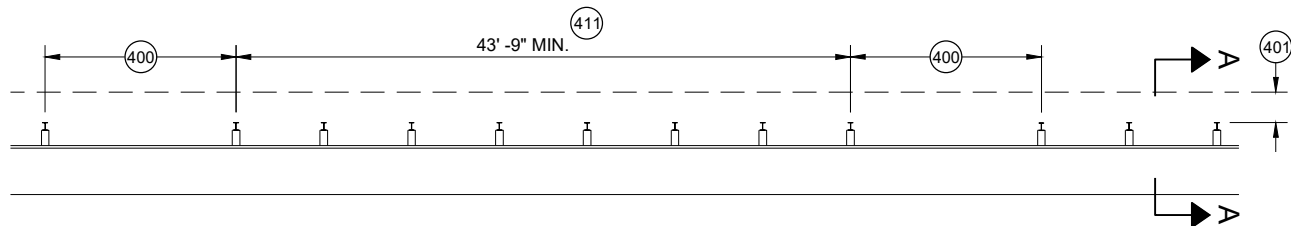


PLAN VIEW

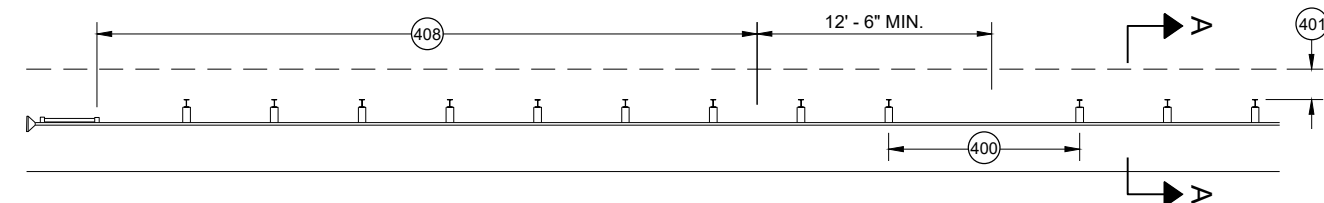
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

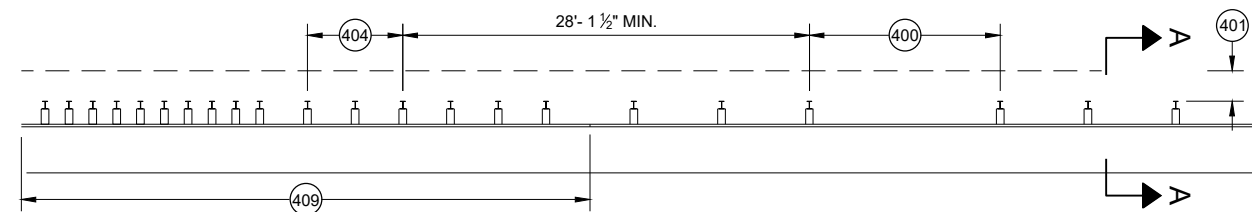
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



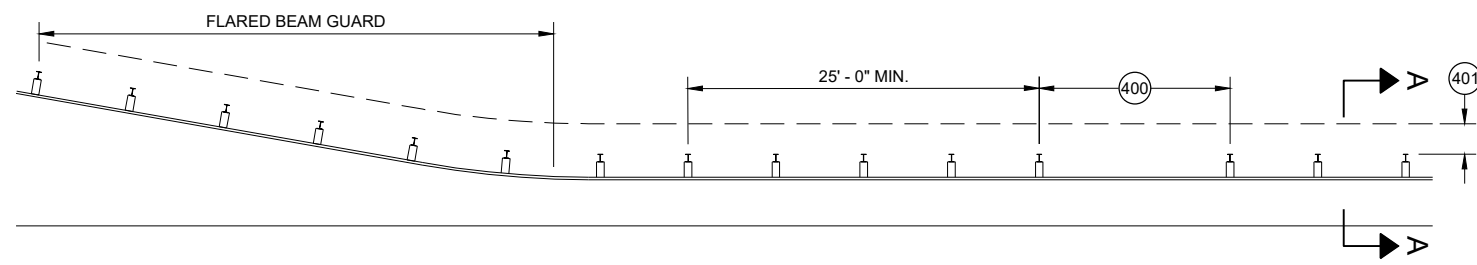
MISSING POST IN MGS GUARDRAIL



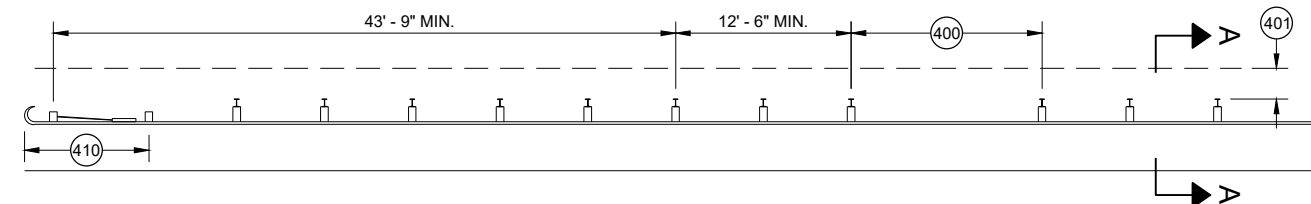
MISSING POST IN MGS GUARDRAIL NEAR EAT



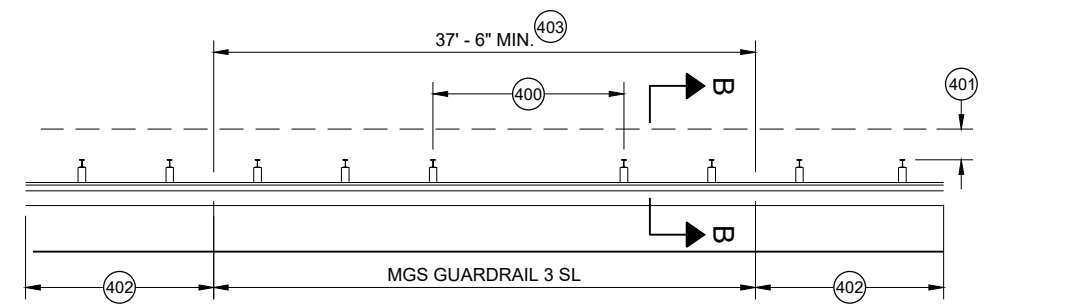
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

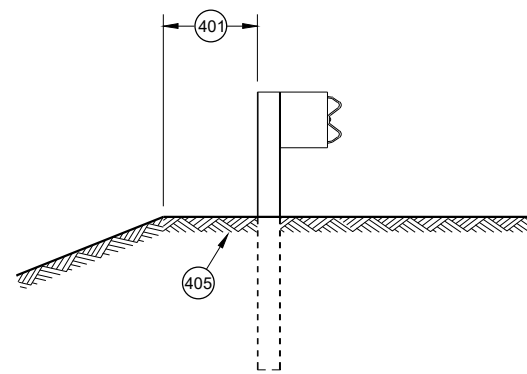


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

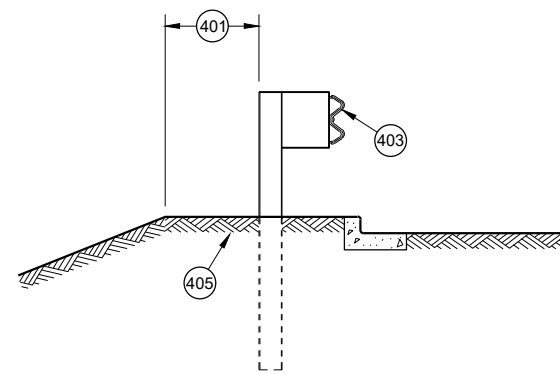


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- (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

GENERAL NOTES

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

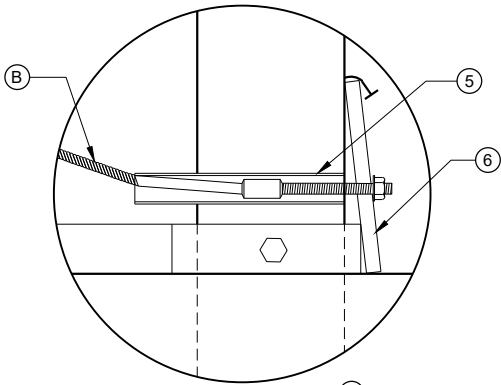
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

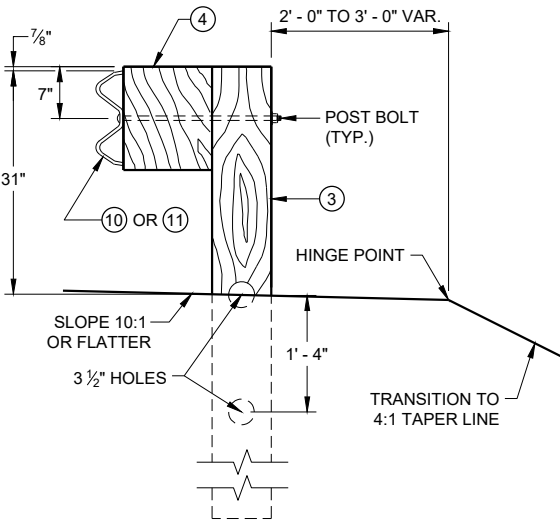
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

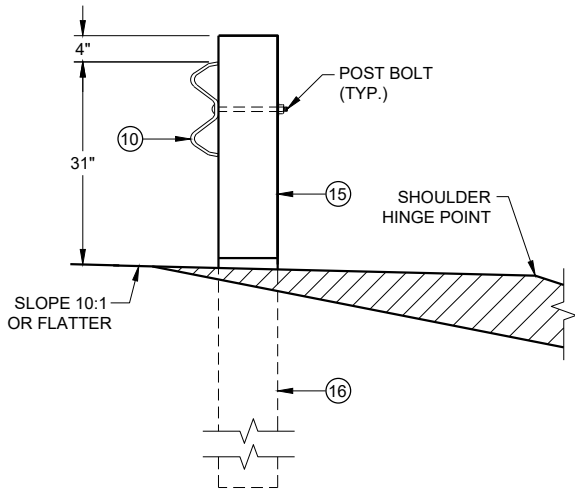
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



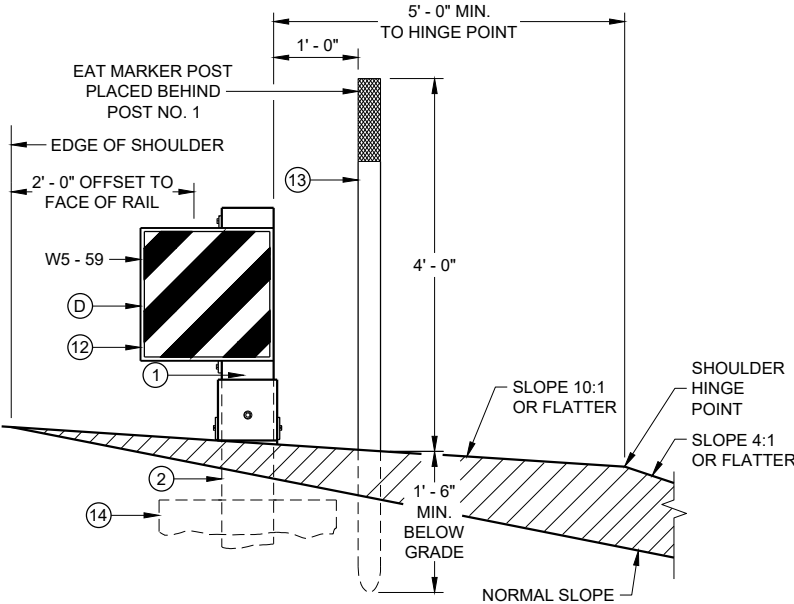
DETAIL "A"



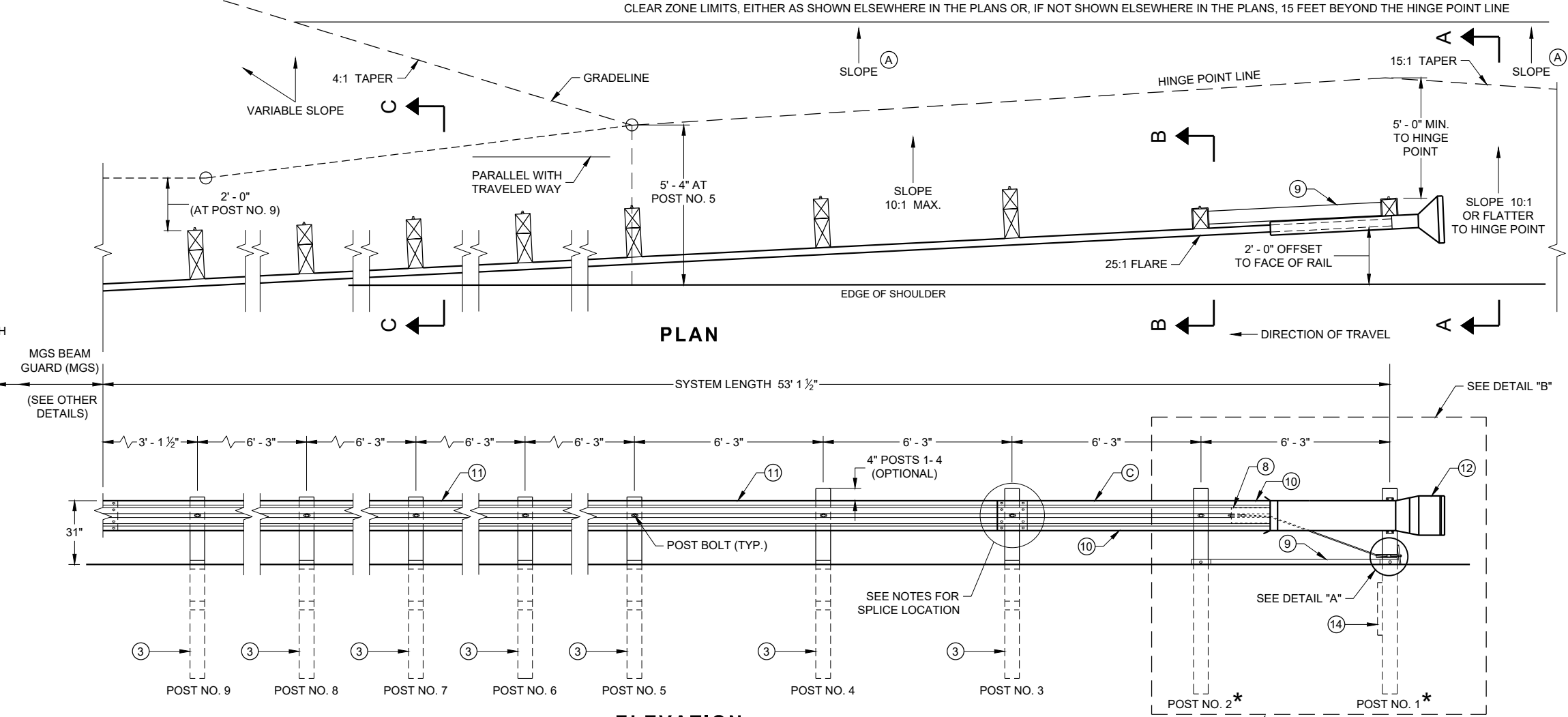
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*

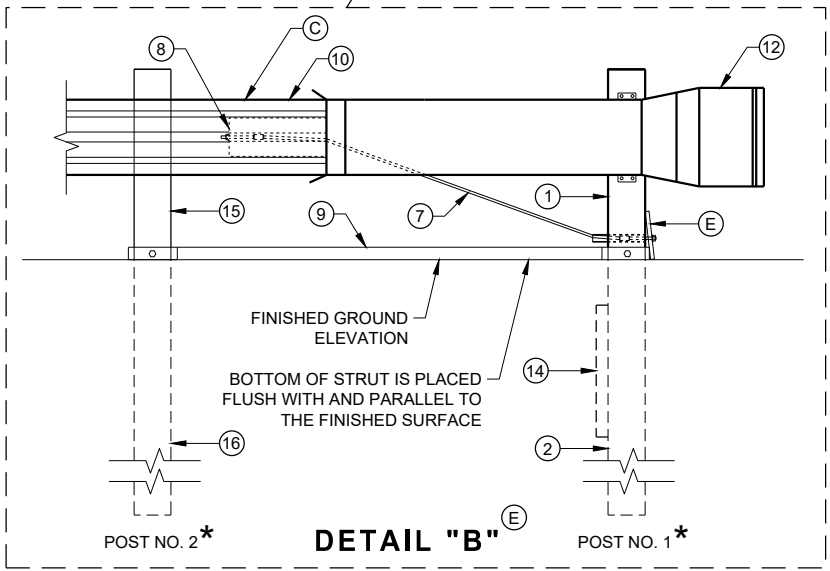


SECTION A - A
TYPICAL AT POST NO. 1*



PLAN

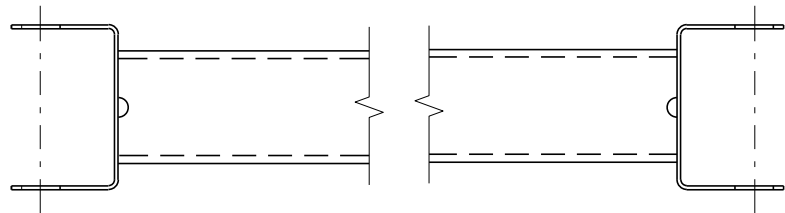
ELEVATION



DETAIL "B"

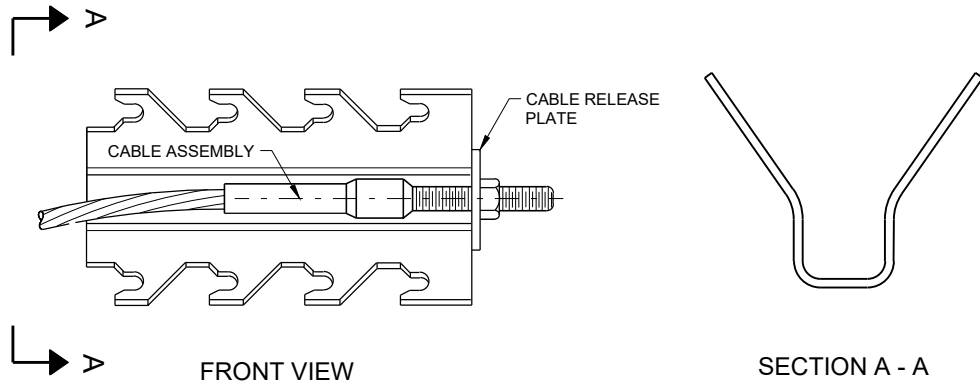
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

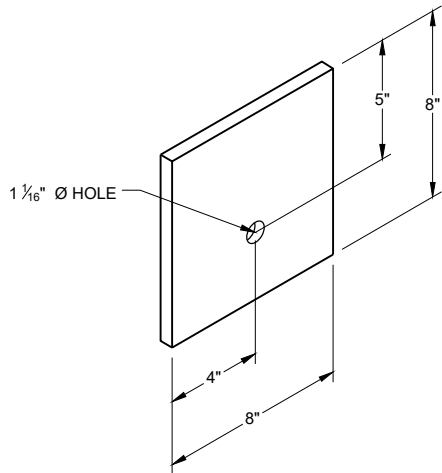


GENERIC GROUND STRUT⁹ ^E

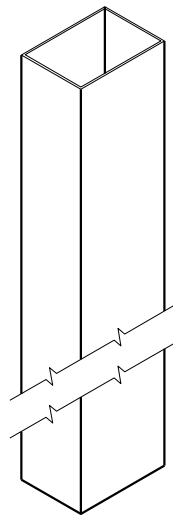
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED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



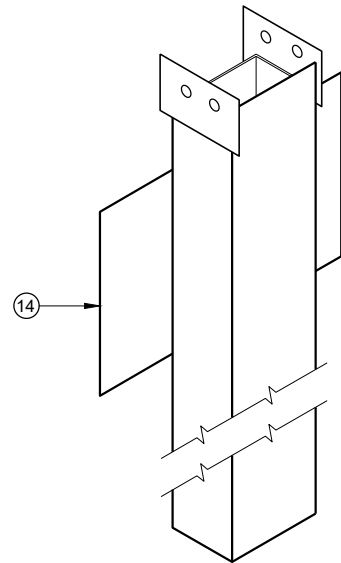
GENERIC ANCHOR CABLE BOX⁹ ^E



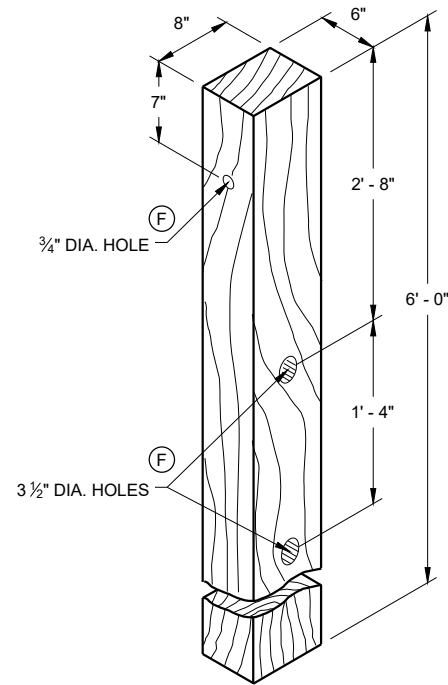
BEARING PLATE⁶ ^E



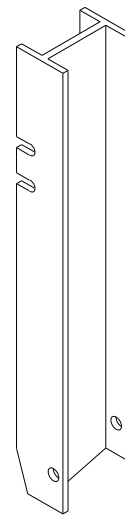
UPPER POST NO. 1 ⁽¹⁾ (E)



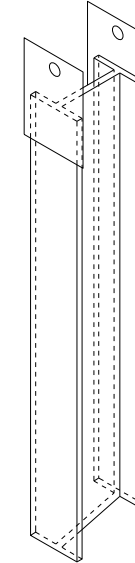
LOWER POST NO. 1 ⁽²⁾ (E)



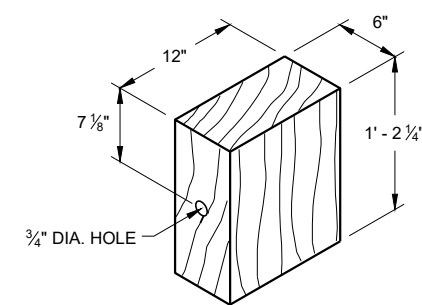
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



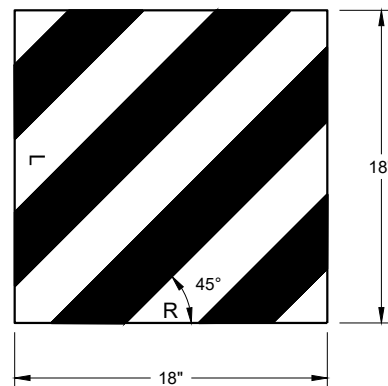
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



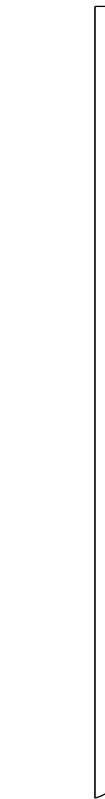
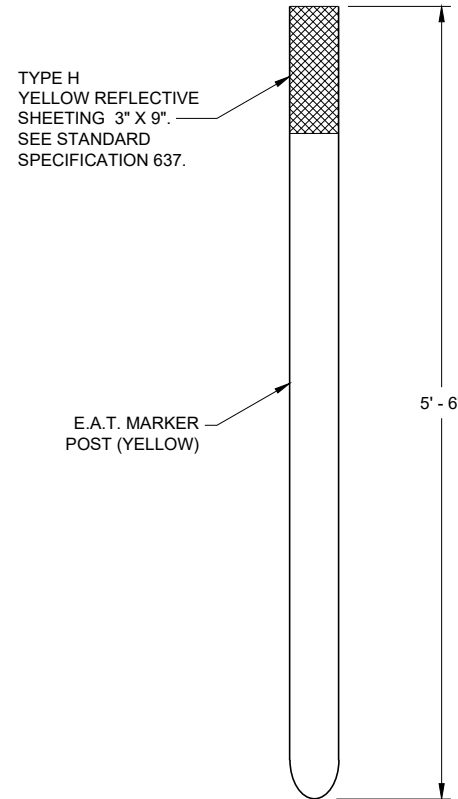
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



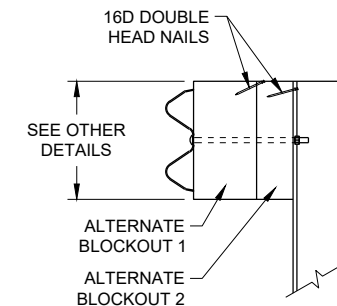
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



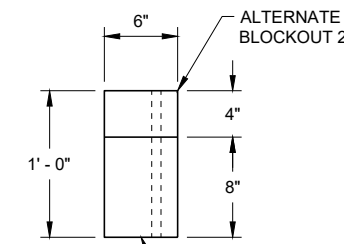
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



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



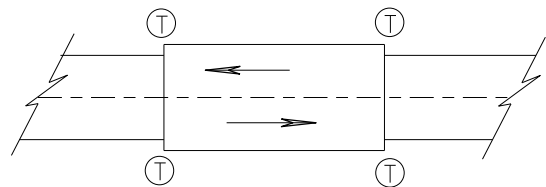
SIDE VIEW



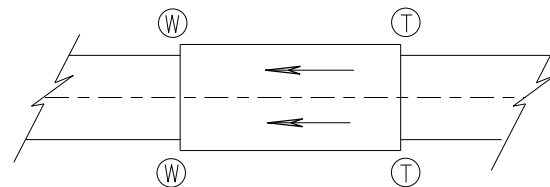
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

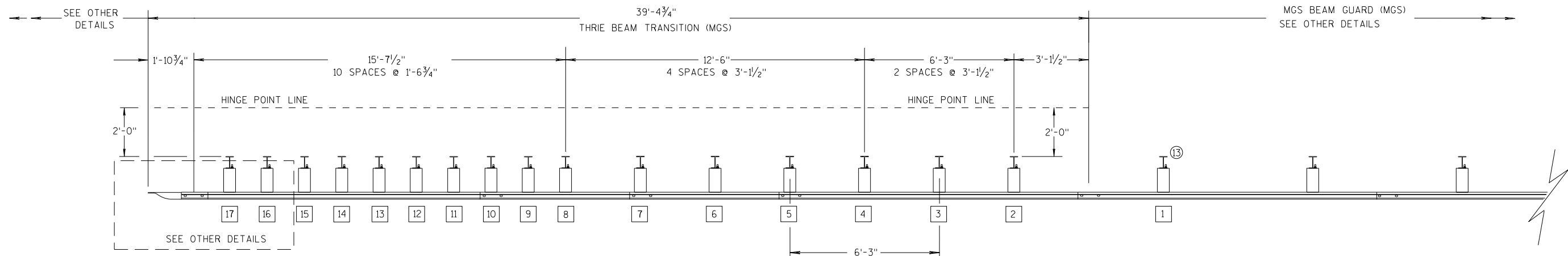
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

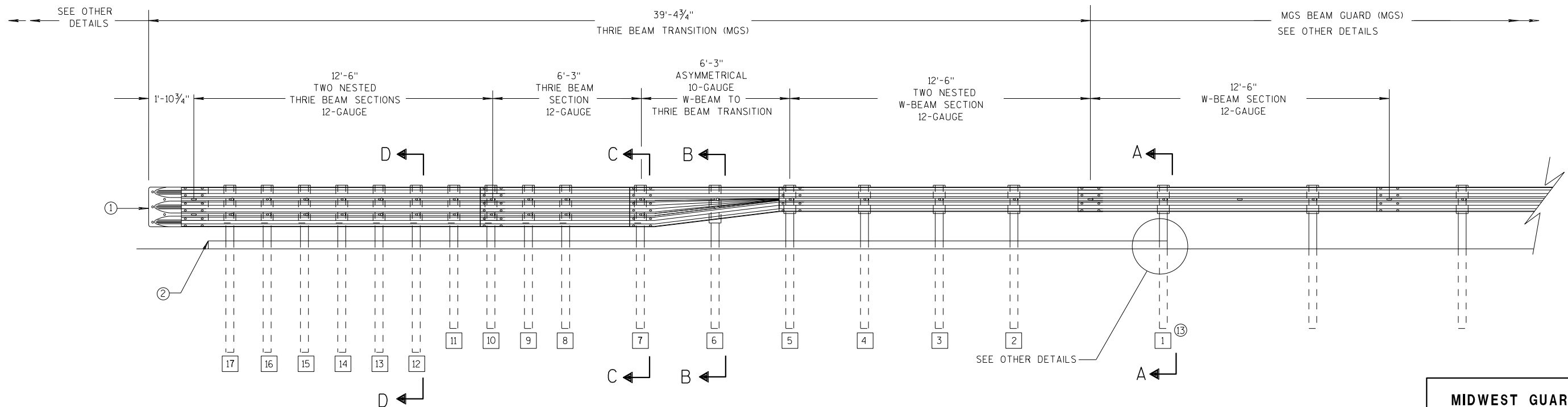
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

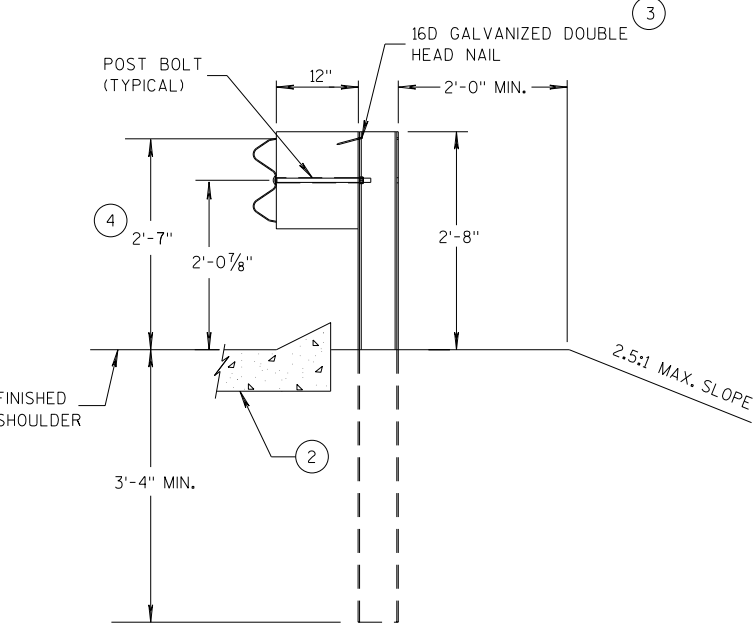
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

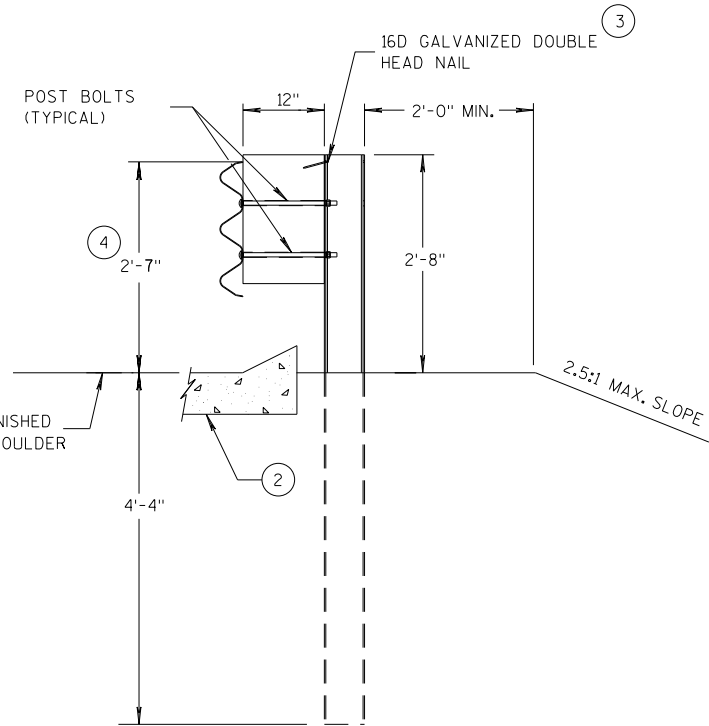
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

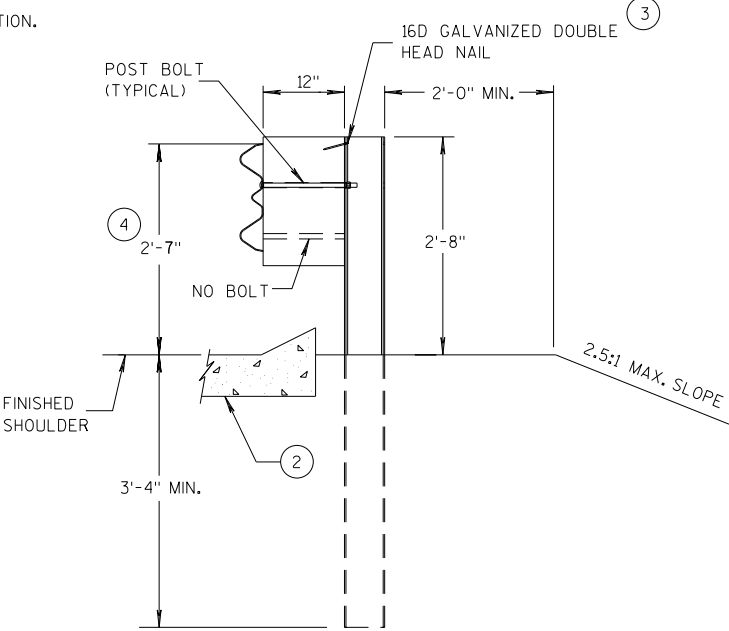
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



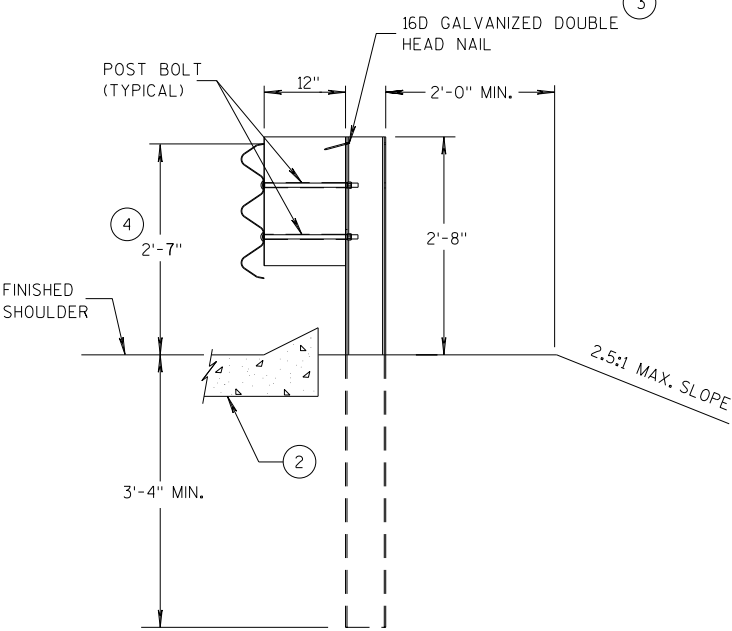
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

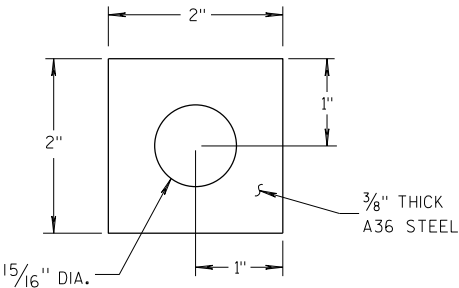
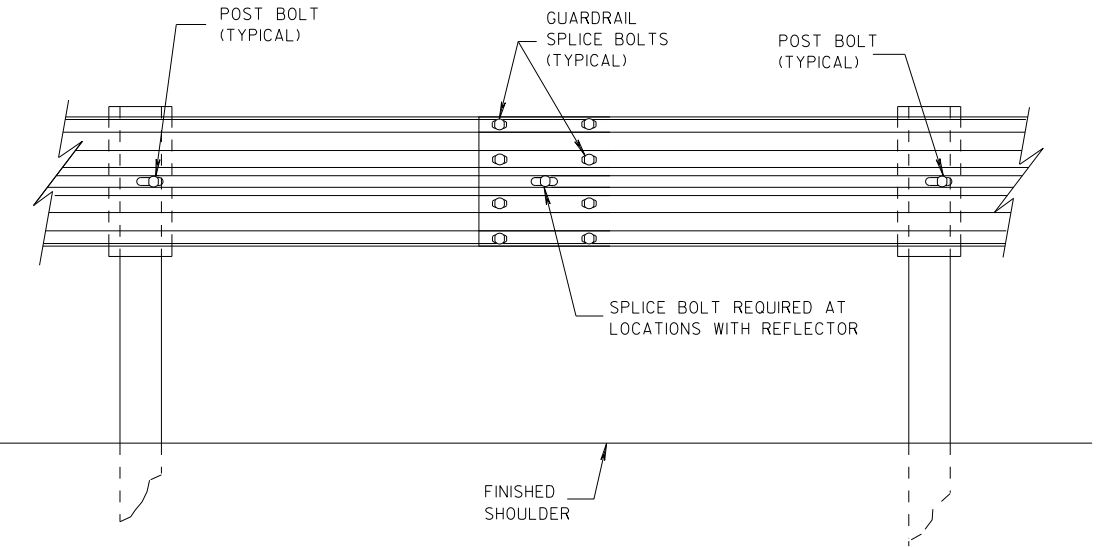
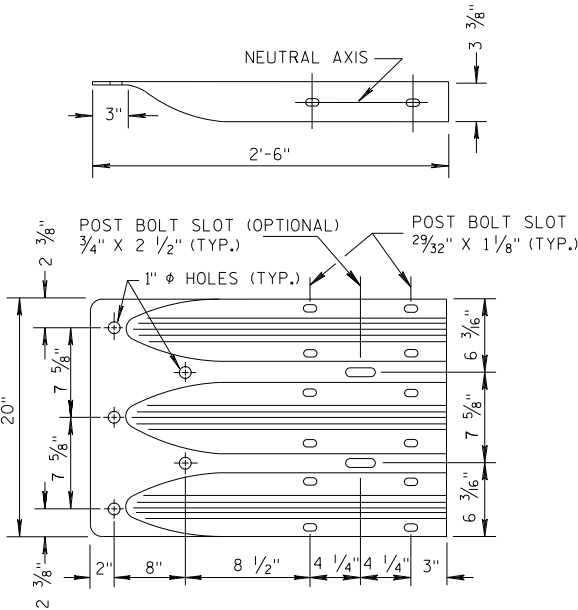


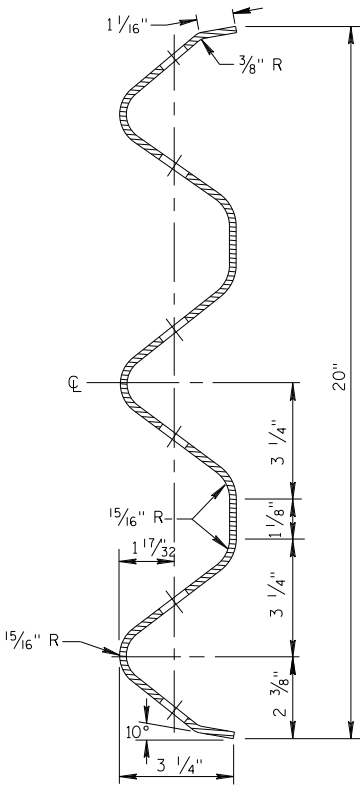
PLATE WASHER DETAIL



SPlice DETAIL



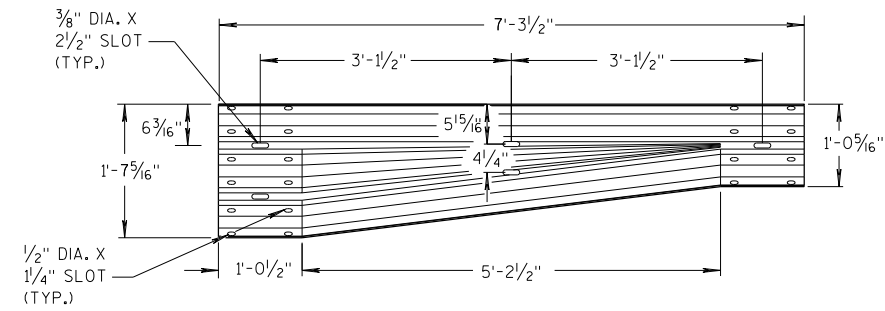
THRIE BEAM
TERMINAL CONNECTOR



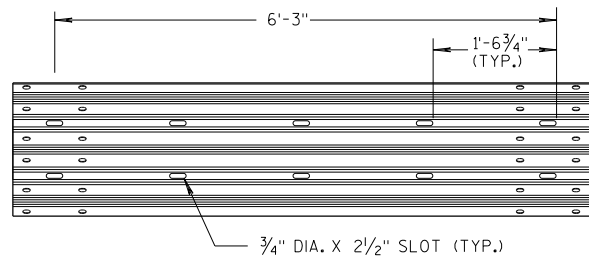
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

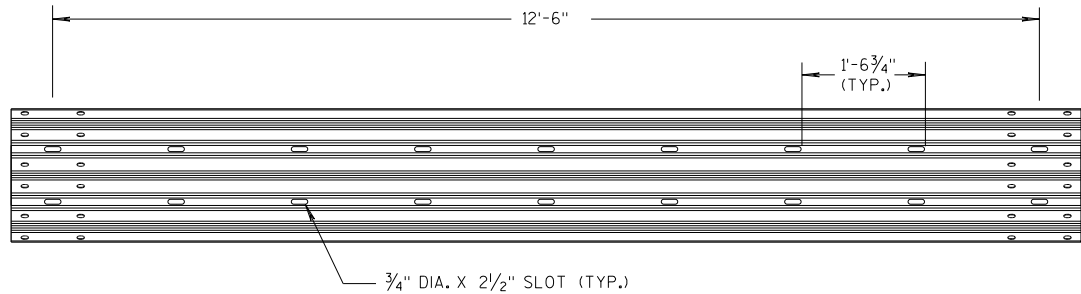
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



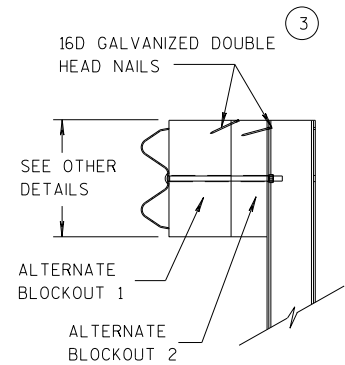
W-BEAM TO THRIE BEAM TRANSITION SECTION



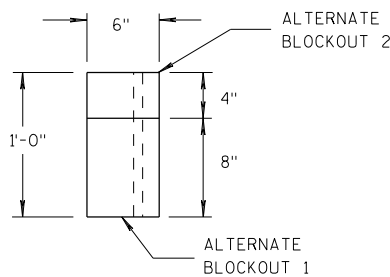
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

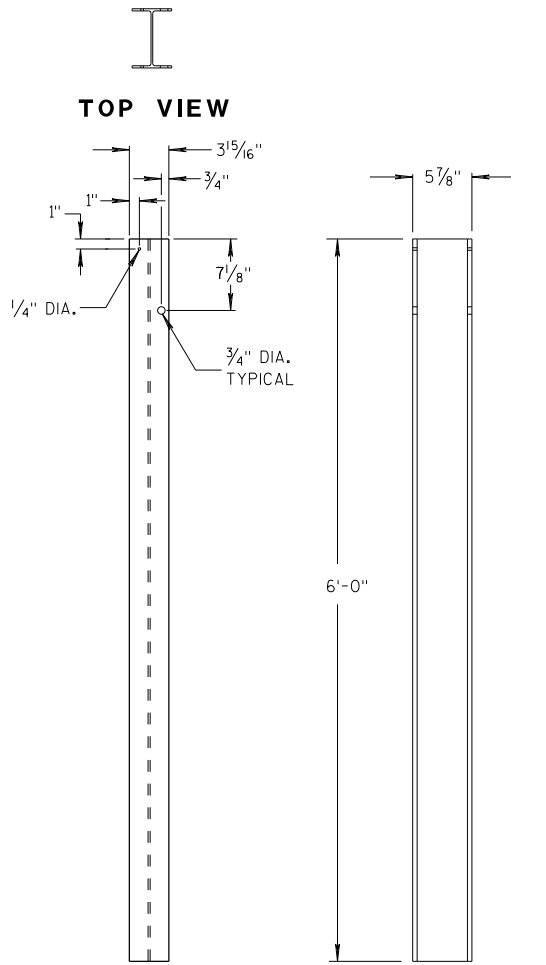


SIDE VIEW



TOP VIEW

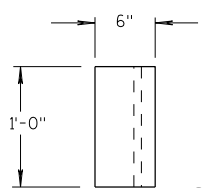
ALTERNATE WOOD BLOCKOUT DETAIL



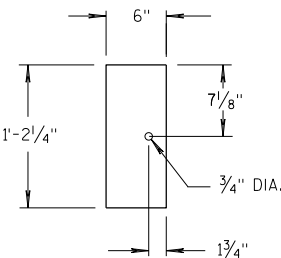
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

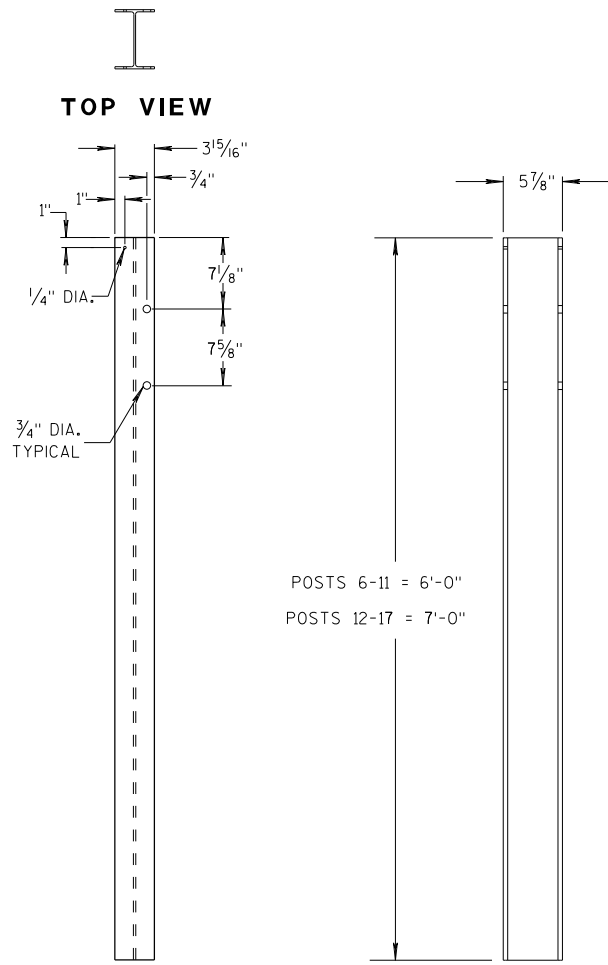


TOP VIEW



FRONT VIEW

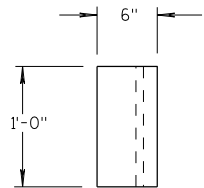
BLOCKOUT POSTS 1-5



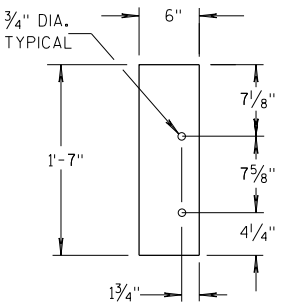
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

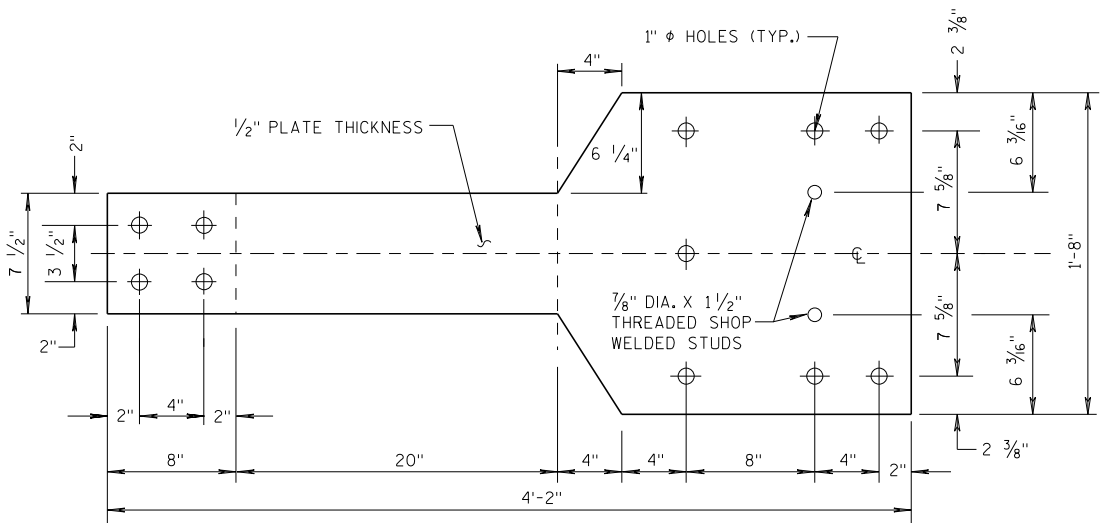
⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

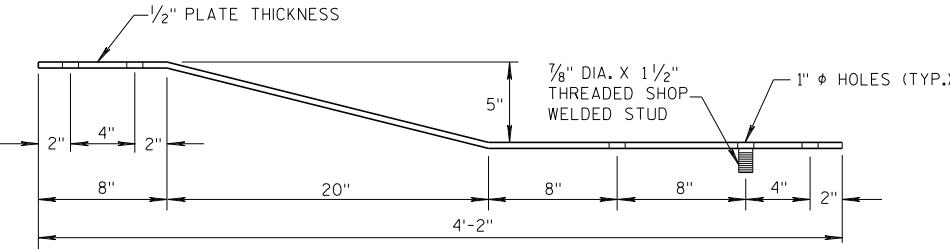
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

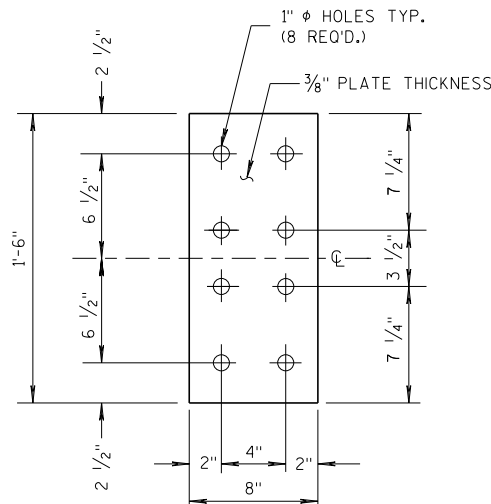


FRONT VIEW



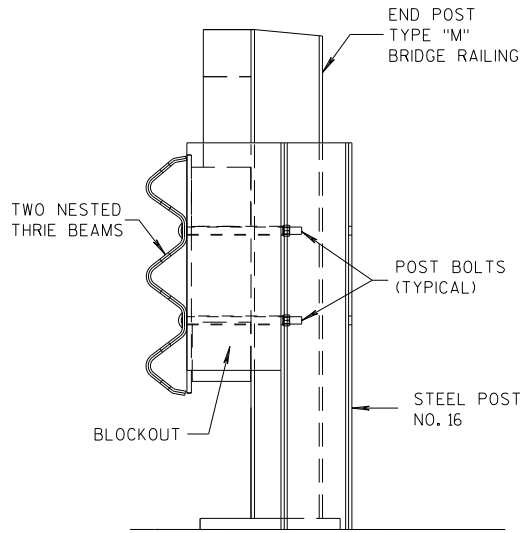
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

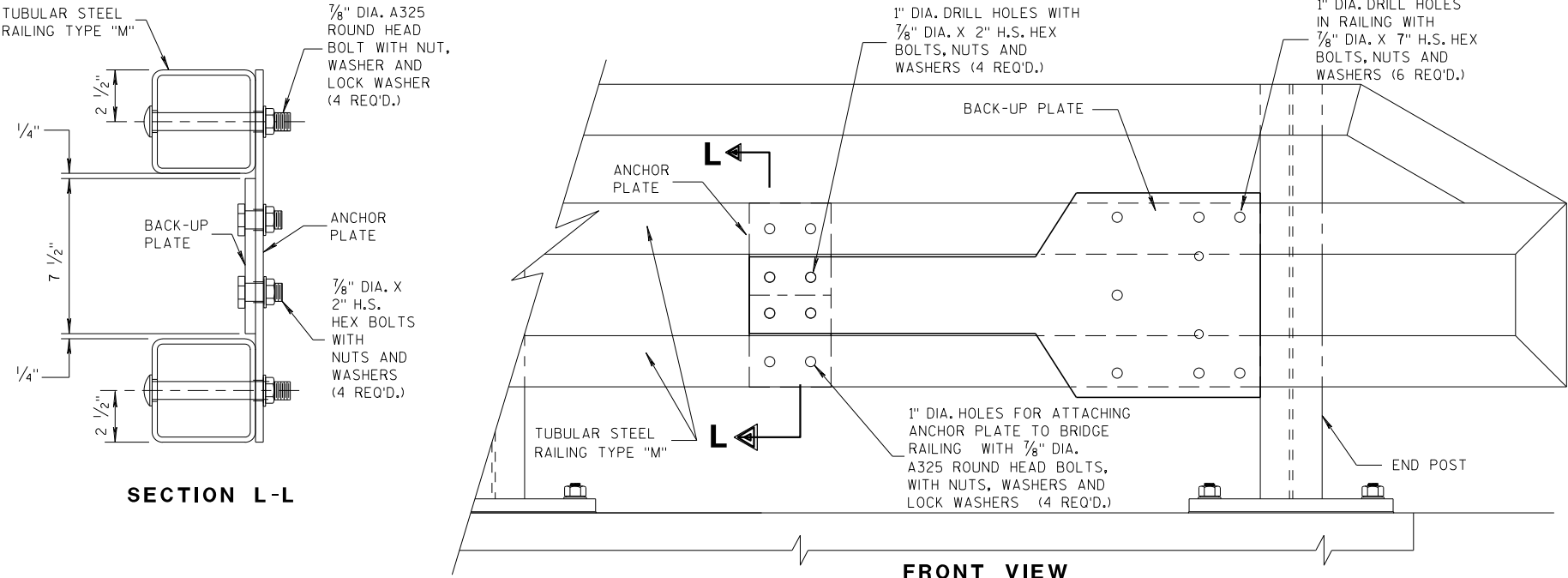


FRONT VIEW

ANCHOR PLATE DETAIL, TYPE "M"



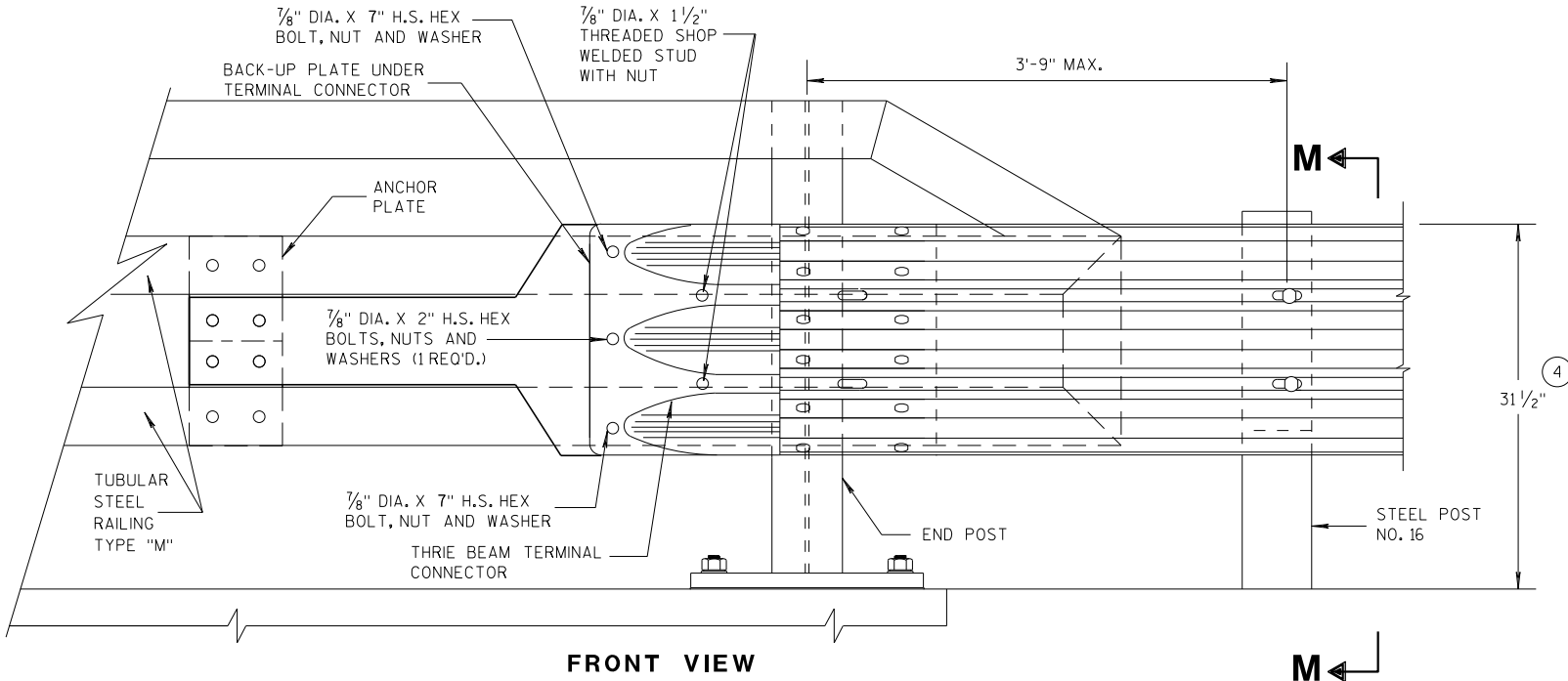
SECTION M-M



SECTION L-L

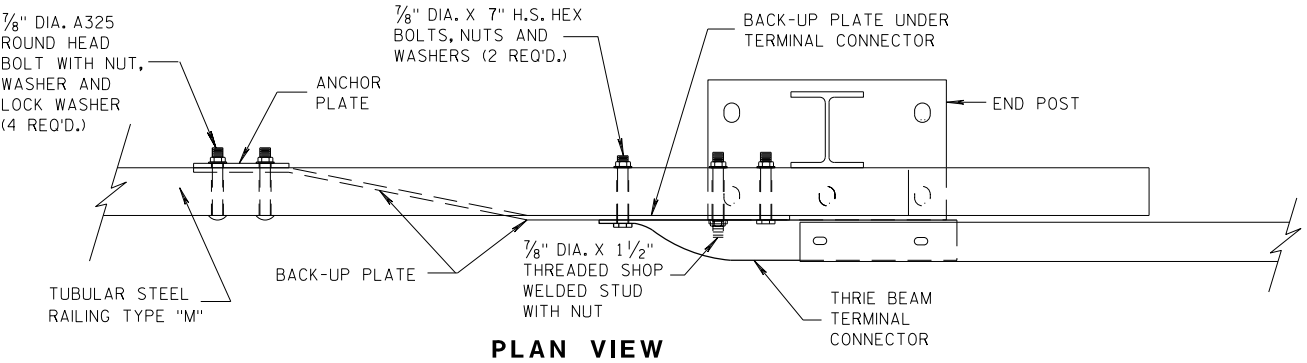
FRONT VIEW

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



FRONT VIEW

M



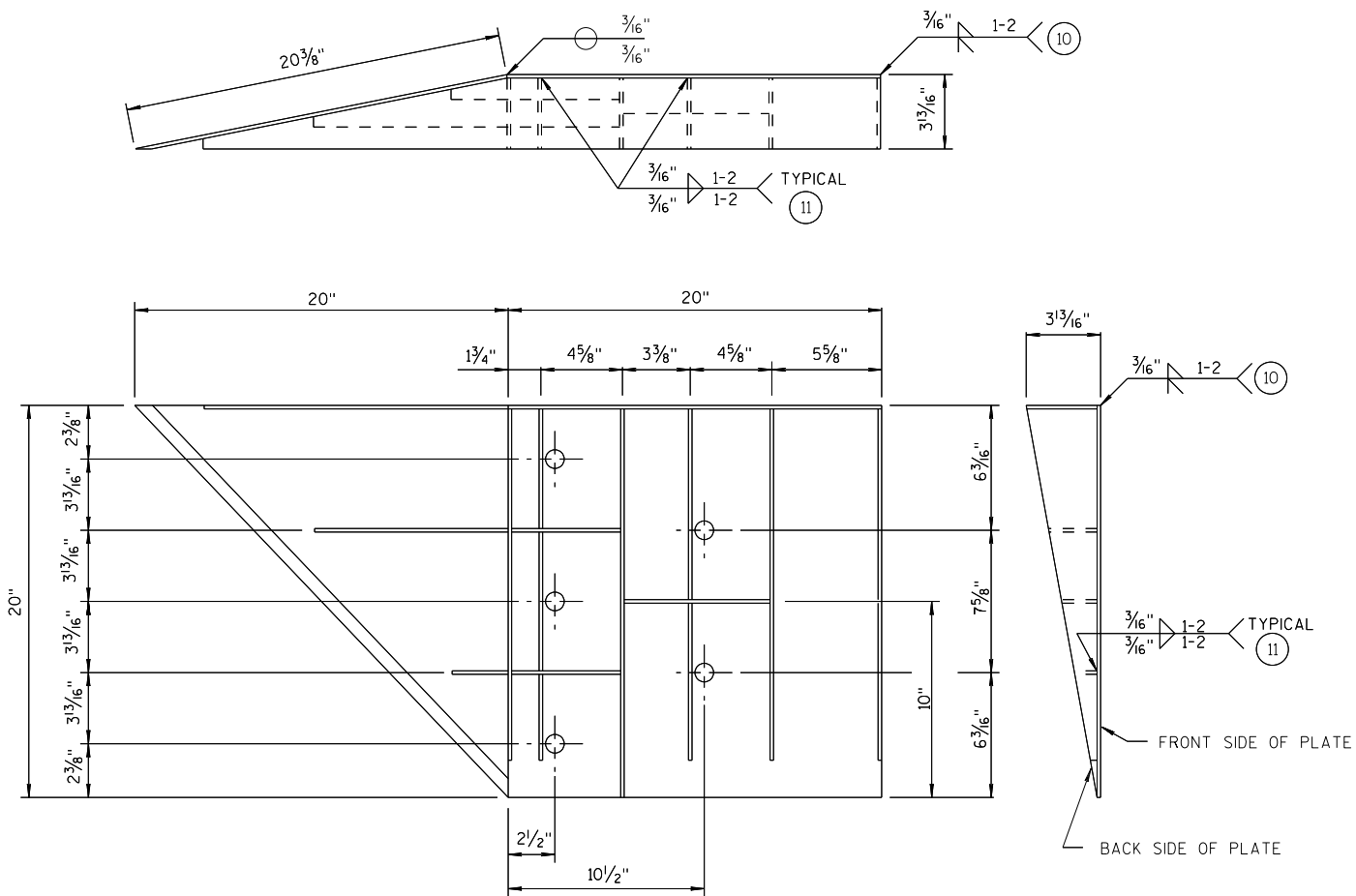
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERVISOR
FHWA 56 ENT



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

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

SINGLE SLOPE CONNECTION PLATE

GENERAL NOTES

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

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

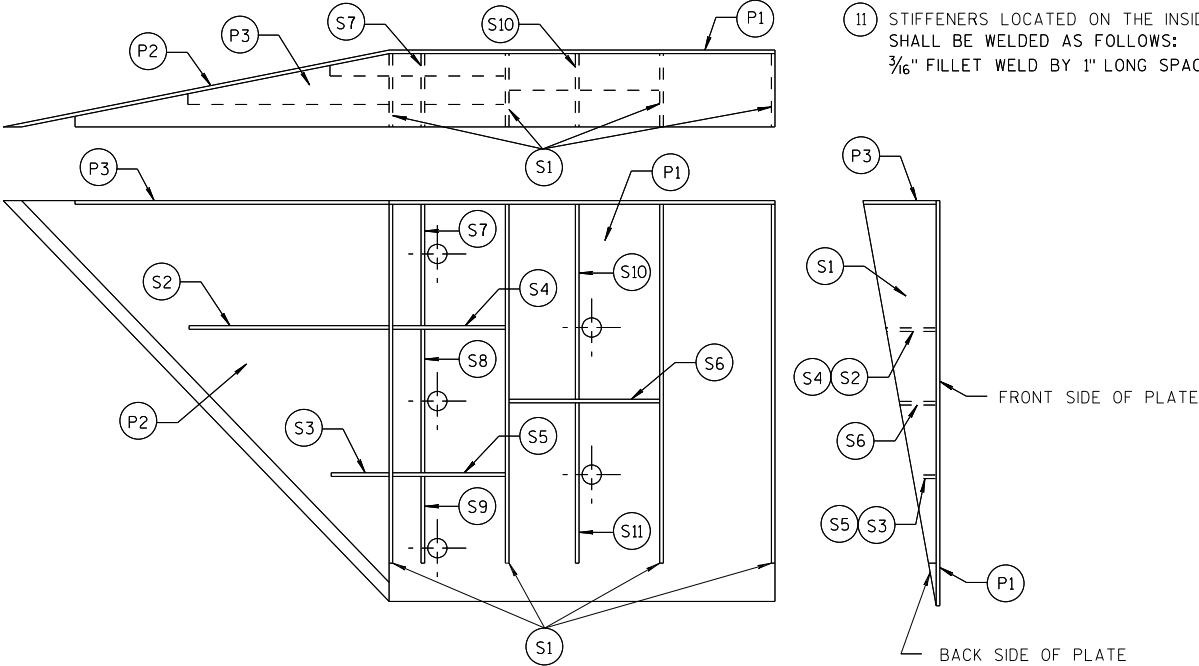
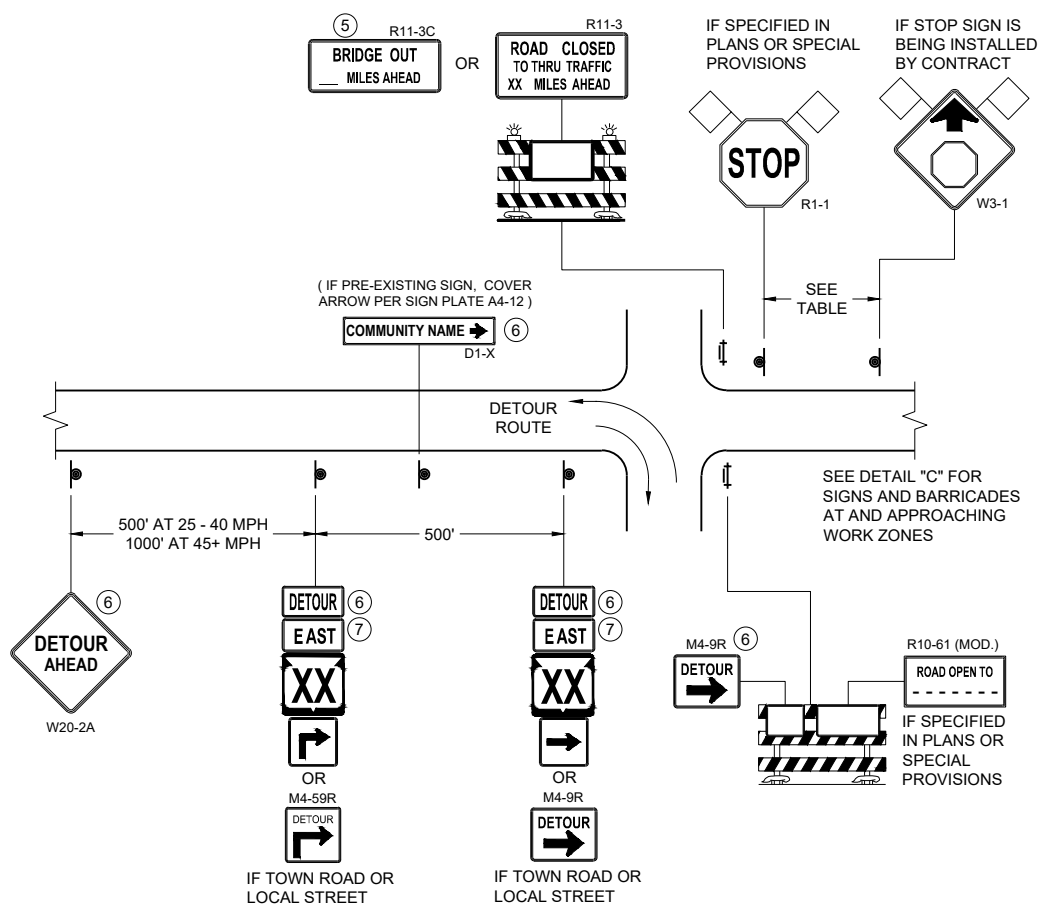


PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

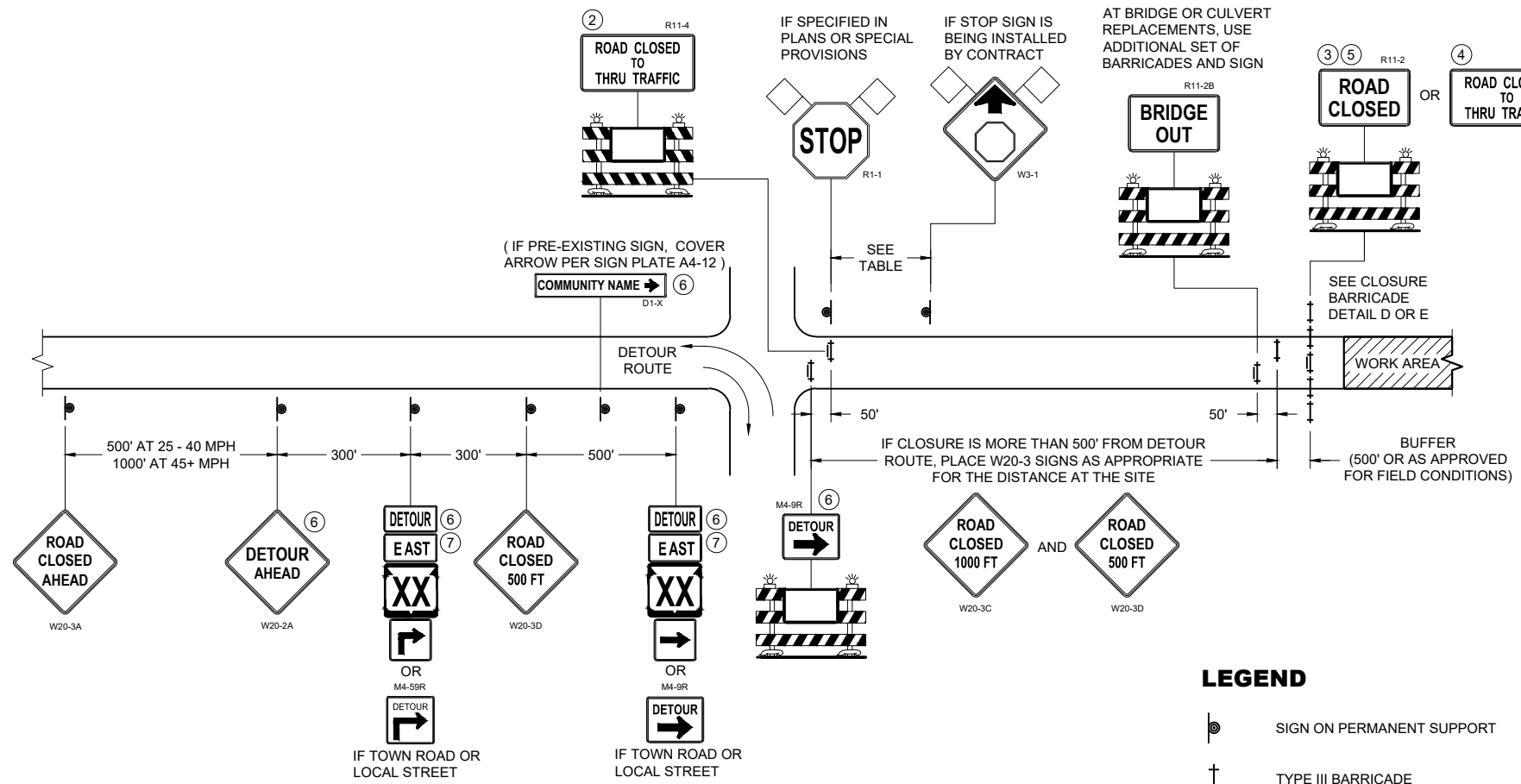
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

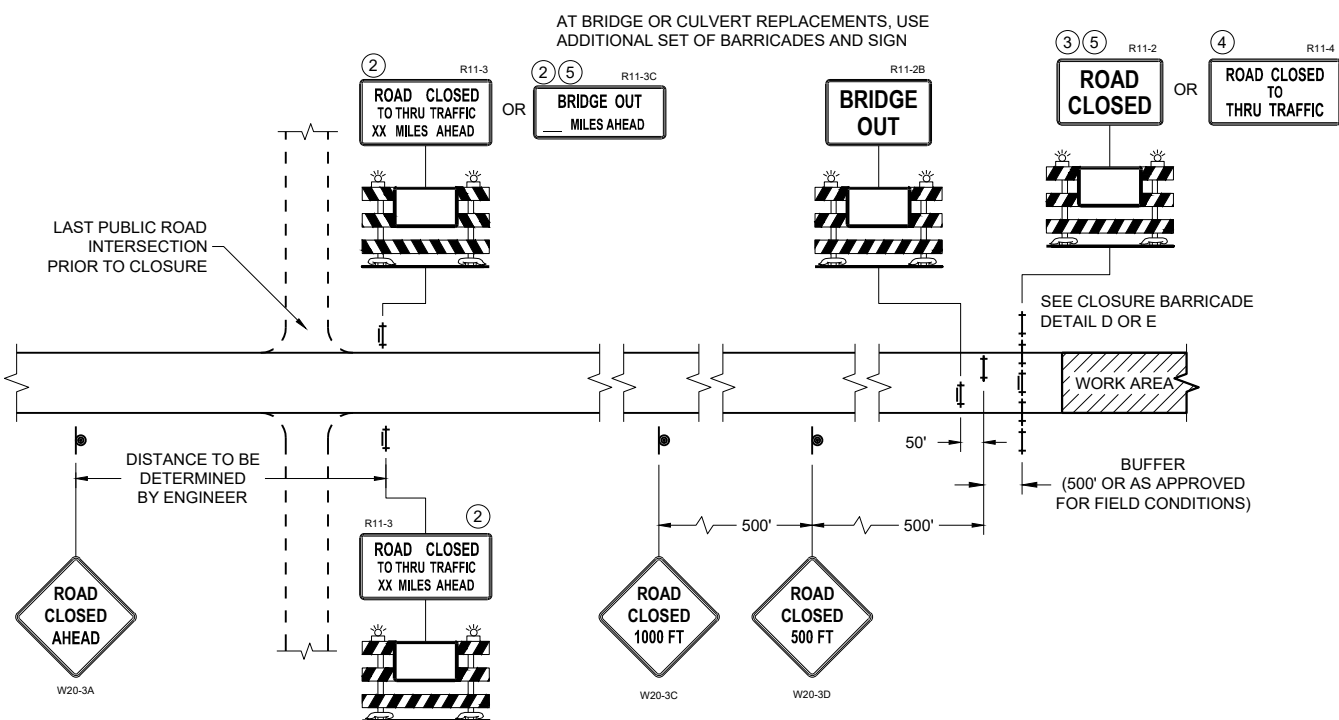
APPROVED
7/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERVISOR
FHWA 57 ENT



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

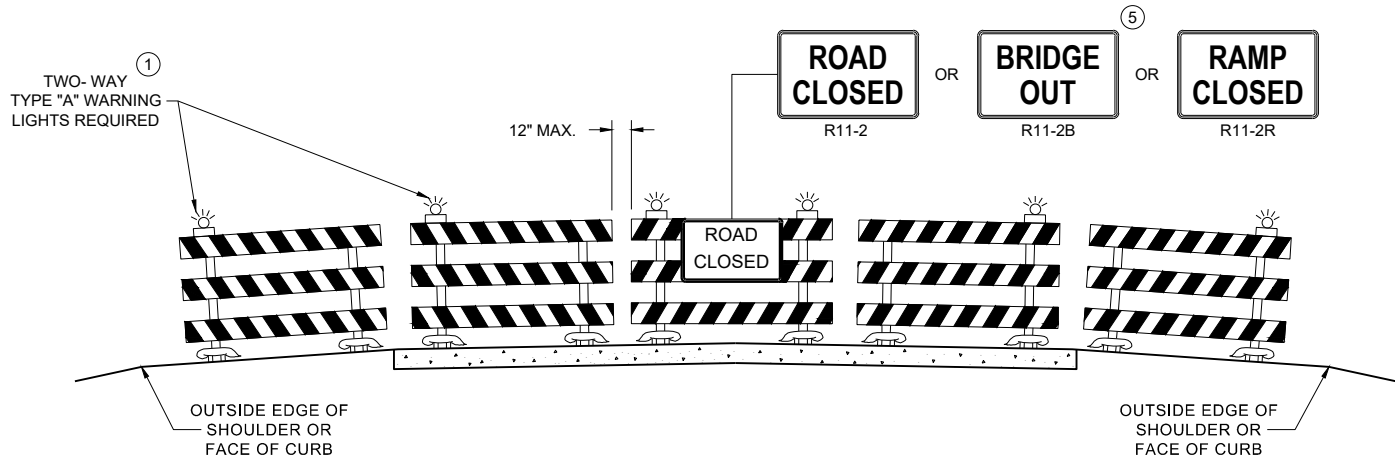
DETOUR M4 - 8
EAST M3 - X
XX OR **XX** OR **COUNTY X**
M1 - 4 M1 - 6 M1 - 5A
DETOUR OR **DETOUR**
M05 - 1 M06 - 1

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

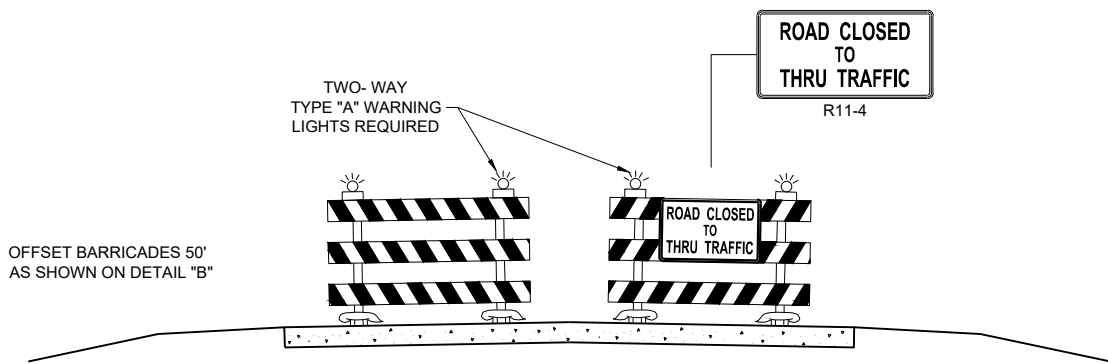
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DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /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.

PARTIAL NUMBERS ON SIGNS SHALL BE DISPLAYED AS A WHOLE NUMBER(AS NEEDED) FOLLOWED BY A FRACTION. SIGNS SHALL NOT DISPLAY NUMBERS IN DECIMAL FORM.

"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"

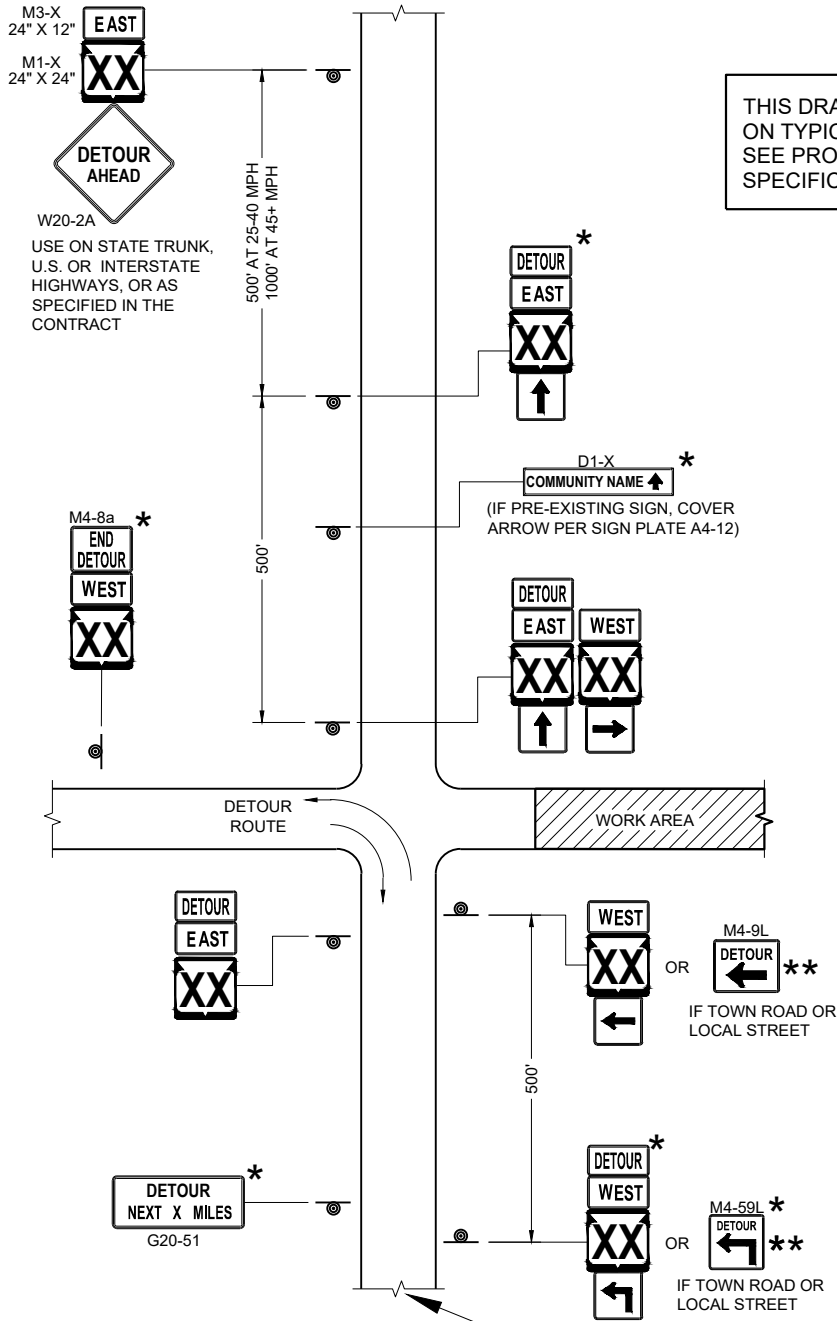
SIGNS PLACED ON TYPE III BARRICADES THAT ARE SIZES OTHER THAN 48"X30" SHALL HAVE A CORRUGATED POLYPROPYLENE OR POLYETHYLENE PLASTIC SIGN BASE.

- 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
November 2025 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

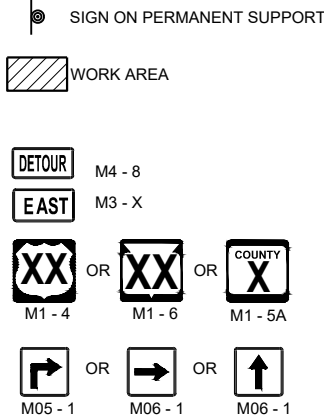


THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

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

DETAIL F
DETOUR SIGNING

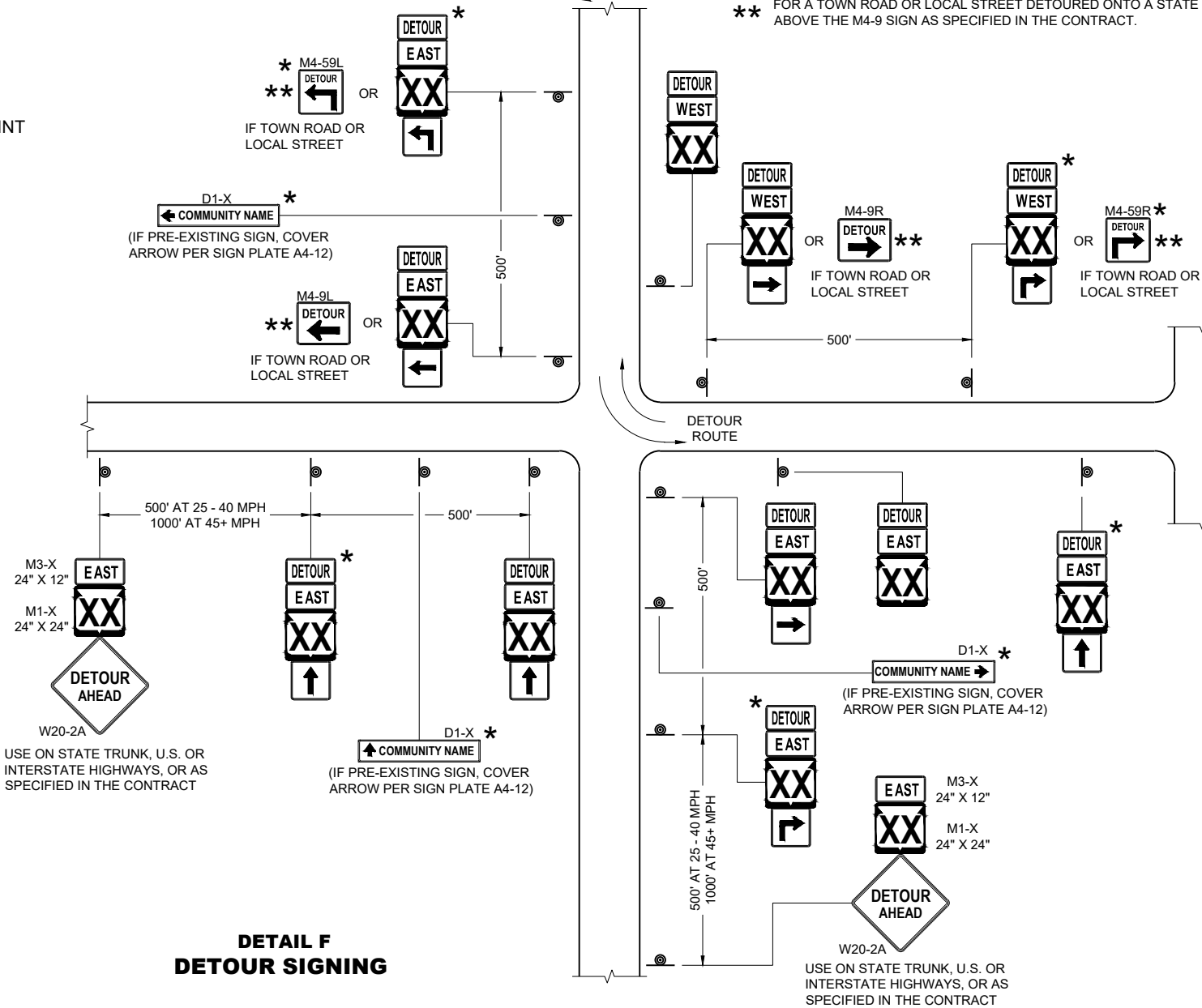
LEGEND



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.

MATCH POINT



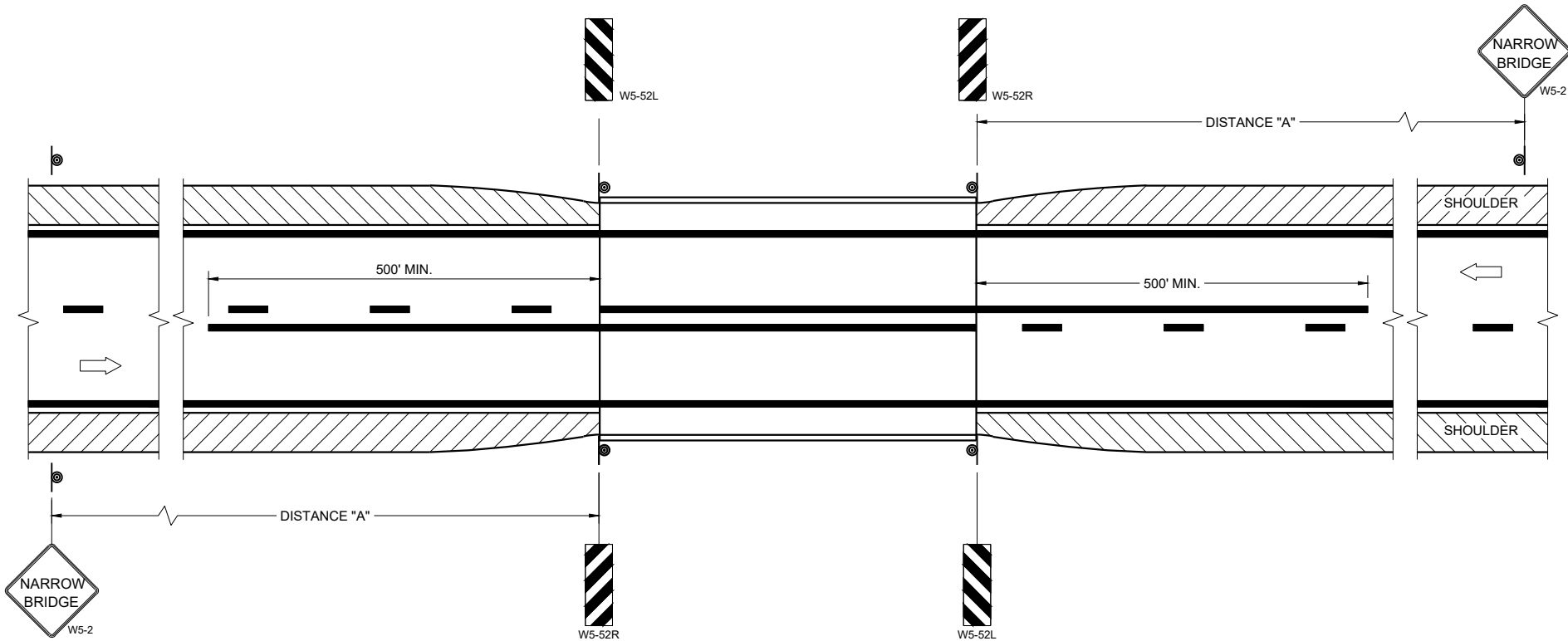
DETOUR SIGNING
FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

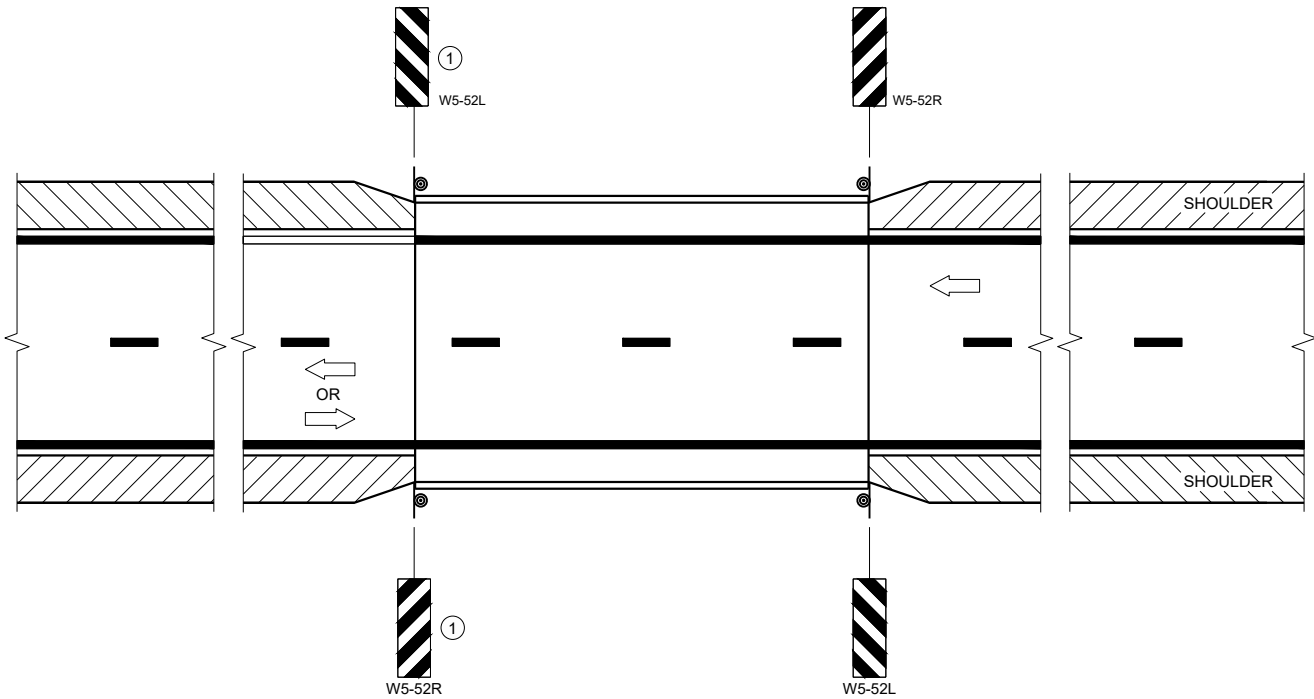
APPROVED
November 2025
DATE

/S/ Andrew Heidtke
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'

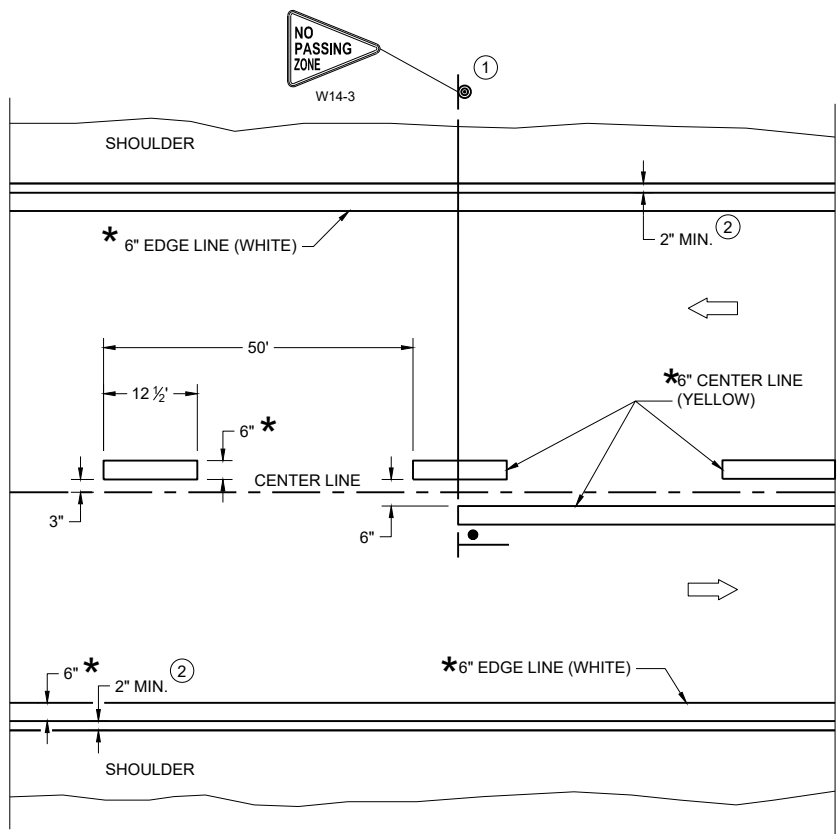
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
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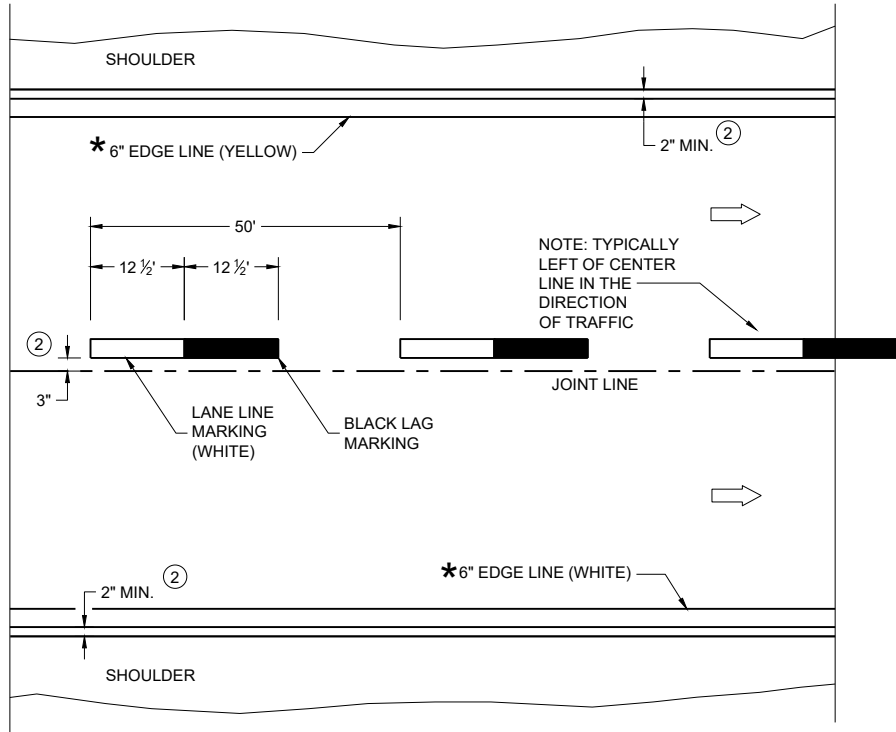
APPROVED
May 2023
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

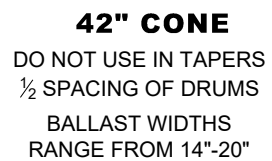
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

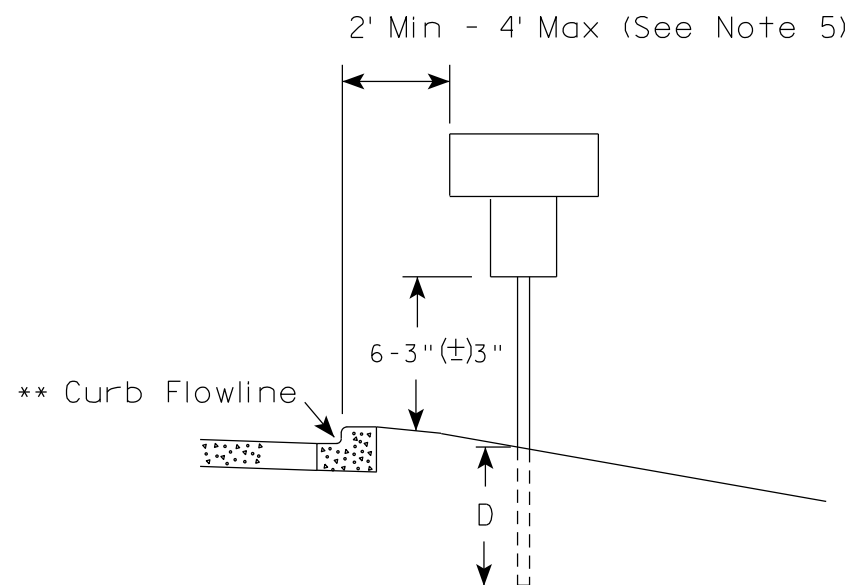
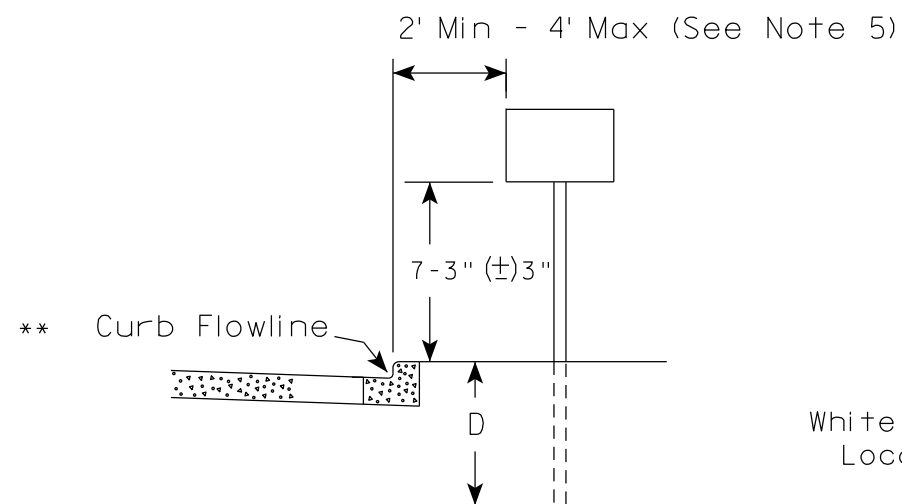
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer



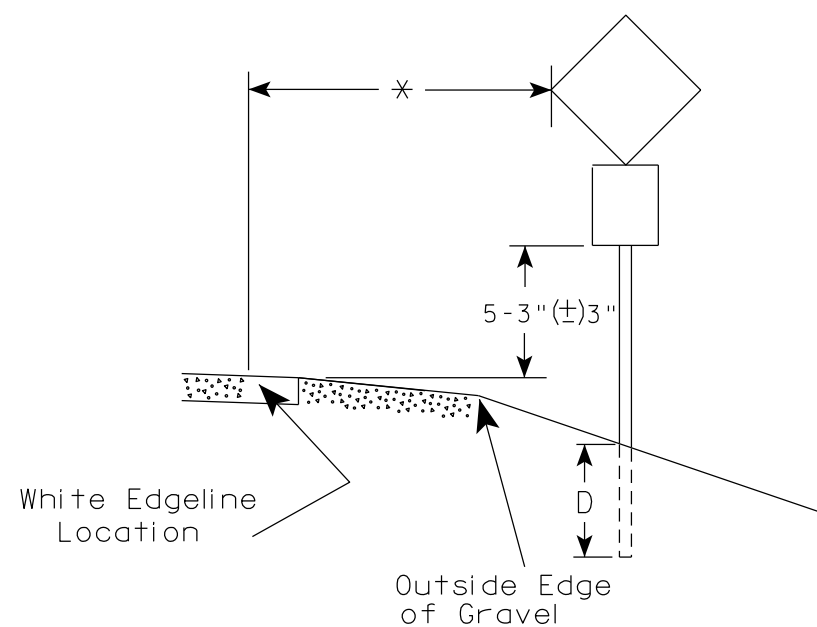
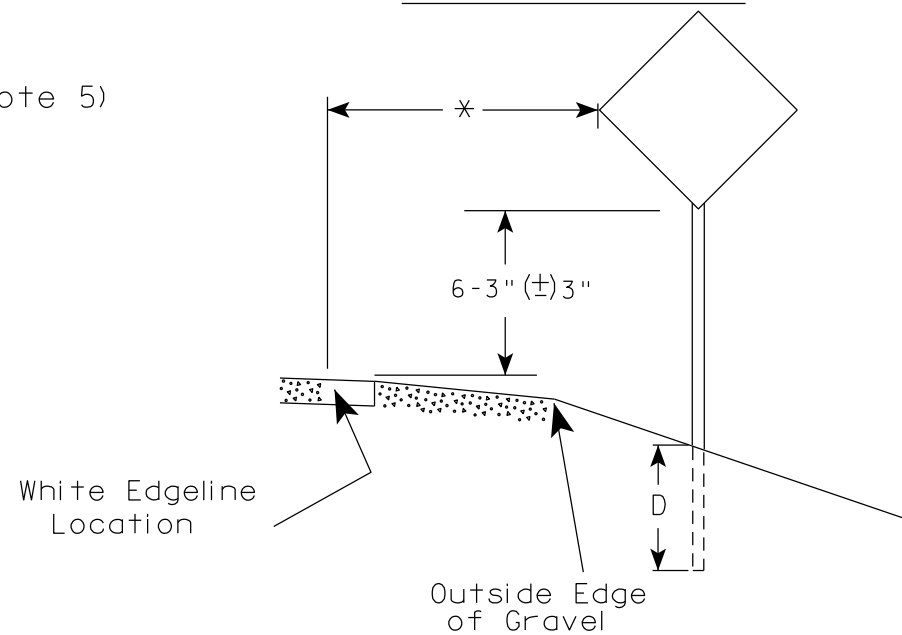
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

URBAN AREA



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

RURAL AREA (See Note 2)



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

GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

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

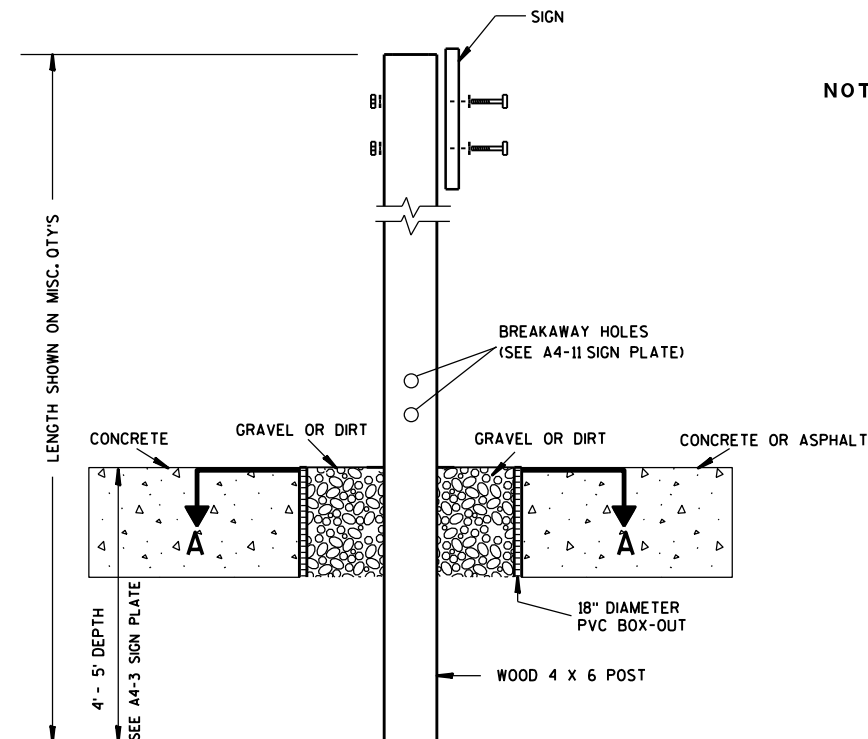
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 64

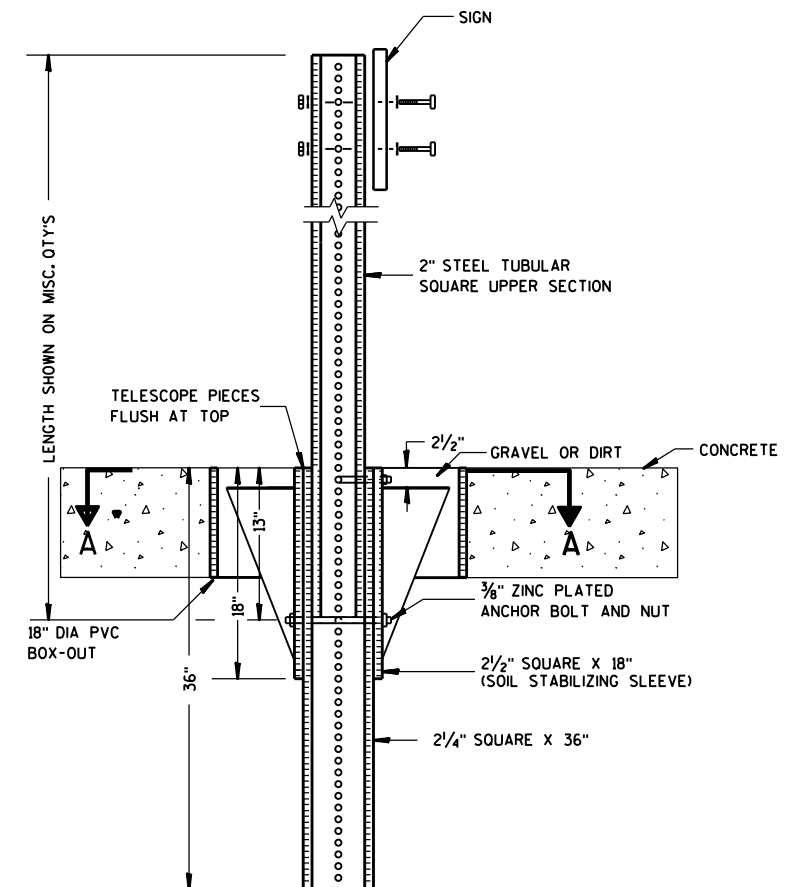
E



ELEVATION VIEW

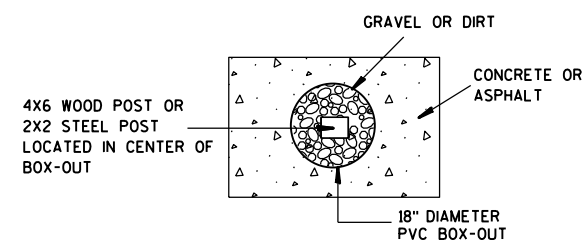
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 65 A4-3B.1

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

GENERAL NOTES

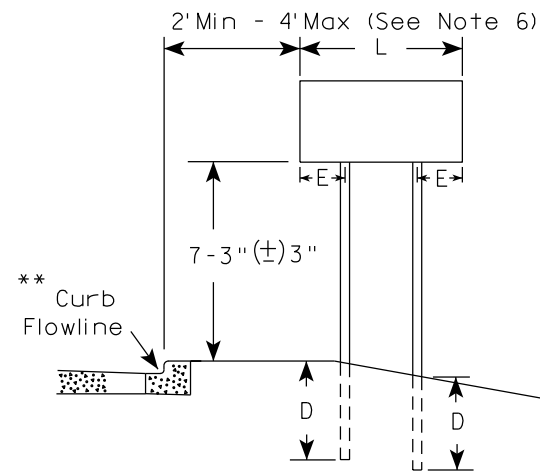
- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.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

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

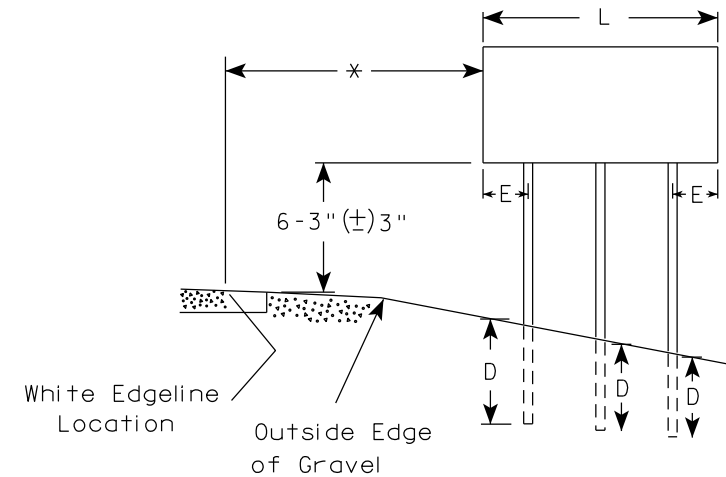
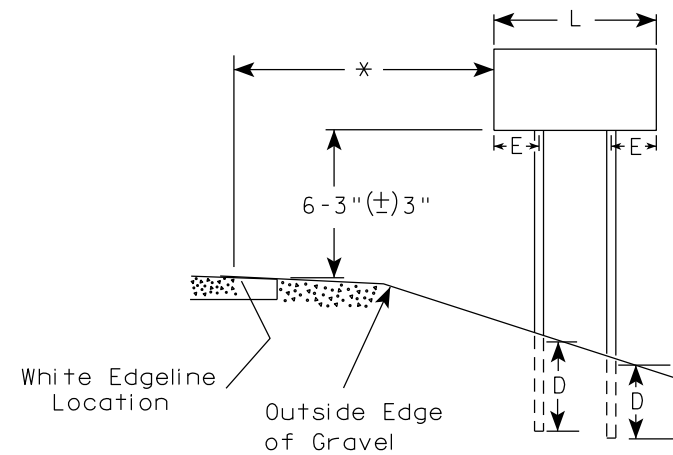
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs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

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

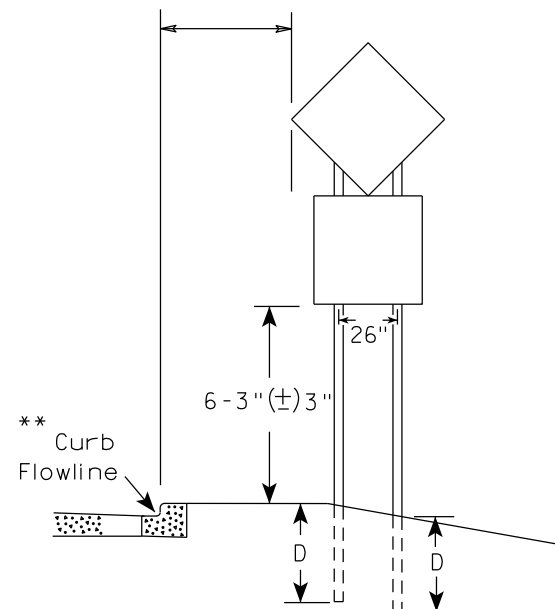
URBAN AREA



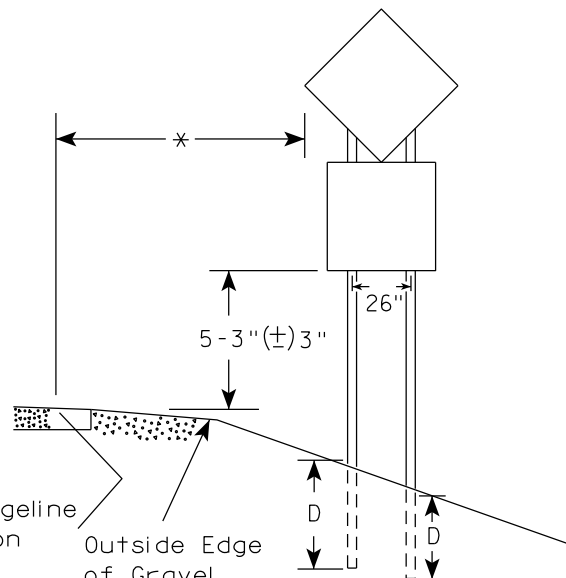
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

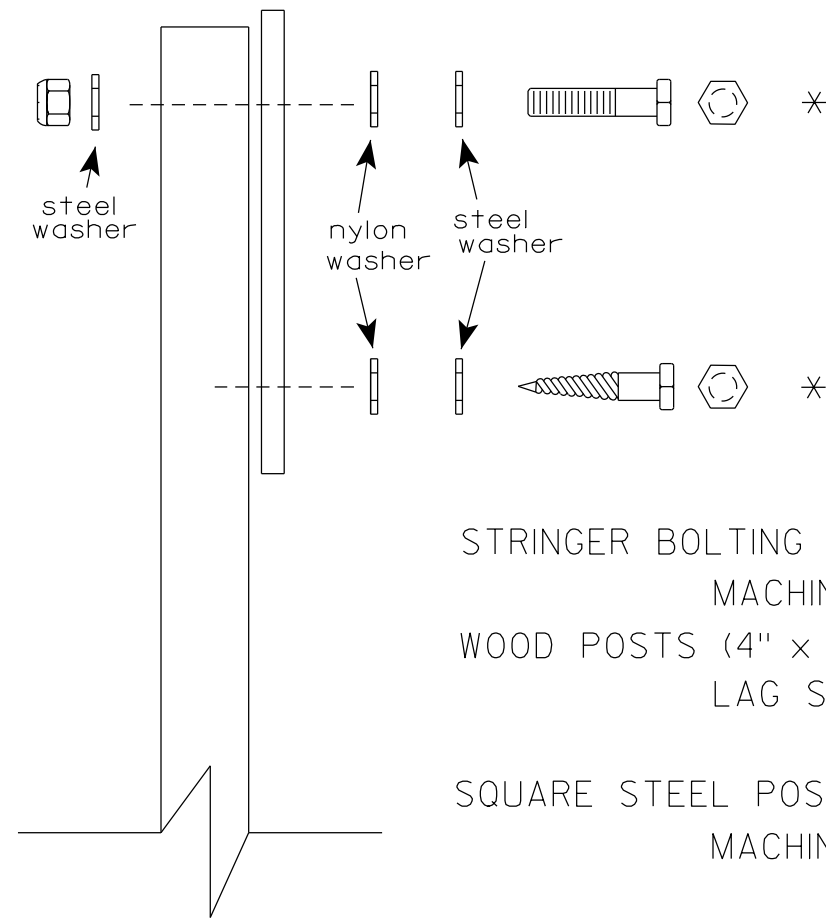
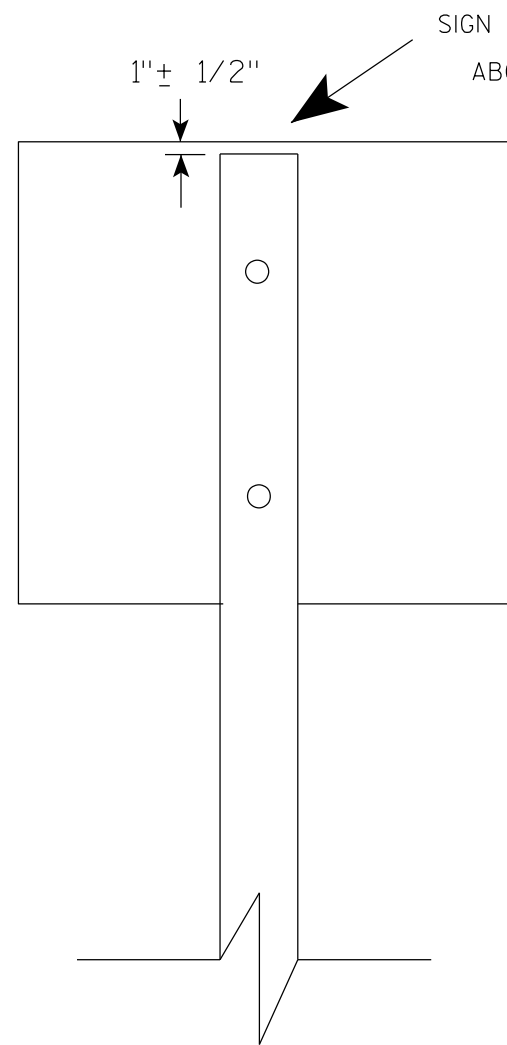
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

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

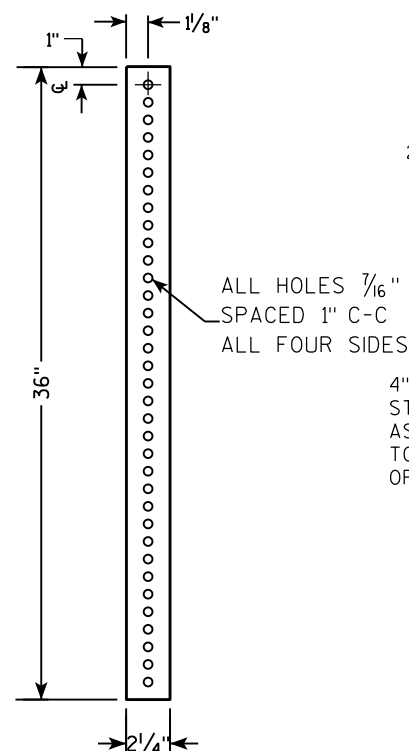
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

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

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

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



2 1/2" TELESPAR TUBE

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

4"

2 1/2"

10"

3 1/2"

18"

[illegible]

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY.

Side View Dimensions:

- Overall height: LENGTH SHOWN ON MISC. QTYS
- Top section: 2" STEEL TUBULAR SQUARE UPPER SECTION
- Telescope pieces: TELESCOPE PIECES FLUSH AT TOP
- Vertical dimensions from ground line: 36", 18", 12"
- Ground level: Indicated by a hatched line with downward arrows labeled 'A'.

End View Details:

- Top: SIGN
- Fasteners: SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
- Upper section: 2" STEEL TUBULAR SQUARE UPPER SECTION
- Drilling: ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES
- Corner fasteners: $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT (1" spacing)
- Main fasteners: $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
- Soil stabilizing sleeve: 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- Post section: 2 1/4" SQUARE X 36"

A schematic diagram of a square microfluidic chip. It features a central square channel with rounded corners. This central channel is surrounded by a larger square frame, also with rounded corners. Four ports are located at the midpoints of the outer frame's sides, serving as inlets or outlets. A small rectangular component is attached to the top center of the frame, with a line extending from it into the central channel.

DIRECTION
OF TRAFFIC

SECTION A-A

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

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 PLAT 68 14-9.9

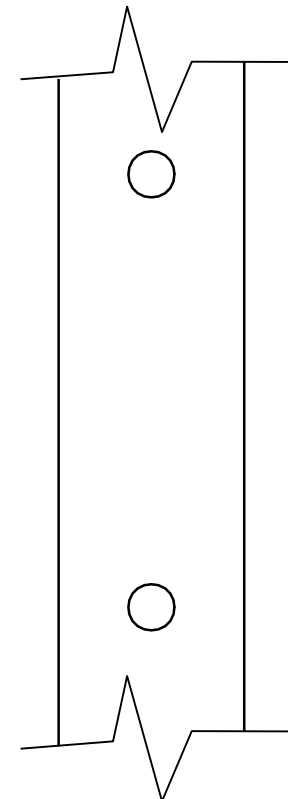
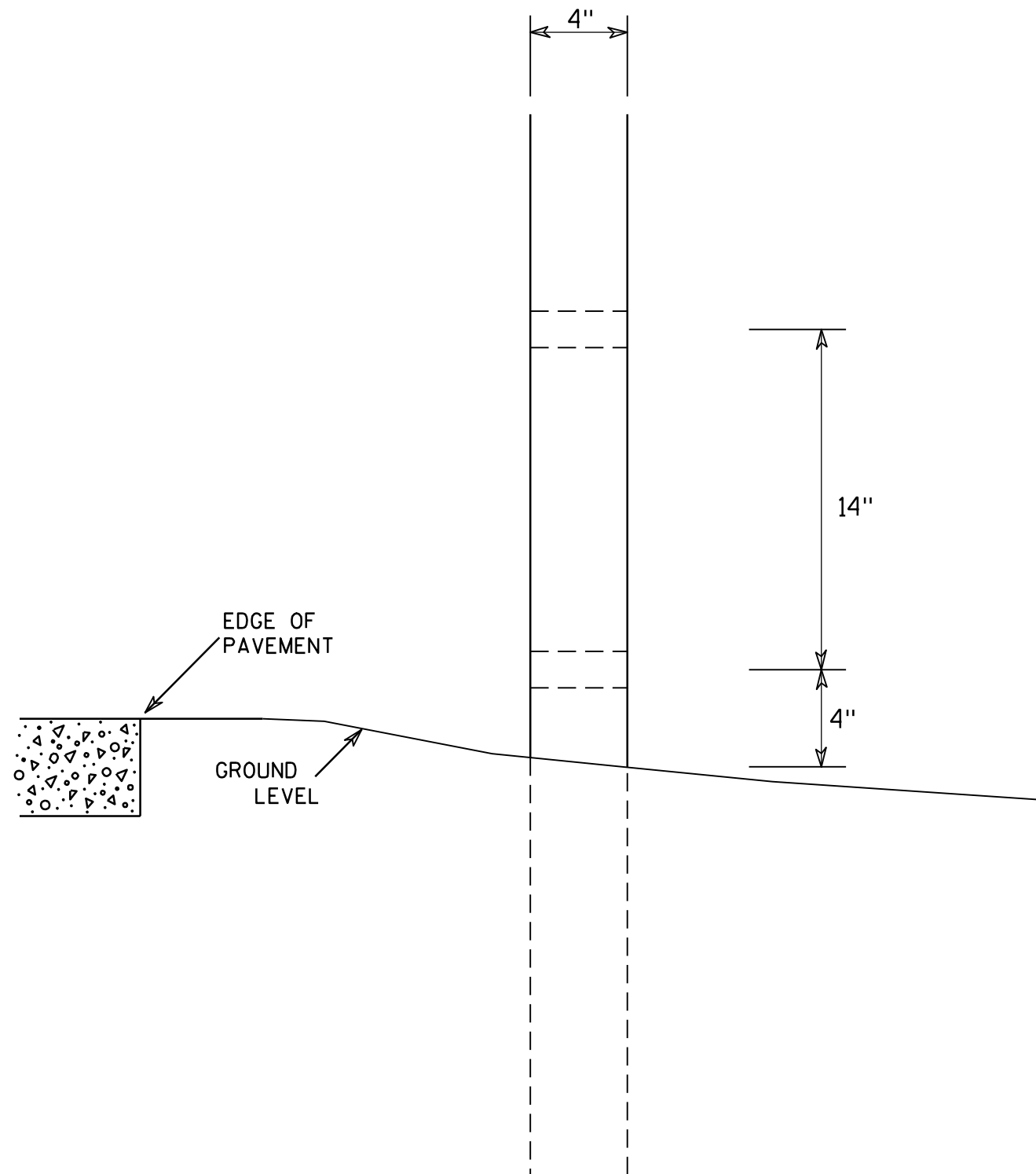
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

T E



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

COUNTY:

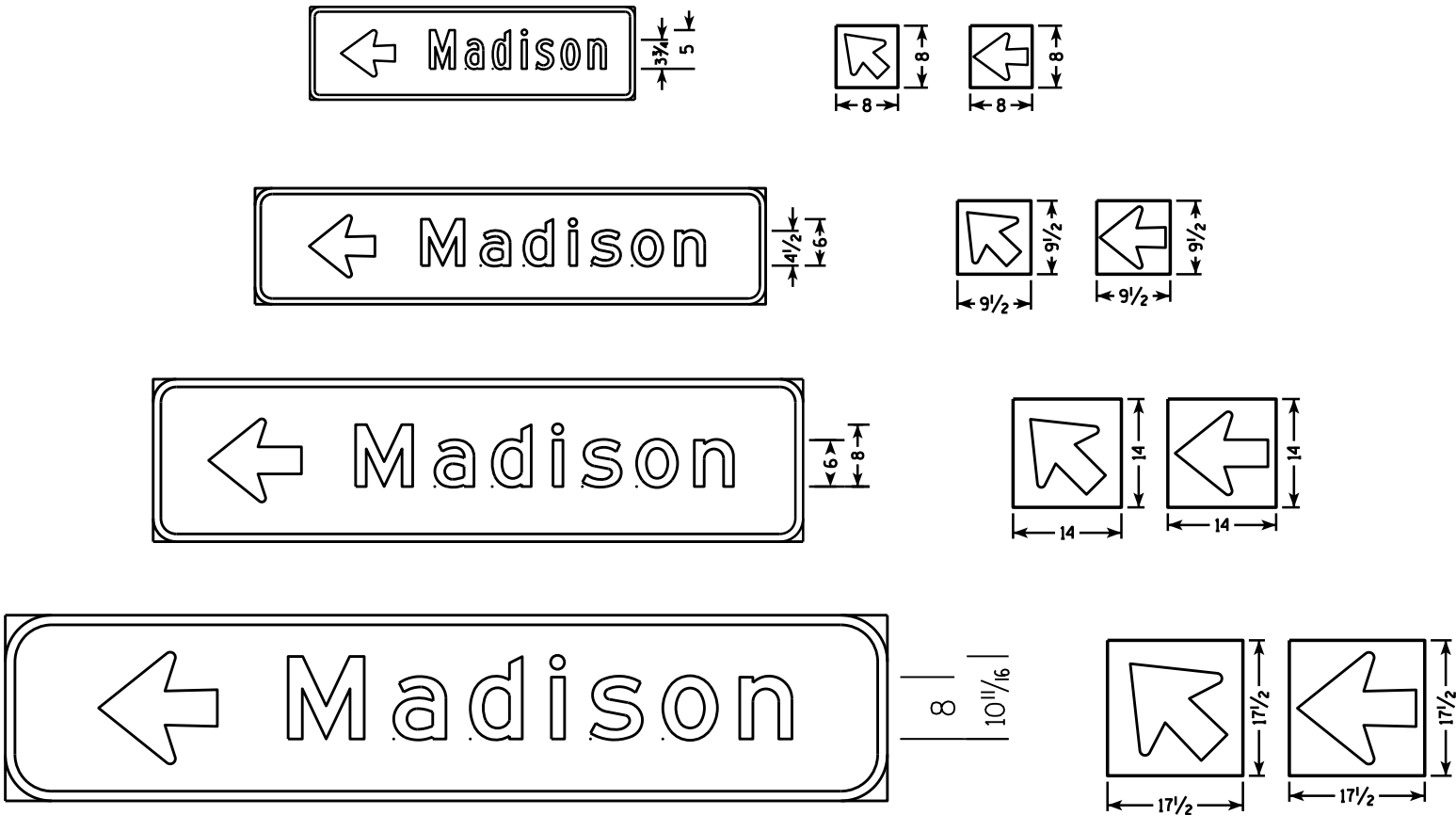
SHEET NO: 69

E

SIGN LAYOUT WITH VARIOUS SIZED MESSAGES

GENERAL NOTES

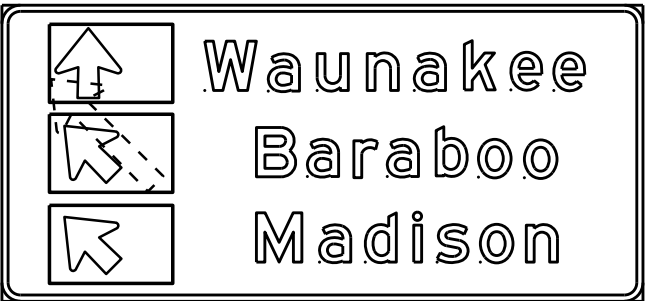
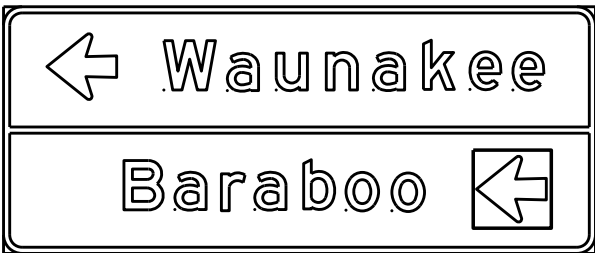
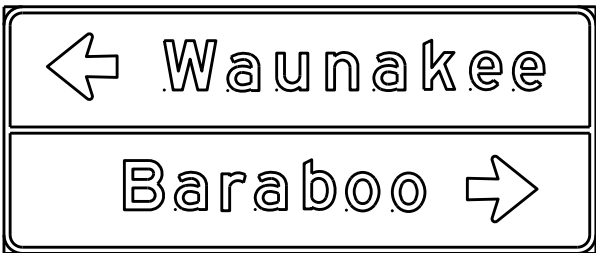
- 1. Materials shall conform to Standard Specification Section 637.
Base - Sheet Aluminum 0.040" Thickness
Sheeting - Orange Type F Reflective
Arrow - Black Non-Reflective
- 2. Arrow signs shall be fastened to permanent sign by either aluminum rivets or aluminum self-tapping sheet metal screws.
There shall be a minmum of 2 fasteners used per arrow sign.
- 3. There shall be a spacer consisting of a 0.08" nylon washer between the back of the arrow sign and the face of the permanent sign.
- 4. Arrows are per standard plate A1-2
- 5. Use separate arrow sign for each destination
- 6. Tilt arrow is always at 45 degrees
- 7. Arrow is centered on arrow sign



Lower Case Copy Size	Standard Width (Single Arrow)	2 Line Tilt Arrow Cover Width	3 Line Tilt Arrow Cover Width	Height
3 3/4" Series C	8	9 1/2	14 1/2	8
4 1/2" Series D & E	9 1/2	10	15	9 1/2
6" Series D & E	14	16	20 1/2	14
8" Series E	17 1/2	20 1/2	25	17 1/2

BEFORE

AFTER



DESTINATION DIRECTIONAL ARROW
FOR DETOUR SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/08/14 70 . A4-12.2

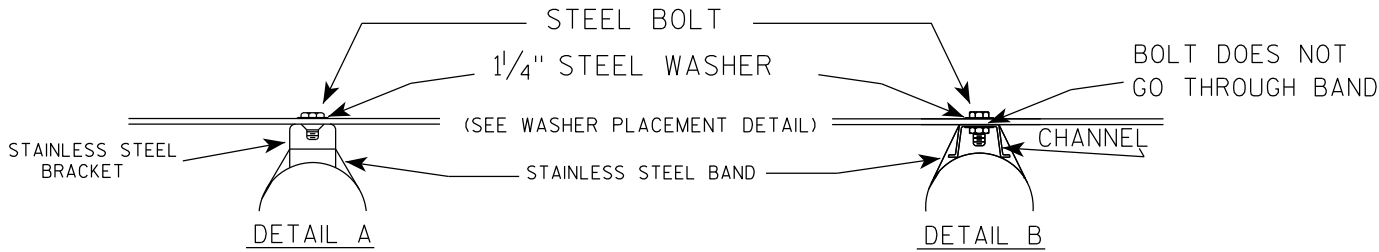
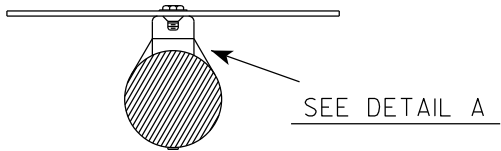
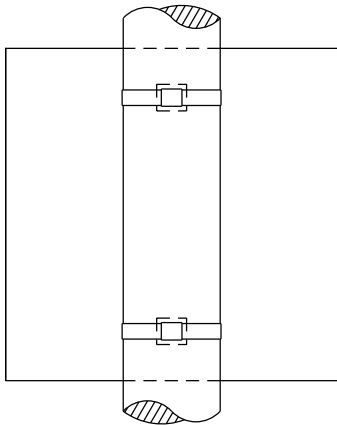
PROJECT NO:

SHEET NO:

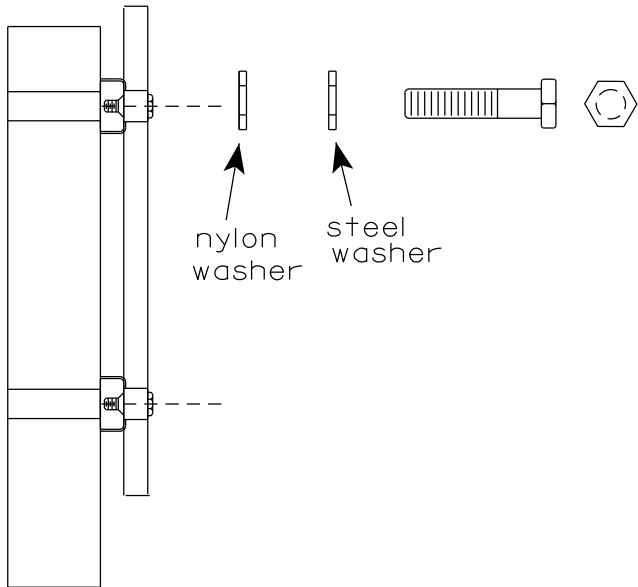
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

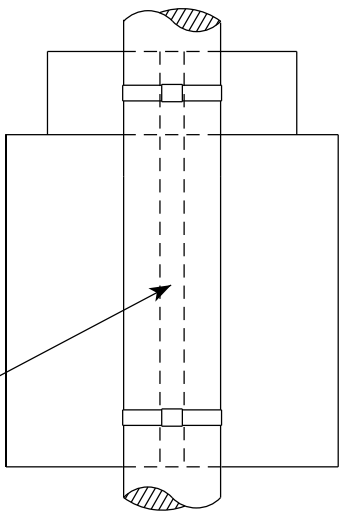


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

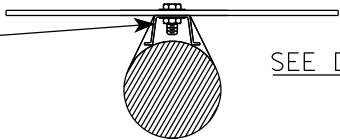
GENERAL NOTES

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

"J" ASSEMBLY



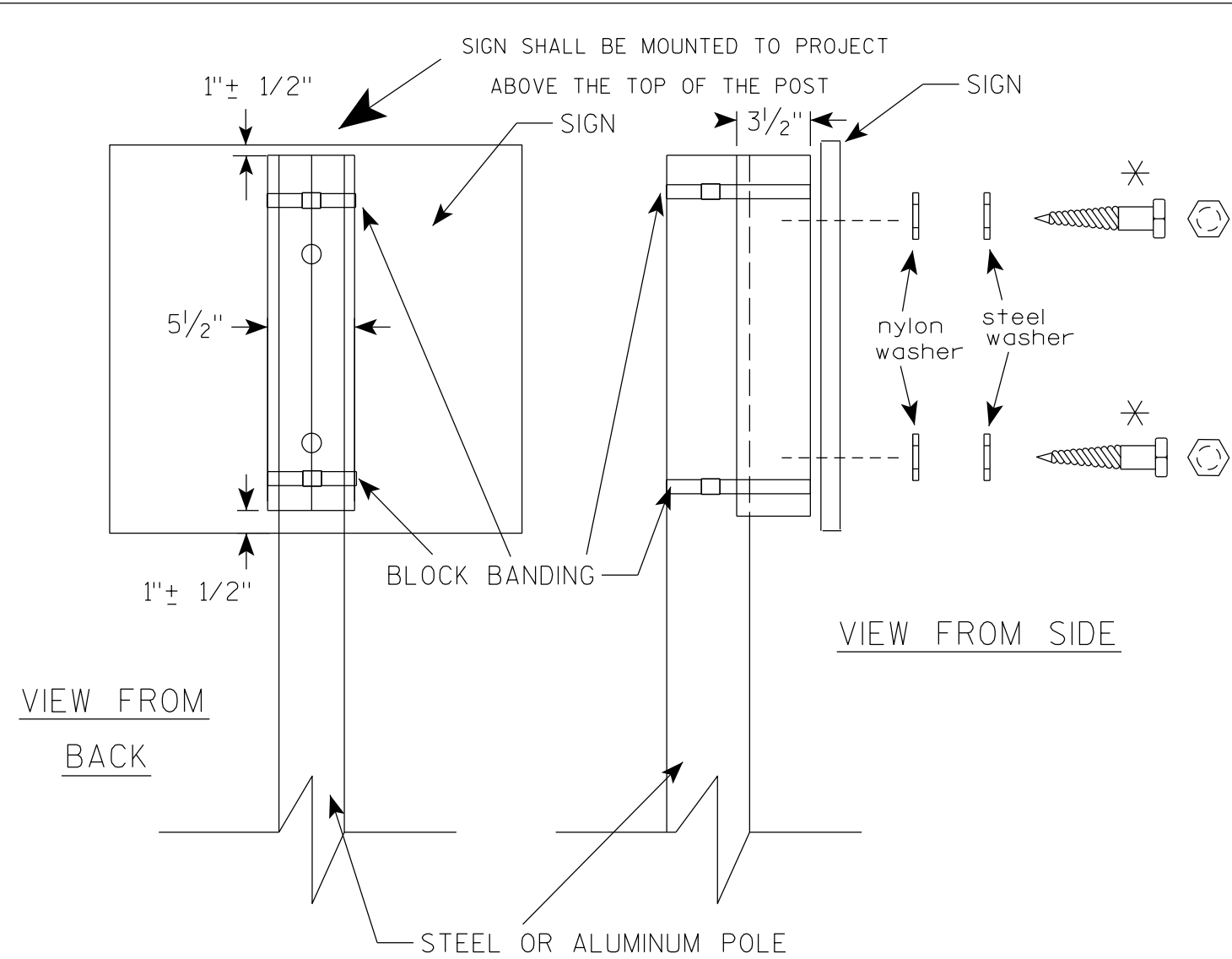
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

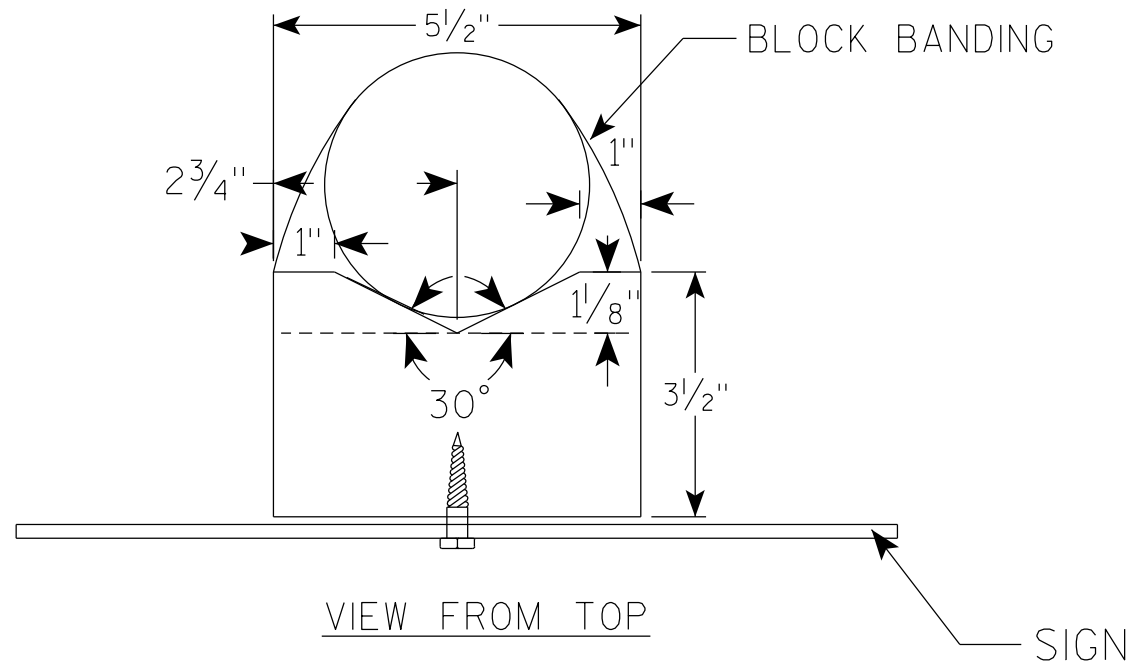
WISCONSIN DEPT OF TRANSPORTATION

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



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

SIGN

GENERAL NOTES

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

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

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 72

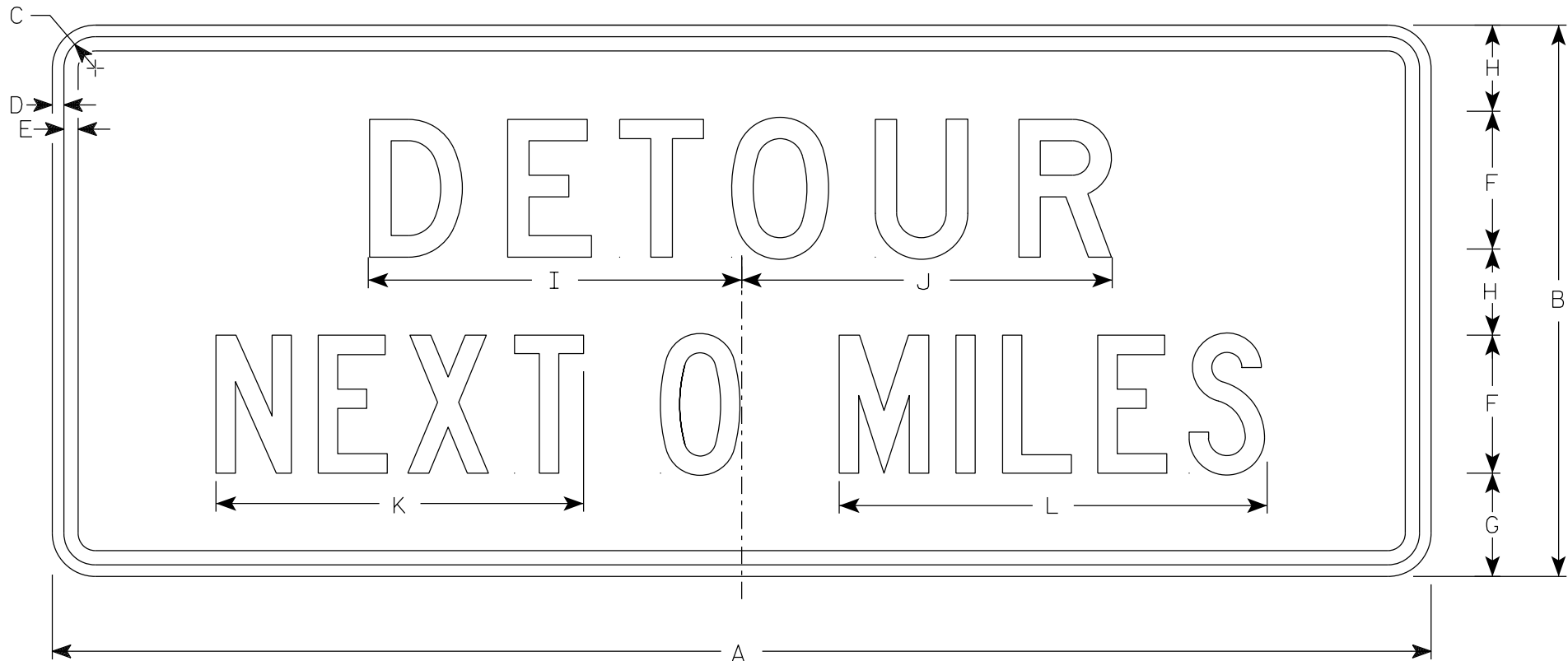
E

7

7

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - Line 1 is D and Line 2 is 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. Round distance to nearest whole Mile and substitute appropriate numerals and optically adjust spacing to achieve proper balance



G20-51

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	60	24	1 7⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4	16 1⁄4	16 1⁄8	16	18 5⁄8															10.0
2M	60	24	1 7⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4	16 1⁄4	16 1⁄8	16	18 5⁄8															10.0
3	60	24	1 7⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4	16 1⁄4	16 1⁄8	16	18 5⁄8															10.0
4	60	24	1 7⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4	16 1⁄4	16 1⁄8	16	18 5⁄8															10.0
5	60	24	1 7⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4	16 1⁄4	16 1⁄8	16	18 5⁄8															10.0

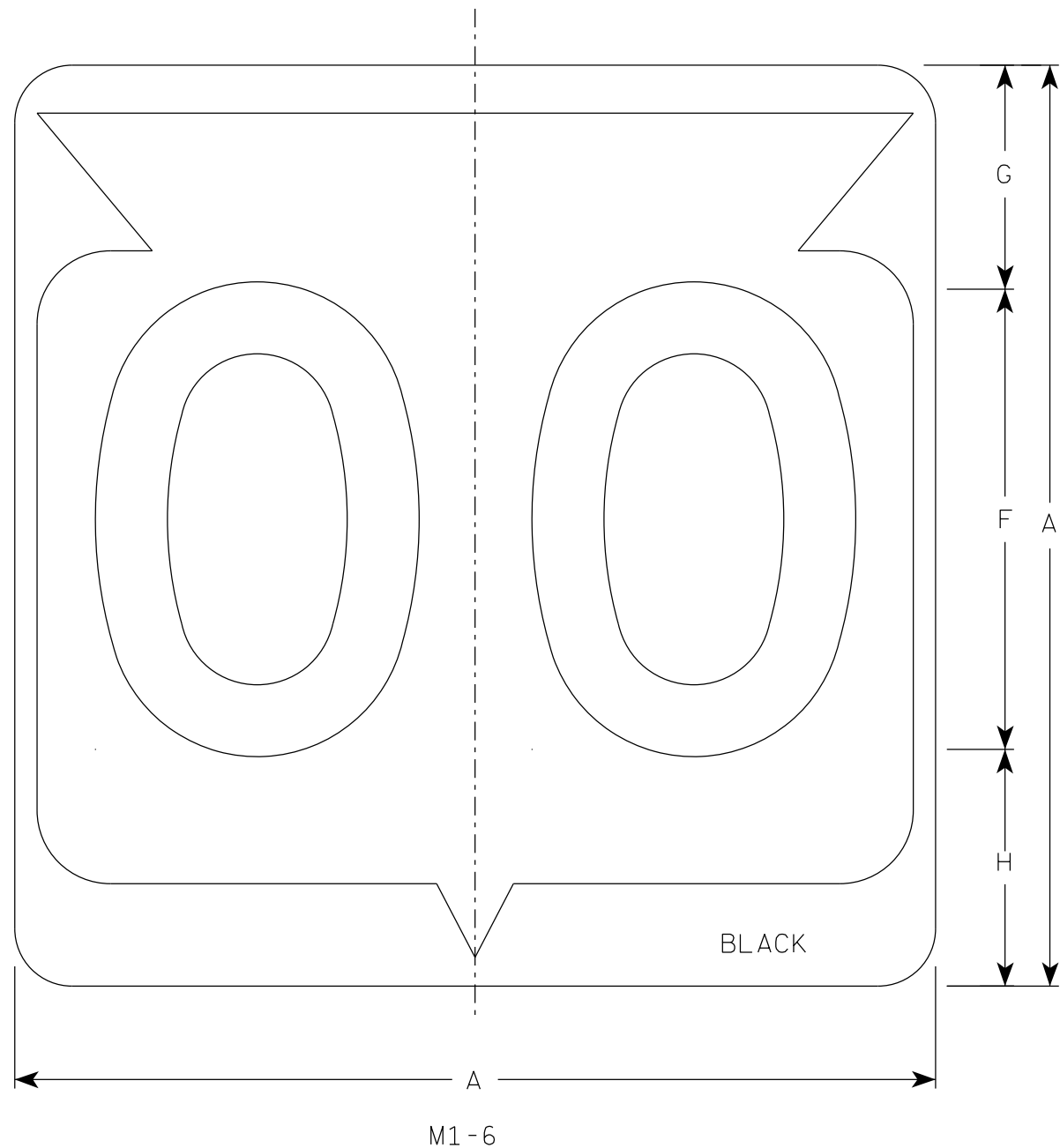
STANDARD SIGN
G20-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
State Traffic Engineer

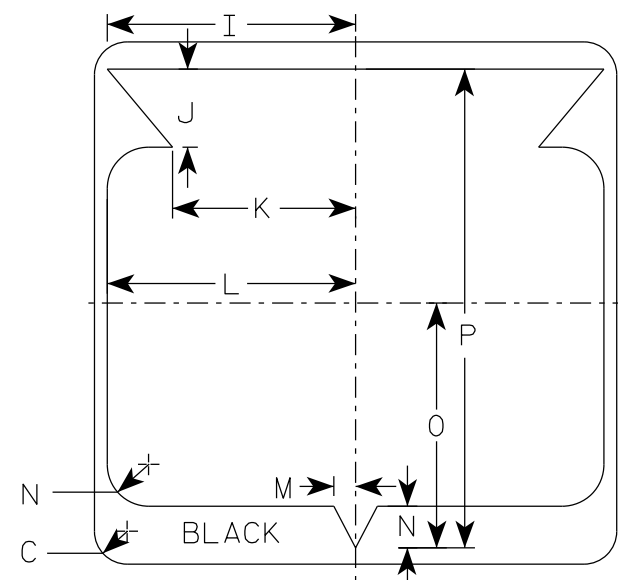
DATE 1/26/2023 PLATE NO. G20-51.3

7



NOTES

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



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

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

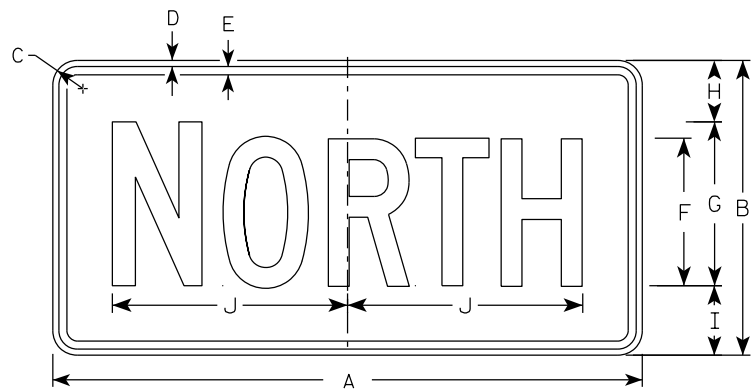
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

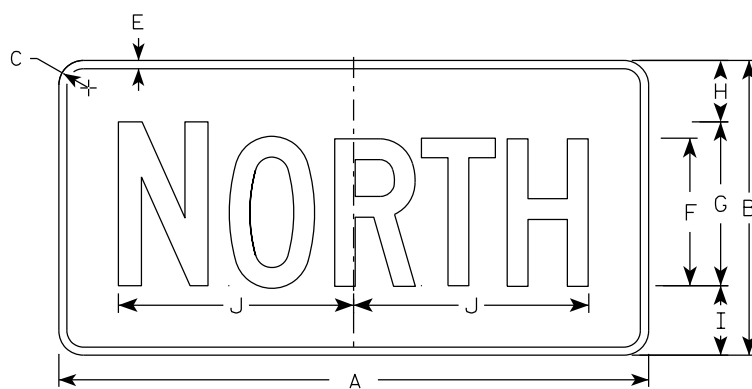
DATE 11/8/2022 PLATE NO. M1-6.11

SHEET NO: 74

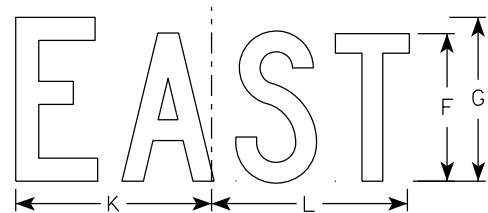
7



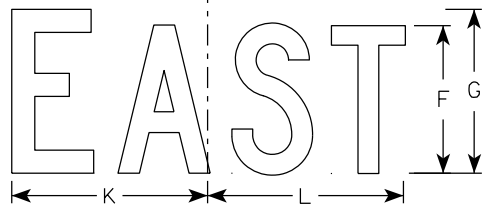
M3-1
MM3-1
MP3-1



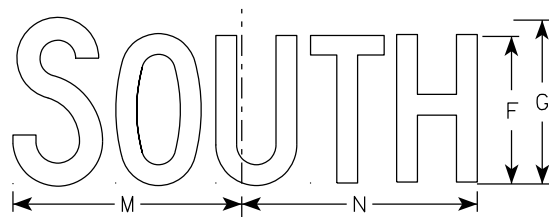
MB3-1
MK3-1
MN3-1



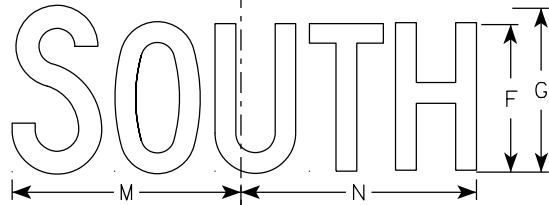
M3-2
MM3-2
MP3-2



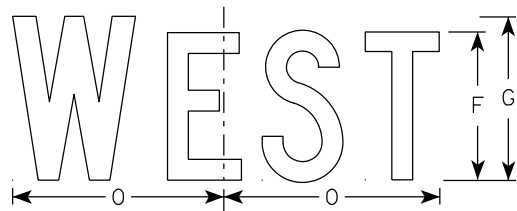
MB3-2
MK3-2
MN3-2



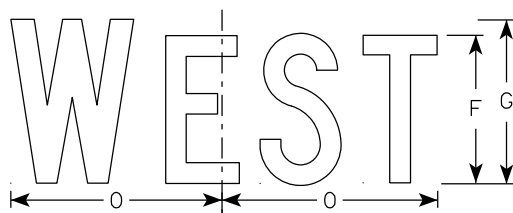
M3-3
MM3-3
MP3-3



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.

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

STANDARD SIGNS M3-1 THRU M3-4 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/8/2023 PLATE NO. M3-1.15

PROJECT NO: HWY: COUNTY: SHEET NO: 75 E

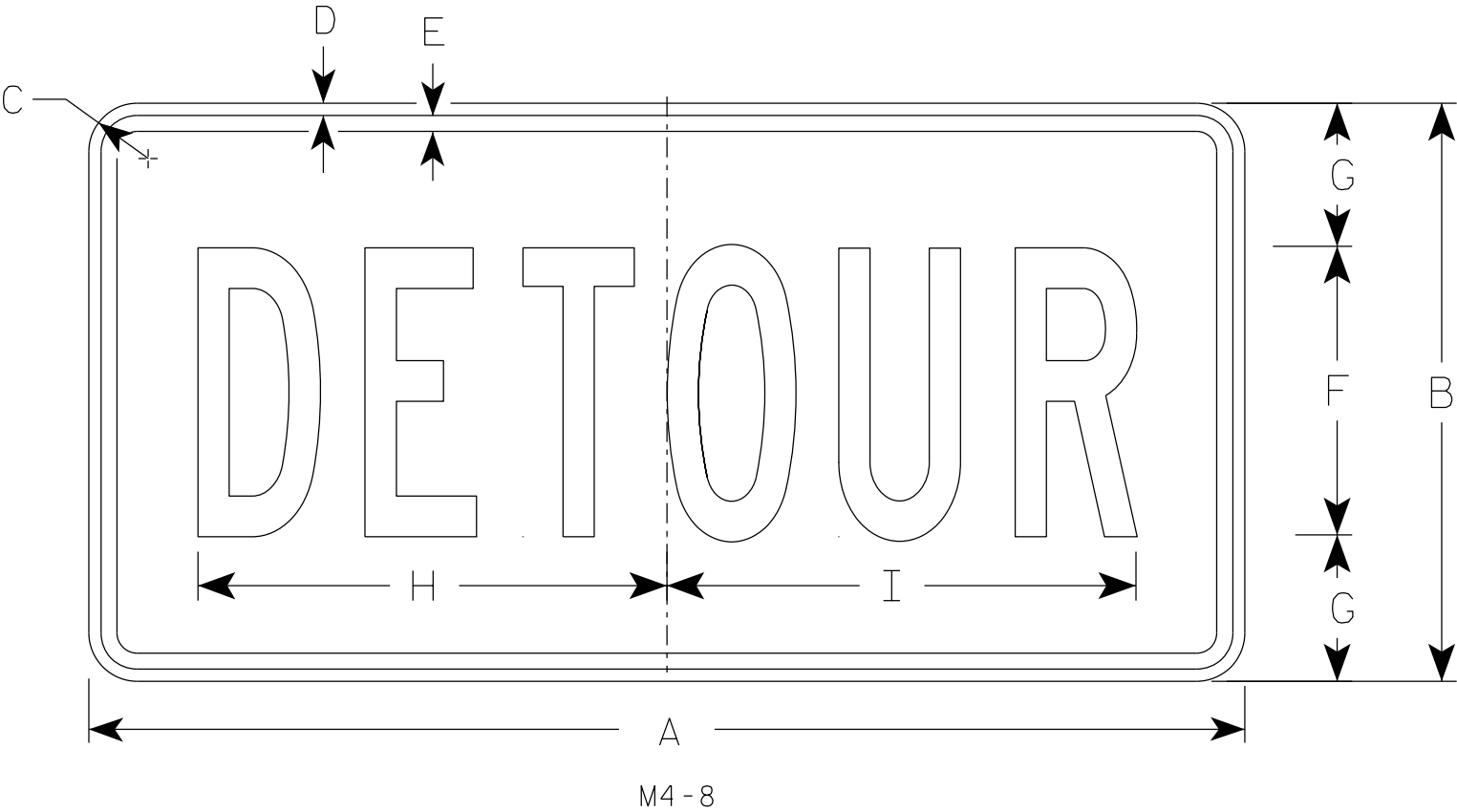
FILE NAME : C:\CAEfiles\Projects\tr_stdplate-M31.dgn PLOT DATE : 8-FEB 2023 11:00 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : \$\$.....plotscale.....\$\$WISDOT/CADDS SHEET 42

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

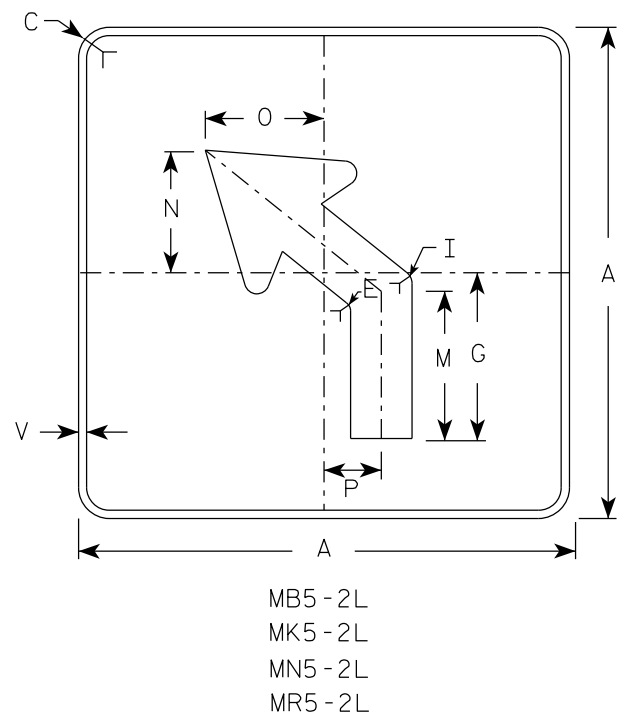
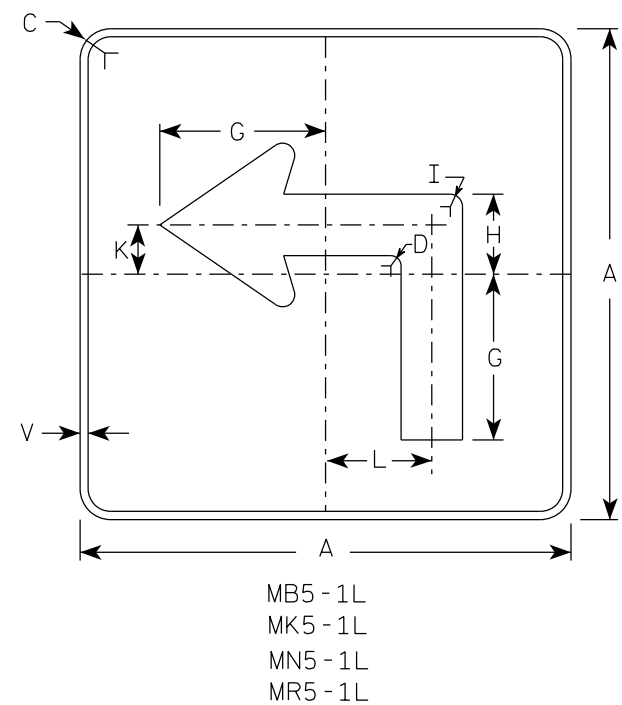
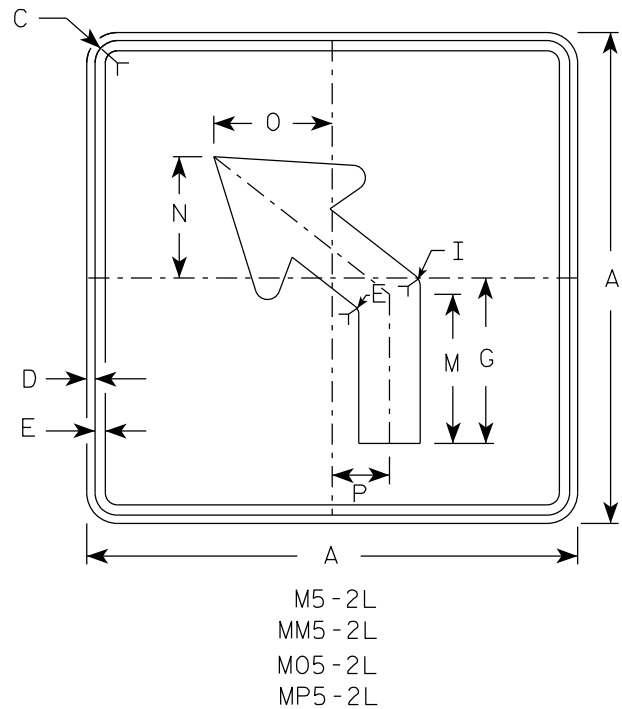
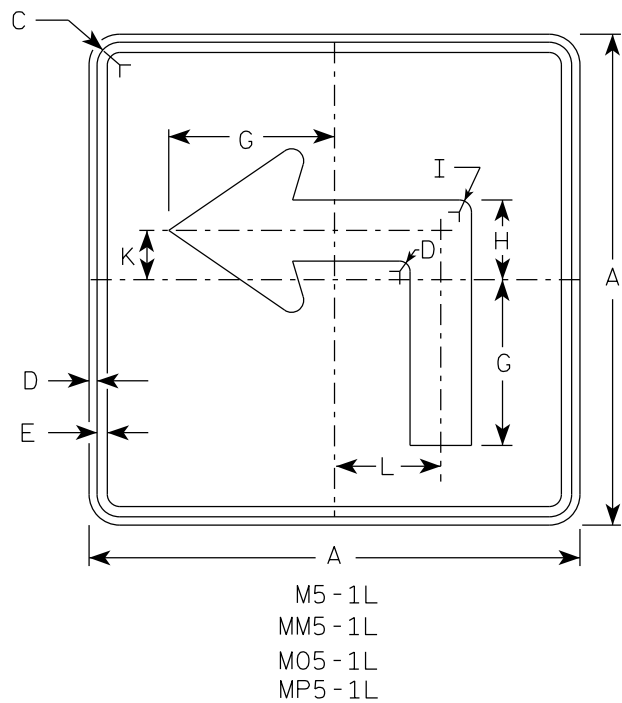
STANDARD SIGN

M4-8

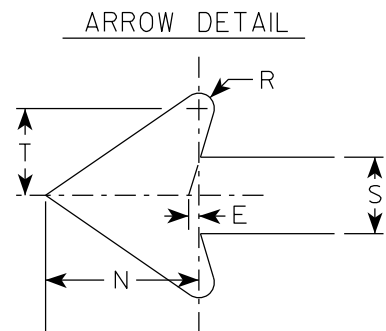
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

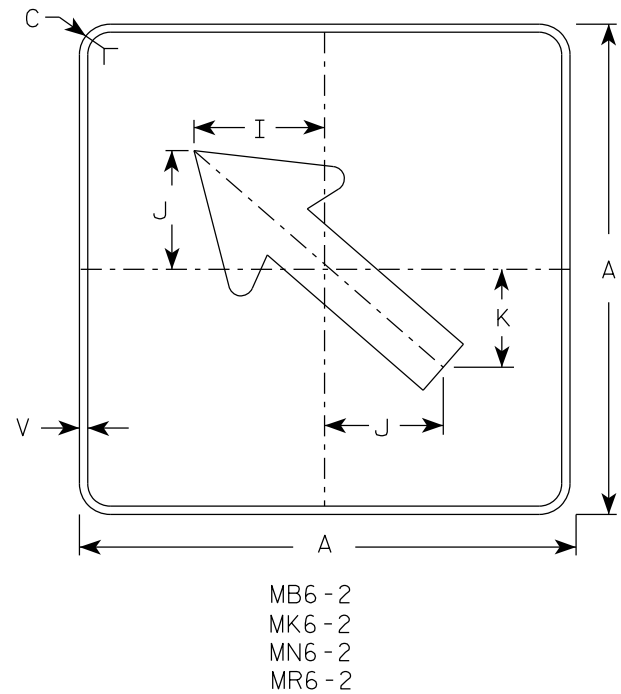
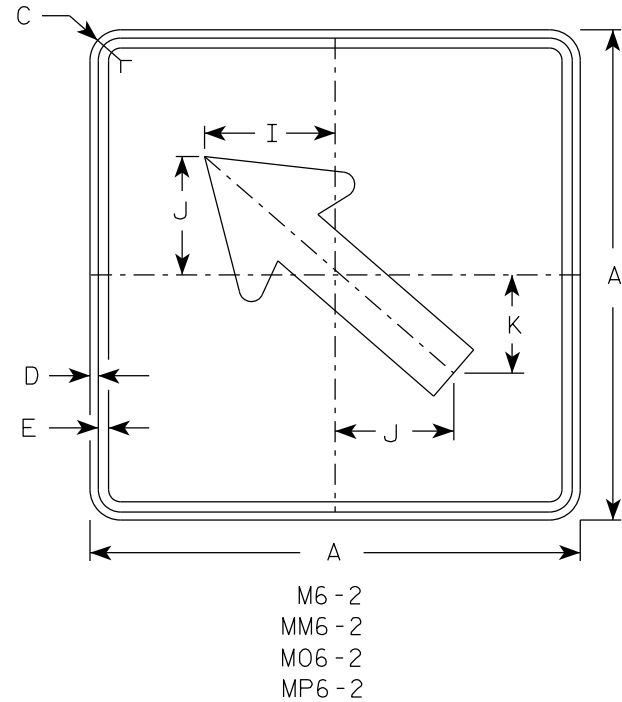
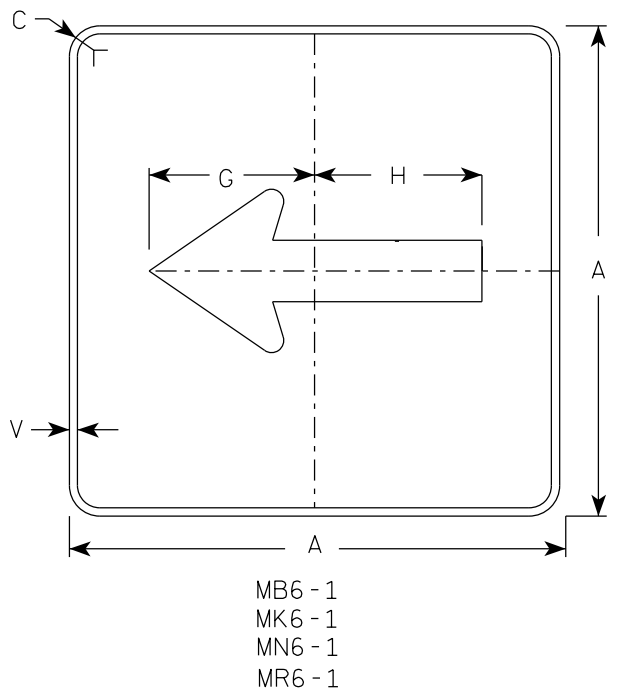
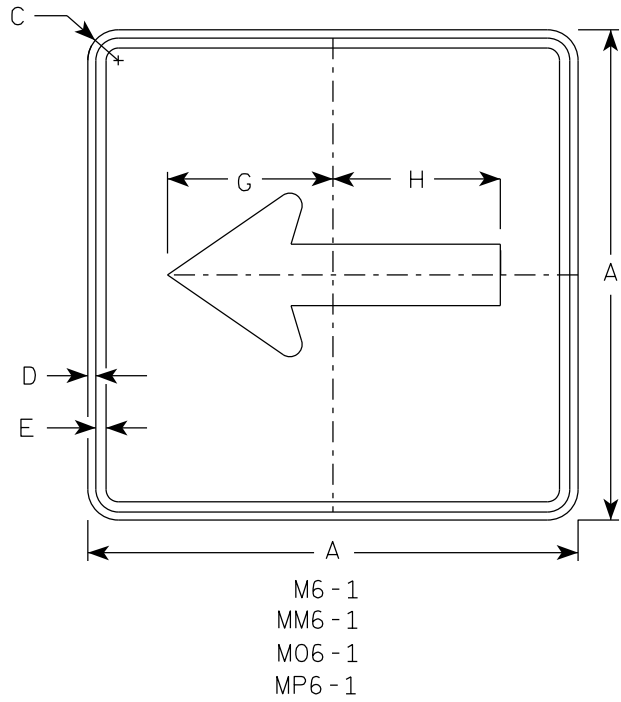


- NOTES
- Signs are Type II - Type H reflective except as shown
 - Color:
Background - See note 4
Message - See note 4
 - Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 - | | | |
|-----------|-------|---|
| 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.



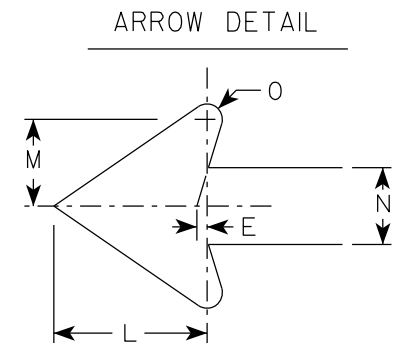
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2	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: 77	E
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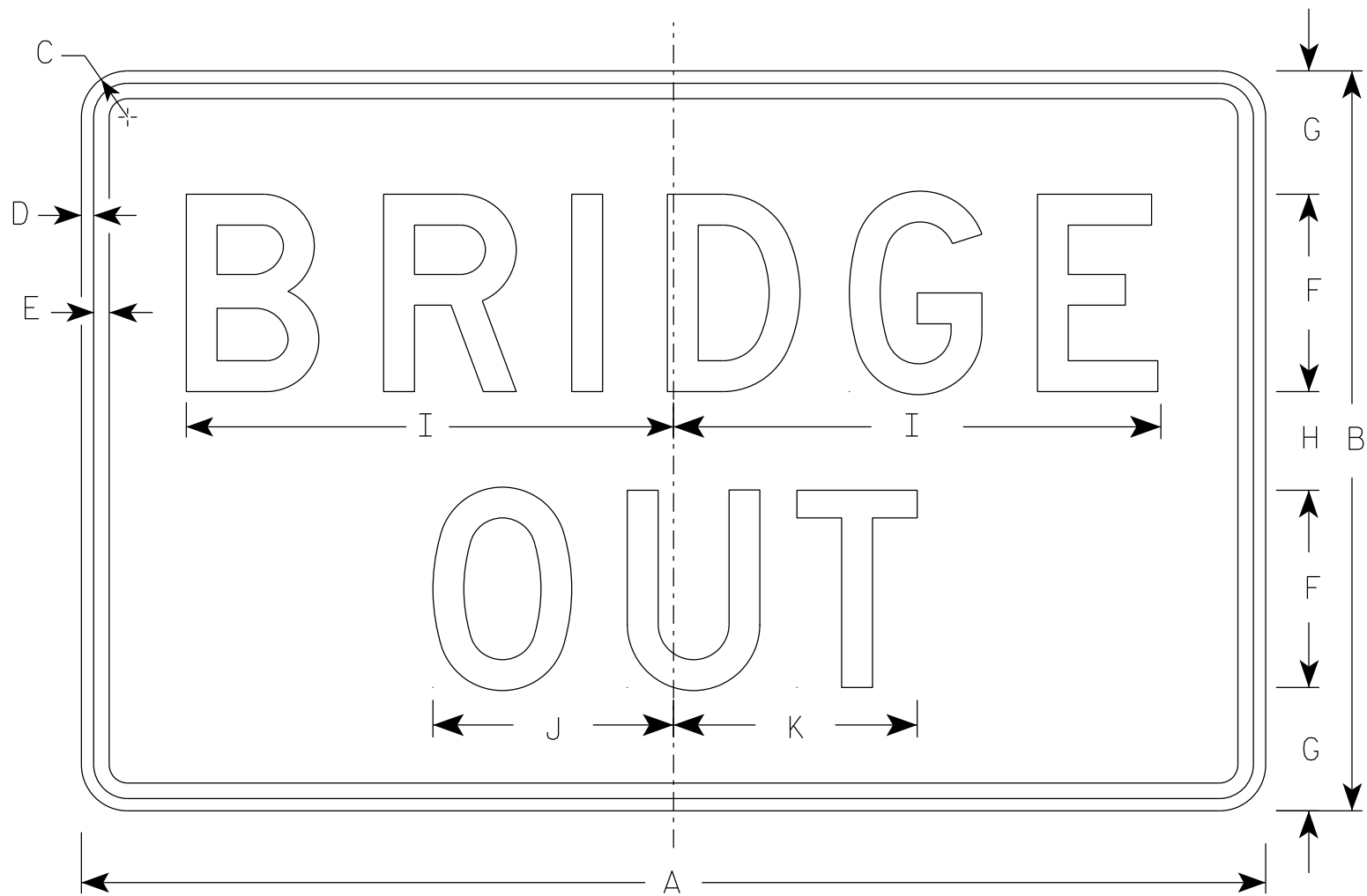


NOTES

- 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



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.

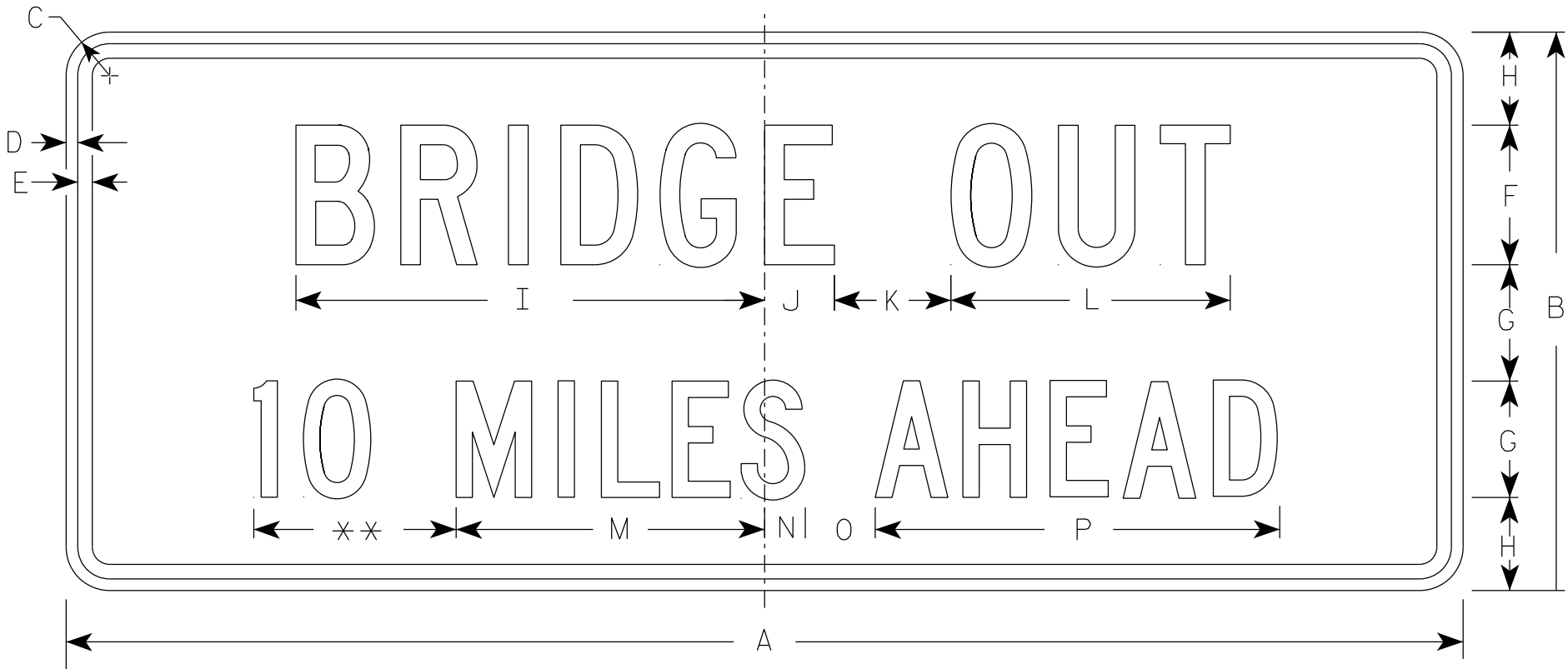
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0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

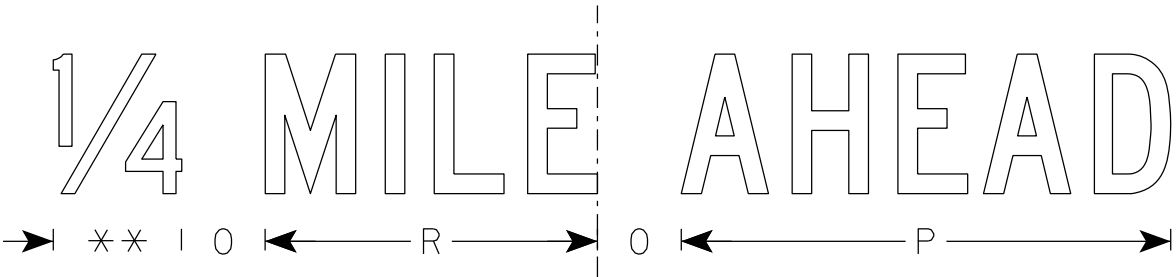
Background - White

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

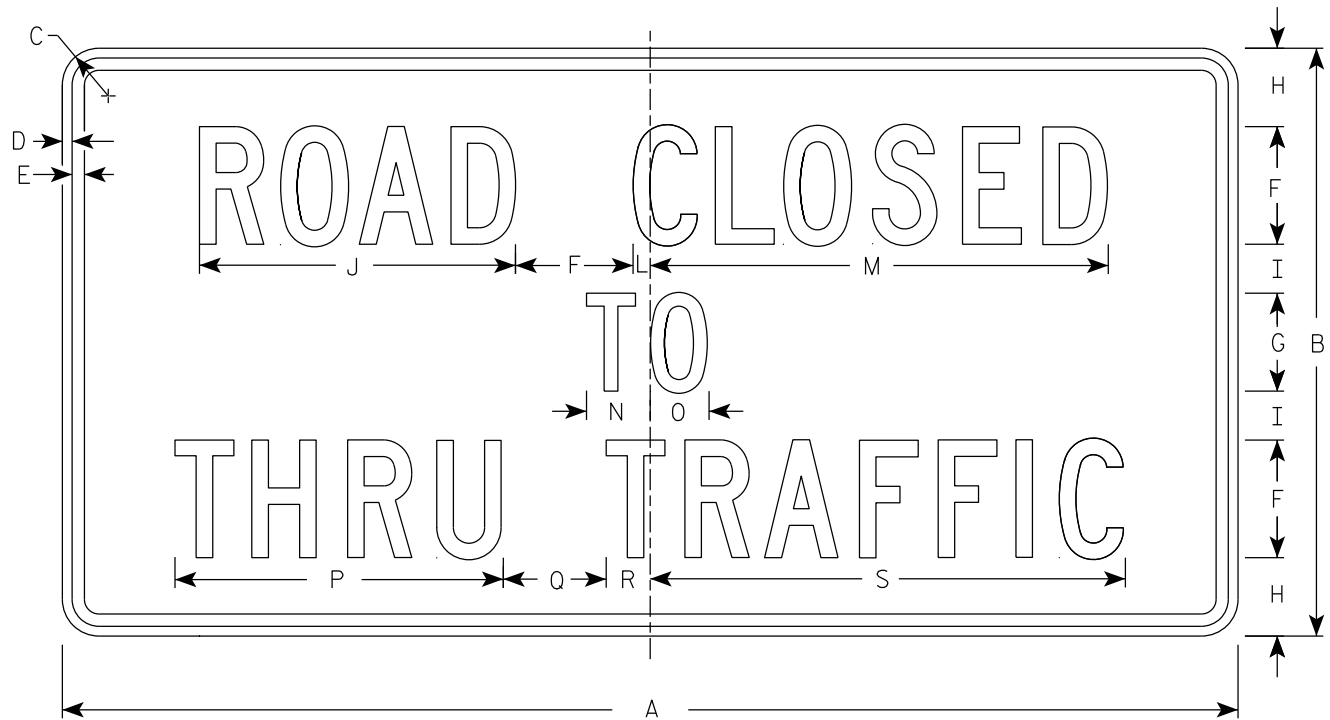
DATE 2/5/24 PLATE NO. R11-3C.4

PROJECT NO:

SHEET NO: 80

E

7



R11-4

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.

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	60	30	1 7/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
2M	60	30	1 7/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
3																											
4																											
5																											

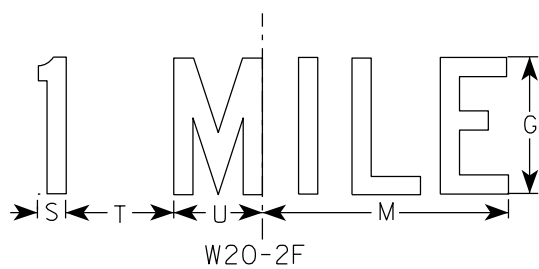
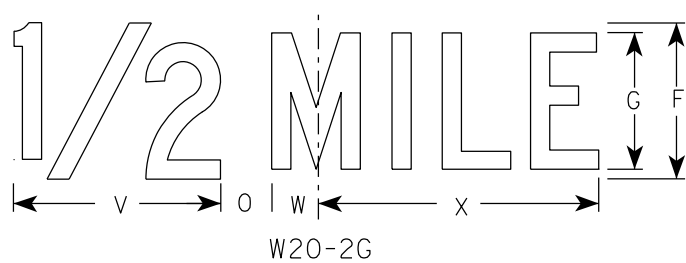
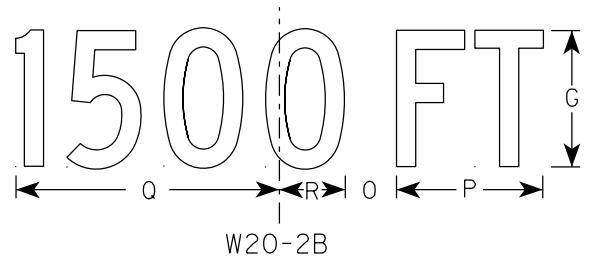
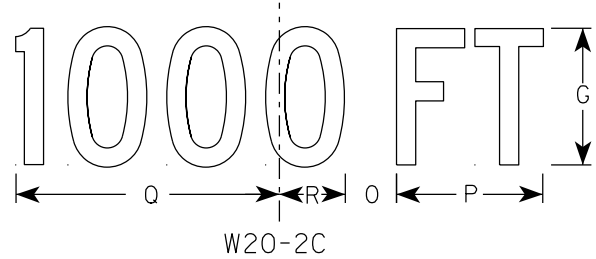
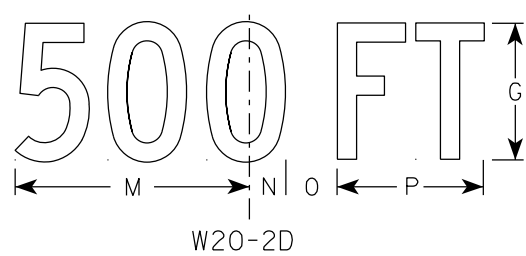
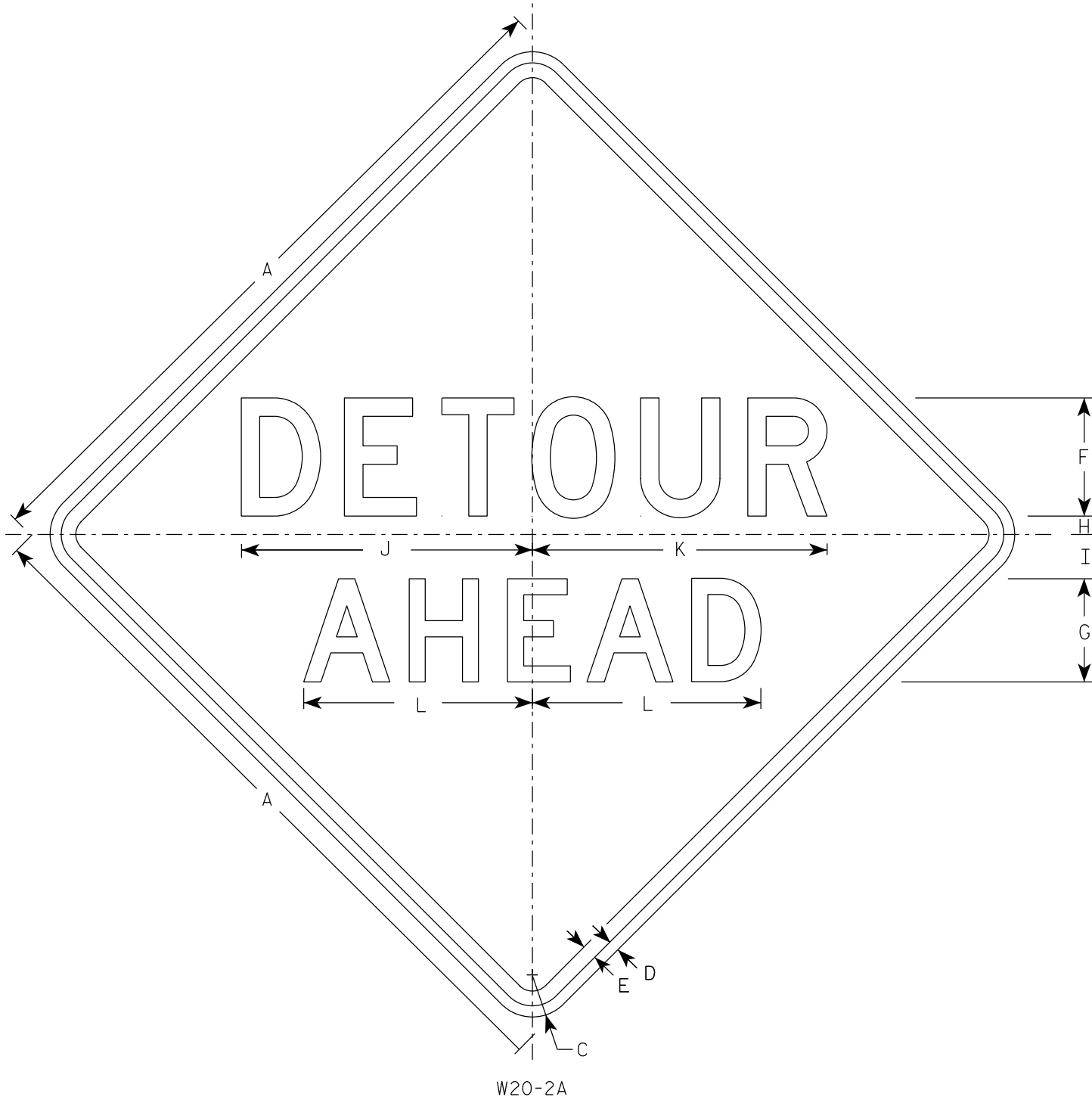
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 81

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: 82	E
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DESIGN DATA

LIVE LOAD:

DESIGN LOADING _____ HS 20
INVENTORY RATING _____ HS 45.0
OPERATING RATING _____ HS 75.1
WISCONSIN STANDARD PERMIT
VEHICLE RATING (WS.-SPV): _____ 250 KIPS

MATERIAL PROPERTIES - DECK REPLACEMENT:

CONCRETE MASONRY DECK _____ $f'_c = 4,000$ 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:

STH 54
A.A.D.T. (2027) _____ 2,700
A.A.D.T. (2047) _____ 3,120
DESIGN SPEED _____ 60 M.P.H.

SCOPE OF WORK

- REMOVAL OF EXISTING CONCRETE DECK AND PLACEMENT OF NEW WIDER DECK
- ABUTMENT MODIFICATION TO ACCOMMODATE WIDER BRIDGE DECK
- NEW RAILING TUBULAR TYPE M
- SURFACE REPAIR AT NORTH ABUTMENT
- RIPRAP AROUND PIER 1, WEST FOOTING

LIST OF DRAWINGS

- GENERAL PLAN
- CROSS SECTIONS, GENERAL NOTES AND QUANTITIES
- CROSS SECTIONS AND PROFILE
- ABUTMENTS
- SUPERSTRUCTURE
- SUPERSTRUCTURE DETAILS
- STRIP SEAL EXPANSION JOINT DETAIL
- SUPERSTRUCTURE REINFORCEMENT
- RAILING TUBULAR TYPE M

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

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



NOTES

* LOCATION OF BEAM GUARD ATTACHMENT

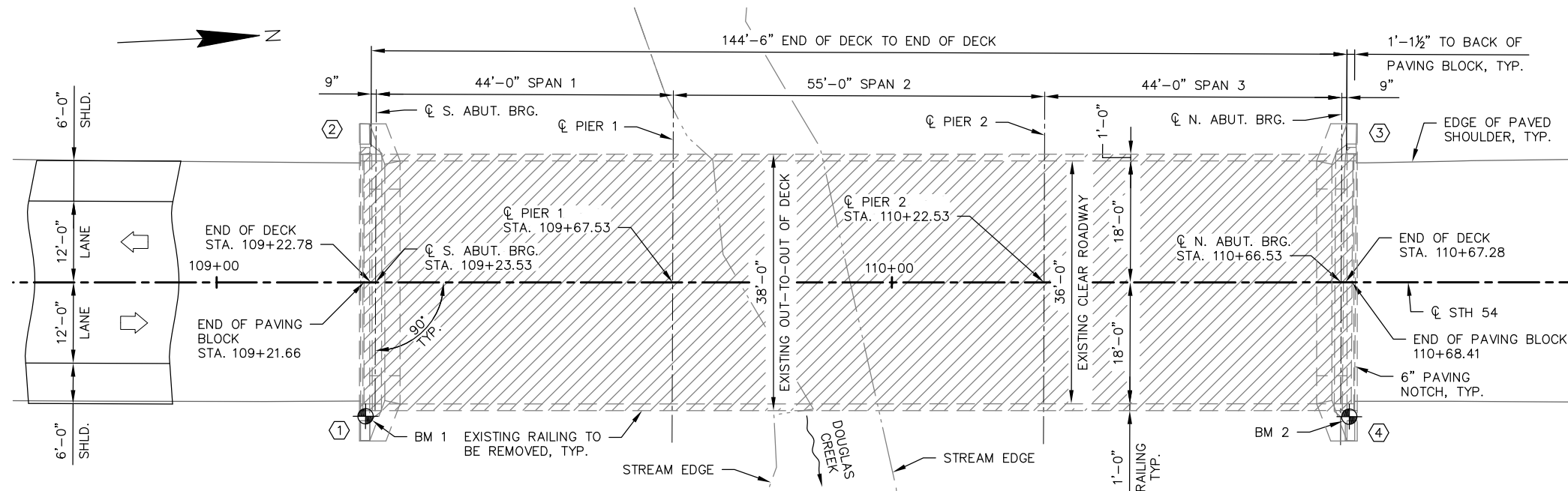
⬡ INDICATES WING NUMBER

▨ LIMITS OF REMOVAL

BENCH MARKS

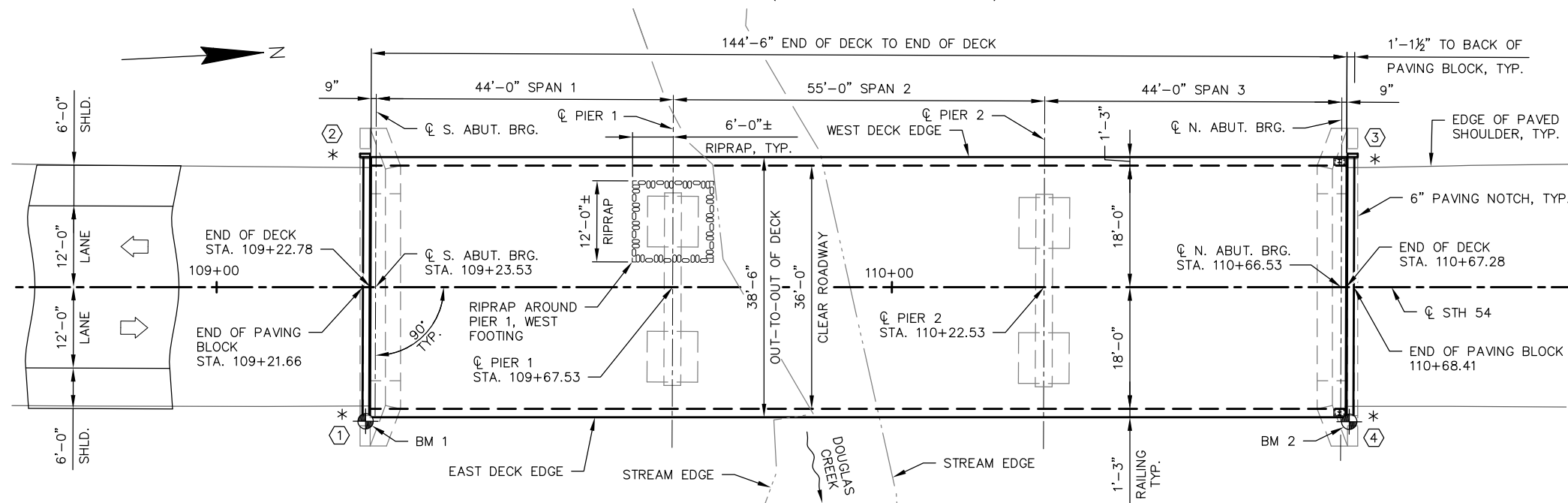
NO.	STATION/OFFSET	DESCRIPTION	ELEVATION
BM 1	109+22.13, 19.72' RT.	ALUMINUM DISC IN WING WALL	777.52
BM 2	110+67.81, 19.25' RT.	BRONZE DISC IN WING WALL	777.56

HORIZONTAL DATUM AND ADJUSTMENT: NAD 83 (2011)
VERTICAL DATUM AND ADJUSTMENT: NAVD 88 (2012)
COORDINATE REFERENCE SYSTEM: WISCRS JACKSON CO.



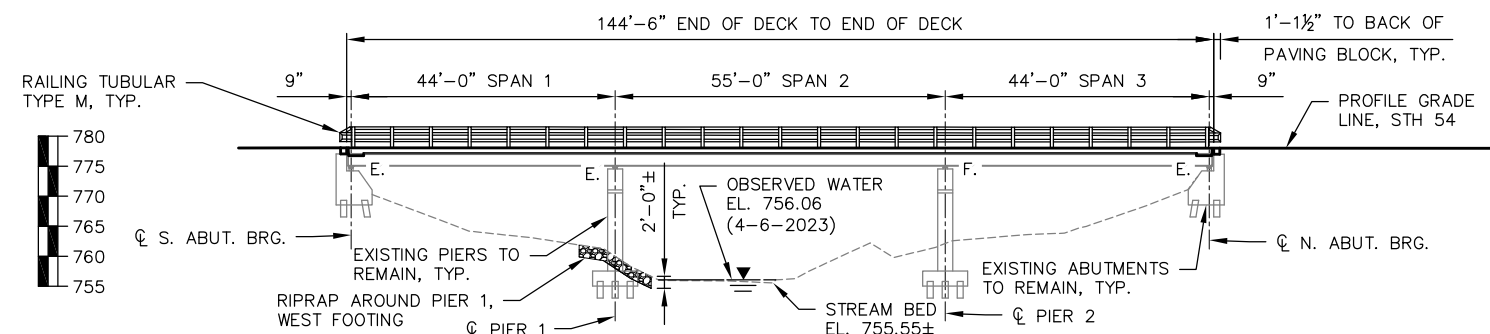
EXISTING REMOVAL PLAN B-27-16

(THREE SPAN W24x146 STEEL GIRDERS)
(PIERS NOT SHOWN FOR CLARITY)



PLAN B-27-16

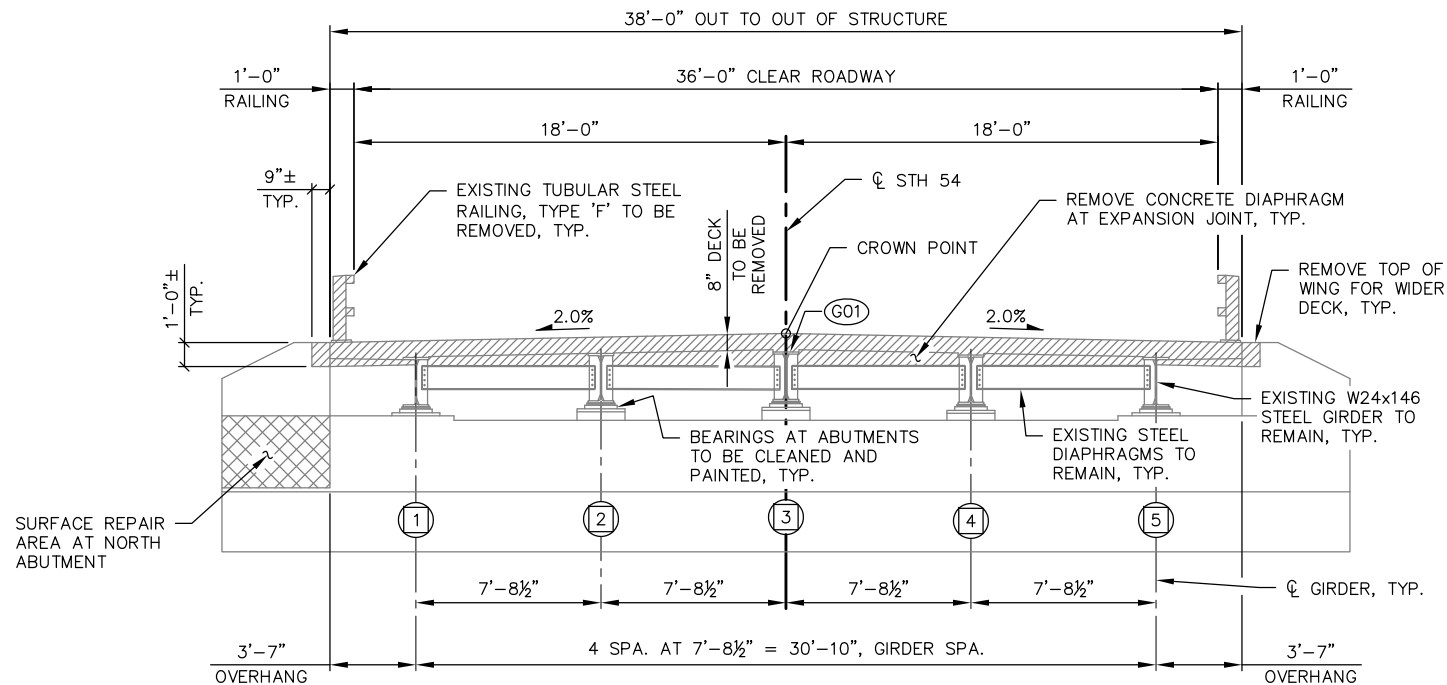
(THREE SPAN W24x146 STEEL GIRDERS)



ELEVATION

(THRU DOUGLAS CREEK, LOOKING WEST)

NO.	DATE	REVISION	BY
WESTBROOK Associated Engineers, Inc.			
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		08/11/26 DATE	
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-27-16			
STH 54 OVER DOUGLAS CREEK			
COUNTY	JACKSON	TOWN/CITY/VILLAGE	MELROSE
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	JDO	DESIGN CK'D.	CDS
DRAWN BY	JDO	PLANS CK'D.	ACK
GENERAL PLAN			SHEET 1 OF 9
			83



AT ABUTMENT
(PILING NOT SHOWN FOR CLARITY)

CROSS SECTION THRU ROADWAY – REMOVAL STAGE

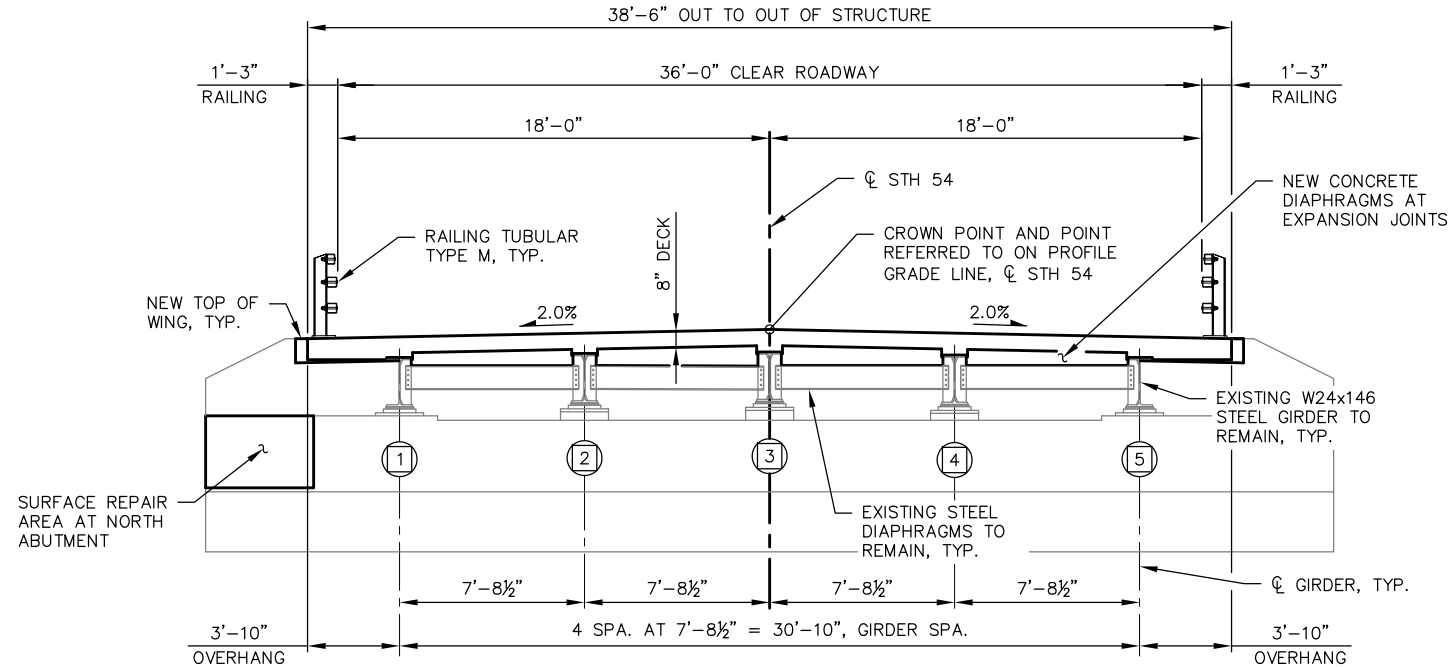
(LOOKING NORTH)

NOTES

- (G01) CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE SHEAR STUDS AND TOP GIRDER FLANGE. FIELD ENGINEER WILL INSPECT GIRDERS PRIOR TO PLACING NEW DECK.
- LIMITS OF REMOVAL
- LIMITS OF CONCRETE SURFACE REPAIR. CONCRETE SURFACE REPAIR LIMITS ARE APPROXIMATE. FIELD CONDITIONS MAY VARY. CONCRETE SURFACE REPAIR AS DIRECTED BY THE FIELD ENGINEER.
- (#) INDICATES GIRDER LINE DESIGNATION

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	S. ABUT.	PIER 1	PIER 2	N. ABUT.	SUPER.	TOTALS
203.0270	REMOVING STRUCTURE OVER WATERWAY DEBRIS CAPTURE B-27-16	EACH	---	---	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-27-16	EACH	---	---	---	---	---	1
502.0100	CONCRETE MASONRY BRIDGES	CY	1.5	---	---	1.5	155.9	159
502.3101	EXPANSION DEVICE	LF	---	---	---	---	77.0	77
502.3200	PROTECTIVE SURFACE TREATMENT	SY	19	---	---	19	679	717
502.4106	ADHESIVE ANCHORS 3/4-INCH	EACH	---	---	---	---	5	5
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	---	---	---	---	78	78
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	---	---	---	---	48100	48100
509.1500	CONCRETE SURFACE REPAIR	SF	---	---	---	14	---	14
513.4061	RAILING TUBULAR TYPE M	LF	---	---	---	---	294	294
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	1	---	---	1	---	2
517.0901.S	PREPARATION AND COATING OF TOP FLANGES B-27-16	EACH	---	---	---	---	---	1
517.4001.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-27-16	EACH	---	---	---	---	---	1
606.0300	RIPRAP HEAVY	CY	---	11	---	---	---	11
645.0120	GEOTEXTILE TYPE HR	SY	---	27	---	---	---	27
SPV.0060	CLEANING AND PAINTING BEARINGS	EACH	5	5	5	5	---	20
SPV.0090	FLASHING STAINLESS STEEL	LF	---	---	---	---	289	289
(NON-BID ITEM)	BRIDGE SEAT PROTECTION							



AT ABUTMENT
(PILING NOT SHOWN FOR CLARITY)

CROSS SECTION THRU ROADWAY – FINAL CONDITION

(LOOKING NORTH)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS AND THE EXISTING FIELD SURVEY FROM 2023.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

THE PROJECT WILL REHABILITATE EXISTING STRUCTURE, B-27-16, A THREE SPAN STEEL GIRDER WITH CONCRETE DECK BRIDGE, 148'-6"± FEET LONG AND HAS A CLEAR ROADWAY WIDTH OF 36'-0" AND AN OVERALL WIDTH OF 38'-0". THE EXISTING DECK TO BE REMOVED. REMOVE THE EXISTING STEEL RAILING, TYPE 'F'.

ANY EXCAVATION NECESSARY TO COMPLETE THE RE-DECK IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-27-16".

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 LOCATION 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 2.7" WHICH IS THE MAXIMUM HAUNCH FOR WHICH THE CONTRACTOR WILL BE PAID.

VARIATIONS OF THE NEW GRADE LINE OVER ½" MUST BE SUBMITTED TO THE DESIGN ENGINEER FOR REVIEW.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

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

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

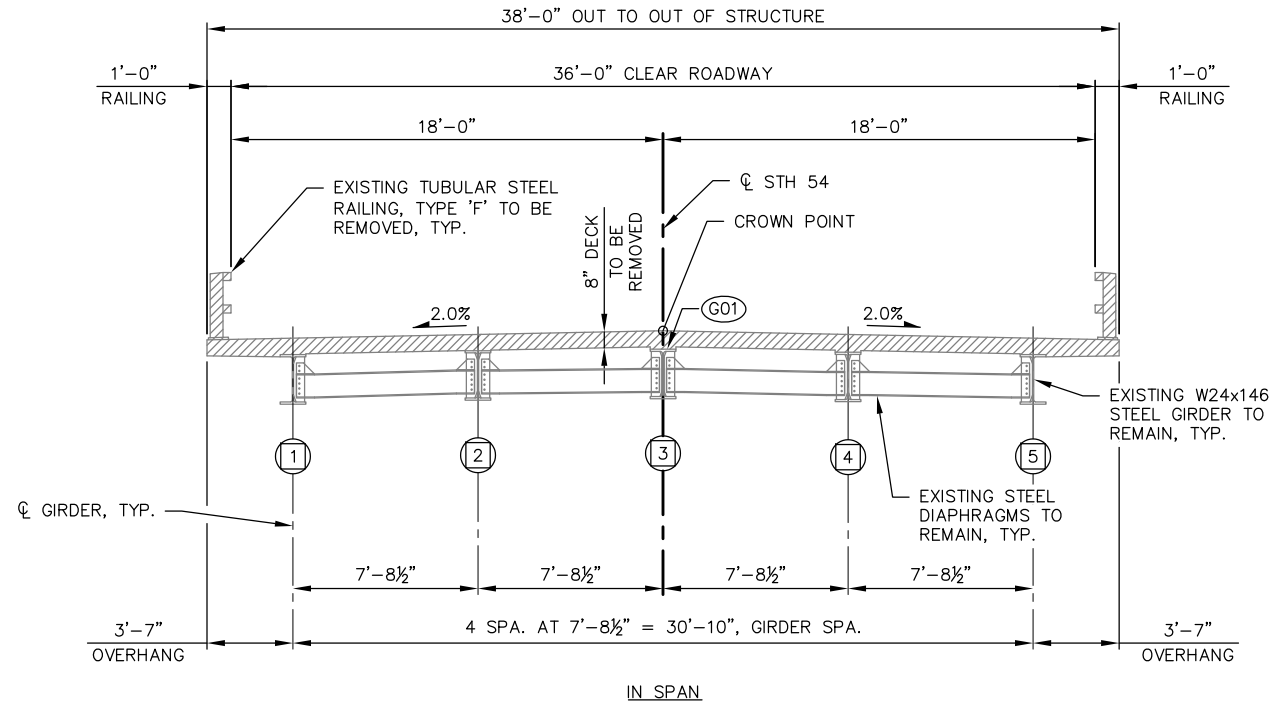
THE SLOPE OF THE FILL AROUND PIER 1 SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE HR TO THE EXTENT SHOWN ON THE "GENERAL PLAN" SHEET AND AS DIRECTED BY THE ENGINEER.

APPLY BRIDGE SEAT PROTECTION PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS TO THE TOP SURFACES OF BOTH ABUTMENTS BELOW EXPANSION DEVICES.

ALL EXISTING BEARINGS AT THE SOUTH AND NORTH ABUTMENTS AND PIERS 1 AND 2, TO BE CLEANED AND PAINTED UNDER THE BID ITEM "CLEANING AND PAINTING BEARINGS". PAINT APPLICATION ON THE BEARINGS SHALL BE BRUSHED ON.

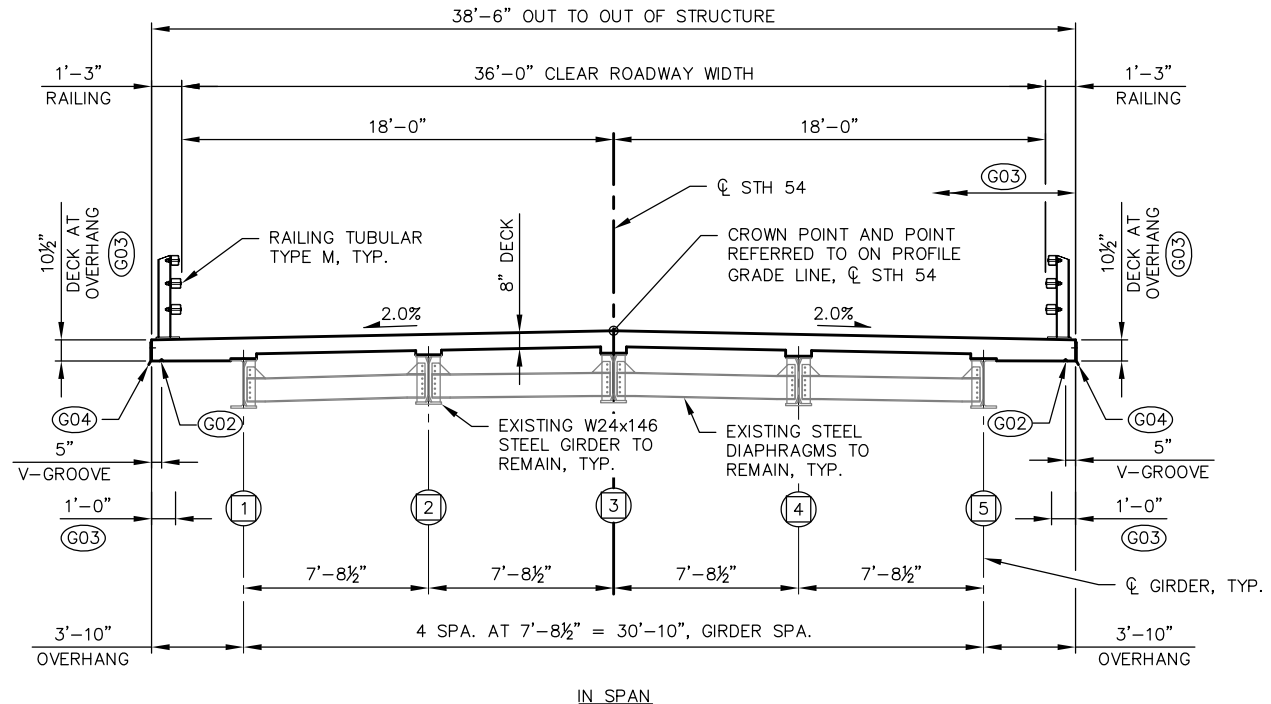
THE FINAL COAT OF PAINT ON REPAINTED BEARINGS SHALL MATCH AMS STANDARD COLOR NUMBER 20059 (BROWN).

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-16			
DRAWN BY JDO		PLANS CK'D	ACK
CROSS SECTIONS, GENERAL NOTES, AND QUANTITIES			SHEET 2 OF 9
			84



CROSS SECTION THRU ROADWAY – REMOVAL STAGE

(LOOKING NORTH)



CROSS SECTION THRU ROADWAY – FINAL CONDITION

(LOOKING NORTH)

NOTES

- LIMITS OF REMOVAL
- G01 CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE SHEAR STUDS AND TOP GIRDER FLANGE. FIELD ENGINEER WILL INSPECT GIRDERS PRIOR TO PLACING NEW DECK.
- G02 3/4" V-GROOVE REQ'D. EXTEND TO 2'-0" FROM F.F. OF ABUTMENT BODY.
- G03 COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS. PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO ENTIRE EXPOSED TOP OF DECK, INCLUDING THE DECK EDGES AND 1'-0" UNDER THE DECK, EXPOSED SURFACES OF THE WING, THE FRONT FACE OF THE ABUTMENT TO 1'-0" PAST THE EDGE OF DECK, AND VERTICAL AND HORIZONTAL FACES OF PAVING NOTCH.
- G04 FLASHING STAINLESS STEEL INSTALLED ALONG DECK EDGE, SEE "FLASHING DETAIL" THIS SHEET.
- # INDICATES GIRDER LINE DESIGNATION

FLASHING NOTES

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

FLASHING TO BE INSTALLED AFTER PROTECTIVE SURFACE TREATMENT APPLICATION. PROTECTION SURFACE TREATMENT SHALL BE APPLIED TO THE TOP SURFACE OF THE DECK, THE EXTERIOR EDGE OF THE DECK AND THE FIRST 1'-0" OF THE UNDERSIDE OF THE DECK.

CONCRETE SCREWS SHALL BE 410 STAINLESS STEEL.

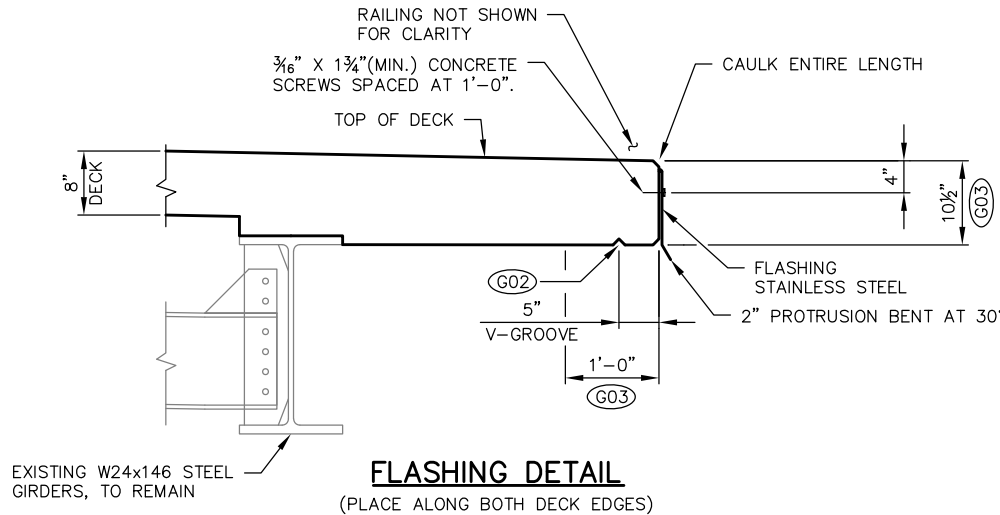
EXTEND FLASHING FROM END OF DECK TO END OF DECK (DO NOT EXTEND ACROSS EXPANSION JOINTS).

TOP OF FLASHING TO BEGIN APPROX. 1-INCH BELOW TOP OF DECK SURFACE.

THE FLASHING IS TO BE A CONSTANT HEIGHT BASED ON THE THINNEST DECK DEPTH OVER THE BRIDGE LENGTH.

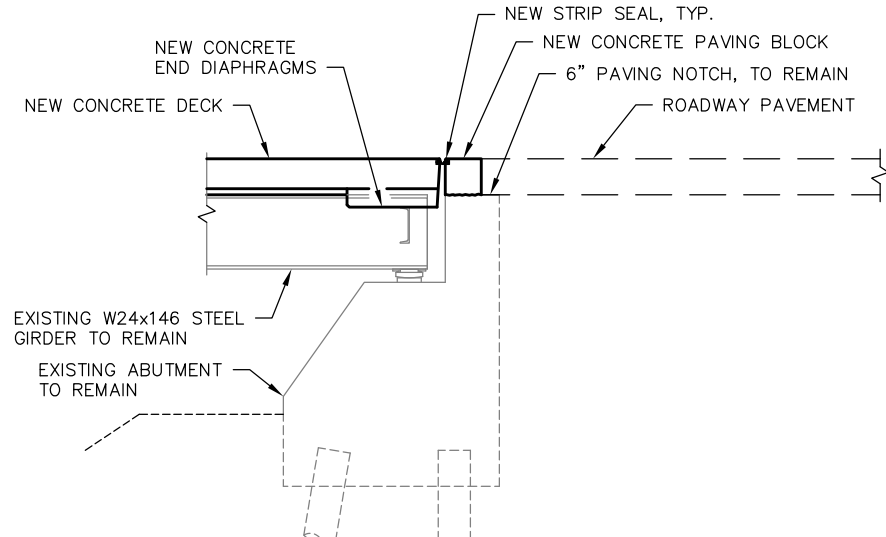
PROVIDE 2" MINIMUM FLASHING OVERLAP, FASTEN WITH 3/16" X 2" (MIN.) CONCRETE SCREWS.

CAULK SHALL BE NON-STAINING, GRAY NON-BITUMINOUS JOINT SEALER.

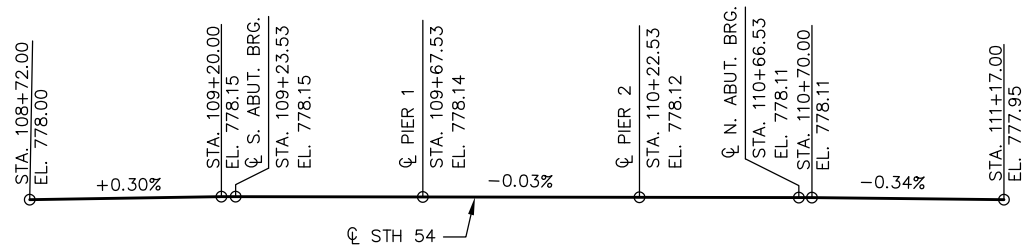


FLASHING DETAIL

(PLACE ALONG BOTH DECK EDGES)

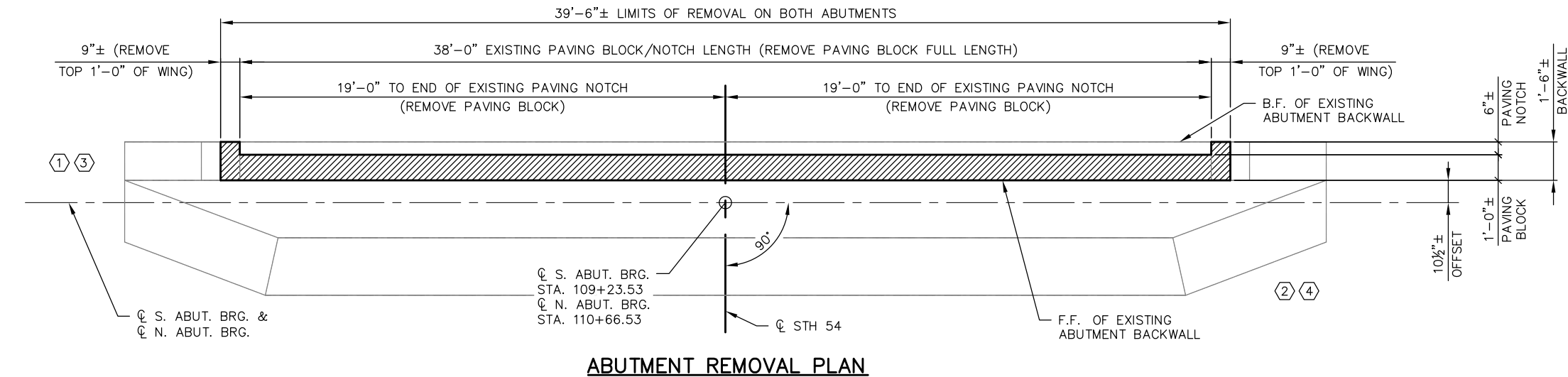
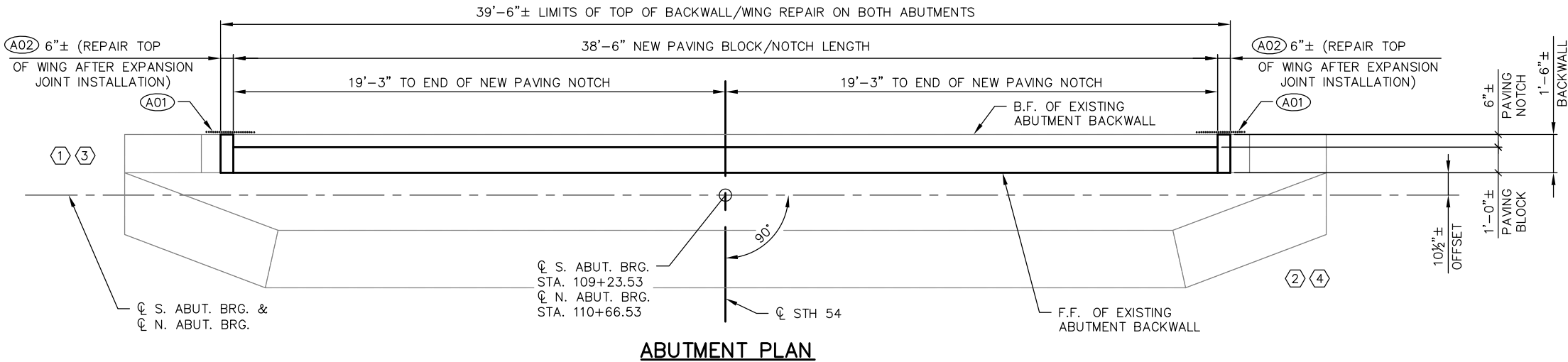
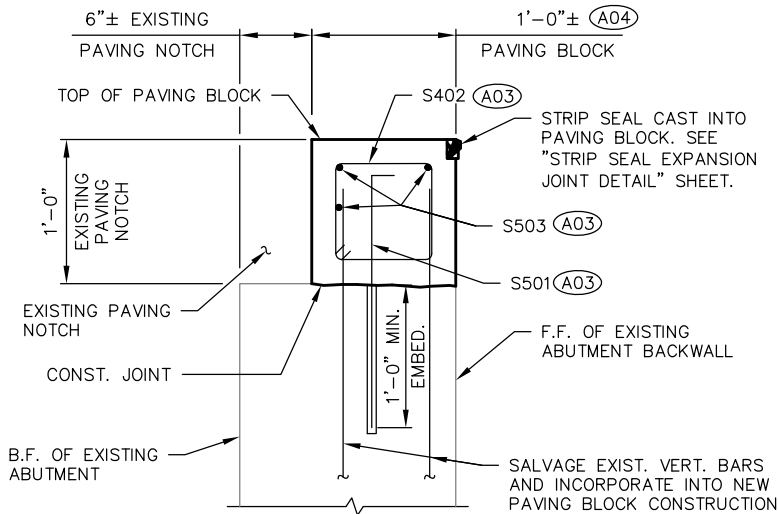
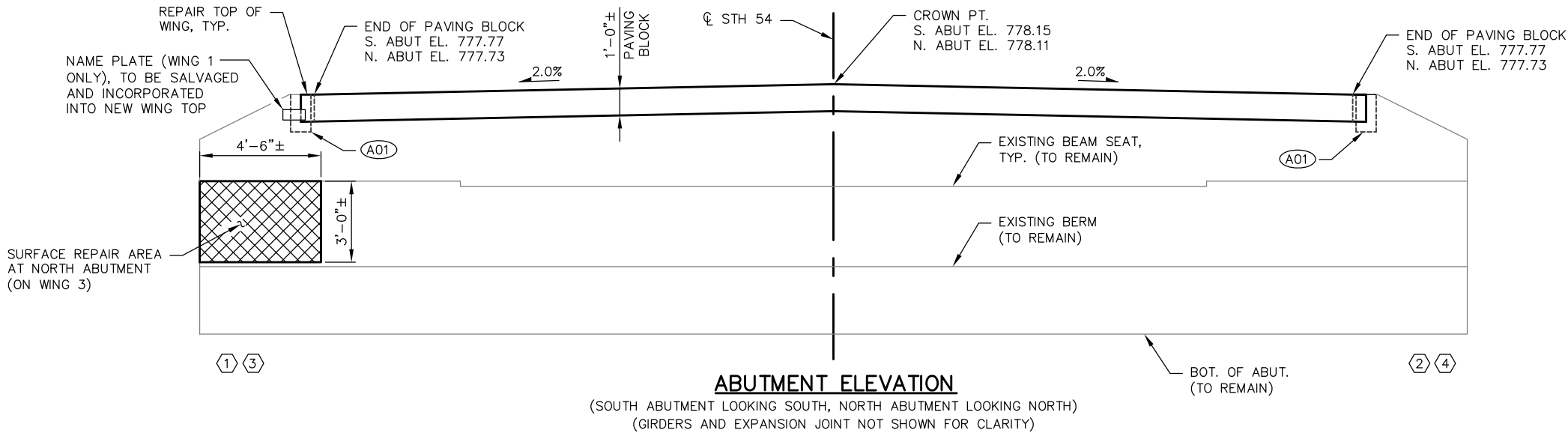


TYPICAL SECTION THRU ABUTMENT



PROFILE GRADE LINE, CL STH 54

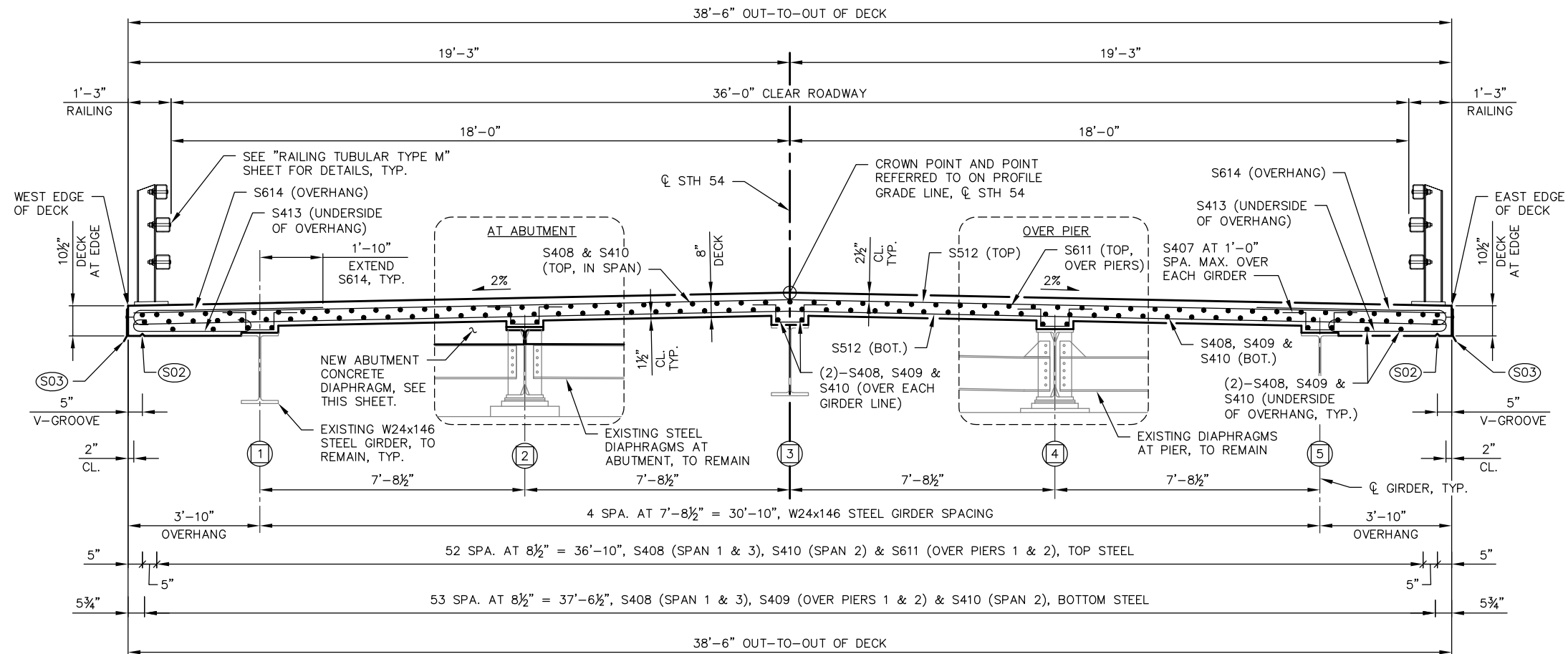
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-16			
DRAWN BY JDO		PLANS CK'D	ACK
CROSS SECTIONS AND PROFILE			SHEET 3 OF 9
			85



- NOTES
- A01 18" RUBBERIZED MEMBRANE WATERPROOFING (R.M.W.), SEAL BACK FACE OF NEW TOP OF WING JOINTS (BOTH HORIZONTAL AND VERTICAL JOINTS).
 - A02 SALVAGE AND REALIGN EXISTING WING REINFORCEMENT IN AREAS OF WING REPAIR REQUIRED FOR INSTALLATION OF NEW STRIP SEAL.
 - A03 SEE SUPERSTRUCTURE SHEETS FOR REINFORCEMENT WITHIN PAVING BLOCK.
 - A04 POUR PAVING BLOCK CONCRETE AFTER SUPERSTRUCTURE IS IN PLACE.
 - INDICATES WING NUMBER

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

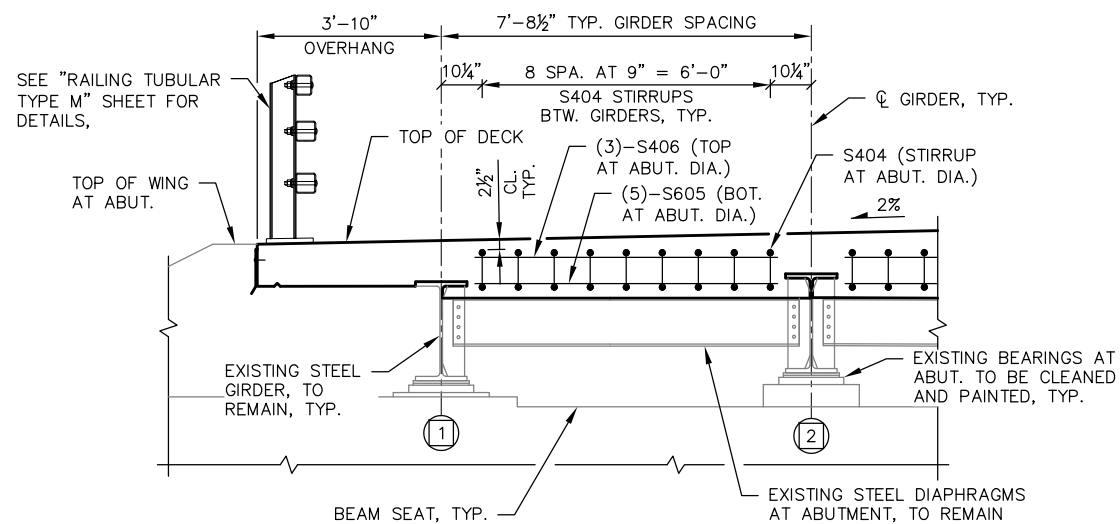
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-16			
DRAWN BY CDS		PLANS CK'D ACK	
ABUTMENTS			SHEET 4 OF 9
			86



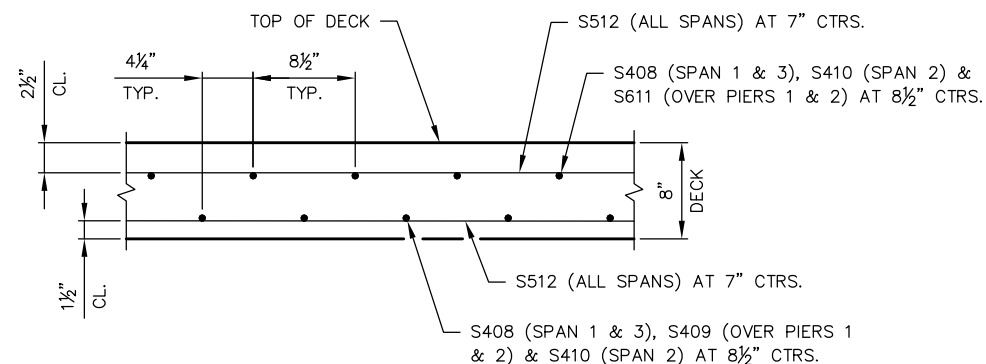
CROSS SECTION THRU ROADWAY
(LOOKING NORTH)

NOTES

- (S02) 3/4" V-GROOVE. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT BODY. V-GROOVES ARE REQUIRED.
- (S03) FLASHING STAINLESS STEEL. SEE "CROSS SECTIONS AND PROFILE" SHEET FOR DETAILS.
- (#) INDICATES GIRDER LINE DESIGNATION

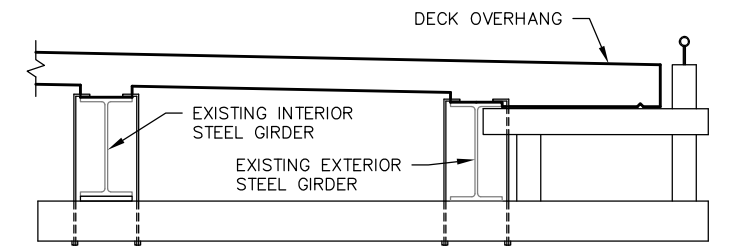


ABUTMENT CONCRETE DIAPHRAGM
(NORTH ABUTMENT LOOKING NORTH,
SOUTH ABUTMENT SIMILAR)



SECTION A-A
(IN SPAN)

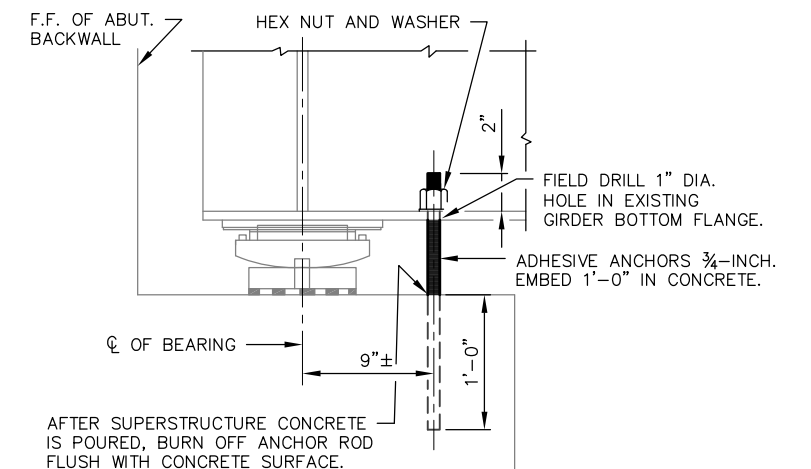
F.F. - FRONT FACE
B.F. - BACK FACE



OVERHANG SUPPORT CONCEPT SKETCH

(THIS DETAIL IS FOR INFORMATIONAL PURPOSES ONLY.
CONTRACTOR MAY CONSIDER THIS OR ANOTHER SYSTEM AT THEIR DISCRETION)

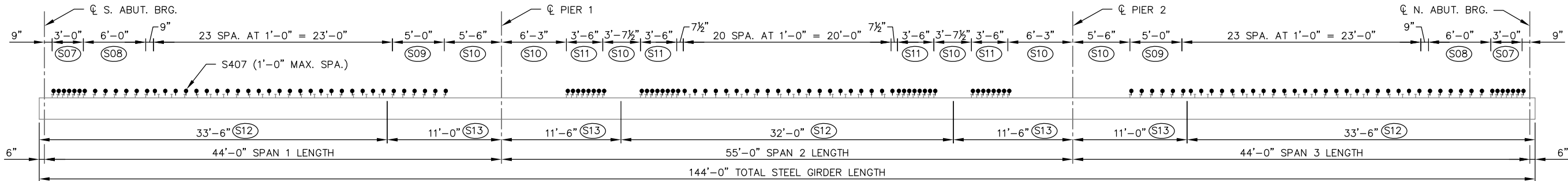
NOTE:
THE CONTRACTOR SHALL VERIFY STABILITY OF FASCIA BEAMS FROM OVERTURNING (NO PERMANENT BEAM DIAPHRAGMS ARE PRESENT). CONTRACTOR SHALL PROVIDE TEMPORARY BRACING. COST OF OVERHANG SUPPORT SYSTEM TO BE INCLUDED WITH BID ITEM "CONCRETE MASONRY BRIDGES".



**TEMPORARY HOLD DOWN DEVICE
ELEVATION AT ABUTMENT**

PLACE ONE ANCHOR ROD PER GIRDER AT ABUTMENT WHERE SLAB POUR TERMINATES. LOCATE 4" (NORMAL) OFF CL. OF GIRDER. ANCHOR ROD, NUT, WASHER, AND DRILLED HOLE IN GIRDER FLANGE SHALL BE PAID FOR AS "ADHESIVE ANCHORS 3/4-INCH".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-16			
DRAWN BY CDS		PLANS CK'D	ACK
SUPERSTRUCTURE DETAILS			SHEET 6 OF 9
			88



S407 BAR SPACING OVER EACH GIRDER LINE

(S407 SPACING TO MATCH EXISTING SHEAR STUD SPACING ON EXISTING GIRDERS)

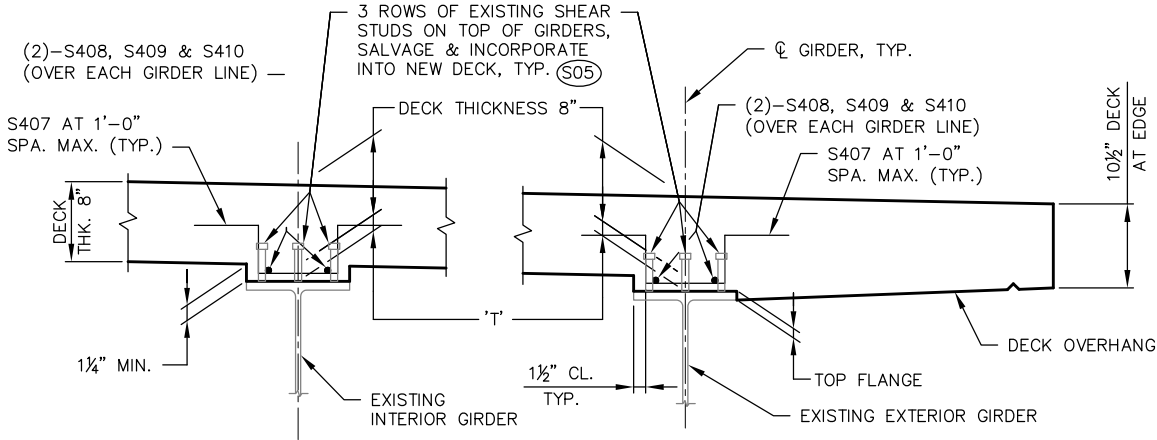
BILL OF BARS SUPERSTRUCTURE

COATED = 48,100 LBS.

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
(S06)	S501	78				ABUT. PAVING BLOCK (DOWEL - ADHESIVE ANCHOR) VERT.
	S402	78				ABUT. PAVING BLOCK (STIRRUP) VERT.
	S503	36				ABUT. PAVING BLOCK HORIZ.
	S404	72				DECK - ABUT. DIAPHRAGM (STIRRUP) VERT.
	S605	40				DECK - ABUT. DIAPHRAGM (BOTTOM) TRANS.
	S406	24				DECK - ABUT. DIAPHRAGM (TOP) TRANS.
	S407	685				DECK - OVER GIRDERS (STIRRUP) VERT.
	S408	246				DECK - SPANS 1 & 3 (TOP & BOTTOM) LONGIT.
	S409	136				DECK - OVER PIERS 1 & 2 (BOTTOM) LONGIT.
	S410	123				DECK - SPAN 2 (TOP & BOTTOM) LONGIT.
	S611	110				DECK - OVER PIERS 1 & 2 (TOP) LONGIT.
	S512	495				DECK - ALL SPANS (TOP & BOTTOM) TRANS.
	S413	496				DECK - ALL SPANS (UNDERSIDE OF OVERHANG) TRANS.
	S614	496				DECK - ALL SPANS (TOP - OVERHANG) TRANS.
	S615	92				DECK - TOP AT RAIL POSTS TRANS.
	S616	168				DECK - TOP AT INTERIOR RAIL POSTS LONGIT.
	S617	16				DECK - TOP AT END RAIL POSTS LONGIT.

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

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.



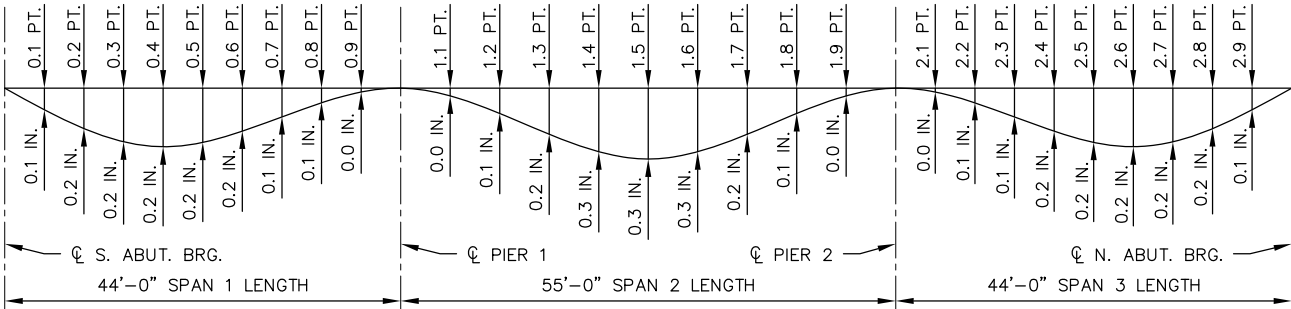
DECK HAUNCH DETAIL

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 C 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 STEEL GIRDER ELEVATION
+ CONCRETE DEAD LOAD DEFLECTION
- DECK THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2.7" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



CONCRETE DEAD LOAD DEFLECTION DIAGRAM

NOTES

- (S05) CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE EXISTING STEEL GIRDER, INCLUDING SHEAR STUDS. FIELD ENGINEER WILL INSPECT GIRDER TOP FLANGES AND SHEAR STUDS PRIOR TO PLACING NEW DECK.
- (S06) ADHESIVE ANCHORS NO. 5 BARS EMBED 1'-0" INTO EXISTING ABUTMENT CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. ANCHORS SHALL BE EPOXY COATED BARS S501.
- (S07) 6 SPA. AT 6" = 3'-0", S407 STIRRUP
- (S08) 6 SPA. AT 1'-0" = 6'-0", S407 STIRRUP
- (S09) 5 SPA. AT 1'-0" = 5'-0", S407 STIRRUP
- (S10) NO S407 STIRRUP REQUIRED (NO SHEAR STUDS IN THIS AREA)
- (S11) 7 SPA. AT 6" = 3'-6", S407 STIRRUP
- (S12) BOTTOM FLANGE TENSION ZONE. FIELD WELDING TO BOTTOM FLANGE FOR CONSTRUCTION PURPOSES IS PROHIBITED IN THIS AREA.
- (S13) TOP FLANGE TENSION ZONE. FIELD WELDING TO TOP FLANGE FOR CONSTRUCTION PURPOSES IS PROHIBITED IN THIS AREA.

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

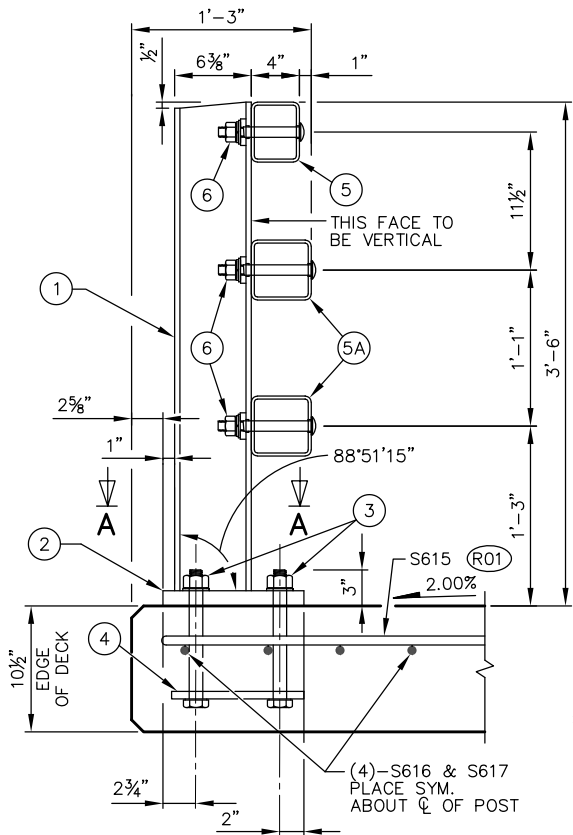
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-16			
DRAWN BY CDS		PLANS CK'D	ACK
SUPERSTRUCTURE REINFORCEMENT			SHEET 8 OF 9
			90

LEGEND

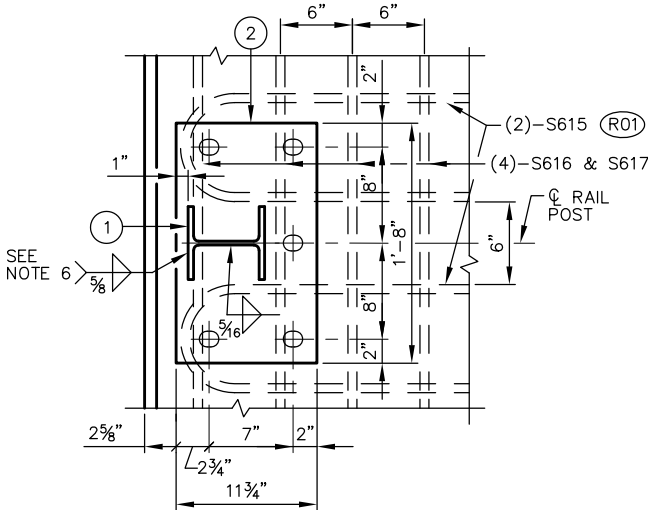
- ① W6 x 25 WITH 1 1/8" x 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1 1/4" x 11 3/4" x 1'-8" WITH 1 7/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.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

NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

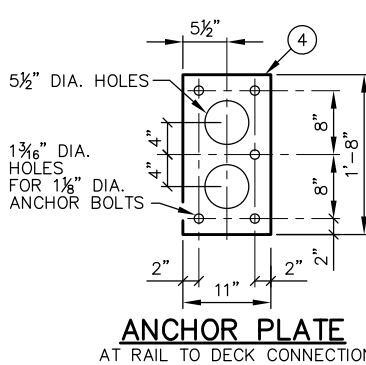


SECTION THRU RAILING ON SLAB

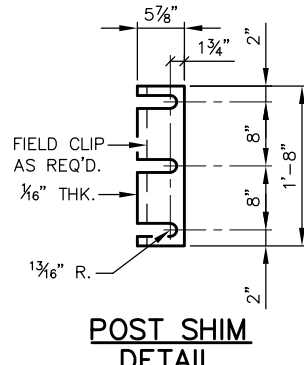


SECTION A-A

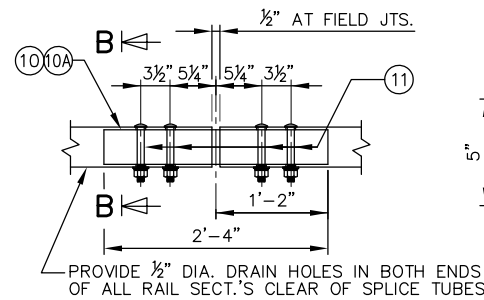
(R01) TIE TO TOP MAT OF STEEL.



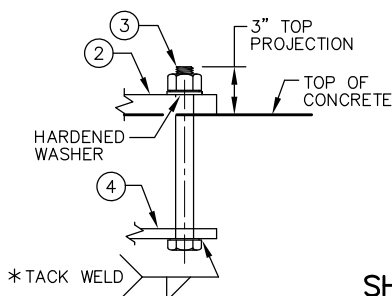
ANCHOR PLATE AT RAIL TO DECK CONNECTION



POST SHIM DETAIL



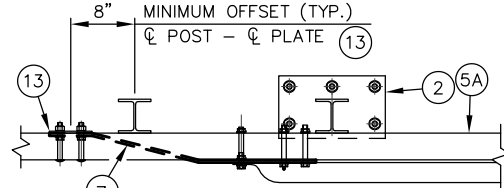
FIELD ERECTION JOINT DETAIL



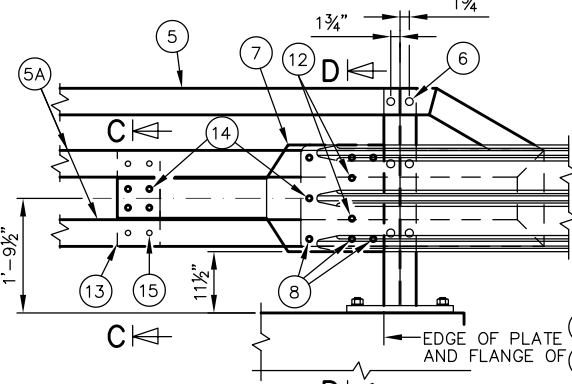
ANCHOR BOLTS

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

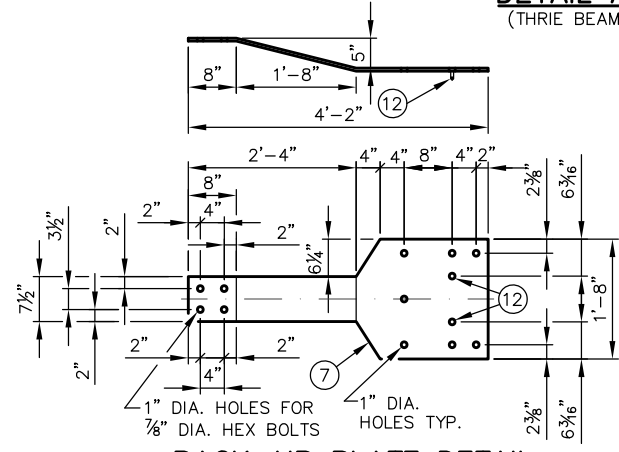
SHOP RAIL SPLICE DETAIL (LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



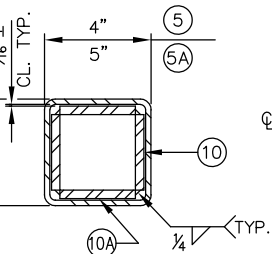
TOP VIEW AT END POST (THRIE BEAM RAIL ATTACHMENT)



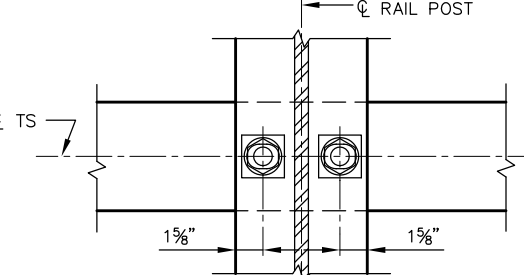
DETAIL AT END POST (THRIE BEAM RAIL ATTACHMENT)



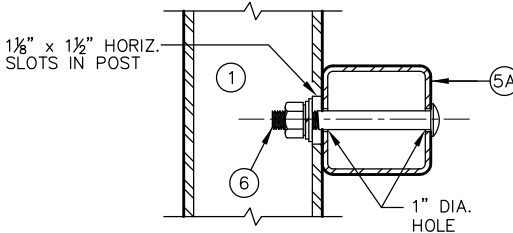
BACK-UP PLATE DETAIL AT BEAM GUARD ATTACHMENTS



SECTION B-B



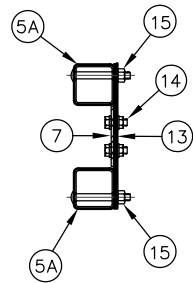
SECTION THRU POST WEB



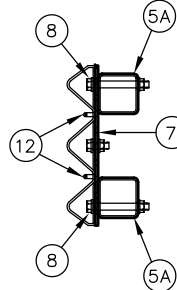
SECTION THRU RAIL

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

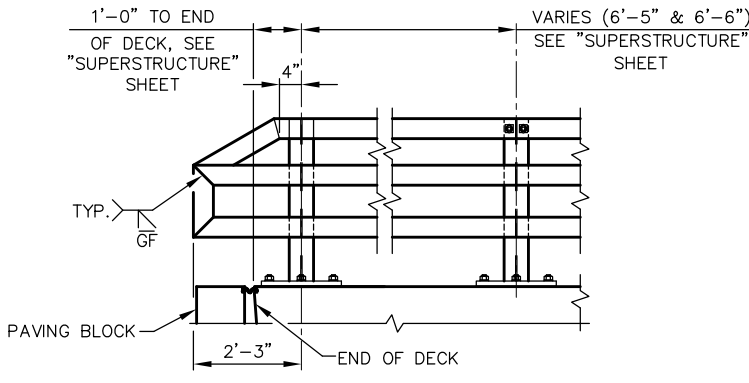
TYPICAL RAIL TO POST CONNECTIONS



SECTION C-C



SECTION D-D



PART ELEVATION OF RAILING

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-16			
DRAWN BY CDS		PLANS CK'D	ACK
RAILING TUBULAR TYPE M			SHEET 9 OF 9
			91

DESIGN DATA

LIVE LOAD:

DESIGN LOADING _____ HS 20
INVENTORY RATING _____ HS 21.0
OPERATING RATING _____ HS 36.7
WISCONSIN STANDARD PERMIT
VEHICLE RATING (WIS.-SPV): _____ 250 KIPS

MATERIAL PROPERTIES - DECK REPLACEMENT:

CONCRETE MASONRY _____ f'_c = 4,000 P.S.I.
HIGH-STRENGTH BAR STEEL
REINFORCEMENT _____ f_y = 60,000 P.S.I.

TRAFFIC DATA:

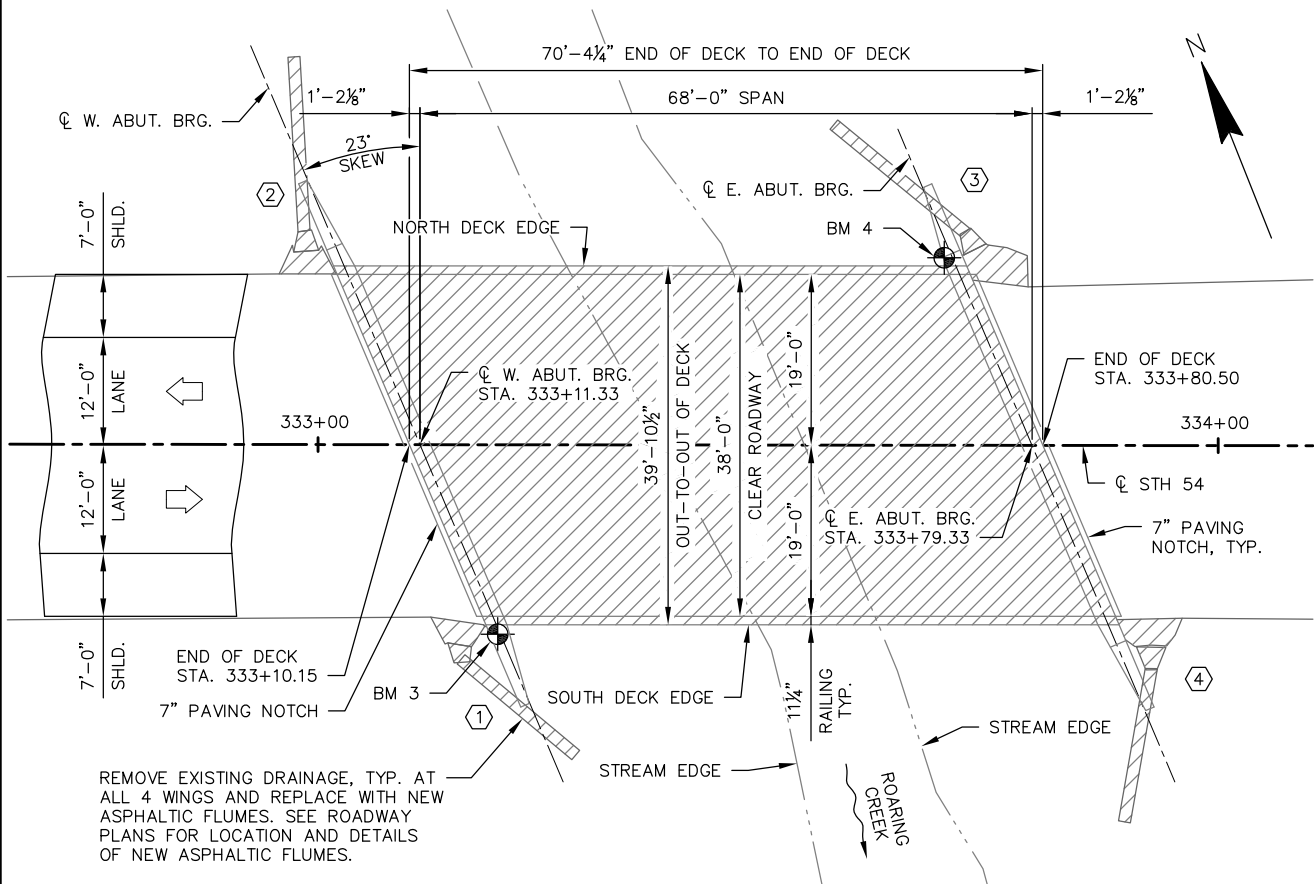
STH 54
A.A.D.T. (2027) _____ 2,700
A.A.D.T. (2047) _____ 3,120
DESIGN SPEED _____ 60 M.P.H.

SCOPE OF WORK

- REMOVAL OF EXISTING CONCRETE DECK AND PLACEMENT OF NEW WIDER DECK
- ABUTMENT MODIFICATIONS TO ACCOMMODATE WIDER BRIDGE DECK
- NEW 42SS PARAPET
- PLACE RIPRAP AT LOW AREAS AT FRONT FACE OF ABUTMENTS

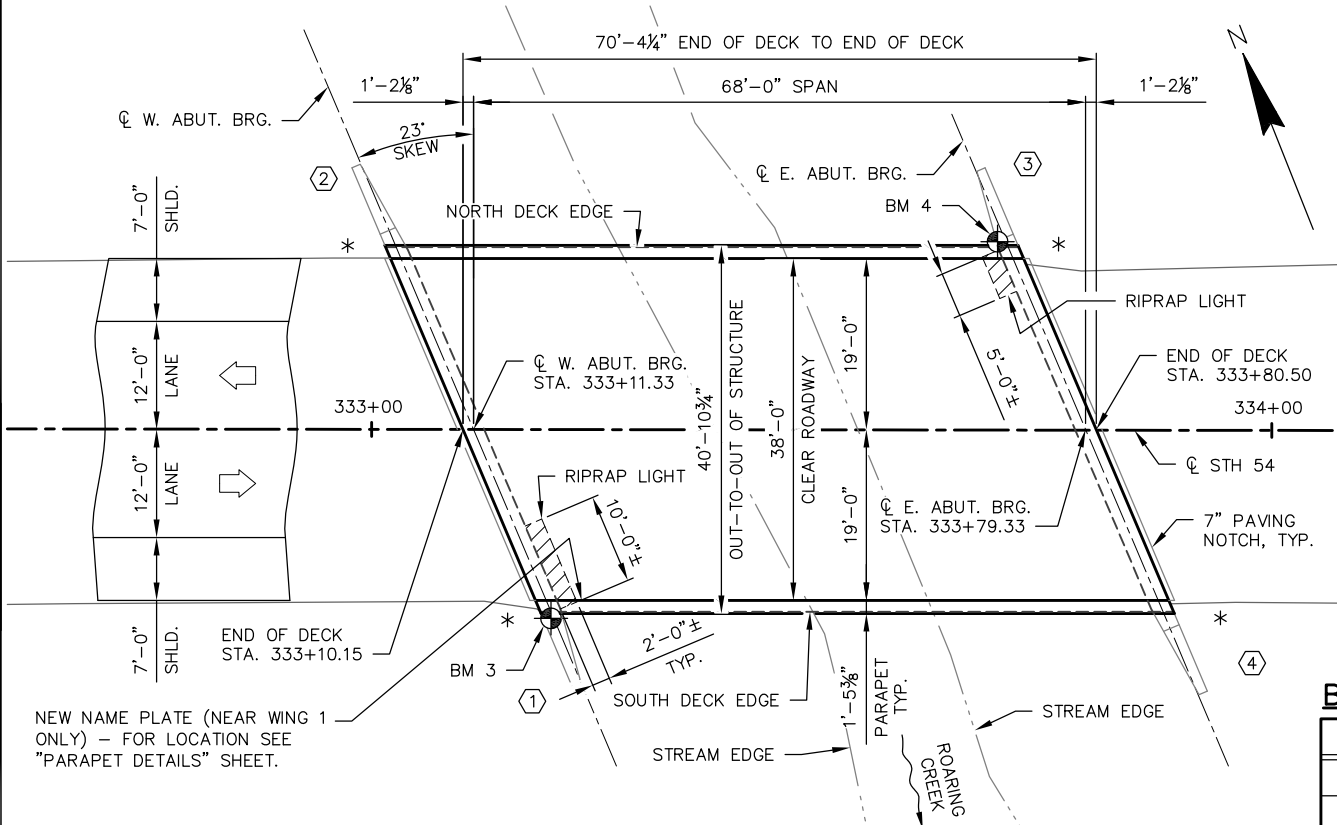


NO.	DATE	REVISION	BY
WESTBROOK Associated Engineers, Inc. 619 EAST HOXIE STREET P.O. BOX 429 SPRING GREEN, WI 53588 PHONE (608) 588-7866 FAX (608) 588-7954			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED <i>[Signature]</i> JLR CHIEF STRUCTURES DESIGN ENGINEER		08/11/26 DATE	
STRUCTURE B-27-76			
STH 54 OVER ROARING CREEK			
COUNTY	JACKSON	TOWN/CITY/VILLAGE	IRVING
DESIGN SPEC.	REHABILITATION N/A		
DESIGNED BY	JDO	DESIGN CK'D.	CDS
DRAWN BY	JDO	PLANS CK'D.	ACK
GENERAL PLAN			SHEET 1 OF 9
			92



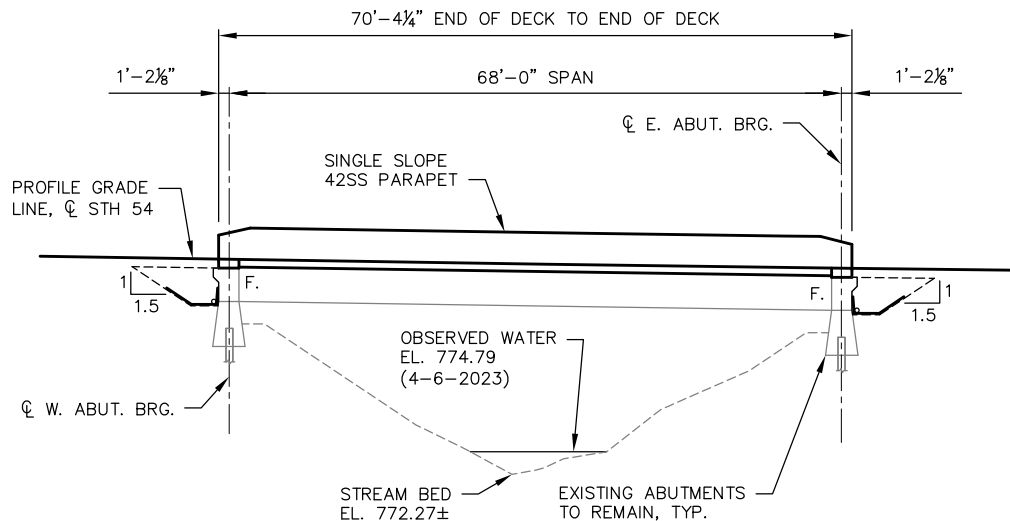
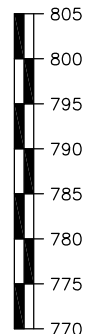
EXISTING REMOVAL PLAN B-27-76

(SINGLE SPAN 45-INCH PRESTRESSED CONCRETE GIRDERS)



PLAN B-27-76

(SINGLE SPAN 45-INCH PRESTRESSED CONCRETE GIRDERS)



ELEVATION

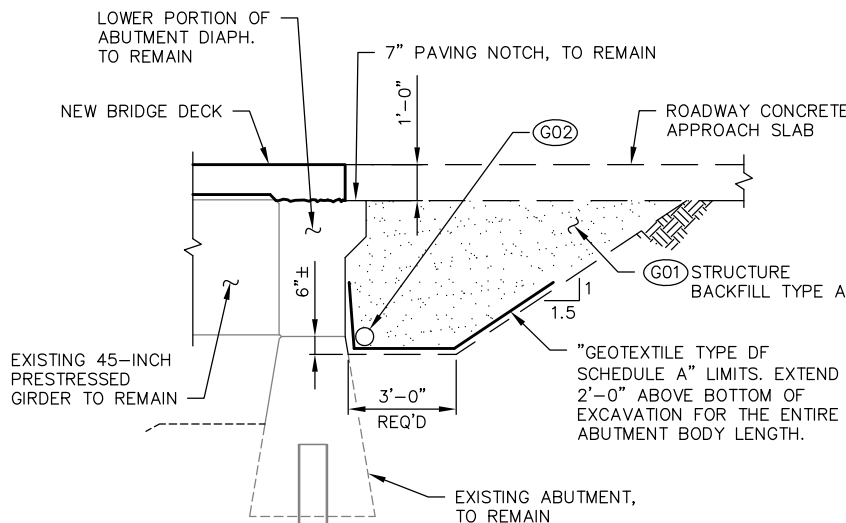
(THRU ROARING CREEK, LOOKING NORTH)

NOTES

- * LOCATION OF BEAM GUARD ATTACHMENT
- INDICATES WING NUMBER
- LIMITS OF REMOVAL
- G01 BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCLUDED WITH THE BID ITEM EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- G02 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. AS DETAILED ON "CROSS SECTIONS AND PROFILE" SHEET.

LIST OF DRAWINGS

- GENERAL PLAN
- CROSS SECTIONS, GENERAL NOTES AND QUANTITIES
- CROSS SECTIONS AND PROFILE
- ABUTMENTS
- STEEL DIAPHRAGMS
- SUPERSTRUCTURE
- SUPERSTRUCTURE DETAILS
- PARAPET DETAILS
- SUPERSTRUCTURE REINFORCEMENT



STRUCTURAL BACKFILL DETAIL

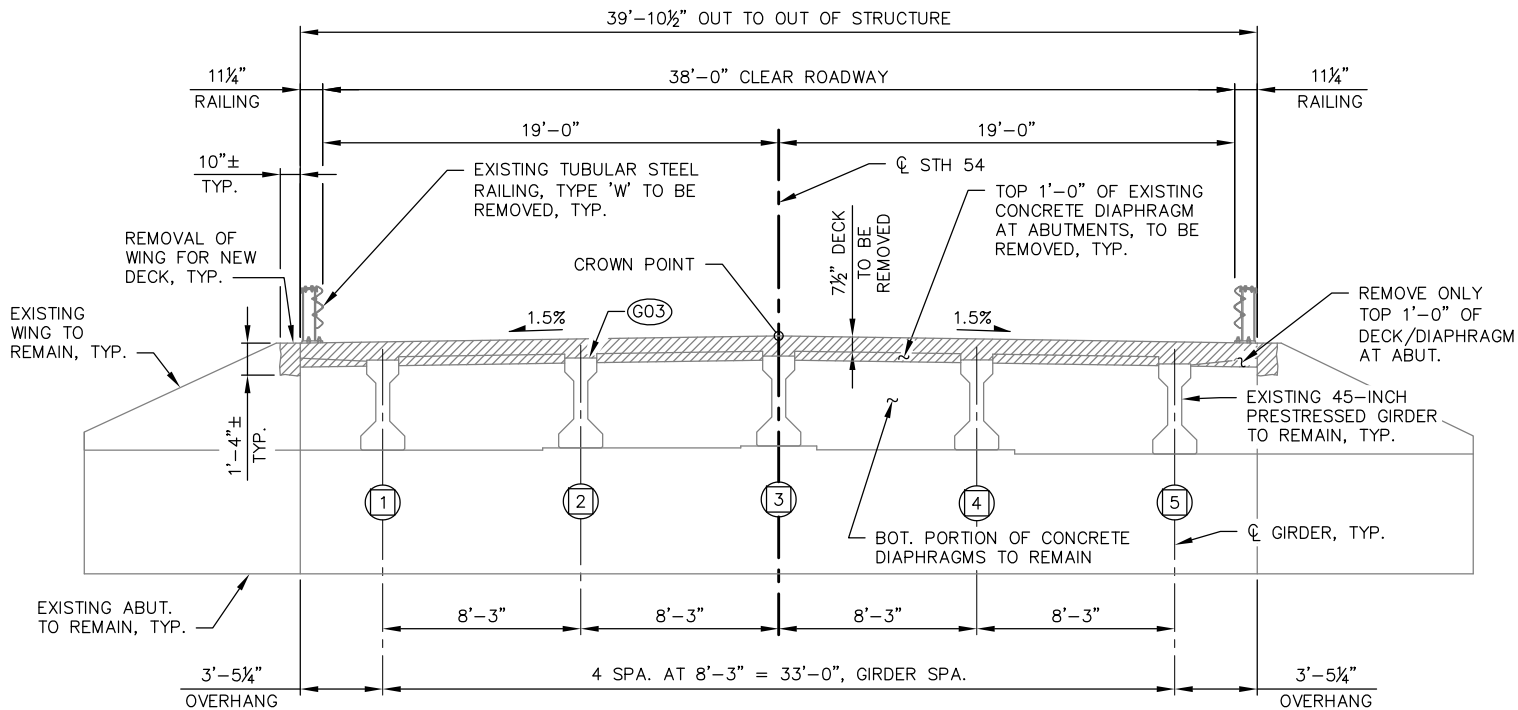
BENCH MARKS

NO.	STATION/OFFSET	DESCRIPTION	ELEVATION
BM 3	333+19.77, 20.55' RT.	ALUMINUM DISC IN WING WALL	795.52
BM 4	333+69.54, 20.85' LT.	CHISELED X IN WING WALL	794.75

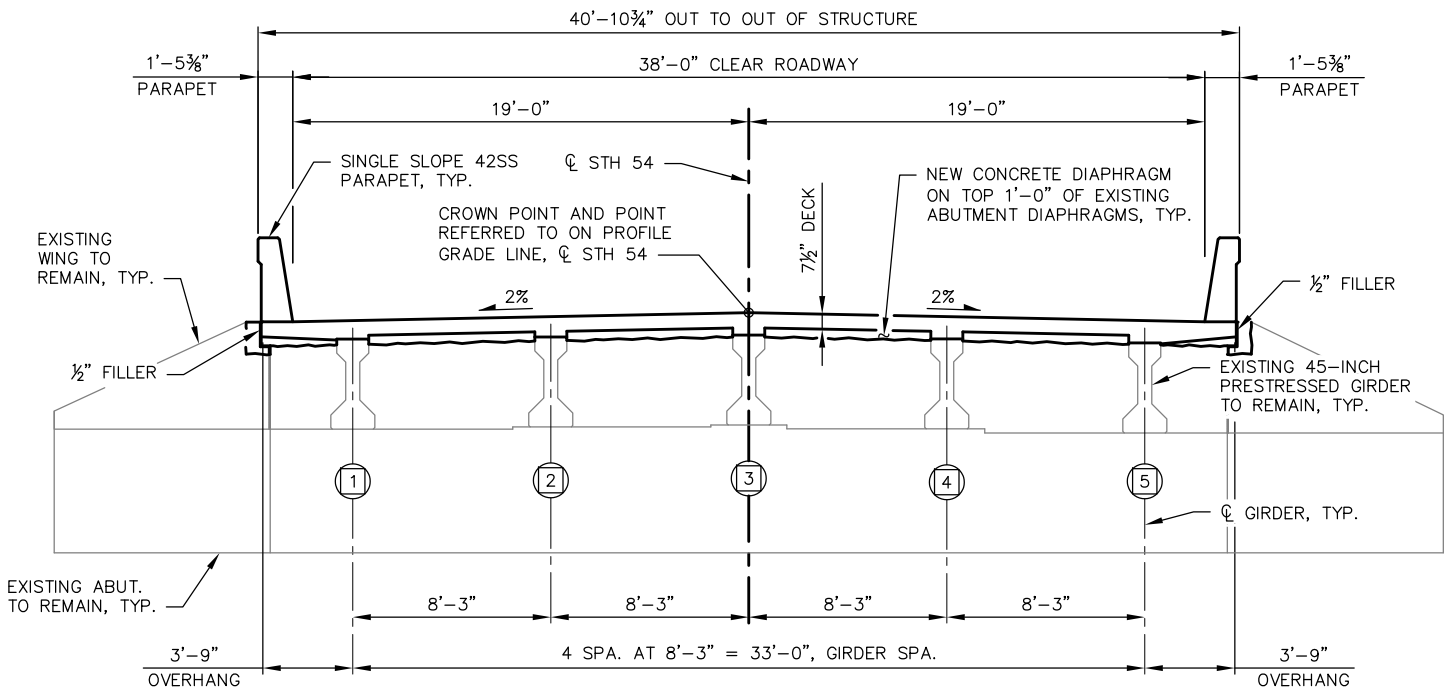
HORIZONTAL DATUM AND ADJUSTMENT: NAD 83 (2011)
VERTICAL DATUM AND ADJUSTMENT: NAVD 88 (2012)
COORDINATE REFERENCE SYSTEM: WISCRS JACKSON CO.

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

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



CROSS SECTION THRU ROADWAY – REMOVAL STAGE
(LOOKING EAST)



CROSS SECTION THRU ROADWAY – FINAL CONDITION
(LOOKING EAST)

NOTES

(G03) CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE SHEAR STIRRUPS AND TOP GIRDER FLANGE. FIELD ENGINEER WILL INSPECT GIRDERS PRIOR TO PLACING NEW DECK.

(CIRCLE) INDICATES GIRDER LINE DESIGNATION

(HATCH) LIMITS OF REMOVAL

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTALS
203.0270	REMOVING STRUCTURE OVER WATERWAY DEBRIS CAPTURE B-27-76	EACH	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-27-76	EACH	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	100	100	---	200
502.0100	CONCRETE MASONRY BRIDGES	CY	0.2	0.2	93.1	94
502.3200	PROTECTIVE SURFACE TREATMENT	SY	---	---	312	312
502.3210	PIGMENTED SURFACE SEALER	SY	---	---	69	69
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	4	4	---	8
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	20	20	27450	27490
506.4000	STEEL DIAPHRAGMS B-27-76	EACH	---	---	4	4
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	1	1	---	2
606.0100	RIPRAP LIGHT	CY	2	1	---	3
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	70	70	---	140
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	2	---	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	42	42	---	84
645.0120	GEOTEXTILE TYPE HR	SY	8	5	---	13
(NON-BID ITEM)	FILLER	SIZE				1/2" & 3/4"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS AND THE EXISTING FIELD SURVEY FROM 2023.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

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 1986.

THE PROJECT WILL REHABILITATE EXISTING STRUCTURE, B-27-76, A SINGLE SPAN 45-INCH PRESTRESSED CONCRETE GIRDER BRIDGE, 70'-4"± FEET LONG AND HAS A CLEAR ROADWAY WIDTH OF 38'-0" AND AN OVERALL WIDTH OF 39'-10 1/2". THE EXISTING DECK, INTERMEDIATE CONCRETE DIAPHRAGMS, AND TOP 1'-0" OF ABUTMENT CONCRETE DIAPHRAGMS TO BE REMOVED. SALVAGE EXISTING PRESTRESSED GIRDERS, AND REINFORCEMENT EXTENDING FROM ABUTMENT DIAPHRAGMS INTO THE NEW DECK. SALVAGED REINFORCEMENT SHALL BE INCORPORATED INTO NEW CONCRETE AS SHOWN IN THE PLANS. REMOVE THE EXISTING STEEL RAILING, TYPE 'W'.

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 B-27-76" 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.

ROUGHEN SURFACE OF CONCRETE 1/4" MIN. DEEP AT ALL CONCRETE AREAS OF NEW TO EXISTING CONCRETE CONTACT.

THE HAUNCH CONCRETE QUANTITY IS BASED ON AN AVERAGE DEPTH OF 2.6" WHICH IS THE MAXIMUM HAUNCH FOR WHICH THE CONTRACTOR WILL BE PAID.

VARIATIONS OF THE NEW GRADE LINE OVER 1/4" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

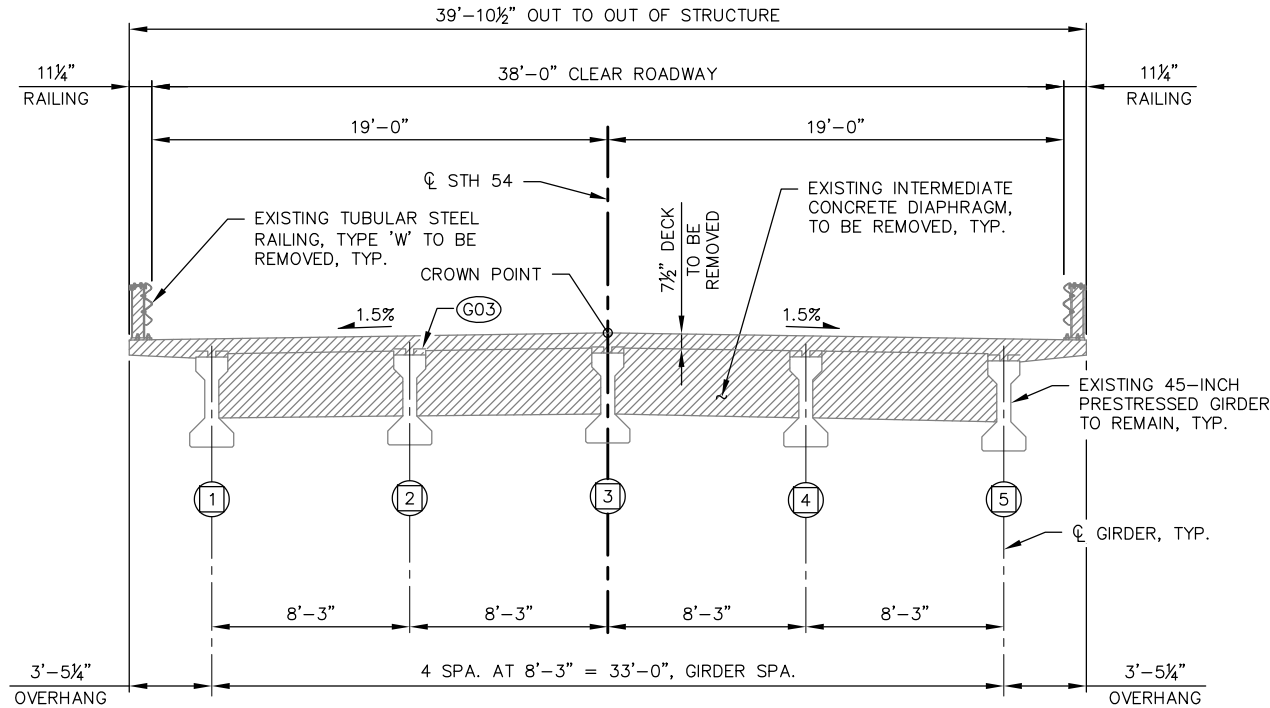
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.

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

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 B-27-76".

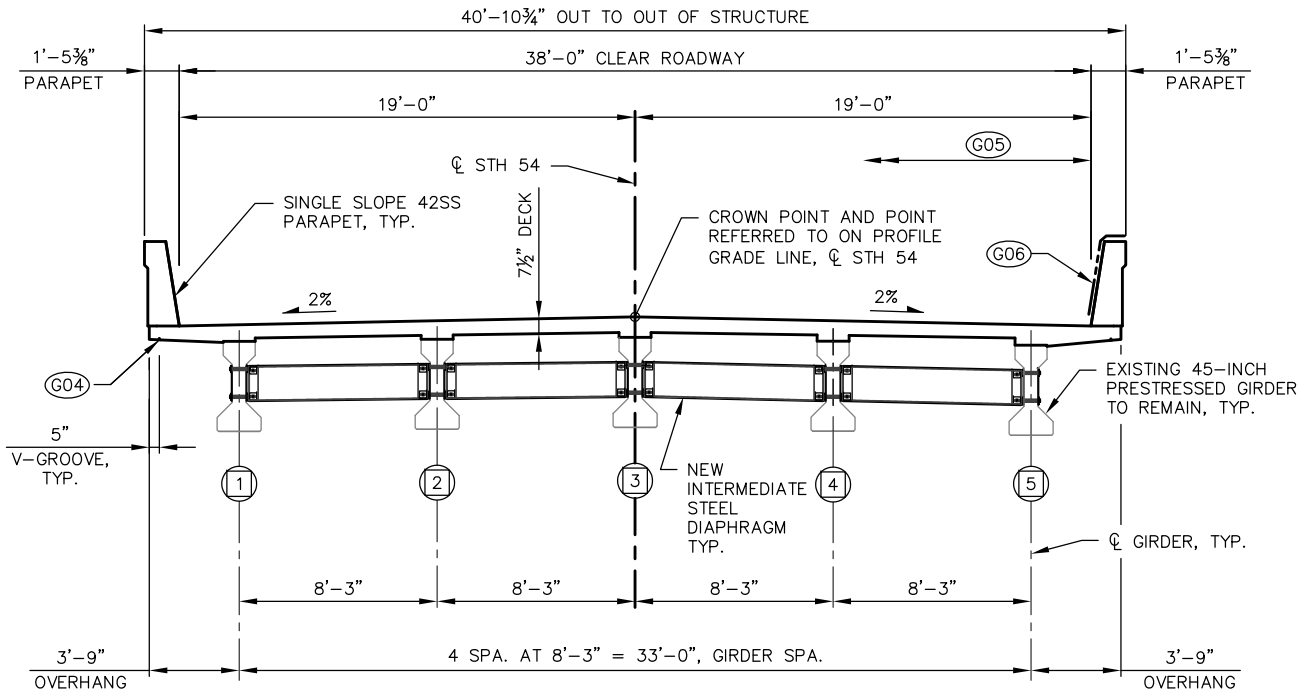
FILL VOIDS IN THE EXISTING RIPRAP WITH LIGHT RIPRAP AND GEOTEXTILE FABRIC TYPE HR TO THE EXTENT SHOWN ON THE "GENERAL PLAN" SHEET.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-76			
	DRAWN BY	JDO	PLANS CK'D ACK
CROSS SECTIONS, GENERAL NOTES, AND QUANTITIES			SHEET 2 OF 9
			93



CROSS SECTION THRU ROADWAY - REMOVAL STAGE

(LOOKING EAST)

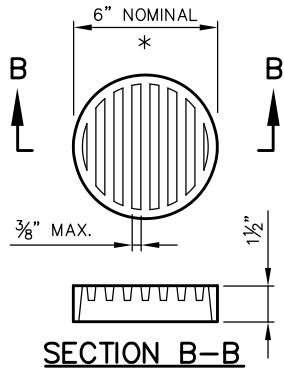


CROSS SECTION THRU ROADWAY - FINAL CONDITION

(LOOKING EAST)

NOTES

- LIMITS OF REMOVAL
- G03 CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE SHEAR STIRRUPS AND TOP GIRDER FLANGE. FIELD ENGINEER WILL INSPECT GIRDERS PRIOR TO PLACING NEW DECK.
- G04 3/4" V-GROOVE. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM. V-GROOVE ARE REQUIRED.
- G05 COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS. PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO ENTIRE EXPOSED TOP OF DECK & PAVING NOTCHES.
- G06 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

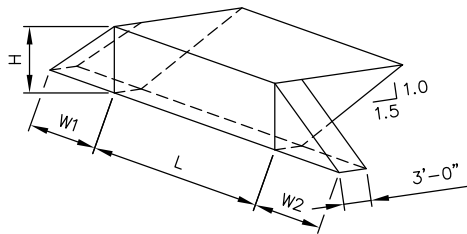


RODENT SHIELD DETAIL

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

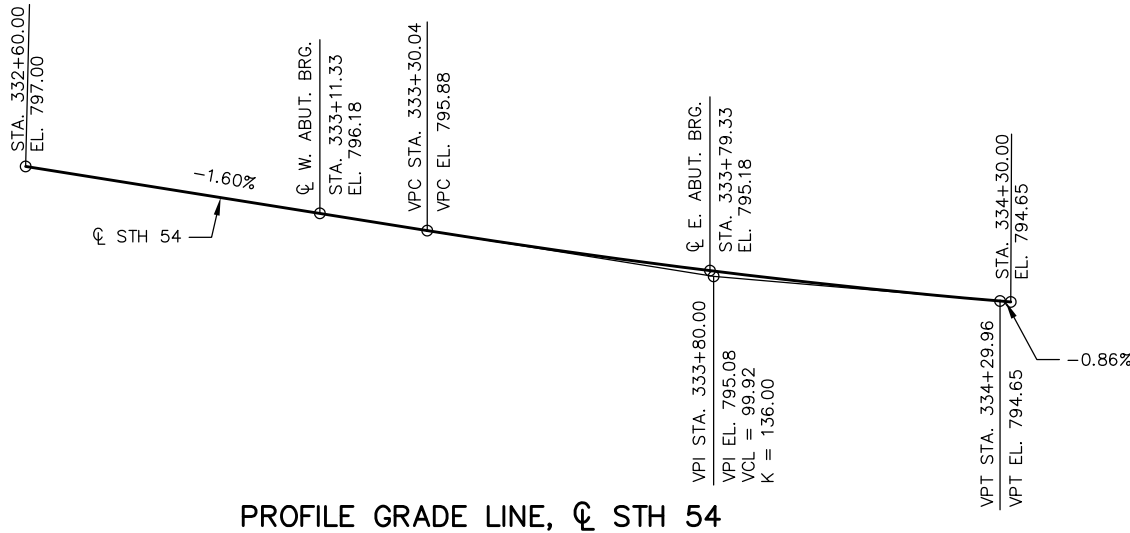
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH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

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



ABUTMENT BACKFILL DIAGRAM

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



PROFILE GRADE LINE, CENTERLINE STATION 54

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-76			
DRAWN BY JDO		PLANS CK'D	ACK
CROSS SECTIONS AND PROFILE			SHEET 3 OF 9
			94

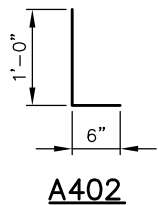
BILL OF BARS
BOTH ABUT.

COATED = 40 LBS.

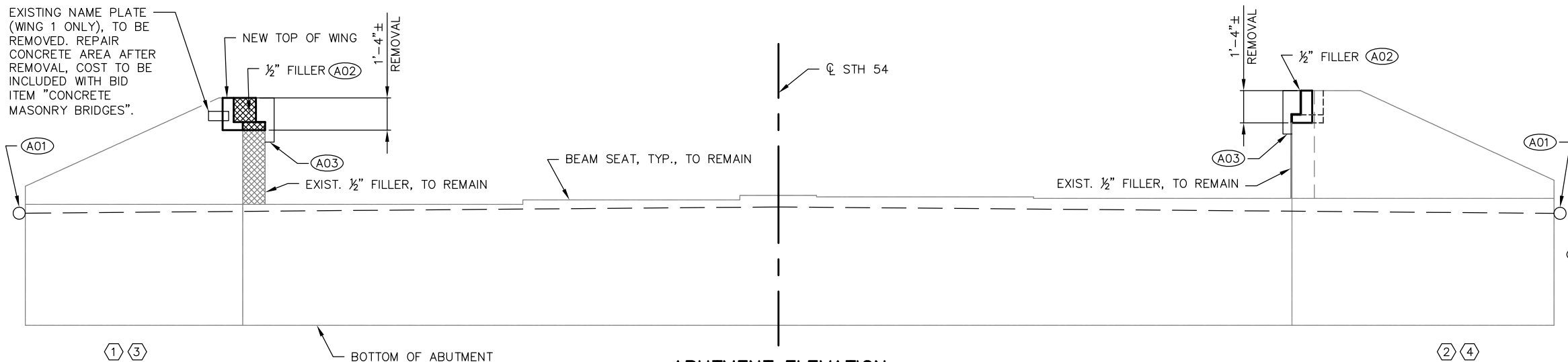
MARK	COATED	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION	
		W. ABUT.	E. ABUT.					
A501	X	4	4	1'-6"			WINGS - DOWEL	VERT.
A402	X	4	4	1'-5"	X		WINGS - STIRRUP	VERT.
A403	X	6	6	1'-10"			WINGS	TRANS.

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

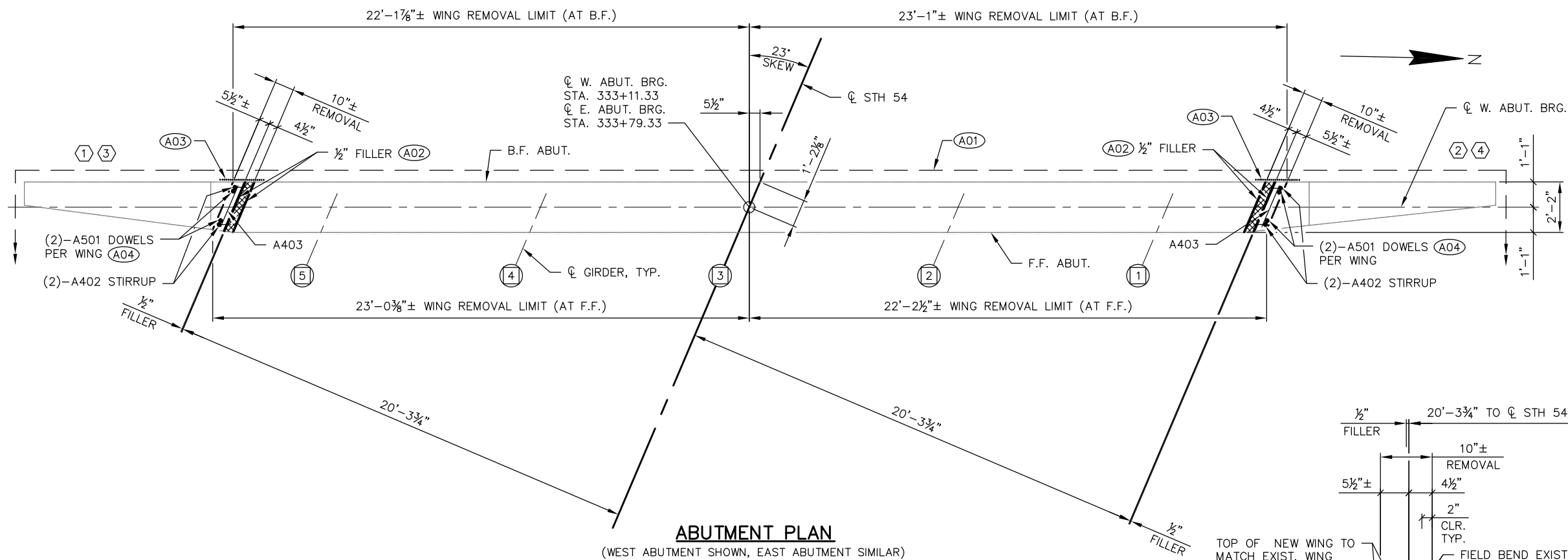
ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.



A402



ABUTMENT ELEVATION

(WEST ABUTMENT LOOKING WEST, EAST ABUTMENT LOOKING EAST)
(GIRDERS AND ABUT. DIAPHRAGM NOT SHOWN FOR CLARITY)

ABUTMENT PLAN

(WEST ABUTMENT SHOWN, EAST ABUTMENT SIMILAR)

NOTES

(A01) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON "CROSS SECTIONS AND PROFILE" SHEET. RODENT SHIELD SHALL BE INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

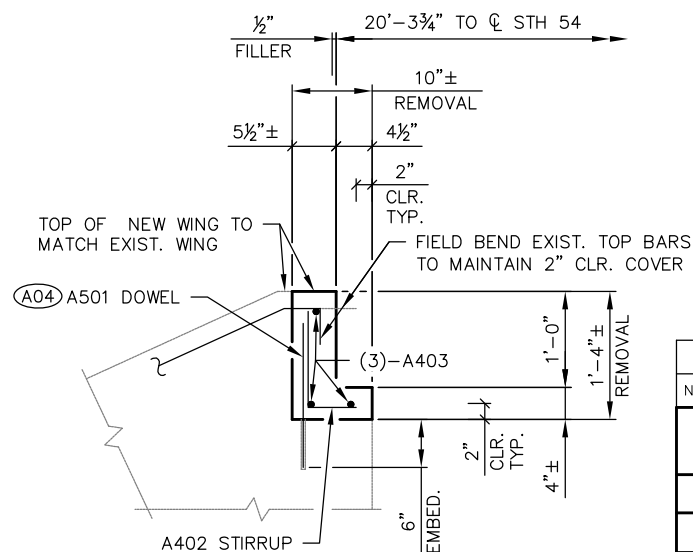
(A02) 1/2" FILLER. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). 1/2" FILLER TO EXTEND FROM EXISTING 1/2" FILLER TO TOP OF NEW WING (INCLUDING ON HORIZONTAL PORTION OF NEW WING).

(A03) 18" RUBBERIZED MEMBRANE WATERPROOFING (R.M.W.), SEAL BACK FACE OF NEW TOP OF WING JOINTS (BOTH HORIZONTAL AND VERTICAL JOINTS). SEAL ANY AREAS OF THE EXISTING R.M.W. THAT IS DAMAGED DURING EXCAVATION.

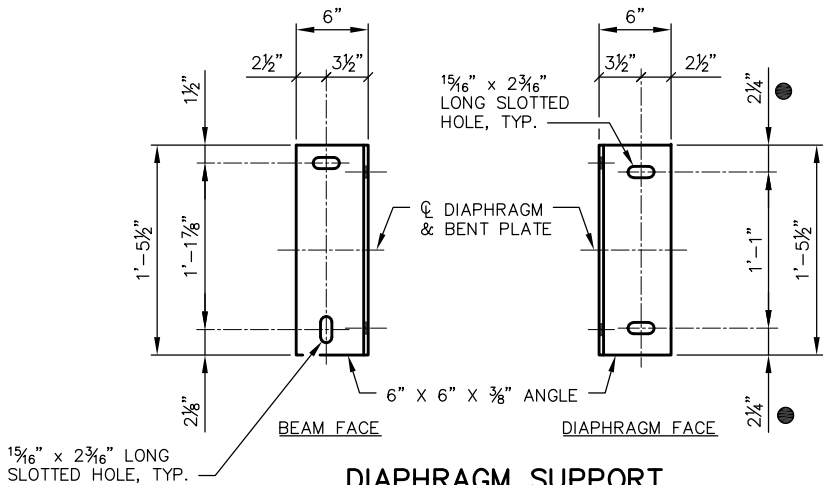
(A04) ADHESIVE ANCHORS NO. 5 BARS EMBED 6" INTO EXISTING WING CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. ANCHORS SHALL BE EPOXY COATED BARS A501.

⬡ INDICATES WING NUMBER

⓪ INDICATES GIRDER LINE DESIGNATION

NEW TOP OF WINGS
- ELEVATION VIEW

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-76			
DRAWN BY CDS		PLANS CK'D	ACK
ABUTMENTS			SHEET 4 OF 9
			95

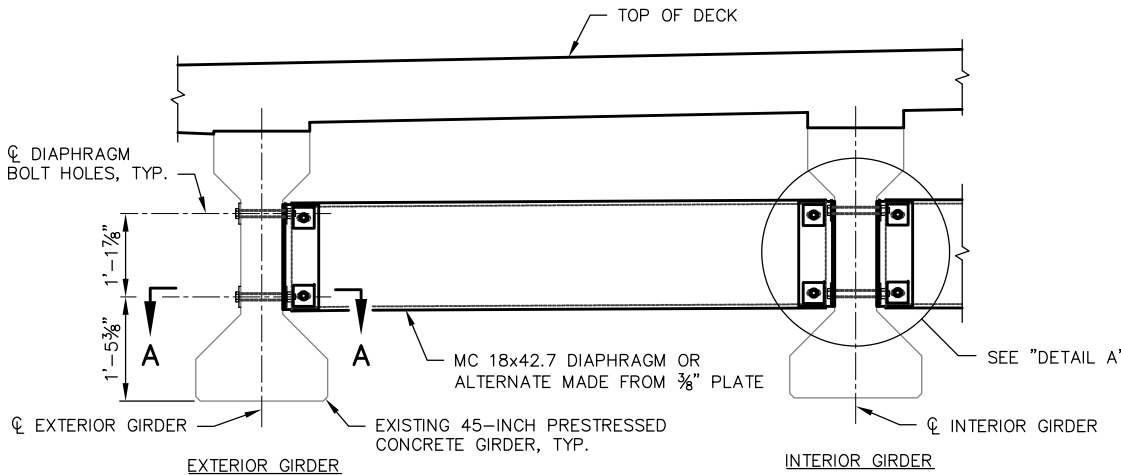


DIAPHRAGM SUPPORT

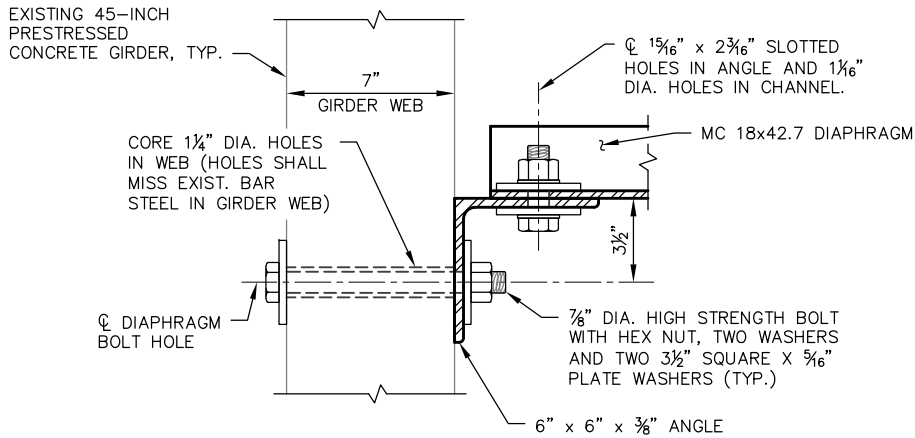
● DIMENSION CHANGES TO 2 1/2" WHEN ALTERNATE PLATE DIAPHRAGM IS USED.

SECTION THROUGH DIAPHRAGM

SECTION THROUGH ALTERNATE DIAPHRAGM



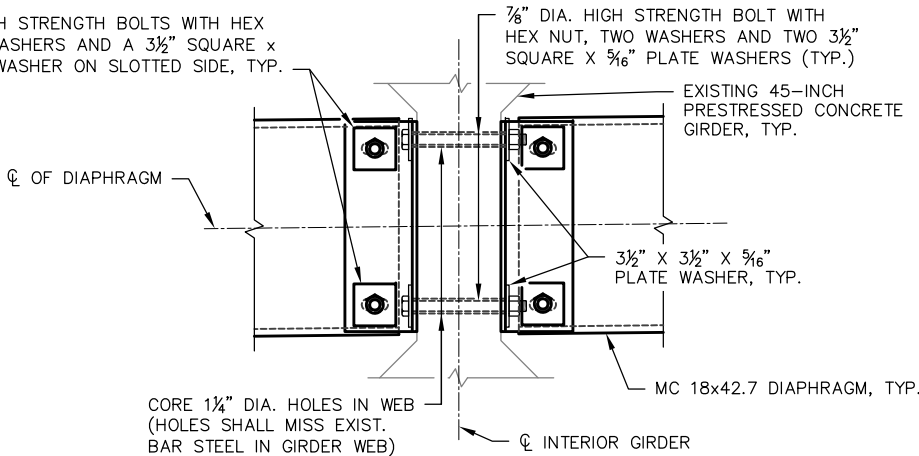
PART TRANSVERSE SECTION AT DIAPHRAGM



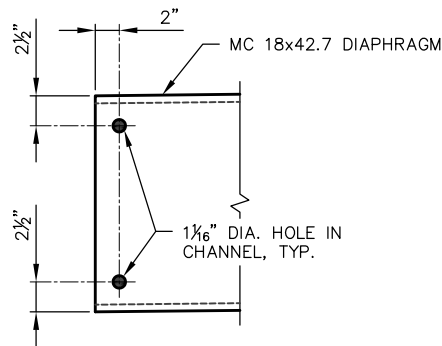
SECTION A-A

(EXTERIOR GIRDER SHOWN, INTERIOR GIRDER SIMILAR)

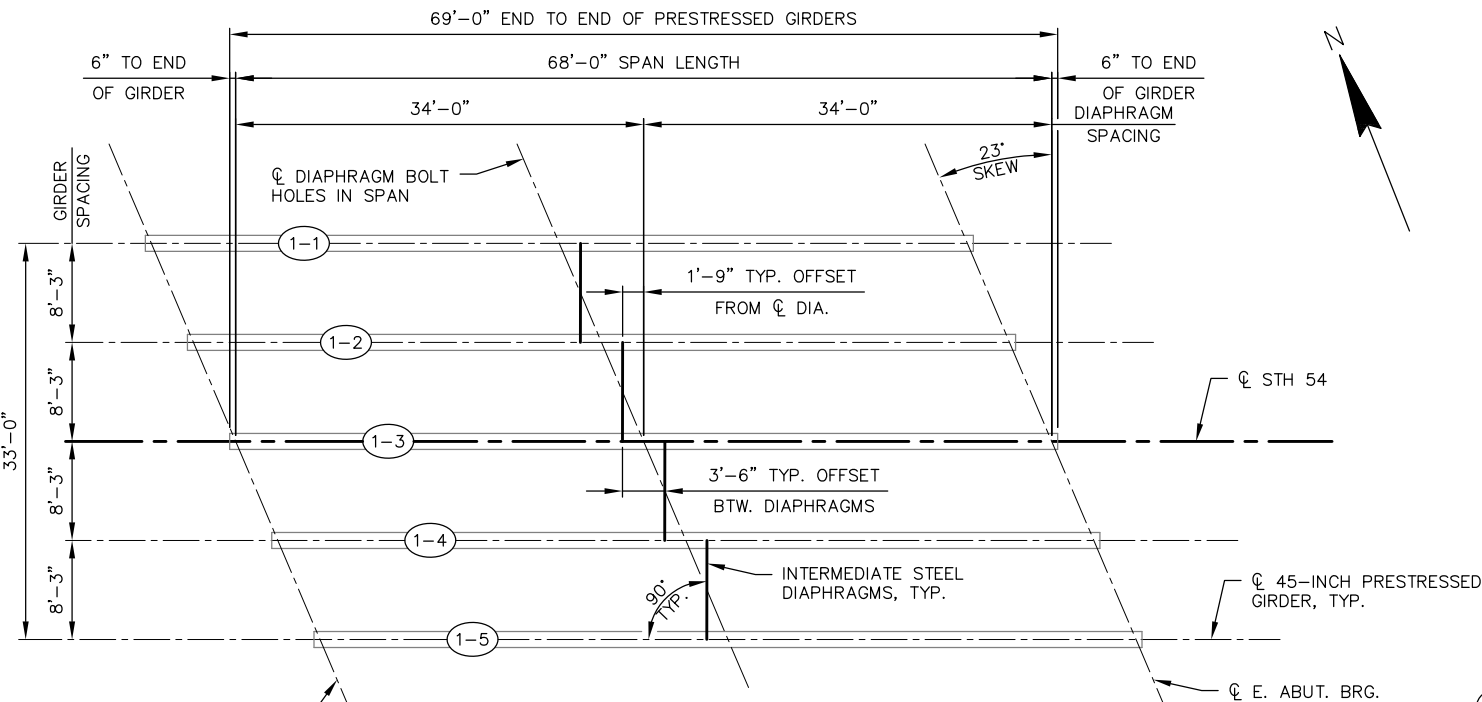
7/8" DIA. HIGH STRENGTH BOLTS WITH HEX NUT, TWO WASHERS AND A 3 1/2" SQUARE X 5/16" PLATE WASHER ON SLOTTED SIDE, TYP.



DETAIL A



CHANNEL DETAIL



STEEL DIAPHRAGM LAYOUT PLAN

NOTES

ALL DIAPHRAGM MATERIAL SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-27-76", 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.

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-76			
DRAWN BY CDS		PLANS CK'D ACK	
STEEL DIAPHRAGMS			SHEET 5 OF 9
			96

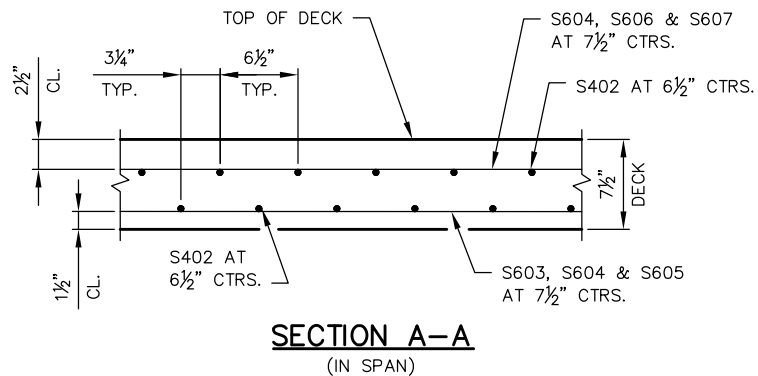
(S01) PARAPET STEEL IN REBAR TRANSITION ZONE.
SEE DETAILS ON "PARAPET DETAILS" SHEET.

* LOCATION OF BEAM GUARD ATTACHMENT

⬡ INDICATES WING NUMBER



	℄ W. ABUT. BRG.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ E. ABUT. BRG.
NORTH INSIDE FACE OF PARAPET	795.93	795.82	795.71	795.60	795.49	795.39	795.28	795.18	795.09	794.99	794.90
GIRDER 1	795.96	795.85	795.74	795.63	795.53	795.42	795.32	795.22	795.12	795.03	794.94
GIRDER 2	796.08	795.97	795.86	795.75	795.64	795.54	795.44	795.34	795.24	795.15	795.06
GIRDER 3/ CROWN POINT	796.18	796.07	795.96	795.85	795.75	795.64	795.54	795.45	795.36	795.27	795.18
GIRDER 4	795.96	795.85	795.75	795.64	795.53	795.43	795.33	795.24	795.15	795.06	794.98
GIRDER 5	795.74	795.63	795.52	795.41	795.31	795.21	795.12	795.02	794.93	794.85	794.77
SOUTH INSIDE FACE OF PARAPET	795.67	795.56	795.45	795.35	795.25	795.15	795.05	794.96	794.87	794.79	794.70

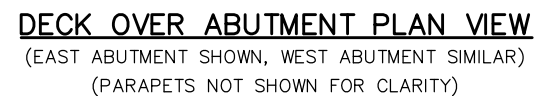


F.F. – FRONT FACE
B.F. – BACK FACE

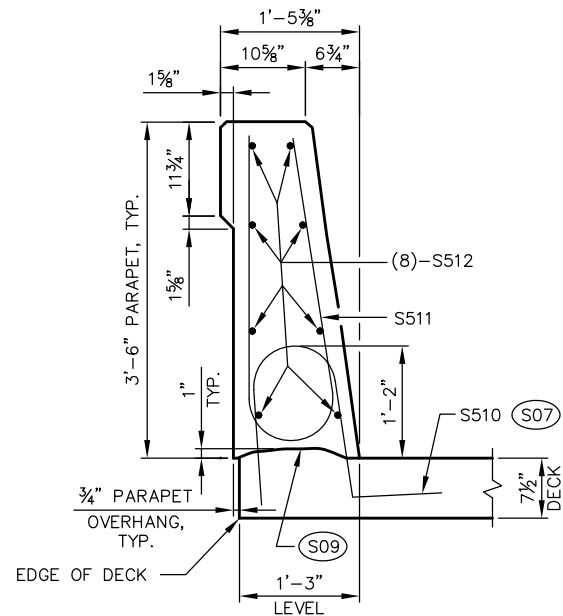
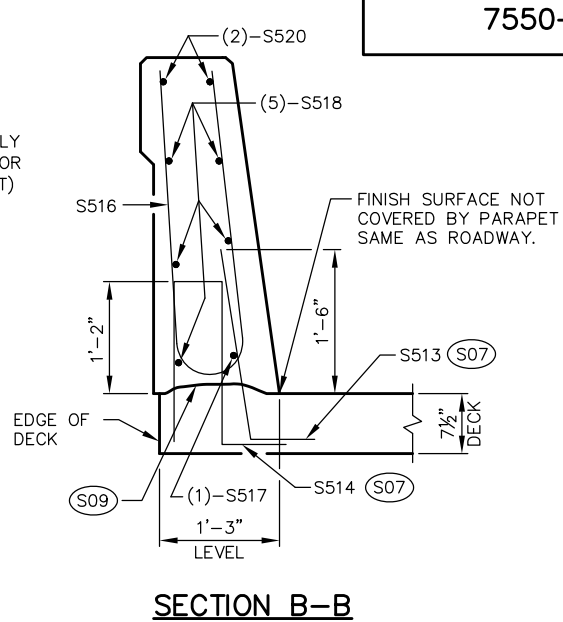
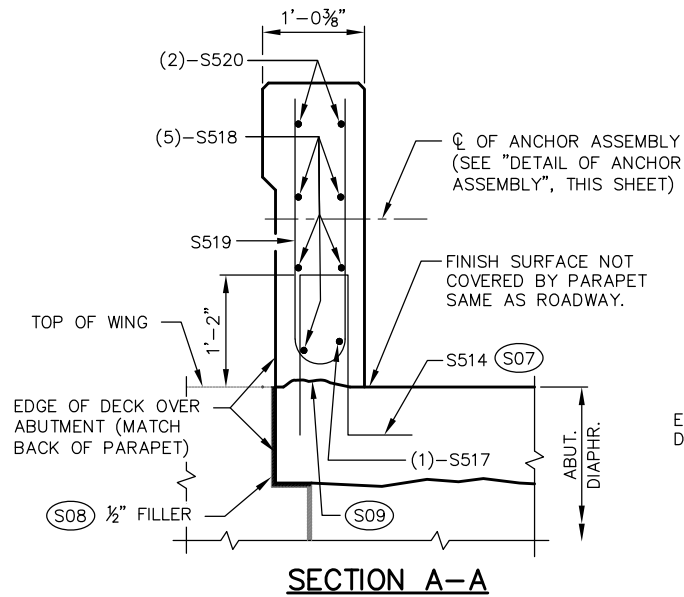
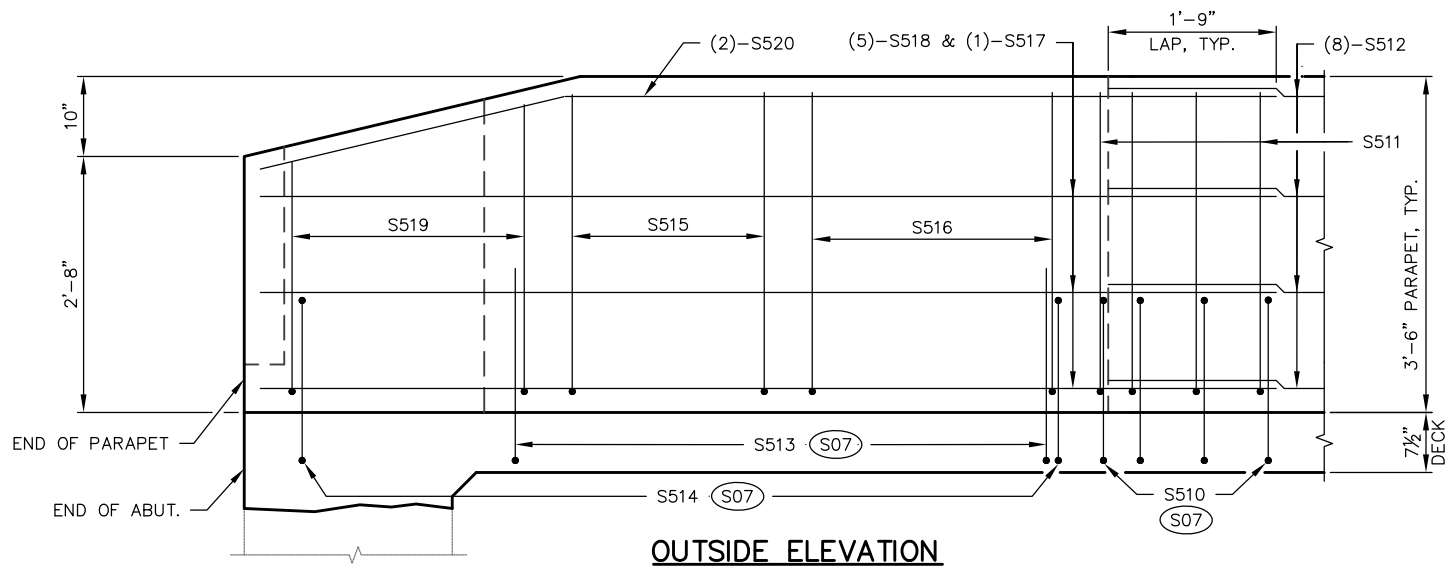
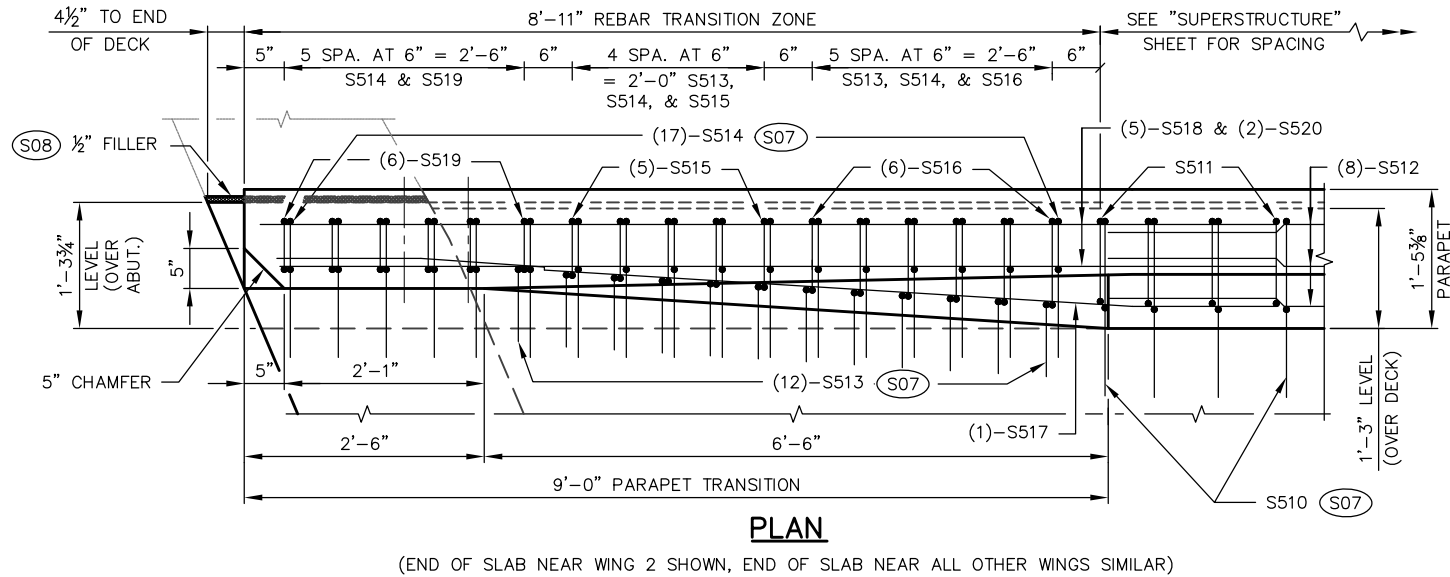
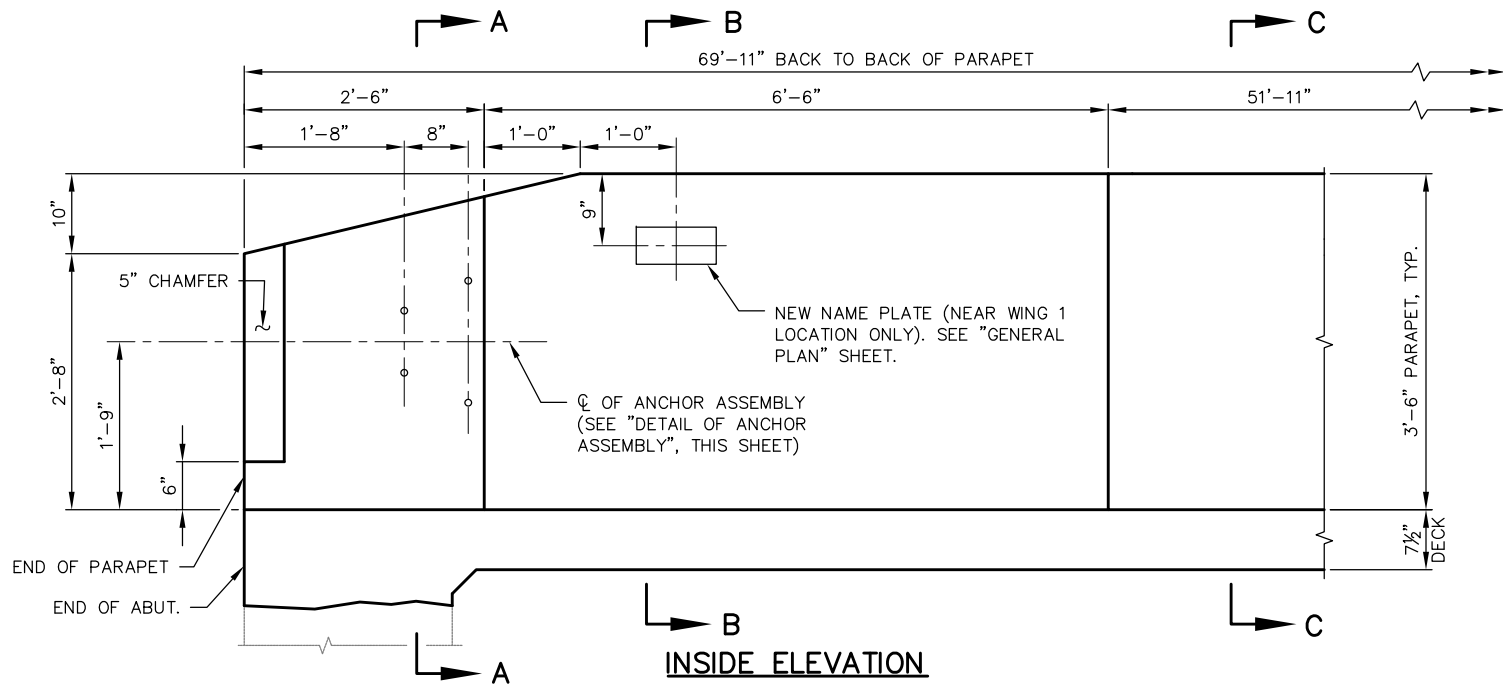
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-76			
DRAWN BY		CDS	PLANS CK'D ACK
SUPERSTRUCTURE		SHEET 6 OF 9	
		97	

- (S02) ¾" V-GROOVE. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT BODY. V-GROOVES ARE REQUIRED.
- (S03) DIMENSION TAKEN NORMAL TO ∇ ABUTMENT.
- (S04) DIMENSION TAKEN PARALLEL TO ∇ GIRDER.
- (S05) APPLY PROTECTION SURFACE TREATMENT TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES.
- (S06) DETERIORATED OR UN-SALVAGEABLE BARS SHALL BE REPLACED WITH REINFORCING BAR ADHESIVE ANCHORS OF SIMILAR SIZE AND SHAPE OF ORIGINAL REINFORCEMENT AS DIRECTED BY FIELD ENGINEER. ADHESIVE ANCHORS USED TO REPLACE DETERIORATED OR UN-SALVAGEABLE BARS SHALL BE INCLUDED IN BID ITEM "REMOVING STRUCTURE OVER WATERWAY DEBRIS CAPTURE B-27-76". ADHESIVE ANCHORS SHALL CONFORM TO STANDARD SPECIFICATION 502.2.12 AND BE INSTALLED PER STANDARD SPECIFICATION 502.3.14.

F.F. – FRONT FACE
B.F. – BACK FACE



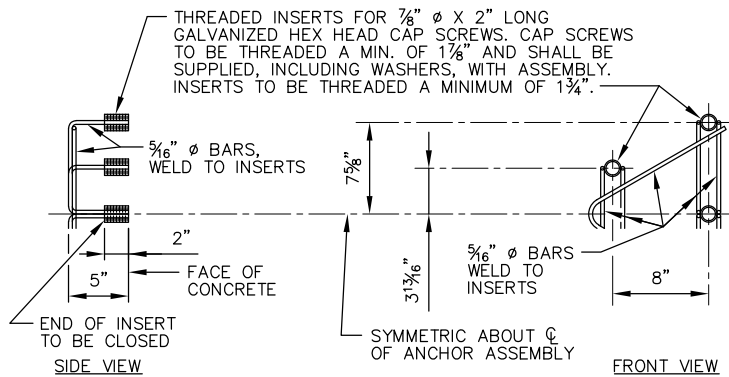
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-76			
DRAWN BY		CDS	PLANS CK'D ACK
SUPERSTRUCTURE DETAILS		SHEET 7 OF 9	
		98	



SECTION C-C
(TYPICAL SECTION THRU. PARAPET ON BRIDGE)

NOTES

- (S07) S510, S513, AND S514 BARS TO BE TIED TO SUPERSTRUCTURE DECK STEEL BEFORE CONCRETE IS POURED.
- (S08) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
- (S09) CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.



NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH ASTM F2329.

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-76			
DRAWN BY	CDS	PLANS CK'D	ACK
PARAPET DETAILS			SHEET 8 OF 9
			99

BILL OF BARS
SUPERSTRUCTURE

COATED = 27,450 LBS.

STATE PROJECT NUMBER

7550-00-77

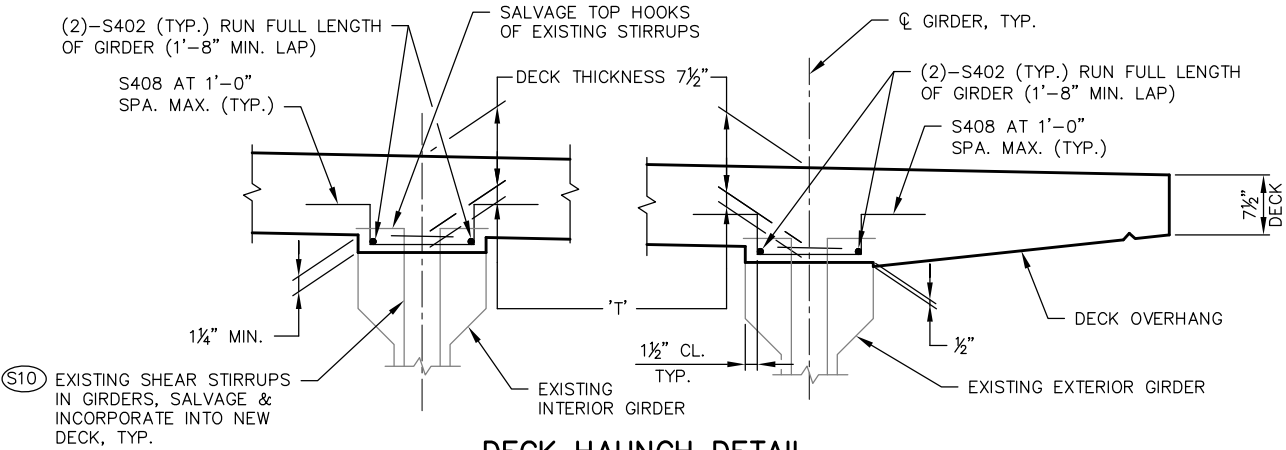
MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
S601	4		43'-7"			ABUT. DIAPHRAGM (BTW. EXIST. STIRRUPS)
S402	322		35'-10"			DECK - TOP & BOTTOM & OVER GIRDERS
S603	27		20'-0"			DECK - BOTTOM (NEAR W. ABUT.)
S604	169		40'-2"			DECK - TOP & BOTTOM
S605	27		20'-1"			DECK - BOTTOM (NEAR E. ABUT.)
S606	27		20'-9"			DECK - TOP (NEAR W. ABUT.)
S607	27		20'-10"			DECK - TOP (NEAR E. ABUT.)
S408	340		3'-2"	X		DECK - STIRRUP OVER GIRDERS
S509	220		5'-8"	X		DECK - TOP OVERHANG STEEL
S510	160		4'-5"	X		PARAPET - STIRRUP (CAST INTO DECK)
S511	160		6'-8"	X		PARAPET - STIRRUP
S512	16		51'-11"			PAPAPET - HORIZONTAL
S513	48		2'-9"	X		PARAPET TRANSITION (CAST INTO DECK)
S514	68		4'-4"	X		PARAPET TRANSITION (CAST INTO DECK)
S515	20		6'-5"	X		PARAPET TRANSITION
S516	24		6'-6"	X		PARAPET TRANSITION
S517	4		10'-7"	X		PARAPET TRANSITION
S518	20		10'-7"			PARAPET TRANSITION
S519	24		5'-5"	X		PARAPET TRANSITION
S520	8		10'-7"	X		PARAPET TRANSITION

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

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

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

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



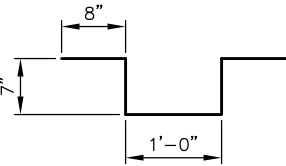
DECK HAUNCH DETAIL

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".

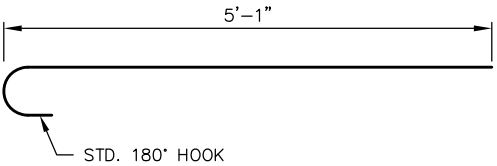
TO DETERMINE 'T', ELEVATIONS OF TOP OF GIRDERS AT CL OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

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

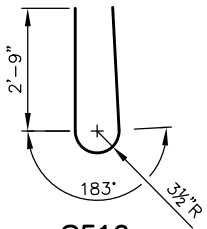
NOTE: AN AVERAGE HAUNCH ('T') OF 2.6" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



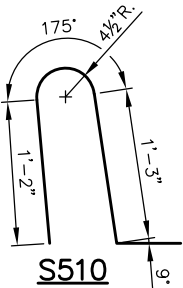
S408



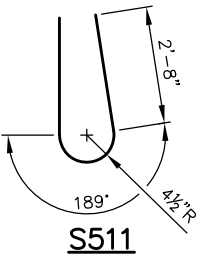
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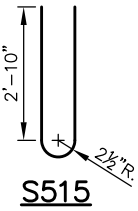
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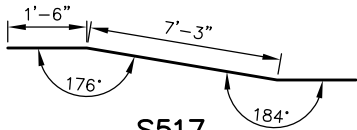
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S511



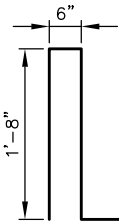
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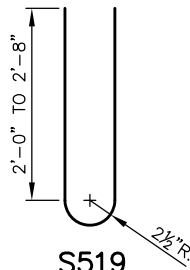
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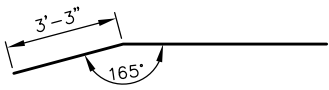
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S514



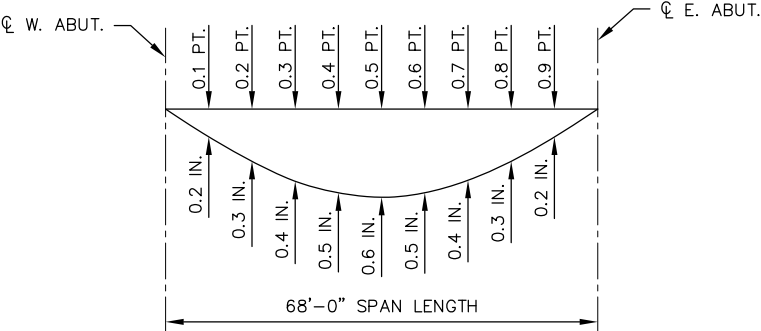
S519



S520

BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
S603	1 SERIES OF 27	11" TO 39'-1"
S605	1 SERIES OF 27	1'-0" TO 39'-2"
S606	1 SERIES OF 27	1'-8" TO 39'-10"
S607	1 SERIES OF 27	1'-9" TO 39'-11"
S519	4 SERIES OF 6	4'-9" TO 6'-1"



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	1.2

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 B-27-76			
DRAWN BY CDS		PLANS CK'D	ACK
SUPERSTRUCTURE REINFORCEMENT			SHEET 9 OF 9
			100

B-27-016

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDNATE
108+22.00	0.00	0.00	0.00	31.21	0	0	0	0	0	0
108+50.00	28.00	0.00	0.00	36.07	0	0	35	0	44	-44
108+72.00	22.00	0.00	0.00	25.94	0	0	25	0	75	-75
109+00.00	28.00	52.40	11.91	12.01	27	6	20	27	100	-79
109+21.28	21.28	52.82	10.95	75.94	41	9	35	68	144	-91
STRUCTURE B-27-016										
SOUTH APPROACH TOTAL					68	15	115			

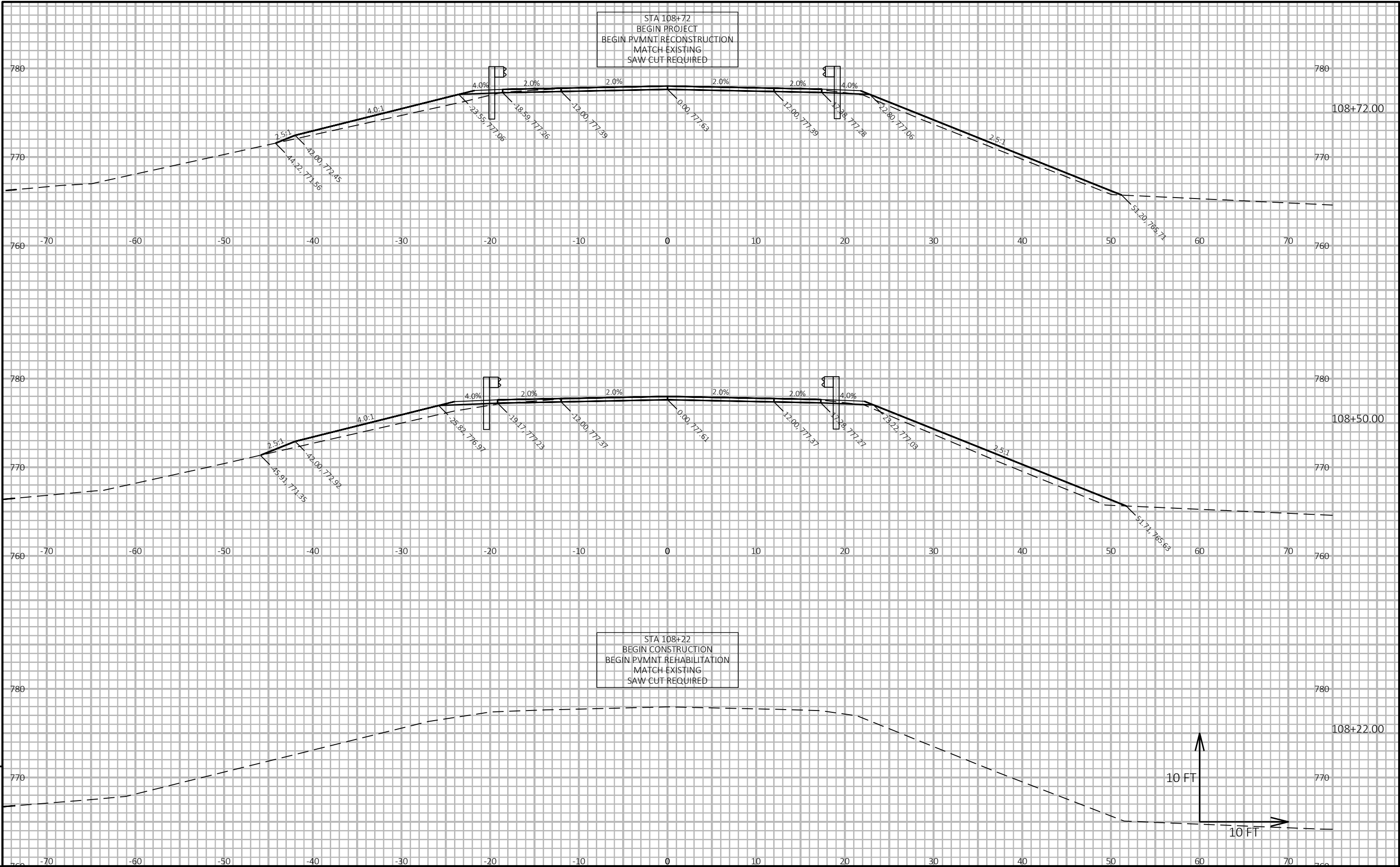
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDNATE
110+68.93	0.00	51.99	11.03	64.14	0	0	0	0	0	0
111+00.00	31.07	60.12	10.42	2.72	65	12	38	65	48	6
111+17.00	17.00	0.00	0.00	4.92	19	3	2	84	50	19
111+50.00	33.00	0.00	0.00	19.45	0	0	15	84	69	0
111+67.00	17.00	0.00	0.00	17.61	0	0	12	84	84	-15
NORTH APPROACH TOTAL					84	15	67			
B-27-016 TOTAL					152	30	182			

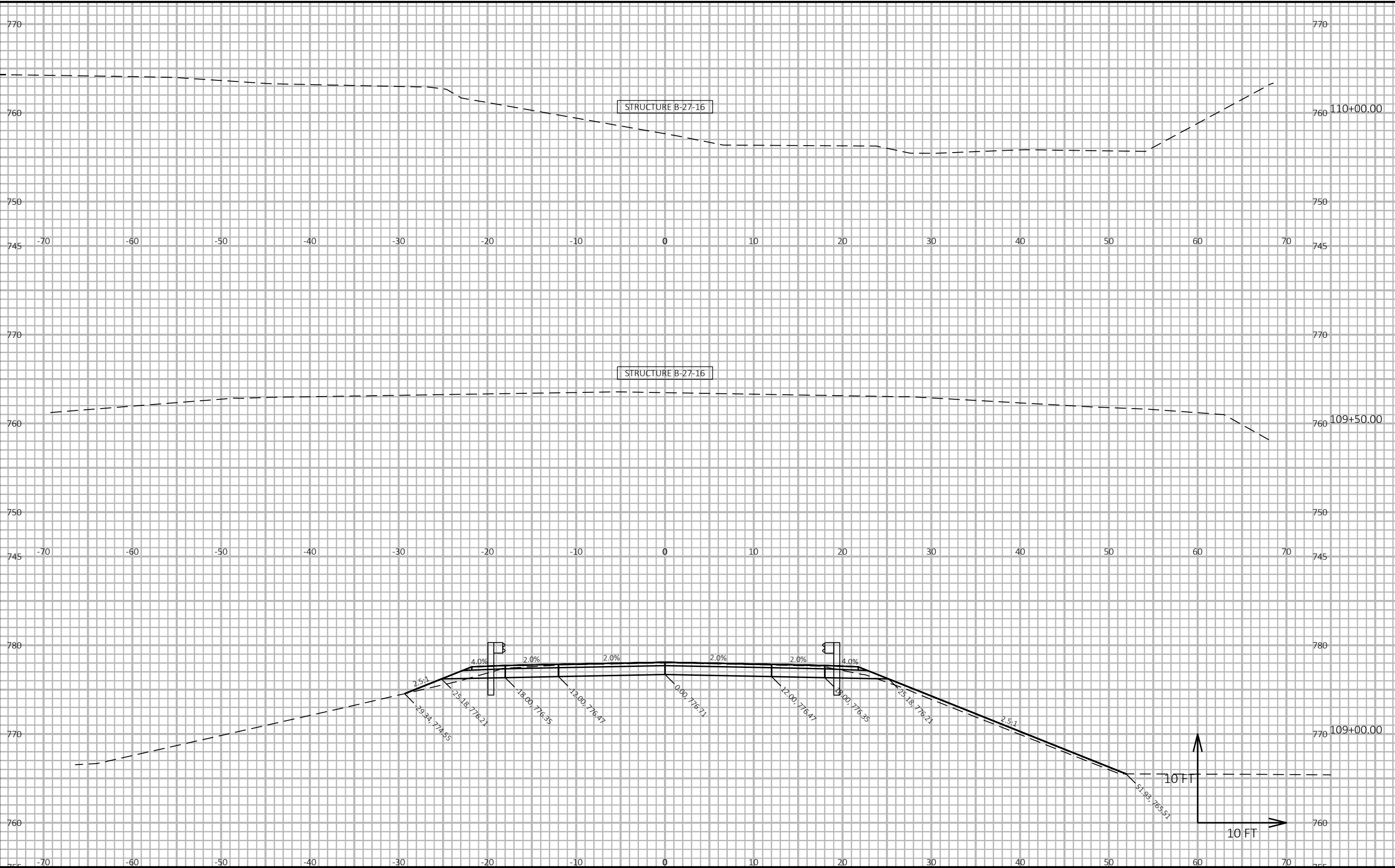
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDNATE	[(CUT) - (FILL*FILL FACTOR) - SALVAGED/UNUSABLE PAVEMENT MATERIAL]]

B-27-076

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDNATE
330+64.00	0.00	8.88	0.00	0.12	0	0	0	0	0	0
330+69.00	5.00	8.68	0.00	0.00	2	0	0	2	0	2
331+00.00	31.00	18.33	0.00	0.98	16	0	1	18	1	17
331+10.00	10.00	18.50	0.00	2.06	7	0	1	25	3	23
331+50.00	40.00	10.57	0.00	13.74	22	0	12	47	18	30
331+74.37	24.37	11.06	0.00	0.26	10	0	6	57	25	32
331+78.90	4.53	10.44	0.00	0.43	2	0	0	59	25	34
332+00.00	21.10	9.83	0.00	0.95	8	0	1	67	26	41
332+50.00	50.00	9.66	0.00	3.78	18	0	4	85	31	54
332+60.00	10.00	8.82	0.00	4.76	3	0	2	88	34	54
333+00.00	40.00	60.61	11.14	116.36	51	8	90	139	146	-15
333+10.15	10.15	32.76	5.44	3.31	18	3	22	157	174	-28
STRUCTURE B-27-076										
WEST APPROACH TOTAL					157	11	139			

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDNATE
333+80.50	0.00	37.64	5.30	0.00	0	0	0	0	0	0
334+00.00	19.50	75.29	10.90	8.25	41	6	3	41	4	31
334+30.00	30.00	16.14	0.00	0.46	51	6	5	92	10	70
334+50.00	20.00	8.18	0.00	1.05	9	0	1	101	11	78
334+86.96	36.96	9.69	0.00	1.29	12	0	2	113	14	87
335+00.00	13.04	12.14	0.00	0.40	5	0	0	118	14	92
335+16.08	16.08	15.75	0.00	0.04	8	0	0	126	14	100
335+50.00	33.92	17.18	0.00	0.03	21	0	0	147	14	121
335+80.00	30.00	18.06	0.00	0.00	20	0	0	167	14	141
335+88.00	8.00	16.74	0.00	0.00	5	0	0	172	14	146
EAST APPROACH TOTAL					172	12	11			
B-27-076 TOTAL					329	23	150			

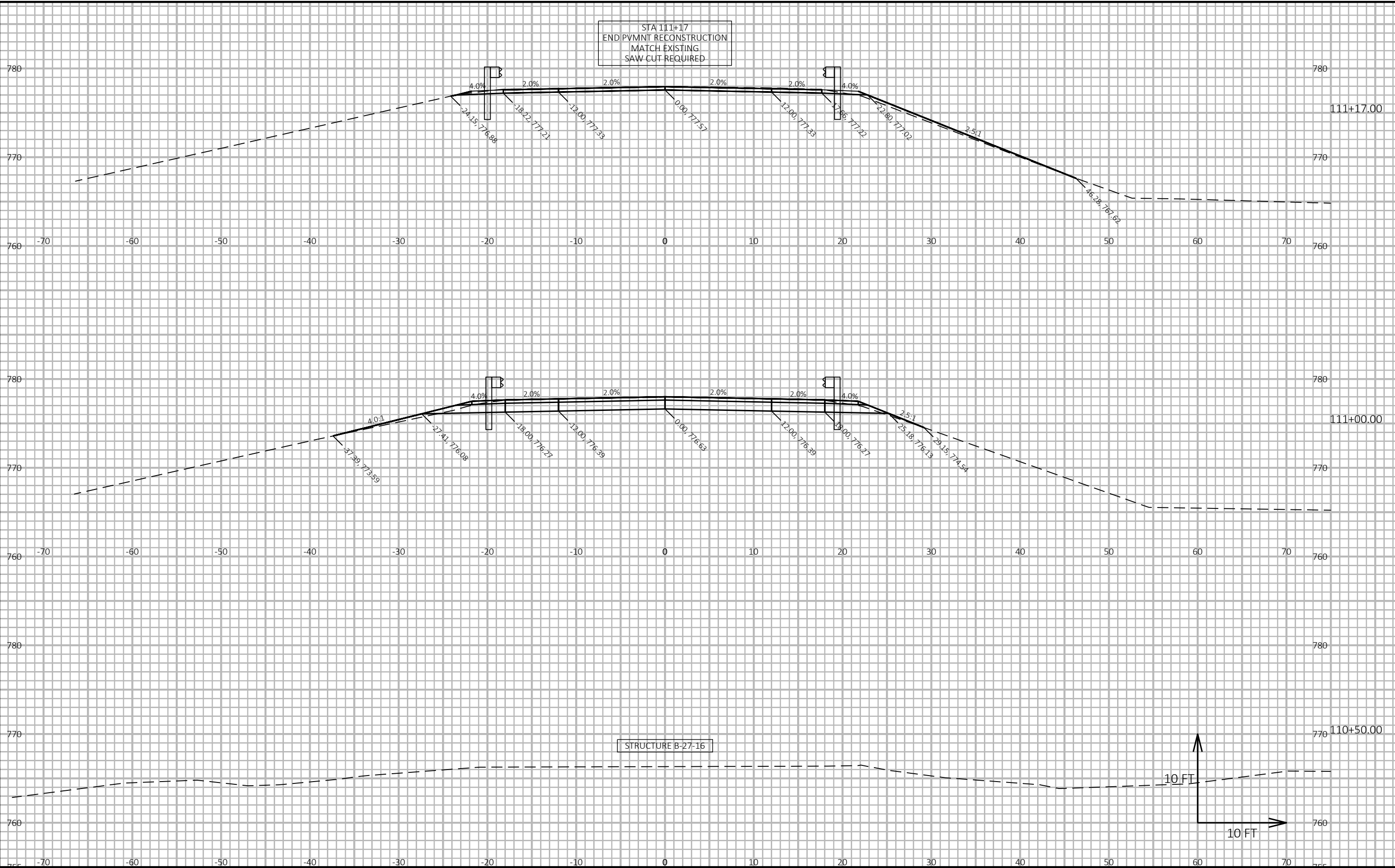


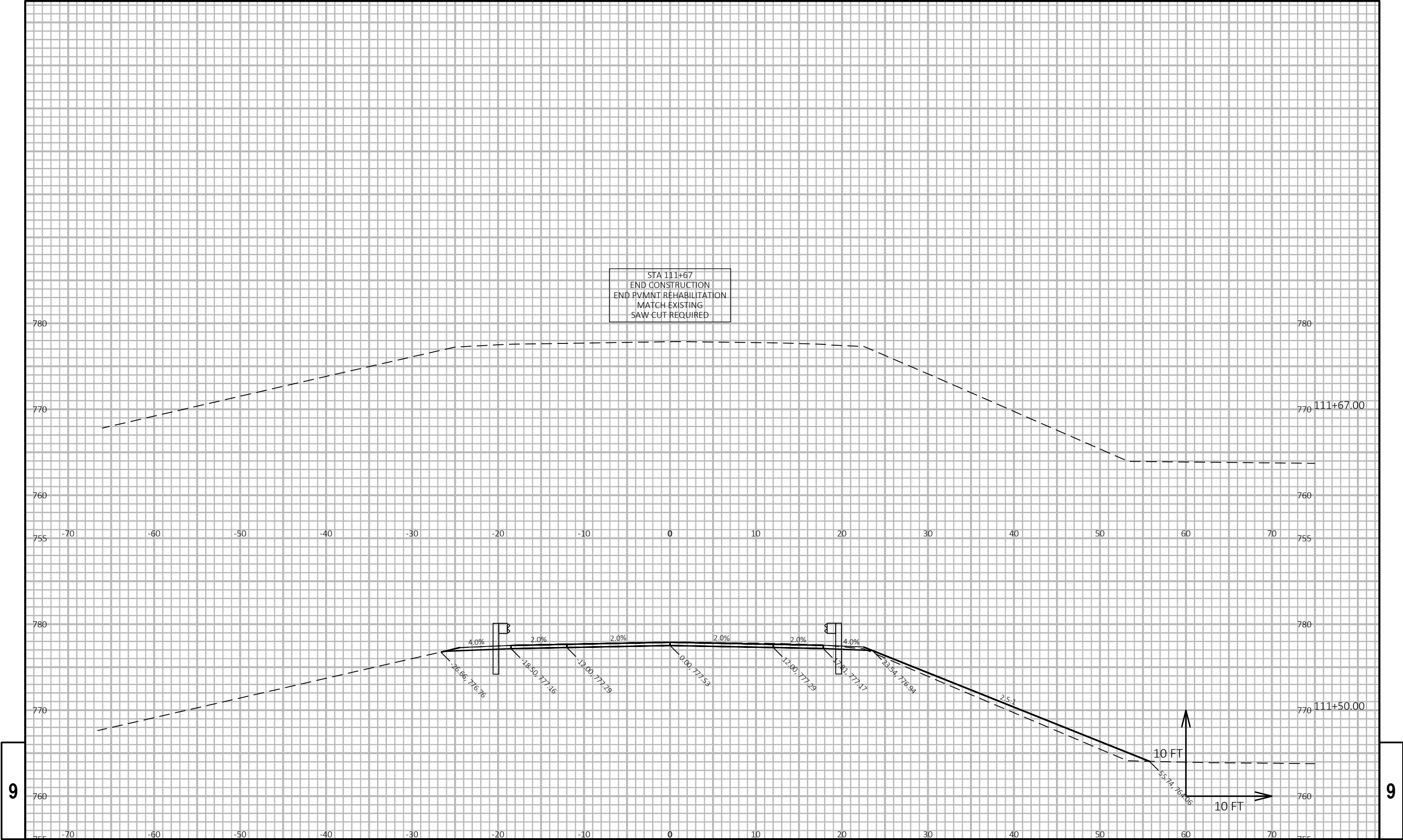


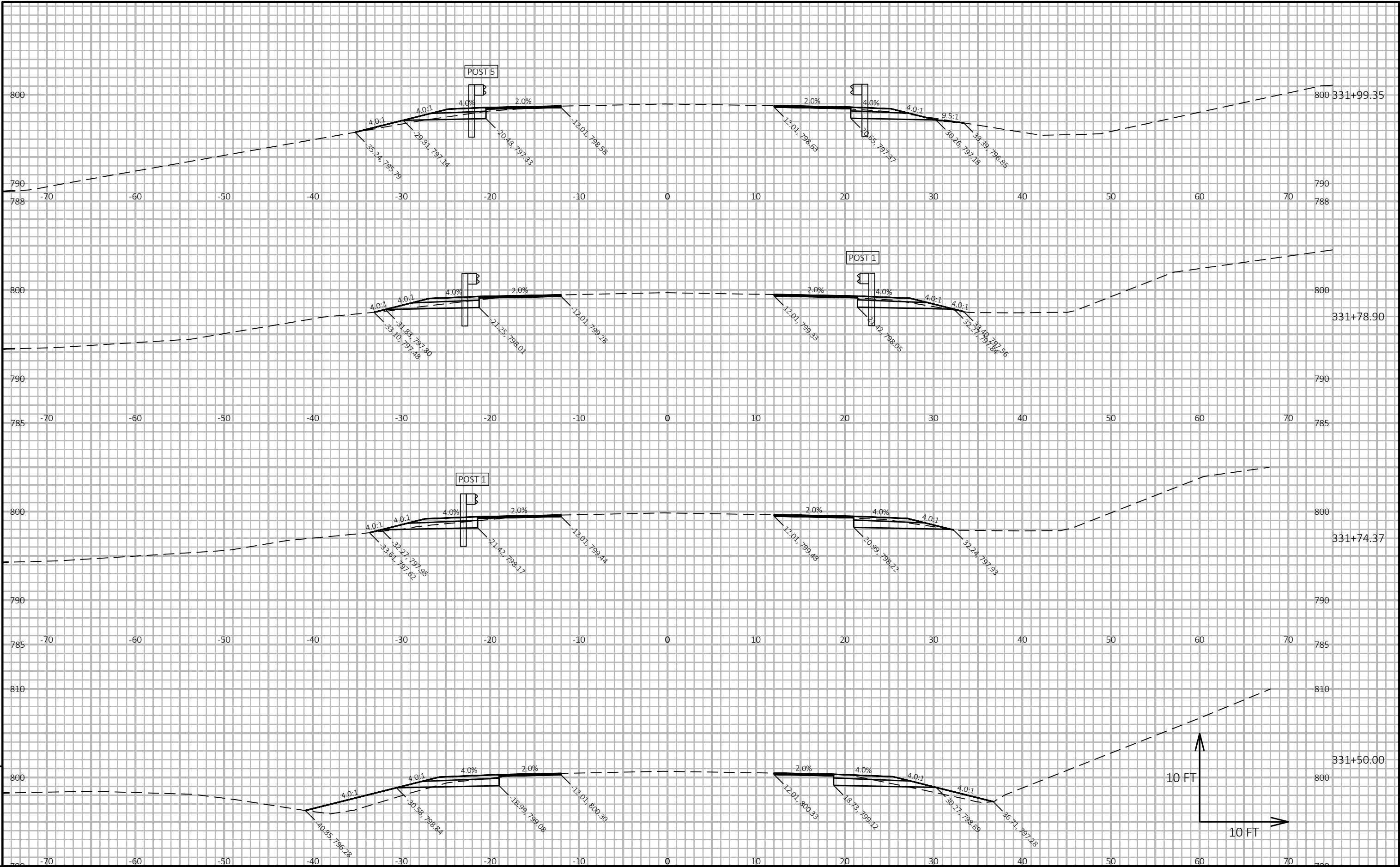
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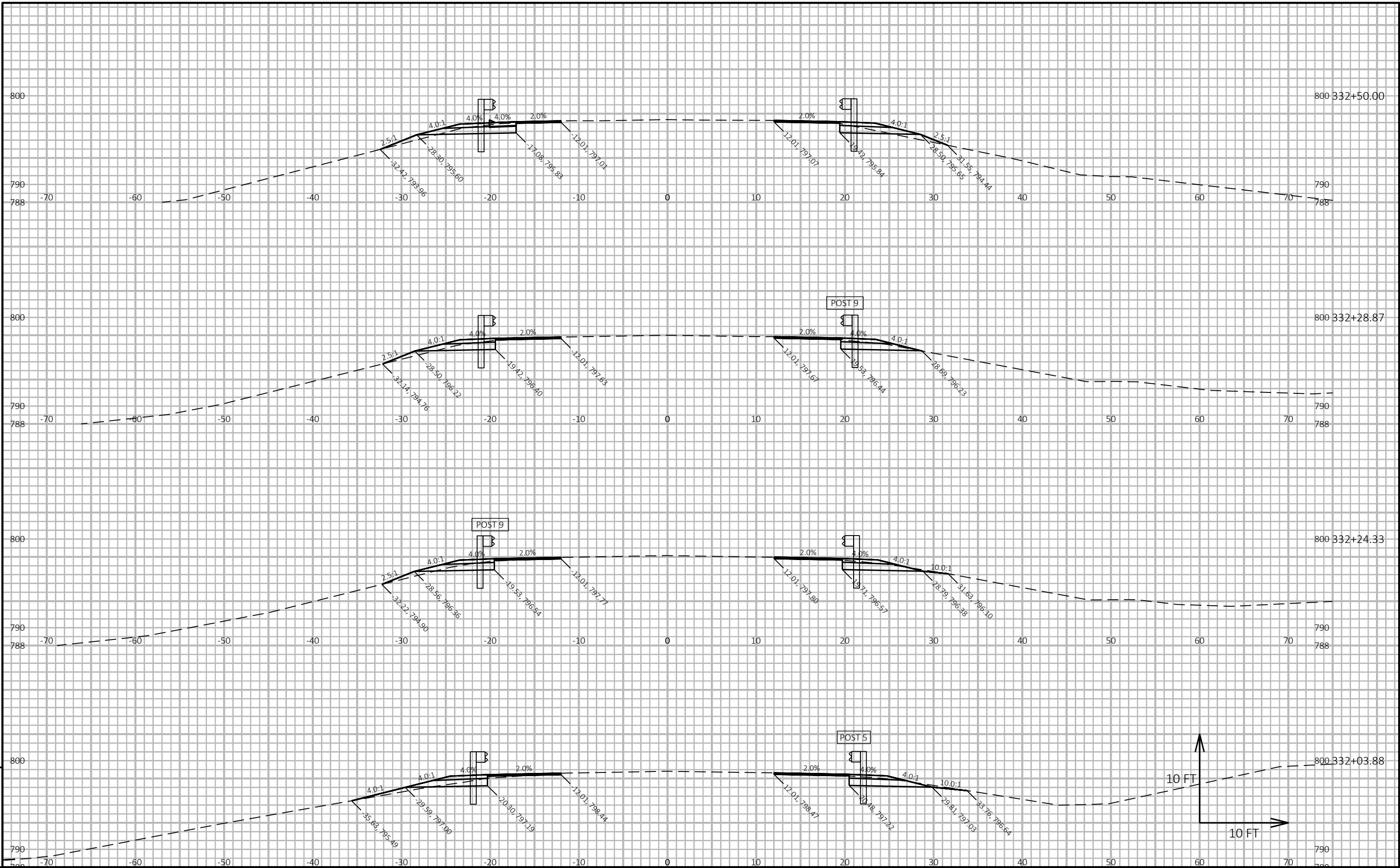
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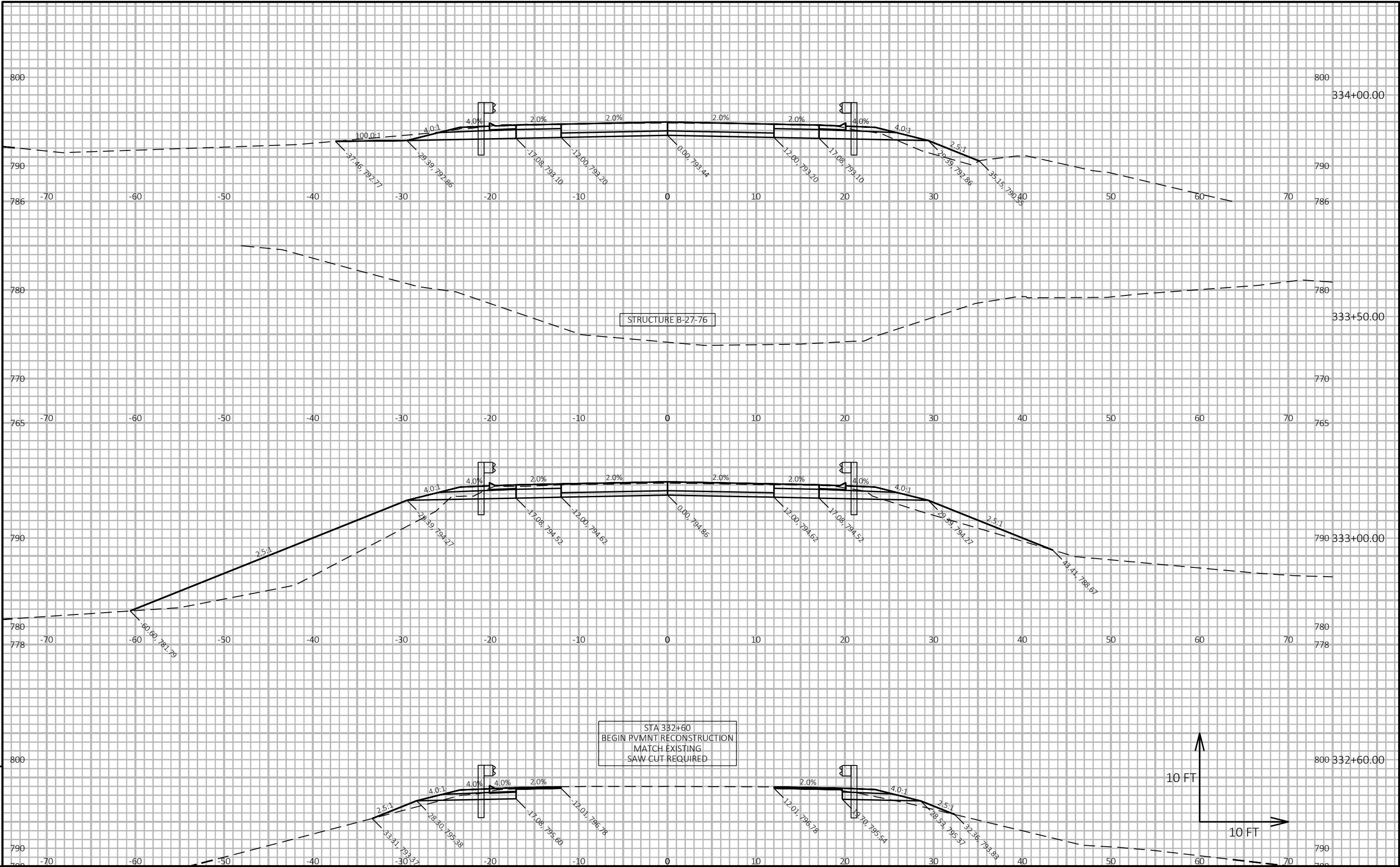
PROJECT NO: 7550-00-77	HWY: STH 54	COUNTY: JACKSON	CROSS SECTIONS: B-27-016	SHEET 103	E
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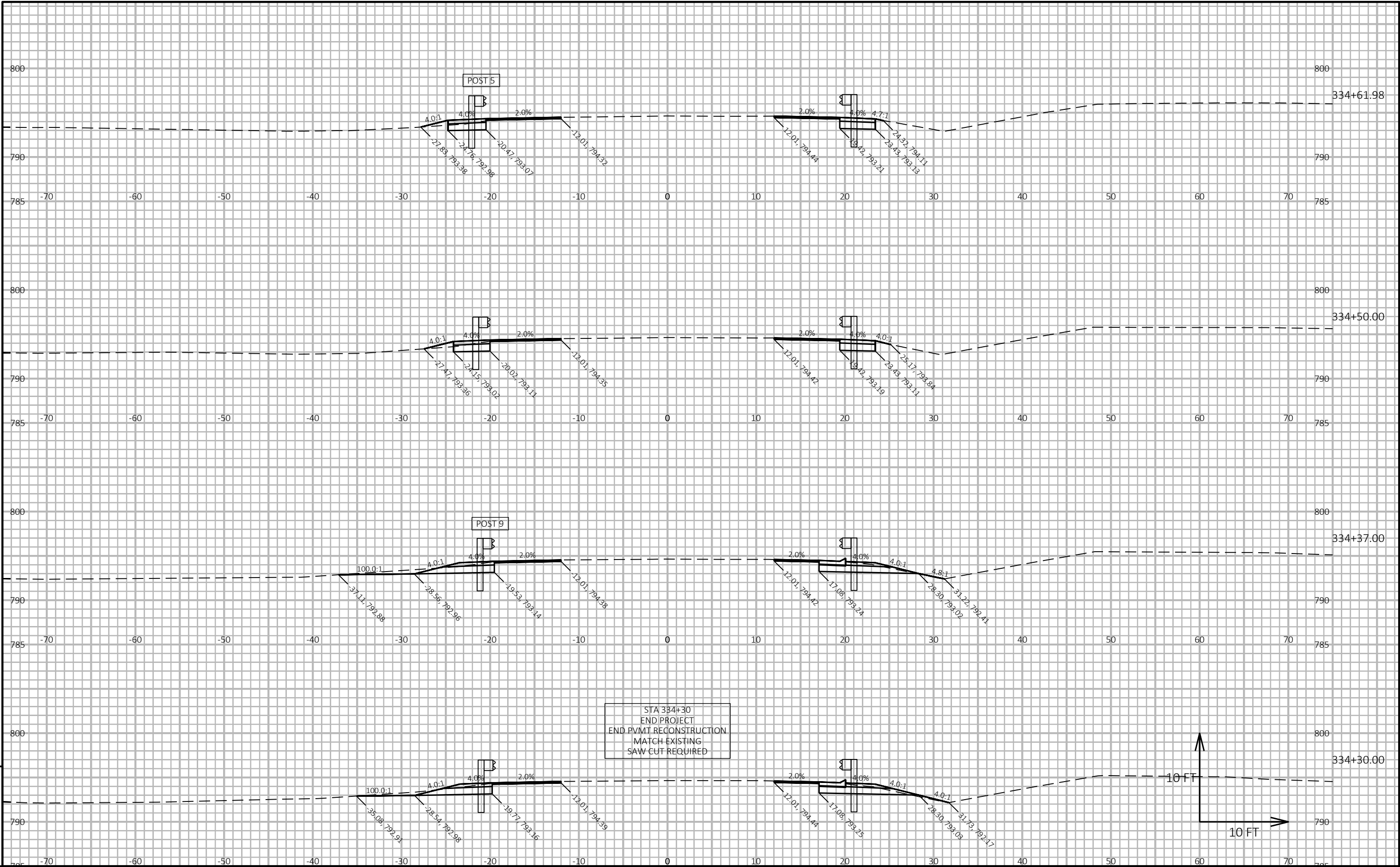


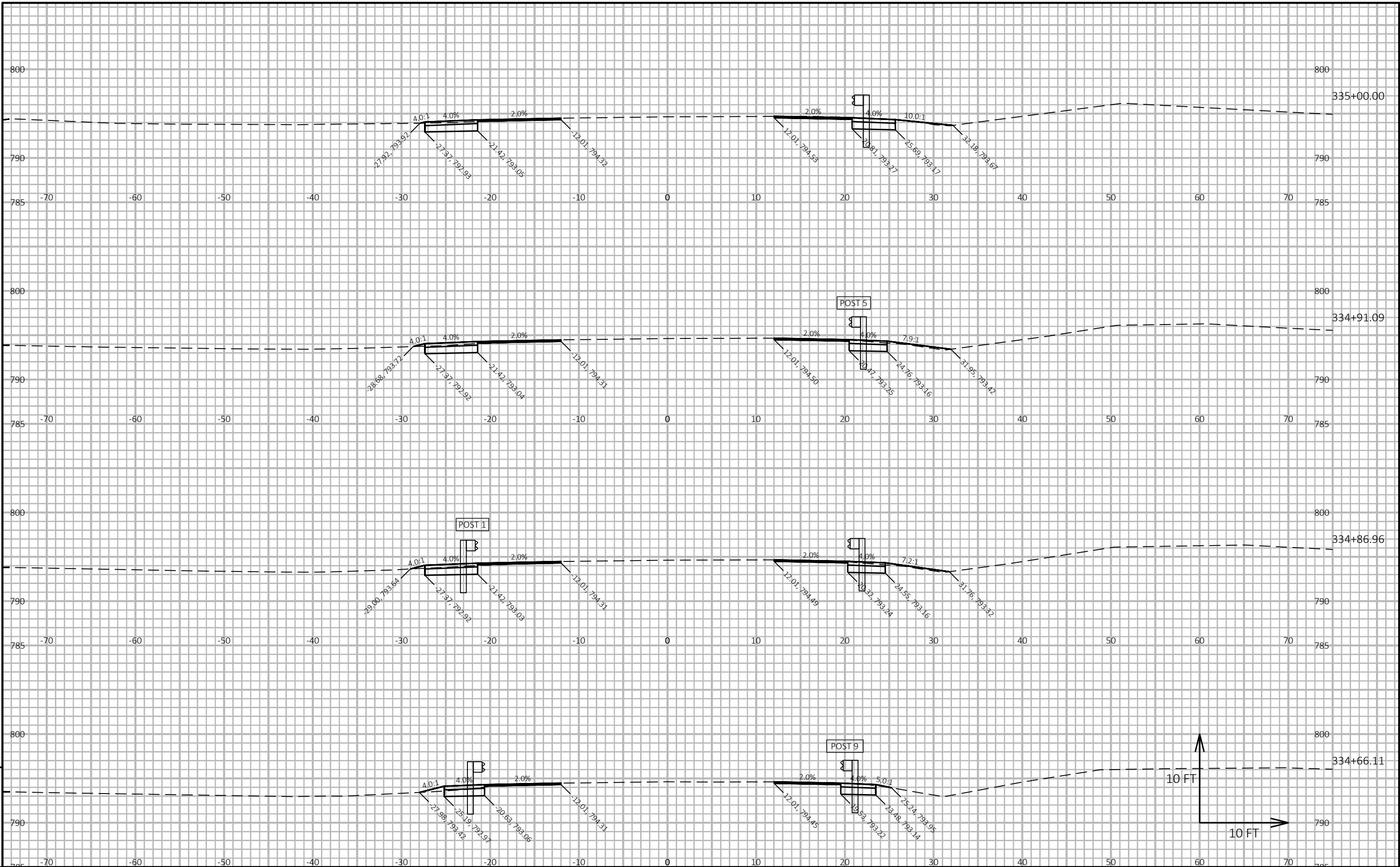


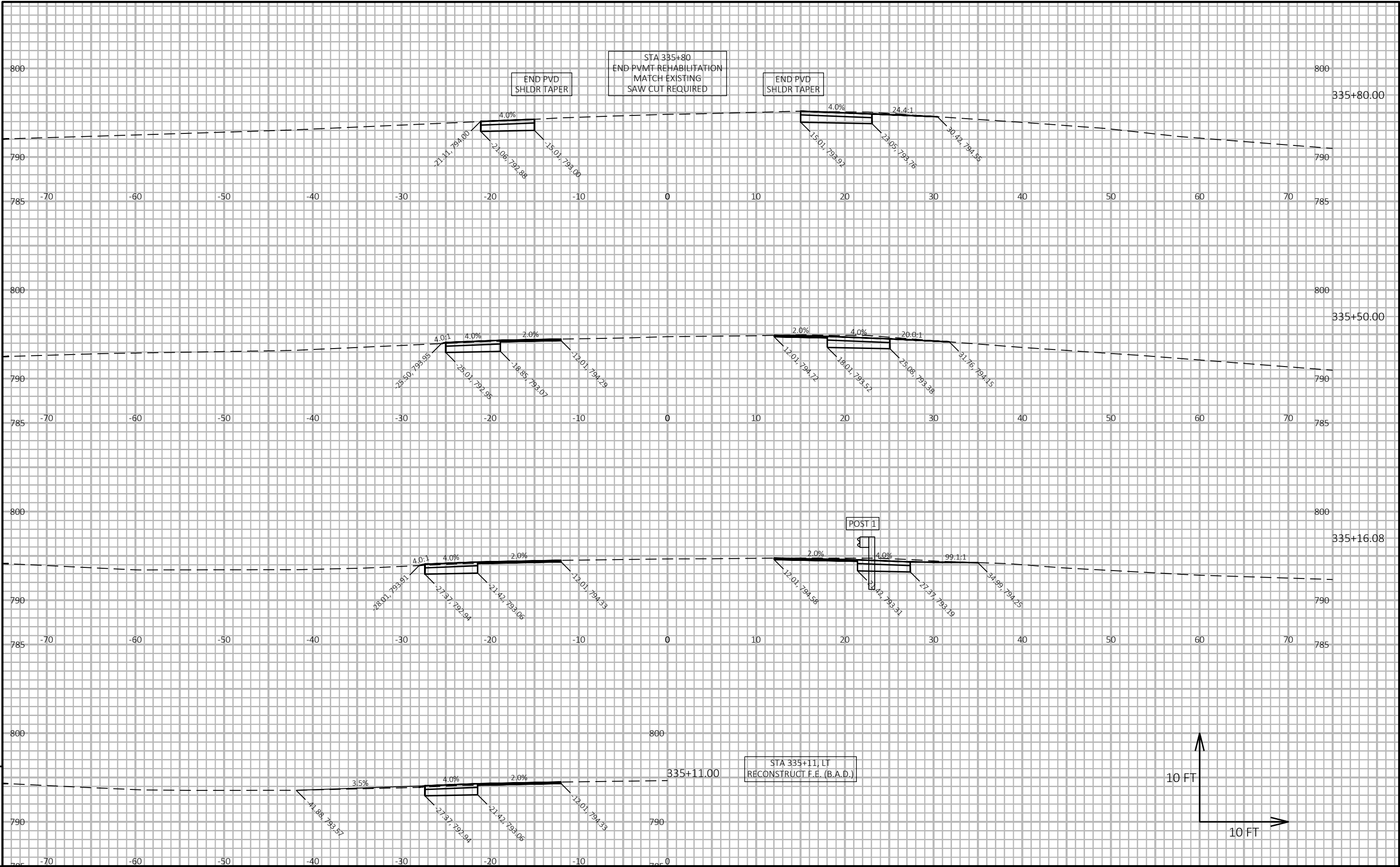


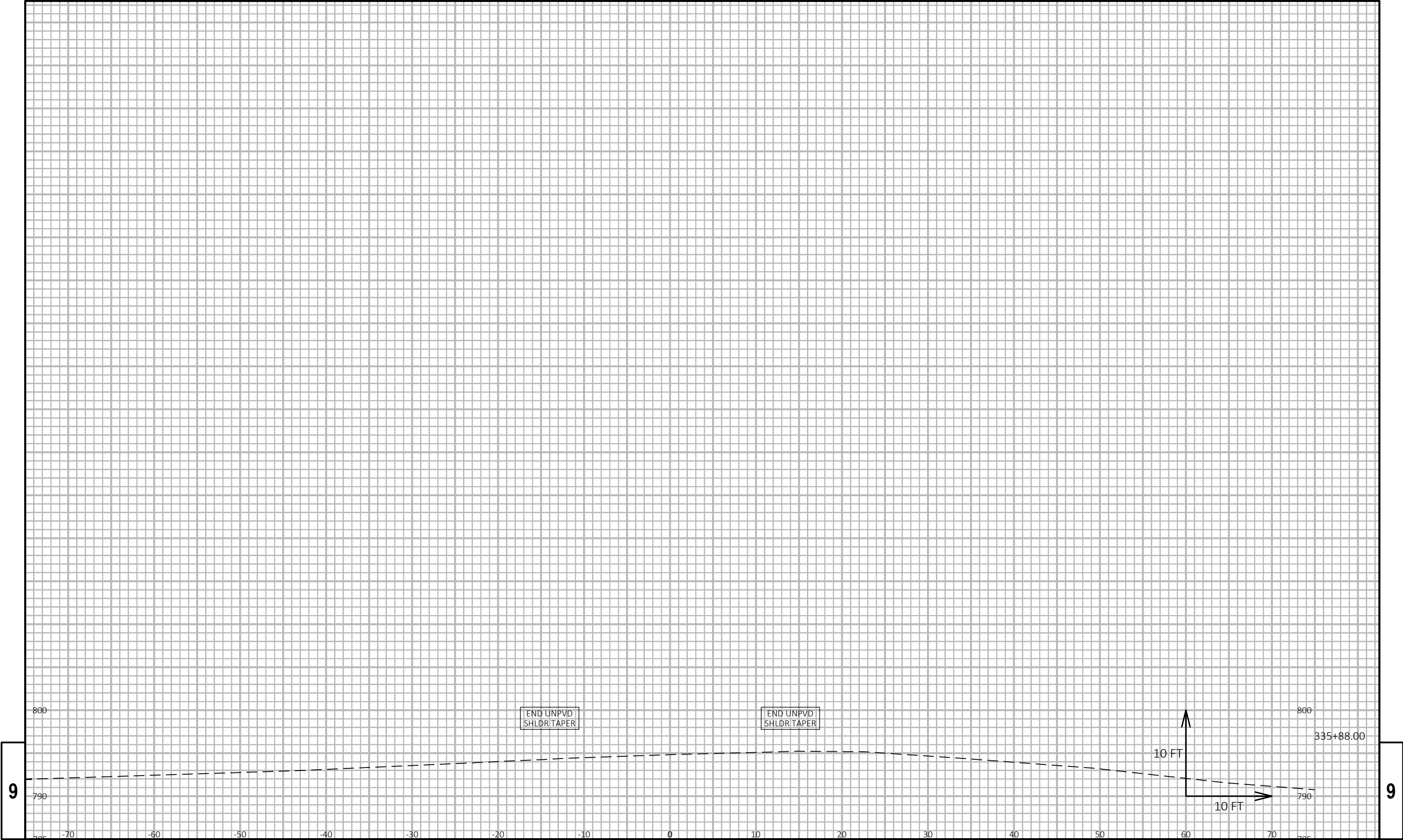


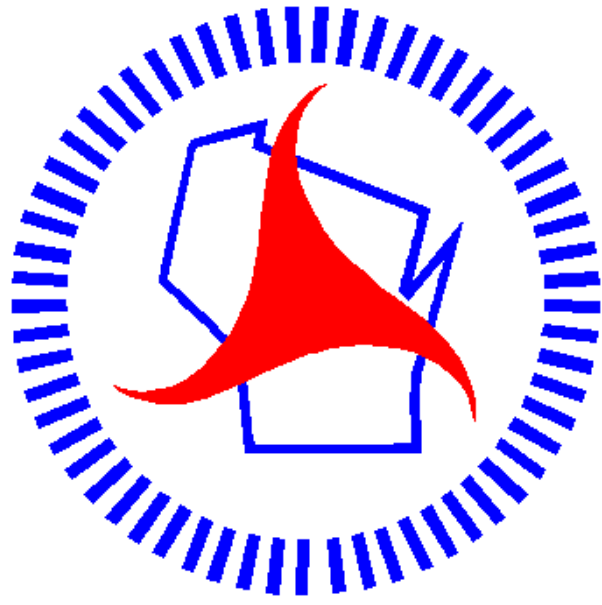












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