

EAU
PROJECT ID:
WITH: N/A

7146-00-74

COUNTY:

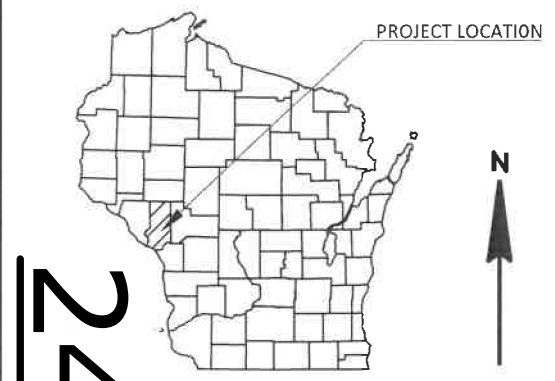
TREMPEALEAU

MAY 2023

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 = 74



24

DESIGN DESIGNATION

A.A.D.T. (2023)	=	700
A.A.D.T. (2043)	=	755
D.H.V.	=	N/A
D.D.	=	50/50
T.	=	8.5%
DESIGN SPEED	=	55 MPH
ESALS	=	168,235

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

USH 53 - STH 95

FRENCH CREEK BRIDGE B-61-255

CTH D

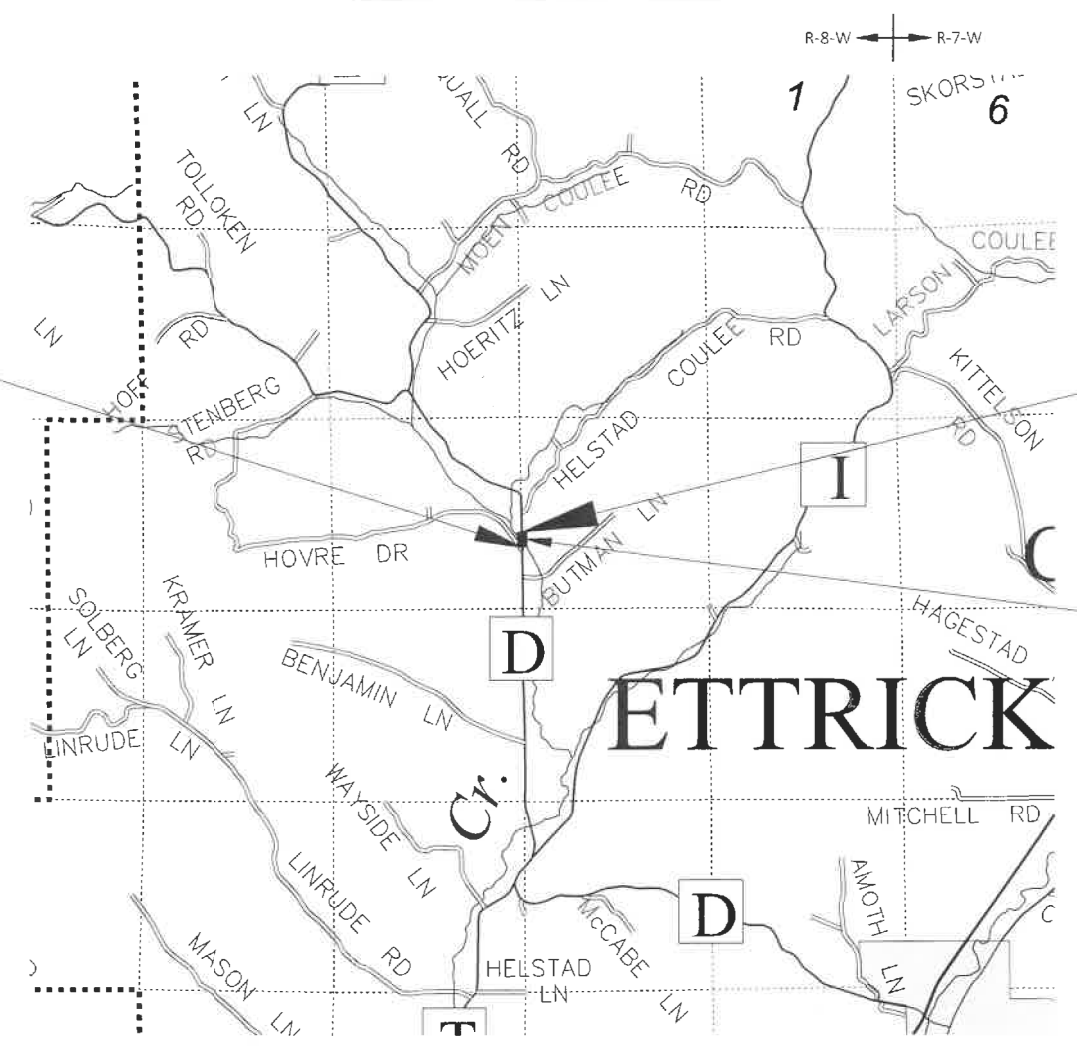
TREMPEALEAU COUNTY

STATE PROJECT NUMBER
7146-00-74

BEGIN PROJECT
STA 8+94
Y= 380784.281
X= 856892.389

END PROJECT
STA 10+90

STRUCTURE B-61-255
STA 9+43.79 - STA 10+34.21



TOTAL NET LENGTH OF CENTERLINE = 0.037 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), TREMPEALEAU 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
7146-00-74	WISC 2023405	1

ACCEPTED FOR
TREMPEALEAU COUNTY
Date: 4/12/23
(Signature and Title of Official)

ORIGINAL PLANS PREPARED BY
CORRE
ENGINEERING
MADISON | EAU CLAIRE | WAUKESHA | APPLETON | TOMAH | WITTENBERG

WISCONSIN PROFESSIONAL ENGINEER
KEVIN L. MEYER
E-86608-006
ELK MOUND, WI
DATE: 4/12/23
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: CORRE INC
Designer: CORRE INC
Project Manager: TYLER RONGSTAD
Regional Examiner: TOU YANG
Regional Supervisor: TYLER RONGSTAD

APPROVED FOR THE DEPARTMENT
Tyler Rongstad
DATE: _____
(Signature)

E

GENERAL NOTES

THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

THE ENGINEER SHALL ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH THE EXISTING UTILITY FACILITIES.

D.O.T. BRIDGE BENCHMARK MONUMENT TO BE FURNISHED BY THE STATE AND PLACED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

RIGHT OF WAY LINES SHOWN ON THE CROSS SECTIONS ARE APPROXIMATE.

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT ASPHALTIC SURFACE LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING LANE.

ASPHALTIC SURFACE WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.

TACK COAT VOLUME CALCULATIONS ARE BASED ON 0.07 GAL/SY.

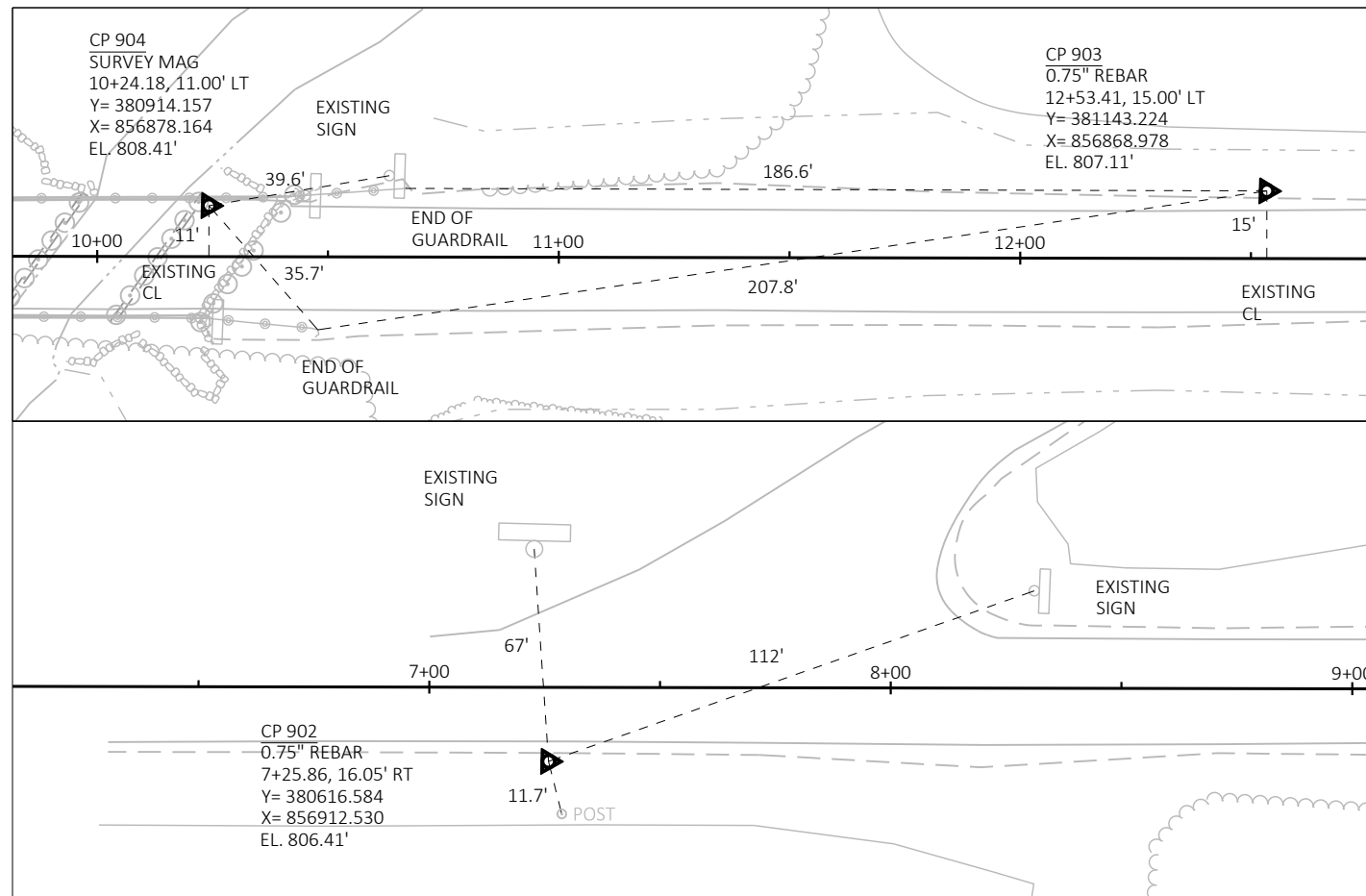
4.5-INCH ASPHALTIC SURFACE, SHALL BE CONSTRUCTED WITH 2.5-INCH UPPER LAYER AND 2-INCH LOWER LAYER.

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

THE QUANTITY OF THE ITEMS FOR EROSION PROTECTION INCLUDES AN UNDISTRIBUTED AMOUNT FOR PROTECTION, CONTROL AND ABATEMENT OF WATER POLLUTION RESULTING FROM SOIL EROSION. THE DISTRIBUTION AND LOCATION OF THESE MATERIALS ARE TO BE DETERMINED BY THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED (SALVAGED), FERTILIZED, SEEDED, AND COVERED WITH EROSION MAT AS DIRECTED BY THE ENGINEER.

CONTROL POINT TIES



RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 1.43 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.58 ACRES

DNR CONTACT

DEPARTMENT OF NATURAL RESOURCES
DNR WEST CENTRAL REGION HQ
1300 WEST CLAIREMONT AVE
EAU CLAIRE, WI 54701

ATTN: AMY LESIK
TELEPHONE: (715) 495-1903
E-MAIL: AMY.LESIK@WISCONSIN.GOV

COUNTY CONTACT

TREMPEALEAU COUNTY HIGHWAY COMMISSIONER
PO BOX 97
20699 STATE ROAD 121
WHITEHALL, WI 54773

ATTN: AL RINKA
TELEPHONE: (715) 538-9402
E-MAIL: AL.RINKA@CO.TREMPEALEAU.WI.US

CONSULTANT CONTACT

CORRE, INC.
1802 WARDEN STREET
EAU CLAIRE, WI 54703

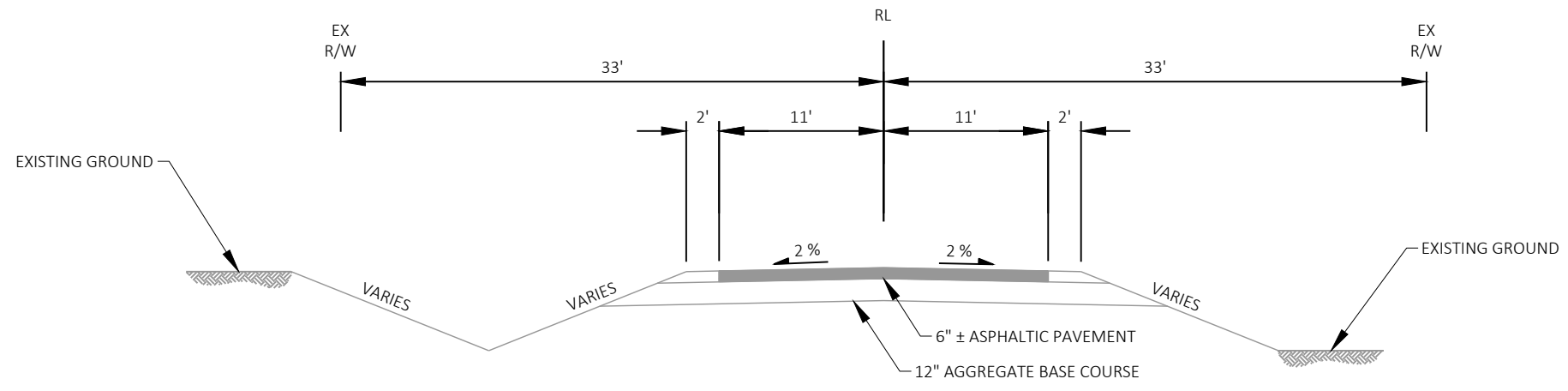
ATTN: KEVIN MEYER, P.E.
TELEPHONE: (715) 299-1894
E-MAIL: KMEYER@CORREINC.COM

UTILITY CONTACTS

BRIGHTSPEED
1905 WARD AVENUE
LA CROSSE, WI 54601

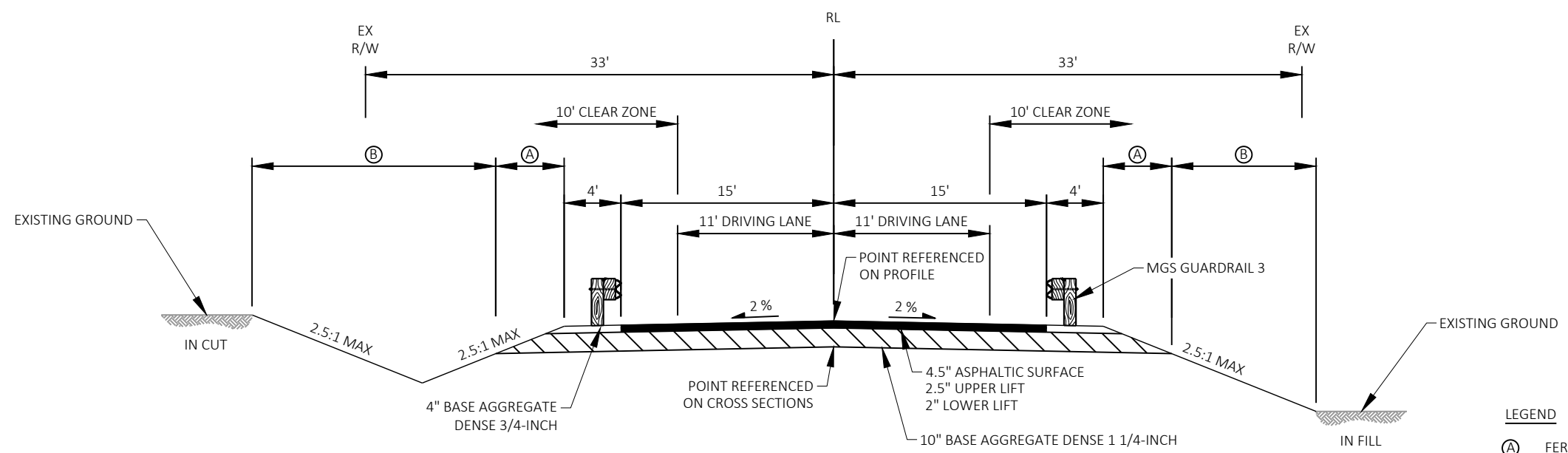
ATTN: TOM MURRAY
TELEPHONE: (608) 780-0895
E-MAIL: TOM.L.MURRAY@BRIGHTSPEED.COM

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



EXISTING TYPICAL SECTION

STA 6+47 - 9+68.3±
STA 10+32.2± - 13+40

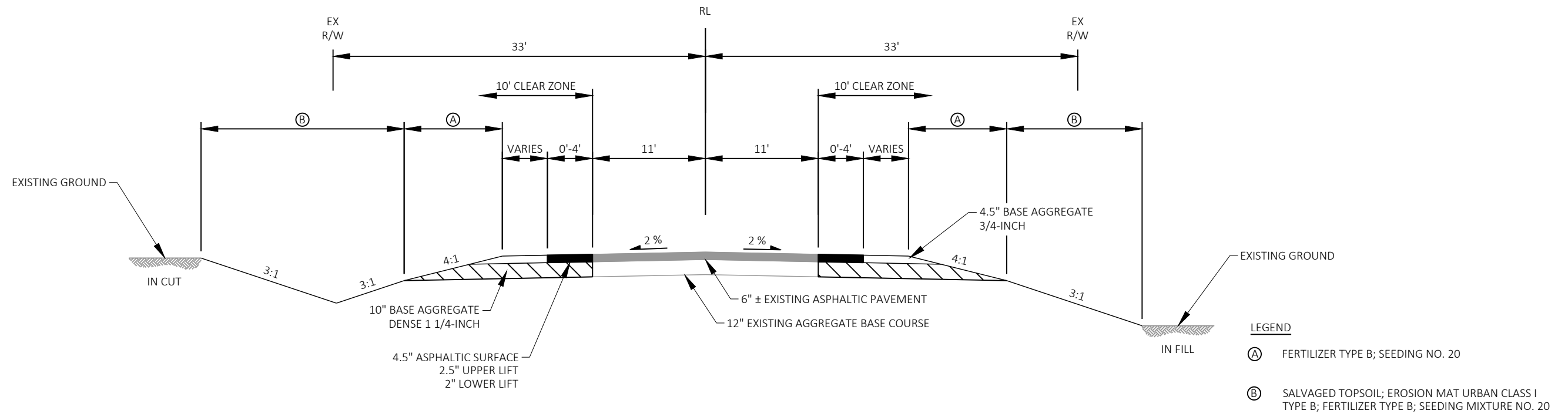


FINISHED TYPICAL SECTION

STA 8+94 - 9+43.79
STA 10+34.21 - 10+90

LEGEND

- (A) FERTILIZER TYPE B; SEEDING NO. 20
- (B) SALVAGED TOPSOIL; EROSION MAT URBAN CLASS I TYPE B; FERTILIZER TYPE B; SEEDING MIXTURE NO. 20



FINISHED TYPICAL SECTION - SHOULDER

STA 6+47 - 8+94
STA 10+90 - 13+40

Estimate Of Quantities

7146-00-74

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	4.000	4.000
0004	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-61-74	EACH	1.000	1.000
0006	204.0165	Removing Guardrail	LF	97.000	97.000
0008	205.0100	Excavation Common	CY	361.000	361.000
0010	206.1001	Excavation for Structures Bridges (structure) 01. B-61-255	EACH	1.000	1.000
0012	208.0100	Borrow	CY	492.000	492.000
0014	210.1500	Backfill Structure Type A	TON	380.000	380.000
0016	213.0100	Finishing Roadway (project) 01. 7146-00-74	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	170.000	170.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	680.000	680.000
0022	415.0060	Concrete Pavement 6-Inch	SY	38.000	38.000
0024	415.0410	Concrete Pavement Approach Slab	SY	104.000	104.000
0026	455.0605	Tack Coat	GAL	28.000	28.000
0028	465.0105	Asphaltic Surface	TON	110.000	110.000
0030	502.0100	Concrete Masonry Bridges	CY	192.000	192.000
0032	502.3200	Protective Surface Treatment	SY	390.000	390.000
0034	503.0137	Prestressed Girder Type I 36W-Inch	LF	348.000	348.000
0036	505.0400	Bar Steel Reinforcement HS Structures	LB	5,200.000	5,200.000
0038	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	22,770.000	22,770.000
0040	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	8.000	8.000
0042	506.4000	Steel Diaphragms (structure) 01. B-61-255	EACH	6.000	6.000
0044	513.4061	Railing Tubular Type M	LF	242.000	242.000
0046	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0048	550.0500	Pile Points	EACH	22.000	22.000
0050	550.2104	Piling CIP Concrete 10 3/4 X 0.25-Inch	LF	1,760.000	1,760.000
0052	606.0300	Riprap Heavy	CY	205.000	205.000
0054	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	180.000	180.000
0056	614.2300	MGS Guardrail 3	LF	137.500	137.500
0058	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0060	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0062	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7146-00-74	EACH	1.000	1.000
0064	619.1000	Mobilization	EACH	1.000	1.000
0066	624.0100	Water	MGAL	7.000	7.000
0068	625.0500	Salvaged Topsoil	SY	1,370.000	1,370.000
0070	628.1504	Silt Fence	LF	1,175.000	1,175.000
0072	628.1520	Silt Fence Maintenance	LF	1,175.000	1,175.000
0074	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0076	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0078	628.2008	Erosion Mat Urban Class I Type B	SY	1,370.000	1,370.000
0080	628.6005	Turbidity Barriers	SY	100.000	100.000
0082	629.0210	Fertilizer Type B	CWT	1.040	1.040
0084	630.0120	Seeding Mixture No. 20	LB	53.000	53.000
0086	630.0200	Seeding Temporary	LB	53.000	53.000
0088	630.0500	Seed Water	MGAL	38.000	38.000
0090	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0092	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0094	638.2602	Removing Signs Type II	EACH	4.000	4.000
0096	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0098	642.5001	Field Office Type B	EACH	1.000	1.000

Estimate Of Quantities

7146-00-74

Line	Item	Item Description	Unit	Total	Qty
0100	643.0420	Traffic Control Barricades Type III	DAY	1,440.000	1,440.000
0102	643.0705	Traffic Control Warning Lights Type A	DAY	2,240.000	2,240.000
0104	643.0900	Traffic Control Signs	DAY	1,120.000	1,120.000
0106	643.5000	Traffic Control	EACH	1.000	1.000
0108	645.0111	Geotextile Type DF Schedule A	SY	84.000	84.000
0110	645.0120	Geotextile Type HR	SY	350.000	350.000
0112	646.1020	Marking Line Epoxy 4-Inch	LF	442.000	442.000
0114	650.4500	Construction Staking Subgrade	LF	96.000	96.000
0116	650.5000	Construction Staking Base	LF	96.000	96.000
0118	650.6501	Construction Staking Structure Layout (structure) 01. B-61-255	EACH	1.000	1.000
0120	650.9911	Construction Staking Supplemental Control (project) 01. 7146-00-74	EACH	1.000	1.000
0122	650.9920	Construction Staking Slope Stakes	LF	593.000	593.000
0124	690.0150	Sawing Asphalt	LF	480.000	480.000
0126	715.0502	Incentive Strength Concrete Structures	DOL	1,152.000	1,152.000
0128	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0130	999.2005.S	Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000
0132	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0134	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0136	SPV.0090	Special 01. Flashing Stainless Steel	LF	178.000	178.000
0138	SPV.0090	Special 02. Removing Existing Timber Piling	LF	200.000	200.000

3

3

201.0205 GRUBBING STA				204.0165 REMOVING GUARDRAIL LF			305.0110 BASE AGGREGATE DENSE 3/4-INCH TON				REMARKS		305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON		624.0100 WATER MGAL							
STATION	TO	STATION	LOCATION	STATION	TO	STATION	LOCATION	STATION	TO	STATION	LOCATION	TON	REMARKS	STATION	TO	STATION	LOCATION	TON	WATER			
8+00	-	12+00	CTH D	4	9+33	-	9+58	SOUTH APPROACH RT	25	6+47	-	9+40	SOUTH APPROACH	70	SHOULDERS	6+47	-	9+40	SOUTH APPROACH	290	3	
					9+52	-	9+76	SOUTH APPROACH LT	23	10+33	-	13+40	NORTH APPROACH	100	SHOULDERS	10+33	-	13+40	NORTH APPROACH	390	4	
			TOTAL 0010	4	10+23	-	10+47	NORTH APPROACH RT	24													
					10+42	-	10+67	NORTH APPROACH LT	25													
					TOTAL 0010			97			TOTAL 0010			170				TOTAL 0010			680	7

CONCRETE PAVEMENT ITEMS

ASPHALT ITEMS

MGS GUARDRAIL ITEMS

415.0060 CONCRETE PAVEMENT 6-INCH SY		415.0410 CONCRETE PAVEMENT APPROACH SLAB SY		455.0605 TACK COAT GAL		465.0105 ASPHALTIC SURFACE TON		614.2300 MGS GUARDRAIL 3 LF		614.2500 MGS THRIE BEAM LF		614.2610 MGS GUARDRAIL TERMINAL EAT EACH						
STATION	TO	STATION	LOCATION	STATION	TO	STATION	LOCATION	STATION	TO	STATION	LOCATION	LF	LF	EACH				
9+23	-	9+44	SOUTH APPROACH	19	52	8+94	-	9+23	SOUTH APPROACH	13	50	7+94	-	9+24	SE QUADRANT	37.5	39.4	1
10+33	-	10+55	NORTH APPROACH	19	52	10+55	-	10+90	NORTH APPROACH	15	60	8+24	-	9+41	SW QUADRANT	25.0	39.4	1
			TOTAL 0010	38	104				TOTAL 0010	28	110	10+36	-	11+66	NE QUADRANT	37.5	39.4	1
												10+53	-	11+83	NW QUADRANT	37.5	39.4	1
												TOTAL 0010			137.5	157.6	4	

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (3)	AVAILABLE MATERIAL (4)	UNEXPANDED FILL	EXPANDED FILL (5) FACTOR 1.30	MASS ORDINATE +/- (6)	208.0100 BORROW
			CUT (2)	EBS EXCAVATION						
CTH D	6+47 TO 9+22	SOUTH APPROACH	105		14	91	142	185	-94	94
	10+60 TO 13+55	NORTH APPROACH	256		11	245	495	644	-399	399
DIVISION 1 SUBTOTAL			361	0	25	336	637	828	-492	
GRAND TOTAL			361	0	25	336	637	828	-492	492
TOTAL COMMON EXC			361							

NOTES:

- (1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
- (2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- (3) SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE 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 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.

LANDSCAPING ITEMS

STATION	TO	STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL
6+47	-	9+40	SOUTH APPROACH RT	250	250	0.22	10	10	8
8+16	-	9+40	SOUTH APPROACH LT	70	70	0.07	5	5	3
10+40	-	11+40	NORTH APPROACH RT	730	730	0.48	25	25	17
10+40	-	13+40	NORTH APPROACH LT	240	240	0.21	10	10	8
			UNDISTRIBUTED (25%)	80	80	0.06	3	3	2
TOTAL 0010				1,370	1,370	1.04	53	53	38

EROSION CONTROL ITEMS

STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
6+47	-	9+40	SOUTH APPROACH RT	310	310
8+16	-	9+40	SOUTH APPROACH LT	150	150
10+40	-	11+40	NORTH APPROACH RT	155	155
10+40	-	13+43	NORTH APPROACH LT	325	325
			UNDISTRIBUTED (25%)	235	235
TOTAL 0010				1,175	1,175

SIGNING ITEMS

STATION	LOCATION	628.6005 TURBIDITY BARRIERS SY	634.0614 POSTS WOOD 4X6-INCH X 14- FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	REMARKS
9+40	SOUTH APPROACH	50			
10+40	NORTH APPROACH	50			
TOTAL 0010		100			
			PROPOSED STRUCTURE B-61-291	4	12
TOTAL 0010			4	12	PROPOSED BRIDGE HASH MARKS; W5-52L & W5-52R

EROSION CONTROL ITEMS (CONT'D)

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT	5	2
TOTAL 0010	5	2

NOTE: PLACE BRIDGE HASH MARK SIGNS PER SDD "SIGNING AND MARKING FOR TWO LANE BRIDGES"

REMOVING SIGN ITEMS

LOCATION	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
EXISTING STRUCTURE P-61-74	4	4	EXISTING BRIDGE HASH MARKS
TOTAL 0010	4	4	

**642.5001
FIELD OFFICE
TYPE B
EACH**

LOCATION	642.5001 FIELD OFFICE TYPE B EACH
PROJECT	1
TOTAL 0010	1

TRAFFIC CONTROL ITEMS

LOCATION	DURATION	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.5000 TRAFFIC CONTROL EACH
PROJECT	80 DAYS	1,440	2,240	1,120	1
TOTAL 0010		1,440	2,240	1,120	1

3

PAVEMENT MARKING

		646.1020 MARKING LINE EPOXY 4-INCH			
STATION	TO	STATION	LOCATION	LF	REMARKS
8+94	-	10+90	CTH D	50	YELLOW CENTERLINE (SKIPS)
8+94	-	10+90	CTH D	392	WHITE EDGELINE
TOTAL 0010				442	

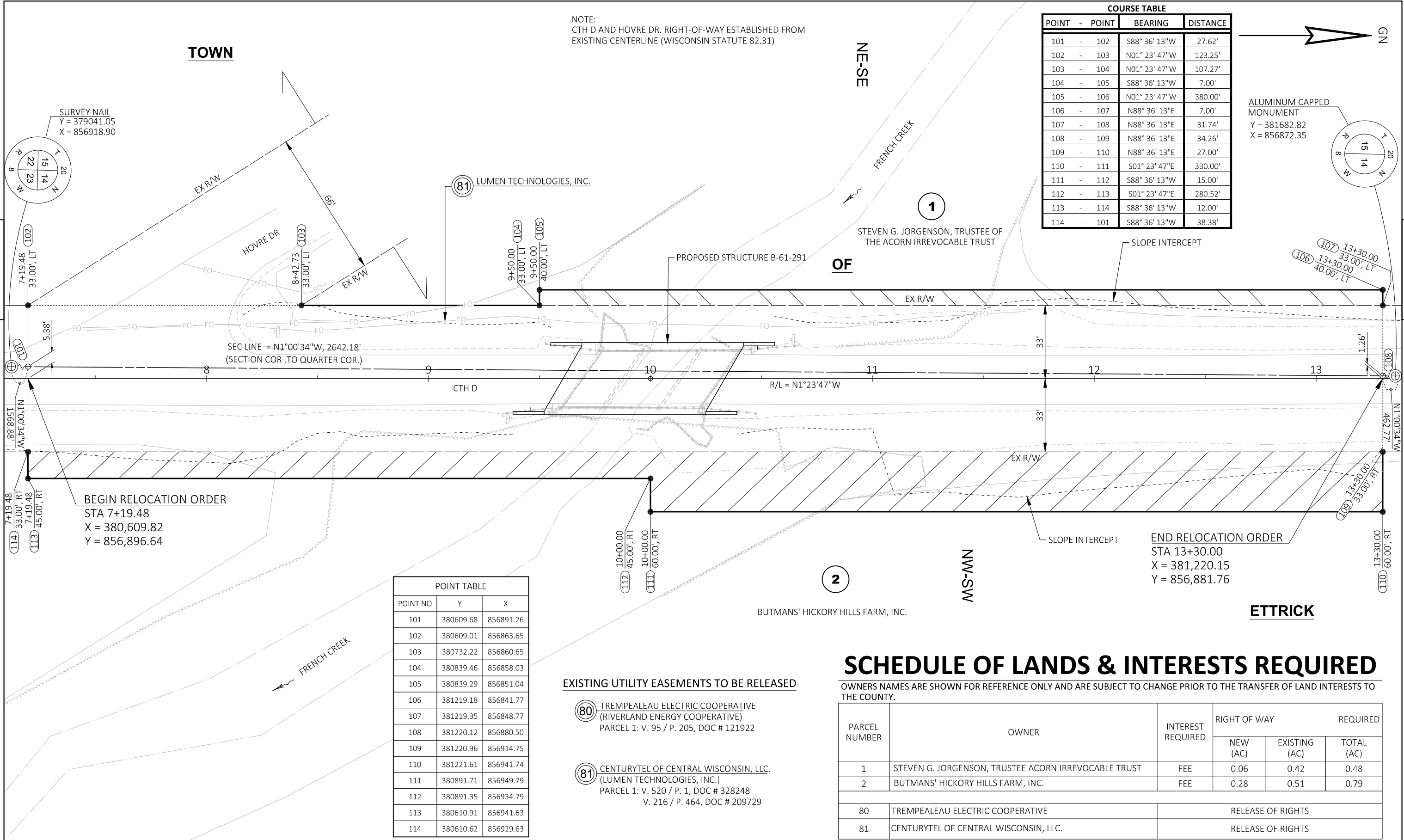
		650.6501.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. B-61-255)	
LOCATION	EACH		
B-61-255	1		
TOTAL 0020	1		

CONSTRUCTION STAKING ITEMS

		650.4500		650.5000		650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 7146-00-74)		650.9920 CONSTRUCTION STAKING SLOPE STAKES	
STATION	TO	STATION	LOCATION	CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	EACH	LF	LF	LF
6+47	-	8+94	SOUTH APPROACH	--	--	--			247
8+94	-	9+40	SOUTH APPROACH	46	46	--			46
10+40	-	10+90	NORTH APPROACH	50	50	--			50
10+90	-	13+40	NORTH APPROACH PROJECT	--	--	1			250
TOTAL 0010				96	96	1			593

		690.0150 SAWING ASPHALT	
STATION	LOCATION		LF
8+94	BEGIN PROJECT		215
10+90	END PROJECT		265
TOTAL 0010			480

3



NOTE:
 CTH D AND HOVRE DR. RIGHT-OF-WAY ESTABLISHED FROM
 EXISTING CENTERLINE (WISCONSIN STATUTE 82.31)

COURSE TABLE

POINT	POINT	BEARING	DISTANCE
101	102	S88° 36' 13"W	27.62'
102	103	N01° 23' 47"W	123.25'
103	104	N01° 23' 47"W	107.27'
104	105	S88° 36' 13"W	7.00'
105	106	N01° 23' 47"W	380.00'
106	107	N88° 36' 13"E	7.00'
107	108	N88° 36' 13"E	31.74'
108	109	N88° 36' 13"E	34.26'
109	110	N88° 36' 13"E	27.00'
110	111	S01° 23' 47"E	330.00'
111	112	S88° 36' 13"W	15.00'
112	113	S01° 23' 47"E	280.52'
113	114	S88° 36' 13"W	12.00'
114	101	S88° 36' 13"W	38.38'

ALUMINUM CAPPED
 MONUMENT
 Y = 381682.82
 X = 856872.35

EXISTING UTILITY EASEMENTS TO BE RELEASED

- (80) TREMPEALEAU ELECTRIC COOPERATIVE
 (RIVERLAND ENERGY COOPERATIVE)
 PARCEL 1: V. 95 / P. 205, DOC # 121922
- (81) CENTURYTEL OF CENTRAL WISCONSIN, LLC.
 (LUMEN TECHNOLOGIES, INC.)
 PARCEL 1: V. 520 / P. 1, DOC # 328248
 V. 216 / P. 464, DOC # 209729

SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE COUNTY.

PARCEL NUMBER	OWNER	INTEREST REQUIRED	RIGHT OF WAY REQUIRED		
			NEW (AC)	EXISTING (AC)	TOTAL (AC)
1	STEVEN G. JORGENSEN, TRUSTEE ACORN IRREVOCABLE TRUST	FEE	0.06	0.42	0.48
2	BUTMANS' HICKORY HILLS FARM, INC.	FEE	0.28	0.51	0.79
80	TREMPEALEAU ELECTRIC COOPERATIVE		RELEASE OF RIGHTS		
81	CENTURYTEL OF CENTRAL WISCONSIN, LLC.		RELEASE OF RIGHTS		

REVISION DATE	DATE 10/24/2022	SCALE, FEET 0 20 40	HWY: CTH D	STATE R/W PROJECT NUMBER 7146-00-04	PLAT SHEET 4.02
	GRID FACTOR		COUNTY: TREMPEALEAU	CONSTRUCTION PROJECT NUMBER 7146-00-74	PS&E SHEET

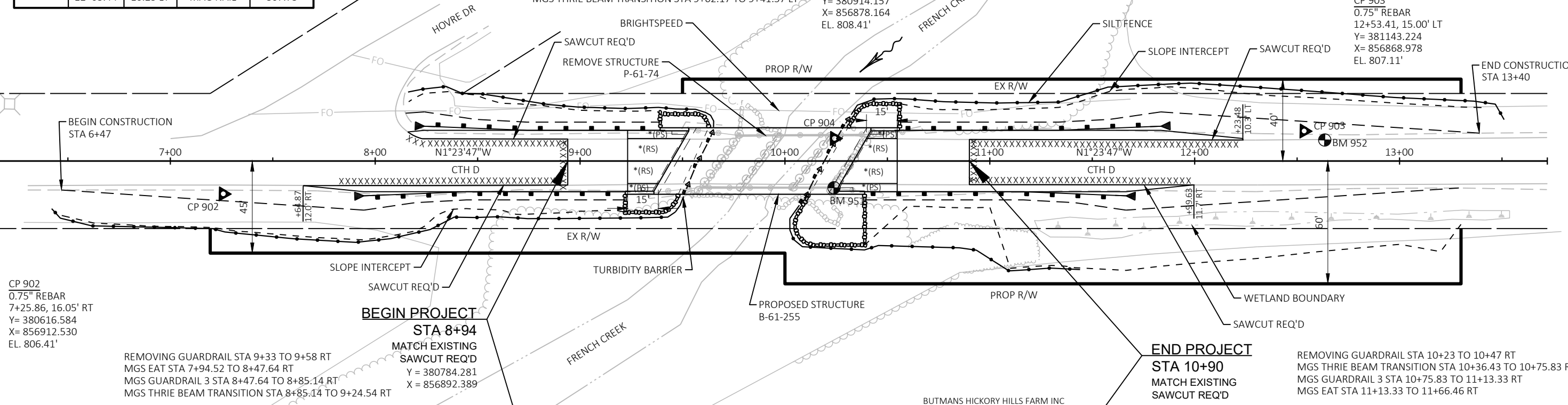
BENCHMARKS				
NUMBER	STATION	OFFSET	DESCRIPTION	ELEVATION
BM 951	10+23.93	13.07 RT	MAG NAIL	808.97
BM 952	12+63.44	10.25 LT	MAG NAIL	807.73

*(PS) = CONCRETE PAVEMENT 6-INCH
*(RS) = CONCRETE APPROACH SLAB

ACORN IRREVOCABLE TRUST

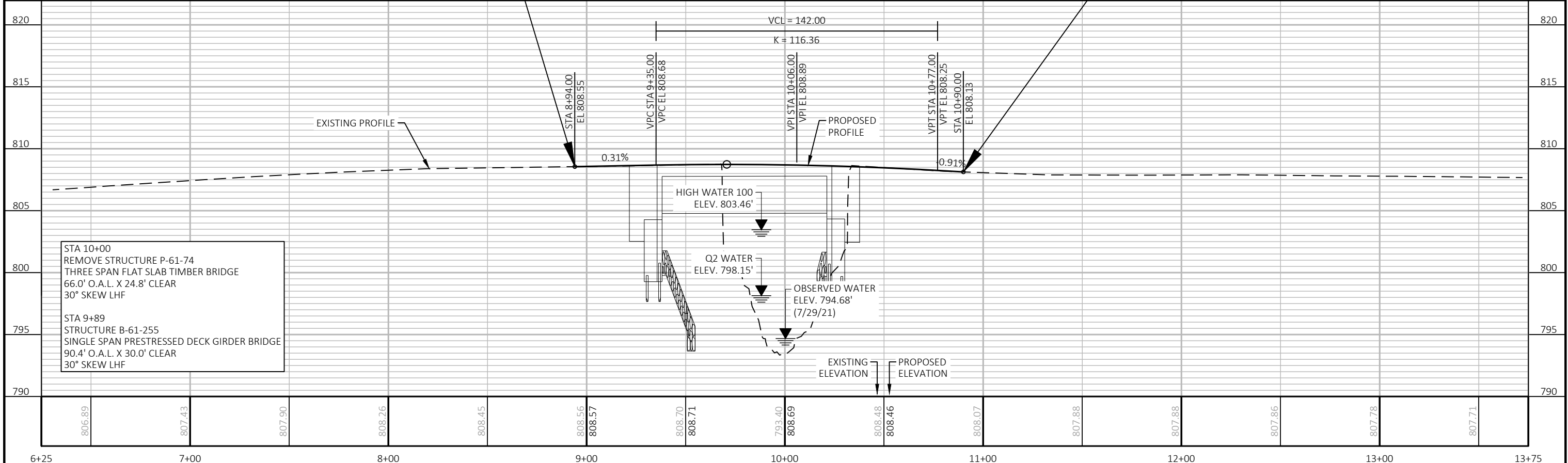
REMOVING GUARDRAIL STA 10+42 TO 10+67 LT
MGS THRIE BEAM TRANSITION STA 10+53.46 TO 10+92.86 LT
MGS GUARDRAIL 3 STA 10+92.86 TO 11+30.36 LT
MGS EAT STA 11+30.36 TO 11+83.48 LT

CP 903
0.75" REBAR
12+53.41, 15.00' LT
Y= 381143.224
X= 856868.978
EL. 807.11'



5

5



STA 10+00
REMOVE STRUCTURE P-61-74
THREE SPAN FLAT SLAB TIMBER BRIDGE
66.0' O.A.L. X 24.8' CLEAR
30° SKEW LHF

STA 9+89
STRUCTURE B-61-255
SINGLE SPAN PRESTRESSED DECK GIRDER BRIDGE
90.4' O.A.L. X 30.0' CLEAR
30° SKEW LHF

PROJECT NO: 7146-00-74	HWY: CTH D	COUNTY: TREMPLEALEU	PLAN AND PROFILE: CTH D	SCALE, FEET: 0 25 50	SHEET: E
------------------------	------------	---------------------	-------------------------	----------------------	----------

Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
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 THREE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-10	SIGNING & MARKING FOR TWO LANE BRIDGES



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

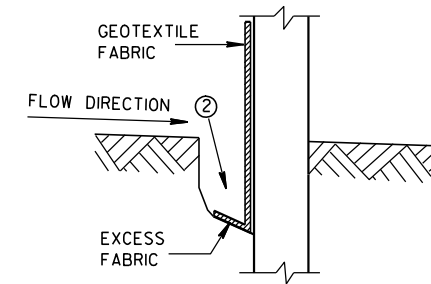


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

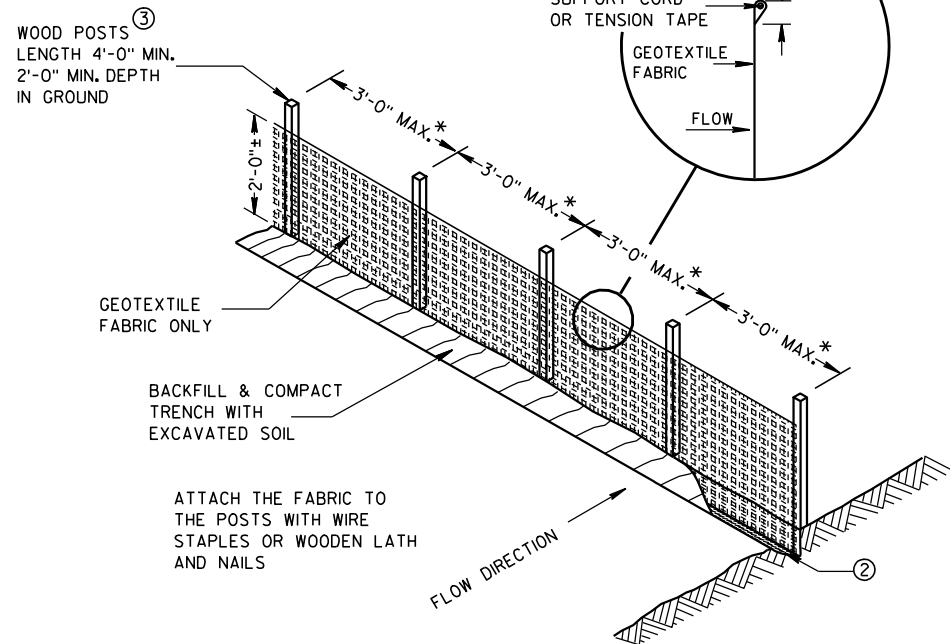
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



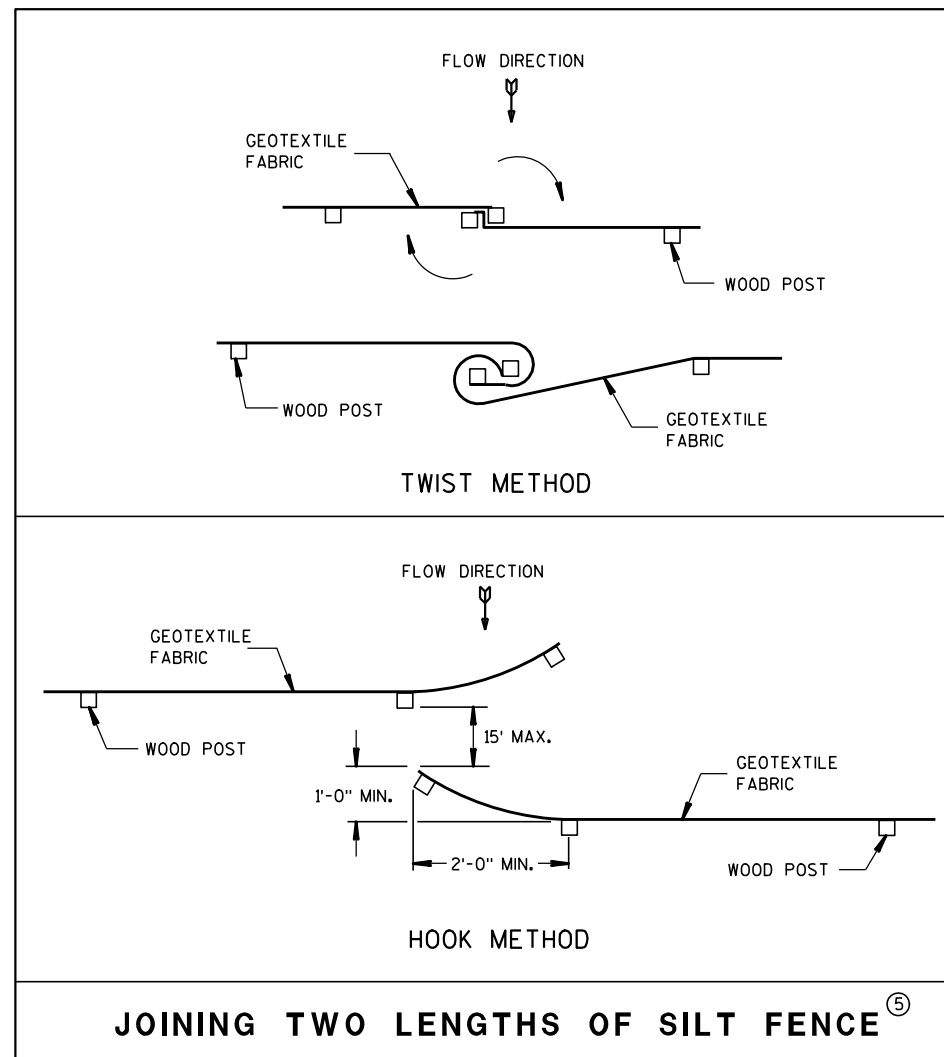
TRENCH DETAIL

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

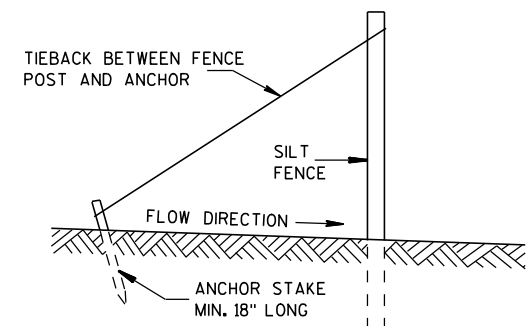


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤

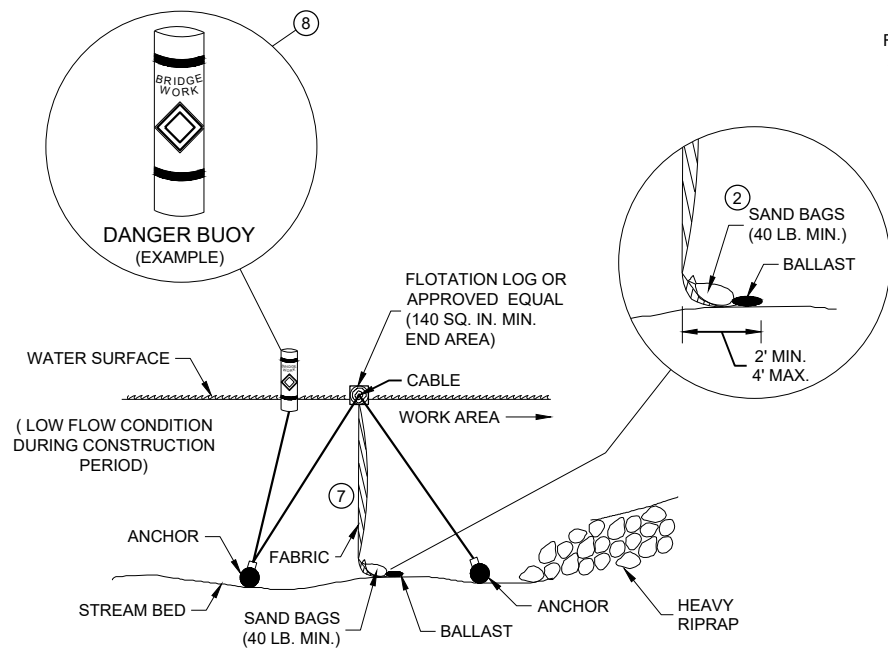


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

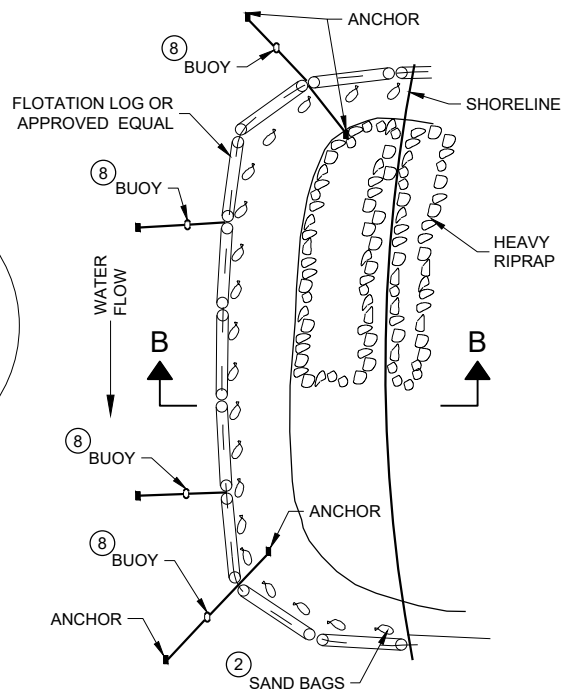
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

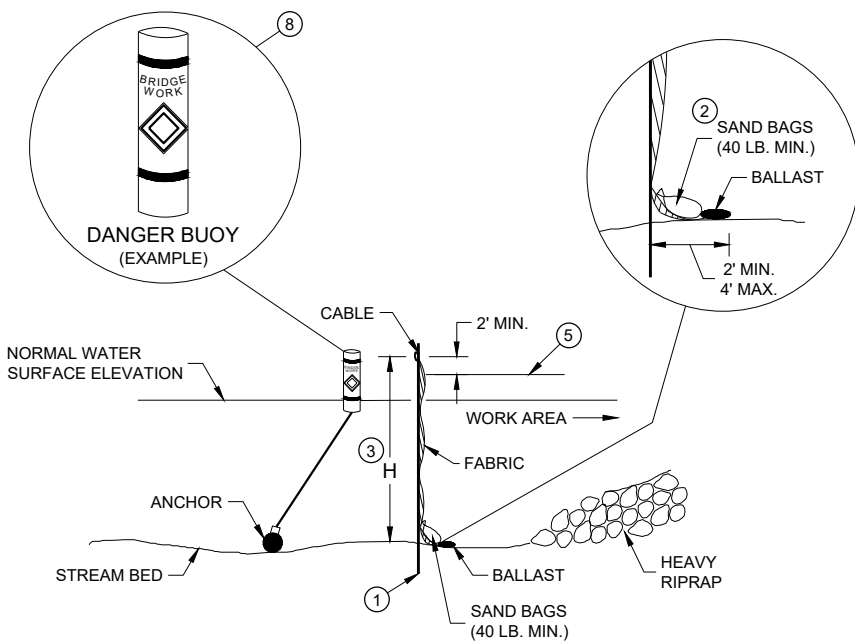


SECTION B - B

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

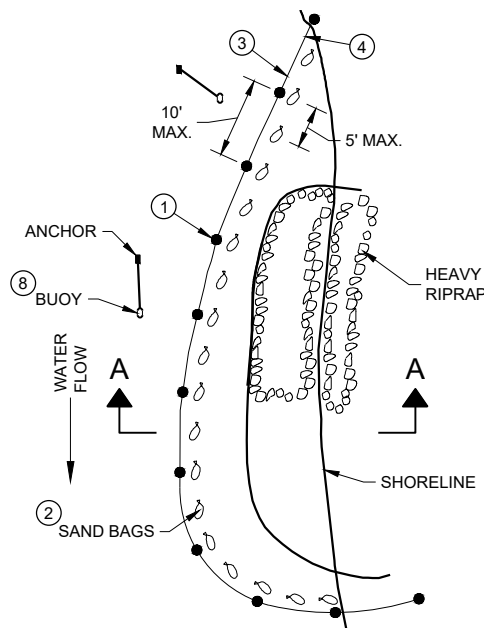


PLAN VIEW



SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW

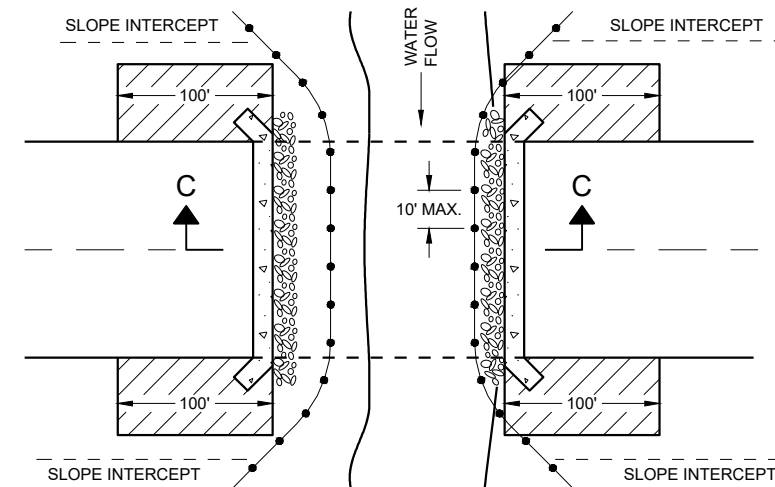
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

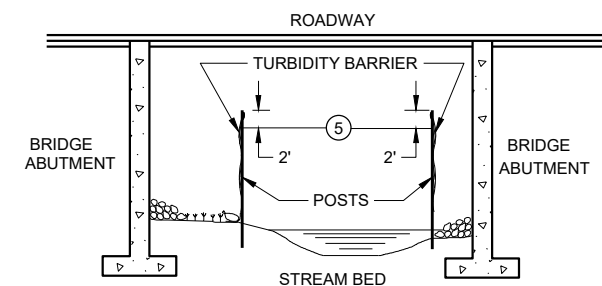
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



SECTION C - C

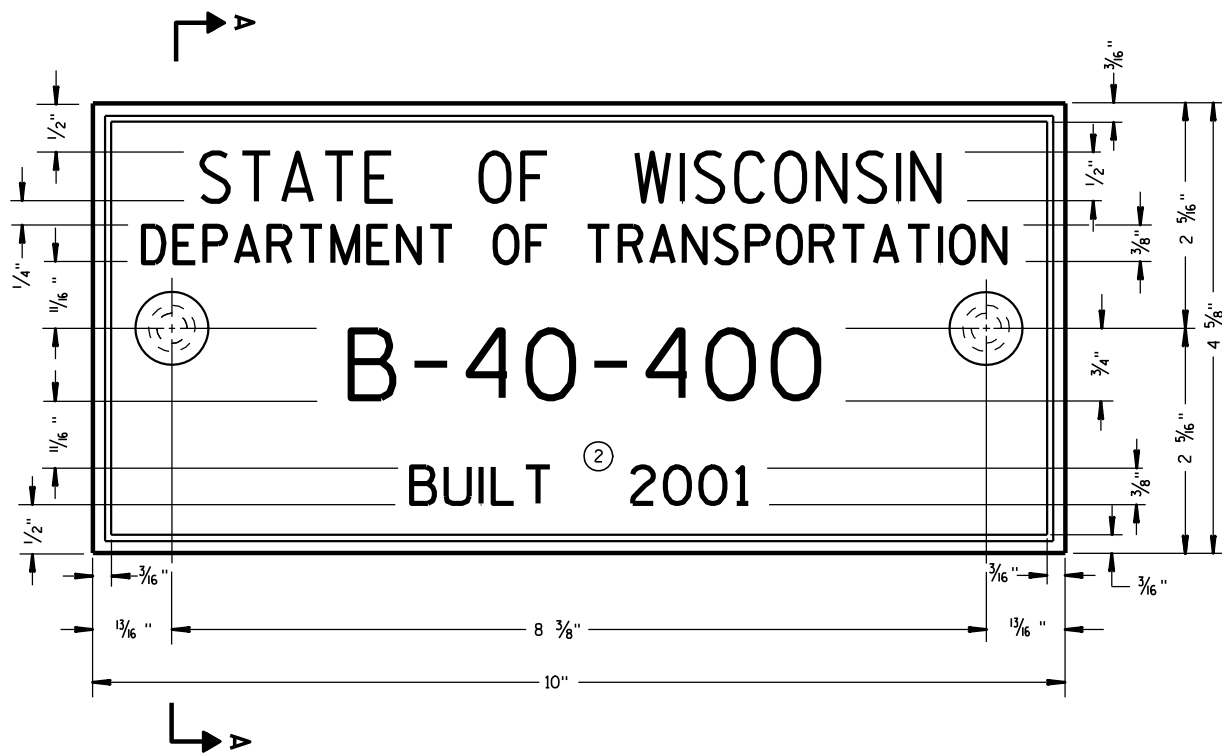
**TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES**

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



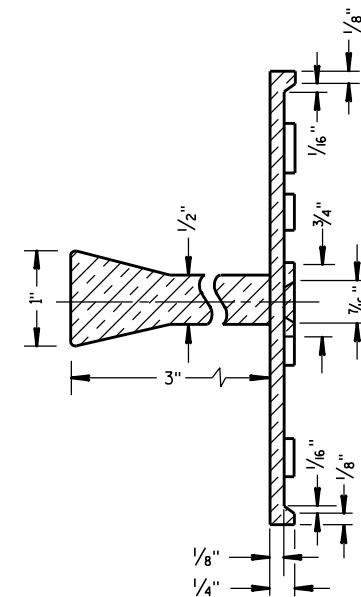
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

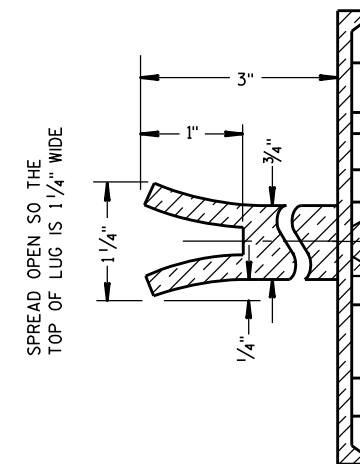
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

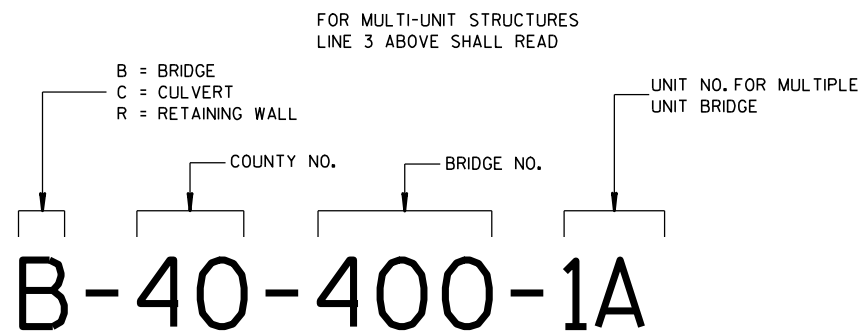
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A

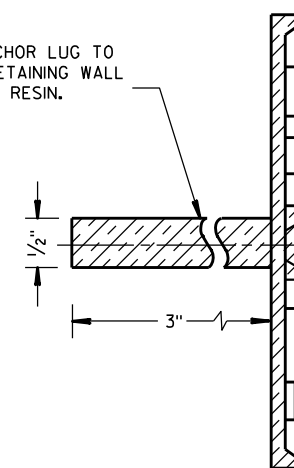


ALTERNATE LUG



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

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

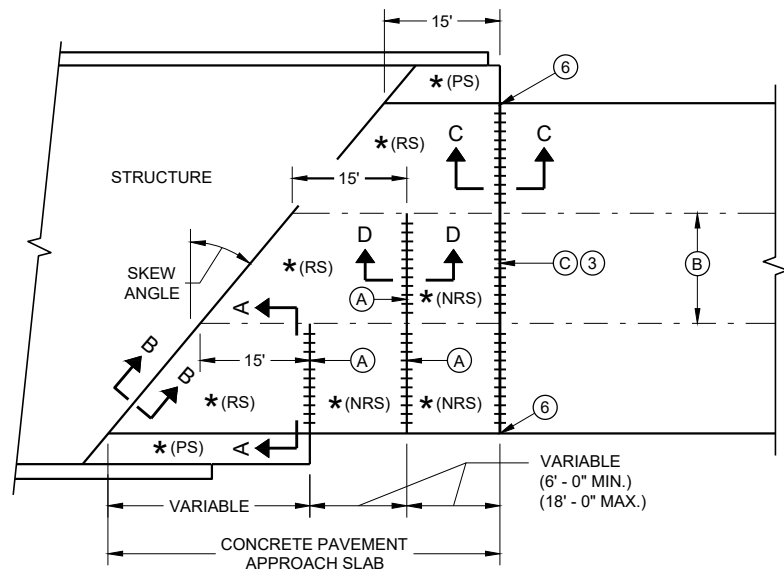


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

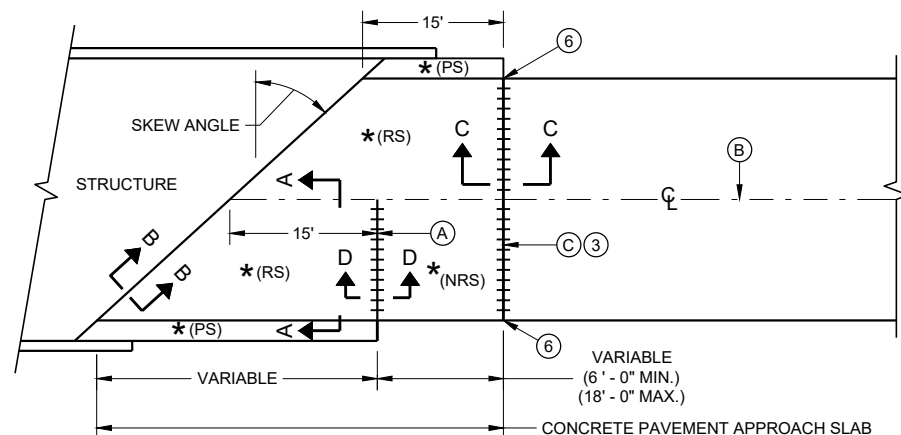
**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

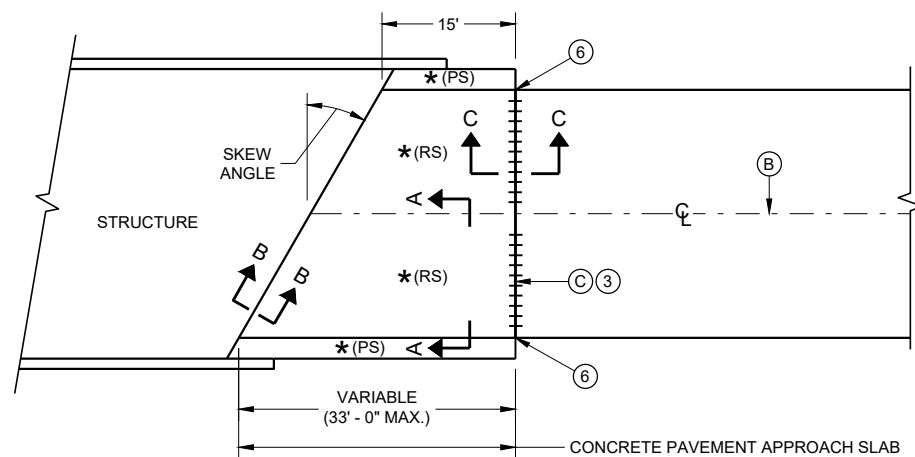
APPROVED
DATE 3/26/10 /S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA



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

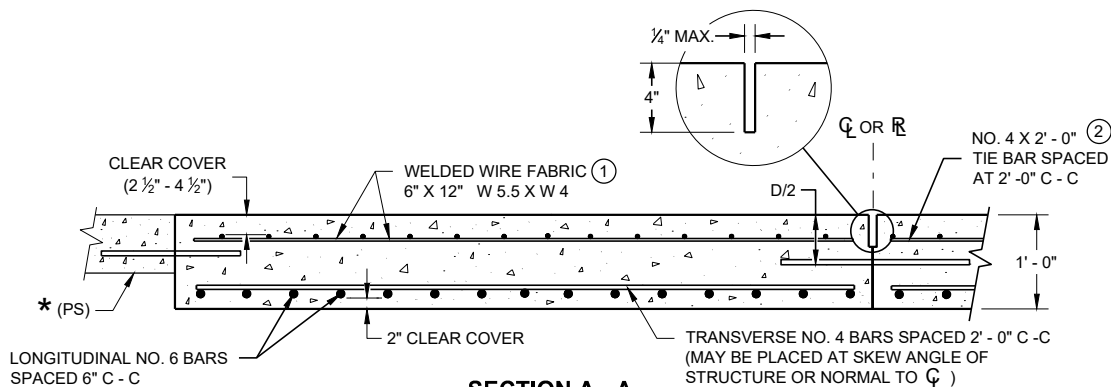


**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

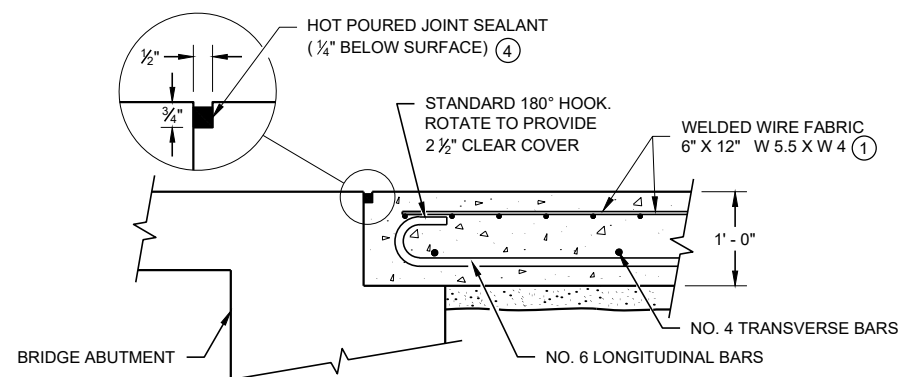


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**
APPROACH SLAB AND ADJACENT PAVEMENT

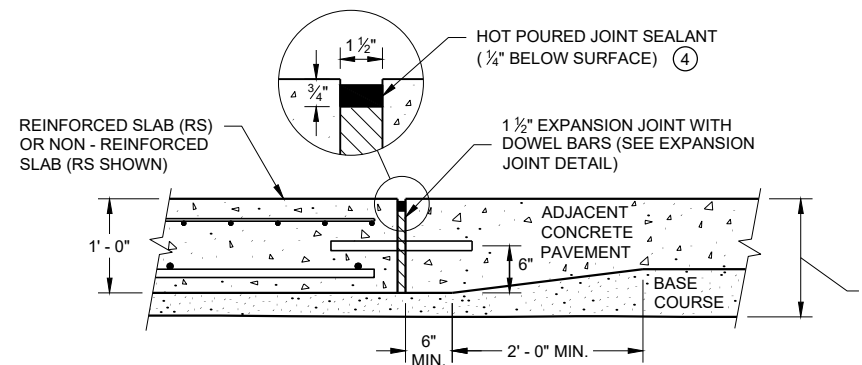
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



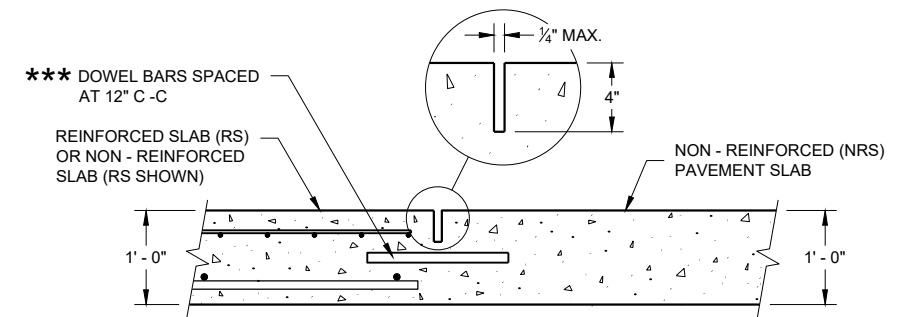
**SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT**



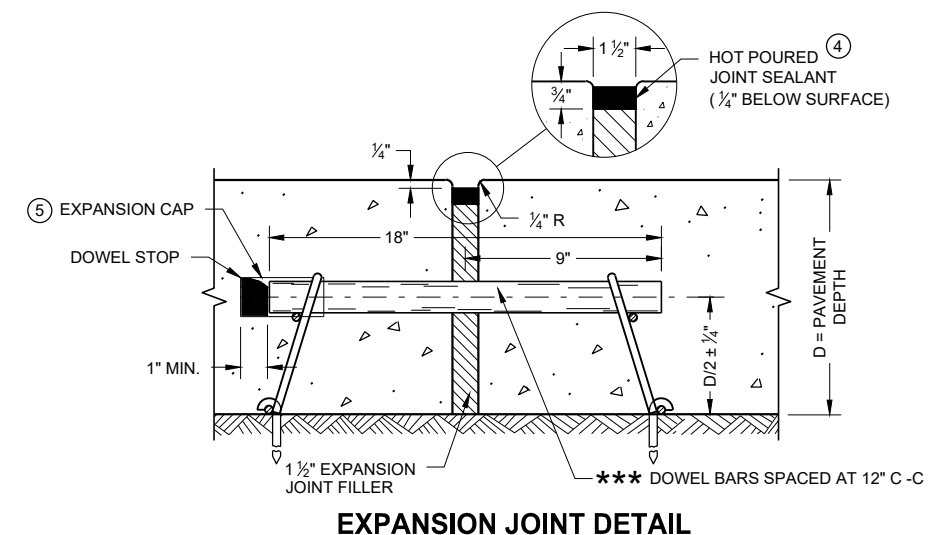
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

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 \bar{C} OR \bar{R} .
 - (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
 - (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO \bar{C} OR \bar{R} .



**SECTION D - D
CONTRACTION JOINT**



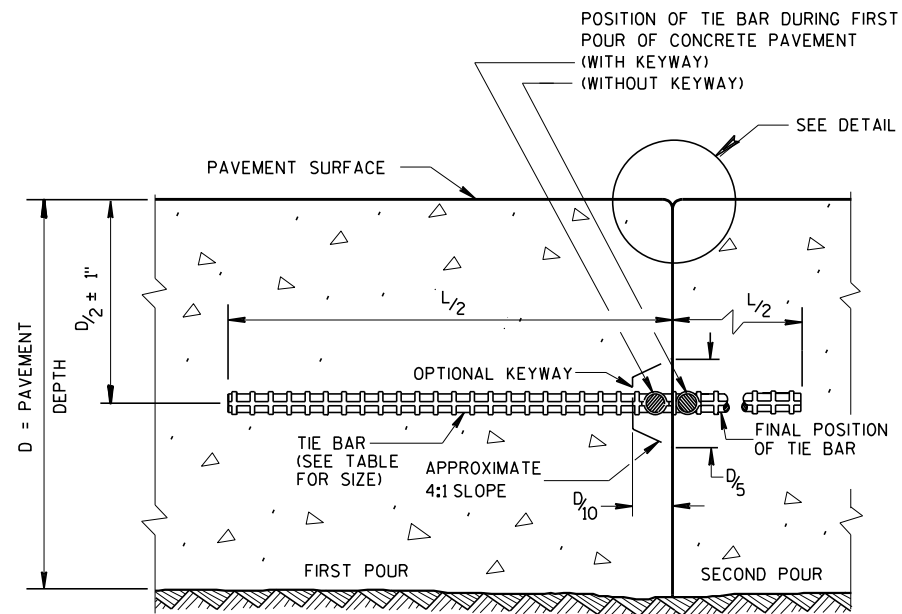
EXPANSION JOINT DETAIL

**CONCRETE PAVEMENT
APPROACH SLAB**

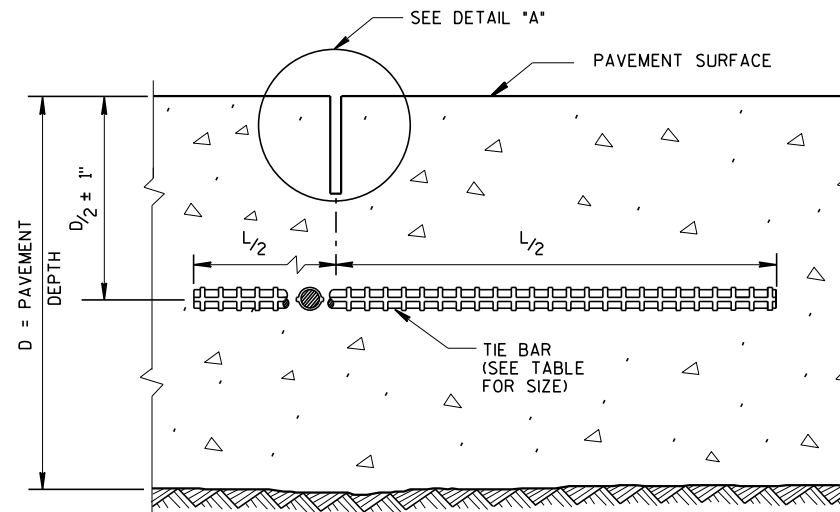
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



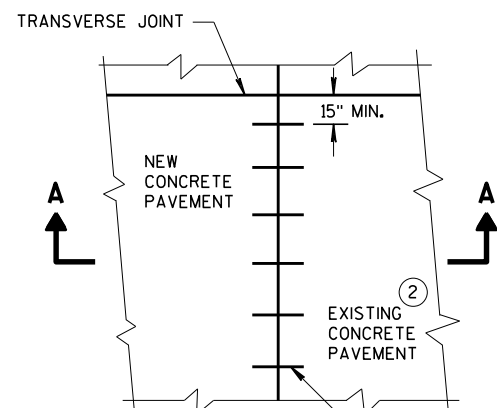
CONSTRUCTION JOINT



SAWED JOINT

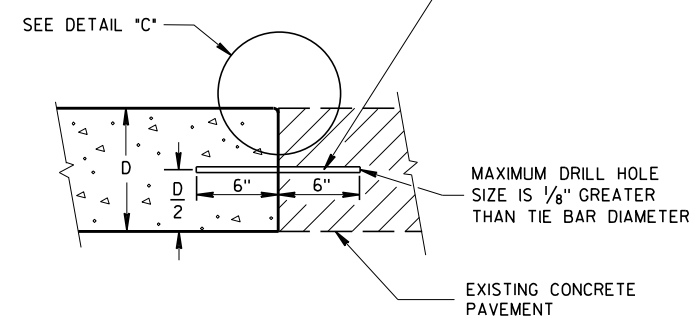
GENERAL NOTES

- CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

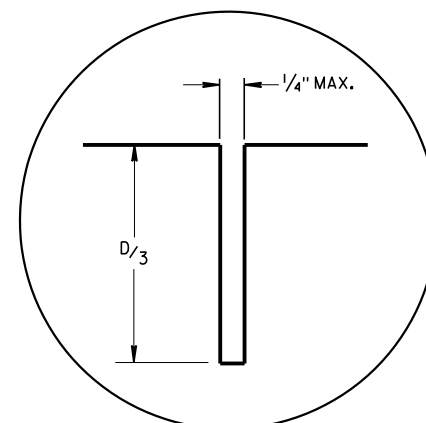


PLAN VIEW

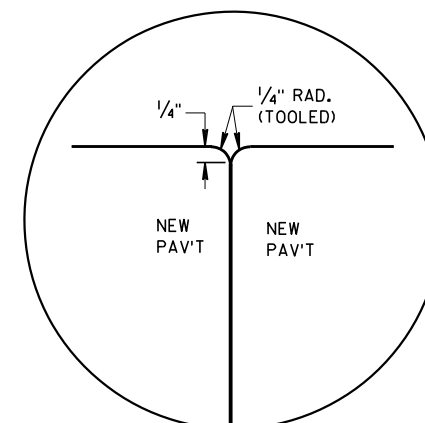
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



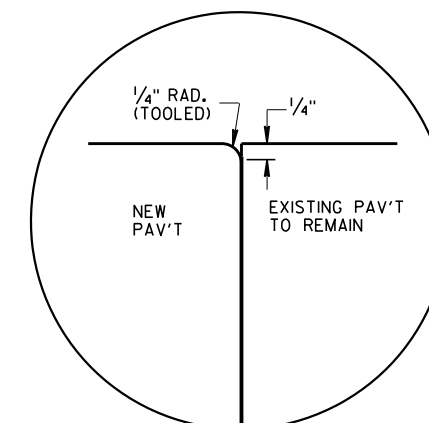
**SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT**



DETAIL "A"



DETAIL "B"



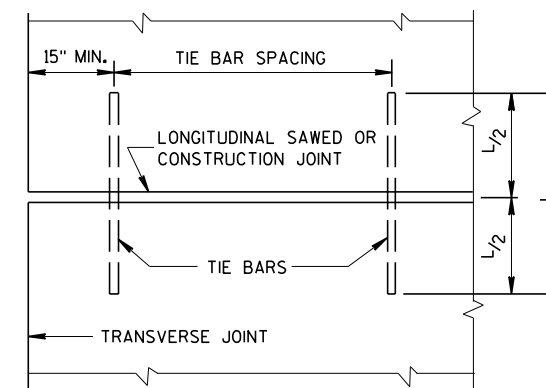
DETAIL "C"

TIE BAR TABLE

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

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

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

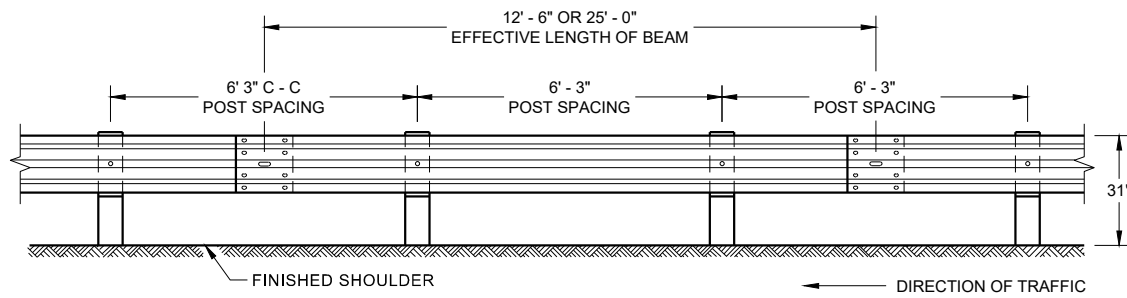


**PLAN VIEW
SHOWING LOCATION OF TIE BARS**

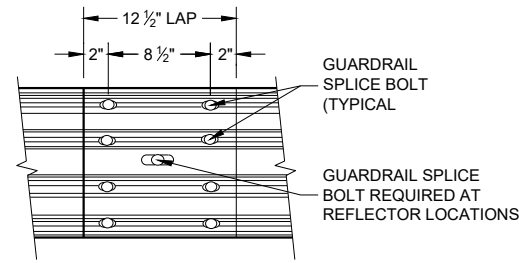
**CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



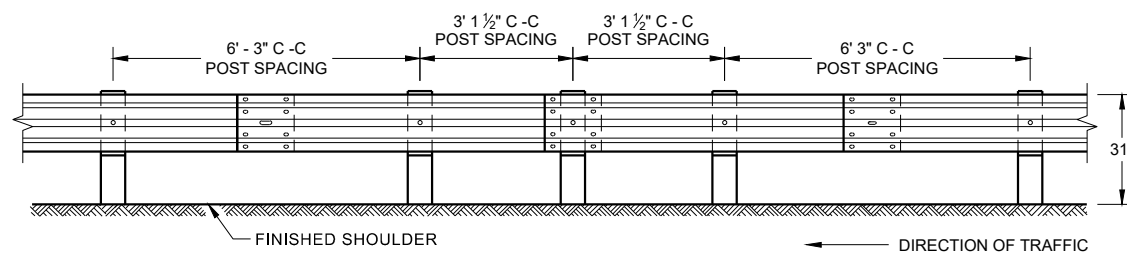
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



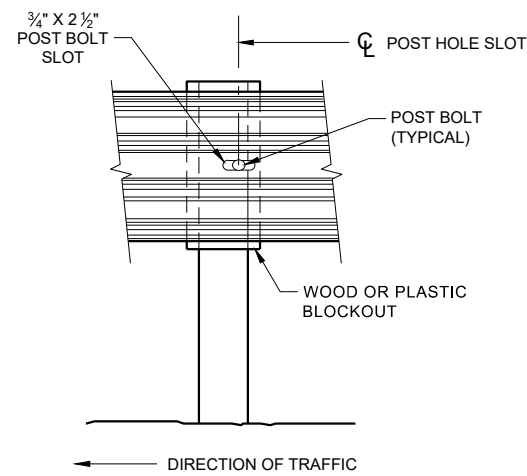
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

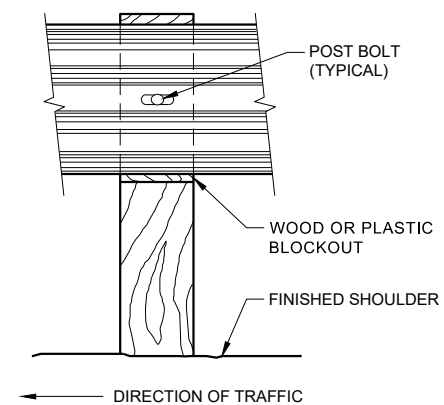
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER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



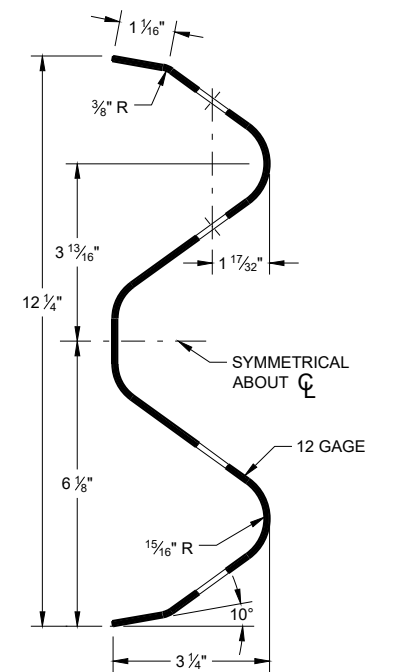
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



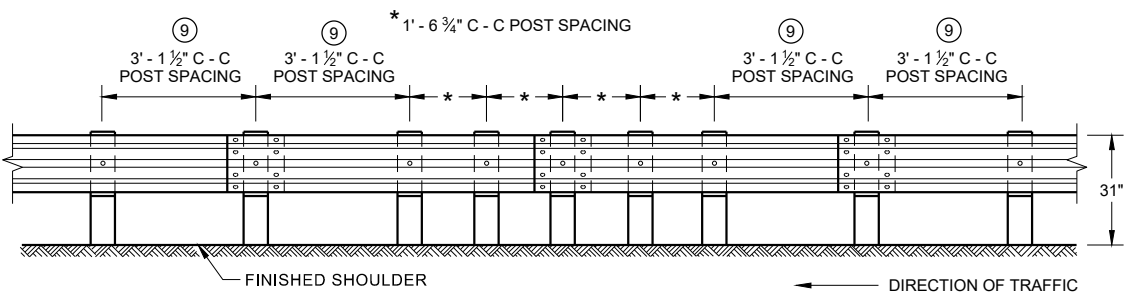
FRONT VIEW AT STEEL POST



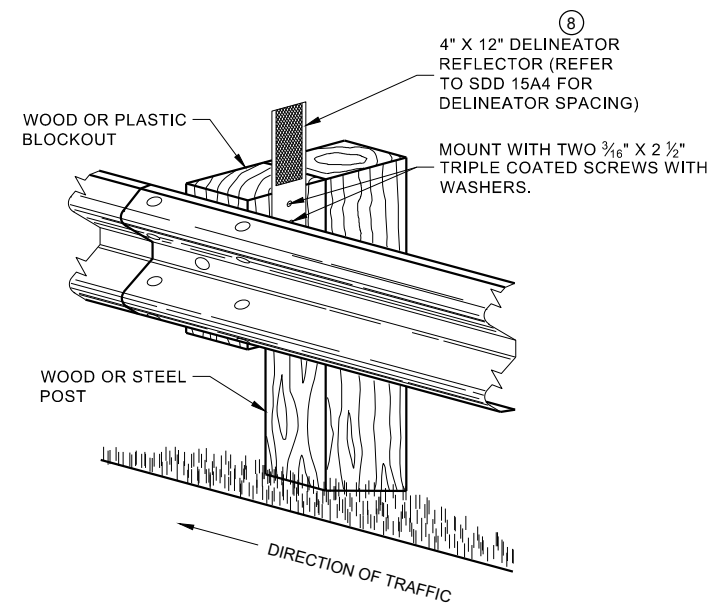
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

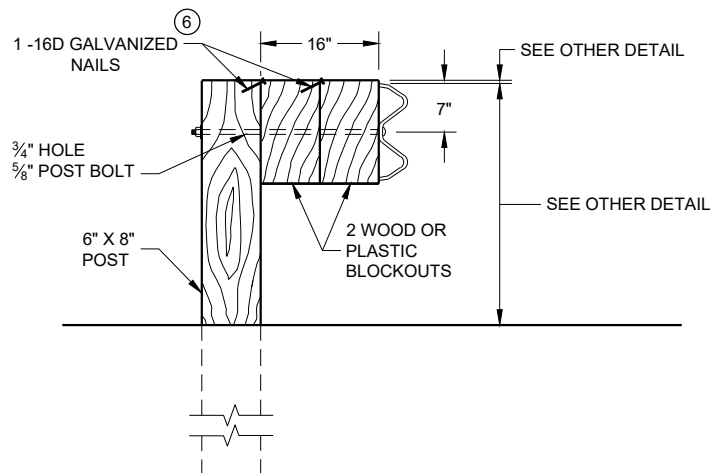
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

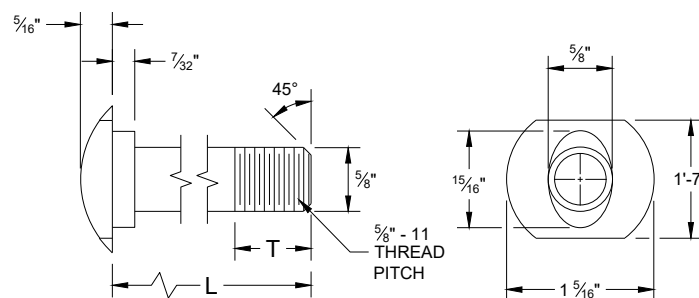


DETAIL FOR 16" BLOCKOUT DEPTH

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

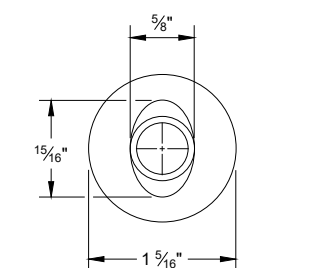
NOTE:

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

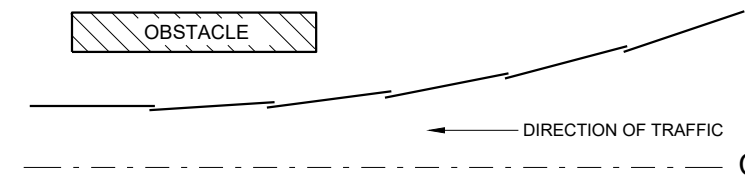


POST BOLT TABLE

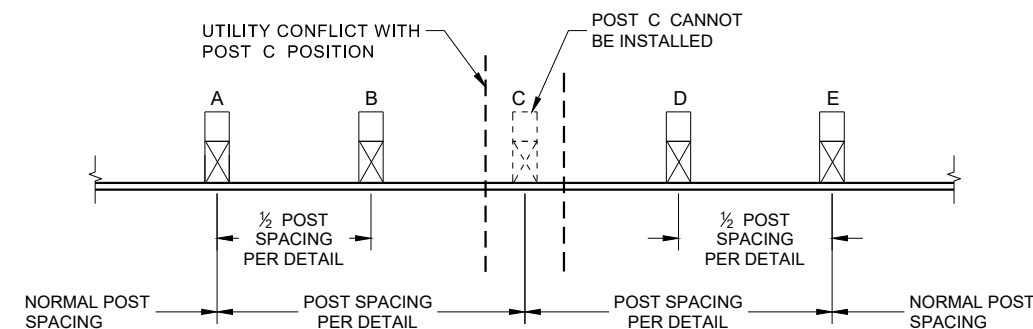
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



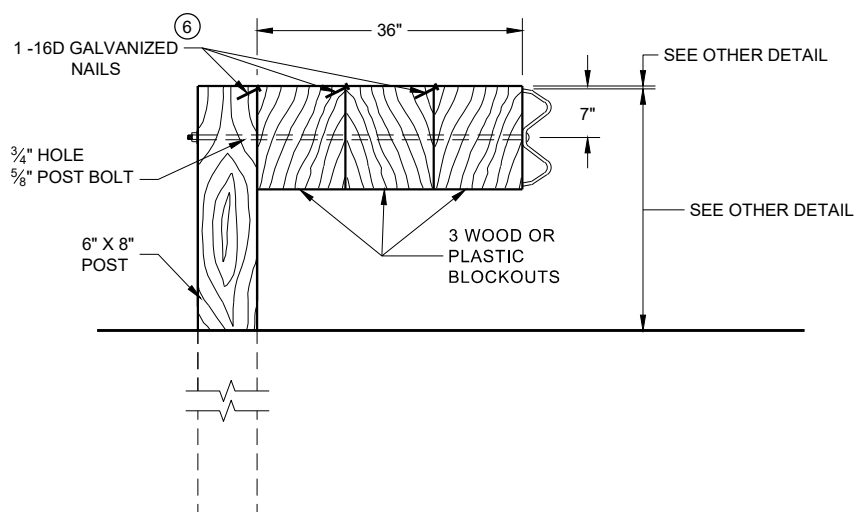
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

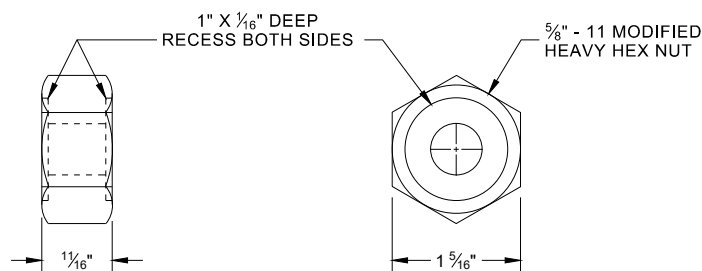


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

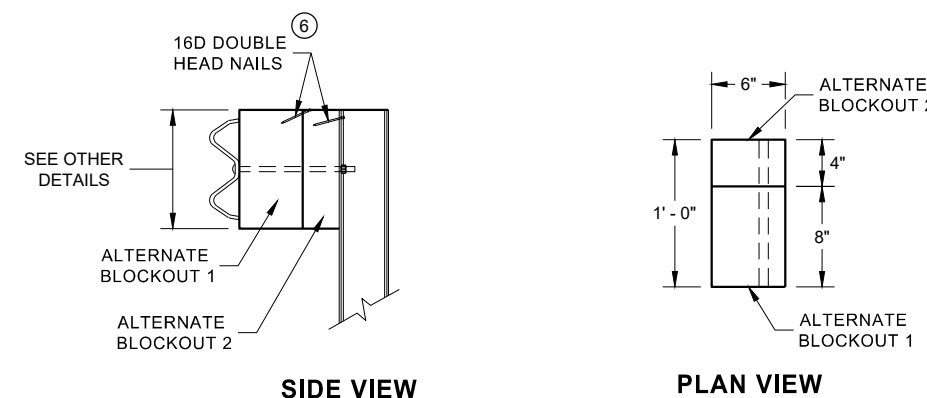


DETAIL FOR 36" BLOCKOUT DEPTH

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



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

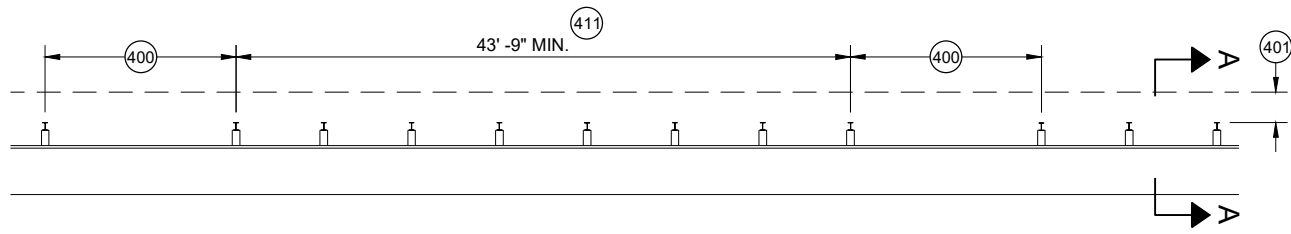


**ALTERNATE WOOD
BLOCKOUT DETAIL**

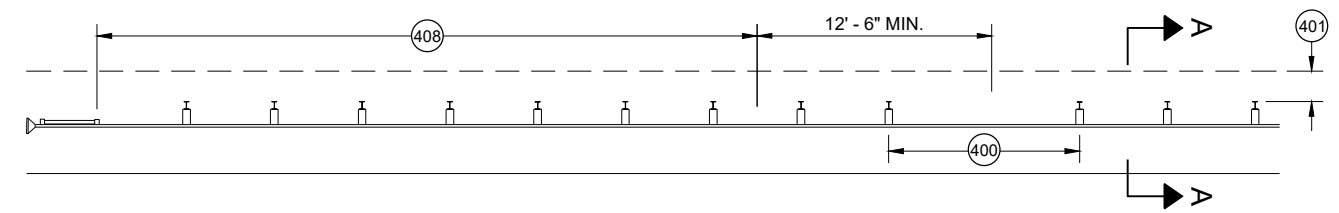
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

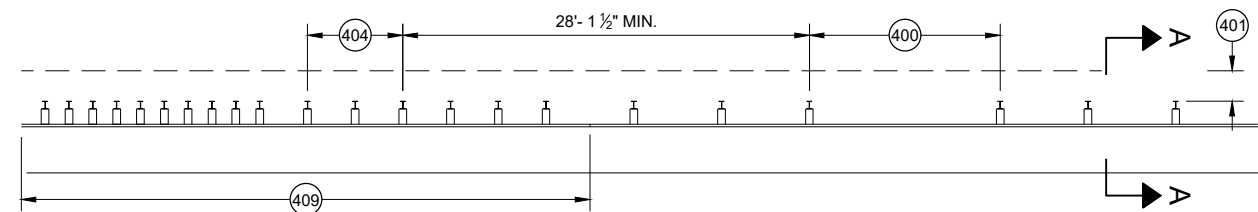
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



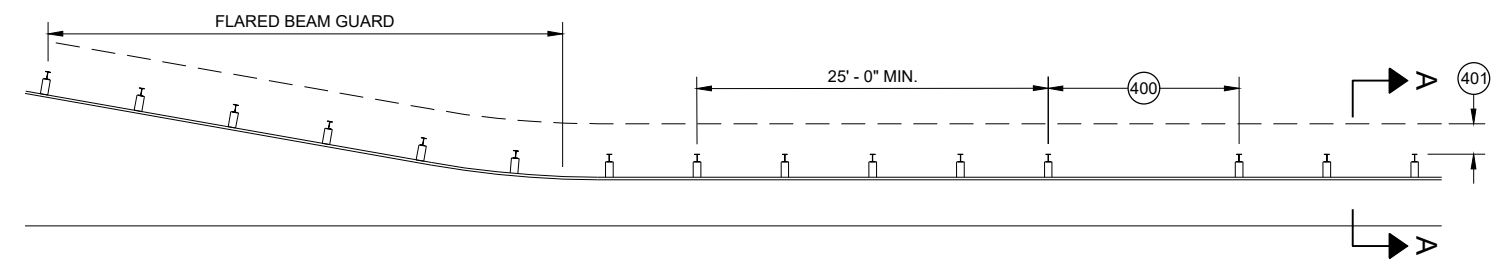
MISSING POST IN MGS GUARDRAIL



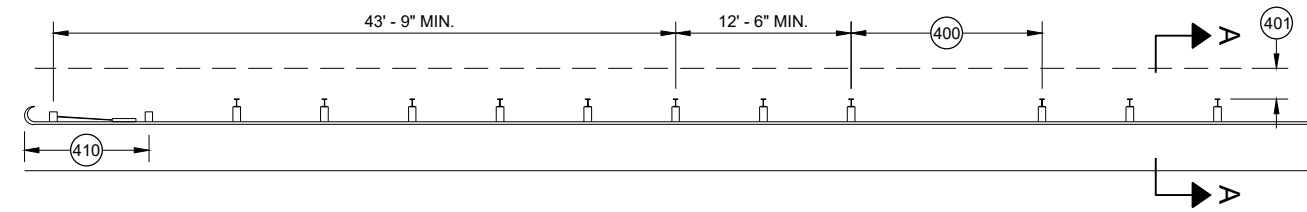
MISSING POST IN MGS GUARDRAIL NEAR EAT



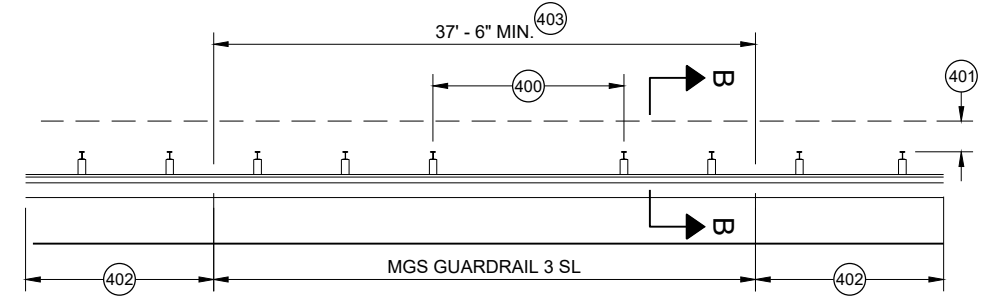
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

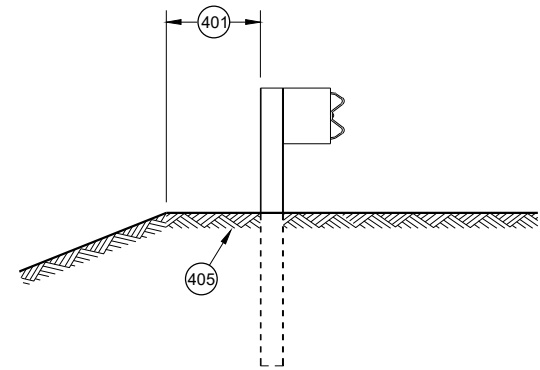


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

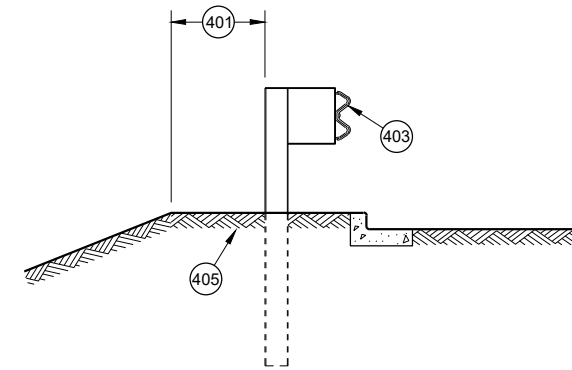


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

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

GENERAL NOTES

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

SEE SDD 14B42 FOR MORE INFORMATION.

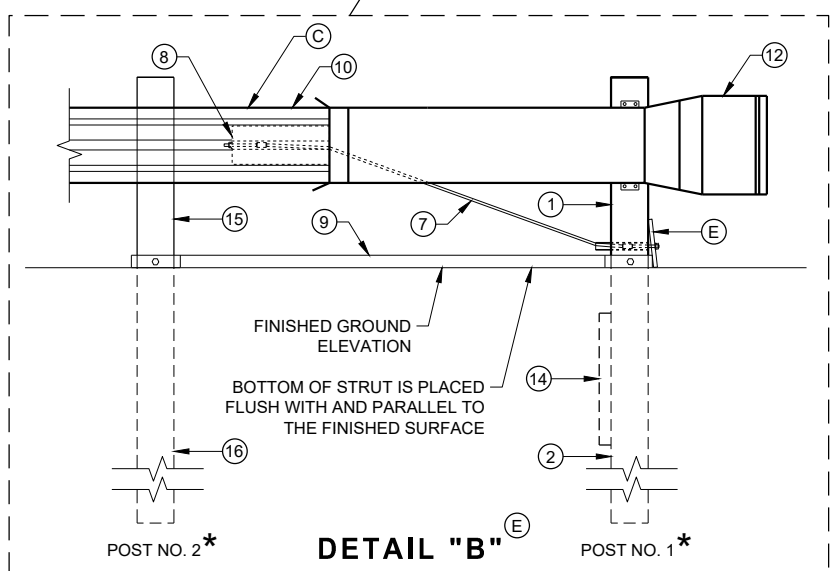
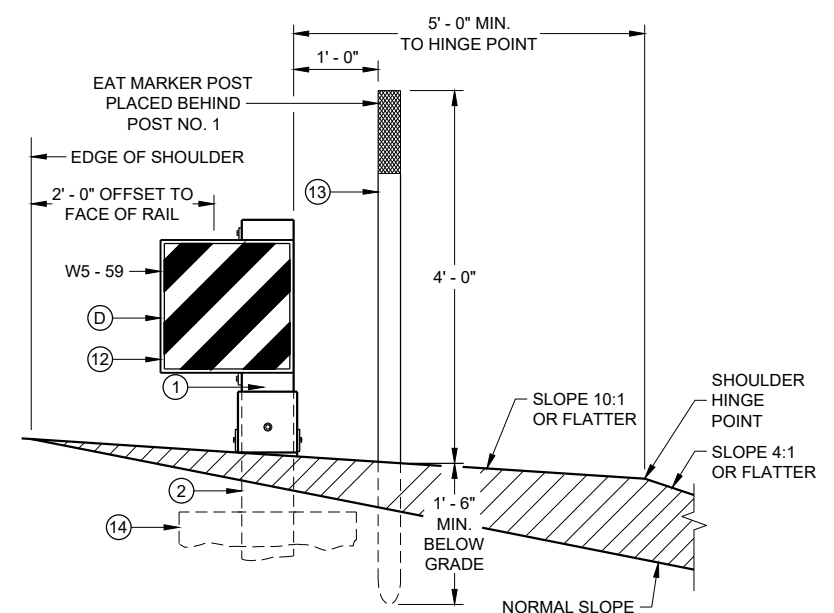
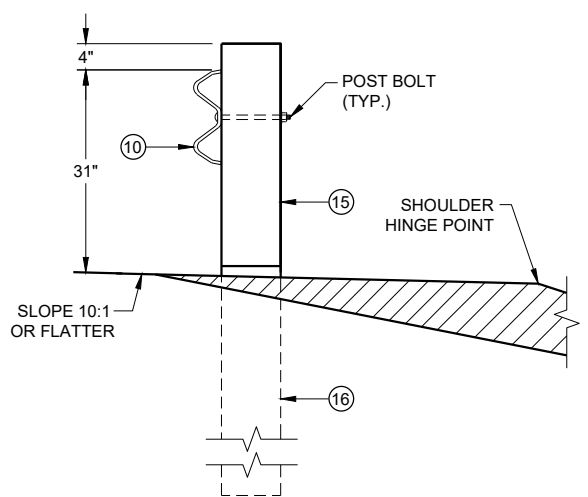
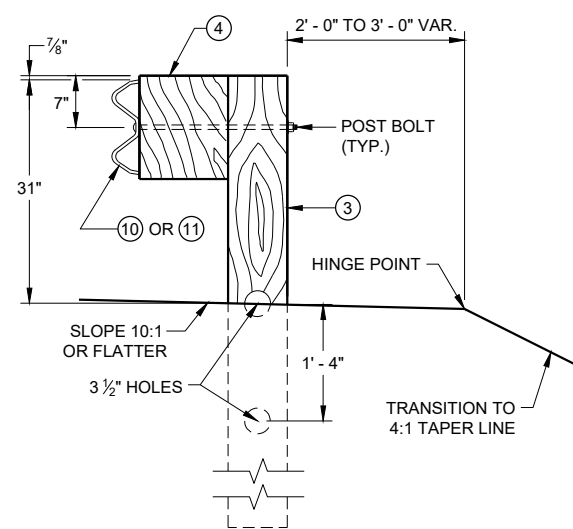
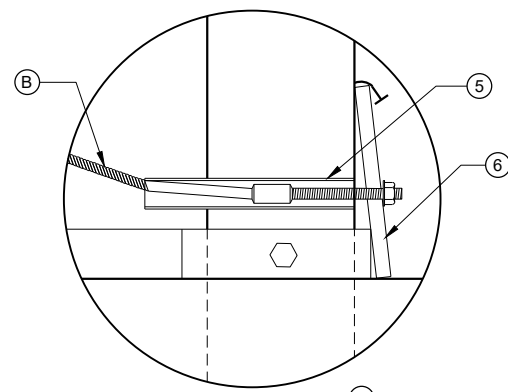
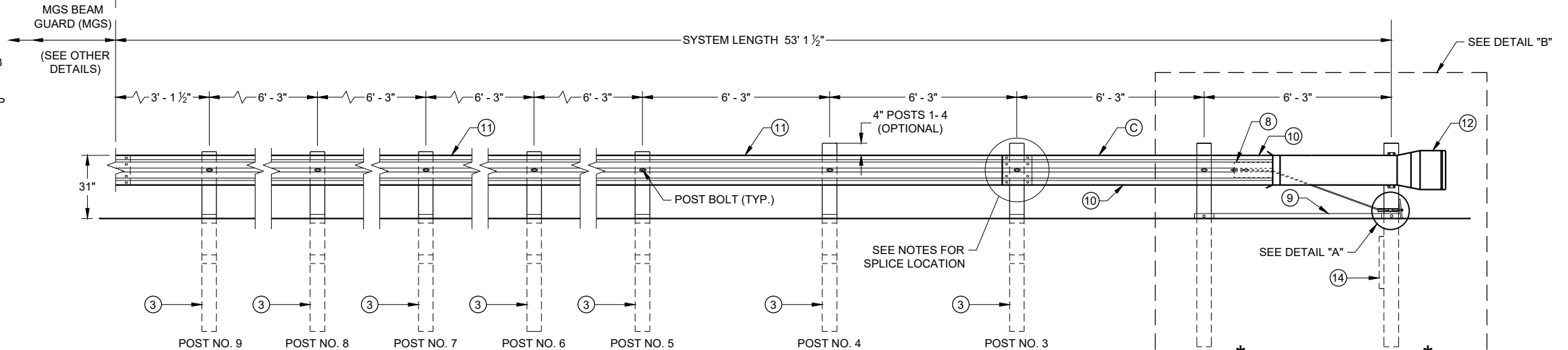
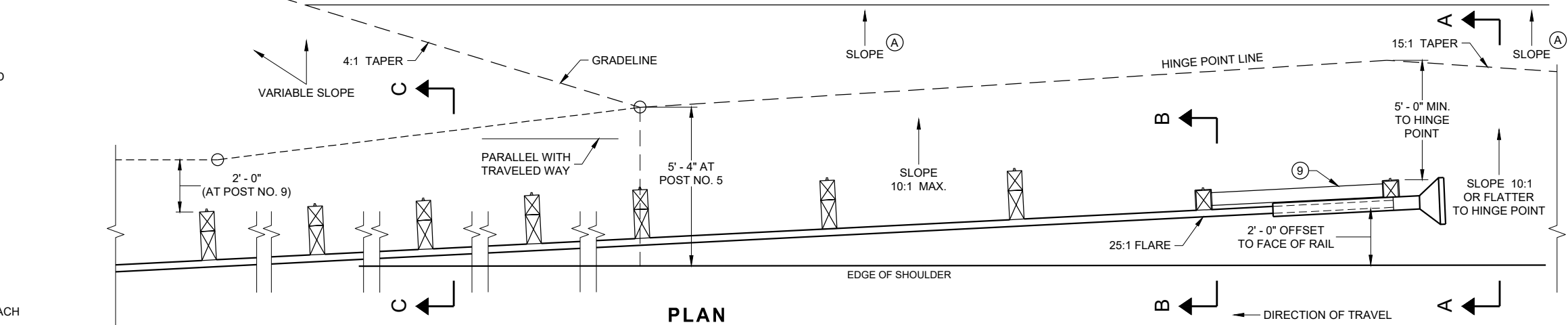
* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

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

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

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

CLEAR ZONE LIMITS, EITHER AS SHOWN ELSEWHERE IN THE PLANS OR, IF NOT SHOWN ELSEWHERE IN THE PLANS, 15 FEET BEYOND THE HINGE POINT LINE



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

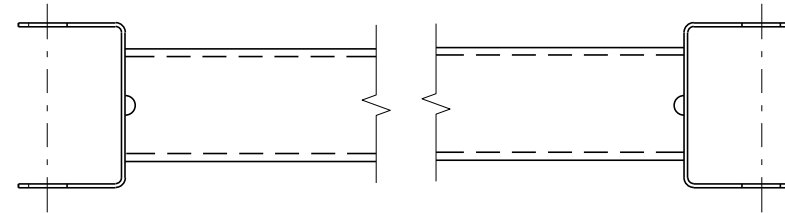
6

SDD 14B44 - 04a

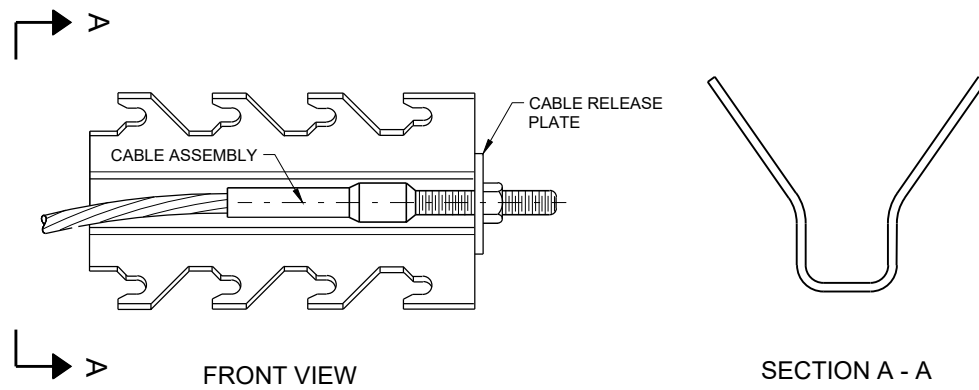
SDD 14B44 - 04a

BILL OF MATERIALS

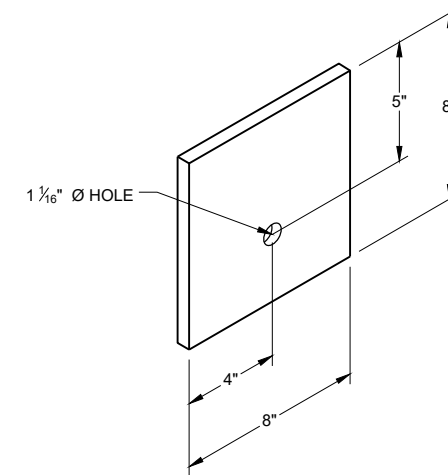
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL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



GENERIC GROUND STRUT ⑨ ⑤



GENERIC ANCHOR CABLE BOX ⑨ ⑤



BEARING PLATE ⑥ ⑤

6

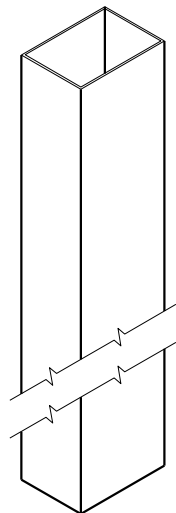
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SDD 14B44 - 04b

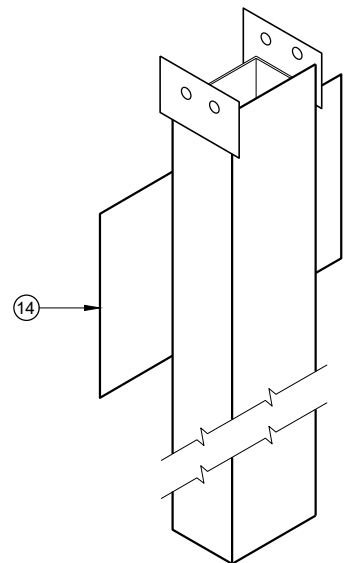
SDD 14B44 - 04b

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

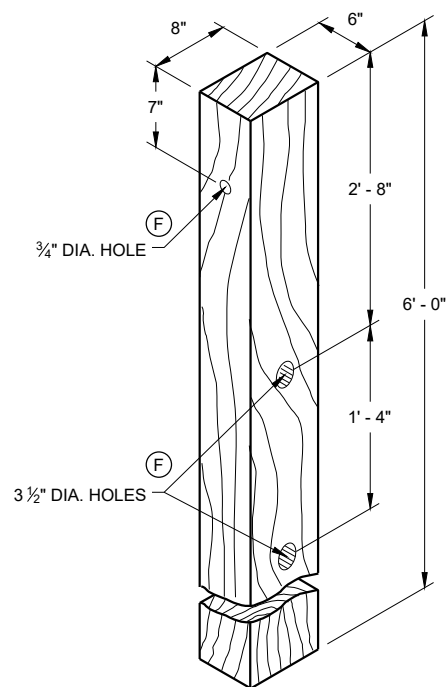
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



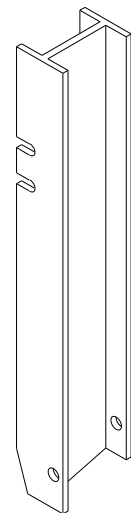
UPPER POST NO. 1 ⁽¹⁾ (E)



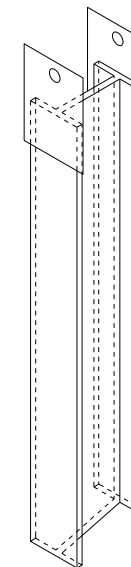
LOWER POST NO. 1 ⁽²⁾ (E)



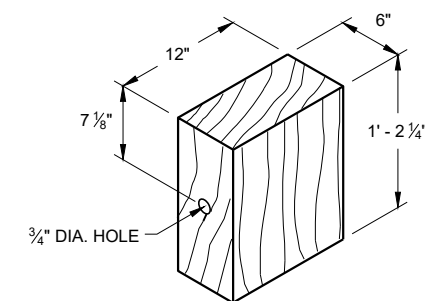
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

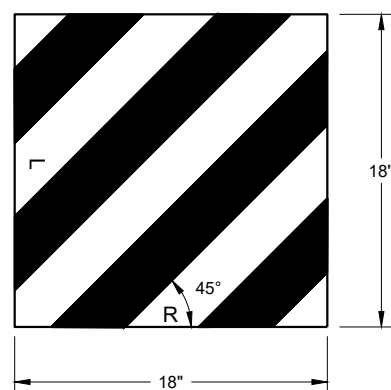


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

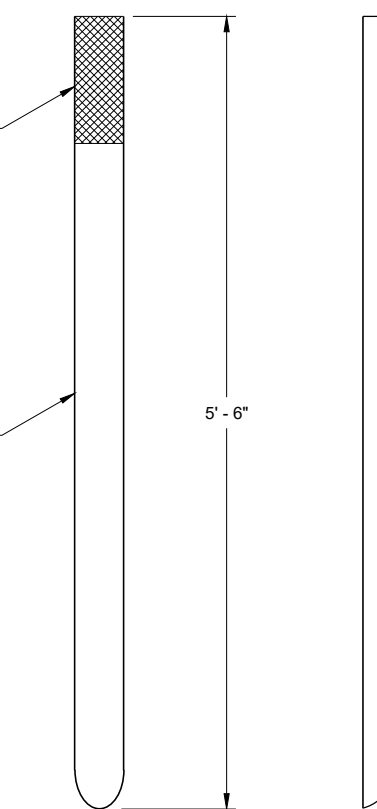
6



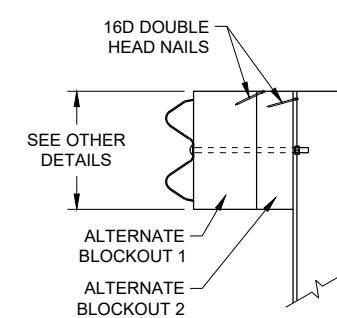
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)

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

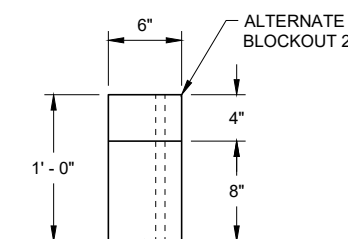
E.A.T. MARKER
POST (YELLOW)



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



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

6

SDD 14B44 - 04c

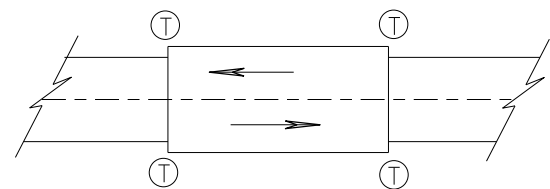
SDD 14B44 - 04c

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

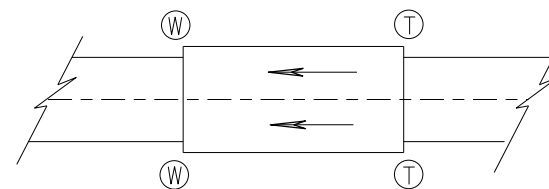
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

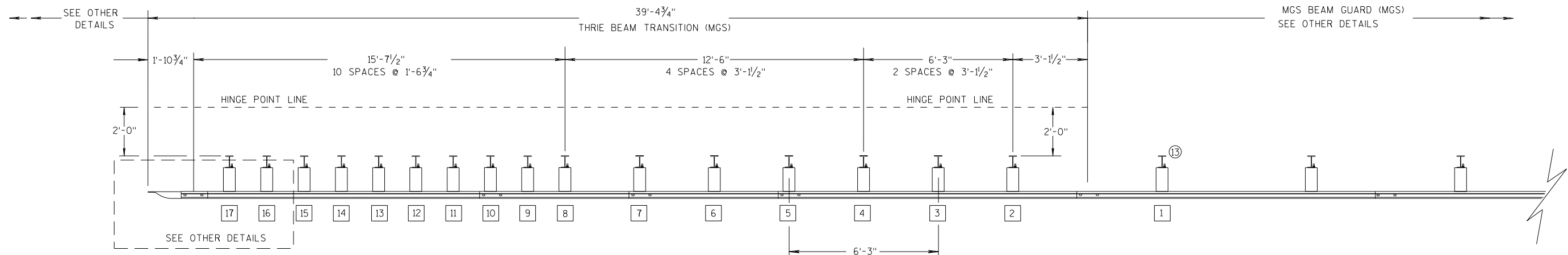
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

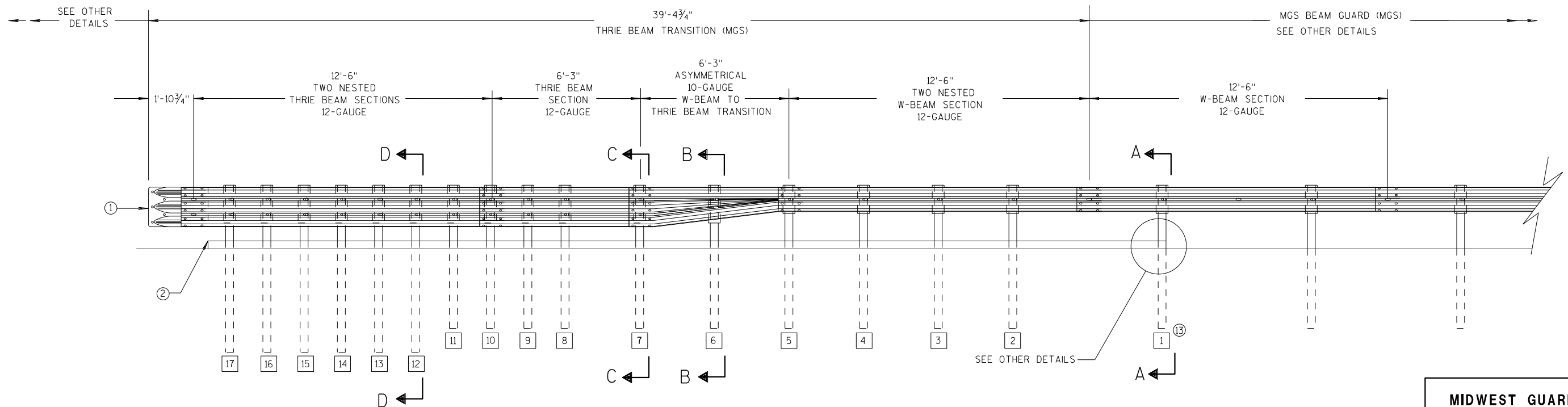
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

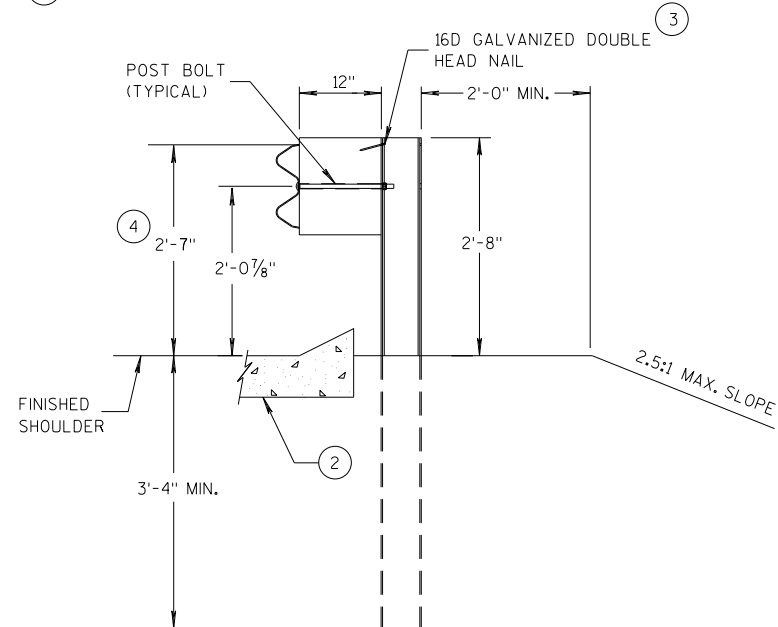
6

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

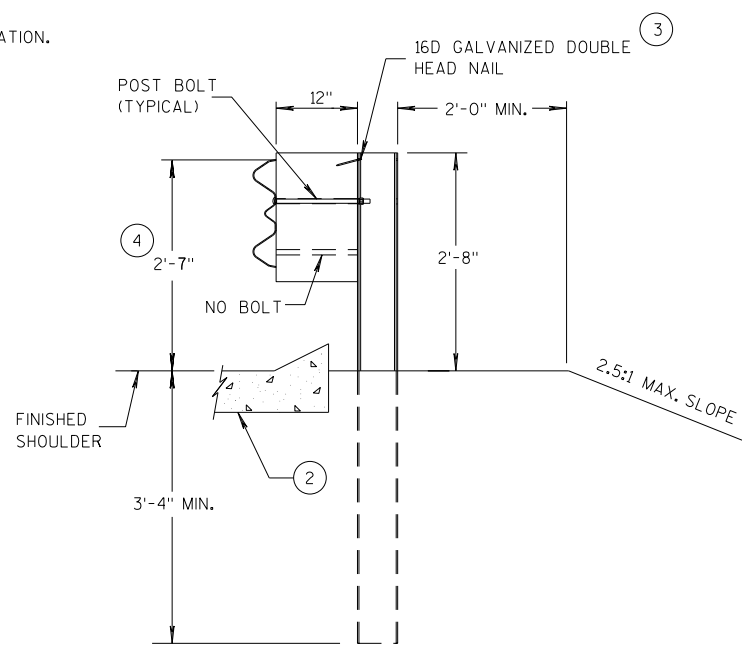
S.D.D. 14 B 45-5a

GENERAL NOTES

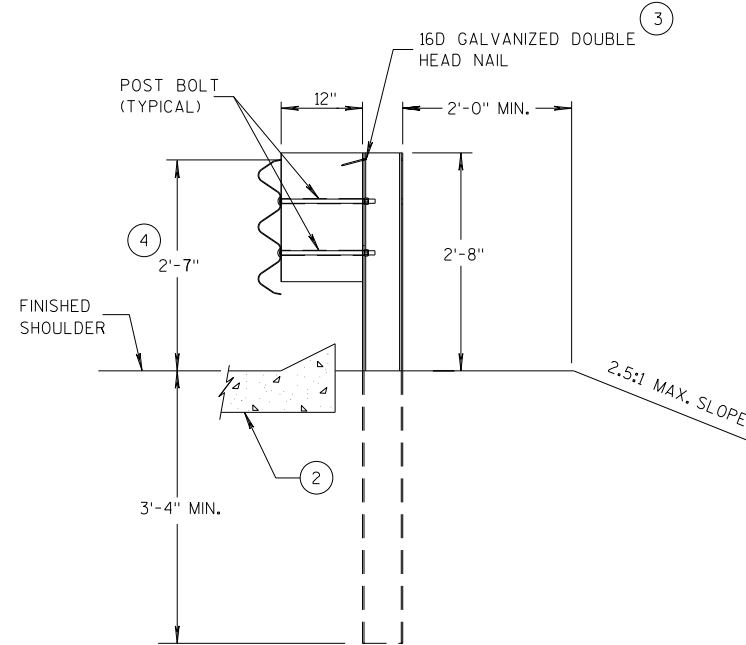
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



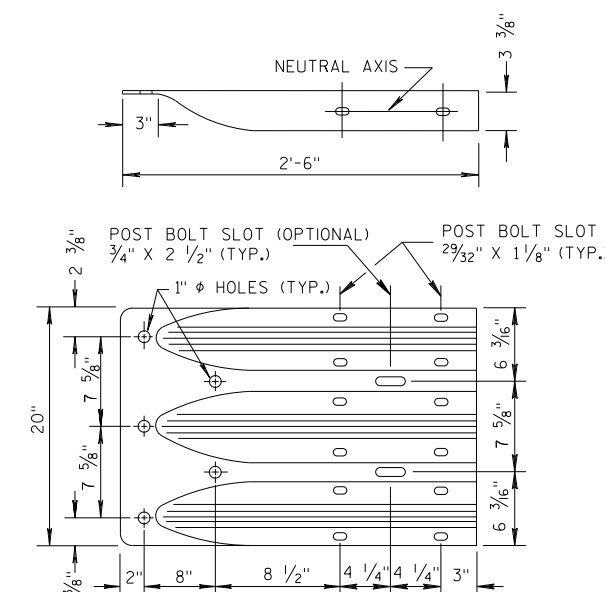
**SECTION A-A
POSTS 1-5**



**SECTION B-B
POST 6**



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



**THRIE BEAM
TERMINAL CONNECTOR**

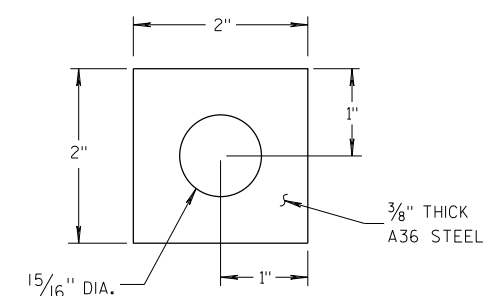
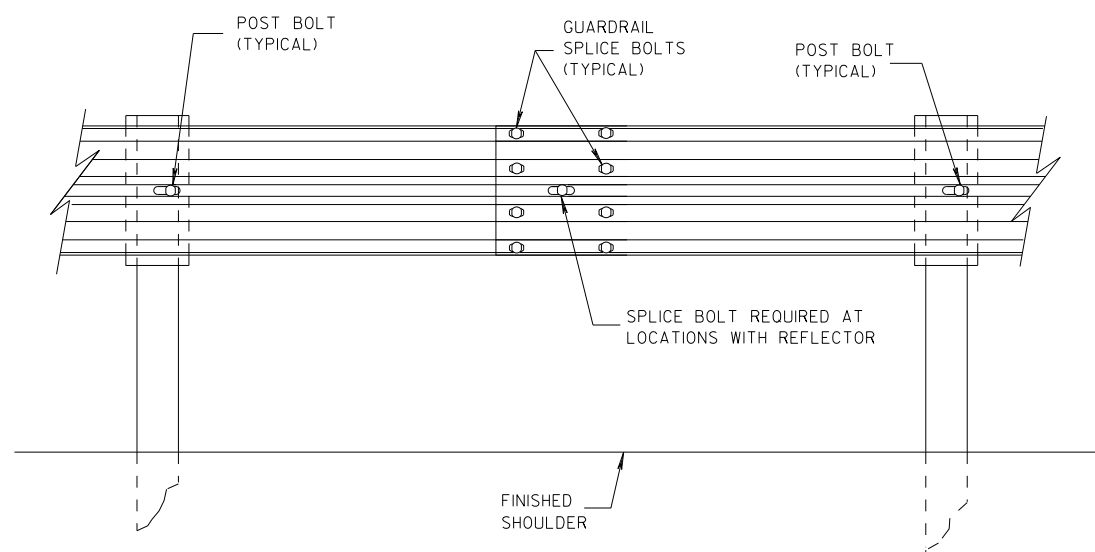
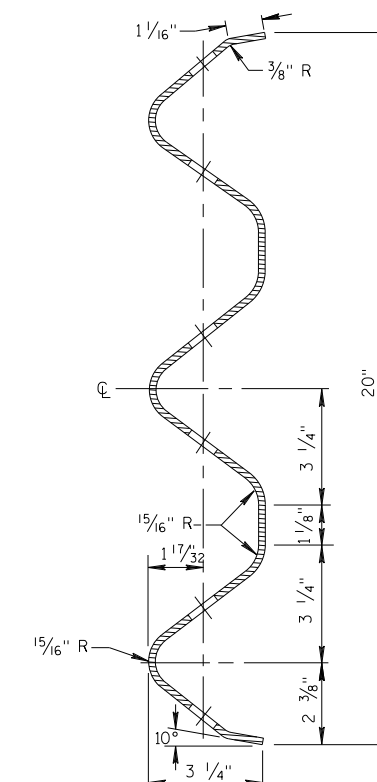


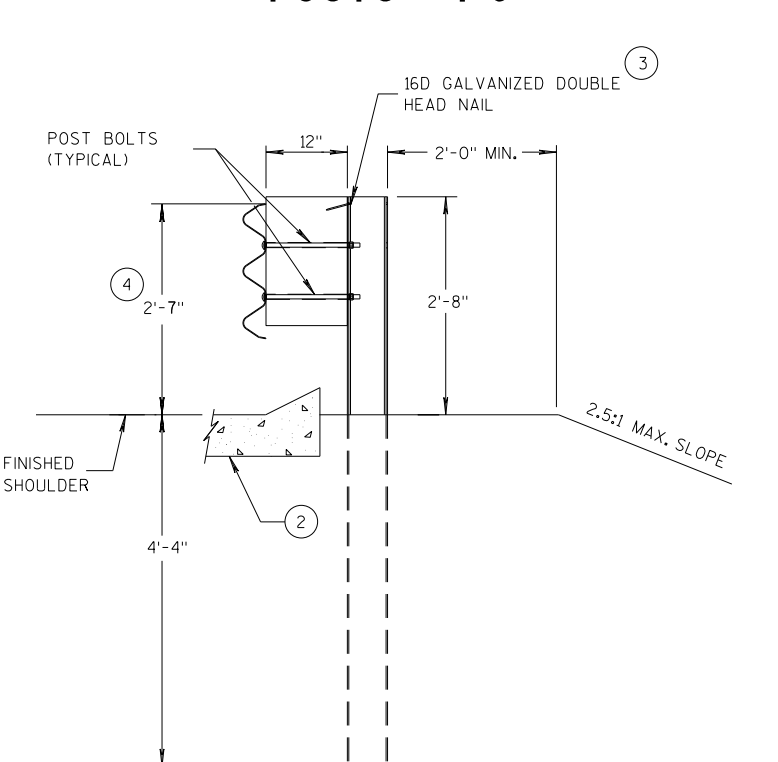
PLATE WASHER DETAIL



SPLICE DETAIL



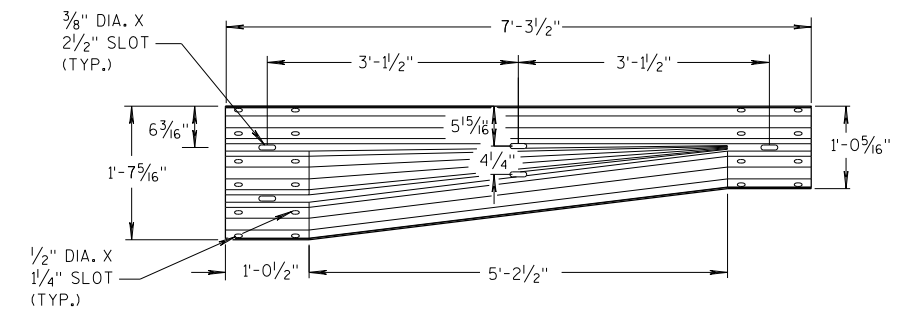
**SECTION THRU THRIE
BEAM RAIL ELEMENT**



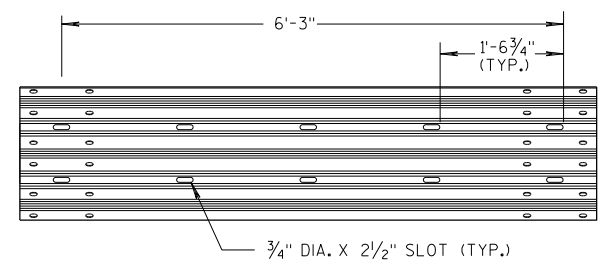
**SECTION D-D
POSTS 12-17**

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

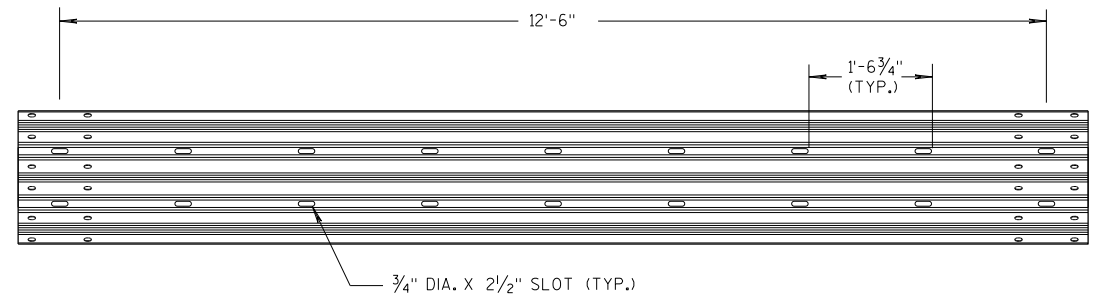
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



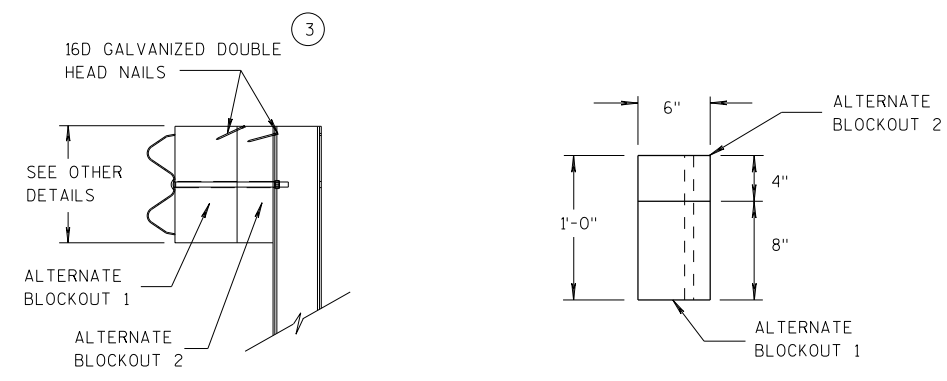
W-BEAM TO THRIE BEAM TRANSITION SECTION



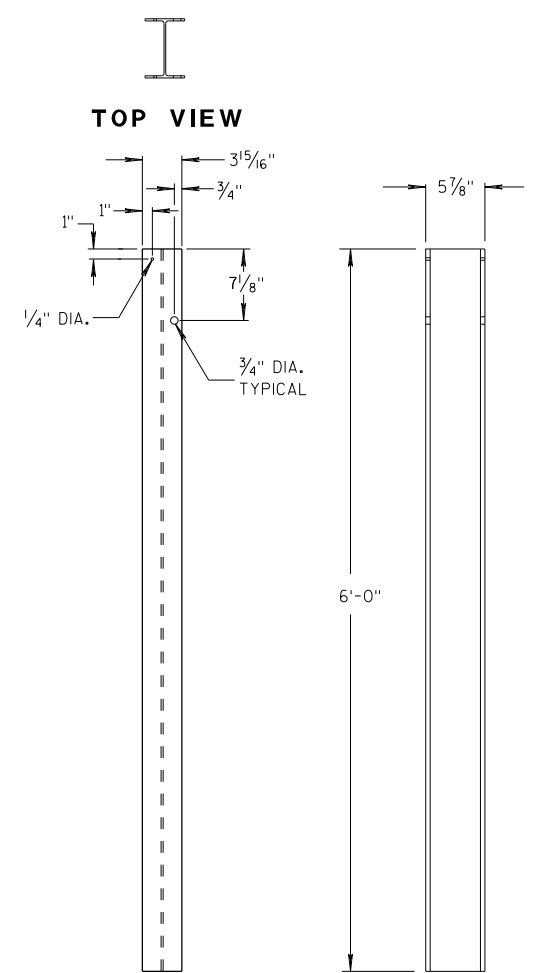
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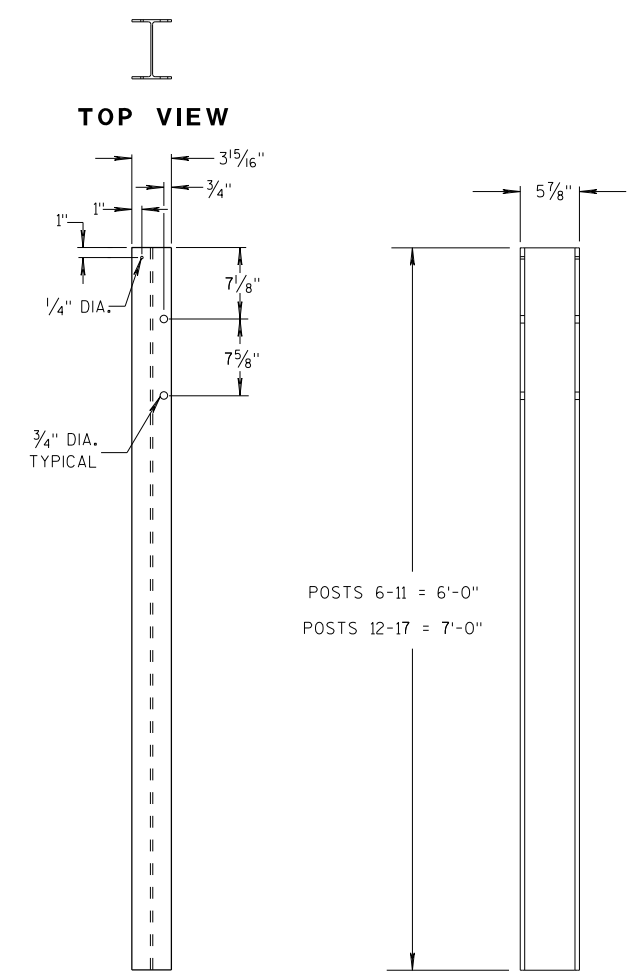
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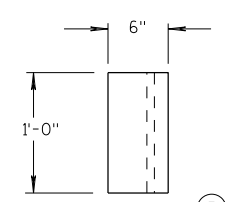
ALTERNATE WOOD BLOCKOUT DETAIL



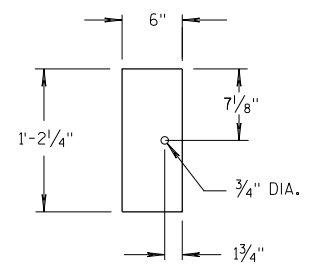
STEEL POSTS 1-5



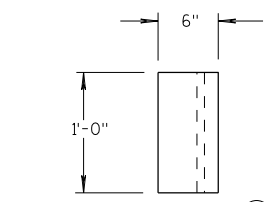
STEEL POSTS 6-17



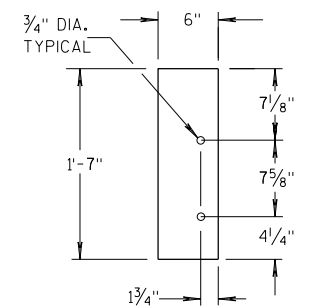
TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 1-5**



TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 6-17**

GENERAL NOTES

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

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

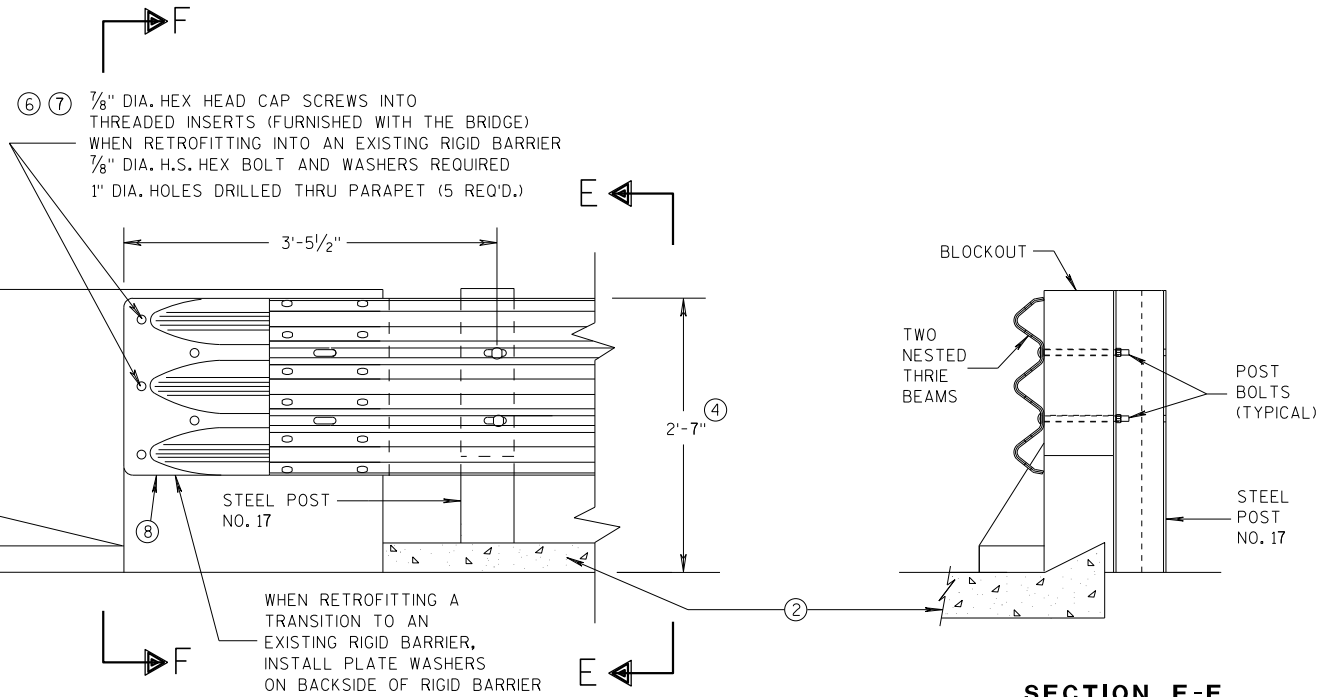
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

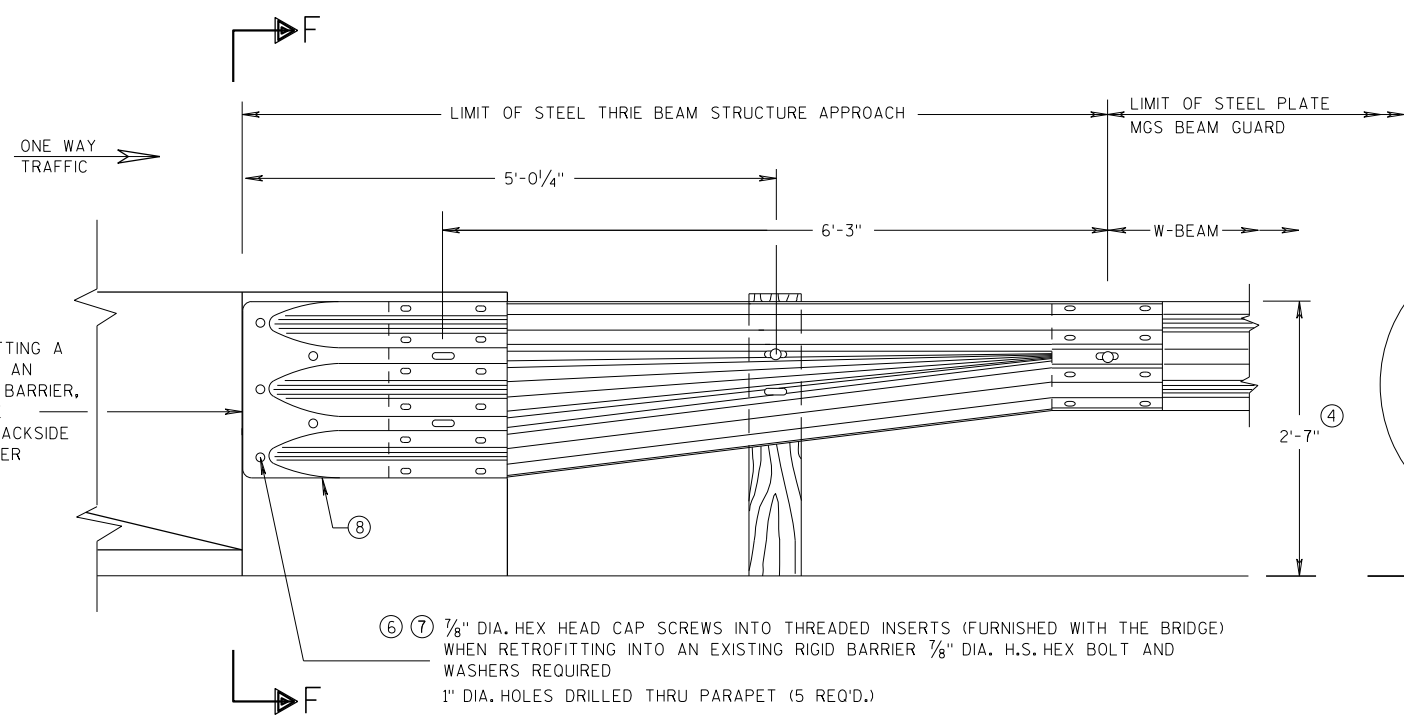
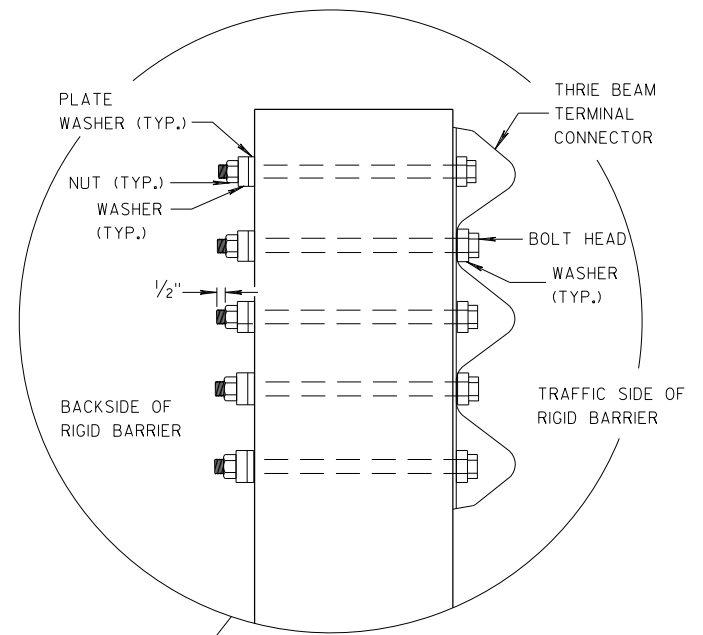
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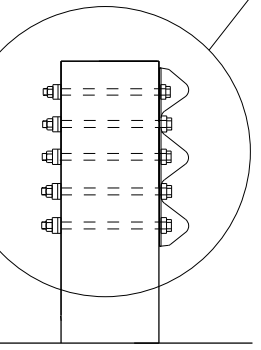
FRONT VIEW
THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS

GENERAL NOTES

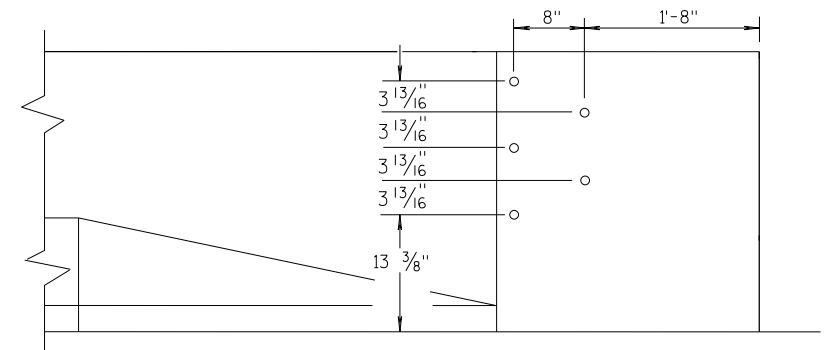
- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
 - (4) TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
 - (6) DRILLING BOLT HOLES THROUGH THE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



FRONT VIEW
W BEAM TRANSITION AND CONNECTION TO
BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION F-F



DRILL HOLE LOCATION

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

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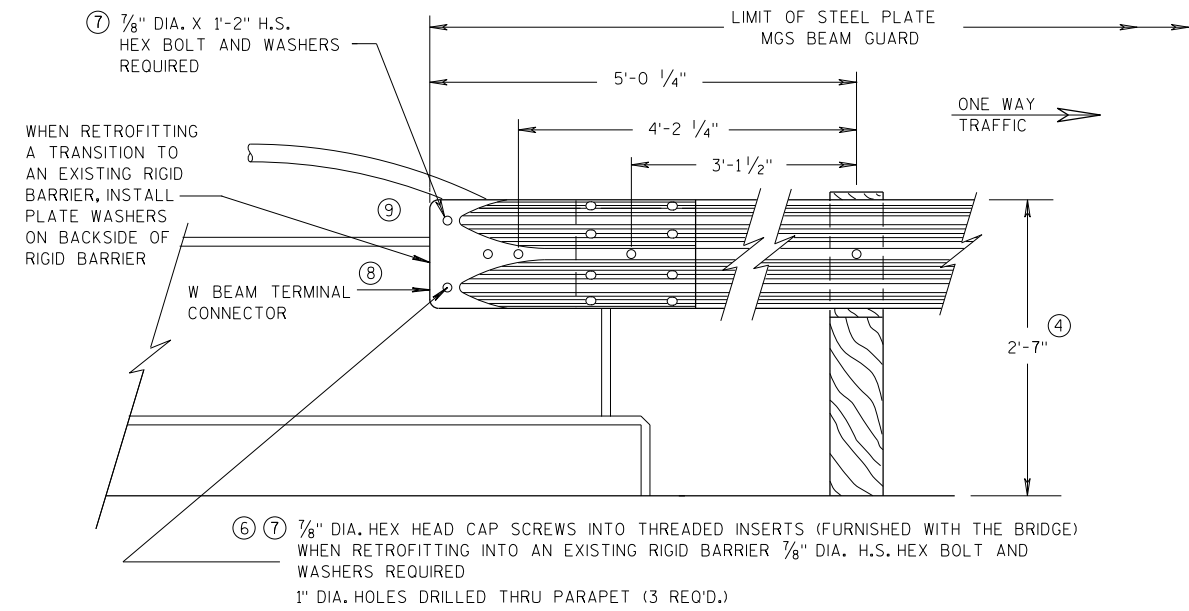
S.D.D. 14 B 45-5d

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

GENERAL NOTES

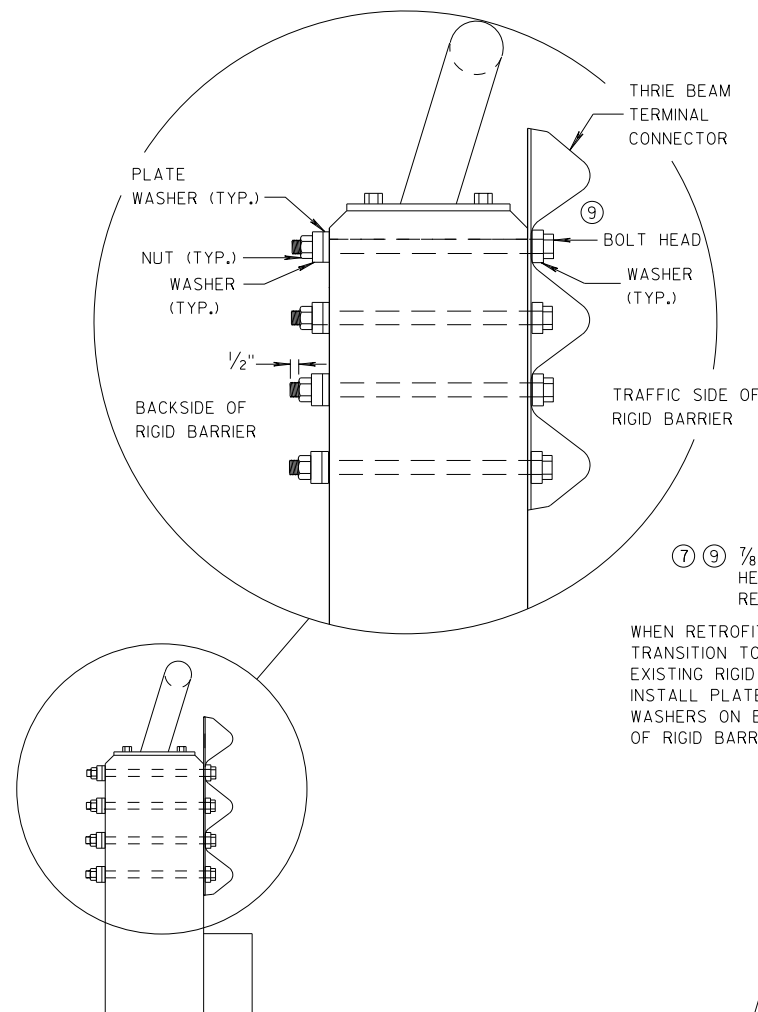
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
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- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ⑨ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

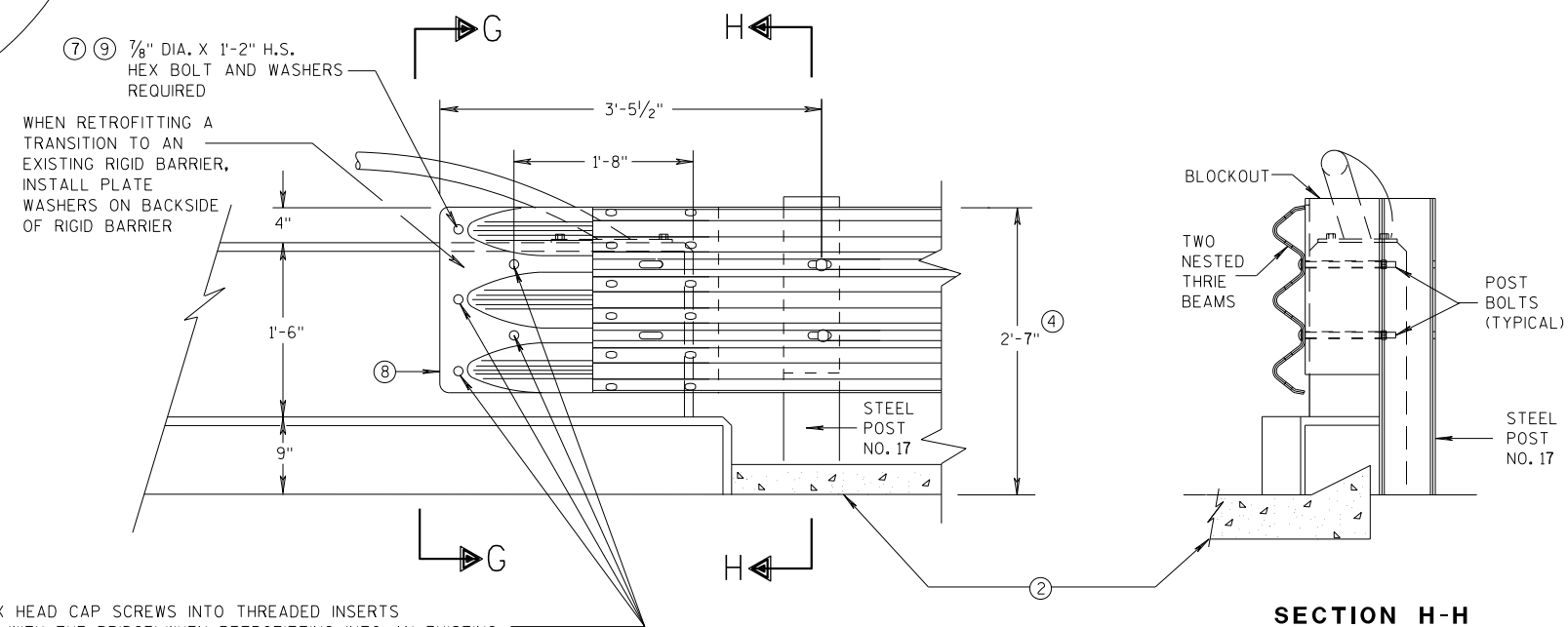


FRONT VIEW

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



SECTION G-G



FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

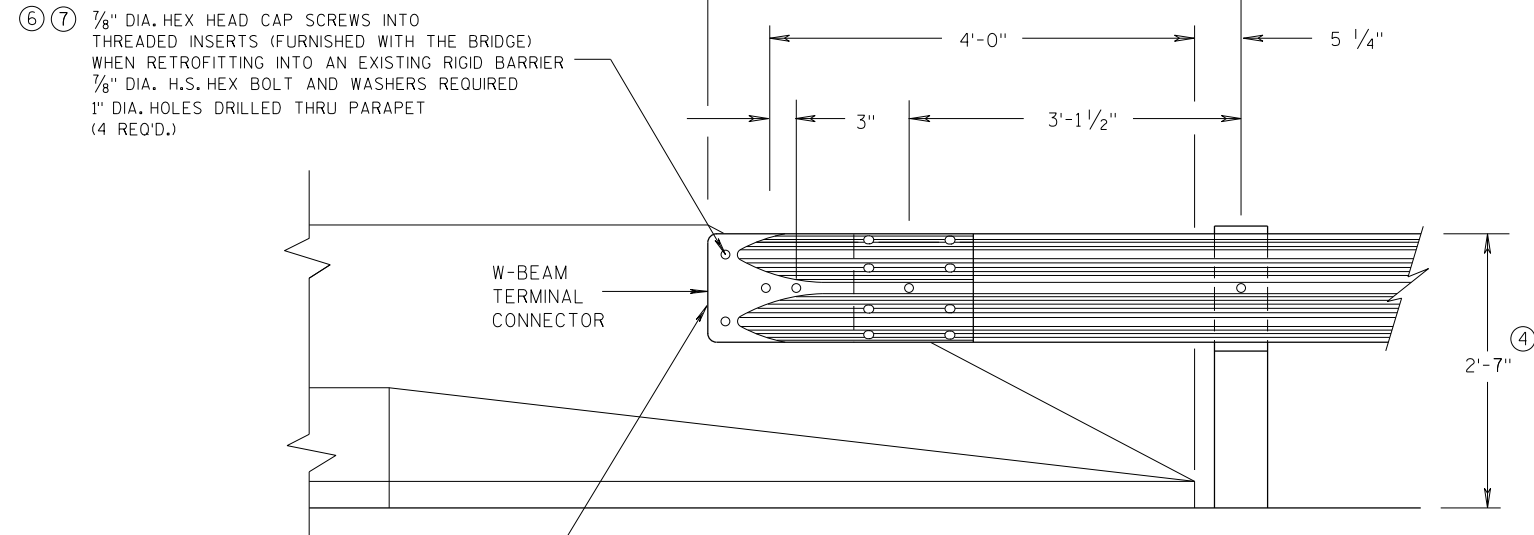
SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 /s/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

ONE WAY
TRAFFIC



FRONT VIEW

**W BEAM CONNECTION TO
PARAPETS WITH SLOPED ENDS**

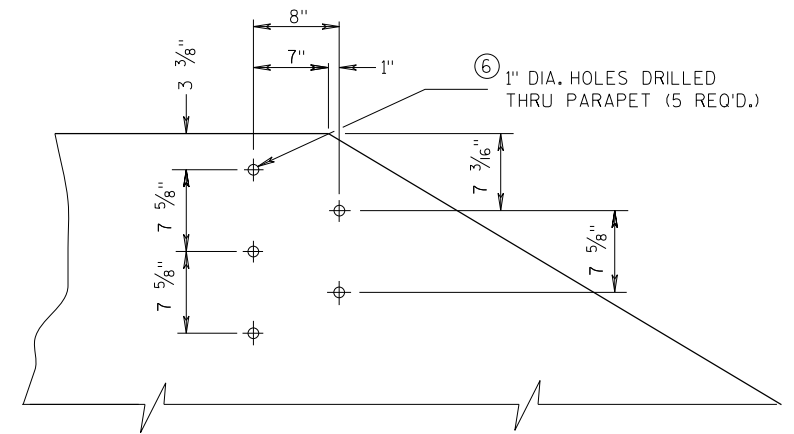
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

WHEN RETROFITTING A TRANSITION
TO AN EXISTING RIGID BARRIER,
INSTALL PLATE WASHERS ON
BACKSIDE OF RIGID BARRIER.

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

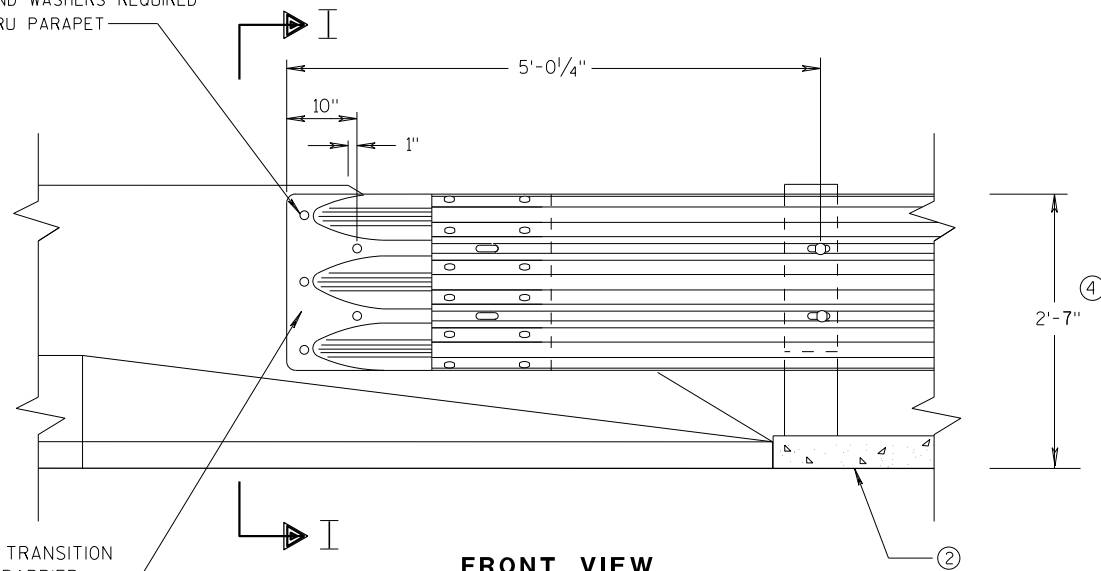
GENERAL NOTES

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
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**DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION**

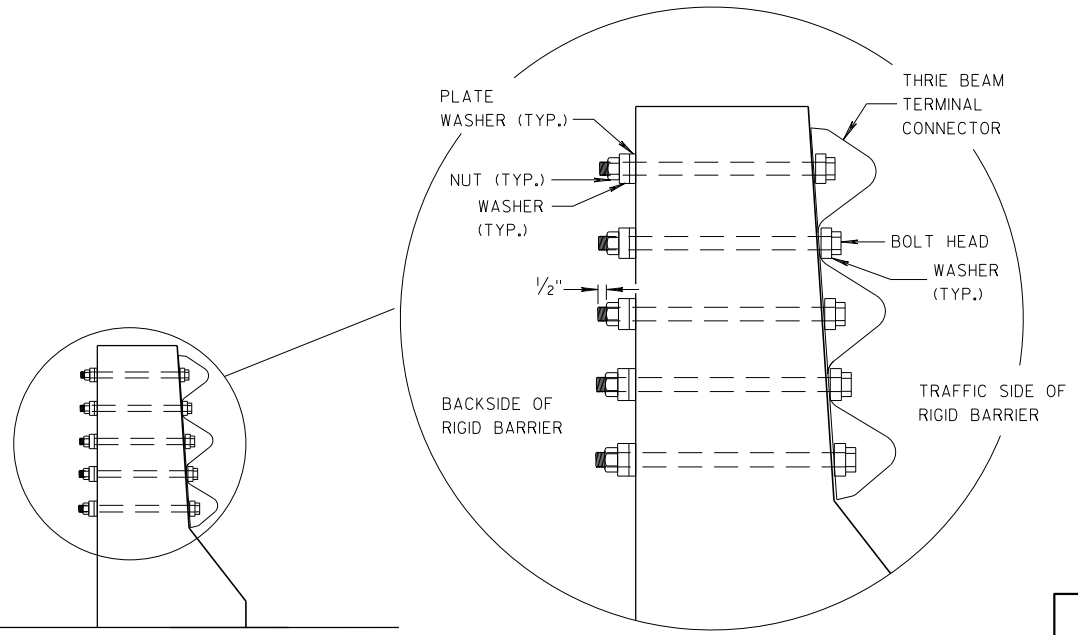
⑥ ⑦ 7/8" DIA. HEX HEAD CAP SCREWS INTO
THREADED INSERTS (FURNISHED WITH THE BRIDGE)
WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER
7/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET
(5 REQ'D.)



FRONT VIEW

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

WHEN RETROFITTING A TRANSITION
TO AN EXISTING RIGID BARRIER,
INSTALL PLATE WASHERS ON
BACKSIDE OF RIGID BARRIER.

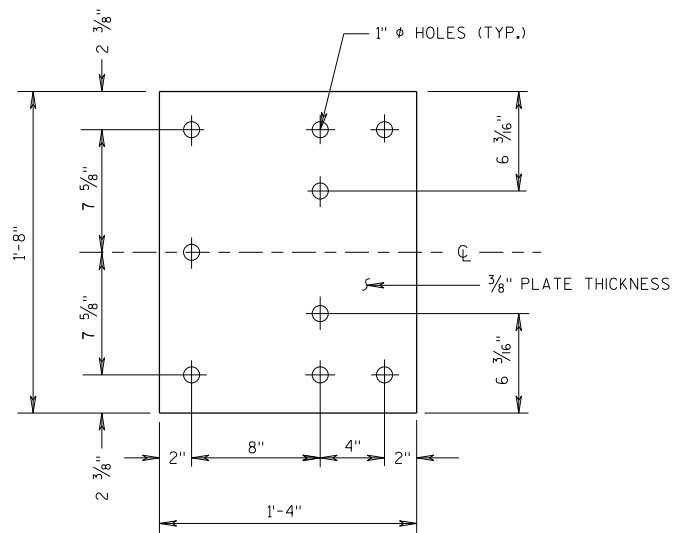


SECTION I-I

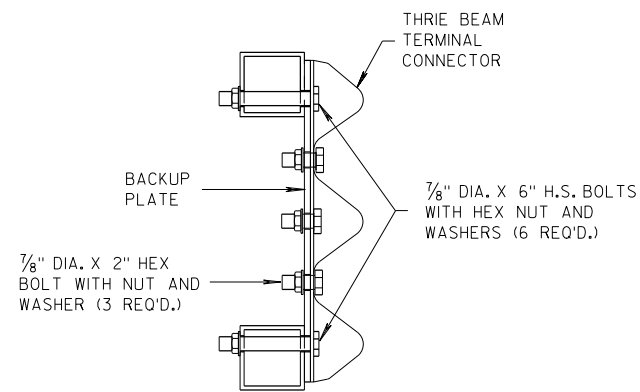
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

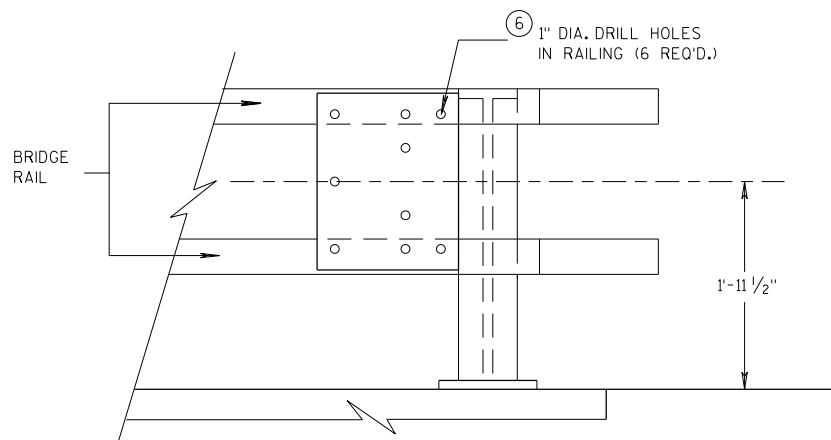
APPROVED
DATE 07/2018 /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



BACK-UP PLATE DETAIL



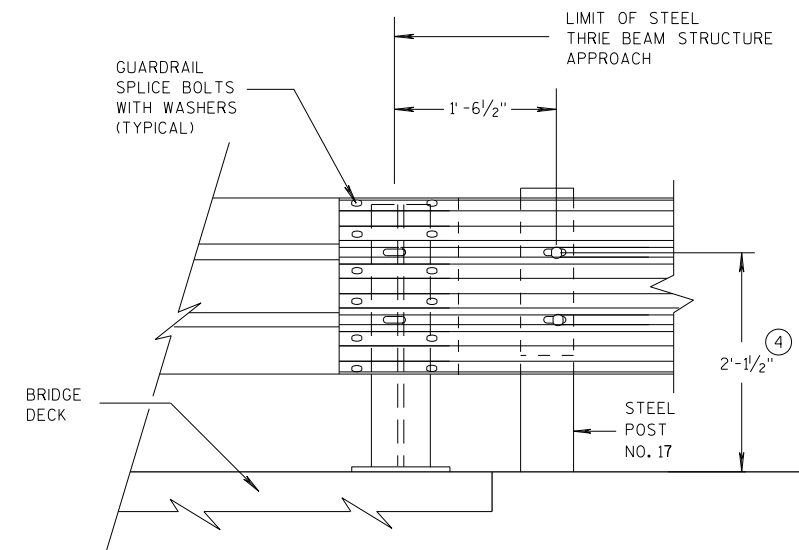
SECTION J-J



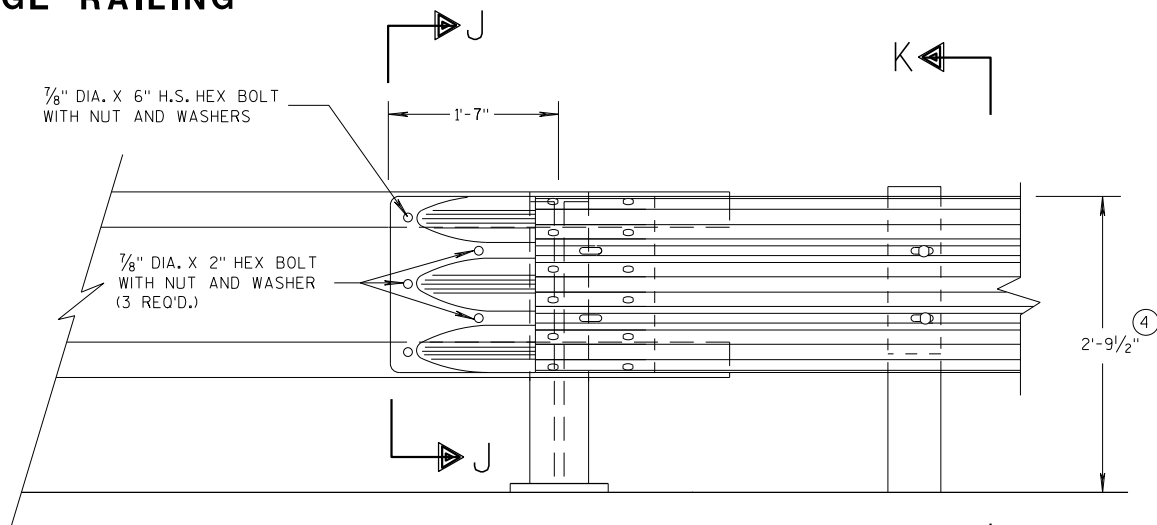
BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

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

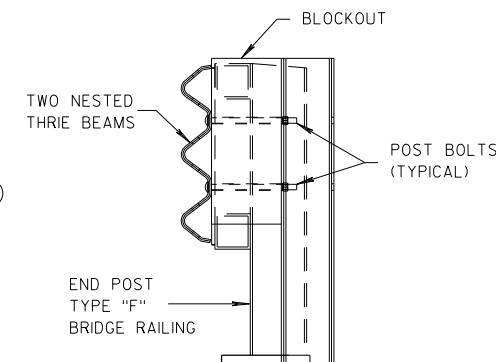


**FRONT VIEW
THRIE BEAM CONNECTION TO
STEEL RAILING TYPE "W"**



FRONT VIEW

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



SECTION K-K

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

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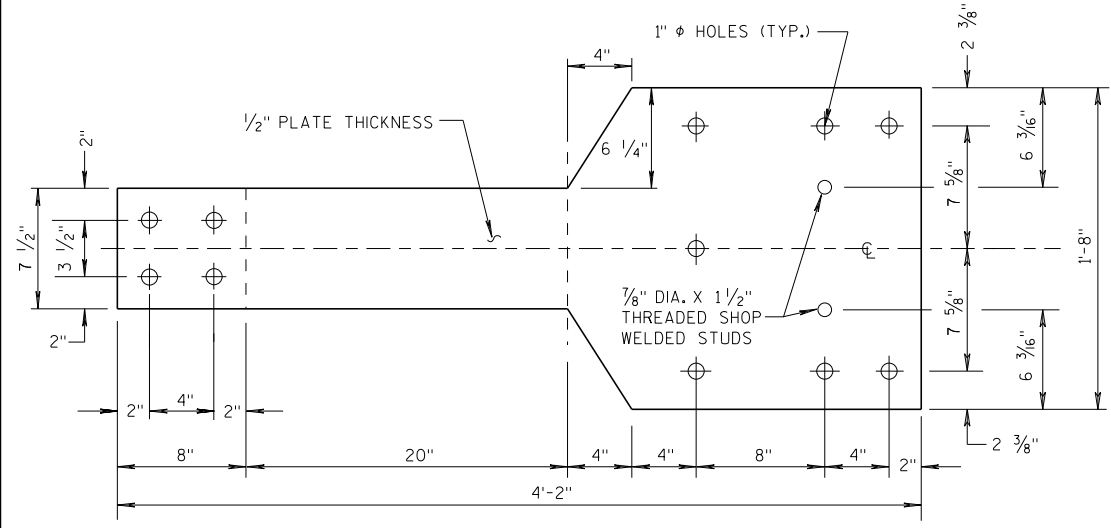
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S.D.D. 14 B 45-59

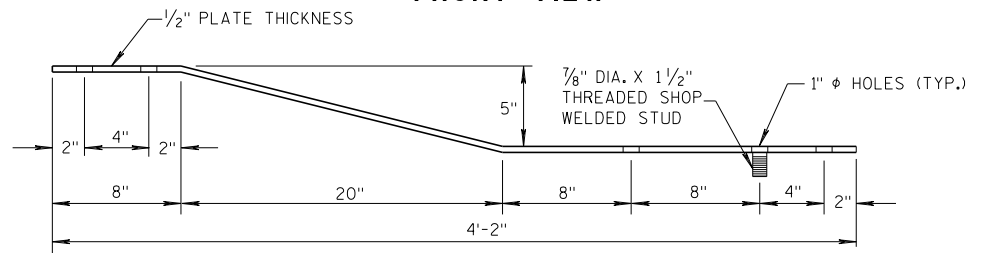
S.D.D. 14 B 45-59

GENERAL NOTES

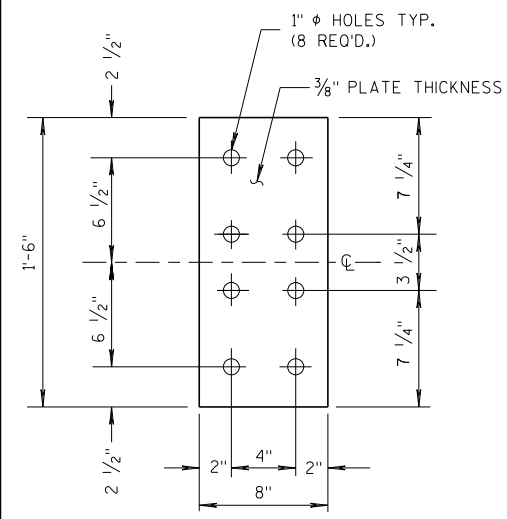
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



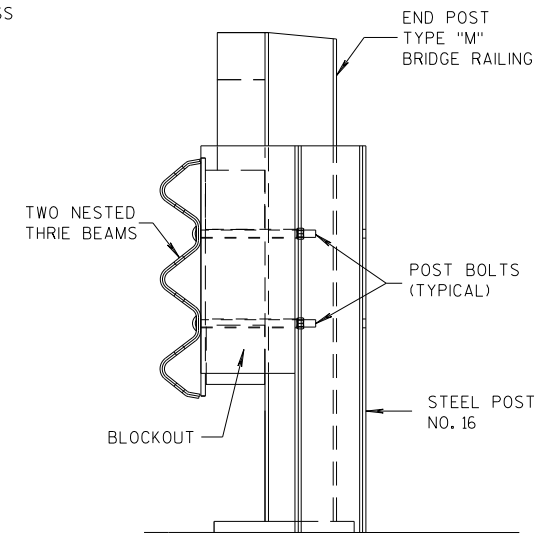
FRONT VIEW



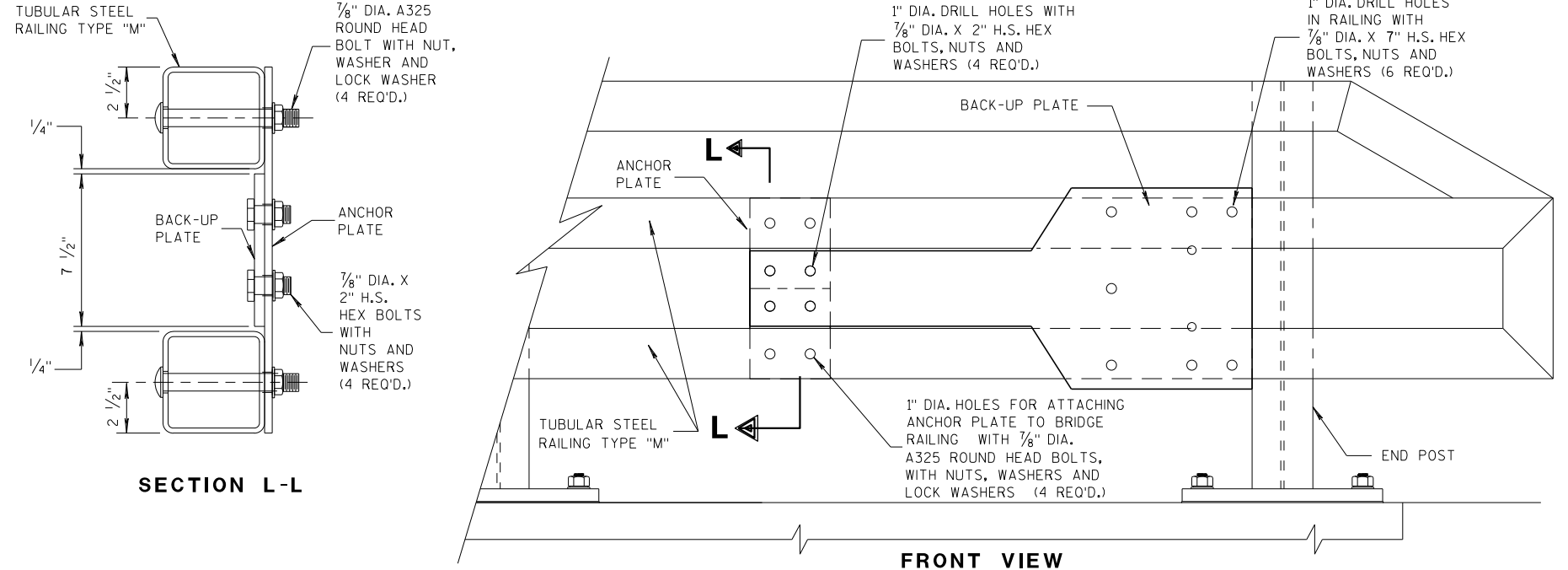
**PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"**



**FRONT VIEW
ANCHOR PLATE DETAIL, TYPE "M"**



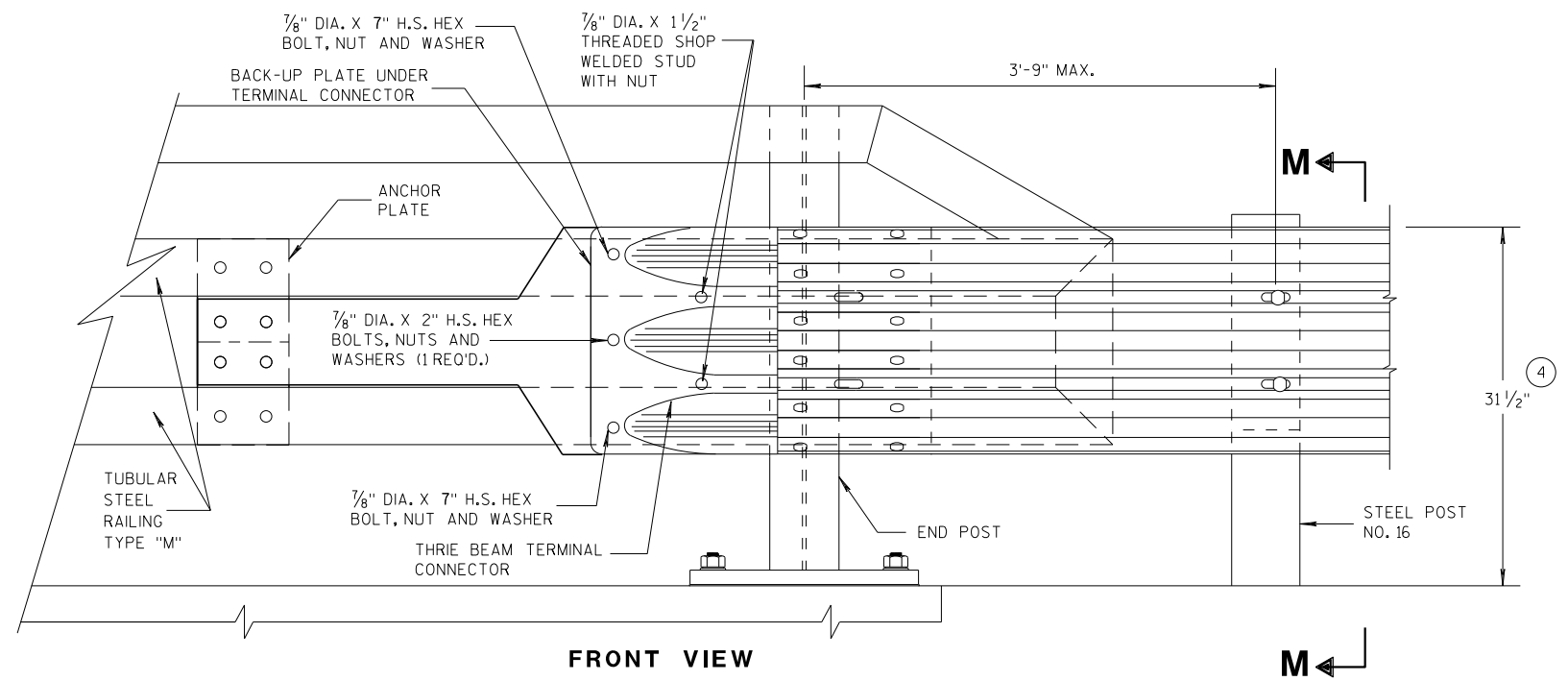
SECTION M-M



SECTION L-L

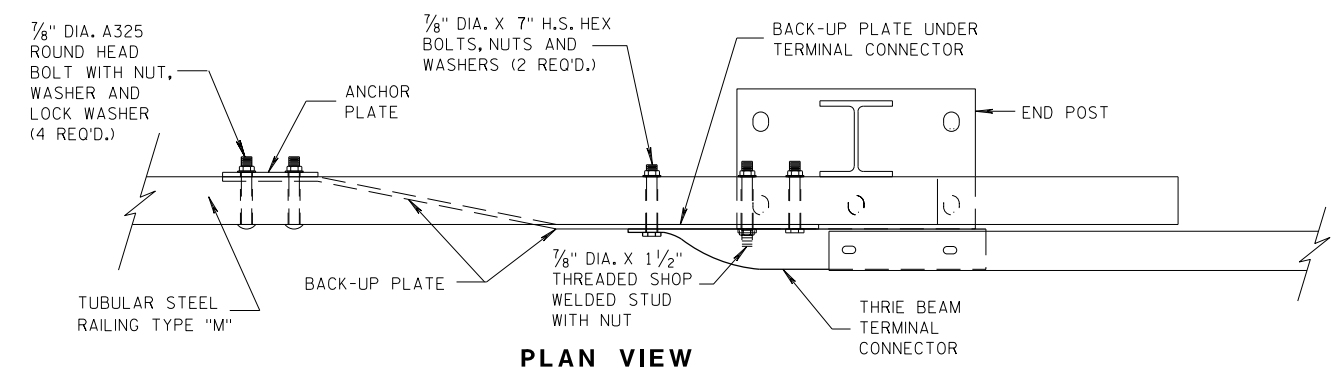
FRONT VIEW

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



FRONT VIEW

M



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

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

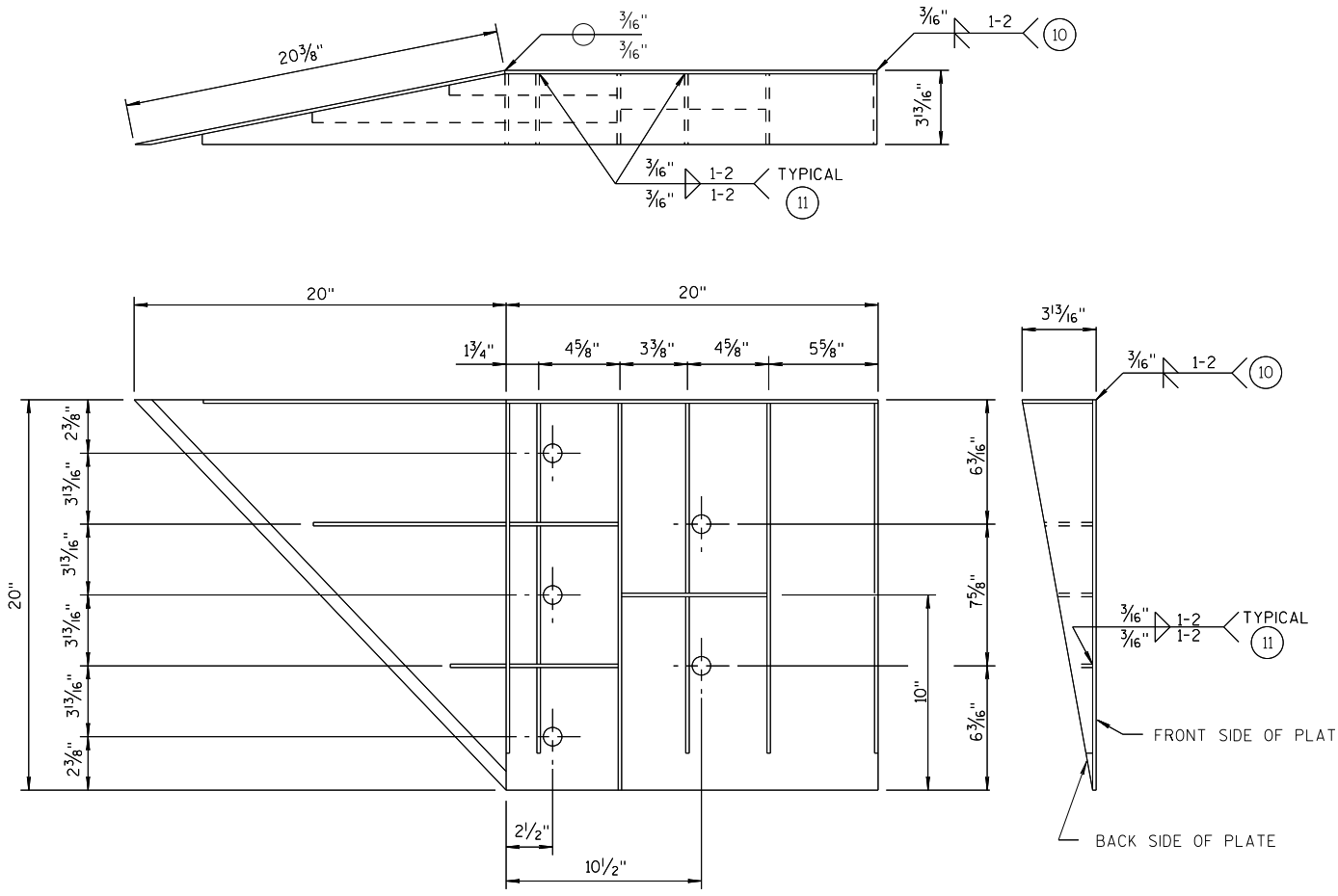
S.D.D. 14 B 45-5h

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

GENERAL NOTES

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

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



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

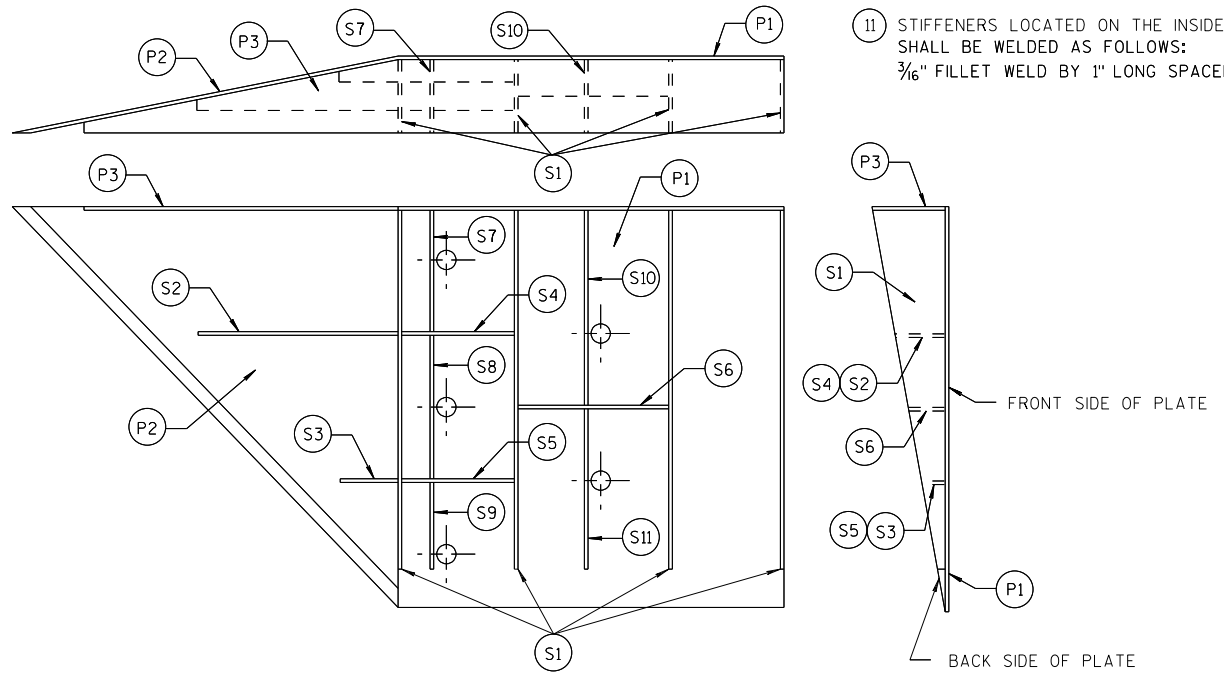


PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

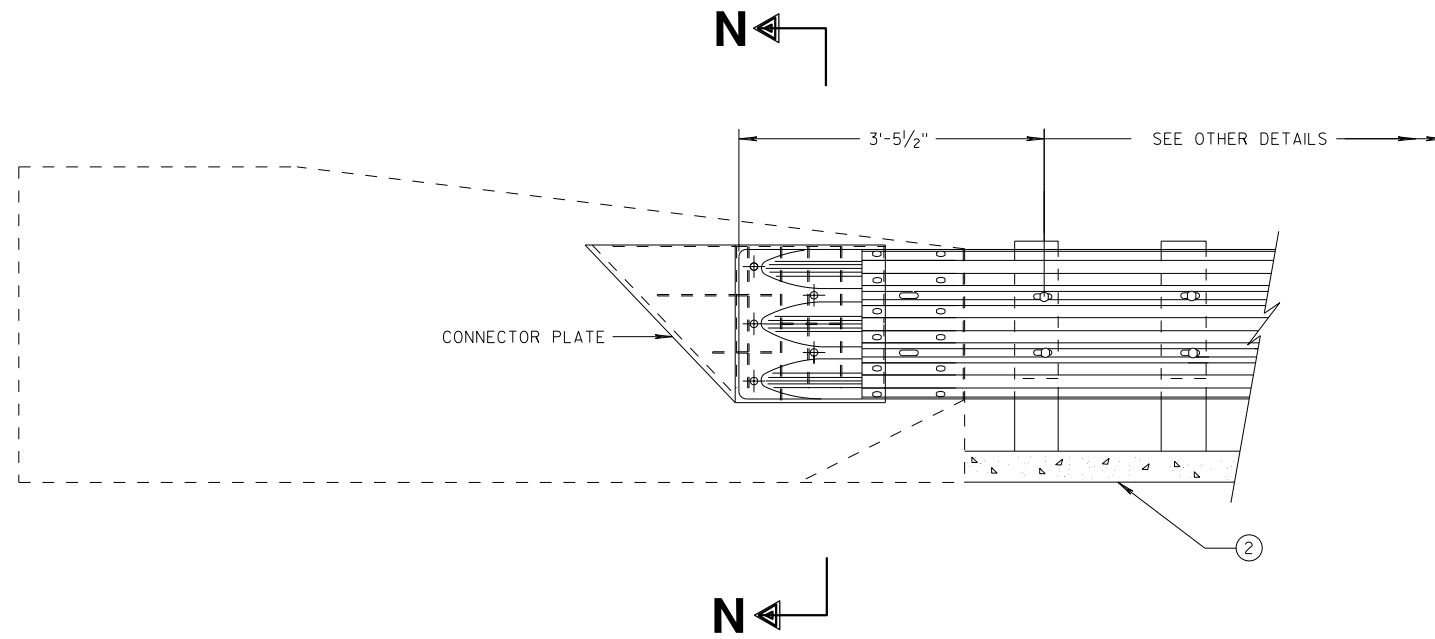
FHWA

GENERAL NOTES

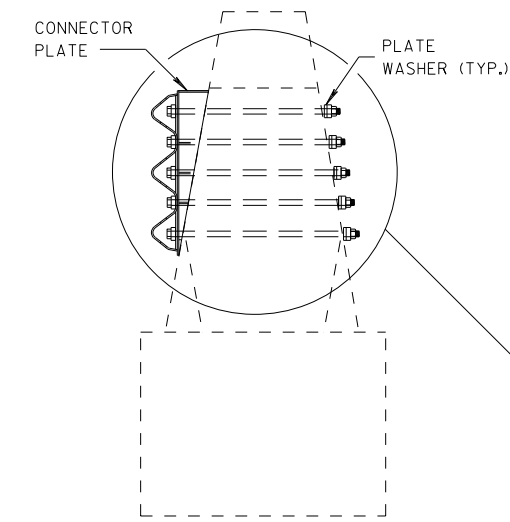
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

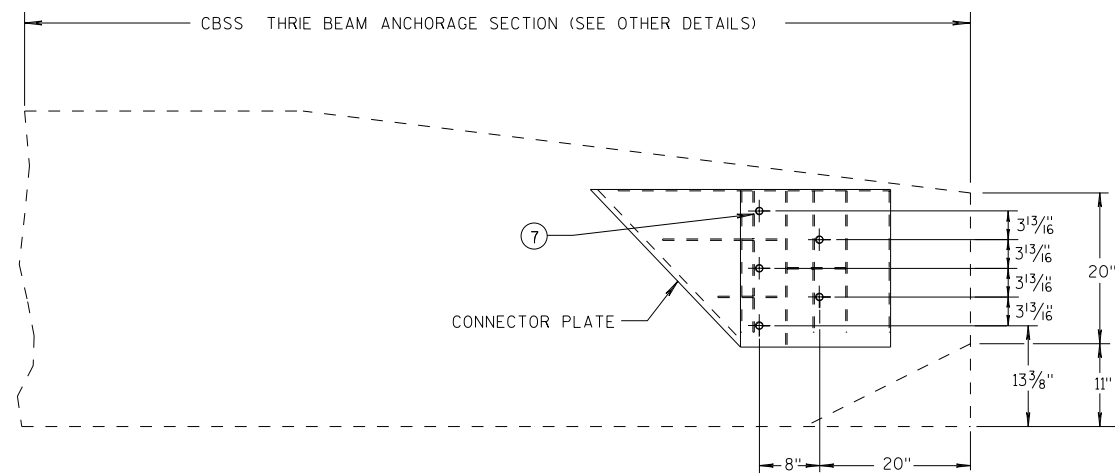
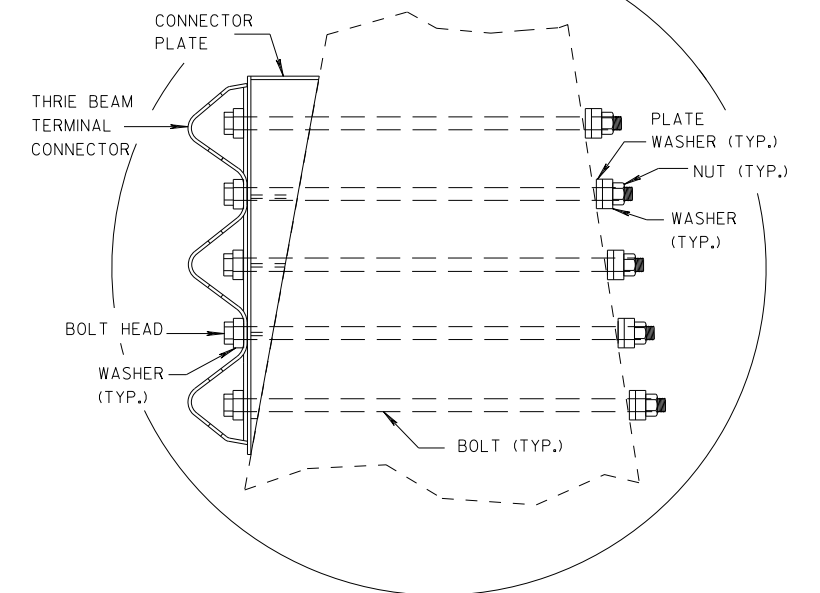
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THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



SECTION N-N

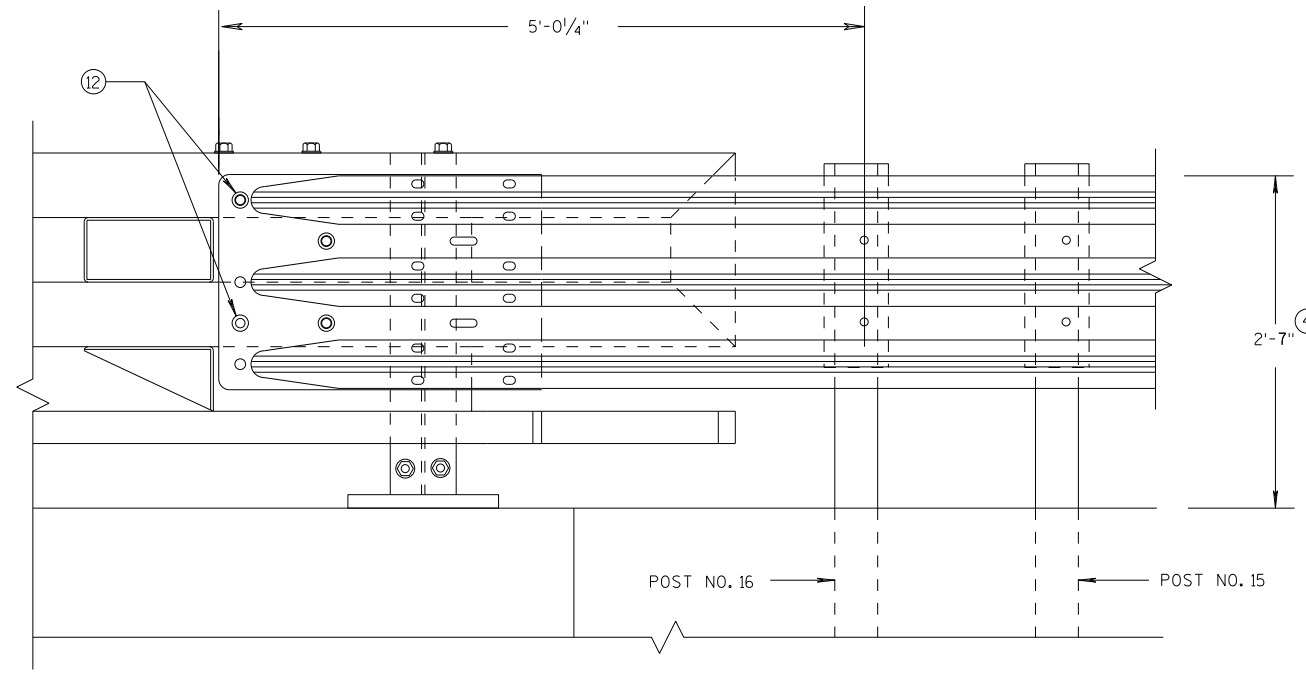


SINGLE SLOPE CONNECTION PLATE PLACEMENT

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

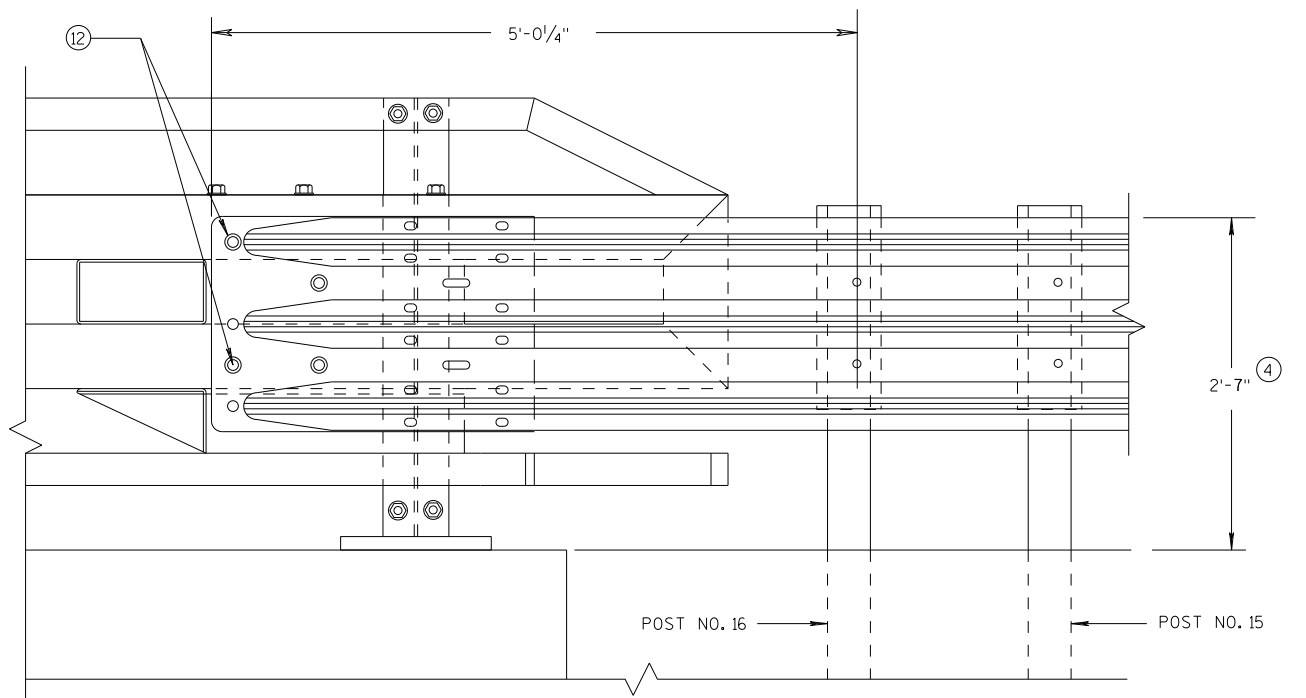
APPROVED
DATE 7/2018 /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA



ELEVATION OF DETAIL AT NY3 END POST
THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

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



ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT

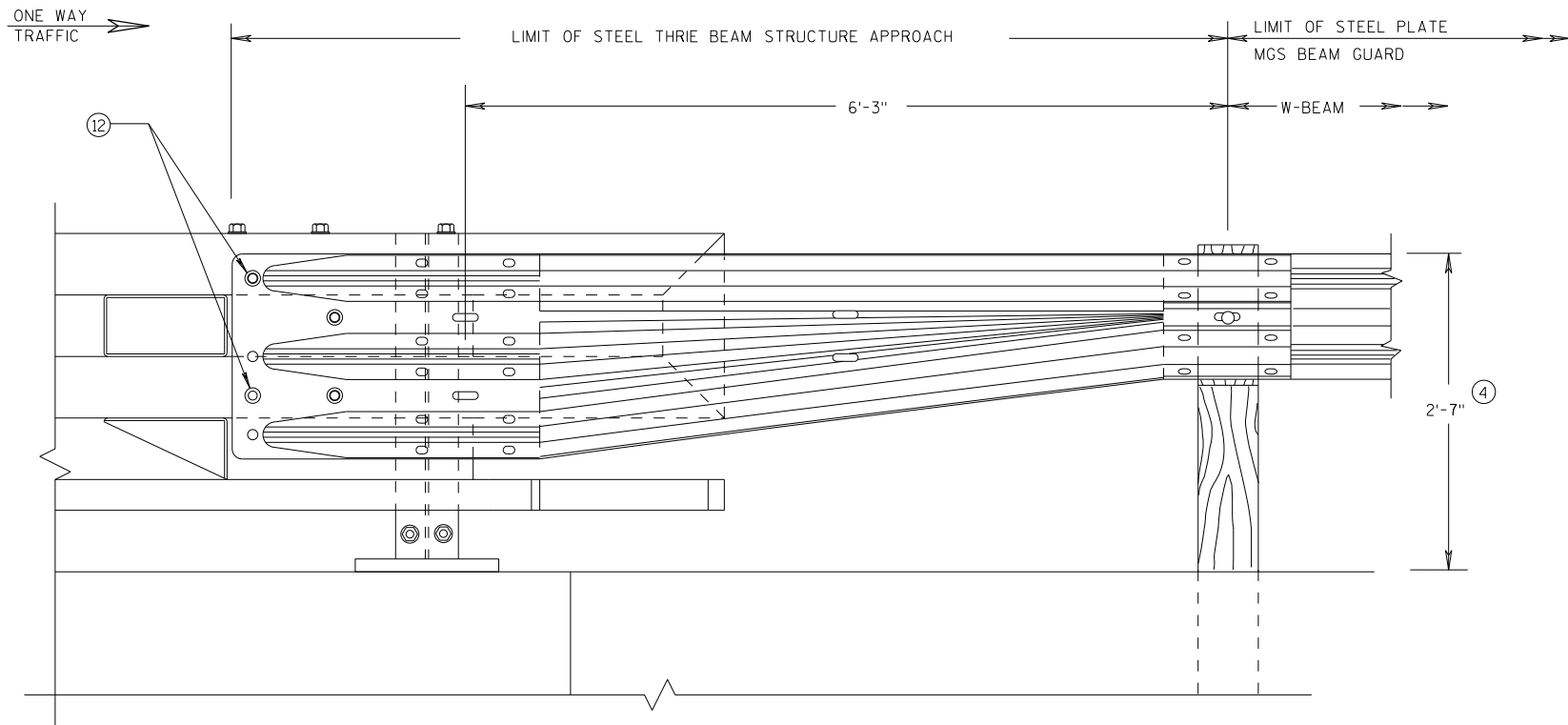
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

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

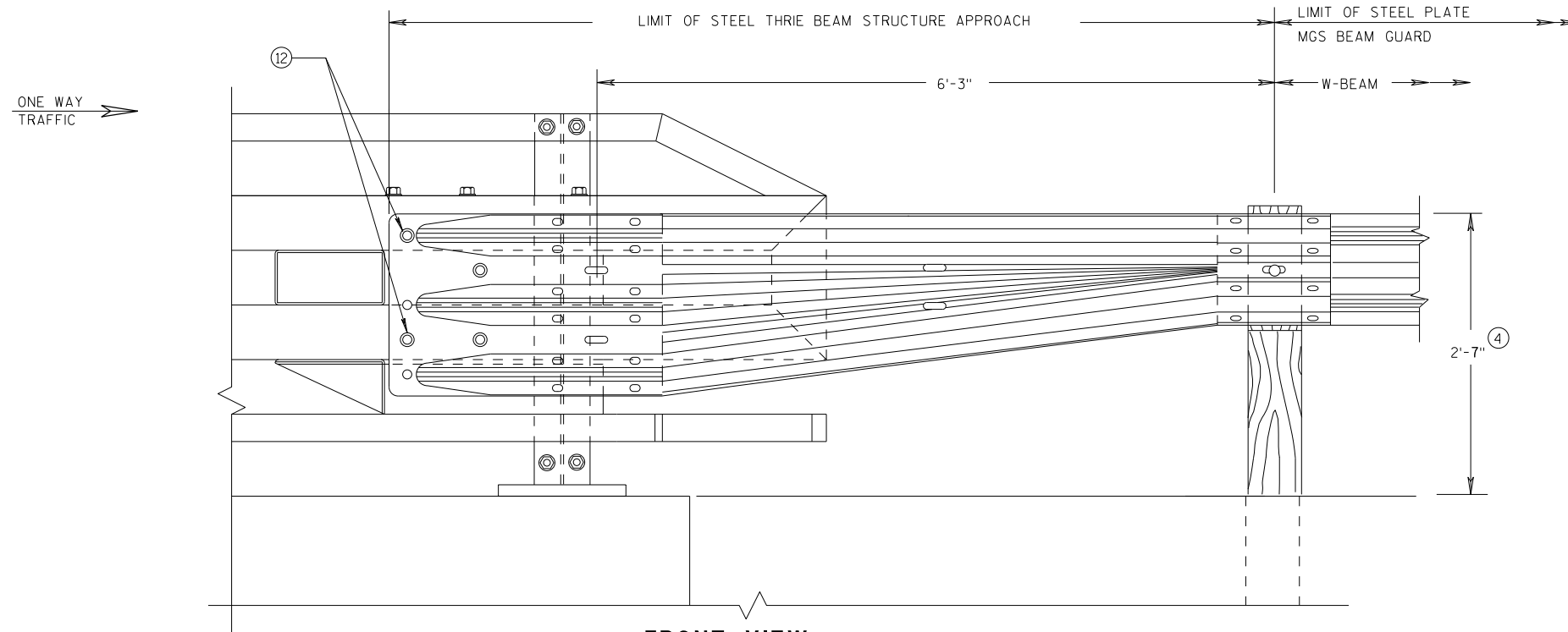
S.D.D. 14 B 45-5k



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

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.

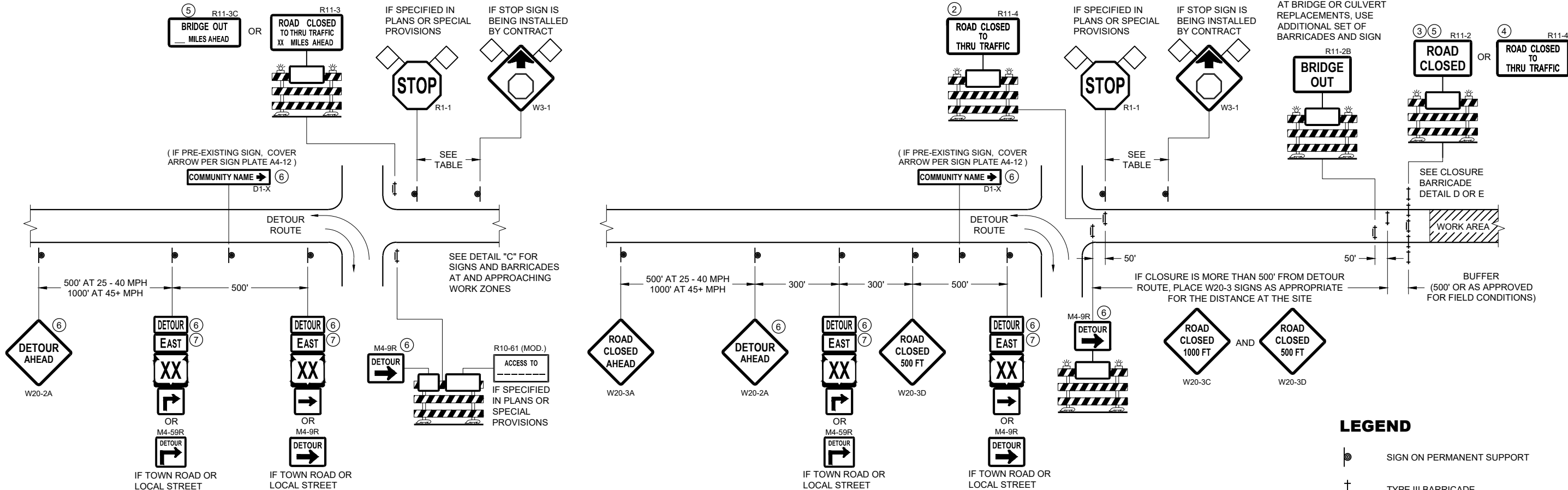


FRONT VIEW
W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY4"
 (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

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



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

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

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

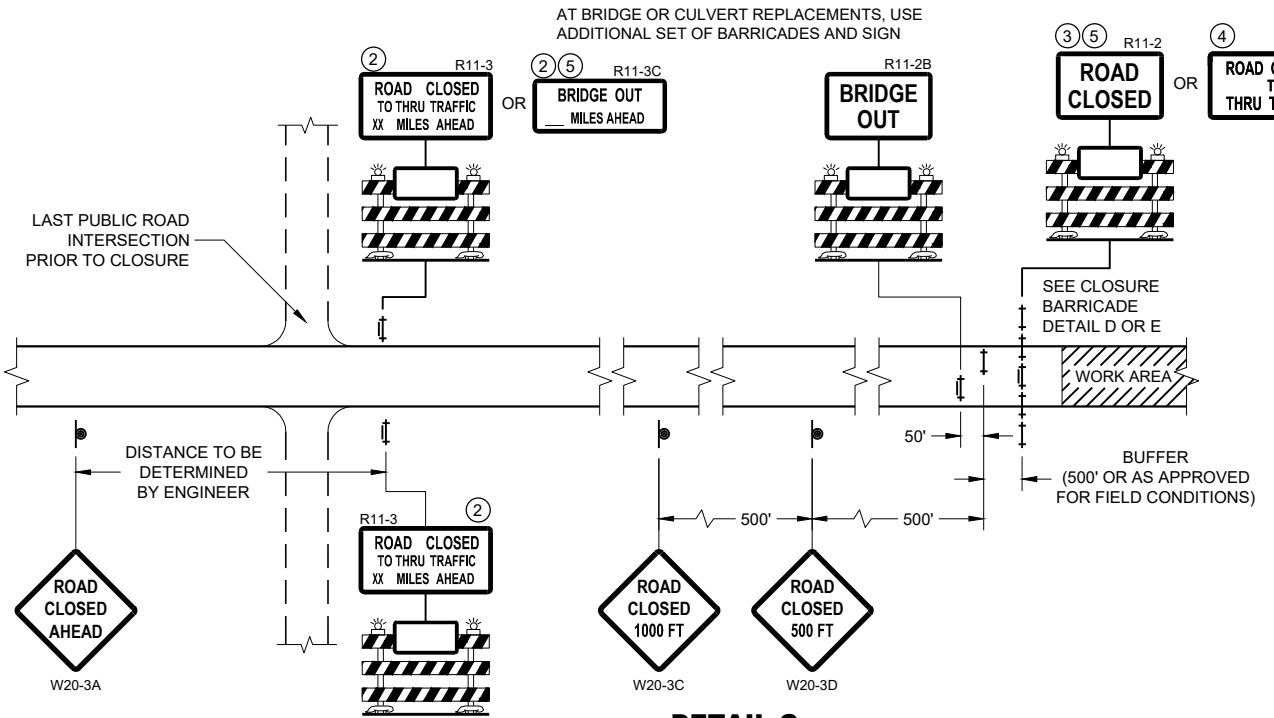
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- M4 - 8
- M3 - X
- M1 - 4 OR M1 - 6 OR M1 - 5A
- M05 - 1 OR M06 - 1

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

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

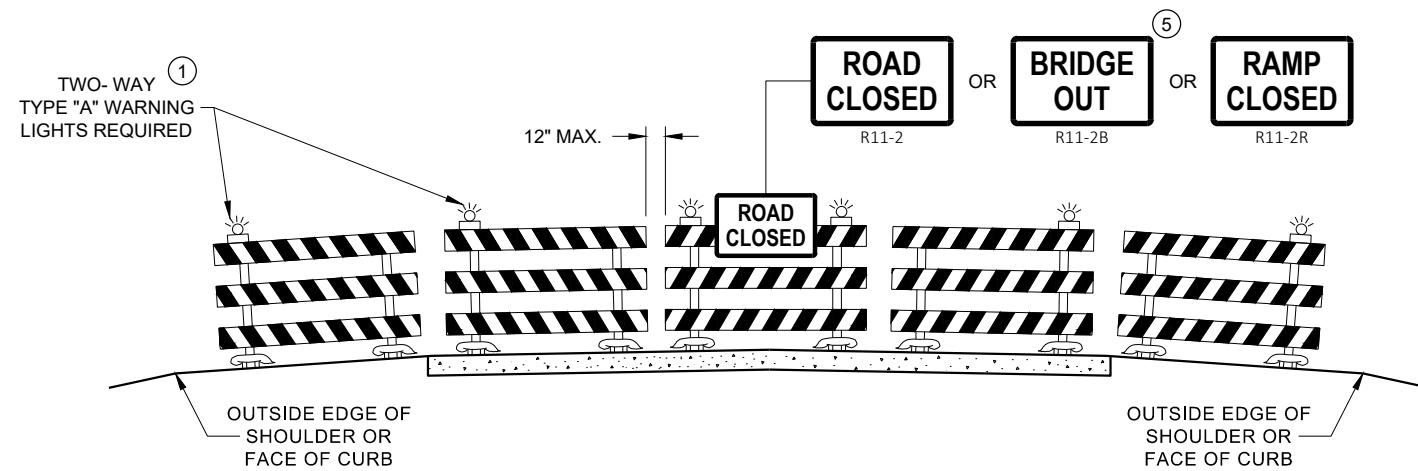


**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

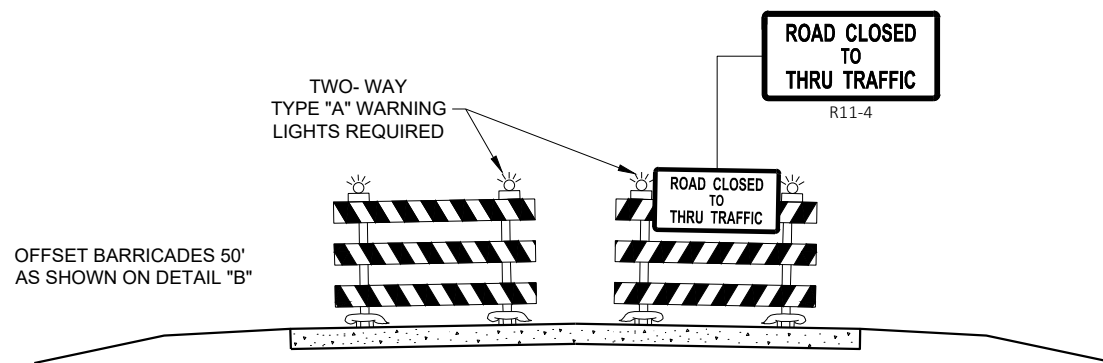
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

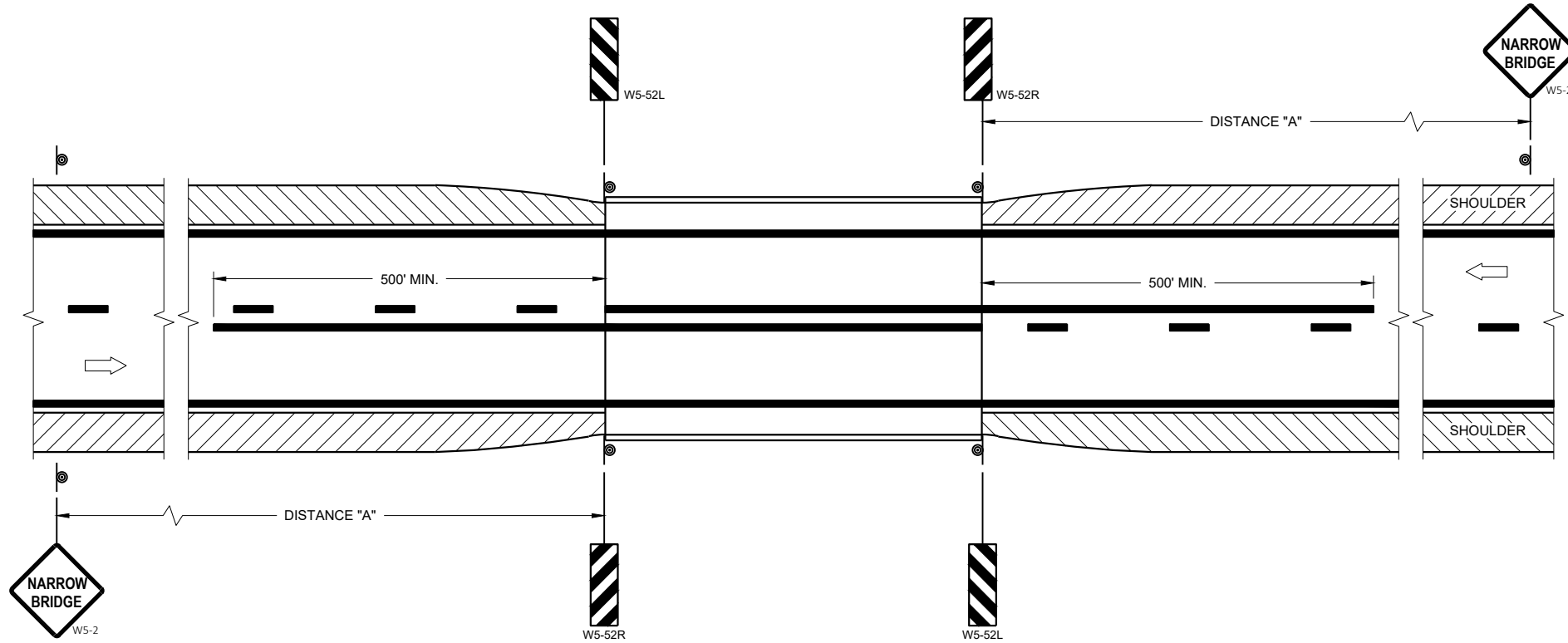
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24"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

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

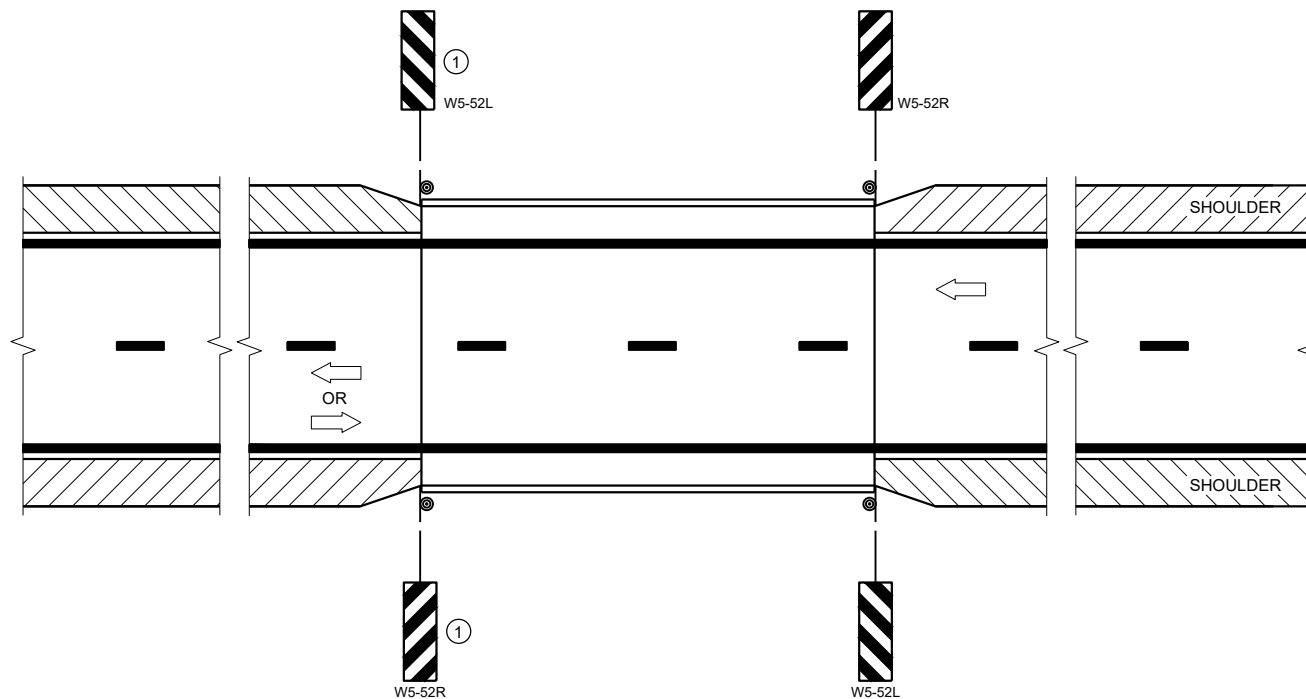
**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



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

GENERAL NOTES

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

DISTANCE TABLE

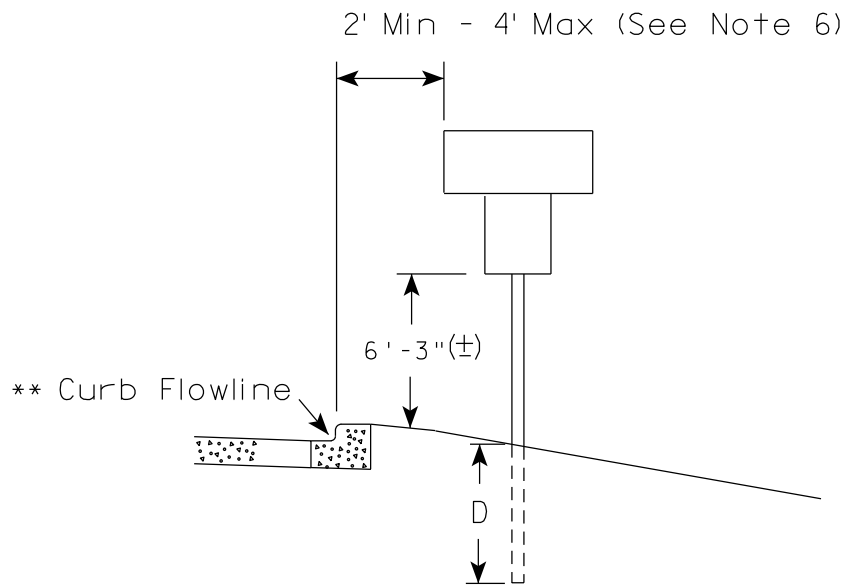
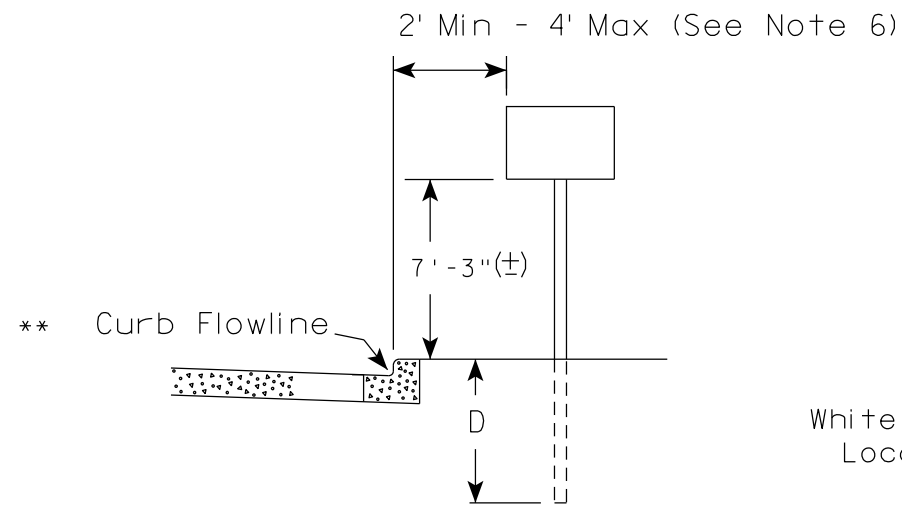
POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

SIGNING AND MARKING FOR TWO LANE BRIDGES

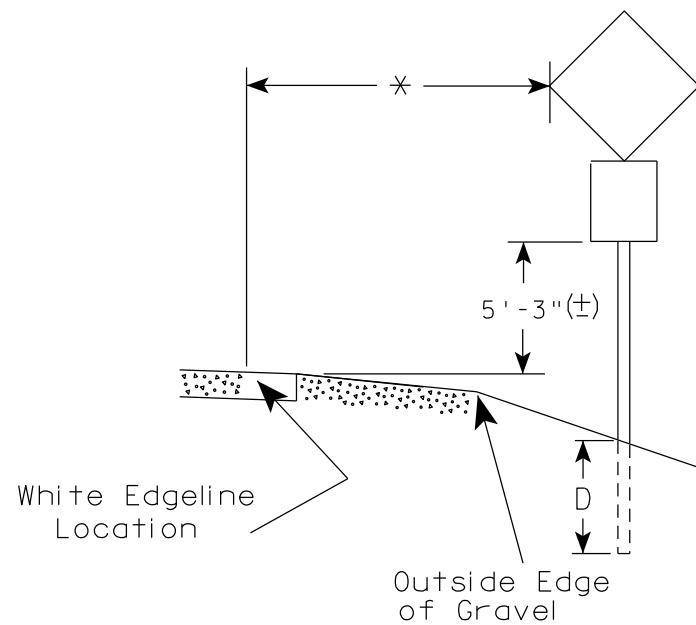
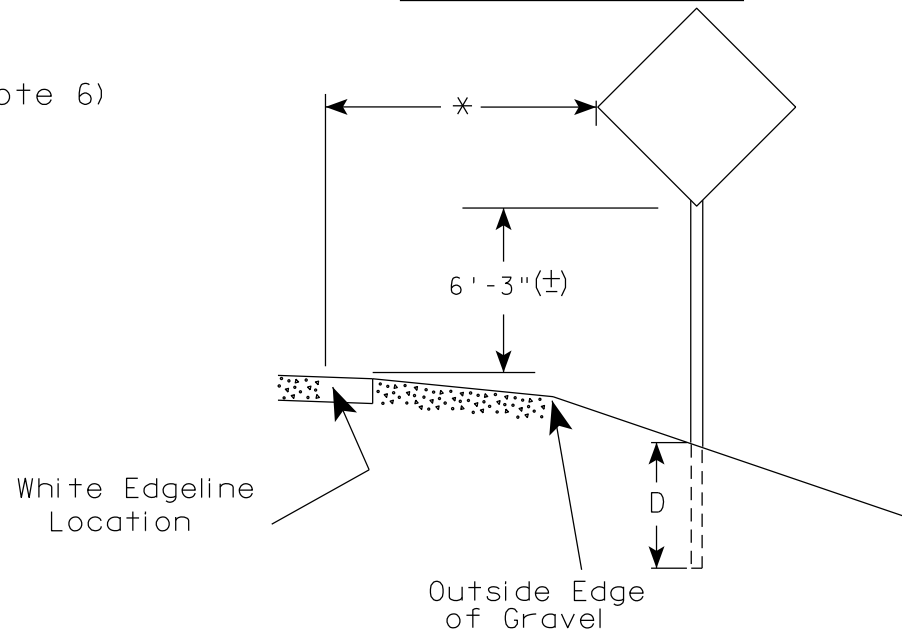
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 May 2022 /S/ Jeannie Silver
 DATE STATE SIGNING AND MARKING ENGINEER

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

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

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

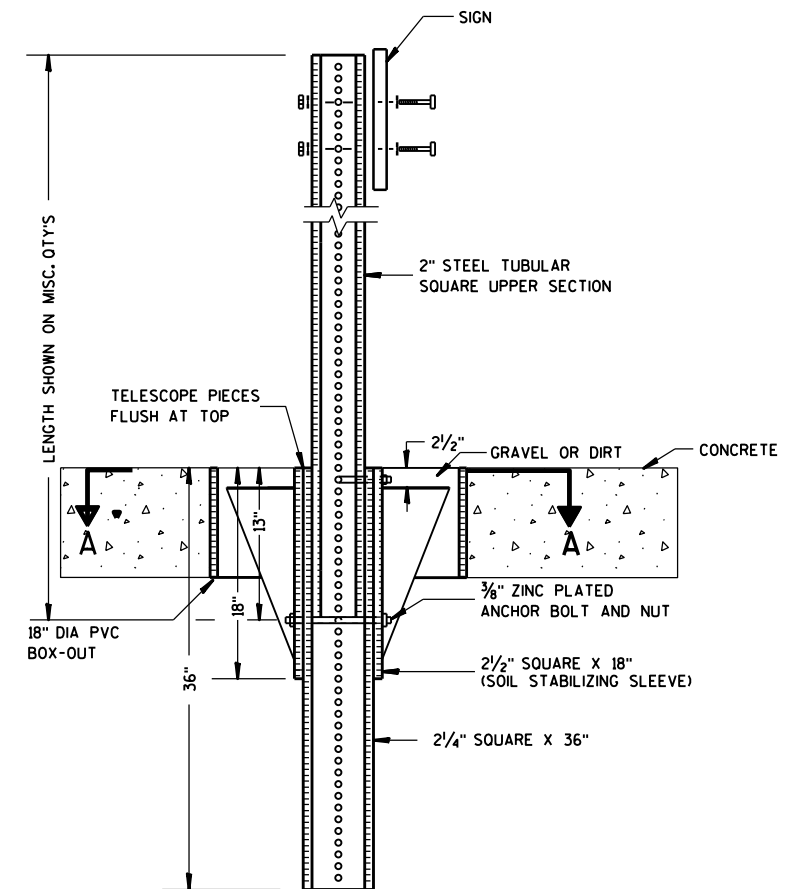
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

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

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

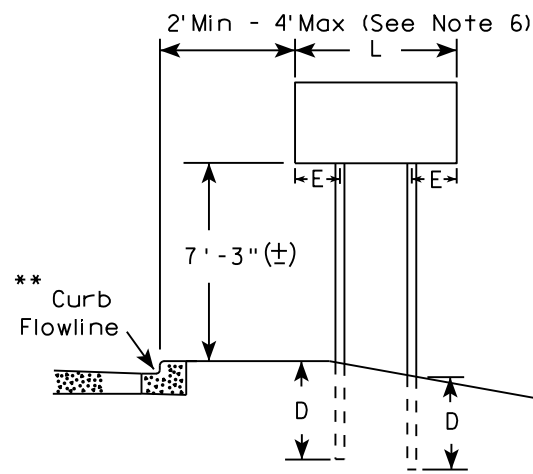
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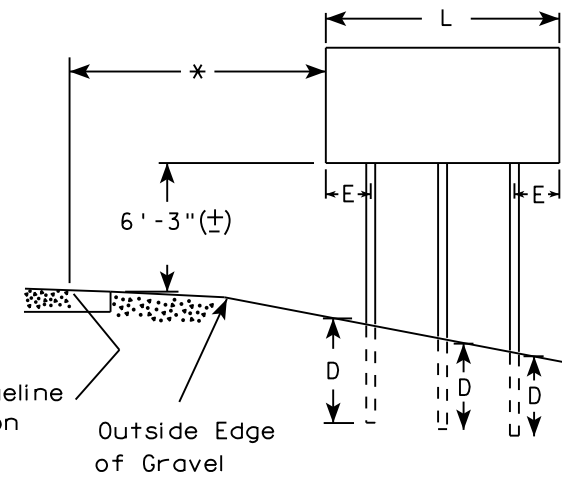
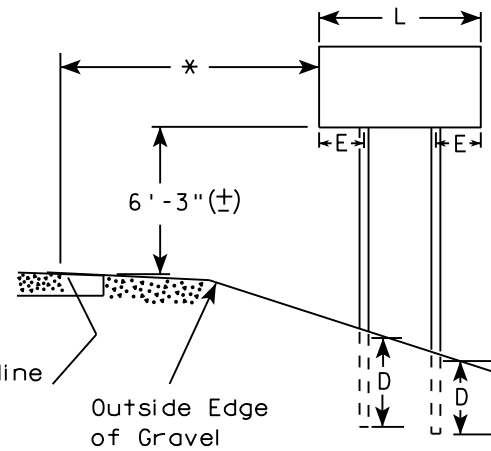
GENERAL NOTES

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

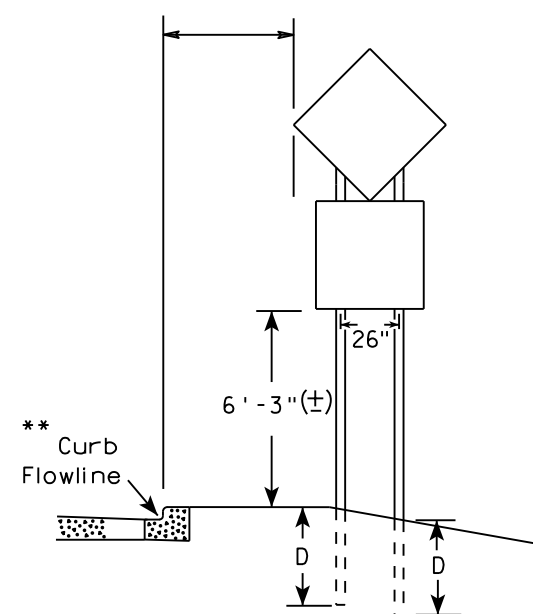
URBAN AREA



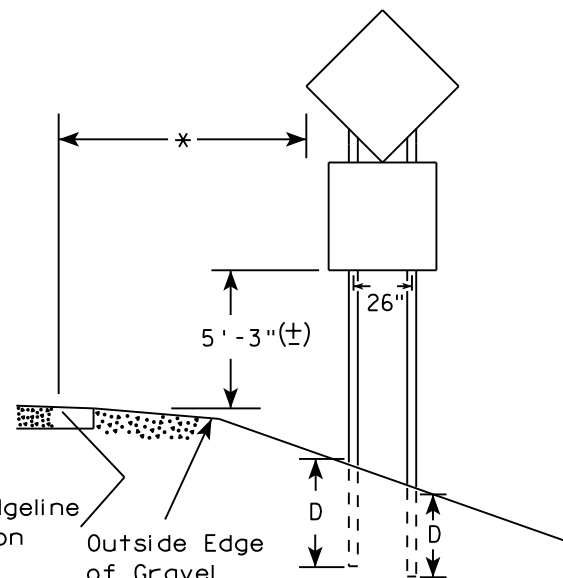
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

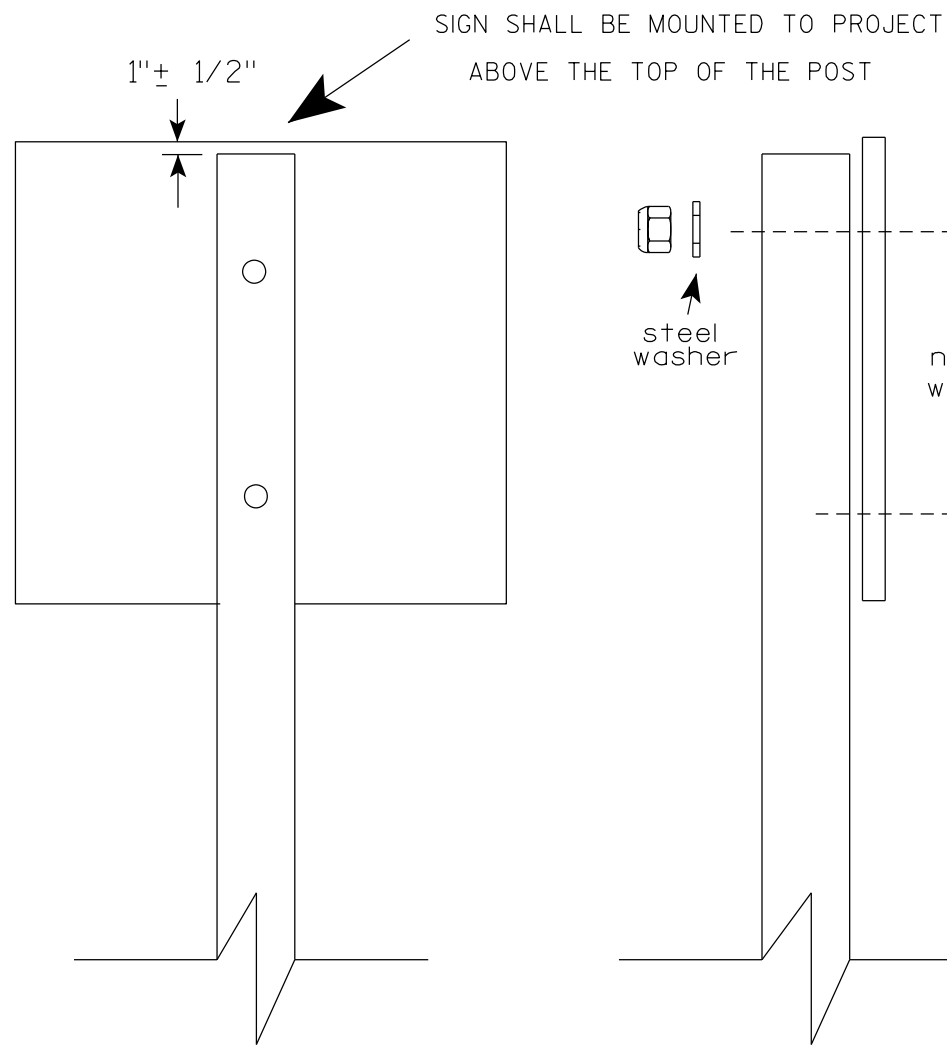
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION
 APPROVED *Matthew R. Rauch*
 For State Traffic Engineer
 DATE 8/21/17 PLATE NO. A4-4.15



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

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

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

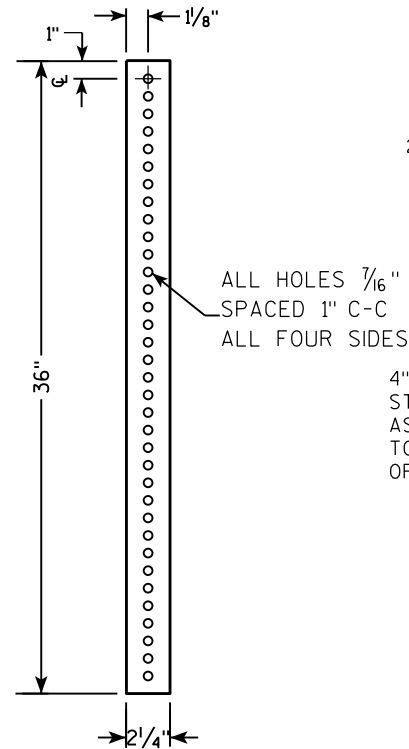
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE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

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

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

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

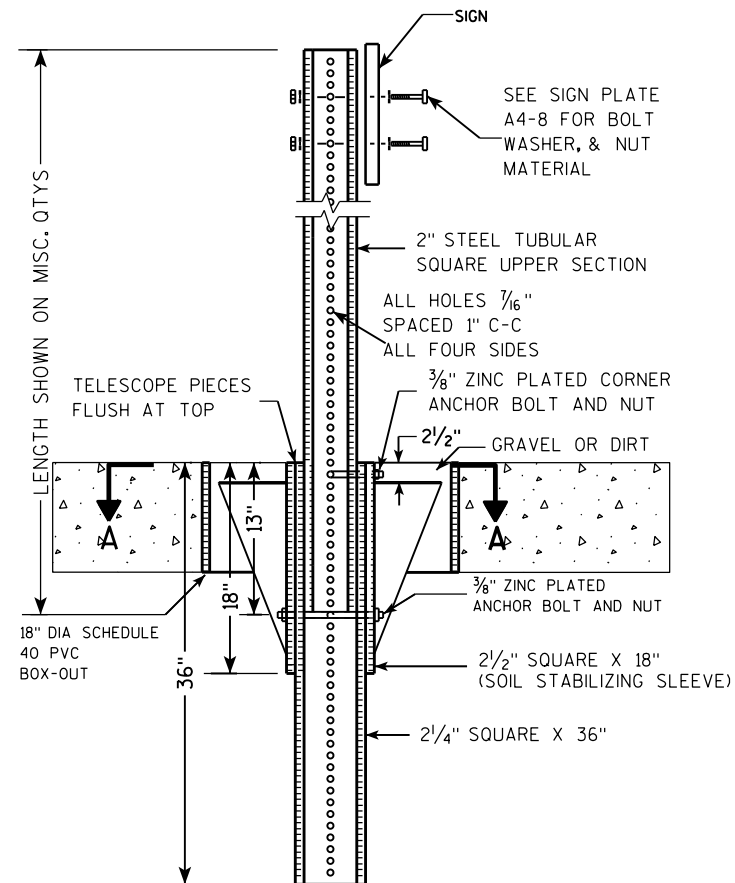
**2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



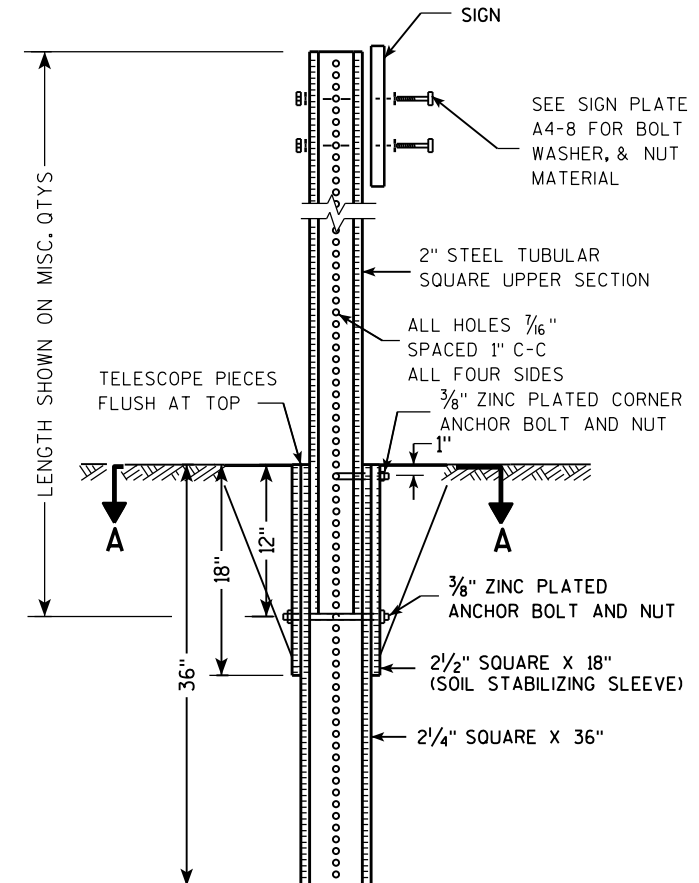
**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



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



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



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

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

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

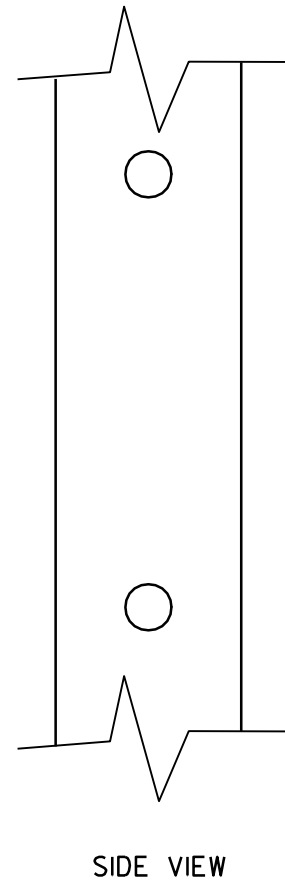
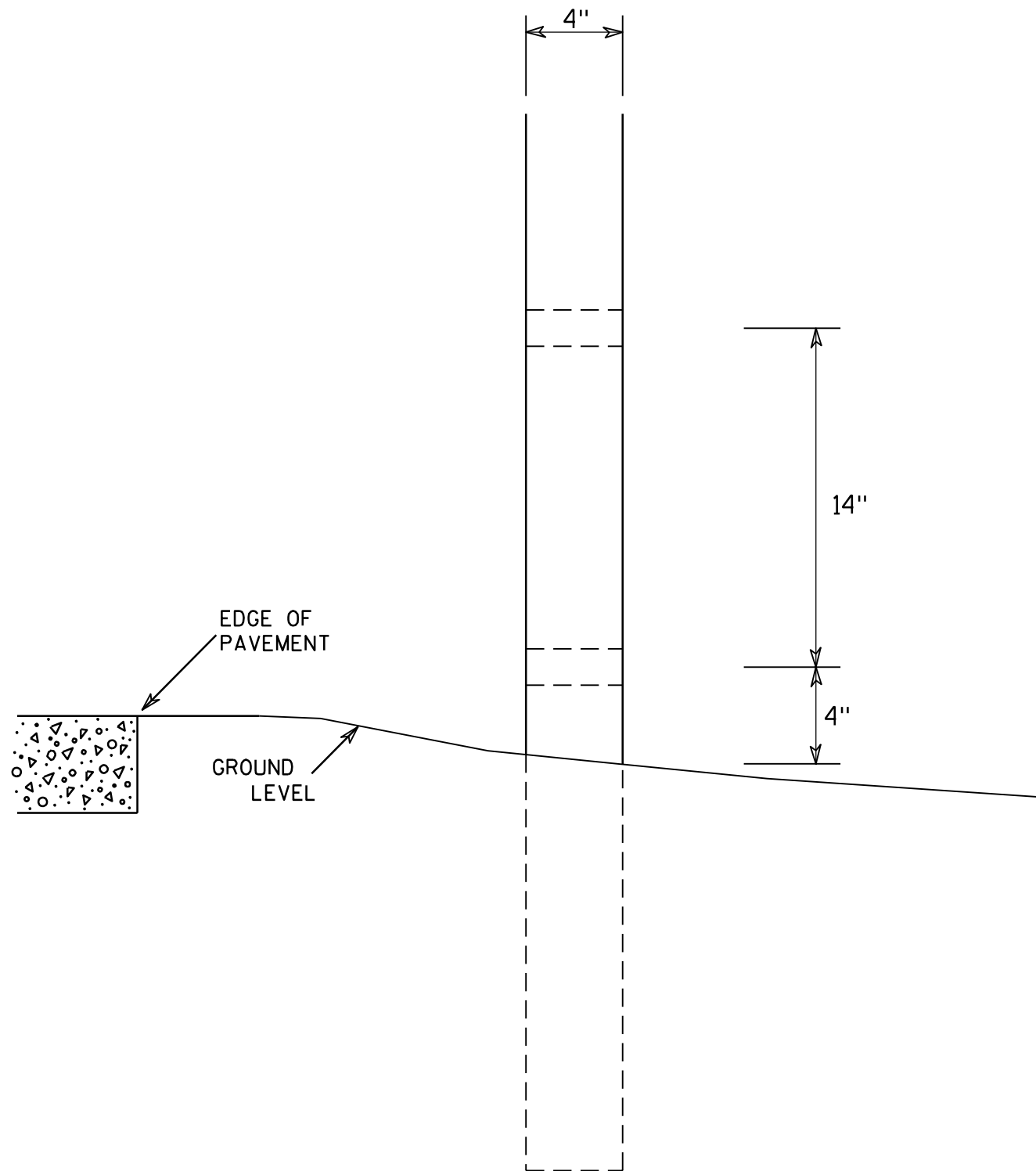
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



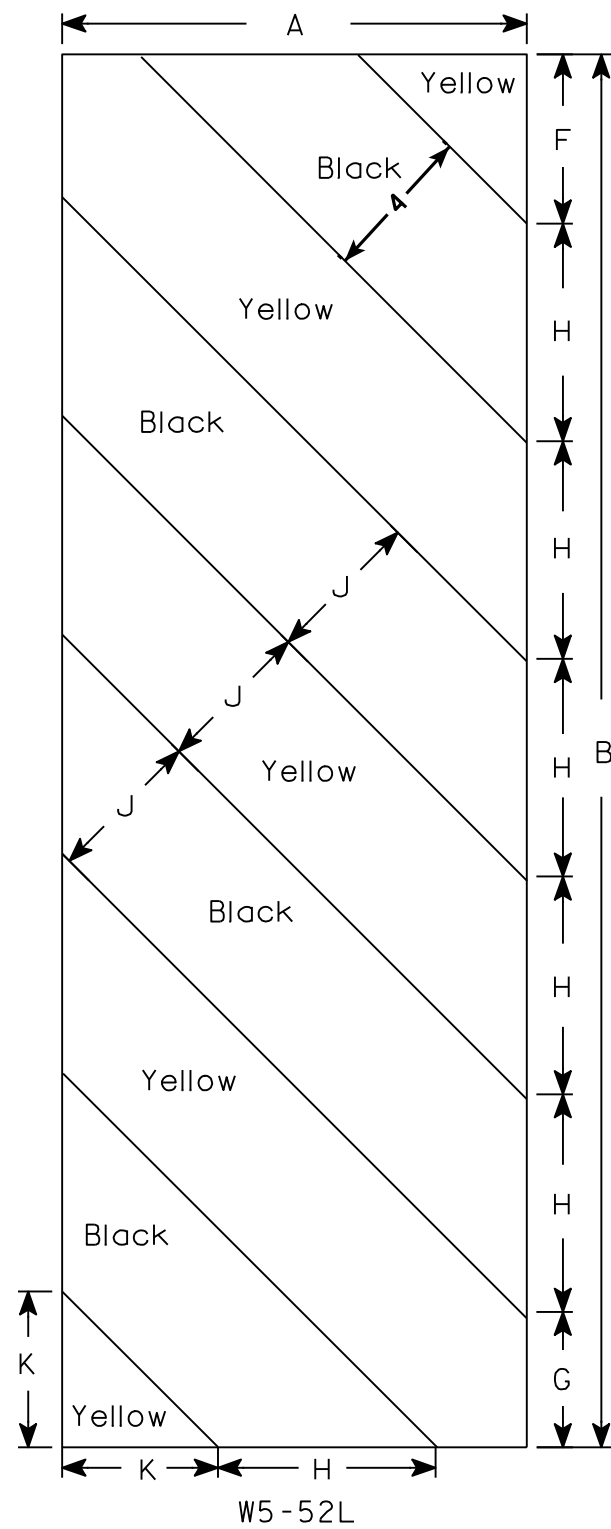
GENERAL NOTES

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

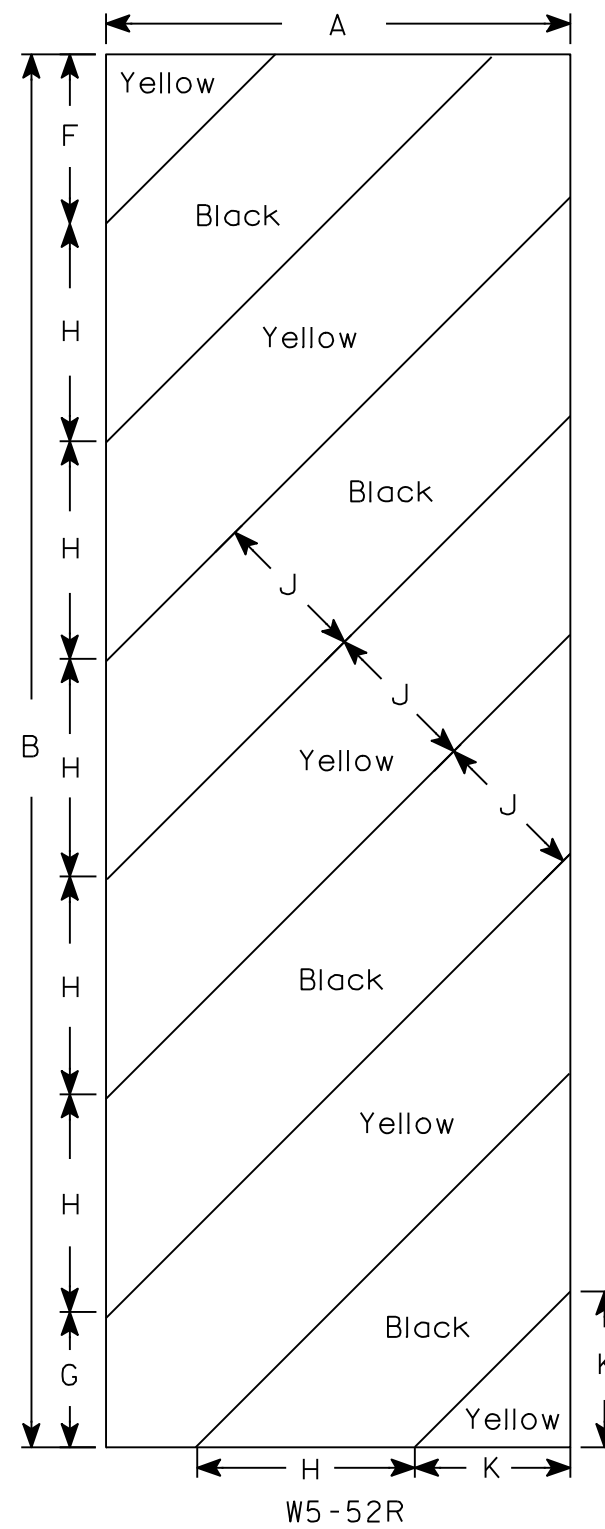
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4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>



W5-52L



W5-52R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

7

7

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

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

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

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 10 3/4 x 0.25-INCH DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 125* TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 85' LONG AT THE SOUTH ABUTMENT AND 75' LONG AT THE NORTH ABUTMENT. PILE POINTS REQUIRED.

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

DESIGN DATA

DESIGN LOADING HL-93
 INVENTORY RATING FACTOR 1.11
 OPERATING RATING FACTOR 1.57
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) 250 KIPS
 STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES

CONCRETE MASONRY, SUPERSTRUCTURE f'c = 4,000 PSI
 ALL OTHER f'c = 3,500 PSI
 HIGH STRENGTH BAR STEEL REINFORCEMENT f_y = 60,000 PSI
 36W PRESTRESSED GIRDERS, CONCRETE MASONRY f'c = 8,000 PSI
 STRANDS-0.6" DIA. ULTIMATE TENSILE STRENGTH f_u = 270,000 PSI

LEGEND

- [1-01] LIMITS OF RIPRAP HEAVY AND GEOTEXTILE TYPE HR
- (X) INDICATES WING NUMBER
- [Hatched Box] AREA TO EXCAVATE INCLUDED IN "EXCAVATION FOR STRUCTURES BRIDGES B-61-255"

STATE PROJECT NUMBER

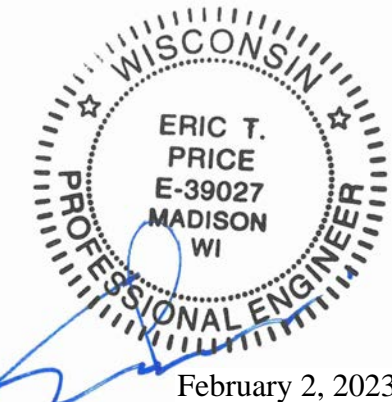
7146-00-74

TRAFFIC DATA

ADT (2023) = 700
 ADT (2043) = 755
 DESIGN SPEED = 55 MPH

LIST OF DRAWINGS

1. GENERAL PLAN & QUANTITIES
2. CROSS SECTION & QUANTITIES
3. MISCELLANEOUS DETAILS
4. SUBSURFACE EXPLORATION
5. SOUTH ABUTMENT
6. SOUTH ABUTMENT DETAILS-1
7. SOUTH ABUTMENT DETAILS-2
8. NORTH ABUTMENT
9. NORTH ABUTMENT DETAILS-1
10. NORTH ABUTMENT DETAILS-2
11. 36W-INCH PRESTRESSED GIRDER DETAILS-1
12. 36W-INCH PRESTRESSED GIRDER DETAILS-2
13. INTERMEDIATE STEEL DIAPHRAGMS
14. SUPERSTRUCTURE
15. SUPERSTRUCTURE DETAILS
16. TUBULAR STEEL RAILING TYPE 'M'

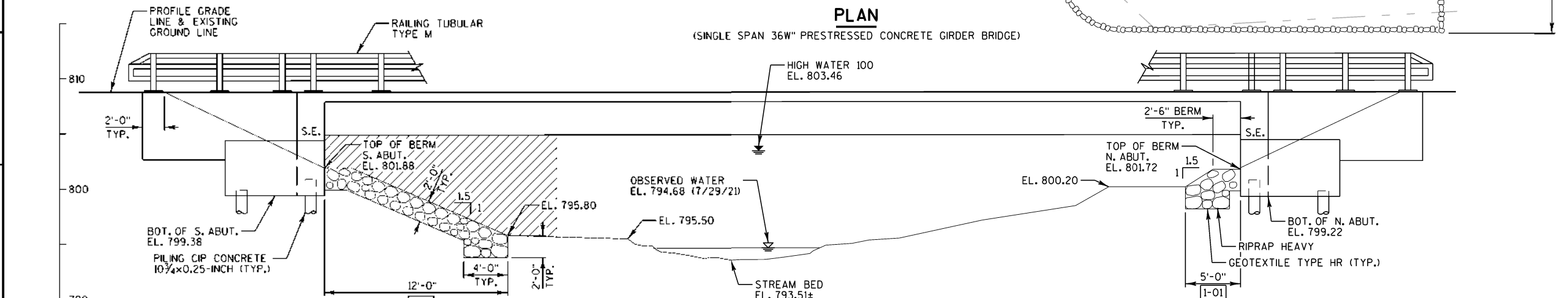
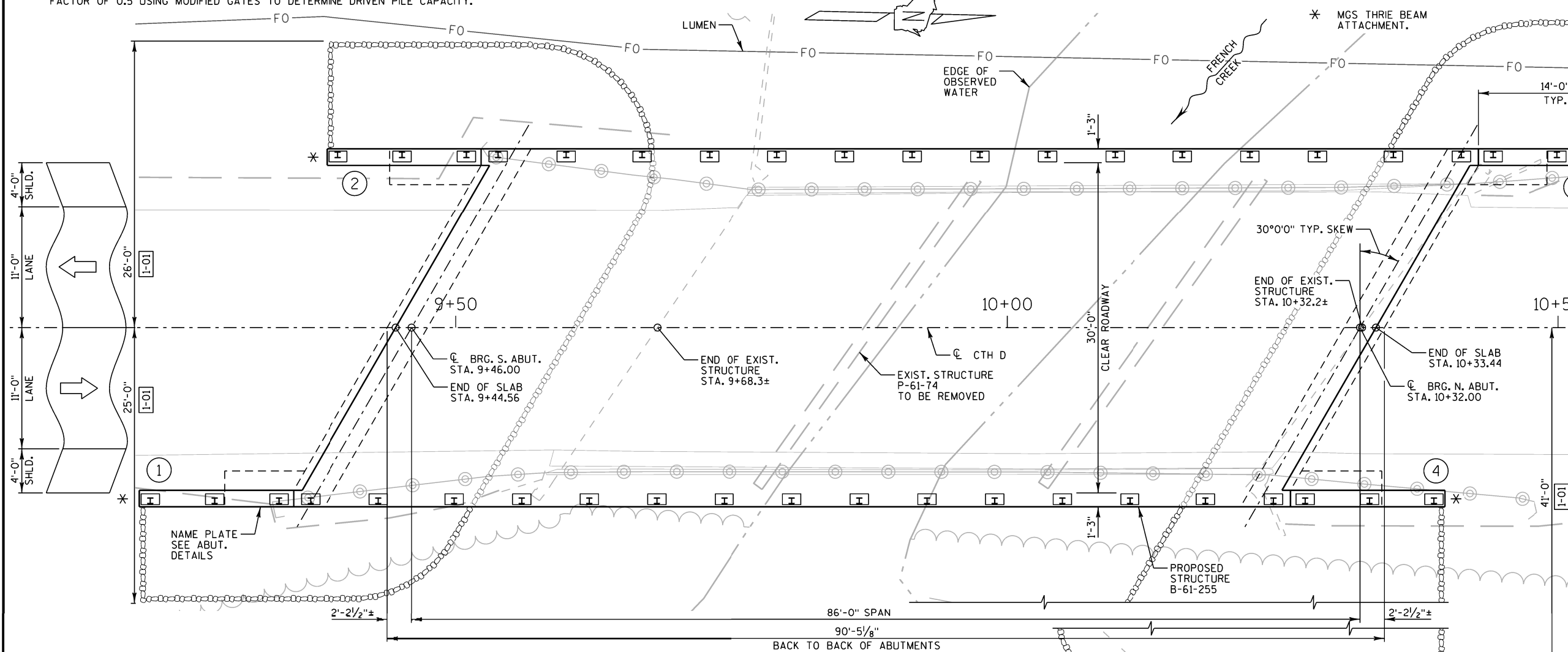


February 2, 2023

HYDRAULIC DATA:

100 YEAR FREQUENCY
 Q₁₀₀ 2,800 C.F.S.
 VEL. 6.5 F.P.S.
 HW₁₀₀ EL. 803.46
 WATERWAY AREA 429 SQ. FT.
 DRAINAGE AREA 9.6 SQ. MI.
 SCOUR CRITICAL CODE 5
 OVERTOPPING FREQUENCY N/A

2 YEAR FREQUENCY
 Q₂ 540 C.F.S.
 VEL. 4.6 F.P.S.
 HW₂ EL. 798.15



BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEVATION
951	10+23.93, 13.07 RT	MAG NAIL	808.97

ELEVATION
 LOOKING WEST AT DOWNSTREAM EDGE OF BRIDGE

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

CONSULTANT CONTACT
 ERIC PRICE, P.E.
 TELEPHONE: (608) 826-6146

NO.	DATE	REVISION	BY
CORRE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	SDR 02/03/23		DATE
STRUCTURE B-61-255			
CTH D OVER BIG FRENCH CREEK			
COUNTY	TREMPEALEAU	TOWN/GRASSY	ETTRICK
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS		
DESIGNED BY	DESIGNER	DRAWN BY	PLANS CHECKED BY
GENERAL PLAN			SHEET 1 OF 16

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M153 TYPE I, II OR III OR AASHTO DESIGNATION M213.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS, OR AS DIRECTED BY THE ENGINEER.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-61-255" SHALL BE THE EXISTING GROUNDLINE.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAILS SHEET.

THE EXISTING STRUCTURE P-61-74 TO BE REMOVED, IS A THREE-SPAN TIMBER DECK GIRDER BRIDGE, 66.0 FT. LONG WITH A 24.8 FT. CLEAR ROADWAY WIDTH.

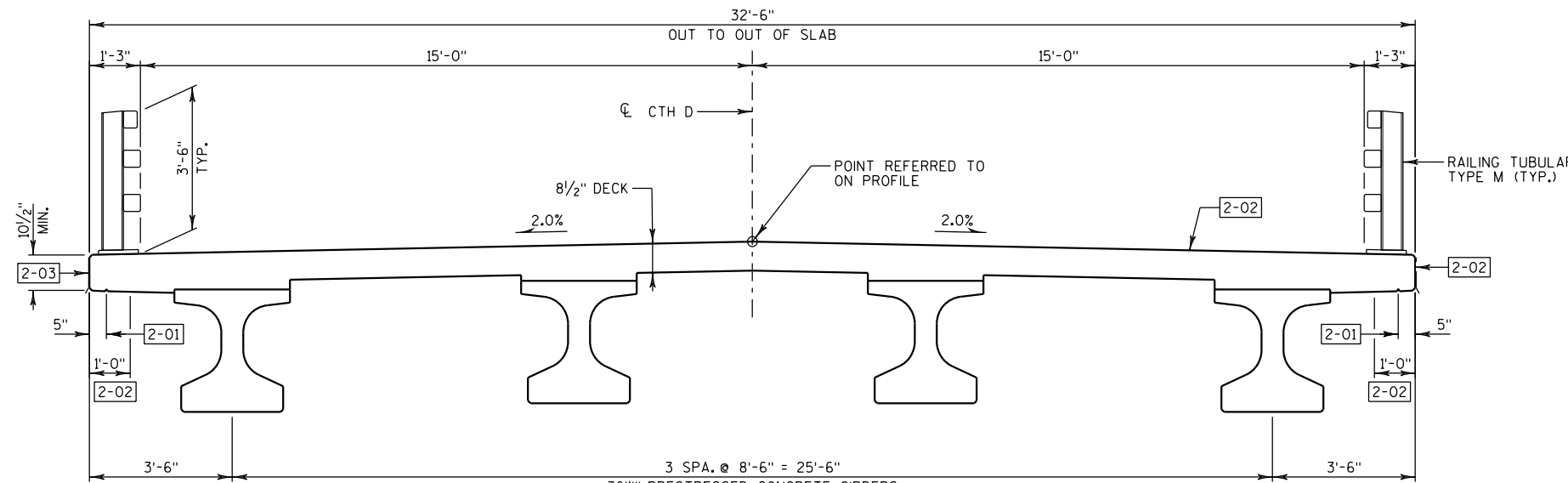
ELASTOMERIC BEARING PADS NON-LAMINATED NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED TO THE TOP OF DECK AND WINGS, THE DECK EDGE AND UNDERSIDE OF DECK AS SHOWN, THE EXTERIOR EXPOSED FACE OF WINGS, AND THE END 1'-0" OF THE ABUTMENT FRONT FACES.

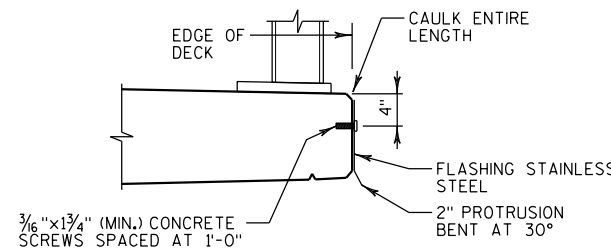
LEGEND

- [2-01] 3/4" V-GROOVE. TERMINATE 6" FROM FRONT FACE OF ABUTMENTS.
- [2-02] COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE WISDOT STANDARD SPECIFICATION.
- [2-03] THE BID ITEM "FLASHING STAINLESS STEEL" SHALL INCLUDE PROVIDING AND INSTALLING THE STAINLESS FLASHING, SILICONE CAULK AND 3/16" CONCRETE SCREWS.

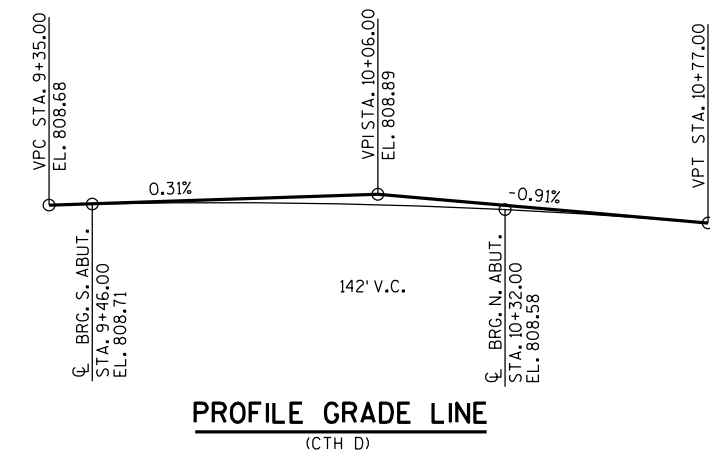
FLASHING TO BE INSTALLED AFTER PROTECTIVE SURFACE TREATMENT APPLICATION.
 CONCRETE SCREWS SHALL BE 410 STAINLESS STEEL.
 EXTEND FLASHING TO B.F. OF ABUTMENT DIAPHRAGM.
 TOP OF FLASHING TO BEGIN APPROX. 1-INCH BELOW TOP OF DECK/SLAB SURFACE.
 THE FLASHING IS TO BE A CONSTANT HEIGHT BASED ON THE THINNEST SLAB DEPTH OVER THE BRIDGE LENGTH.
 PROVIDE 2" MINIMUM FLASHING OVERLAP. FASTEN WITH 3/16"x2" (MIN.) CONCRETE SCREWS.
 CAULK SHALL BE NON-STAINING, GRAY NON-BITUMINOUS JOINT SEALER.



CROSS SECTION THRU BRIDGE
(LOOKING NORTH)



FLASHING STAINLESS STEEL [2-03]



PROFILE GRADE LINE
(CTH D)

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEM	UNIT	SOUTH ABUTMENT	NORTH ABUTMENT	SUPER.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-61-74	EACH	--	--	--	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-61-255	EACH	--	--	--	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	190	190	--	380
502.0100	CONCRETE MASONRY BRIDGES	CY	38.9	39.0	113.3	192
502.3200	PROTECTIVE SURFACE TREATMENT	SY	17	17	356	390
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	--	--	348	348
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,600	2,600	--	5,200
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,680	1,680	19,410	22,770
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	4	4	--	8
506.4000	STEEL DIAPHRAGMS B-61-255	EACH	--	--	6	6
513.4061	RAILING TUBULAR TYPE M	LF	--	--	242	242
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	10	--	20
550.0500	PILE POINTS	EACH	11	11	--	22
550.2104	PIILING CIP CONCRETE 10 3/4 X 0.25-INCH	LF	935	825	--	1,760
606.0300	RIPRAP HEAVY	CY	95	110	--	205
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	90	90	--	180
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	42	42	--	84
645.0120	GEOTEXTILE TYPE HR	SY	165	185	--	350
SPV.0090.01	FLASHING STAINLESS STEEL	LF	--	--	178	178
SPV.0090.02	REMOVING EXISTING TIMBER PILING	LF	--	200	--	200
NON-BID ITEMS						
FILLER	SIZE	--	--	--	--	1/2" & 3/4"
NAME PLATE	EACH	--	--	--	--	1

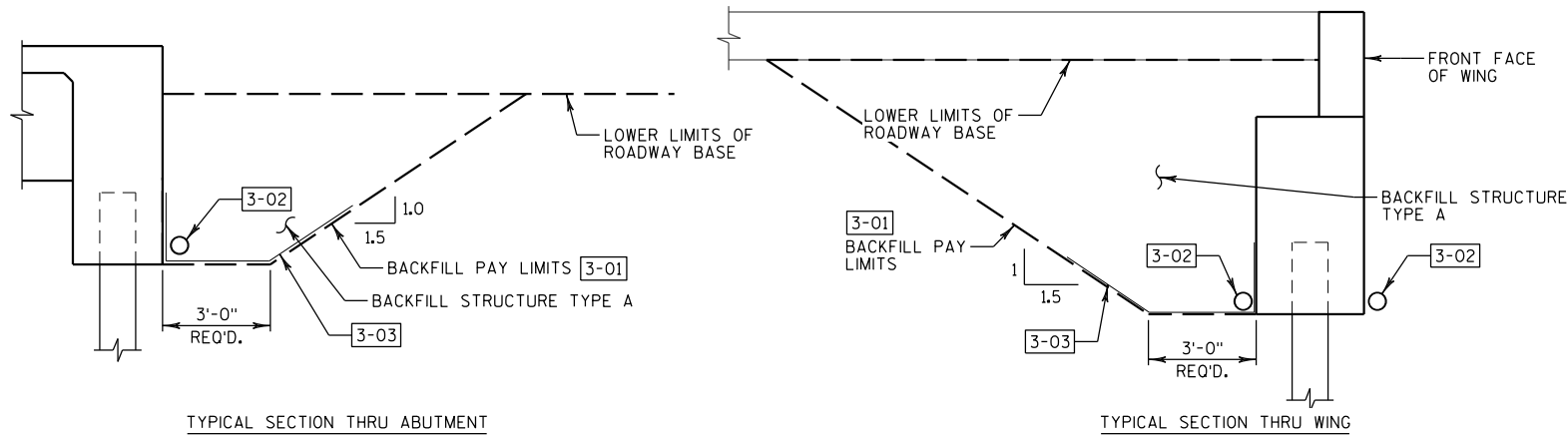
ABBREVIATIONS:

- ABUT. - ABUTMENT
- BTWN. - BETWEEN
- B.F. - BACK FACE
- BOT. - BOTTOM
- BRG. - BEARING
- CL. - CLEAR
- CONST. - CONSTRUCTION
- DIA. - DIAMETER
- E.F. - EACH FACE
- EXIST. - EXISTING
- F.F. - FRONT FACE
- HORIZ. - HORIZONTAL
- JT. - JOINT
- LONG. - LONGITUDINAL
- PPT. - PARAPET
- PROJ. - PROJECTION
- S.E. - SEMI-EXPANSION
- SPA. - SPACED
- STD. - STANDARD
- SYMM. - SYMMETRICAL
- T&B - TOP AND BOTTOM
- TRANS. - TRANSVERSE
- TYP. - TYPICAL
- VERT. - VERTICAL
- U.N.O. - UNLESS NOTED OTHERWISE

NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
CROSS SECTION & QUANTITIES			SHEET 2 OF 16

LEGEND

- 3-01 BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO "EXCAVATION FOR STRUCTURES BRIDGES B-61-255". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- 3-02 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.
- 3-03 EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. "GEOTEXTILE TYPE DF SCHEDULE A" SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF EXCAVATION LIMITS.

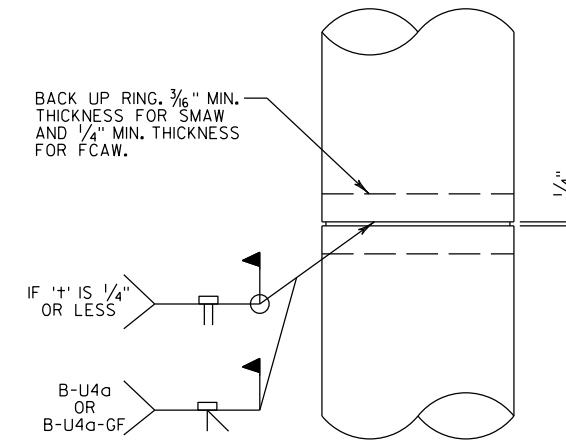


TYPICAL SECTION THRU ABUTMENT

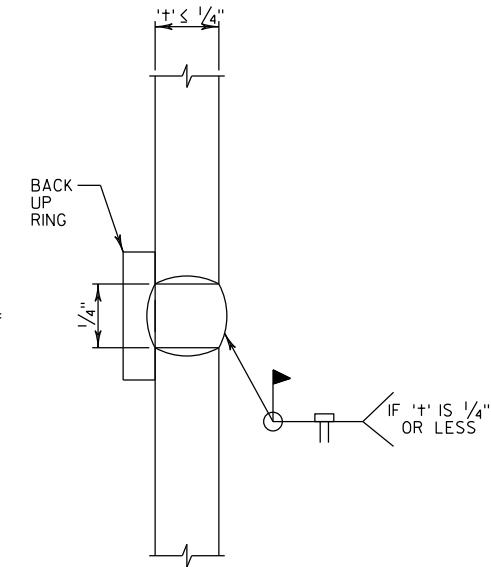
TYPICAL SECTION THRU WING

STRUCTURE BACKFILL LIMITS

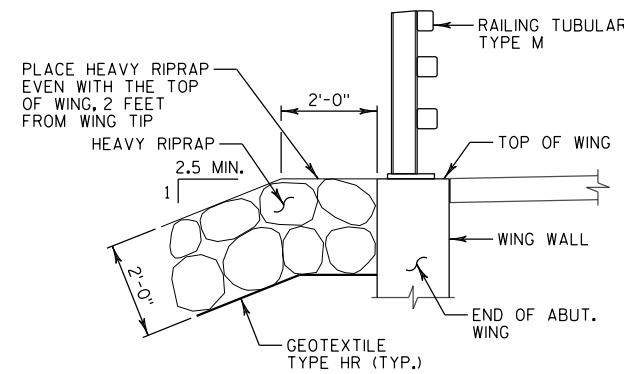
THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION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



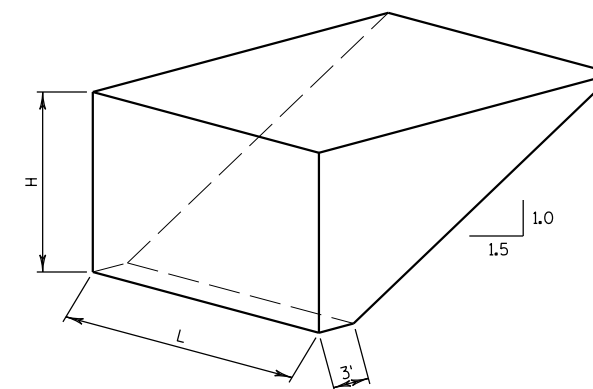
CAST-IN-PLACE 'PIPE PILE'



CIP PILE WELD DETAIL

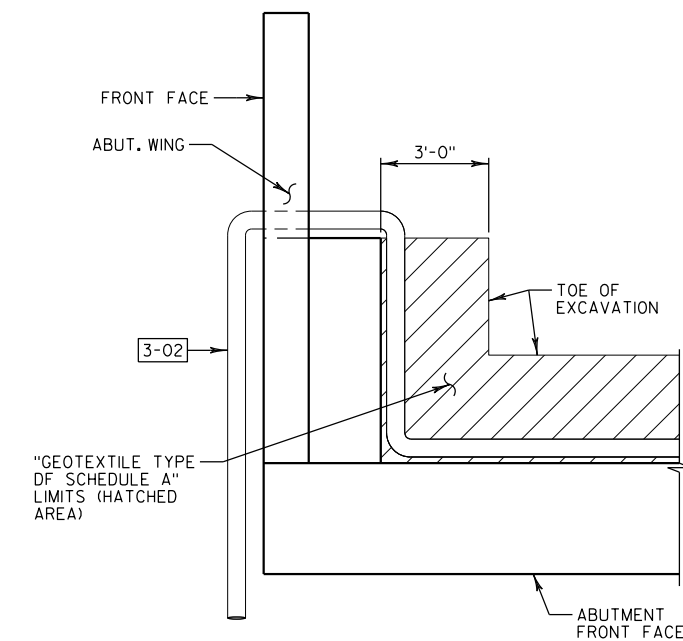


TYPICAL FILL SECTION AT WING TIPS

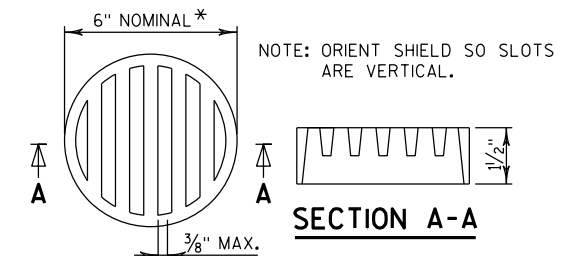


ABUTMENT BACKFILL PAY LIMIT DIAGRAM

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



ABUTMENT PLAN WITH WING



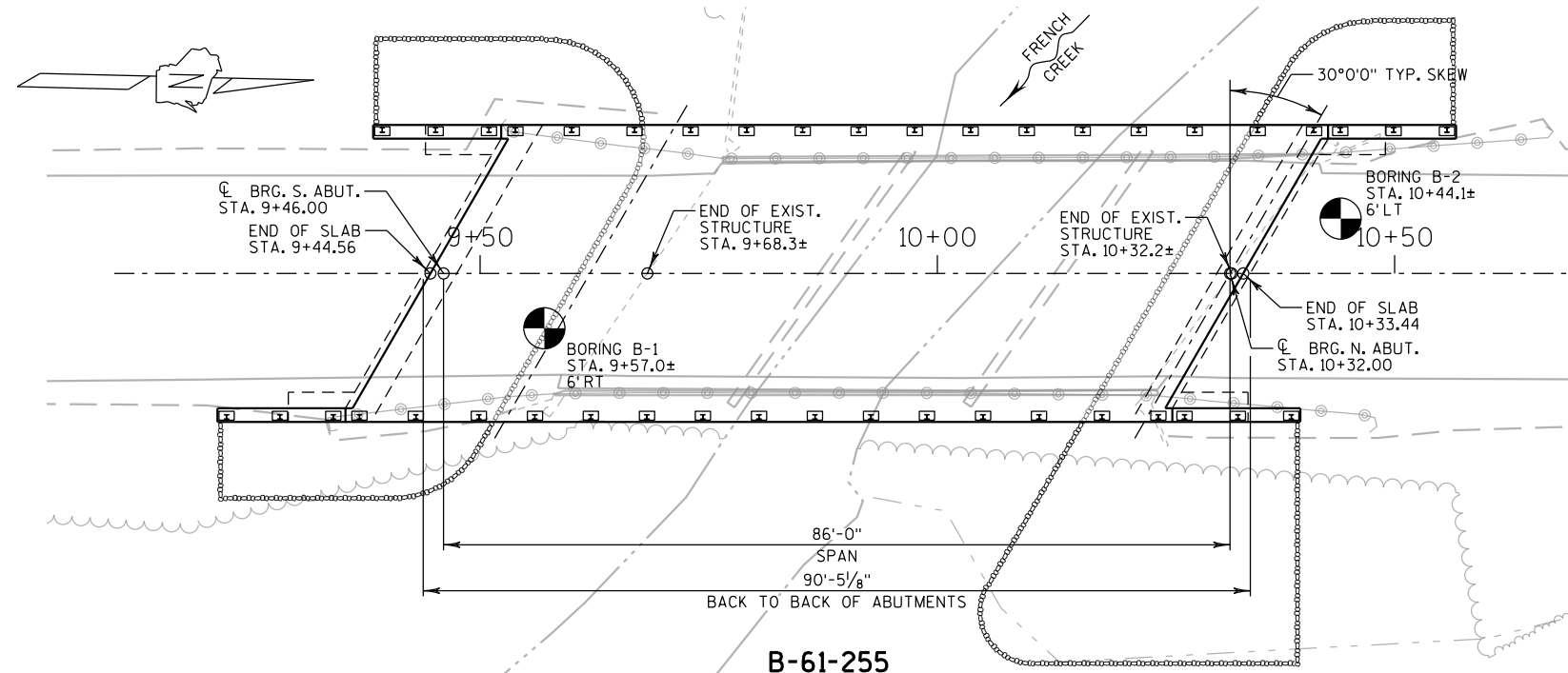
* DIMENSION IS APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

RODENT SHIELD DETAIL

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

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

NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
MISCELLANEOUS DETAILS			SHEET 3 OF 16



GEOTECHNICAL REPORT & SOIL BORINGS PERFORMED BY: CHOSEN VALLEY TESTING, INC. GEOTECHNICAL ENGINEERING AND TESTING 1019 SECOND AVE. SW ONALASKA, WI 54650 (608)-782-5505

BORING B-1 PERFORMED ON 8/9/21
BORING B-2 PERFORMED ON 8/9/21

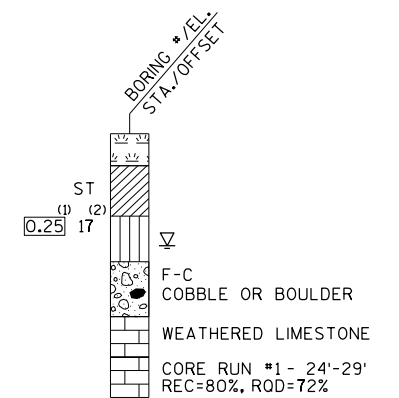
STATE PROJECT NUMBER

7146-00-74

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

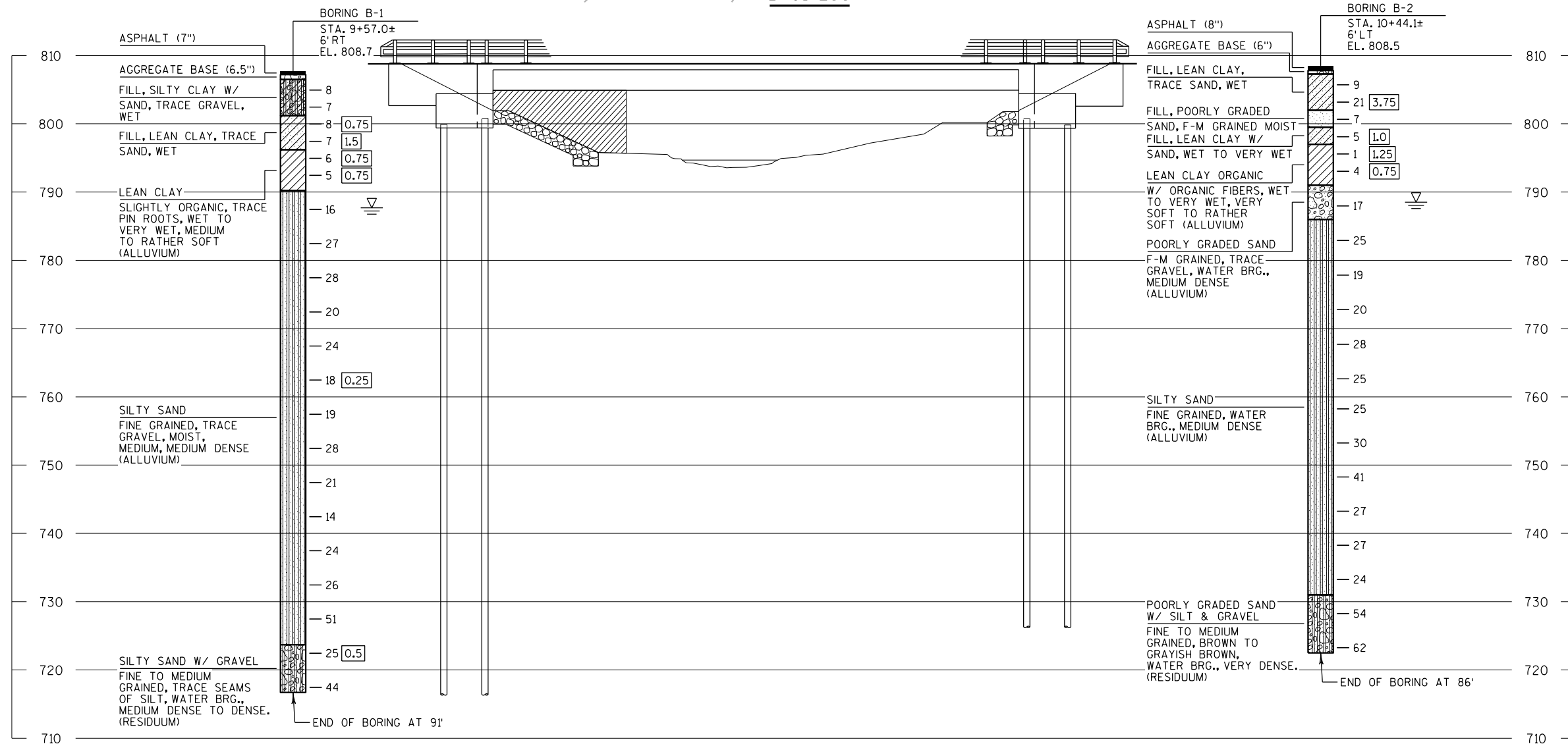
- ▽ AT TIME OF DRILLING
- ▽ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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



8

8

NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
SUBSURFACE EXPLORATION			SHEET 4 OF 16

PILE NOTE

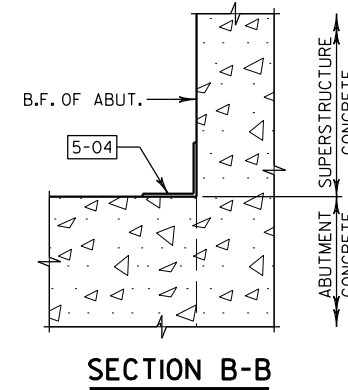
SOUTH ABUTMENT TO BE SUPPORTED ON PILING CIP CONCRETE 10 3/4 x 0.25-INCH DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 125* TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA, ESTIMATED 85' LONG. PILE POINTS REQUIRED.

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

LEGEND

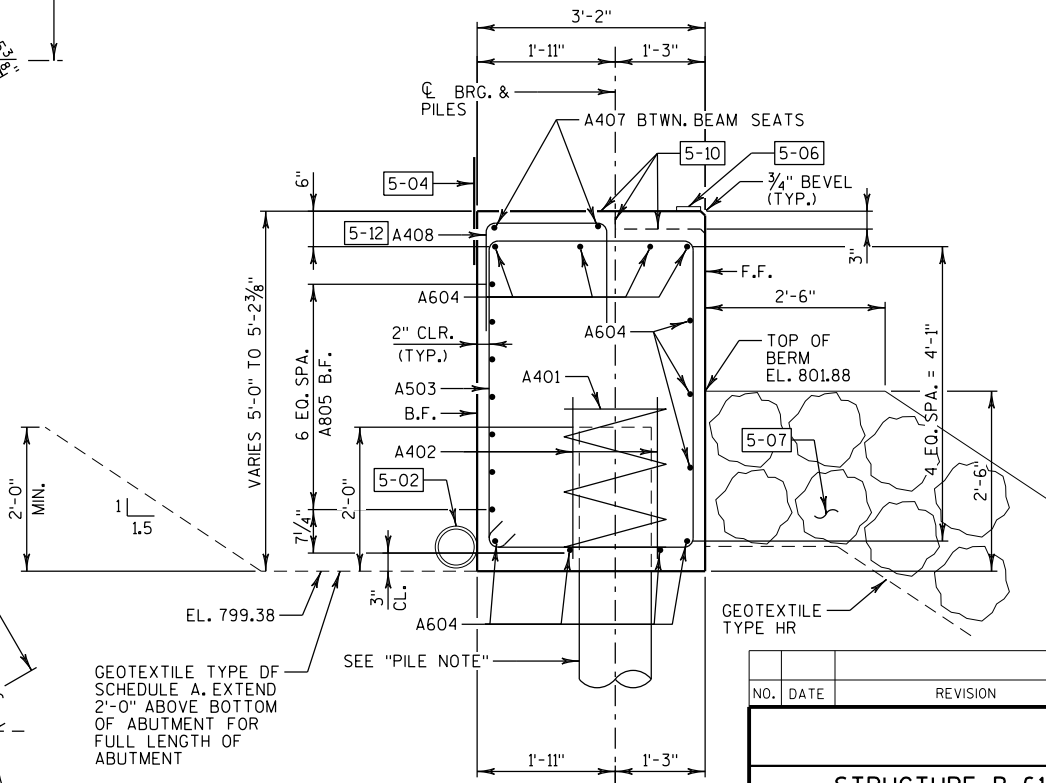
- [5-01] ELEVATION GIVEN AT BACK FACE OF WING.
- [5-02] PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH."
- [5-03] 1/2" FILLER (INCLUDED IN WING LENGTH); 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.)
- [5-04] 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- [5-05] 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- [5-06] 1/2"x4" PREFORMED JOINT FILLER TO EXTEND BETWEEN EDGES OF DIAPHRAGM (TYP.)
- [5-07] HEAVY RIPRAP. SEE SHEET 1 FOR ADDITIONAL DETAILS.
- [5-08] SEE BEARING PAD DETAIL ON SUPERSTRUCTURE DETAILS SHEET.
- [5-09] SLOPE 2% TO DRAIN.
- [5-10] STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03"
- [5-11] ELEVATION SHOWN AT TOP OF CONCRETE AT THE C OF BRG.
- [5-12] PULL UP TO 2" CLEAR.
- [5-13] OPTIONAL CONST. JOINT FORMED BY BEVELED 2"x6" KEYWAY WITH MEMBRANE ON BACKFACE.
- [5-14] 3/4" "V" GROOVE ON FRONT FACE OF WINGWALL.
- (X) INDICATES WING NUMBER.
- [GX] INDICATES GIRDER NUMBER.

ELEVATION
(LOOKING SOUTH)



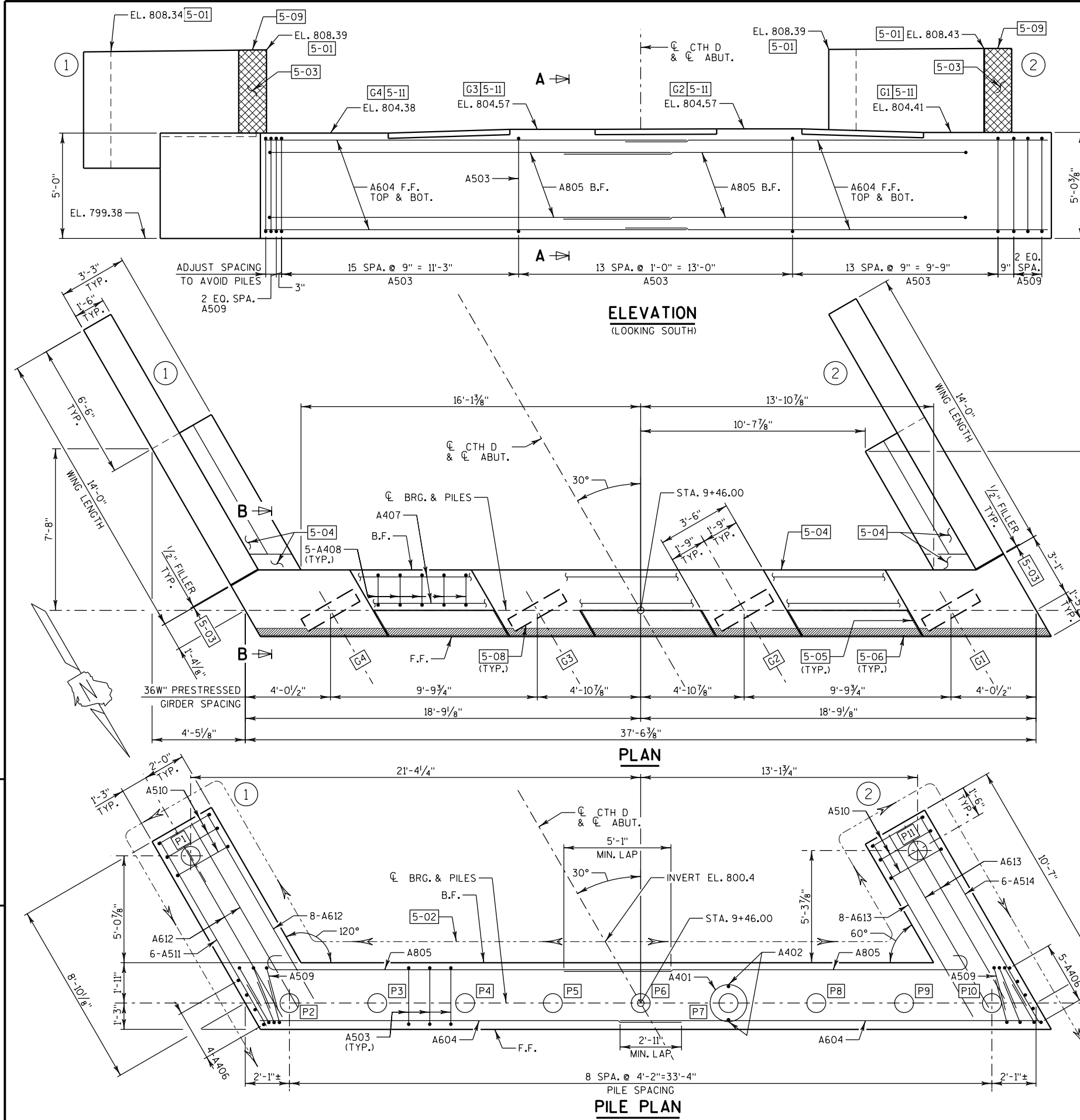
PLAN

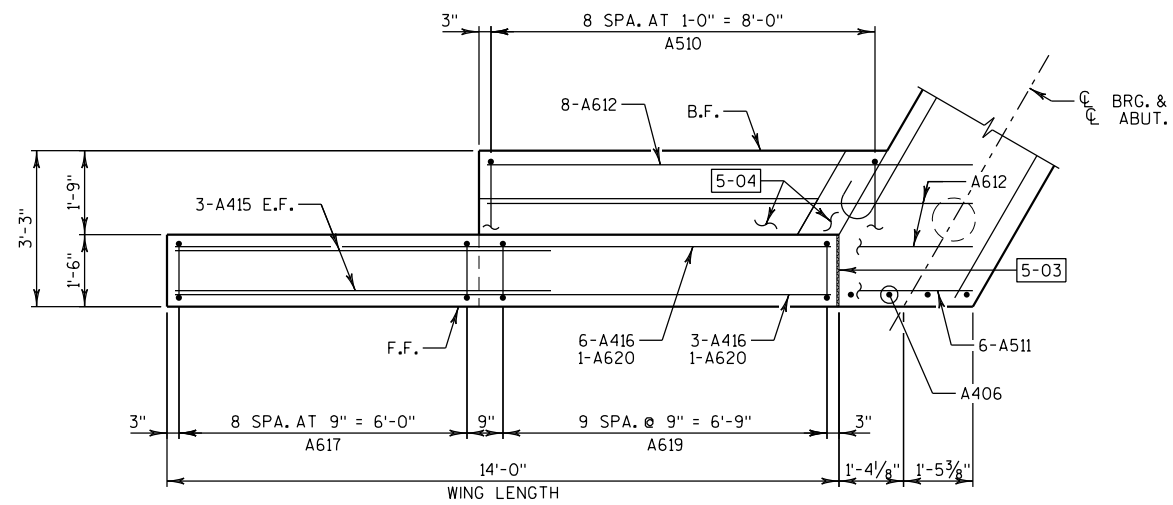
PILE PLAN



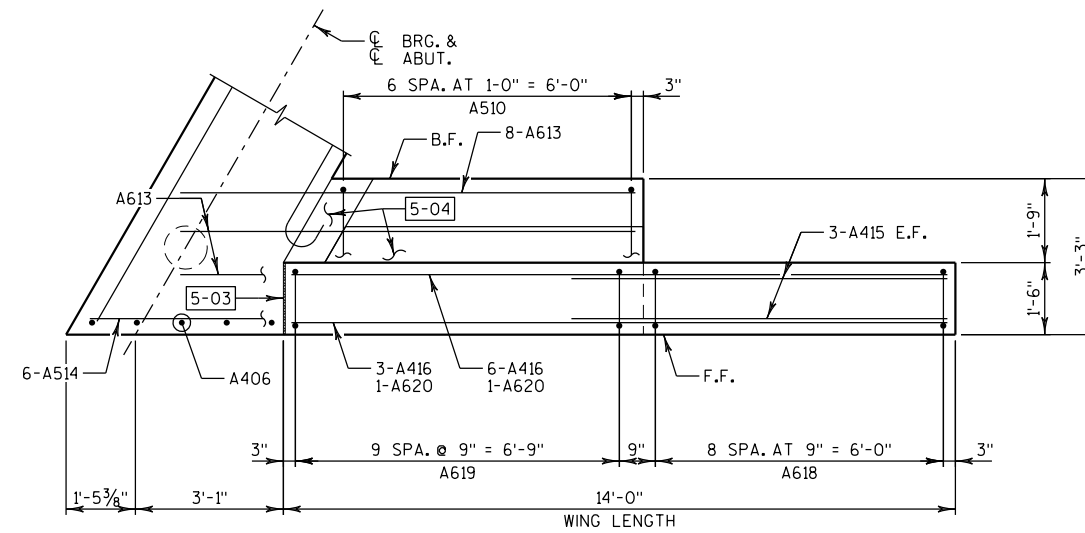
SECTION A-A

NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
SOUTH ABUTMENT			SHEET 5 OF 16

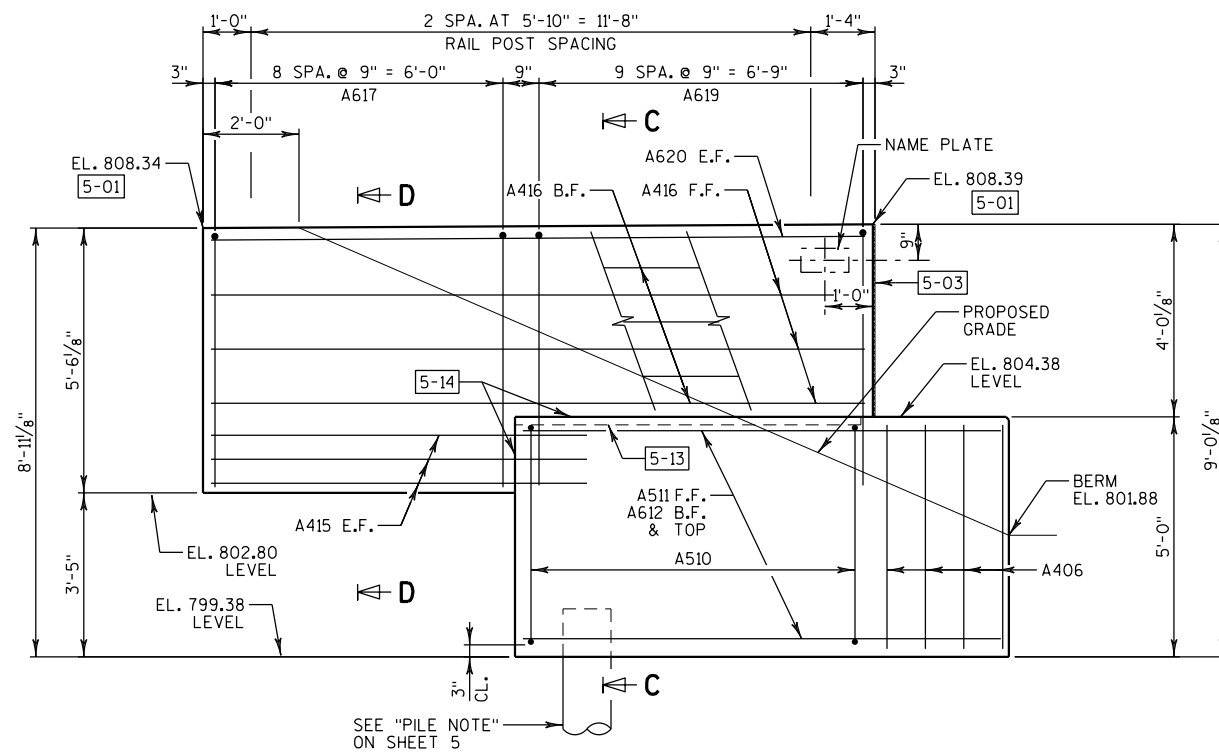




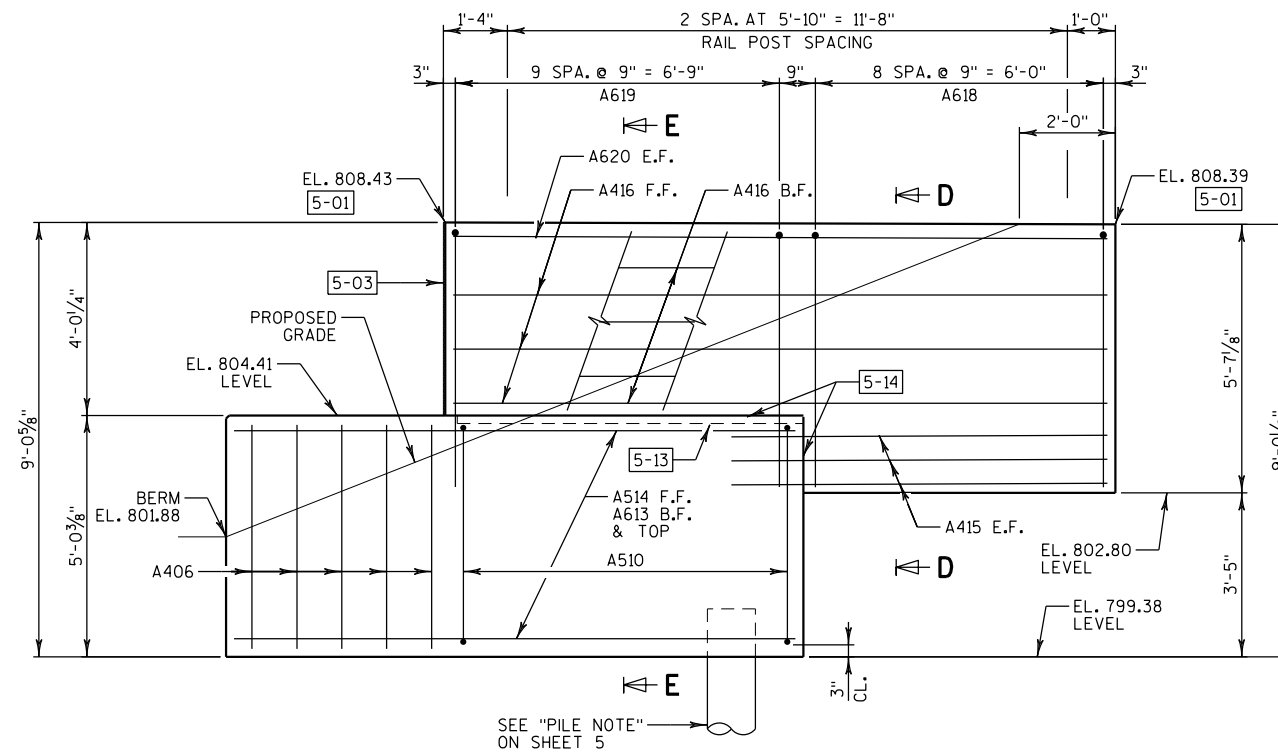
PLAN-WING 1



PLAN-WING 2



ELEVATION-WING 1



ELEVATION-WING 2

LEGEND

[5-XX] FOR SYMBOL DESCRIPTIONS SEE SHEET 5.

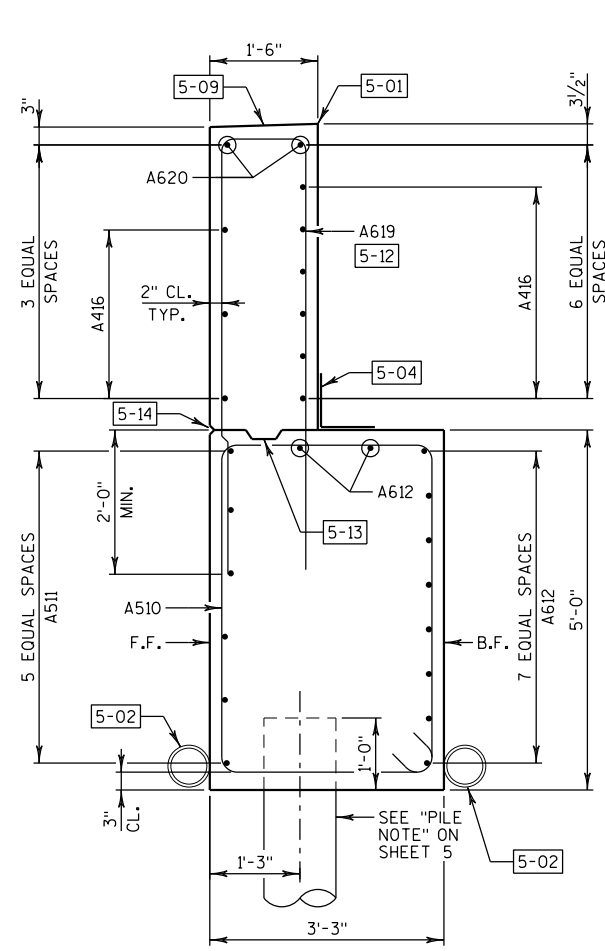
NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
SOUTH ABUTMENT DETAILS-1			SHEET 6 OF 16

BILL OF BARS - SOUTH ABUTMENT

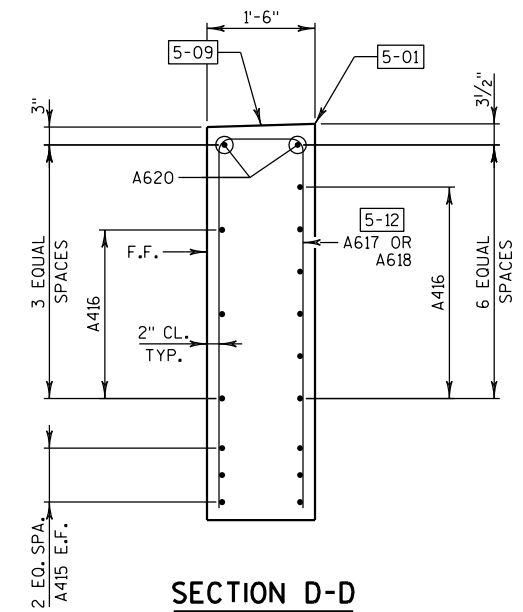
DIMENSIONS IN BENDING DETAILS ARE OUT-TO-OUT OF BAR.

BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS					TOTAL WEIGHT = 2,600 LBS
A401	11	28'-0"	X		BODY - AT PILES - 1 PER PILE VERT.
A402	22	2'-3"			BODY - AT PILES - 2 PER PILE VERT.
A503	42	15'-0"	X		BODY - STIRRUPS VERT.
A604	22	20'-1"			BODY - F.F., TOP & BTM HORIZ.
A805	14	22'-0"	X		BODY - B.F. HORIZ.
A406	9	4'-7"			BODY - ABUTMENT ENDS VERT.
A407	6	7'-10"			BODY - BTWN BEAM SEATS HORIZ.
A408	15	4'-5"	X		BODY - BTWN BEAM SEATS VERT.
A509	12	9'-6"	X		BODY - ABUTMENT ENDS VERT.
COATED BARS					TOTAL WEIGHT = 1,680 LBS
A510	16	15'-8"	X		WINGS 1 & 2 - STIRRUPS VERT.
A511	6	9'-11"			WING 1 - F.F. HORIZ.
A612	10	10'-4"			WING 1 - TOP & B.F. HORIZ.
A613	10	9'-5"			WING 2 - TOP & B.F. HORIZ.
A514	6	11'-6"			WING 2 - F.F. HORIZ.
A415	12	7'-9"			WINGS 1 & 2 - OVERHANG HORIZ.
A416	18	13'-8"			WINGS 1 & 2 HORIZ.
A617	9	11'-0"	X		WING 1 - OVERHANG VERT.
A618	9	11'-2"	X		WING 2 - OVERHANG VERT.
A619	20	12'-6"	X		WINGS 1 & 2 - TOP VERT.
A620	4	13'-8"			WINGS 1 & 2 - TOP HORIZ.

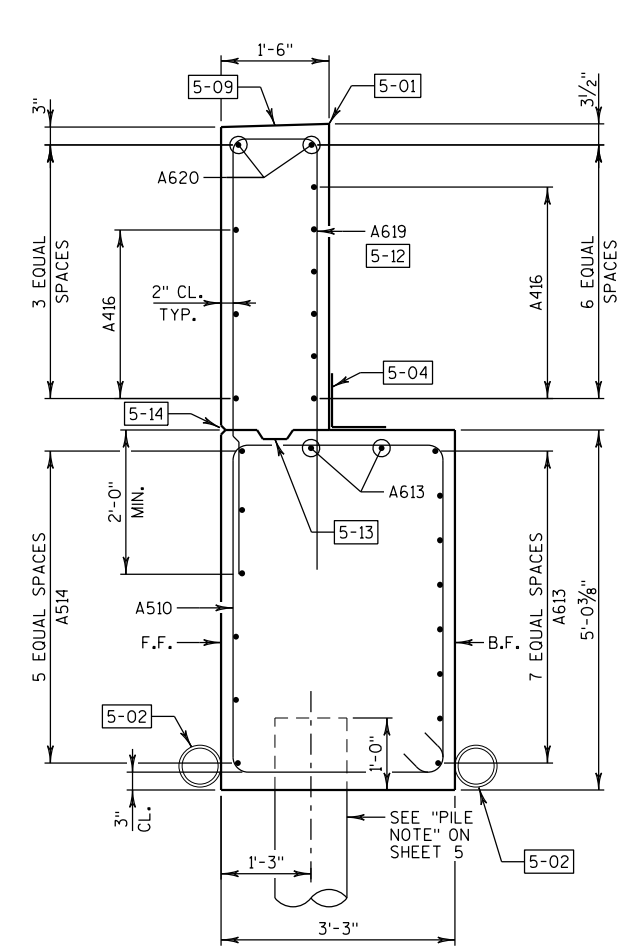
THE FIRST DIGIT OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.



SECTION C-C



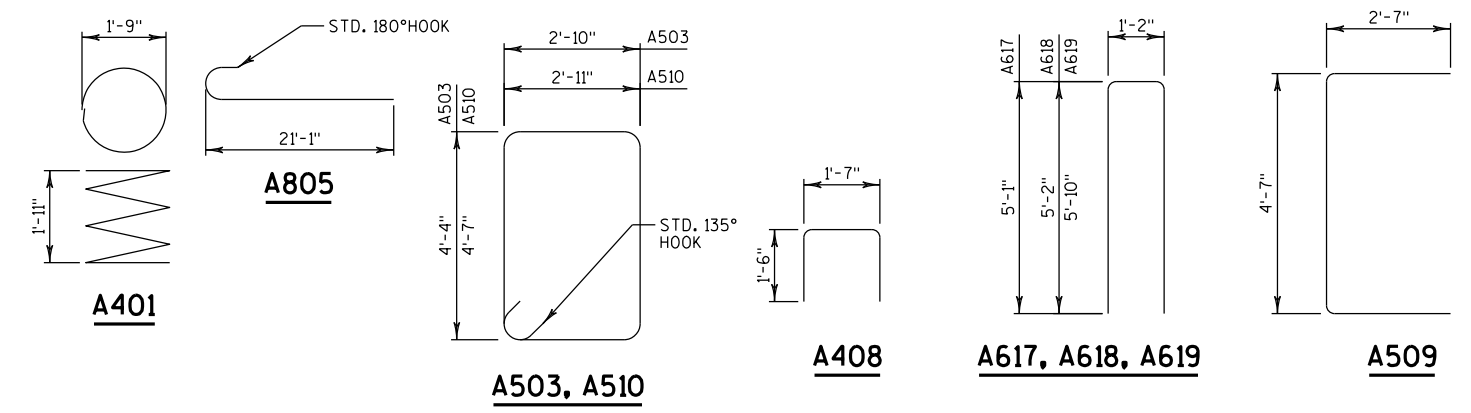
SECTION D-D



SECTION E-E

LEGEND

[5-XX] FOR SYMBOL DESCRIPTIONS SEE SHEET 5.



NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
SOUTH ABUTMENT DETAILS-2			SHEET 7 OF 16

PILE NOTE

NORTH ABUTMENT TO BE SUPPORTED ON PILING CIP CONCRETE 10 3/4"x0.25-INCH DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 125* TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 75' LONG. PILE POINTS REQUIRED.

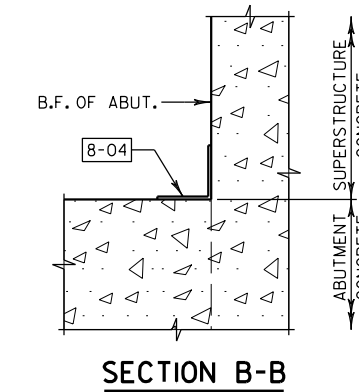
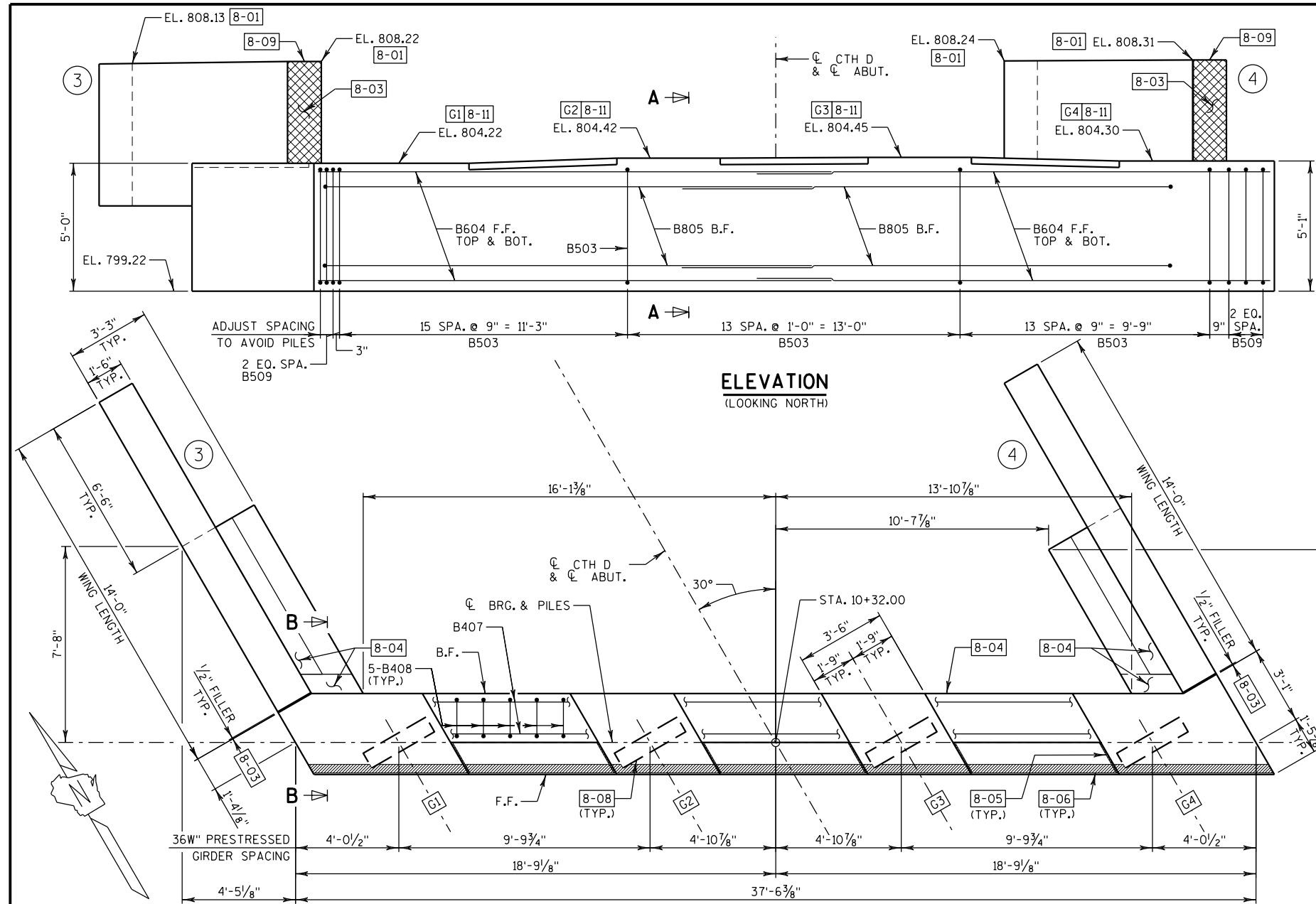
*THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

EXISTING TIMBER PILES ARE ANTICIPATED TO CONFLICT WITH NEW CONSTRUCTION. REMOVE ALL 8 PILES. ESTIMATED LENGTH = 25 FEET/PILE. PAID FOR UNDER "REMOVING EXISTING TIMBER PILING".

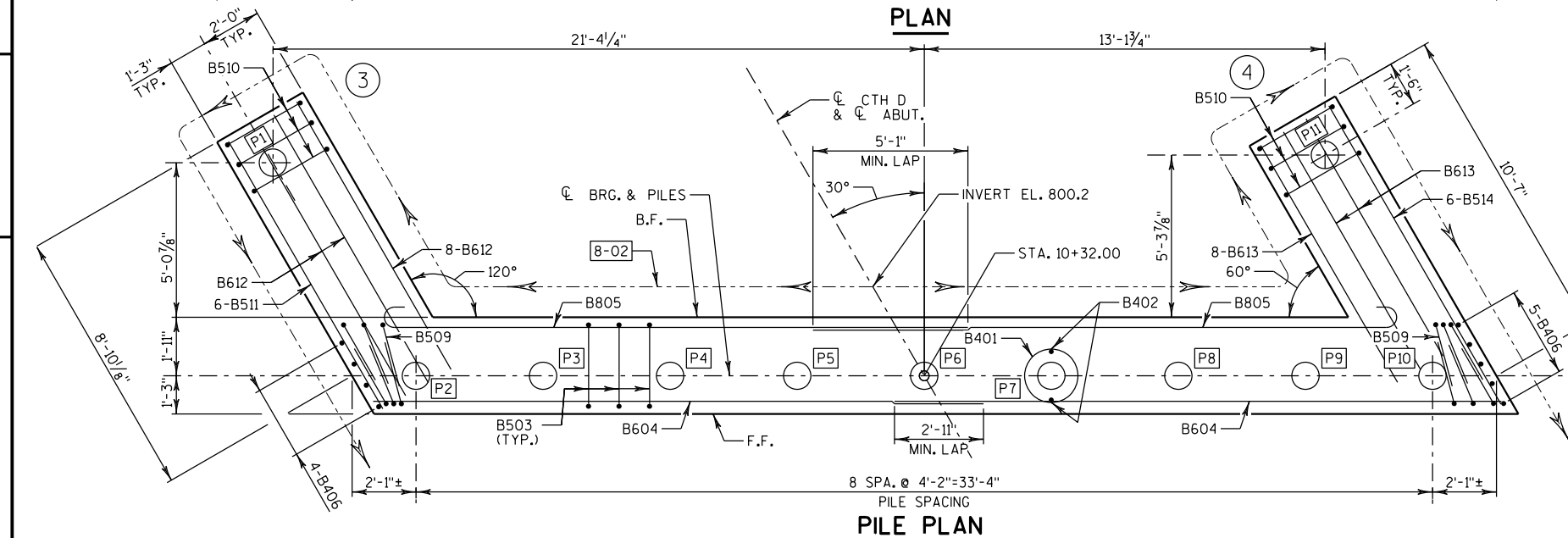
LEGEND

- 8-01 ELEVATION GIVEN AT BACK FACE OF WING.
- 8-02 PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH."
- 8-03 1/2" FILLER (INCLUDED IN WING LENGTH): 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.)
- 8-04 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- 8-05 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- 8-06 1/2"x4" PREFORMED JOINT FILLER TO EXTEND BETWEEN EDGES OF DIAPHRAGM (TYP.)
- 8-07 HEAVY RIPRAP. SEE SHEET 1 FOR ADDITIONAL DETAILS.
- 8-08 SEE BEARING PAD DETAIL ON SUPERSTRUCTURE DETAILS SHEET.
- 8-09 SLOPE 2% TO DRAIN.
- 8-10 STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03"
- 8-11 ELEVATION SHOWN AT TOP OF CONCRETE AT THE CL OF BRG.
- 8-12 PULL UP TO 2" CLEAR.
- 8-13 OPTIONAL CONST. JOINT FORMED BY BEVELED 2"x6" KEYWAY WITH MEMBRANE ON BACKFACE.
- 8-14 3/4" "V" GROOVE ON FRONT FACE OF WINGWALL.
- (X) INDICATES WING NUMBER.
- (GX) INDICATES GIRDER NUMBER.

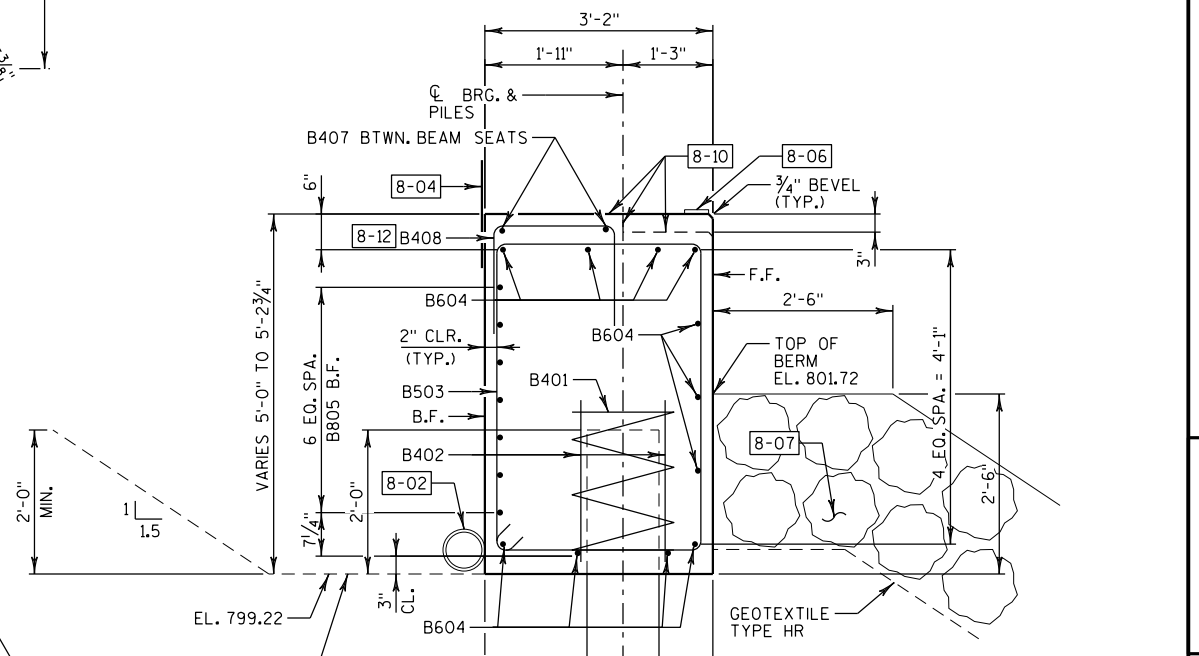
ELEVATION
(LOOKING NORTH)



PLAN

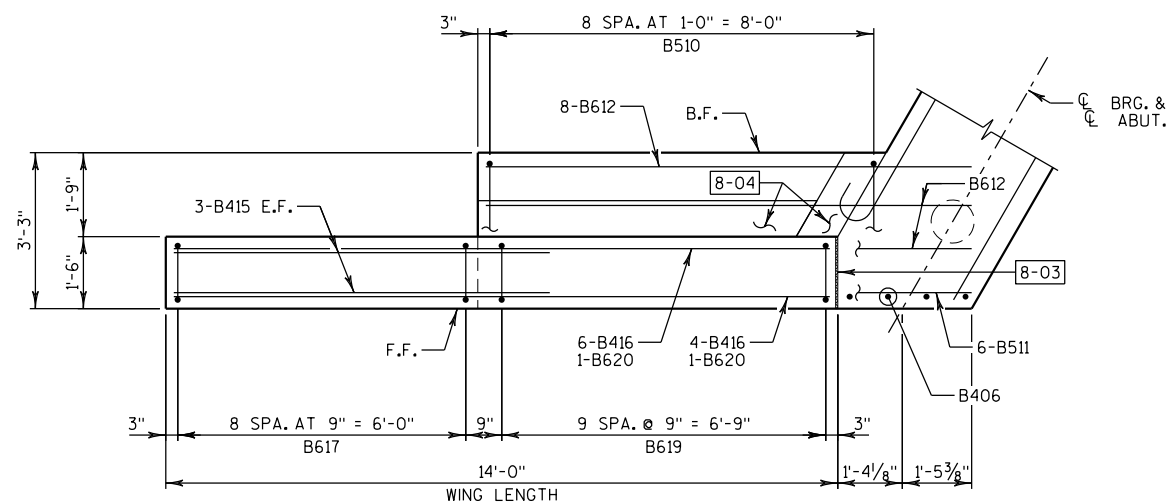


PILE PLAN

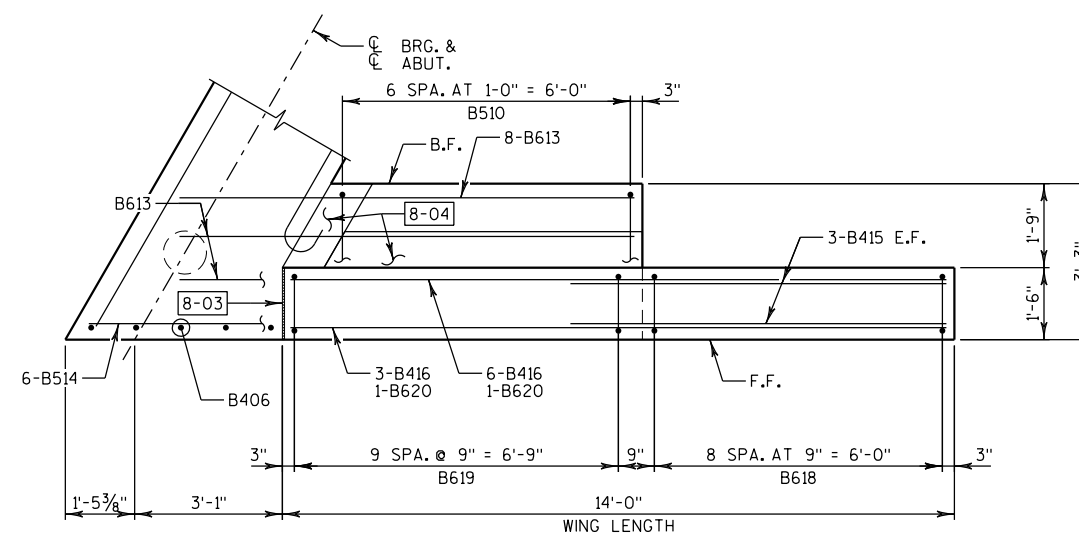


SECTION A-A

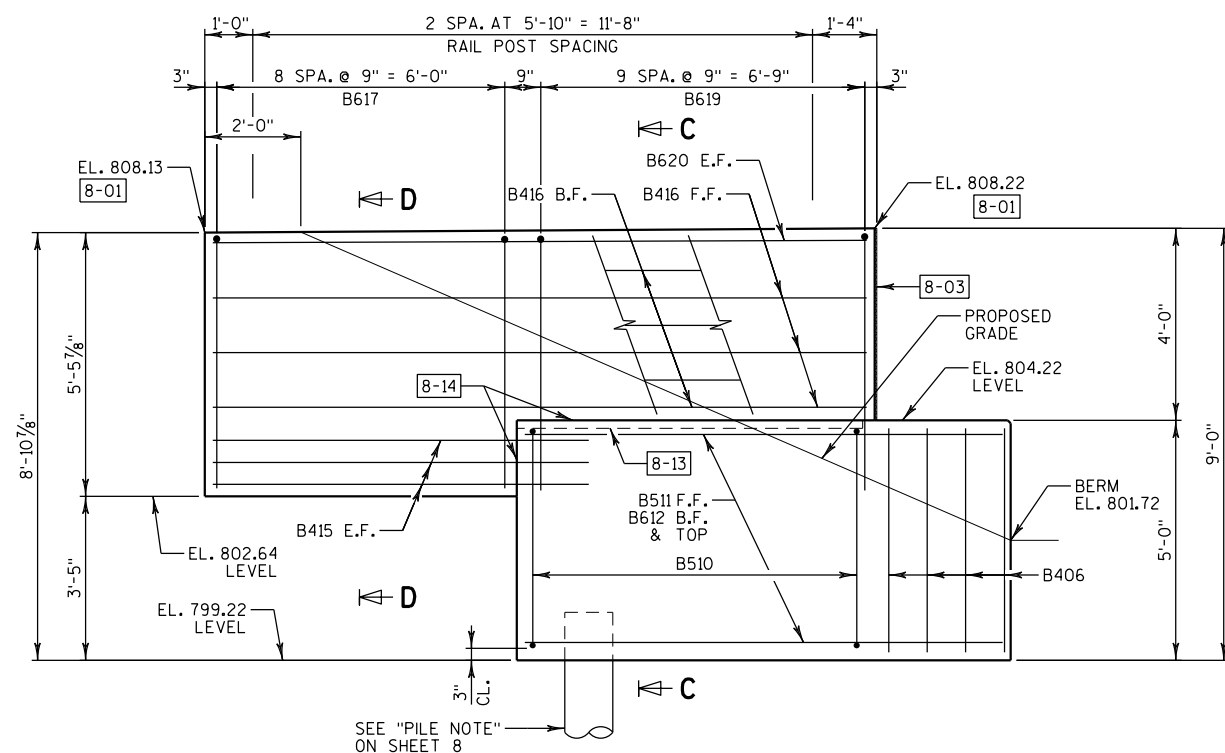
NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
NORTH ABUTMENT			SHEET 8 OF 16



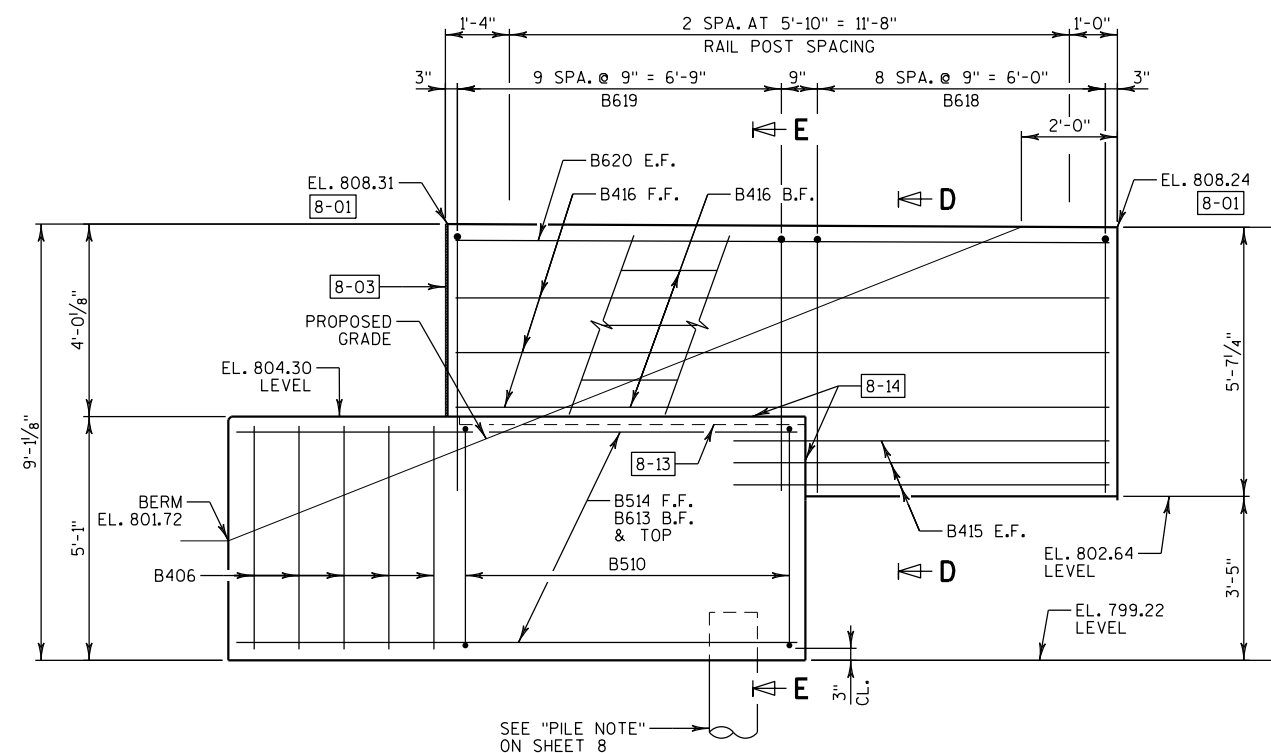
PLAN-WING 3



PLAN-WING 4



ELEVATION-WING 3



ELEVATION-WING 4

LEGEND

[8-XX] FOR SYMBOL DESCRIPTIONS SEE SHEET 8.

8

8

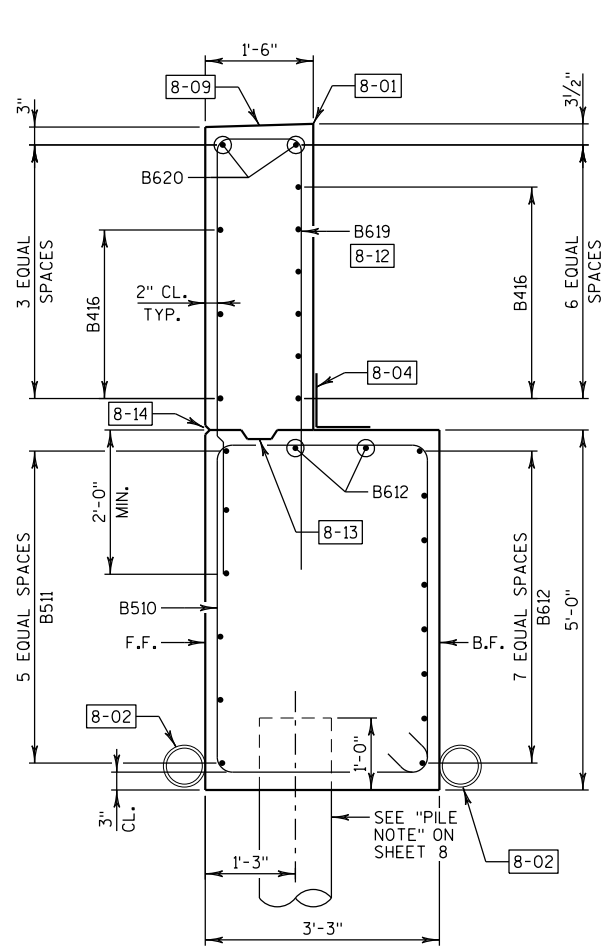
NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
NORTH ABUTMENT DETAILS-1			SHEET 9 OF 16

BILL OF BARS - NORTH ABUTMENT

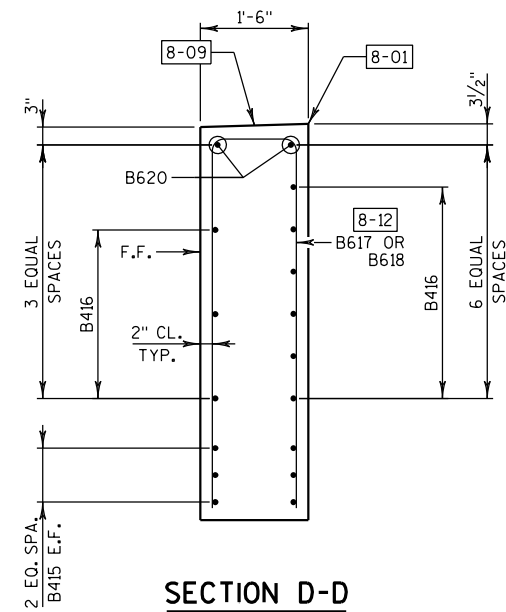
DIMENSIONS IN BENDING DETAILS ARE OUT-TO-OUT OF BAR.

BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS					TOTAL WEIGHT = 2,600 LBS
B401	11	28'-0"	X		BODY - AT PILES - 1 PER PILE VERT.
B402	22	2'-3"			BODY - AT PILES - 2 PER PILE VERT.
B503	42	15'-0"	X		BODY - STIRRUPS VERT.
B604	22	20'-1"			BODY - F.F., TOP & BTM HORIZ.
B805	14	22'-0"	X		BODY - B.F. HORIZ.
B406	9	4'-7"			BODY - ABUTMENT ENDS VERT.
B407	6	7'-10"			BODY - BTWN BEAM SEATS HORIZ.
B408	15	4'-5"	X		BODY - BTWN BEAM SEATS VERT.
B509	12	9'-6"	X		BODY - ABUTMENT ENDS VERT.
COATED BARS					TOTAL WEIGHT = 1,680 LBS
B510	16	15'-8"	X		WINGS 3 & 4 - STIRRUPS VERT.
B511	6	9'-11"			WING 3 - F.F. HORIZ.
B612	10	10'-4"			WING 3 - TOP & B.F. HORIZ.
B613	10	9'-5"			WING 4 - TOP & B.F. HORIZ.
B514	6	11'-6"			WING 4 - F.F. HORIZ.
B415	12	7'-9"			WINGS 3 & 4 - OVERHANG HORIZ.
B416	18	13'-8"			WINGS 3 & 4 HORIZ.
B617	9	11'-0"	X		WING 3 - OVERHANG VERT.
B618	9	11'-2"	X		WING 4 - OVERHANG VERT.
B619	20	12'-6"	X		WINGS 3 & 4 - TOP VERT.
B620	4	13'-8"			WINGS 3 & 4 - TOP HORIZ.

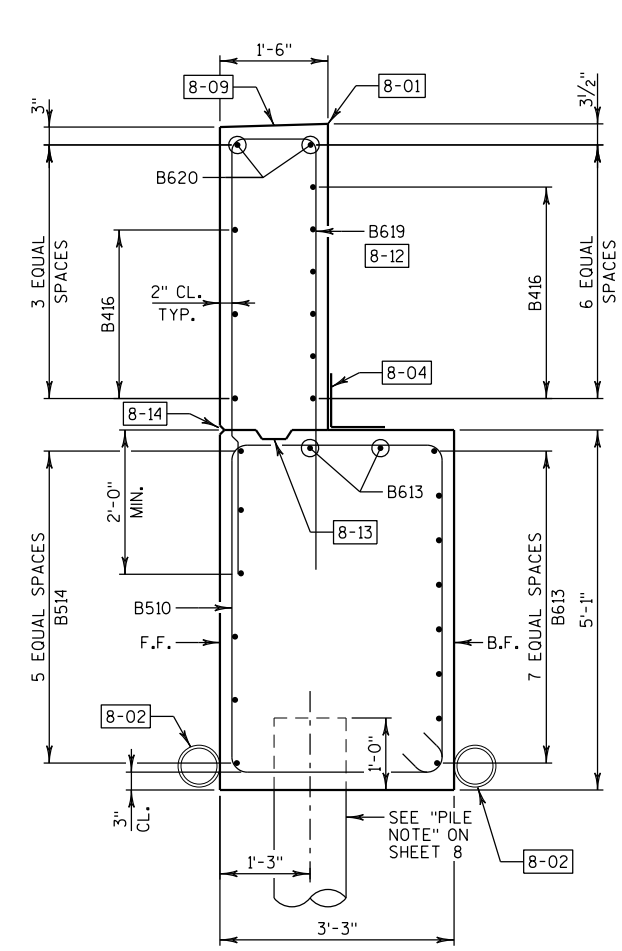
THE FIRST DIGIT OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.



SECTION C-C



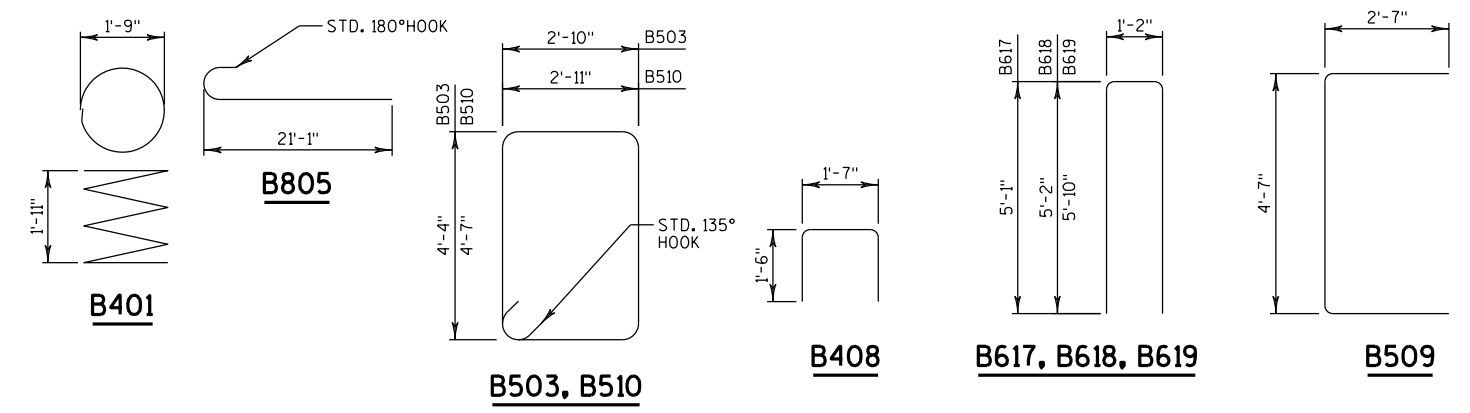
SECTION D-D



SECTION E-E

LEGEND

8-XX FOR SYMBOL DESCRIPTIONS SEE SHEET 8.



NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
NORTH ABUTMENT DETAILS-2			SHEET 10 OF 16

NOTES

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

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

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECTION 503.3.4 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

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

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

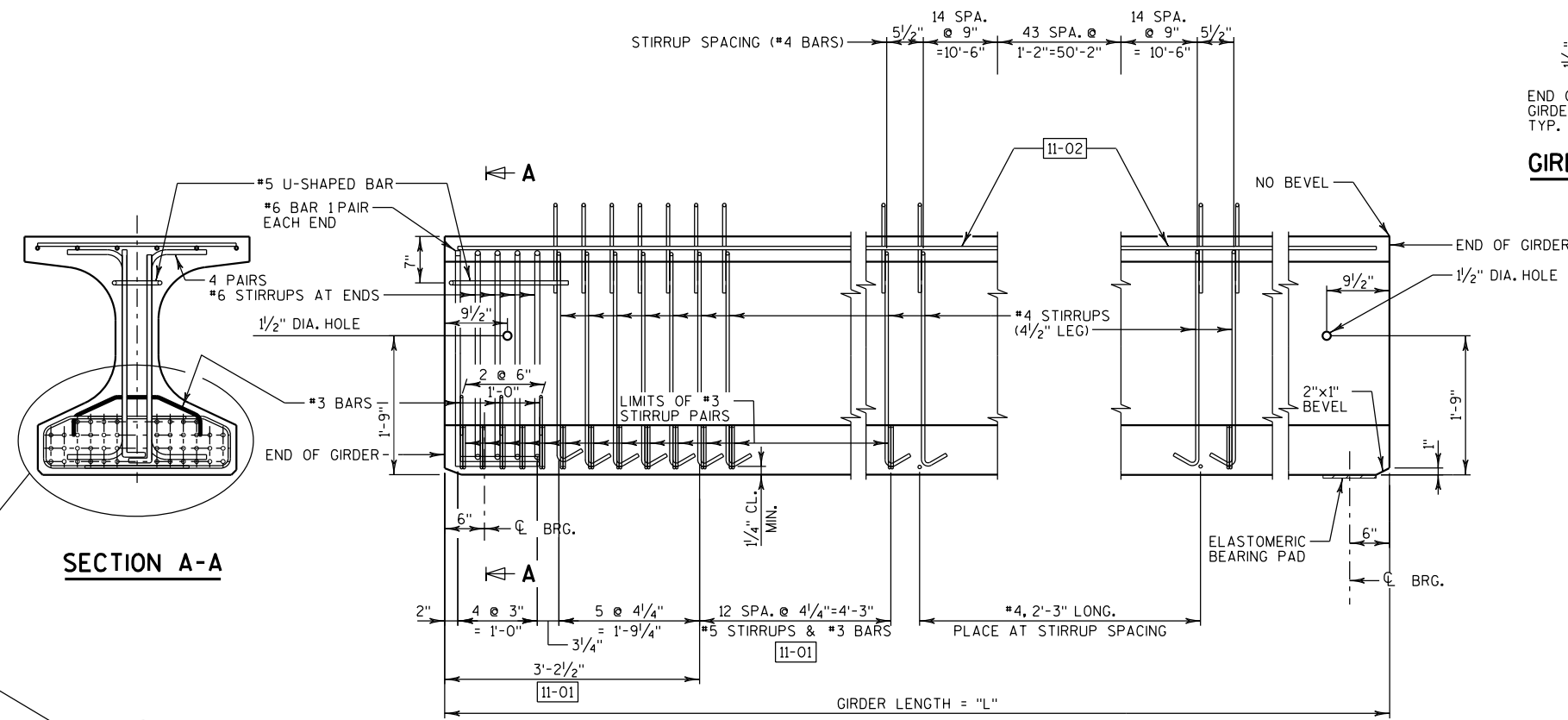
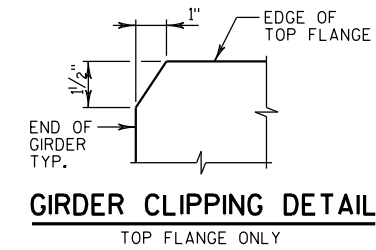
SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

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

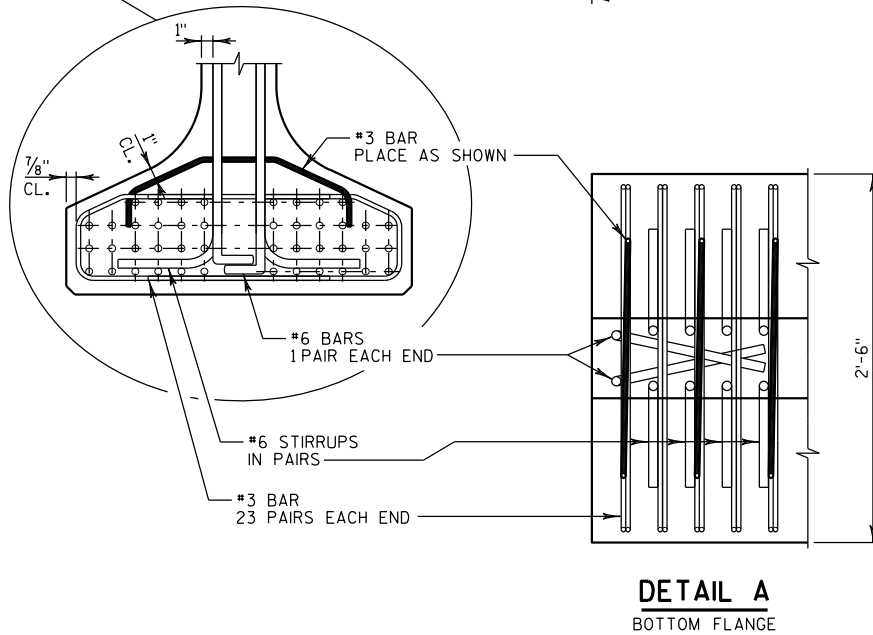
PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

11-01 DETAIL TYP. AT EACH END.

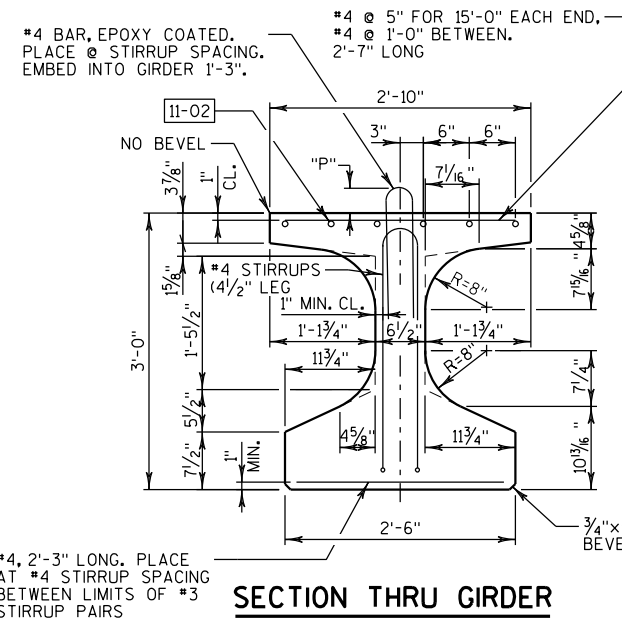
11-02 6-#4 BARS, FULL LENGTH, MIN. LAP = 1'-11"



SUPPORT WITH 1/2" ELASTOMERIC BEARING PAD

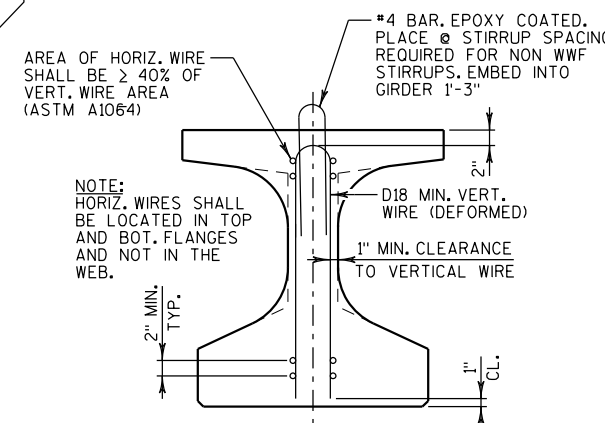


DETAIL A
BOTTOM FLANGE



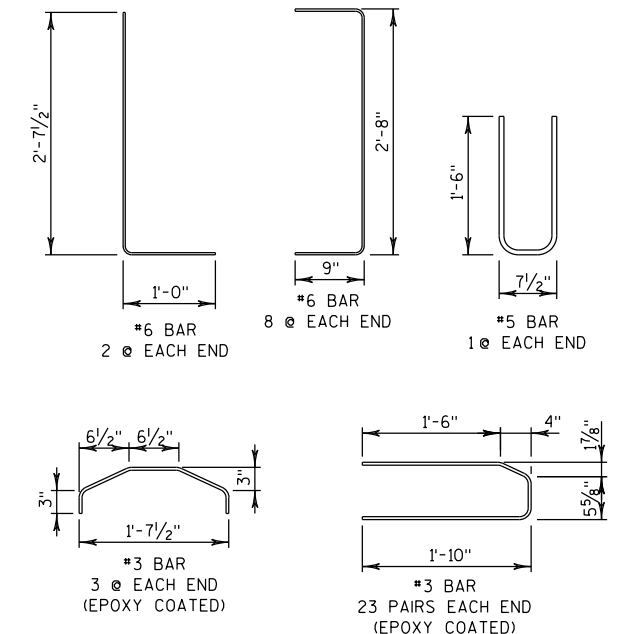
SECTION THRU GIRDER

STRANDS NOT SHOWN



SECTION THRU GIRDER

SHOWING WELDED WIRE FABRIC (WWF) STIRRUPS
ASTM A1064 (FY = 70 KSI)

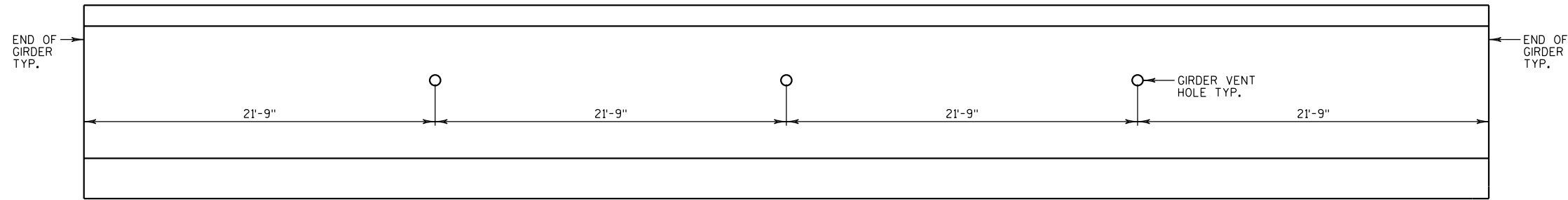


* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

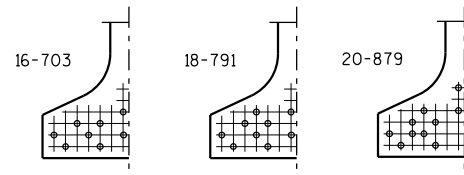
SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	DEAD LOAD DEF. (IN.)								CONC. STRGTH. f'c (P.S.I.)	"P" (IN.)			DIA. OF STRAND (IN.)	DRAPED PATTERN (IN.)						
			1/10	3/10	3/10	4/10	5/10	7/10	8/10	9/10		1ST 1/3 OF GIRDER	MID 1/3 OF GIRDER	END 1/3 OF GIRDER		TOTAL NO. OF STRANDS	f'ci (P.S.I.)	"A"	"B" MIN.	"B" MAX.	"C"	
1	ALL	87.00	0.6	1.3	1.6	1.9	2.0	1.9	1.6	1.3	0.6	8,000	7.00	7.00	7.00	0.6	36	6,800	26	10.25	12.75	5

NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
36W-INCH PRESTRESSED GIRDER DETAILS-1			SHEET 11 OF 16



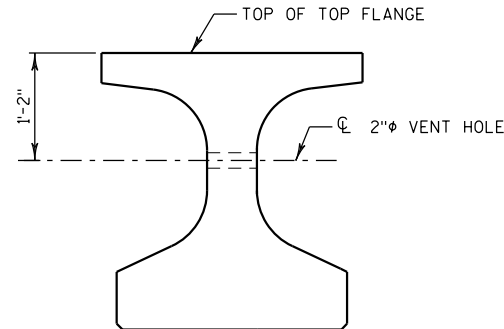
GIRDER VENT LOCATIONS

(TYPICAL ALL GIRDERS)



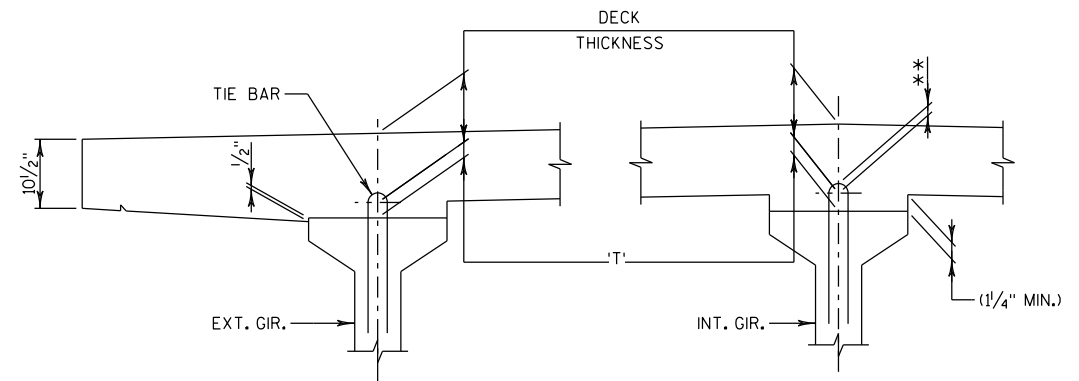
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6" DIA. STRANDS



GIRDER VENT HOLE DETAIL

2" VENT HOLE MAY BE PRODUCED WITH A REMOVABLE OR NON-REMOVABLE FORM. THEY MAY BE SHIFTED SLIGHTLY TO AVOID CONFLICTS WITH GIRDER REINFORCING.



DECK HAUNCH DETAIL

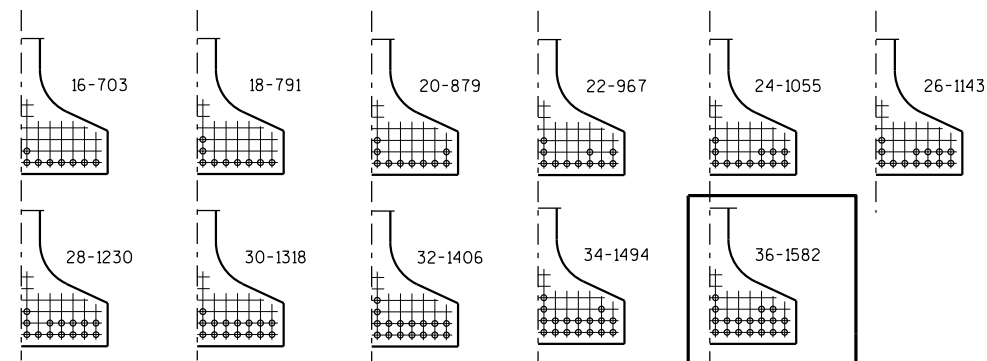
IF 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, ** IF 3" MINIMUM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

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

- TOP OF DECK ELEVATIONS AT FINAL GRADE
- TOP OF GIRDER ELEVATION
- + DEAD LOAD DEFLECTION
- DECK THICKNESS
- = HAUNCH HEIGHT "T"

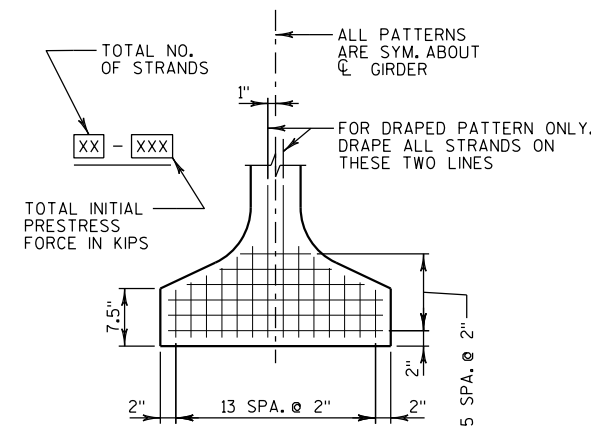
NOTE: AN AVERAGE HAUNCH ('T') OF 2 5/8" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

SEE SHEET 11 FOR DEADLOAD DEFLECTIONS.

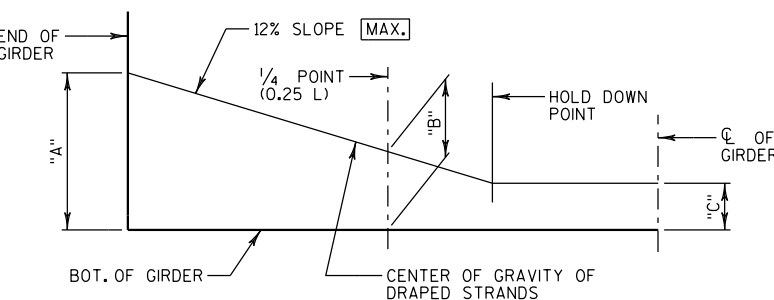


ARRANGEMENT AT C SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6" DIA. STRANDS



TYP. STRAND PATTERN



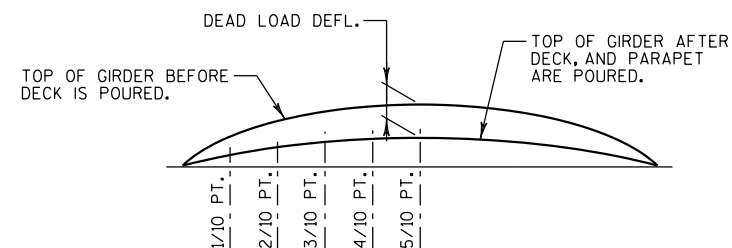
LOCATION OF DRAPED STRANDS

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

SPAN	CAMBER (IN.) *
1	4.1

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

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



DEAD LOAD DEFLECTION DIAGRAM

NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
36W-INCH PRESTRESSED GIRDER DETAILS-2			SHEET 12 OF 16

LEGEND

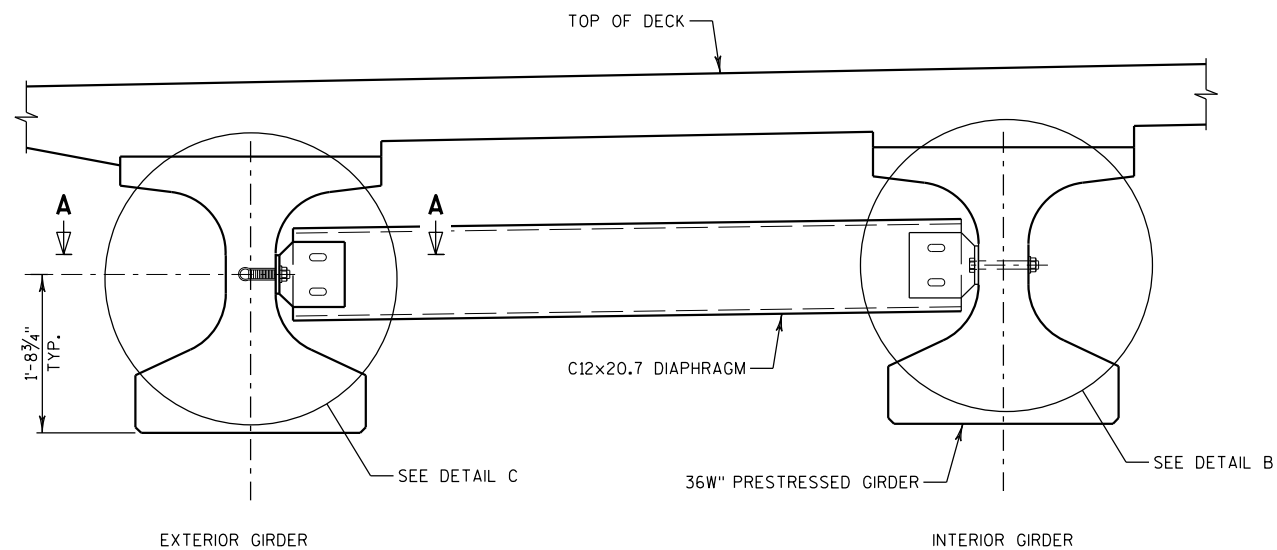
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-61-255", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

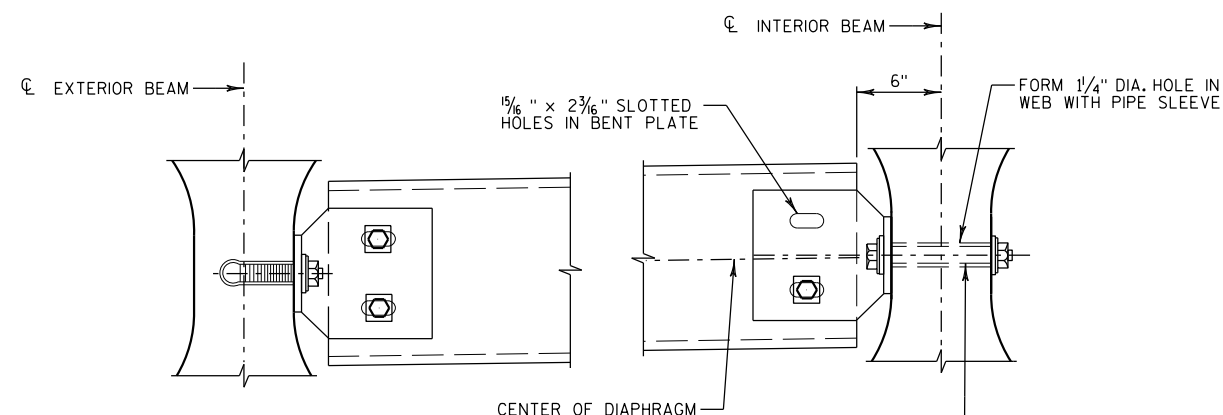
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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

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

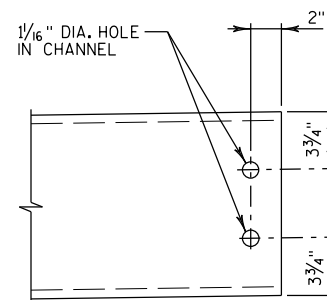


PART TRANSVERSE SECTION AT DIAPHRAGM

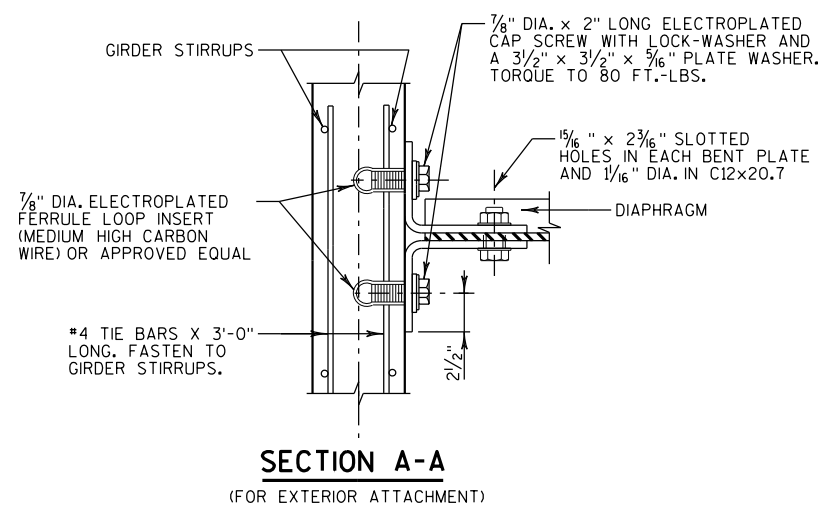


DETAIL C

DETAIL B

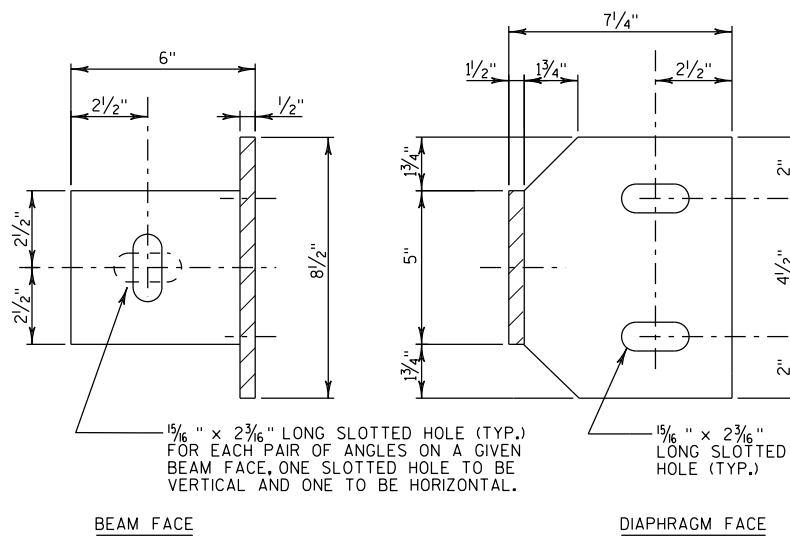


TYPICAL HOLES IN DIAPHRAGM



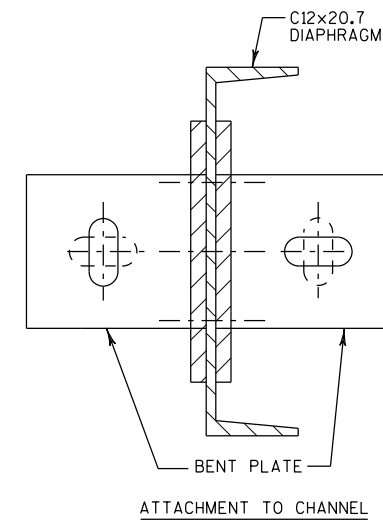
SECTION A-A

(FOR EXTERIOR ATTACHMENT)



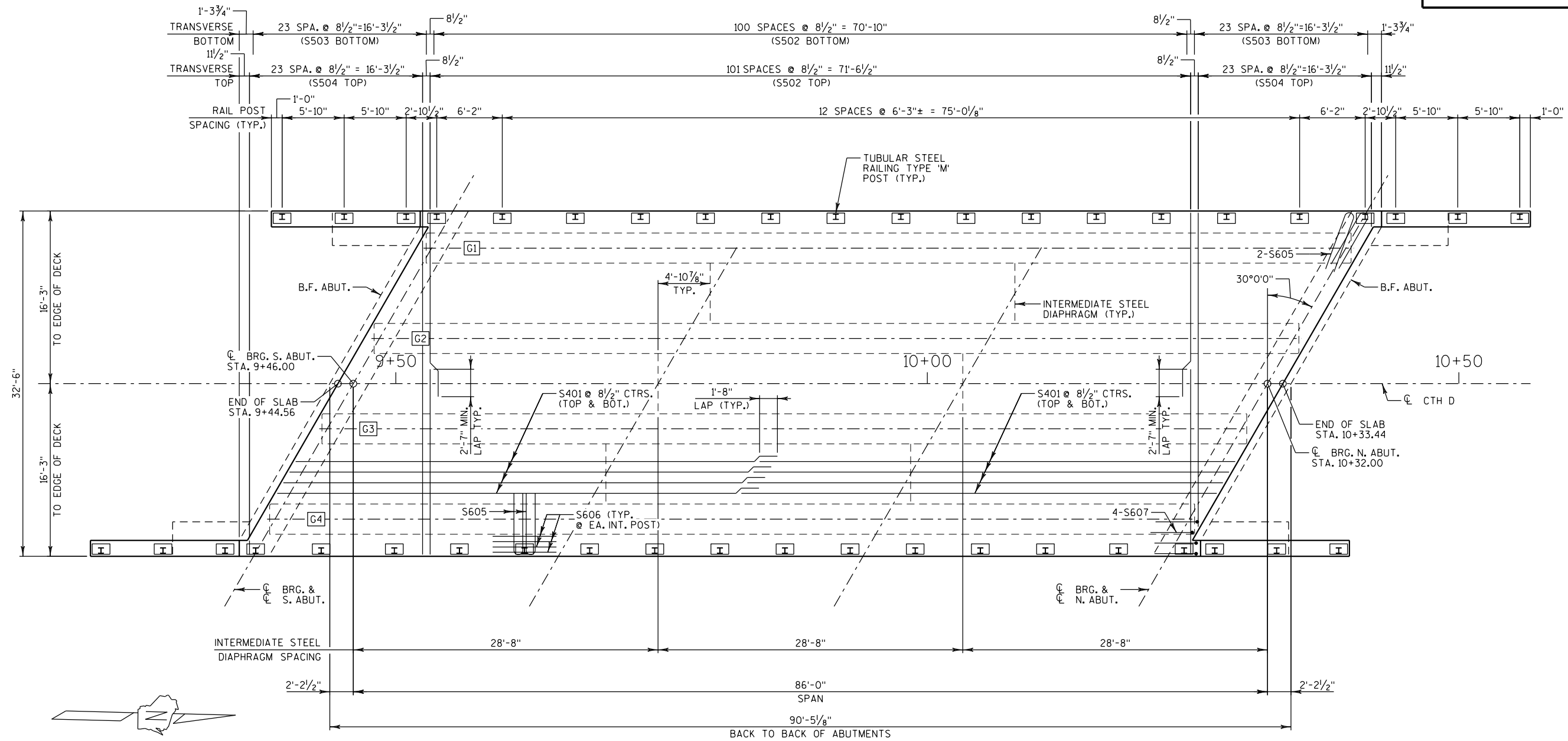
BEAM FACE

DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
INTERMEDIATE STEEL DIAPHRAGMS			SHEET 13 OF 16



PLAN

NOTES:

THE TOP TRANSVERSE BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS WITH A CENTER TO CENTER SPACING NOT TO EXCEED 4'-0". ONE LINE OF CONTINUOUS BAR CHAIRS SHALL BE PLACED NEAR EACH EDGE OF SLAB TO SUPPORT THE ENDS OF THE BOTTOM TRANSVERSE BAR STEEL.

THE TOP LONGITUDINAL BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS IN TRANSVERSE DIRECTION ON 4'-0" CENTERS.

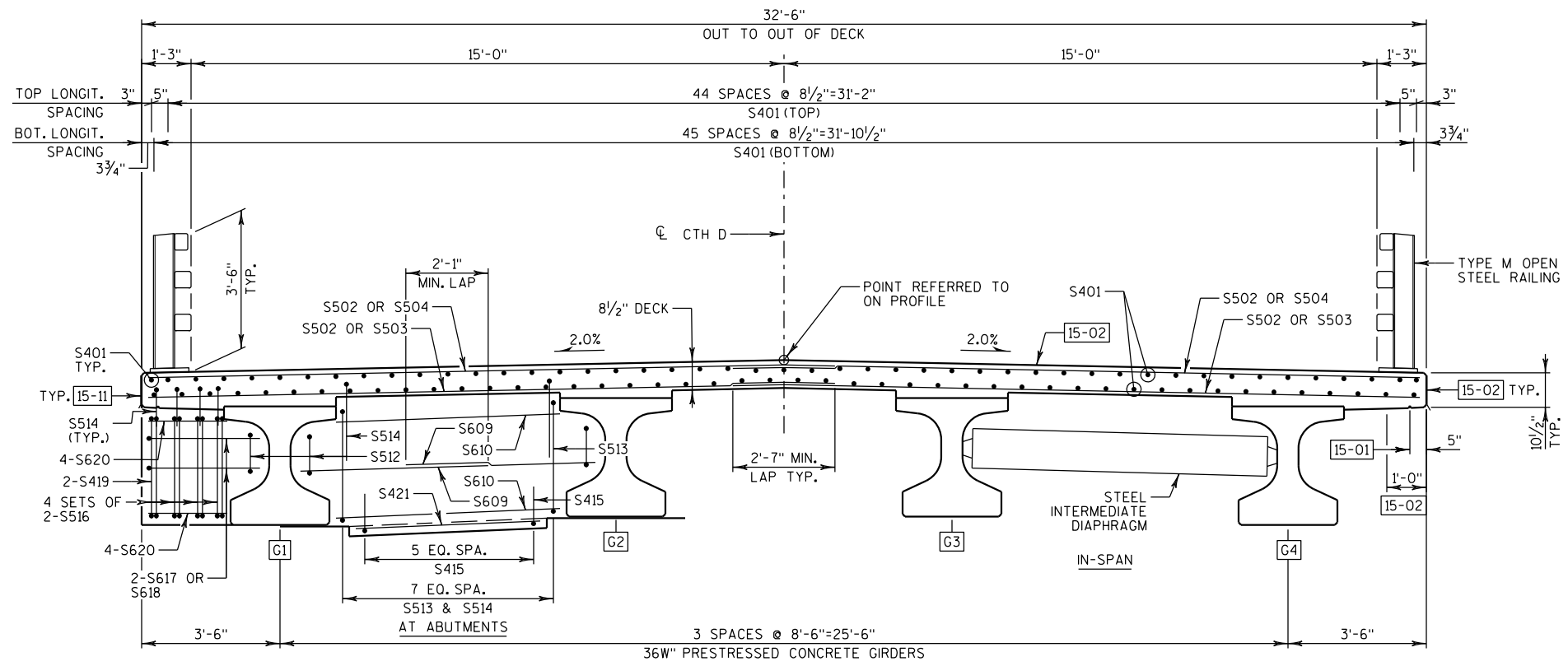
TOP OF DECK ELEVATIONS

LOCATION	S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	N. ABUT.
WEST EDGE OF DECK	808.40	808.41	808.41	808.41	808.40	808.38	808.36	808.33	808.29	808.25	808.20
GIRDER 1	808.47	808.48	808.48	808.48	808.47	808.45	808.43	808.40	808.37	808.33	808.28
GIRDER 2	808.63	808.64	808.65	808.65	808.64	808.63	808.61	808.59	808.56	808.52	808.48
CROWN	808.71	808.72	808.73	808.74	808.73	808.72	808.71	808.68	808.65	808.62	808.58
GIRDER 3	808.62	808.64	808.65	808.65	808.65	808.64	808.63	808.61	808.58	808.54	808.50
GIRDER 4	808.44	808.46	808.47	808.48	808.48	808.48	808.47	808.45	808.42	808.39	808.36
EAST EDGE OF DECK	808.36	808.38	808.40	808.41	808.41	808.41	808.40	808.38	808.36	808.33	808.30

NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
SUPERSTRUCTURE			SHEET 14 OF 16

8

8



CROSS SECTION THRU BRIDGE
(LOOKING NORTH)

BILL OF BARS - SUPERSTRUCTURE

BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
COATED BARS TOTAL WEIGHT = 19,410 LBS					
S401	186	45'-3"			DECK - TOP & BTM LONGIT.
S502	406	17'-5"			DECK - TOP & BTM TRANS.
S503	48	16'-1"		X	DECK - BTM TRANS.
S504	48	15'-5"		X	DECK - TOP TRANS.
S605	60	11'-4"	X		DECK - TOP - AT RAIL POSTS TRANS.
S606	104	6'-0"			DECK - TOP - AT INT. RAIL POSTS LONGIT.
S607	16	4'-8"	X		DECK - TOP - AT EXT. RAIL POSTS LONGIT.
S608	20	19'-9"			DIAPHRAGMS - B.F. HORIZ.
S609	12	5'-2"			DIAPHRAGMS - F.F. HORIZ.
S610	12	6'-7"			DIAPHRAGMS - F.F. HORIZ.
S511	16	6'-0"			DIAPHRAGMS - THRU GIRDERS HORIZ.
S512	16	10'-0"	X		DIAPHRAGMS - STIRRUPS VERT.
S513	48	13'-0"	X		DIAPHRAGMS - STIRRUPS VERT.
S514	64	6'-3"	X		DIAPHRAGMS - TOP VERT.
S415	36	3'-7"	X		DIAPHRAGMS - BTM VERT.
S516	32	8'-2"	X		END DIAPHRAGMS VERT.
S617	4	8'-8"	X		END DIAPHRAGMS - WINGS 1 & 3 HORIZ.
S618	4	10'-2"	X		END DIAPHRAGMS - WINGS 2 & 4 HORIZ.
S419	8	2'-7"			END DIAPHRAGMS VERT.
S620	32	2'-0"			END DIAPHRAGMS - TOP & BTM TRANS.
S421	12	5'-5"			DIAPHRAGMS - BTM HORIZ.

THE FIRST DIGIT OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT-TO-OUT OF BAR.

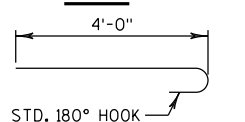
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
S503	2 SERIES OF 24	1'-11" TO 30'-2"
S504	2 SERIES OF 24	1'-4" TO 29'-6"

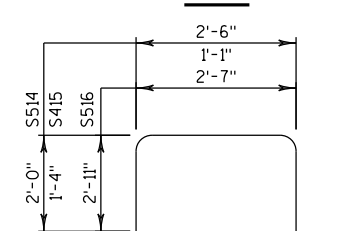
BUNDLE AND TAG EACH SERIES SEPARATELY.



S605



S607



S514, S415, S516

NO.	DATE	REVISION	BY

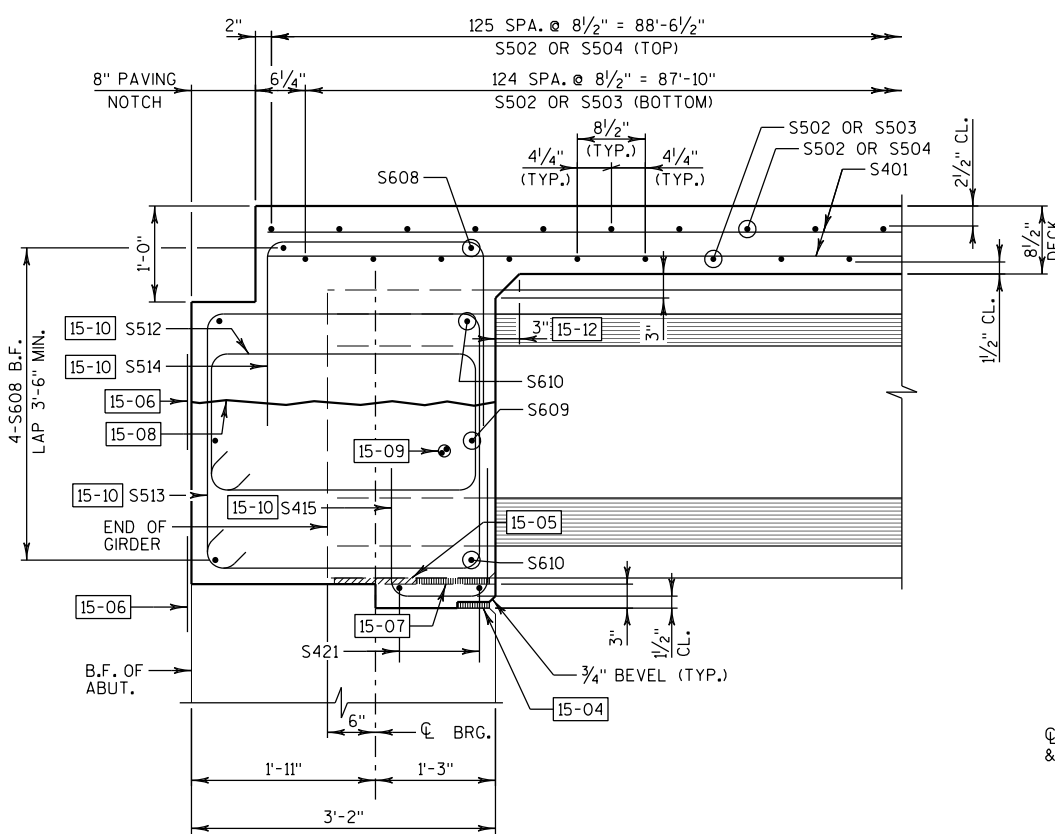
STRUCTURE B-61-255

DRAWN BY TKB PLANS CK'D. ETP

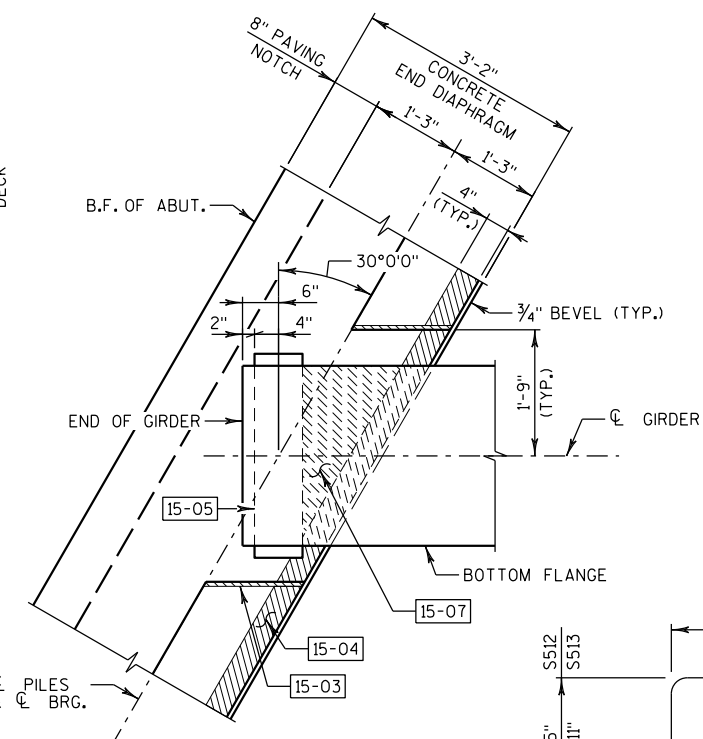
SUPERSTRUCTURE DETAILS SHEET 15 OF 16

LEGEND

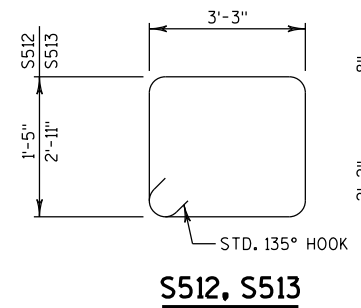
- 15-01 3/4" CONTINUOUS DRIP GROOVE, END 6" FROM FRONT FACE OF SUBSTRUCTURE UNITS.
- 15-02 COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATION.
- 15-03 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- 15-04 1/2"x4" PREFORMED JOINT FILLER TO EXTEND BETWEEN EDGES OF DIAPHRAGM.
- 15-05 1/2"x8"x2'-10" NON-LAMINATED ELASTOMERIC BEARING PAD. SEE BEARING PAD LAYOUT DETAIL.
- 15-06 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- 15-07 1/2" PREFORMED JOINT FILLER UNDER GIRDER FLANGE IN FRONT OF BEARING PAD.
- 15-08 OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDER. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM TIME OF THE DIAPHRAGM POUR. SEAL CONSTRUCTION JOINT ON B.F. ABUTMENT WITH 18" RUBBERIZED MEMBRANE WATERPROOFING (COST INCIDENTAL TO "CONCRETE MASONRY BRIDGES").
- 15-09 (1)-1/2" DIA. HOLE IN WEB FOR (2) S511 BARS. PLACE SYMMETRICAL ABOUT C OF GIRDERS. FIELD BEND ALONG SKEW.
- 15-10 BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO C GIRDERS.
- 15-11 FLASHING STAINLESS STEEL REQUIRED. SEE SHEET 2 FOR DETAILS.
- 15-12 MEASURED PERPENDICULAR TO C ABUTMENT.



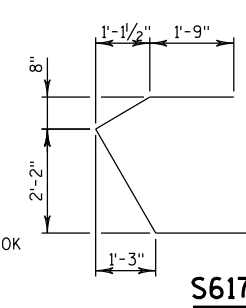
PART LONGITUDINAL SECTION AT ABUTMENTS
(TYPICAL BETWEEN GIRDERS)



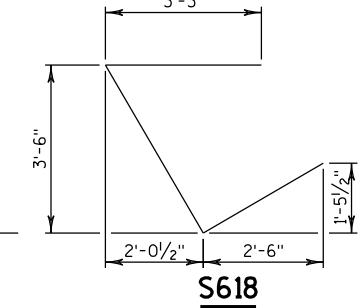
BEARING PAD LAYOUT



S512, S513



S617



S618

LEGEND

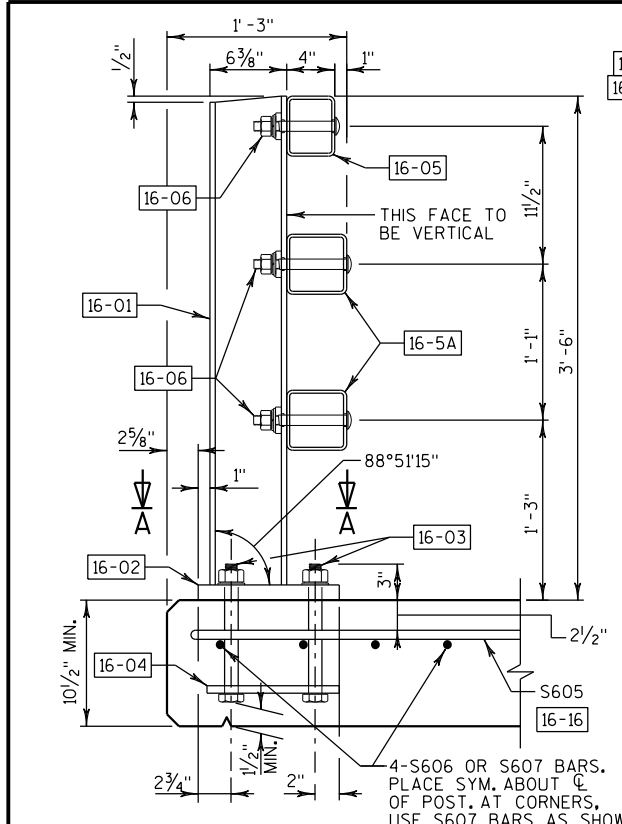
- [16-01] W6 x 25 WITH 1/8" X 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT [16-06]. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- [16-02] PLATE 1/4" X 11 3/4" X 1'-8" WITH 1/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS [16-03]. WELD TO [16-01] AS SHOWN.
- [16-03] ASTM A449 - 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE [16-02]. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. 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.)
- [16-04] 5/8" X 11" X 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS [16-03].
- [16-05] TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO [16-01] WITH [16-06].
- [16-5A] TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO [16-01] WITH [16-06].
- [16-06] 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.)
- [16-07] 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" X 1/2" THREADED SHOP WELDED STUDS ([16-12]). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES [16-5A].
- [16-08] 1" DIA. HOLES IN PLATE [16-07] & TUBES [16-5A] FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE [16-07].
- [16-09] SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- [16-10] 3/8" X 3 5/8" X 2'-4" PLATE. 2 PER RAIL. USED IN [16-05] & [16-5A].
- [16-10A] 3/8" X 2 5/8" X 2'-4" PLATE USED IN [16-05], 3/8" X 3 5/8" X 2'-4" PLATE USED IN [16-5A]. 2 PER RAIL.
- [16-11] 7/8" φ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/16" X 1 1/4" LONG IT. SLOTTED HOLES IN PLATE [16-10A] AT FIELD JOINTS AND 1 5/16" X 2 1/4" MIN. LONG IT. SLOTTED HOLES AT EXP. JOINTS IN PLATE [16-10A]. PROVIDE 1/16" DIA. ROUND HOLES IN TUBES [16-05] AND [16-5A].
- [16-12] 7/8" DIA. X 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- [16-13] 3/8" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES [16-5A].
- [16-14] 7/8" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- [16-15] 1" φ HOLES IN TUBES [16-5A] FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

[16-16] TIE TO TOP MAT OF STEEL. [16-17] 1/4" TO 3/4".

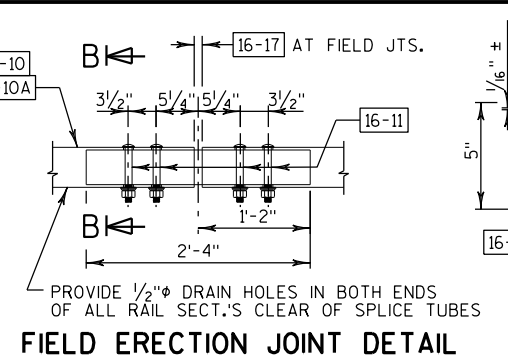
* ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.

NOTES

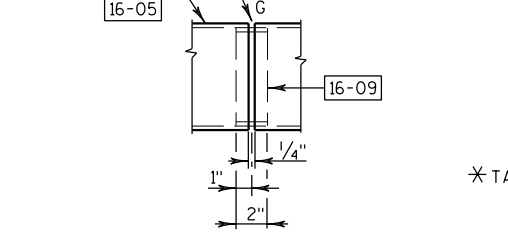
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 ksi. ANCHOR PLATES, 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. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
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 [16-02] AND CAULK AROUND PERIMETER OF PLATE [16-02] 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 SSPC SPECIFICATIONS.



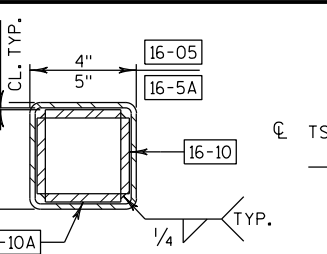
SECTION THRU RAILING ON DECK



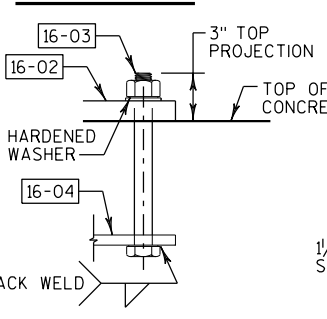
FIELD ERECTION JOINT DETAIL



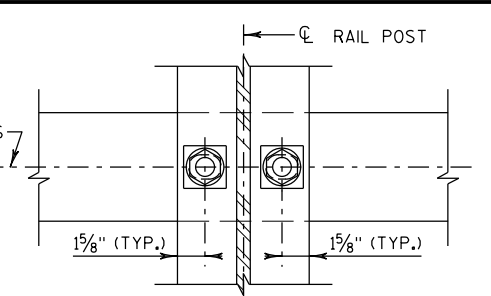
SHOP RAIL SPLICE DETAIL



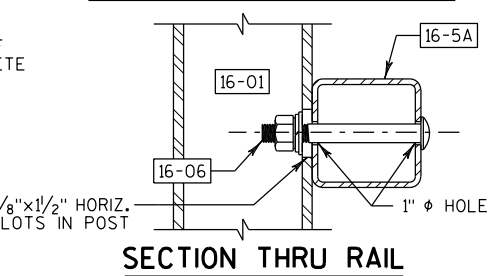
SECTION B-B



ANCHOR BOLTS

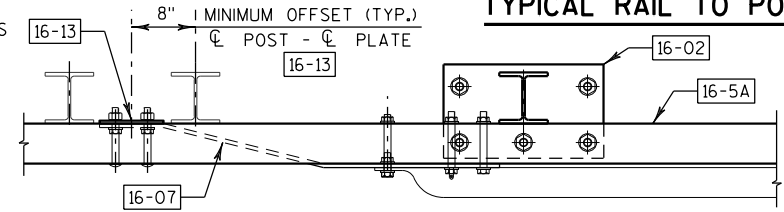


SECTION THRU POST WEB



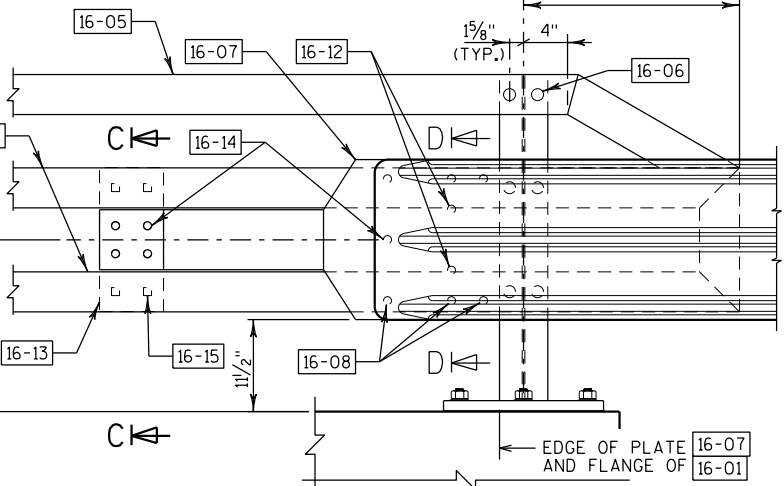
SECTION THRU RAIL

TYPICAL RAIL TO POST CONNECTIONS

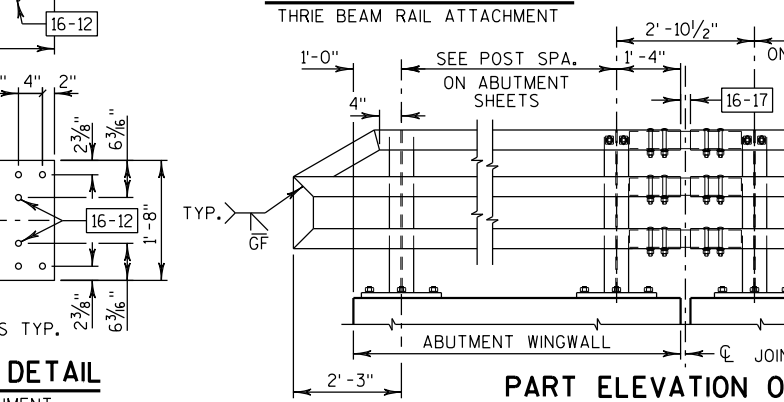


TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT

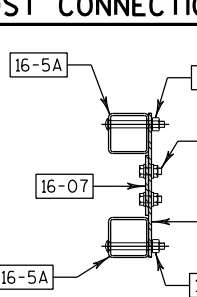


SECTION C-C

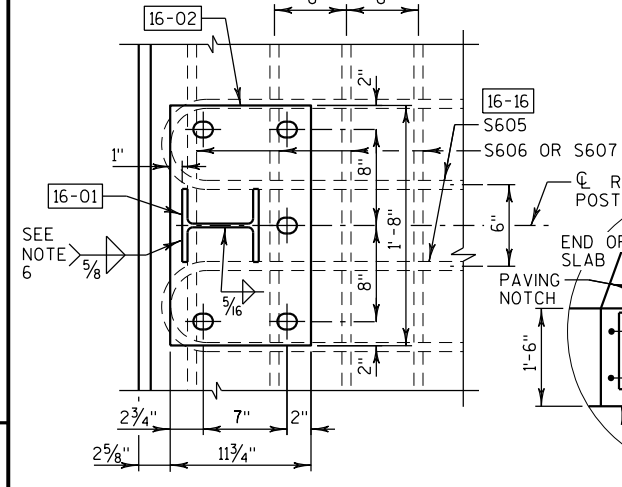


DETAIL AT END POST

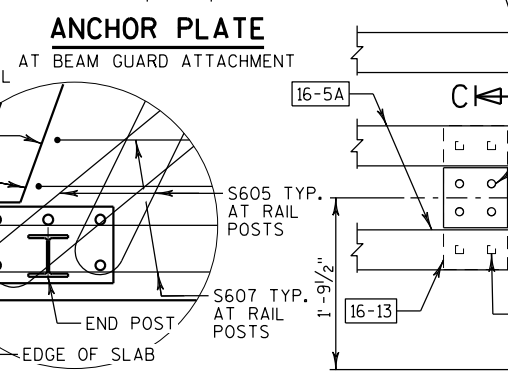
THRIE BEAM RAIL ATTACHMENT



SECTION D-D

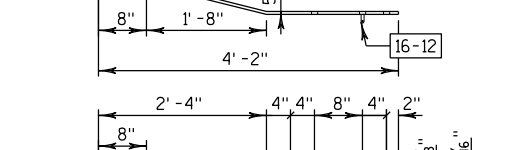


SECTION A-A



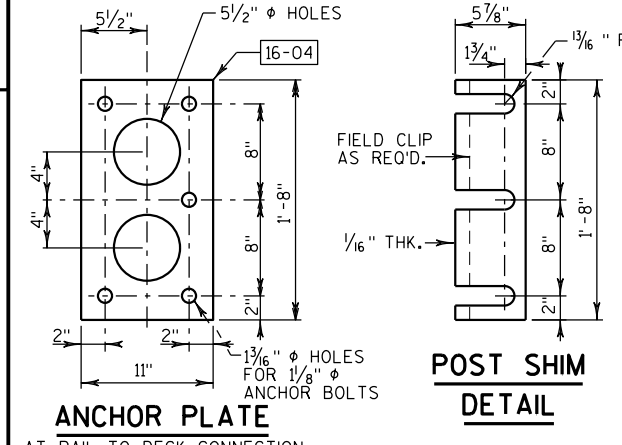
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT



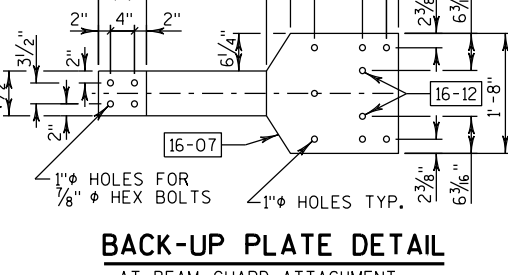
END POST DETAIL

REINFORCEMENT AT CORNERS



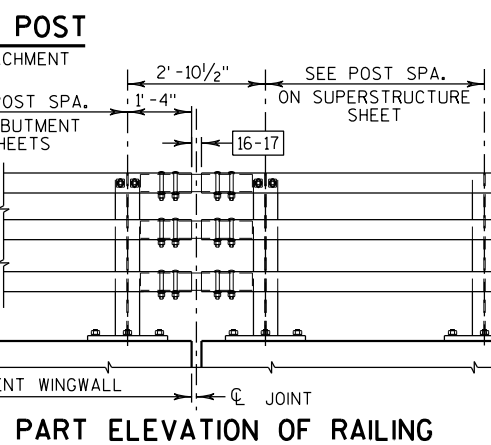
ANCHOR PLATE

AT RAIL TO DECK CONNECTION



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

8

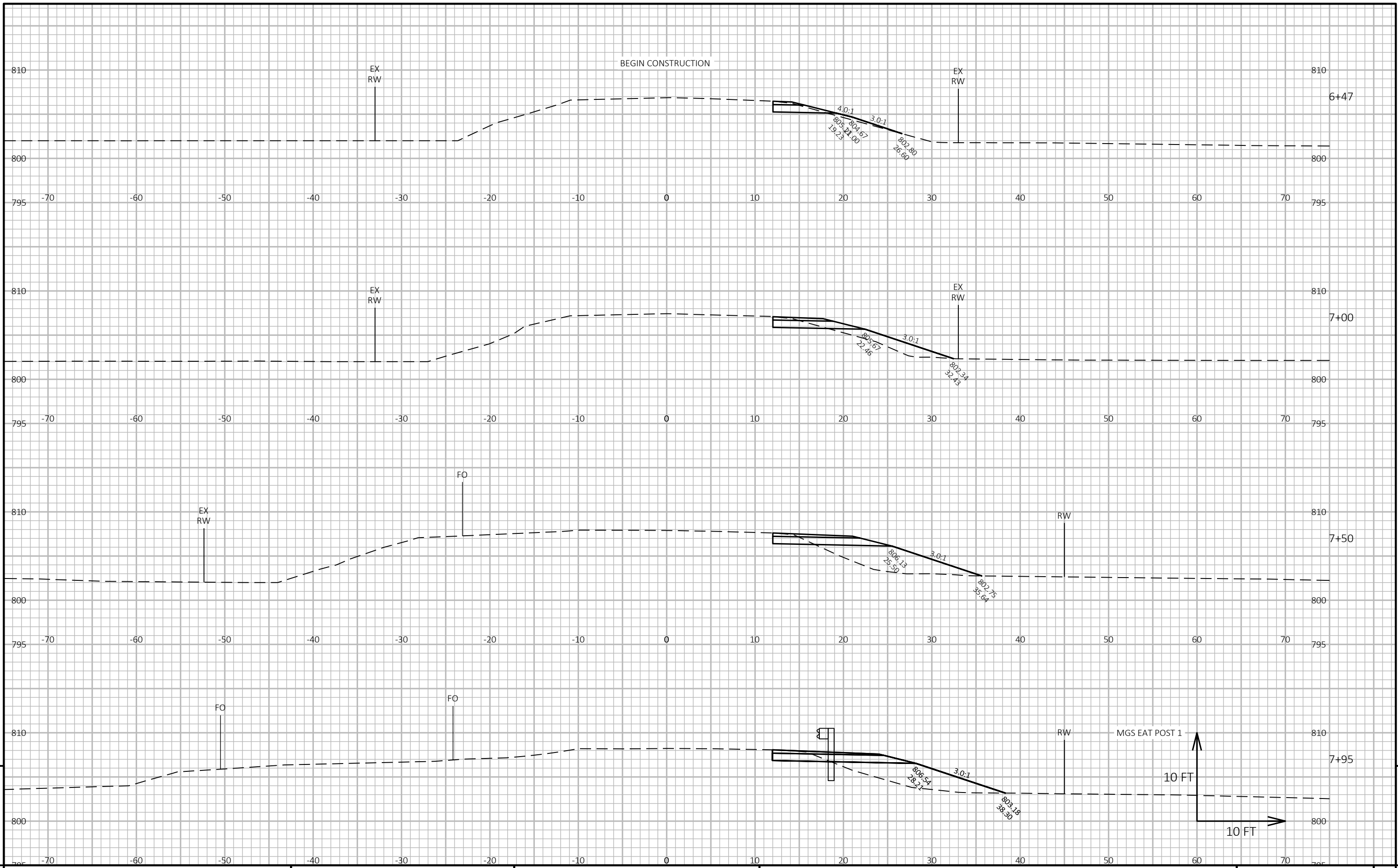
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NO.	DATE	REVISION	BY
STRUCTURE B-61-255			
DRAWN BY TKB		PLANS CK'D. ETP	
TUBULAR STEEL RAILING TYPE 'M'			SHEET 16 OF 16

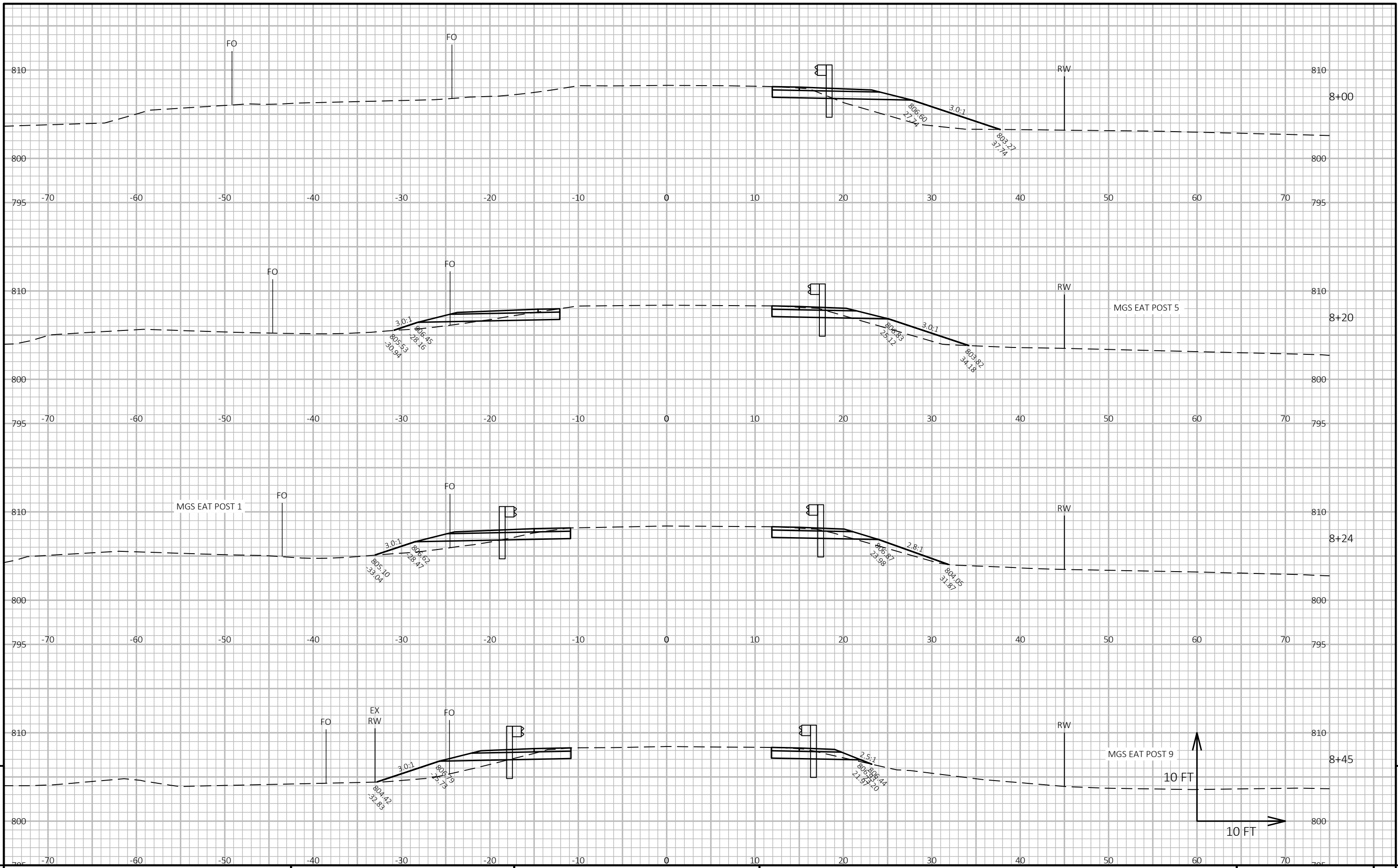
DIVISION -- CTH D

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 ORDINATE
06+47	0.00	4.42	0.00	1.81	0	0	0	0	0	0
06+75	28.00	4.44	0.00	2.99	5	0	2	5	3	2
07+00	25.00	4.54	0.00	8.53	4	0	5	9	9	0
07+25	25.00	4.40	0.00	19.89	4	0	13	13	26	-13
07+50	25.00	3.96	0.00	27.30	4	0	22	17	55	-38
07+75	25.00	4.60	0.00	29.40	4	0	26	21	88	-67
07+94	19.52	6.15	0.00	26.27	4	0	20	25	114	-89
08+00	5.48	6.94	0.00	22.75	1	0	5	26	121	-95
08+19	19.52	13.67	0.00	21.84	7	0	16	33	142	-109
08+24	4.53	13.05	0.00	19.54	2	0	3	35	146	-111
08+47	23.59	12.03	0.00	12.74	11	0	14	46	164	-118
08+49	1.40	11.69	0.00	8.74	1	0	1	47	165	-118
08+77	28.13	10.80	0.00	7.49	12	0	8	59	176	-117
08+94	16.83	11.17	11.00	5.09	7	3	4	66	181	-118
09+00	6.00	41.15	11.00	2.00	6	2	1	72	182	-115
09+22	22.04	40.48	11.00	2.11	33	9	2	105	185	-94
10+60	0.00	39.03	11.00	0.00	0	0	0	105	185	-94
10+75	15.00	39.08	11.00	2.12	22	6	1	127	186	-79
11+00	25.00	12.49	0.00	1.76	24	5	2	151	189	-63
11+16	16.46	34.60	0.00	28.55	14	0	9	165	200	-60
11+33	17.02	33.33	0.00	43.13	21	0	23	186	230	-69
11+41	7.98	33.19	0.00	52.27	10	0	14	196	248	-77
11+58	17.02	30.01	0.00	77.36	20	0	41	216	302	-111
11+66	7.98	28.38	0.00	84.28	9	0	24	225	333	-133
11+83	17.02	26.05	0.00	86.24	17	0	54	242	403	-186
12+00	16.52	26.03	0.00	79.53	16	0	51	258	469	-236
12+25	25.00	25.87	0.00	67.95	24	0	68	282	558	-301
12+50	25.00	23.01	0.00	59.27	23	0	59	305	634	-354
12+75	25.00	19.44	0.00	54.97	20	0	53	325	703	-403
13+00	25.00	16.77	0.00	44.90	17	0	46	342	763	-446
13+25	25.00	14.25	0.00	34.99	14	0	37	356	811	-480
13+40	15.00	4.23	0.00	10.12	5	0	13	361	828	-492

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

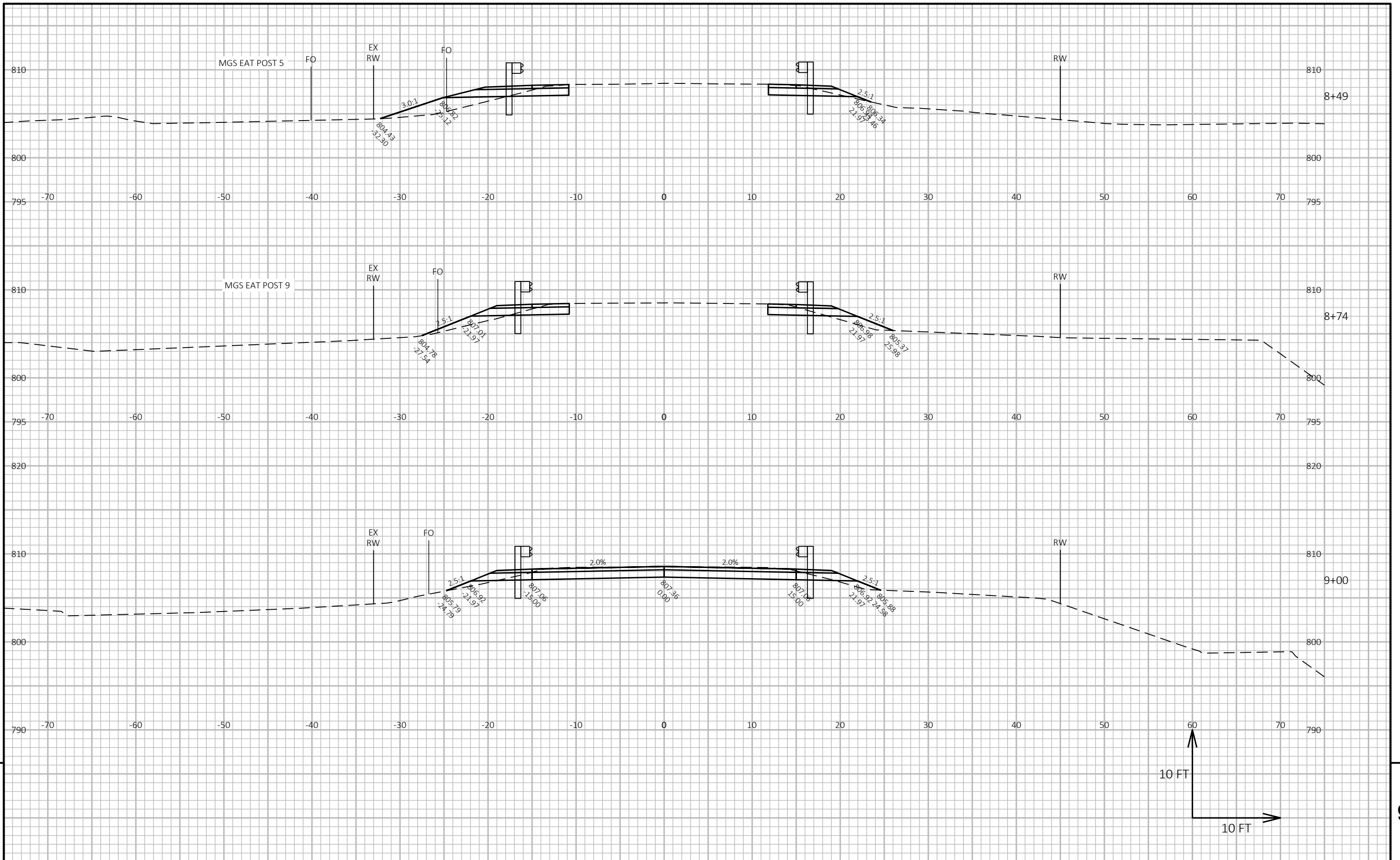


PROJECT NO: 7146-00-74	HWY: CTH D	COUNTY: TREMPLEALEU	CROSS SECTIONS: CTH D	SHEET	9
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PROJECT NO: 7146-00-74	HWY: CTH D	COUNTY: TREMPLEAU	CROSS SECTIONS: CTH D	SHEET
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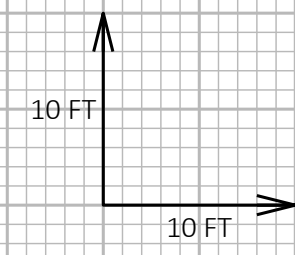
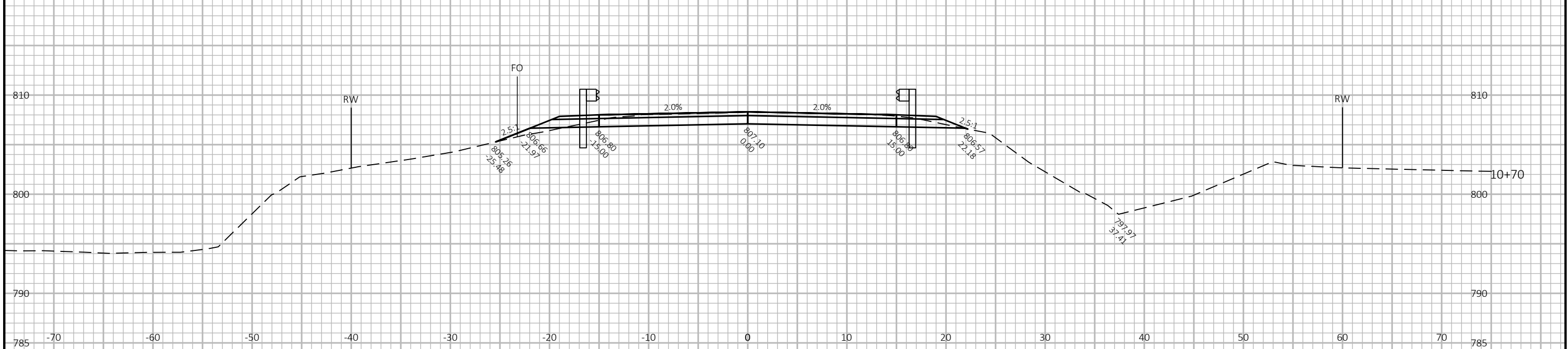
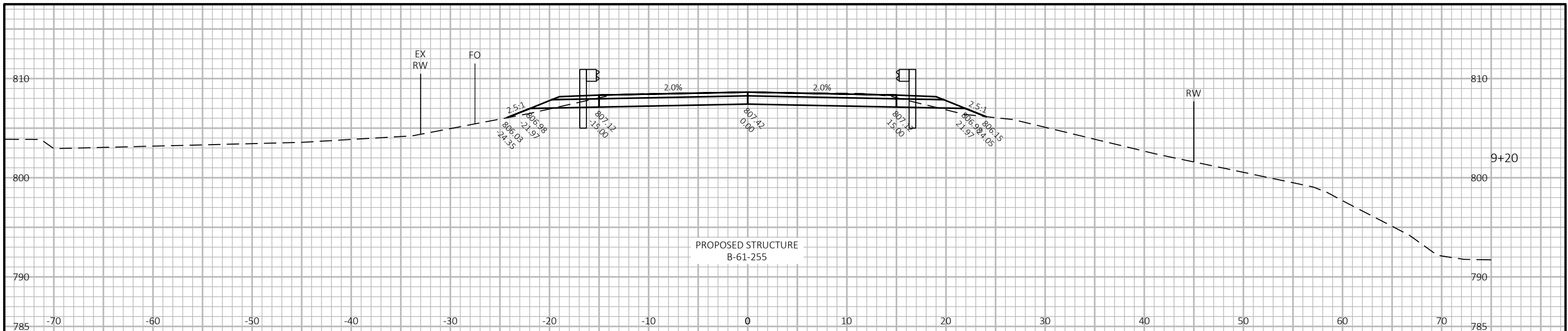
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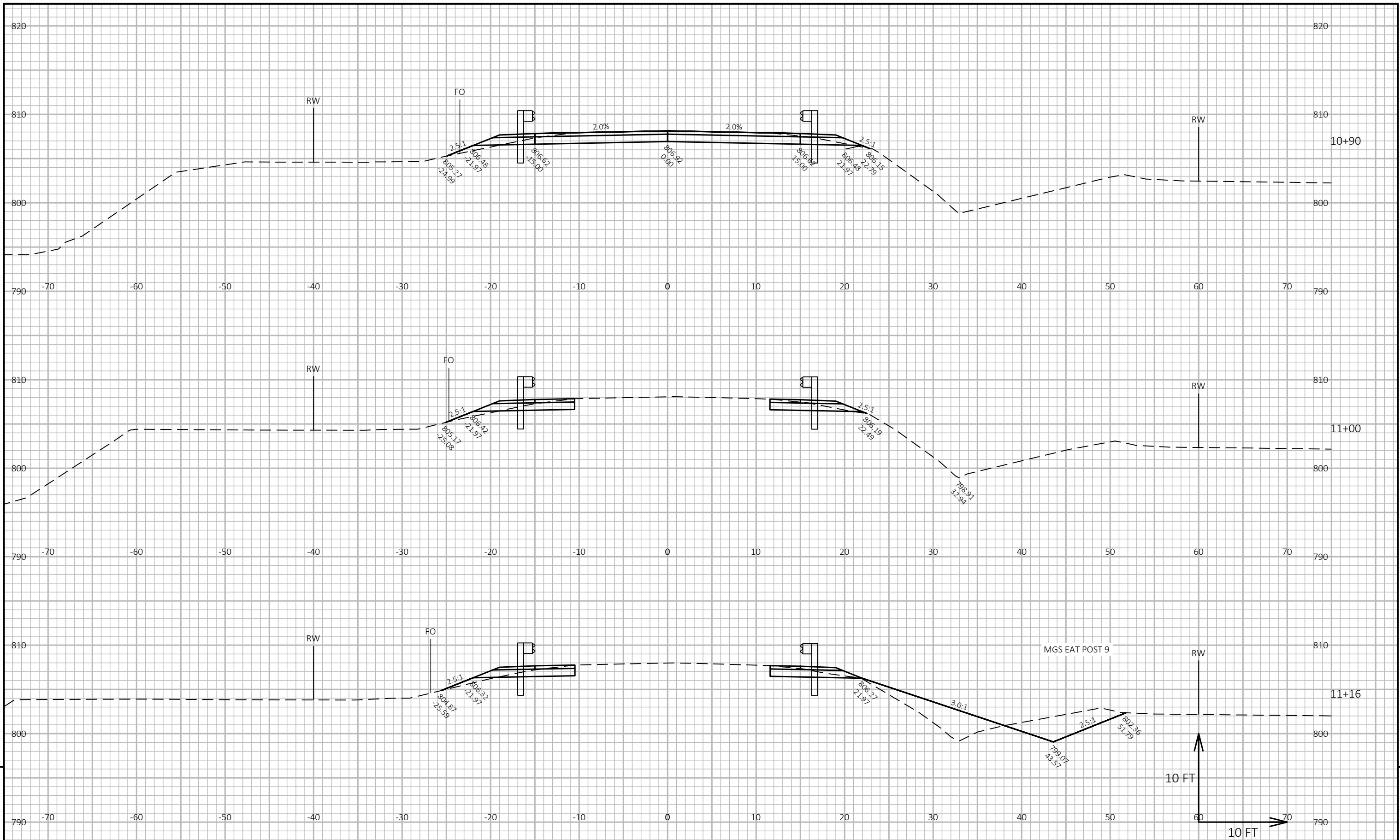
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9

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PROJECT NO: 7146-00-74	HWY: CTH D	COUNTY: TREMPLEAU	CROSS SECTIONS: CTH D	SHEET	E
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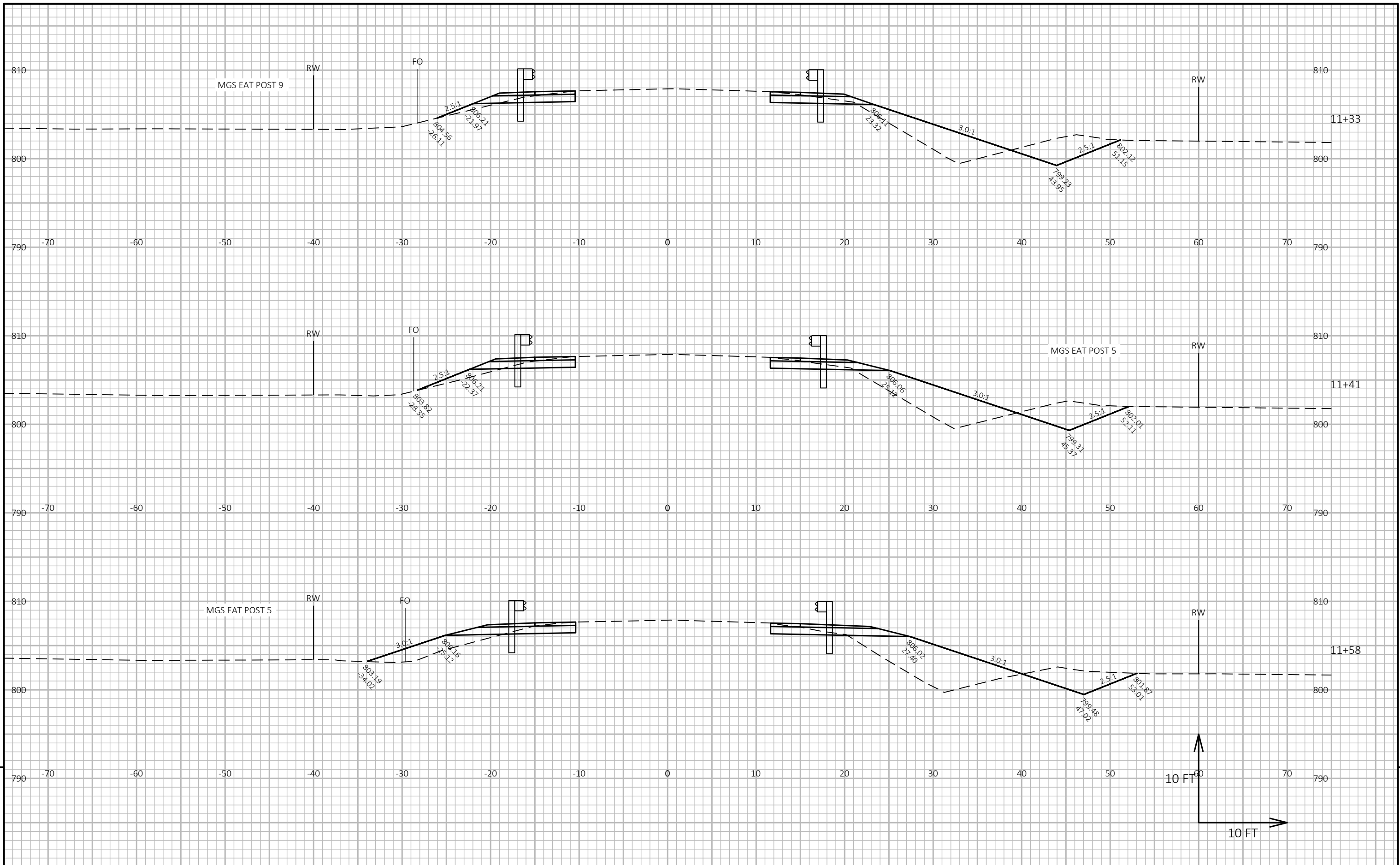
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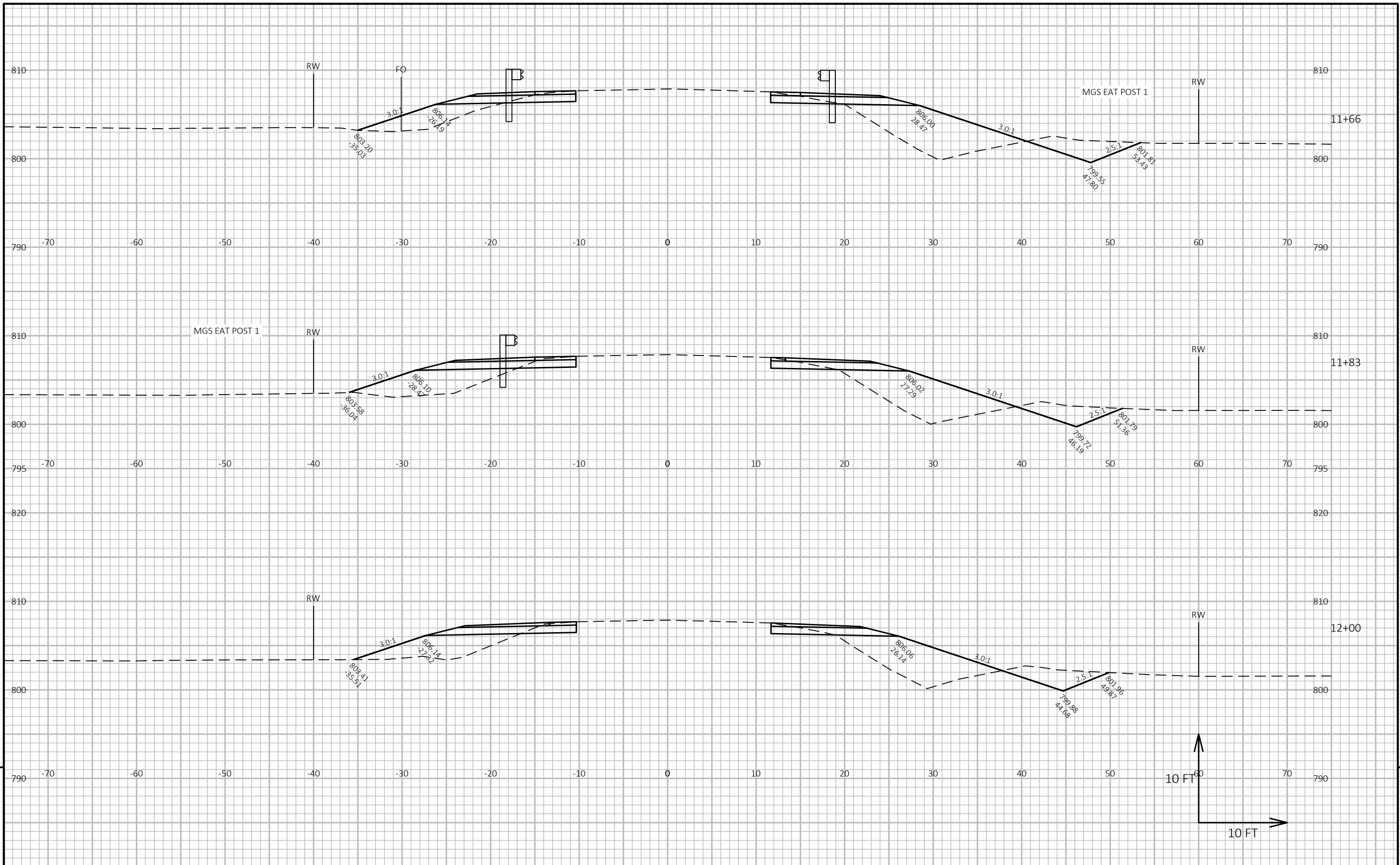
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FILE NAME : C:\OD\CORRE, INC\PROJECTS - WI-NW REGION\C0362-D-06_TREMPLEALEU CO_CTH D OVER FRENCH CREEK\500_CADD\501_C3D_2020\C0362D06\SHEETSPLAN\090201-XS.DWG PLOT DATE : 1/11/2023 10:01 AM PLOT BY : NICHOLAS WATHKE PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 05



9
10 FT
10 FT
9



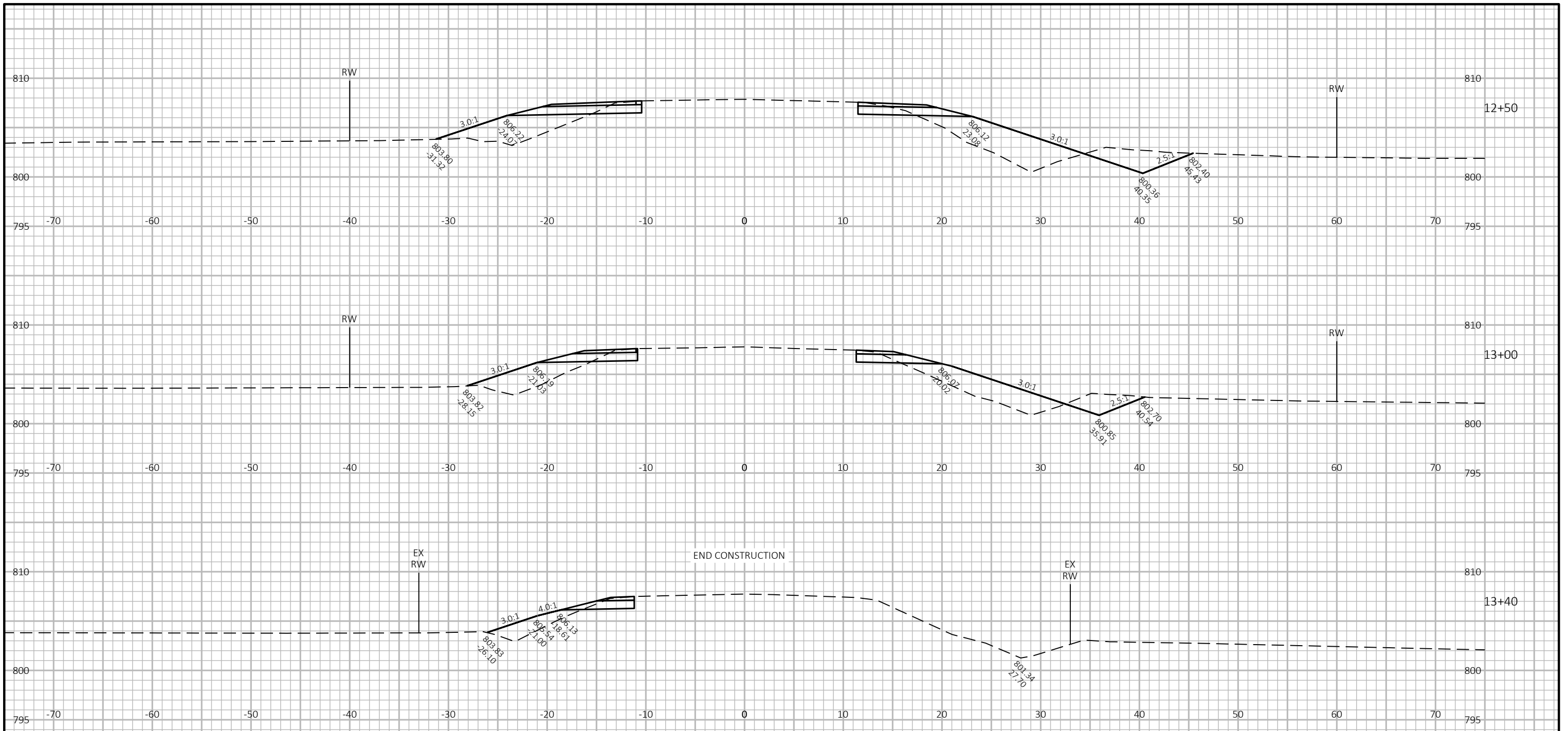
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PROJECT NO: 7146-00-74 HWY: CTH D COUNTY: TREMPLEAU CROSS SECTIONS: CTH D SHEET E

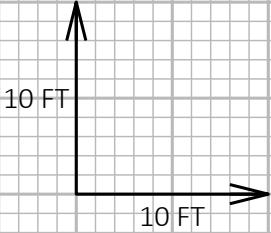
FILE NAME: C:\OD\CORRE, INC\PROJECTS - WI-NW REGION\C0362-D-06_TREMPLEAU CO_CTH D OVER FRENCH CREEK\500_CADD\501_C3D_2020\C0362D06\SHEETSPLAN\090201-XS.DWG PLOT DATE: 1/11/2023 10:01 AM PLOT BY: NICHOLAS WATKHE PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 07



9

9



PROJECT NO: 7146-00-74	HWY: CTH D	COUNTY: TREMPEALEAU	CROSS SECTIONS: CTH D	SHEET	E
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Notes



Wisconsin Department of Transportation

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