

EAU

JANUARY 2024

PROJECT ID: WITH: NA

7879-03-74

COUNTY: DUNN

24

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 = 60

DESIGN DESIGNATION 7879-03-04

A.A.D.T.	2021	=	1,322
A.A.D.T.	2041	=	1,450
D.H.V.		=	119
D.D.		=	50/50
T.		=	16.8%
DESIGN SPEED		=	55 MPH
ESALS		=	360,000

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

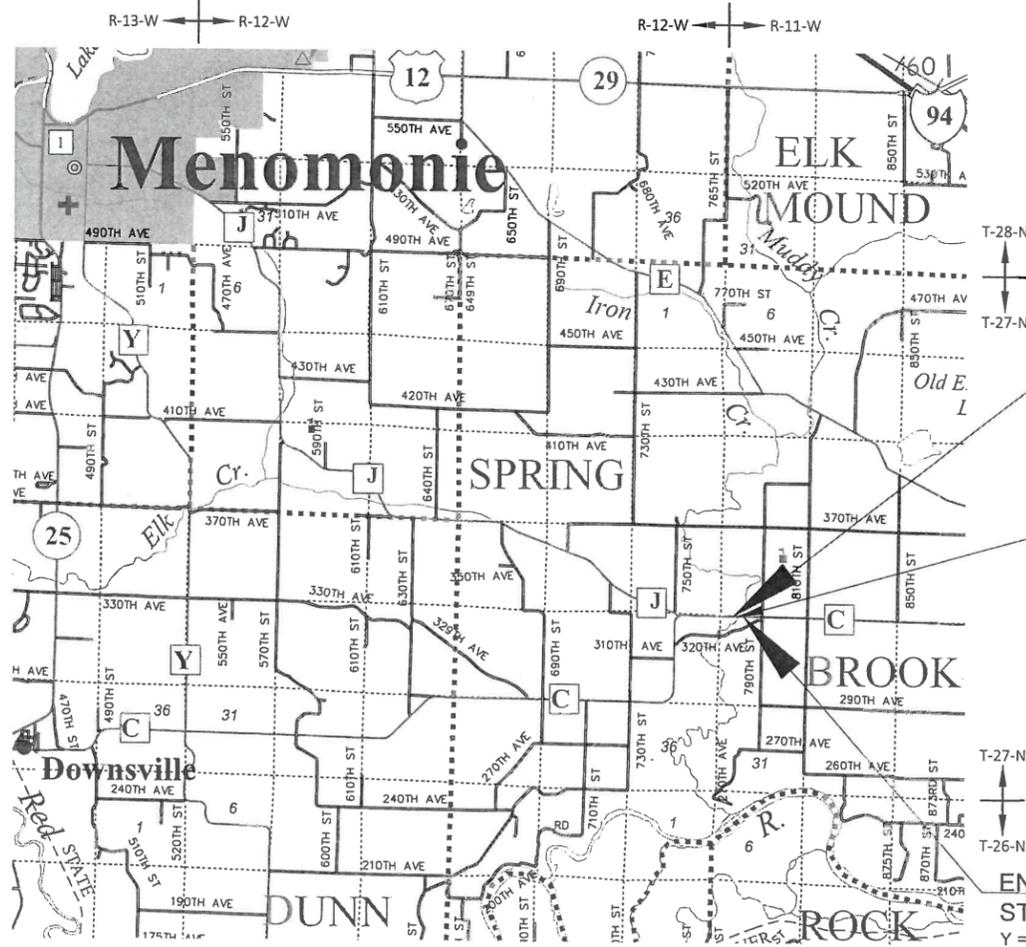
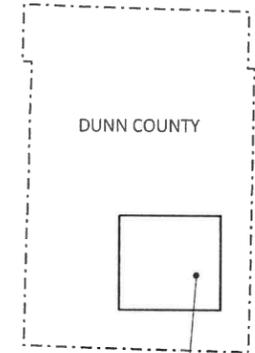
DOWNSVILLE - EAST COUNTY LINE

MUDDY CREEK BRIDGE B-17-0234

CTH C DUNN COUNTY

STATE PROJECT NUMBER 7879-03-74

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7879-03-74	WISC 2024130	1



BEGIN PROJECT STA 131+25 Y = 142,740.80 X = 202,860.77

STRUCTURE B-17-0234 STA 131+83.10 - STA 132+54.33

END PROJECT STA 133+00 Y = 142,742.29 X = 203,035.77

LAYOUT SCALE 0 2 MI TOTAL NET LENGTH OF CENTERLINE = 0.033 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), DUNN COUNTY, NAD83 (1991), 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 (N/A). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

ACCEPTED FOR DUNN COUNTY Date 07/13/2023 [Signature] HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY WISCONSIN PROFESSIONAL ENGINEER JACOB A. FRIBERG E-43328 RICE LAKE WI DATE: 7/13/23 [Signature]

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION PREPARED BY: Surveyor COOPER ENGINEERING, Designer COOPER ENGINEERING, Project Manager MATTHEW BERG, PE, Regional Examiner TOU YANG, PE, Regional Supervisor TYLER RONGSTAD, PE

APPROVED FOR THE DEPARTMENT DATE: 7/13/23 [Signature]

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LIST OF STANDARD ABBREVIATIONS

ABUT	ABUTMENT	LT.	LEFT
AC	ACRES	LS	LUMP SUM
AGG	AGGREGATE	MH	MANHOLE
AH	AHEAD	N	NORTH
ADT	AVERAGE DAILY TRAFFIC	NC	NORMAL CROWN
AVG.	AVERAGE	PAVT	PAVEMENT
ASPH	ASPHALTIC	PC	POINT OF CURVATURE
BK.	BACK	PE	PRIVATE ENTRANCE
BM	BENCHMARK	PI	POINT OF INTERSECTION
Δ	CENTRAL ANGLE OR DELTA	PL	PROPERTY LINE
℄, C/L	CENTERLINE	PP	POWER POLE
C & G	CURB AND GUTTER	PT	POINT OF TANGENCY
CABC	CRUSHED AGGREGATE BASE COURSE	R	RANGE, RADIUS
CONC.	CONCRETE	RCCP	REINFORCED CONCRETE CULVERT PIPE
COR	CORNER	RD	ROAD
CORR	CORRUGATED	REBAR	REINFORCEMENT BAR
CSCP	CORRUGATED STEEL CULVERT PIPE	REQD	REQUIRED
CSPA	CORRUGATED STEEL PIPE ARCH	RDWY	ROADWAY
CTH	COUNTY TRUNK HIGHWAY	RHF	RIGHT HAND FORWARD
CP.	CULVERT PIPE	RL, R/L	REFERENCE LINE
CY	CUBIC YARD	RR	RAILROAD
CWT.	HUNDREDWEIGHT	RT.	RIGHT
DIA	DIAMETER	R/W	RIGHT-OF-WAY
D	DEGREE OF CURVE	S	SOUTH
DHV	DESIGN HOURLY VOLUME	SAN S	SANITARY SEWER
DWY	DRIVEWAY	SDD	STANDARD DETAIL DRAWING
EBS	EXC. BELOW SUB GRADE	SE	SUPER ELEVATION
ELEV., EL	ELEVATION	SF.	SQUARE FEET
ELEC.	ELECTRIC	SHLDR	SHOULDER
EXC	EXCAVATION	SPECS	SPECIFICATIONS
EXIST	EXISTING	SQ.	SQUARE
E	EAST	SS.	STORM SEWER
FE	FIELD ENTRANCE	SY.	SQUARE YARD
FF.	FACE TO FACE	STH	STATE TRUNK HIGHWAY
FL, F/L	FLOW LINE	ST.	STREET
FS	FULL SUPERELEVATION	STA.	STATION
G	GARAGE	SW	SIDEWALK
GN	GRID NORTH	T	TANGENT
H	HOUSE	TC	TOP OF CURB
		℄, T/L	TRANSIT LINE
		TEL	TELEPHONE
		TEMP	TEMPORARY
		TLE	TEMPORARY LIMITED EASEMENT
		TYP	TYPICAL
HYD	HYDRANT	USH	UNITED STATES HIGHWAY
I	INTERSECTION ANGLE	UG	UNDERGROUND
INTERS	INTERSECTION	V	DESIGN SPEED
INV.	INVERT	VAR.	VARIABLE
IP	IRON PIN OR PIPE	VERT	VERTICAL
LC	LONG CHORD OF CURVE	YD	YARD
LF	LINEAR FOOT		
LHF	LEFT HAND FORWARD		
L	LENGTH OF CURVE		

COMMUNICATIONS

AT&T DISTRIBUTION
RICK PODOLAK
304 S DEWEY ST
EAU CLAIRE, WI 54701
PHONE: (715) 839-5565
EMAIL: rp4514@att.com

UTILITY CONTACTS

COMMUNICATIONS

WEST WISCONSIN TELCOM
BRAD SCHMIDTKNECHT
E4528 CTY RD C, PO BOX 115
DOWNSVILLE, WI 54735
PHONE: (715) 231-2000
EMAIL: brads@wvt.coop

ELECTRIC

XCEL ENERGY
SCOTT DEMERS
PO BOX 8
EAU CLAIRE, WI 54702
PHONE: (715) 308-0655
EMAIL: Scott.a.demers@xcelenergy.com

ALL UTILITIES LISTED ARE MEMBERS OF DIGGERS HOTLINE



OTHER CONTACTS

DESIGN CONSULTANT

COOPER ENGINEERING
JACOB FRIBERG
2600 COLLEGE DRIVE
RICE LAKE, WI 54868
PHONE: (715) 234-7008
EMAIL: jfriberg@cooperengineering.net

DUNN COUNTY

HIGHWAY COMMISSIONER
DUSTIN BINDER
3303 HIGHWAY 12 EAST
MENOMONIE, WI
PHONE: (715) 232-2181
EMAIL: dbinder@co.dunn.wi.us

WDNR REGIONAL CONTACT

WDNR/WISDOT LIAISON
LEAH NICOL
1300 WEST CLAIREMONT AVENUE
EAU CLAIRE, WI 54701
PHONE: (715) 934-9014
EMAIL: Leah.Nicol@wisconsin.gov

GENERAL NOTES:

NO TREES OR SHRUBS SHALL BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE BEEN DESIGNATED FOR REMOVAL BY THE ENGINEER.

ACCESS TO ALL RESIDENCES & SIDE ROADS SHALL BE MAINTAINED DURING CONSTRUCTION.

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

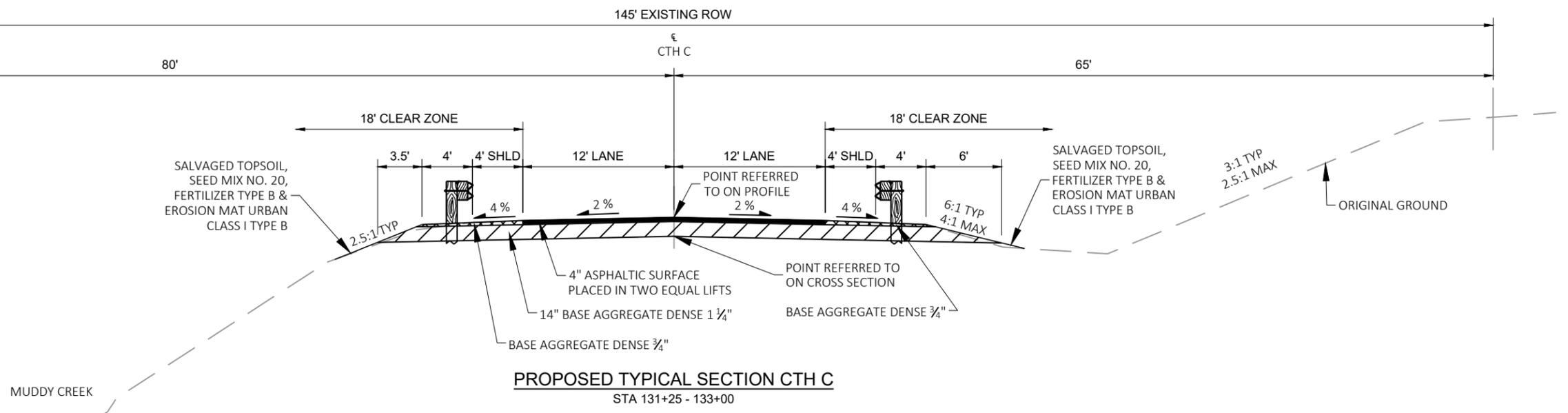
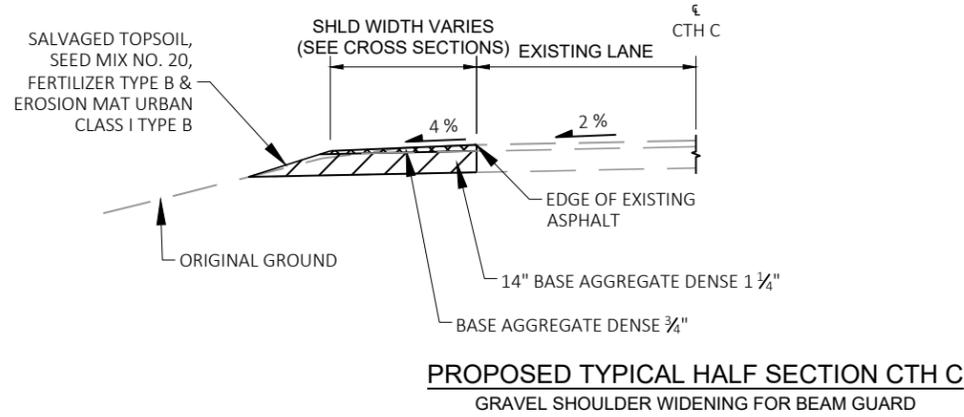
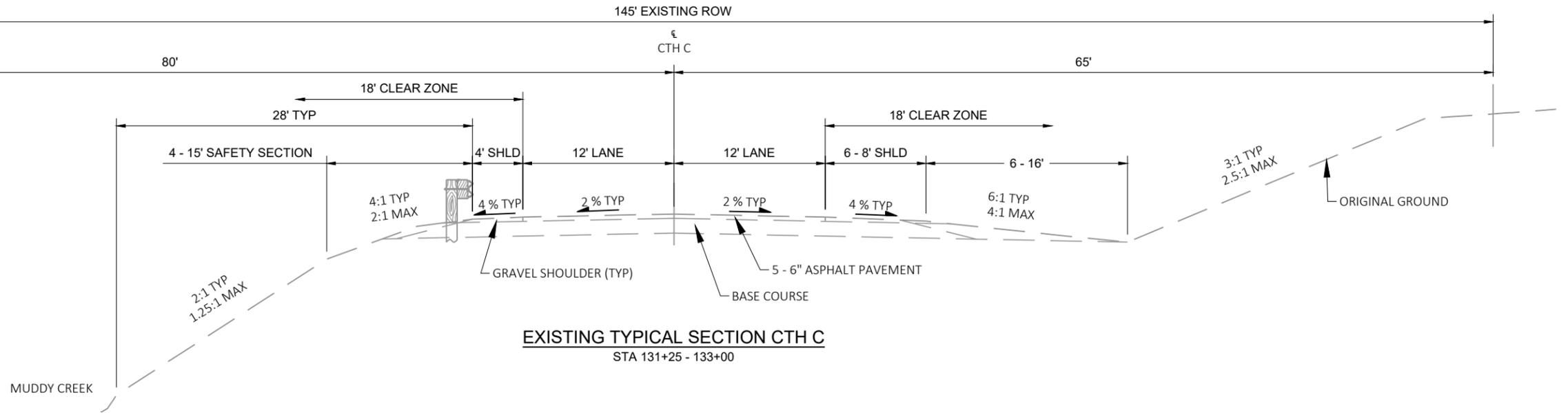
THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

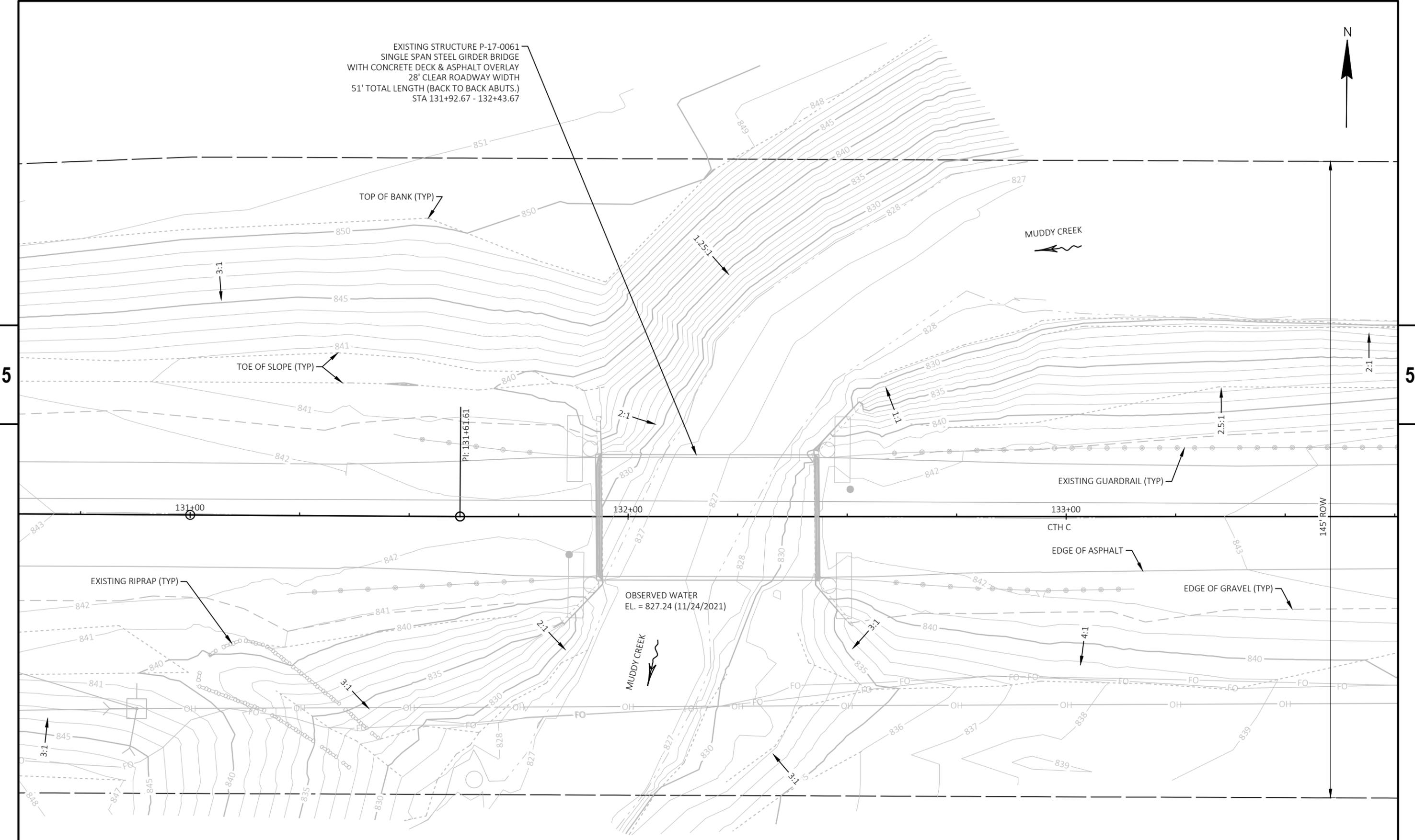
CTH C WILL BE CLOSED DURING CONSTRUCTION AND NO DETOUR ROUTE WILL BE MARKED.

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP								
	A			B			C		
	SLOPE RANGE (%)			SLOPE RANGE (%)			SLOPE RANGE (%)		
LAND USE:	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
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36
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 = 2.03 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.46 ACRES





EROSION CONTROL LEGEND

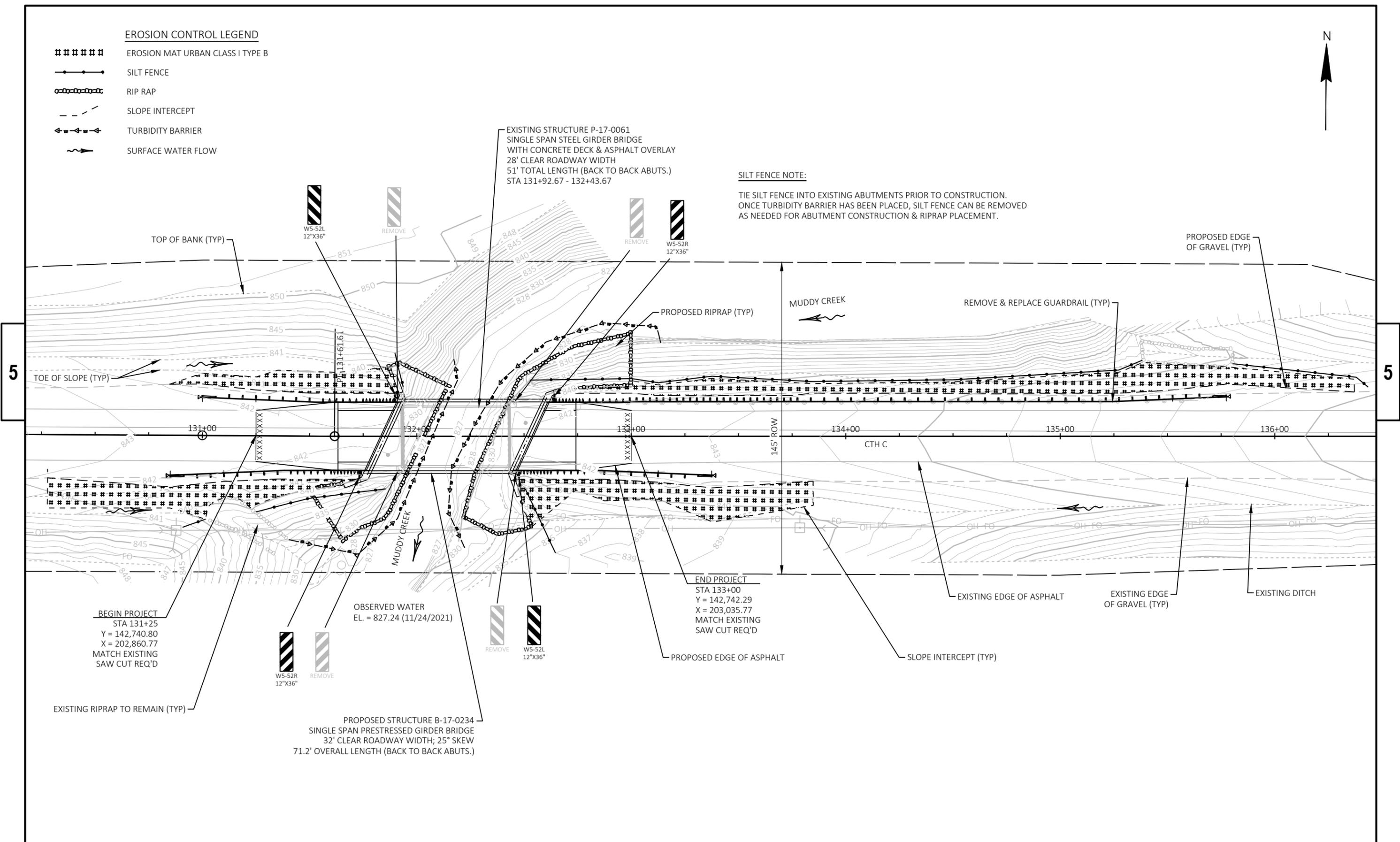
- ##### EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- RIP RAP
- - - - SLOPE INTERCEPT
- ←←←←← TURBIDITY BARRIER
- SURFACE WATER FLOW



EXISTING STRUCTURE P-17-0061
SINGLE SPAN STEEL GIRDER BRIDGE
WITH CONCRETE DECK & ASPHALT OVERLAY
28' CLEAR ROADWAY WIDTH
51' TOTAL LENGTH (BACK TO BACK ABUTS.)
STA 131+92.67 - 132+43.67

SILT FENCE NOTE:

TIE SILT FENCE INTO EXISTING ABUTMENTS PRIOR TO CONSTRUCTION.
ONCE TURBIDITY BARRIER HAS BEEN PLACED, SILT FENCE CAN BE REMOVED
AS NEEDED FOR ABUTMENT CONSTRUCTION & RIPRAP PLACEMENT.



TOP OF BANK (TYP)

PROPOSED EDGE OF GRAVEL (TYP)

MUDDY CREEK

REMOVE & REPLACE GUARDRAIL (TYP)

PROPOSED RIPRAP (TYP)

5

5

TOE OF SLOPE (TYP)

CTH C

145' ROW

BEGIN PROJECT
STA 131+25
Y = 142,740.80
X = 202,860.77
MATCH EXISTING
SAW CUT REQ'D

OBSERVED WATER
EL. = 827.24 (11/24/2021)

END PROJECT
STA 133+00
Y = 142,742.29
X = 203,035.77
MATCH EXISTING
SAW CUT REQ'D

EXISTING EDGE OF ASPHALT

EXISTING EDGE OF GRAVEL (TYP)

EXISTING DITCH

PROPOSED EDGE OF ASPHALT

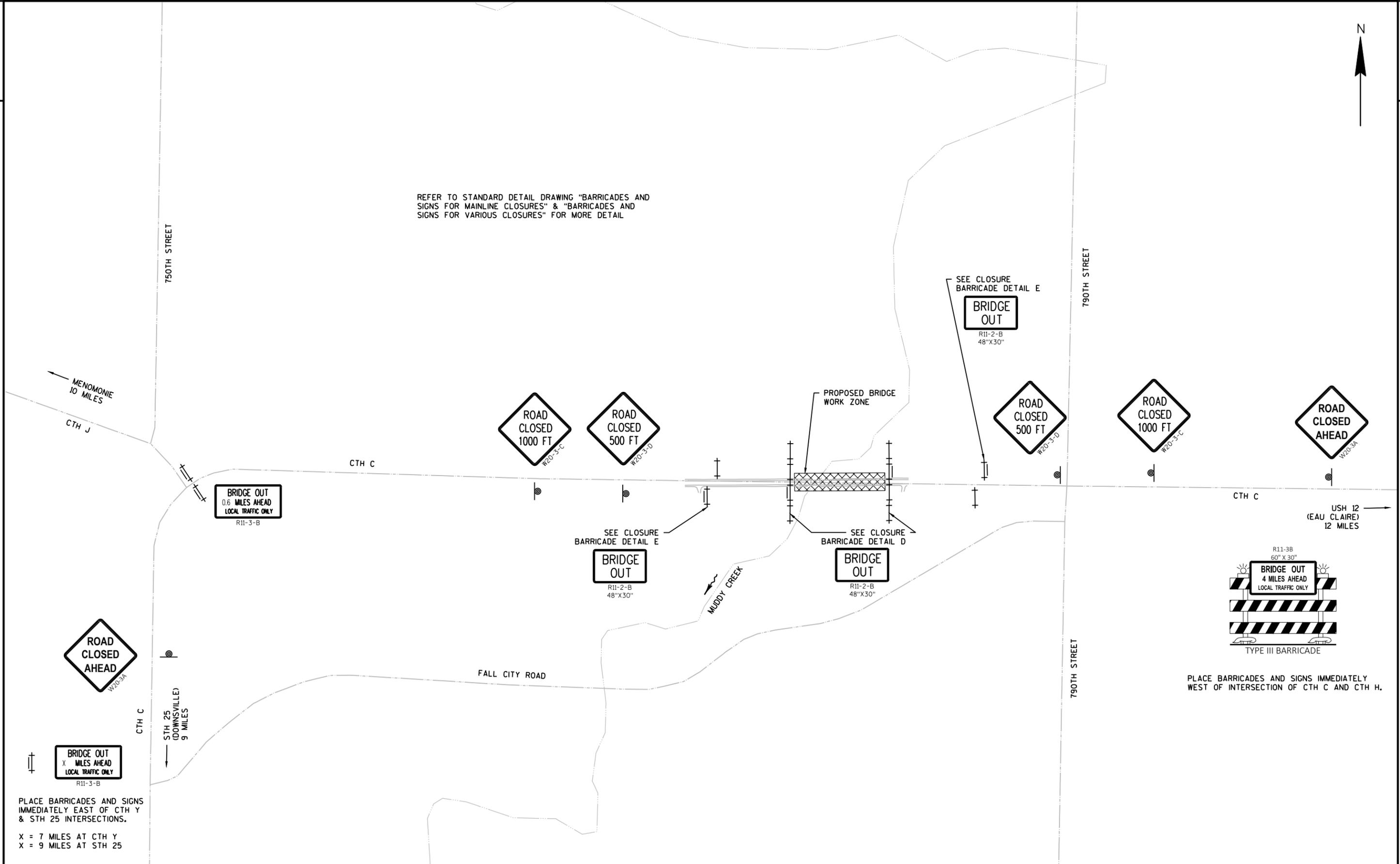
SLOPE INTERCEPT (TYP)

EXISTING RIPRAP TO REMAIN (TYP)

PROPOSED STRUCTURE B-17-0234
SINGLE SPAN PRESTRESSED GIRDER BRIDGE
32' CLEAR ROADWAY WIDTH; 25° SKEW
71.2' OVERALL LENGTH (BACK TO BACK ABUTS.)



REFER TO STANDARD DETAIL DRAWING "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" & "BARRICADES AND SIGNS FOR VARIOUS CLOSURES" FOR MORE DETAIL



BRIDGE OUT
0.6 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3-B

ROAD CLOSED
1000 FT
W20-3-C

ROAD CLOSED
500 FT
W20-3-D

BRIDGE OUT
R11-2-B
48"X30"

ROAD CLOSED
500 FT
W20-3-D

ROAD CLOSED
1000 FT
W20-3-C

ROAD CLOSED
AHEAD
W20-3-A

SEE CLOSURE
BARRICADE DETAIL E
BRIDGE OUT
R11-2-B
48"X30"

SEE CLOSURE
BARRICADE DETAIL D
BRIDGE OUT
R11-2-B
48"X30"



PLACE BARRICADES AND SIGNS IMMEDIATELY WEST OF INTERSECTION OF CTH C AND CTH H.

ROAD CLOSED
AHEAD
W20-3A

BRIDGE OUT
X MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3-B

PLACE BARRICADES AND SIGNS IMMEDIATELY EAST OF CTH Y & STH 25 INTERSECTIONS.
X = 7 MILES AT CTH Y
X = 9 MILES AT STH 25

PROJECT NO: 7879-03-74	HWY: CTH C	COUNTY: DUNN	TRAFFIC CONTROL OVERVIEW	SHEET	E
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Estimate Of Quantities

7879-03-74

Line	Item	Item Description	Unit	Total	Qty
0002	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-17-0061	EACH	1.000	1.000
0004	204.0165	Removing Guardrail	LF	510.000	510.000
0006	205.0100	Excavation Common	CY	540.000	540.000
0008	206.1001	Excavation for Structures Bridges (structure) 01. B-17-0234	EACH	1.000	1.000
0010	210.1500	Backfill Structure Type A	TON	780.000	780.000
0012	213.0100	Finishing Roadway (project) 01. 7879-03-74	EACH	1.000	1.000
0014	305.0110	Base Aggregate Dense 3/4-Inch	TON	300.000	300.000
0016	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	800.000	800.000
0018	415.0120	Concrete Pavement 12-Inch	SY	36.000	36.000
0020	415.0410	Concrete Pavement Approach Slab	SY	110.000	110.000
0022	455.0605	Tack Coat	GAL	15.000	15.000
0024	465.0105	Asphaltic Surface	TON	50.000	50.000
0026	502.0100	Concrete Masonry Bridges	CY	176.000	176.000
0028	502.3200	Protective Surface Treatment	SY	332.000	332.000
0030	503.0137	Prestressed Girder Type I 36W-Inch	LF	272.000	272.000
0032	505.0400	Bar Steel Reinforcement HS Structures	LB	5,260.000	5,260.000
0034	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	19,900.000	19,900.000
0036	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	8.000	8.000
0038	506.4000	Steel Diaphragms (structure) 01. B-17-0234	EACH	3.000	3.000
0040	513.4061	Railing Tubular Type M	LF	146.000	146.000
0042	516.0500	Rubberized Membrane Waterproofing	SY	16.000	16.000
0044	550.0020	Pre-Boring Rock or Consolidated Materials	LF	176.000	176.000
0046	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	220.000	220.000
0048	606.0300	Riprap Heavy	CY	280.000	280.000
0050	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	200.000	200.000
0052	614.2300	MGS Guardrail 3	LF	150.000	150.000
0054	614.2330	MGS Guardrail 3 K	LF	75.000	75.000
0056	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0058	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0060	618.0100	Maintenance and Repair of Haul Roads (project) 01. 7879-03-74	EACH	1.000	1.000
0062	619.1000	Mobilization	EACH	1.000	1.000
0064	624.0100	Water	MGAL	10.000	10.000
0066	625.0500	Salvaged Topsoil	SY	870.000	870.000
0068	628.1504	Silt Fence	LF	550.000	550.000
0070	628.1520	Silt Fence Maintenance	LF	550.000	550.000
0072	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0074	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0076	628.2008	Erosion Mat Urban Class I Type B	SY	870.000	870.000
0078	628.6005	Turbidity Barriers	SY	250.000	250.000
0080	629.0210	Fertilizer Type B	CWT	0.600	0.600
0082	630.0120	Seeding Mixture No. 20	LB	30.000	30.000
0084	630.0500	Seed Water	MGAL	25.000	25.000
0086	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0088	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0090	638.2602	Removing Signs Type II	EACH	4.000	4.000
0092	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0094	642.5001	Field Office Type B	EACH	1.000	1.000
0096	643.0420	Traffic Control Barricades Type III	DAY	2,000.000	2,000.000
0098	643.0705	Traffic Control Warning Lights Type A	DAY	3,400.000	3,400.000
0100	643.0900	Traffic Control Signs	DAY	1,800.000	1,800.000

Estimate Of Quantities

7879-03-74

Line	Item	Item Description	Unit	Total	Qty
0102	643.5000	Traffic Control	EACH	1.000	1.000
0104	645.0111	Geotextile Type DF Schedule A	SY	100.000	100.000
0106	645.0120	Geotextile Type HR	SY	420.000	420.000
0108	646.1020	Marking Line Epoxy 4-Inch	LF	700.000	700.000
0110	650.4500	Construction Staking Subgrade	LF	538.000	538.000
0112	650.5000	Construction Staking Base	LF	538.000	538.000
0114	650.6501	Construction Staking Structure Layout (structure) 01. B-17-0234	EACH	1.000	1.000
0116	650.7000	Construction Staking Concrete Pavement	LF	56.000	56.000
0118	650.9911	Construction Staking Supplemental Control (project) 01. 7879-03-74	EACH	1.000	1.000
0120	650.9920	Construction Staking Slope Stakes	LF	538.000	538.000
0122	690.0150	Sawing Asphalt	LF	48.000	48.000
0124	715.0502	Incentive Strength Concrete Structures	DOL	1,760.000	1,760.000
0126	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	73.000	73.000
0128	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 132+25	EACH	1.000	1.000
0130	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0132	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0134	SPV.0090	Special 01. Flashing Stainless Steel	LF	128.000	128.000

3

CATEGORY	POST #1 STA	LOCATION	MGS		MGS		MGS		MGS	
			REMOVING	GUARDRAIL	GUARDRAIL	THRIE BEAM	GUARDRAIL	THRIE BEAM	GUARDRAIL	THRIE BEAM
			204.0165	614.2300	614.2330	614.2500	614.2610	3	3 K	TRANSITION
	LF	LF	EA	LF	EA					
0010	130+85	RT	71	-	-	39.4	1			
0010	131+00	LT	46	-	-	39.4	1			
0010	133+37	RT	72	-	-	39.4	1			
0010	135+77	LT	321	150	75	39.4	1			
TOTAL 0010			510	150	75	157.6	4			

CATEGORY	STATION TO	STATION	SIDE	SALVAGED/ UNUSEABLE		EXPANDED FILL		MASS ORDNATE +/-	
				EXCAVATION COMMON	PAVEMENT MATERIAL	AVAILABLE MATERIAL	UNEXPANDED FILL		
				205.0100	205.0100	205.0100	205.0100		
0010	130+28	- 131+85	LT/RT	220	30	190	15	20	170
0010	132+54	- 136+37	LT/RT	320	30	290	60	75	215
TOTAL 0010				540	60	480	75	95	385

3

CATEGORY	STATION TO	STATION	SIDE	ASPHALT THICKNESS (IN)	LAYERS	BASE AGGREGATE		BASE AGGREGATE		CONCRETE PAVEMENT		ASPHALTIC SURFACE		SAWING ASPHALT		REMARKS
						DENSE 3/4-INCH	DENSE 1 1/4-INCH	DENSE 12-INCH	CONCRETE PAVEMENT APPROACH	TACK COAT	ASPHALTIC SURFACE	WATER	SAWING ASPHALT			
						305.0110	305.0120	415.0120	415.0410	455.0605	465.0105	624.0100	690.0150			
0010	130+28	- 131+25	RT	-	-	46	95	-	-	-	-	1.2	-			
0010	130+85	- 131+25	LT	-	-	22	42	-	-	-	-	0.6	-			
0010	131+25	- 131+63	LT/RT	4	2	24	136	-	-	9	30	1.7	24			
0010	131+63	- 131+83	LT/RT	-	-	8	35	18	55	-	-	0.5	-	PLACE 8" B.A.D. UNDER CONCRETE		
0010	132+54	- 132+74	LT/RT	-	-	8	35	18	55	-	-	0.5	-	PLACE 8" B.A.D. UNDER CONCRETE		
0010	132+74	- 133+00	LT/RT	4	2	16	91	-	-	6	20	1.1	24			
0010	133+00	- 133+85	RT	-	-	41	83	-	-	-	-	1.0	-			
0010	133+00	- 136+37	LT	-	-	135	283	-	-	-	-	3.4	-			
TOTAL 0010						300	800	36	110	15	50	10	48			

CATEGORY	LOCATION	EROSION MAT		SEEDING		
		SALVAGED TOPSOIL	URBAN CLASS I TYPE B	FERTILIZER TYPE B	MIX NO. 20	SEED WATER
		625.0500	628.2008	629.0210	630.0120	630.0500
		SY	SY	CWT	LB	MGAL
0010	B-17-0234 NW	90	90	0.06	3	3
0010	B 17 0234 SW	150	150	0.10	6	5
0010	B 17 0234 SE	185	185	0.12	6	5
0010	B 17 0234 NE	270	270	0.19	9	7
0010	UNDISTRIBUTED	175	175	0.13	6	5
TOTAL 0010		870	870	0.6	30	25

CATEGORY	LOCATION	SILT FENCE	
		SILT FENCE	MAINTENANCE
		628.1504	628.1520
		LF	LF
0010	B-17-0234 NW	15	15
0010	B-17-0234 SW	60	60
0010	B-17-0234 SE	25	25
0010	B-17-0234 NE	340	340
0010	UNDISTRIBUTED	110	110
TOTAL 0010		550	550

PROJECT NO: 7879-03-74

HWY: CTH C

COUNTY: DUNN

MISCELLANEOUS QUANTITIES

SHEET

E

3

CATEGORY	LOCATION	MOBILIZATIONS		REMARKS
		EROSION CONTROL	EMERGENCY EROSION CONTROL	
		628.1905	628.1910	
0010	PROJECT	1	-	SILT FENCE
0010	PROJECT	1	-	TURBIDITY BARRIER
0010	PROJECT	1	-	RESTORATION WEST SIDE
0010	PROJECT	1	-	RESTORATION EAST SIDE
0010	PROJECT	-	2	UNDISTRIBUTED
TOTAL 0010		4	2	

CATEGORY	LOCATION	TURBIDITY BARRIER		REMARKS
		628.6005	SY	
0010	B-17-0234 WEST	110		140' LONG X 7' HIGH
0010	B-17-0234 EAST	140		175' LONG X 7' HIGH
TOTAL 0010		250		

3

CATEGORY	LOCATION	POSTS		SIGNS		REMARKS
		WOOD	TYPE II	REMOVING	REMOVING	
		4x6-INCH	REFLECTIVE	SIGNS	SMALL SIGN	
		x 12 FT	F	TYPE II	SUPPORTS	
		634.0612	637.2230	638.2602	638.3000	
0010	B-17-0234 NW	1	3	1	1	W5-52R
0010	B-17-0234 SW	1	3	1	1	W5-52L
0010	B-17-0234 SE	1	3	1	1	W5-52L
0010	B-17-0234 NE	1	3	1	1	W5-52R
TOTAL 0010		4	12	4	4	

CATEGORY	DAYS	TRAFFIC CONTROL BARRICADES		TRAFFIC CONTROL WARNING LIGHTS		TRAFFIC CONTROL SIGNS		REMARKS
		TYPE III	TYPE A	TYPE A	TYPE A	TYPE A	TYPE A	
		643.0420	643.0705	643.0900	643.0900	643.0900	643.0900	
		#	DAYS	#	DAYS	#	DAYS	
0010	100	4	400	5	500	1	100	ROAD CLOSED DETAIL D WEST SIDE
0010	100	4	400	5	500	1	100	ROAD CLOSED DETAIL D EAST SIDE
0010	100	8	800	16	1,600	10	1,000	ADVANCED ROAD CLOSED DETAIL C WEST SIDE
0010	100	4	400	8	800	6	600	ADVANCED ROAD CLOSED DETAIL C EAST SIDE
TOTAL 0010		2,000		3,400		1,800		

CATEGORY	STATION TO	STATION	SIDE	MARKING LINE EPOXY		MARKING LINE EPOXY		MARKING LINE EPOXY		REMARKS
				4-INCH	4-INCH, YELLOW	4-INCH, YELLOW	4-INCH, WHITE			
				646.1020	*	*	*			
				LF	LF	LF	LF			
0010	131+25	- 133+00	CL	350	350	-	-	-	DOUBLE YELLOW CENTERLINE	
0010	131+25	- 133+00	LT	175	-	-	-	175	LT WHITE EDGELINE	
0010	131+25	- 133+00	RT	175	-	-	-	175	RT WHITE EDGELINE	
TOTAL 0010				700	350	350				

*FOR INFORMATION ONLY

CATEGORY	STATION TO	STATION	CONSTRUCTION STAKING		CONSTRUCTION CONCRETE		CONSTRUCTION STAKING	
			SUBGRADE	CONSTRJCTION STAKING BASE	PAVEMENT	SLOPE STAKES		
			650.4500	650.5000	650.7000	650.9920		
			LF	LF	LF	LF		
0010	130+28	- 131+83	155	155	28	155		
0010	132+54	- 136+37	383	383	28	383		
TOTAL 0010			538	538	56	538		

PROJECT NO: 7879-03-74

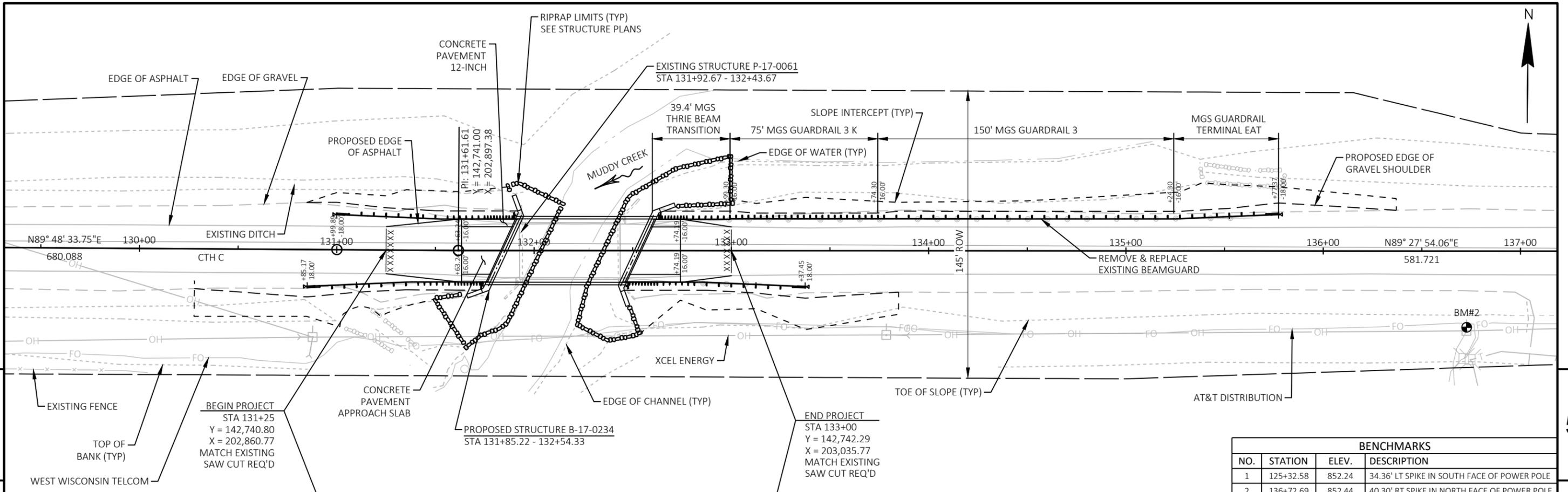
HWY: CTH C

COUNTY: DUNN

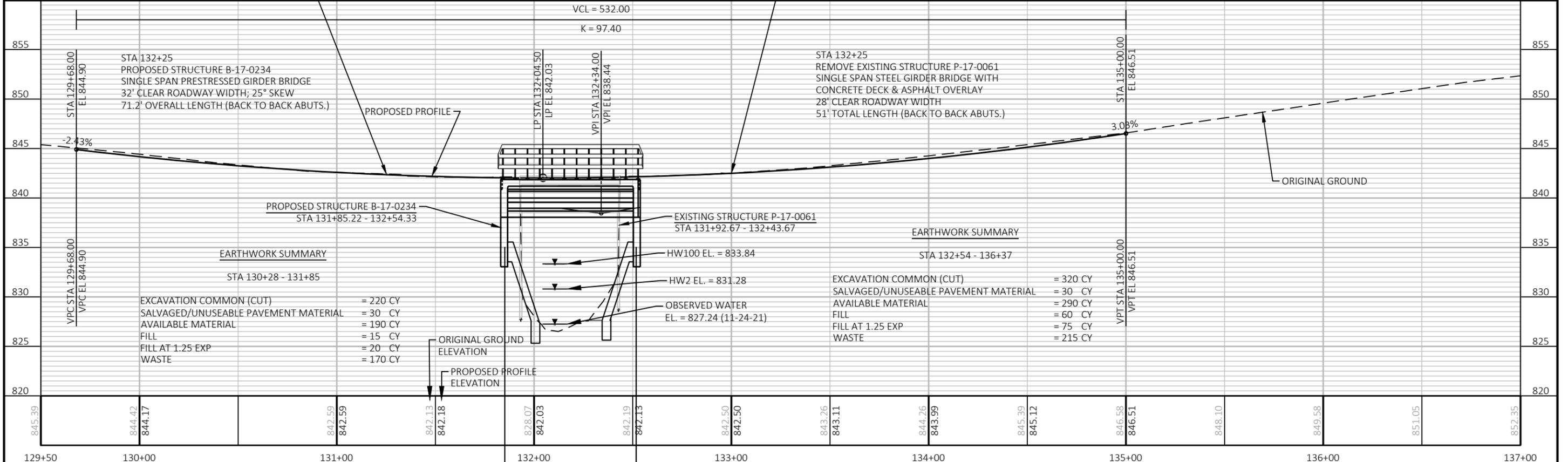
MISCELLANEOUS QUANTITIES

SHEET

E



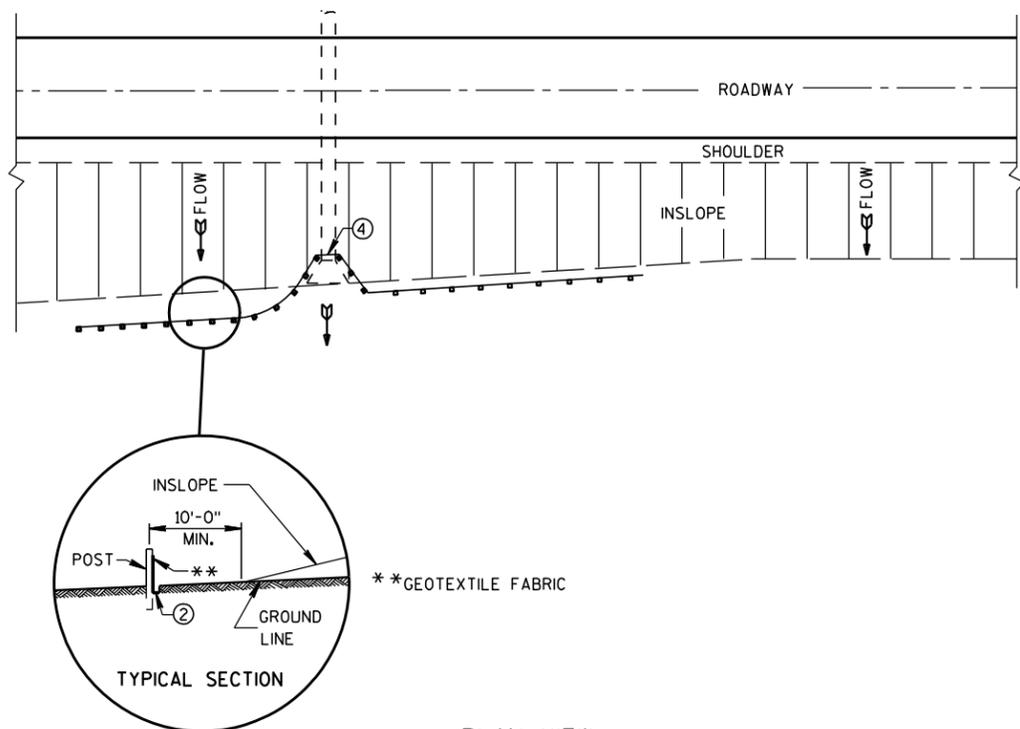
BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
1	125+32.58	852.24	34.36' LT SPIKE IN SOUTH FACE OF POWER POLE
2	136+72.69	852.44	40.30' RT SPIKE IN NORTH FACE OF POWER POLE



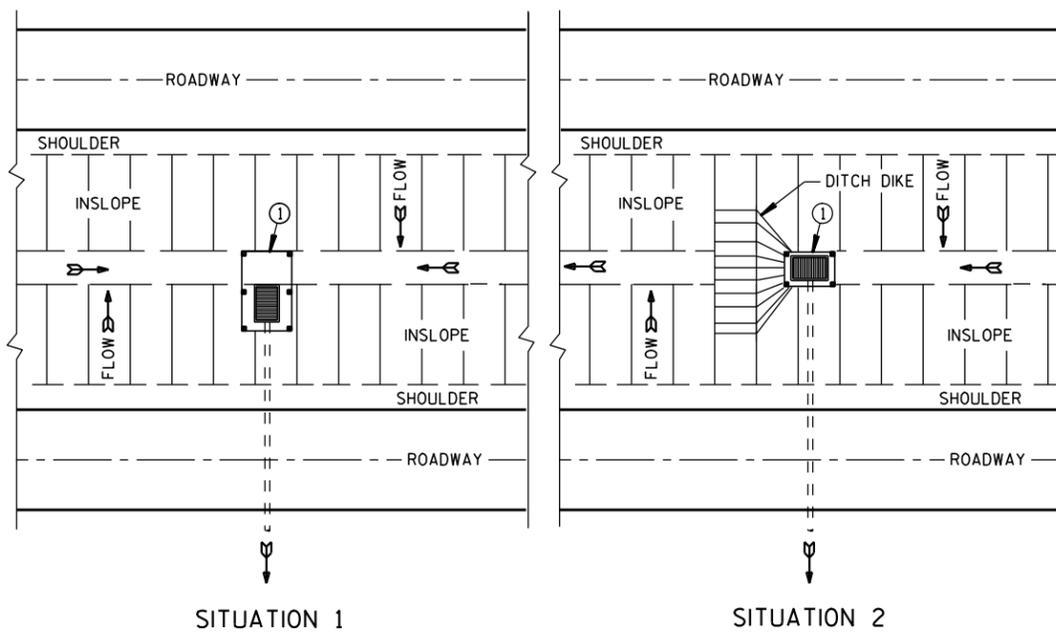
PROJECT NO:	7879-03-74	HWY:	CTH C	COUNTY:	DUNN	PLAN AND PROFILE:	CTH C	SHEET	5
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Standard Detail Drawing List

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)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

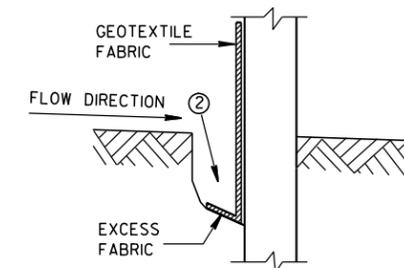


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

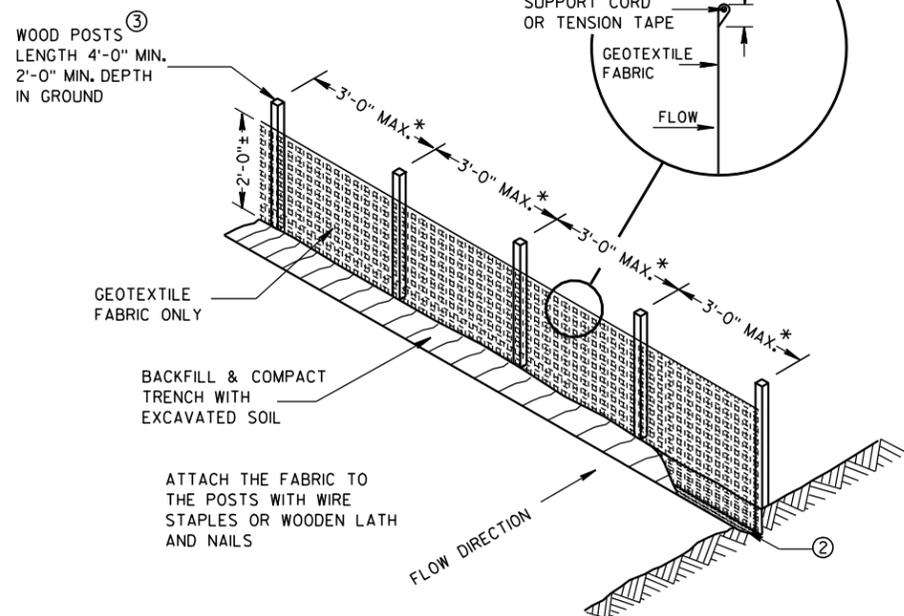
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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.



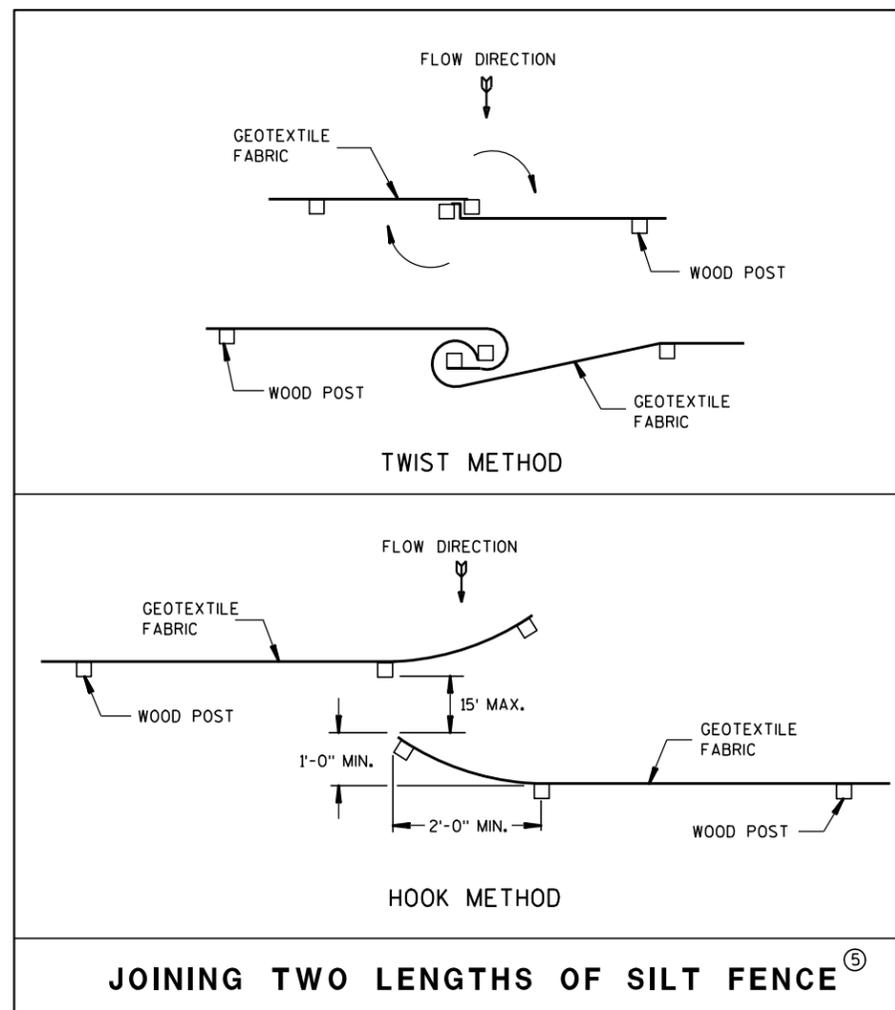
TRENCH DETAIL

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

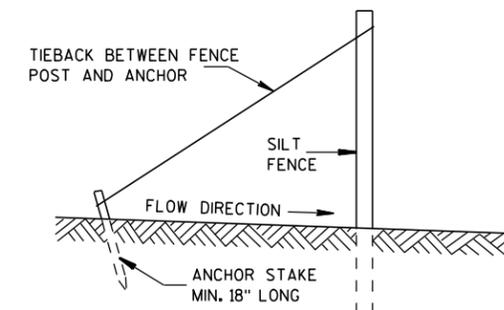


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤

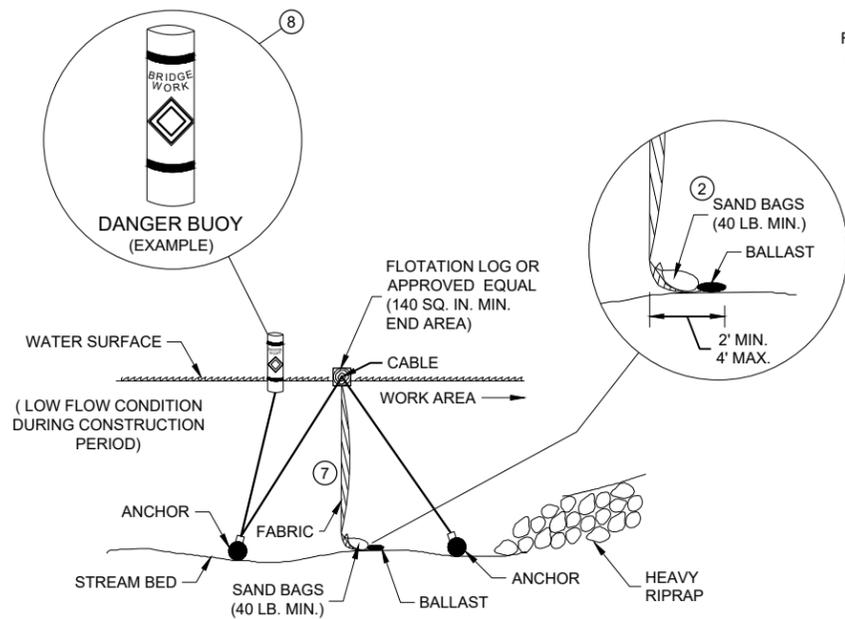


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

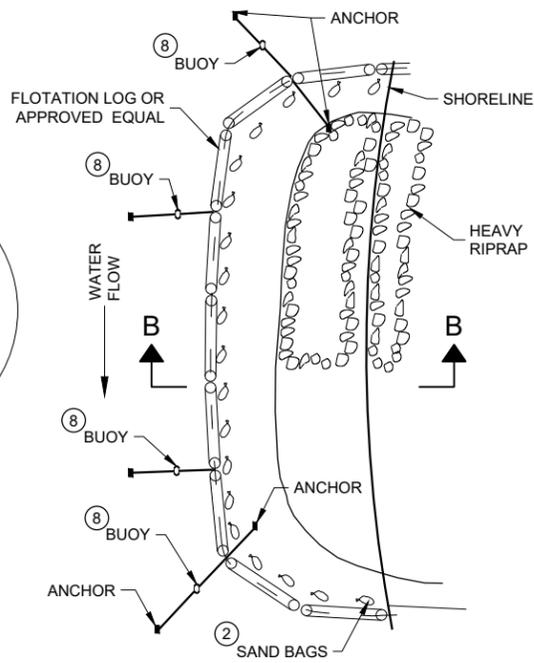
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

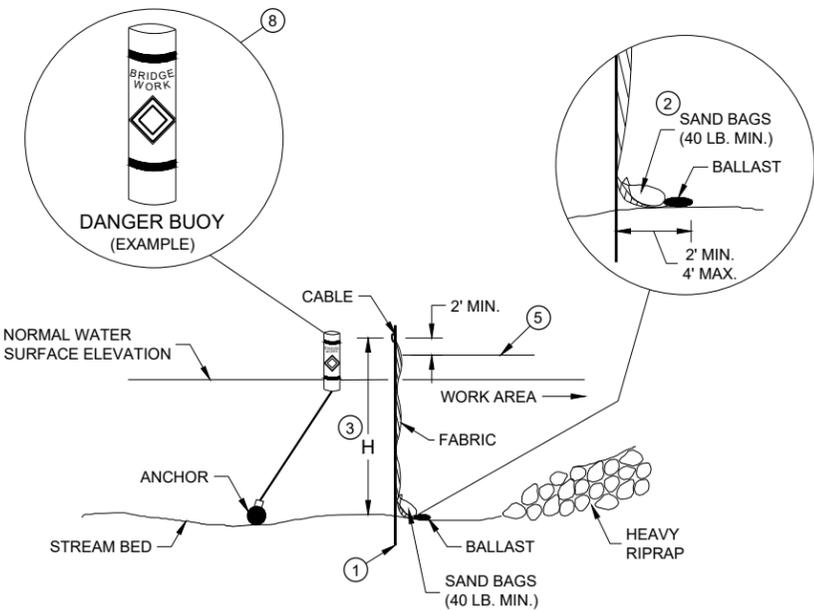


SECTION B - B

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

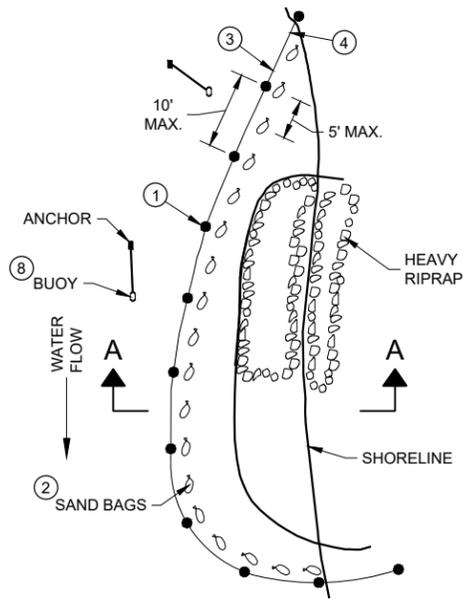


PLAN VIEW



SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW

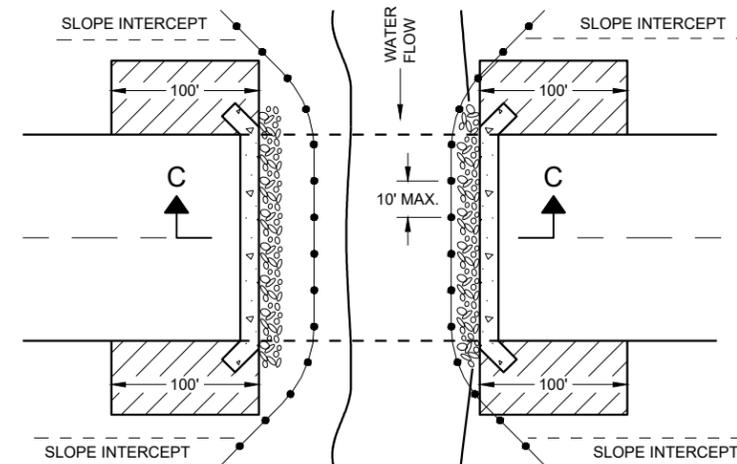
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

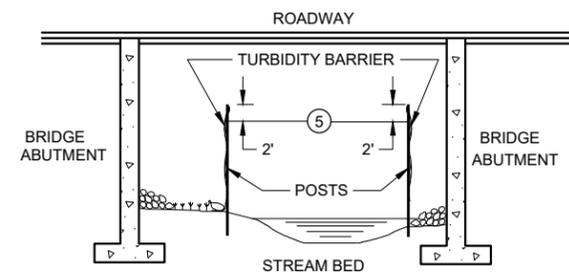
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

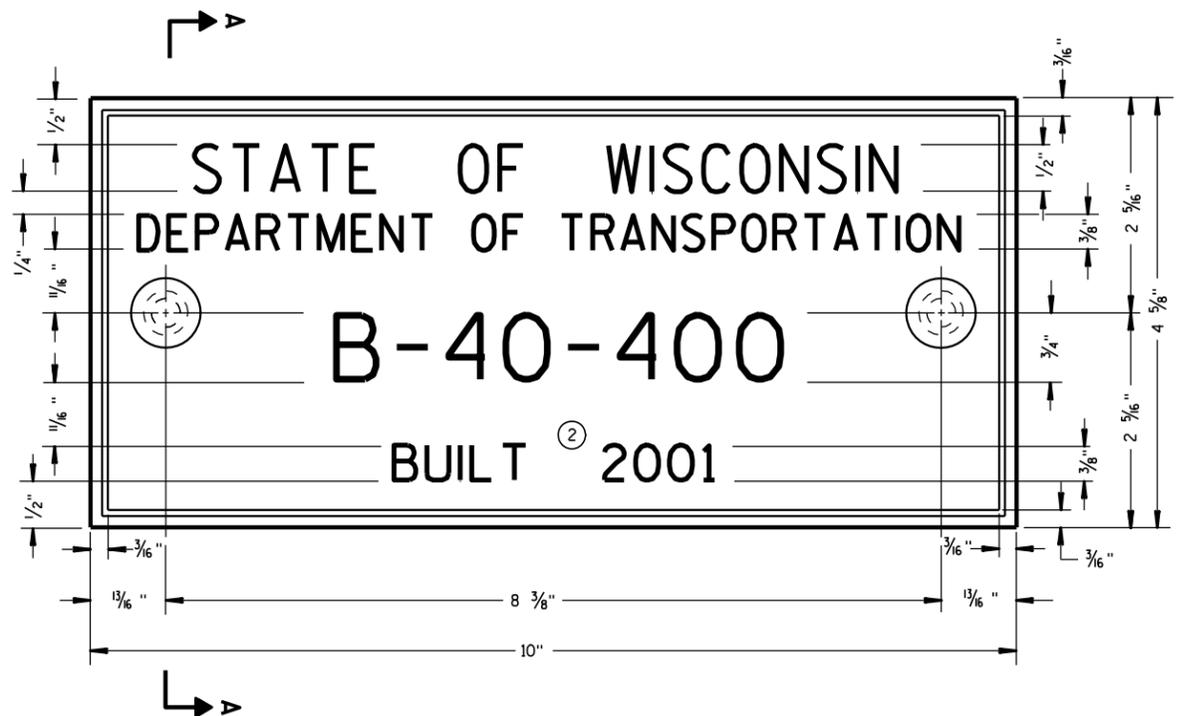
**TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES**

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



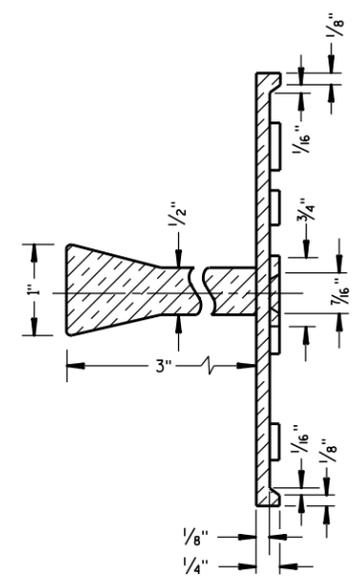
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

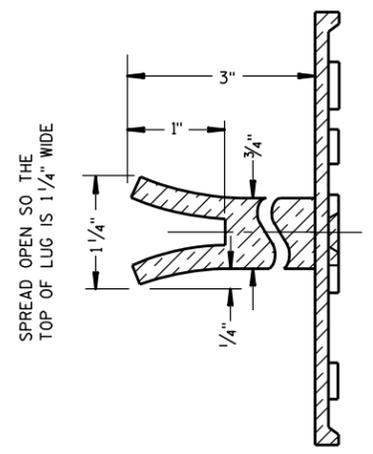
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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



SPREAD OPEN SO THE TOP OF LUG IS 1 1/4" WIDE

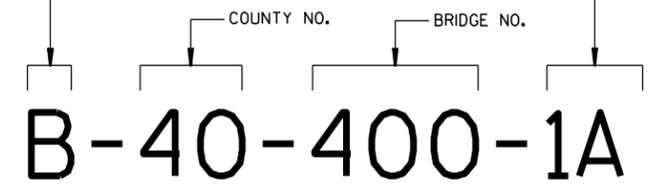
ALTERNATE LUG

6

6

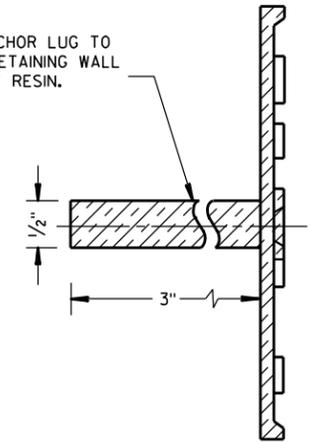
FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

- B = BRIDGE
- C = CULVERT
- R = RETAINING WALL
- UNIT NO. FOR MULTIPLE UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

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

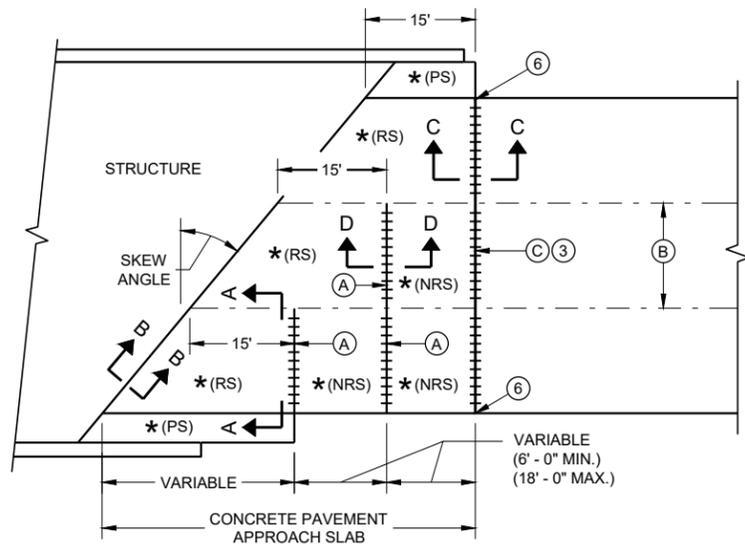


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

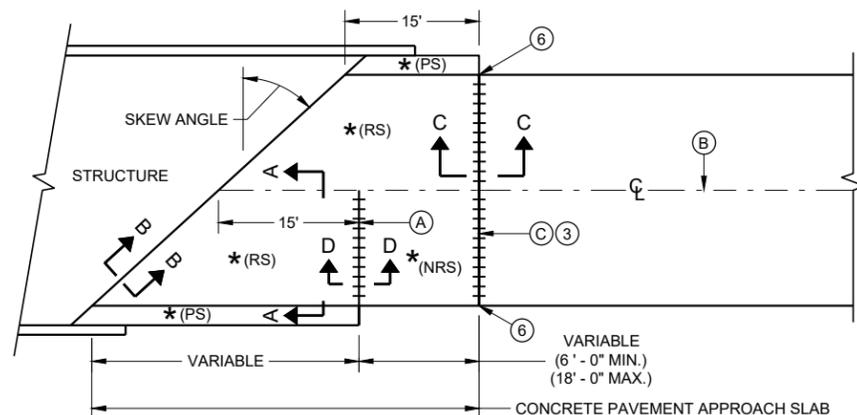
S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

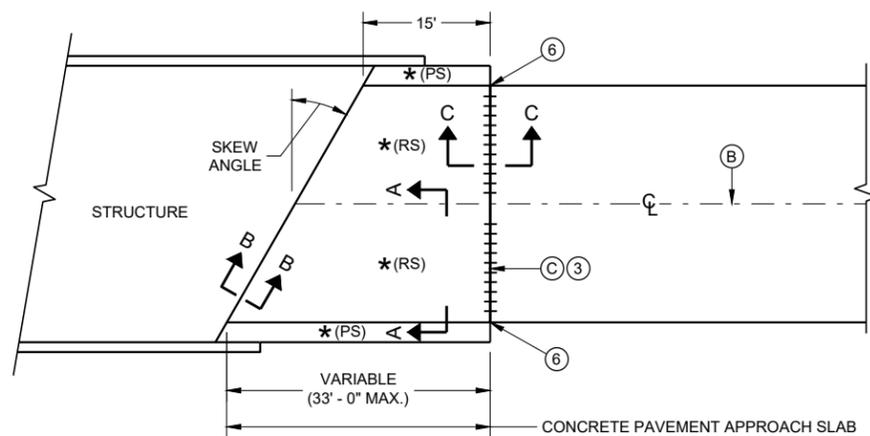
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



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

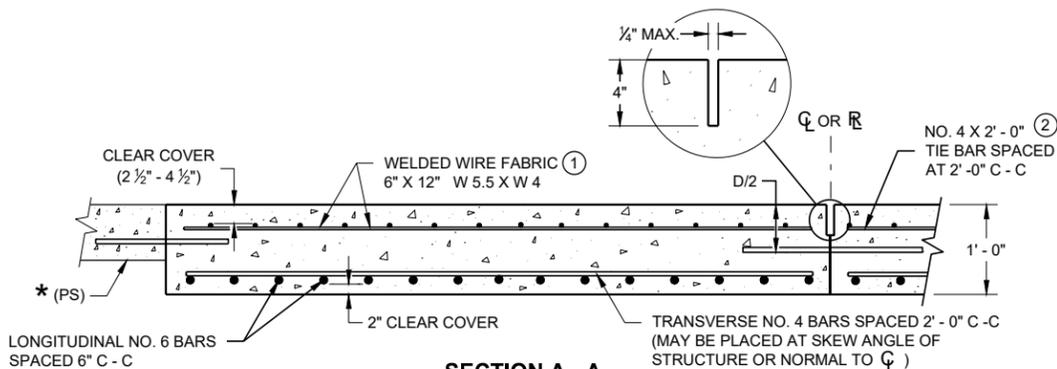


**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

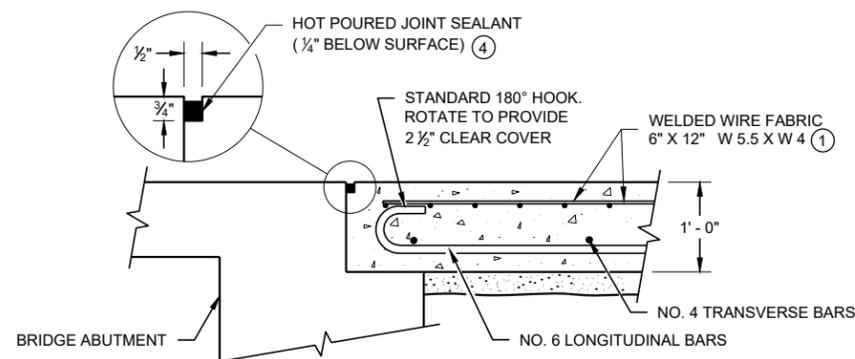


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**
APPROACH SLAB AND ADJACENT PAVEMENT

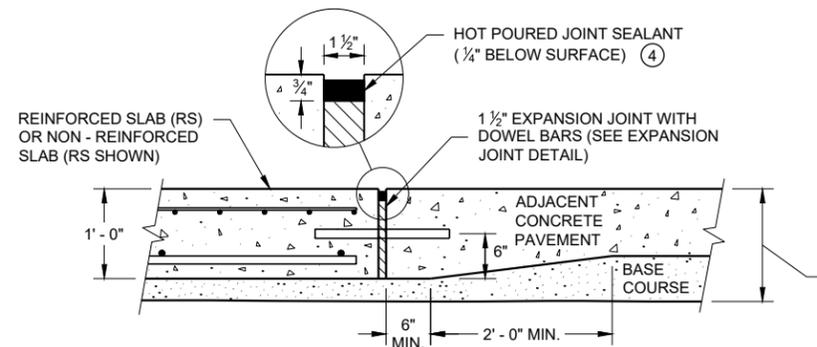
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



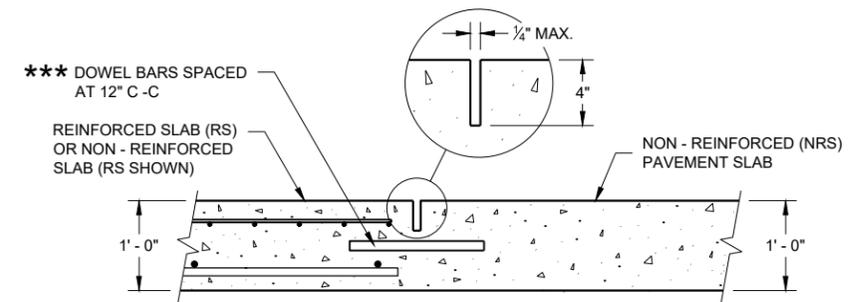
**SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT**



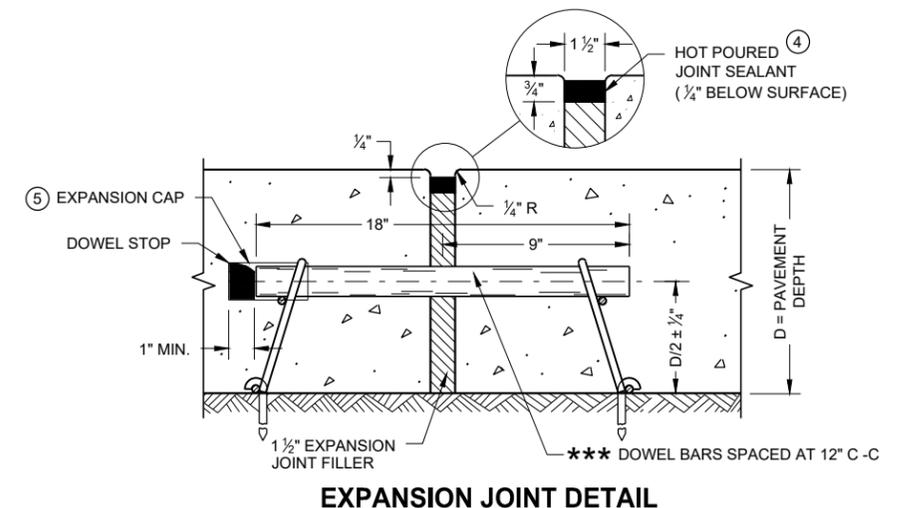
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

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



**SECTION D - D
CONTRACTION JOINT**

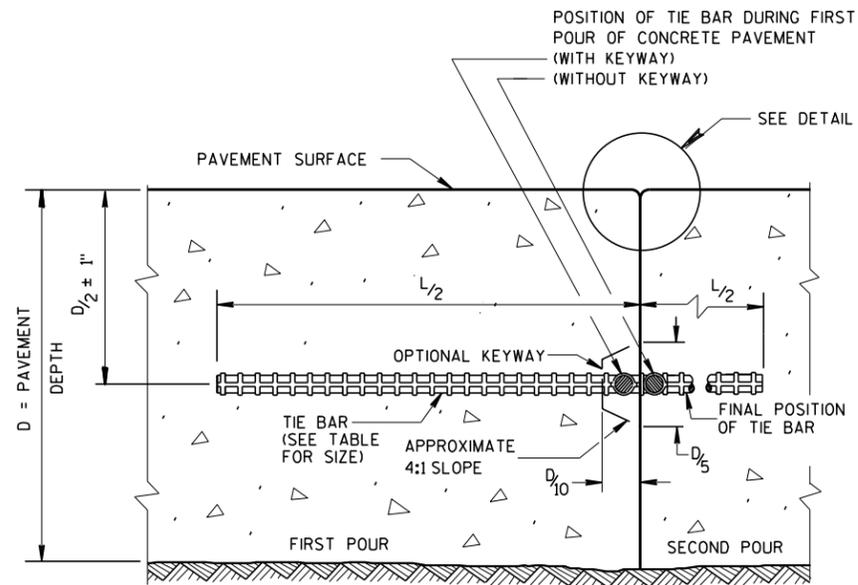


EXPANSION JOINT DETAIL

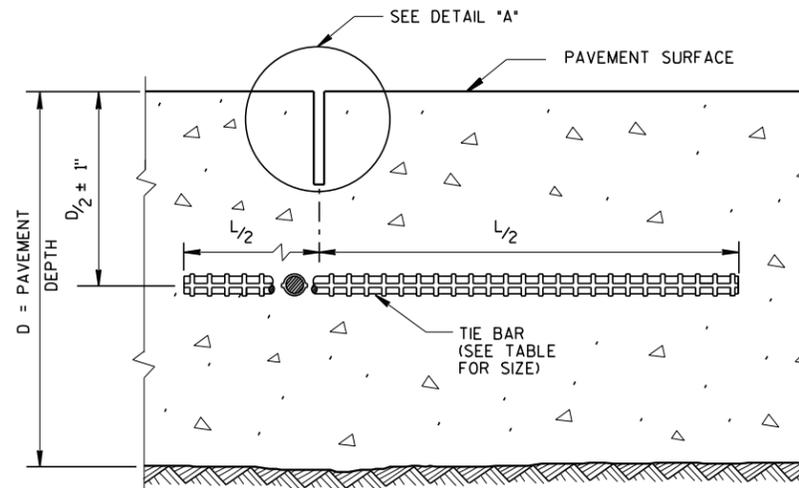
**CONCRETE PAVEMENT
APPROACH SLAB**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



CONSTRUCTION JOINT



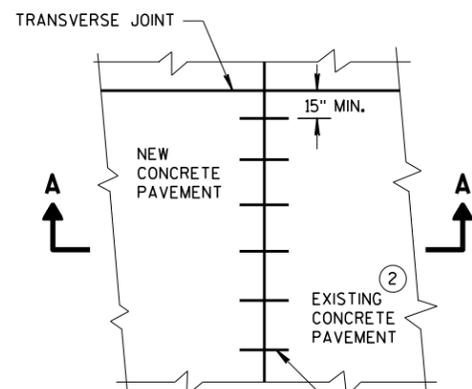
SAWED JOINT

GENERAL NOTES

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

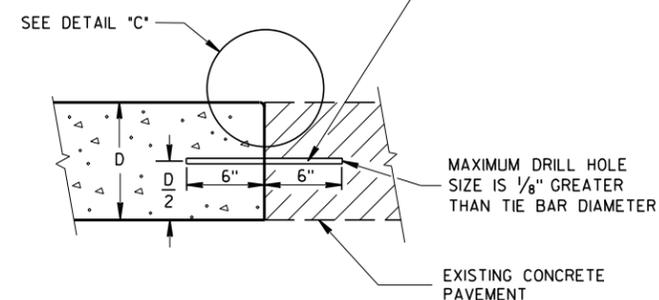
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

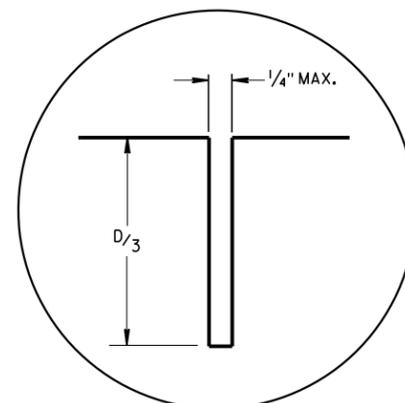


PLAN VIEW

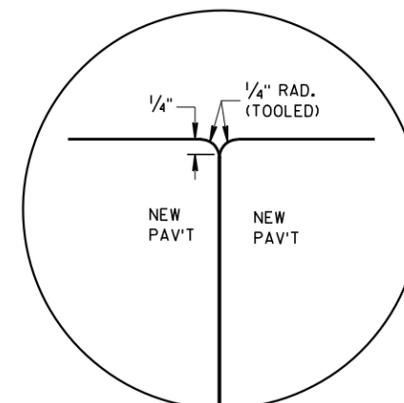
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



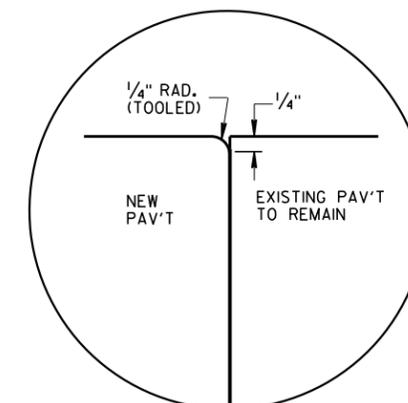
**SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT**



DETAIL "A"



DETAIL "B"



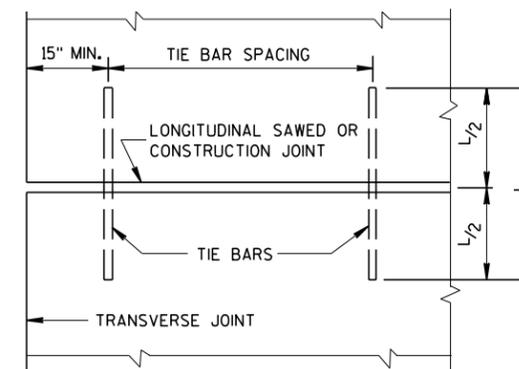
DETAIL "C"

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.

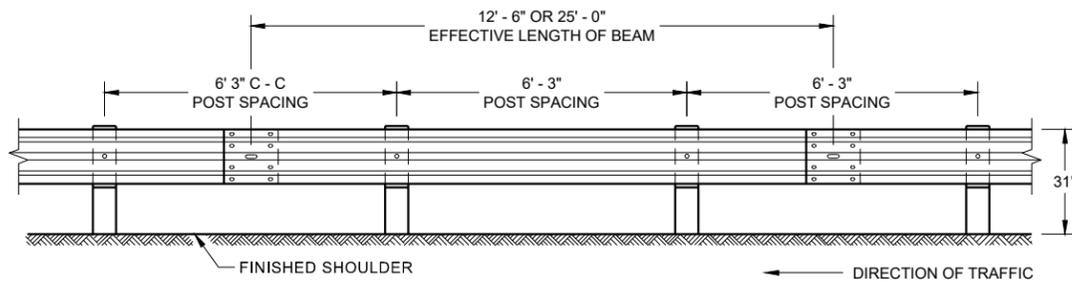


**PLAN VIEW
SHOWING LOCATION OF TIE BARS**

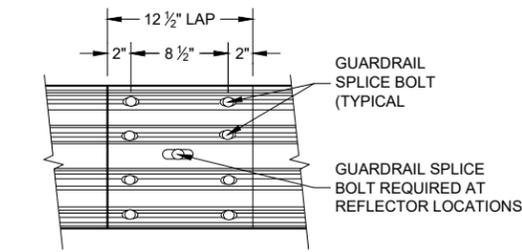
**CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



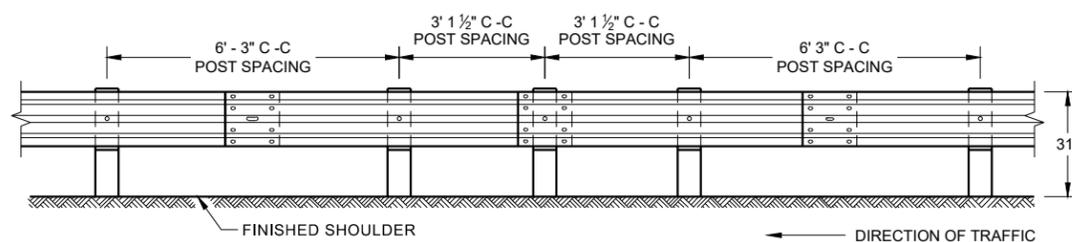
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



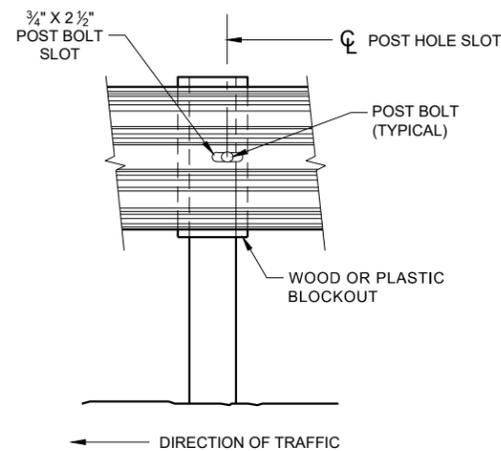
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

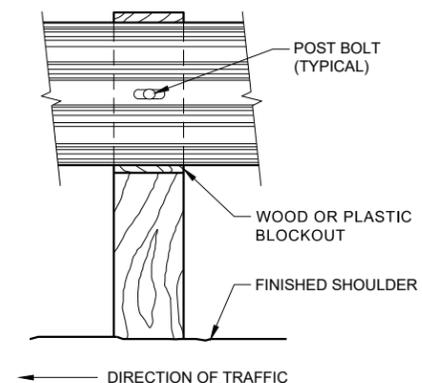
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER 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.



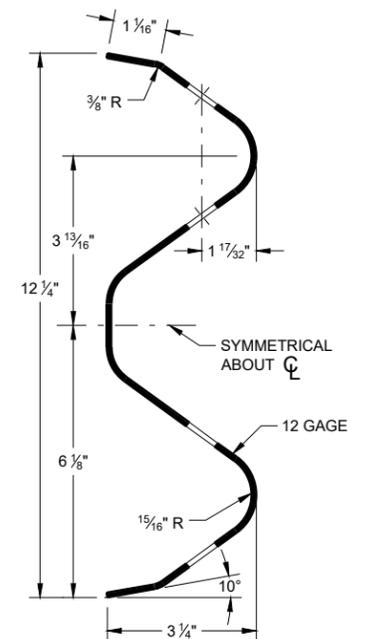
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



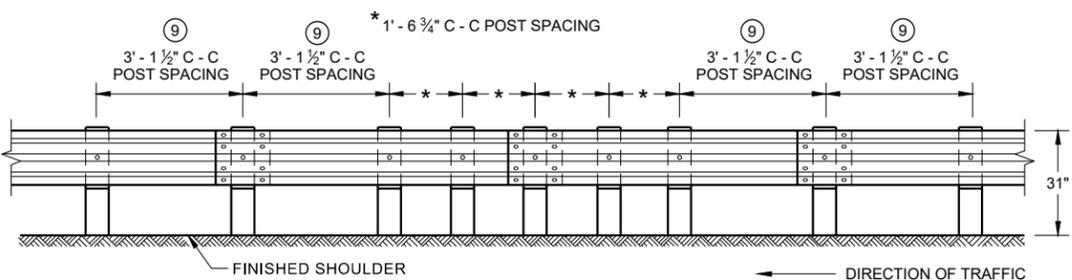
FRONT VIEW AT STEEL POST



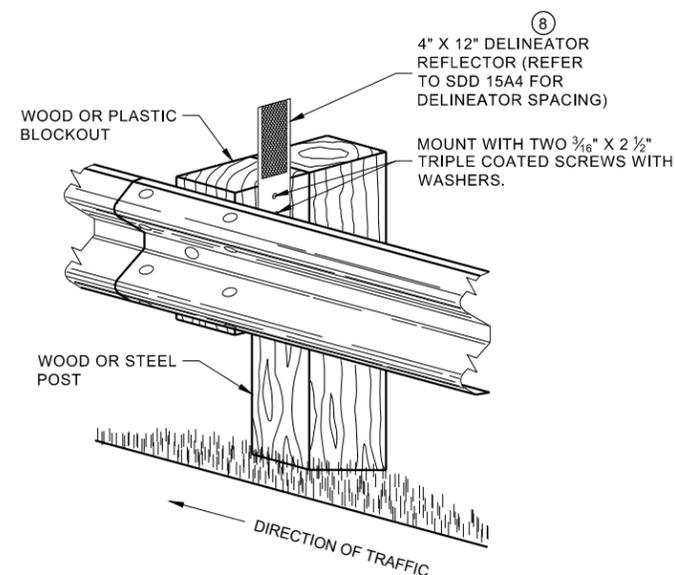
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

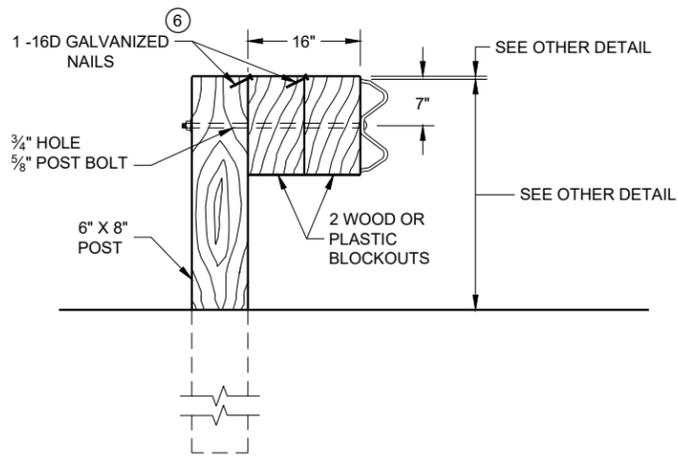
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

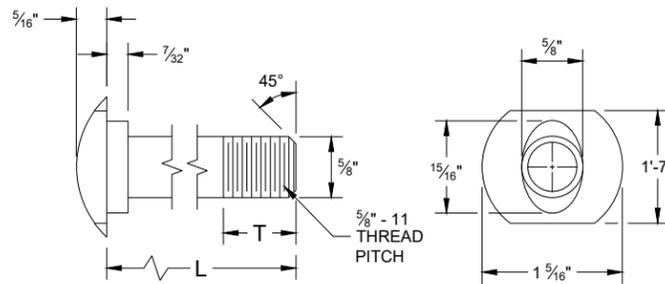


DETAIL FOR 16" BLOCKOUT DEPTH

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.

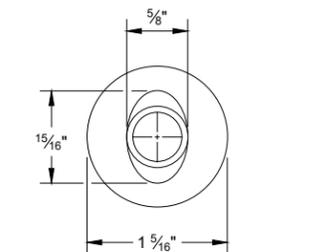
NOTE:

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.

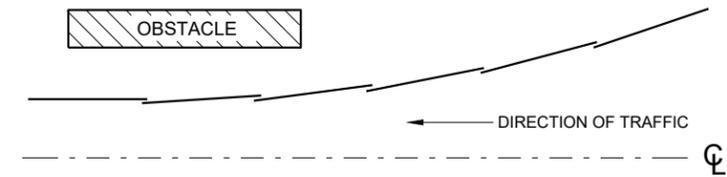


POST BOLT TABLE

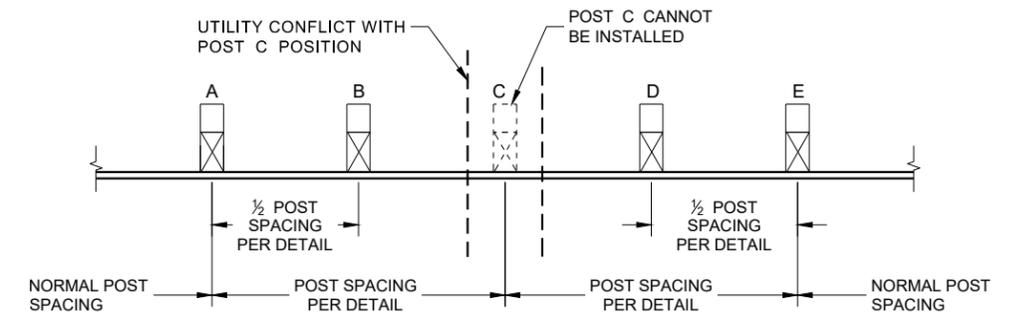
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



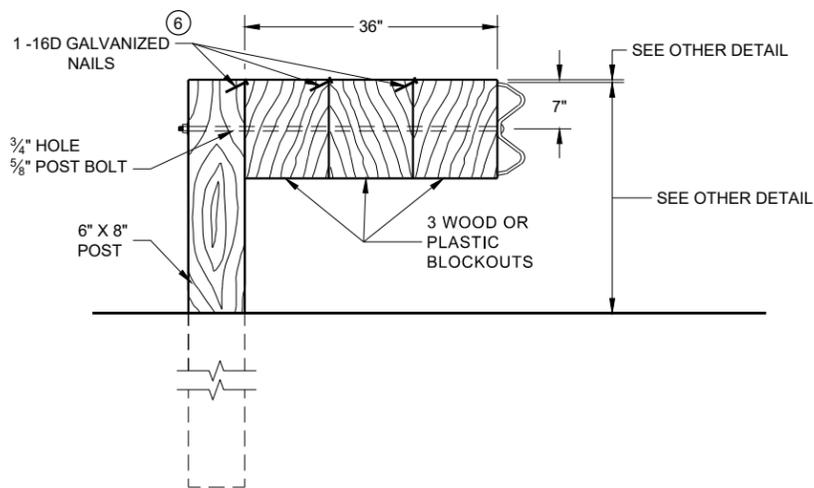
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

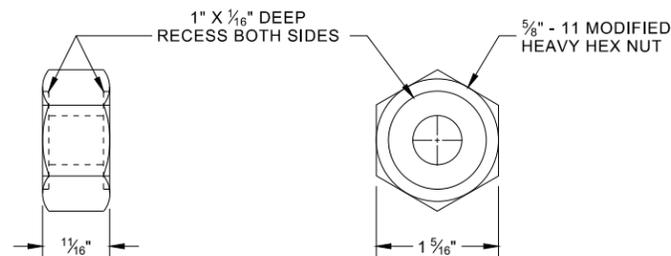


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

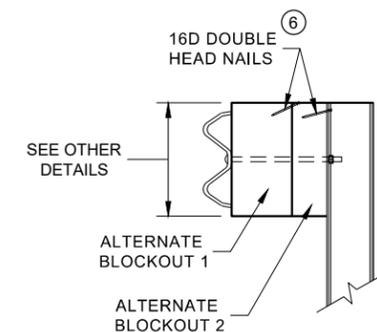


DETAIL FOR 36" BLOCKOUT DEPTH

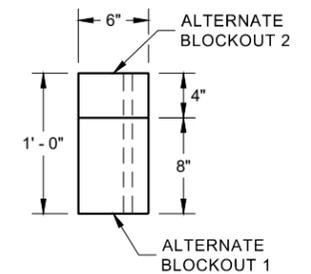
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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



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



SIDE VIEW



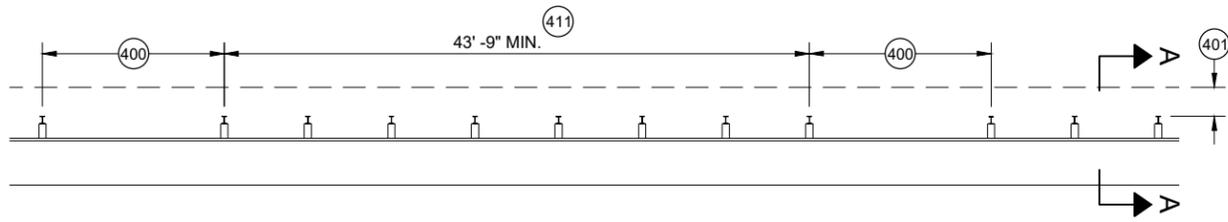
PLAN VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

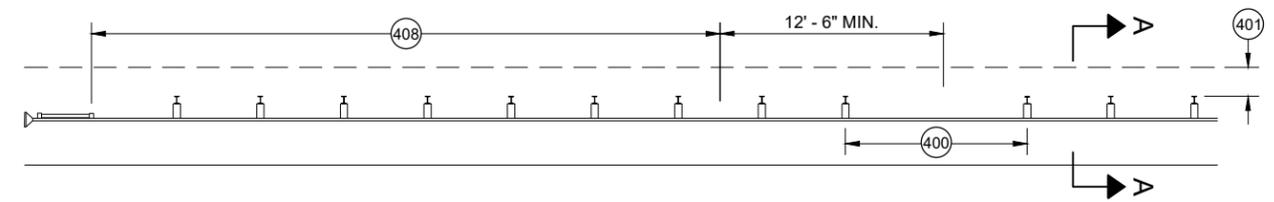
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

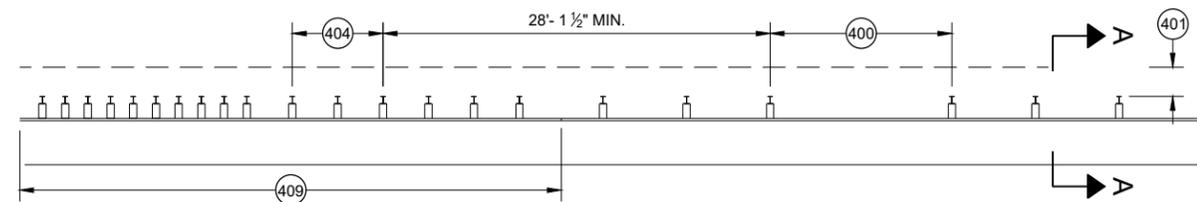
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



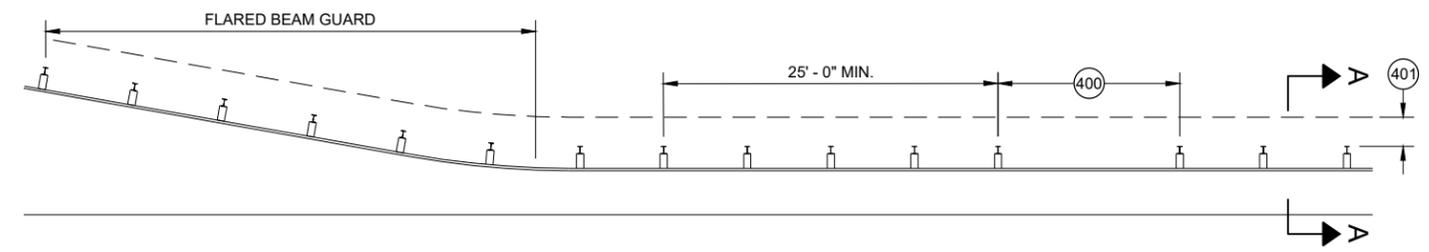
MISSING POST IN MGS GUARDRAIL



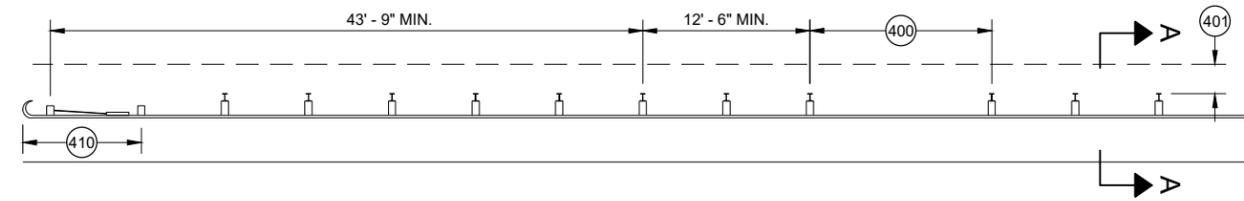
MISSING POST IN MGS GUARDRAIL NEAR EAT



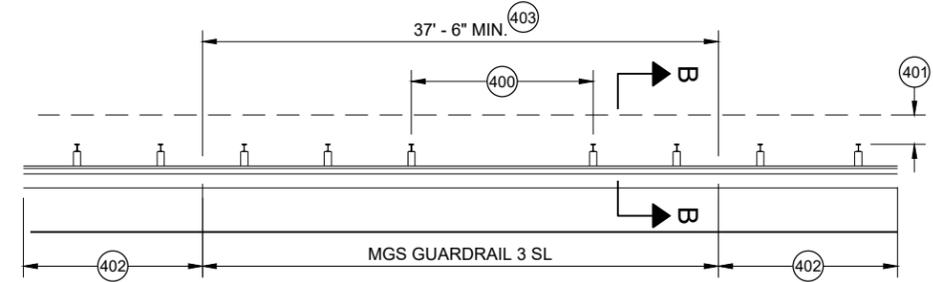
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

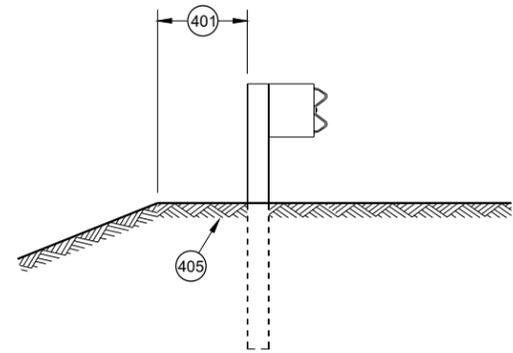


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

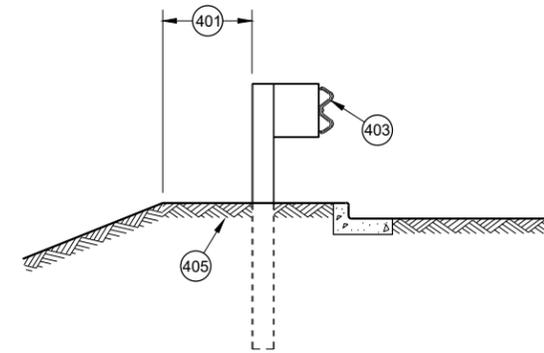


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- 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

6

6

SDD 14B42 - 07d

SDD 14B42 - 07d

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.

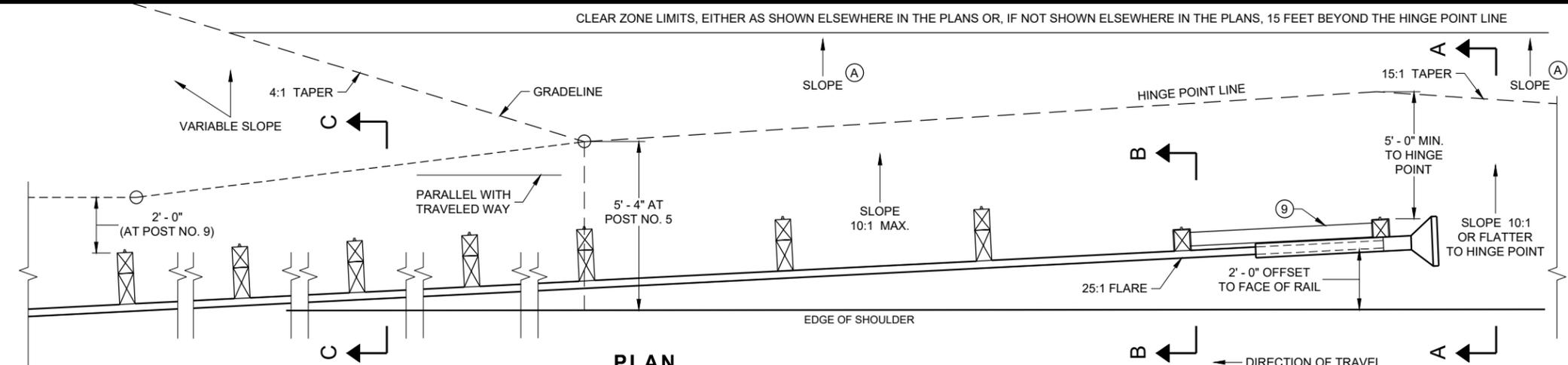
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

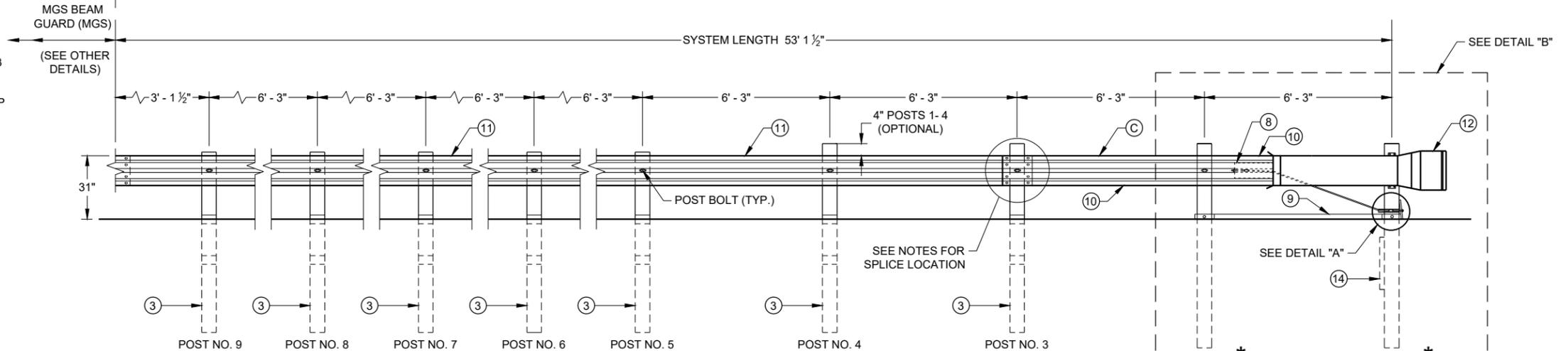
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

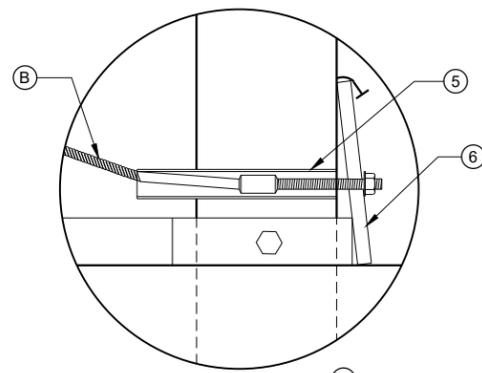
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



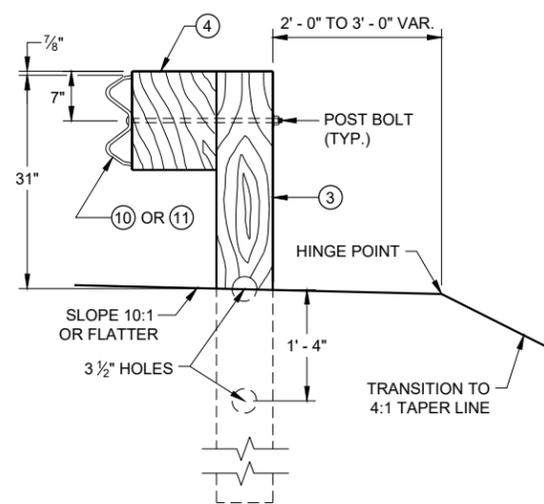
PLAN



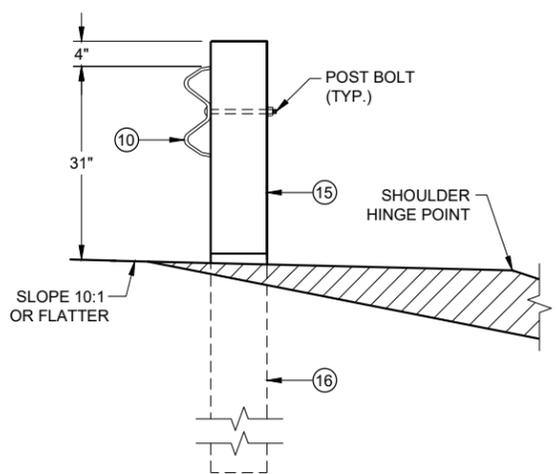
ELEVATION



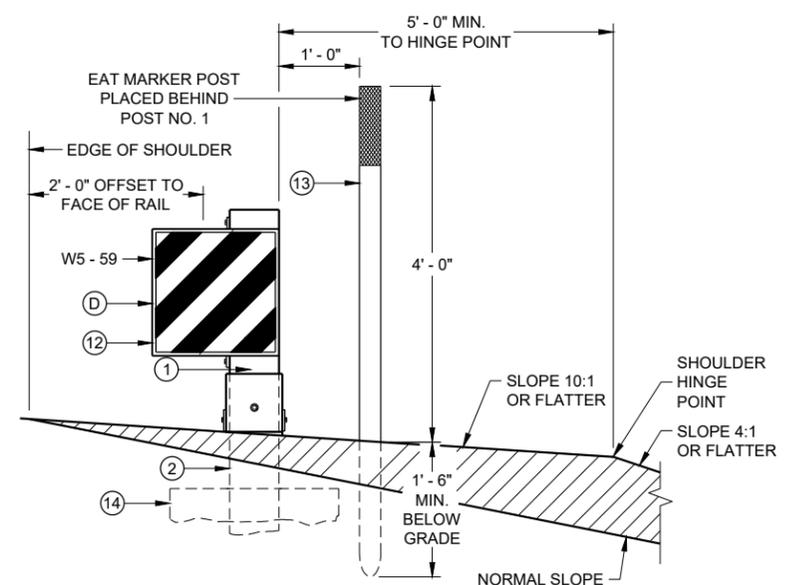
DETAIL "A"



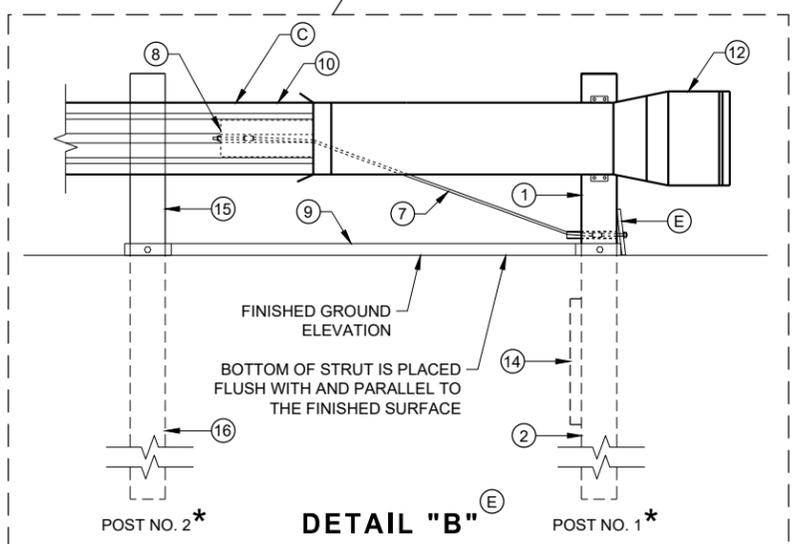
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



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



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



DETAIL "B"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

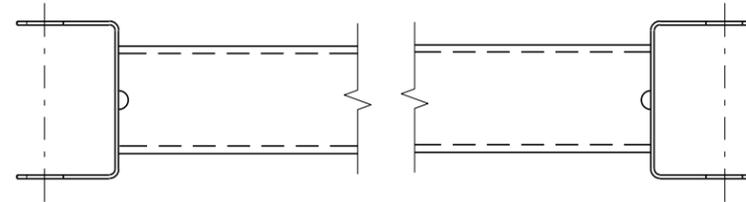
6

SDD 14B44 - 04a

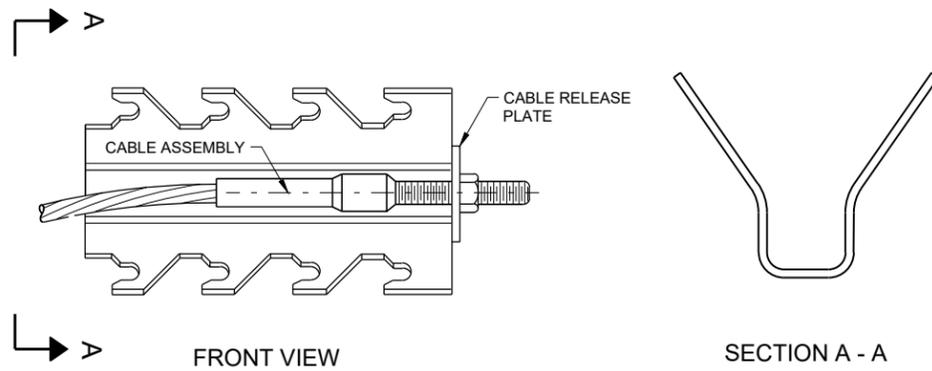
SDD 14B44 - 04a

BILL OF MATERIALS

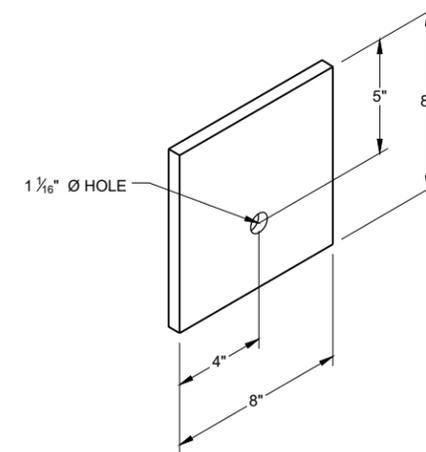
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL 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



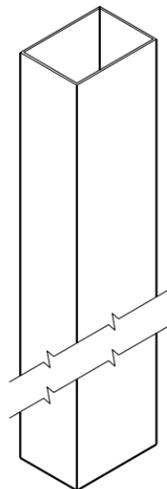
GENERIC ANCHOR CABLE BOX ⑨ ⑤



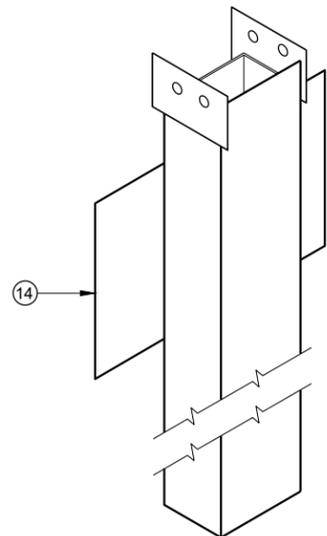
BEARING PLATE ⑥ ⑤

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

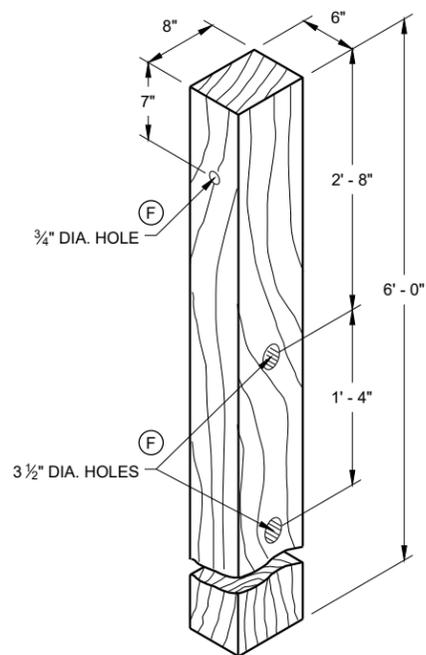
STATE OF WISCONSIN
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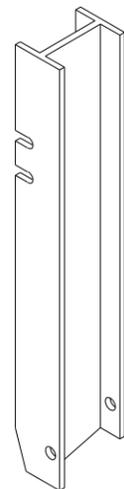
UPPER POST NO. 1 ⁽¹⁾ (E)



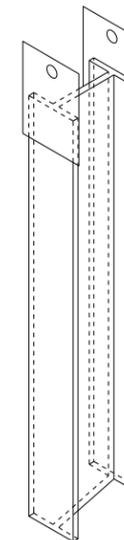
LOWER POST NO. 1 ⁽²⁾ (E)



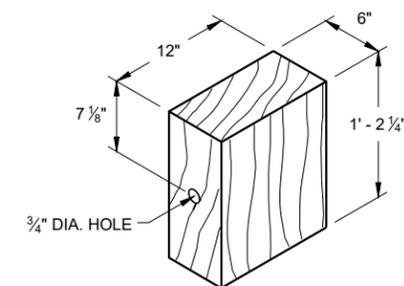
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

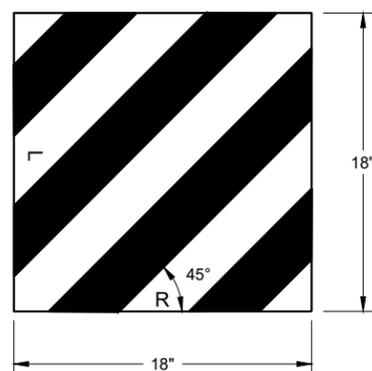


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

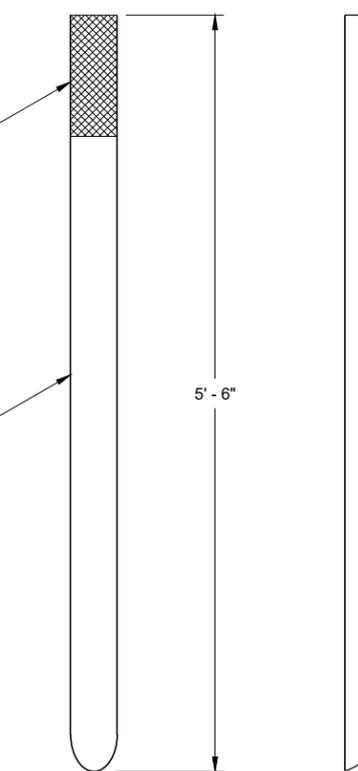
6



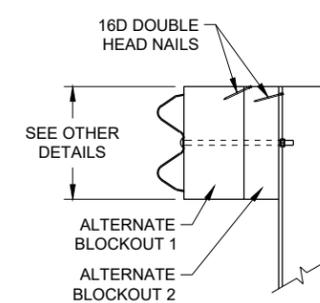
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)

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

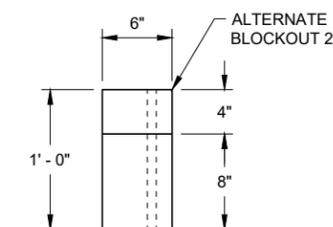
E.A.T. MARKER
POST (YELLOW)



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



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

6

SDD 14B44 - 04c

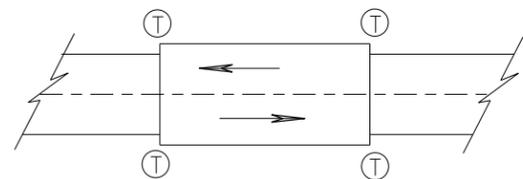
SDD 14B44 - 04c

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

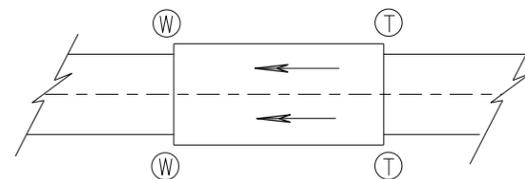
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

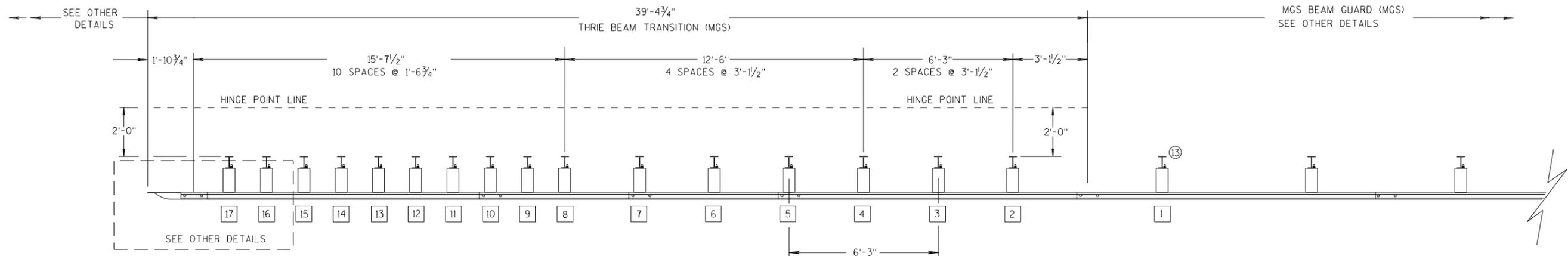
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

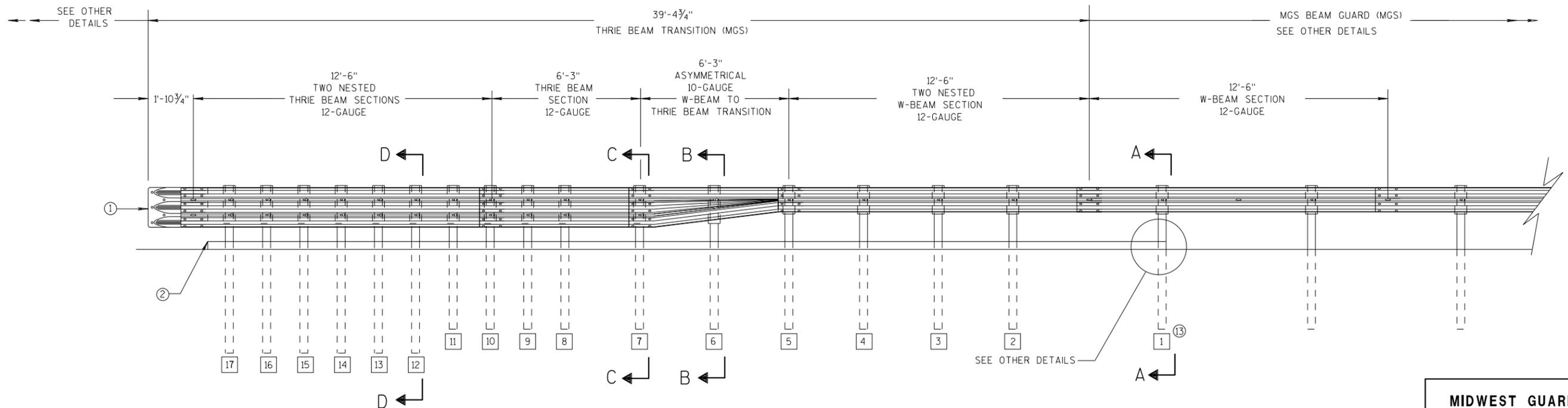
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

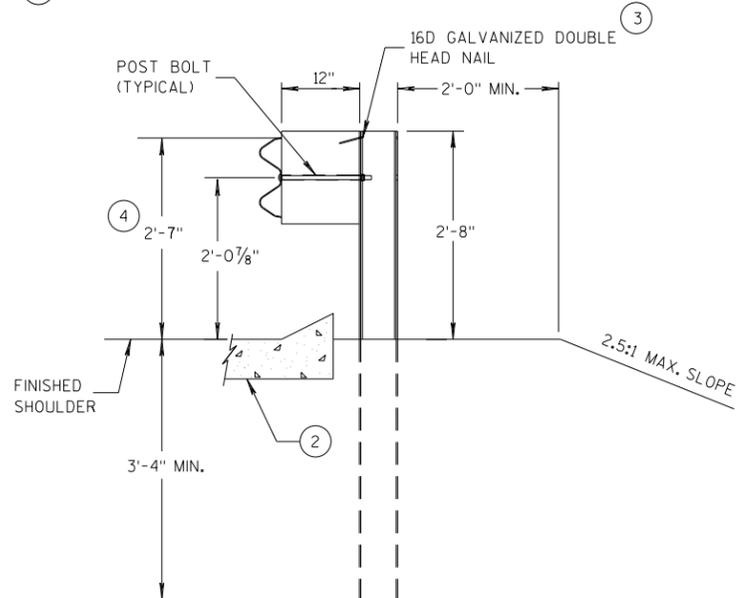
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

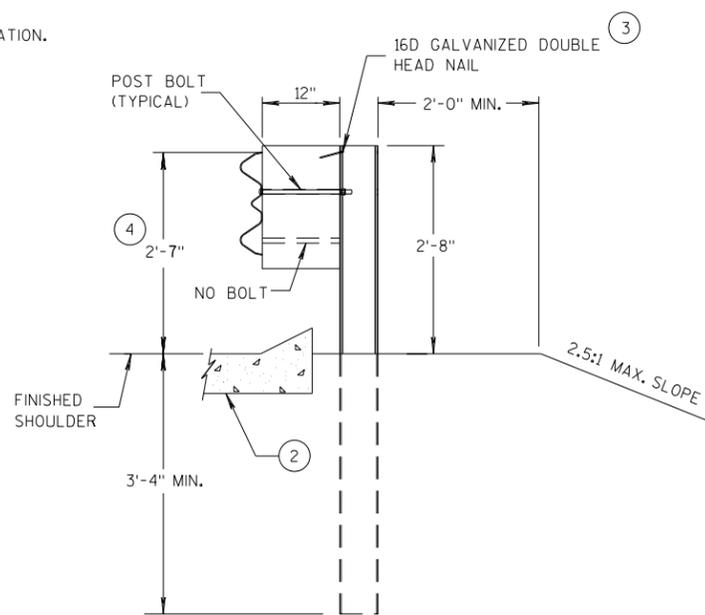
STATE OF WISCONSIN
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GENERAL NOTES

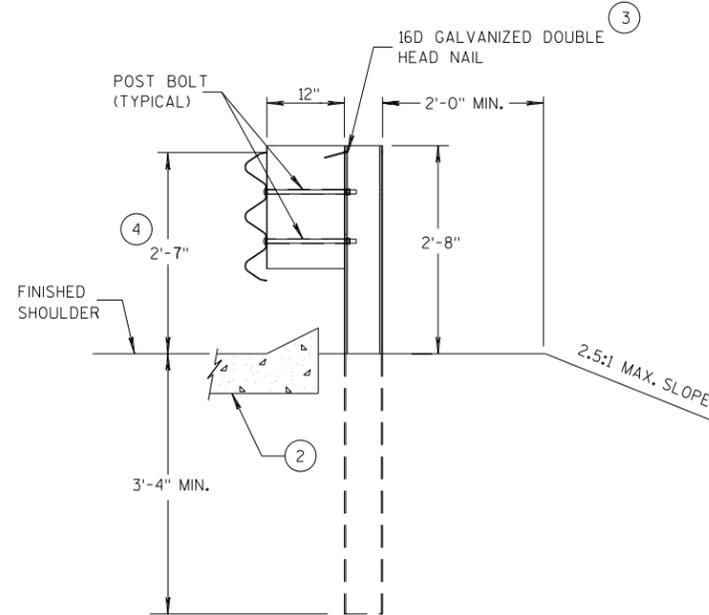
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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

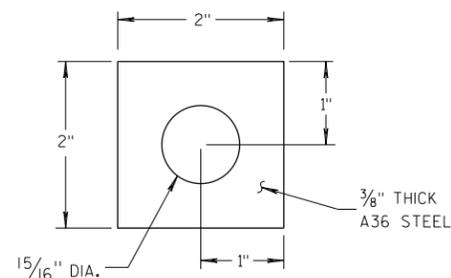
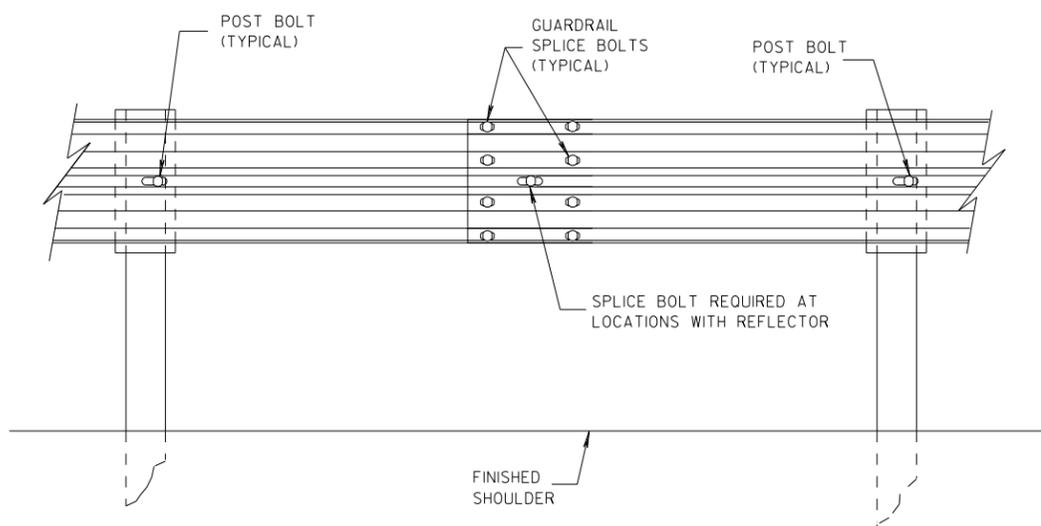
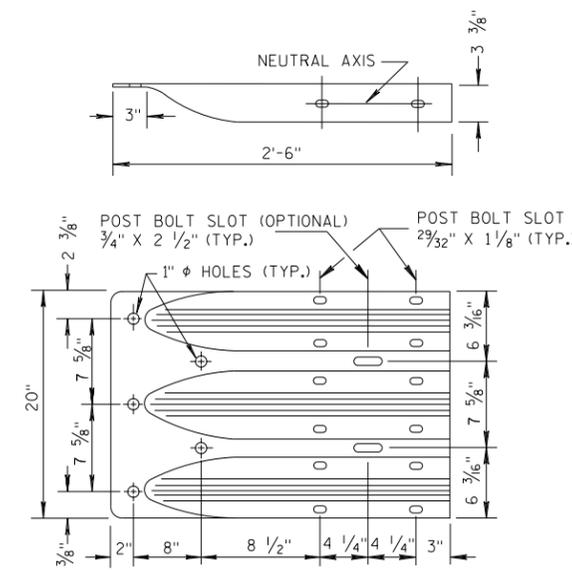


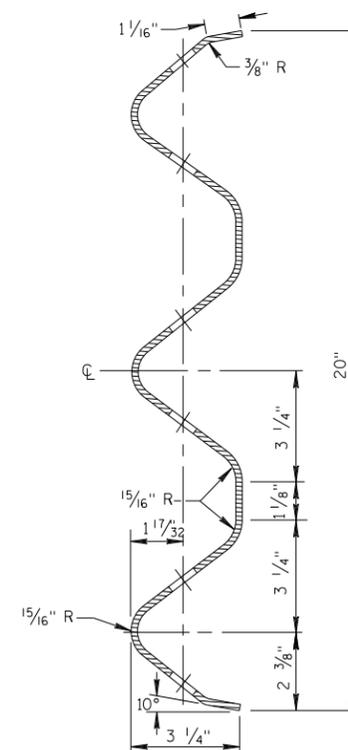
PLATE WASHER DETAIL



SPLICE DETAIL



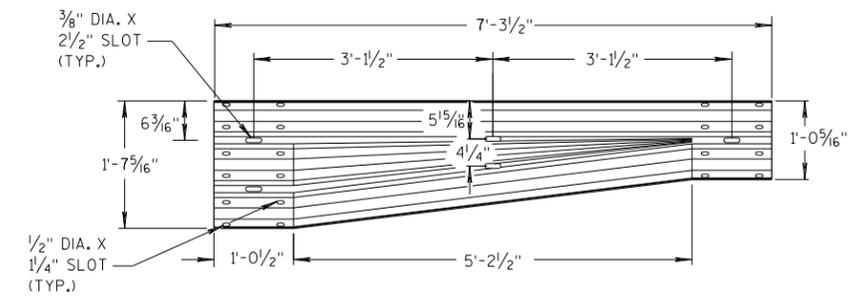
**THRIE BEAM
TERMINAL CONNECTOR**



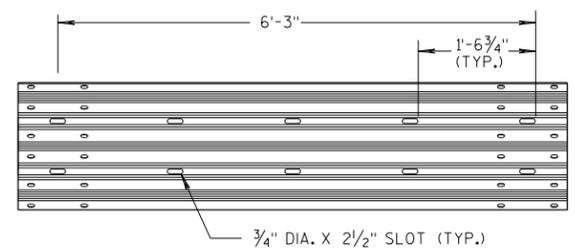
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

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

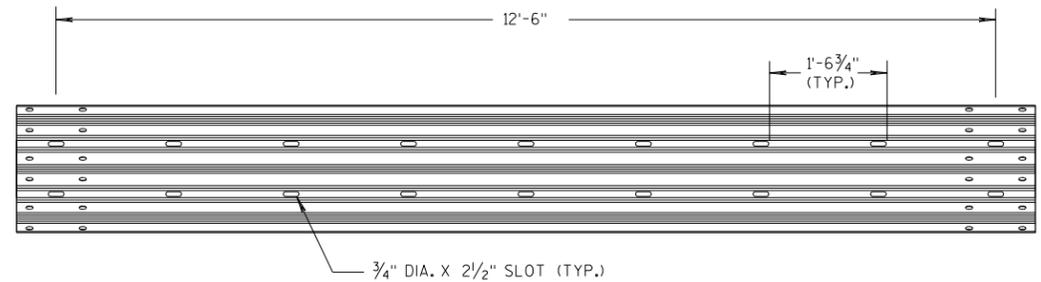
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



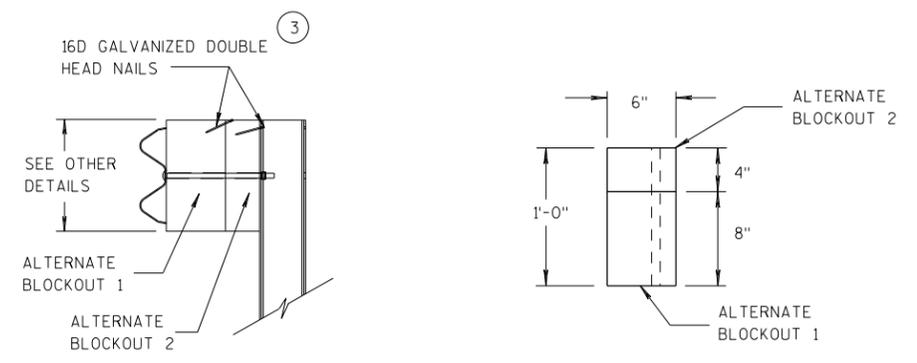
W-BEAM TO THRIE BEAM TRANSITION SECTION



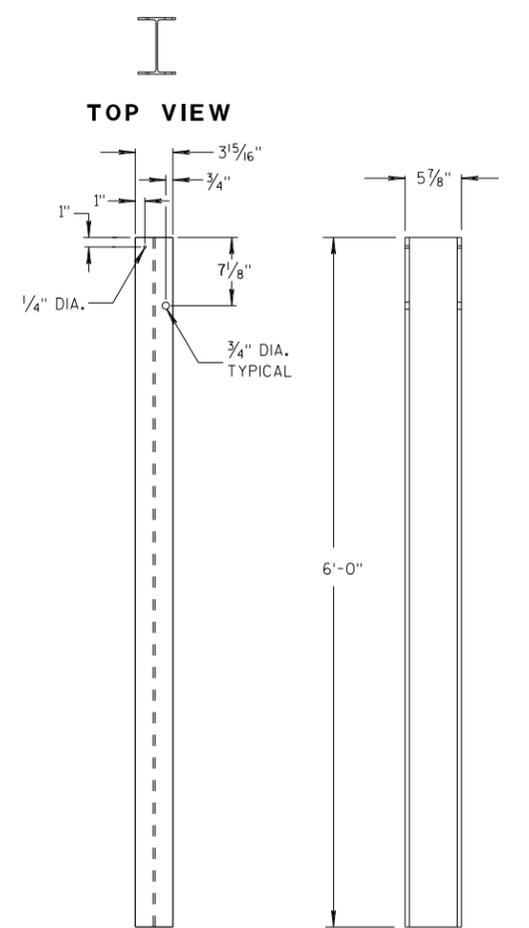
6'-3\"/>



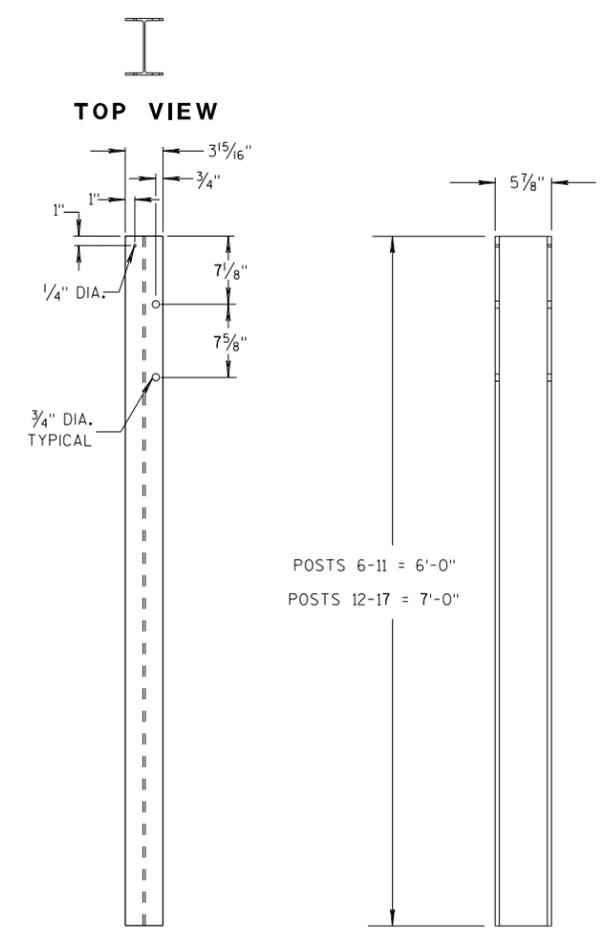
12'-6\"/>



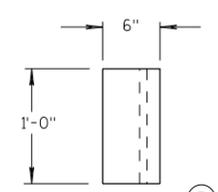
ALTERNATE WOOD BLOCKOUT DETAIL



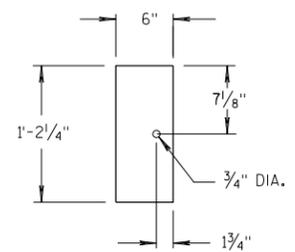
STEEL POSTS 1-5



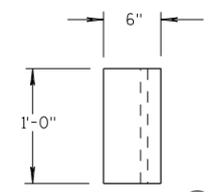
STEEL POSTS 6-17



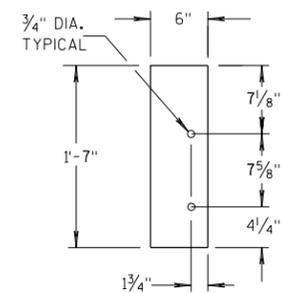
BLOCKOUT POSTS 1-5



BLOCKOUT POSTS 1-5



BLOCKOUT POSTS 6-17



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

6

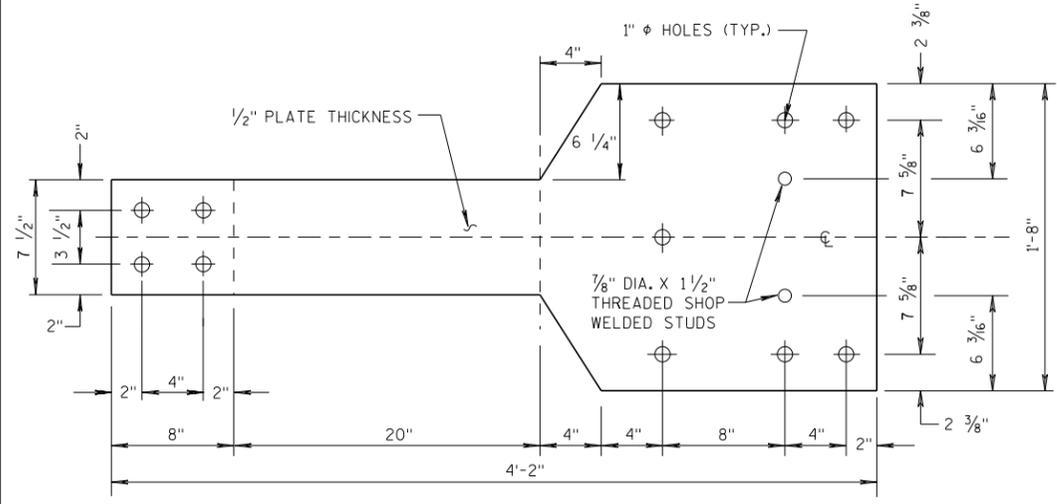
6

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

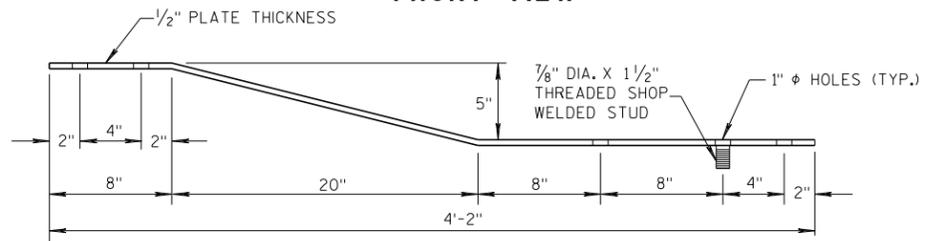
S.D.D. 14 B 45-5c

GENERAL NOTES

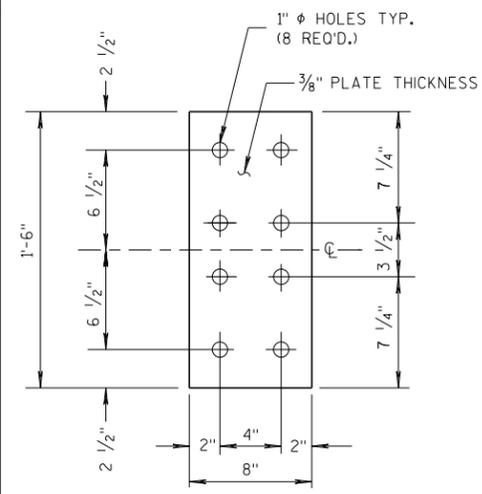
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



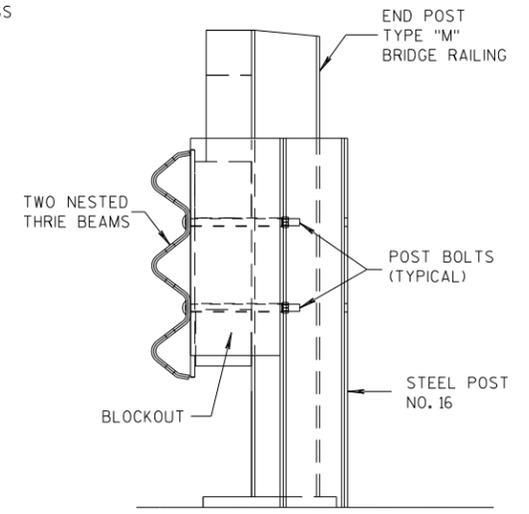
FRONT VIEW



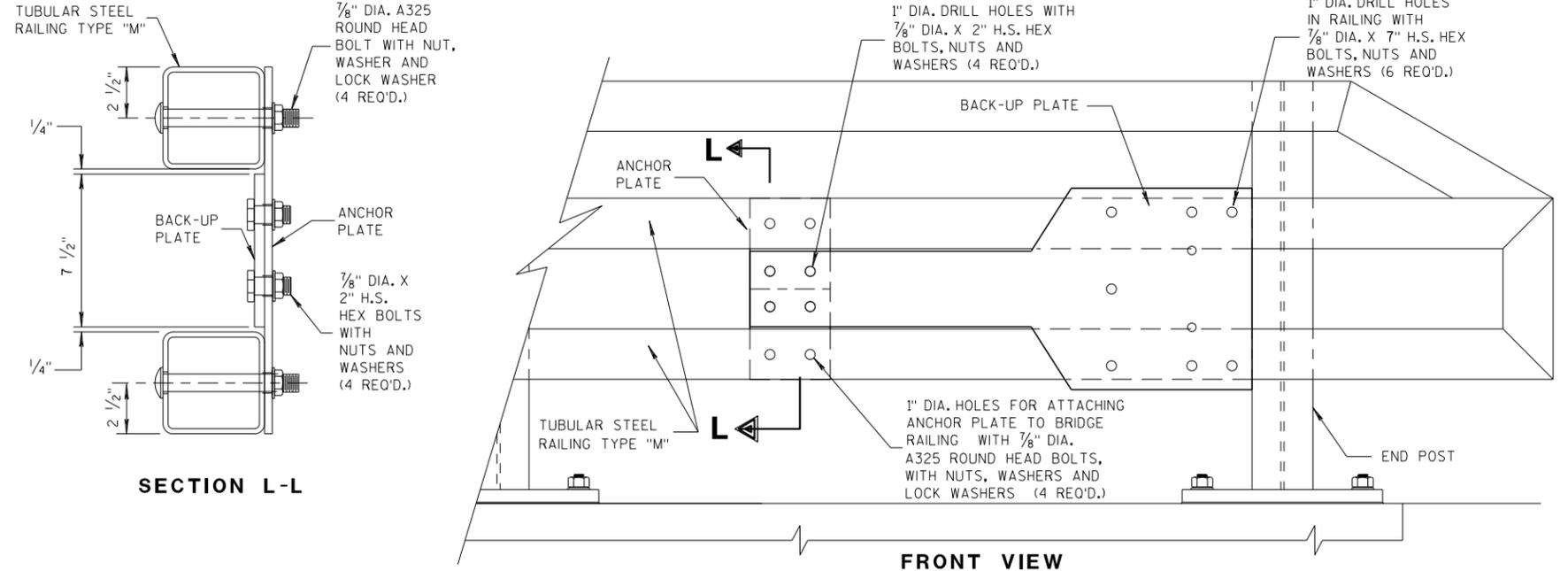
**PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"**



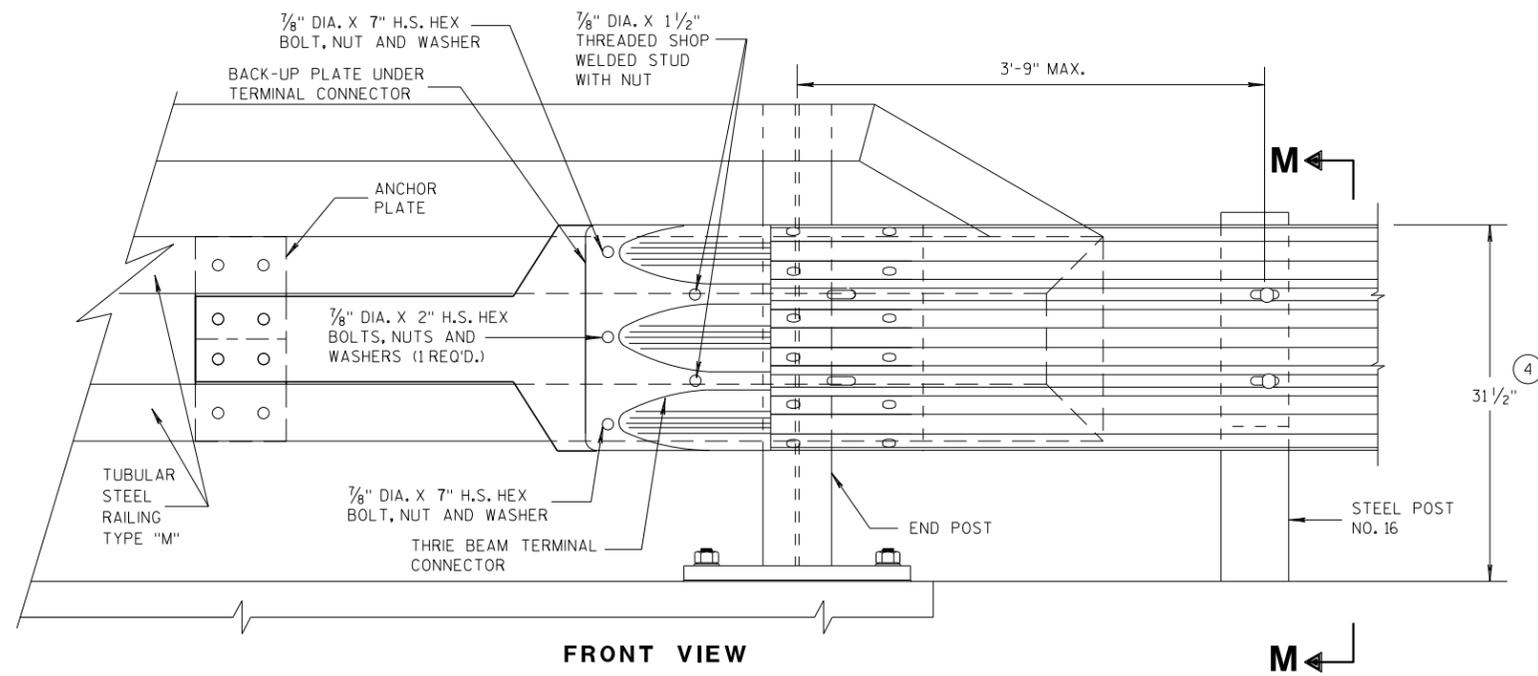
**FRONT VIEW
ANCHOR PLATE DETAIL, TYPE "M"**



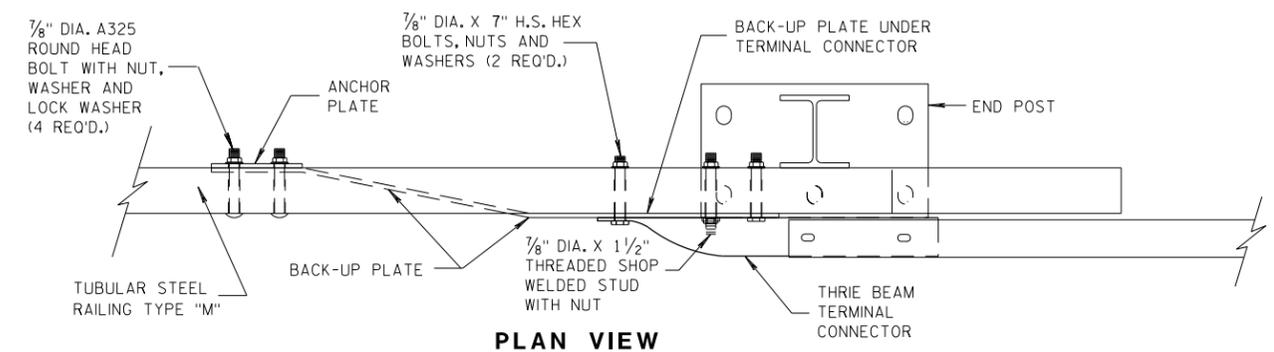
SECTION M-M



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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

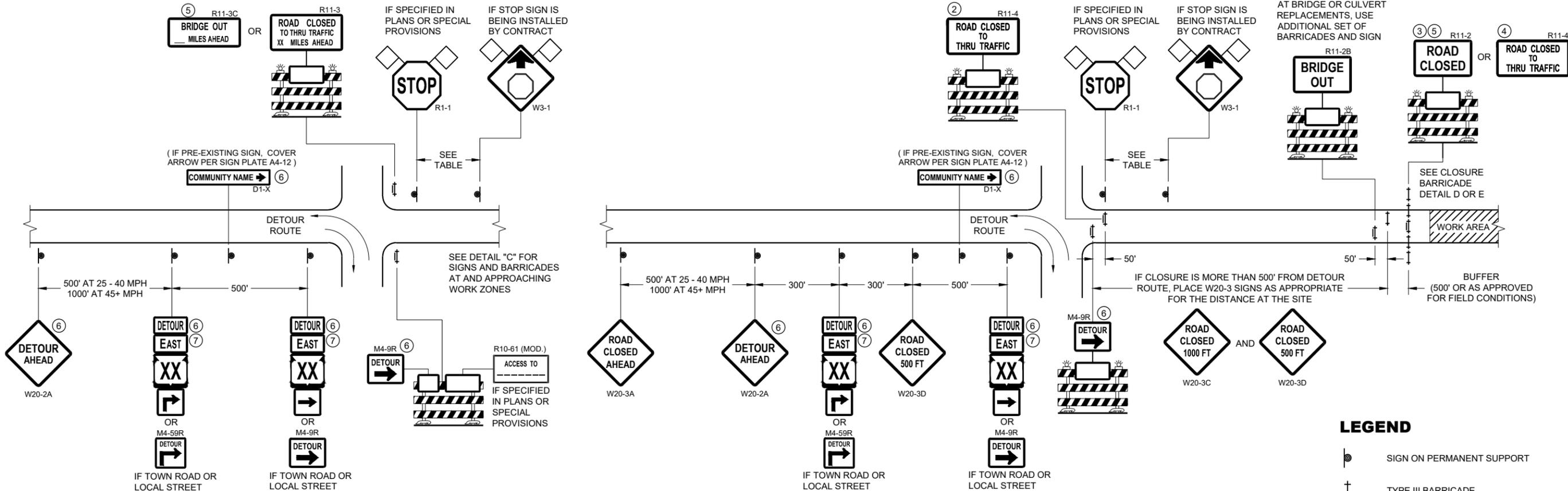
6

6

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



**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**

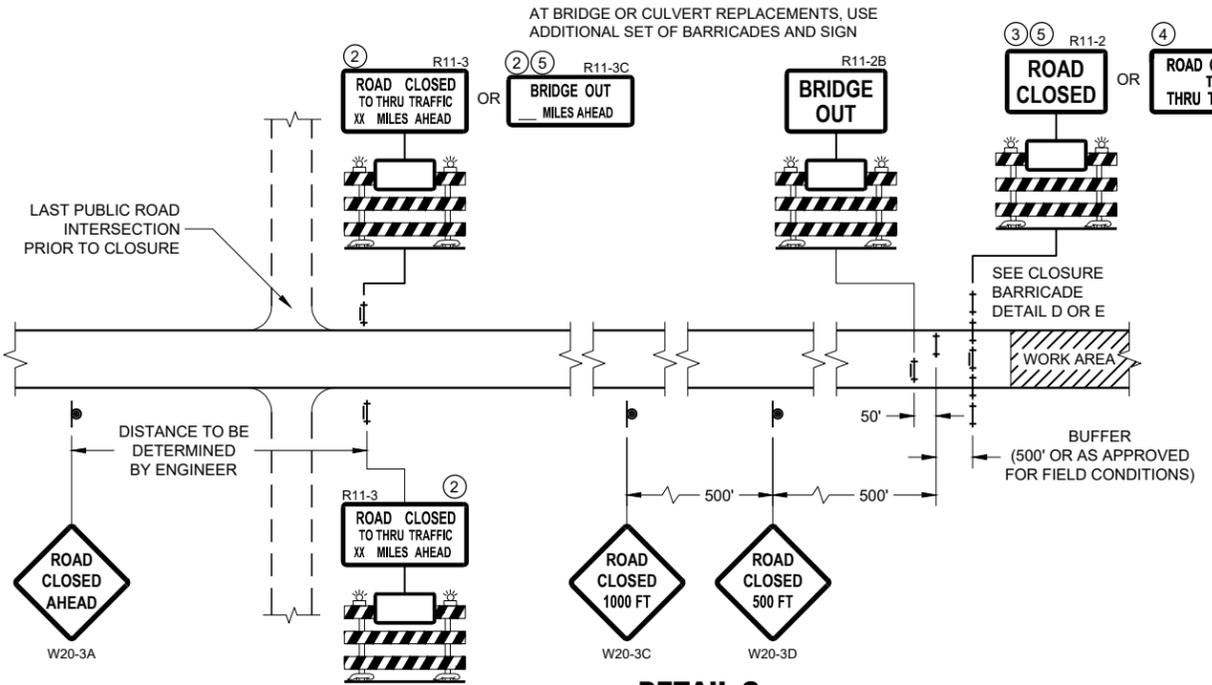
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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)

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

- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1



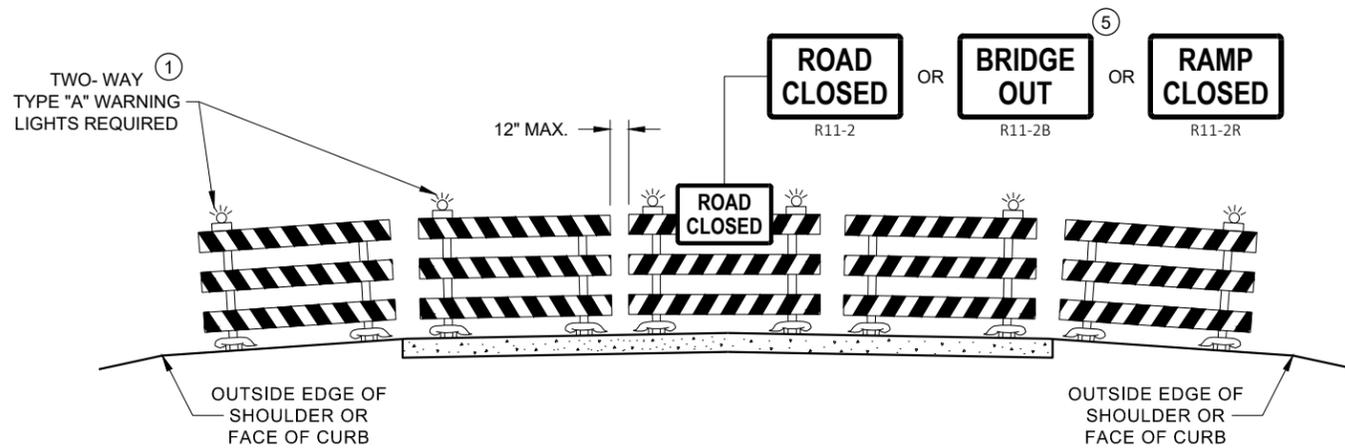
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

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

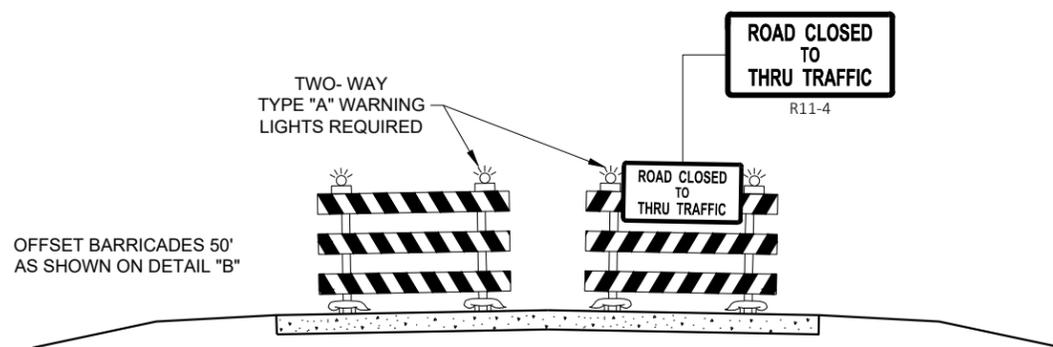
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

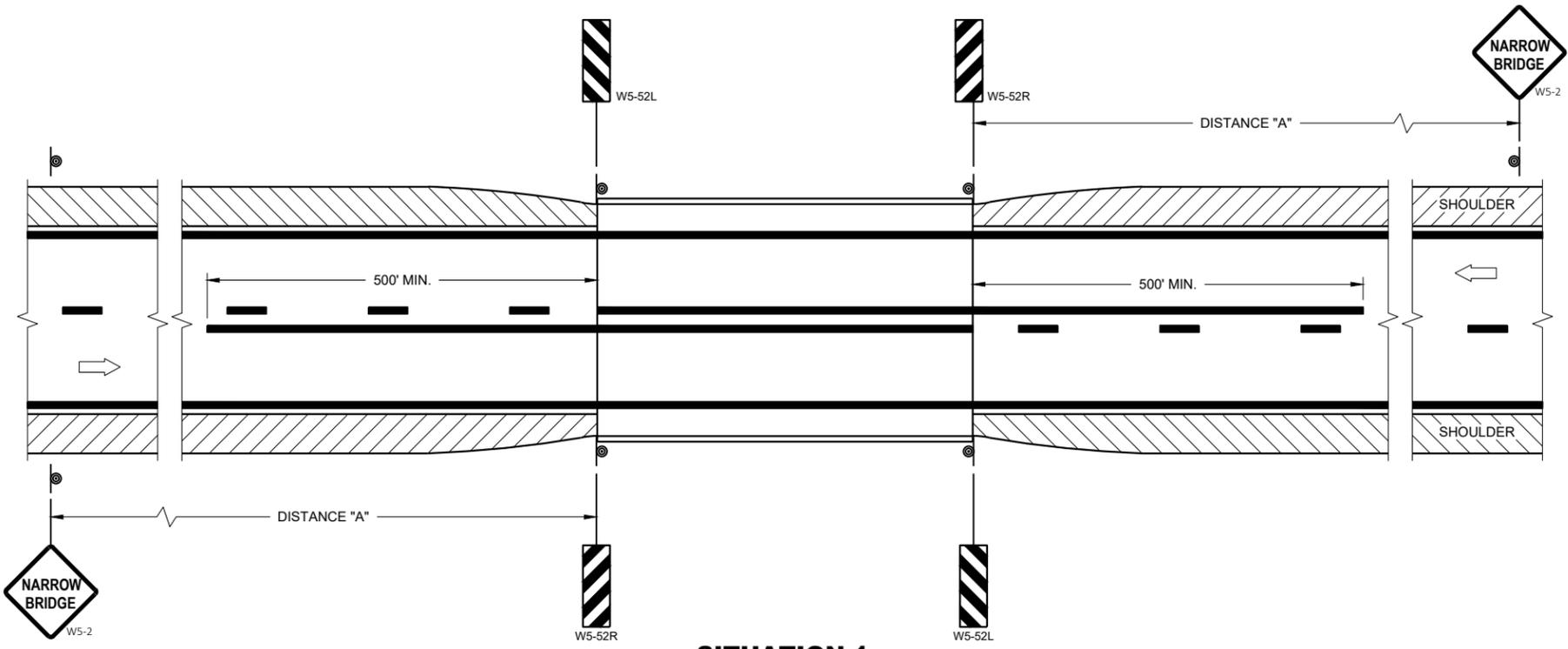
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24"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

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

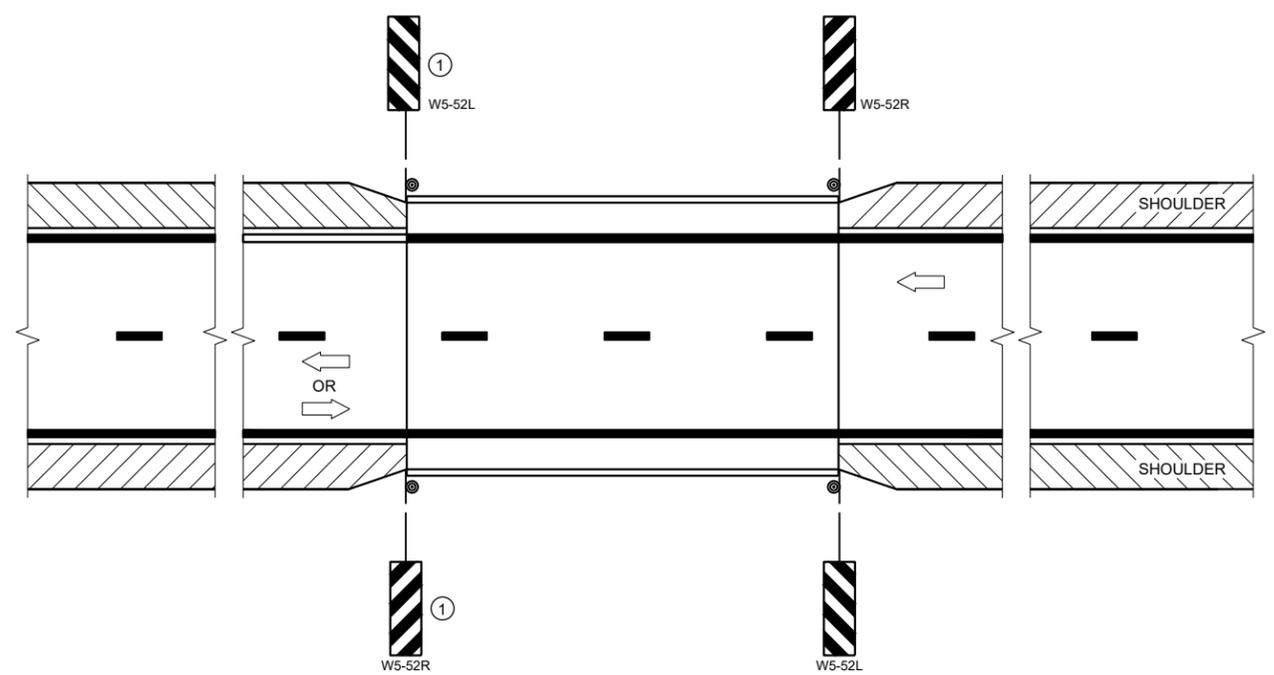
**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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'

6

6

SDD 15C06-12

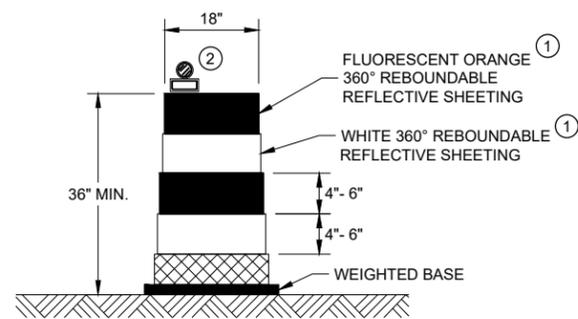
SDD 15C06-12

SIGNING AND MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

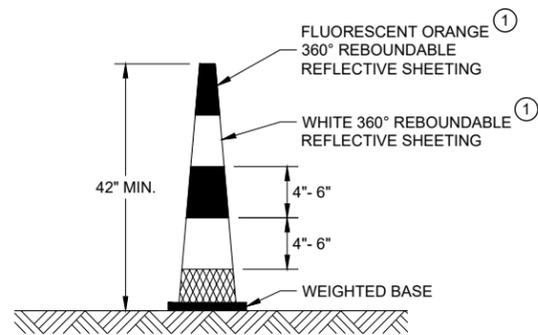
APPROVED
 May 2023 /S/ Jeannie Silver
 DATE STATE SIGNING AND MARKING ENGINEER

FHWA



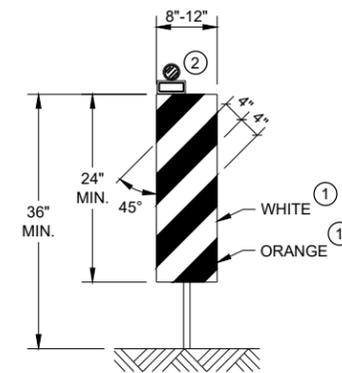
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

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

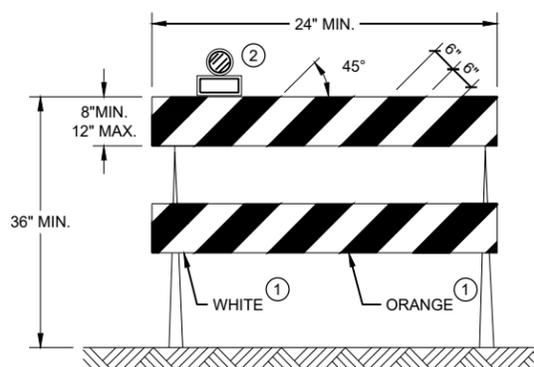


VERTICAL PANEL

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

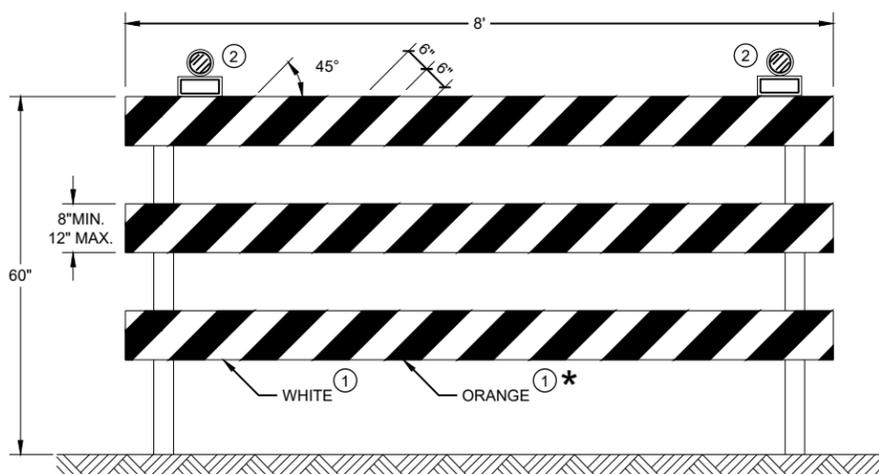
GENERAL NOTES

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

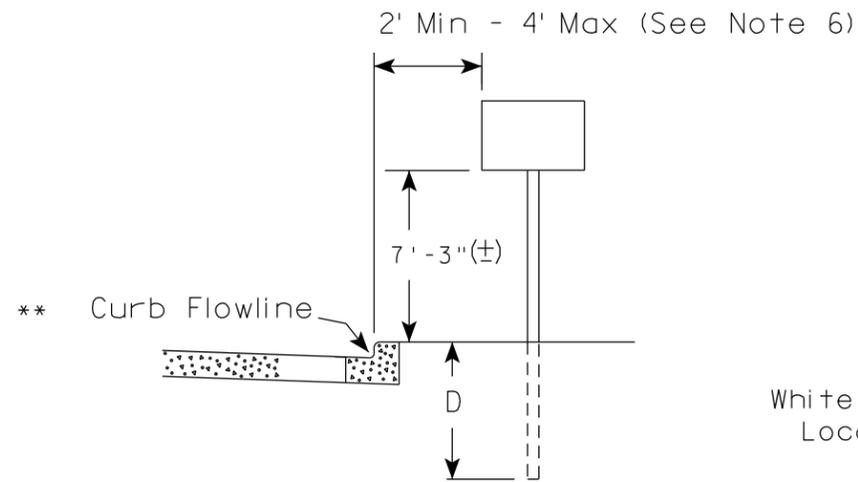
* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

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

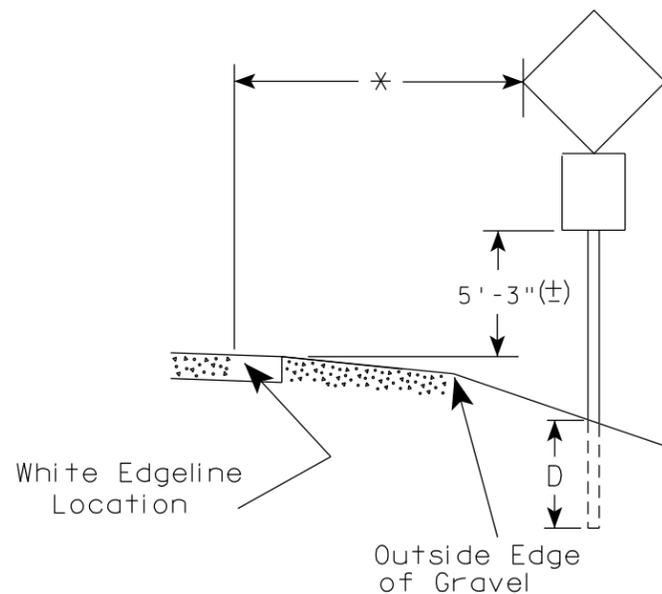
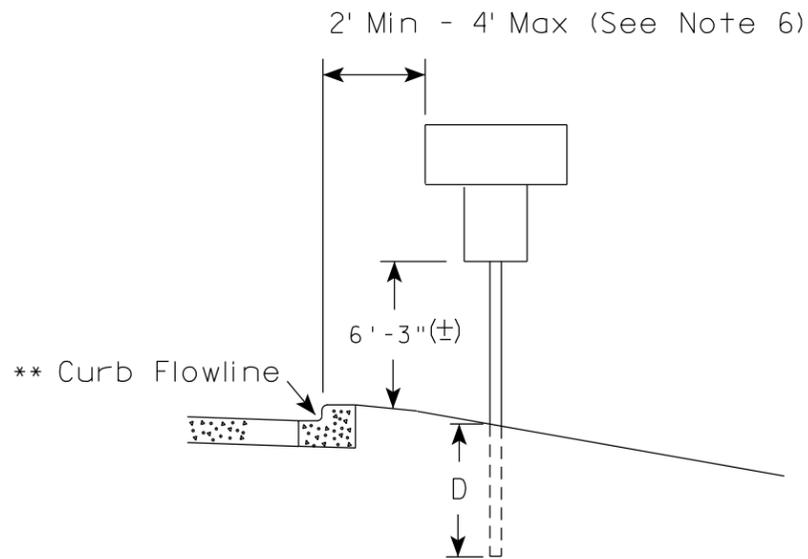
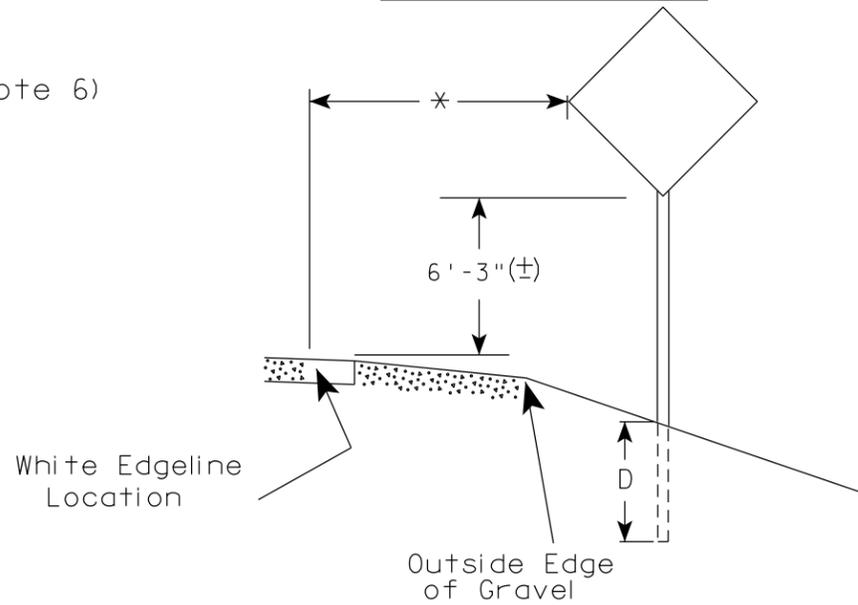
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

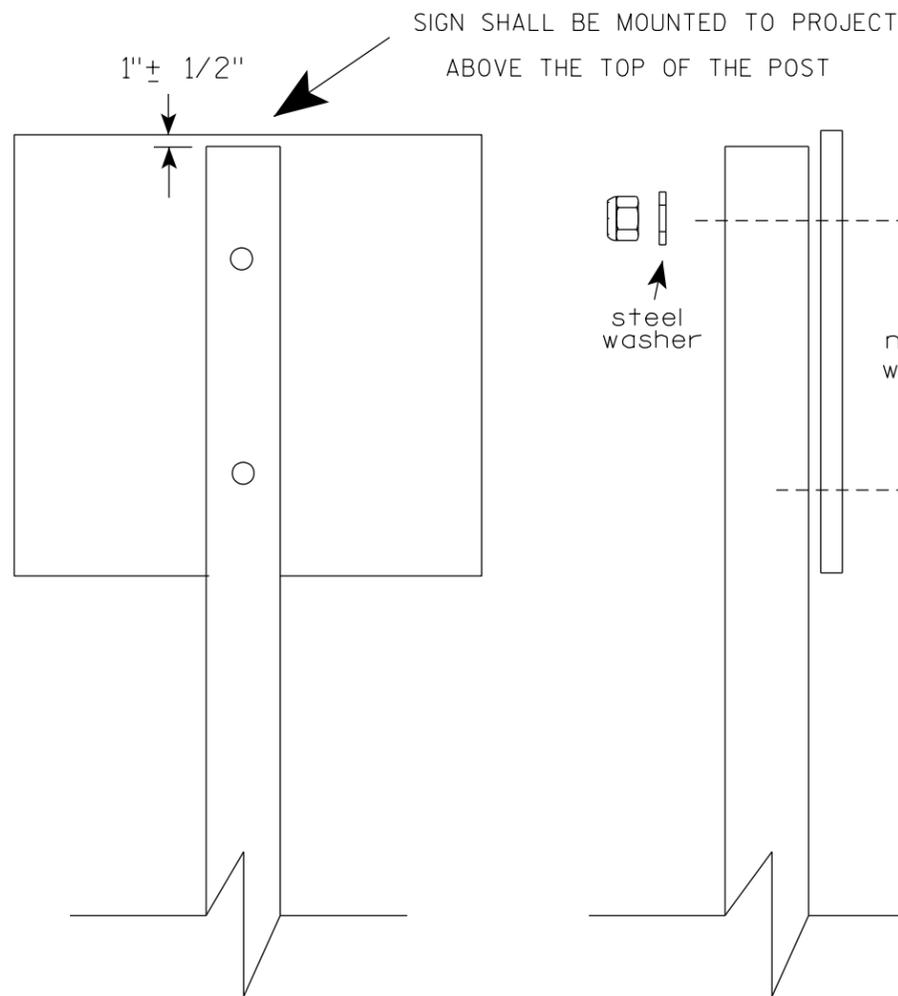
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

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



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

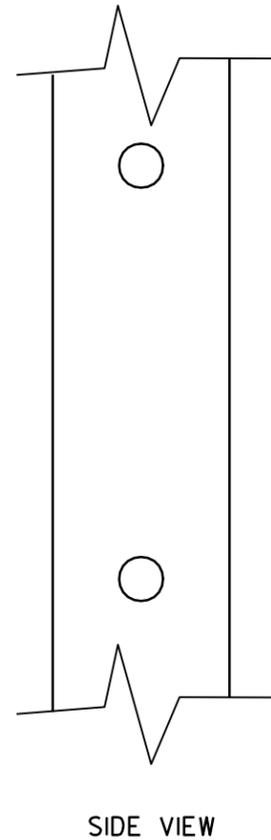
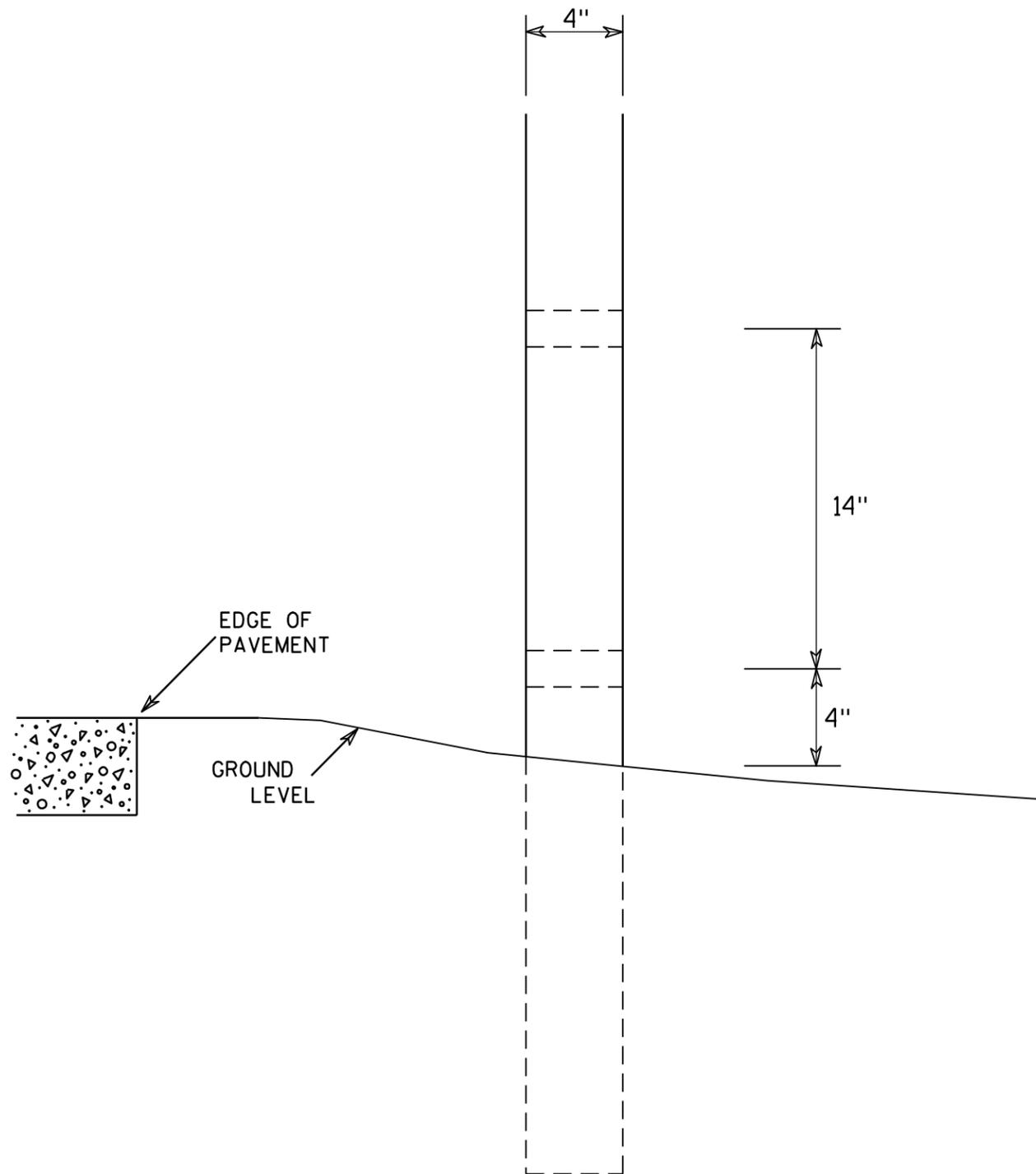
- Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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 - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - 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 3/8" I.D. X 1/16" STEEL
- 1-1/4" O.D. X 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



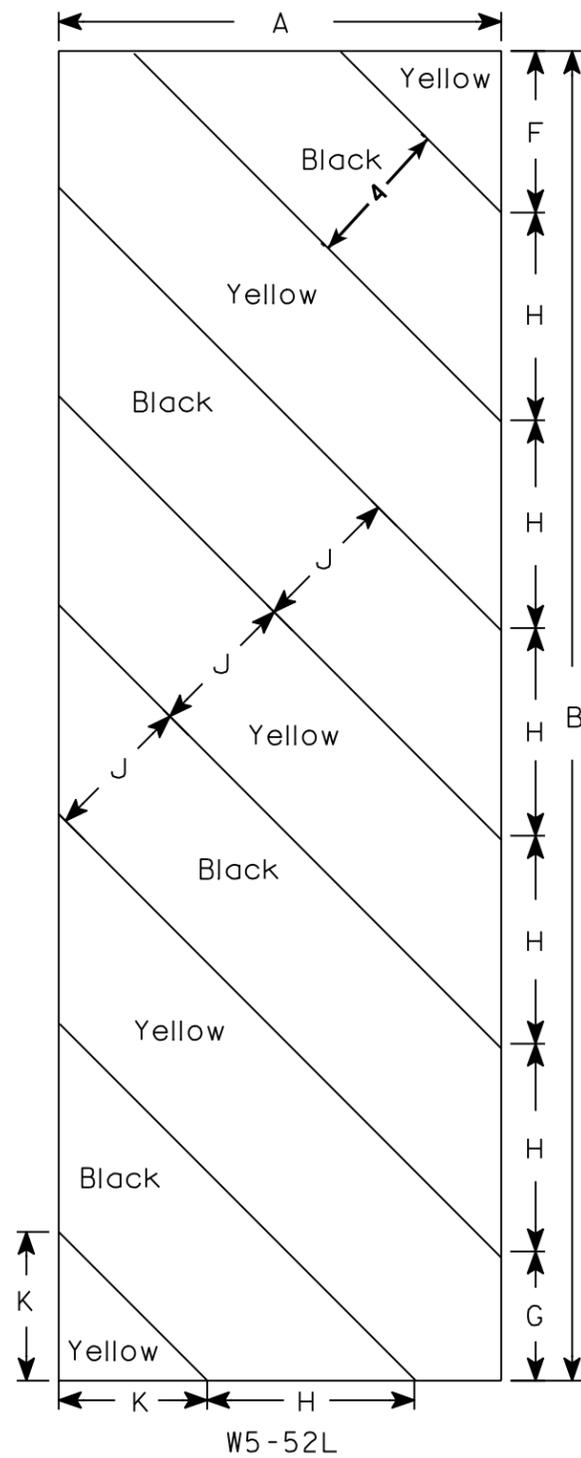
GENERAL NOTES

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

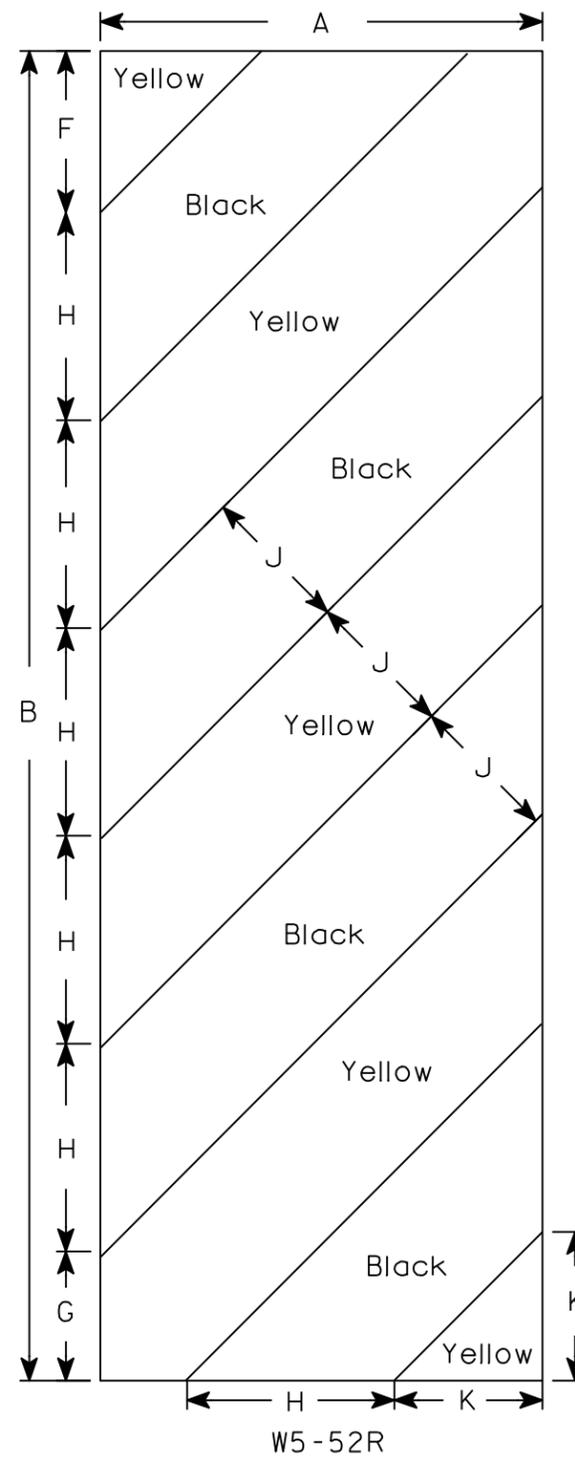
7

7

4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	 <small>for State Traffic Engineer</small>
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

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING: RF = 1.17
OPERATING RATING: RF = 1.51
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 (KIPS)

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

MATERIAL PROPERTIES:

CONCRETE MASONRY:
SUPERSTRUCTURE f'c = 4,000 PSI
ALL OTHER f'c = 3,500 PSI

BAR STEEL REINFORCEMENT
GRADE 60 fy = 60,000 PSI

36W" PRESTRESSED GIRDERS:
CONCRETE MASONRY f'c = 8,000 PSI
STRANDS: 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 PILING SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO ROCK. PILE DRIVING IS NOT REQUIRED. ESTIMATED PILE LENGTH 15'-0" LONG FOR BOTH ABUTMENTS.

THE FACTORED AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR DESIGN IS 170 TONS MULTIPLIED BY A RESISTANCE FACTOR OF 0.5.

HYDRAULIC DATA

100-YEAR FREQUENCY:
Q100 = 2,090 C.F.S.
V100 = 11.42 F.P.S.
HW100 = EL. 833.84
WATERWAY AREA = 183 SQ. FT.
DRAINAGE AREA = 63.1 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5

TRAFFIC DATA

FEATURE ON:
ADT = 1,450 (2041)
R.D.S. = 55 MPH

2-YEAR FREQUENCY:

Q2 = 768 C.F.S.
V2 = 8.76 F.P.S.
HW2 = EL. 831.28

BENCH MARK

Table with 4 columns: NO., STATION, DESCRIPTION, ELEV. Row 1: 2, 136+72.69, 40.3' RT SPIKE IN N. FACE OF POWER POLE, 852.44

STRUCTURE DESIGN CONTACTS:

JACOB FRIBERG 715-234-7008
AARON BONK 608-261-0261

Table with 4 columns: NO., DATE, REVISION, BY

COOPER ENGINEERING logo and address: 2600 COLLEGE DRIVE, P.O. BOX 230, RICE LAKE, WISCONSIN 54868-0230

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

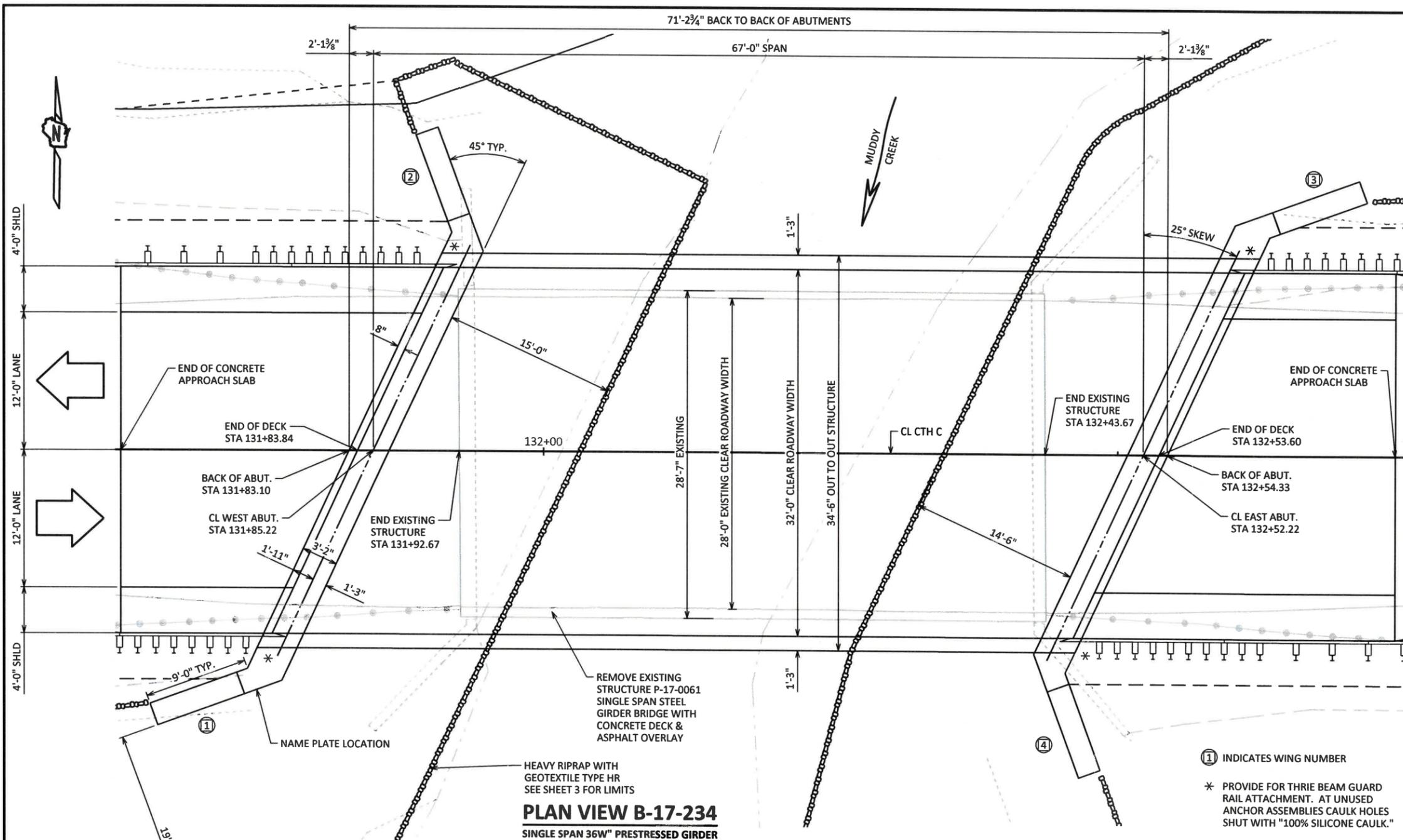
ACCEPTED [Signature] SDR 09/07/23
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-17-234

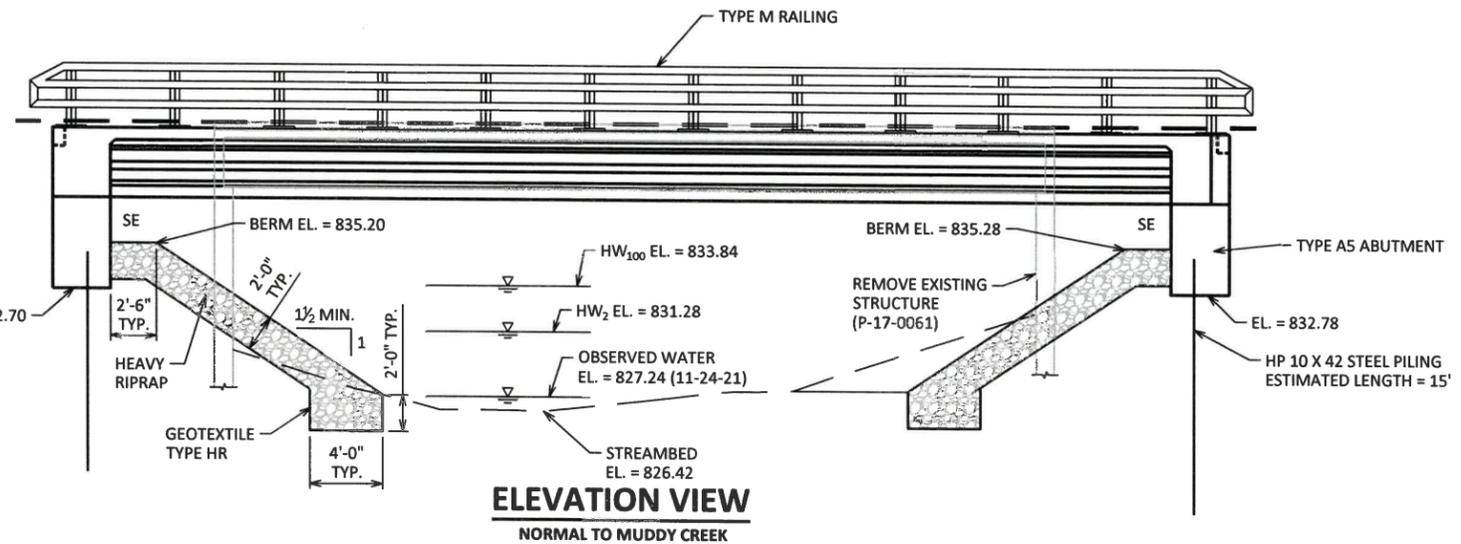
CTH C OVER MUDDY CREEK
COUNTY DUNN TOWN SPRING BROOK

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION
DESIGNED BY JAF CK'D SKP DRAWN BY JAF PLANS CK'D SKP

GENERAL PLAN SHEET 1 OF 14



PLAN VIEW B-17-234
SINGLE SPAN 36W" PRESTRESSED GIRDER



ELEVATION VIEW
NORMAL TO MUDDY CREEK

LIST OF DRAWINGS:

- 1 GENERAL PLAN
2 CROSS SECTION & QUANTITIES
3 SUBSURFACE EXPLORATION
4 WEST ABUTMENT
5 WEST ABUTMENT WING 1 DETAILS
6 WEST ABUTMENT WING 2 DETAILS
7 EAST ABUTMENT
8 EAST ABUTMENT WING 3 DETAILS
9 EAST ABUTMENT WING 4 DETAILS
10 36W" PRESTRESSED GIRDER DETAILS
11 STEEL DIAPHRAGM
12 SUPERSTRUCTURE
13 SUPERSTRUCTURE DETAILS
14 TUBULAR STEEL RAILING TYPE "M"



8

8

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-17-234" SHALL BE THE EXISTING GROUNDLINE.

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

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

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

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

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP SURFACE, SIDE, AND 1'-0" UNDERSIDE OF CONCRETE DECK.

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

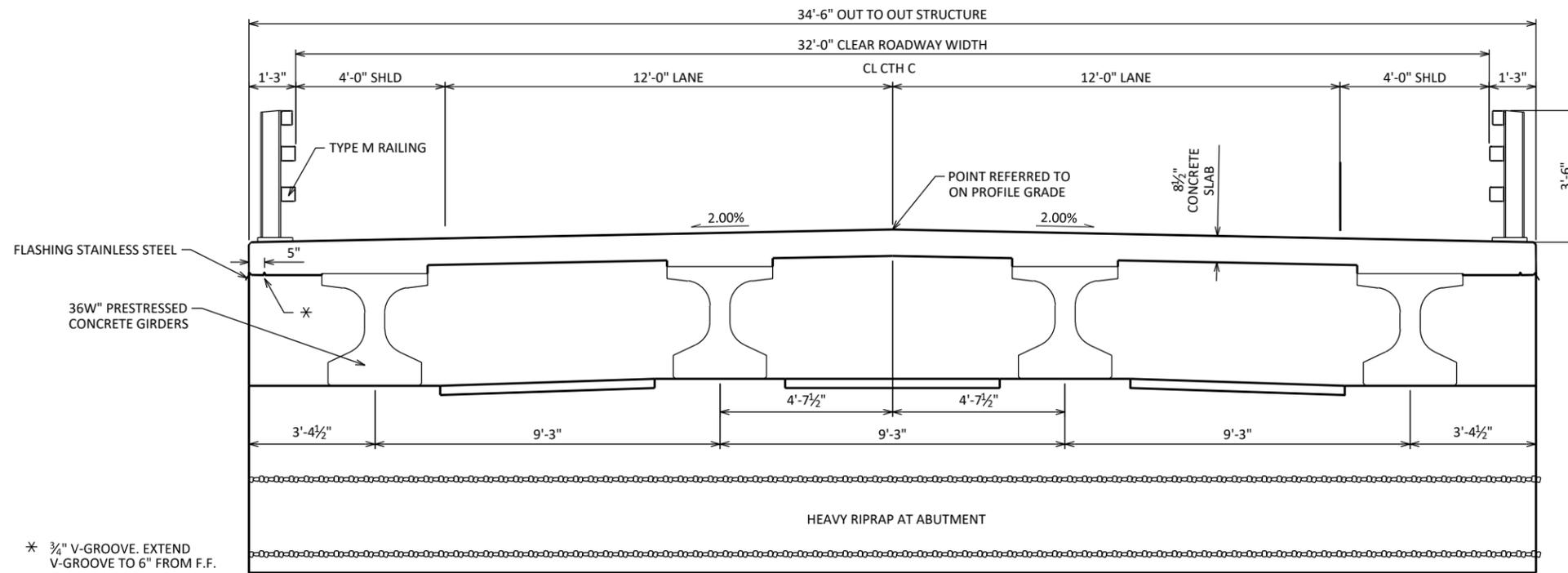
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "36W PRESTRESSED GIRDER DETAILS" SHEET.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

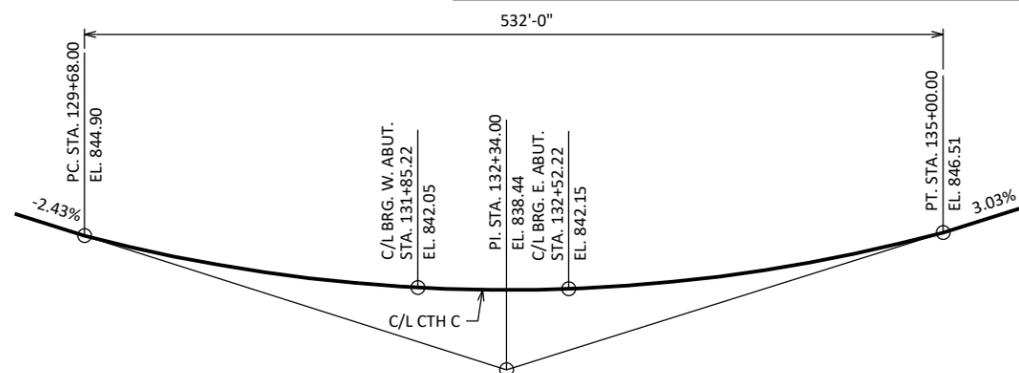
ELEVATIONS SHOWN ON THE PLANS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88)

THE COORDINATE SYSTEM FOR THIS PROJECT IS WISCONSIN COUNTY COORDINATE SYSTEM (WCCS) - DUNN COUNTY.



PROPOSED CROSS SECTION THRU BRIDGE (LOOKING EAST)

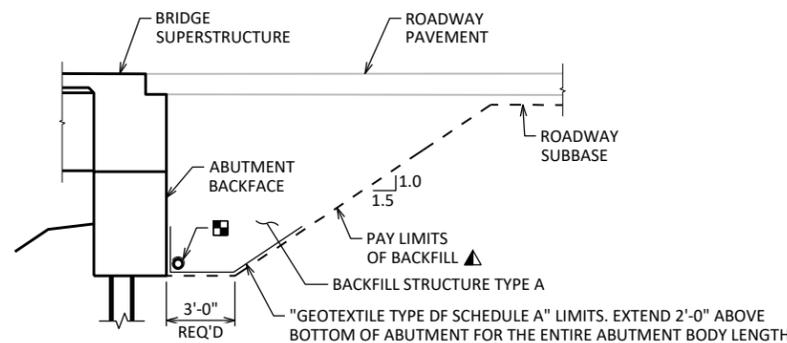
* 3/4" V-GROOVE. EXTEND V-GROOVE TO 6" FROM F.F. OF ABUT. DIAPHRAGM. V-GROOVES ARE REQUIRED.



PROFILE GRADE LINE

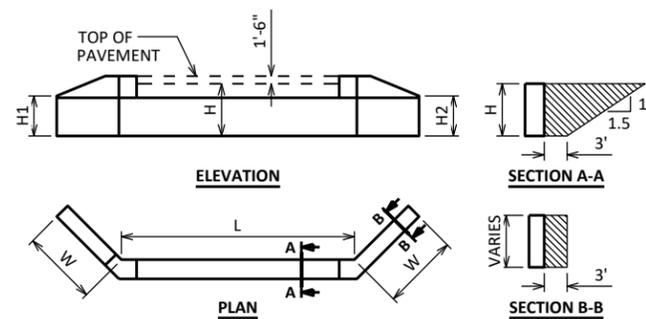
TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTAL
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS (P-17-0061)	EACH	-	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-17-234)	LS	0.5	0.5	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	390	390	-	780
502.0100	CONCRETE MASONRY BRIDGES	CY	39.2	39.0	97.8	176
502.3200	PROTECTIVE SURFACE TREATMENT	SY	18	19	295	332
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	-	-	272	272
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,630	2,630	-	5,260
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,690	1,680	16,530	19,900
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EA	4	4	-	8
506.4000	STEEL DIAPHRAGMS (B-17-234)	EA	-	-	3	3
513.4061	RAILING TUBULAR TYPE M	LF	-	-	146	146
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	8	8	-	16
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	80	96	-	176
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	100	120	-	220
606.0300	RIPRAP HEAVY	CY	115	165	-	280
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100	100	-	200
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	50	50	-	100
645.0120	GEOTEXTILE TYPE HR	SY	175	245	-	420
SPV.0090.01	FLASHING STAINLESS STEEL	LF	-	-	128	128
NON-BID ITEM	4" X 1/2" PERFORMED JOINT FILLER	LF	38	38	-	76
NON-BID ITEM	1/2" PERFORMED JOINT FILLER (BENEATH GIRDERS)	SF	6	6	-	12
NON-BID ITEM	3" X 3/4" CORK FILLER AT BEAM SEATS	LF	9	9	-	18



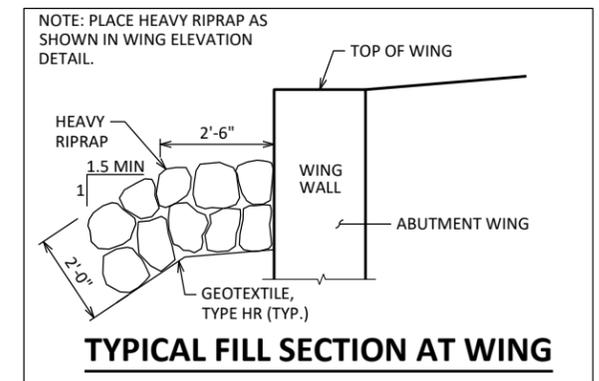
TYPICAL SECTION THRU ABUTMENT

- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



ABUTMENT BACKFILL DIAGRAM

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



TYPICAL FILL SECTION AT WING

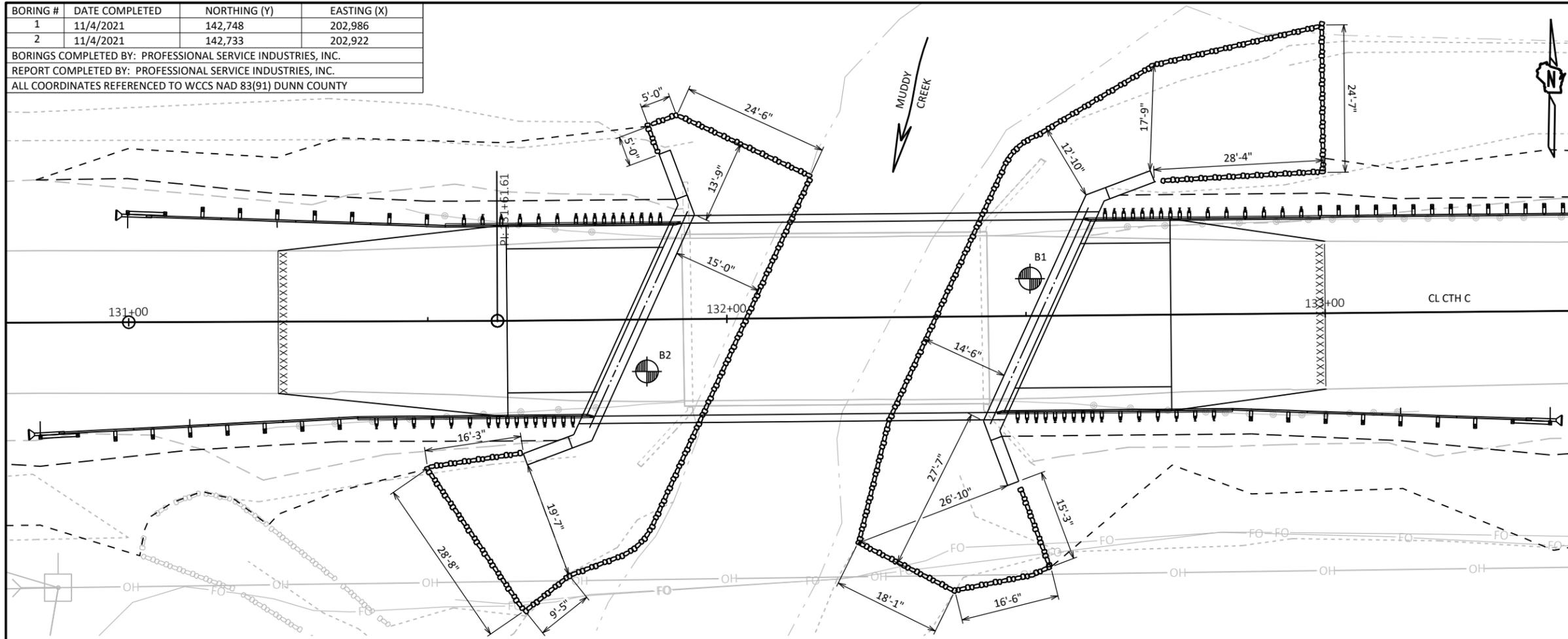
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-234			
DRAWN BY		JAF	PLANS CK'D SKP
CROSS SECTION & QUANTITIES			SHEET 2

SCALE =

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	11/4/2021	142,748	202,986
2	11/4/2021	142,733	202,922

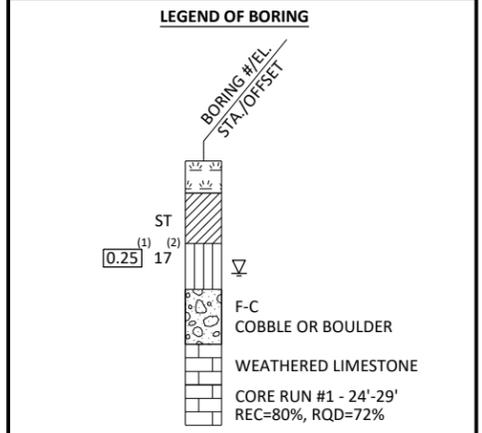
BORINGS COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC.
 REPORT COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC.
 ALL COORDINATES REFERENCED TO WCCS NAD 83(91) DUNN COUNTY

STATE PROJECT NUMBER
7879-03-74



MATERIAL SYMBOLS

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



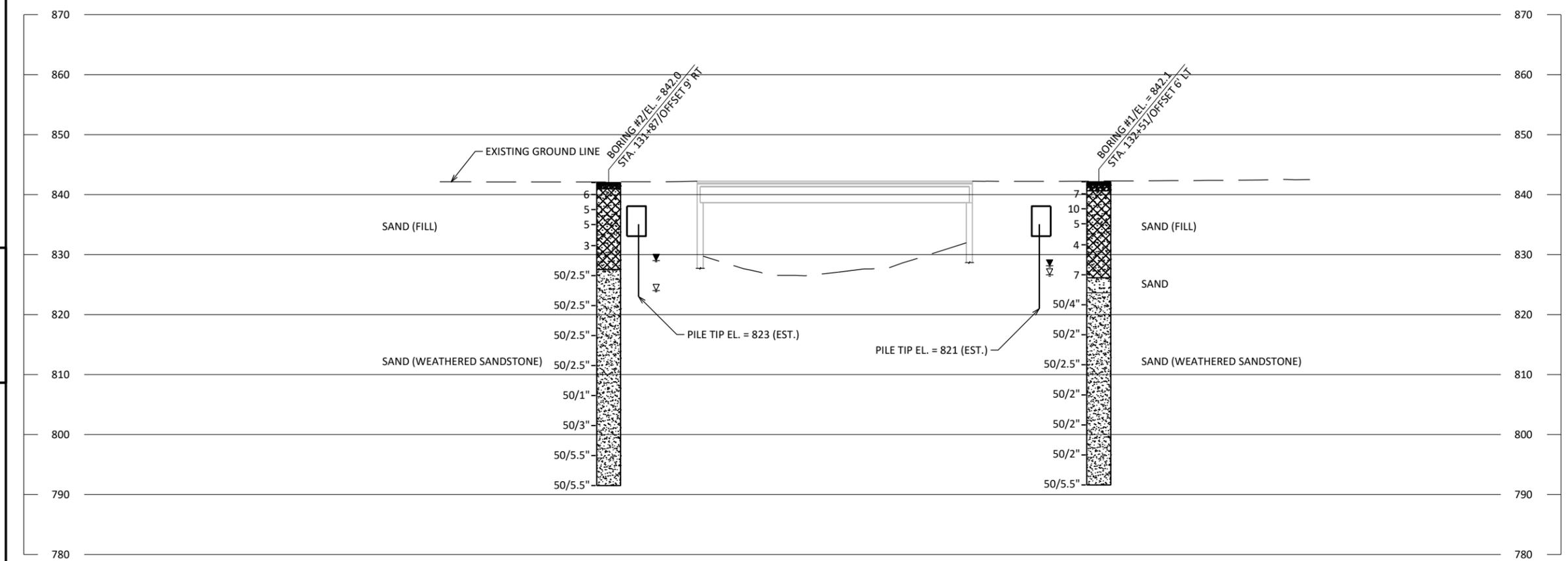
(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)
 (2) UNLESS OTHERWISE SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

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

ABBREVIATIONS

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



SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

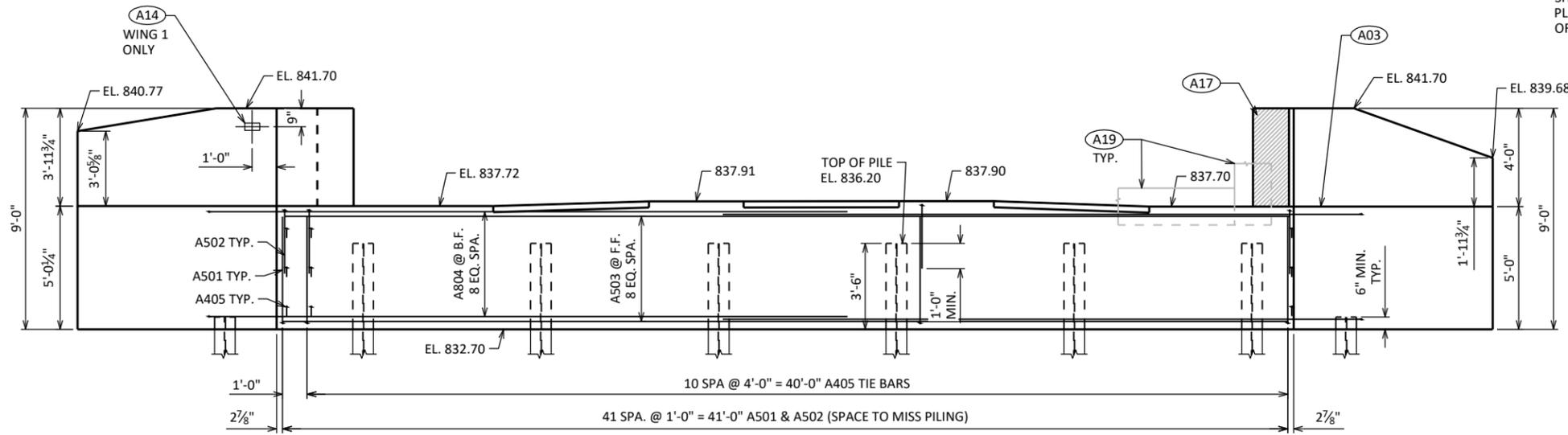
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-234			
DRAWN BY		JAF	PLANS CK'D SKP
SUBSURFACE EXPLORATION			SHEET 3

8

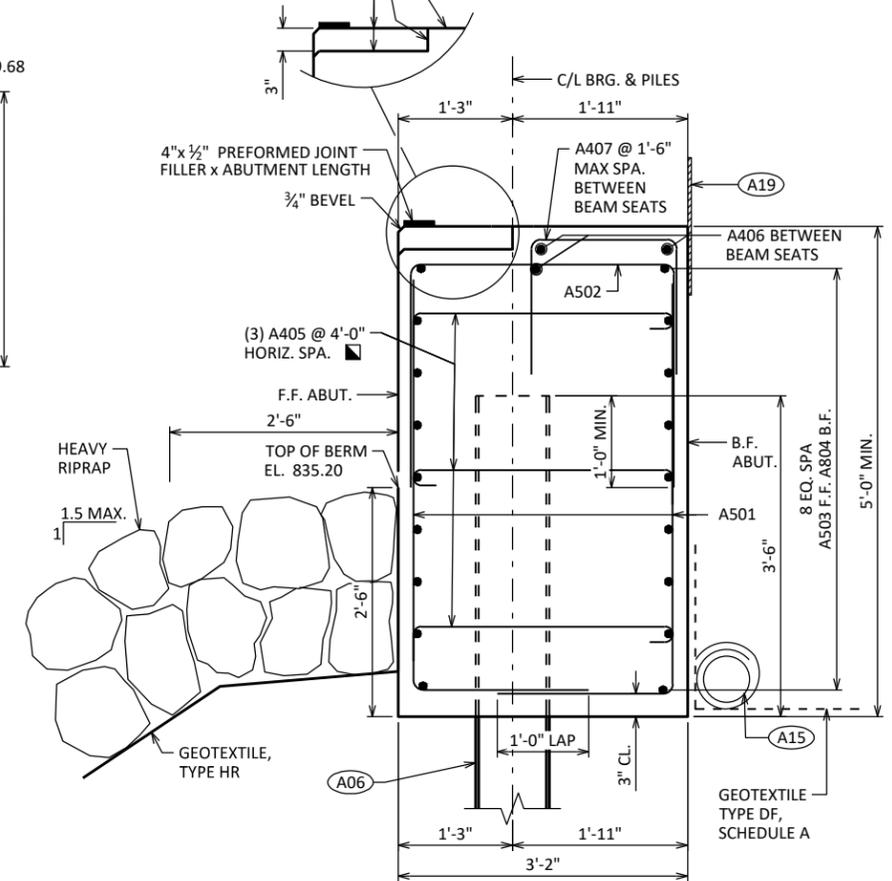
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SCALE =



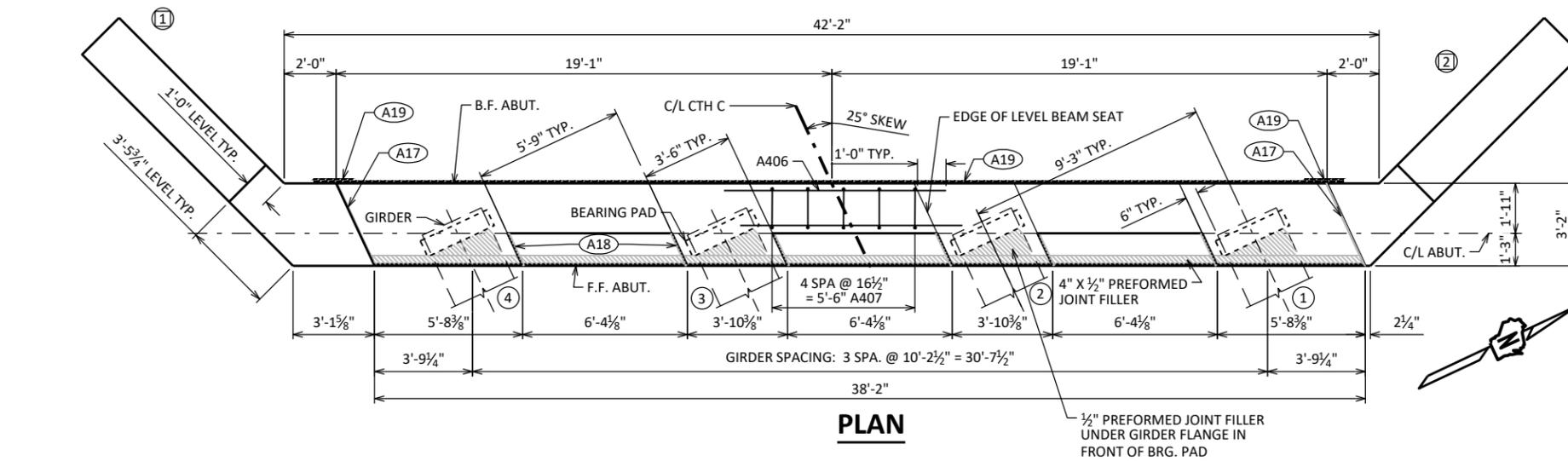
ELEVATION

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".

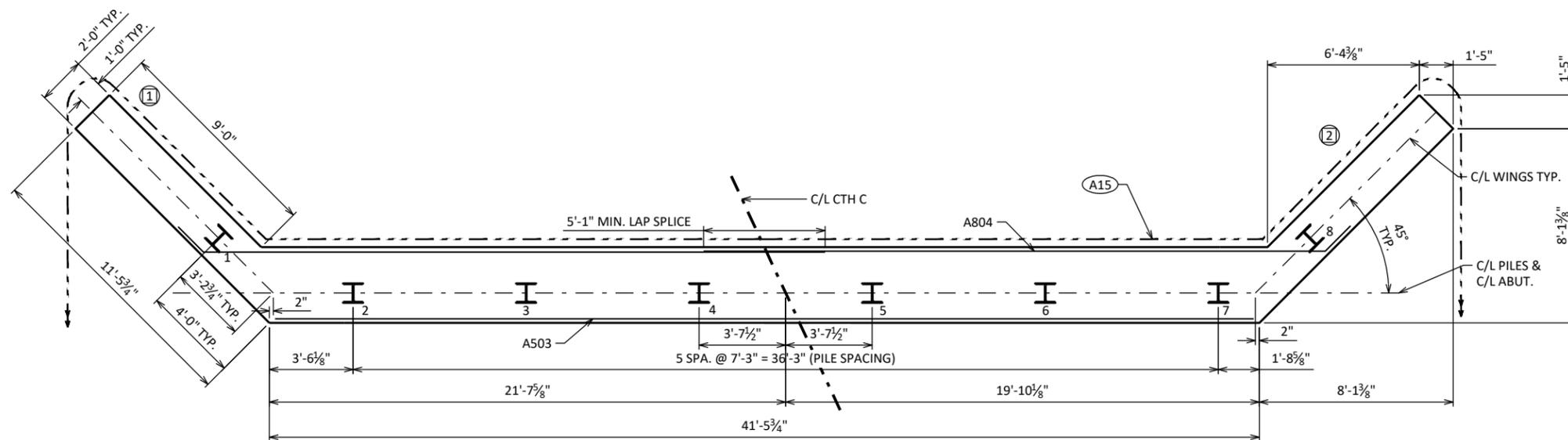


SECTION THRU BODY

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 15'-0" LONG SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO ROCK. PILE DRIVING IS NOT REQUIRED.
- (A14) CONTRACTOR SHALL SUPPLY A NEW NAME PLATE PER 502.3.11 OF STD. SPEC.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES

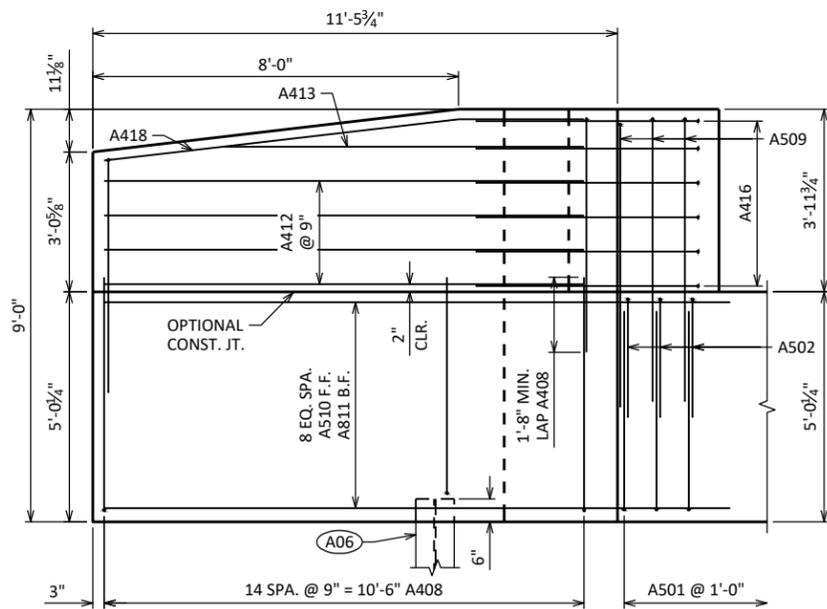


PLAN



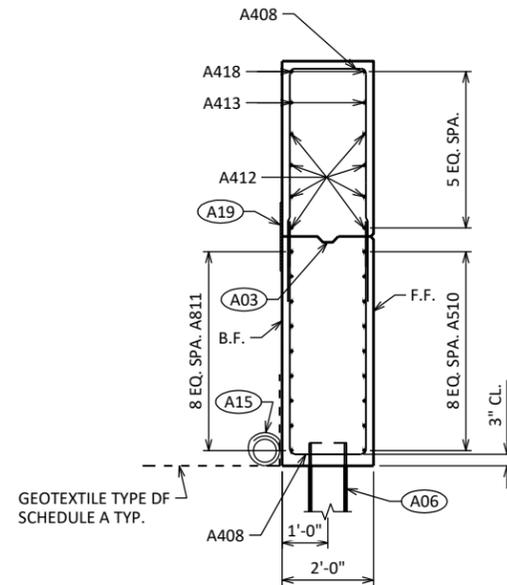
PILE LAYOUT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-234			
DRAWN BY		JAF	PLANS CK'D SKP
WEST ABUTMENT			SHEET 4

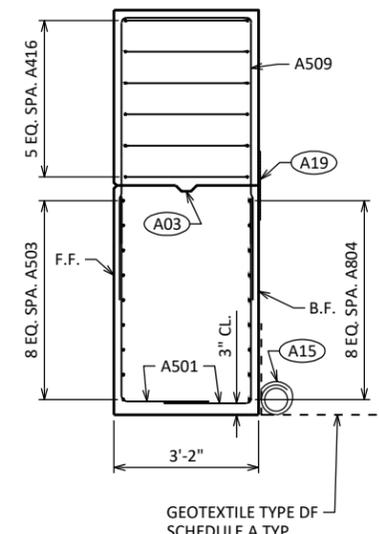


WING 1 ELEVATION

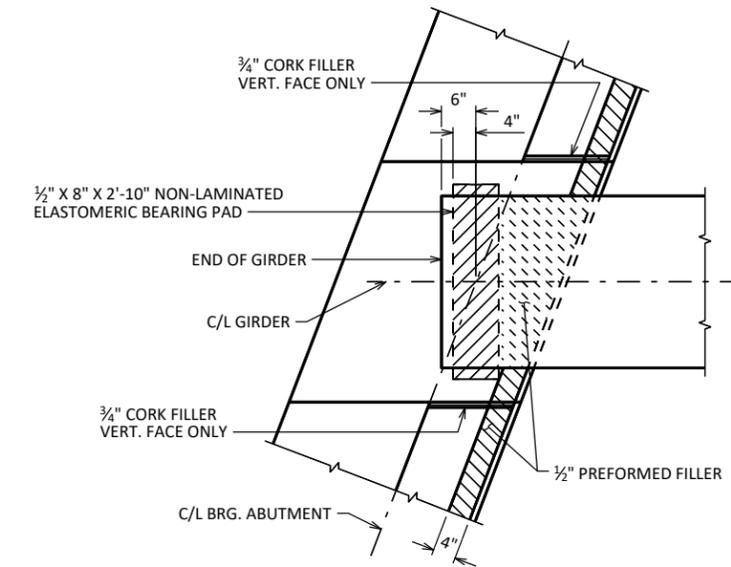
SHOWING F.F. WING



SECTION THRU WING 1

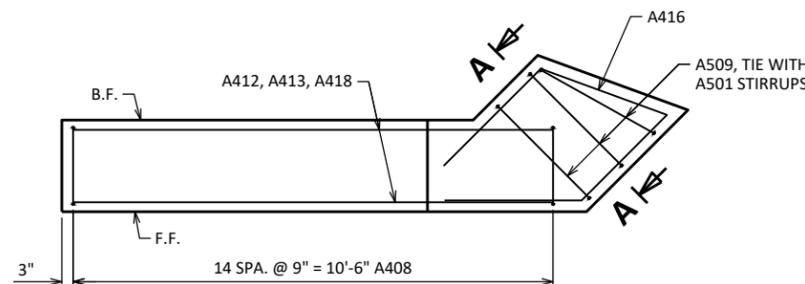


SECTION A-A



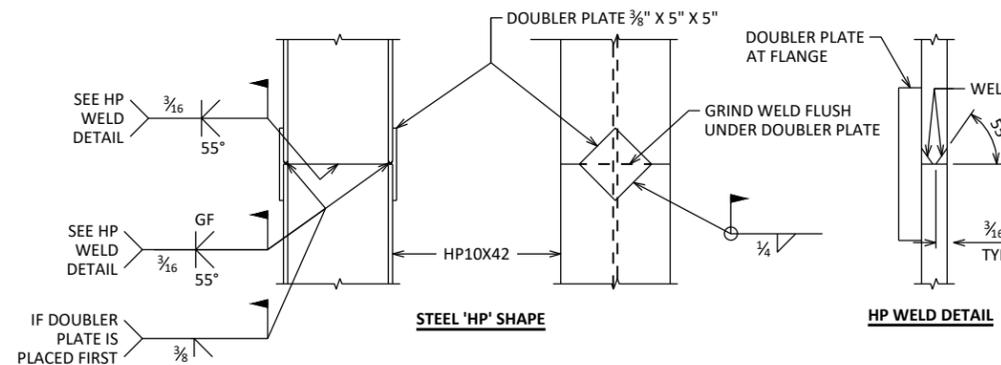
BEARING PAD DETAIL

AT ABUTMENTS

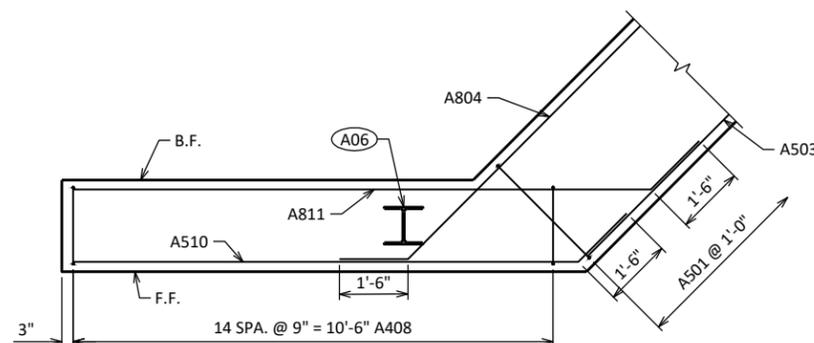


WING 1 PLAN

SHOWING UPPER WING REINFORCEMENT

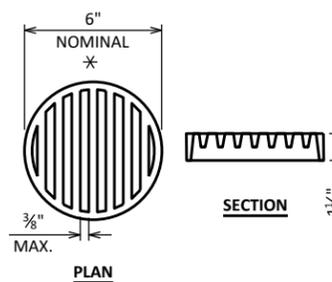


'HP' PILE DETAILS



WING 1 PLAN

SHOWING LOWER WING REINFORCEMENT



RODENT SHIELD DETAIL

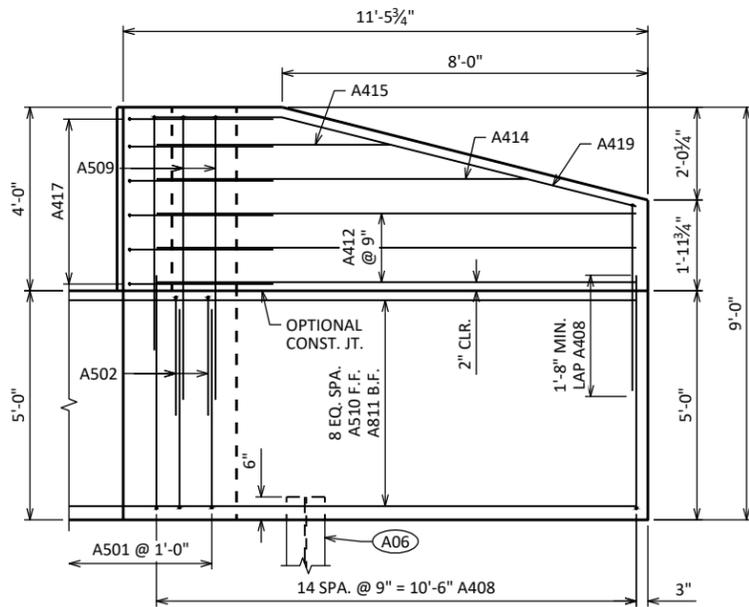
* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

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

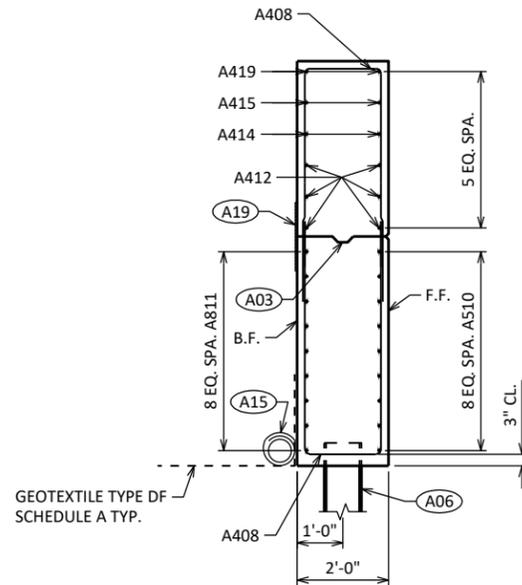
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 15'-0" LONG SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO ROCK. PILE DRIVING IS NOT REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-234			
DRAWN BY		JAF	PLANS CK'D SKP
WEST ABUTMENT WING 1 DETAILS			SHEET 5

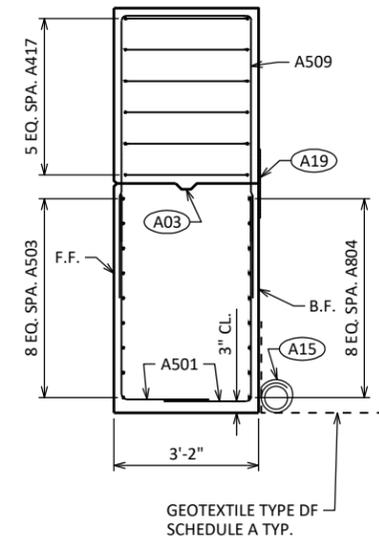


WING 2 ELEVATION

SHOWING F.F. WING



SECTION THRU WING 2

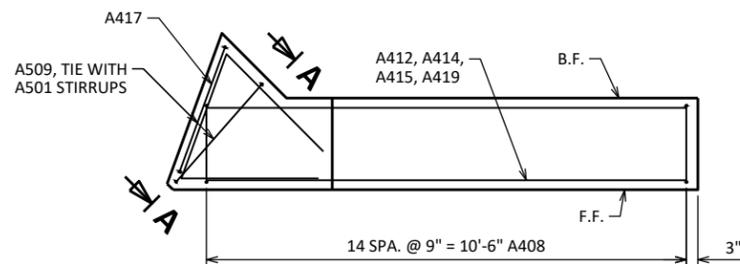


SECTION A-A

BILL OF BARS

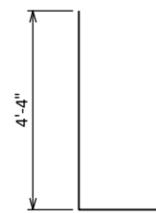
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES
A501		84	6'-3"	X	ABUT BODY STIRRUPS
A502		42	7'-9"	X	ABUT BODY STIRRUPS - TOP U-BAR
A503		9	41'-0"		ABUT BODY HORIZ. - F.F.
A804		18	24'-8"	X	ABUT BODY HORIZ. - B.F.
A405		33	3'-8"	X	ABUT BODY TIE BARS
A406		9	8'-5"		ABUT BODY HORIZ. BETWEEN BEAM SEATS
A407		15	4'-6"	X	ABUT BODY VERT. TOP U-BAR BETWEEN BEAM SEATS
A408	X	60	11'-8"	X	WING STIRRUPS
A509	X	5	14'-11"	X	WING CORNER STIRRUPS - TOP U-BAR
A510	X	18	12'-6"	X	WING LOWER HORIZ. - F.F.
A811	X	18	14'-0"	X	WING LOWER HORIZ. - B.F.
A412	X	14	10'-6"		WING UPPER HORIZ.
A413	X	2	7'-11"		WING 1 UPPER HORIZ.
A414	X	2	8'-1"		WING 2 UPPER HORIZ.
A415	X	2	5'-1"		WING 2 UPPER HORIZ.
A416	X	6	11'-6"	X	WING 1 UPPER HORIZ. CORNER
A417	X	6	8'-10"	X	WING 2 UPPER HORIZ. CORNER
A418	X	2	10'-6"	X	WING 1 TOP HORIZ.
A419	X	2	10'-6"	X	WING 2 TOP HORIZ.

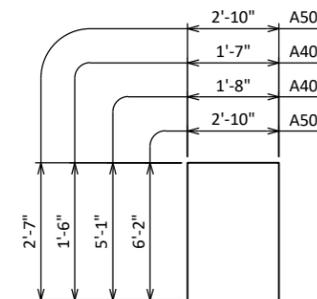


WING 2 PLAN

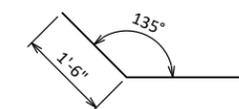
SHOWING UPPER WING REINFORCEMENT



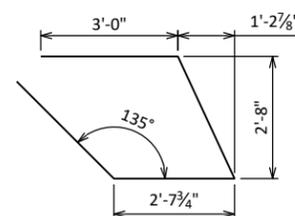
A501



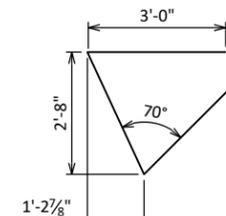
A502, A407, A408, A509



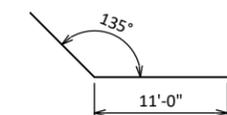
A804



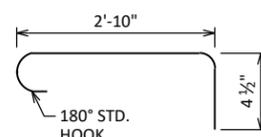
A416



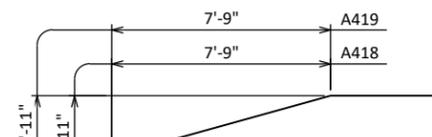
A417



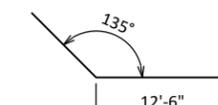
A510



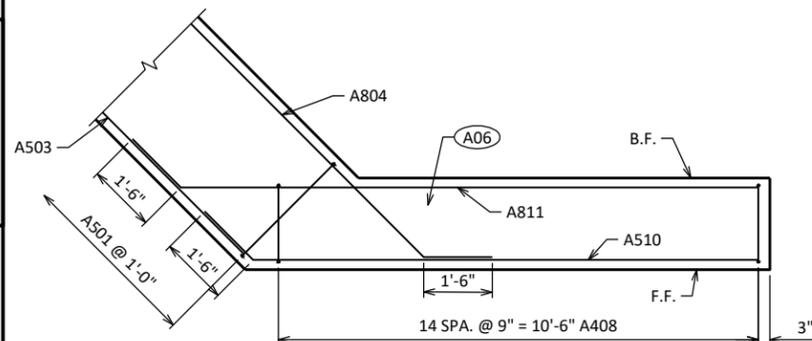
A405



A418, A419



A811

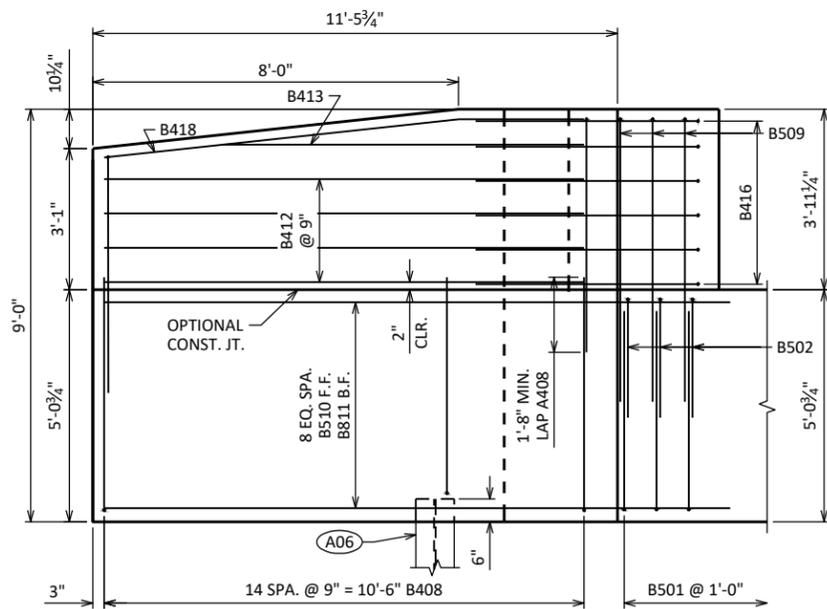


WING 2 PLAN

SHOWING LOWER WING REINFORCEMENT

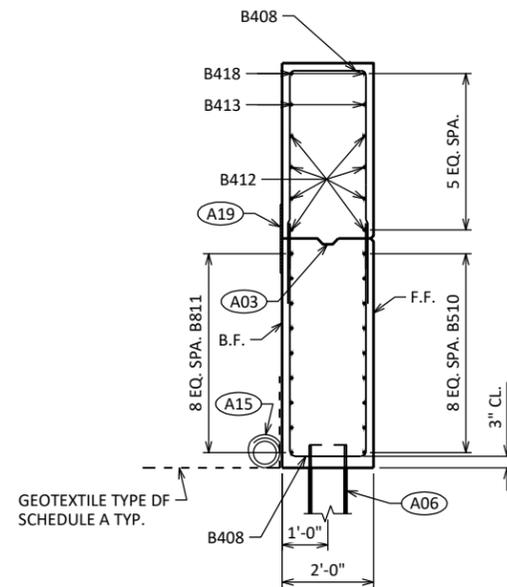
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 15'-0" LONG SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO ROCK. PILE DRIVING IS NOT REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-234			
DRAWN BY		JAF	PLANS CK'D SKP
WEST ABUTMENT WING 2 DETAILS			SHEET 6

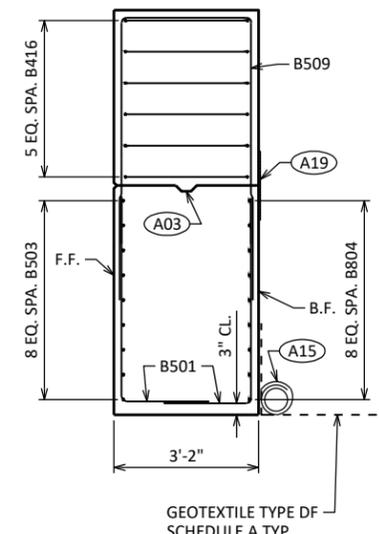


WING 3 ELEVATION

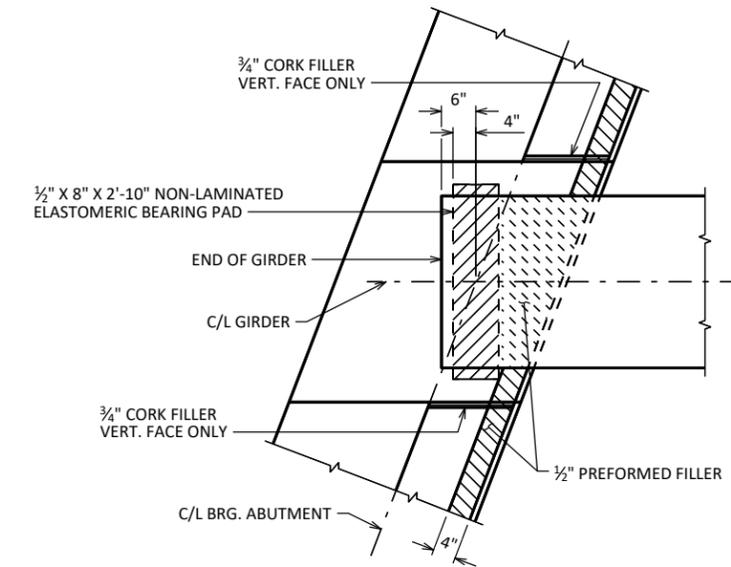
SHOWING F.F. WING



SECTION THRU WING 3

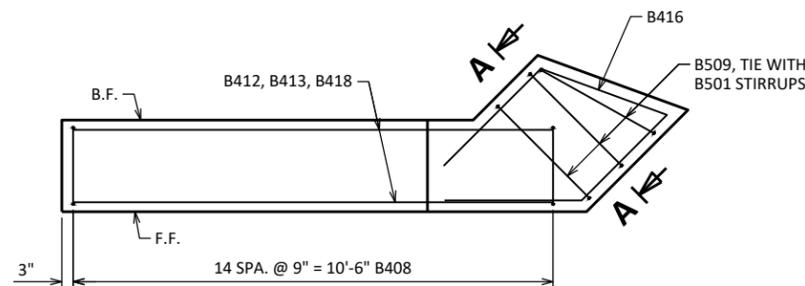


SECTION A-A



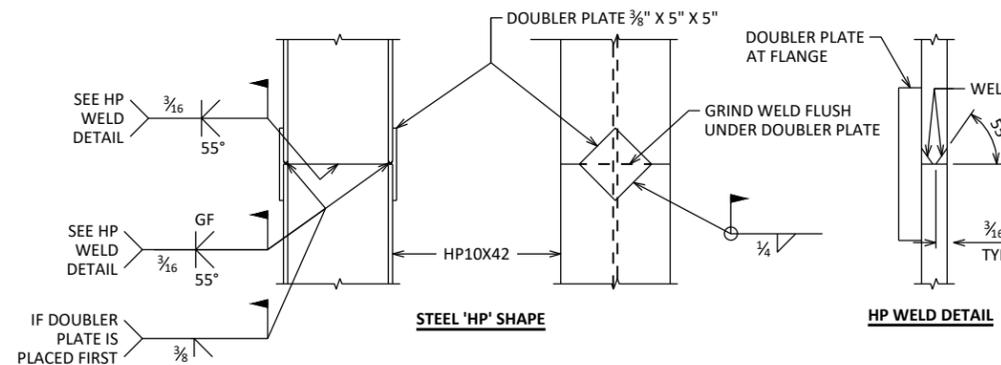
BEARING PAD DETAIL

AT ABUTMENTS

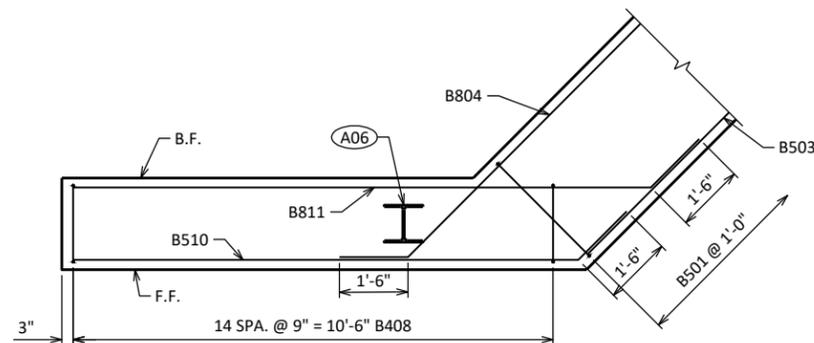


WING 3 PLAN

SHOWING UPPER WING REINFORCEMENT

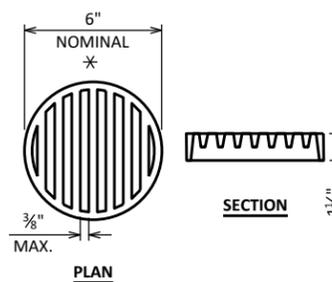


'HP' PILE DETAILS



WING 3 PLAN

SHOWING LOWER WING REINFORCEMENT



RODENT SHIELD DETAIL

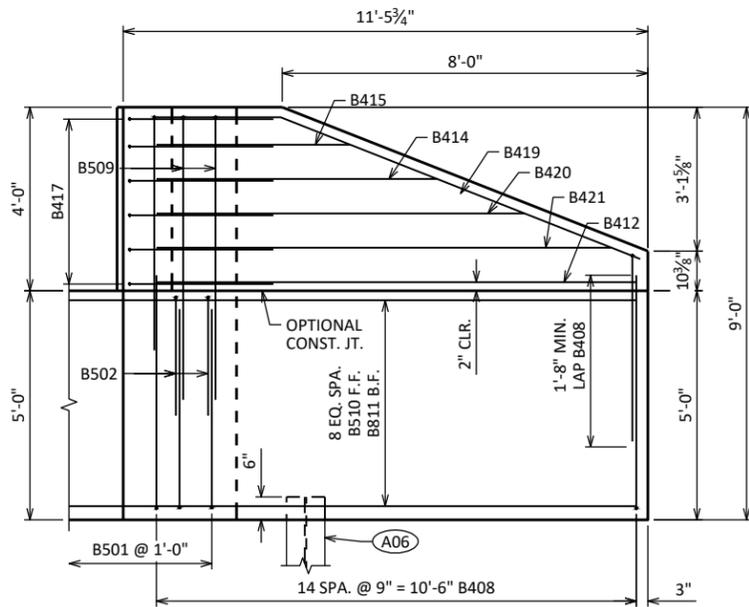
* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

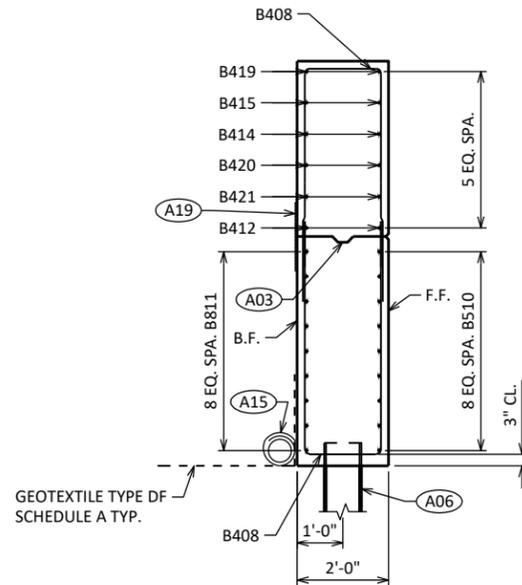
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH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

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 15'-0" LONG SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO ROCK. PILE DRIVING IS NOT REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

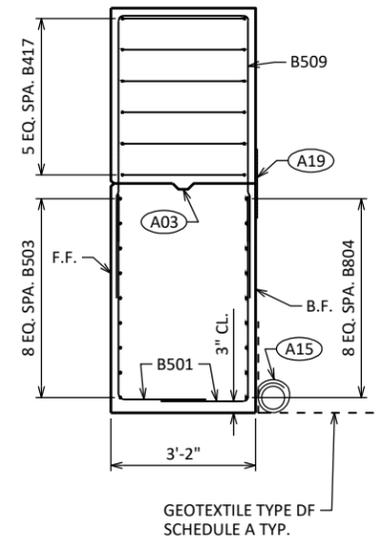
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-234			
DRAWN BY		JAF	PLANS CK'D SKP
EAST ABUTMENT WING 3 DETAILS			SHEET 8



WING 4 ELEVATION
SHOWING F.F. WING



SECTION THRU WING 4

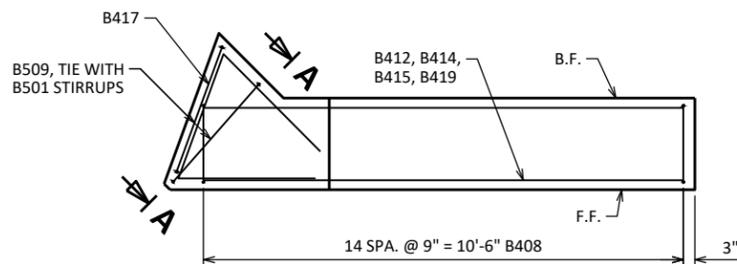


SECTION A-A

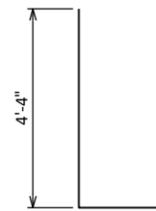
BILL OF BARS

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

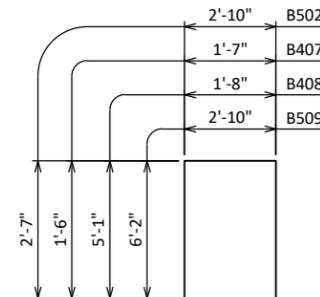
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES
B501		84	6'-3"	X	ABUT BODY STIRRUPS
B502		42	7'-9"	X	ABUT BODY STIRRUPS - TOP U-BAR
B503		9	41'-0"		ABUT BODY HORIZ. - F.F.
B804		18	24'-8"	X	ABUT BODY HORIZ. - B.F.
B405		33	3'-8"	X	ABUT BODY TIE BARS
B406		9	8'-5"		ABUT BODY HORIZ. BETWEEN BEAM SEATS
B407		15	4'-6"	X	ABUT BODY VERT. TOP U-BAR BETWEEN BEAM SEATS
B408	X	60	11'-8"	X	WING STIRRUPS
B509	X	5	14'-11"	X	WING CORNER STIRRUPS - TOP U-BAR
B510	X	18	12'-6"	X	WING LOWER HORIZ. - F.F.
B811	X	18	14'-0"	X	WING LOWER HORIZ. - B.F.
B412	X	10	10'-6"		WING UPPER HORIZ.
B413	X	2	7'-11"		WING 3 UPPER HORIZ.
B414	X	2	6'-2"		WING 4 UPPER HORIZ.
B415	X	2	4'-3"		WING 4 UPPER HORIZ.
B416	X	6	11'-6"	X	WING 3 UPPER HORIZ. CORNER
B417	X	6	8'-10"	X	WING 4 UPPER HORIZ. CORNER
B418	X	2	10'-6"	X	WING 3 TOP HORIZ.
B419	X	2	10'-6"	X	WING 4 TOP HORIZ.
B420	X	2	8'-0"		WING 4 UPPER HORIZ.
B421	X	2	10'-0"		WING 4 UPPER HORIZ.



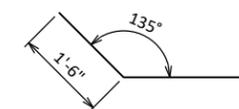
WING 4 PLAN
SHOWING UPPER WING REINFORCEMENT



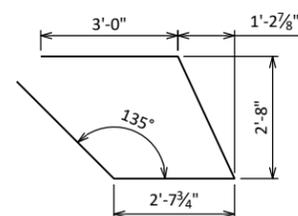
B501



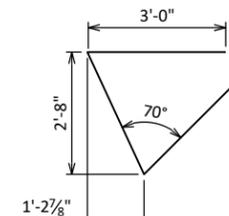
B502, B407, B408, B509



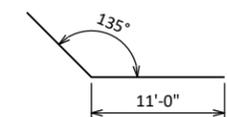
B804



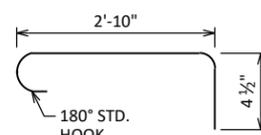
B416



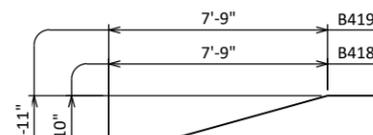
B417



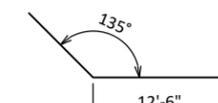
B510



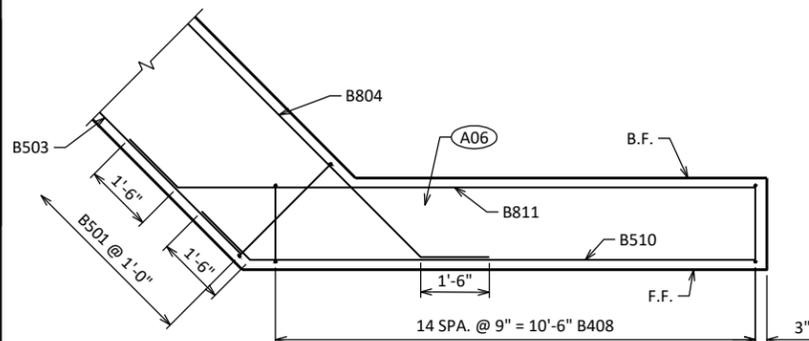
B405



B418, B419



B811



WING 4 PLAN
SHOWING LOWER WING REINFORCEMENT

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 15'-0" LONG SEATED IN PRE-BORED HOLES CORED 3 FEET MINIMUM INTO ROCK. PILE DRIVING IS NOT REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-234			
DRAWN BY		JAF	PLANS CK'D SKP
EAST ABUTMENT WING 4 DETAILS			SHEET 9

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 SECT. 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.

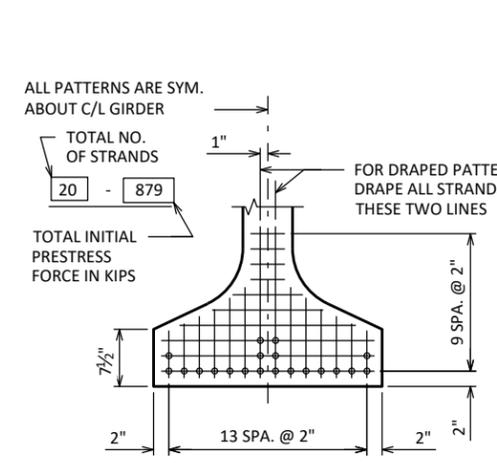
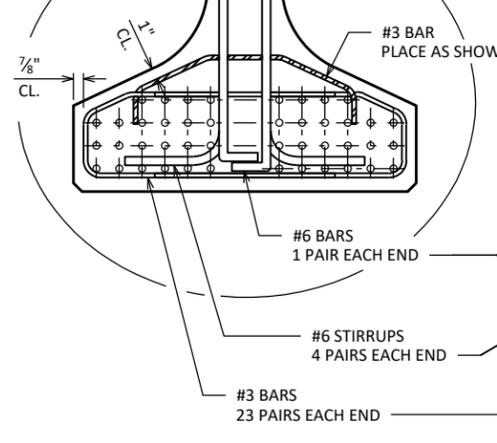
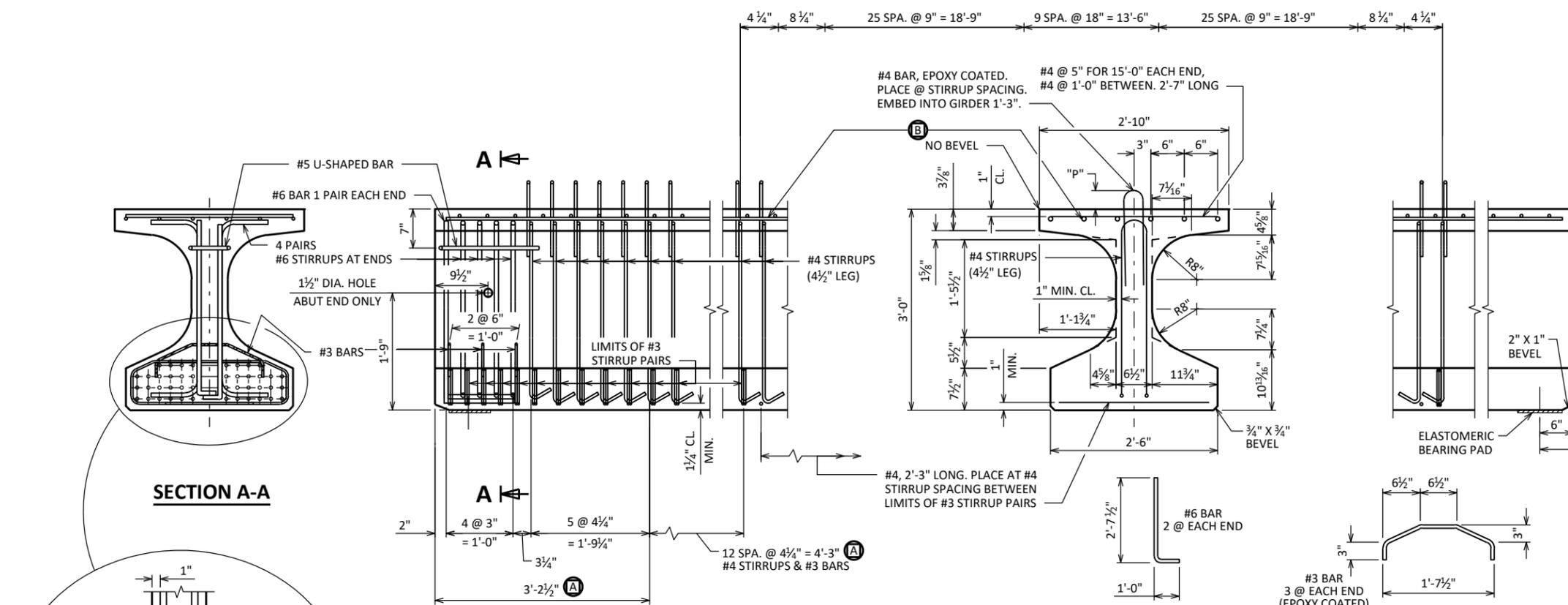
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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

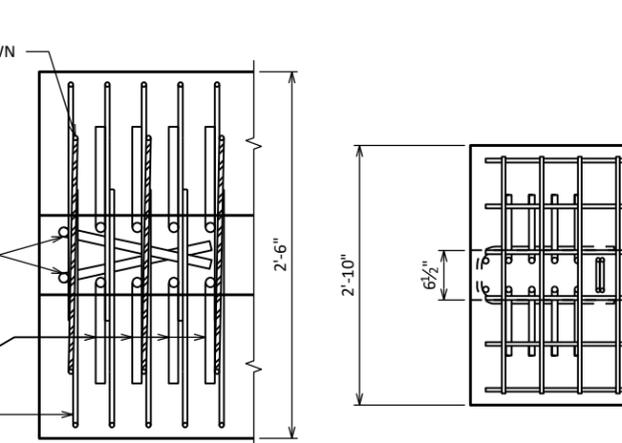
AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON ACCEPTANCE OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING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

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

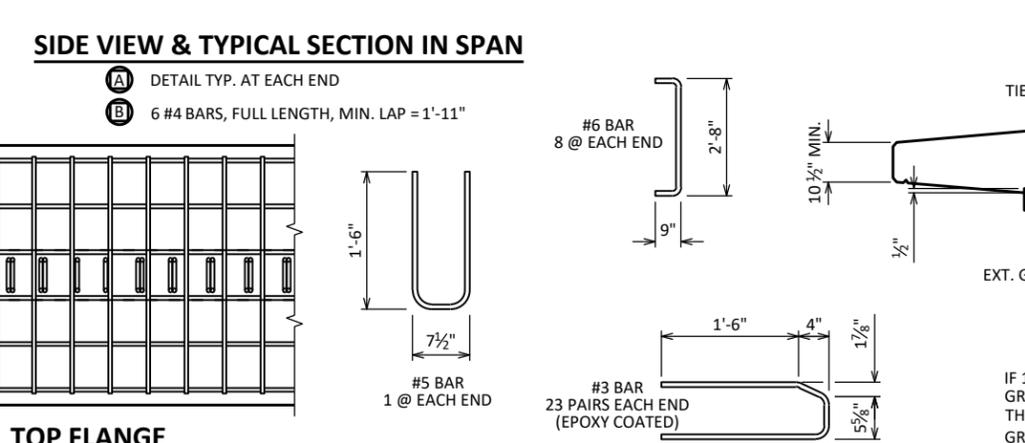
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



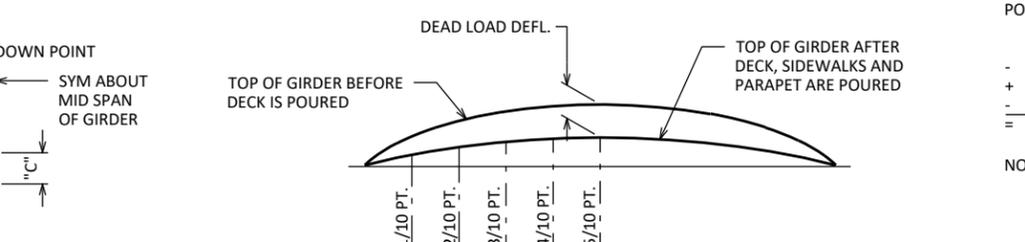
TYP. STRAND PATTERN



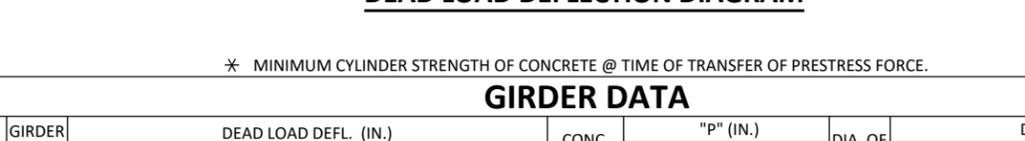
BOTTOM FLANGE



TOP FLANGE



DRAPED STRAND PROFILE

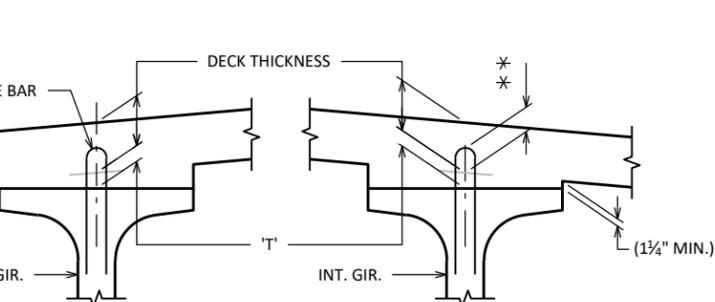


DEAD LOAD DEFLECTION DIAGRAM

* 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.

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

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



DECK HAUNCH DETAIL

IF 1 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE 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 GIR'S. AT C/L OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

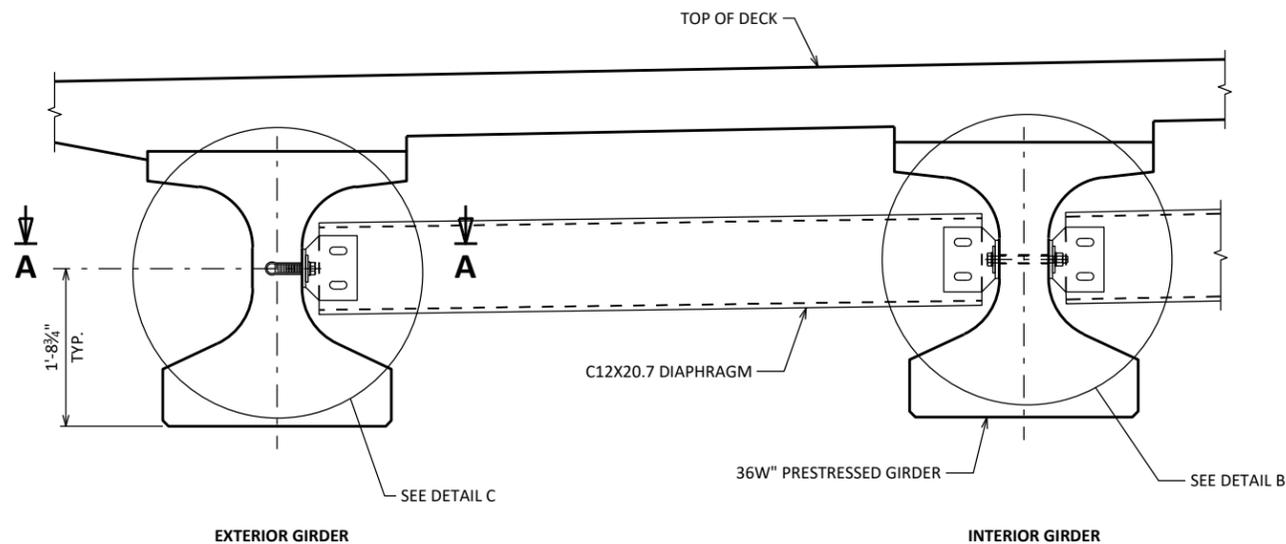
- TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
- + DEAD LOAD DEFLECTION
- DECK THICKNESS
- = HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2 7/8" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

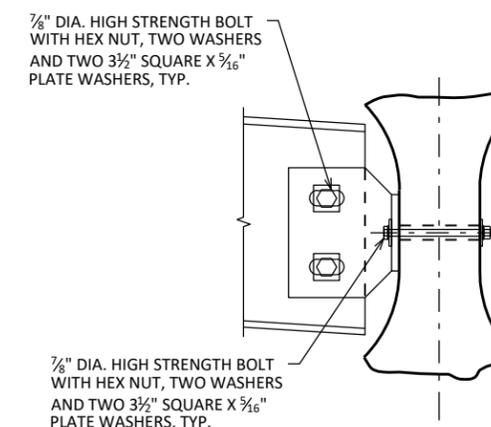
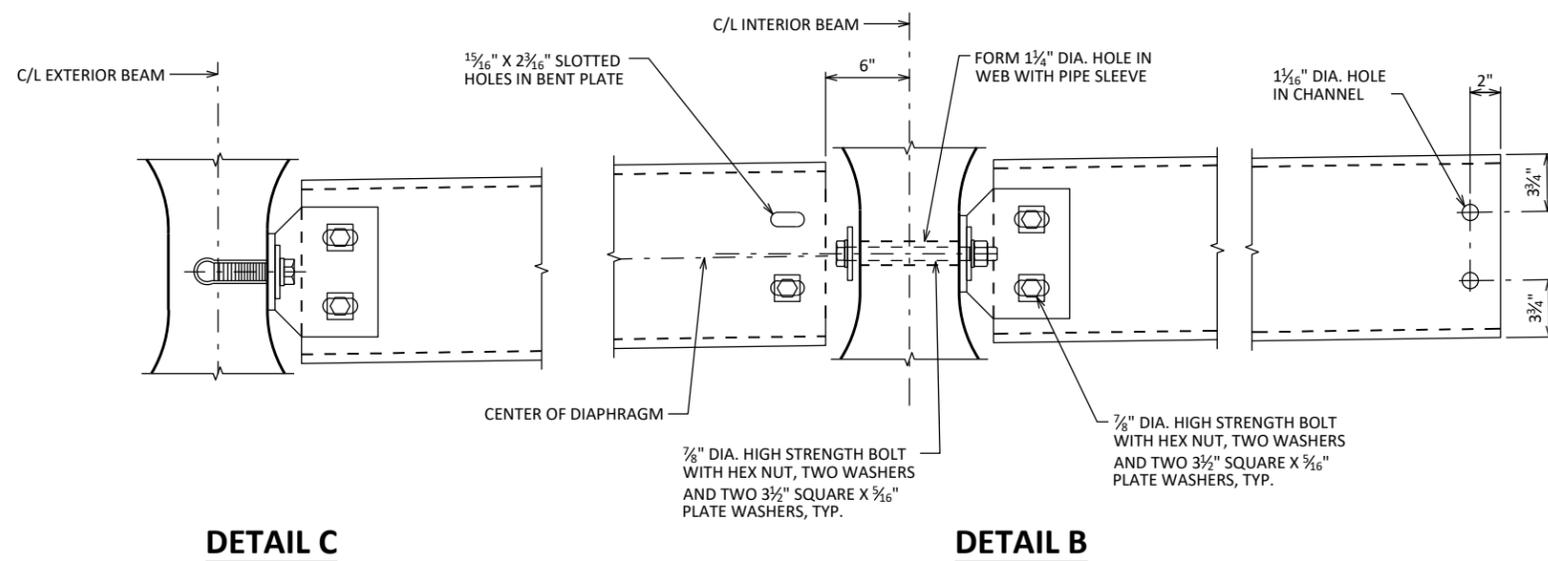
GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH (FEET)	DEAD LOAD DEFL. (IN.)										CONC. STRGTH. f _c (P.S.I.)	"P" (IN.)			DIA. OF STRAND (IN.)	TOTAL NO. OF STRANDS	f _{ci} (P.S.I.)	DRAPED PATTERN (IN.)			
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	1ST 1/3 OF GIRDER		MID 1/3 OF GIRDER	END 1/3 OF GIRDER	"A"				"B" MIN.	"B" MAX.	"C"	
1	1 & 4	68	0.2	0.4	0.5	0.6	0.7	0.6	0.5	0.4	0.2	8000	7	6	7	0.6	20	6800	32	11	14	4	
1	2 & 3	68	0.2	0.4	0.6	0.7	0.8	0.7	0.6	0.4	0.2	8000	7	6	7	0.6	20	6800	32	11	14	4	

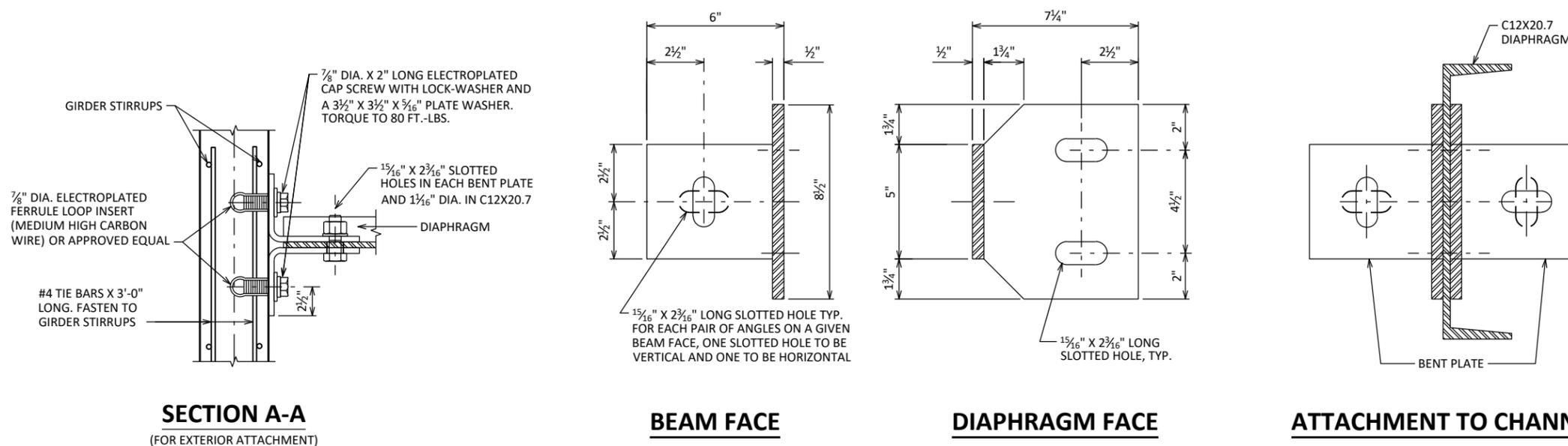
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-234			
DRAWN BY		JAF	PLANS CK'D SKP
36W" PRESTRESSED GIRDER DETAILS		SHEET 10	



PART TRANSVERSE SECTION AT DIAPHRAGM



SECTION AT INTERIOR GIRDERS THRU DIAPHRAGM FOR SKEW ANGLES > 10°



8

8

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-17-0234," EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

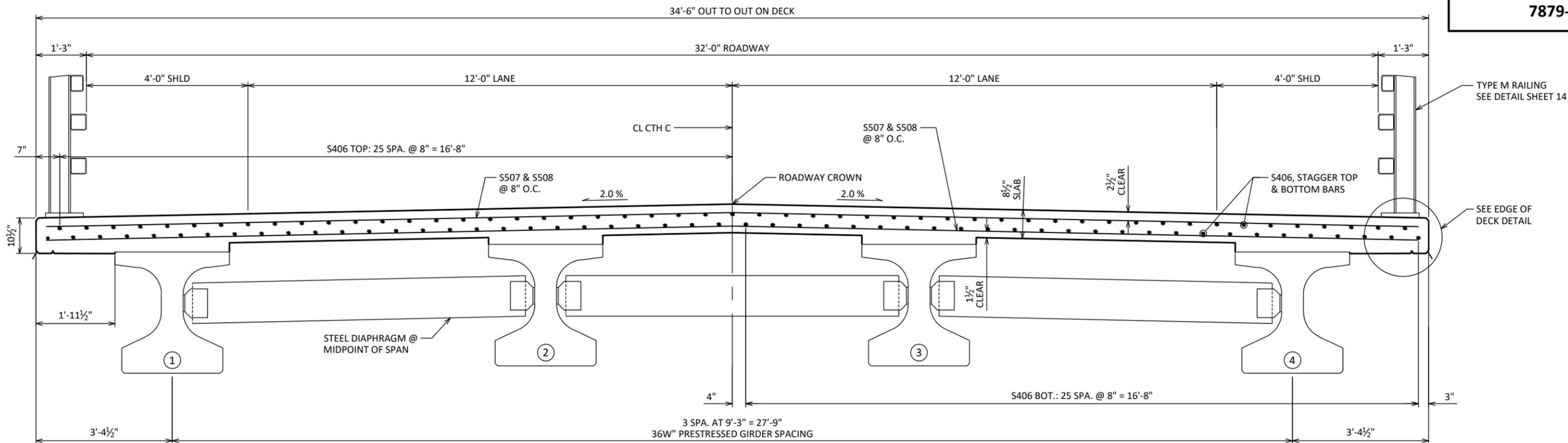
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-234			
DRAWN BY		JAF	PLANS CK'D SKP
STEEL DIAPHRAGM			SHEET 11

SCALE = 2:00



GENERAL NOTES

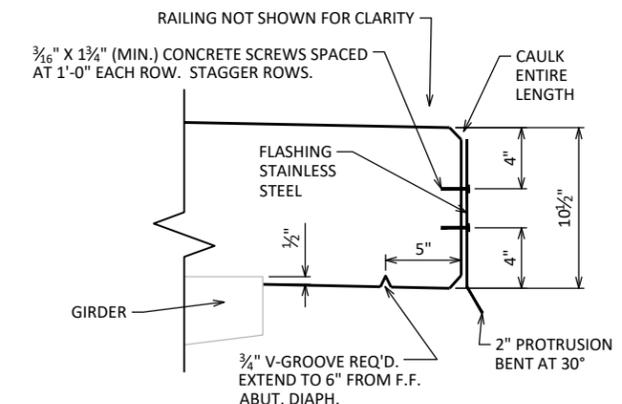
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" \varnothing . BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" \varnothing .

TRANSVERSE BARS SHALL BE PLACED PERPENDICULAR TO THE \varnothing OF GIRDERS.

THE SLAB THICKNESS DIMENSION IS MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

CROSS SECTION THRU BRIDGE

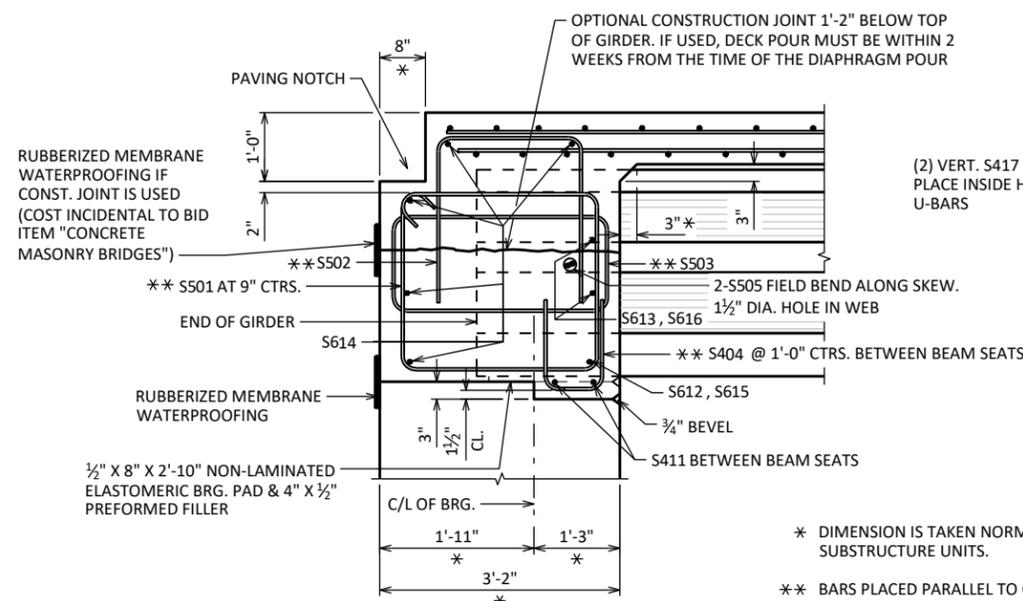
LOOKING EAST



EDGE OF DECK DETAIL

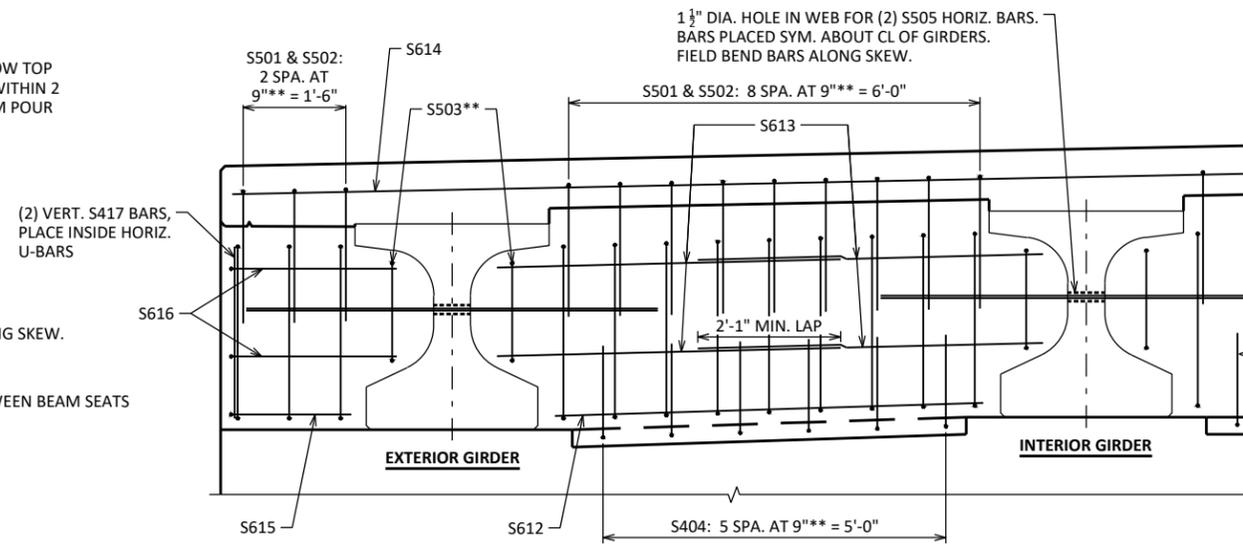
FLASHING STAINLESS STEEL NOTES:

- THE BID ITEM "FLASHING STAINLESS STEEL" SHALL INCLUDE PROVIDING AND INSTALLING THE STAINLESS STEEL 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. ABUTMENT DIAPHRAGM.
- TOP OF FLASHING TO BEGIN APPROX. 1-INCH BELOW TOP OF DECK/SLAB SURFACE.
- THE FLASHING IS TO BE CONSTANT HEIGHT BASED ON THE THINNEST SLAB DEPTH OVER THE BRIDGE LENGTH.
- PROVIDE 2" MINIMUM FLASHING OVERLAP, FASTEN WITH 3/16" X 2" (MIN.) CONCRETE SCREWS.
- CAULK SHALL BE NON-STAINING, GRAY NON-BITUMINOUS JOINT SEALER.



PART LONGIT. SECTION

AT ABUTMENTS



PART TRANSVERSE SECTION AT ABUTMENT DIAPHRAGM

- * DIMENSION IS TAKEN NORMAL TO C/L SUBSTRUCTURE UNITS.
- ** BARS PLACED PARALLEL TO GIRDERS SPACING PERPENDICULAR TO C/L GIRDERS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-234			
DRAWN BY		TAG	PLANS CK'D JAF
SUPERSTRUCTURE			SHEET 12

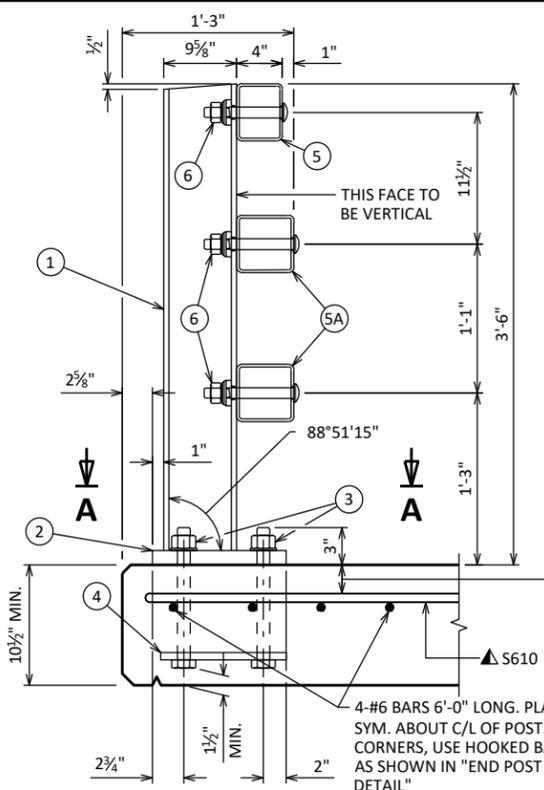
SCALE =

LEGEND

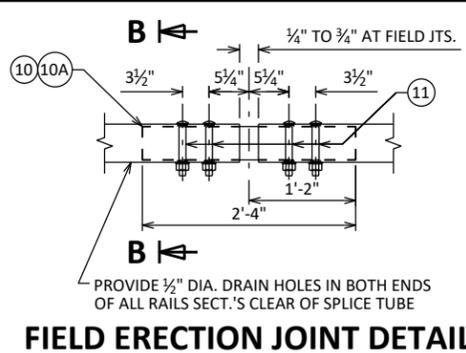
- 1 W6 X 25 WITH 1 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- 2 PLATE 1 1/4" X 11 3/8" X 1'-8" WITH 1 1/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.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

GENERAL NOTES

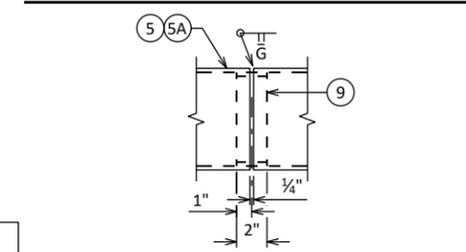
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, 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 1/2 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 NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.



SECTION THRU RAILING ON DECK

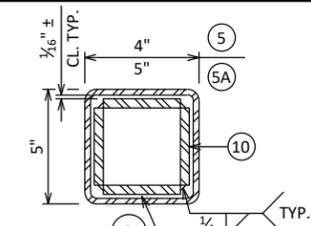


FIELD ERECTION JOINT DETAIL

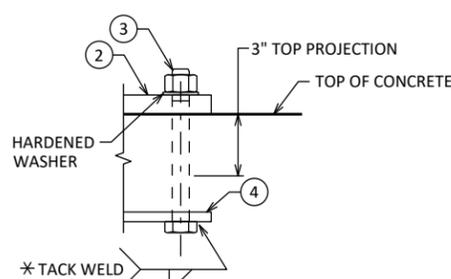


SHOP RAIL SPLICE DETAIL

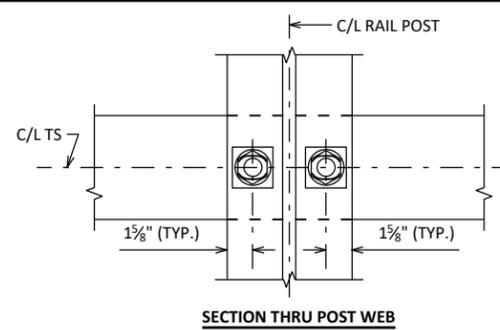
2 1/2" FOR SLABS ON GIRDERS; FOR OTHER STRUCTURES, PLACE BELOW TOP MAT SLAB REINFORCEMENT



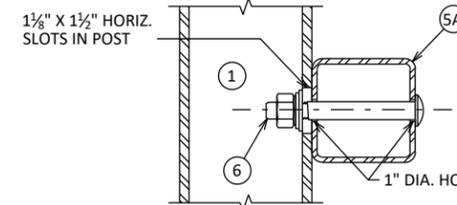
SECTION B-B



ANCHOR BOLTS

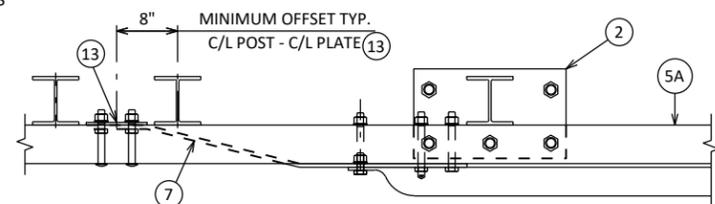


SECTION THRU POST WEB

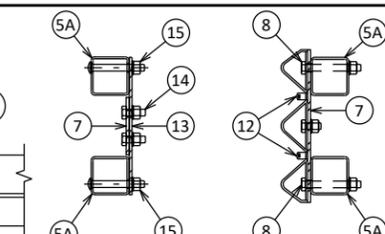


SECTION THRU RAIL
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

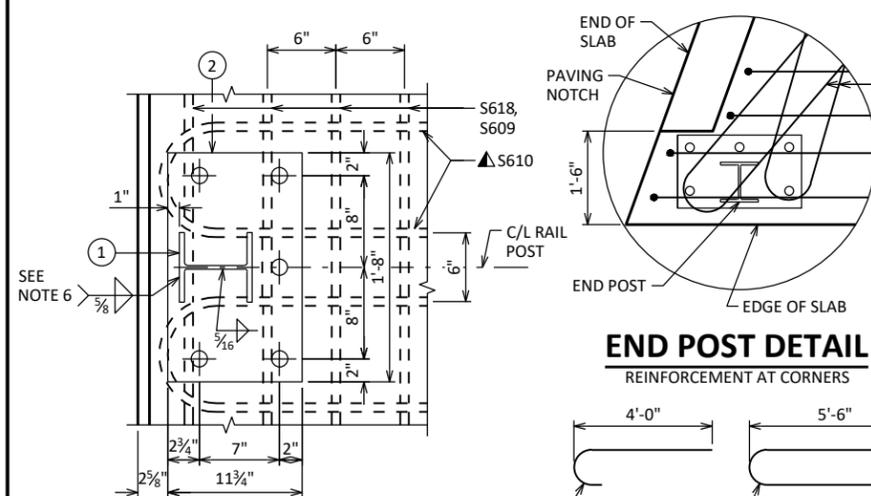
TYPICAL RAIL TO POST CONNECTIONS



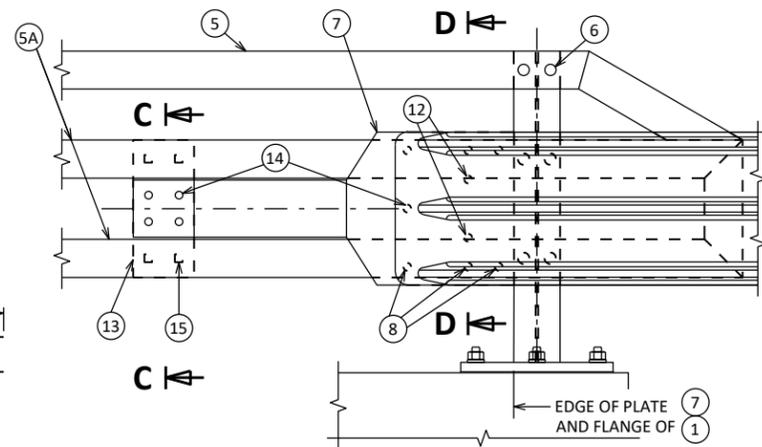
TOP VIEW AT END POST
THRIE BEAM RAIL ATTACHMENT



SECTION C-C SECTION D-D

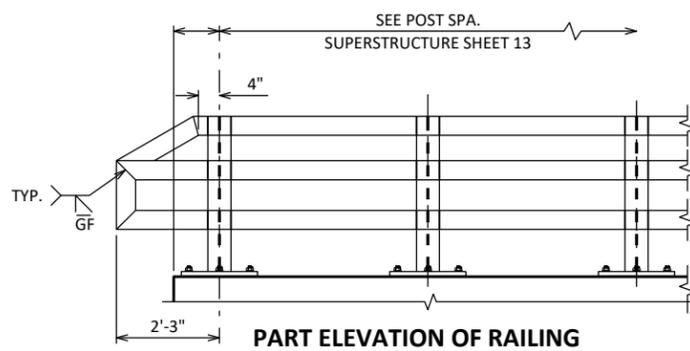


END POST DETAIL
REINFORCEMENT AT CORNERS

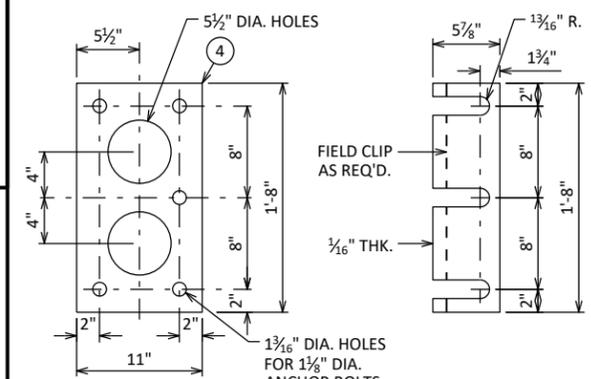


ANCHOR PLATE
AT BEAM GUARD ATTACHMENT

DETAIL AT END POST
THRIE BEAM RAIL ATTACHMENT

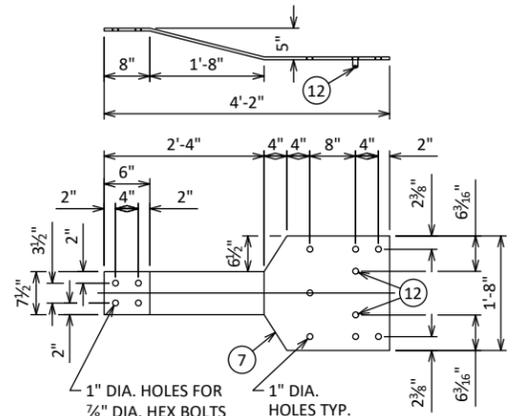


PART ELEVATION OF RAILING



ANCHOR PLATE
AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL
AT BEAM GUARD ATTACHMENT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-234			
DRAWN BY		JAF	PLANS CK'D SKP
TUBULAR STEEL RAILING TYPE "M"			SHEET 14

- ▲ TIE TO TOP MAT OF STEEL.
- * ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.

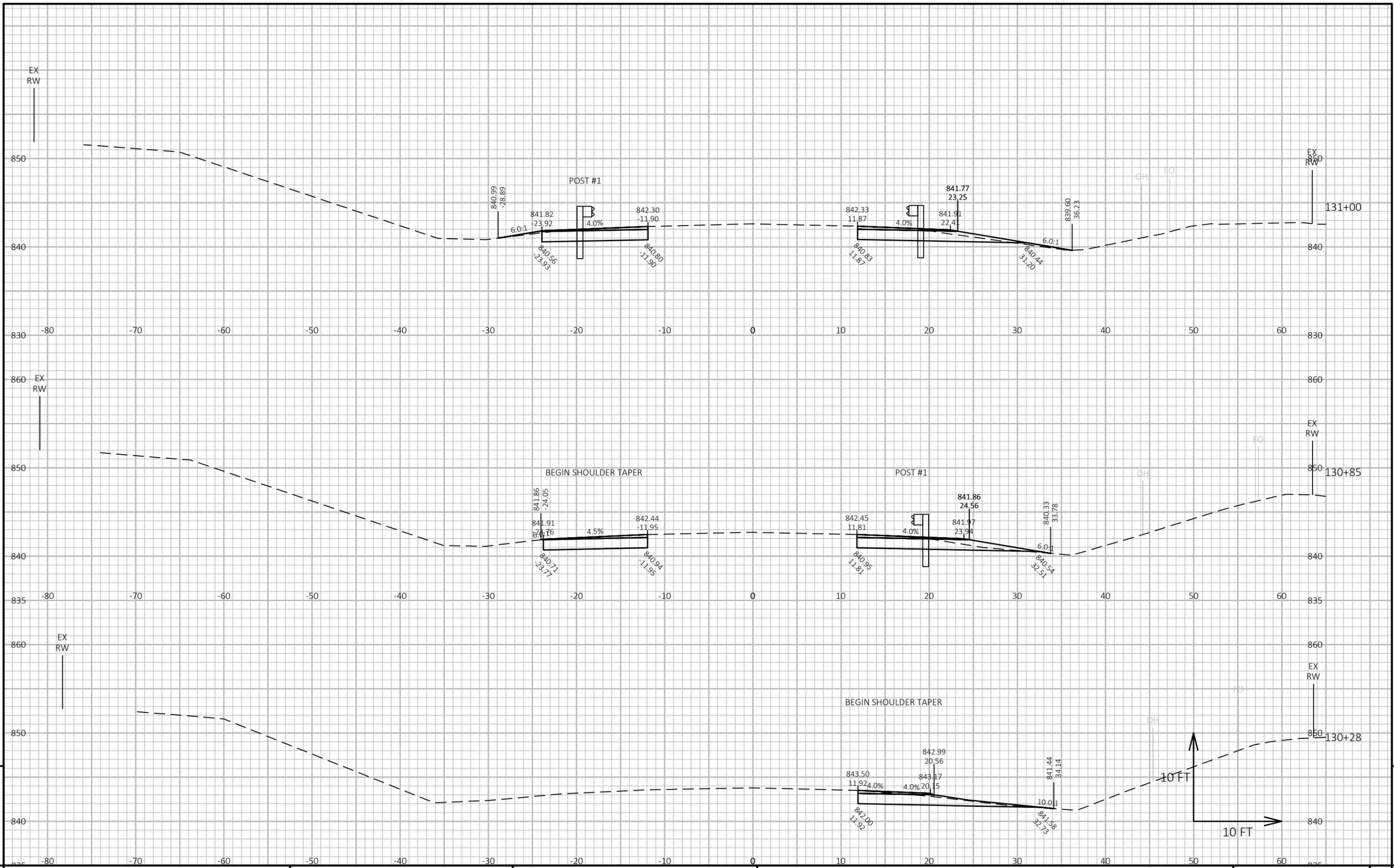
CTH C

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	CUT 1.00 NOTE 1	EXPANDED FILL 1.25 NOTE 4	MASS ORDINATE NOTE 5
130+28	0	15.61	0.00	0.05	0	0	0	0	0	0
130+85	57	32.57	0.00	0.15	51	0	0	51	0	51
131+00	15	32.55	0.00	1.42	18	0	0	69	0	69
131+10	10	33.23	0.00	1.72	12	0	1	81	1	80
131+25	15	71.77	9.92	0.00	29	3	0	110	1	106
131+35	10	67.69	9.80	0.01	26	4	0	136	1	128
131+50	15	63.27	10.13	0.03	36	6	0	172	1	158
131+63	13	62.00	10.63	15.01	30	5	4	202	6	178
131+83	20				18	12	10	220	20	171
BRIDGE								220	20	171
132+54	0				0	0	0	220	20	171
132+74	20	60.83	12.80	33.22	45	14	24	265	50	171
132+88	14	63.35	12.50	17.84	32	7	13	297	66	180
133+00	12	62.87	12.30	9.23	28	6	6	325	74	195
133+12	12	24.37	0.00	0.62	19	3	2	344	76	208
133+37	25	27.55	0.00	4.49	24	0	2	368	79	230
133+85	48	13.40	0.00	2.38	36	0	6	404	86	258
134+50	65	16.05	0.00	0.00	35	0	3	439	90	289
135+27	77	13.95	0.00	0.36	43	0	1	482	91	331
135+52	25	14.22	0.00	2.15	13	0	1	495	92	343
135+77	25	14.90	0.00	0.58	13	0	1	508	94	355
136+37	60	13.77	0.00	0.00	32	0	1	540	95	385
COLUMN TOTAL					540	60	75			

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

9

9



PROJECT NO: 7879-03-74

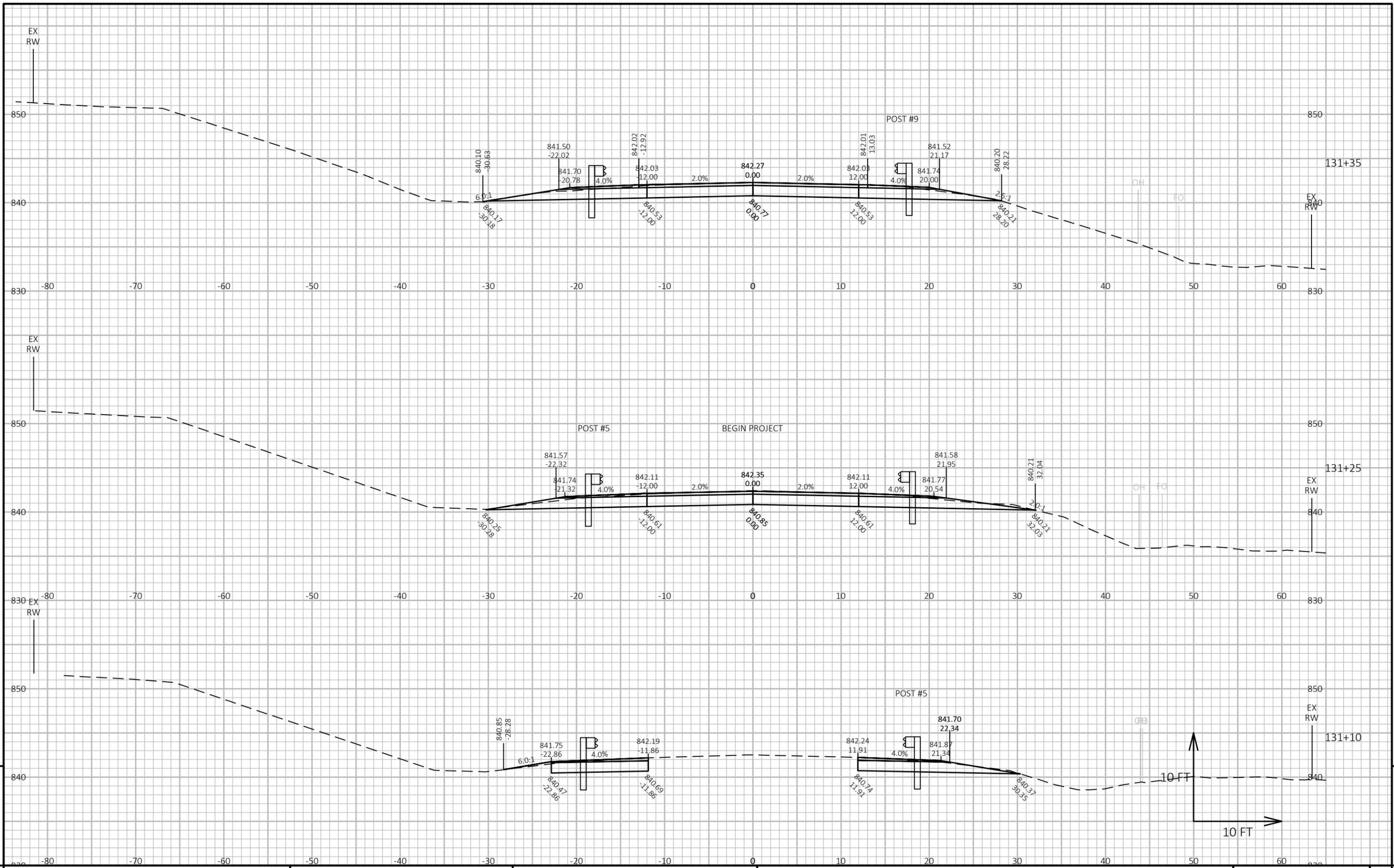
HWY: CTH C

COUNTY: DUNN

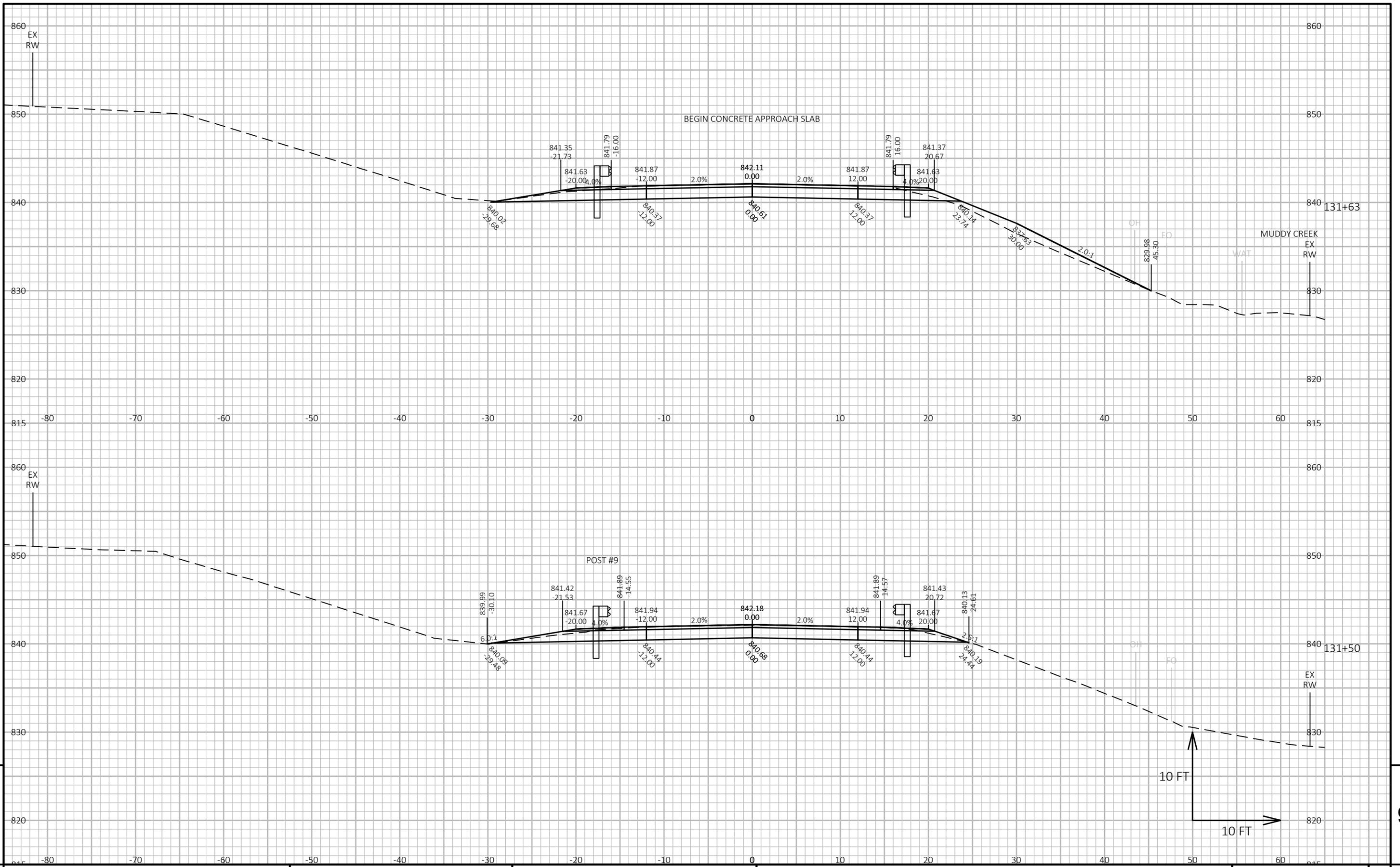
CROSS SECTIONS: CTH C

SHEET

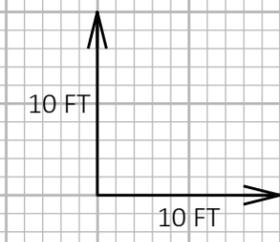
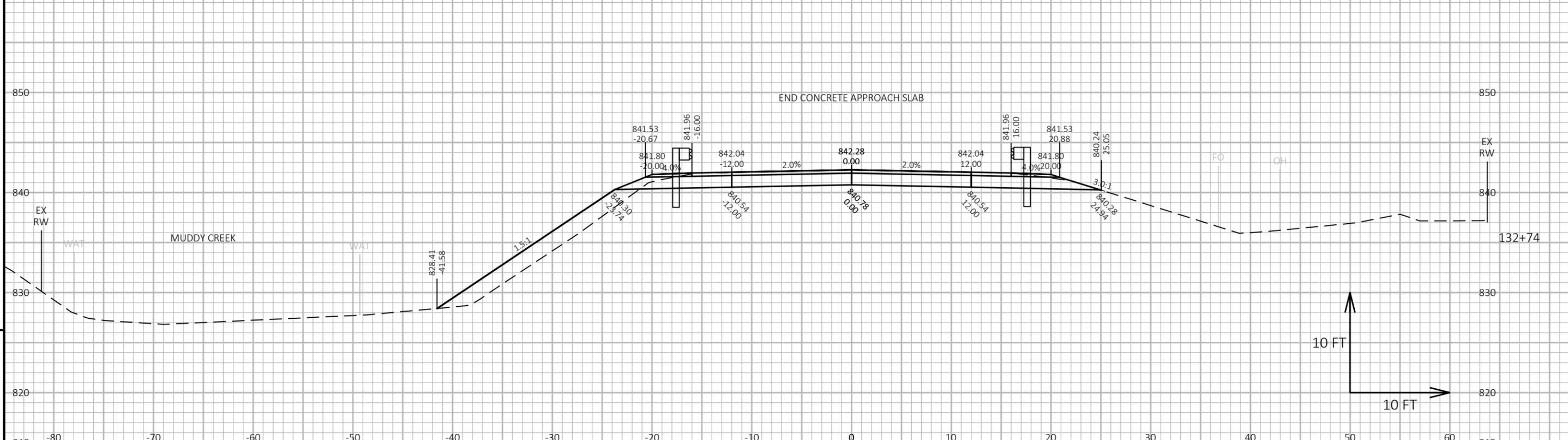
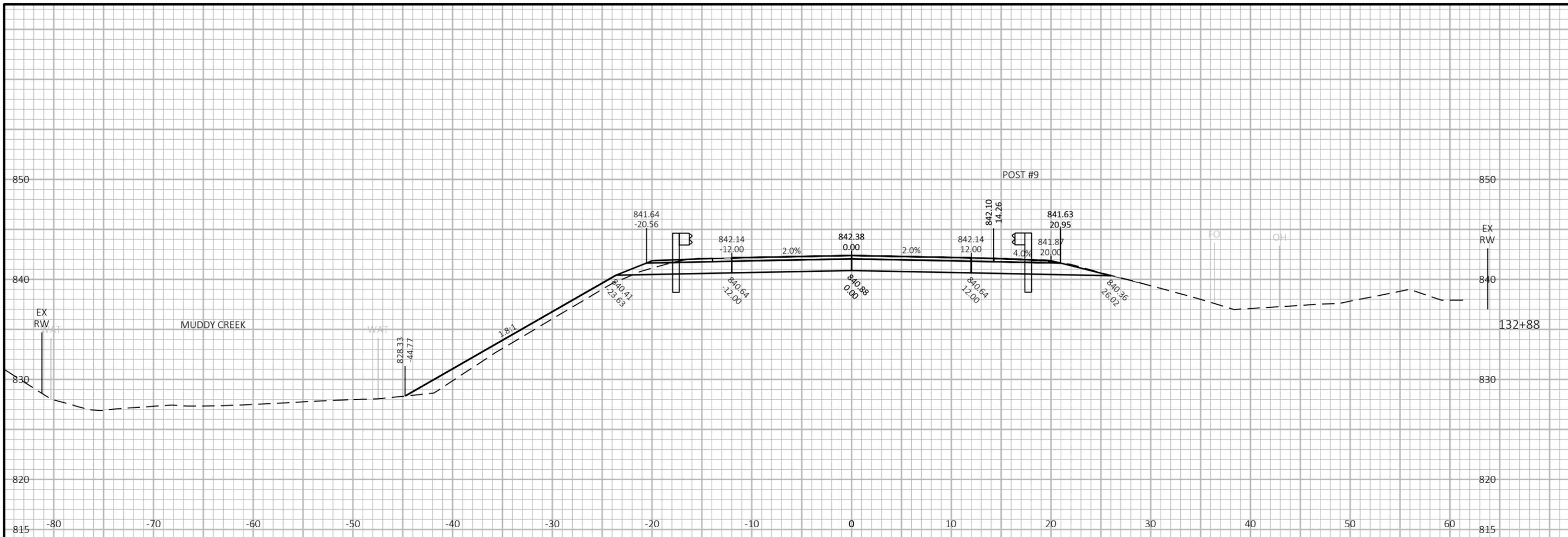
E



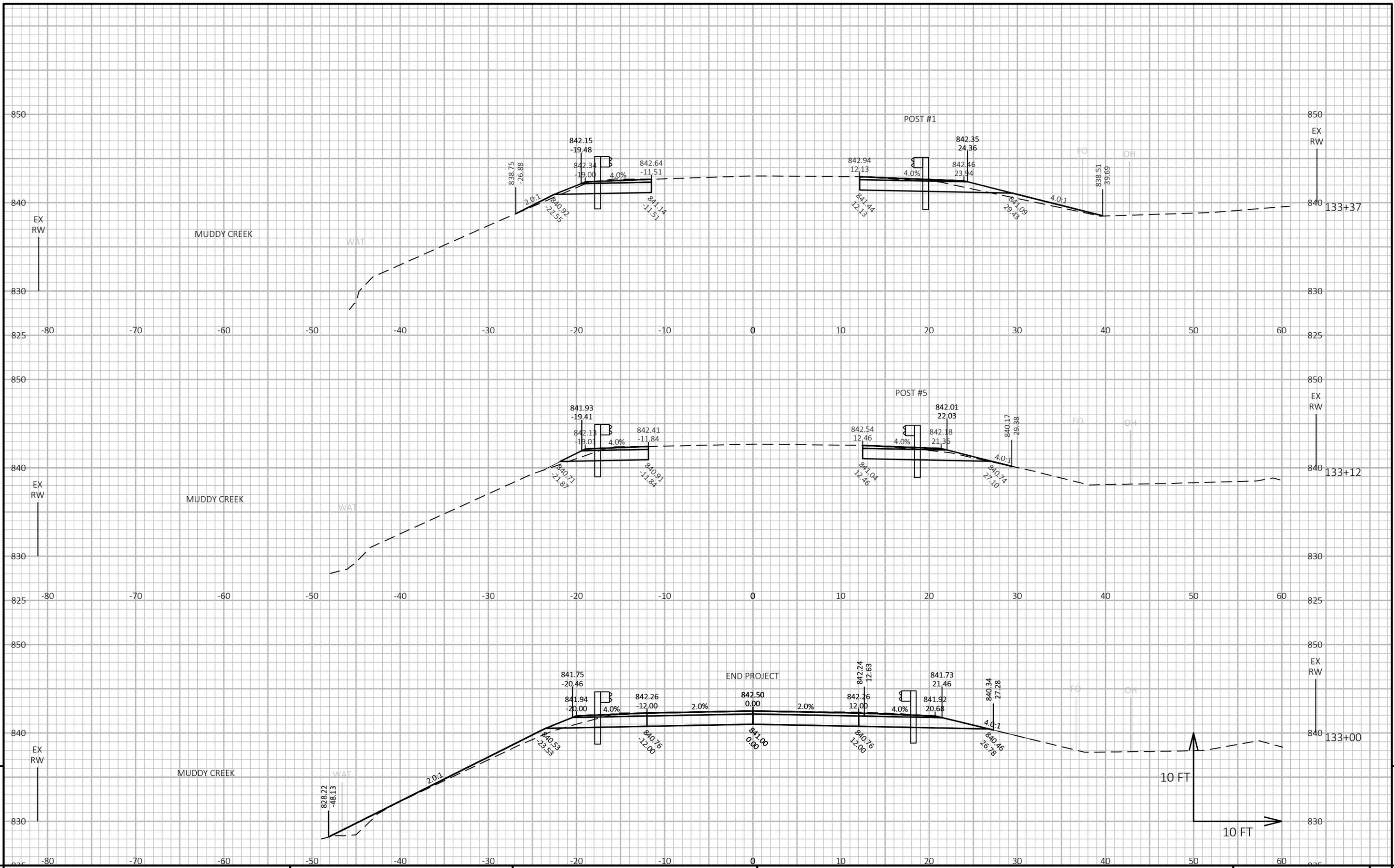
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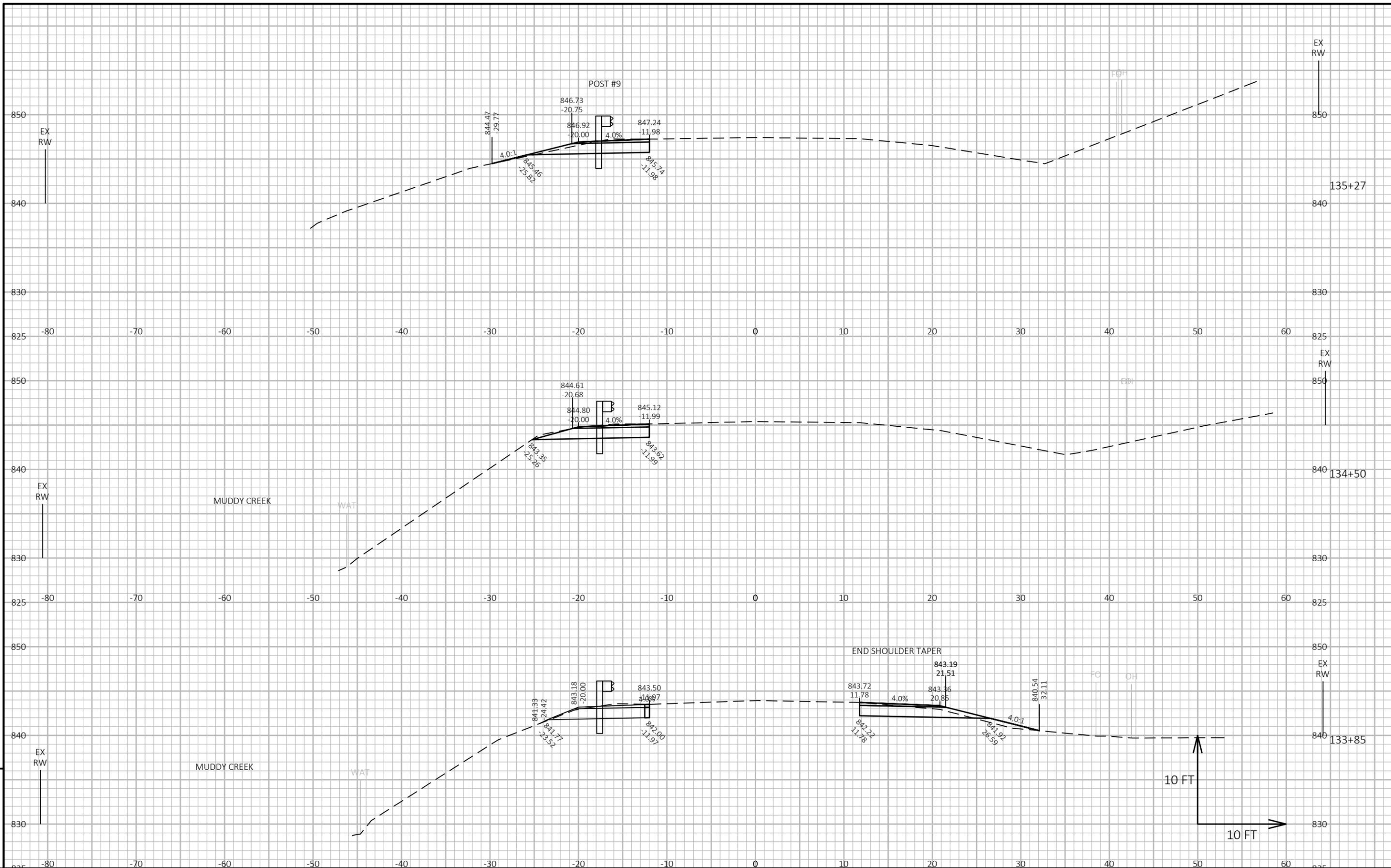
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PROJECT NO: 7879-03-74 HWY: CTH C COUNTY: DUNN CROSS SECTIONS: CTH C SHEET 9



PROJECT NO: 7879-03-74 HWY: CTH C COUNTY: DUNN CROSS SECTIONS: CTH C SHEET 9



PROJECT NO: 7879-03-74

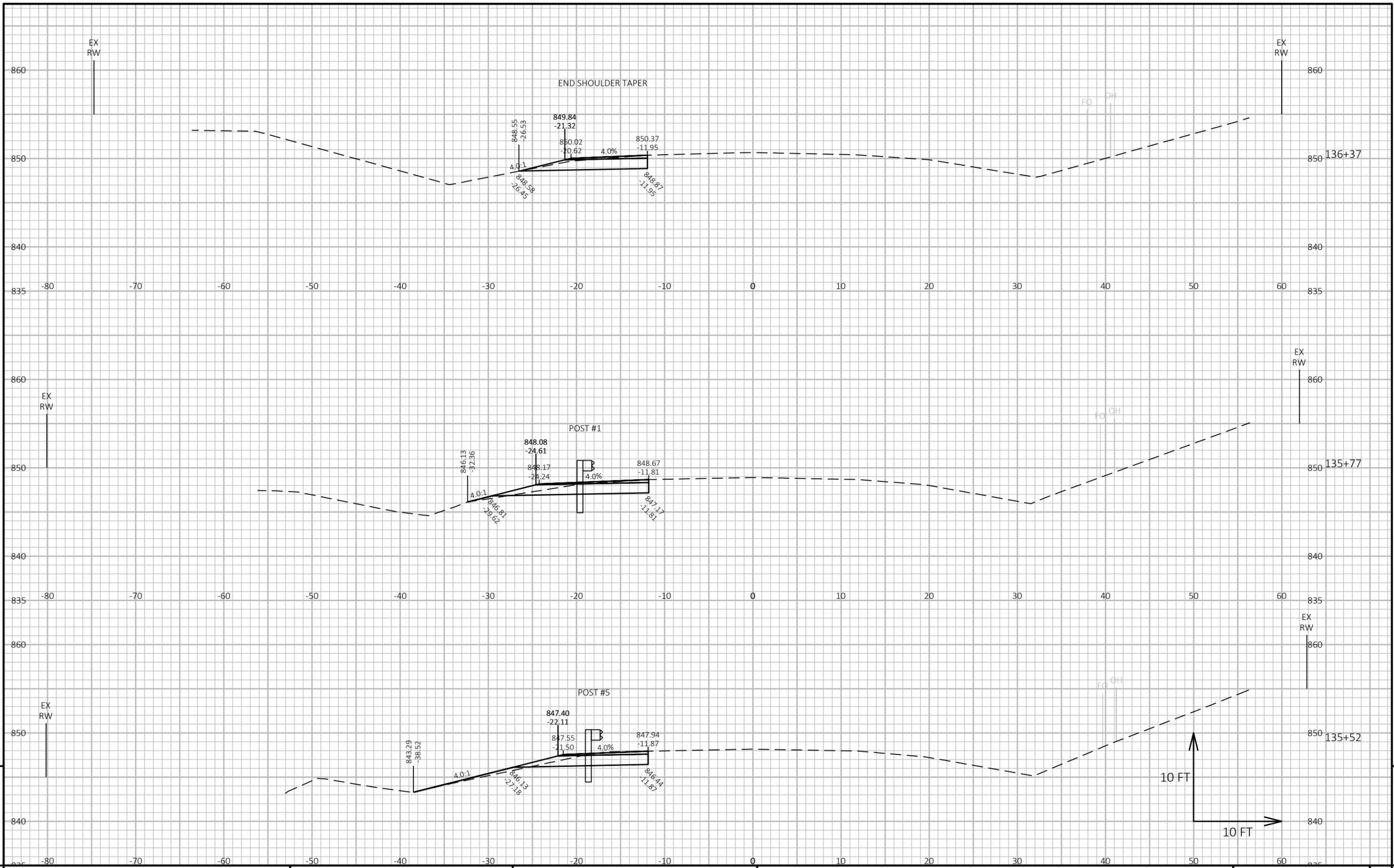
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COUNTY: DUNN

CROSS SECTIONS: CTH C

SHEET

E



PROJECT NO: 7879-03-74

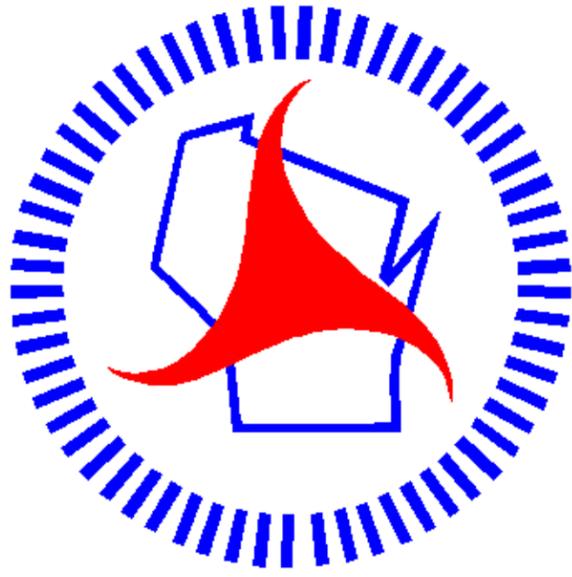
HWY: CTH C

COUNTY: DUNN

CROSS SECTIONS: CTH C

SHEET

E



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