

MAD

FEBRUARY 2023

PROJECT ID: 6217-00-78

WITH: N/A

COUNTY: COLUMBIA

12

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 (Incl. Erosion Control Plans)
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 74

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6217-00-78		

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

TOWN OF COLUMBUS, OLD STH 73 RD

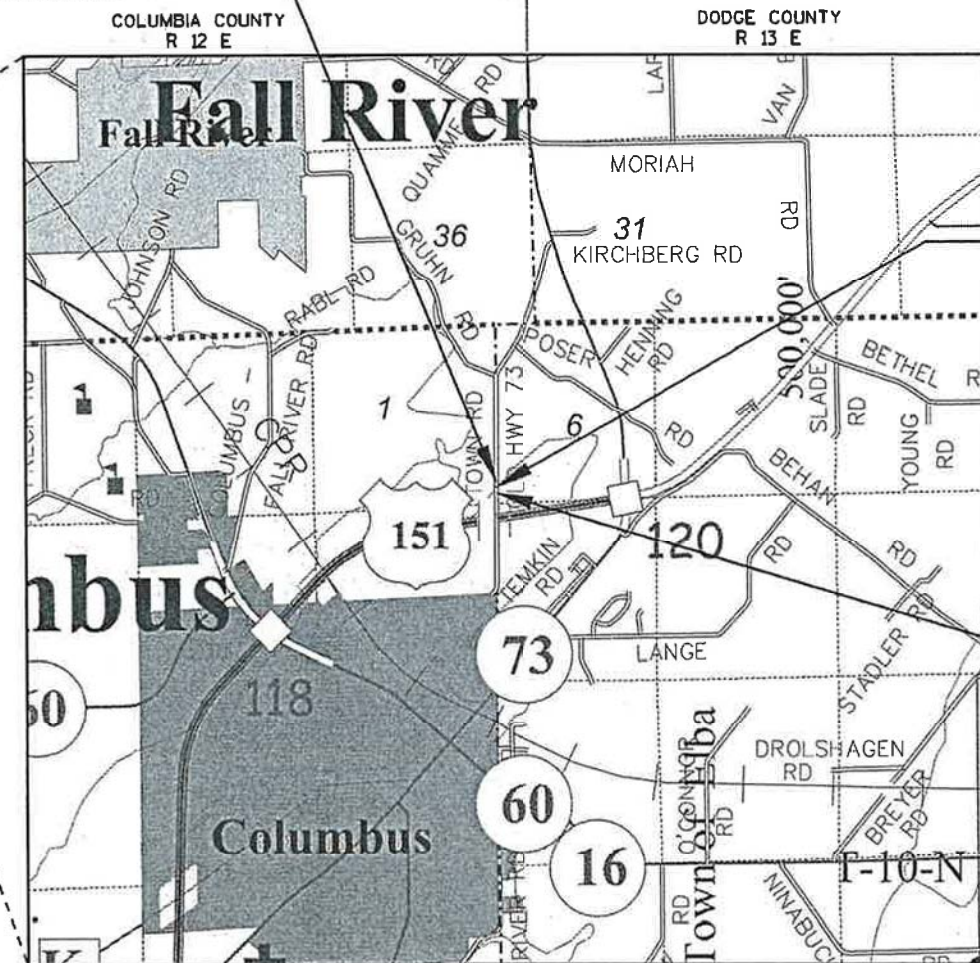
CRAWFISH RIVER BRIDGE, B-11-0175

LOCAL STREET  
COLUMBIA COUNTY



END PROJECT 6217-00-78  
STA. 13+82.00  
Y = 328,778.877  
X = 657,510.334

STATE PROJECT NUMBER  
**6217-00-78**



BRIDGE STRUCTURE (B-11-0175)

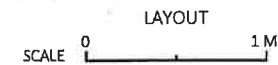
BEGIN PROJECT 6217-00-78  
STA. 7+20.00  
Y = 328,116.893  
X = 657,505.835

DESIGN DESIGNATION 6217-00-78

A.A.D.T.	2023	=	190
A.A.D.T.	2043	=	210
D.H.V.		=	
D.D.		=	
T.		=	3.5%
DESIGN SPEED		=	35 MPH
ESALS		=	

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
	STORM SEWER
	TELEPHONE
	WATER
MARSH AREA	UTILITY PEDESTAL
	POWER POLE
WOODED OR SHRUB AREA	TELEPHONE POLE



TOTAL NET LENGTH OF CENTERLINE = 0.125 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), COLUMBIA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

ACCEPTED FOR  
COLUMBIA COUNTY  
Date 10/24/22  
(COUNTY COMMISSIONER)

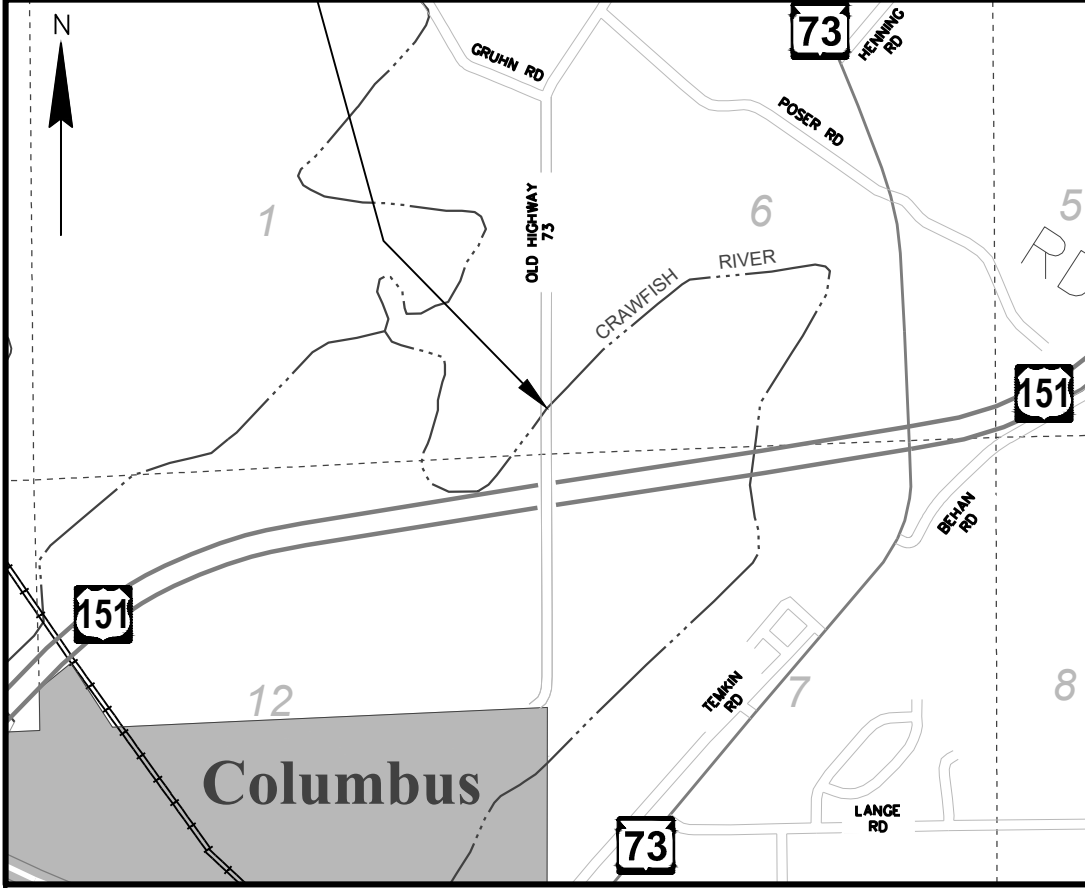
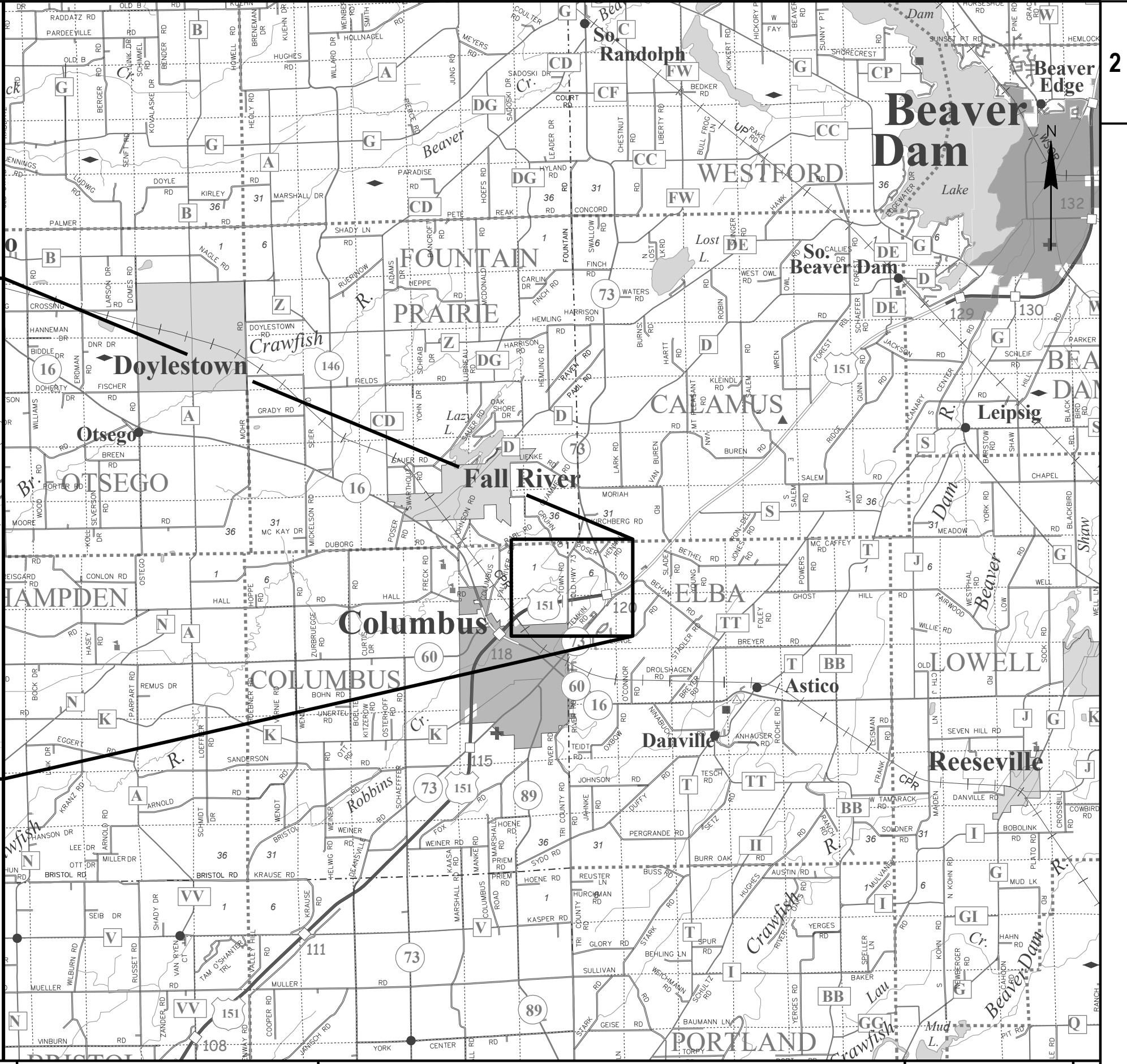
ORIGINAL PLANS PREPARED BY  
**AYRES**  
AMANDA M. INMAN  
44690 OREGON WI  
PROFESSIONAL ENGINEER  
10/31/2022

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
PREPARED BY  
Surveyor AYRES ASSOCIATES  
Designer AYRES ASSOCIATES  
Project Manager ZACH PEARSON  
Regional Examiner  
Regional Supervisor KYLE HEMP

APPROVED FOR THE DEPARTMENT  
DATE: 10/31/22  
(Signature)

E

PROJECT LOCATION  
 ID 6217-00-01/78  
 TOWN OF COLUMBUS,  
 OLD STH 73 RD  
 (CRAWFISH RIVER BRIDGE B-11-0175)  
 TOWN ROAD  
 COLUMBIA COUNTY



PROJECT NO: 6217-00-78	HWY: OLD STH 73	COUNTY: COLUMBIA	PROJECT OVERVIEW	SHEET	E
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### GENERAL NOTES

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

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT LOCATION THAT ARE NOT SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES.

A SAWED JOINT WILL BE REQUIRED WHERE NEW PAVEMENT IS TO MEET AN EXISTING PAVED SURFACE.

EXACT TRAFFIC CONTROL LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALL SIGN LOCATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.

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

PROTECT FROM DAMAGE AND COMPLETE SHOULDER WORK AROUND ANY EXISTING SIGNS OR MAILBOXES THAT ARE TO REMAIN IN PLACE.

RESTORATION OF EXPOSED SLOPES AND DITCHES SHALL TAKE PLACE WITHIN 7 CALENDAR DAYS AFTER FINISHED GRADING IS COMPLETE.

WETLANDS ARE PRESENT IN THE PROJECT AREA. DO NOT DISTURB WETLANDS OUTSIDE THE PROPOSED SLOPE INTERCEPTS.

IF AN EXISTING SIGN IS TO BE REMOVED AND REPLACED WITH A NEW SIGN, DO NOT REMOVE THE EXISTING SIGN PRIOR TO INSTALLATION OF THE NEW SIGN.

THE LOCATIONS OF EROSION CONTROL ITEMS SHALL BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

TACK COAT APPLICATION RATE: 0.07 GAL/SY  
ASPHALT UNIT WEIGHT: 112 LB/SY/IN

### ABBREVIATIONS

A.D.T.	AVERAGE DAILY TRAFFIC
ATMS	ARTERIAL TRAFFIC MANAGEMENT SYSTEM
BM	BENCHMARK
BOC	BACK OF CURB
BTWN	BETWEEN
C&G	CURB AND GUTTER
C.E.	COMMERCIAL ENTRANCE
CONST	CONSTRUCTION
CP	CONTROL POINT
CTR.	CENTER
D.D.	DIRECTIONAL DISTRIBUTION
D.H.T.	DESIGN HOURLY VOLUME
DMS	DYNAMIC MESSAGE SIGN
EB	EASTBOUND
EXIST	EXISTING
GALV.	GALVANIZED
HMA	HOT MIX ASPHALT
H.S.	HIGH STRENGTH
ITS	INTELLIGENT TRAFFIC SYSTEM
MAX	MAXIMUM
MIN	MINIMUM
NB	NORTHBOUND
NOR	NORMAL
PC	POINT OF CURVATURE
PCC	POINT OF COMMON CURVATURE
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVT	PAVEMENT
R/L	REFERENCE LINE
REQ'D	REQUIRED
SB	SOUTHBOUND
SYM	SYMMETRICAL
T.	PERCENT TRUCKS
TCC	TRAFFIC CONDITION CAMERA
TYP	TYPICAL
VAR	VARIABLE
WB	WESTBOUND
Wt.	WEIGHT
X-WALK	CROSS WALK

### PROJECT CONTACTS

**COLUMBIA COUNTY**  
CHRIS HARDY, PE  
HIGHWAY COMMISSIONER  
338 OLD HIGHWAY 16 WEST  
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**TOWN OF COLUMBUS**  
DARREN SCHROEDER  
TOWN CHAIRMAN  
N1120 SCHAEFER ROAD  
COLUMBUS, WI 53925  
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**WISCONSIN DEPARTMENT OF NATURAL RESOURCES**  
ERIC HEGGELUND  
DNR SOUTH CENTRAL REGION HEADQUARTERS  
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FITCHBURG, WI 53711  
P: (608) 275-3301  
E: ERIC.HEGGELUND@WISCONSIN.GOV

**DESIGNER**  
AMANDA INMAN, PE  
AYRES ASSOCIATES  
5201 EAST TERRACE DRIVE, SUITE 200  
MADISON, WI 53718  
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E: INMANA@AYRESASSOCIATES.COM

### UTILITIES

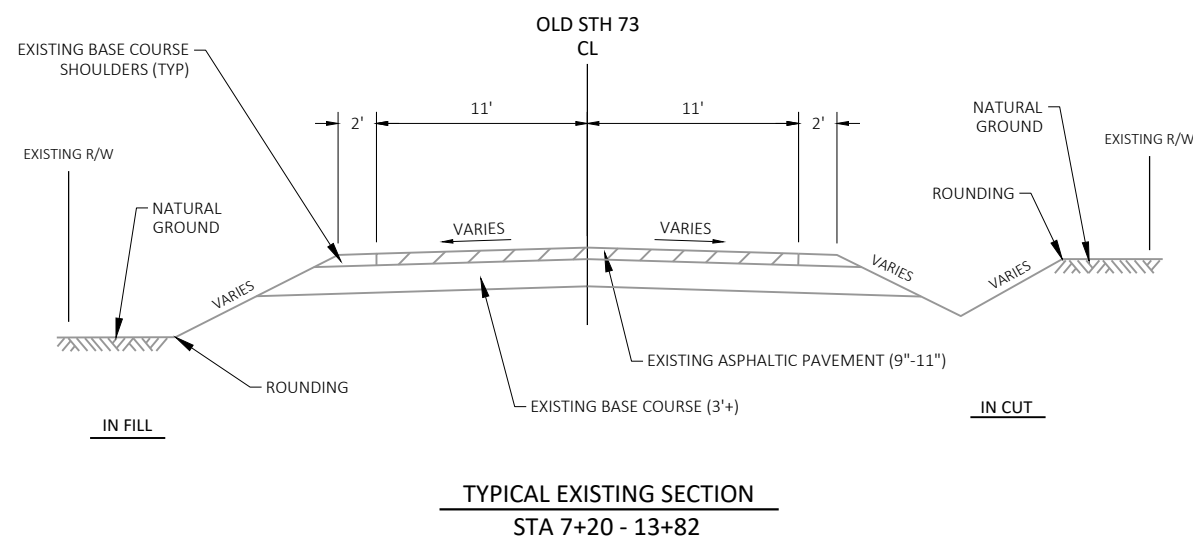
ADAMS-COLUMBIA ELECTRIC COOPERATIVE  
SHAWN PIETRZAK  
401 EAST LAKE STREET  
FRIENDSHIP, WI 53934  
P: (608) 547-2174  
E: SPIETRZAK@ACEWI.COM

AT&T  
CHUCK BARTELT  
70 EAST DIVISION STREET  
FOND DU LAC, WI 54935  
P: (920) 410-5104  
E: CB1461@ATT.COM

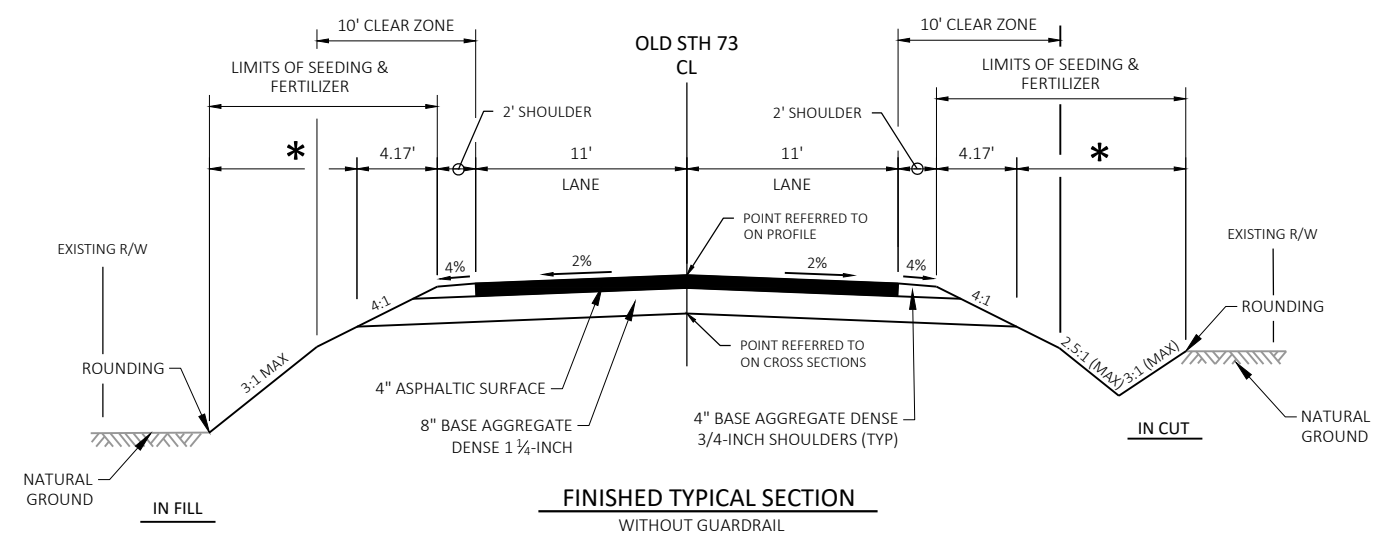
\*\* DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS



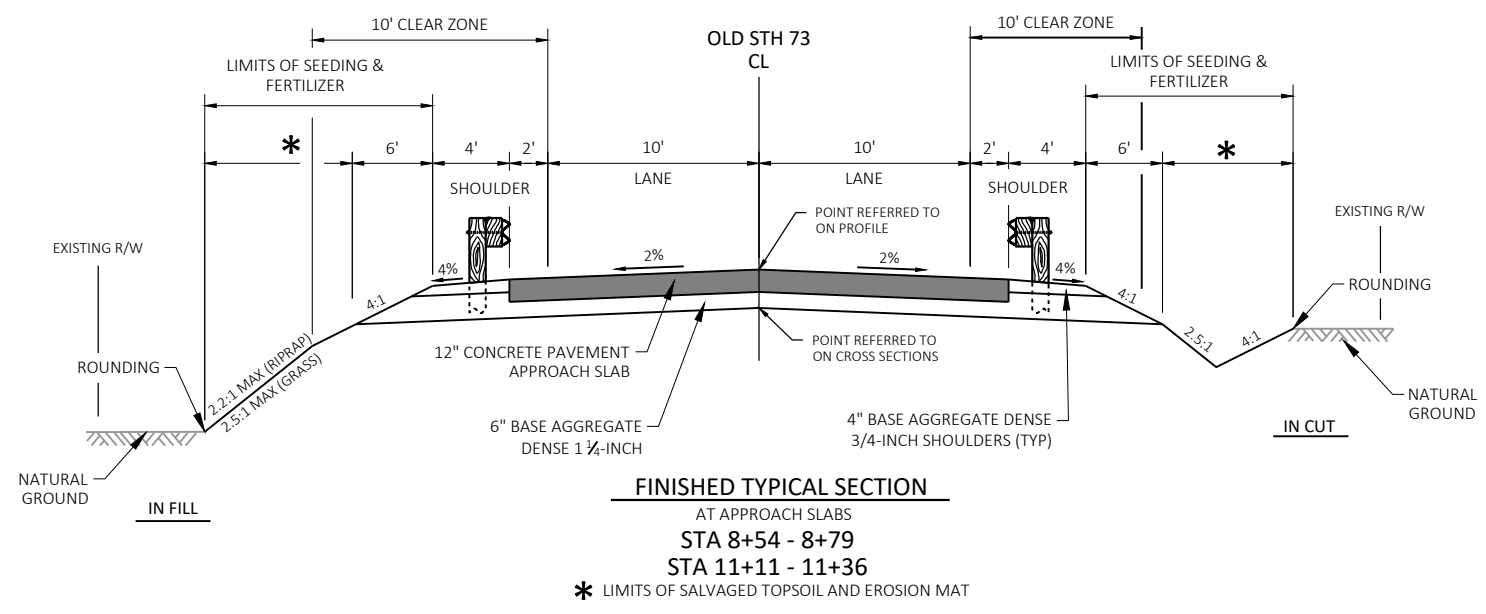
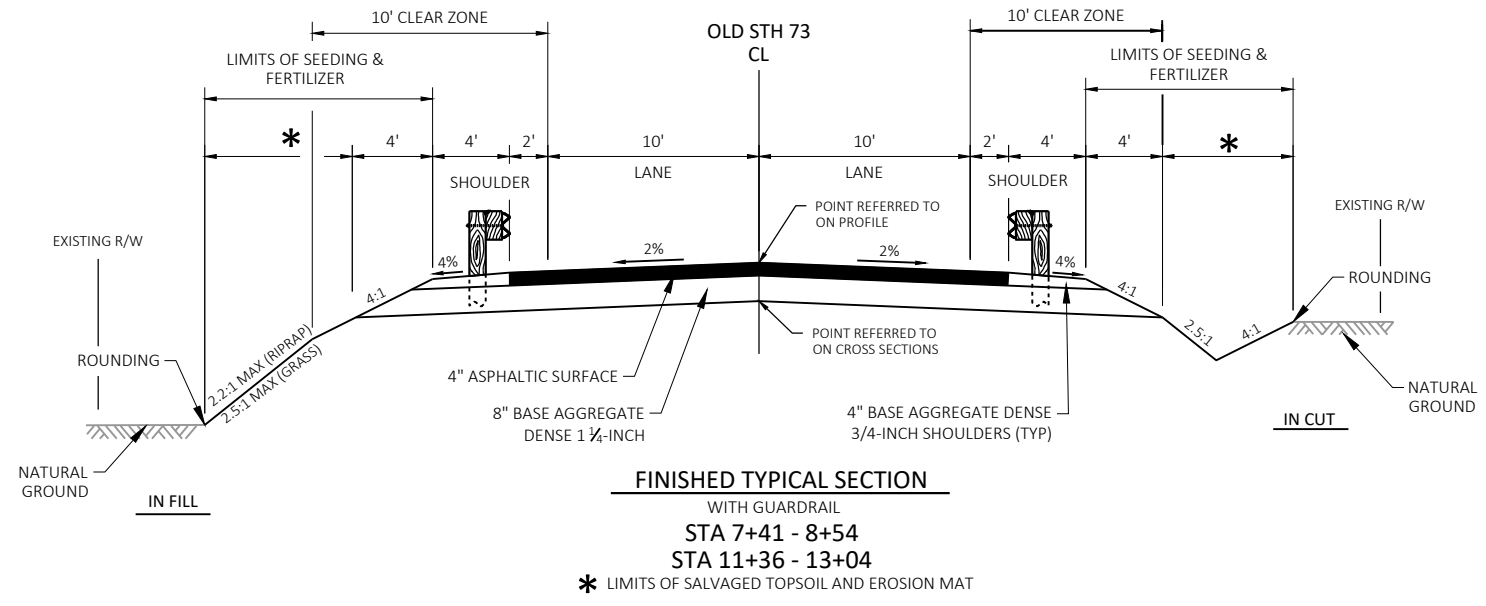
**Dial 811 or (800) 242-8511**  
www.DiggersHotline.com









TYPICAL EXISTING SECTION  
STA 7+20 - 13+82

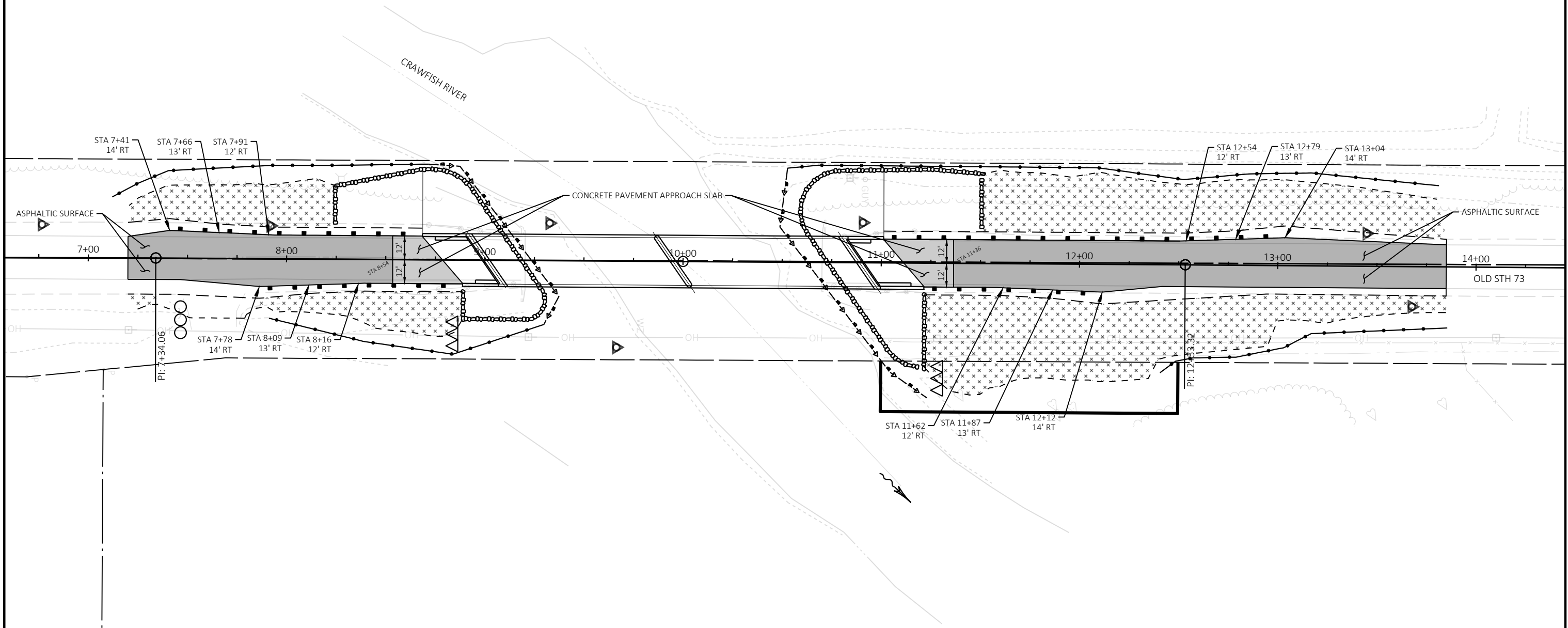
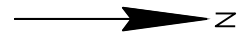


FINISHED TYPICAL SECTION  
WITHOUT GUARDRAIL  
STA 7+20 - 7+41  
STA 13+04 - 13+82  
\* LIMITS OF SALVAGED TOPSOIL AND EROSION MAT



**LEGEND**

-  EROSION MAT URBAN CLASS I TYPE B (MAT AS DIRECTED BY FIELD ENGINEER)
-  SILT FENCE
-  TURBIDITY BARRIER
-  SURFACE WATER FLOW
-  DITCH CHECK
-  CULVERT PIPE CHECK



PROJECT NO: 6217-00-78	HWY: OLD STH 73	COUNTY: COLUMBIA	CONSTRUCTION DETAILS	SHEET	<b>E</b>
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Estimate Of Quantities

6217-00-78

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	5.000	5.000
0004	203.0250	Removing Structure Over Waterway Remove Debris (structure) 01. B-11-0910	EACH	1.000	1.000
0006	204.0165	Removing Guardrail	LF	208.000	208.000
0008	205.0100	Excavation Common	CY	240.000	240.000
0010	206.1001	Excavation for Structures Bridges (structure) 01. B-11-0175	EACH	1.000	1.000
0012	206.5001	Cofferdams (structure) 01. B-11-0175	EACH	1.000	1.000
0014	208.0100	Borrow	CY	2,591.000	2,591.000
0016	210.1500	Backfill Structure Type A	TON	590.000	590.000
0018	213.0100	Finishing Roadway (project) 01. 6217-00-78	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	115.000	115.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	630.000	630.000
0024	415.0410	Concrete Pavement Approach Slab	SY	140.000	140.000
0026	455.0605	Tack Coat	GAL	73.000	73.000
0028	465.0105	Asphaltic Surface	TON	235.000	235.000
0030	502.0100	Concrete Masonry Bridges	CY	378.000	378.000
0032	502.3200	Protective Surface Treatment	SY	725.000	725.000
0034	502.9000.S	Underwater Substructure Inspection (structure) 01. B-11-0175	EACH	1.000	1.000
0036	503.0137	Prestressed Girder Type I 36W-Inch	LF	755.000	755.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	9,420.000	9,420.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	50,080.000	50,080.000
0042	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	16.000	16.000
0044	506.4000	Steel Diaphragms (structure) 01. B-11-0175	EACH	12.000	12.000
0046	513.4061	Railing Tubular Type M	LF	477.800	477.800
0048	516.0500	Rubberized Membrane Waterproofing	SY	24.000	24.000
0050	550.0500	Pile Points	EACH	27.000	27.000
0052	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	630.000	630.000
0054	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	315.000	315.000
0056	606.0300	Riprap Heavy	CY	460.000	460.000
0058	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	210.000	210.000
0060	614.2300	MGS Guardrail 3	LF	162.500	162.500
0062	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0064	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0066	618.0100	Maintenance And Repair of Haul Roads (project) 01. 6217-00-78	EACH	1.000	1.000
0068	619.1000	Mobilization	EACH	1.000	1.000
0070	623.0200	Dust Control Surface Treatment	SY	1,610.000	1,610.000
0072	624.0100	Water	MGAL	8.000	8.000
0074	625.0500	Salvaged Topsoil	SY	1,710.000	1,710.000
0076	628.1504	Silt Fence	LF	870.000	870.000
0078	628.1520	Silt Fence Maintenance	LF	1,740.000	1,740.000
0080	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0082	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0084	628.2008	Erosion Mat Urban Class I Type B	SY	1,882.000	1,882.000
0086	628.6005	Turbidity Barriers	SY	450.000	450.000
0088	628.7504	Temporary Ditch Checks	LF	35.000	35.000
0090	628.7555	Culvert Pipe Checks	EACH	4.000	4.000
0092	629.0210	Fertilizer Type B	CWT	2.000	2.000
0094	630.0120	Seeding Mixture No. 20	LB	65.000	65.000
0096	630.0200	Seeding Temporary	LB	65.000	65.000
0098	630.0300	Seeding Borrow Pit	LB	12.000	12.000

Estimate Of Quantities

6217-00-78

Line	Item	Item Description	Unit	Total	Qty
0100	630.0500	Seed Water	MGAL	60.000	60.000
0102	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0104	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0106	638.2602	Removing Signs Type II	EACH	4.000	4.000
0108	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0110	642.5001	Field Office Type B	EACH	1.000	1.000
0112	643.0420	Traffic Control Barricades Type III	DAY	2,196.000	2,196.000
0114	643.0705	Traffic Control Warning Lights Type A	DAY	2,928.000	2,928.000
0116	643.0900	Traffic Control Signs	DAY	1,708.000	1,708.000
0118	643.5000	Traffic Control	EACH	1.000	1.000
0120	645.0111	Geotextile Type DF Schedule A	SY	110.000	110.000
0122	645.0120	Geotextile Type HR	SY	1,085.000	1,085.000
0124	650.4500	Construction Staking Subgrade	LF	473.000	473.000
0126	650.5000	Construction Staking Base	LF	473.000	473.000
0128	650.6501	Construction Staking Structure Layout (structure) 01. B-11-0175	EACH	1.000	1.000
0130	650.9911	Construction Staking Supplemental Control (project) 01. 6217-00-78	EACH	1.000	1.000
0132	650.9920	Construction Staking Slope Stakes	LF	473.000	473.000
0134	690.0150	Sawing Asphalt	LF	44.000	44.000
0136	715.0502	Incentive Strength Concrete Structures	DOL	2,268.000	2,268.000
0138	999.2005.S	Maintaining Bird Deterrent System (station) 01. 9+95	EACH	1.000	1.000
0140	SPV.0195	Special 01. Select Crushed Material for Travel Corridor	TON	15.000	15.000

3

GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0205 GRUBBING		REMARKS
					STA		
'0010	8+00	-	9+00	LT	1		
0010	10+00	-	14+00	LT	4		
TOTAL 0010					5		

REMOVING GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL		REMARKS
					LF		
0010	8+67	-	9+19	LT	52		
	8+67	-	9+19	RT	52		
	10+72	-	11+24	LT	52		
	10+72	-	11+23	RT	52		
TOTAL 0010					208		

MGS GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	614.2300	614.2500	614.2610	REMARKS
					MGS GUARDRAIL 3 LF	MGS THRIE BEAM TRANSITION LF	MGS GUARDRAIL TERMINAL EAT EACH	
0010	7+41	-	8+68	LT	37.5	39.4	1	
	7+86	-	8+89	RT	12.5	39.4	1	
	11+01	-	13+04	LT	112.5	39.4	1	
	11+22	-	12+12	RT	-	39.4	1	
TOTAL 0010					162.5	157.6	4	

**OLD STH 73 ROAD EARTHWORK SUMMARY**

From/To Station	Location	Common Excavation (1)		Unexpanded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Waste	Borrow (Item 208.0100)	Comment:
		Cut	Unusable		Factor 1.30				
7+20 to 9+00	SOUTH APPROACH	59	109	189	248	-295		295	
10+91 to 13+85	NORTH APPROACH	181	276	1693	2201	-2296		2296	
TOTAL		240			2449			2591	

- 1) Common Excavation is the Cut. Unusable excavation is existing pavement (Included in Cut volume). Item number 205.0100.
- 2) Expanded Fill. Factor = 1.30; Expanded Fill = Unexpanded Fill \* Fill Factor
- 3) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material on the project.
- 4) All quantities shown in CY.

BASE AGGREGATES

CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	624.0100	REMARKS
					BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	WATER MGAL	
0010	7+20	-	9+00	MAINLINE	45	240	3	SOUTH APPROACH
	10+91	-	13+85	MAINLINE	70	390	5	NORTH APPROACH
TOTAL 0010					115	630	8	

PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	415.0410	455.0605	465.0105	REMARKS
					CONCRETE PAVEMENT APPROACH SLAB SY	TACK COAT GAL	ASPHALTIC SURFACE TON	
0010	7+20	-	8+54	MAINLINE	70	26	85	SOUTH APPROACH
	11+37	-	13+85	MAINLINE	70	47	150	NORTH APPROACH
TOTAL 0010					140	73	235	

- NOTES:
- \* TACK COAT APPLICATION RATE = 0.07 GAL/SY
  - \*\* ASSUMED ASPHALT AT 112 LBS/SY/IN

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

3



EROSION CONTROL AND FINISHING ITEMS

CATEGORY	STATION TO STATION	LOCATION	606.0300	625.0500	628.1504	628.1520	628.2008	628.6005	628.7504	628.7555	629.0210	630.0120	630.0200	630.0300	630.0500	645.0120
			RIPRAP HEAVY CY	SALVAGED TOPSOIL SY	SILT FENCE LF	SILT FENCE MAINTENANCE LF	EROSION MAT URBAN CLASS I TYPE B SY	TURBIDITY BARRIERS SY	TEMPORARY DITCH CHECKS LF	CULVERT PIPE CHECKS EACH	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEEDING TEMPORARY LB	SEEDING BORROW PIT LB	SEED WATER MGAL	GEOTEXTILE TYPE HR
0010	7+20 - 8+68	LT	10	195	165	330	195	-	-	-	0.2	7	7	-	6	140
	7+20 - 8+89	RT	-	135	145	290	135	192	16	4	0.2	7	7	-	6	-
	11+01 - 13+85	LT	10	600	330	660	600	-	-	-	0.5	20	20	-	16	180
	11+22 - 13+85	RT	-	780	150	300	780	244	12	-	0.6	25	25	-	20	-
	UNDISTRIBUTED		-	-	80	160	172	14	7	-	0.5	6	6	12	13	-
	TOTAL 0010		20	1,710	870	1,740	1,882	450	35	4	2	65	65	12	60	320

\*ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLANS

SIGNS

MISCELLANEOUS EROSION CONTROL

CATEGORY	LOCATION	623.0200 DUST CONTROL SURFACE TREATMENT SY	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	REMARKS
0010	OLD STH 73 ROAD	1,610	4	4	
	TOTAL 0010	1,610	4	4	

CATEGORY	STATION	LOCATION	634.0614 POSTS WOOD 4X6- INCH X 14-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
0010	8+68	LT	1	3	1	1	W5-52L: CLEARANCE STRIPER DOWN RIGHT
	8+88	RT	1	3	1	1	W5-52R: CLEARANCE STRIPER DOWN LEFT
	11+02	LT	1	3	1	1	W5-52R: CLEARANCE STRIPER DOWN LEFT
	11+22	RT	1	3	1	1	W5-52L: CLEARANCE STRIPER DOWN RIGHT
	TOTAL 0010		4	12	4	4	

SAWING ASPHALT

CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT LF	REMARKS
0010	7+20	MAINLINE	22	SOUTH APPROACH
	13+85	MAINLINE	22	NORTH APPROACH
	TOTAL 0010		44	

STAKING

CATEGORY	STATION TO STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6501.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) EACH	650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 6217-00-78) EACH	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
0010	7+20 - 13+85	MAINLINE	473	473	-	1	473
	TOTAL 0010		473	473	0	1	473
0020	9+00 - 10+91	B-11-0175	-	-	1	-	-
	TOTAL 0020		0	0	1	0	0
	PROJECT TOTAL		473	473	1	1	473

TRAFFIC CONTROL

CATEGORY	LOCATION	DURATION DAYS	NO.	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	NO.	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	NO.	643.0900 TRAFFIC CONTROL SIGNS DAY	643.5000 TRAFFIC CONTROL EACH
0010	PER SDD 15C2 OLD STH 73 ROAD	122	18	2,196	24	2,928	14	1,708	-
	TOTAL 0010	-	-	2,196	-	2,928	-	1,708	1

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

**CONVENTIONAL SYMBOLS**

SECTION LINE	---	PARCEL NUMBER	(25)	UTILITY NUMBER	(40)
QUARTER LINE	---	PRW POINT NUMBER	(100)	TLE POINT NUMBER	(T150)
SIXTEENTH LINE	---	SECTION CORNER	(18, 23, 24, 16, 15, 9)	R/W MONUMENT	●
NEW REFERENCE LINE	---	NOTATION FOR COMBUSTIBLE FLUIDS	CAUTION	NON-MONUMENTED R/W POINT	○
NEW R/W LINE	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION	FOUND IRON PIN	IP
EXISTING R/W LINE	---	NOTATION FOR COMBUSTIBLE FLUIDS	CAUTION	VALVE (GAS, WATER, ETC.)	○ (TYPE)
PROPERTY LINE	PL	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION	SIGN	♣ SIGN
LOT, TIE, AND OTHER MINOR LINES	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION	OFF-PREMISE SIGN	♣ SIGN
SLOPE INTERCEPT	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION		
CORPORATE LIMITS	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION		
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)	W (TYPE)	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION		
FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION		
TEMP. LIMITED EASEMENT AREA	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION		
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION		
TRANSMISSION STRUCTURES	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION		
BUILDING	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION		
BUILDING (TO BE REMOVED)	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION		
BRIDGE	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	CAUTION		

**CONVENTIONAL UTILITY SYMBOLS**

WATER	W	NON-COMPENSABLE	---	COMPENSABLE	---
GAS	G	POWER POLE	---	TELEPHONE POLE	---
TELEPHONE	T	TELEPHONE PEDESTAL	---		
OVERHEAD TRANSMISSION LINES	OH				
ELECTRIC	E				
CABLE TELEVISION	TV				
FIBER OPTIC	FO				
SANITARY SEWER	SAN				
STORM SEWER	SS				
ELECTRIC TOWER	ET				

**SCHEDULE OF LANDS AND INTERESTS REQUIRED**

PARCEL NO.	OWNER(S)	INTEREST REQUIRED	R/W (SQ FT)			TLE
			FEE	EXISTING	TOTAL	
1	TATIHA LIVING TRUST	FEE	3,750	0.00	0.00	0

R/W PROJECT NUMBER 6217-00-01	SHEET NUMBER 4.01	TOTAL SHEETS 1
CONSTRUCTION PROJECT NUMBER 6217-00-01		
PLAT OF RIGHT OF WAY REQUIRED FOR <b>OLD HIGHWAY 73</b>		
OLD HIGHWAY 73	COLUMBIA COUNTY, DODGE COUNTY	

**CONVENTIONAL ABBREVIATIONS**

ACCESS POINT/ DRIVEWAY CONNECTION	AP	RELEASE OF RIGHTS REMAINING	ROR
ACCESS RIGHTS	AR	RIGHT-OF-WAY	R/W
ACRES	AC.	SECTION	SEC.
AND OTHERS	ET.AL.	STATION	STA.
CENTERLINE	C/L	TEMPORARY LIMITED EASEMENT	TLE
CERTIFIED SURVEY MAP CORNER	CSM COR.	VOLUME	V.
DOCUMENT	DOC.	<b>CURVE DATA</b>	
EASEMENT	EASE.	LONG CHORD	LCH
HIGHWAY EASEMENT	H.E.	LONG CHORD BEARING	LCB
LAND CONTRACT	LC	RADIUS	R
MONUMENT	MON.	DEGREE OF CURVE	D
PAGE	P.	CENTRAL ANGLE OR DELTA	DELTA
PERMANENT LIMITED EASEMENT	PLE	LENGTH OF CURVE	L
PROPERTY LINE	PL	TANGENT	TAN
RECORDED AS (100')	(100')		
REFERENCE LINE	R/L		

Point	Station	Offset	COURSE	BEARING	DISTANCE
100	12+50.00	-1.00'	100-101	S89° 36' 52"E	1.00'
101	12+50.00	0.00'	101-102	S89° 36' 52"E	49.00'
102	12+50.00	49.00'	102-103	S89° 36' 52"E	25.00'
103	12+50.00	74.00'	103-104	S00° 15' 10"W	150.00'
104	11+00.00	74.34'	104-105	N89° 36' 58"W	25.00'
105	11+00.00	49.34'	105-106	N89° 36' 58"W	49.34'
106	11+00.00	0.000'	106-107	N89° 36' 58"W	0.66'
107	11+00.00	-0.66'	107-100	N00° 15' 10"E	150.00'
			105-102	N00° 15' 10"E	150.00'

**NOTES:**

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), COLUMBIA COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

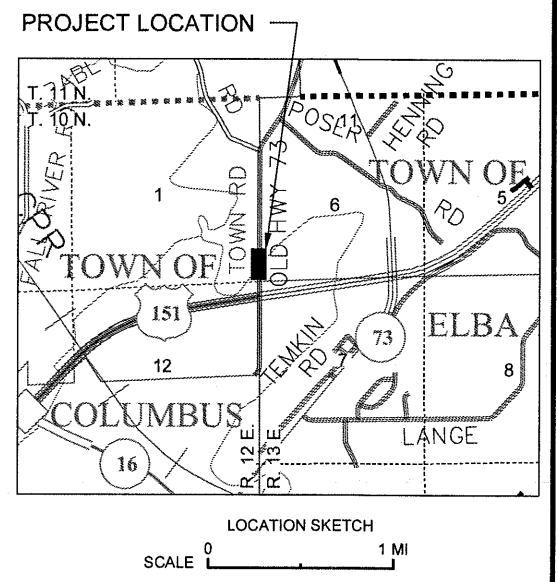
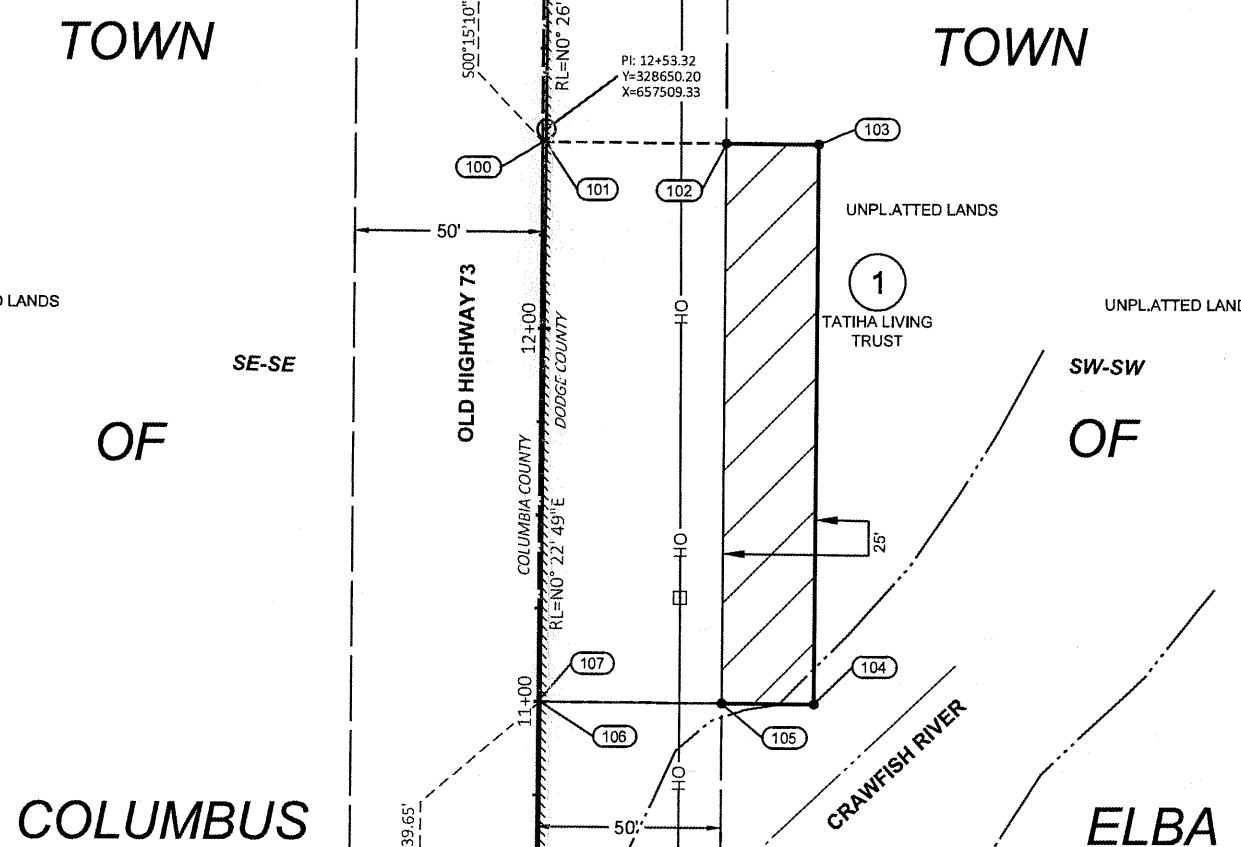
RIGHT-OF-WAY MONUMENTS ARE TYPE 2 (3/4"x24" CAPPED IRON REBAR WEIGHING 1.50 LBS./LIN. FT.) AND ARE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINT OF REFERENCE:

EXISTING HIGHWAY RIGHT-OF-WAY FOR OLD HWY 73 SHOWN HEREIN IS BASED ON ROADWAY PROJECT T017-2(47) THE WIDTH HAS BEEN ESTABLISHED AT 100 FEET.



APPROVED FOR TOWN OF ELBA  
 DATE: 7/19/2022  
 TOWN CHAIRMAN: *Jerome M. Daska*

PLAT PREPARED BY  
**AYRES**

THE SURVEY IS PREPARED AT THE REQUEST OF THE TOWN OF ELBA  
 THE FIELD SURVEY WAS PERFORMED IN FEBRUARY 2020.  
 THIS SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

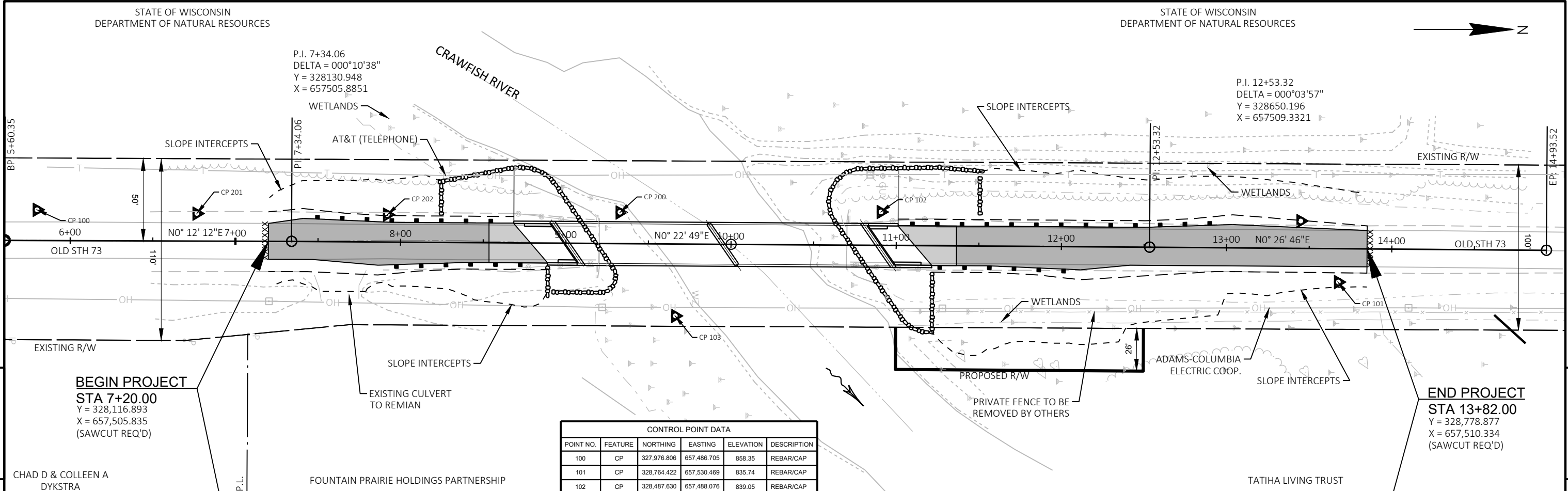


REVISION DATE: \_\_\_\_\_  
 BENJAMIN J. LARSON, P.L.S. S-3006  
 DATE: MAY 25, 2022



P.I. 7+34.06  
DELTA = 000°10'38"  
Y = 328130.948  
X = 657505.8851

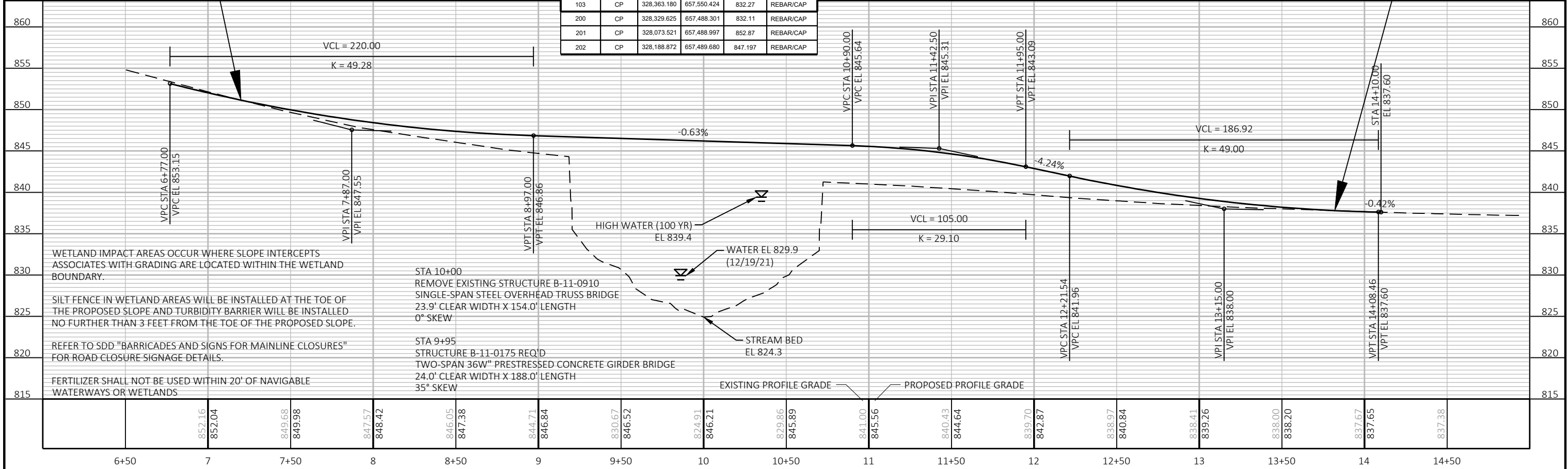
P.I. 12+53.32  
DELTA = 000°03'57"  
Y = 328650.196  
X = 657509.3321



**BEGIN PROJECT**  
STA 7+20.00  
Y = 328,116.893  
X = 657,505.835  
(SAWCUT REQ'D)

**END PROJECT**  
STA 13+82.00  
Y = 328,778.877  
X = 657,510.334  
(SAWCUT REQ'D)

CONTROL POINT DATA					
POINT NO.	FEATURE	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	CP	327,976.806	657,486.705	858.35	REBAR/CAP
101	CP	328,764.422	657,530.469	835.74	REBAR/CAP
102	CP	328,487.630	657,488.076	839.05	REBAR/CAP
103	CP	328,363.180	657,550.424	832.27	REBAR/CAP
200	CP	328,329.625	657,488.301	832.11	REBAR/CAP
201	CP	328,073.521	657,488.997	852.87	REBAR/CAP
202	CP	328,188.872	657,489.680	847.197	REBAR/CAP



WETLAND IMPACT AREAS OCCUR WHERE SLOPE INTERCEPTS ASSOCIATES WITH GRADING ARE LOCATED WITHIN THE WETLAND BOUNDARY.

SILT FENCE IN WETLAND AREAS WILL BE INSTALLED AT THE TOE OF THE PROPOSED SLOPE AND TURBIDITY BARRIER WILL BE INSTALLED NO FURTHER THAN 3 FEET FROM THE TOE OF THE PROPOSED SLOPE.

REFER TO SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" FOR ROAD CLOSURE SIGNAGE DETAILS.

FERTILIZER SHALL NOT BE USED WITHIN 20' OF NAVIGABLE WATERWAYS OR WETLANDS

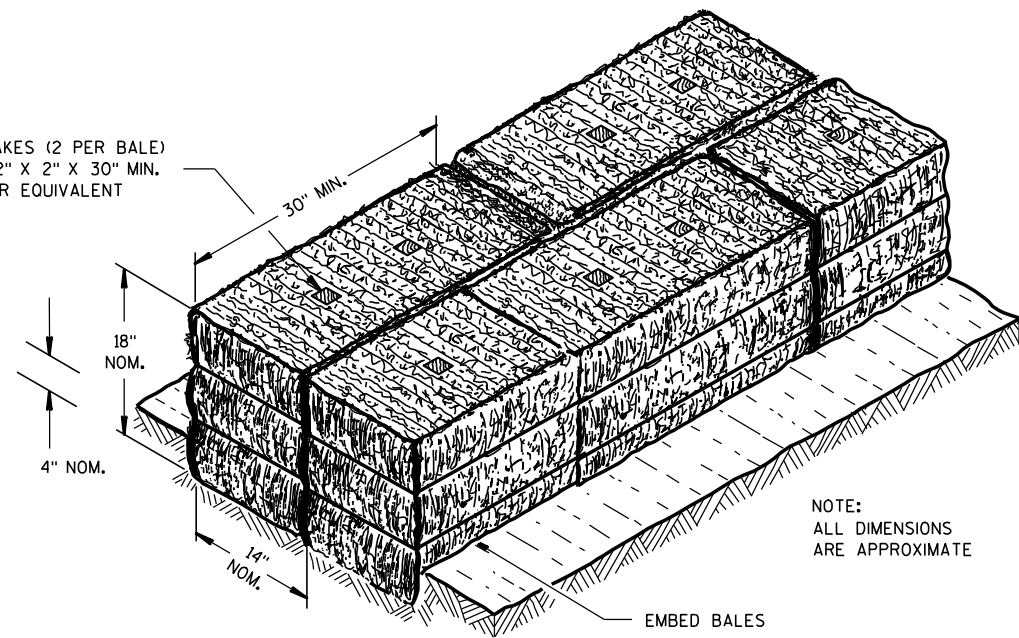
STA 10+00  
REMOVE EXISTING STRUCTURE B-11-0910  
SINGLE-SPAN STEEL OVERHEAD TRUSS BRIDGE  
23.9' CLEAR WIDTH X 154.0' LENGTH  
0° SKEW

STA 9+95  
STRUCTURE B-11-0175 REQ'D  
TWO-SPAN 36" PRESTRESSED CONCRETE GIRDER BRIDGE  
24.0' CLEAR WIDTH X 188.0' LENGTH  
35° SKEW

## Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E15-01	CULVERT PIPE CHECK
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13B02-09B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-10	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

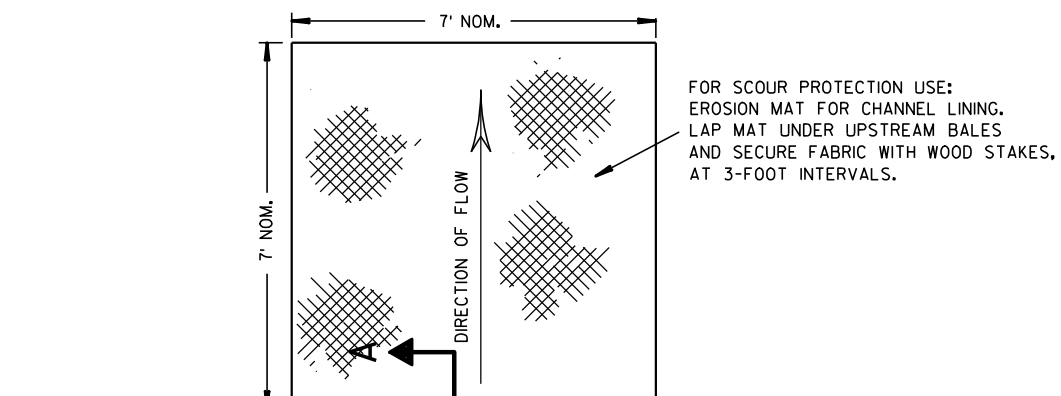
WOOD STAKES (2 PER BALE)  
NOMINAL 2" X 2" X 30" MIN.  
LENGTH OR EQUIVALENT



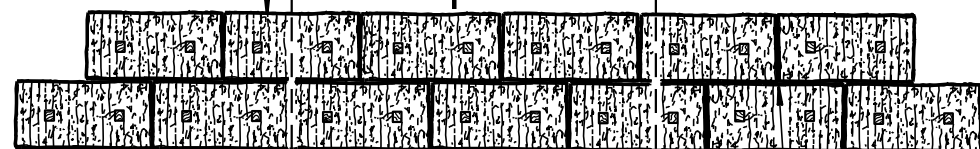
NOTE:  
ALL DIMENSIONS  
ARE APPROXIMATE

EMBED BALES

SECTION A-A



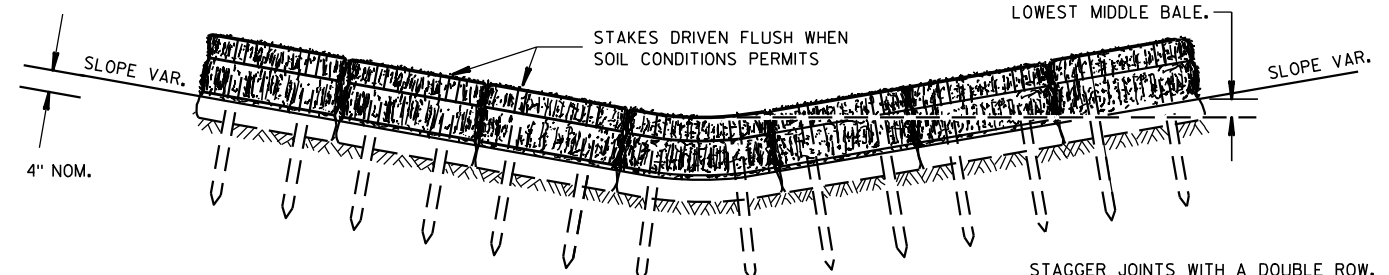
FOR SCOUR PROTECTION USE:  
EROSION MAT FOR CHANNEL LINING.  
LAP MAT UNDER UPSTREAM BALES  
AND SECURE FABRIC WITH WOOD STAKES,  
AT 3-FOOT INTERVALS.



STAGGER JOINTS BETWEEN ADJACENT  
ROWS OF BALES.

PLAN VIEW

BOTTOM ELEVATION OF END BALE SHALL  
BE EQUAL TO OR GREATER THAN TOP OF  
LOWEST MIDDLE BALE.



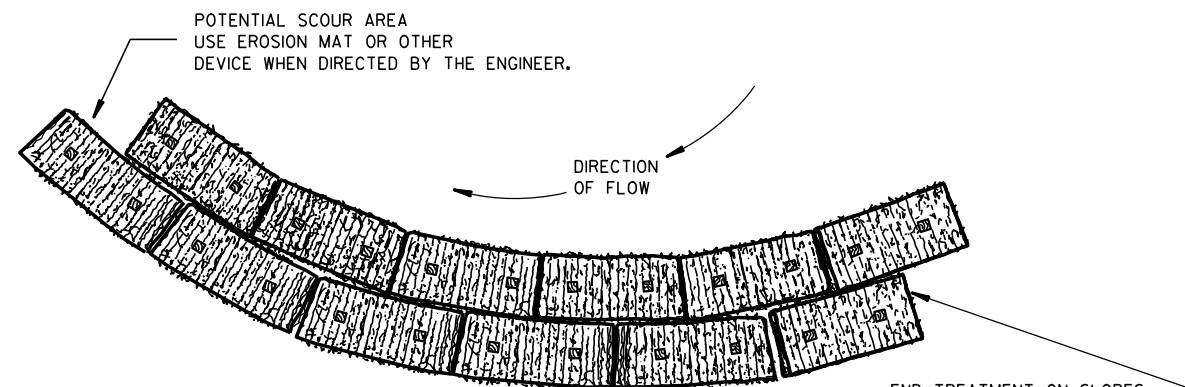
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

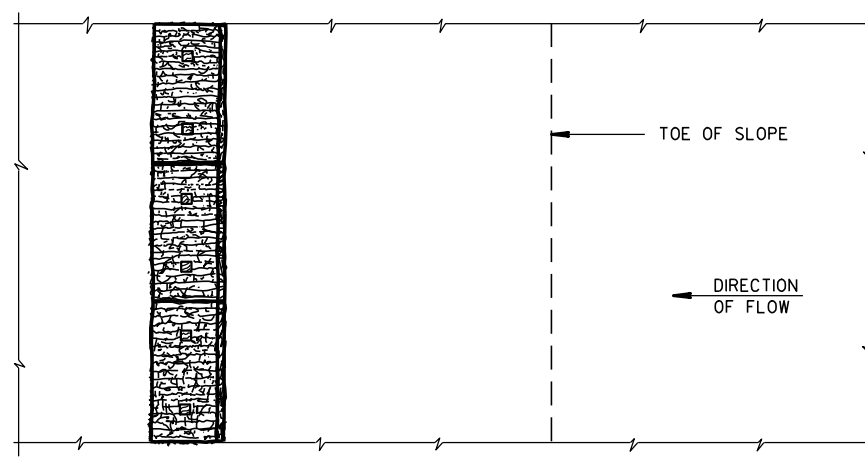
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

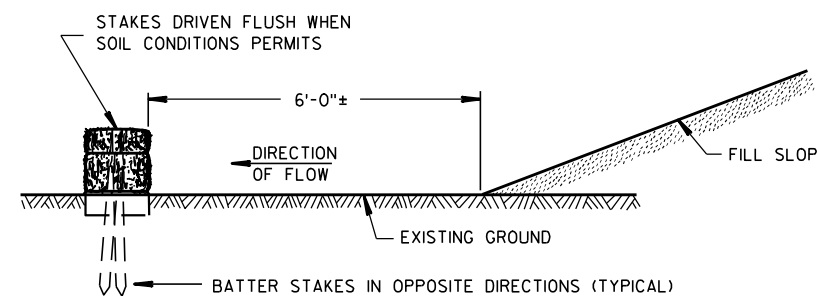


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

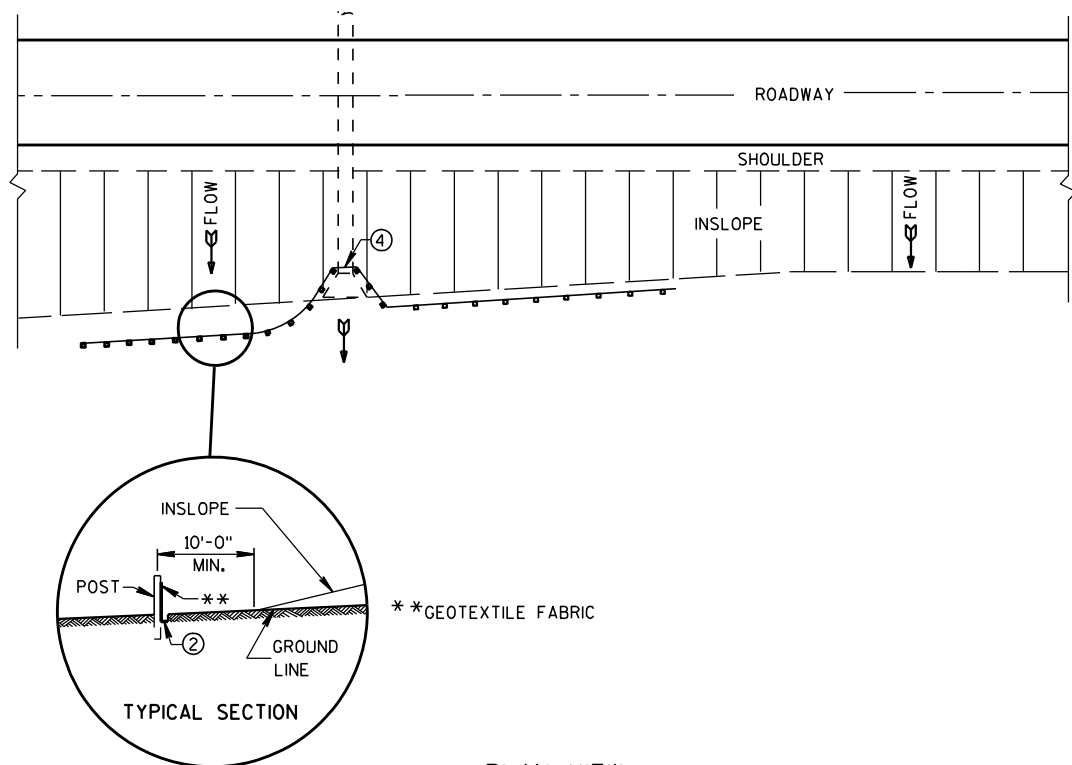
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

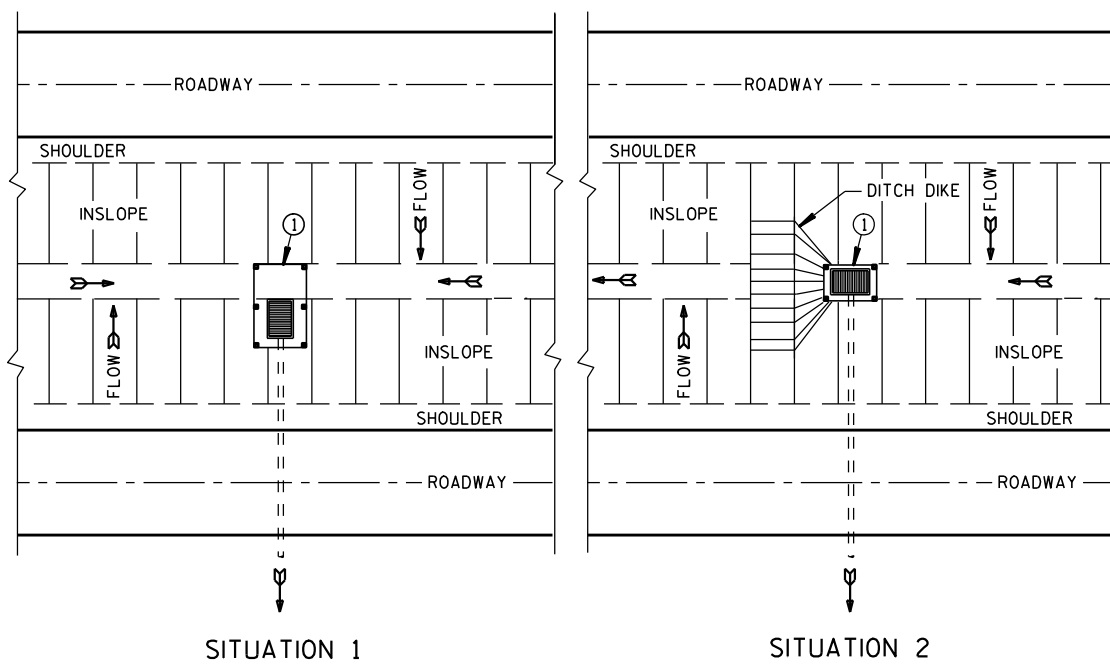
TYPICAL INSTALLATIONS OF  
EROSION BALES / TEMPORARY  
DITCH CHECKS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
 6/04/02 /S/ Beth Canestra  
 DATE CHIEF ROADWAY DEVELOPMENT ENGINEER  
 FHWA



PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE

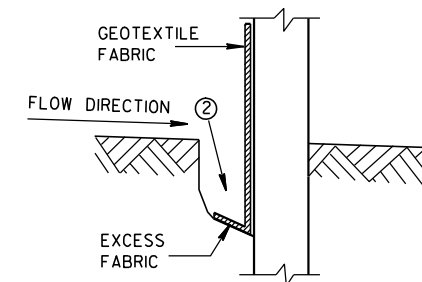


SITUATION 1 SITUATION 2  
PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

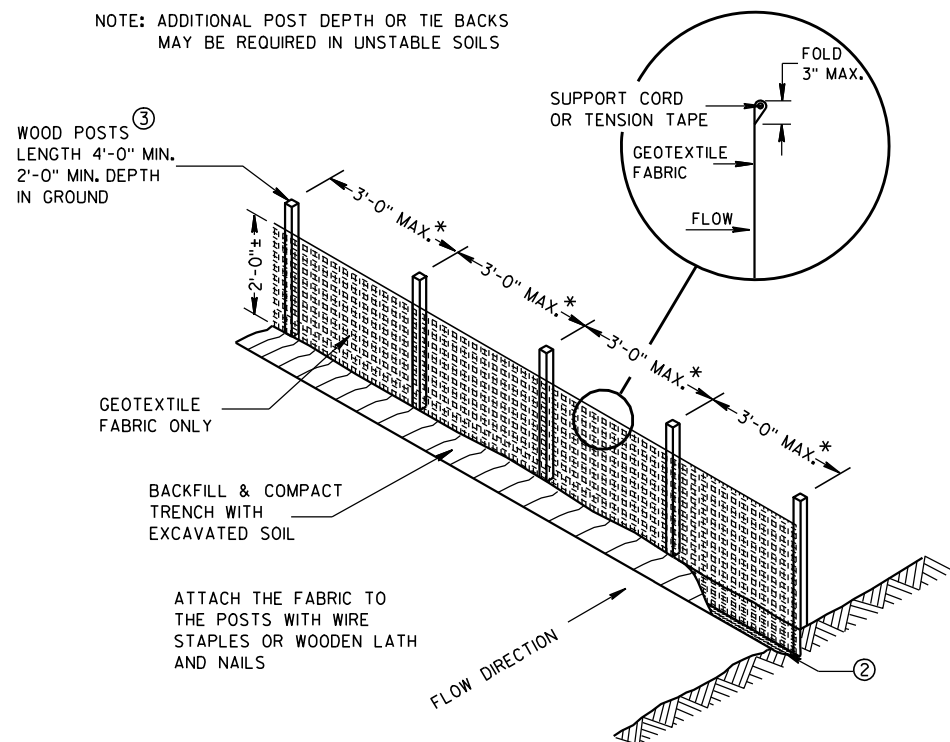
**GENERAL NOTES**

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

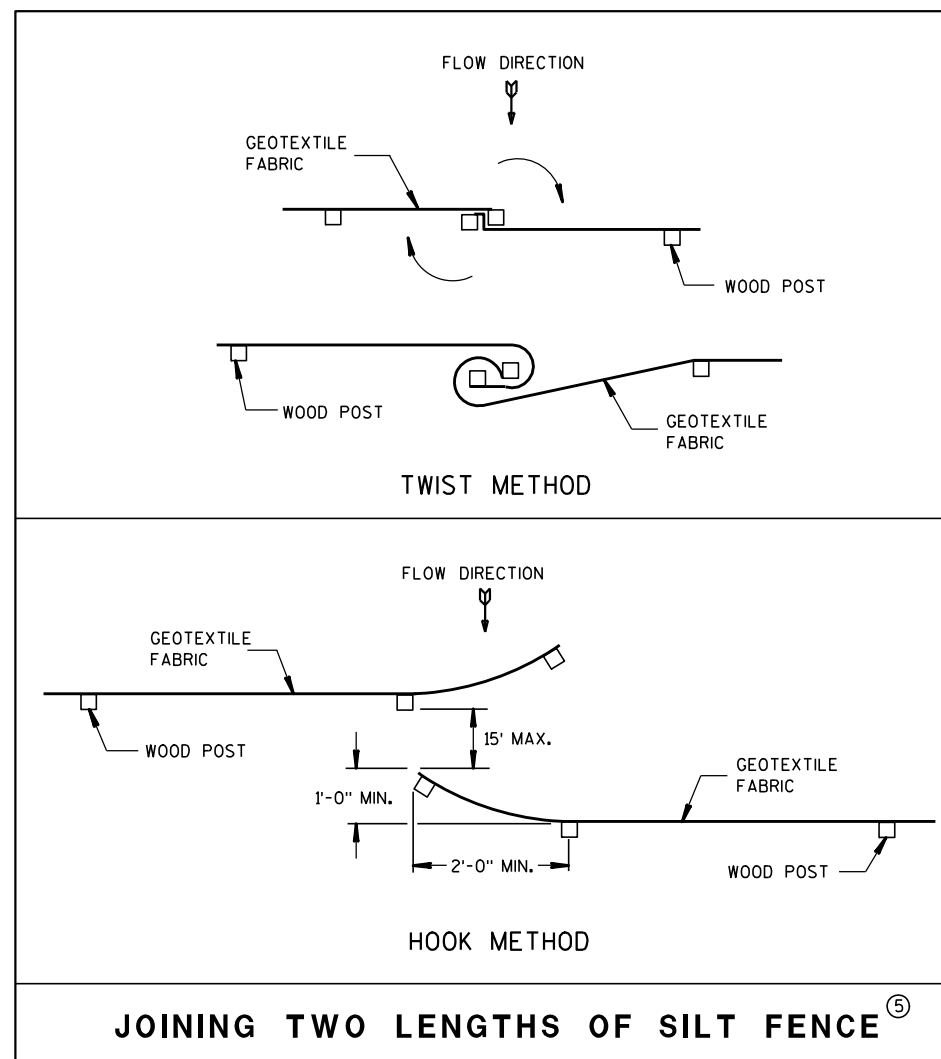
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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



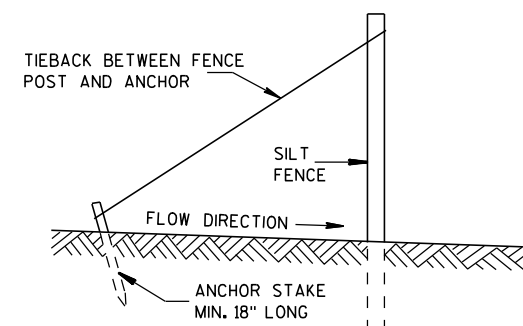
TRENCH DETAIL



SILT FENCE



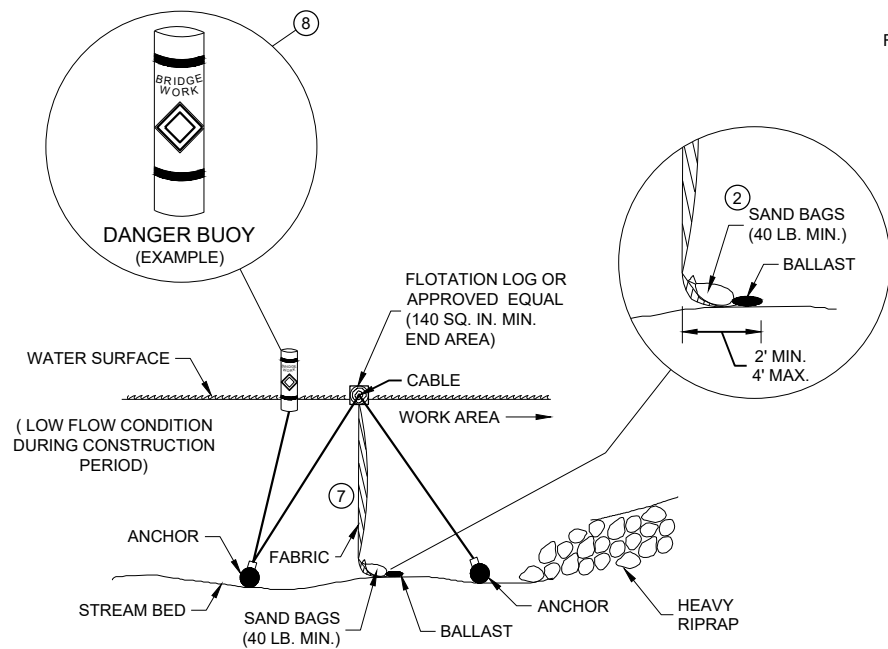
JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

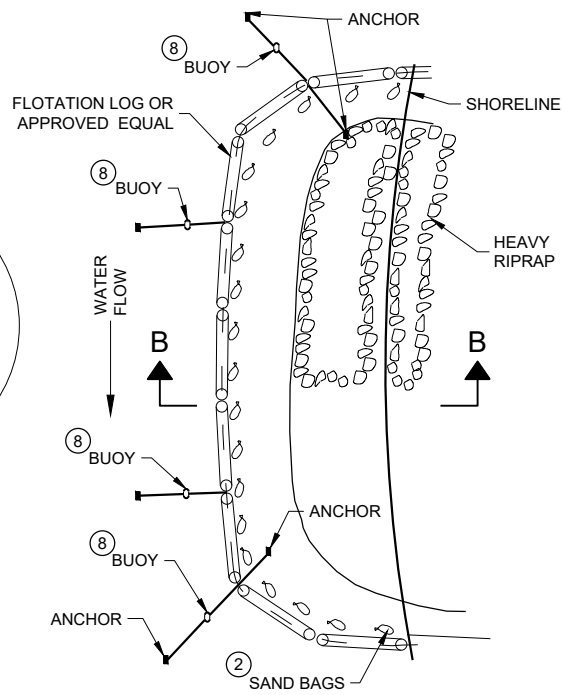
<b>SILT FENCE</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



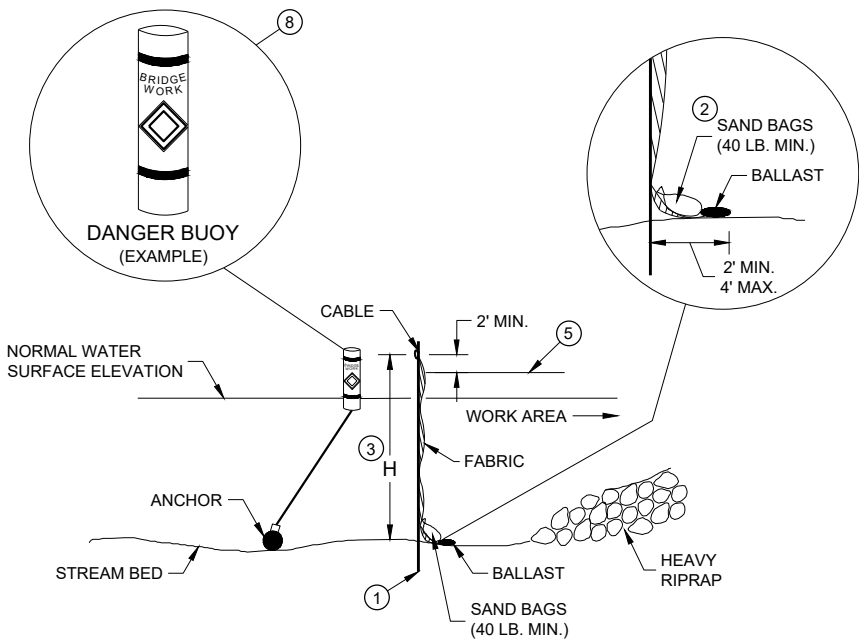


**SECTION B - B**

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

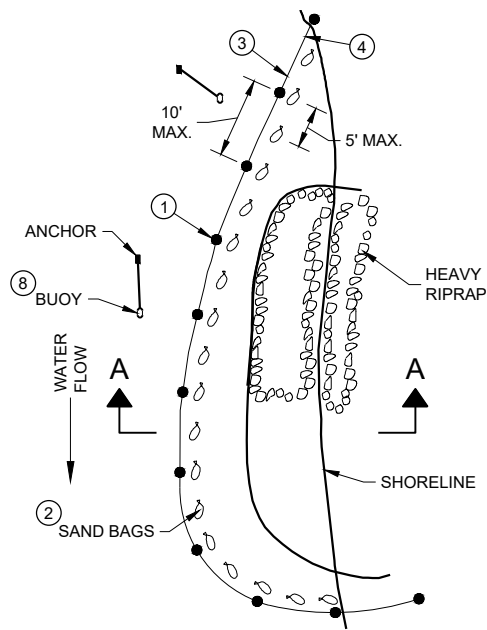


**PLAN VIEW**



**SECTION A - A**

**TURBIDITY BARRIER - STANDARD POST INSTALLATION**



**PLAN VIEW**

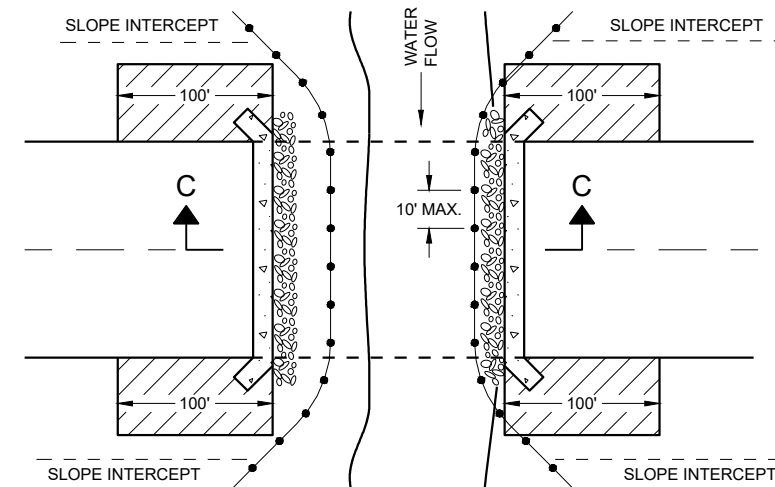
**TURBIDITY BARRIER PLACEMENT DETAILS**

**GENERAL NOTES**

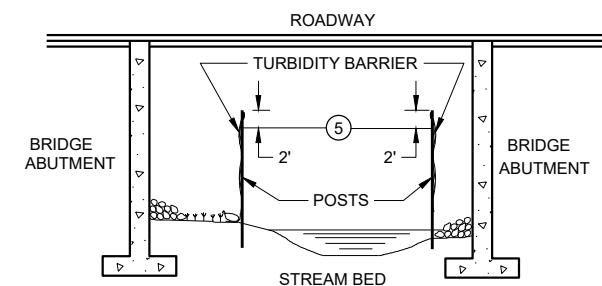
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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**

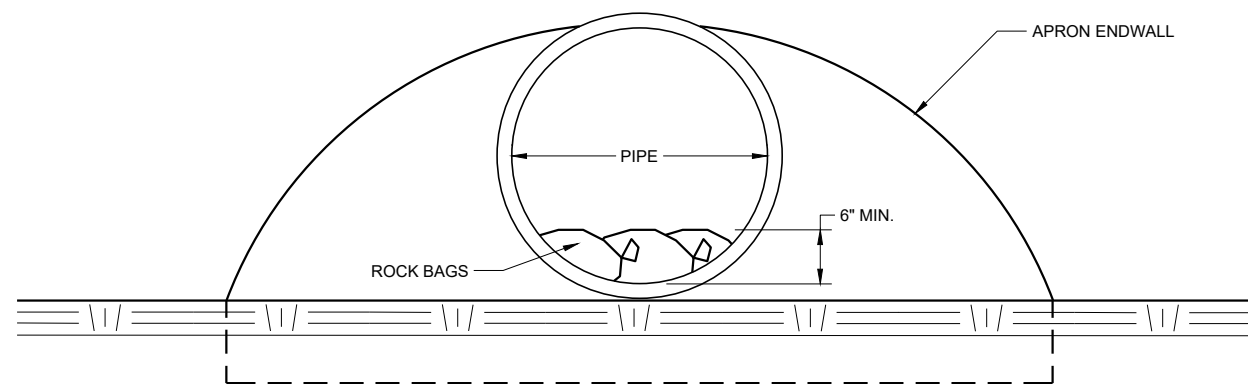
**TURBIDITY BARRIER DETAIL SHOWING  
TYPICAL PLACEMENT AT STRUCTURES**

**TURBIDITY BARRIER**

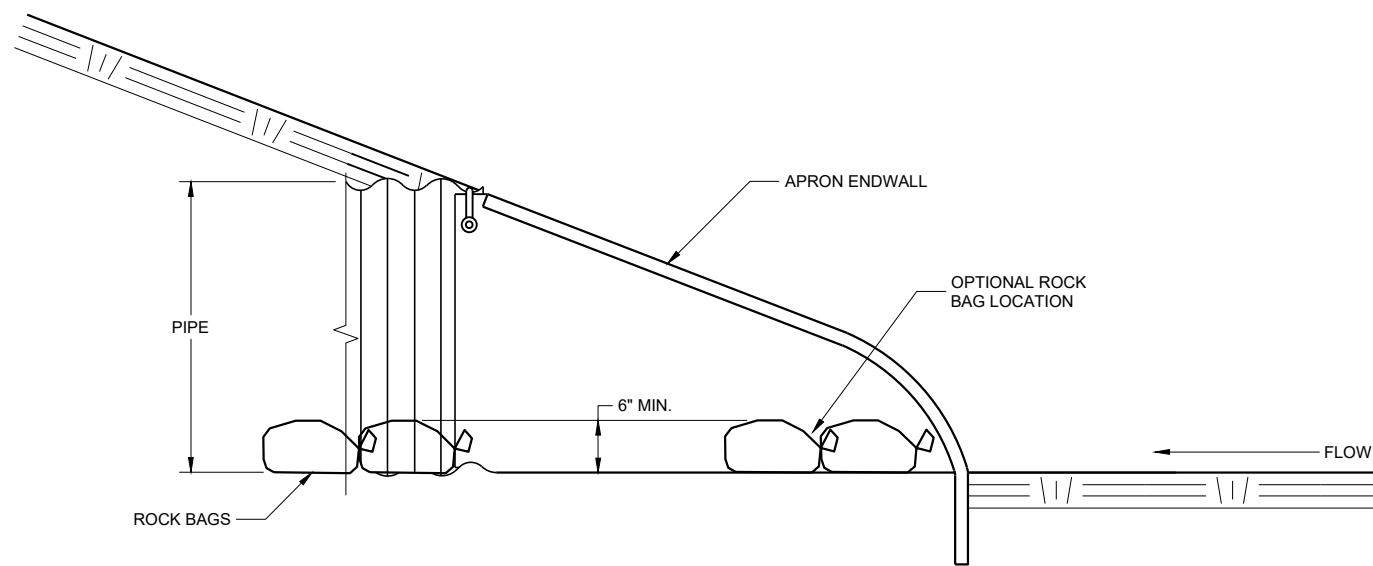
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



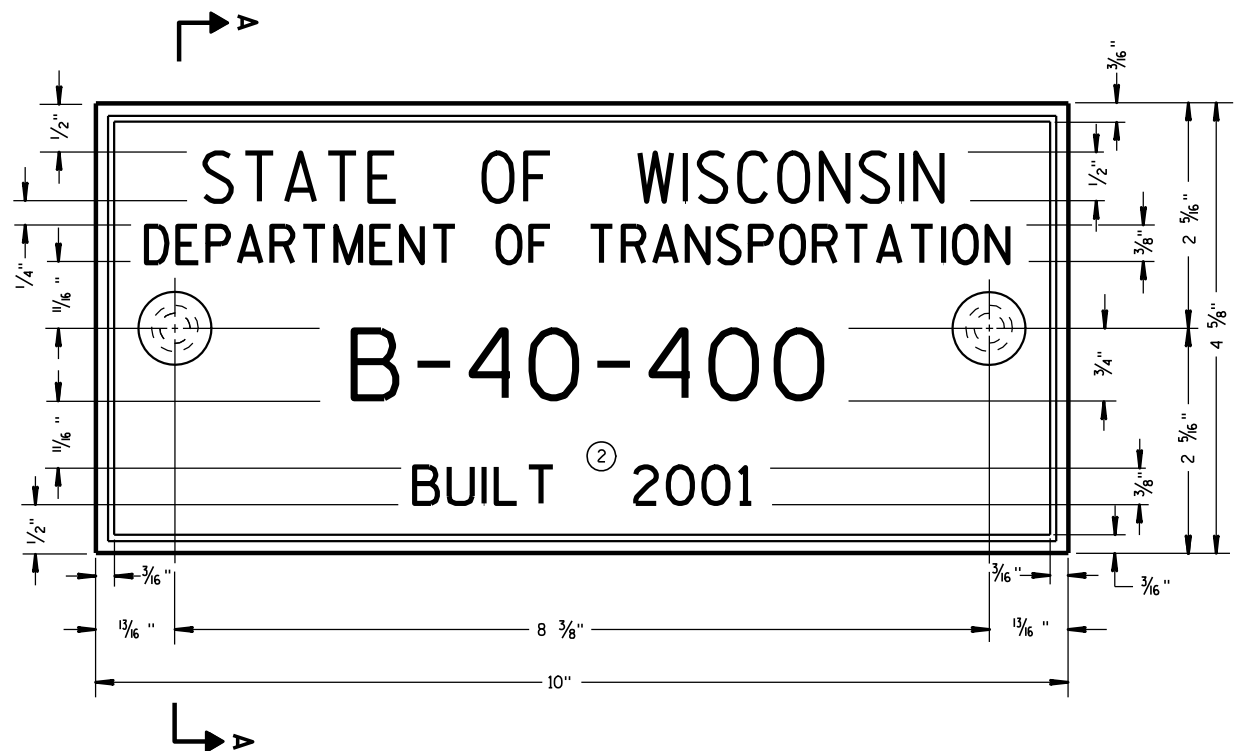
END VIEW



SIDE VIEW

**CULVERT PIPE CHECK**  
 (INSTALL ON INLET END ONLY)

<b>CULVERT PIPE CHECK</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGINEER
<small>FHWA</small>	



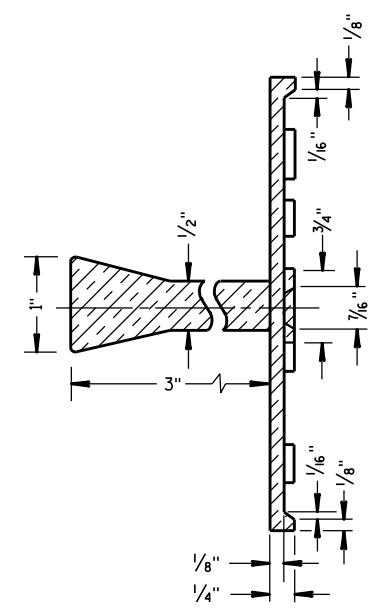
**TYPICAL NAME PLATE**  
(BRIDGES, CULVERTS, AND RETAINING WALLS)

**GENERAL NOTES**

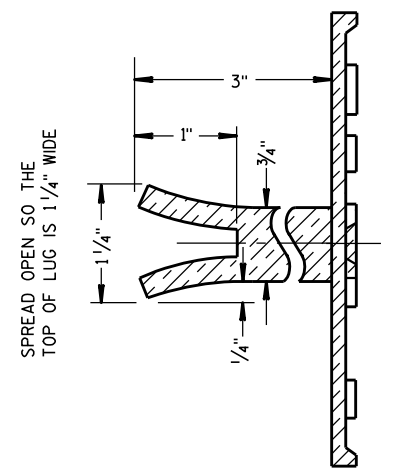
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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



**SECTION A-A**



**ALTERNATE LUG**

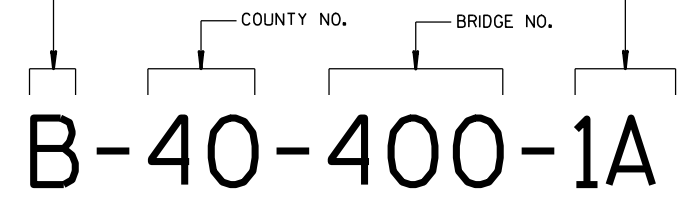
6

6

FOR MULTI-UNIT STRUCTURES  
LINE 3 ABOVE SHALL READ

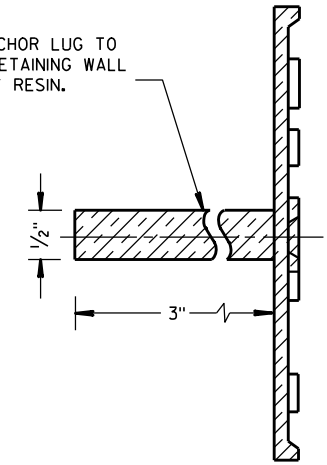
B = BRIDGE  
C = CULVERT  
R = RETAINING WALL

UNIT NO. FOR MULTIPLE  
UNIT BRIDGE



**NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES**

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

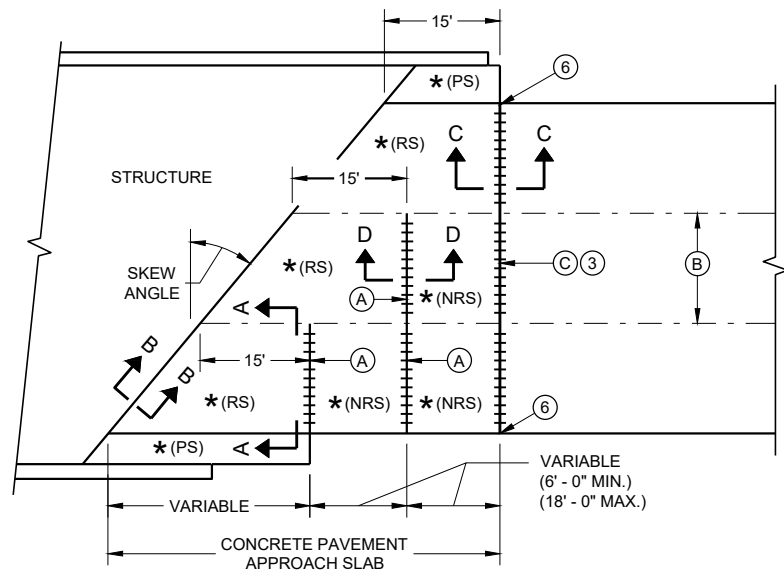


**ALTERNATE LUG**  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

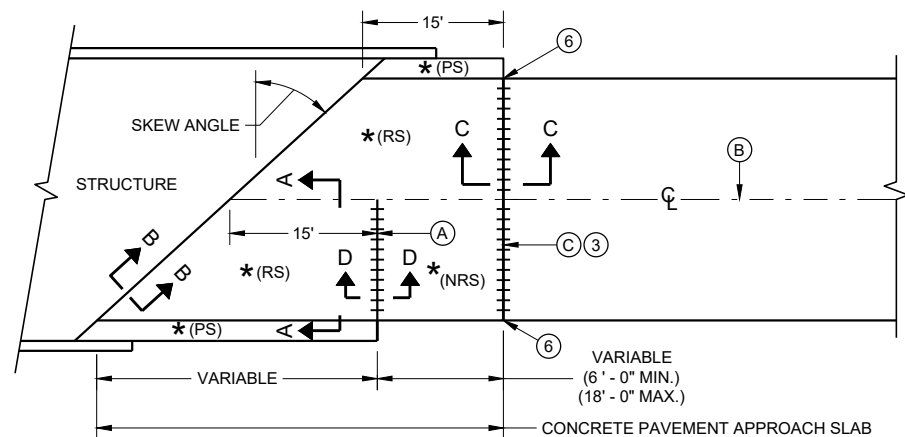
S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

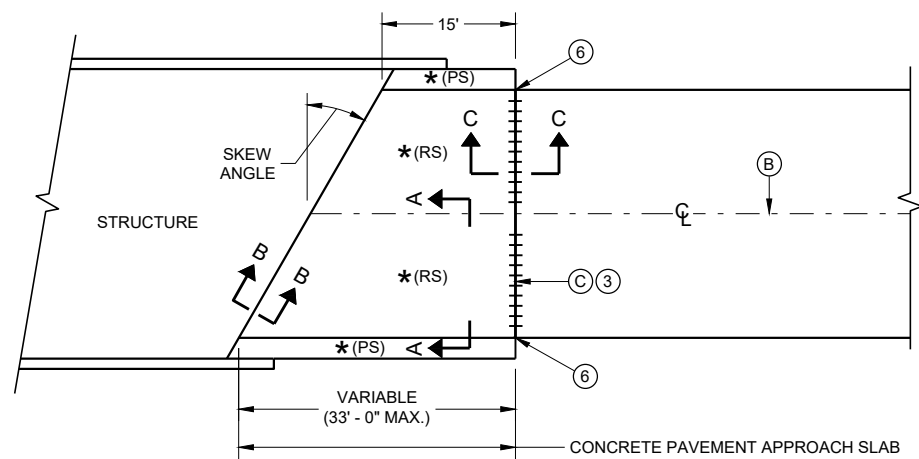
<b>NAME PLATE (STRUCTURES)</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



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

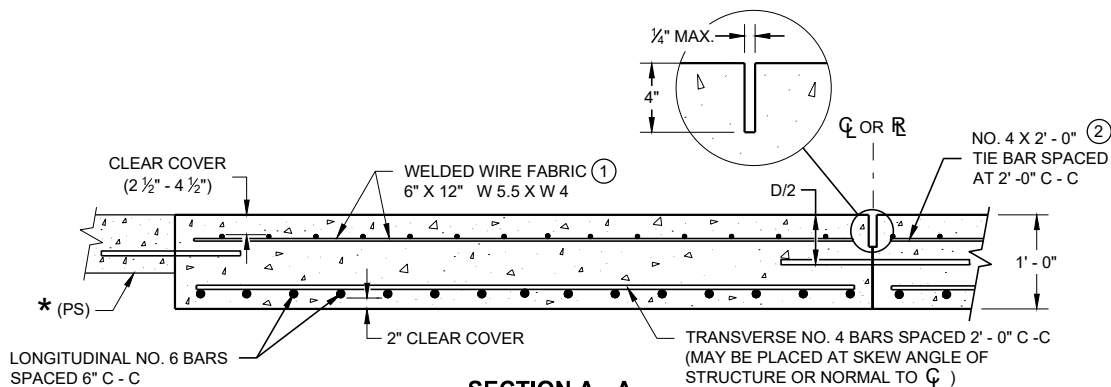


**SKews > 20°  
(PAVEMENT WIDTH ≤ 30')**

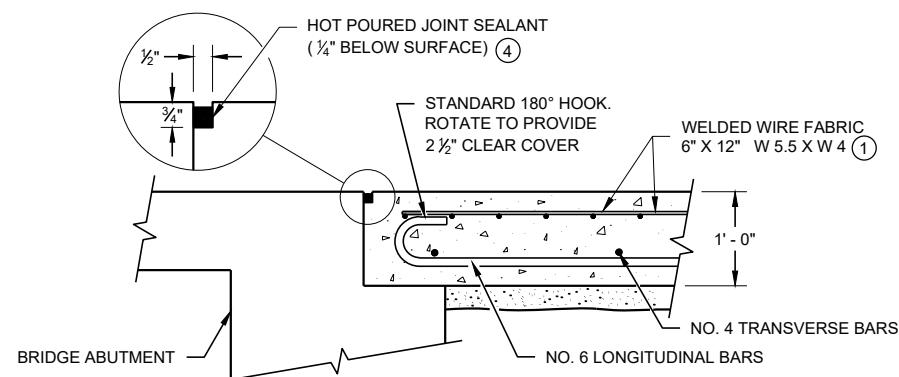


**SKews ≤ 20°  
(PAVEMENT WIDTH ≤ 30')**  
**APPROACH SLAB AND ADJACENT PAVEMENT**

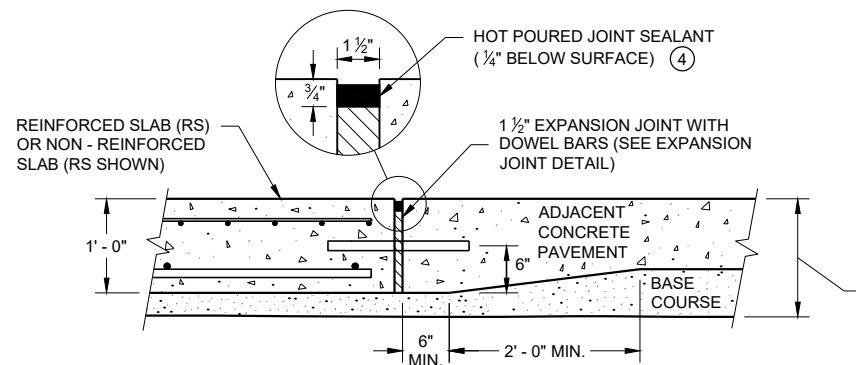
- \* (RS) = REINFORCED CONCRETE SLAB
- \* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- \* (NRS) - NON - REINFORCED CONCRETE SLAB
- \*\*\* STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A  
REINFORCEMENT POSITIONING DETAIL**



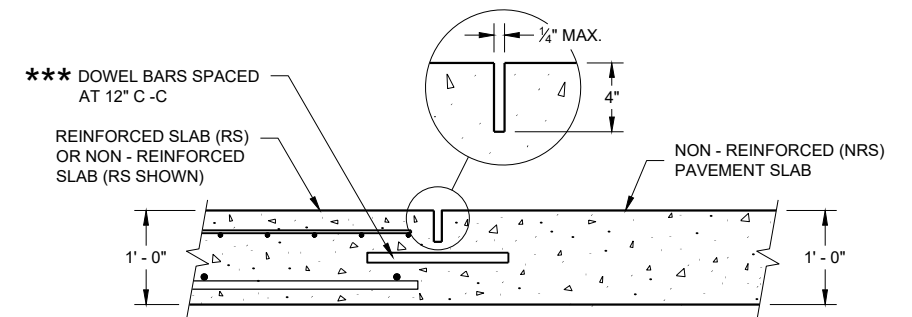
**SECTION B - B  
BEND DETAIL  
BOTTOM REINFORCEMENT**



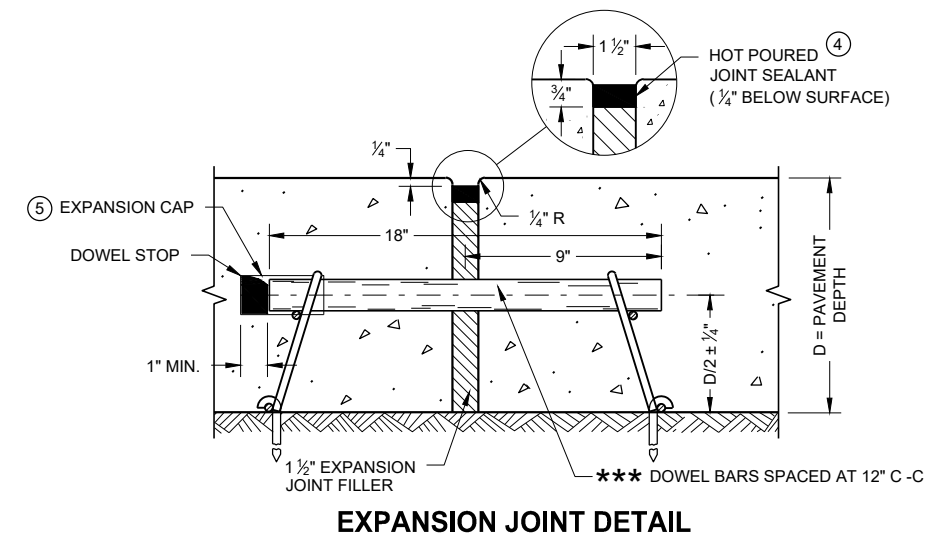
**SECTION C - C  
TRANSITION DETAIL  
APPROACH SLAB TO ADJACENT PAVEMENT**

**GENERAL NOTES**

- THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.
- TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.
- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
  - ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
  - ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
  - ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
  - ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
  - ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
  - (A) STANDARD CONTRACTION JOINT NORMAL TO  $\bar{C}$  OR  $\bar{R}$ .
  - (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
  - (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO  $\bar{C}$  OR  $\bar{R}$ .



**SECTION D - D  
CONTRACTION JOINT**



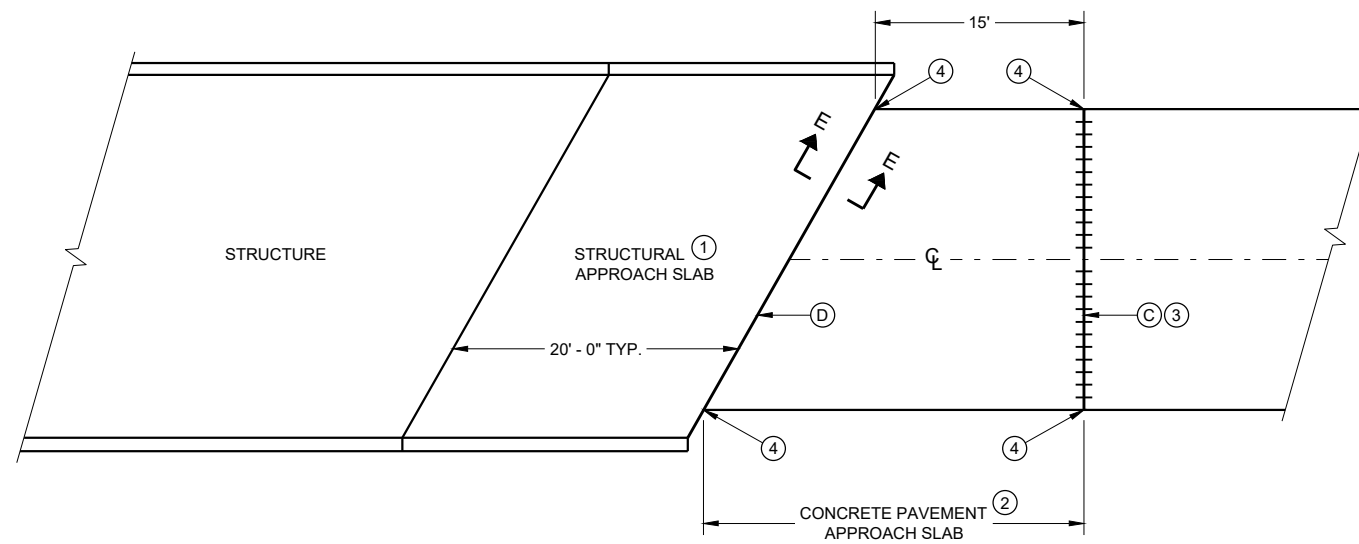
**EXPANSION JOINT DETAIL**

**CONCRETE PAVEMENT  
APPROACH SLAB**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

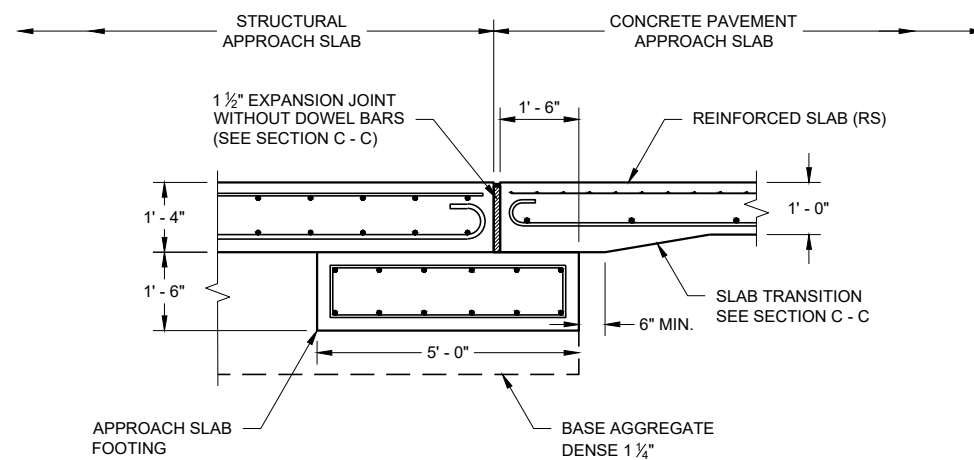


**GENERAL NOTES**

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE PAVEMENT APPROACH SLAB.

- ① SEE BRIDGE PLAN.
- ② CONFORM TO SDD 13B02 SHEET A FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO  $\text{CL}$  OR  $\text{RL}$ .
- Ⓓ 1½" EXPANSION JOINT (NO DOWELS)

**BRIDGE APPROACHES**



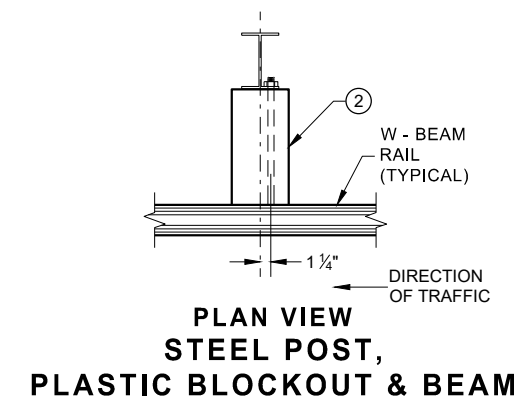
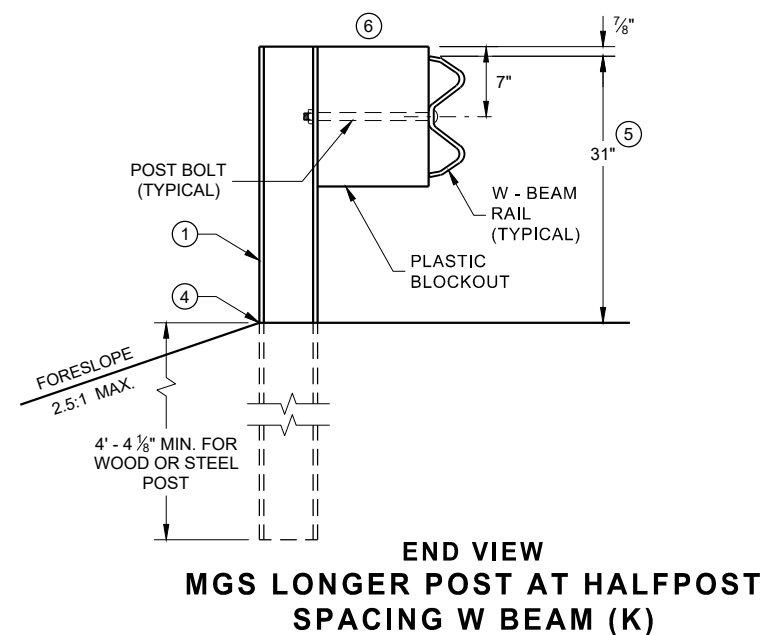
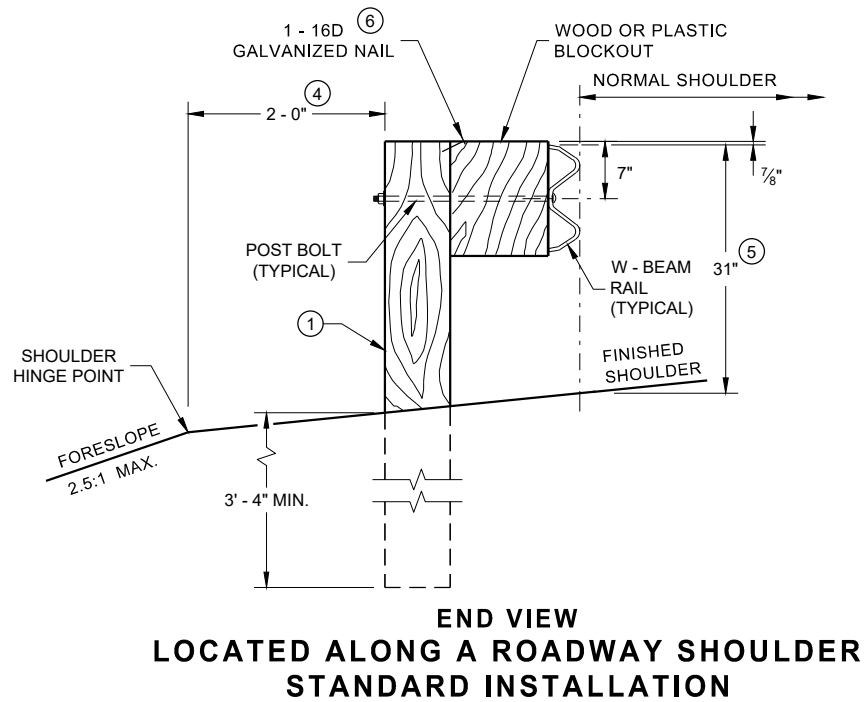
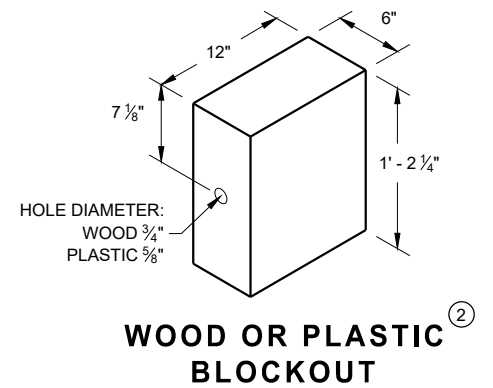
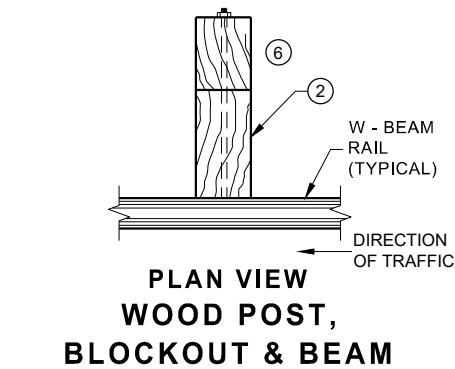
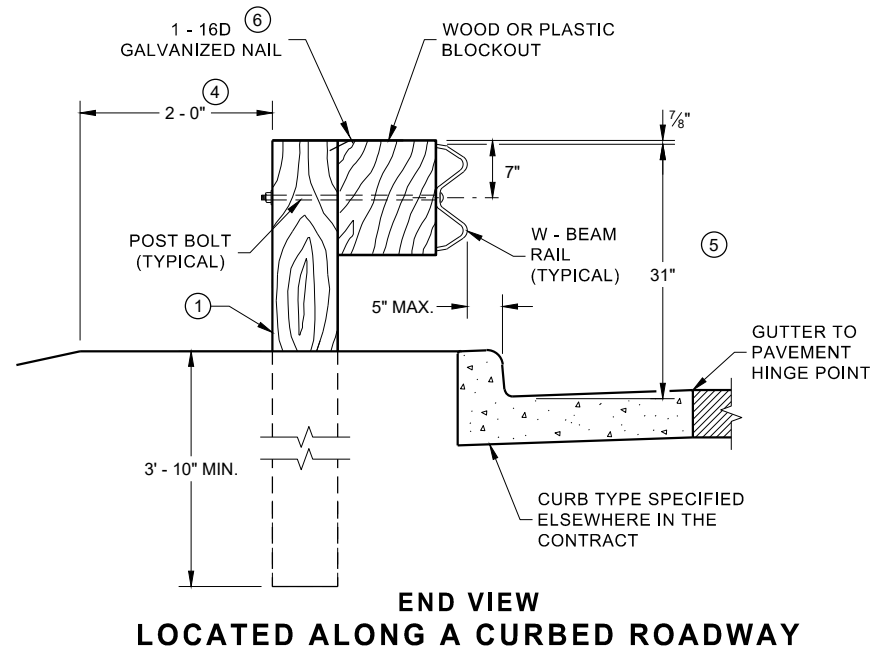
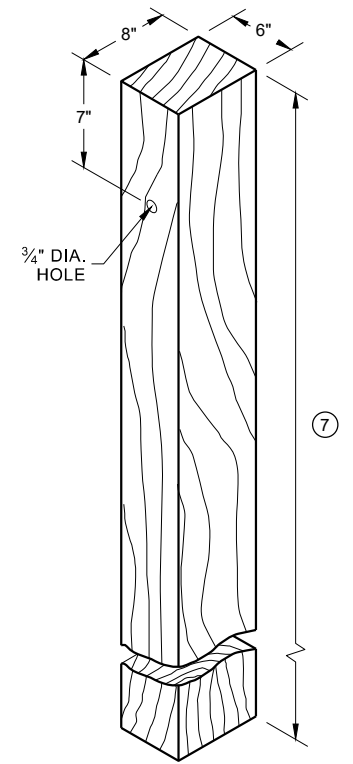
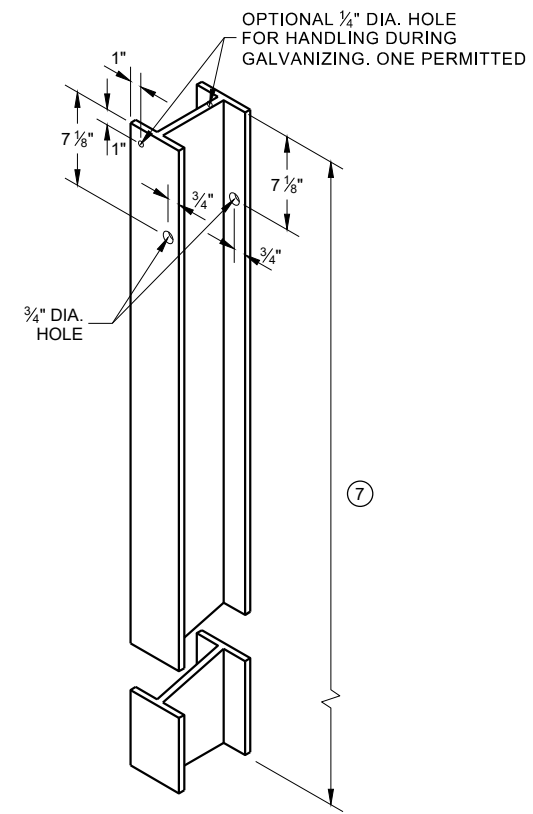
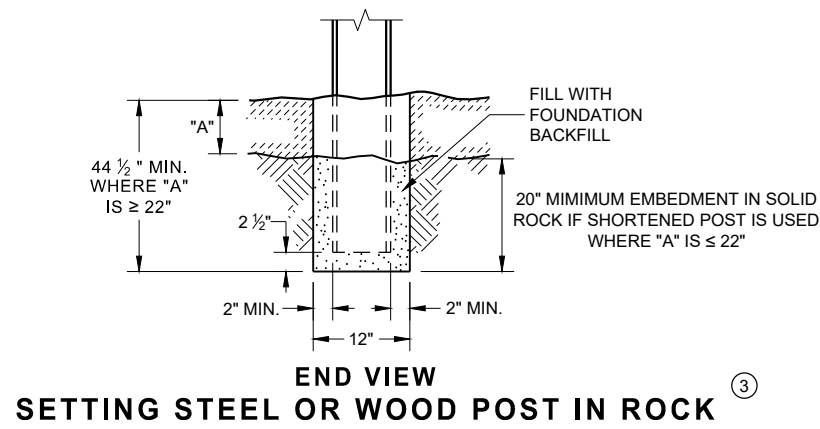
**SECTION E - E  
FOOTING DETAIL  
STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH**

**STRUCTURAL APPROACH SLAB  
AND CONCRETE PAVEMENT  
APPROACH SLAB**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

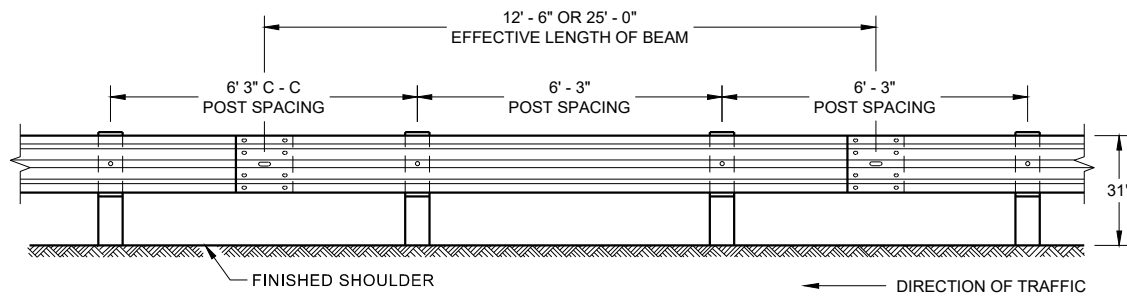
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL.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



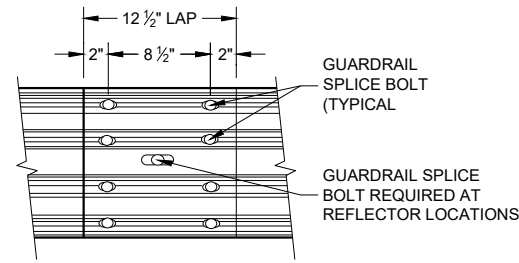
**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION





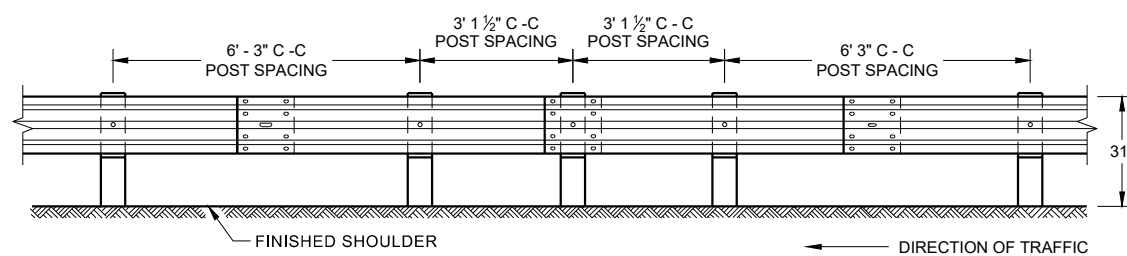
**FRONT VIEW  
POST SPACING STANDARD INSTALLATION**



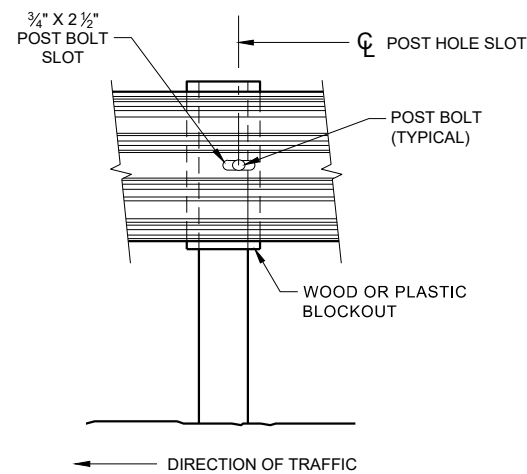
**FRONT VIEW  
MID-SPAN BEAM SPLICE**

**GENERAL NOTES**

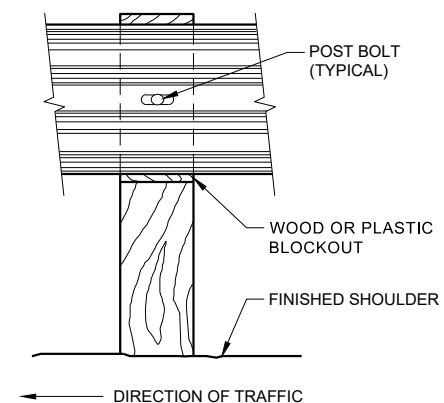
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
  - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER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



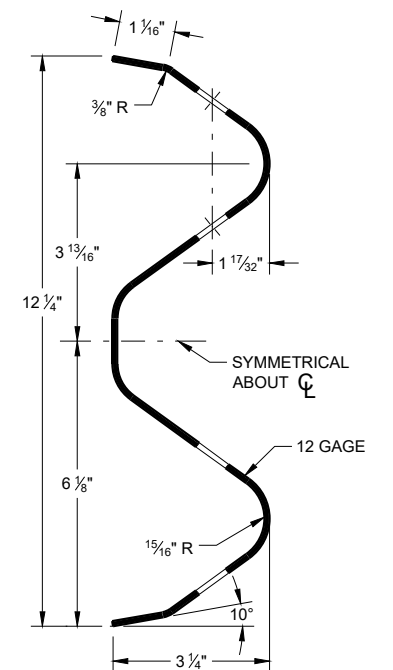
**FRONT VIEW  
HALF POST SPACING (HS) AND  
HALF POST SPACING WITH LONGER POSTS (K)**



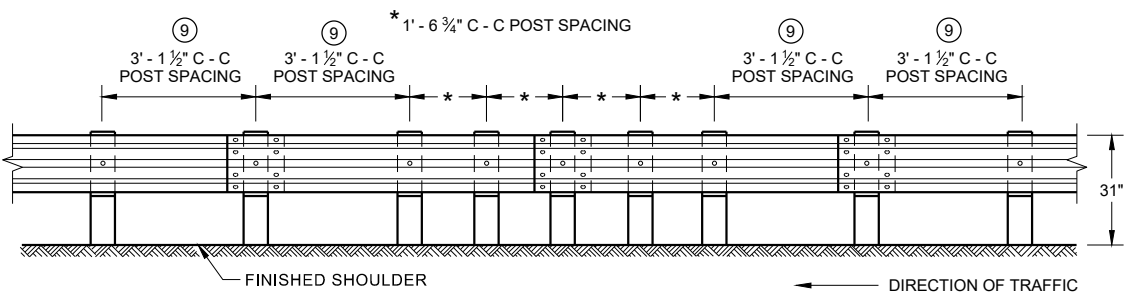
**FRONT VIEW AT STEEL POST**



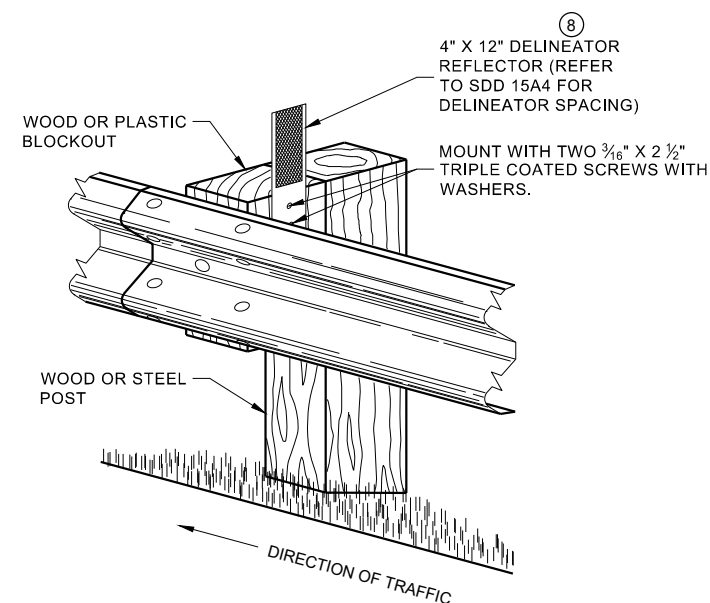
**FRONT VIEW AT WOOD POST**



**SECTION THRU W-BEAM RAIL**



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



**ONE SIDED REFLECTOR DETAIL  
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

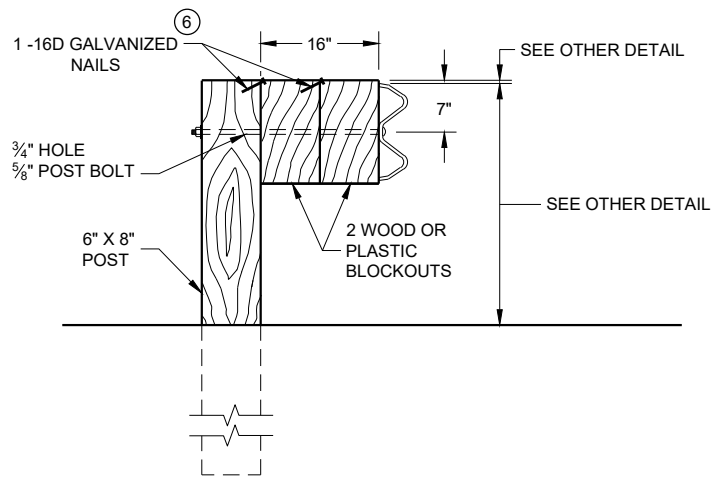
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

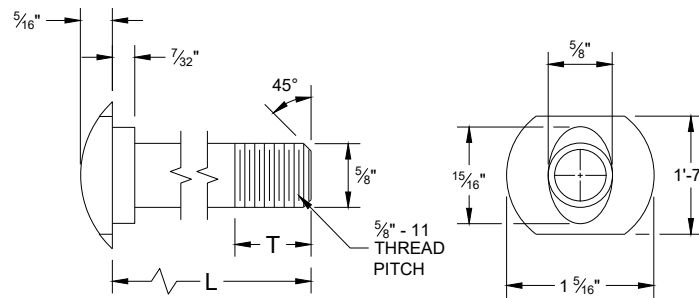


**DETAIL FOR 16" BLOCKOUT DEPTH**

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.

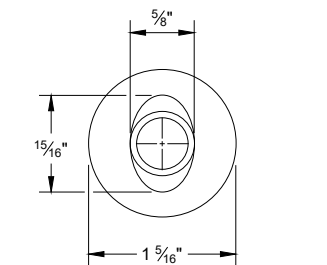
**NOTE:**

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.

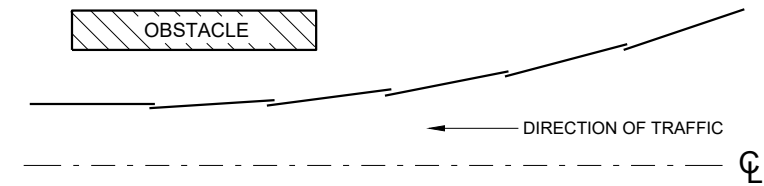


**POST BOLT TABLE**

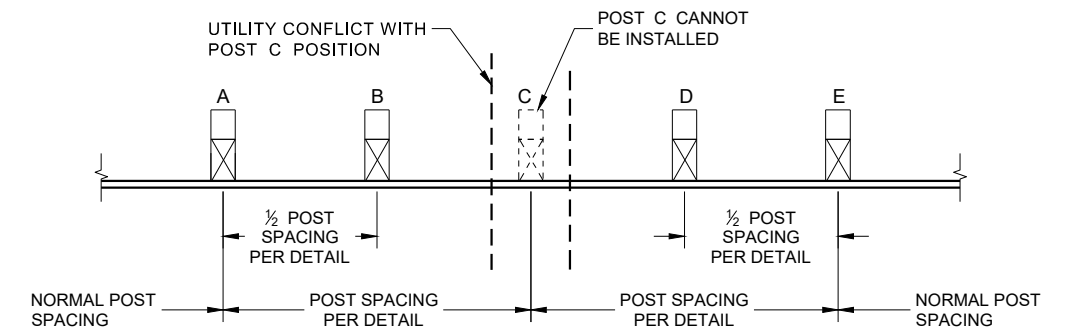
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



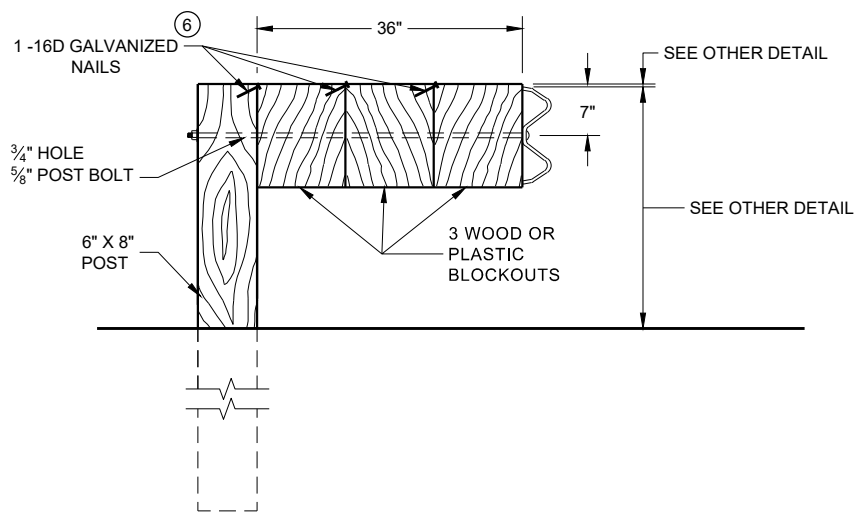
**ALTERNATE BOLT HEAD**



**PLAN VIEW  
BEAM LAPPING DETAIL**

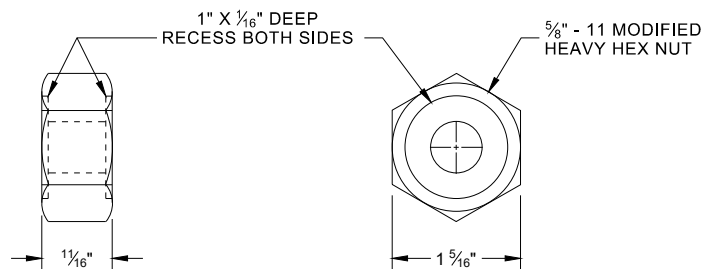


**POST DRIVING FOR CONTINUOUS  
UNDERGROUND OBSTRUCTION**

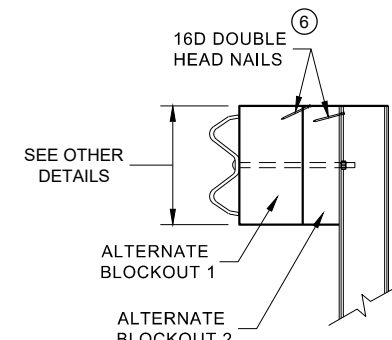


**DETAIL FOR 36" BLOCKOUT DEPTH**

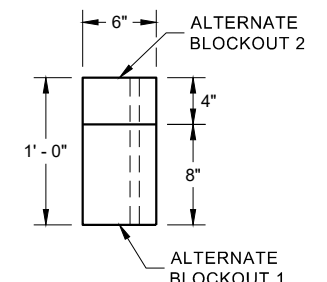
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.  
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE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



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



**SIDE VIEW**



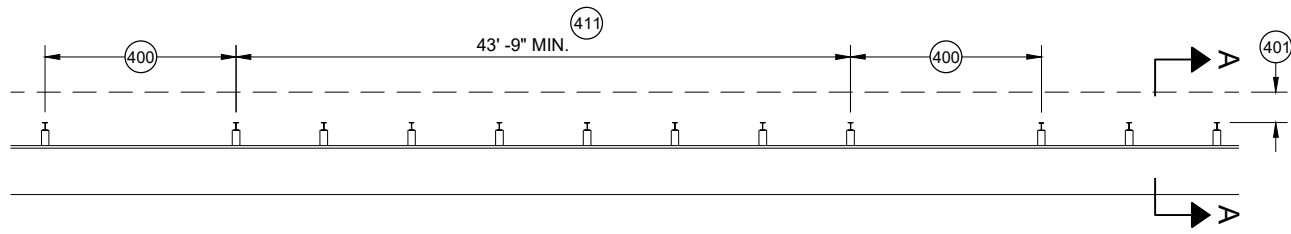
**PLAN VIEW**

**ALTERNATE WOOD  
BLOCKOUT DETAIL**

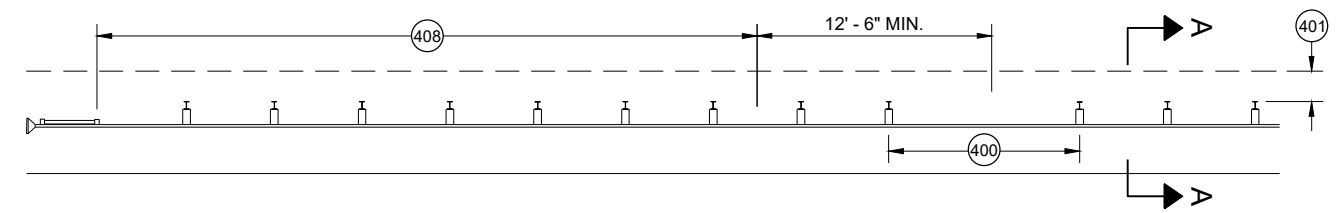
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

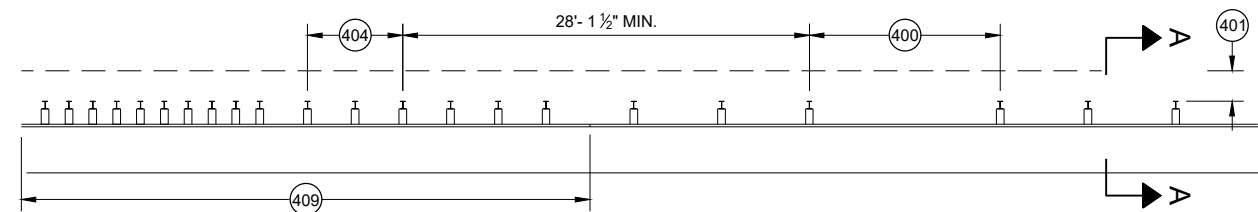
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



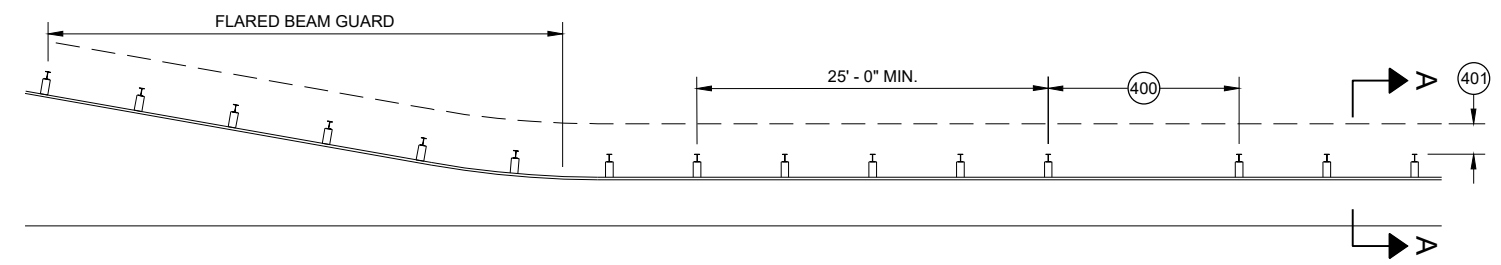
**MISSING POST IN MGS GUARDRAIL**



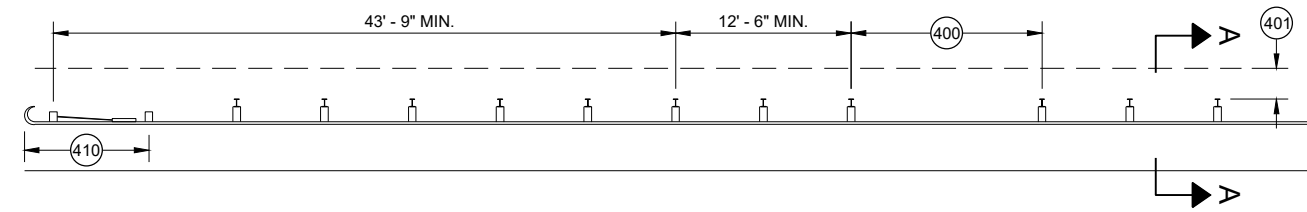
**MISSING POST IN MGS GUARDRAIL NEAR EAT**



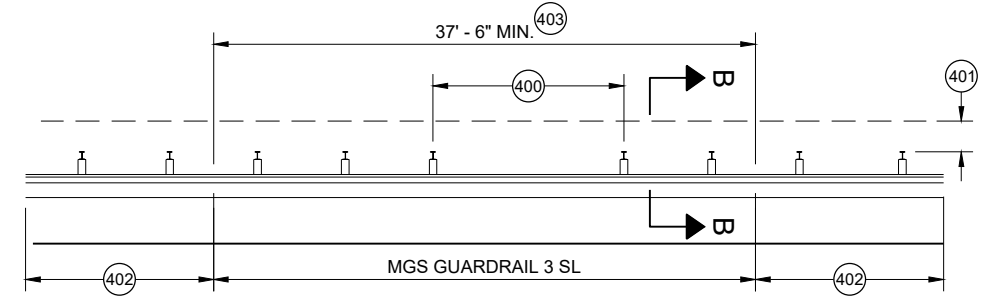
**MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION**



**MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD**

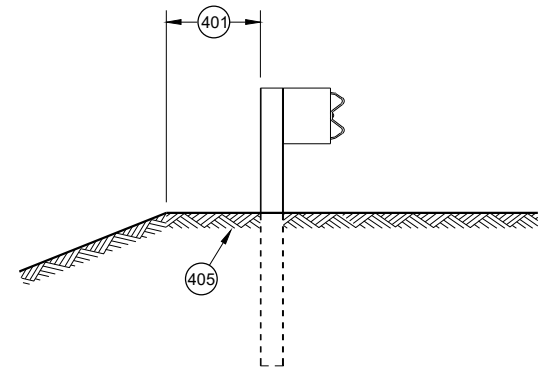


**MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL**

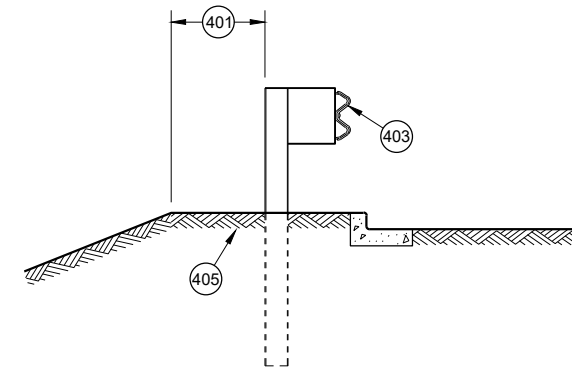


**MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)**

- 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**

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

**GENERAL NOTES**

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

SEE SDD 14B42 FOR MORE INFORMATION.

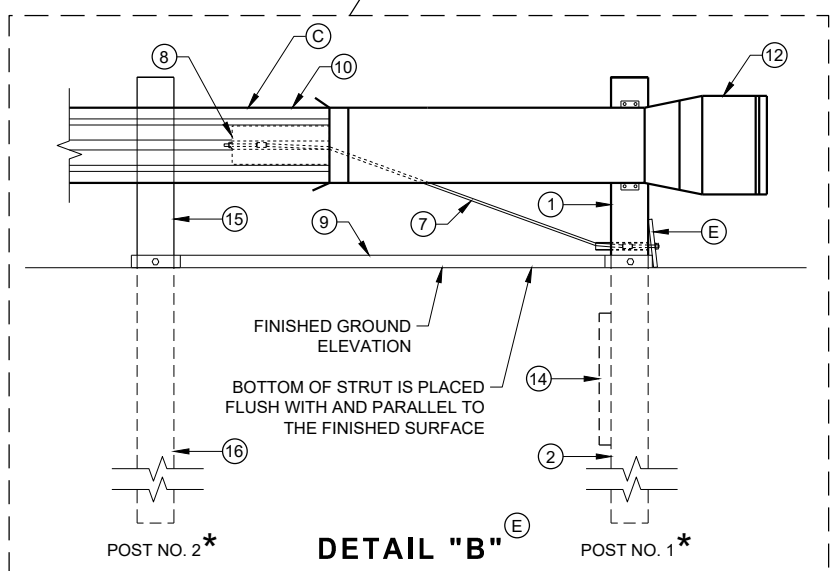
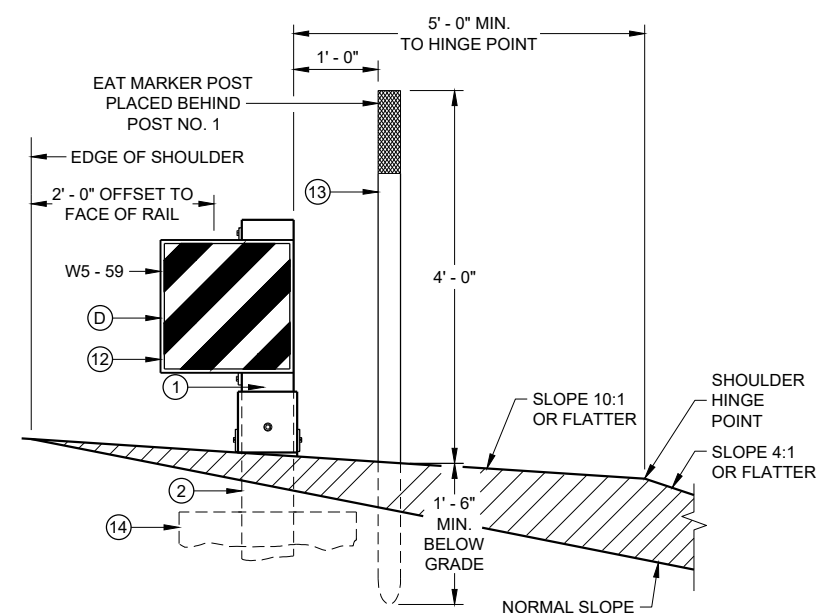
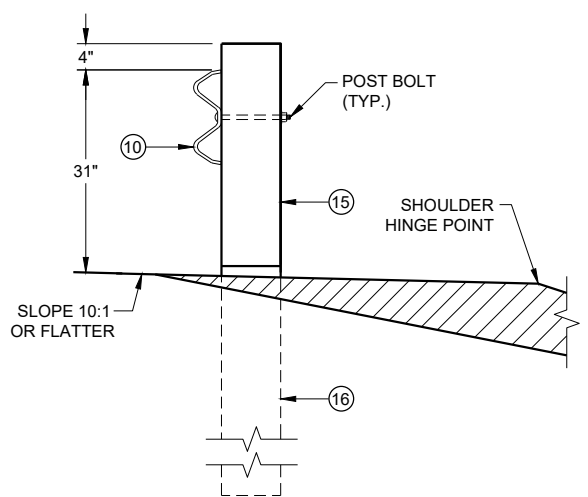
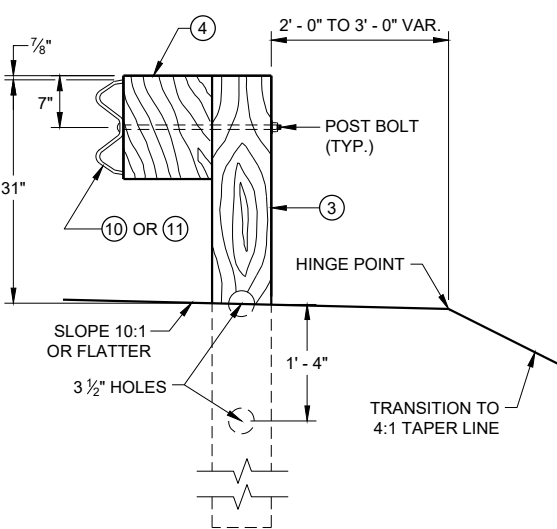
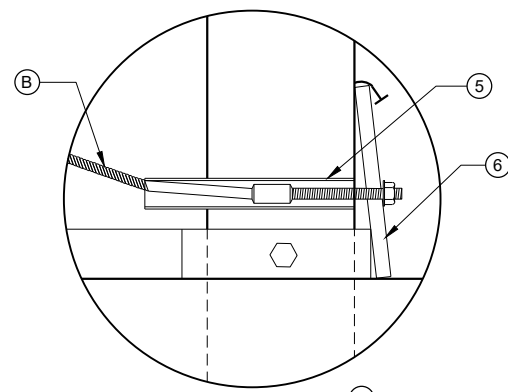
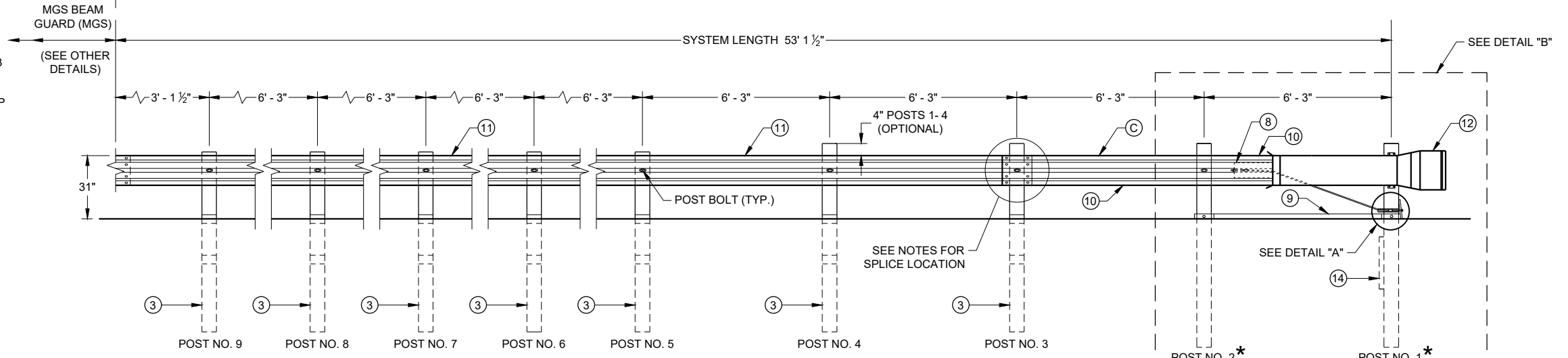
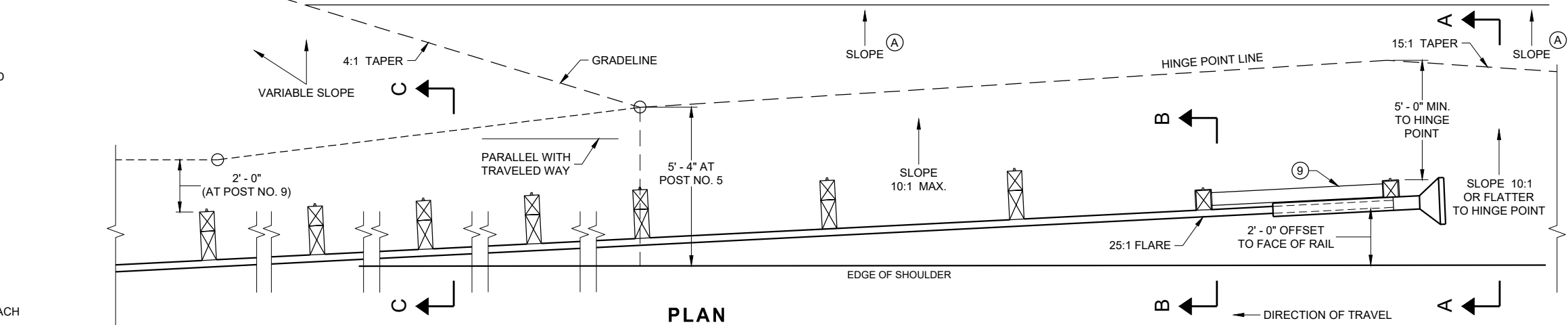
\* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

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

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

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

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



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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

6

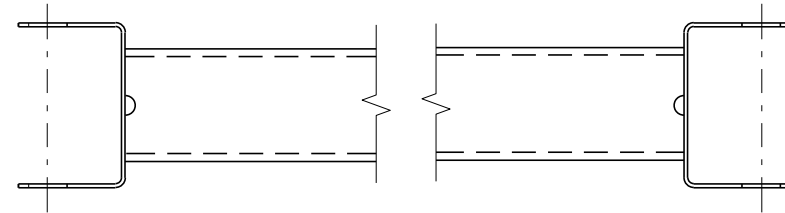
6

SDD 14B44 - 04a

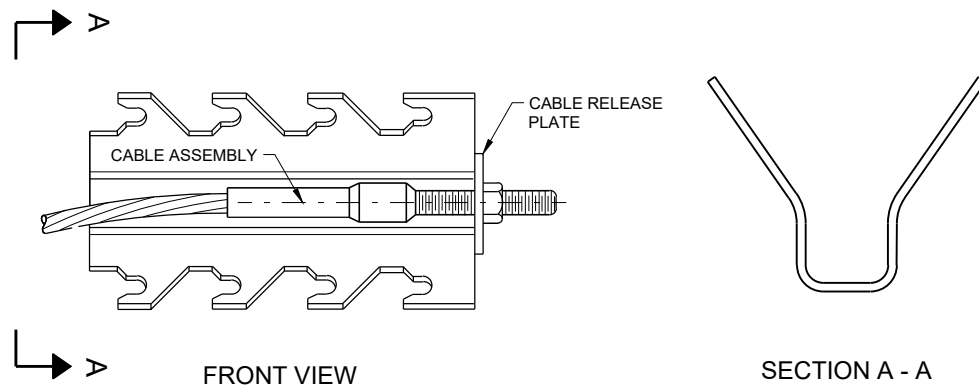
SDD 14B44 - 04a

**BILL OF MATERIALS**

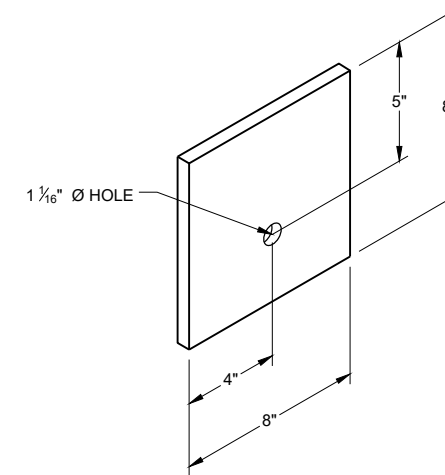
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL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



**GENERIC GROUND STRUT** ⑨ ⑤



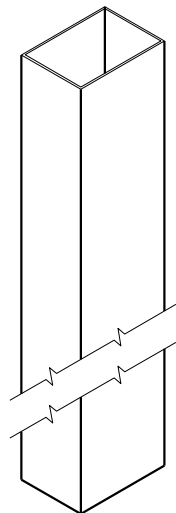
**GENERIC ANCHOR CABLE BOX** ⑨ ⑤



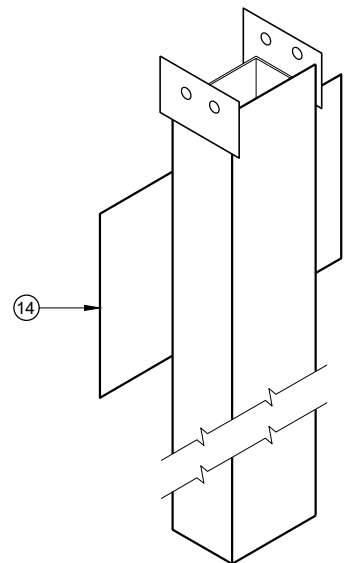
**BEARING PLATE** ⑥ ⑤

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

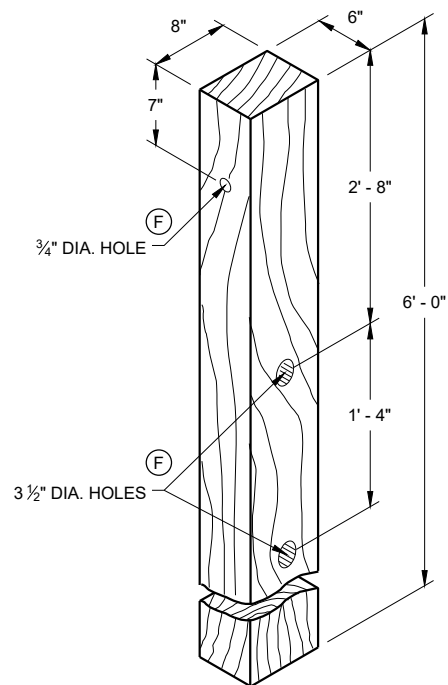
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



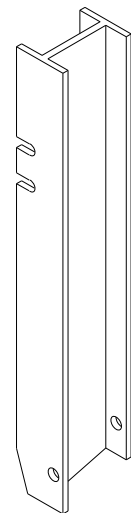
UPPER POST NO. 1 <sup>(1)</sup> (E)



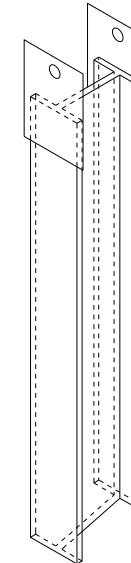
LOWER POST NO. 1 <sup>(2)</sup> (E)



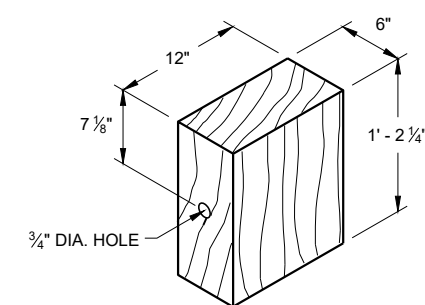
WOOD CRT POST <sup>(3)</sup> (E)  
POSTS NUMBER 3-9



UPPER POST NO. 2 <sup>(15)</sup> (E)

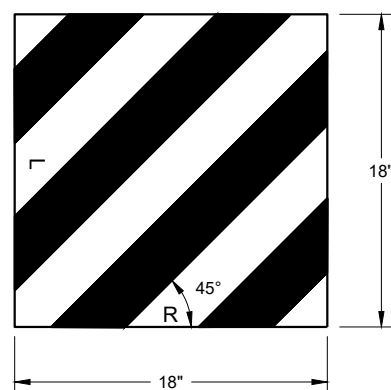


LOWER POST NO. 2 <sup>(16)</sup> (E)



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

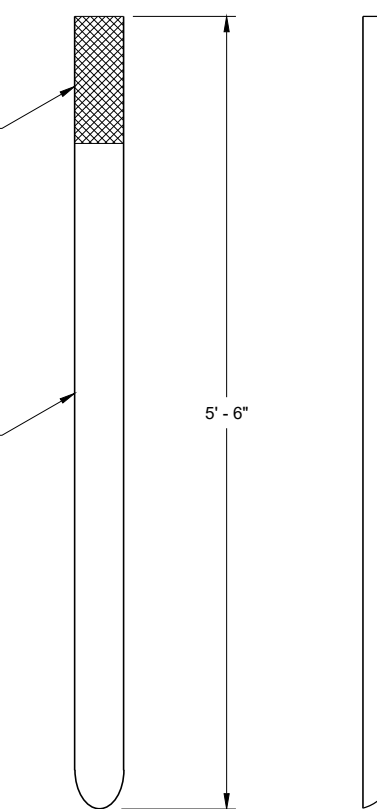
6



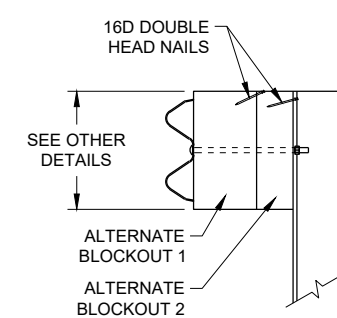
W5 - 59  
REFLECTIVE SHEETING DETAIL <sup>(E)</sup>

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

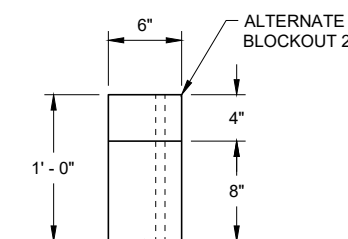
E.A.T. MARKER  
POST (YELLOW)



FRONT VIEW SIDE VIEW  
E.A.T. MARKER POST <sup>(13)</sup>



SIDE VIEW



TOP VIEW

ALTERNATE WOOD  
BLOCKOUT DETAIL

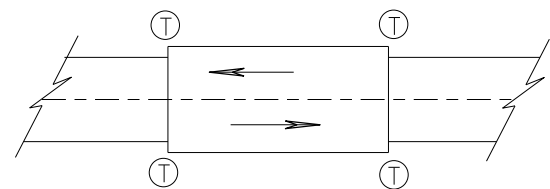
6

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

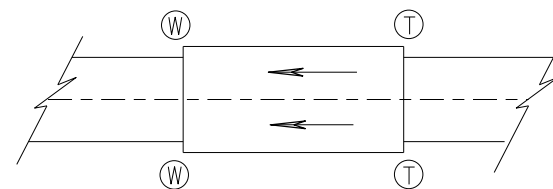
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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





**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

**GENERAL NOTES**

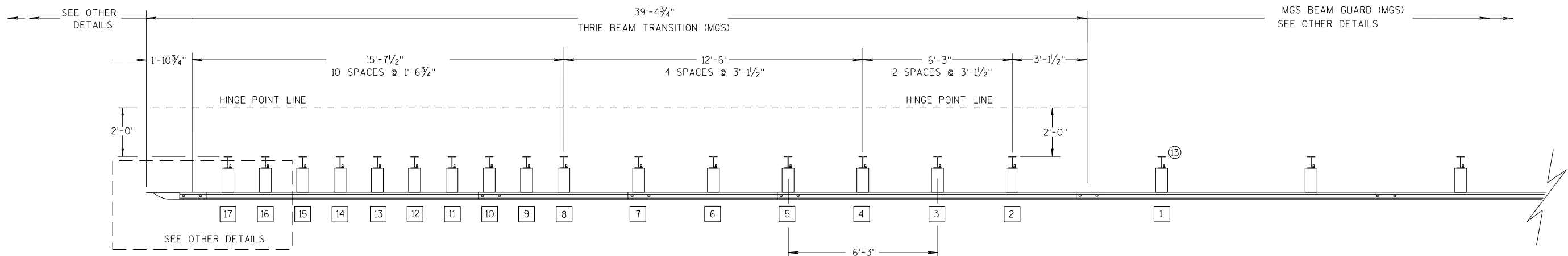
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

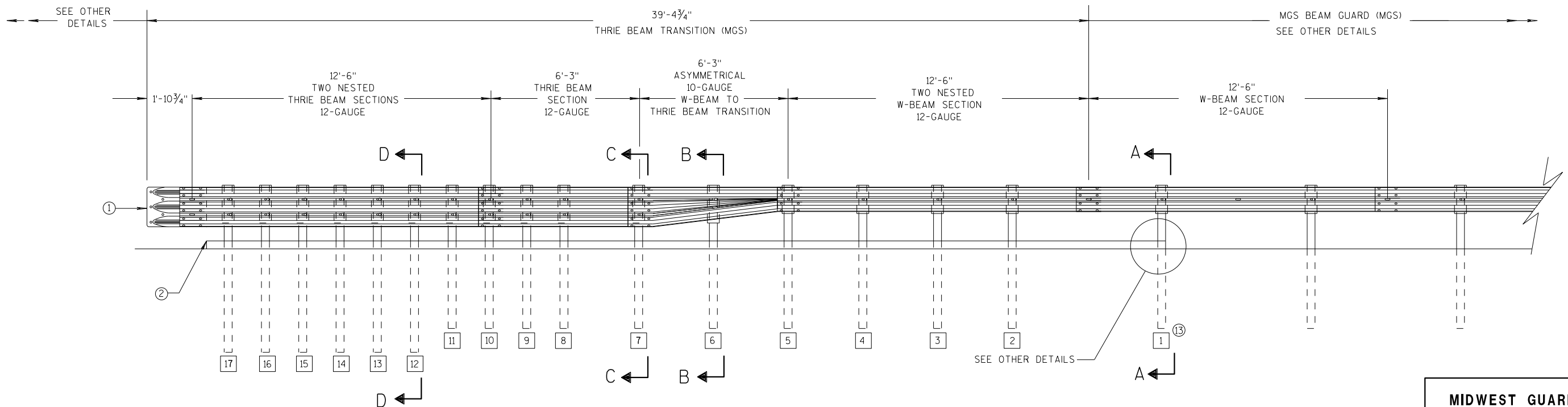
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



**PLAN VIEW**



**ELEVATION VIEW**

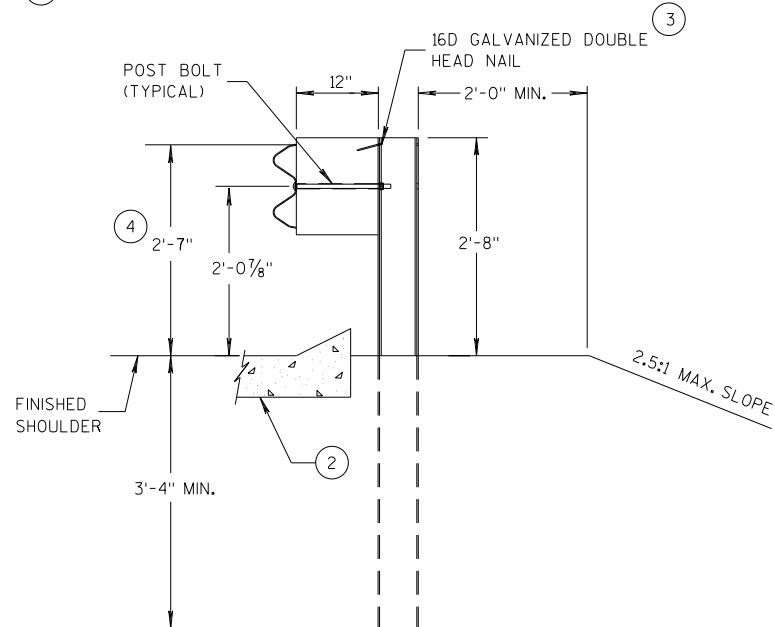
**MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION**

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

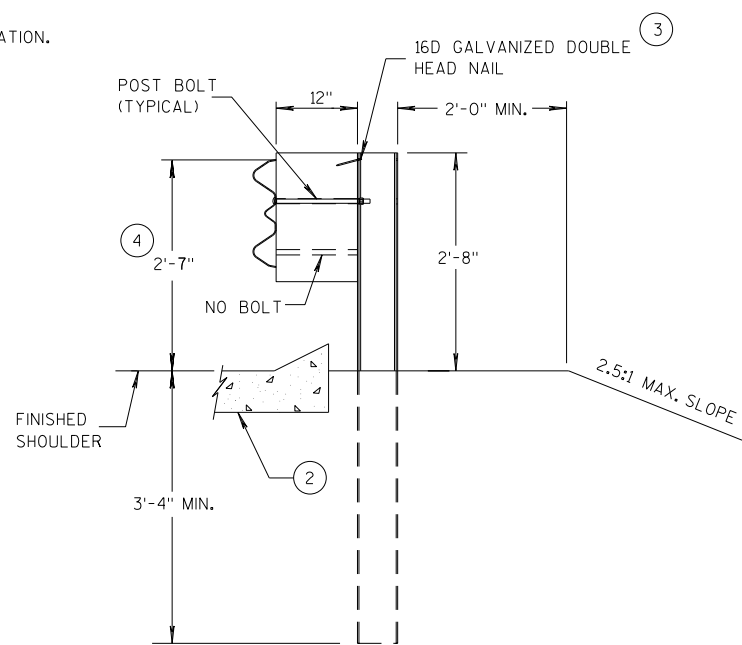
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

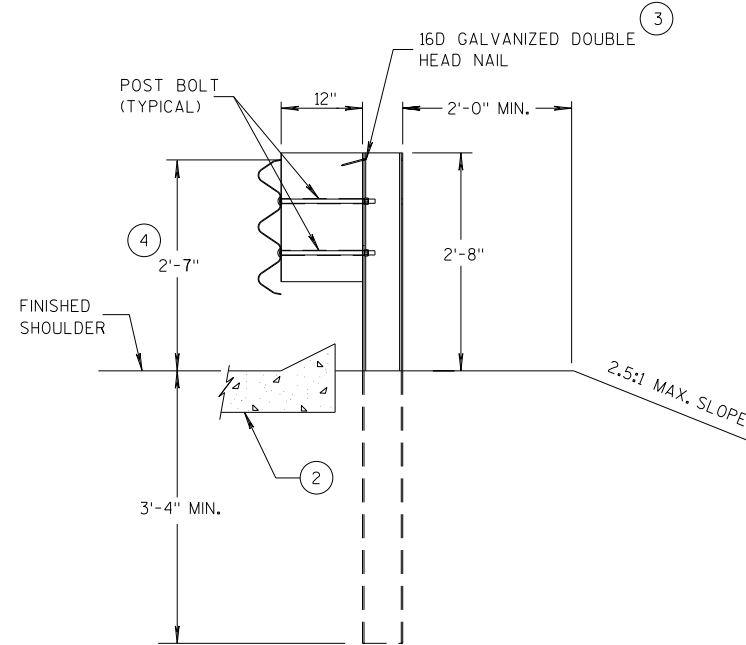
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



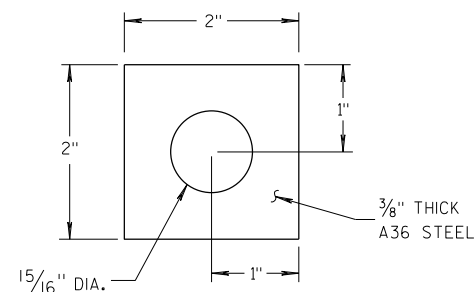
**SECTION A-A  
POSTS 1-5**



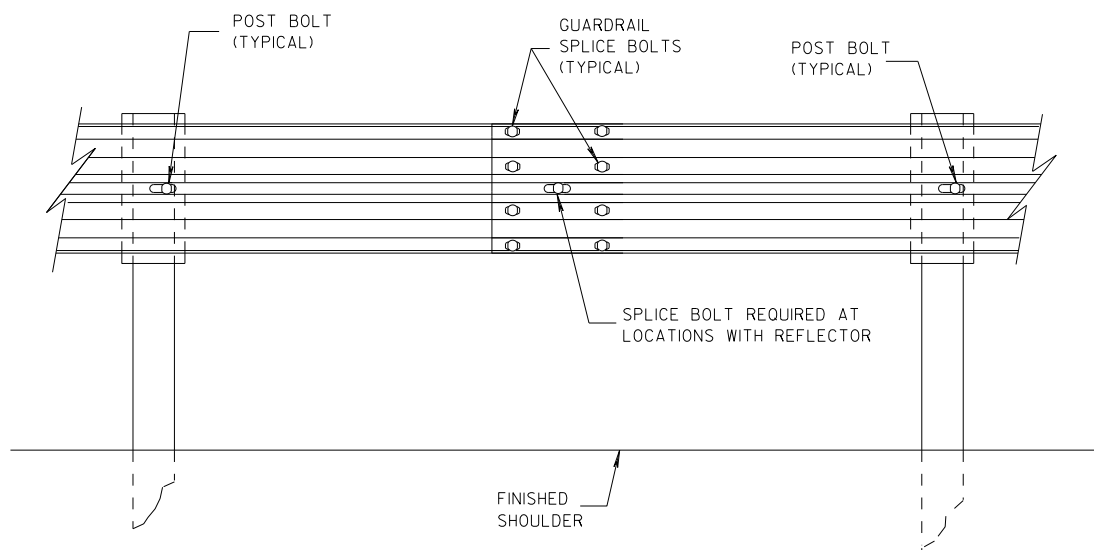
**SECTION B-B  
POST 6**



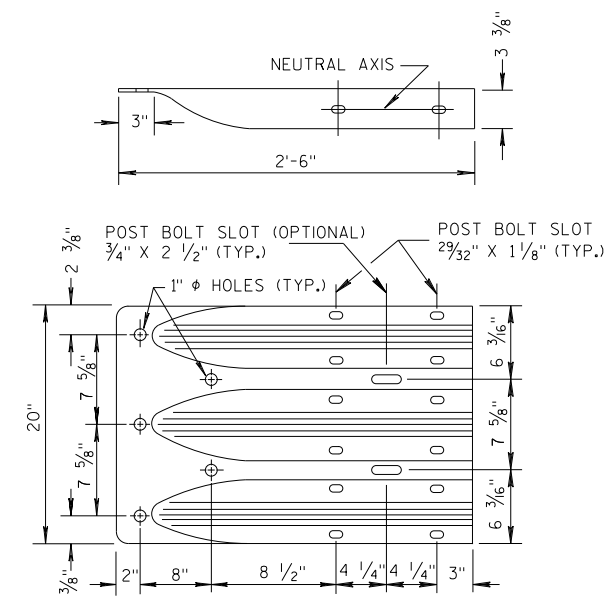
**SECTION C-C  
POSTS 7-11**



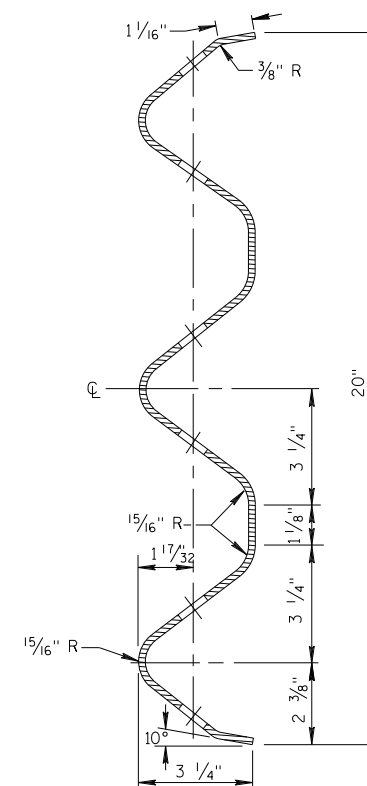
**PLATE WASHER DETAIL**



**SPLICE DETAIL**



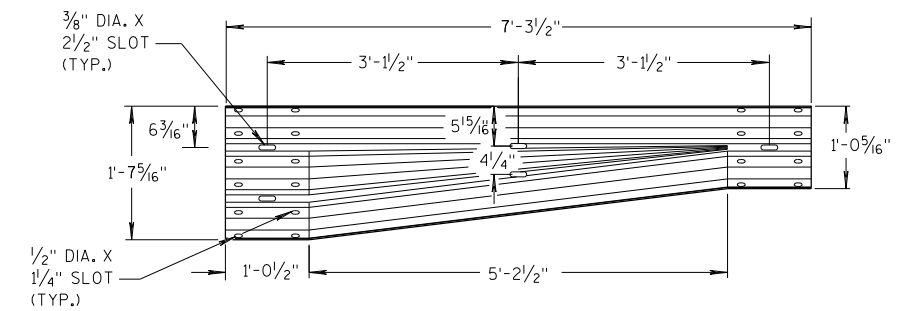
**THRIE BEAM  
TERMINAL CONNECTOR**



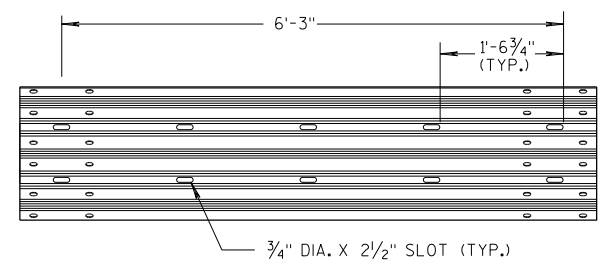
**SECTION THRU THRIE  
BEAM RAIL ELEMENT**

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

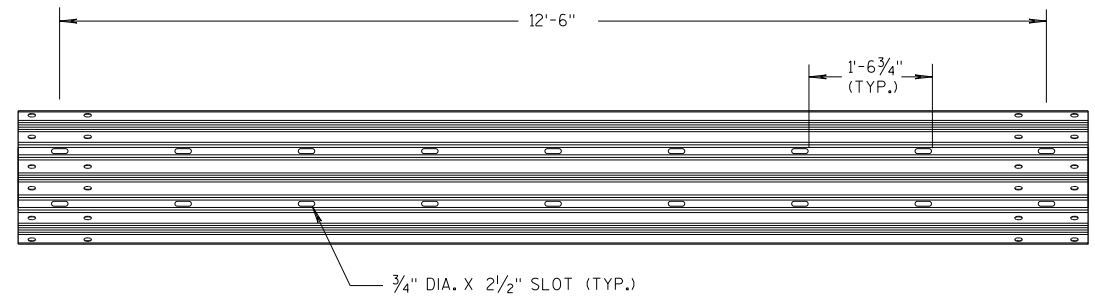
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



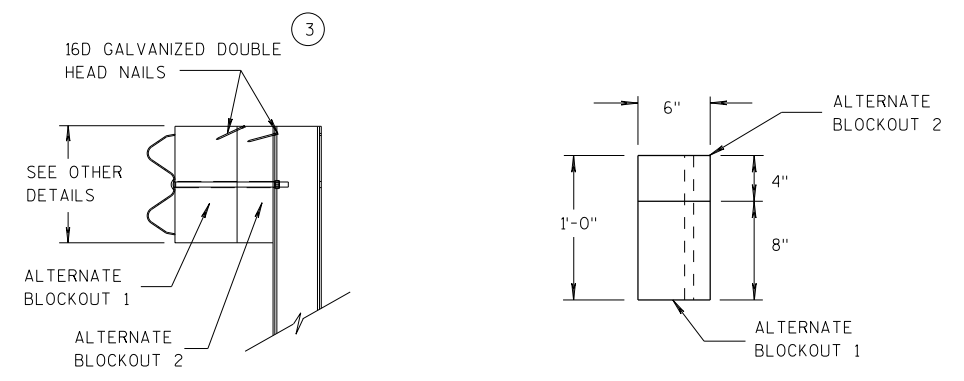
**W-BEAM TO THRIE BEAM TRANSITION SECTION**



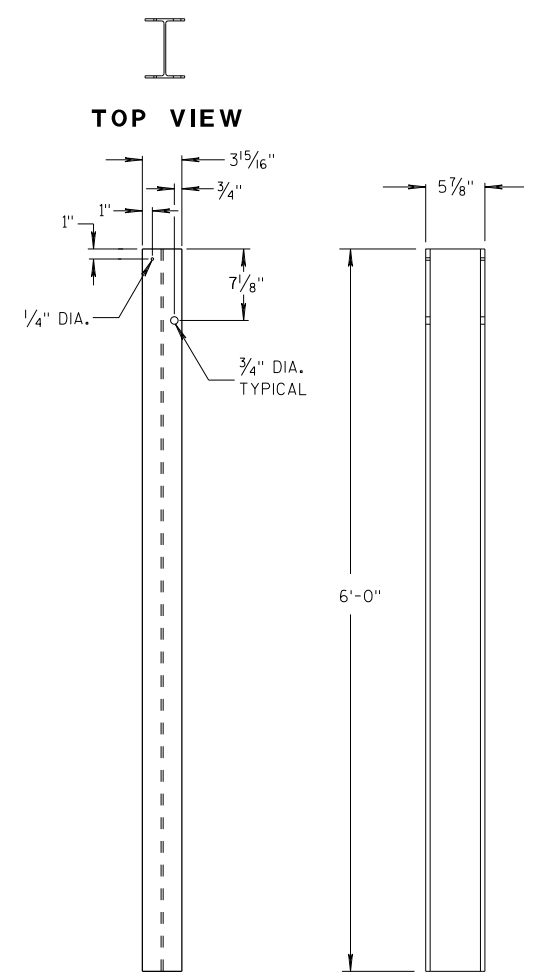
**6'-3\"/>**



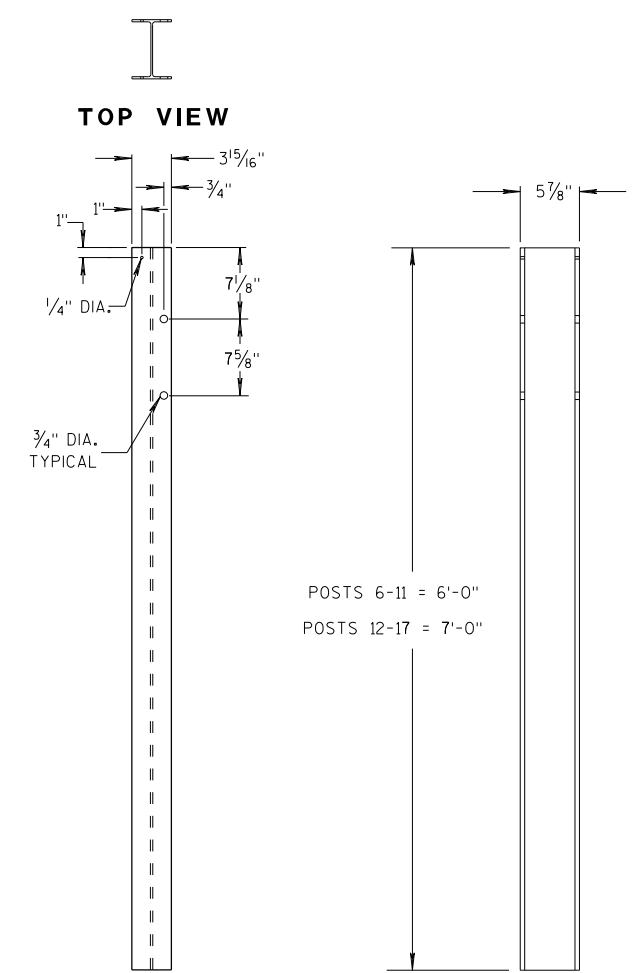
**12'-6\"/>**



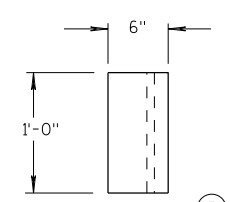
**ALTERNATE WOOD BLOCKOUT DETAIL**



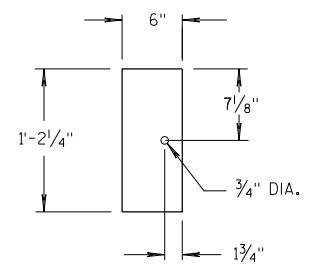
**STEEL POSTS 1-5**



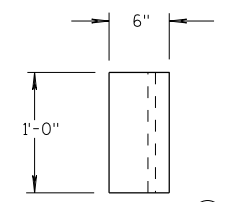
**STEEL POSTS 6-17**



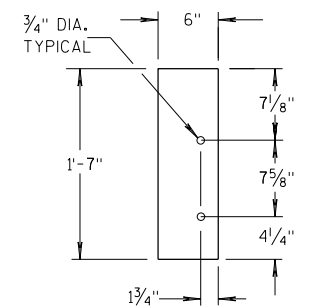
**TOP VIEW**



**BLOCKOUT POSTS 1-5**



**TOP VIEW**



**BLOCKOUT POSTS 6-17**

**GENERAL NOTES**

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

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

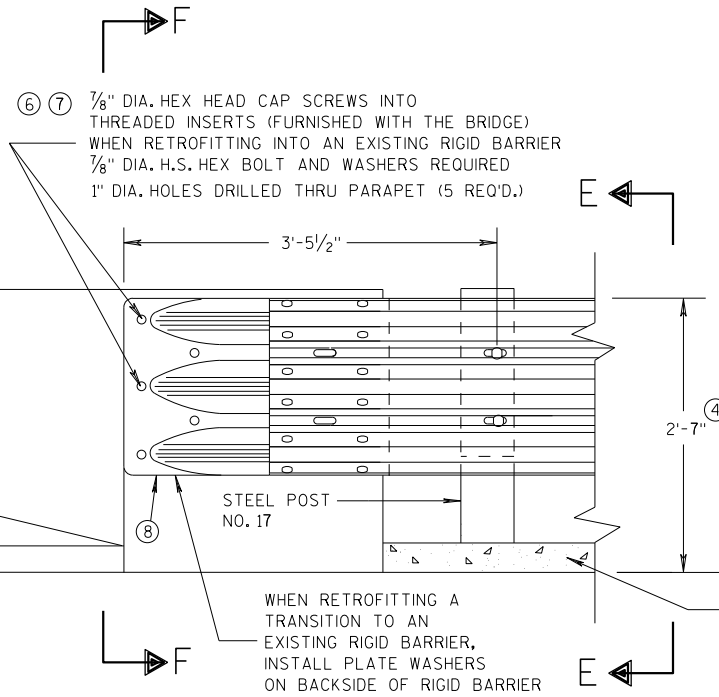
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

6

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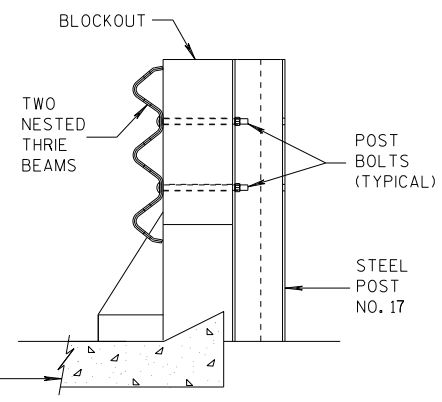
S.D.D. 14 B 45-5c

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



FRONT VIEW

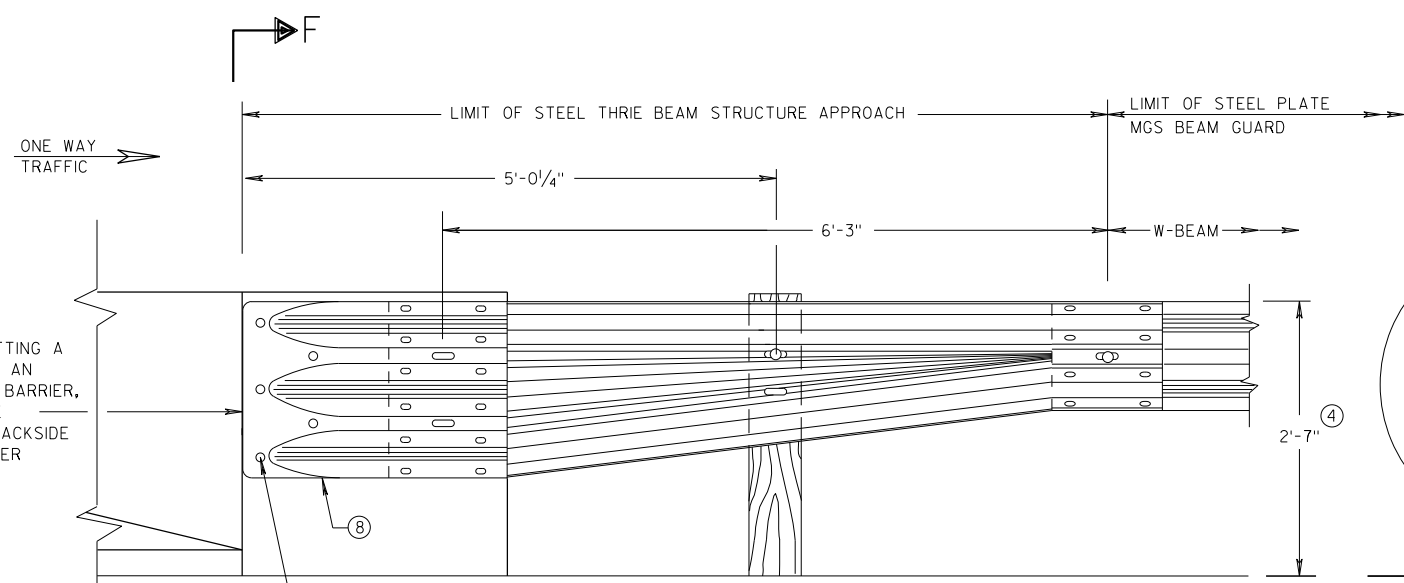
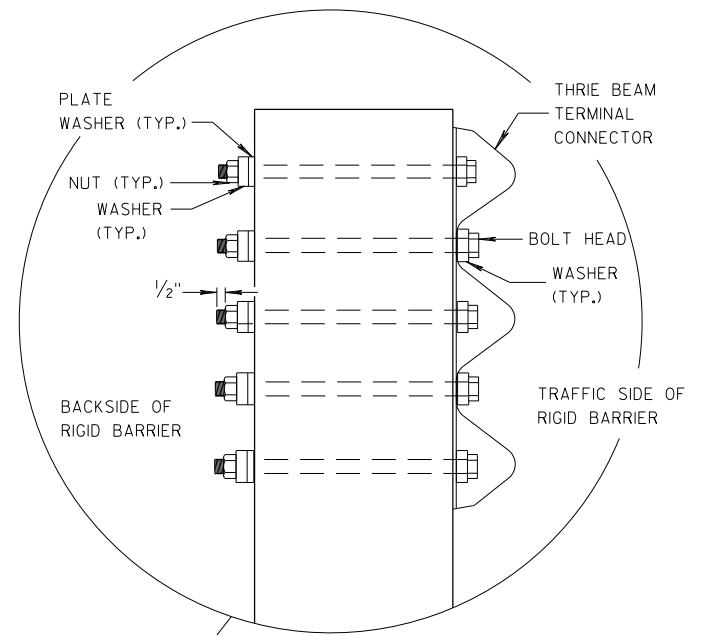
**THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS**



SECTION E-E

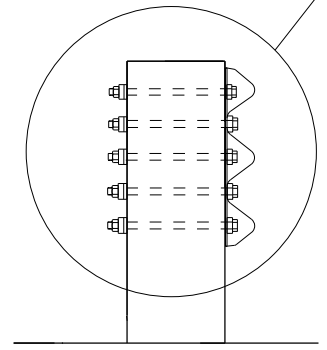
**GENERAL NOTES**

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

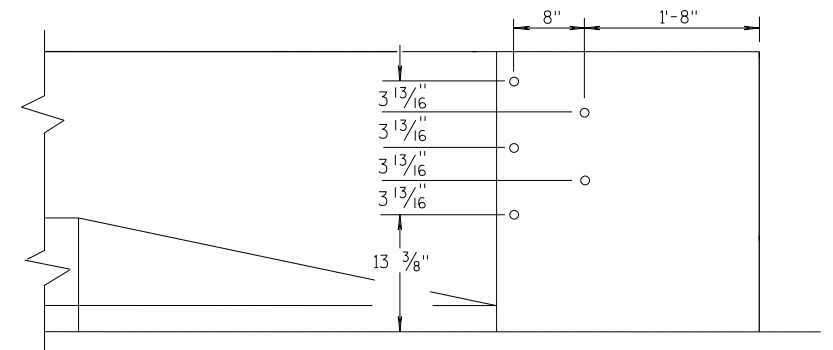


FRONT VIEW

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



SECTION F-F



DRILL HOLE LOCATION

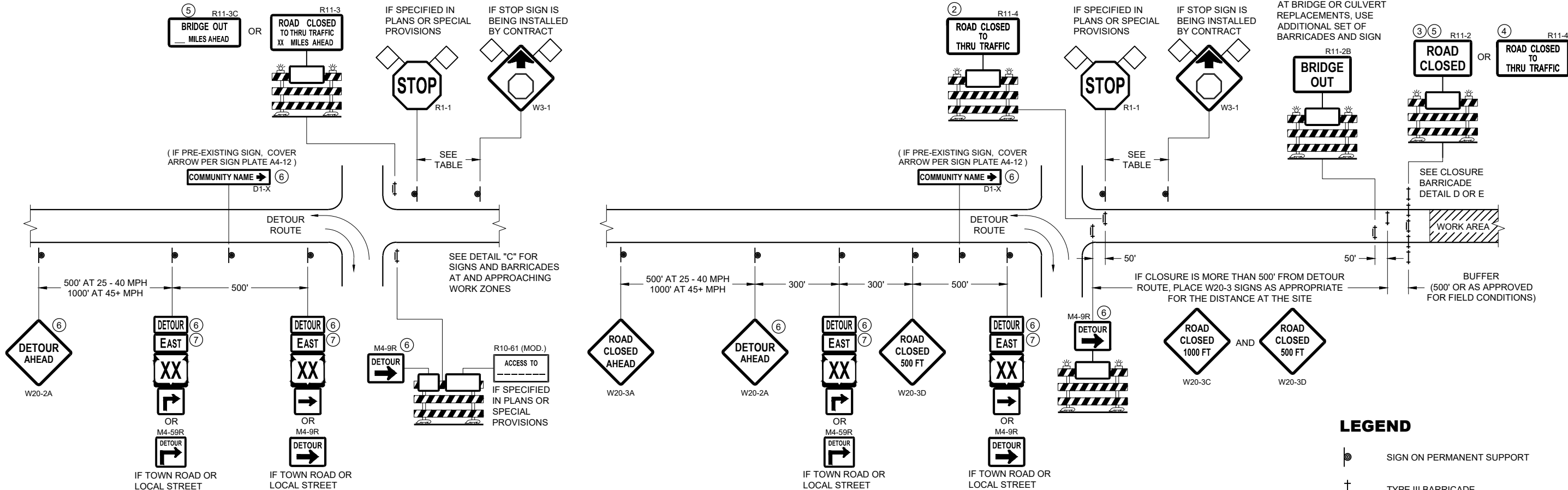
<b>MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

6

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

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



**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**

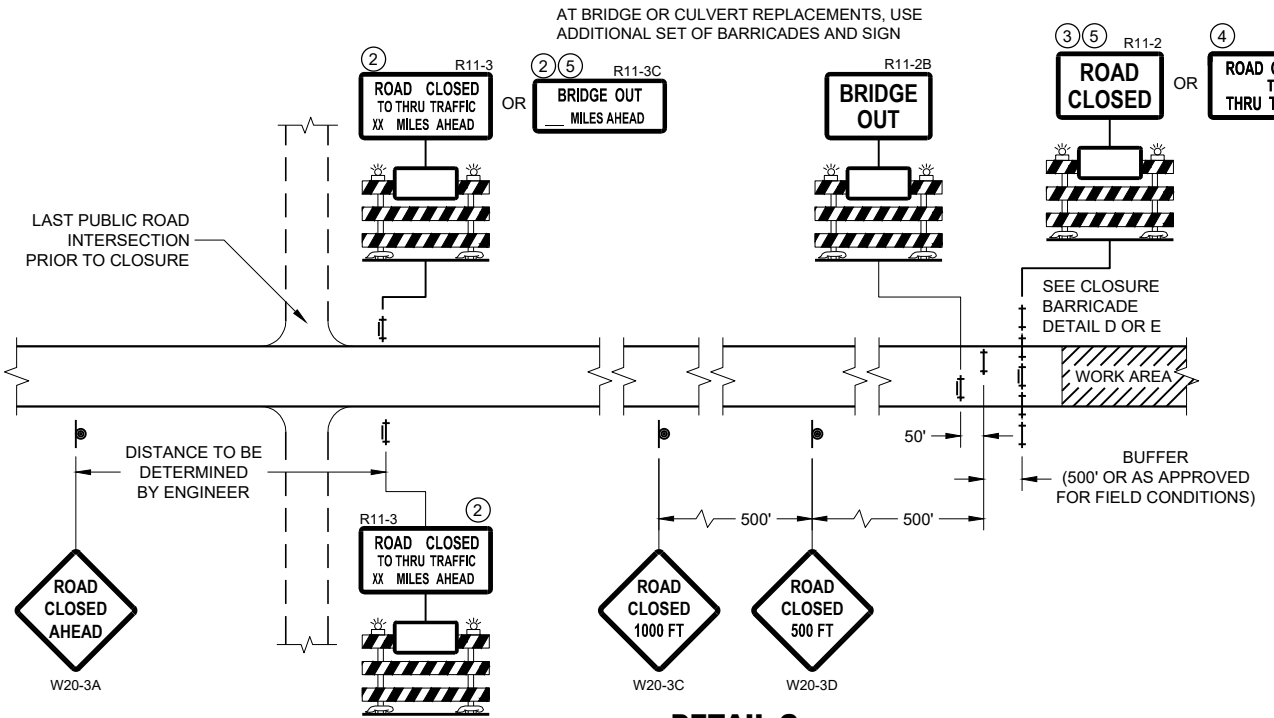
WORK ZONE LESS THAN 1/2 MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

**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



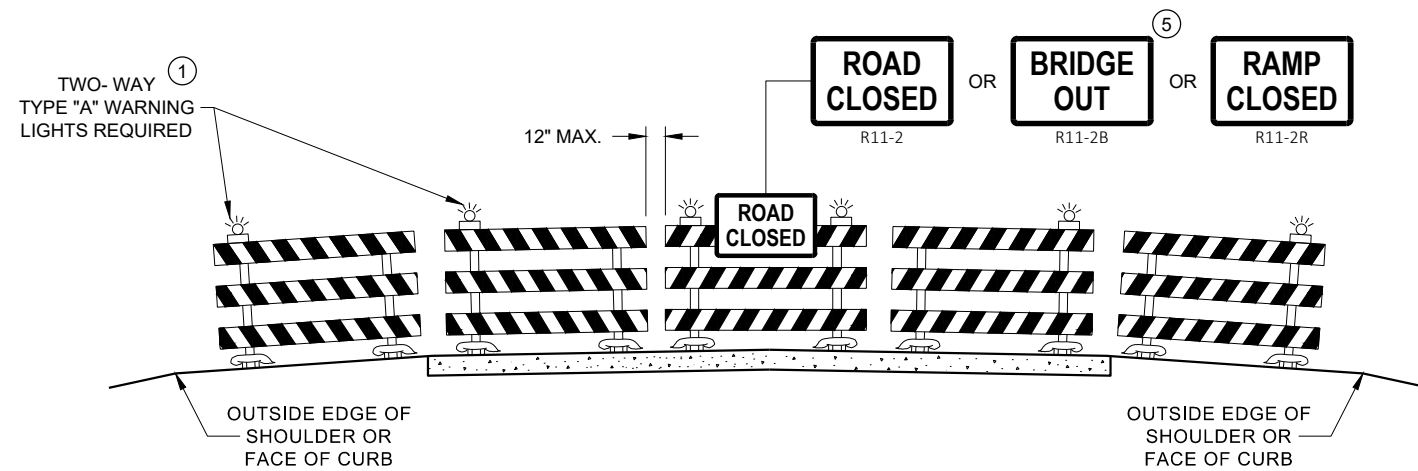
**DETAIL C  
MAINLINE CLOSURE, NO POSTED DETOUR**

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

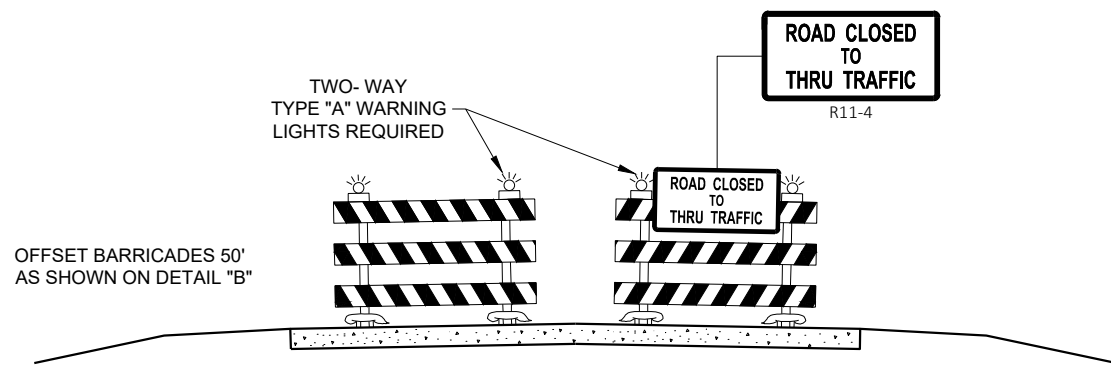
**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /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:

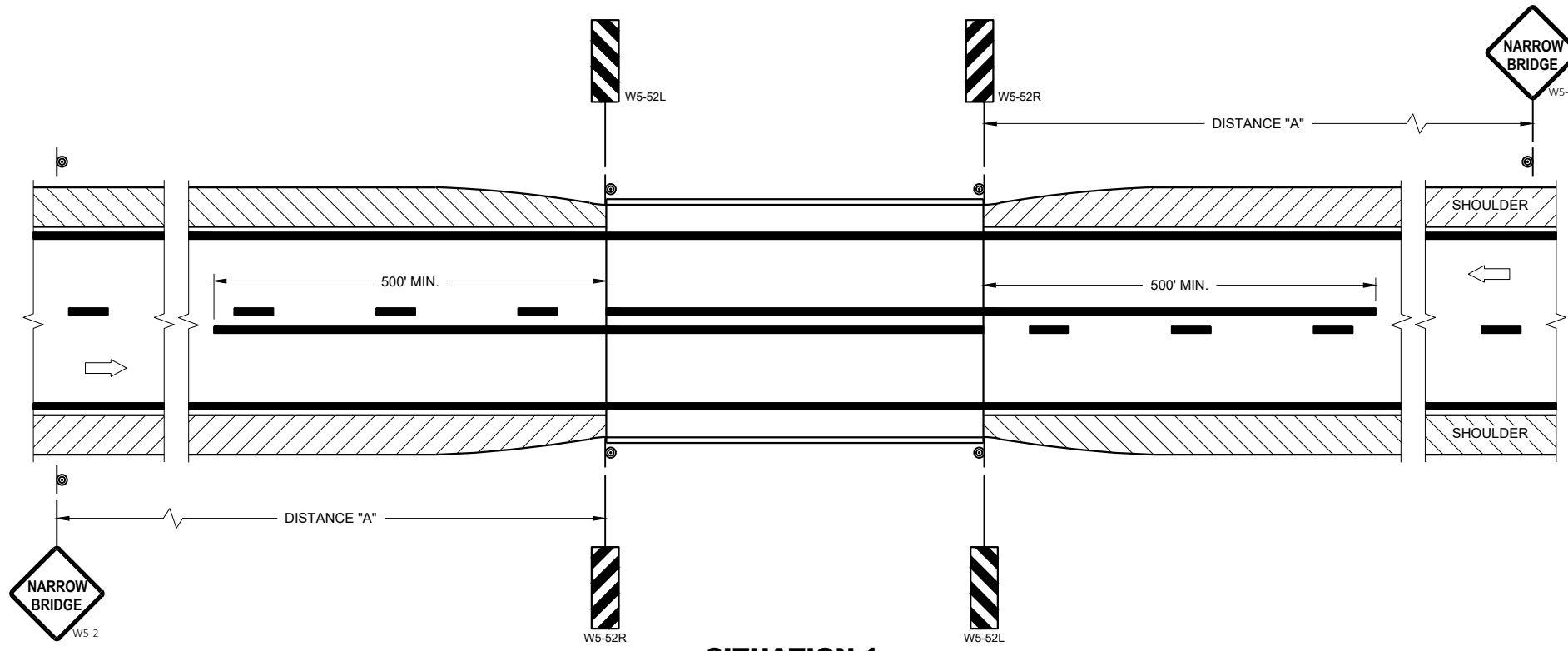
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" 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.

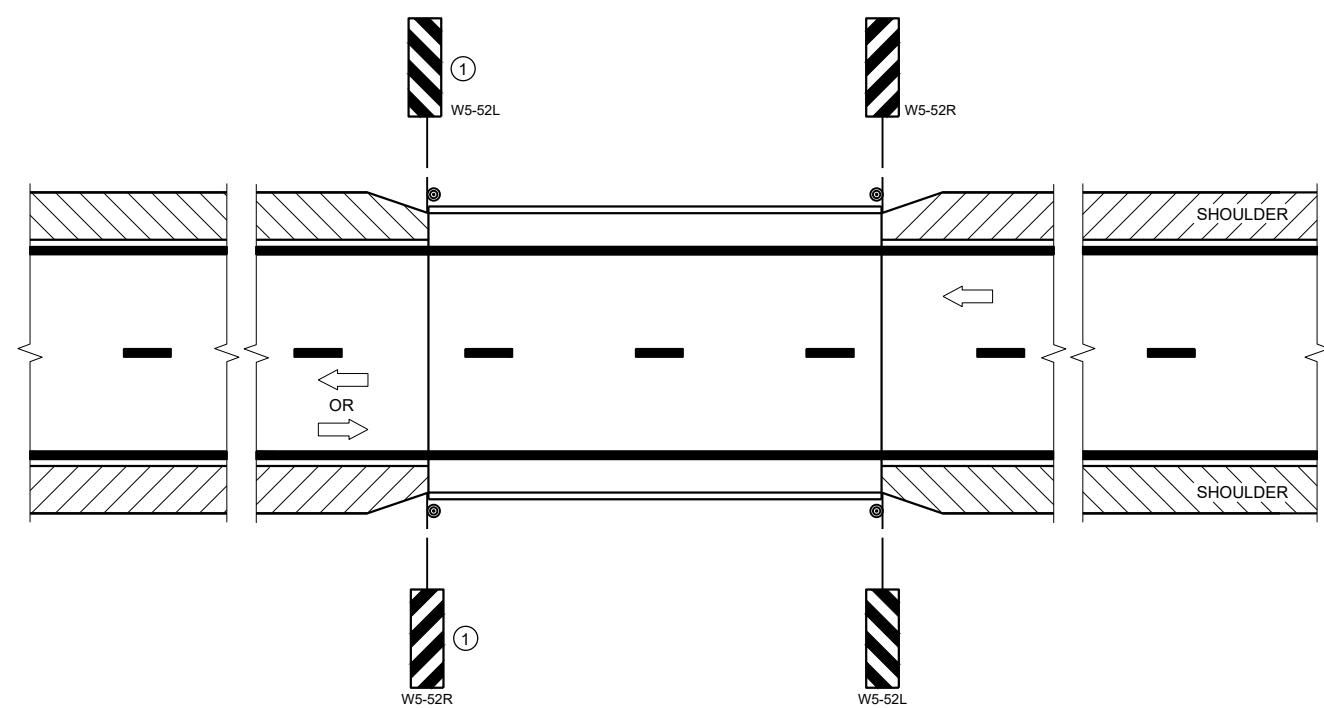
**BARRICADES AND SIGNS  
FOR  
VARIOUS CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



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



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

**GENERAL NOTES**

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

**LEGEND**

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

**DISTANCE TABLE**

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

6

6

SDD 15C06 - 10

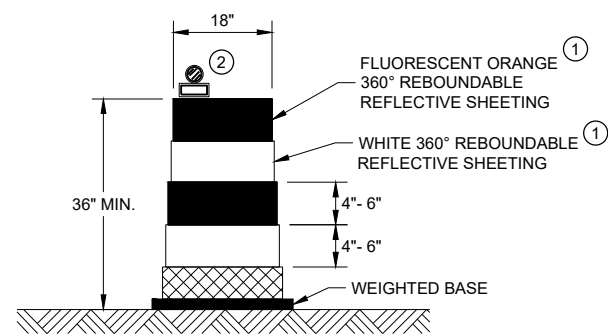
SDD 15C06 - 10

**SIGNING AND MARKING FOR TWO LANE BRIDGES**

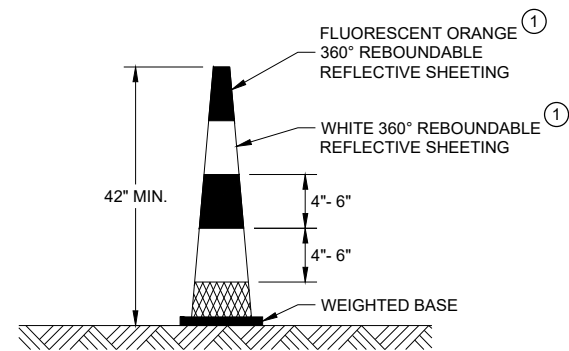
STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

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

FHWA

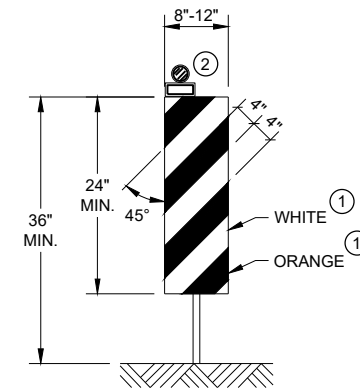


**DRUM**



**42" CONE**

DO NOT USE IN TAPERS  
 1/2 SPACING OF DRUMS

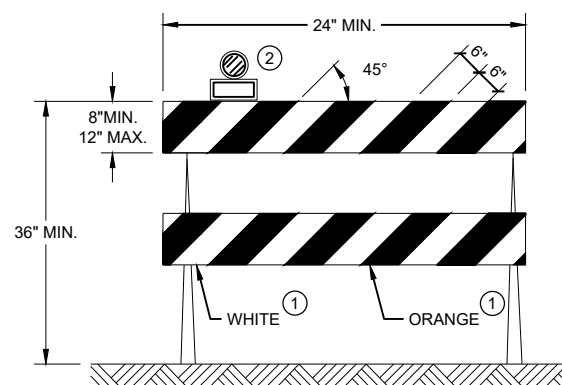


**VERTICAL PANEL**

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

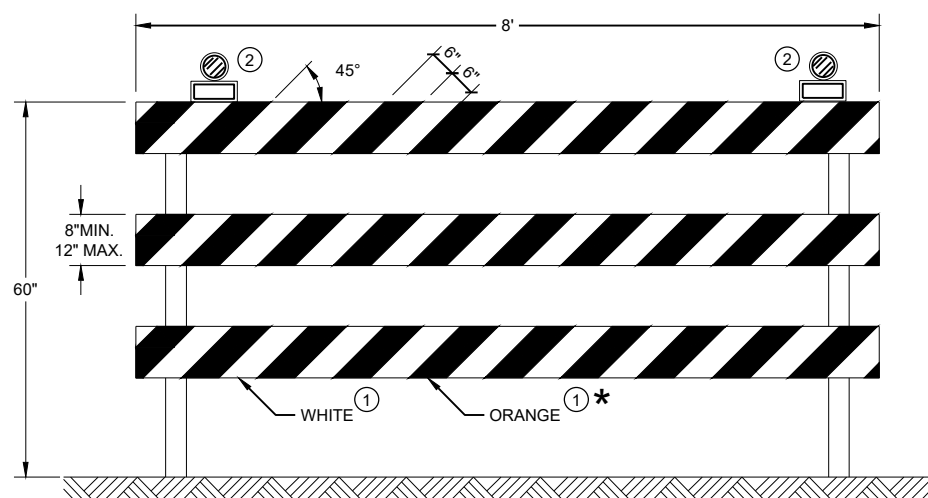
**GENERAL NOTES**

- 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**

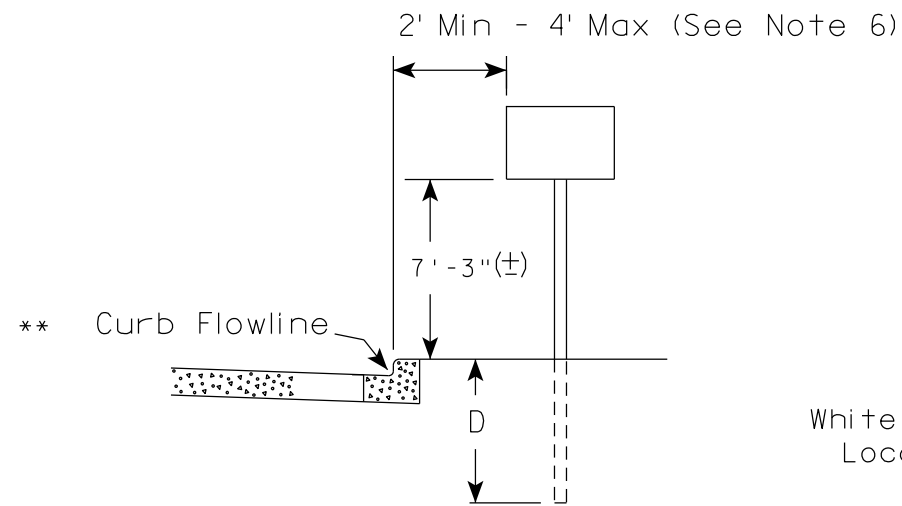
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

\* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

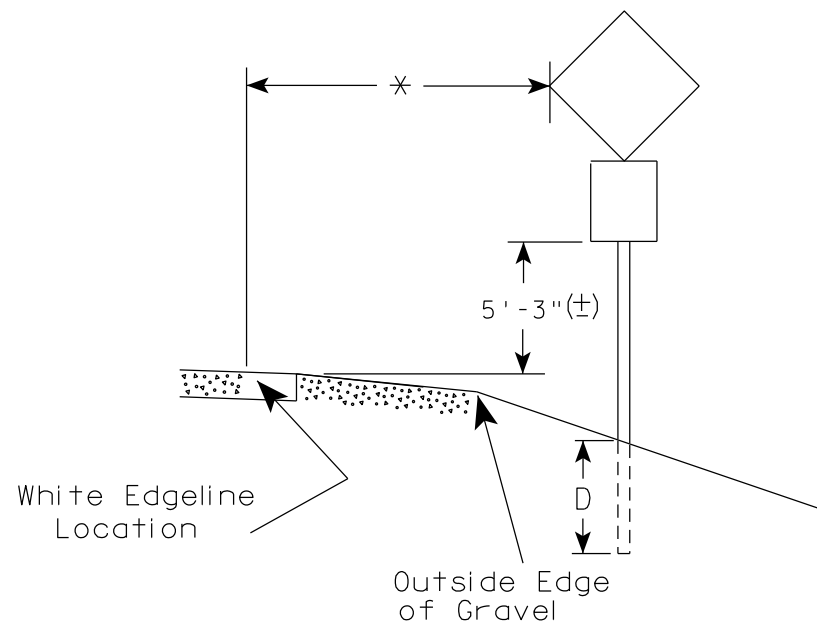
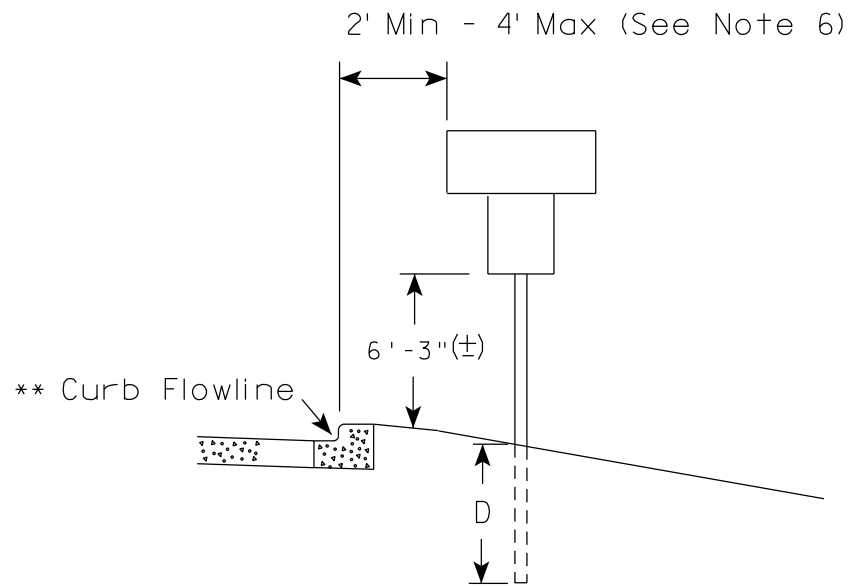
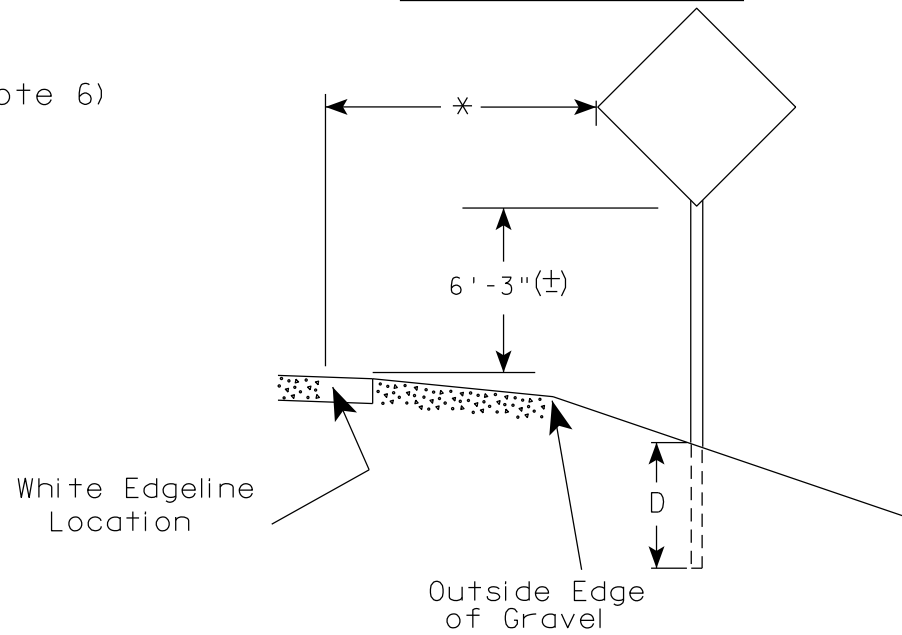
<b>CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

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

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.

\* \* 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.

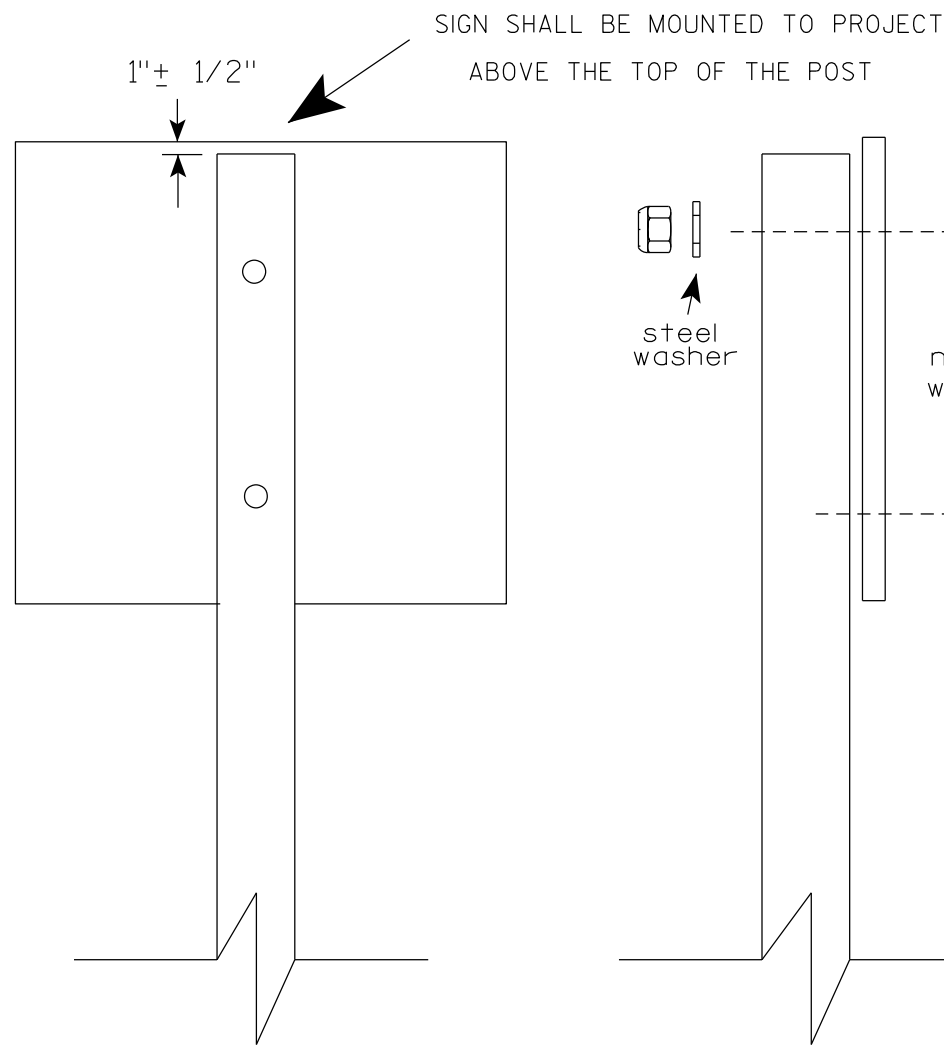
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

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 :

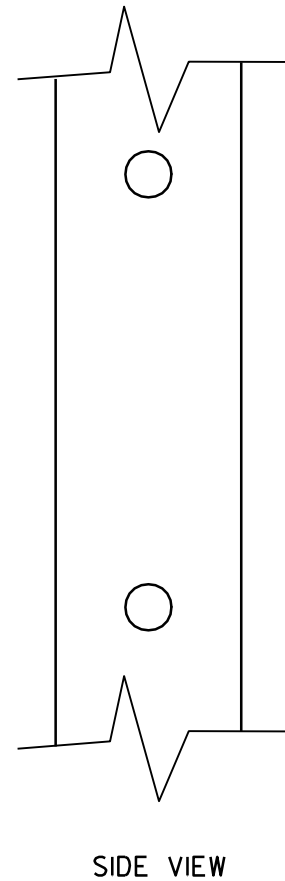
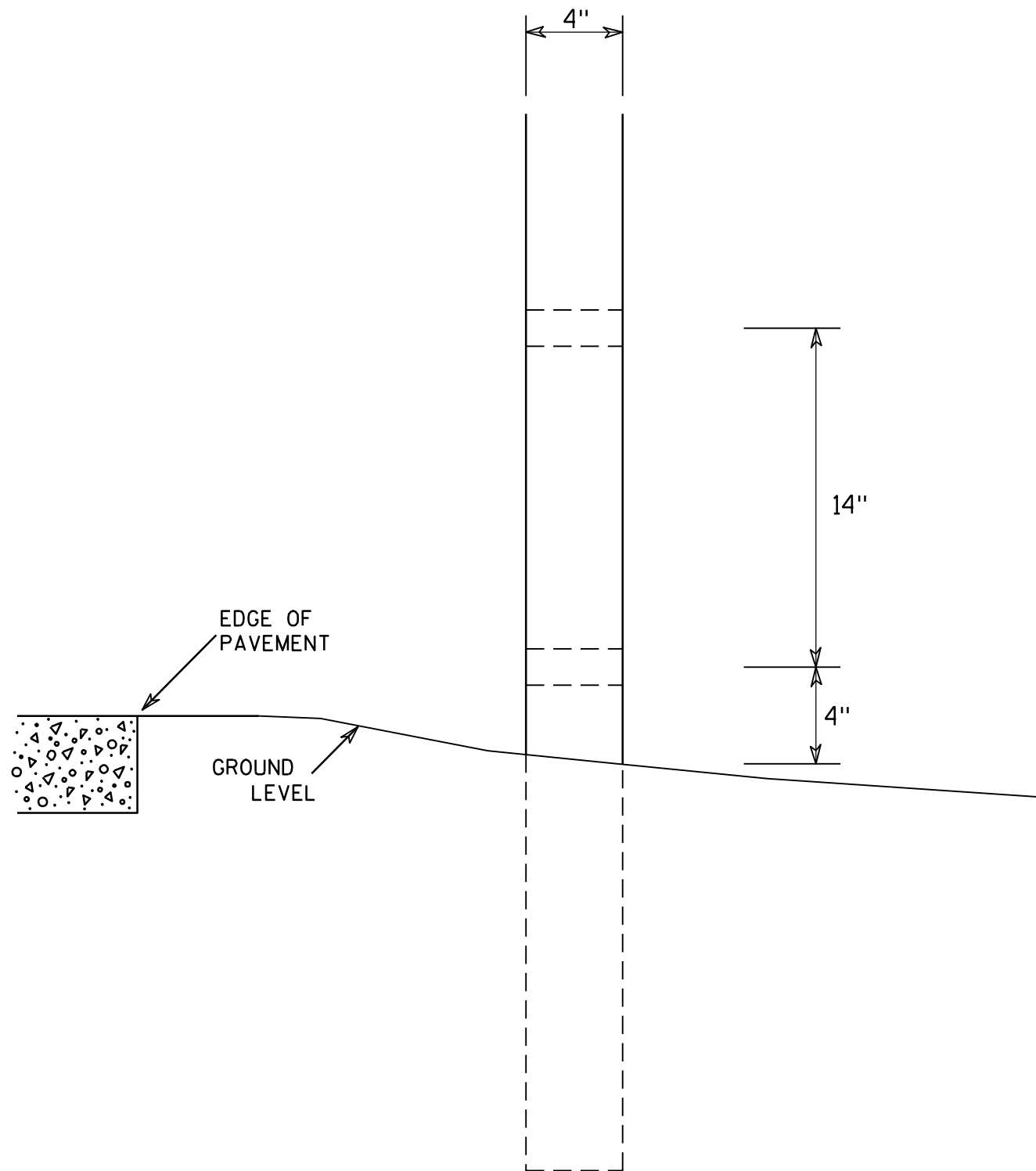
- Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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



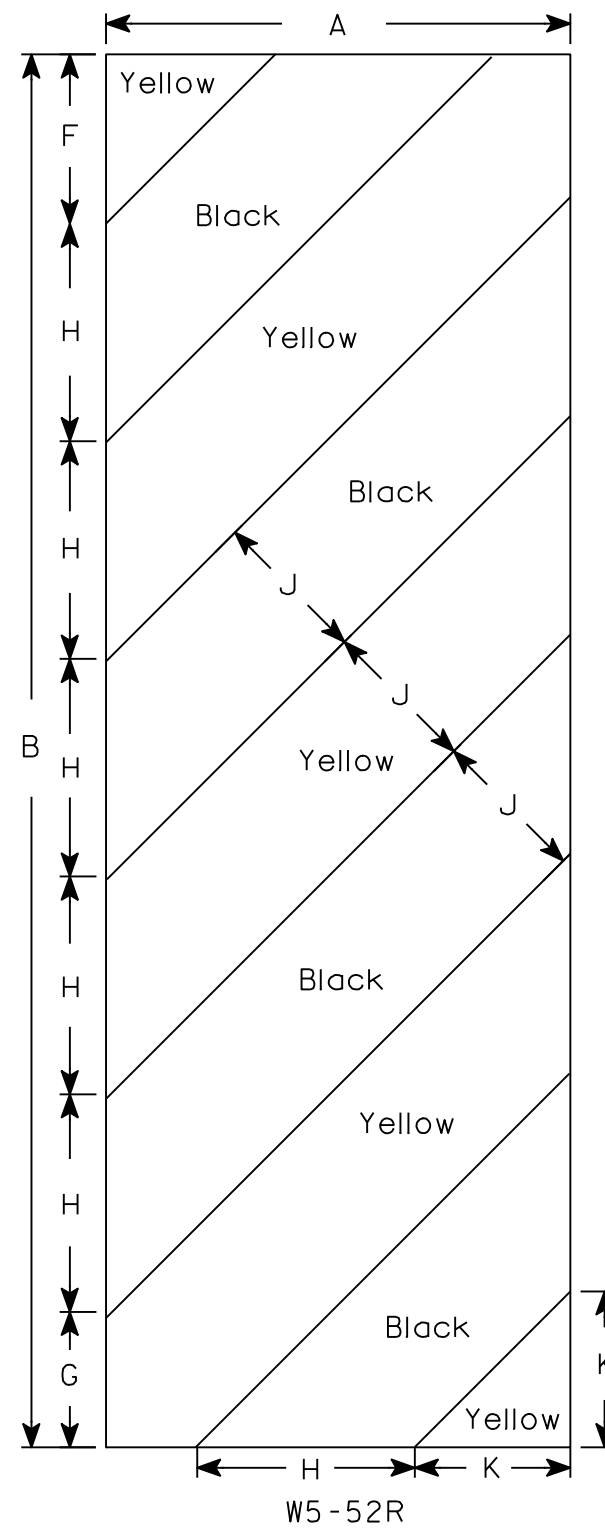
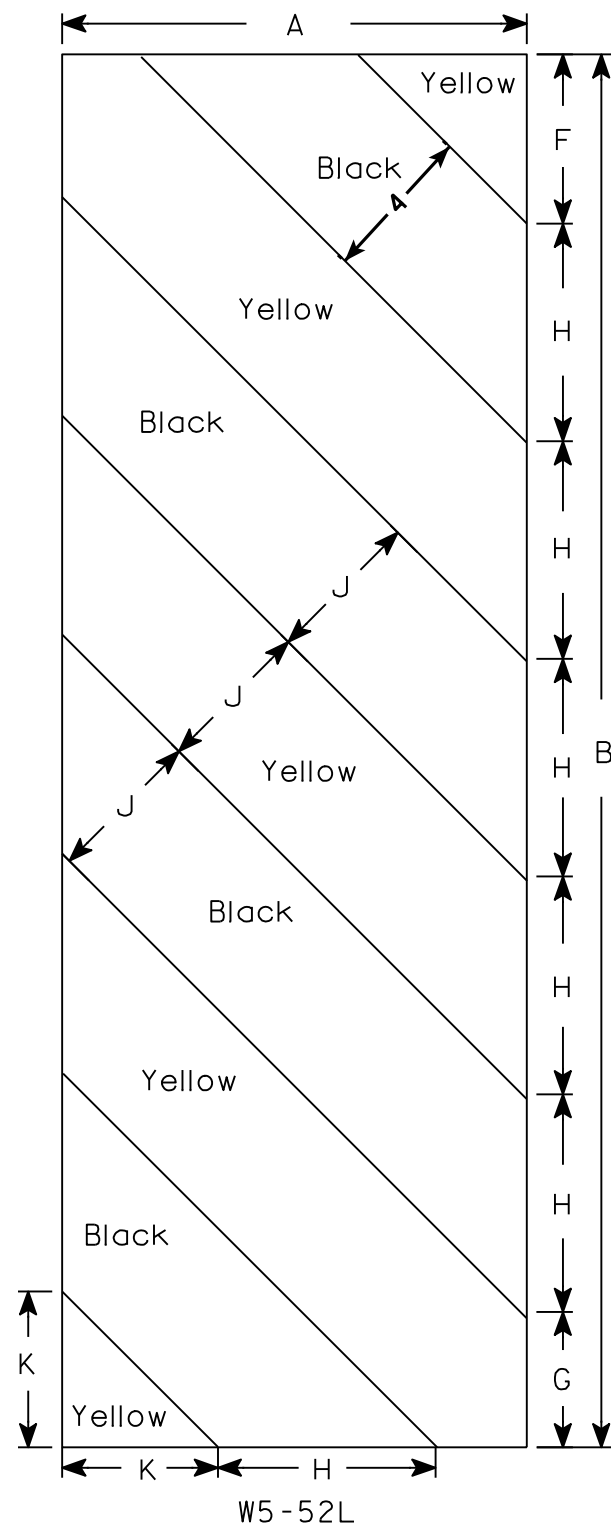
GENERAL NOTES

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

7

7

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



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

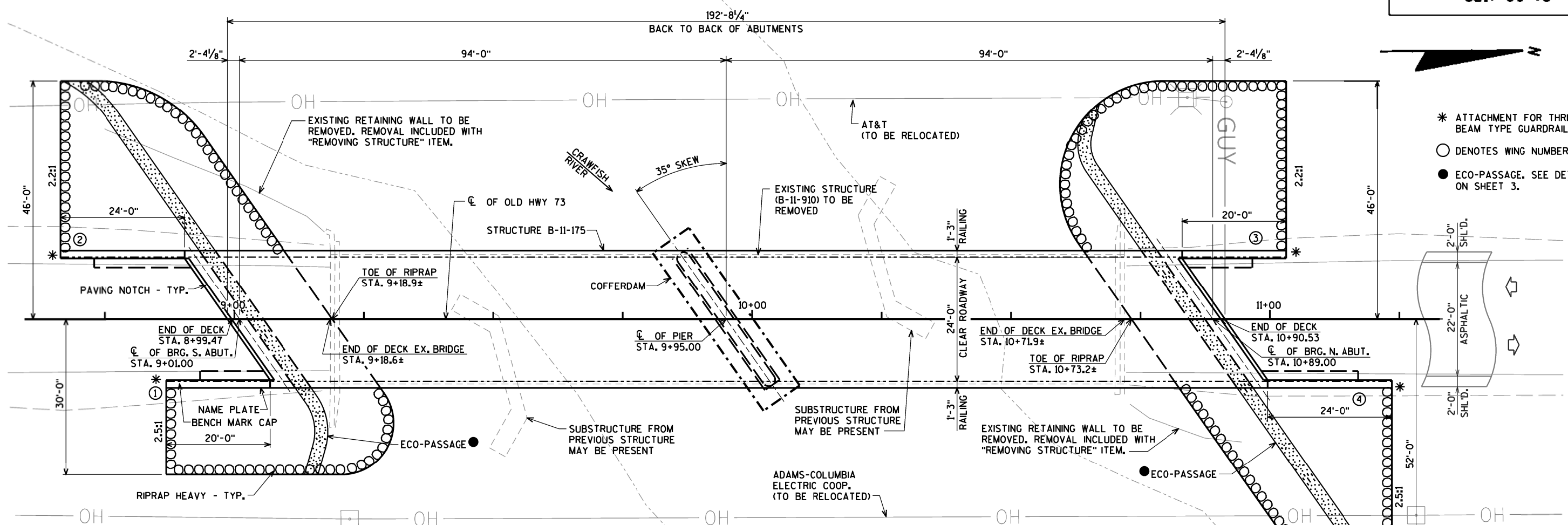
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E



- \* ATTACHMENT FOR THRIE BEAM TYPE GUARDRAIL.
- DENOTES WING NUMBER.
- ECO-PASSAGE. SEE DETAIL ON SHEET 3.



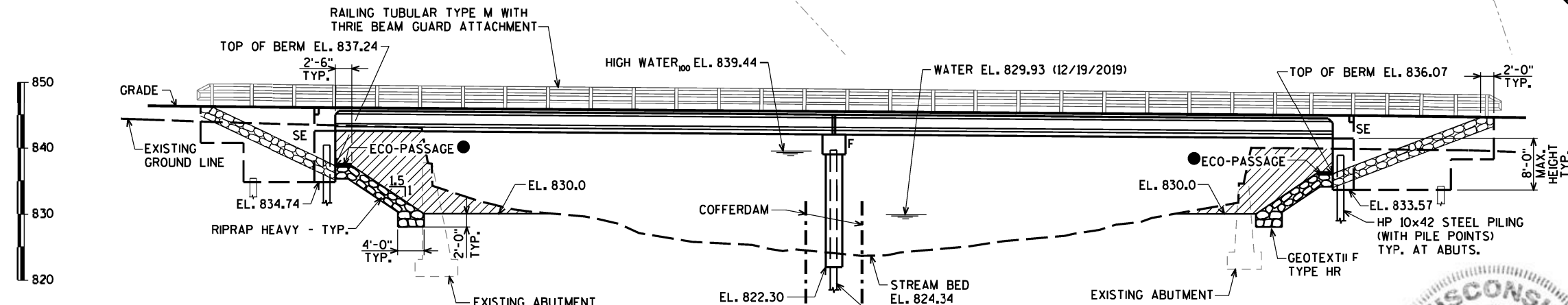
**PLAN**

TWO-SPAN 36W" PRESTRESSED CONCRETE GIRDER BRIDGE

9/1/2022 PENTABLE:Requ-shd\_util.tbl

DATE: DATE:  
CHECKED BY: BACK CHECKED BY:  
CORRECTED BY:

8



**ELEVATION**

(NORMAL TO C OF CRAWFISH RIVER)

SEE SHEET 2 FOR TYPICAL SECTION, PROFILE AND DESIGN DATA

COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-11-175".

REMOVE EXISTING SUBSTRUCTURE AS NEEDED. COST INCLUDED WITH "REMOVING STRUCTURE" ITEM. TYPICAL AT ALL SUBSTRUCTURES.

**LIST OF DRAWINGS**

1. GENERAL PLAN
2. QUANTITIES, TYPICAL SECTION & NOTES
3. STRUCTURE DETAILS
4. SUBSURFACE EXPLORATION
5. SOUTH ABUTMENT
6. SOUTH ABUTMENT PILE LAYOUT
7. SOUTH ABUTMENT WING 1 DETAILS
8. SOUTH ABUTMENT WING 2 DETAILS
9. SOUTH ABUTMENT SECTIONS THRU WINGS 1 & 2
10. SOUTH ABUTMENT DETAILS AND BILL OF BARS
11. NCRTH ABUTMENT
12. NCRTH ABUTMENT PILE LAYOUT
13. NCRTH ABUTMENT WING 3 DETAILS
14. NORTH ABUTMENT WING 4 DETAILS
15. NORTH ABUTMENT SECTIONS THRU WINGS 3 & 4
16. NORTH ABUTMENT DETAILS AND BILL OF BARS
17. PIER
18. STEEL DIAPHRAGM
19. 36W" PRESTRESSED GIRDER DETAILS
20. 36W" PRESTRESSED GIRDER DETAILS
21. SUPERSTRUCTURE
22. SUPERSTRUCTURE PLAN
23. SUPERSTRUCTURE TRANSVERSE STEEL LAYOUT
24. SUPERSTRUCTURE DETAILS
25. SUPERSTRUCTURE ELEVATIONS AND BEARINGS
26. TUBULAR STEEL RAILING TYPE 'M'



09/01/2022

BRIDGE OFFICE CONTACT:  
AARON BONK  
(608)-261-0261

CONSULTANT CONTACT:  
DAN SYDOW  
(715)-834-3161

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY  
**AVRES** 3433 Oakwood Hills Parkway  
Eau Claire, WI 54701  
www.AyresAssociates.com

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

ACCEPTED: *[Signature]* SDR **11/15/22**  
CHIEF STRUCTURES DESIGN ENGINEER DATE

**STRUCTURE B-11-175**

OLD HWY 73 OVER CRAWFISH RIVER

COUNTY: COLUMBIA TOWN/CITY/VILLAGE: COLUMBUS

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY: ZSS DESIGN CR'D: JLB DRAWN BY: ZSS/CLP PLANS CR'D: DNS

**GENERAL PLAN** SHEET 1 OF 26

8

**TOTAL ESTIMATED QUANTITIES**

BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	PIER	N. ABUT.	SUPER.	TOTAL
203.0250	REMOVING STRUCTURE OVER WATERWAY REMOVE DEBRIS B-11-910	EACH	-----	-----	-----	-----	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-11-175	EACH	-----	-----	-----	-----	1
206.5001	COFFERDAMS B-11-175	EACH	-----	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	295	-----	295	-----	590
502.0100	CONCRETE MASONRY BRIDGES	CY	70.1	69.6	56.0	182.1	378
502.3200	PROTECTIVE SURFACE TREATMENT	SY	35	-----	35	655	725
502.9000.S	UNDERWATER SUBSTRUCTURE INSPECTION B-11-175	EACH	-----	1	-----	-----	1
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	-----	-----	-----	755	755
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	3,340	2,860	3,220	-----	9,420
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	4,350	20	4,340	41,370	50,080
506.2605	BEARING PADS ELASOMERIC NON-LAMINATED	EACH	-----	-----	-----	16	16
506.4000	STEEL DIAPHRAGMS B-11-175	EACH	-----	-----	-----	12	12
513.4061	RAILING TUBULAR TYPE M	LF	46.2	-----	46.2	385.4	477.8
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	12	-----	12	-----	24
550.0500	PILE POINTS	EACH	9	9	9	-----	27
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	315	-----	315	-----	630
550.1120	PILING STEEL HP 12-INCH x 53 LB	LF	-----	315	-----	-----	315
606.0300	RIPRAP HEAVY	CY	195	-----	245	-----	440
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	105	-----	105	-----	210
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	55	-----	55	-----	110
645.0120	GEOTEXTILE TYPE HR	SY	340	-----	425	-----	765
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	7	-----	8	-----	15
NON-BID ITEMS							
	FILLER	SIZE	-----	-----	-----	-----	1/2" & 3/4"

**GENERAL NOTES**

DRAWINGS SHALL NOT BE SCALED.  
 BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.  
 THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE. JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.  
 THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.  
 ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.  
 THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-11-175" SHALL BE THE EXISTING GROUNDLINE.  
 THE EXISTING STRUCTURE, B-11-910, TO BE REMOVED, IS A SINGLE SPAN STEEL OVERHEAD TRUSS BRIDGE ON CONCRETE ABUTMENTS, 154 FT. LONG WITH A 23.9 FT. CLEAR ROADWAY WIDTH.  
 PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON SHEET 3, THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND FRONT FACE OF ABUTMENTS TO 1'-0" PAST THE EDGE OF DECK.  
 BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.

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 BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3- FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.  
 EXISTING SUBSTRUCTURE LOCATIONS ARE BASED ON SURVEY AND ORIGINAL PLANS. APPROXIMATE EXTENT OF BELOW GRADE SUBSTRUCTURES ARE SHOWN ON PLAN. REMOVE EXISTING SUBSTRUCTURES AS NEEDED TO BUILD NEW SUBSTRUCTURES. COST OF SUBSTRUCTURE REMOVAL IS INCLUDED WITH "REMOVING STRUCTURE" BID ITEM.  
 CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 5C2.3.5.3 OF THE STANDARD SPECIFICATIONS.  
 THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAILS SHEET, WHICH IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH THE CONTRACTOR WILL BE PAID.

**DESIGN DATA**

**LIVE LOADS:**

DESIGN LOADING: HL-93  
 INVENTORY RATING FACTOR: 1.14  
 OPERATING RATING FACTOR: 1.52  
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 #/S.F.

**MATERIAL PROPERTIES:**

CONCRETE MASONRY { SUPERSTRUCTURE f'c = 4,000 p.s.i.  
 { ALL OTHER f'c = 3,500 p.s.i.  
 HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) fy = 60,000 p.s.i.  
 36W" PRESTRESSED GIRDER  
 CONCRETE MASONRY f'c = 8,000 p.s.i.  
 STRANDS - 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF = 270,000 p.s.i.

**HYDRAULIC DATA:**

<b>100 YEAR FREQUENCY</b>	<b>2 YEAR FREQUENCY</b>
Q <sub>100</sub> = 5,670 c.f.s. { BRIDGE = 3,951 c.f.s. { OVERFLOW = 1,719 c.f.s.	Q <sub>2</sub> = 1,800 c.f.s.
VEL <sub>100</sub> = 2.6 f.p.s. HW <sub>100</sub> = EL. 839.44	VEL <sub>2</sub> = 2.0 f.p.s. HW <sub>2</sub> = EL. 835.35
<b>ROADWAY OVERTOPPING FREQUENCY</b>	
WATERWAY AREA = 1,263 sq. ft. DRAINAGE AREA = 153 sq. mi. SCOUR CRITICAL CODE = 5 DATUM = NAVD88 (2012)	FREQUENCY = 13 YEARS Q <sub>13</sub> = 3,200 c.f.s. HW <sub>13</sub> = EL. 837.32

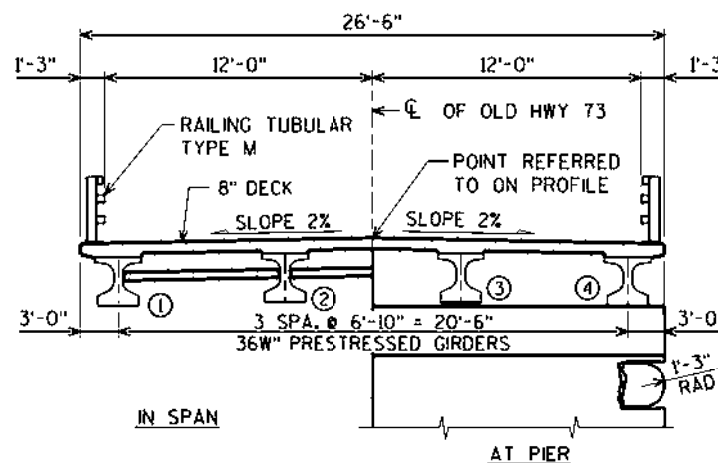
**FOUNDATION DATA:**

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS + PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 35'-0".  
 PIER TO BE SUPPORTED ON HP 12 x 53 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS+ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 35'-0".

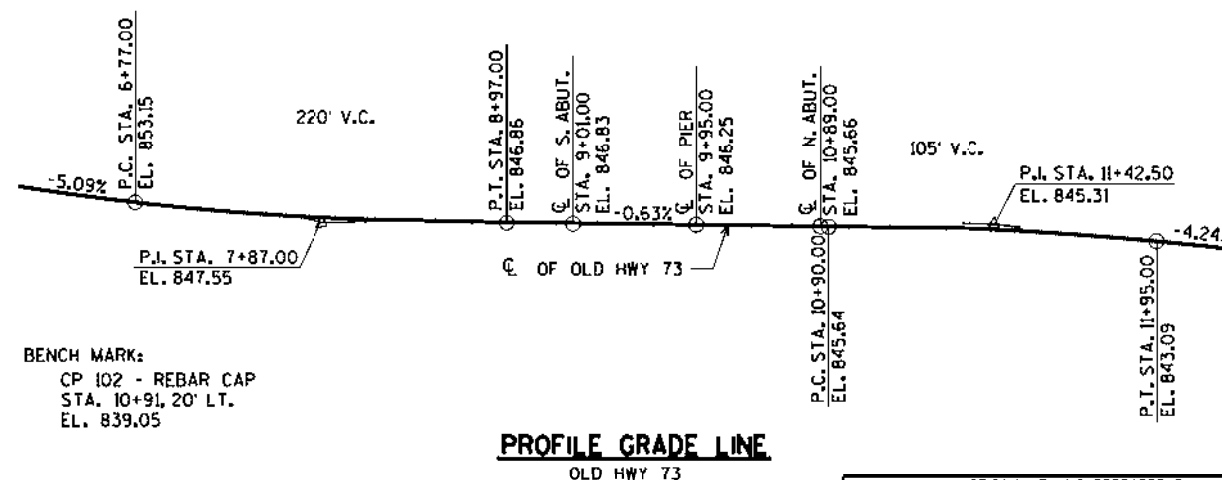
\*THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

**TRAFFIC DATA:**

A.A.D.T. = 190 (2023)  
 A.A.D.T. = 210 (2043)  
 R.D.S. = 35 M.P.H.



**TYPICAL SECTION THRU BRIDGE**



**PROFILE GRADE LINE**  
 OLD HWY 73

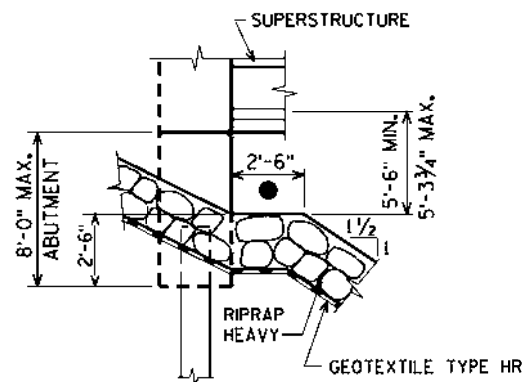
ORIGINAL PLANS PREPARED BY  
**AYRES** 3433 Oakwood Hills Parkway  
 Eau Claire, WI 54701  
 www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY ZSS		PLANS CKD. JLB	
<b>QUANTITIES, TYPICAL SECTION &amp; NOTES</b>			SHEET 2 OF 26

9/1/2022 PENTABLE:BRQuo\_shd\_util.tbl

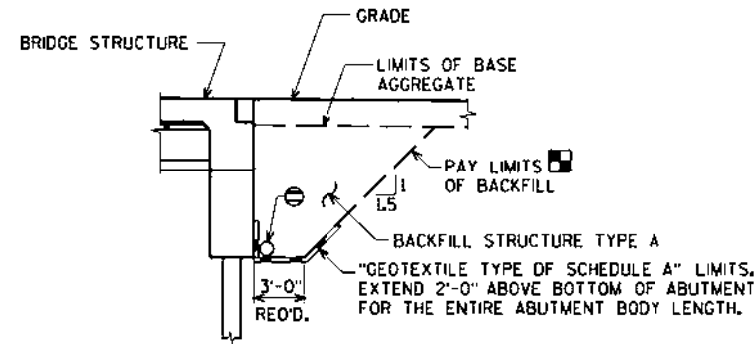
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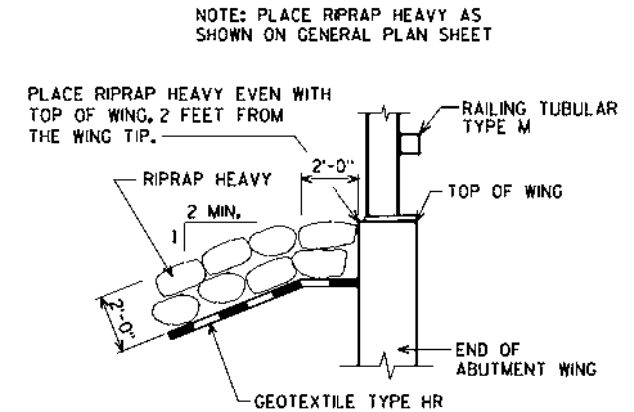
**ECO-PASSAGE DETAIL**

● ECO-PASSAGE. FILL VOIDS IN RIPRAP HEAVY WITH "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR".

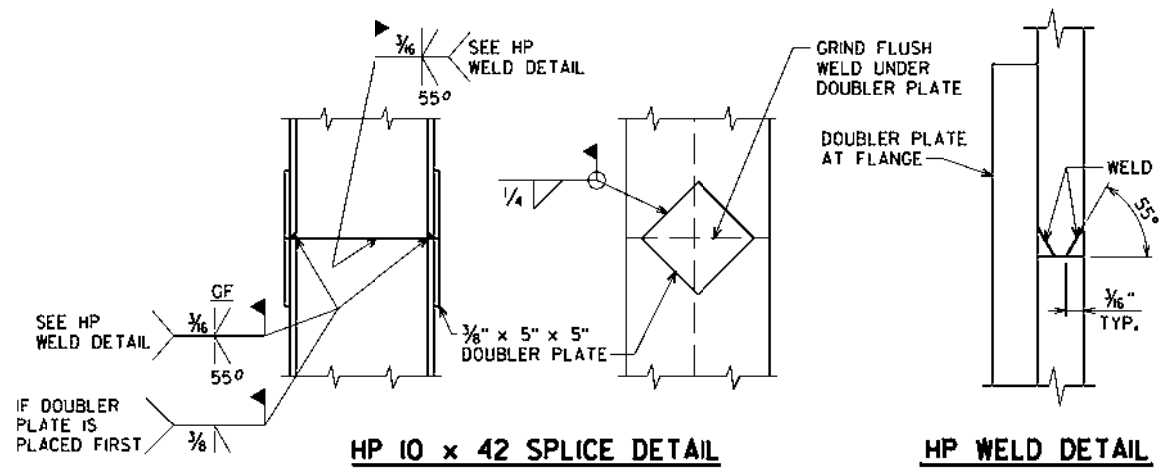


**BACKFILL STRUCTURE LIMITS**

- BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL 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 AS DETAILED ON THIS SHEET.



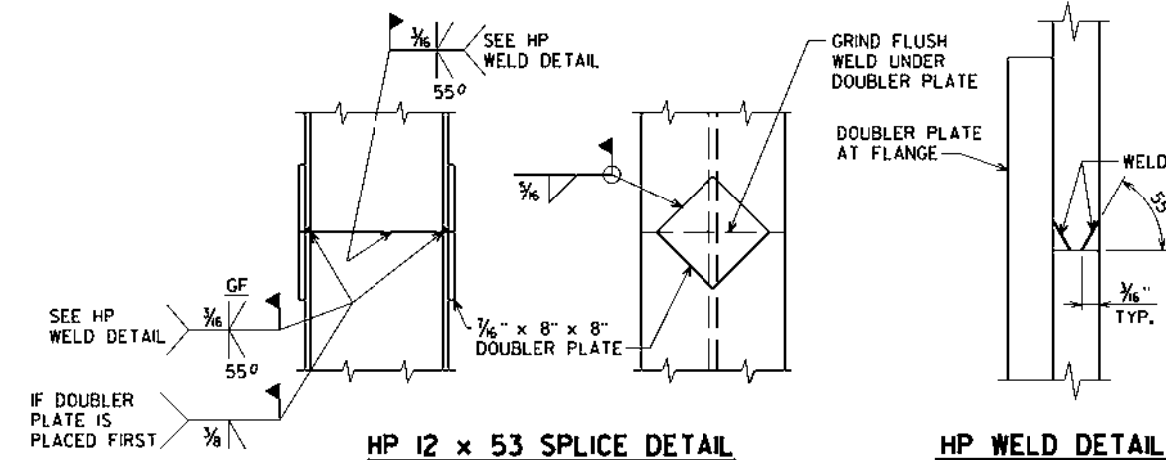
**TYPICAL FILL SECTION AT WING TIPS**



**HP 10 x 42 SPLICE DETAIL**

**HP WELD DETAIL**

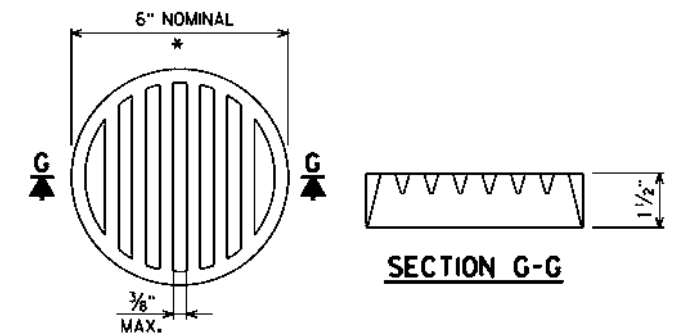
FLANGE SHOWN, WEB SIMILAR



**HP 12 x 53 SPLICE DETAIL**

**HP WELD DETAIL**

FLANGE SHOWN, WEB SIMILAR



**SECTION G-G**

\* 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 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 SHEET METAL SCREWS.

**RODENT SHIELD DETAIL**

**PROTECTIVE SURFACE TREATMENT DETAIL**

- APPLY TO TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

NO.	DATE	REVISION	BY
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<b>STRUCTURE B-11-175</b>			
DRAWN BY		ZSS	PLANS CKD. JLB
<b>STRUCTURE DETAILS</b>			SHEET 3 OF 26

ORIGINAL PLANS PREPARED BY  
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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	AUGUST 24, 2020	328302.28	657499.02
2	AUGUST 26, 2020	328387.27	657499.59
3	AUGUST 25, 2020	328480.93	657516.21

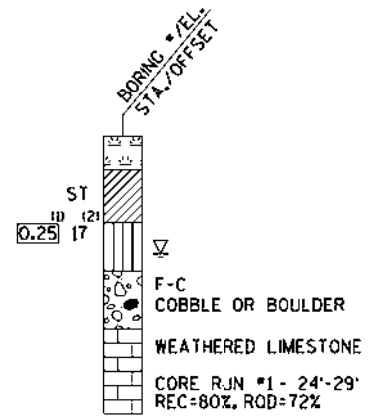
BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC  
 REPORT COMPLETED BY: ECS MIDWEST, LLC  
 ALL COORDINATES REFERENCED TO WCCS NAD 83(91) COLUMBIA COUNTY



**MATERIAL SYMBOLS**

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

**LEGEND OF BORING**



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

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

**GROUND WATER ELEVATION**

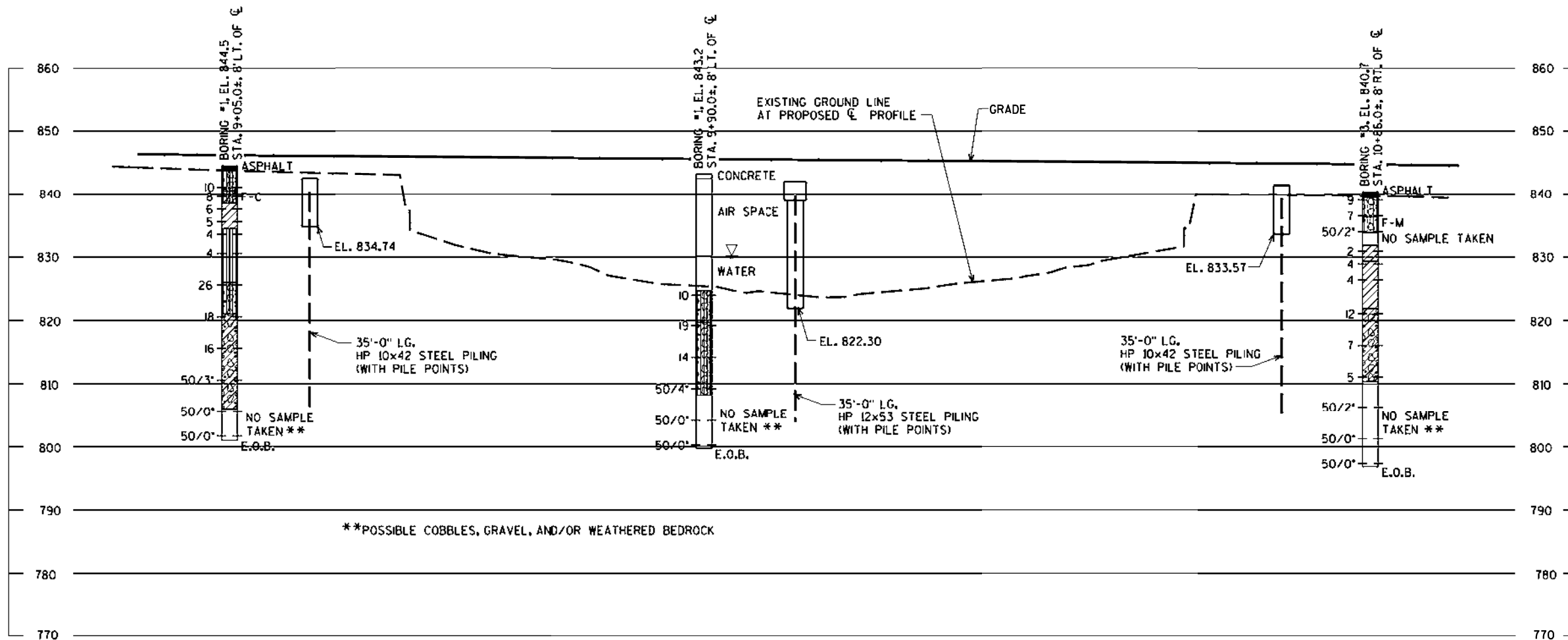
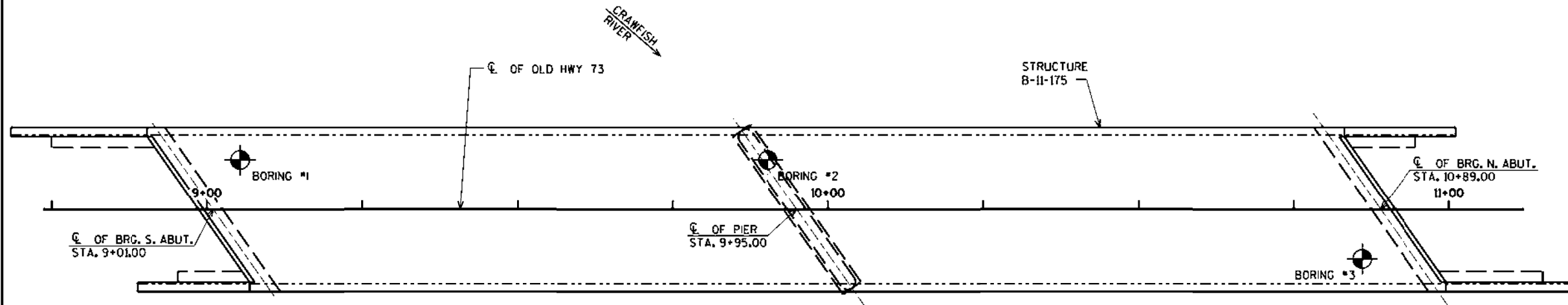
- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

**ABBREVIATIONS**

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

**SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION**

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



\*\*POSSIBLE COBBLES, GRAVEL, AND/OR WEATHERED BEDROCK

8/29/2022 PENTABLE:BR900...shd...tbl.tbl

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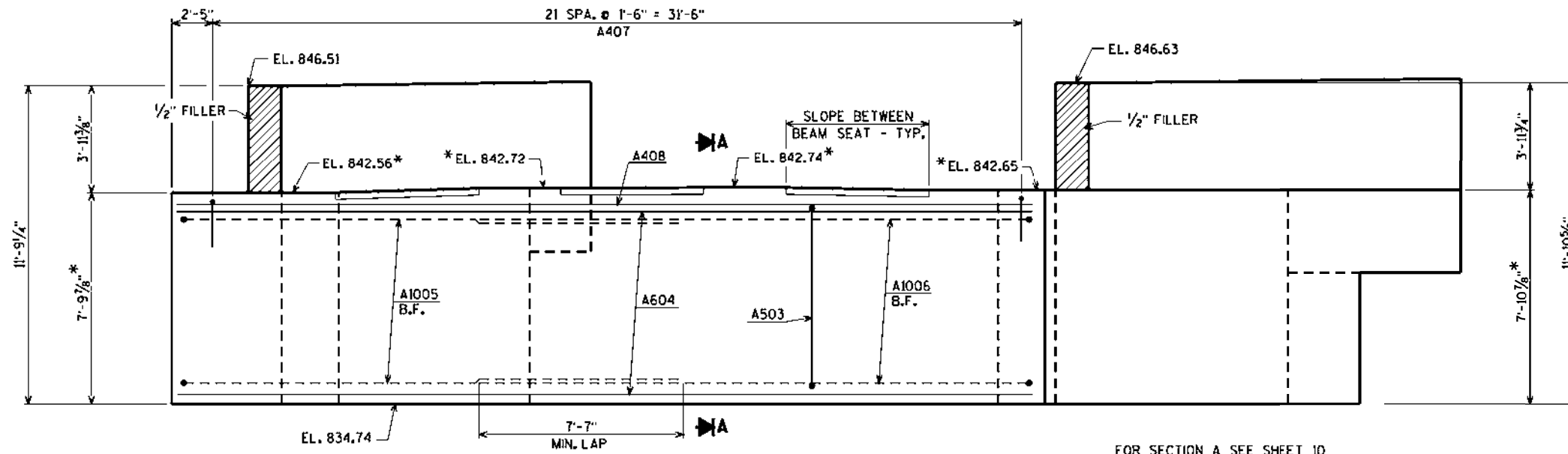
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-II-175</b>			
DRAWN BY		ZSS	PLANS CKD. JLB
<b>SUBSURFACE EXPLORATION</b>			SHEET 4 OF 26



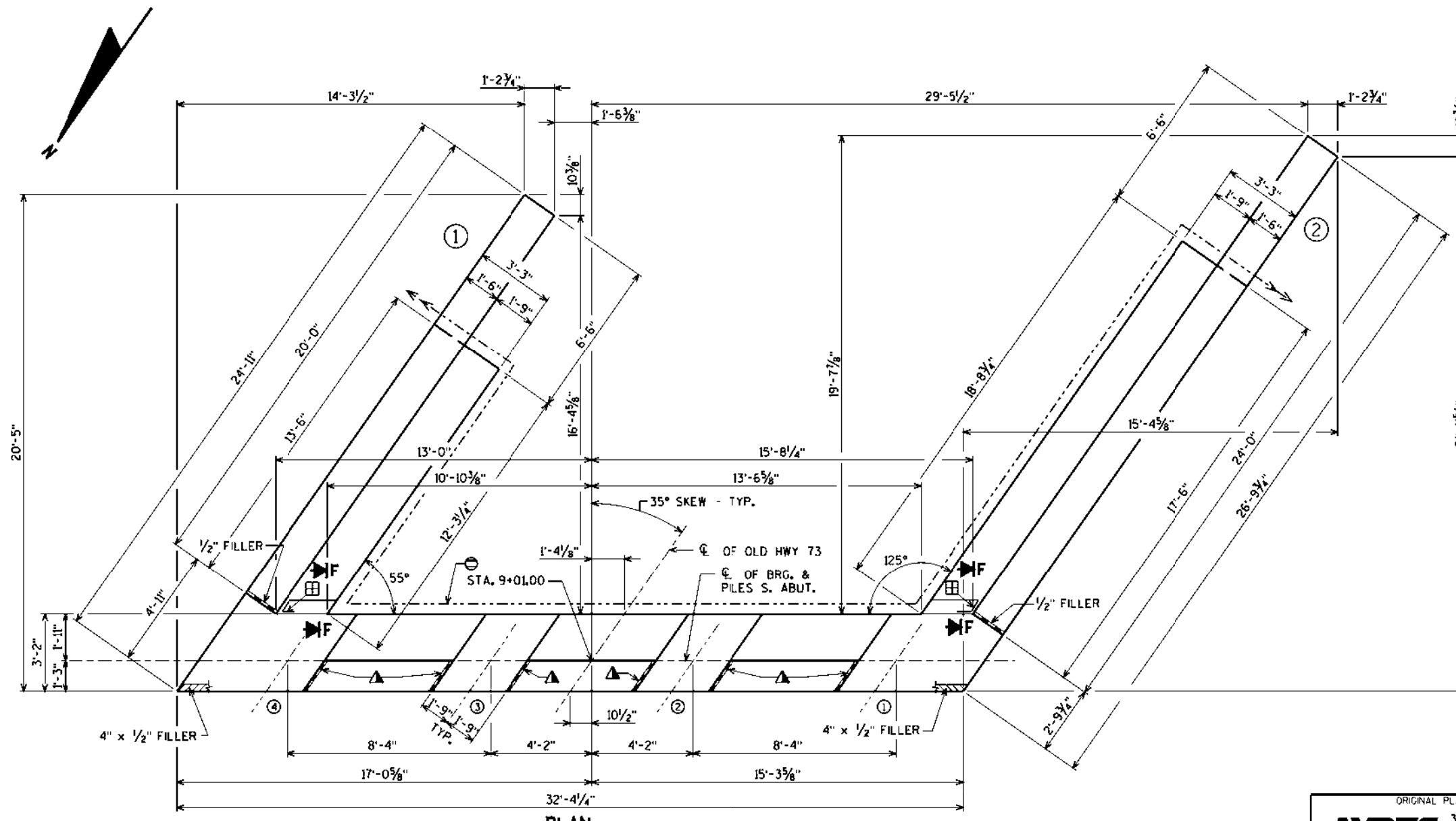
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)

\* ELEVATIONS AND DIMENSIONS TAKEN AT CL OF BRG. & PILES S. ABUT.

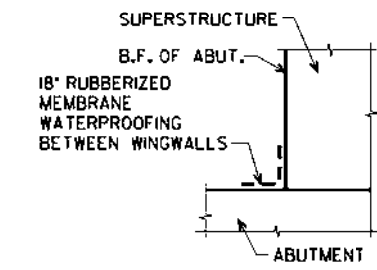


**ELEVATION**  
(LOOKING SOUTH)

FOR SECTION A SEE SHEET 10



**PLAN**



**SECTION F**

- ▣ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- ▲ 3/4" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- ⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 3, RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

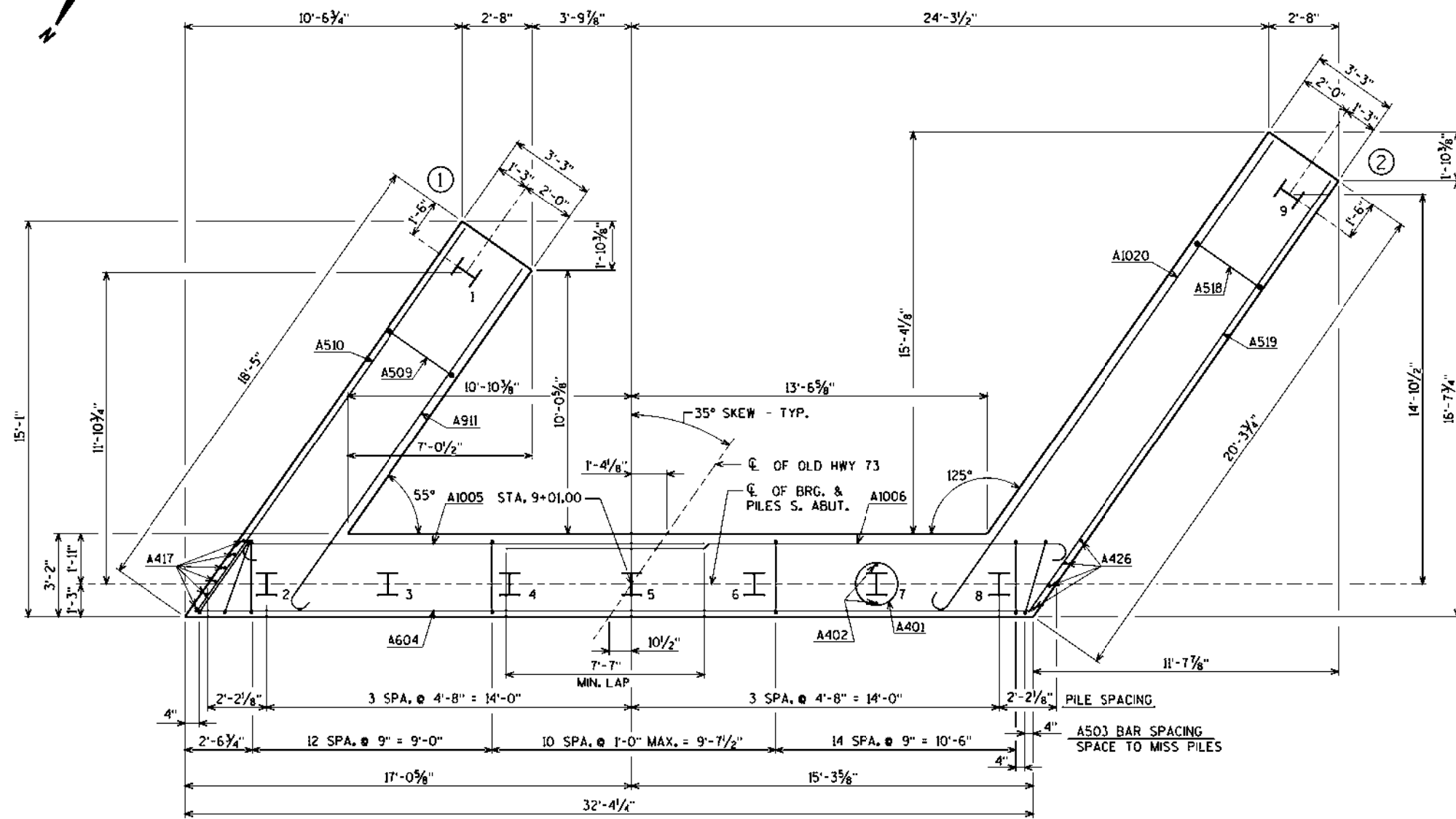
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY CLP		PLANS CKD. JLB	
<b>SOUTH ABUTMENT</b>			SHEET 5 OF 26

ORIGINAL PLANS PREPARED BY  
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**PILE LAYOUT**

FOR PILE SPLICE DETAIL SEE SHEET 3.

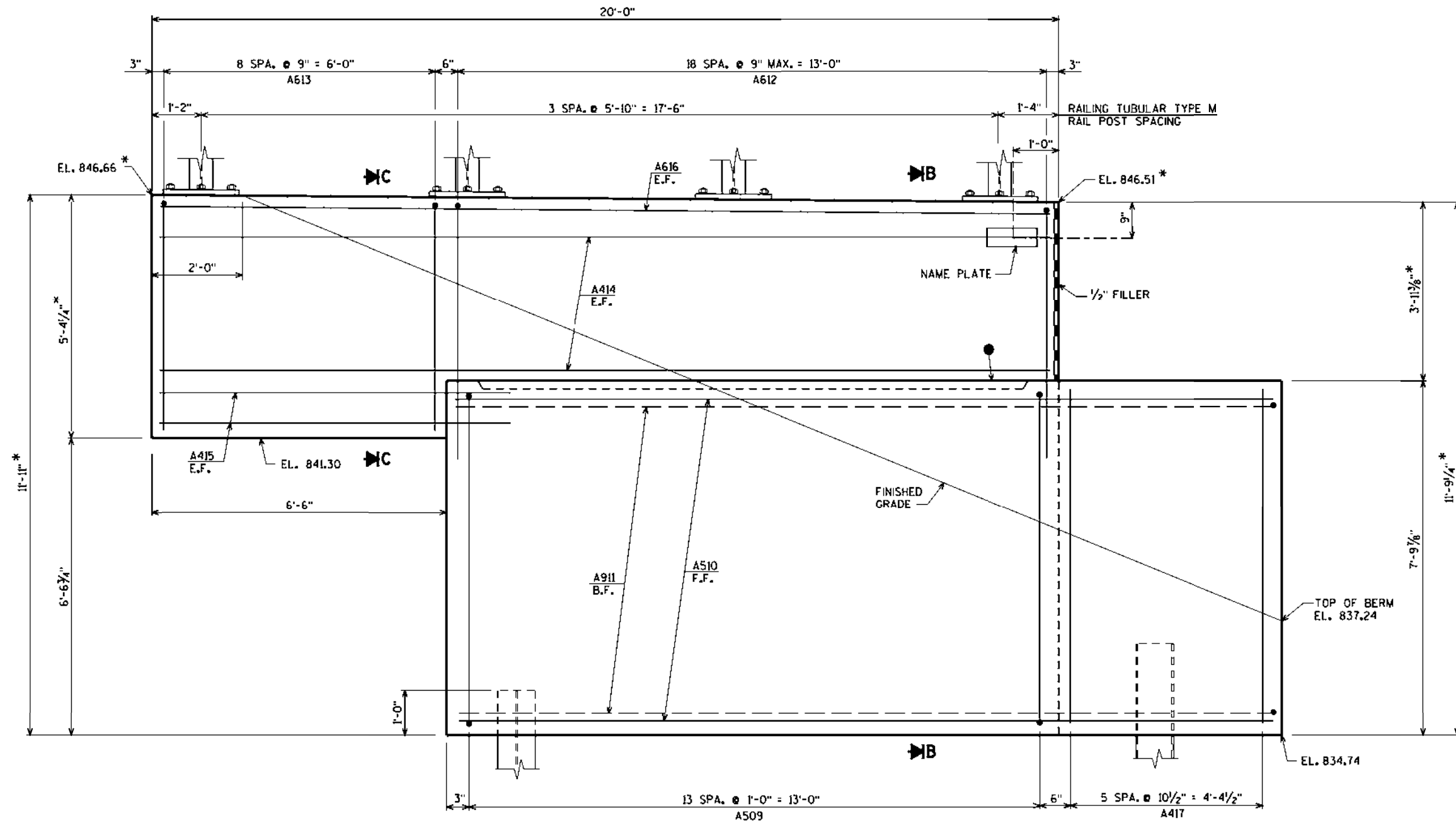
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY		CLP	PLANS CKD. JLB
<b>SOUTH ABUTMENT PILE LAYOUT</b>			SHEET 6 OF 26

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 Eau Claire, WI 54701  
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**ELEVATION - WING 1**

FOR SECTIONS B & C SEE SHEET 9.

● OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

\* ELEVATIONS AND DIMENSIONS SHOWN ARE AT FRONT FACE OF WINGWALL.

FOR PILE SPLICE DETAIL SEE SHEET 3.

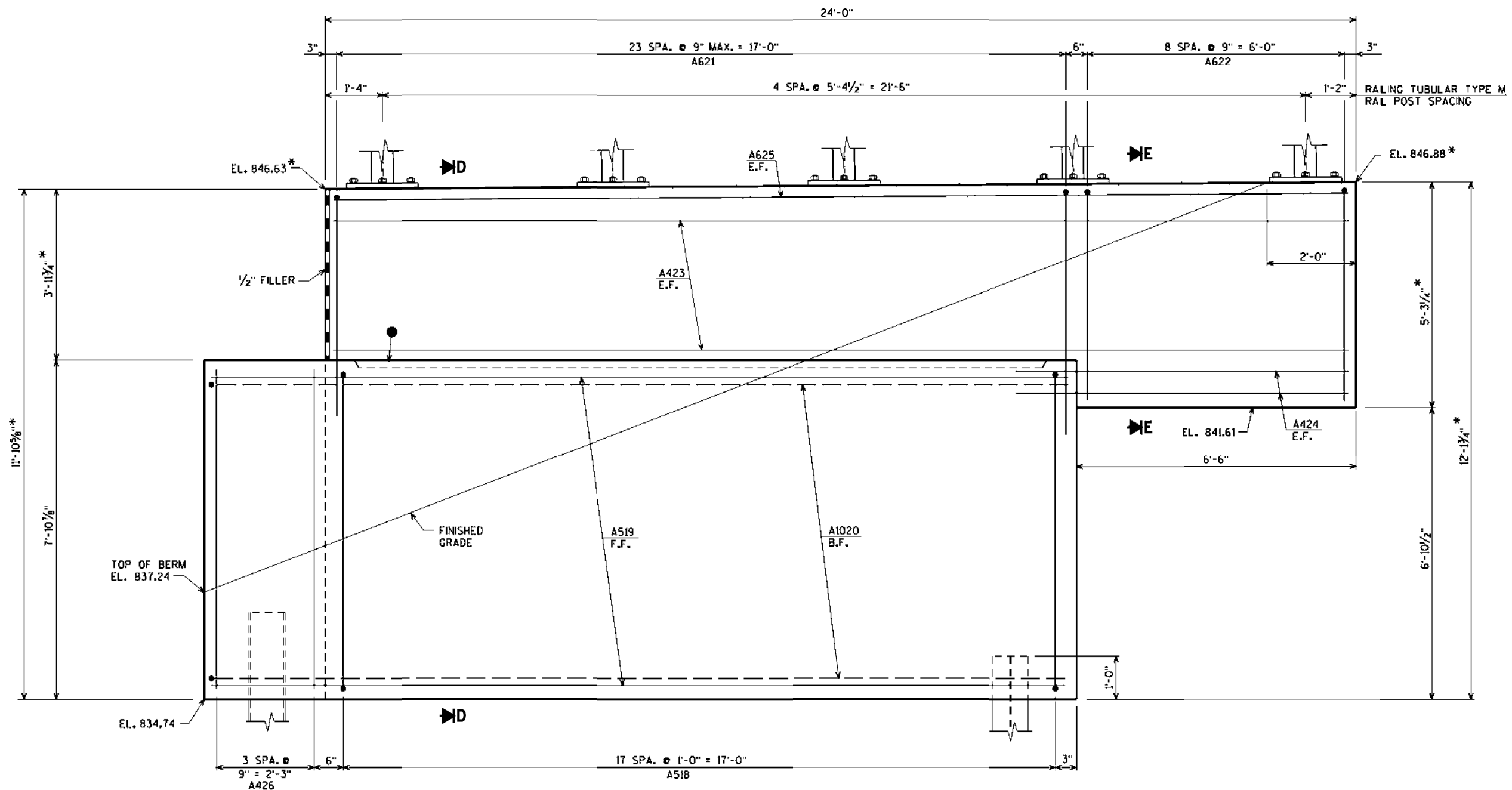
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY	CLP	PLANS CKD.	JLB
<b>SOUTH ABUTMENT WING 1 DETAILS</b>			SHEET 7 OF 26

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**ELEVATION - WING 2**

FOR SECTIONS D & E SEE SHEET 9.

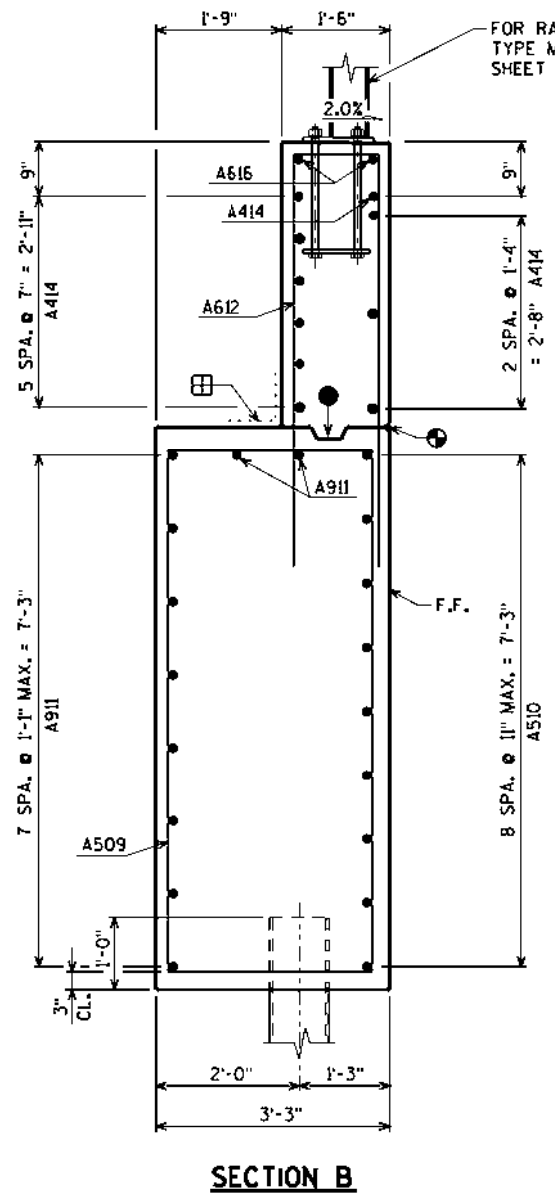
● OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

\* ELEVATIONS AND DIMENSIONS SHOWN ARE AT FRONT FACE OF WINGWALL.

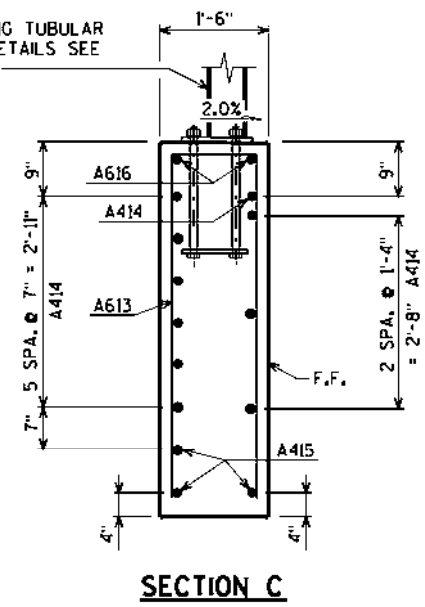
FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY		CLP	PLANS CKD. JLB
<b>SOUTH ABUTMENT WING 2 DETAILS</b>			SHEET 8 OF 26

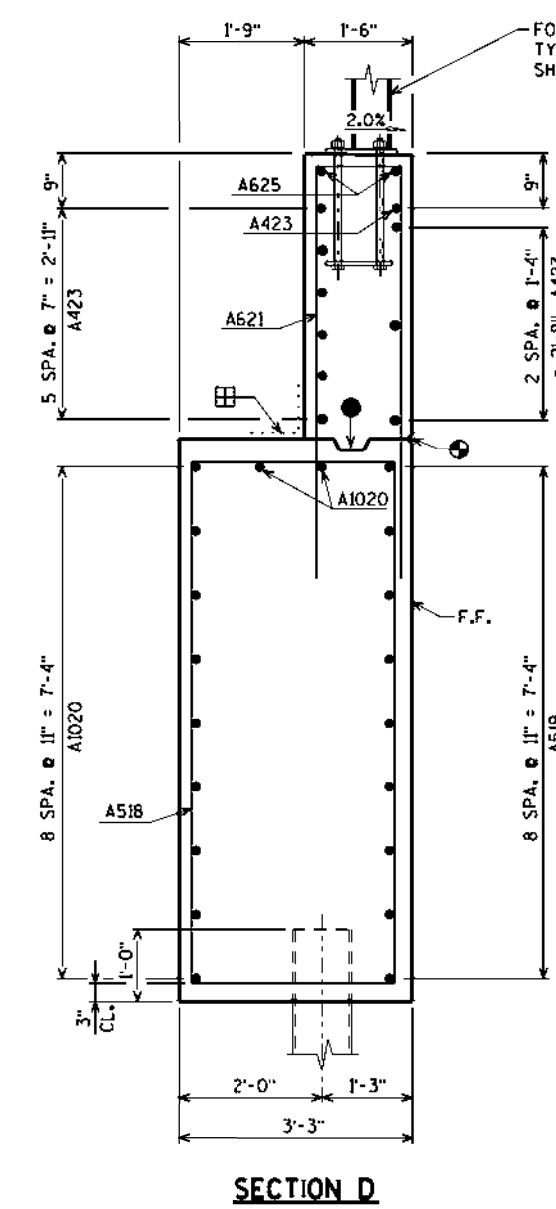
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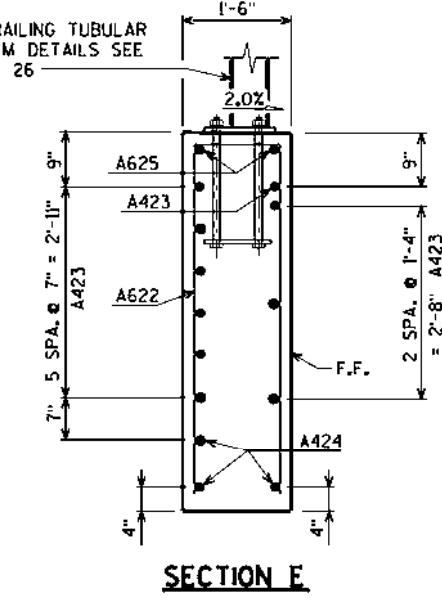
**SECTION B**



**SECTION C**



**SECTION D**



**SECTION E**

FOR LOCATION OF SECTIONS B & C SEE SHEET 7.  
FOR LOCATION OF SECTIONS D & E SEE SHEET 8.

- ⊕ 3/4" x 1/2" GROOVE ON FRONT FACE OF WINGWALL.
- OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.
- ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

FOR PILE SPLICE DETAIL SEE SHEET 3.

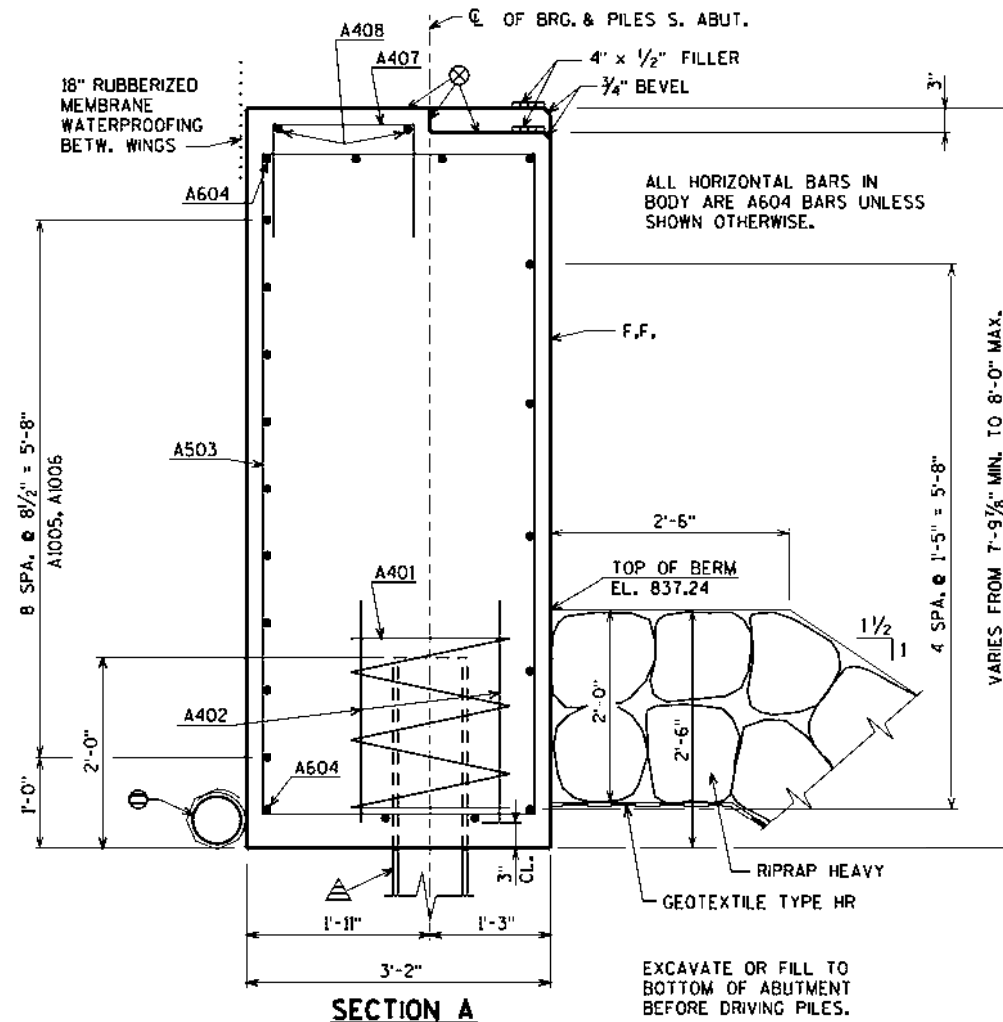
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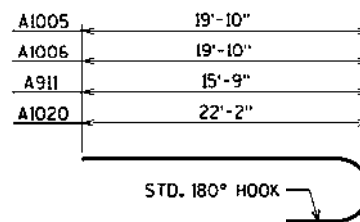
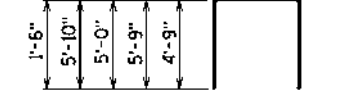
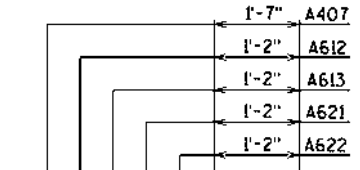
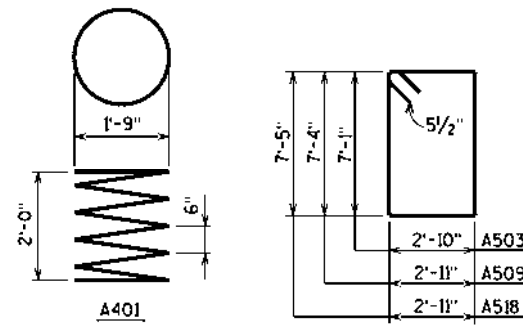
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NO.	DATE	REVISION	BY
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<b>STRUCTURE B-11-175</b>			
DRAWN BY CLP		PLANS CKD. JLB	
<b>SOUTH ABUTMENT SECTIONS THRU WINGS 1 &amp; 2</b>			SHEET 9 OF 26



△ ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQ'D. DRIVING RESISTANCE OF 180 TONS PER PILE. ESTIMATED LENGTH 35'-0".



**BILL OF BARS**

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLE	BAR SERIES	4,350# COATED 3,340# UNCOATED	
								LOCATION
A401		7	28-0	X				BODY @ PILES
A402		14	2-3					BODY @ PILES
A503		40	20-6	X				BODY VERT.
A604		12	31-11					BODY HORIZ.
A1005		9	21-3	X				BODY HORIZ. B.F. @ WING 1
A1006		9	21-3	X				BODY HORIZ. B.F. @ WING 2
A407		22	4-5	X				BODY VERT. TOP
A408		2	31-11					BODY HORIZ. TOP
A509	X	14	21-2	X				WING 1 VERT.
A510	X	9	18-0					WING 1 HORIZ. F.F.
A911	X	10	17-0	X				WING 1 HORIZ.
A612	X	19	12-6	X				WING 1 VERT.
A613	X	9	10-10	X				WING 1 VERT.
A414	X	10	19-8					WING 1 HORIZ. E.F.
A415	X	3	7-9					WING 1 HORIZ. E.F.
A616	X	2	19-8					WING 1 HORIZ. TOP E.F.
A417	X	6	7-4					BODY VERT. END @ WING 1
A518	X	18	21-4	X				WING 2 VERT.
A519	X	9	19-10					WING 2 HORIZ. F.F.
A1020	X	11	23-7	X				WING 2 HORIZ.
A621	X	24	12-4	X				WING 2 VERT.
A622	X	9	10-4	X				WING 2 VERT.
A423	X	10	23-8					WING 2 HORIZ. E.F.
A424	X	3	7-9					WING 2 HORIZ. E.F.
A625	X	2	23-8					WING 2 HORIZ. TOP E.F.
A426	X	4	7-5					BODY VERT. END @ WING 2

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

8/29/2022 PENTABLE:BRQu\_ahd\_util.tbj

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FOR LOCATION OF SECTION A SEE SHEET 5.

- ⊗ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING FILLER AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".
- ⊙ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 3. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

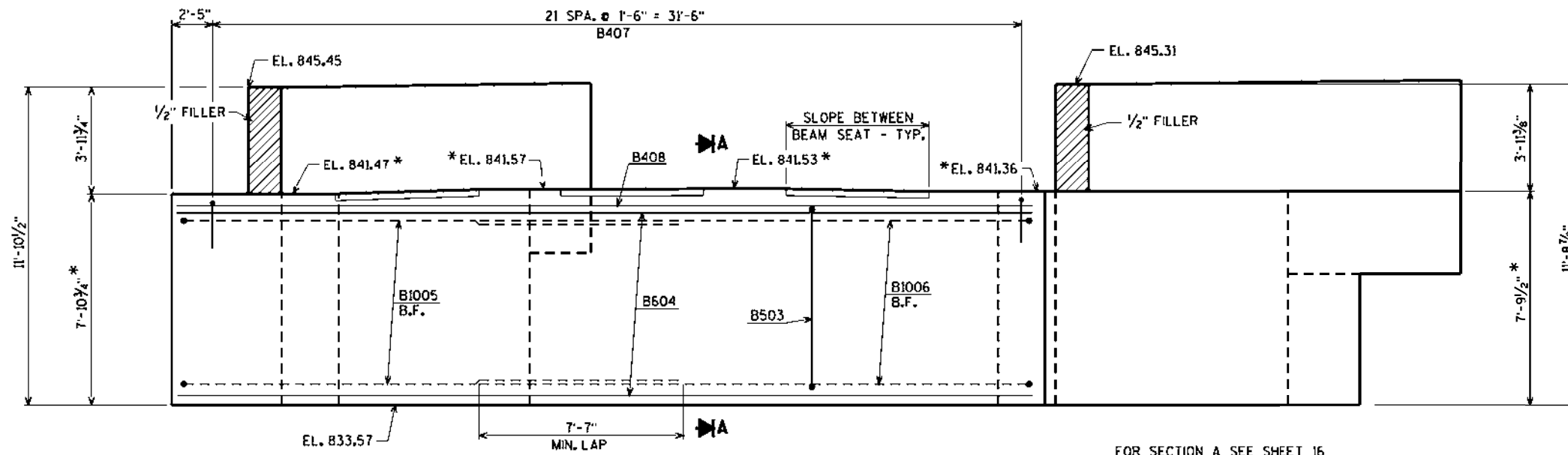
FOR PILE SPLICE DETAIL SEE SHEET 3.

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-11-175			
DRAWN BY	CLP	PLANS CKD.	JLB
SOUTH ABUTMENT DETAILS AND BILL OF BARS			SHEET 10 OF 26

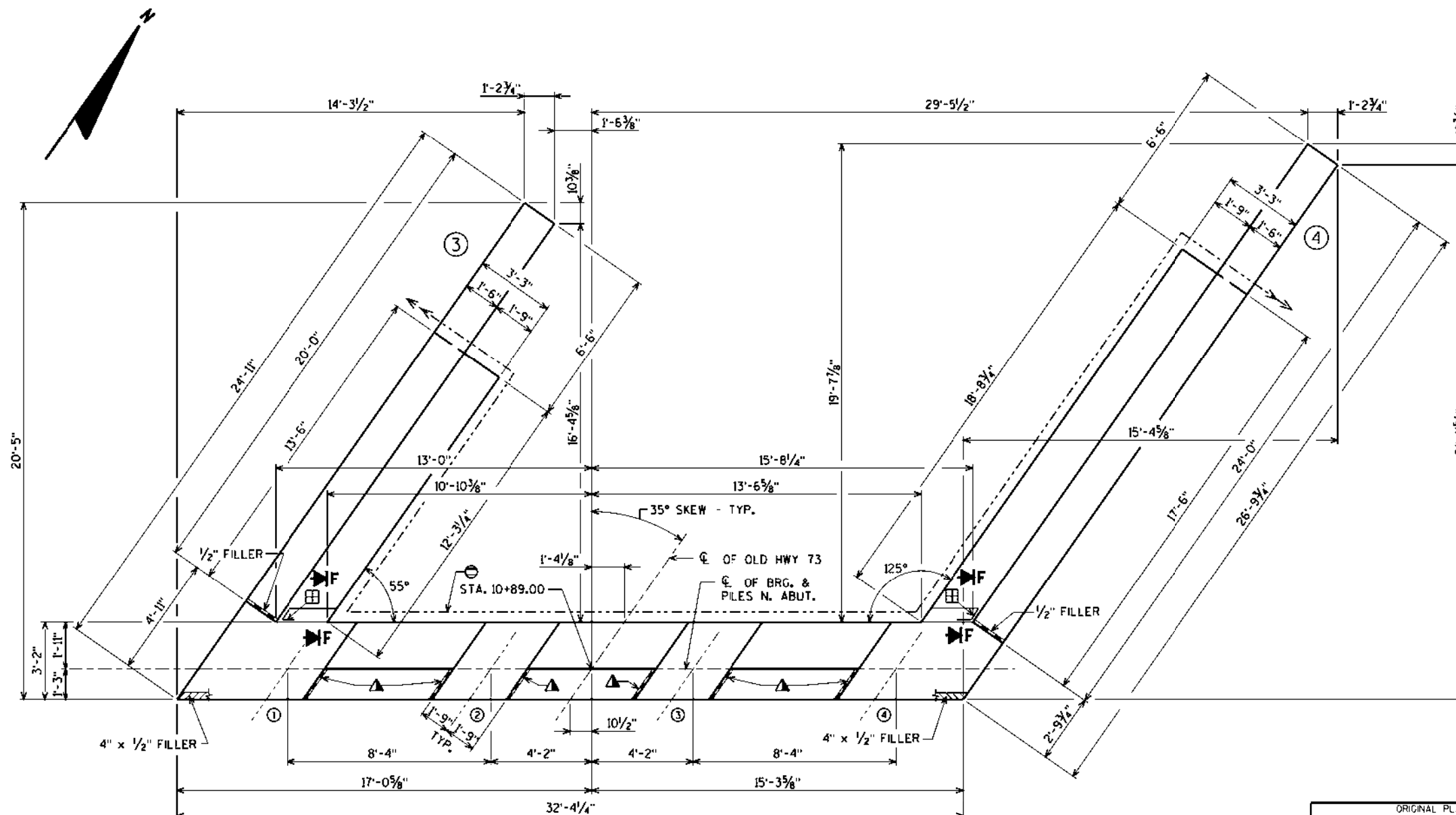
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)

\* ELEVATIONS AND DIMENSIONS TAKEN AT C/L OF BRG. & PILES N. ABUT.

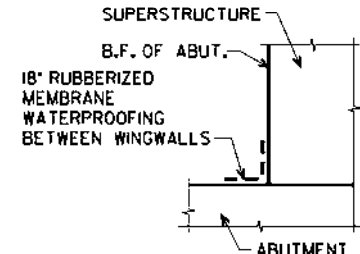


**ELEVATION**  
(LOOKING NORTH)

FOR SECTION A SEE SHEET 16



**PLAN**



**SECTION F**

- ▣ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- ▲ 3/4" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- ⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 3, RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

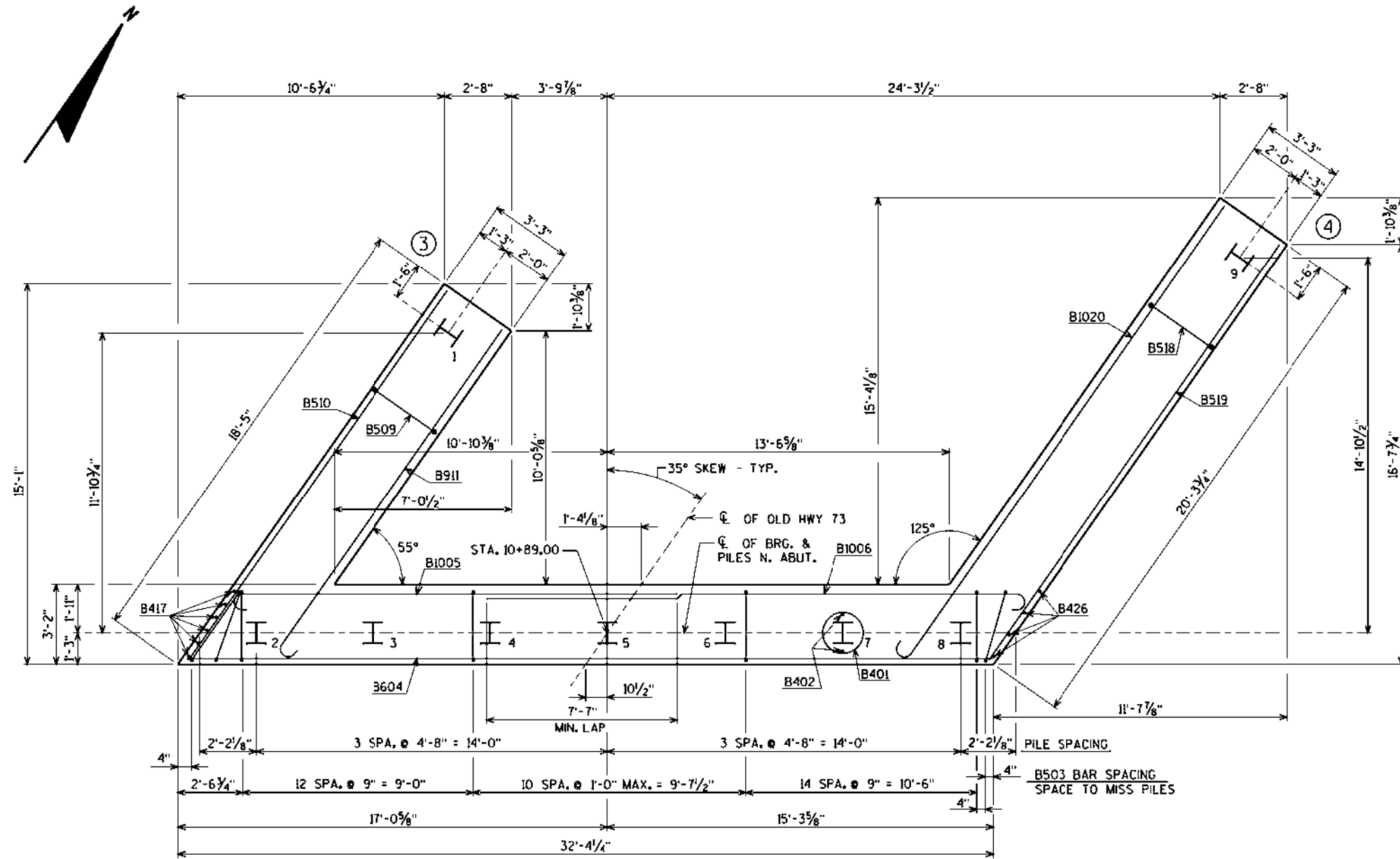
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY		CLP	PLANS CKD. JLB
<b>NORTH ABUTMENT</b>			SHEET 11 OF 26

ORIGINAL PLANS PREPARED BY  
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**PILE LAYOUT**

FOR PILE SPLICE DETAIL SEE SHEET 3.

8/29/2022  
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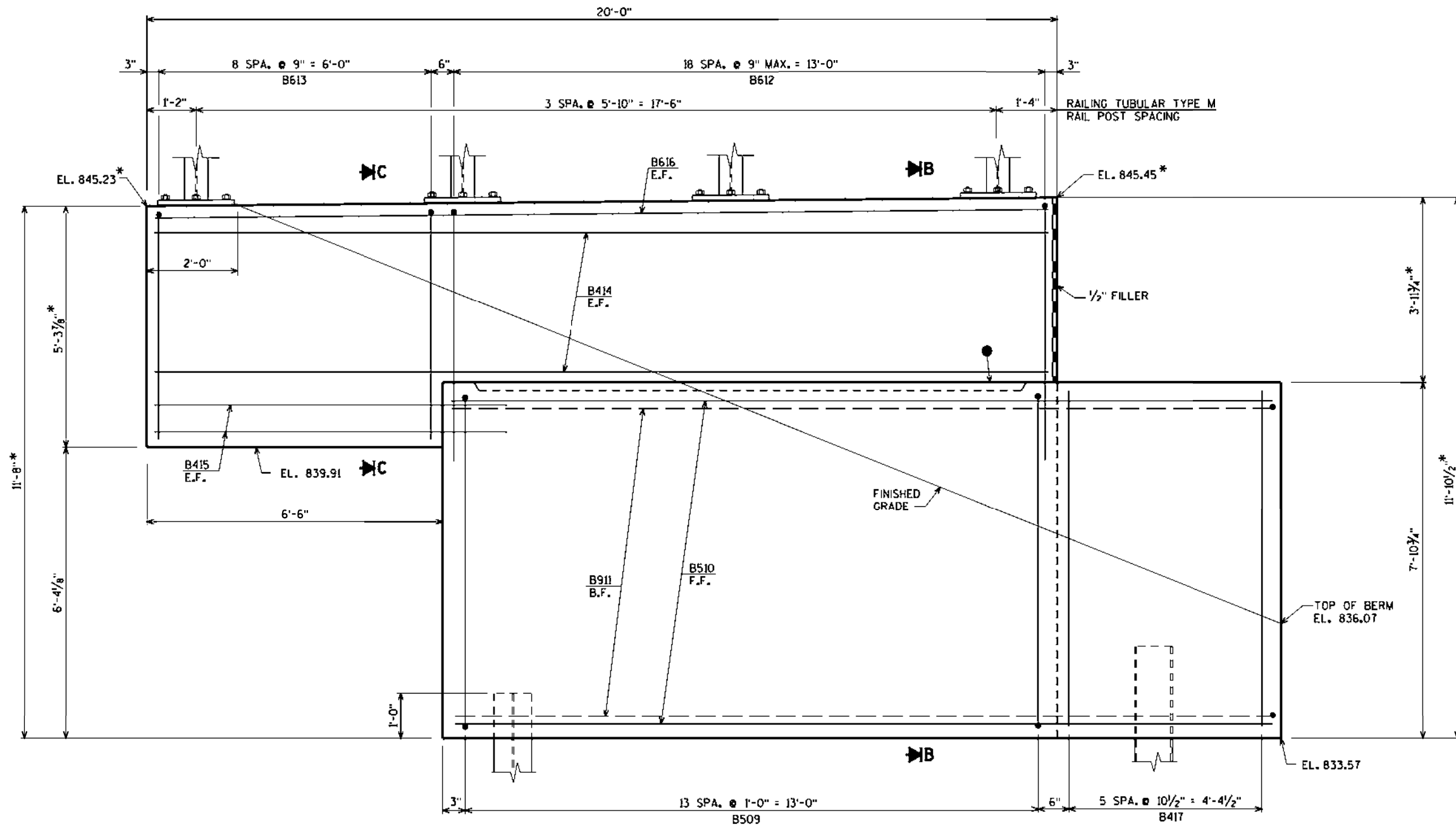
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY CLP		PLANS CKD. JLB	
<b>NORTH ABUTMENT PILE LAYOUT</b>			SHEET 12 OF 26

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Eau Claire, WI 54701  
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**ELEVATION - WING 3**

FOR SECTIONS B & C SEE SHEET 15.

● OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

\* ELEVATIONS AND DIMENSIONS SHOWN ARE AT FRONT FACE OF WINGWALL.

FOR PILE SPLICE DETAIL SEE SHEET 3.

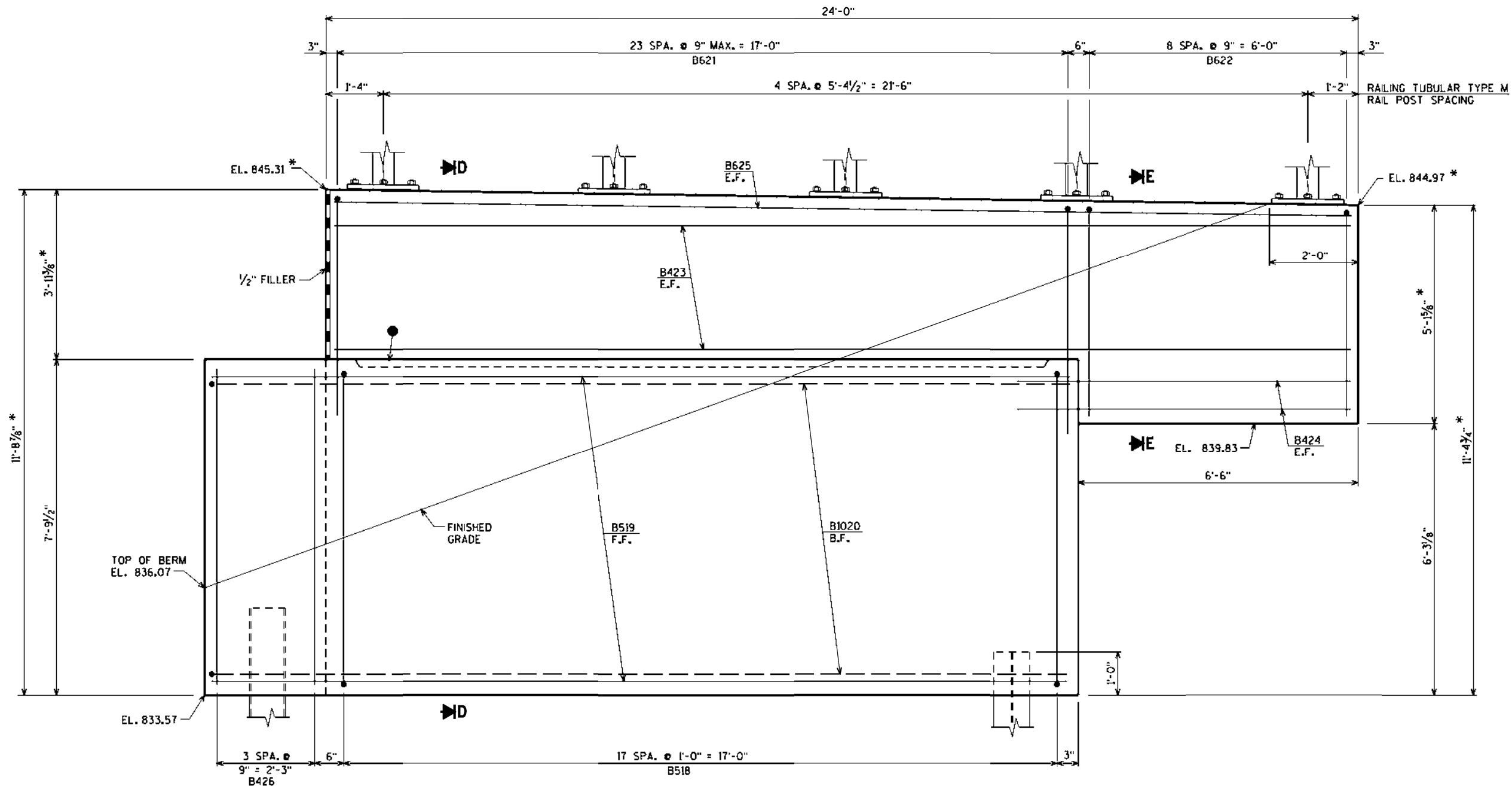
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY	CLP	PLANS CKD.	JLB
<b>NORTH ABUTMENT WING 3 DETAILS</b>			SHEET 13 OF 26

ORIGINAL PLANS PREPARED BY  
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Eau Claire, WI 54701  
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**ELEVATION - WING 4**

FOR SECTIONS D & E SEE SHEET 15.

● OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

\* ELEVATIONS AND DIMENSIONS SHOWN ARE AT FRONT FACE OF WINGWALL.

FOR PILE SPLICE DETAIL SEE SHEET 3.

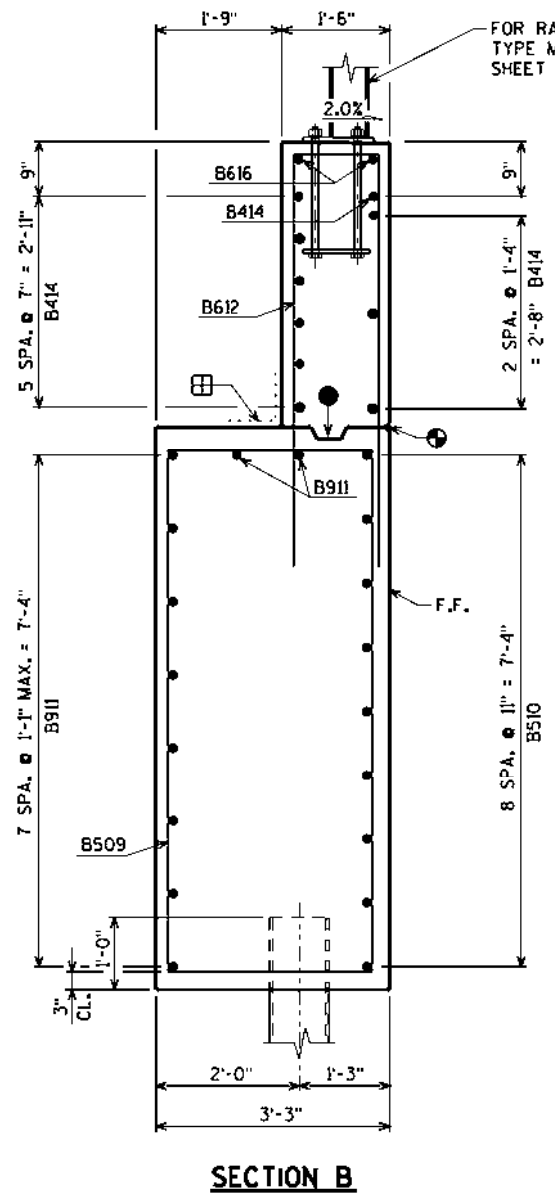
8/29/2022  
PENTABLE:BRRequ\_shd\_util.tbi

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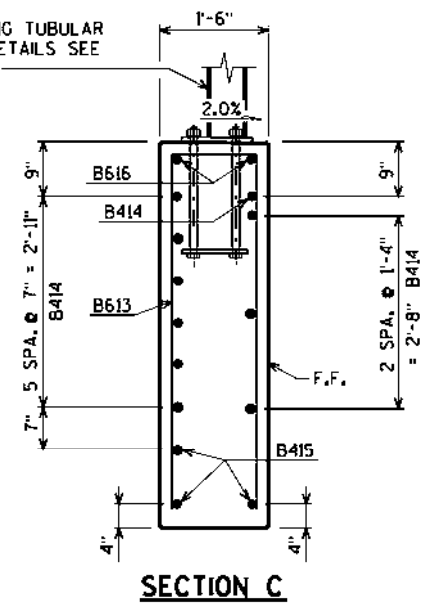
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY		CLP	PLANS CKD. JLB
<b>NORTH ABUTMENT WING 4 DETAILS</b>			SHEET 14 OF 26

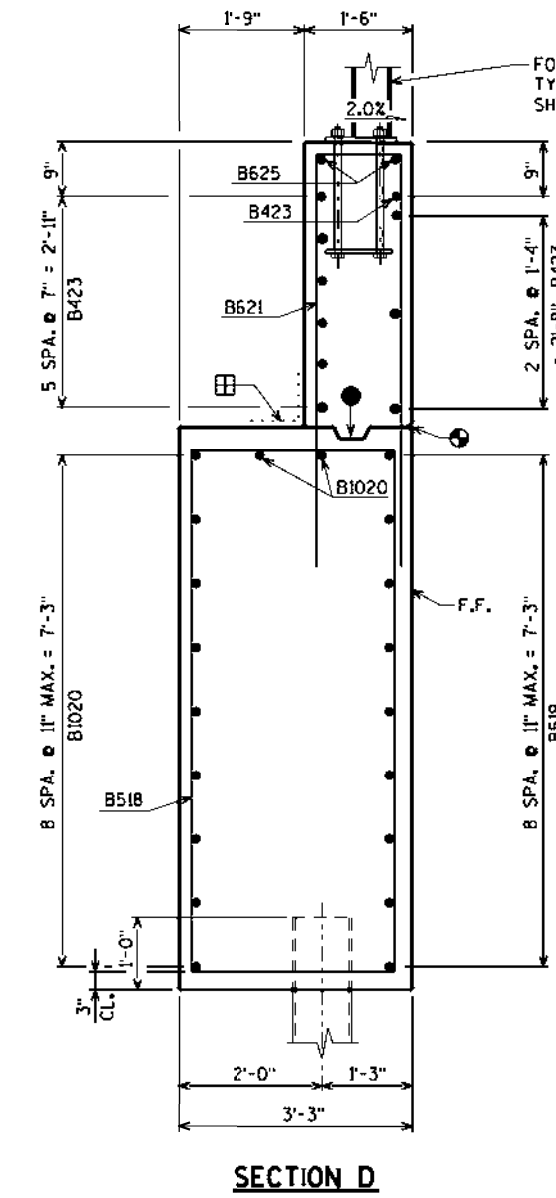
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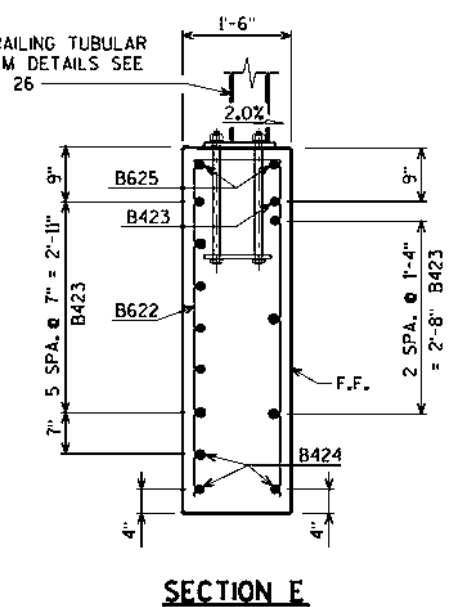
**SECTION B**



**SECTION C**



**SECTION D**



**SECTION E**

FOR LOCATION OF SECTIONS B & C SEE SHEET 13.  
FOR LOCATION OF SECTIONS D & E SEE SHEET 14.

- ⊕ 3/4" x 1/2" GROOVE ON FRONT FACE OF WINGWALL.
- OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.
- ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

FOR FILE SPLICE DETAIL SEE SHEET 3.

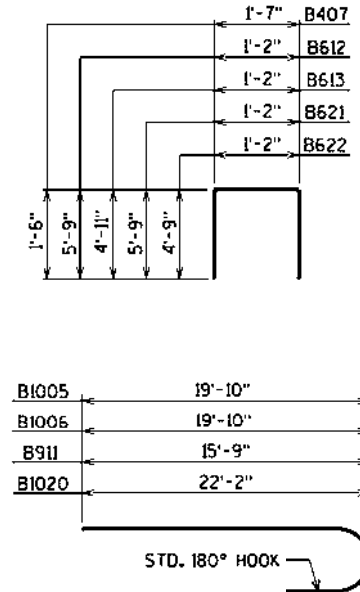
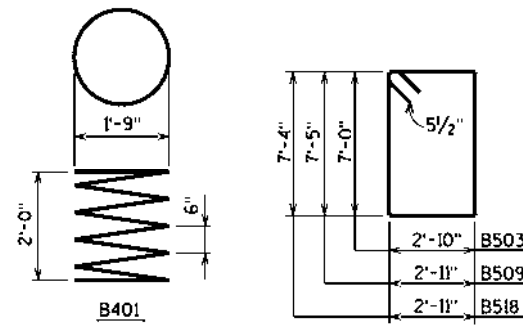
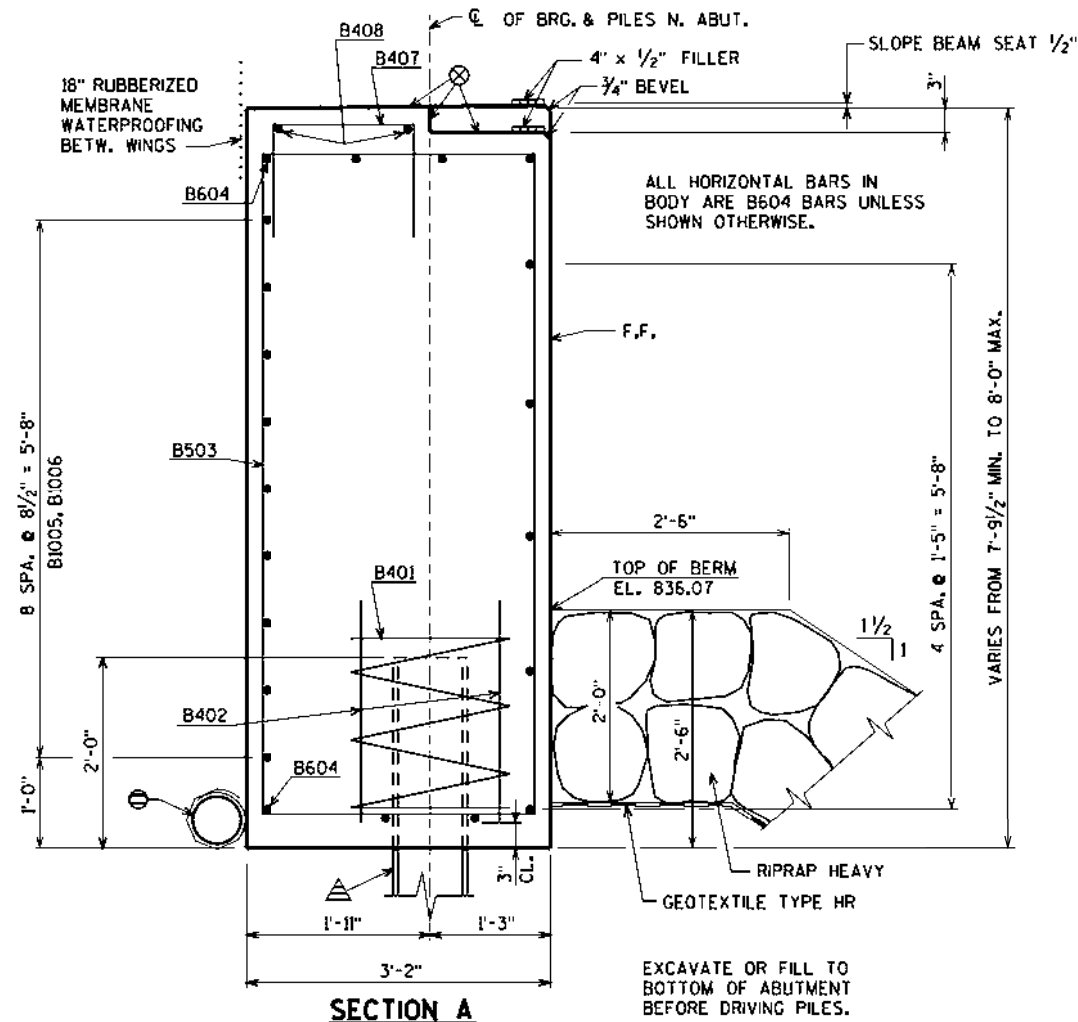
8/31/2022  
PENTABLE:BRRequ\_shd\_util.tbl

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY CLP		PLANS CKD. JLB	
<b>NORTH ABUTMENT SECTIONS THRU WINGS 3 &amp; 4</b>			SHEET 15 OF 26

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**BILL OF BARS**

BAR NO.	COATED BAR	NO. REOD.	LENGTH	BENT BAR	BUNDLE	BAR SERIES	4,340' COATED 3,220' UNCOATED	
								LOCATION
B401		7	28-0	X				BODY @ PILES
B402		14	2-3					BODY @ PILES
B503		40	20-4	X				BODY VERT.
B604		12	31-11					BODY HORIZ.
B1005		9	19-10	X				BODY HORIZ. B.F. @ WING 3
B1006		9	19-10	X				BODY HORIZ. B.F. @ WING 4
B407		22	4-5	X				BODY VERT. TOP
B408		2	31-11					BODY HORIZ. TOP
B509	X	14	21-4	X				WING 3 VERT.
B510	X	9	18-0					WING 3 HORIZ. F.F.
B911	X	10	17-0	X				WING 3 HORIZ.
B612	X	19	12-4	X				WING 3 VERT.
B613	X	9	10-8	X				WING 3 VERT.
B414	X	10	19-8					WING 3 HORIZ. E.F.
B415	X	3	7-9					WING 3 HORIZ. E.F.
B616	X	2	19-8					WING 3 HORIZ. TOP E.F.
B417	X	6	7-5					BODY VERT. END @ WING 3
B518	X	18	21-2	X				WING 4 VERT.
B519	X	9	19-10					WING 4 HORIZ. F.F.
B1020	X	11	23-7	X				WING 4 HORIZ.
B622	X	24	12-4	X				WING 4 VERT.
B622	X	9	10-4	X				WING 4 VERT.
B423	X	10	23-8					WING 4 HORIZ. E.F.
B424	X	3	7-9					WING 4 HORIZ. E.F.
B625	X	2	23-8					WING 4 HORIZ. TOP E.F.
B426	X	4	7-4					BODY VERT. END @ WING 4

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

8/29/2022 PENTABLE:BRQu\_shd\_util.tbj

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FOR LOCATION OF SECTION A SEE SHEET 11.

- ⊗ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING FILLER AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".
- ⊙ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 3. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

FOR PILE SPLICE DETAIL SEE SHEET 3.

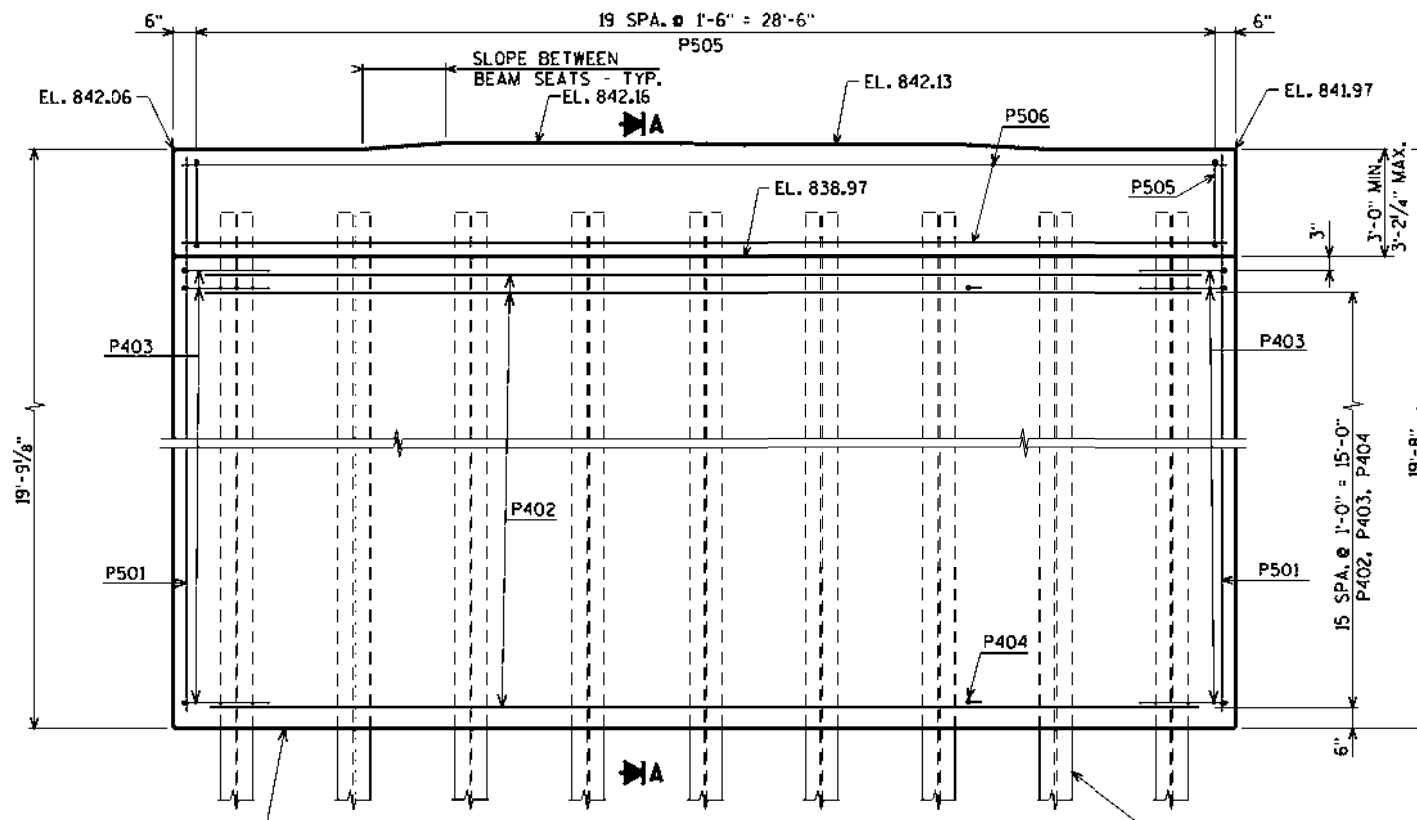
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY CLP		PLANS CKD. JLB	
<b>NORTH ABUTMENT DETAILS AND BILL OF BARS</b>			SHEET 16 OF 26

**BILL OF BARS**

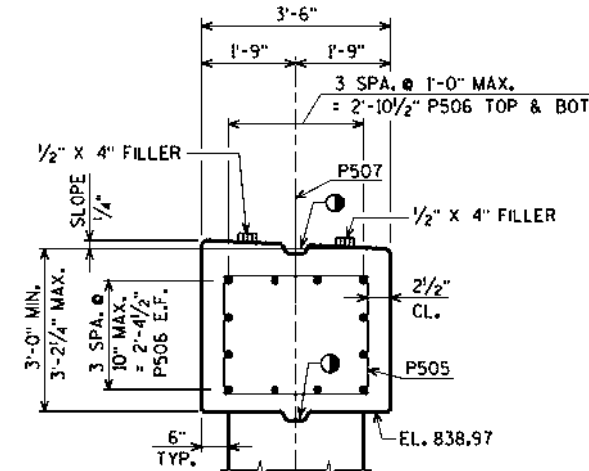
BAR NO.	NO. REQ'D.	LENGTH	BENT BAR	BUNDLE	BAR SERIES	20# COATED 2.860# UNCOATED
						LOCATION
P501	62	18-11				COLUMN VERT. E.F.
P402	34	27-0				COLUMN HORIZ.
P403	34	6-1	X			COLUMN HORIZ. @ ENDS
P404	144	2-10	X			COLUMN TIES
P505	20	12-0	X			CAP STIRRUPS
P506	12	29-1				CAP HORIZ.
P507	X	9	2-0			CAP DOWELS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

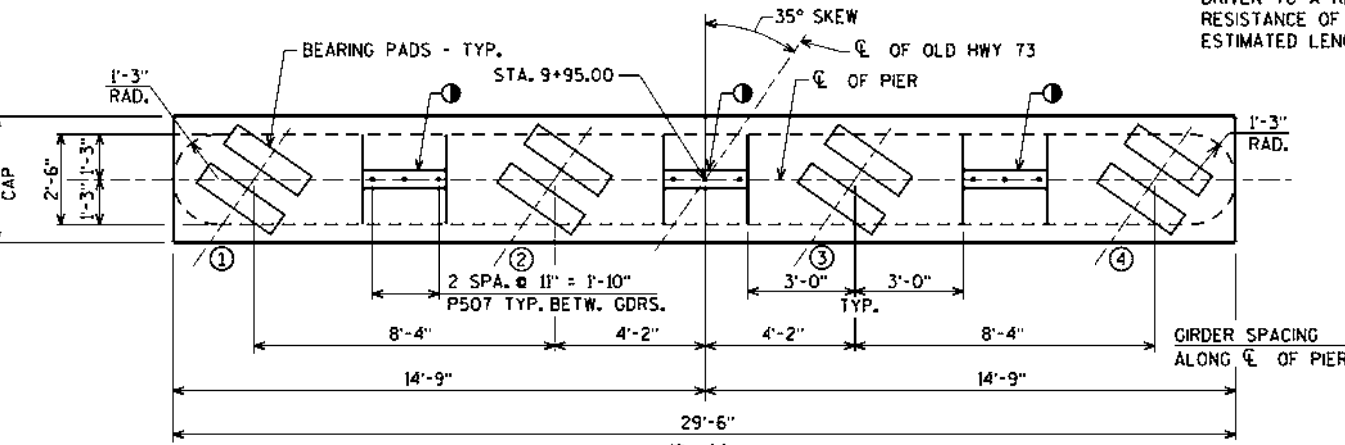


**ELEVATION**  
(LOOKING NORTH)

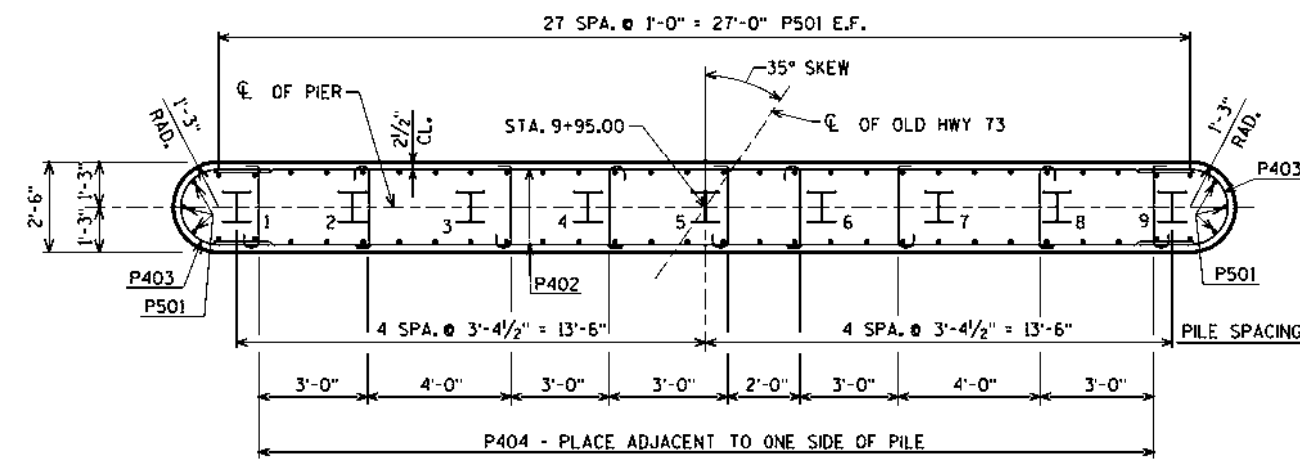
PIER TO BE SUPPORTED ON HP 12 x 53 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQ'D. DRIVING RESISTANCE OF 220 TONS PER PILE ESTIMATED LENGTH 35'-0\"/>



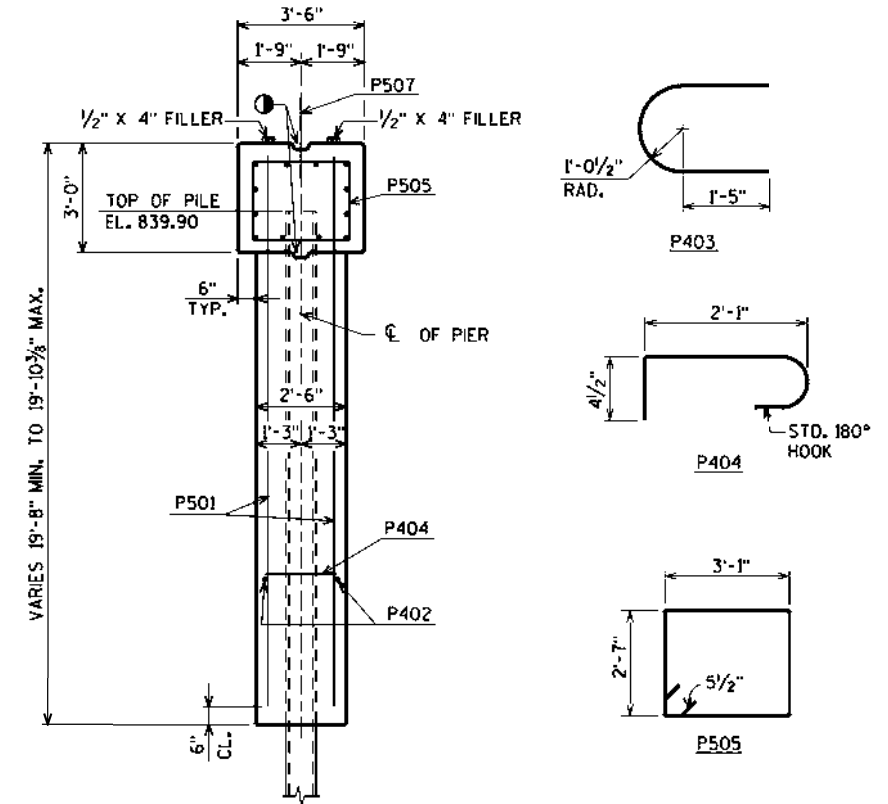
**PIER CAP DETAIL**



**PLAN**



**PILE LAYOUT**



**SECTION A**

P507 BARS MAY BE PLACED AFTER PIER IS POURED BUT BEFORE CONC. HAS SET. EMBED BARS 1'-0\"/>

KEYED CONST. JOINT - FORMED BY A BEVELED 2\"/>

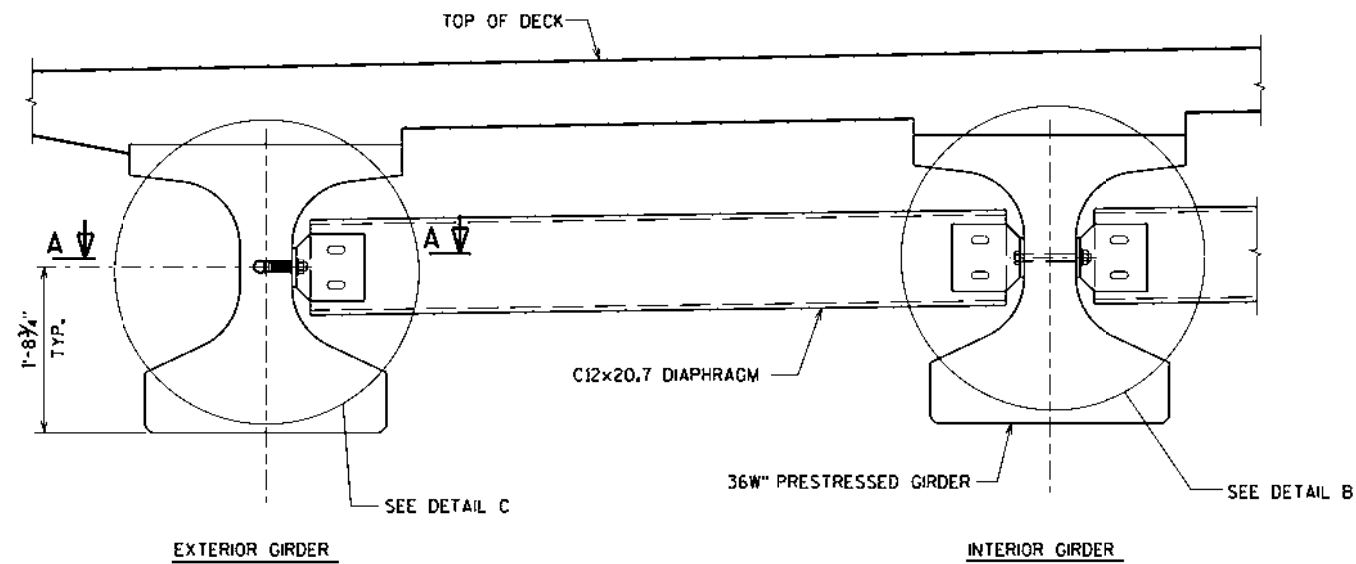
FOR PILE SPLICE DETAIL SEE SHEET 3.

ORIGINAL PLANS PREPARED BY

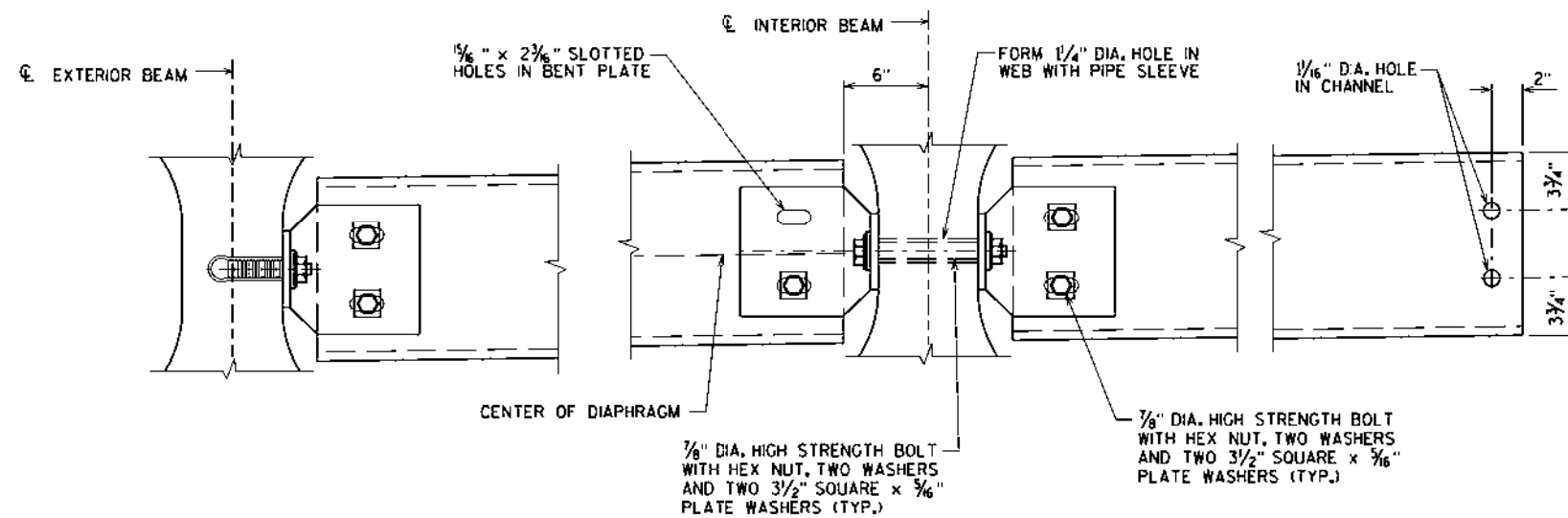
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<b>STRUCTURE B-11-175</b>			
DRAWN BY CLP		PLANS CKD. JLB	
<b>PIER</b>			SHEET 17 OF 26

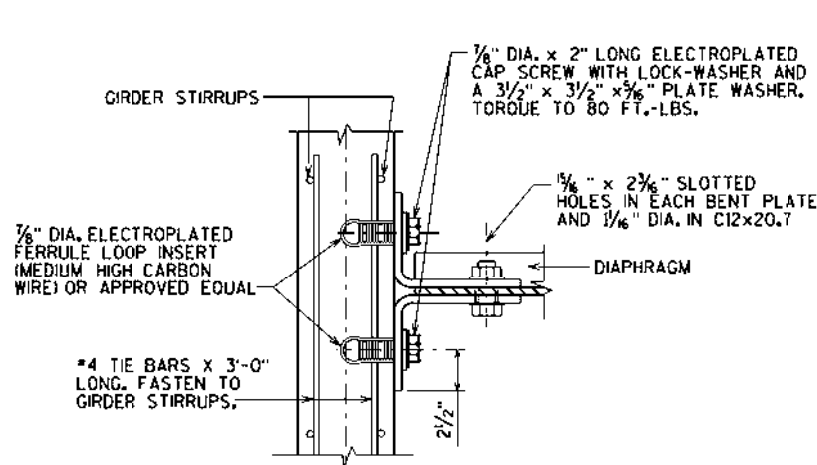


PART TRANSVERSE SECTION AT DIAPHRAGM

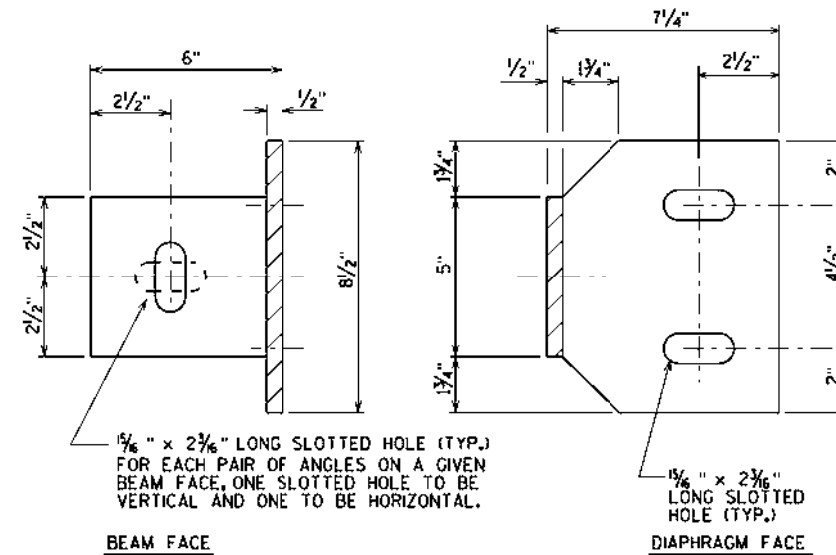


DETAIL C

DETAIL B

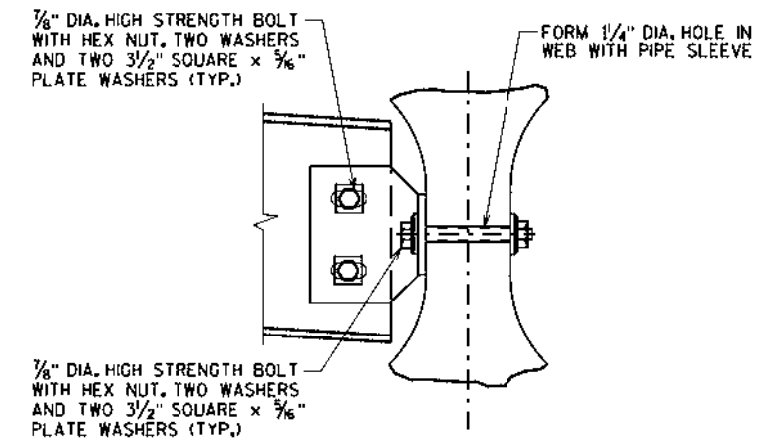


SECTION A-A  
(FOR EXTERIOR ATTACHMENT)

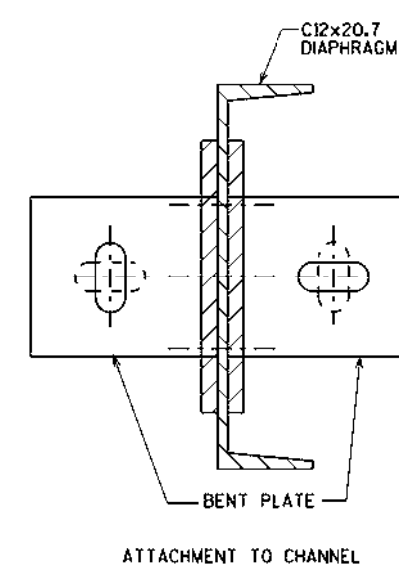


BEAM FACE

DIAPHRAGM FACE



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



ATTACHMENT TO CHANNEL

NOTES

- ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-11-175", 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.
- FOR DIAPHRAGM SPACING SEE SHEET 22.

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<b>STRUCTURE B-11-175</b>			
DRAWN BY CLP		PLANS CKD. JLB	
<b>STEEL DIAPHRAGM</b>			SHEET 18 OF 26

**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 SUIJTABLE 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 ASTM M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

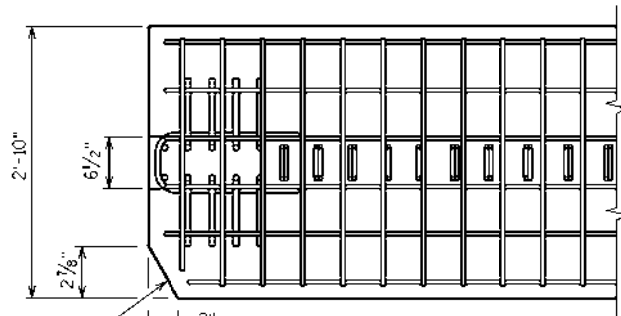
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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

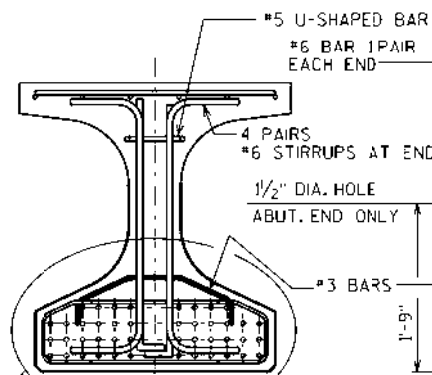
AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

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

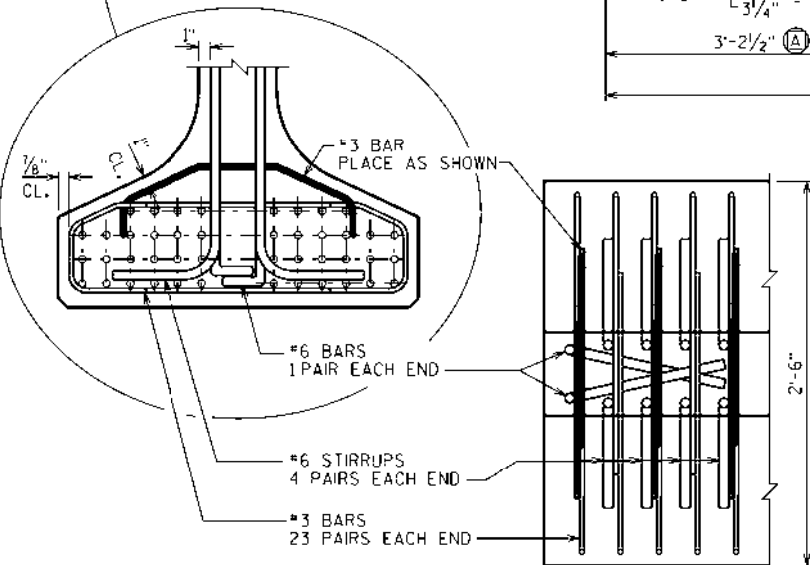
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



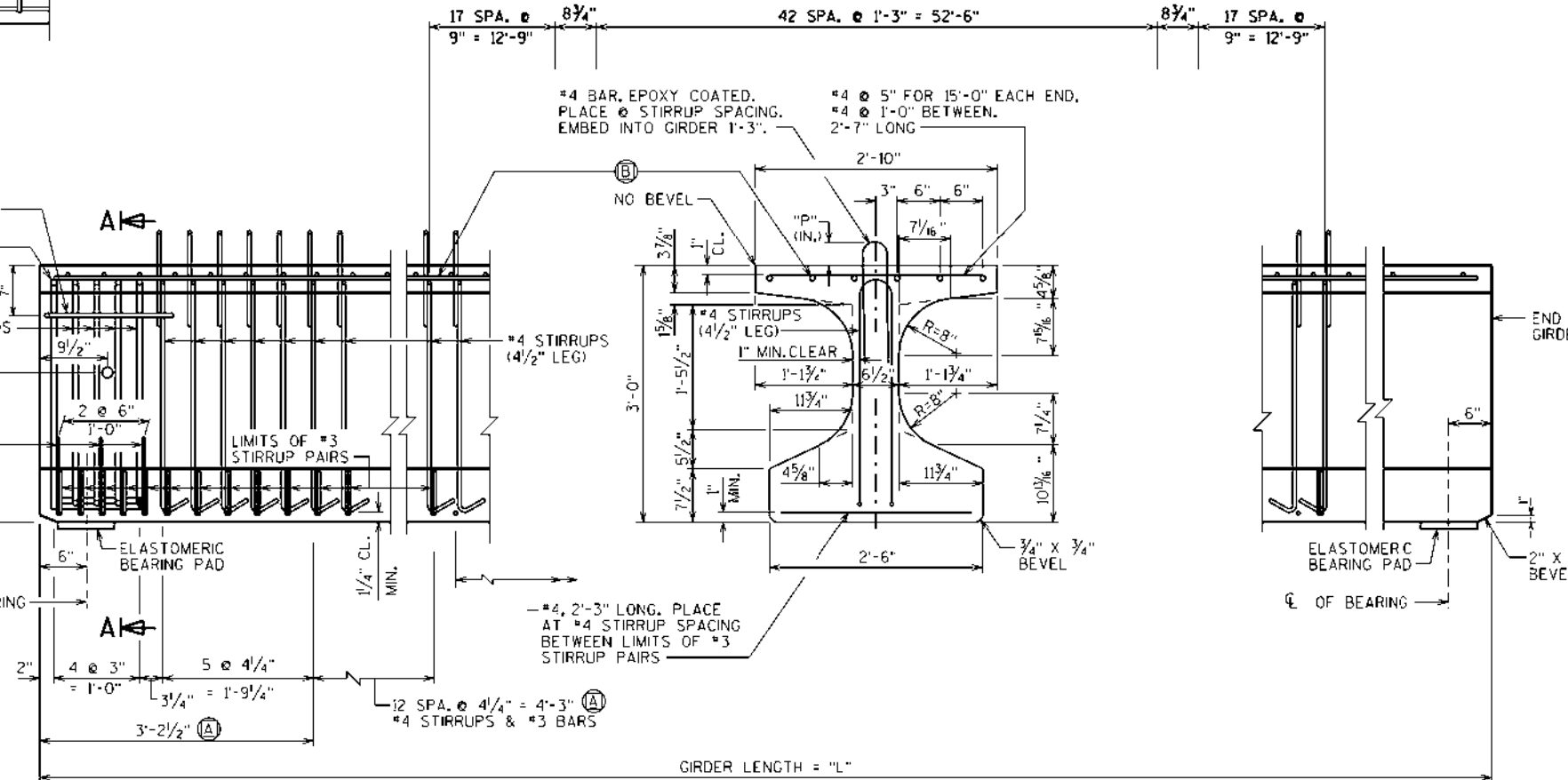
**TOP FLANGE**



**SECTION A-A**

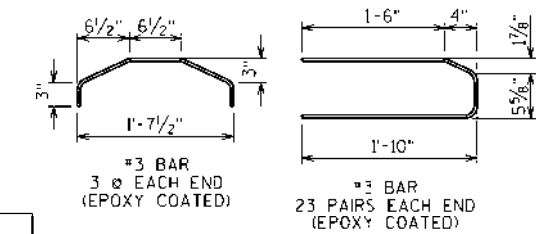
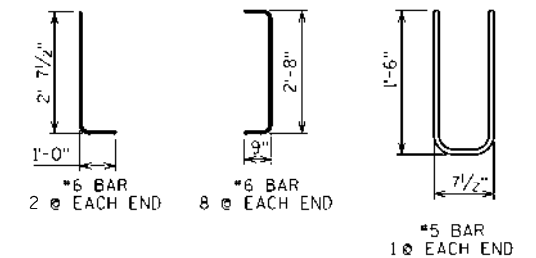


**BOTTOM FLANGE**



**SIDE VIEW & TYPICAL SECTION IN SPAN**

- (A) DETAIL TYP. AT EACH END
- (B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 2'-4"



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

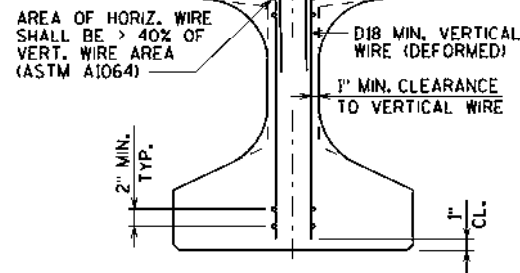
SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	DEAD LOAD DEFL. (IN.)									CONC. STRGTH. F <sub>c</sub> (P.S.I.)	"P" (IN.)			DIA. OF STRAND (IN.)	DRAPED PATTERN (IN.)					UNDRAPED PATTERN		
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10		1ST 1/3 OF GIRDER	MID 1/3 OF GIRDER	END 1/3 OF GIRDER		TOTAL NO. OF STRANDS	F <sub>ci</sub> (P.S.I.) *	"A"	"B" MIN.	"B" MAX.	"C"	TOTAL NO. OF STRANDS	F <sub>ci</sub> (P.S.I.) *
1	1 & 4	94'-4 1/2"	0.7	1.3	1.8	2.1	2.2	2.1	1.8	1.3	0.7	8,000	8	7 1/4"	8	0.6	32	6,400	31	11.5	14.5	5		
2	2 & 3	94'-4 1/2"	0.7	1.3	1.8	2.1	2.2	2.1	1.8	1.3	0.7	8,000	8	7 1/4"	8	0.6	32	6,400	31	11.5	14.5	5		

NO.	DATE	REVISION	BY
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<b>STRUCTURE B-11-175</b>			
DRAWN BY		CLP	PLANS CKD. JLB
<b>36W" PRESTRESSED GIRDER DETAILS</b>			SHEET 19 OF 26

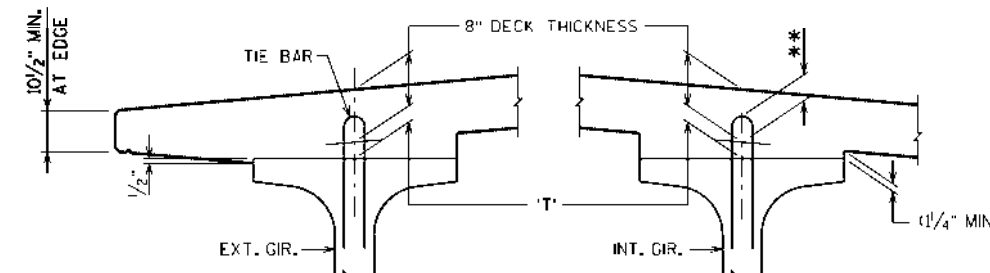
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\*4 BAR, EPOXY COATED. PLACE @ STIRRUP SPACING REQUIRED FOR NON WWF STIRRUPS. EMBED INTO GIRDER 1'-3".

HORIZ. WIRES SHALL BE LOCATED IN TOP AND BOT. FLANGES AND NOT IN THE WEB.



**SECTION THRU GIRDER**  
SHOWING WELDED WIRE FABRIC (WWF) STIRRUPS  
ASTM A1064 (FY = 70 KSI)



**DECK HAUNCH DETAIL**

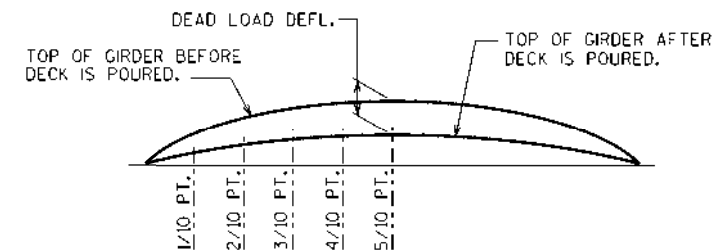
IF 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR.

\*\* IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

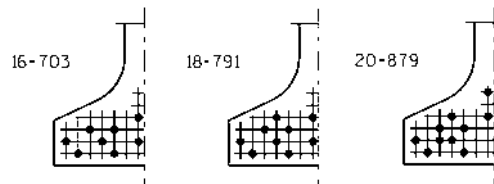
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT C OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

- 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 3 3/8" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

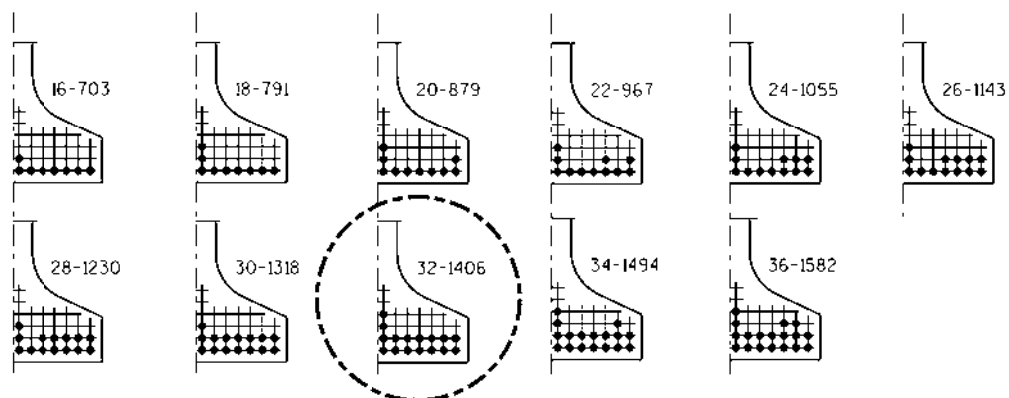


**DEAD LOAD DEFLECTION DIAGRAM**



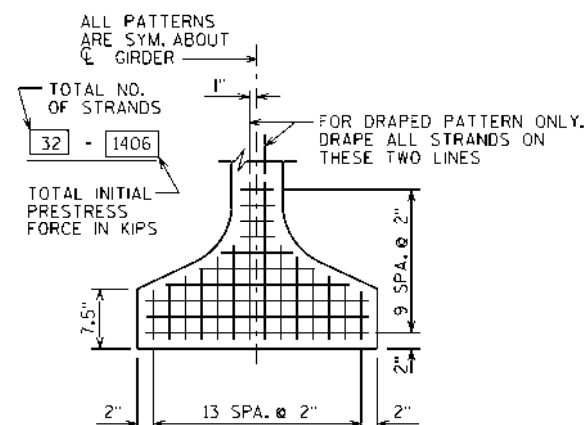
**STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS**

0.6" DIA. STRANDS



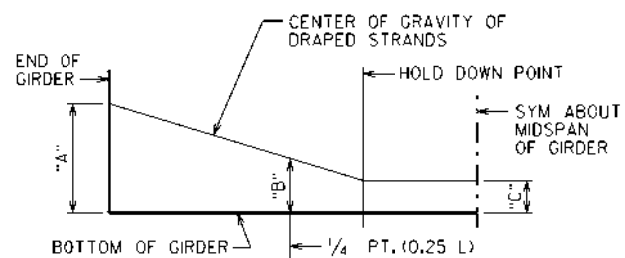
**ARRANGEMENT AT C SPAN - FOR GIRDERS WITH DRAPED STRANDS**

0.6" DIA. STRANDS



**TYP. STRAND PATTERN**

8/31/2022 PENTABLE:BRRequ\_shd\_util.tbi



**DRAPED STRAND PROFILE**

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

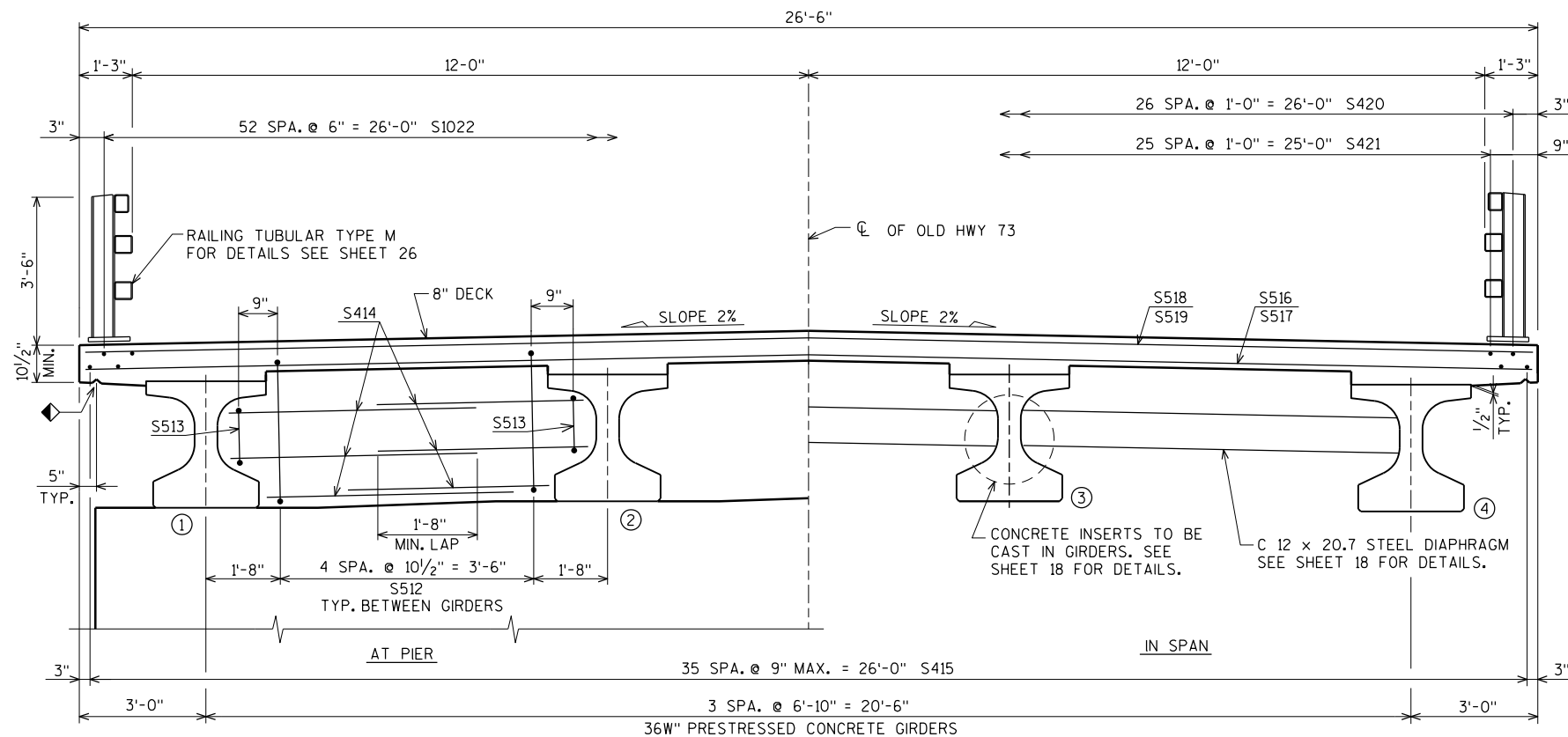
SPAN	CAMBER (IN.) *
1	3.7
2	3.7

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

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<b>STRUCTURE B-11-175</b>			
DRAWN BY		CLP	PLANS CKD. JLB
<b>36W" PRESTRESSED GIRDER DETAILS</b>			SHEET 20 OF 26



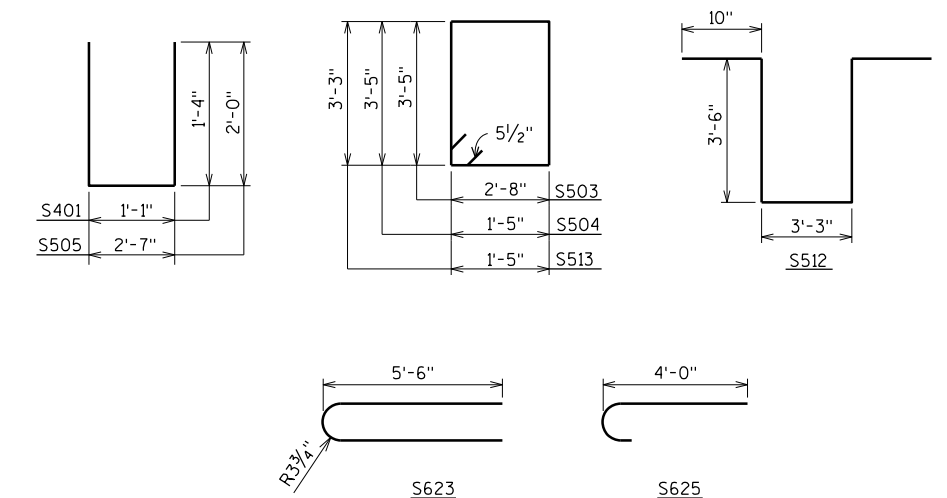


**TYPICAL SECTION THRU BRIDGE**  
(LOOKING NORTH)

**BILL OF BARS**

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	41.370# COATED	
							LOCATION	
S401	X	24	3-7	X			DIAPH. @ ABUT. VERT. @ NOTCH	
S402	X	12	3-8				DIAPH. @ ABUT. HORIZ. @ NOTCH	
S503	X	48	12-8	X			DIAPH. @ ABUT. VERT.	
S504	X	16	10-4	X			DIAPH. @ ABUT. VERT.	
S505	X	48	6-4	X			DIAPH. @ ABUT. VERT.	
S606	X	10	31-11				DIAPH. @ ABUT. HORIZ.	
S607	X	24	5-3				DIAPH. @ ABUT. HORIZ. BETW. GDRS.	
S608	X	6	4-10				DIAPH. @ ABUT. HORIZ. BETW. GDRS.	
S609	X	4	1-8				DIAPH. @ ABUT. HORIZ. @ EXT. GDRS.	
S610	X	8	2-11				DIAPH. @ ABUT. HORIZ. @ EXT. GDRS.	
S511	X	16	6-0				DIAPH. @ ABUT. HORIZ. THRU GDRS.	
S512	X	15	11-5	X			DIAPH. @ PIER VERT.	
S513	X	6	10-0	X			DIAPH. @ PIER VERT. @ GIRDERS	
S414	X	36	4-6				DIAPH. @ PIER HORIZ.	
S415	X	180	39-6				DECK LONG. BOT.	
S516	X	246	26-2				DECK TRANS. BOT.	
S517	X	46	13-3		X		DECK TRANS. BOT.	
S518	X	247	26-2				DECK TRANS. TOP	
S519	X	46	12-9		X		DECK TRANS. TOP	
S420	X	108	34-7				DECK LONG. TOP	
S421	X	104	43-2				DECK LONG. TOP	
S1022	X	53	41-10				DECK LONG. TOP @ PIER	
S623	X	124	12-0	X			DECK @ RAIL POSTS	
S624	X	232	6-0				DECK @ INT. RAIL POSTS	
S625	X	16	6-0	X			DECK @ END RAIL POSTS	

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.  
 X LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.



**BAR SERIES TABLE**

BAR MARK	NO. REQ'D.	LENGTH
S517	2 SERIES OF 23	2'-0" TO 24'-6"
S519	2 SERIES OF 23	1'-5" TO 24'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.

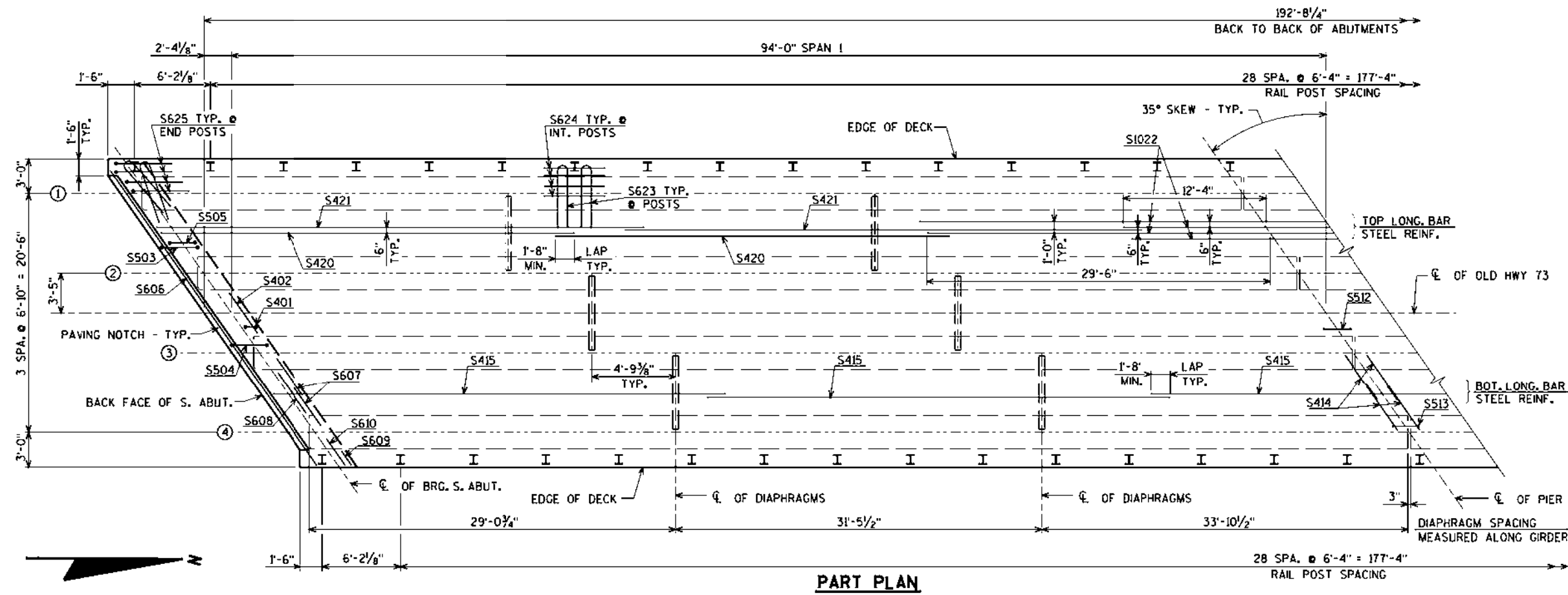
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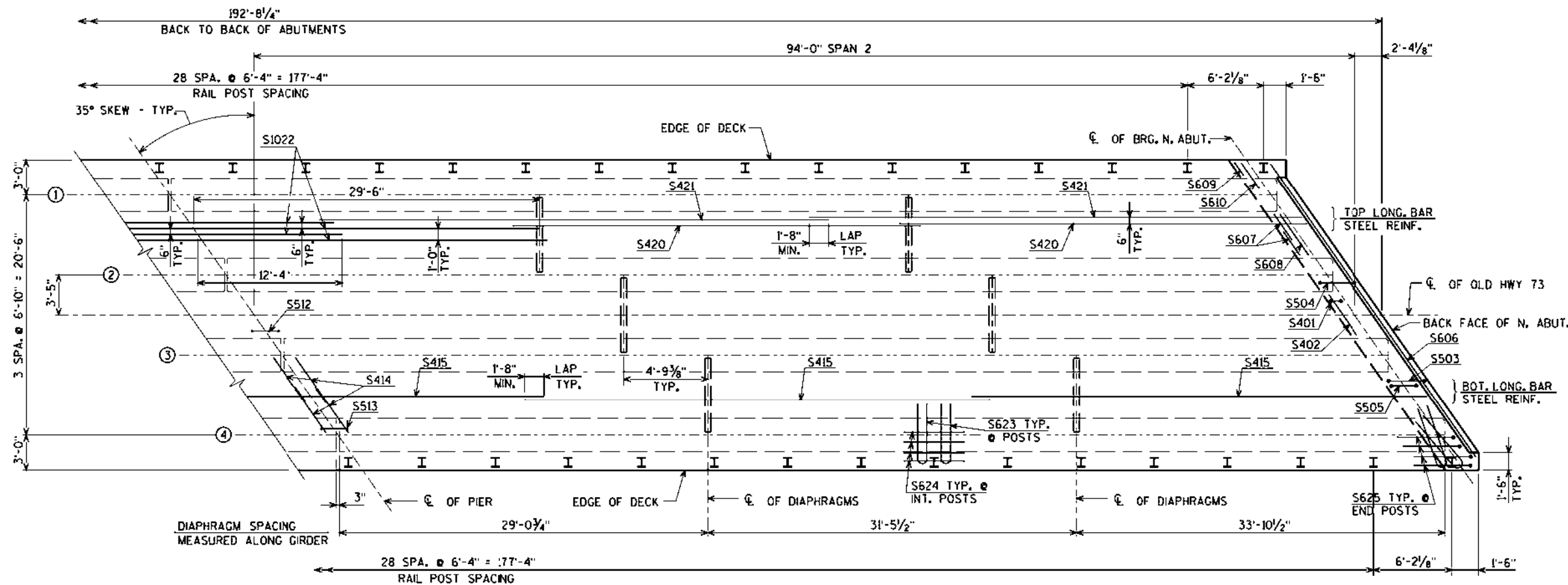
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ORIGINAL PLANS PREPARED BY  
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-11-175			
DRAWN BY		CLP	PLANS CK'D. JLB
SUPERSTRUCTURE			SHEET 21 OF 26



PART PLAN



PART PLAN

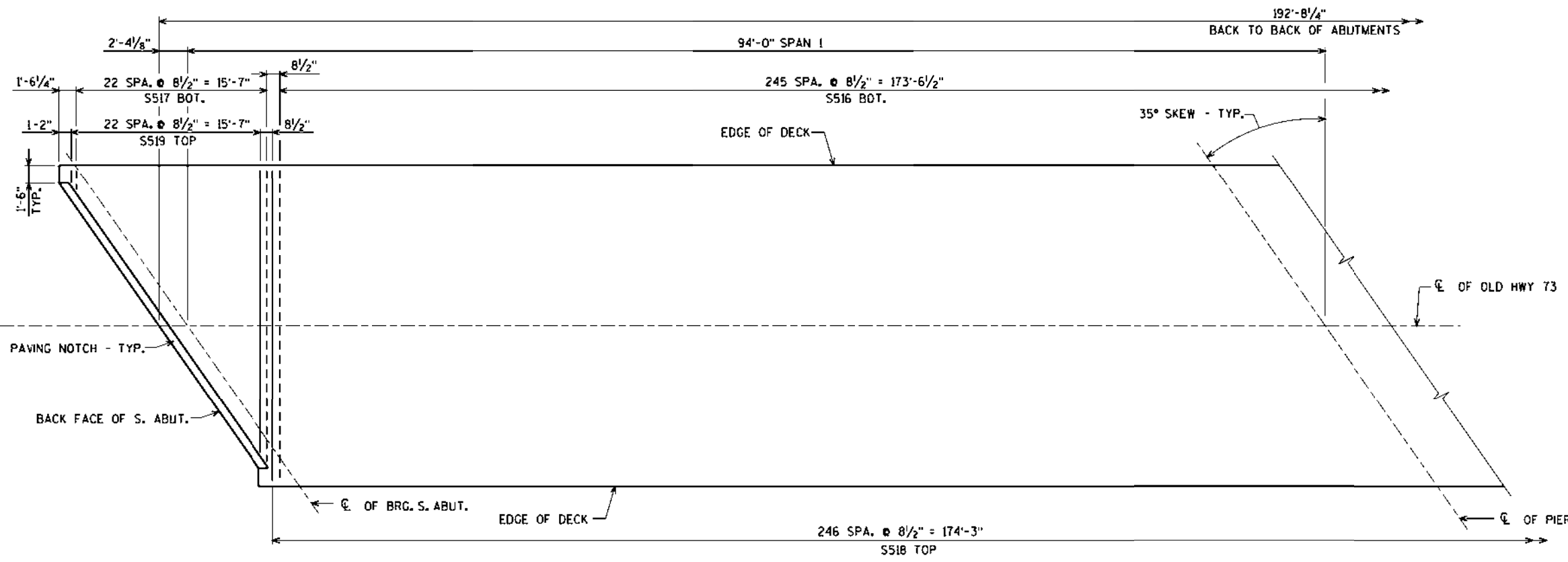
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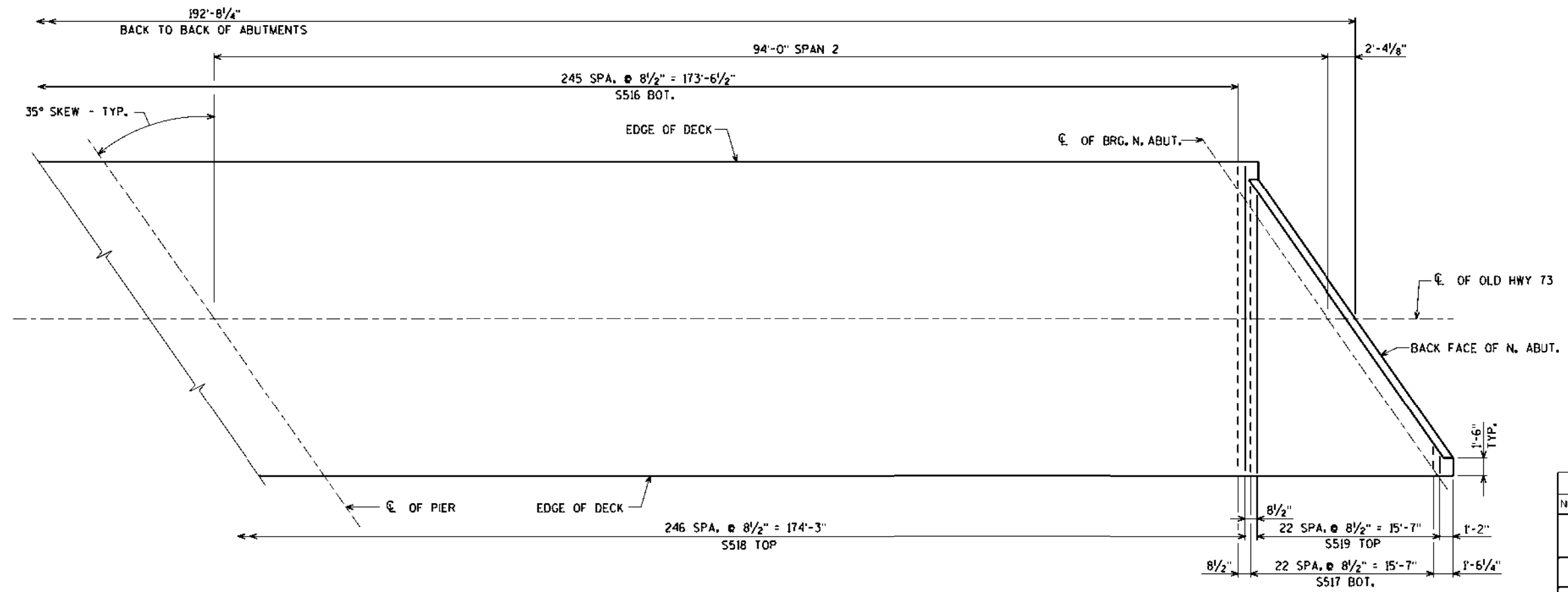
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY		CLP	PLANS CKD. JLB
<b>SUPERSTRUCTURE PLAN</b>			SHEET 22 OF 26

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**PART PLAN**



**PART PLAN**

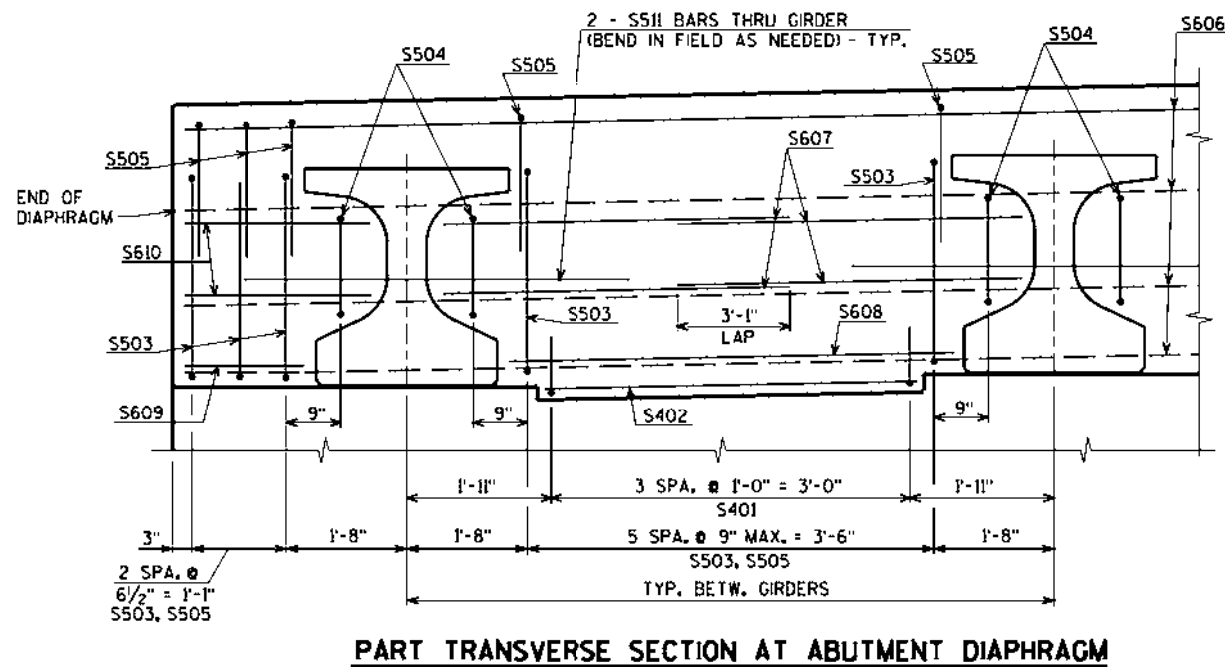
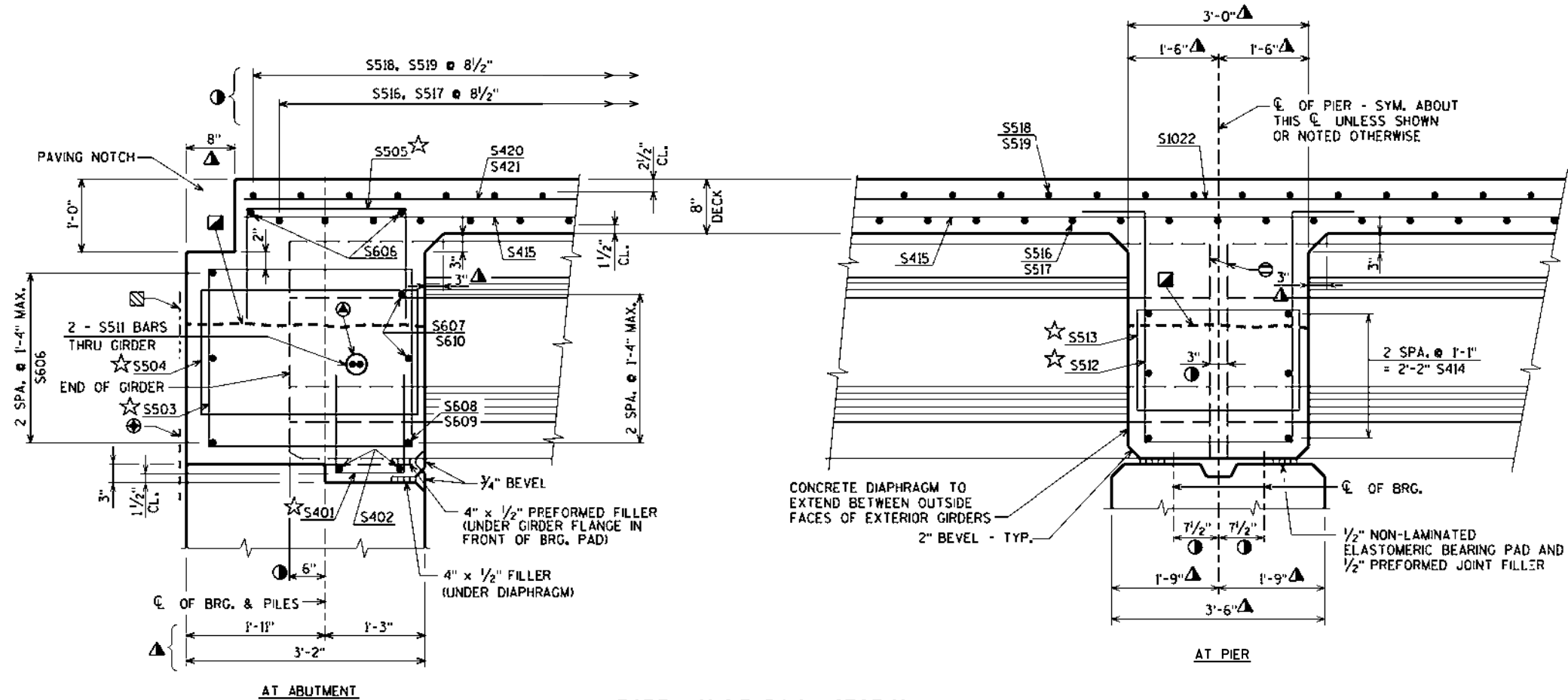
8/30/2022  
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY	CLP	PLANS CKD.	JLB
<b>SUPERSTRUCTURE TRANSVERSE BAR STEEL LAYOUT</b>			SHEET 23 OF 26

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- ⊗ 18" RUBBERIZED MEMBRANE WATERPROOFING
- ⊙ DIMENSION IS TAKEN PARALLEL TO  $\bar{C}$  OF GIRDER.
- ⚠ DIMENSIONS MEASURED NORMAL TO  $\bar{C}$  OF SUBSTRUCTURE UNIT.
- ⊠ OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDER. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.
- ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JT. IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES"
- ⊙ 1- 1/2" DIA. HOLE IN WEB FOR S511 BARS. PLACE S511 BARS SYM. ABOUT  $\bar{C}$  OF GIRDERS. FIELD BEND ALONG SKEW.
- ☆ BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO  $\bar{C}$  OF GIRDERS.
- ⊖ END OF GIRDER.

9/1/2022 PENTABLE:BRRequ\_shd\_util.tb1

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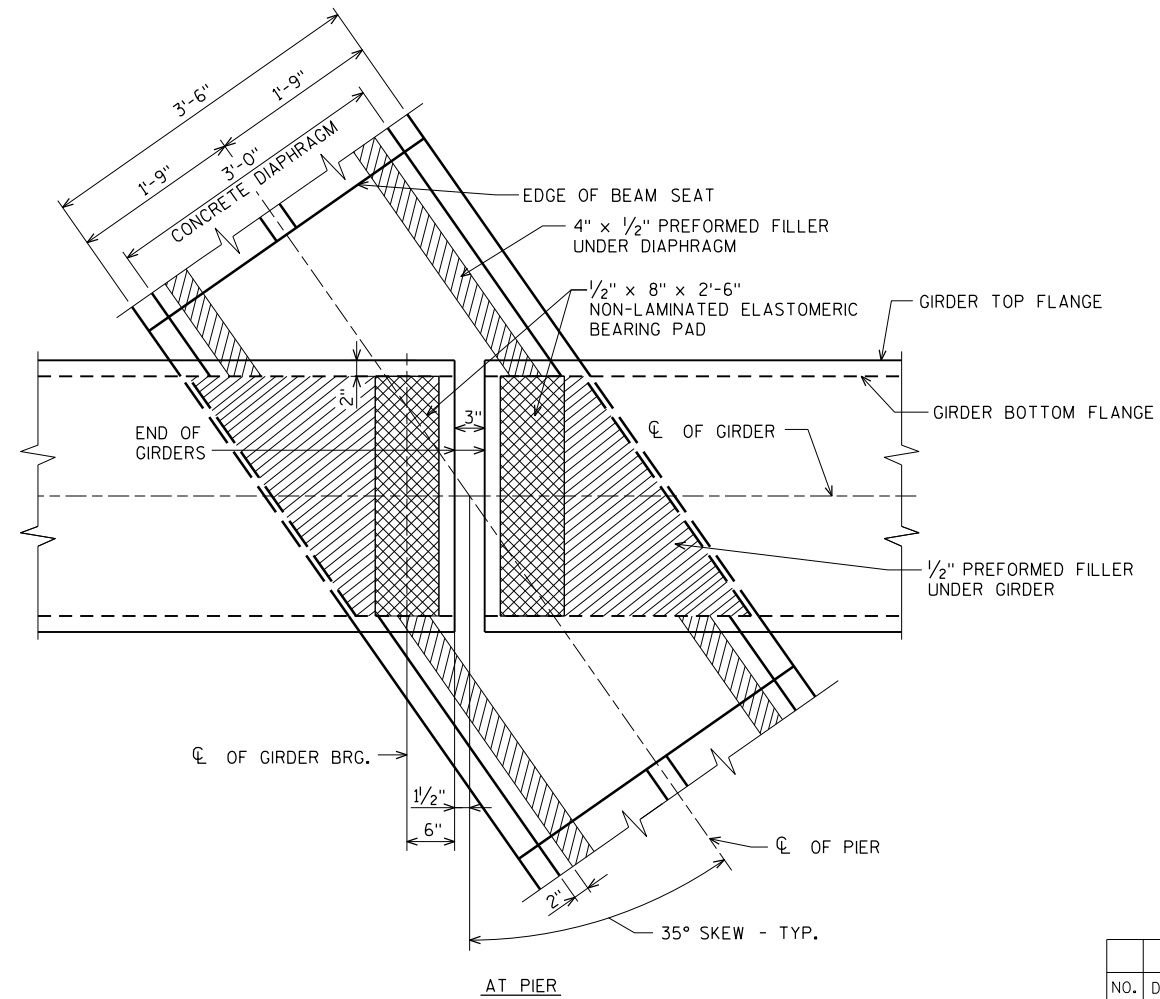
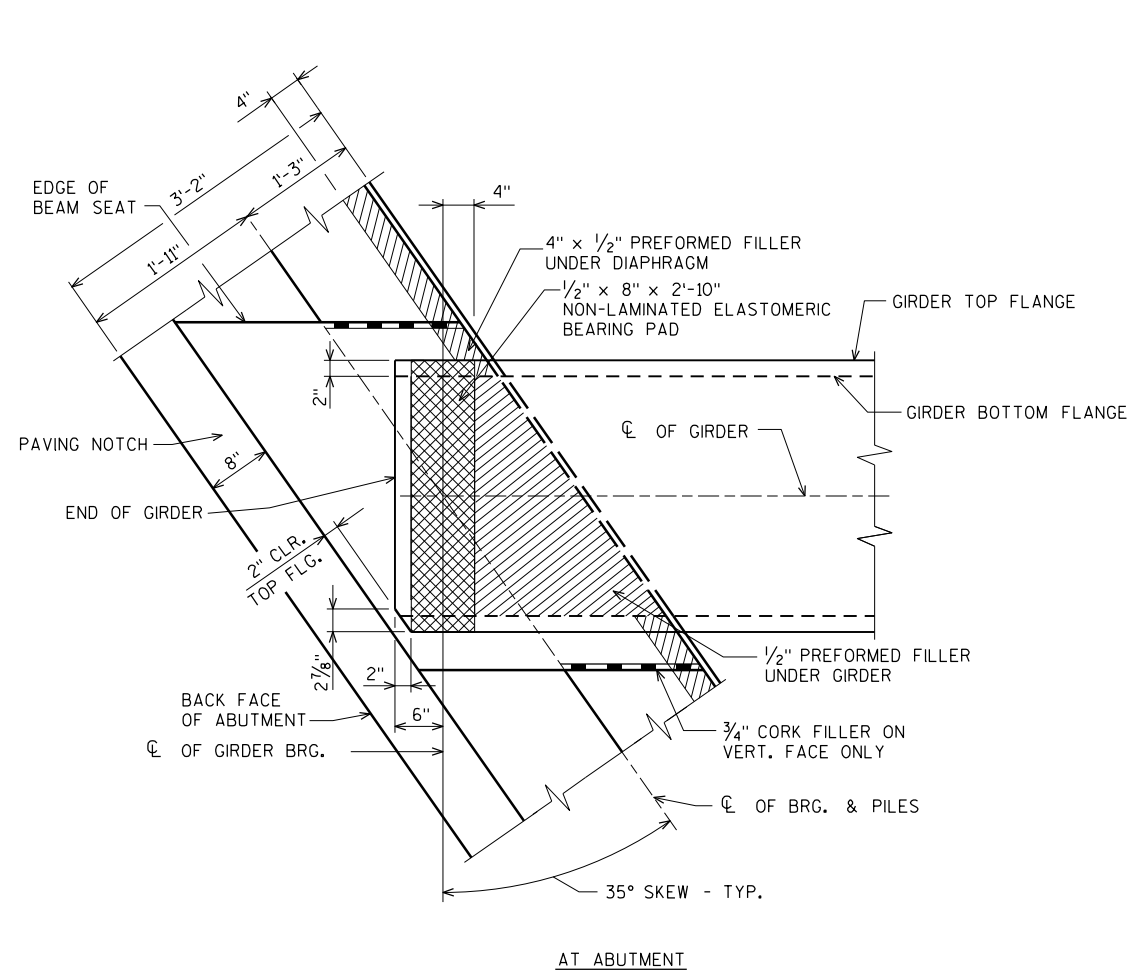
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY CLP		PLANS CKD. JLB	
<b>SUPERSTRUCTURE DETAILS</b>			SHEET 24 OF 26

ORIGINAL PLANS PREPARED BY  
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TOP OF DECK ELEVATIONS

	℄ OF S. ABUT.	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	℄ OF PIER	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	℄ OF N. ABUT.
W. EDGE OF DECK	846.63	846.57	846.51	846.45	846.39	846.33	846.27	846.22	846.16	846.10	846.04	845.98	845.92	845.86	845.80	845.74	845.69	845.63	845.57	845.51	845.45
GIRDER 1	846.67	846.62	846.56	846.50	846.44	846.38	846.32	846.26	846.20	846.14	846.09	846.03	845.97	845.91	845.85	845.79	845.73	845.67	845.61	845.56	845.50
GIRDER 2	846.78	846.72	846.66	846.60	846.55	846.49	846.43	846.37	846.31	846.25	846.19	846.13	846.07	846.02	845.96	845.90	845.84	845.78	845.72	845.66	845.60
℄ OF OLD HWY 73	846.83	846.78	846.72	846.66	846.60	846.54	846.48	846.42	846.36	846.30	846.25	846.19	846.13	846.07	846.01	845.95	845.89	845.83	845.77	845.72	845.66
GIRDER 4	846.75	846.69	846.63	846.57	846.52	846.46	846.40	846.34	846.28	846.22	846.16	846.10	846.04	845.99	845.93	845.87	845.81	845.75	845.69	845.63	845.56
GIRDER 5	846.58	846.53	846.47	846.41	846.35	846.29	846.23	846.17	846.11	846.05	846.00	845.94	845.88	845.82	845.76	845.70	845.64	845.58	845.52	845.47	845.39
E. EDGE OF DECK	846.51	846.45	846.39	846.33	846.28	846.22	846.16	846.10	846.04	845.98	845.92	845.86	845.80	845.75	845.69	845.63	845.57	845.51	845.45	845.39	845.31



BEARING PAD DETAIL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-11-175			
DRAWN BY CLP		PLANS CK'D. JLB	
SUPERSTRUCTURE ELEVATIONS AND BEARINGS			SHEET 25 OF 26

ORIGINAL PLANS PREPARED BY  
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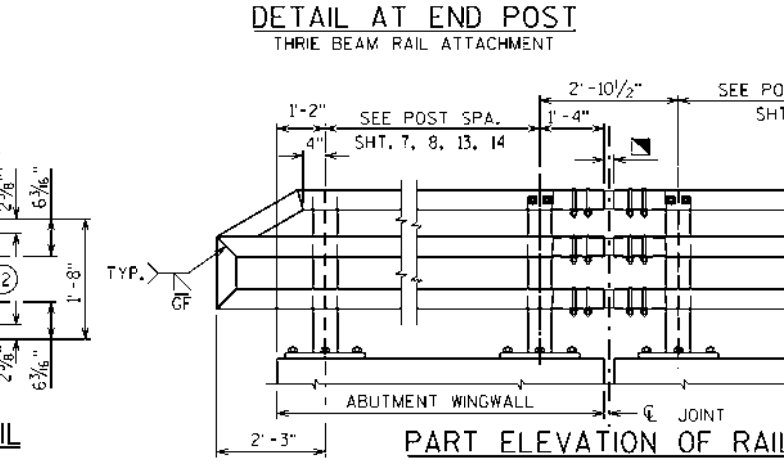
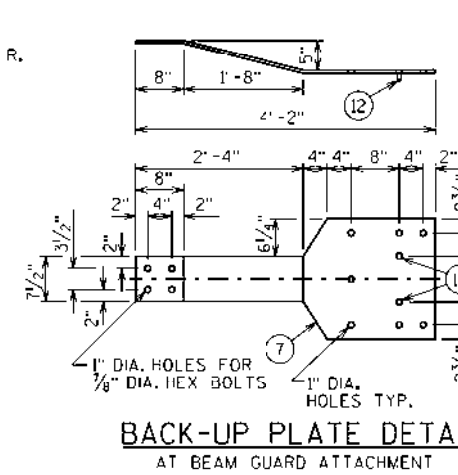
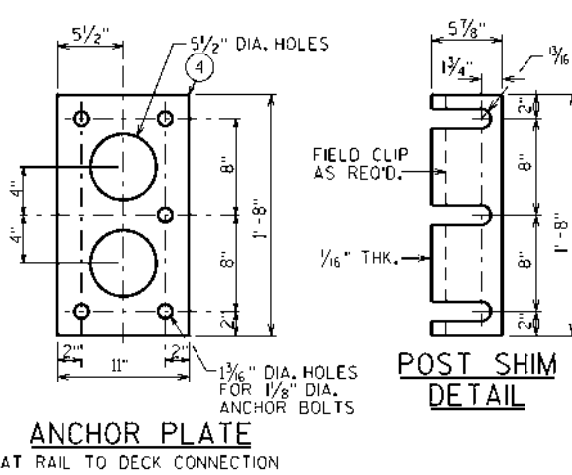
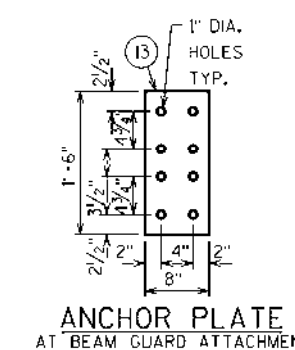
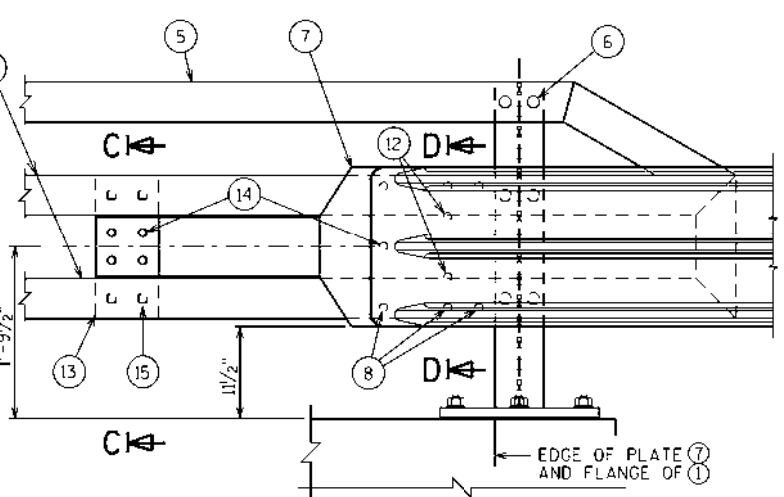
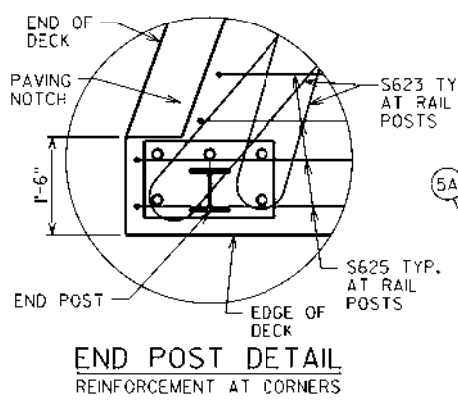
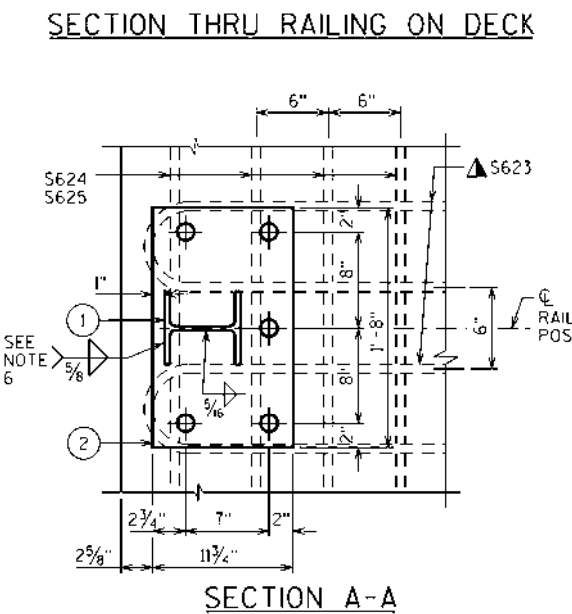
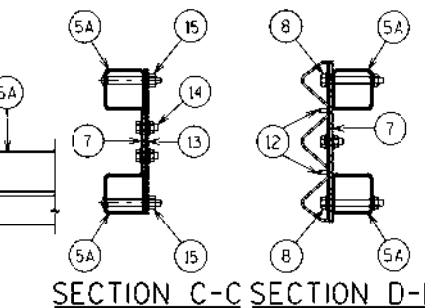
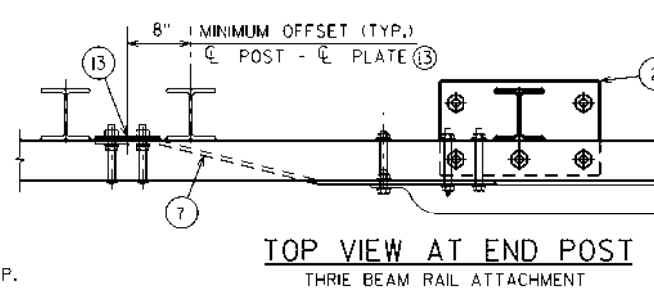
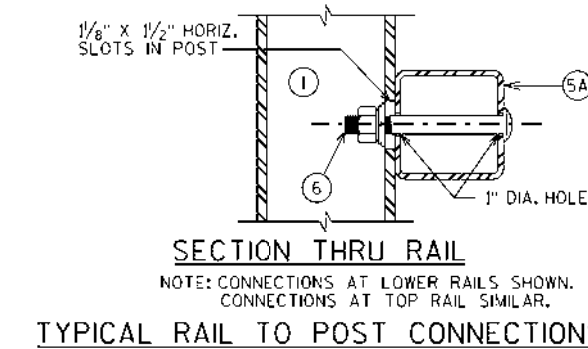
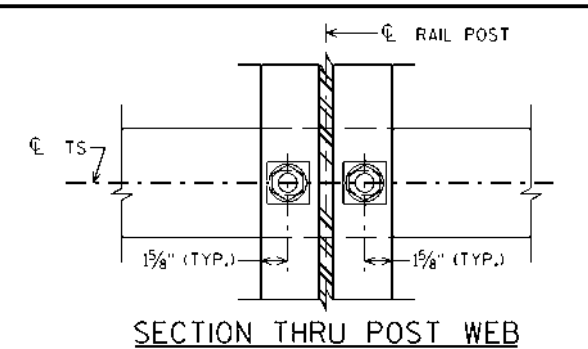
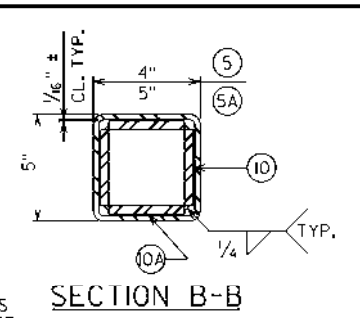
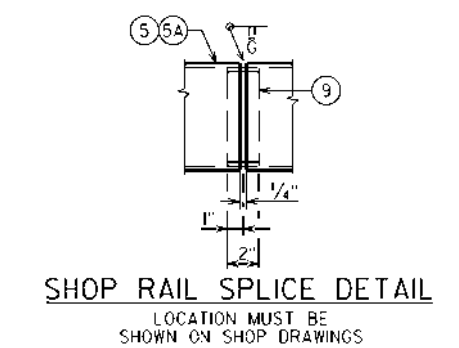
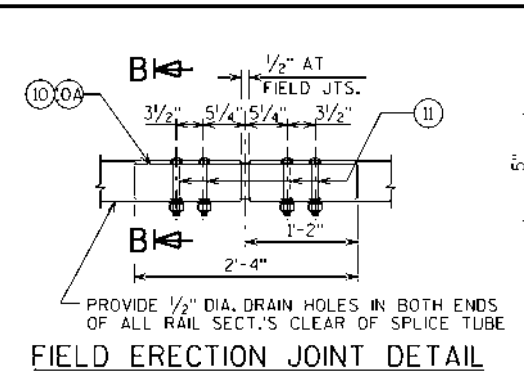
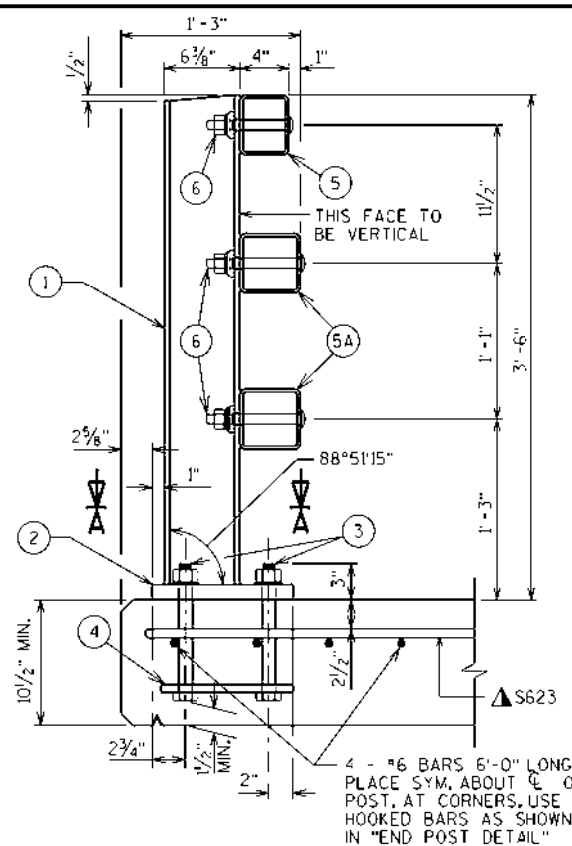
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**LEGEND**

- ① W6 x 25 WITH 1/8" x 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 1/4" x 11 3/4" x 1'-8" WITH 1 1/8" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- ③ ASTM A449 - 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED), 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE 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 > 10" 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 3/4" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 1/8" 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 3/8" 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 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THREE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 3/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- ⑨ SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- ⑩ 3/8" x 3 5/8" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- ⑩A 3/8" x 2 5/8" x 2'-4" PLATE USED IN NO. 5A. 3/8" x 3 5/8" x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪ 3/4" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 1/2" x 1 1/4" LONG. SLOTTED HOLES AT FIELD JOINTS AND 1 1/2" x 2 1/4" MIN. LONG. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A. PROVIDE 1/8" DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.
- ⑫ 3/8" DIA. x 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 THREE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- ⑭ 3/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.)
- ⑮ 1" DIA. HOLES IN TUBES NO. 5A FOR 3/8" 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 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE 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.



- ▲ 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.
- 1/4" TO 3/4" OPENING AT ALL ABUTMENTS.

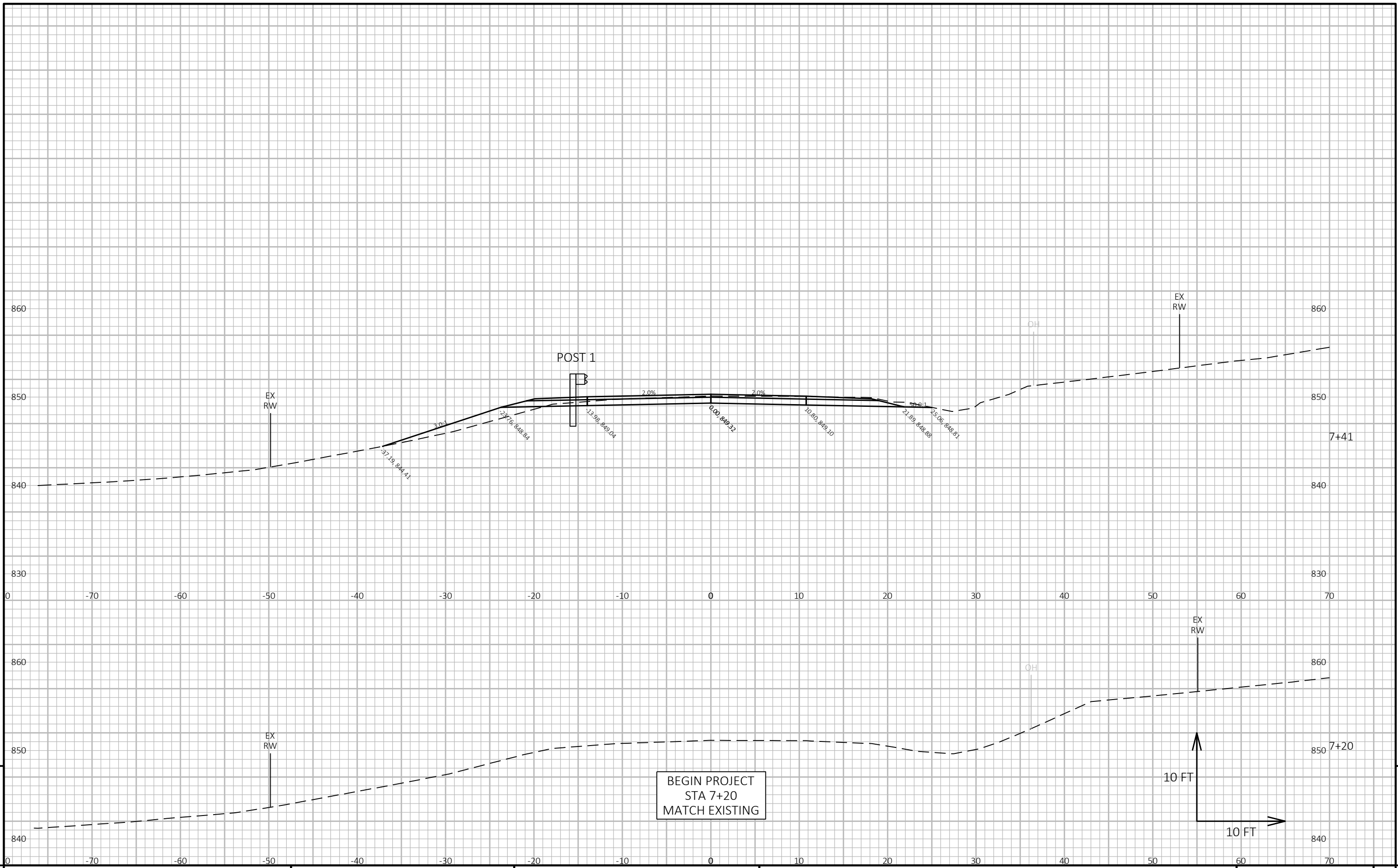
ORIGINAL PLANS PREPARED BY  
**AYRES** 3433 Oakwood Hills Parkway  
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-11-175</b>			
DRAWN BY		CLP	PLANS CKD. JLB
<b>TUBULAR STEEL RAILING TYPE 'M'</b>			SHEET 26 OF 26

**OLD STH 73 ROAD COMPUTER EARTHWORK**

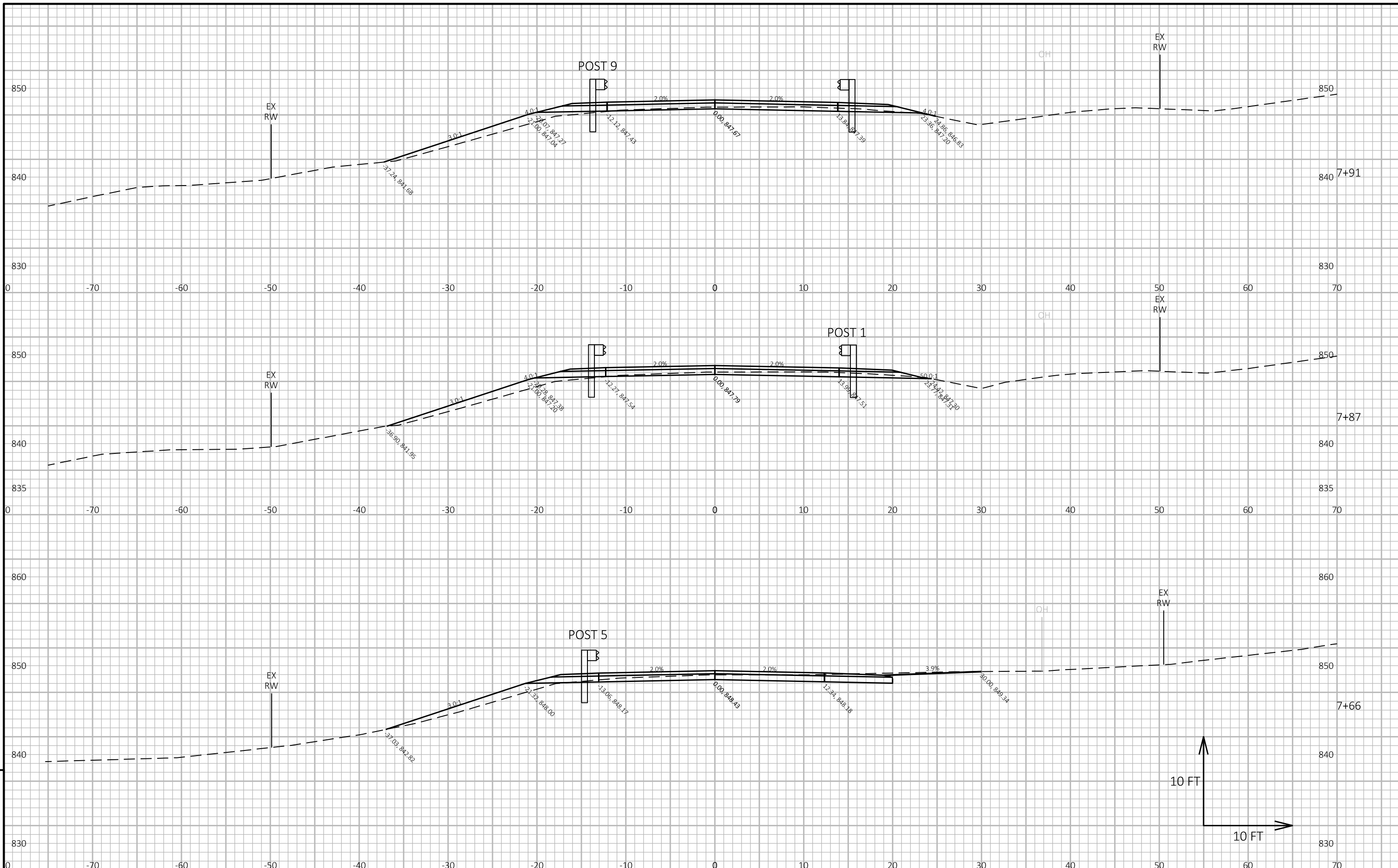
Station	Distance	Area (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			Mass Ordinate
		Cut	Unusable Cut	Fill	Cut	Unusable Cut	Fill	Cut 1.00	Unusable Cut	Expanded Fill 1.30	
7+20	--	0.0	0.0	0.0	--	--	--				
7+41	21	31.2	18.3	12.6	12	7	5	12	7	7	-2
7+66	25	25.5	18.3	12.3	26	17	12	38	24	23	-9
7+87	21	11.2	18.3	14.3	14	14	10	52	38	36	-22
7+91	4	7.8	18.3	15.2	1	3	2	53	41	39	-27
8+12	21	3.6	18.3	24.6	4	14	15	57	55	59	-57
8+37	25	0.0	18.3	18.8	2	17	20	59	72	85	-98
8+50	13	0.0	18.3	27.5	0	9	11	59	81	99	-121
8+60	10	0.0	18.3	37.9	0	7	12	59	88	115	-144
8+91	31	0.0	18.3	140.4	0	21	102	59	109	248	-298
NEW BRIDGE	--	--	--	--	--	--	--	--	--	--	--
10+99	--	0.0	18.3	254.4	--	--	--	--	--	--	--
11+25	26	9.3	18.3	316.3	4	18	275	63	127	606	-670
11+50	25	9.8	18.3	294.9	9	17	283	72	144	974	-1046
11+62	12	3.8	18.3	340.8	3	8	141	75	152	1157	-1234
11+87	25	2.6	18.3	287.4	3	17	291	78	169	1535	-1626
12+12	25	5.1	18.3	246.2	4	17	247	82	186	1856	-1960
12+25	13	4.7	18.3	196.5	2	9	107	84	195	1995	-2106
12+53	28	0.3	18.3	103.7	3	19	156	87	214	2198	-2325
12+78	25	7.0	18.3	73.5	3	17	82	90	231	2305	-2446
13+03	25	4.6	18.3	50.0	5	17	57	95	248	2379	-2532
13+25	22	0.0	18.3	0.0	2	15	20	97	263	2405	-2571
13+50	25	0.0	18.3	0.0	0	17	0	97	280	2405	-2588
13+75	25	27.1	18.3	6.5	13	17	3	110	297	2409	-2596
13+85	260	0.0	0.0	0.0	130	88	31	240	385	2449	-2594
					240	385	1882				

Note 1 - Cut	Cut includes unusable pavement material.
Note 2 - Unusable Cut	Existing asphalt pavement. Not to be used outside the 1:1 road core.
Note 3 - Expanded Fill	Volume needed to be filled = Fill * 1.30 (Does not include unusable pavement excavation volume.)
Note 4 - Mass Ordinate	(Cut) - (Unusable) - (Expanded Fill * Fill Factor)



PROJECT NO: 6217-00-78      HWY: OLD STH 73      COUNTY: COLUMBIA      CROSS SECTIONS: OLD STH 73      SHEET      E





PROJECT NO: 6217-00-78

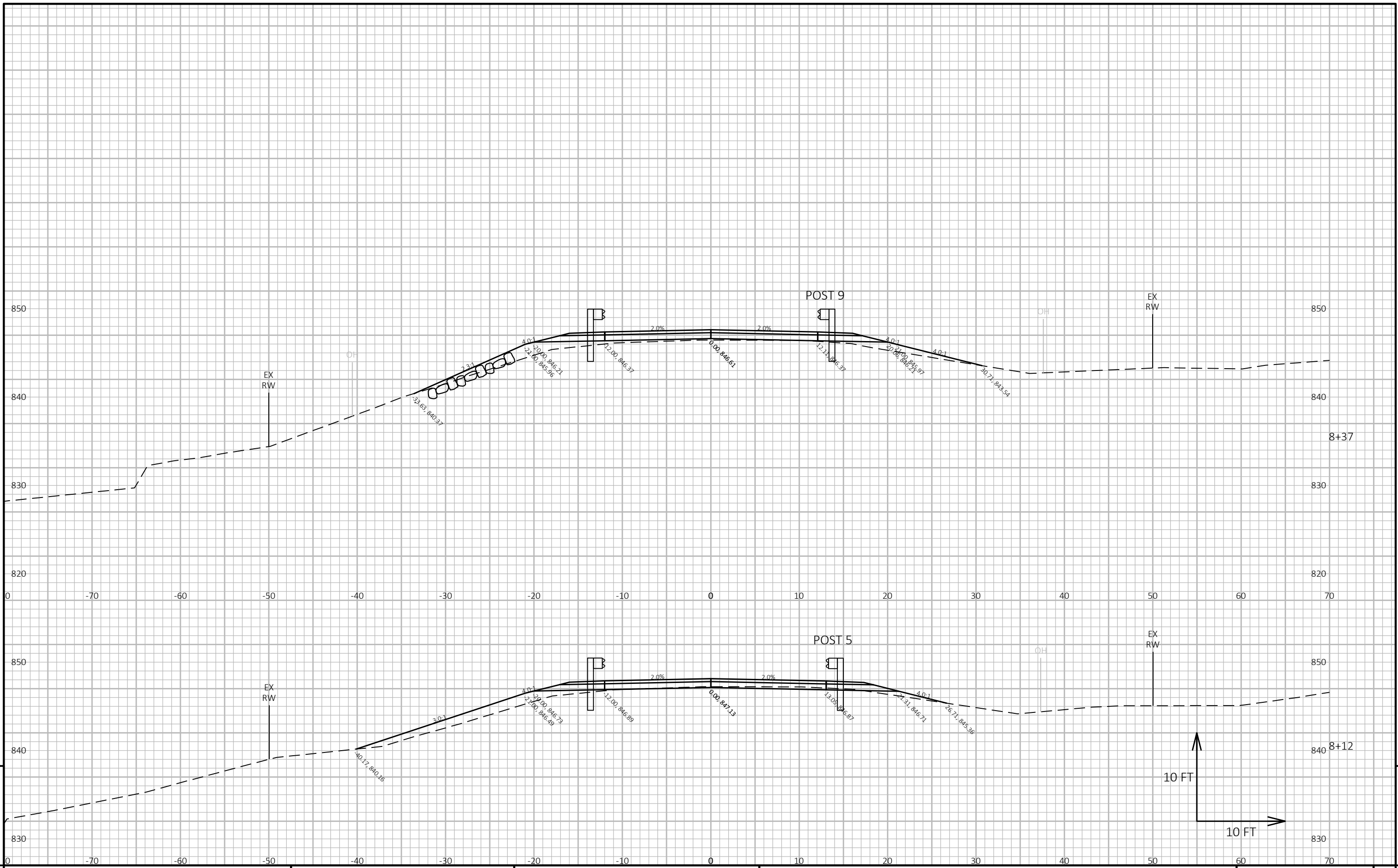
HWY: OLD STH 73

COUNTY: COLUMBIA

CROSS SECTIONS: OLD STH 73

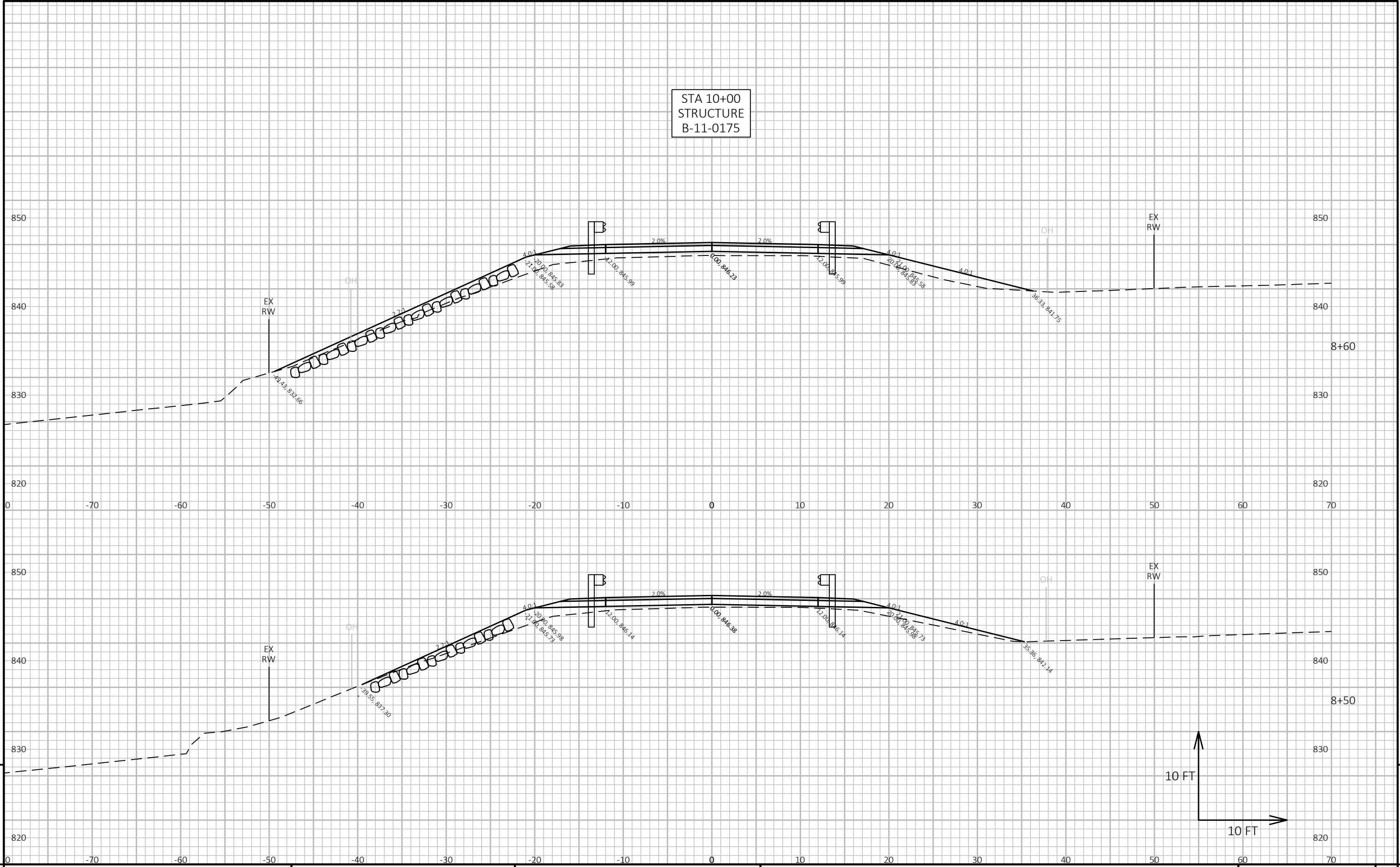
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PROJECT NO: 6217-00-78      HWY: OLD STH 73      COUNTY: COLUMBIA      CROSS SECTIONS: OLD STH 73      SHEET      E

STA 10+00  
STRUCTURE  
B-11-0175

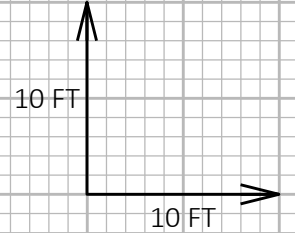


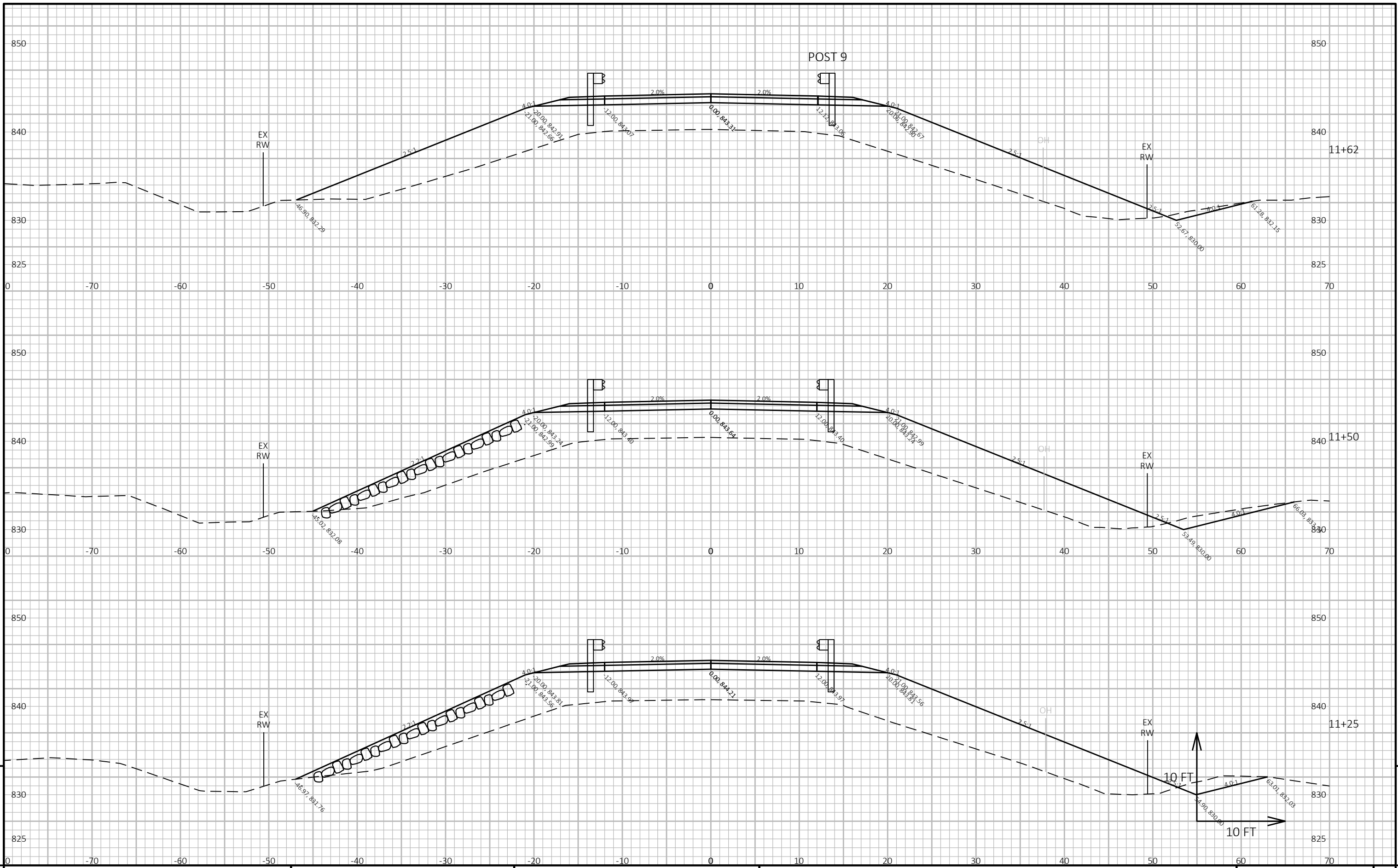
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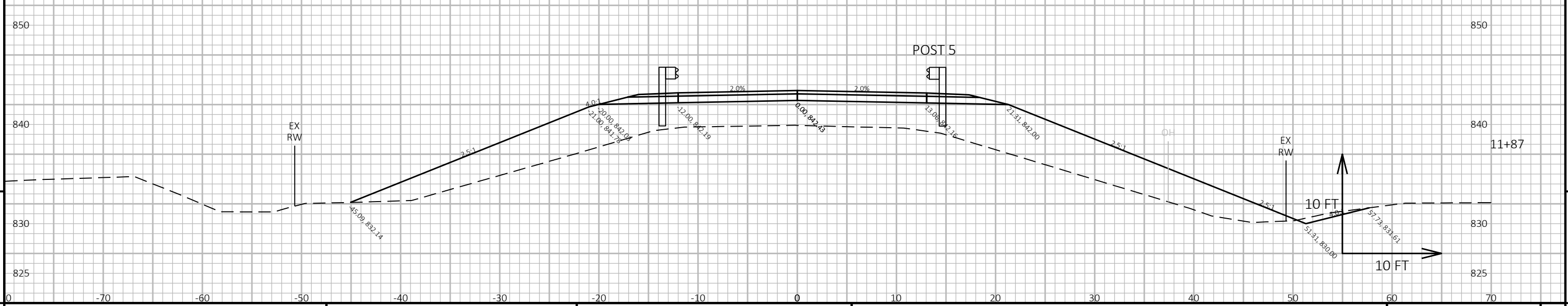
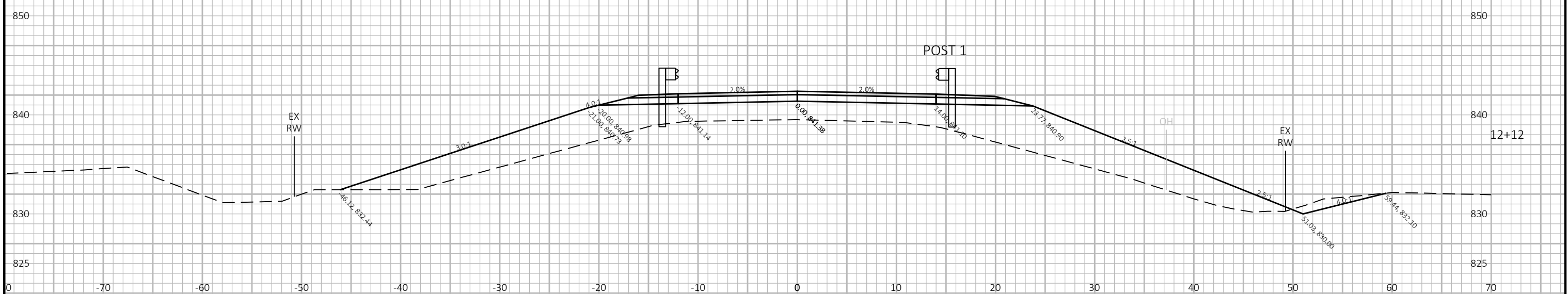
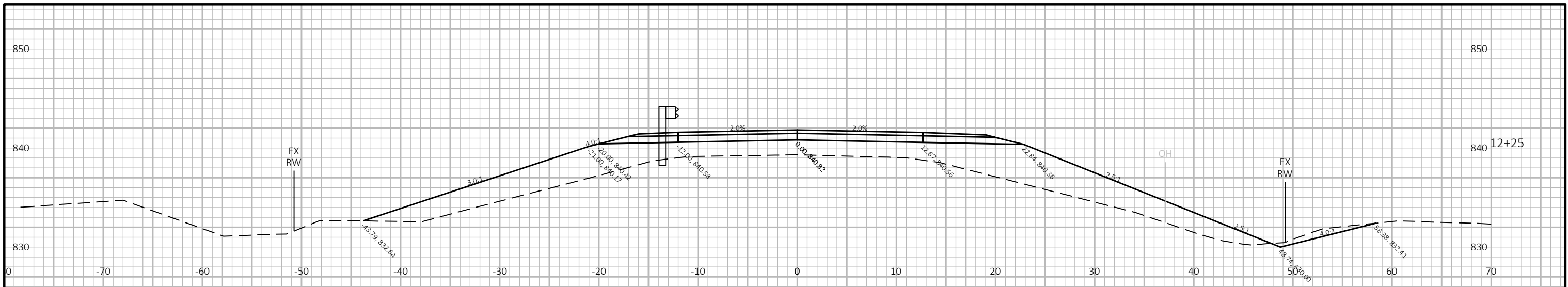
PROJECT NO: 6217-00-78      HWY: OLD STH 73      COUNTY: COLUMBIA      CROSS SECTIONS: OLD STH 73      SHEET      E

FILE NAME : I:\47\410837 OLD HWY 73 OVER CRAWFISH RIVER\C3D\DESIGN\CORRIDORS\CRDR-OLD73.DWG      PLOT DATE : 9/19/2022 4:10 PM      PLOT BY : ROSA, AUSTIN      PLOT NAME :      PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.      WISDOT/CADD SHEET 49

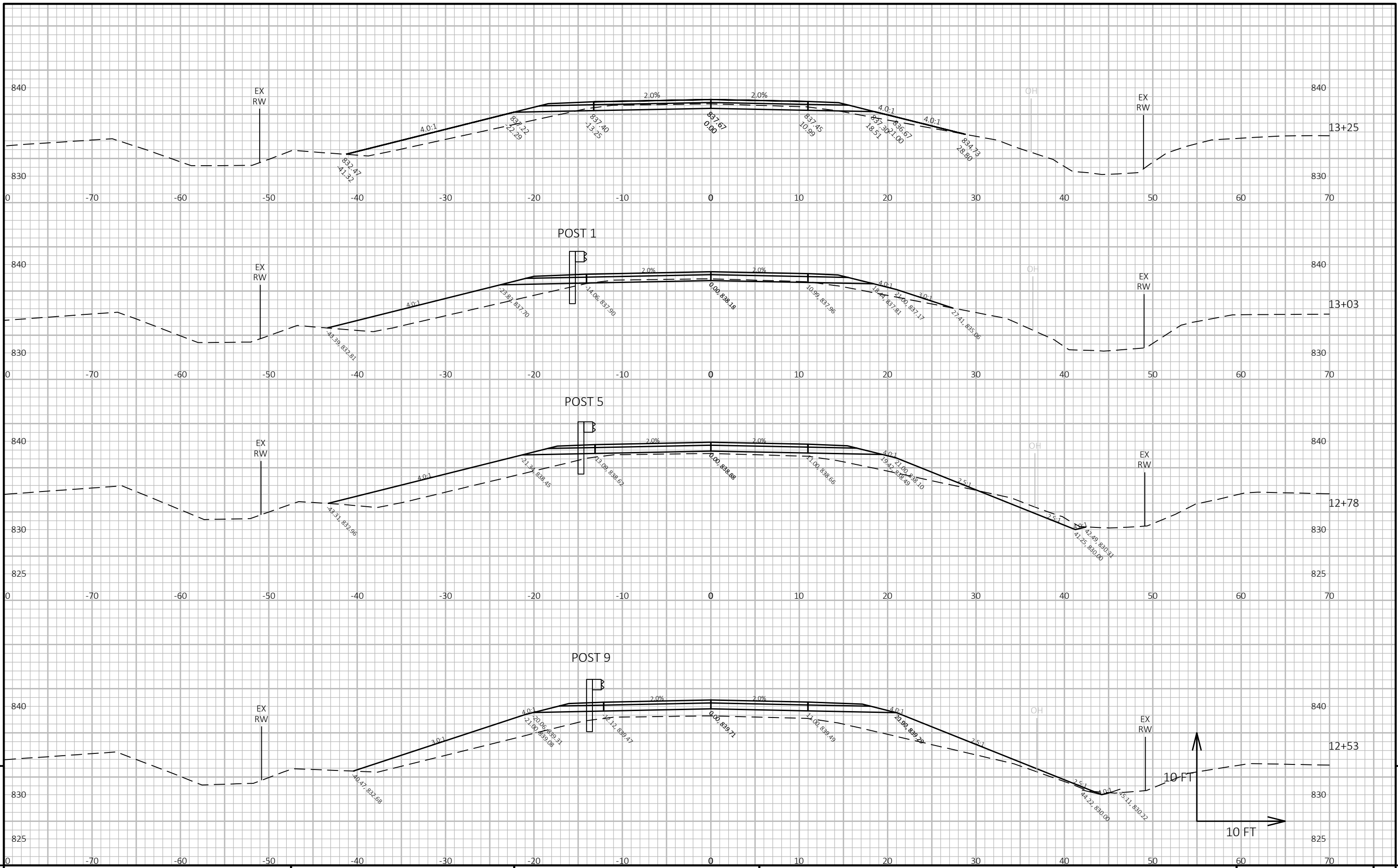




PROJECT NO: 6217-00-78	HWY: OLD STH 73	COUNTY: COLUMBIA	CROSS SECTIONS: OLD STH 73
SHEET			E



PROJECT NO: 6217-00-78	HWY: OLD STH 73	COUNTY: COLUMBIA	CROSS SECTIONS: OLD STH 73	SHEET	E
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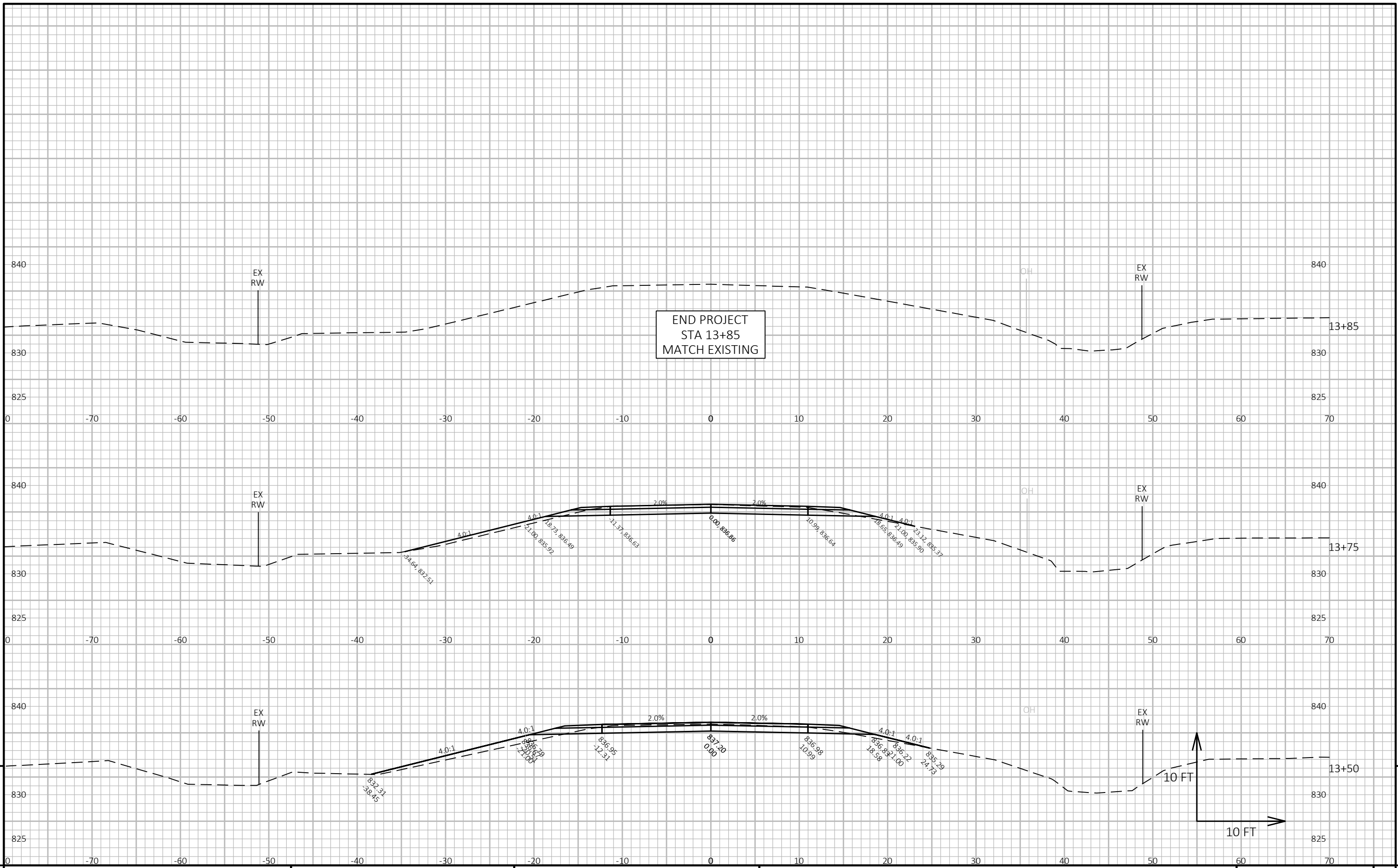
9

9

PROJECT NO: 6217-00-78      HWY: OLD STH 73      COUNTY: COLUMBIA      CROSS SECTIONS: OLD STH 73      SHEET      E

FILE NAME : I:\47\410837 OLD HWY 73 OVER CRAWFISH RIVER\C3D\DESIGN\CORRIDORS\CRDR-OLD73.DWG      PLOT DATE : 9/19/2022 4:10 PM      PLOT BY : ROSA, AUSTIN      PLOT NAME :      PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.      WISDOT/CADD SHEET 49

LAYOUT NAME - 07



PROJECT NO: 6217-00-78

HWY: OLD STH 73

COUNTY: COLUMBIA

CROSS SECTIONS: OLD STH 73

SHEET

E



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