

1

STANDARD ABBREVIATIONS

ABUT	ABUTMENT	HYD	HYDRANT
AC	ACRE	ID	INSIDE DIAMETER
AGG	AGGREGATE	INV	INVERT
AECPRC	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE	IP	IRON PIPE ON PIN
AECPCS	APRON ENDWALL FOR CULVERT PIPE CORRUGATED STEEL	LHF	LEFT-HAND FORWARD
ASPH	ASPHALTIC	L	LENGTH OF CURVE
AVG	AVERAGE	LF	LINEAR FOOT
ADT	AVERAGE DAILY TRAFFIC	LC	LONG CHORD OF CURVE
BF	BACK FACE	LS	LUMP SUM
BM	BENCH MARK	MH	MANHOLE
BR	BRIDGE	MOR	MID POINT OF RADIUS
CE	COMMERCIAL ENTRANCE	NC	NORMAL CROWN
C/L	CENTER LINE	NO	NUMBER
Δ	CENTRAL ANGLE OR DELTA	OBLIT	OBLITERATE
COB	CENTER OF BARRIER	PAVT	PAVEMENT
CONC	CONCRETE	PE	PRIVATE ENTRANCE
CPRC	CULVERT PIPE REINFORCED CONCRETE	PVRC	POINT OF VERTICAL REVERSE CURVE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL	QOR	QUARTER POINT OF RADIUS
CR	CREEK	R	RADIUS
CY	CUBIC YARD	REQ'D	REQUIRED
C&G	CURB AND GUTTER	RES	RESIDENCE OR RESIDENTIAL
D	DEGREE OF CURVE	RHF	RIGHT-HAND FORWARD
DHV	DESIGN HOUR VOLUME	R/W	RIGHT-OF-WAY
DISCH	DISCHARGE	R	RIVER
DG	DITCH GRADE	RDWY	ROADWAY
DWY	DRIVEWAY	R/L	REFERENCE LINE
X	EAST GRID COORDINATE	SALV	SALVAGED
EAT	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	SAN	SANITARY SEWER
EOR	END POINT OF RADIUS	SF	SQUARE FEET
EL	ELEVATION	SY	SQUARE YARD
ENT	ENTRANCE	SDD	STANDARD DETAIL DRAWINGS
ESALS	EQUIVALENT SINGLE AXLE LOADS	STA	STATION
EXC	EXCAVATION	SS	STORM SEWER
EBS	EXCAVATION BELOW SUBGRADE	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
EXIST	EXISTING	SE	SUPERELEVATION RATE
FC	FACE OF CURB	TC	TOP OF CURB
FF	FACE TO FACE	T OR TN	TOWN
FERT	FERTILIZE	T	TRUCKS (PERCENT OF)
FE	FIELD ENTRANCE	TYP	TYPICAL
FL	FLOW LINE	VAR	VARIABLE
FO	FIBER OPTIC	VC	VERTICAL CURVE
CWT	HUNDREDWEIGHT	Y	NORTH GRID COORDINATE
		YD	YARD

DNR AREA LIAISON:

WI DEPT OF NATURAL RESOURCES
DNR SOUTH CENTRAL REGION HEADQUARTERS
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
TELEPHONE: 608.785.9115
ATTENTION: ANDY BARTA
EMAIL: ANDREW.BARTA@WISCONSIN.GOV

GRANT COUNTY:

GRANT COUNTY HIGHWAY DEPARTMENT
1011 NORTH ADAMS STREET
LANCASTER, WISCONSIN, 53813
TELEPHONE: 608.723.2595
ATTENTION: STEVE MORGAN
EMAIL: SMORGAN@CO.GRANT.WI.GOV

WISDOT CONTACT:

WI DEPT OF TRANSPORTATION
2101 WRIGHT STREET
MADISON, WI 53704
TELEPHONE: 608.246.5317
ATTENTION: DONALD CARPENTER
EMAIL: DONALD2.CARPENTER@DOT.WI.GOV

DESIGN CONTACT:

SHORT ELLIOTT HENDRICKSON INC
6808 ODANA ROAD, SUITE 200
MADISON, WI 53719-1137
TELEPHONE: 608.620.6192
ATTENTION: CHRISTOPHER BLUM
EMAIL: CBLUM@SEHINC.COM

GENERAL NOTES:

- THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.
- WETLANDS, WATERWAYS, AND OTHER ENVIRONMENTALLY SENSITIVE AREAS SHALL BE PROTECTED AT ALL TIMES. DO NOT STORE EQUIPMENT OR MATERIALS NEAR THESE SITES UNLESS APPROVED BY THE ENGINEER.
- TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
- THE EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
- FERTILIZER SHALL NOT BE USED WITHIN 20 FEET OF NAVIGABLE WATERWAYS OR WETLANDS.
- A CONVERSION FACTOR OF 2.0 TONS/CY IS USED TO ESTIMATE QUANTITIES FOR BASE AGGREGATE DENSE.
- HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.

UTILITY CONTACT LIST:

BRIGHTSPEED - COMMUNICATION
135 NORTH BONSON STREET
PLATTEVILLE, WI 53818
TELEPHONE: 608.482.5377
ATTENTION: DOUG MCGOWAN
EMAIL: DOUG.MCGOWAN1@BRIGHTSPEED.COM
EMAIL: RELOCATIONS@BRIGHTSPEED.COM

GRANT COUNTY FIBER OPTICS - FIBER OPTIC
1011 NORTH ADAMS STREET
LANCASTER, WISCONSIN, 53813
TELEPHONE: 608.723.2595
ATTENTION: STEVE MORGAN
EMAIL: SMORGAN@CO.GRANT.WI.GOV

SCENIC RIVERS ENERGY COOPERATIVE - ELECTRIC
206 COUNTY ROAD K
LANCASTER, WI 53813
TELEPHONE: 608.723.2121 EXT. 561
ATTENTION: CHAD OLMSTEAD
EMAIL: COLMSTEAD@SREC.NET

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 2.3 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.2 ACRES

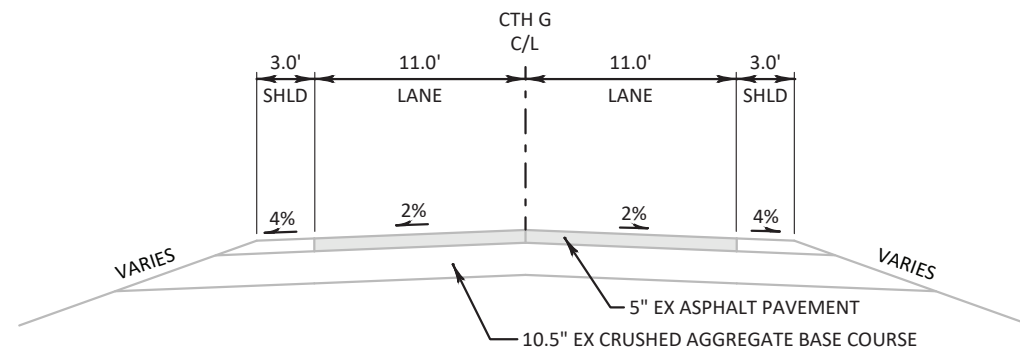
DIGGERS



HOTLINE

Dial  or (800)242-8511

www.DiggersHotline.com

**TYPICAL EXISTING SECTION**

CTH G

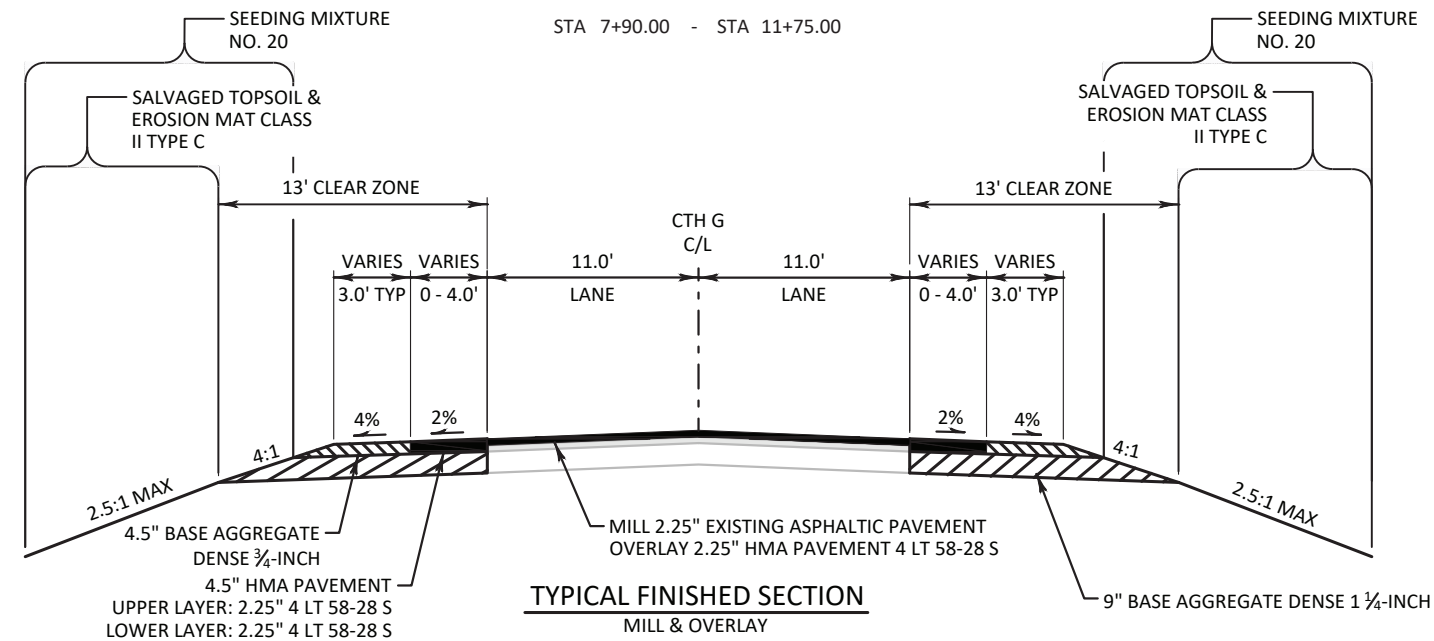
STA 7+90.00 - STA 11+75.00

TYPICAL FINISHED SECTION

SHOULDER WIDENING - LT

STA 6+48.20 - STA 6+66.13

STA 12+98.54 - STA 13+67.26

**TYPICAL FINISHED SECTION**

MILL & OVERLAY

STA 6+66.13 - STA 7+90.00

STA 11+75.00 - STA 12+98.54

TYPICAL FINISHED SECTION

SHOULDER WIDENING - RT

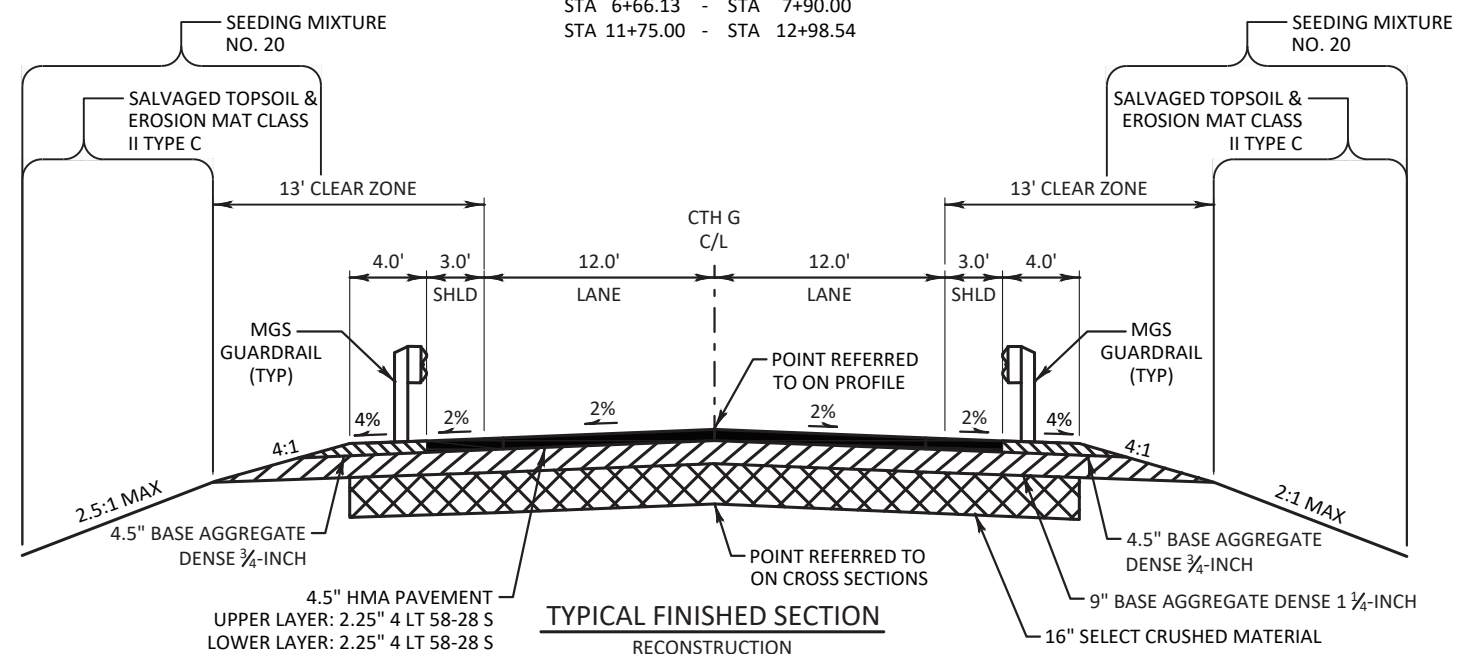
STA 6+17.15 - STA 6+66.13

STA 12+98.54 - STA 13+00.68

MGS EAT POST LOCATIONS

LEFT

POST NO.	STATION
1	7+56.21
5	7+81.65
9	8+06.79
9	11+94.85
5	12+20.14
1	12+45.45

**TYPICAL FINISHED SECTION**

RECONSTRUCTION

STA 7+90.00 - STA 11+75.00

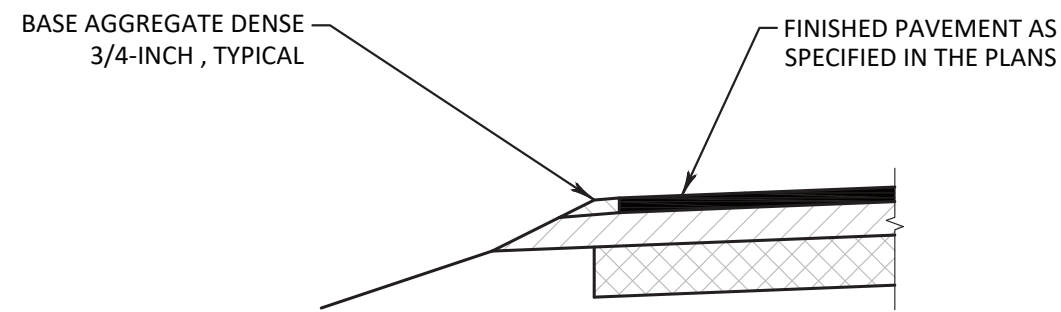
B-22-0309 BRIDGE DECK

STA 9+15.19 - STA 10+73.80

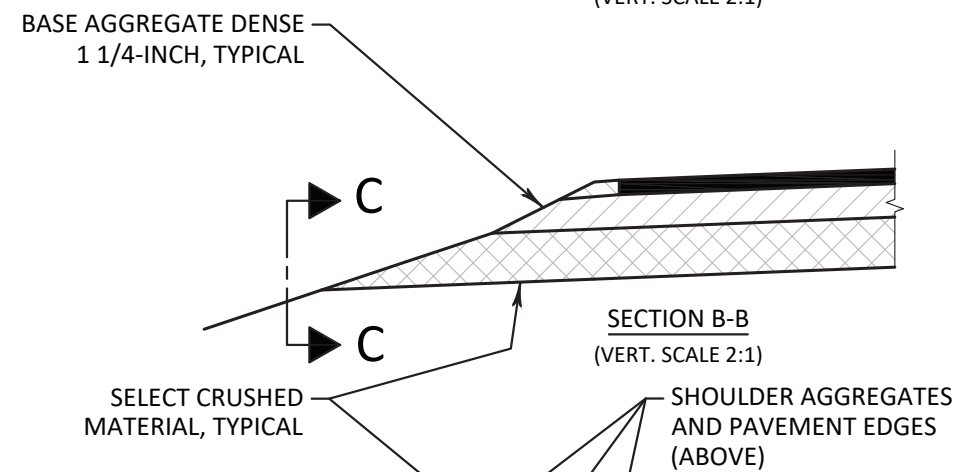
MGS EAT POST LOCATIONS

RIGHT

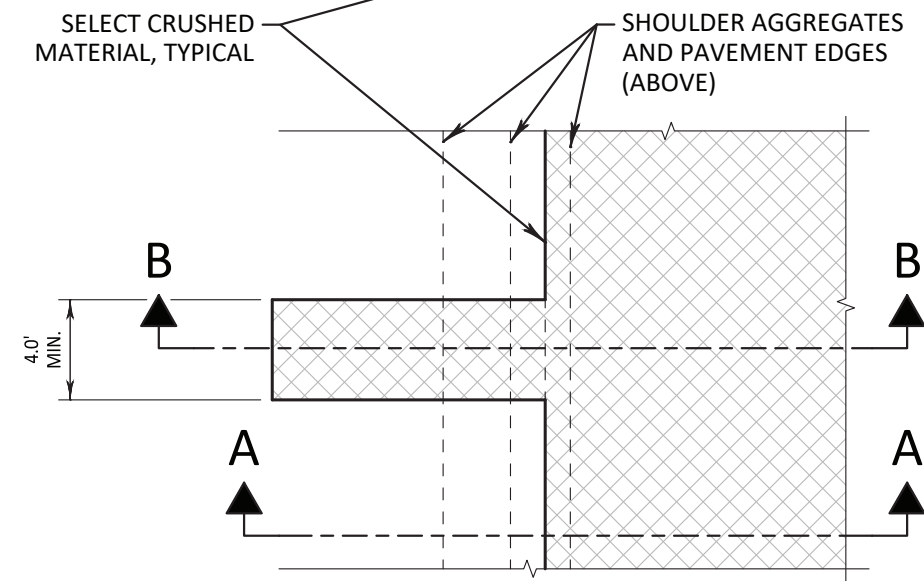
POST NO.	STATION
1	7+46.80
5	7+71.38
9	7+96.32
9	11+77.85
5	12+02.53
1	12+27.20



SECTION A-A
(VERT. SCALE 2:1)

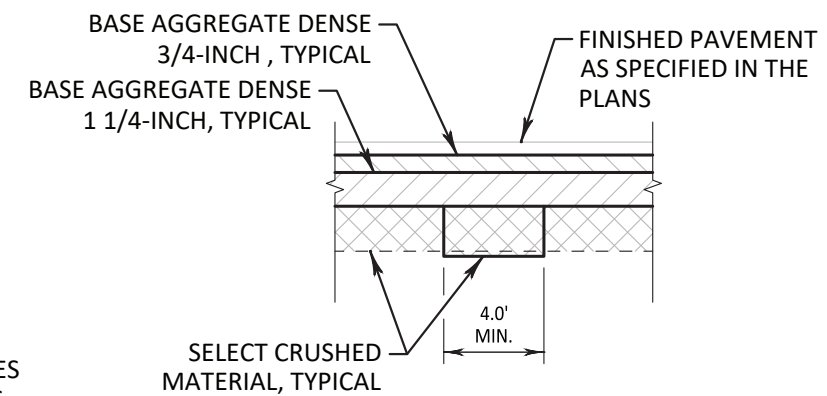


SECTION B-B
(VERT. SCALE 2:1)



PLAN VIEW
(VIEW PLANE AT TOP OF SELECT
CRUSHED MATERIAL)

RELIEF TRENCH



SECTION C-C
(VERT. SCALE 2:1)

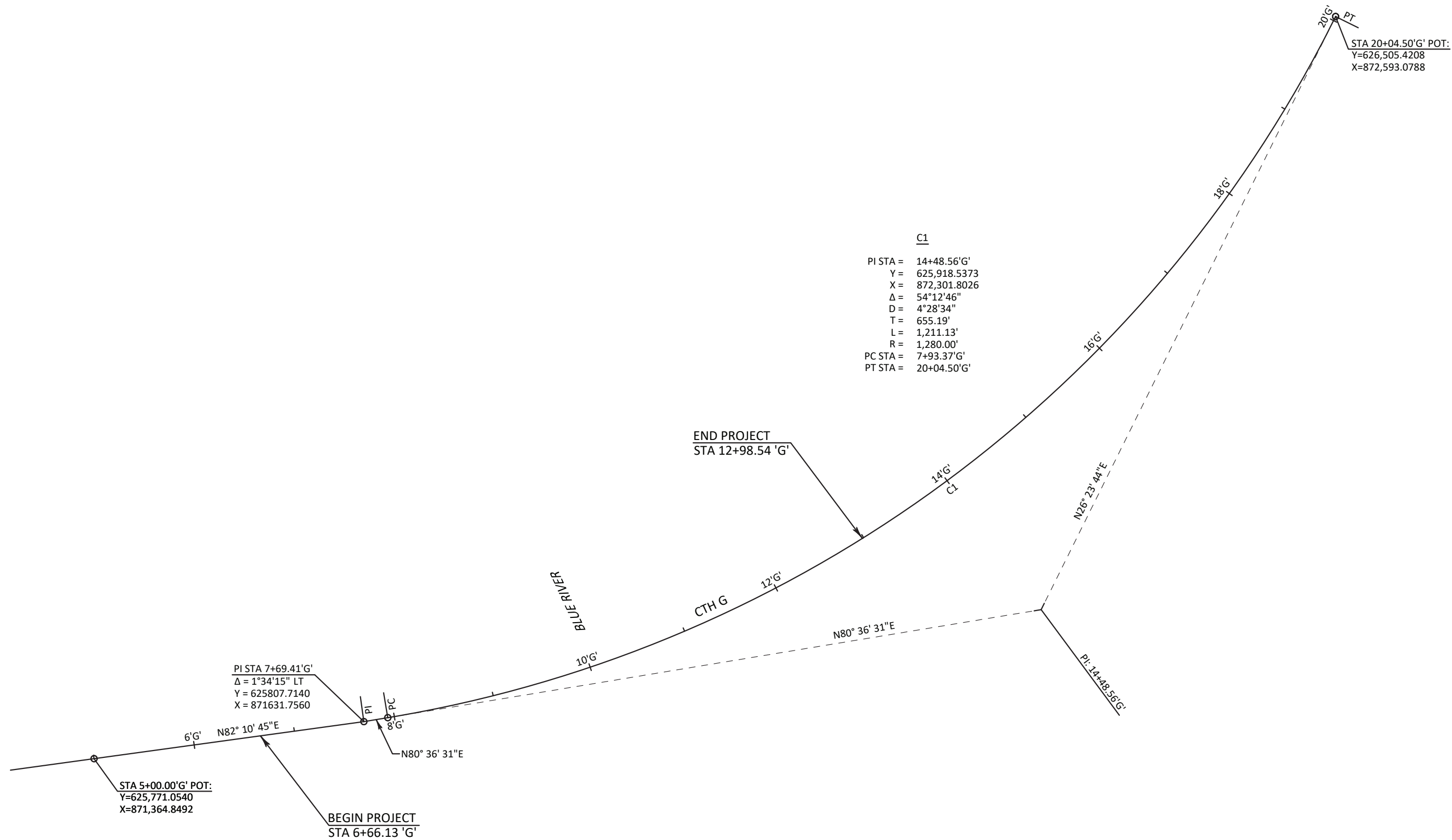
NOTE:

CONSTRUCT RELIEF TRENCHES AT 200'-300' INTERVALS
AND AT PROFILE SAG POINTS (LEFT AND RIGHT).

FINAL LOCATIONS TO BE APPROVED OR DETERMINED
BY THE ENGINEER IN THE FIELD.

MATERIALS AND LABOR FOR RELIEF TRENCH ARE
INCLUDED IN THE SELECT CRUSHED MATERIAL BID ITEM.

SUPERELEVATION REPORT FOR CTH G					
TRANSITION EVENT POINTS		RATE (FT/FT)			
LOCATION	STATION	LEFT SHOULDER	LEFT LANE	RIGHT LANE	RIGHT SHOULDER
CURVE 1					
MATCH EXSTING	7+90.00	-0.043	-0.043	0.017	0.017
BEGIN FULL SUPER	8+99.68	-0.059	-0.059	0.059	0.059
END FULL SUPER	11+00.00	-0.059	-0.059	0.059	0.059
MATCH EXSTING	11+75.00	-0.058	-0.058	0.035	0.035



Estimate Of Quantities

5905-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-22-13	EACH	1.000	1.000
0004	204.0120	Removing Asphaltic Surface Milling	SY	667.000	667.000
0006	204.0165	Removing Guardrail	LF	114.000	114.000
0008	205.0100	Excavation Common	CY	863.000	863.000
0010	206.1001	Excavation for Structures Bridges (structure) 01. B-22-309	EACH	1.000	1.000
0012	208.0100	Borrow	CY	232.000	232.000
0014	210.1500	Backfill Structure Type A	TON	499.000	499.000
0016	213.0100	Finishing Roadway (project) 01. 5905-00-70	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	187.000	187.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	868.000	868.000
0022	312.0110	Select Crushed Material	TON	869.000	869.000
0024	455.0605	Tack Coat	GAL	79.000	79.000
0026	460.2000	Incentive Density HMA Pavement	DOL	200.000	200.000
0028	460.5224	HMA Pavement 4 LT 58-28 S	TON	311.000	311.000
0030	502.0100	Concrete Masonry Bridges	CY	622.000	622.000
0032	502.3200	Protective Surface Treatment	SY	529.000	529.000
0034	502.3210	Pigmented Surface Sealer	SY	188.000	188.000
0036	503.0137	Prestressed Girder Type I 36W-Inch	LF	628.000	628.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	6,980.000	6,980.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	51,130.000	51,130.000
0042	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	16.000	16.000
0044	506.4000	Steel Diaphragms (structure) 01. B-22-309	EACH	6.000	6.000
0046	514.0450	Floor Drains Type WF	EACH	2.000	2.000
0048	514.2608	Downspout 8-Inch	LF	9.000	9.000
0050	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0052	550.0020	Pre-Boring Rock or Consolidated Materials	LF	900.000	900.000
0054	550.1120	Piling Steel HP 12-Inch x 53 Lb	LF	1,035.000	1,035.000
0056	606.0300	Riprap Heavy	CY	360.000	360.000
0058	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	180.000	180.000
0060	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0062	614.2300	MGS Guardrail 3	LF	225.000	225.000
0064	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0066	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0068	618.0100	Maintenance and Repair of Haul Roads (project) 01. 5905-00-70	EACH	1.000	1.000
0070	619.1000	Mobilization	EACH	1.000	1.000
0072	624.0100	Water	MGAL	11.000	11.000
0074	625.0500	Salvaged Topsoil	SY	2,993.000	2,993.000
0076	628.1504	Silt Fence	LF	1,294.000	1,294.000
0078	628.1520	Silt Fence Maintenance	LF	1,294.000	1,294.000
0080	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0082	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0084	628.2027	Erosion Mat Class II Type C	SY	2,993.000	2,993.000
0086	628.6005	Turbidity Barriers	SY	134.000	134.000
0088	630.0120	Seeding Mixture No. 20	LB	136.000	136.000
0090	630.0200	Seeding Temporary	LB	82.000	82.000
0092	630.0500	Seed Water	MGAL	4.000	4.000
0094	634.0612	Posts Wood 4x6-Inch x 12-FT	EACH	4.000	4.000
0096	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0098	638.2102	Moving Signs Type II	EACH	2.000	2.000

Estimate Of Quantities

5905-00-70

Line	Item	Item Description	Unit	Total	Qty
0100	638.2602	Removing Signs Type II	EACH	4.000	4.000
0102	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0104	638.4000	Moving Small Sign Supports	EACH	2.000	2.000
0106	642.5001	Field Office Type B	EACH	1.000	1.000
0108	643.0300	Traffic Control Drums	DAY	140.000	140.000
0110	643.0420	Traffic Control Barricades Type III	DAY	1,530.000	1,530.000
0112	643.0705	Traffic Control Warning Lights Type A	DAY	2,040.000	2,040.000
0114	643.0900	Traffic Control Signs	DAY	1,190.000	1,190.000
0116	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0118	643.5000	Traffic Control	EACH	1.000	1.000
0120	645.0111	Geotextile Type DF Schedule A	SY	60.000	60.000
0122	645.0120	Geotextile Type HR	SY	615.000	615.000
0124	646.2020	Marking Line Epoxy 6-Inch	LF	2,356.000	2,356.000
0126	650.4500	Construction Staking Subgrade	LF	591.000	591.000
0128	650.5000	Construction Staking Base	LF	591.000	591.000
0130	650.6501	Construction Staking Structure Layout (structure) 01. B-22-0309	EACH	1.000	1.000
0132	650.9911	Construction Staking Supplemental Control (project) 01. 5905-00-70	EACH	1.000	1.000
0134	650.9920	Construction Staking Slope Stakes	LF	591.000	591.000
0136	690.0150	Sawing Asphalt	LF	592.000	592.000
0138	715.0502	Incentive Strength Concrete Structures	DOL	3,732.000	3,732.000
0140	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 9+94.50	EACH	1.000	1.000
0142	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000
0144	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,320.000	1,320.000
0146	SPV.0090	Special 01. Salvage and Reinstall Fence	LF	50.000	50.000

3

REMOVALS				
CATEGORY	STATION	LOCATION	204.0120	204.0165
			REMOVING ASPHALTIC SURFACE MILLING	REMOVING GUARDRAIL
0010	6+66.13 TO 7+90	LT/RT	335	-
	8+90 TO 9+22	LT/RT	-	57
	10+70 TO 10+99	LT/RT	-	57
	11+75 TO 12+98.54	LT/RT	332	-
ITEM TOTALS			667	114

GUARDRAIL ITEMS					
CATEGORY	STATION TO STATION	LOCATION	614.2300	614.2500	614.2610
			MGS GUARDRAIL 3	MGS THRIE BEAM TRANSITION	MGS GUARDRAIL TERMINAL EAT
0010	7+46.80 TO 9+00.71	RT	62.5	39.4	1
	7+56.21 TO 8+98.48	LT	50	39.4	1
	10+88.29 TO 12+27.20	RT	50	39.4	1
	10+90.52 TO 12+44.45	LT	62.5	39.4	1
ITEM TOTALS			225	157.6	4

3

EARTHWORK SUMMARY						
CATEGORY	STATION	LOCATION	205.0100	AVAILABLE	EXPANDED	208.0100
			EXCAVATION COMMON (1)	MATERIAL (2)	FILL (3)	BORROW
0010	6+17 TO 7+90	LT/RT	90	90	259	-169
	7+90 TO 9+05	LT/RT	379	330	356	-26
	10+80 TO 11+75	LT/RT	282	243	151	92
	11+75 TO 13+67	LT/RT	112	112	149	-37
PROJECT TOTAL			863	775	915	-140

NOTES:
(1) UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN COMMON EXCAVATION.
(2) AVAILABLE MATERIAL DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION.
(3) EXPANSION FACTOR = 1.3
(4) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

TOPSOIL AND SEEDING						
CATEGORY	STATION	LOCATION	625.0500	630.0120	630.0200	630.0500
			SALVAGED TOPSOIL	SEEDING MIXTURE NO. 20	TEMPORARY SEEDING	SEED WATER
0010	6+17 TO 9+07	RT	813	37	22	1
	6+38 TO 9+49	LT	576	26	16	1
	10+84 TO 13+67	LT/RT	1105	50	30	1
	UNDISTRIBUTED		499	23	14	1
ITEM TOTALS			2,993	136	82	4

BASE AGGREGATE ITEMS								
CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	312.0110	624.0100
					BASE AGGREGATE DENSE 3/4-INCH	BASE AGGREGATE DENSE 1 1/4-INCH	SELECT CRUSHED MATERIAL	WATER
0010	6+17	TO	9+16	LT/RT	109	461	438	6
	10+73	TO	13+67	LT/RT	78	407	352	5
	UNDISTRIBUTED				-	-	79	-
ITEM TOTALS					187	868	869	11

SEE RELIEF TRENCH CONSTRUCTION DETAIL

HMA PAVEMENT						
CATEGORY	STATION	TO	STATION	LOCATION	455.0605	460.5224
					TACK COAT	HMA PAVEMENT 4 LT 58-28 S
0010	6+66	TO	7+90	LT/RT	17	42
	6+66	TO	7+90	RT	2	8
	6+96	TO	7+90	LT	2	8
	7+90	TO	9+16	LT/RT	20	105
	10+73	TO	11+75	LT/RT	17	85
	11+75	TO	12+77	RT	2	10
	11+75	TO	12+99	LT	2	11
	11+75	TO	12+99	LT/RT	17	42
	ITEM TOTALS				79	311

EROSION CONTROL ITEMS					
CATEGORY	STATION	LOCATION	628.1504	628.1520	628.2027
			SILT FENCE	SILT FENCE MAINTENANCE	EROSION MAT CLASS II TYPE C
0010	6+17 TO 9+55	RT	300	300	813
	6+38 TO 9+50	LT	253	253	576
	9+59 TO 10+32	LT/RT	-	-	-
	10+35 TO 13+67	LT/RT	525	525	1105
	UNDISTRIBUTED		216	216	499
	ITEM TOTALS		1,294	1,294	2,993

134

PROJECT NO: 5905-00-70

HWY: CTH G

COUNTY: GRANT

MISCELLANEOUS QUANTITIES

SHEET

E

3

MOBILIZATIONS EROSION CONTROL				
		628.1905	628.1910	
		MOBILIZATIONS	MOBILIZATIONS	
		EROSION	EMERGENCY	
		CONTROL	EROSION	
CATEGORY	STATION	EACH	EACH	
0010	PROJECT LENGTH	3	3	
ITEM TOTALS		3	3	

SAWING			
			690.0150
			SAWING
			ASPHALT
CATEGORY	STATION	LOCATION	LF
0010	6+97 TO 7+90	LT/RT	273
	7+90	LT/RT	24
	11+75	LT/RT	24
	11+75 TO 12+97	LT/RT	271
ITEM TOTALS			592

BIRD DETERRENT SYSTEM		
		999.2000.S
		INSTALLING AND MAINTAINING BIRD
		DETERRENT SYSTEM STATION
		01. 9+94.50
CATEGORY		EACH
0010	9+94.50	1
ITEM TOTALS		1

3

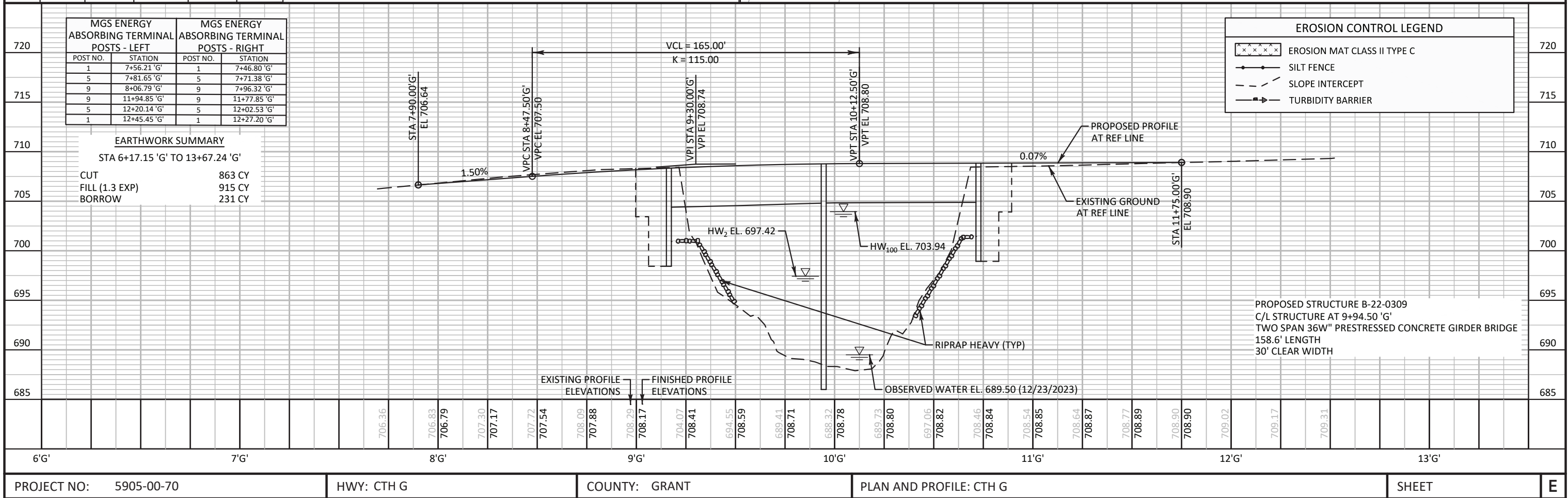
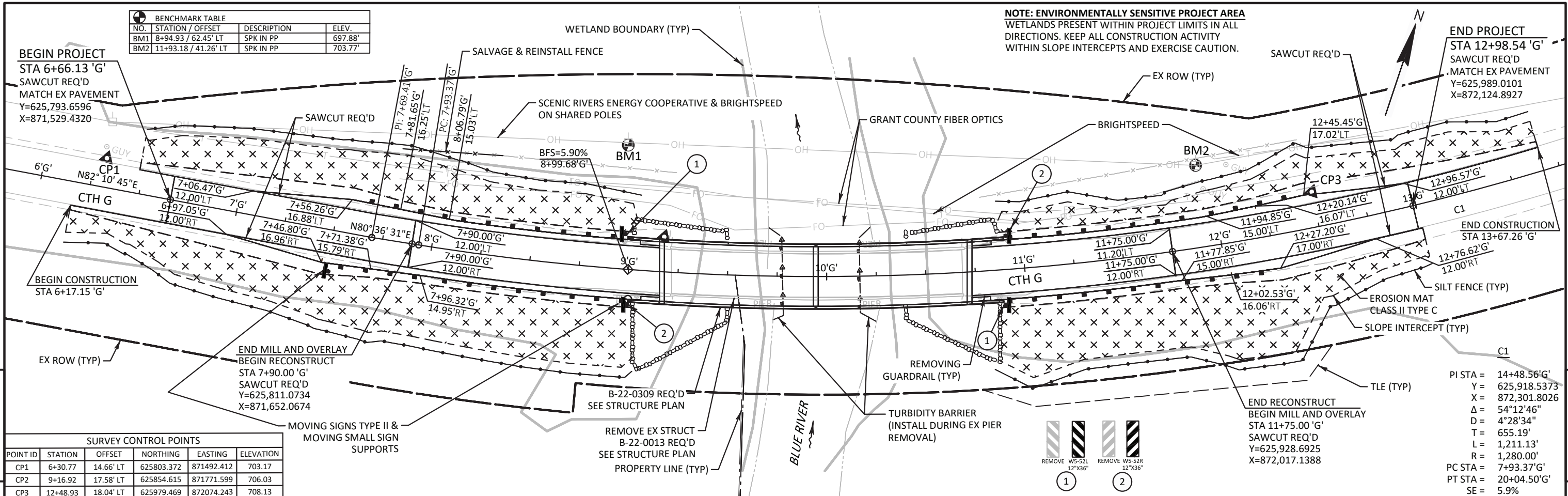
PERMANENT SIGNING												
						634.0612	637.2230	638.2102	638.2602	638.3000	638.4000	
						POSTS WOOD	SIGNS TYPE II	MOVING SIGNS	REMOVING SIGNS	REMOVING SMALL	MOVING SMALL	
						4X6-INCH X 12-FT	REFLECTIVE F	TYPE II	TYPE II	SIGN SUPPORTS	SIGN SUPPORTS	
CATEGORY	STATION	LOCATION	SIGN CODE	SIZE	MESSAGE	EACH	SF	EACH	EACH	EACH	EACH	
0010	8+97	RT	-	-	COUNTY Q; RIGHT TURN ARROW	-	-	2	-	-	2	
	9+21	LT	W5-52-L	12	CLEARANCE STRIPER	1	3.00	-	1	1	-	
	9+22	RT	W5-52-R	12	CLEARANCE STRIPER	1	3.00	-	1	1	-	
	10+68	RT	W5-52-L	12	CLEARANCE STRIPER	1	3.00	-	1	1	-	
	10+70	LT	W5-52-R	12	CLEARANCE STRIPER	1	3.00	-	1	1	-	
PROJECT TOTAL						4	12.00	2	4	4	2	

TRAFFIC CONTROL												
				643.0300	643.0420		643.0705		643.0900		643.1050	
				TRAFFIC	TRAFFIC		TRAFFIC		TRAFFIC		TRAFFIC	
				CONTROL	CONTROL		CONTROL		CONTROL		CONTROL	
				DRUMS	BARRICADES		WARNING		SIGNS		SIGNS	
				<u>TYPE III</u>	<u>TYPE III</u>		<u>LIGHTS TYPE A</u>		<u>SIGNS</u>		<u>PCMS</u>	
CATEGORY	PROJECT LOCATION	APPROX. SERVICE PERIOD DAYS	QTY.	DAY	QTY.	DAY	QTY.	DAY	QTY.	DAY	QTY.	DAY
0010	PROJECT LENGTH	85	10	140	18	1,530	24	2,040	14	1,190	2	14
PROJECT TOTAL				140		1,530		2,040		1,190		14

PAVEMENT MARKING				
		646.2020		
		MARKING LINE		
		EPOXY 6-INCH		
CATEGORY	STATION	LOCATION	LF	REMARKS
0010	6+66.13 TO 9+00	CL	59	DASHED CL MATCH EXISTING
	6+66.13 TO 9+00	CL	234	SOLID CL MATCH EXISTING
	6+66 TO 12+98.54	LT/RT	1265	WHITE EDGE LINE MATCH EXISTING
	9+00 TO 12+98.54	CL	798	DOUBLE YELLOW CENTERLINE
ITEM TOTALS			2,356	

CONSTRUCTION STAKING						
		650.4500	650.5000	650.6501	650.9911	
		SUBGRADE	BASE	STRUCTURE	SUPPLEMENTAL	
				LAYOUT	CONTROL	
				(B-22-0309)	(5905-00-70)	
CATEGORY	STATION	LOCATION	LF	LF	EACH	LF
0010	PROJECT LENGTH	LT/RT	-	-	1	-
	6+17 TO 9+15	LT/RT	298	298	-	298
	10+74 TO 13+67	LT/RT	293	293	-	293
ITEM TOTALS			591	591	1	591

SPECIAL ITEMS		
		SPV.0090.01
		SALVAGE AND REINSTALL FENCE
CATEGORY	STATION	LF
0010	7+78 TO 8+28	50
ITEM TOTALS		50

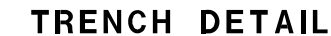


Standard Detail Drawing List

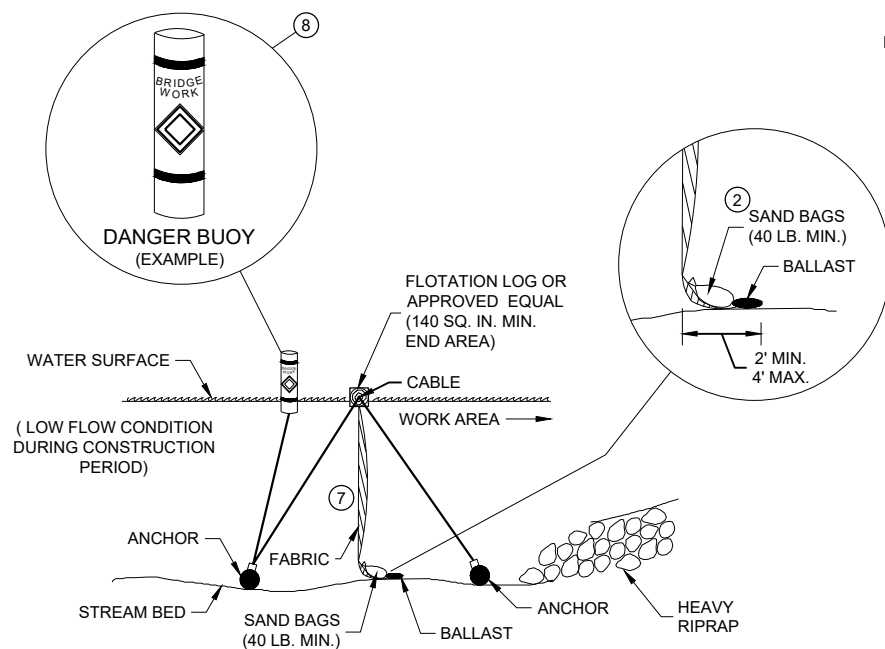
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-10A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-10B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C11-11B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

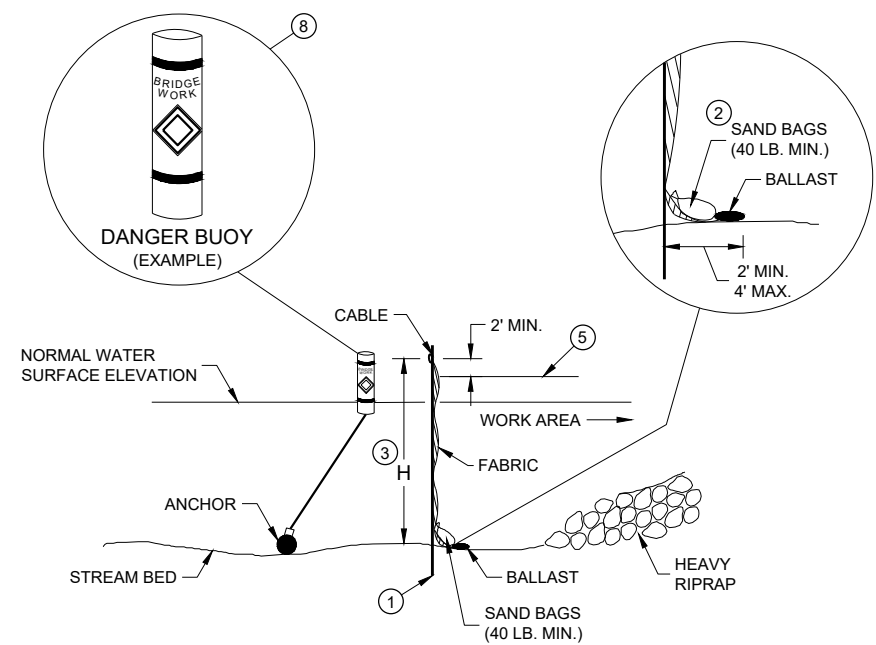


SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>4-29-05</u> DATE	<u>/S/ Beth Canestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER



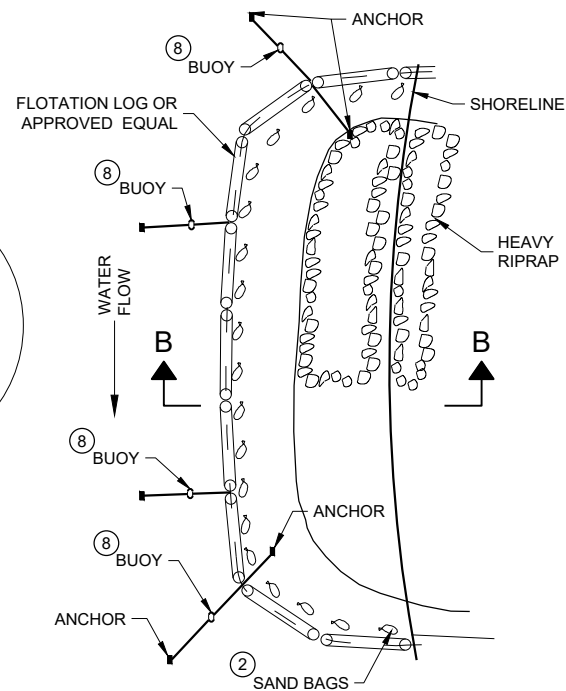
SECTION B - B

TURBIDITY BARRIER - FLOAT ALTERNATIVE CAUTION - SEE NOTE 6

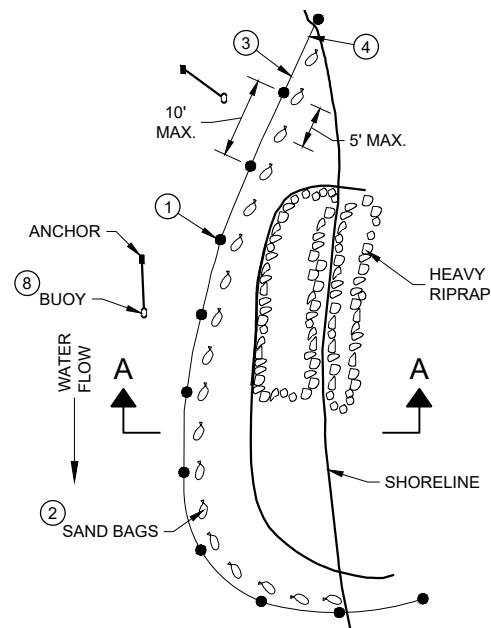


SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW



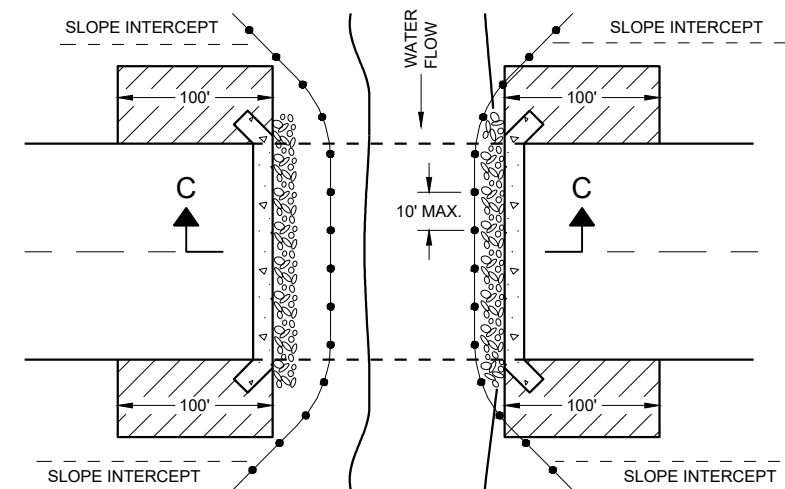
PLAN VIEW

GENERAL NOTES

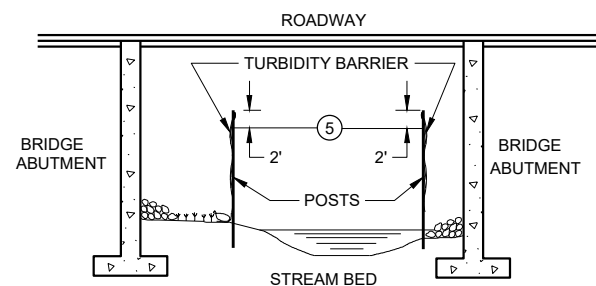
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

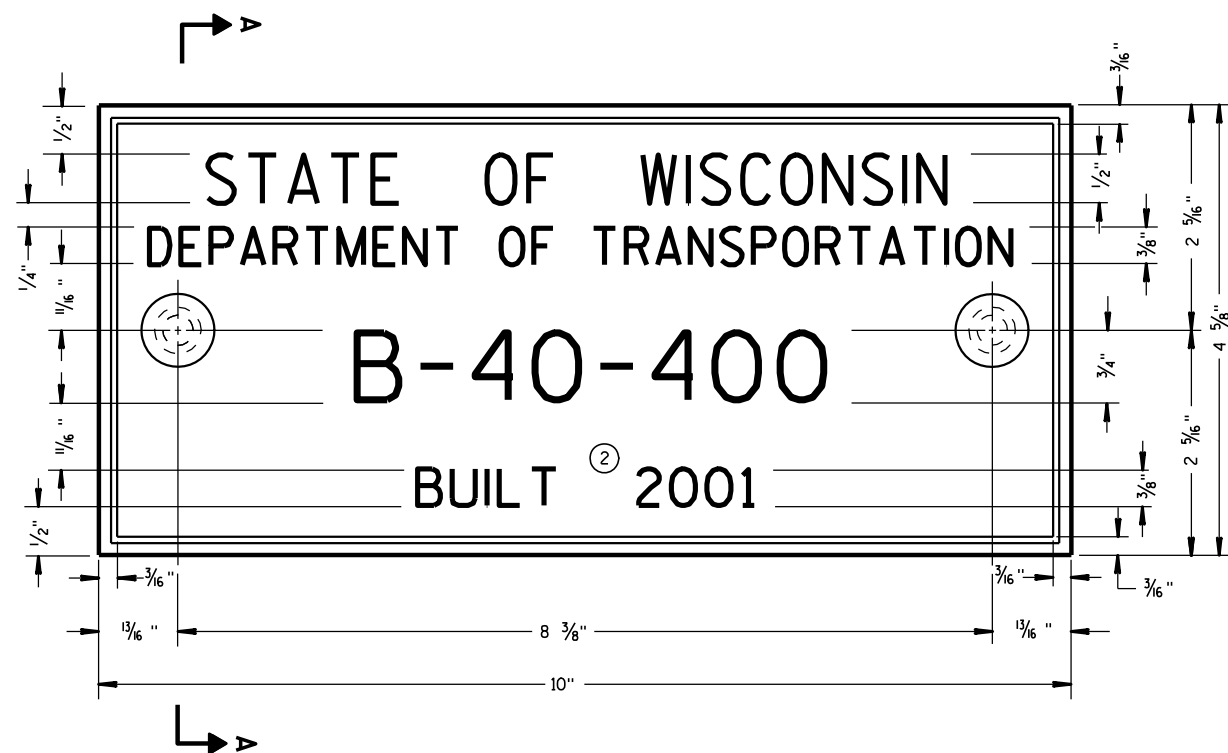
APPROVED

6/4/02

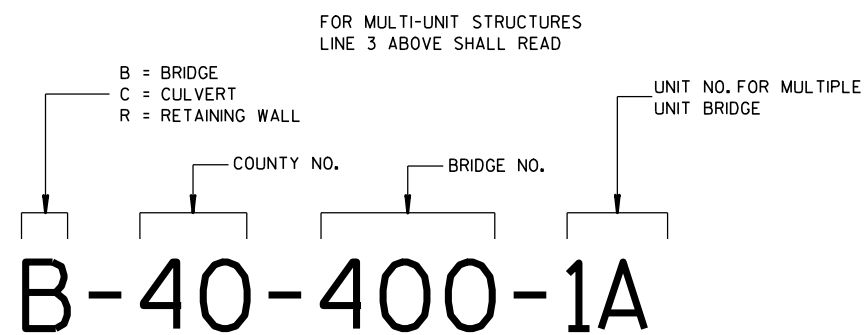
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT
ENGINEER



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



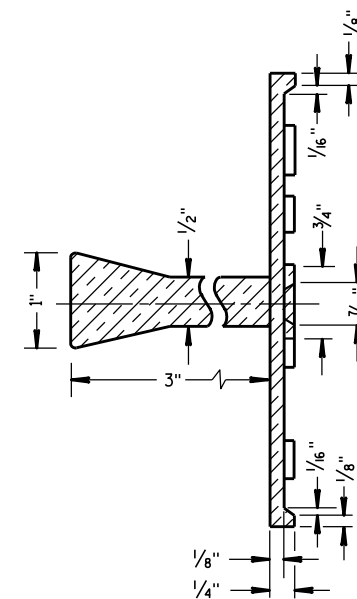
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

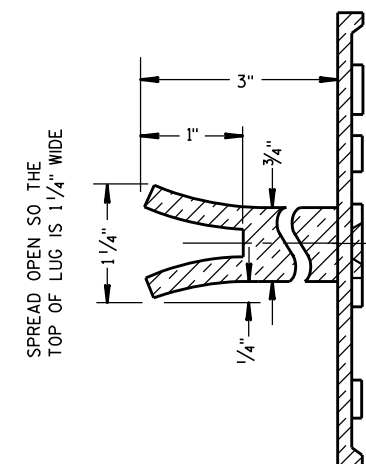
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

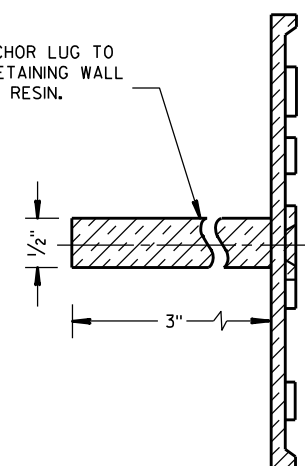


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

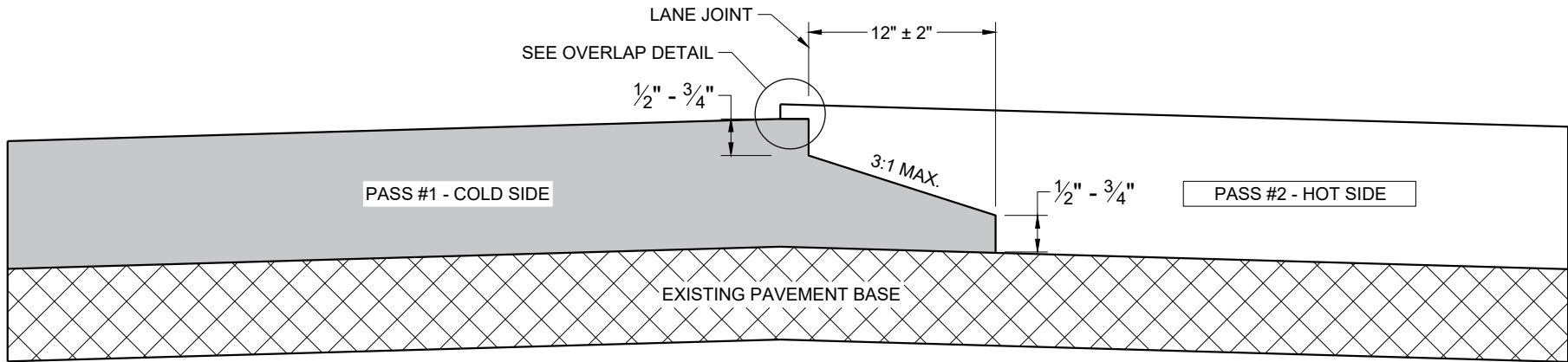
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

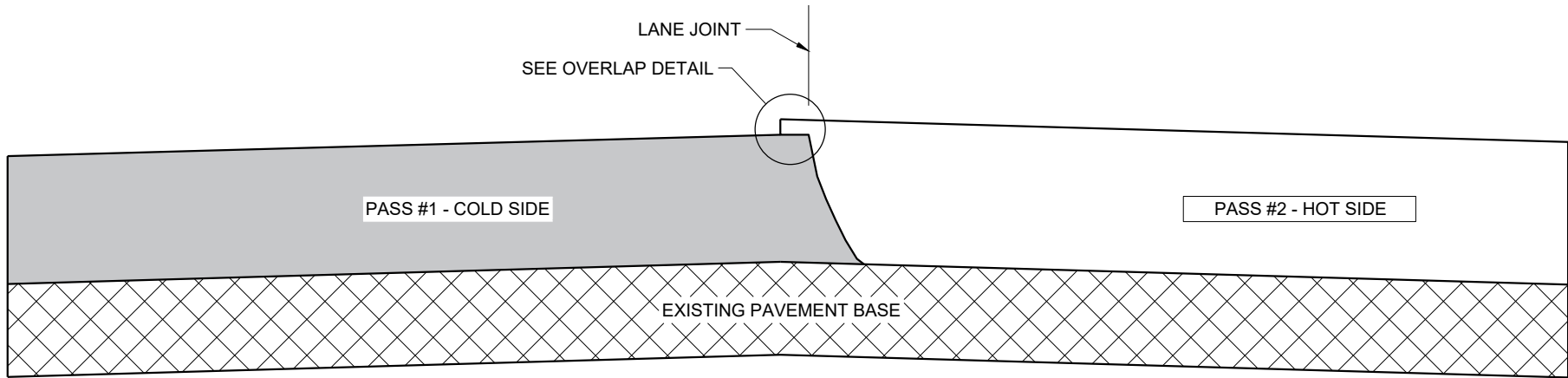
3/26/10
DATE

FHWA

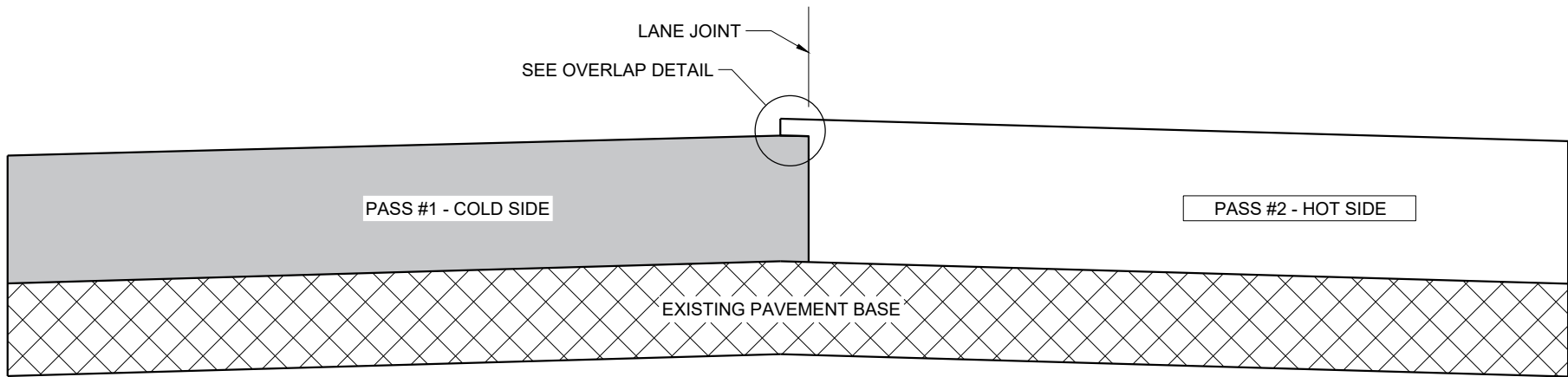
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

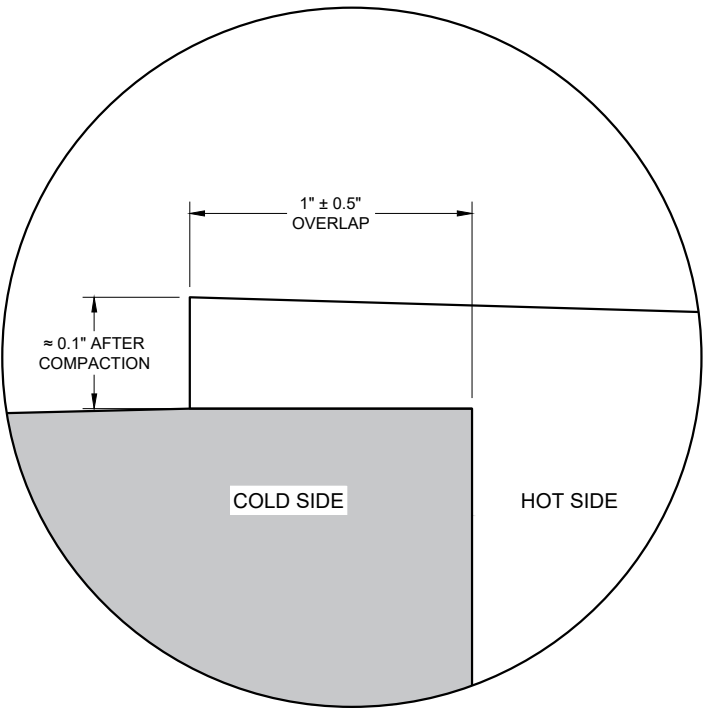
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



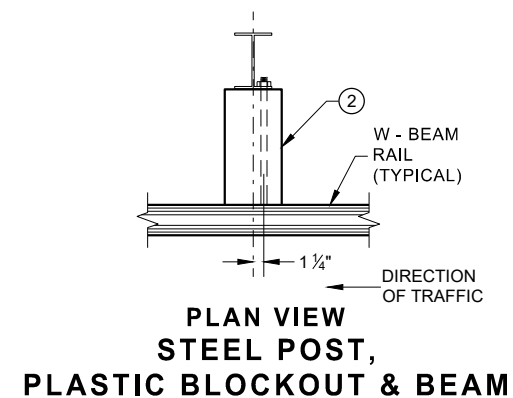
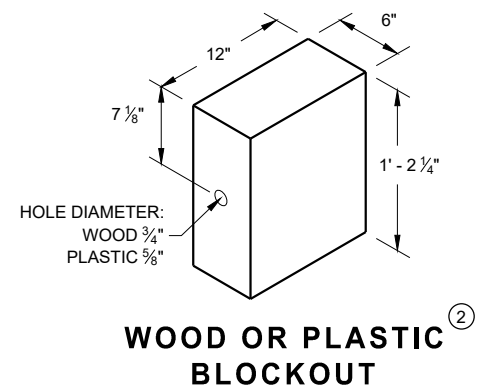
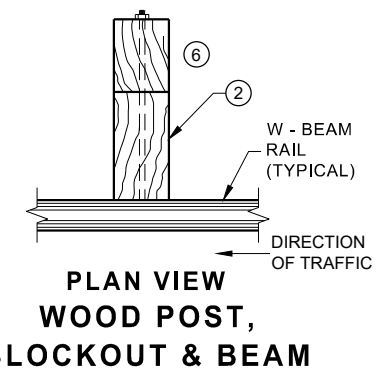
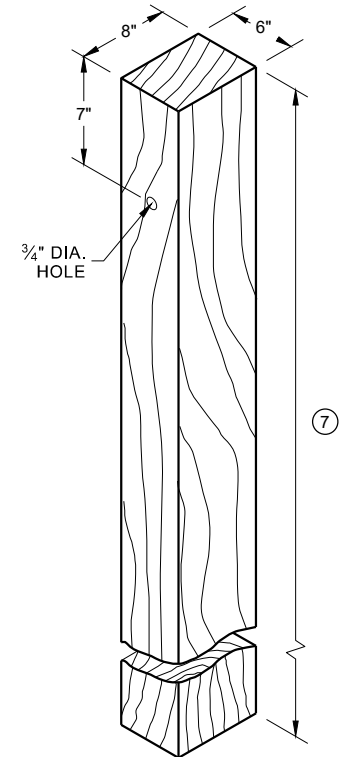
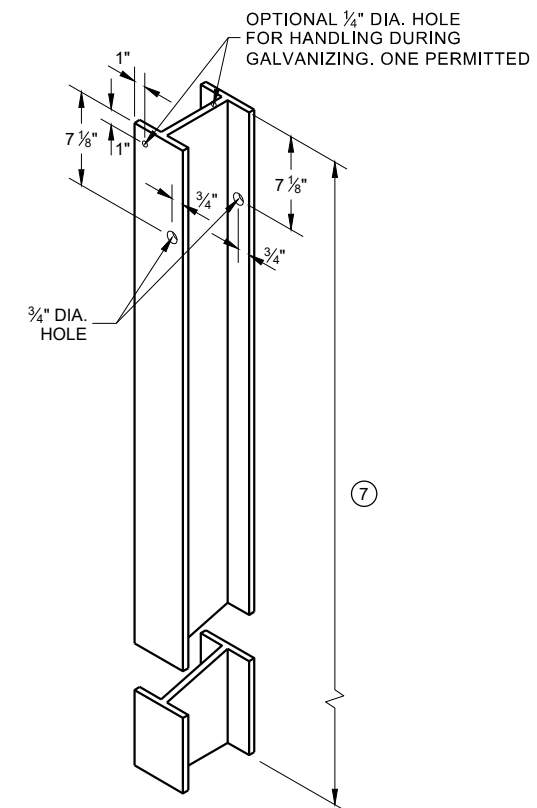
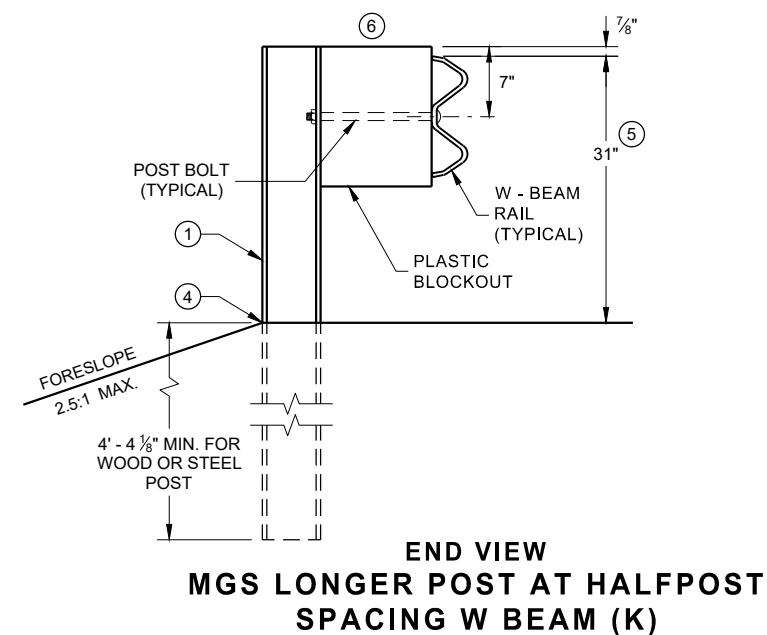
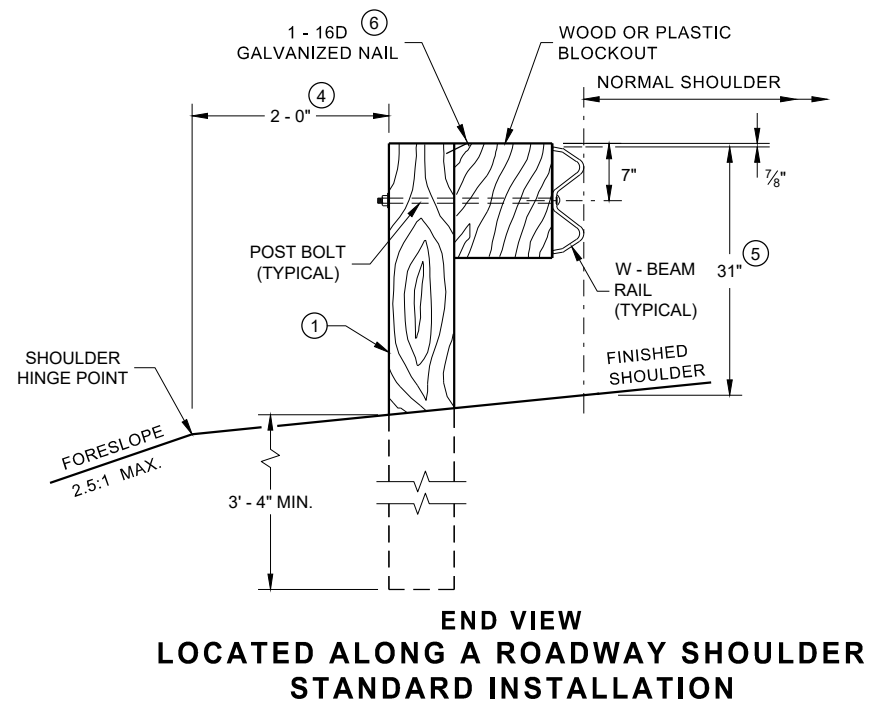
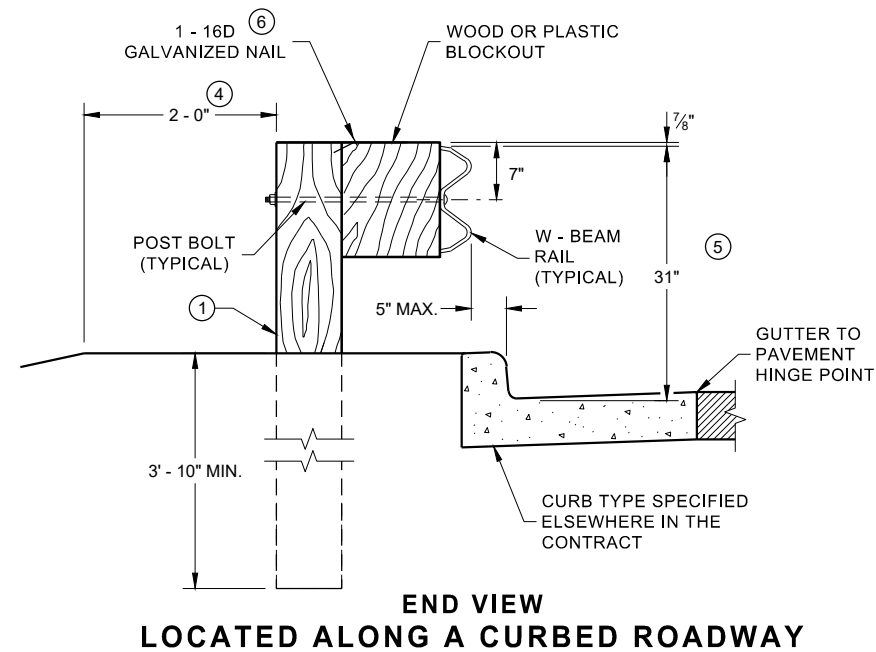
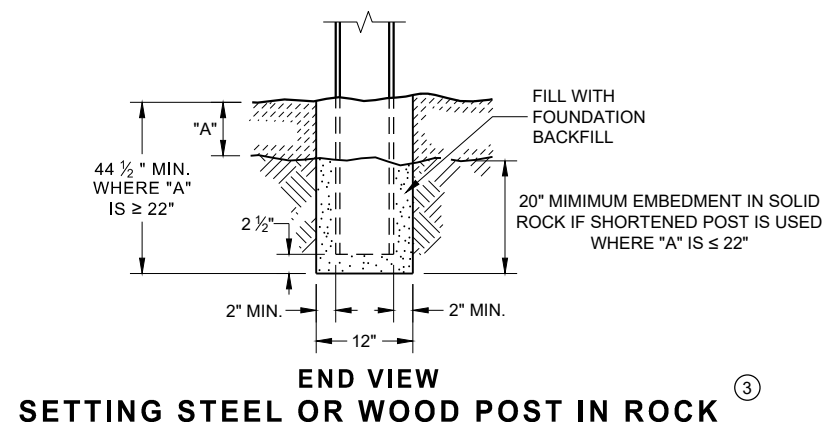
OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

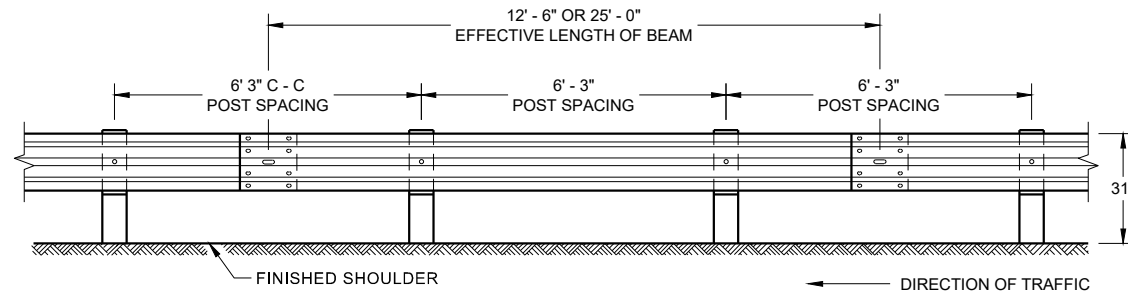
APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGINEER
FHWA

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

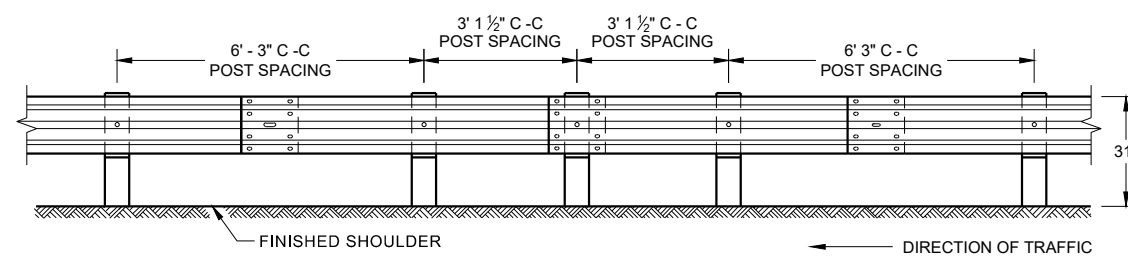


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

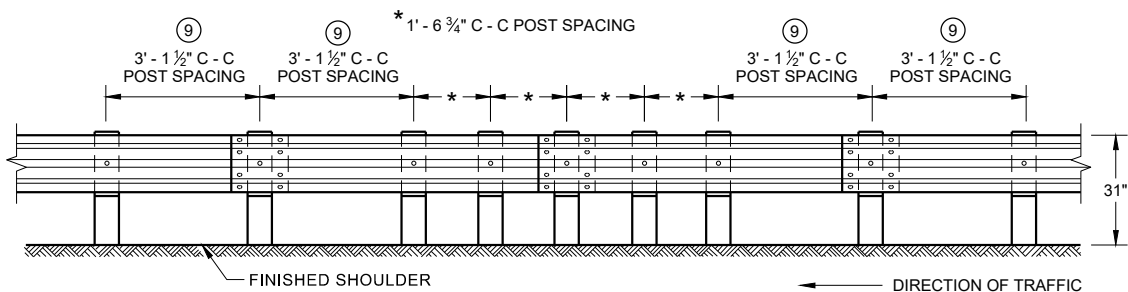
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



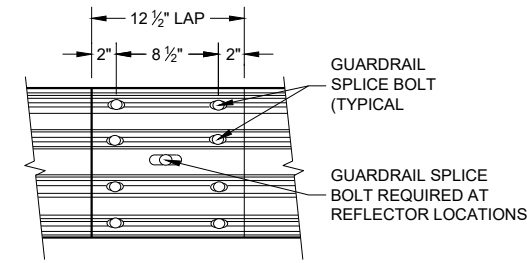
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



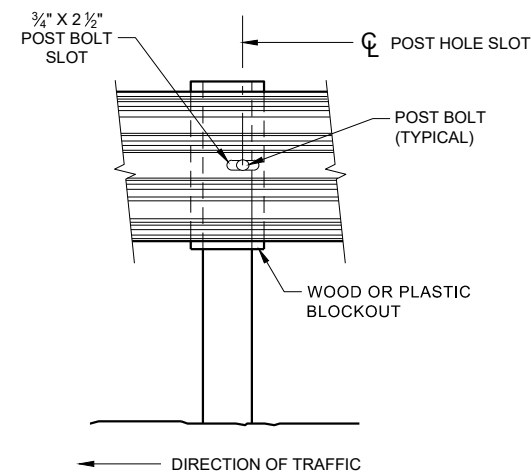
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



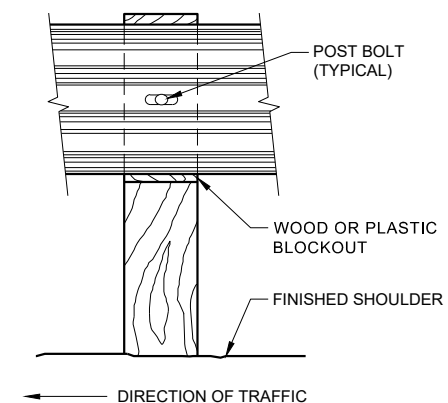
**FRONT VIEW
QUARTER POST SPACING (QS)**



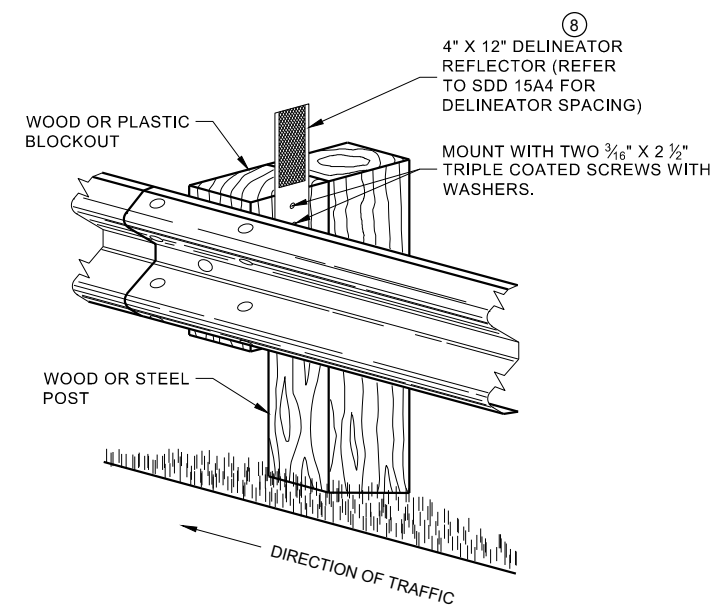
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



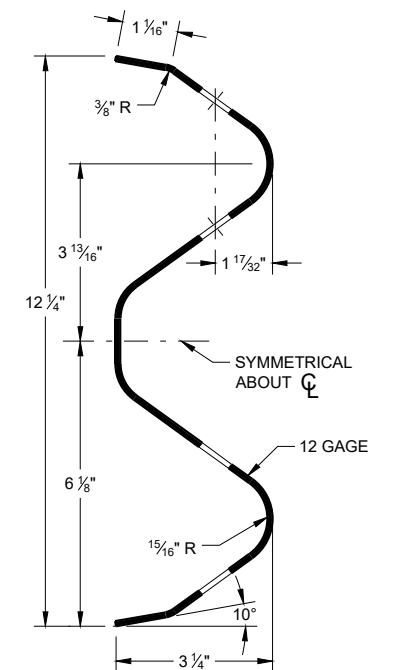
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

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

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

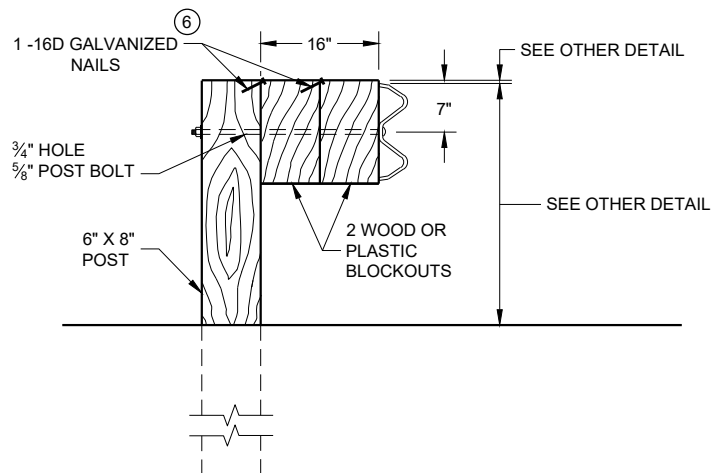
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

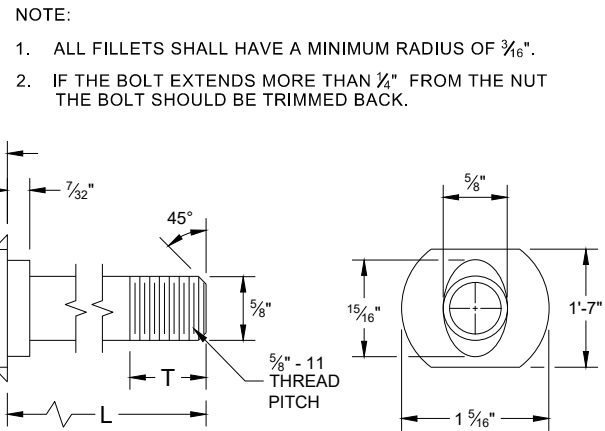
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



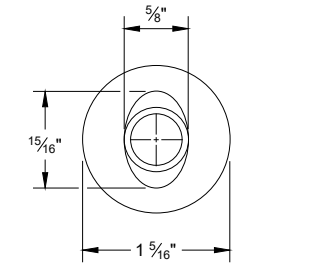
DETAIL FOR 16" BLOCKOUT DEPTH

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

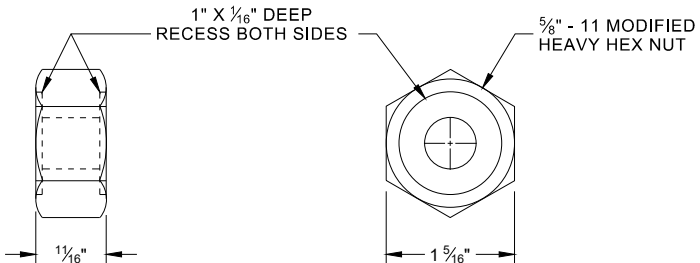


POST BOLT TABLE

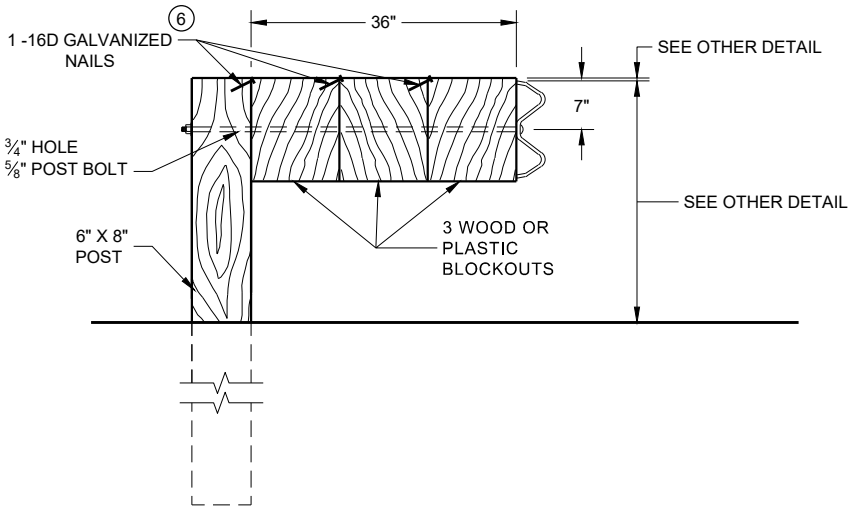
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD



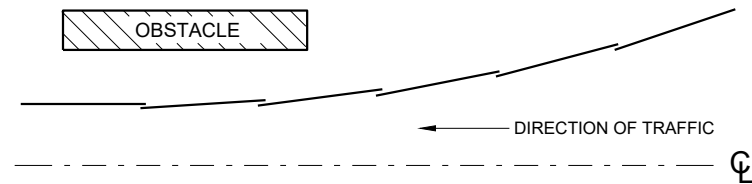
POST BOLT, SPLICE BOLT AND RECESS NUT



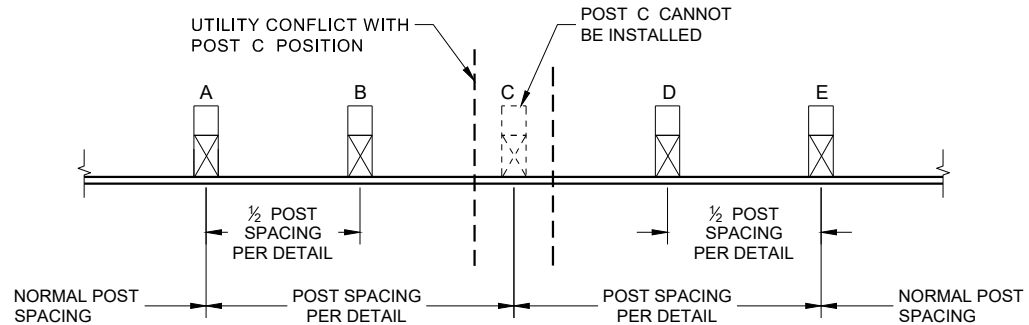
DETAIL FOR 36" BLOCKOUT DEPTH

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.

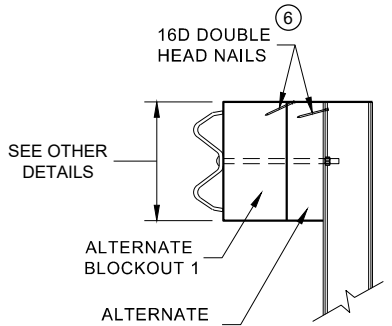
6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



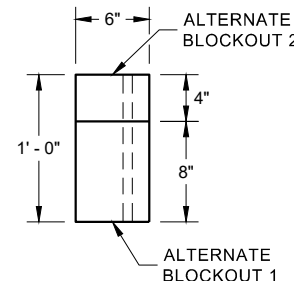
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

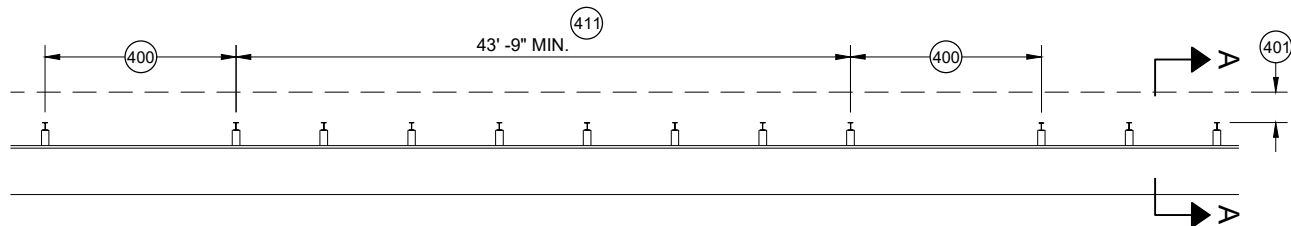


PLAN VIEW

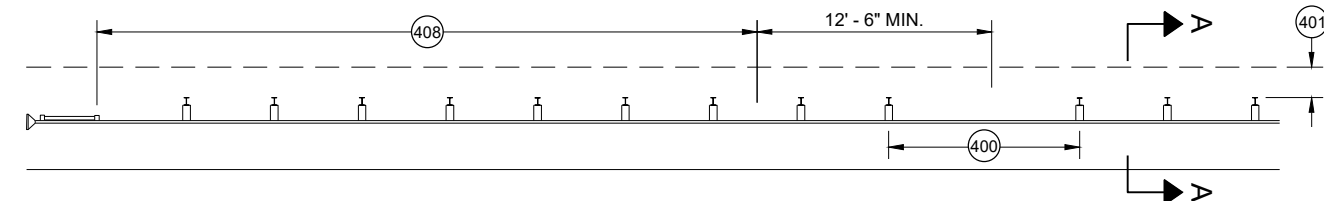
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

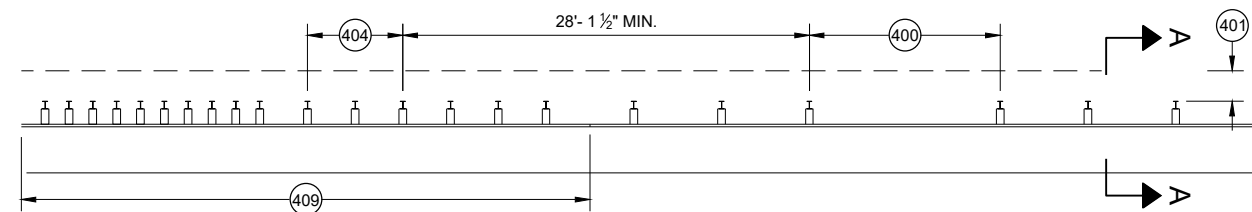
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



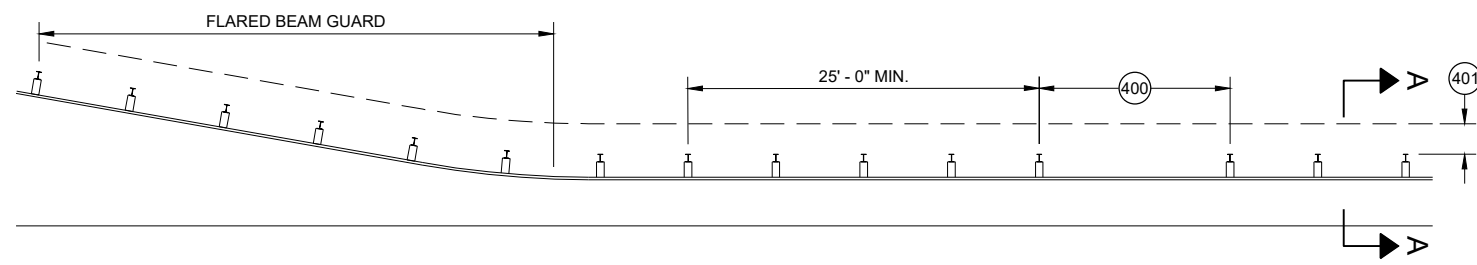
MISSING POST IN MGS GUARDRAIL



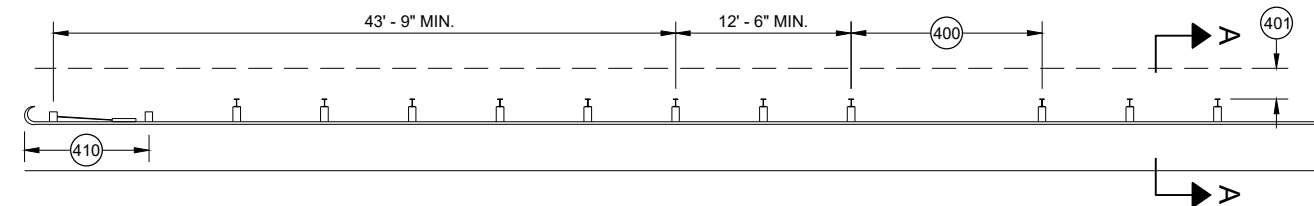
MISSING POST IN MGS GUARDRAIL NEAR EAT



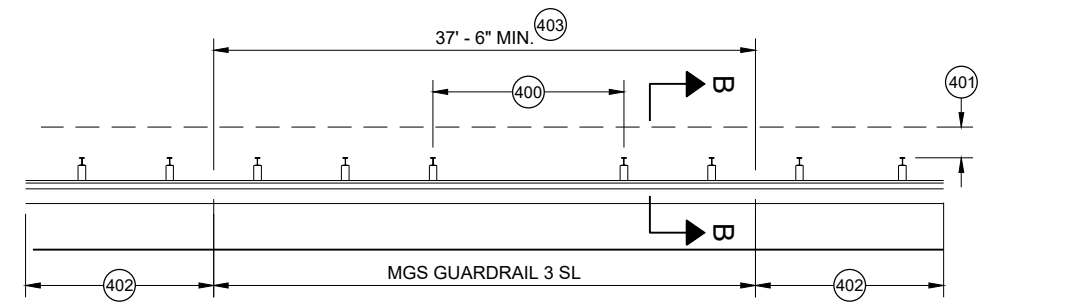
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

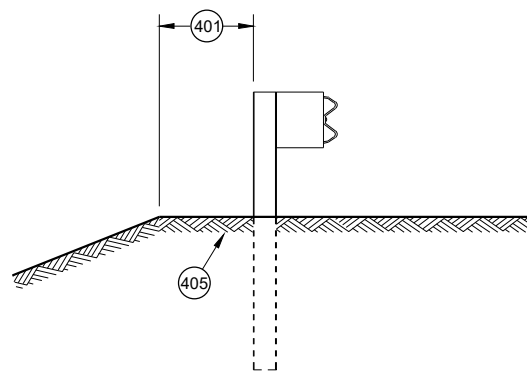


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

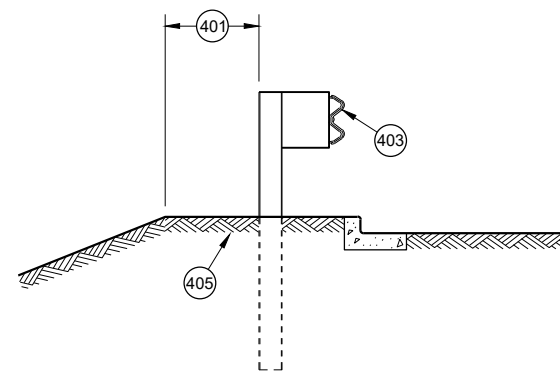


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

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



SECTION A - A



SECTION B - B

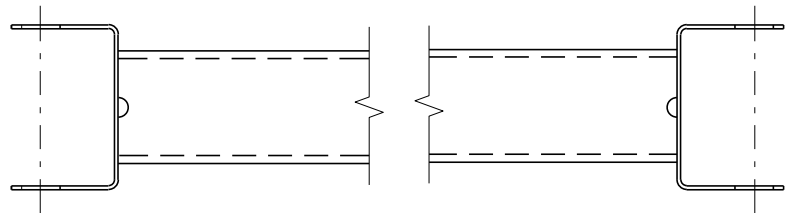
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

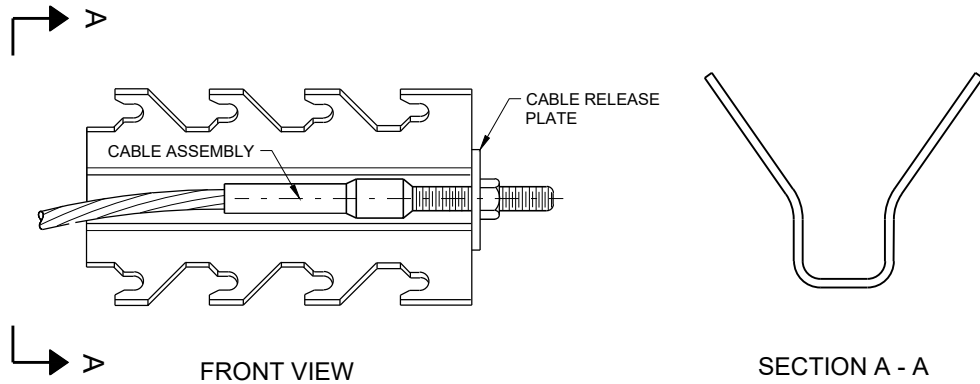
FHWA

SDD14B44 - 04a

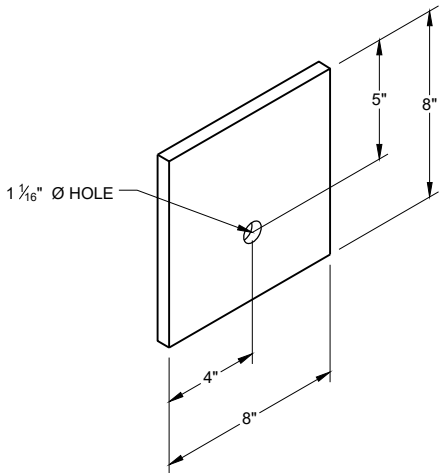


GENERIC GROUND STRUT^⑨ [Ⓔ]

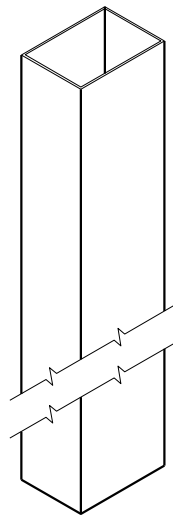
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED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



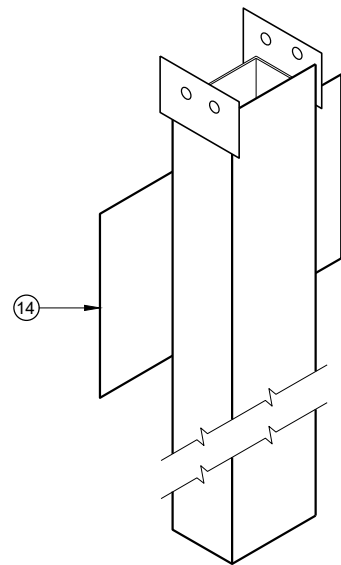
GENERIC ANCHOR CABLE BOX^⑨ [Ⓔ]



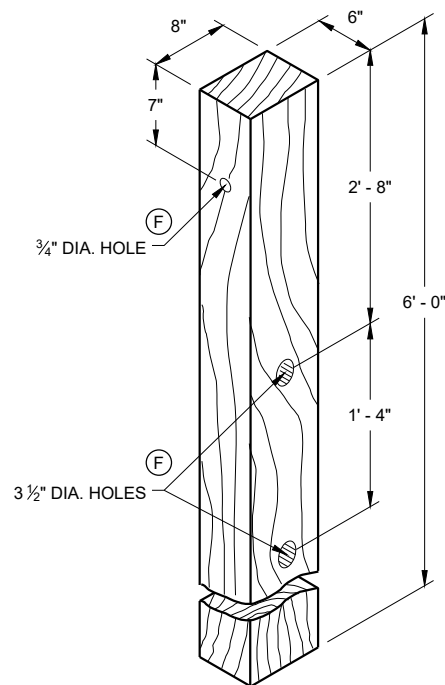
BEARING PLATE^⑥ [Ⓔ]



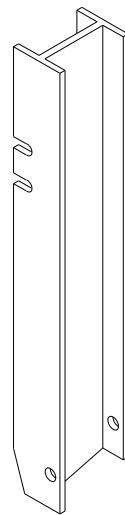
UPPER POST NO. 1 ⁽¹⁾ (E)



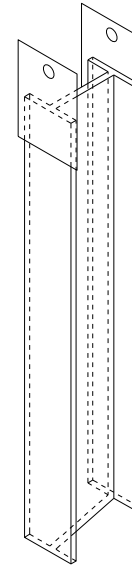
LOWER POST NO. 1 ⁽²⁾ (E)



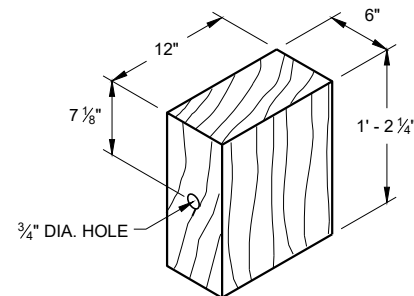
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



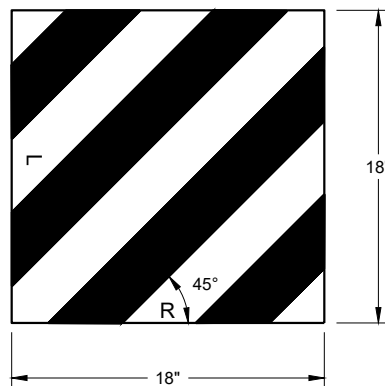
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



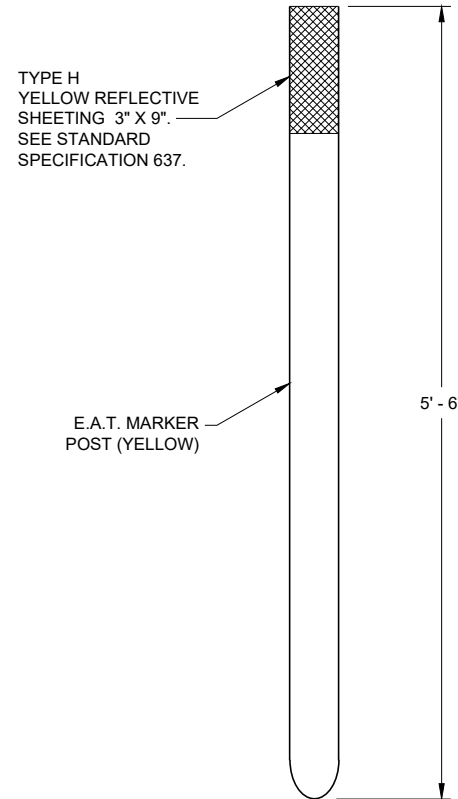
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



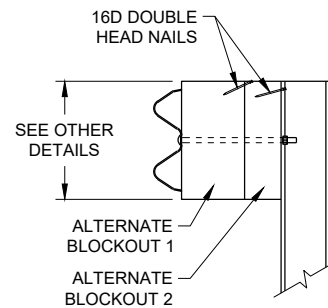
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



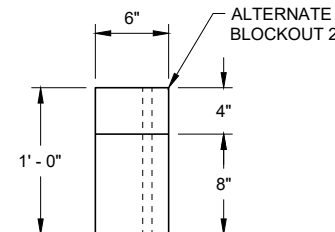
REFLECTIVE SHEETING DETAIL ^(E)



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



SIDE VIEW



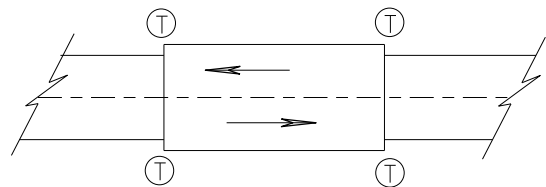
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

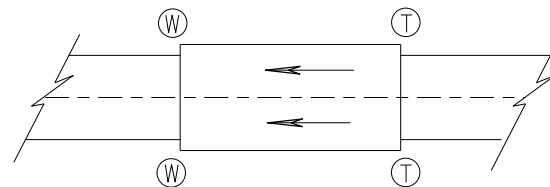
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

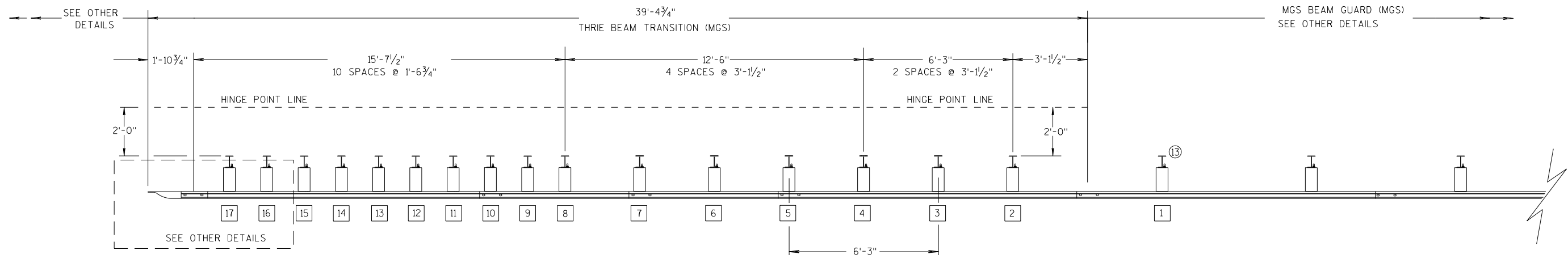
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

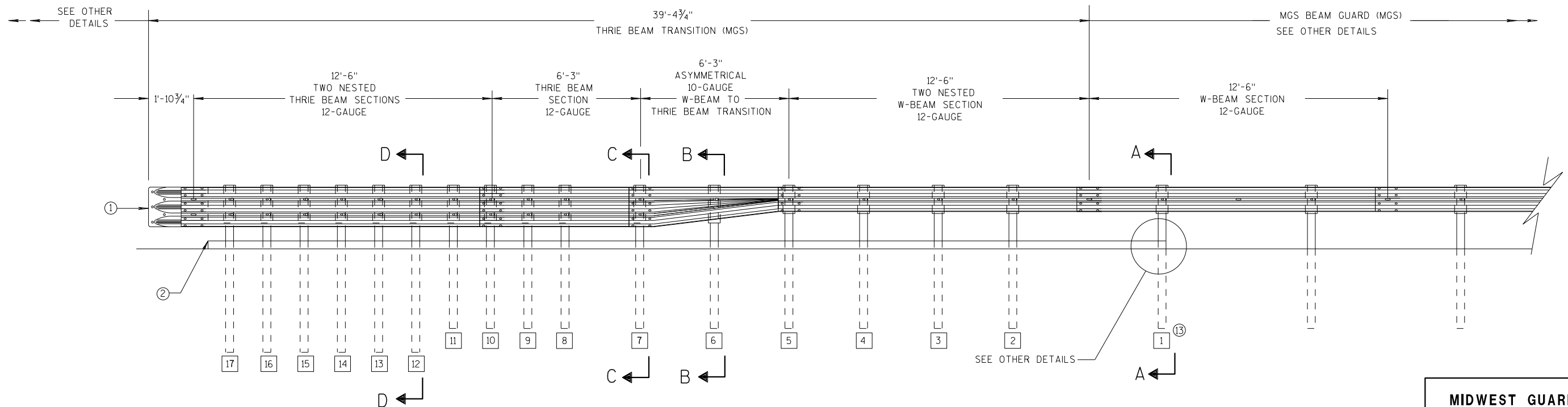
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



PLAN VIEW



ELEVATION VIEW

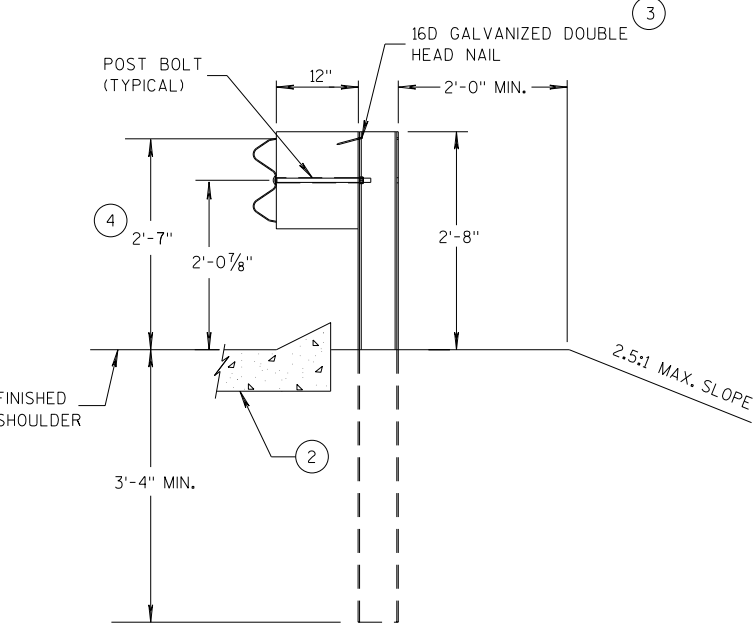
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

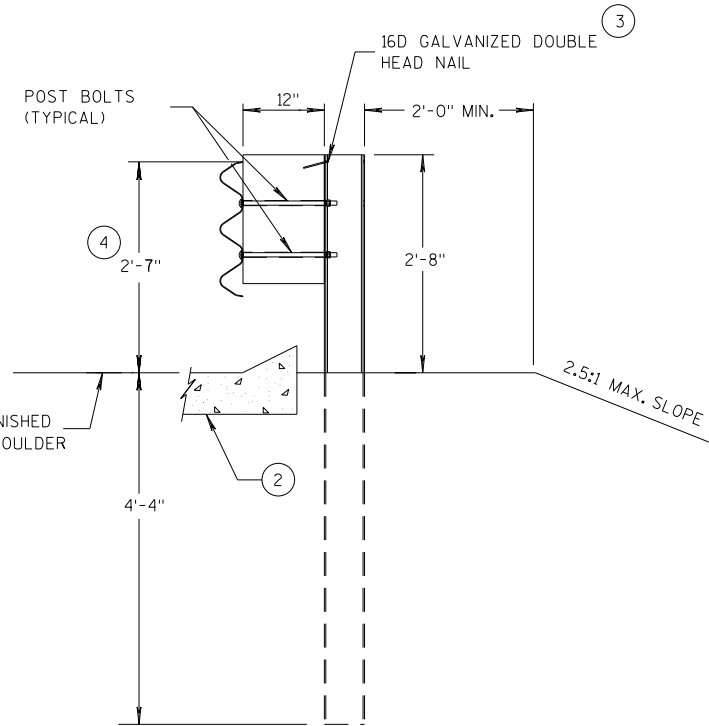
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

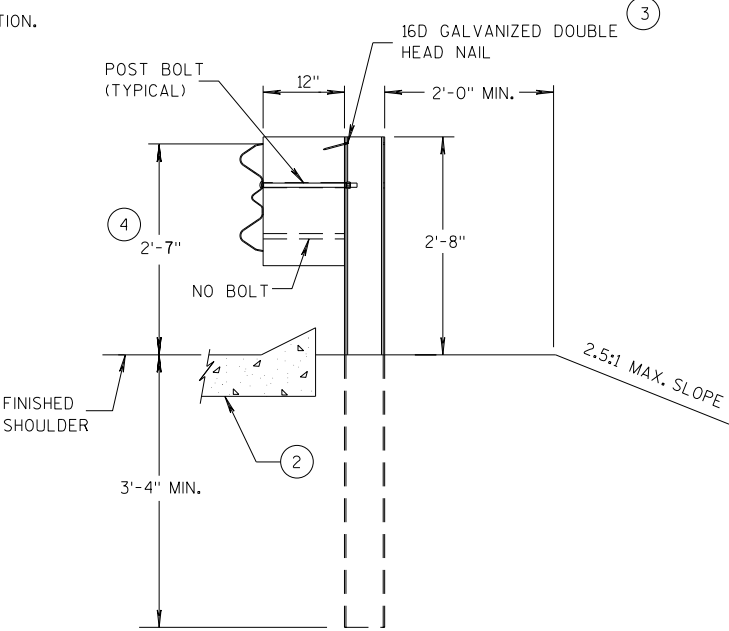
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



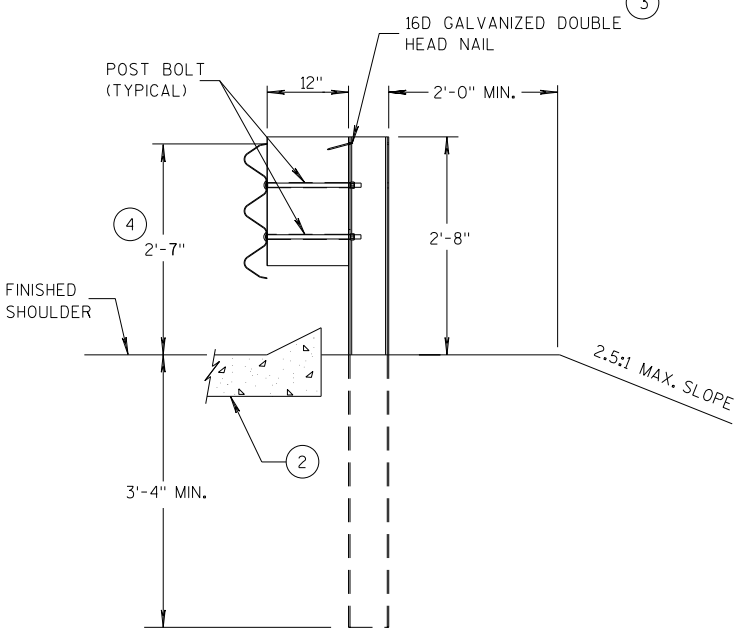
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

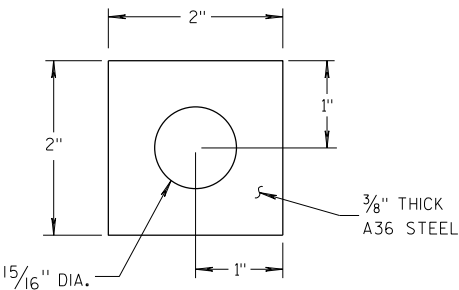
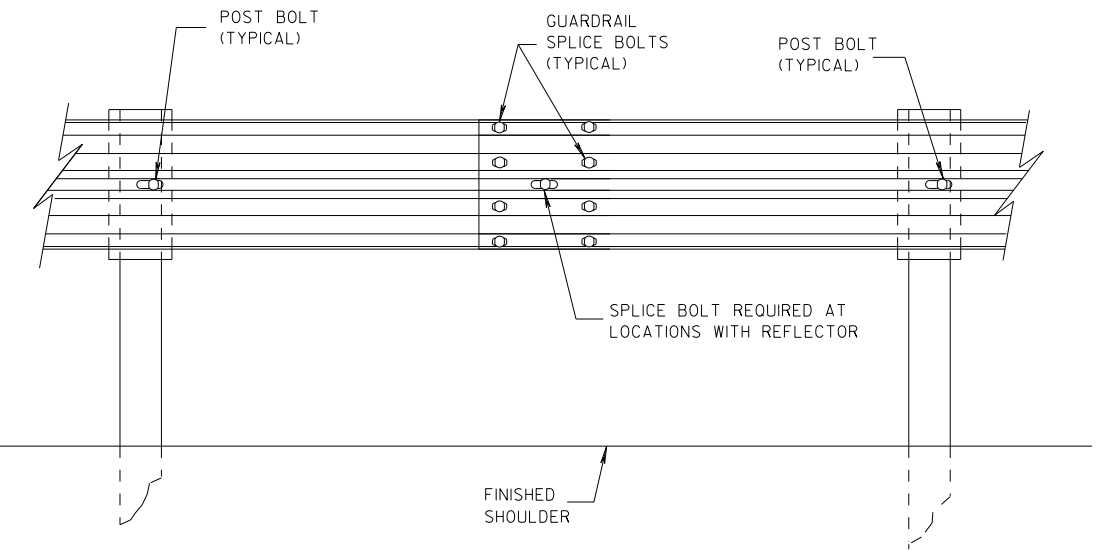
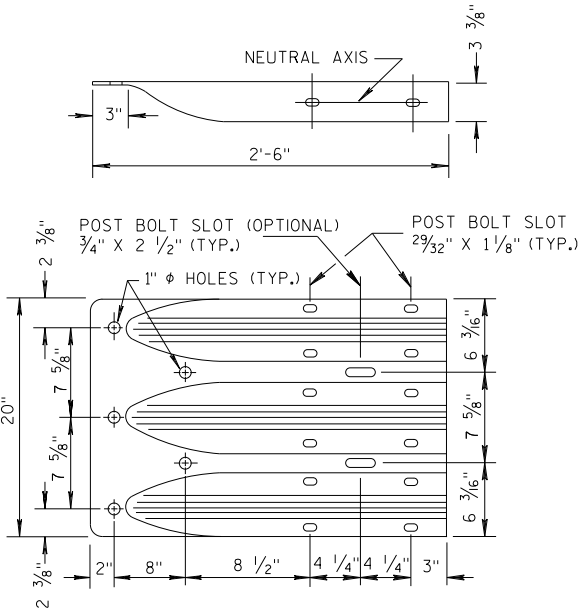


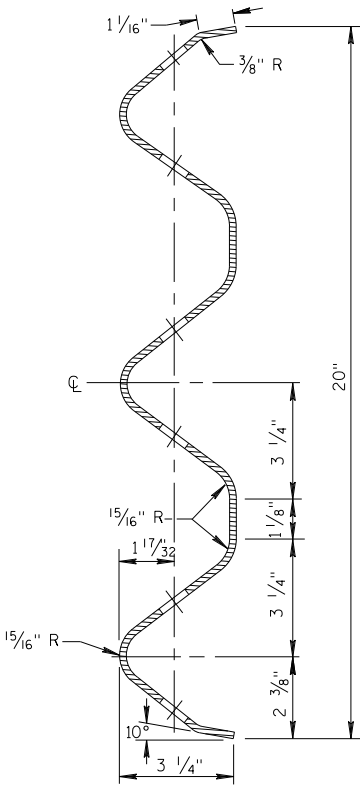
PLATE WASHER DETAIL



SPLICE DETAIL



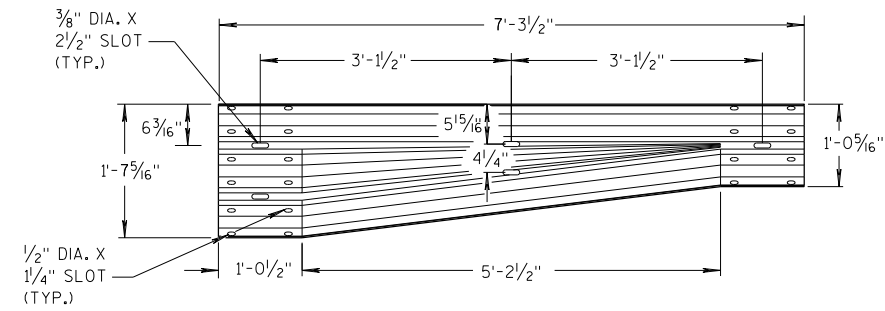
THRIE BEAM
TERMINAL CONNECTOR



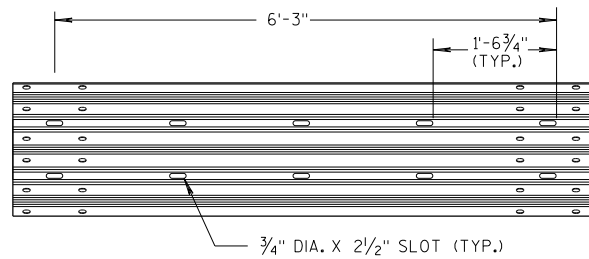
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

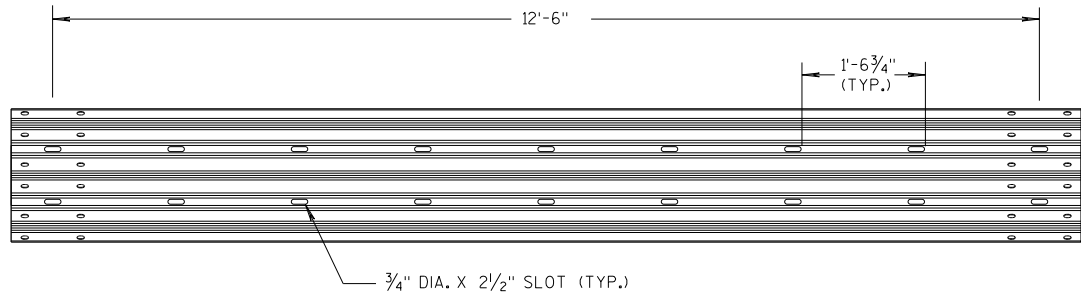
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



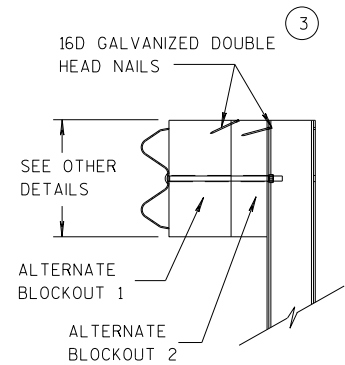
W-BEAM TO THRIE BEAM TRANSITION SECTION



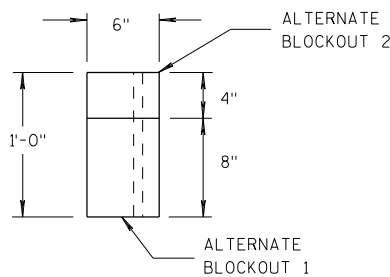
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

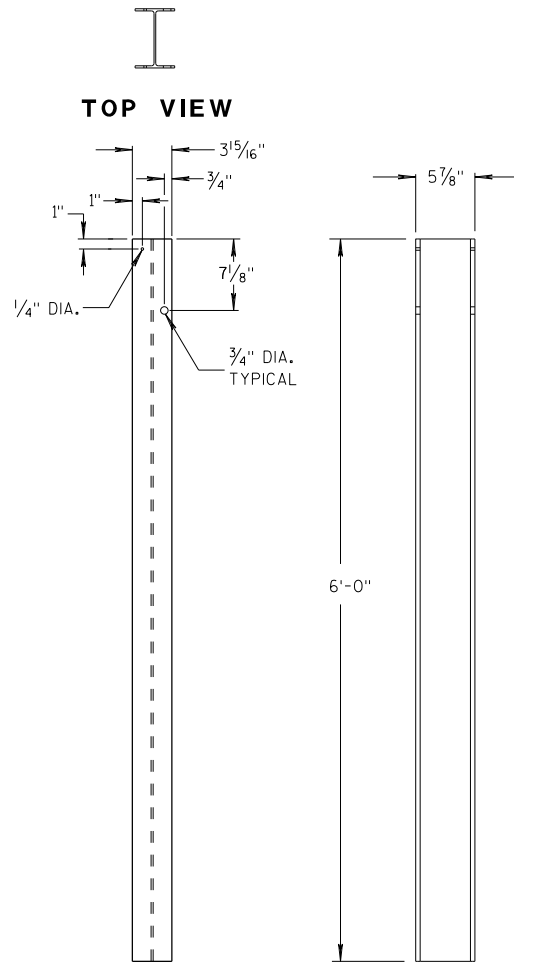


SIDE VIEW



TOP VIEW

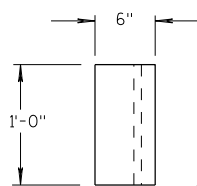
ALTERNATE WOOD BLOCKOUT DETAIL



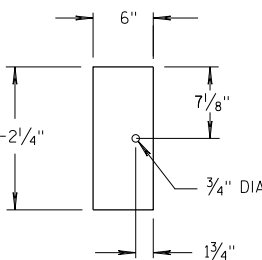
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

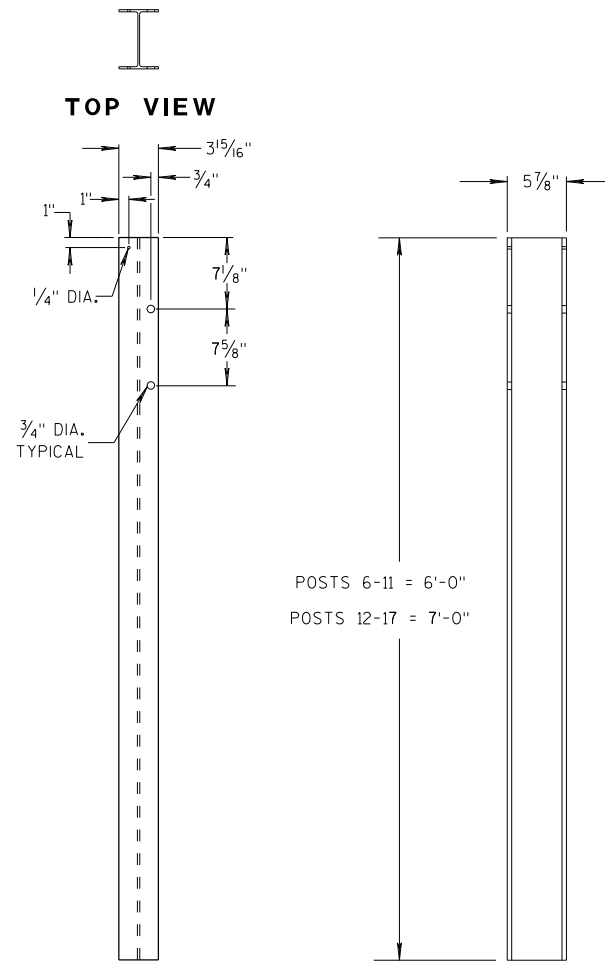


TOP VIEW



FRONT VIEW

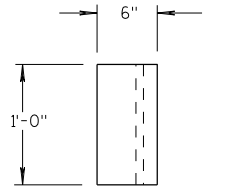
BLOCKOUT POSTS 1-5



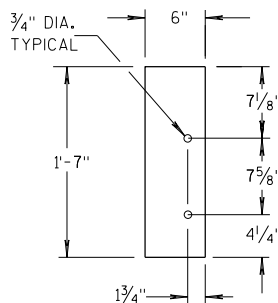
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

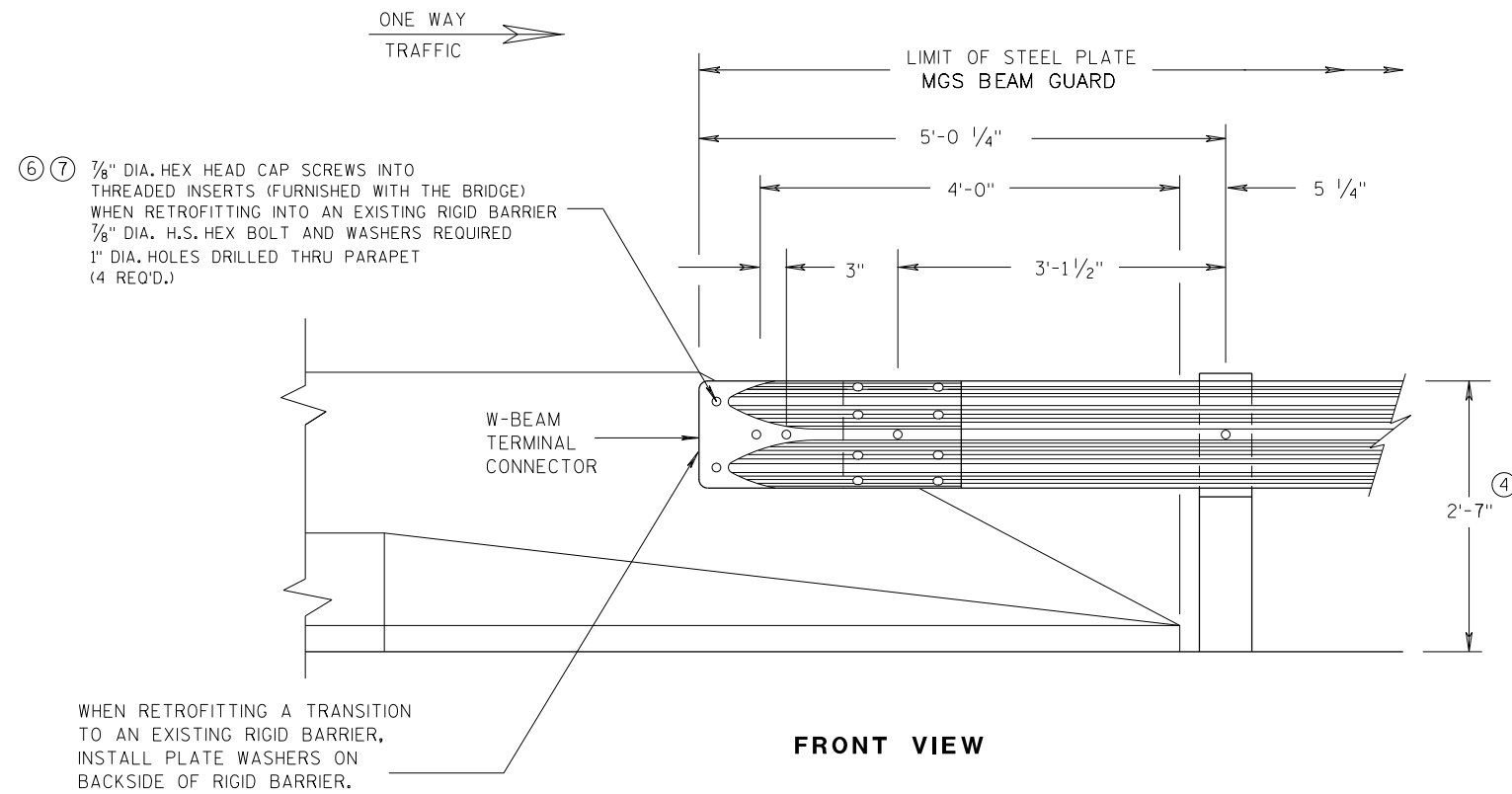
STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

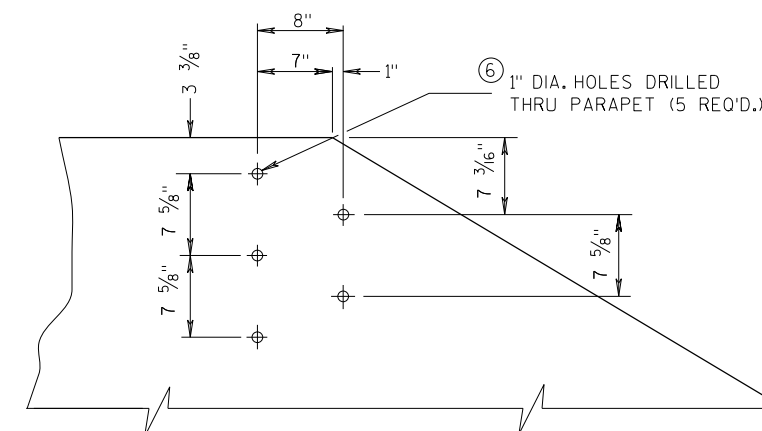
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



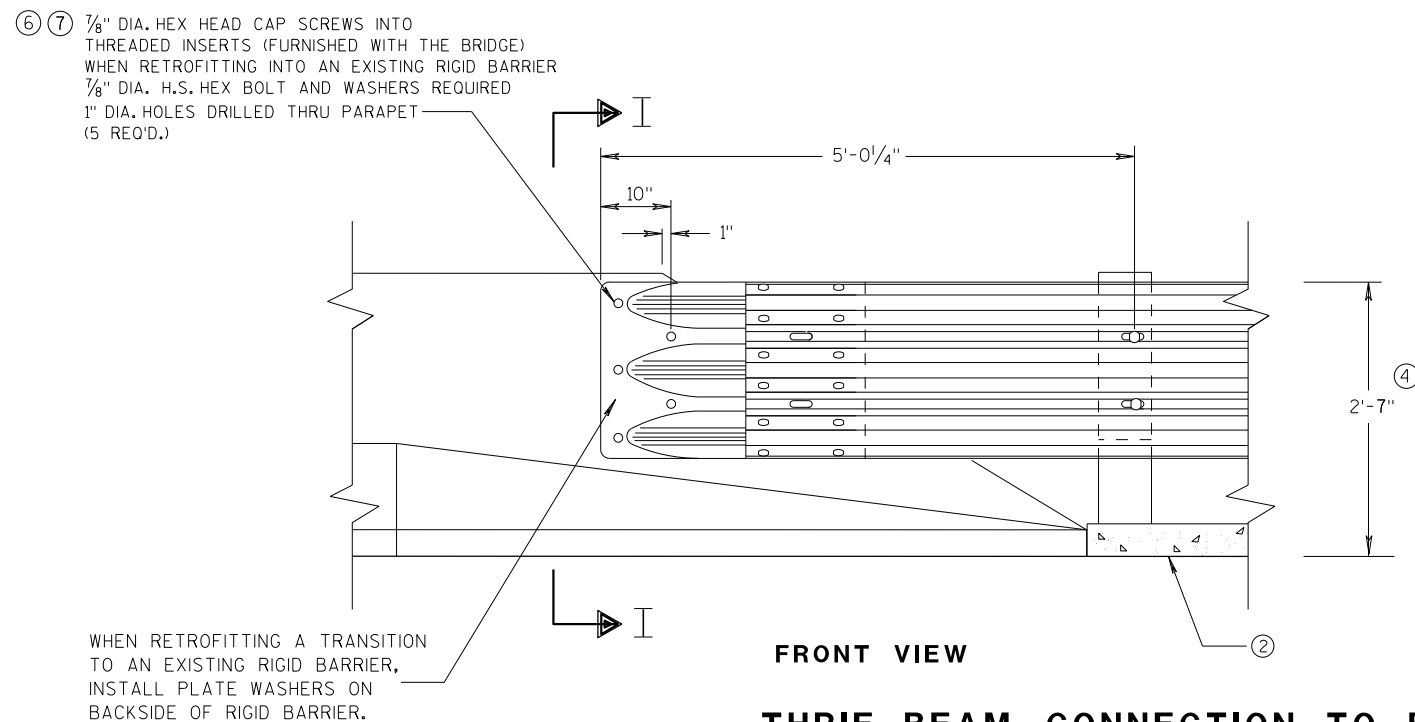
**W BEAM CONNECTION TO
PARAPETS WITH SLOPED ENDS
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)**

GENERAL NOTES

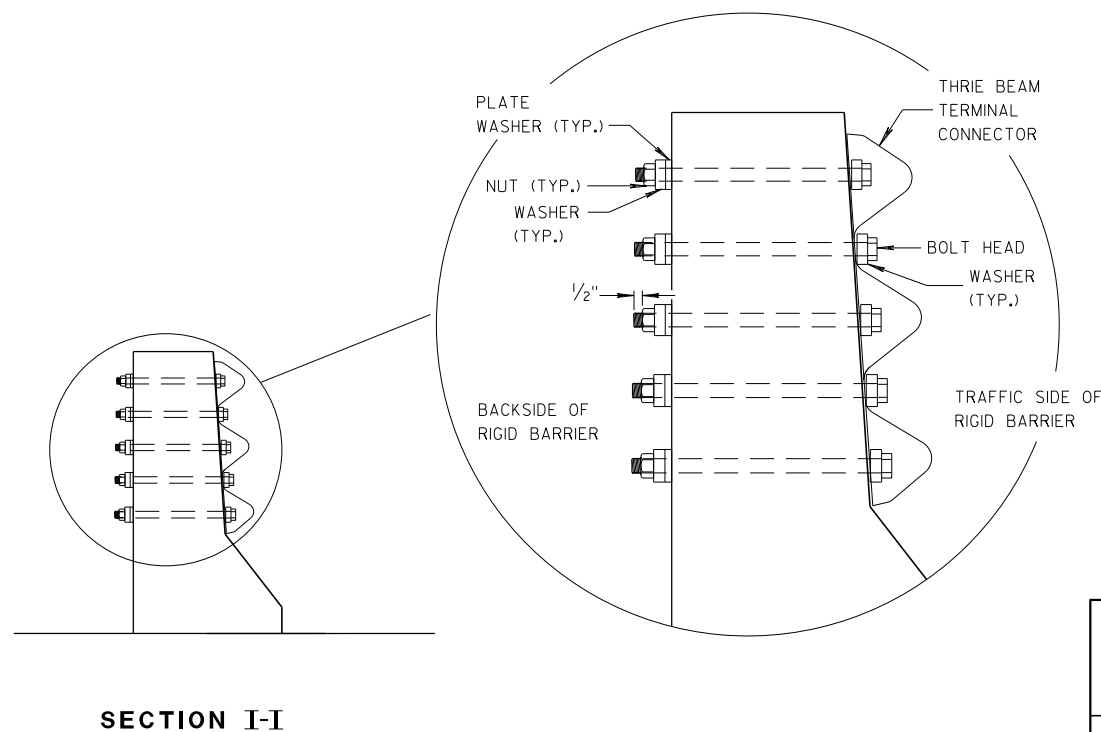
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH 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.



**DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION**



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

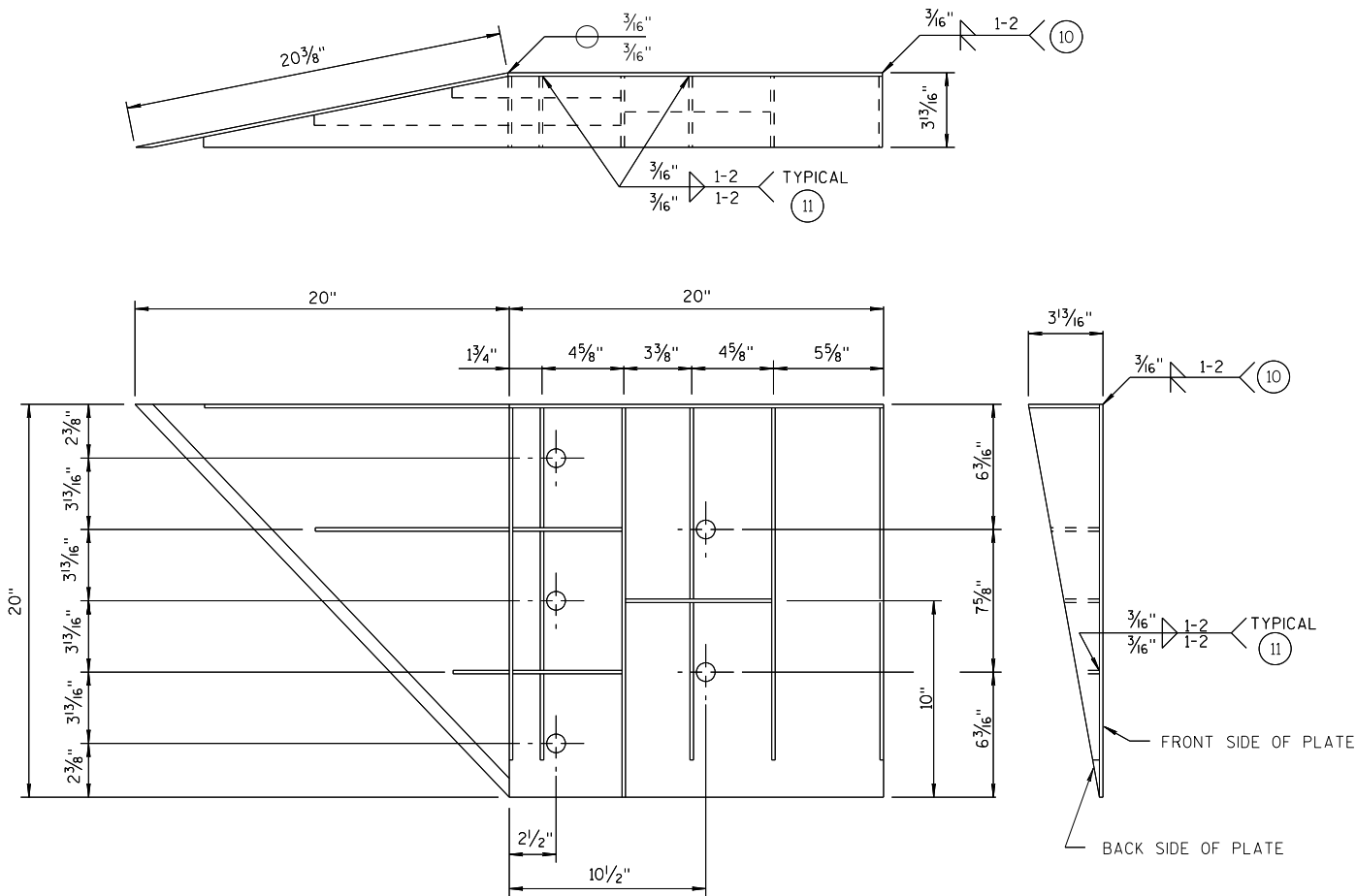


**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

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

SINGLE SLOPE CONNECTION PLATE

GENERAL NOTES

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

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

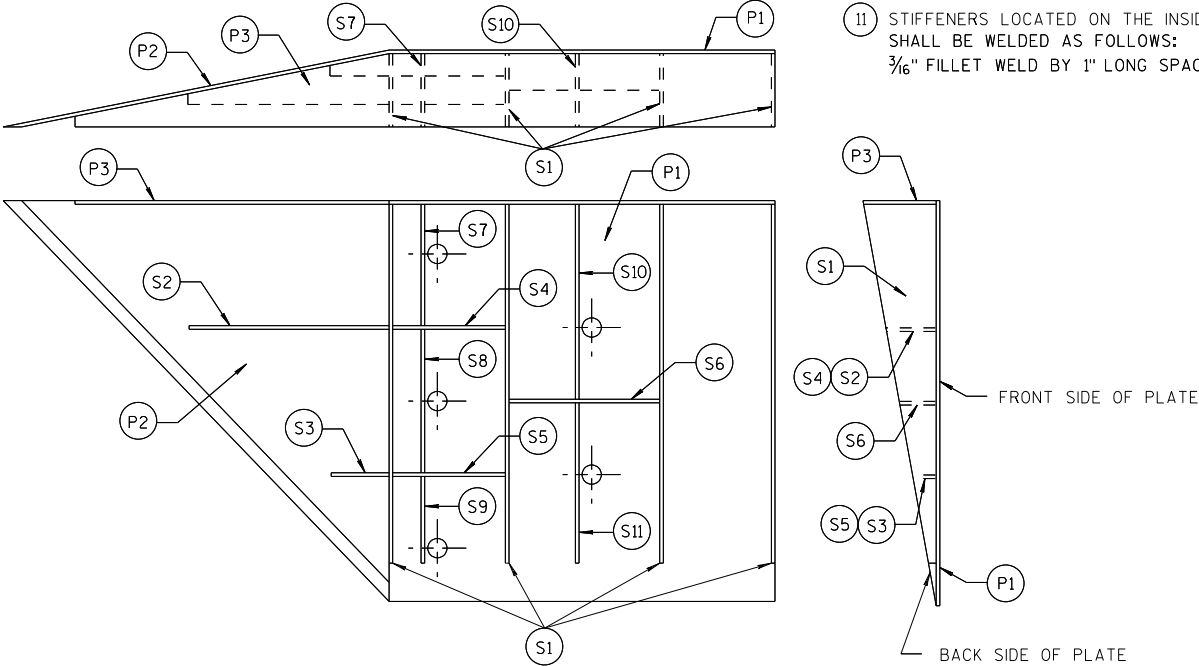


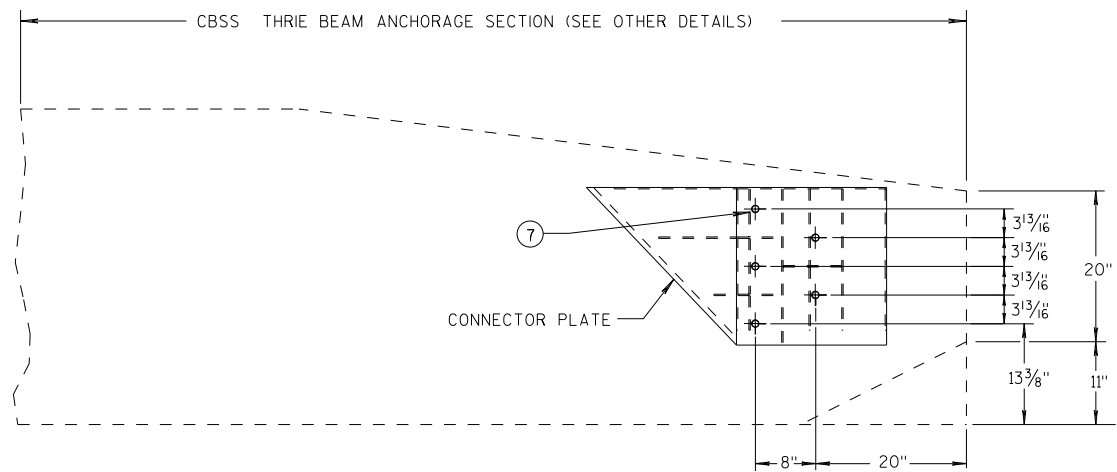
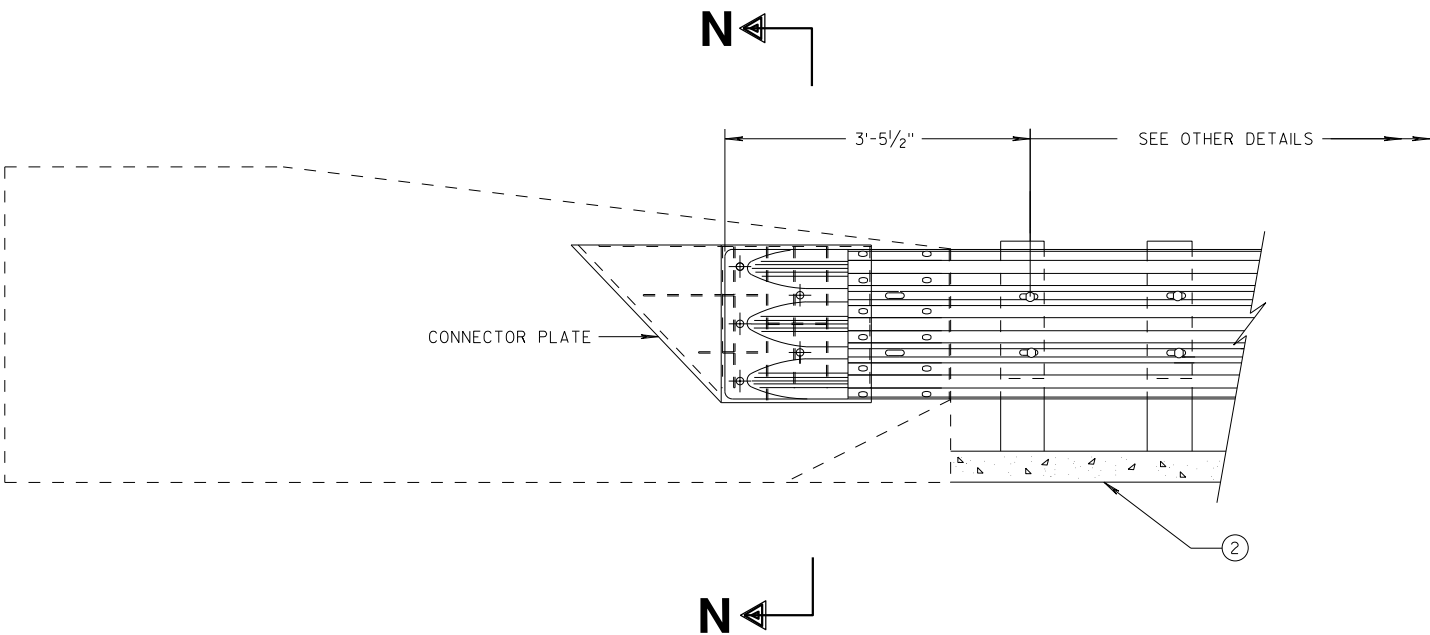
PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



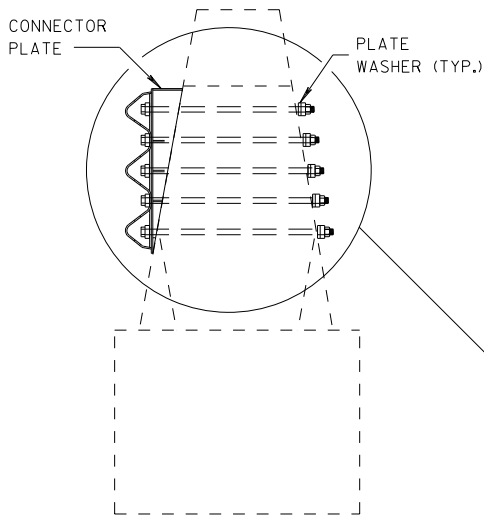
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

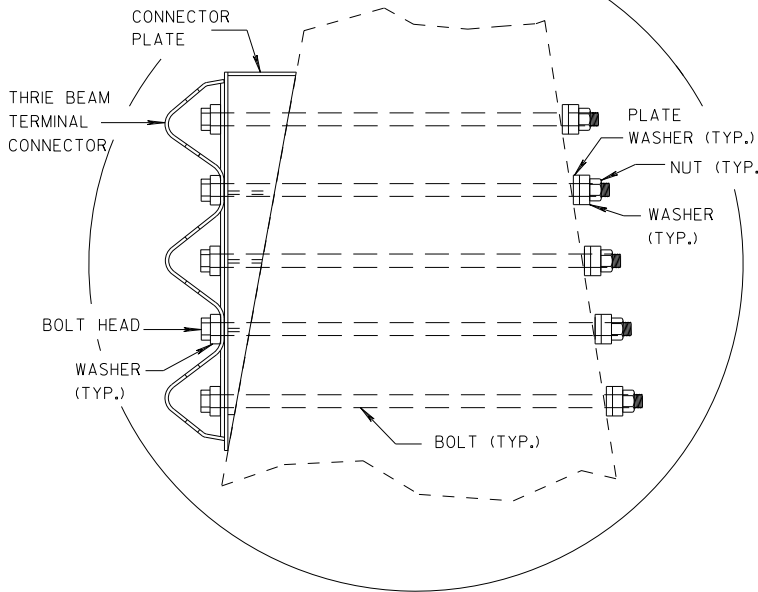
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

7 BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM 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.



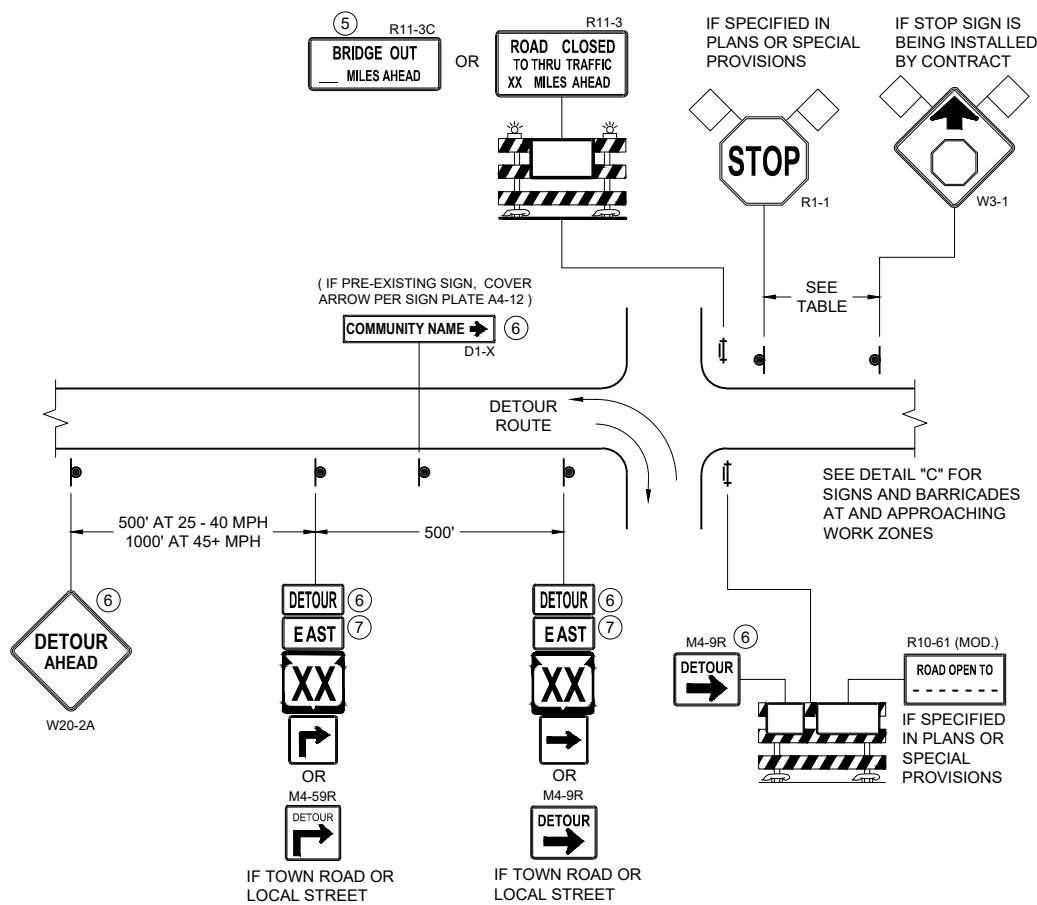
SECTION N-N



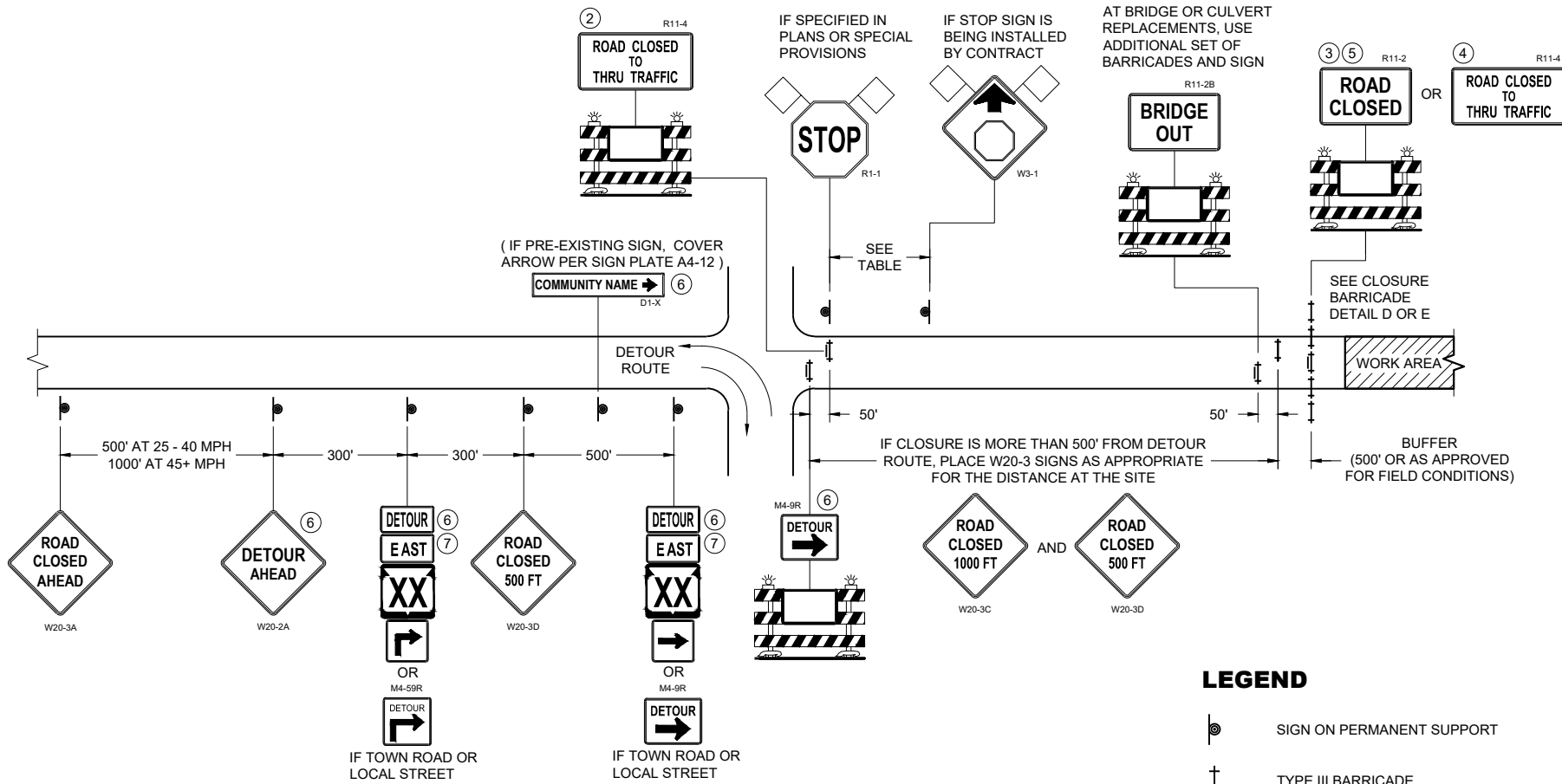
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

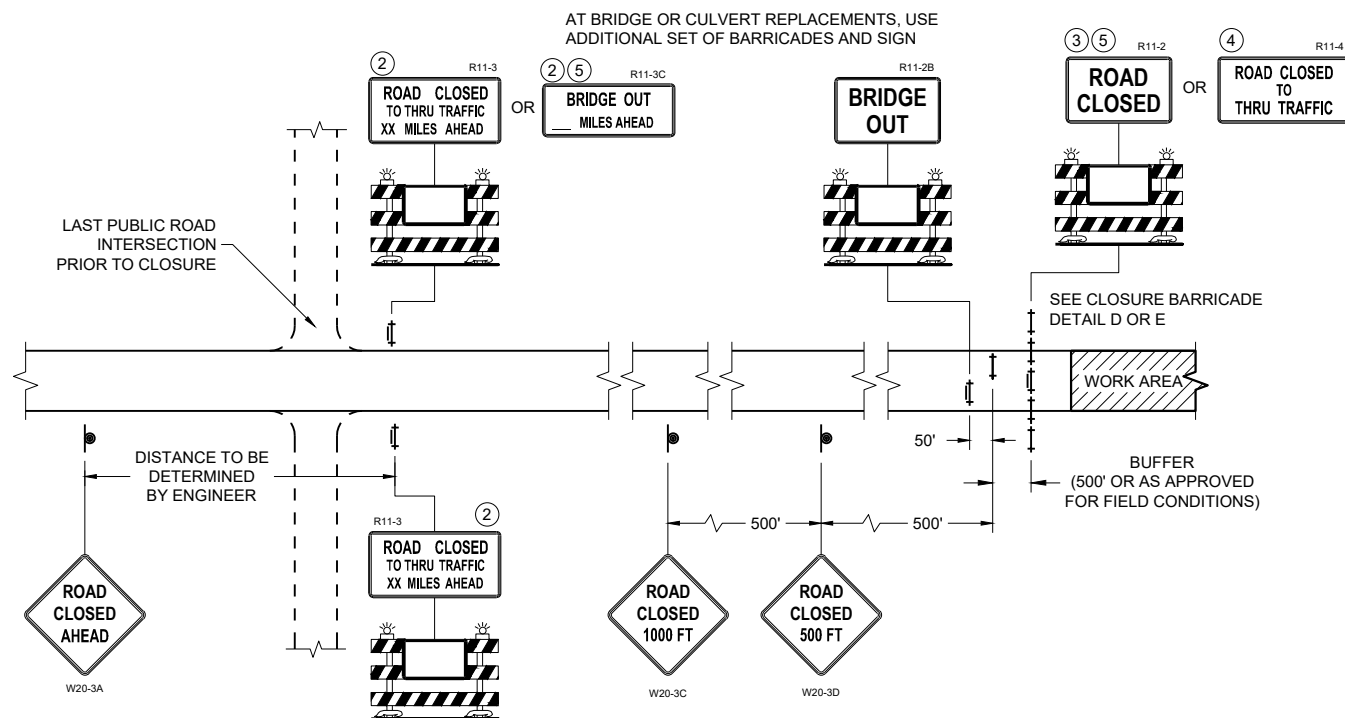
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



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



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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

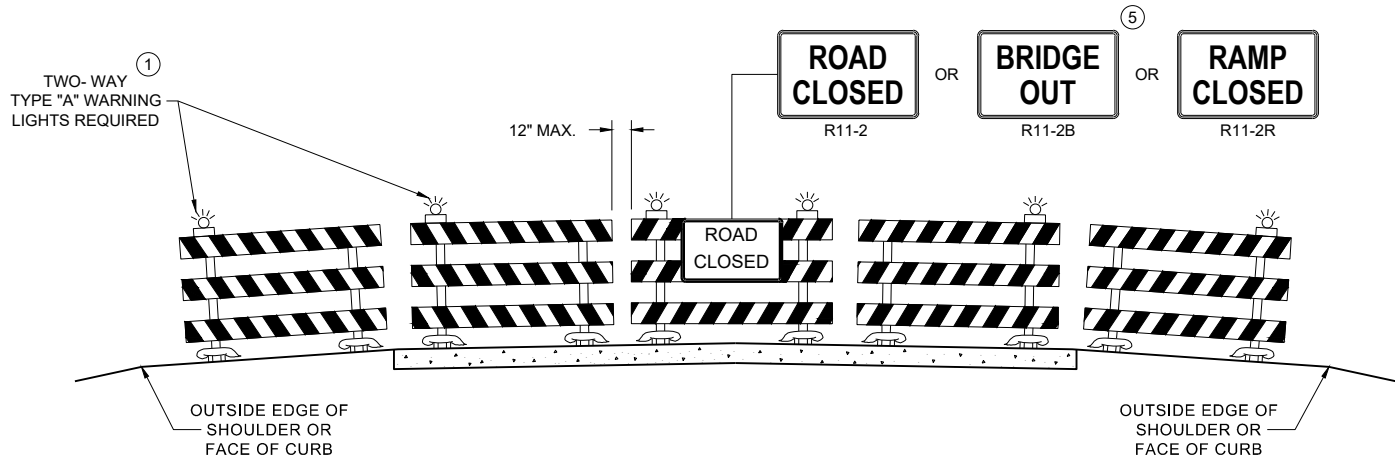
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

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

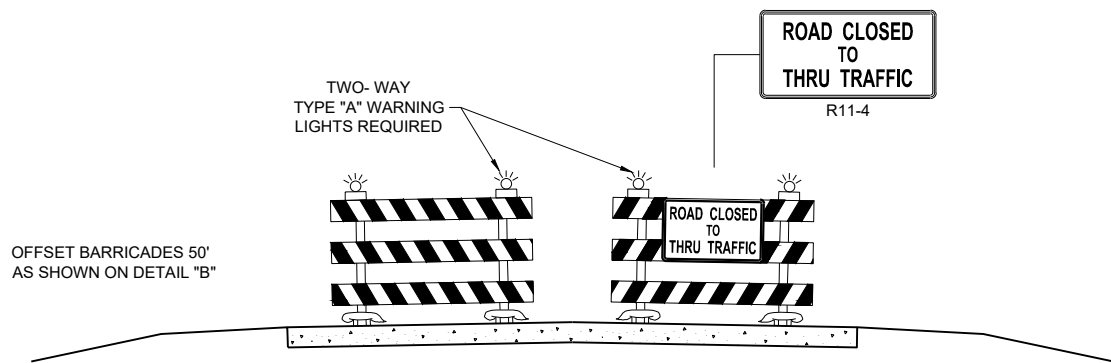
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

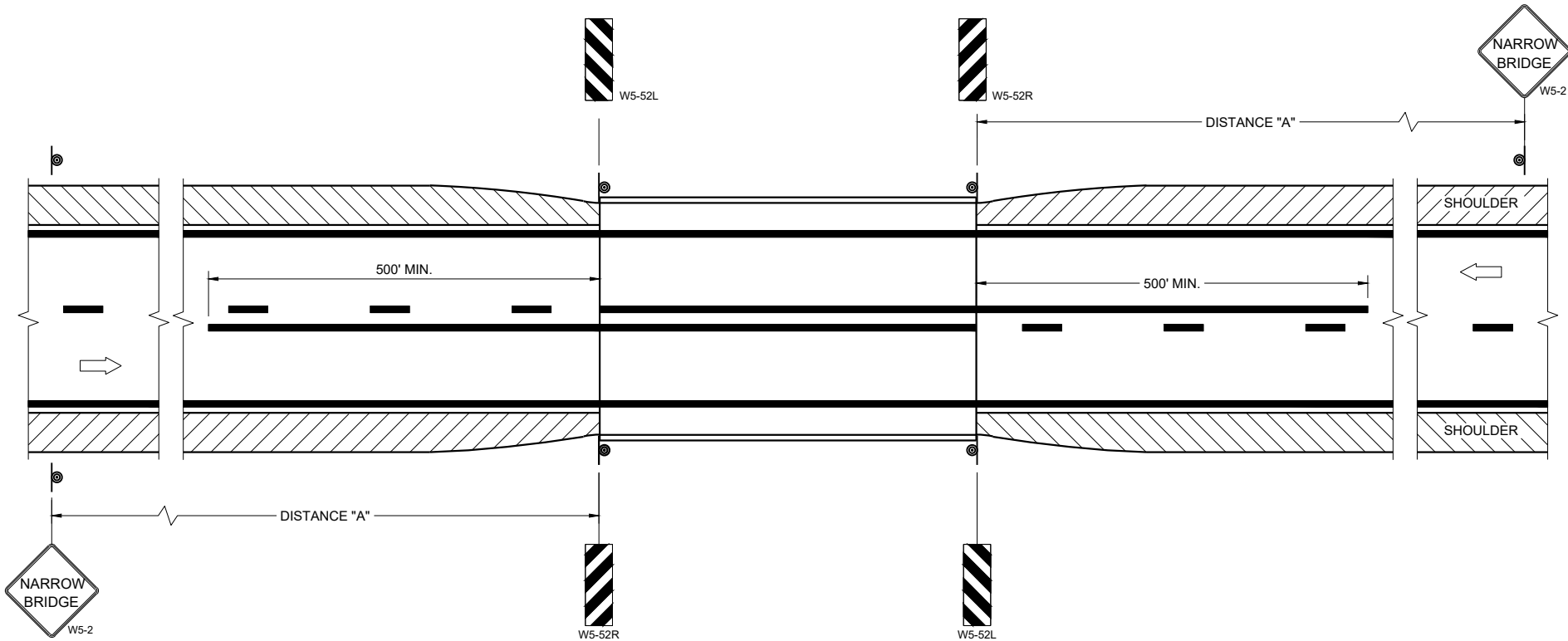
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

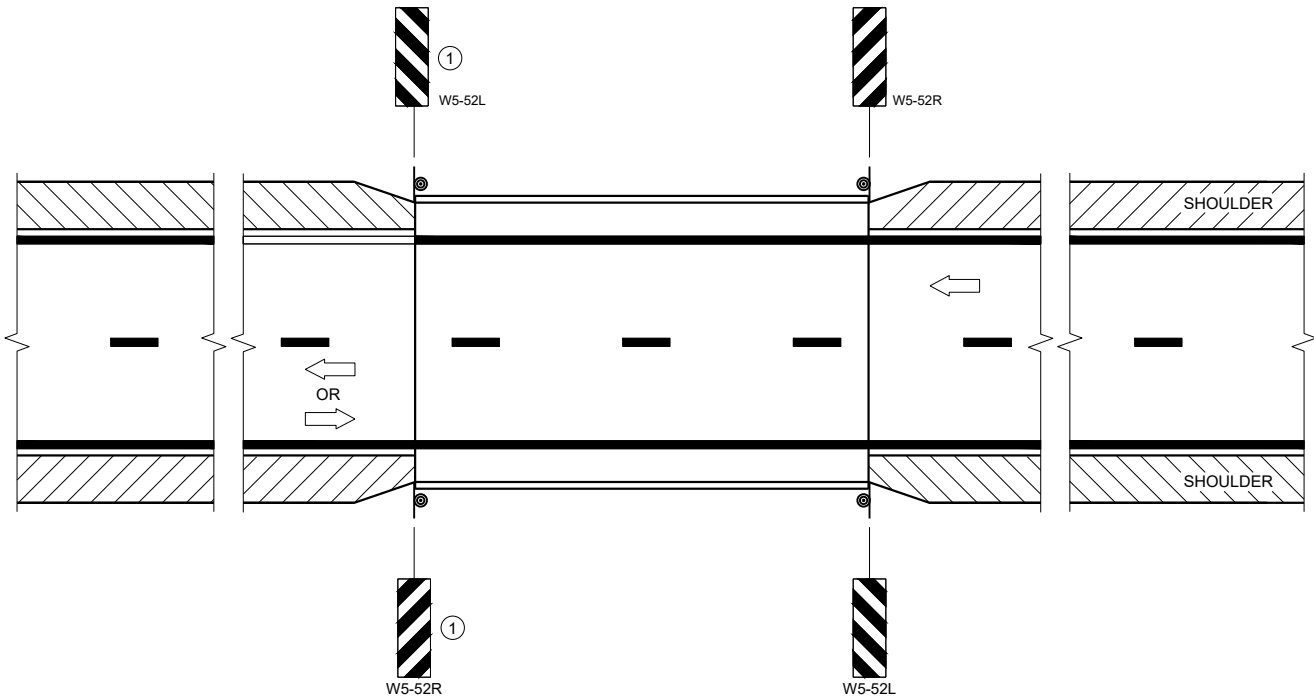
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



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



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

GENERAL NOTES

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

DISTANCE TABLE

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

**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

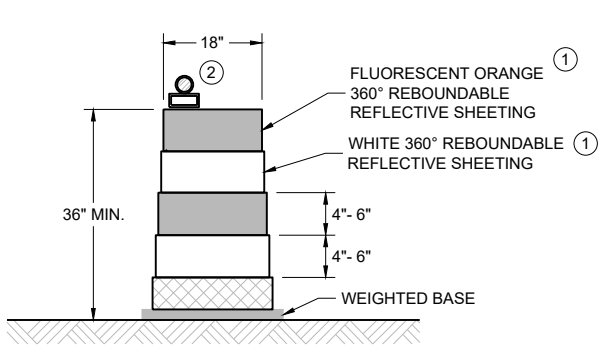
APPROVED
May 2023 /S/ Jeannie Silver
DATE Statewide Pavement Marking Engineer
FHWA



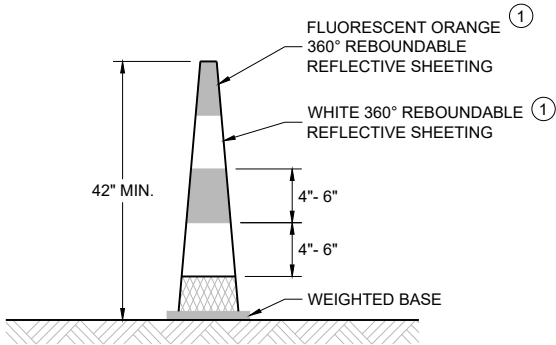
PERMANENT PAVEMENT MARKING

APPROVED
December 2024
DATE

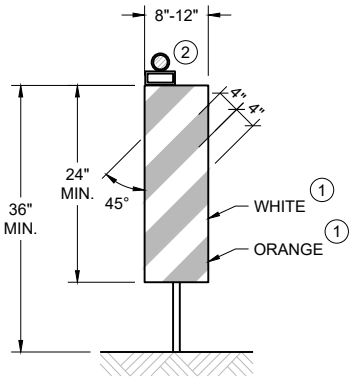
/S/ Jeannie Silver
Statewide Pavement Marking Engineer



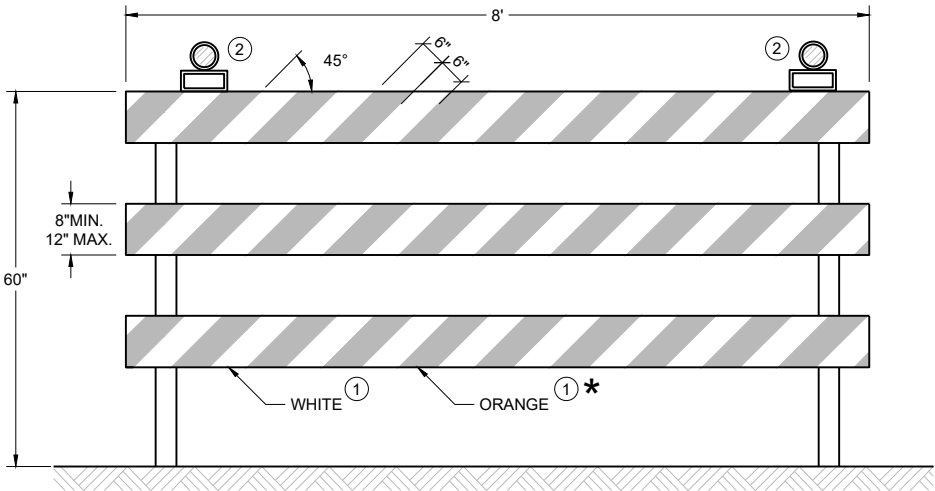
DRUM
BALLAST WIDTHS
RANGE FROM 24"-36"



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



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



TYPE III BARRICADE
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.
* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

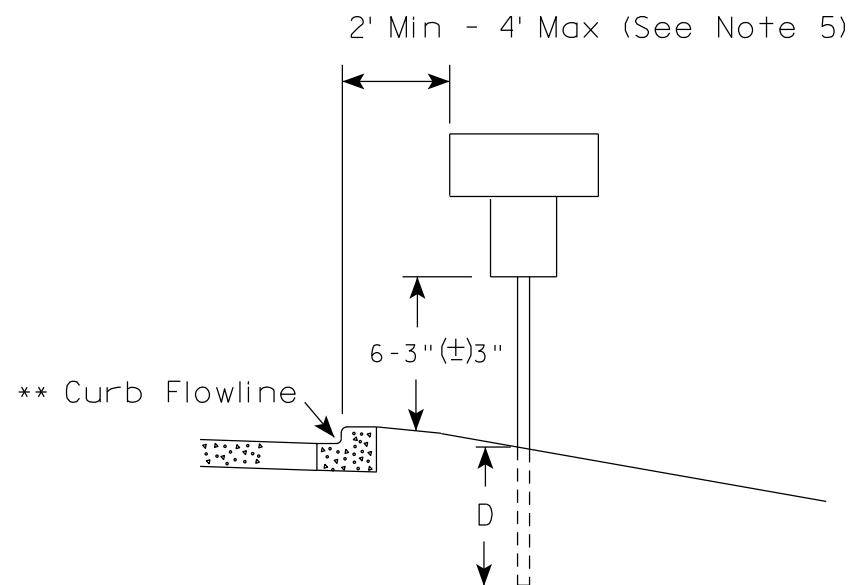
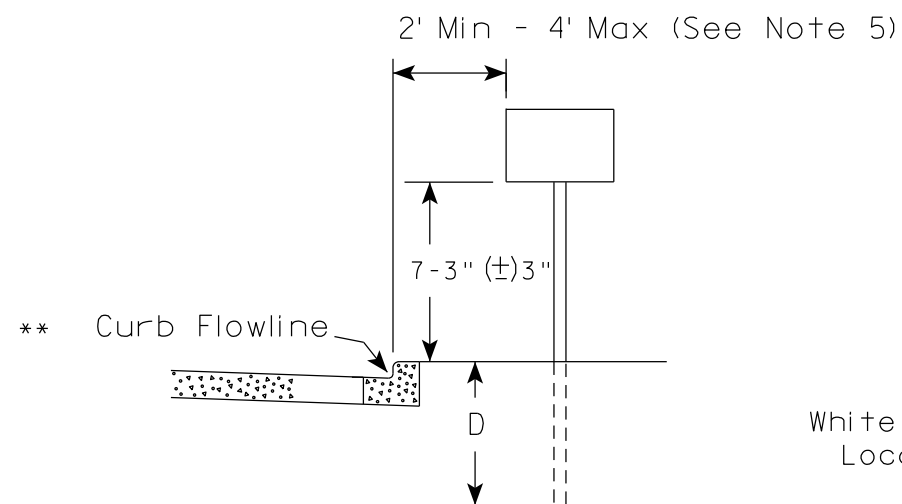
**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2026 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

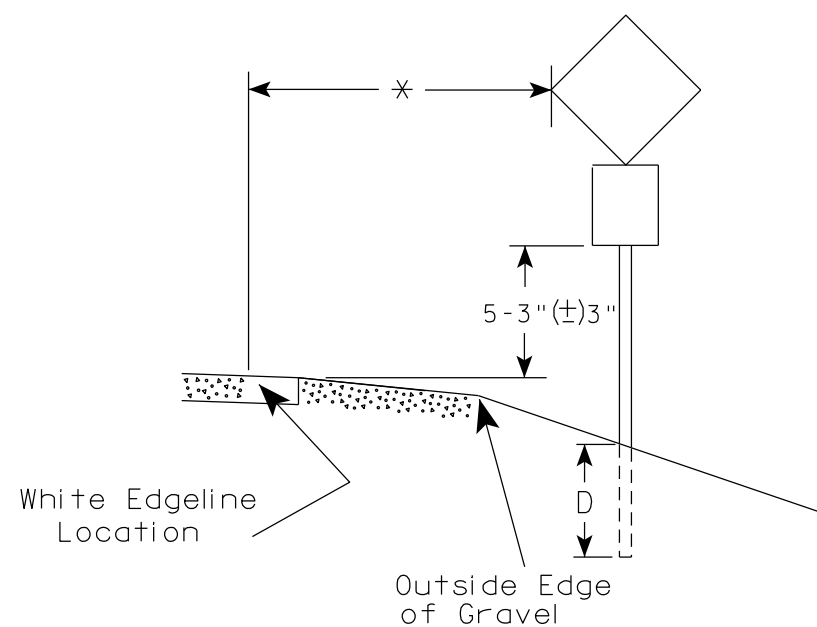
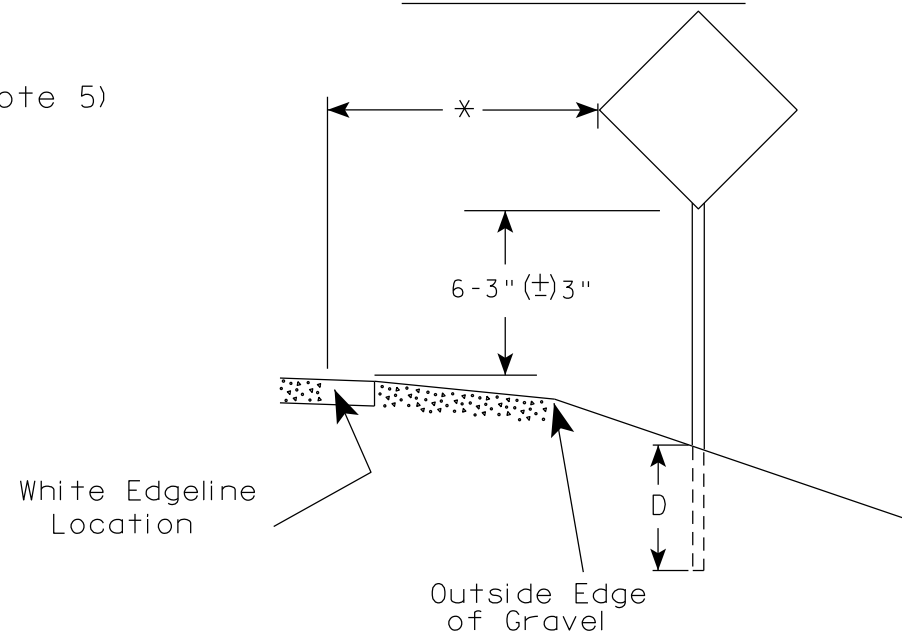
FHWA

URBAN AREA



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

RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

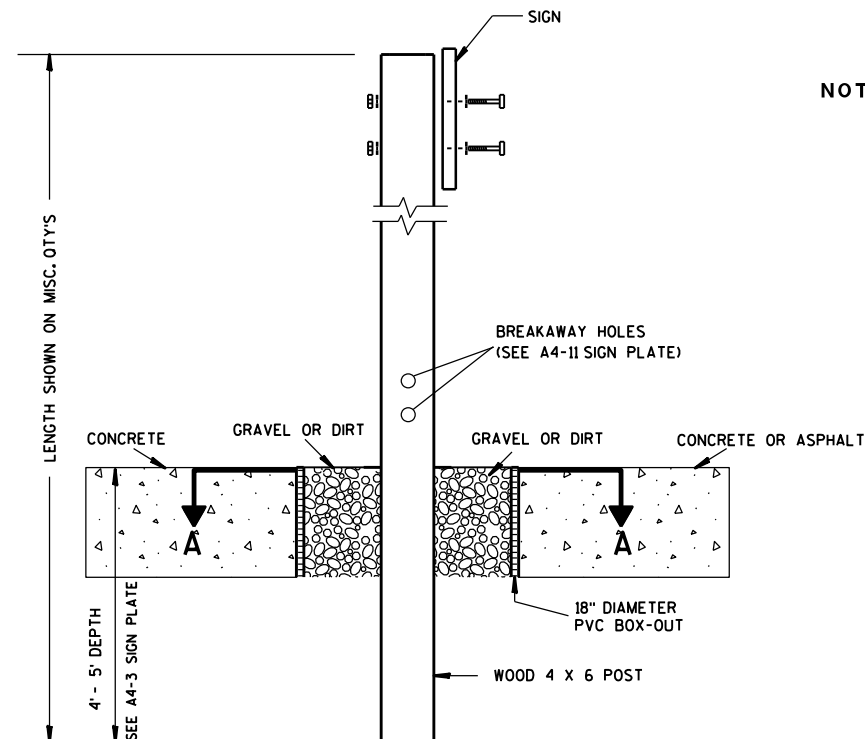
- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

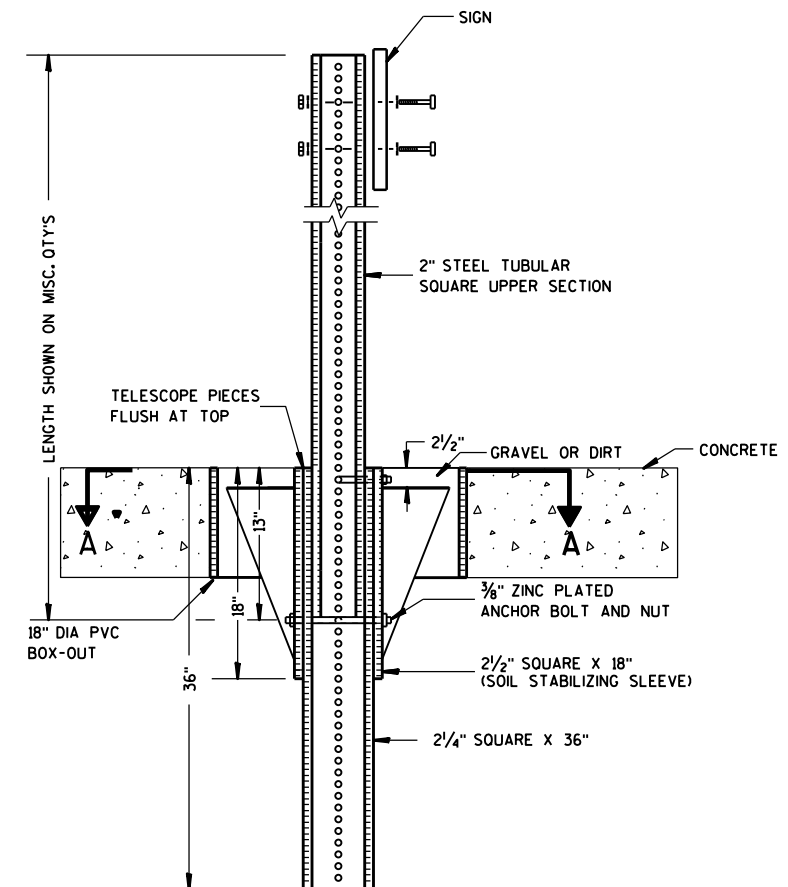
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

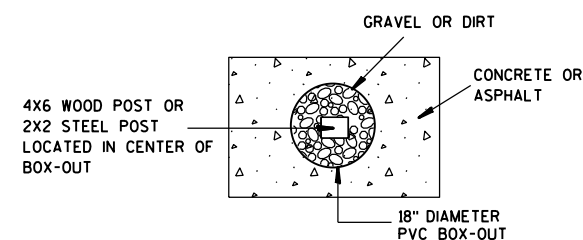
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

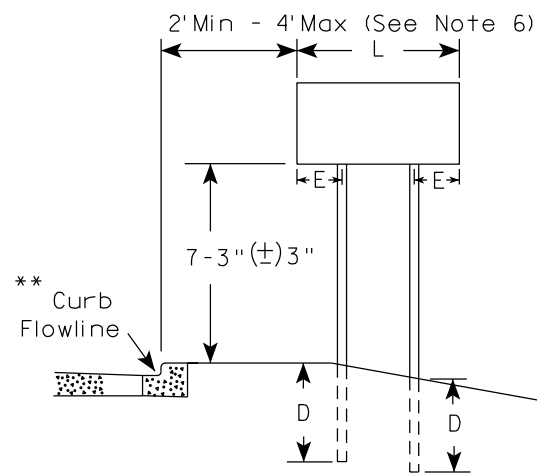
HWY:

COUNTY:

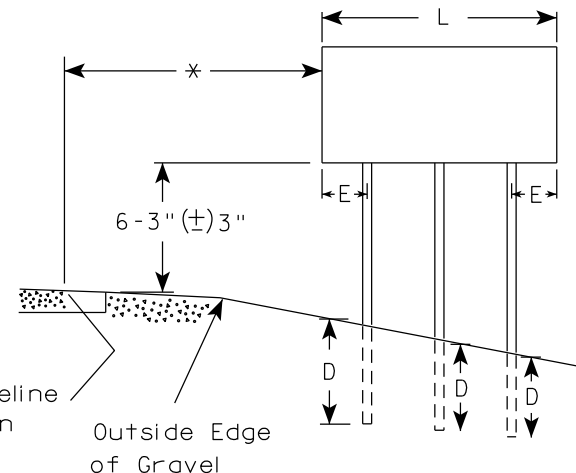
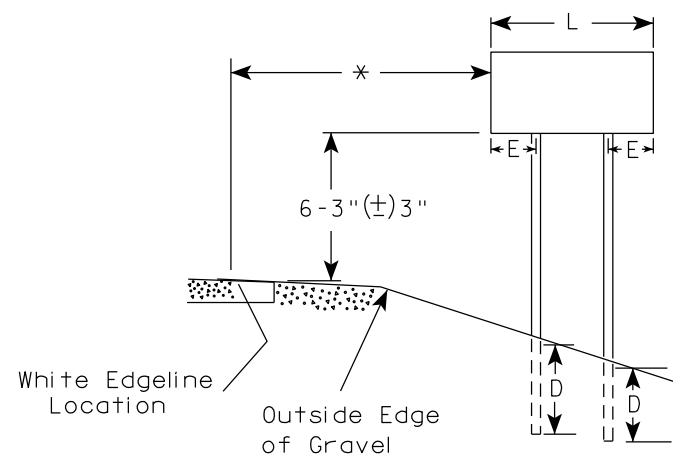
SHEET NO:

E

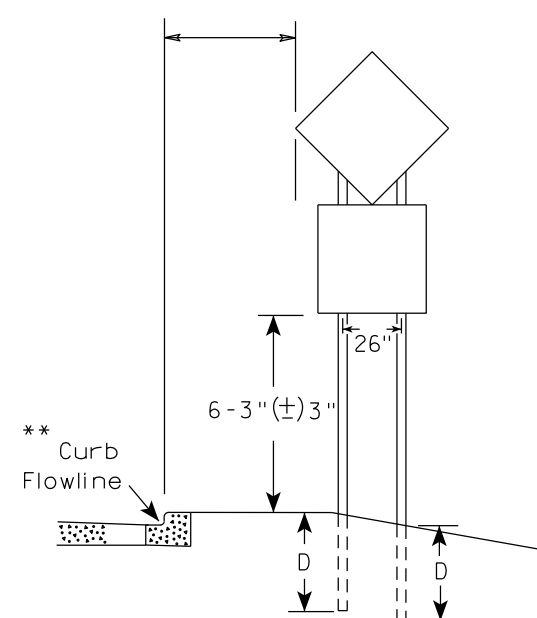
URBAN AREA



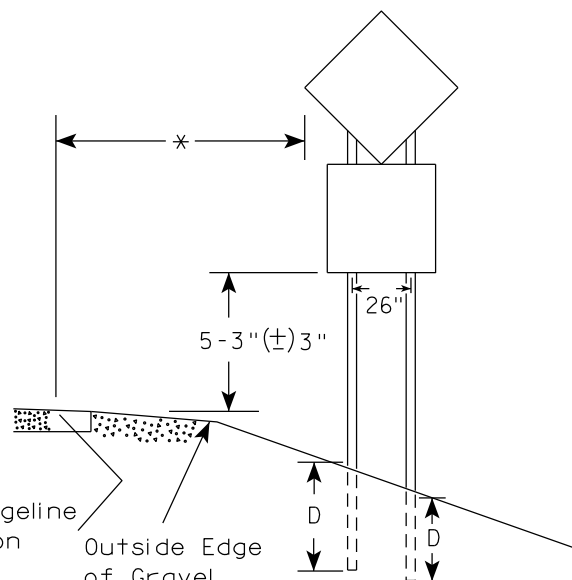
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

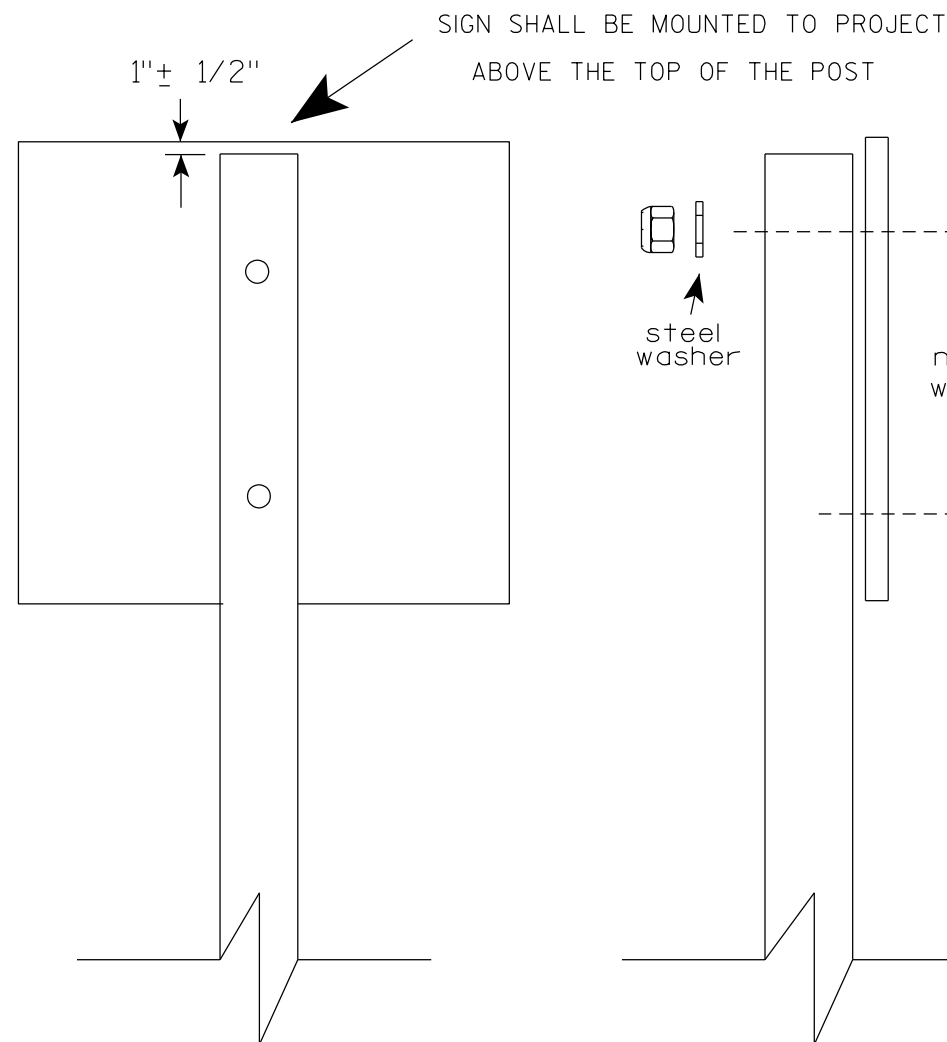
GENERAL NOTES

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

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

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

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



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

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

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

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

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

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

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

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

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

2 1/2" TELES PAR TUBE

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

4"

2 1/2"

10"

3 1/2"

16"

[illegible]

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

- Dimensions:**
 - Overall height: LENGTH SHOWN ON MISC. Q'TYS
 - Section A-A: 36" (total), 18" (upper), 12" (lower)
 - Section B-B: 1"
- Components:**
 - SIGN
 - SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 - 2" STEEL TUBULAR SQUARE UPPER SECTION
 - ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C
 - ALL FOUR SIDES
 - $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT
 - $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
 - 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 - 2 1/4" SQUARE X 36"
 - TELESCOPE PIECES FLUSH AT TOP

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT

DIRECTION
OF TRAFFIC

SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Ranch

for State Traffic Engineer

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

PROJECT NO:

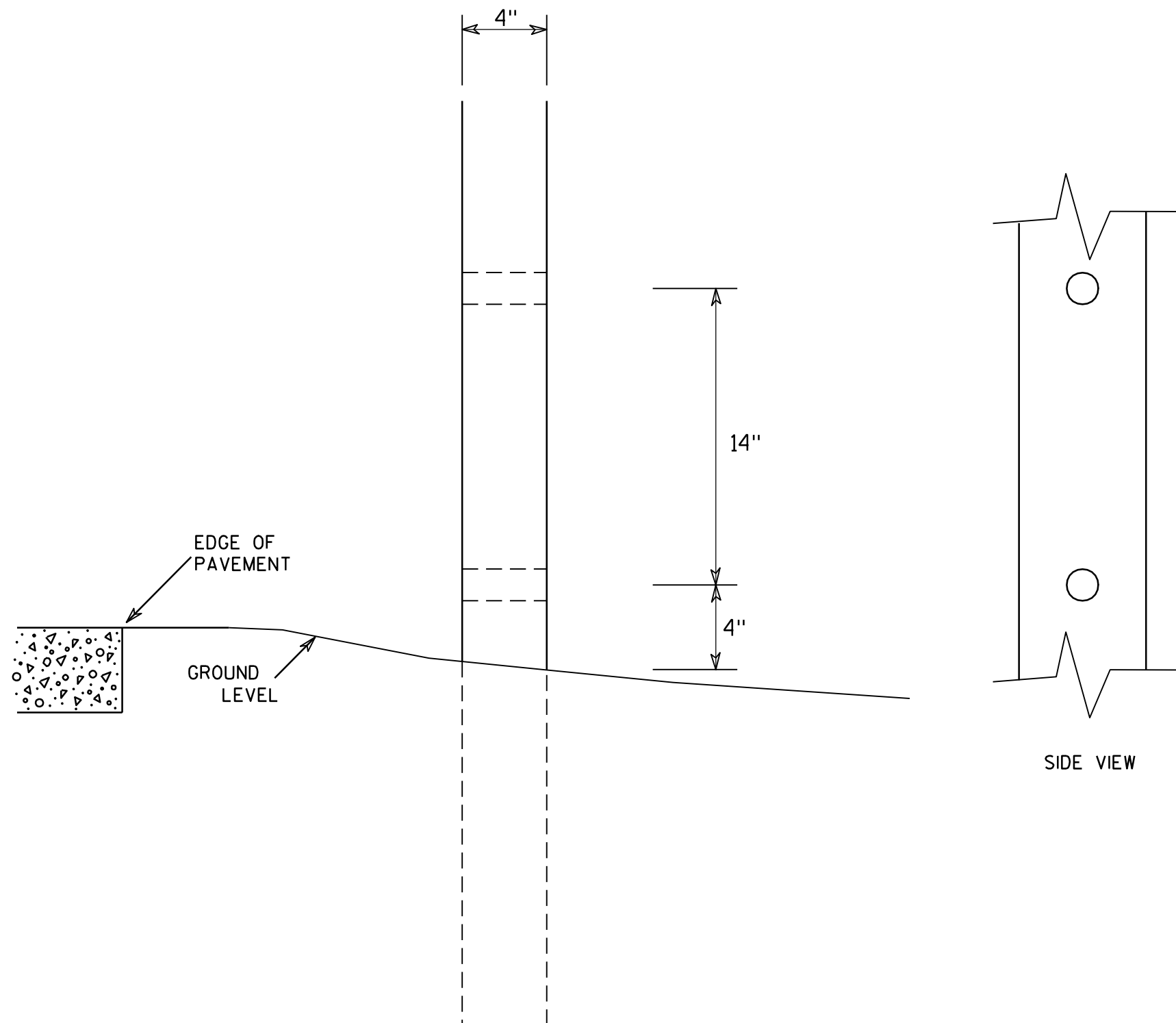
HWY:

COUNTY:

SHEET NO:

E

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

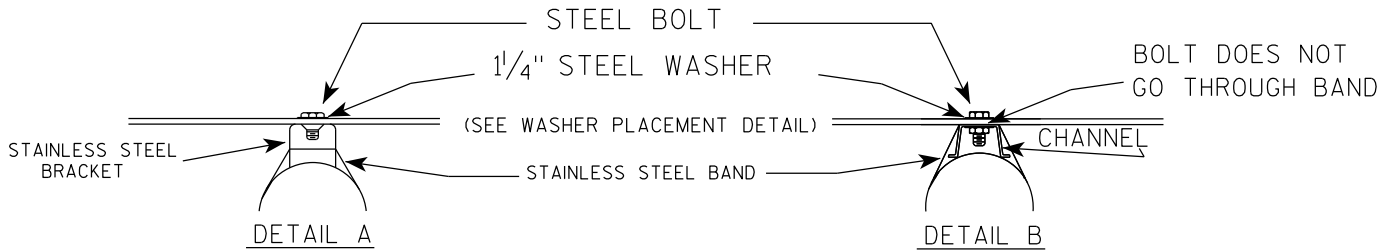
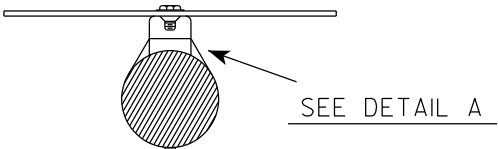
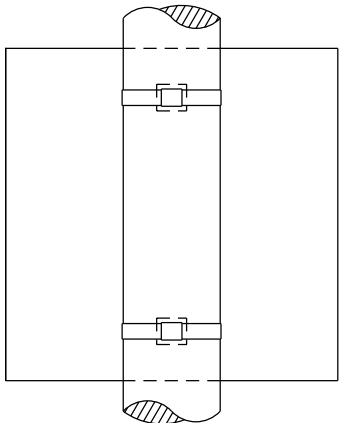
COUNTY:

SHEET NO:

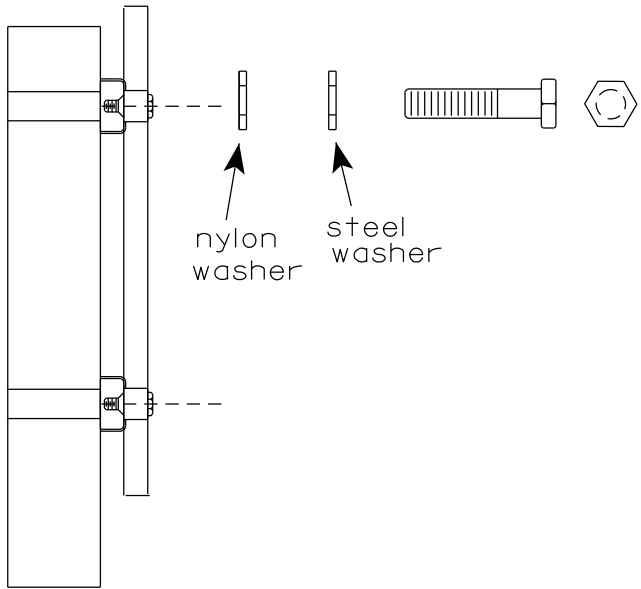
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

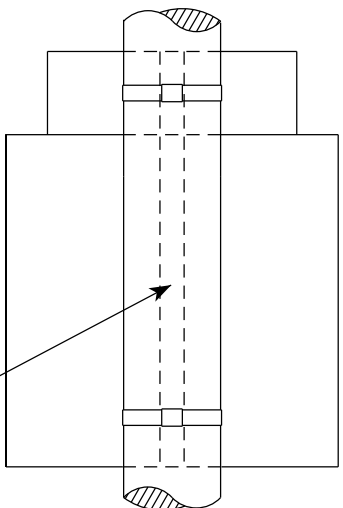


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

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

"J" ASSEMBLY

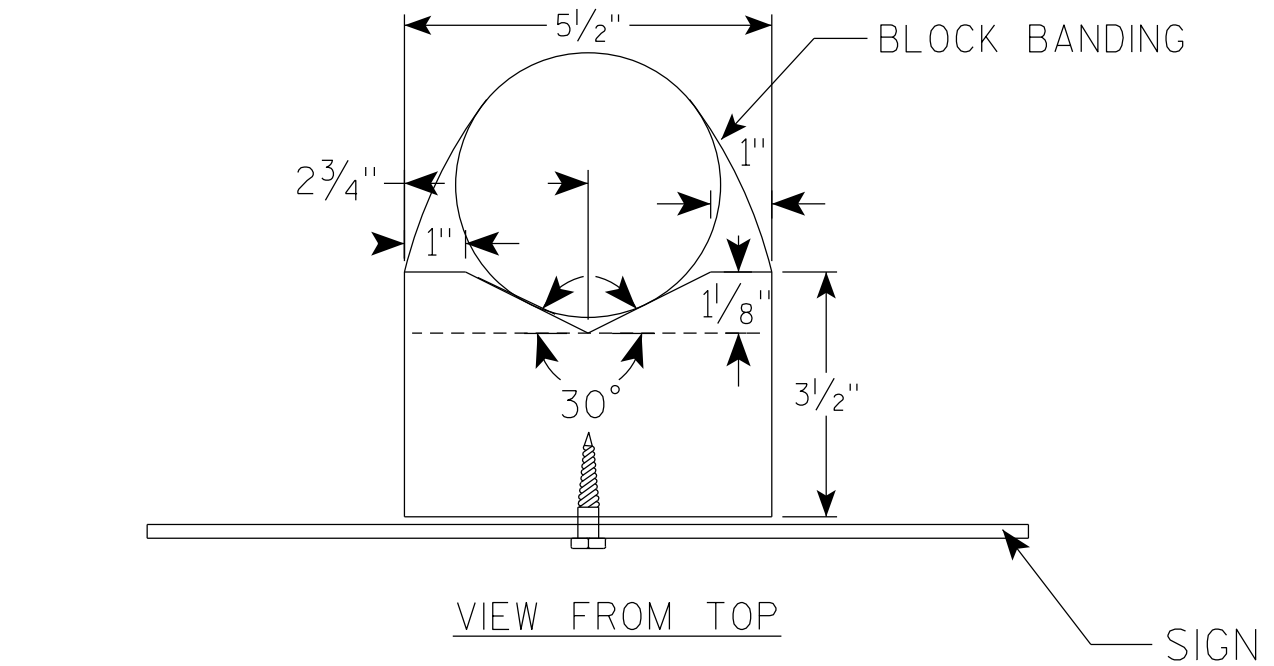
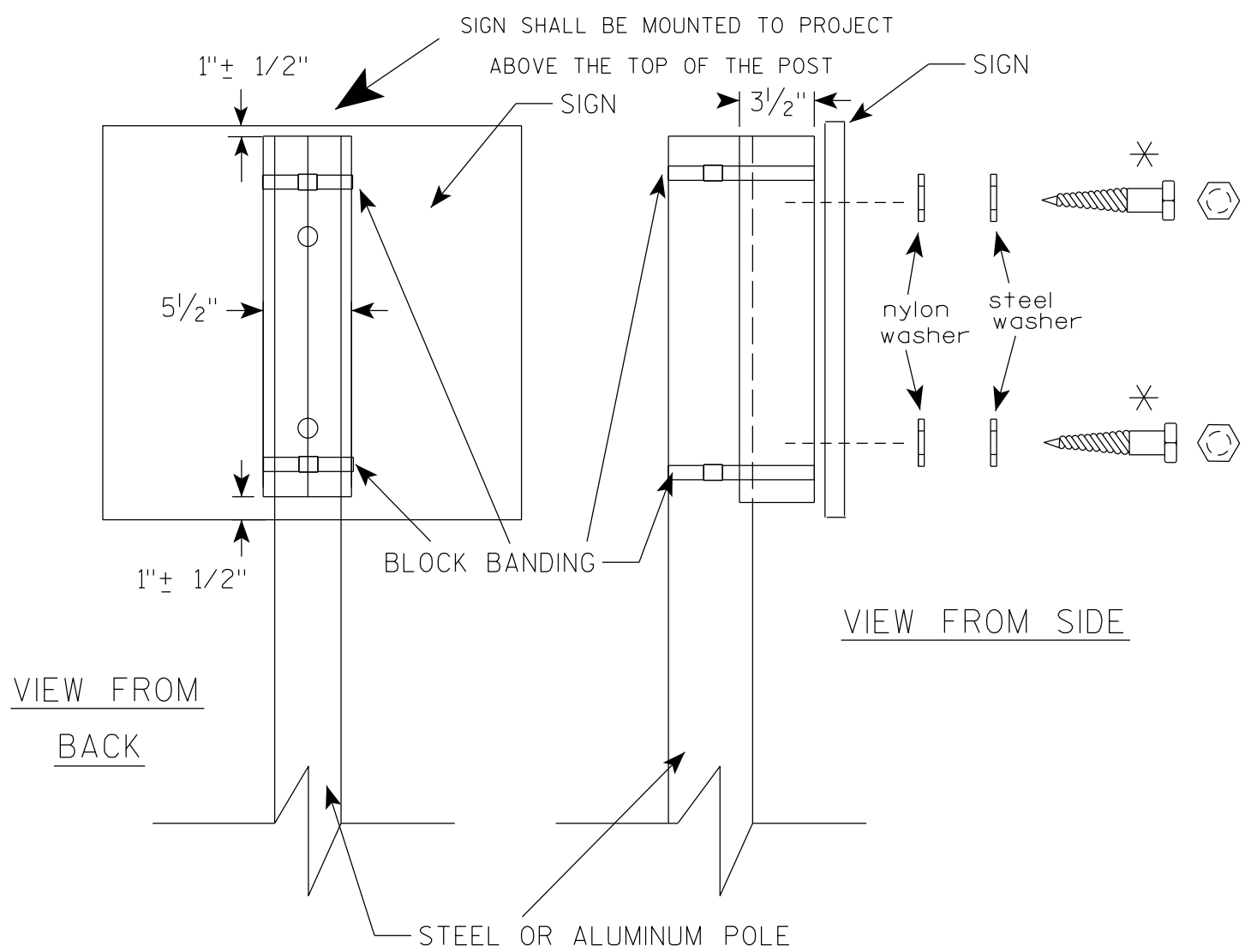


SEE DETAIL B

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

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

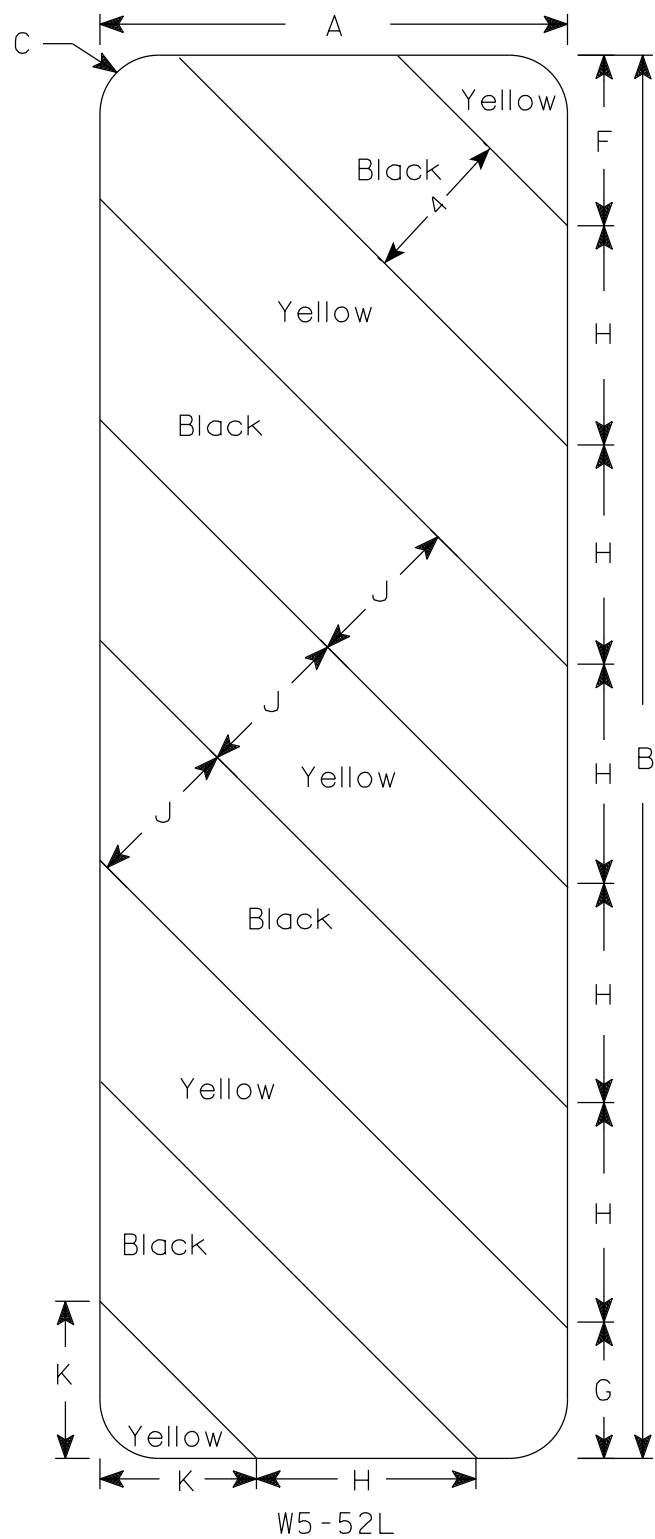


GENERAL NOTES

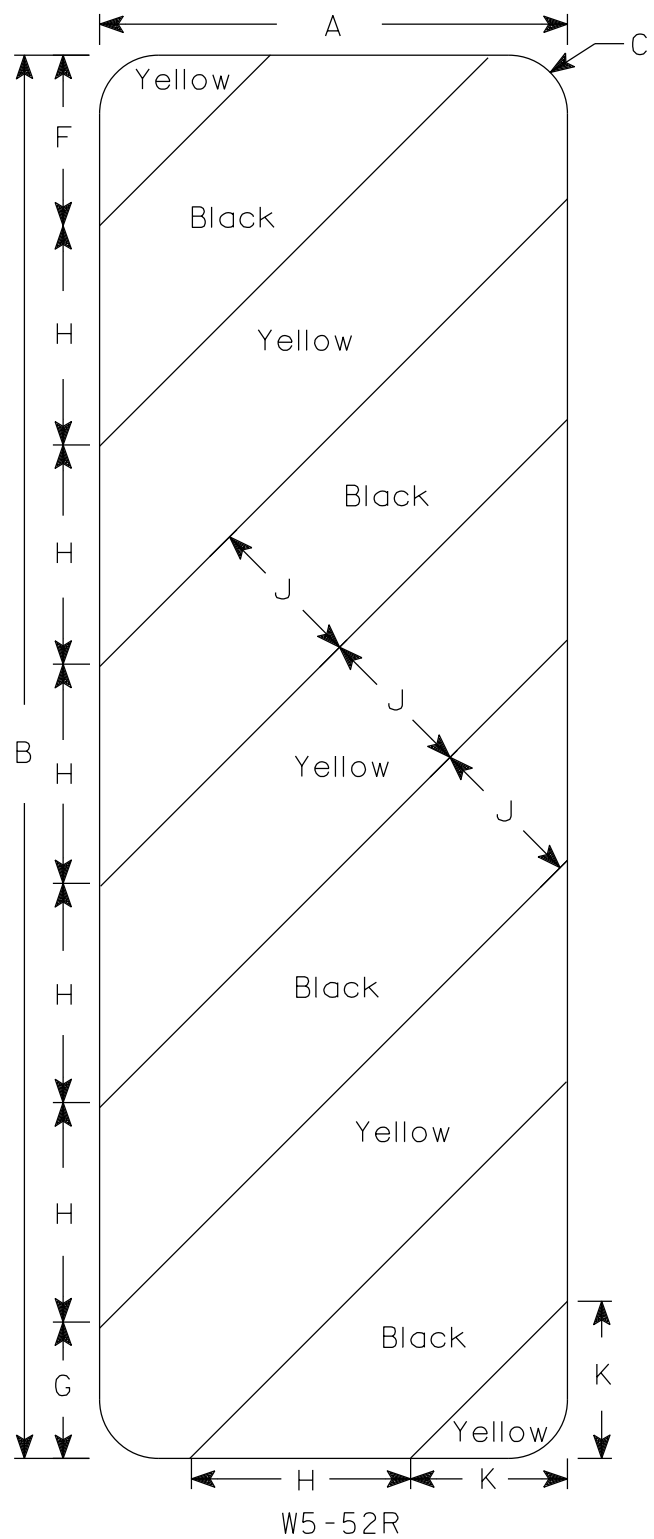
1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS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

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

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



W5-52L



W5-52R

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Yellow
 - Message - Black
- 3. Alternate colors of stripes as shown.

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

STANDARD SIGN
W5-52L & W5-52R

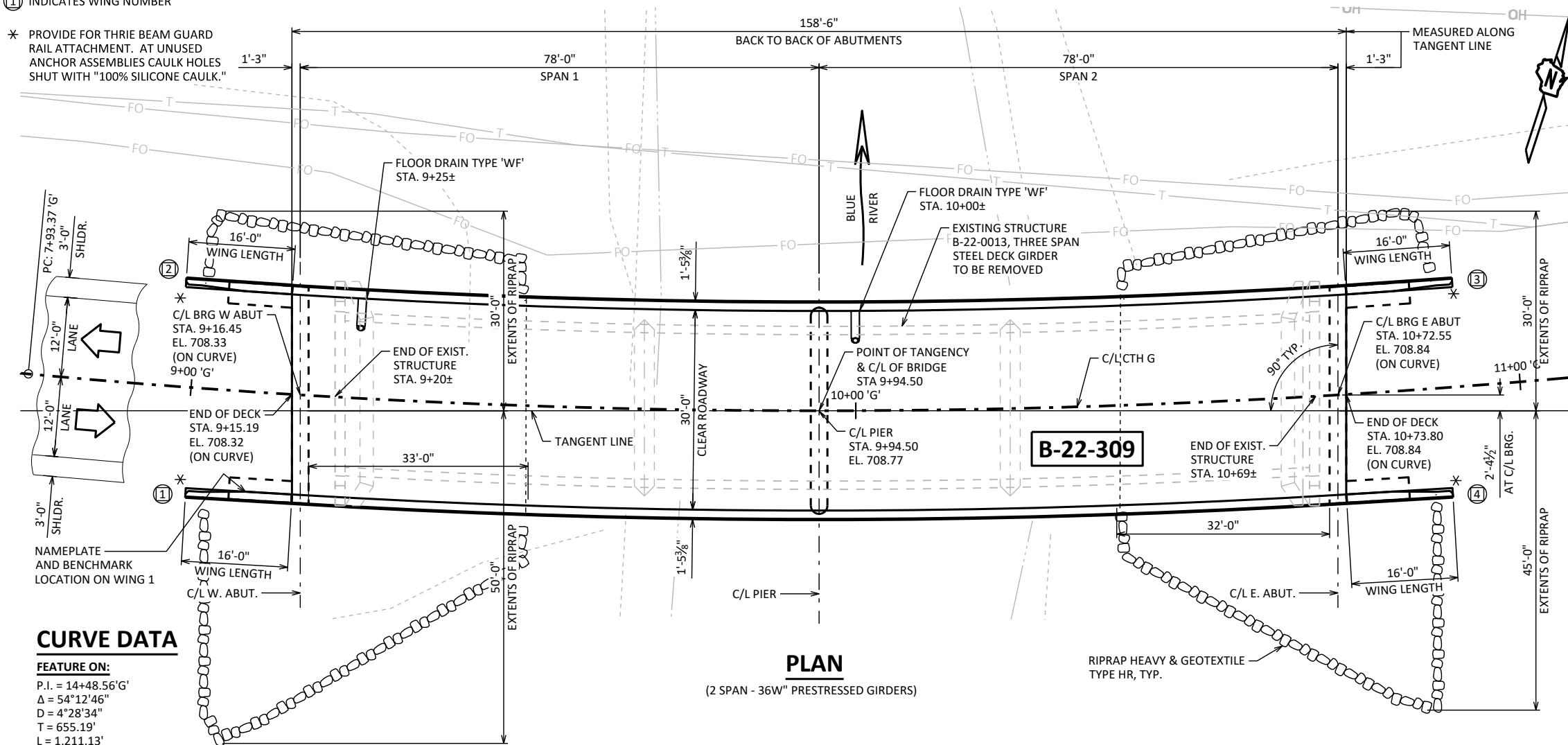
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/4/2024 PLATE NO. W5-52.10

① INDICATES WING NUMBER

* PROVIDE FOR THREE BEAM GUARD RAIL ATTACHMENT. AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK.



CURVE DATA

FEATURE ON:
P.I. = 14+48.56'G'
 Δ = 54°12'46"
D = 4°28'34"
T = 655.19'
L = 1,211.13'
R = 1,280.00'
P.C. = 7+93.37'G'
P.T. = 20+04.50'G'

DESIGN DATA

LIVE LOAD:

DESIGN LOADING:	HL-93
INVENTORY RATING:	RF = 1.06
OPERATING RATING:	RF = 1.37
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 210 (KIPS)	

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

MATERIAL PROPERTIES:

CONCRETE MASONRY:

SUPERSTRUCTURE & STRUCTURAL APPROACH SLAB	_____	$f'_c = 4,000$ PSI
ALL OTHER	_____	$f'_c = 3,500$ PSI

BAR STEEL REINFORCEMENT
GRADE 60 ————— $f_y = 60,000 \text{ PS}$

36-W" PRESTRESSED GIRDERS:
CONCRETE MASONRY _____ $f'_c = 8,000$ PSI
STRANDS: 0.6" DIA. -7-WIRE LOW-RELAXATION WITH ULTIMATE
TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS AND PIERS TO BE SUPPORTED ON HP12X53 PILING SEATED IN PRE-BORED HOLES CORED IN TO SOLID ROCK AND A MINIMUM OF 5'-0" BELOW ANY VOIDS ENCOUNTERED DURING PRE-BORING OR AS SHOWN ON BORING LOGS. PILE DRIVING IS NOT REQUIRED. THE FACTORED AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR DESIGN IS 220 TONS MULTIPLIED BY A RESISTANCE FACTOR OF 0.5.

ESTIMATED 45'-0" LONG.

ESTIMATED PILE TIP ELEVATION:
658.00 FT. FOR ALL

HYDRAULIC DATA

100-YEAR FREQUENCY:

$$\begin{aligned} Q_{100} &= 11,200 \text{ C.F.S.} \\ V_{100} &= 7.8 \text{ F.P.S.} \\ HW_{100} &= \text{EL. 703.94} \end{aligned}$$

WATERWAY AREA = 1,436 SQ. FT.
DRAINAGE AREA = 79.5 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5

2-YEAR FREQUENCY:

$Q_2 = 1,456 \text{ C.F.S.}$
 $V_2 = 2.0 \text{ F.P.S.}$
 $HW_2 = \text{EL. } 697.42$

STATE PROJECT NUMBER

5905-00-70

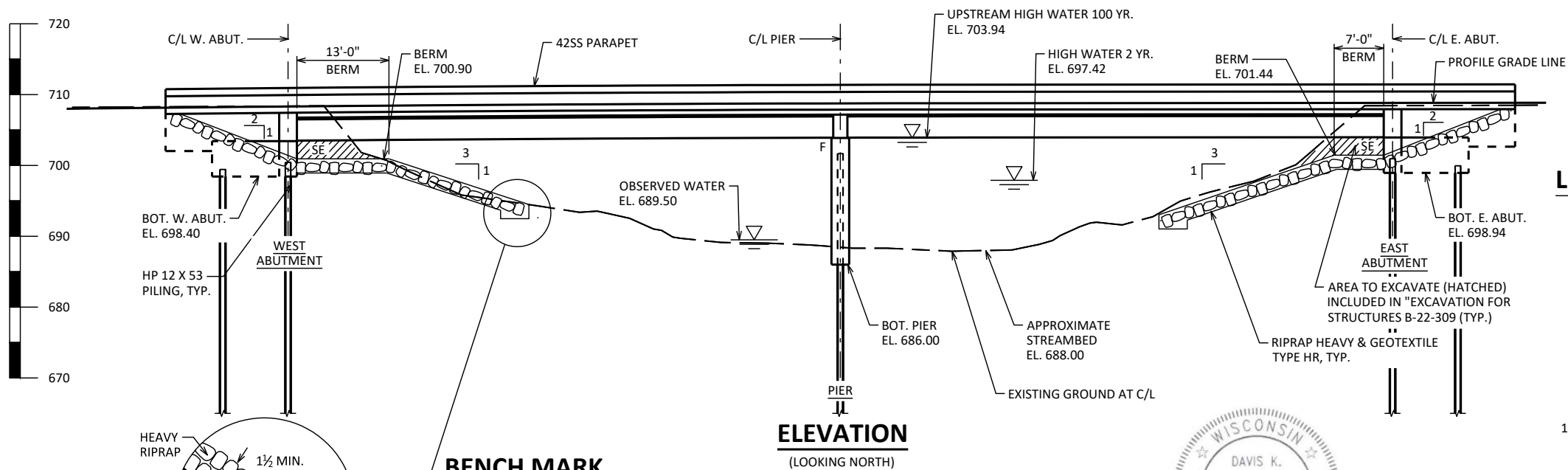
TRAFFIC DATA

FEATURE ON CTH G:

ADT = 480 (2026)
ADT = 580 (2046)
R.D.S. = 55 MPH

PLAN

(2 SPAN - 36W" PRESTRESSED GIRDERS)

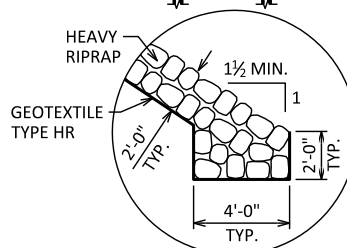


ELEVATION

(LOOKING NORTH)

BENCH MARK			(LOOKING NORTH)
NO.	STATION / OFFSET	DESCRIPTION	ELEV.
BM1	8+94.93 / 62.45' LT	SPK IN PP	697.88'
BM2	11+93.18 / 41.26' LT	SPK IN PP	703.77'

BENCH MARK



8

8

LIST OF DRAWINGS:

- 1 GENERAL PLAN
- 2 CROSS SECTION & QUANTITIES
- 3 SUBSURFACE EXPLORATION
- 4 WEST ABUTMENT DETAILS
- 5 WEST ABUTMENT FOOTING
- 6 WEST ABUTMENT WING 1
- 7 WEST ABUTMENT WING 2
- 8 EAST ABUTMENT DETAILS
- 9 EAST ABUTMENT FOOTING
- 10 EAST ABUTMENT WING 3
- 11 EAST ABUTMENT WING 4
- 12 WEST & EAST ABUTMENT DETAILS
- 13 PIER DETAILS
- 14-15 36W PRESTRESSED GIRDER DETAILS
- 16 STEEL DIAPHRAGM
- 17 SUPERSTRUCTURE
- 18 DIAPHRAGM DETAILS
- 19 FRAMING PLAN
- 20 TANGENT OFFSET
- 21 DIAPHRAGM CROSS SECTIONS
- 22 SUPERSTRUCTURE DETAILS
- 23 SINGLE SLOPE PARAPET 42SS
- 24 FLOOR DRAIN TYPE 'WF'

STRUCTURE DESIGN CONTACTS:

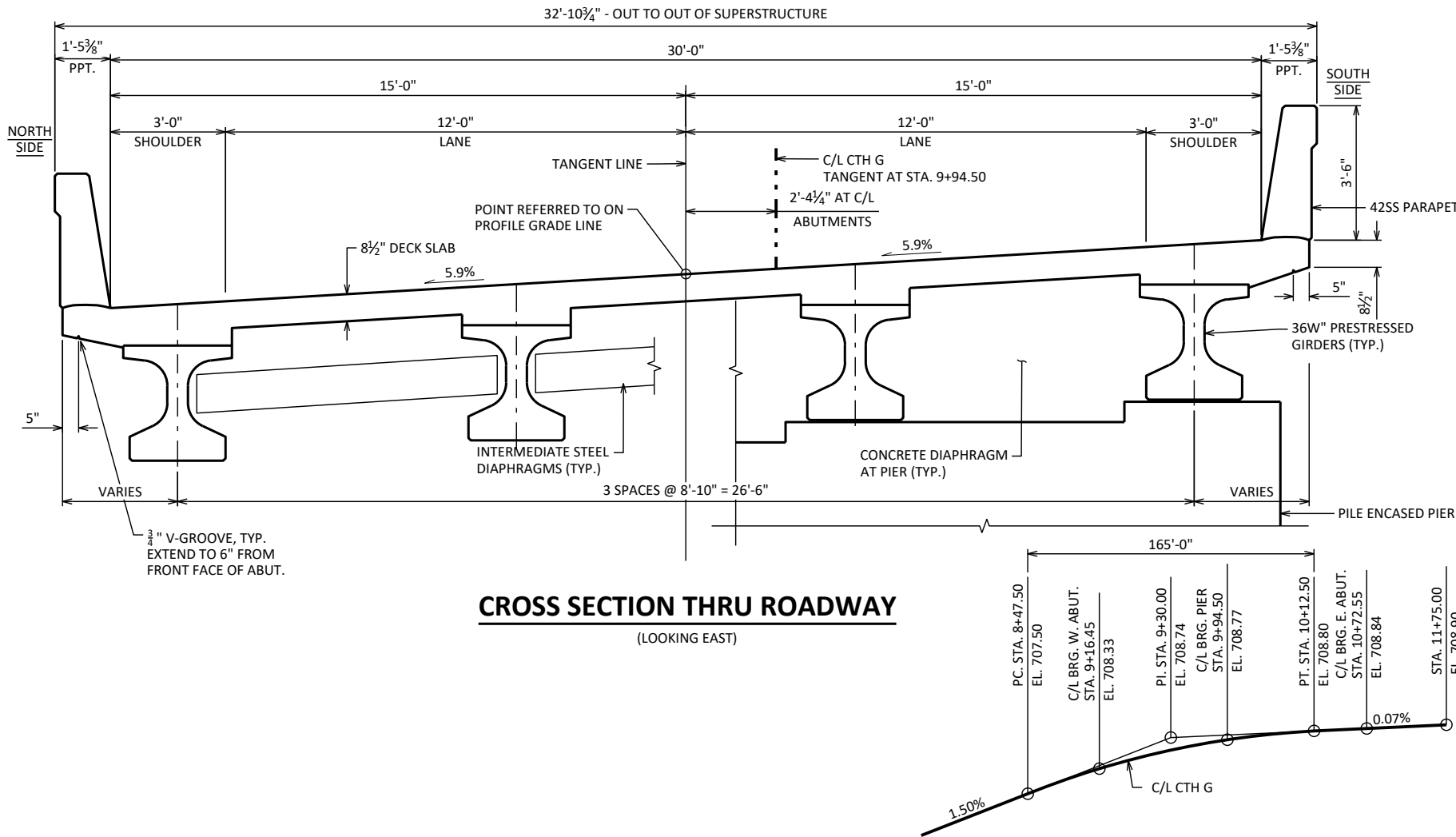
SEH CONTACT: DAVIS WING, PE, 336.464.7271

WISDOT BRIDGE OFFICE CONTACT: AARON BONK, PE, 608.261.0261

NO.	DATE	REVISION	BY
 SHORT ELLIOTT HENDRICKSON INC.			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	 CHIEF STRUCTURES DESIGN ENGINEER		JLR 05/11/26 DATE
STRUCTURE B-22-309			
CTH G OVER BLUE RIVER			
COUNTY	GRANT	TOWN/CITY/VILLAGE	MUSCODA
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION			
DESIGNED BY DKW	DESIGN CK'D	DRAWN BY NCK	PLANS CK'D DKW
GENERAL PLAN			SHEET 1 OF 24

I.D.

DATE:



CROSS SECTION THRU ROADWAY
(LOOKING EAST)

PROFILE GRADE LINE

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	WEST ABUT.	EAST ABUT.	PIER	SUPER	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-22-13	EACH	---	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-22-309	EACH	---	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	249	250	---	---	499
502.0100	CONCRETE MASONRY BRIDGES	CY	37.7	37.3	52.7	494.2	622
502.3200	PROTECTIVE SURFACE TREATMENT	SY	---	---	---	529	529
502.3210	PIGMENTED SURFACE SEALER	SY	---	---	---	188	188
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	---	---	---	628	628
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,220	2,220	2,540	---	6,980
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,490	2,490	40	46,110	51,130
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	4	4	8	---	16
506.4000	STEEL DIAPHRAGMS B-22-309	EACH	---	---	---	6	6
514.0450	FLOOR DRAINS TYPE WF	EACH	---	---	---	2	2
514.2608	DOWNSPOUT 8-INCH	LF	---	---	---	9	9
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	9	---	---	18
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	315	315	270	---	900
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	315	315	405	---	1,035
606.0300	RIRPRAP HEAVY	CY	190	170	---	---	360
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	90	90	---	---	180
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	---	---	---	4	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	30	30	---	---	60
645.0120	GEOTEXTILE TYPE HR	SY	325	290	---	---	615
	NON-BID ITEMS						
	FILLER	SIZE	---	---	---	---	1/2", 3/4"
	NAMEPLATE	EACH	---	---	---	---	1
	BENCHMARK	EACH	---	---	---	---	1

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-22-309" SHALL BE THE EXISTING GROUNDLINE.

AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A. ALSO EXCLUDED IS THE "BASE AGGREGATE DENSE 1 1/4-INCH" AS DETAILED ON THE STRUCTURAL APPROACH SLAB SHEETS.

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

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

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

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS.

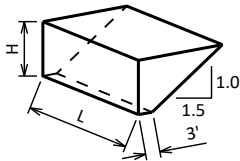
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

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

THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

AT ABUTMENTS AND PIER, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

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



ABUTMENT BACKFILL DIAGRAM

L = OUT TO OUT OF ABUTMENT BODY INCLUDING WINGS (FT)

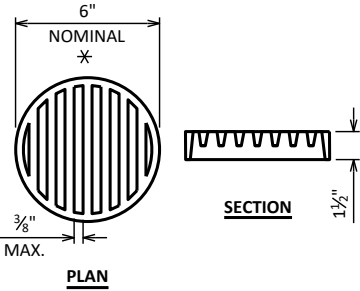
H = AVERAGE ABUTMENT FILL HEIGHT (FT)

EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)

$V_{CF} = (L)(3.0')(H) + (L)(0.5')(1.5H)(H)$

$V_{CY} = V_{CF}(EF)/27$

$V_{TON} = V_{CY}(2.0)$

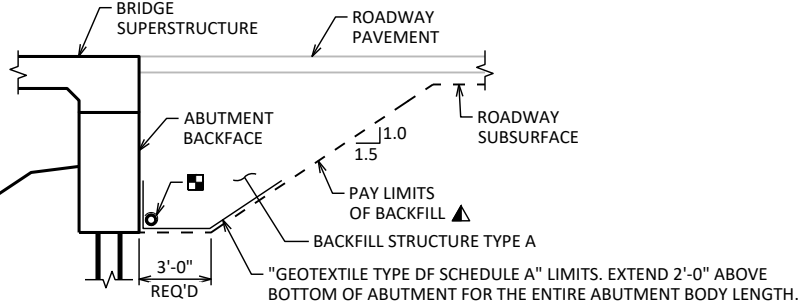


RODENT SHIELD DETAIL

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

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

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



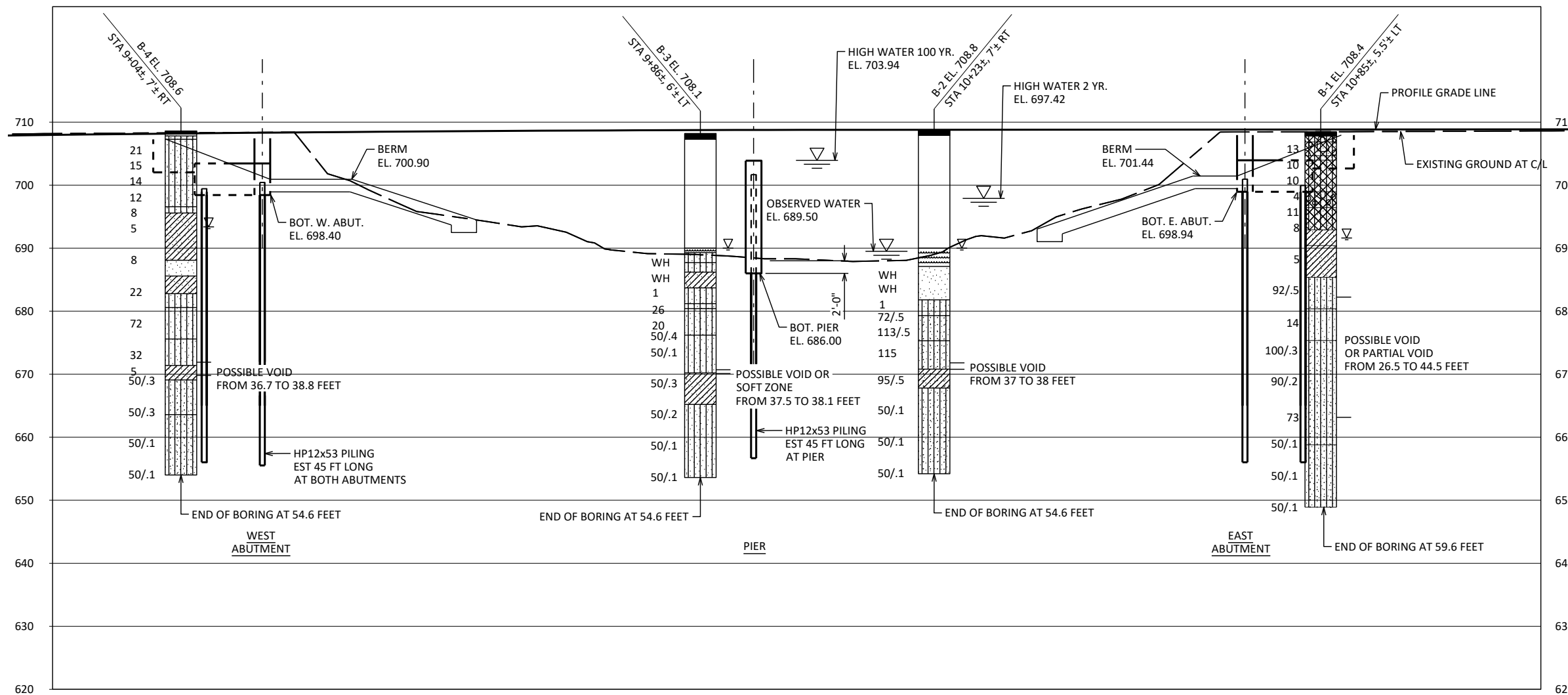
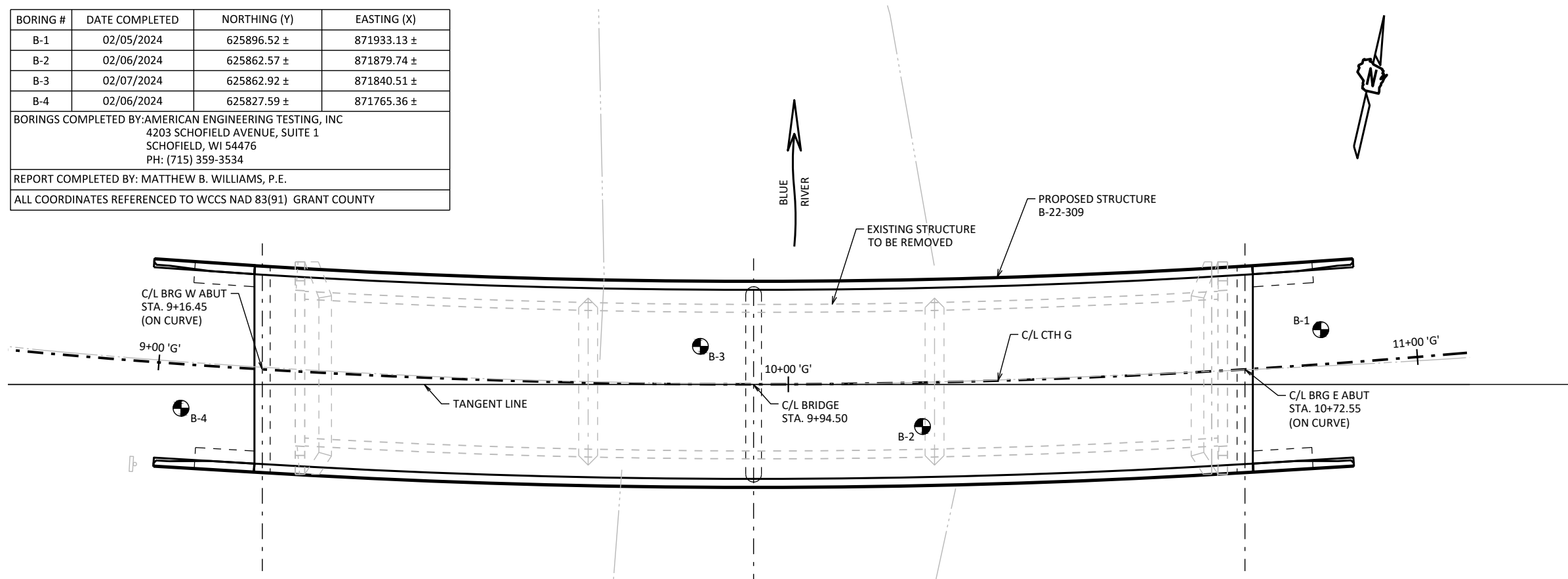
TYPICAL SECTION THRU ABUTMENT

▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

■ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

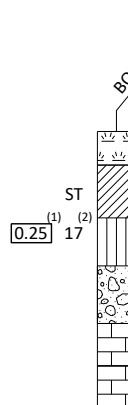
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
CROSS SECTION & QUANTITIES			SHEET 2 OF 24

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-1	02/05/2024	625896.52 ±	871933.13 ±
B-2	02/06/2024	625862.57 ±	871879.74 ±
B-3	02/07/2024	625862.92 ±	871840.51 ±
B-4	02/06/2024	625827.59 ±	871765.36 ±
BORINGS COMPLETED BY: AMERICAN ENGINEERING TESTING, INC 4203 SCHOFIELD AVENUE, SUITE 1 SCHOFIELD, WI 54476 PH: (715) 359-3534			
REPORT COMPLETED BY: MATTHEW B. WILLIAMS, P.E.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) GRANT COUNTY			



	STATE PROJECT NUMBER
	5905-00-70

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

LEGEND OF BORING
 F-C COBBLE OR BOULDER WEATHERED LIMESTONE CORE RUN #1 - 24'-29' REC=80%, RQD=72%

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

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

GROUND WATER ELEVATION	
	AT TIME OF DRILLING
	END OF DRILLING
	AFTER DRILLING

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

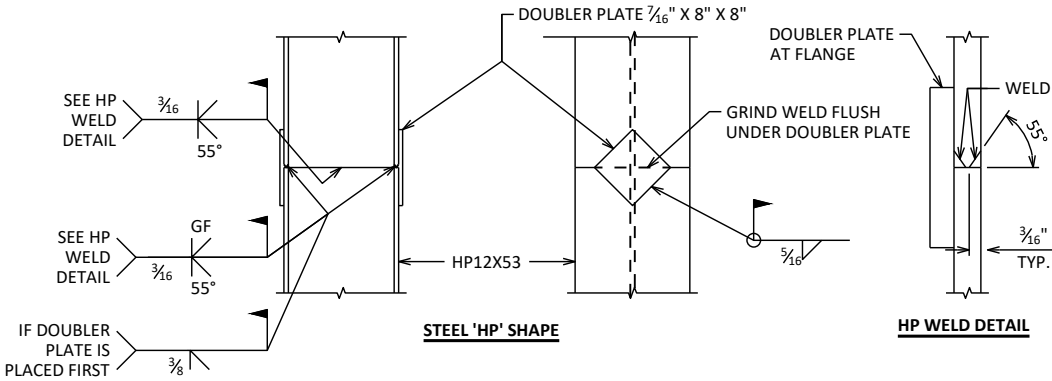
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT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

NO.	DATE	REVISION	BY

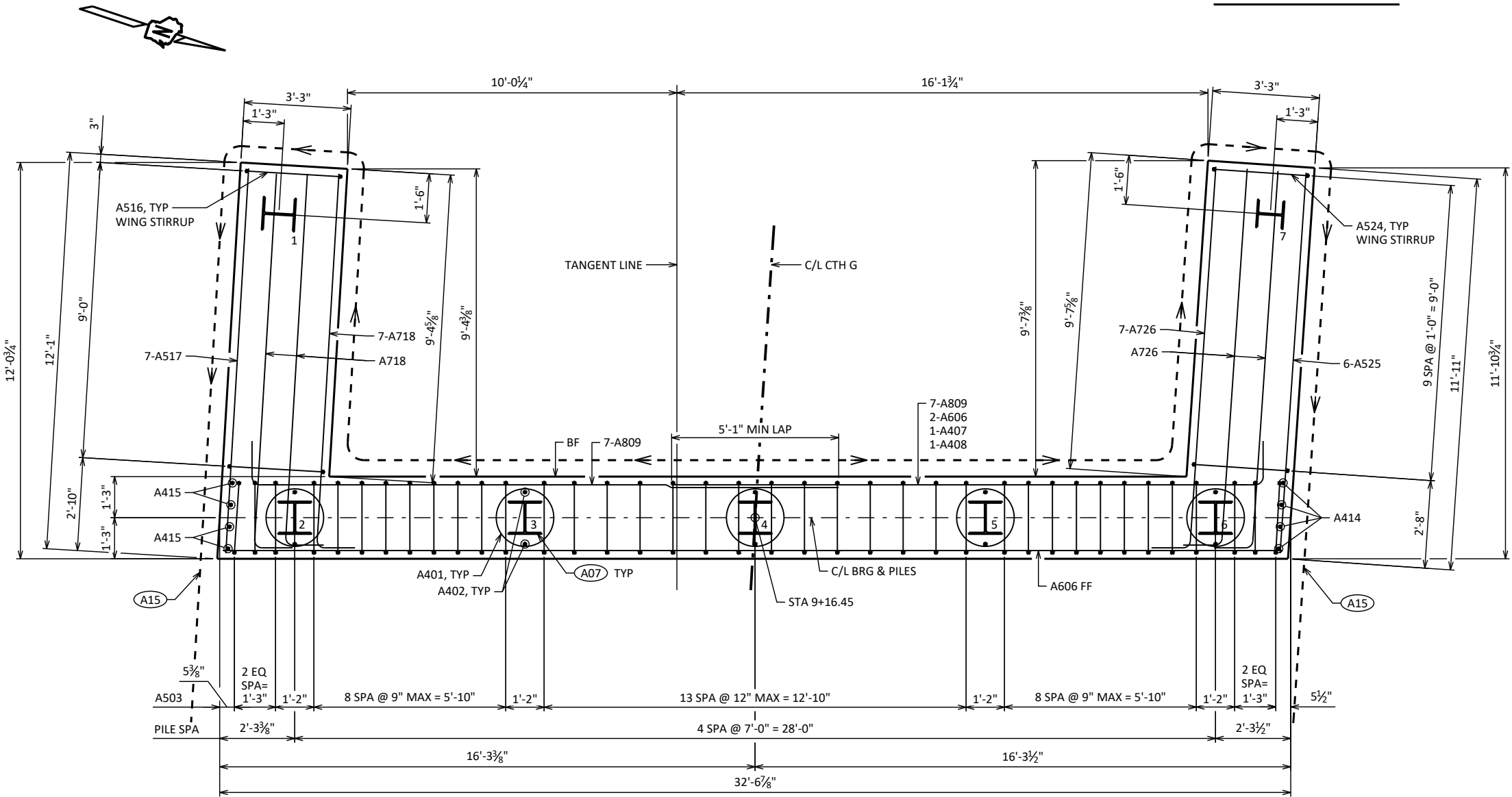
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

STRUCTURE		B-22-309	
DRAWN BY	RAD	PLANS CK'D	DKW

SUBSURFACE EXPLORATION	SHEET 3 OF 24
------------------------	---------------



'HP' PILE DETAILS

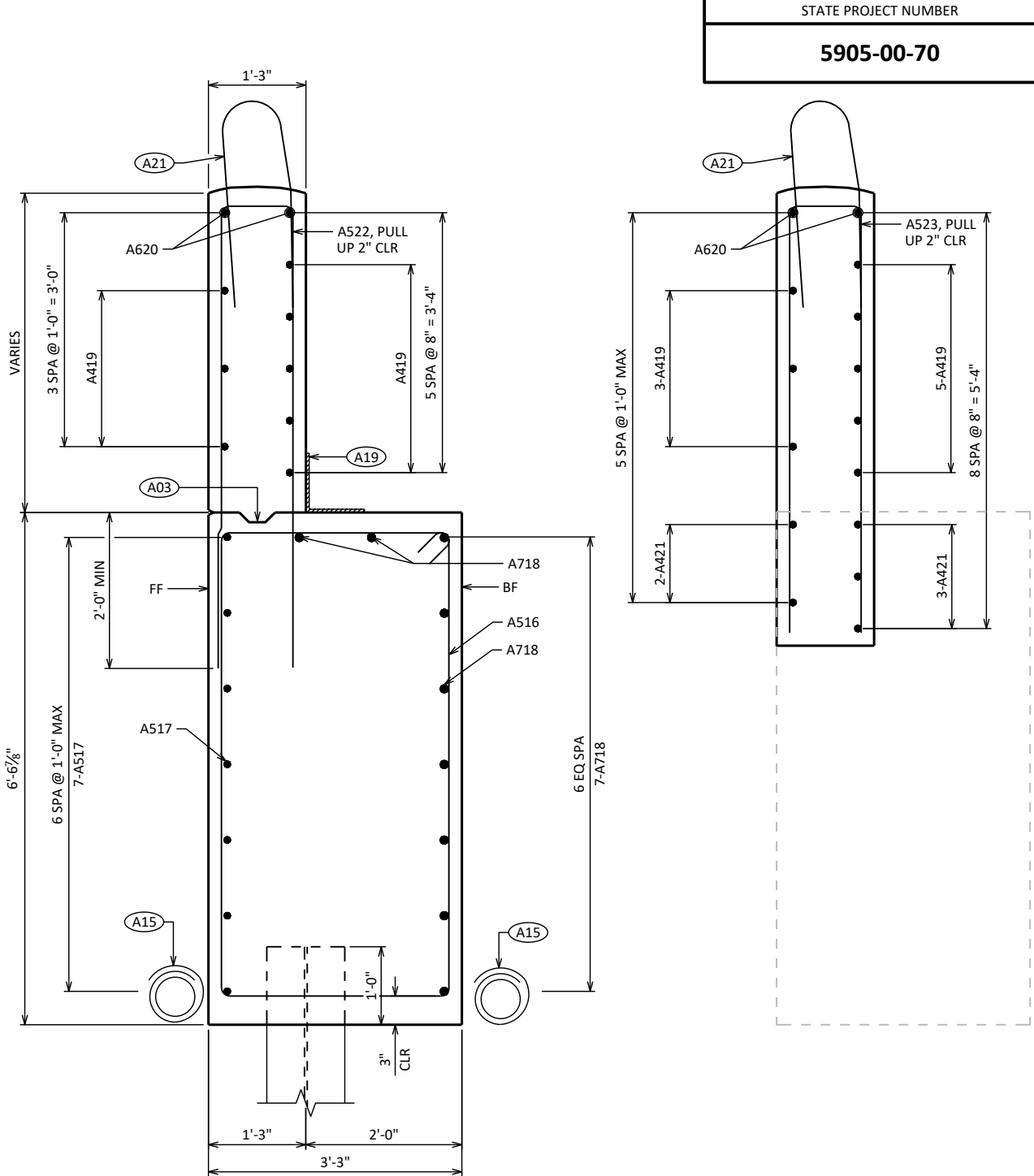
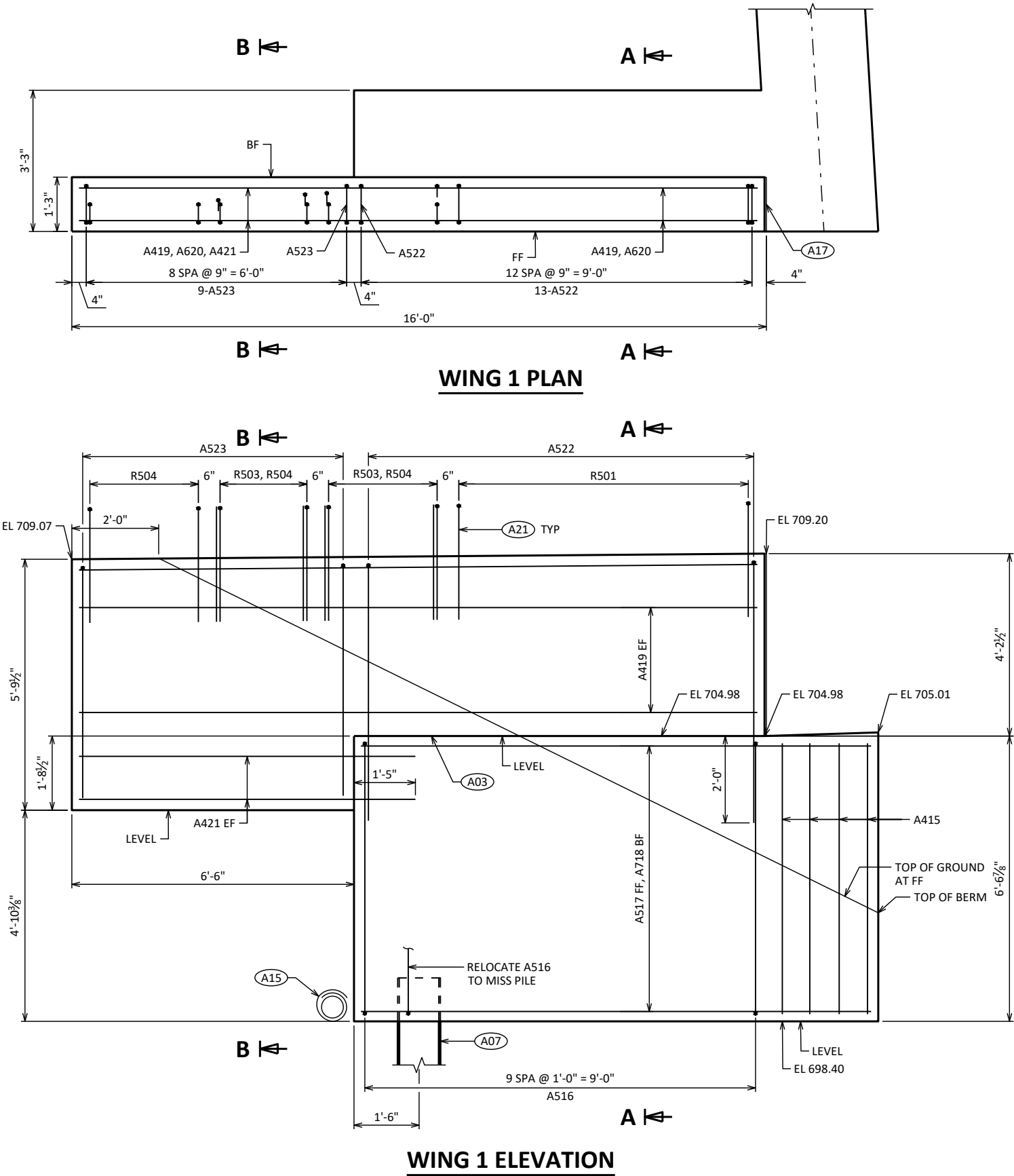


FOOTING LAYOUT

ABUTMENT NOTES

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A07) SUPPORT ABUTMENT ON HP 12 x 53 STEEL PILING, ESTIMATED 45'-0" LONG, ESTIMATED PRE-BORING PILE TIP ELEVATION OF 658.00 FT.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 3/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- ★ ELEVATIONS NOTED ARE AT C/L BEARING
- ⊠ INDICATES WING NUMBER
- INDICATES GIRDER NUMBER
- EF = EACH FACE
FF = FRONT FACE
BF = BACK FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
WEST ABUTMENT FOOTING		SHEET 5 OF 24	



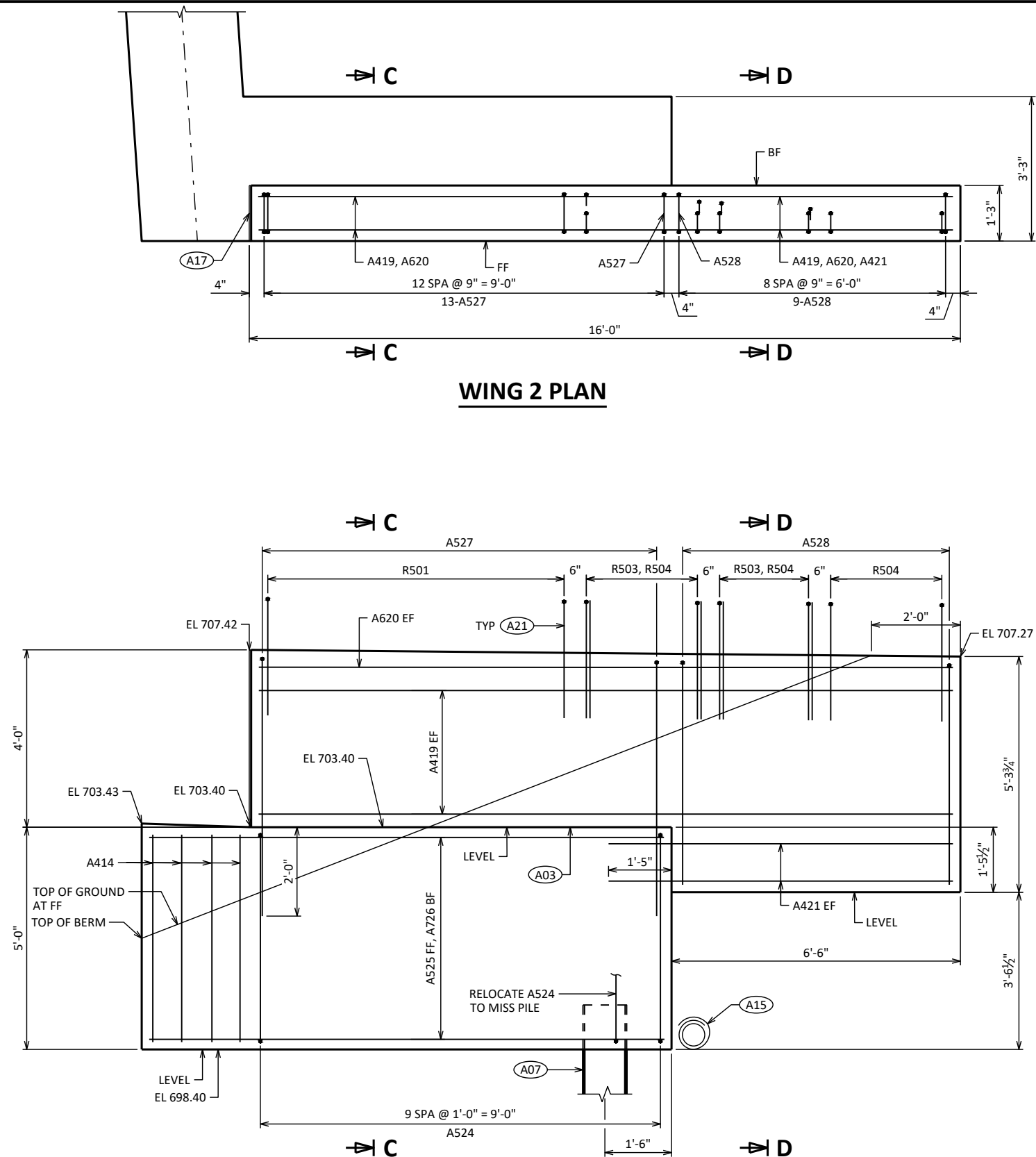
SECTION A-A THRU WING 1
ABUTMENT NOTES

- A03** OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6, (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
 - A07** SUPPORT ABUTMENT ON HP 12 x 53 STEEL PILING, ESTIMATED 45'-0" LONG, ESTIMATED PRE-BORING PILE TIP ELEVATION OF 658.00 FT.
 - A15** PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
 - A17** 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
 - A19** 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
 - A21** FOR PPT. BARS & DIMENSIONS SEE PARAPET SHEET.
- EF = EACH FACE
FF = FRONT FACE
BF = BACK FACE

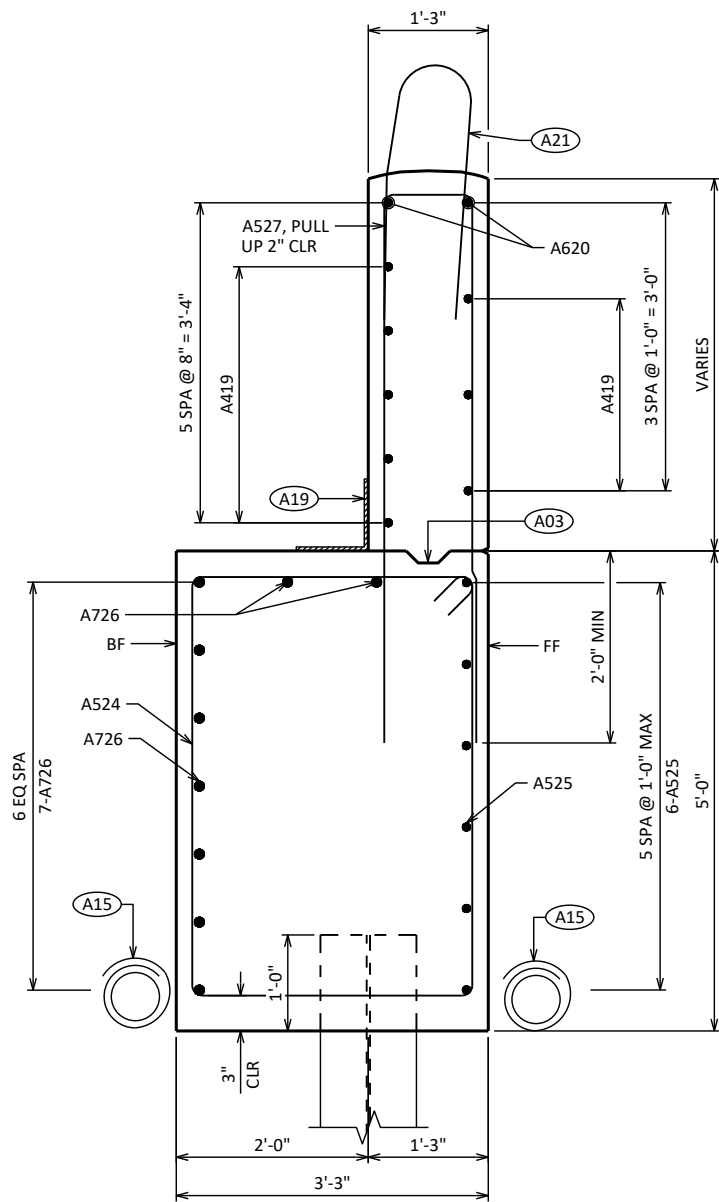
STATE PROJECT NUMBER

5905-00-70

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
WEST ABUTMENT WING 1		SHEET 6 OF 24	



WING 2 ELEVATION

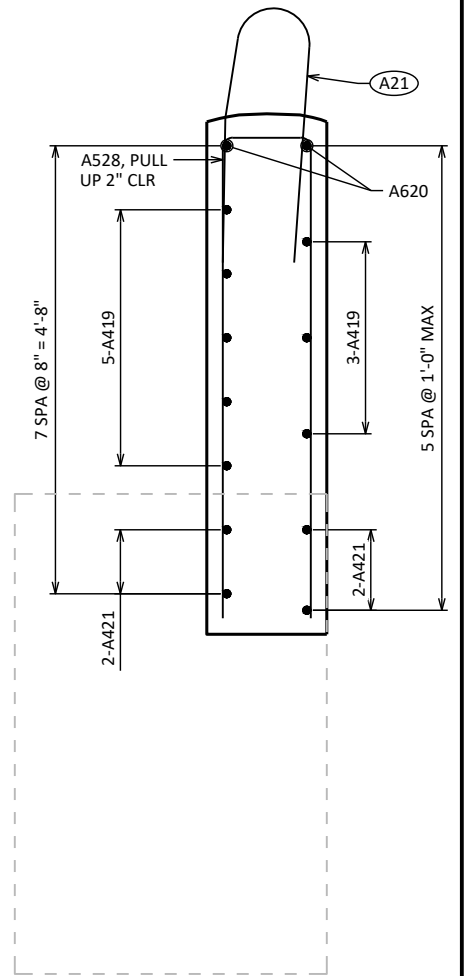


SECTION C-C THRU WING 2

ABUTMENT NOTES

- A03** OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6, (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- A07** SUPPORT ABUTMENT ON HP 12 x 53 STEEL PILING, ESTIMATED 45'-0" LONG, ESTIMATED PRE-BORING PILE TIP ELEVATION OF 658.00 FT.
- A15** PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17** 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A19** 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- A21** FOR PPT. BARS & DIMENSIONS SEE PARAPET SHEET.

EF = EACH FACE
FF = FRONT FACE
BF = BACK FACE



SECTION D-D THRU WING 2

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
WEST ABUTMENT WING 2		SHEET 7 OF 24	

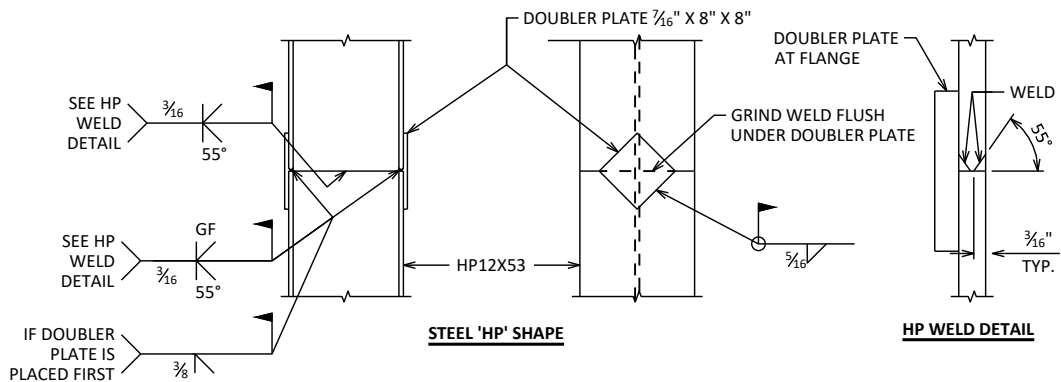


GEOTEXTILE,
TYPE HR



EF = EACH FACE
FF = FRONT FACE
BF = BACK FACE

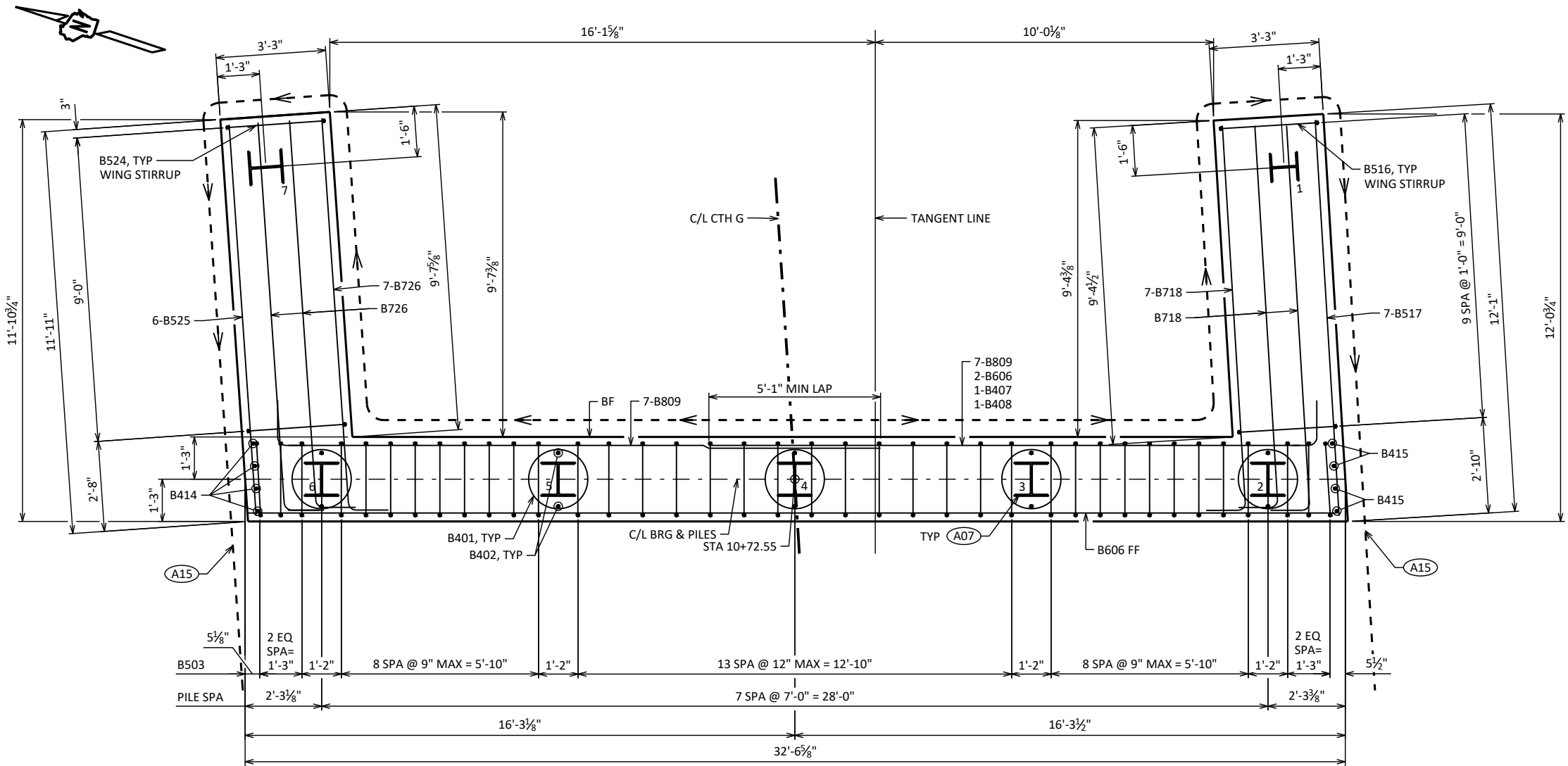
NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION					
STRUCTURE B-22-309					
		DRAWN BY	RAD	PLANS CK'D	DKW
EAST ABUTMENT DETAILS			SHEET 8 OF 24		



'HP' PILE DETAILS

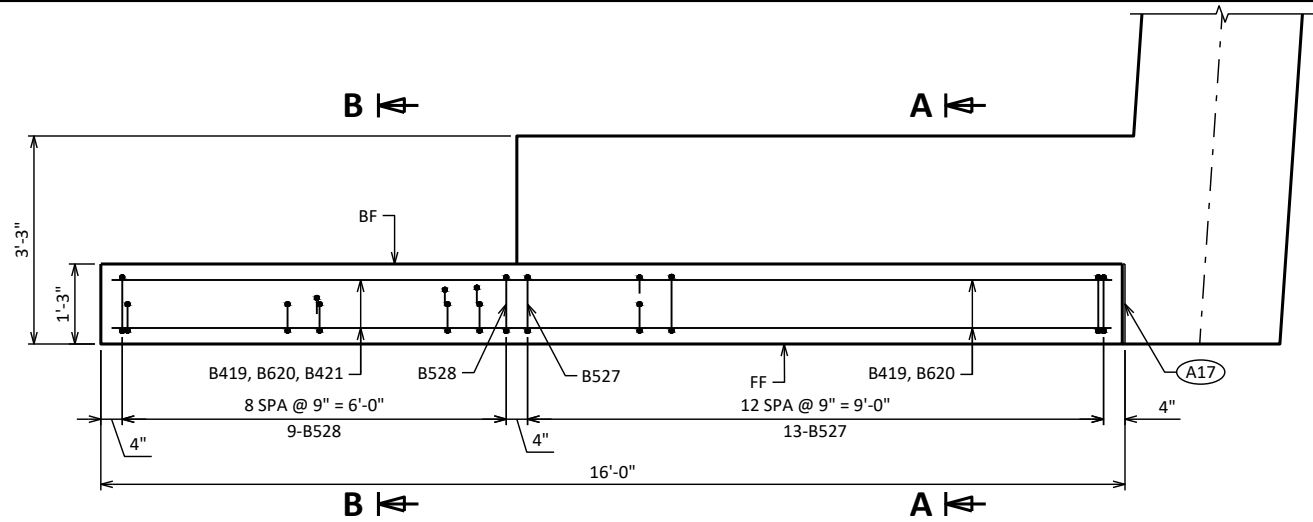
ABUTMENT NOTES

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A07) SUPPORT ABUTMENT ON HP 12 x 53 STEEL PILING, ESTIMATED 45'-0" LONG, ESTIMATED PRE-BORING PILE TIP ELEVATION OF 658.00 FT.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 3/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

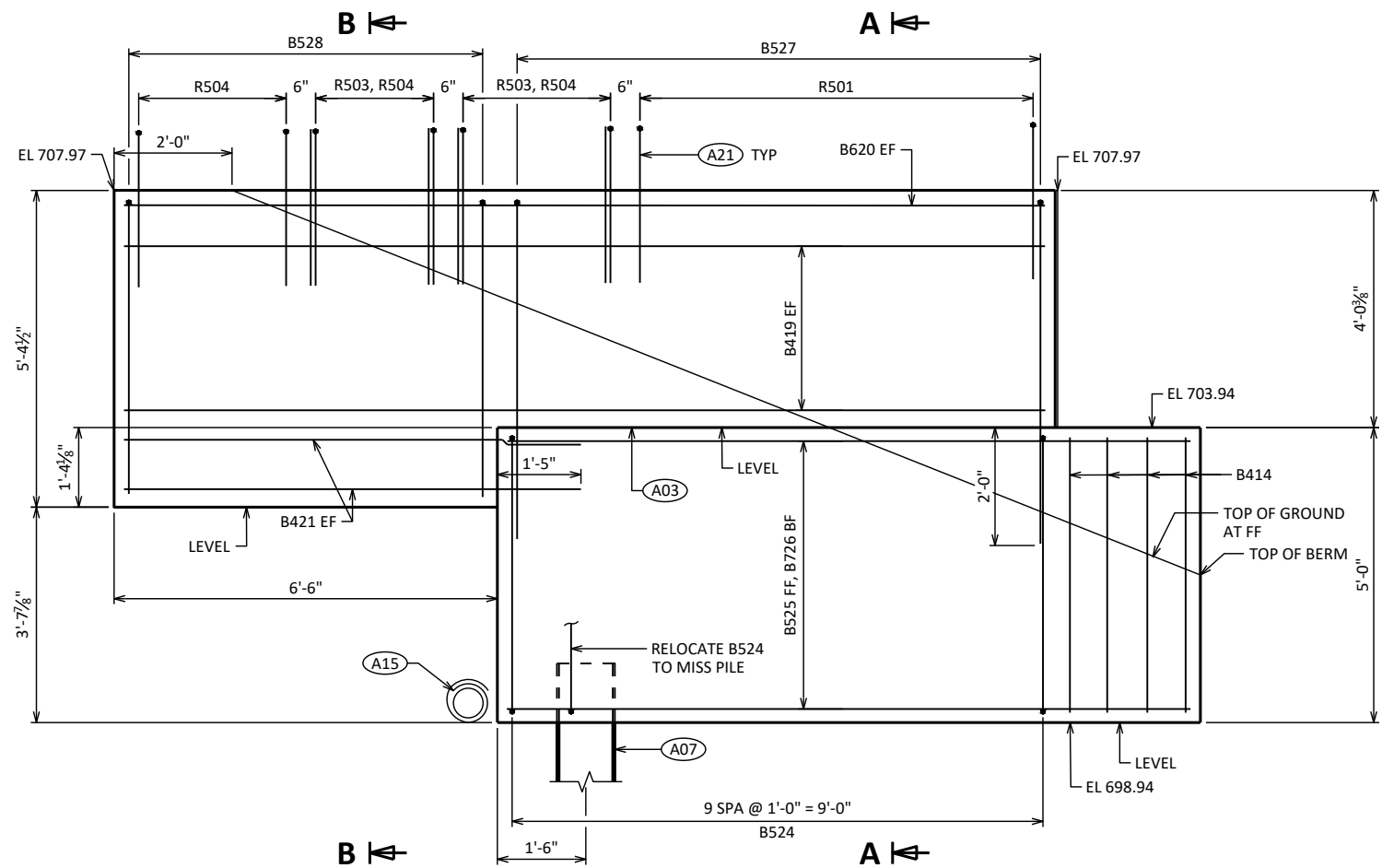


FOOTING LAYOUT

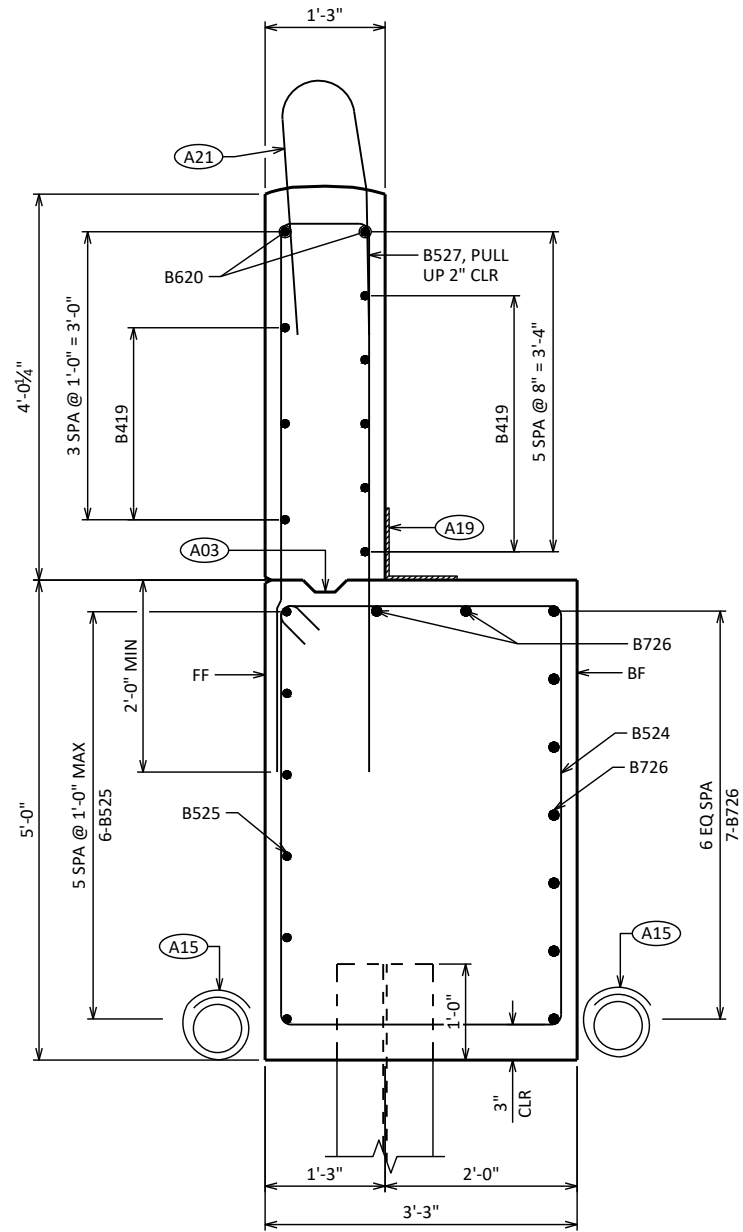
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY RAD		PLANS CK'D DKW	
EAST ABUTMENT FOOTING		SHEET 9 OF 24	



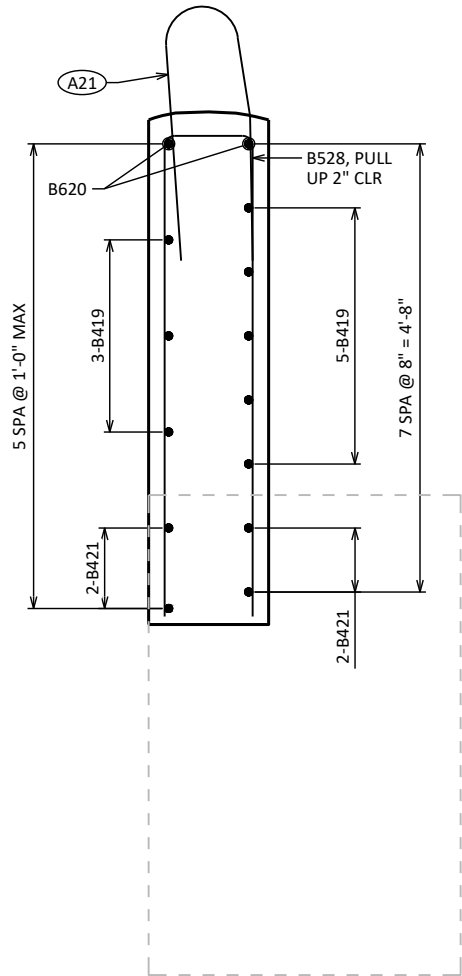
WING 3 PLAN



WING 3 ELEVATION



SECTION A-A THRU WING 3



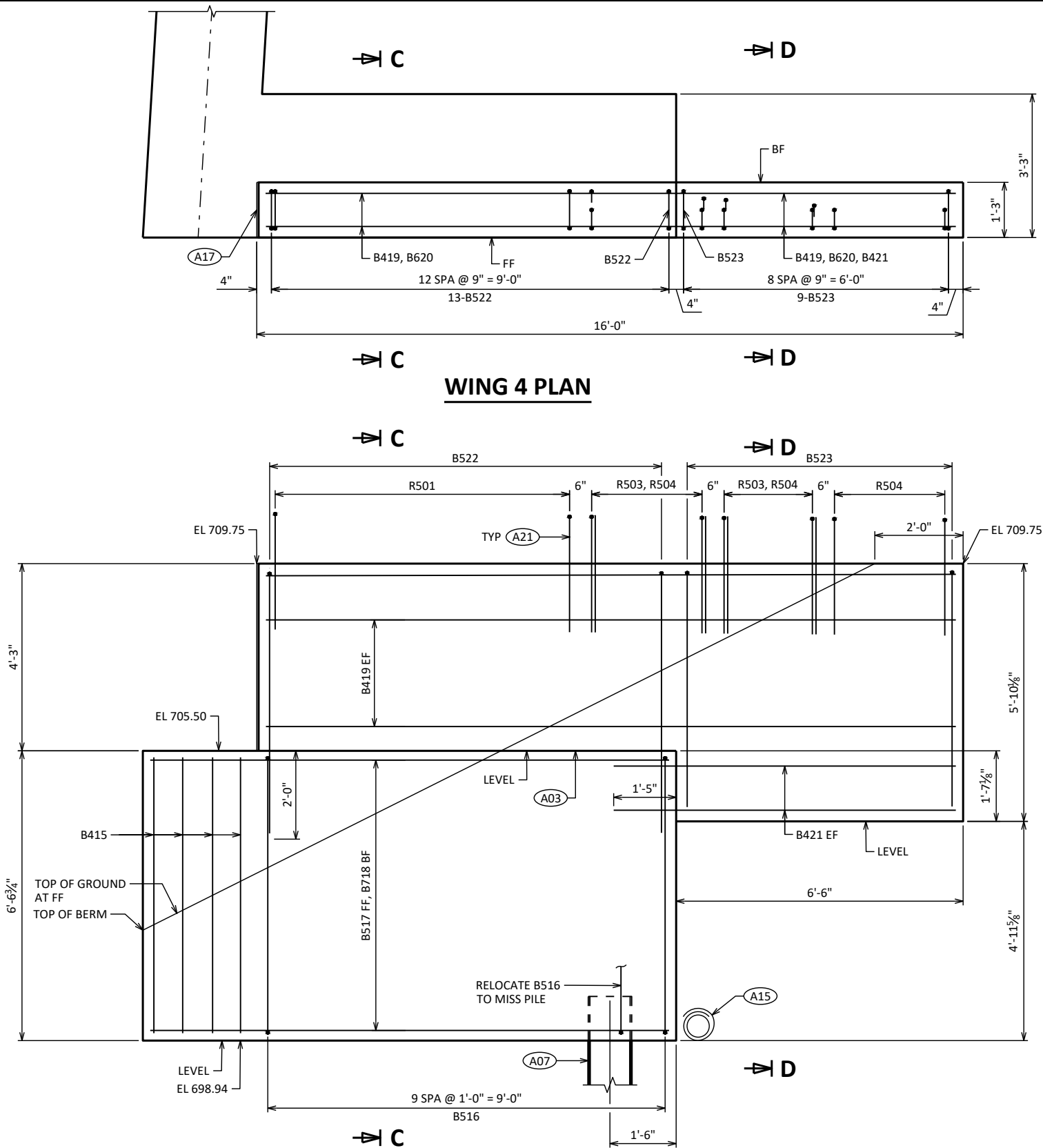
SECTION B-B THRU WING 3

ABUTMENT NOTES

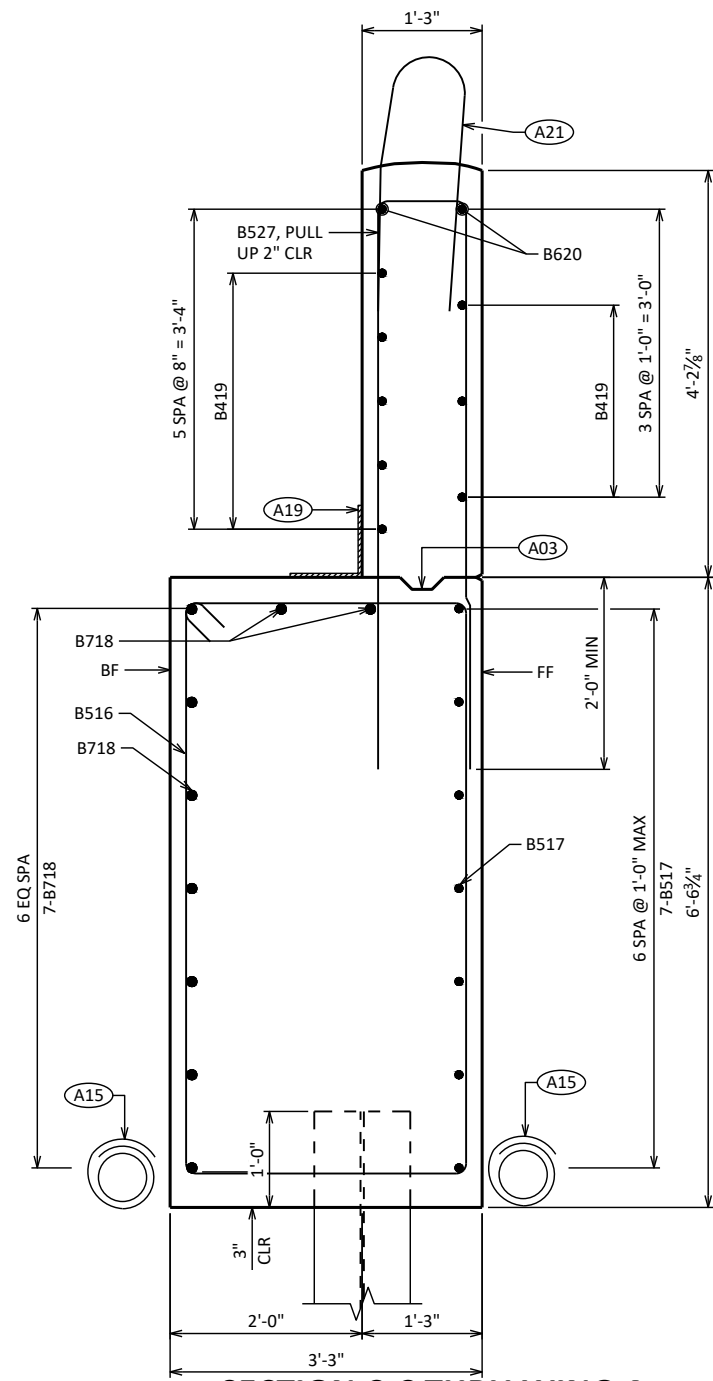
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6, (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A07) SUPPORT ABUTMENT ON HP 12 x 53 STEEL PILING, ESTIMATED 45'-0" LONG, ESTIMATED PRE-BORING PILE TIP ELEVATION OF 658.00 FT.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/2" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A21) FOR PPT. BARS & DIMENSIONS SEE PARAPET SHEET.

EF = EACH FACE
FF = FRONT FACE
BF = BACK FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
EAST ABUTMENT WING 3		SHEET 10 OF 24	



WING 4 ELEVATION

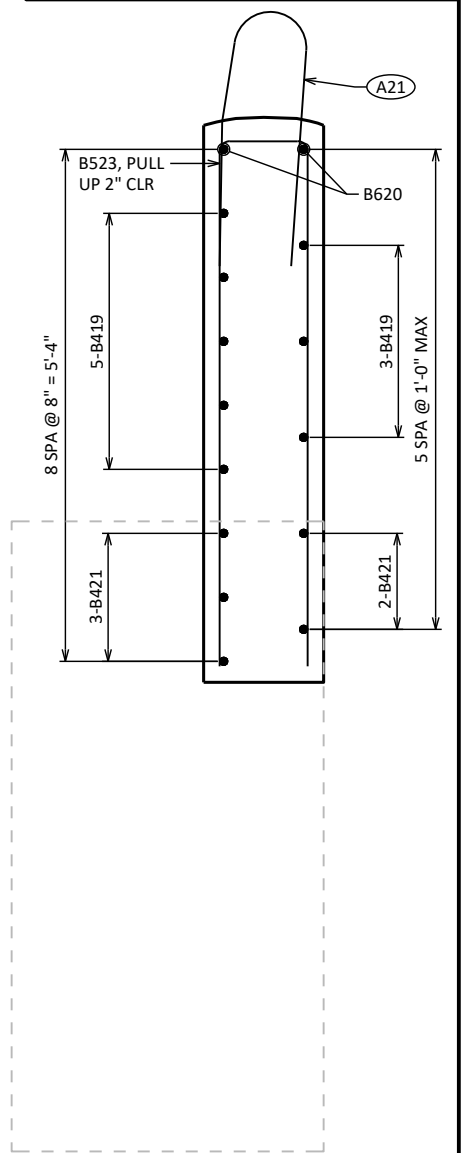


SECTION C-C THRU WING 4

ABUTMENT NOTES

- A03** OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- A07** SUPPORT ABUTMENT ON HP 12 x 53 STEEL PILING, ESTIMATED 45'-0" LONG, ESTIMATED PRE-BORING PILE TIP ELEVATION OF 658.00 FT.
- A15** PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17** 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A19** 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- A21** FOR PPT. BARS & DIMENSIONS SEE PARAPET SHEET.

EF = EACH FACE
FF = FRONT FACE
BF = BACK FACE



SECTION D-D THRU WING 4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
EAST ABUTMENT WING 4		SHEET 11 OF 24	

BILL OF BARS - WEST ABUTMENT

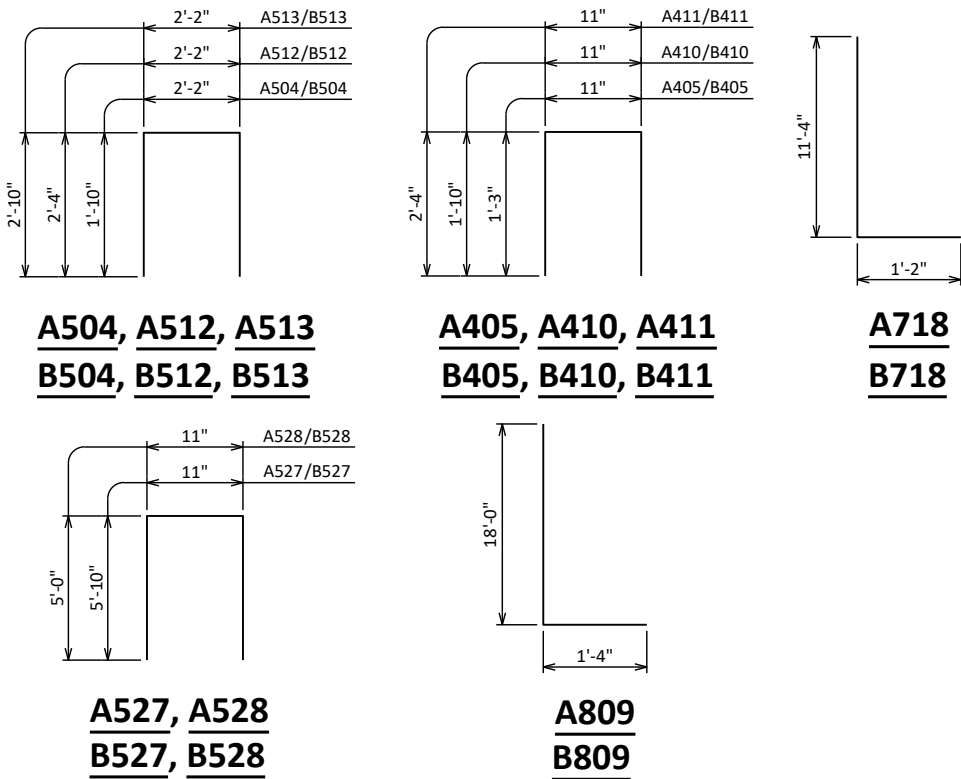
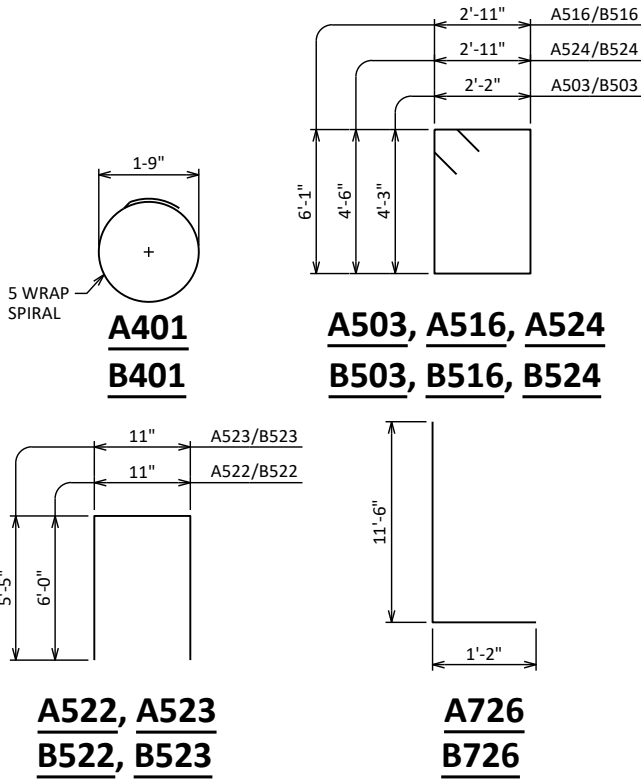
NOTE:
THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A401		5	28'-0"	X		BODY AT PILES
A402		10	2'-3"			BODY AT PILES
A503		38	13'-6"	X		BODY STIRRUPS
A504		9	5'-7"	X		BODY TIES
A405		4	3'-3"	X		BODY TIES BETWEEN BEAM SEATS
A606		11	32'-2"			BODY HORIZ FF, TOP & BOT
A407		3	22'-0"			BODY HORIZ TOP
A408		6	7'-4"			BODY HORIZ BETWEEN BEAM SEATS
A809		14	19'-2"	X		BODY HORIZ BF
A410		4	4'-5"	X		BODY TIES BETWEEN BEAM SEATS
A411		4	5'-5"	X		BODY TIES BETWEEN BEAM SEATS
A512		9	6'-7"	X		BODY TIES
A513		4	7'-7"	X		BODY TIES
A414		4	4'-8"			NORTH END BODY VERT
A415		4	6'-3"			SOUTH END BODY VERT
A516	X	10	18'-8"	X		WING 1 STIRRUPS
A517	X	7	11'-9"			WING 1 HORIZ FF
A718	X	9	12'-4"	X		WING 1 HORIZ BF TOP
A419	X	16	15'-7"			WING 1 & 2 HORIZ EF
A620	X	4	15'-7"			WING 1 & 2 HORIZ TOP
A421	X	9	7'-9"			WING 1 & 2 HORIZ EF FLAG
A522	X	13	12'-8"	X		WING 1 VERT
A523	X	9	11'-6"	X		WING 1 VERT FLAG
A524	X	10	15'-6"	X		WING 2 STIRRUPS
A525	X	6	11'-7"			WING 2 HORIZ FF
A726	X	9	12'-6"	X		WING 2 HORIZ BF TOP
A527	X	13	12'-4"	X		WING 2 VERT
A528	X	9	10'-8"	X		WING 2 VERT FLAG
A429		3	13'-3"			BODY HORIZ TOP
A430		3	4'-4"			BODY HORIZ TOP

BILL OF BARS - EAST ABUTMENT

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B401		5	28'-0"	X		BODY AT PILES
B402		10	2'-3"			BODY AT PILES
B503		38	13'-6"	X		BODY STIRRUPS
B504		9	5'-7"	X		BODY TIES
B405		4	3'-3"	X		BODY TIES BETWEEN BEAM SEATS
B606		11	32'-2"			BODY HORIZ FF, TOP & BOT
B407		3	22'-0"			BODY HORIZ TOP
B408		6	7'-4"			BODY HORIZ BETWEEN BEAM SEATS
B809		14	19'-2"	X		BODY HORIZ BF
B410		4	4'-5"	X		BODY TIES BETWEEN BEAM SEATS
B411		4	5'-5"	X		BODY TIES BETWEEN BEAM SEATS
B512		9	6'-7"	X		BODY TIES
B513		4	7'-7"	X		BODY TIES
B414		4	4'-8"			NORTH END BODY VERT
B415		4	6'-3"			SOUTH END BODY VERT
B516	X	10	18'-8"	X		WING 4 STIRRUPS
B517	X	7	11'-9"			WING 4 HORIZ FF
B718	X	9	12'-4"	X		WING 4 HORIZ BF TOP
B419	X	16	15'-7"			WING 3 & 4 HORIZ EF
B620	X	4	15'-7"			WING 3 & 4 HORIZ TOP
B421	X	9	7'-9"			WING 3 & 4 HORIZ EF FLAG
B522	X	13	12'-8"	X		WING 4 VERT
B523	X	9	11'-6"	X		WING 4 VERT FLAG
B524	X	10	15'-6"	X		WING 3 STIRRUPS
B525	X	6	11'-7"			WING 3 HORIZ FF
B726	X	9	12'-6"	X		WING 3 HORIZ BF TOP
B527	X	13	12'-4"	X		WING 3 VERT
B528	X	9	10'-8"	X		WING 3 VERT FLAG
B429		3	13'-3"			BODY HORIZ TOP
B430		3	4'-4"			BODY HORIZ TOP



STATE PROJECT NUMBER

5905-00-70

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
WEST & EAST ABUTMENT DETAILS		SHEET 12 OF 24	

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

P505

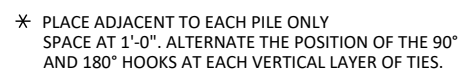
P408

P412

☆ ELEVATIONS AND DIMENSIONS NOTED ARE AT THE C/L OF PIER

NO.	DATE	REVISION

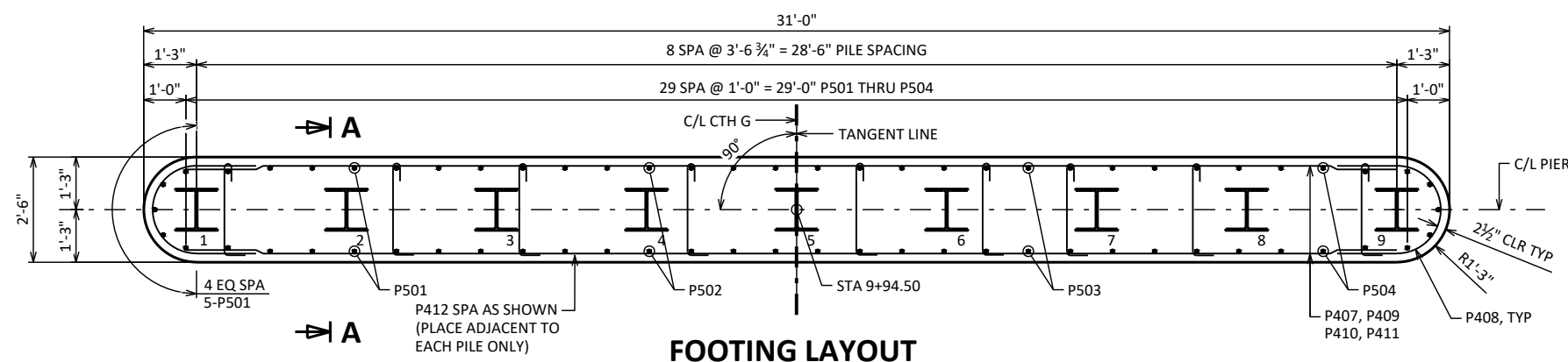
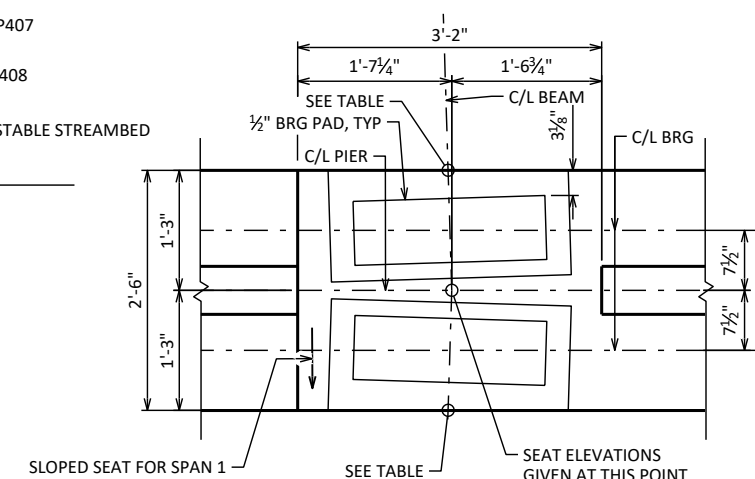
STATE OF MISSISSIPPI DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-22-309	
DRAWN BY		RAD	PLANS CK'D
PIER DETAILS		SHEET 13 OF 24	



— SYMMETRICAL ABOUT THIS
LINE UNLESS SHOWN OR
OTHERWISE NOTED

SUPPORT PIER ON HP 12 x 53 STEEL PILING, ESTIMATED
45'-0" LONG. SEE PILE SPlice DETAIL, ABUTMENT
DETAILS SHEET (IF SPlice REQUIRED) ESTIMATED
PRE-BORING PILE TIP ELEVATION OF 658.00 FT.

P504	
P505	
P506	X
P407	
P408	
P409	
P410	
P411	
P412	



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.

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

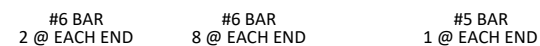
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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 DESIGN 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.



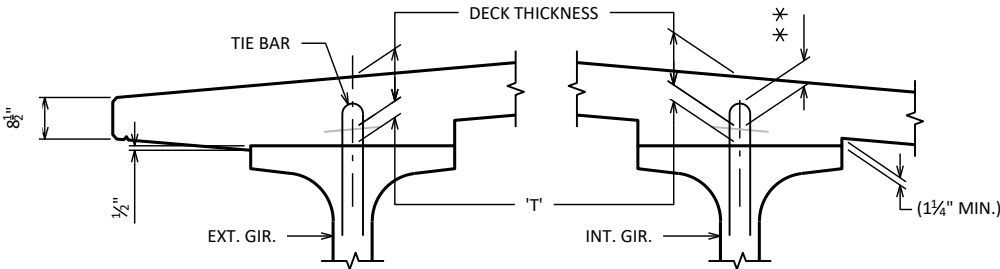
(A) DETAIL TYP. AT EACH END
(B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-9"
(C) 1" DIA. SLEEVE CAST IN GIRDER WEB FOR FLOOR DRAIN TYPE "WF"
 WEST END OF GIRDER 1 IN SPANS 1 AND 2 ONLY.



GIRDER DATA

[illegible]

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
	DRAWN BY	RAD	PLANS CK'D DWG
36W PRESTRESSED GIRDER DETAILS		SHEET 14 OF 24	



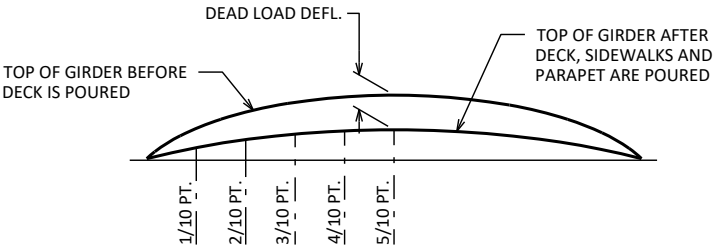
DECK HAUNCH DETAIL

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

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

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

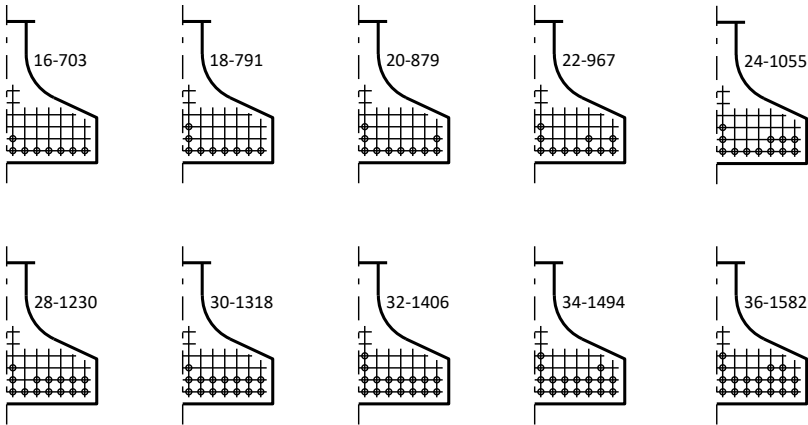
NOTE: AN AVERAGE HAUNCH ('T') OF 4 3/8" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM

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

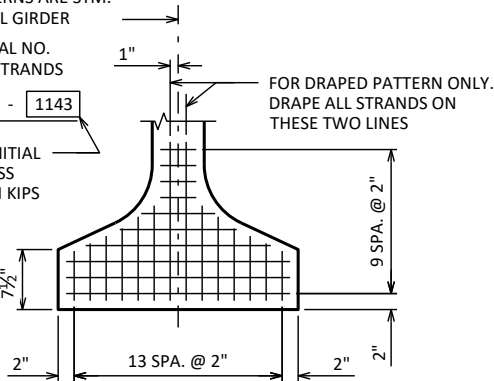
0.6" DIA. STRANDS



ALL PATTERNS ARE SYM. ABOUT C/L GIRDER

TOTAL NO. OF STRANDS
26 - 1143

TOTAL INITIAL PRESTRESS FORCE IN KIPS

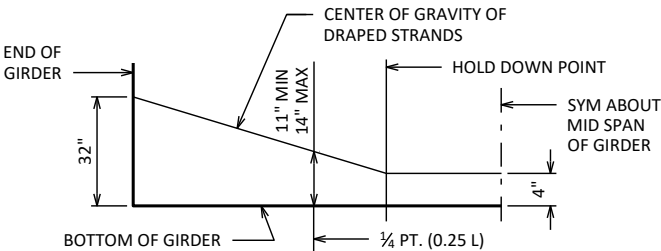


TYP. STRAND PATTERN

DRAPE CENTER 6 STRANDS

ARRANGEMENT AT C/L SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6" DIA. STRANDS



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.) *
ALL	2.6

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

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
36W PRESTRESSED GIRDER DETAILS			SHEET 15 OF 24

NOTES

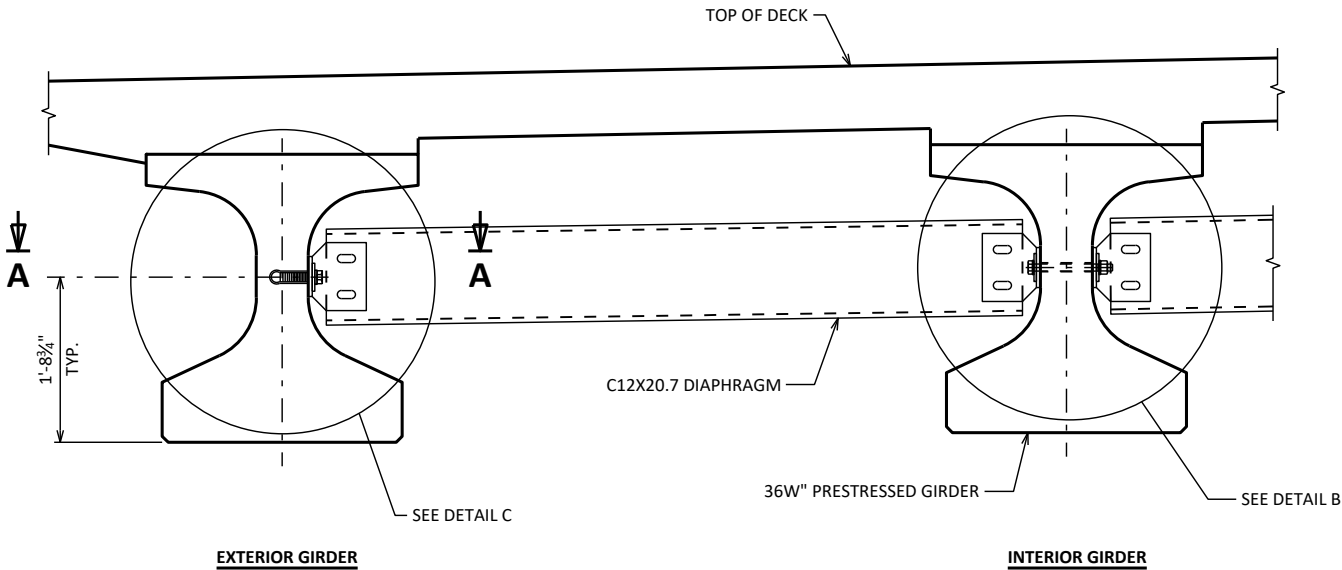
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-22-309", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

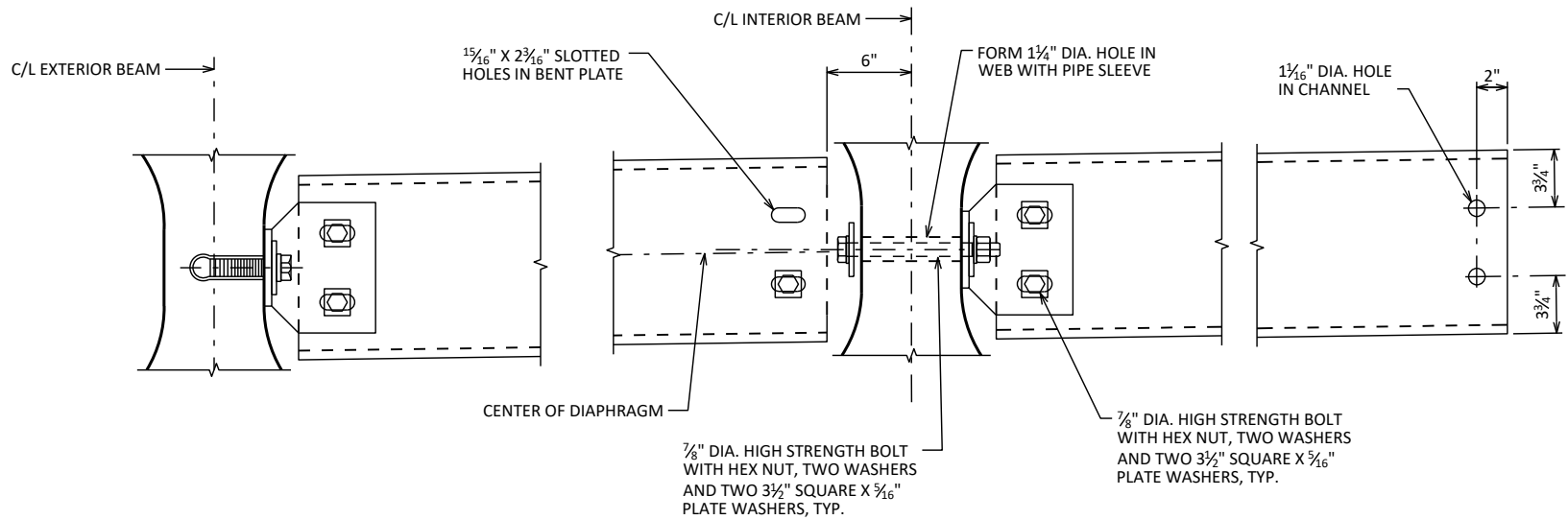
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.

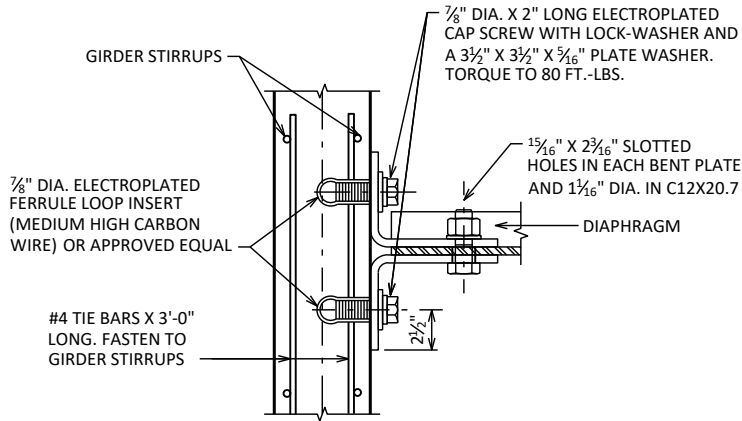


PART TRANSVERSE SECTION AT DIAPHRAGM



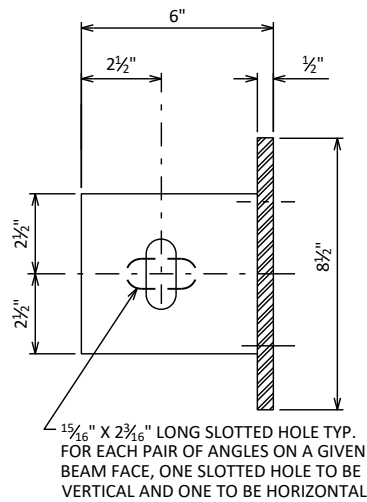
DETAIL C

DETAIL B

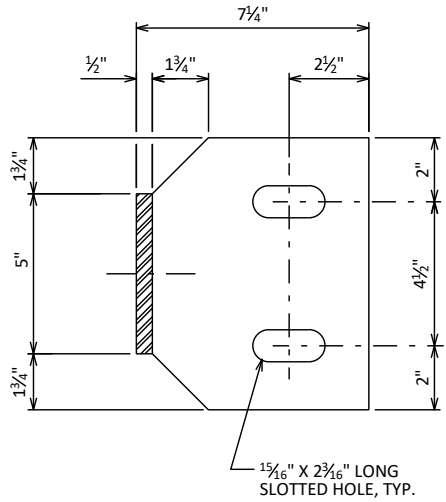


SECTION A-A

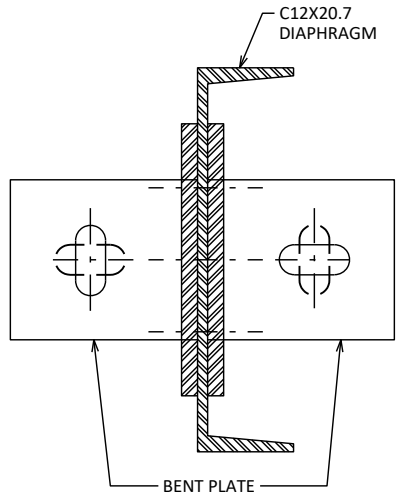
(FOR EXTERIOR ATTACHMENT)



BEAM FACE



DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
STEEL DIAPHRAGM		SHEET 16 OF 24	

NOTE

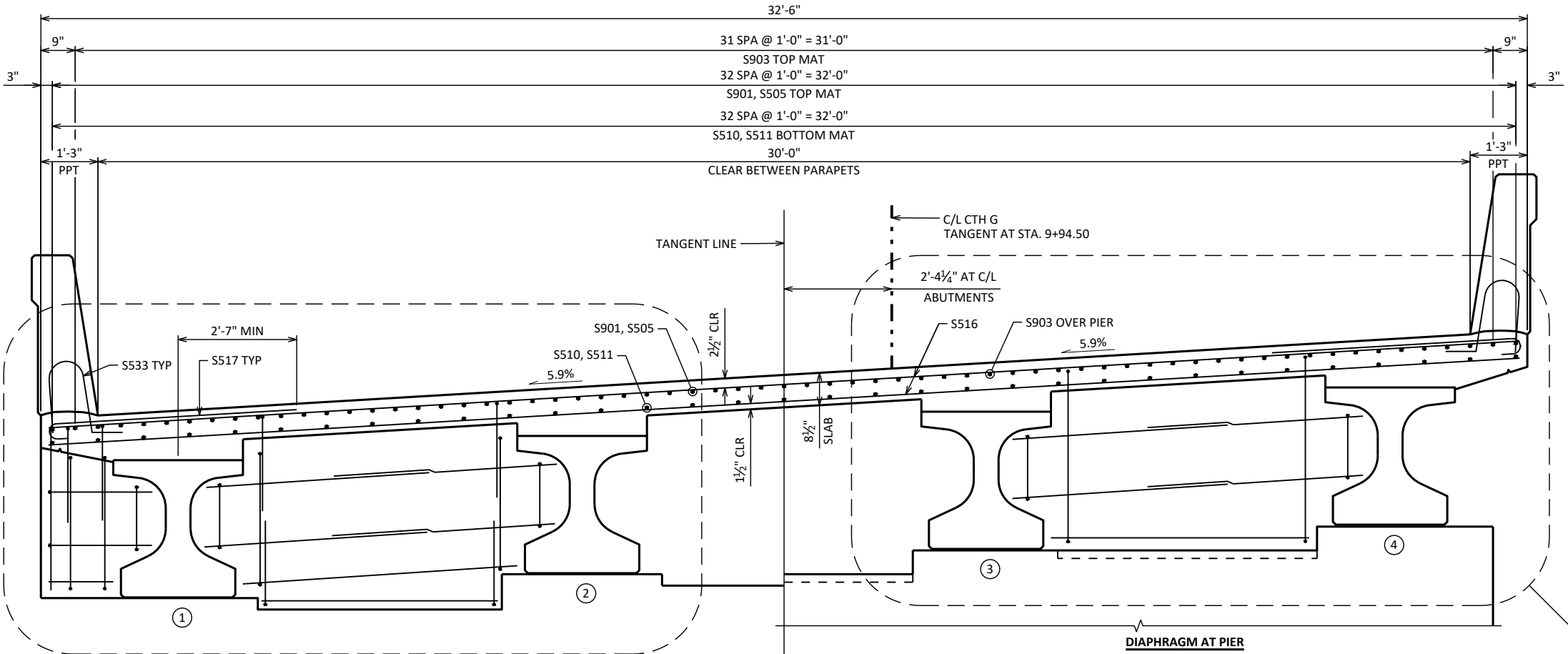
FOR GIRDER LAYOUT AND STEEL DIAPHRAGM SPACING DETAILS SEE "FRAMING PLAN" SHEET.

FOR STEEL DIAPHRAGM DETAILS SEE "STEEL DIAPHRAGM" SHEET.

FOR THE DIAPHRAGM REINFORCEMENT DETAILS SEE "DIAPHRAGM DETAILS" AND "DIAPHRAGM CROSS SECTIONS" SHEETS.

○ INDICATES GIRDER NUMBER.

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE
T = TOP
B = BOTTOM



CROSS SECTION THRU ROADWAY

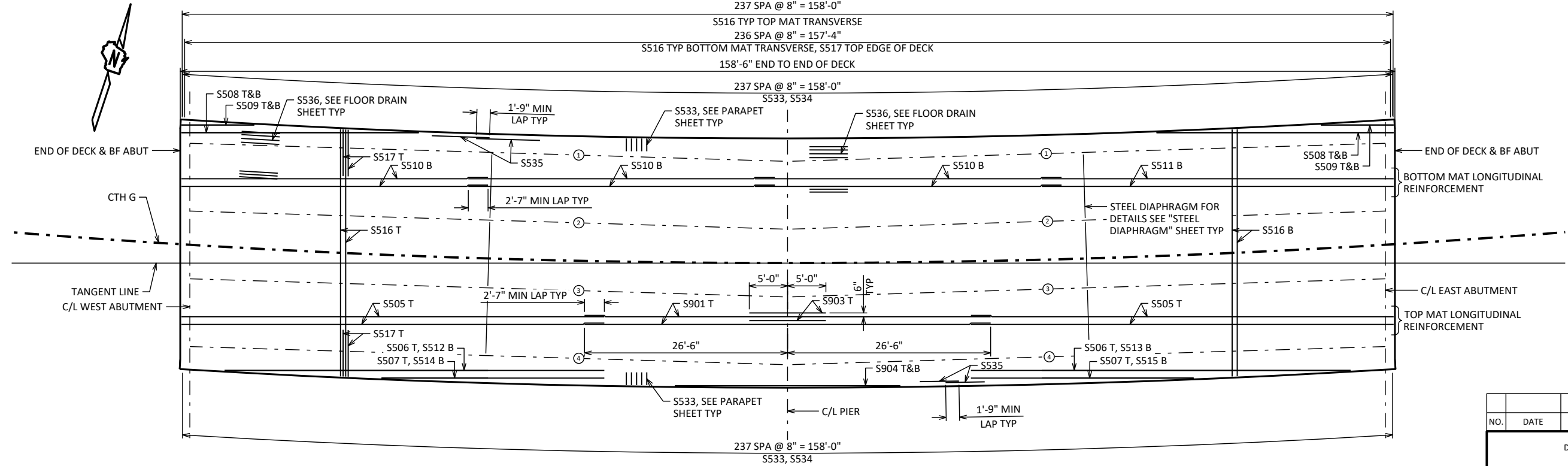
(LOOKING EAST)

SEE "DIAPHRAGM DETAILS" SHEET

DIAPHRAGM AT ABUTMENTS

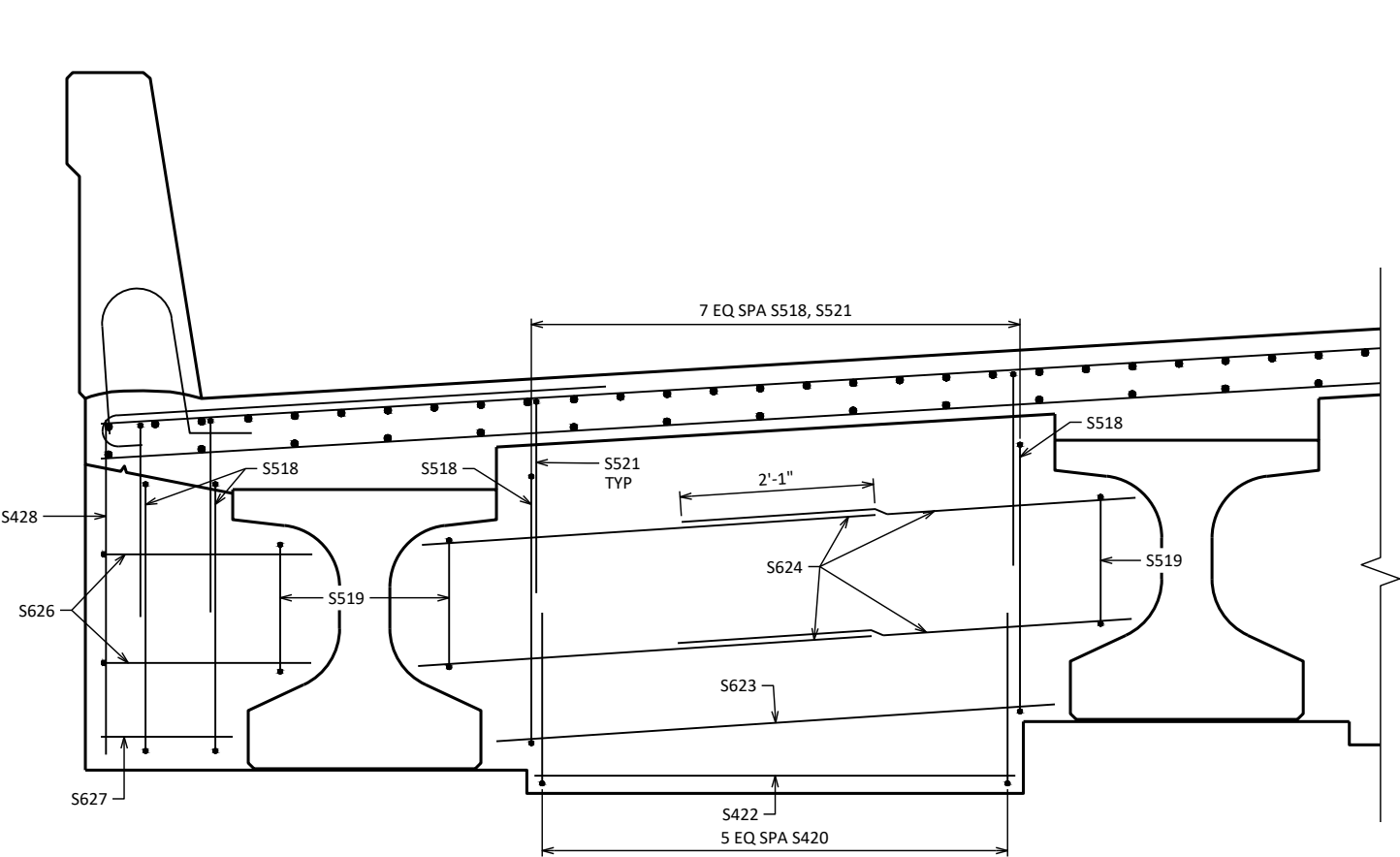
DIAPHRAGM AT PIER

SEE "DIAPHRAGM DETAILS" SHEET



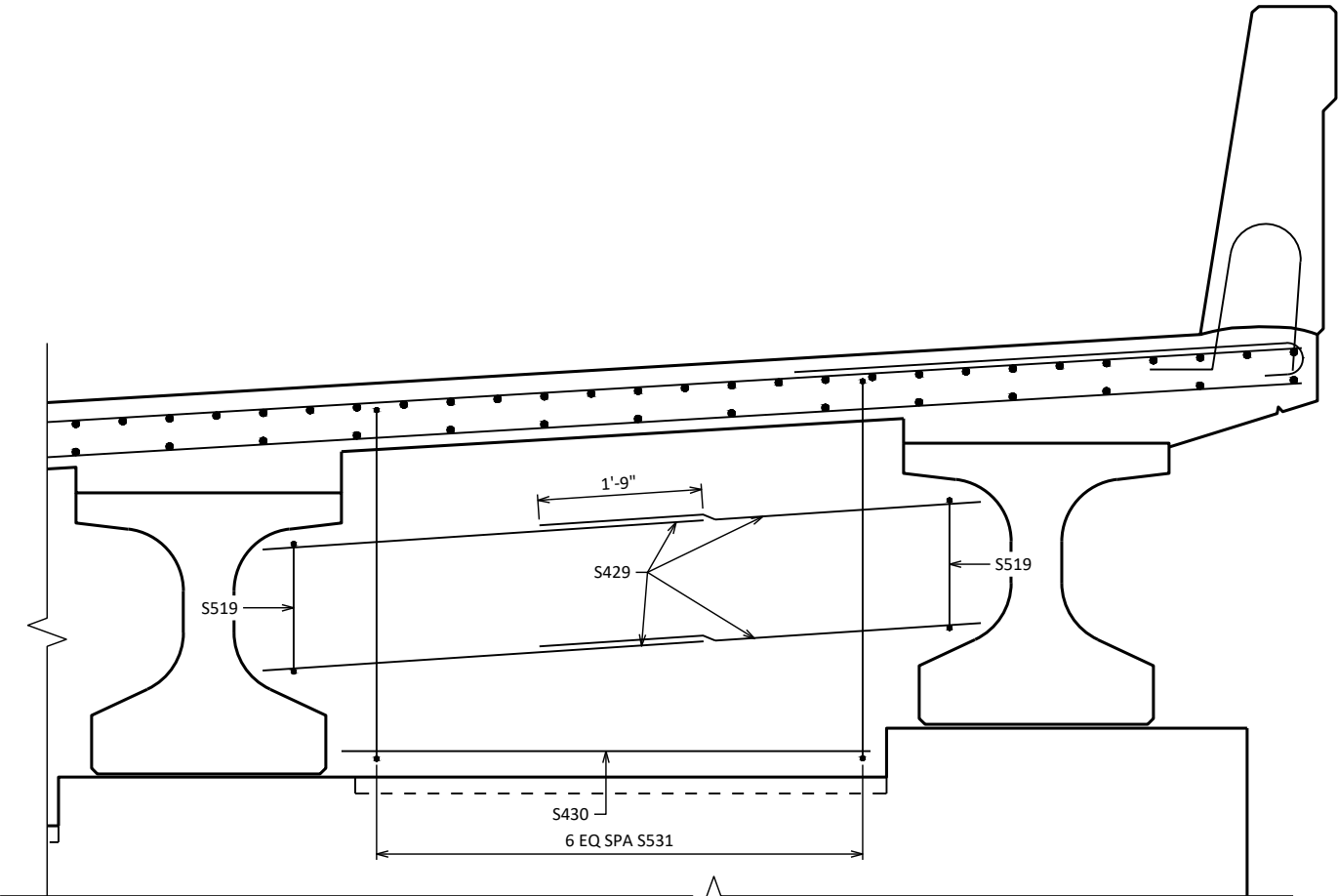
PLAN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY RAD		PLANS CK'D DKW	
SUPERSTRUCTURE		SHEET 17 OF 24	



TYPICAL DIAPHRAGM

AT ABUTMENTS



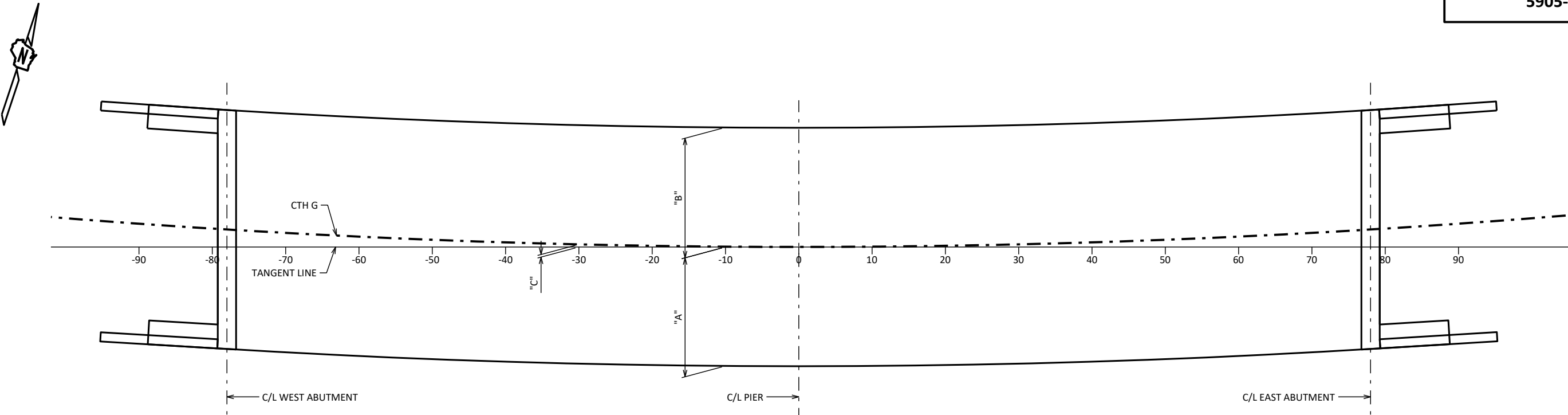
TYPICAL DIAPHRAGM

AT PIER

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
DIAPHRAGM DETAILS		SHEET 18 OF 24	



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
		DRAWN BY	PLANS CK'D
		RAD	DKW
FRAMING PLAN		SHEET 19 OF 24	



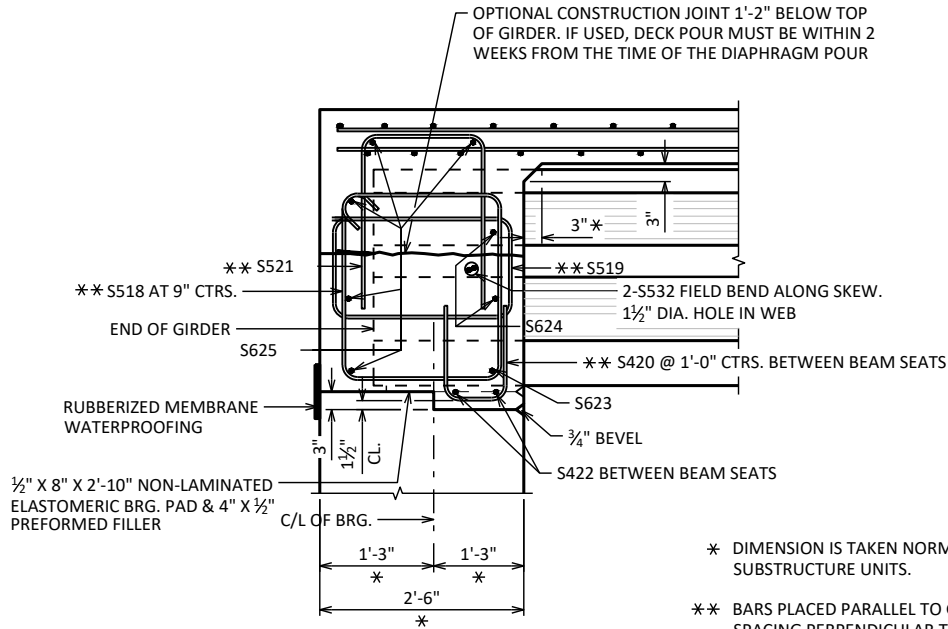
TANGENT OFFSET PLAN

TABLE OF TAN. OFFSETS

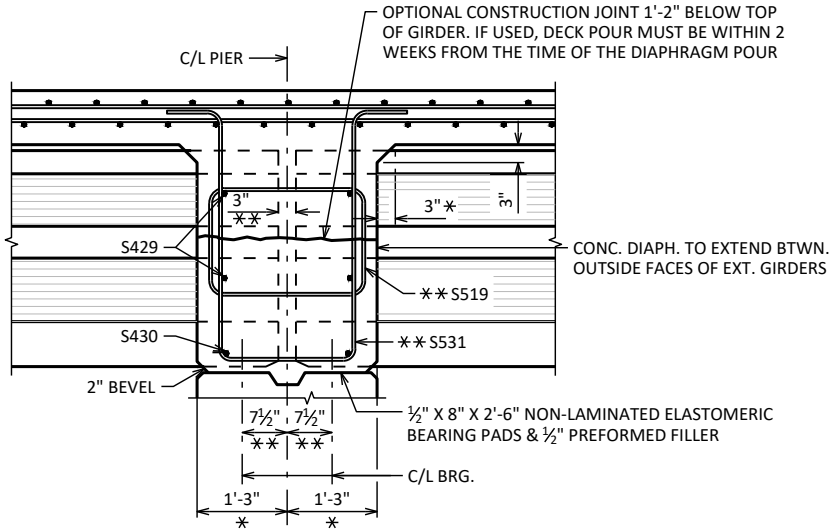
DISTANCES ARE TYPICAL FOR BOTH (+) PLUS & (-) MINUS LOCATIONS FROM POINT OF TANGENCY (OFFSETS ARE NORMAL TO TAN. LINE).

DIST.	"A"	"B"	"C"
-90	13'-1½"	19'-5½"	3'-2"
-80	13'-9¾"	18'-9¾"	2'-6"
-70	14'-4¼"	18'-2¼"	1'-11"
-60	14'-10¾"	17'-8¾"	1'-4⅞"
-50	15'-3¾"	17'-2⅞"	11¾"
-40	15'-7⅞"	16'-10⅝"	7½"
-30	15'-10⅞"	16'-7¼"	4¼"
-20	16'-1⅞"	16'-4⅞"	1⅞"
-10	16'-2½"	16'-3½"	½"
0	16'-3"	16'-3"	0"
10	16'-2½"	16'-3½"	½"
20	16'-1⅞"	16'-4⅞"	1⅞"
30	15'-10⅞"	16'-7¼"	4¼"
40	15'-7⅞"	16'-10⅝"	7½"
50	15'-3¾"	17'-2⅞"	11¾"
60	14'-10¾"	17'-8¾"	1'-4⅞"
70	14'-4¼"	18'-2¼"	1'-11"
80	13'-9¾"	18'-9¾"	2'-6"
90	13'-1½"	19'-5½"	3'-2"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
TANGENT OFFSET		SHEET 20 OF 24	



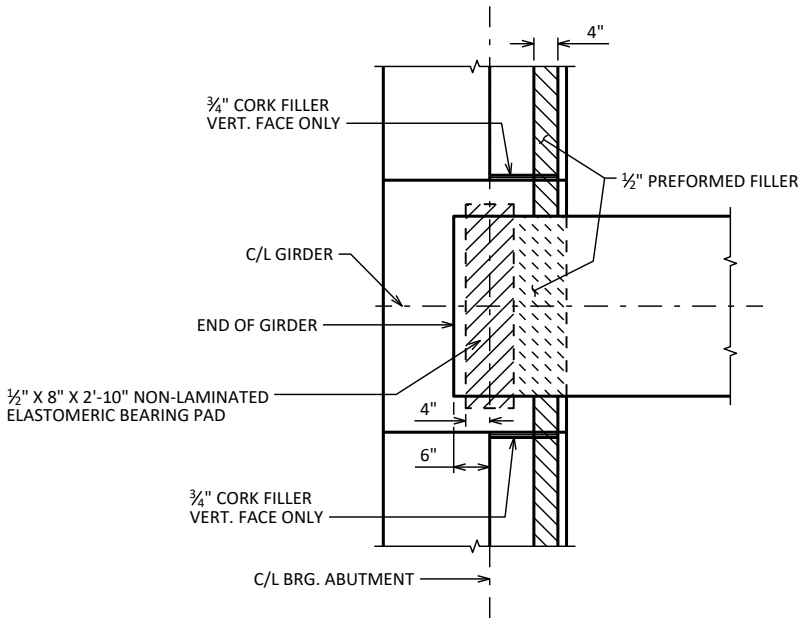
PART LONGIT. SECTION
AT ABUTMENTS



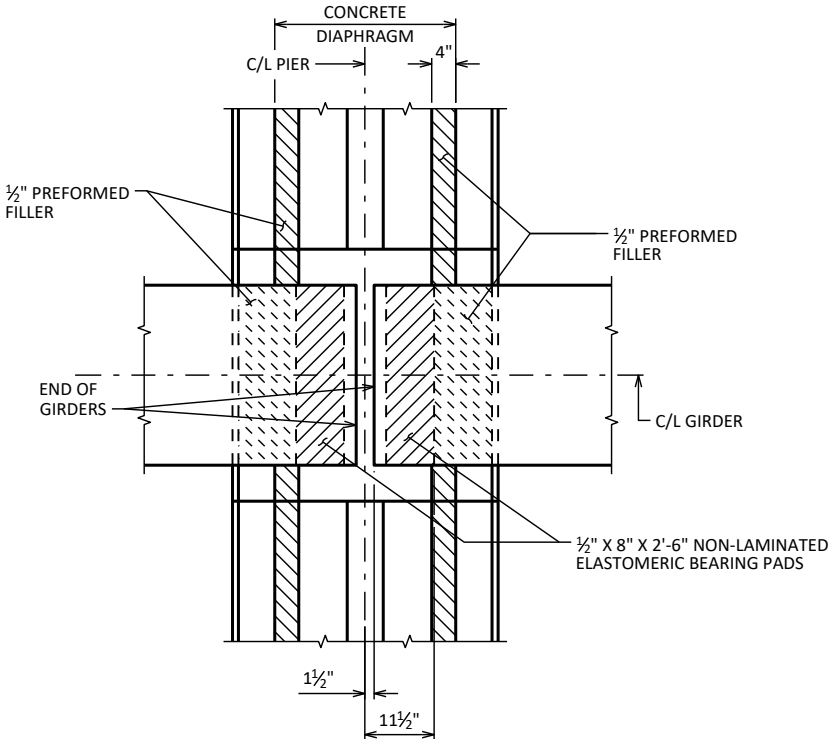
PART LONGIT. SECTION
AT PIER

TOP OF DECK ELEVATIONS

LOCATION	C/L BRG W ABUT	1/10 PT.	3/10 PT.	5/10 PT.	7/10 PT.	9/10 PT.	11/10 PT.	13/10 PT.	15/10 PT.	C/L BRG PIER	C/L BRG PIER	1/10 PT.	3/10 PT.	5/10 PT.	7/10 PT.	9/10 PT.	11/10 PT.	13/10 PT.	15/10 PT.	C/L BRG E ABUT		
NORTH EOD	707.44	707.51	707.57	707.63	707.68	707.73	707.77	707.81	707.84	707.87	707.89	707.89	707.90	707.91	707.92	707.92	707.93	707.94	707.94	707.95	707.95	707.96
GIRDER 1	707.54	707.60	707.65	707.70	707.75	707.80	707.84	707.88	707.92	707.95	707.99	707.99	707.99	707.99	707.99	707.99	708.00	708.01	708.02	708.03	708.04	708.06
GIRDER 2	708.07	708.12	708.18	708.23	708.27	708.32	708.36	708.40	708.44	708.48	708.51	708.51	708.51	708.51	708.51	708.52	708.52	708.53	708.54	708.55	708.56	708.58
PGL/CL	708.33	708.40	708.46	708.52	708.57	708.62	708.66	708.69	708.72	708.75	708.77	708.77	708.79	708.80	708.80	708.81	708.81	708.82	708.82	708.83	708.84	708.98
TANGENT	708.47	708.51	708.55	708.59	708.62	708.65	708.68	708.71	708.73	708.75	708.77	708.77	708.79	708.81	708.82	708.83	708.85	708.87	708.89	708.92	708.95	708.98
GIRDER 3	708.59	708.65	708.70	708.75	708.80	708.84	708.88	708.93	708.96	709.00	709.03	709.03	709.04	709.04	709.04	709.04	709.04	709.05	709.06	709.07	709.08	709.10
GIRDER 4	709.12	709.17	709.22	709.27	709.32	709.37	709.41	709.45	709.48	709.52	709.55	709.55	709.56	709.56	709.56	709.56	709.56	709.57	709.58	709.59	709.60	709.62
SOUTH EOD	709.22	709.29	709.35	709.41	709.46	709.50	709.54	709.58	709.61	709.64	709.66	709.66	709.67	709.68	709.69	709.69	709.70	709.70	709.71	709.71	709.72	709.73



BEARING PAD DETAIL
AT ABUTMENTS



BEARING PAD DETAIL
AT PIER

NOTES

ALL DIAPHRAGM SUPPORT HARDWARE SHALL BE INCIDENTAL TO "CONCRETE MASONRY BRIDGES".

DIAPHRAGM SUPPORT ANGLES SHALL BE ASTM A709 GRADE 36.

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

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
DIAPHRAGM CROSS SECTIONS		SHEET 21 OF 24	

BILL OF BARS - SUPERSTRUCTURE

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S901	X	32	53'-0"			DECK CONTINUITY REINF TOP
S903	X	32	10'-0"			DECK CONTINUITY REINF TOP
S904	X	2	29'-5"			DECK CONTINUITY REINF TOP/BOT
S505	X	60	55'-2"			DECK LONGITUDINAL TOP
S506	X	2	49'-7"			DECK LONGITUDINAL TOP
S507	X	2	29'-1"			DECK LONGITUDINAL TOP
S508	X	4	31'-0"			DECK LONGITUDINAL TOP & BOT
S509	X	4	9'-6"			DECK LONGITUDINAL TOP & BOT
S510	X	94	40'-0"			DECK LONGITUDINAL BOT
S511	X	30	46'-0"			DECK LONGITUDINAL BOT
S512	X	1	34'-5"			DECK LONGITUDINAL BOT
S513	X	1	40'-4"			DECK LONGITUDINAL BOT
S514	X	1	13'-11"			DECK LONGITUDINAL BOT
S515	X	1	19'-10"			DECK LONGITUDINAL BOT
S516	X	475	32'-2"			DECK TRANSVERSE TOP & BOT
S517	X	475	6'-1"	X		DECK TRANSVERSE TOP EDGE OF DECK
S518	X	56	10'-8"	X		ABUT DIAPH STIRRUP
S519	X	24	7'-10"	X		ABUT & PIER DIAPH STIRRUP BTWN GIRDERS
S420	X	36	4'-7"	X		ABUT DIAPH VERTICAL
S521	X	48	5'-10"	X		ABUT DIAPH VERTICAL
S422	X	12	5'-2"			ABUT DIAPH HORIZ BTWN BEAM SEATS
S623	X	6	6'-0"			ABUT DIAPH HORIZ BTWN BEAM SEATS
S624	X	24	4'-11"			ABUT DIAPH HORIZ BTWN GIRDERS
S625	X	10	32'-2"			ABUT DIAPH HORIZ BF
S626	X	8	6'-2"	X		ABUT DIAPH HORIZ END
S627	X	8	1'-5"			ABUT DIAPH HORIZ END
S428	X	8	3'-7"			ABUT DIAPH VERTICAL END
S429	X	24	4'-9"			PIER DIAPH HORIZ BTWN GIRDERS
S430	X	6	5'-7"			PIER DIAPH HORIZ BTWN GIRDERS
S531	X	21	11'-0"	X	▲	PIER DIAPH VERTICAL
S532	X	16	6'-0"			ABUT DIAPH HORIZ THRU GIRDERS
S533	X	476	4'-5"	X		PARAPET DOWEL
S534	X	476	6'-8"	X		PARAPET VERTICAL
S535	X	64	41'-0"			PARAPET HORIZONTAL
S536	X	14	5'-0"			FLOOR DRAIN

BAR SERIES TABLE

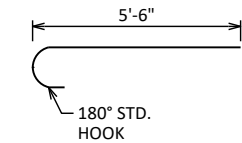
BAR MARK	NO. REQ'D.	LENGTH
S531	3 SERIES OF 7	10'-8" TO 11'-4"

BUNDLE AND TAG EACH SERIES SEPARATELY.

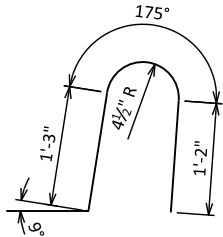
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

STATE PROJECT NUMBER

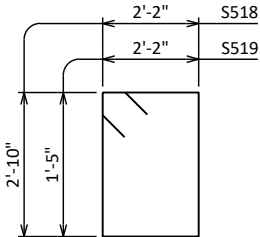
5905-00-70



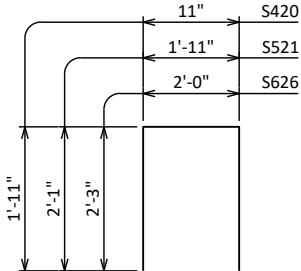
S517



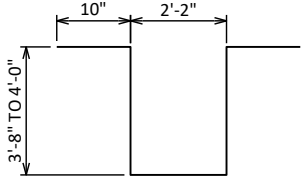
S533



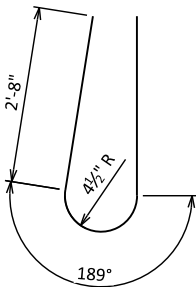
S518, S519



S420, S521, S626



S531



S534

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
		DRAWN BY	PLANS CK'D
		RAD	DKW
SUPERSTRUCTURE DETAILS		SHEET 22 OF 24	

BILL OF BARS

FOR WING PARAPETS

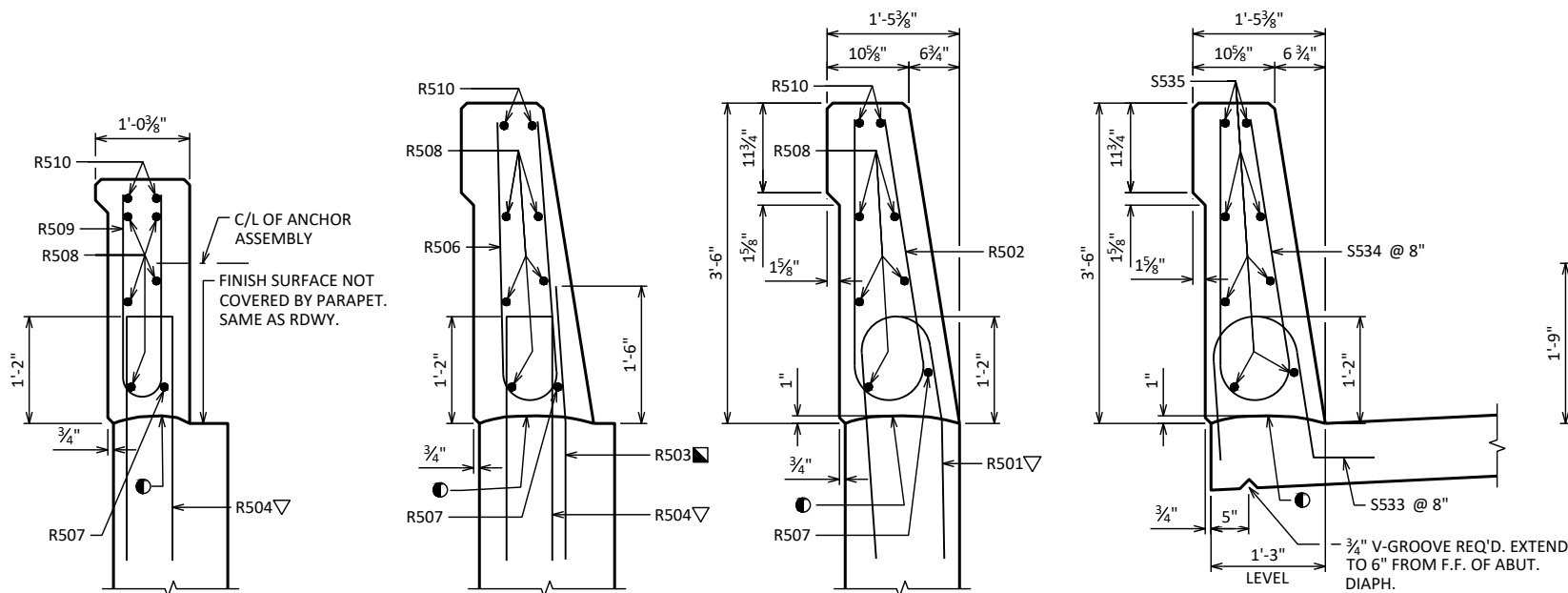
BAR MARK	COAT	WEST ABUT.	EAST ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	22	22	5'-10"	X		PARAPET VERT.
R502	X	22	22	6'-8"	X		PARAPET VERT.
R503	X	12	12	3'-0"	X		PARAPET VERT.
R504	X	17	17	5'-7"	X		PARAPET VERT.
R505	X	5	5	6'-5"	X		PARAPET VERT.
R506	X	6	6	6'-6"	X		PARAPET VERT.
R507	X	1	1	15'-7"	X		PARAPET HORIZ.
R508	X	5	5	15'-7"			PARAPET HORIZ.
R509	X	6	6	5'-5"	X	▲	PARAPET VERT.
R510	X	2	2	15'-7"	X		PARAPET HORIZ.

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

BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY.

BAR MARK	NO. REQ'D.	LENGTH
R509	2 SERIES OF 6	4'-9" TO 6'-1"



SECTION A-A

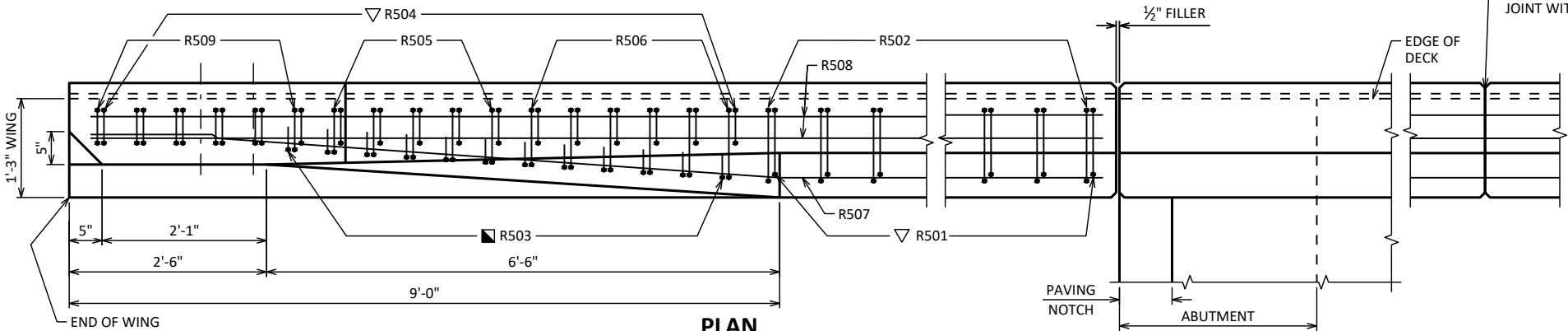
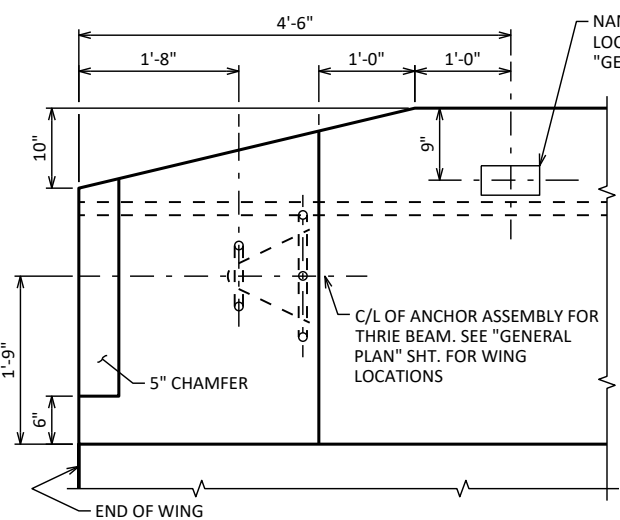
SECTION B-B

SECTION C-C

SECTION THRU PARAPET ON DECK

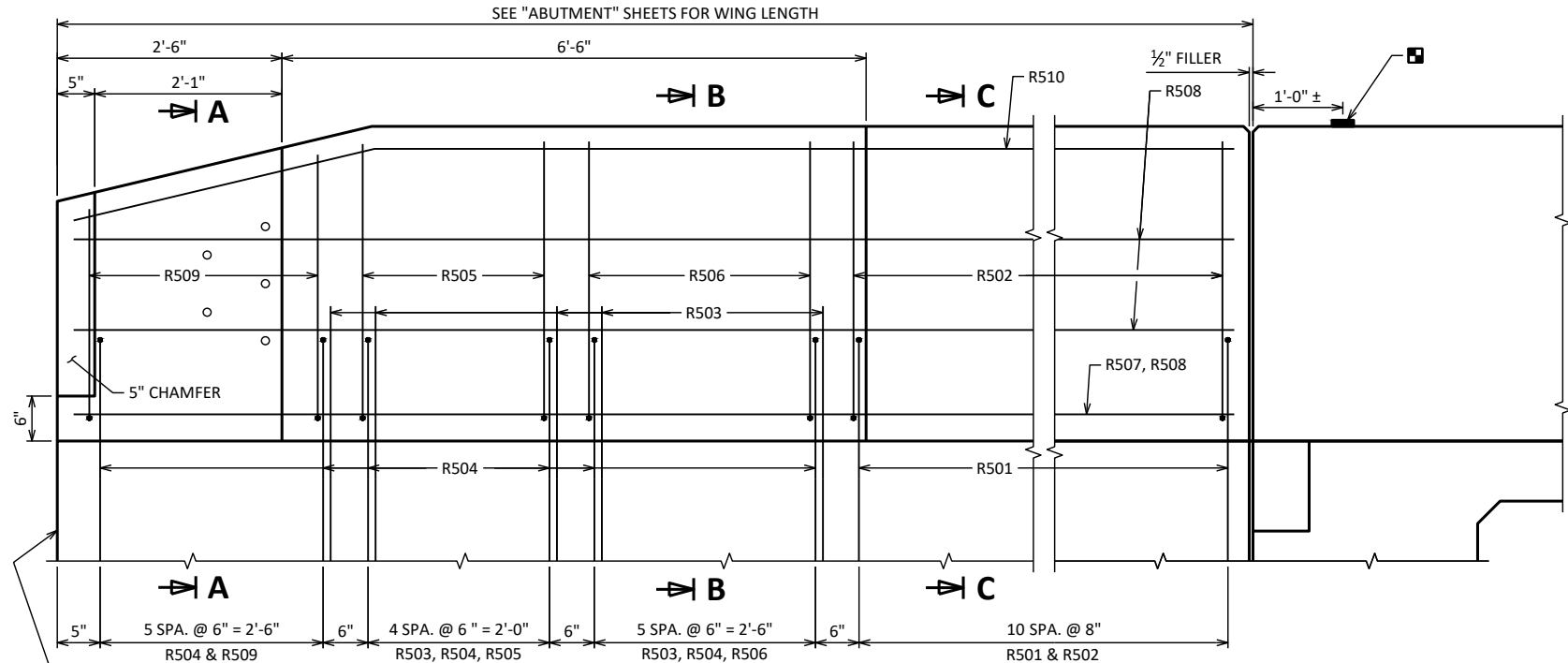
PARAPET END TREATMENT DETAIL

LOOKING AT INSIDE FACE OF PARAPET



PLAN

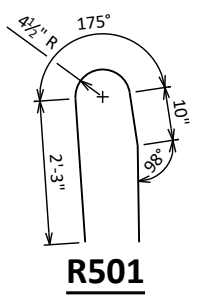
NW CORNER SHOWN, OTHERS SIMILAR



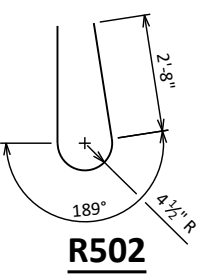
INSIDE ELEVATION

NW CORNER SHOWN, OTHERS SIMILAR

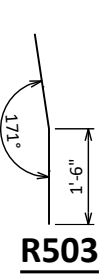
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" - 'V' GROOVE



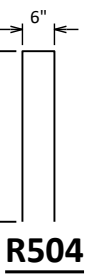
R501



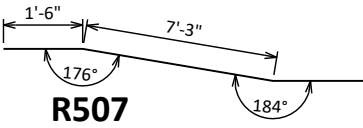
R502



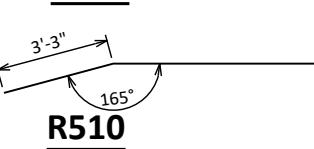
R503



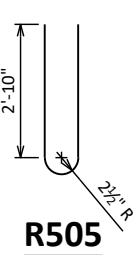
R504



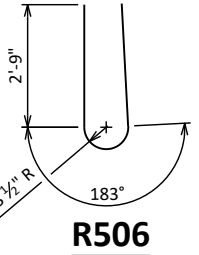
R507



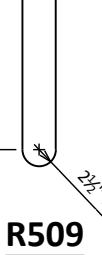
R510



R505

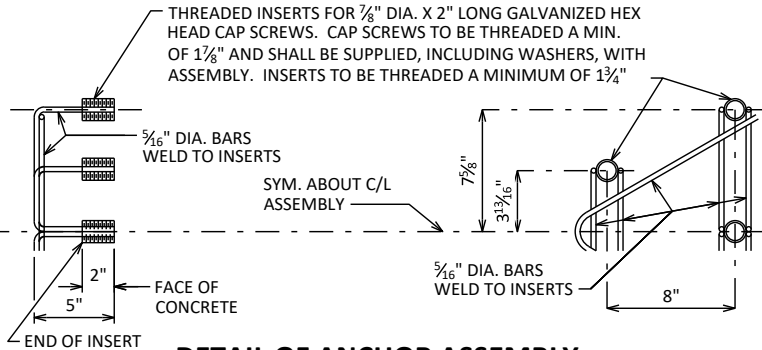


R506



R509

■ BENCH MARK CAP (WHEN SUPPLIED). AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.

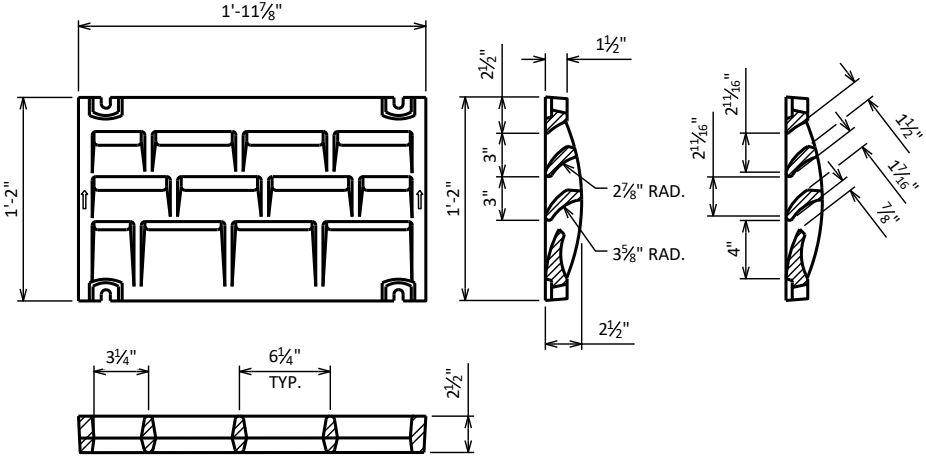
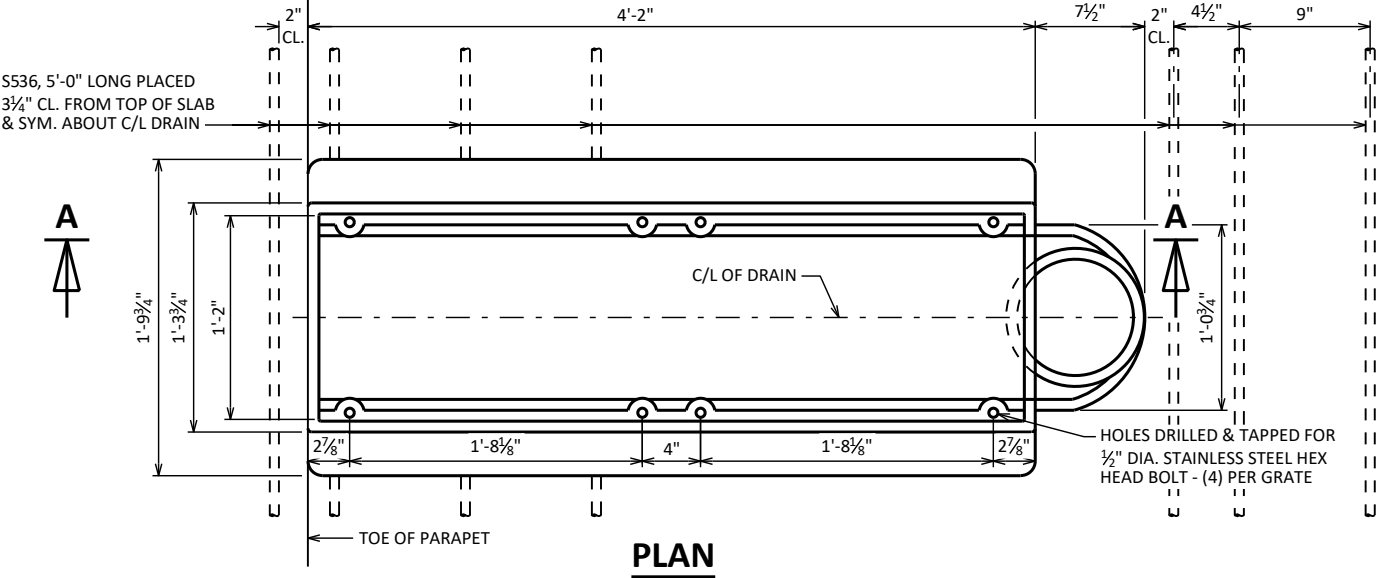


DETAIL OF ANCHOR ASSEMBLY

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

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
SINGLE SLOPE PARAPET 42SS		SHEET 23 OF 24	



NOTES

ALL MATERIAL FOR TYPE "WF" CASTING AND 8" DIA. CONNECTION PIPE, EXCLUDING GRATE HOLD DOWN SCREWS, SHALL BE GRAY IRON CONFORMING TO ASTM A48, CLASS 30.

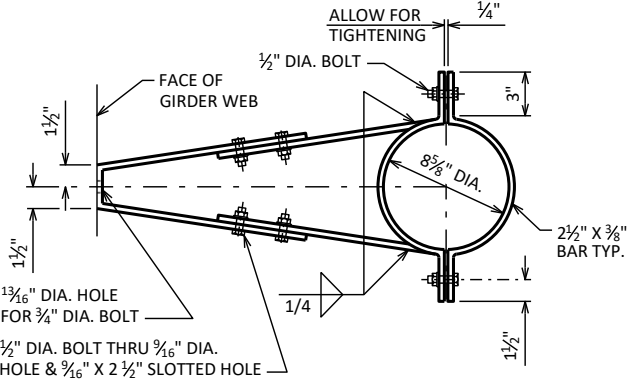
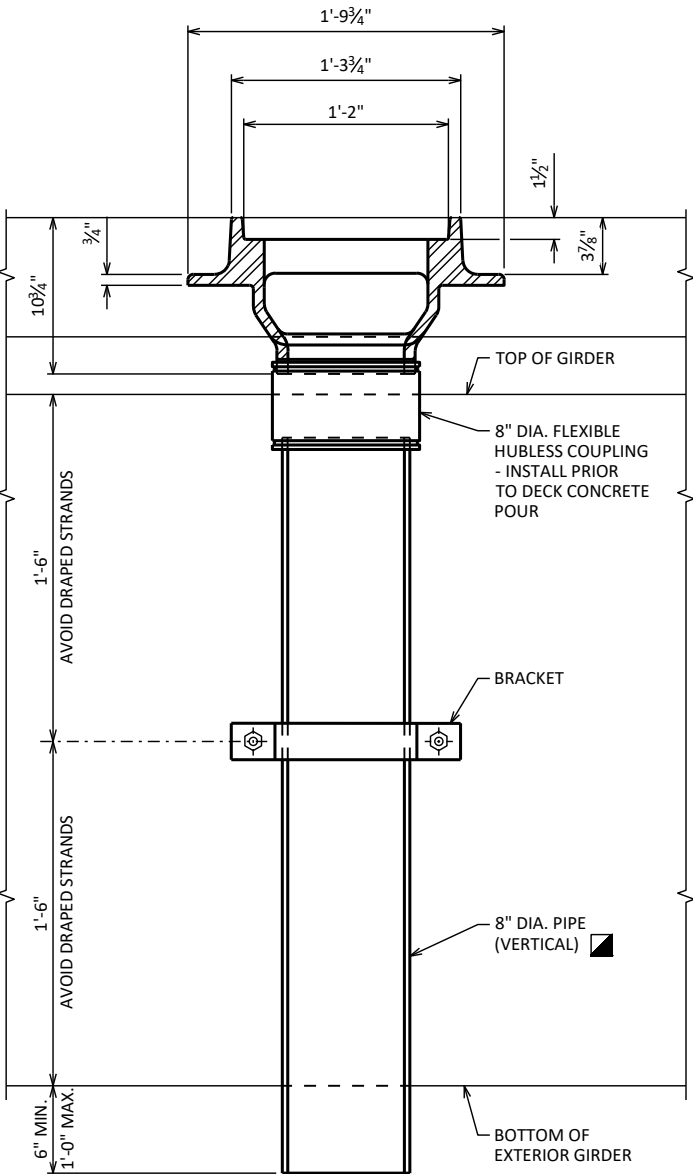
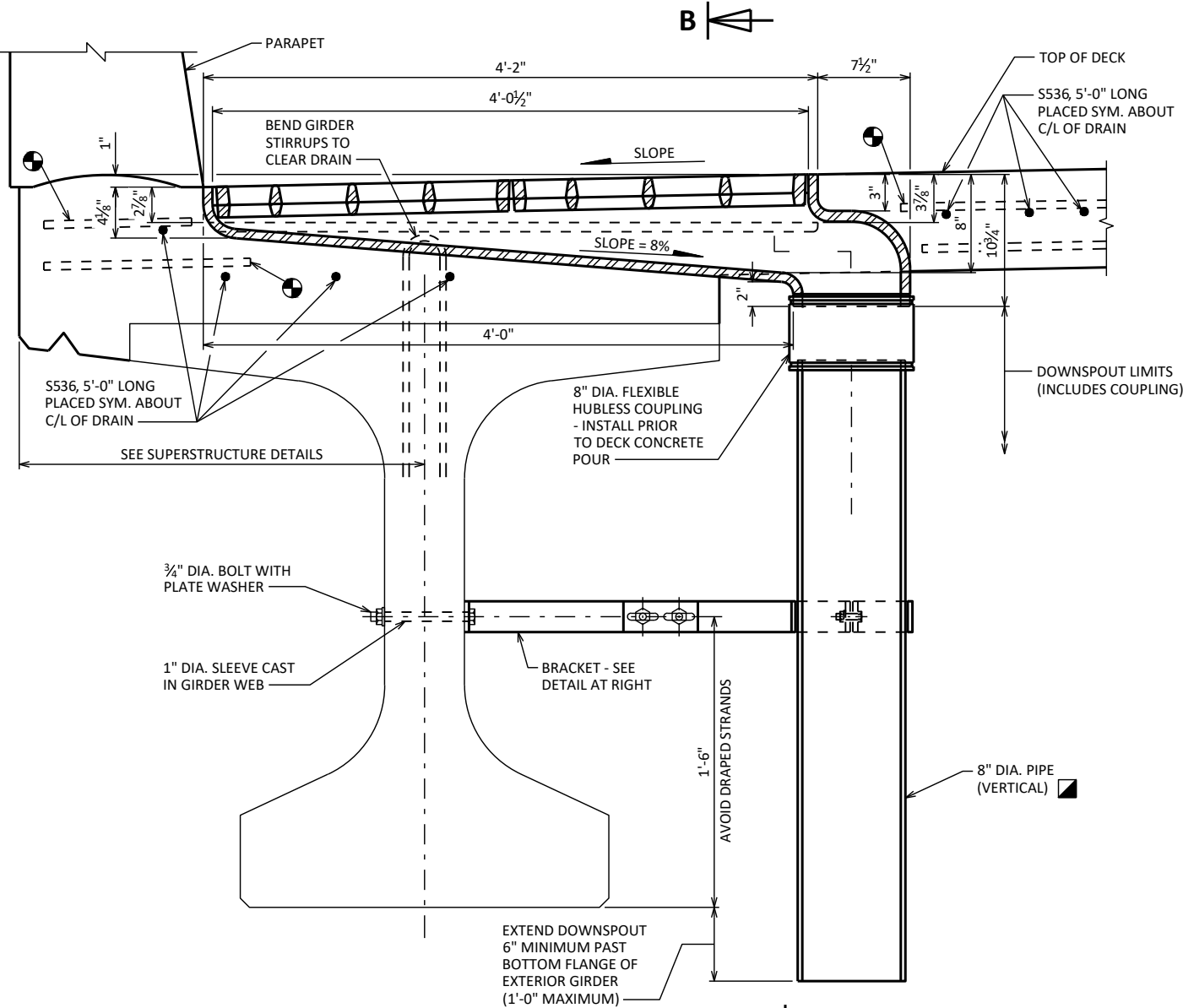
MATERIAL FOR BRACKETS SHALL CONFORM TO ASTM A36.

ALTERNATE BRACKETS ARE NOT ALLOWED.

ALL MATERIAL FOR FLOOR DRAINS TO BE INCLUDED IN THE BID ITEM "FLOOR DRAINS TYPE WF".

ALL MATERIAL FOR DOWNSPOUTS, DOWNSPOUT CONNECTIONS, AND BRACKETS TO BE INCLUDED IN THE BID ITEM "DOWNSPOUT 8-INCH".

- 8" DIA. DOWNSPOUTS SHALL BE REINFORCED THERMOSETTING RESIN PIPE (RTRP).
- TRANSVERSE & LONGITUDINAL SLAB BAR REINFORCEMENT TO BE CUT A MAXIMUM OF 1" CLEAR FROM DRAIN FRAME. DISPLACE BARS WHERE POSSIBLE.



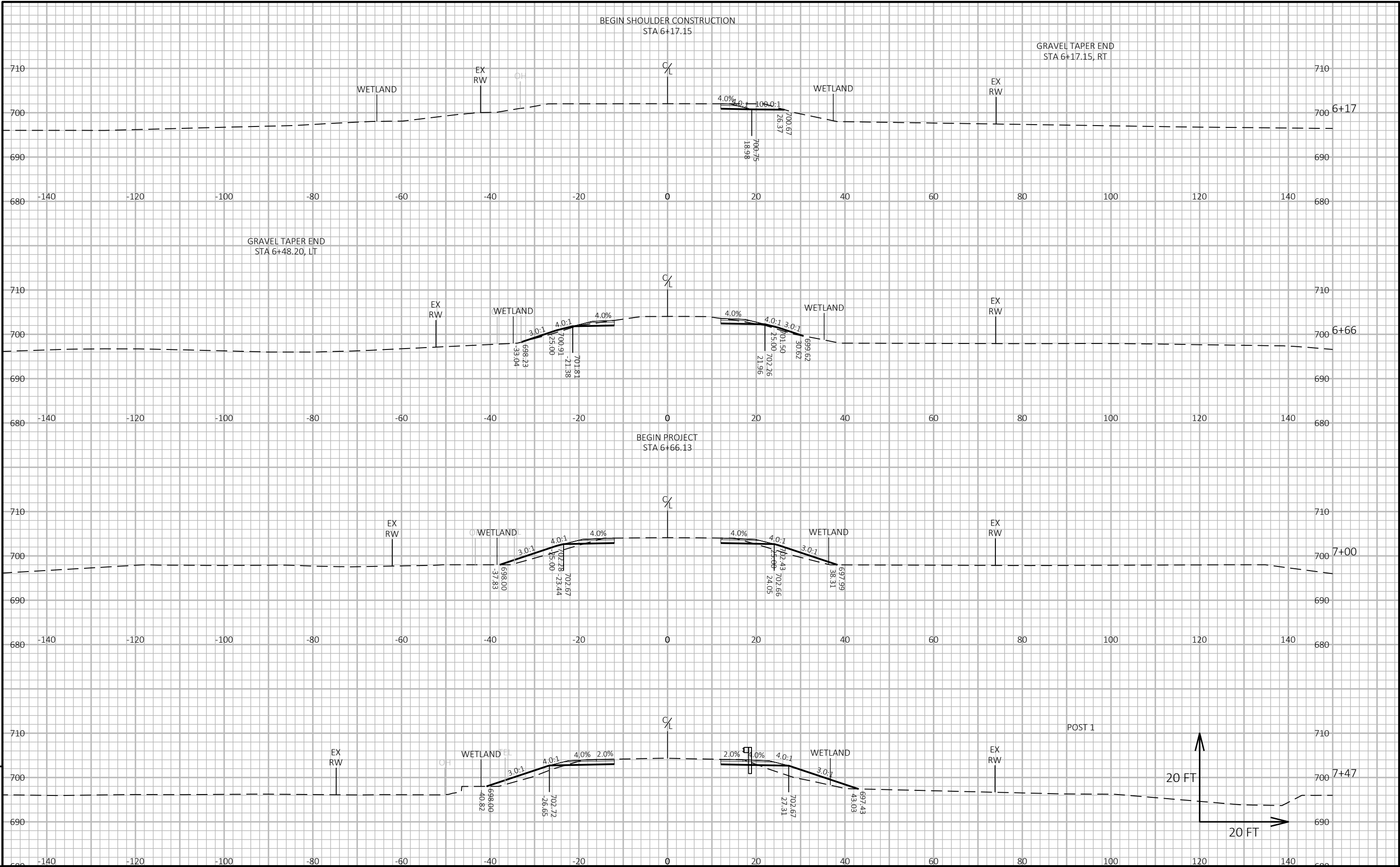
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-22-309			
DRAWN BY		RAD	PLANS CK'D DKW
FLOOR DRAIN TYPE 'WF'		SHEET 24 OF 24	

CTH G BRIDGE B-22-0309
EARTHWORK SUMMARY

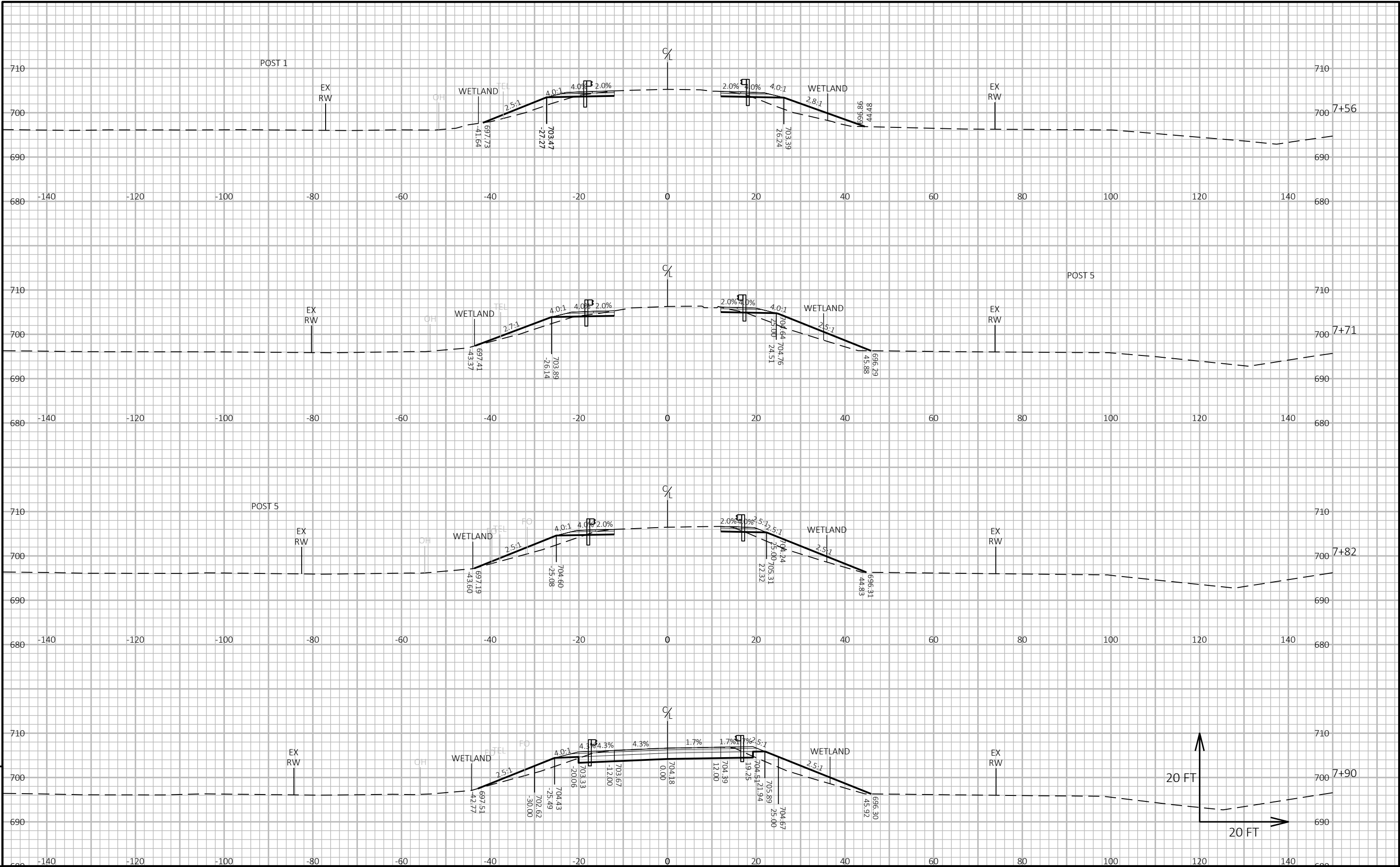
STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		MASS ORDINATE
			CUT	FILL	CUT (3)	FILL (1)	FILL (2)	CUT 1.00	FILL 1.3 (2)	
6+17.15	AH	617.15	0.00	14.78	0.00	0.00	0.00	0.00	0.00	0.00
6+66.13		666.13	48.98	10.27	22.72	5.71	7.43	22.72	7.43	15.29
7+00		700.00	33.87	11.38	13.58	24.88	32.35	36.30	39.78	-3.47
7+46.92		746.92	46.92	17.74	25.30	69.20	89.96	61.60	129.73	-68.13
7+56.07		756.07	9.15	11.33	4.93	18.35	23.85	66.53	153.58	-87.06
7+71.32		771.32	15.25	7.77	5.39	36.21	47.07	71.92	200.65	-128.73
7+81.68		781.68	10.36	9.07	3.23	25.01	32.52	75.15	233.17	-158.02
7+90		790.00	8.32	87.26	14.84	20.21	26.27	90.00	259.44	-169.44
7+96.27		796.27	6.27	88.14	20.37	15.01	19.52	110.36	278.95	-168.59
8+00		800.00	3.73	88.47	12.20	8.48	11.02	122.56	289.97	-167.41
8+06.85		806.85	6.85	89.04	22.52	14.89	19.36	145.08	309.34	-164.26
8+50		850.00	43.15	91.92	144.60	87.55	113.81	289.68	423.15	-133.47
9+00		900.00	50.00	84.93	163.75	132.36	172.07	453.43	595.22	-141.79
9+05	BK	905.00	5.00	82.88	15.54	15.24	19.81	468.97	615.02	-146.06
STRUCTURE B-22-0309										
10+80	AH	1080.00	0.00	63.13	58.59	0.00	0.00	468.97	615.02	-146.06
11+00		1100.00	20.00	74.18	50.86	37.69	49.00	519.82	664.02	-144.20
11+50		1150.00	50.00	86.63	148.90	58.97	76.66	668.72	740.69	-71.97
11+75		1175.00	25.00	90.54	82.02	19.14	24.88	750.74	765.57	-14.83
11+77.85		1177.85	2.85	13.16	5.47	2.16	2.81	756.22	768.38	-12.16
11+94.85		1194.85	17.00	13.40	8.36	13.93	18.11	764.58	786.49	-21.92
12+00		1200.00	5.15	13.69	2.58	5.43	7.05	767.16	793.55	-26.38
12+02.53		1202.53	2.53	13.69	1.28	3.18	4.14	768.44	797.69	-29.24
12+20.14		1220.14	17.61	13.52	8.87	30.94	40.23	777.32	837.91	-60.60
12+27.20		1227.20	7.06	13.45	3.53	16.60	21.58	780.84	859.50	-78.65
12+45.45		1245.45	18.25	13.82	9.22	30.57	39.73	790.06	899.23	-109.17
12+50		1250.00	4.55	14.65	2.40	2.79	3.62	792.46	902.86	-110.40
12+98.54		1298.54	48.54	22.59	33.47	8.95	11.64	825.93	914.50	-88.56
13+67.24	BK	1367.24	68.70	6.86	37.47	0.00	0.00	863.40	914.50	-51.10

TOTALS 863 915

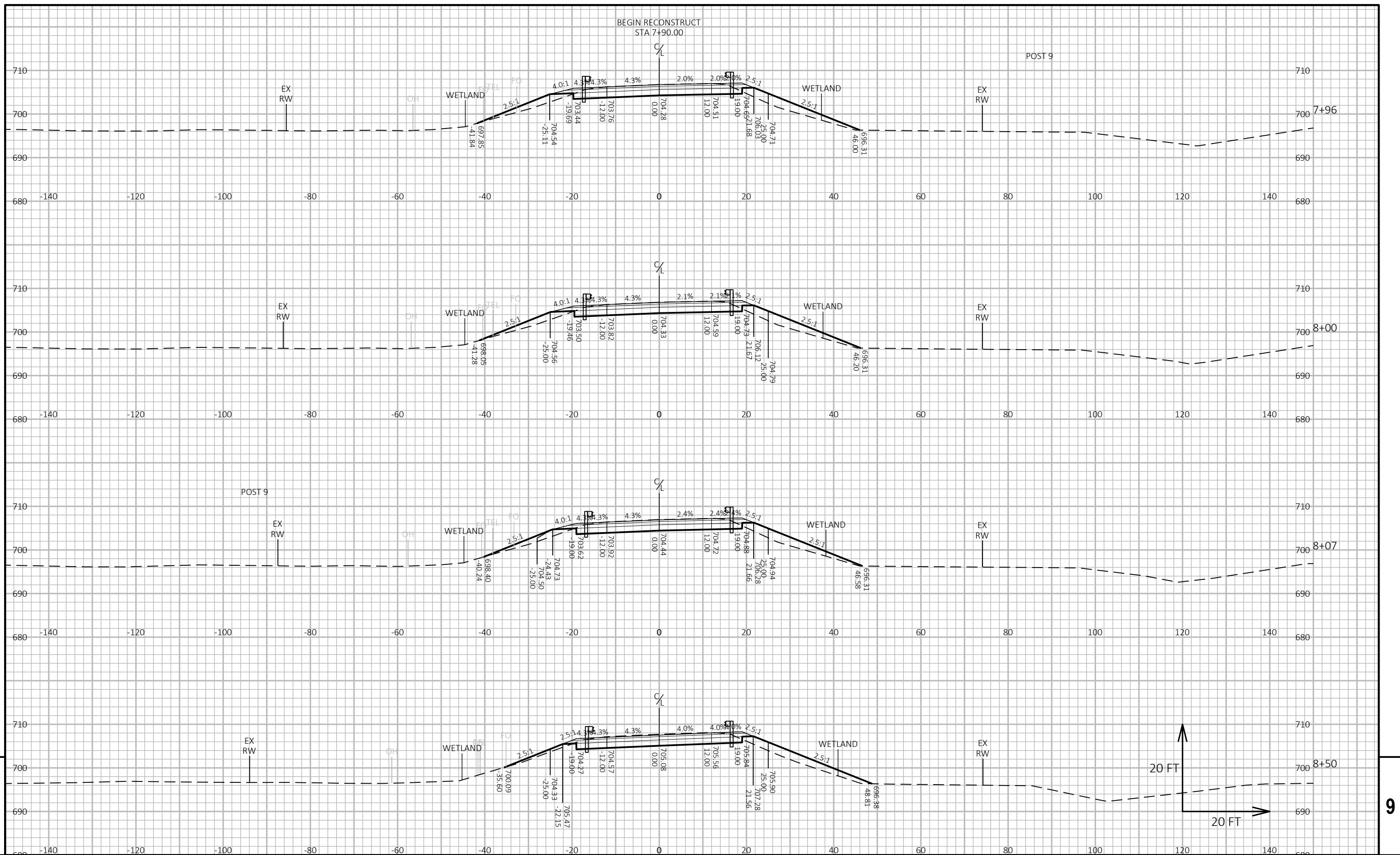
- (1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY
(2) - FILL EXPANSION 30%
(3) - EXISTING ASPHALTIC PAVEMENT IS INCLUDED IN COMMON EXCAVATION TOTALS



PROJECT NO: 5905-00-70	HWY: CTH G	COUNTY: GRANT	CROSS SECTIONS: CTH G	SHEET E
------------------------	------------	---------------	-----------------------	---------



PROJECT NO: 5905-00-70	HWY: CTH G	COUNTY: GRANT	CROSS SECTIONS: CTH G	SHEET E
------------------------	------------	---------------	-----------------------	---------



PROJECT NO:	5905-00-70
-------------	------------

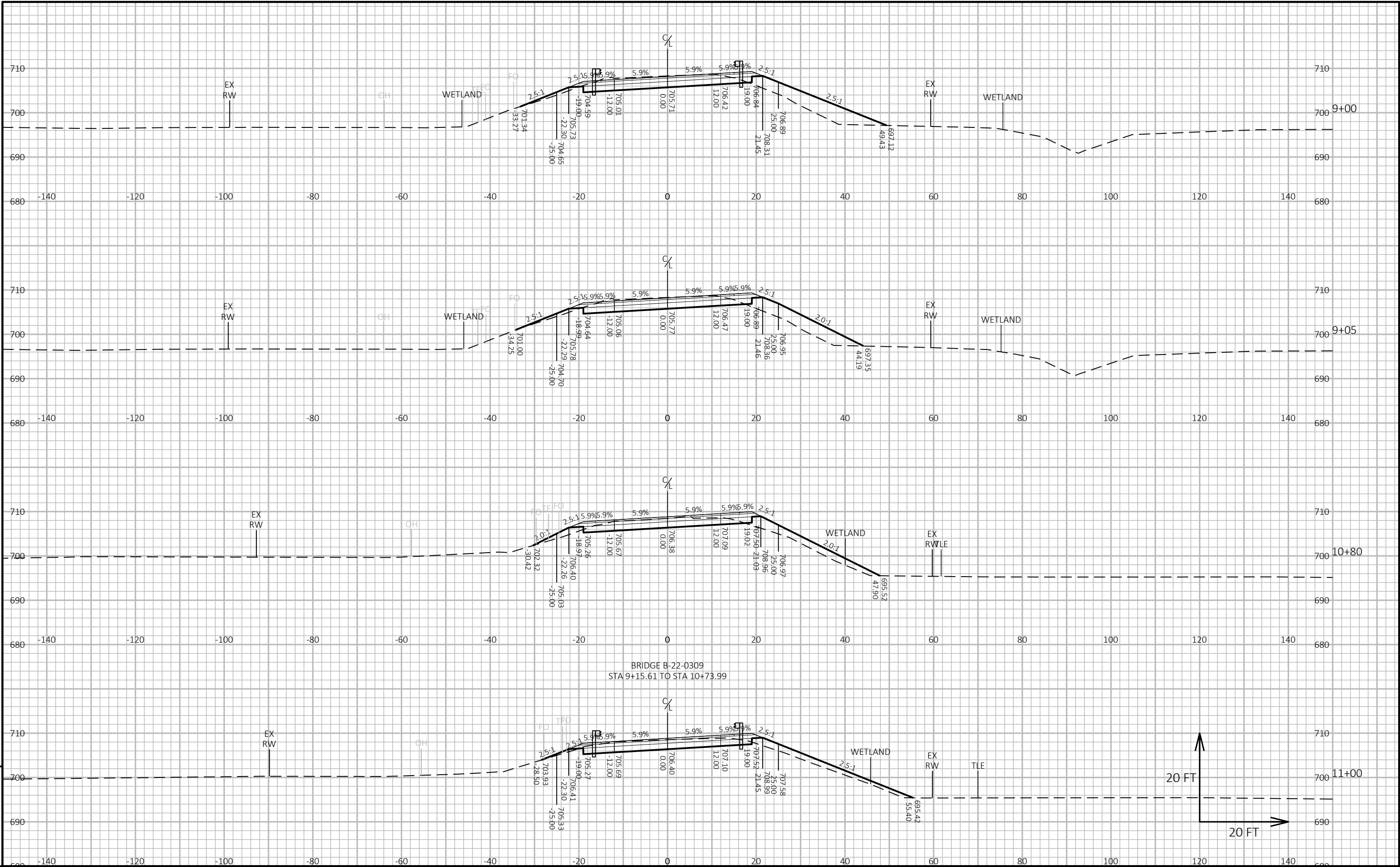
HWY: CTH G

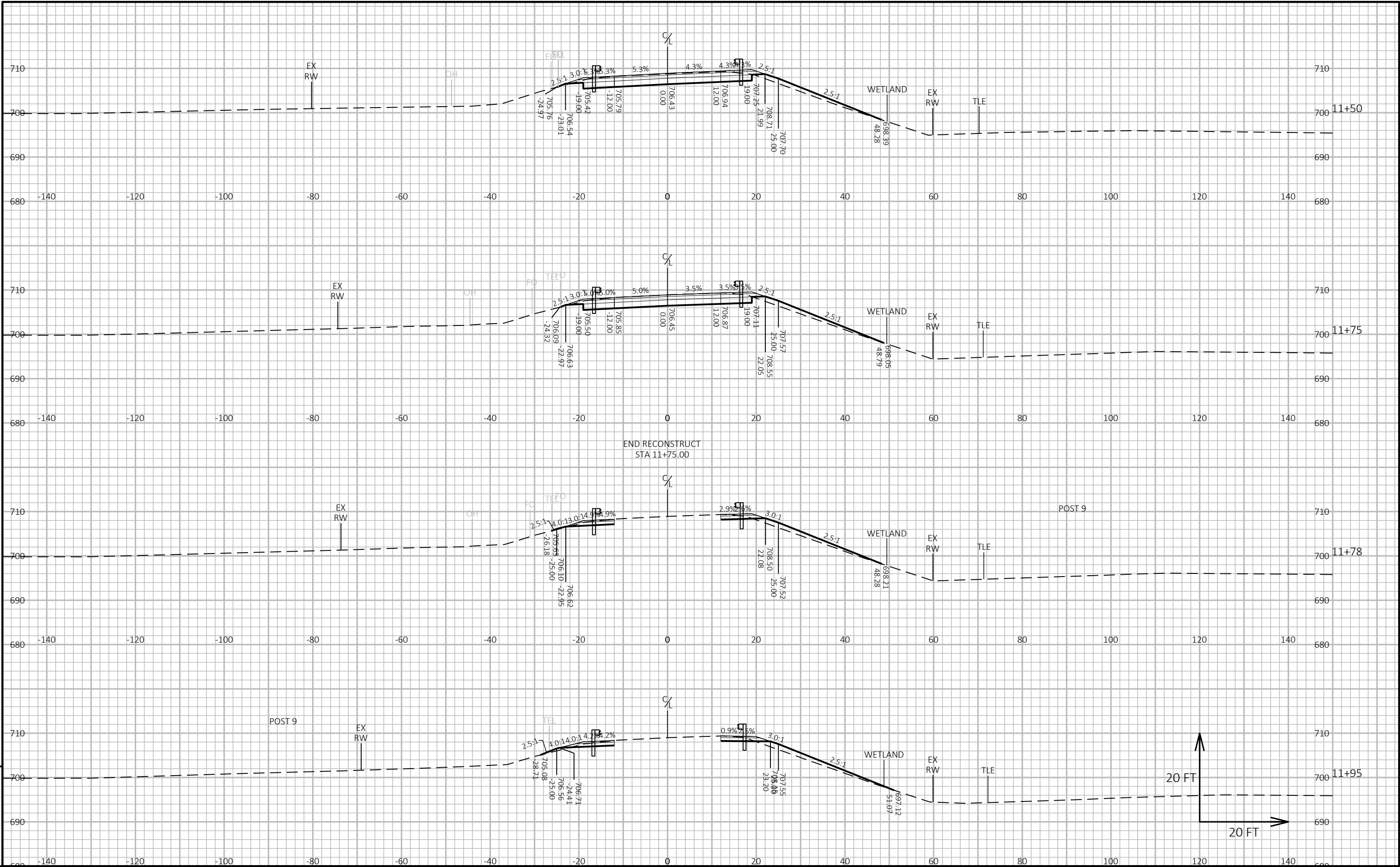
COUNTY: GRANT

CROSS SECTIONS:	CTH G
-----------------	-------

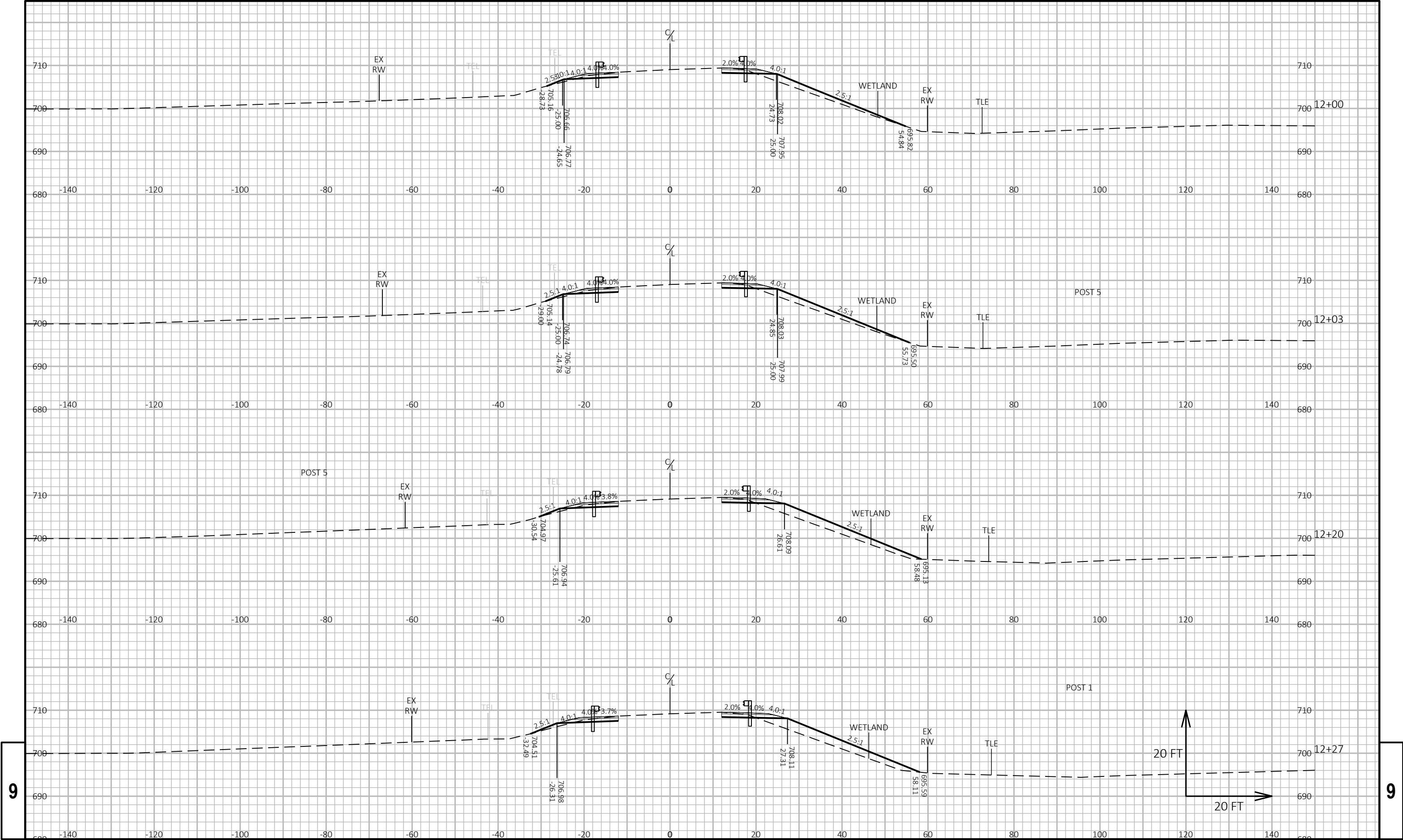
SHEET

--	--



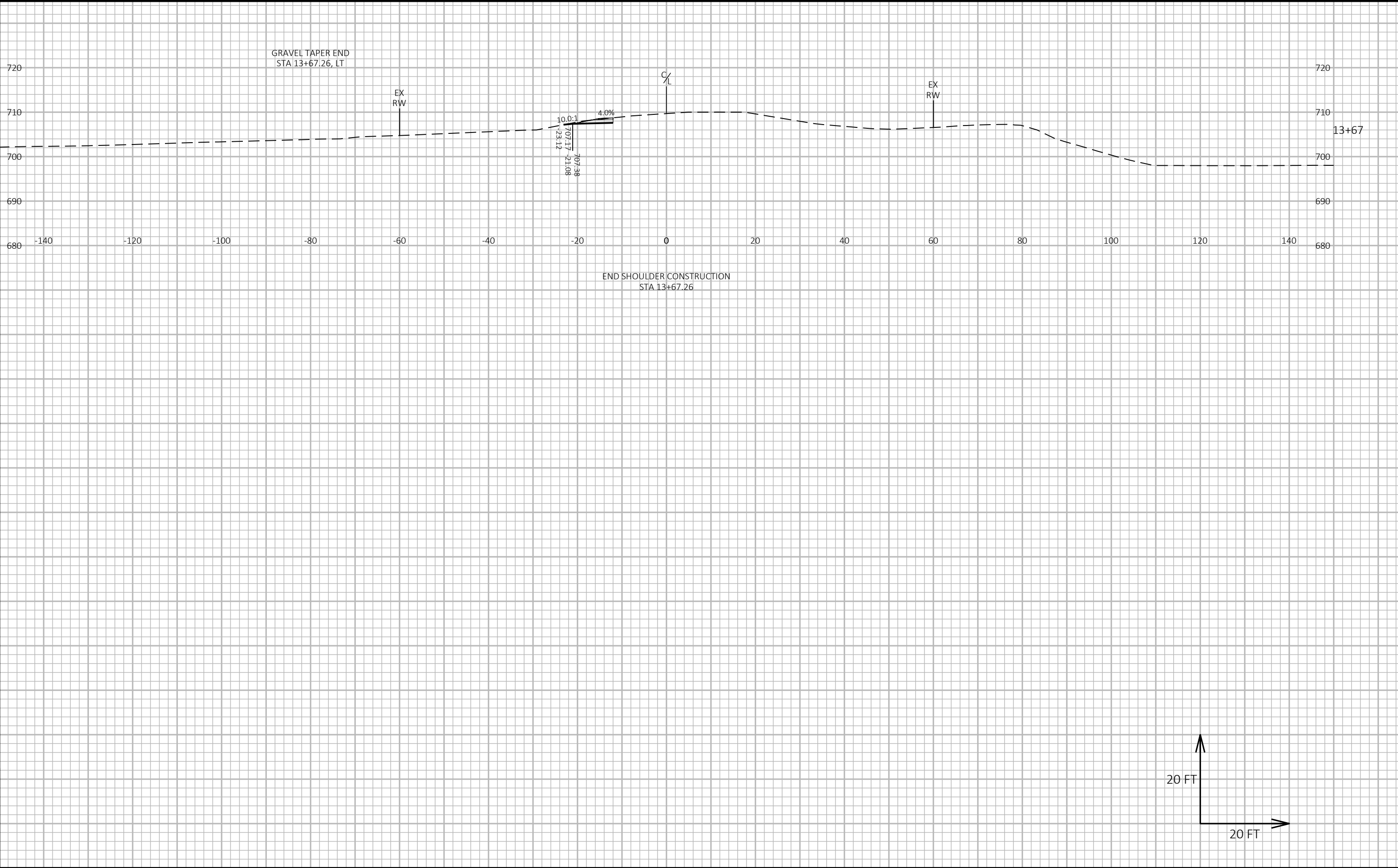


PROJECT NO: 5905-00-70	HWY: CTH G	COUNTY: GRANT	CROSS SECTIONS: CTH G	SHEET	E
------------------------	------------	---------------	-----------------------	-------	---



9

9

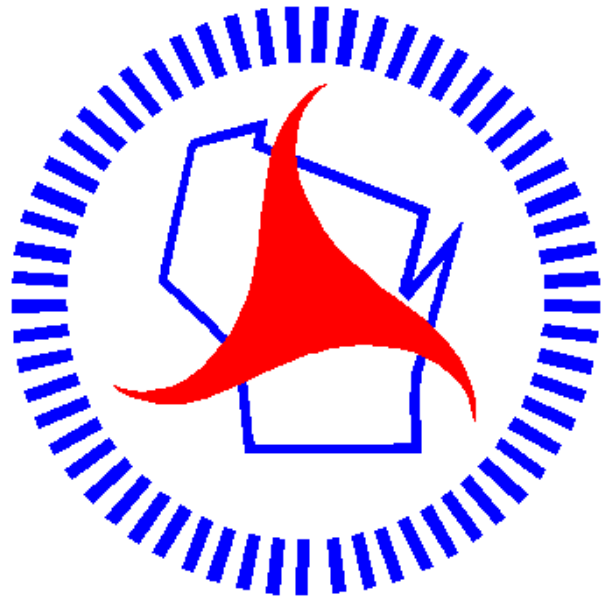


9

9

PROJECT NO: 5905-00-70	HWY: CTH G	COUNTY: GRANT	CROSS SECTIONS: CTH G	SHEET E
------------------------	------------	---------------	-----------------------	---------

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

<http://www.dot.wisconsin.gov>