

APPROVED FOR THE DEPARTMENT
04/25/2024

DATE: _____

(Signature)

E

LOCAL STREET SAUK COUNTY

ELEVATIONS ARE REFERENCED TO NAVD 88 (2018). GPS DERIVED
ELEVATIONS ARE BASED ON GEOID G18-WI.

PROFILE
GRADE LINE
ORIGINAL GROUND
MARSH OR ROCK PROFILE
(To be noted as such)
SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES
ELECTRIC
FIBER OPTIC
GAS
SANITARY SEWER
STORM SEWER
TELEPHONE
WATER
UTILITY PEDESTAL
POWER POLE
TELEPHONE POLE

— E —
 — FO —
 — G —
 — SAN —
 — SS —
 — T —
 — W —
 ♀
 ♂
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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 AREA THAT ARE NOT SHOWN.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

WETLANDS ARE PRESENT. AREAS OUTSIDE THE SLOPE INTERCEPTS SHALL NOT BE DISTURBED IN WETLAND AREAS.

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. THE ENGINEER MAY MODIFY LOCATIONS AS NEEDED. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

ASPHALTIC SURFACE QUANTITIES WERE CALCULATED USING 112 LB/SY/IN.

MSA DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC.
ATTN: JOSH SWENO, P.E.
1702 PANKRATZ STREET
MADISON, WI 53704
PHONE: (608) 355-8852
EMAIL: JSWENO@MSA-PS.COM

DNR LIAISON

DEPARTMENT OF NATURAL RESOURCES
ATTN.: ANDY BARTA
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
PHONE: (608) 235-2955
EMAIL: ANDREW.BARTA@WISCONSIN.GOV

TOWN CONTACT

TOWN OF FREEDOM
ATTN: DENNIS REHR
P.O. BOX 176
ROCK SPRINGS, WI 53961
PHONE: (608) 393-4165
EMAIL: DREHR.FREEDOM.TOWNOF@GMAIL.COM

UTILITIES

SAUK COUNTY
ATTN: IAN CRAMMOND
510 BROADWAY STREET
BARABOO, WI 53913
PHONE: (608) 355-4415
EMAIL: IAN.CRAMMOND@SAUKCOUNTYWI.COM

ALLIANT ENERGY
ATTN: MICHAEL LONG
520 COMMERCE AVENUE
BARABOO, WI 53913
PHONE: (608) 356-0608
EMAIL: LONG3990@GMAIL.COM

*DENOTES UTILITIES THAT ARE NOT
DIGGERS HOTLINE MEMBERS



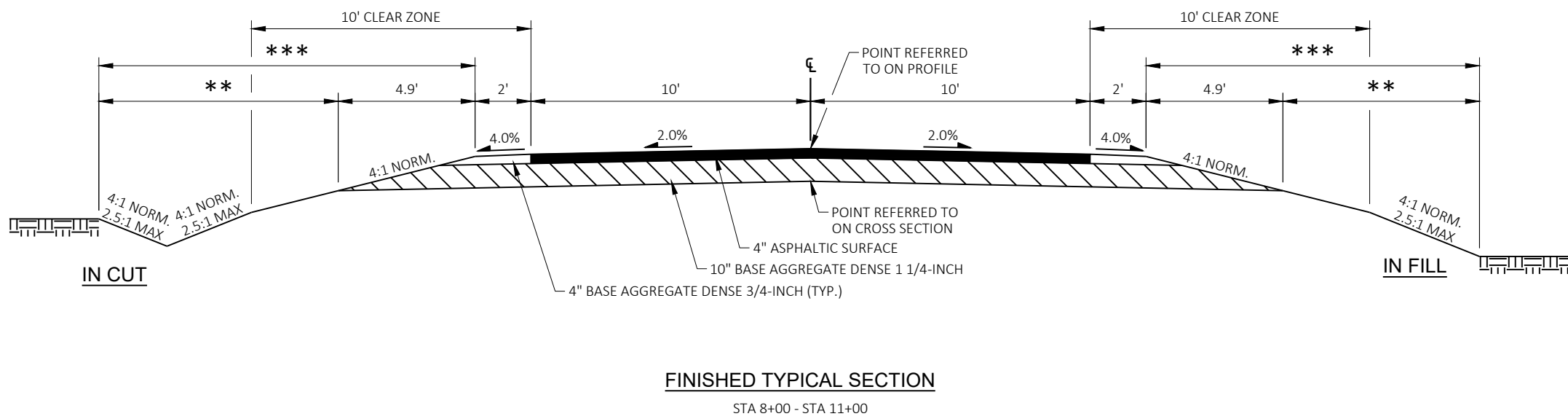
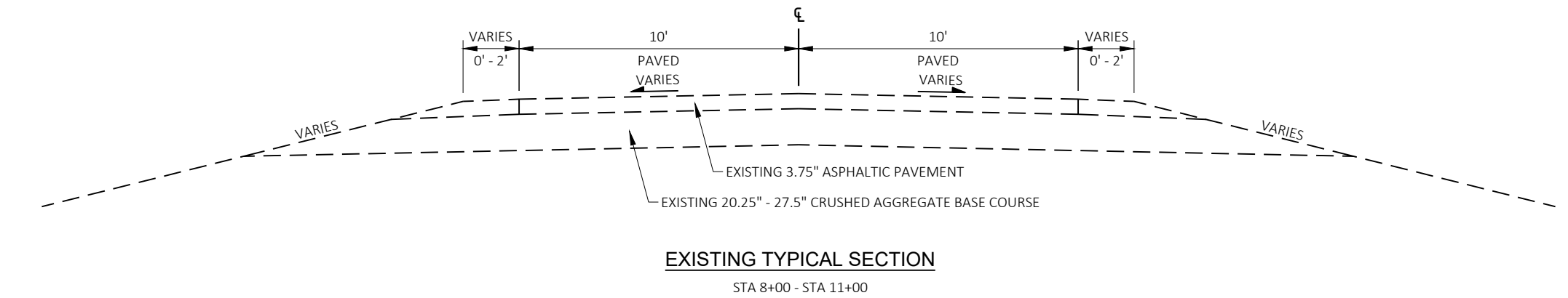
Dial **811** or (800) 242-8511

www.DiggersHotline.com

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 0.58 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.49 ACRES



** LIMITS OF SALVAGED TOPSOIL AND EROSION MAT URBAN CLASS I, TYPE B
*** LIMITS OF SEEDING MIXTURE #20, SEEDING TEMPORARY, & FERTILIZER TYPE B

Estimate Of Quantities

5976-00-76

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	1.000	1.000
0004	201.0205	Grubbing	STA	1.000	1.000
0006	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-56-146	EACH	1.000	1.000
0008	205.0100	Excavation Common	CY	224.000	224.000
0010	206.1001	Excavation for Structures Bridges (structure) 01. B-56-243	EACH	1.000	1.000
0012	210.1500	Backfill Structure Type A	TON	380.000	380.000
0014	213.0100	Finishing Roadway (project) 01. 5976-00-76	EACH	1.000	1.000
0016	305.0110	Base Aggregate Dense 3/4-Inch	TON	29.000	29.000
0018	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	467.000	467.000
0020	455.0605	Tack Coat	GAL	29.000	29.000
0022	465.0105	Asphaltic Surface	TON	128.000	128.000
0024	502.0100	Concrete Masonry Bridges	CY	174.000	174.000
0026	502.3200	Protective Surface Treatment	SY	216.000	216.000
0028	505.0400	Bar Steel Reinforcement HS Structures	LB	4,380.000	4,380.000
0030	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	22,310.000	22,310.000
0032	513.4061	Railing Tubular Type M	LF	105.000	105.000
0034	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0036	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,960.000	1,960.000
0038	606.0300	Riprap Heavy	CY	105.000	105.000
0040	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	170.000	170.000
0042	618.0100	Maintenance and Repair of Haul Roads (project) 01. 5976-00-76	EACH	1.000	1.000
0044	619.1000	Mobilization	EACH	1.000	1.000
0046	624.0100	Water	MGAL	11.000	11.000
0048	625.0500	Salvaged Topsoil	SY	621.000	621.000
0050	628.1504	Silt Fence	LF	1,090.000	1,090.000
0052	628.1520	Silt Fence Maintenance	LF	1,090.000	1,090.000
0054	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0056	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0058	628.2008	Erosion Mat Urban Class I Type B	SY	3,005.000	3,005.000
0060	628.6005	Turbidity Barriers	SY	390.000	390.000
0062	629.0210	Fertilizer Type B	CWT	0.500	0.500
0064	630.0120	Seeding Mixture No. 20	LB	17.000	17.000
0066	630.0200	Seeding Temporary	LB	9.000	9.000
0068	630.0500	Seed Water	MGAL	5.000	5.000
0070	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0072	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0074	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0076	642.5001	Field Office Type B	EACH	1.000	1.000
0078	643.0420	Traffic Control Barricades Type III	DAY	1,472.000	1,472.000
0080	643.0705	Traffic Control Warning Lights Type A	DAY	2,282.000	2,282.000
0082	643.0900	Traffic Control Signs	DAY	1,062.000	1,062.000
0084	643.5000	Traffic Control	EACH	1.000	1.000
0086	645.0111	Geotextile Type DF Schedule A	SY	60.000	60.000
0088	645.0120	Geotextile Type HR	SY	220.000	220.000
0090	650.4500	Construction Staking Subgrade	LF	250.000	250.000
0092	650.5000	Construction Staking Base	LF	250.000	250.000
0094	650.6501	Construction Staking Structure Layout (structure) 01. B-56-0243	EACH	1.000	1.000
0096	650.9911	Construction Staking Supplemental Control (project) 01. 5976-00-76	EACH	1.000	1.000
0098	650.9920	Construction Staking Slope Stakes	LF	250.000	250.000

Estimate Of Quantities

5976-00-76

Line	Item	Item Description	Unit	Total	Qty
0100	690.0150	Sawing Asphalt	LF	40.000	40.000
0102	715.0502	Incentive Strength Concrete Structures	DOL	1,044.000	1,044.000
0104	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000
0106	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0108	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0110	SPV.0090	Special 01. Flashing Stainless Steel	LF	91.000	91.000

CLEARING AND GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0105	201.0205
					CLEARING	GRUBBING
CATEGORY	STATION	TO	STATION	LOCATION	STA	STA
0010	9+25	-	10+25	MAINLINE	1	1
TOTAL 0010					1	1

EXCAVATION COMMON

CATEGORY	STATION	TO	STATION	LOCATION	205.0100	FILL	EXPANDED FILL	WASTE
					EXCAVATION			
CATEGORY	STATION	TO	STATION	LOCATION	COMMON	CY (1)	CY (2)	CY
					CY (3)			
0010	8+00	-	9+75	MAINLINE	166	30	39	127
0010	10+25	-	11+00	MAINLINE	58	49	63	-5
TOTAL 0010					224			

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

BASE AGGREGATE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	624.0100
					BASE	BASE	
CATEGORY	STATION	TO	STATION	LOCATION	AGGREGATE	AGGREGATE	
					DENSE 3/4-INCH	DENSE 1 1/4-INCH	WATER
CATEGORY	STATION	TO	STATION	LOCATION	TON	TON	MGAL
0010	8+00	-	9+74.71	MAINLINE	21	330	8
0010	10+25.30	-	11+00	MAINLINE	8	137	3
TOTAL 0010					29	467	11

ASPHALTIC SURFACE

CATEGORY	STATION	TO	STATION	LOCATION	455.0605	465.0105
					TACK COAT	ASPHALTIC
CATEGORY	STATION	TO	STATION	LOCATION	GAL	SURFACE
						TON
0010	8+00	-	9+75	MAINLINE	20	89
0010	10+25	-	11+00	MAINLINE	9	39
TOTAL 0010					29	128

RESTORATION ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0500	628.2008	629.0210	630.0120	630.0200	630.0500
					SALVAGED	EROSION MAT	FERTILIZER TYPE	SEEDING	SEEDING	SEED WATER
					TOPSOIL	URBAN CLASS I	B	MIXTURE NO. 20	TEMPORARY	MGAL
					SY	SY	CWT	LB	LB	
0010	8+00	-	9+59	LT	170	727	0.1	5	2	1
0010	8+00	-	9+70	RT	182	776	0.1	5	3	1
0010	10+32	-	11+00	LT	111	691	0.1	3	2	1
0010	10+43	-	11+00	RT	77	419	0.1	2	1	1
0010	UNDISTRIBUTED			---	81	392	0.1	2	1	1
TOTAL 0010					621	3,005	0.5	17	9	5

EROSION CONTROL ITEMS

					628.1504	628.1520	628.1905	628.1910	628.6005
					SILT FENCE LF	SILT FENCE MAINTENANCE LF	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	TURBIDITY BARRIERS SY
CATEGORY	STATION	TO	STATION	LOCATION					
0010	8+00	-	9+69	MAINLINE, LT & RT	363	363	-	-	-
0010	9+63	-	-	PIER, EXISTING BRIDGE	-	-	-	-	150
0010	10+29	-	-	PIER, EXISTING BRIDGE	-	-	-	-	162
0010	10+37	-	11+00	MAINLINE, LT & RT	508	508	-	-	-
0010	-	-	-	UNDISTRIBUTED	219	219	3	2	78
TOTAL 0010					1,090	1,090	3	2	390

TRAFFIC CONTROL

					643.0420			643.0705			643.0900
			TRAFFIC CONTROL BARRICADES TYPE III	TRAFFIC CONTROL BARRICADES TYPE III	TRAFFIC CONTROL WARNING LIGHTS TYPE A	TRAFFIC CONTROL WARNING LIGHTS TYPE A	TRAFFIC CONTROL SIGNS EACH	TRAFFIC CONTROL SIGNS EACH	TRAFFIC CONTROL SIGNS EACH	TRAFFIC CONTROL SIGNS EACH	TRAFFIC CONTROL SIGNS EACH
CATEGORY	LOCATION	DAYS	EACH	DAY	EACH	DAY	DAY	DAY	DAY	DAY	DAY
0010	JUNCTION WITH CTH PF	74	2	148	4	296	4	296			
0010	BEGIN PROJECT	74	7	518	10	740	2	148			
0010	END PROJECT	74	7	518	10	740	4	296			
0010	JUNCTION WITH CTH W	74	2	148	4	296	3	222			
0010	UNDISTRIBUTED	---	---	140	---	210	---	100			
TOTAL 0010				1,472		2,282		1,062			

SAWING ASPHALT

CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT LF
0010	8+00	MAINLINE	20
0010	11+00	MAINLINE	20
TOTAL 0010			40

SIGNS

			634.0612 POSTS WOOD 4X6-INCH X 12- FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
0010	9+69	MAINLINE, LT	1	3	1	W5-52L
0010	9+76	MAINLINE, RT	1	3	1	W5-52R
0010	10+24	MAINLINE, LT	1	3	1	W5-52R
0010	10+31	MAINLINE, RT	1	3	1	W5-52L
TOTAL 0010			4	12	4	

CONSTRUCTION STAKING

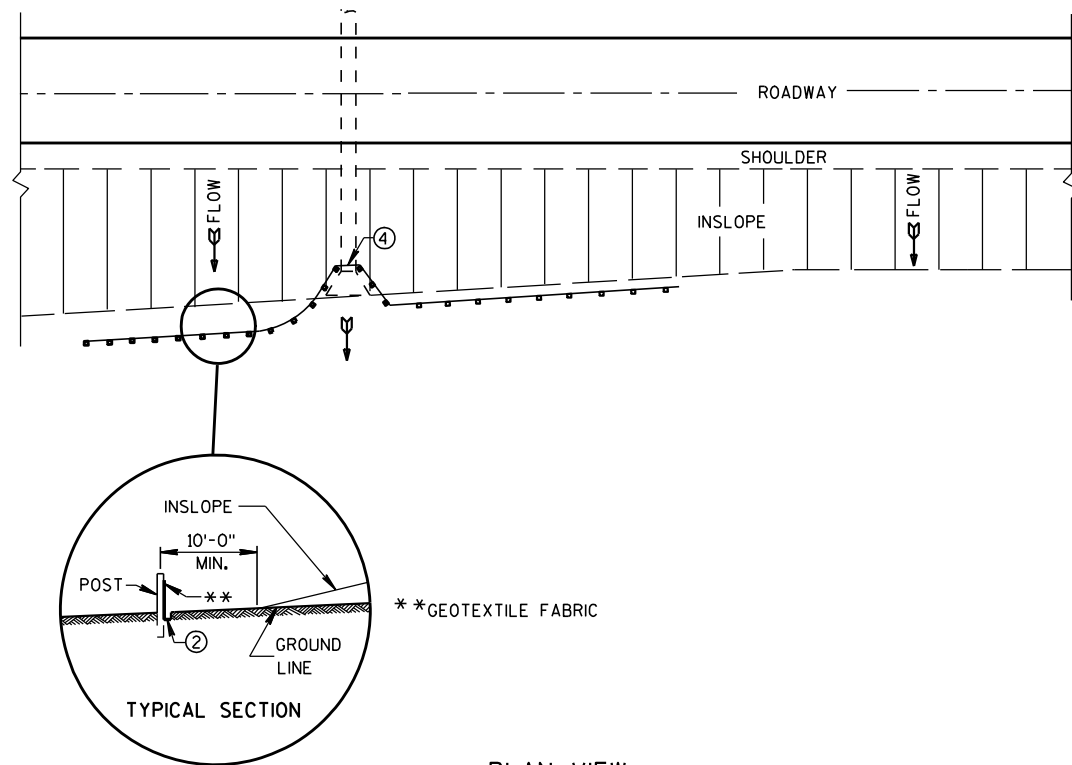
			650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
0010	8+00	- 9+75	175	175	175
0010	10+25	- 11+00	75	75	75
TOTAL 0010			250	250	250

BIRD DETERRENT SYSTEM

			999.2000.S.01 INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM STATION 10+00 EACH
0010	10+00	P-56-146	1
TOTAL 0010			1

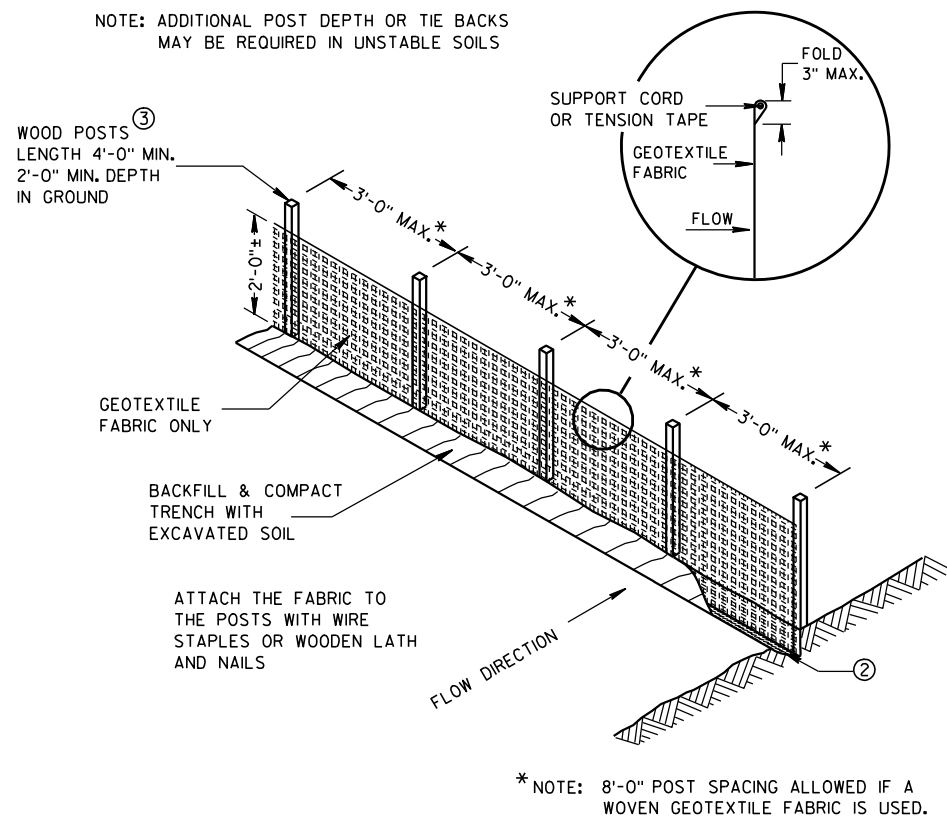
Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

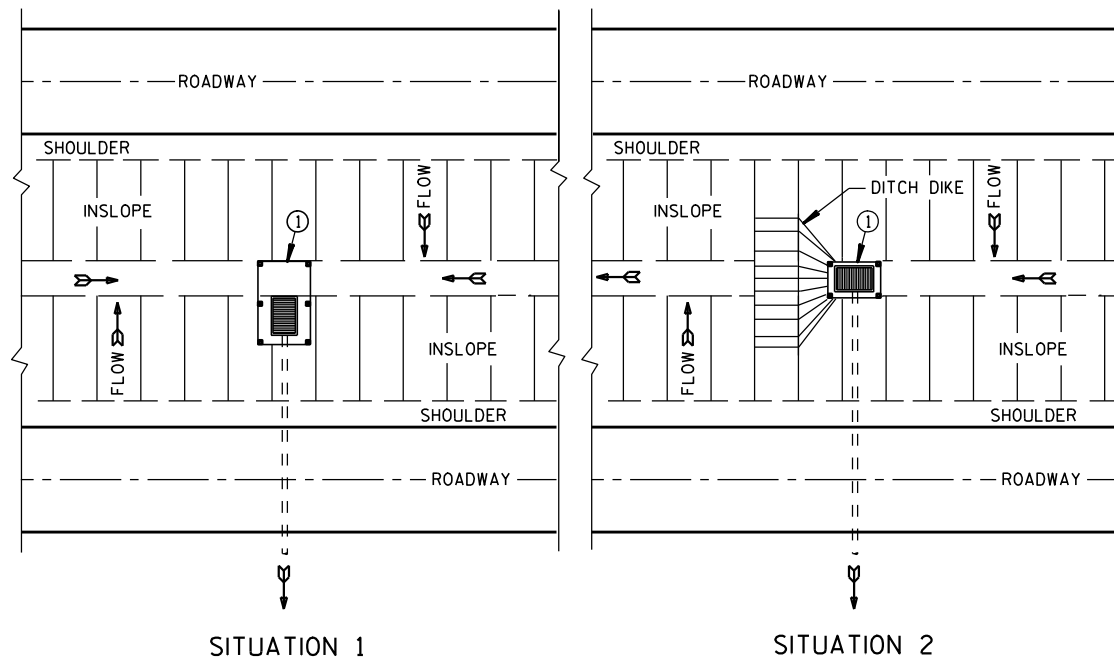


TYPICAL APPLICATION OF SILT FENCE

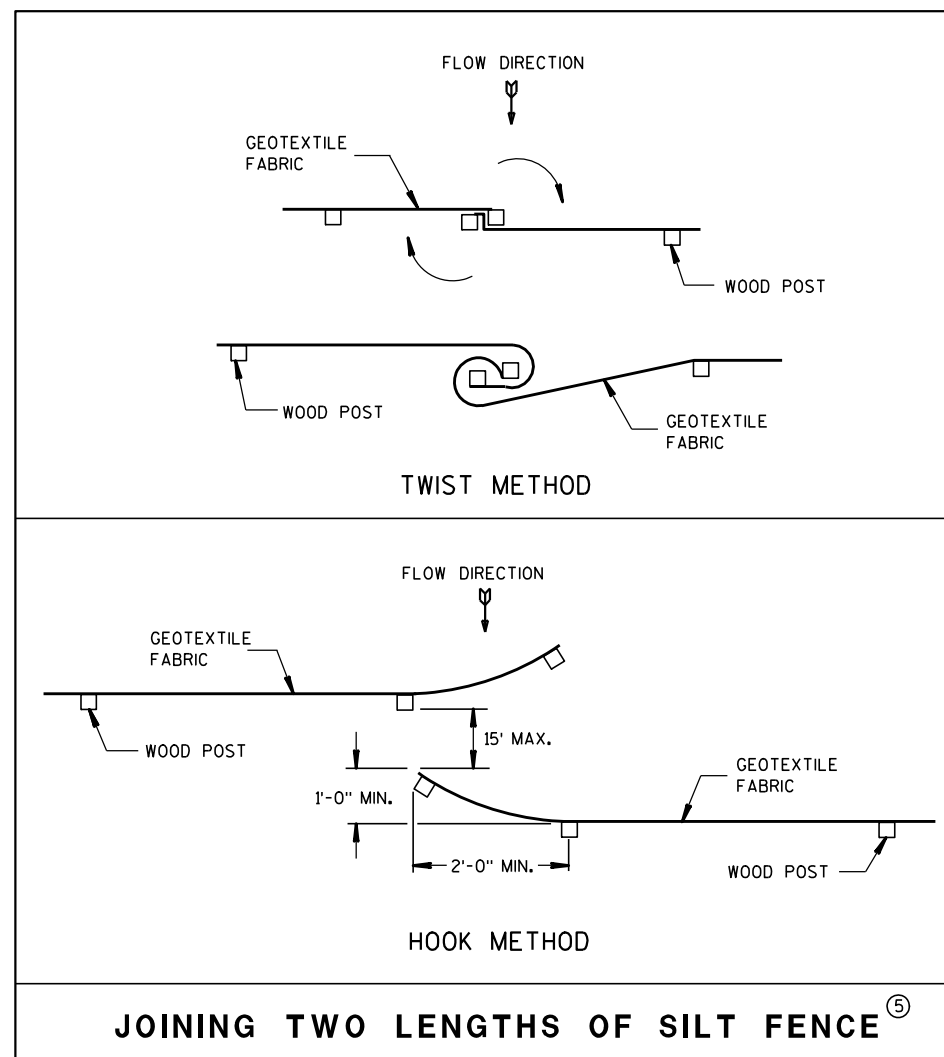
NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS



SILT FENCE



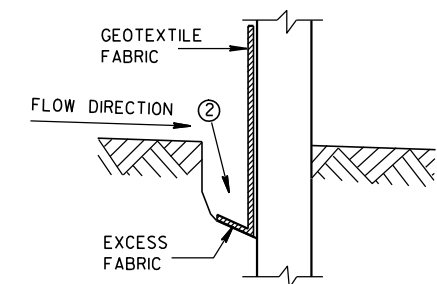
SILT FENCE AT MEDIAN SURFACE DRAINS



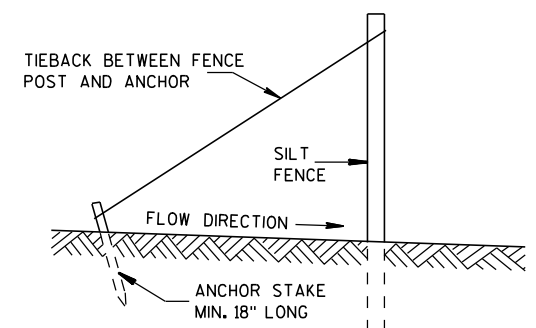
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

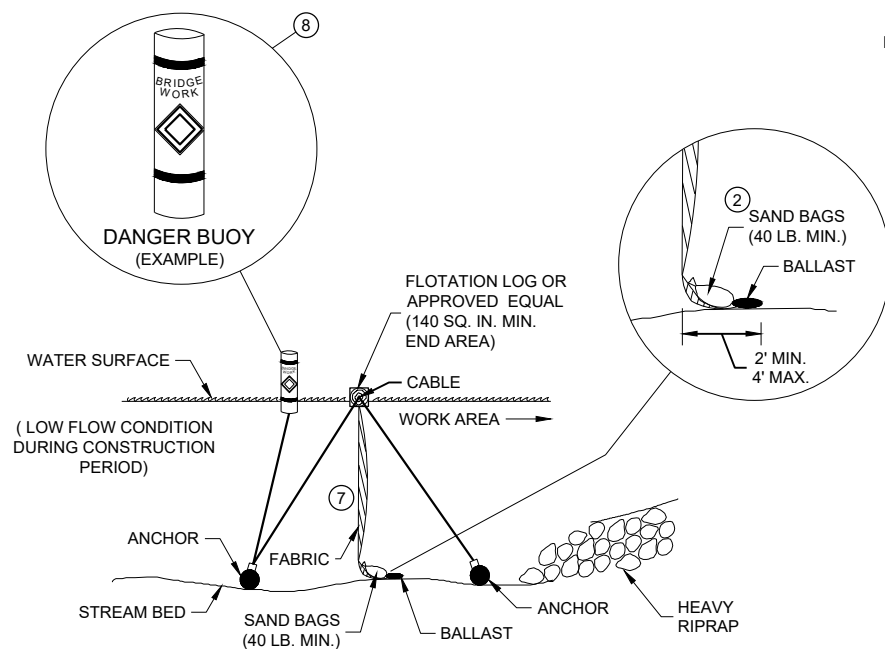
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05
DATE

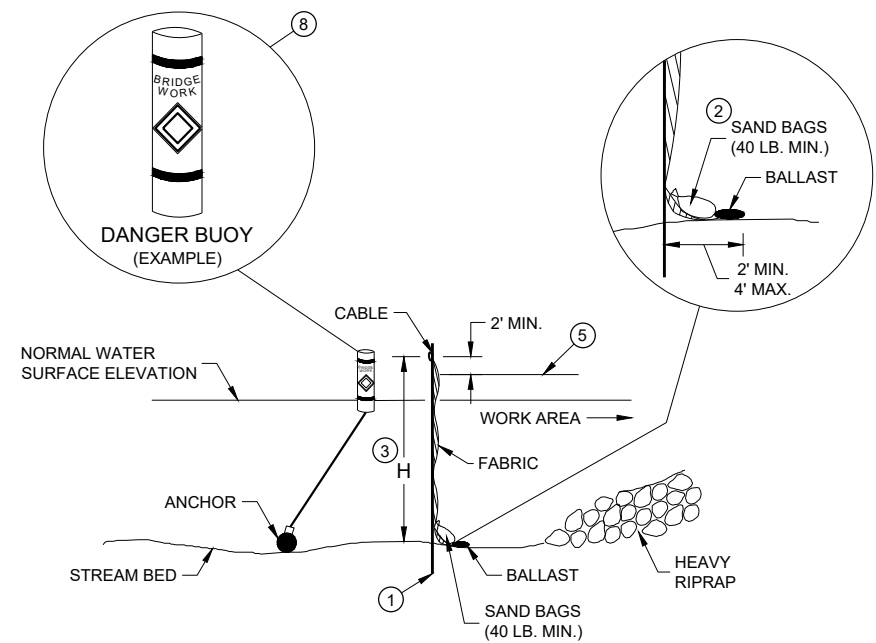
FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



SECTION B - B

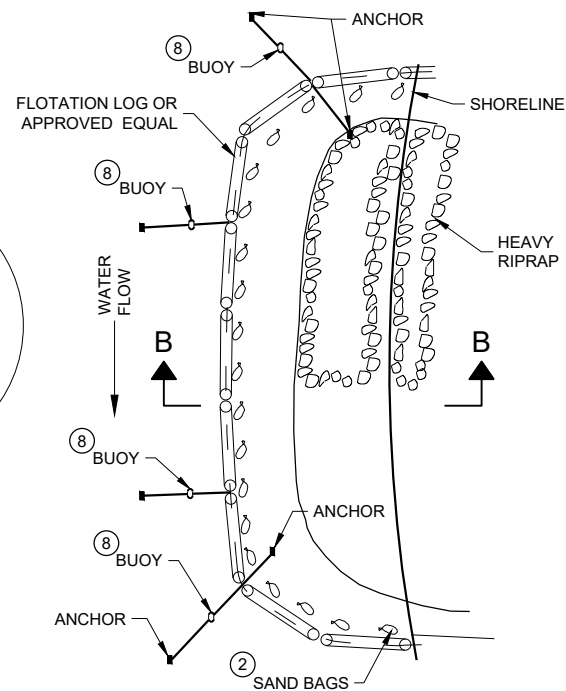
TURBIDITY BARRIER - FLOAT ALTERNATIVE CAUTION - SEE NOTE 6



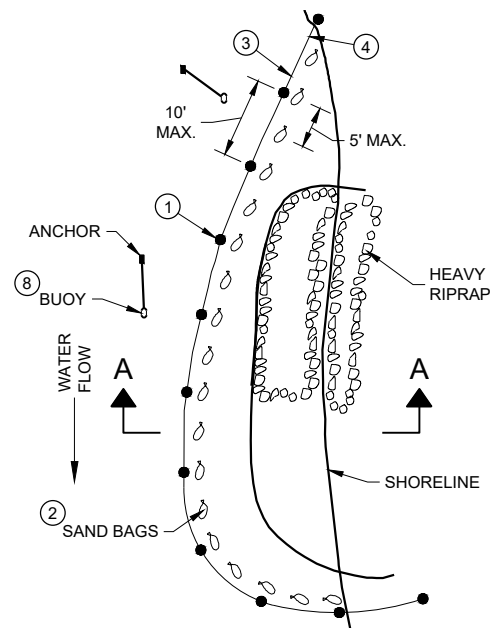
SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS



PLAN VIEW



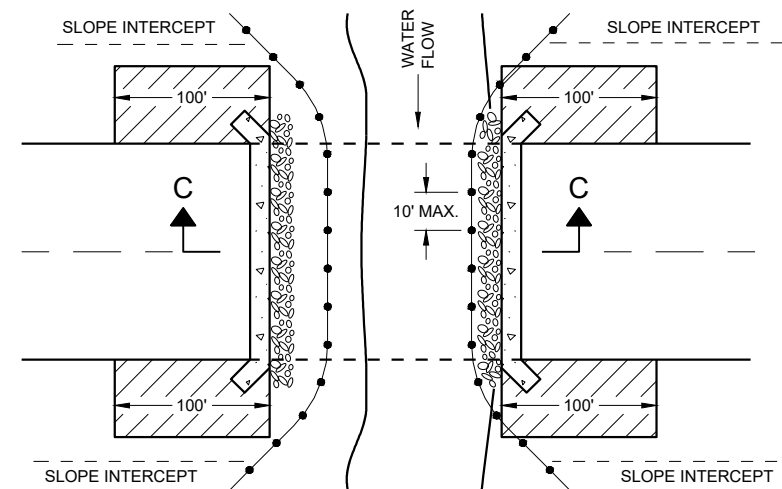
PLAN VIEW

GENERAL NOTES

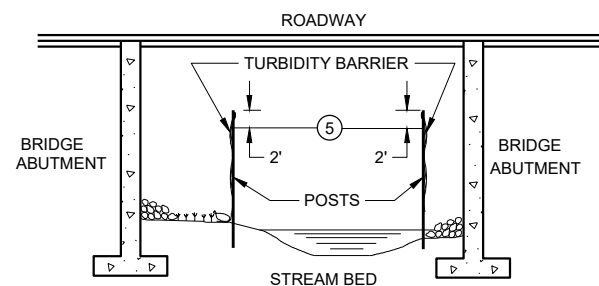
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/4/02

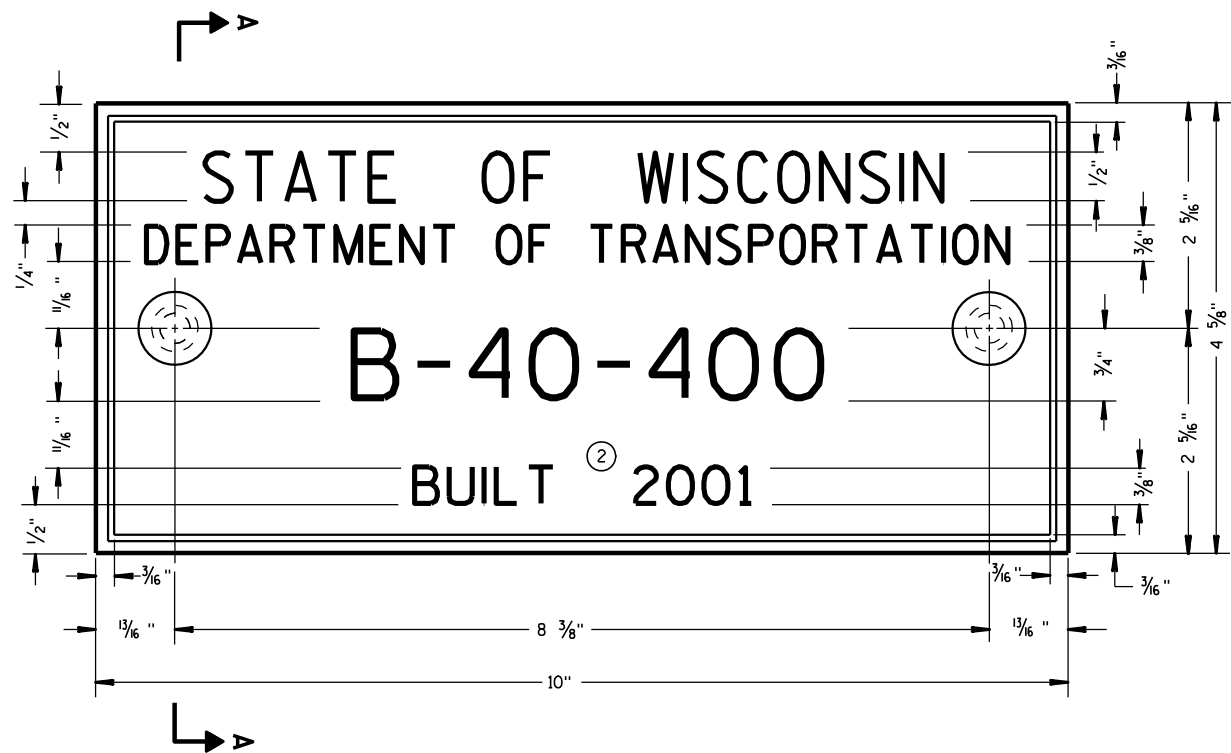
DATE

FHWA

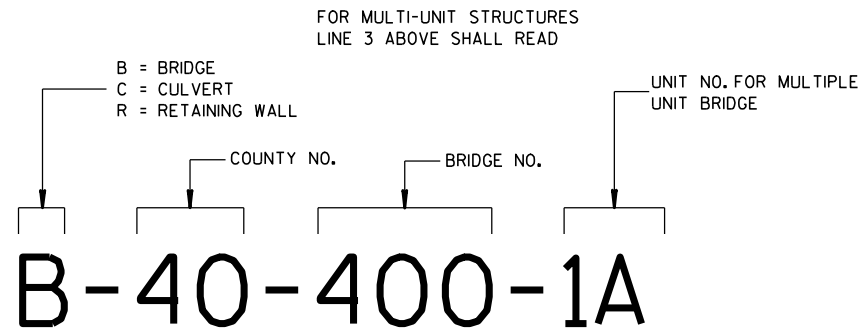
/S/ Beth Cannestra

CHIEF ROADWAY DEVELOPMENT

ENGINEER



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



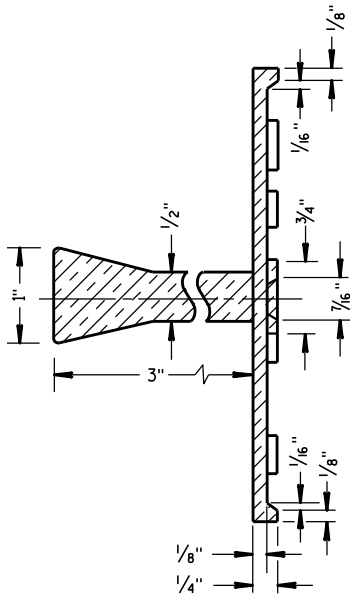
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

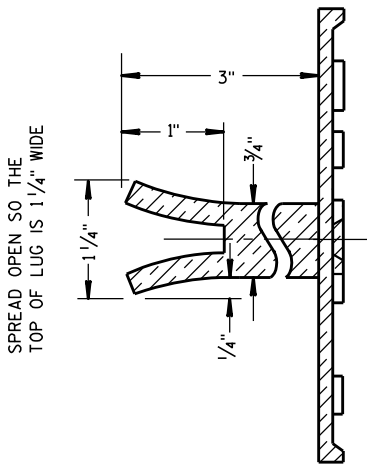
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

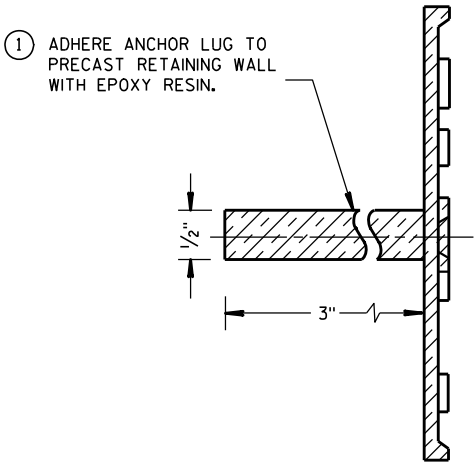
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A

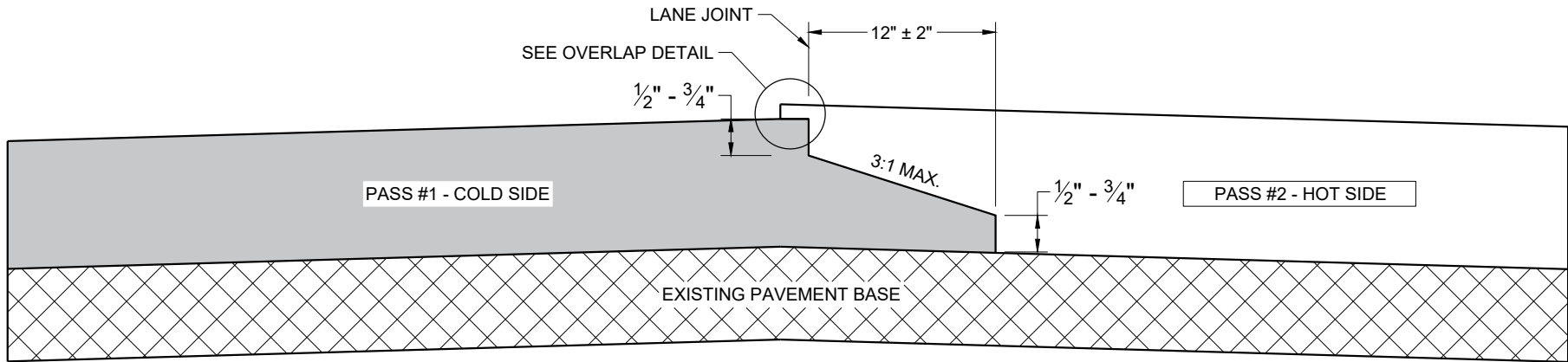


ALTERNATE LUG

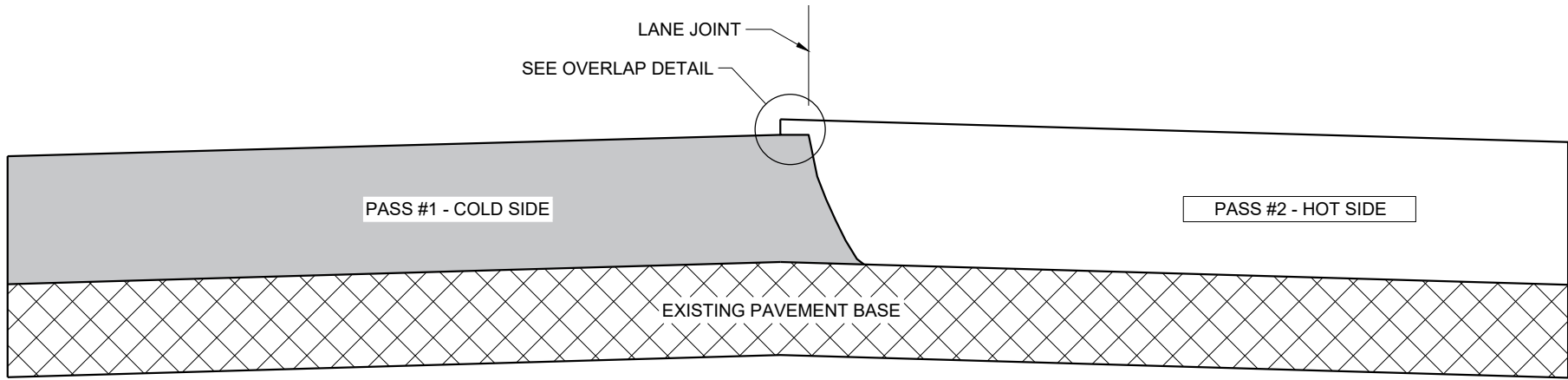


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

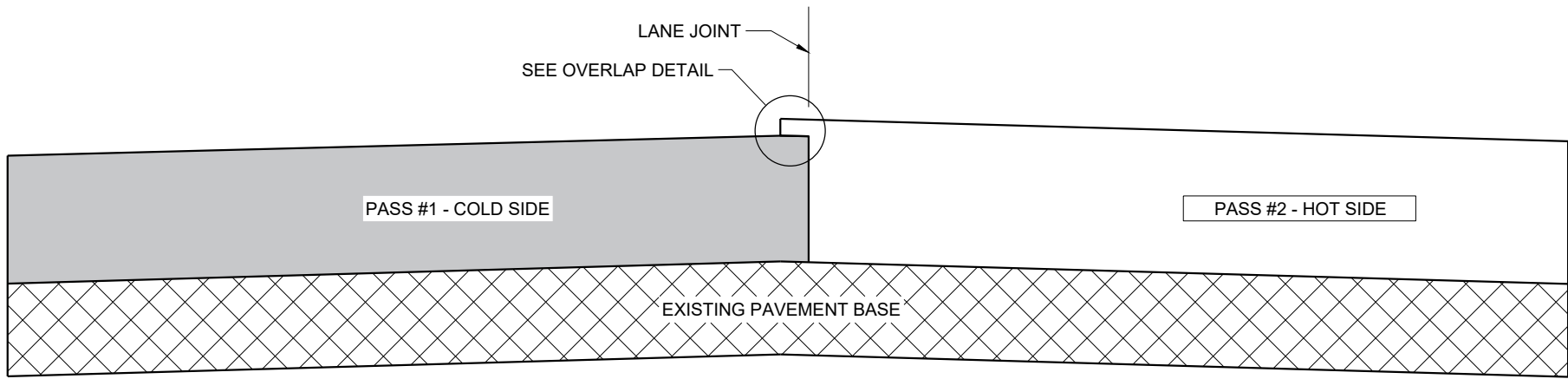
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/26/10 DATE	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

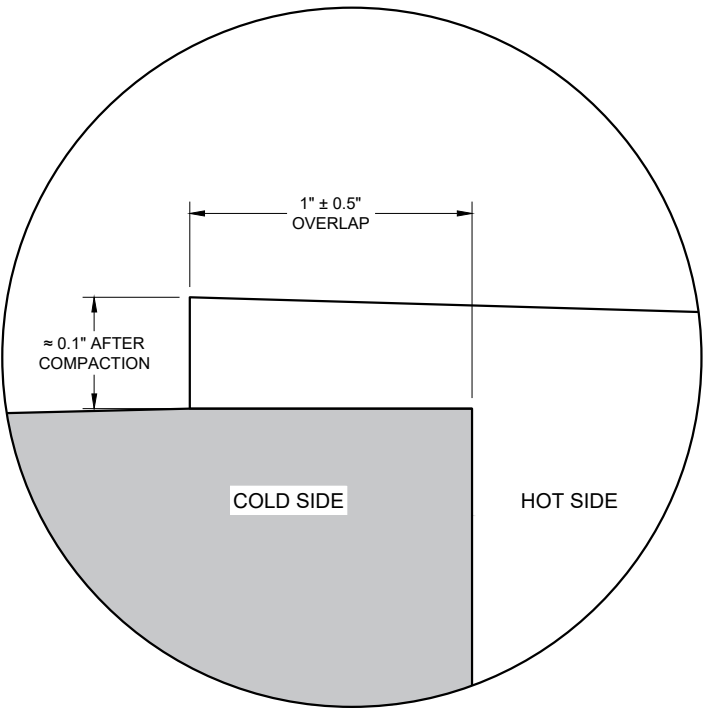
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ 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.

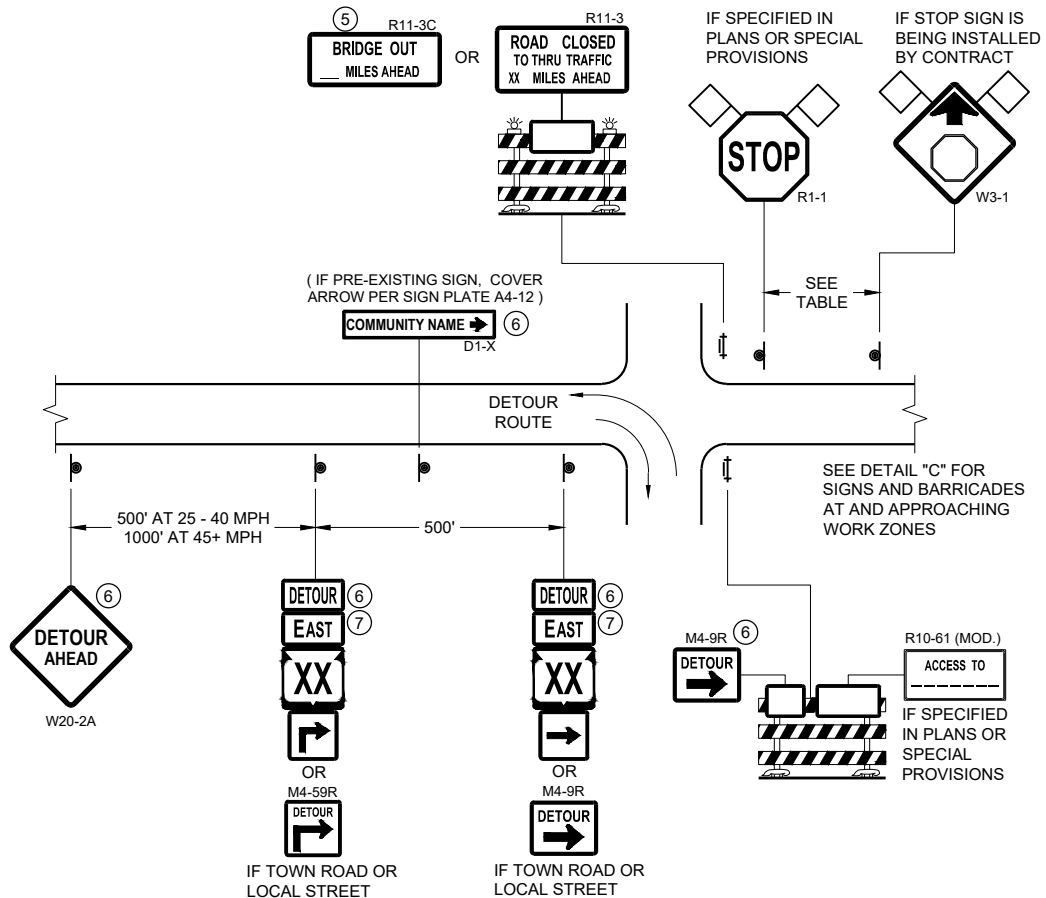


OVERLAP DETAIL (TYPICAL)

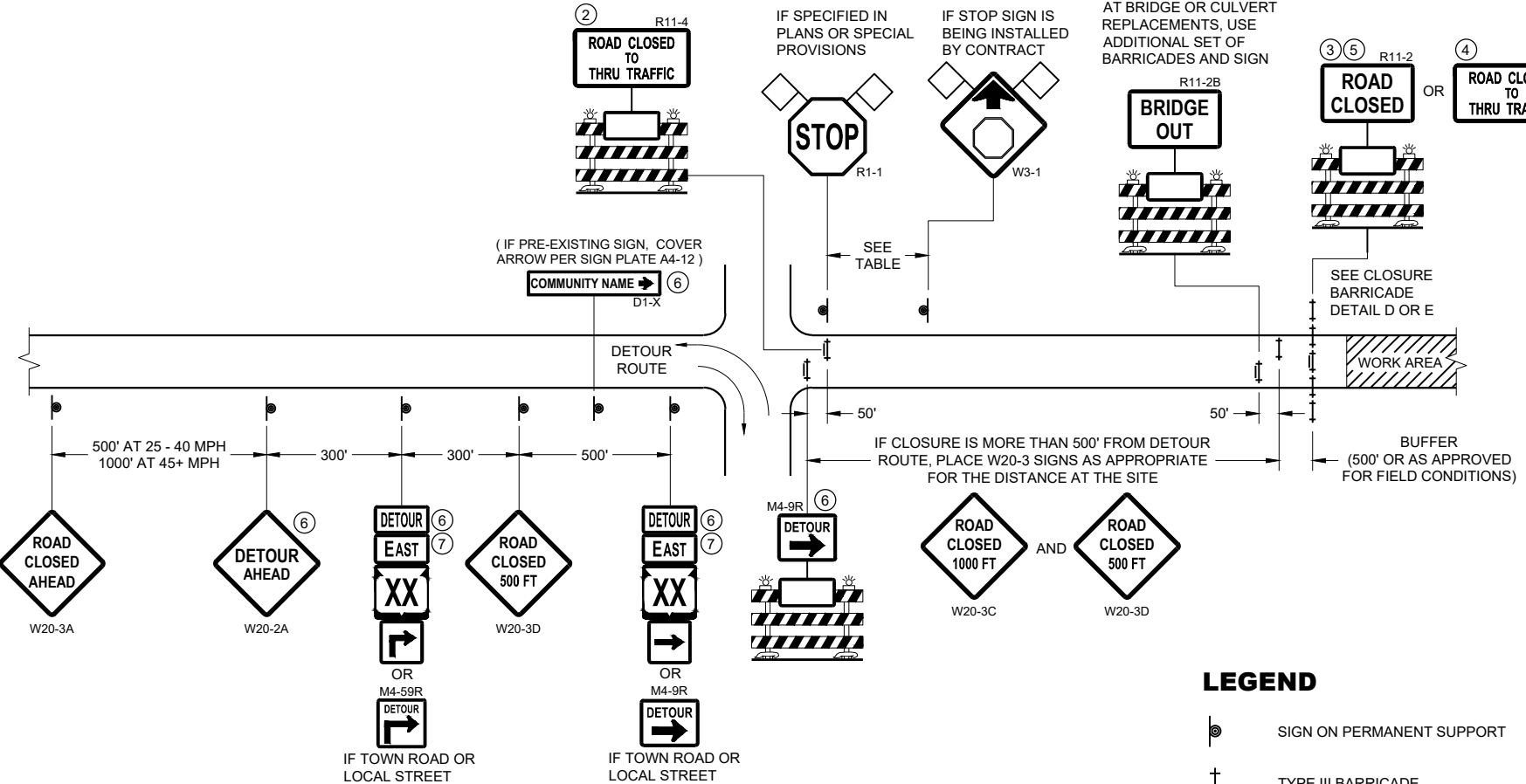
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



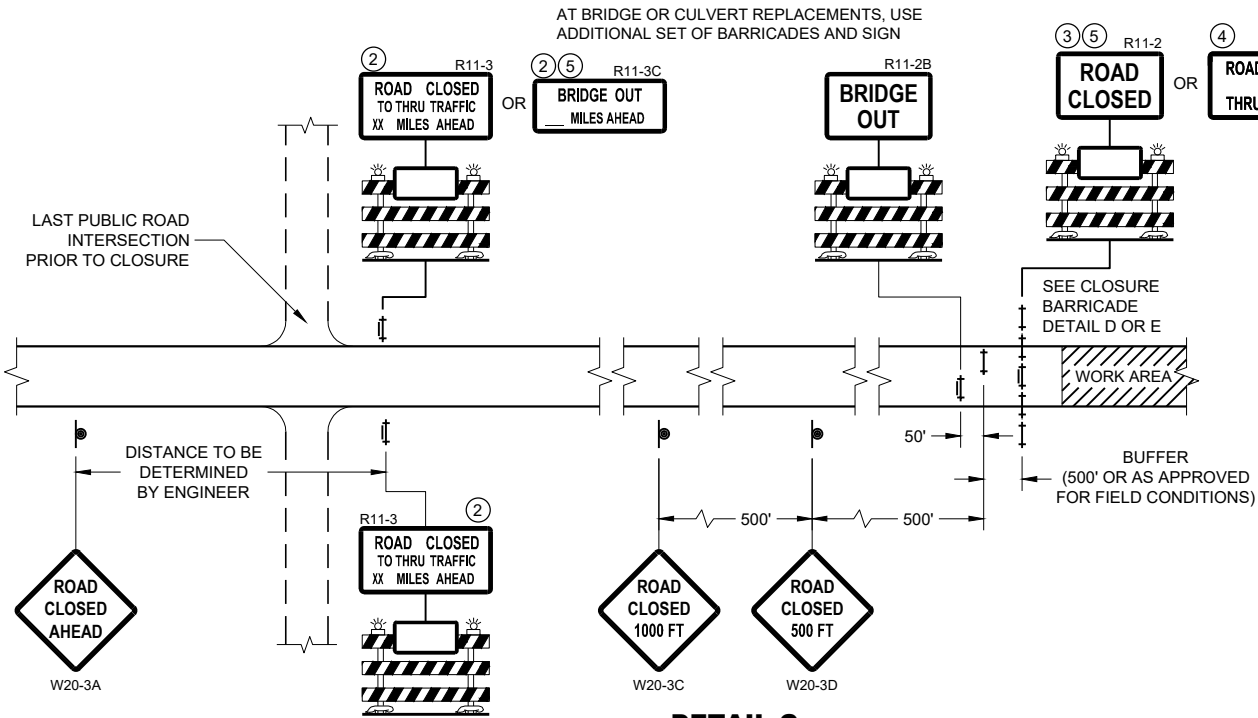
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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

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

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

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



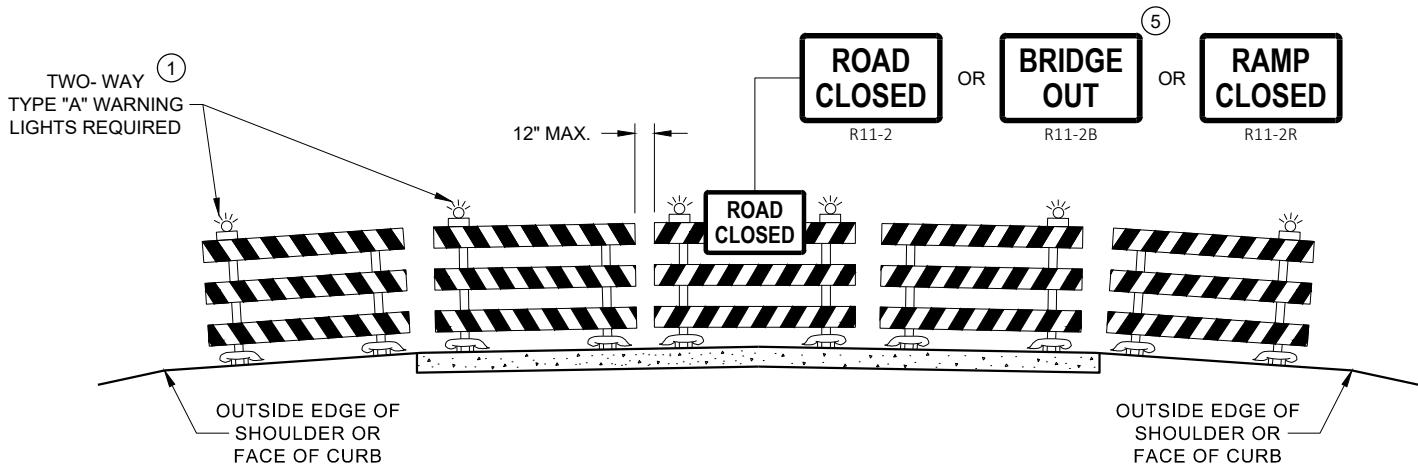
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

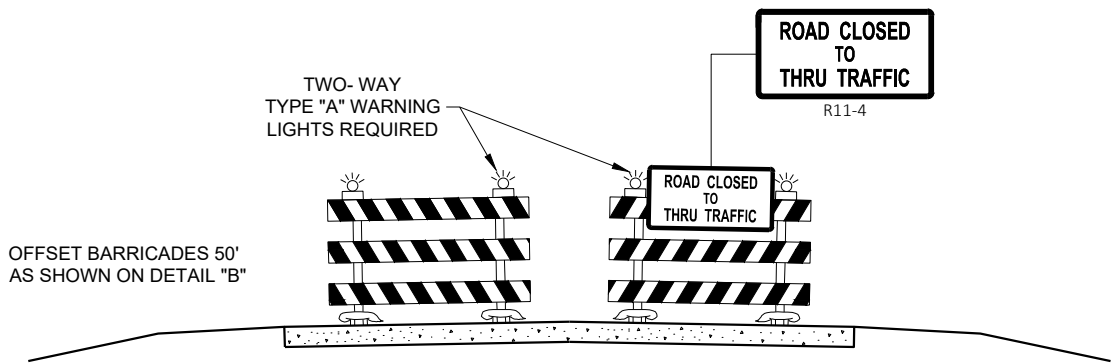
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

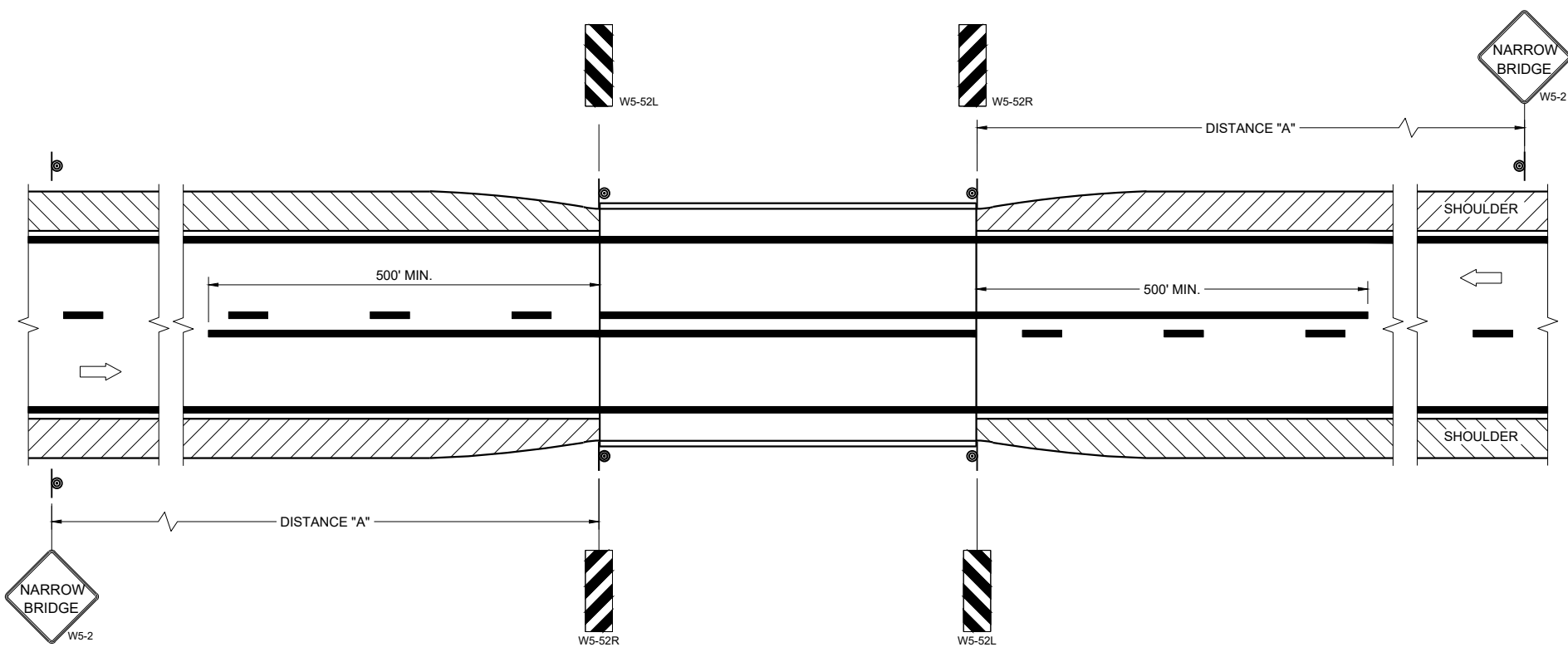
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES

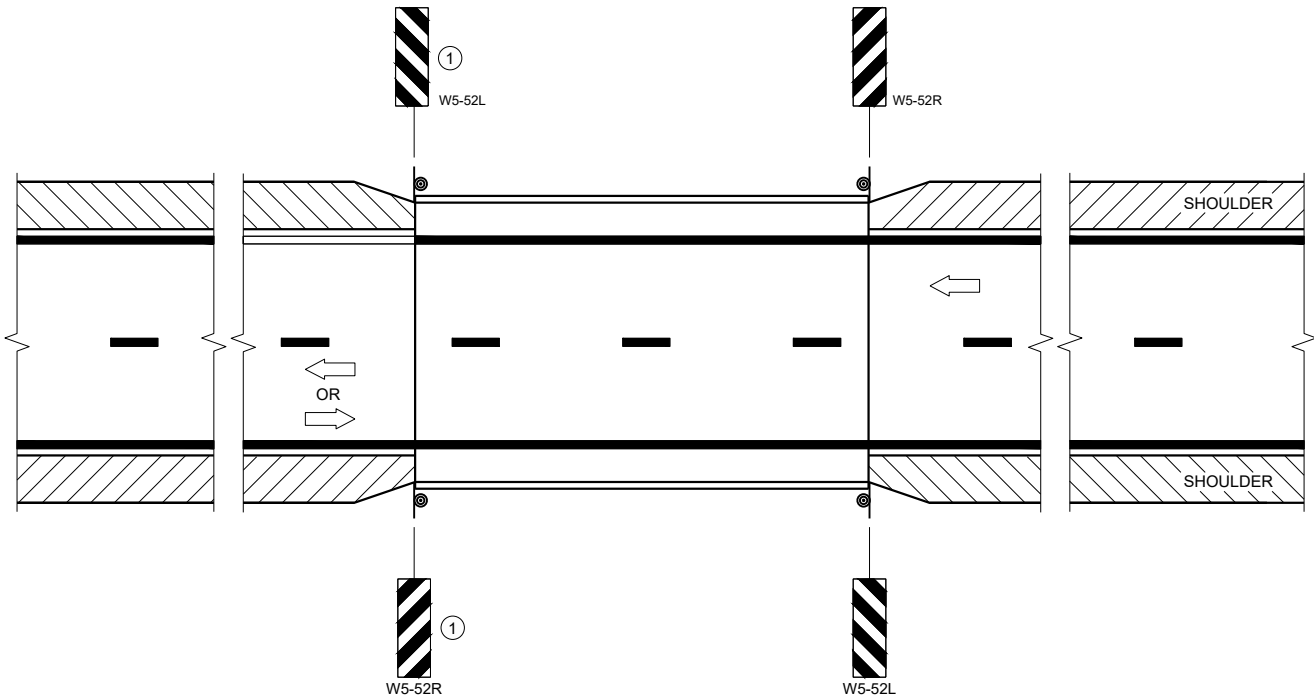
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /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

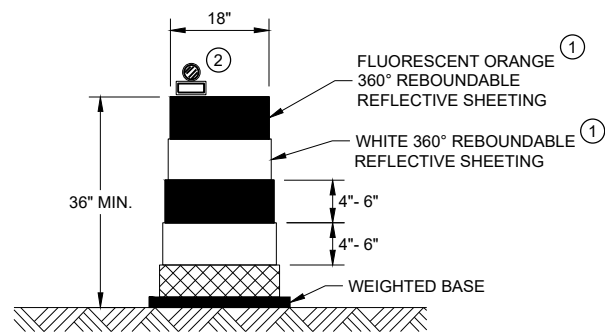
DISTANCE TABLE

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**

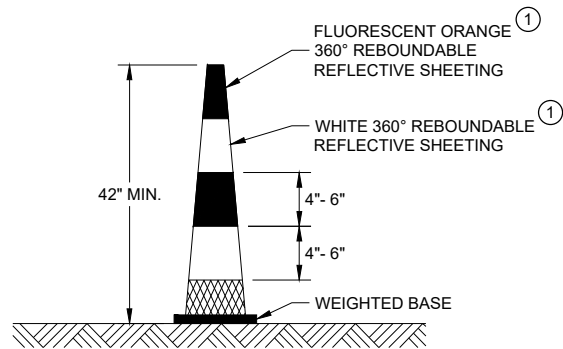
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



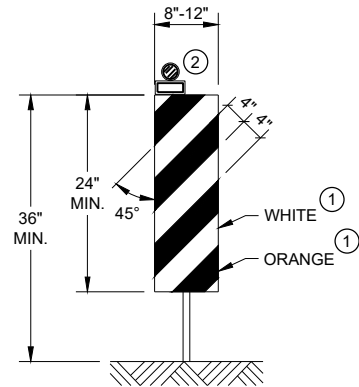
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



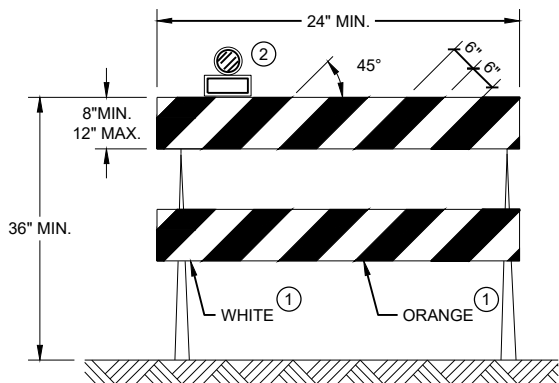
42" CONE

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



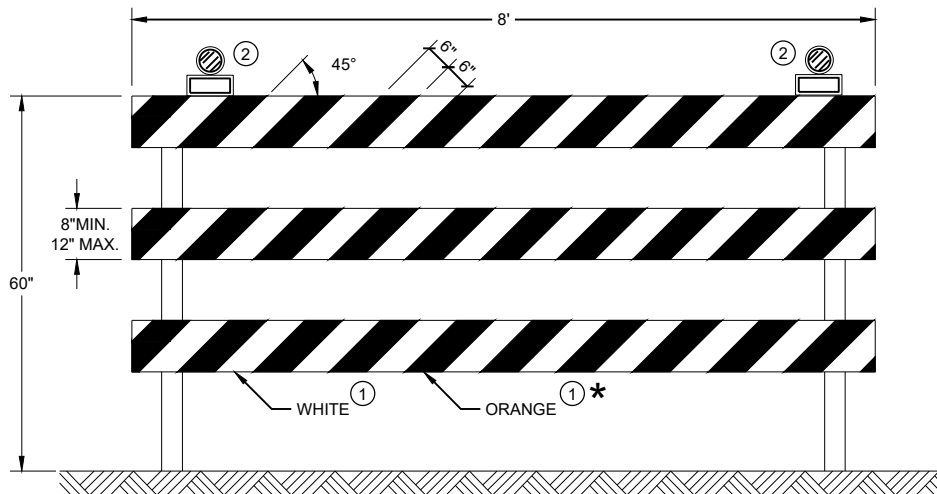
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

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.

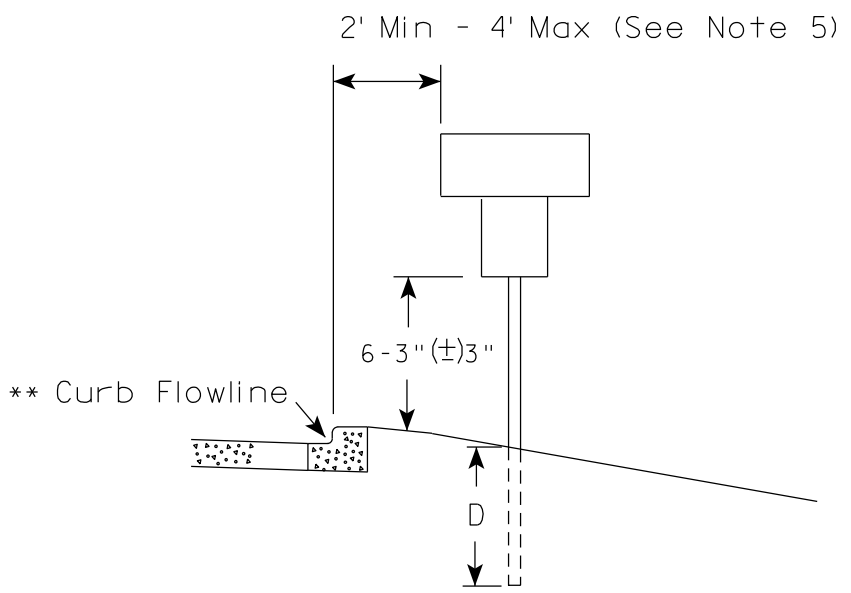
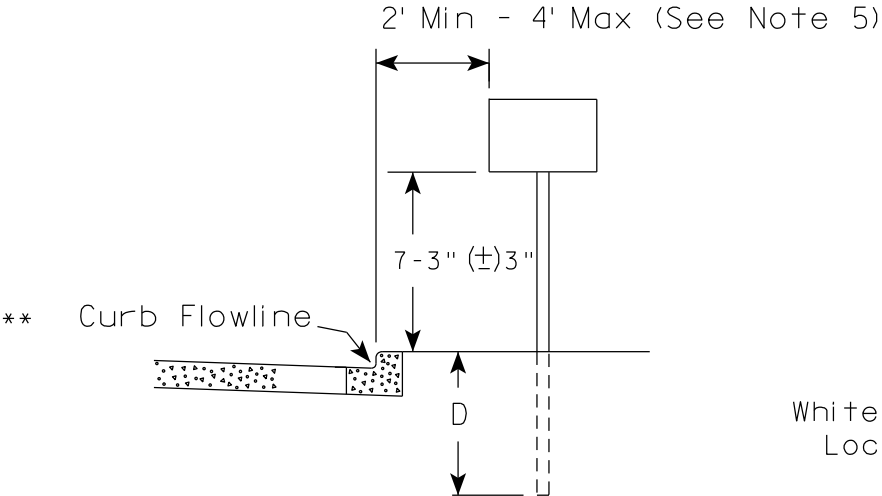
**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

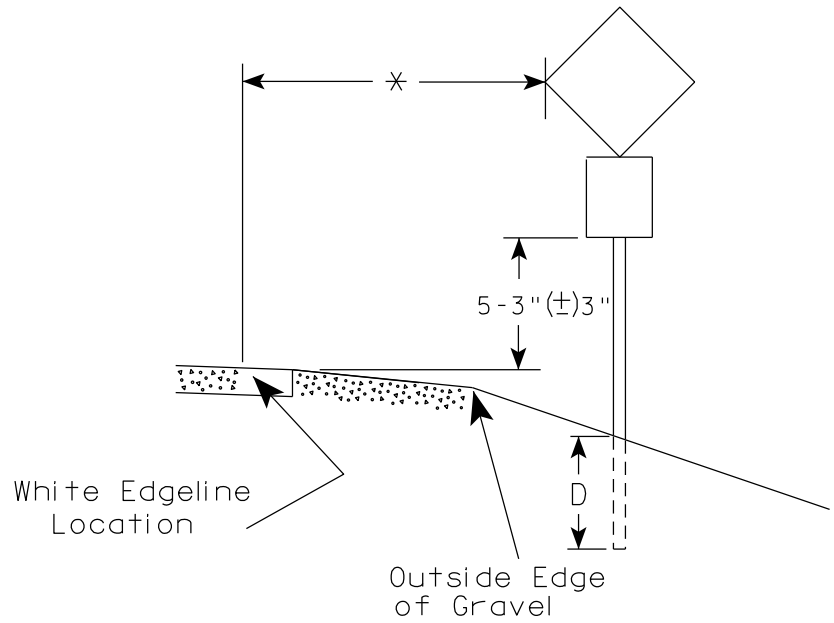
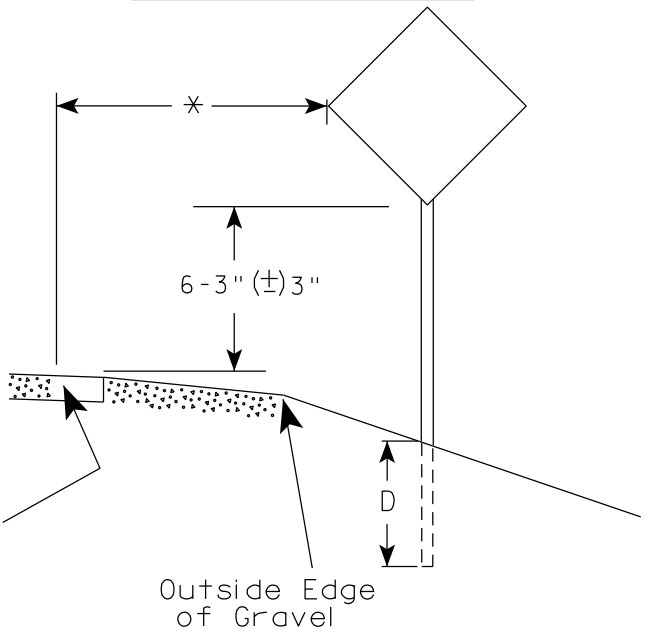
APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

URBAN AREA



RURAL AREA (See Note 2)



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

GENERAL NOTES

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

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

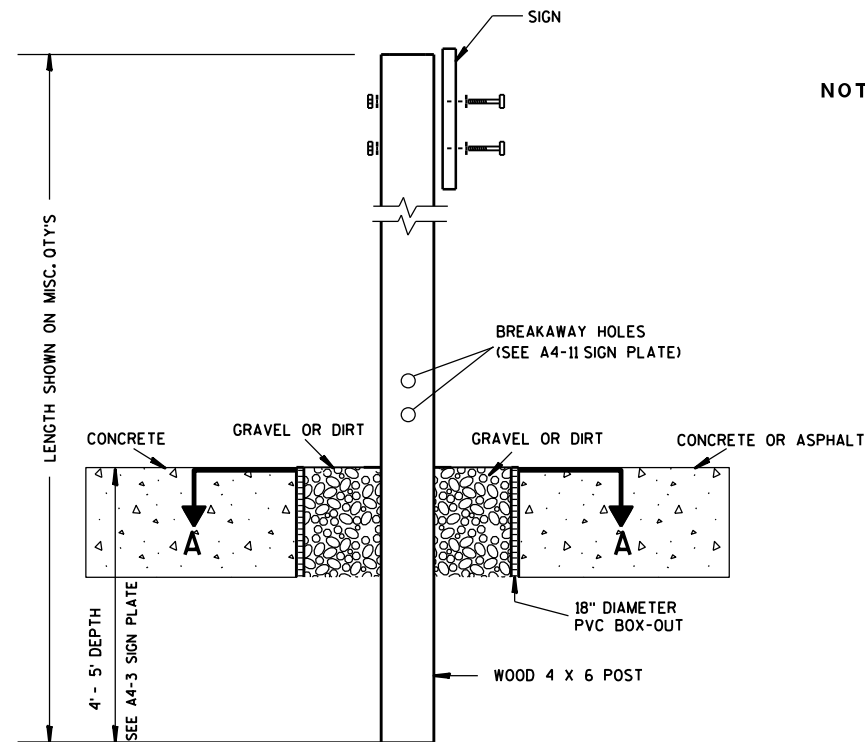
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

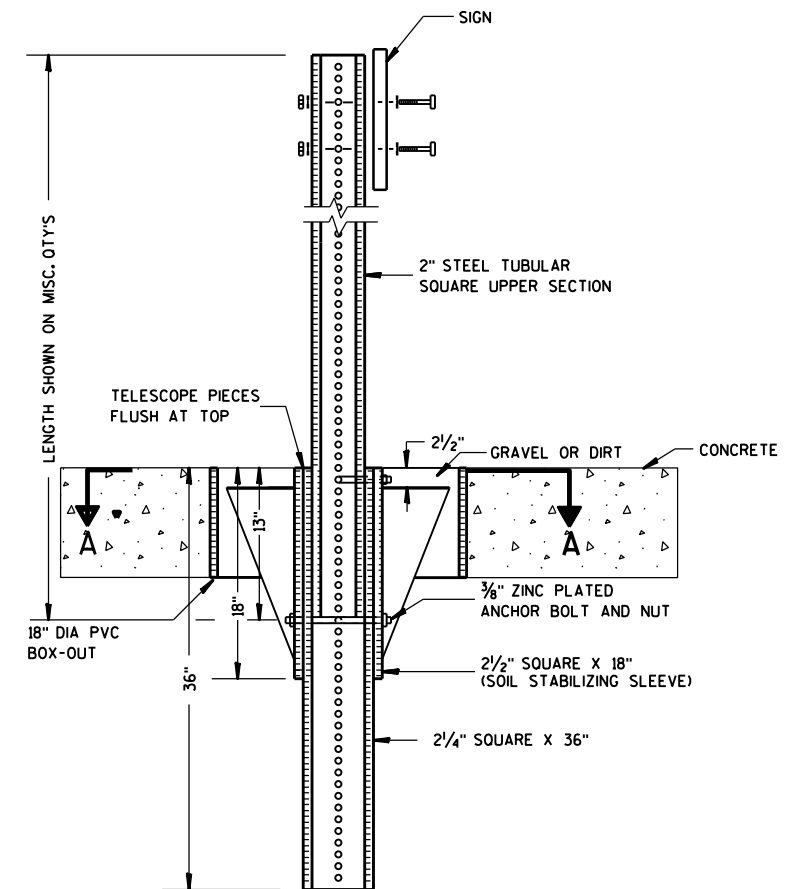
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

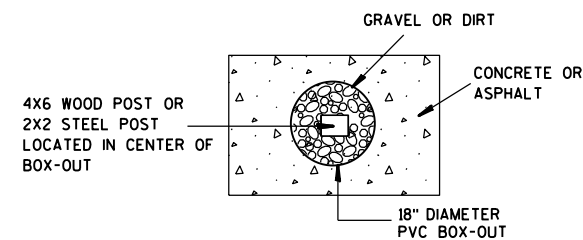
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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:

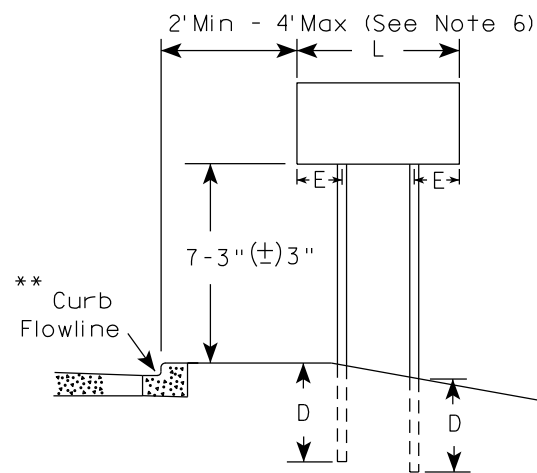
HWY:

COUNTY:

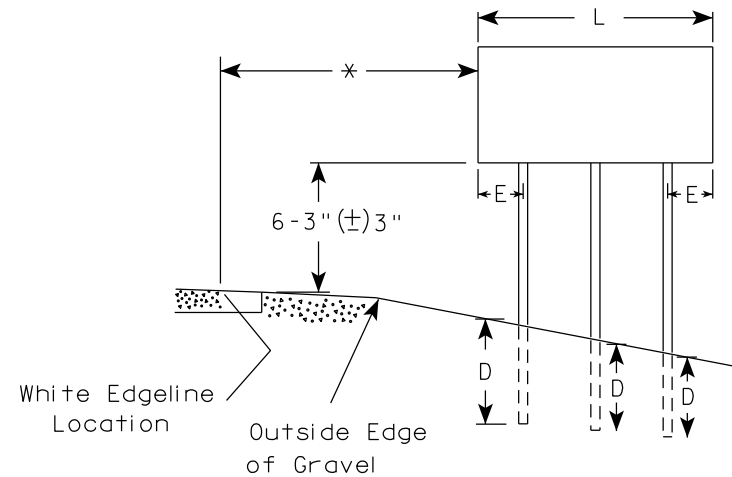
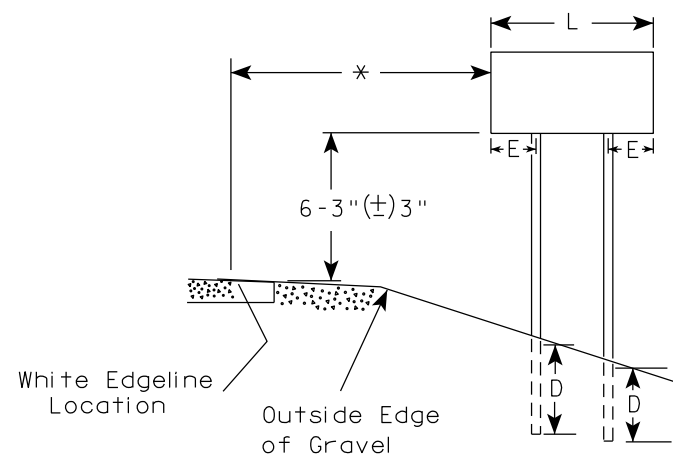
SHEET NO:

E

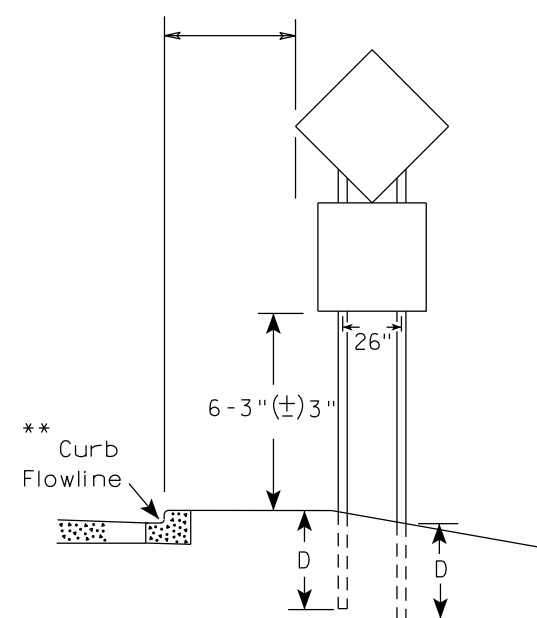
URBAN AREA



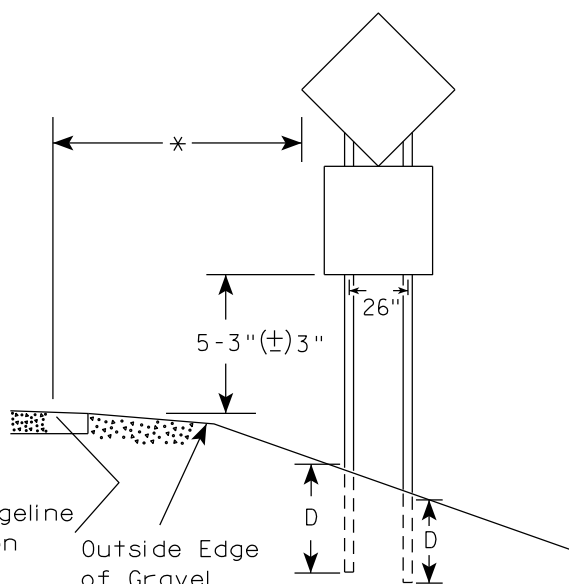
RURAL AREA (See Note 3)



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

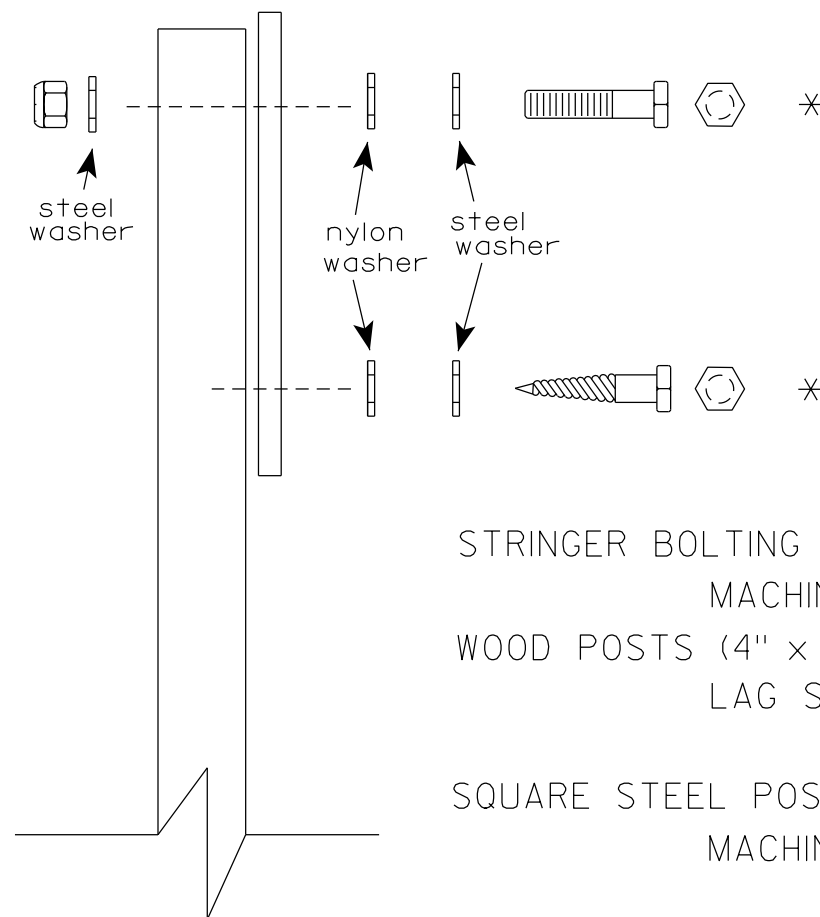
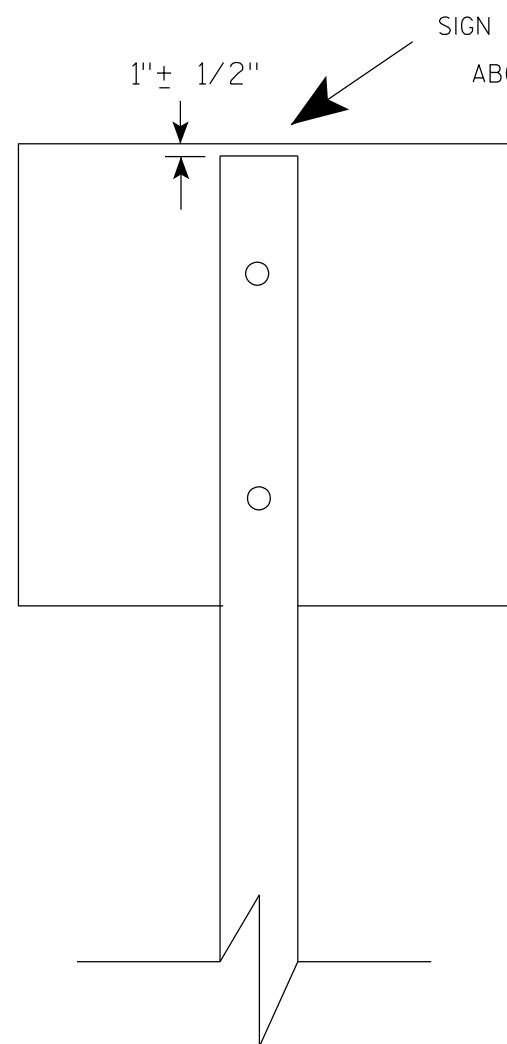
GENERAL NOTES

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

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

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

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



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

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

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

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

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

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

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

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"

2 1/2"

10"

3 1/2"

16"

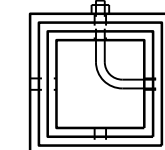
4" x 10" x 10 GA. STEEL PLATE (CUT AS SHOWN) WELDED TO ALL FOUR CORNERS OF TELES PAR TUBE

[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:

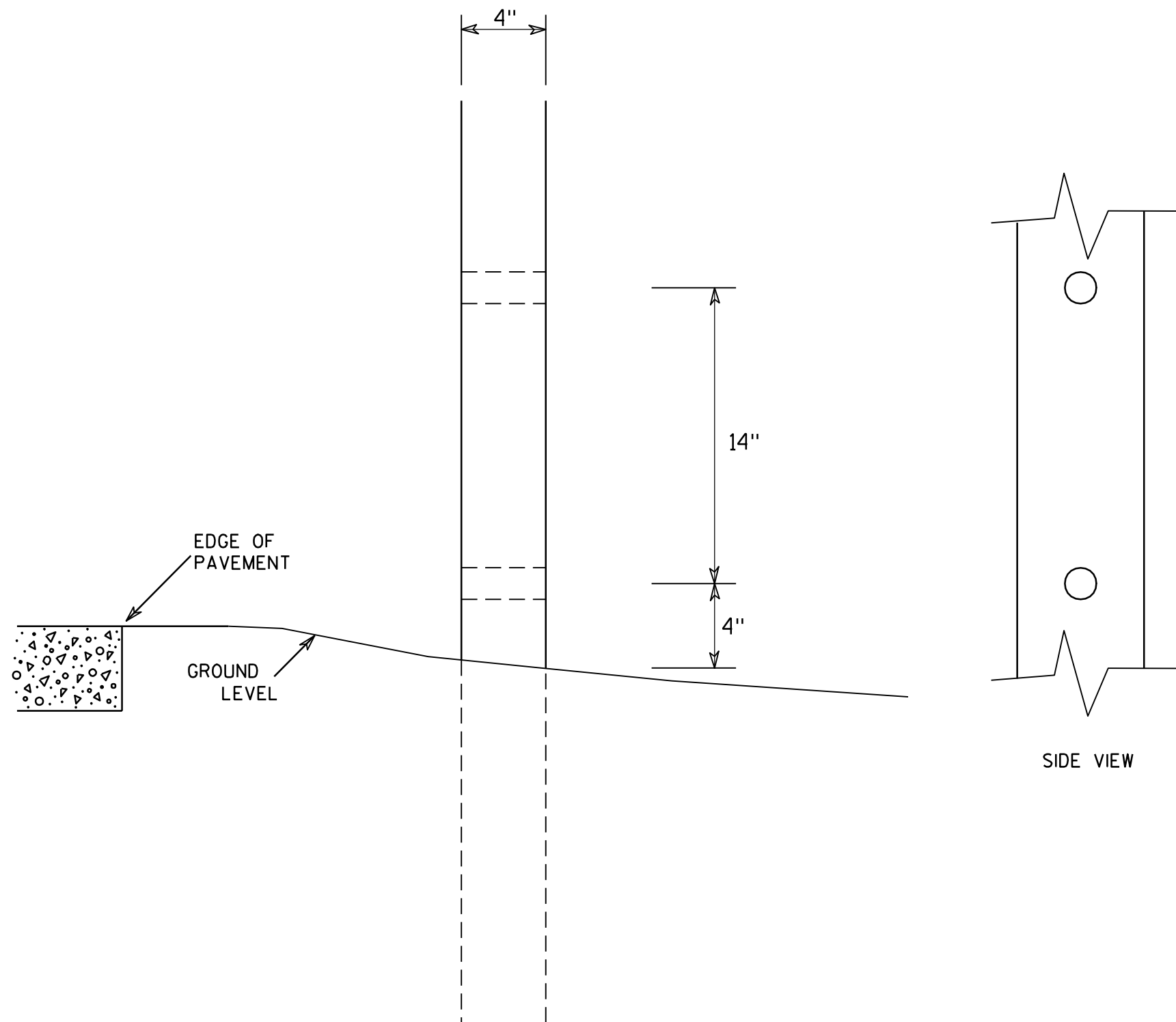
HWY:

COUNTY:

SHEET NO:

T

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:

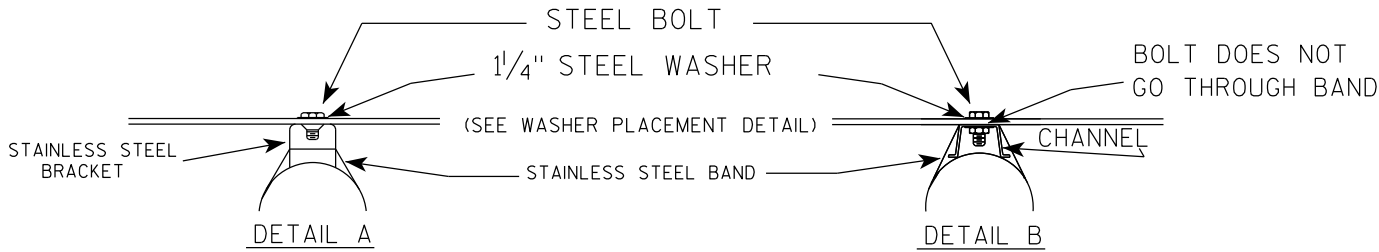
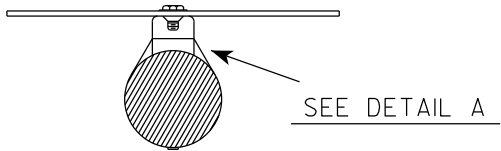
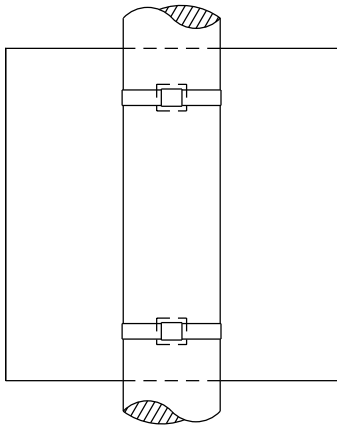
COUNTY:

SHEET NO:

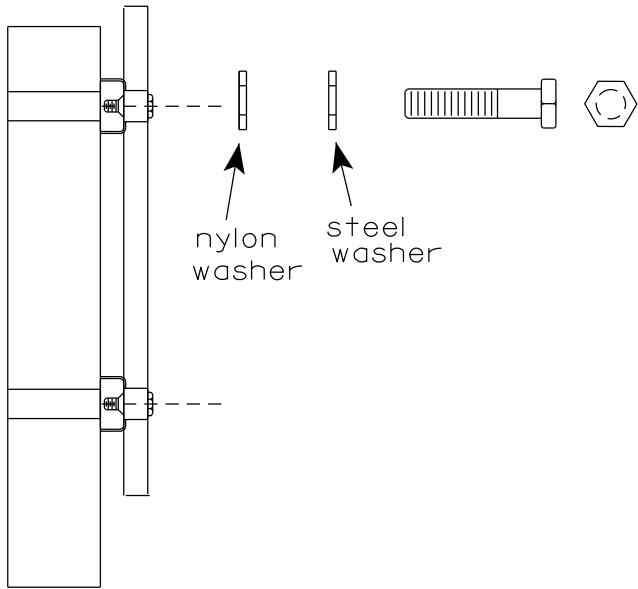
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

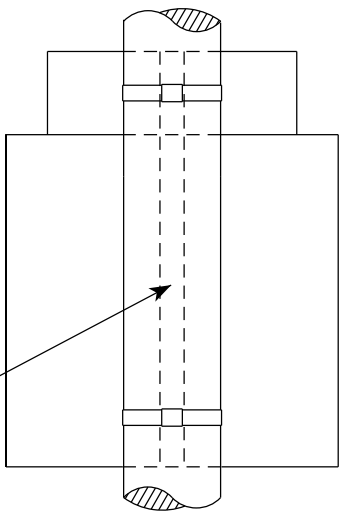


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

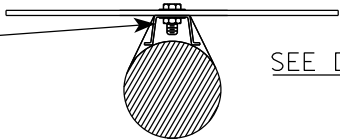
GENERAL NOTES

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



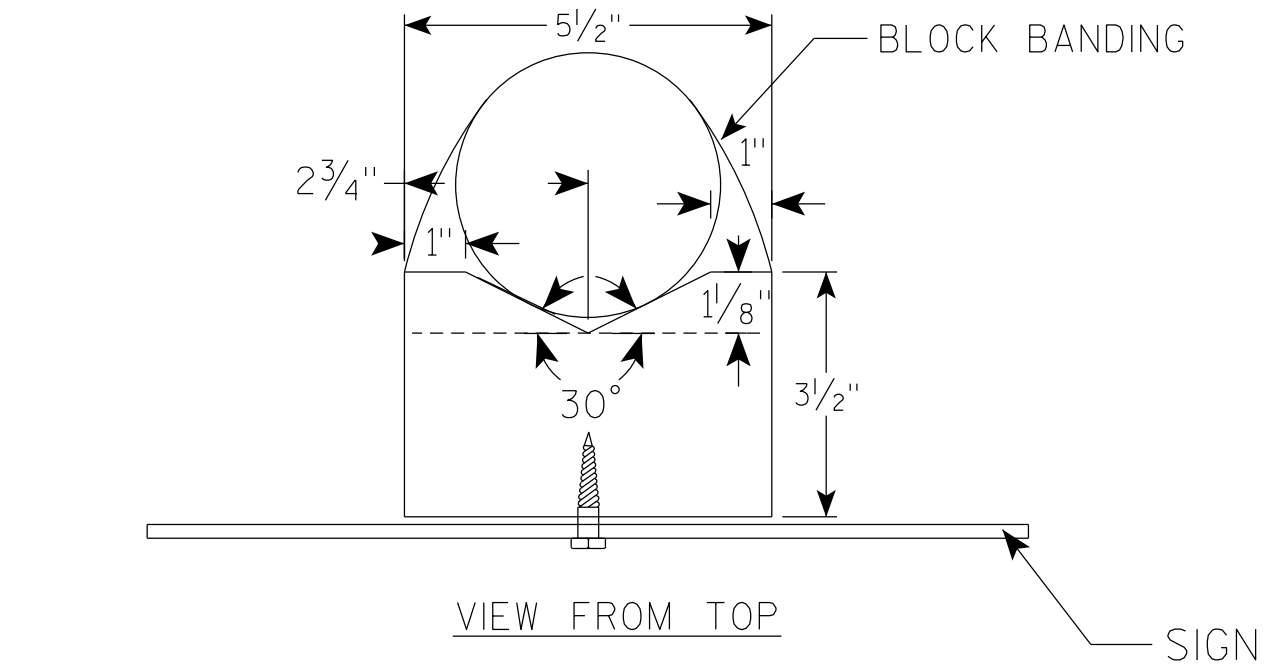
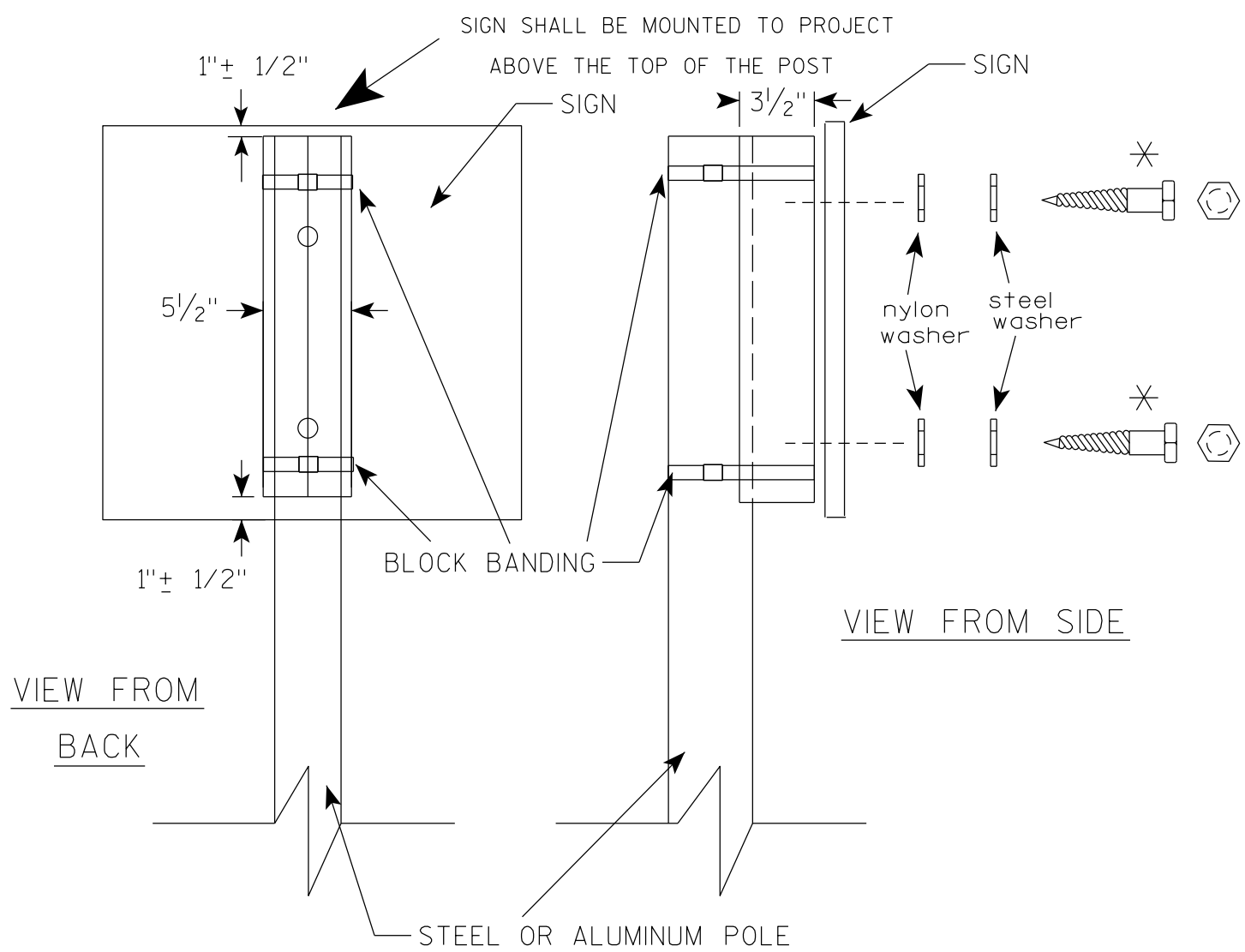
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

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

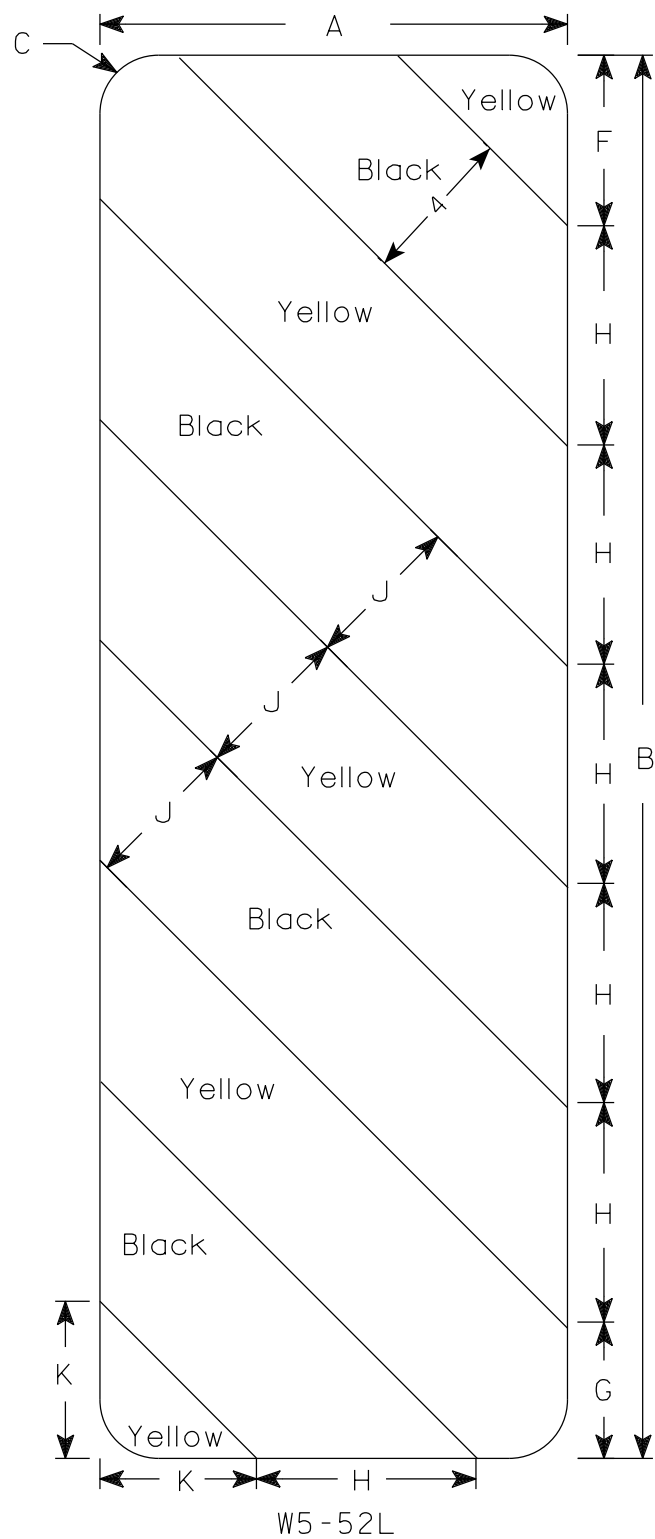


GENERAL NOTES

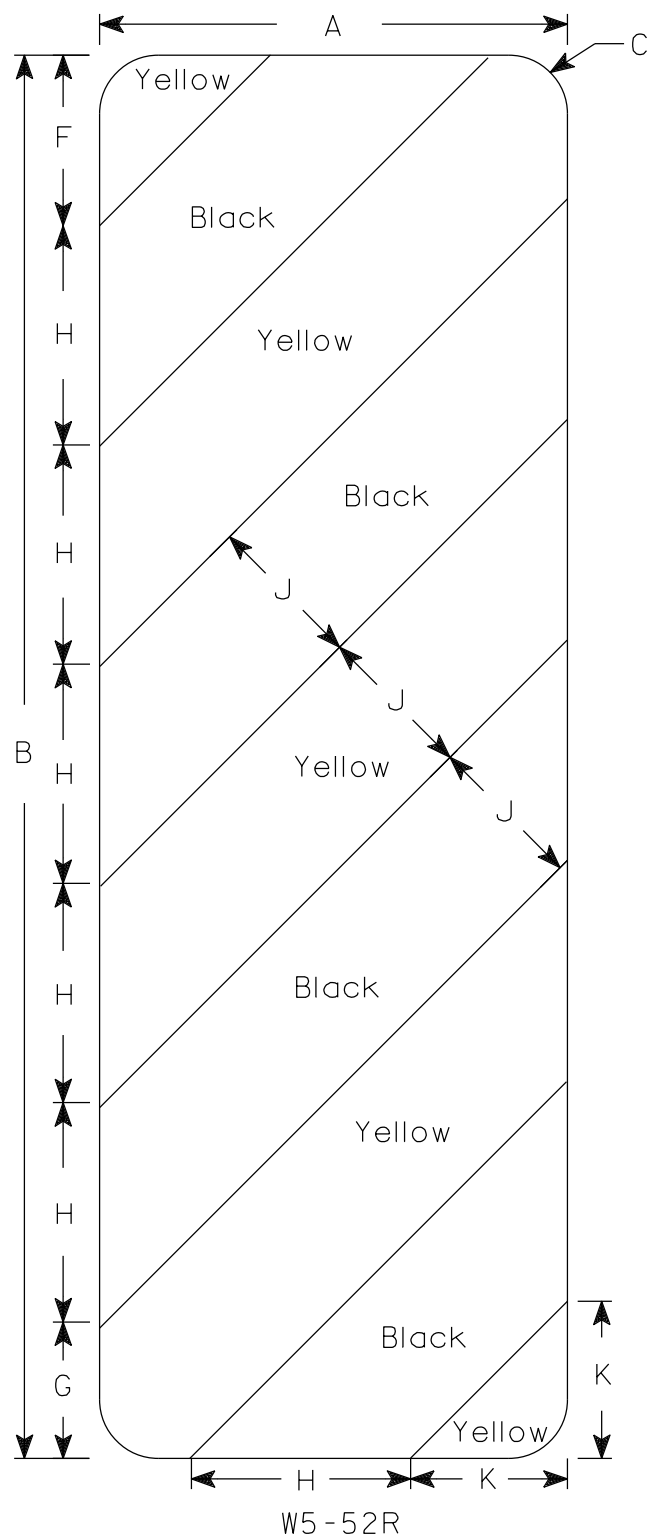
1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
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

DESIGN DATA

LIVE LOAD:

DESIGN LOADING : HL-93

INVENTORY RATING FACTOR : 1.17

OPERATIONAL RATING FACTOR : 1.52

WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS.

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

TRAFFIC DATA:

A.A.D.T. (2025) = 140

A.A.D.T. (2045) = 170

R.D.S. = 30 MPH

MATERIAL PROPERTIES:

CONCRETE MASONRY, SLAB $f'_c = 4,000$ P.S.I.ALL OTHER $f'_c = 3,500$ P.S.I.HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 $f_y = 60,000$ P.S.I.PILING STEEL HP 10-INCH X 42 LB $f_y = 50,000$ P.S.I.

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS * PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE LENGTHS ARE 140'-0" AT BOTH ABUTMENTS.

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

HYDRAULIC DATA:

100 YEAR FREQUENCY

DRAINAGE AREA 21.5 SQ. MI.
 Q_{100} - TOTAL 3,095 C.F.S.
- THRU BRIDGE 1,293 C.F.S.
- OVERTOPPING ROADWAY 1,802 C.F.S.
VELOCITY - THRU BRIDGE 4.45 FT./SEC.
WATERWAY AREA - THRU BRIDGE 290 SQ. FT.
SCOUR CRITICAL CODE 5
HIGH WATER₁₀₀ ELEVATION 874.94

2 YEAR FREQUENCY

Q_2 1,220 C.F.S.
 Q_2 VELOCITY 4.2 FT./SEC.
 Q_2 ELEVATION 870.5

ROADWAY OVERFLOW DESIGN FREQUENCY

OVERTOPPING FREQUENCY 7 YEARS
 Q_7 1,730 C.F.S.
HW₇ ELEVATION 872.31

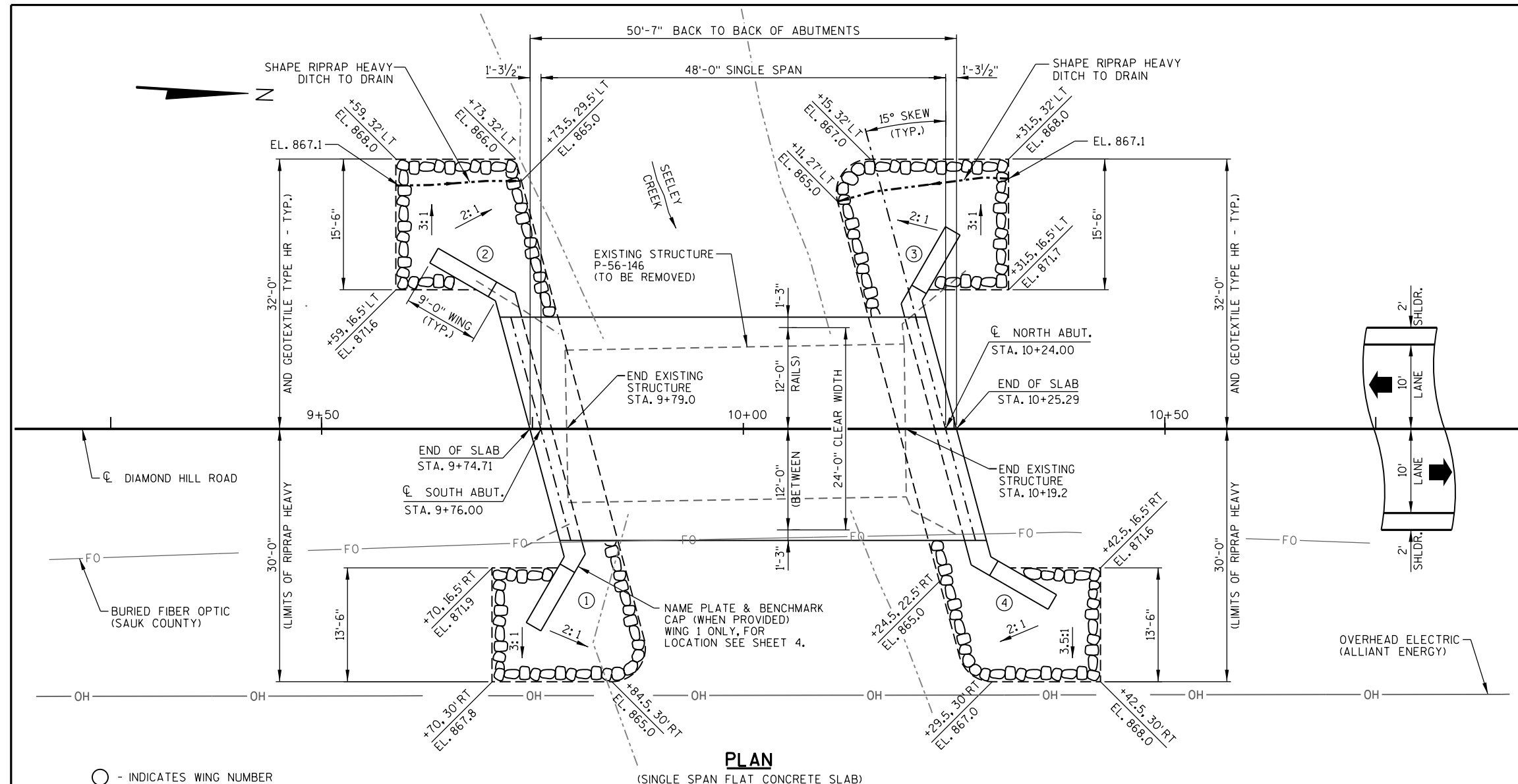
CONSULTANT DESIGN CONTACT: BRIDGE OFFICE CONTACT:
JOSHUA SWENO AARON BONK
(608) 355-8852 (608) 261-0261



2/29/2024

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION, QUANTITIES & NOTES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. SUPERSTRUCTURE
9. SUPERSTRUCTURE DETAILS
10. RAILING TUBULAR TYPE M



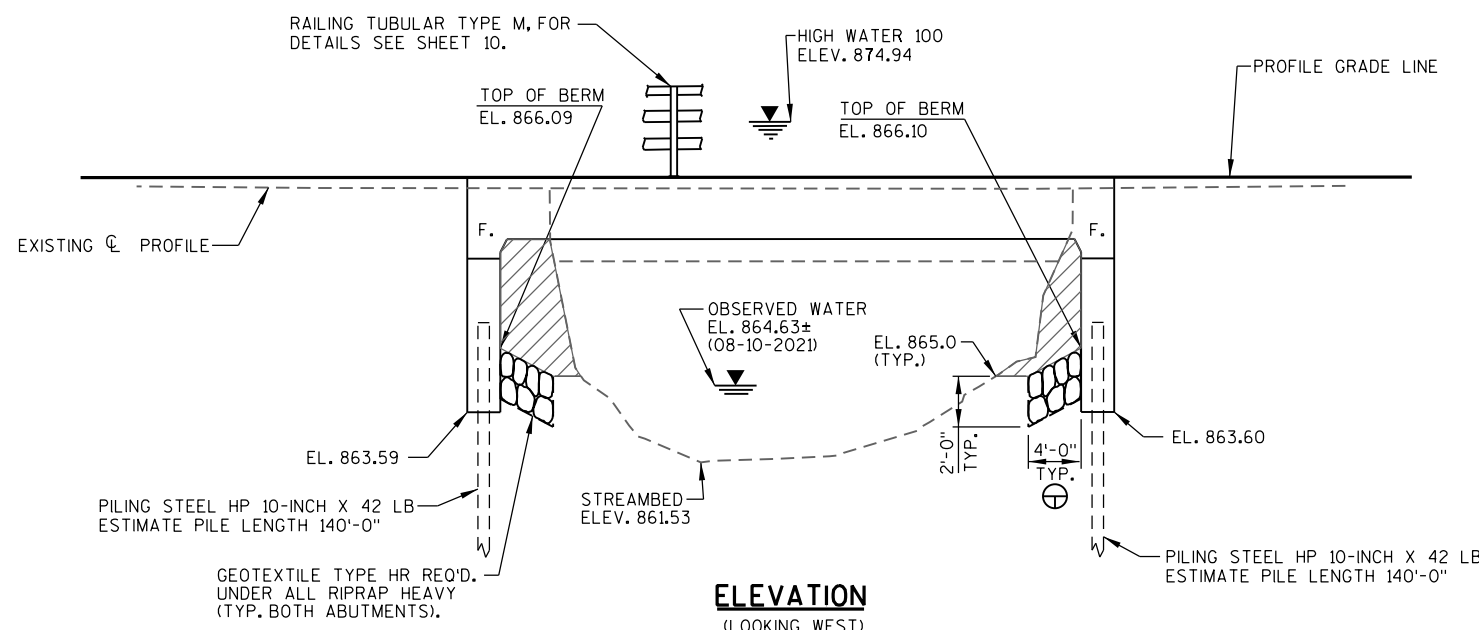
PLAN

(SINGLE SPAN FLAT CONCRETE SLAB)

○ - INDICATES WING NUMBER

⊕ - NORMAL TO \mathcal{C} OF ABUTMENTS.

▨ - EXCAVATE TO ELEVATION 865.0. REMOVAL OF THIS MATERIAL IS INCLUDED IN THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-56-243".

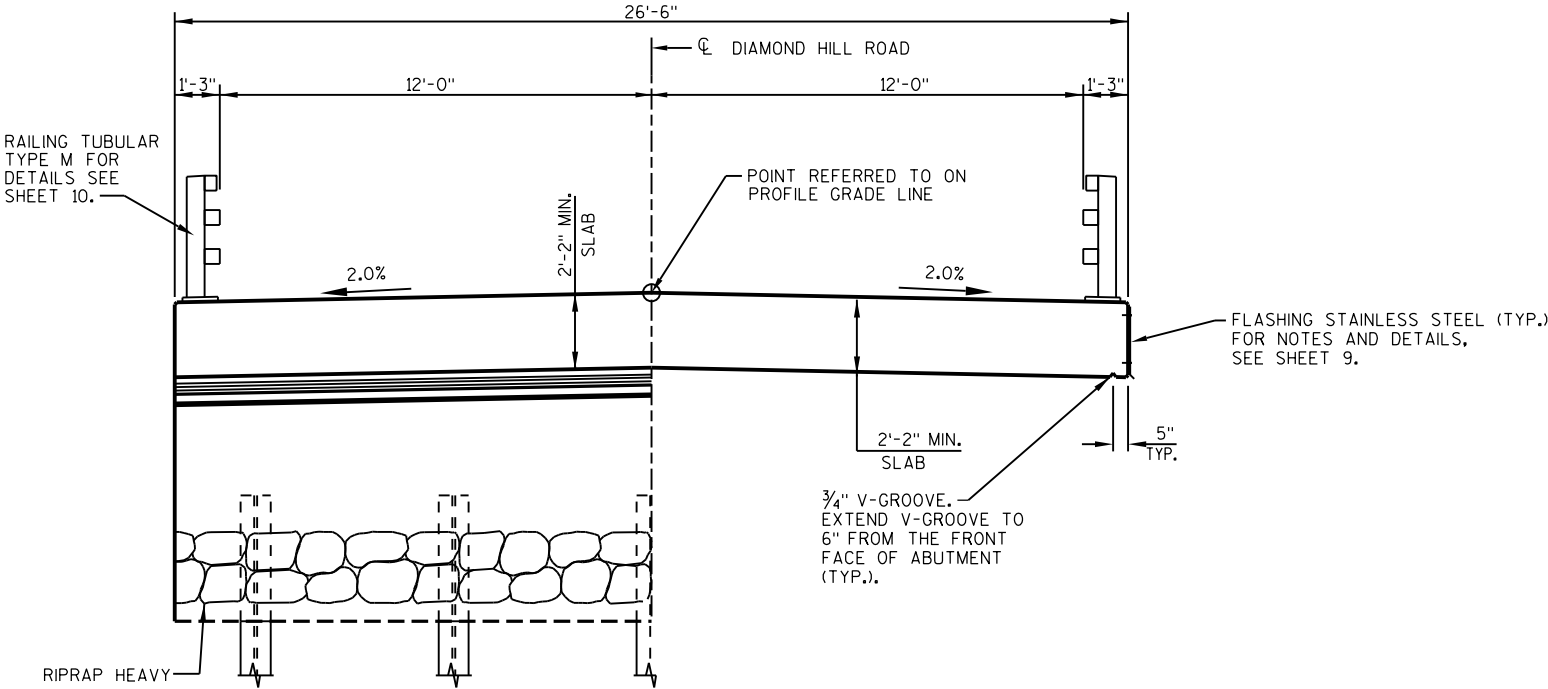


ELEVATION

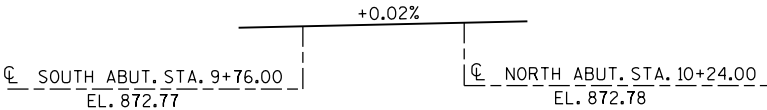
(LOOKING WEST)

GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.
- THE FIRST DIGIT OF A THREE DIGIT BAR MARK AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.
- THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE LIMITS SHOWN ON SHEET 1 AND ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER.
- THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-56-243" FOR THE ABUTMENTS.
- SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
- THIS STRUCTURE WILL REPLACE EXISTING BRIDGE, P-56-146, A 40.2 FT. LONG SINGLE SPAN STEEL DECK GIRDER BRIDGE ON CONCRETE AND MASONRY ABUTMENTS.
- BACKFILL PAY LIMITS, BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.
- DO NOT PLACE FILL ABOVE 3'-0" FROM THE BOTTOM OF THE ABUTMENT UNTIL THE SUPERSTRUCTURE IS IN PLACE.
- 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.
- AT THE ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.
- PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND EDGES OF SLAB, TO THE OUTSIDE 1'-0" OF THE UNDERSIDE OF SLAB, TO THE TOPS OF WINGS, TO THE EXPOSED FRONT FACES OF WINGS, AND TO THE END 1'-0" OF THE ABUTMENT BODY FRONT FACE.
- ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO USGS NAVD 88 (2018 ADJUSTED). BENCHMARK ELEVATIONS AT THE PROJECT SITE WERE SET BY THE CONSULTANT USING GPS TECHNOLOGY.



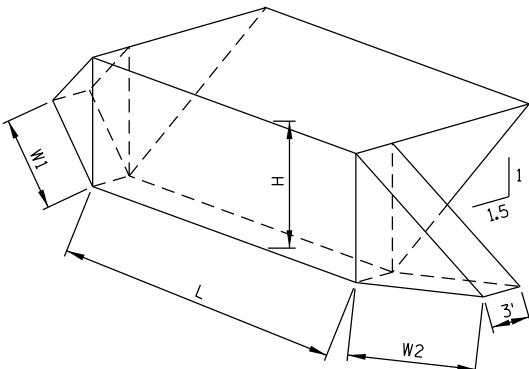
AT ABUTMENTS IN SPAN
CROSS SECTION THRU BRIDGE
(LOOKING NORTH)



PROFILE GRADE LINE - DIAMOND HILL ROAD

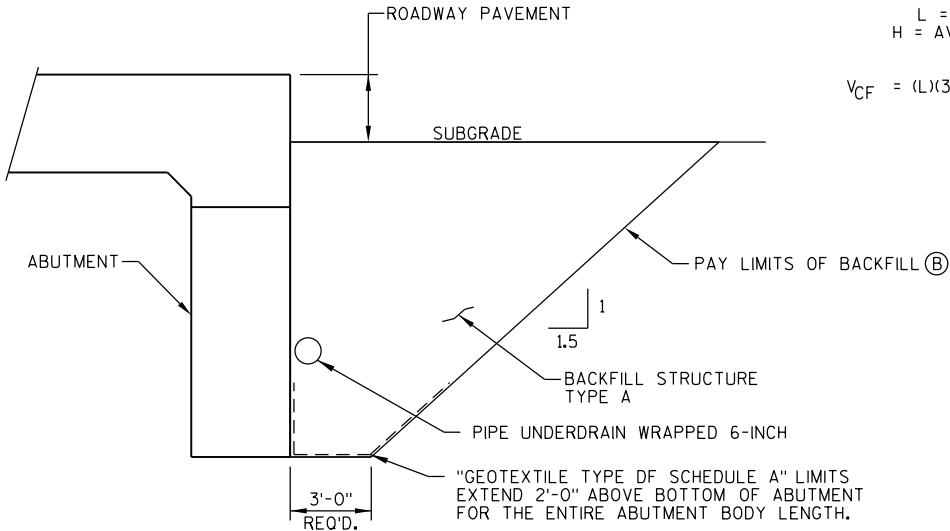
TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	SOUTH ABUT.	NORTH ABUT.	SUPER	TOTAL
203.0260.01	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-56-146	EACH	-	-	-	1
206.1001.01	EXCAVATION FOR STRUCTURES BRIDGES B-56-243	EACH	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	190	190	-	380
502.0100	CONCRETE MASONRY BRIDGES	CY	30.8	30.8	111.7	174
502.3200	PROTECTIVE SURFACE TREATMENT	SY	18	18	180	216
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,190	2,190	-	4,380
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,515	1,515	19,280	22,310
513.4061	RAILING TUBULAR TYPE M	LF	-	-	105	105
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	6	6	-	12
550.1100	PIILING STEEL HP 10-INCH X 42 LB	LF	980	980	-	1,960
606.0300	RIPRAP HEAVY	CY	50	55	-	105
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	85	85	-	170
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	30	30	-	60
645.0120	GEOTEXTILE TYPE HR	SY	105	115	-	220
SPV.0090.01	FLASHING STAINLESS STEEL	LF	-	-	91	91
NON-BID ITEMS						
	PREFORMED FILLER	SIZE				1/2" & 3/4"



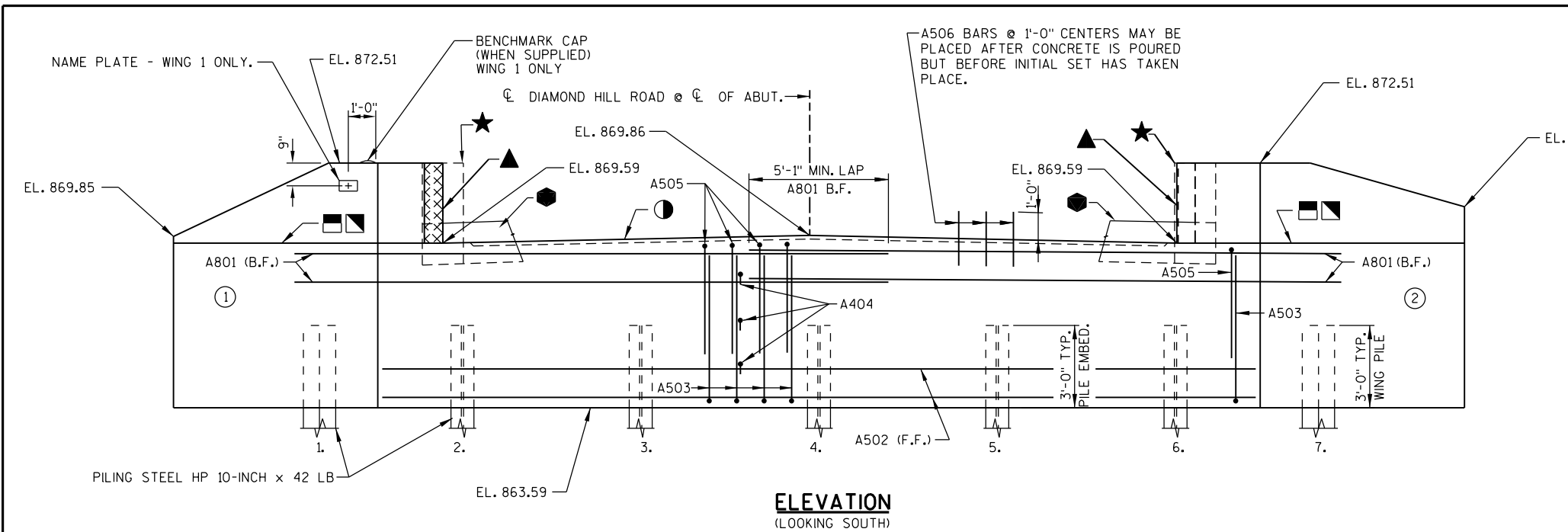
ABUTMENT BACKFILL DIAGRAM

$$L = \text{OUT-TO-OUT OF ABUTMENT (FT)}$$
$$H = \text{AVERAGE ABUTMENT FILL HEIGHT (FT)}$$
$$W1 = \text{WING 1 LENGTH (FT)}$$
$$W2 = \text{WING 2 LENGTH (FT)}$$
$$V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (0.5)(H)(W1+W2)(3.0')$$
$$V_{TON} = V_{CF} (2.0)/27$$

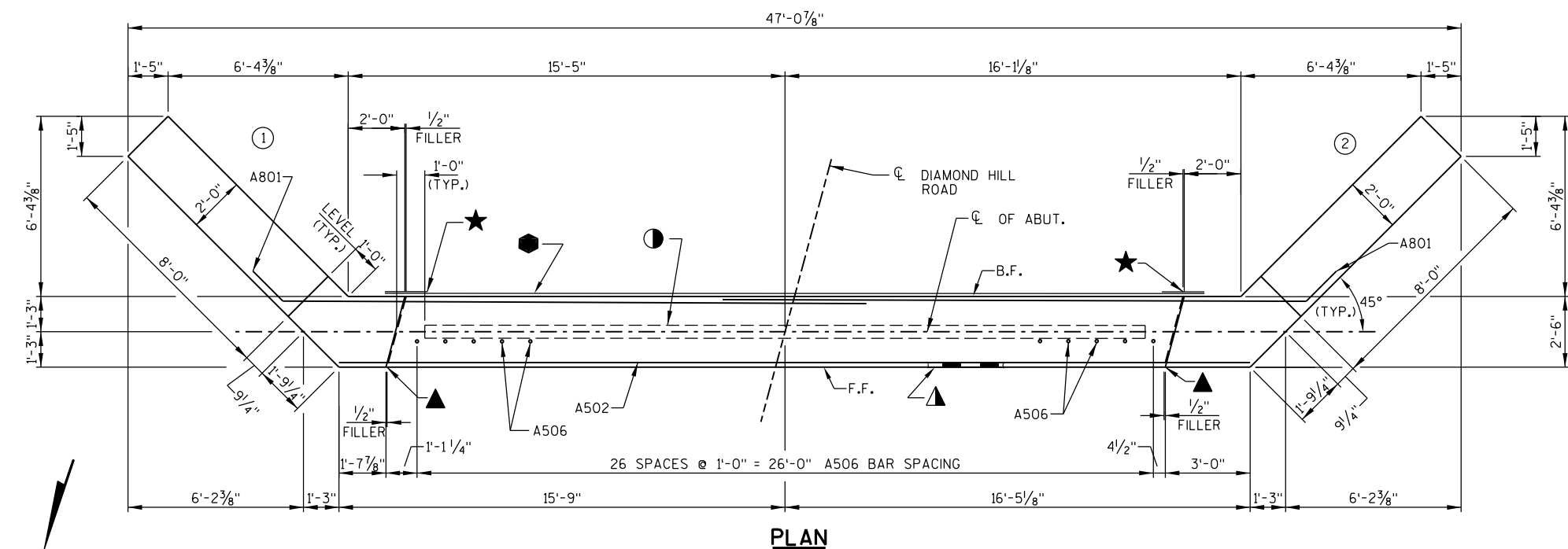


STRUCTURE BACKFILL DETAIL

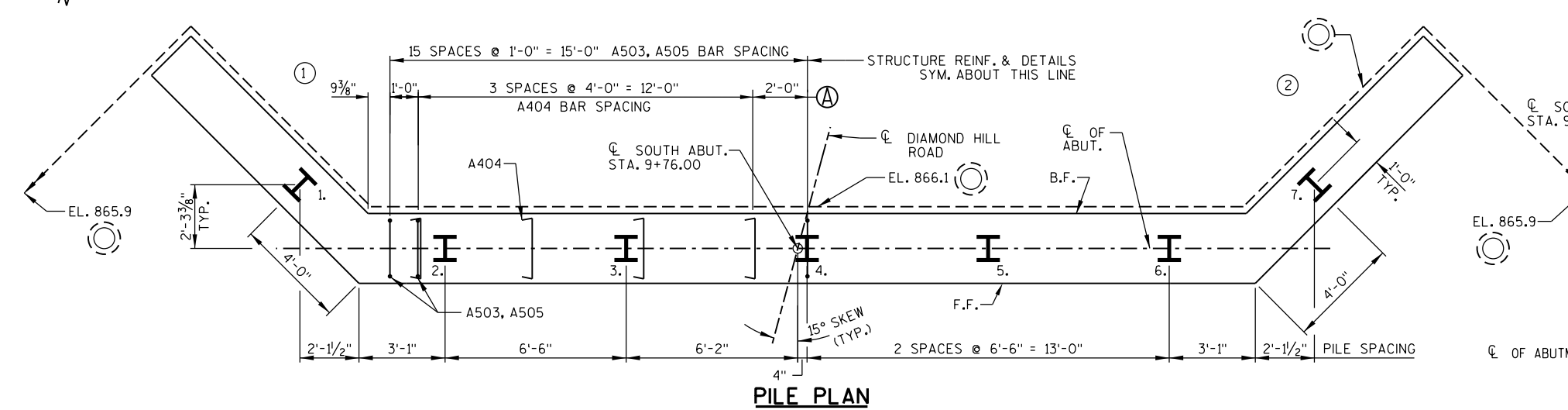
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-56-243			
DRAWN BY RLR		PLANS CK'D. JDH	
CROSS SECTION, QUANTITIES & NOTES			SHEET 2 OF 10



ELEVATION
(LOOKING SOUTH)

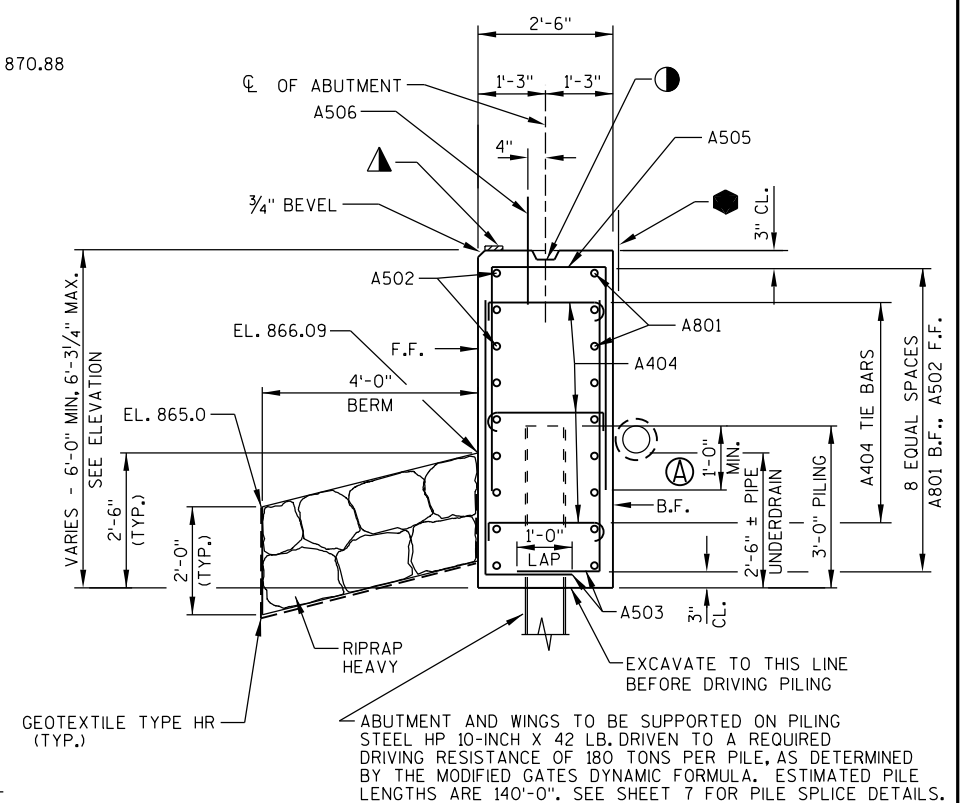


PLAN



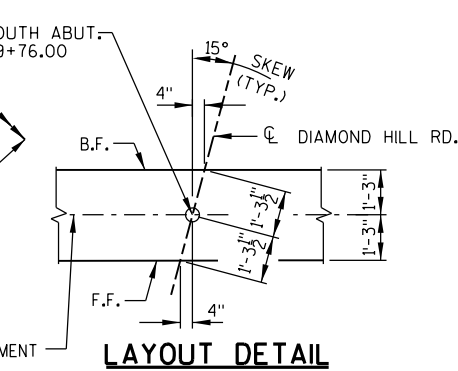
PILE PLAN

NOTE:
FOR WING DETAILS SEE SHEET 5.



TYPICAL SECTION THRU ABUTMENT

- LEGEND**
- KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
 - 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE).
 - 4"x 3/4" FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.
 - VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
 - HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WINGS.
 - OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2 X 6. IF JOINT IS USED, PLACE ON B.F. OF WING. COST OF IS INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES".
 - 3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.
 - PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT SHIELD AT ENDS OF PIPE. FOR RODENT SHIELD DETAILS, SEE SHEET 5.
 - ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.
 - INDICATES WING NUMBER F.F.—FRONT FACE B.F.—BACK FACE CL.—CLEAR



LAYOUT DETAIL

STATE PROJECT NUMBER			
5976-00-76			

AND WINGS TO BE SUPPORTED ON PILING
P 10-INCH X 42 LB. DRIVEN TO A REQUIRED
RESISTANCE OF 180 TONS PER PILE, AS DETERMINED
MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE
ARE 140'-0". SEE SHEET 7 FOR PILE SPLICE DETAILS.

ON THRU ABUTMENT

BY BEVELED 2x6.

ALL EXPOSED HORIZ. & VERT. SURFACES
NON-BITUMINOUS JOINT SEALER. (1" DEEP &
RETE).

H OF ABUTMENT BETWEEN EDGES OF SLAB.

BRANE WATERPROOFING. EXTEND FROM 9" BELOW

MBRANE WATERPROOFING. EXTEND BETWEEN WINGS.

ING FORMED BY BEVELED 2 X 6. IF JOINT IS USED,
F IS INCIDENTAL TO BID ITEM "CONCRETE MASONRY

WING WALL, REQUIRED ONLY WHERE CONSTRUCTION

EXTEND THRU GEOTEXTILE AT FACE OF RIPRAP HEAVY.
PAGE. PROVIDE RODENT SHIELD AT ENDS OF PIPE.
SHEET 5.

0° AND 180° HOOKS AT EACH VERTICAL

FRONT FACE B.F.—BACK FACE CL.—CLEAR

D.			
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-56-243	
DRAWN BY		RLR	PLANS CK'D. JDH
SOUTH ABUTMENT		SHEET 4 OF 10	

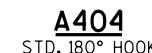


RODENT SHIELD

SECTION RS-RS

MARK	A	B
A801 A807 A512	1'-6"	45°
A408 A414 A415 A416	1'-11"	45°
A409	2'-3"	19°
A413	1'-5"	45°
A417	2'-4"	11°
A418 A419 A420	2'-7"	45°

MARK	C	D
A505	4'-1"	2'-2"
A410	5'-1"	1'-8"
A411	4'-10"	2'-2"



BILL OF BARS (SOUTH ABUT.)

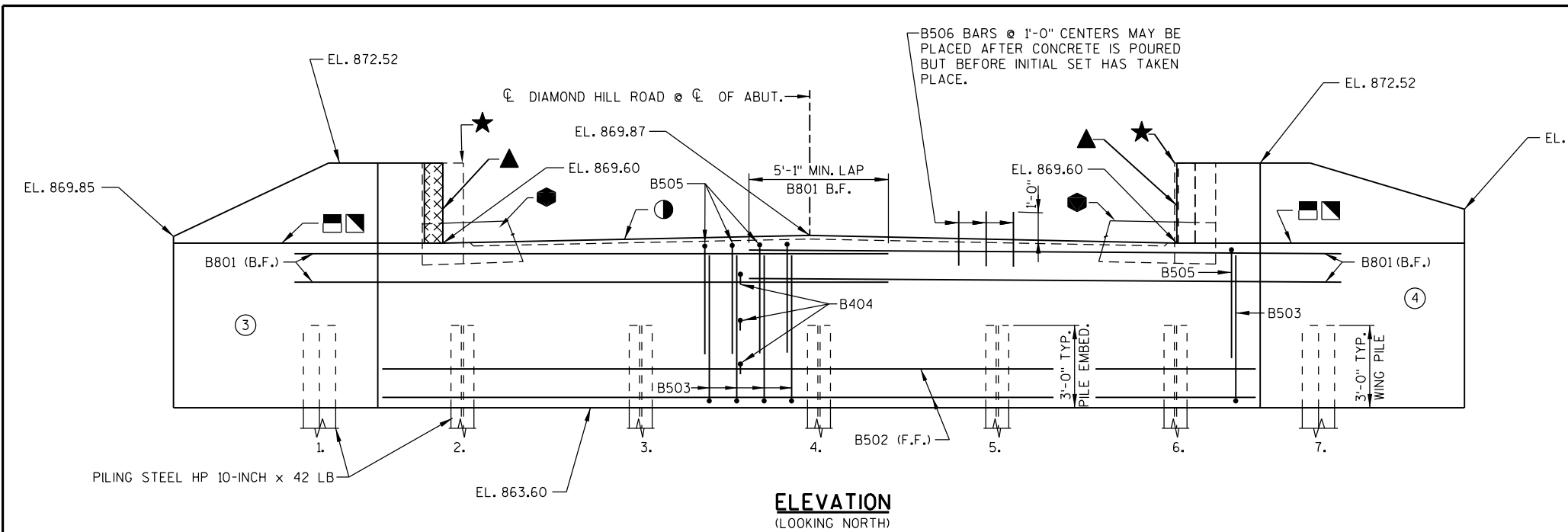
MARK	NUMBER COATED	REQUIRED UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION
A801	-	18	22'-1"	X		ABUTMENT BODY - B.F. - HORIZ.
A502	-	9	31'-11"			ABUTMENT BODY - F.F. - HORIZ.
A503	-	62	7'-0"	X		ABUTMENT BODY - F.F. & B.F. - VERT.
A404	-	24	3'-0"	X		ABUTMENT BODY - TIES - HORIZ.
A505	-	31	10'-1"	X		ABUTMENT BODY - TOP - VERT.
A506	27	-	2'-0"			ABUTMENT BODY - TOP DOWEL - VERT.
A807	18	-	13'-1"	X		WINGS - B.F. - HORIZ.
A408	4	-	6'-5"	X	◇	WING 1 - B.F. - HORIZ.
A409	2	-	10'-7"	X		WING 1 - F.F. & B.F. - TOP - HORIZ.
A410	58	-	11'-8"	X		WINGS - F.F. & B.F. - VERT.
A411	6	-	11'-8"	X		WINGS - F.F. & B.F. - TOP - VERT.
A512	18	-	11'-8"	X		WINGS - F.F. - HORIZ.
A413	4	-	7'-4"	X	◇	WING 1 - F.F. - HORIZ.
A414	2	-	10'-10"	X		WING 2 - B.F. - HORIZ.
A415	1	-	7'-1"	X		WING 2 - B.F. - HORIZ.
A416	1	-	3'-5"	X		WING 2 - B.F. - HORIZ.
A417	2	-	10'-4"	X		WING 2 - F.F. & B.F. - TOP - HORIZ.
A418	2	-	12'-10"	X		WING 2 - F.F. - HORIZ.
A419	1	-	9'-1"	X		WING 2 - F.F. - HORIZ.
A420	1	-	5'-5"	X		WING 2 - F.F. - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR

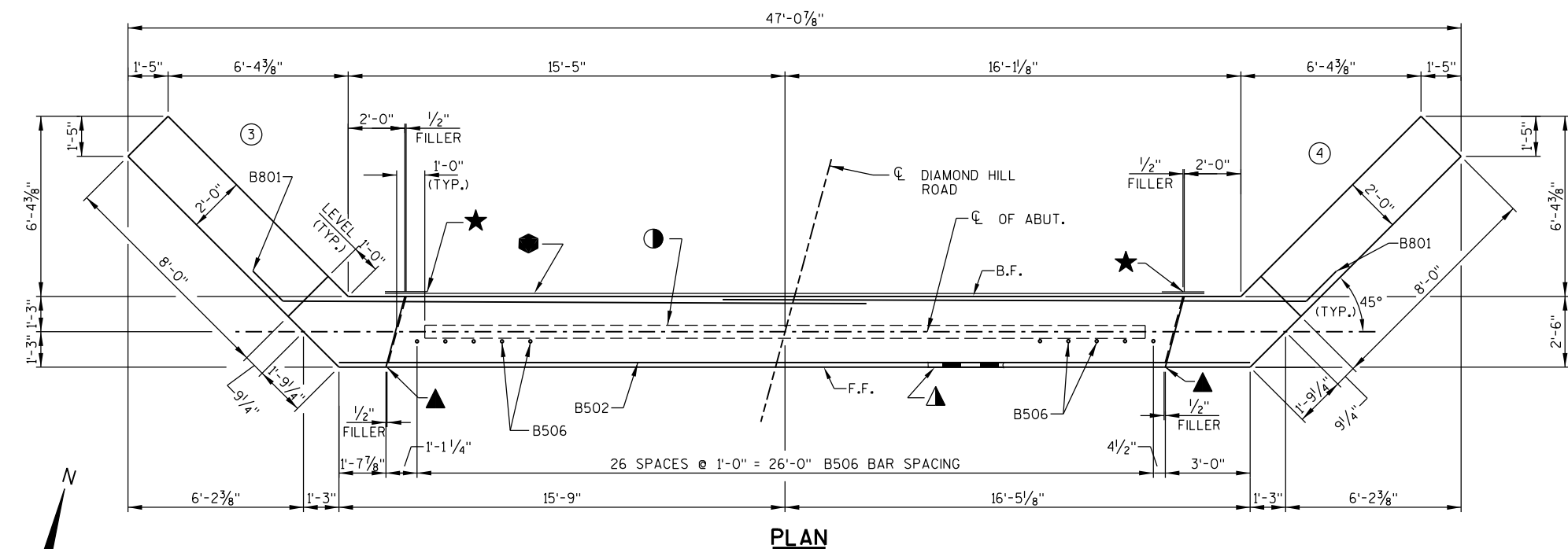
BAR MARK	NO. REQ'D.	LENGTH
A408	1 SERIES OF 4	3'-1" TO 9'-0"
A413	1 SERIES OF 4	4'-0" TO 10'-0"

BAR SERIES TABLE

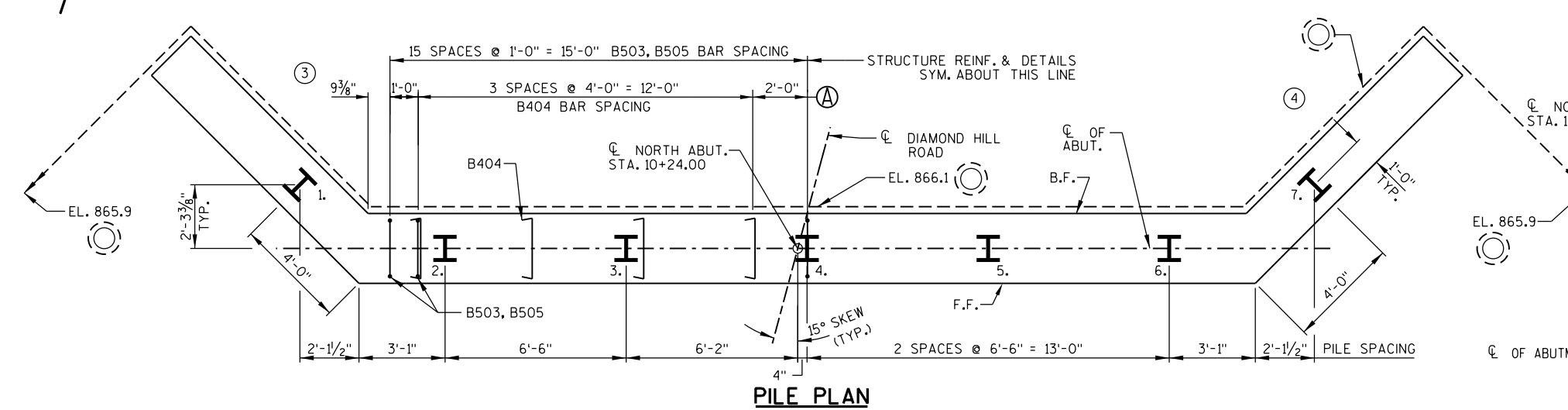
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-56-243	
DRAWN BY		RLR	PLANS CK'D. JDH
SOUTH ABUTMENT DETAILS		SHEET 5 OF 1	



ELEVATION
(LOOKING NORTH)



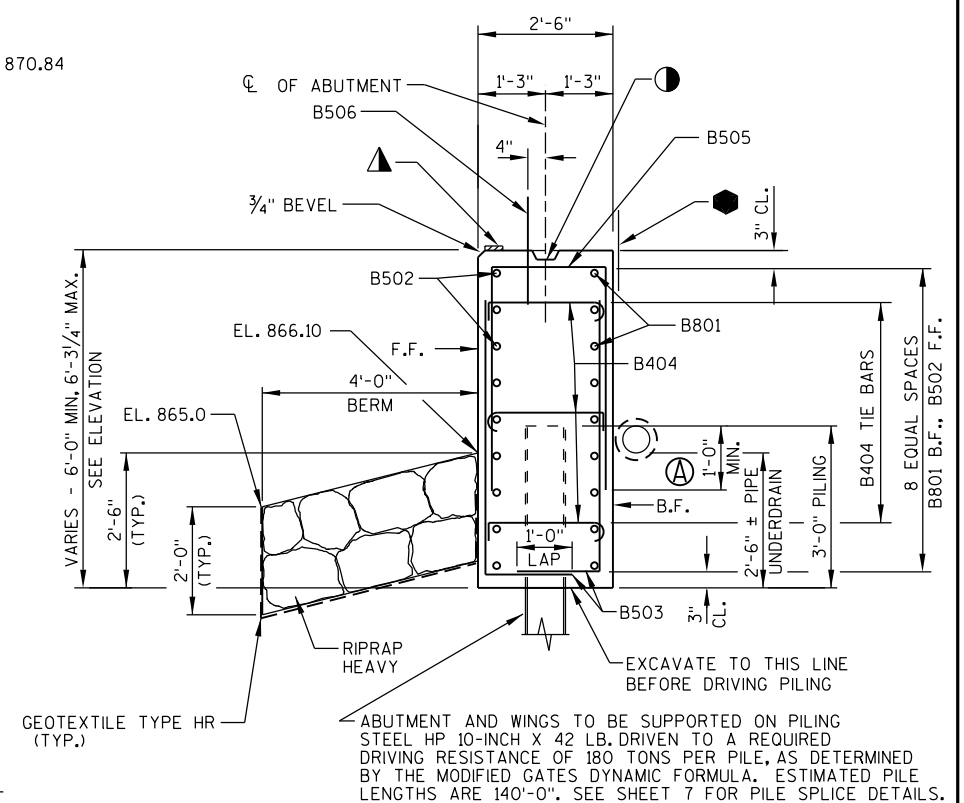
PLAN



PILE PLAN

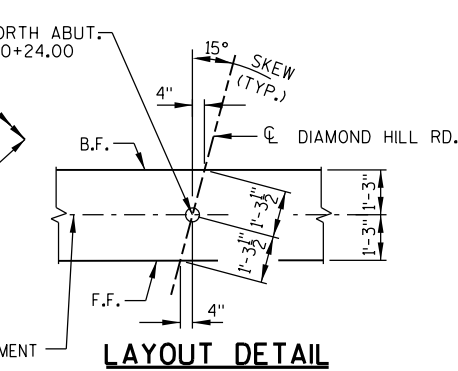
NOTE:
FOR WING DETAILS SEE SHEET 7.

STATE PROJECT NUMBER
5976-00-76



TYPICAL SECTION THRU ABUTMENT

- LEGEND**
- — KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
 - ▲ — 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE).
 - ▲ — 4"x 3/4" FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.
 - ★ — VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
 - — HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WINGS.
 - — OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2 X 6. IF JOINT IS USED, PLACE ON B.F. OF WING. COST OF ■ IS INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES".
 - ▣ — 3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.
 - — PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT SHIELD AT ENDS OF PIPE. FOR RODENT SHIELD DETAILS, SEE SHEET 5.
 - Ⓐ — ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.
 - — INDICATES WING NUMBER F.F.—FRONT FACE B.F.—BACK FACE CL.—CLEAR



LAYOUT DETAIL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-56-243	
DRAWN BY		RLR	PLANS CK'D. JDH
NORTH ABUTMENT		SHEET 6 OF 10	



MARK	A	B
B801 B807 B512	1'-6"	45°
B408 B414 B415 B416	1'-11"	45°
B409	2'-3"	19°
B413	1'-5"	45°
B417	2'-4"	12°
B418 B419 B420	2'-7"	45°

MARK	C	D
B505	4'-1"	2'-2"
B410	5'-1"	1'-8"
B411	4'-10"	2'-2"

BAR MARK	NO. REQ'D.	LENGTH
B408	1 SERIES OF 4	3'-1" TO 9'-9"
B413	1 SERIES OF 4	4'-0" TO 10'-1"

COATED 1,515 LBS.

BILL OF BARS (NORTH ABUT.)

UNCOATED 2,190 LBS.

MARK	NUMBER REQUIRED		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
B801	-	18	22'-1"	X		ABUTMENT BODY - B.F. - HORIZ.
B502	-	9	31'-11"			ABUTMENT BODY - F.F. - HORIZ.
B503	-	62	7'-0"	X		ABUTMENT BODY - F.F. & B.F. - VERT.
B404	-	24	3'-0"	X		ABUTMENT BODY - TIES - HORIZ.
B505	-	31	10'-1"	X		ABUTMENT BODY - TOP - VERT.
B506	27	-	2'-0"			ABUTMENT BODY - TOP DOWEL - VERT.
B807	18	-	13'-1"	X		WINGS - B.F. - HORIZ.
B408	4	-	6'-5"	X	⊞	WING 3 - B.F. - HORIZ.
B409	2	-	10'-7"	X		WING 3 - F.F. & B.F. - TOP - HORIZ.
B410	58	-	11'-8"	X		WINGS - F.F. & B.F. - VERT.
B411	6	-	11'-8"	X		WINGS - F.F. & B.F. - TOP - VERT.
B512	18	-	11'-8"	X		WINGS - F.F. - HORIZ.
B413	4	-	7'-4"	X	⊞	WING 3 - F.F. - HORIZ.
B414	2	-	10'-10"	X		WING 4 - B.F. - HORIZ.
B415	1	-	7'-0"	X		WING 4 - B.F. - HORIZ.
B416	1	-	3'-5"	X		WING 4 - B.F. - HORIZ.
B417	2	-	10'-4"	X		WING 4 - F.F. & B.F. - TOP - HORIZ.
B418	2	-	12'-10"	X		WING 4 - F.F. - HORIZ.
B419	1	-	9'-0"	X		WING 4 - F.F. - HORIZ.
B420	1	-	5'-5"	X		WING 4 - F.F. - HORIZ.

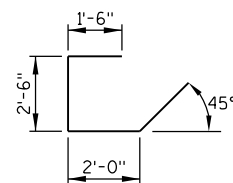
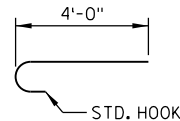
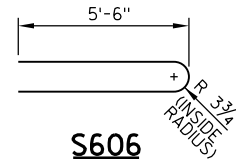
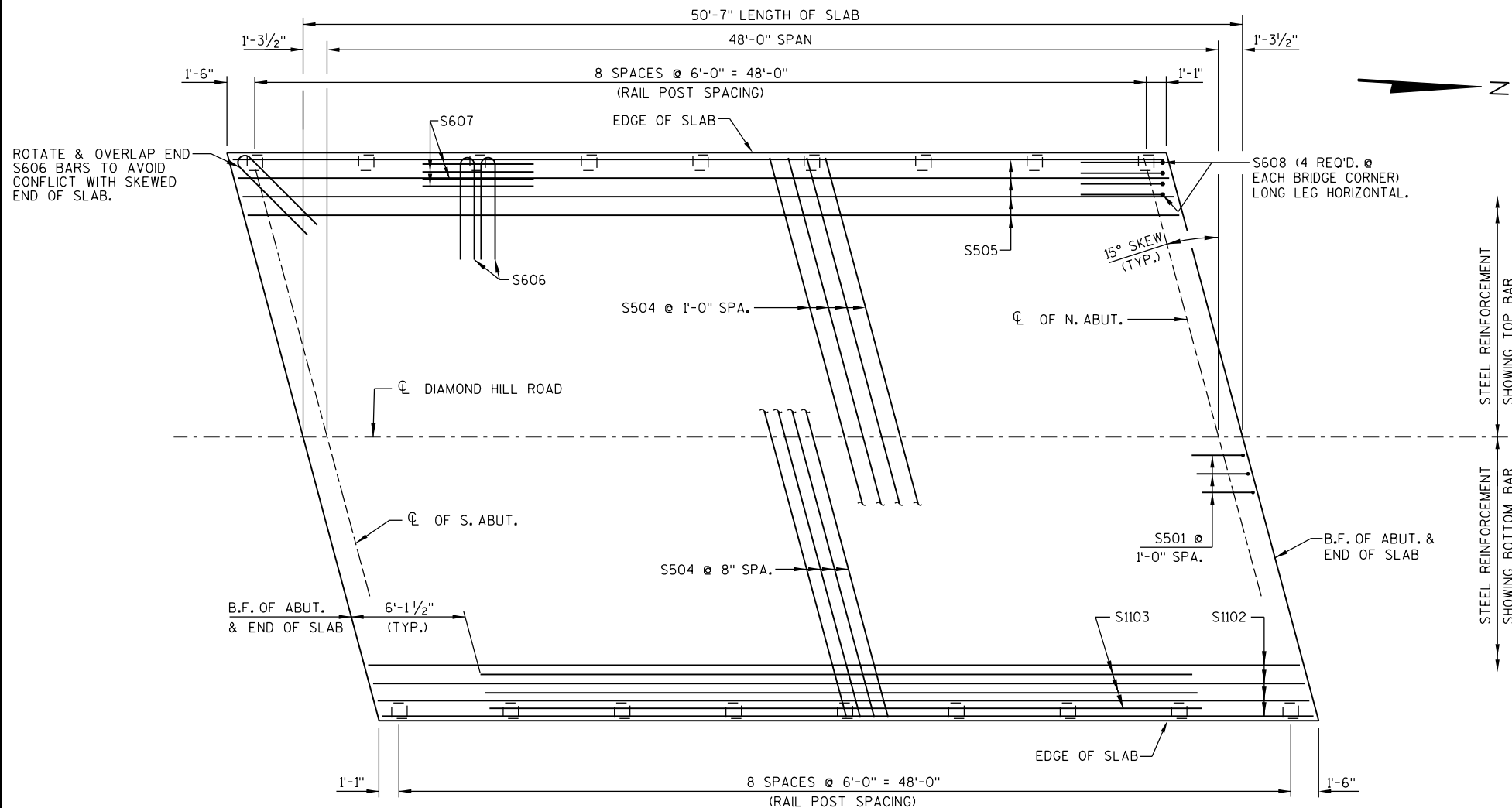
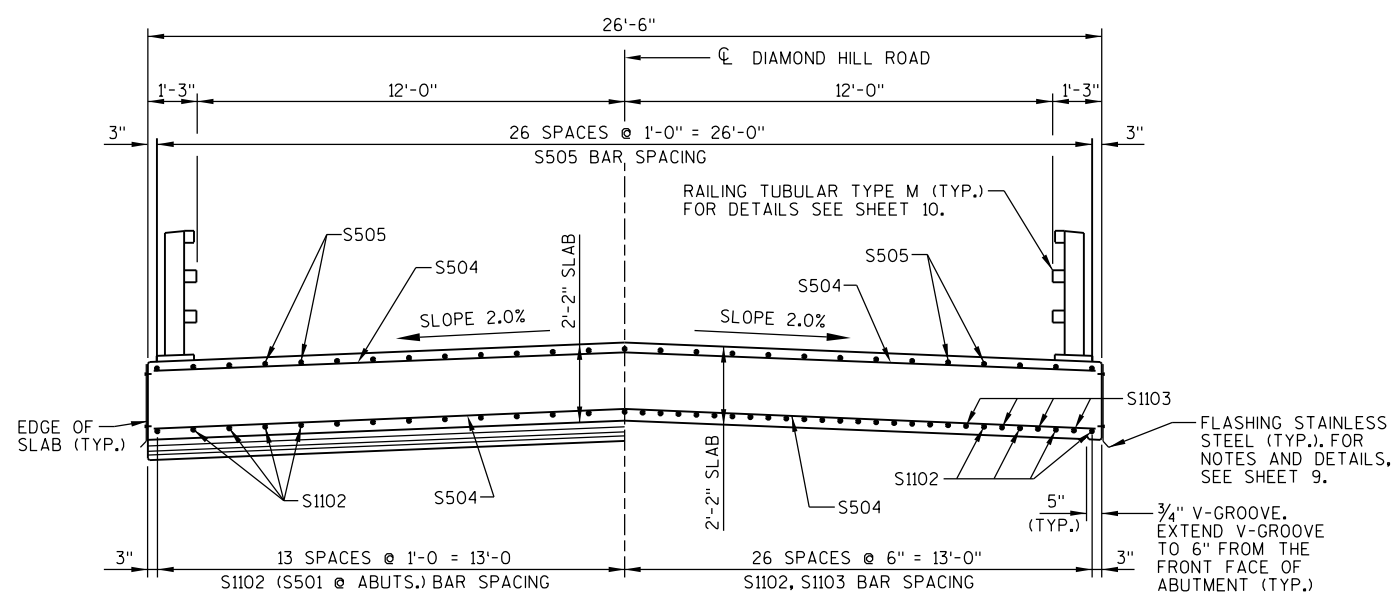
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION					
STRUCTURE			B-56-243		
		DRAWN BY	RLR	PLANS CK'D.	JDH
NORTH ABUTMENT DETAILS			SHEET 7 OF 10		

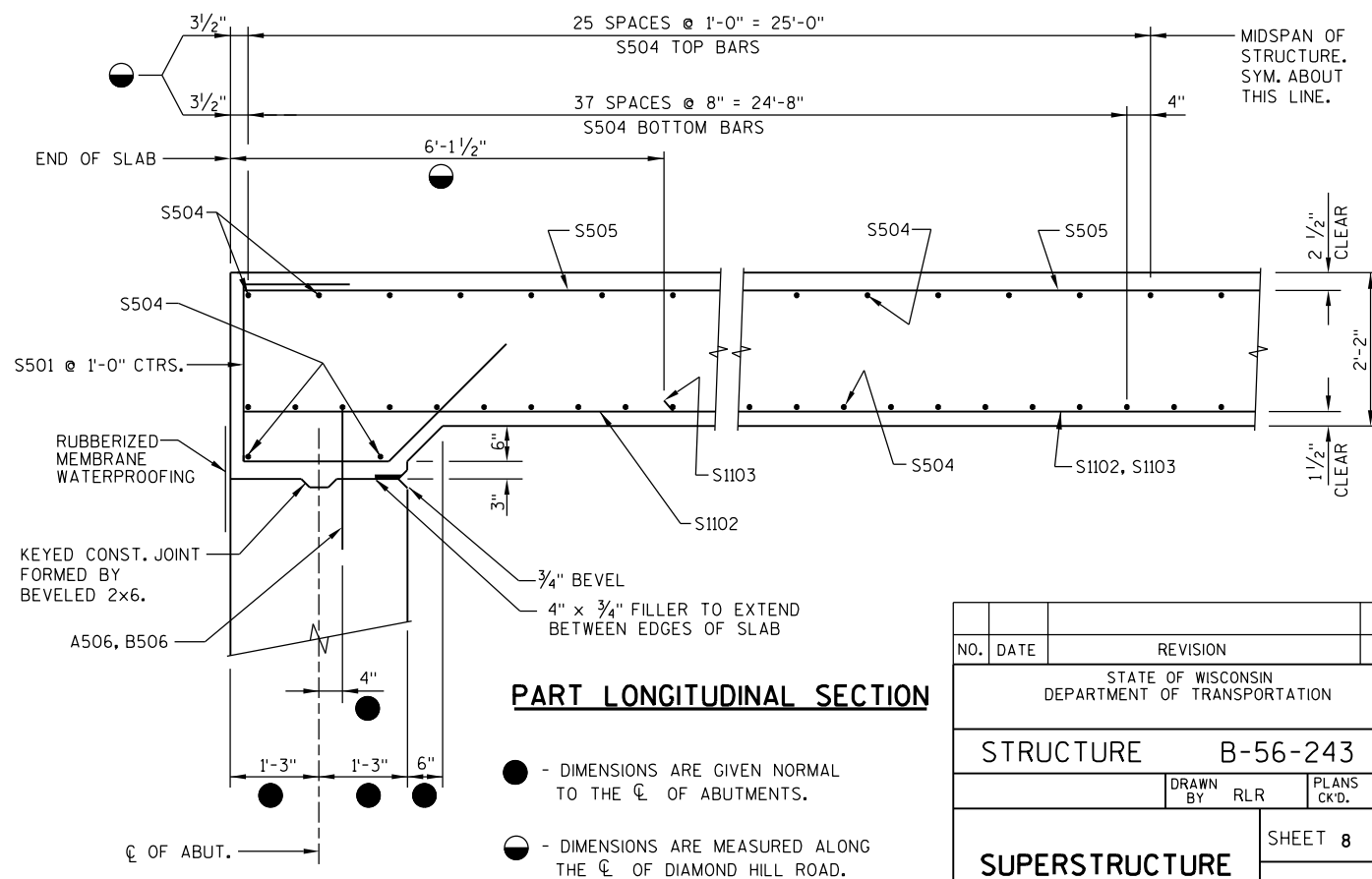
BILL OF BARS (COATED) 19,280 LBS.

MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	54	7'-11"	X	DIAPHRAGM @ ABUTS. - LONGIT.
S1102	27	50'-2"		SLAB BOTTOM - LONGIT.
S1103	26	38'-4"		SLAB BOTTOM - LONGIT.
S504	131	27'-1"		SLAB TOP & BOTTOM - TRANS.
S505	27	50'-2"		SLAB TOP - LONGIT.
S606	36	11'-4"	X	SLAB TOP @ RAIL POST, 2 PER POST
S607	56	6'-0"		SLAB TOP @ RAIL POST, 4 PER POST
S608	16	4'-8"	X	SLAB TOP @ RAIL END POST AS NOTED

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
EPOXY COAT ALL SUPERSTRUCTURE BAR STEEL REINFORCEMENT.

**S501****S608****S606****PLAN****AT ABUTMENTS****IN SPAN****CROSS SECTION THRU BRIDGE**

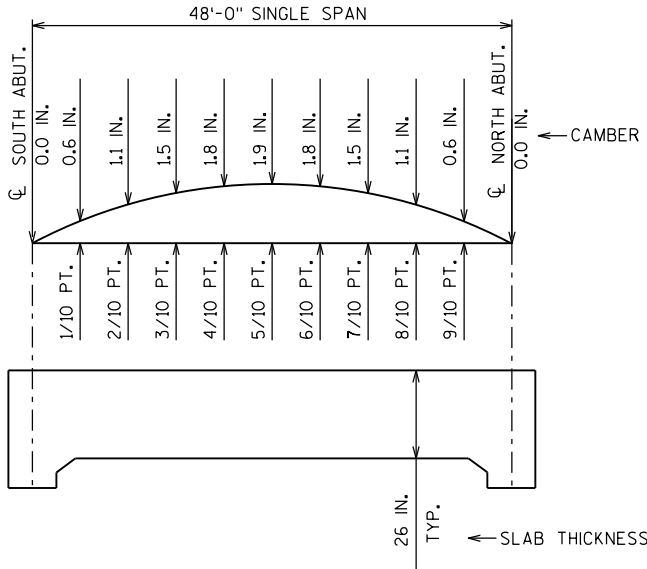
(LOOKING NORTH)

**PART LONGITUDINAL SECTION**

● - DIMENSIONS ARE GIVEN NORMAL TO THE ϕ OF ABUTMENTS.

○ - DIMENSIONS ARE MEASURED ALONG THE ϕ OF DIAMOND HILL ROAD.

NO.	DATE	REVISION	BY
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STRUCTURE B-56-243			
DRAWN BY RLR		PLANS CK'D. JDH	
SUPERSTRUCTURE			SHEET 8 OF 10



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS.

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

FLASHING NOTES

THE BID ITEM "FLASHING STAINLESS STEEL" SHALL INCLUDE PROVIDING AND INSTALLING THE STAINLESS STEEL FLASHING, CAULK, 3/16" CONCRETE SCREWS AND CLEANING THE EDGE OF THE SLAB PRIOR TO ATTACHMENT OF THE FLASHING.

FLASHING TO BE INSTALLED AFTER PROTECTIVE SURFACE TREATMENT.

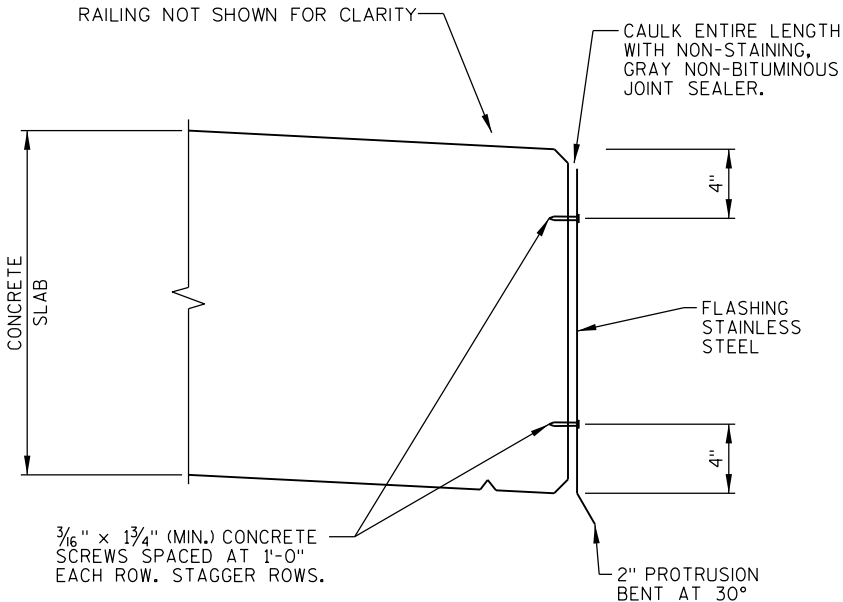
CONCRETE SCREWS SHALL BE 410 STAINLESS STEEL.

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

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

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

EXTEND FLASHING TO F.F. OF WING.



FLASHING DETAIL

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE FOLLOW THIS PROCEDURE:

TOP OF SLAB ELEVATION AT FINAL GRADE
MINUS --- SLAB THICKNESS
PLUS --- CAMBER
PLUS --- FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS = TOP OF SLAB FALSEWORK ELEVATION

SURVEY TOP OF SLAB ELEVATIONS

	CL SOUTH ABUTMENT	5/10 PT.	CL NORTH ABUTMENT
WEST EDGE OF SLAB			
CL DIAMOND HILL ROAD			
EAST EDGE OF SLAB			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE CL OF ABUTMENTS, AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG THE EDGE OF SLAB AND CROWN OR CL. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

TOP OF SLAB ELEVATIONS

	CL BEARING SOUTH ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CL BEARING NORTH ABUT.
WEST EDGE OF SLAB	872.51	872.51	872.51	872.51	872.51	872.51	872.51	872.51	872.52	872.52	872.52
CL DIAMOND HILL ROAD	872.77	872.77	872.77	872.78	872.78	872.78	872.78	872.78	872.78	872.78	872.78
EAST EDGE OF SLAB	872.51	872.51	872.51	872.51	872.51	872.51	872.51	872.51	872.51	872.52	872.52

NOTES

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

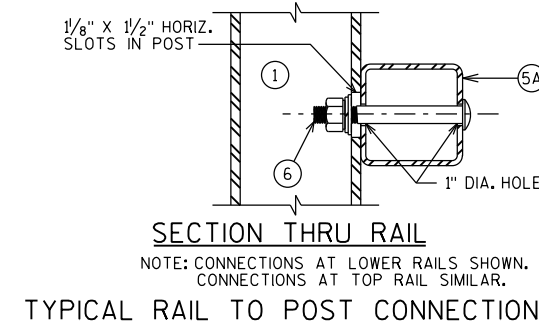
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

FILL IN THE TABLE OF "SURVEY TOP OF SLAB ELEVATIONS" FOR EACH SPAN ON AS BUILT PLANS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-56-243	
DRAWN BY		RLR	PLANS CK'D. JDH
SUPERSTRUCTURE DETAILS		SHEET 9 OF 10	

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

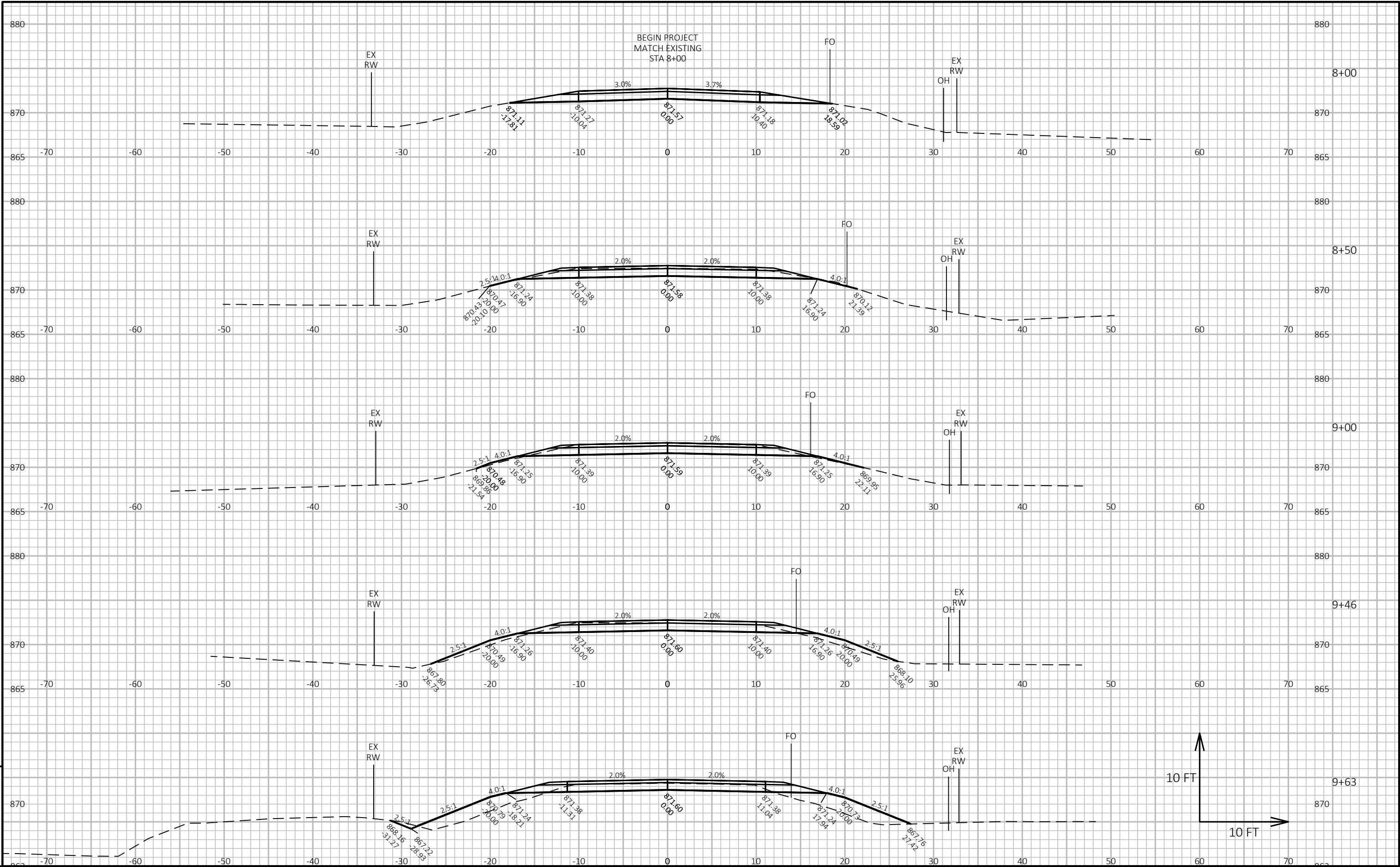
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50, HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI, ANCHOR PLATES,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

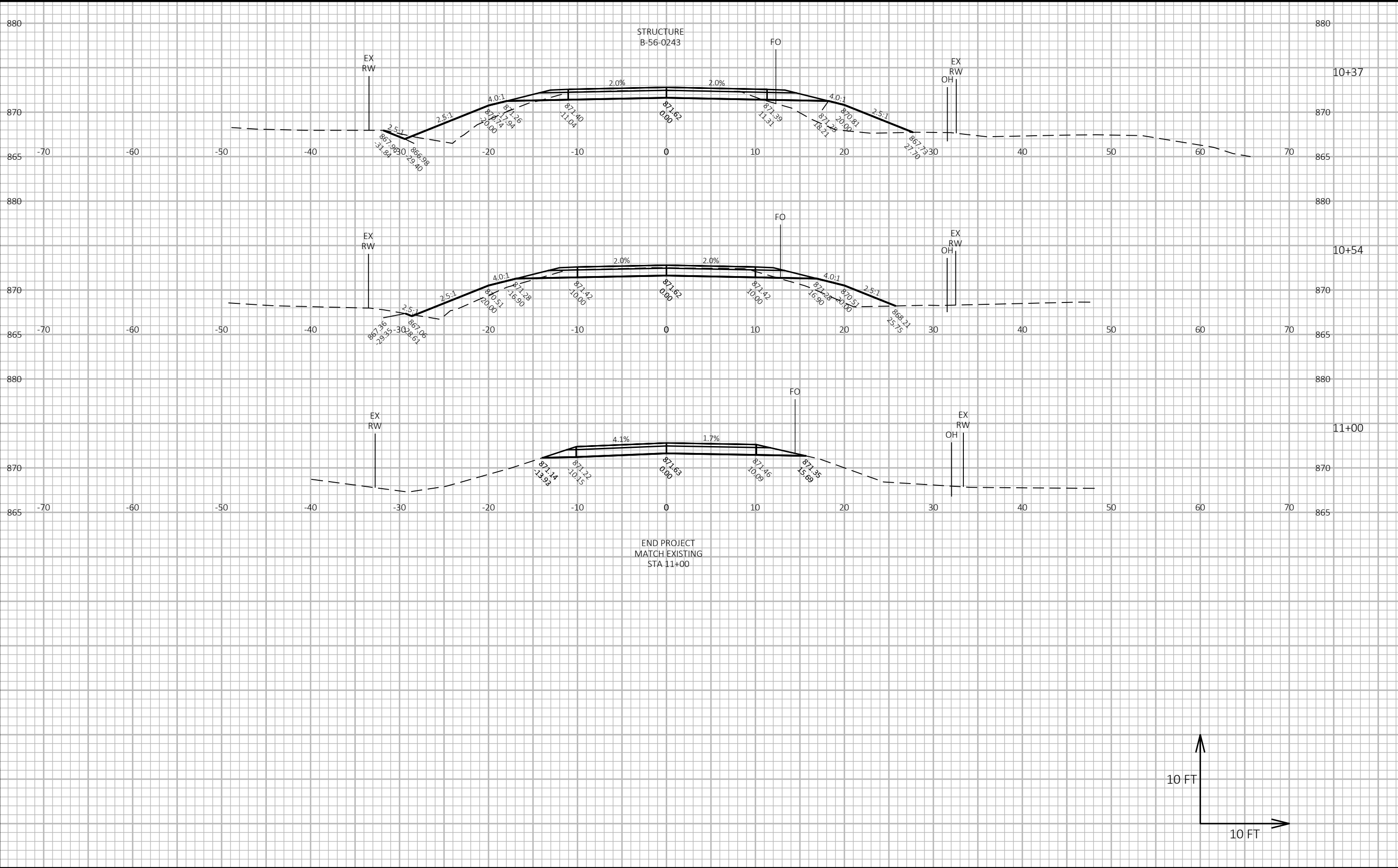


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-56-243	
DRAWN BY		RLR	PLANS CK'D. JDH
RAILING TUBULAR TYPE M		SHEET 10 OF 10	

EARTHWORK SUMMARY

STA	EXCAVATION	EXCAVATION	EXPANDED		WASTE	BORROW
	COMMON	ROCK	FILL (1)	FILL (2)		
	CY	CY	CY	CY	CY	CY
8+00.00	-	-	-	-	-	-
	55.00	0.00	0.00	0.00	55.00	-55.00
8+50.00	-	-	-	-	-	-
	51.00	0.00	1.00	1.00	50.00	-50.00
9+00.00	-	-	-	-	-	-
	45.00	0.00	9.00	12.00	33.00	-33.00
9+46.49	-	-	-	-	-	-
	12.00	0.00	13.00	17.00	-5.00	5.00
9+62.84	-	-	-	-	-	-
-	3.00	0.00	7.00	9.00	-6.00	6.00
9+69.49	-	-	-	-	-	-
STRUCTURE B-56-0243						
10+31.47	-	-	-	-	-	-
	3.00	0.00	7.00	9.00	-6.00	6.00
10+37.16	-	-	-	-	-	-
	12.00	0.00	21.00	27.00	-15.00	15.00
10+53.51	-	-	-	-	-	-
	43.00	0.00	21.00	27.00	16.00	-16.00
11+00.00	-	-	-	-	-	-
SUBTOTALS						
S. APPROACH	166.00	0.00	30.00	39.00	127.00	-127.00
N. APPROACH	58.00	0.00	49.00	63.00	-5.00	5.00
UNUSABLE PAVEMENT (3)						60.00
TOTALS	224.00	0.00	79.00	102.00	122.00	-62.00
(1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY. (2) - FILL EXPANSION 30% (3) - EXISTING PAVEMENT BASED ON AVE THK OF 3.75"						







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