

LAX

PROJECT ID:
WITH: N/A

5126-00-74

COUNTY:

MONROE

SEPTEMBER 2025

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 56



DESIGN DESIGNATION 5126-00-04

A.A.D.T.	2026	=	255
A.A.D.T.	2046	=	281
D.H.V.		=	N/A
D.D.		=	N/A
T.		=	16.3%
DESIGN SPEED		=	55 MPH
ESALS		=	72,000

CONVENTIONAL SYMBOLS

PLAN

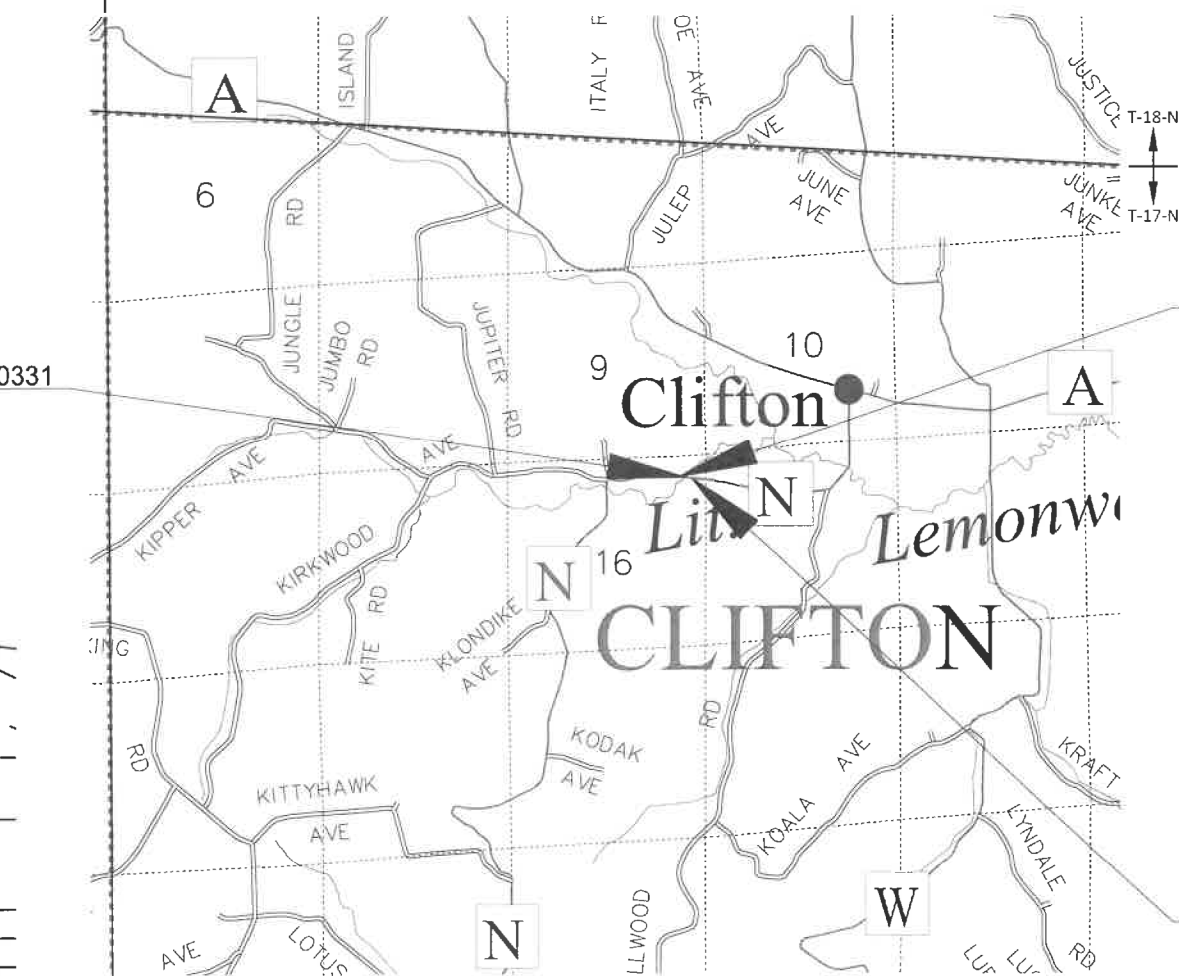
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

PROFILE

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

STRUCTURE B-41-0331

R-1-W R-1-E



LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.028 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), MONROE COUNTY NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH W - CTH A (CTH N)

LITTLE LEMONWEIR BRIDGE B-41-0331

CTH N MONROE COUNTY

STATE PROJECT NUMBER

5126-00-74

STATE PROJECT

5126-00-74

FEDERAL PROJECT

PROJECT

WISC 2025591

CONTRACT

1

ACCEPTED FOR

MONROE COUNTY

Date: 4/17/25 (Signature and Title of Official)

ORIGINAL PLANS PREPARED BY

CORRE

KEVIN L. MEYER
E-38309-006
ELK MOUND, WI
DATE: 4/17/25

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	CORRE INC
Designer	CORRE INC
Project Manager	JOSH SCHOENMANN
Regional Examiner	SW REGION
Regional Supervisor	KYLE HEMP, PE

APPROVED FOR THE DEPARTMENT

DATE: 4/22/25 (Signature)

E

GENERAL NOTES

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

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

RIGHT OF WAY SHOWN ON THE CROSS SECTIONS ARE APPROXIMATE.

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE TOPSOILED (SALVAGED), FERTILIZED, SEEDED AND EROSION MAT URBAN CLASS I TYPE B AS DIRECTED BY THE ENGINEER.

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

4-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH AN 1.75-INCH UPPER LAYER AND 2.25-INCH LOWER LAYER.

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

CONTRACTOR SHALL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY OPERATIONS OUTSIDE OF NORMAL CONSTRUCTION LIMITS.

SILT FENCE IS TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, AND IN PLACE PRIOR TO BRIDGE REMOVAL.

ALL PAVEMENT DIMENSIONS AND STATIONS ARE SHOWN TO THE EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.

WETLANDS EXIST WITHIN THE PROJECT LIMITS. DO NOT OPERATE MACHINERY OUTSIDE THE SLOPE INTERCEPTS.

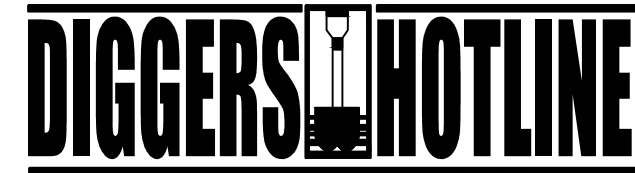
UTILITY CONTACTS

COMMUNICATION

LEMONWEIR VALLEY TELEPHONE COMPANY
BEN GRILLEY
127 USH 12/16, PO BOX 267
CAMP DOUGLAS, WI 54618
PHONE: (608) 427-4036
PHONE (MOBILE): (608) 542-0186
EMAIL: BEN.GRILLEY@GETLYNXX.COM

ELECTRICITY

OAKDALE ELECTRIC COOPERATIVE
JOHN OLLENDICK
PO BOX 40
OAKDALE, WI 54649
PHONE: (608) 372-4131
EMAIL: JOLLENDICK@OAKDALEREC.COM



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 = 0.23 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.17 ACRES

DNR LIAISON

WDNR
KAREN KALVELAGE
3550 MORMON COULEE RD
LA CROSSE, WI 54601
PHONE: (608) 715-9115
EMAIL: KAREN.KALVELAGE@WISCONSIN.GOV

REGION CONTACT

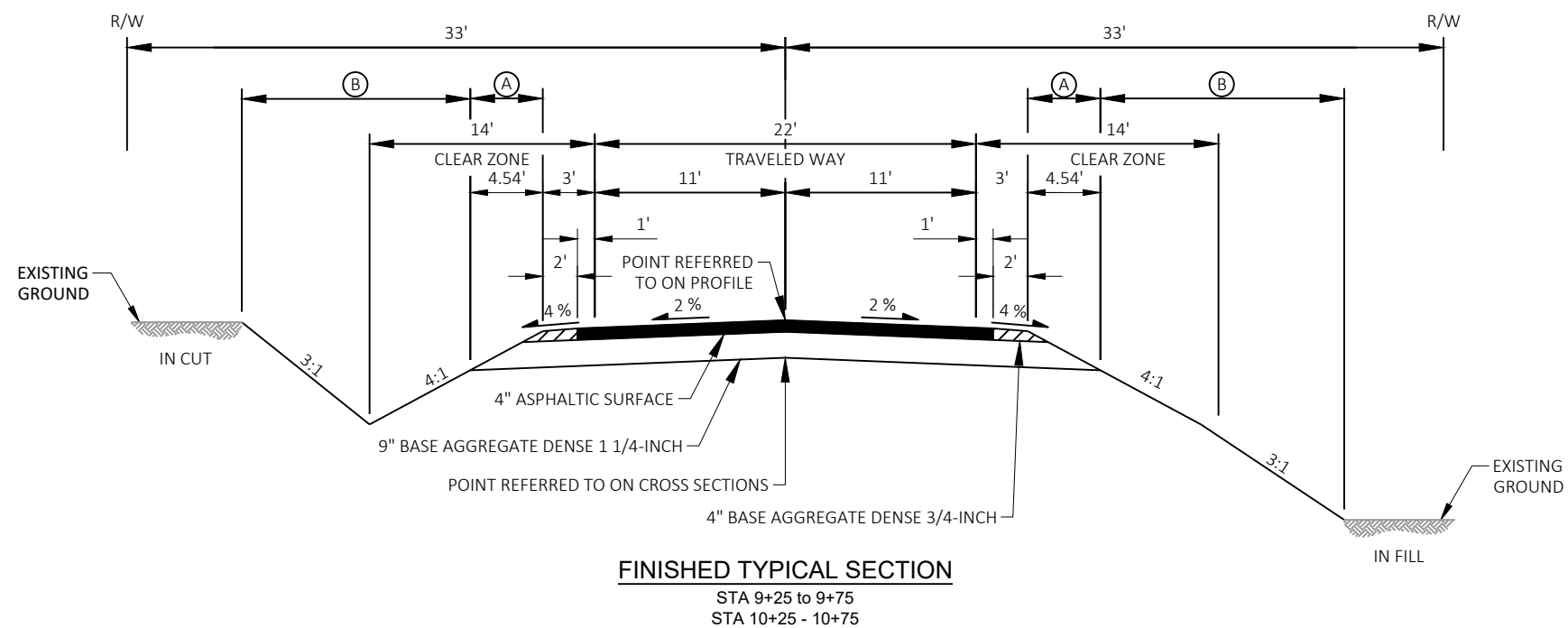
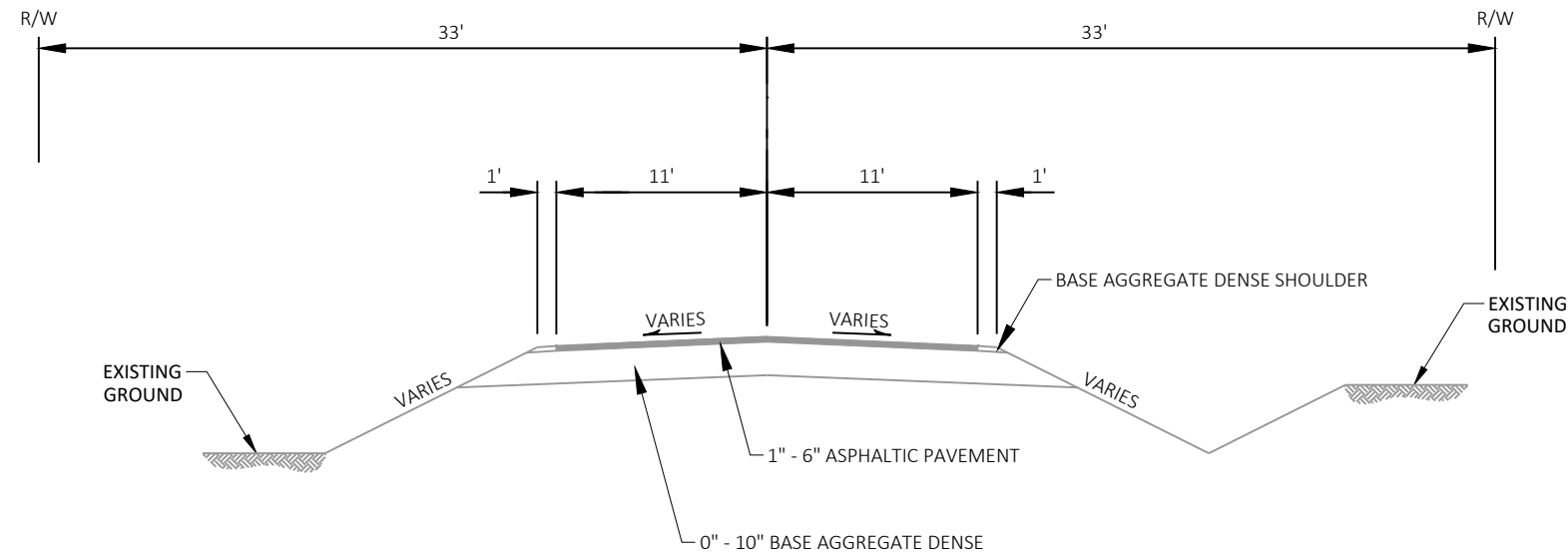
WISCONSIN DEPARTMENT OF TRANSPORTATION
JOSH SCHOENMANN
2101 WRIGHT ST
MADISON, WI 53704
PHONE: (608) 246-5448
EMAIL: JOSH.SCHOENMANN@DOT.WI.GOV

COUNTY CONTACT

MONROE COUNTY HIGHWAY COMMISSIONER
DAVID OHNSTAD
803 WASHINGTON ST
SPARTA, WI 54636
PHONE: (608) 269-8740
EMAIL: HIGHWAYS@CO.MONROE.WI.US





DESIGN CONTACT

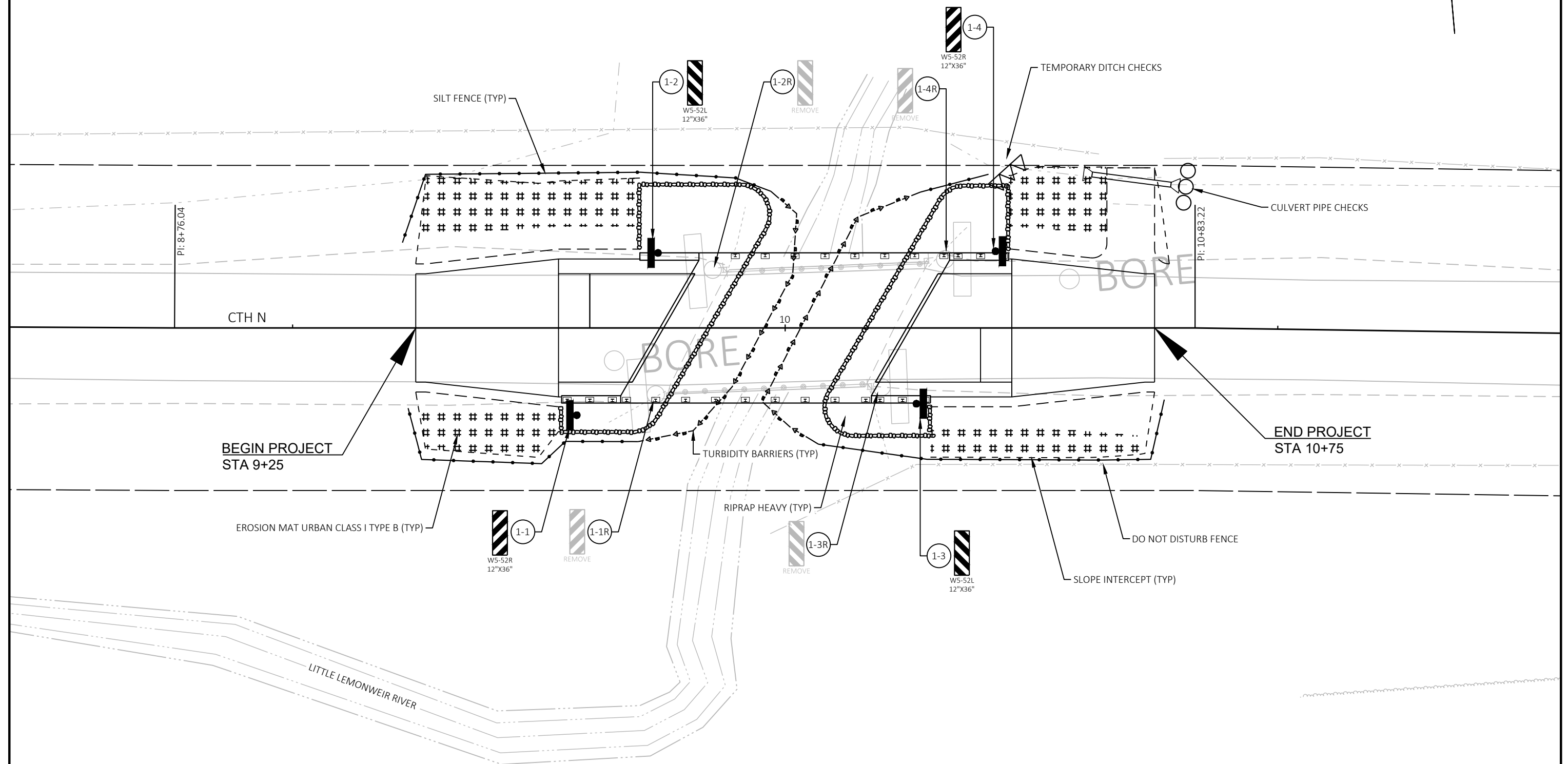
CORRE, INC.
KEVIN MEYER
1802 WARDEN ST
EAU CLAIRE, WI 54703
PHONE: (715) 299-1894
EMAIL: KMEYER@CORREINC.COM

**LEGEND**

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

LEGEND

- | | |
|---|-------------------------------|
|  | EXISTING SIGN MOUNTED ON POST |
|  | PROPOSED SIGN MOUNTED ON POST |
|  | DENOTES SIGN NUMBER |
|  | INDICATES SIGN SIZE |



Estimate Of Quantities

5126-00-74

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0004	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-41-122	EACH	1.000	1.000
0006	205.0100	Excavation Common	CY	104.000	104.000
0008	206.1001	Excavation for Structures Bridges (structure) 01. B-41-331	EACH	1.000	1.000
0010	210.1500	Backfill Structure Type A	TON	310.000	310.000
0012	213.0100	Finishing Roadway (project) 01. 5126-00-74	EACH	1.000	1.000
0014	305.0110	Base Aggregate Dense 3/4-Inch	TON	20.000	20.000
0016	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	180.000	180.000
0018	415.0060	Concrete Pavement 6-Inch	SY	16.000	16.000
0020	415.0410	Concrete Pavement Approach Slab	SY	89.000	89.000
0022	455.0605	Tack Coat	GAL	12.000	12.000
0024	465.0105	Asphaltic Surface	TON	36.000	36.000
0026	502.0100	Concrete Masonry Bridges	CY	200.000	200.000
0028	502.3200	Protective Surface Treatment	SY	228.000	228.000
0030	505.0400	Bar Steel Reinforcement HS Structures	LB	4,340.000	4,340.000
0032	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	26,070.000	26,070.000
0034	513.4061	Railing Tubular Type M	LF	155.000	155.000
0036	516.0500	Rubberized Membrane Waterproofing	SY	22.000	22.000
0038	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	2.000	2.000
0040	521.3112	Culvert Pipe Corrugated Steel 12-Inch	LF	16.000	16.000
0042	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	400.000	400.000
0044	602.3010	Concrete Surface Drains	CY	5.000	5.000
0046	606.0300	Riprap Heavy	CY	148.000	148.000
0048	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	200.000	200.000
0050	618.0100	Maintenance and Repair of Haul Roads (project) 01. 5126-00-74	EACH	1.000	1.000
0052	619.1000	Mobilization	EACH	1.000	1.000
0054	624.0100	Water	MGAL	4.000	4.000
0056	625.0500	Salvaged Topsoil	SY	170.000	170.000
0058	628.1504	Silt Fence	LF	340.000	340.000
0060	628.1520	Silt Fence Maintenance	LF	340.000	340.000
0062	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0064	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0066	628.2008	Erosion Mat Urban Class I Type B	SY	170.000	170.000
0068	628.6005	Turbidity Barriers	SY	140.000	140.000
0070	628.7504	Temporary Ditch Checks	LF	20.000	20.000
0072	628.7555	Culvert Pipe Checks	EACH	4.000	4.000
0074	629.0210	Fertilizer Type B	CWT	0.300	0.300
0076	630.0120	Seeding Mixture No. 20	LB	12.000	12.000
0078	630.0200	Seeding Temporary	LB	12.000	12.000
0080	630.0500	Seed Water	MGAL	7.000	7.000
0082	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0084	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0086	638.2602	Removing Signs Type II	EACH	4.000	4.000
0088	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0090	642.5001	Field Office Type B	EACH	1.000	1.000
0092	643.0420	Traffic Control Barricades Type III	DAY	1,190.000	1,190.000
0094	643.0705	Traffic Control Warning Lights Type A	DAY	2,040.000	2,040.000
0096	643.0900	Traffic Control Signs	DAY	1,190.000	1,190.000
0098	643.5000	Traffic Control	EACH	1.000	1.000

Estimate Of Quantities

5126-00-74

Line	Item	Item Description	Unit	Total	Qty
0100	645.0111	Geotextile Type DF Schedule A	SY	62.000	62.000
0102	645.0120	Geotextile Type HR	SY	275.000	275.000
0104	650.4500	Construction Staking Subgrade	LF	91.000	91.000
0106	650.5000	Construction Staking Base	LF	91.000	91.000
0108	650.6501	Construction Staking Structure Layout (structure) 01. B-41-331	EACH	1.000	1.000
0110	650.9911	Construction Staking Supplemental Control (project) 01. 5126-00-74	EACH	1.000	1.000
0112	650.9920	Construction Staking Slope Stakes	LF	91.000	91.000
0114	690.0150	Sawing Asphalt	LF	44.000	44.000
0116	715.0502	Incentive Strength Concrete Structures	DOL	1,200.000	1,200.000
0118	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0120	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000
0122	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0124	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

203.0100 REMOVING SMALL PIPE CULVERTS					305.0110 BASE AGGREGATE DENSE 3/4-INCH					305.0120 BASE AGGREGATE DENSE 1 1/4-INCH			624.0100 WATER			415.0060 CONCRETE PAVEMENT 6-INCH		415.0410 CONCRETE APPROACH SLAB		602.3010 CONCRETE SURFACE DRAINS	
CATEGORY	STATION	LOCATION	EACH	REMARKS	CATEGORY	STATION	TO	STATION	LOCATION	TON	TON	MGAL	CATEGORY	STATION	TO	STATION	LOCATION	SY	SY	CY	
0010	10+72	LT	1	11 LF 12" CPCS	0010	9+25	-	10+75	ML	20	180	4	0010	9+54	-	10+46	CTH N	16	89	5	
TOTAL 0010			1		TOTAL 0010					20	180	4	TOTAL 0010					16	89	5	

DIVISION	FROM/TO STATION	LOCATION	COMMON EXCAVATION (1)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE
			CUT (2)				FACTOR 1.25		
DIVISION 1									
CTH N	9+25.00/10+75.00	CTH N	104	21	83	20	25	58	
DIVISION 1 SUBTOTAL			104	21	83	20	25	58	58
GRAND TOTAL			104	21	83	20	25	58	58
TOTAL COMMON EXC			104						

NOTES:
(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
(2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
(5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
(13) EXPANDED FILL FACTOR = 1.25
DEPENDING ON SELECTIONS: **EXPANDED FILL = (UNEXPANDED FILL) * FILL FACTOR**
(14) 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
(15) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

						455.0605	465.0105						521.1012	521.3112	
													APRON		
													ENDWALLS		
						TACK COAT	ASPHALTIC						FOR CULVERT	CULVERT PIPE	
													PIPE STEEL 12-	CORRUGATED	
CATEGORY	STATION	TO	STATION	LOCATION		GAL	TON						INCH	STEEL 12-INCH	
0010	9+25	-	9+52	CTH N		6	18						EACH	LF	REMARKS
0010	10+47	-	10+75	CTH N		6	18								MINIMUM PIPE THICKNESS: 0.064"
						TOTAL 0010							TOTAL 0010		
						12	36						2	16	

					625.0500	628.2008	628.7504	628.7555	629.0210	630.0120	630.0200	630.0500						628.1504	628.1520
					EROSION MAT		TEMPORARY DITCH CHECKS	CULVERT PIPE CHECKS	FERTILIZER TYPE B	SEEDING MIXTURE NO. 20	SEEDING TEMPORARY	SEED WATER LB						SILT FENCE	
					SALVAGED TOPSOIL	URBAN CLASS I TYPE B												MAINTENANCE	
CATEGORY	STATION	TO	STATION	LOCATION	SY	SY							CATEGORY	STATION	TO	STATION	LOCATION	LF	LF
0010	9+25	-	10+75	CTH N	130	130	10	4	0.2	9	9	5	0010	9+25	-	10+75	CTH N	270	270
0010	9+25	-	10+75	UNDISTRIBUTED	40	40	10	-	0.1	3	3	2	0010	9+25	-	10+75	UNDISTRIBUTED	70	70
TOTAL 0010					170	170	20	4	0.3	12	12	7	TOTAL 0010					340	340

			628.6005
			TURBIDITY
			BARRIERS
CATEGORY	LOCATION	SY	
0010	WEST BANK	70	
0010	EAST BANK	70	
TOTAL 0010		140	

			634.0614		637.2230	638.2602	638.3000			
			POSTS WOOD		SIGN TYPE II	REMOVING	REMOVING			
			4X6-INCH X 14-	FT		SIGNS TYPE II	SMALL SIGN			
CATEGORY	STATION	LOCATION	SIGN NUMBER	SIGN CODE	SIZE IN X IN	REFLECTIVE F SF	SIGNS TYPE II EACH	SUPPORTS EACH	DESCRIPTION	
0010	9+55	RT	1-1	W5-52R	12 36	3	-	-	BRIDGE HASH MARKS	
0010	9+74	RT	1-1R	W5-52R	- -	-	1	1	BRIDGE HASH MARKS	
0010	9+71	LT	1-2	W5-52L	12 36	3	-	-	BRIDGE HASH MARKS	
0010	9+85	LT	1-2R	W5-52L	- -	-	1	1	BRIDGE HASH MARKS	
0010	10+30	RT	1-3	W5-52L	12 36	3	-	-	BRIDGE HASH MARKS	
0010	10+20	RT	1-3R	W5-52L	- -	-	1	1	BRIDGE HASH MARKS	
0010	10+45	LT	1-4	W5-52R	12 36	3	-	-	BRIDGE HASH MARKS	
0010	10+32	LT	1-4R	W5-52R	- -	-	1	1	BRIDGE HASH MARKS	
TOTAL 0010						4	12	4	4	

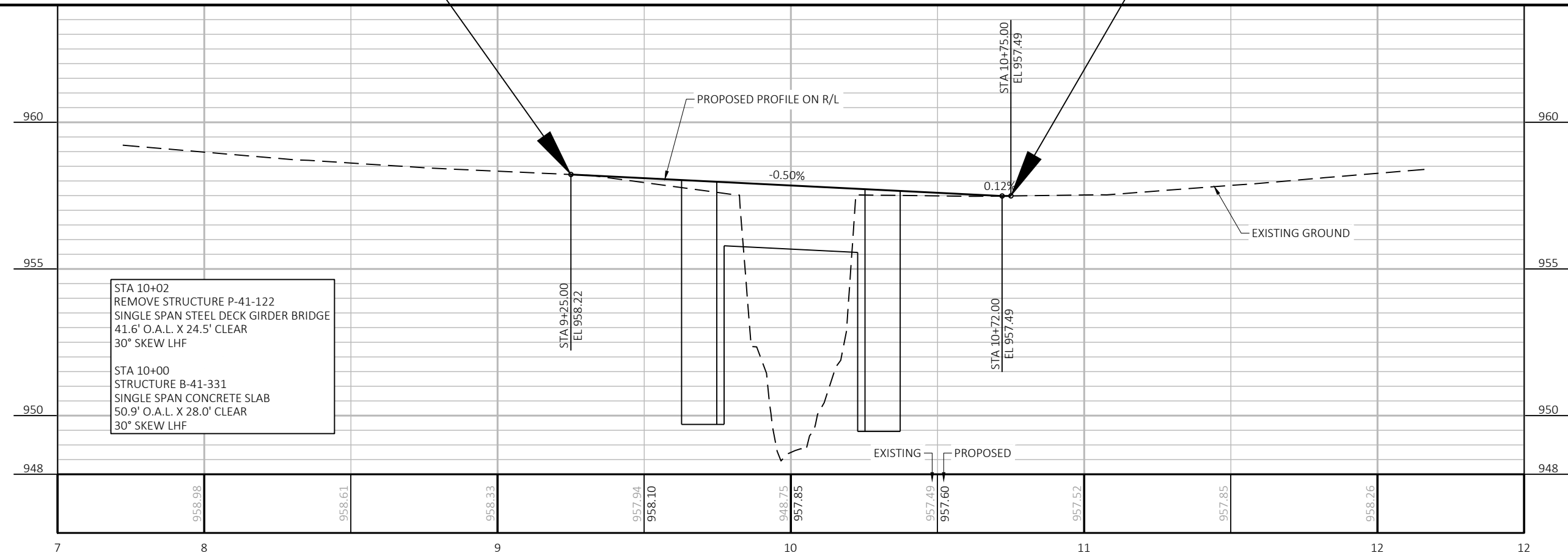
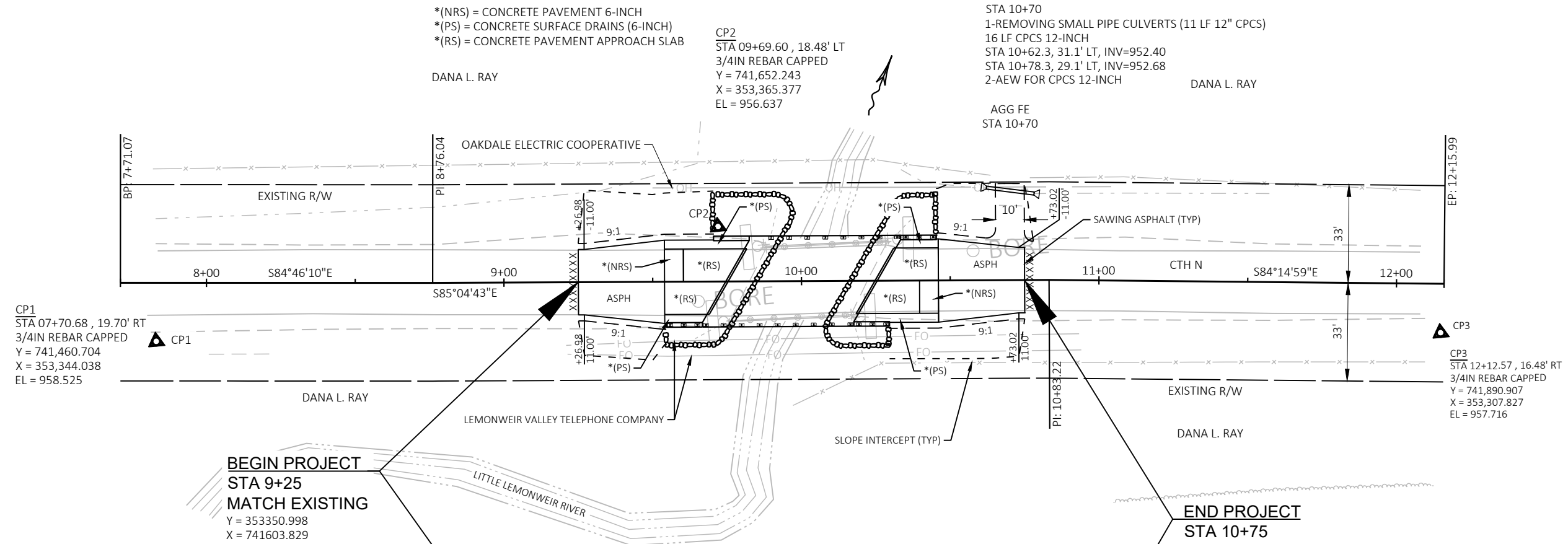
					643.0420		643.0705		643.0900						
					TRAFFIC CONTROL		TRAFFIC CONTROL								
					BARRICADES		WARNING		TRAFFIC						
					TYPE III		LIGHTS TYPE A		CONTROL SIGNS						
CATEGORY	STATION	TO	STATION	LOCATION	DEVICES	DAYS	DAY	DEVICES	DAYS	DAY	DEVICES	DAYS	DAY		
0010	9+25	-	10+75	PROJECT	14	85	1,190	24	85	2,040	14	85	1,190		
TOTAL 0010							1,190			2,040			1,190		

					650.4500	650.5000	650.9920
					CONSTRUCTION		CONSTRUCTION
					STAKING	CONSTRUCTION	STAKING SLOPE
					SUBGRADE	STAKING BASE	STAKES
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF
0010	9+25	-	9+71	ML	46	46	46
0010	10+30	-	10+75	ML	45	45	45
TOTAL 0010					91	91	91

				690.0150
				SAWING
				ASPHALT
CATEGORY	STATION	LOCATION	LF	
0010	9+25	CTH N	22	
0010	10+75	CTH N	22	
TOTAL 0010			44	

5

5



PROJECT NO: 5126-00-74

HWY: CTH N

COUNTY: MONROE

PLAN AND PROFILE: CTH N

SHEET

E

Standard Detail Drawing List

08D02-08A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F07-05	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE DRAINS
08F08-02	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED CROSS DRAINS
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
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

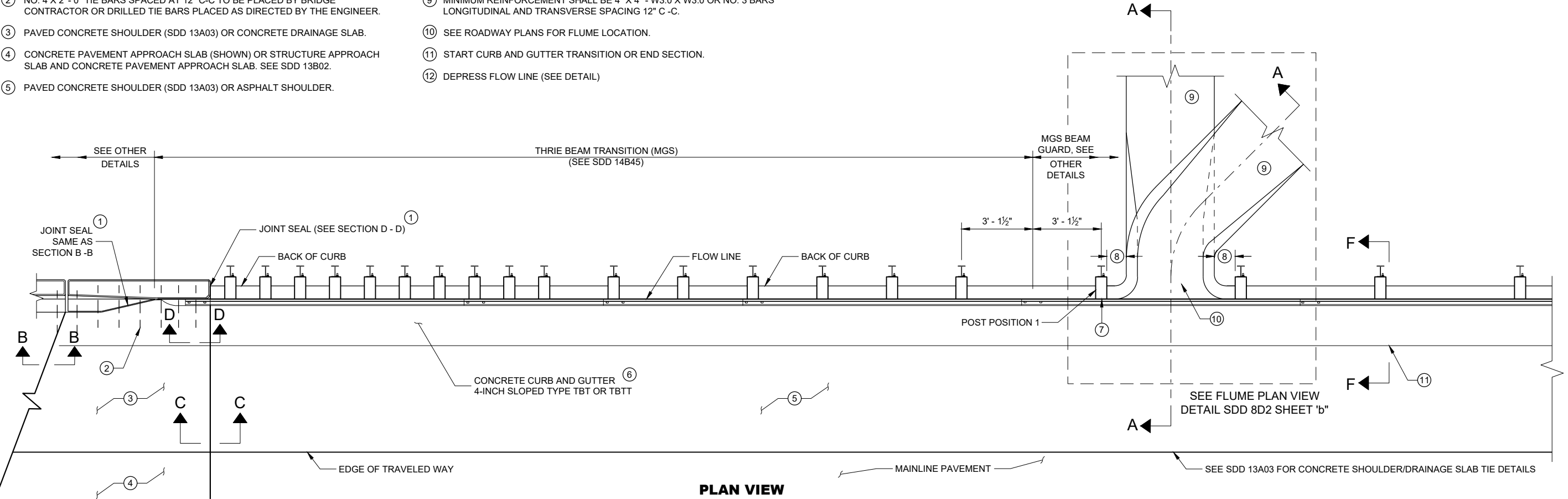
GENERAL NOTES

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.

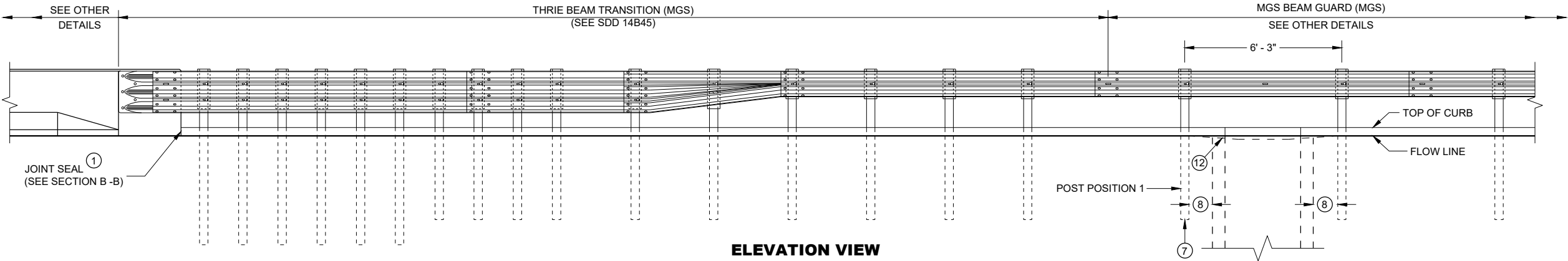
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- 1 USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- 2 NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- 3 PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- 4 CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
- 5 PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

- 6 CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- 7 PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- 8 CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- 9 MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- 10 SEE ROADWAY PLANS FOR FLUME LOCATION.
- 11 START CURB AND GUTTER TRANSITION OR END SECTION.
- 12 DEPRESS FLOW LINE (SEE DETAIL)



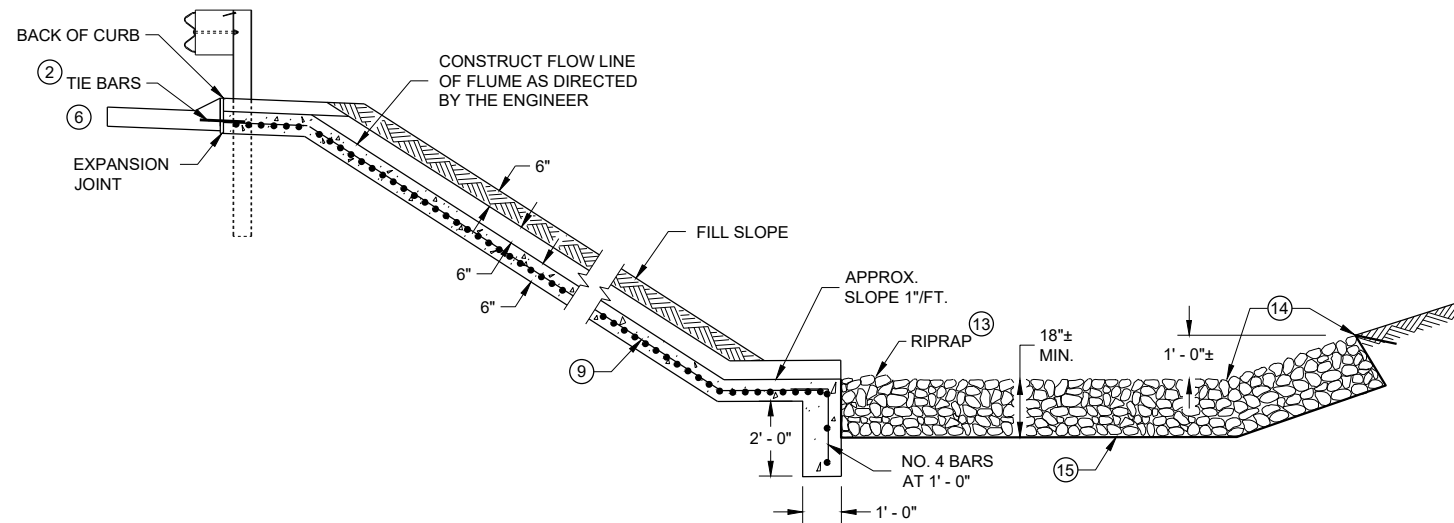
PLAN VIEW



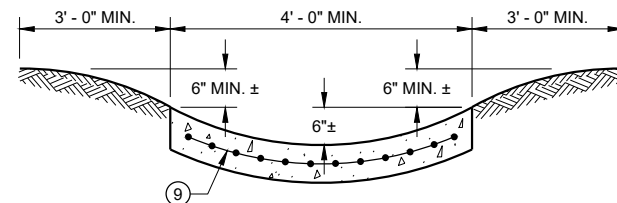
ELEVATION VIEW

CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES

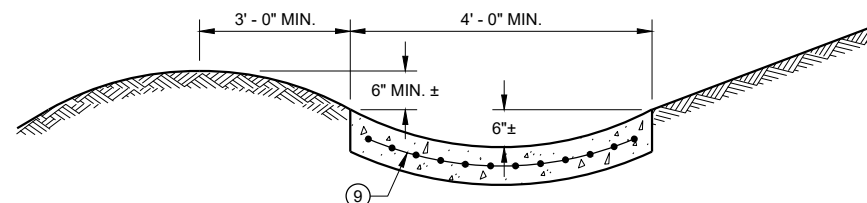
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



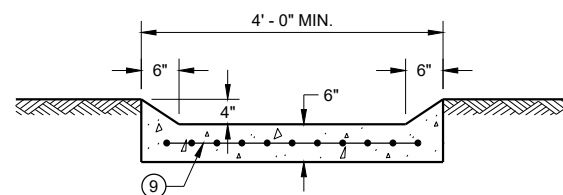
SECTION A - A



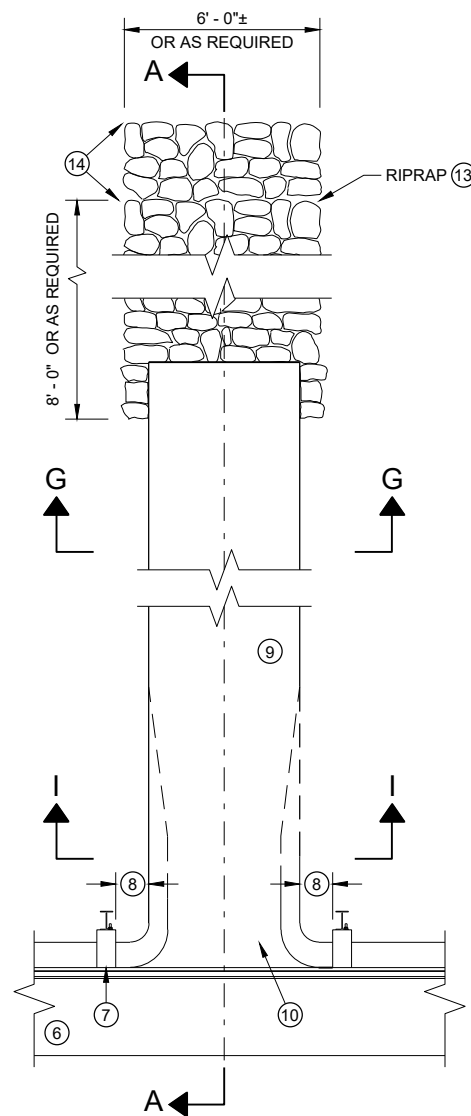
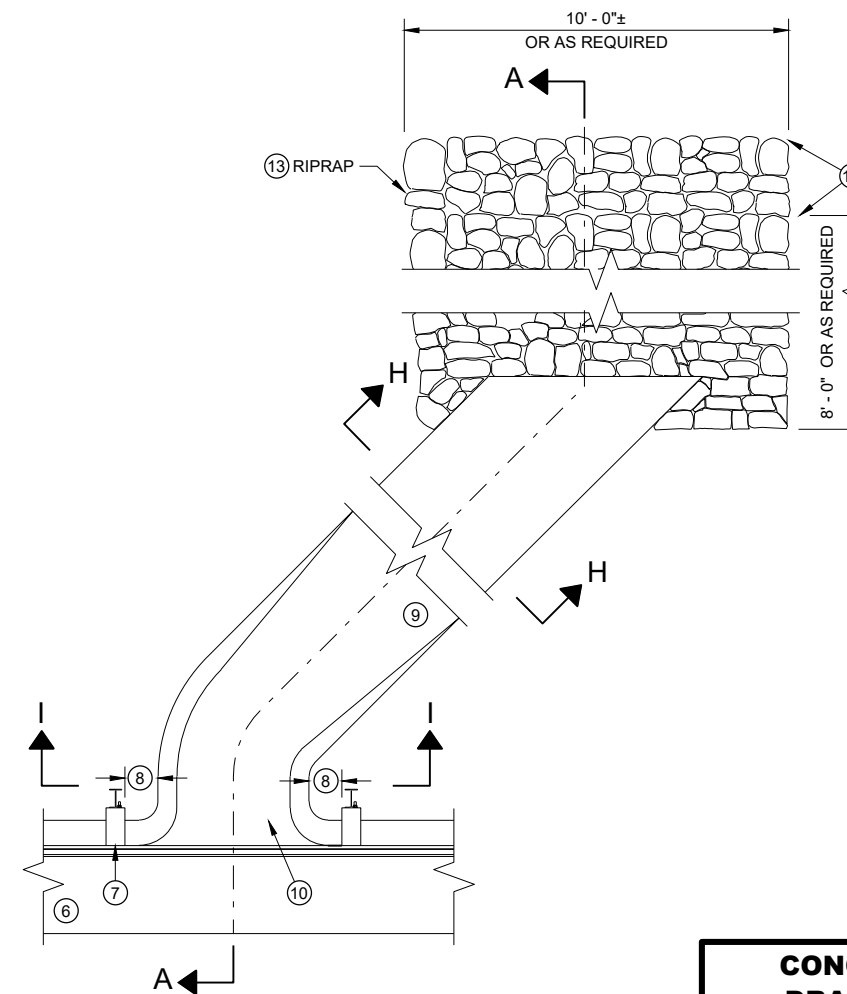
SECTION G - G



SECTION H - H



SECTION I - I

PLAN VIEW
PERPENDICULAR FLUMEPLAN VIEW
SKEWED FLUME

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.

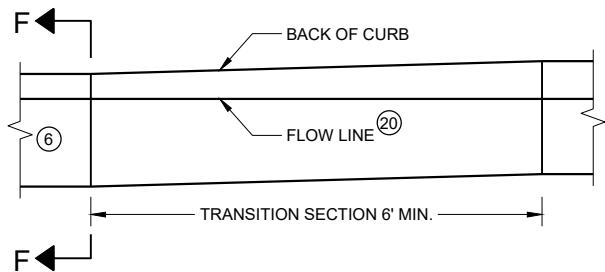
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBT. USE TYPE TBT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

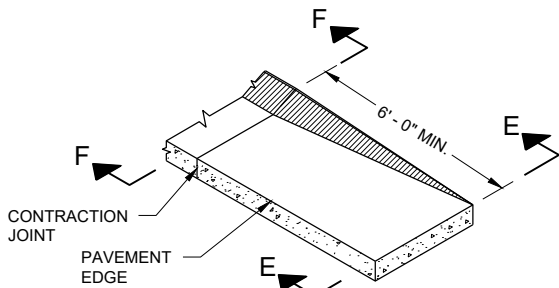
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH AS REQUIRED.
- ⑮ GEOTEXTILE TYPE HR.

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

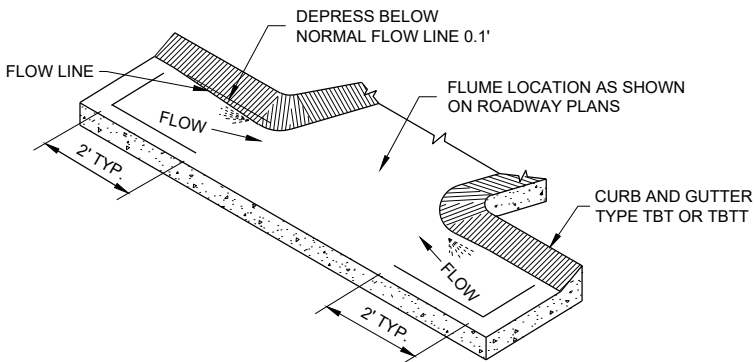
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



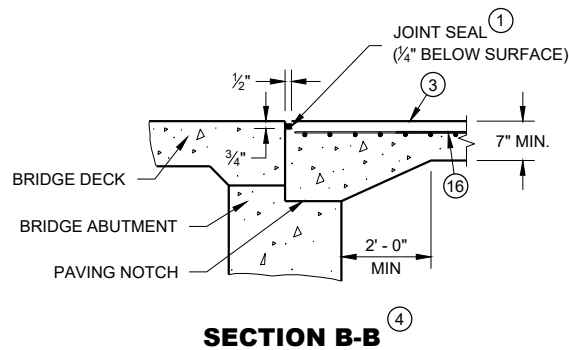
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



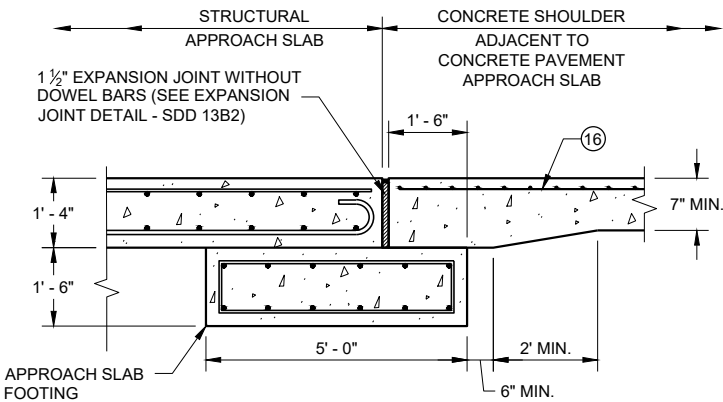
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



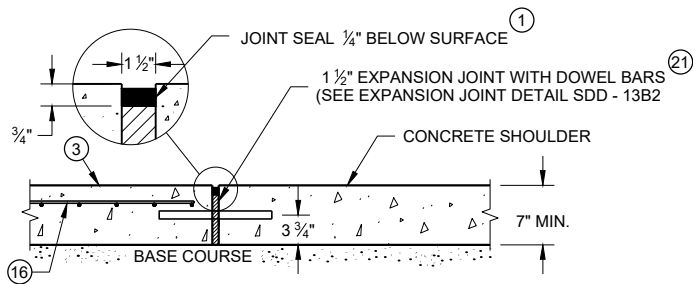
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



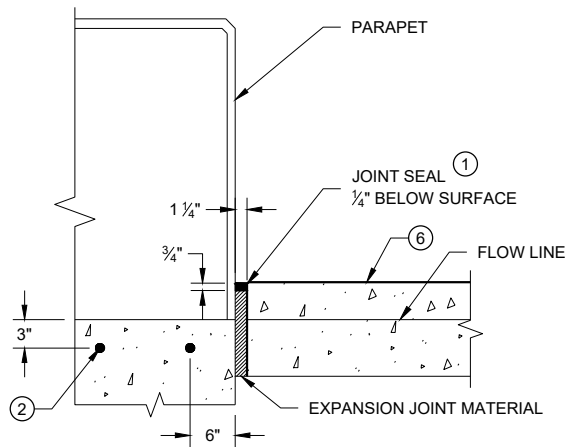
SECTION B-B



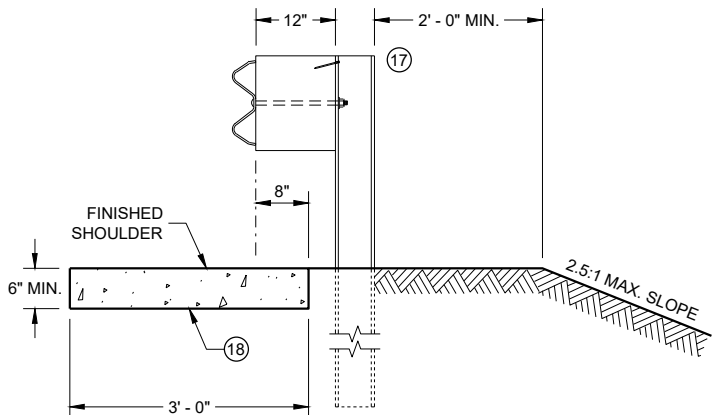
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



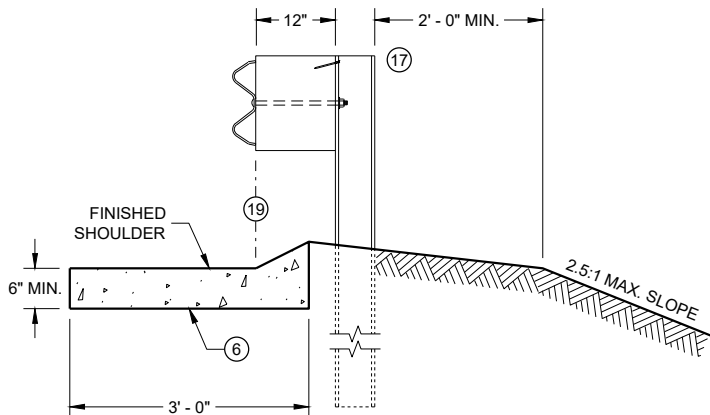
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

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.

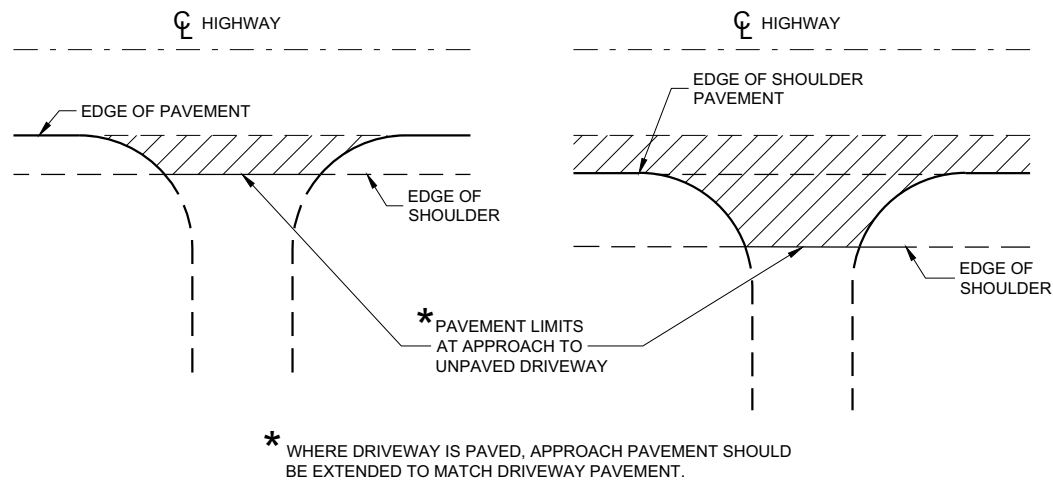
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
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- CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
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- CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- SEE ROADWAY PLANS FOR FLUME LOCATION.
- START CURB AND GUTTER TRANSITION OR END SECTION.
- DEPRESS FLOW LINE (SEE DETAIL)
- MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- GEOTEXTILE TYPE HR.
- MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

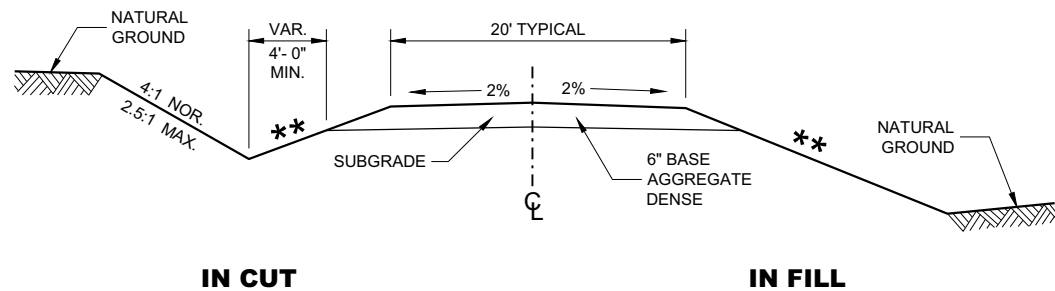
APPROVED
May 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

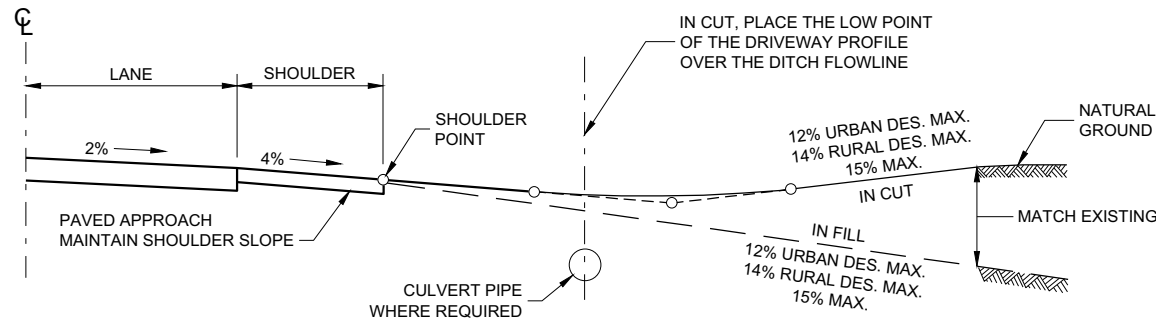
**RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB AND GUTTER OR SIDEWALK)**



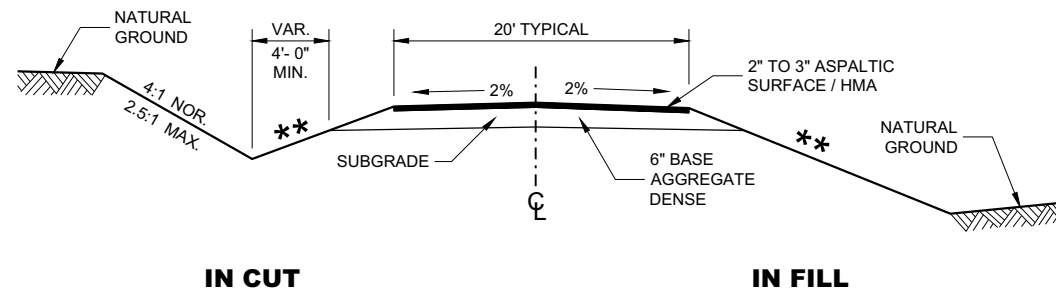
**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE**

** SLOPE CAN VARY WITH SPEED. SEE 11-45-30.6.2

POSTED SPEED MPH	MAX. SLOPE
<35	4:1
≥ 35 TO < 60	6:1
≥60	10:1



TYPICAL DRIVEWAY PROFILES

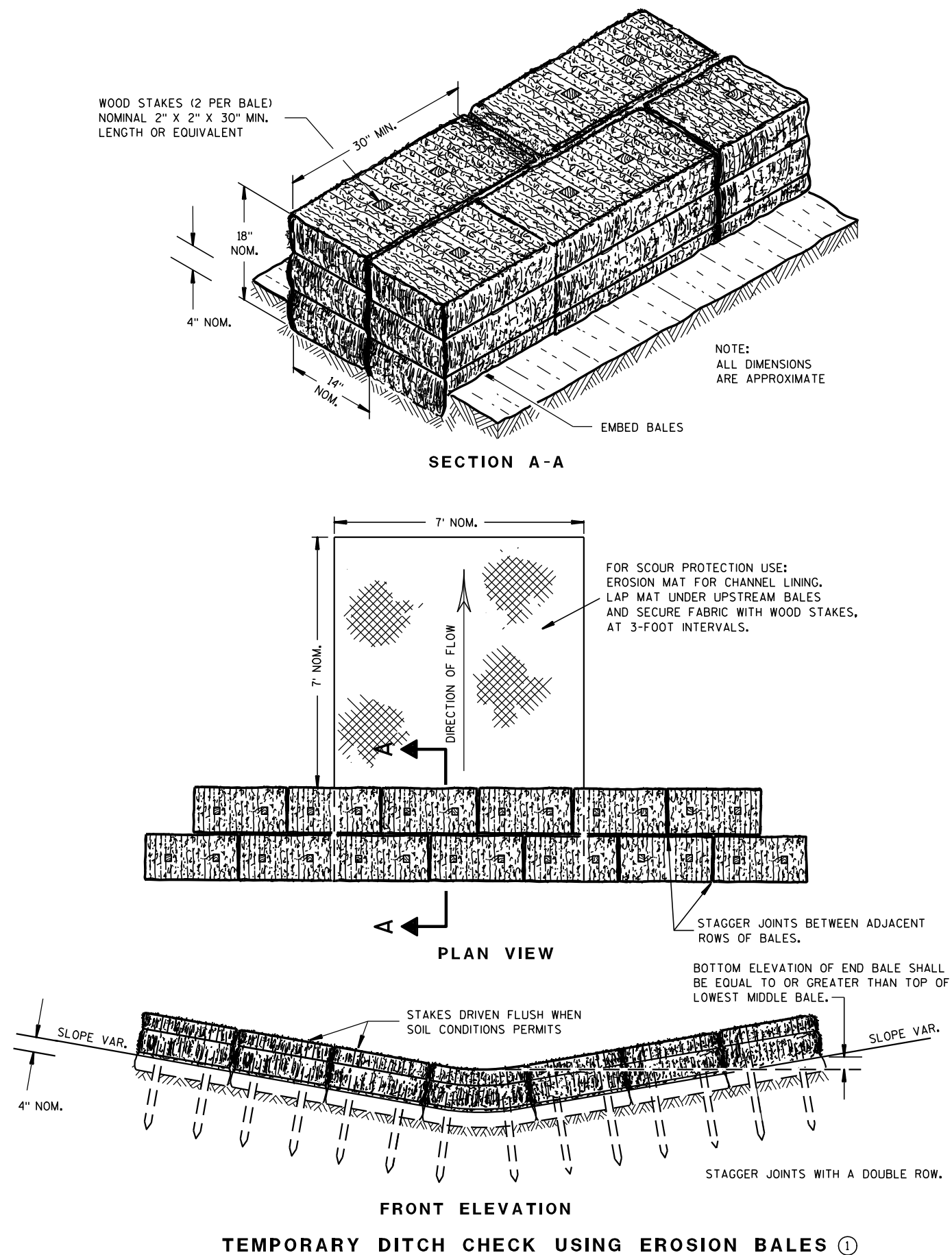


**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE**

**DRIVEWAYS WITHOUT
CURB AND GUTTER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

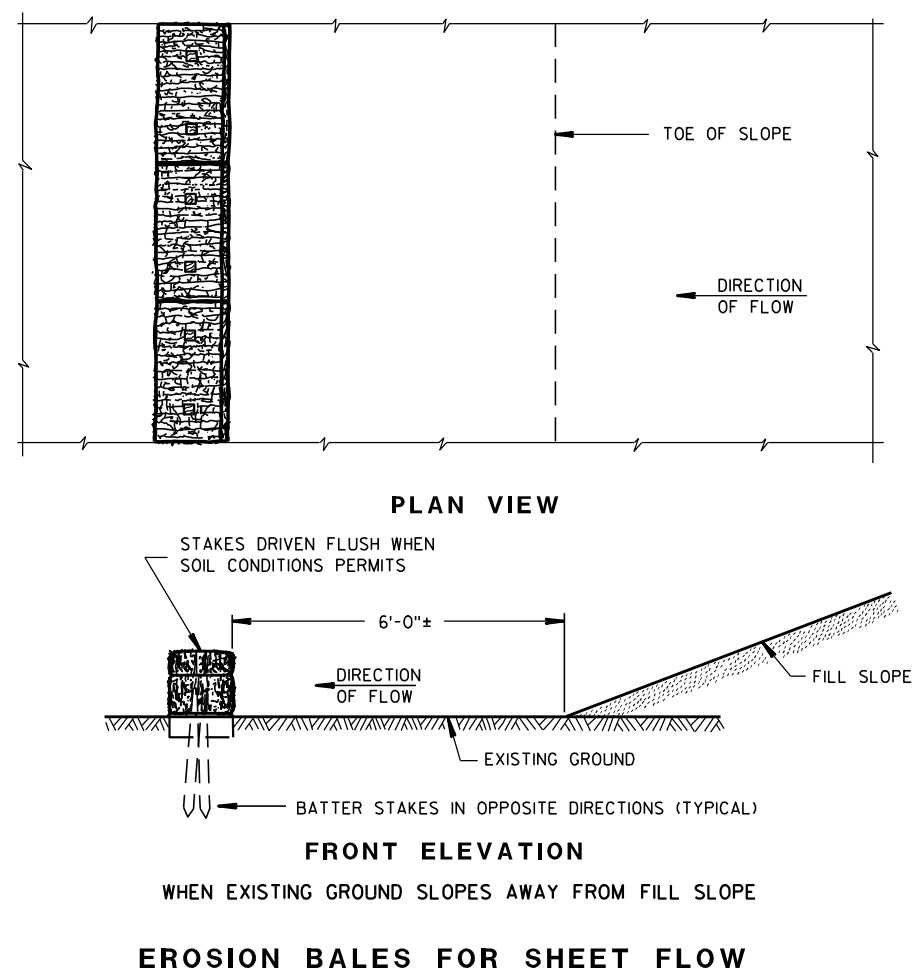
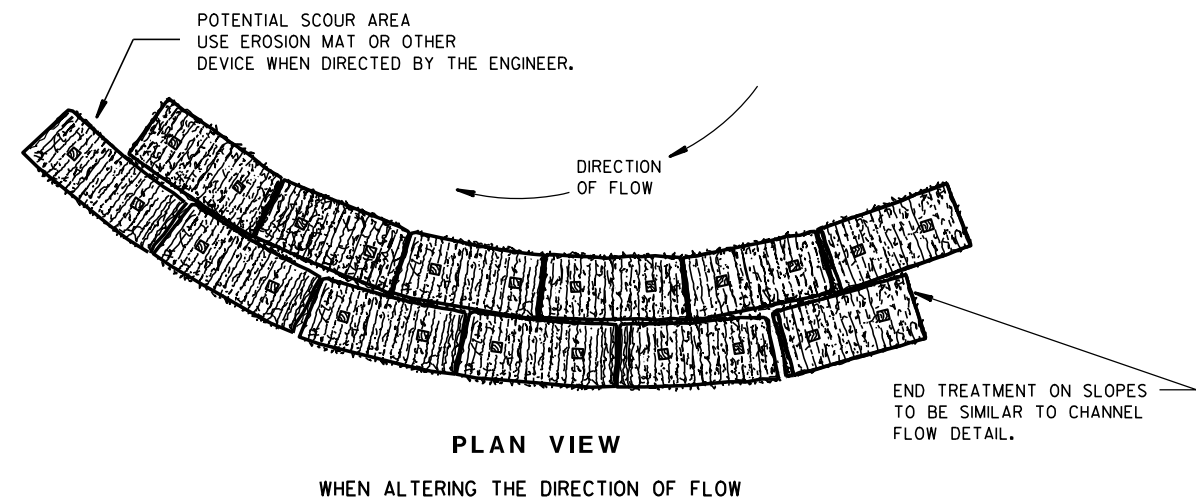
APPROVED
December 2017
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

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

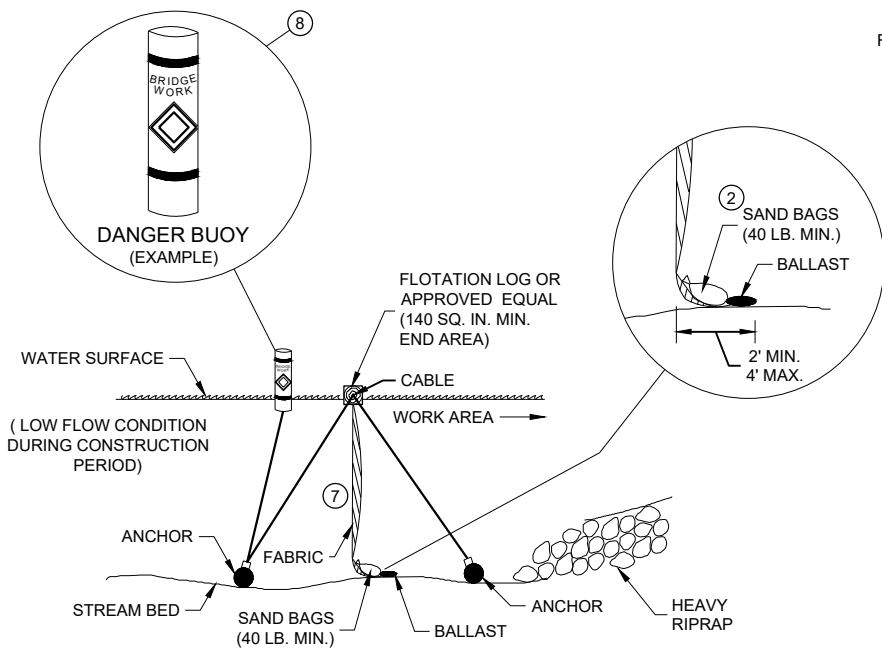
FHWA



- 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.

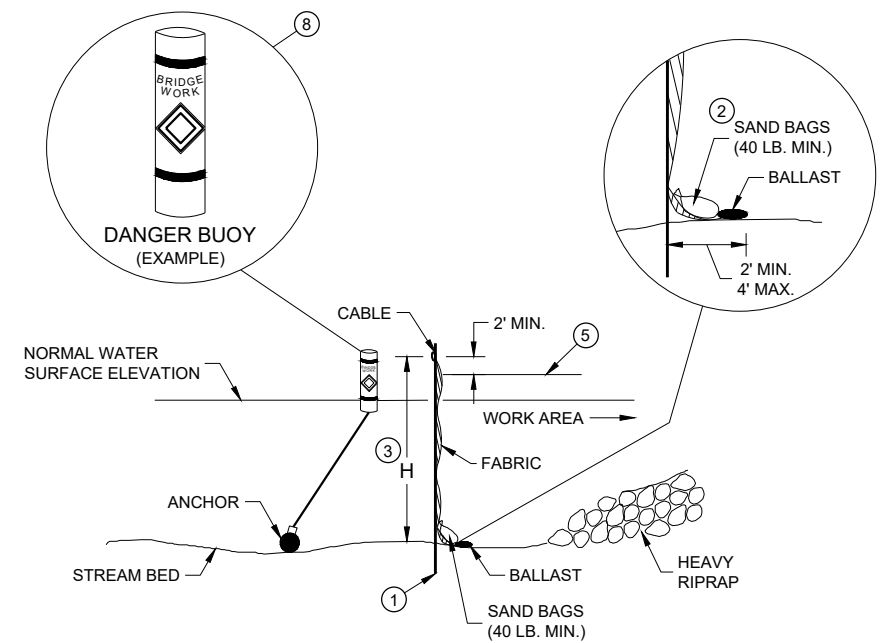


<div>SILT FENCE</div>	
<div>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</div>	
<div>APPROVED</div>	
<div>4-29-05</div>	<div>/S/ Beth Cannestra</div>
<div>DATE</div>	<div>CHIEF ROADWAY DEVELOPMENT ENGINEER</div>
<div>FHWA</div>	



SECTION B - B

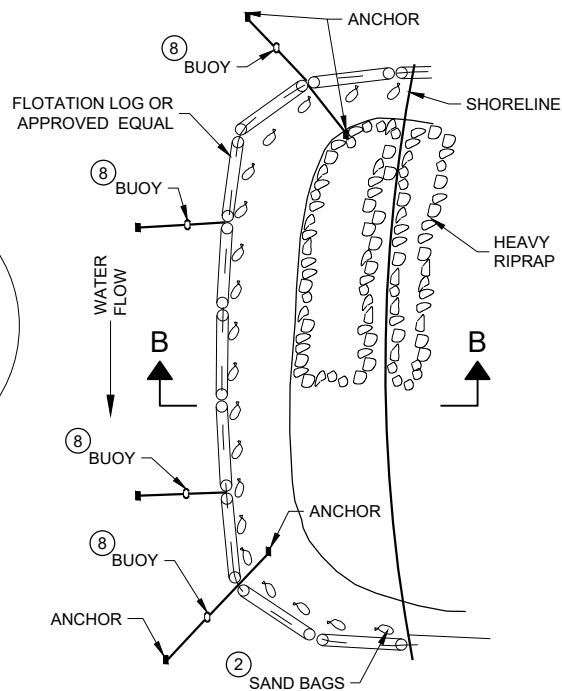
TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



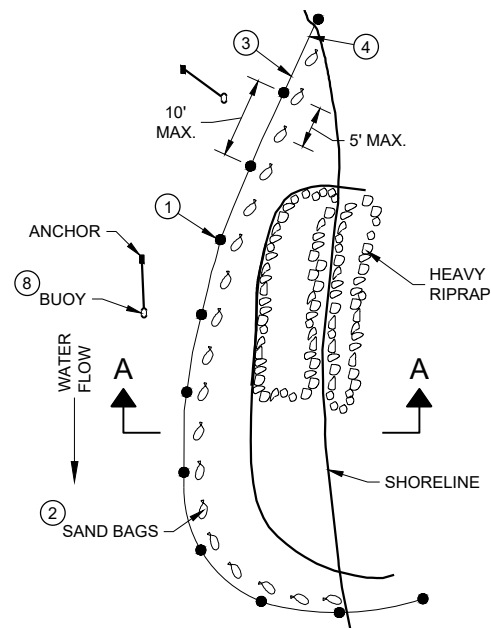
SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS



PLAN VIEW



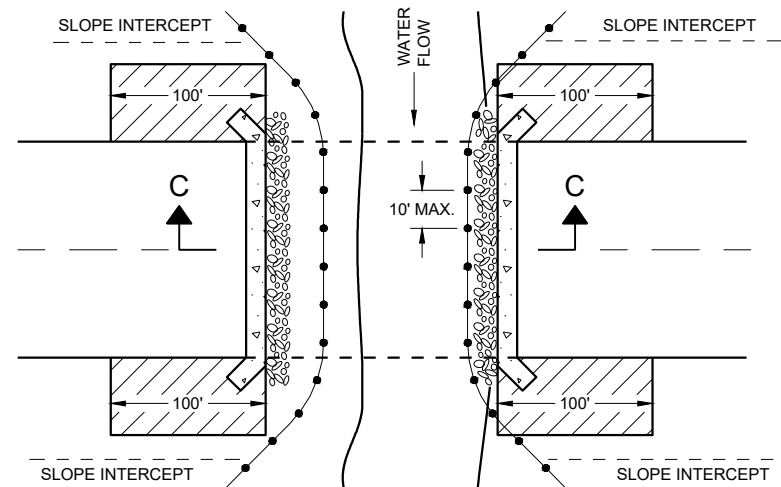
PLAN VIEW

GENERAL NOTES

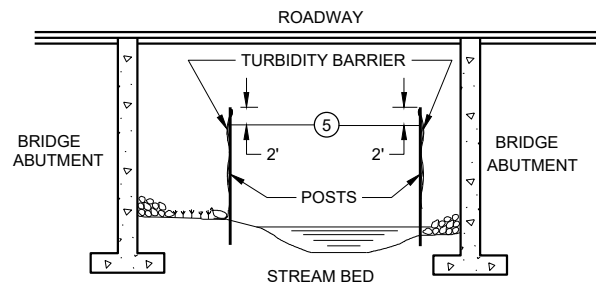
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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



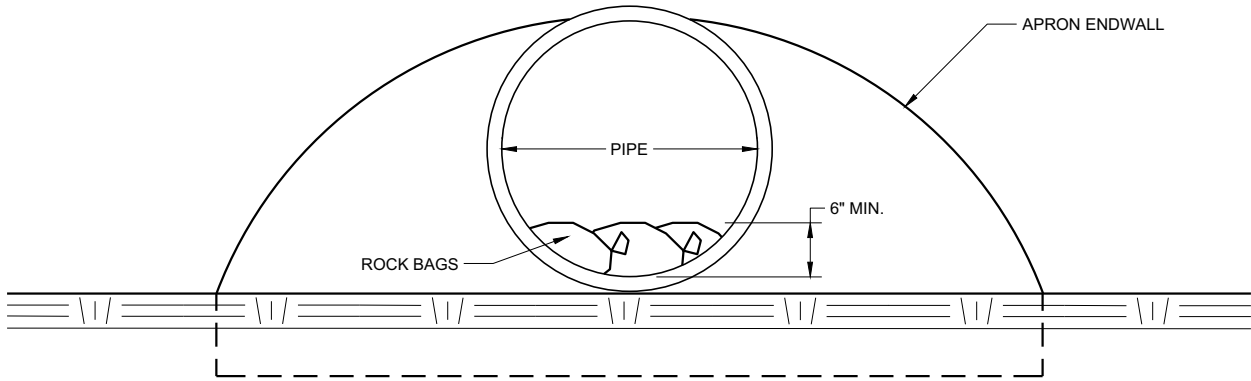
SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES

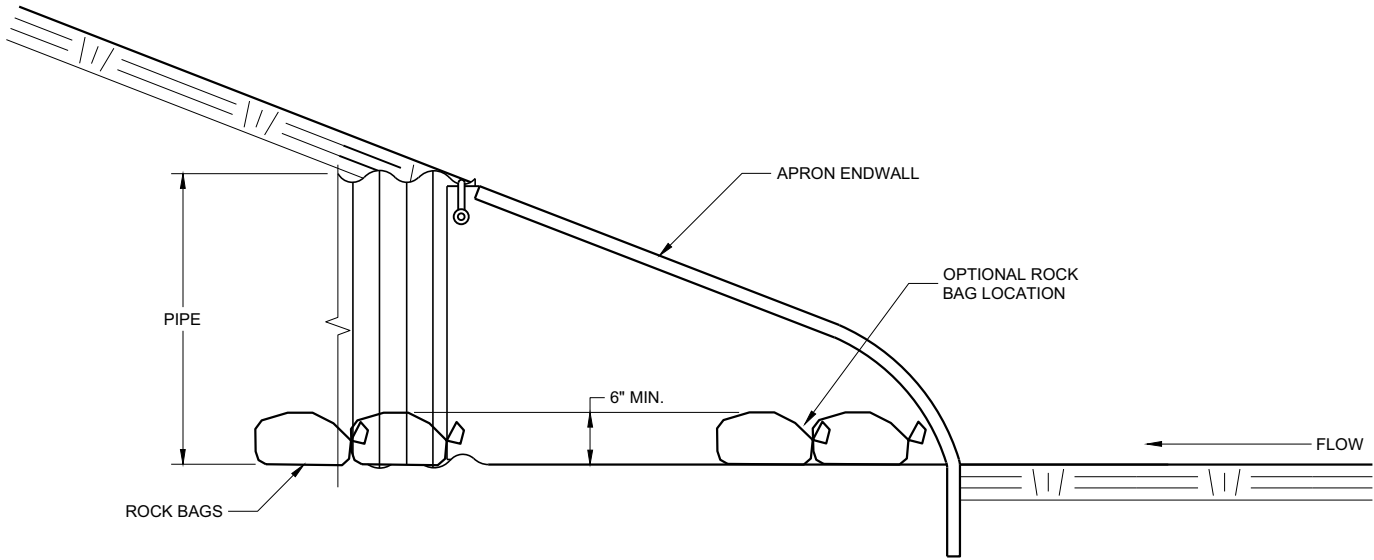
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



END VIEW



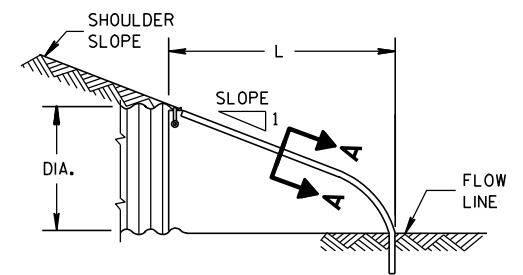
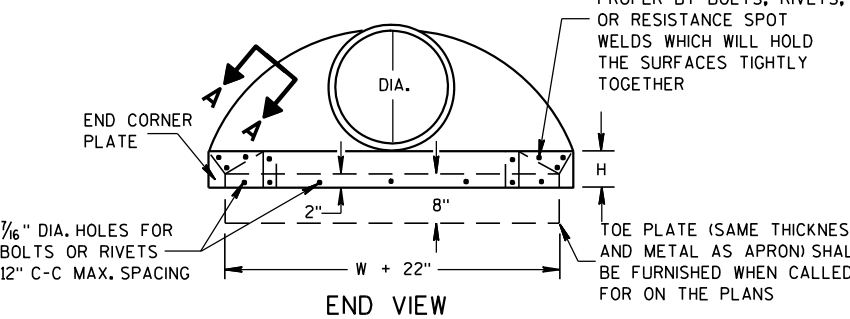
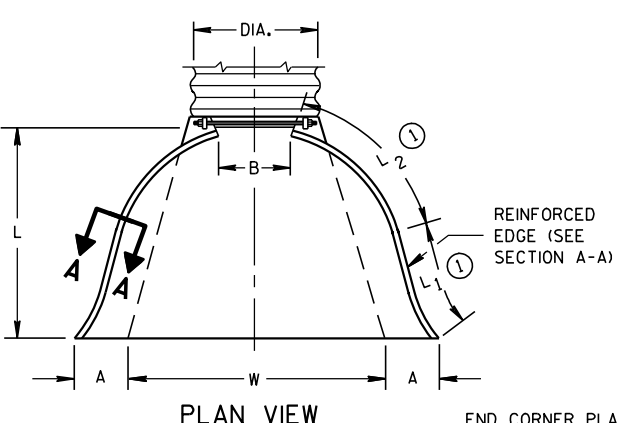
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

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

METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.	
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.	
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.	
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.	
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.	
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.	
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.	
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.	
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.	
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.	
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.	
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.	
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.	
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.	
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.	
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.	

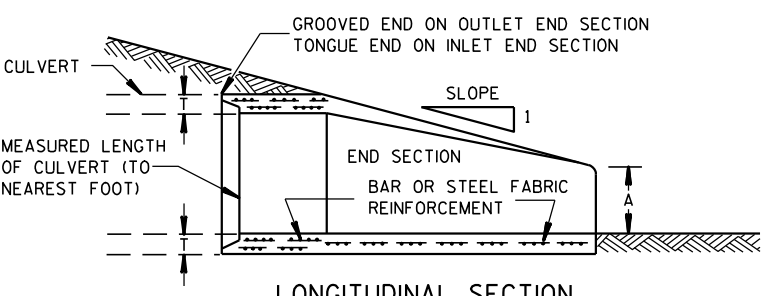
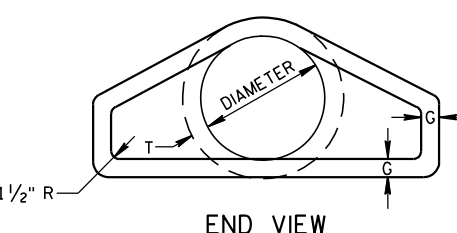
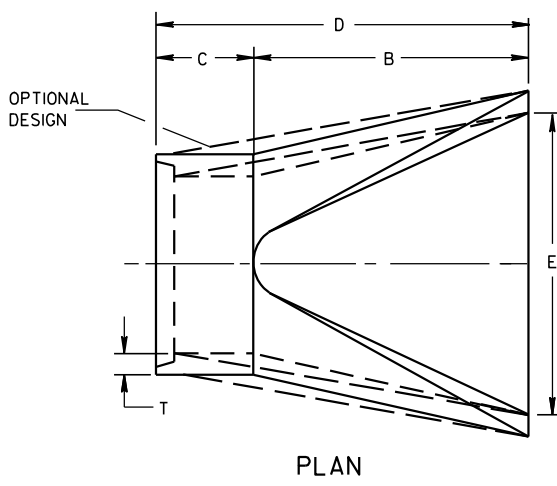
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



SIDE ELEVATION
METAL ENDWALLS

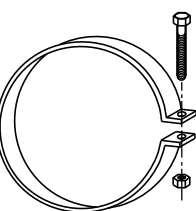
REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ² / ₂	9	27	46	73	36	2 ² / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	3 to 1
27	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	3 to 1
30	3 ¹ / ₂	12	54	19 ³ / ₄	73 ¹ / ₂	60	3 ¹ / ₂	3 to 1
36	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	3 to 1
42	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 ¹ / ₂	27	65	^{**} 33 ¹ / ₄ - ^{**} 35	^{**} 98 ¹ / ₄ - ^{**} 100	90	5 ¹ / ₂	2 ⁵ / ₈ to 1
60	6	^{**} 30- ^{**} 35	60	39	99	96	5	2 to 1
66	6 ¹ / ₂	^{**} 24- ^{**} 30	^{**} 72- ^{**} 78	^{**} 21- ^{**} 27	99	102	5 ¹ / ₂	2 to 1
72	7	^{**} 24- ^{**} 36	78	21	99	108	6	2 to 1
78	7 ¹ / ₂	^{**} 24- ^{**} 36	78	21	99	114	6 ¹ / ₂	2 to 1
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1

* MINIMUM
** MAXIMUM

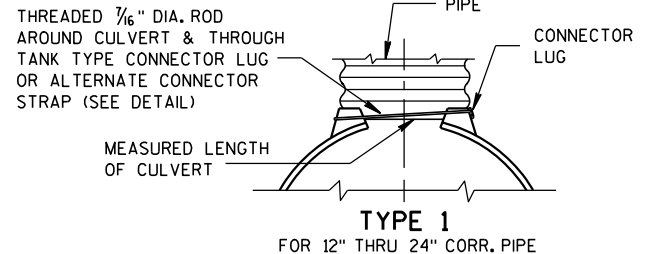


LONGITUDINAL SECTION
CONCRETE ENDWALLS

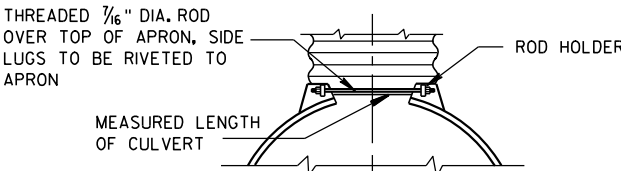
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



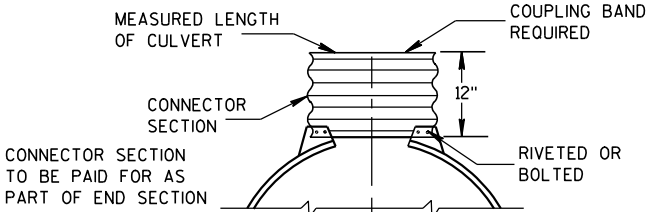
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



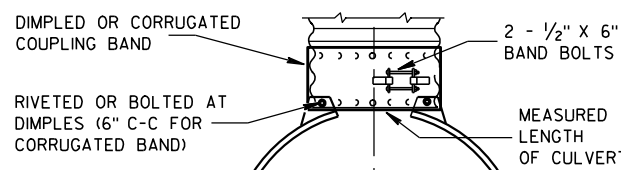
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

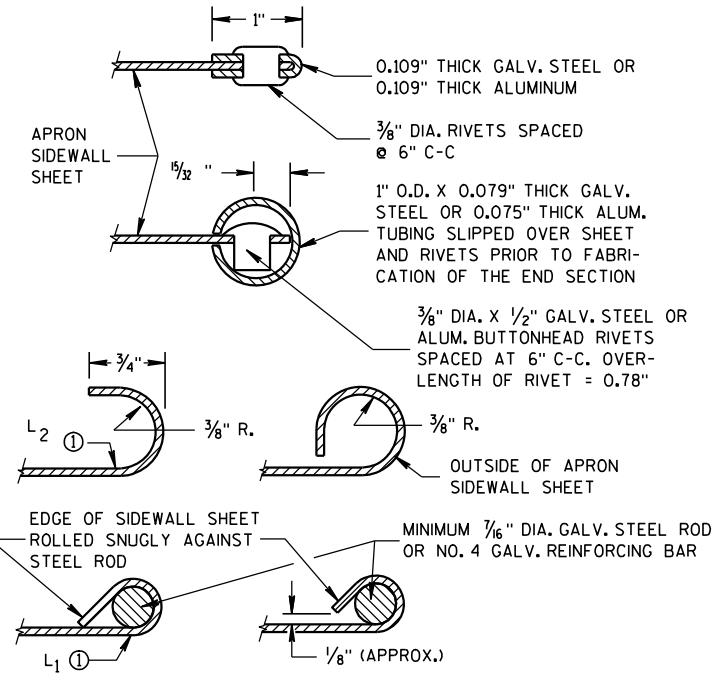
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

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.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

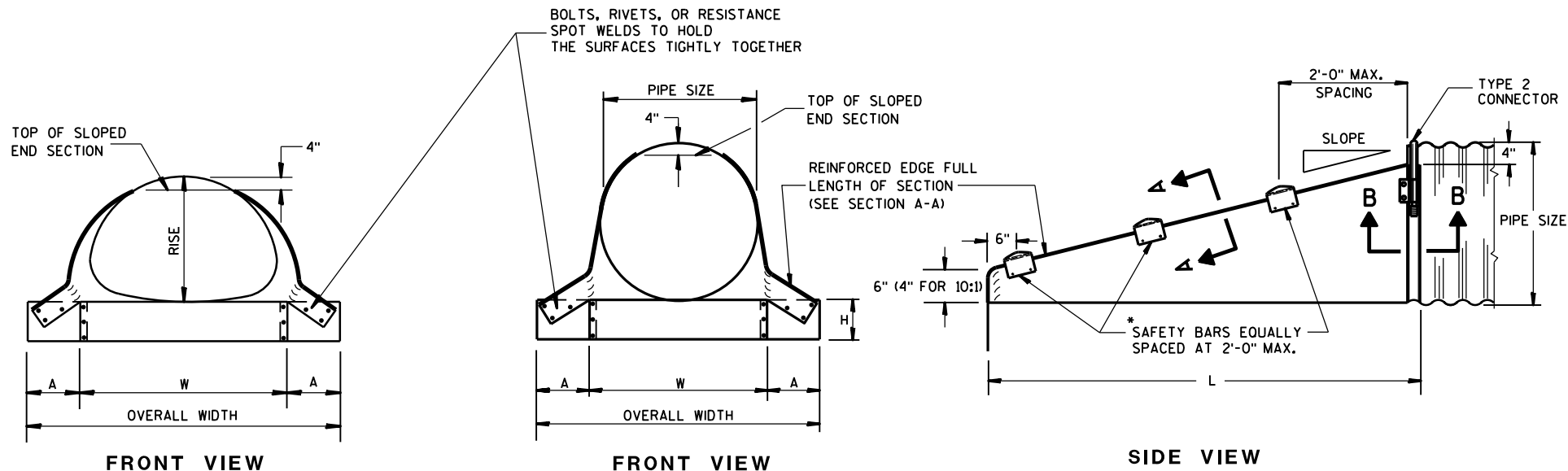
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



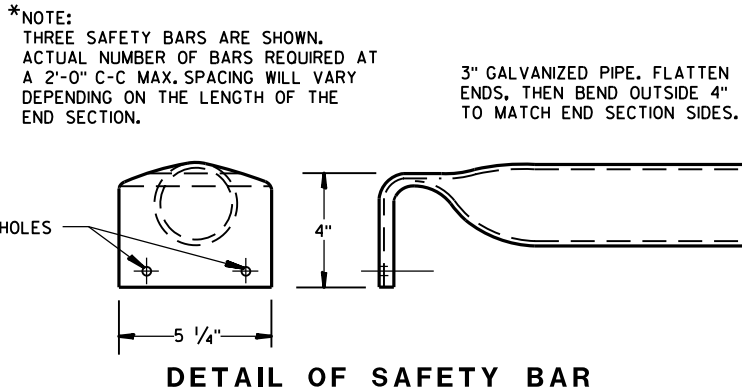
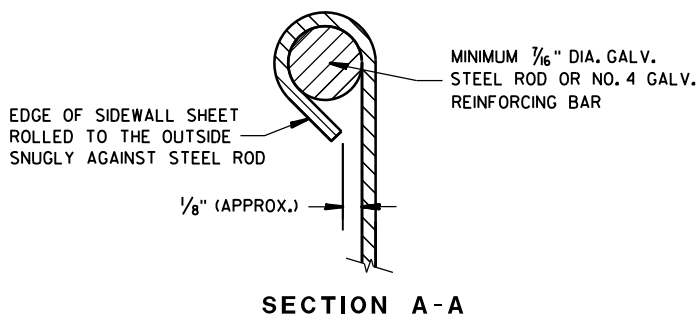
GENERAL NOTES

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.

SLOPED END SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, SECTION 521 FOR STEEL APRON ENDWALLS.

SAFETY BARS SHALL BE FABRICATED FROM GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL.

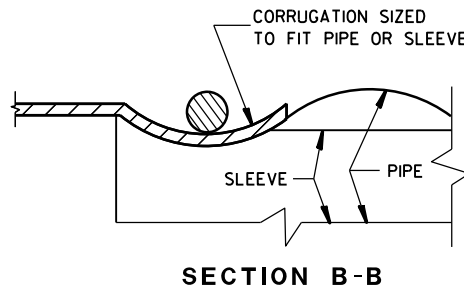
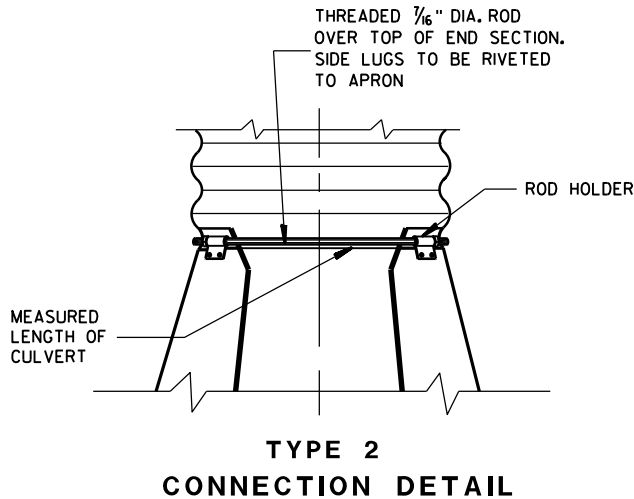
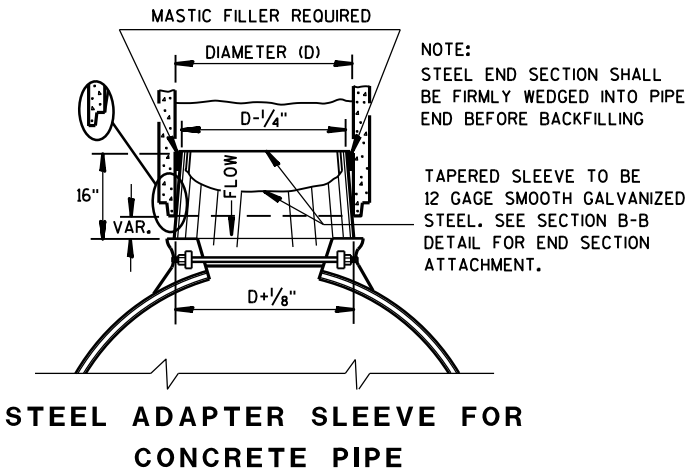
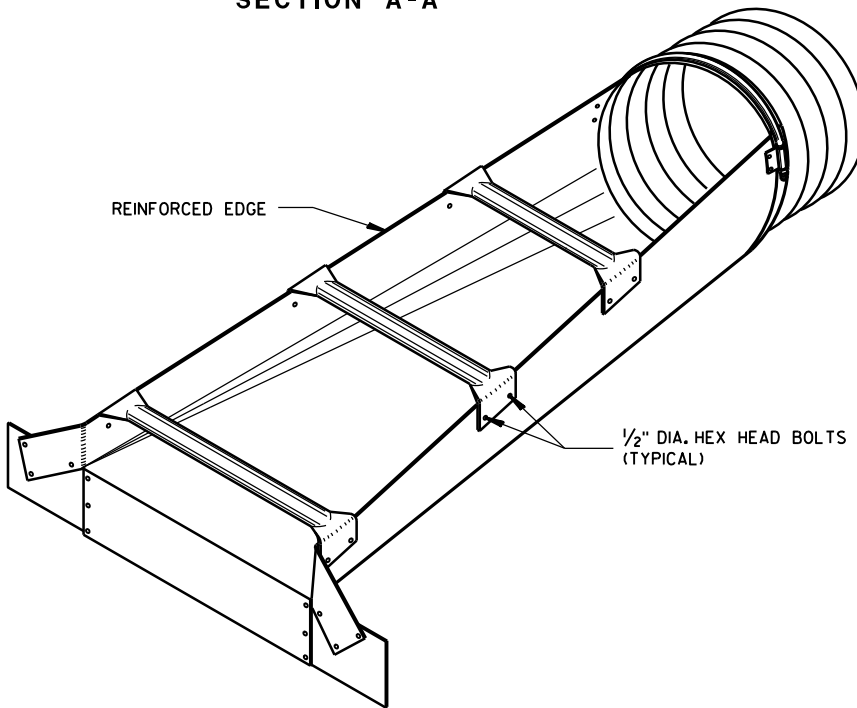
STEEL APRON ENDWALLS FOR CULVERT PIPE SLOPED SIDE DRAINS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)	DIMENSIONS (Inches)				L DIMENSIONS					
		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
15	.064	8	6	21	37	4:1	20	6:1	30	10:1	70
18	.064	8	6	24	40	4:1	32	6:1	48	10:1	100
21	.064	8	6	27	43	4:1	44	6:1	66	10:1	130
24	.064	8	6	30	46	4:1	56	6:1	84	10:1	160
30	.109	12	9	36	60	4:1	80	6:1	120	10:1	220
36	.109	12	9	42	66	4:1	104	6:1	156	10:1	280
42	.109	16	12	48	80	4:1	128	6:1	192	—	—
48	.109	16	12	54	86	4:1	152	6:1	228	—	—
54	.109	16	12	60	92	4:1	176	6:1	264	—	—
60	.109	16	12	66	98	4:1	200	6:1	300	—	—



STEEL APRON ENDWALLS FOR PIPE ARCH SLOPED SIDE DRAINS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches) ①	DIMENSIONS (Inches)				L DIMENSIONS					
	SPAN	RISE		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
15	17	13	.064 *	7	6	30	44	4:1	19	6:1	30	10:1 ②	70
18	21	15	.064 *	8	6	27	43	4:1	20	6:1	30	10:1	70
21	24	18	.064 *	8	6	30	46	4:1	32	6:1	48	10:1	100
24	28	20	.064 *	8	6	34	50	4:1	40	6:1	60	10:1	120
30	35	24	.079 *	12	9	41	65	4:1	56	6:1	84	10:1	160
36	42	29	.109 *	12	9	48	72	4:1	76	6:1	114	10:1	210
42	49	33	.109	16	12	55	87	4:1	92	6:1	138	—	—
48	57	38	.109	16	12	63	95	4:1	112	6:1	168	—	—
54	64	43	.109	16	12	70	102	4:1	132	6:1	198	—	—

① * MINIMUM THICKNESS OF ALL 10:1 SLOPED SIDE DRAINS IS 0.109".

② ACTUAL SLOPE GREATER THAN 10:1.



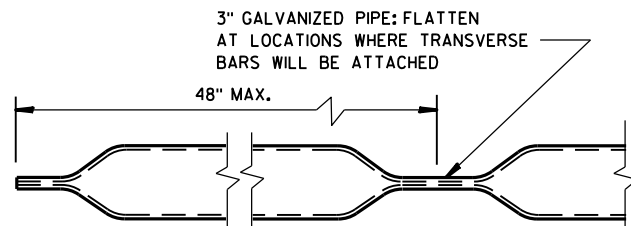
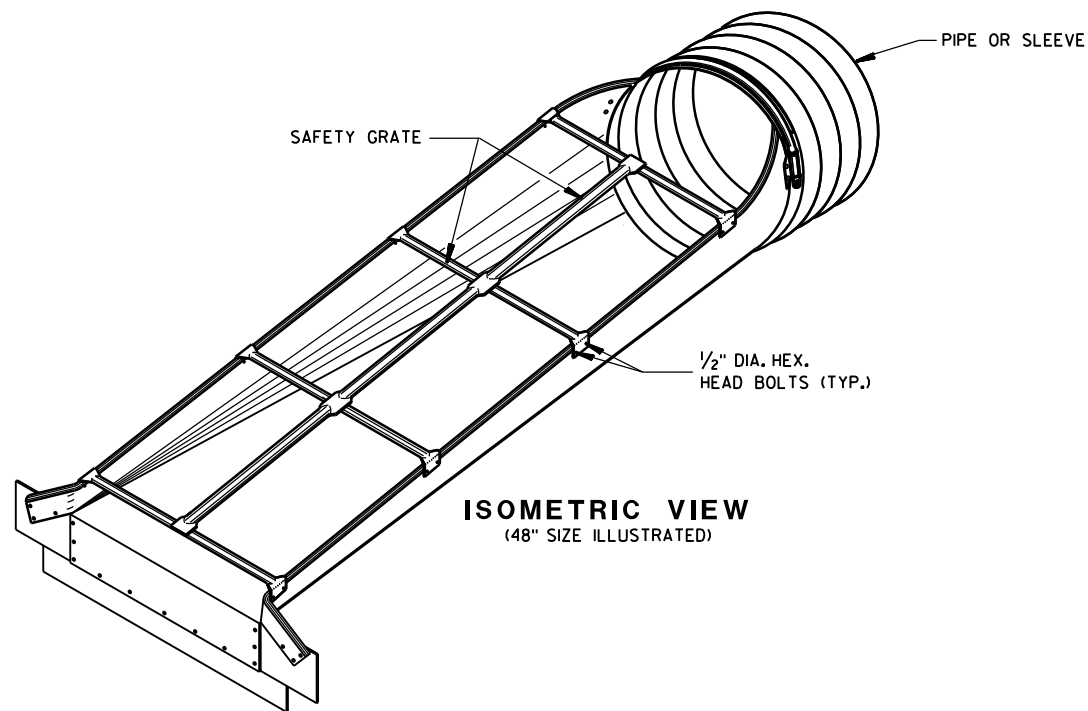
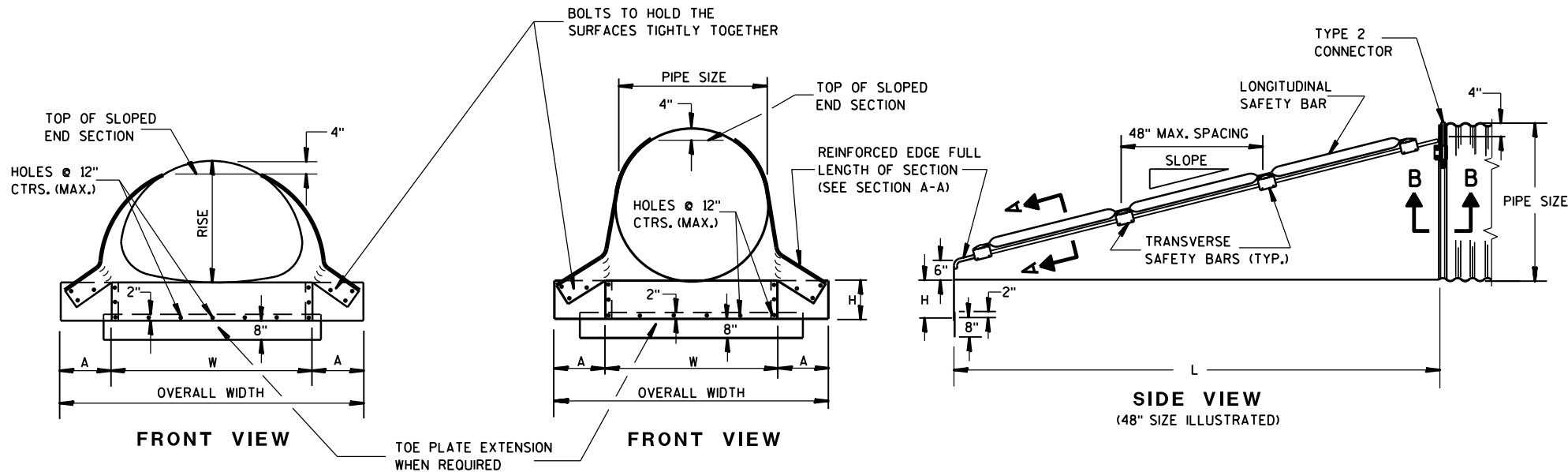
STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE DRAINS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

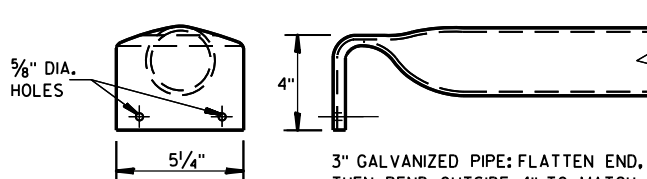
APPROVED
9/14/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA



LONGITUDINAL SAFETY BAR



TRANSVERSE SAFETY BAR

GENERAL NOTES

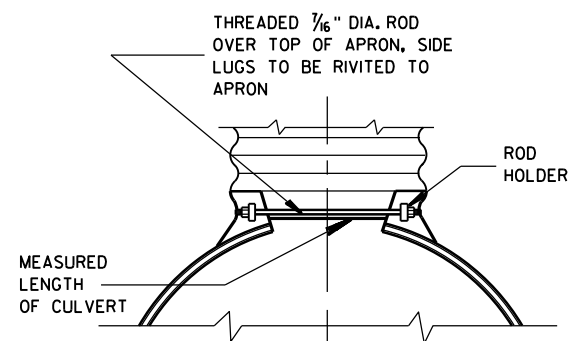
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

SAFETY GRATES SHALL BE FABRICATED FROM 3-INCH DIAMETER GALVANIZED PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL. THE LONGITUDINAL BAR SHALL BE WELDED TO THE TRANSVERSE BARS WHERE THE BARS CROSS. THE NUMBER OF TRANSVERSE BARS REQUIRED WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION.

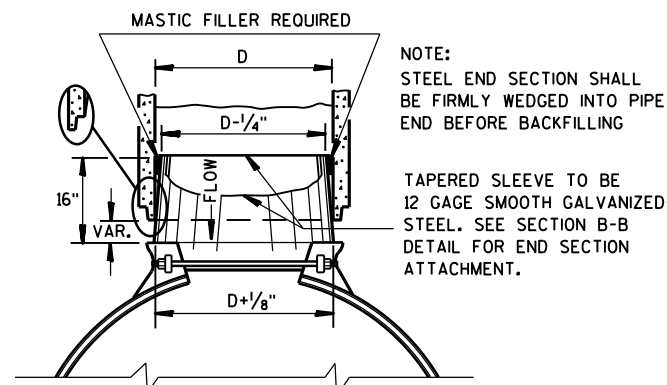
SLOPED STEEL ENDWALLS LOCATED AT THE ENDS OF CONCRETE CULVERT PIPE SHALL BE FURNISHED WITH STEEL ADAPTER SLEEVES.

STEEL APRON ENDWALLS FOR CULVERT PIPE CROSS DRAINS										
PIPE DIA. (IN.)	MIN. THICK. IN.	GAGE	DIMENSIONS (inches)				L DIMENSIONS			
			A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
36	.109	12	12	9	42	66	4:1	104	6:1	156
42	.109	12	16	12	48	80	4:1	128	6:1	192
48	.109	12	16	12	54	86	4:1	152	6:1	228
54	.109	12	16	12	60	92	4:1	176	6:1	264
60	.109	12	16	12	66	98	4:1	200	6:1	300

STEEL APRON ENDWALLS FOR PIPE ARCH SLOPED CROSS DRAINS												
EQUIV. DIA. (IN.)	INCHES		MIN. THICK.		DIMENSIONS (inches)				L DIMENSIONS			
	SPAN	RISE	IN.	GAGE	A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
30	35	24	.079	14	12	9	41	65	4:1	56	6:1	84
36	42	29	.109	12	12	9	48	72	4:1	76	6:1	114
42	49	33	.109	12	16	12	55	87	4:1	92	6:1	138
48	57	38	.109	12	16	12	63	95	4:1	112	6:1	168
54	64	43	.109	12	16	12	70	102	4:1	132	6:1	198
60	71	47	.109	12	16	12	77	109	4:1	148	6:1	222



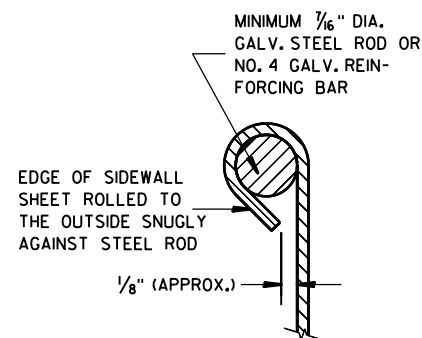
TYPE 2 CONNECTOR DETAIL



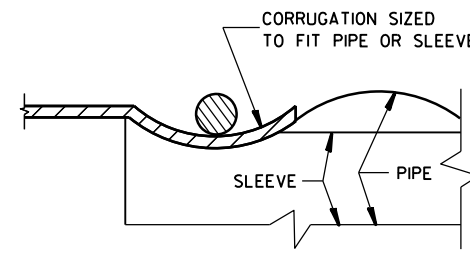
STEEL ADAPTER SLEEVE FOR CONCRETE PIPE

NOTE: STEEL END SECTION SHALL BE FIRMLY WEDGED INTO PIPE END BEFORE BACKFILLING

TAPERED SLEEVE TO BE 12 GAGE SMOOTH GALVANIZED STEEL. SEE SECTION B-B DETAIL FOR END SECTION ATTACHMENT.



SECTION A-A

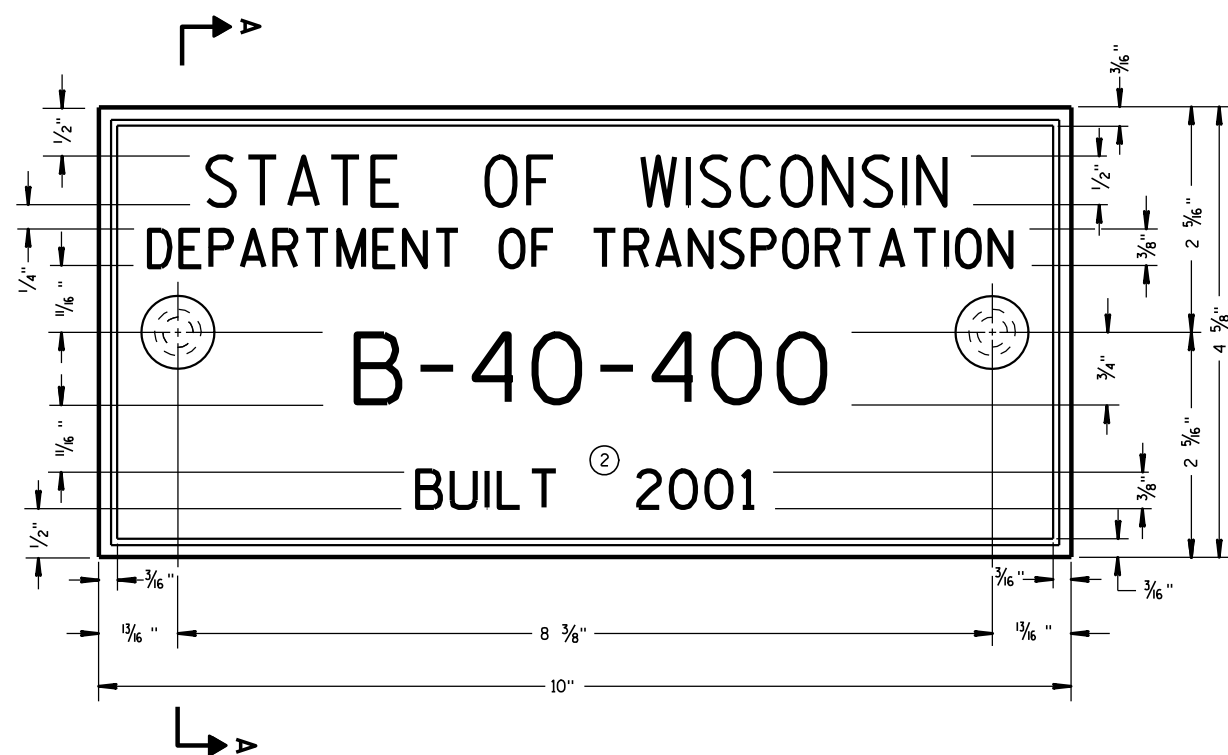


SECTION B-B

STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED CROSS DRAINS

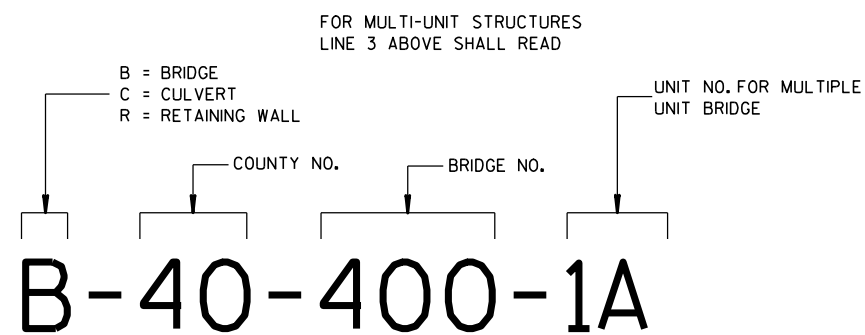
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 6/5/2012 /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



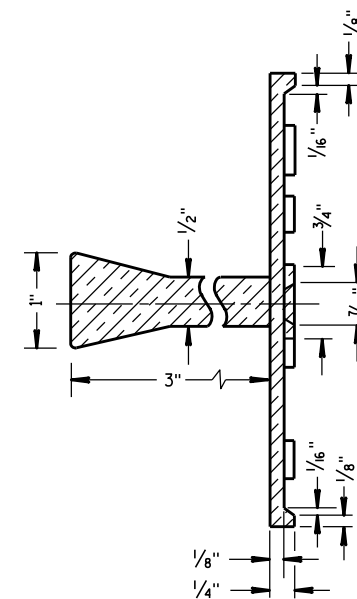
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

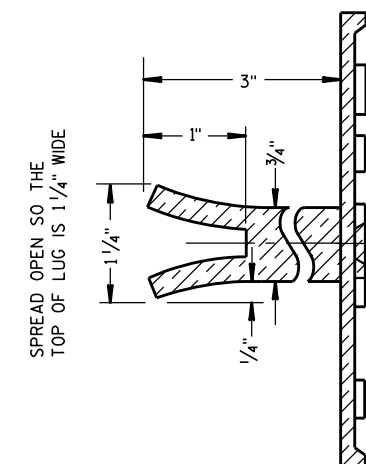
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

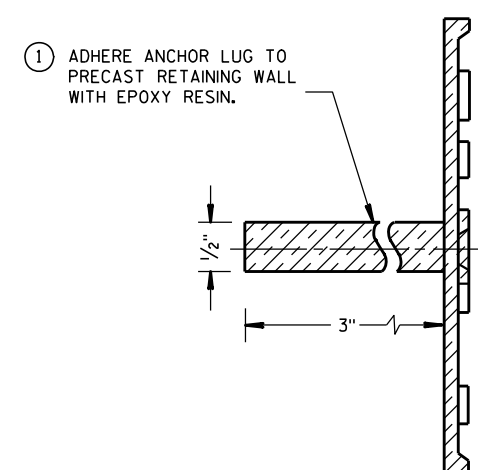
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

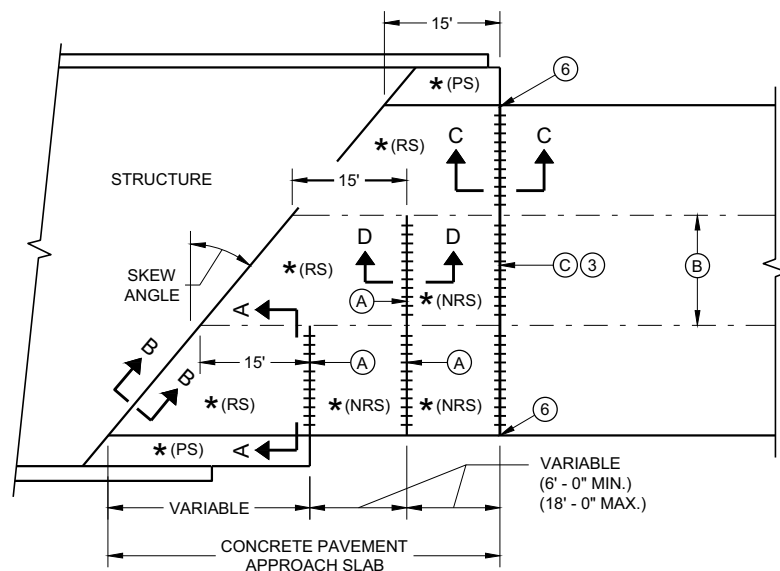
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

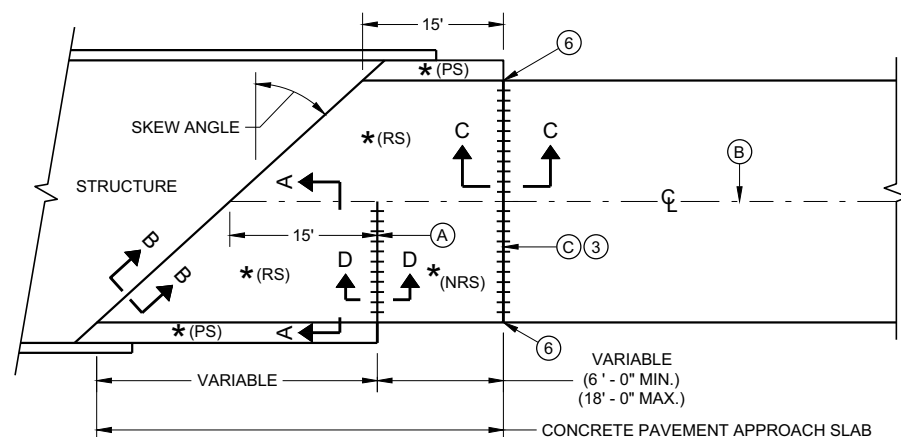
3/26/10
DATE

FHWA

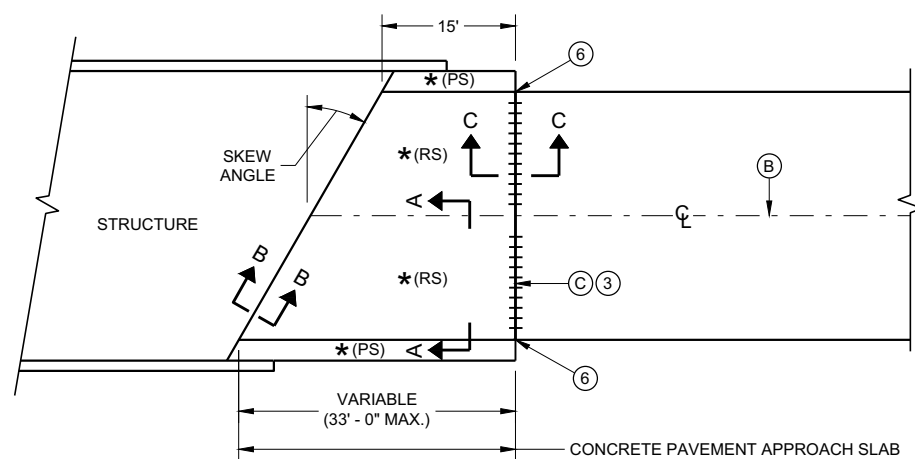
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



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



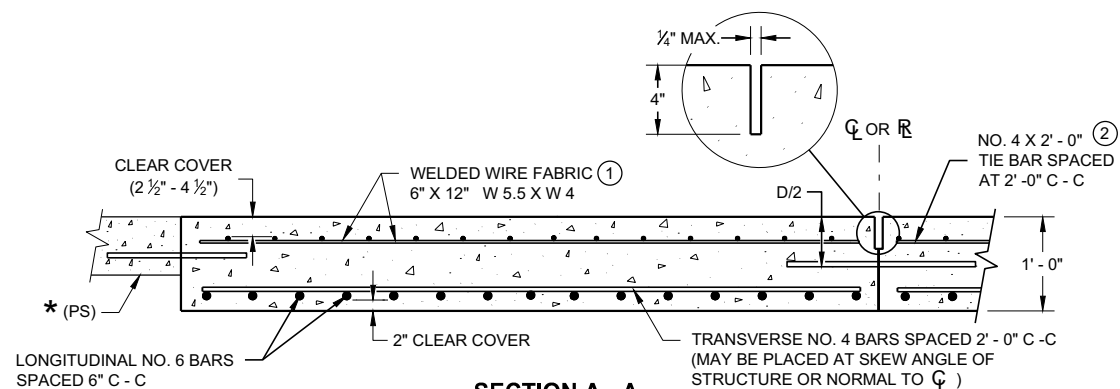
**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**



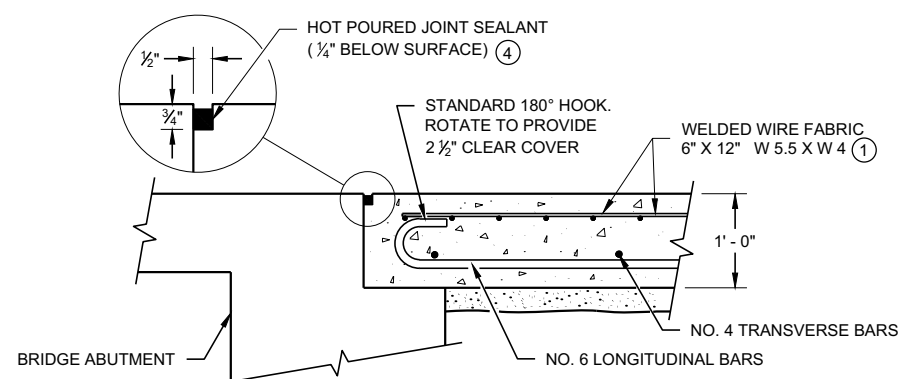
**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**

APPROACH SLAB AND ADJACENT PAVEMENT

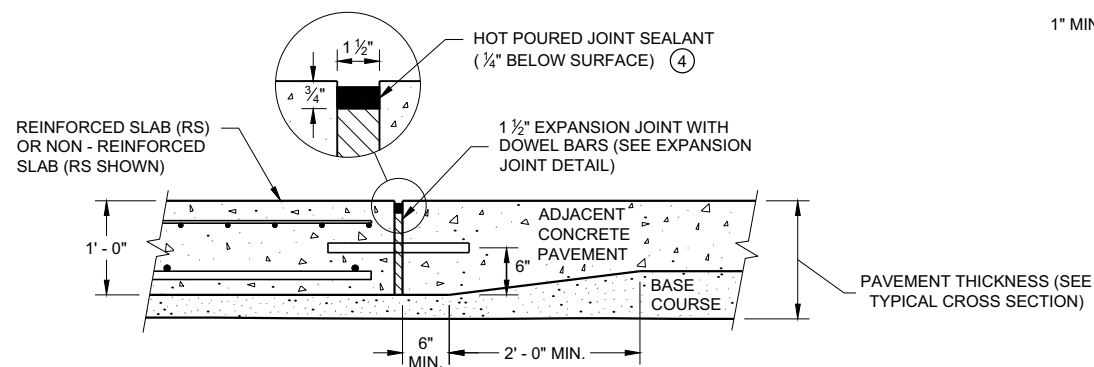
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



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



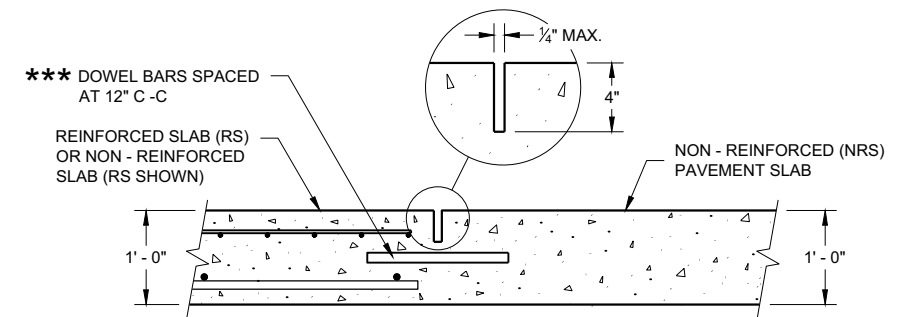
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

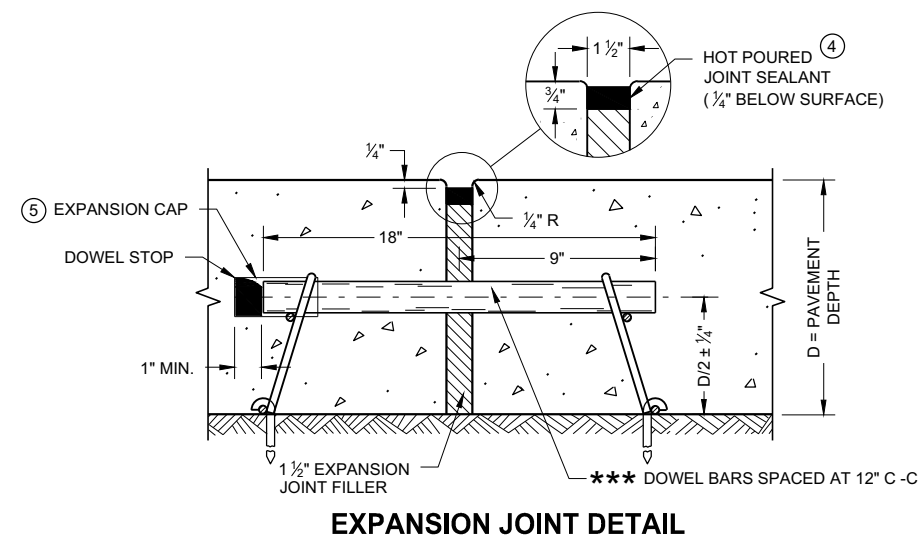
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

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



**SECTION D - D
CONTRACTION JOINT**



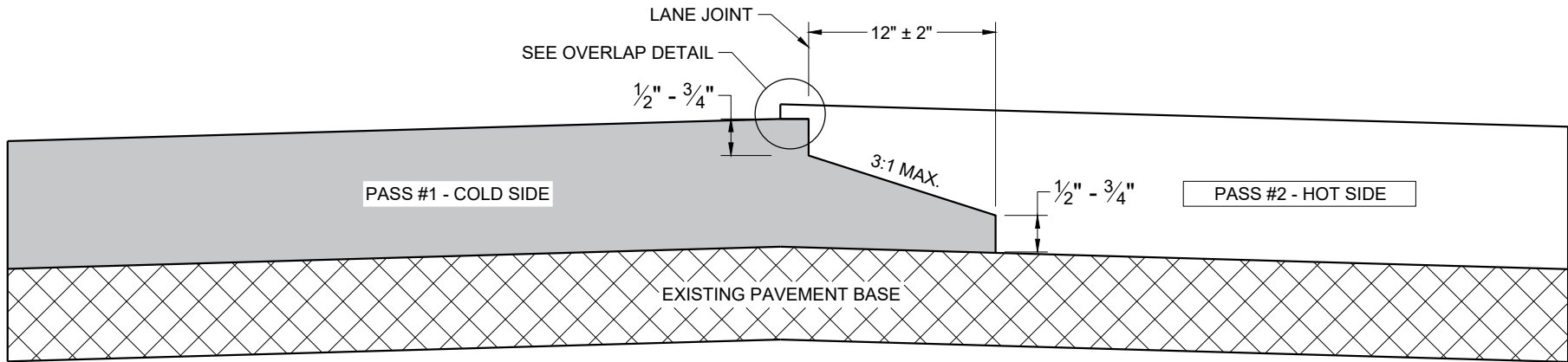
EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

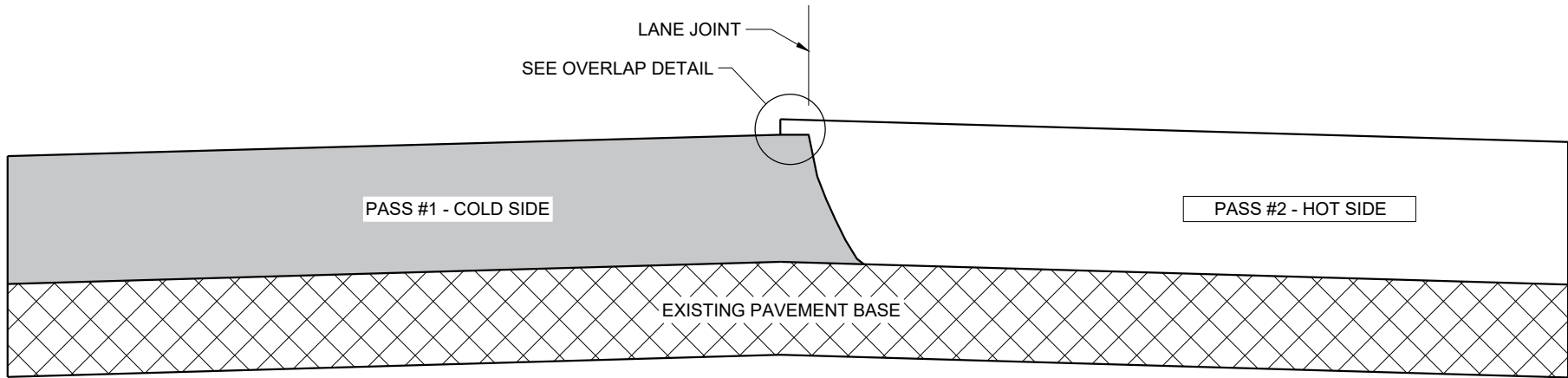
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

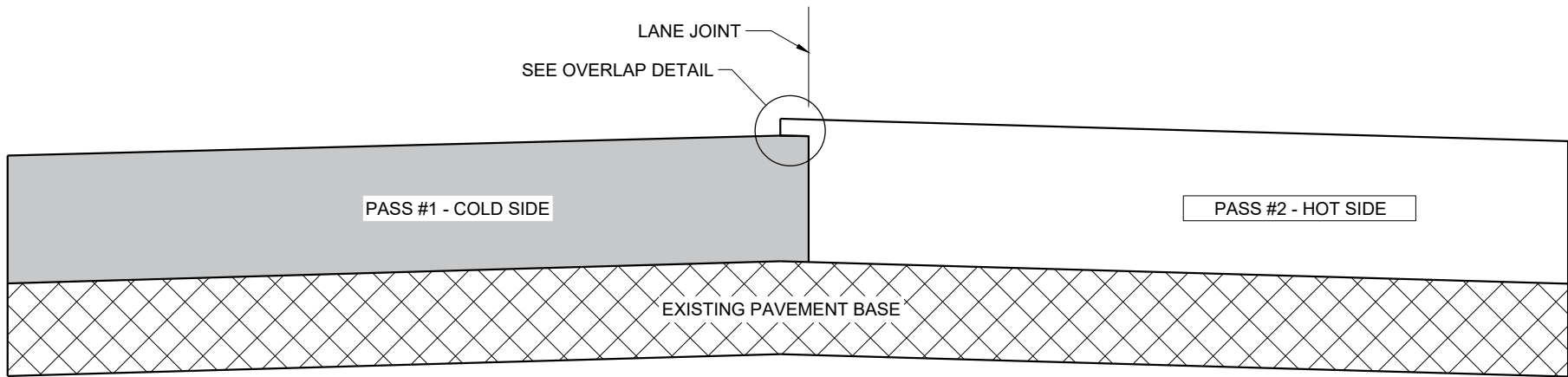
FHWA



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)**

GENERAL NOTES

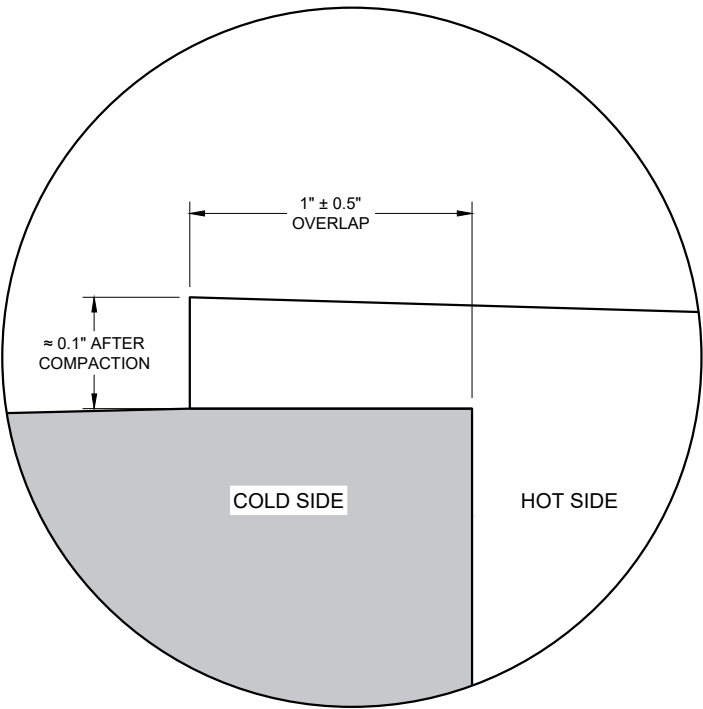
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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.



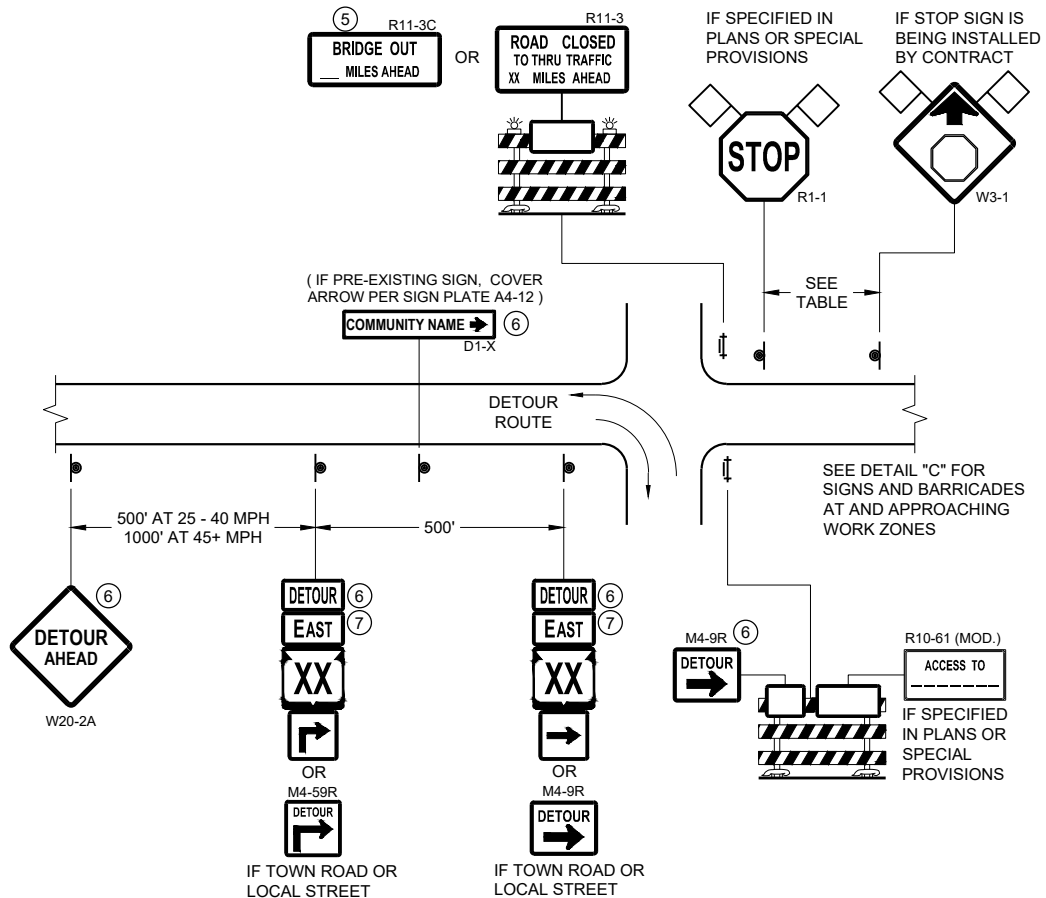
OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

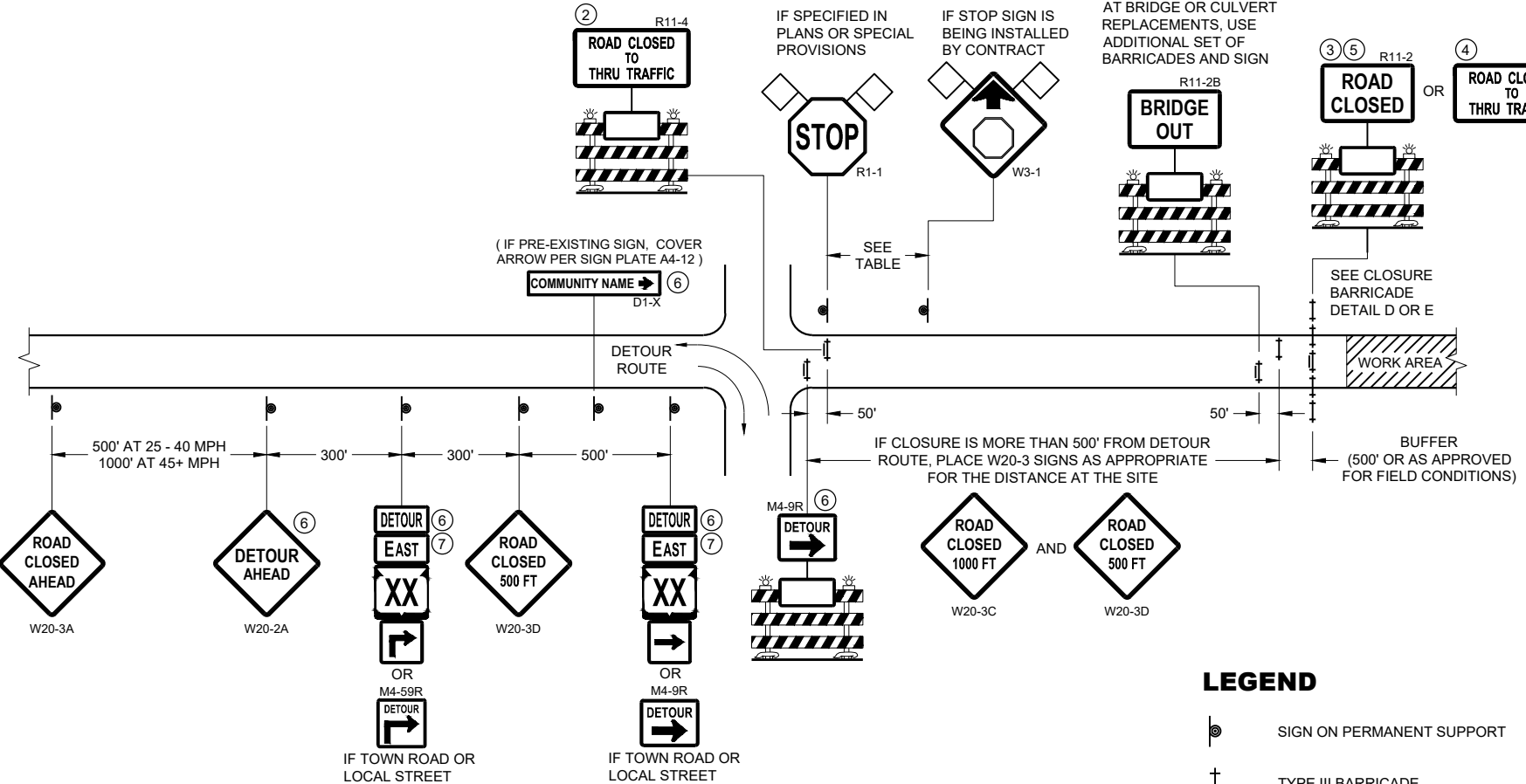
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

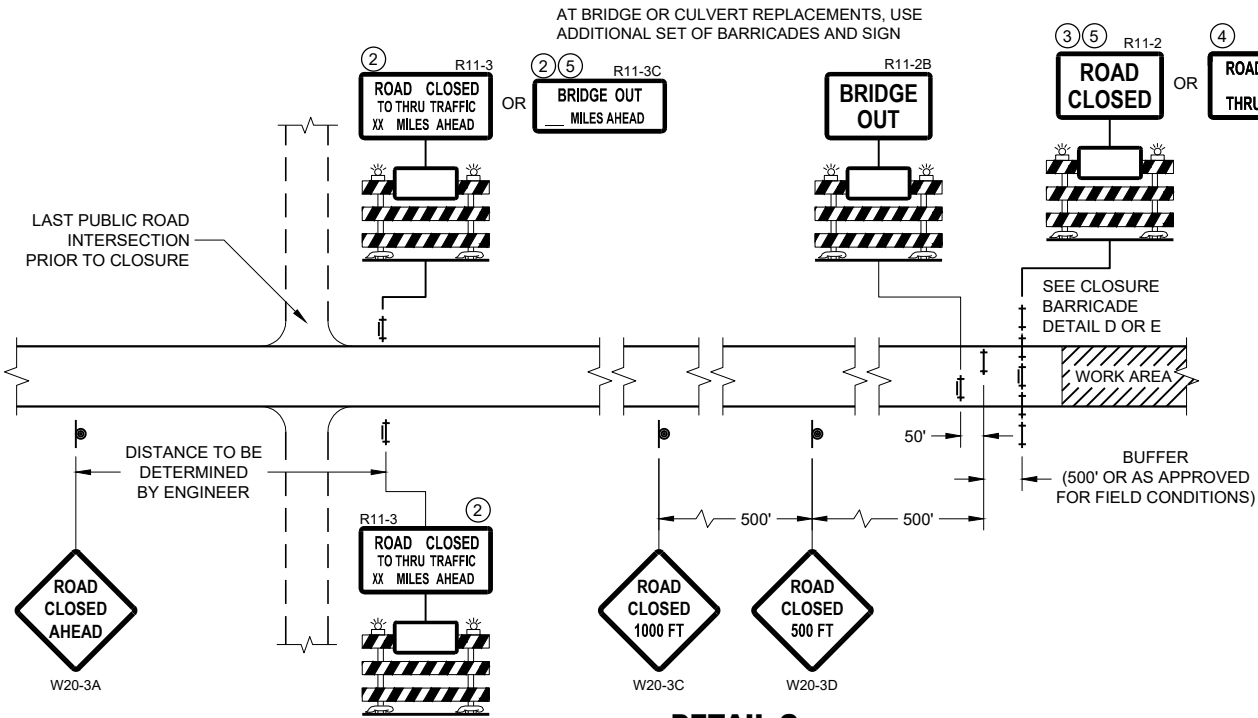
FHWA



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)



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

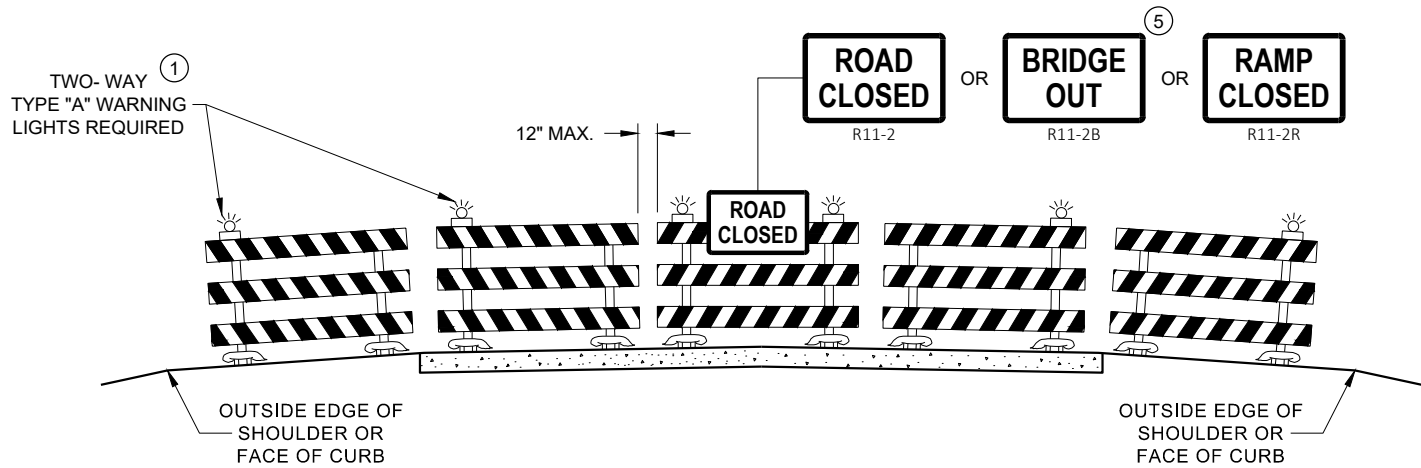
LEGEND

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

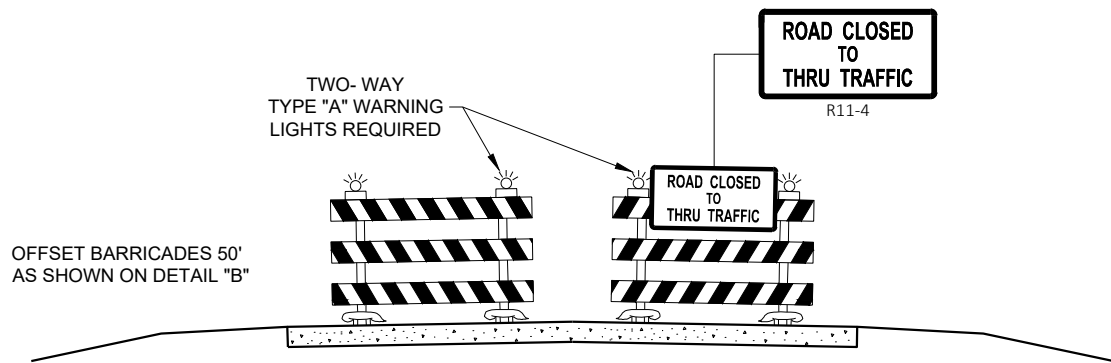
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

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"

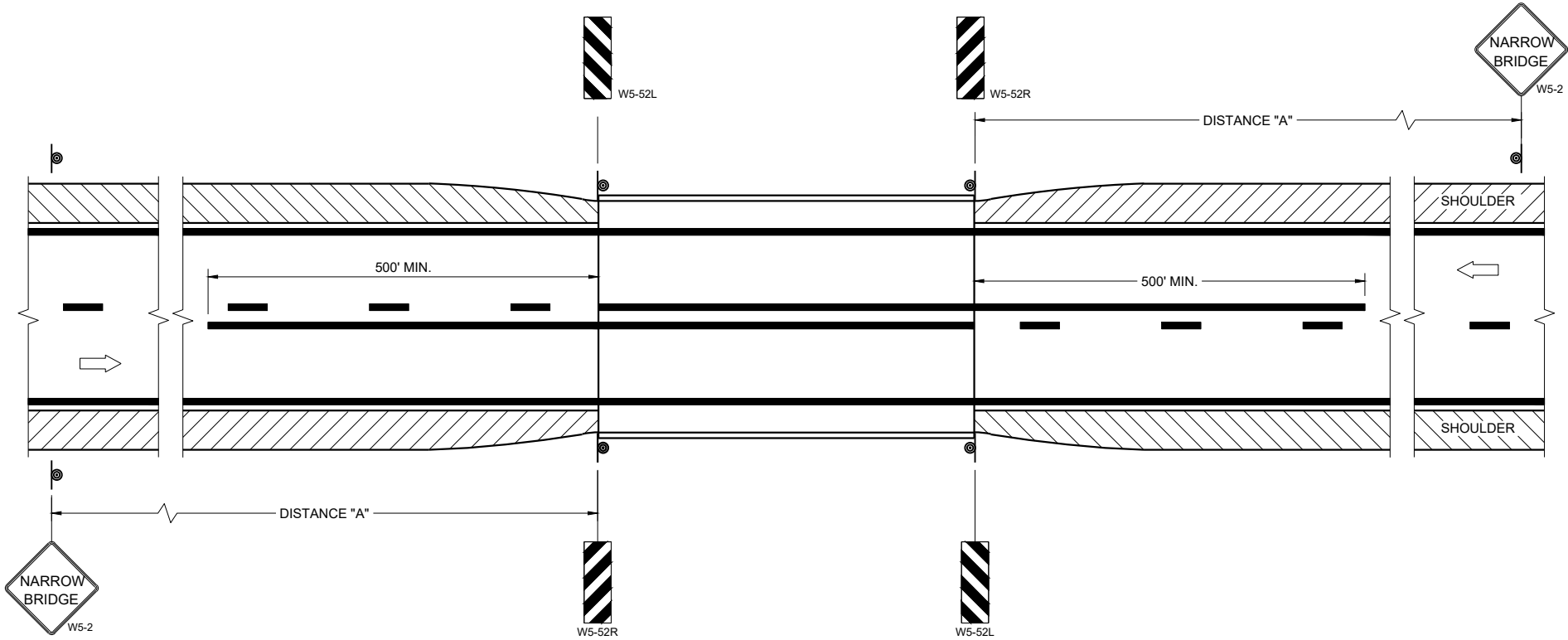
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS 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

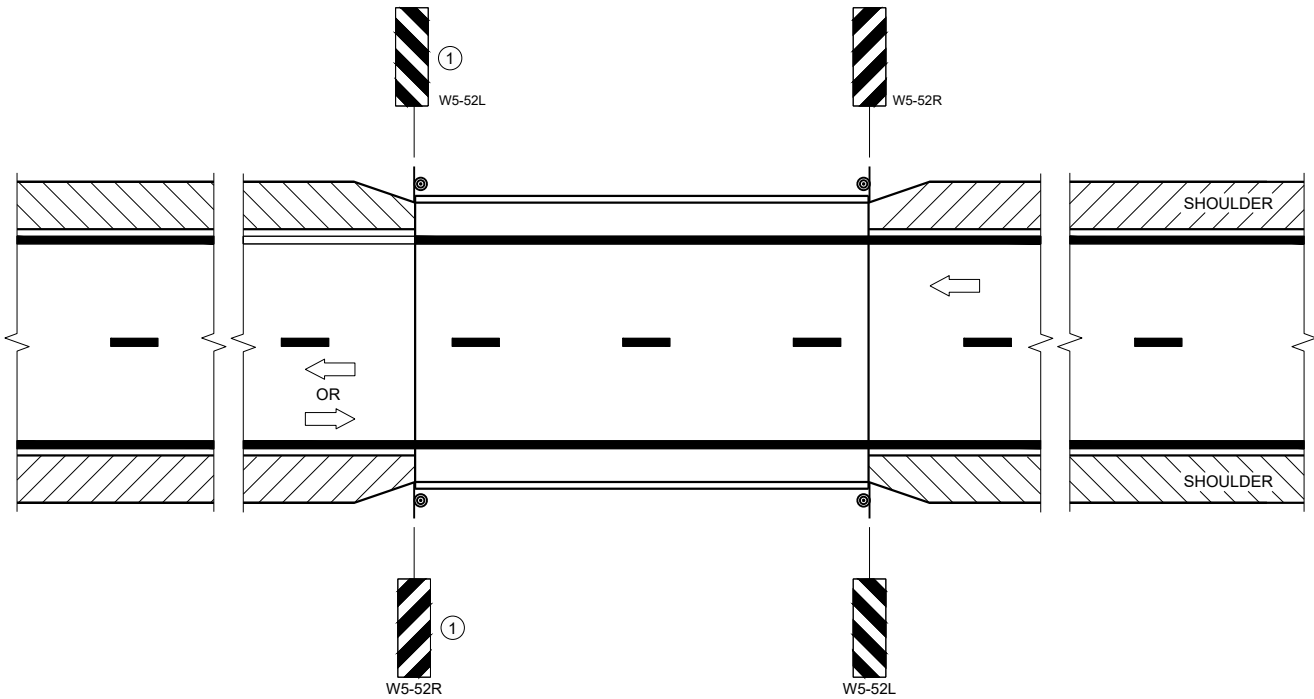
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

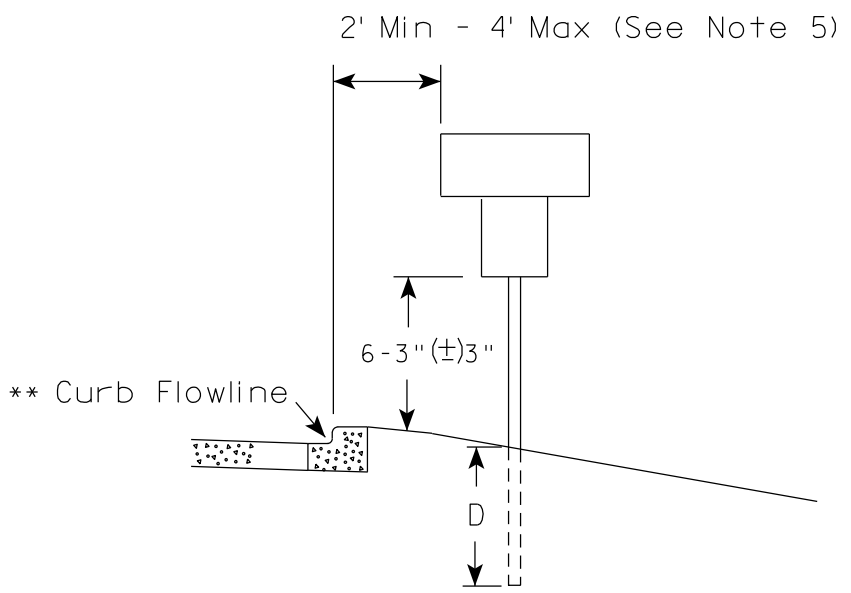
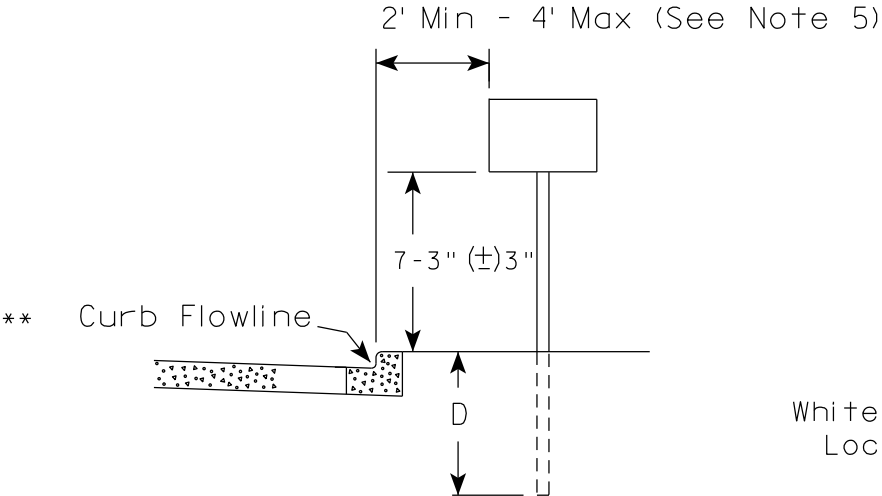
POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

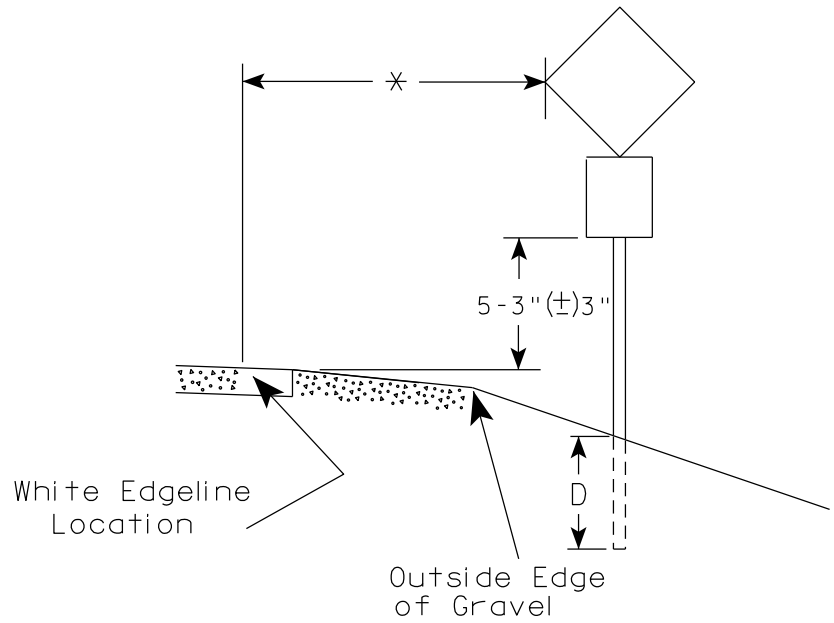
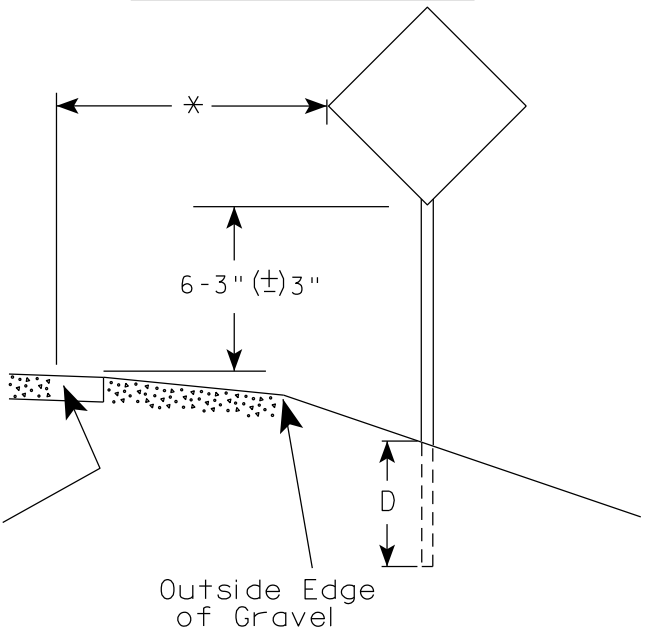
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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:

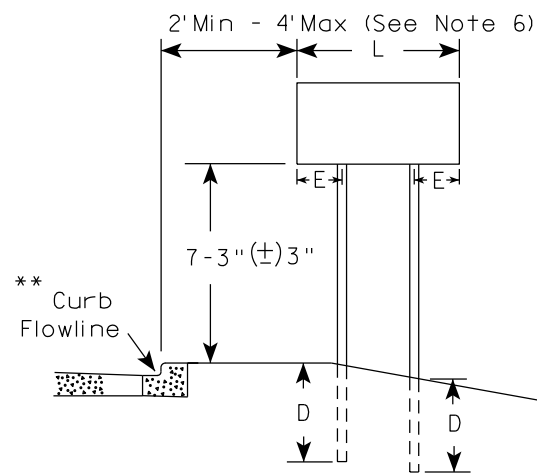
HWY:

COUNTY:

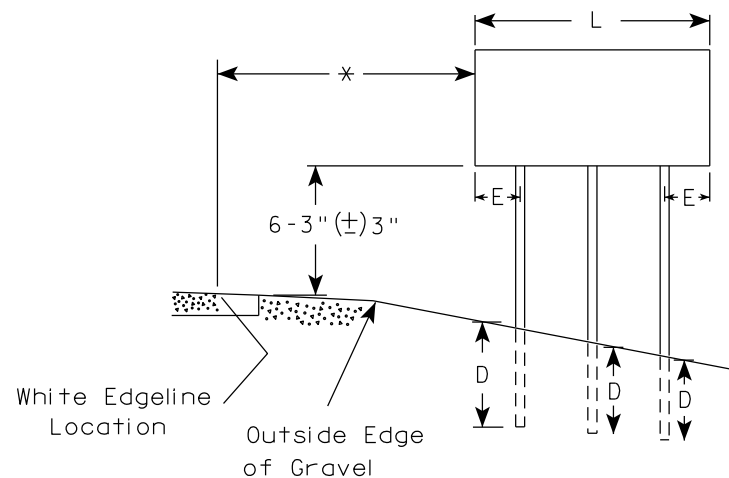
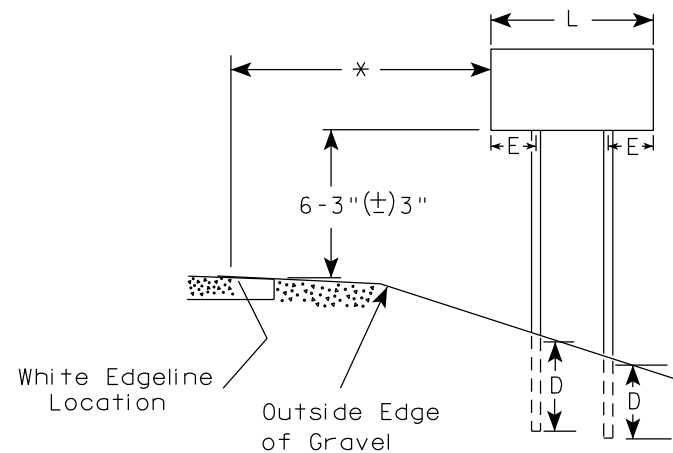
SHEET NO:

E

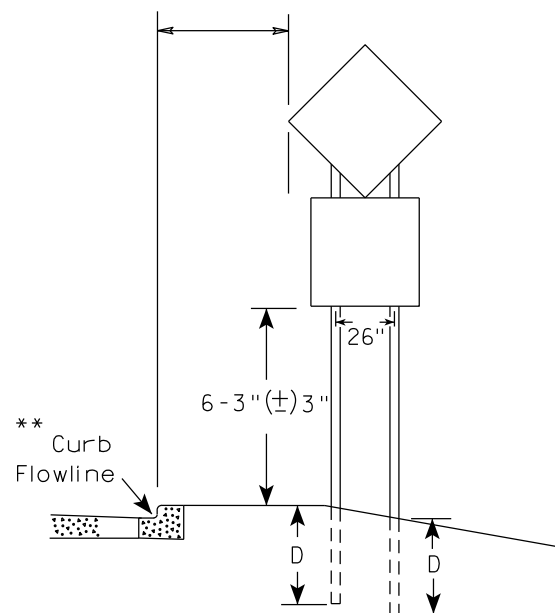
URBAN AREA



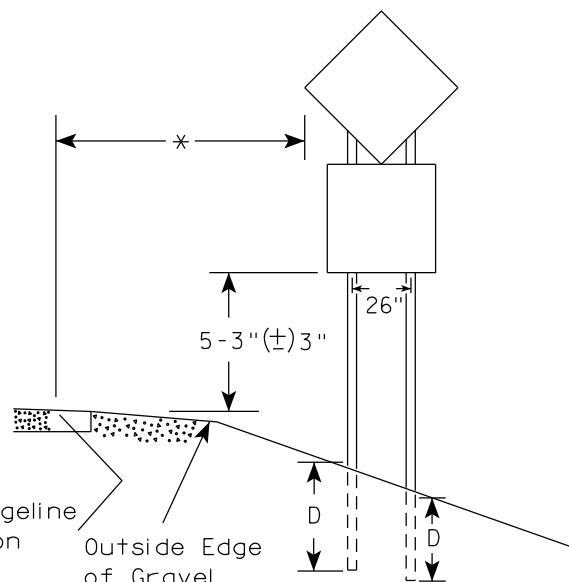
RURAL AREA (See Note 3)



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

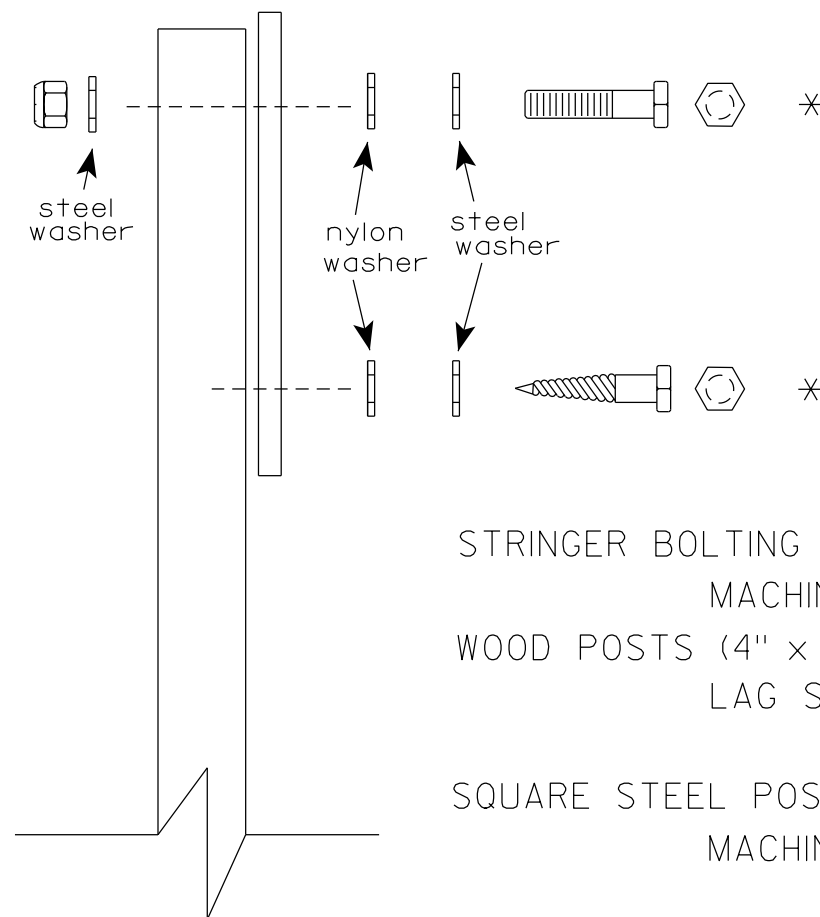
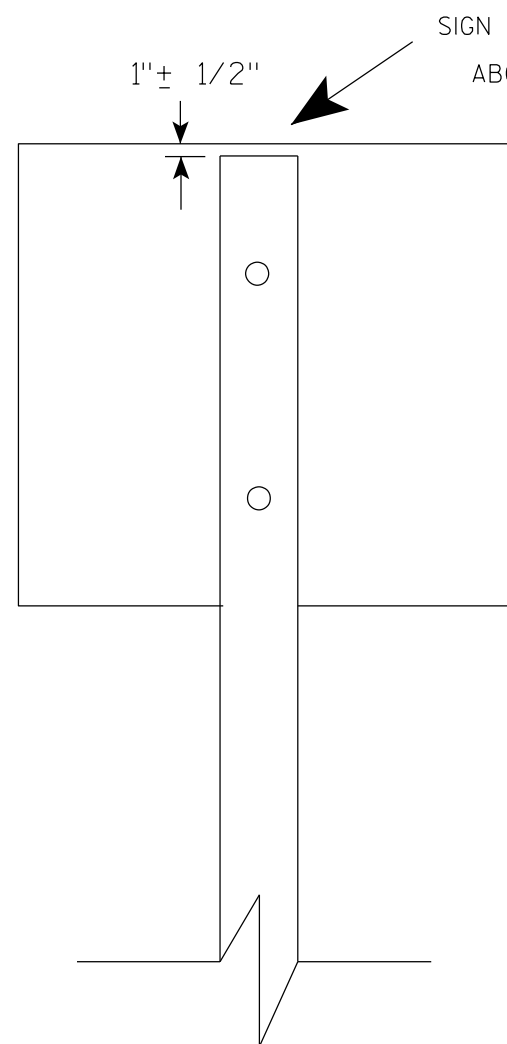
GENERAL NOTES

- 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.

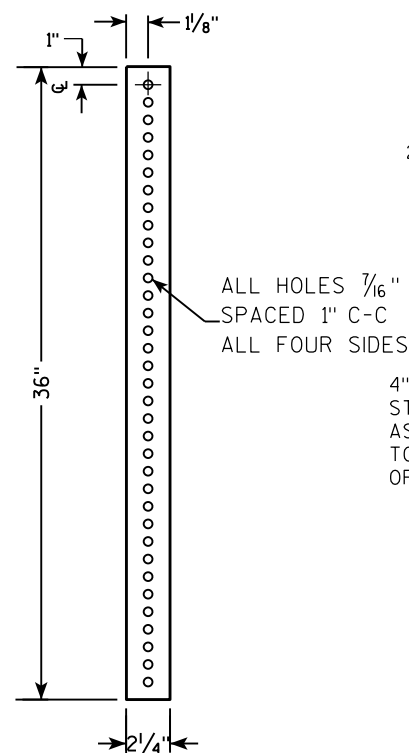
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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

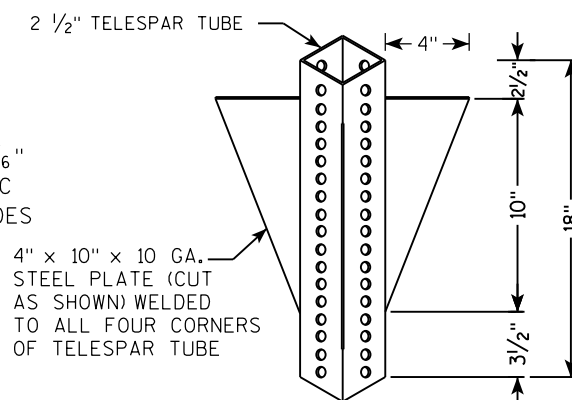
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

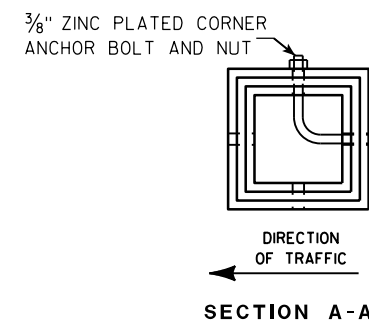


**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**

[illegible]

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

- TELESCOPE PIECES FLUSH AT TOP**: Indicated by a dimension line on the left.
- 2" STEEL TUBULAR SQUARE UPPER SECTION**: The main vertical support.
- ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES**: Specification for the perforations in the upper section.
- 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT**: Located at the top of the upper section.
- 1"**: Dimension for the offset of the anchor bolt.
- 3/8" ZINC PLATED ANCHOR BOLT AND NUT**: Located at the base of the upper section.
- 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)**: The sleeve supporting the upper section.
- 2 1/4" SQUARE X 36"**: The base section of the post.
- SIGN**: The sign plate at the top.
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL**: Reference to the sign plate for hardware details.
- LENGTH SHOWN ON MISC. QTY'S**: Dimension line on the left indicating the total length of the assembly.
- Dimensions**:
 - 36" (Total length of the base section)
 - 18" (Height of the soil stabilizing sleeve)
 - 12" (Height of the upper section)



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

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch

for State Traffic Engineer

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

PROJECT NO:

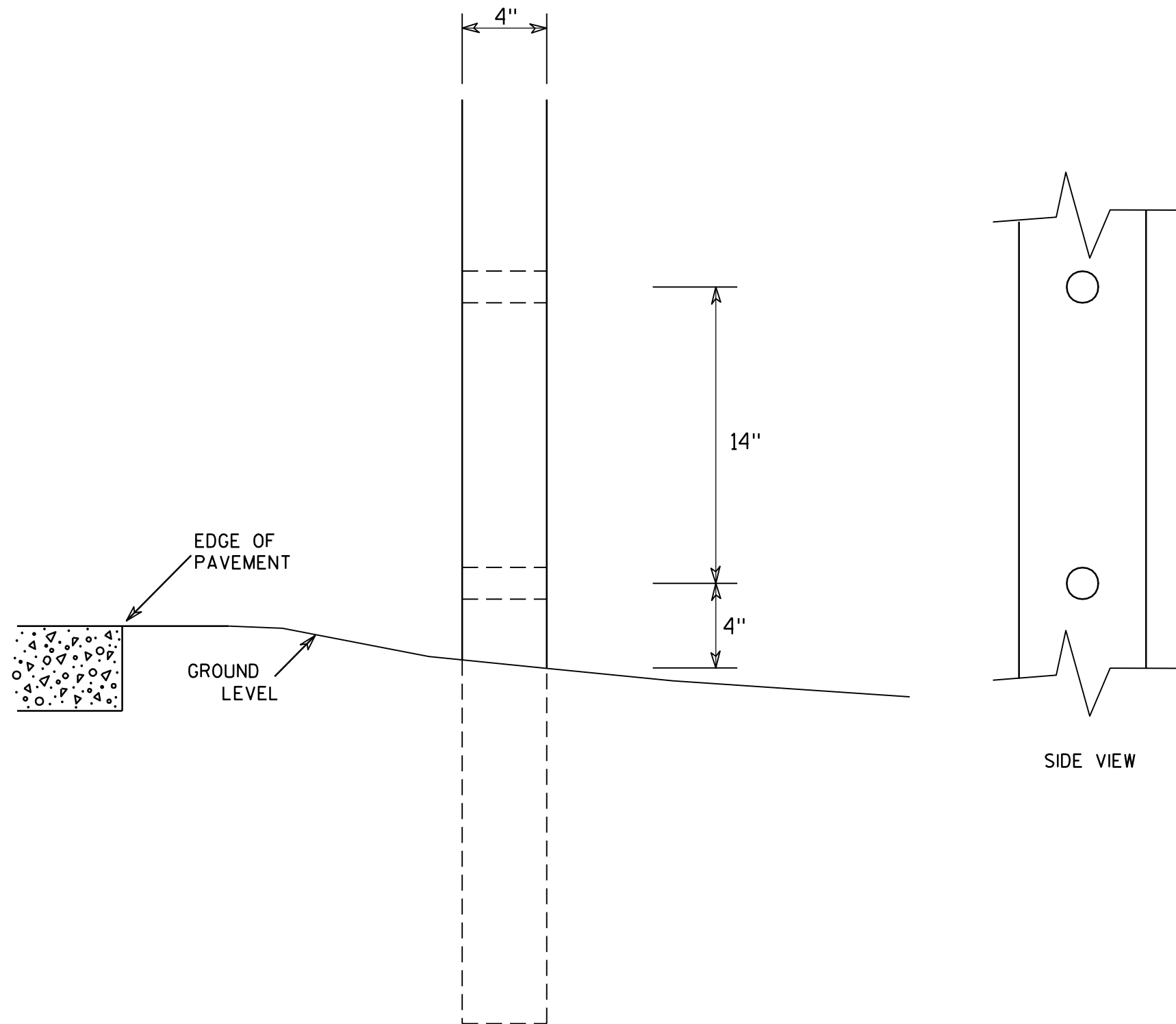
HWY:

COUNTY:

SHEET NO:

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

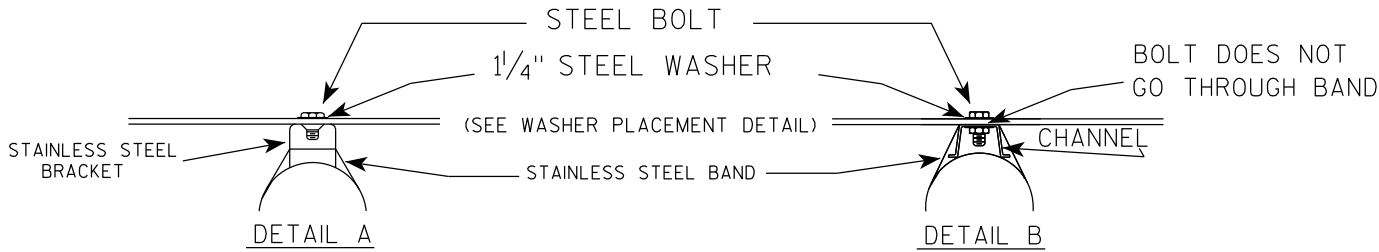
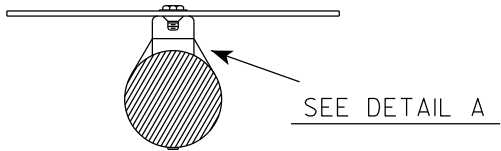
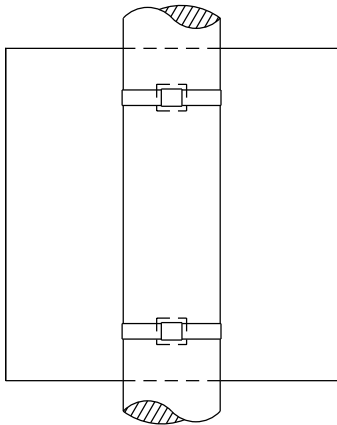
APPROVED *Chester J. Spang*
for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

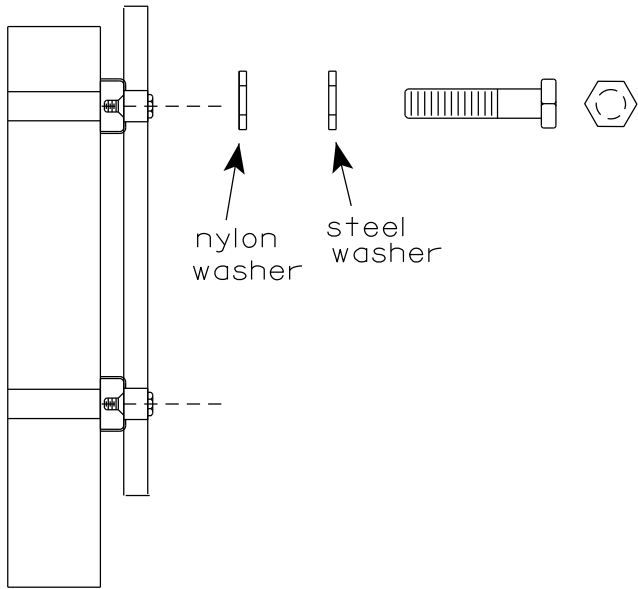
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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BANDING

SINGLE SIGN



WASHER PLACEMENT

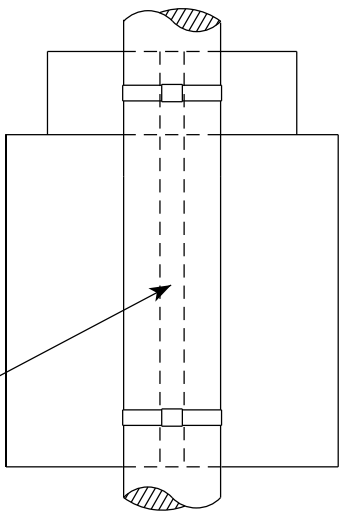


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

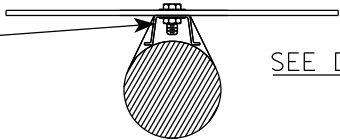
GENERAL NOTES

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



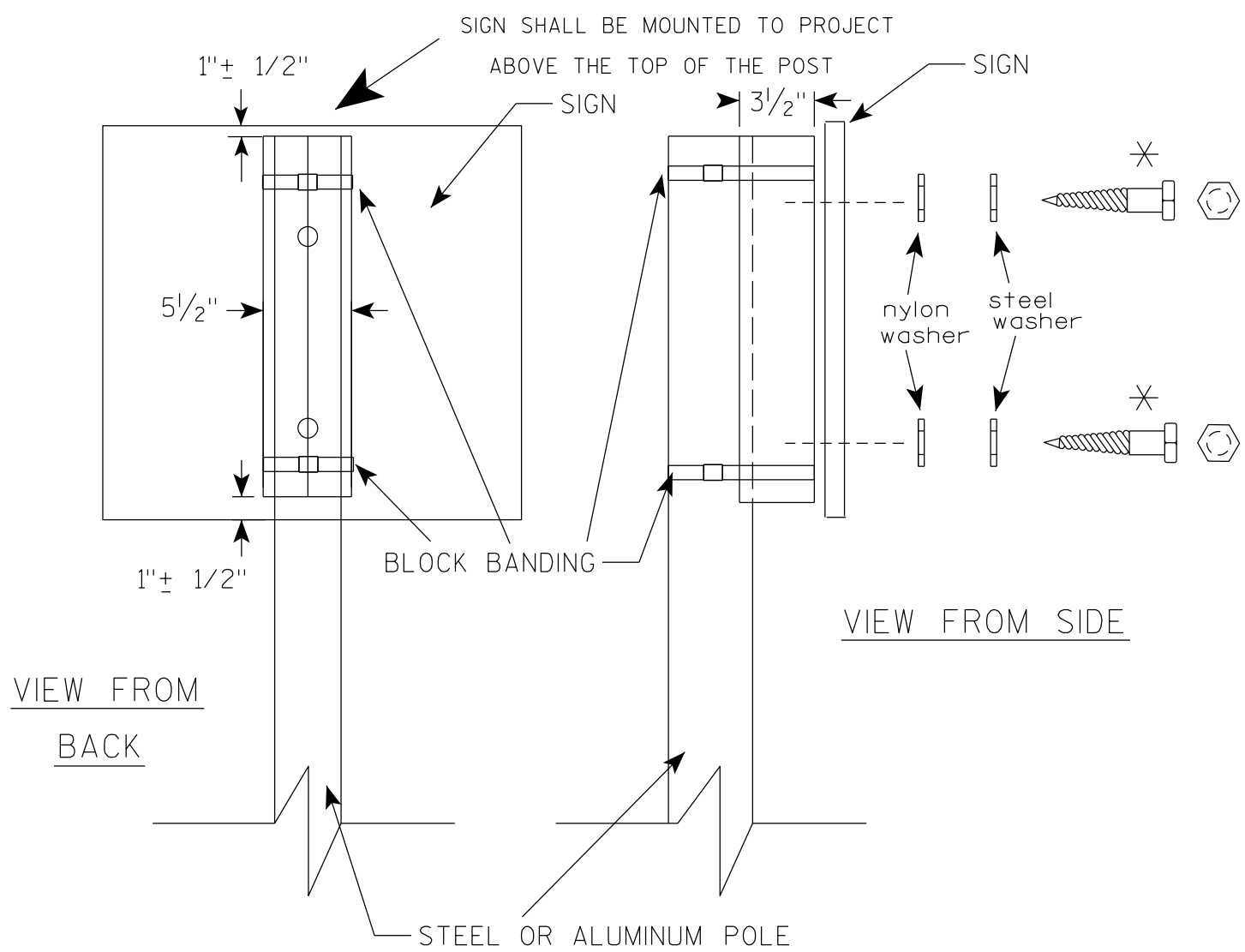
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

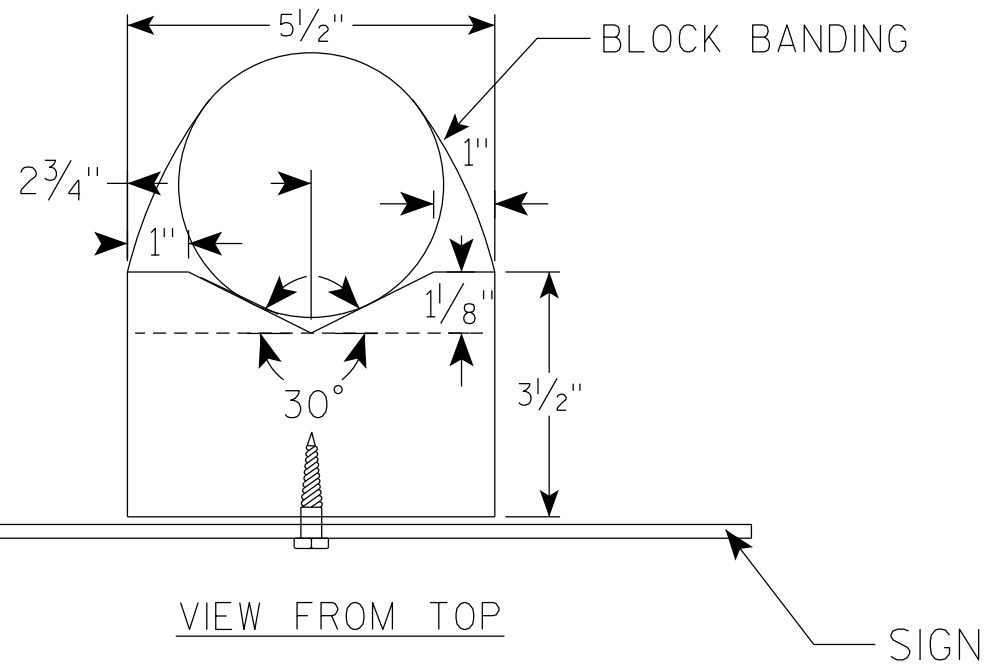
WISCONSIN DEPT OF TRANSPORTATION

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



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

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

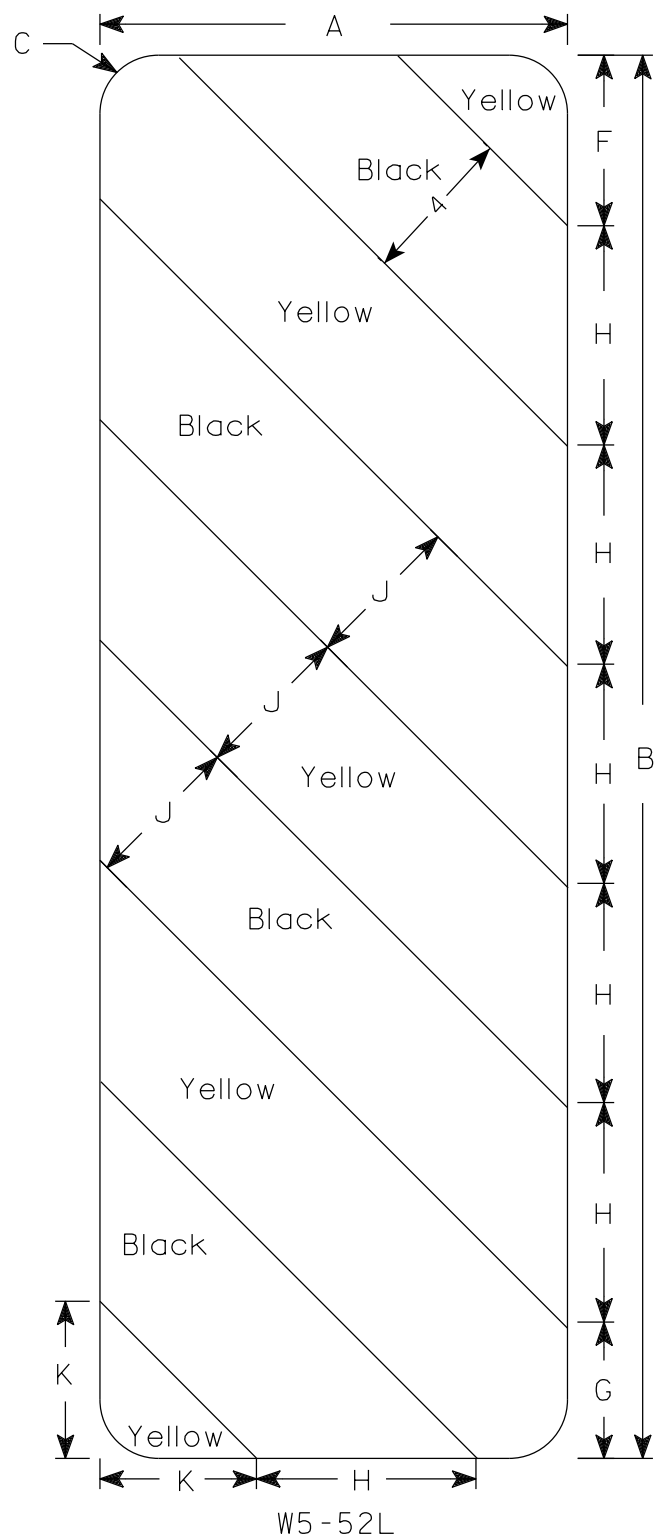
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/19/2022 PLATE NO. A5-10.3

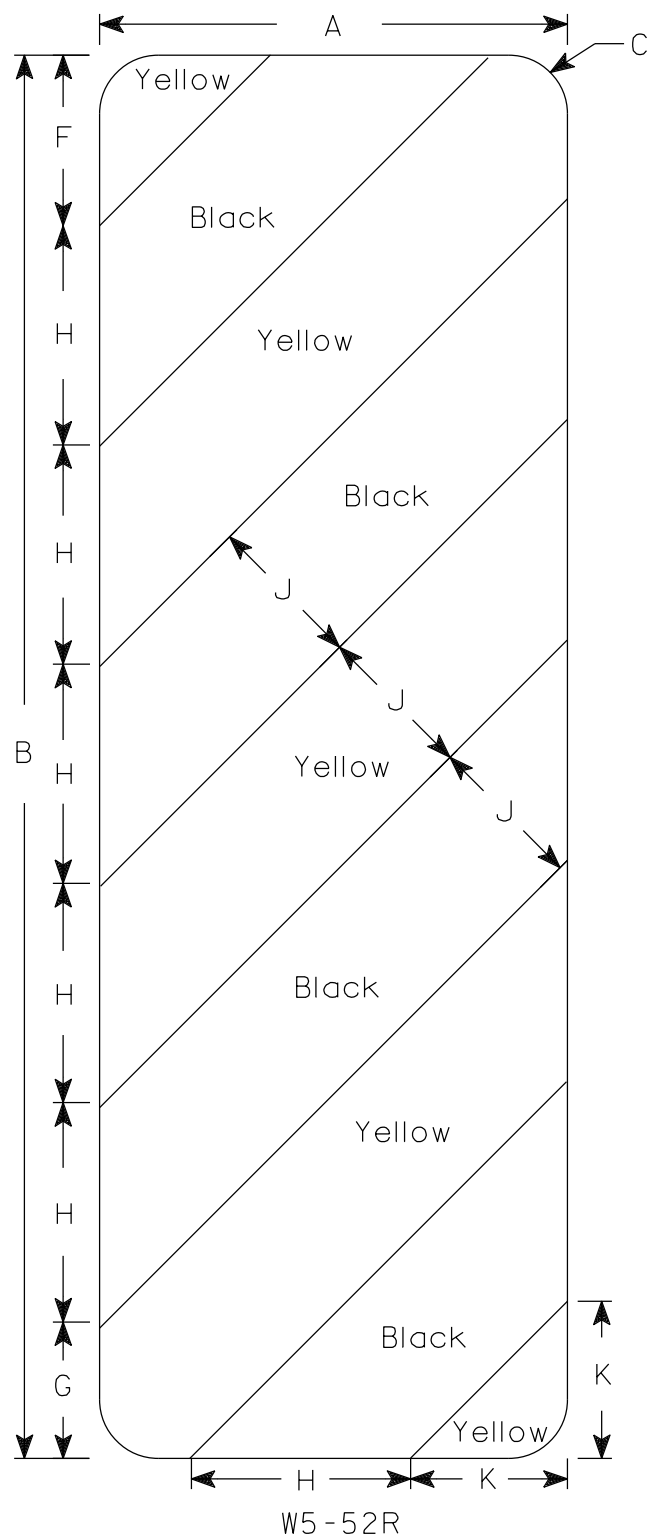
PROJECT NO:

SHEET NO:

E



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 _____ 1.10
OPERATING RATING FACTOR _____ 1.43
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) _____ 250 KIPS

STRUCTURE IS DESIGNED FOR A
FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES

CONCRETE MASONRY: _____
SUPERSTRUCTURE _____ f'c = 4,000 PSI
ALL OTHER _____ f'c = 3,500 PSI
HIGH STRENGTH BAR STEEL REINFORCEMENT: _____
GRADE 60 _____ fy = 60,000 PSI

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10x42 STEEL PILING DRIVEN TO
A REQUIRED RESISTANCE OF 175** TONS PER PILE AS DETERMINED
BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 40' LONG AT EACH ABUTMENT.

** 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
Q100 _____ 1,325 C.F.S.
VEL100 _____ 6.4 F.P.S.
HW100 _____ EL. 957.51
WATERWAY AREA _____ 208.0 SQ. FT.
DRAINAGE AREA _____ 8.1 SQ. MI.
OVERTOPPING FREQUENCY _____ N/A
SCOUR CRITICAL CODE _____ 5

2 YEAR FREQUENCY
Q2 _____ 285 C.F.S.
VEL2 _____ 1.8 F.P.S.
HW2 _____ EL. 954.36

TRAFFIC VOLUME

CTH N
ADT _____ 281 (2046)
R.D.S. _____ 55 M.P.H.

LEGEND

(X) INDICATES WING NUMBER.
AREA TO EXCAVATE INCLUDED IN
"EXCAVATION FOR STRUCTURES
BRIDGES B-41-331".
1-01 LIMITS OF RIPRAP HEAVY AND
GEOTEXTILE TYPE HR.

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. CROSS SECTION & QUANTITIES
3. MISCELLANEOUS DETAILS
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT
6. WEST ABUTMENT DETAILS-1
7. WEST ABUTMENT DETAILS-2
8. EAST ABUTMENT DETAILS
9. EAST ABUTMENT DETAILS-1
10. EAST ABUTMENT DETAILS-2
11. SUPERSTRUCTURE DETAILS-1
12. SUPERSTRUCTURE DETAILS-2
13. SUPERSTRUCTURE DETAILS-3
14. TUBULAR STEEL RAILING TYPE M

50'-10³/₄" BACK TO BACK OF ABUTMENTS

48'-0" SPAN

1'-5³/₈"

OH

OH

OH

OH

OH

OH

OH

OAKDALE ELECTRIC
COOPERATIVE

EDGE OF
OBSERVED
WATER

12'-0"
TYP.

30°0'0"
TYP.
SKEW

31'-0"
1-01

2

3

EXIST. SINGLE SPAN
STEEL DECK GIRDER
BRIDGE P-41-122
TO BE REMOVED

CL. BRG. E. ABUT.
STA. 10+24.00

END OF EXIST.
STRUCTURE
STA. 10+22.12±

END OF SLAB
STA. 10+24.67

CLEAR ROADWAY
28'-0"

CL. CTH N 10+00

END OF SLAB
STA. 9+75.33

CL. BRG. W. ABUT.
STA. 9+76.00

8" PAVING
NOTCH TYP.

1

NAME PLATE
SEE ABUT.
DETAILS

CL. BRG.
W. ABUT.

PROPOSED
STRUCTURE
B-41-331

CL. BRG.
E. ABUT.

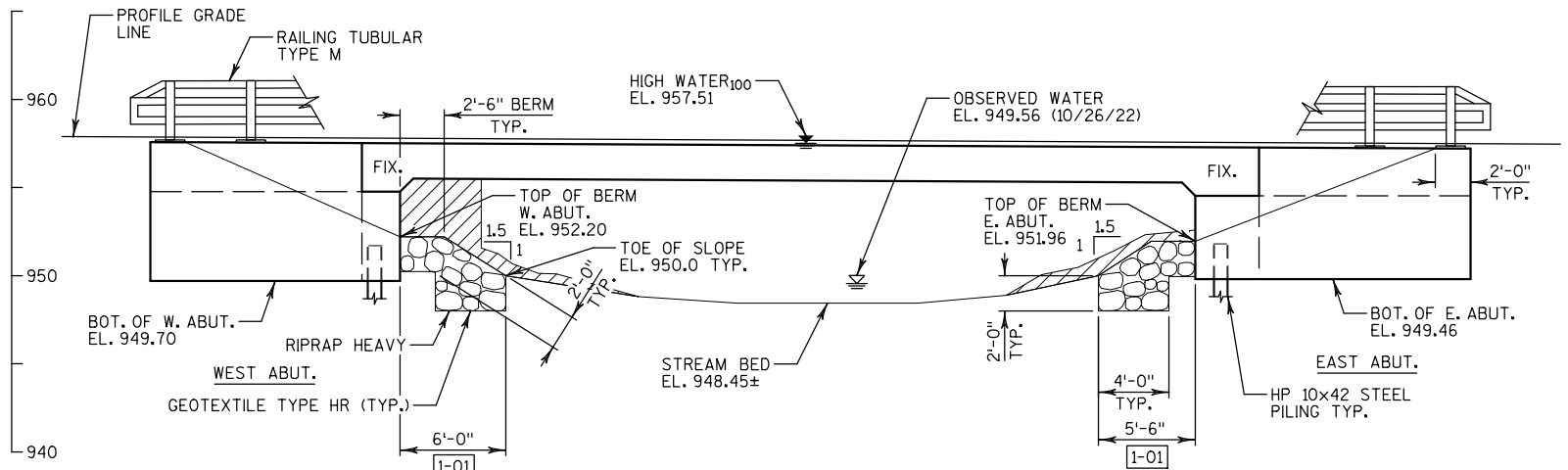
LEMONWEIR VALLEY
TELEPHONE

30'-0"
1-01

4

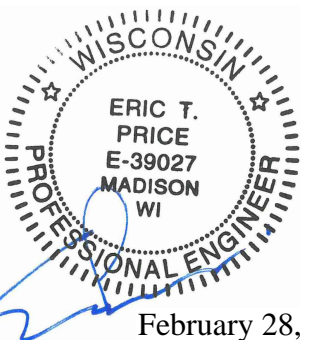
PLAN

(SINGLE SPAN CONCRETE SLAB BRIDGE)



ELEVATION

LOOKING NORTH
AT UPSTREAM EDGE
OF BRIDGE



BUREAU OF STRUCTURES CONTACT:

AARON BONK, P.E. (608) 261-0261

CONSULTANT CONTACT

ERIC PRICE, P.E. (608) 826-6146

NO.	DATE	REVISION	BY
CORRE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	CHIEF STRUCTURES DESIGN ENGINEER		DATE 05/22/25
STRUCTURE B-41-331			
CTH N OVER LITTLE LEMONWEIR RIVER			
COUNTY	MONROE	TOWN/VILLAGE	CLIFTON
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	WCAB	CK'D. BH	DRAWN BY TKB
GENERAL PLAN & ELEVATION			SHEET 1 OF 14

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 $\frac{3}{4}$ " UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-41-331" SHALL BE THE EXISTING GROUNDLINE.

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

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

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

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

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.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

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

2-01 $\frac{3}{4}$ " V-GROOVE. TERMINATE 6" FROM FRONT FACE OF ABUTMENTS.

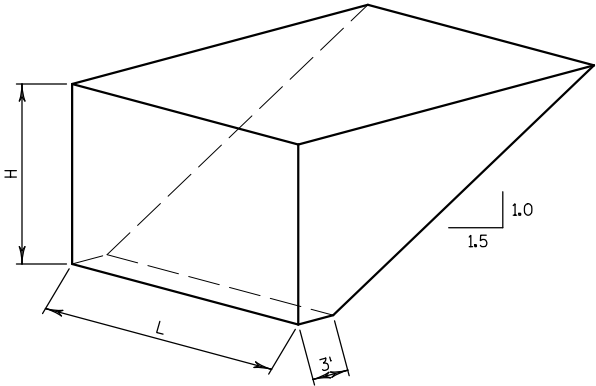
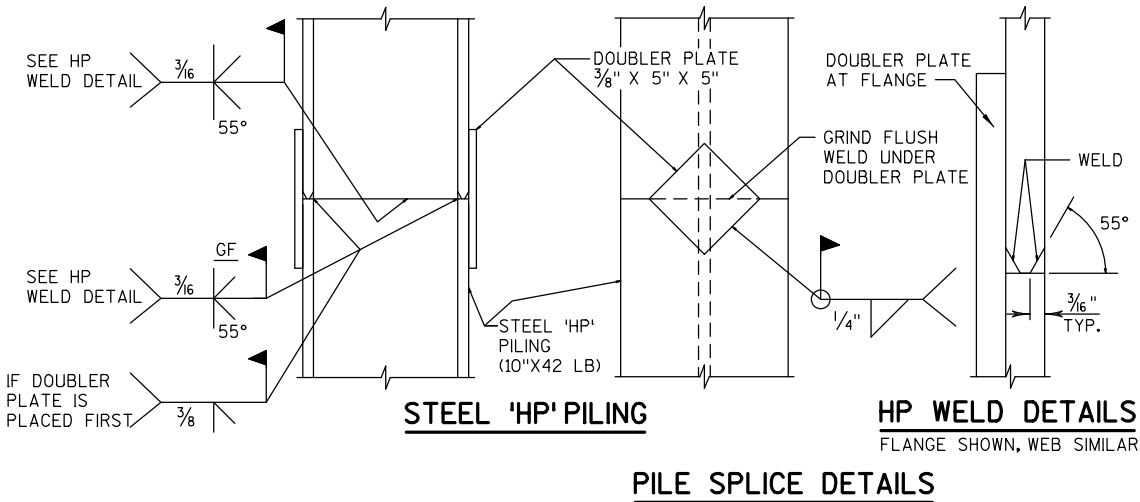
2-02 COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE WISDOT
STANDARD SPECIFICATIONS.

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

BID ITEM NUMBER	BID ITEM	UNIT	WEST ABUTMENT	EAST ABUTMENT	SUPER.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-41-122	EACH	--	--	--	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-41-331	EACH	--	--	--	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	155	155	--	310
502.0100	CONCRETE MASONRY BRIDGES	CY	36.0	36.0	128.0	200
502.3200	PROTECTIVE SURFACE TREATMENT	SY	11	11	206	228
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,170	2,170	--	4,340
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,710	1,710	22,650	26,070
513.4061	RAILING TUBULAR TYPE M	LF	--	--	155	155
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	11	--	22
550.1100	PIILING STEEL HP 10-INCH X 42 LB	LF	200	200	--	400
606.0300	RIPRAP HEAVY	CY	74	74	--	148
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100	100	--	200
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	31	31	--	62
645.0120	GEOTEXTILE TYPE HR	SY	138	137	--	275
	NON-BID ITEMS					
	NAME PLATE	EACH	--	--	--	1
	FILLER	SIZE	--	--	--	1/2" & 3/4"

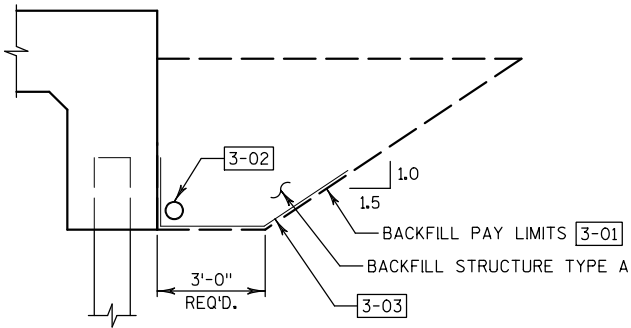
LEGEND

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



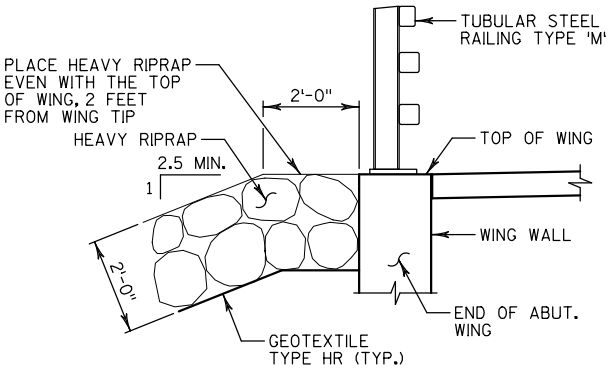
ABUTMENT BACKFILL PAY LIMIT DIAGRAM

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



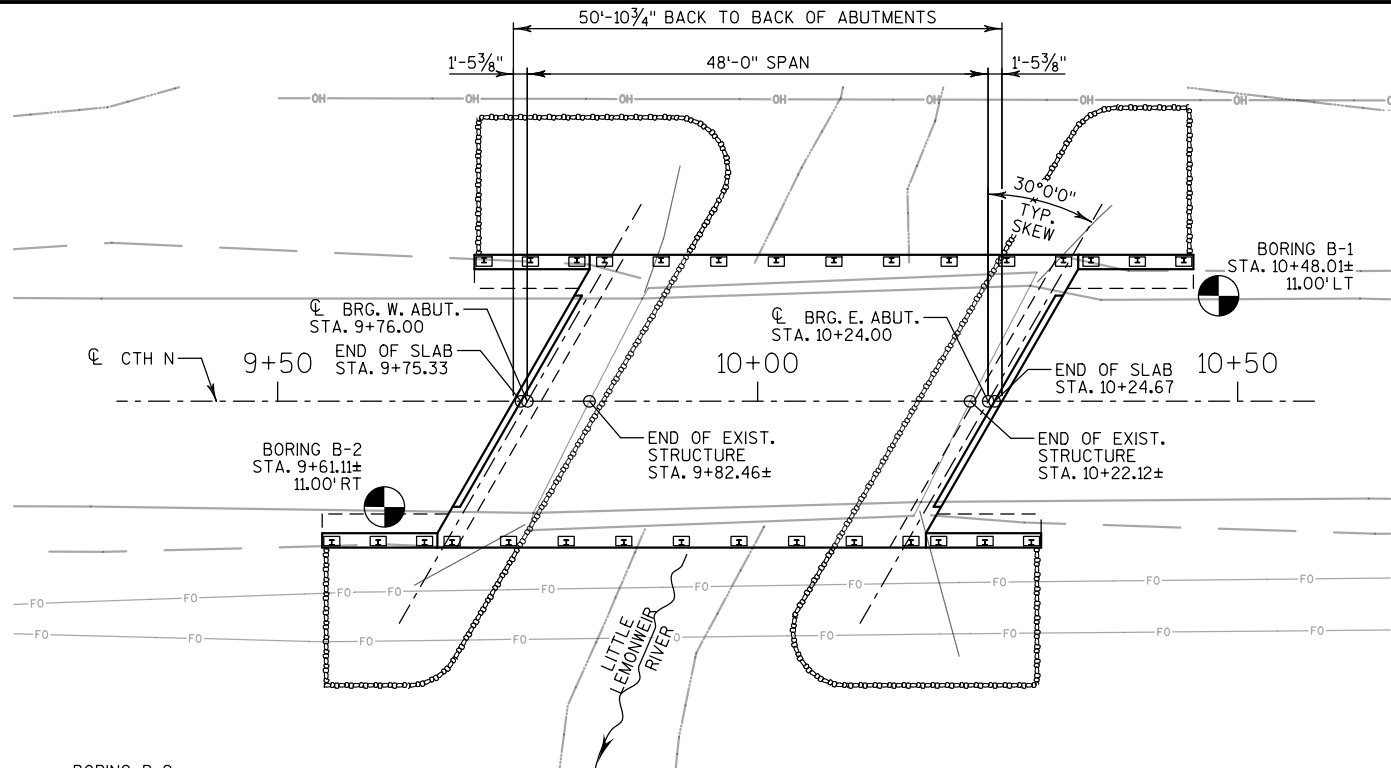
STRUCTURE BACKFILL LIMITS

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



TYPICAL FILL SECTION AT WING TIPS

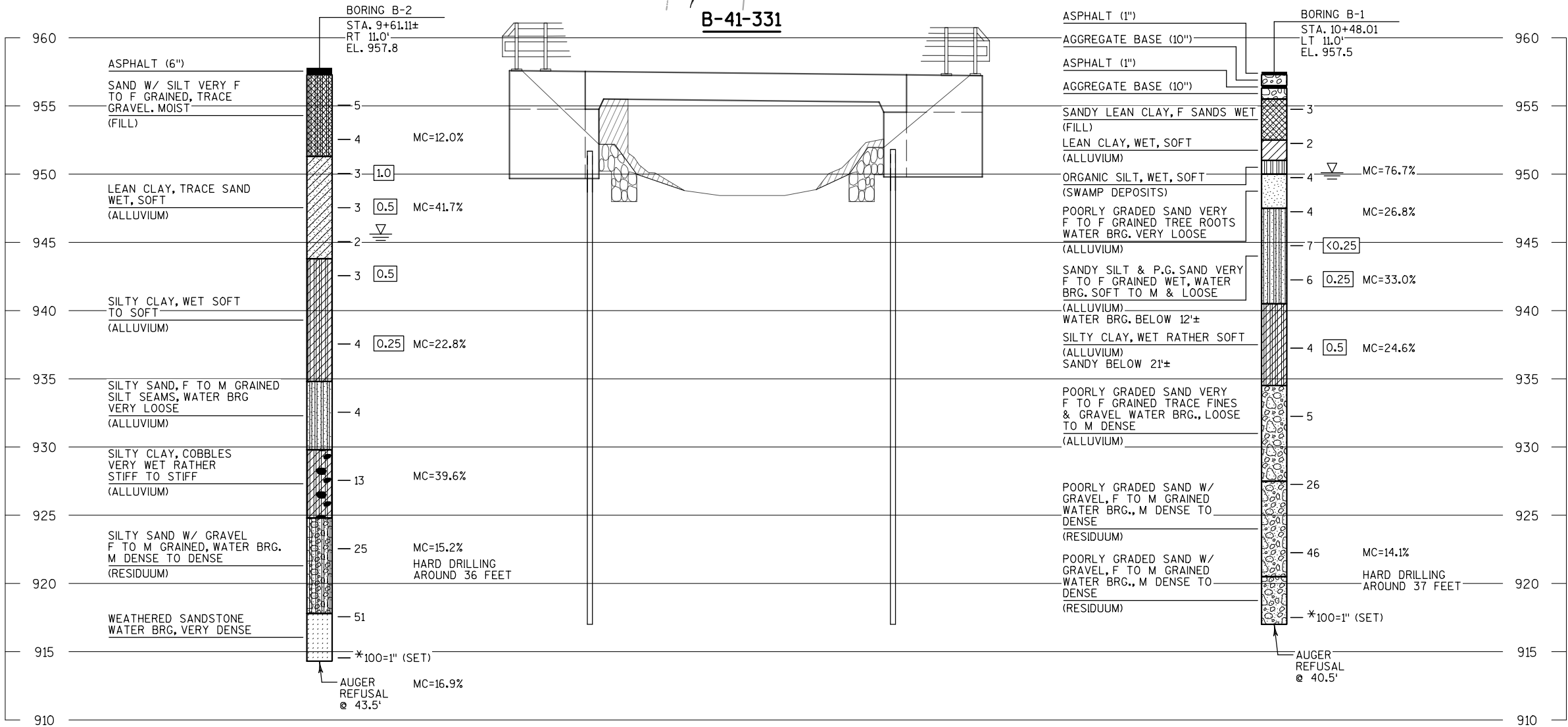
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-331			
DRAWN BY		TKB	PLANS CK'D. ETP
MISCELLANEOUS DETAILS			SHEET 3 OF 14



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

BORING B-1
PERFORMED ON 10/5/22
BORING B-2
PERFORMED ON 10/5/22

B-41-331



STATE PROJECT NUMBER
5126-00-74

MATERIAL SYMBOLS

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

LEGEND OF BORING

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

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

GROUND WATER ELEVATION

▽ AT TIME OF DRILLING

▽ END OF DRILLING

▽ AFTER DRILLING

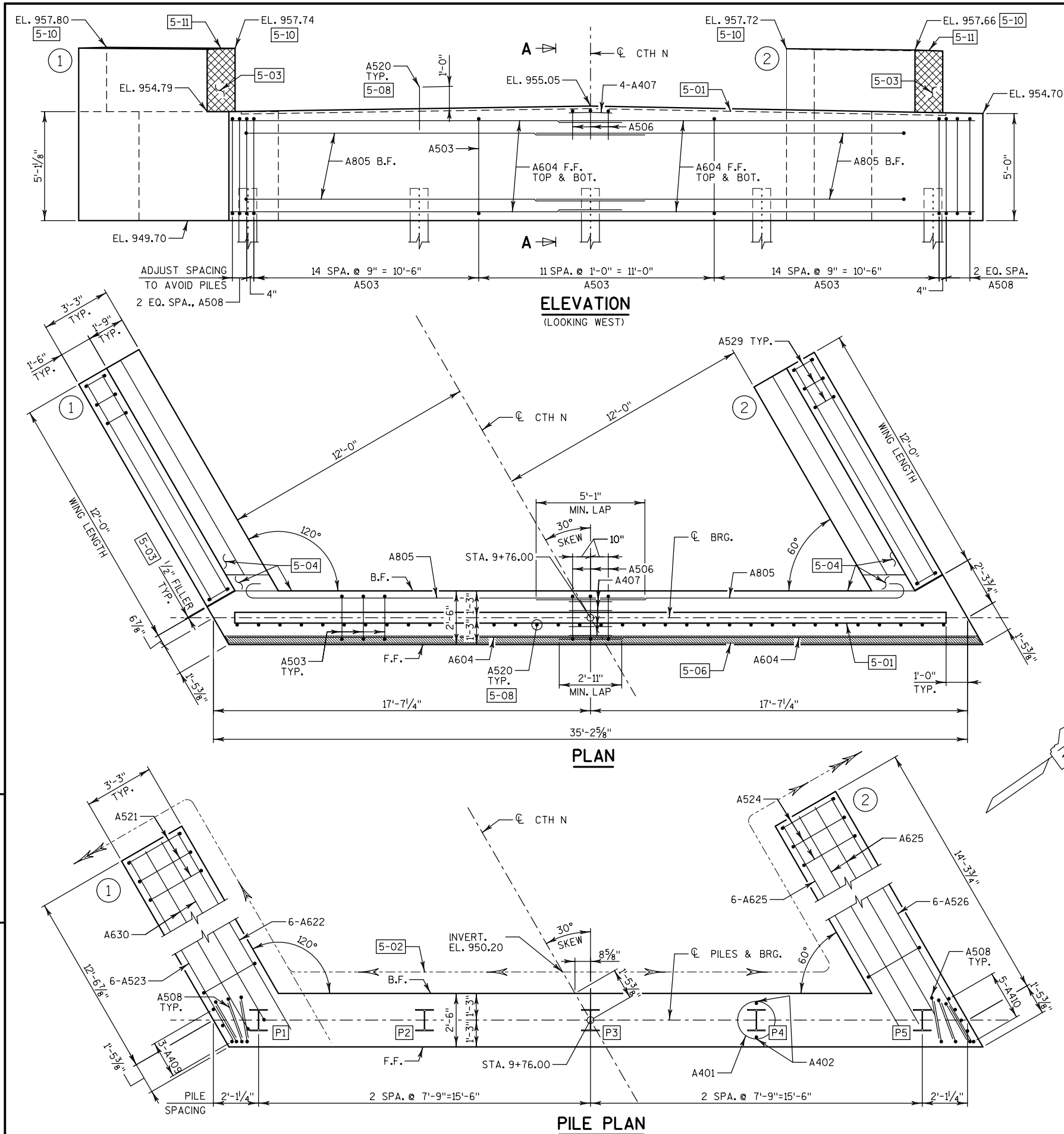
ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-331			
DRAWN BY TKB		PLANS CK'D. ETP	
SUBSURFACE EXPLORATION-1		SHEET 4 OF 14	



- LEGEND
- X

INDICATES WING NUMBER.
- PX

INDICATES PILE NUMBER.
- 5-01

KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"x6".
- 5-02

PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".
- 5-03

1/2" FILLER (INCLUDED IN WING LENGTH). SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
- 5-04

18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- 5-05

PULL UP TO 2" CLEAR.
- 5-06

3/4"x4" PREFORMED JOINT FILLER TO EXTEND BETWEEN EDGES OF SLAB.
- 5-07

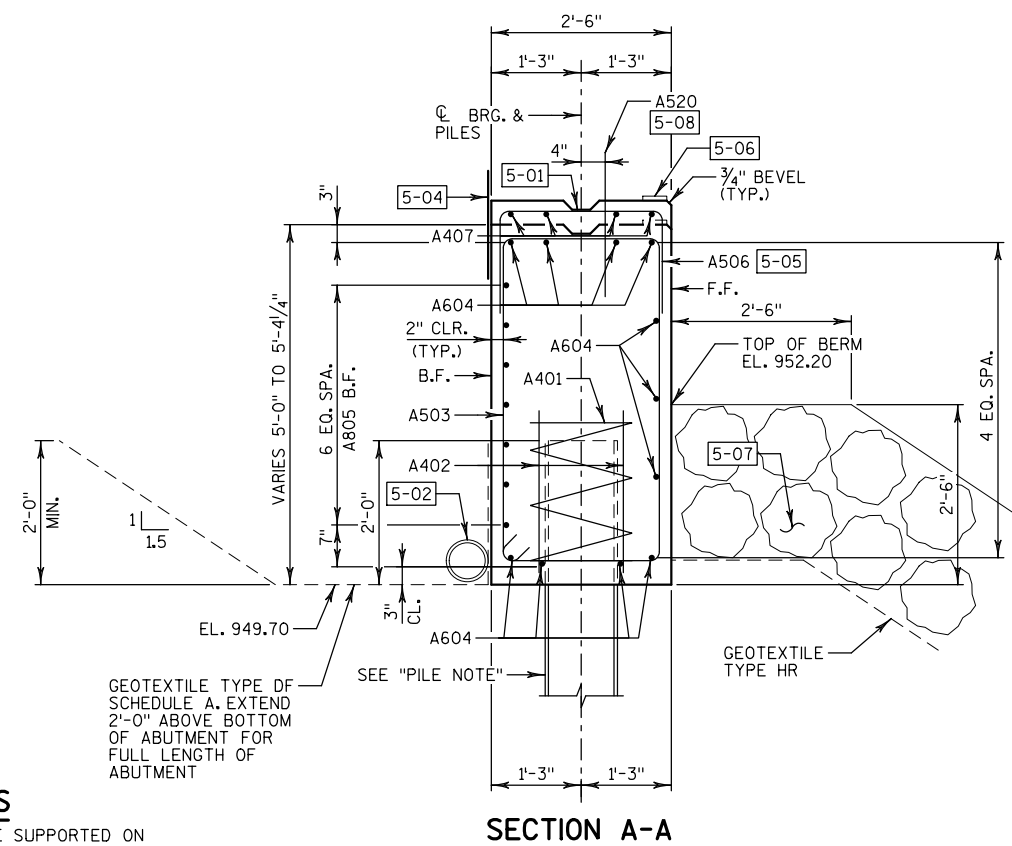
HEAVY RIPRAP. SEE SHEET 1 FOR ADDITIONAL DETAILS.
- 5-08

A520 BARS SPACED AT 1'-0" ON CENTER MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.
- 5-09

OPTIONAL CONSTRUCTION JOINT: KEYWAY FORMED BY BEVELED 2x6 (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED, INCIDENTAL TO "CONCRETE MASONRY").
- 5-10

ELEVATION SHOWN IS TAKEN AT B.F. OF WING.
- 5-11

SLOPE 2.0% TO DRAIN.



PILE NOTES

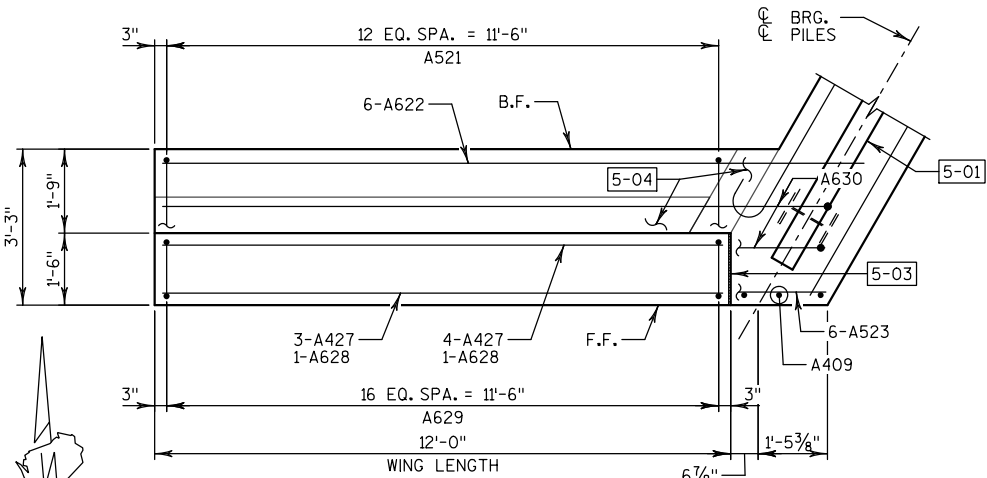
ABUTMENT TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 175* TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 40' LONG AT THE WEST ABUTMENT.

* 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.

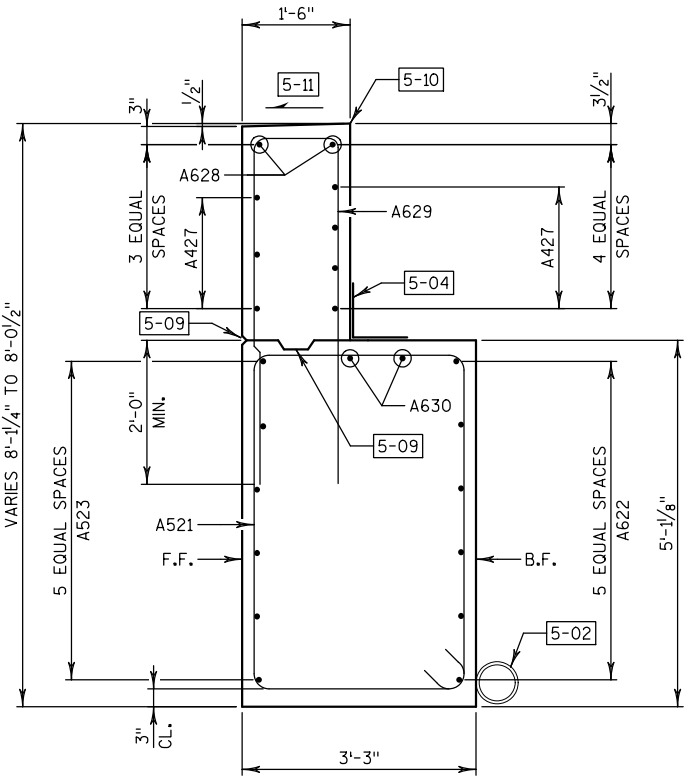
STATE PROJECT NUMBER			
5126-00-74			
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-331			
DRAWN BY TKB		PLANS CK'D. ETP	
WEST ABUTMENT			SHEET 5 OF 14

LEGEND

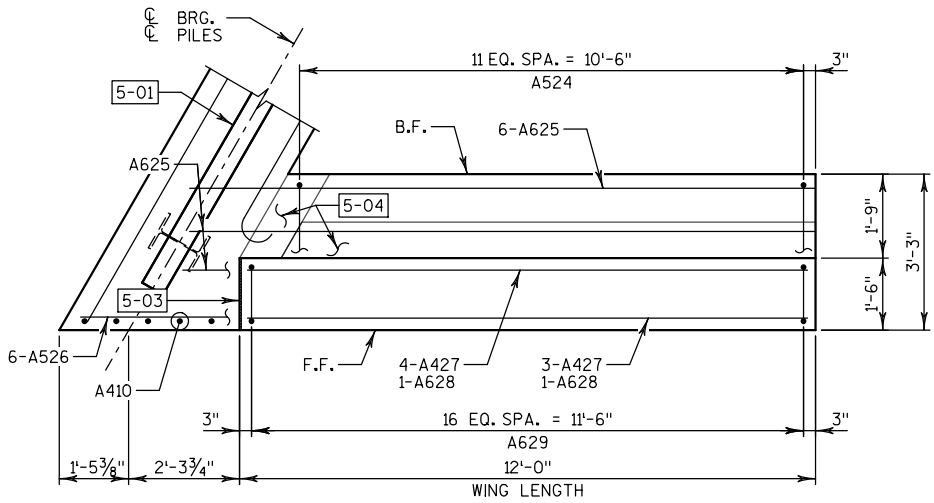
5-XX SEE SHEET 5 FOR CALLOUTS.



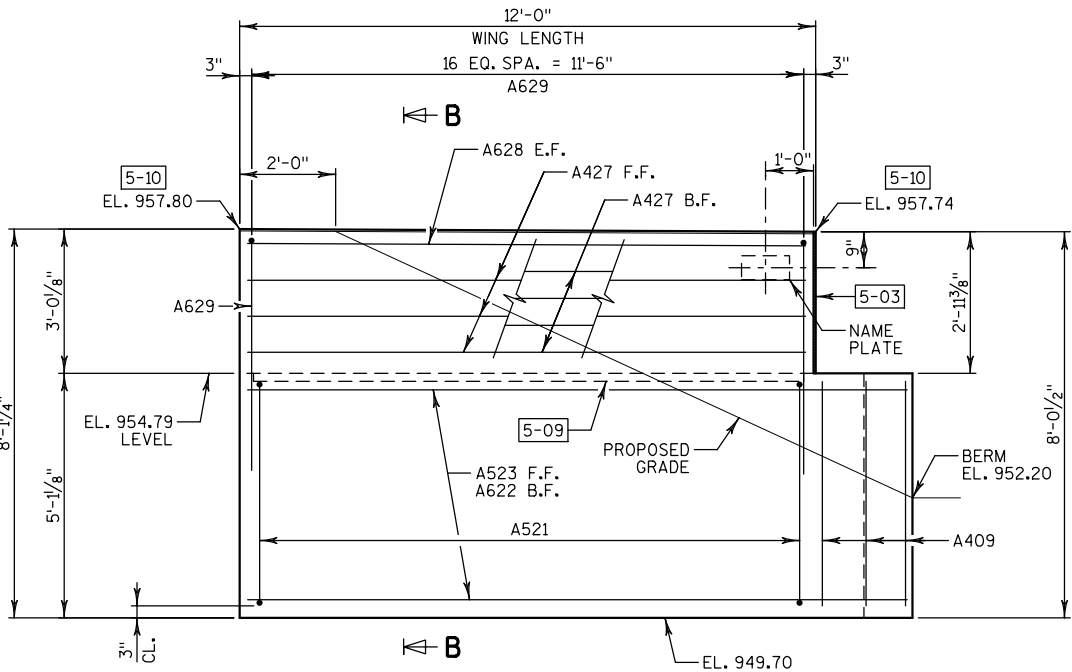
PLAN - WING 1



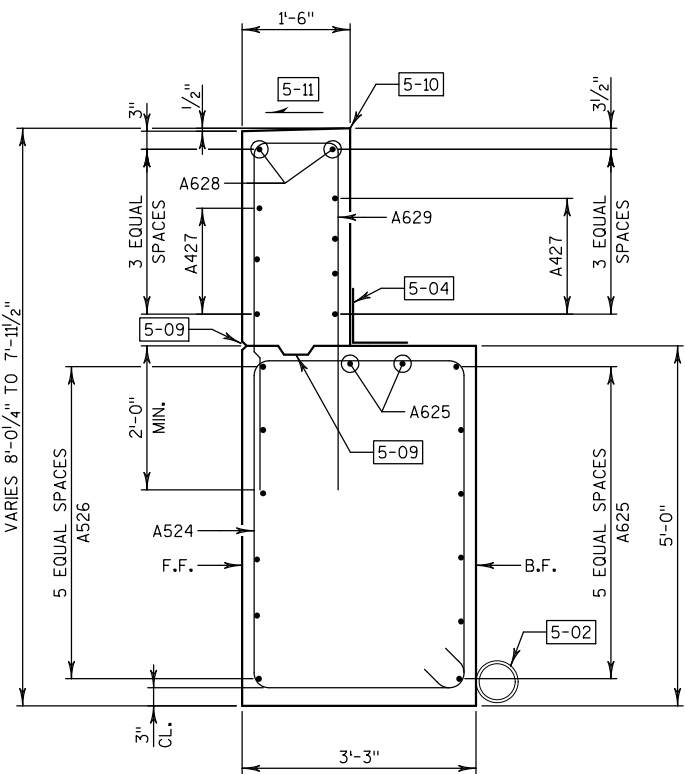
SECTION B-B



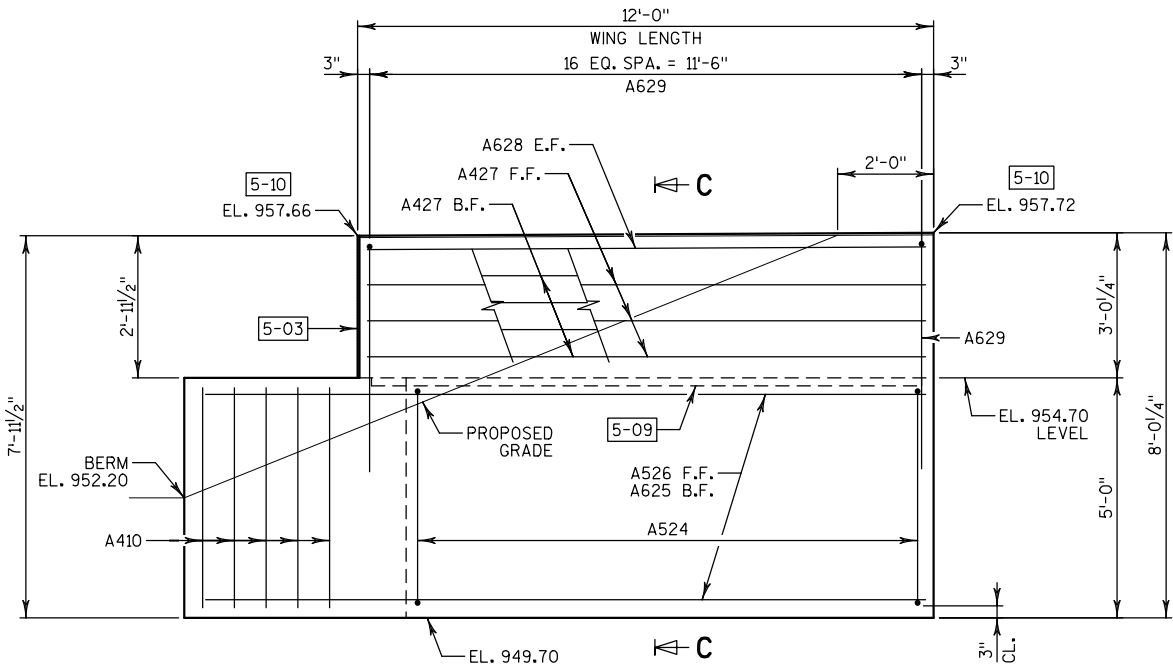
PLAN - WING 2



ELEVATION - WING 1

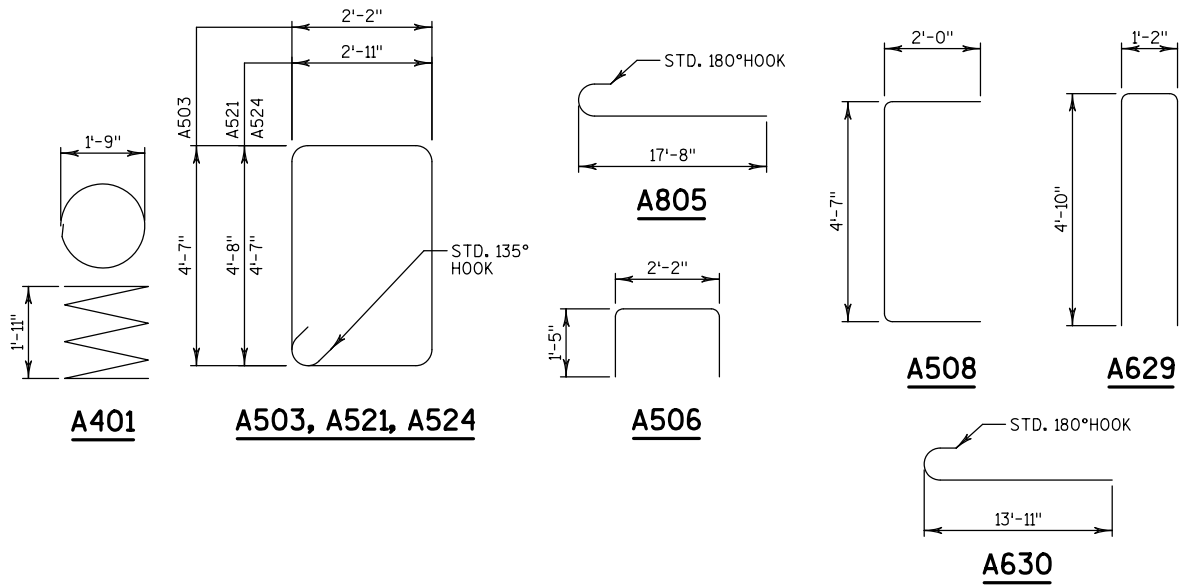


SECTION C-C



ELEVATION - WING 2

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-331			
DRAWN BY TKB		PLANS CK'D. ETP	
WEST ABUTMENT DETAILS-1			SHEET 6 OF 14



BILL OF BARS - WEST ABUTMENT

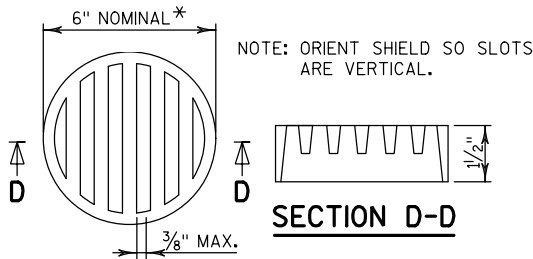
DIMENSIONS IN BENDING DETAILS ARE OUT-TO-OUT OF BAR.

BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
NON-COATED BARS					TOTAL WEIGHT = 2,170 LBS	
A401	5	28'-0"	X		BODY - AT PILES - 1 PER PILE	VERT.
A402	10	2'-3"			BODY - AT PILES - 2 PER PILE	VERT.
A503	40	14'-2"	X		BODY - STIRRUPS	VERT.
A604	22	18'-11"			BODY - TOP, F.F. & BOT	HORIZ.
A805	14	18'-7"	X		BODY - B.F.	HORIZ.
A506	3	4'-9"	X		BODY - TOP	VERT.
A407	4	2'-0"			BODY - TOP	HORIZ.
A508	12	8'-4"	X		BODY - ENDS	VERT.
A409	3	4'-8"			BODY - END NEAR WING 1	VERT.
A410	5	4'-7"			BODY - END NEAR WING 2	VERT.
COATED BARS					TOTAL WEIGHT = 1,710 LBS	
A520	34	2'-0"			BODY - DOWELS	VERT.
A521	13	15'-10"	X		WING 1 FTG. - STIRRUPS	VERT.
A622	6	14'-11"			WING 1 FTG. - B.F.	HORIZ.
A523	6	13'-9"			WING 1 FTG. - F.F.	HORIZ.
A524	12	15'-8"	X		WING 2 FTG. - STIRRUPS	VERT.
A625	8	13'-1"			WING 2 FTG. - B.F. & TOP	HORIZ.
A526	6	15'-2"			WING 2 FTG. - F.F.	HORIZ.
A427	14	11'-8"			WINGS - B.F. & F.F.	HORIZ.
A628	4	11'-8"			WINGS - TOP	HORIZ.
A629	34	10'-6"	X		WINGS - STIRRUPS	VERT.
A630	2	14'-7"	X		WING 1 FTG. - TOP	HORIZ.

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

LEGEND

5-XX SEE SHEET 5 FOR CALLOUTS.



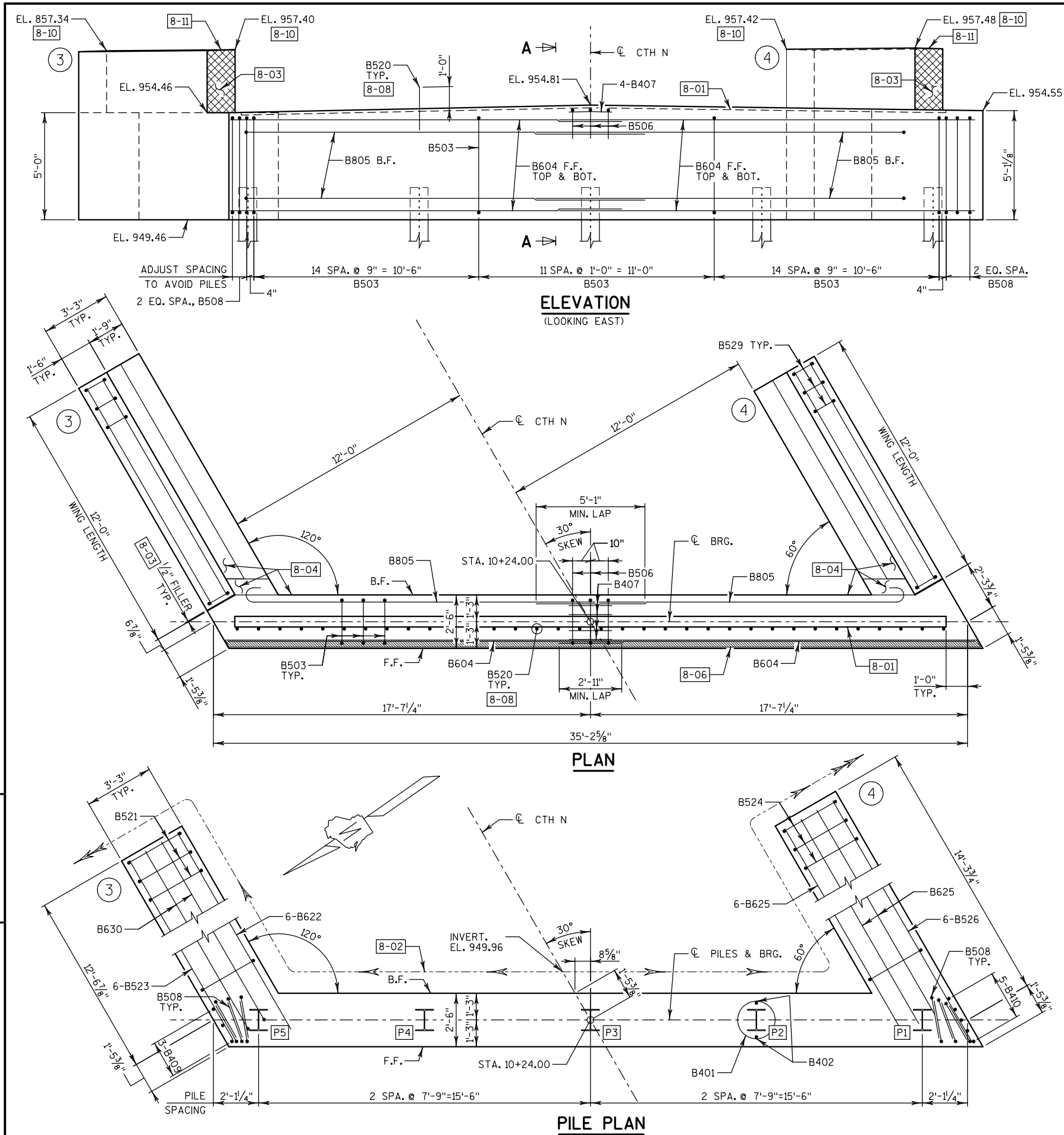
* DIMENSION IS APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

RODENT SHIELD DETAIL

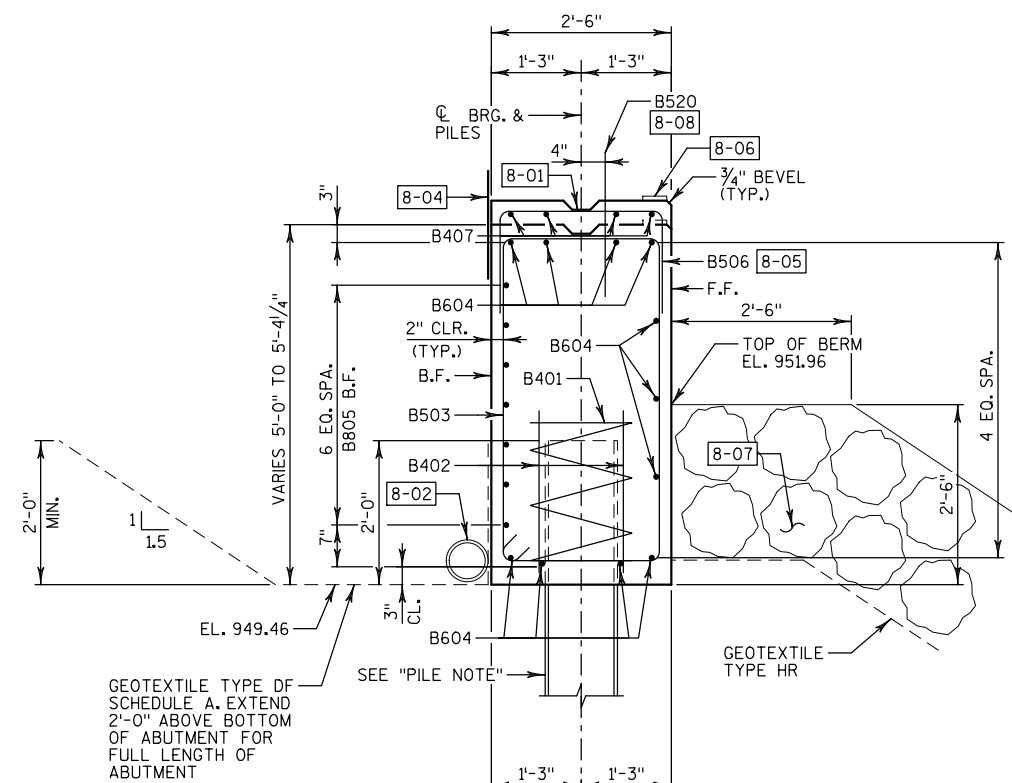
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-331			
DRAWN BY TKB		PLANS CK'D. ETP	
WEST ABUTMENT DETAILS-2			SHEET 7 OF 14



- (X) INDICATES WING NUMBER.
(PX) INDICATES PILE NUMBER.
8-01 KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"x6".
8-02 PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".
8-03 1/2" FILLER (INCLUDED IN WING LENGTH). SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
8-04 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
8-05 PULL UP TO 2" CLEAR.
8-06 3/4"x4" PREFORMED JOINT FILLER TO EXTEND BETWEEN EDGES OF SLAB.
8-07 HEAVY RIPRAP. SEE SHEET 1 FOR ADDITIONAL DETAILS.
8-08 B520 BARS SPACED AT 1'-0" ON CENTER MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.
8-09 OPTIONAL CONSTRUCTION JOINT: KEYWAY FORMED BY BEVELED 2x6 (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED, INCIDENTAL TO "CONCRETE MASONRY").
8-10 ELEVATION SHOWN IS TAKEN AT B.F. OF WING.
8-11 SLOPE 2.0% TO DRAIN.



PILE NOTES

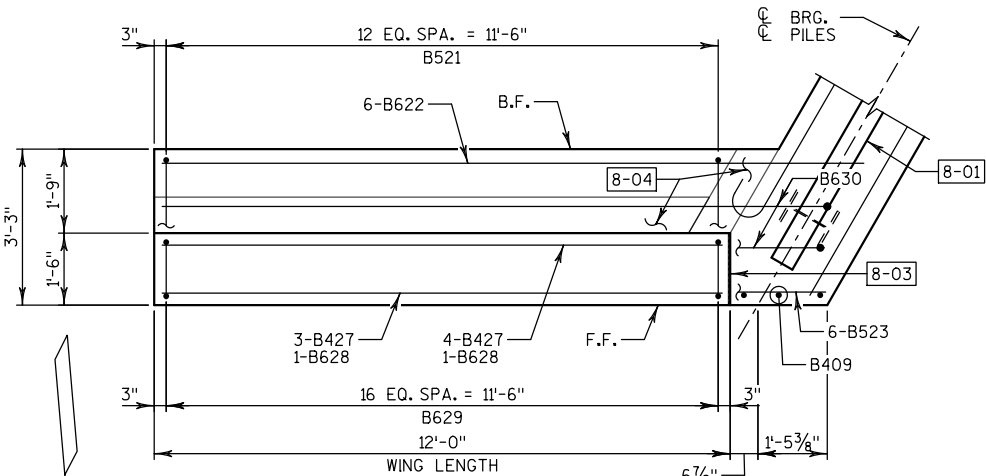
ABUTMENT TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 175* TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 40' LONG AT THE EAST ABUTMENT.

* 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.

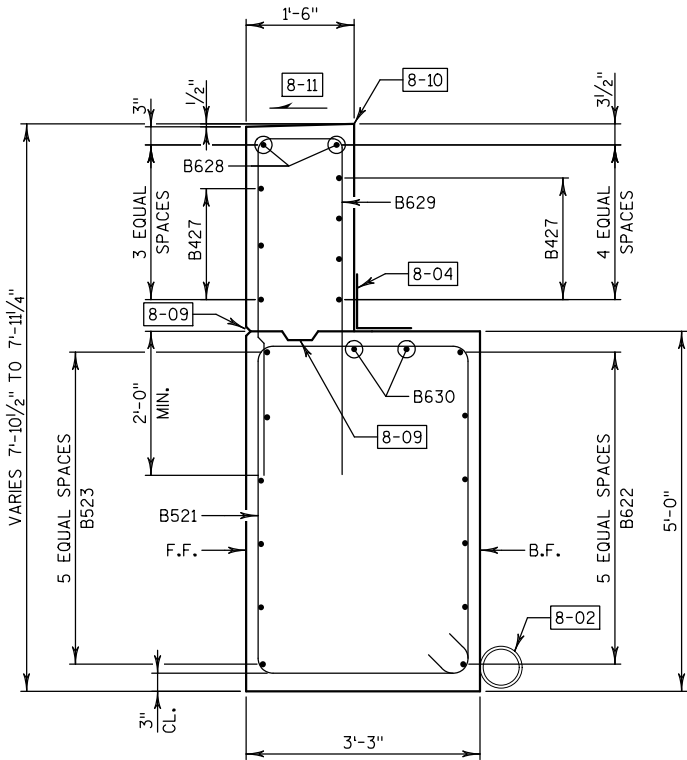
STATE PROJECT NUMBER			
5126-00-74			
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-331			
DRAWN BY TKB		PLANS CK'D. ETP	
EAST ABUTMENT			SHEET 8 OF 14

LEGEND

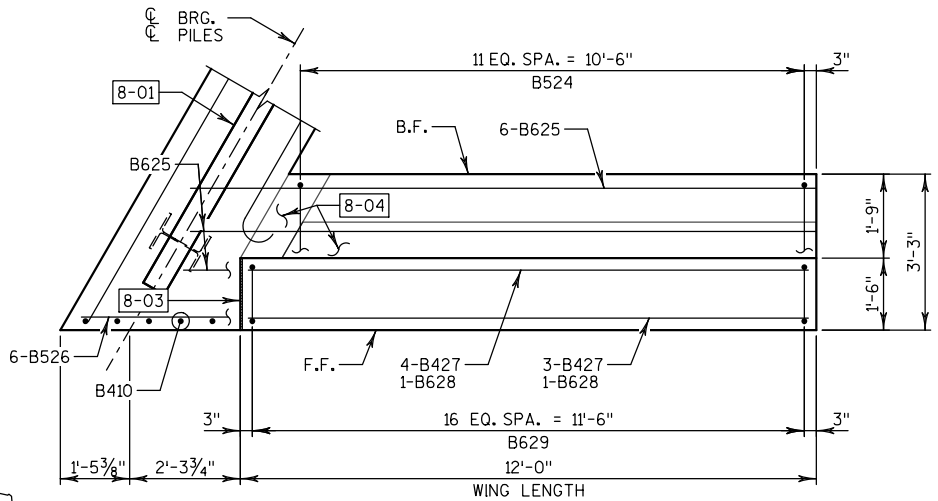
8-XX SEE SHEET 8 FOR CALLOUTS.



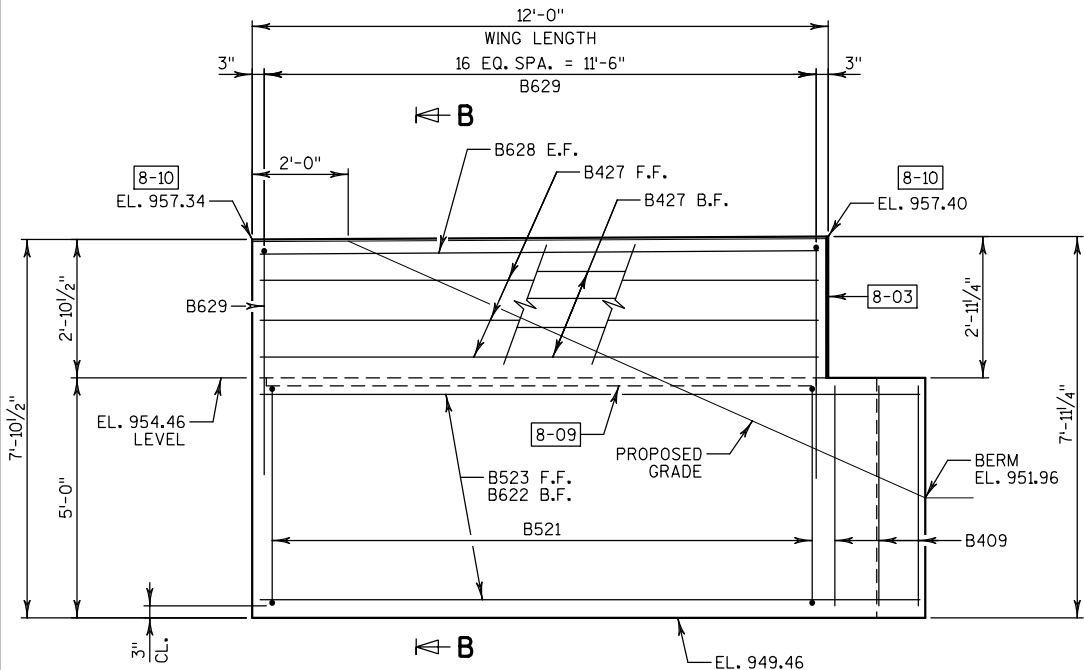
PLAN - WING 3



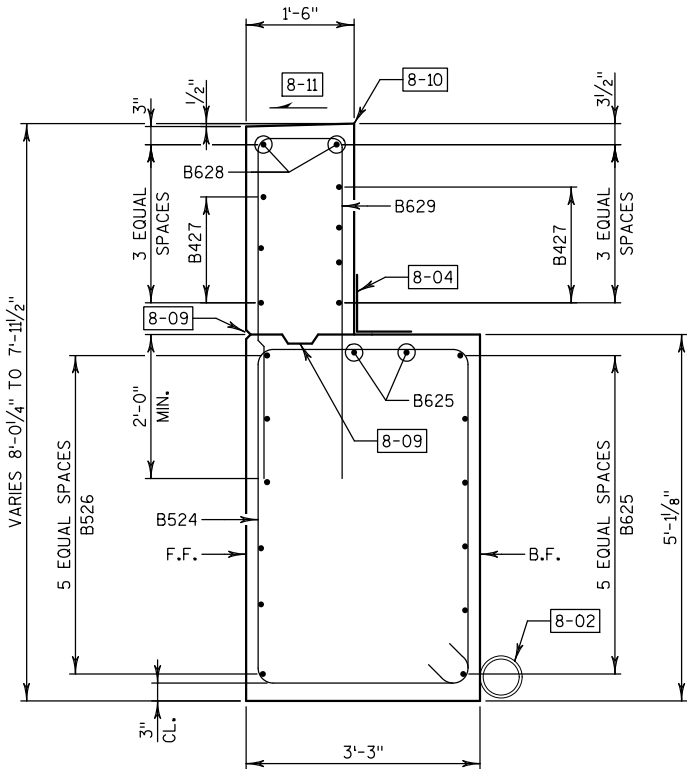
SECTION B-B



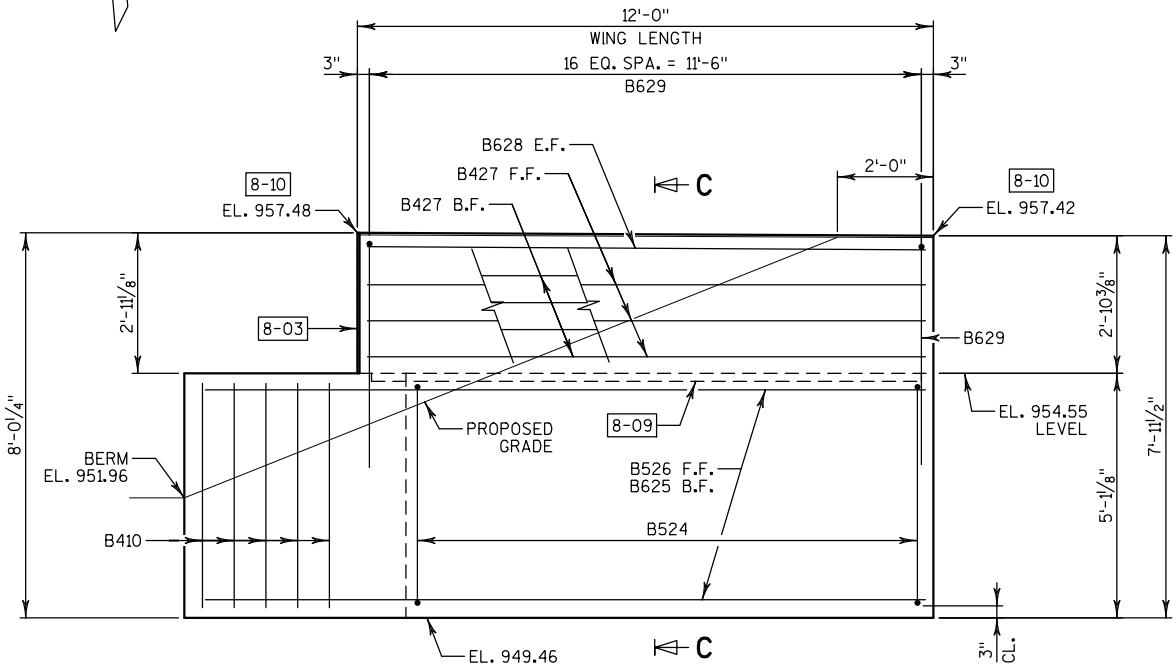
PLAN - WING 4



ELEVATION - WING 3



SECTION C-C



ELEVATION - WING 4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-331			
DRAWN BY TKB		PLANS CK'D. ETP	
EAST ABUTMENT DETAILS-1			SHEET 9 OF 14

BILL OF BARS - EAST ABUTMENT

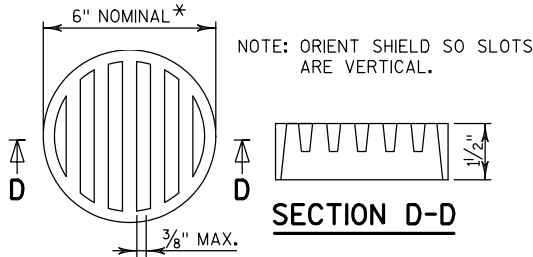
DIMENSIONS IN BENDING DETAILS ARE OUT-TO-OUT OF BAR.

BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
NON-COATED BARS					TOTAL WEIGHT = 2,170 LBS	
B401	5	28'-0"	X		BODY - AT PILES - 1 PER PILE	VERT.
B402	10	2'-3"			BODY - AT PILES - 2 PER PILE	VERT.
B503	40	14'-2"	X		BODY - STIRRUPS	VERT.
B604	22	18'-11"			BODY - TOP, F.F. & BOT	HORIZ.
B805	14	18'-7"	X		BODY - B.F.	HORIZ.
B506	3	4'-9"	X		BODY - TOP	VERT.
B407	4	2'-0"			BODY - TOP	HORIZ.
B508	12	8'-4"	X		BODY - ENDS	VERT.
B409	3	4'-7"			BODY - END NEAR WING 3	VERT.
B410	5	4'-8"			BODY - END NEAR WING 4	VERT.
COATED BARS					TOTAL WEIGHT = 1,710 LBS	
B520	34	2'-0"			BODY - DOWELS	VERT.
B521	13	15'-8"	X		WING 3 FTG. - STIRRUPS	VERT.
B622	6	14'-11"			WING 3 FTG. - B.F.	HORIZ.
B523	6	13'-9"			WING 3 FTG. - F.F.	HORIZ.
B524	12	15'-10"	X		WING 4 FTG. - STIRRUPS	VERT.
B625	8	13'-1"			WING 4 FTG. - B.F. & TOP	HORIZ.
B526	6	15'-2"			WING 4 FTG. - F.F.	HORIZ.
B427	14	11'-8"			WINGS - B.F. & F.F.	HORIZ.
B628	4	11'-8"			WINGS - TOP	HORIZ.
B629	34	10'-6"	X		WINGS - STIRRUPS	VERT.
B630	2	14'-7"	X		WING 3 FTG. - TOP	HORIZ.

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

LEGEND

[8-XX] SEE SHEET 8 FOR CALLOUTS.



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

RODENT SHIELD DETAIL

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

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-331			
DRAWN BY TKB		PLANS CK'D. ETP	
EAST ABUTMENT DETAILS-2			SHEET 10 OF 14

THE TOP TRANSVERSE BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY.

THE BOTTOM LONGITUDINAL BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

TRANSVERSE BARS SHALL BE PLACED PARALLEL TO
SUBSTRUCTURE UNITS.

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

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE Q OF ABUTMENTS, THE Q PIERS AND AT 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG THE GUTTER LINES AND R CURVE N/CROWN POINT. RECORD THE ELEVATIONS IN THE "SURVEY TOP OF SLAB ELEVATIONS" TABLE ON "SUPERSTRUCTURE DETAILS-3" SHEET FOR THE "AS BUILT" PLANS.

PARAPETS SHALL BE POURED AFTER FORMWORK IS RELEASED.

11-01 3/4" CONTINUOUS DRIP "V" GROOVE. END 6" FROM FRONT FACE OF
ABUTMENTS.

11-02 COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATION.

11-03 3/4"x4" PREFORMED JOINT FILLER TO EXTEND BETWEEN EDGES OF SLAB.

11-04 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

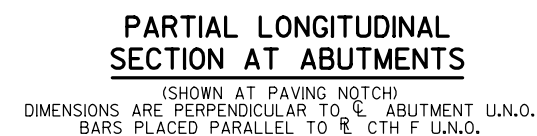
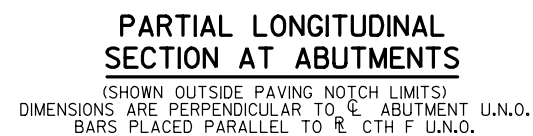
11-05 DIMENSION IS TAKEN PERPENDICULAR TO \mathbb{C} SUBSTRUCTURES.

11-06 DIMENSION IS TAKEN PARALLEL TO R CTH N.

11-07 BARS PLACED PARALLEL TO SKEW AND SPACED ALONG
R CTH N.

11-08 SEE ABUTMENT SHEETS FOR DOWEL INFORMATION.

11-09 SEE DETAILS ON "TUBULAR STEEL RAILING TYPE M" SHEET FOR
ADDITIONAL REINFORCEMENT



BILL OF BARS - SUPERSTRUCTURE

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

BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
COATED BARS					TOTAL WEIGHT = 22,650 LBS
S501	46	7'-11"	X		SLAB AT PAVING NOTCH VERT.
S502	46	3'-11"	X		SLAB AT PAVING NOTCH VERT.
S503	10	8'-1"	X		SLAB OUTSIDE PAVING NOTCH VERT.
S504	2	7'-10"	X		SLAB OUTSIDE PAVING NOTCH - WINGS 1 & 3 VERT.
S505	2	7'-3"	X		SLAB OUTSIDE PAVING NOTCH - WINGS 1 & 3 VERT.
S506	2	8'-10"	X		SLAB OUTSIDE PAVING NOTCH - WINGS 2 & 4 VERT.
S507	2	4'-2"	X		SLAB OUTSIDE PAVING NOTCH - WINGS 1 & 3 TRANS.
S508	2	4'-3"	X		SLAB OUTSIDE PAVING NOTCH - WINGS 2 & 4 TRANS.
S1110	61	44'-7"			SLAB - BTM. LONGIT.
S511	132	34'-10"			SLAB - TOP AND BTM. TRANS.
S412	82	26'-6"			SLAB - TOP TRANS.
S620	36	11'-4"	X		SLAB - TOP AT RAIL POSTS TRANS.
S621	56	6'-0"			SLAB - TOP AT INT. RAIL POSTS LONGIT.
S622	16	4'-8"	X		SLAB - TOP AT EXT. RAIL POSTS LONGIT.

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

LEGEND

11-XX SEE "SUPERSTRUCTURE DETAILS-1" SHEET FOR CALLOUTS AND NOTES.

PLAN

CORNER DETAIL AT WINGS 2 & 4

SLAB LONGITUDINAL AND ADDITIONAL TRANSVERSE REINFORCEMENT NOT SHOWN FOR CLARITY

CORNER DETAIL AT WINGS 1 & 3

SLAB LONGITUDINAL AND ADDITIONAL TRANSVERSE REINFORCEMENT NOT SHOWN FOR CLARITY

S501

S502

S503, S504, S505, S506

S507

S508

S620

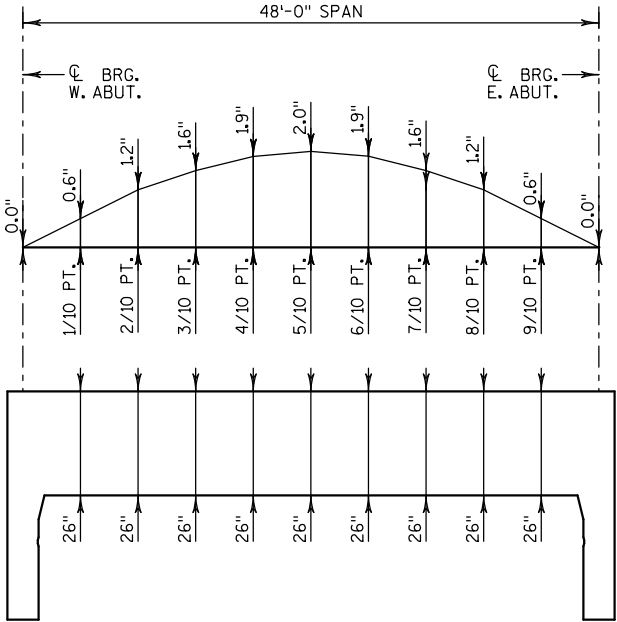
S622

TOP OF SLAB ELEVATIONS

LOCATION	W. ABUT.	.1 PT	.2 PT	.3 PT	.4 PT	.5 PT	.6 PT	.7 PT	.8 PT	.9 PT	E. ABUT.
NORTH EDGE	957.62	957.59	957.57	957.54	957.52	957.50	957.47	957.45	957.42	957.40	957.38
CROWN	957.97	957.94	957.92	957.89	957.87	957.85	957.82	957.80	957.77	957.75	957.73
SOUTH EDGE	957.70	957.68	957.66	957.63	957.61	957.58	957.56	957.54	957.51	957.49	957.46

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

EDGE-OF-SLAB ELEVATION IS THE TOP OUTER EDGE OF THE SLAB.



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR CENTERLINE 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

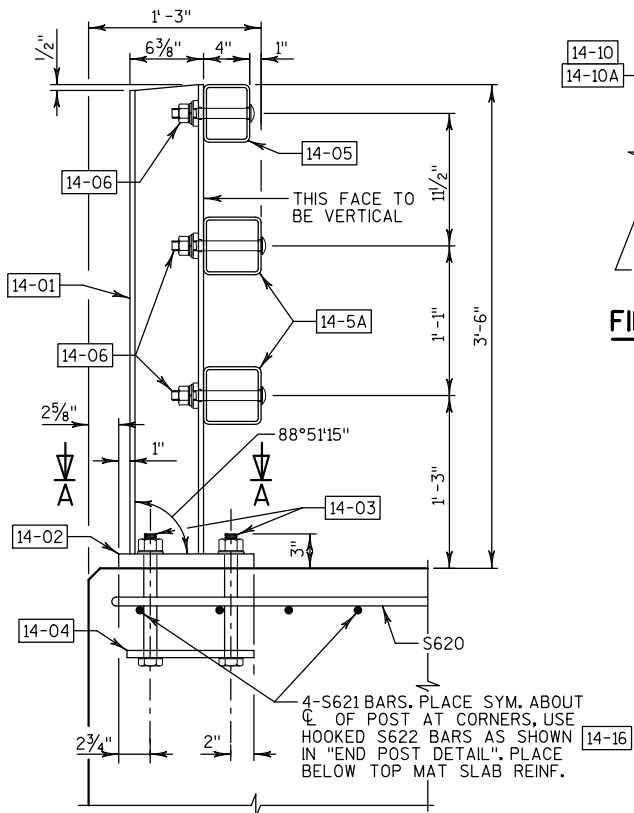
LOCATION	S. ABUT.	5/10 PT	N. ABUT.
NORTH EDGE			
CROWN			
SOUTH EDGE			

CAMBER NOTES:

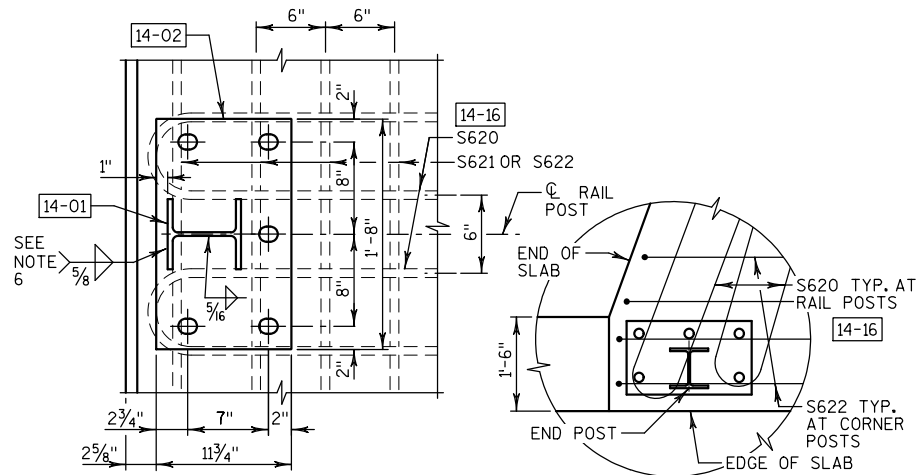
PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C OF ABUTMENTS, THE C OF PIERS AND AT 5/10 POINTS, TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN POINT. RECORD THE ELEVATIONS IN THE "SURVEY TOP OF SLAB ELEVATIONS" TABLE FOR THE "AS BUILT" PLANS.

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

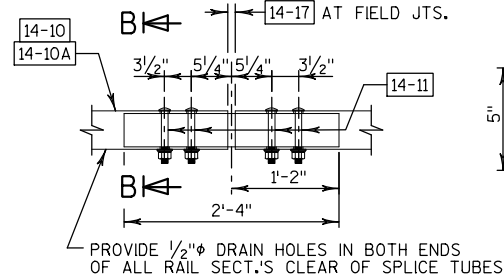
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-331			
DRAWN BY TKB		PLANS CK'D. ETP	
SUPERSTRUCTURE DETAILS-3			SHEET 13 OF 14



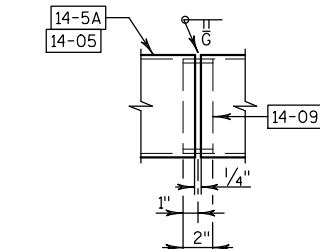
SECTION THRU RAILING ON SLAB



SECTION A-A

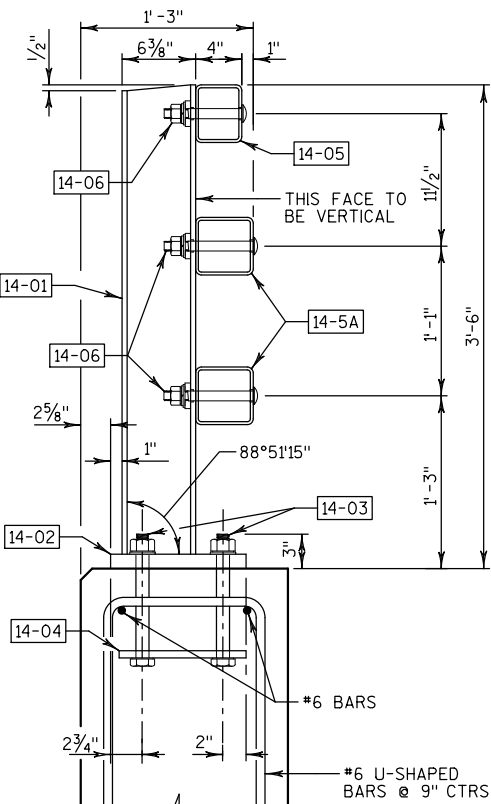


FIELD ERECTION JOINT DETAIL

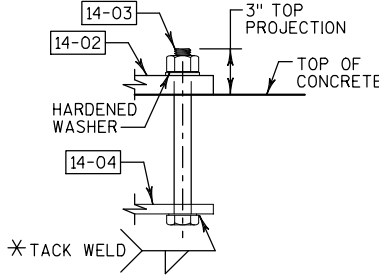


SHOP RAIL SPLICE DETAIL

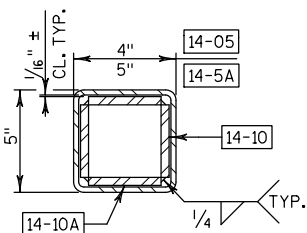
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



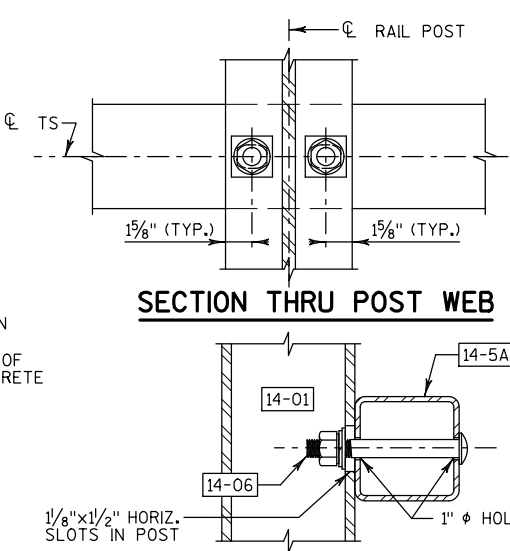
SECTION THRU RAILING ON WING



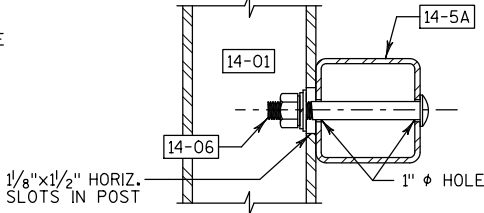
ANCHOR BOLTS



SECTION B-B



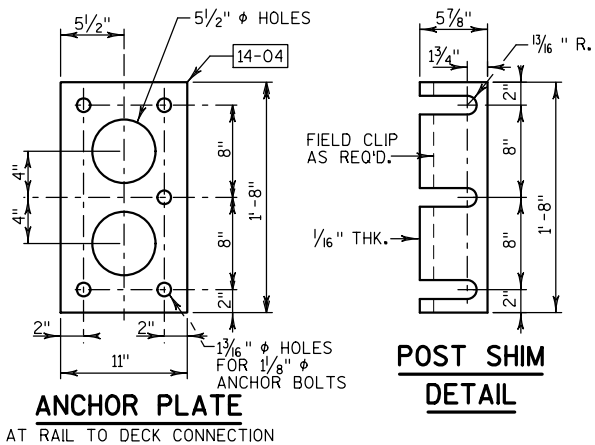
SECTION THRU POST WEB



SECTION THRU RAIL

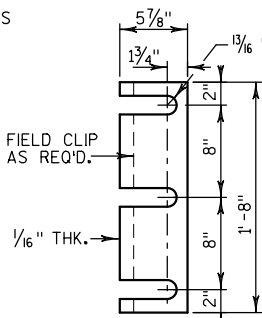
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



ANCHOR PLATE

AT RAIL TO DECK CONNECTION



POST SHIM DETAIL

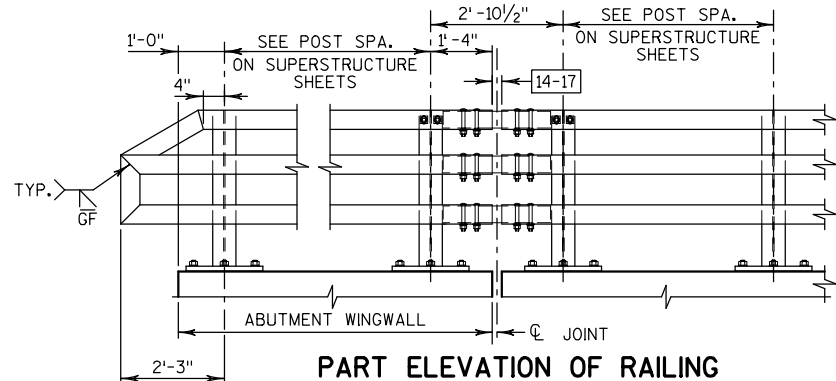
LEGEND

- 14-01 W6x25 WITH 1/8"x1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT 14-06. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- 14-02 PLATE 1/4"x11 3/4"x1'-8" WITH 1 1/8" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS 14-03. WELD TO 14-01 AS SHOWN.
- 14-03 ASTM A449 - 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE 14-02. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. USE 1'-3" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
- 14-04 5/8"x11"x1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 1/8" DIA. HOLES FOR ANCHOR BOLTS 14-03.
- 14-05 TS 5x4x0.25 STRUCTURAL TUBING. ATTACH TO 14-01 WITH 14-06.
- 14-5A TS 5x5x0.25 STRUCTURAL TUBING. ATTACH TO 14-01 WITH 14-06.
- 14-06 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16"x1 5/8"x1 5/8" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION).
- 14-07 NOT USED.
- 14-08 NOT USED.
- 14-09 SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- 14-10 3/8"x3 5/8"x2'-4" PLATE. 2 PER RAIL. USED IN 14-05 & 14-5A.
- 14-10A 3/8"x2 5/8"x2'-4" PLATE USED IN 14-05, 3/8"x3 5/8"x2'-4" PLATE USED IN 14-5A. 2 PER RAIL.
- 14-11 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/8"x1 1/4" LONGIT. SLOTTED HOLES IN PLATE 14-10A AT FIELD JOINTS AND 1 5/8"x2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE 14-10A. PROVIDE 1/16" DIA. ROUND HOLES IN TUBES 14-05 AND 14-5A.
- 14-12 NOT USED.
- 14-13 NOT USED.
- 14-14 NOT USED.
- 14-15 NOT USED.
- 14-16 TIE BELOW TOP MAT OF STEEL.
- 14-17 1/4" TO 3/4".

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

NOTES

- BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
- 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.
- THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
- 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.
- ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
- WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
- FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE 14-02 AND CAULK AROUND PERIMETER OF PLATE 14-02 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
- 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.
- 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.



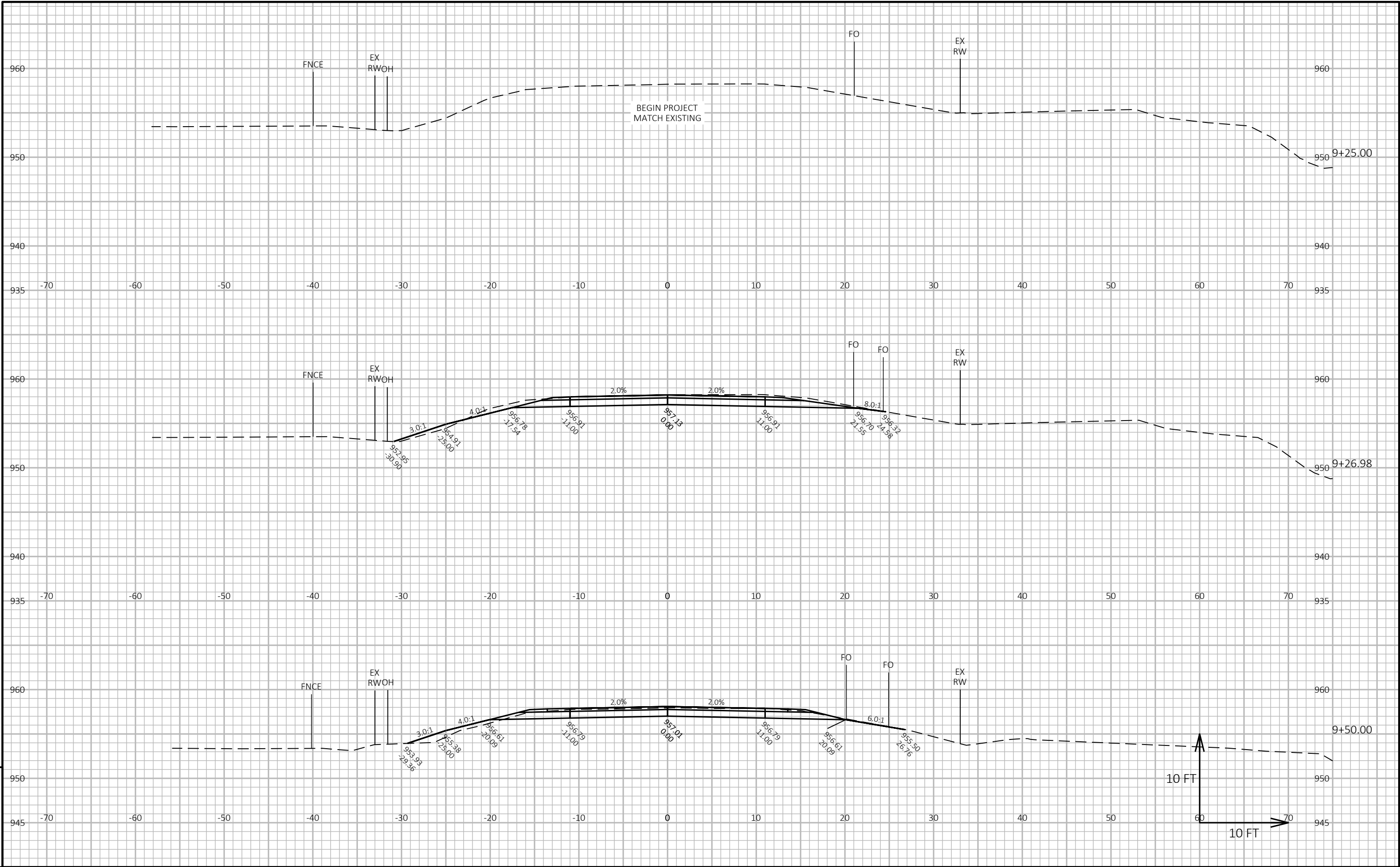
PART ELEVATION OF RAILING

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-331			
DRAWN BY TKB		PLANS CK'D. EP	
TUBULAR STEEL RAILING TYPE M			SHEET 14 OF 14

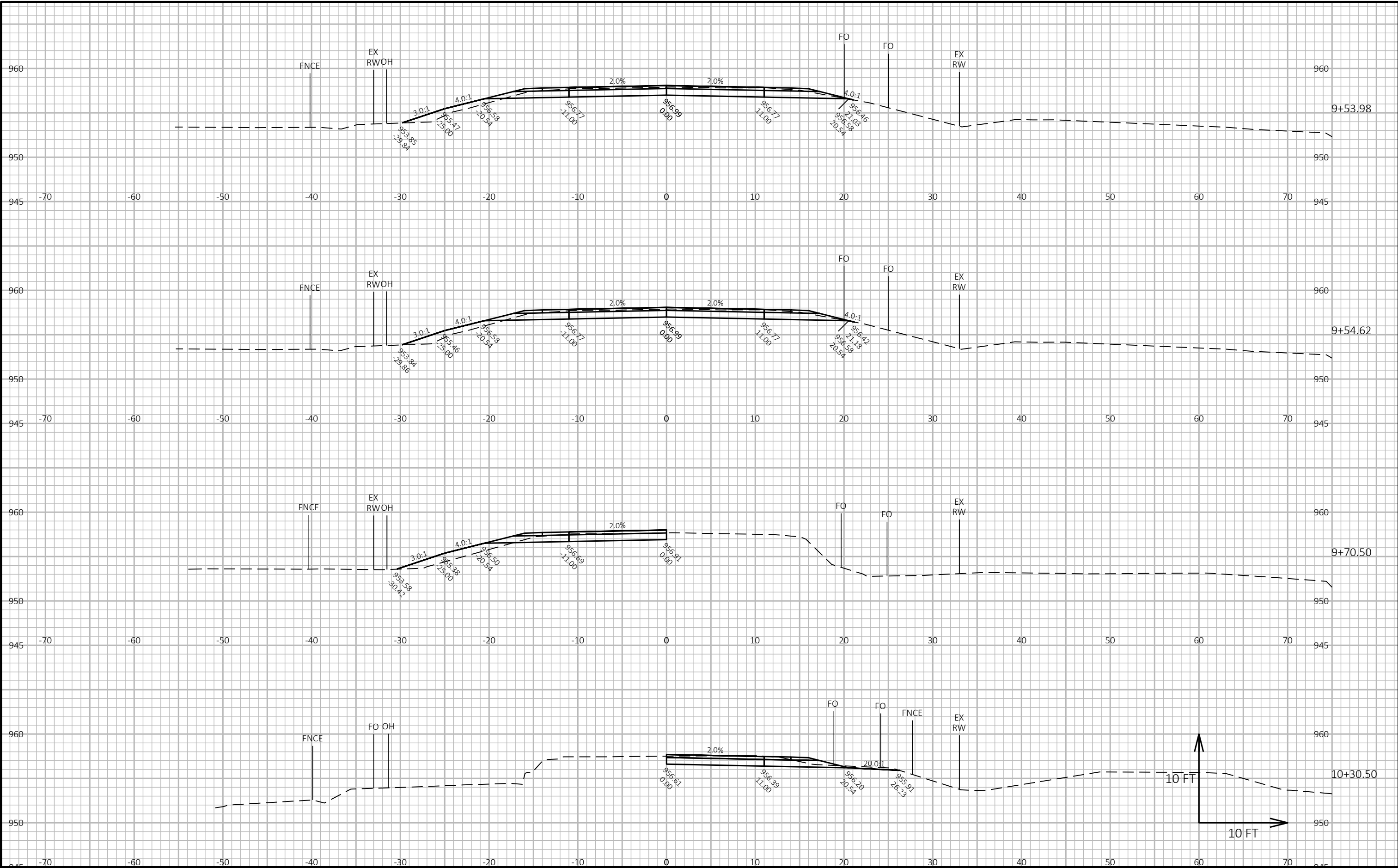
DIVISION 1 - CTHN

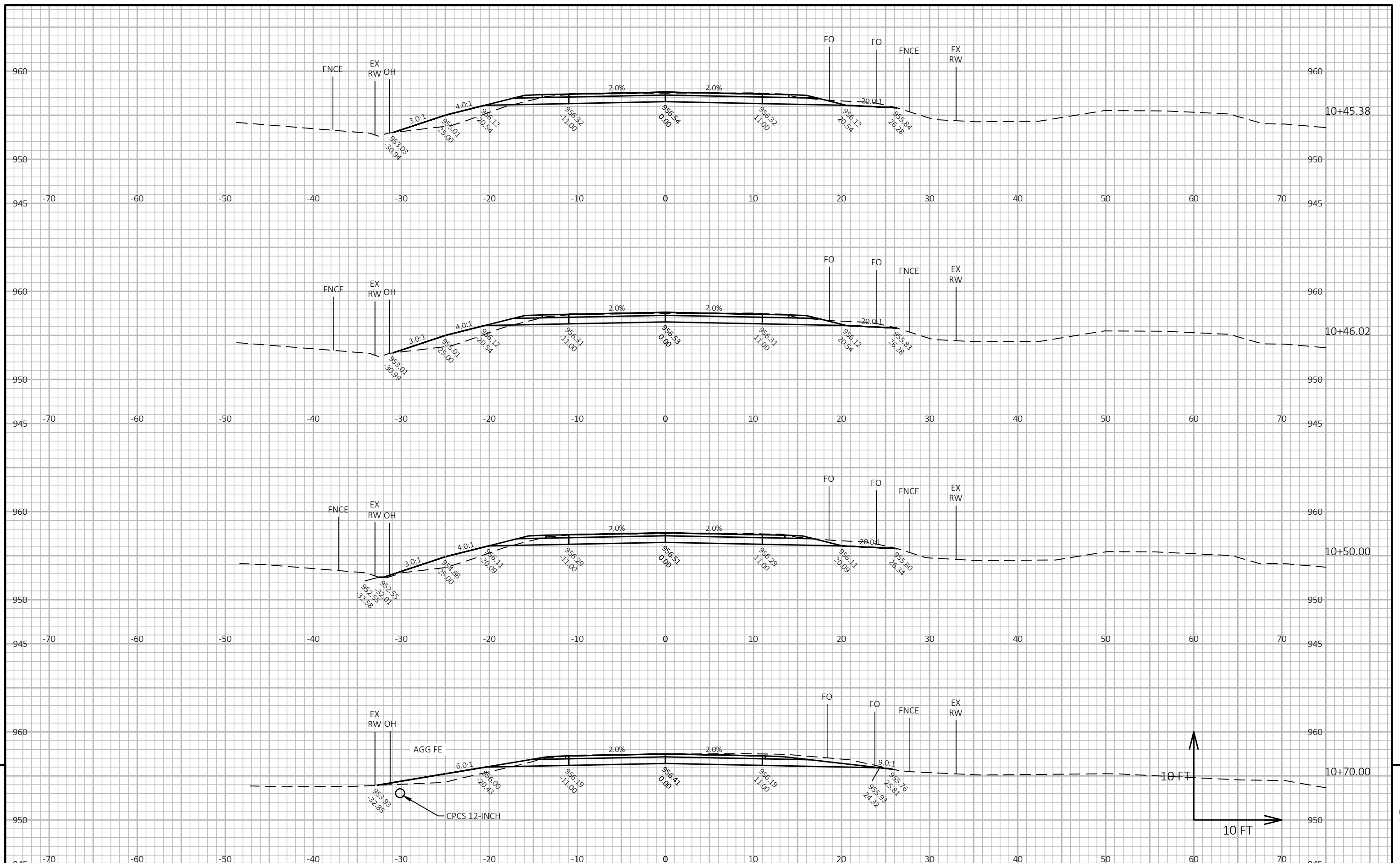
STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.25	NOTE 8
9+25.00	925.00	0.00	40.24	6.42	0.00	0	0	0	0	0	0
9+26.98	926.98	1.98	42.26	6.42	2.44	3	0	0	3	0	3
9+50.00	950.00	23.02	33.18	6.42	5.02	32	5	3	35	4	26
9+53.98	953.98	3.98	31.27	6.42	6.43	5	1	1	40	5	29
9+54.62	954.62	0.64	31.02	6.42	6.52	1	0	0	41	5	30
9+54.63	954.63	0.01	14.58	6.42	6.50	0	0	0	41	5	30
9+70.50	970.50	15.87	12.33	6.42	9.03	8	4	5	49	11	28
10+30.50	1030.50	0.00	17.85	6.42	0.00	0	0	0	49	11	28
10+45.37	1045.37	14.87	21.66	6.42	0.00	11	4	0	60	11	35
10+45.38	1045.38	0.01	36.80	6.42	10.67	0	0	0	60	11	35
10+50.00	1050.00	4.62	38.40	6.42	10.22	6	1	2	66	14	37
10+70.00	1070.00	20.00	42.61	6.42	8.32	30	5	7	96	23	54
10+73.02	1073.02	3.02	42.56	6.42	7.70	5	1	1	101	24	56
10+75.00	1075.00	1.98	42.22	6.42	8.54	3	0	1	104	25	58

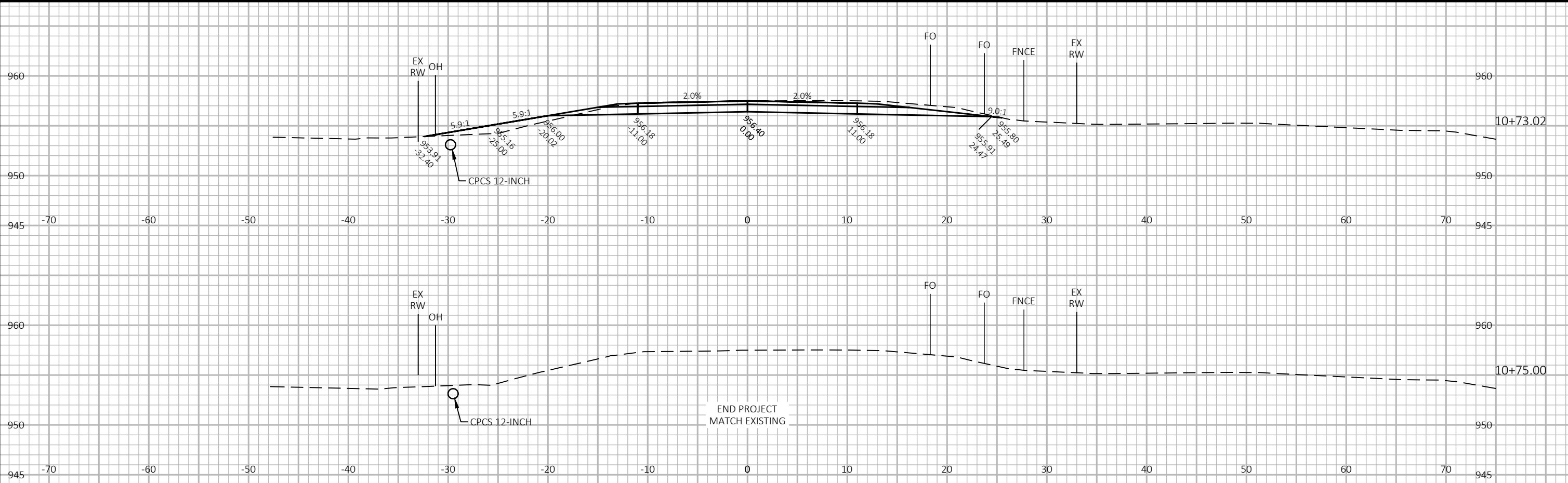
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	(CUT - SALVAGED PAVT - ((FILL) * FILL FACTOR)



PROJECT NO: 5126-00-74	HWY: CTH N	COUNTY: MONROE	CROSS SECTIONS: CTH N	SHEET	E
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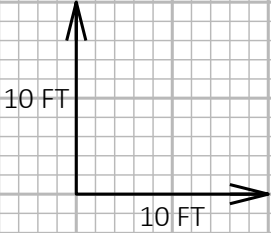






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PROJECT NO: 5126-00-74	HWY: CTH N	COUNTY: MONROE	CROSS SECTIONS: CTH N	SHEET E
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