

PROJECT
WITH: N/A

8402-00-70

COUNTY:

POLK

PLOT NAME :

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8402-00-70	WISC 2025172	1

ACCEPTED FOR

COUNTY _____ of _____ POLK _____

07-17-2024

(Date) *Joshua W. Kelch*
(Highway Commissioner)

AYRES



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	AYRES ASSOCIATES INC
Designer	AYRES ASSOCIATES INC
Project Manager	PAULA GROOM, PE
Regional Examiner	TOU YANG, PE
Regional Supervisor	TOU YANG, PE

APPROVED FOR THE DEPARTMENT

DATE: 07/26/2024 Paula Droom
(Signature)

E

UTILITIES CONTACTS

POLK-BURNETT ELECTRIC CO-OP
JOSH SPOELSTRA
1001 STATE ROAD 35
CENTURIA, WI 54824
PHONE: 715-566-1290
EMAIL: jspoelstra@polkburnett.com

DAIRYLAND POWER COOPERATIVE
MIKE LYDON
3200 EAST AVENUE SOUTH
PO BOX 817
LA CROSSE, WI 54602-0817
PHONE: 608-787-1381
EMAIL: michael.lydon@dairylandpower.com



WISCONSIN DNR LIAISON

AMY CRONK
WDNR
810 W MAPLE STREET
SPOONER, WI 54801
PHONE: 715-520-3976
EMAIL: amy.cronk@wisconsin.gov

DESIGN PROJECT LEADER

JOSEPH BLUMA, PE
AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
PHONE: 715-834-3161
EMAIL: BlumaJ@AyresAssociates.com

COUNTY HIGHWAY COMMISSIONER

JOSH KELCH, COMMISSIONER
POLK COUNTY
900 PHEASANT LANE
BALSAM LAKE, WI 54810
PHONE: 715-485-8723
EMAIL: josh.kelch@polkcountywi.gov

GENERAL NOTES

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

FILL EXPANSION FACTOR IS 30%.

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

RIGHT OF WAY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE.

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT APPROXIMATE LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND APPROVED BY THE ENGINEER. MAINTAIN EROSION CONTROL MEASURES UNTIL SUCH A TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SUBGRADE SHOULDER POINTS ARE TO BE SEEDED AND EROSION MAT AS DIRECTED BY THE ENGINEER.

SEED MIXTURE NO. 20 AND SEEDING TEMPORARY SHALL BE USED IN THE PROJECT AND SHALL BE PLACED AS SHOWN IN THE PLANS AND/OR DIRECTED BY THE ENGINEER.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD) 1988.

ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 2" UPPER LAYER AND A 2" LOWER LAYER. ASPHALTIC SURFACE SHALL BE USED 12.5 mm NOMINAL AGGREGATE SIZE.

THE PROPOSED SHOULDER WIDTH SHOWN IN THE TYPICAL SECTIONS ARE MINIMUM WIDTH. PERPETUATE EXISTING SHOULDERS THAT ARE WIDER THAN WHAT IS SHOWN IN THE TYPICAL SECTIONS.

SAWCUTS, AS SHOWN ON THE PLANS, ARE SUGGESTED LOCATIONS AND MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER TO BETTER SUIT FIELD CONDITIONS.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

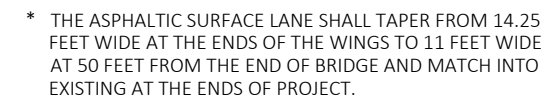
THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

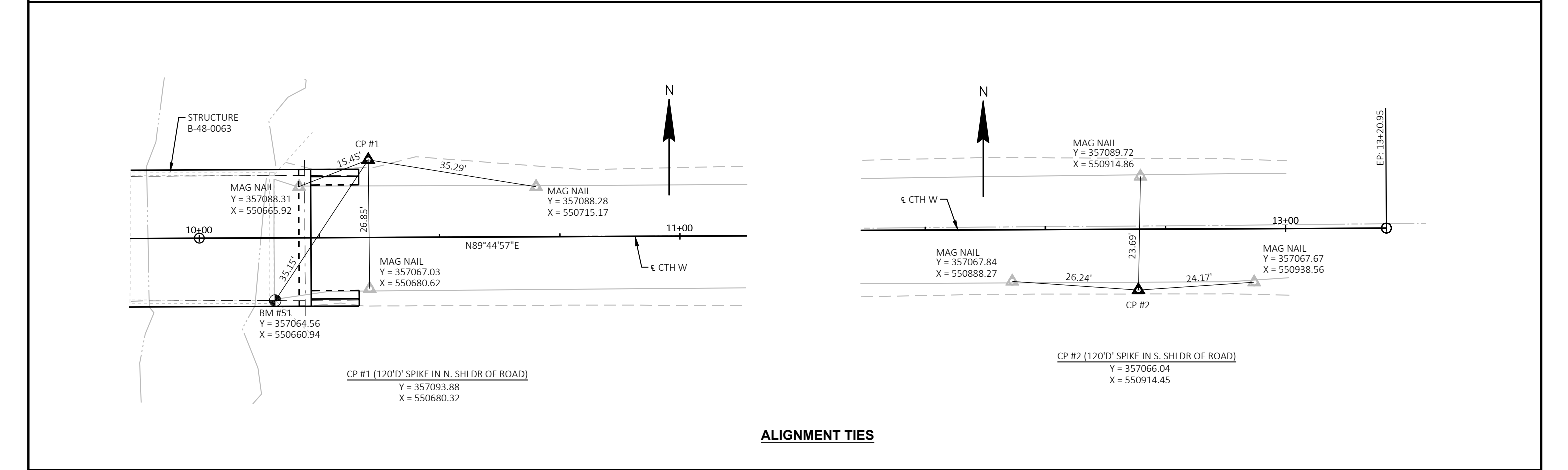
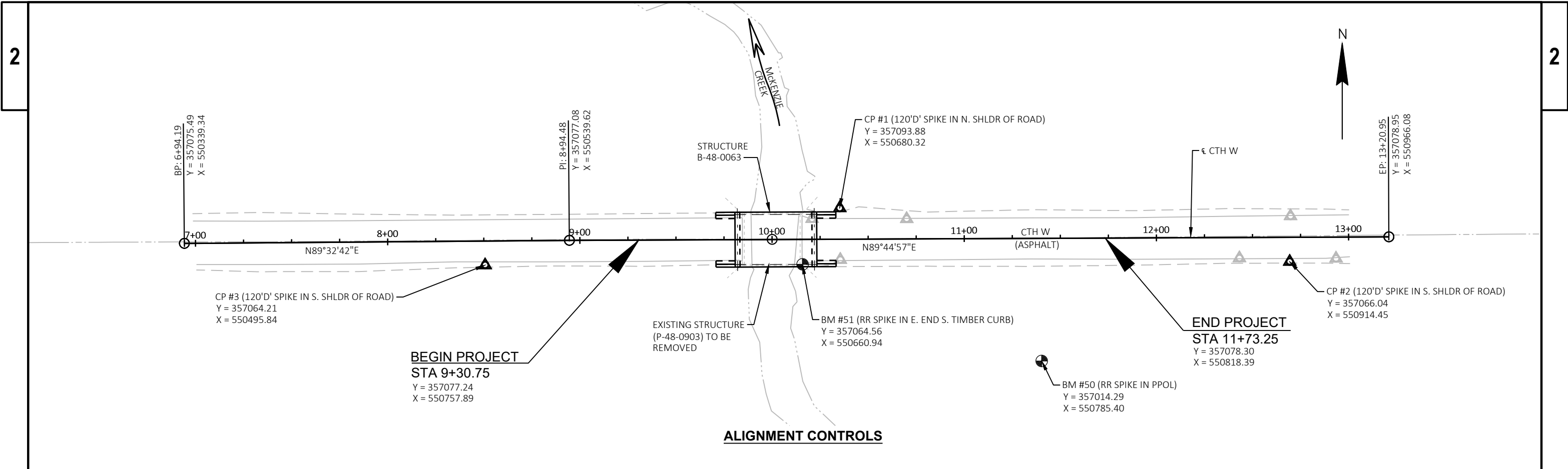
DO NOT DRIVE OR STORE EQUIPMENT, OR STORE CONSTRUCTION MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS OR WATERWAYS.

RUNOFF COEFFICIENT TABLE

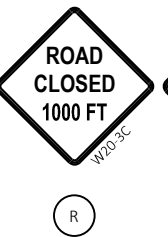
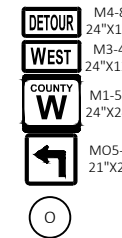
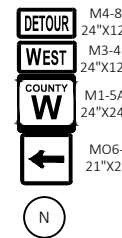
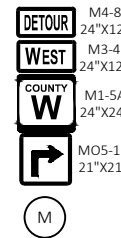
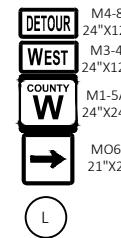
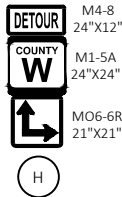
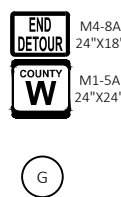
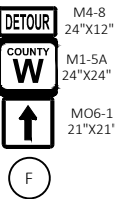
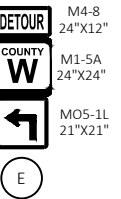
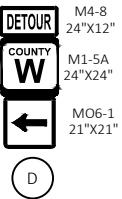
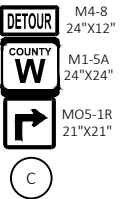
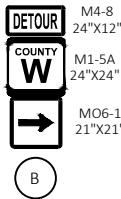
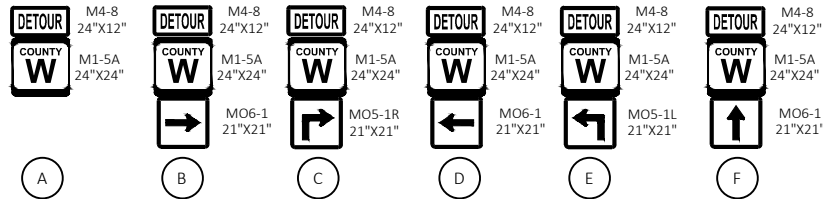
LAND USE:	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS:	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIPTURF:	.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 SLOPETURF:			.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 = 0.367 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.258 ACRES





PROJECT NO: 8402-00-70	HWY: CTH W	COUNTY: POLK	ALIGNMENT CONTROLS	SHEET	E
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DETOUR NOTES:

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

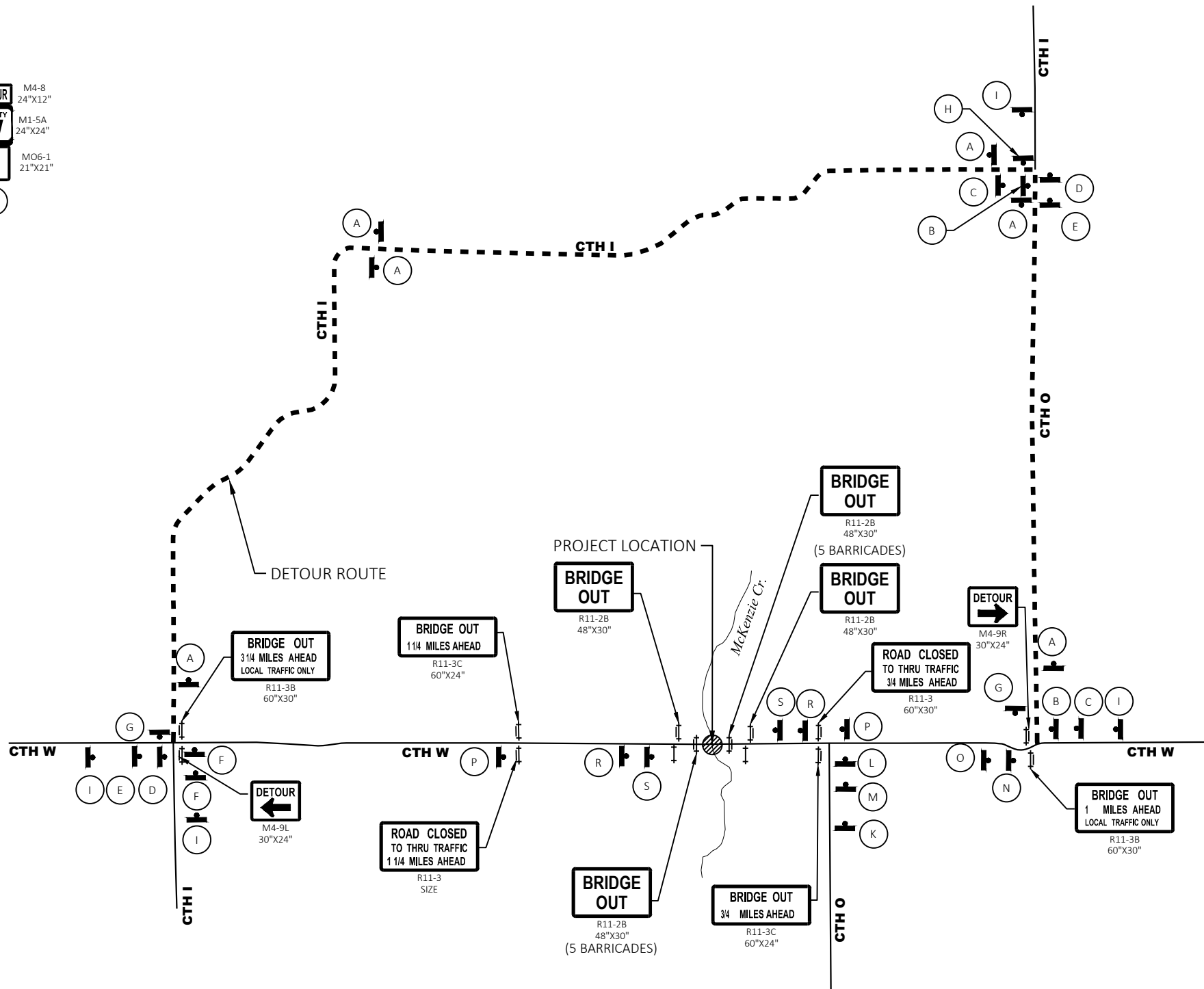
IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED OR REMOVED AS NEEDED AND AS APPROVED BY THE ENGINEER. THERE IS AN UNDISTRIBUTED AMOUNT IN THE QUANTITIES FOR THESE SIGNS.

ALL SIGNS SHALL BE 48"X48" UNLESS NOTED BY THE ENGINEER.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND SHALL BE ORANGE.

FOR DETAILS NOT SHOWN SEE SDD "BARRICADES AND SIGNS FOR MAINLINE, DETOUR, ON RAMP, OFF RAMP CLOSURES AND ADVANCED WIDTH RESTRICTION" SHEETS A AND C, FOR ADDITIONAL INFORMATION.



NOT TO SCALE

PROJECT NO: 8402-00-70

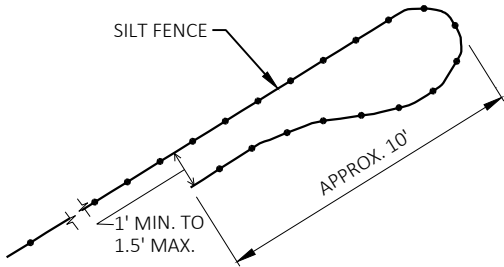
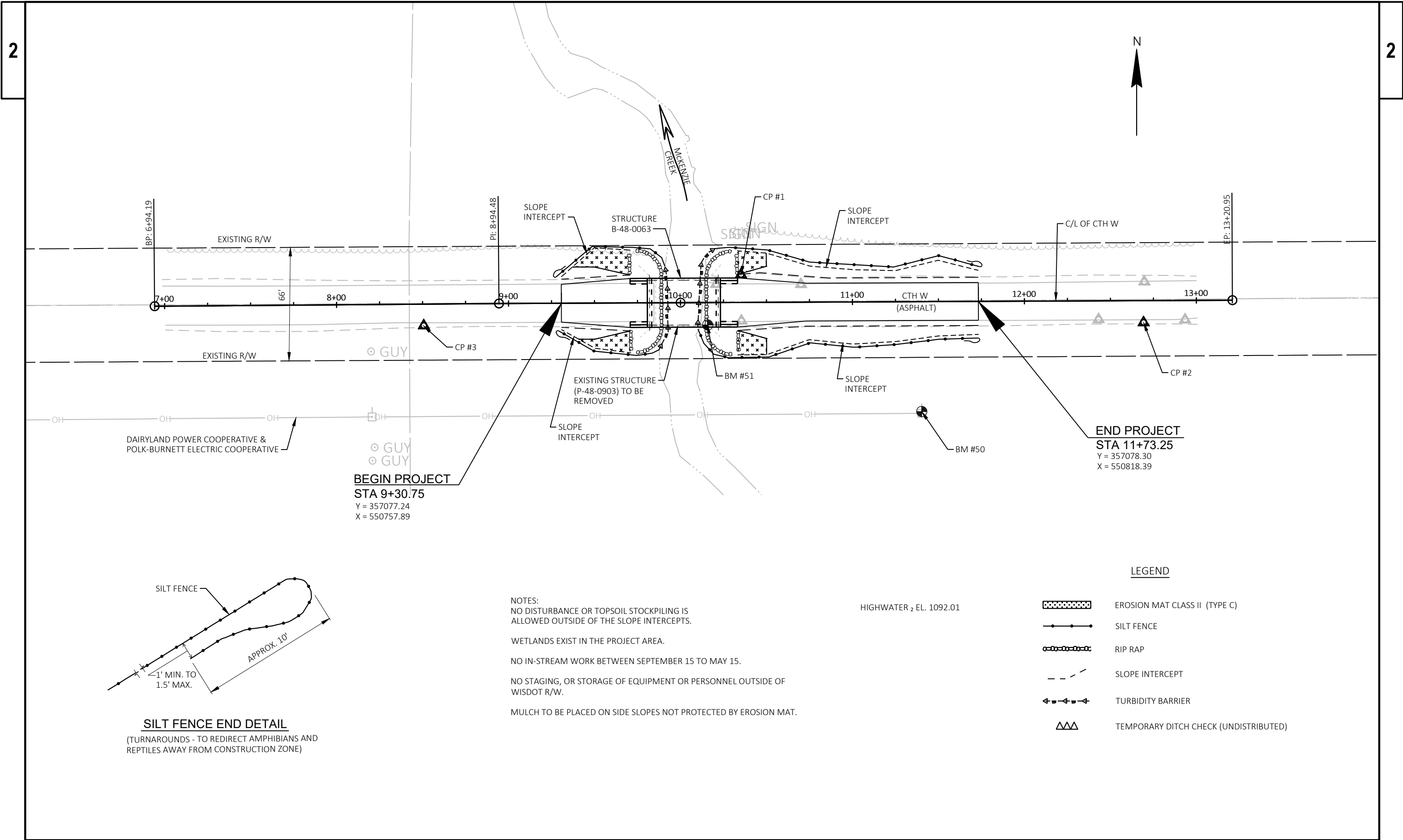
HWY: CTH W

COUNTY: POLK

DETOUR ROUTE

SHEET

E



SILT FENCE END DETAIL
(TURNAROUNDS - TO REDIRECT AMPHIBIANS AND REPTILES AWAY FROM CONSTRUCTION ZONE)

NOTES:
NO DISTURBANCE OR TOPSOIL STOCKPILING IS ALLOWED OUTSIDE OF THE SLOPE INTERCEPTS.

WETLANDS EXIST IN THE PROJECT AREA.

NO IN-STREAM WORK BETWEEN SEPTEMBER 15 TO MAY 15.

NO STAGING, OR STORAGE OF EQUIPMENT OR PERSONNEL OUTSIDE OF WISDOT R/W.

MULCH TO BE PLACED ON SIDE SLOPES NOT PROTECTED BY EROSION MAT.

HIGHWATER₂ EL. 1092.01

LEGEND	
	EROSION MAT CLASS II (TYPE C)
	SILT FENCE
	RIP RAP
	SLOPE INTERCEPT
	TURBIDITY BARRIER
	TEMPORARY DITCH CHECK (UNDISTRIBUTED)

Estimate Of Quantities

8402-00-70					
Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	1.000	1.000
0004	201.0205	Grubbing	STA	1.000	1.000
0006	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-48-0903	EACH	1.000	1.000
0008	205.0100	Excavation Common	CY	166.000	166.000
0010	205.0506.S	Excavation, Hauling, and Disposal of Creosote Contaminated Soil 01. 8402-00-70	TON	100.000	100.000
0012	206.1001	Excavation for Structures Bridges (structure) 01. B-48-0063	EACH	1.000	1.000
0014	210.1500	Backfill Structure Type A	TON	230.000	230.000
0016	213.0100	Finishing Roadway (project) 01. 8402-00-70	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	40.000	40.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	335.000	335.000
0022	455.0605	Tack Coat	GAL	34.000	34.000
0024	465.0105	Asphaltic Surface	TON	125.000	125.000
0026	502.0100	Concrete Masonry Bridges	CY	143.000	143.000
0028	502.3200	Protective Surface Treatment	SY	180.000	180.000
0030	505.0400	Bar Steel Reinforcement HS Structures	LB	3,280.000	3,280.000
0032	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	18,070.000	18,070.000
0034	513.4061	Railing Tubular Type M	LF	130.000	130.000
0036	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0038	550.2104	Piling CIP Concrete 10 3/4 X 0.25-Inch	LF	900.000	900.000
0040	606.0300	Riprap Heavy	CY	130.000	130.000
0042	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	140.000	140.000
0044	618.0100	Maintenance and Repair of Haul Roads (project) 01. 8402-00-70	EACH	1.000	1.000
0046	619.1000	Mobilization	EACH	1.000	1.000
0048	623.0200	Dust Control Surface Treatment	SY	660.000	660.000
0050	624.0100	Water	MGAL	4.000	4.000
0052	625.0100	Topsoil	SY	710.000	710.000
0054	627.0200	Mulching	SY	580.000	580.000
0056	628.1504	Silt Fence	LF	605.000	605.000
0058	628.1520	Silt Fence Maintenance	LF	1,210.000	1,210.000
0060	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0062	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0064	628.2027	Erosion Mat Class II Type C	SY	130.000	130.000
0066	628.6005	Turbidity Barriers	SY	105.000	105.000
0068	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0070	629.0210	Fertilizer Type B	CWT	0.500	0.500
0072	630.0120	Seeding Mixture No. 20	LB	35.000	35.000
0074	630.0200	Seeding Temporary	LB	10.000	10.000
0076	630.0500	Seed Water	MGAL	20.000	20.000
0078	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0080	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0082	638.2602	Removing Signs Type II	EACH	4.000	4.000
0084	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0086	642.5001	Field Office Type B	EACH	1.000	1.000
0088	643.0420	Traffic Control Barricades Type III	DAY	1,606.000	1,606.000
0090	643.0705	Traffic Control Warning Lights Type A	DAY	2,628.000	2,628.000
0092	643.0900	Traffic Control Signs	DAY	7,008.000	7,008.000
0094	643.5000	Traffic Control	EACH	1.000	1.000
0096	645.0111	Geotextile Type DF Schedule A	SY	90.000	90.000
0098	645.0120	Geotextile Type HR	SY	265.000	265.000

Estimate Of Quantities

8402-00-70

Line	Item	Item Description	Unit	Total	Qty
0100	646.1020	Marking Line Epoxy 4-Inch	LF	968.000	968.000
0102	650.4500	Construction Staking Subgrade	LF	200.000	200.000
0104	650.5000	Construction Staking Base	LF	200.000	200.000
0106	650.6501	Construction Staking Structure Layout (structure) 01. B-48-0063	EACH	1.000	1.000
0108	650.9911	Construction Staking Supplemental Control (project) 01. 8402-00-70	EACH	1.000	1.000
0110	650.9920	Construction Staking Slope Stakes	LF	200.000	200.000
0112	690.0150	Sawing Asphalt	LF	44.000	44.000
0114	715.0502	Incentive Strength Concrete Structures	DOL	858.000	858.000
0116	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000
0118	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0120	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0122	SPV.0195	Special 01. Select Crushed Material For Travel Corridor	TON	12.000	12.000

CLEARING & GRUBBING

STATION	TO	STATION	LOCATION	201.0105	201.0205
				CLEARING STA	GRUBBING STA
9+00	-	10+00	CTH W	1	1
TOTAL 0010				1	1

NOTE: CUTTING TREES TO BE DONE BY OTHERS PRIOR TO CONSTRUCTION.
CLEAR CUT TREES.

EXCAVATION, HAULING, AND DISPOSAL OF CREOSOTE CONTAMINATED SOIL

STATION	TO	STATION	LOCATION	205.0506.S	REMARKS
				EXCAVATION, HAULING, AND DISPOSAL OF CREOSOTE CONTAMINATED SOIL TON	
9+83	-	9+88	W. ABUT.	50	TIMBER ABUTMENT
10+13	-	10+18	E. ABUT.	50	TIMBER ABUTMENT
TOTAL 0010				100	

EXCAVATE A 2' OFFSET AROUND EACH EXISTING BRIDGE TIMBER SUBSTRUCTURE AND 3' DEEP

BASE AGGREGATE DENSE

STATION	TO	STATION	LOCATION	305.0110	305.0120	623.0200	624.0100
				BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	DUST CONTROL SURFACE TREATMENT SY	WATER MGAL
9+31	-	9+81	CTH W	10	85	170	1
10+23	-	11+73	CTH W	30	250	490	3
TOTAL 0010				40	335	660	4

ASPHALTIC SURFACE

STATION	TO	STATION	LOCATION	455.0605	465.0105
				TACK COAT GAL	ASPHALTIC SURFACE TON
9+31	-	9+81	CTH W	10	35
10+23	-	11+73	CTH W	24	90
TOTAL 0010				34	125

FINISHING ROADWAY

LOCATION	213.0100.01
	FINISHING ROADWAY (PROJECT) (01. 8402-00-70) EACH
PROJECT LIMITS	1
TOTAL 0010	1

MAINTENANCE AND REPAIR OF HAUL ROADS

CATEGORY	LOCATION	618.0100.01
		MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) (01. 8402-00-70) EACH
0030	PROJECT LIMITS	1
TOTAL 0030		1

MOBILIZATION

LOCATION	619.1000
	MOBILIZATION EACH
PROJECT LIMITS	1
TOTAL 0010	1

CTH W EARTHWORK SUMMARY

From/To Station	Location	Common Excavation (1) (Item 205.0100)	Unexpanded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Waste
		Cut		Factor 1.30		
9+31 - 9+81	MAINLINE	61	31	40	21	21
10+23 - 11+73	MAINLINE	105	31	40	65	65

166

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

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

3

	628.1905	628.1910
	MOBILIZATIONS	MOBILIZATIONS
	EROSION	EROSION
	CONTROL	CONTROL
LOCATION	EACH	EACH
PROJECT LIMITS	4	4
TOTAL 0010	4	4

				628.1504	628.1520	628.2027	628.6005	628.7504
				SILT FENCE	SILT FENCE MAINTENANCE	EROSION MAT CLASS II TYPE C	TURBIDITY BARRIERS	TEMPORARY DITCH CHECKS
STATION	TO	STATION	LOCATION	LF	LF	SY	SY	LF
9+31	-	9+89	LT	80	160	38	--	--
9+31	-	9+89	RT	67	134	24	40	--
10+15	-	11+73	LT	160	320	20	--	--
10+15	-	11+73	RT	179	358	22	45	--
UNDISTRIBUTED				119	238	26	20	50
TOTAL 0010				605	1,210	130	105	50

				625.0100	627.0200	629.0210	630.0120 SEEDING MIXTURE	630.0200 SEEDING TEMPORARY	630.0500 SEED WATER
STATION	TO	STATION	LOCATION	TOPSOIL SY	MULCHING SY	FERTILIZER TYPE B CWT	NO. 20 LB		
9+31	-	9+81	CTH W	146	84	0.1	7	2	4
10+23	-	11+73	CTH W	420	378	0.3	19	6	10
			UNDISTRIBUTED	144	118	0.1	9	2	6
TOTAL 0010				710	580	0.5	35	10	20

STATION	LOCATION	SIGN CODE	SIGN SIZE WxH (INCHES)	634.0614 POSTS WOOD 4X6-INCH X 14-FT EACH	637.2230 SIGN TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGN TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
9+70	LT	W5-52L	12x36	1	3	1	1
9+70	RT	W5-52R	12x36	1	3	1	1
10+33	LT	W5-52R	12x36	1	3	1	1
10+33	RT	W5-52L	12x36	1	3	1	1
TOTAL 0010				4	12	4	4

	642.5001
	FIELD OFFICE
	TYPE B
LOCATION	EACH
PROJECT LIMITS	1
TOTAL 0010	1

				646.1020	
				MARKING LINE EPOXY	
				4-INCH	
				YELLOW	WHITE
STATION	TO	STATION	LOCATION	LF	
9+31	-	11+73	EDGE LINE	-	242
9+31	-	11+73	EDGE LINE	-	242
9+31	-	11+73	DOUBLE CENTER LINE	484.00	-
UNDISTRIBUTED					
SUBTOTALS				484	484
TOTAL 0010				968	

		650.6501.01
		CONSTRUCTION
		STAKING STRUCTURE
		LAYOUT (STRUCTURE)
		(01. B-48-0063)
CATEGORY	STRUCTURE	EACH
0020	B-48-0063	1
	TOTAL 0020	1

		690.0150
		SAWING
		ASPHALT
STATION	LOCATION	LF
9+31	CTH W	22
11+73	CTH W	22
TOTAL 0010		44

	643.0420	643.0705	643.0900
	TRAFFIC	TRAFFIC	
	CONTROL	CONTROL	
	BARRICADES	WARNING	TRAFFIC
	TYPE III	LIGHTS TYPE A	CONTROL SIGNS
LOCATION	DAY	DAY	DAY
DETOUR	1,606	2,628	7,008
TOTAL 0010	1,606	2,628	7,008

	650.4500 CONSTRUCTION STAKING SUBGRADE	650.5000 CONSTRUCTION STAKING BASE	650.9920 CONSTRUCTION STAKING SLOPE STAKES
LOCATION	LF	LF	LF
CTH W	200	200	200
TOTAL 0010	200	200	200

	650.9911.01
	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 8402-00-70)
LOCATION	EACH
PROJECT LIMITS	1
TOTAL 0010	1

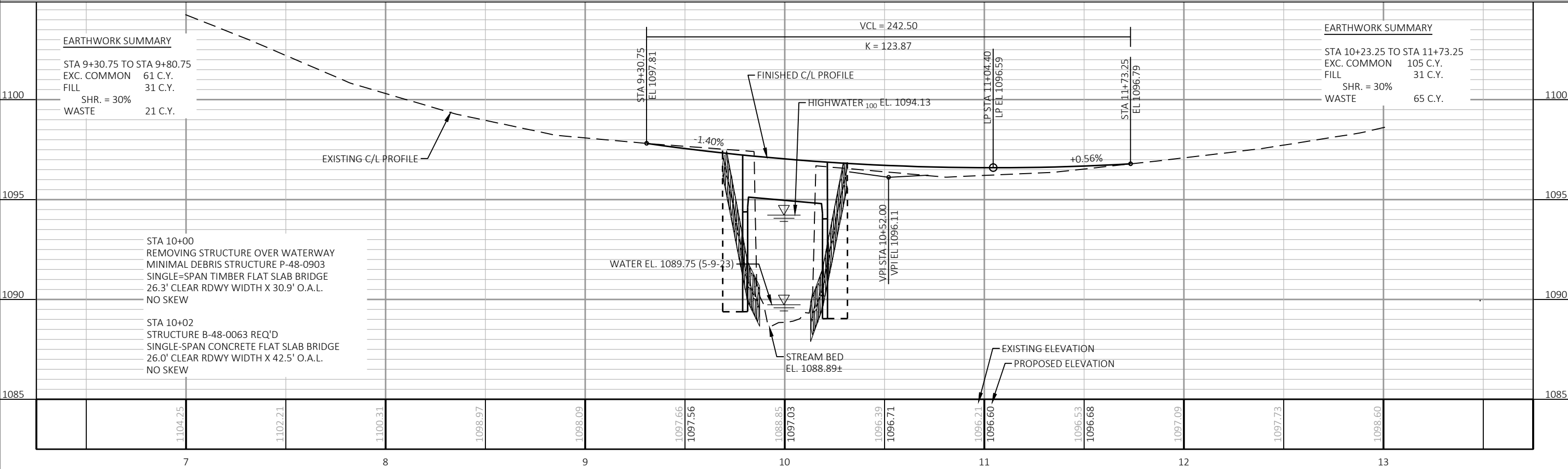
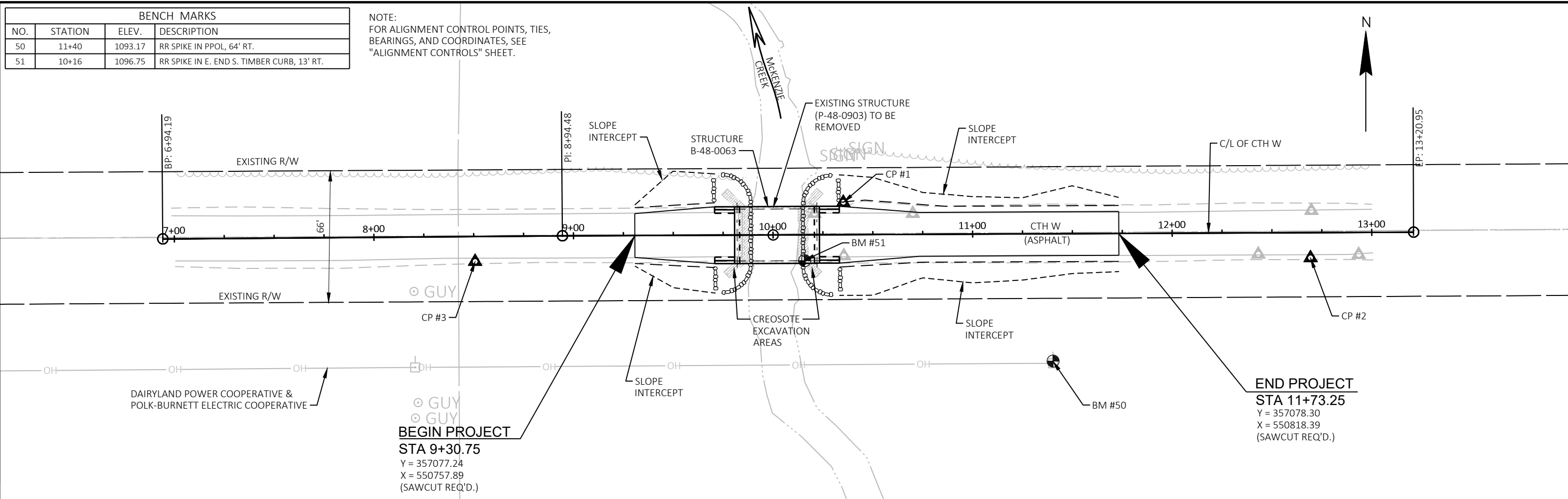
		999.2000.S.01
		INSTALLING AND MAINTAINING
		BIRD DETERRENT SYSTEM
		(STATION) (01. STA 10+00)
STATION	LOCATION	EACH
10+00	CTH W	1
TOTAL 0010		1

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

3

BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
50	11+40	1093.17	RR SPIKE IN PPOL, 64' RT.
51	10+16	1096.75	RR SPIKE IN E. END S. TIMBER CURB, 13' RT.

NOTE:
FOR ALIGNMENT CONTROL POINTS, TIES,
BEARINGS, AND COORDINATES, SEE
"ALIGNMENT CONTROLS" SHEET.



PROJECT NO: 8402-00-70	HWY: CTH W	COUNTY: POLK	PLAN AND PROFILE	SHEET	E
------------------------	------------	--------------	------------------	-------	---

FILE NAME : I:\42\42-1362.00 - POLK CO, CTH W OVER MCKENZIE CREEK\C3D\SHEETS\050101-PP.DWG
LAYOUT NAME - PLAN & PROFILE

PLOT DATE : 6/3/2024 12:43 PM

PLOT BY : RESHESKE, CARRIE

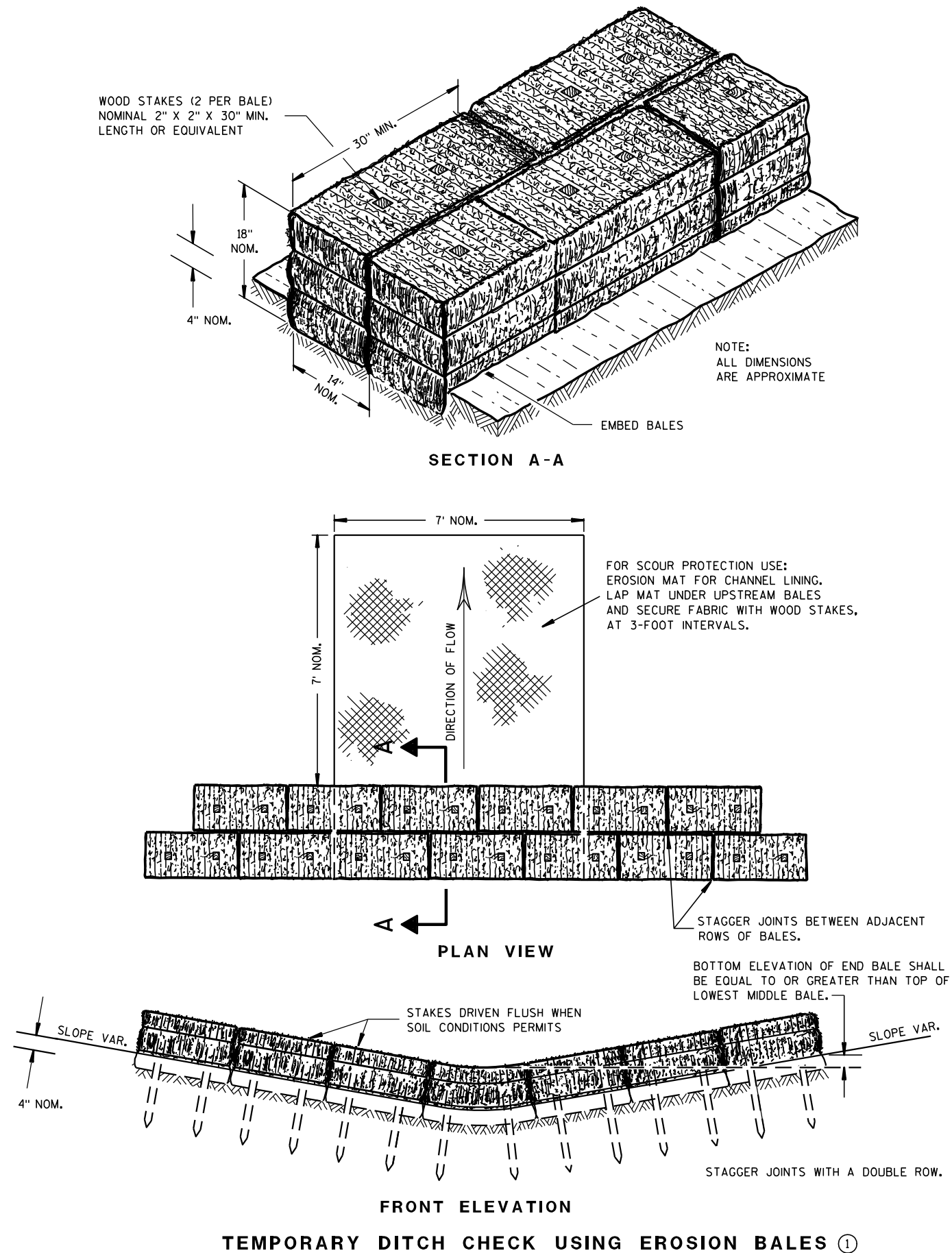
PLOT NAME :

PLOT SCALE : 1 IN:50 FT

WISDOT/CADDs SHEET 44

Standard Detail Drawing List

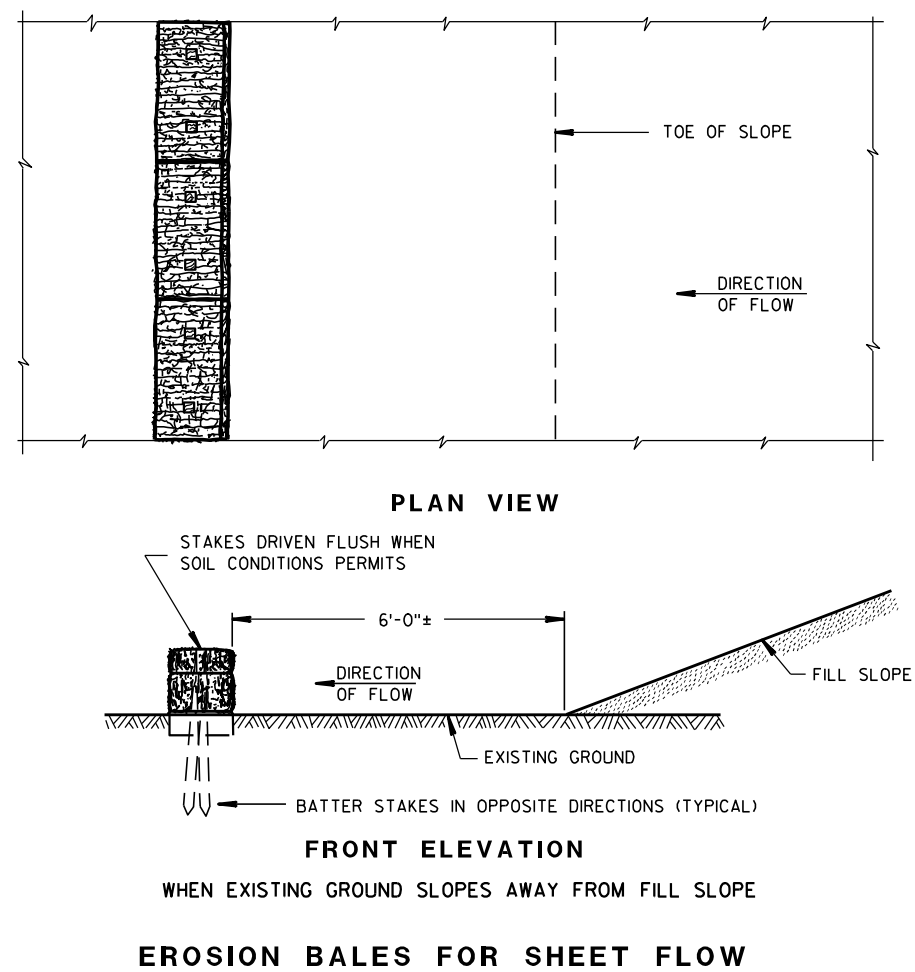
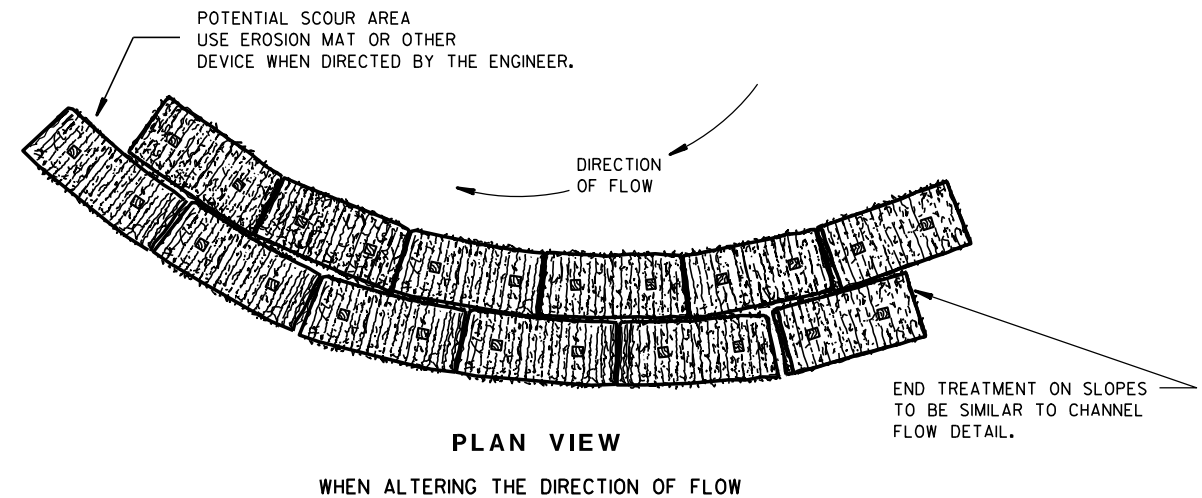
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS



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.

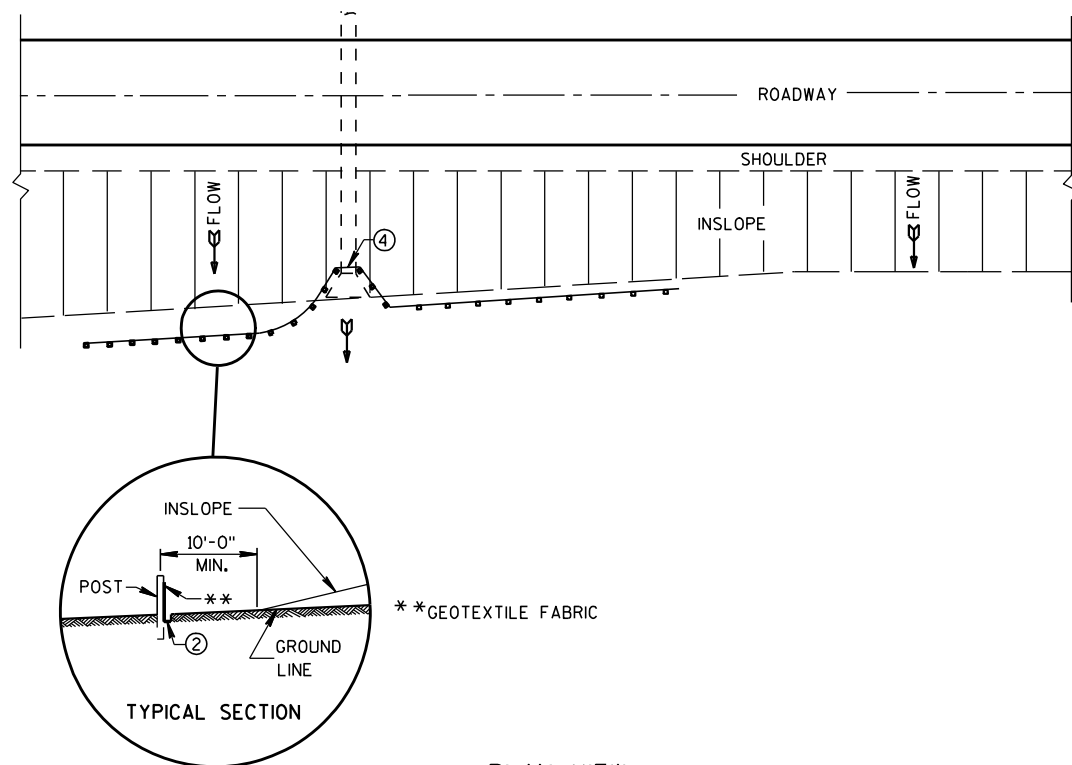
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

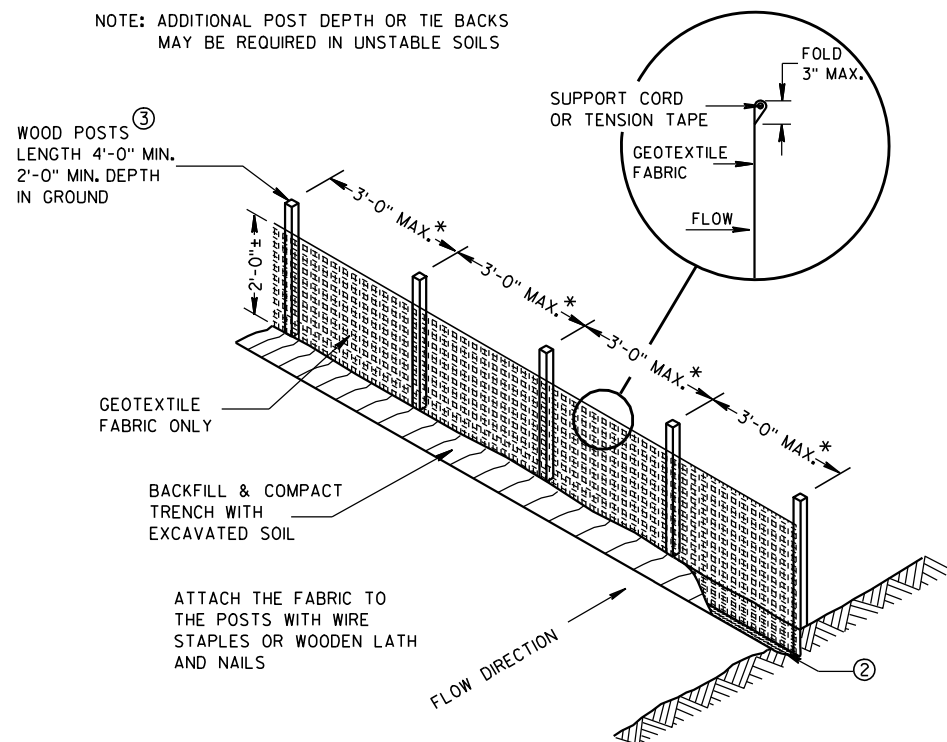
6/04/02
DATE/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



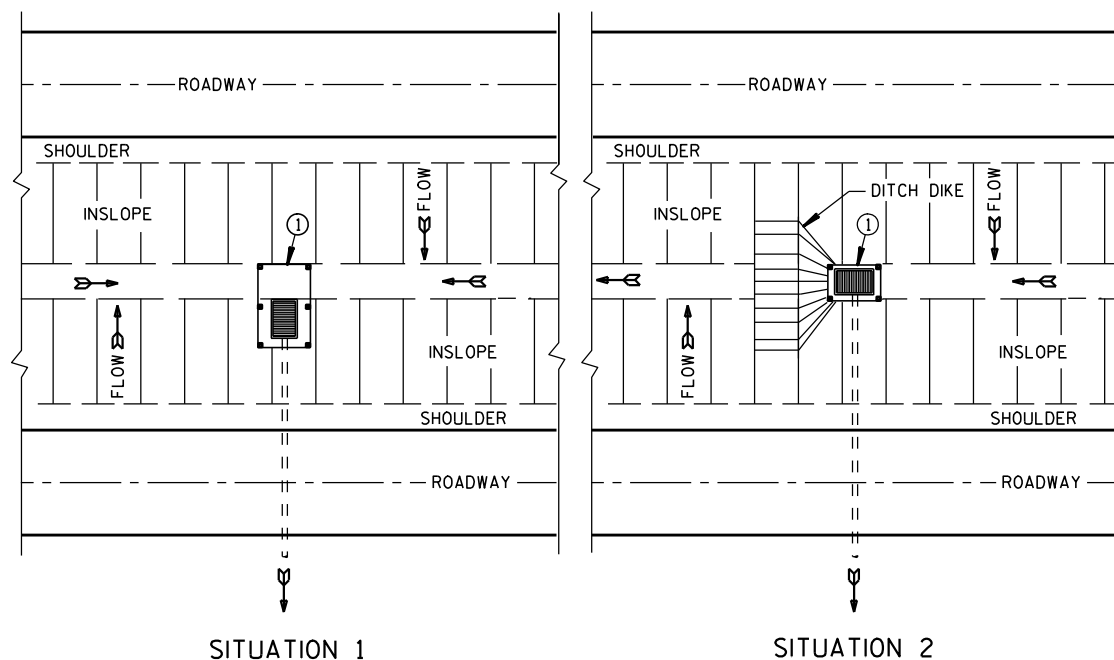
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

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

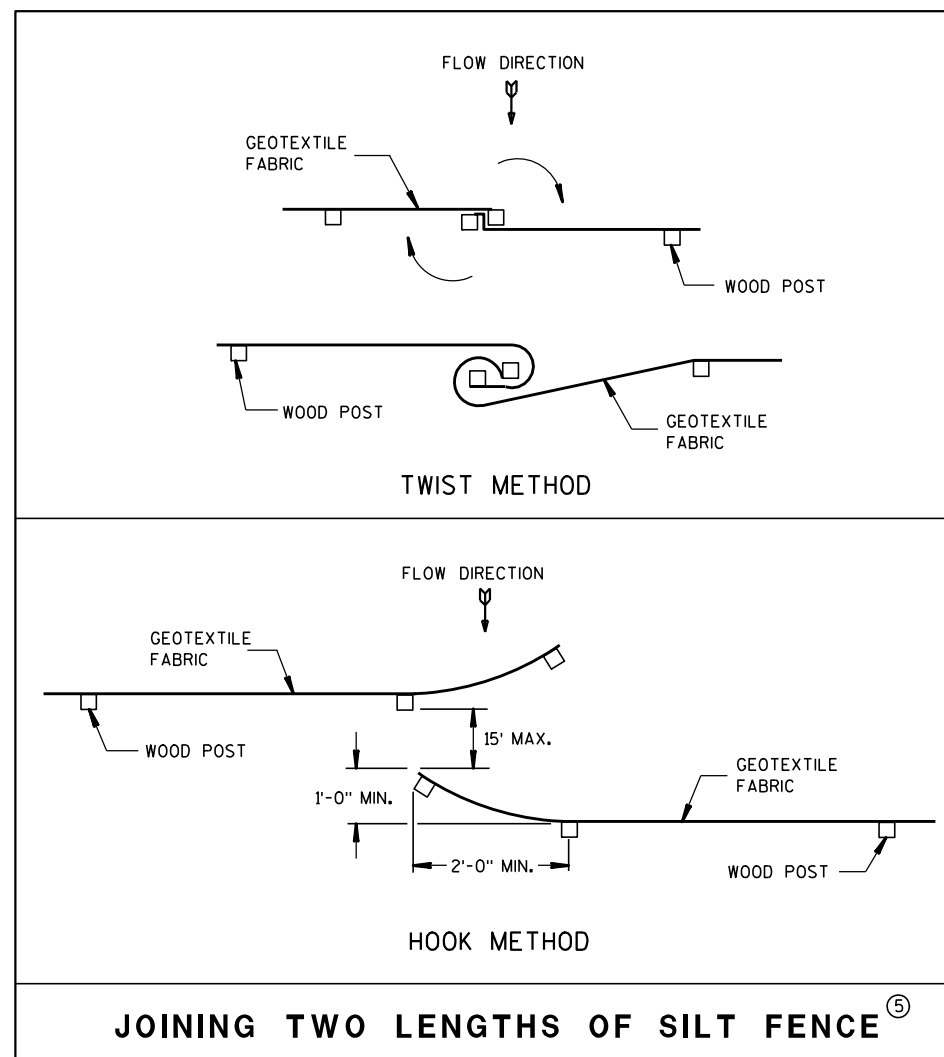


SILT FENCE

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



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

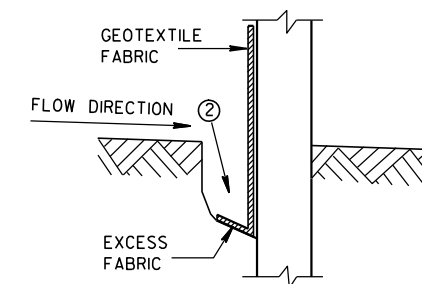


JOINING TWO LENGTHS OF SILT FENCE^⑤

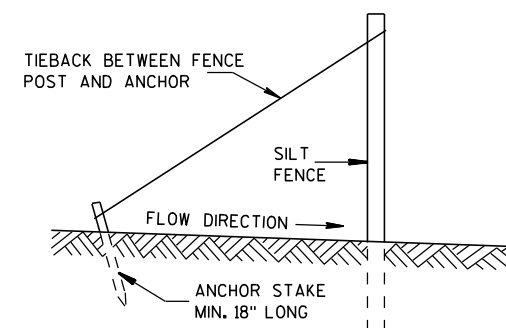
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

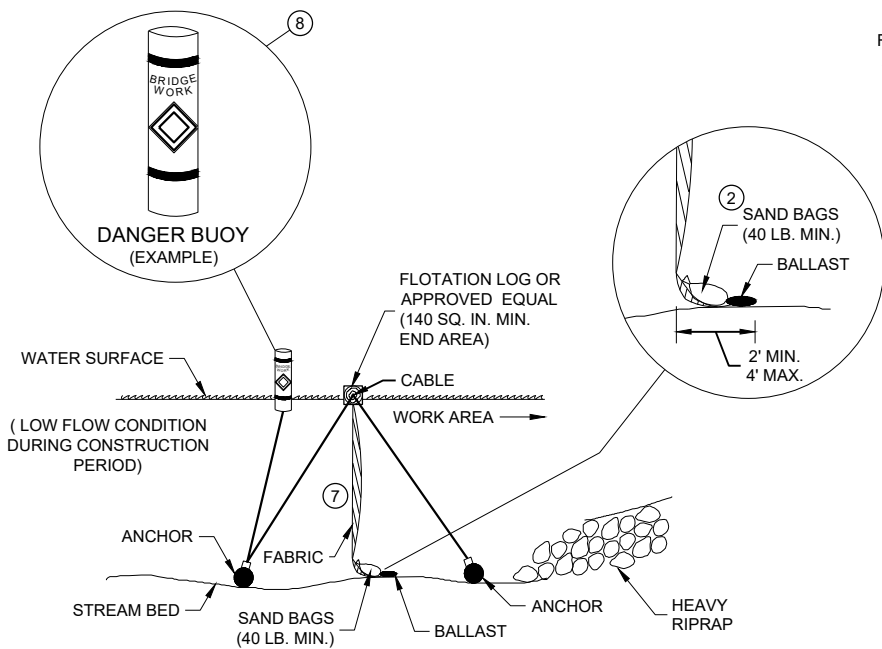
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05
DATE

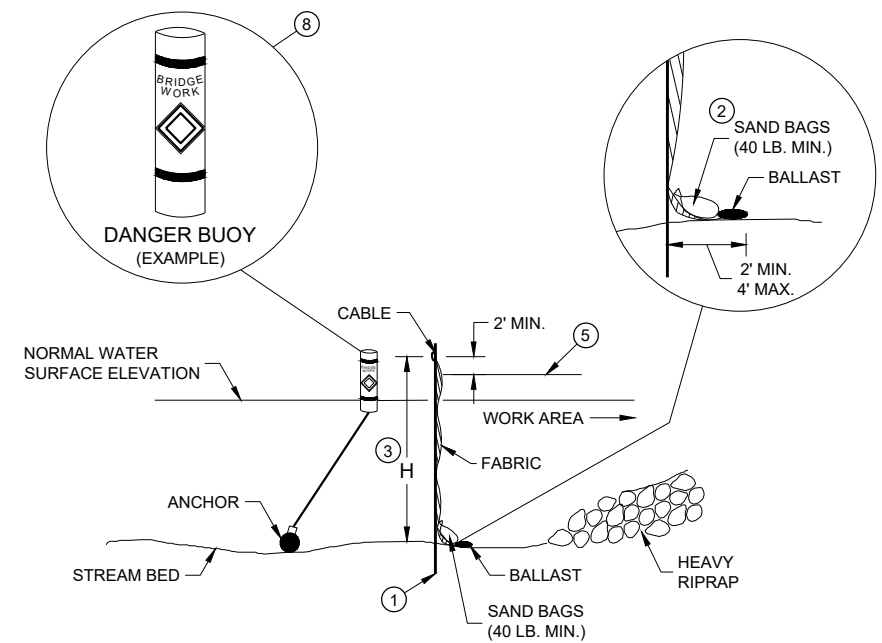
FHWA

/S/ Beth Connestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



SECTION B - B

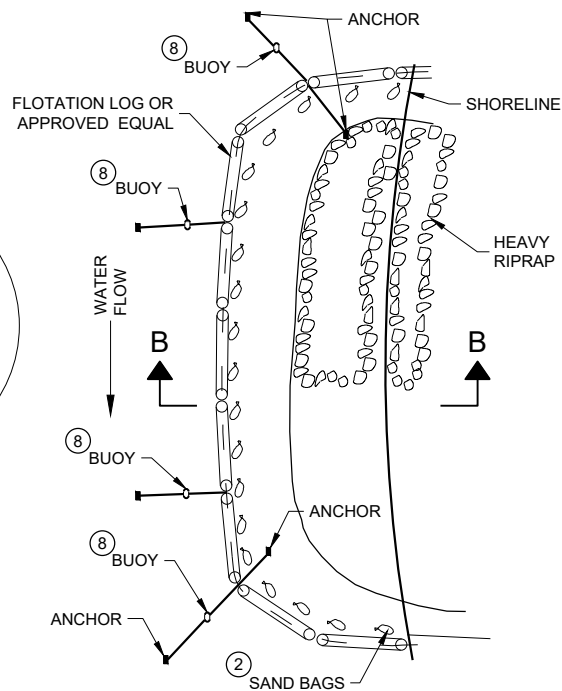
TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



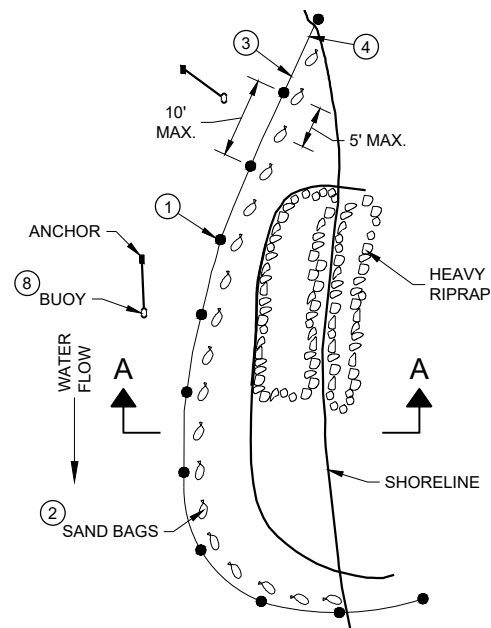
SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS



PLAN VIEW



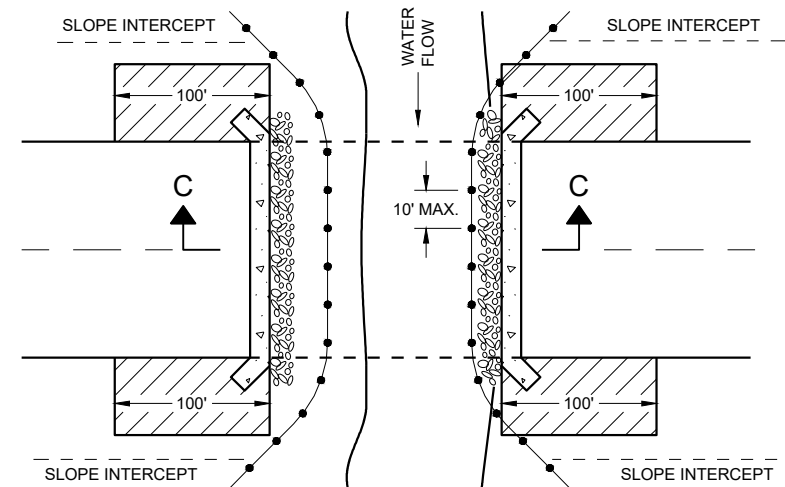
PLAN VIEW

GENERAL NOTES

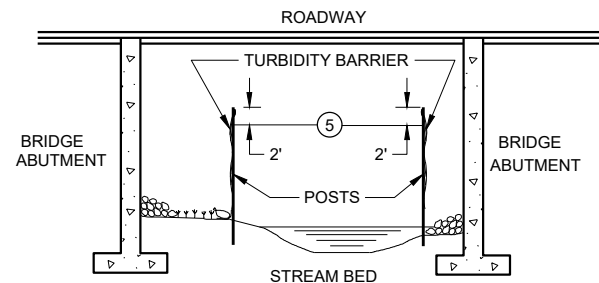
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



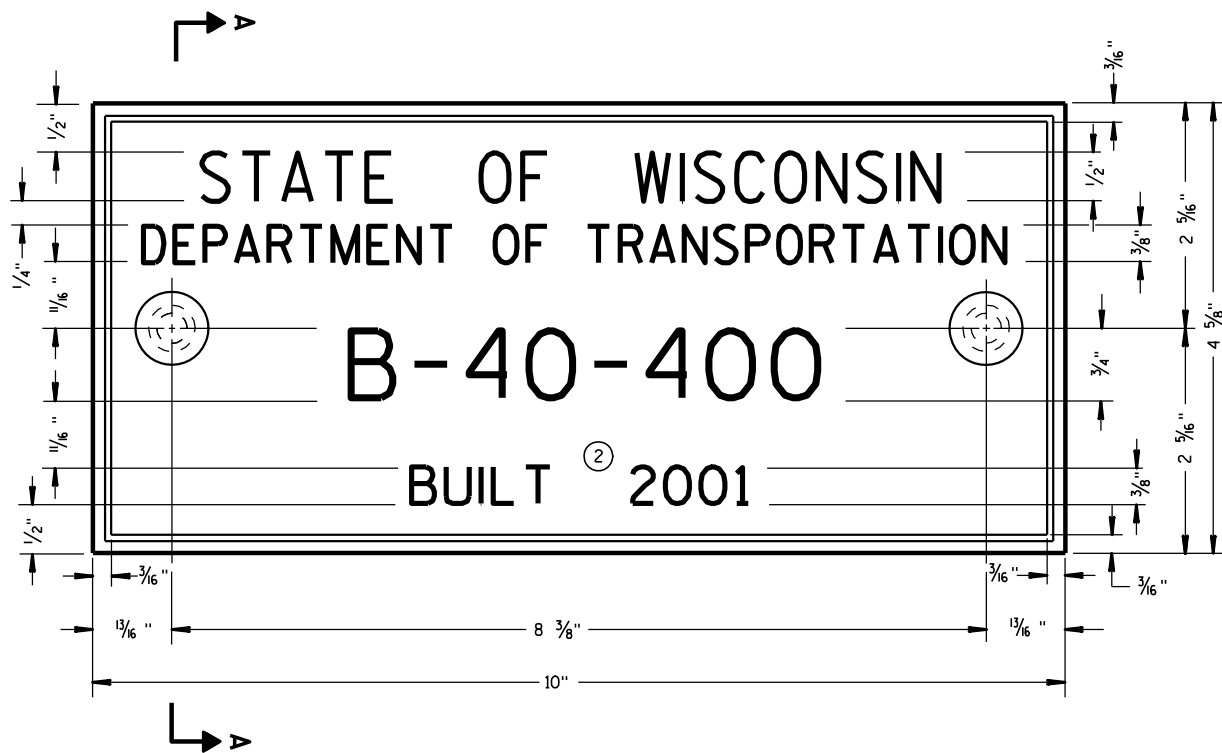
SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES

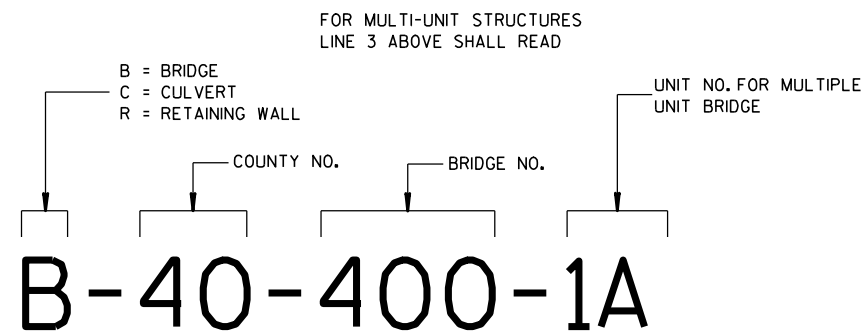
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



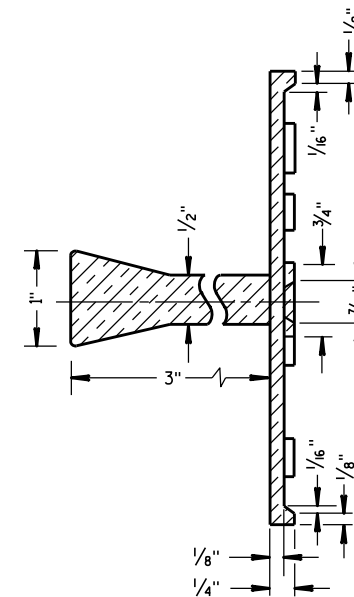
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

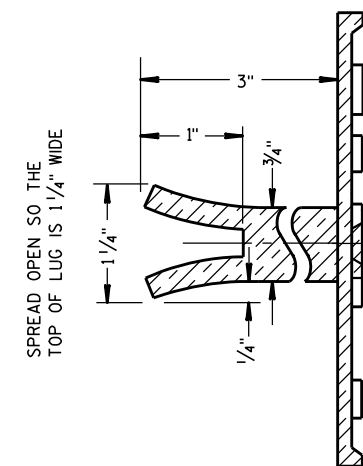
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

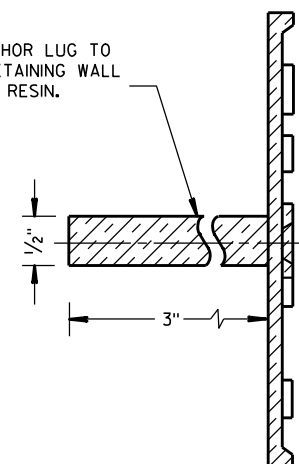


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

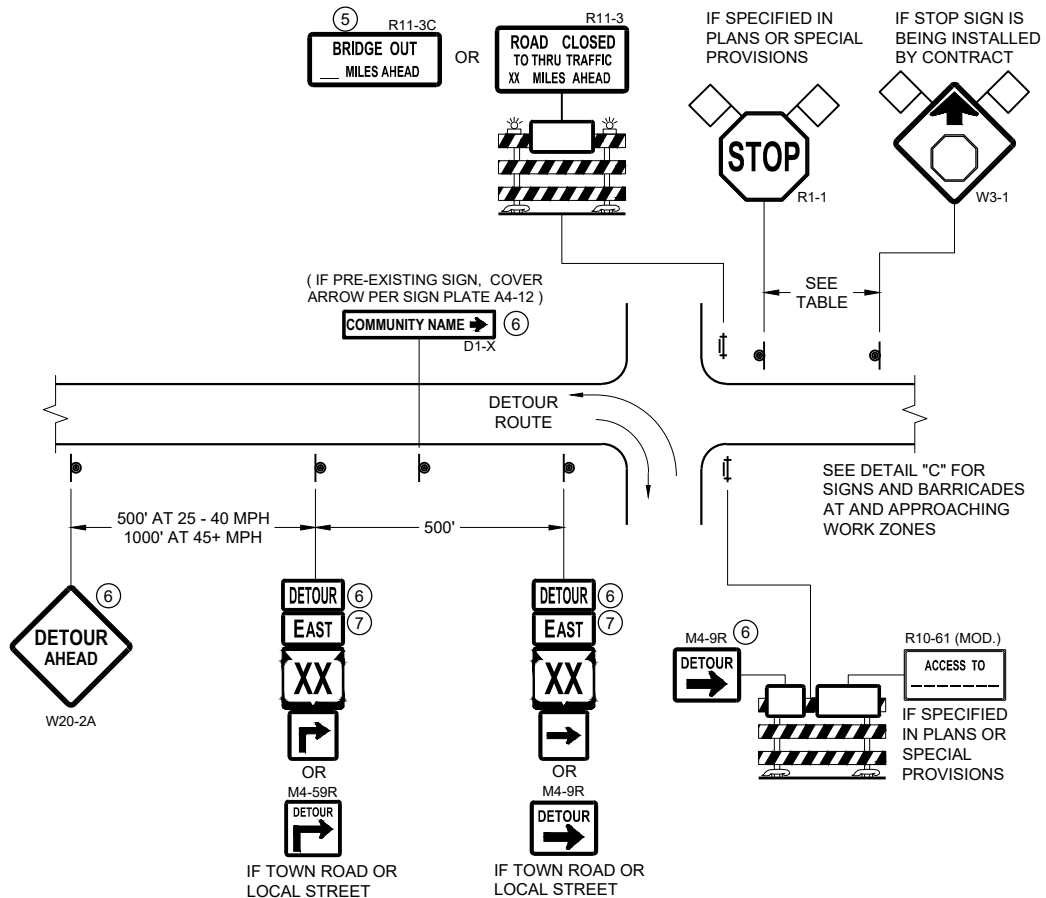
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

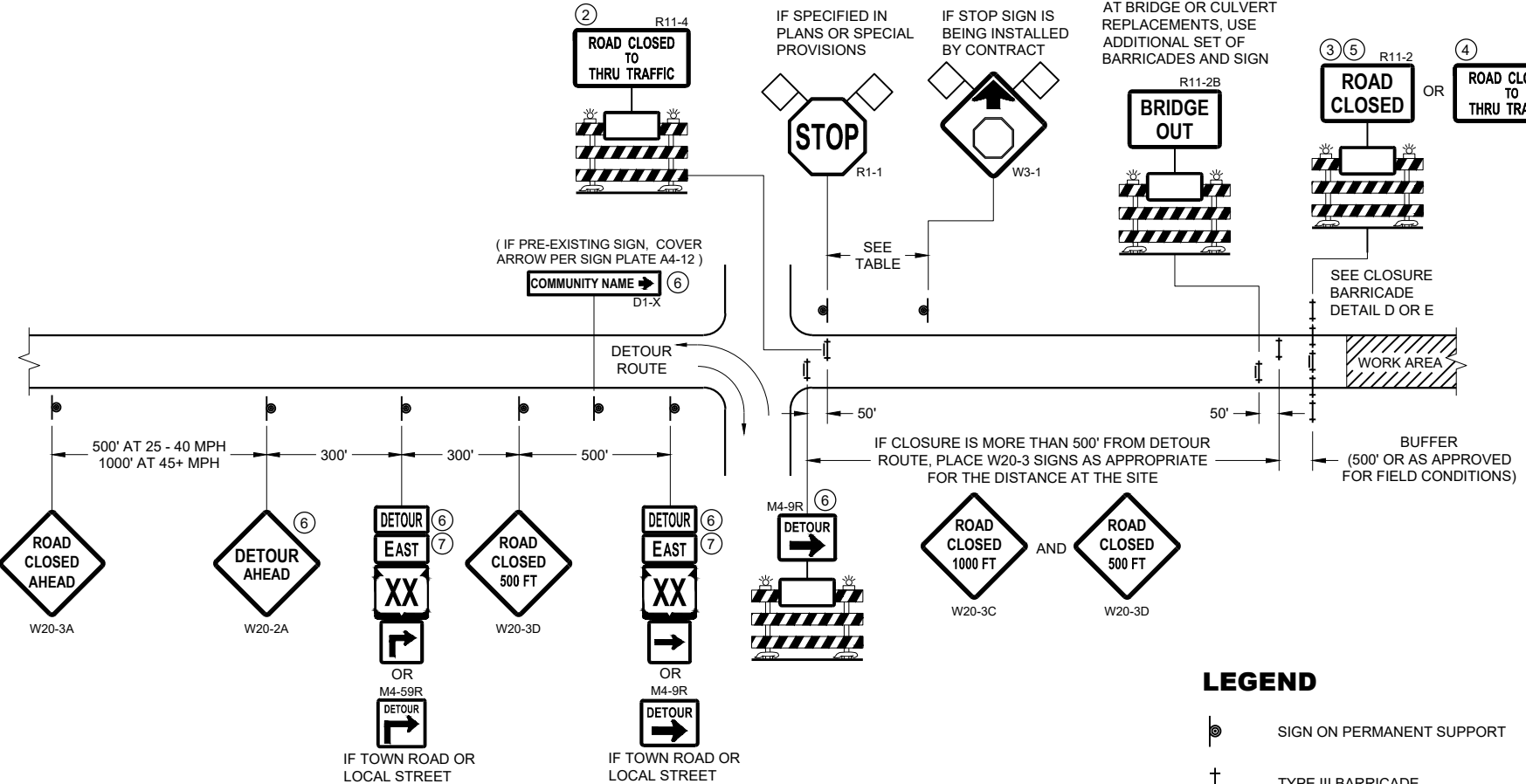
3/26/10
DATE

FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



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



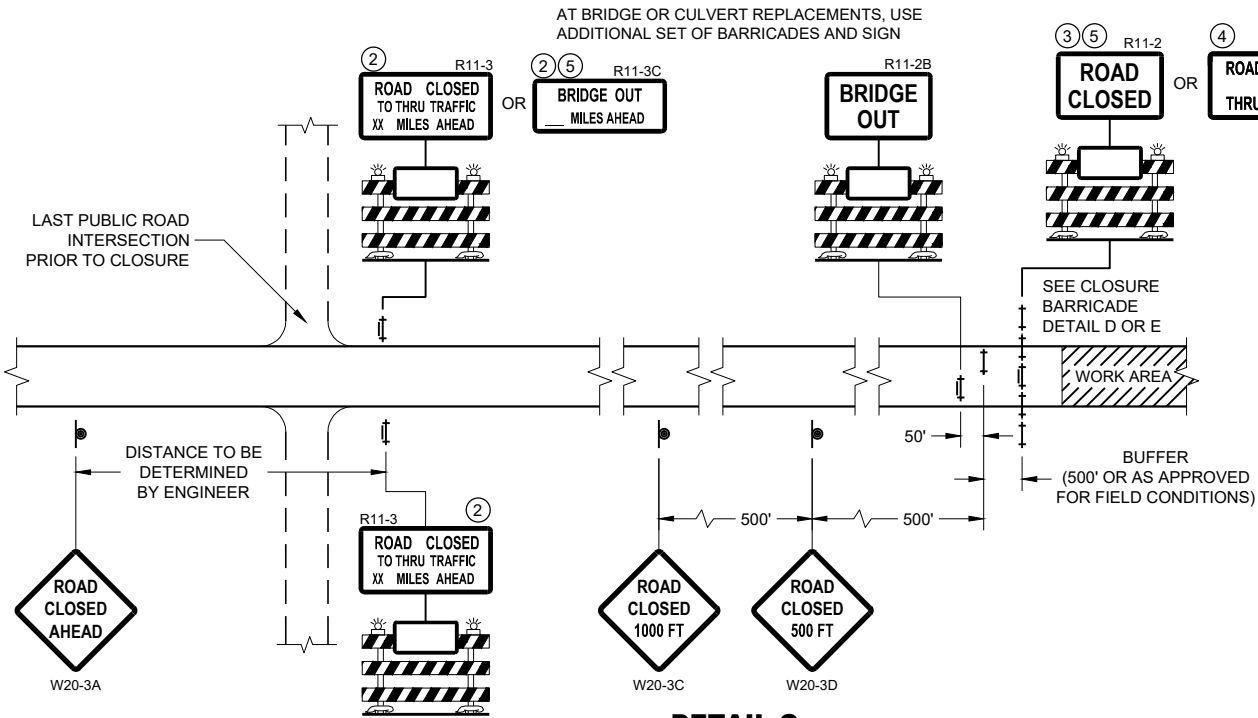
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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

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

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

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



SEE SDD 15C2 - SHEET "a" FOR LEGEND

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:

LESS 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.

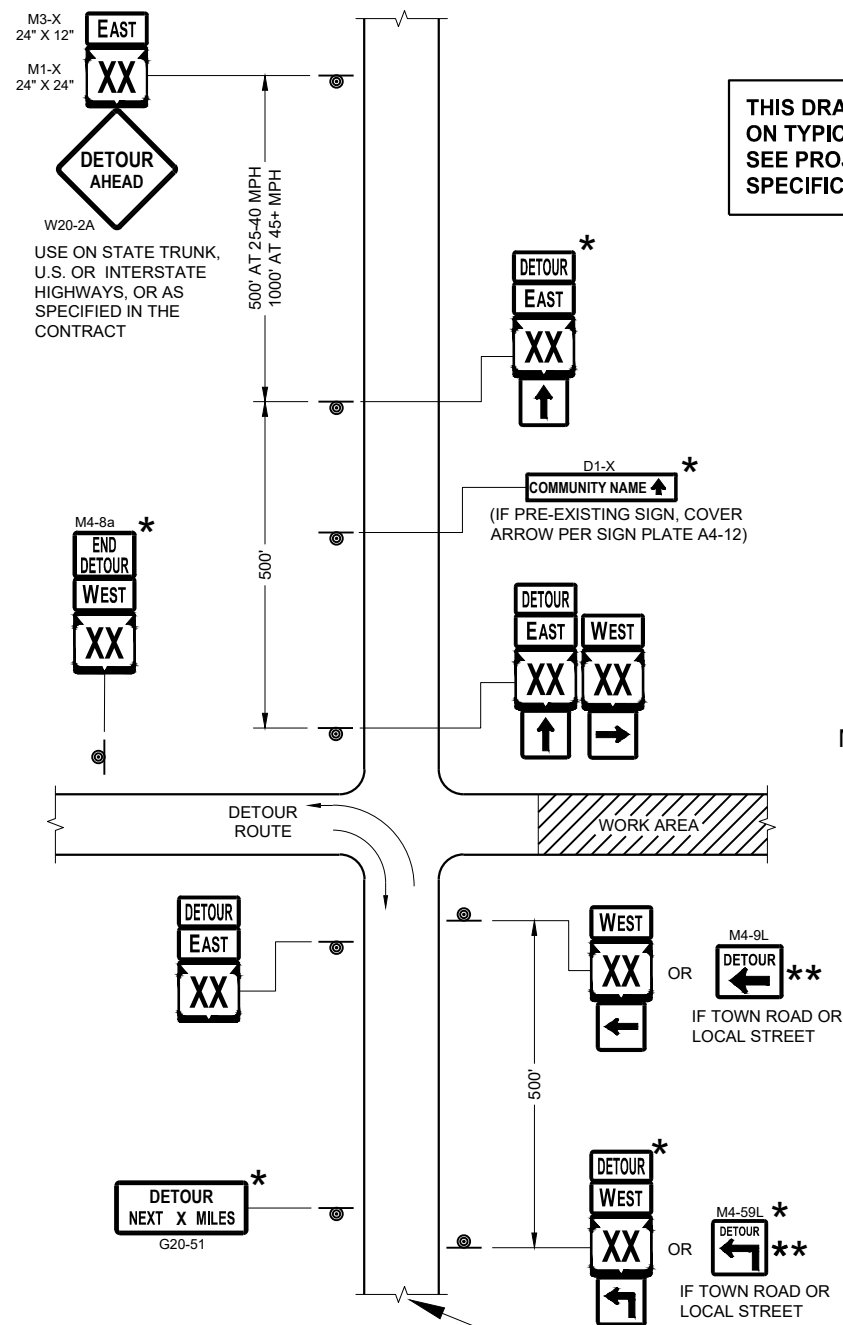
R1 - 1 SHALL BE 36" X 36"

- 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.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

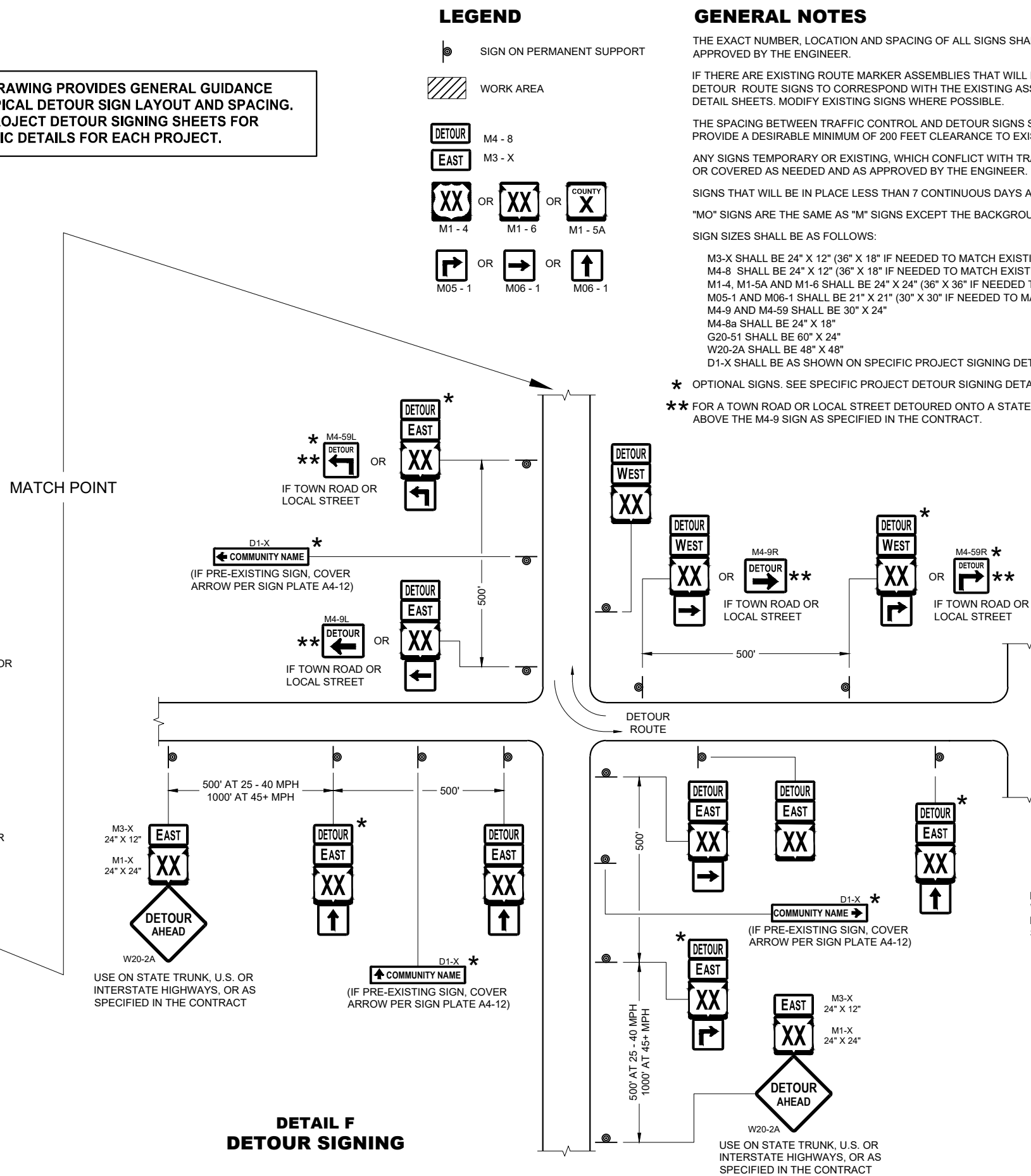
/S/ Andrew Heidtknecht
WORK ZONE ENGINEER



**THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.**

SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

SDD 15C02 - 09c



DETAIL F DETOUR SIGNING

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

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)
M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
M4-9 AND M4-59 SHALL BE 30" X 24"
M4-8a SHALL BE 24" X 18"
G20-51 SHALL BE 60" X 24"
W20-2A SHALL BE 48" X 48"
D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

**** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.**

DETOUR SIGNING FOR MAINLINE CLOSURES

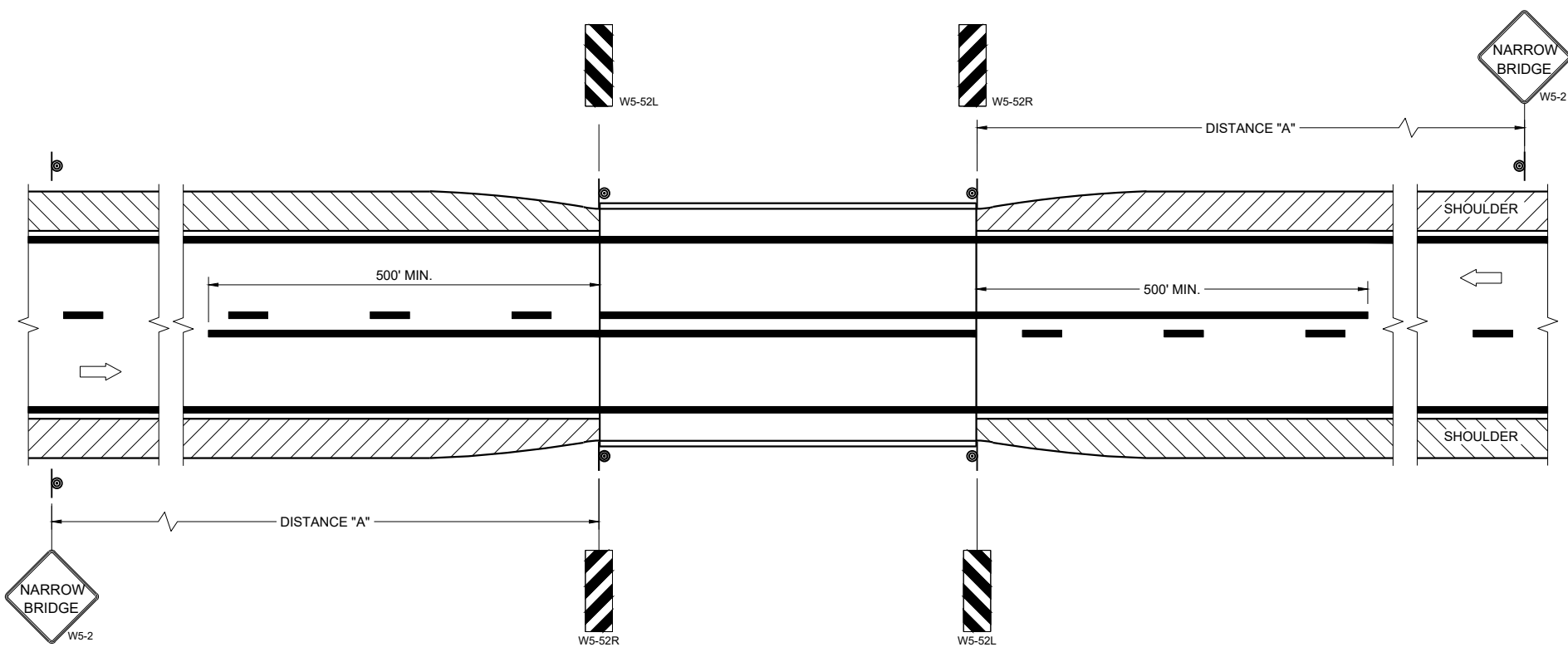
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

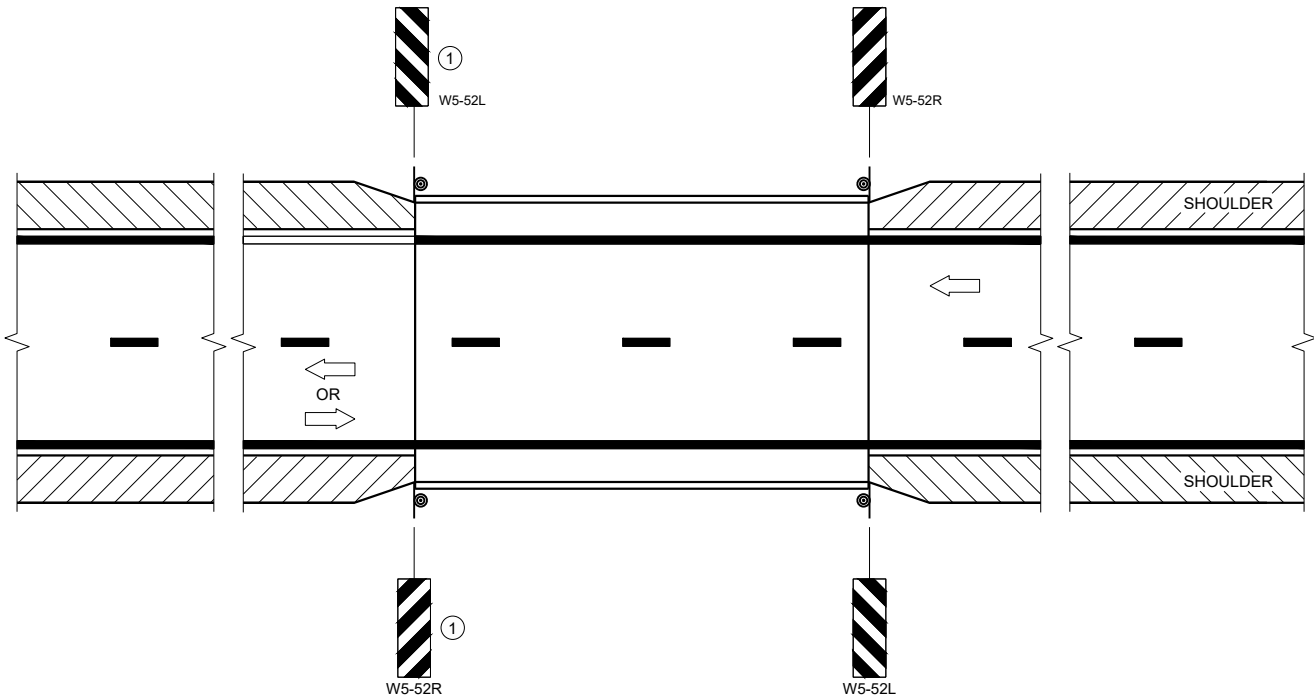
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD15C02 - 09c



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

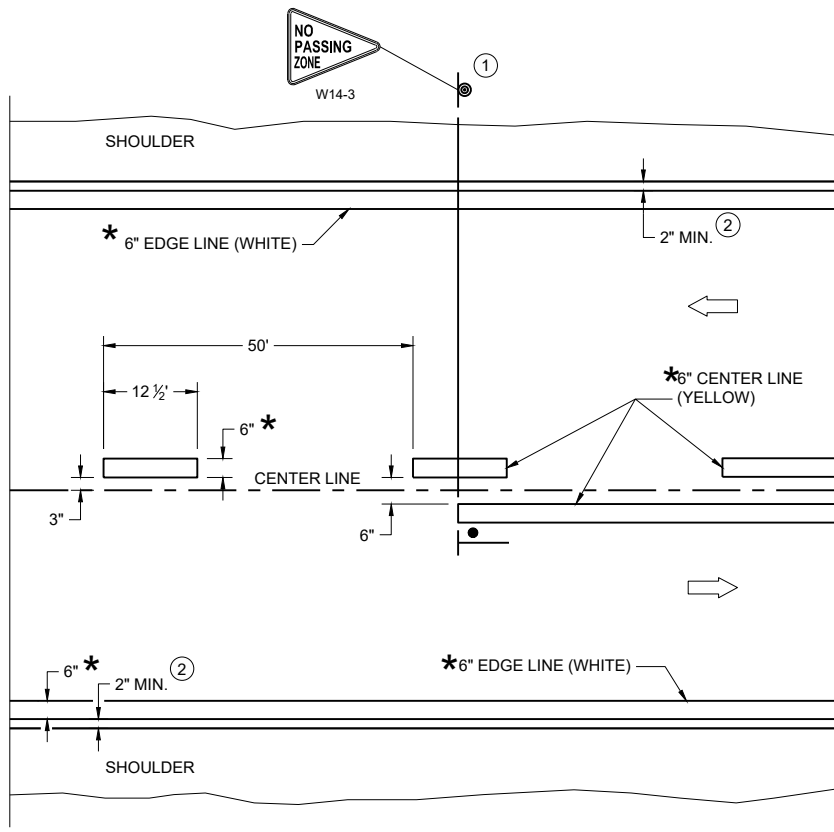
DISTANCE TABLE

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

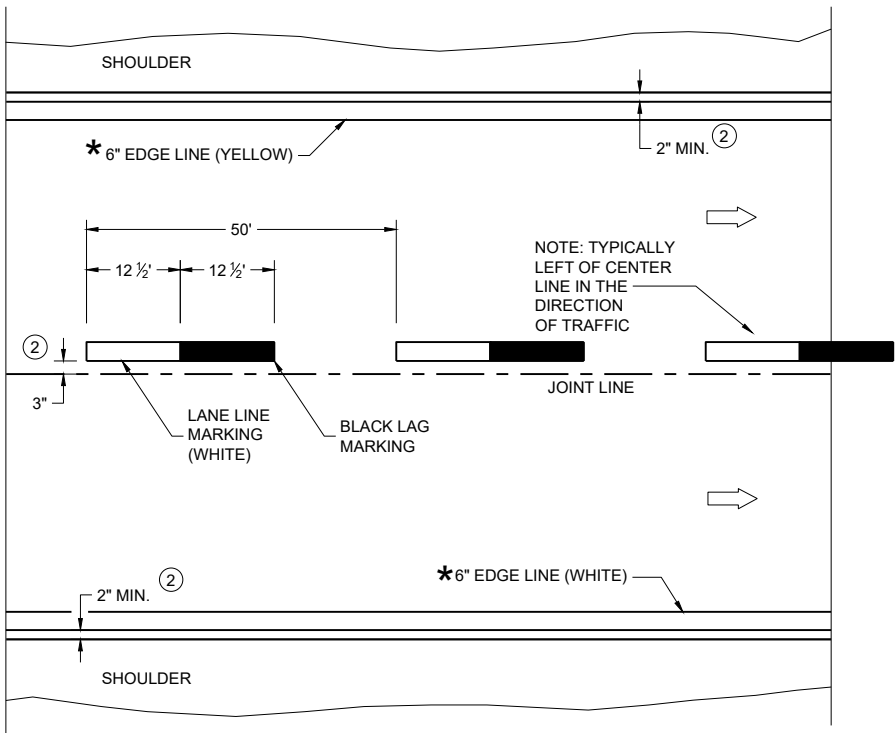
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

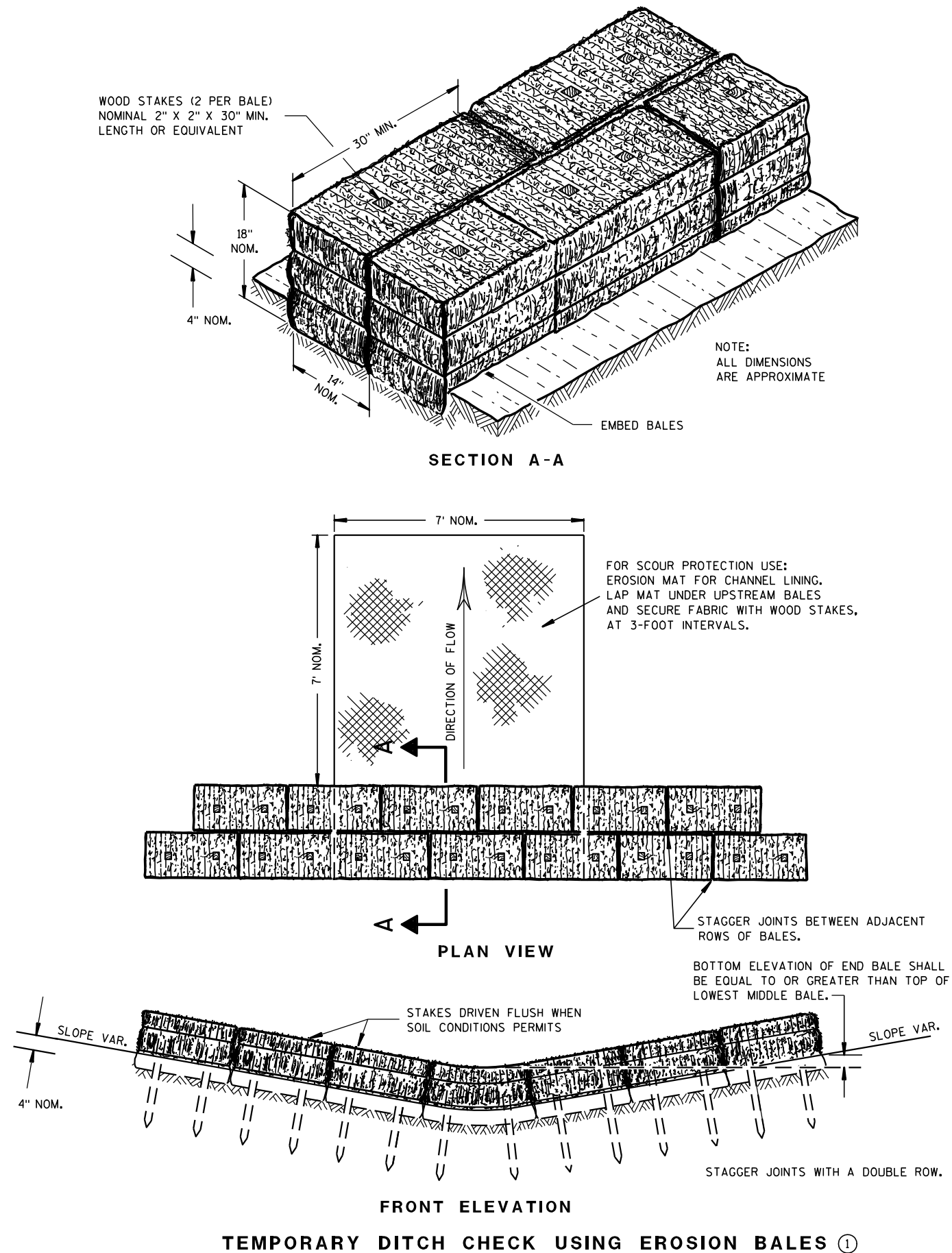
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer

FHWA

Standard Detail Drawing List

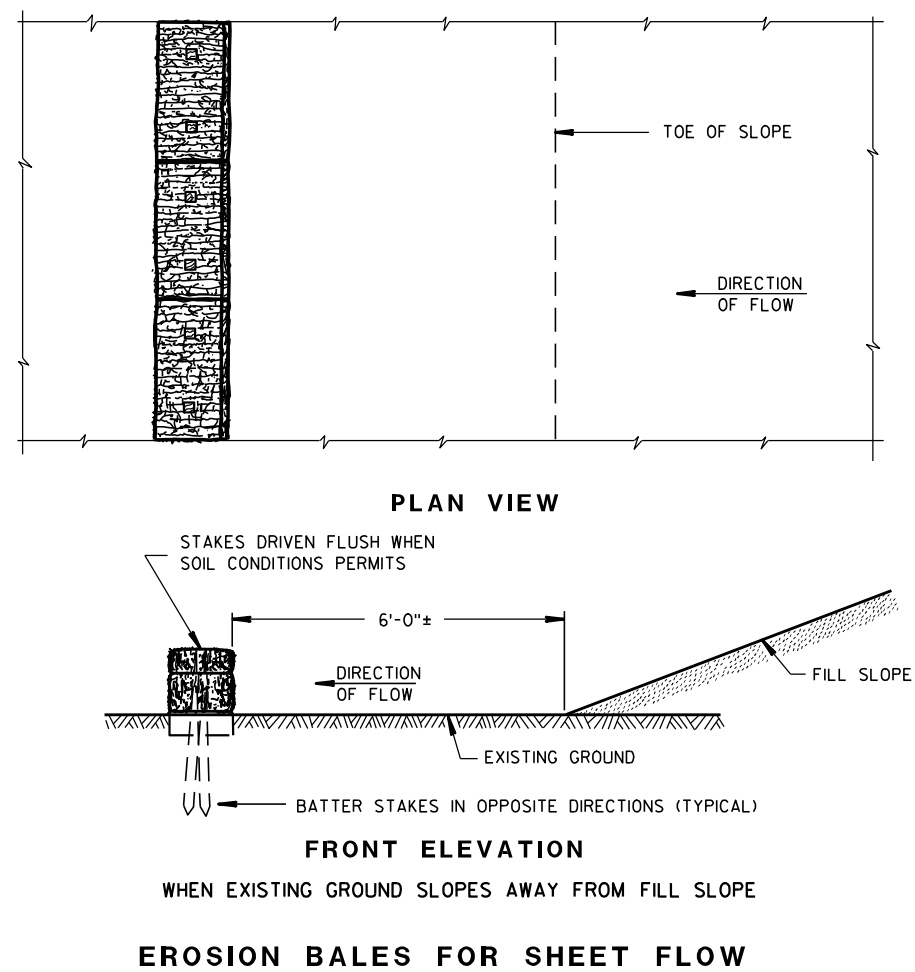
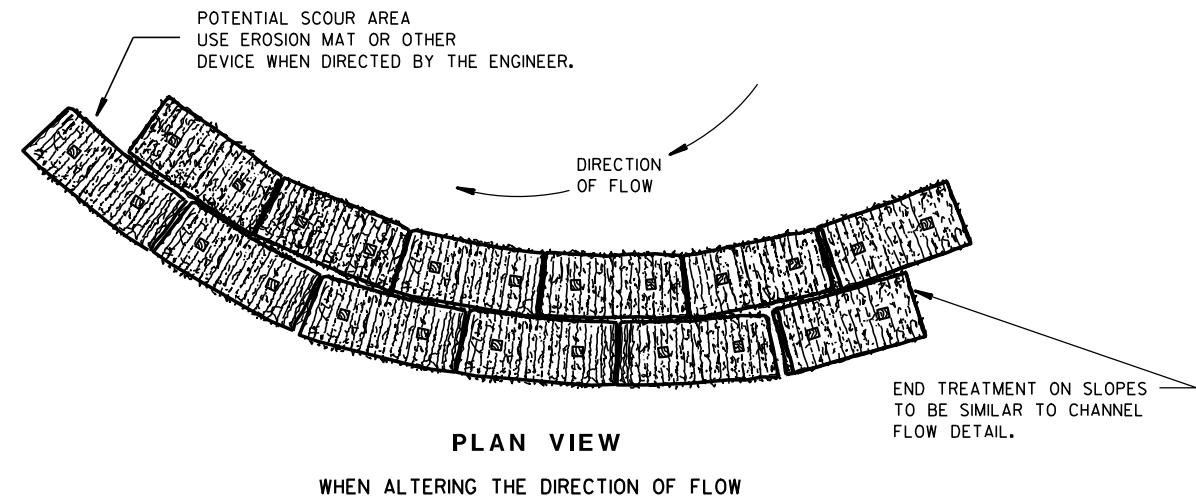
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS



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

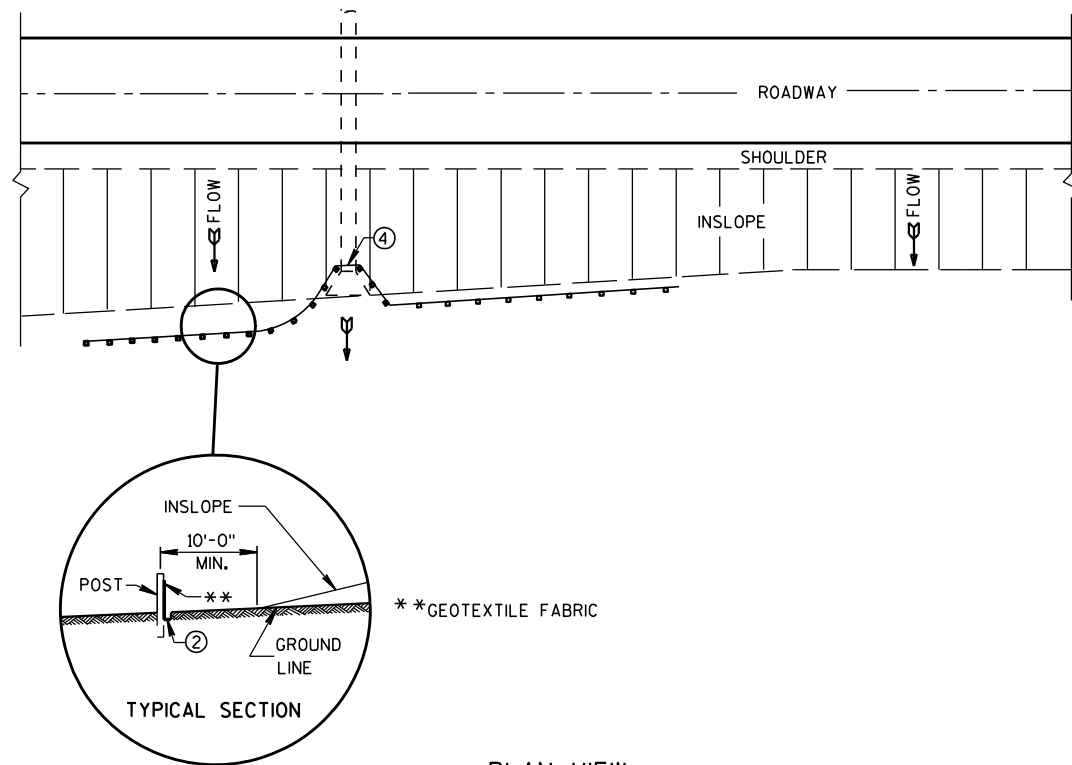
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

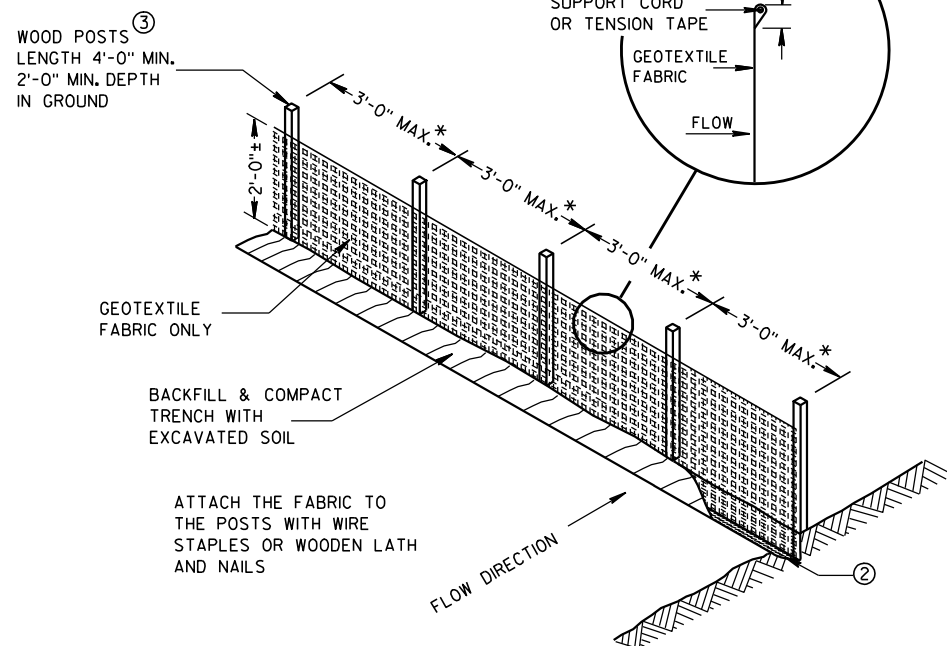
FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



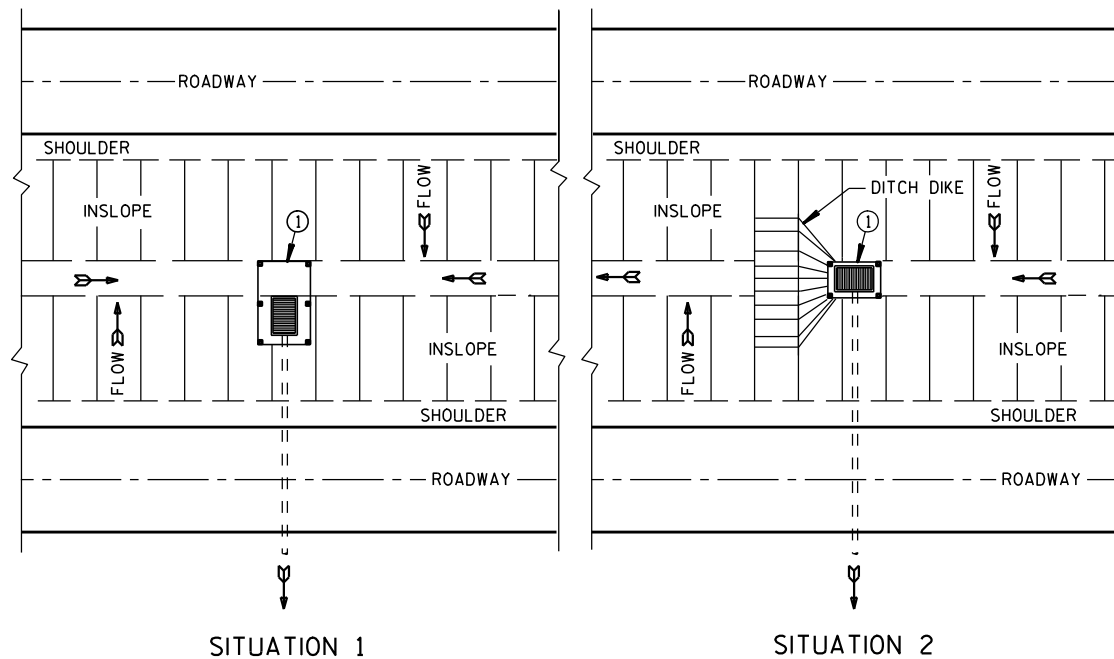
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

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

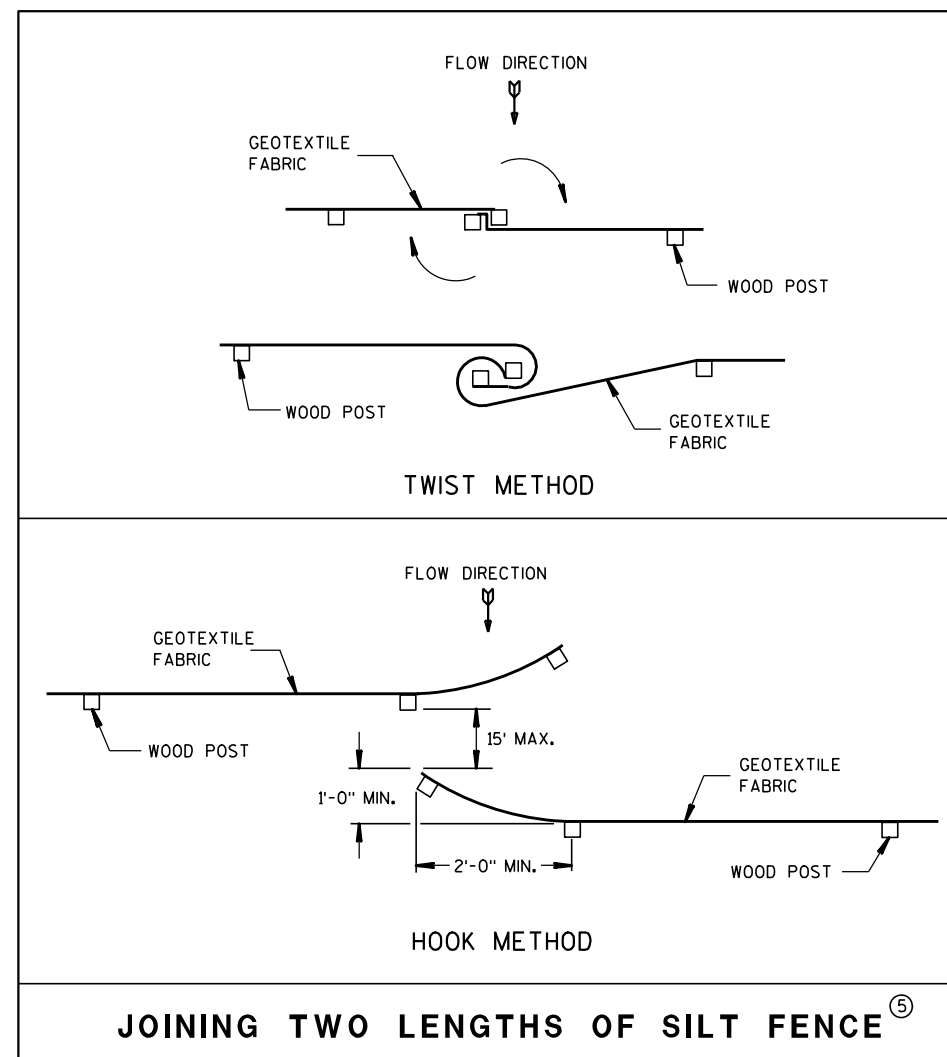


SILT FENCE

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



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

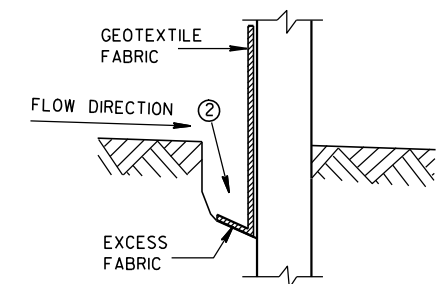


JOINING TWO LENGTHS OF SILT FENCE^⑤

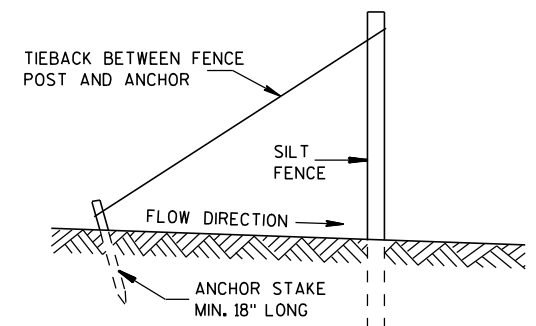
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

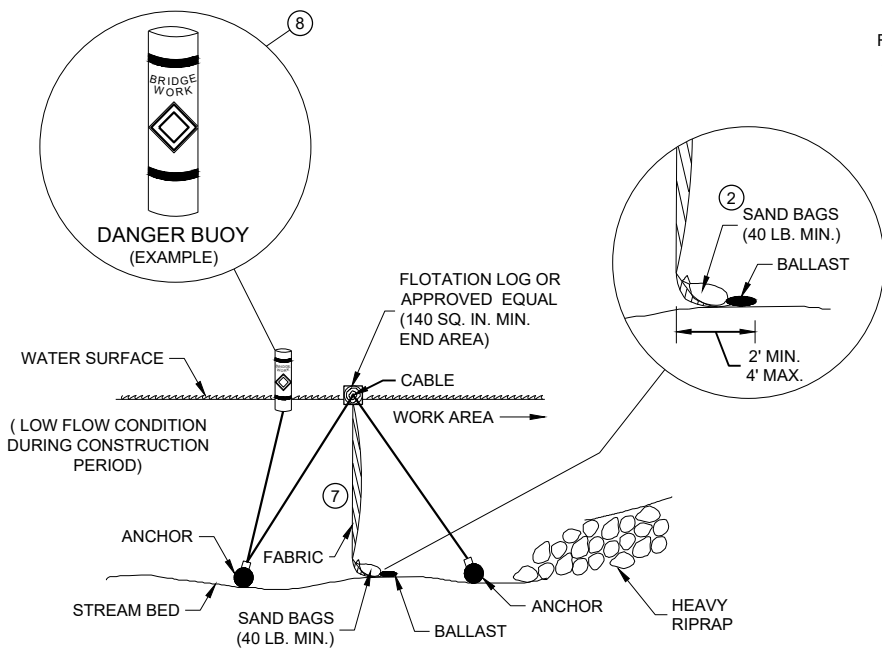
APPROVED

4-29-05

DATE

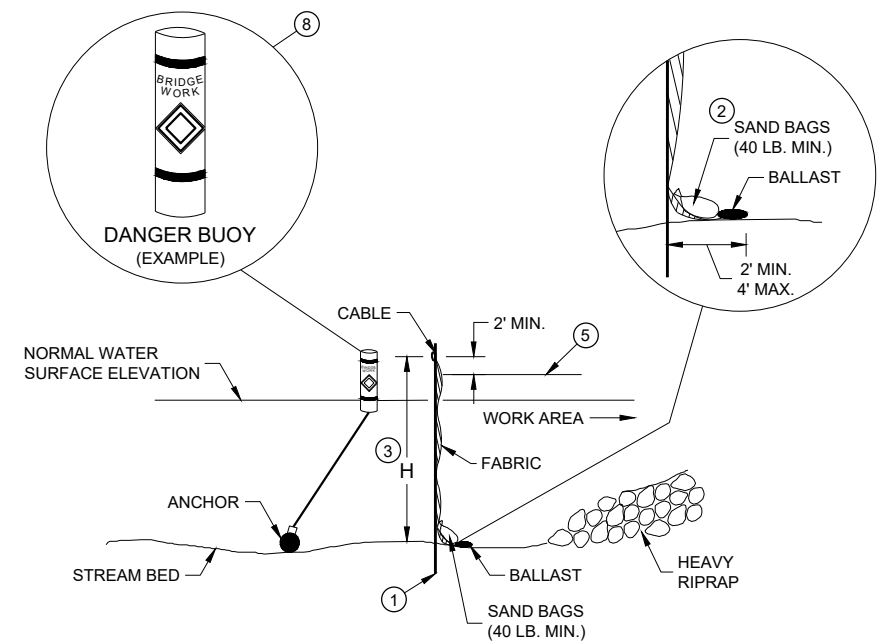
FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



SECTION B - B

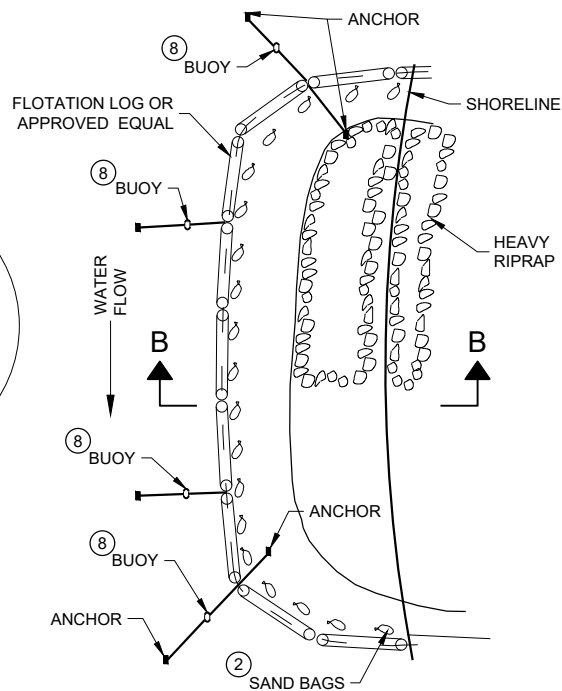
TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



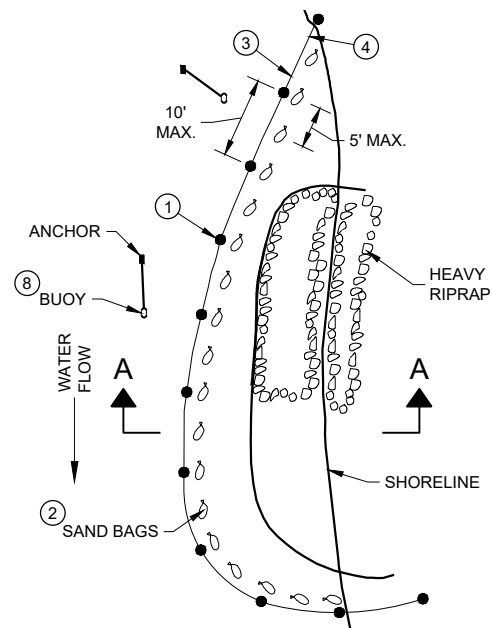
SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS



PLAN VIEW



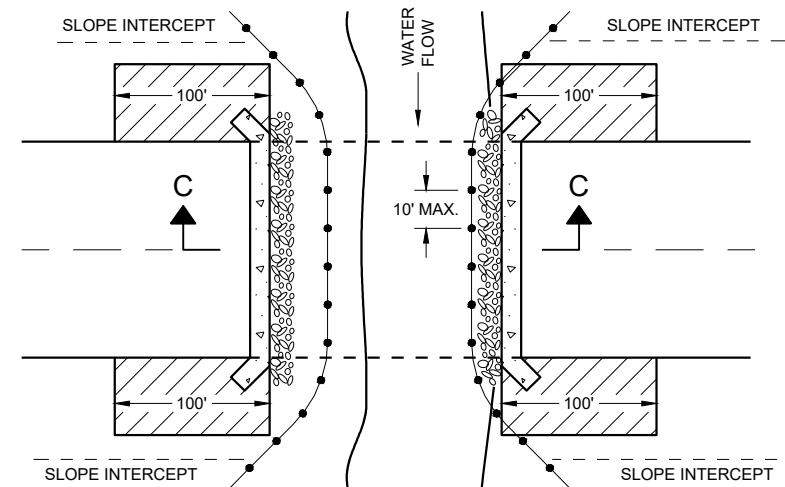
PLAN VIEW

GENERAL NOTES

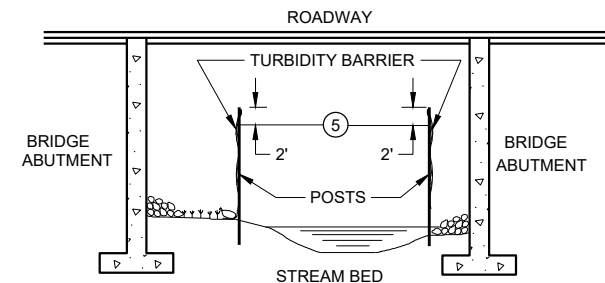
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



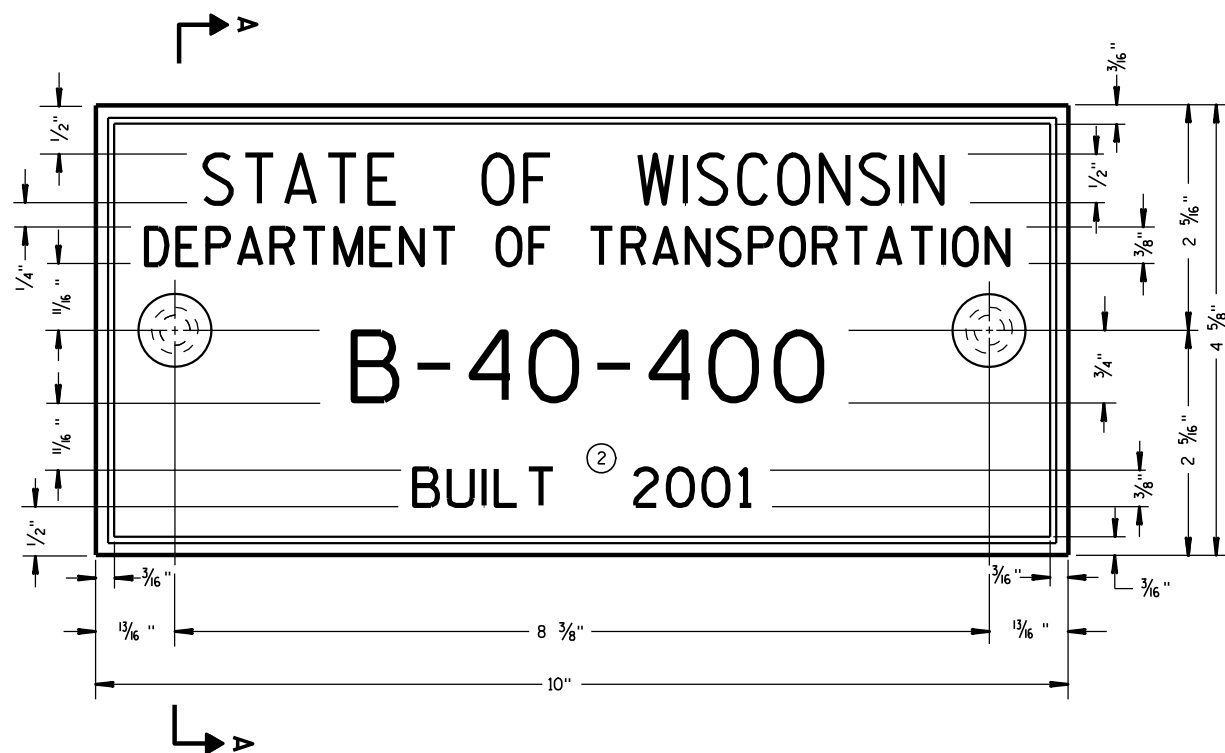
SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES

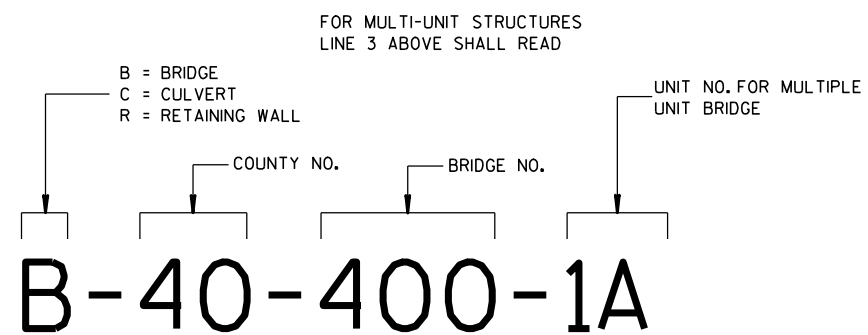
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



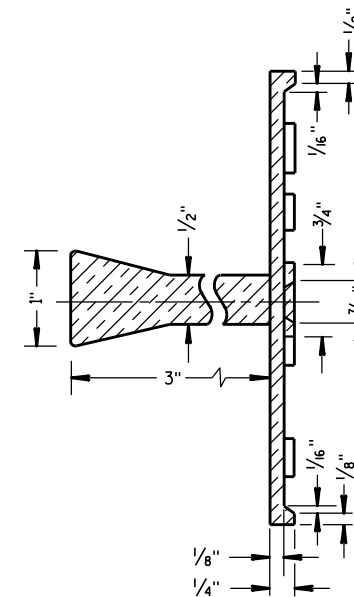
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

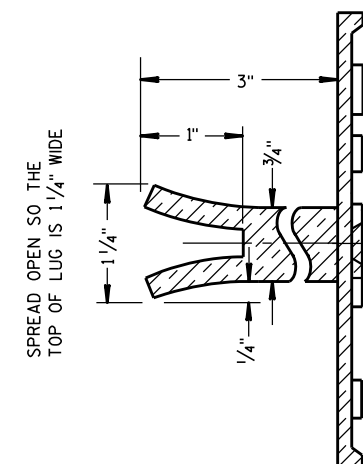
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.



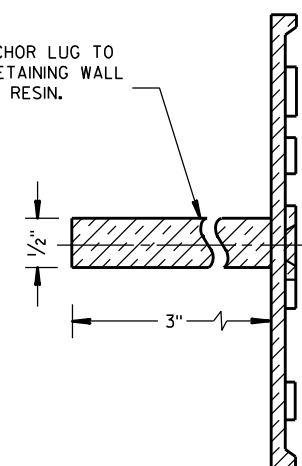
SECTION A-A



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

ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

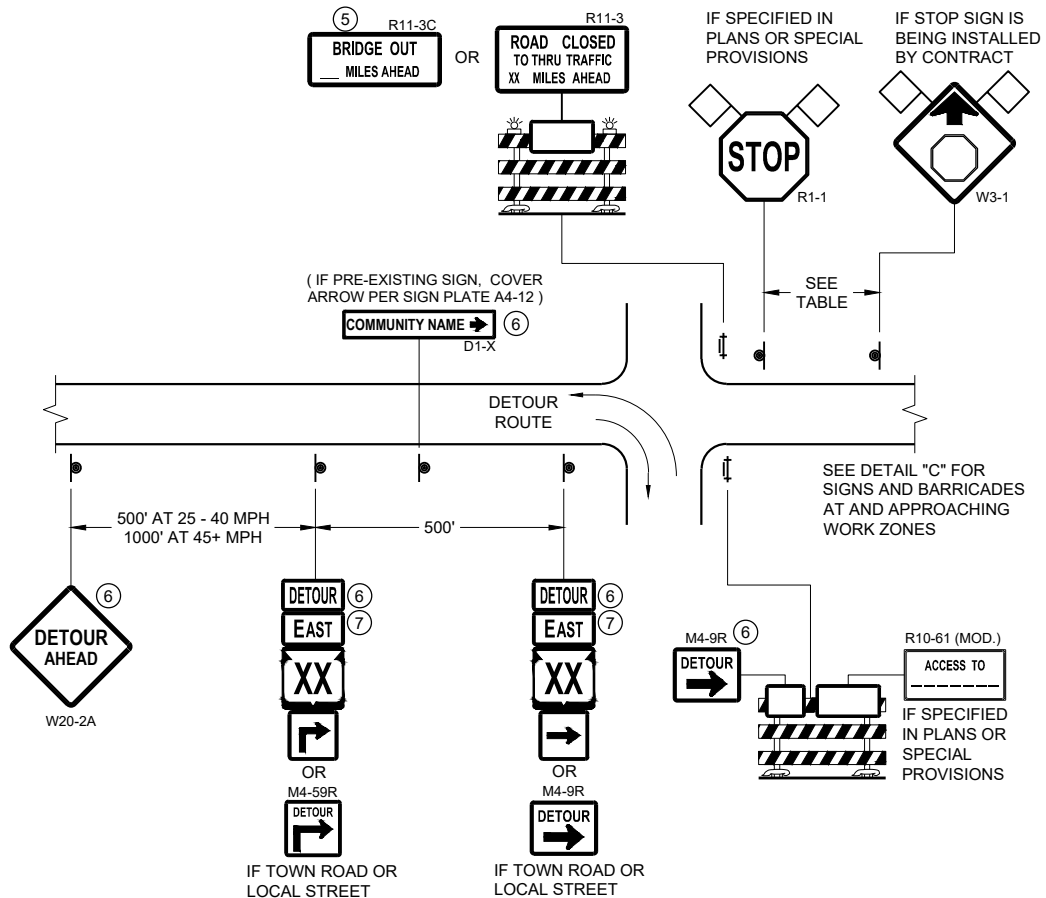
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

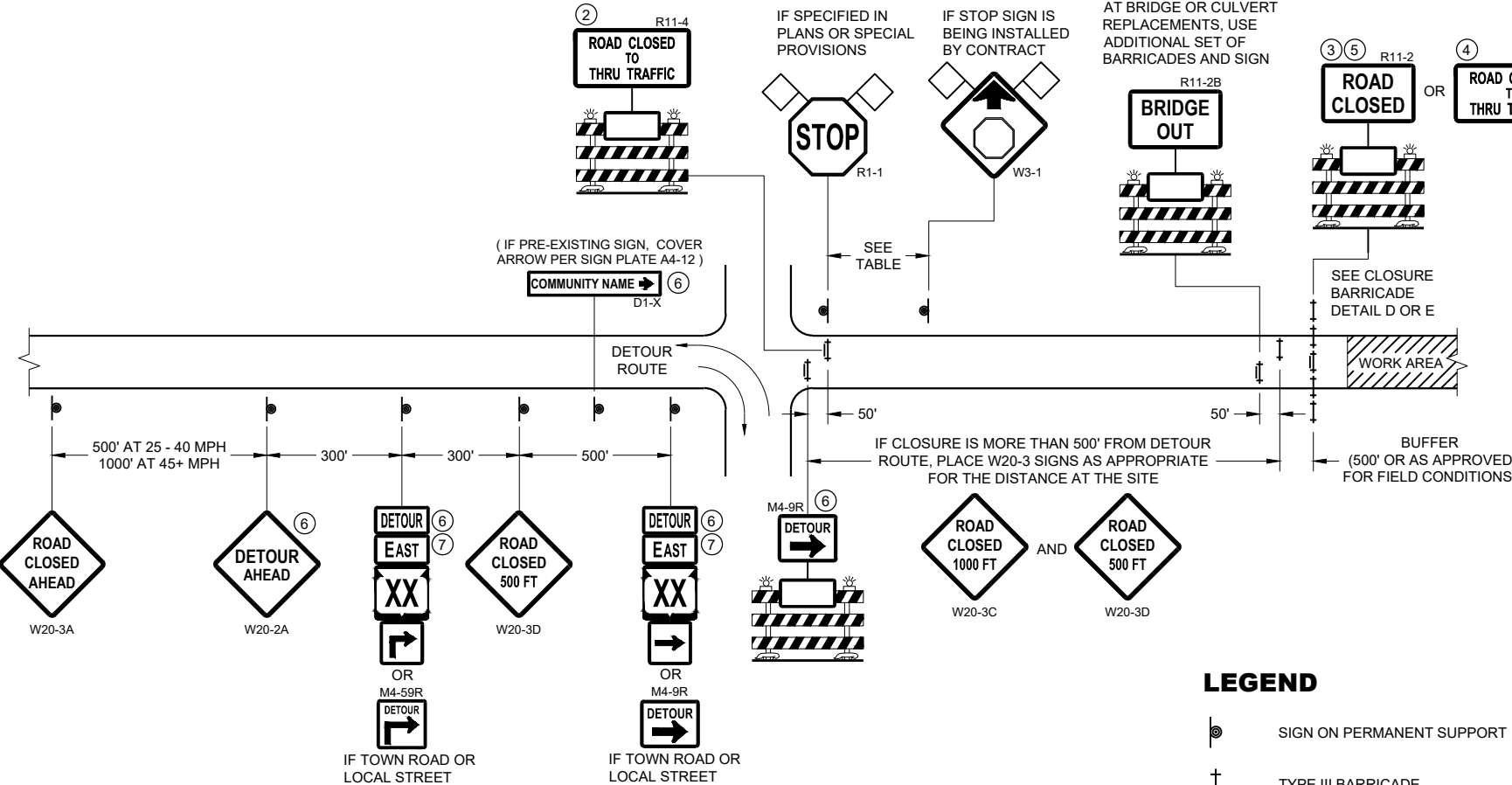
3/26/10
DATE

FHWA

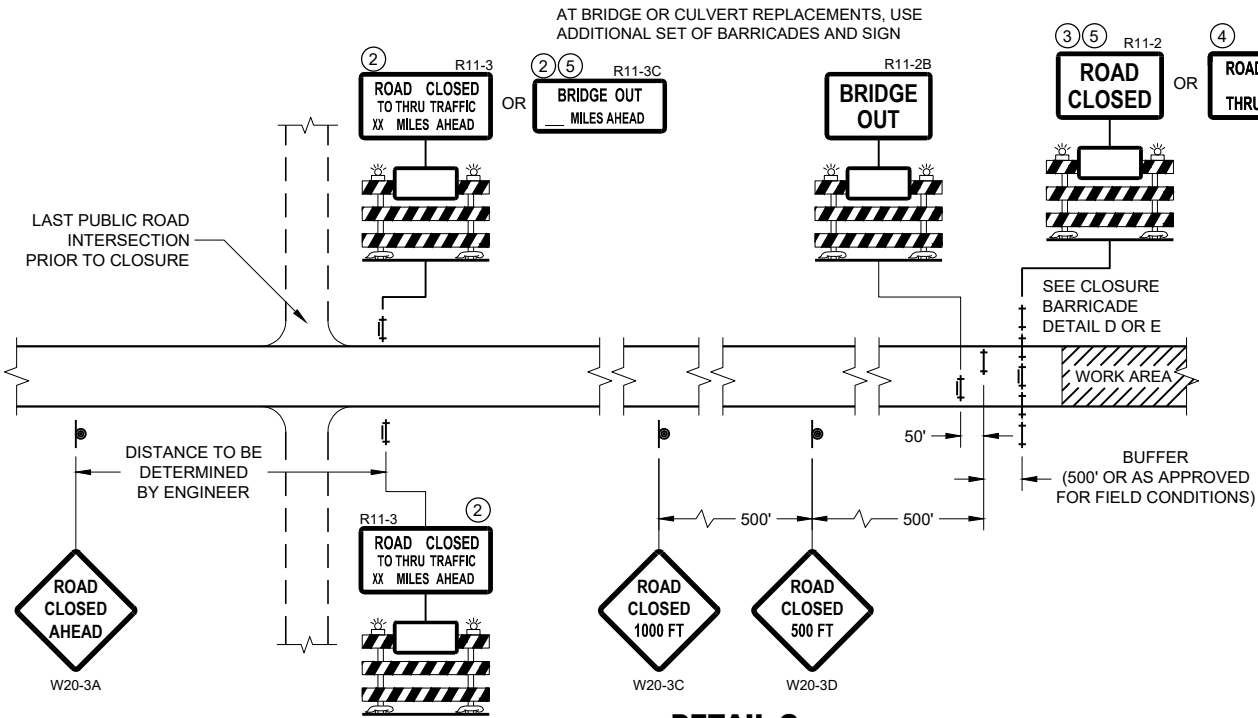
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



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

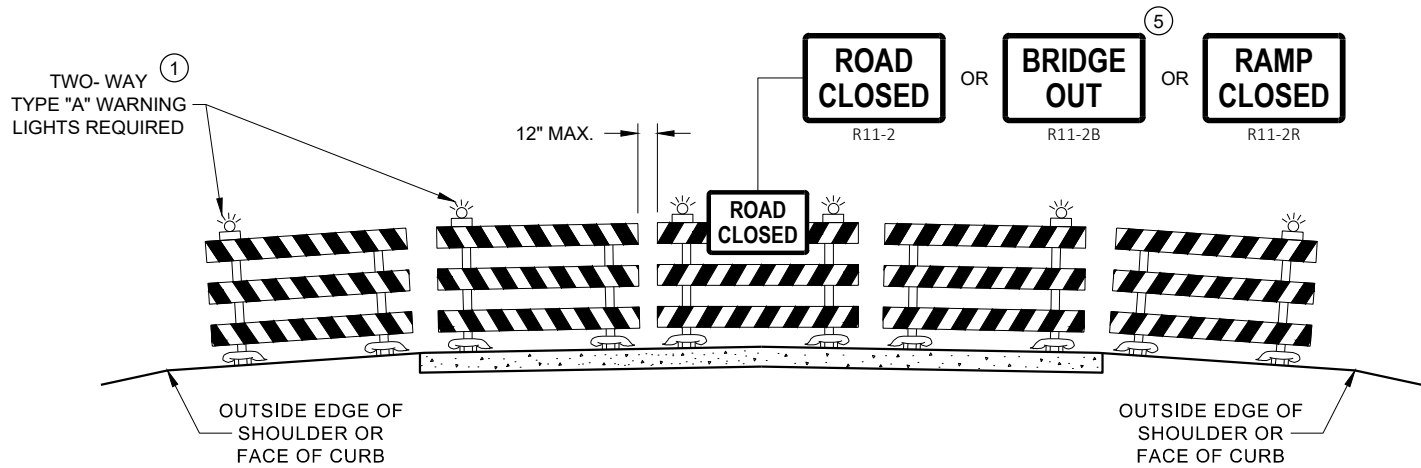
LEGEND

- 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

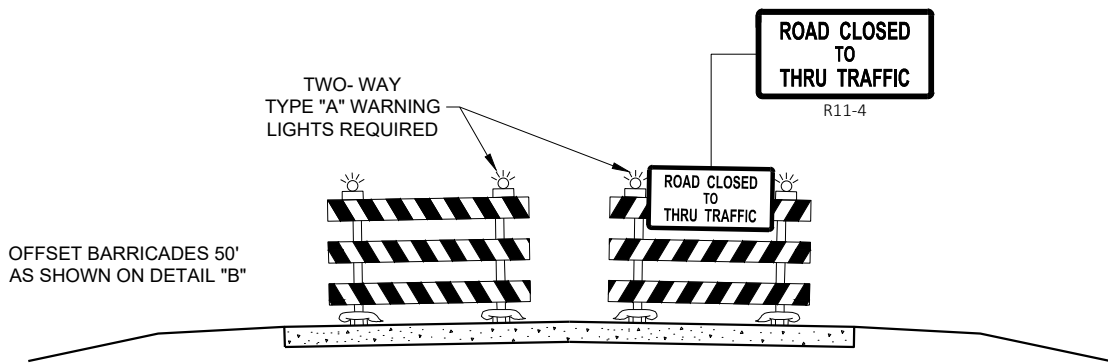
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

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"

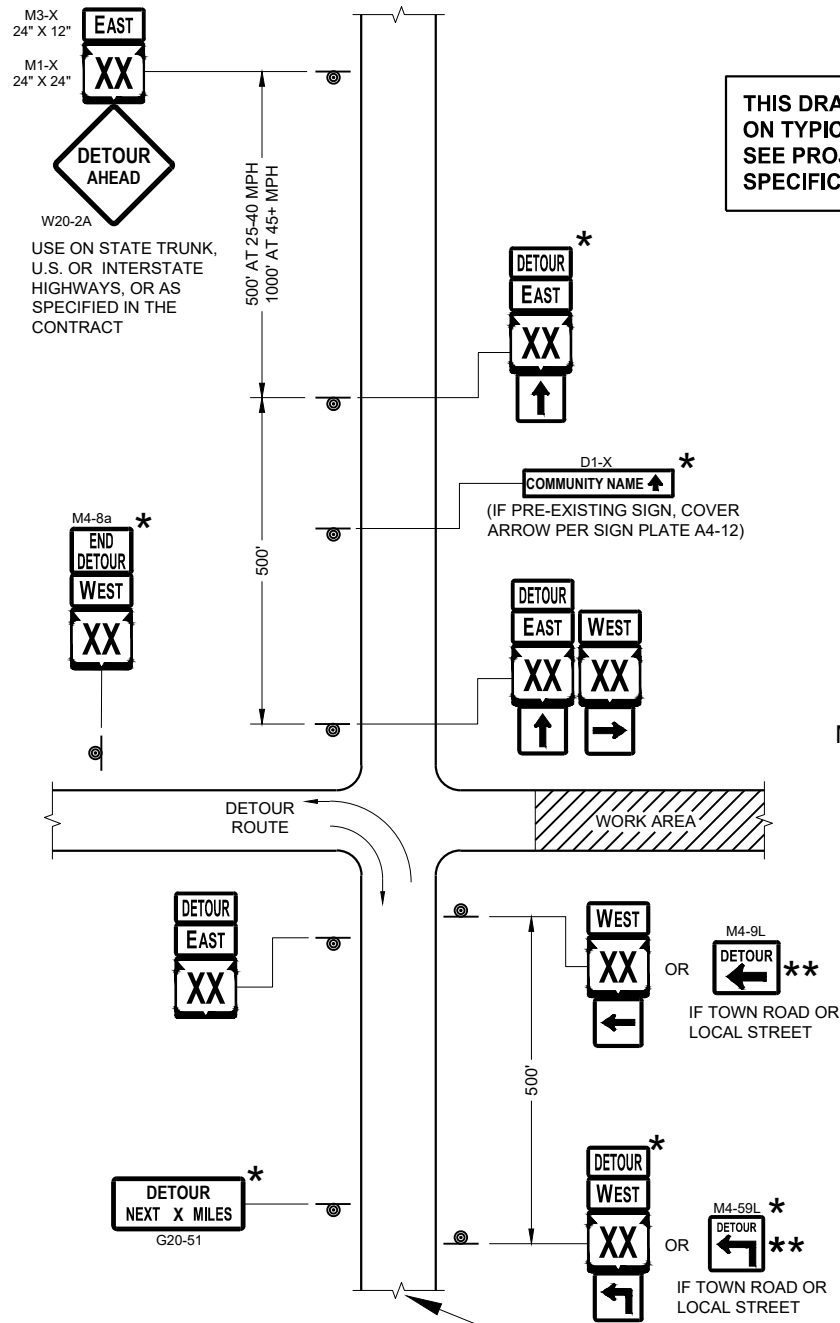
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

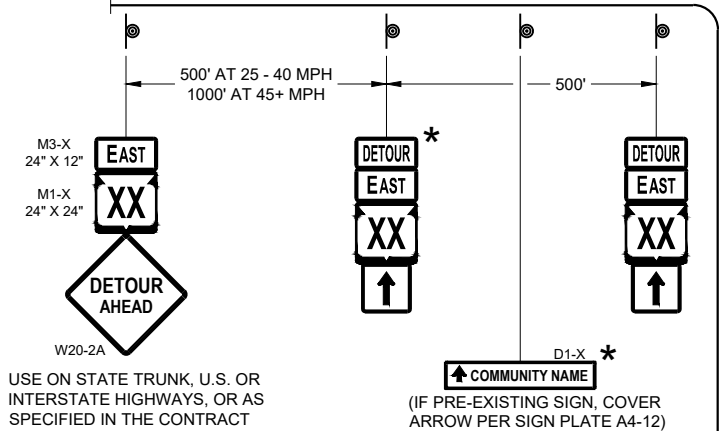
FHWA



SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST (M4 - 8)
- DETOUR WEST (M3 - X)
- DETOUR AHEAD (M1 - 4, M1 - 6, M1 - 5A)
- DETOUR RIGHT (M05 - 1, M06 - 1, M06 - 1)

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

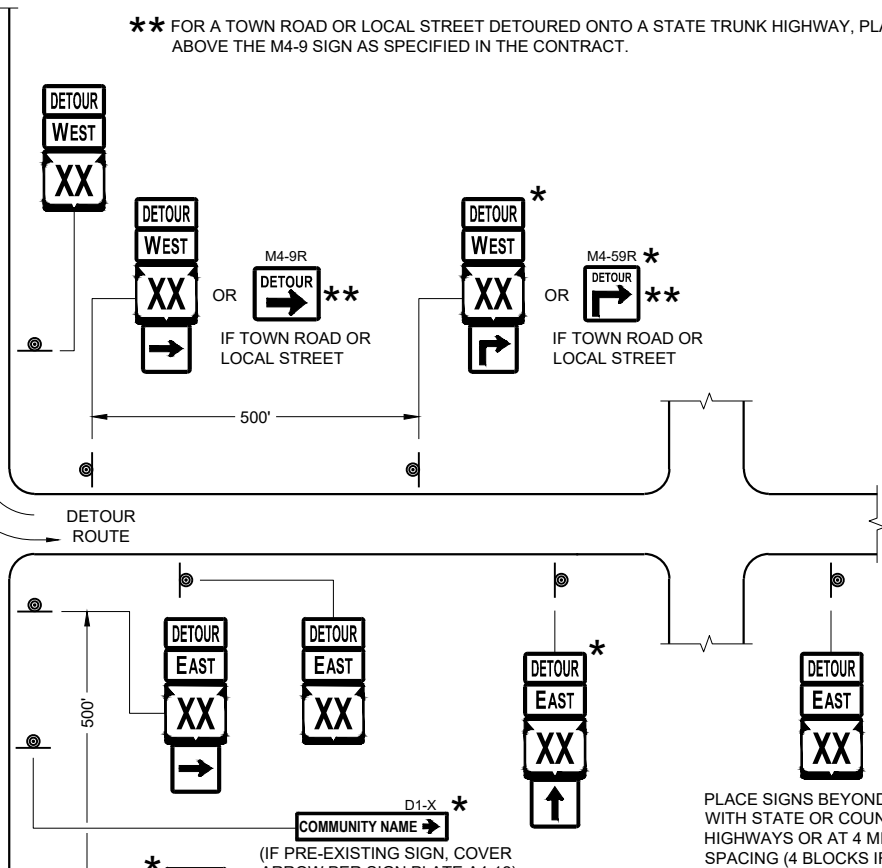
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

- 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)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

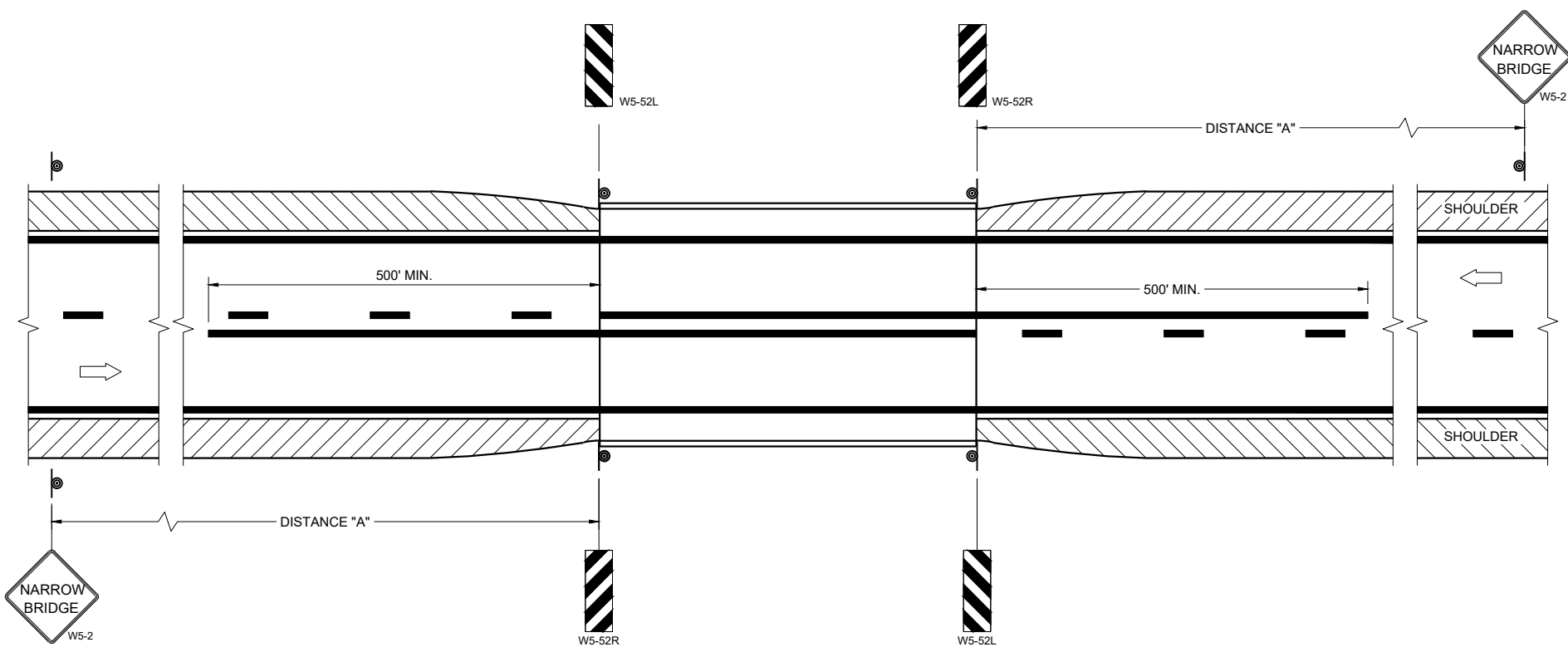


PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

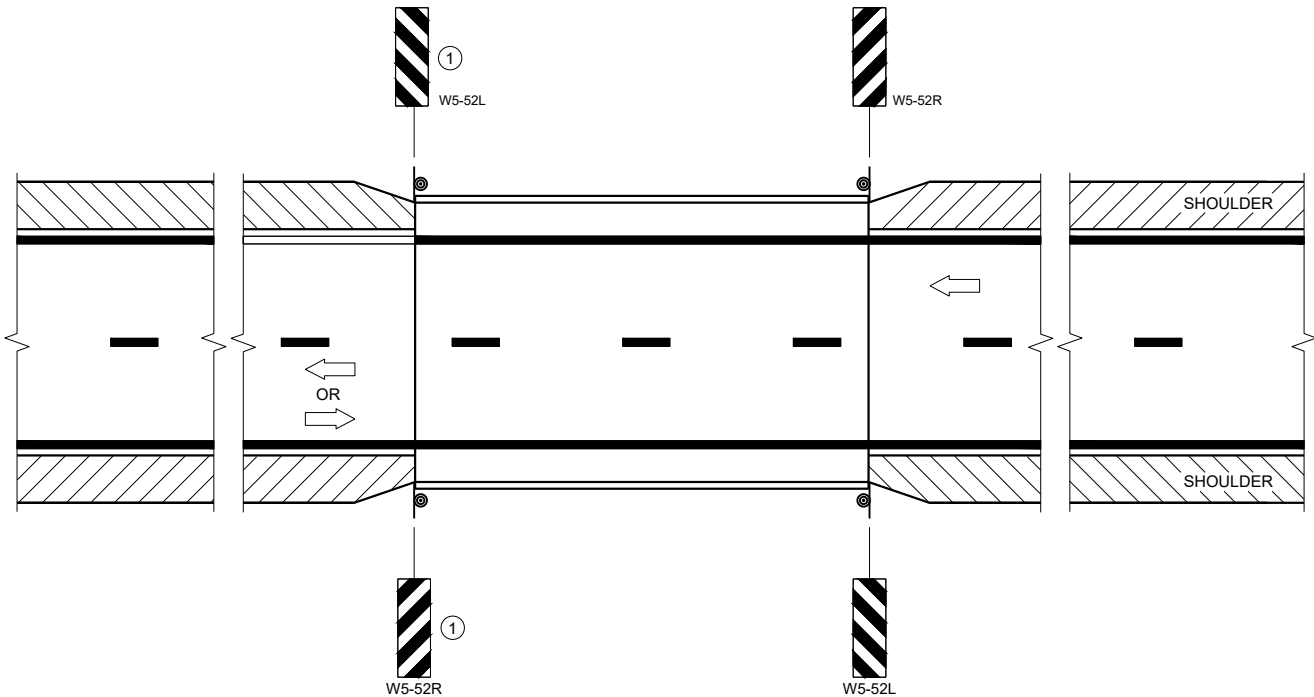
DETOUR SIGNING
FOR MAINLINE CLOSURES

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

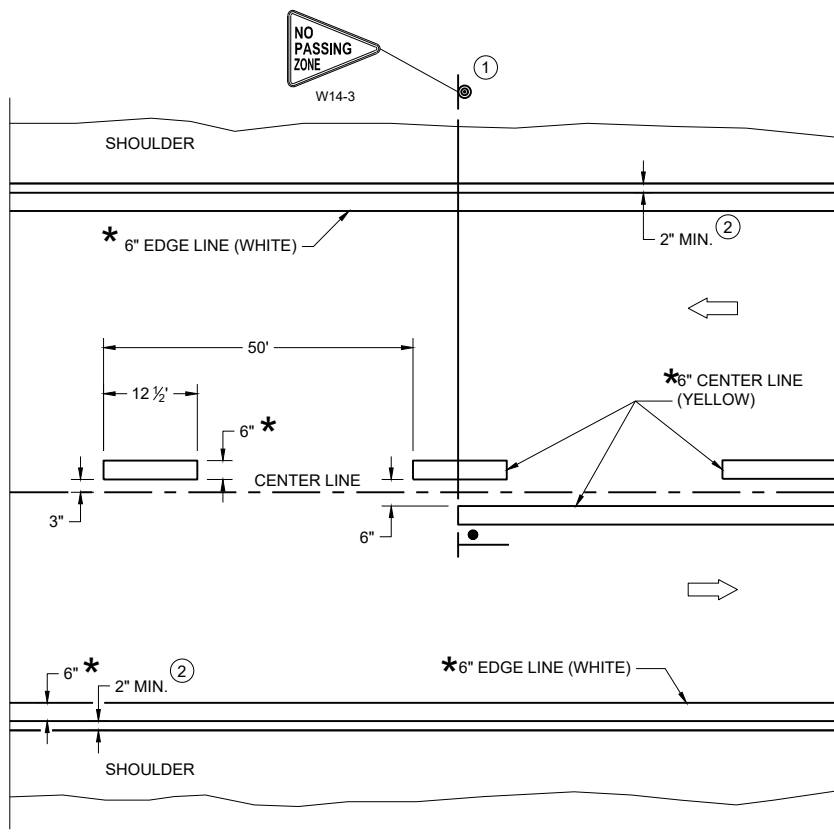
DISTANCE TABLE

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

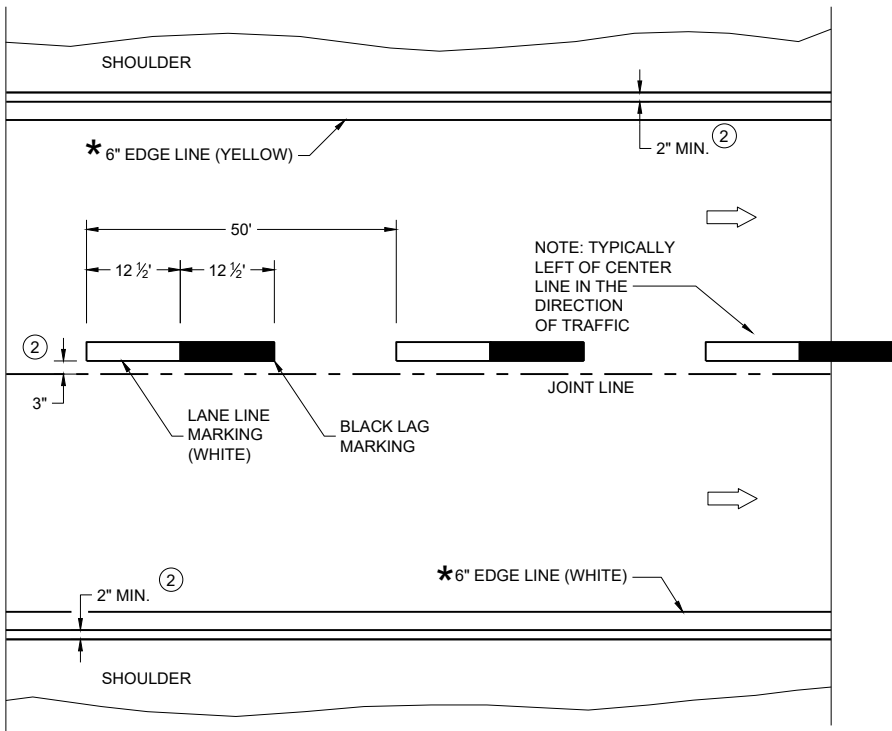
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

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

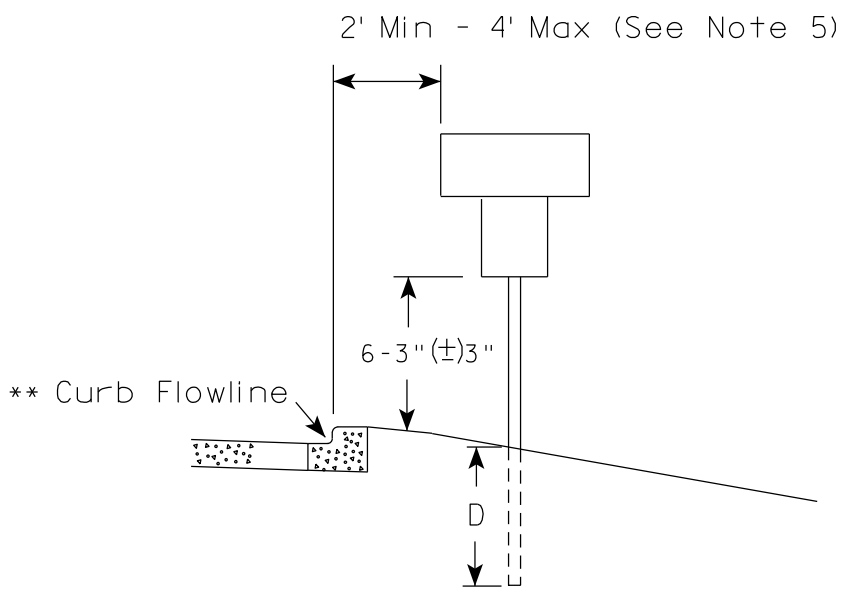
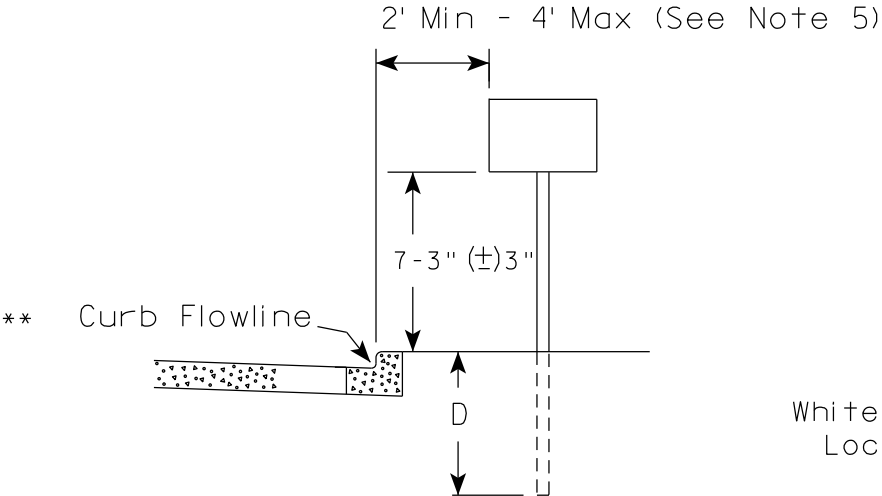
- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

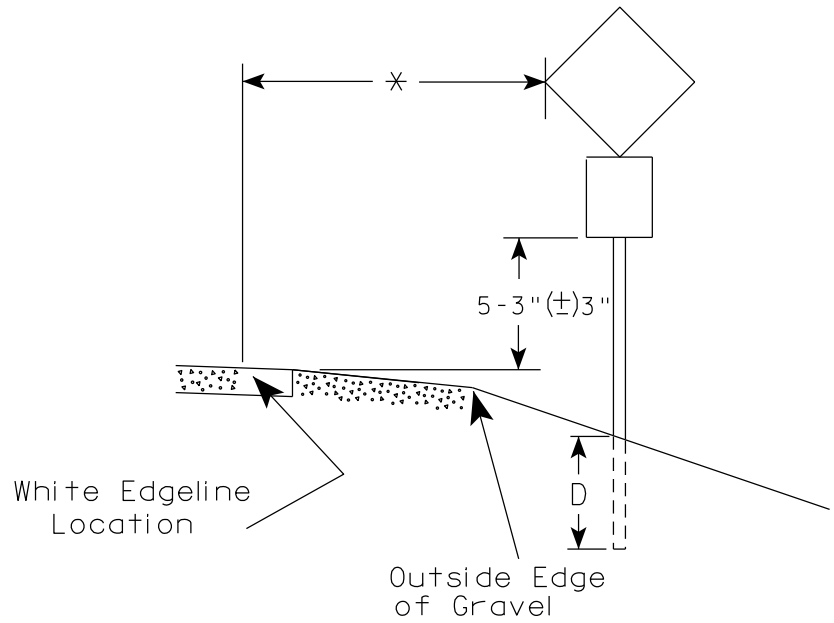
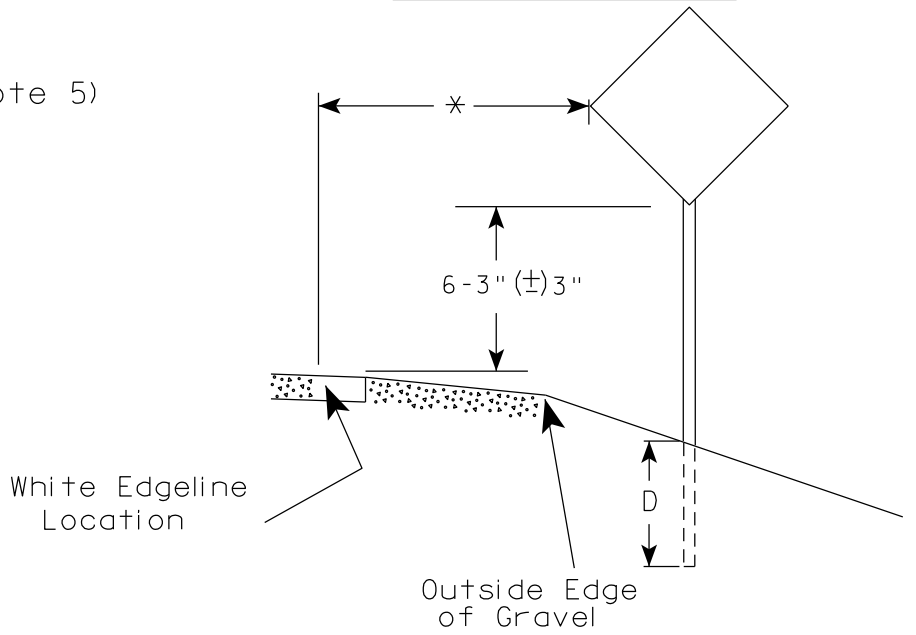
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver 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.

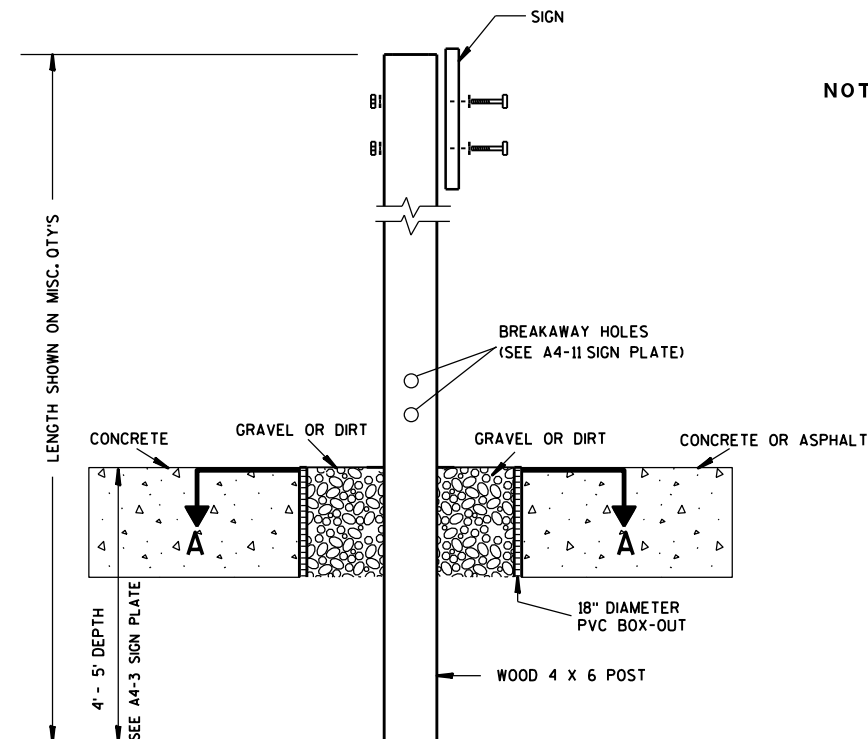
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

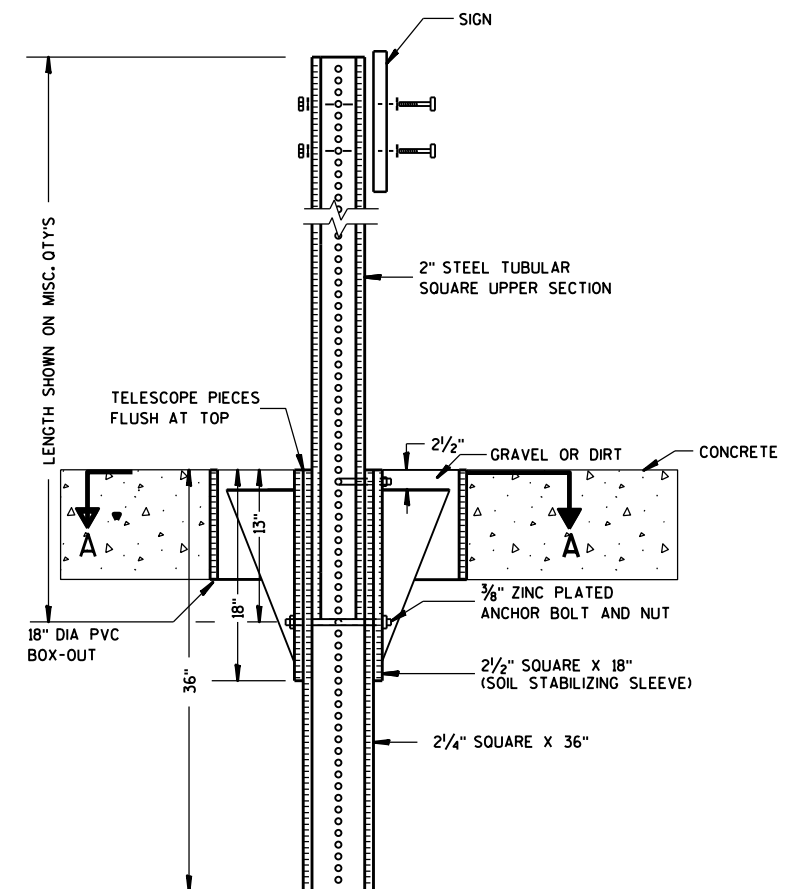
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

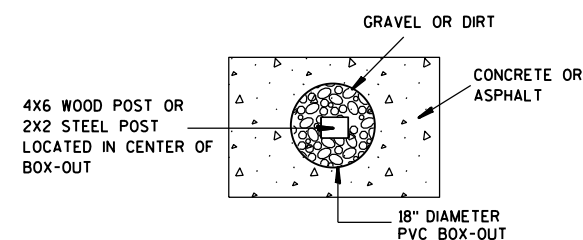
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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:

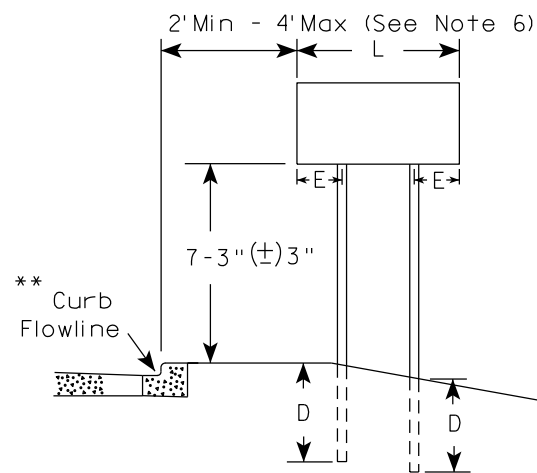
HWY:

COUNTY:

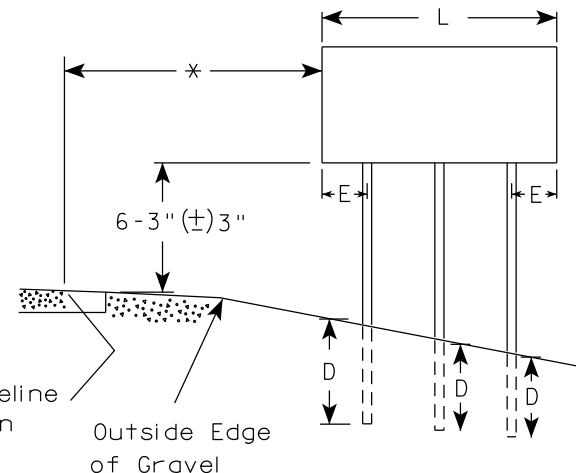
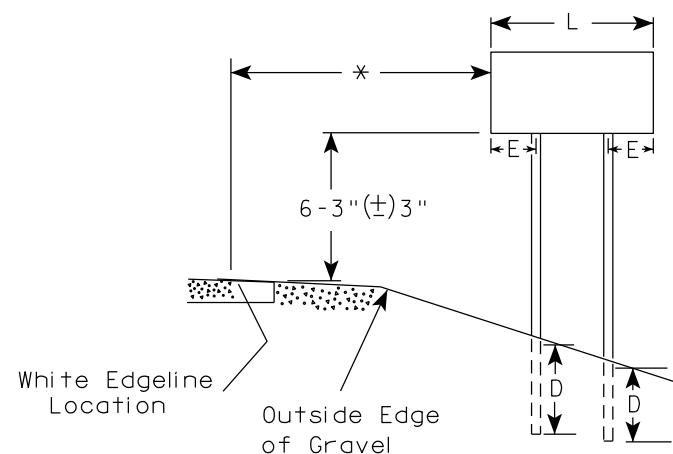
SHEET NO:

E

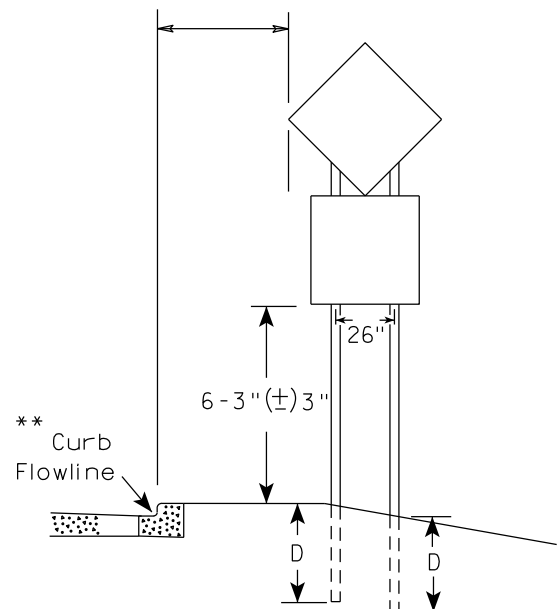
URBAN AREA



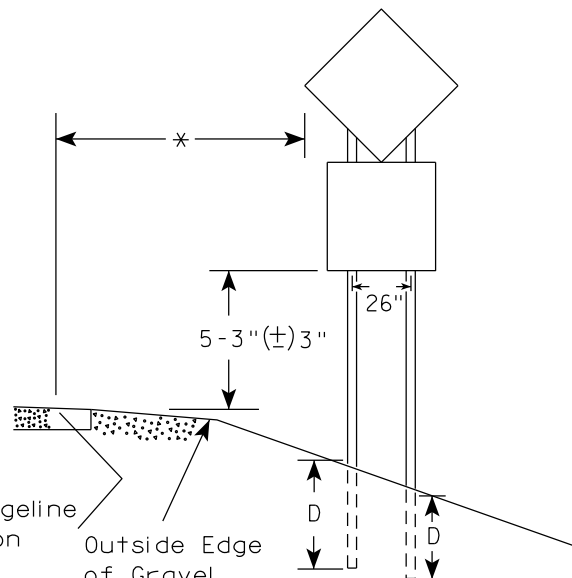
RURAL AREA (See Note 3)



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

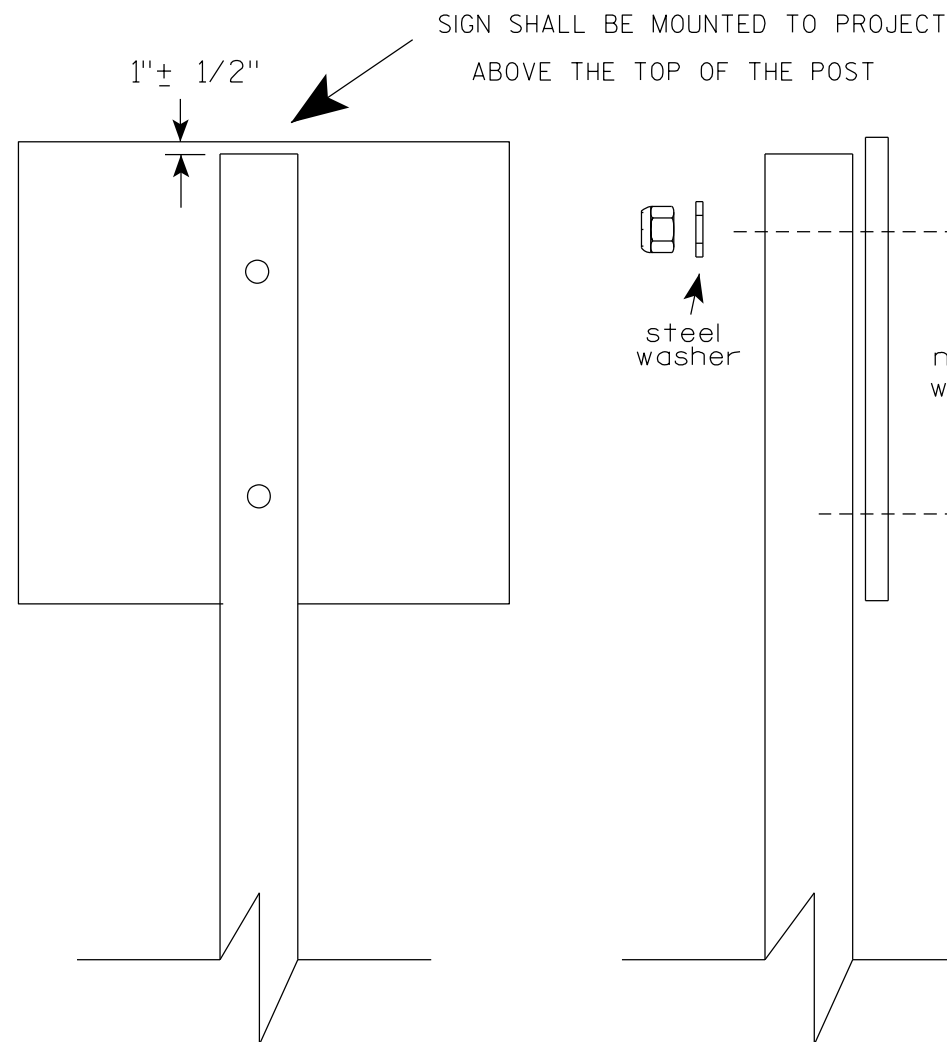
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

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



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.

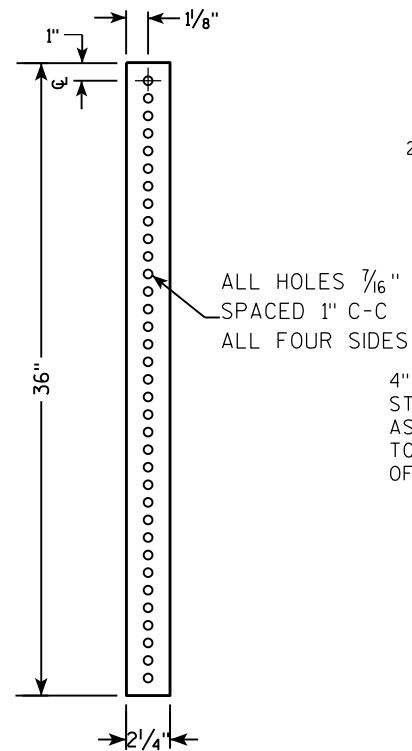
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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**



LENGTH SHOWN ON MISC. QTY'S
 18" DIA SCHEDULE 40 PVC BOX-OUT
 TELESCOPE PIECES FLUSH AT TOP
 36"
 18"
 13"
 2 1/2"
 2 1/4" SQUARE X 36"
 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 3/8" ZINC PLATED ANCHOR BOLT AND NUT
 2 1/2" GRAVEL OR DIRT
 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT
 ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES
 2" STEEL TUBULAR SQUARE UPPER SECTION
 SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 SIGN

LENGTH SHOWN ON MISC. QTY'S

SIGN

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

TELESCOPE PIECES FLUSH AT TOP

1"

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

2 $\frac{1}{2}$ " SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 $\frac{1}{4}$ " SQUARE X 36"

36"

18"

12"

A

B

DIRECTION
OF TRAFFIC

SECTION A-A

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

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:

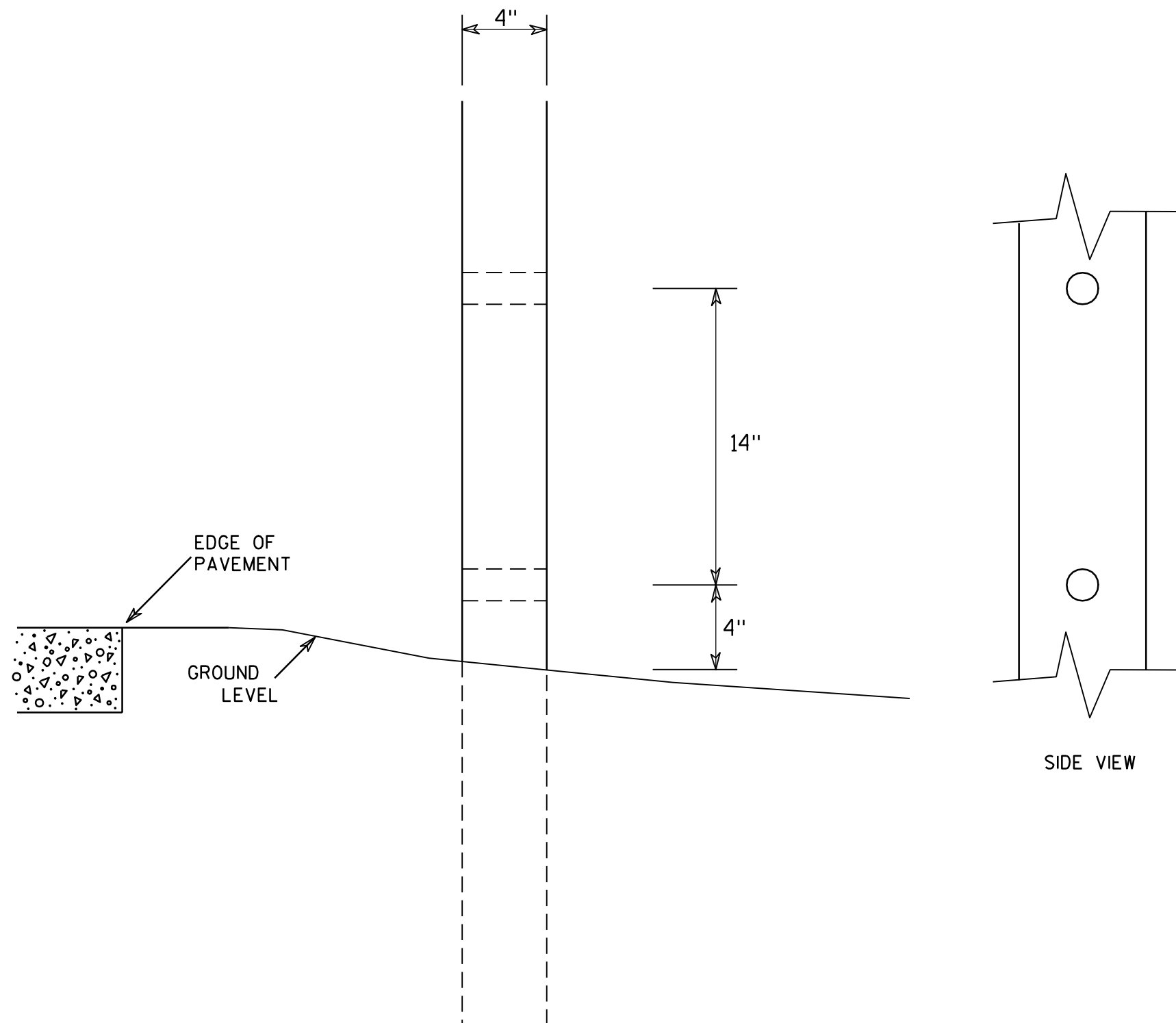
HWY:

COUNTY:

SHEET NO:

11

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

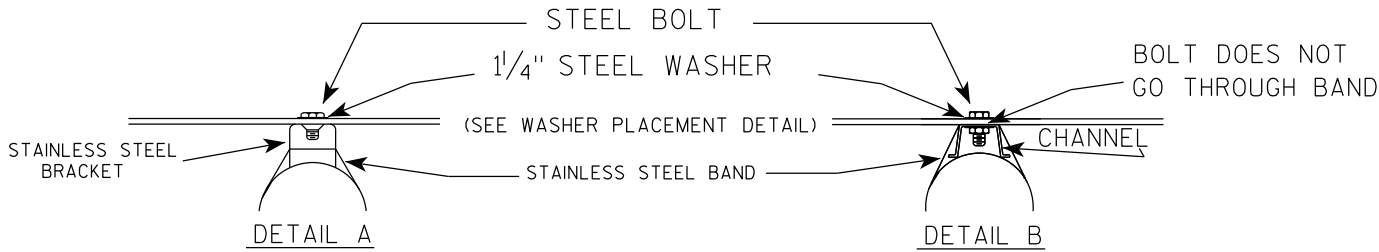
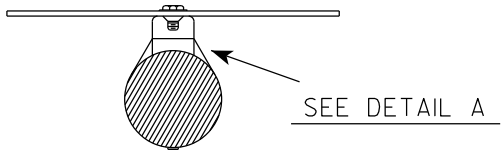
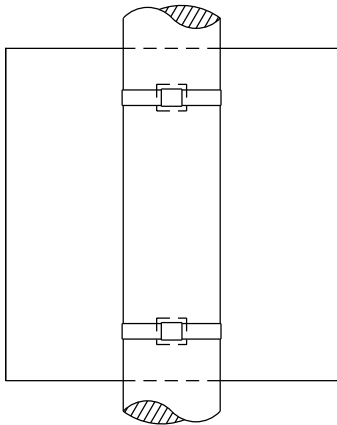
COUNTY:

SHEET NO:

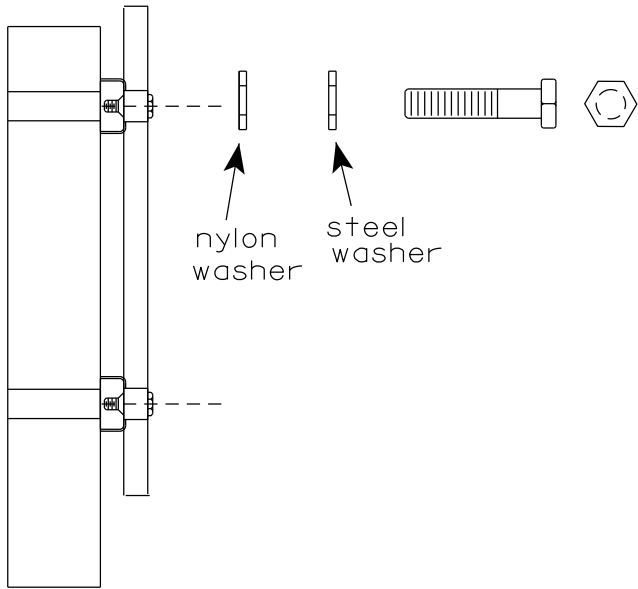
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

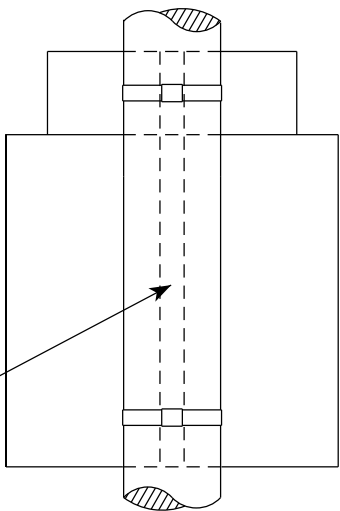


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

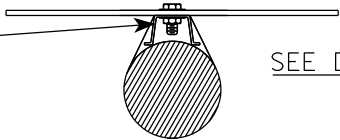
GENERAL NOTES

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

"J" ASSEMBLY



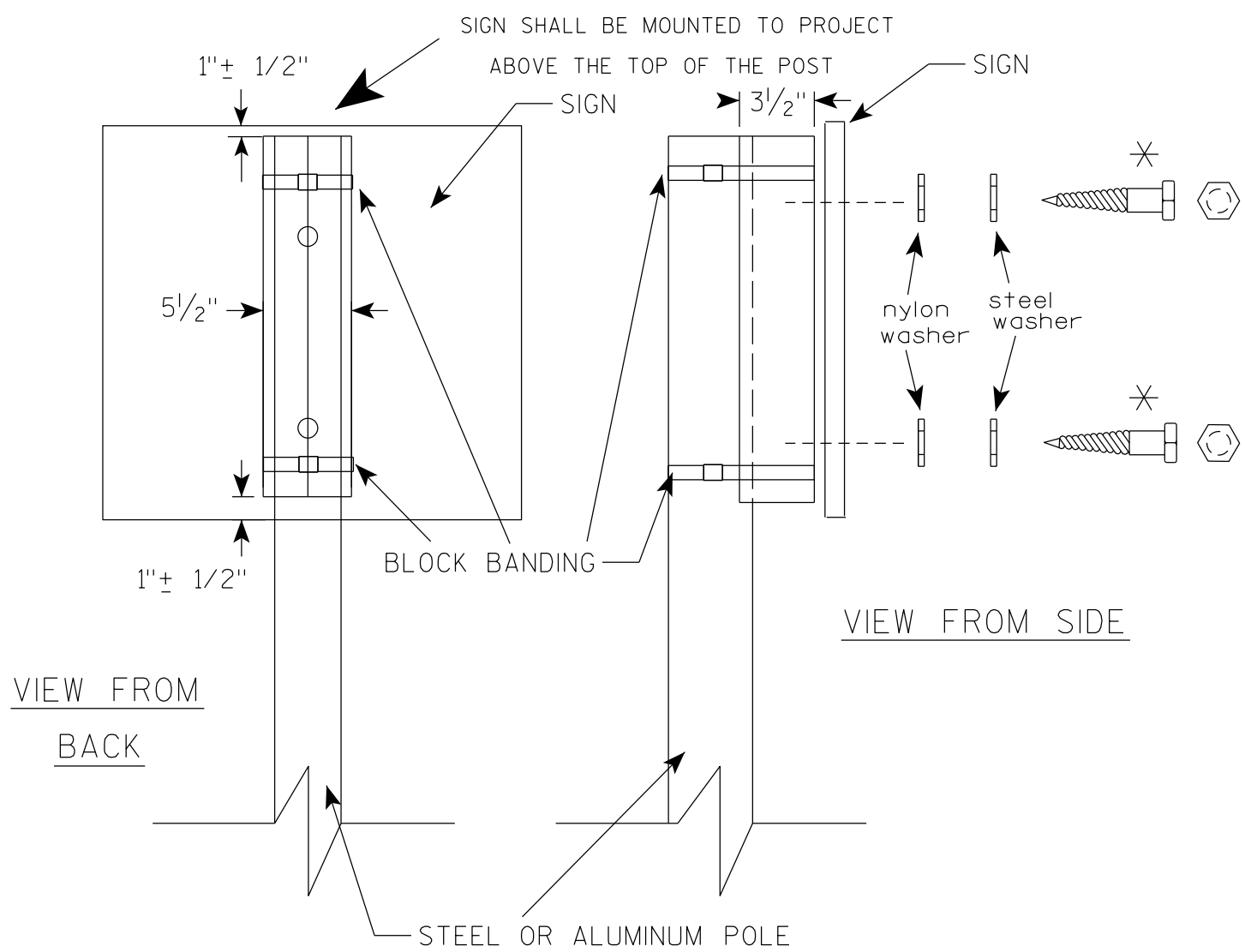
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

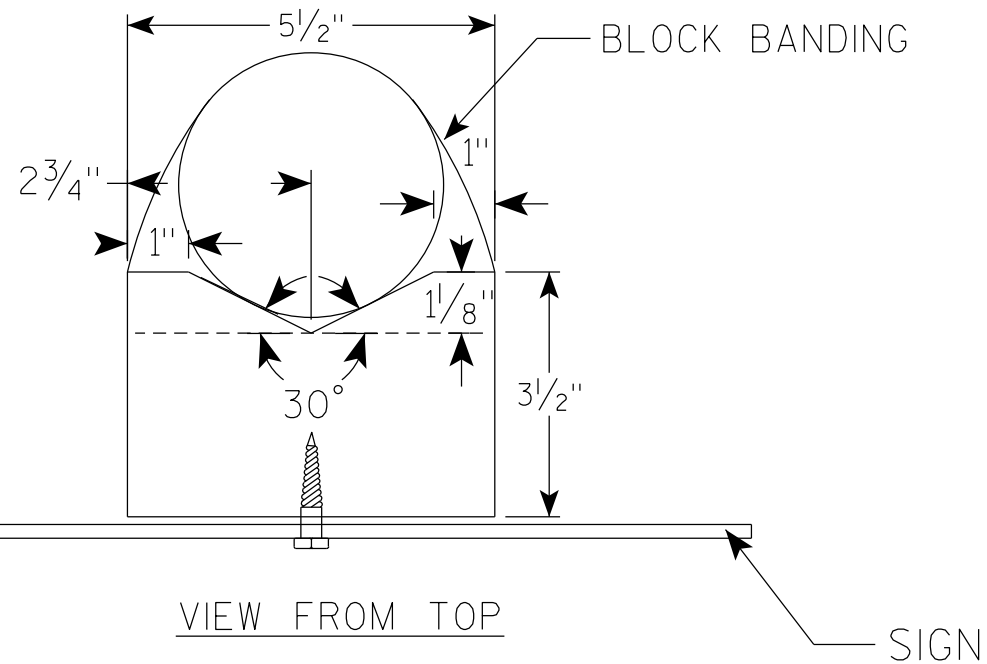
WISCONSIN DEPT OF TRANSPORTATION

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



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

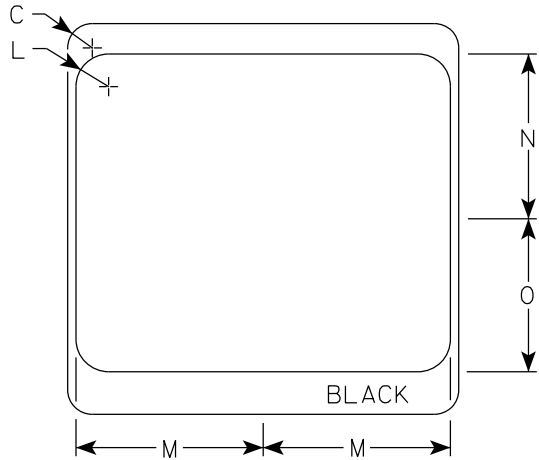
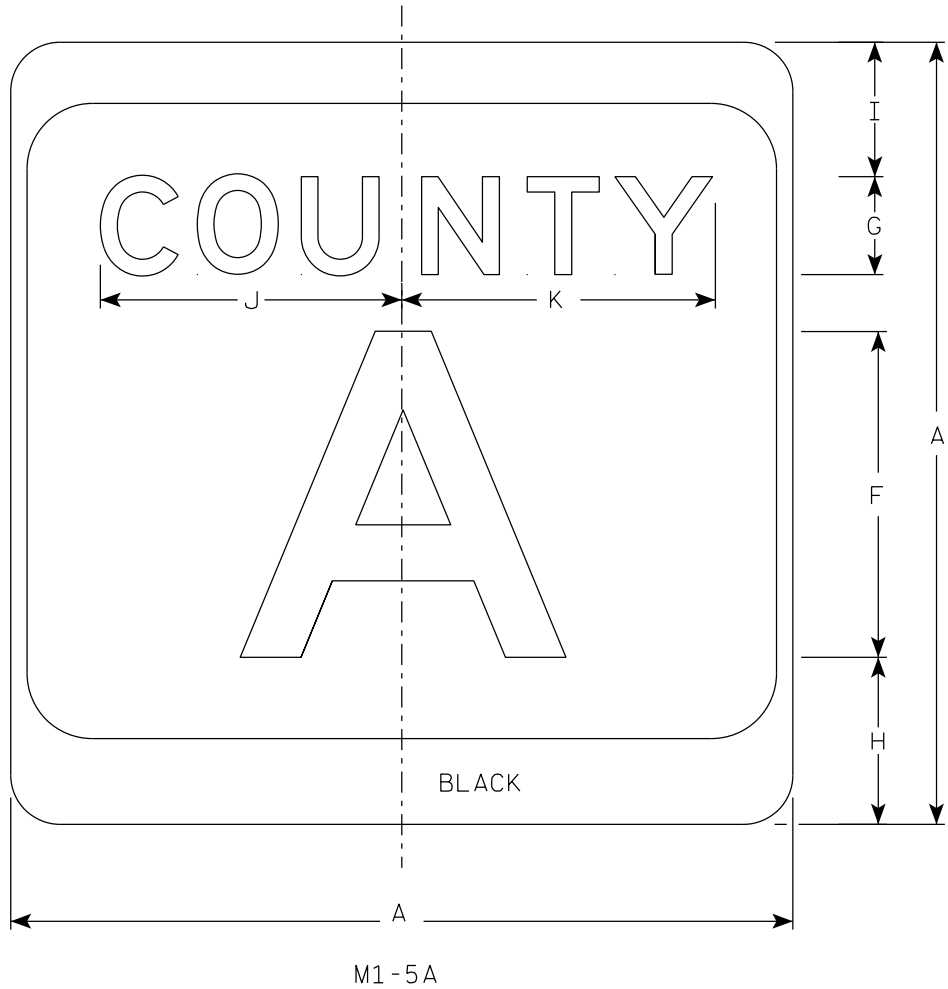
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO:

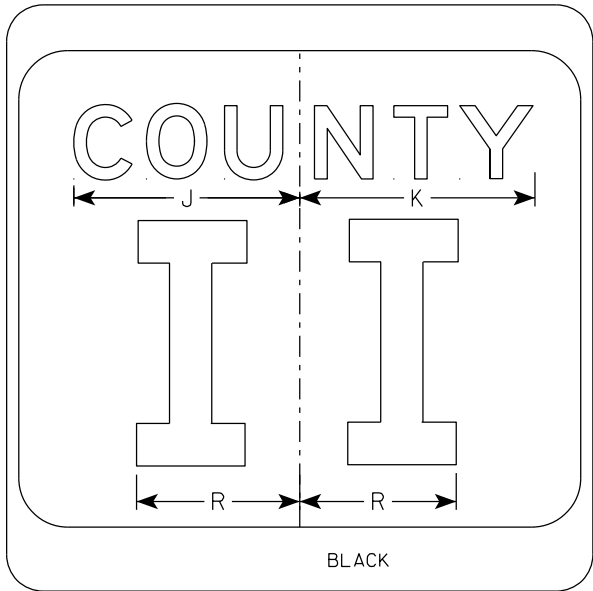
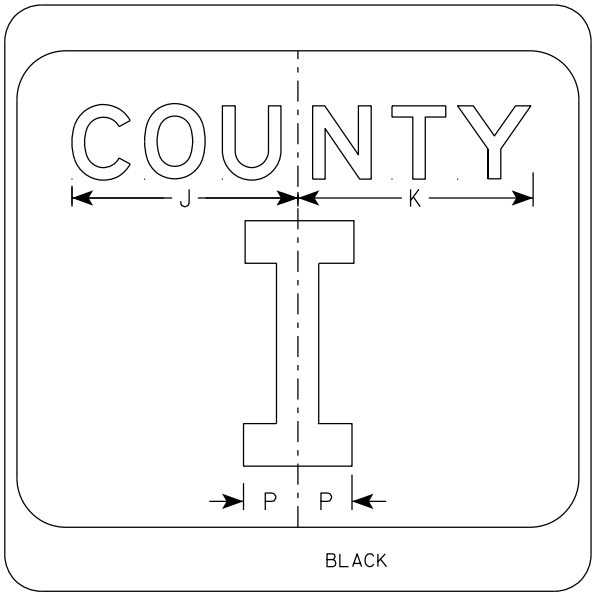
E

7



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White & Black
Message - Black
3. Message Series - see Note 4
4. Message Series E for 1 letter.
Message Series D for 2 letters unless
message is too big then Series C.
Message Series C for 3 letters unless
message is too big then Series B.
5. Substitute appropriate letters & optically
center to achieve proper balance.



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																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
2M	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

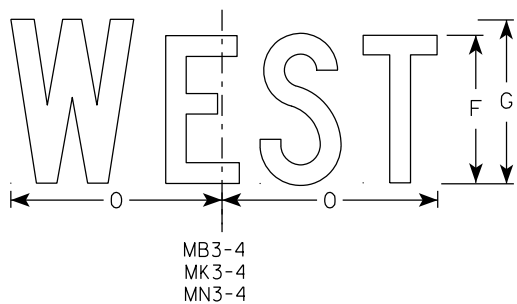
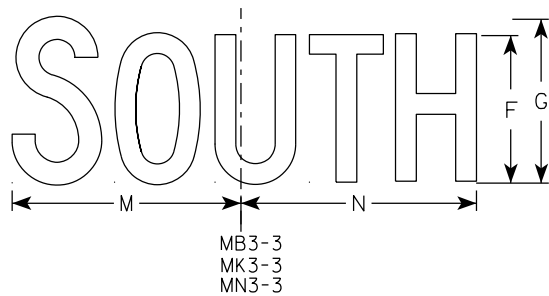
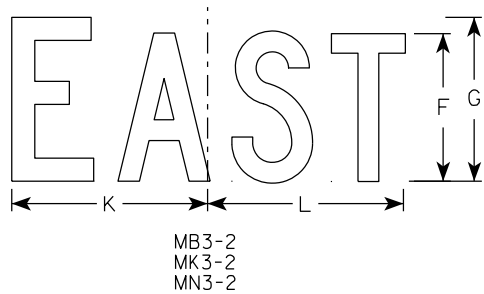
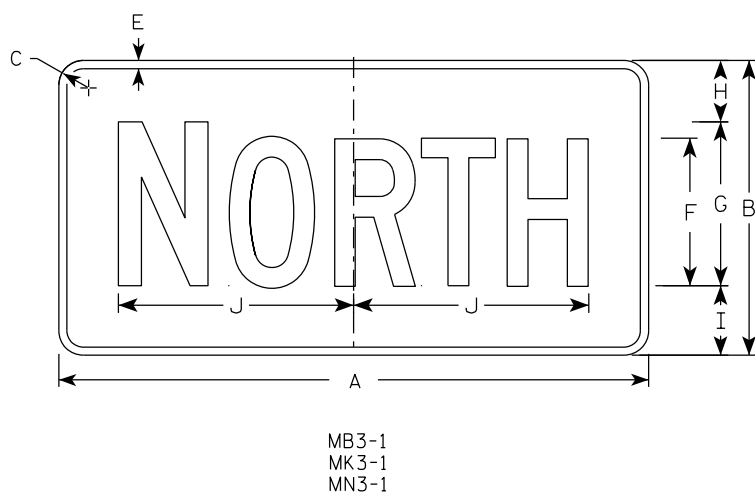
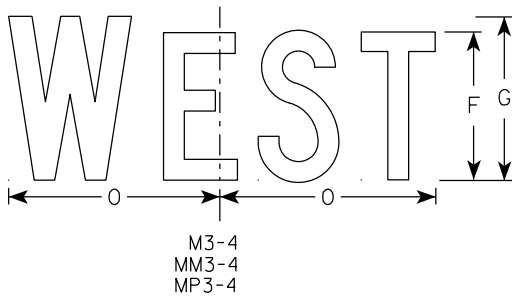
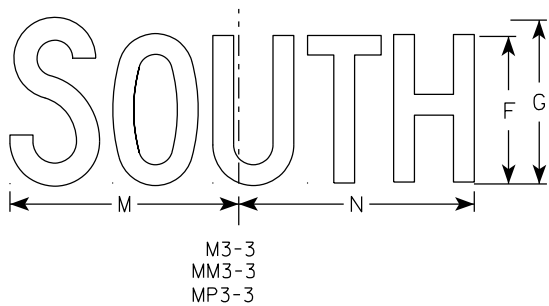
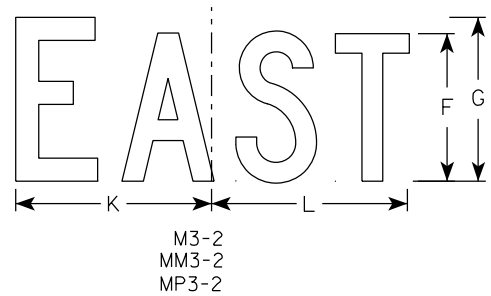
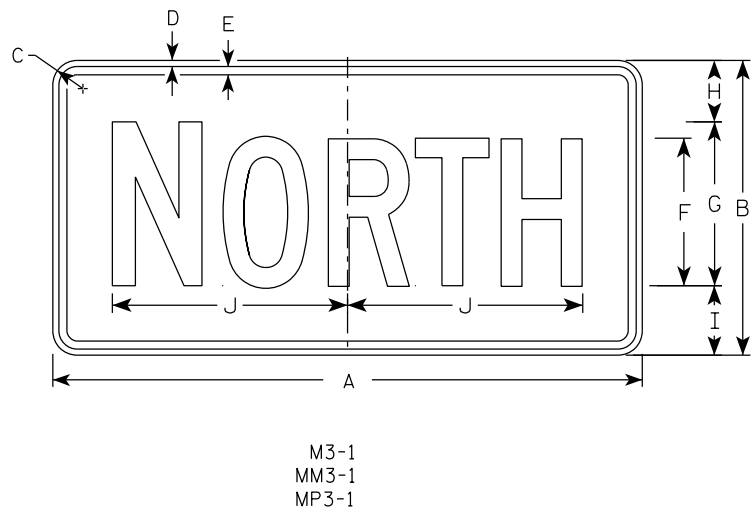
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/8/2022 PLATE NO. M1-5A.9

7



NOTES

1. All Signs Type II - Type H Reflective
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

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	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
2M	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
3	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
4	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
5	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5

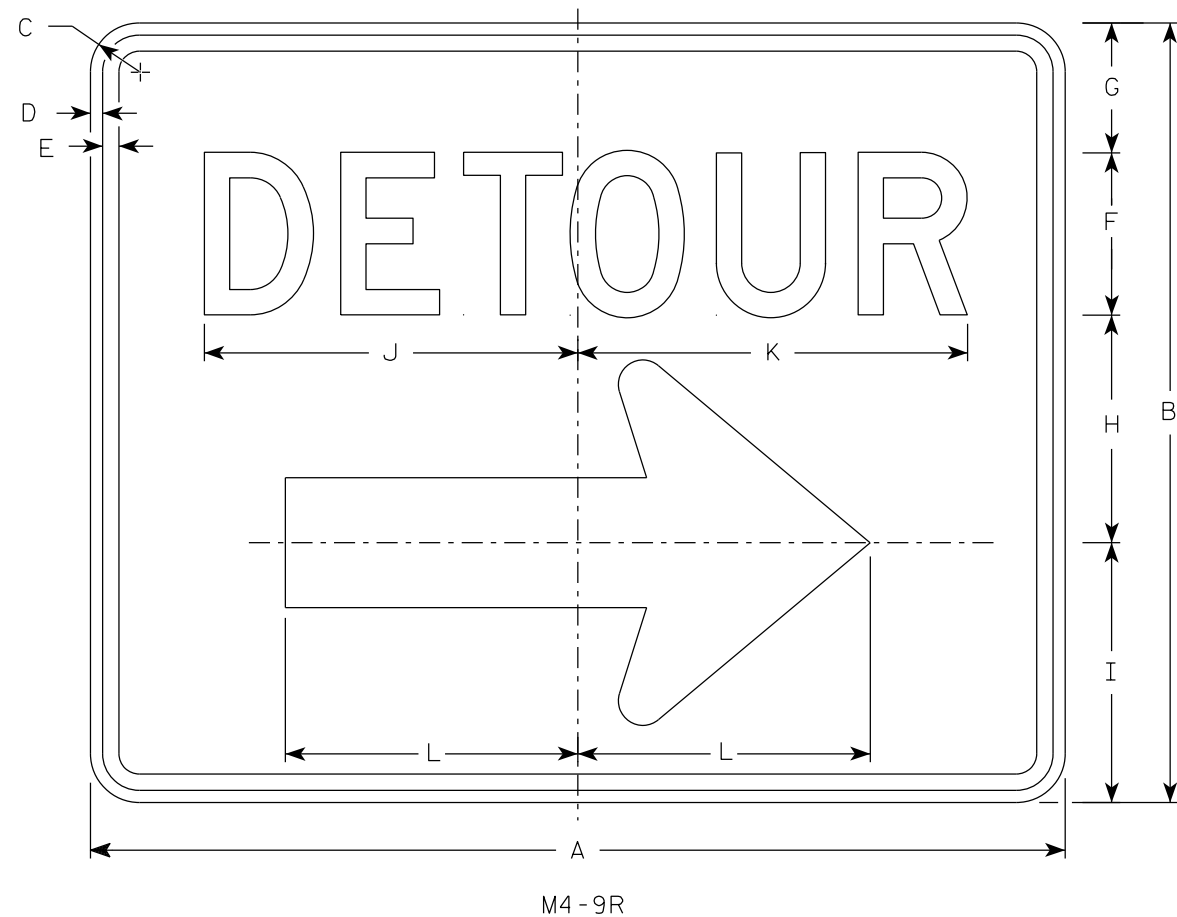
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGNS
M3-1 THRU M3-4
SERIES

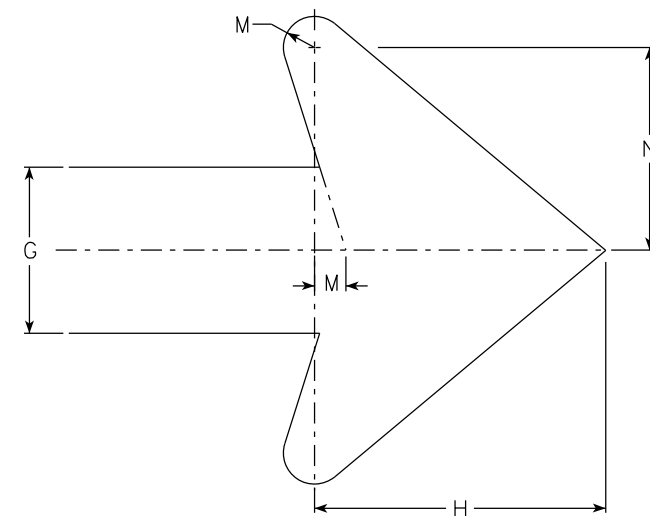
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/8/2023 PLATE NO. M3-1.15



- NOTES
1. Sign is Type II - Type F Reflective
 2. Color:
Background - Orange
Message - Black
 3. Message Series - D
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 4. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

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																											
2	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
2M	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 7/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 7/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

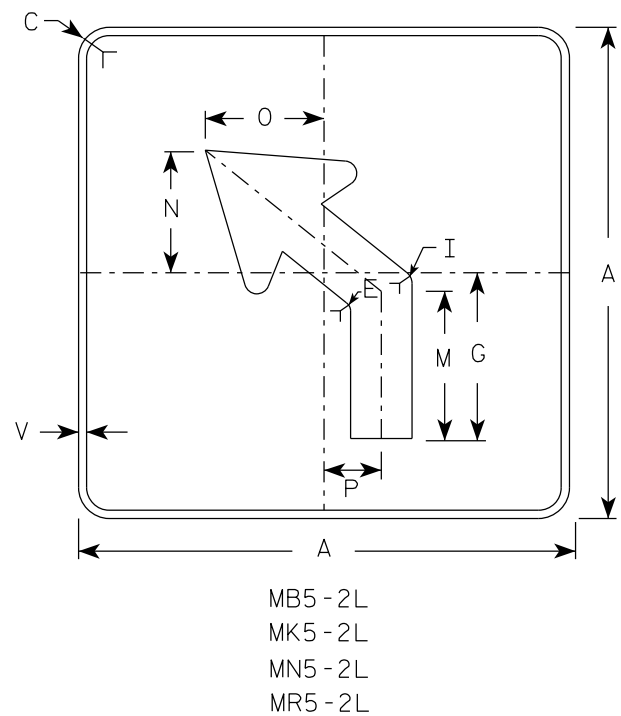
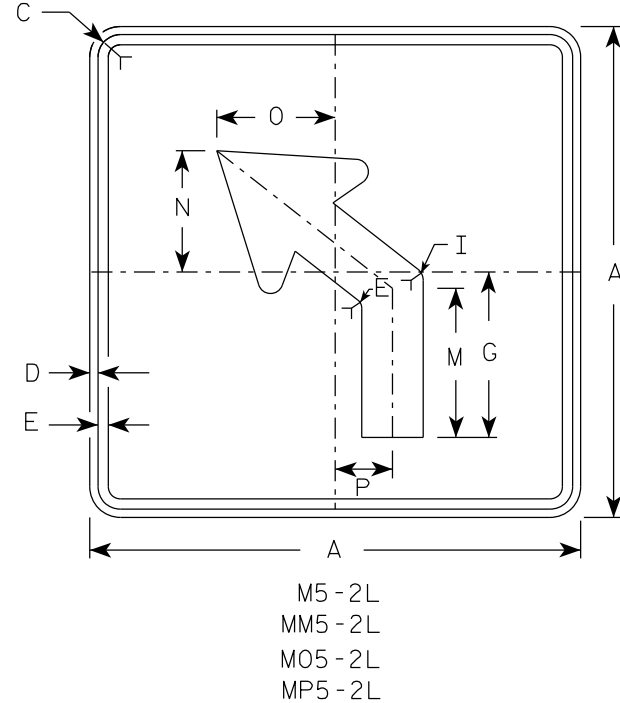
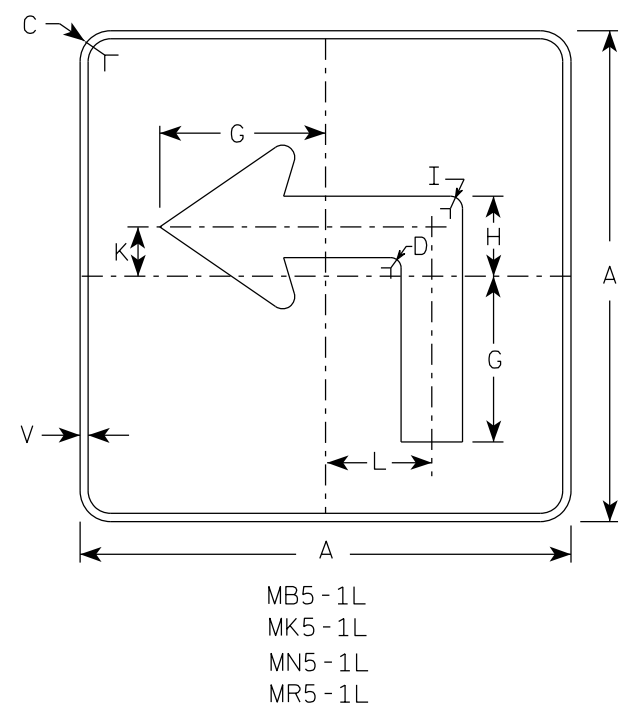
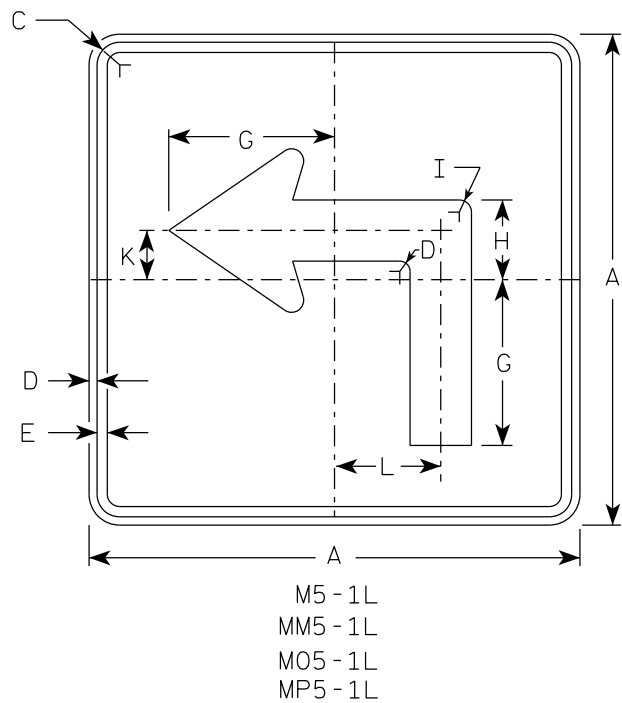
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-9R.6

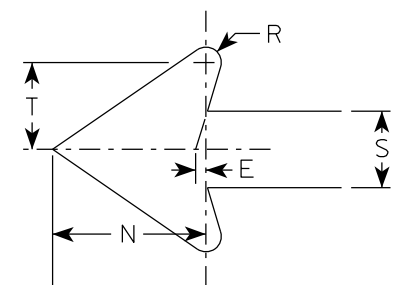
PROJECT NO: HWY: COUNTY: SHEET NO: **E**



NOTES

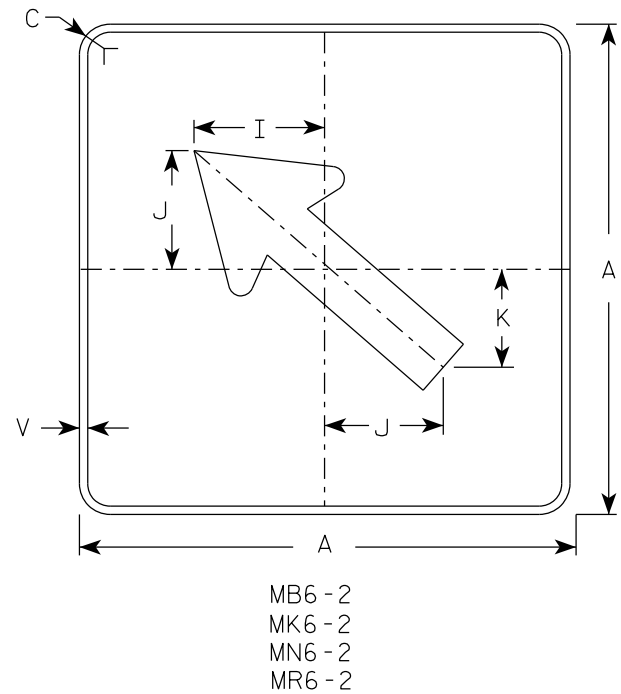
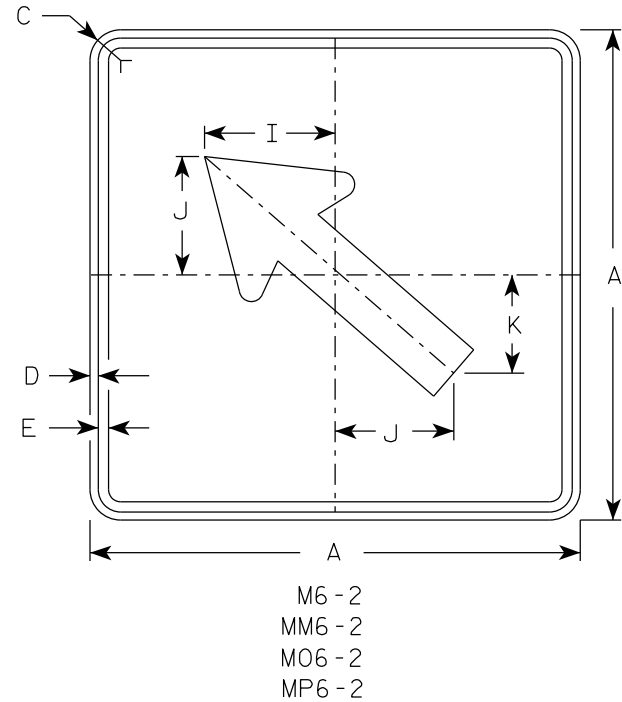
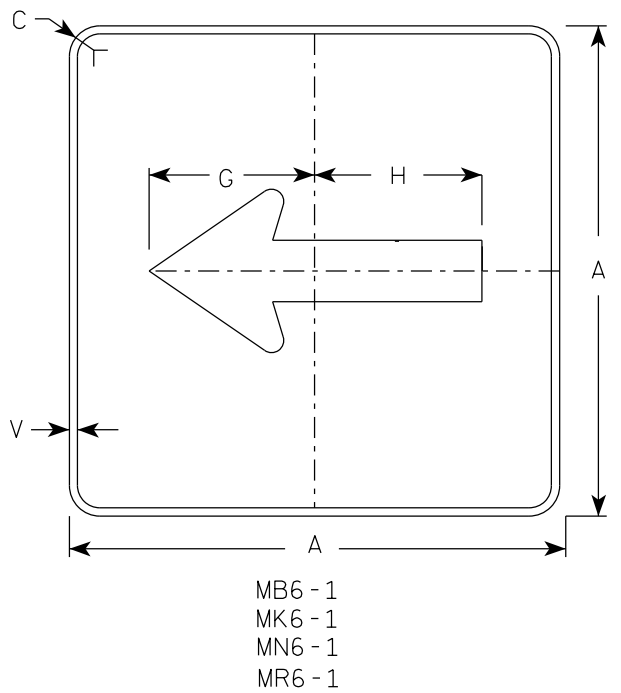
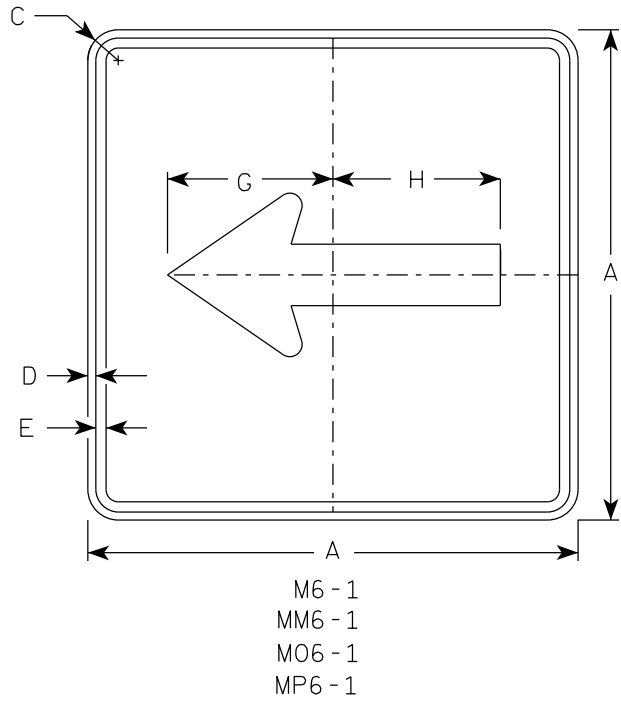
- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | | |
|-----------|-------|---|
| M5-1 and | M5-2 | Background - White |
| | | Message - Black |
| MB5-1 and | MB5-2 | Background - Blue |
| | | Message - White |
| MK5-1 and | MK5-2 | Background - Green |
| | | Message - White |
| MM5-1 and | MM5-2 | Background - White |
| | | Message - Green |
| MN5-1 and | MN5-2 | Background - Brown |
| | | Message - White |
| M05-1 and | M05-2 | Background - Orange - Type F Reflective |
| | | Message - Black |
| MP5-1 and | MP5-2 | Background - White |
| | | Message - Blue |
| MR5-1 and | MR5-2 | Background - Brown |
| | | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

ARROW DETAIL

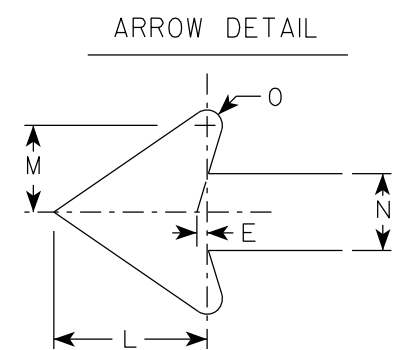


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25
4	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25
5	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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- NOTES
- Signs are Type II - Type H Reflective except as Shown
 - Color:
Background - See note 4
Message - See note 4
 - Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 - M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow



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	21		1 1/2	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2							1/2					3.06
2M	21		1 1/2	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2							1/2					3.06
3	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2					6.25
4	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2					6.25
5	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2					6.25

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

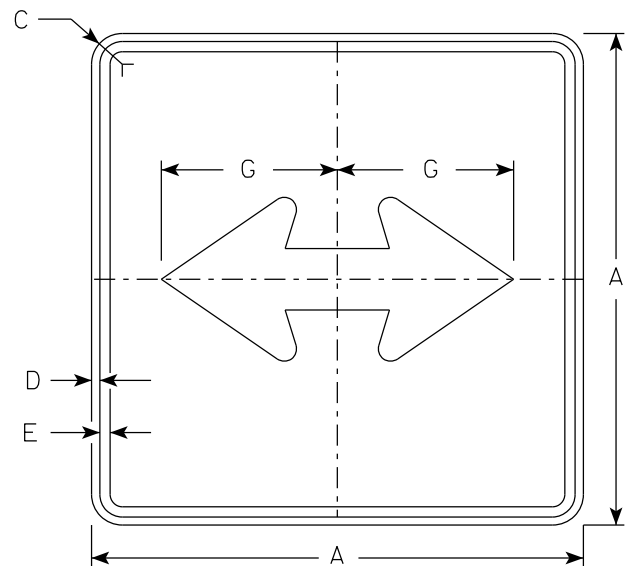
E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

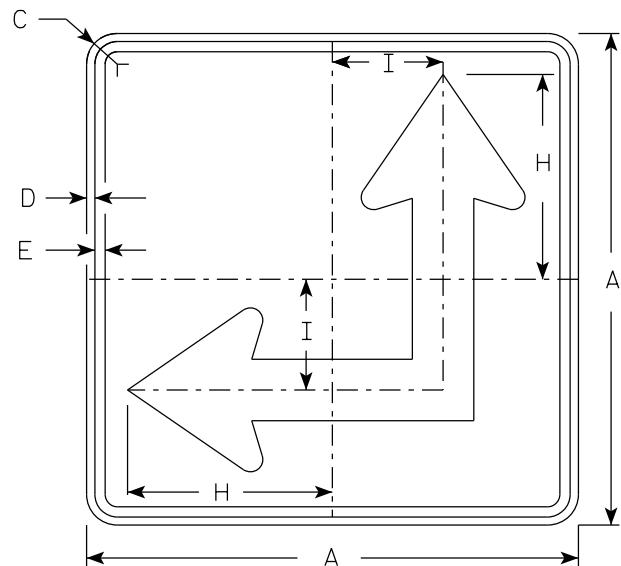
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

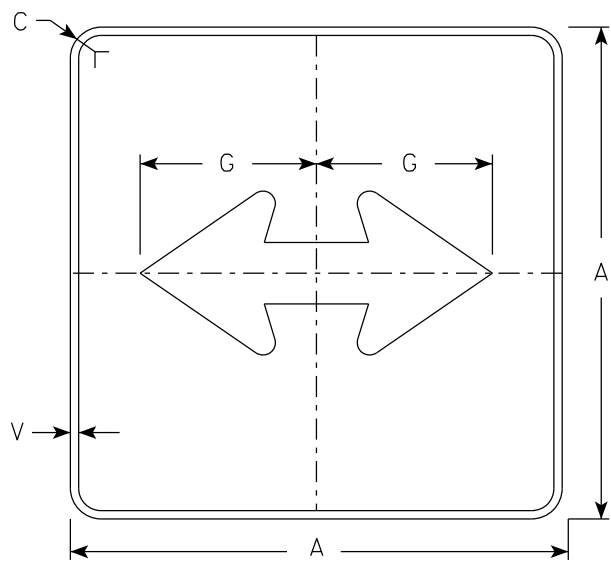
DATE 2/13/2023 PLATE NO. M6-1.16



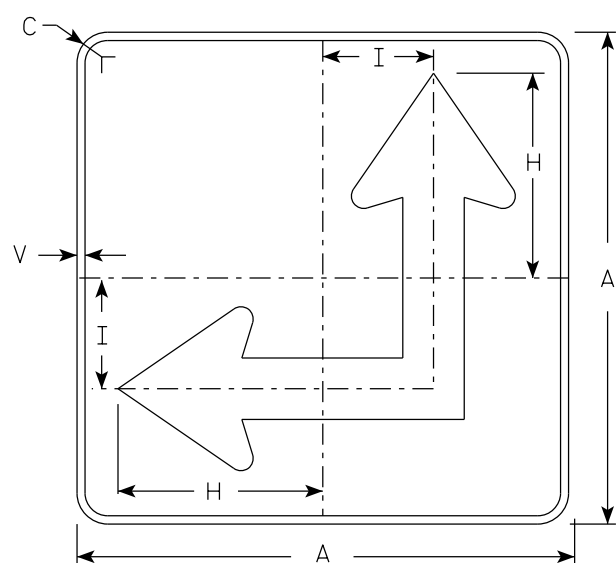
M6 - 4
MM6 - 4
M06 - 4
MP6 - 4



M6 - 6
MM6 - 6
M06 - 6
MP6 - 6



MB6 - 4
MK6 - 4
MN6 - 4
MR6 - 4

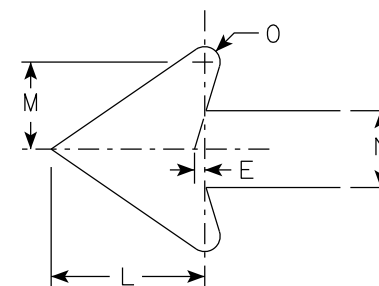


MB6 - 6
MK6 - 6
MN6 - 6
MR6 - 6

NOTES

- Signs are Type II - Type H Reflective except as Shown
- Color:
Background - See Note 4
Message - See Note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-4 and M6-6 Background - White
Message - Black
MB6-4 and MB6-6 Background - Blue
Message - White
MK6-4 and MK6-6 Background - Green
Message - White
MM6-4 and MM6-6 Background - White
Message - Green
MN6-4 and MN6-6 Background - Brown
Message - White
M06-4 and M06-6 Background - Orange - Type F Reflective
Message - Black
MP6-4 and MP6-6 Background - White
Message - Blue
MR6-4 and MR6-6 Background - Brown
Message - Yellow
- M6-6R same as M6-6L except arrow points ahead and right.

ARROW DETAIL



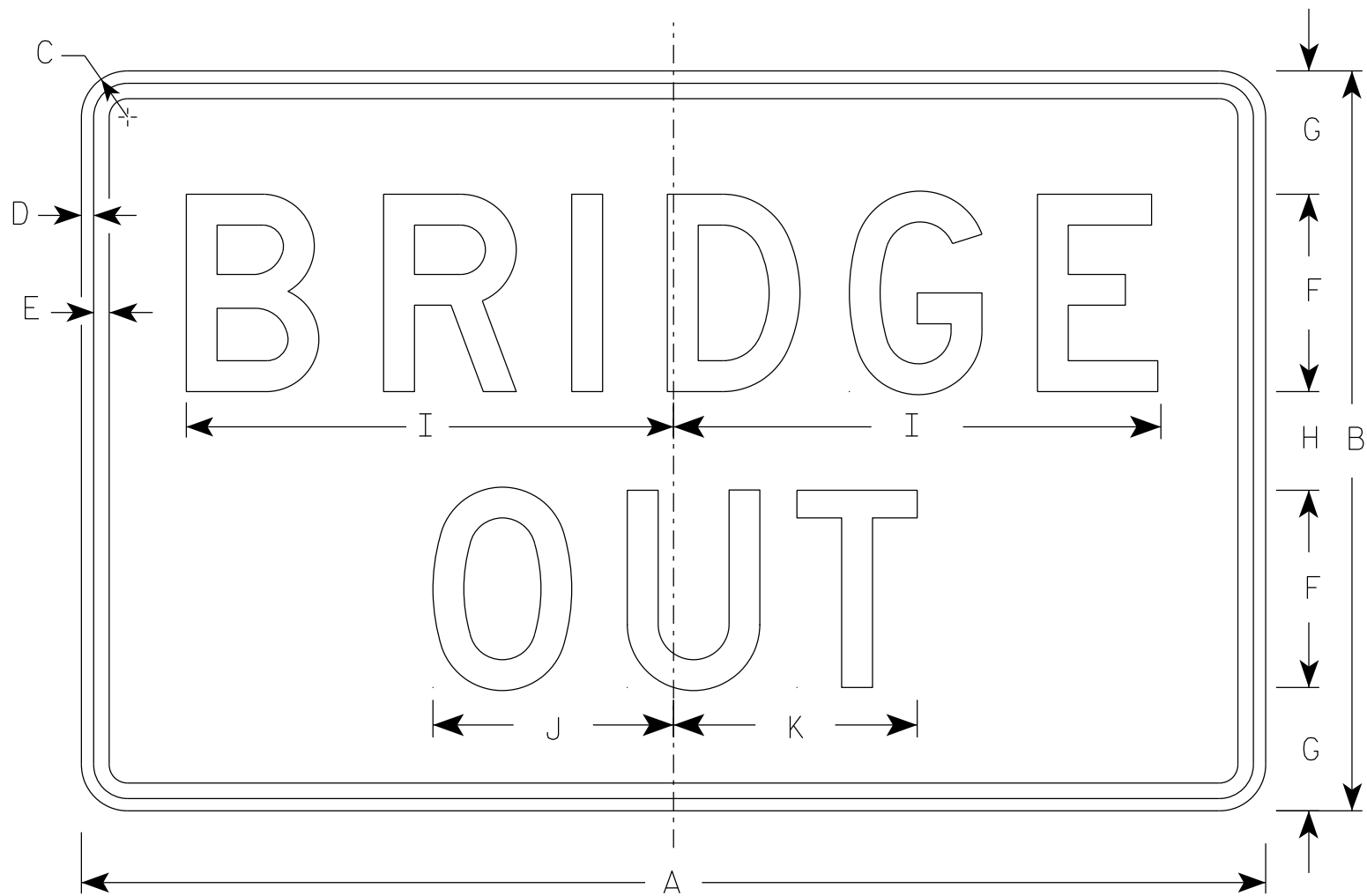
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	
1																												
2S	21		1 1/2	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2							1/2						3.06
2M	21		1 1/2	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2							1/2						3.06
3	30		1 7/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4							1/2						6.25
4	30		1 7/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4							1/2						6.25
5	30		1 7/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4							1/2						6.25

STANDARD SIGN
M6 - 4 & M6 - 6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/13/2023 PLATE NO. M6-4.11



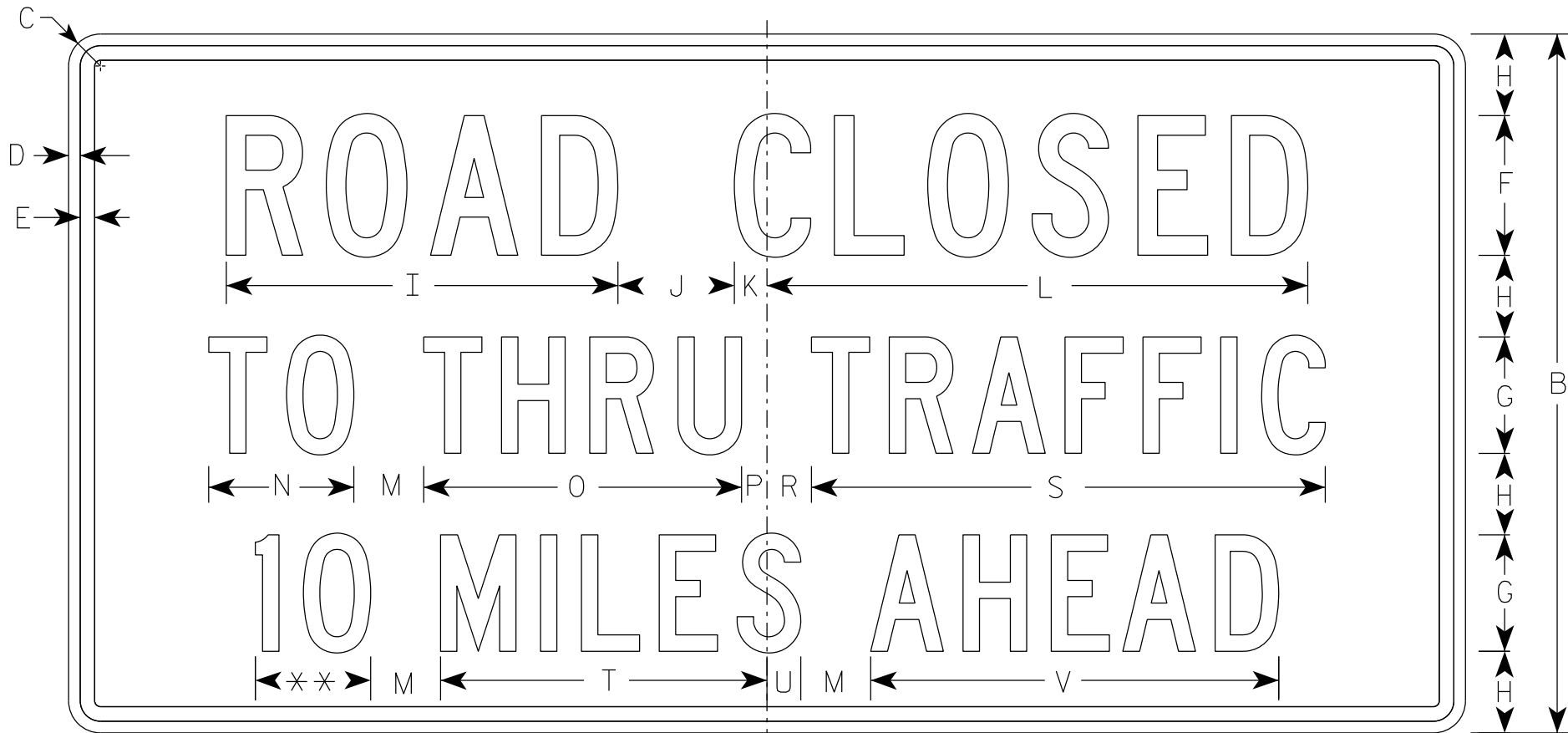
R11-2B

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - Message - Black
- 3. Message Series - D
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

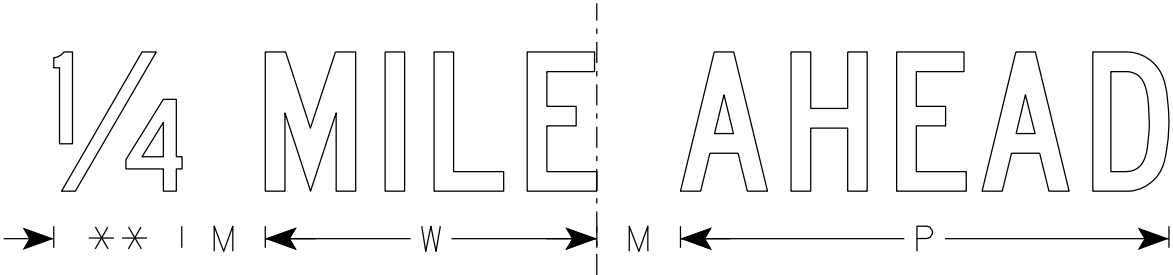
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

7



R11-3

** See Note 5



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/2	3/8	3/8	4	3	2	11 1/4	3	1 1/8	15 3/8	2	3 3/4	8 1/4	5/8		1 3/8	13 1/4	8 3/8	7/8	10 1/2	7 1/8				4.5
2S	60	30	1 7/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5
2M	60	30	1 7/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5
3																											
4																											
5																											

STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

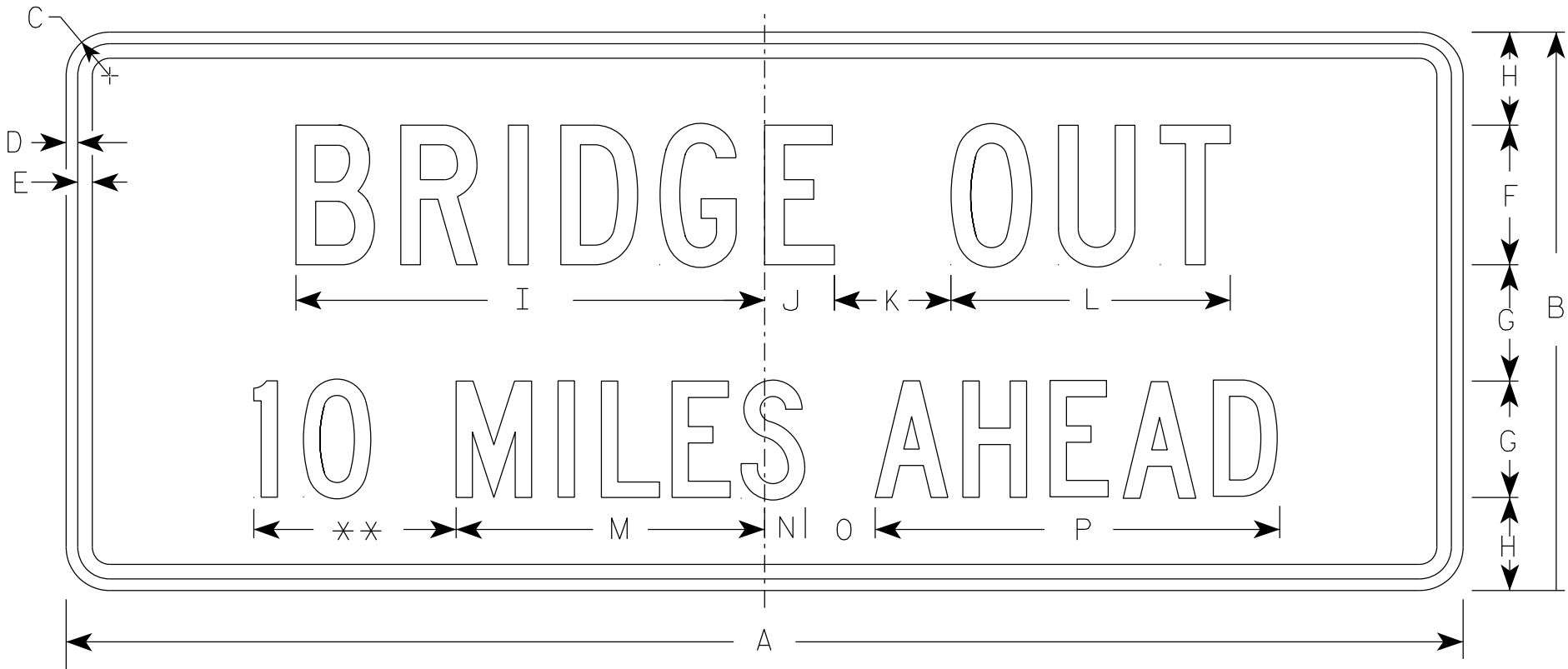
DATE 2/5/24 PLATE NO. R11-3.10

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

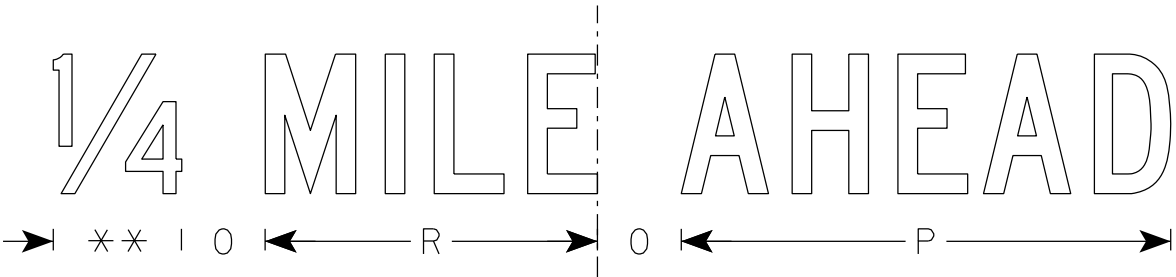
Background - White

Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3C

** See Note 5



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	36	15	1 1/2	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4		7 1/8									3.75
2S	60	24	1 7/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
2M	60	24	1 7/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
3																											
4																											
5																											

STANDARD SIGN
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

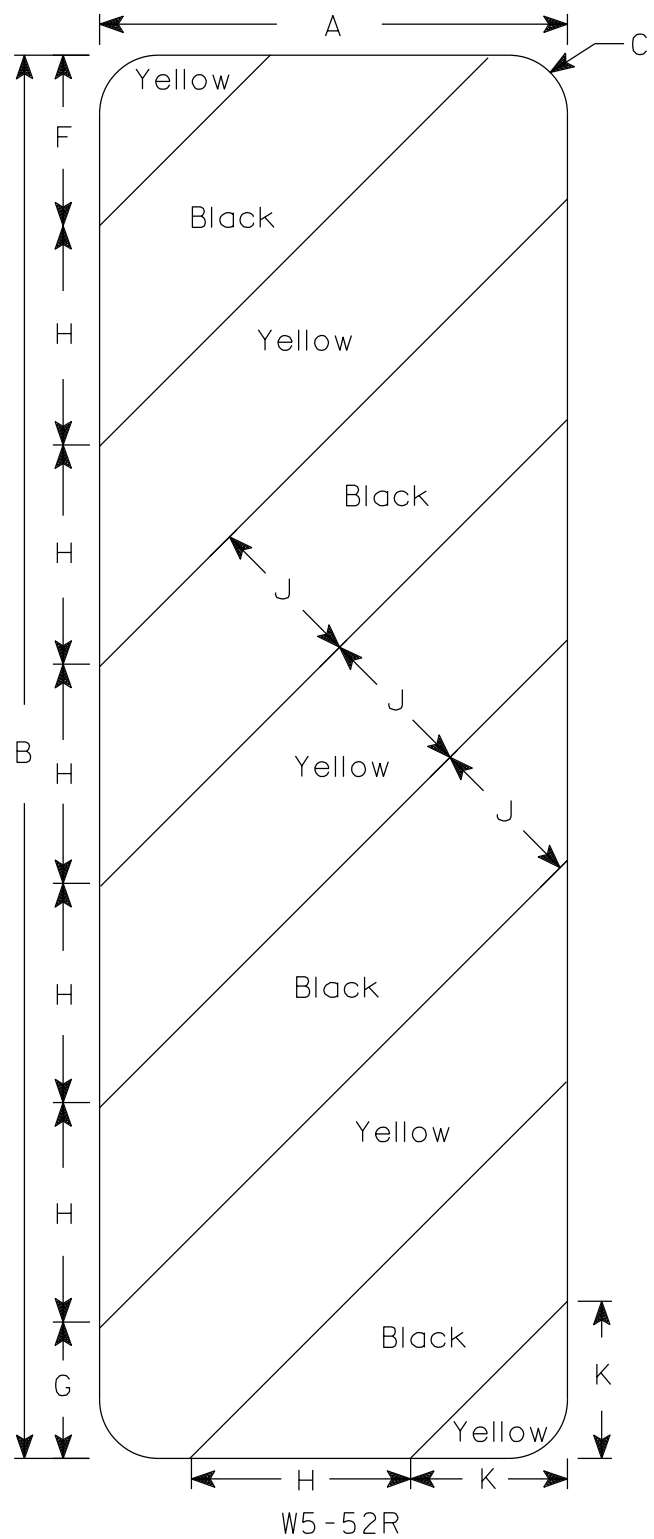
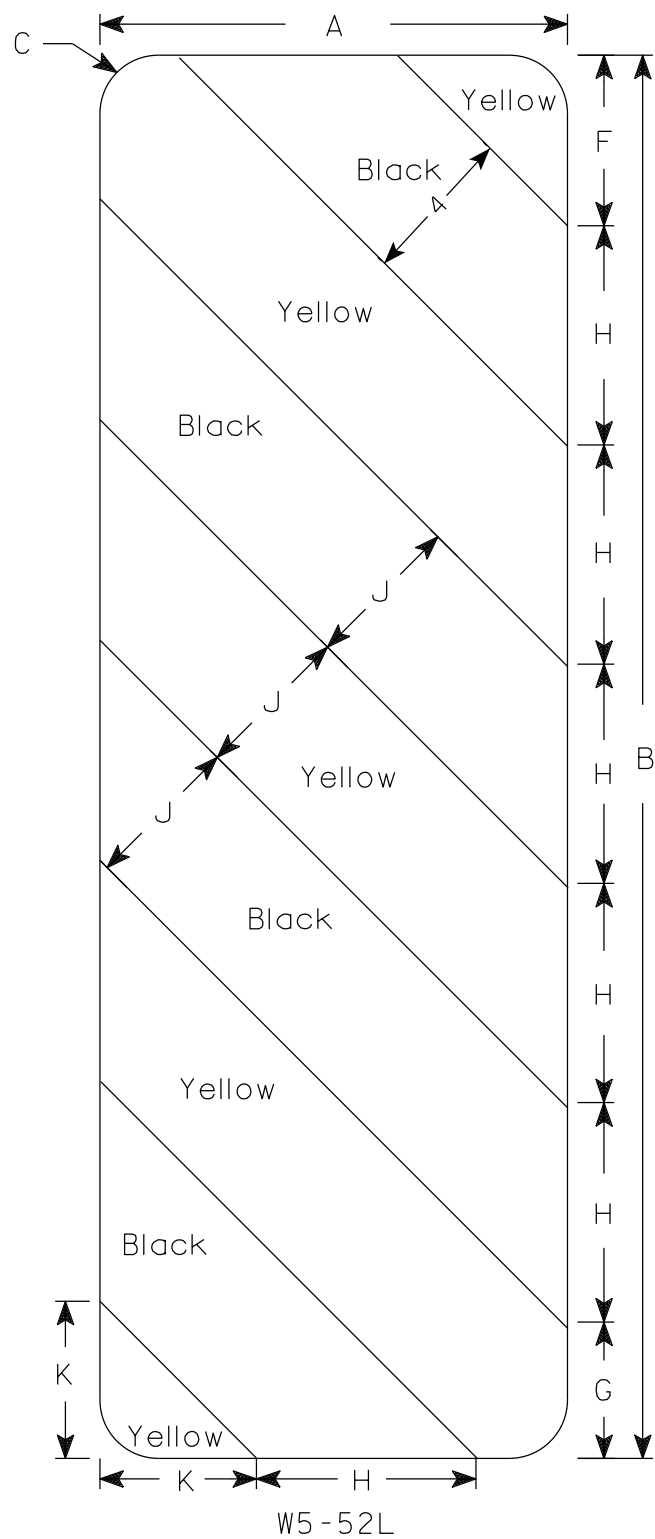
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 2/5/24 PLATE NO. R11-3C.4

PROJECT NO:

SHEET NO:

E



NOTES

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

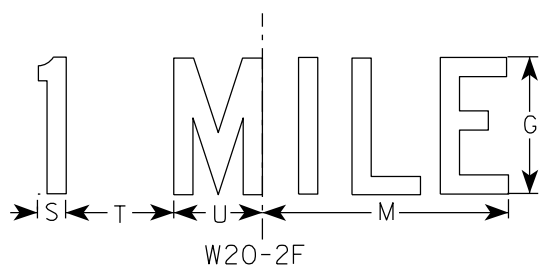
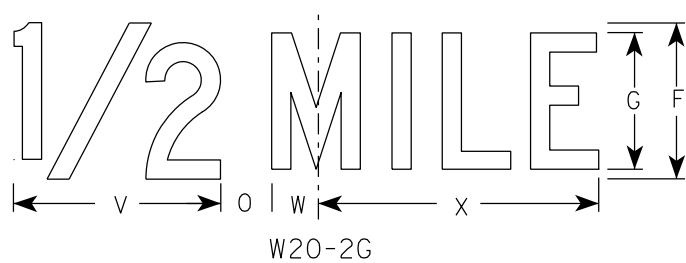
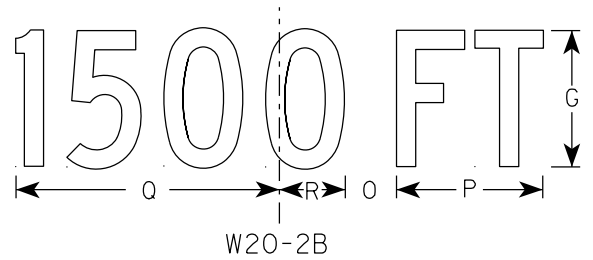
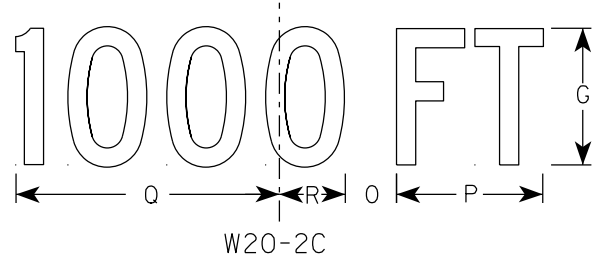
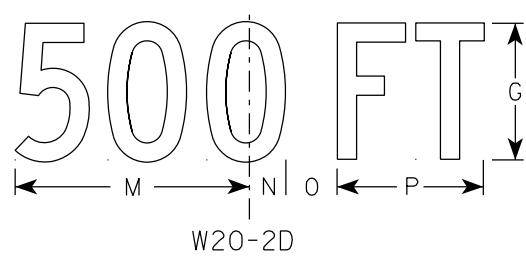
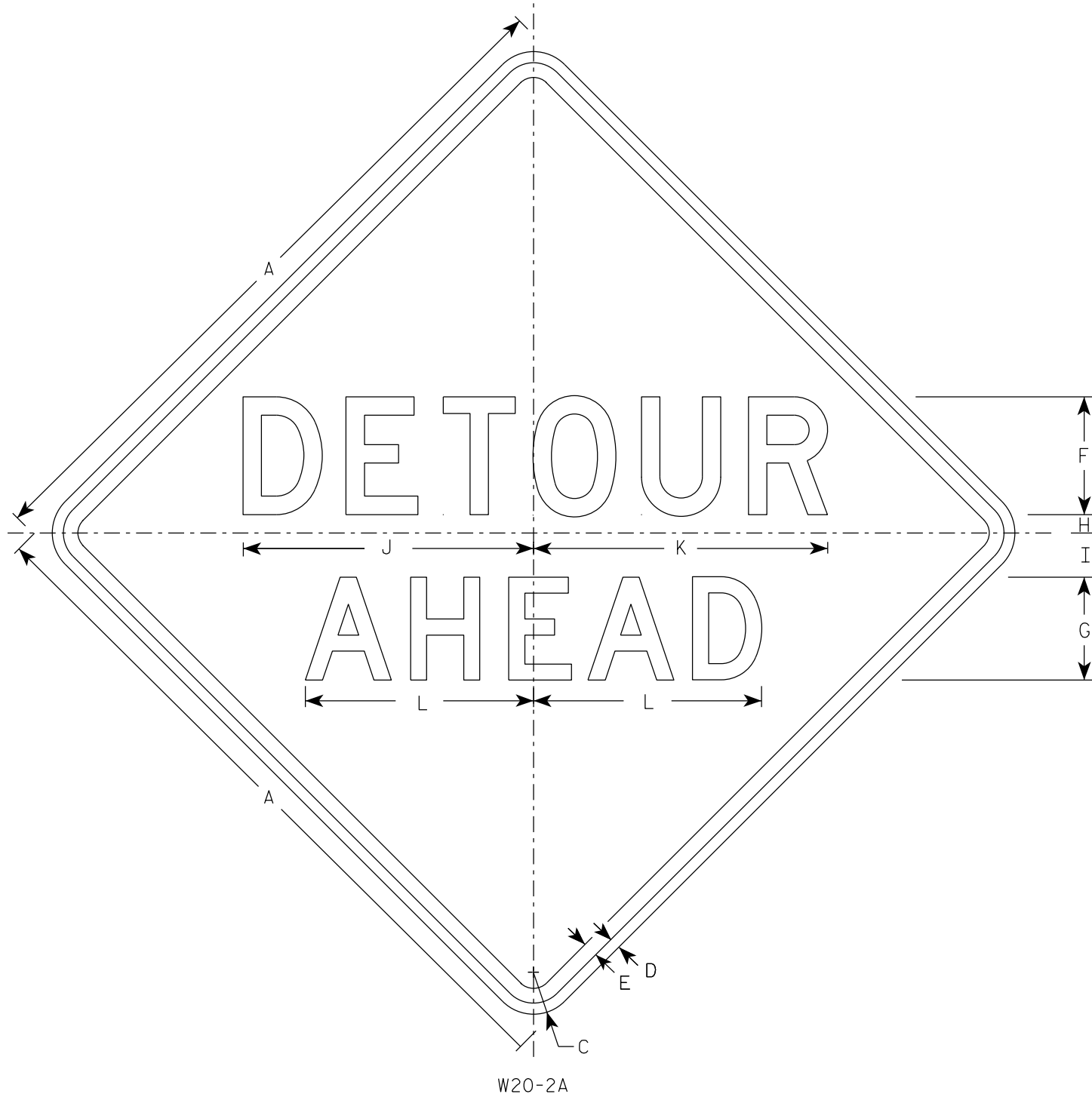
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54	1 1/2			6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4													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



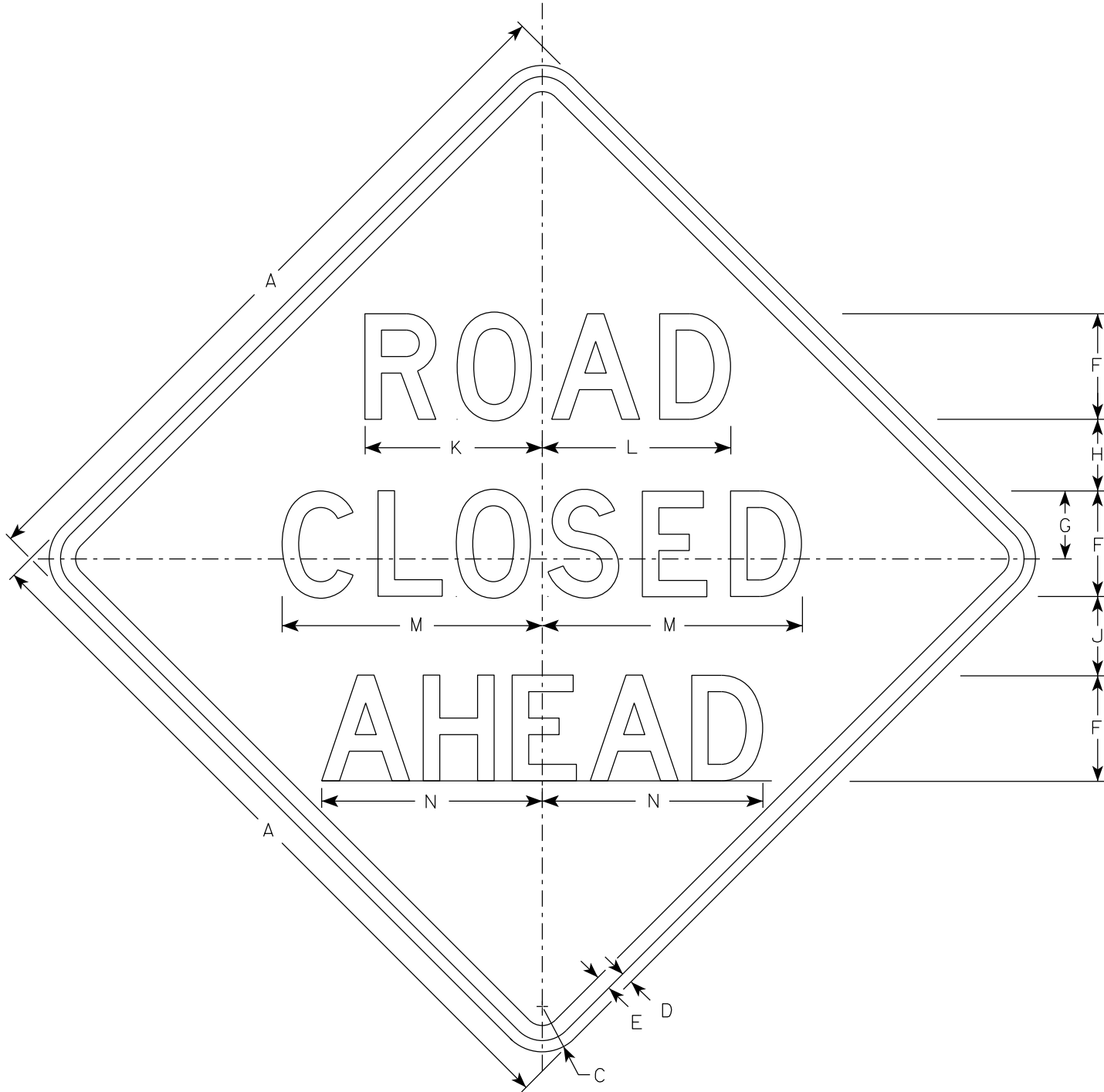
NOTES

- Sign is Type II - Type F Reflective
- Color:
Background - Orange
Message - Black
- Message Series - See note 5
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

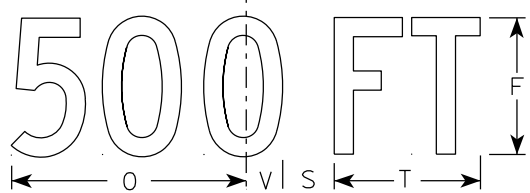
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN W20-2A,B,C,D,F & G	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 1/10/2024	PLATE NO. W20-2.7

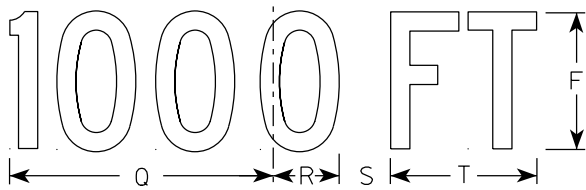
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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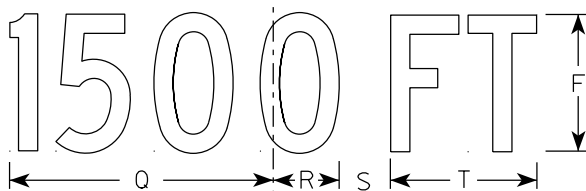
W20-3A



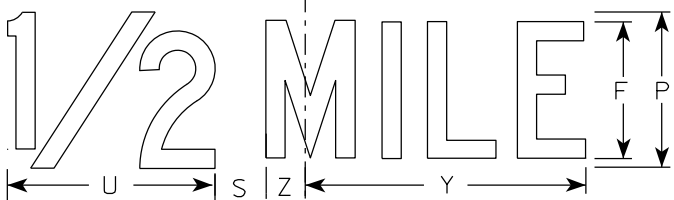
W20-3D



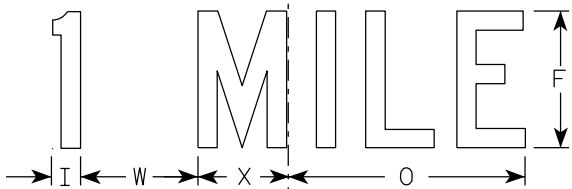
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

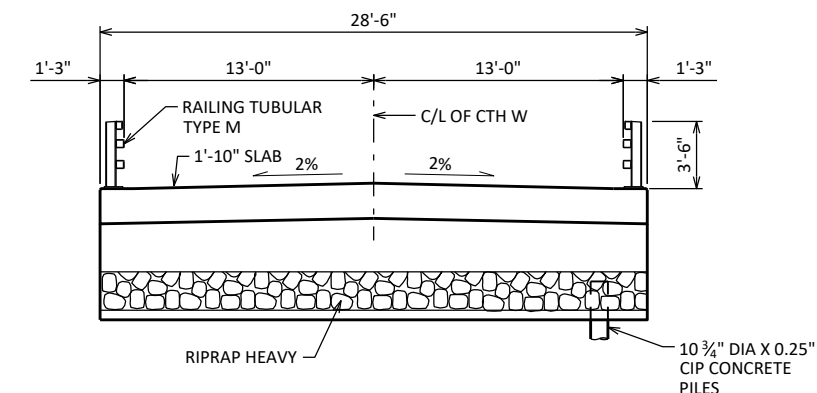
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-3.8



TYPICAL SECTION THRU BRIDGE

FOUNDATION DATA

ESTIMATED 85'-0" LONG AT WEST ABUTMENT.
ESTIMATED 95'-0" LONG AT EAST ABUTMENT.

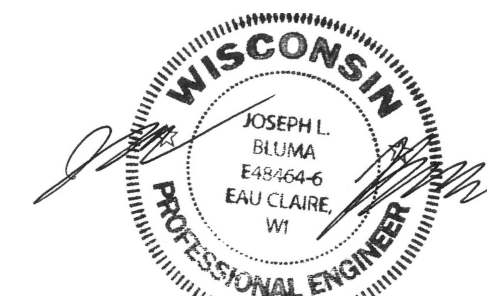
**THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE PILE CAPACITY.

HYDRAULIC DATA

Q₁₀₀= 570 C.F.S.
V₁₀₀= 4.3 F.P.S.
HW₁₀₀= EL. 1094.13
WATERWAY AREA = 133 SQ. FT.
DRAINAGE AREA = 12.6 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5

TRAFFIC DATA

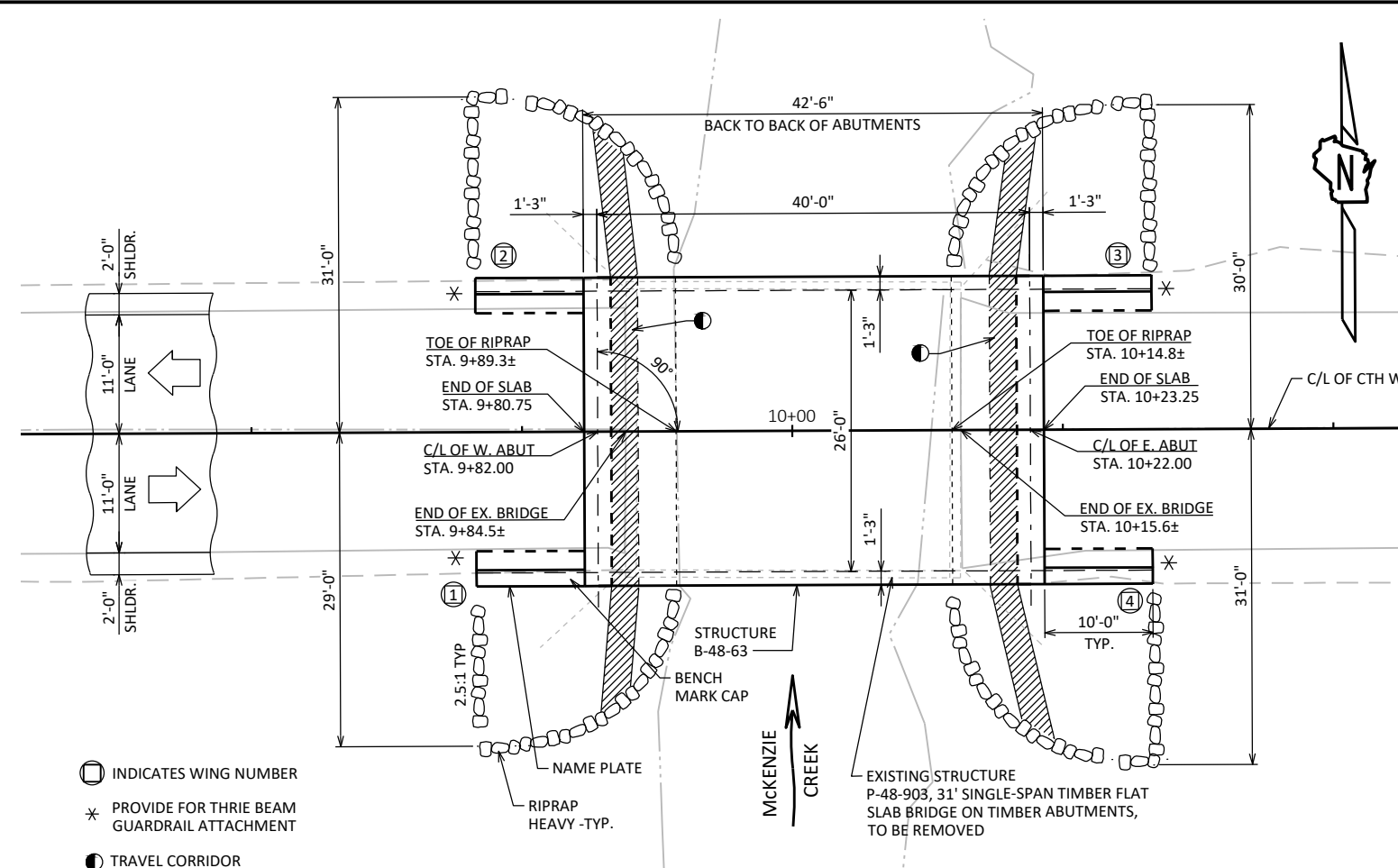
ADT = 280 (2025)
ADT= 300 (2045)
R.D.S. = 45 MPH



06/03/2024

STRUCTURE DESIGN CONTACTS:

AARON BONK	608-261-0261
JOSEPH BLUMA	715-834-3161



DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING: RF = 1.05
OPERATING RATING: RF = 1.36
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 (KIPS)

MATERIAL PROPERTIES:

CONCRETE MASONRY:

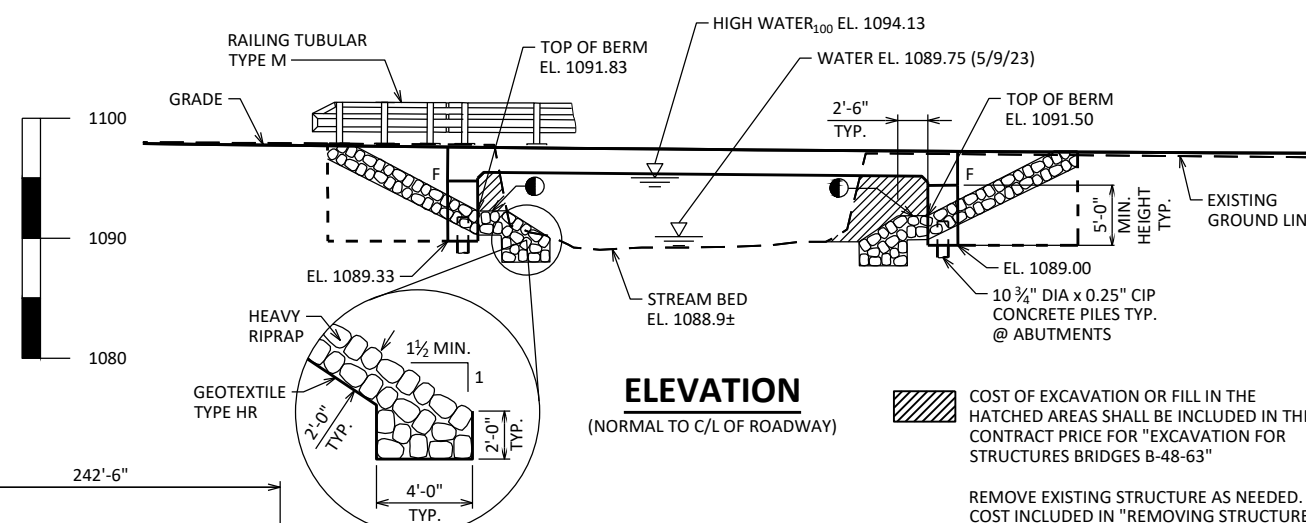
SUPERSTRUCTURE	$f'_c = 4,000$ PSI
ALL OTHER	$f'_c = 3,500$ PSI

BAR STEEL REINFORCEMENT

GRADE 60	$f_y = 60,000$ PSI
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LIST OF DRAWINGS:

1. GENERAL PLAN
2. QUANTITIES AND NOTES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT WING DETAILS
6. WEST ABUTMENT PILE LAYOUT AND BILL OF BARS
7. EAST ABUTMENT
8. EAST ABUTMENT WING DETAILS
9. EAST ABUTMENT PILE LAYOUT AND BILL OF BARS
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE PLAN
12. TUBULAR RAILING STEEL TYPE "M"

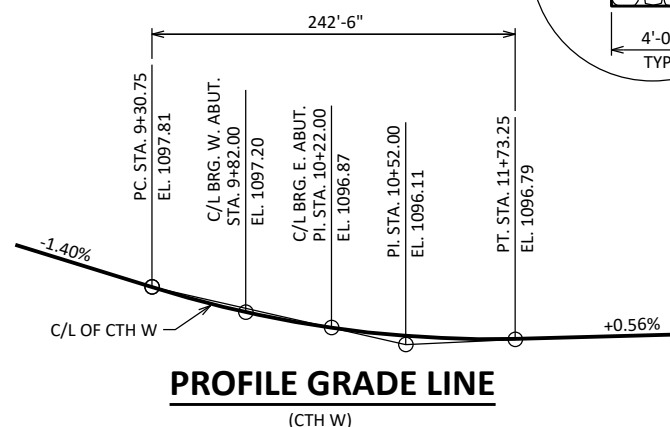


ELEVATION

(NORMAL TO C/L OF ROADWAY)

 COST OF EXCAVATION OR FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-48-63"

REMOVE EXISTING STRUCTURE AS NEEDED.
COST INCLUDED IN "REMOVING STRUCTURE
OVER WATERWAY MINIMAL DEBRIS" ITEM.
TYPICAL AT ALL SUBSTRUCTURES.

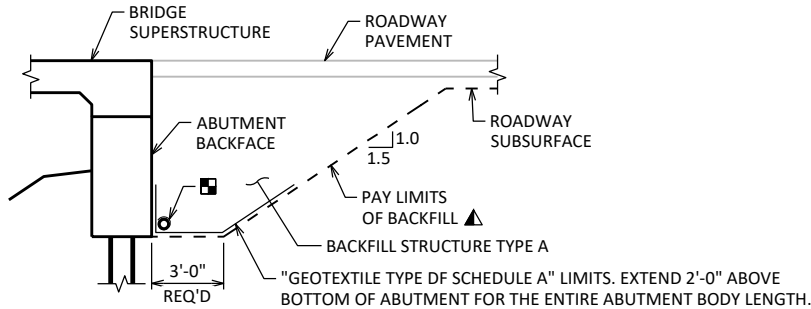


BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
50	11+40	RR SPIKE IN PPOL, 64' RT.	1093.17
51	10+16	RR SPIKE IN E. END S. TIMBER CURB, 13' RT	1096.75

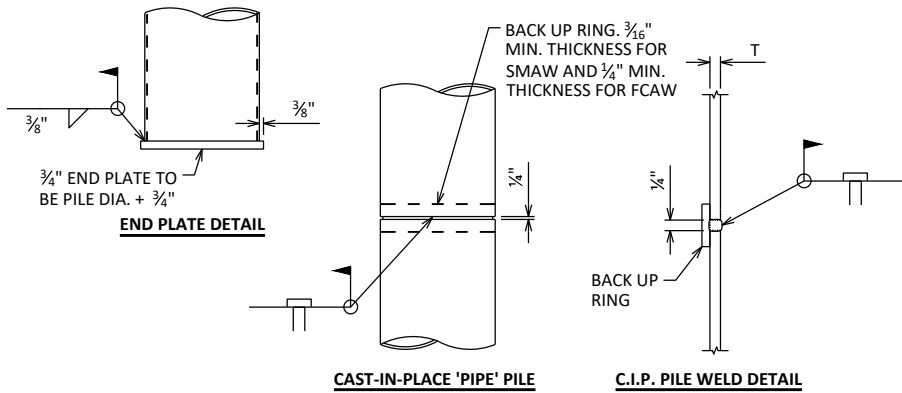
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	W ABUT.	E ABUT.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS (P-48-903)	EACH	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-48-63	EACH	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	---	115	115	230
502.0100	CONCRETE MASONRY BRIDGES	CY	86.3	28.3	28.2	143
502.3200	PROTECTIVE SURFACE TREATMENT	SY	162	9	9	180
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	---	1,640	1,640	3,280
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	15,270	1400	1,400	18,070
513.4061	RAILING TUBULAR TYPE M	LF	85	22.5	22.5	130
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---	9	9	18
550.2104	PIILING CIP CONCRETE 10 3/4 X 0.25-INCH	LF	---	425	475	900
606.0300	RIPRAP HEAVY	CY	---	65	65	130
612.0406	PIPE UNDERDRAIN WRAPPED 6 - INCH	LF	---	70	70	140
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	---	45	45	90
645.0120	GEOTEXTILE TYPE HR	SY	---	130	135	265
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	---	6	6	12
	NON-BID ITEMS					
	FILLER	SIZE	---	---	---	1/2", 3/4"



TYPICAL SECTION THRU ABUTMENT

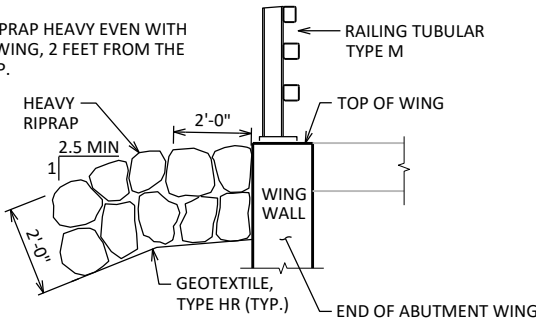
- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ▣ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



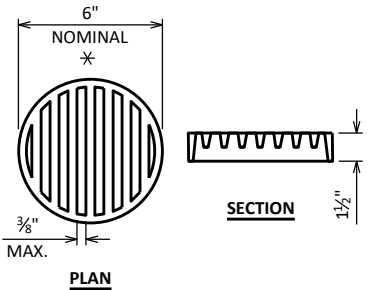
CIP PILE DETAILS

NOTE: PLACE RIPRAP HEAVY AS SHOWN ON GENERAL PLAN SHEET

PLACE RIPRAP HEAVY EVEN WITH TOP OF WING, 2 FEET FROM THE WING TIP.



TYPICAL FILL SECTION AT WING TIPS



RODENT SHIELD DETAIL

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

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

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

GENERAL NOTES

STATE PROJECT NUMBER

8402-00-70

DRAWINGS SHALL NOT BE SCALED.

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

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

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

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

SLAB FALSE WORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATIVE METHOD IS APPROVED BY THE ENGINEER.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-48-63" SHALL BE THE EXISTING GROUNDLINE.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET AND APPLY TO THE TOP AND EXTERIOR EXPOSED FACE OF WINGS AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

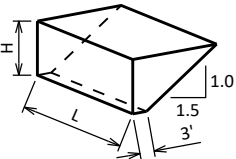
AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.

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

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

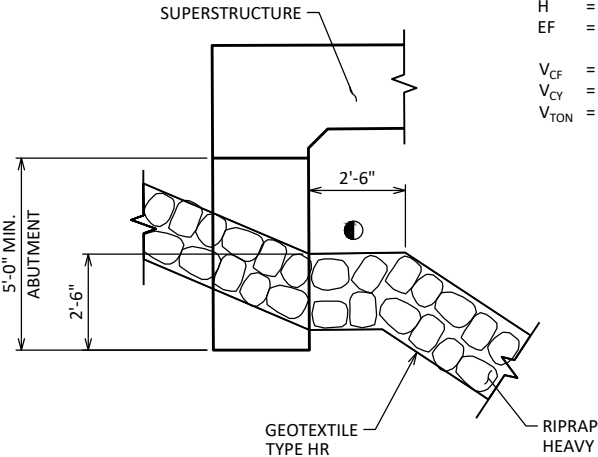
EXISTING SUBSTRUCTURE LOCATIONS ARE BASED ON SURVEY. EXTENT OF BELOW GRADE SUBSTRUCTURES ARE NOT KNOWN. REMOVE EXISTING SUBSTRUCTURES AS NEEDED TO BUILD NEW SUBSTRUCTURES. COST OF SUBSTRUCTURE REMOVAL IS CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS" BID ITEM.

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



ABUTMENT BACKFILL DIAGRAM

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



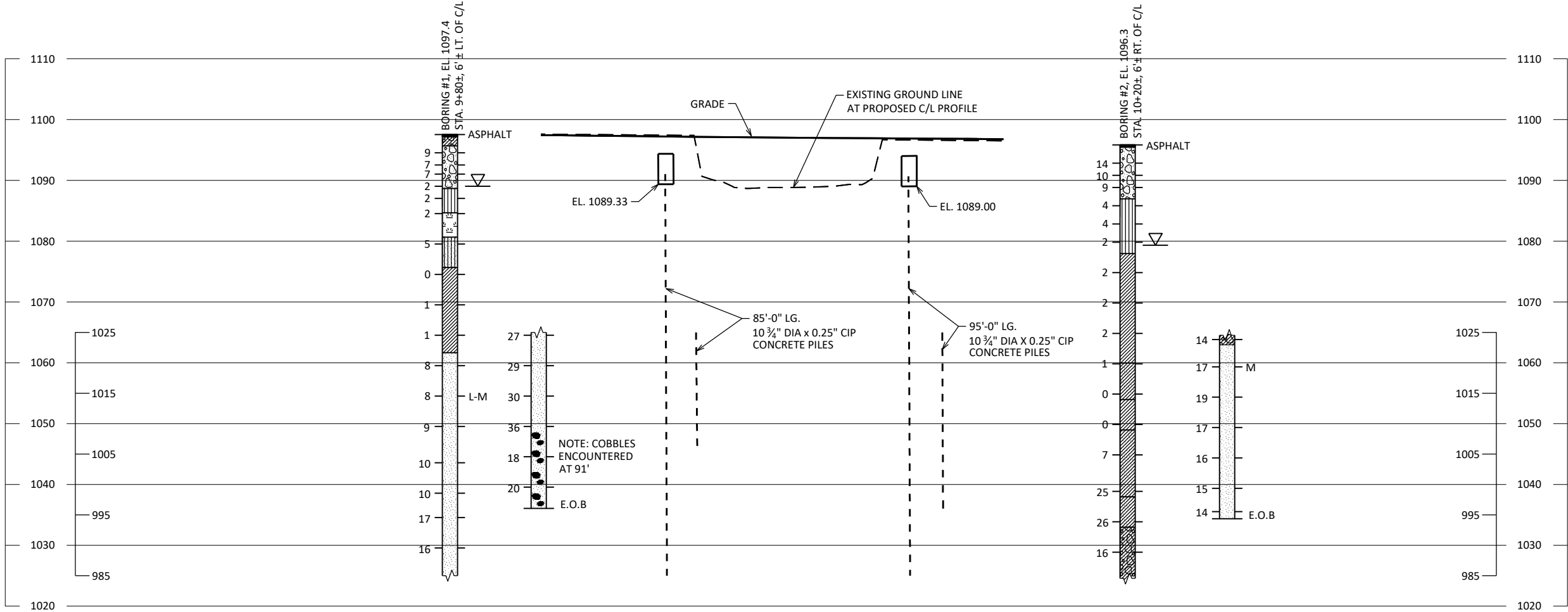
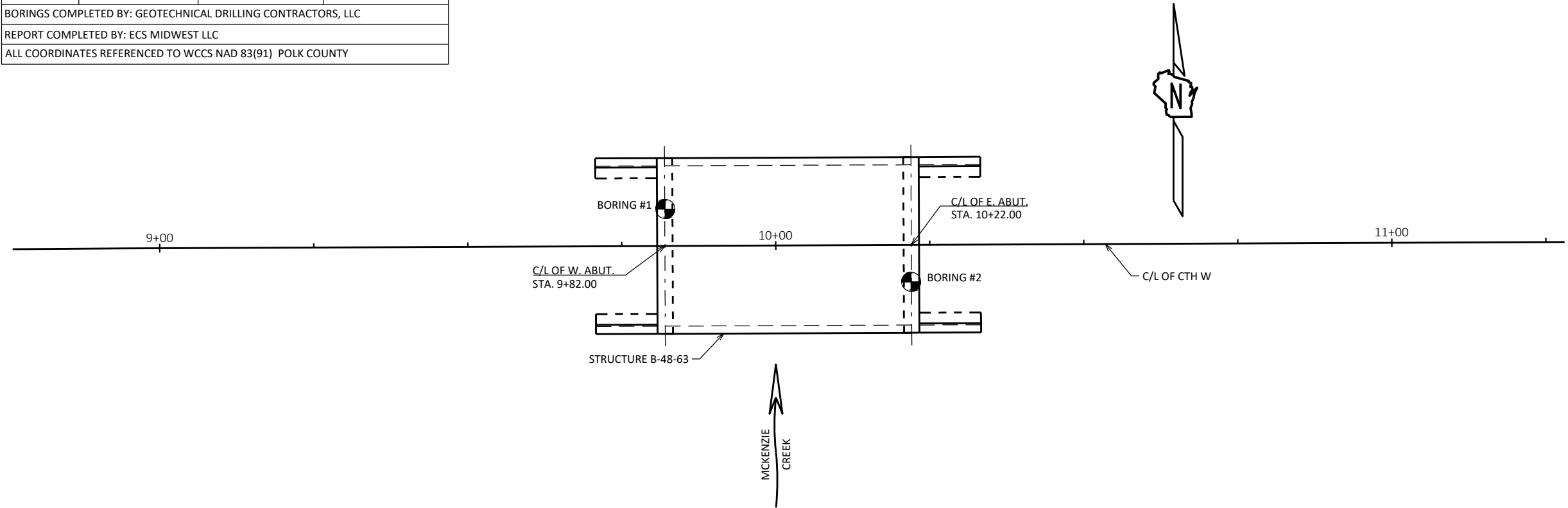
TRAVEL CORRIDOR

- FILL VOIDS WITH SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR AFTER RIPRAP IS PLACED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-48-63			
	DRAWN BY JMC	PLANS CK'D DRS	
QUANTITIES AND NOTES		SHEET 2 OF 12	

SCALE =

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	9/20/2023	357083.46	550625.11
2	9/19/2023	337071.63	550665.16
BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC			
REPORT COMPLETED BY: ECS MIDWEST LLC			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) POLK COUNTY			



STATE PROJECT NUMBER

8402-00-70

MATERIAL SYMBOLS

ASPHALT

CONCRETE

SAND

BOULDERS OR COBBLES

SHALE

TOPSOIL

FILL

CLAY

LIMESTONE

SANDSTONE

PEAT

GRAVEL

SILT

BEDROCK (UNKNOWN)

IGNEOUS/META

LEGEND OF BORING

BORING #/EL. STA./OFFSET

ST

0.25

17

F-C

COBBLE OR BOULDER

WEATHERED LIMESTONE

CORE RUN #1 - 24'-29'

REC=80%, RQD=72%

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

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-48-63

DRAWN BY

JMC

PLANS CK'D

DRS

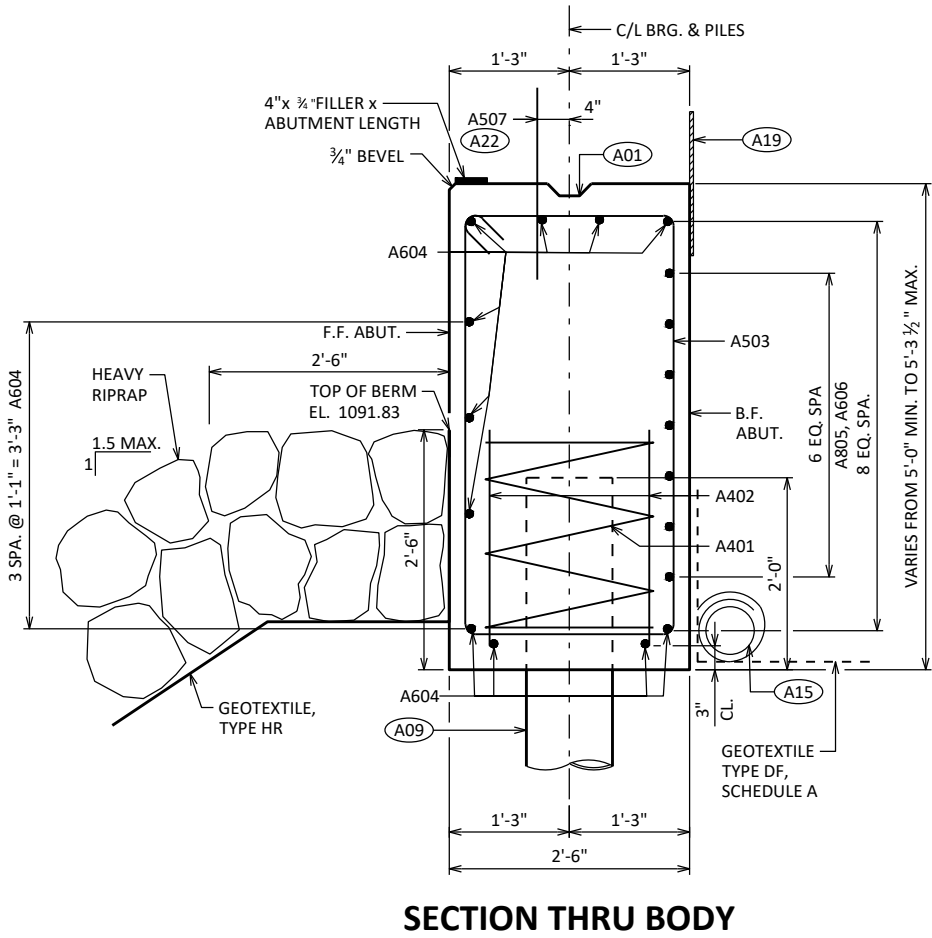
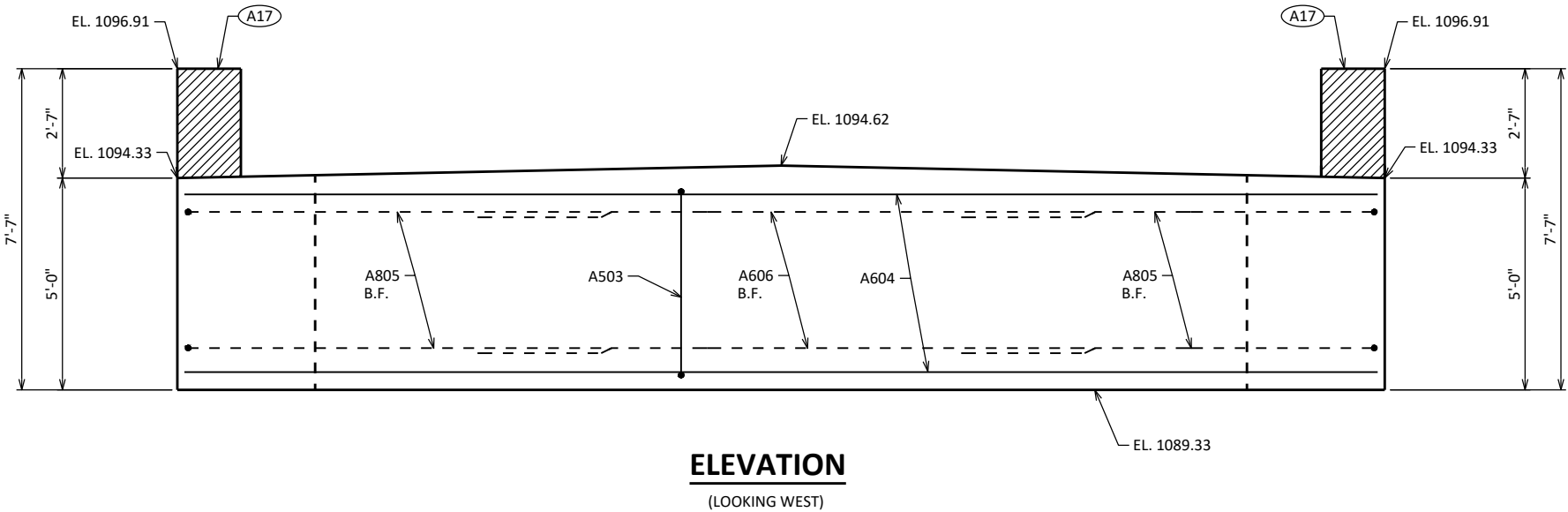
SUBSURFACE EXPLORATION

SHEET 3 OF 12

SCALE =

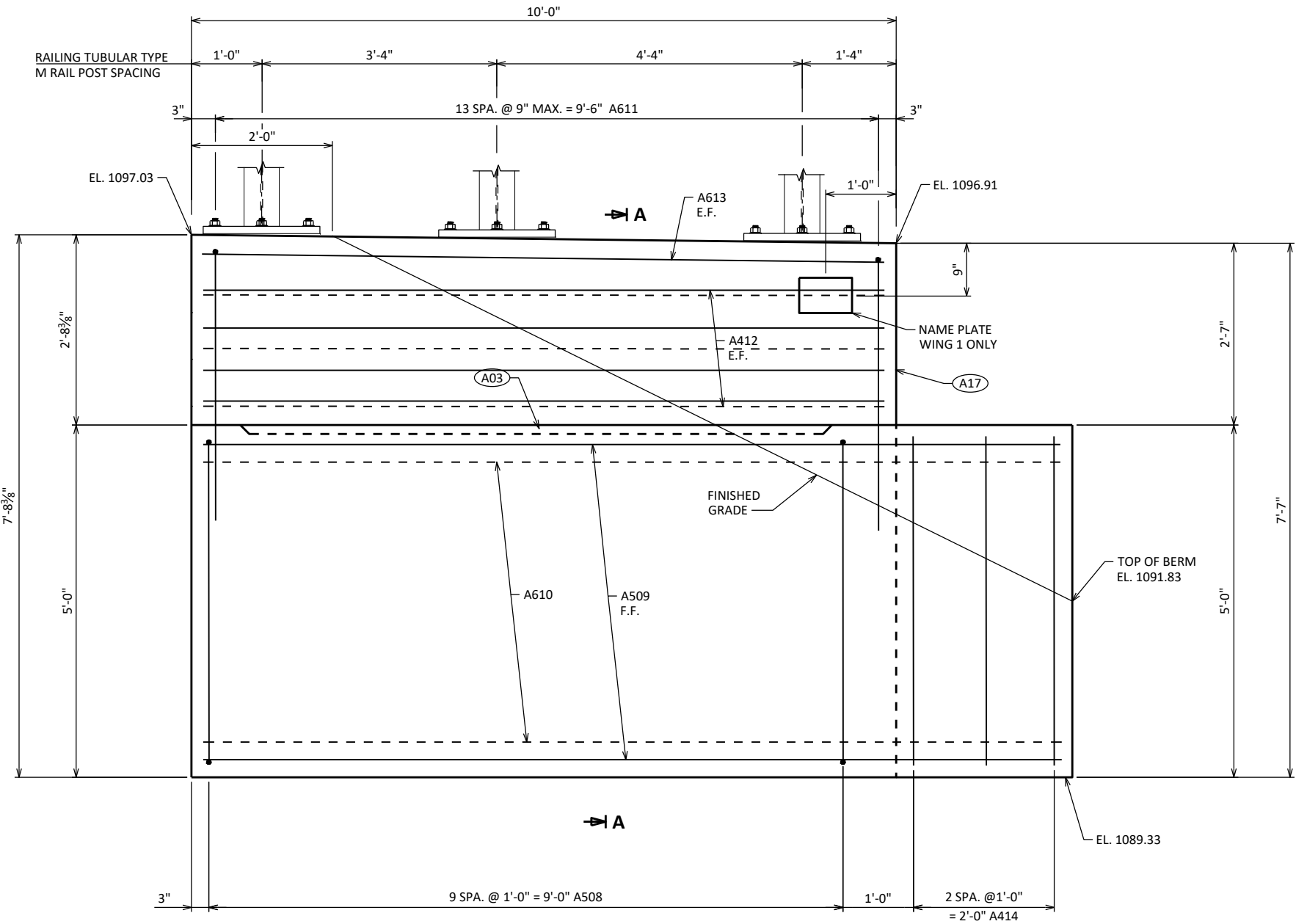
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8

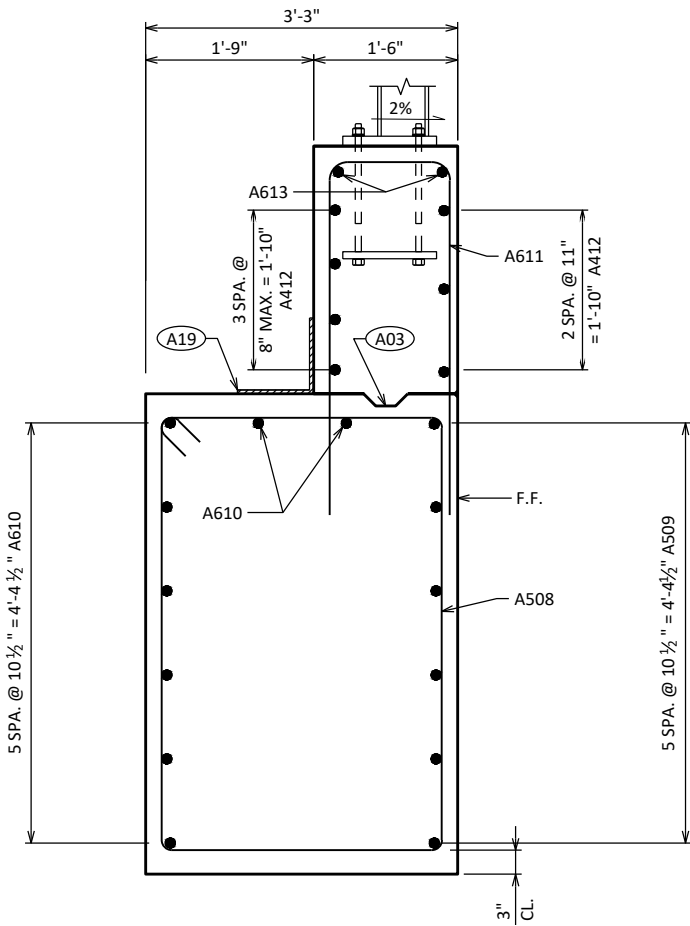


- (A01) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- (A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.25" CIP CONCRETE PILING, ESTIMATED 85'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A22) BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-48-63			
DRAWN BY		CLP	PLANS CK'D DRS
WEST ABUTMENT		SHEET 4 OF 12	



ELEVATION - WING 1
(WING 1 SHOWN - WING 2 SIMILAR)



SECTION A

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-48-63			
DRAWN BY		CLP	PLANS CK'D DRS
WEST ABUTMENT WING DETAILS		SHEET 5 OF 12	



STATE PROJECT NUMBER

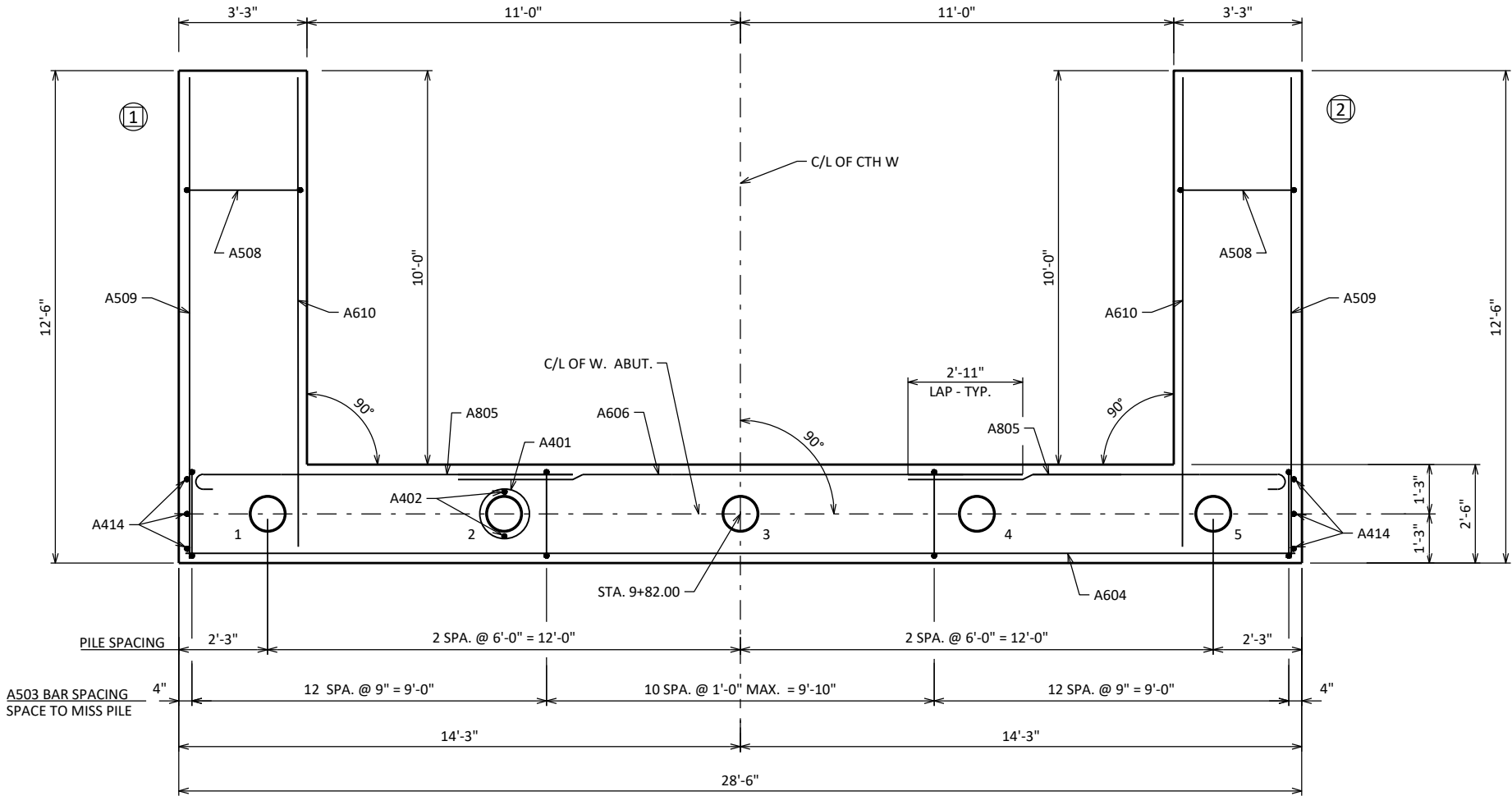
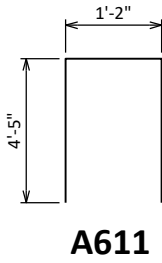
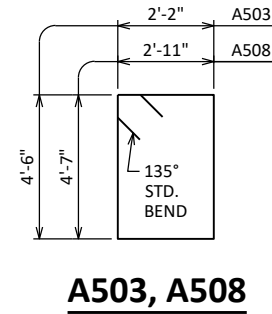
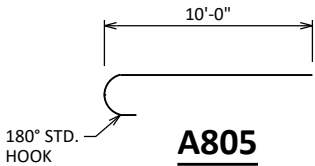
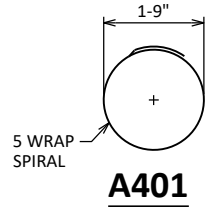
8402-00-70

BILL OF BARS

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

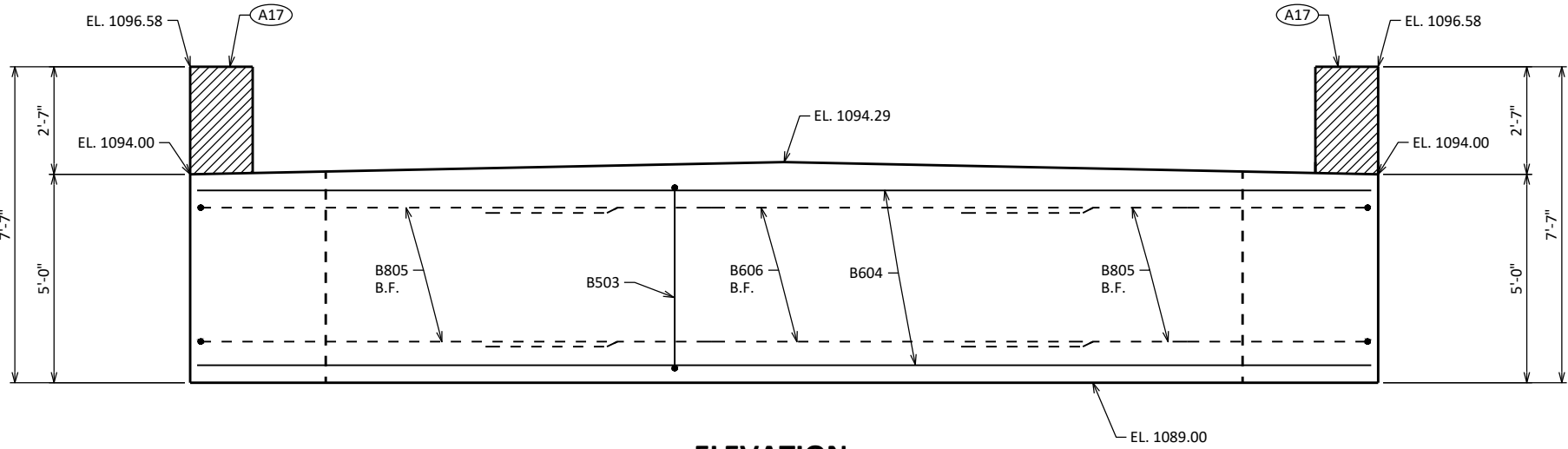
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A401		5	28'-0"	X		BODY @ PILES
A402		10	2'-3"			BODY @ PILES
A503		35	14'-0"	X		BODY VERT.
A604		11	28'-2"			BODY HORIZ.
A805		14	10'-11"	X		BODY HORIZ. @ WINGS 1 & 2 B.F.
A606		7	14'-0"			BODY HORIZ. BETWEEN WINGS 1 & 2 B.F.
A507	X	27	2'-0"			BODY DOWELS
A508	X	20	15'-8"	X		WINGS 1 & 2 VERT.
A509	X	12	12'-2"			WINGS 1 & 2 HORIZ. F.F.
A610	X	16	11'-11"			WINGS 1 & 2 HORIZ. B.F. & TOP
A611	X	28	9'-10"	X		WINGS 1 & 2 VERT.
A412	X	14	9'-8"			WINGS 1 & 2 HORIZ. E.F.
A613	X	4	9'-8"			WINGS 1 & 2 HORIZ. E.F. TOP
A414	X	6	4'-7"			BODY VERT. END @ WINGS 1 & 2

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

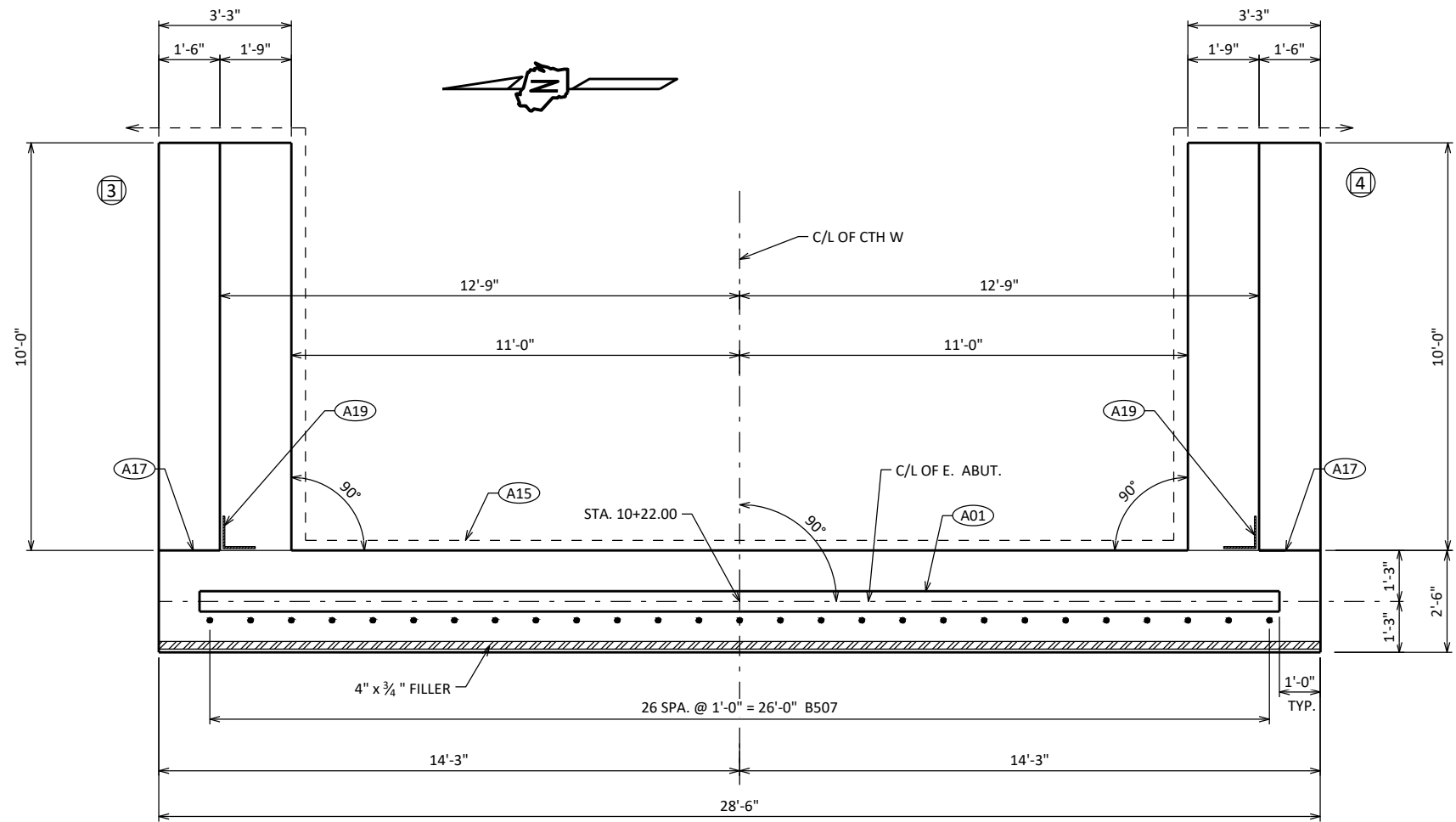


PILE LAYOUT

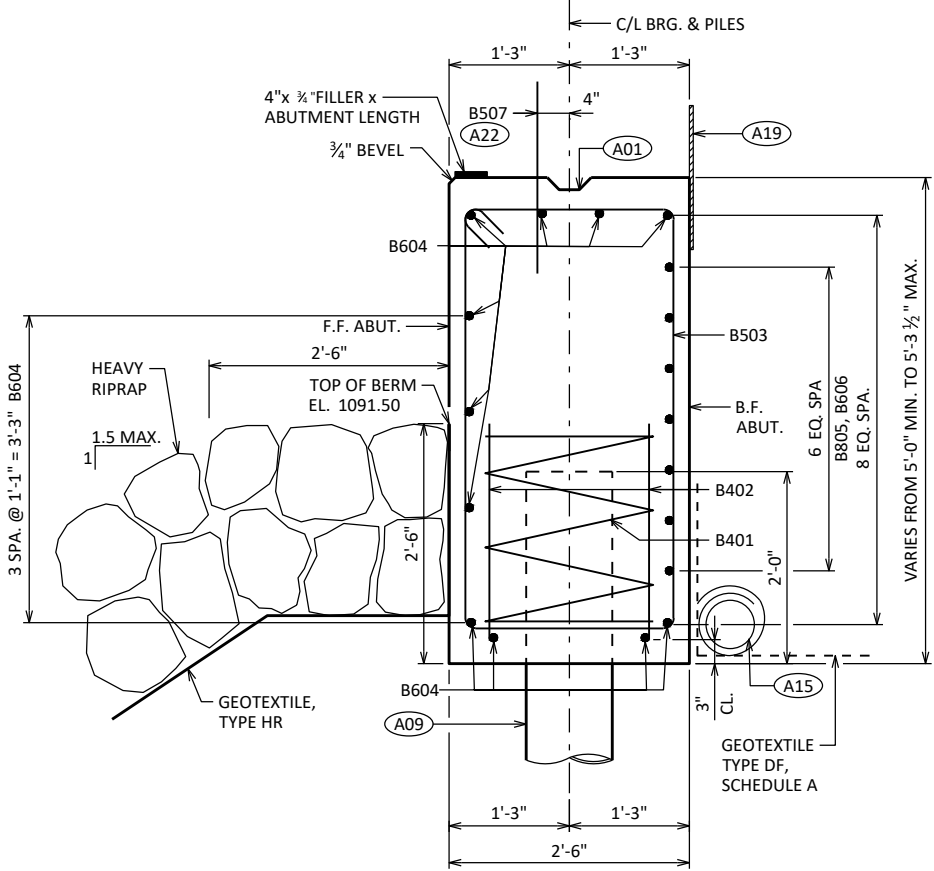
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-48-63			
DRAWN BY		CLP	PLANS CK'D DRS
WEST ABUTMENT PILE LAYOUT AND BILL OF BARS		SHEET 6 OF 12	



ELEVATION
(LOOKING EAST)



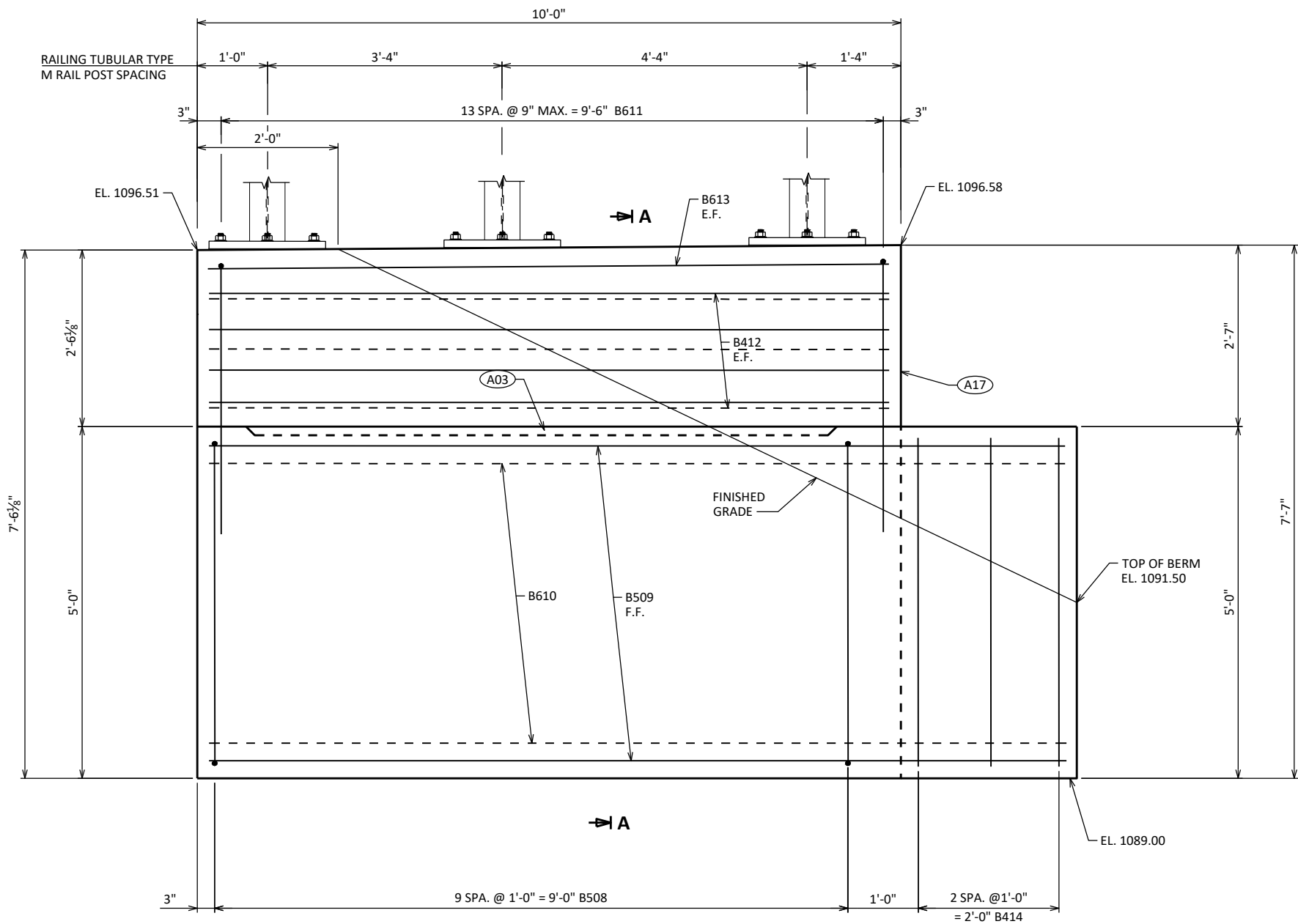
PLAN



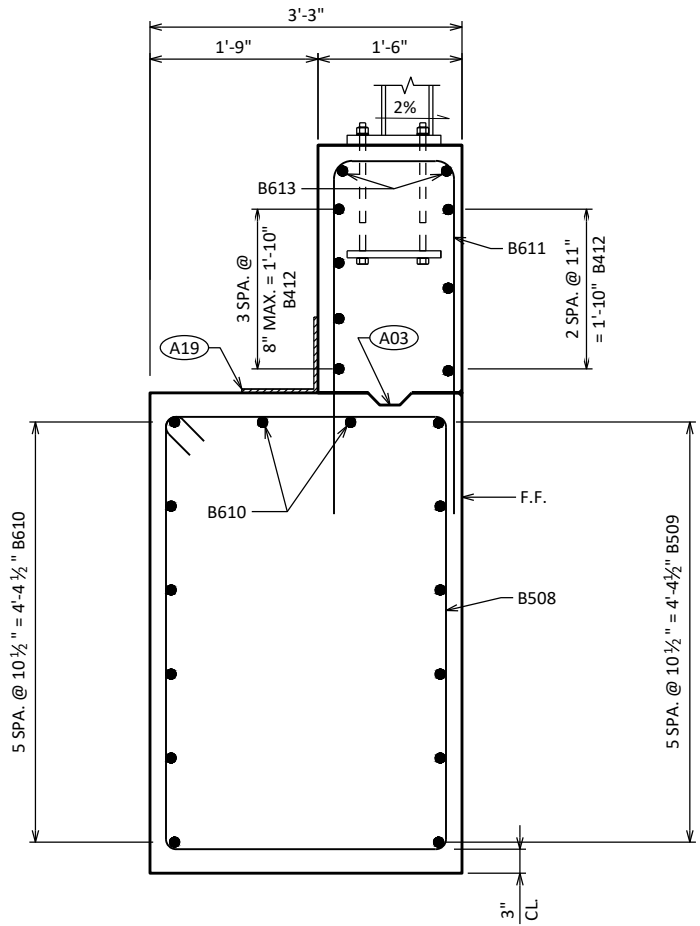
SECTION THRU BODY

- (A01)** CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- (A09)** SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.25" CIP CONCRETE PILING, ESTIMATED 95'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE.
- (A15)** PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17)** 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/2" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19)** 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A22)** BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-48-63			
DRAWN BY		CLP	PLANS CK'D DRS
EAST ABUTMENT		SHEET 7 OF 12	



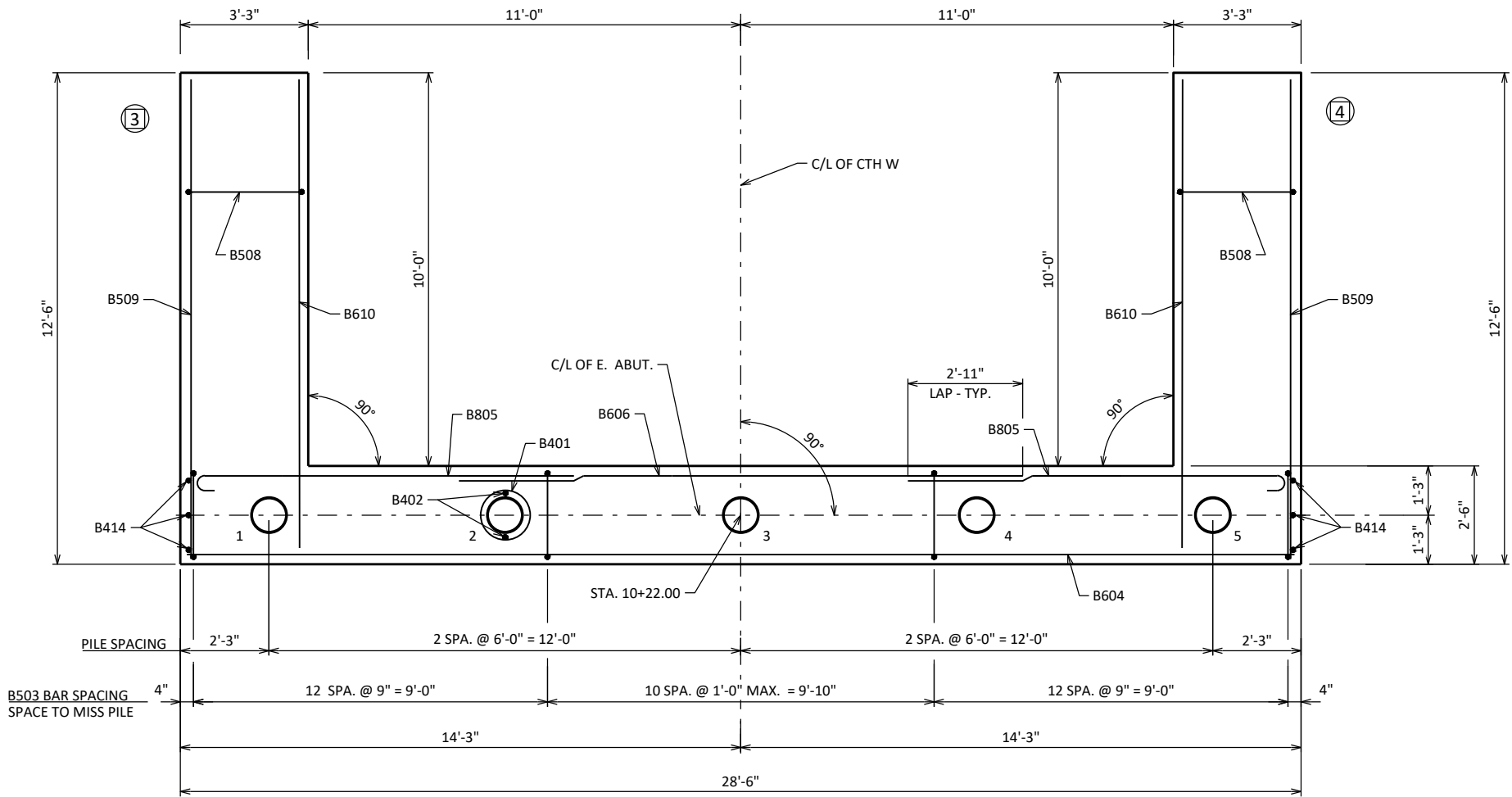
ELEVATION - WING 3
(WING 3 SHOWN - WING 4 SIMILAR)



SECTION A

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 3/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-48-63			
DRAWN BY		CLP	PLANS CK'D DRS
EAST ABUTMENT WING DETAILS		SHEET 8 OF 12	



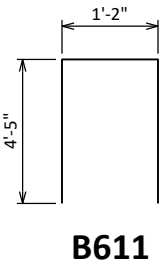
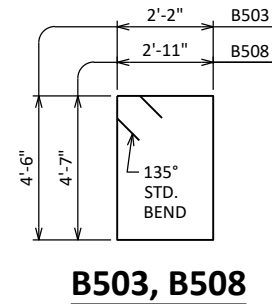
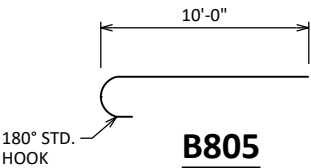
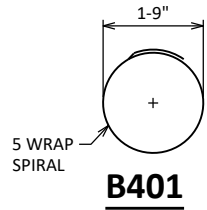
PILE LAYOUT

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B401		5	28'-0"	X		BODY @ PILES
B402		10	2'-3"			BODY @ PILES
B503		35	14'-0"	X		BODY VERT.
B604		11	28'-2"			BODY HORIZ.
B805		14	10'-11"	X		BODY HORIZ. @ WINGS 3 & 4 B.F.
B606		7	14'-0"			BODY HORIZ. BETWEEN WINGS 3 & 4 B.F.
B507	X	27	2'-0"			BODY DOWELS
B508	X	20	15'-8"	X		WINGS 3 & 4 VERT.
B509	X	12	12'-2"			WINGS 3 & 4 HORIZ. F.F.
B610	X	16	11'-11"			WINGS 3 & 4 HORIZ. B.F. & TOP
B611	X	28	9'-10"	X		WINGS 3 & 4 VERT.
B412	X	14	9'-8"			WINGS 3 & 4 HORIZ. E.F.
B613	X	4	9'-8"			WINGS 3 & 4 HORIZ. E.F. TOP
B414	X	6	4'-7"			BODY VERT. END @ WINGS 3 & 4

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



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STRUCTURE B-48-63			
DRAWN BY		CLP	PLANS CK'D DRS
EAST ABUTMENT PILE LAYOUT AND BILL OF BARS		SHEET 9 OF 12	



V-GROOVES ARE REQUIRED.



	TOP OF SLAB ELEVATION AT FINAL GRADE
LESS	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

LOCATION	C/L W. ABUT.	$\frac{1}{10}$ PT.	$\frac{2}{10}$ PT.	$\frac{3}{10}$ PT.	$\frac{4}{10}$ PT.	$\frac{5}{10}$ PT.	$\frac{6}{10}$ PT.	$\frac{7}{10}$ PT.	$\frac{8}{10}$ PT.	$\frac{9}{10}$ PT.	C/L E. ABUT.
N. EDGE OF SLAB	1096.91	1096.87	1096.84	1096.80	1096.77	1096.73	1096.70	1096.67	1096.64	1096.61	1096.58
C/L OF CTH W	1097.20	1097.16	1097.12	1097.09	1097.05	1097.02	1096.98	1096.95	1096.92	1096.89	1096.87
S. EDGE OF SLAB	1096.91	1096.87	1096.84	1096.80	1096.77	1096.73	1096.70	1096.67	1096.64	1096.61	1096.58

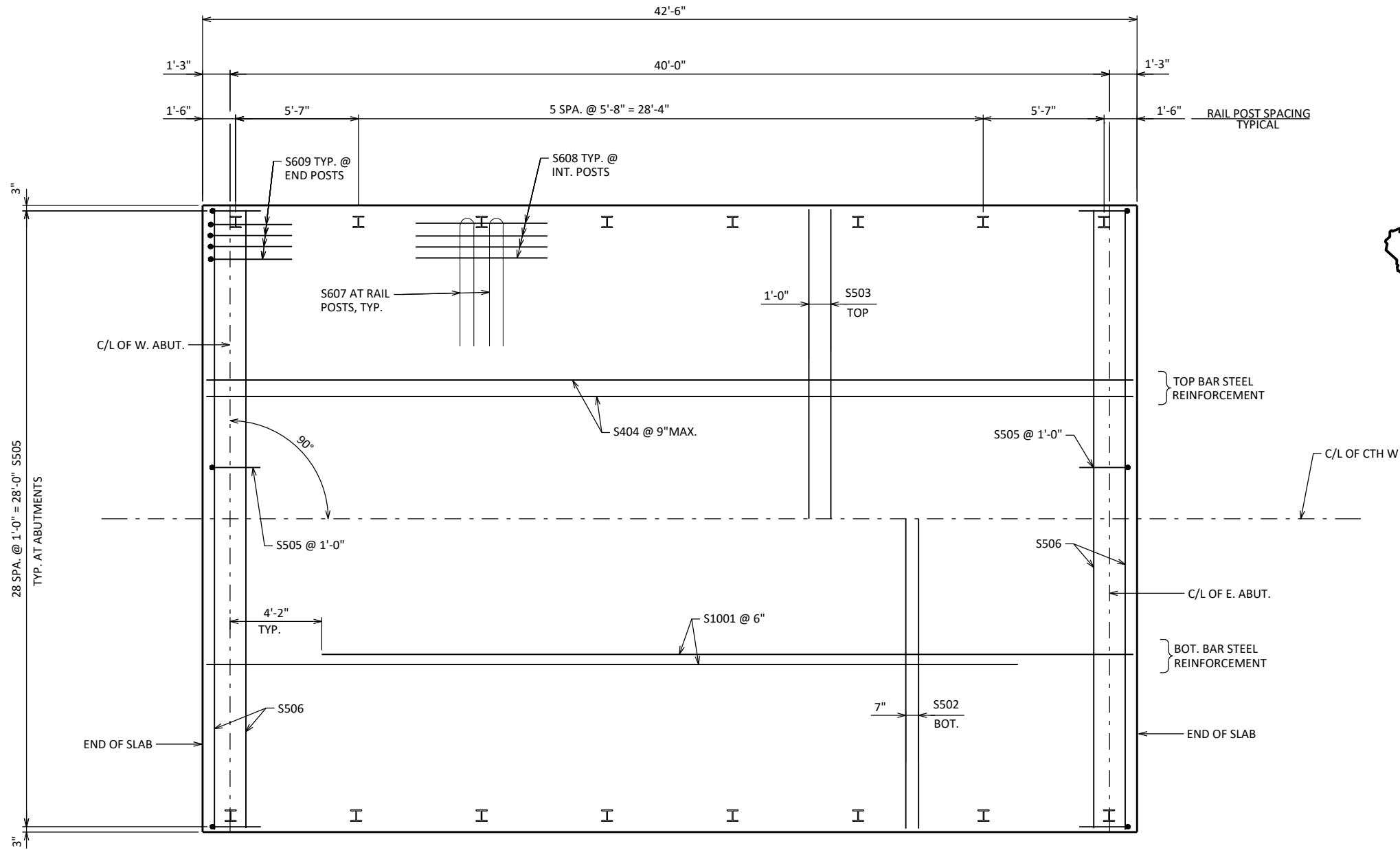
BENDING DIMENSIONS ARE OUT TO OUT OF BARS



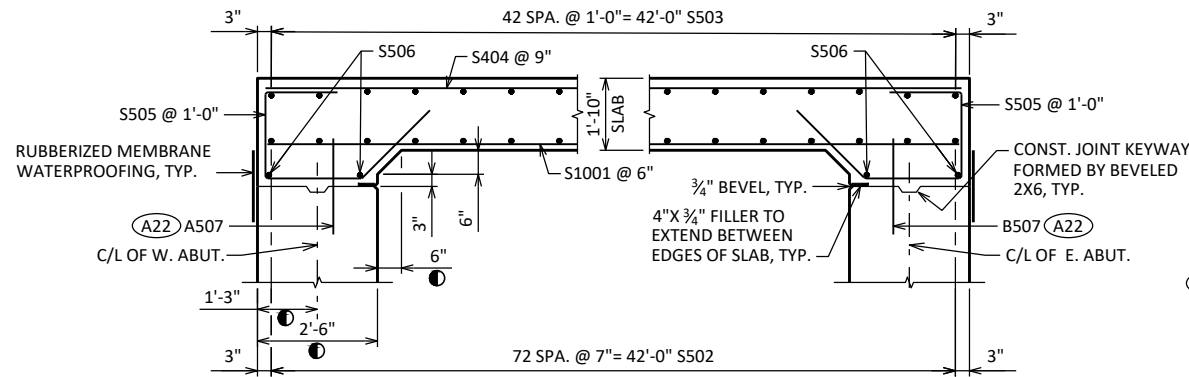
	<u>ABUTMENT</u>	<u>5/10 PT.</u>	<u>ABUTMENT</u>
W. EDGE OF SLAB			
C/L OF CTH W			
E. EDGE OF SLAB			

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-48-63			
		DRAWN BY	PLANS CK'D
		CLP	DRS
SUPERSTRUCTURE		SHEET 10 OF 12	



PLAN



LONGITUDINAL SECTION

DIMENSIONS ARE GIVEN PARALLEL TO C/L ROADWAY UNLESS OTHERWISE NOTED.

MEASURED NORMAL TO THE C/L OF ABUTMENT. DIMENSIONS ARE TYPICAL FOR BOTH ABUTMENTS.

A507, B507 BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

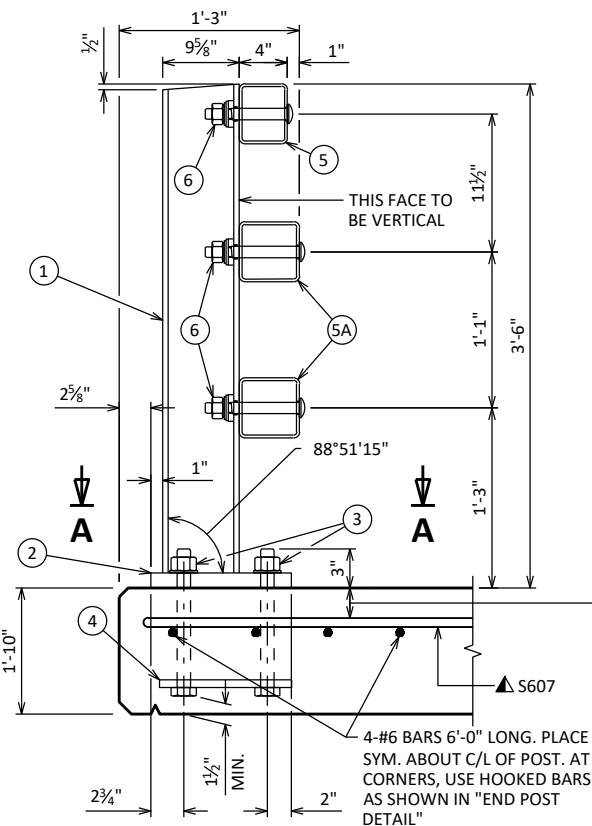
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-48-63			
DRAWN BY		CLP	PLANS CK'D DRS
SUPERSTRUCTURE PLAN		SHEET 11 OF 12	

LEGEND

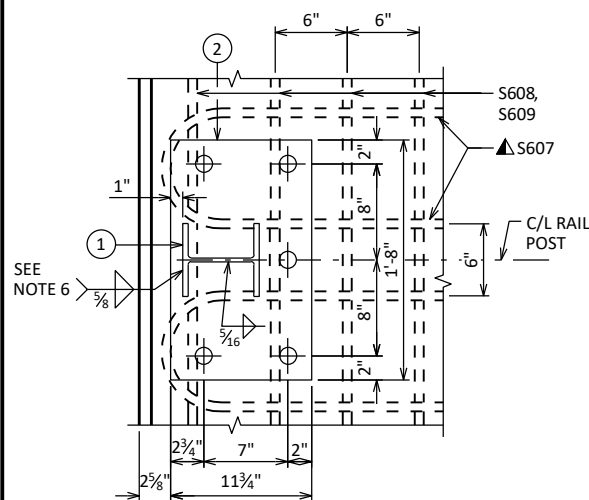
- W6 X 25 WITH $1\frac{1}{8}$ " X $1\frac{1}{2}$ " HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- PLATE $1\frac{1}{4}$ " X $11\frac{3}{4}$ " X 1'-8" WITH $1\frac{1}{16}$ " DIA. OVERSIZED HOLES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

GENERAL NOTES

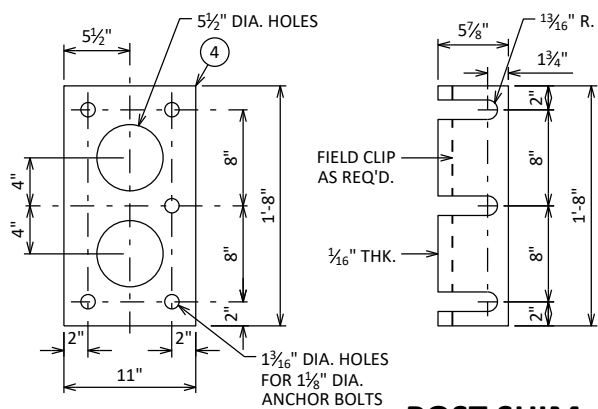
- BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
- RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND 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 $\frac{1}{8}$ 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 NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
- 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.



SECTION THRU RAILING ON DECK



SECTION A-A

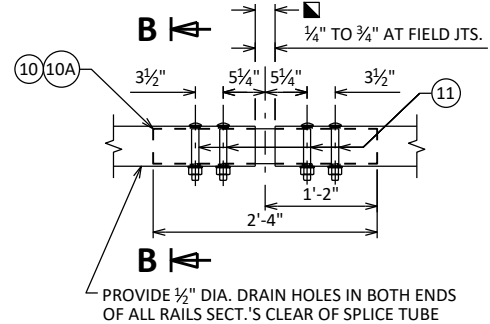


ANCHOR PLATE

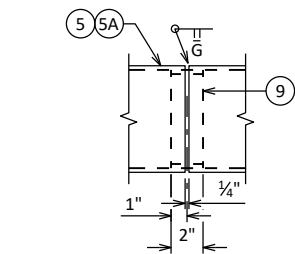
AT RAIL TO DECK CONNECTION

POST SHIM

DETAIL



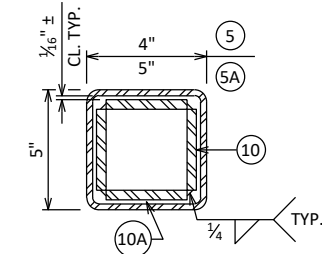
FIELD ERECTION JOINT DETAIL



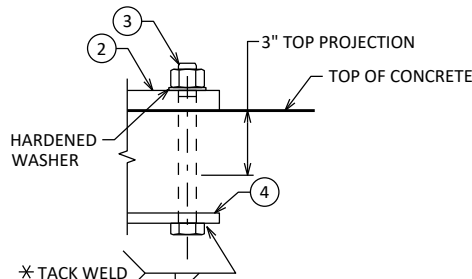
SHOP RAIL SPLICE DETAIL

LOCATION MUST BE SHOWN ON SHOP DRAWINGS

$2\frac{1}{2}$ " FOR SLABS ON GIRDERS; FOR OTHER STRUCTURES, PLACE BELOW TOP MAT SLAB REINFORCEMENT

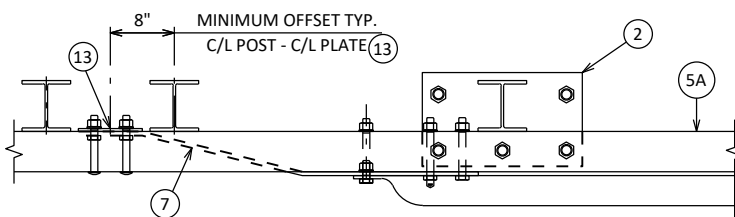


SECTION B-B



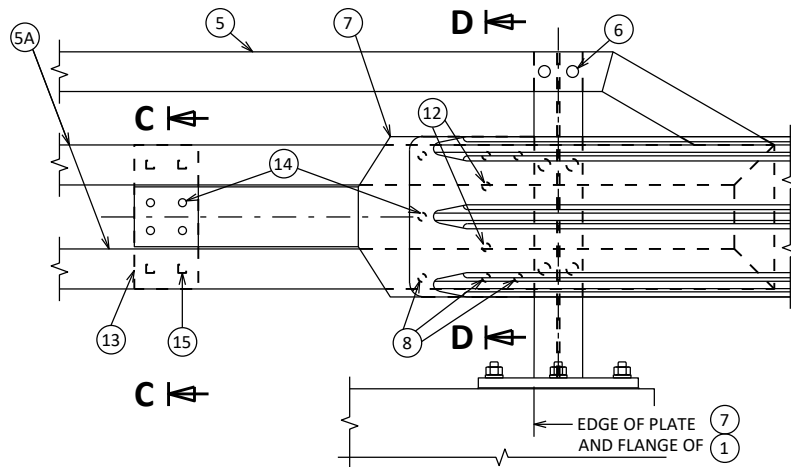
ANCHOR BOLTS

TYPICAL RAIL TO POST CONNECTIONS



TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT

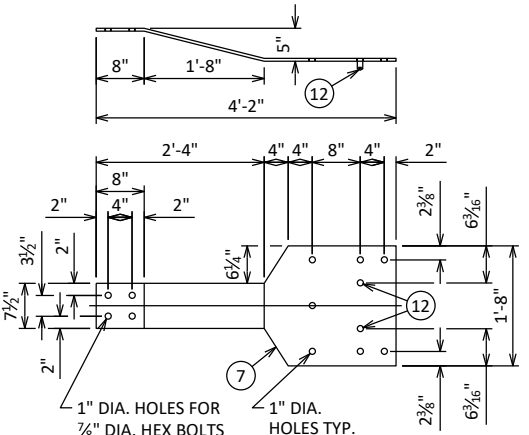


ANCHOR PLATE

AT BEAM GUARD ATTACHMENT

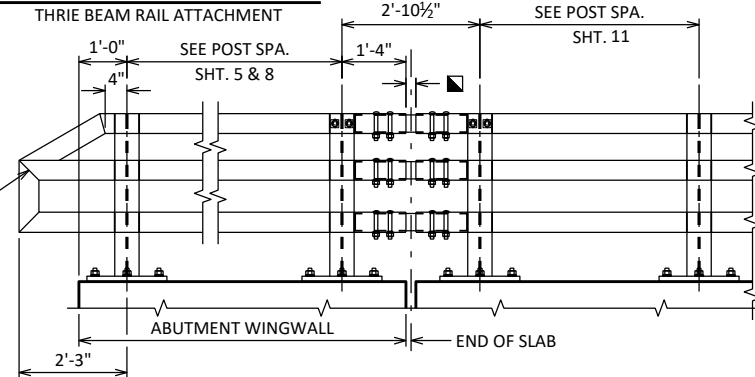
DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

▲ TIE TO TOP MAT OF STEEL.

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

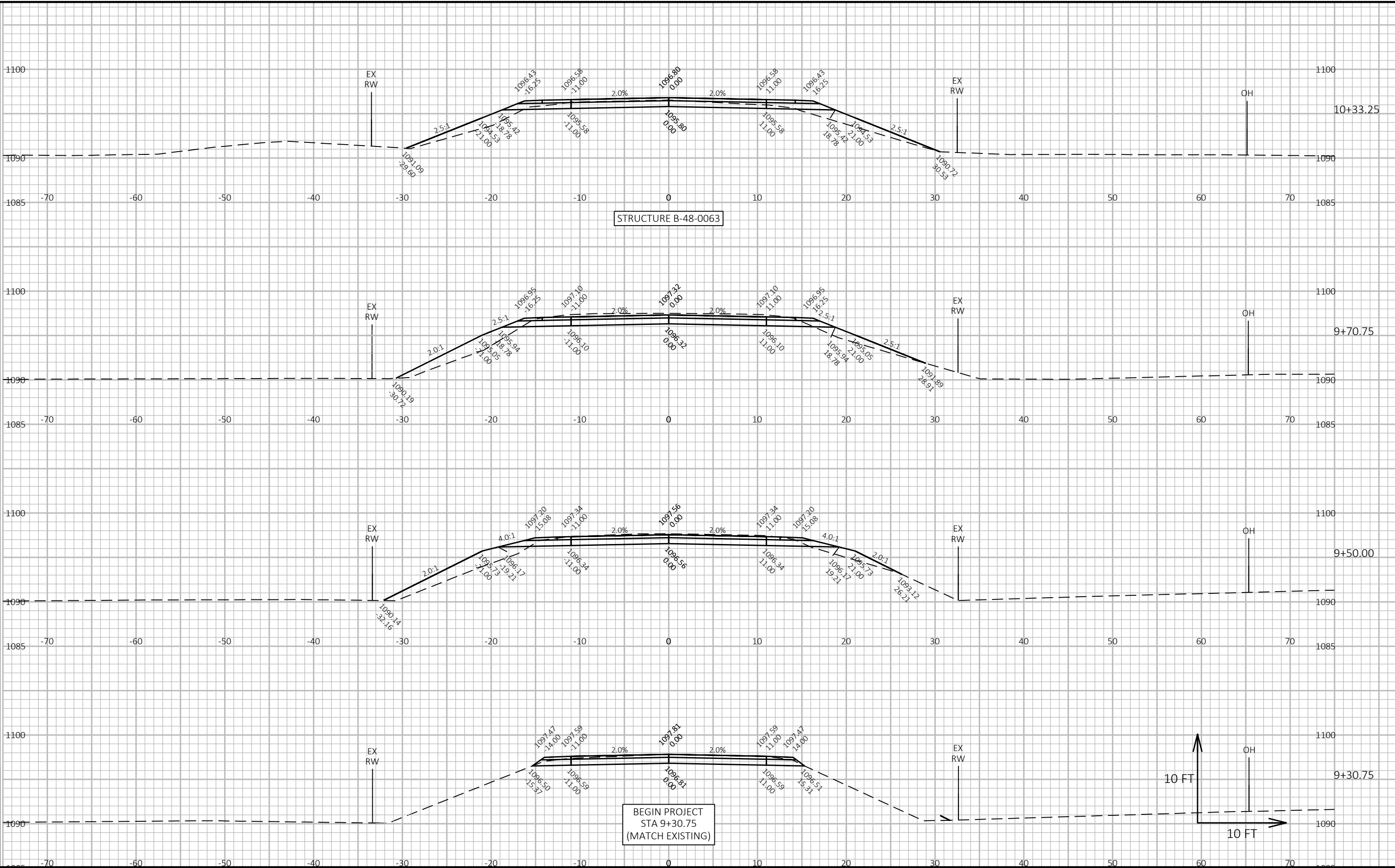
■ $\frac{1}{4}$ " TO $\frac{3}{4}$ " OPENING FOR A1 ABUTMENT.

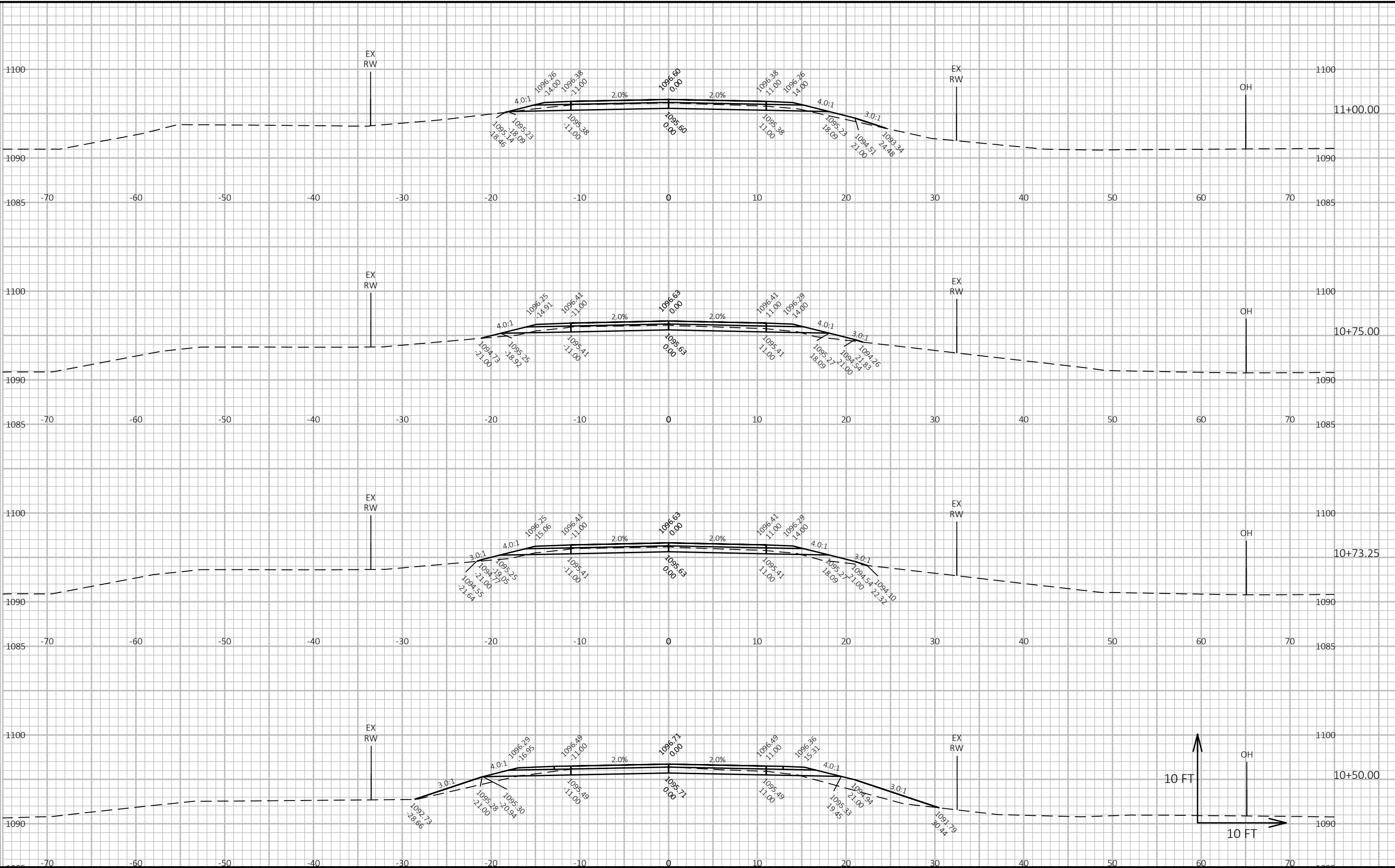
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-48-63			
DRAWN BY		CLP	PLANS CK'D DRS
TUBULAR STEEL RAILING TYPE "M"		SHEET 12 OF 12	

CTH W COMPUTER EARTHWORK								
Station	Distance	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut 1.00 Note 1	Expanded Fill 1.30	
9+30.75	--	25.9	0.0					
9+50	19	31.5	24.6	20	9	20	11	9
9+70.75	21	37.0	22.1	26	18	47	35	12
9+81.	10	37.0	0.0	14	4	61	40	21
BRIDGE	--	--	--	--	--	--	--	--
10+23.	--	17.3	0.0	--	--	--	--	--
10+33.25	10	17.3	19.1	7	4	67	45	22
10+50.	17	15.9	17.1	10	11	78	59	18
10+73.25	23	13.5	4.4	13	9	90	72	19
10+75.	2	13.3	3.4	1	0	91	72	19
11+00.	25	16.3	2.5	14	3	105	75	29
11+25.	25	19.3	1.3	16	2	121	78	44
11+50	25	24.7	1.2	20	1	142	79	62
11+73	23	31.2	0.0	24	1	166	80	86
				166	61			

Note 1 - Cut	Volume need to be cut.
Note 2 - Fill	Volume needed to be filled.
Note 3 - Mass Ordinate	(Cut) - (Fill * 1.30)

PROJECT NO: 8402-00-70	HWY: CTH W	COUNTY: POLK	EARTHWORK COMPUTATIONS	SHEET NO:	E
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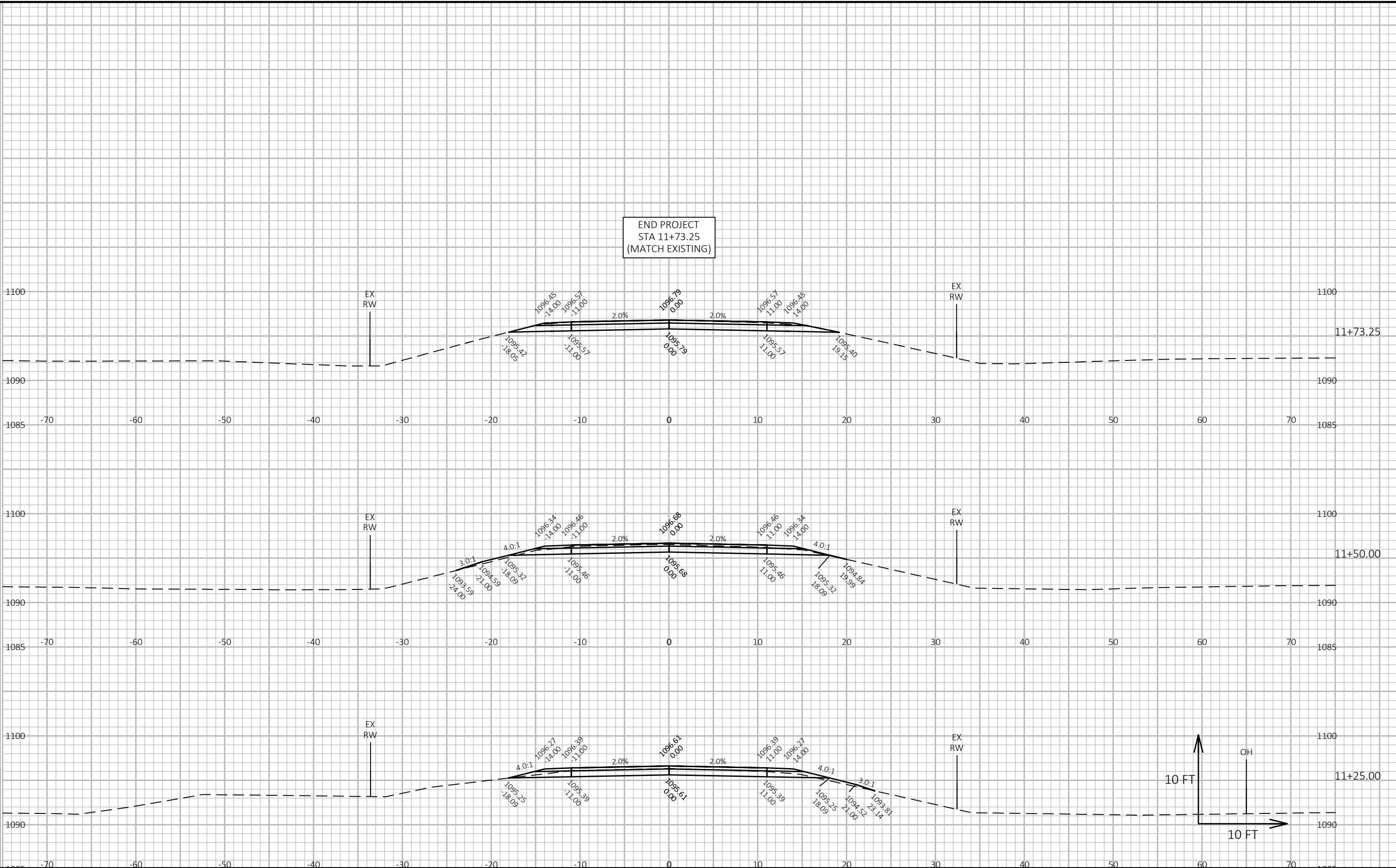




9

9

PROJECT NO: 8402-00-70	HWY: CTH W	COUNTY: POLK	CROSS SECTIONS: CTH W	SHEET	E
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PROJECT NO: 8402-00-70	HWY: CTH W	COUNTY: POLK	CROSS SECTIONS: CTH W	SHEET	E
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