

GRE

AUGUST 2026

PROJECT ID:
WITH: N/A

4478-02-70

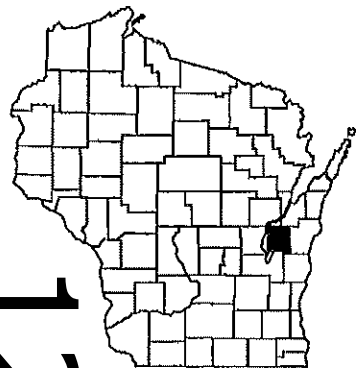
COUNTY:

CALUMET

ORDER OF SHEETS

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

TOTAL SHEETS = 46



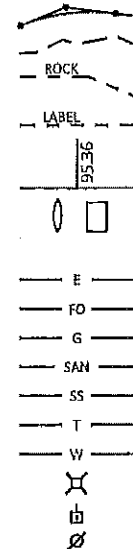
DESIGN DESIGNATION

A.A.D.T.	(2027)	=	31
A.A.D.T.	(2047)	=	34
D.H.V.		=	-
D.D.		=	50/50
T.		=	7.1%
DESIGN SPEED		=	60 MPH
ESALS		=	-

CONVENTIONAL SYMBOLS

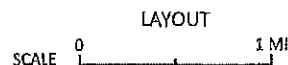
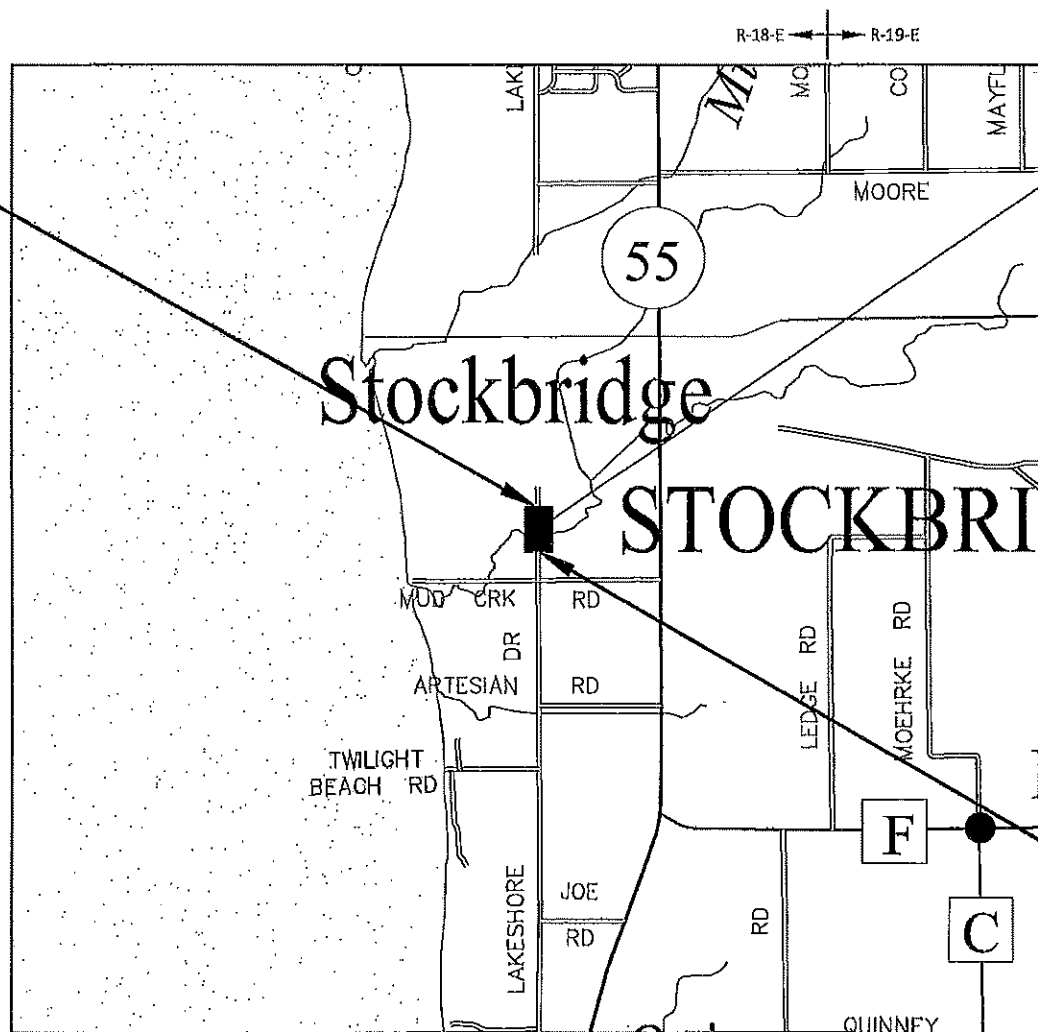
PLAN	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

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



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
T STOCKBRIDGE, LAKESHORE DRIVE
MUD CREEK BRIDGE
LOC STR
CALUMET COUNTY

STATE PROJECT NUMBER
4478-02-70



TOTAL NET LENGTH OF CENTERLINE = 0.027 MI

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

ELEVATIONS ARE REFERENCED TO NAVD 88 (2011), GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4478-02-70	WISC 2026393	1

ACCEPTED FOR TOWN OF STOCKBRIDGE	
4-8-26 DATE	 CHAIRMAN
ORIGINAL PLANS PREPARED BY AYRES	
3/26/2026 (Date)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	AYRES
Designer	AYRES
Project Manager	MIKE COHEN
Regional Supervisor	KIMBERLY SLEZAK
APPROVED FOR THE DEPARTMENT DATE: 4/16/26 (Signature)	
E	

UTILITIES CONTACTS

WISCONSIN PUBLIC SERVICES
GAS UTILITY
CATRINA THIRY
2850 S ASHLAND AVE
GREEN BAY, WI 54304
PHONE: 920-433-1513
EMAIL: utilitiesrelocation@wisconsinpublicservice.com

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL

WISCONSIN DNR LIAISON

MARTY DILLENBURG
NORTHEAST REGION
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
PHONE: 920-410-7428
EMAIL: marty.dillenburg@wisconsin.gov

TOWN OF STOCKBRIDGE

JOE KUHN
TOWN CHAIRMAN
N4331 HIGHWAY 55
CHILTON, WI 53014
PHONE: 920-378-1685
EMAIL: jkuhnstockbridge@yahoo.com

DESIGN CONTACT

RYAN SCHAITEL
AYRES
700 PILGRIM WAY SUITE 180
GREEN BAY, WI 54304
PHONE: 920-327-7840
EMAIL: schaitelr@ayresassociates.com

COUNTY HIGHWAY COMMISSIONER

CHAD SCHEINOH
CALUMET COUNTY
241 EAST CHESTNUT STREET
CHILTON, WI 53014
PHONE: 920-849-1463
EMAIL: chad.scheinoha@calumetcounty.org

GENERAL NOTES

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

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

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT APPROXIMATE LOCATIONS.

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

BEARINGS SHOWN ON THE PLAN ARE TRUE BEARINGS.

RUNOFF COEFFICIENT TABLE

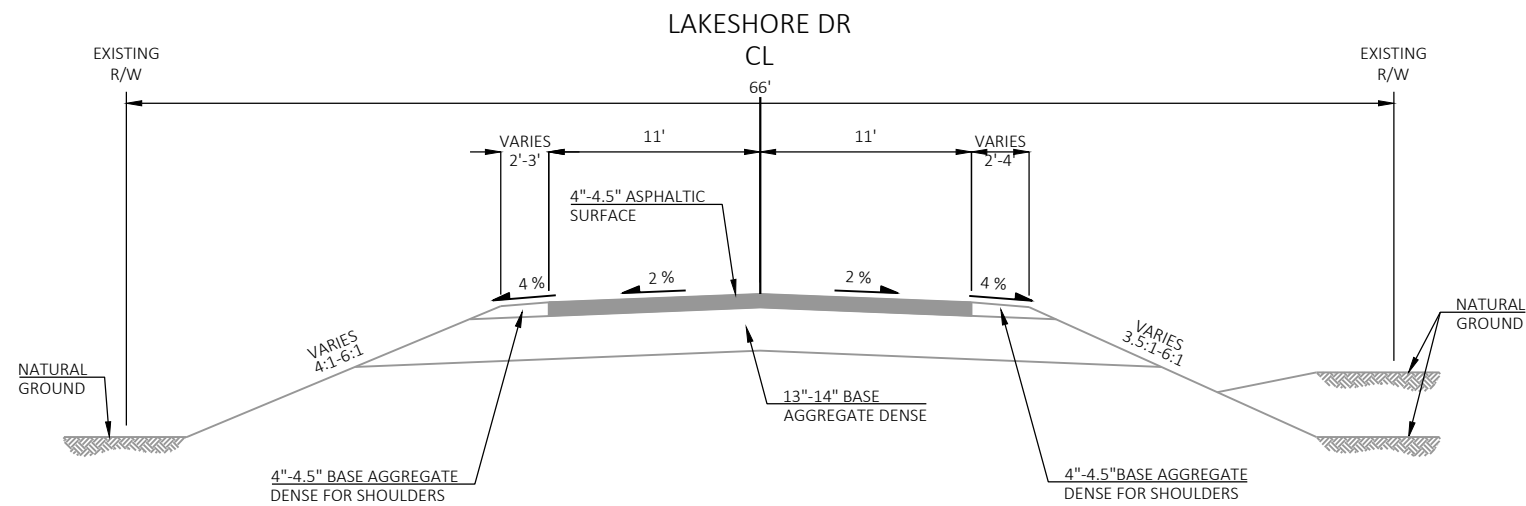
LAND USE:	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS:	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.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 = 0.19 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.17 ACRES

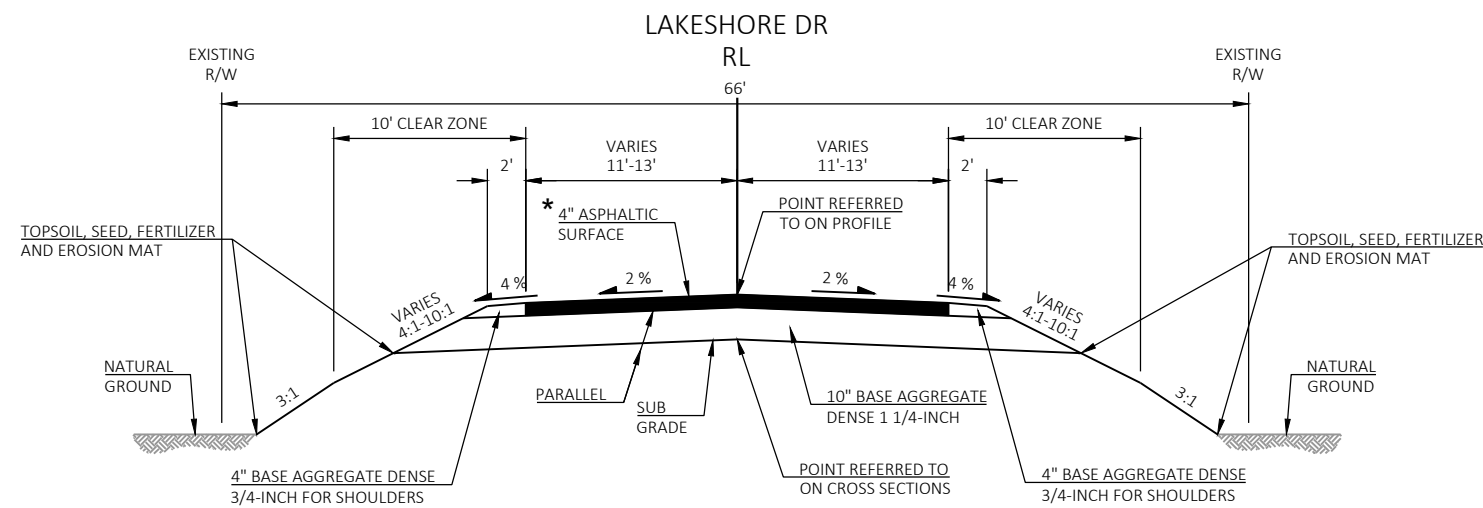
DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

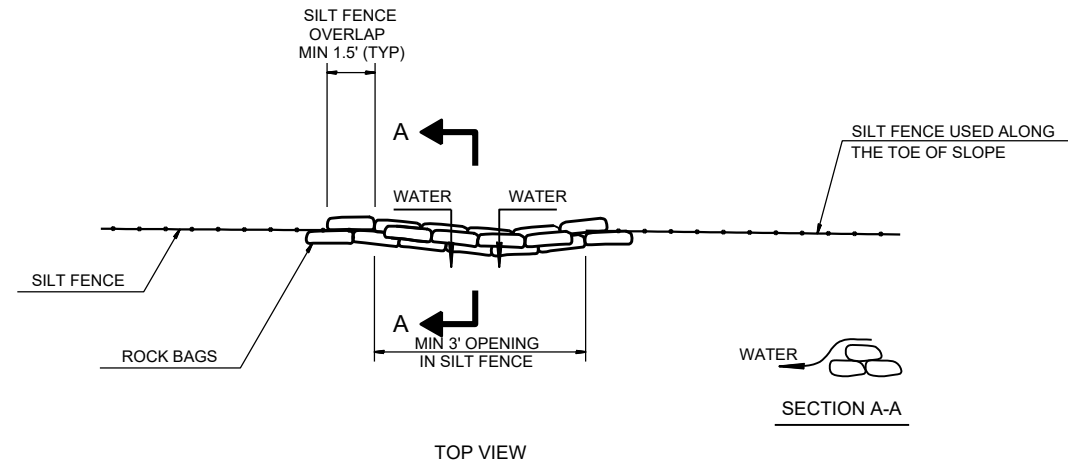


EXISTING TYPICAL SECTION FOR LAKESHORE DRIVE
STA 9+30 - STA 10+70



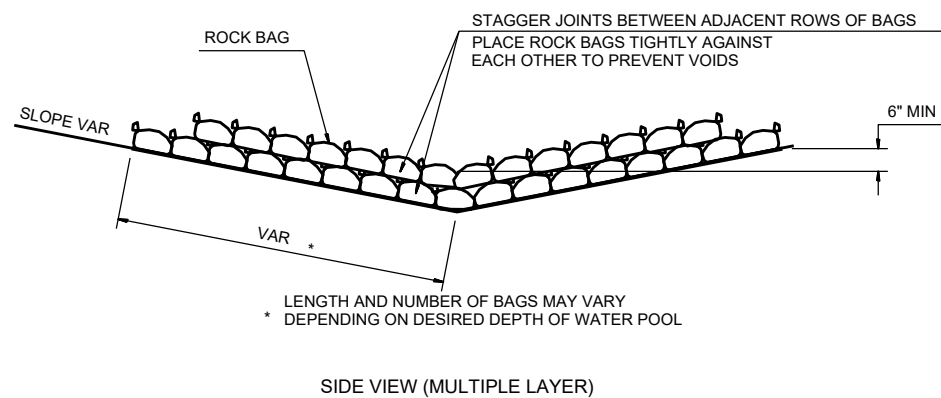
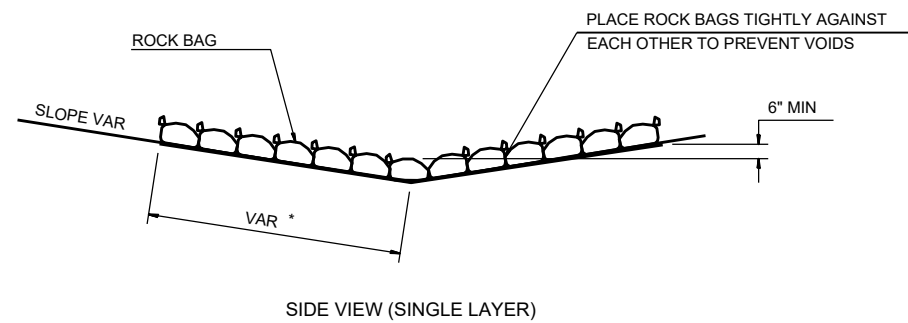
FINISHED TYPICAL SECTION FOR LAKESHORE DRIVE
STA 9+30 - STA 10+70

LAKESHORE DRIVE		
LAYER	THICKNESS	TYPE
UPPER	1 3/4-INCHES	ASPHALTIC SURFACE
LOWER	2 1/4-INCHES	ASPHALTIC SURFACE



ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL

PAID AS ROCK BAGS
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)

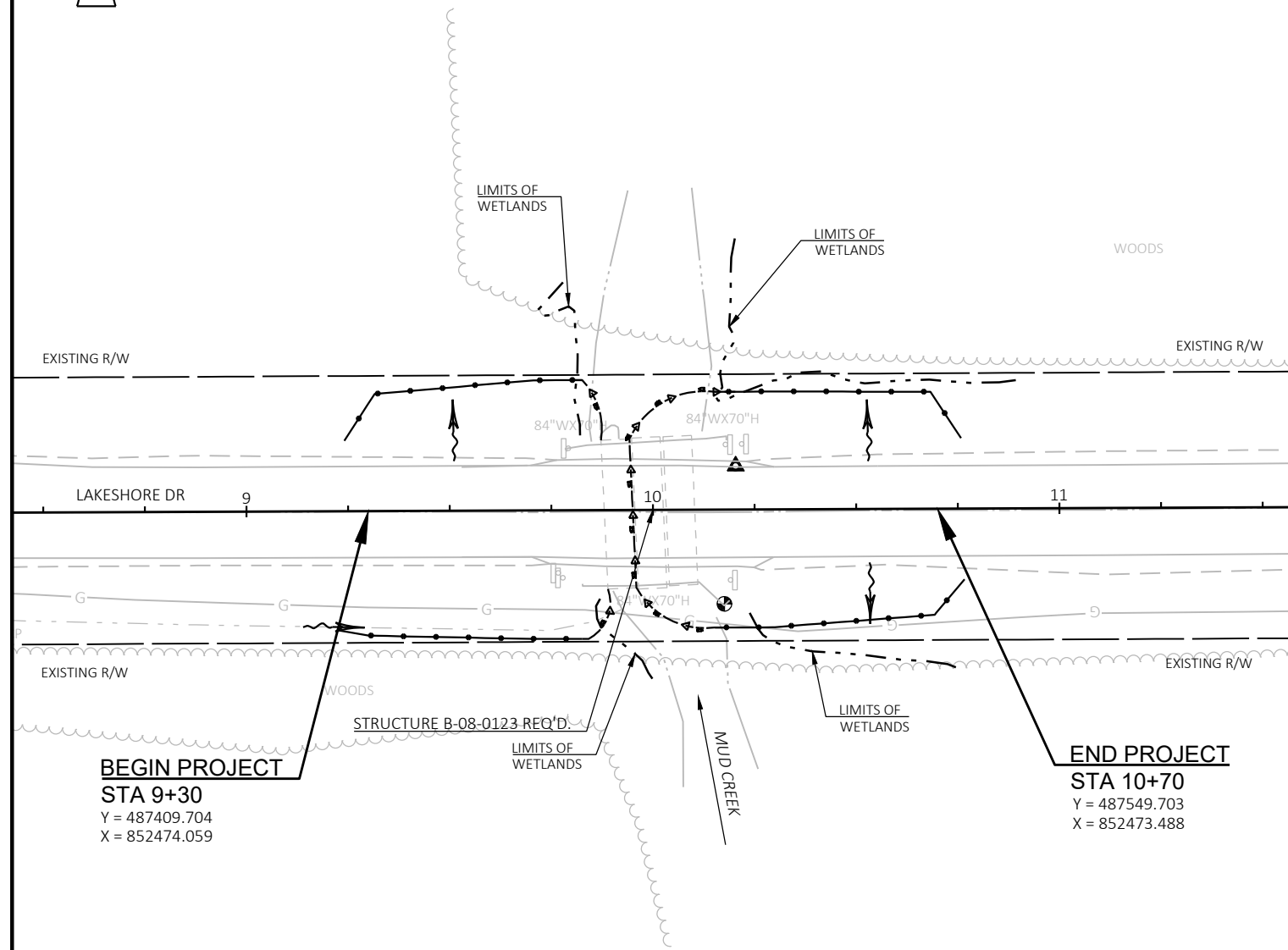


ROCK BAGS DITCH CHECK

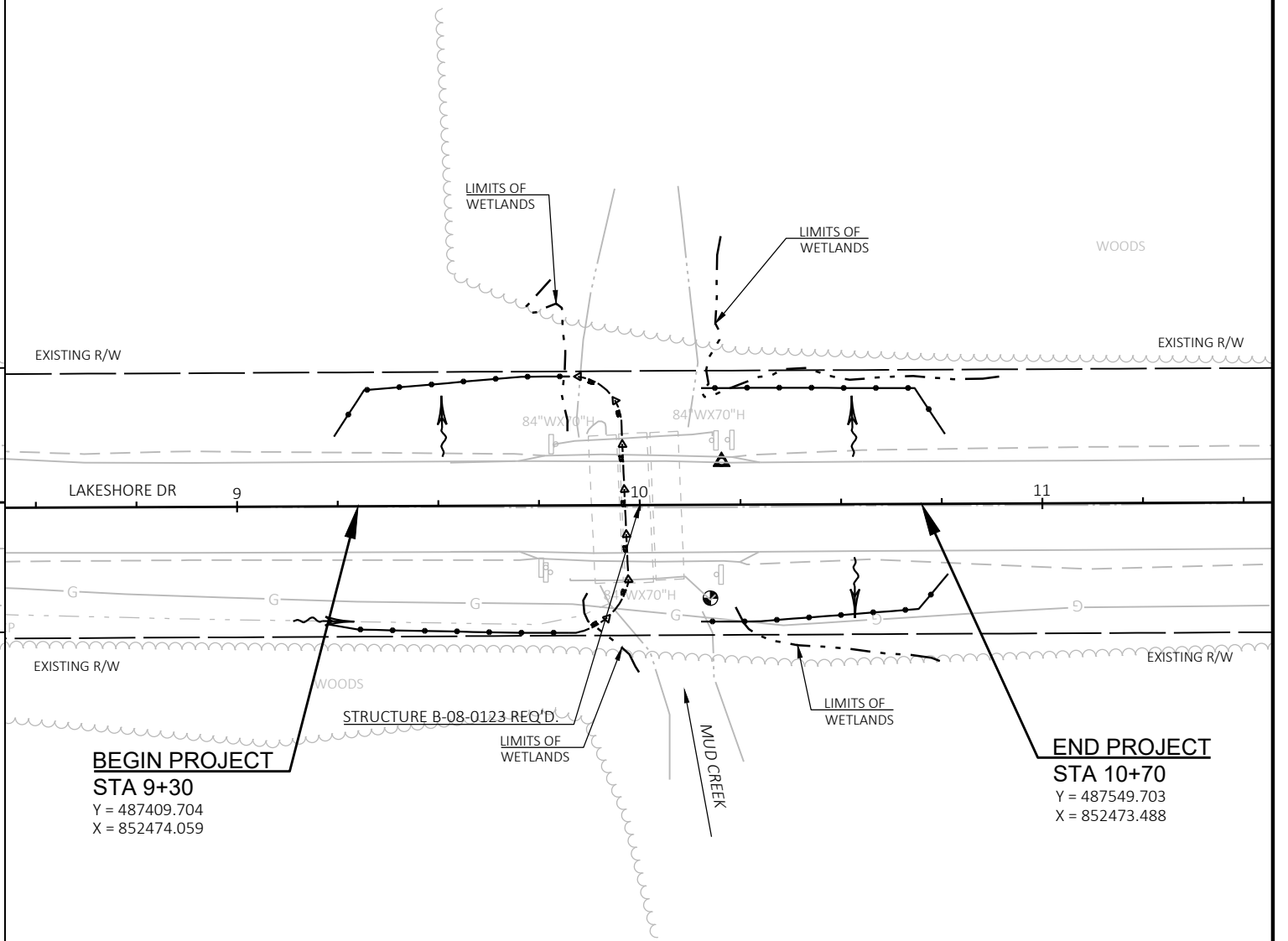
PAID AS ROCK BAGS
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)

A diagram showing a coordinate system. A horizontal line with an arrow pointing to the right is labeled 'z'. A vertical line with an arrow pointing upwards is labeled 'y'.

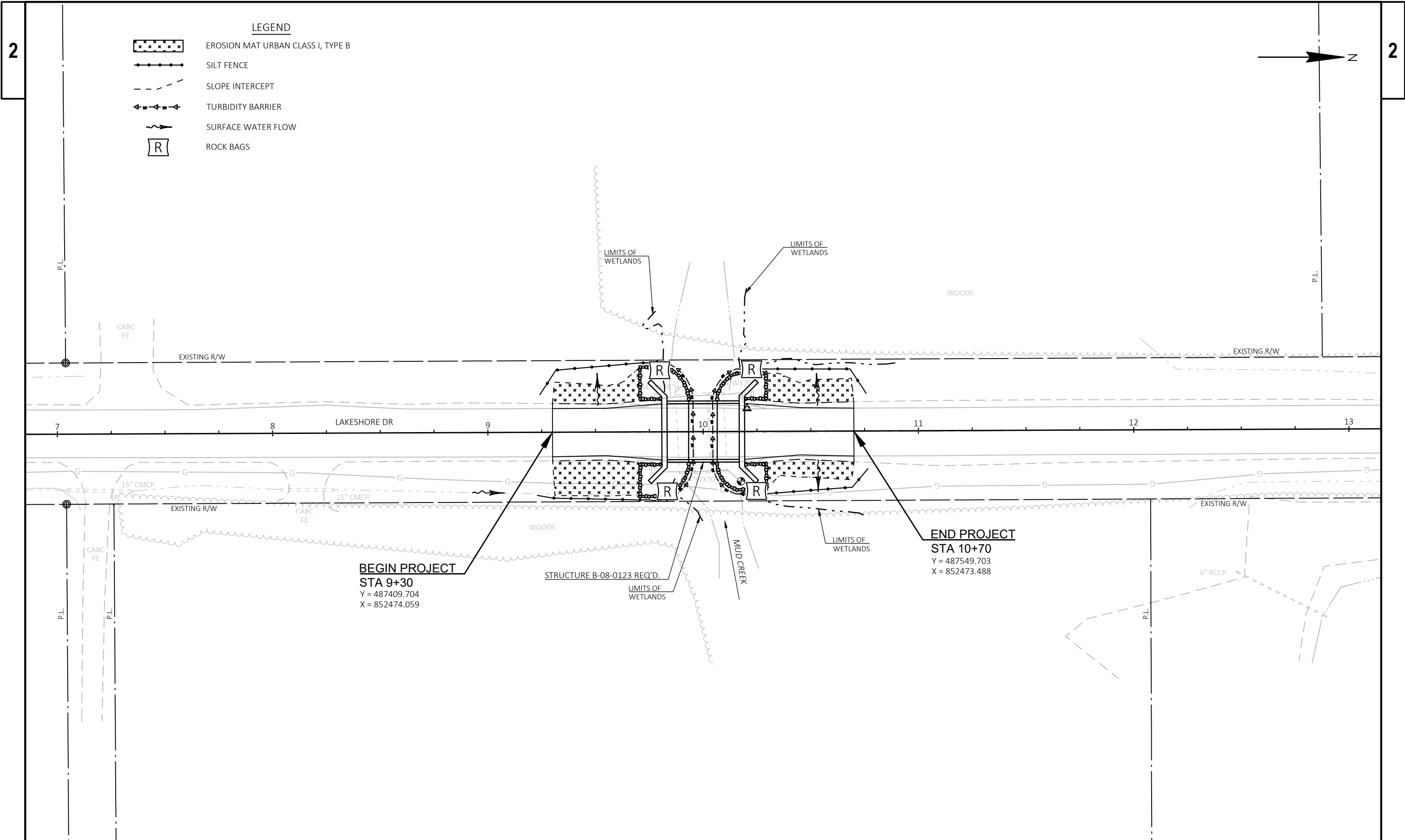
- | | |
|---|-----------------------------------|
|  | EROSION MAT URBAN CLASS I, TYPE B |
|  | SILT FENCE |
|  | SLOPE INTERCEPT |
|  | TURBIDITY BARRIER |
|  | SURFACE WATER FLOW |
|  | ROCK BAGS |



PHASE 1 EXISTING STRUCTURE REMOVAL PLAN



PHASE 1 EXISTING STRUCTURE REMOVAL PLAN



PROJECT NO: 4478-02-70	HWY: LAKESHORE DRIVE	COUNTY: CALUMET	EROSION CONTROL - PHASE 2	SHEET E
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Estimate Of Quantities

4478-02-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0220	Removing Structure (structure) 01. P-8-905	EACH	1.000	1.000
0004	205.0100	Excavation Common	CY	98.000	98.000
0006	206.1001	Excavation for Structures Bridges (structure) 01. B-8-123	EACH	1.000	1.000
0008	210.1500	Backfill Structure Type A	TON	290.000	290.000
0010	213.0100	Finishing Roadway (project) 01. 4478-02-70	EACH	1.000	1.000
0012	305.0110	Base Aggregate Dense 3/4-Inch	TON	16.000	16.000
0014	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	180.000	180.000
0016	455.0605	Tack Coat	GAL	20.000	20.000
0018	465.0105	Asphaltic Surface	TON	60.000	60.000
0020	502.0100	Concrete Masonry Bridges	CY	119.000	119.000
0022	502.3200	Protective Surface Treatment	SY	171.000	171.000
0024	505.0400	Bar Steel Reinforcement HS Structures	LB	4,160.000	4,160.000
0026	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	18,790.000	18,790.000
0028	513.4061	Railing Tubular Type M	LF	82.000	82.000
0030	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0032	550.0500	Pile Points	EACH	14.000	14.000
0034	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,225.000	1,225.000
0036	606.0300	Riprap Heavy	CY	155.000	155.000
0038	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	142.000	142.000
0040	618.0100	Maintenance and Repair of Haul Roads (project) 01. 4478-02-70	EACH	1.000	1.000
0042	619.1000	Mobilization	EACH	1.000	1.000
0044	624.0100	Water	MGAL	4.000	4.000
0046	625.0100	Topsoil	SY	230.000	230.000
0048	628.1504	Silt Fence	LF	320.000	320.000
0050	628.1520	Silt Fence Maintenance	LF	640.000	640.000
0052	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0054	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0056	628.2008	Erosion Mat Urban Class I Type B	SY	230.000	230.000
0058	628.6005	Turbidity Barriers	SY	180.000	180.000
0060	628.7570	Rock Bags	EACH	60.000	60.000
0062	629.0210	Fertilizer Type B	CWT	0.300	0.300
0064	630.0120	Seeding Mixture No. 20	LB	12.000	12.000
0066	630.0200	Seeding Temporary	LB	8.000	8.000
0068	630.0500	Seed Water	MGAL	8.000	8.000
0070	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0072	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0074	638.2602	Removing Signs Type II	EACH	8.000	8.000
0076	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0078	642.5001	Field Office Type B	EACH	1.000	1.000
0080	643.0420	Traffic Control Barricades Type III	DAY	4,700.000	4,700.000
0082	643.0705	Traffic Control Warning Lights Type A	DAY	6,580.000	6,580.000
0084	643.0900	Traffic Control Signs	DAY	3,995.000	3,995.000
0086	643.5000	Traffic Control	EACH	1.000	1.000
0088	645.0111	Geotextile Type DF Schedule A	SY	88.000	88.000
0090	645.0120	Geotextile Type HR	SY	290.000	290.000
0092	650.4500	Construction Staking Subgrade	LF	100.000	100.000
0094	650.5000	Construction Staking Base	LF	100.000	100.000
0096	650.6501	Construction Staking Structure Layout (structure) 01. B-8-123	EACH	1.000	1.000
0098	650.9911	Construction Staking Supplemental Control (project) 01. 4478-02-70	EACH	1.000	1.000

Estimate Of Quantities

4478-02-70

Line	Item	Item Description	Unit	Total	Qty
0100	650.9920	Construction Staking Slope Stakes	LF	100.000	100.000
0102	690.0150	Sawing Asphalt	LF	46.000	46.000
0104	715.0502	Incentive Strength Concrete Structures	DOL	714.000	714.000
0106	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	150.000	150.000
0108	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0110	SPV.0195	Special 01. Infill Riprap B-8-123	TON	22.000	22.000

BASE AGGREGATE DENSE							ASPHALTIC SURFACE					
				305.0110	305.0120	624.0100					455.0605	465.0105
				BASE AGGREGATE	BASE AGGREGATE						TACK COAT	ASPHALTIC
				DENSE 3/4-INCH	DENSE 1 1/4-INCH	WATER						SURFACE
STATION	TO	STATION	LOCATION	TON	TON	MGAL	STATION	TO	STATION	LOCATION	GAL	TON
9+30	-	9+80	LAKESHORE DRIVE LT & RT	8	90	2	9+30	-	9+80	LAKESHORE DRIVE LT & RT	10	30
10+20	-	10+70	LAKESHORE DRIVE LT & RT	8	90	2	10+20	-	10+70	LAKESHORE DRIVE LT & RT	10	30
TOTALS				16	180	4	TOTALS				20	60

DIVISION	FROM/TO STATION	LOCATION	205.0100 EXCAVATION COMMON (Item #205.0100)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE
			CUT (2)				FACTOR 1.30		
1	9+30 - 10+70	LAKESHORE DRIVE	98	23	75	14	18	80	80
DIVISION TOTALS			98	23	75	14	18	80	80

Notes:	
2-Cut	Unusable Pavement Material is included in Cut
4-Salvaged/Unusable Pavement Material	This does not show up in cross sections. Unusable Pavement Material = Existing Asphaltic Pavement.
5-Available Material	Available Material = Cut - Unusable Pavement Material
13-Expanded Fill	Expanded Fill Factor = 1.3. Expanded Fill = Unexpanded Fill x Expanded Fill Factor.
14-Mass Ordinate	Cut - Unusable Pavement Material - (Unexpanded Fill * Expanded Fill Factor)

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED.

LANDSCAPING ITEMS

				625.0100	628.2008	629.0210	630.0120	630.0200	630.0500
				TOPSOIL	EROSION MAT URBAN	FERTILIZER	SEEDING	SEEDING	SEED WATER
				SY	CLASS I TYPE B SY	TYPE B CWT	MIXTURE NO. 20 LB	TEMPORARY LB	MGAL
9+30	-	9+80	LAKESHORE DRIVE LT & RT	106	106	0.1	5	3	3
10+20	-	10+70	LAKESHORE DRIVE LT & RT	76	76	0.1	4	3	3
UNDISTRIBUTED				48	48	0.1	3	2	2
TOTALS				230	230	0.3	12	8	8

ROCK BAGS

		628.7570
		ROCK BAGS
STATION	LOCATION	EACH
9+80	LAKESHORE DRIVE LT & RT	24
10+20	LAKESHORE DRIVE LT & RT	24
UNDISTRIBUTED		12
TOTAL		60

SILT FENCE

				628.1504	628.1520
				SILT FENCE	SILT FENCE
				LF	MAINTENANCE
STATION	TO	STATION	LOCATION	LF	LF
9+30	-	9+80	LAKESHORE DRIVE LT & RT	130	260
10+20	-	10+70	LAKESHORE DRIVE LT & RT	125	250
UNDISTRIBUTED				65	130
TOTALS				320	640

TURBIDITY BARRIERS

		628.6005	
		TURBIDITY	
		BARRIERS	
STATION	LOCATION	SY	REMARKS
9+80	LAKESHORE DRIVE LT & RT	52	PHASE 1
9+80	LAKESHORE DRIVE LT & RT	41	PHASE 2
10+20	LAKESHORE DRIVE LT & RT	44	PHASE 1
10+20	LAKESHORE DRIVE LT & RT	43	PHASE 2
TOTAL		180	

MOBILIZATIONS EROSION CONTROL

				628.1905	628.1910
				MOBILIZATIONS	MOBILIZATIONS
				EROSION	EMERGENCY
				CONTROL	EROSION CONTROL
STATION	TO	STATION	LOCATION	EACH	EACH
9+30	-	10+70	LAKESHORE DRIVE LT & RT	5	3
TOTALS				5	3

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED.

TRAFFIC CONTROL								
LOCATION	APPROXIMATE SERVICE PERIOD	643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0900 TRAFFIC CONTROL SIGNS		REMARKS
		NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	
MUD CREEK RD	235	2	470	4	940	3	705	"BRIDGE OUT 0.2 MILES AHEAD". SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL C
SOUTH WORK ZONE LIMITS	235	7	1645	8	1880	4	940	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL D
NORTH WORK ZONE LIMITS	235	7	1645	8	1880	4	940	SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL D
SUNSET BEACH RD	235	2	470	4	940	3	705	"BRIDGE OUT 0.5 MILES AHEAD". SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL C
W LAKE ST/CTH E	235	2	470	4	940	3	705	"BRIDGE OUT 1.0 MILES AHEAD". SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL C
TOTALS			4,700		6,580		3,995	

SIGNS					
STATION	LOCATION		634.0612	637.2230	
			POSTS WOOD 4X6- INCH X 12-FT	SIGNS TYPE II REFLECTIVE F W5-52L W5-52R	
			EACH	SF	SF
9+80	LAKESHORE DRIVE	RT	1	-	3
9+80	LAKESHORE DRIVE	LT	1	3	-
10+20	LAKESHORE DRIVE	RT	1	3	-
10+20	LAKESHORE DRIVE	LT	1	-	3
TOTALS			4	12	

REMOVING SIGNS AND SIGN SUPPORTS					
STATION	LOCATION		638.2602	638.3000	REMARKS
			REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
	LAKESHORE DRIVE	RT	1	1	"20 TON BRIDGE AHEAD"
9+80	LAKESHORE DRIVE	RT	1	1	"20 TON BRIDGE"
9+80	LAKESHORE DRIVE	LT & RT	2	2	OBJECT MARKER
10+20	LAKESHORE DRIVE	LT	1	1	"20 TON BRIDGE"
10+20	LAKESHORE DRIVE	LT & RT	2	2	OBJECT MARKER
	LAKESHORE DRIVE	LT	1	1	"20 TON BRIDGE AHEAD"
TOTALS			8	8	

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED.

CONSTRUCTION STAKING

					650.4500	650.5000	650.6501.01	650.9911.01	650.9920
					CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION
					STAKING	STAKING	STAKING	STAKING	STAKING
					SUBGRADE	BASE	STRUCTURE	SUPPLEMENTAL CONTROL	SLOPE
					LF	LF	LF	LF	LF
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF	LF	LF
0010	9+30	-	9+80	LAKESHORE DRIVE	50	50	-	-	50
0010		PROJECT		LAKESHORE DRIVE	-	-	-	1	-
0010	10+20	-	10+70	LAKESHORE DRIVE	50	50	-	-	50
TOTAL 0010					100	100	0	1	100
0020		PROJECT		B-08-0123	-	-	1	-	-
TOTAL 0020					0	0	1	0	0
PROJECT TOTAL					100	100	1	1	100

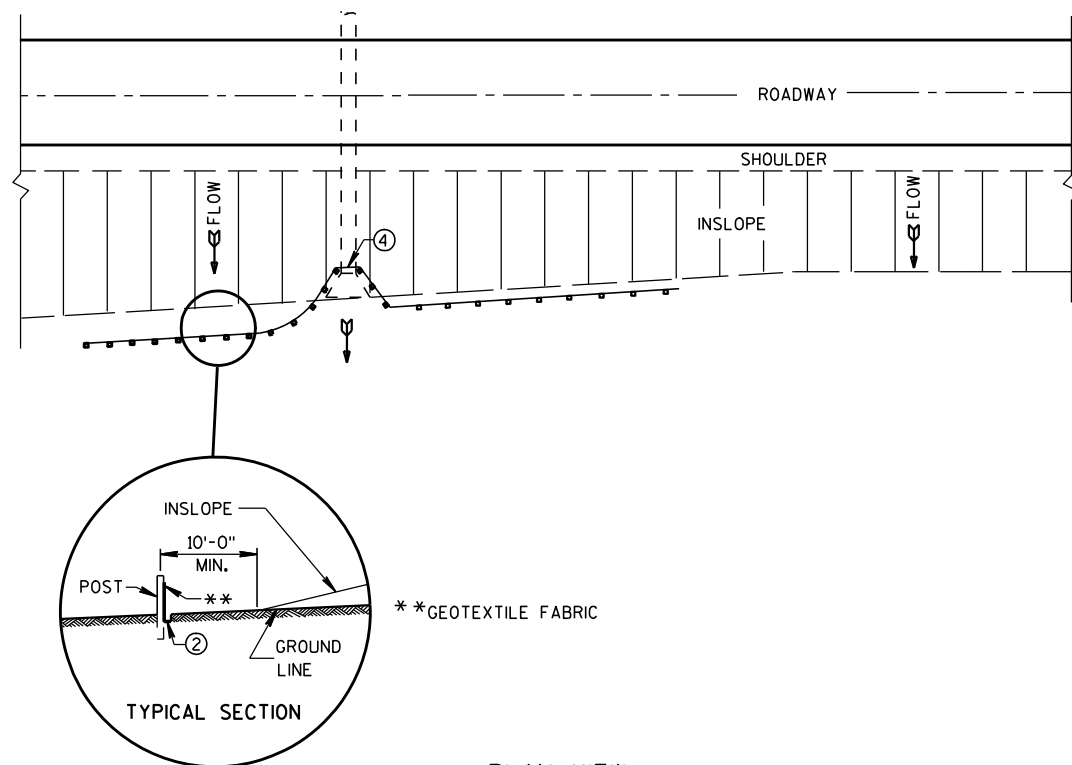
SAWING ASPHALT

		690.0150
		SAWING
		ASPHALT
STATION	LOCATION	LF
9+30	LAKESHORE DRIVE LT & RT	23
10+70	LAKESHORE DRIVE LT & RT	23
TOITAL		46

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED.

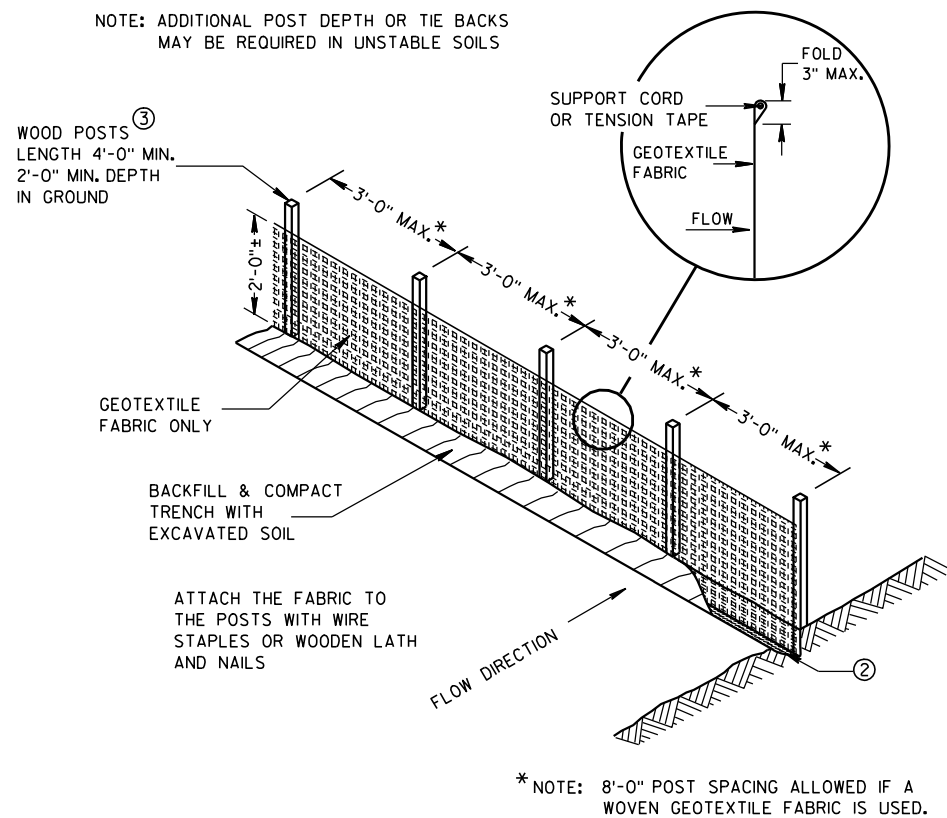
Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
15C02-10A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-10B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-11B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

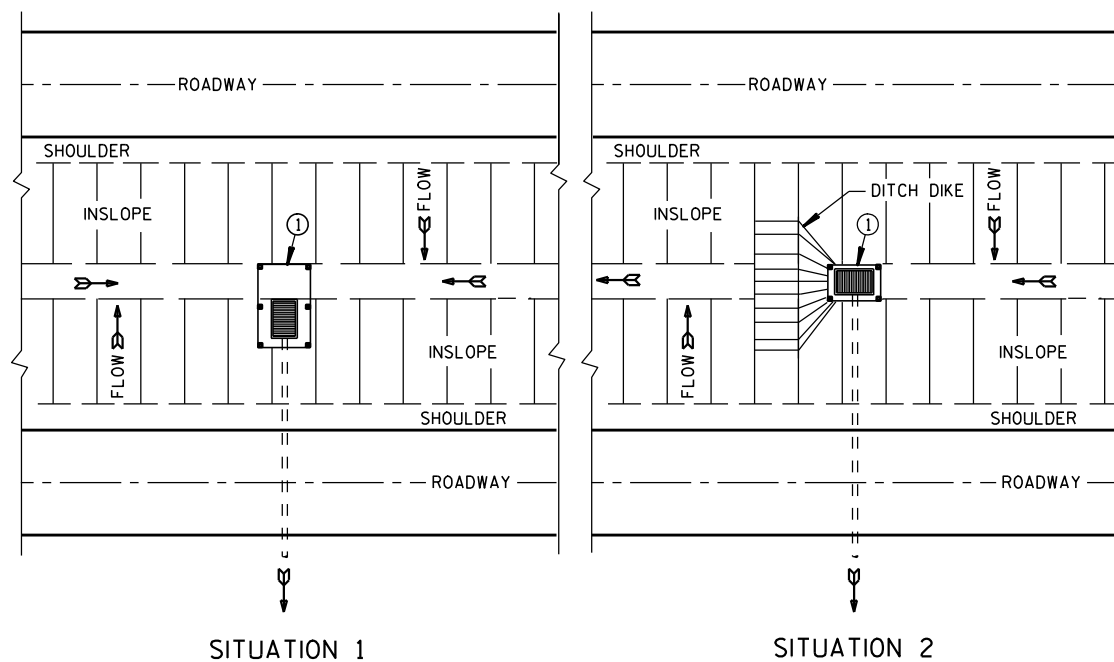


PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

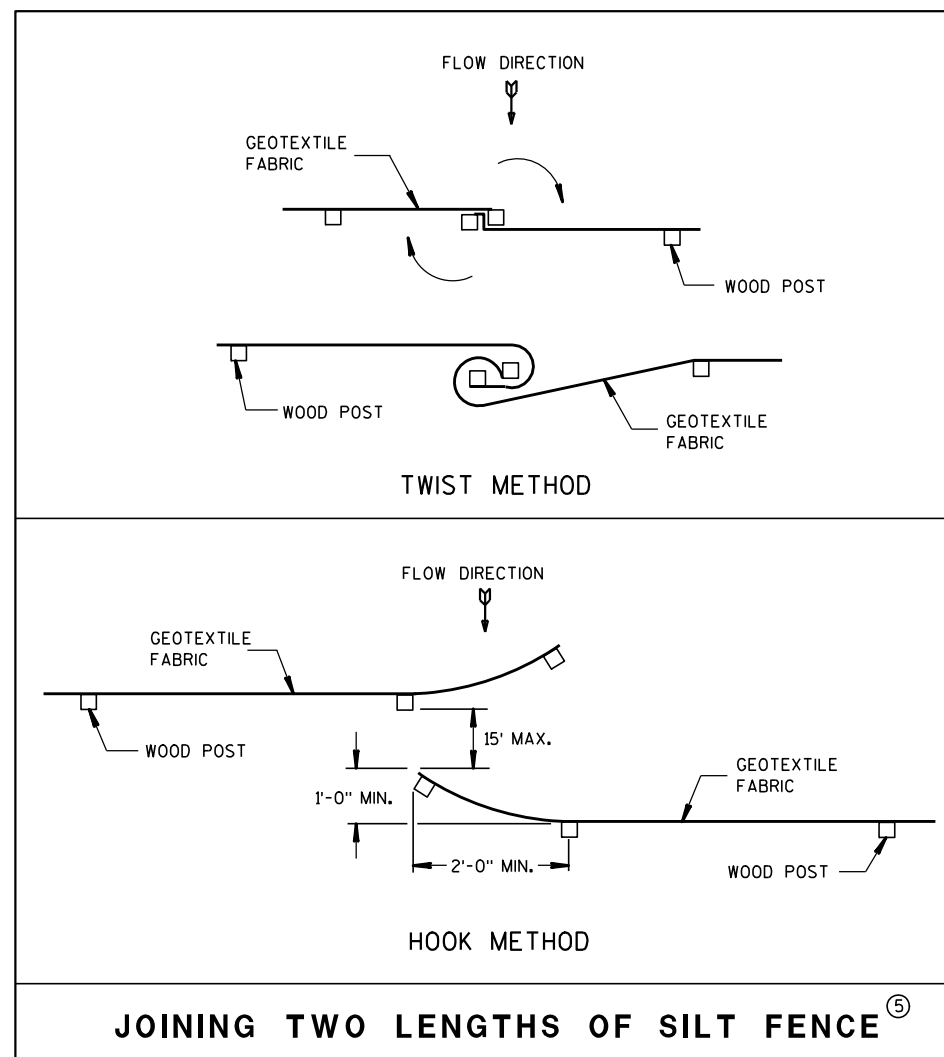
NOTE: ADDITIONAL POST DEPTH OR TIE BACKS
MAY BE REQUIRED IN UNSTABLE SOILS



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

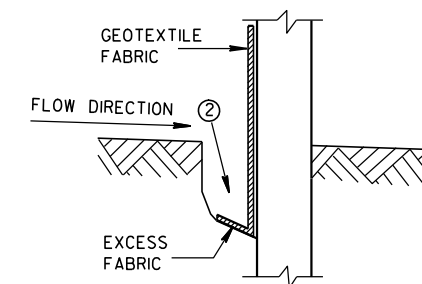


JOINING TWO LENGTHS OF SILT FENCE^⑤

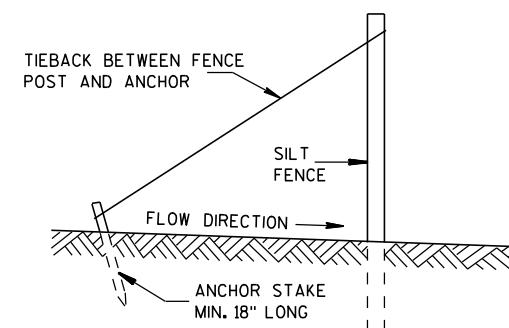
GENERAL NOTES

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

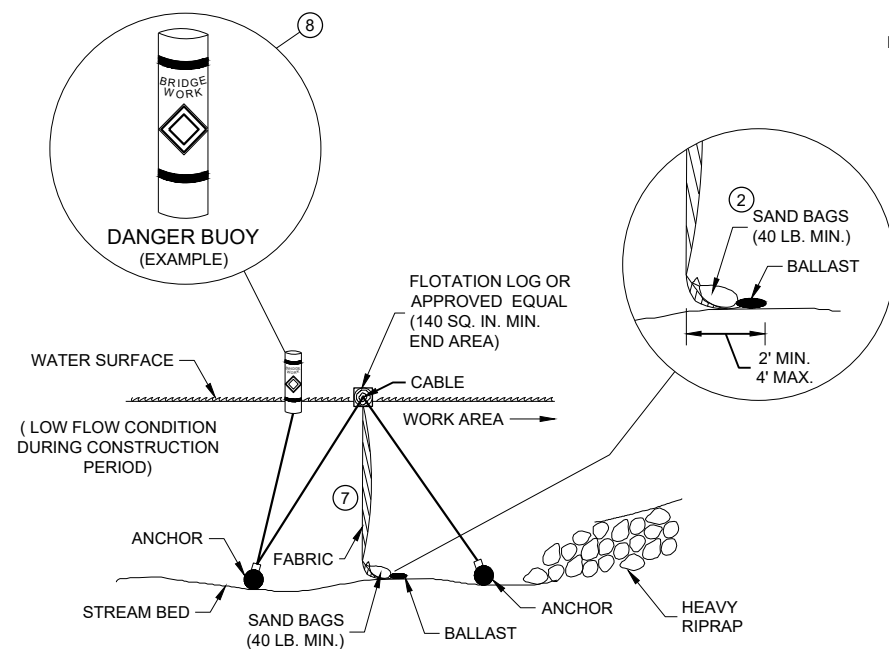
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

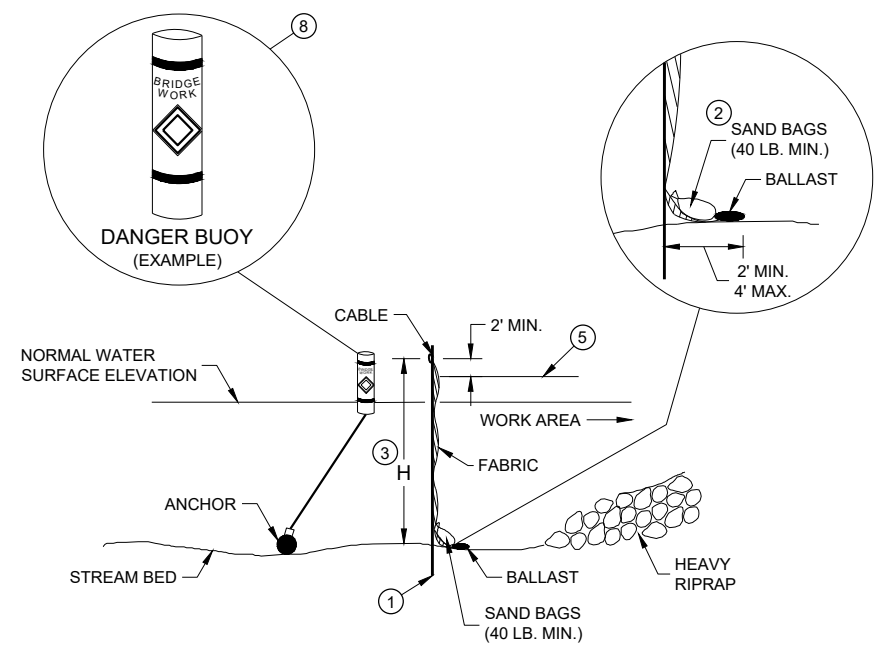
4-29-05
DATE

FHWA

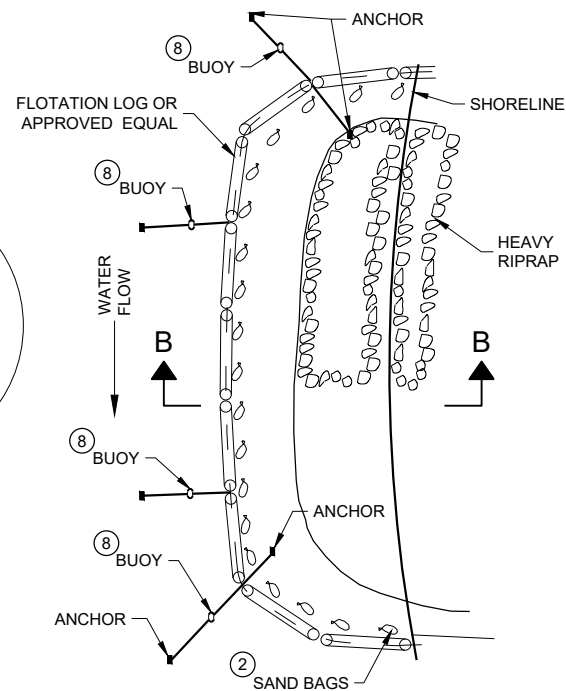
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



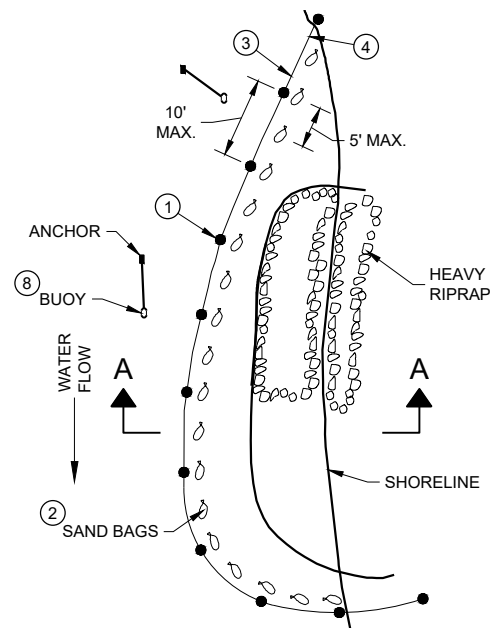
SECTION B - B

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

SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION

PLAN VIEW



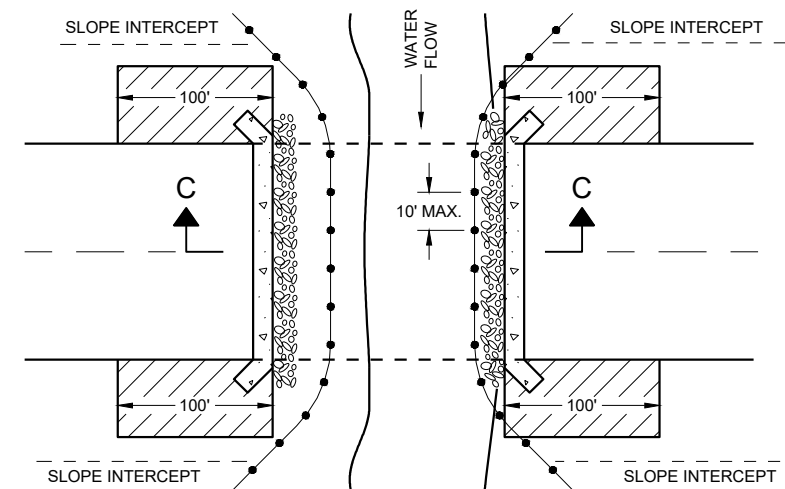
PLAN VIEW

TURBIDITY BARRIER PLACEMENT DETAILS**GENERAL NOTES**

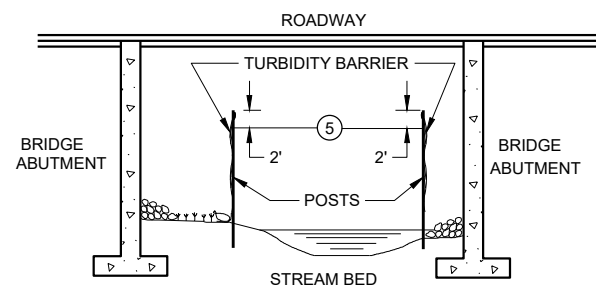
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



SECTION C - C

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

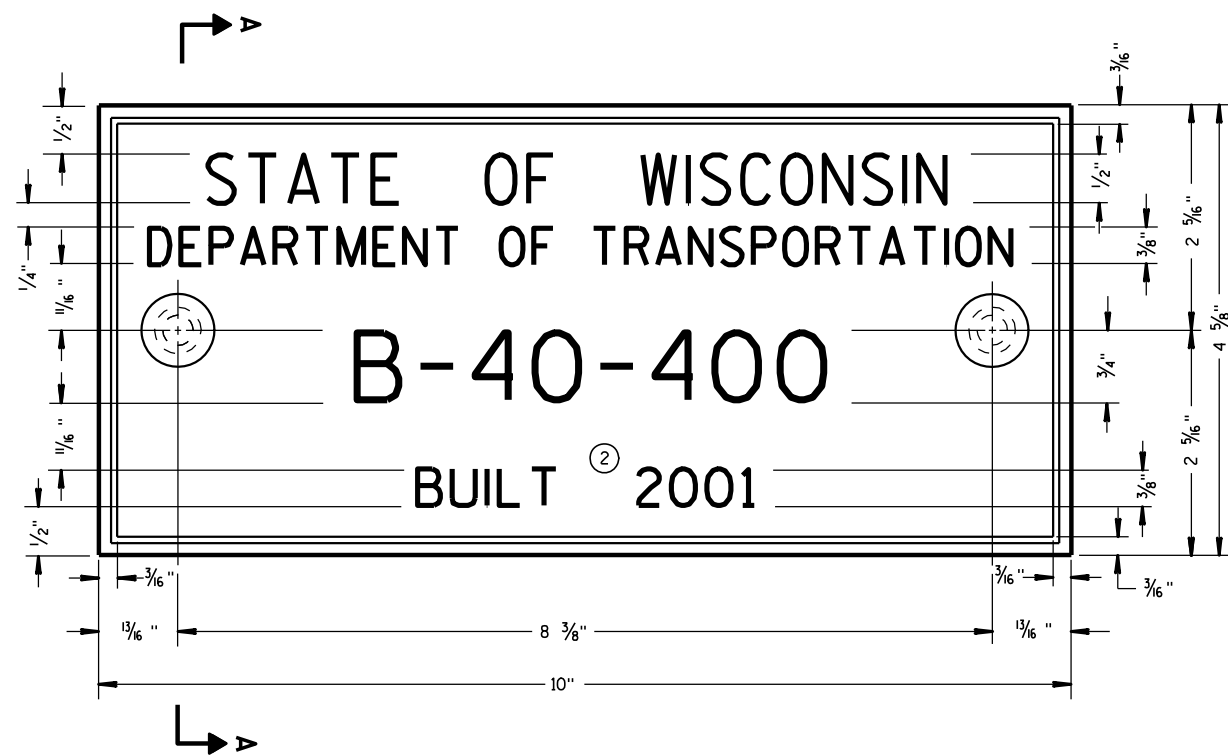
APPROVED

6/4/02

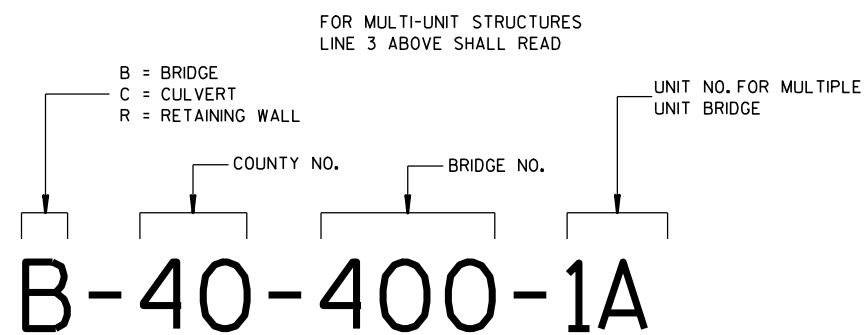
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT
ENGINEER



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



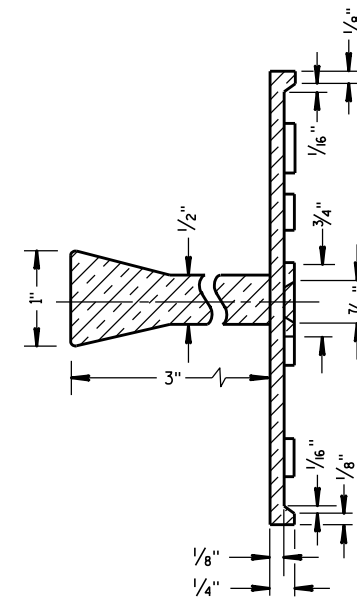
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

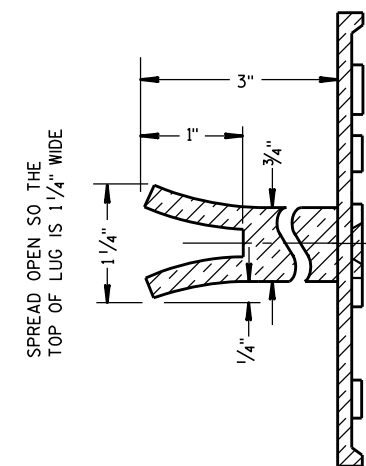
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

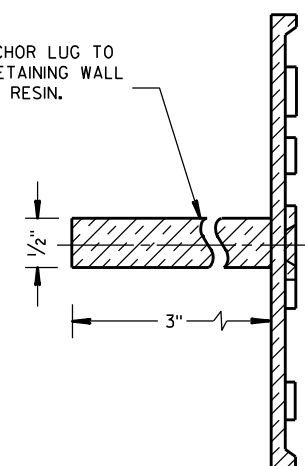


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

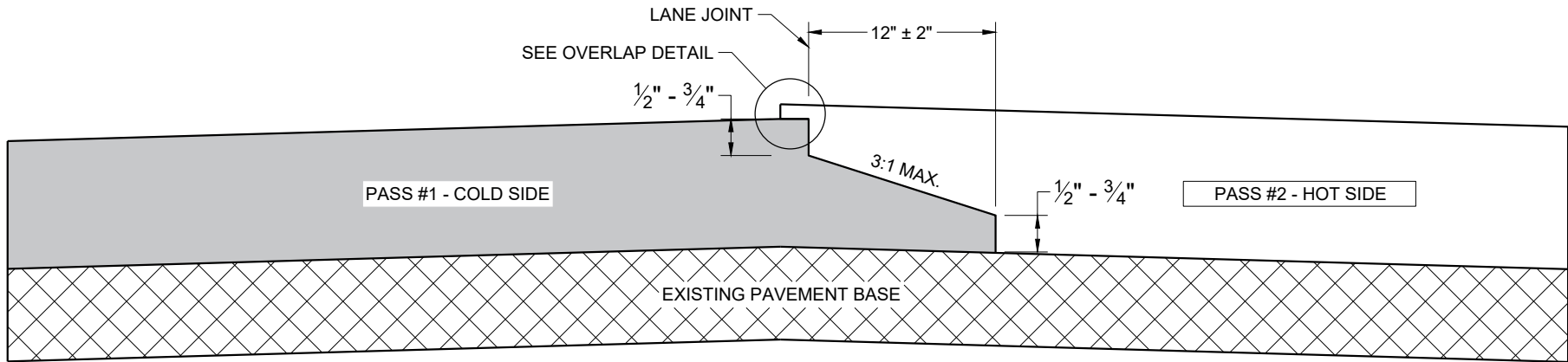
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

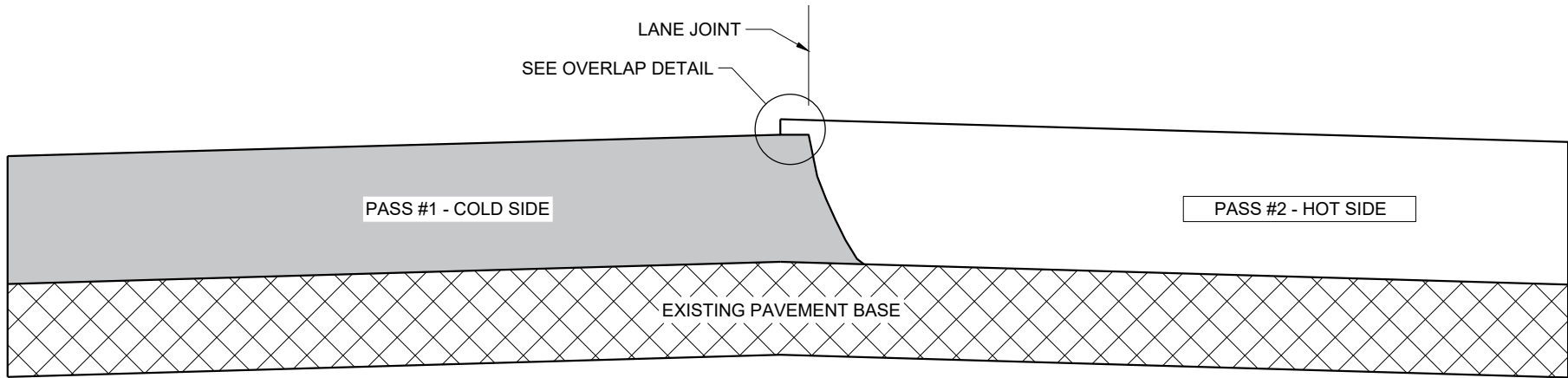
3/26/10
DATE

FHWA

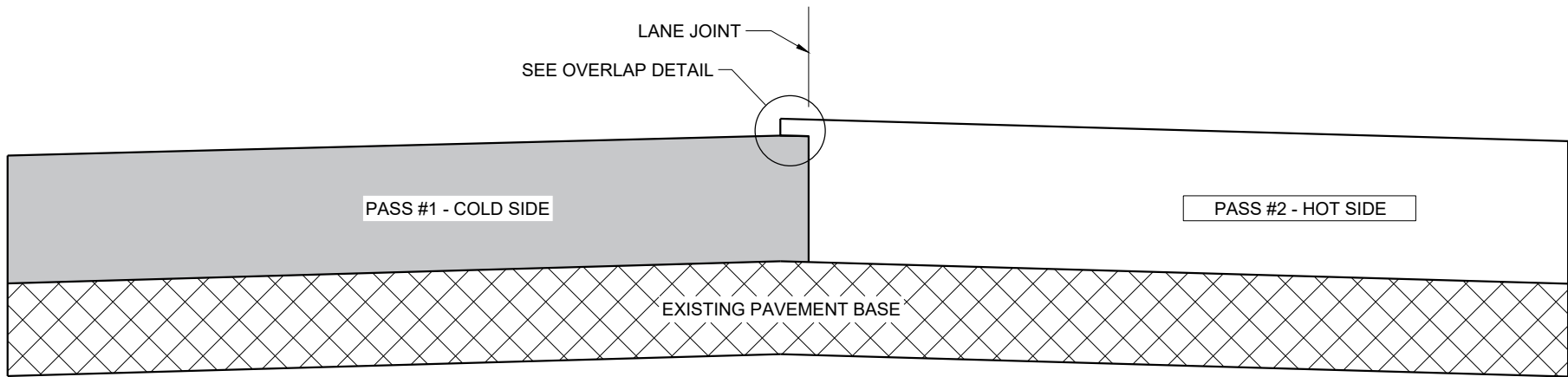
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

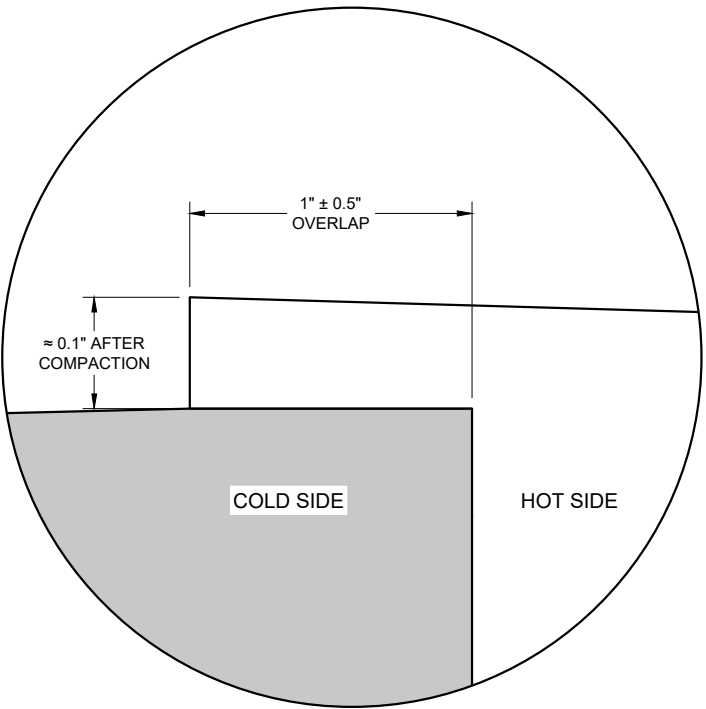
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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

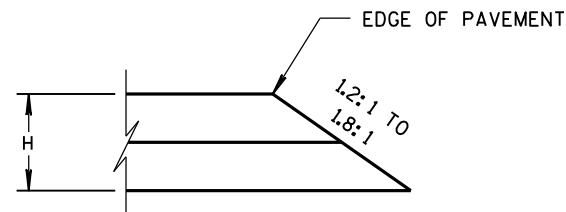


OVERLAP DETAIL (TYPICAL)

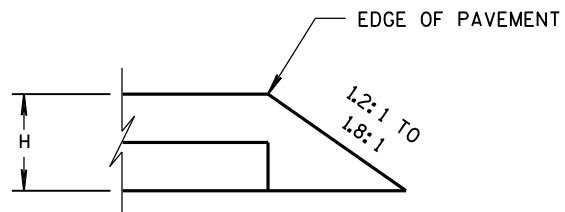
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

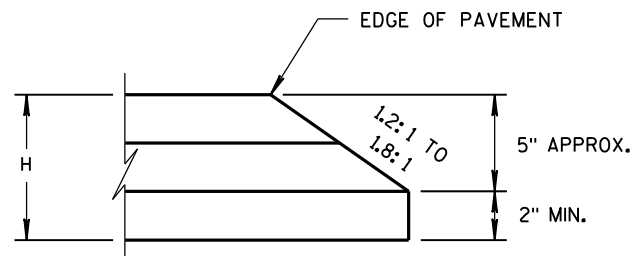
APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGINEER
FHWA



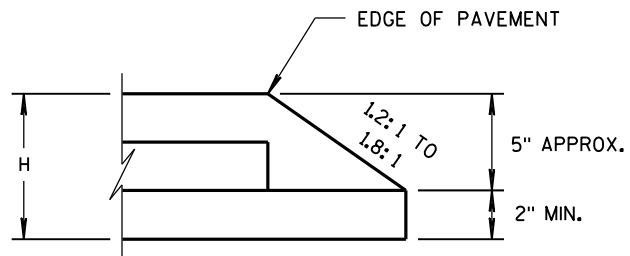
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

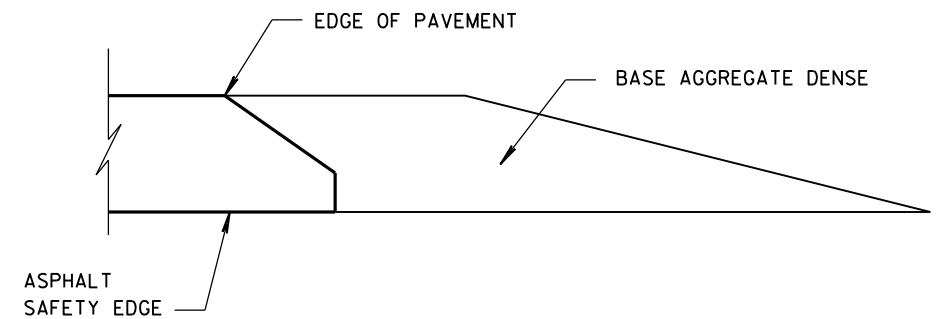


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



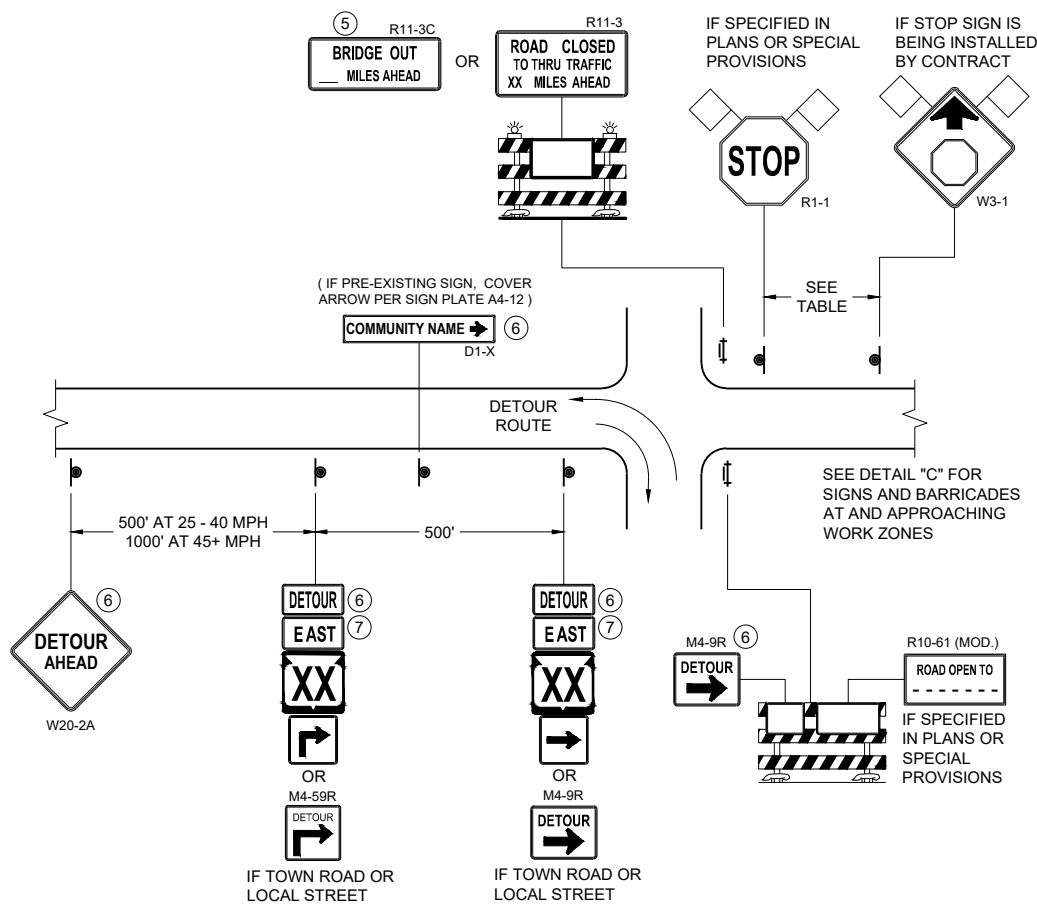
CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS

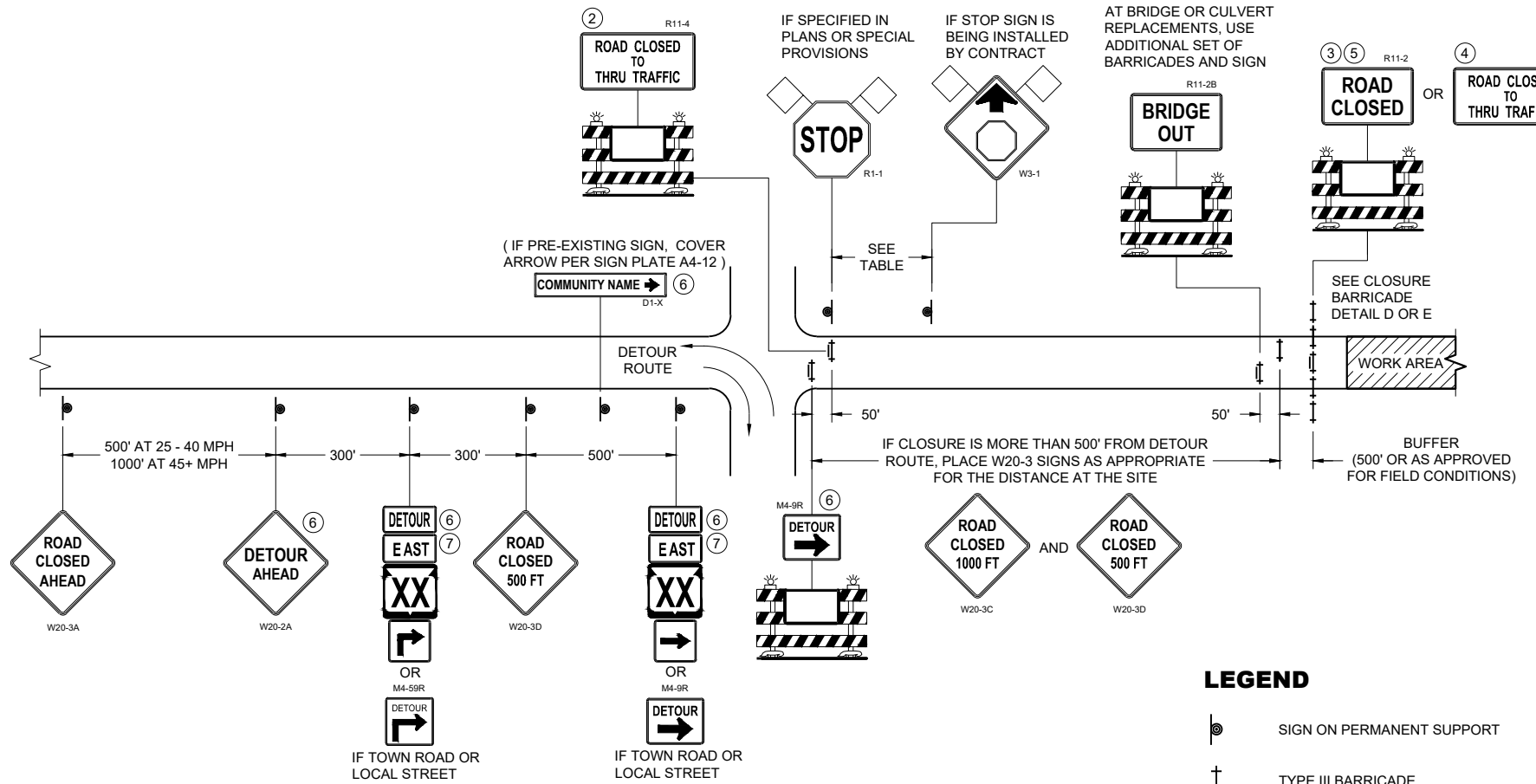


FINISHED SHOULDER AGGREGATE PLACEMENT

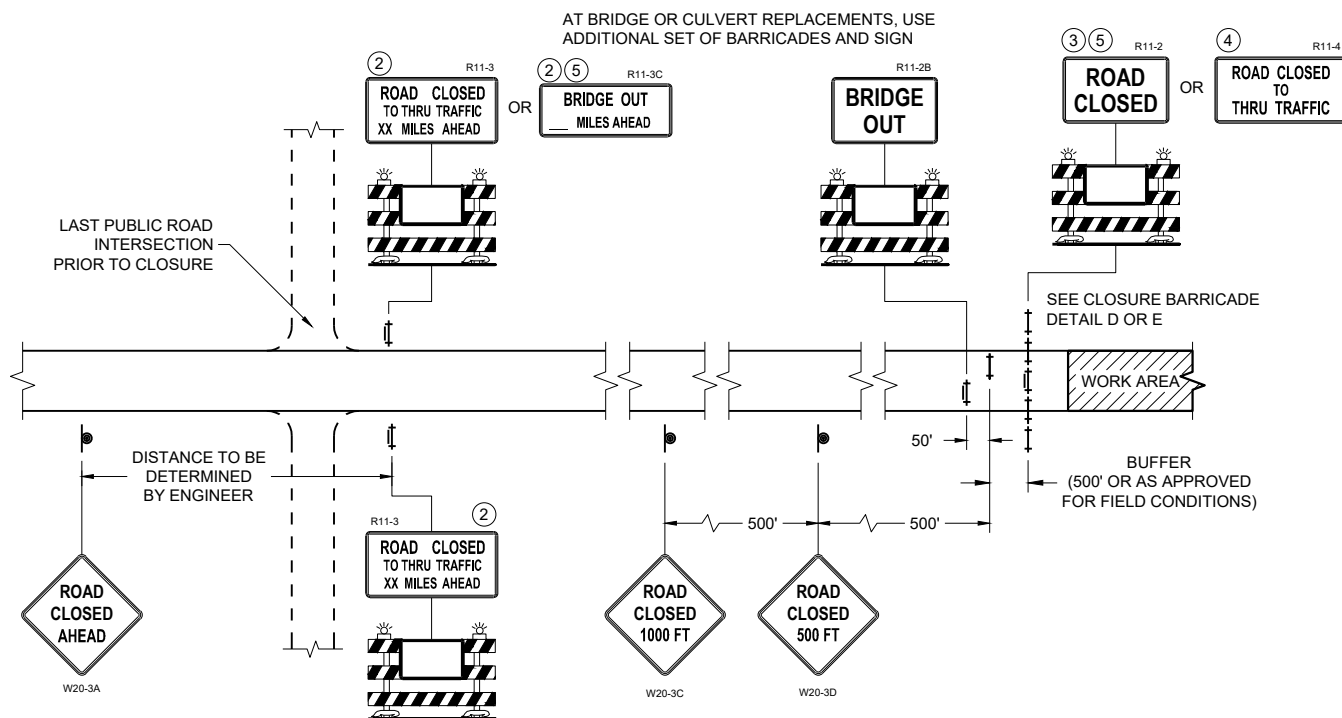
SAFETY EDGE _{SM}	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 11/30/2012	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER FHWA



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



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)

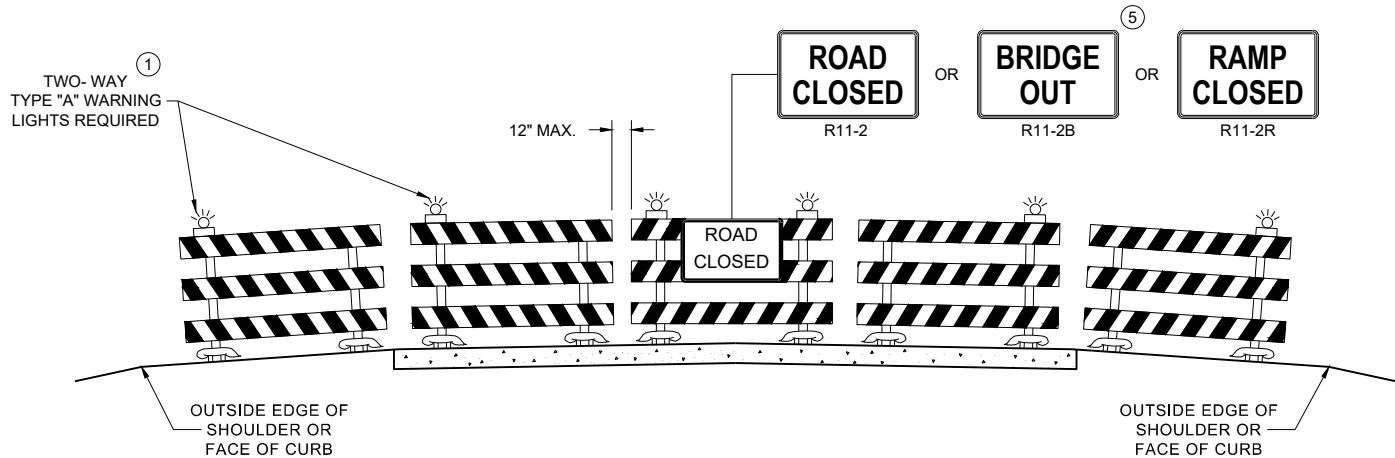
DETOUR M4 - 8
EAST M3 - X
XX OR **XX** OR **COUNTY X**
M1 - 4 M1 - 6 M1 - 5A
→ OR **→**
M05 - 1 M06 - 1

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

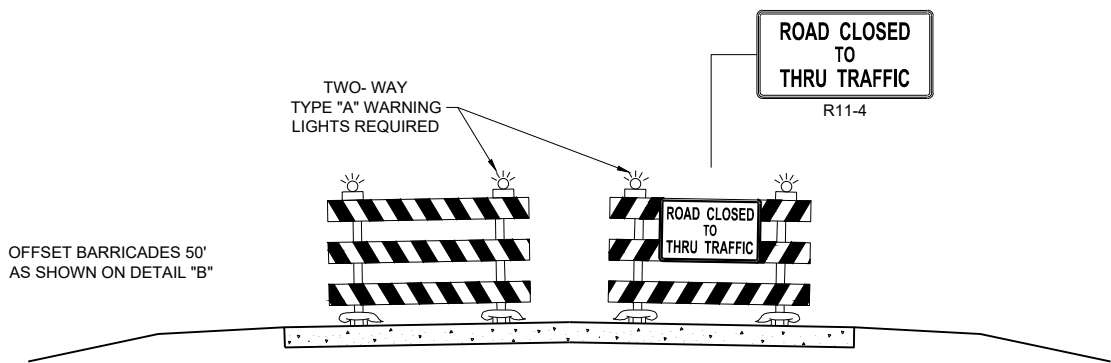
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

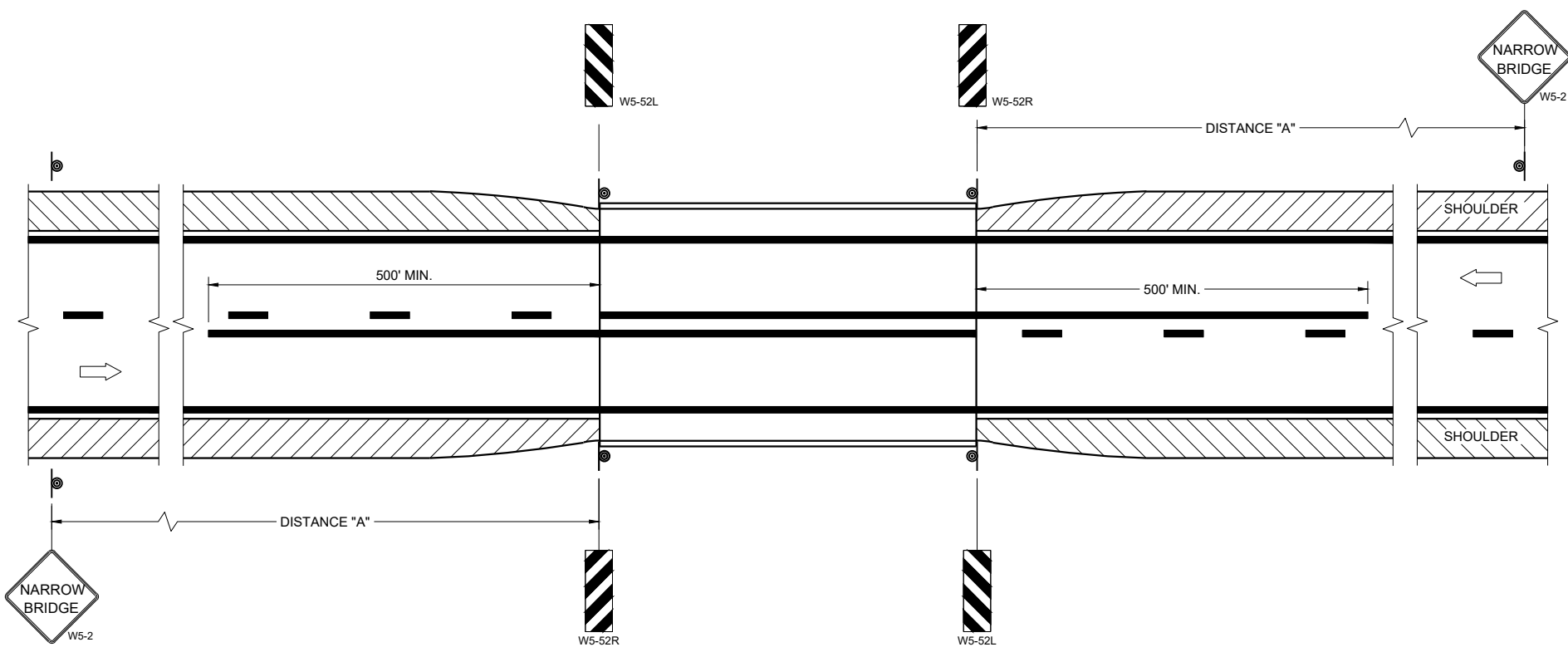
"WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

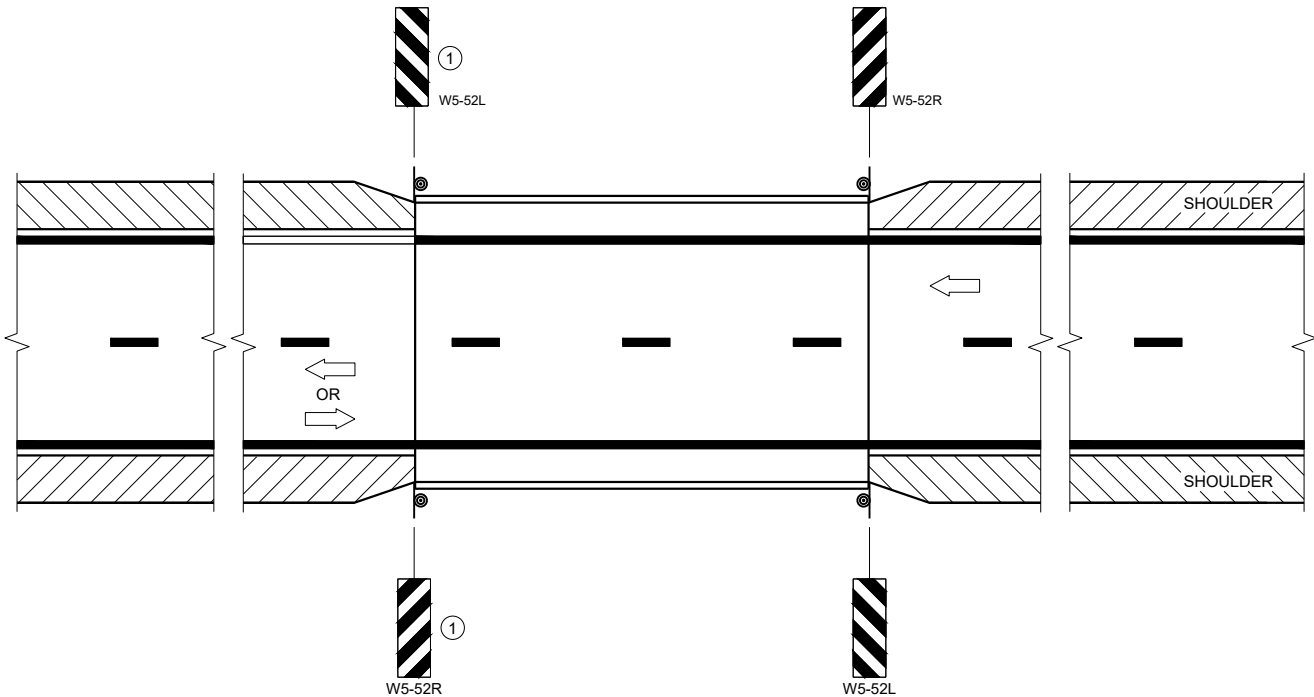
SIGNS PLACED ON TYPE III BARRICADES THAT ARE SIZES OTHER THAN 48"X30" SHALL HAVE A CORRUGATED POLYPROPYLENE OR POLYETHYLENE PLASTIC SIGN BASE.

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2025 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



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



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

GENERAL NOTES

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

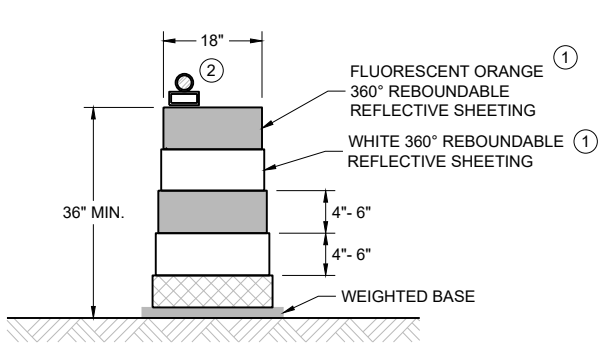
DISTANCE TABLE

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

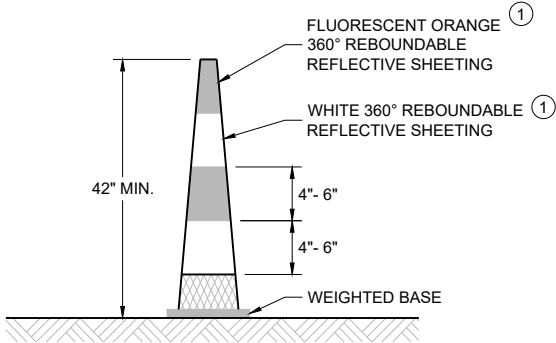
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

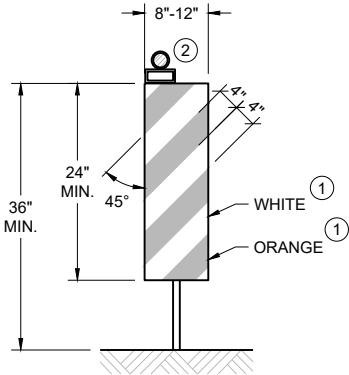
APPROVED
May 2023 /S/ Jeannie Silver
DATE Statewide Pavement Marking Engineer
FHWA



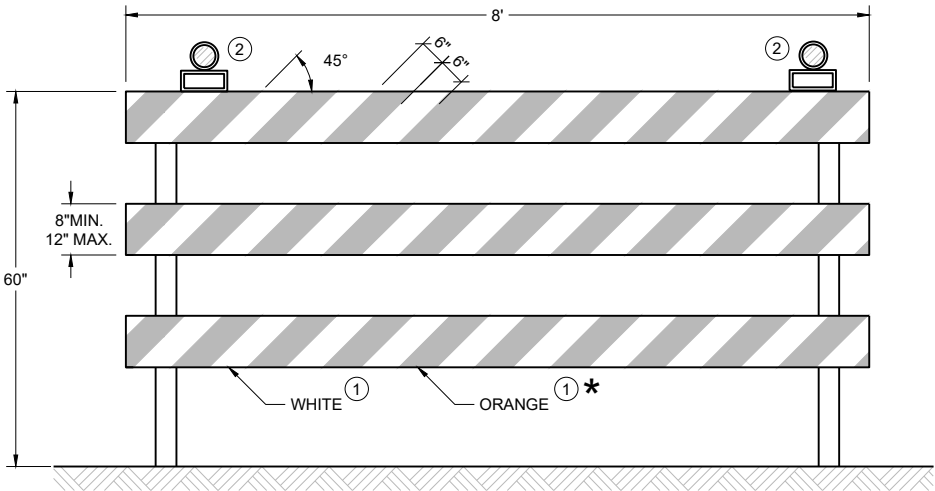
DRUM
BALLAST WIDTHS
RANGE FROM 24"-36"



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



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



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

GENERAL NOTES

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

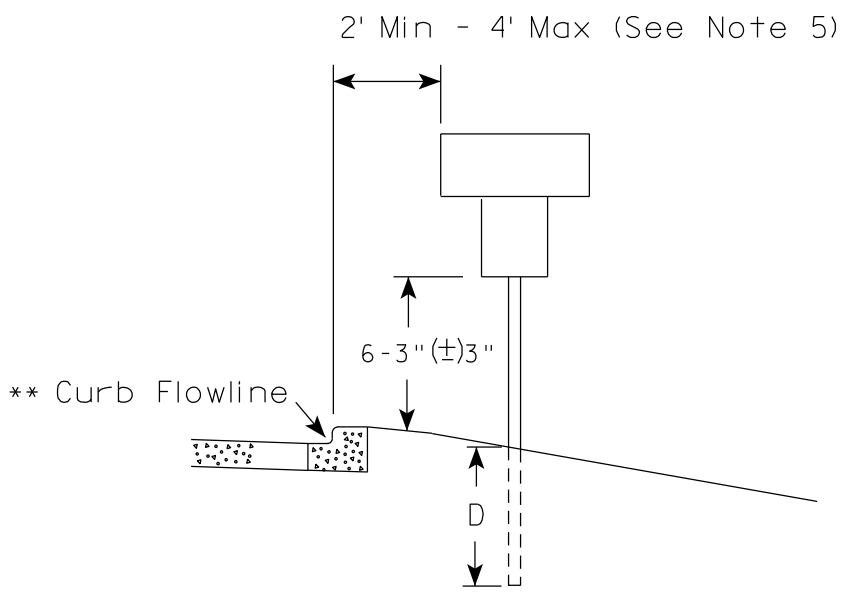
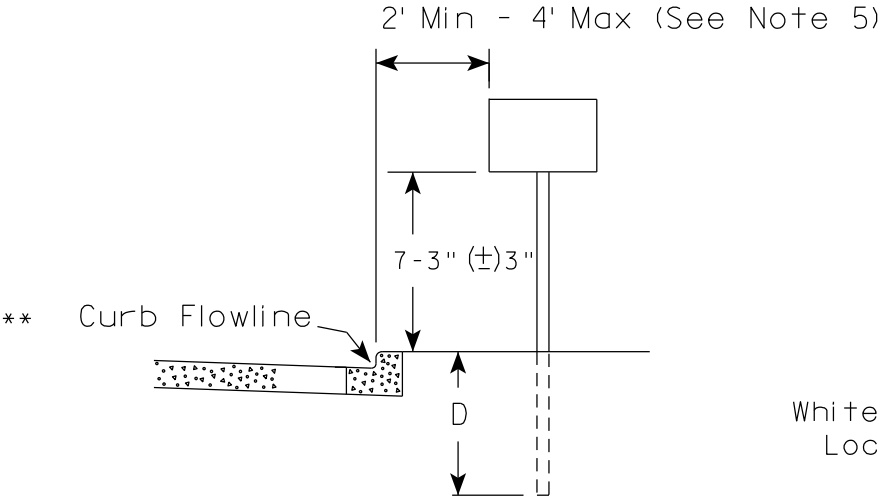
**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

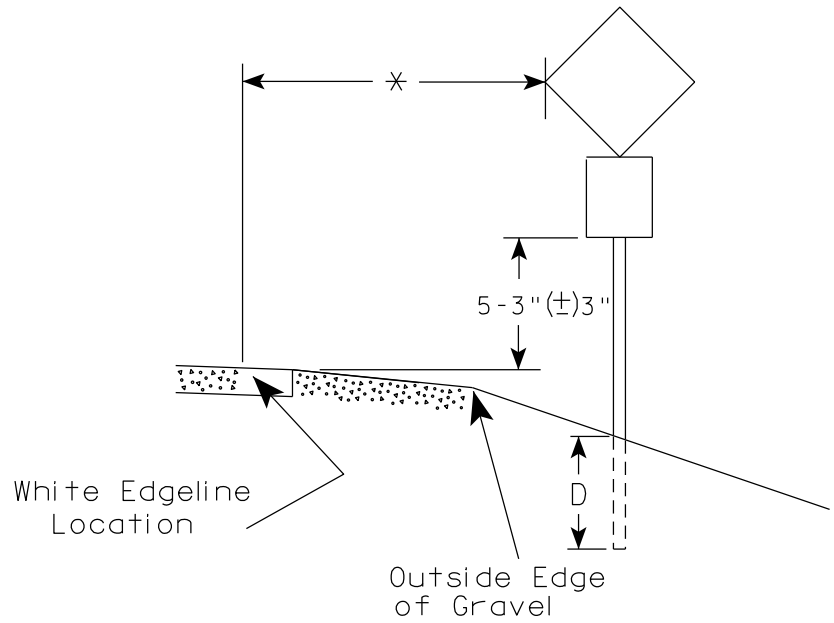
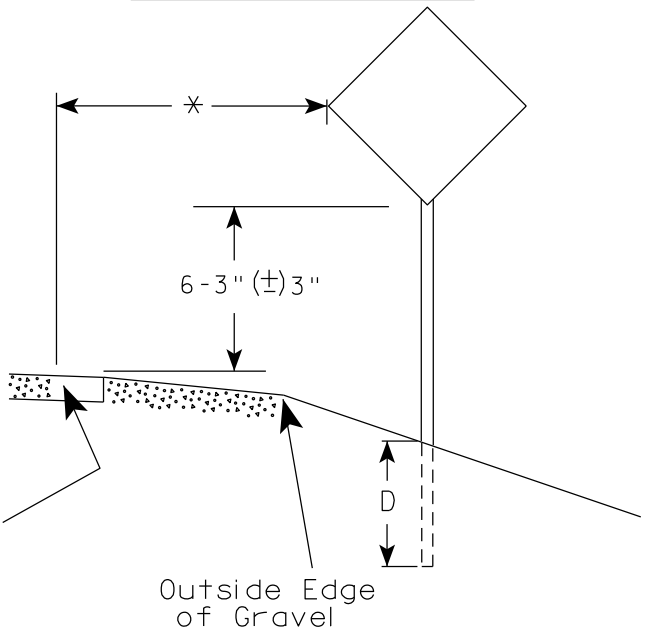
APPROVED
February 2026 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

URBAN AREA



RURAL AREA (See Note 2)



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.

POST EMBEDMENT DEPTH

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

* * 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.

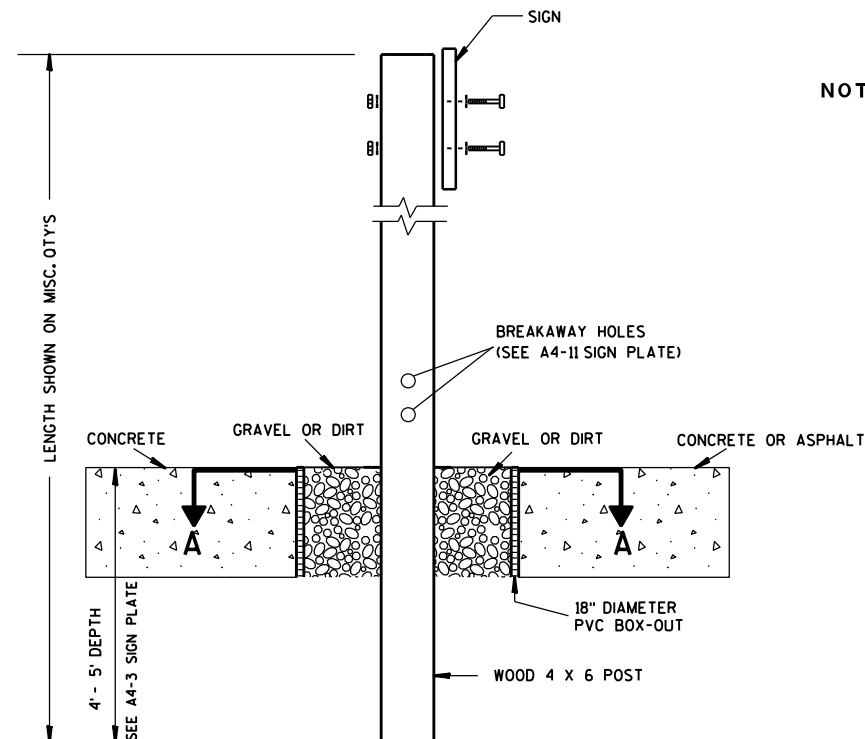
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

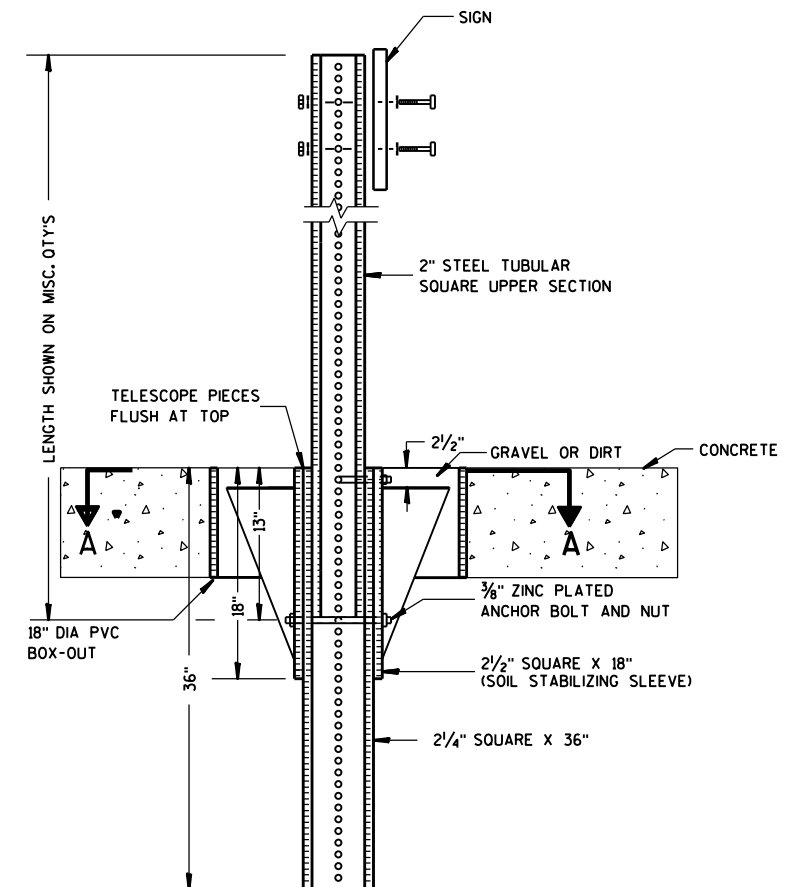
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

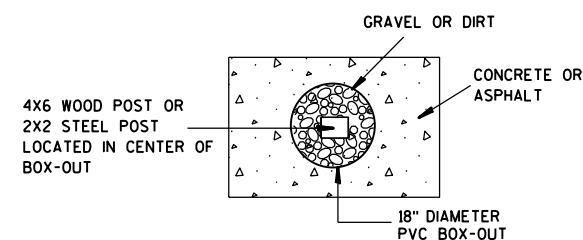
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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:

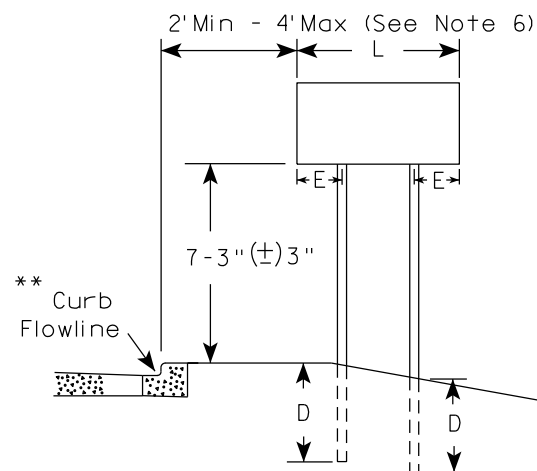
HWY:

COUNTY:

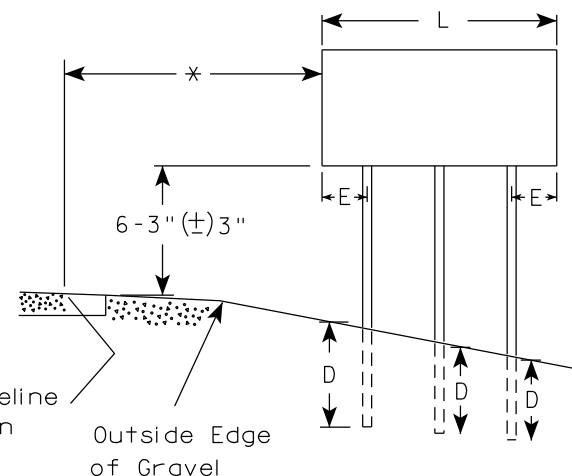
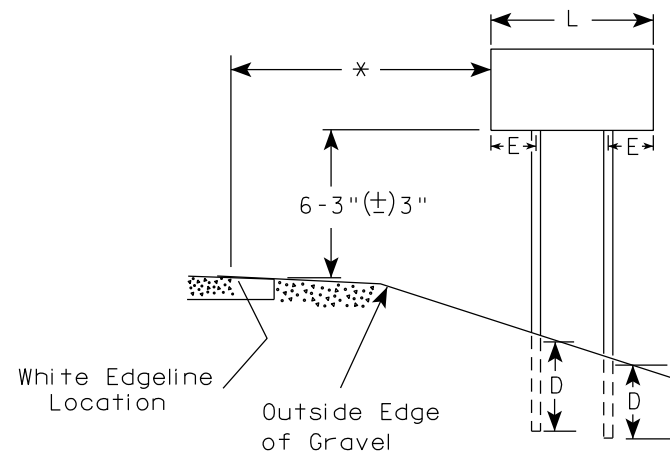
SHEET NO:

E

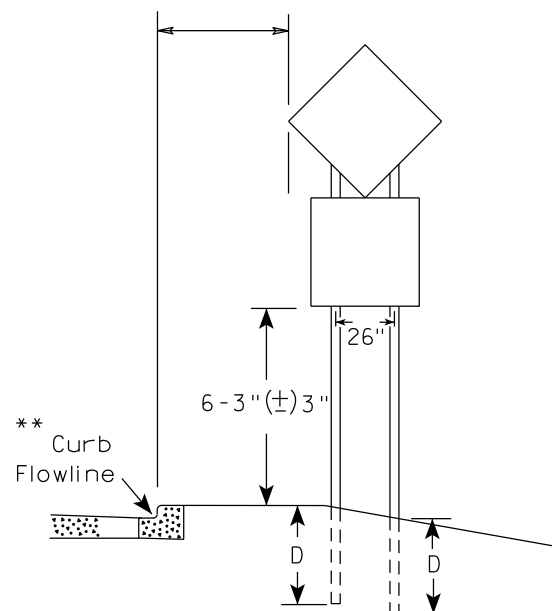
URBAN AREA



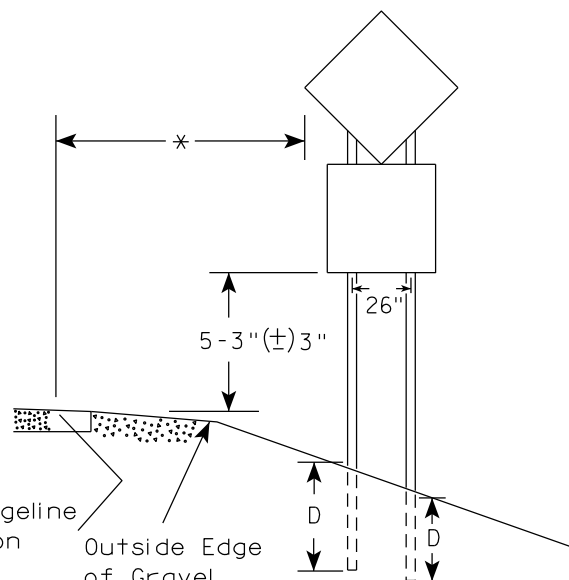
RURAL AREA (See Note 3)



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

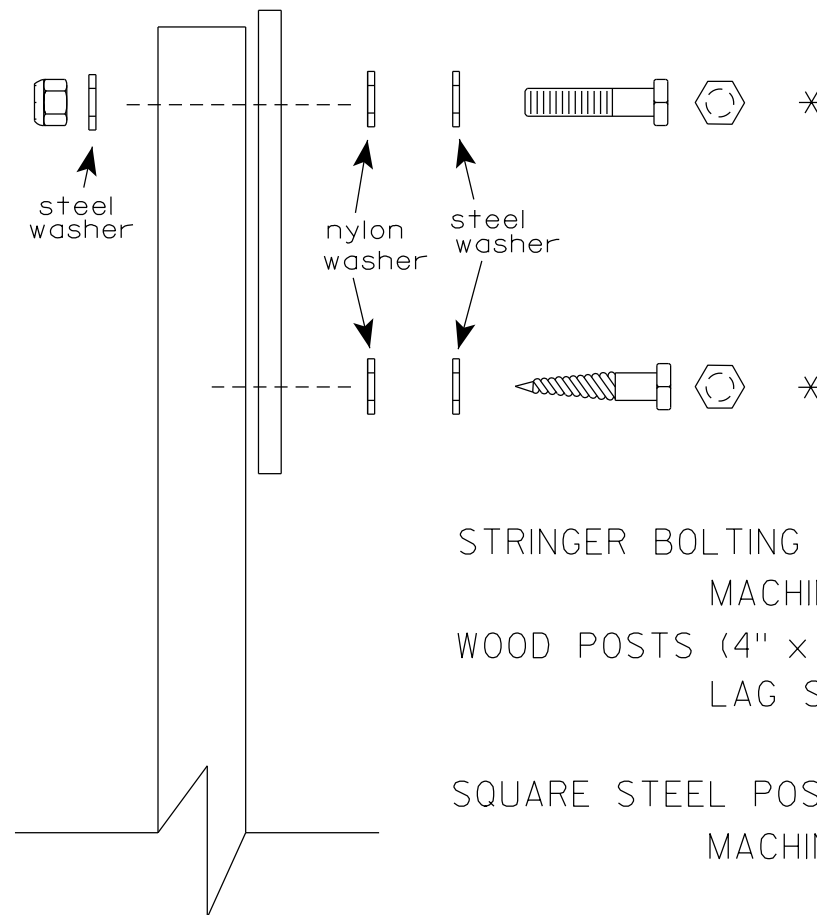
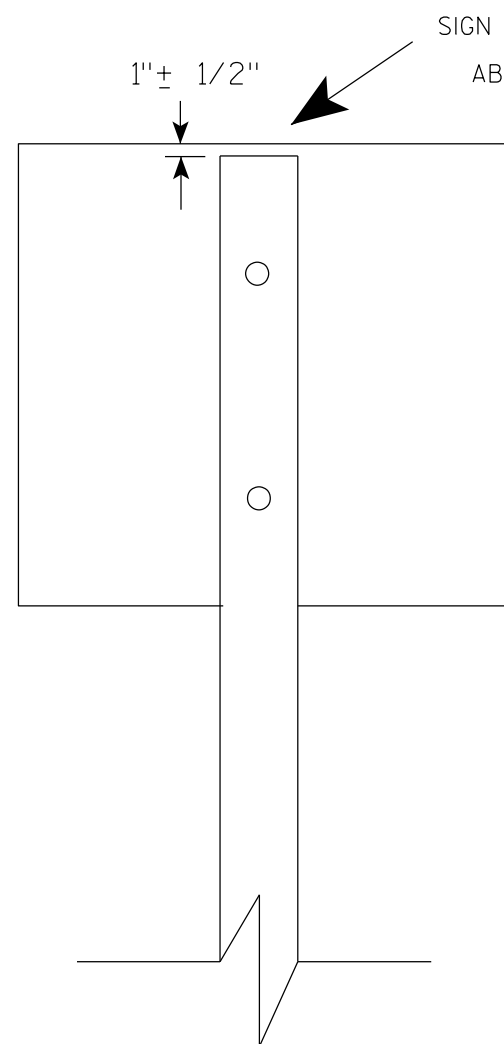
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

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.

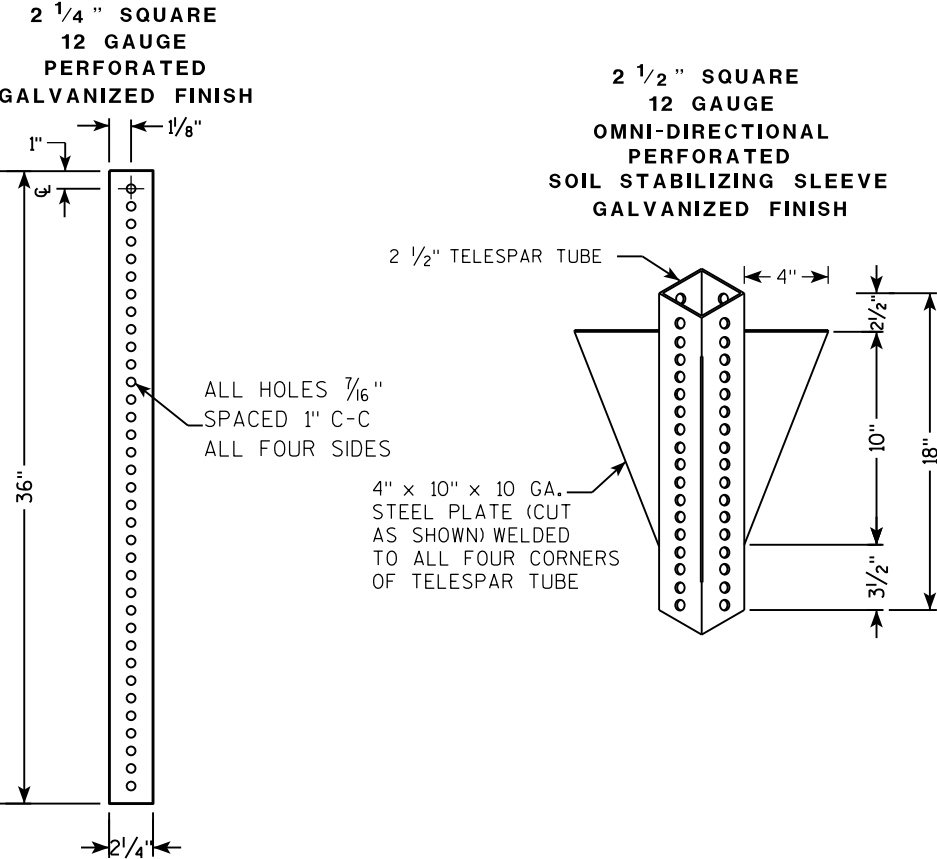
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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

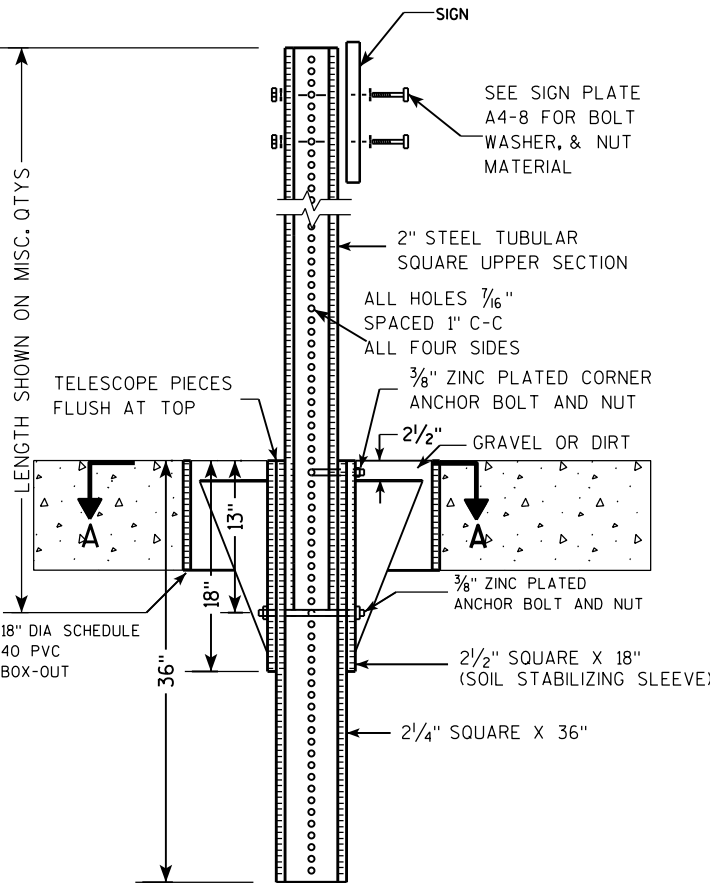
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

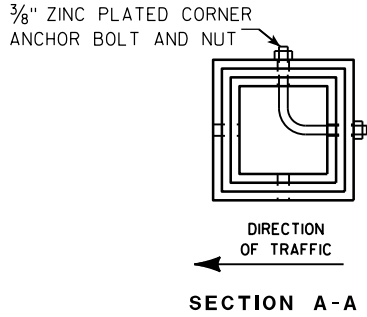
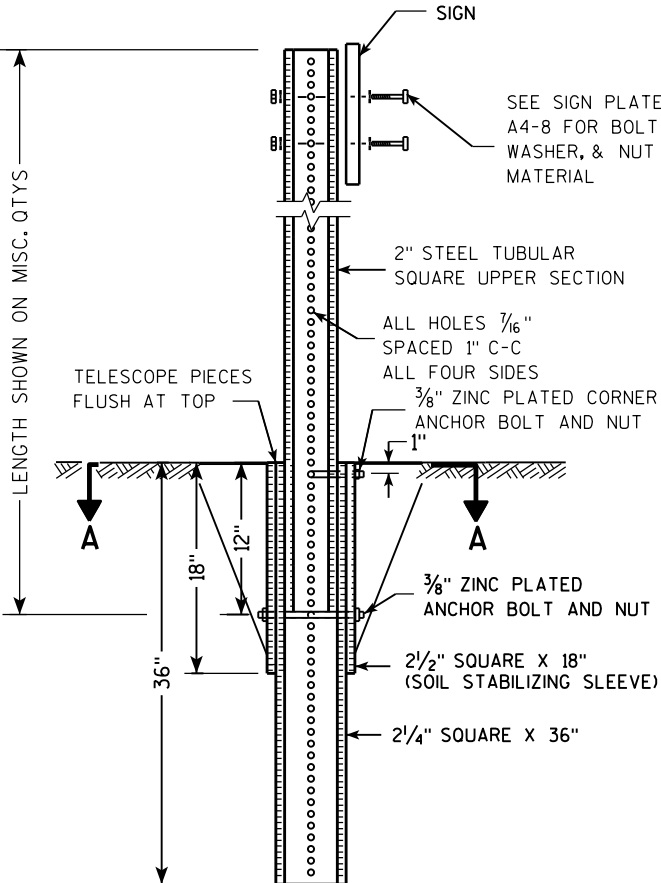
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)



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

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

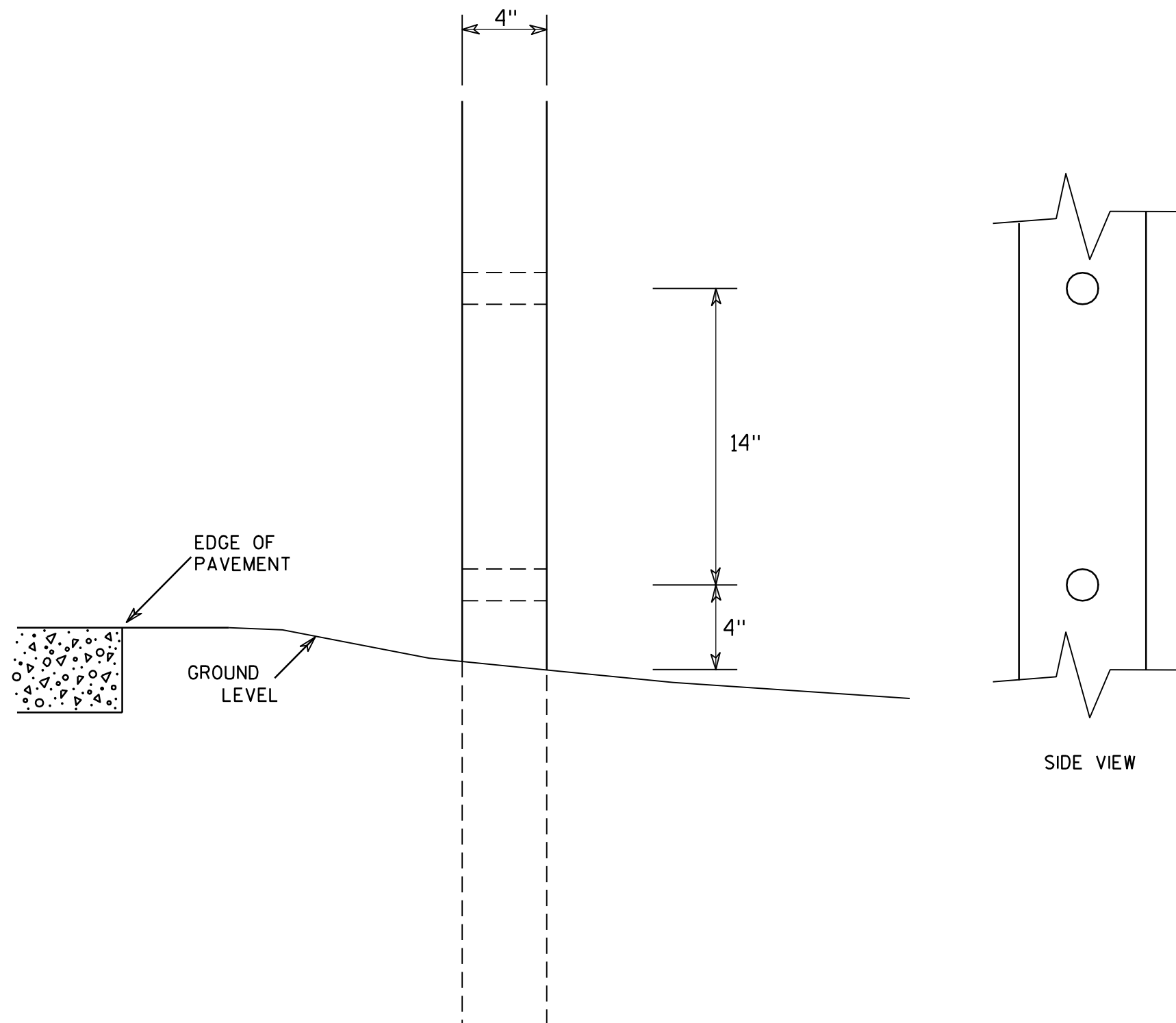
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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:

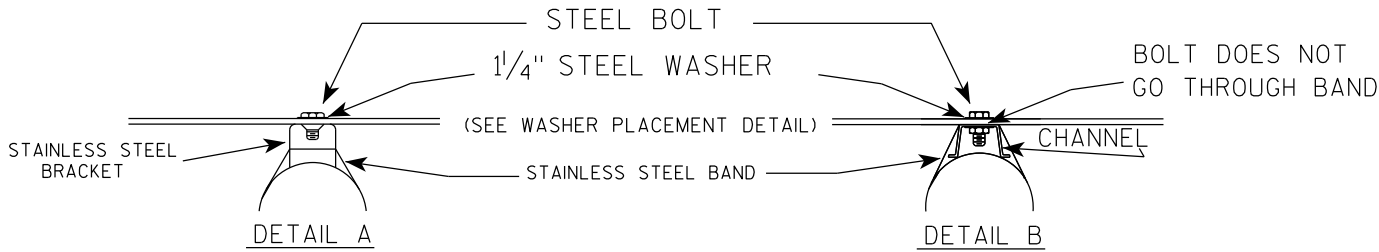
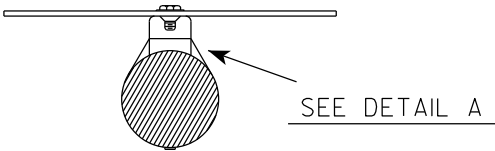
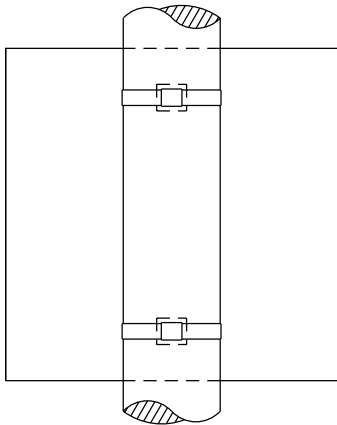
COUNTY:

SHEET NO:

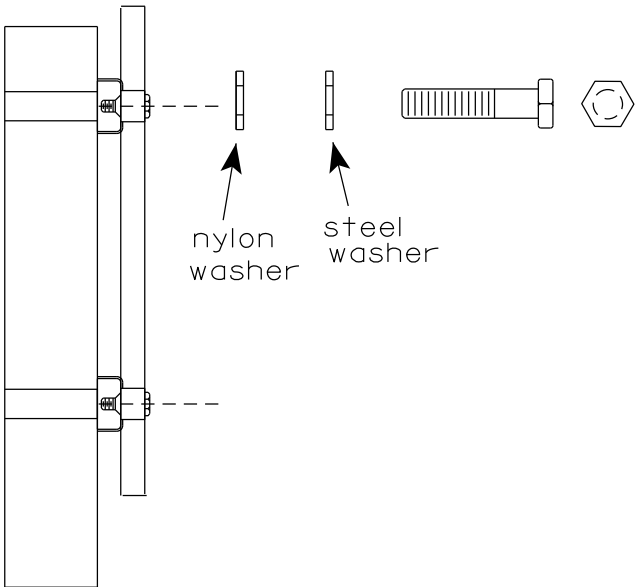
E

BANDING

SINGLE SIGN



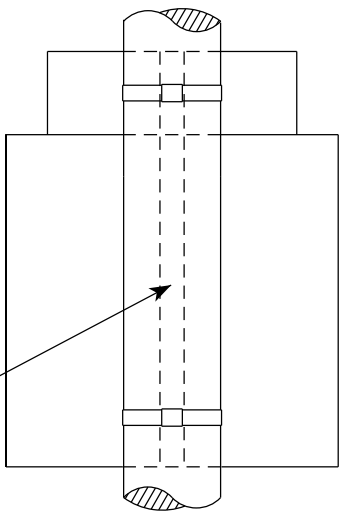
WASHER PLACEMENT



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

CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

"J" ASSEMBLY



SEE DETAIL B

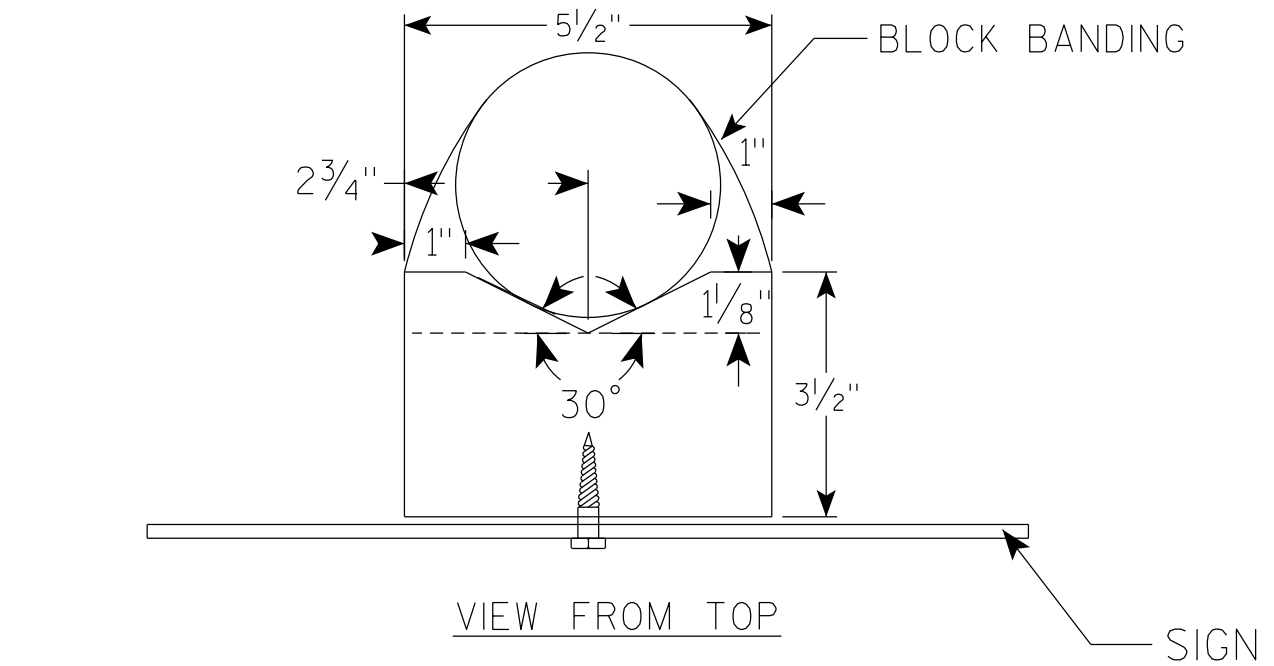
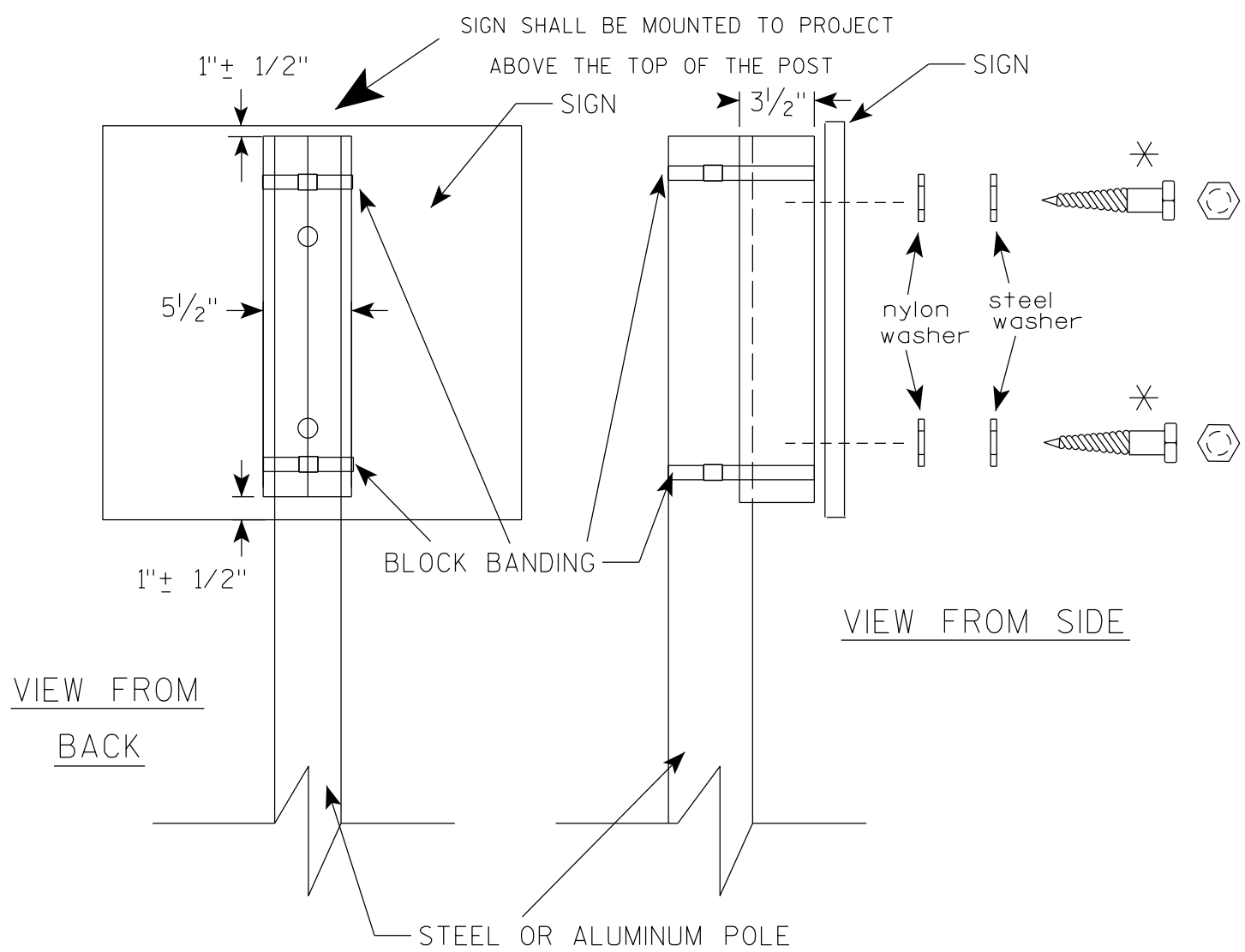
GENERAL NOTES

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

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

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

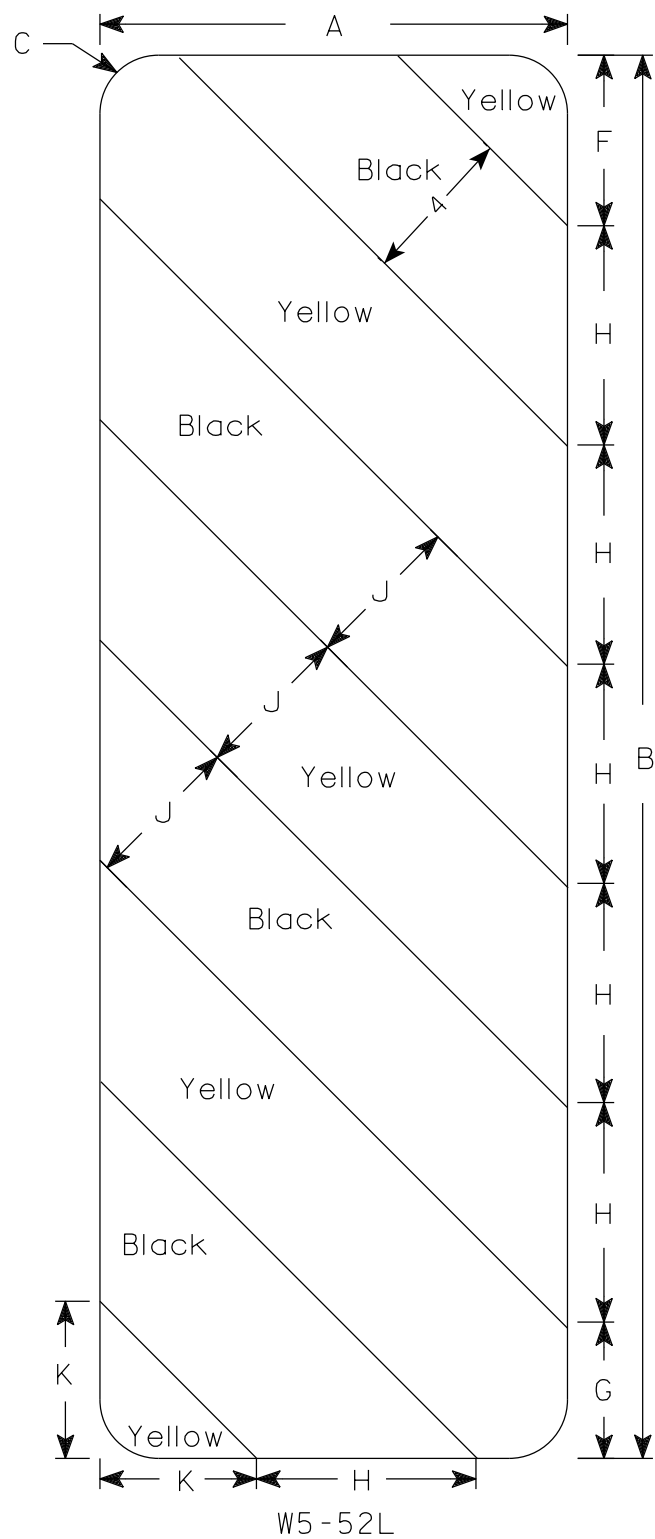


GENERAL NOTES

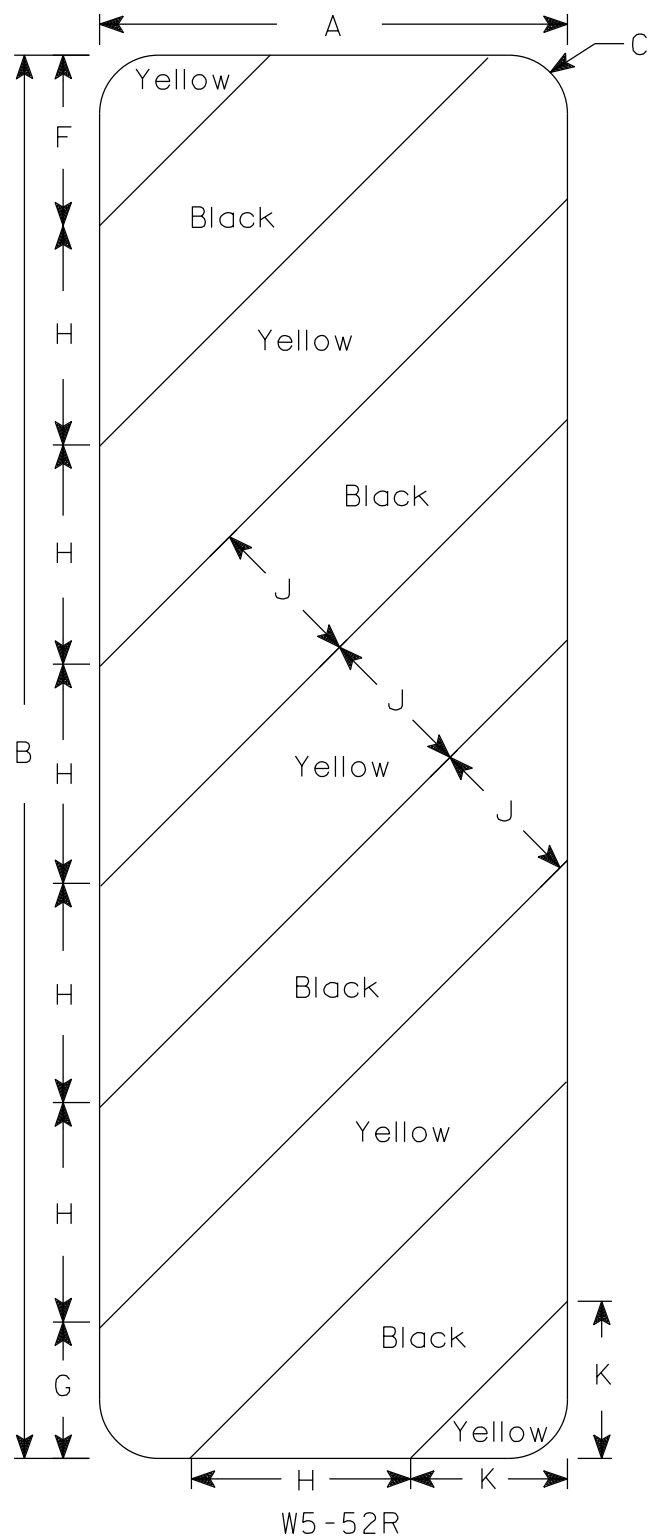
1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS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

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

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



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

- ✱ PROVIDE FOR THRIE BEAM GUARD
RAIL ATTACHMENT.
- Ⓢ INDICATES WING NUMBER
- ▲ ECO-PASSAGE, REFER TO
ABUTMENT SHEETS

STATE PROJECT NUMBER

4478-02-70

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.13
OPERATING RATING FACTOR: RF = 1.47
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

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

MATERIAL PROPERTIES:

CONCRETE MASONRY:
SUPERSTRUCTURE _____ $f'_c = 4,000$ P.S.I.
ALL OTHER _____ $f'_c = 3,500$ P.S.I.

BAR STEEL REINFORCEMENT:
GRADE 60 _____ $f_y = 60,000$ P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 PILING DRIVEN TO A REQUIRED
DRIVING RESISTANCE OF 120 TONS †† PER PILE AS DETERMINED BY THE MODIFIED
GATES DYNAMIC FORMULA.

ESTIMATED 85 FEET LONG AT SOUTH ABUTMENT WITH PILE POINTS.
ESTIMATED 90 FEET LONG AT NORTH ABUTMENT WITH PILE POINTS.

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

TRAFFIC VOLUME

FEATURE ON: LAKESHORE DRIVE
ADT = 31 (2027)
ADT = 34 (2047)
R.D.S. = 60 M.P.H.

HYDRAULIC DATA

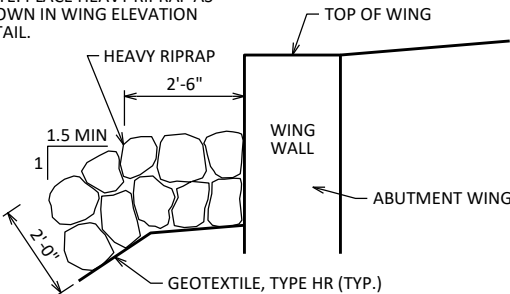
100 YEAR FREQUENCY

$Q_{100} = 750$ C.F.S.
VEL. = 9.1 F.P.S.
HW₁₀₀ = EL. 774.77
WATERWAY AREA = 83 SQ. FT.
DRAINAGE AREA = 5.2 SQ. MI.
ROADWAY OVERTOPPING = NA
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

$Q_2 = 142$ C.F.S.
VEL. = 6.1 F.P.S.
HW₂ = EL. 771.32

NOTE: PLACE HEAVY RIPRAP AS
SHOWN IN WING ELEVATION
DETAIL.



TYPICAL FILL SECTION AT WING

PLAN

SINGLE-SPAN FLAT SLAB

LIST OF DRAWINGS

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

STRUCTURE DESIGN CONTACTS:

AARON BONK 608-261-0261
KRISTOFER OLSON 920-498-1200

THESE PLANS ARE BASED UPON STANDARD
BRIDGE PLANS DEVELOPED AND MAINTAINED BY
THE WISCONSIN DEPARTMENT OF
TRANSPORTATION THROUGH THE USE OF THE
WISDOT STANDARD BRIDGE DESIGN TOOL. THE
UNDERSIGNED DESIGNER CERTIFIES THE
ACCURACY OF THE BRIDGE TYPE, SIZE AND
LOCATION, HYDRAULICS AND FOUNDATION
SUPPORT, AND INFORMATION IN THE PLANS
THAT IS NOT PART OF THE STANDARD PLANS
SUPPLIED BY THE DEPARTMENT. THE DESIGNER
FURTHER CERTIFIES THAT USE OF THE STANDARD
BRIDGE DESIGN TOOL FOR DEVELOPMENT OF
THIS PLAN IS CONSISTENT WITH THE GUIDANCE
PROVIDED IN THE WISDOT BRIDGE MANUAL.



NO. DATE REVISION BY

ORIGINAL PLANS PREPARED BY
AYRES 700 PILGRIM WAY, SUITE 180
GREEN BAY, WI 54304
www.AyresAssociates.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED *[Signature]* JLR 05/11/26
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-8-123

LAKESHORE DRIVE OVER MUD CREEK

COUNTY CALUMET TOWN STOCKBRIDGE

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATION
DESIGNED BY JMC CK'D RCP DRAWN BY JMC PLANS CK'D RCP

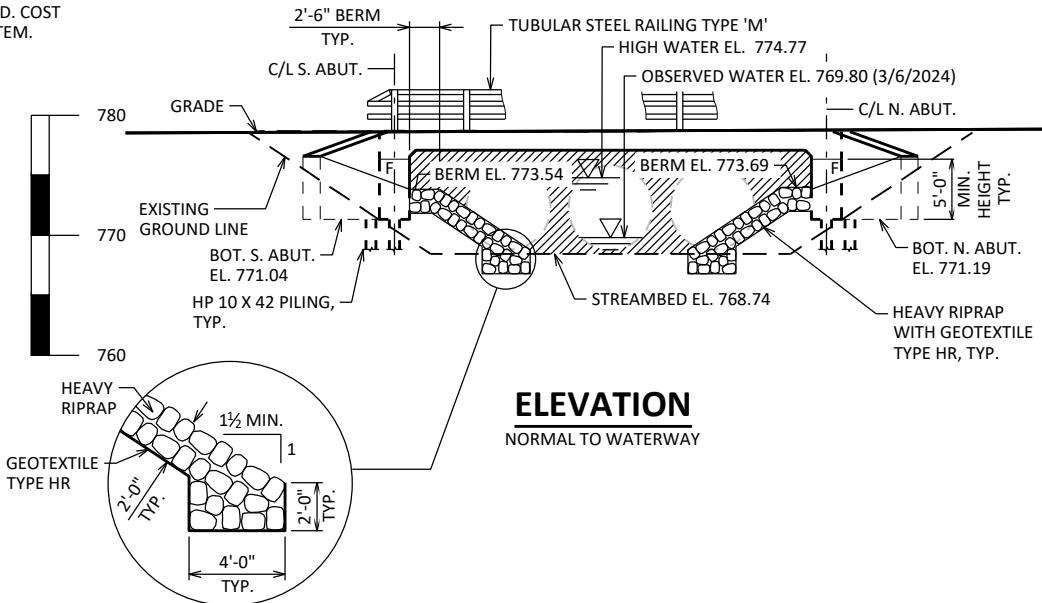
GENERAL PLAN SHEET 1 OF 10

I.D.

DATE:

COST OF EXCAVATION IN THE HATCHED AREAS
SHALL BE INCLUDED IN THE CONTRACT PRICE FOR
"EXCAVATION FOR STRUCTURE BRIDGES B-8-123"

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



ELEVATION

NORMAL TO WATERWAY

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-8-123" SHALL BE THE EXISTING GROUNDLINE.

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

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

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

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

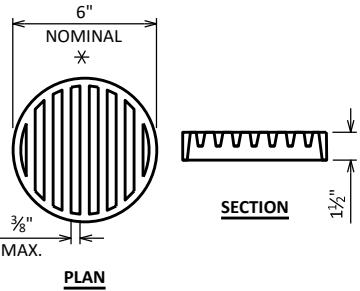
AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

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

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO ENTIRE EXPOSED TOP OF SLAB, INCLUDING THE SLAB EDGE AND 1'-0" UNDER THE SLAB, THE TOP AND EXTERIOR EXPOSED FACE OF WINGS AND FRONT FACE OF ABUTMENT TO 1'-0" PAST THE EDGE OF SLAB.

BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
1001	10+17	CHSLD X NE CORNER WINGWALL, 23' RT	775.85



PLAN

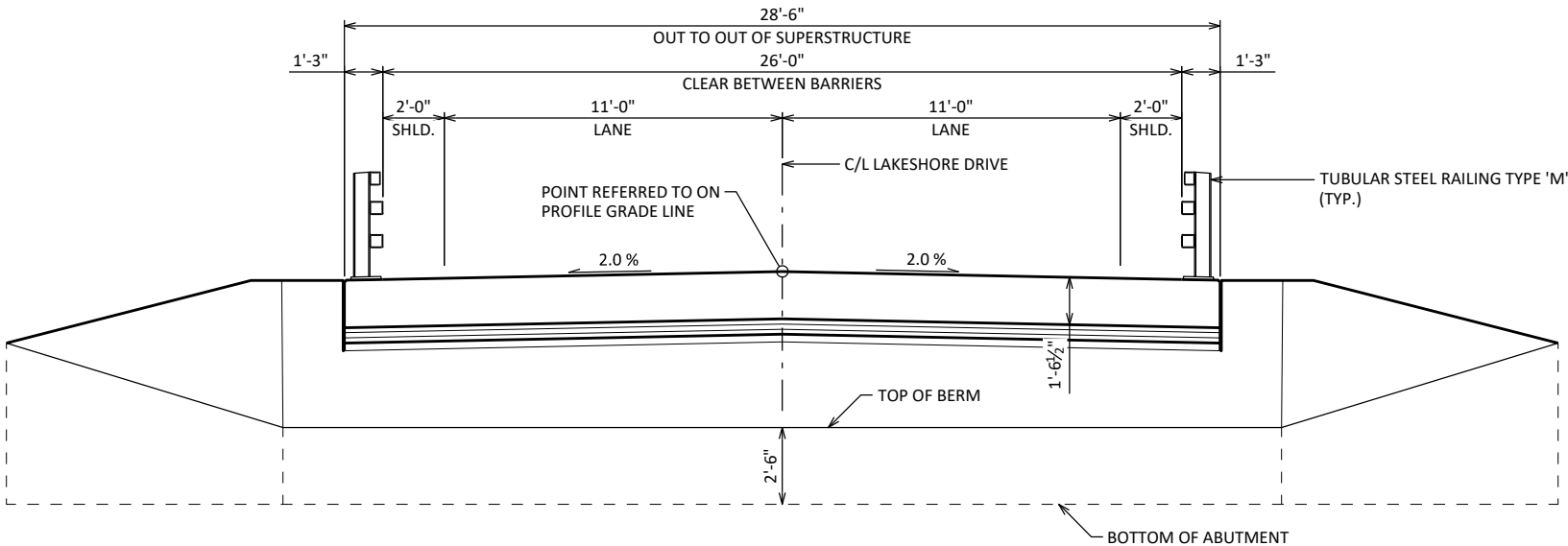
RODENT SHIELD DETAIL

* 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".

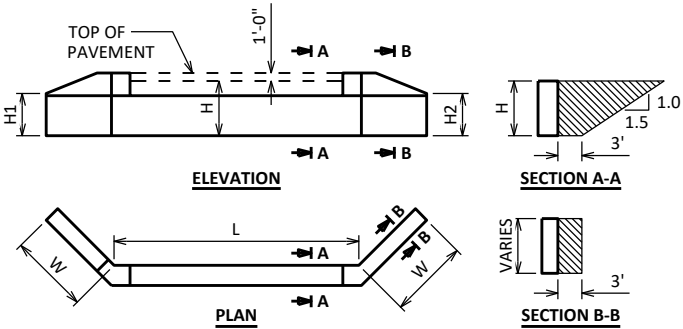
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-123			
DRAWN BY JMC		PLANS CK'D RCP	
CROSS-SECTION & QUANTITIES		SHEET 2 OF 10	



CROSS SECTION THRU ROADWAY

LOOKING UPSTATION
(PILING NOT SHOWN FOR CLARITY)

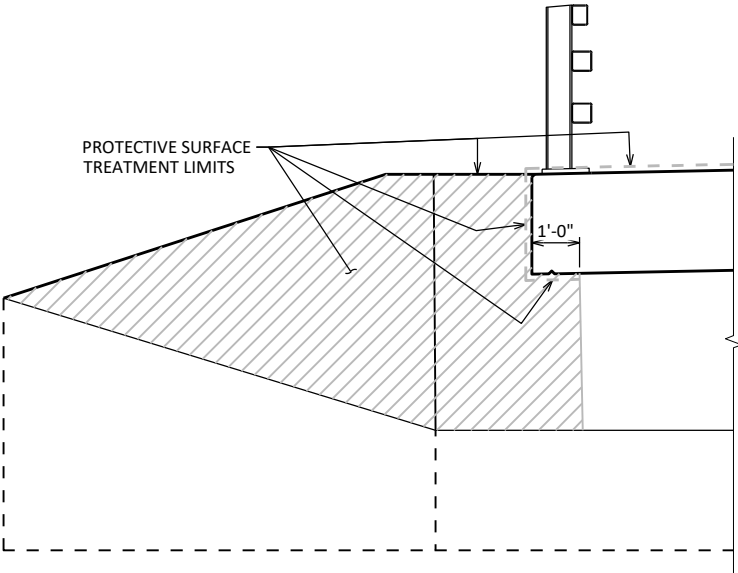


ABUTMENT BACKFILL DIAGRAM

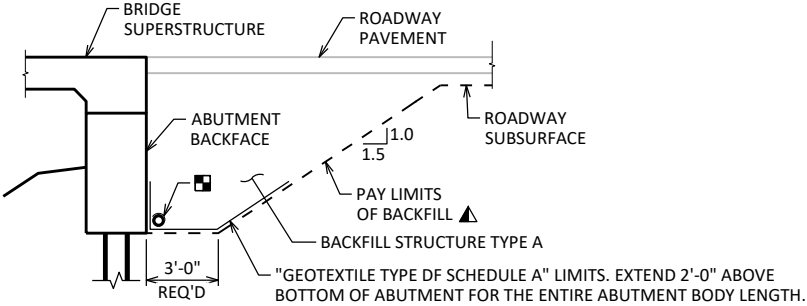
- L = ABUTMENT BODY LENGTH AT BACKFACE (FT)
- H = AVERAGE ABUTMENT FILL HEIGHT (FT)
- H1 = WING 1 HEIGHT AT TIP (FT)
- H2 = WING 2 HEIGHT AT TIP (FT)
- W = WING LENGTH (FT)
- EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
- $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3')(0.5)(H1+H2+H+H)(W)$
- $V_{CY} = V_{CF}(EF)/27$
- $V_{TON} = V_{CY}(2.0)$

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	S. ABUT.	N. ABUT.	TOTALS
203.0220	REMOVING STRUCTURE P-8-905	EACH	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-8-123	EACH	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	---	145	145	290
502.0100	CONCRETE MASONRY BRIDGES	CY	67	26	26	119
502.3200	PROTECTIVE SURFACE TREATMENT	SY	141	15	15	171
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	---	2,080	2,080	4,160
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	15,810	1,490	1,490	18,790
513.4061	RAILING TUBULAR TYPE M	LF	82	---	---	82
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---	6	6	12
550.0500	PILE POINTS	EACH	---	7	7	14
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	---	595	630	1225
606.0300	RIPRAP HEAVY	CY	---	80	75	155
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	---	71	71	142
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	---	44	44	88
645.0120	GEOTEXTILE TYPE HR	SY	---	150	140	290
SPV.0195	INFILL RIPRAP B-8-123	TON	---	11	11	22
NON-BID ITEMS						
	FILLER	SIZE	---	---	---	½", ¾"



PROTECTIVE SURFACE TREATMENT DETAILS

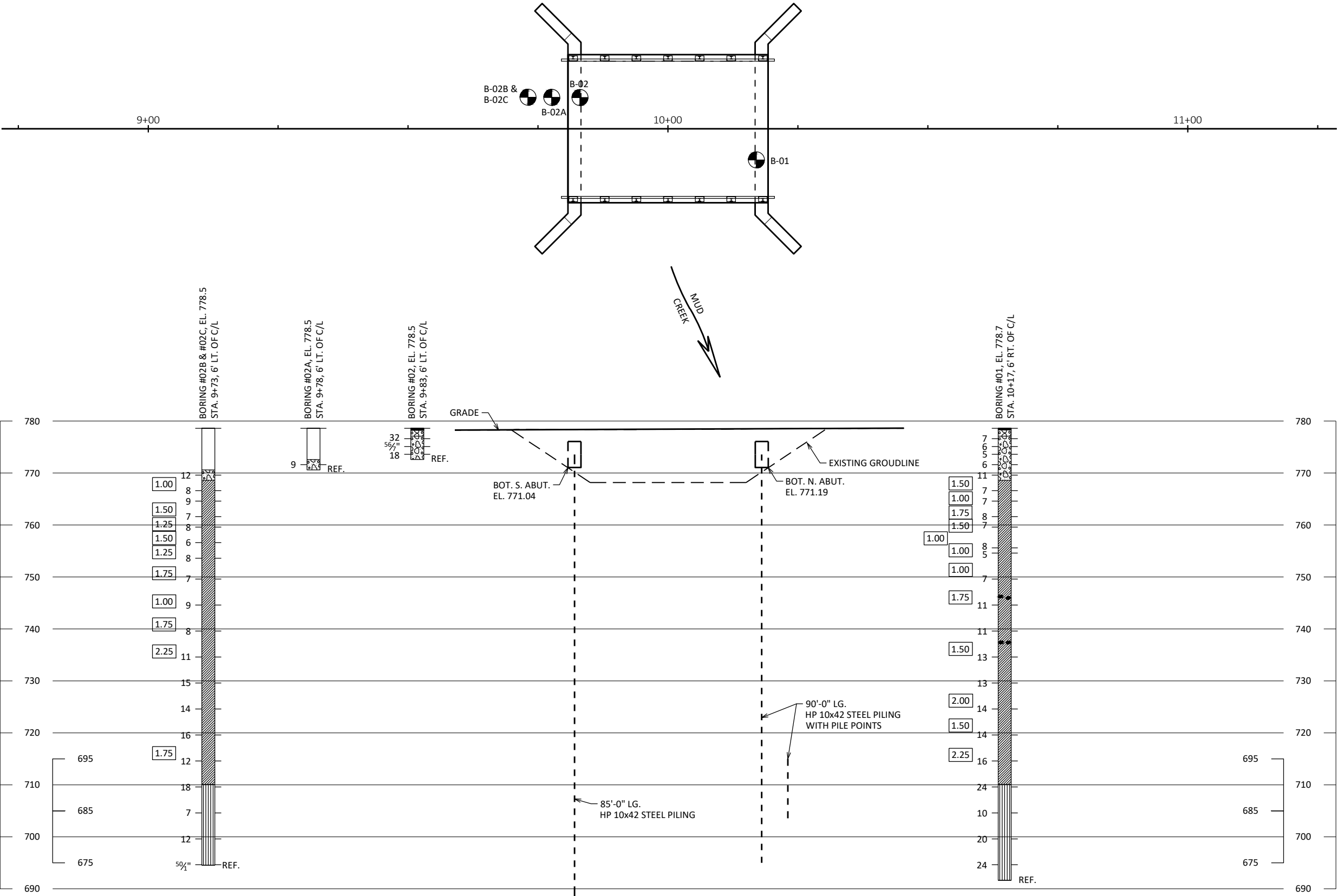


TYPICAL SECTION THRU ABUTMENT

▲ 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.

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-01	DECEMBER 06, 2024	487496.73	852479.70
B-02	DECEMBER 06, 2024	487462.68	852467.84
B-02A	DECEMBER 06, 2024	487457.68	852467.86
B-02B & B-02C	DECEMBER 06 & 09, 2024	487452.68	852467.88
BORINGS COMPLETED BY: ECS MIDWEST, LLC			
REPORT COMPLETED BY: ECS MIDWEST, LLC			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91)		CALUMET COUNTY	



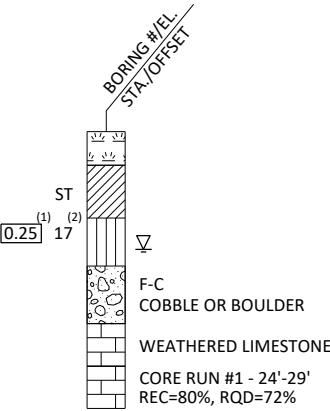
STATE PROJECT NUMBER

4478-02-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▼ AFTER DRILLING

ABBREVIATIONS

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

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

NO.	DATE	REVISION	BY
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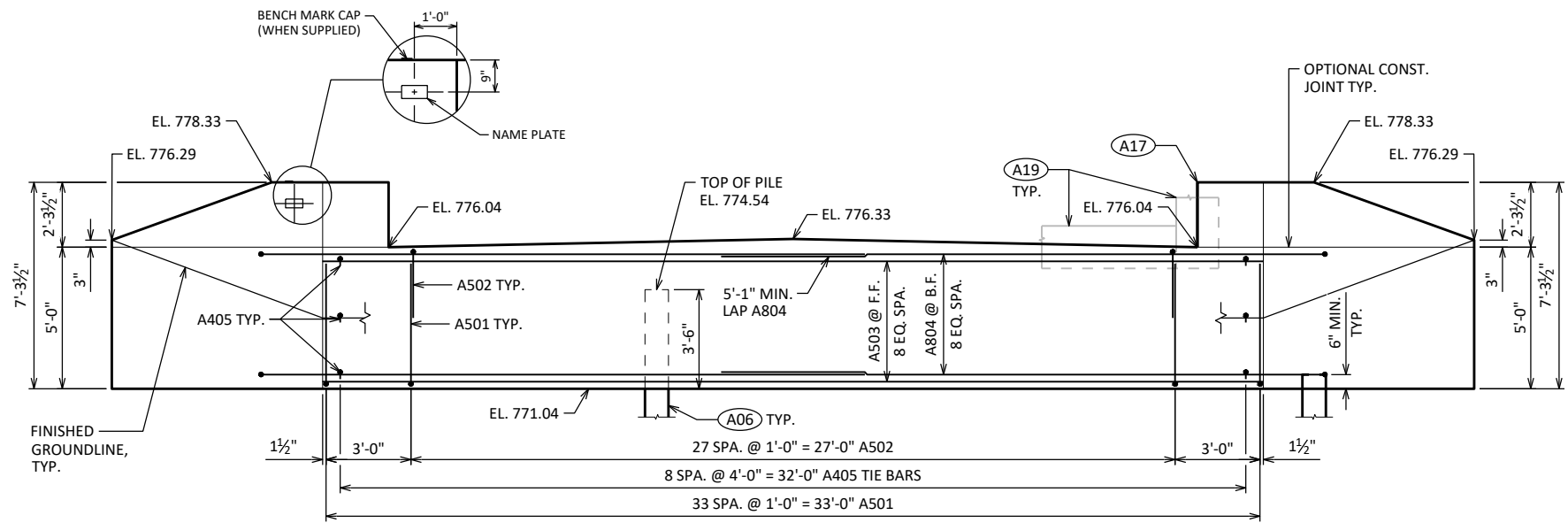
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-8-123

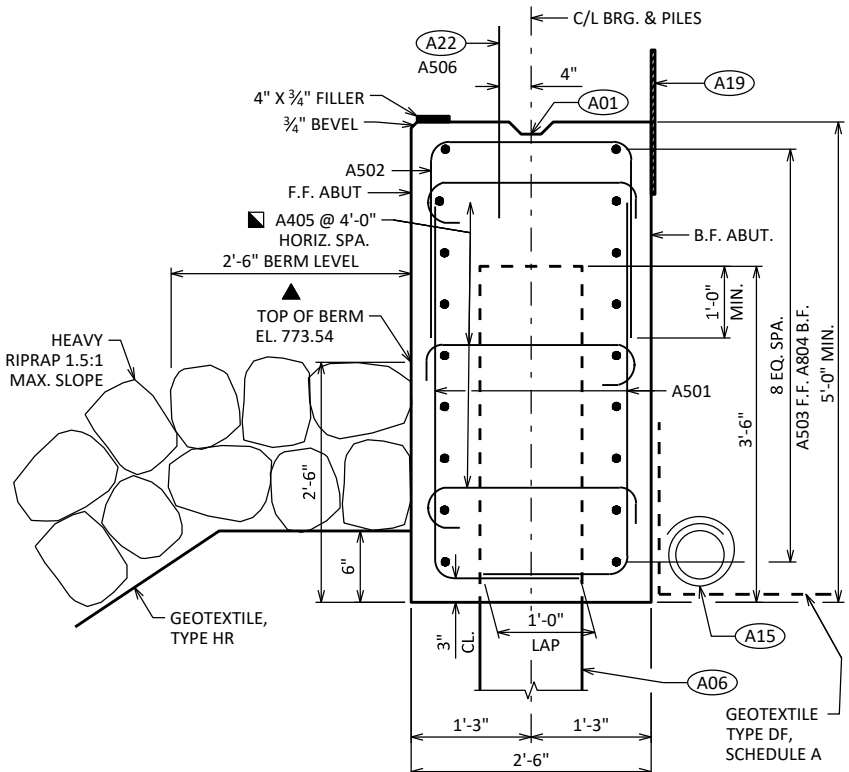
DRAWN BY	JMC	PLANS CK'D	RCP
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SUBSURFACE
EXPLORATION

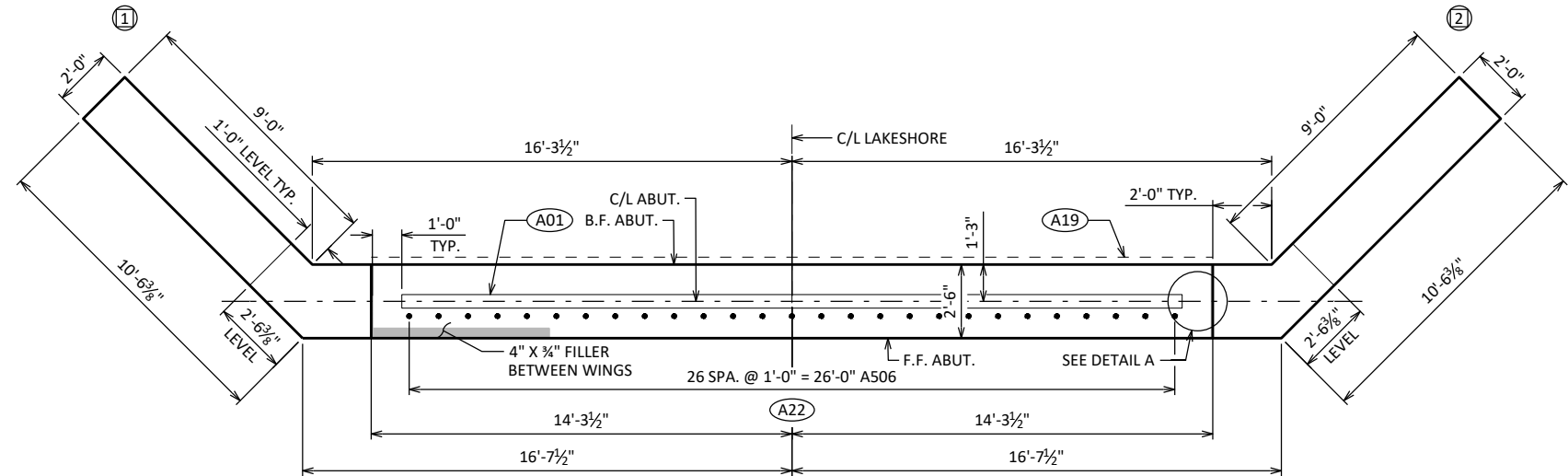
SHEET 3 OF 10



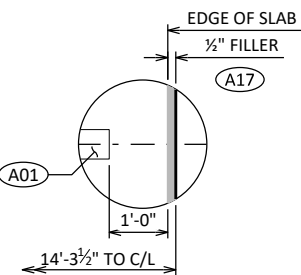
ELEVATION
LOOKING DOWNSTATION



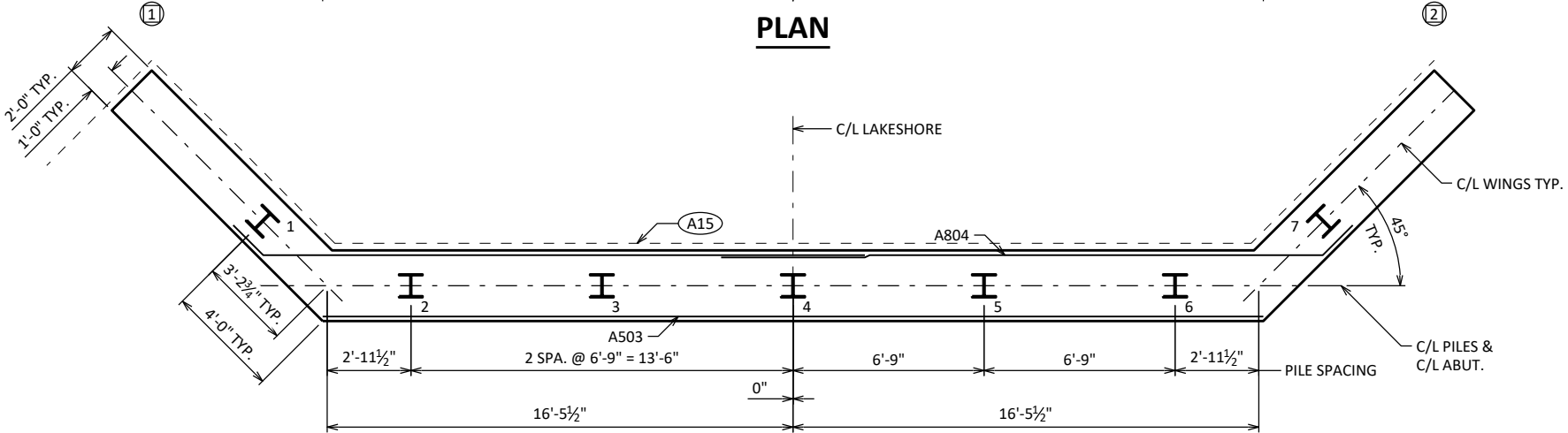
SECTION THRU BODY



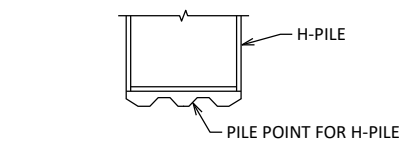
PLAN



DETAIL A



PILE PLAN



PILE POINT FOR H-PILING

PILE POINT SHALL BE INSTALLED ACCORDING TO THE PILE POINT MANUFACTURE'S INSTRUCTIONS

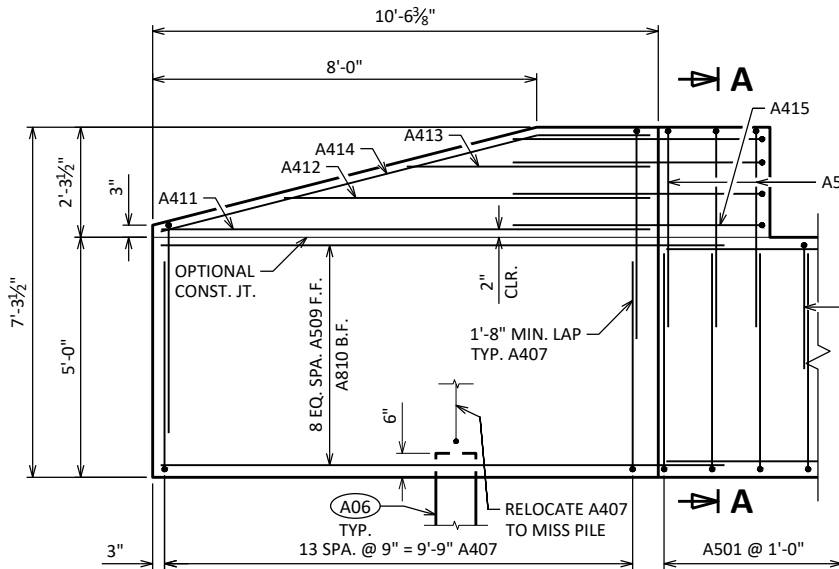
- (A01) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6.
- (A06) SUPPORT ABUTMENT ON HP 10 x 42 PILING, ESTIMATED 85'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 120TONS PER PILE. PILE POINTS REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER: 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" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A22) BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.
- FILL VOIDS WITH INFILL MATERIAL FOR ECO-PASSAGE AFTER RIPRAP IS PLACED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-123			
DRAWN BY		JMC	PLANS CK'D RCP
SOUTH ABUTMENT			SHEET 4 OF 10

BILL OF BARS

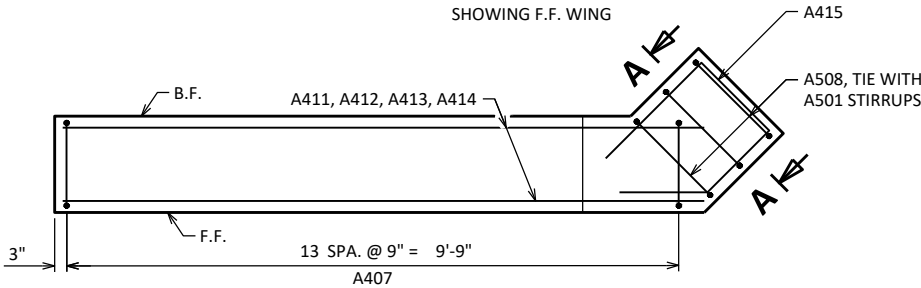
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		68	6'-0"	X		ABUT BODY STIRRUPS
A502		28	7'-1"	X		ABUT BODY STIRRUPS - TOP U-BAR
A503		9	33'-3"			ABUT BODY HORIZ. - F.F.
A804		18	22'-7"	X		ABUT BODY HORIZ. - B.F.
A405		27	3'-0"	X		ABUT BODY TIE BARS
A506	X	27	2'-0"			ABUT BODY DOWEL BARS
A407	X	56	10'-2"	X		WING STIRRUPS
A508	X	6	10'-1"	X		WING CORNER STIRRUPS
A509	X	18	11'-9"	X		WING LOWER HORIZ. - F.F.
A810	X	18	13'-3"	X		WING LOWER HORIZ. - B.F.
A411	X	4	10'-1"			WING UPPER HORIZ.
A412	X	4	7'-6"			WING UPPER HORIZ.
A413	X	4	5'-0"			WING UPPER HORIZ.
A414	X	4	9'-8"	X		WING TOP HORIZ.
A415	X	4	8'-3"	X		WING 1 UPPER HORIZ. CORNER
A416	X	4	8'-4"	X		WING 2 UPPER HORIZ. CORNER



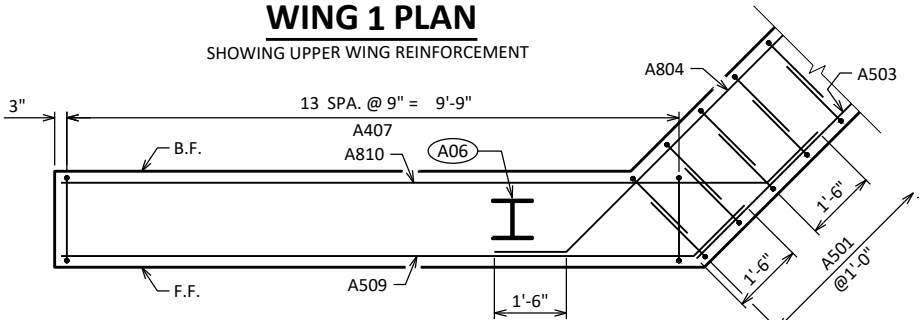
WING 1 ELEVATION

SHOWING F.F. WING



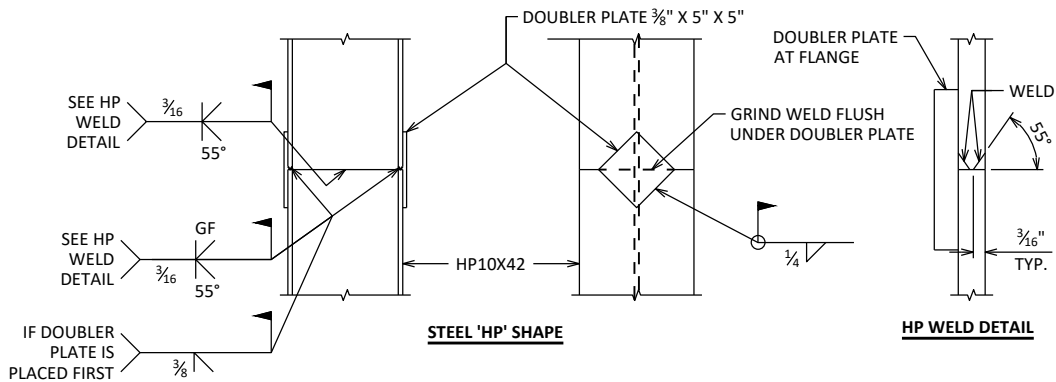
WING 1 PLAN

SHOWING UPPER WING REINFORCEMENT



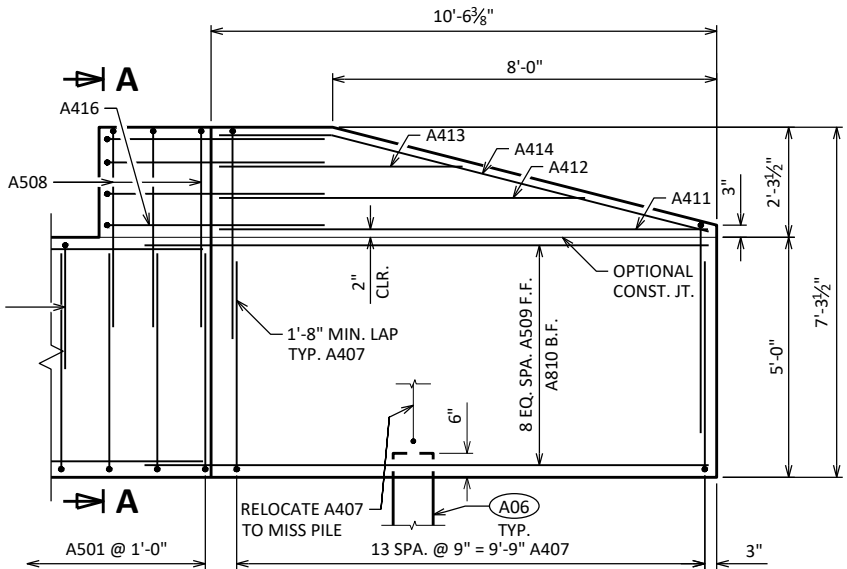
WING 1 PLAN

SHOWING LOWER WING REINFORCEMENT
WING 2 SIMILAR



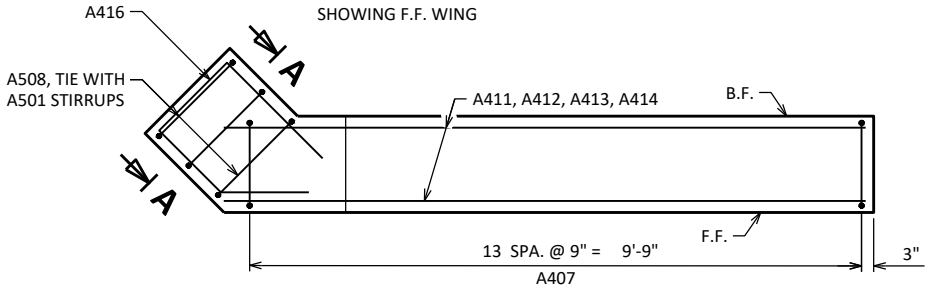
'HP' PILE DETAILS

THIS SHEET WAS CREATED BY THE WISDOT BUREAU OF STRUCTURES STANDARD BRIDGE DESIGN TOOL VERSION 1.2.0.0



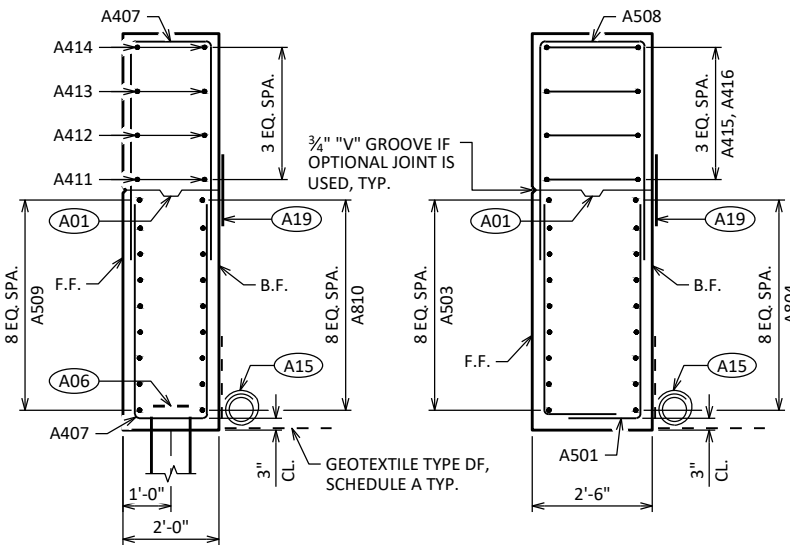
WING 2 ELEVATION

SHOWING F.F. WING



WING 2 PLAN

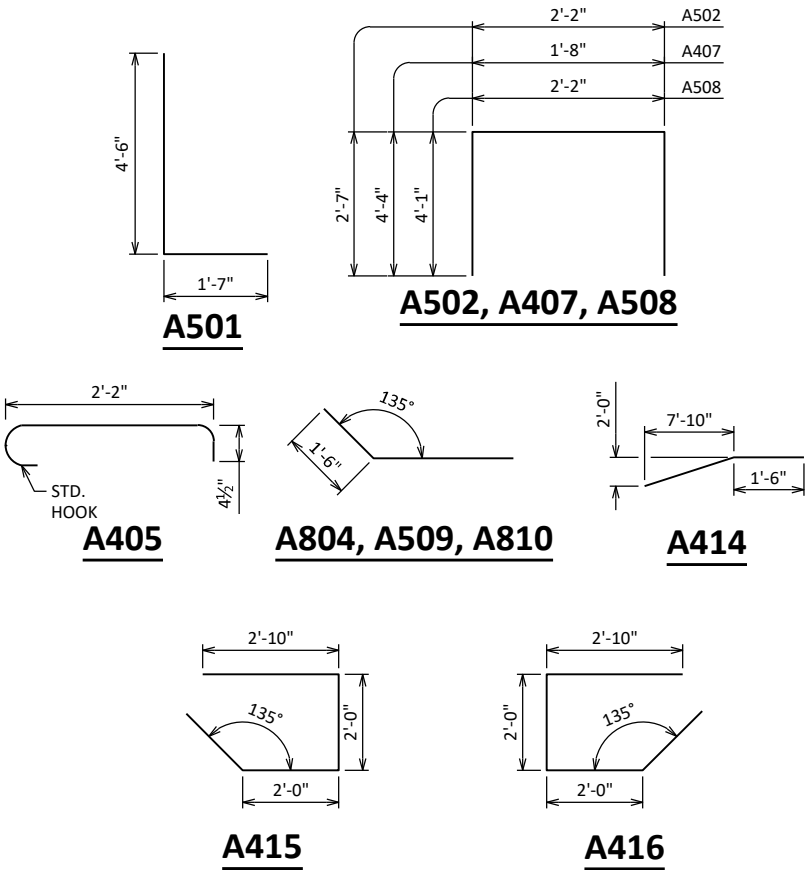
SHOWING UPPER WING REINFORCEMENT



SECTION THRU WING 1

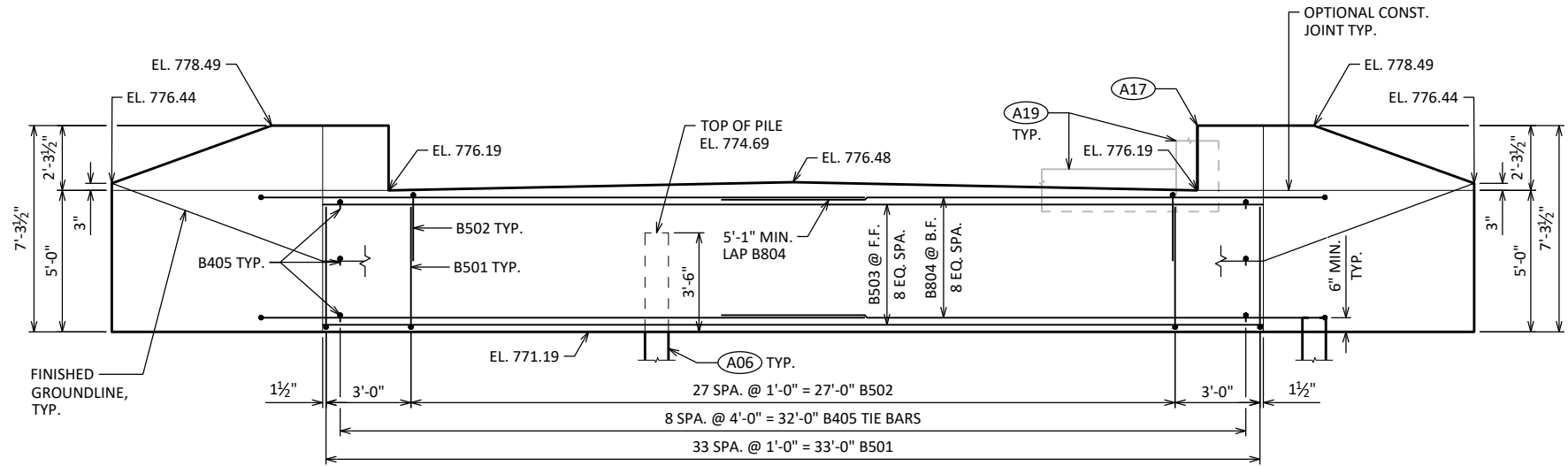
TYPICAL BOTH WINGS

SECTION A-A

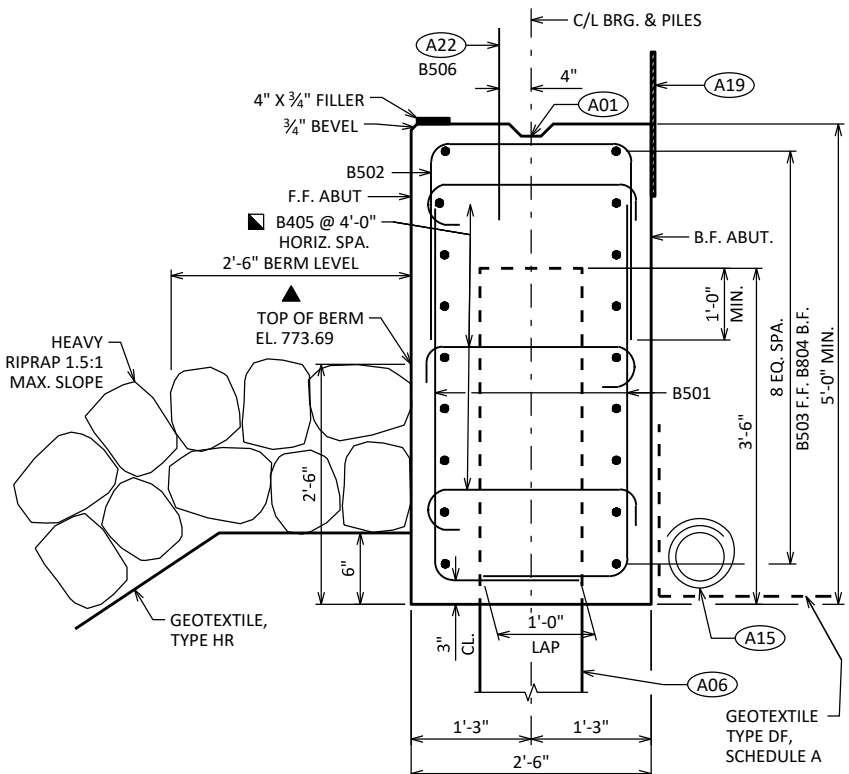


- A01 OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
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- A19 18" RUBBERIZED MEMBRANE WATERPROOFING, ONLY IF OPTIONAL CONSTRUCTION JOINT IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY STRUCTURES".

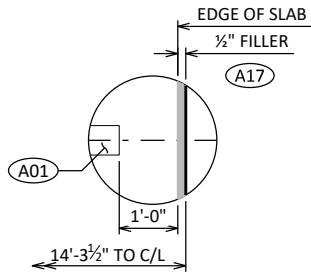
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-123			
DRAWN BY JMC		PLANS CK'D RCP	
SOUTH ABUTMENT DETAILS		SHEET 5 OF 10	



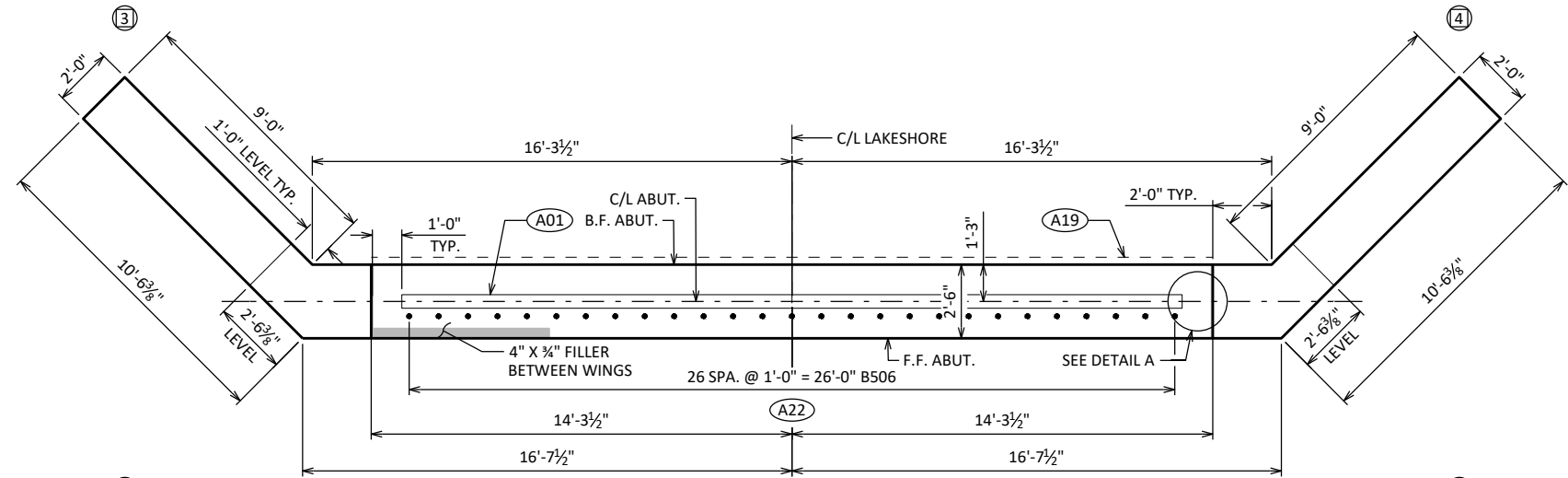
ELEVATION
LOOKING UPSTATION



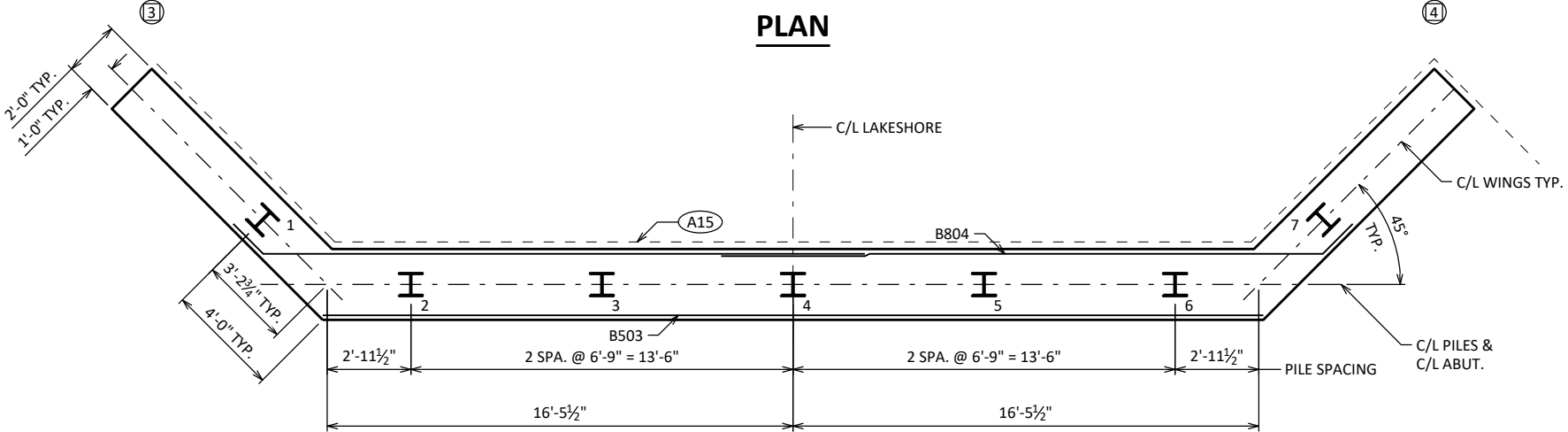
SECTION THRU BODY



DETAIL A



PLAN



PILE PLAN

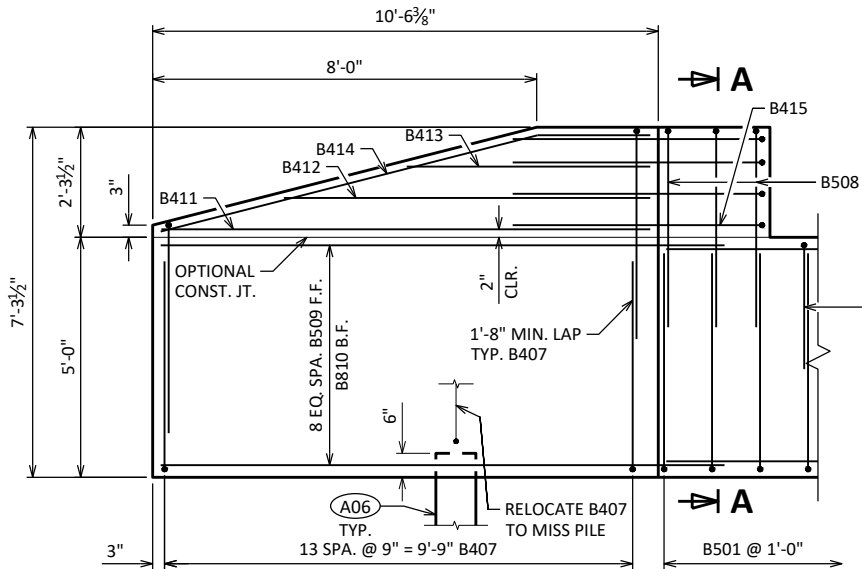
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-123			
DRAWN BY JMC		PLANS CK'D RCP	
NORTH ABUTMENT		SHEET 6 OF 10	

BILL OF BARS

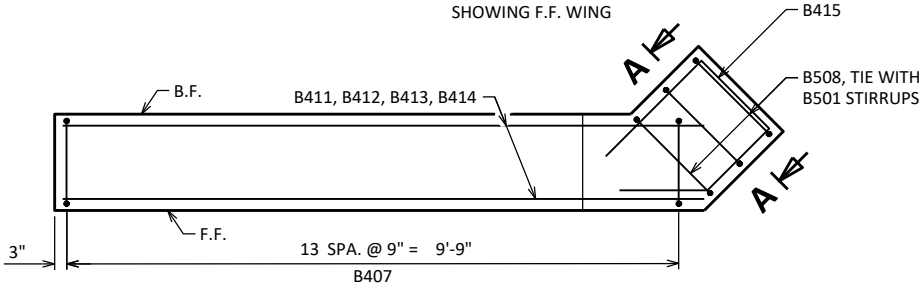
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B509	X	18	11'-9"	X		WING LOWER HORIZ. - F.F.
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B412	X	4	7'-6"			WING UPPER HORIZ.
B413	X	4	5'-0"			WING UPPER HORIZ.
B414	X	4	9'-8"	X		WING TOP HORIZ.
B415	X	4	8'-3"	X		WING 3 UPPER HORIZ. CORNER
B416	X	4	8'-4"	X		WING 4 UPPER HORIZ. CORNER



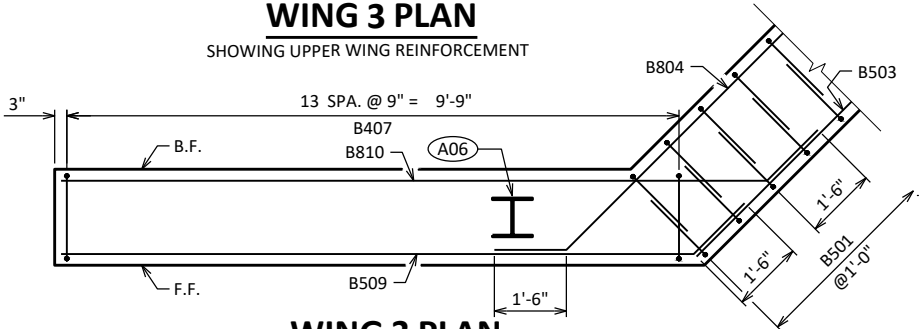
WING 3 ELEVATION

SHOWING F.F. WING



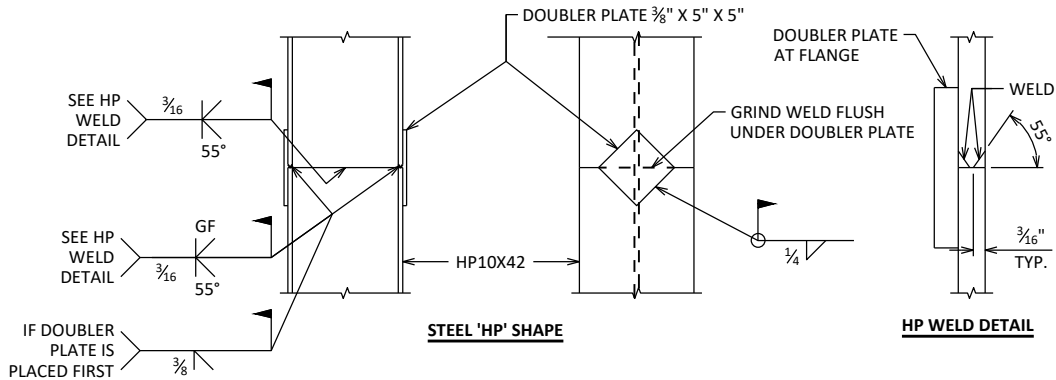
WING 3 PLAN

SHOWING UPPER WING REINFORCEMENT



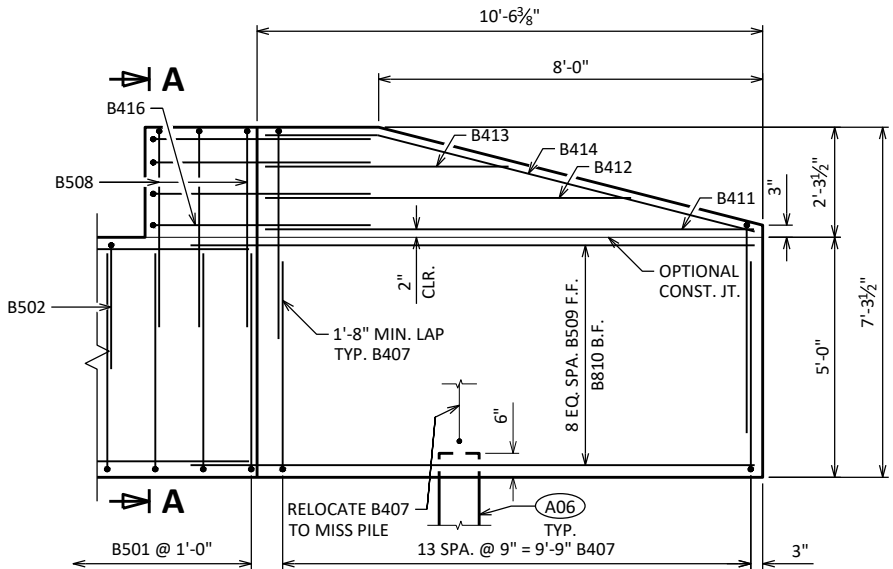
WING 3 PLAN

SHOWING LOWER WING REINFORCEMENT
WING 4 SIMILAR



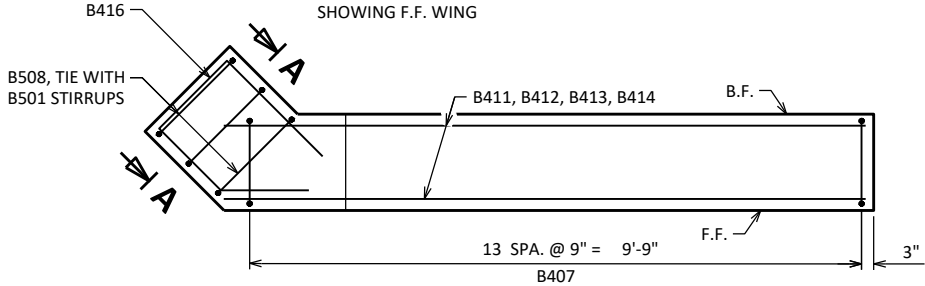
'HP' PILE DETAILS

THIS SHEET WAS CREATED BY THE WISDOT BUREAU OF STRUCTURES STANDARD BRIDGE DESIGN TOOL VERSION 1.2.0.0



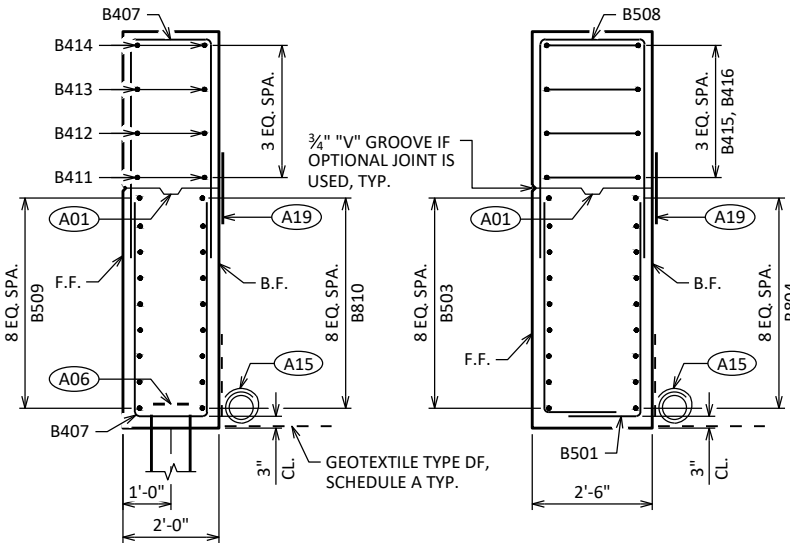
WING 4 ELEVATION

SHOWING F.F. WING



WING 4 PLAN

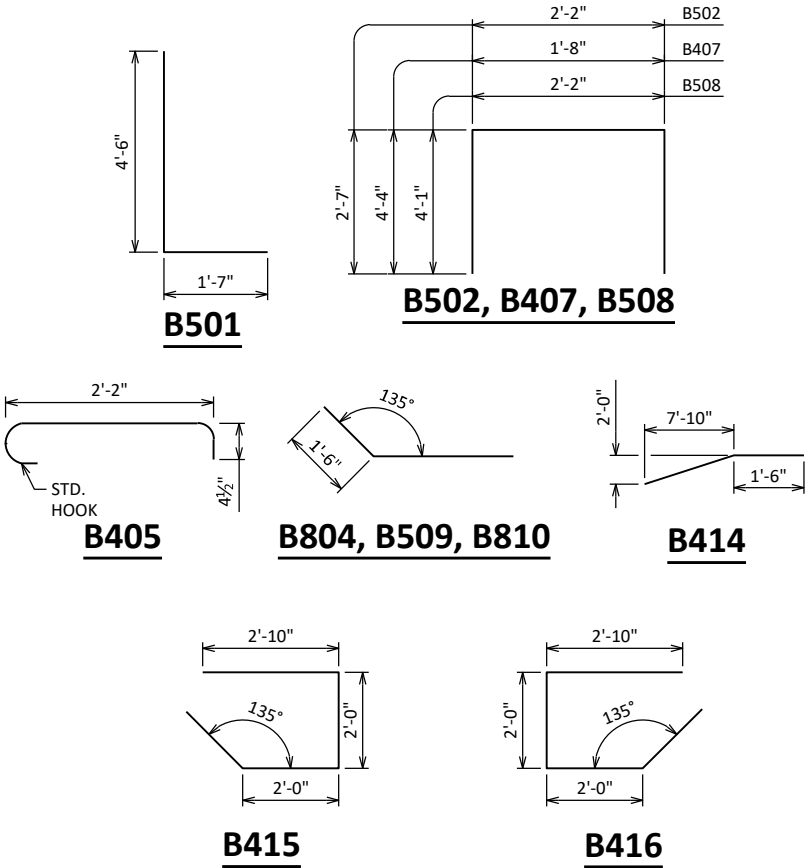
SHOWING UPPER WING REINFORCEMENT



SECTION THRU WING 3

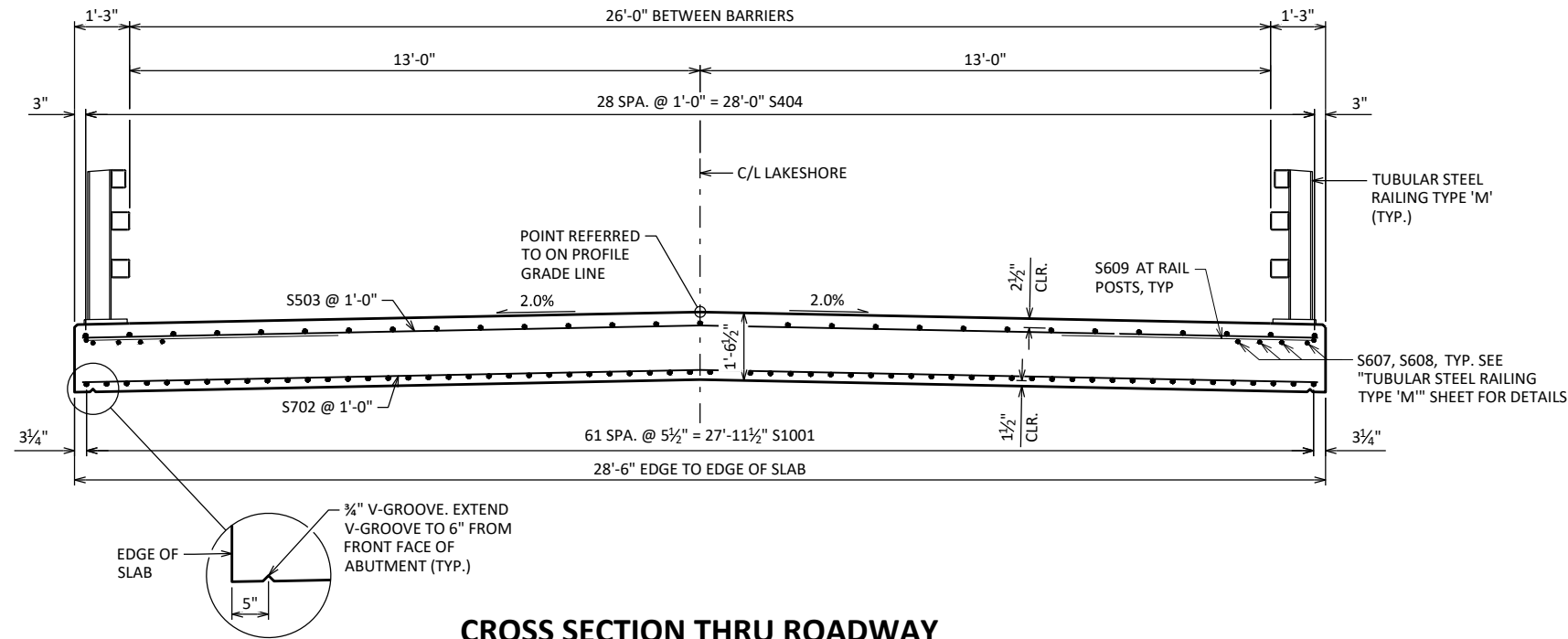
TYPICAL BOTH WINGS

SECTION A-A

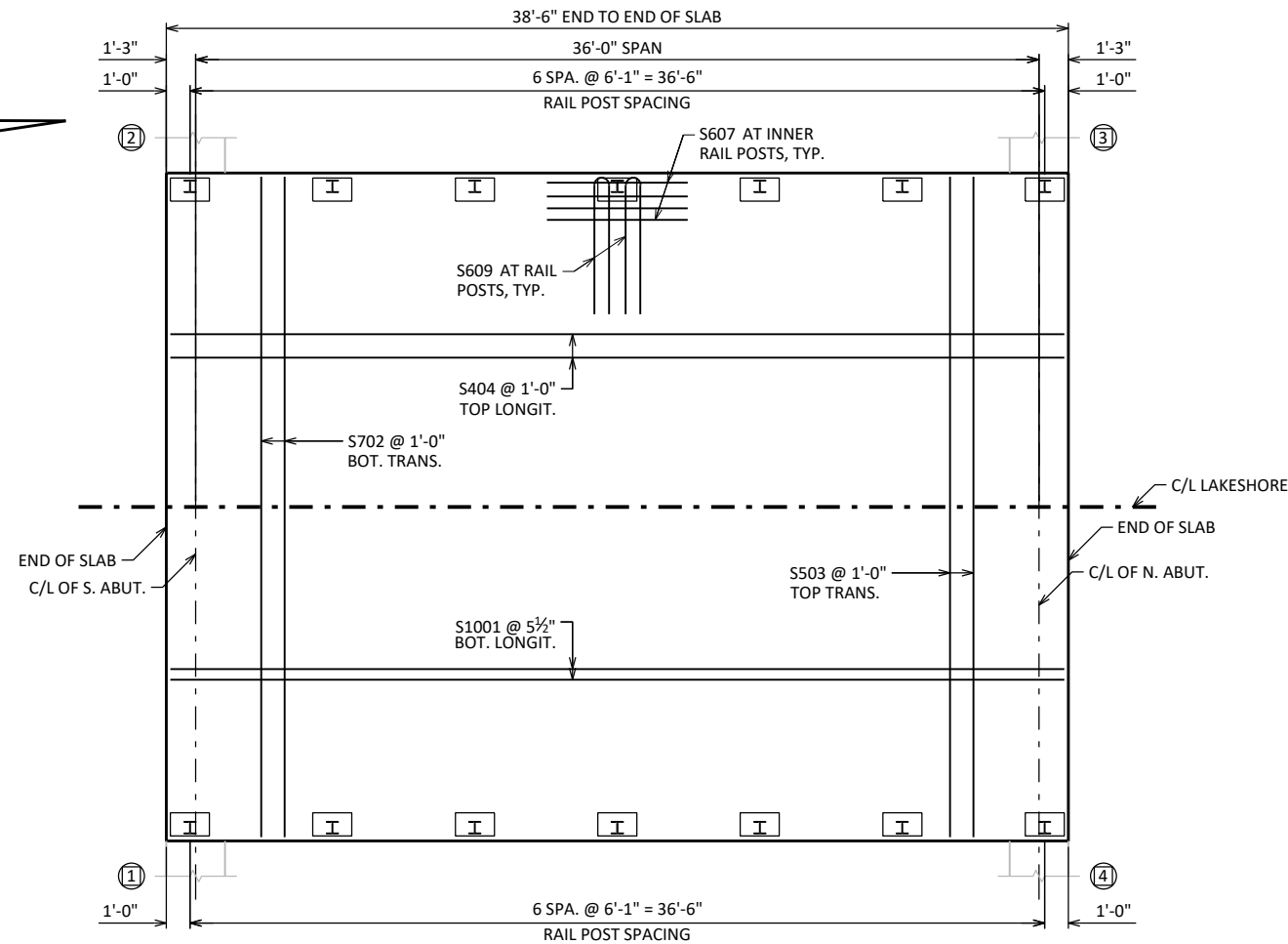


- A01 OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
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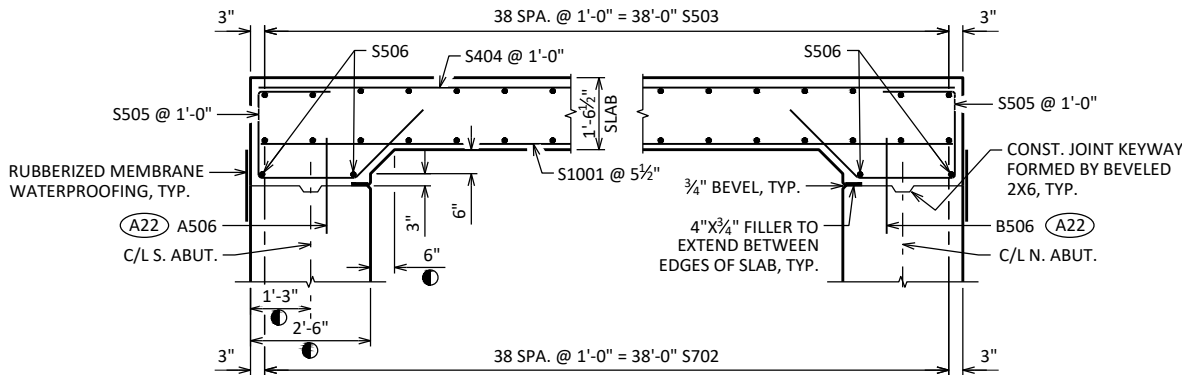
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-123			
DRAWN BY JMC		PLANS CK'D RCP	
NORTH ABUTMENT DETAILS		SHEET 7 OF 10	



CROSS SECTION THRU ROADWAY



PLAN



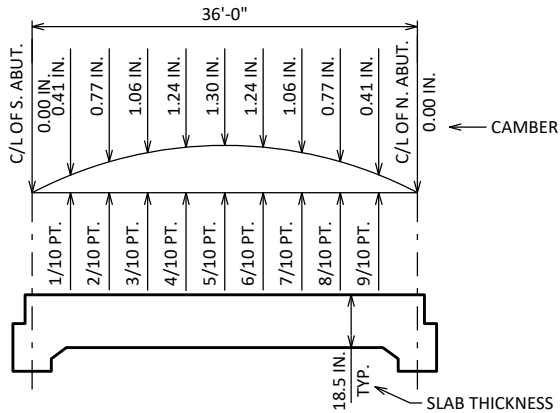
LONGITUDINAL SECTION

DIMENSIONS ARE GIVEN PARALLEL TO ϵ ROADWAY UNLESS OTHERWISE NOTED.

MEASURED NORMAL TO THE ϵ OF ABUTMENT. DIMENSIONS ARE TYPICAL FOR BOTH ABUTMENTS.

A22 A506, B506 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-8-123			
DRAWN BY JMC		PLANS CK'D RCP	
SUPERSTRUCTURE		SHEET 8 OF 10	



CAMBER AND SLAB THICKNESS DIAGRAM

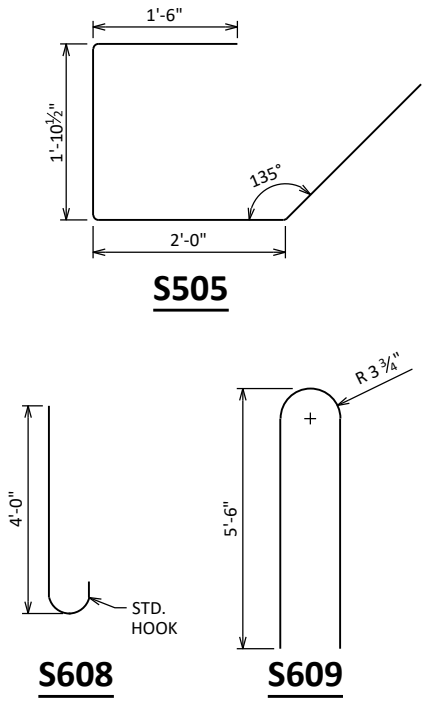
CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. PARAPETS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED, EXCEPT FOR STAGED CONSTRUCTION.

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

LESS	TOP OF SLAB ELEVATION AT FINAL GRADE
PLUS	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

TOP OF SLAB ELEVATIONS

LOCATION	C/L BRG. S. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	C/L BRG. N. ABUT.
W. EDGE OF DECK	778.33	778.35	778.36	778.38	778.39	778.41	778.43	778.44	778.46	778.47	778.49
CROWN	778.62	778.63	778.65	778.66	778.68	778.70	778.71	778.73	778.74	778.76	778.77
E. EDGE OF DECK	778.33	778.35	778.36	778.38	778.39	778.41	778.43	778.44	778.46	778.47	778.49



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
S1001	X	62	38'-2"			SLAB BOTTOM LONGITUDINAL
S702	X	39	28'-2"			SLAB BOTTOM TRANSVERSE
S503	X	39	28'-2"			SLAB TOP TRANSVERSE
S404	X	29	38'-2"			SLAB TOP LONGITUDINAL
S505	X	58	7'-2"	X		ABUTMENT DIAPHRAGM STIRRUPS
S506	X	4	28'-2"			ABUTMENT DIAPHRAGM LONGITUDINAL
S607	X	40	6'-0"			SLAB TOP LONGIT. UNDER RAIL POSTS
S608	X	16	4'-8"	X		SLAB TOP LONGIT. UNDER RAIL END POSTS
S609	X	28	11'-3"	X		SLAB TOP HOOKS UNDER RAIL POSTS

SURVEY TOP OF SLAB ELEVATIONS

LOCATION	ABUTMENT	5/10 PT.	ABUTMENT
W. GUTTER			
CROWN OR R/L			
E. GUTTER			

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

NOTES

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

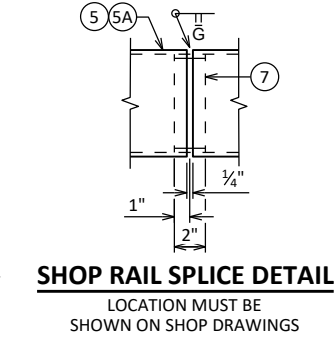
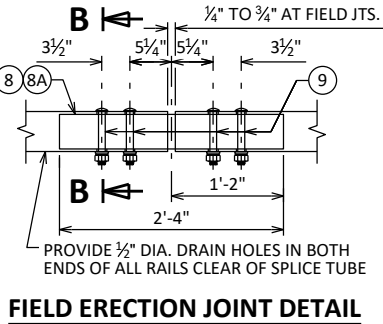
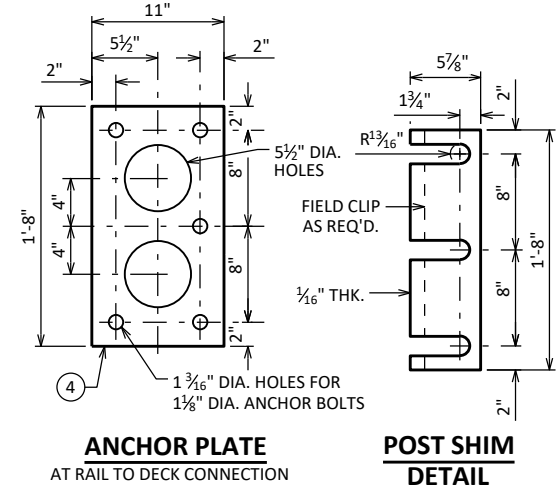
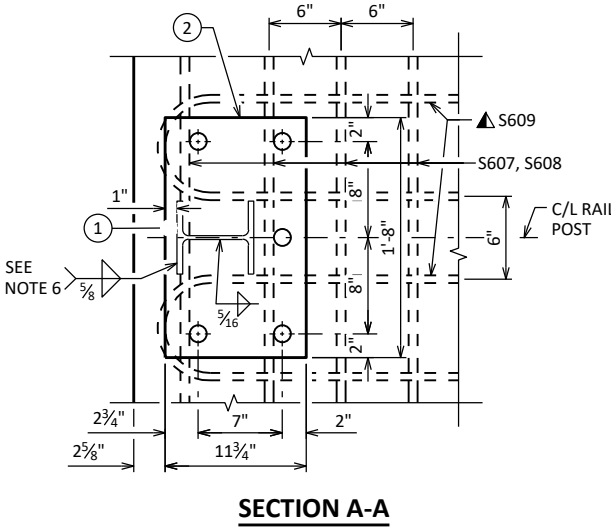
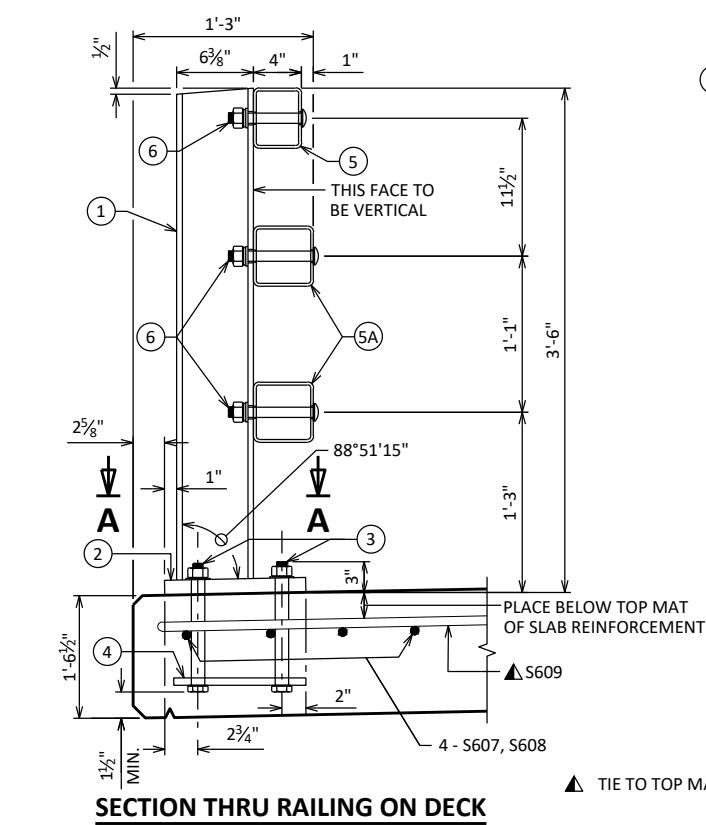
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

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

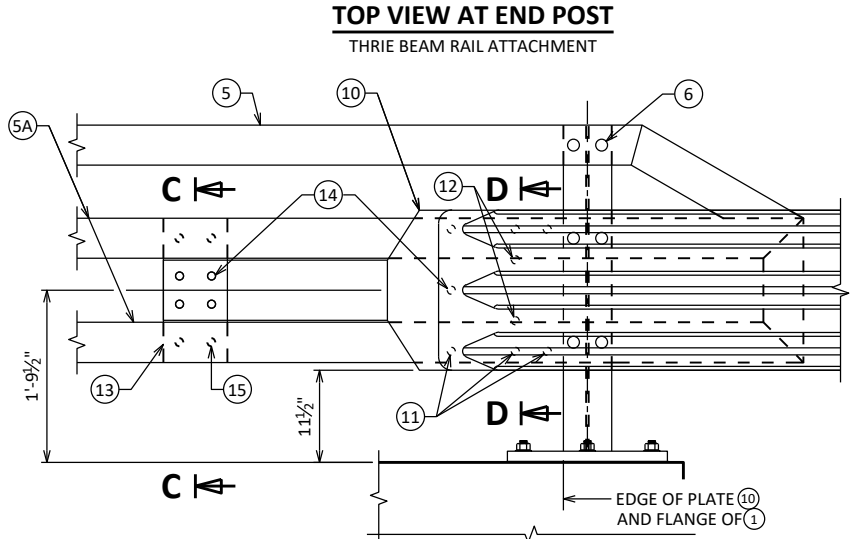
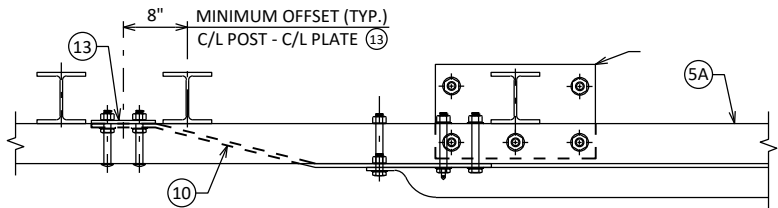
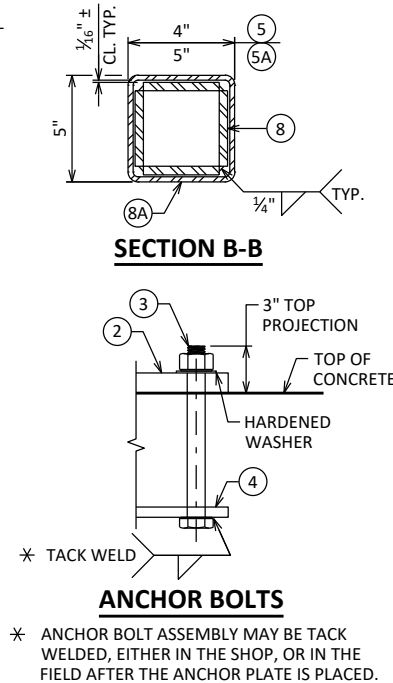
STATE PROJECT NUMBER

4478-02-70

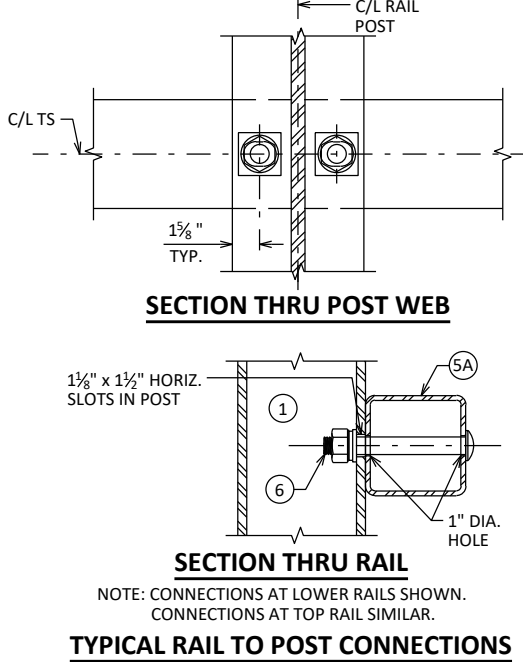
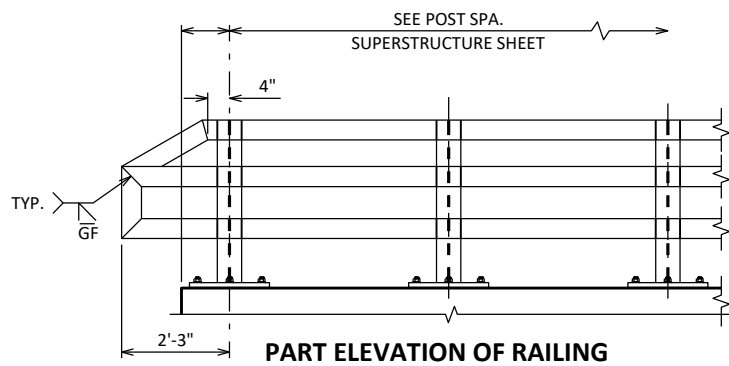
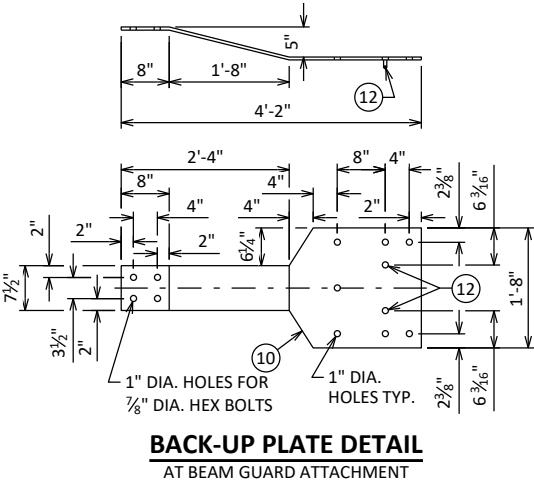
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-123			
		DRAWN BY JMC	PLANS CK'D RCP
STRUCTURE DETAILS		SHEET 9 OF 10	



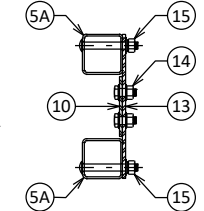
▲ TIE TO TOP MAT OF STEEL.



ANCHOR PLATE AT BEAM GUARD ATTACHMENT



TYPICAL RAIL TO POST CONNECTIONS



SECTION C-C

SECTION D-D

- LEGEND**
- W6 x 25 WITH 1 1/2" x 1 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 1/4" x 11 3/4" x 1'-8" WITH 1 1/16" OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
 - ASTM A449 - 1 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. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
 - 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 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.
 - 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" x 1 5/8" x 1 5/8" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION).
 - SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
 - 3/8" x 3 5/8" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
 - 3/8" x 2 5/8" x 2'-4" PLATE USED IN NO. 5, 3/8" x 3 5/8" x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
 - 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/16" x 1 1/4" LONGIT. SLOTTED HOLES IN PLATE NO. 10A AT FIELD JOINTS AND 1 5/16" x 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 8A. PROVIDE 1 5/16" DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.
 - 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" x 1 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. 10 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 10.
 - 7/8" DIA. x 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
 - 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.
 - 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
 - 1" DIA. HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

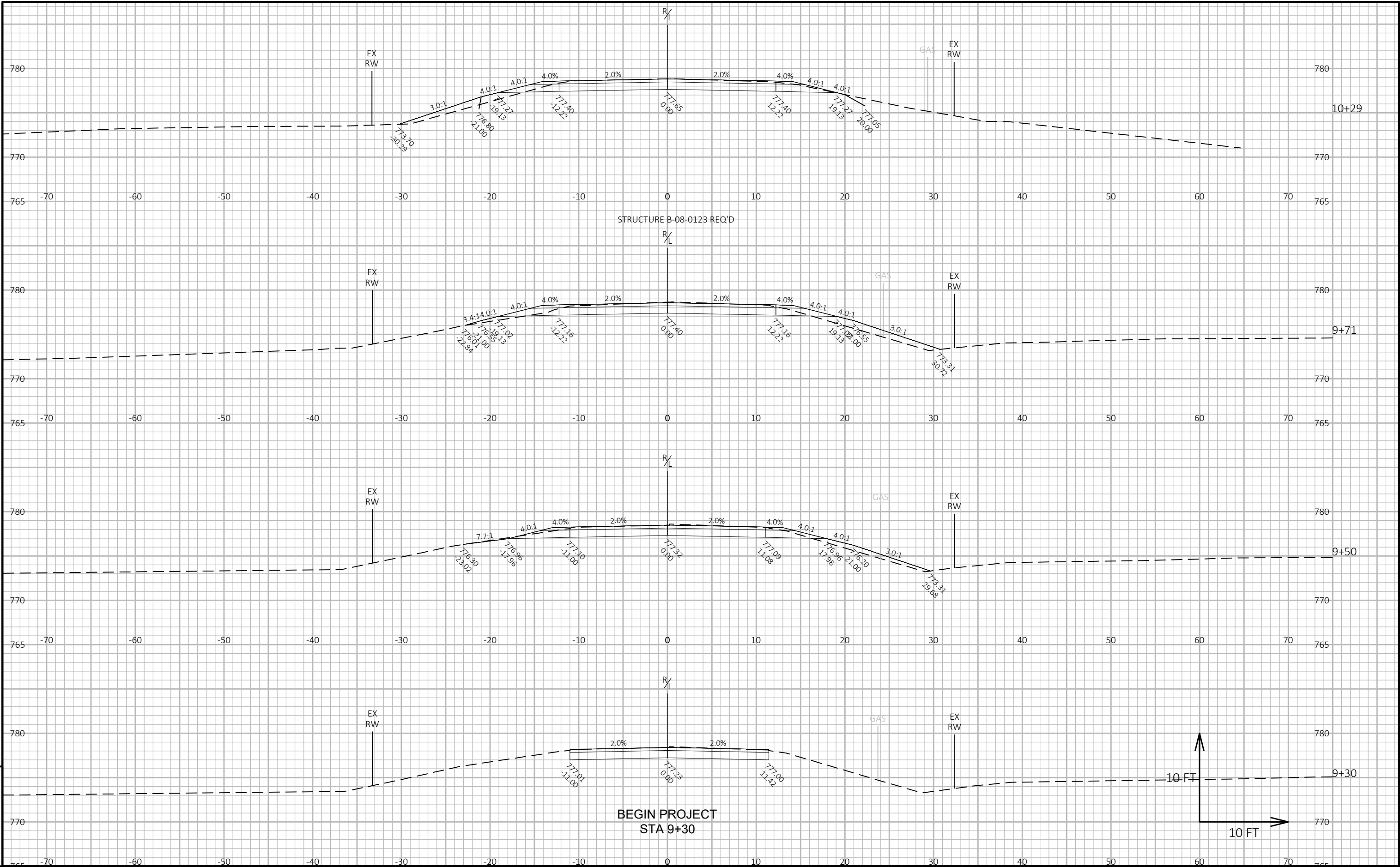
- GENERAL NOTES**
- BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
 - RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. 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 1/2 TURN.
 - RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
 - 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.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-8-123			
DRAWN BY JMC		PLANS CK'D RCP	
TUBULAR STEEL RAILING TYPE 'M'			SHEET 10 OF 10

DIVISION - LCL-LAKESHORE DRIVE									
STATION	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.30	MASS ORDINATE
				NOTE 1	NOTE 2	NOTE 3	NOTE 1		NOTE 8
9+30.00	26.31	7	4.54	0	0	0	0	0	0
9+50.00	37.49	7	5.69	24	5	4	24	5	14
9+70.75	31.11	8	7.13	26	6	5	50	12	27
B-8-123									
10+29.25	34.07	8	7.83	0	0	0	50	12	27
10+50.00	34.35	8	1.31	26	6	4	76	17	42
10+70.00	24.50	8	1.28	22	6	1	98	18	57

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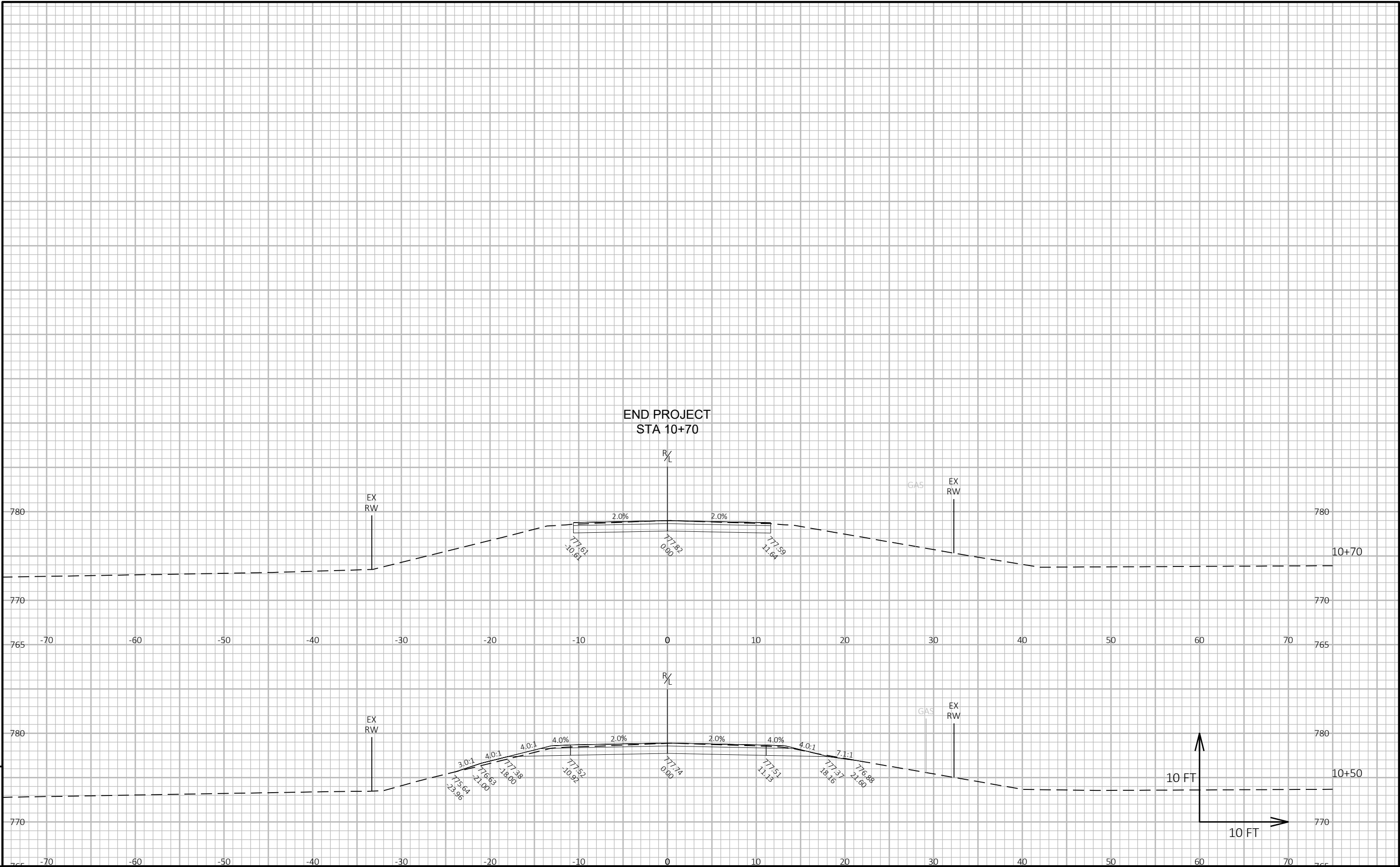
Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
8 - Mass Ordinate	Cut - Unusable Pavement Material - (Fill * Fill Factor)
8 - Mass Ordinate	Mass Ordinate does not include marsh excavation



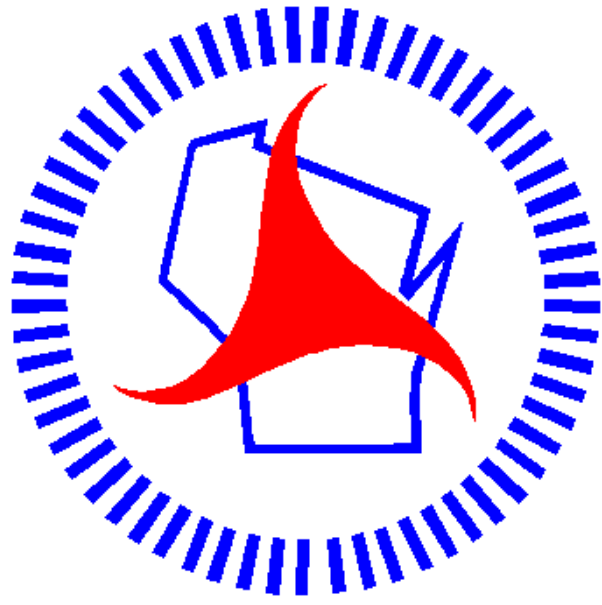
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PROJECT NO: 4478-02-70	HWY: LAKESHORE DRIVE	COUNTY: CALUMET	CROSS SECTIONS: LAKESHORE DRIVE	SHEET	E
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PROJECT NO: 4478-02-70	HWY: LAKESHORE DRIVE	COUNTY: CALUMET	CROSS SECTIONS: LAKESHORE DRIVE	SHEET	E
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