

RHI

PROJECT ID:  
WITH: N/A

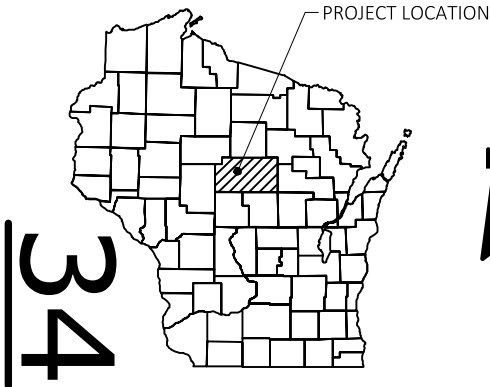
6673-02-72

COUNTY:  
MARATHON

NOVEMBER 2024  
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
<del>Section No.</del>	<del>4</del>	<del>Right of Way Plat</del>
Section No.	5	Plan and Profile (Includes Erosion Control Details)
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 = 44



DESIGN DESIGNATION

A.A.D.T.	(2025)	=	125
A.A.D.T.	(2045)	=	125
D.H.V.		=	160
D.D.		=	50/50
T.		=	10%
DESIGN SPEED		=	55 MPH
ESALS		=	15,000

CONVENTIONAL SYMBOLS

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

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T CASSEL, CHESAK ROAD

BR SCOTCH CREEK CROSSING B-37-0479

LOC STR  
MARATHON COUNTY

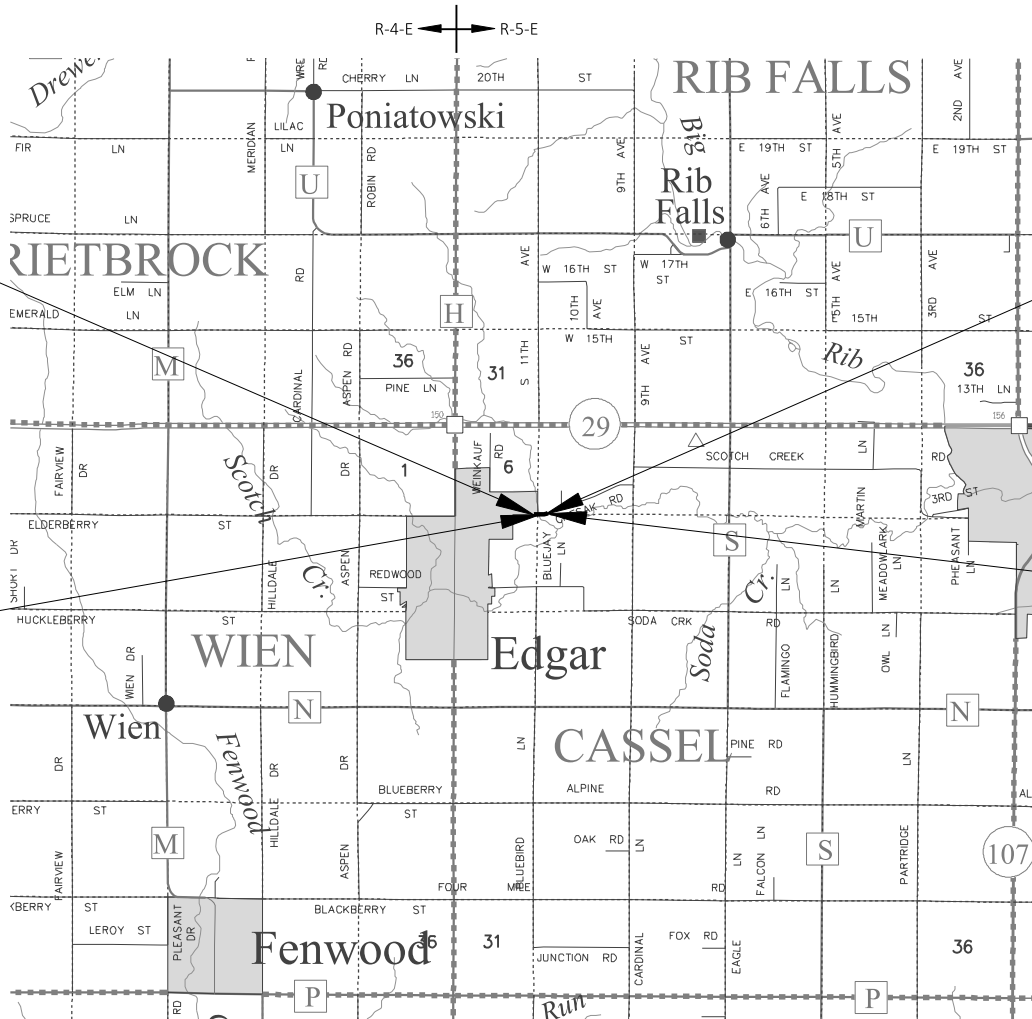
STATE PROJECT NUMBER
6673-02-72

BEGIN PROJECT 6673-02-72  
STA 8+75  
Y = 191,585.8624  
X = 199,277.2446

END PROJECT 6673-02-72  
STA 11+25  
Y = 191,591.9971  
X = 199,527.1628

END CONSTRUCTION  
STA 12+00

BRIDGE B-37-0479



LAYOUT  
SCALE 0 2 MI  
TOTAL NET LENGTH OF CENTERLINE = 0.047 MI

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

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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6673-02-72	WISC 2025054	1

ACCEPTED FOR

MARATHON COUNTY

07/18/2024 *James Griesbach*  
DATE HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY



146 North Central Ave, Marshfield WI 54449  
(715) 384-2133 www.msa-ps.com  
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DATE: 7/18/2024 *Alex Passow*  
(Professional Engineer Signature)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	MSA PROFESSIONAL SERVICES, INC.
Designer	MSA PROFESSIONAL SERVICES, INC.
Project Manager	MICHAEL GRACE
Regional Examiner	N/A
Regional Supervisor	DAN ERVA

APPROVED FOR THE DEPARTMENT  
DATE: 7/22/2024 *Michael Grace*  
(Signature)

E

UTILITIES CONTACTS

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PHONE: 715-573-0349 (MOBILE)  
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WISCONSIN DNR LIAISON

JAY SCHIEFELBEIN  
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COUNTY HIGHWAY COMMISSIONER

JIM GRIESBACH, COMMISSIONER  
MARATHON COUNTY HIGHWAY DEPARTMENT  
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NORTH CENTRAL REGION  
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RHINELANDER, WI 54501  
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MARSHFIELD, WI 54449  
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EMAIL: SSPROMBERG@MSA-PS.COM

GENERAL NOTES

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

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.

RIGHT OF WAY LOCATIONS ARE APPROXIMATE.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED AND EROSION MATTED.

STANDARD ABBREVIATIONS

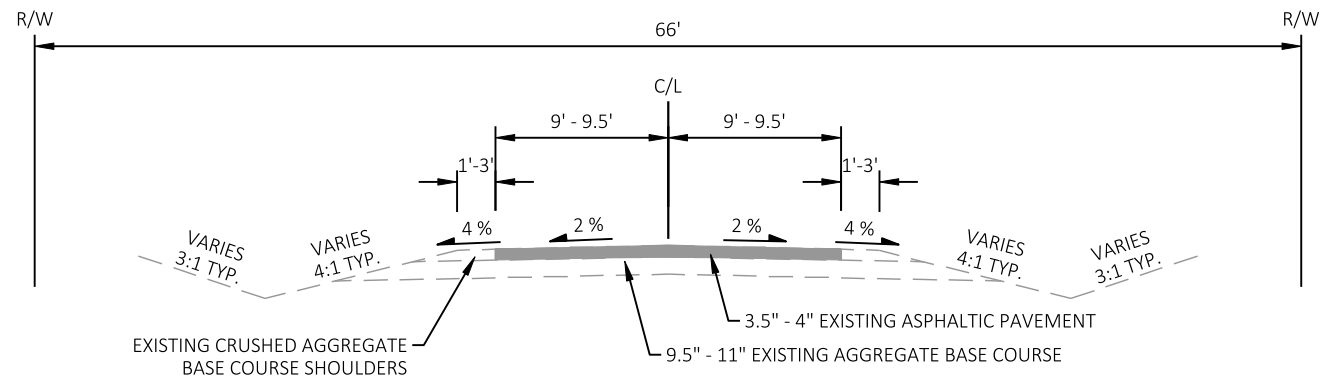
ABUT	ABUTMENT	LC	LONG CHORD OF CURVE
AC	ACRE	LS	LUMP SUM
AGG	AGGREGATE	MGAL	ONE THOUSAND GALLONS
AH	AHEAD	MH	MANHOLE
∠	ANGLE	ML OR M/L	MATCH LINE
AADT	ANNUAL AVERAGE DAILY TRAFFIC	NOM	NOMINAL
ASPH	ASPHALTIC	NC	NORMAL CROWN
BK	BACK	NB	NORTHBOUND
BC	BACK OF CURB	NO	NUMBER
BAD	BASE AGGREGATE DENSE	OD	OUTSIDE DIAMETER
BL OR B/L	BASE LINE	PAVT	PAVEMENT
BM	BENCH MARK	PLE	PERMANENT LIMITED EASEMENT
CB	CATCH BASIN	PC	POINT OF CURVATURE
CL OR C/L	CENTER LINE	PI	POINT OF INTERSECTION
Δ	CENTRAL ANGLE OR DELTA	PT	POINT OF TANGENCY
CE	COMMERCIAL ENTRANCE	PCC	PORTLAND CEMENT CONCRETE
CONC	CONCRETE	LB	POUND
CONST	CONSTRUCTION	PSI	POUNDS PER SQUARE INCH
CP	CONTROL POINT	PE	PRIVATE ENTRANCE
CO	COUNTY	PROJ	PROJECT
CTH	COUNTY TRUCK HIGHWAY	PL	PROPERTY LINE
CY	CUBIC YARD	PRW	PROPOSED RIGHT OF WAY
CP	CULVERT PIPE	R	RADIUS
CPRC	CULVERT PIPE REINFORCED CONCRETE	RL OR R/L	REFERENCE LINE
C & G	CURB AND GUTTER	REQD	REQUIRED
D	DEGREE OF CURVE	RT	RIGHT
DHV	DESIGN HOUR VOLUME	R/W	RIGHT OF WAY
DIA	DIAMETER	RD	ROAD
DWY	DRIVEWAY	RDWY	ROADWAY
EA	EACH	SHLDR	SHOULDER
EB	EASTBOUND	SW	SIDEWALK
EL OR ELEV	ELEVATION	SB	SOUTHBOUND
EMB	EMBANKMENT	SPECS	SPECIFICATIONS
EW	ENDWALL	SF	SQUARE FEET
EAT	ENERGY ABSORBING TERMINAL	SY	SQUARE YARD
ESALS	EQUIVALENT SINGLE AXLE LOADS	SDD	STANDARD DETAIL DRAWINGS
EXC	EXCAVATION	STH	STATE TRUNK HIGHWAY
EBS	EXCAVATION BELOW SUBGRADE	STA	STATION
EXIST	EXISTING	SE	SUPERELEVATION
FERT	FERTILIZER	SL OR S/L	SURVEY LINE
FE	FIELD ENTRANCE	TEMP	TEMPORARY
FL OR F/L	FLOW LINE	TI	TEMPORARY INTEREST
FT	FOOT	TLE	TEMPORARY LIMITED EASEMENT
FTMS	FREE TRAFFIC MANAGEMENT SYSTEM	TC	TOP OF CURB
HE	HIGHWAY EASEMENT	TL OR T/L	TRANSIT LINE
CWT	HUNDRED WEIGHT	T	TRUCKS (PERCENT OF)
IN DIA	INCH DIAMETER	TYP	TYPICAL
INL	INLET	USH	UNITED STATES HIGHWAY
ID	INSIDE DIAMETER	VAR	VARIABLE
INTERS	INTERSECTION	VC	VERTICAL CURVE
IH	INTERSTATE HIGHWAY	VPC	VERTICAL POINT OF CURVATURE
INV	INVERT	VPI	VERTICAL POINT OF INTERSECTION
JT	JOINT	VPT	VERTICAL POINT OF TANGENCY
LT	LEFT	W	WEST
L	LENGTH OF CURVE	WB	WESTBOUND
LF	LINEAR FOOT		

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											

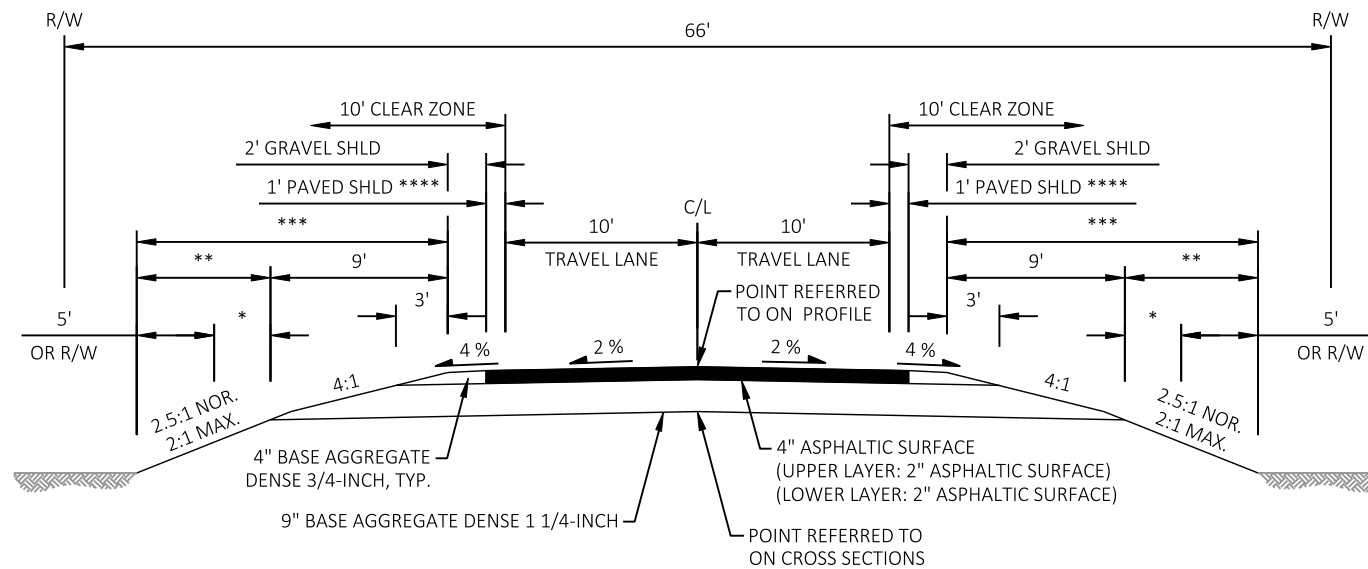
TOTAL PROJECT AREA = 0.53 ACRES  
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.35 ACRES



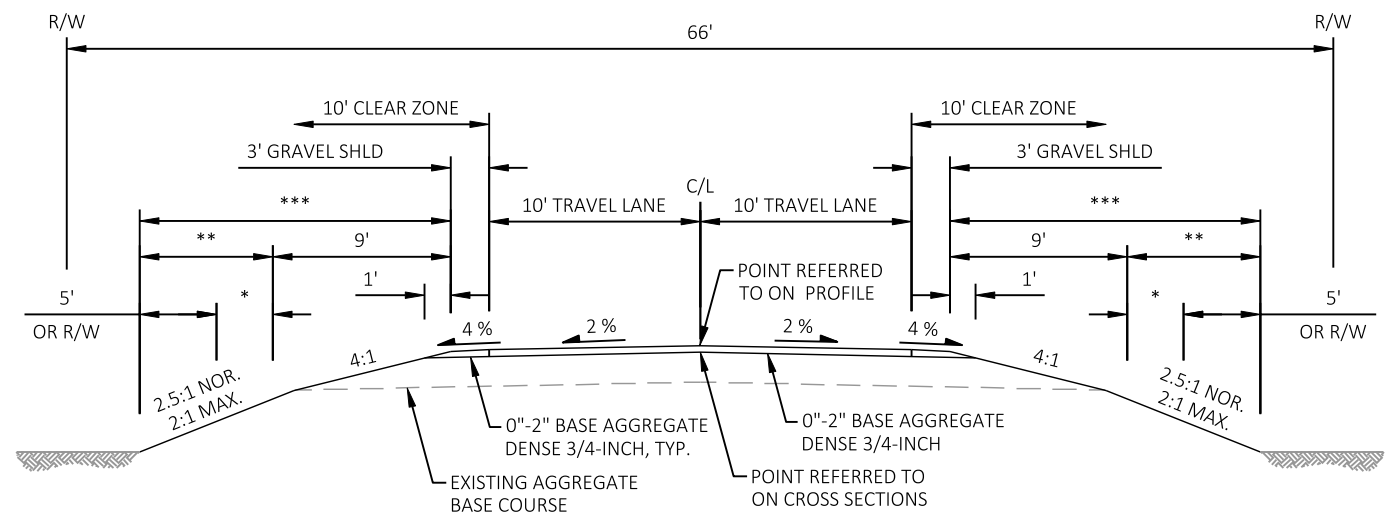


**EXISTING TYPICAL SECTION**  
STA 8+75 - STA 12+00

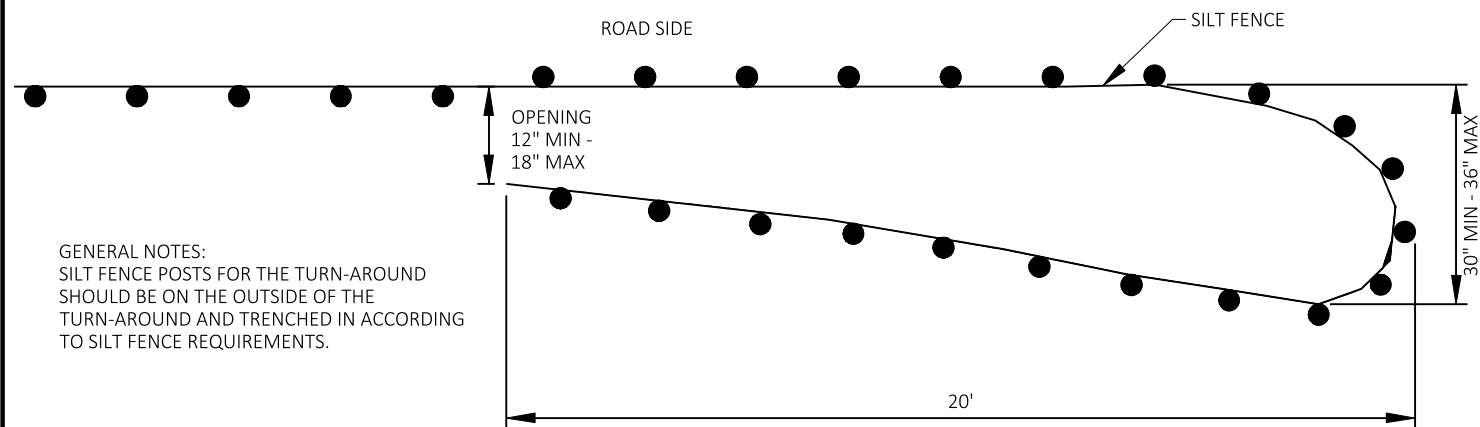
- \* LIMITS OF TOPSOIL
- \*\* LIMITS OF EROSION MAT URBAN CLASS 1 TYPE B
- \*\*\* LIMITS OF SEEDING MIXTURE NO. 20, SEEDING TEMPORARY & FERTILIZER TYPE B
- \*\*\*\* PAVE SHOULDER FULL WIDTH AT STRUCTURE ENDS



**FINISHED TYPICAL SECTION**  
STA 8+75 - STA 11+25



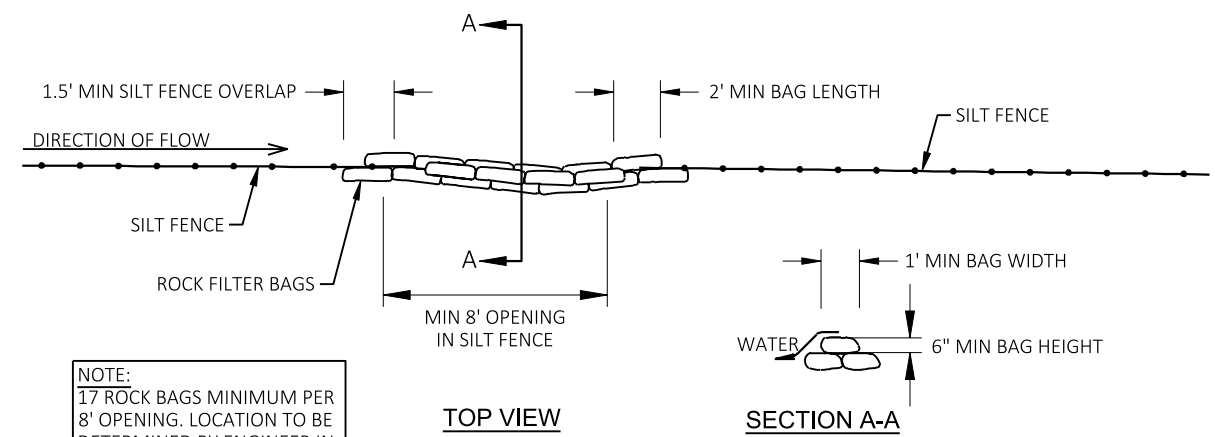
**FINISHED TYPICAL SECTION**  
STA 11+25 - STA 12+00



PLAN VIEW

EXCLUSION FENCING DETAIL

GENERAL NOTES:  
SILT FENCE POSTS FOR THE TURN-AROUND  
SHOULD BE ON THE OUTSIDE OF THE  
TURN-AROUND AND TRENCHED IN ACCORDING  
TO SILT FENCE REQUIREMENTS.



NOTE:  
17 ROCK BAGS MINIMUM PER  
8' OPENING. LOCATION TO BE  
DETERMINED BY ENGINEER IN  
THE FIELD.

TOP VIEW

SECTION A-A

ROCK BAGS USED FOR SILT FENCE RELIEF



Estimate Of Quantities

6673-02-72

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	4.000	4.000
0004	201.0205	Grubbing	STA	4.000	4.000
0006	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-37-249	EACH	1.000	1.000
0008	204.0165	Removing Guardrail	LF	344.000	344.000
0010	205.0100	Excavation Common	CY	234.000	234.000
0012	206.1001	Excavation for Structures Bridges (structure) 01. B-37-479	EACH	1.000	1.000
0014	210.1500	Backfill Structure Type A	TON	366.000	366.000
0016	213.0100	Finishing Roadway (project) 01. 6673-02-72	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	64.000	64.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	360.000	360.000
0022	455.0605	Tack Coat	GAL	36.000	36.000
0024	465.0105	Asphaltic Surface	TON	120.000	120.000
0026	502.0100	Concrete Masonry Bridges	CY	149.000	149.000
0028	502.3200	Protective Surface Treatment	SY	197.000	197.000
0030	505.0400	Bar Steel Reinforcement HS Structures	LB	4,080.000	4,080.000
0032	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	22,020.000	22,020.000
0034	513.4061	Railing Tubular Type M	LF	98.000	98.000
0036	516.0500	Rubberized Membrane Waterproofing	SY	10.000	10.000
0038	550.0500	Pile Points	EACH	14.000	14.000
0040	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	595.000	595.000
0042	606.0300	Riprap Heavy	CY	120.000	120.000
0044	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	138.000	138.000
0046	618.0100	Maintenance and Repair of Haul Roads (project) 01. 6673-02-72	EACH	1.000	1.000
0048	619.1000	Mobilization	EACH	1.000	1.000
0050	624.0100	Water	MGAL	10.000	10.000
0052	625.0100	Topsoil	SY	525.000	525.000
0054	628.1504	Silt Fence	LF	690.000	690.000
0056	628.1520	Silt Fence Maintenance	LF	690.000	690.000
0058	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0060	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0062	628.2008	Erosion Mat Urban Class I Type B	SY	525.000	525.000
0064	628.6005	Turbidity Barriers	SY	160.000	160.000
0066	628.7504	Temporary Ditch Checks	LF	20.000	20.000
0068	628.7570	Rock Bags	EACH	70.000	70.000
0070	629.0210	Fertilizer Type B	CWT	0.420	0.420
0072	630.0120	Seeding Mixture No. 20	LB	17.000	17.000
0074	630.0200	Seeding Temporary	LB	17.000	17.000
0076	630.0500	Seed Water	MGAL	10.000	10.000
0078	634.0612	Posts Wood 4x6-Inch X 12-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	6.000	6.000
0084	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0086	642.5001	Field Office Type B	EACH	1.000	1.000
0088	643.0420	Traffic Control Barricades Type III	DAY	1,450.000	1,450.000
0090	643.0705	Traffic Control Warning Lights Type A	DAY	2,260.000	2,260.000
0092	643.0900	Traffic Control Signs	DAY	1,130.000	1,130.000
0094	643.5000	Traffic Control	EACH	1.000	1.000
0096	645.0111	Geotextile Type DF Schedule A	SY	84.000	84.000
0098	645.0120	Geotextile Type HR	SY	235.000	235.000

Estimate Of Quantities

6673-02-72					
Line	Item	Item Description	Unit	Total	Qty
0100	650.4500	Construction Staking Subgrade	LF	204.000	204.000
0102	650.5000	Construction Staking Base	LF	279.000	279.000
0104	650.6501	Construction Staking Structure Layout (structure) 01. B-37-479	EACH	1.000	1.000
0106	650.9911	Construction Staking Supplemental Control (project) 01. 6673-02-72	EACH	1.000	1.000
0108	650.9920	Construction Staking Slope Stakes	LF	279.000	279.000
0110	715.0502	Incentive Strength Concrete Structures	DOL	700.000	700.000
0112	999.2000.S	Installing and Maintaining Bird Deterrent System (station) Station 10+00	EACH	1.000	1.000
0114	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0116	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

STATION	TO	STATION	LOCATION	201.0105	201.0205
				CLEARING STA	GRUBBING STA
8+75	-	11+25	LT & RT	4	4
TOTAL 0010				4	4

STATION	TO	STATION	LOCATION	205.0100 EXCAVATION COMMON CY
8+75	-	9+77	MAINLINE	102
10+22	-	11+25	MAINLINE	132
TOTAL 0010				234

STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
8+75	-	9+77	MAINLINE	18	60
10+23	-	11+25	MAINLINE	18	60
TOTAL 0010				36	120

STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF
9+02	-	9+83	RT	86
9+02	-	9+82	LT	86
10+18	-	11+03	LT	86
10+18	-	11+03	RT	86
TOTAL 0010				344

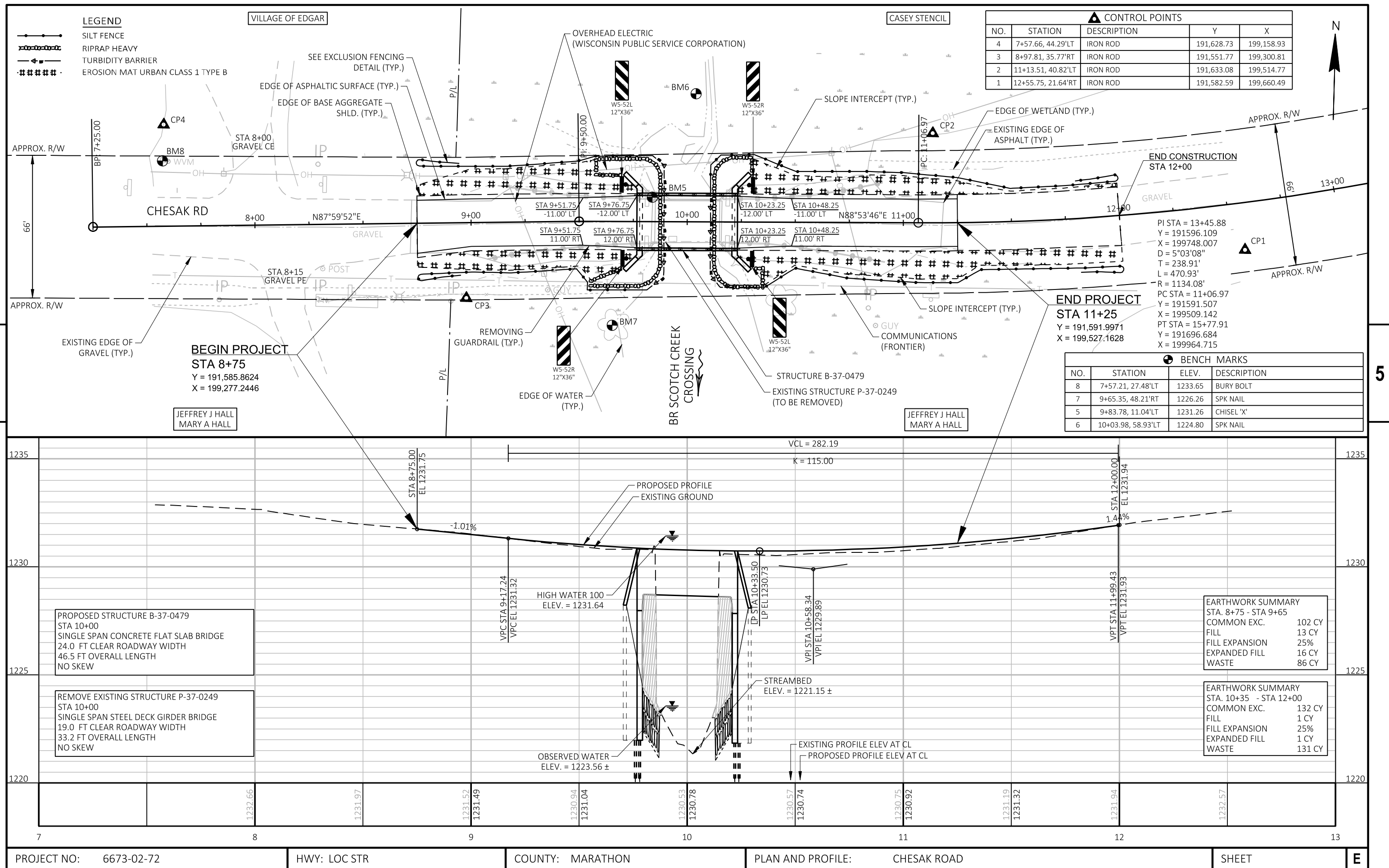
CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
0010	8+75	-	9+77	PROJECT	15	170	4
0010	10+23	-	11+25	PROJECT	15	170	4
				UNDISTRIBUTED	10	20	1
				TOTAL 0010	40	360	9
0030	11+25	-	12+00	PROJECT	24	--	1
				TOTAL 0030	24	--	1
				PROJECT TOTAL	64	360	10

STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EROSION CONTROL EACH
8+75	-	9+77	RT	150	150	--	--
8+75	-	9+77	LT	150	150	--	--
10+23	-	11+25	LT	160	160	--	--
10+23	-	11+25	RT	160	160	--	--
			PROJECT	--	--	4	2
			UNDISTRIBUTED	70	70	--	--
			TOTAL 0010	690	690	4	2

				625.0100	628.2008 EROSION MAT URBAN CLASS I	628.7504	628.7570	629.0210	630.0120	630.0200	630.0500		
				TOPSOIL	TYPE B	TEMPORARY DITCH CHECKS	ROCK BAGS EACH	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEEDING TEMPORARY LB	SEED WATER MGAL	628.6005 TURBIDITY BARRIERS	
STATION	TO	STATION	LOCATION	SY	SY	LF	EACH	CWT	LB	LB	MGAL	LOCATION	SY
8+75	-	9+77	LT	118	118	--	15	0.08	4	4	2	PROJECT	160
8+75	-	9+77	RT	103	103	--	15	0.07	3	3	2		
10+23	-	11+25	LT	164	164	--	15	0.11	5	5	3	TOTAL 0010	160
10+23	-	11+25	RT	90	90	--	15	0.06	3	3	2		
UNDISTRIBUTED				50	50	20	10	0.10	2	2	1		
TOTAL 0010				525	525	20	70	0.42	17	17	10		

		634.0612	637.2230	638.2602	638.3000			
		POSTS WOOD 4X6-	SIGNS TYPE II	REMOVING SIGNS	REMOVING SMALL			
		INCH X 12-FT	REFLECTIVE F	TYPE II	SIGN SUPPORTS			
STATION	LOCATION	EACH	SF	EACH	EACH	REMARKS	LOCATION	643.0420
ADVANCED SIGN		--	--	1	1	W5-2		TRAFFIC CONTROL
9+70	RT	1	3	1	1	W5-52R 12"X36"	PROJECT	BARRICADES TYPE
9+70	LT	1	3	1	1	W5-52L 12"X36"	UNDISTRIBUTED	III
10+40	LT	1	3	1	1	W5-52L 12"X36"	TOTAL 0010	DAY
10+40	RT	1	3	1	1	W5-52R 12"X36"		DAY
ADVANCED SIGN		--	--	1	1	W5-2		TYPE A
TOTAL 0010		4	12	6	6			DAY
								SIGNS
								DAY

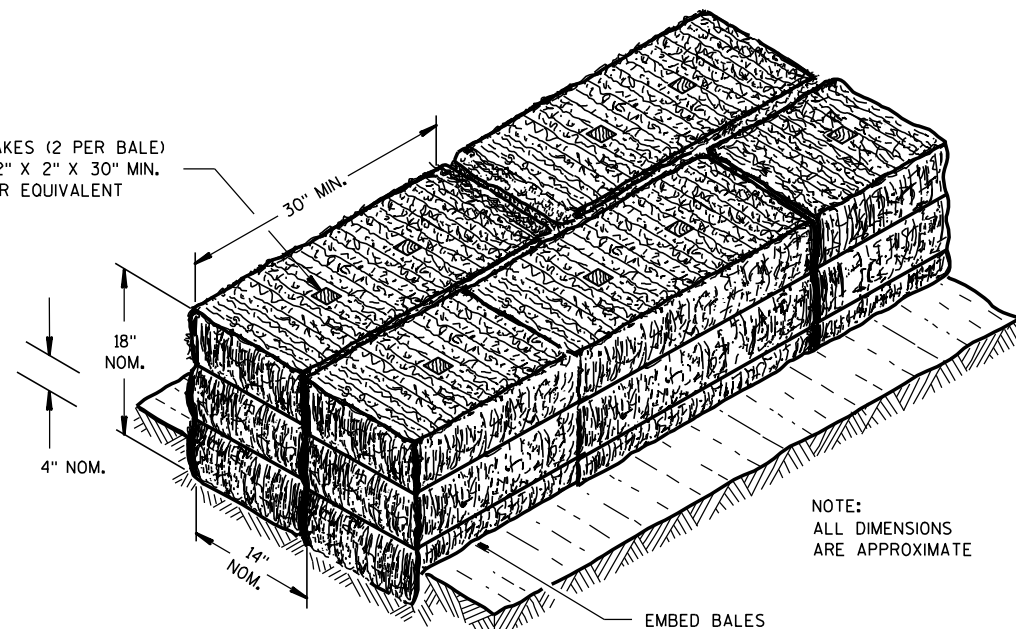
						650.4500	650.5000	650.6501.01	650.9911.01	650.9920
						CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION
						STAKING	STAKING BASE	STAKING	STAKING	STAKING SLOPE
						SUBGRADE	LF	STRUCTURE	SUPPLEMENTAL	STAKES
						LF		LAYOUT	CONTROL	
								(STRUCTURE)	(PROJECT)	
								(01. B-37-479)	(01. 6673-02-72)	
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	EACH	EACH	EACH	LF
0010	8+75	-	9+77	MAINLINE	102	102	--	--	--	102
0010	10+23	-	11+25	MAINLINE	102	102	--	--	--	102
PROJECT					--	--	1	1	--	--
TOTAL 0010					204	204	1	1		204
0030	10+23	-	12+00	MAINLINE	--	75	--	--	--	75
TOTAL 0030					--	75	--	--	--	75
PROJECT TOTAL					204	279	1	1		279



Standard Detail Drawing List

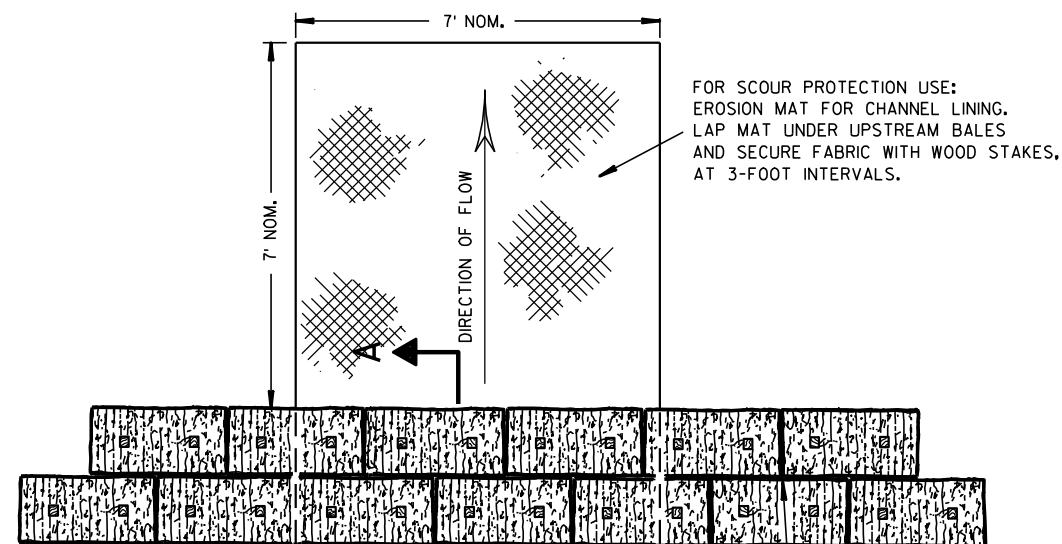
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

WOOD STAKES (2 PER BALE)  
NOMINAL 2" X 2" X 30" MIN.  
LENGTH OR EQUIVALENT

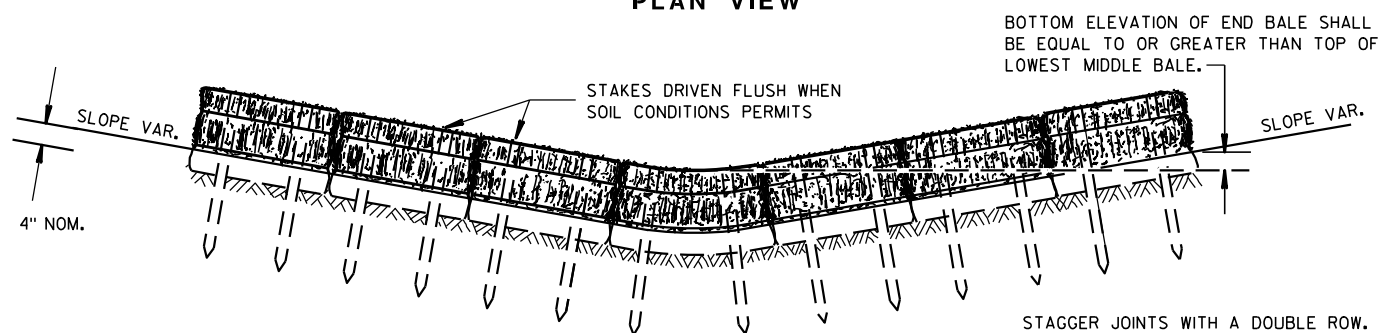


NOTE:  
ALL DIMENSIONS  
ARE APPROXIMATE

SECTION A-A



PLAN VIEW



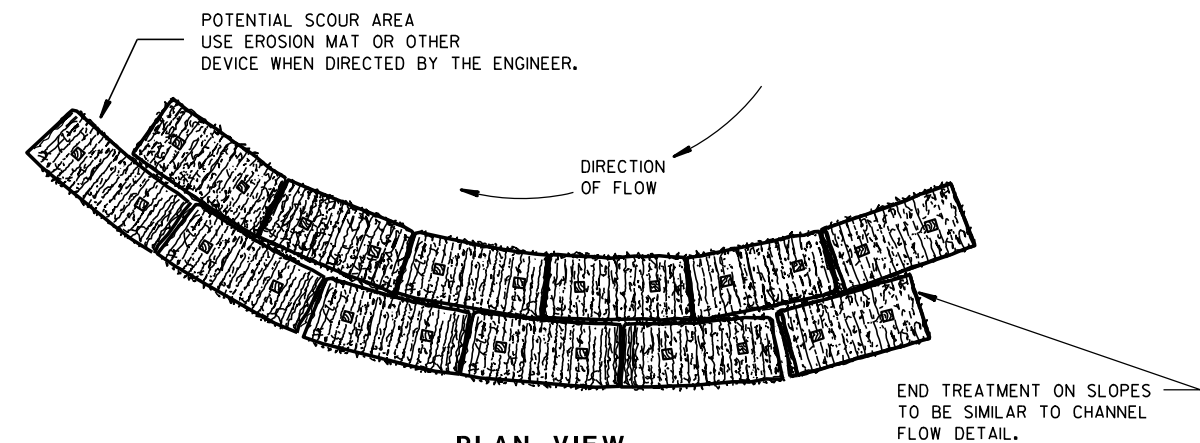
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

## GENERAL NOTES

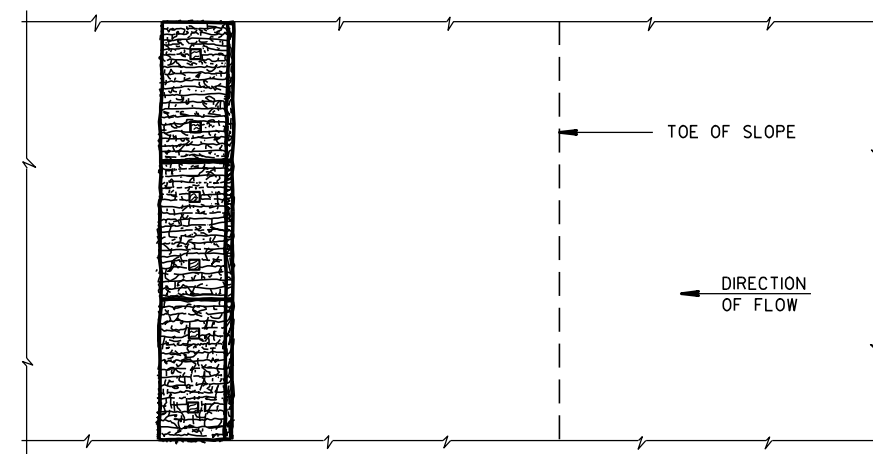
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

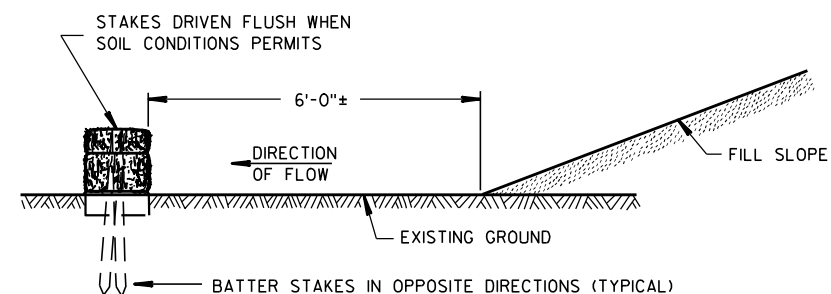


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

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

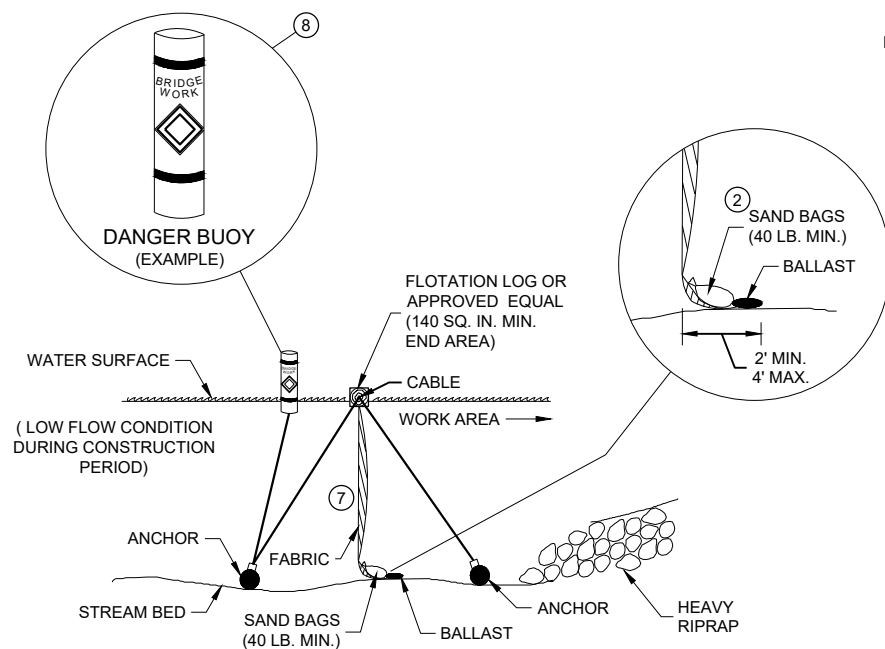


- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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

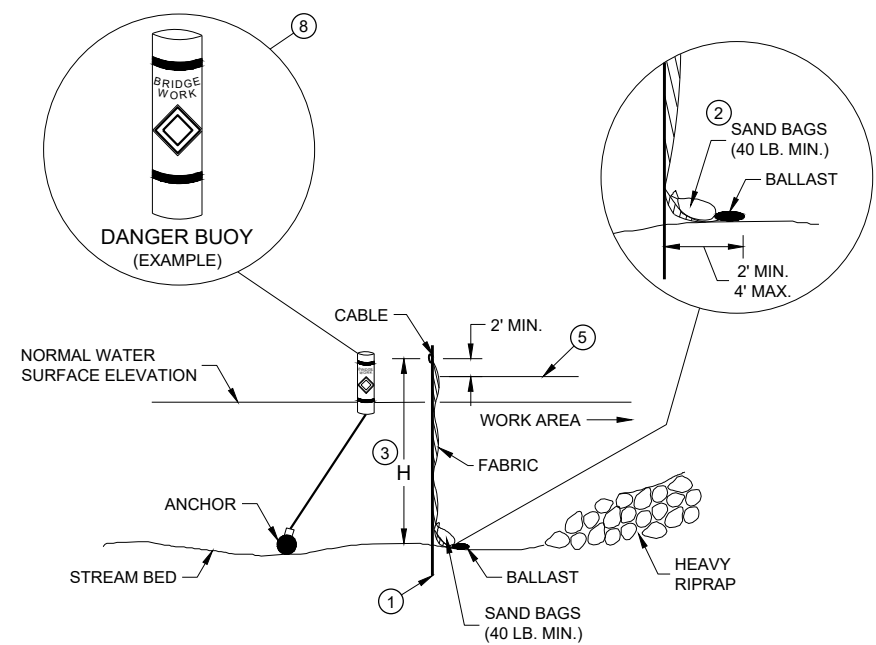


<b>SILT FENCE</b>	
<b>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</b>	
<b>APPROVED</b> <u>4-29-05</u> <b>DATE</b>	<u>/S/ Beth Canestra</u> <b>CHIEF ROADWAY DEVELOPMENT ENGINEER</b>

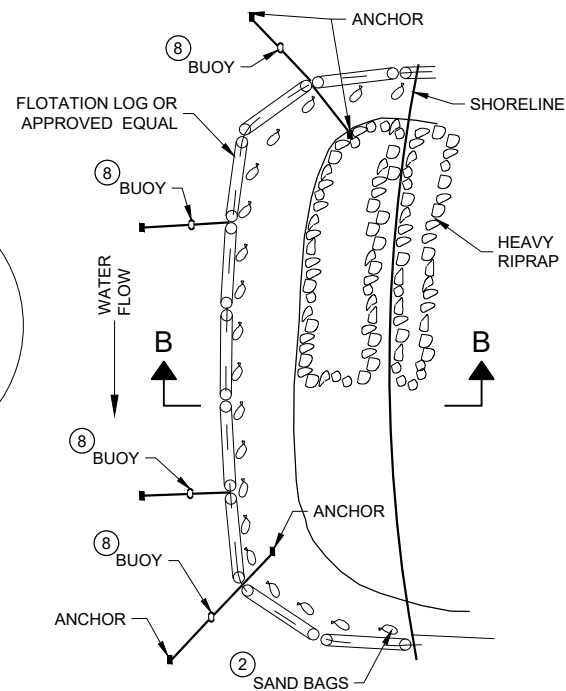




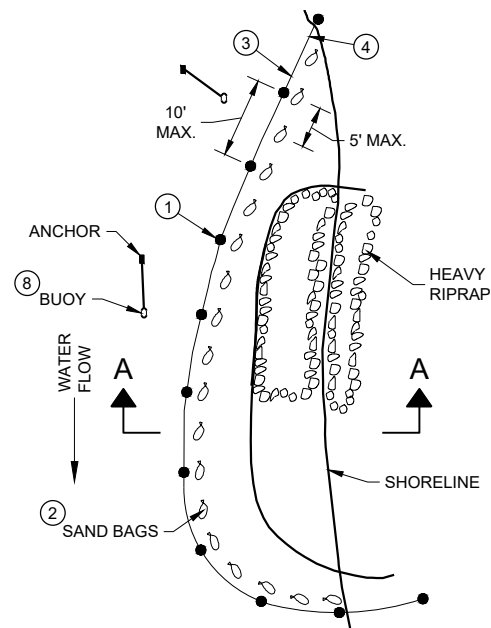
SECTION B - B

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

SECTION A - A

**TURBIDITY BARRIER - STANDARD POST INSTALLATION**

PLAN VIEW



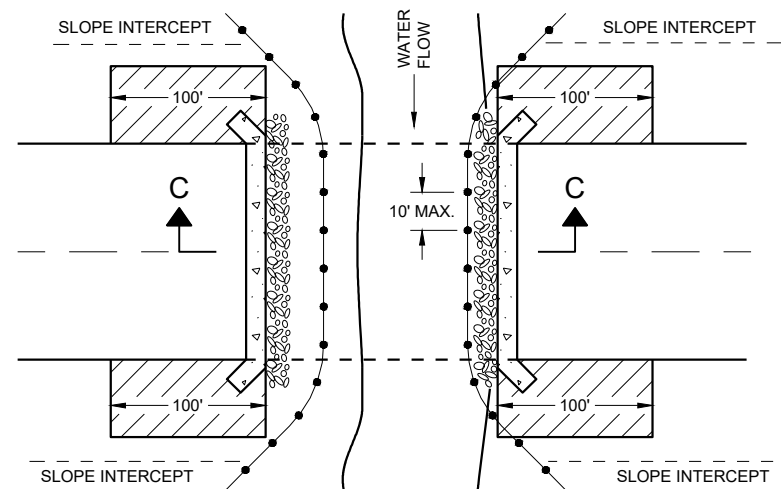
PLAN VIEW

**TURBIDITY BARRIER PLACEMENT DETAILS****GENERAL NOTES**

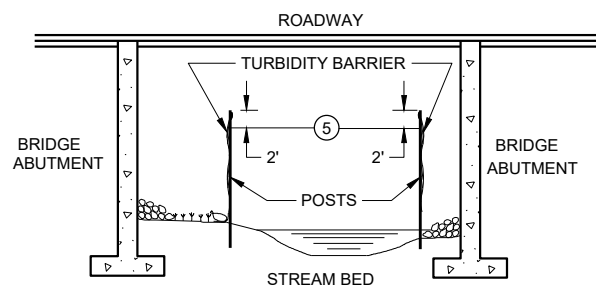
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

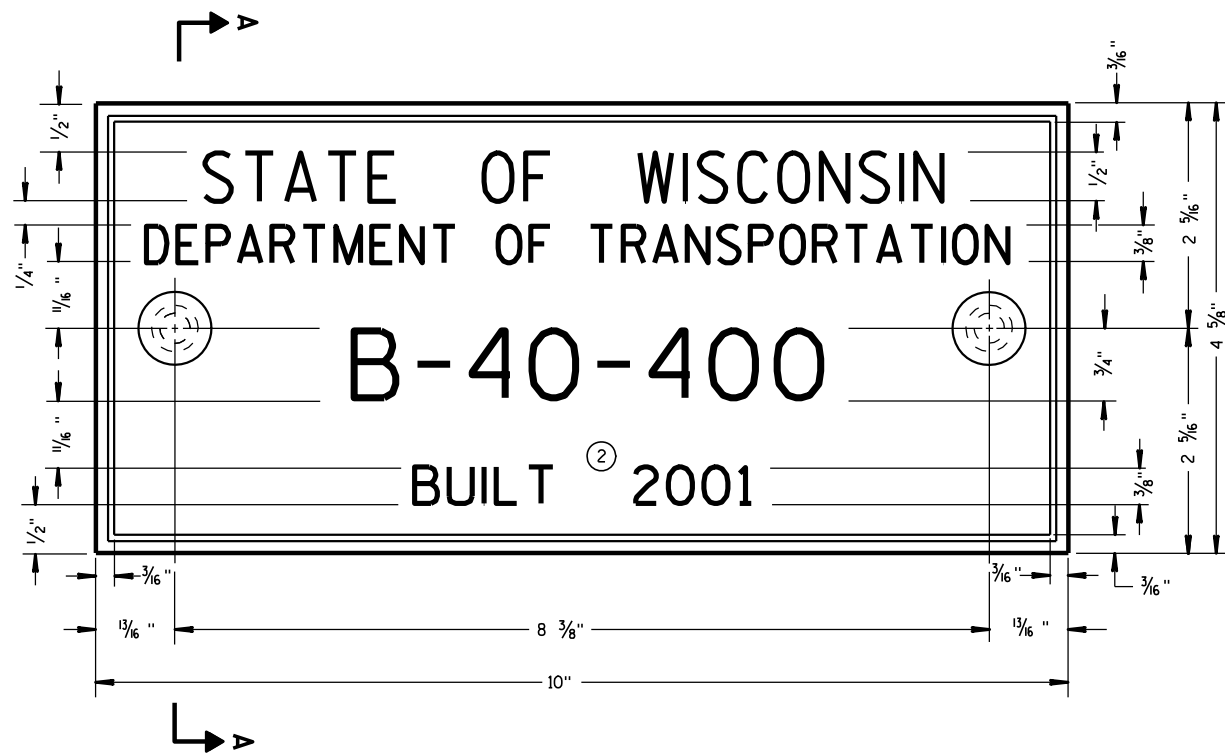
DATE

FHWA

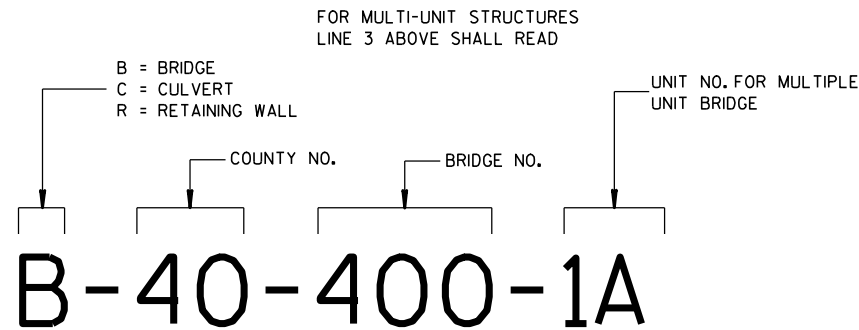
/S/ Beth Canestra

CHIEF ROADWAY DEVELOPMENT

ENGINEER



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



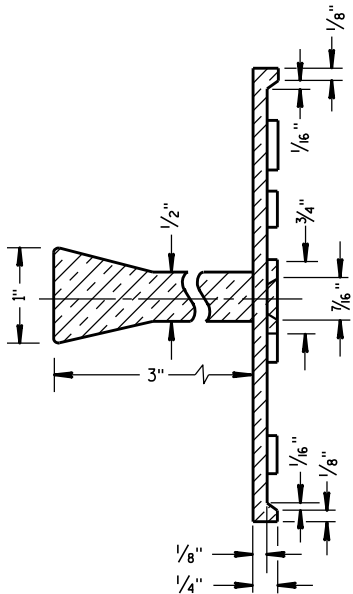
NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES

GENERAL NOTES

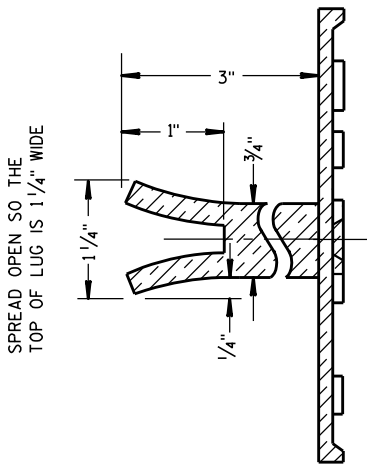
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

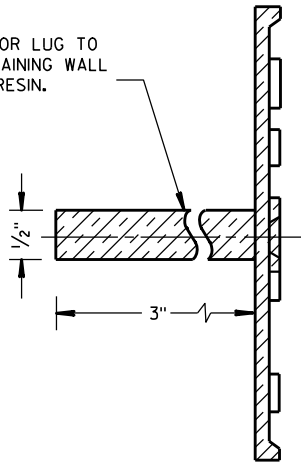


SECTION A-A



ALTERNATE LUG

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

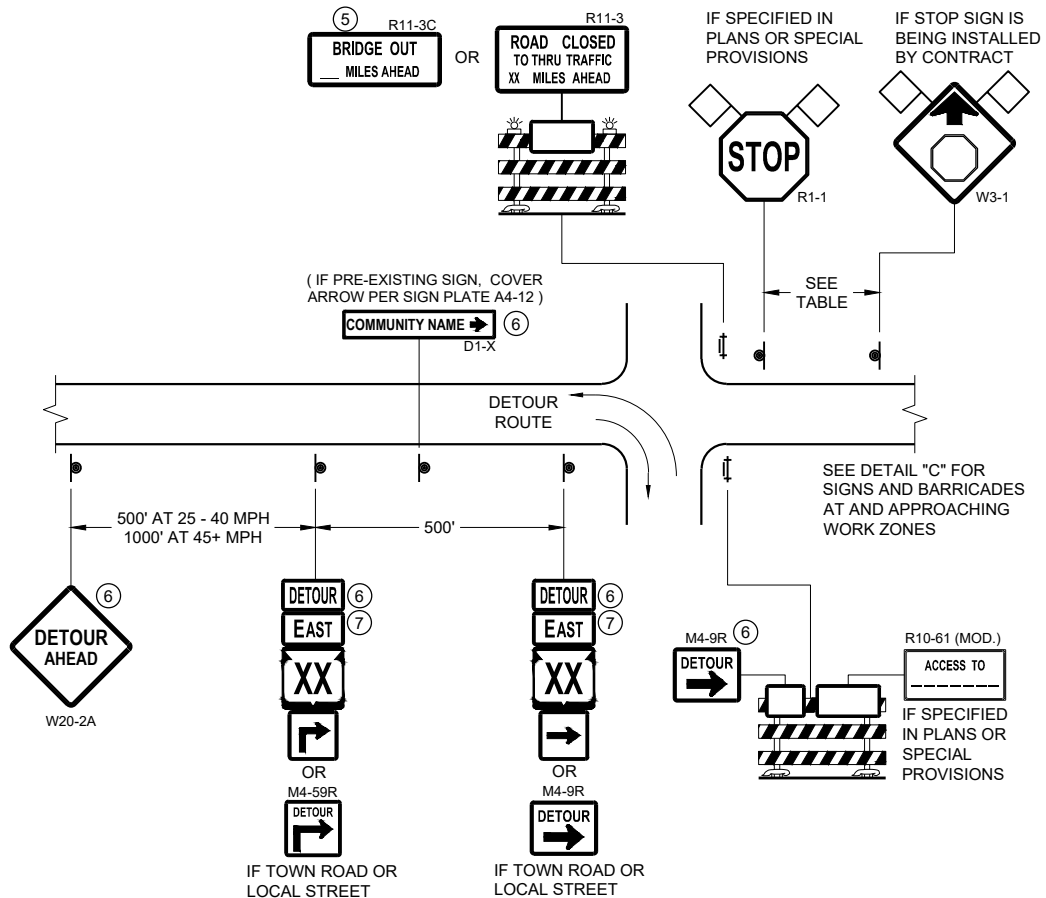


ALTERNATE LUG  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

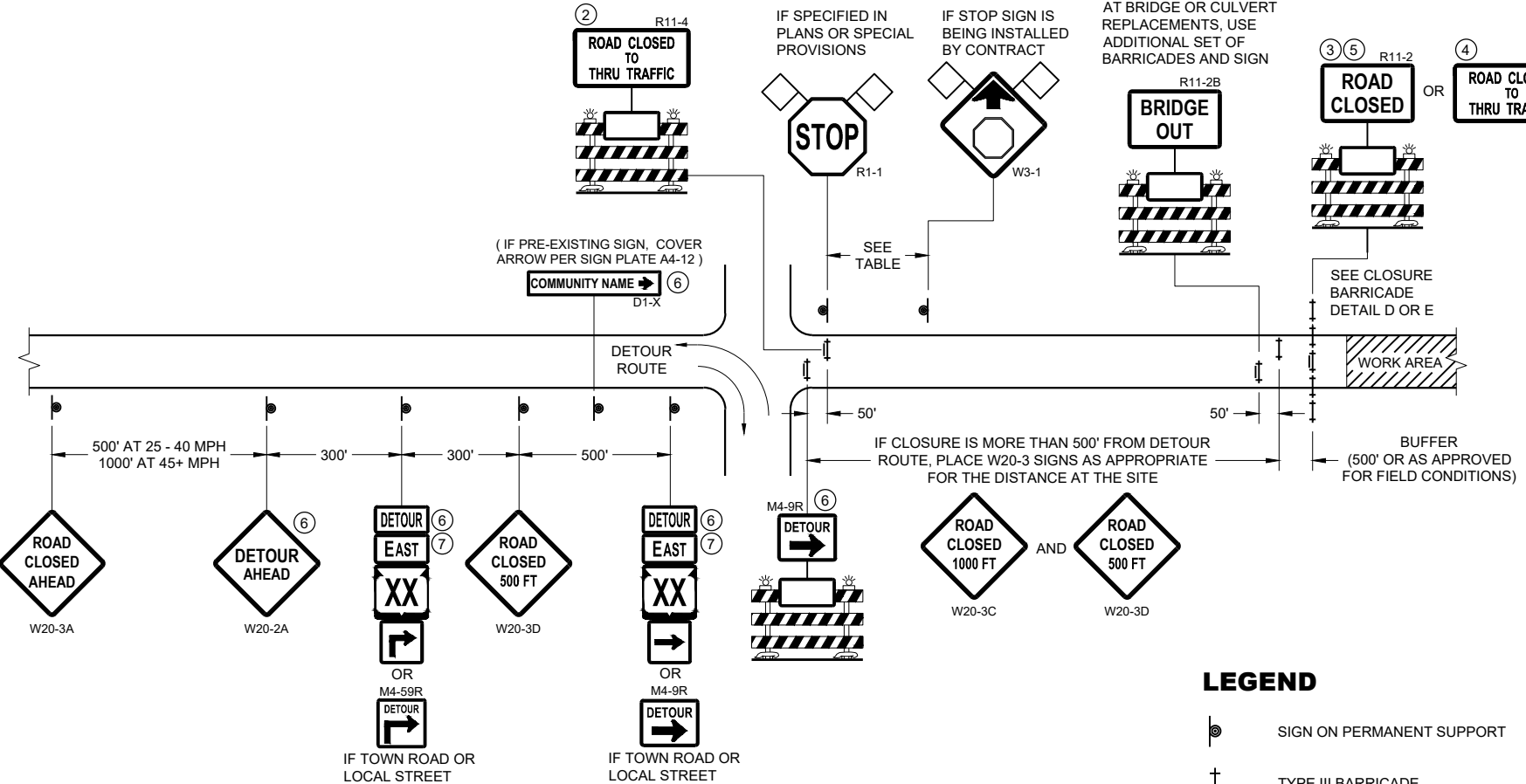
NAME PLATE  
(STRUCTURES)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
3/26/10  
DATE  
/S/ Scot Becker  
CHIEF STRUCTURAL DEVELOPMENT ENGINEER  
FHWA



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



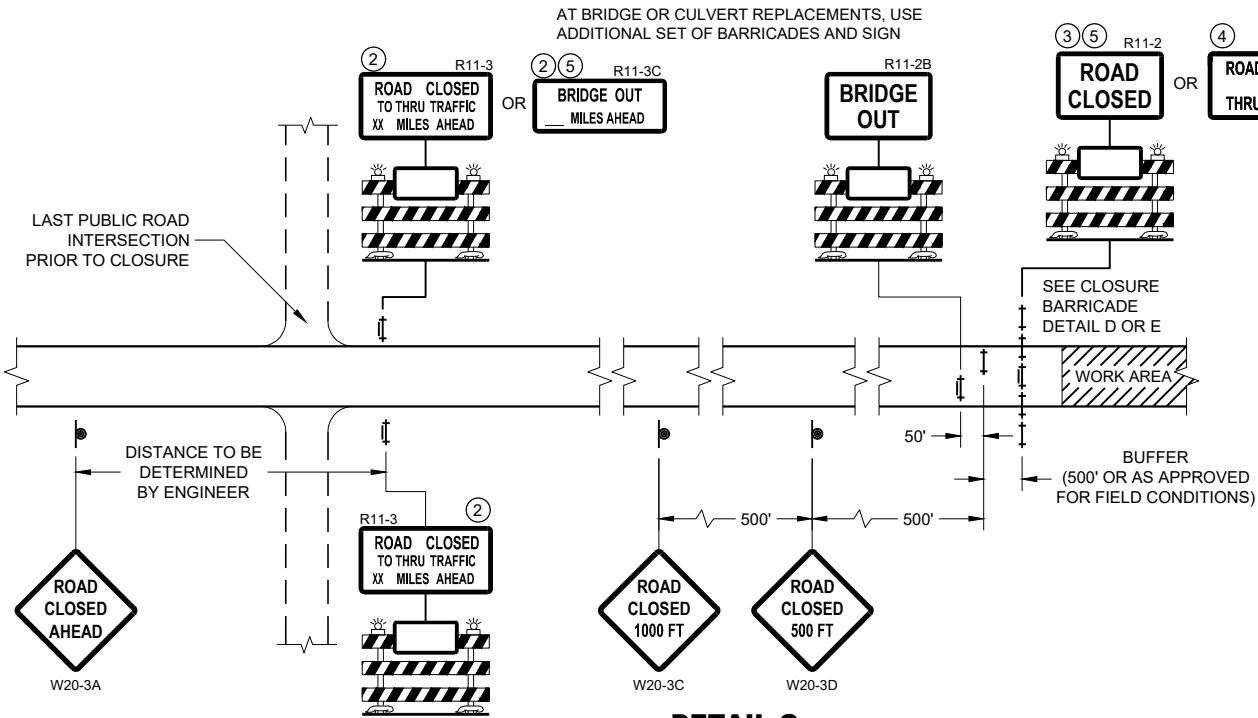
**DETAIL B**  
**MAINLINE CLOSURE WITH POSTED DETOUR**  
WORK ZONE LESS THAN ½ MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

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

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

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

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



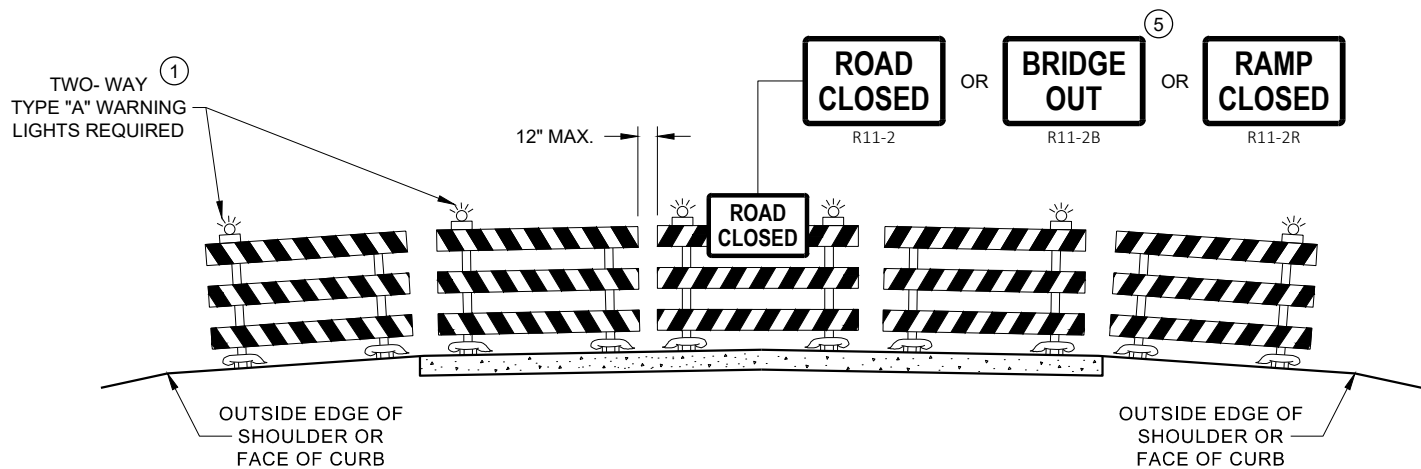
**DETAIL C**  
**MAINLINE CLOSURE, NO POSTED DETOUR**

**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

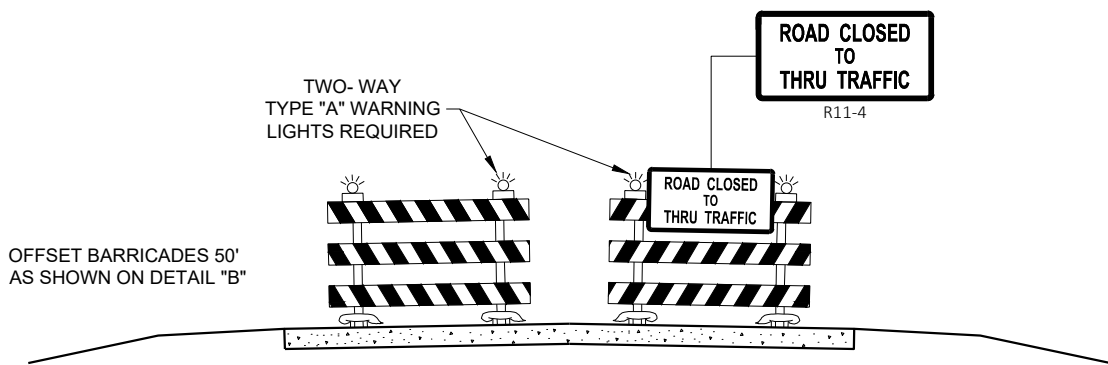
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



**DETAIL D**  
**ROAD CLOSURE BARRICADE DETAIL**  
**APPROACH VIEW**



**DETAIL E**  
**LANE CLOSURE BARRICADE DETAIL**  
**APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

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

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

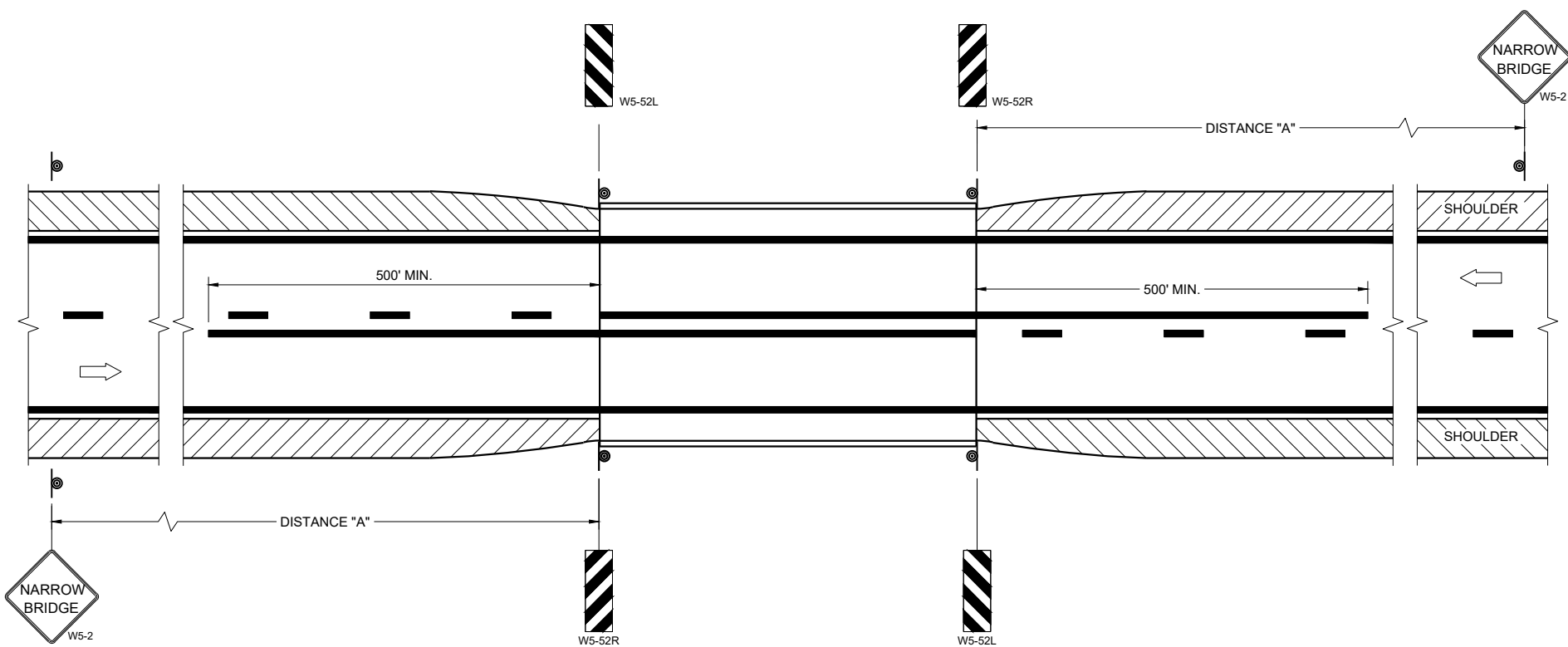
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

**BARRICADES AND SIGNS**  
**FOR**  
**VARIOUS CLOSURES**

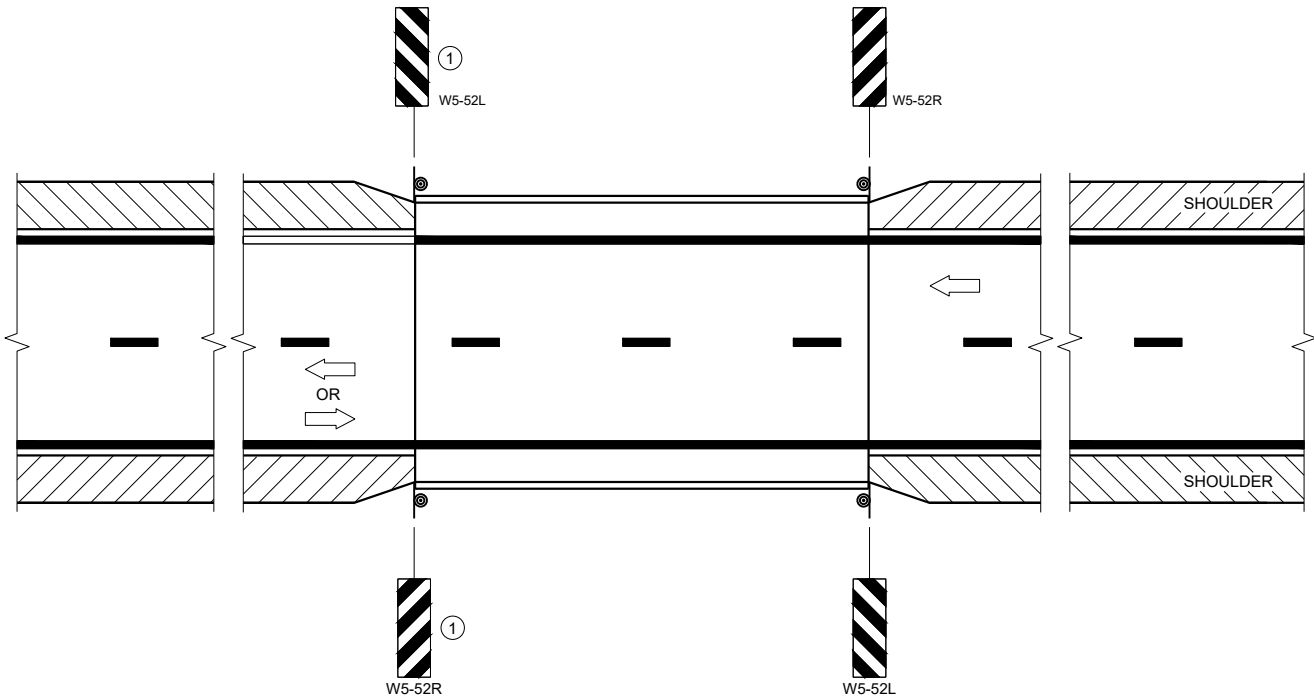
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



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



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

**GENERAL NOTES**

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

**LEGEND**

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

**DISTANCE TABLE**

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

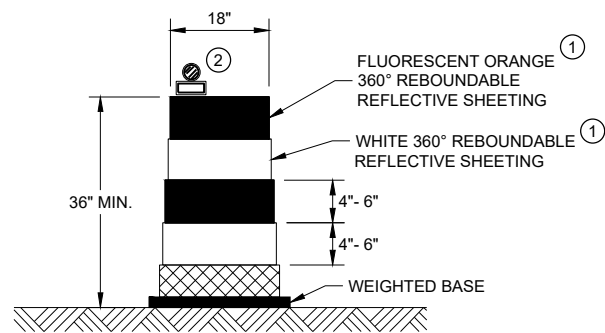
**SIGNING AND MARKING  
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023  
DATE

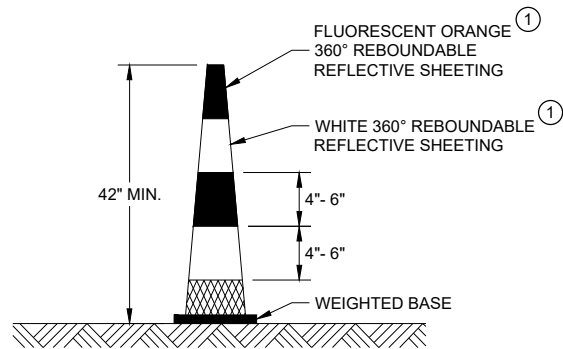
/S/ Jeannie Silver  
Statewide Pavement Marking Engineer

FHWA



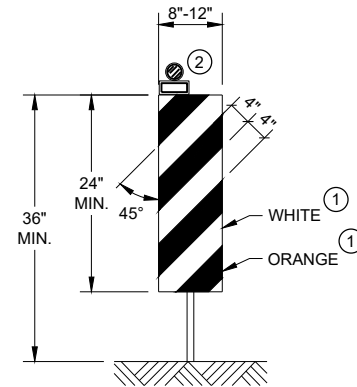
**DRUM**

BALLAST WIDTHS  
RANGE FROM 24"-36"



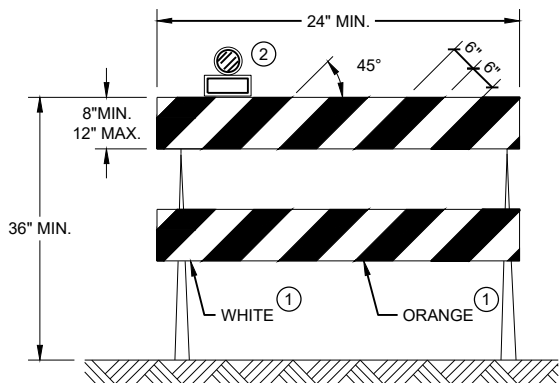
**42" CONE**

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



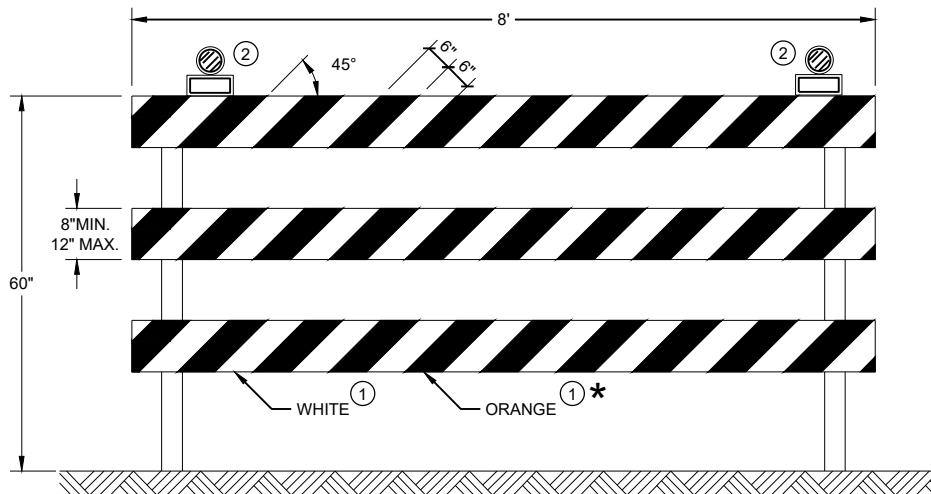
**VERTICAL PANEL**

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



**TYPE II BARRICADE**

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



**TYPE III BARRICADE**

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

\* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

**GENERAL NOTES**

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

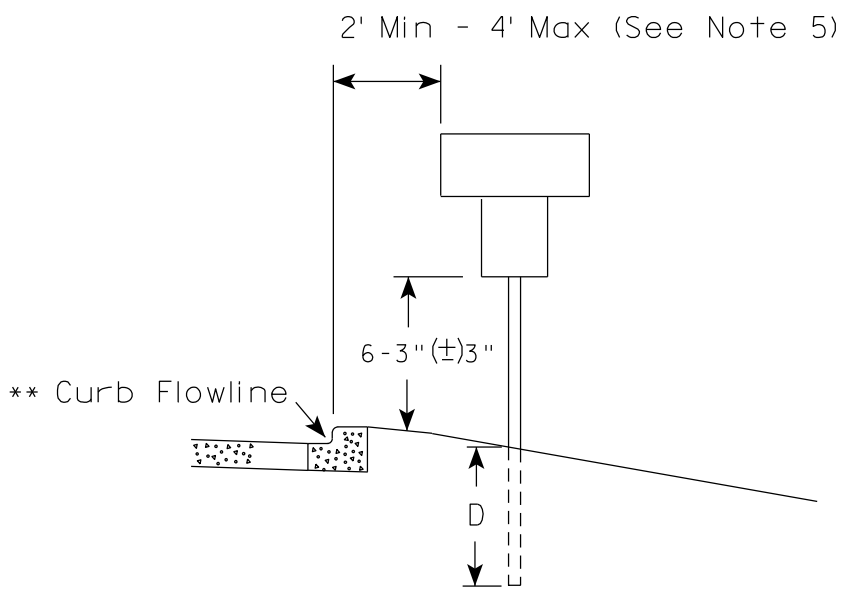
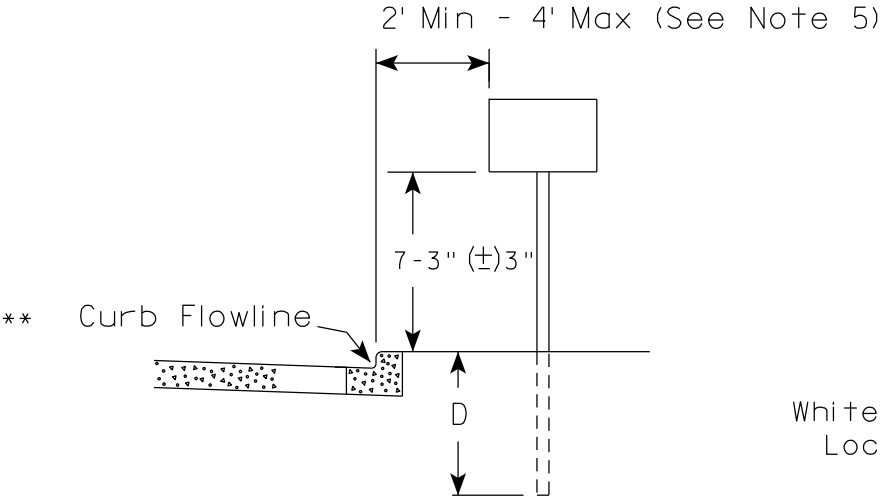
**CHANNELIZING DEVICES  
DRUMS, CONES, BARRICADES  
AND VERTICAL PANELS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

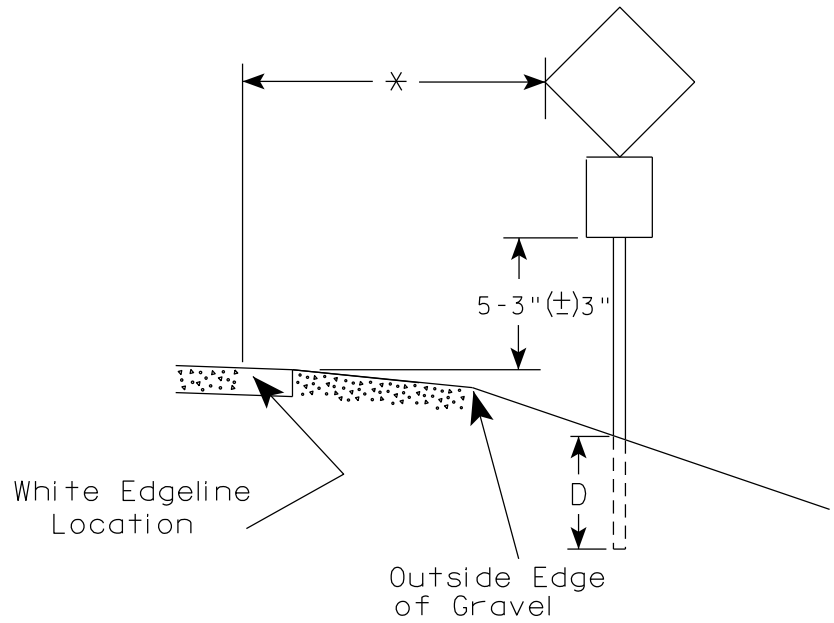
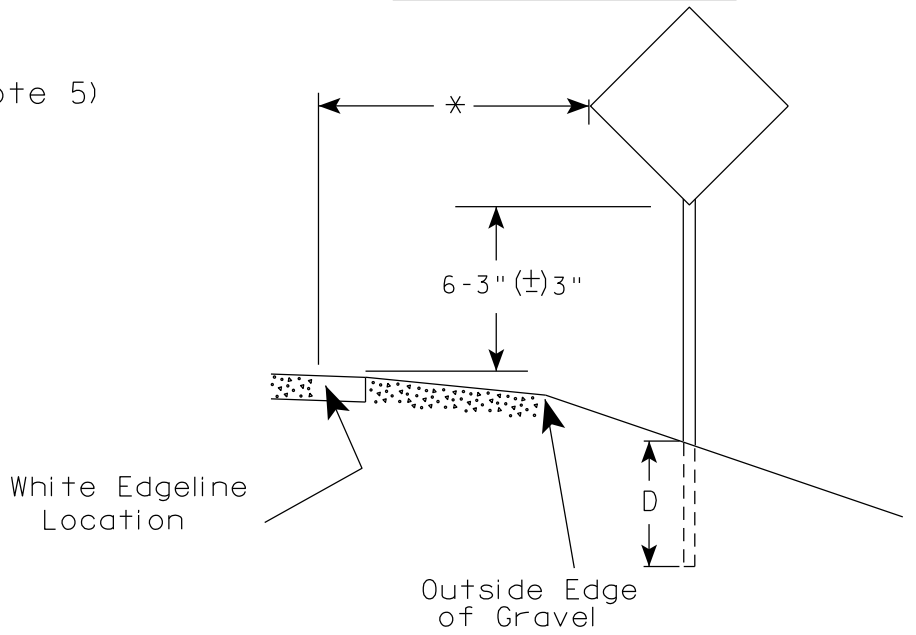
APPROVED  
November 2022 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

URBAN AREA



RURAL AREA (See Note 2)



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.

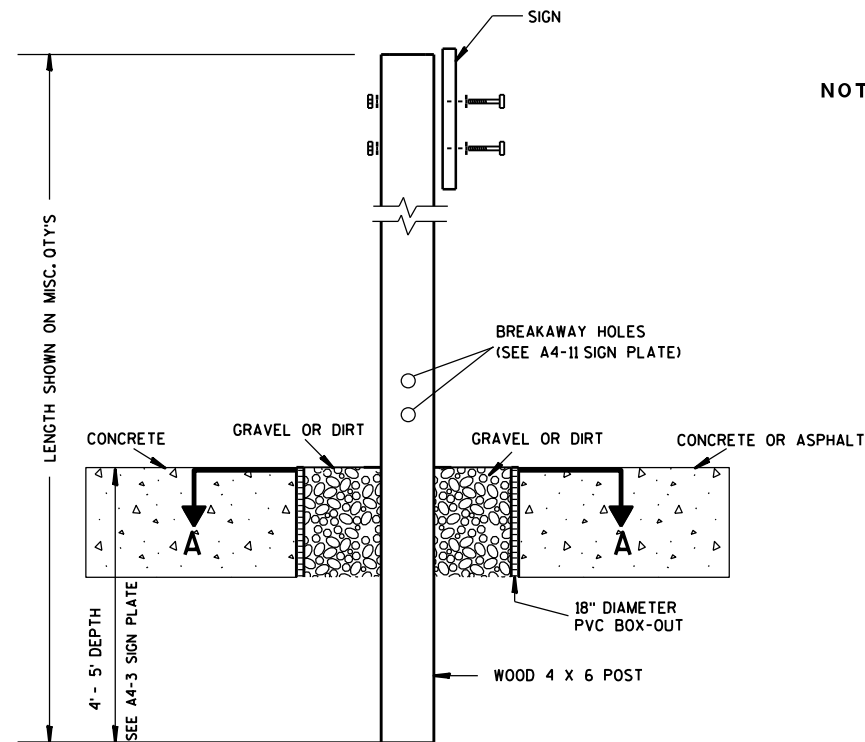
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

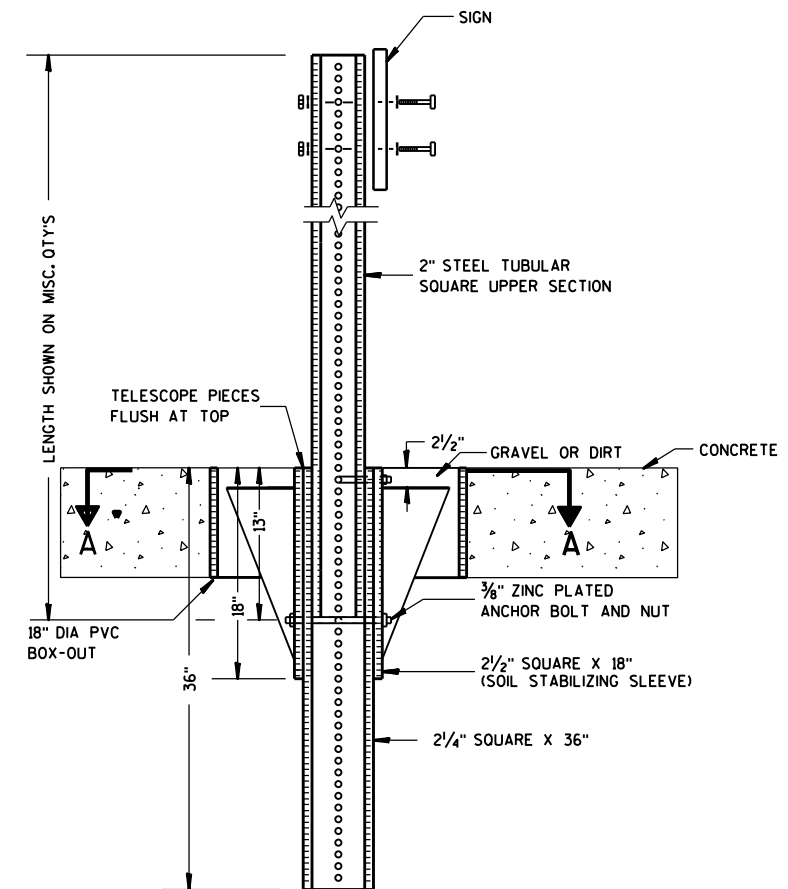
DATE 12/6/23 PLATE NO. A4-3.23



### ELEVATION VIEW

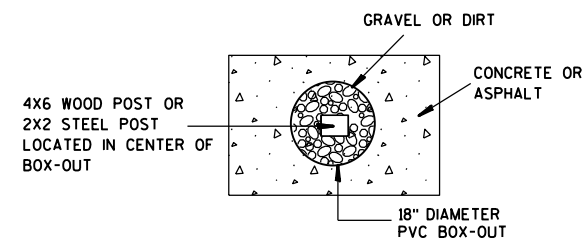
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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:

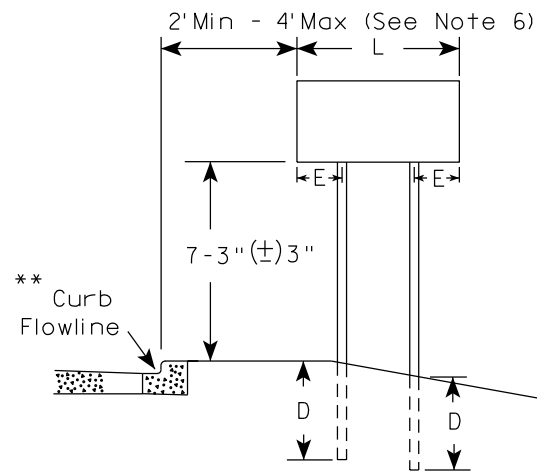
COUNTY:

SHEET NO:

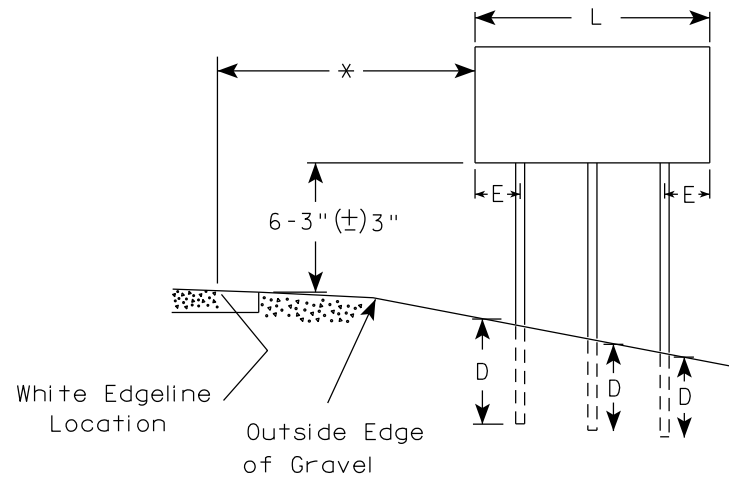
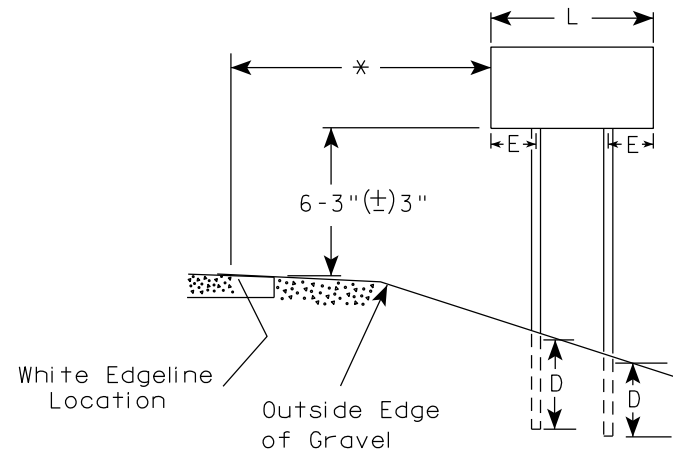
E



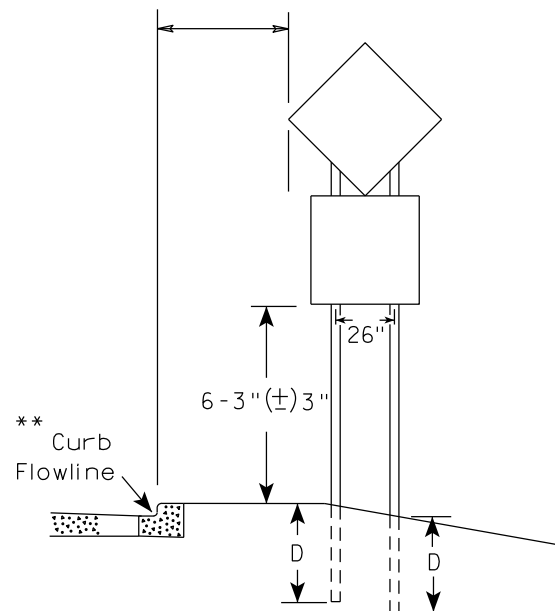
URBAN AREA



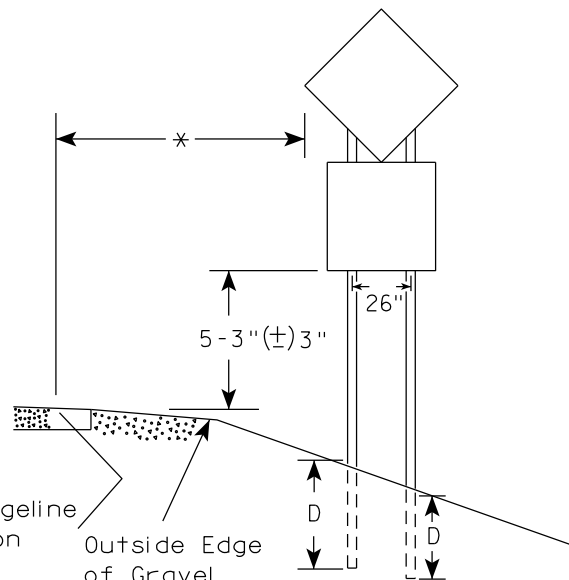
RURAL AREA (See Note 3)



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

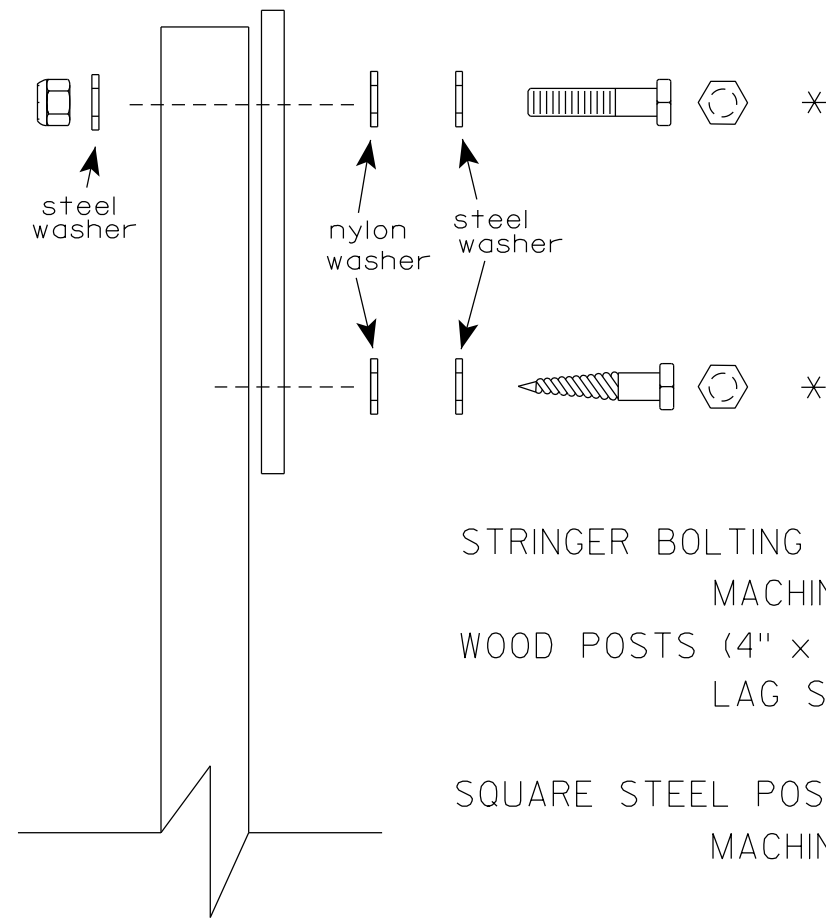
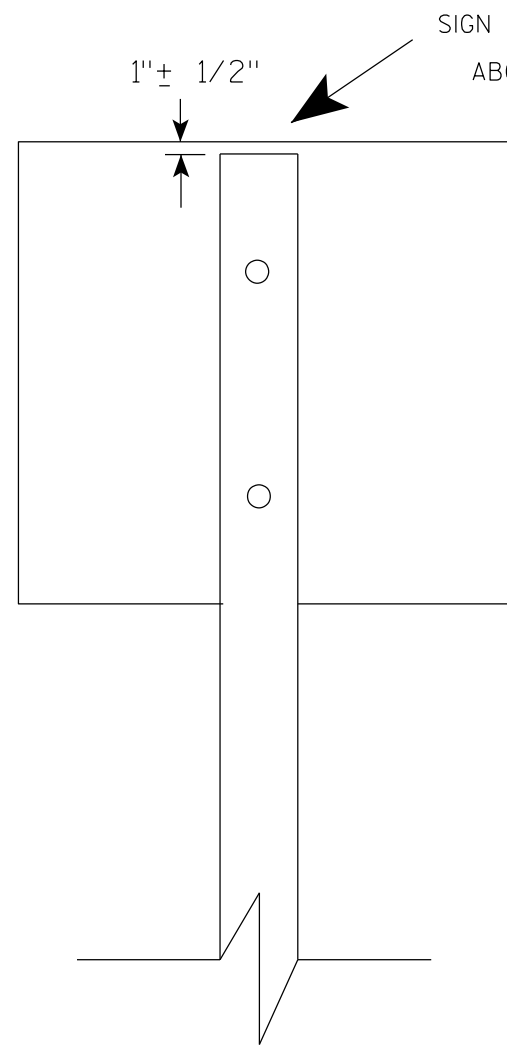
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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.

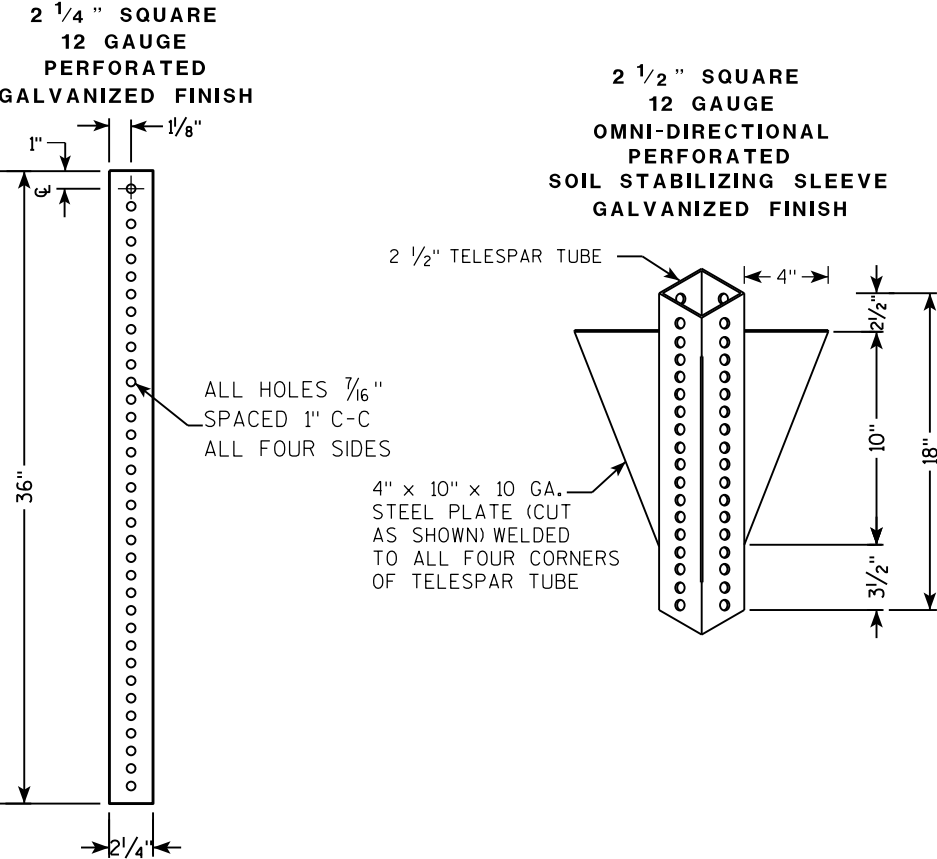
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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

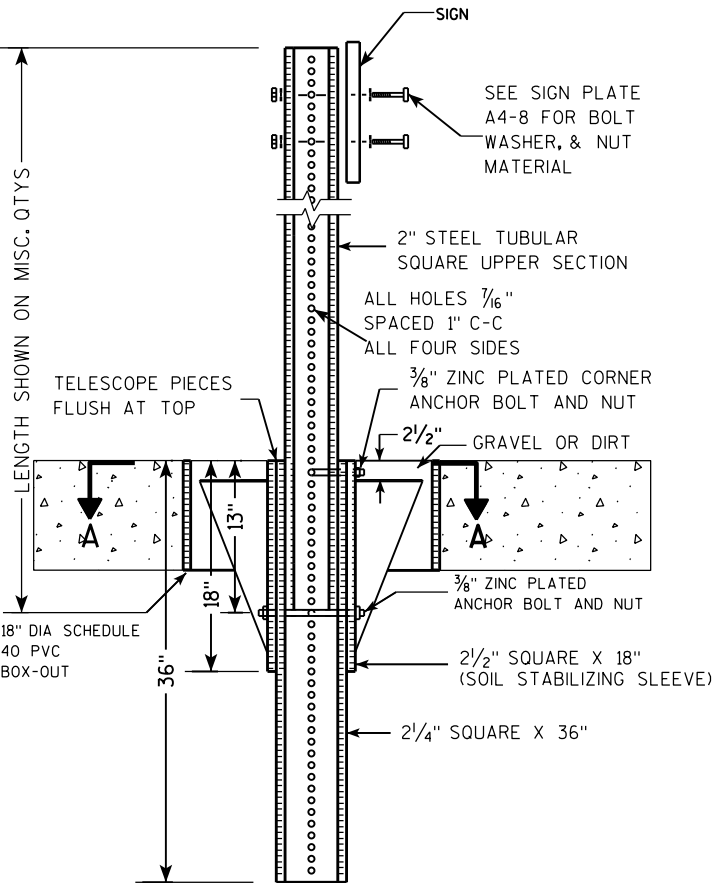
\* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

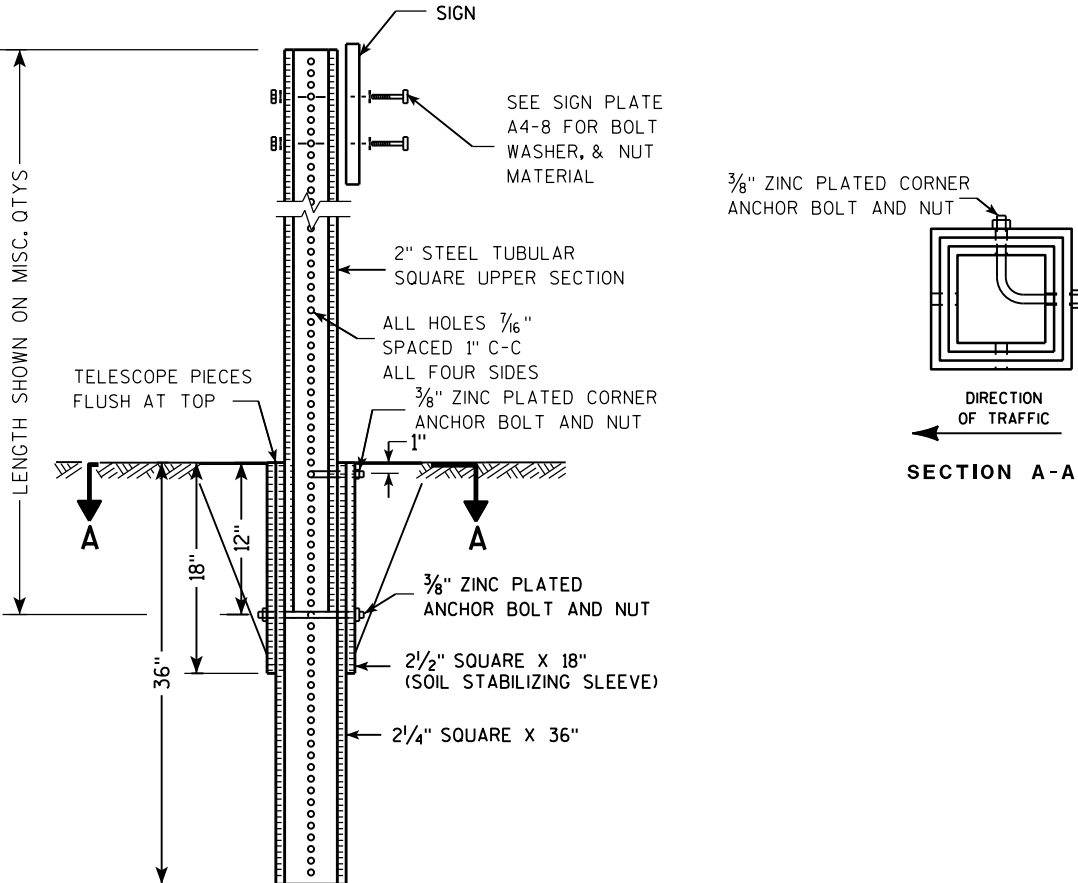
TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM



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).

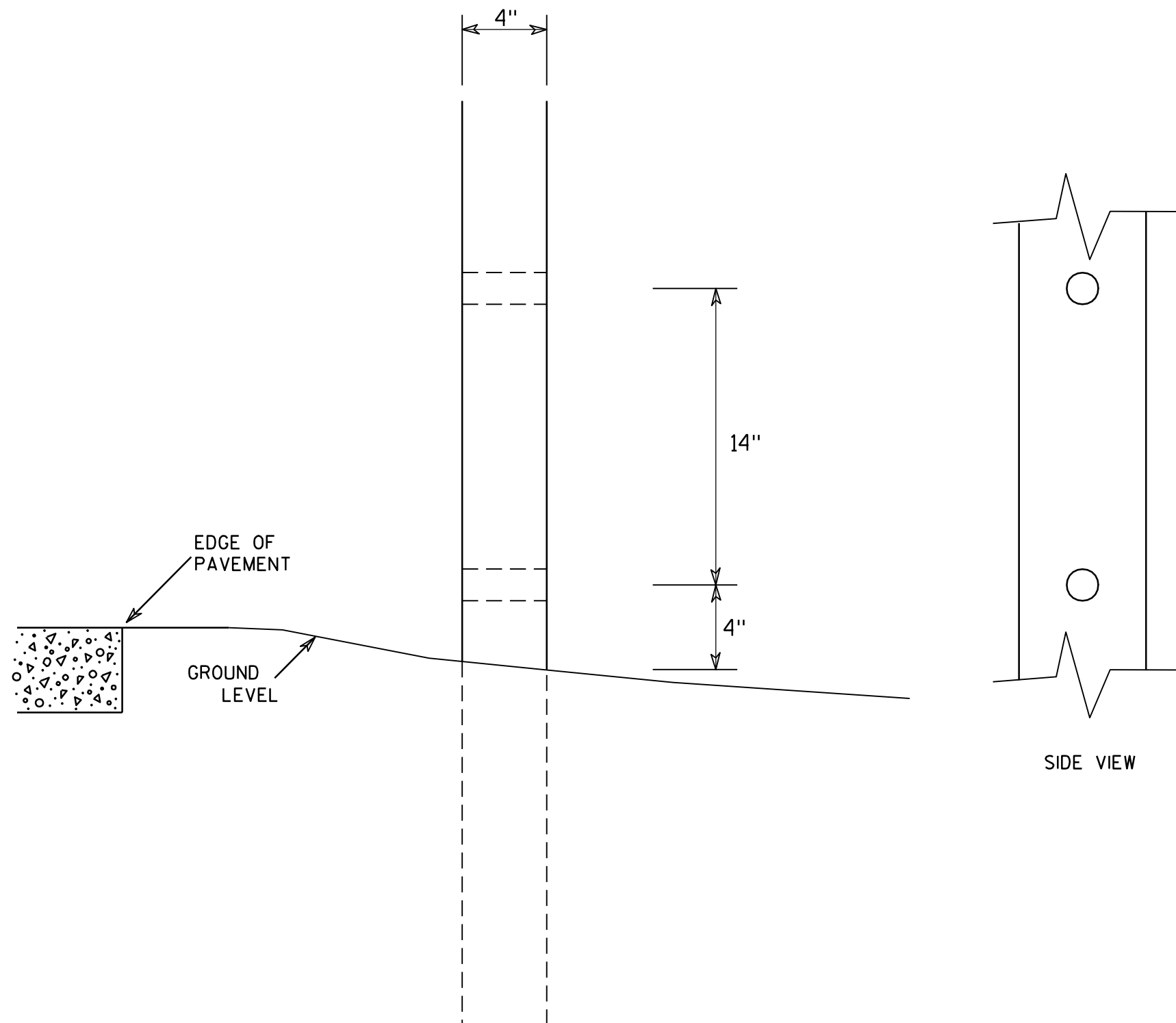
TUBULAR STEEL  
SIGN POST  
A4-9

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:

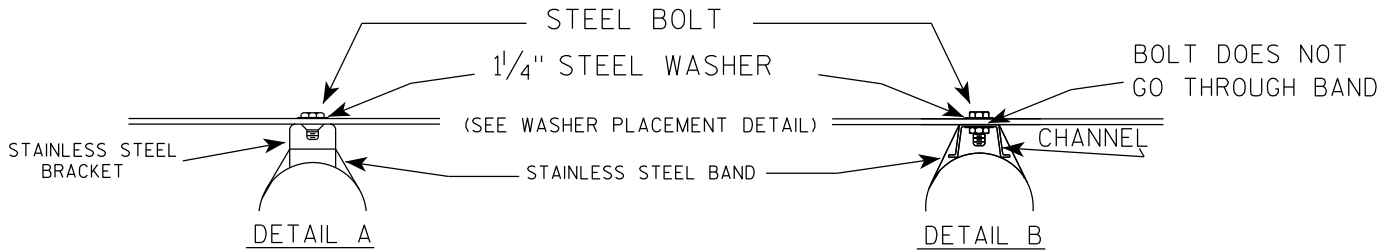
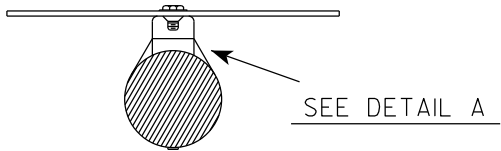
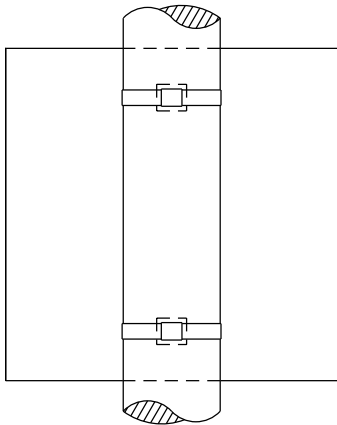
COUNTY:

SHEET NO:

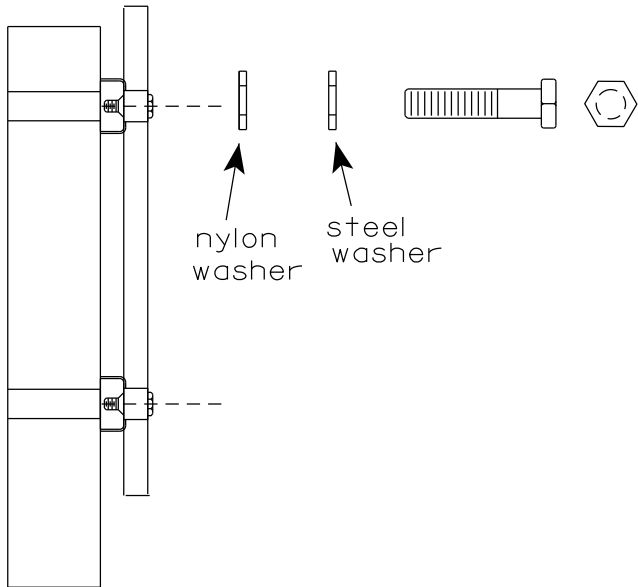
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

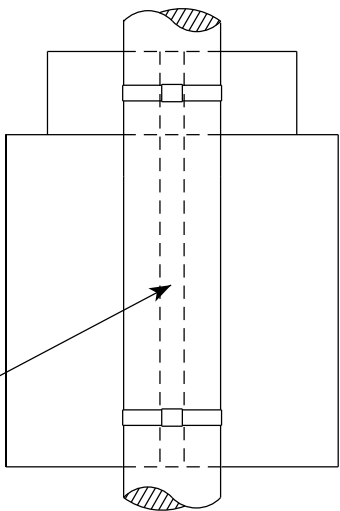


WASHERS (ALL POSTS) -  
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL  
1-1/4" O.D. X 3/8" I.D. X .080 NYLON  
FOR ALL TYPE H SIGNS

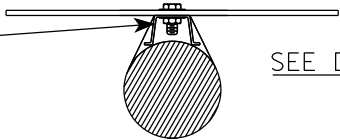
GENERAL NOTES

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

"J" ASSEMBLY



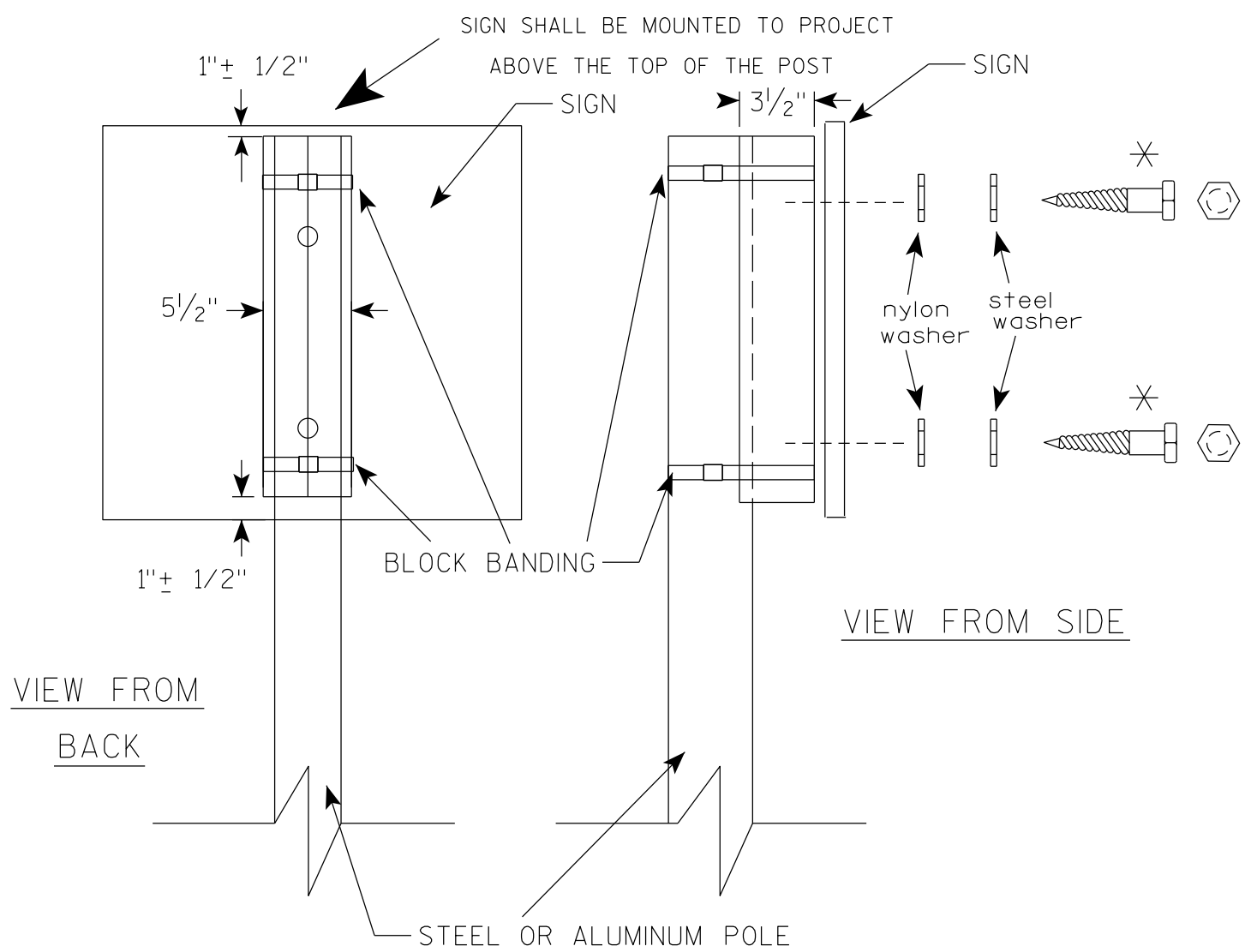
CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET



STANDARD SIGN  
SIGN BANDING DETAILS

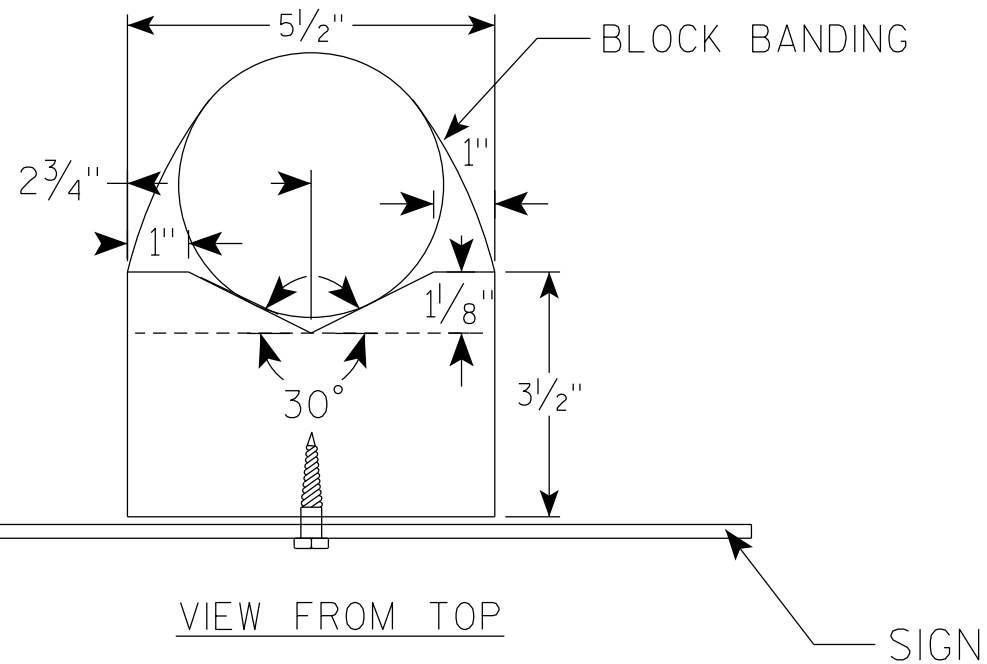
WISCONSIN DEPT OF TRANSPORTATION

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



VIEW FROM  
BACK

VIEW FROM SIDE



VIEW FROM TOP

## GENERAL NOTES

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

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

BLOCK BANDING DETAIL  
( V-BLOCK OPTION )

WISCONSIN DEPT OF TRANSPORTATION

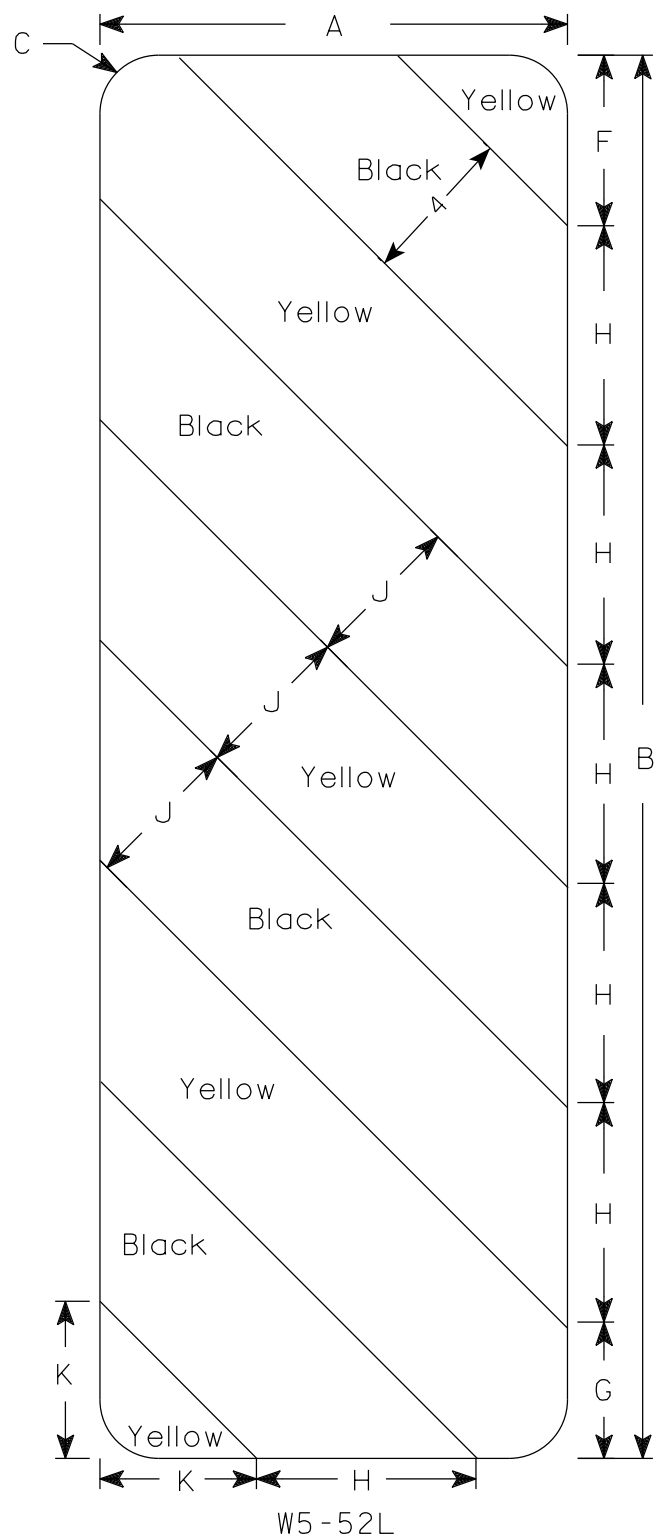
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

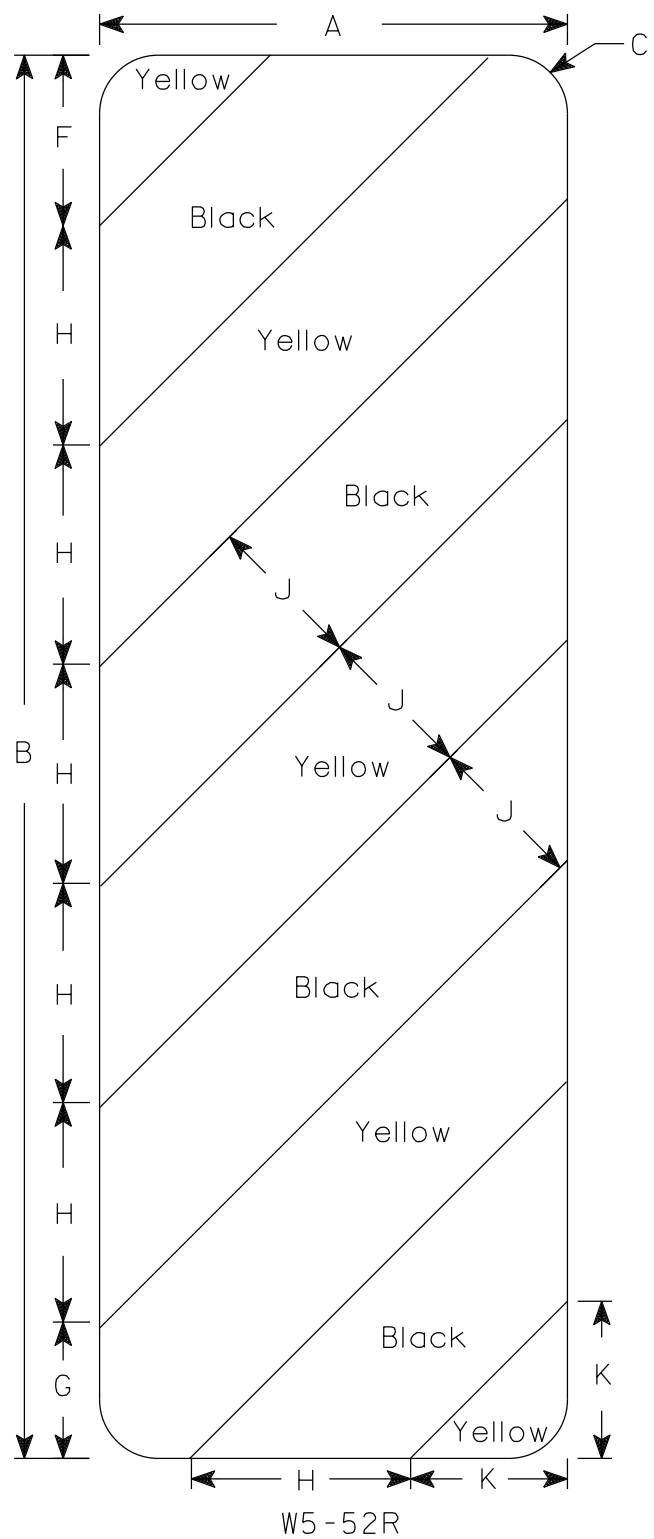
PROJECT NO:

SHEET NO:

E



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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

## DESIGN DATA

## LIVE LOAD:

DESIGN LOADING: HL-93  
INVENTORY RATING FACTOR: RF = 1.09  
OPERATING RATING FACTOR: RF = 1.41  
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 \_\_\_\_\_  
ALL OTHER \_\_\_\_\_  
f'c = 4,000 P.S.I.  
f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT: \_\_\_\_\_  
GRADE 60 \_\_\_\_\_  
fy = 60,000 P.S.I.

## FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ++ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.  
ESTIMATED 45 FEET LONG AT THE WEST ABUTMENT AND 40 FEET LONG AT THE EAST ABUTMENT.

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

## TRAFFIC VOLUME

## CHESAK ROAD

A.A.D.T. (2025) = 125  
A.A.D.T. (2045) = 125  
R.D.S = 55 MPH

## HYDRAULIC DATA

## 100 YEAR FREQUENCY

Q<sub>100</sub> - TOTAL = 2,750 C.F.S.  
- THRU BRIDGE = 2,340 C.F.S.  
- OVERTOPPING ROADWAY = 410 C.F.S.  
VEL. = 9.72 F.P.S.  
HW<sub>100</sub> = EL. 1231.64  
WATERWAY AREA = 240.84 SQ. FT.  
DRAINAGE AREA = 7.65 SQ. MI.  
ROADWAY OVERTOPPING = 87 YEARS  
SCOUR CRITICAL CODE = 5

## 2 YEAR FREQUENCY

Q<sub>2</sub> = 660 C.F.S.  
VEL. = 2.74 F.P.S.  
HW<sub>2</sub> = EL. 1228.86

## ROADWAY OVERTOPPING

FREQUENCY = 87 YEARS  
Q<sub>87</sub> = 2670 C.F.S.  
HW<sub>87</sub> = EL. 1230.73

## LIST OF DRAWINGS

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

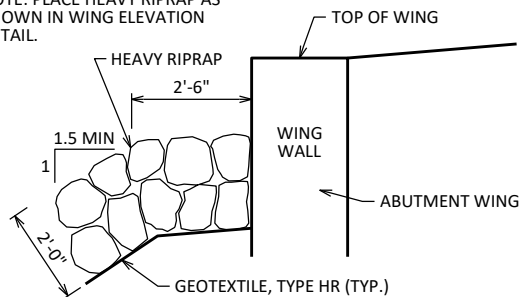
## CONSULTANT DESIGN CONTACT:

NATHAN KINDT  
(920) 392-5155

## BRIDGE OFFICE CONTACT:

AARON BONK  
(608) 261-0261

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



TYPICAL FILL SECTION AT WING

## CONSULTANT DESIGN CONTACT:

NATHAN KINDT  
(920) 392-5155

## BRIDGE OFFICE CONTACT:

AARON BONK  
(608) 261-0261

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.



7-11-2024

## PLAN

SINGLE SPAN FLAT SLAB

## ELEVATION

NORMAL TO WATERWAY



## BENCH MARKS

NO.	STATION	ELEV.	DESCRIPTION
5	9+83.78, 11.04' LT	1231.26	CHISEL 'X'
6	10+03.98, 58.93' LT	1224.80	SPK NAIL
7	9+65.35, 48.21' RT	1226.26	SPK NAIL
8	7+57.21, 27.48' LT	1233.65	BURY BOLT

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-37-479" 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. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO "EXCAVATION FOR STRUCTURES BRIDGES B-37-479".

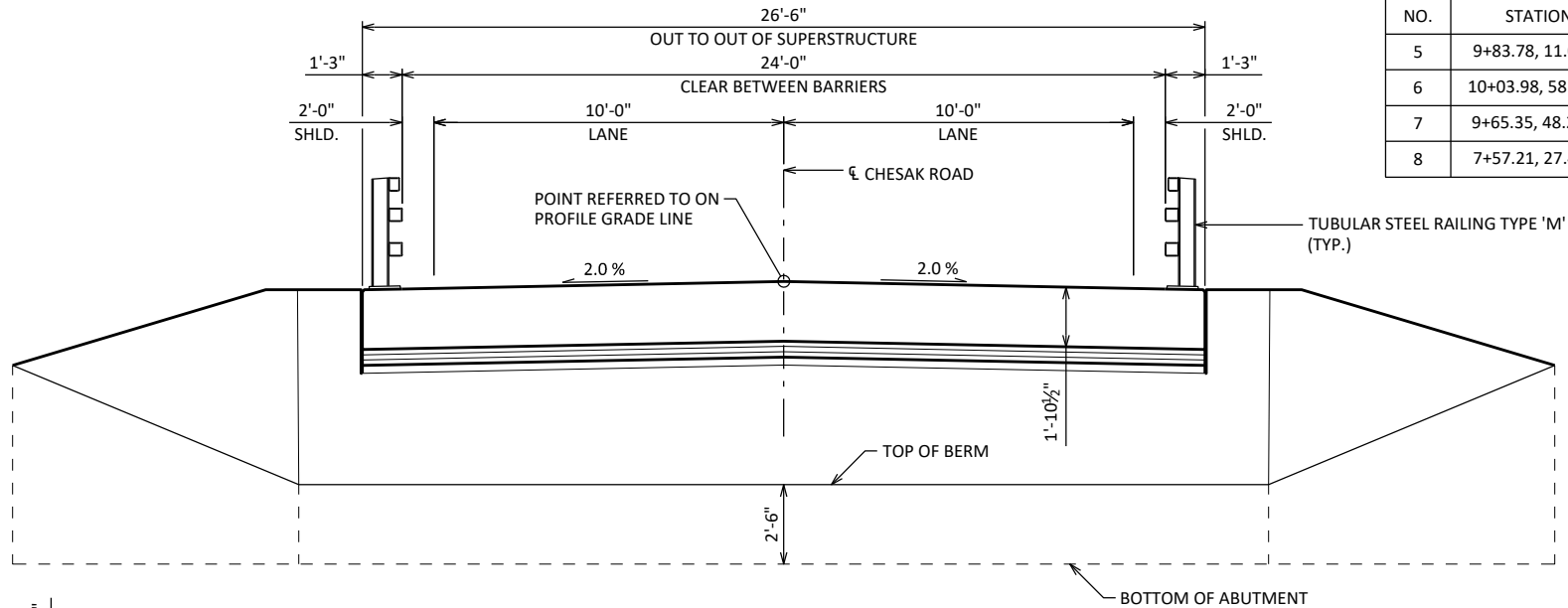
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

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.

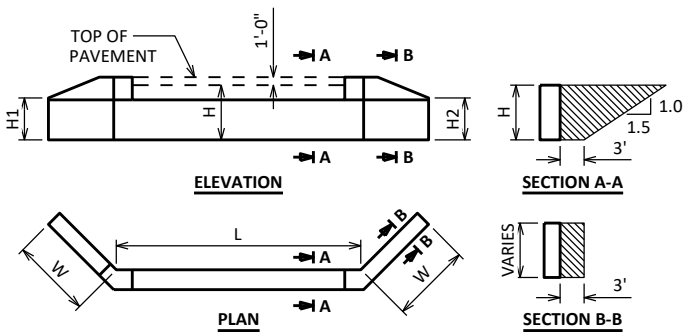
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

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.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO USGS NAVD 88 (2012 ADJUSTED). BENCHMARK REFERENCES AT THE PROJECT SITE WERE SET BY THE CONSULTANT USING GPS TECHNOLOGY.

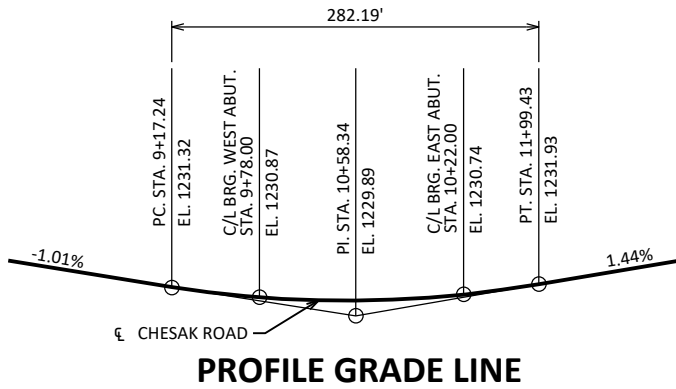


## CROSS SECTION THRU ROADWAY

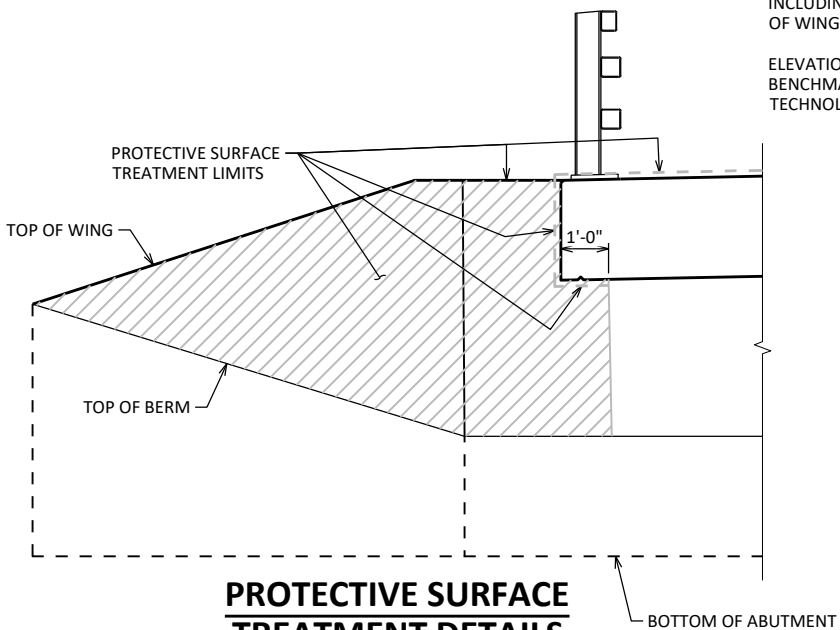
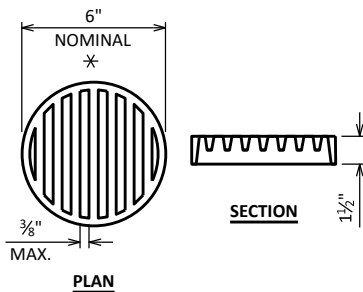
LOOKING UPSTATION  
(PILING NOT SHOWN FOR CLARITY)

## 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)  
 $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3')(0.5)(H1+H2+H+H)(W)$   
 $V_{CY} = V_{CF}(EF)/27$   
 $V_{TON} = V_{CY}(2.0)$



## PROFILE GRADE LINE

PROTECTIVE SURFACE  
TREATMENT DETAILS

## RODENT SHIELD DETAIL

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

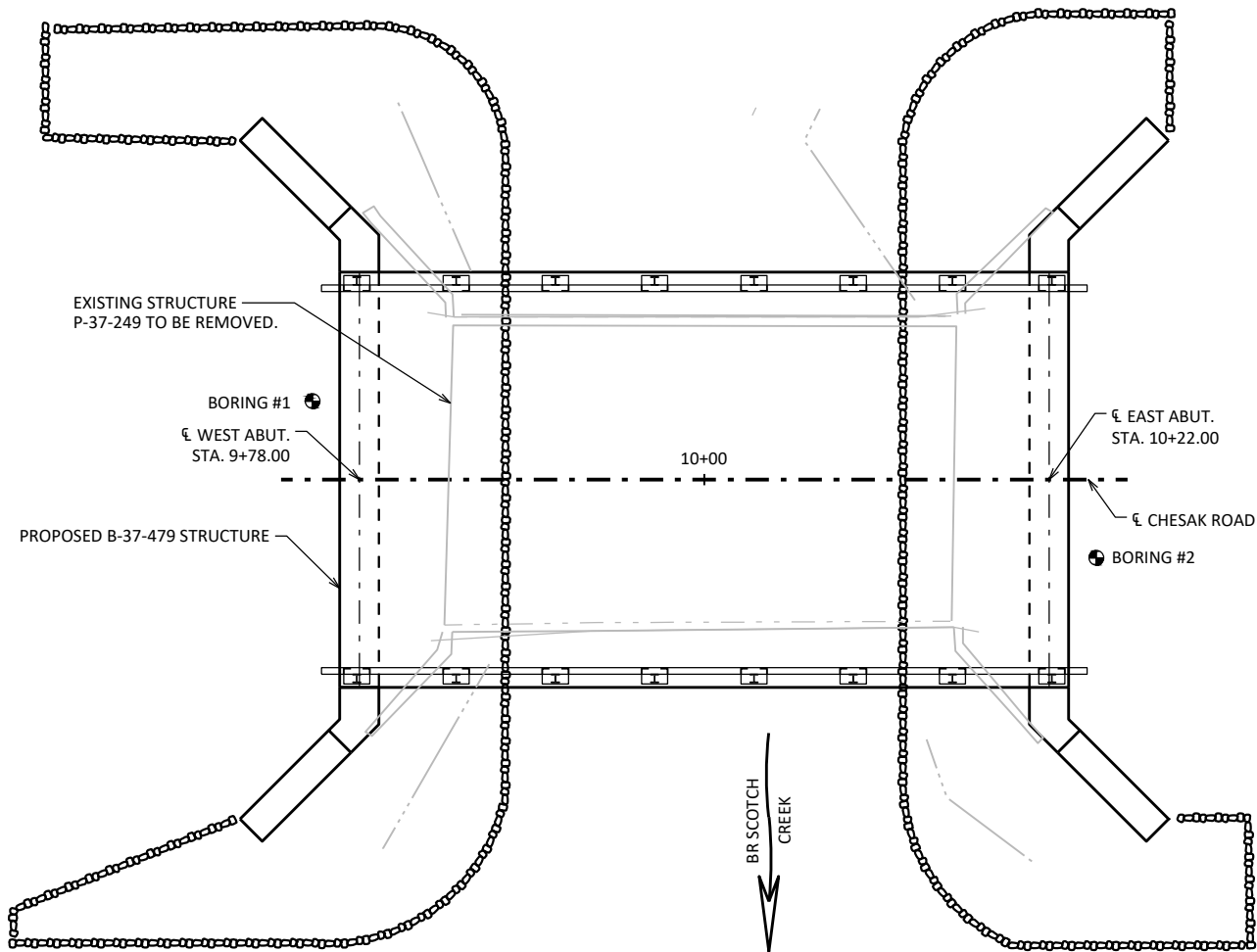
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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.

## TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	WEST ABUT.	EAST ABUT.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS P-37-249	EACH	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-37-479	EACH	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	---	183	183	366
502.0100	CONCRETE MASONRY BRIDGES	CY	89	30	30	149
502.3200	PROTECTIVE SURFACE TREATMENT	SY	163	17	17	197
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	---	2,040	2,040	4,080
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	18,940	1,540	1,540	22,020
513.4061	RAILING TUBULAR TYPE M	LF	98	---	---	98
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---	5	5	10
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	---	315	280	595
550.0500	PILE POINTS	EACH	---	7	7	14
606.0300	RIPRAP HEAVY	CY	---	65	55	120
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	---	69	69	138
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	---	42	42	84
645.0120	GEOTEXTILE TYPE HR	SY	---	130	105	235
	NON-BID ITEMS					
	FILLER	SIZE	---	---	---	$\frac{1}{2}$ ", $\frac{3}{4}$ "

THIS SHEET WAS CREATED BY THE WISDOT BUREAU OF STRUCTURES STANDARD BRIDGE DESIGN TOOL VERSION 1.1.0.0



BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	8-25-2023	191,590.78	199,379.37
2	8-25-2023	191,582.45	199,429.76

BORINGS COMPLETED BY: AMERICAN ENGINEERING TESTING, INC.  
REPORT COMPLETED BY: AMERICAN ENGINEERING TESTING, INC.  
ALL COORDINATES REFERENCED TO WISCRS NAD 83 (2011) MARATHON COUNTY

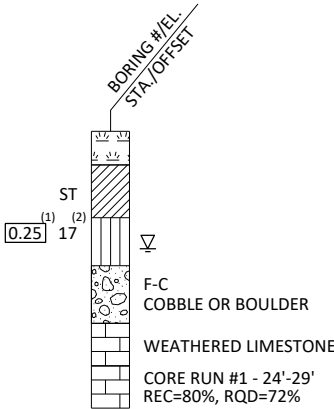
STATE PROJECT NUMBER

6673-02-72

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-37-479

DRAWN BY	EKK	PLANS CK'D	NJK
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SUBSURFACE  
EXPLORATION

SHEET 3

SCALE = 10



- |  |      |                 |                  |
|--|------|-----------------|------------------|
|  |      |                 |                  |
| NO.  | DATE | REVISION        | BY               |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                 |                  |
| <b>STRUCTURE</b>                                   |      | <b>B-37-479</b> |                  |
| DRAWN<br>BY  |      | EKK             | PLANS<br>CK'D NJ |
| <b>WEST<br/>ABUTMENT</b>                           |      | SHEET 4         |                  |
|  |      |                 |                  |

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

**A415**

**A416**

- A01** OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE ¾" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
- A06** SUPPORT ABUTMENT ON HP 10 x 42 PILING, ESTIMATED 45 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.
- A15** PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- 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					
<b>STRUCTURE B-37-479</b>					
		DRAWN BY	EKK	PLANS CK'D	NJK
<b>WEST ABUTMENT DETAILS</b>			SHEET 5		

SCALE -



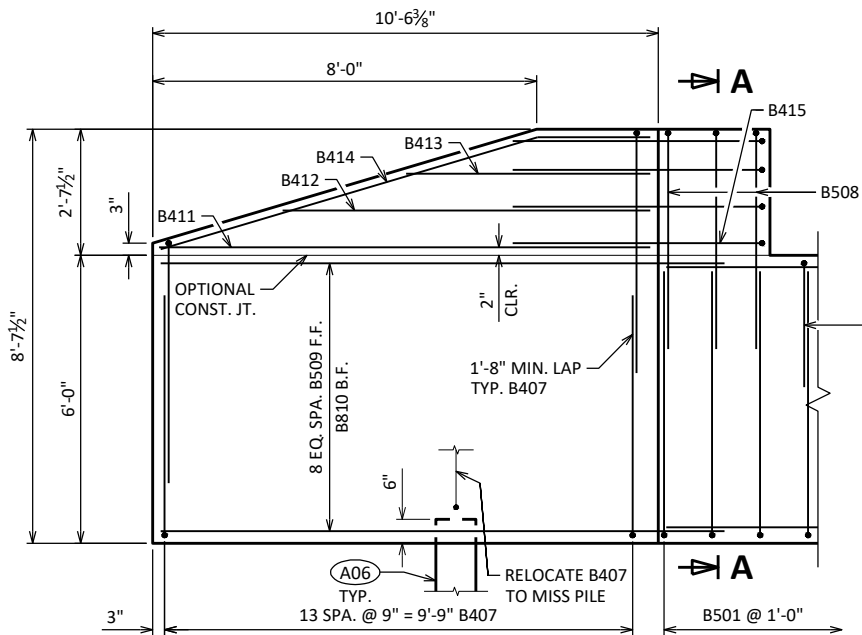


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| NO.  | DATE | REVISION    | BY            |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |             |               |
| <b>STRUCTURE B-37-479</b>                          |      |             |               |
|  |      | DRAWN<br>BY | PLANS<br>CK'D |
|  |      | EKK         | N             |
| <b>EAST<br/>ABUTMENT</b>                           |      | SHEET 6     |               |
|  |      |             |               |

BILL OF BARS

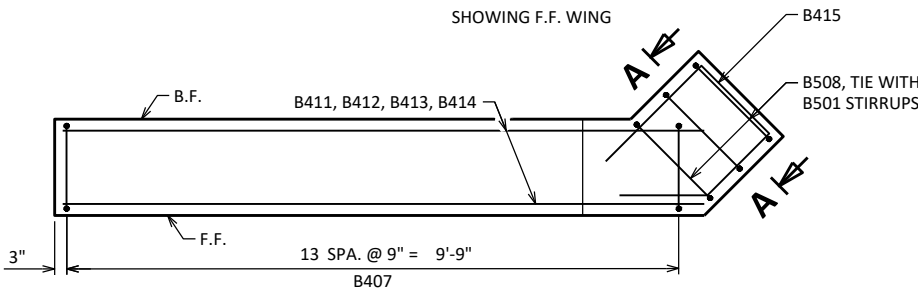
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		64	7'-0"	X		ABUT BODY STIRRUPS
B502		26	7'-1"	X		ABUT BODY STIRRUPS - TOP U-BAR
B503		9	31'-3"			ABUT BODY HORIZ. - F.F.
B804		18	21'-7"	X		ABUT BODY HORIZ. - B.F.
B405		27	3'-0"	X		ABUT BODY TIE BARS
B506	X	25	2'-0"			ABUT BODY DOWEL BARS
B407	X	56	11'-6"	X		WING STIRRUPS
B508	X	6	10'-11"	X		WING CORNER STIRRUPS
B509	X	18	11'-9"	X		WING LOWER HORIZ. - F.F.
B810	X	18	13'-3"	X		WING LOWER HORIZ. - B.F.
B411	X	4	10'-2"			WING UPPER HORIZ.
B412	X	4	7'-7"			WING UPPER HORIZ.
B413	X	4	5'-0"			WING UPPER HORIZ.
B414	X	4	9'-9"	X		WING TOP HORIZ.
B415	X	4	8'-3"	X		WING 3 UPPER HORIZ. CORNER
B416	X	4	8'-3"	X		WING 4 UPPER HORIZ. CORNER



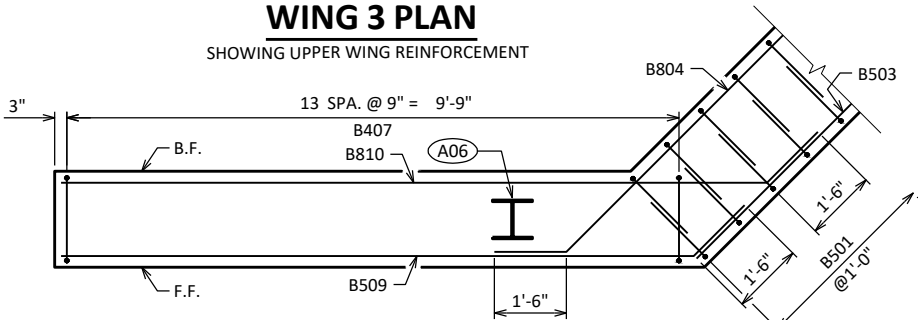
WING 3 ELEVATION

SHOWING F.F. WING



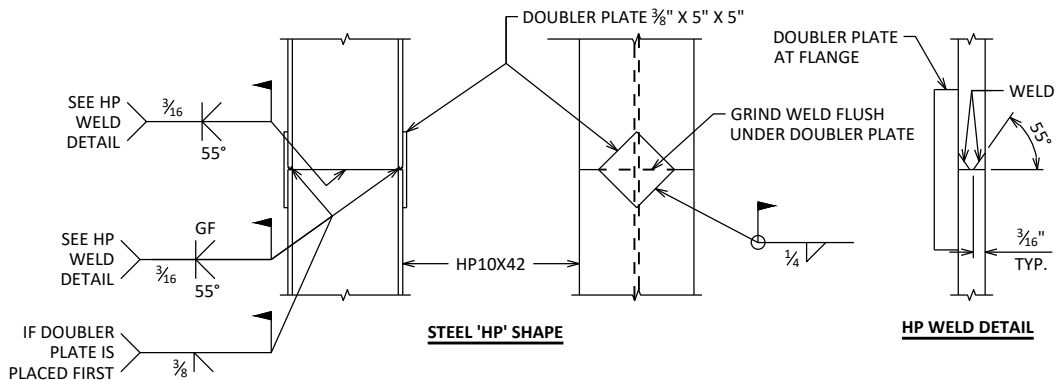
WING 3 PLAN

SHOWING UPPER WING REINFORCEMENT



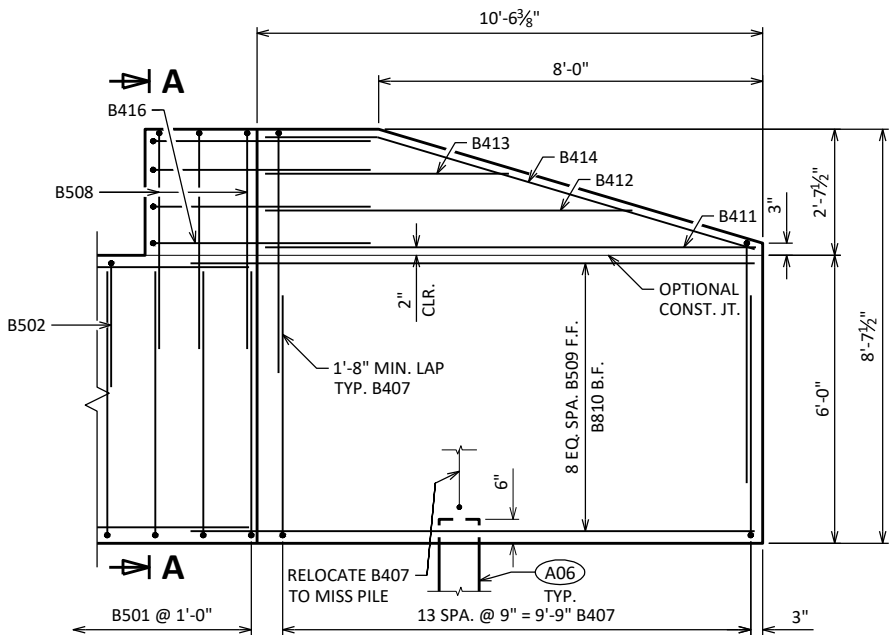
WING 3 PLAN

SHOWING LOWER WING REINFORCEMENT  
WING 4 SIMILAR



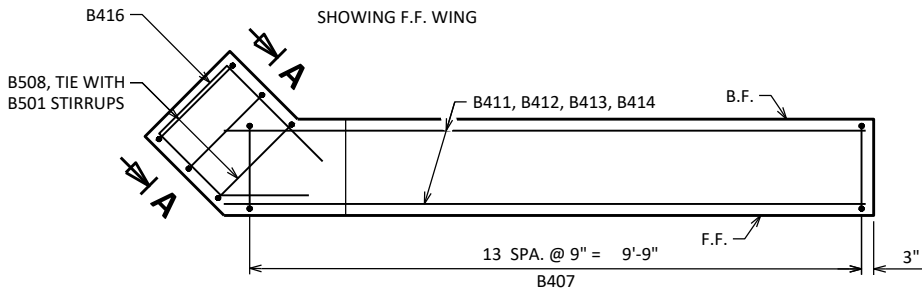
'HP' PILE DETAILS

THIS SHEET WAS CREATED BY THE WISDOT BUREAU OF STRUCTURES STANDARD BRIDGE DESIGN TOOL VERSION 1.0.0.0



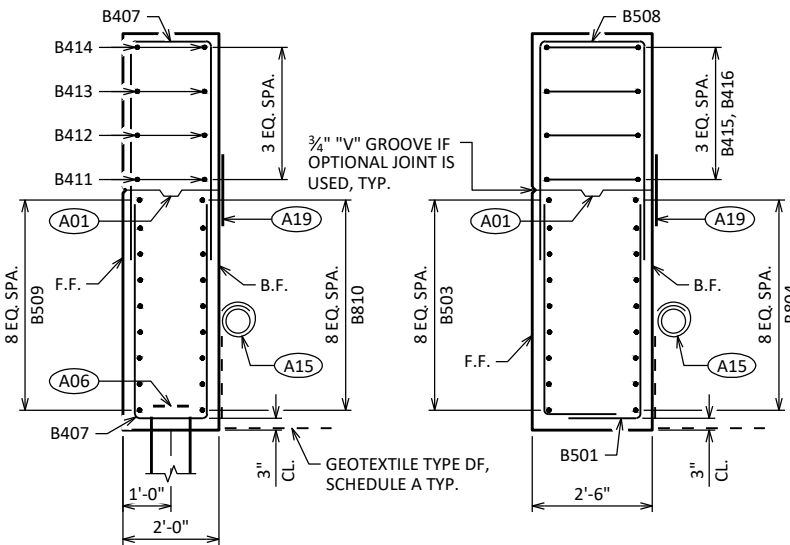
WING 4 ELEVATION

SHOWING F.F. WING



WING 4 PLAN

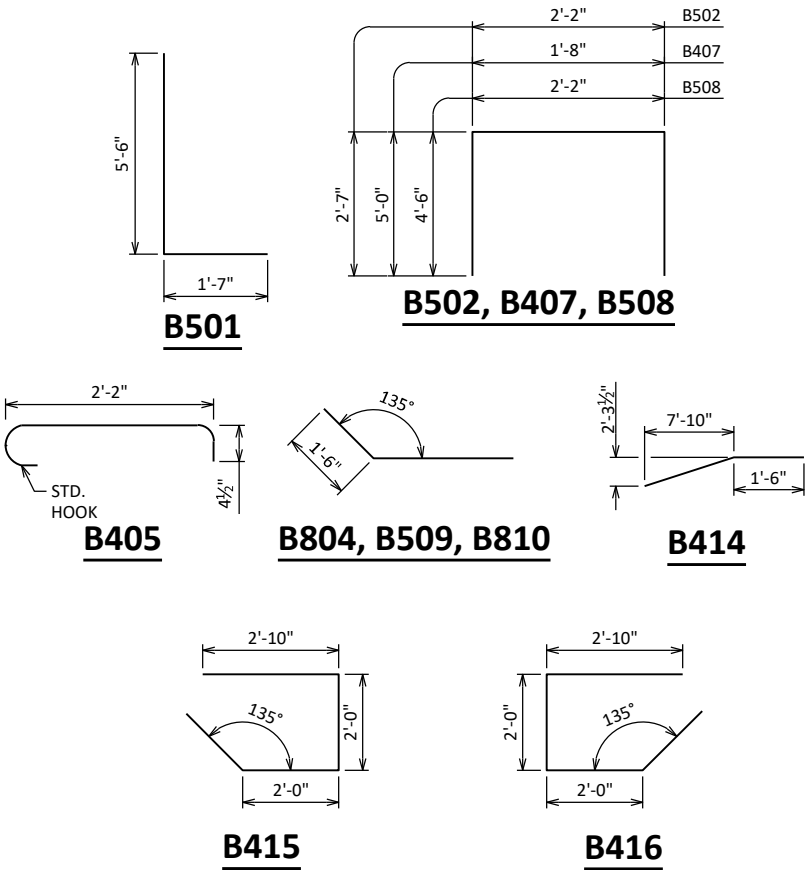
SHOWING UPPER WING REINFORCEMENT



SECTION THRU WING 3

TYPICAL BOTH WINGS

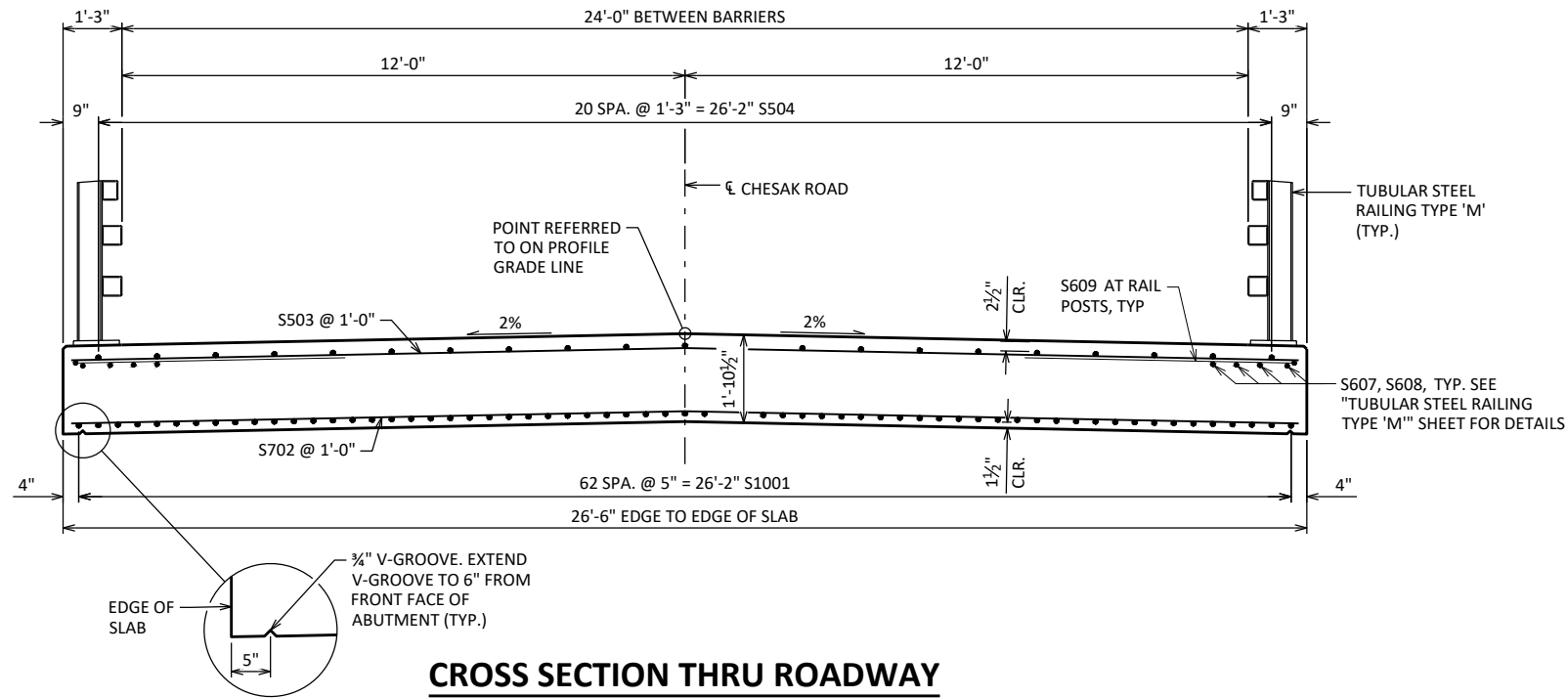
SECTION A-A



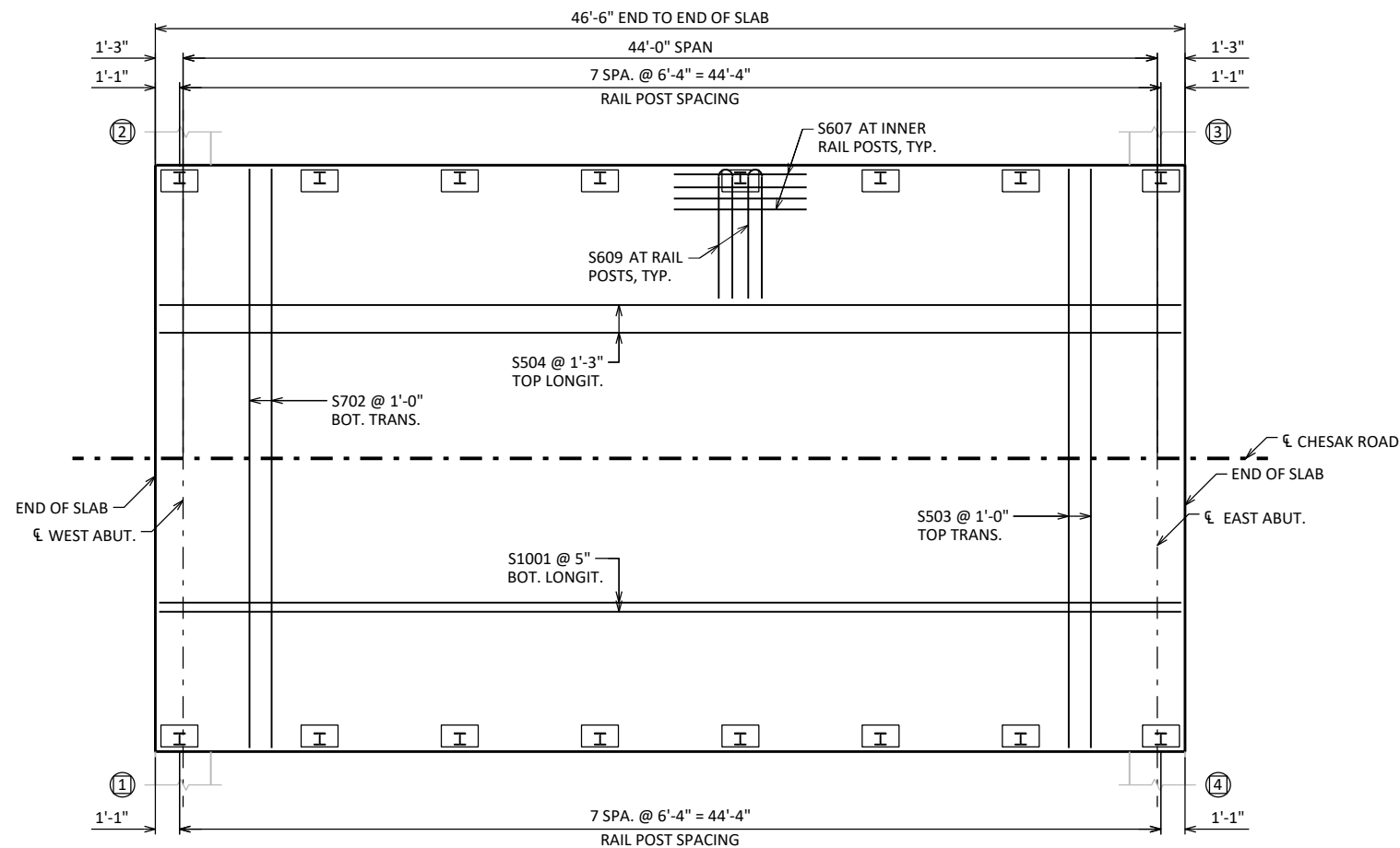
- A01 OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2X6. PROVIDE 3/4" "V" GROOVE ON F.F. OF WINGWALL IF JOINT IS USED.
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STRUCTURE B-37-479			
DRAWN BY		EKK	PLANS CK'D NJK
EAST ABUTMENT DETAILS		SHEET 7	

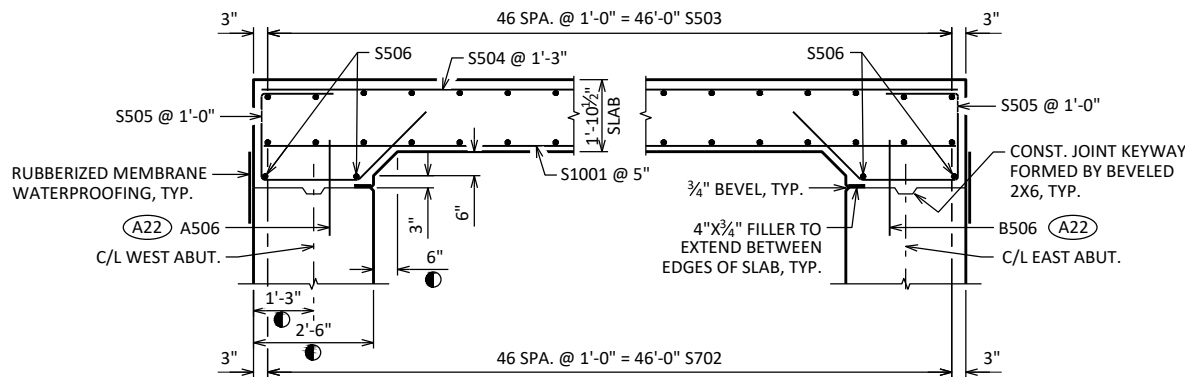
SCALE =



CROSS SECTION THRU ROADWAY



PLAN

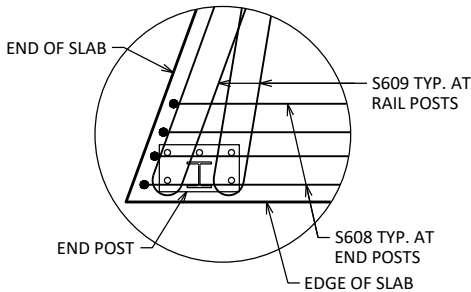


LONGITUDINAL SECTION

DIMENSIONS ARE GIVEN PARALLEL TO CL ROADWAY UNLESS OTHERWISE NOTED.

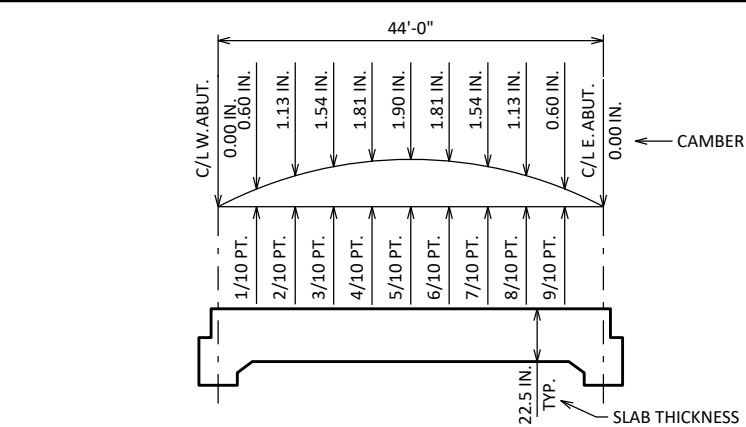
MEASURED NORMAL TO THE CL OF ABUTMENT. DIMENSIONS ARE TYPICAL FOR BOTH ABUTMENTS.

(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.)



END POST DETAILS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-479			
DRAWN BY		EKK	PLANS CK'D NJK
SUPERSTRUCTURE		SHEET 8	



CAMBER AND SLAB THICKNESS DIAGRAM

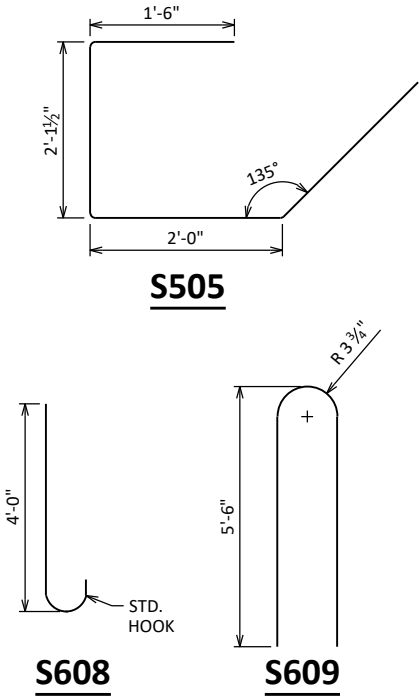
CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. PARAPETS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED, EXCEPT FOR STAGED CONSTRUCTION.

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. W. 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. E. ABUT.
N. EDGE OF DECK	1230.60	1230.58	1230.56	1230.55	1230.53	1230.52	1230.50	1230.49	1230.49	1230.48	1230.47
CROWN OR R/L	1230.87	1230.85	1230.83	1230.81	1230.80	1230.78	1230.77	1230.76	1230.75	1230.74	1230.74
S. EDGE OF DECK	1230.60	1230.58	1230.56	1230.55	1230.53	1230.52	1230.50	1230.49	1230.49	1230.48	1230.47



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	63	46'-2"			SLAB BOTTOM LONGITUDINAL
S702	X	47	26'-2"			SLAB BOTTOM TRANSVERSE
S503	X	47	26'-2"			SLAB TOP TRANSVERSE
S504	X	21	46'-2"			SLAB TOP LONGITUDINAL
S505	X	54	7'-6"	X		ABUTMENT DIAPHRAGM STIRRUPS
S506	X	4	26'-2"			ABUTMENT DIAPHRAGM LONGITUDINAL
S607	X	48	6'-0"			SLAB TOP LONGIT. UNDER RAIL POSTS
S608	X	16	4'-8"	X		SLAB TOP LONGIT. UNDER RAIL END POSTS
S609	X	32	11'-3"	X		SLAB TOP HOOKS UNDER RAIL POSTS

SURVEY TOP OF SLAB ELEVATIONS

LOCATION	W. ABUTMENT	5/10 PT.	E. ABUTMENT
N. GUTTER			
CROWN OR R/L			
S. 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			
6673-02-72			

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DRAWN BY		EKK	PLANS CK'D NJK
SUPERSTRUCTURE DETAILS		SHEET 9	

SCALE =





LOCATION MUST BE  
SHOWN ON SHOP DRAWINGS



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



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

## TYPICAL RAIL TO POST CONNECTIONS

- (1) W6 x 25 WITH 1 $\frac{5}{8}$ " X 1 $\frac{1}{2}$ " HORZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- (2) PLATE 1 $\frac{1}{4}$ " x 11 $\frac{3}{4}$ " x 1'-8" WITH 1 $\frac{1}{16}$ " OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- (3) 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. USE 10 $\frac{3}{4}$ " 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.)
- (4)  $\frac{5}{8}$ " x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 $\frac{1}{16}$ " DIA. HOLES FOR ANCHOR BOLTS NO. 3.
- (5) TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- (5A) TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- (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).
- (7) SPLICE SLEEVE FABRICATED FROM  $\frac{1}{4}$ " PLATE. PROVIDE "SLIDING FIT".
- (8)  $\frac{3}{8}$ " X 3 $\frac{5}{8}$ " X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- (8A)  $\frac{3}{8}$ " 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.
- (9)  $\frac{7}{8}$ " DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE  $\frac{15}{16}$ " X 1 $\frac{1}{2}$ " LONGIT. SLOTTED HOLES IN PLATE NO. 10A AT FIELD JOINTS AND  $\frac{15}{16}$ " X 2 $\frac{1}{4}$ " MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 8A. PROVIDE  $\frac{15}{16}$ " DIA. ROUND HOLES IN TUBES NO. 4 AND NO. 5A.

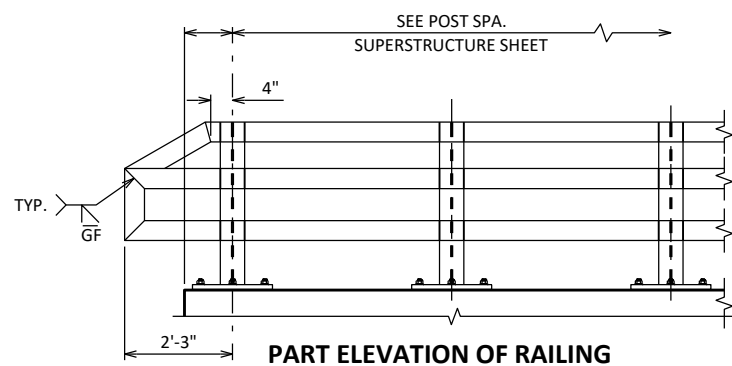
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ½ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.



**AT RAIL TO DECK CONNECTION**



## DETAIL



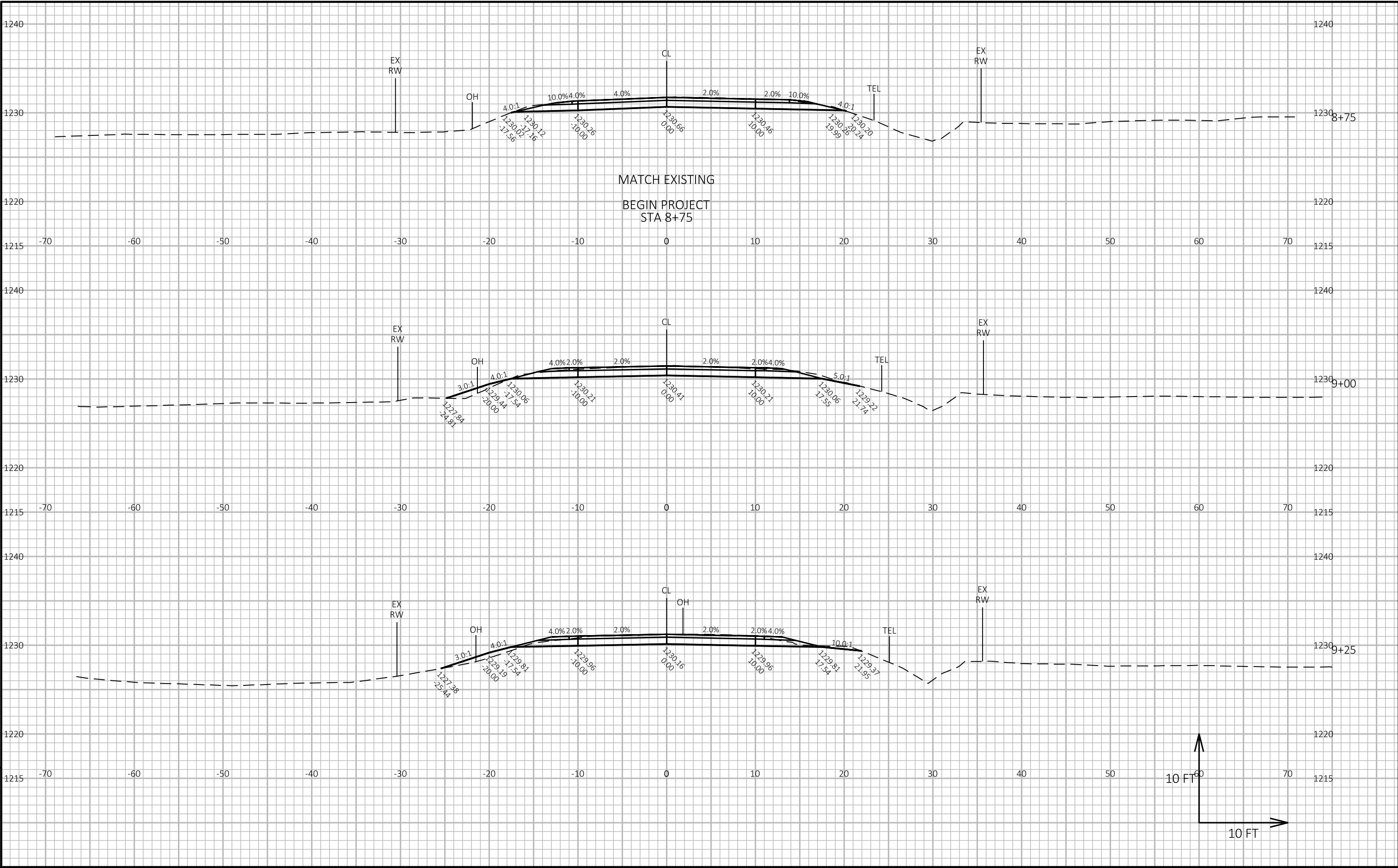
CHESAK ROAD WEST OF BRIDGE

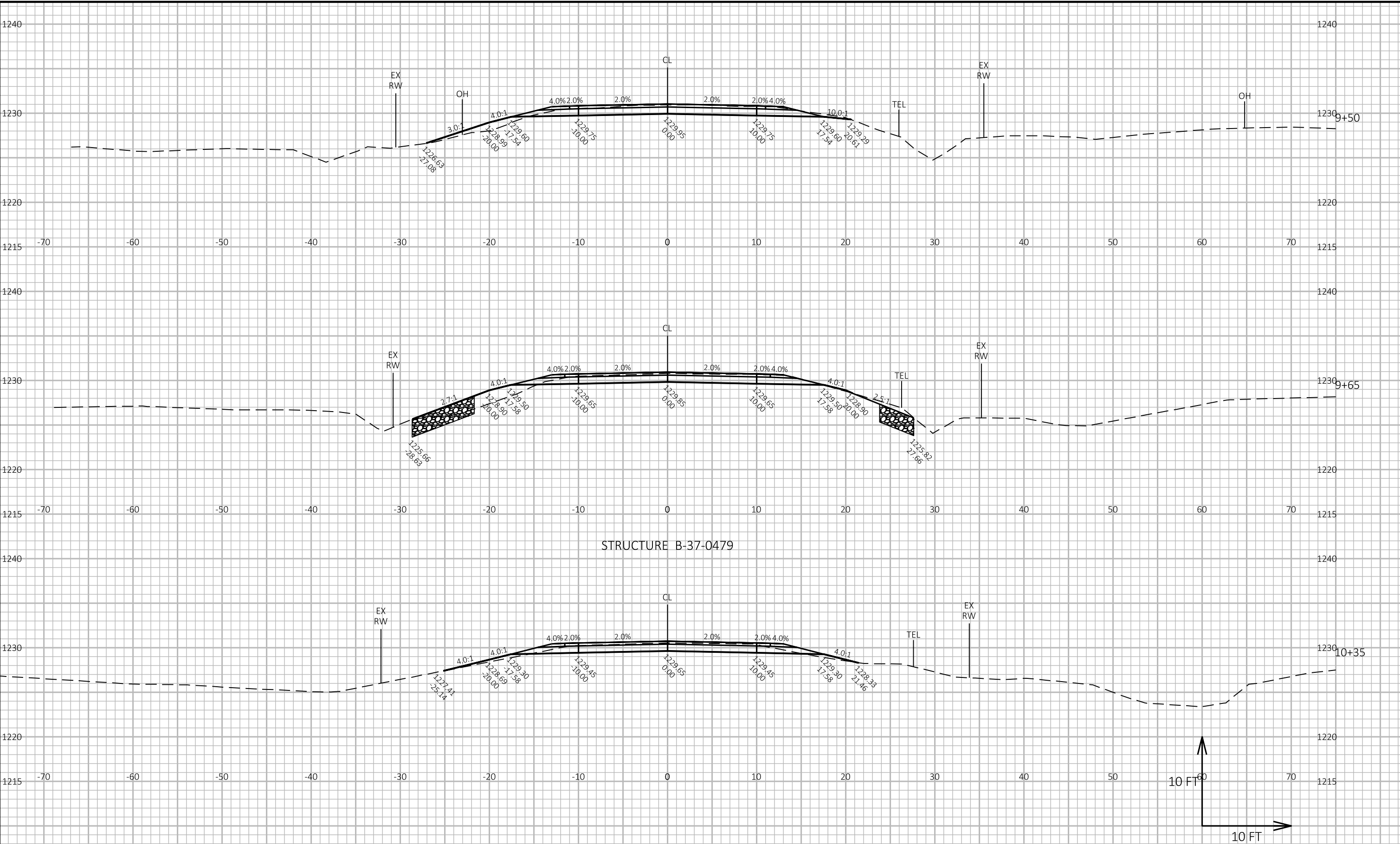
STATION	REAL STATION	DISTANCE	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)				
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	REDUCED MARSH IN FILL	MASS ORDINATE
							NOTE 1	NOTE 2	NOTE 3		NOTE 1	1.25	NOTE 4	NOTE 6	NOTE 8
8+75.00	875.00	0.00	35.59	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0
9+00.00	900.00	25.00	31.89	0.00	2.94	0.00	31	0	1	0	31	1	0	0	30
9+25.00	925.00	25.00	30.13	0.00	3.52	0.00	29	0	3	0	60	5	0	0	55
9+50.00	950.00	25.00	28.66	0.00	5.57	0.00	27	0	4	0	87	10	0	0	77
9+65.00	965.00	15.00	26.75	0.00	13.89	0.00	15	0	5	0	102	16	0	0	86

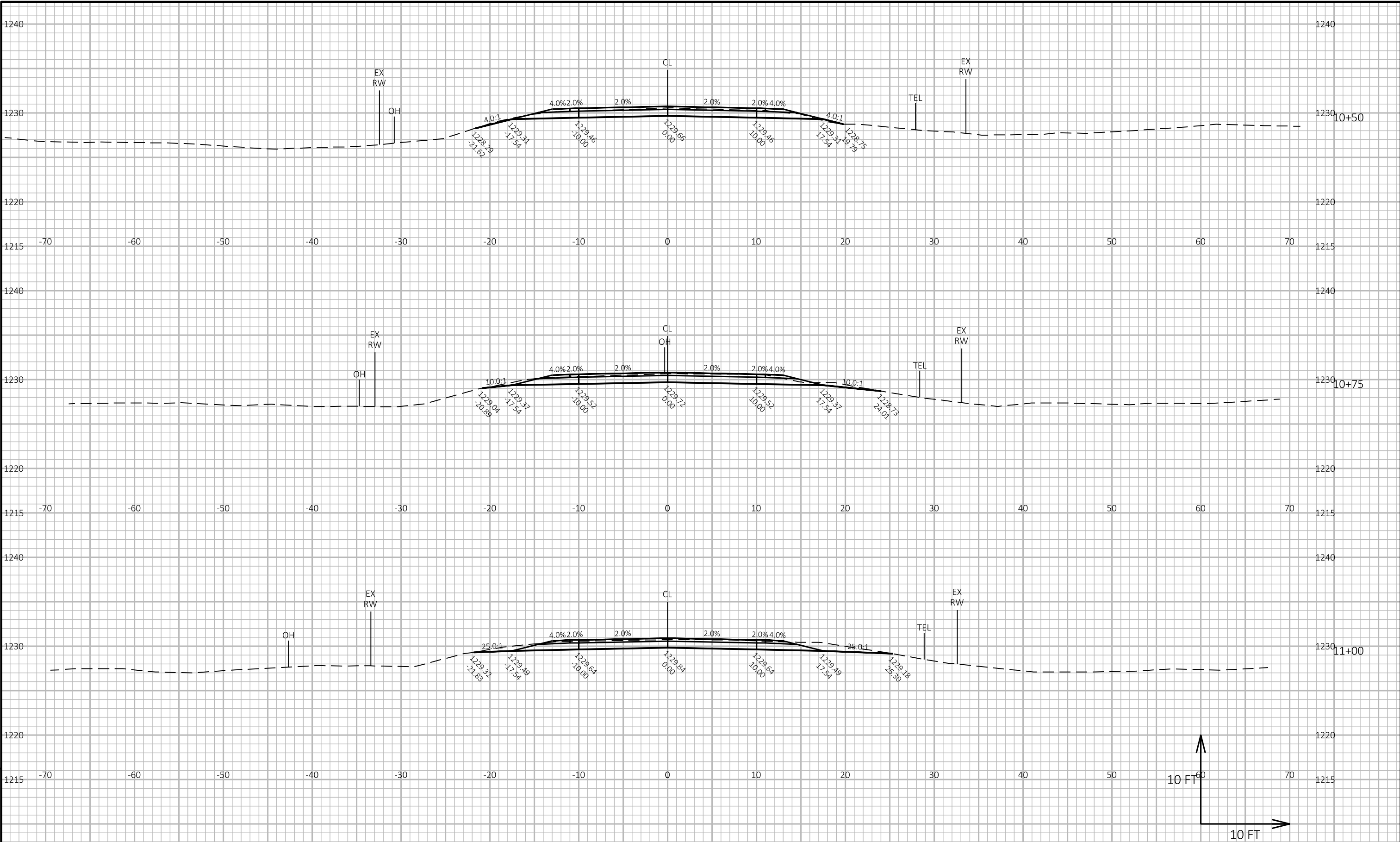
CHESAK ROAD EAST OF BRIDGE

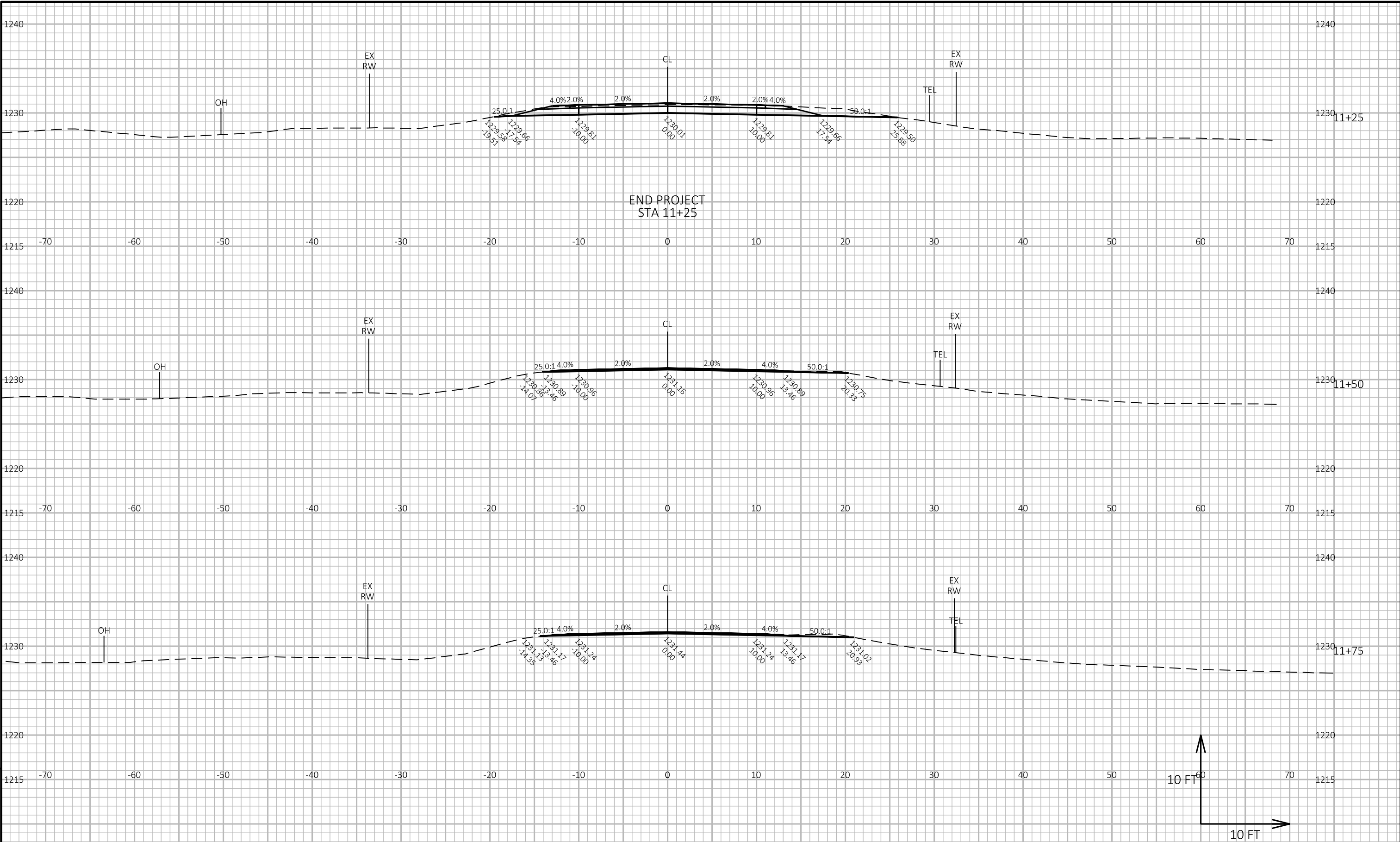
STATION	REAL STATION	DISTANCE	AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)				
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	REDUCED MARSH IN FILL	MASS ORDINATE
							NOTE 1	NOTE 2	NOTE 3		NOTE 1	1.25	NOTE 4	NOTE 6	NOTE 8
10+35.00	1035.00	0.00	22.86	0.00	3.10	0.00	0	0	0	0	0	0	0	0	0
10+50.00	1050.00	15.00	25.58	0.00	0.30	0.00	13	0	1	0	13	1	0	0	12
10+75.00	1075.00	25.00	30.50	0.00	0.00	0.00	26	0	0	0	39	1	0	0	38
11+00.00	1100.00	25.00	36.73	0.00	0.00	0.00	31	0	0	0	70	1	0	0	69
11+25.00	1125.00	25.00	37.84	0.00	0.00	0.00	35	0	0	0	105	1	0	0	104
11+50.00	1150.00	25.00	2.55	0.00	0.00	0.00	19	0	0	0	124	1	0	0	123
11+75.00	1175.00	25.00	4.23	0.00	0.00	0.00	3	0	0	0	127	1	0	0	126
11+99.99	1199.99	24.99	6.79	0.00	0.00	0.00	5	0	0	0	132	1	0	0	131

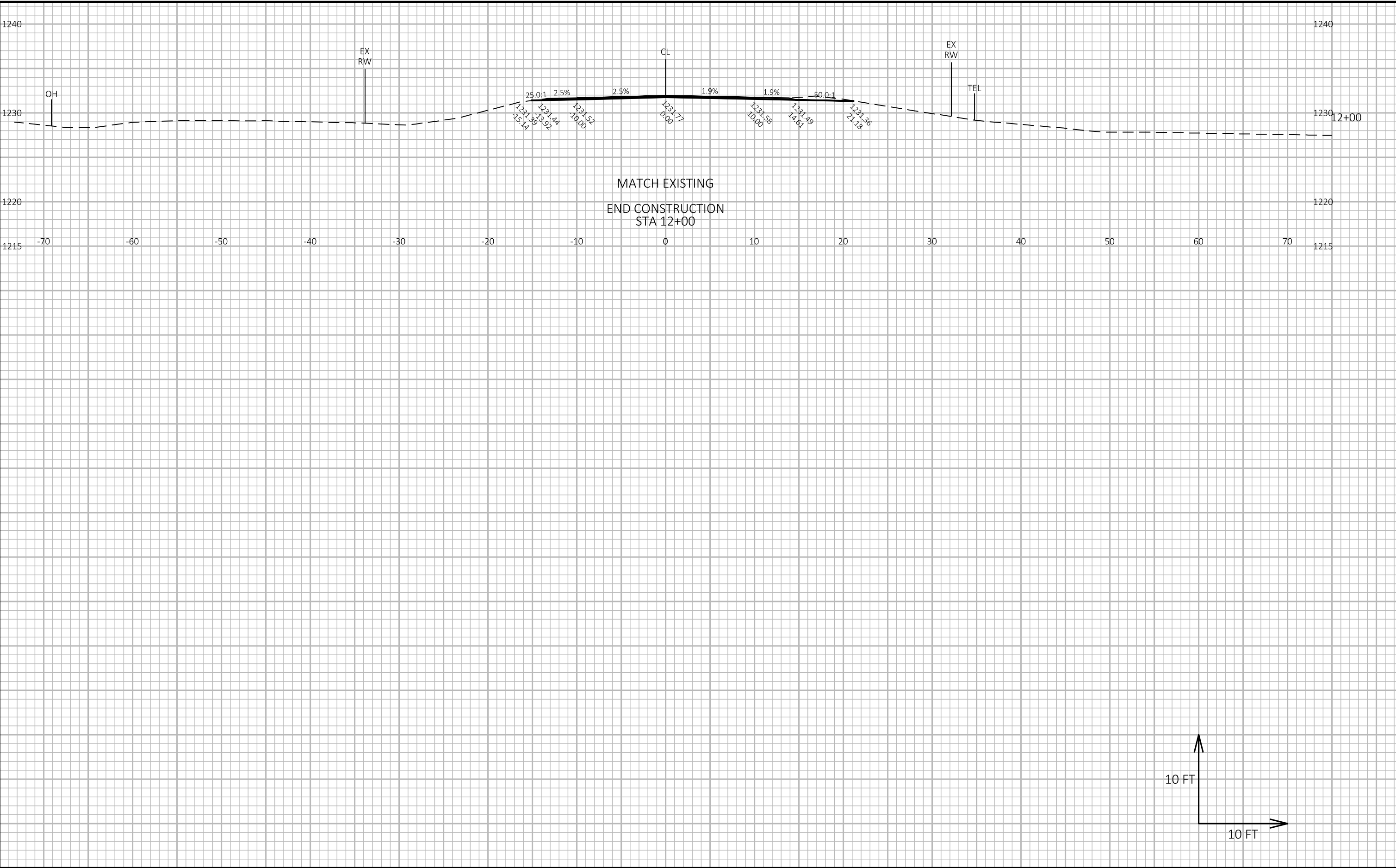
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - EXPANDED MARSH BACKFILL	WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)
6 - REDUCED MARSH IN FILL	REDUCED MARSH EXCAVATION THAT CAN BE USED IN FILL
8 - MASS ORDINATE	IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED MARSH EXC - EXPANDED EBS) - ((FILL - REDUCED MARSH IN FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)]











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PROJECT NO: 6673-02-72	HWY: LOC STR	COUNTY: MARATHON	CROSS SECTIONS: CHESAK ROAD	SHEET E
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## ***Wisconsin Department of Transportation***

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