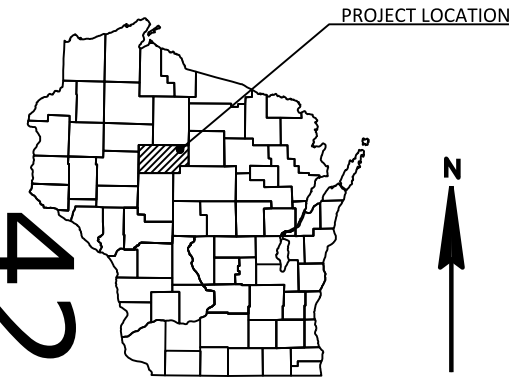


MAY 2025
ORDER OF SHEETS

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

TOTAL SHEETS = 56



DESIGN DESIGNATION

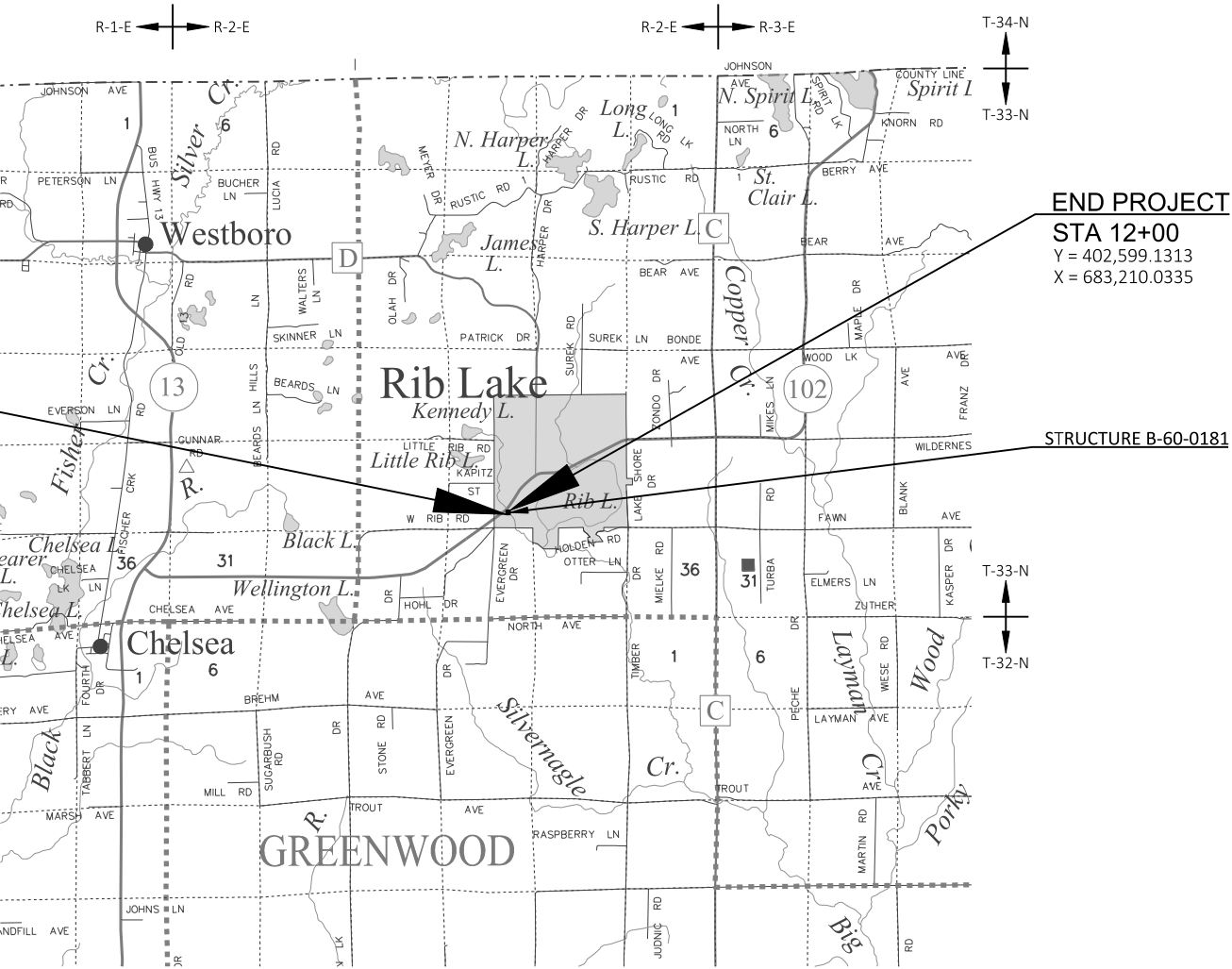
A.A.D.T.	2025	=	111
A.A.D.T.	2045	=	134
D.H.V.		=	N/A
D.D.		=	50/50
T.		=	10%
DESIGN SPEED		=	35 MPH
ESALS		=	14,600

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	

BEGIN PROJECT
STA 8+55
Y = 402,347.0152
X = 682,974.5288



LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 0.065 MI

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

V RIB LAKE, STATE ROAD

B-60-0181

LOC STR

TAYLOR COUNTY

STATE PROJECT NUMBER
9545-00-72

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9545-00-72	WISC 2025490	1

ACCEPTED FOR

TAYLOR COUNTY

Date 1/24/25 Benjamin Stanfley
COUNTY HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY



146 North Central Ave, Marshfield WI 54449
(715) 384-2133 www.msa-ps.com



1/21/2025
DATE: (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	MSA PROFESSIONAL SERVICES, INC.
Surveyor	MSA PROFESSIONAL SERVICES, INC.
Designer	MATTHEW BERG
Project Manager	WISDOT NW REGION
Regional Examiner	TOU YANG
Regional Supervisor	

APPROVED FOR THE DEPARTMENT
DATE: 1/22/2025 (Signature)

E

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MARSHFIELD, WI 54449
PHONE: 715-304-0451
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.

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

DO NOT STORE EQUIPMENT OR MATERIALS IN, NOR IMPACT ANY WETLANDS OR WATERWAYS OUTSIDE THE SLOPE INTERCEPTS SHOWN.

EXISTING ASPHALTIC MATERIAL IS NOT BE USED IN FILL AREAS.

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											

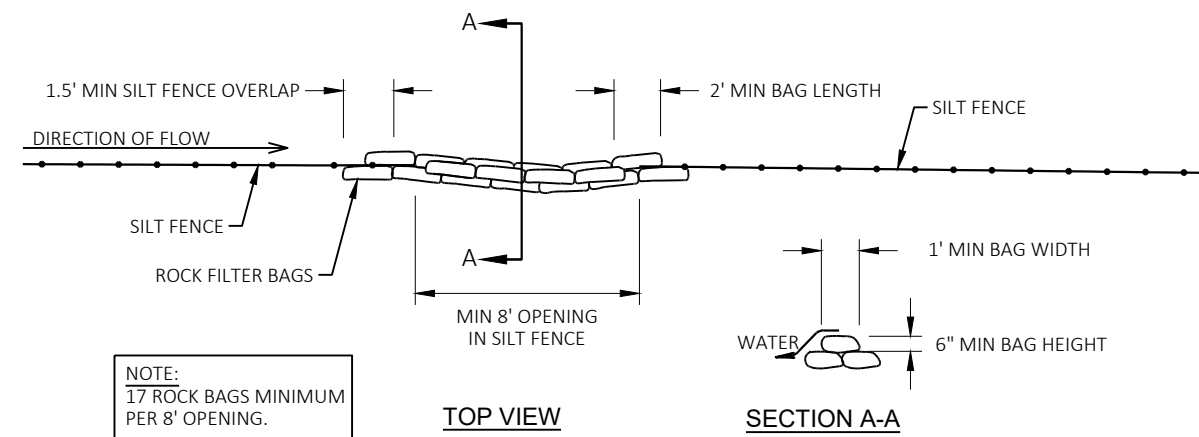
TOTAL PROJECT AREA = 0.523 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.373 ACRES





FINISHED TYPICAL SECTION

STA 8+55 - STA 12+00



NOTE:
17 ROCK BAGS MINIMUM
PER 8' OPENING.

TOP VIEW

SECTION A-A

ROCK BAGS USED FOR SILT FENCE RELIEF

Estimate Of Quantities

9545-00-72

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	203.0250	Removing Structure Over Waterway Remove Debris (structure) 01. P-60-702	EACH	1.000	1.000
0008	204.0110	Removing Asphaltic Surface	SY	773.000	773.000
0010	205.0100	Excavation Common	CY	138.000	138.000
0012	206.1001	Excavation for Structures Bridges (structure) 01. B-60-181	EACH	1.000	1.000
0014	206.5001	Cofferdams (structure) 01. B-60-181	EACH	1.000	1.000
0016	208.0100	Borrow	CY	121.000	121.000
0018	210.1500	Backfill Structure Type A	TON	1,047.000	1,047.000
0020	213.0100	Finishing Roadway (project) 01. 9545-00-72	EACH	1.000	1.000
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	90.000	90.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	560.000	560.000
0026	455.0605	Tack Coat	GAL	54.000	54.000
0028	465.0105	Asphaltic Surface	TON	240.000	240.000
0030	502.0100	Concrete Masonry Bridges	CY	186.000	186.000
0032	502.3200	Protective Surface Treatment	SY	233.000	233.000
0034	505.0400	Bar Steel Reinforcement HS Structures	LB	5,910.000	5,910.000
0036	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	23,990.000	23,990.000
0038	513.4061	Railing Tubular Type M	LF	109.000	109.000
0040	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0042	550.2126	Piling CIP Concrete 12 3/4 X 0.375-Inch	LF	990.000	990.000
0044	606.0300	Riprap Heavy	CY	70.000	70.000
0046	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	140.000	140.000
0048	618.0100	Maintenance and Repair of Haul Roads (project) 01. 9545-00-72	EACH	1.000	1.000
0050	619.1000	Mobilization	EACH	1.000	1.000
0052	624.0100	Water	MGAL	14.000	14.000
0054	625.0100	Topsoil	SY	960.000	960.000
0056	628.1504	Silt Fence	LF	700.000	700.000
0058	628.1520	Silt Fence Maintenance	LF	700.000	700.000
0060	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0062	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0064	628.2008	Erosion Mat Urban Class I Type B	SY	960.000	960.000
0066	628.6005	Turbidity Barriers	SY	130.000	130.000
0068	628.7504	Temporary Ditch Checks	LF	20.000	20.000
0070	628.7570	Rock Bags	EACH	85.000	85.000
0072	629.0210	Fertilizer Type B	CWT	4.000	4.000
0074	630.0120	Seeding Mixture No. 20	LB	45.000	45.000
0076	630.0200	Seeding Temporary	LB	28.000	28.000
0078	630.0500	Seed Water	MGAL	19.000	19.000
0080	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0082	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	1.000	1.000
0084	637.2210	Signs Type II Reflective H	SF	5.000	5.000
0086	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0088	638.2602	Removing Signs Type II	EACH	7.000	7.000
0090	638.3000	Removing Small Sign Supports	EACH	7.000	7.000
0092	642.5001	Field Office Type B	EACH	1.000	1.000
0094	643.0420	Traffic Control Barricades Type III	DAY	1,300.000	1,300.000
0096	643.0705	Traffic Control Warning Lights Type A	DAY	1,900.000	1,900.000
0098	643.0900	Traffic Control Signs	DAY	1,000.000	1,000.000

Estimate Of Quantities

9545-00-72

Line	Item	Item Description	Unit	Total	Qty
0100	643.5000	Traffic Control	EACH	1.000	1.000
0102	645.0111	Geotextile Type DF Schedule A	SY	537.000	537.000
0104	645.0120	Geotextile Type HR	SY	177.000	177.000
0106	650.4500	Construction Staking Subgrade	LF	293.000	293.000
0108	650.5000	Construction Staking Base	LF	293.000	293.000
0110	650.6501	Construction Staking Structure Layout (structure) 01. B-60-181	EACH	1.000	1.000
0112	650.9911	Construction Staking Supplemental Control (project) 01. 9545-00-72	EACH	1.000	1.000
0114	650.9920	Construction Staking Slope Stakes	LF	293.000	293.000
0116	690.0150	Sawing Asphalt	LF	62.000	62.000
0118	715.0502	Incentive Strength Concrete Structures	DOL	1,116.000	1,116.000
0120	999.2005.S	Maintaining Bird Deterrent System (station) 01. Station 10+00	EACH	1.000	1.000
0122	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0124	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0126	SPV.0090	Special 01. Flashing Stainless Steel	LF	95.000	95.000

CATEGORY	STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
0010	8+55	-	12+00	PROJECT	4	4
TOTAL 0010					4	4

CATEGORY	STATION	TO	STATION	LOCATION	205.0100 EXCAVATION COMMON CY	UNEXPANDED FILL CY	EXPANDED FILL (1) CY	MASS ORDINATE +/- (2) CY	208.0100 BORROW CY
0010	8+55	-	9+80	MAINLINE	57	92	120	-63	63
0010	10+32	-	12+00	MAINLINE	81	107	139	-58	58
TOTAL 0010					138				121

(1) EXPANDED FILL FACTOR = 1.30
(2) THE MASS ORDINATE + OR - QUANTITY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.
MINUS QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

CATEGORY	STATION	TO	STATION	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY
0010	8+55	-	9+80	MAINLINE	310
0010	10+32	-	12+00	MAINLINE	420
0010			11+67	RT	43
TOTAL 0010					773

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+55	-	9+80	MAINLINE	40	240	6
0010	10+32	-	12+00	MAINLINE	50	320	8
TOTAL 0010					90	560	14

CATEGORY	STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
0010	8+55	-	9+80	MAINLINE	22	95
0010	10+32	-	12+00	MAINLINE	29	130
0010			11+67	RT	3	15
TOTAL 0010					54	240

CATEGORY	LOCATION	628.6005 TURBIDITY BARRIERS SY
0010	PROJECT	130
TOTAL 0010		130

CATEGORY	STATION	TO	STATION	LOCATION	625.0100 TOPSOIL SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7504 TEMPORARY DITCH CHECKS LF	628.7570 ROCK BAGS EACH	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL
0010	8+55	-	9+80	LT	200	200	--	17	1	9	6	4
0010	8+55	-	9+80	RT	200	200	--	17	1	9	6	4
0010	10+32	-	12+00	LT	260	260	--	17	1	12	7	5
0010	10+32	-	12+00	RT	210	210	--	17	1	10	6	4
UNDISTRIBUTED					90	90	20	17	--	5	3	2
TOTAL 0010					960	960	20	85	4	45	28	19

						628.1504	628.1520	628.1905	628.1910
						SILT FENCE	SILT FENCE	MOBILIZATIONS	MOBILIZATIONS
						LF	MAINTENANCE	EROSION	EROSION
						LF	LF	CONTROL	CONTROL
CATEGORY	STATION	TO	STATION	LOCATION		LF	LF	EACH	EACH
0010	8+55	-	9+80	RT		130	130	--	--
0010	8+55	-	9+80	LT		130	130	--	--
0010	10+32	-	12+00	RT		190	190	--	--
0010	10+32	-	12+00	LT		170	170	--	--
PROJECT						--	--	4	2
UNDISTRIBUTED						80	80	--	--
TOTAL 0010						700	700	4	2

						634.0612	634.0614	637.2210	637.2230	638.2602	638.3000	REMARKS
						POSTS WOOD	POSTS WOOD	SIGNS TYPE II	SIGNS TYPE II	REMOVING	REMOVING	
						4X6-INCH X	4X6-INCH X	REFLECTIVE H	REFLECTIVE F	SIGNS TYPE II	SMALL SIGN	
						12-FT	14-FT				SUPPORTS	
						EACH	EACH	SF	SF	EACH	EACH	
0010	9+75	LT				1	--	--	3.00	1	1	W5-52R 12"X36"
0010	9+75	RT				1	--	--	3.00	1	1	W5-52L 12"X36"
0010	10+35	LT				1	--	--	3.00	1	1	W5-52L 12"X36"
0010	10+35	RT				1	--	--	3.00	1	1	W5-52R 12"X36"
0010	9+45	RT				--	1	5.00	--	1	1	R2-1 24"X30"
0010	8+75	RT				--	--	--	--	1	1	R12-1
0010	11+50	LT				--	--	--	--	1	1	R12-1
TOTAL 0010						4	1	5.00	12.00	7	7	

								643.0420	643.0705	643.0900	643.5000
								TRAFFIC	TRAFFIC	TRAFFIC	TRAFFIC
								CONTROL	CONTROL		
								BARRICADES	WARNING	CONTROL SIGNS	CONTROL
								TYPE III	LIGHTS TYPE A	DAY	EACH
CATEGORY	STATION	TO	STATION	LOCATION	DAYS	DAY	DAY	DAY	DAY	DAY	EACH
0010	8+55	-	12+00	PROJECT	64	1,152	1,792	896			1
				UNDISTRIBUTED		148	108	104			--
TOTAL 0010						1,300	1,900	1,000			1

					650.4500	650.5000	650.6501.01	650.9911.01	650.9920	
					CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. B-60-0181)	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 9545-00-72)	CONSTRUCTION STAKING SLOPE	
							EACH	EACH	STAKES	
CATEGORY	STATION	TO	STATION	LOCATION			LF	LF	EACH	LF
							LF	LF	EACH	LF
0010	8+55	-	9+80	MAINLINE	125	125	--	--	125	
0010	10+32	-	12+00	MAINLINE	168	168	--	--	168	
				PROJECT	--	--	1	1	--	
TOTAL 0010					293	293	1	1	293	

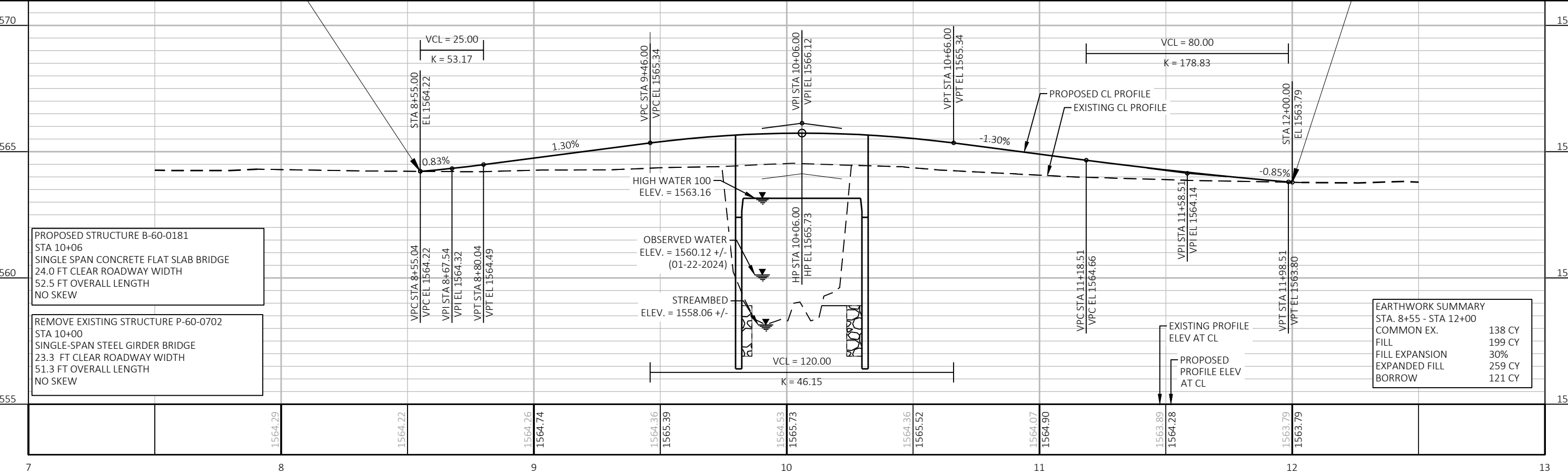
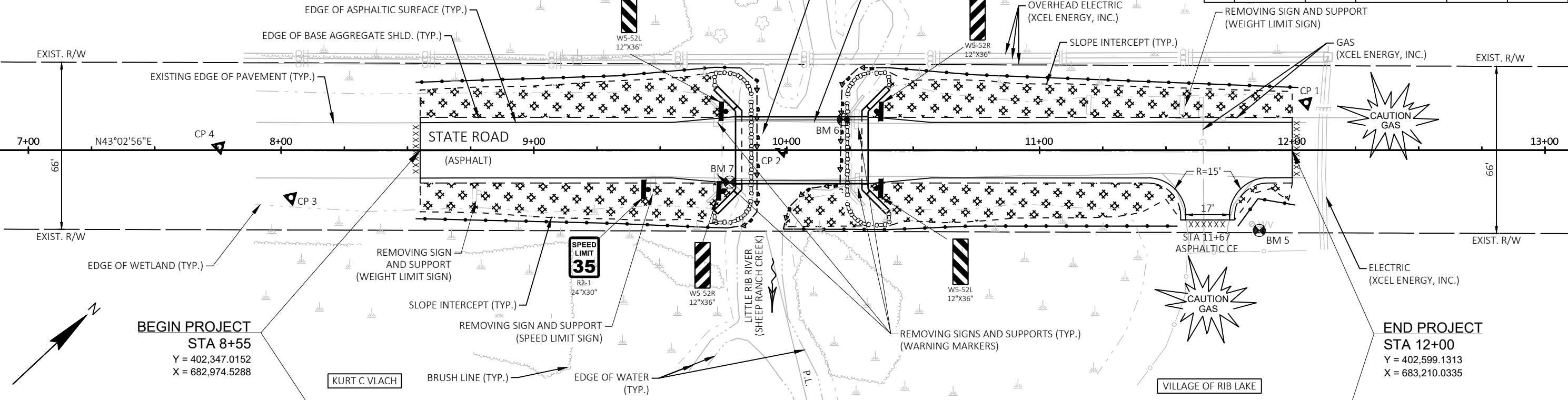
				690.0150
				SAWING ASPHALT
				LF
0010	8+55	BOP		22
0010	11+67	RT		18
0010	12+00	EOP		22
TOTAL 0010				62

BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
7	9+77.46	1567.13	CHISEL MARK ON BRIDGE, 12.67' RT
6	10+22.39	1567.28	CHISEL MARK ON BRIDGE, 12.09' LT
5	11+87.00	1565.57	BURY TAG ON HYDRANT, 31.79' RT

LEGEND	
	SILT FENCE
	RIPRAP HEAVY
	EROSION MAT URBAN CLASS 1 TYPE B
	SAWING ASPHALT
	TURBIDITY BARRIER

VILLAGE OF RIB LAKE

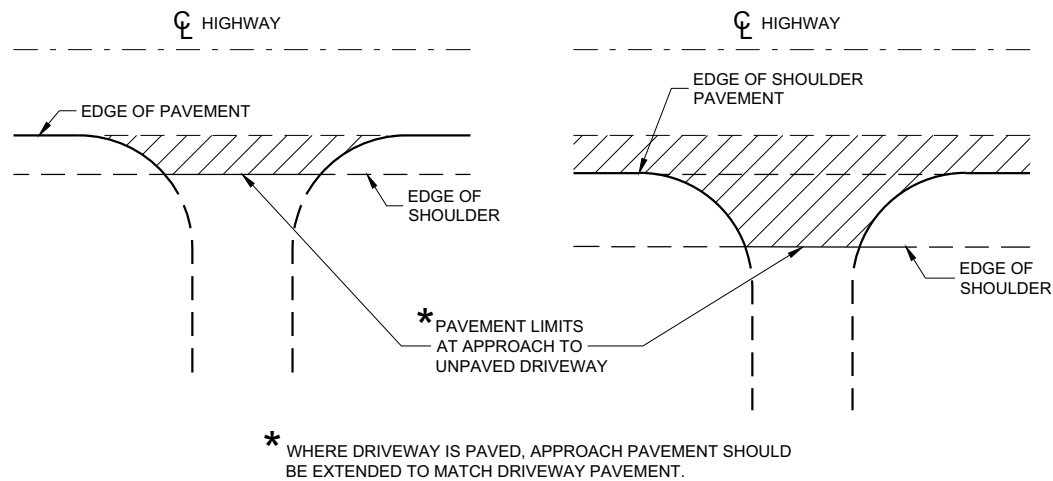
CONTROL POINTS					
NO.	STATION	ELEV.	DESCRIPTION	NORTHING	EASTING
4	7+75.40	1564.31	MAG NAIL, 1.29' LT	402,289.730	682,919.248
3	8+03.82	1561.46	IRON ROD, 18.82' RT	402,296.771	682,953.345
2	9+98.22	1564.52	MAG NAIL, 0.14' LT	402,451.770	683,072.191
1	12+05.56	1561.38	IRON ROD, 18.80' LT	402,616.029	683,200.092



PROJECT NO:	9545-00-72	HWY:	LOC STR	COUNTY:	TAYLOR	PLAN AND PROFILE:	STATE ROAD	SHEET	E
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Standard Detail Drawing List

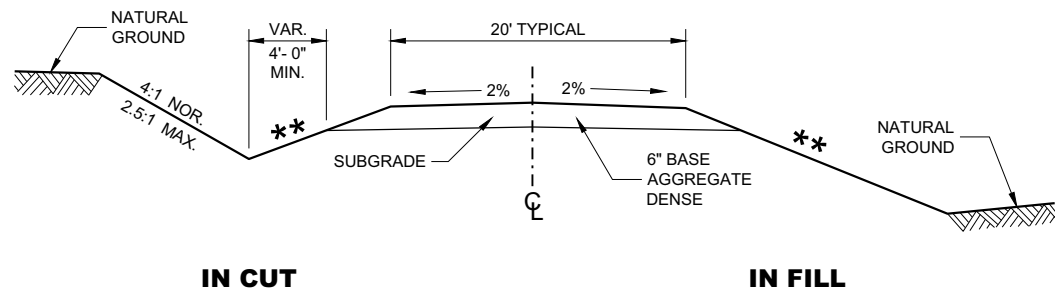
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

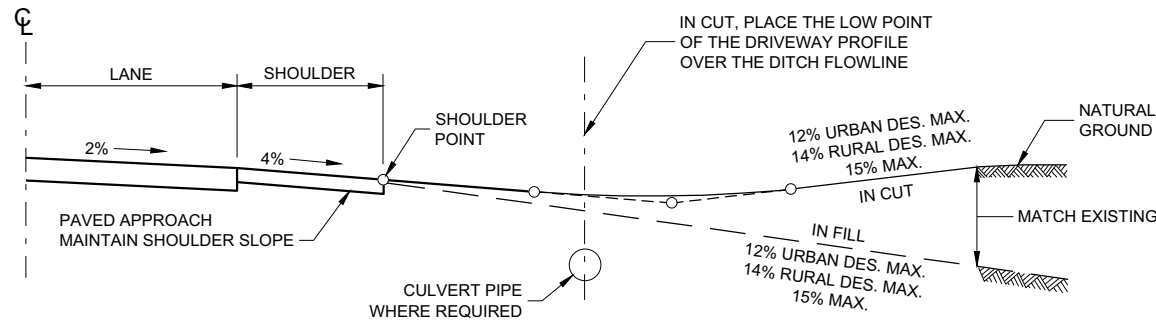
**RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB AND GUTTER OR SIDEWALK)**



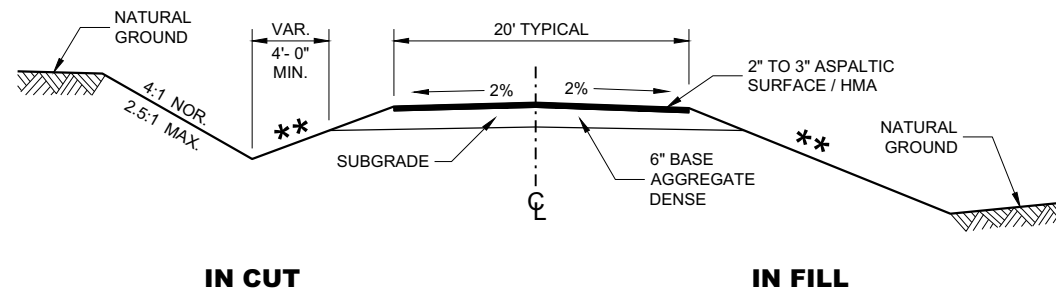
**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE**

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

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



TYPICAL DRIVEWAY PROFILES

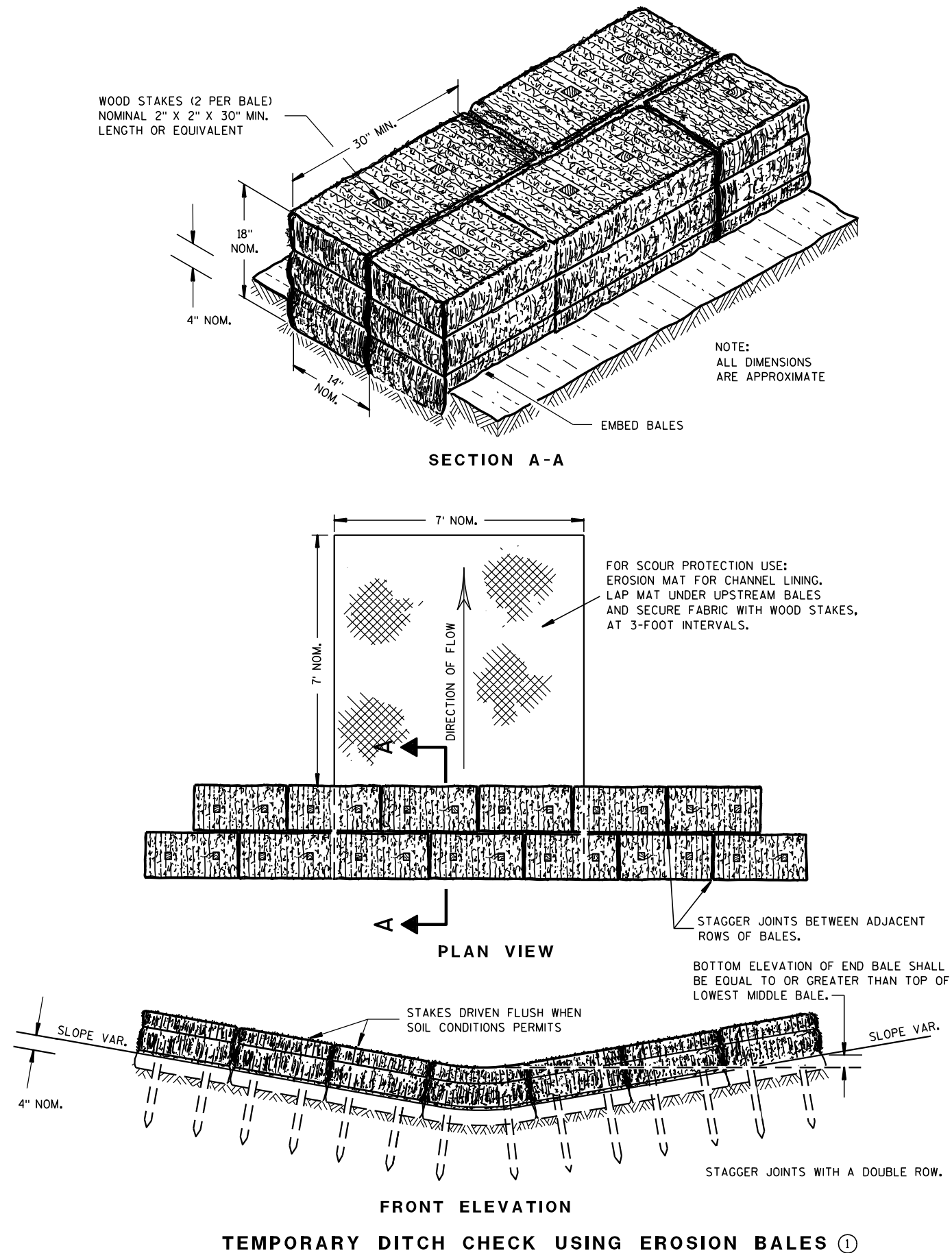


**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE**

**DRIVEWAYS WITHOUT
CURB AND GUTTER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

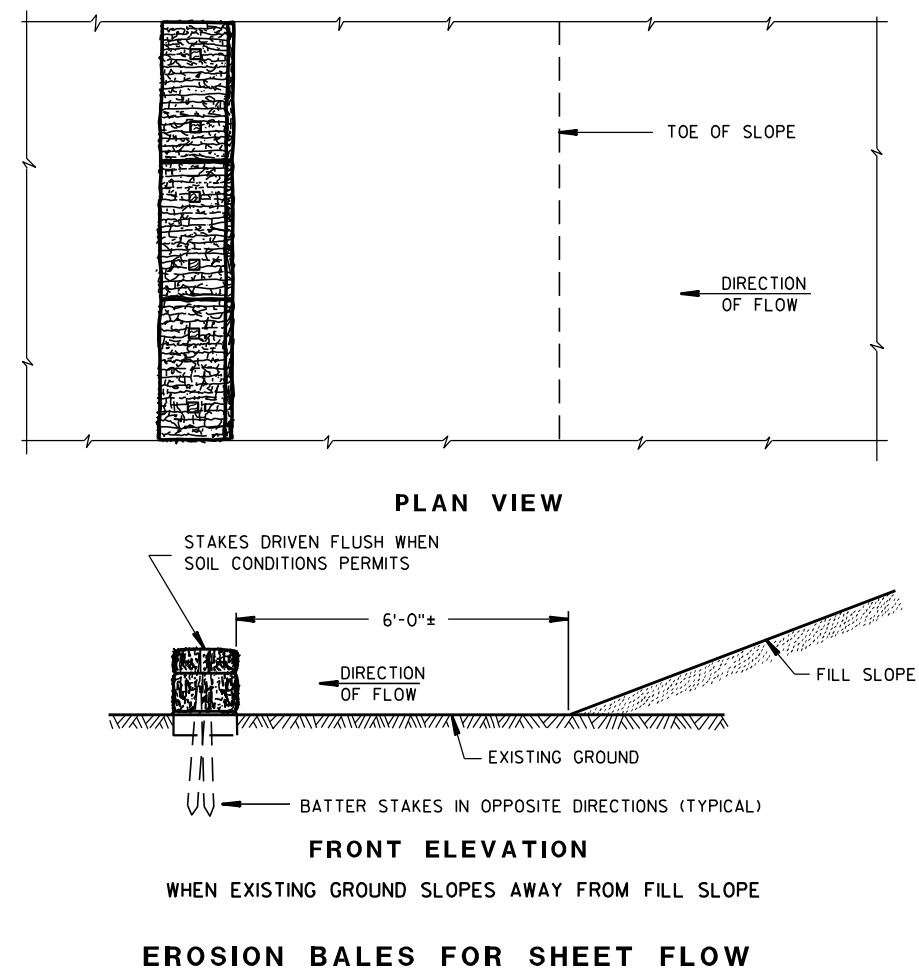
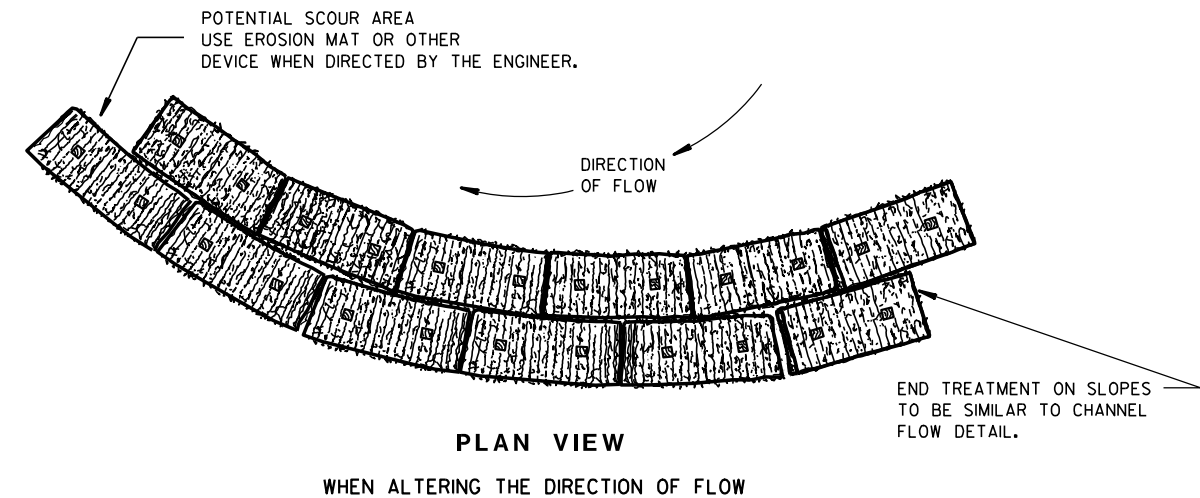
APPROVED
December 2017
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



GENERAL NOTES

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

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



TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

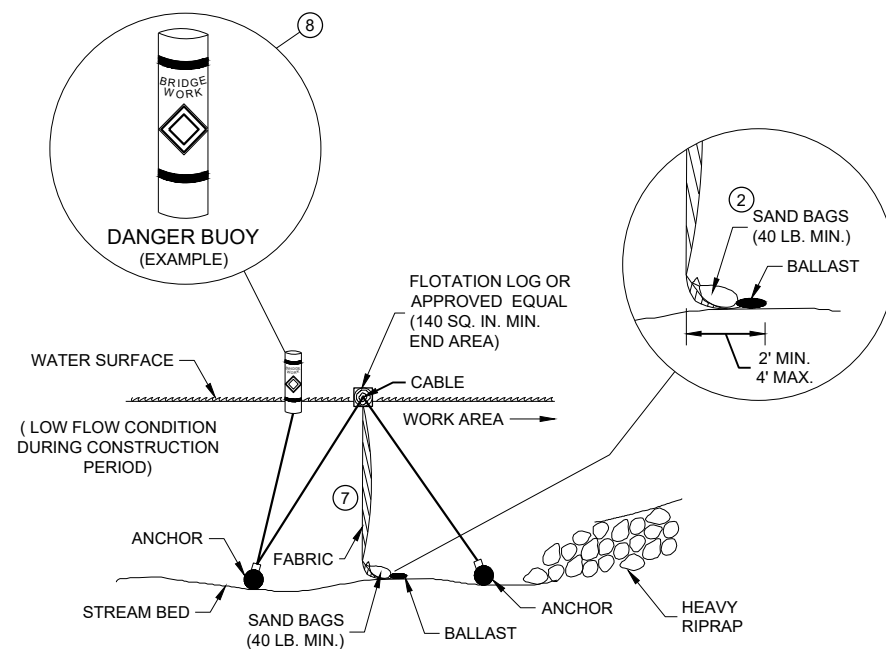
FHWA



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

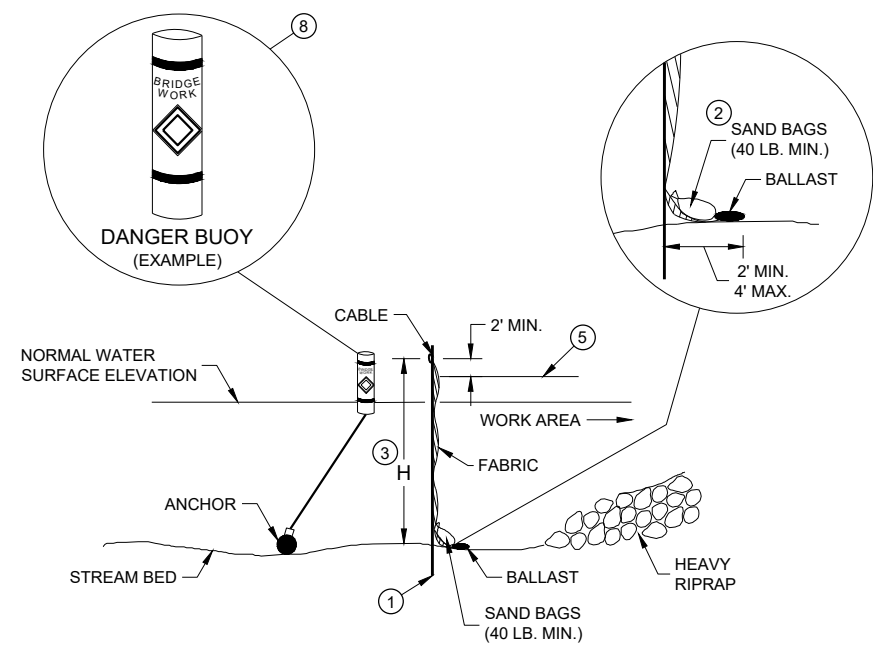


SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER



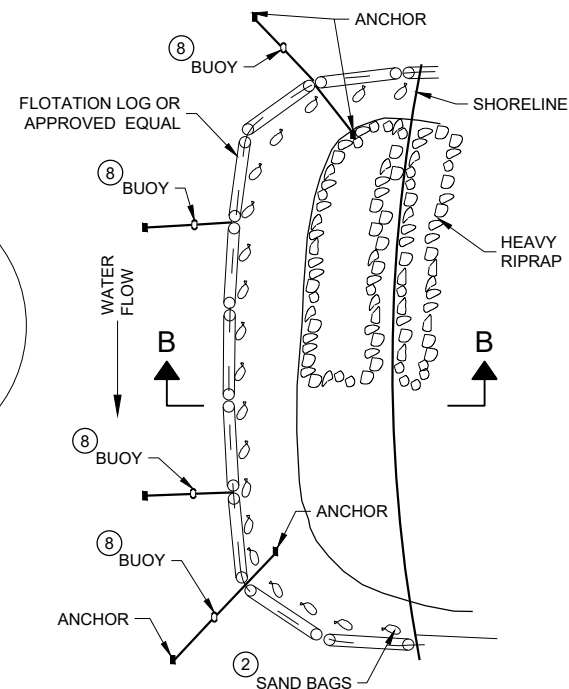
SECTION B - B

TURBIDITY BARRIER - FLOAT ALTERNATIVE CAUTION - SEE NOTE 6

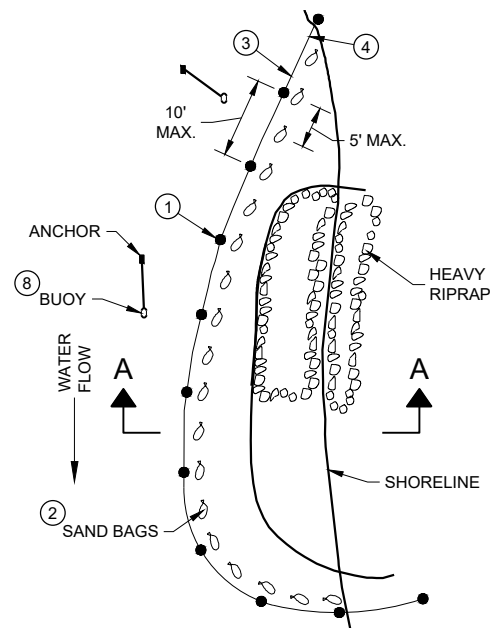


SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW



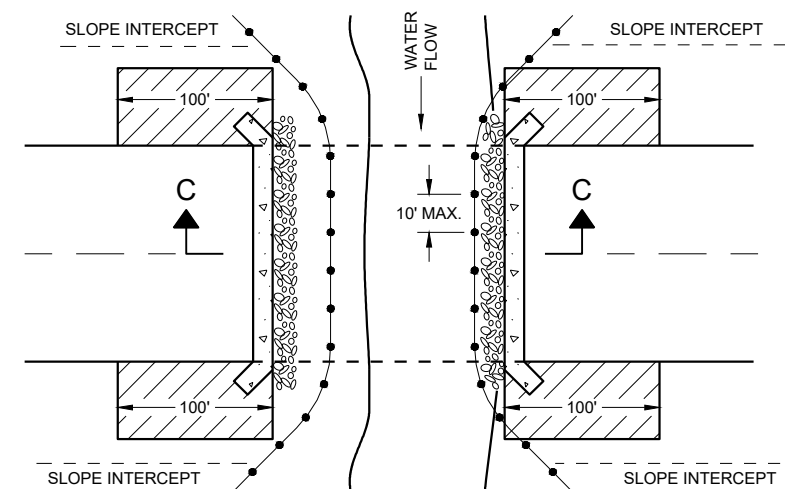
PLAN VIEW

GENERAL NOTES

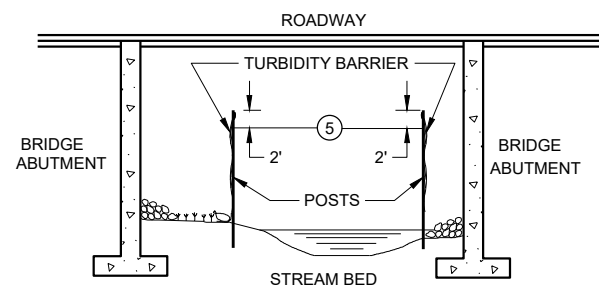
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/4/02

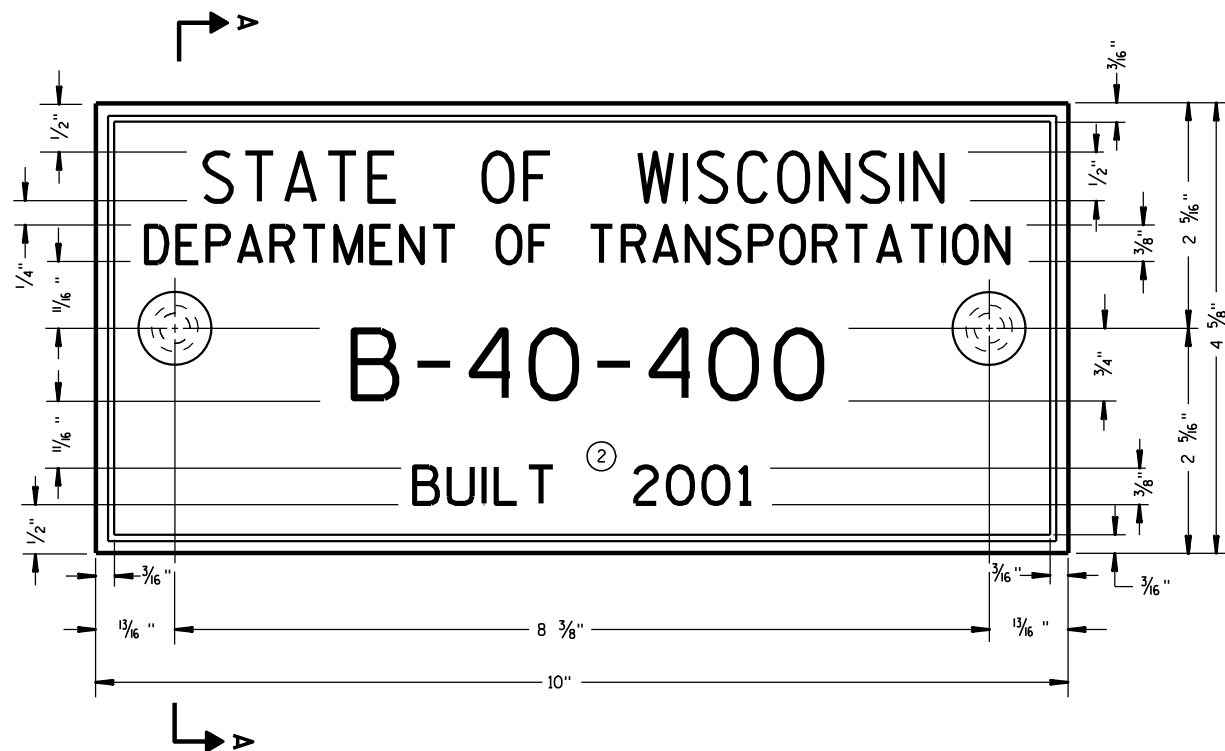
DATE

FHWA

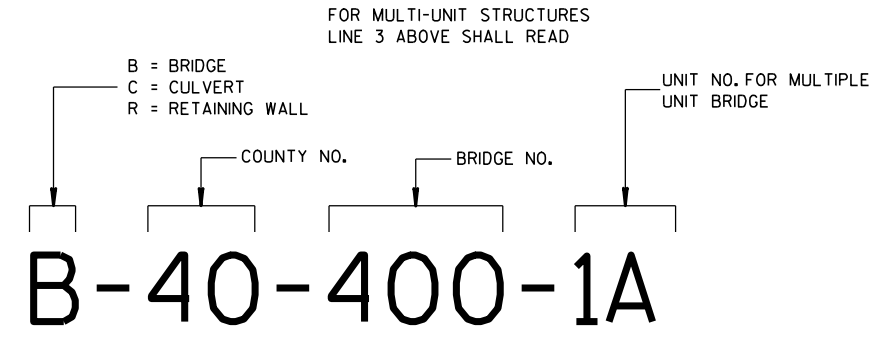
/S/ Beth Cannestra

CHIEF ROADWAY DEVELOPMENT

ENGINEER



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



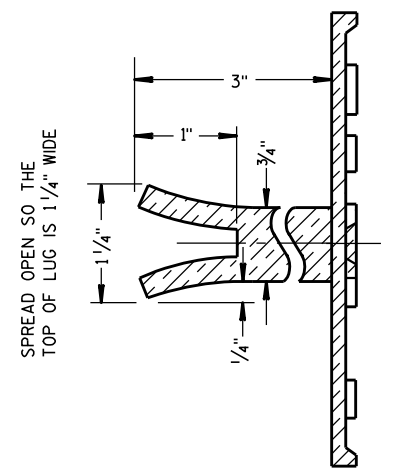
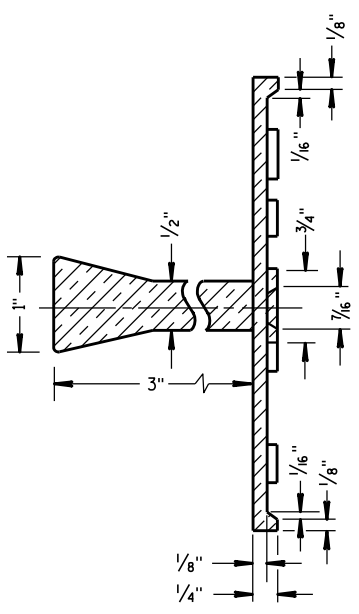
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

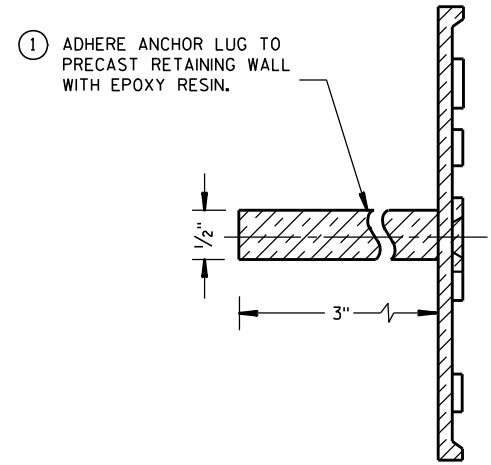
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

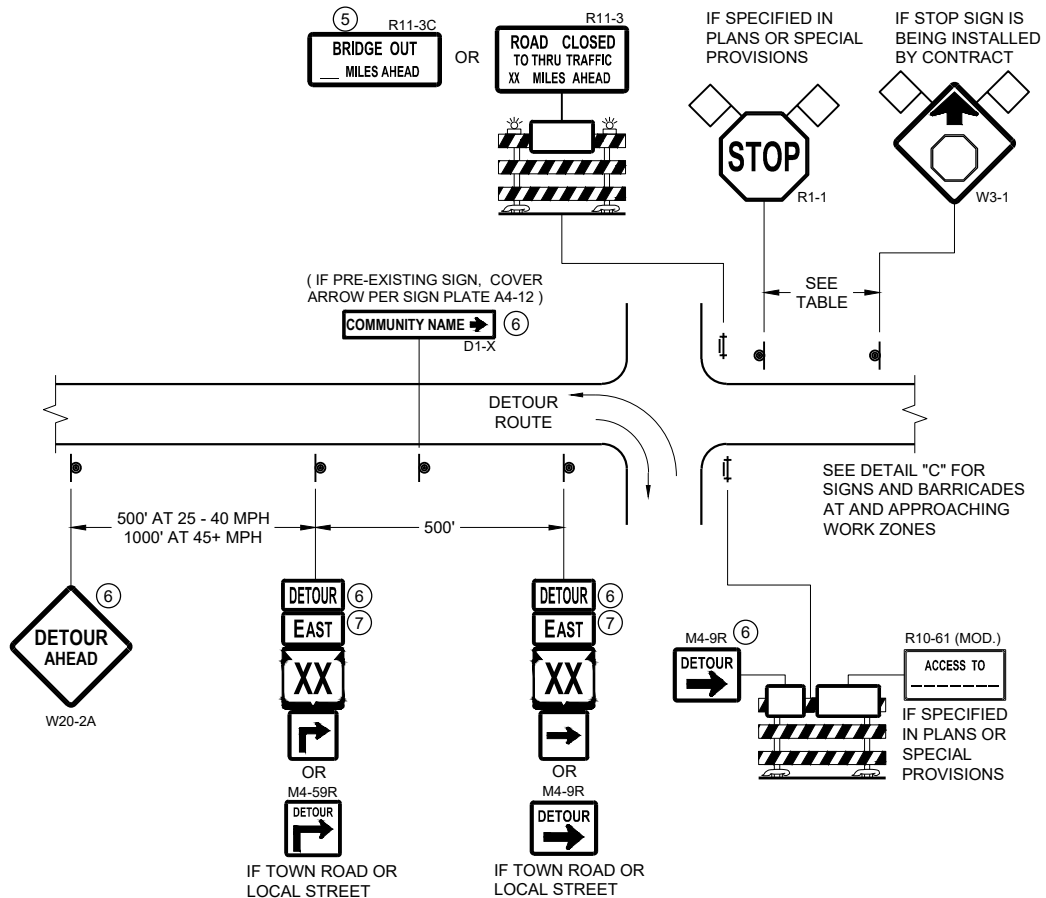


ALTERNATE LUG

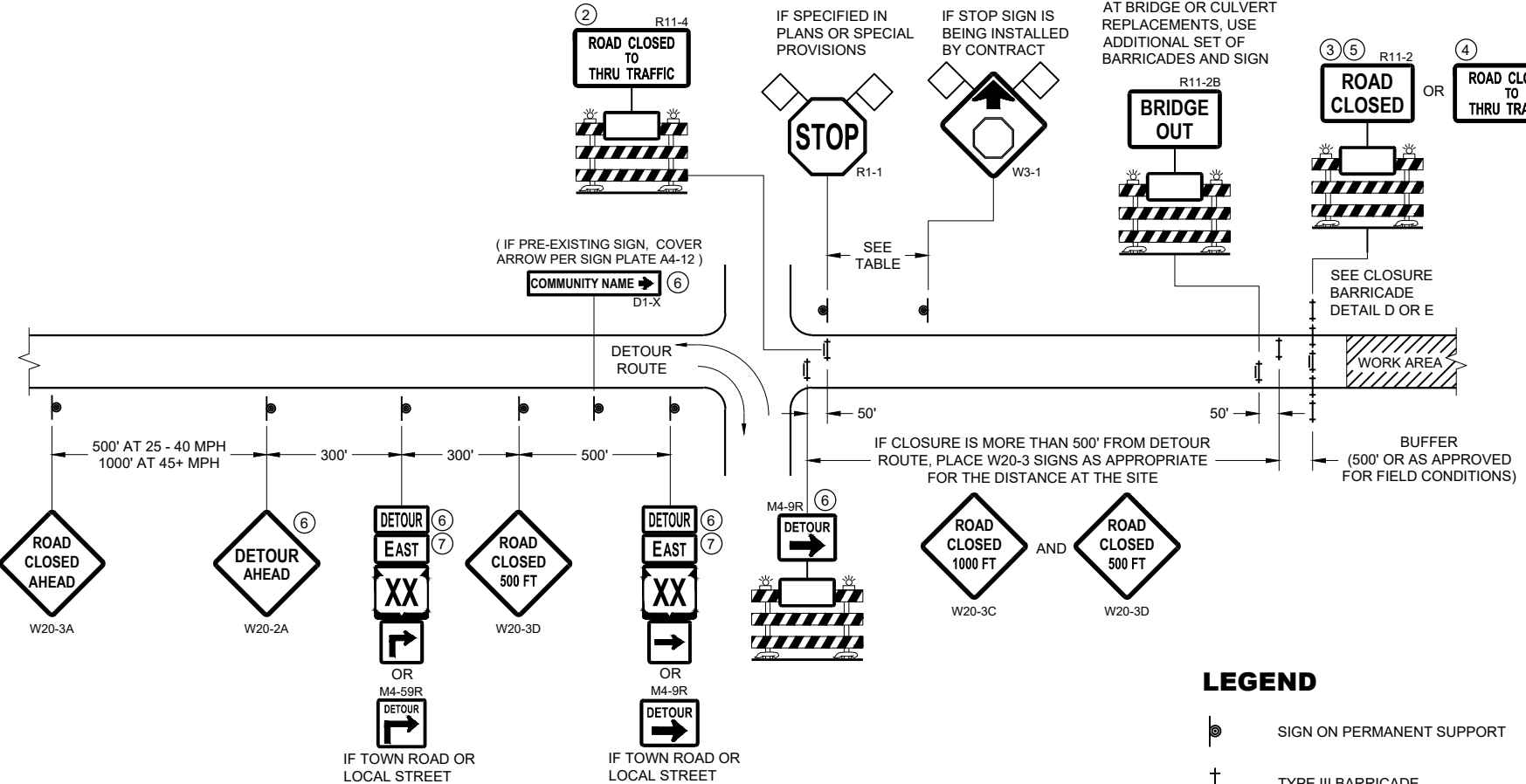


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

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



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



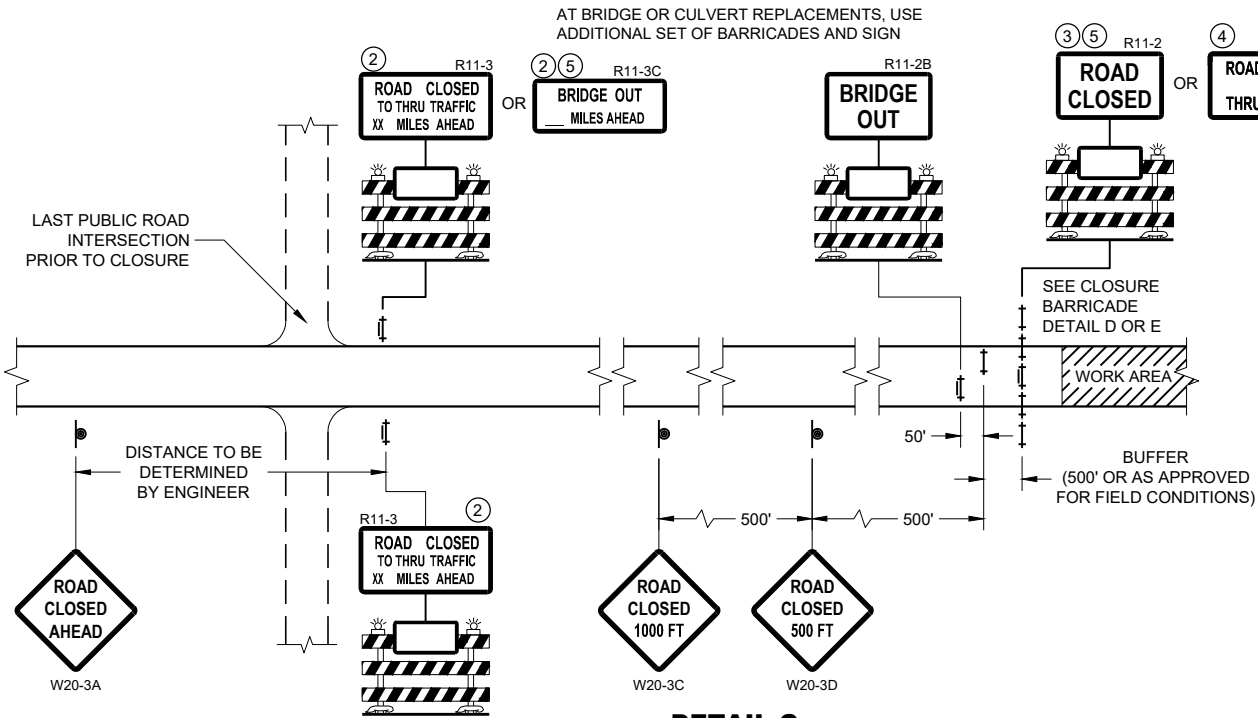
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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

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

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

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



SEE SDD 15C2 - SHEET "a" FOR LEGEND

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

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

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

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

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

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

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

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

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

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

LESS OTHERWISE NOTED BELOW:

R11 - 2 SHALL BE 48" X 30"

R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"

M4 - 9 SHALL BE 30" X 24"

M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)

M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)

M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)

MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)

D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

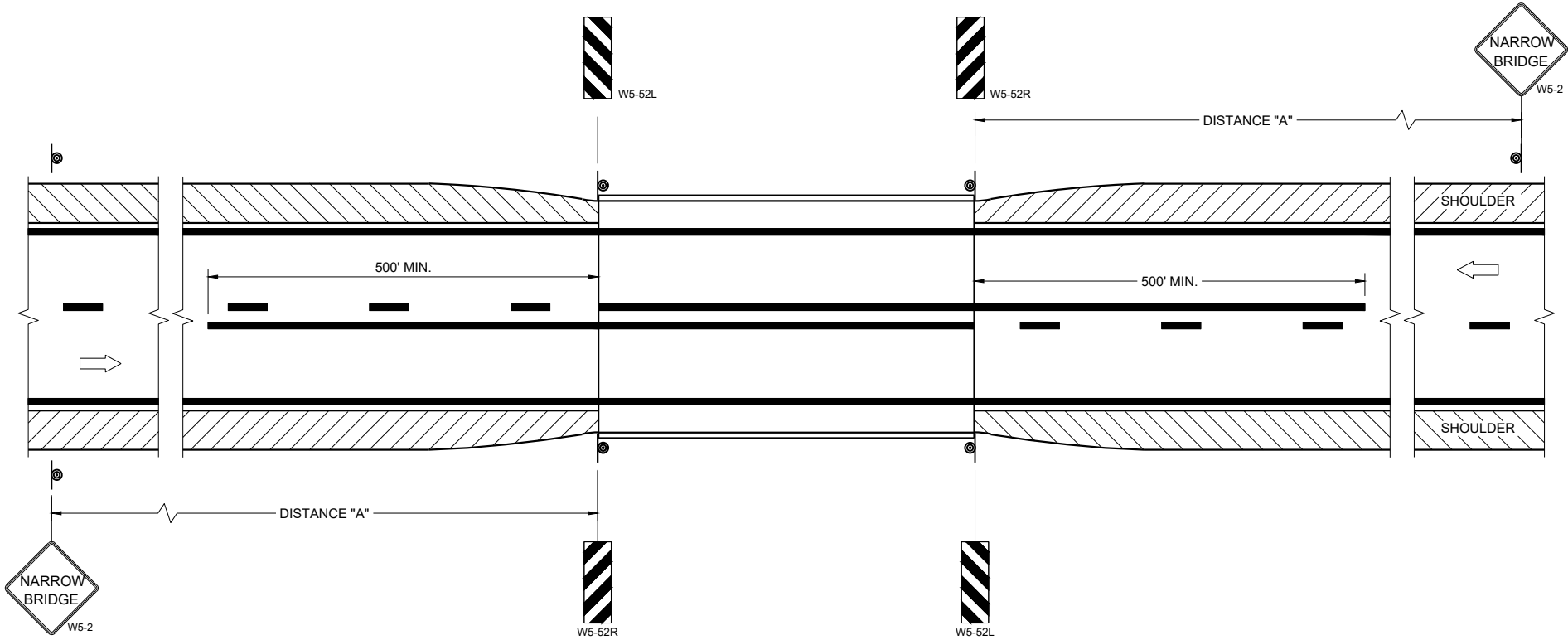
R1 - 1 SHALL BE 36" X 36"

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

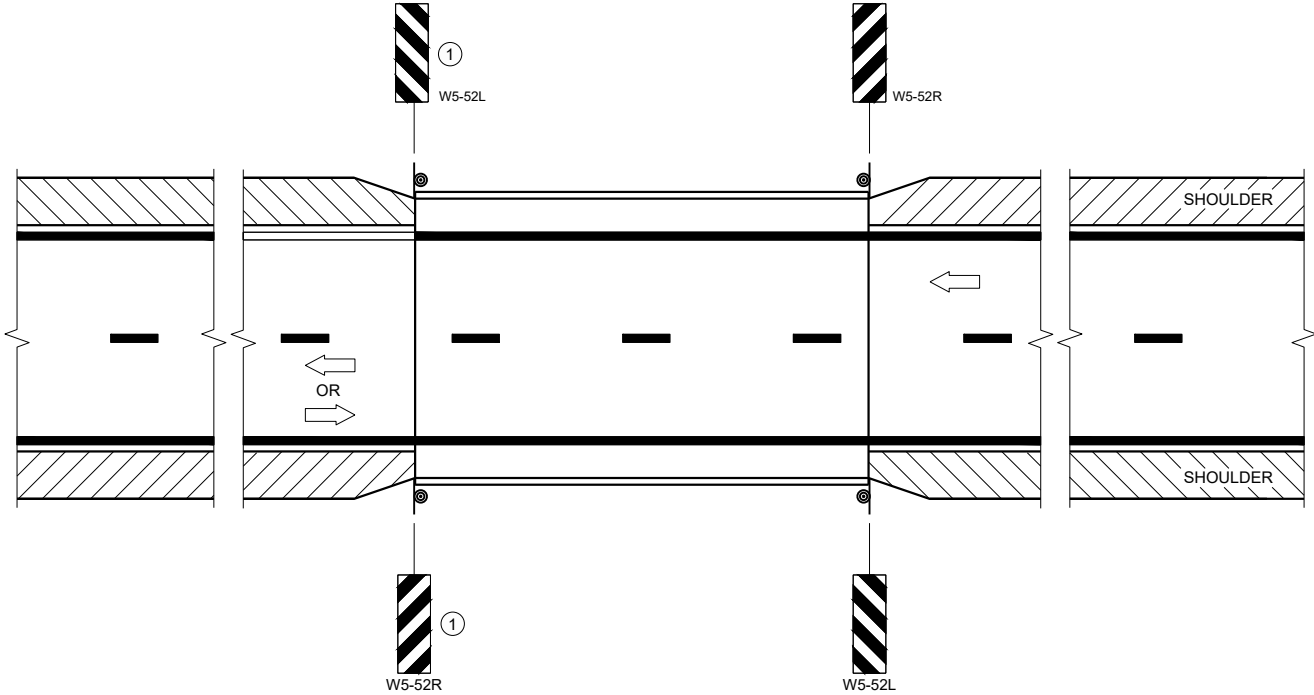
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtknecht
WORK ZONE ENGINEER



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



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

GENERAL NOTES

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

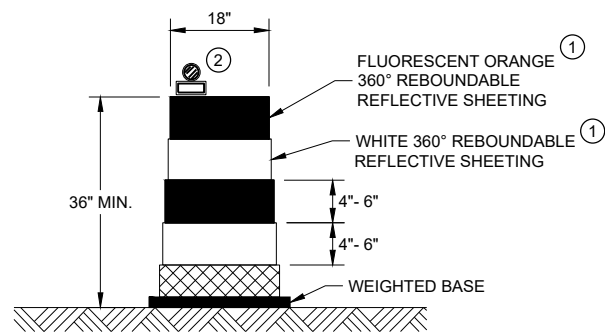
DISTANCE TABLE

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

**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

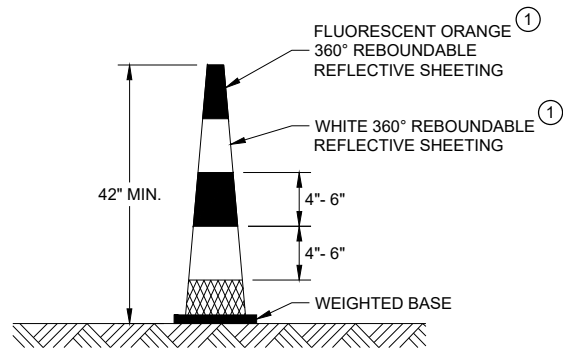
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



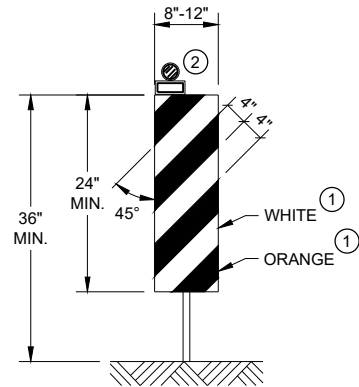
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



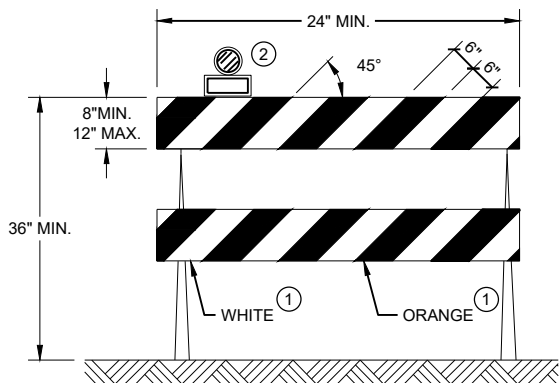
42" CONE

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



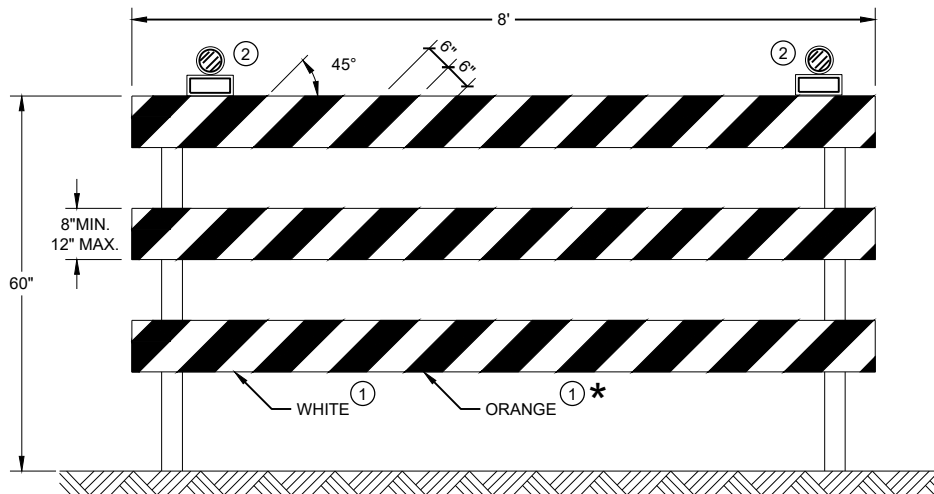
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

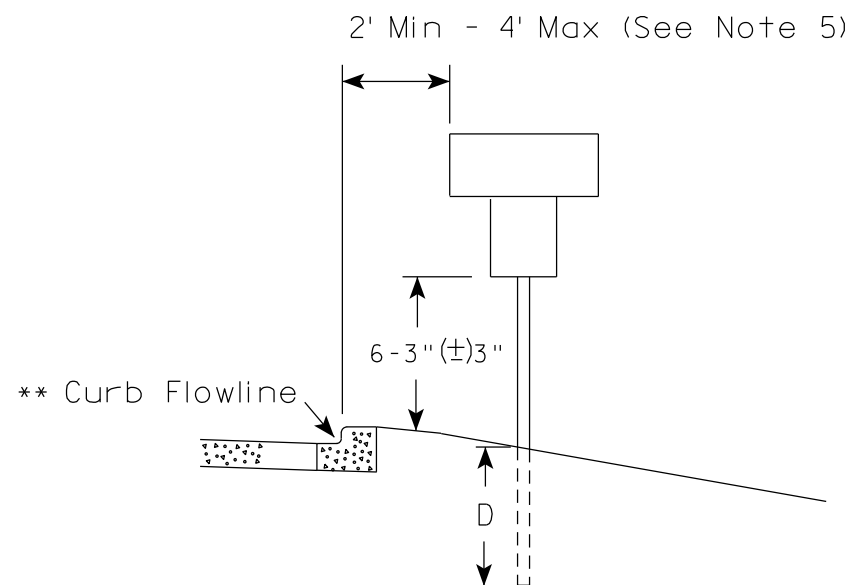
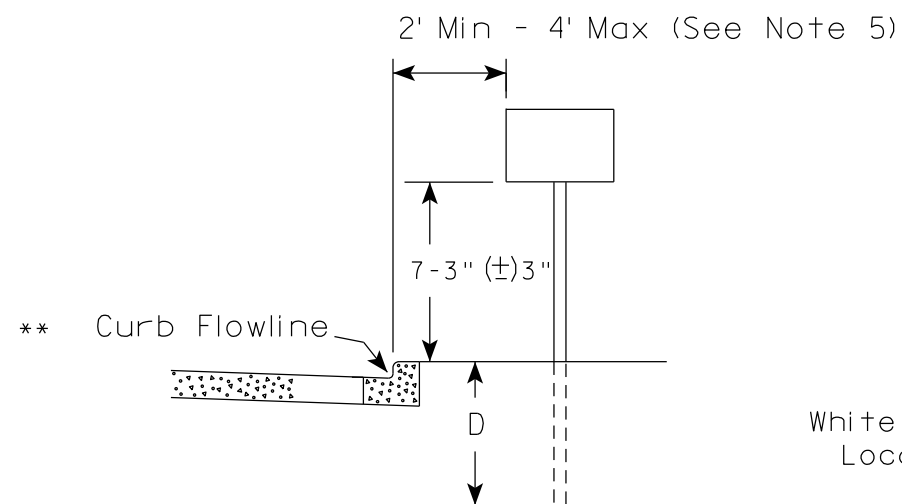
**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

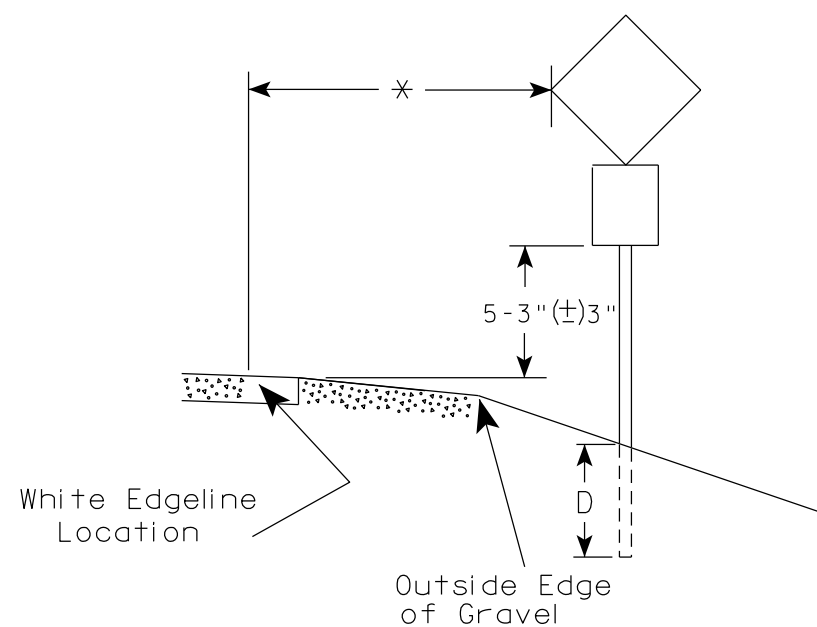
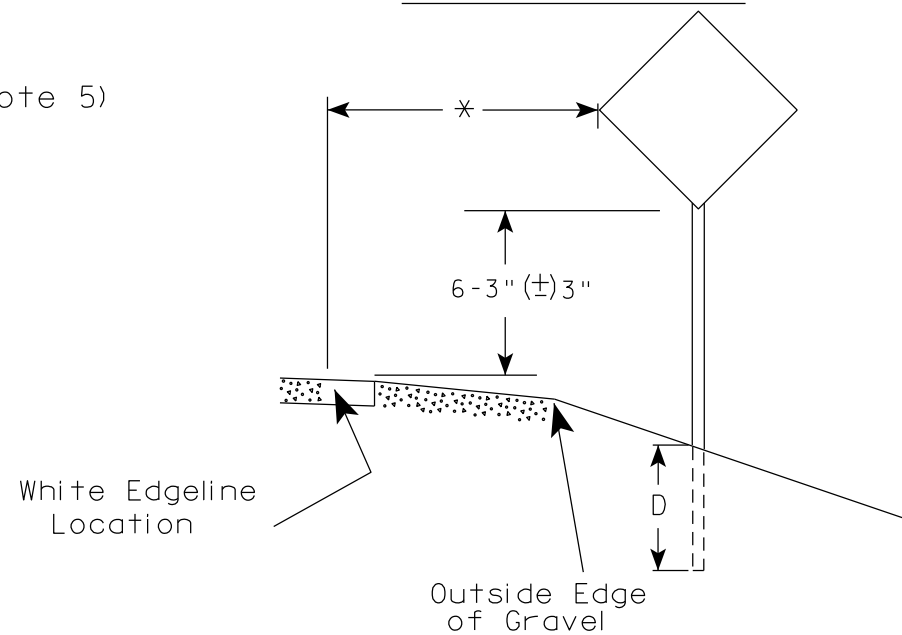
FHWA

URBAN AREA



* * 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.

RURAL AREA (See Note 2)



* 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.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

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

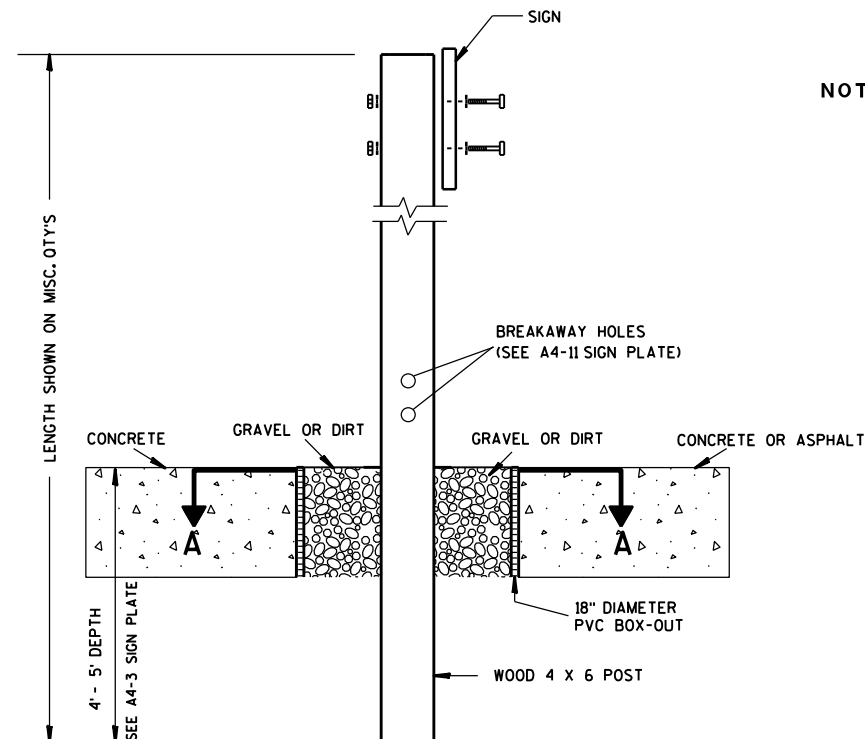
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

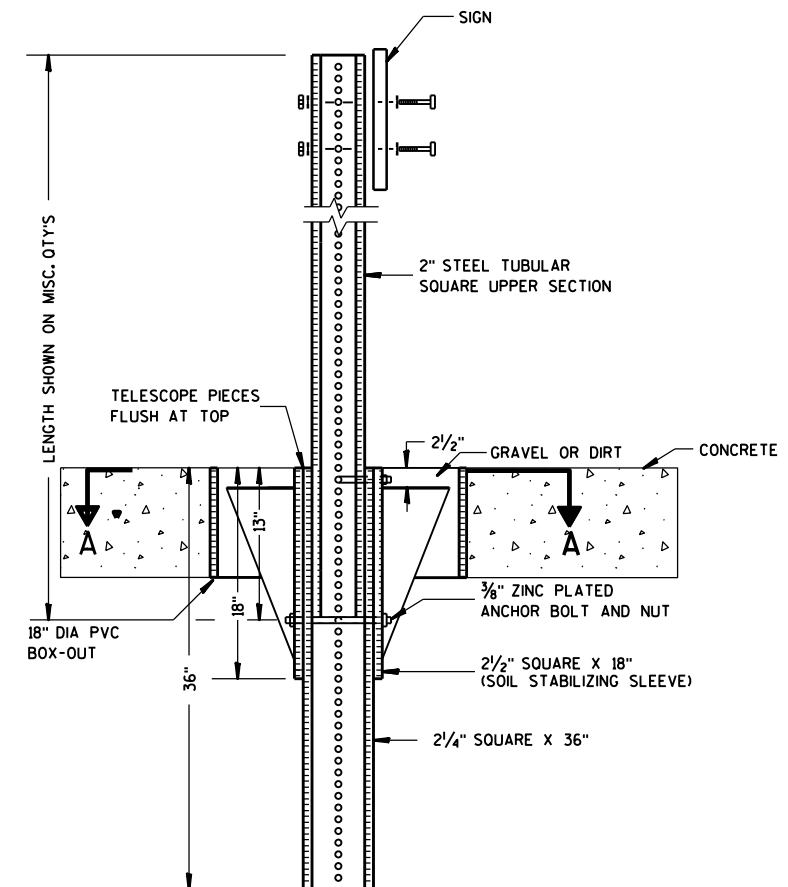
E



ELEVATION VIEW

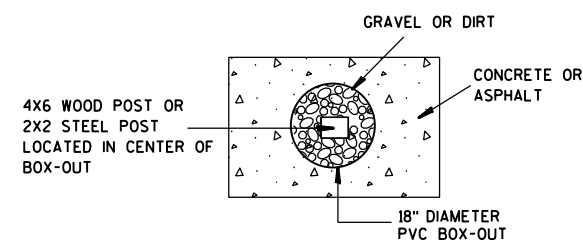
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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:

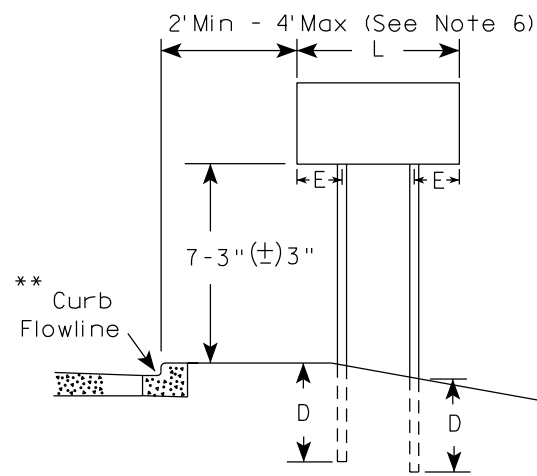
HWY:

COUNTY:

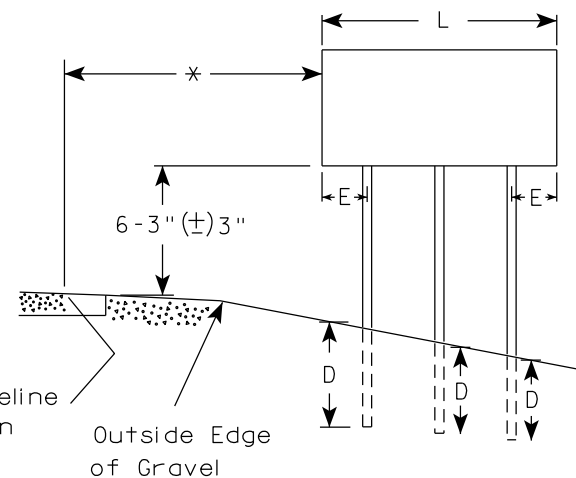
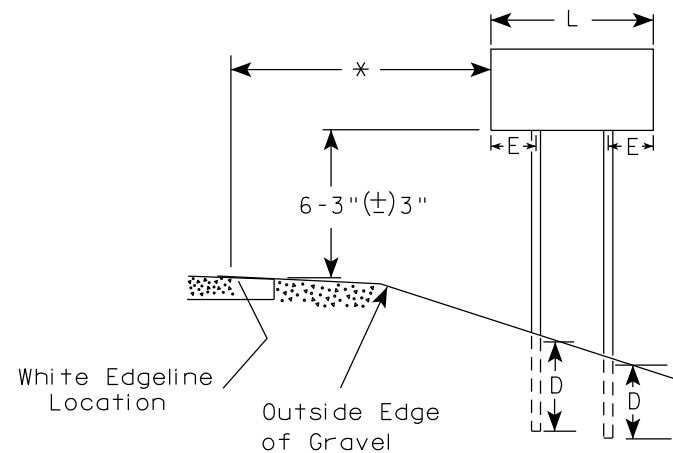
SHEET NO:

E

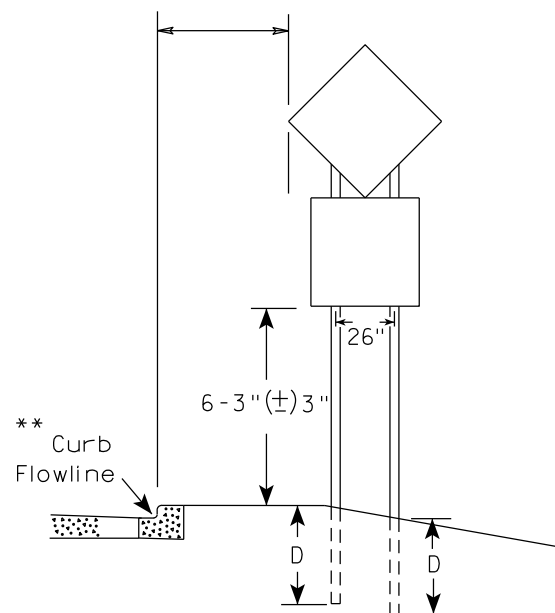
URBAN AREA



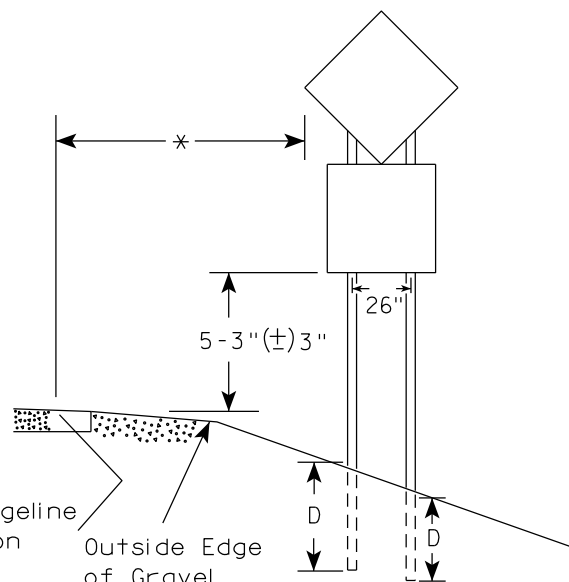
RURAL AREA (See Note 3)



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

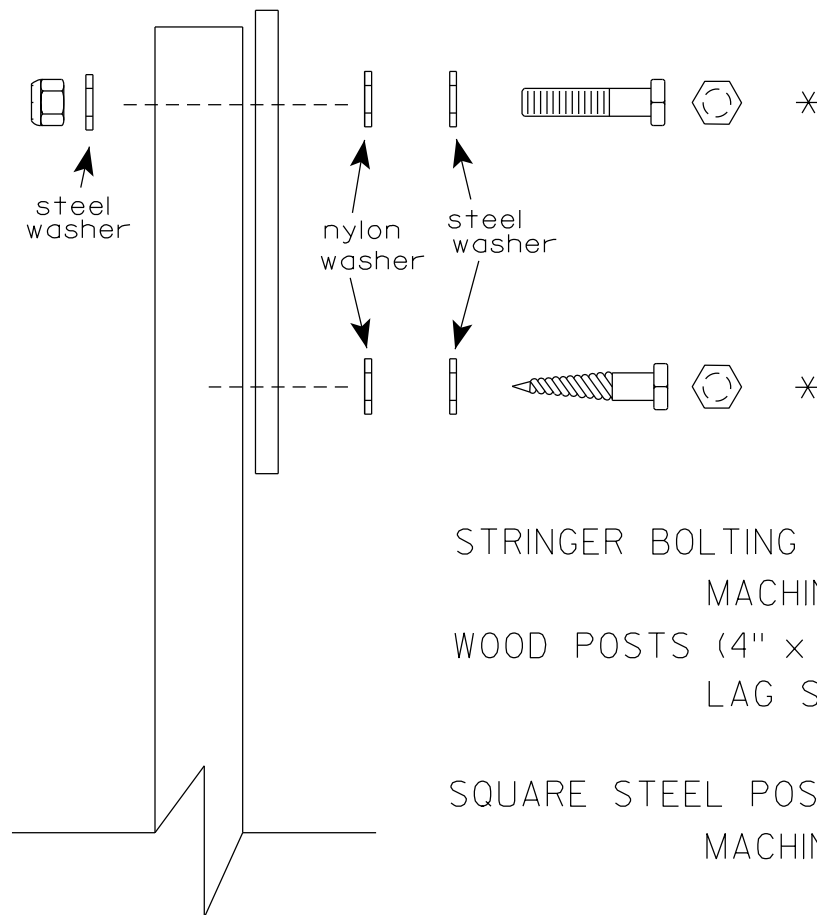
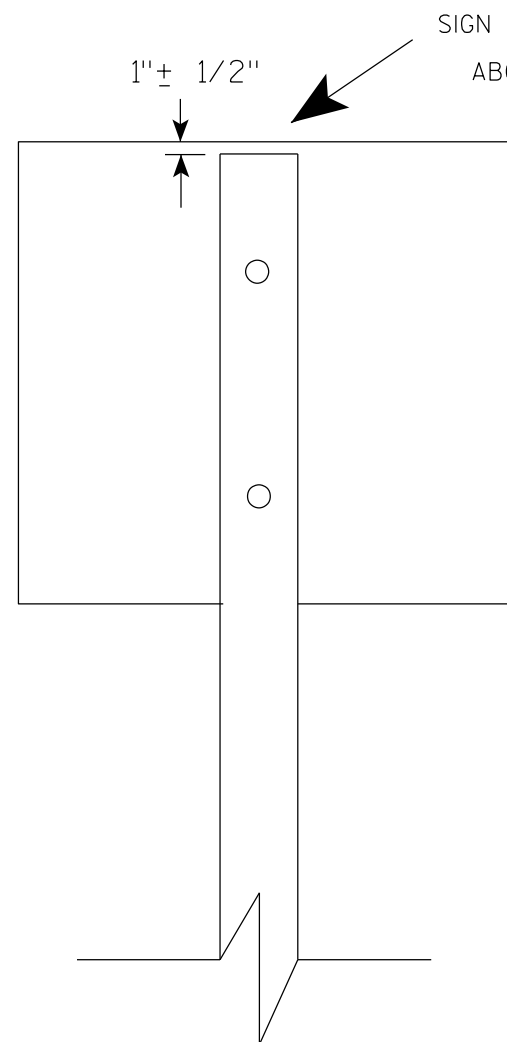
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

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.

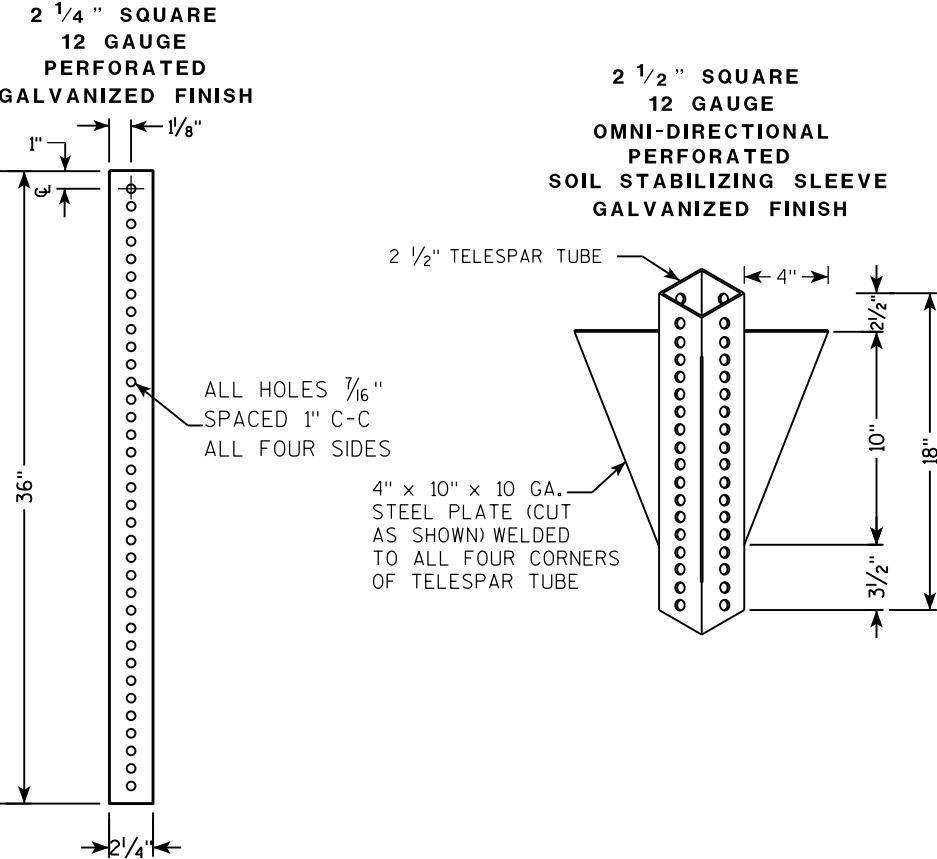
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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

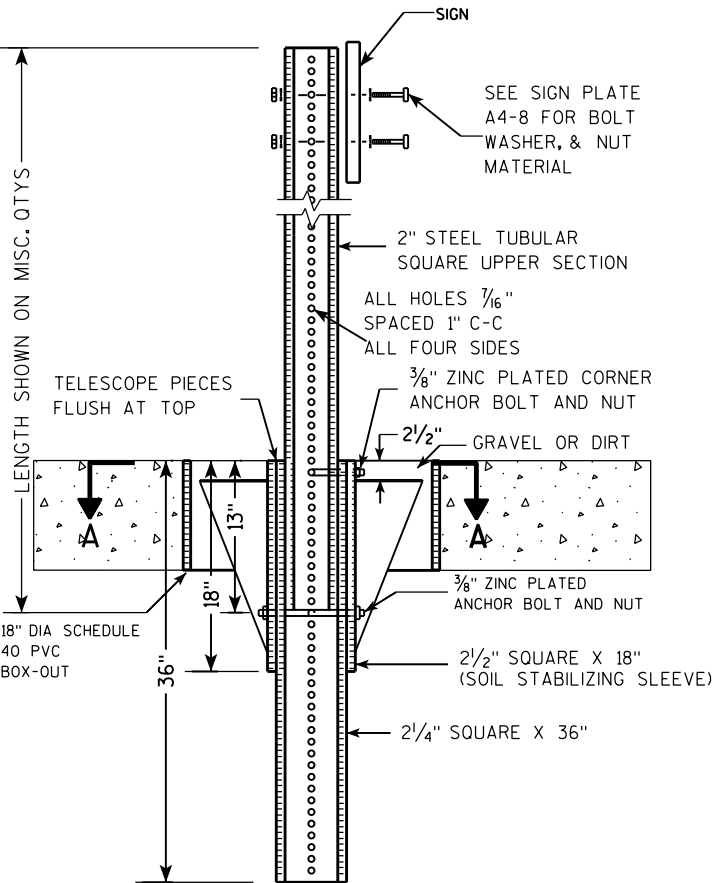
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

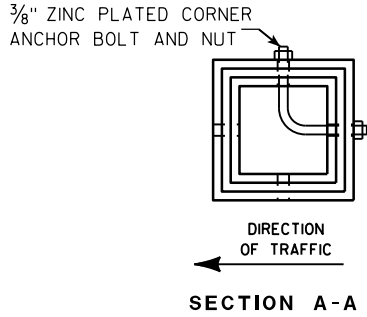
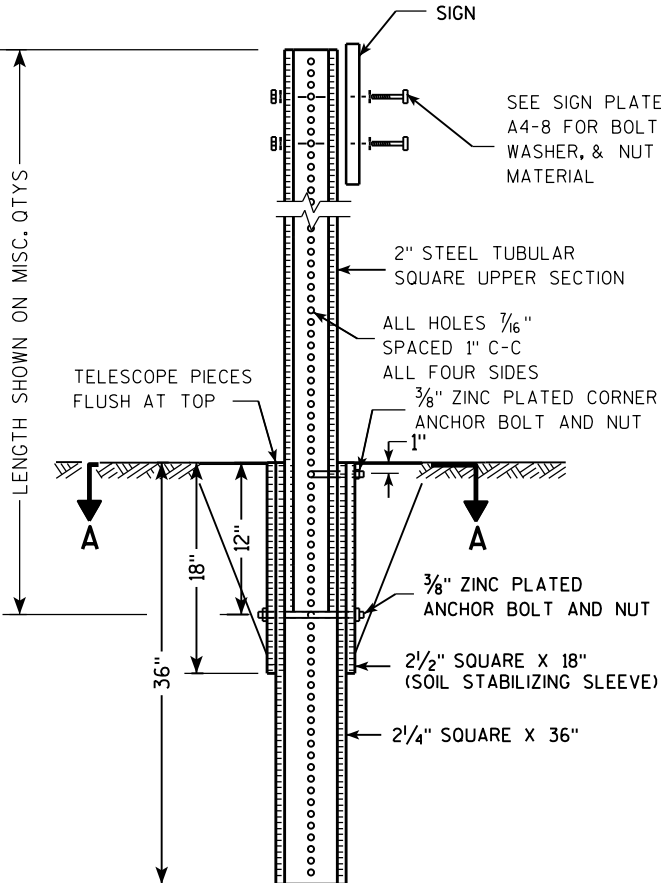
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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).

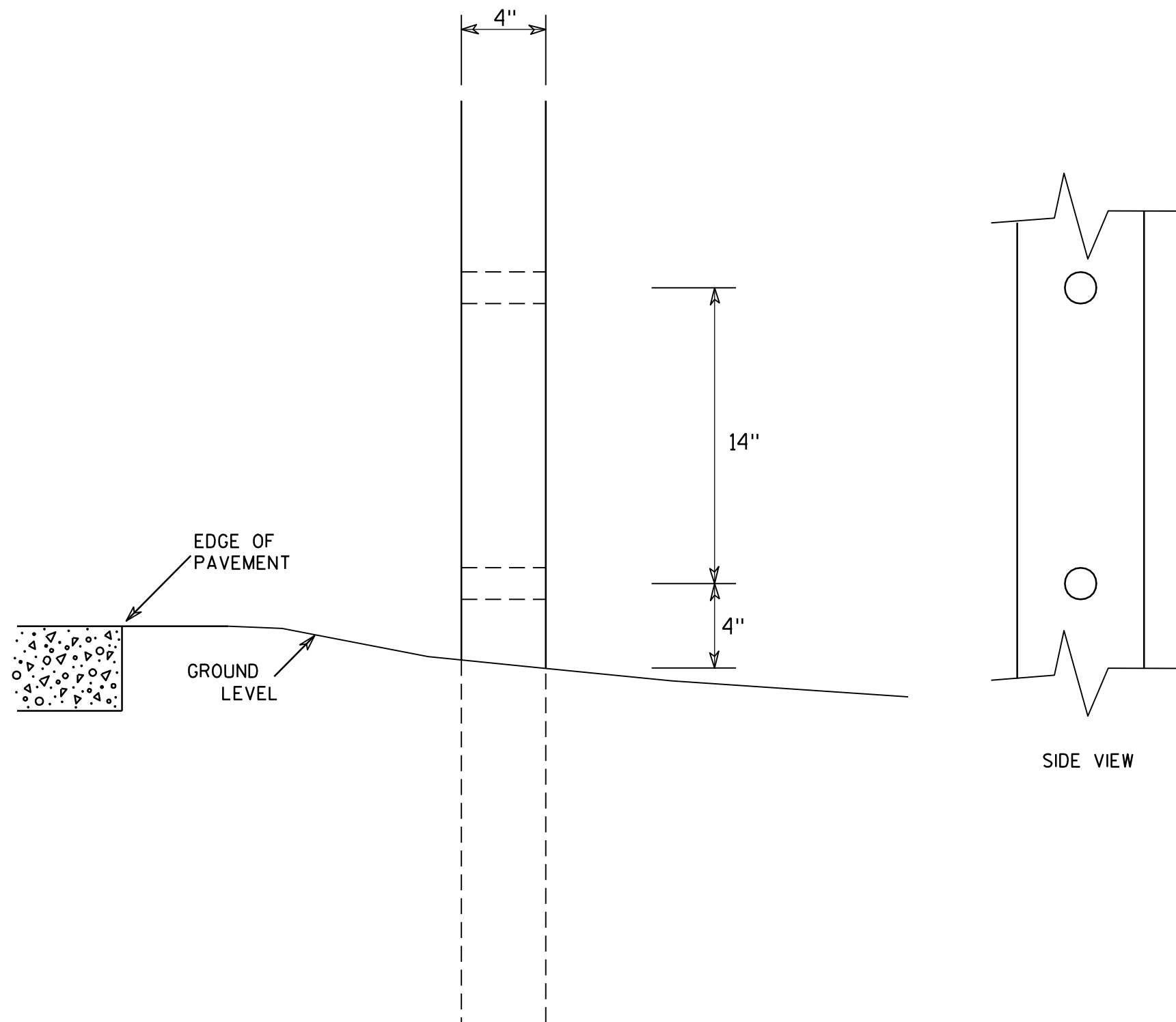
TUBULAR STEEL
SIGN POST
A4-9

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:

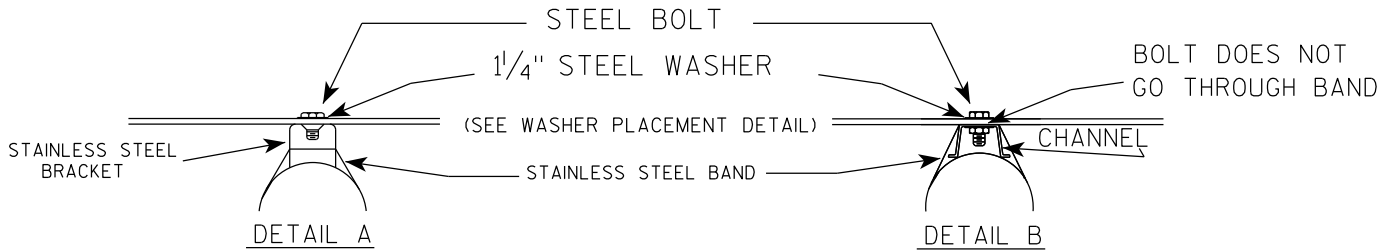
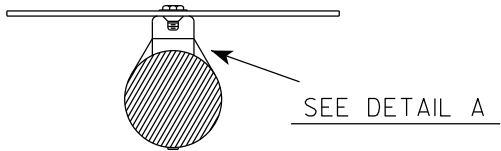
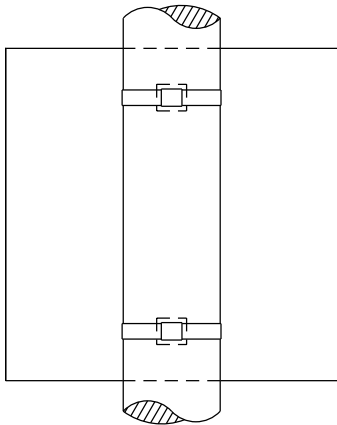
COUNTY:

SHEET NO:

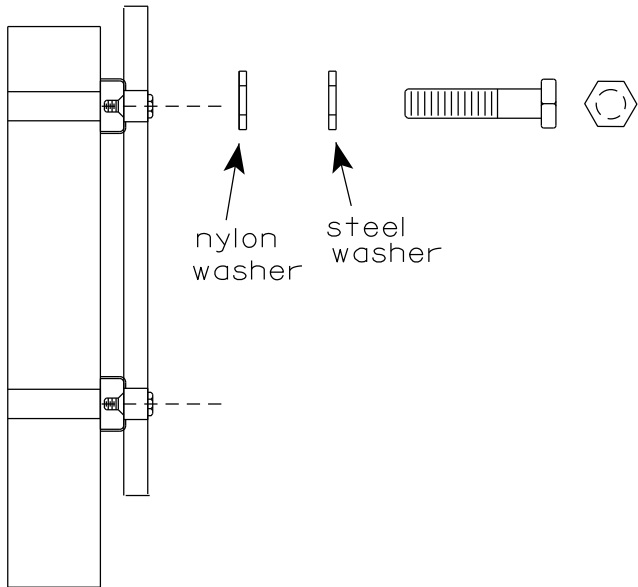
E

BANDING

SINGLE SIGN



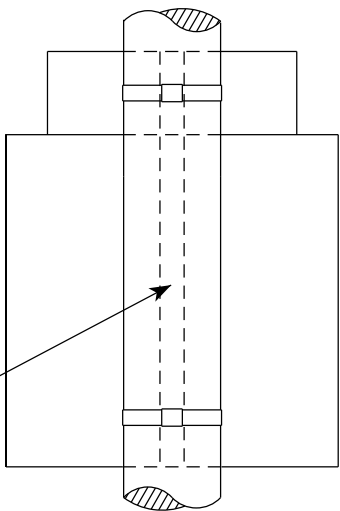
WASHER PLACEMENT



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



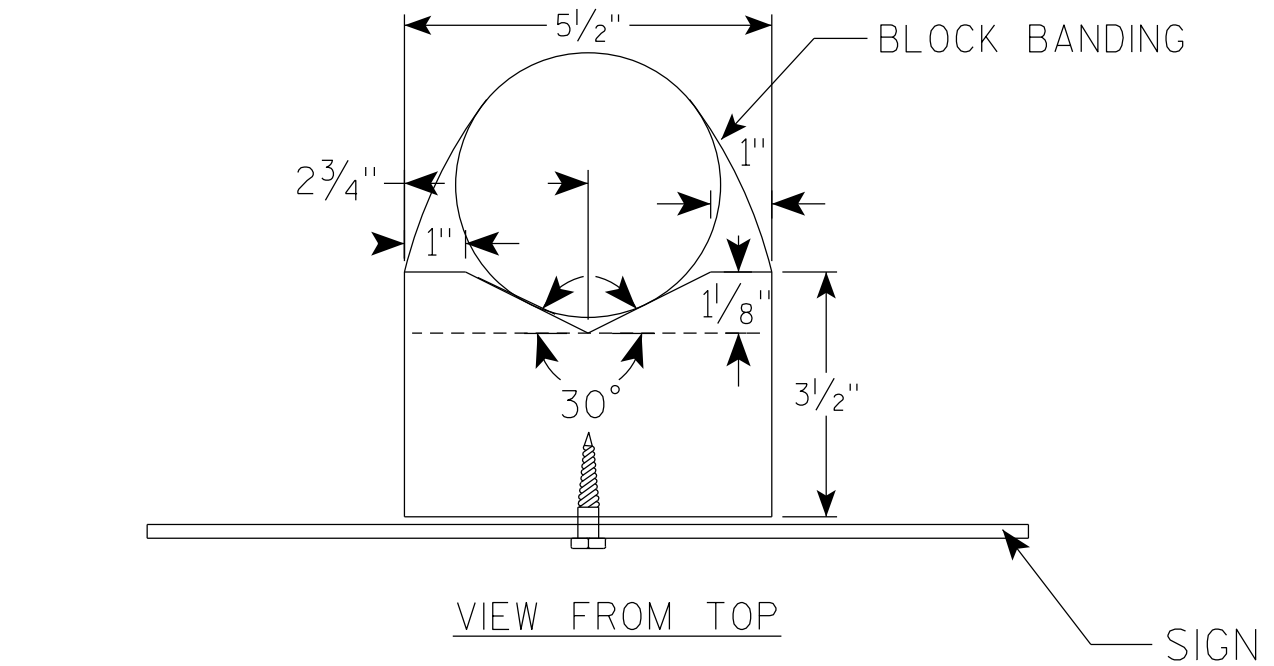
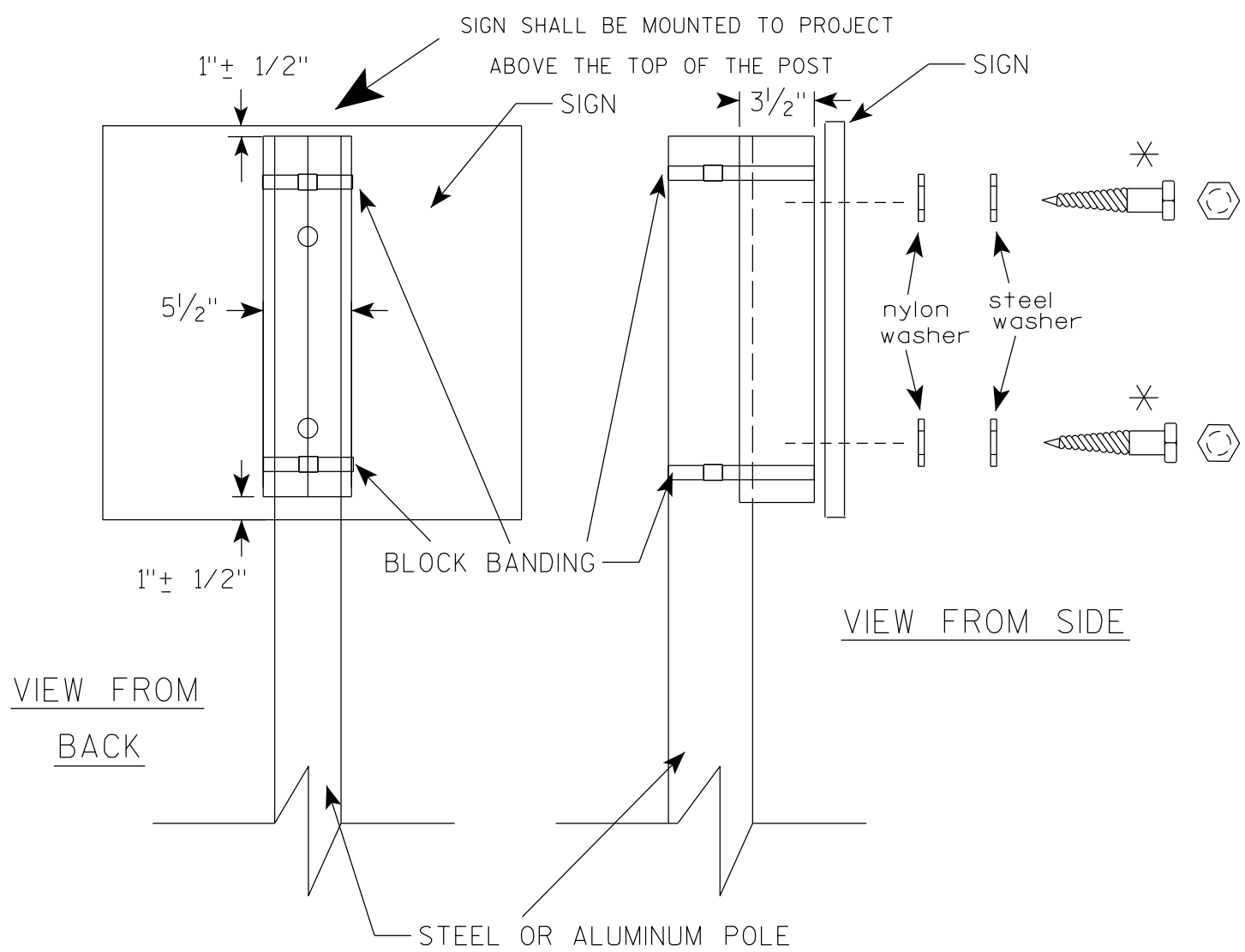
SEE DETAIL B

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



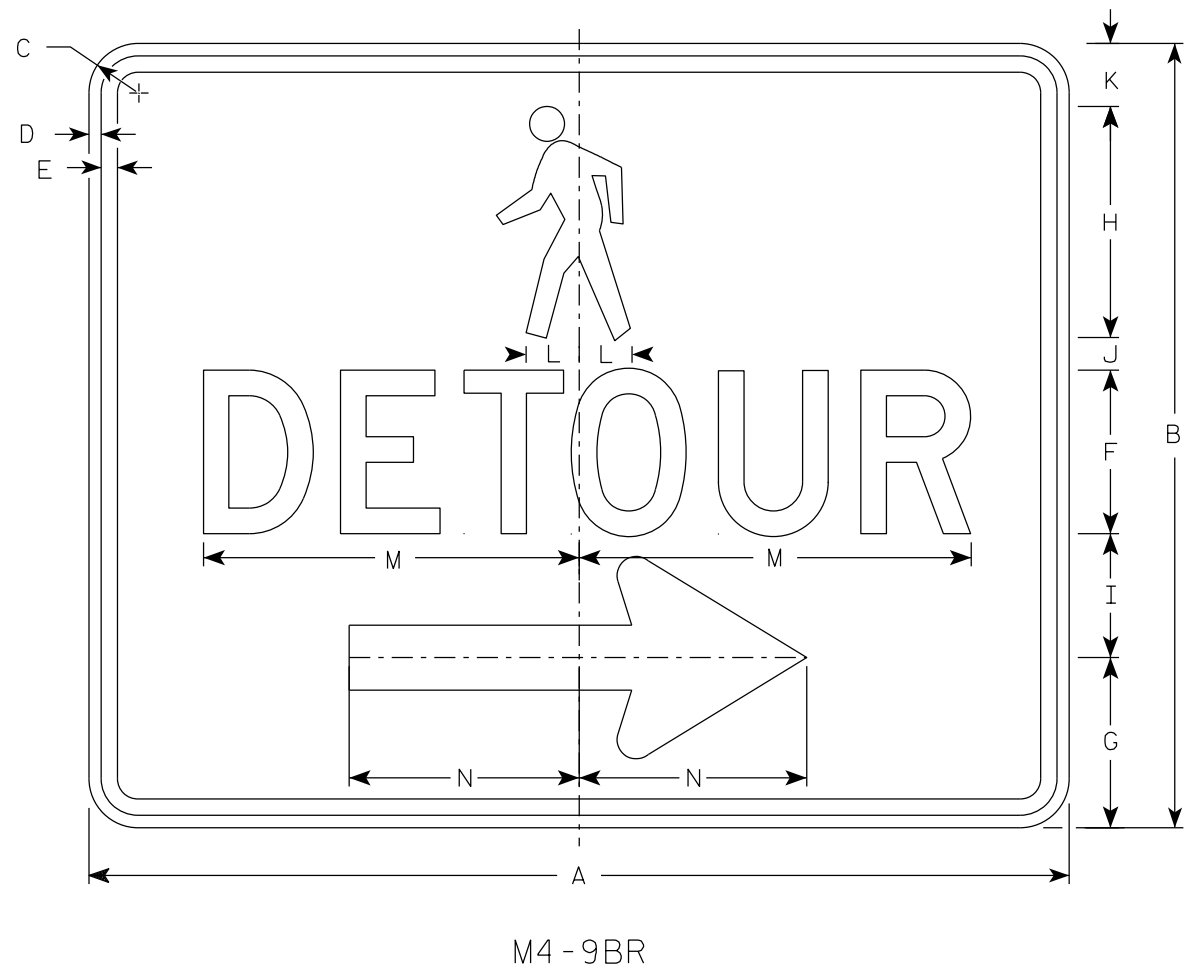
GENERAL NOTES

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

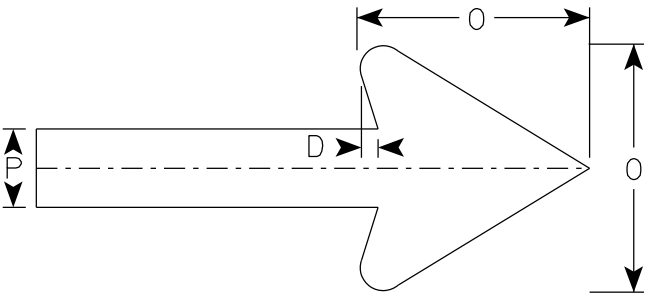
7



M4-9BR

NOTES

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



Arrow Detail

7

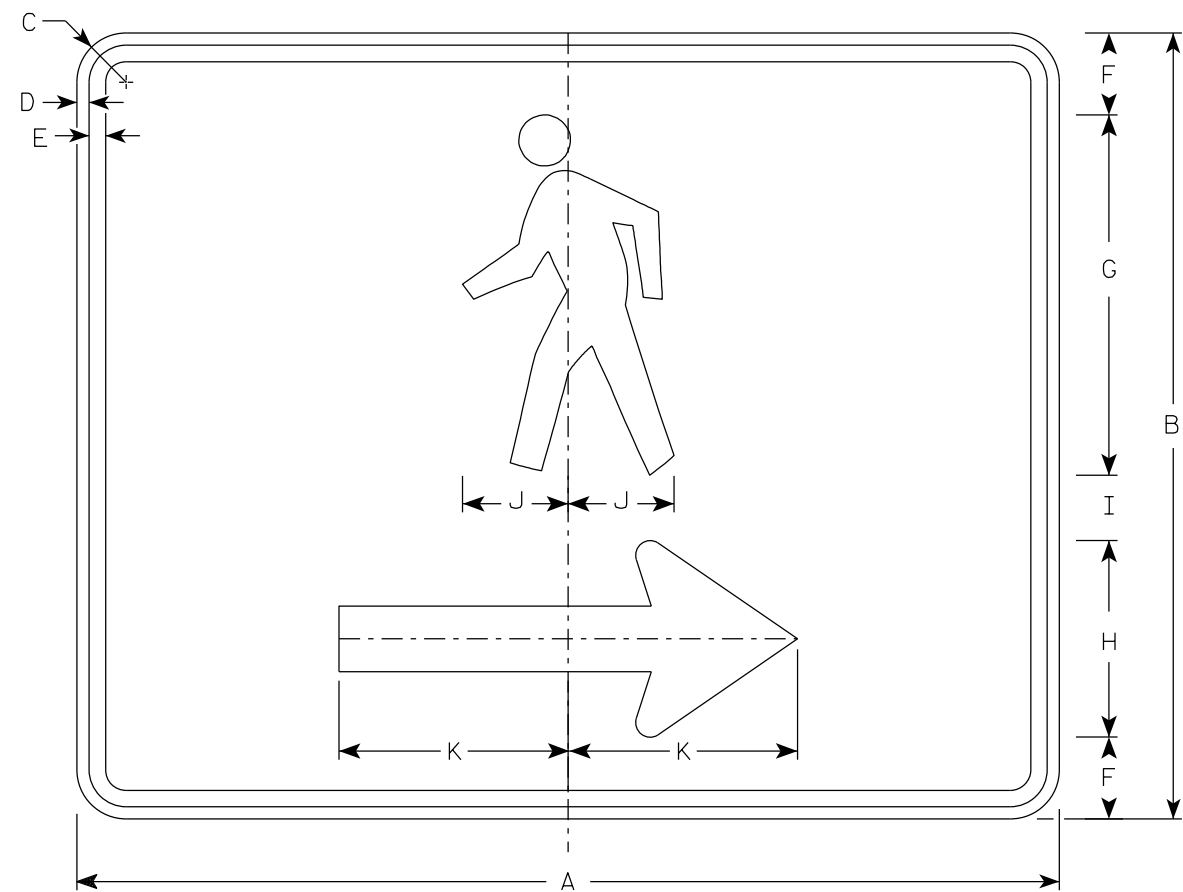
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	24	1 1/2	3/8	1/2	5	5 1/4	7 1/8	3 3/4	1	1 1/8	1 5/8	11 3/4	7	6	2											5.0
2M	30	24	1 1/2	3/8	1/2	5	5 1/4	7 1/8	3 3/4	1	1 1/8	1 5/8	11 3/4	7	6	2											5.0
3																											
4																											
5																											

STANDARD SIGN
M4-9B L&R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

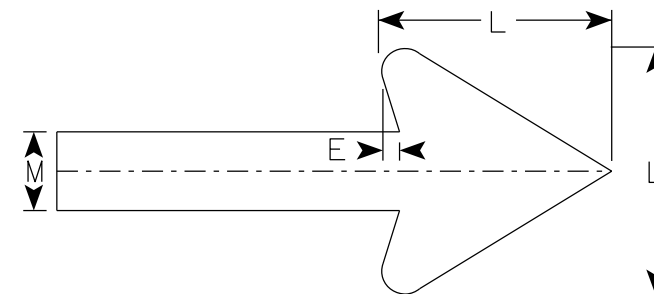
DATE 2/9/2023 PLATE NO. M4-9B.4



M4-60R

NOTES

1. Sign is Type II- Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M4-60L is the same as M4-60R except the arrow is reversed.

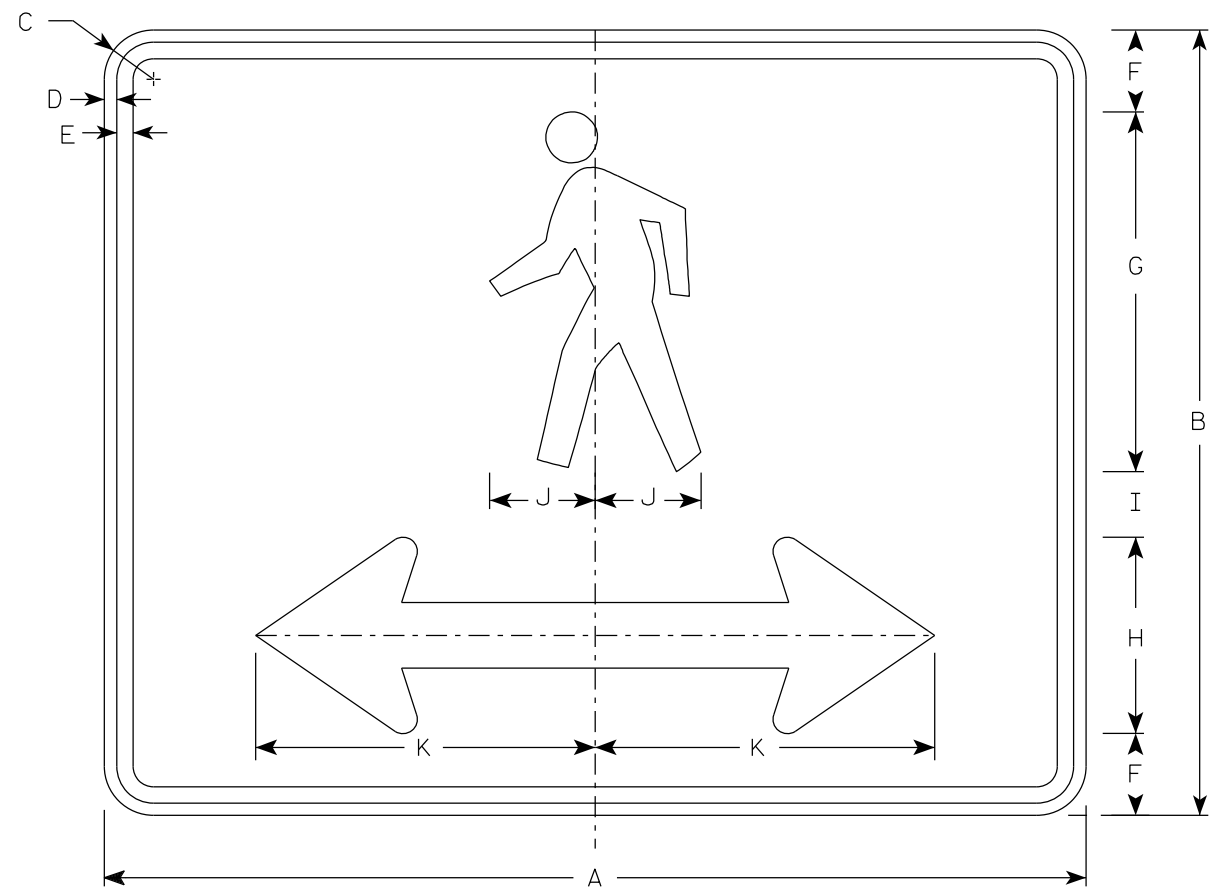


Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	24	1 1/2	3/8	1/2	2 1/2	11	6	2	3 1/4	7	6	2														5.00
2M	30	24	1 1/2	3/8	1/2	2 1/2	11	6	2	3 1/4	7	6	2														5.00
3																											
4																											
5																											

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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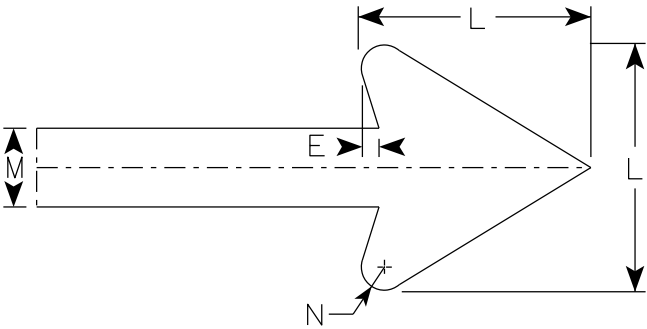
7



M4-60D

NOTES

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



Arrow Detail

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	24	1 1/2	3/8	1/2	2 1/2	11	6	2	3 1/4	10 3/8	6	2	3/8													5.00
2M	30	24	1 1/2	3/8	1/2	2 1/2	11	6	2	3 1/4	10 3/8	6	2	3/8													5.00
3																											
4																											
5																											

PROJECT NO:

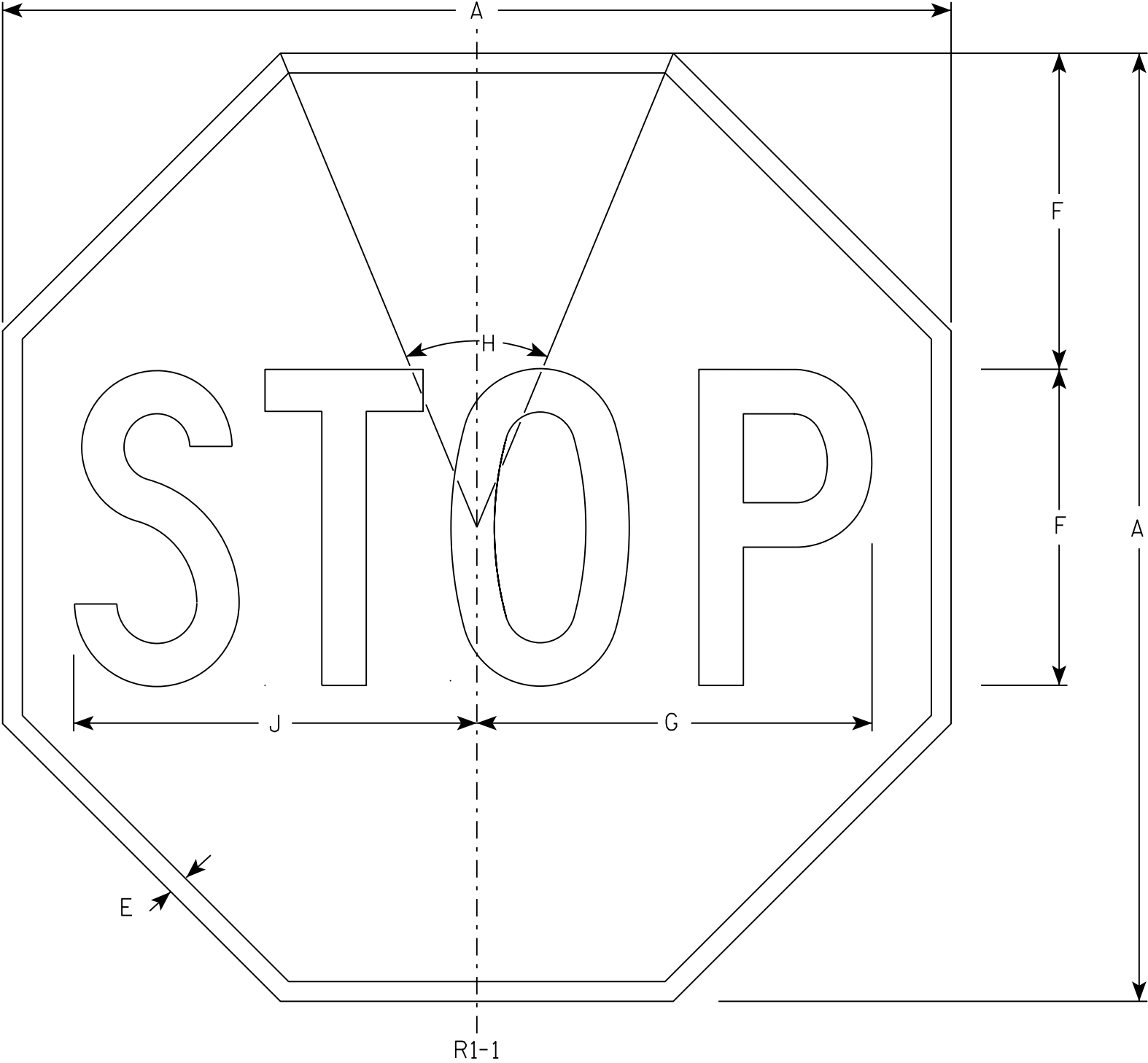
HWY:

COUNTY:

SHEET NO:

E

7



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Red
Message - White
- 3. Message Series - C

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN

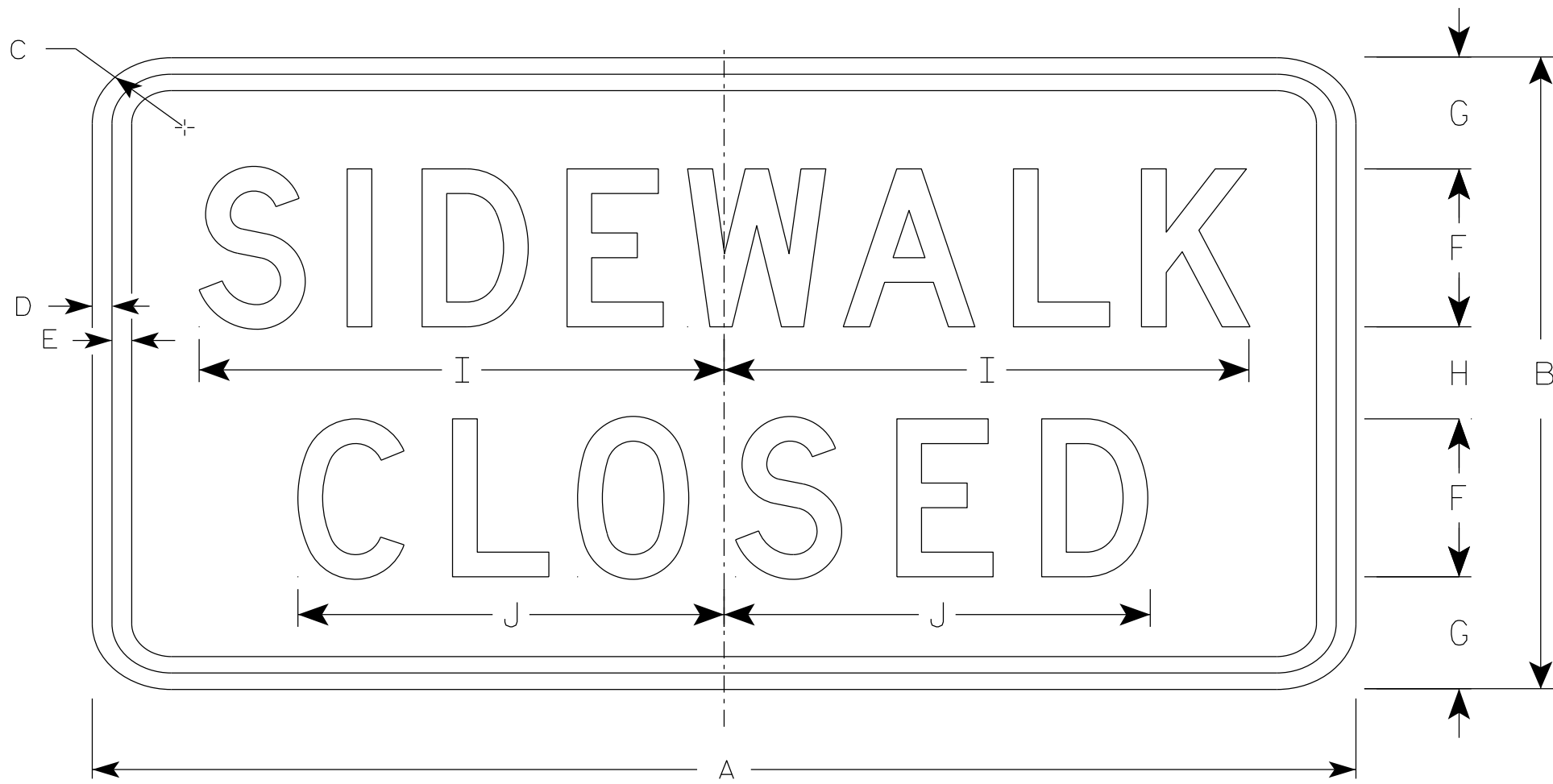
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

7



R9-9

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - Message - Black
- 3. Message Series - C
- 4. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/2	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 1/2	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 1/2	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

STANDARD SIGN
R9-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

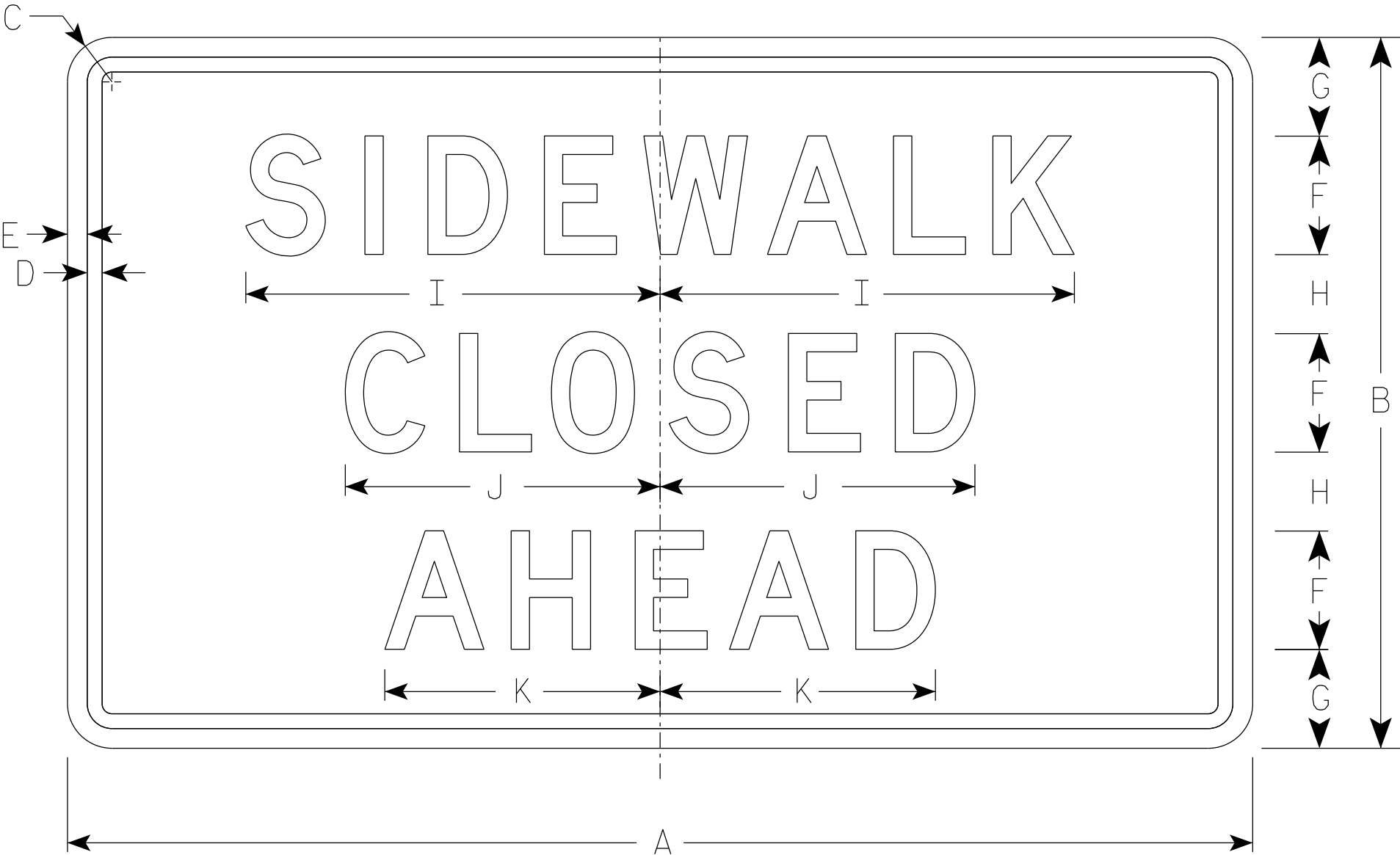
DATE 1/24/24 PLATE NO. R9-9.7

NOTES

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

Background - White

Message - Black
3. Message Series - D



R9-9A

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	30	18	1 1/2	3/8	1/2	3	2 1/2	2	10 1/2	8	7																3.75
2M	30	18	1 1/2	3/8	1/2	3	2 1/2	2	10 1/2	8	7																3.75
3																											
4																											
5																											

PROJECT NO:

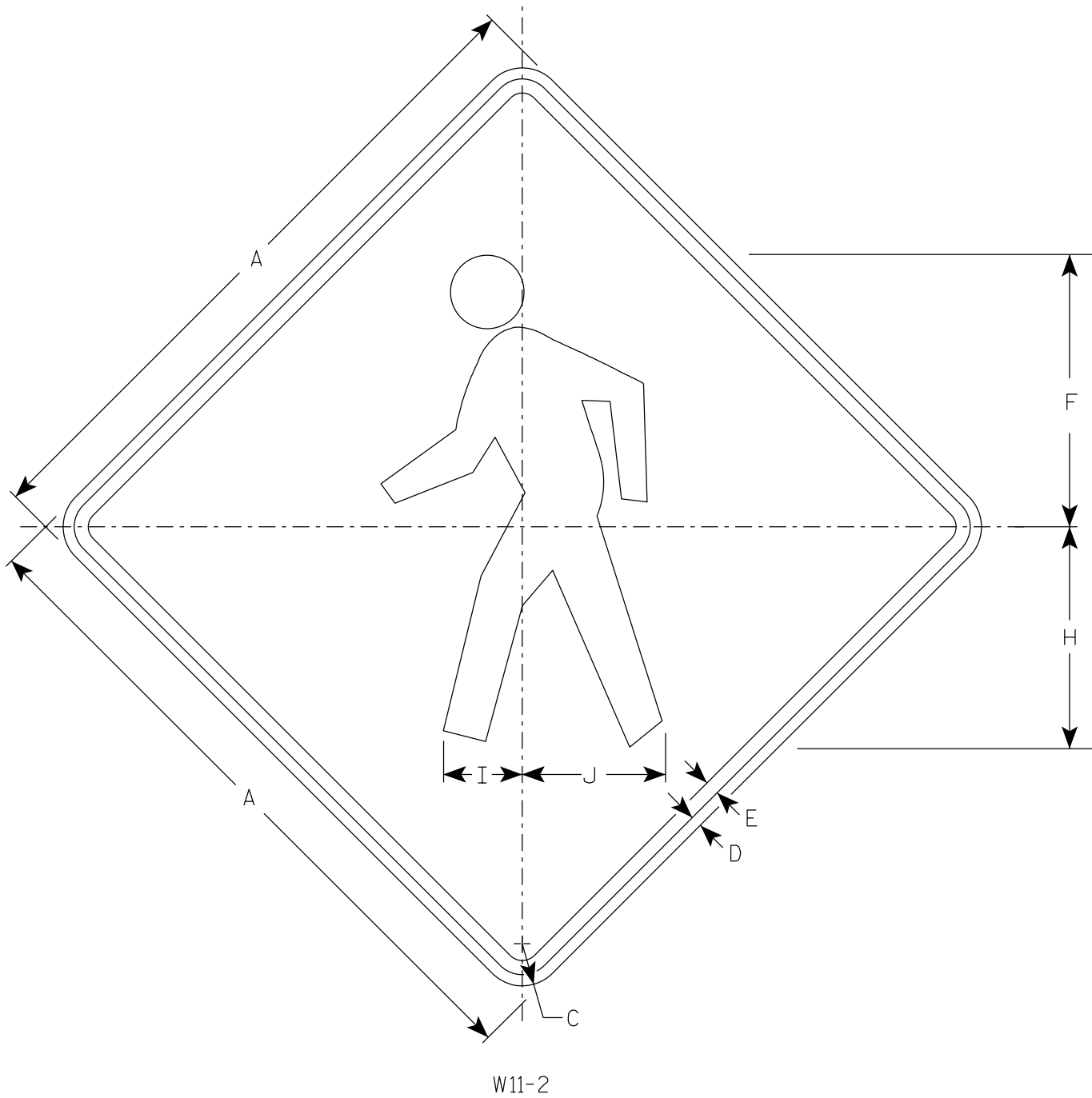
HWY:

COUNTY:

SHEET NO:

E

7



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Yellow
 - Message - Black

7

W11-2

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	24		1 1/2	3/8	1/2	9 3/4		7 7/8	2 7/8	5 1/8																	4.0
2S	30		1 7/8	1/2	5/8	12 1/8		9 7/8	3 1/2	6 3/8																	6.25
2M	36		2 1/4	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
3	36		2 1/4	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
4	48		3	3/4	1	19 3/8		15 3/4	5 5/8	10 1/4																	16.0
5																											

STANDARD SIGN
W11-2

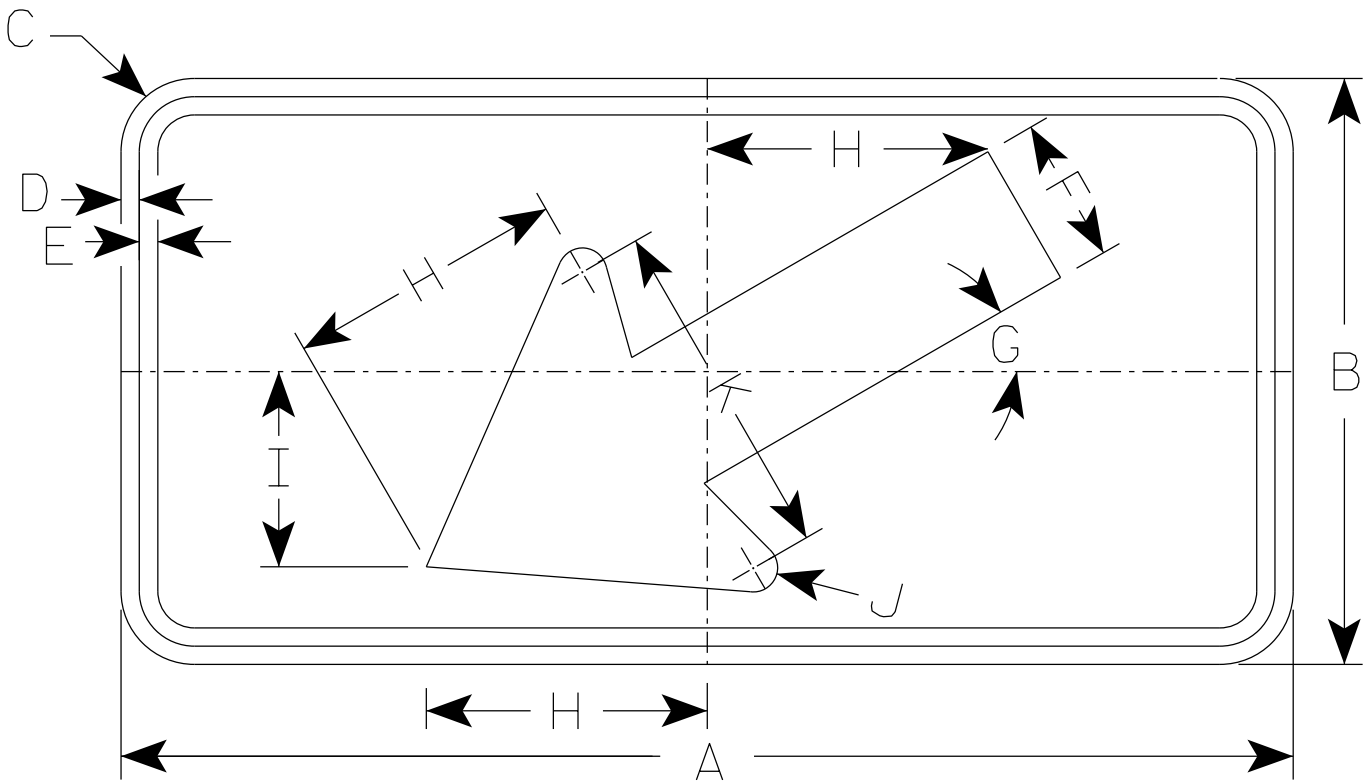
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/15/2023 PLATE NO. W11-2.9

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Yellow
Message - Black
- 3. W16-7R is the same as W16-7L
except the arrow is reversed along
the vertical centerline.



W16-7L

- * For 36" x 36" Warning Signs, use 30" x 18" W16-7L signs.
- * For 48" x 48" Warning Signs, use 48" x 24" W16-7L signs.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/2	3/8	3/8	3	30°	5 3/4	4	1/2	7																2.0
2M	30	18	1 1/2	3/8	1/2	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
3	30	18	1 1/2	3/8	1/2	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
4	48	24	1 7/8	1/2	5/8	6	30°	11 1/2	8	1	14																8.0
5																											

STANDARD SIGN

W16-7

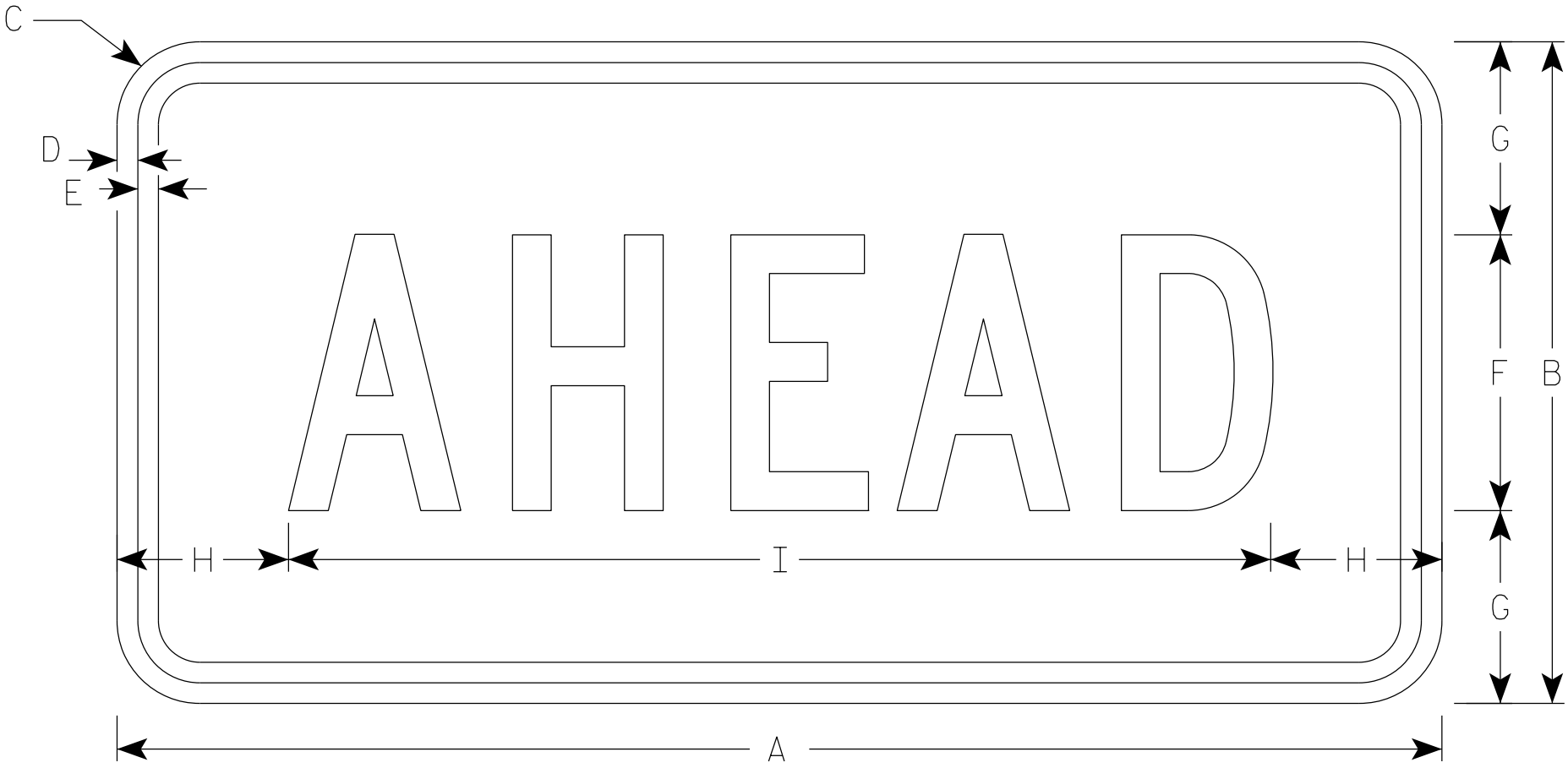
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/9/2024 PLATE NO. W16-7.9

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Yellow
Message - Black
- 3. Message Series - C



W16-9P

- * For 36" x 36" Warning Signs, use 30" x 18" W16-9P signs.
- * For 48" x 48" Warning Signs, use 48" x 24" W16-9P signs.

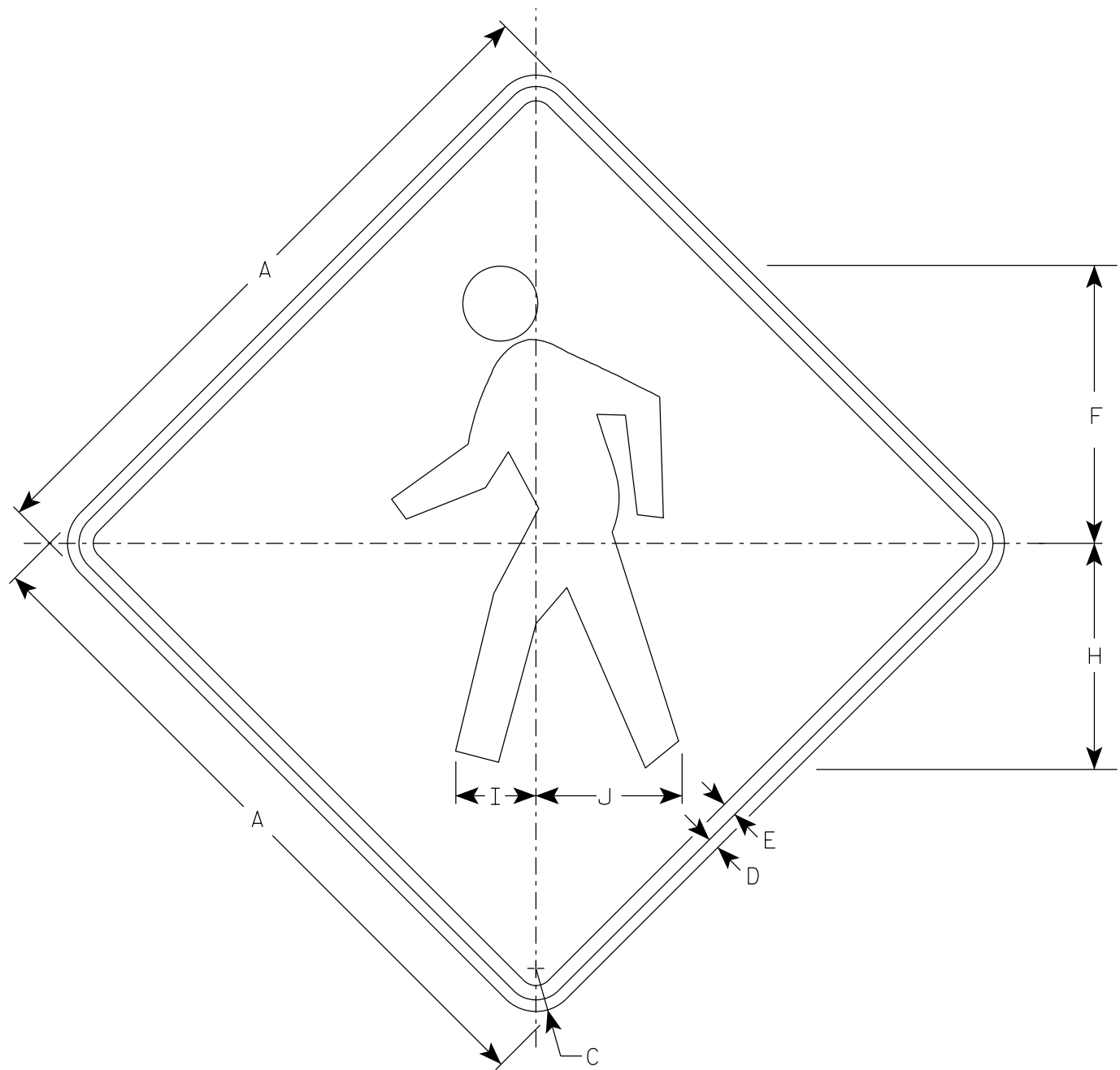
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/2	3/8	3/8	5	3 1/2	3 1/8	17 3/4																		2.0
2M	30	18	1 1/2	3/8	1/2	7	5 1/2	2 3/4	24 1/2																		3.75
3	30	18	1 1/2	3/8	1/2	7	3 1/2	2 3/4	24 1/2																		3.75
4	48	24	1 7/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0
5																											

STANDARD SIGN
W16-9P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/9/2024 PLATE NO. W16-9P.9



NOTES

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

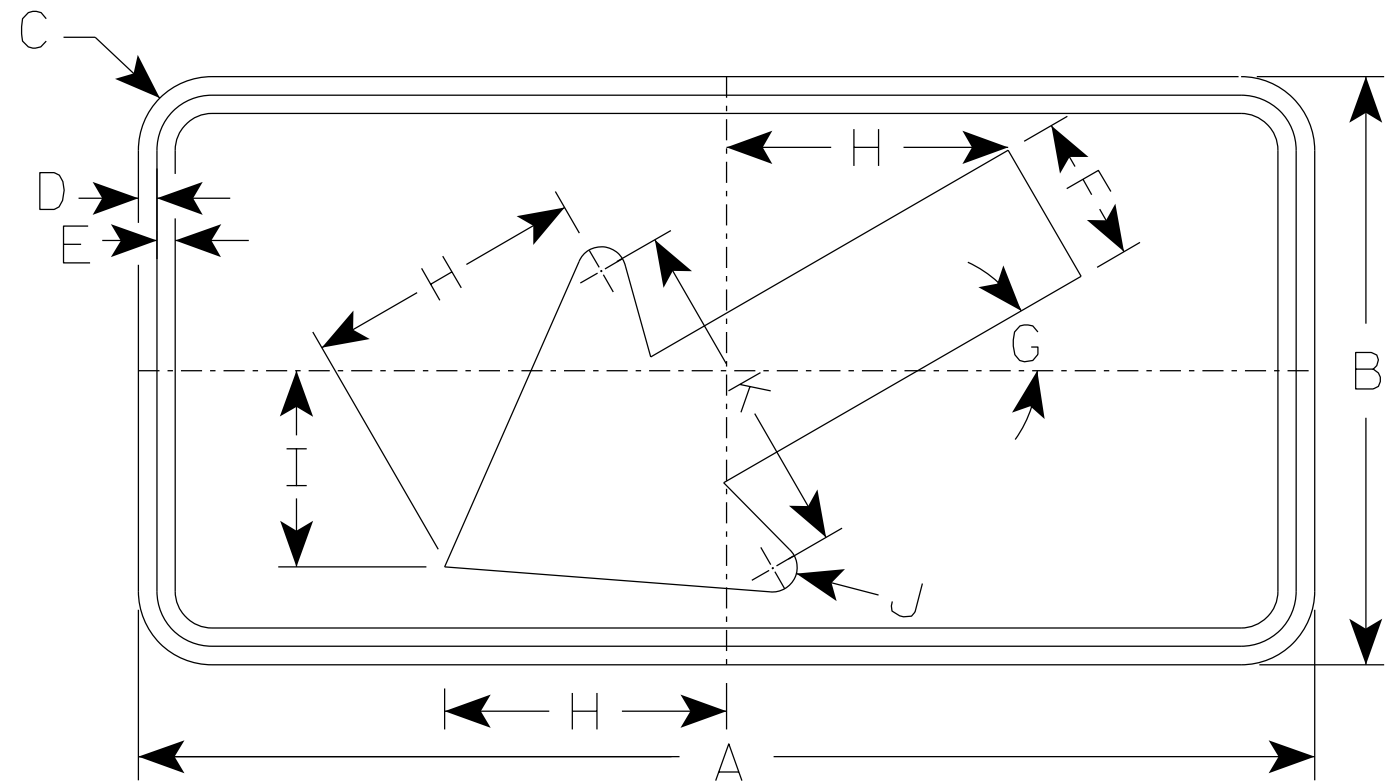
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
2S	48		3	3/4	1	19 3/8		15 3/4	5 5/8	10 1/4																	16.0
2M	48		3	3/4	1	19 3/8		15 3/4	5 5/8	10 1/4																	16.0
3	48		3	3/4	1	19 3/8		15 3/4	5 5/8	10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

STANDARD SIGN
W011-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/1/2024 PLATE NO. W011-2.2



W016-7L

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded but corners shall be rounded when base material is metal.
4. W016-7R is the same as W016-L except the arrow is reversed along the vertical centerline.

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	30	18	1 1/2	3/8	1/2	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
2S	48	24	1 7/8	1/2	5/8	6	30°	11 1/2	8	1	14																8.0
2M	48	24	1 7/8	1/2	5/8	6	30°	11 1/2	8	1	14																8.0
3	48	24	1 7/8	1/2	5/8	6	30°	11 1/2	8	1	14																8.0
4	48	24	1 7/8	1/2	5/8	6	30°	11 1/2	8	1	14																8.0
5	48	24	1 7/8	1/2	5/8	6	30°	11 1/2	8	1	14																8.0

PROJECT NO:		HWY:		COUNTY:		SHEET NO:		E
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STANDARD SIGN
W016-7

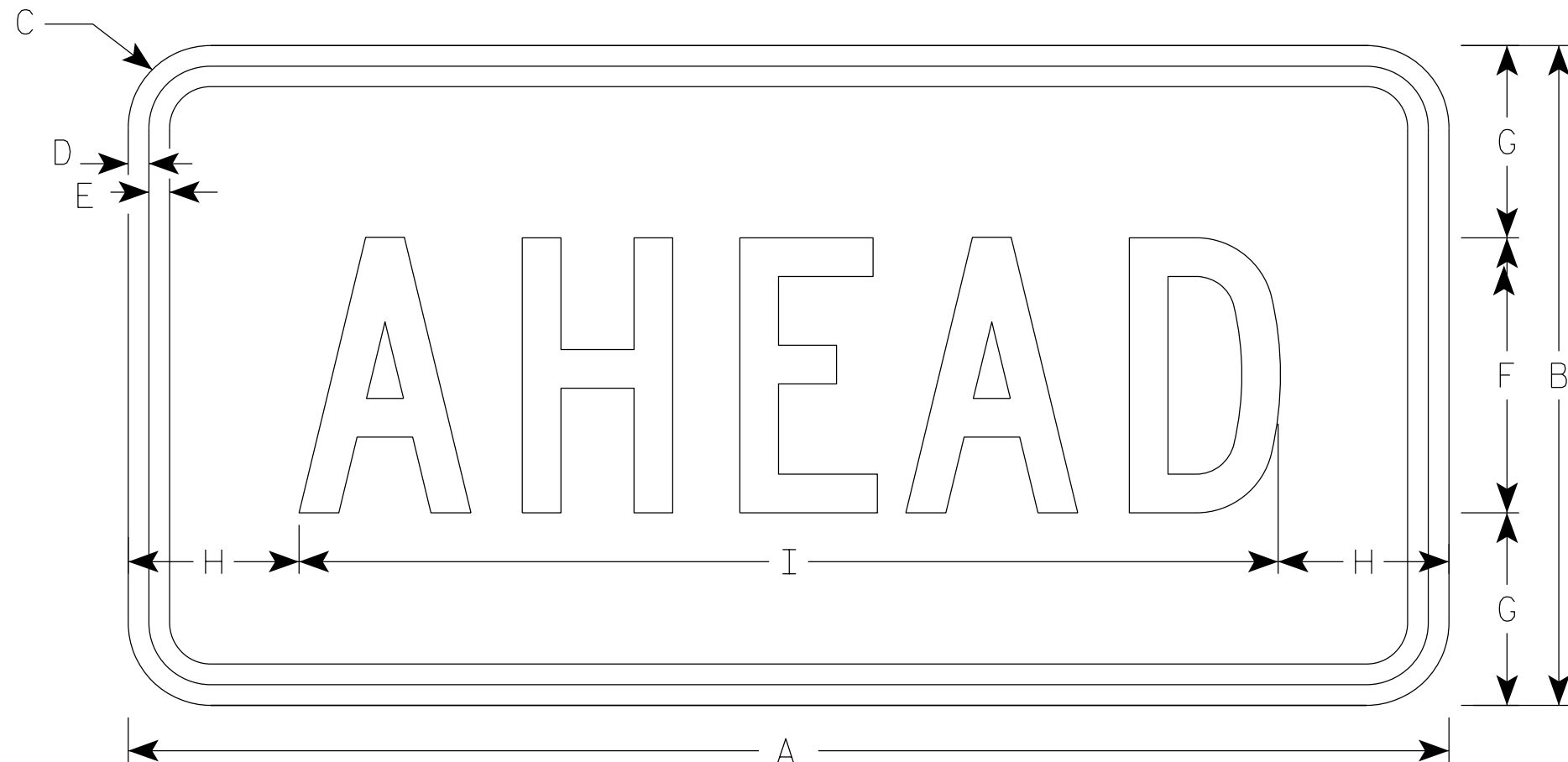
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/1/2024 PLATE NO. W016-7.3

NOTES

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



W016-9P

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	30	18	1 1/2	3/8	1/2	7	5 1/2	2 3/4	24 1/2																		3.75
2S	48	24	1 7/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0
2M	48	24	1 7/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0
3	48	24	1 7/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0
4	48	24	1 7/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0
5	48	24	1 7/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0

STANDARD SIGN

W016-9P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 2/1/2024

PLATE NO. W016-9P.8

PROJECT NO:	HWY:	COUNTY:	SHEET NO:										E
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FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W0169P.dgn PLOT DATE : 1-FEB 2024 10:20 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : \$\$.....plotscale.....\$\$ WISDOT/CADDs SHEET 42

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL - 93
INVENTORY RATING FACTOR: 1.10
OPERATIONAL RATING FACTOR: 1.43
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, SLAB $f'_c = 4,000$ PSI
ALL OTHER $f'_c = 3,500$ PSI
HIGH - STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 $f_y = 60,000$ PSI

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE $12\frac{3}{4}$ " X 0.375-INCH DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS * PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE LENGTHS ARE 80'-0" AT THE SOUTH ABUTMENT AND 85'-0" AT THE NORTH ABUTMENT.

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

HYDRAULIC DATA

100-YEAR FREQUENCY:

$Q_{100} = 550$ C.F.S.
 $V_{100} = 2.6$ F.P.S.
 $HW_{100} = EL. 1563.16$
WATERWAY AREA = 210 SQ. FT.
DRAINAGE AREA = 5.77 SQ. MI.
SCOUR CRITICAL CODE = 5

2-YEAR FREQUENCY:

$Q_2 = 155$ C.F.S.
 $V_2 = 1.2$ F.P.S.
 $HW_2 = EL. 1561.42$

TRAFFIC DATA

FEATURE ON: STATE ROAD

AADT = 111 (2025)
AADT = 134 (2045)
R.D.S. = 35 MPH

LEGEND

① INDICATES WING NUMBER

REMOVAL OF THIS MATERIAL IS INCLUDED IN THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-60-181"

PLAN

(SINGLE SPAN CONCRETE FLAT SLAB)

RAILING TUBULAR TYPE M. FOR DETAILS SEE SHEET 10.

ELEVATION

(LOOKING NORTHWEST)

LIST OF DRAWINGS:

- GENERAL PLAN
- CROSS SECTION, QUANTITIES & NOTES
- SUBSURFACE EXPLORATION
- SOUTH ABUTMENT
- SOUTH ABUTMENT DETAILS
- NORTH ABUTMENT
- NORTH ABUTMENT DETAILS
- SUPERSTRUCTURE
- SUPERSTRUCTURE DETAILS
- TUBULAR STEEL RAILING TYPE M

CONSULTANT DESIGN CONTACT:

JULIA ZEHNER
(608) 355-8878

BRIDGE OFFICE CONTACT:

AARON BONK
(608) 261-0261



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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED

CHIEF STRUCTURES DESIGN ENGINEER

02/11/25

DATE

STRUCTURE B-60-181

STATE ROAD OVER LITTLE RIB RIVER (SHEEP RANCH CREEK)

COUNTY

TAYLOR

TOWN/CITY/VILLAGE

RIB LAKE

DESIGN SPEC.

AASHTO LRFD BRIDGE DESIGN SPECIFICATION

DESIGNED BY

DESIGNED CK'D

JZ

DRAWN BY

EKK

PLANS CK'D

JZ

GENERAL PLAN

SHEET 1 OF 10

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.

THIS STRUCTURE WILL REPLACE EXISTING STRUCTURE P-60-702, A 51.3 FT. LONG STEEL THRU GIRDER BRIDGE SUPPORTED ON FULL RETAINING CONCRETE ABUTMENTS WITH TIMBER PILES.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-60-181" 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 EXTENTS SHOWN IN THE TYPICAL SECTION THRU ABUTMENT DETAIL REQUIRE ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 4'-0" ABOVE BOTTOM OF ABUTMENT.

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

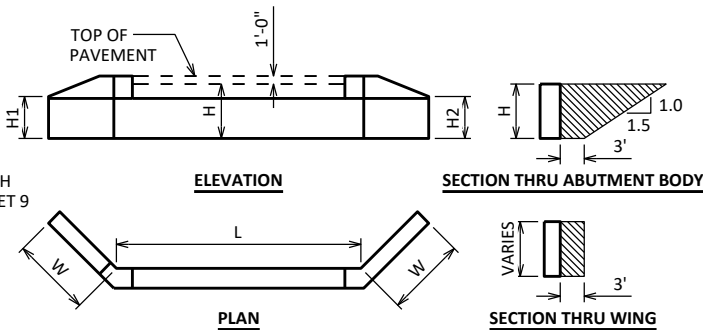
PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND EDGES OF SLAB, TO THE OUTSIDE OF THE UNDERSIDE OF SLAB, TO THE TOPS OF WINGS, TO THE EXPOSED FRONT FACES OF WINGS, ABUTMENTS TO 1'-0" IN FROM THE EDGE OF SLAB.

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

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER. THE CONTRACTOR MAY DIVERT THE FLOW IF NEEDED TO PROVIDE ADEQUATE CLEARANCE FOR SLAB FALSE WORK. THE WATER DIVERSION METHOD SHALL BE INCLUDED IN THE BID ITEM CONCRETE MASONRY BRIDGES AND SPELLED OUT IN THE EROSION CONTROL IMPLEMENTATION PLAN (ECIP) FOR APPROVAL BY THE WDNR PRIOR TO CONSTRUCTION.

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

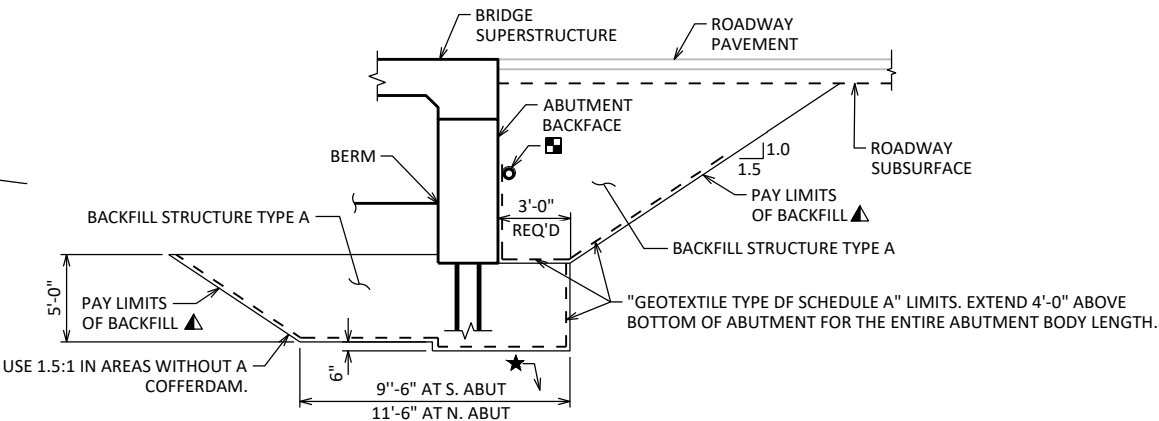
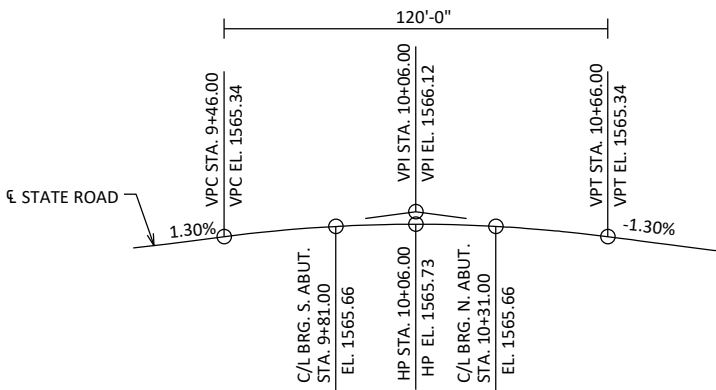
CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.



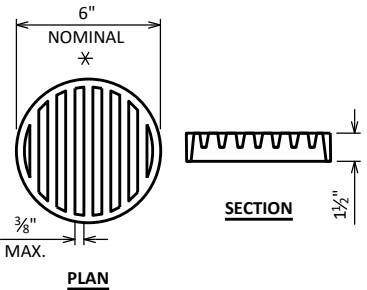
- L = ABUTMENT BODY LENGTH AT BACKFACE (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
H1 = WING 1 HEIGHT AT TIP (FT)
H2 = WING 2 HEIGHT AT TIP (FT)
W = WING LENGTH (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
 $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3')(0.5)(H1+H2+H+H)(W)$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

NOTE: SEE TYPICAL SECTION THRU ABUTMENT DETAIL BELOW FOR ADDITIONAL BACKFILL REQUIRED FOR UNDERCUT PURPOSES. UNDERCUT REQUIRED UNDER ABUTMENTS, WINGS, AND ALL RIPRAP AREAS.

(LOOKING NORTHEAST)



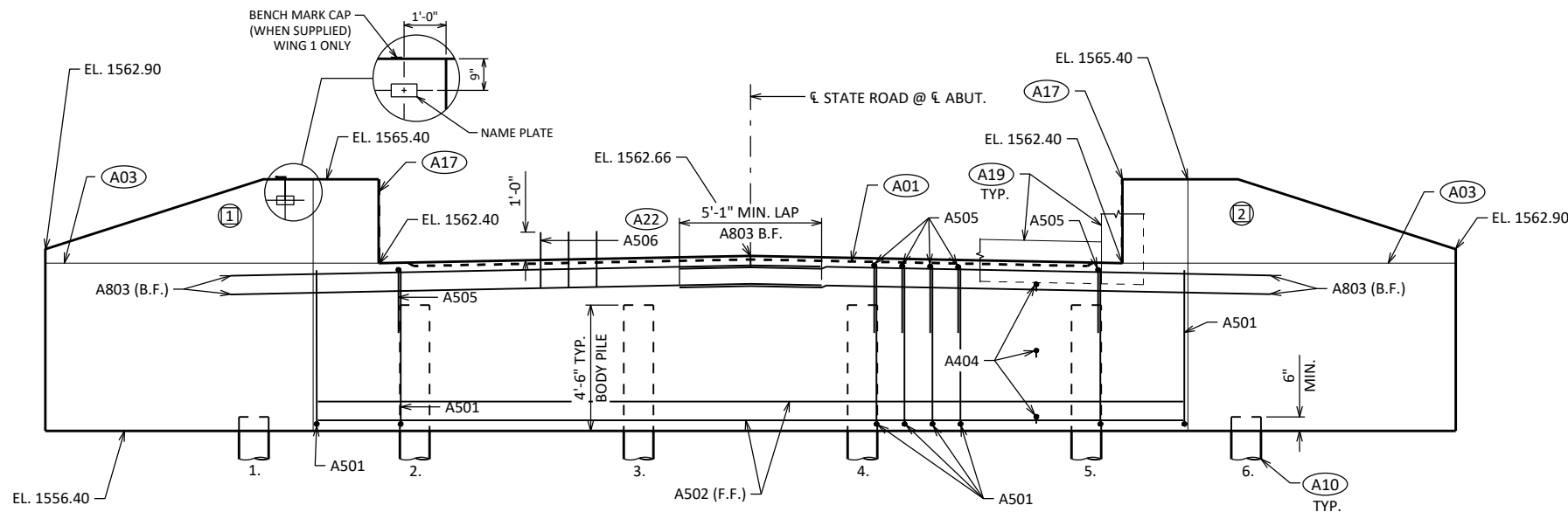
- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.
- ★ UNDERCUT 5 FEET MINIMUM BELOW ABUTMENT BODY, WINGWALLS, AND RIPRAP TO REMOVE ALL SBRIC PEAT AND SOFT MATERIAL AS DIRECTED BY THE ENGINEER. UNDERCUT IS INCLUDED WITH BID ITEM EXCAVATION FOR STRUCTURES BRIDGES. INSTALL GEOTEXTILE TYPE DF SCHEDULE A AND BACKFILL WITH BACKFILL STRUCTURE TYPE A.



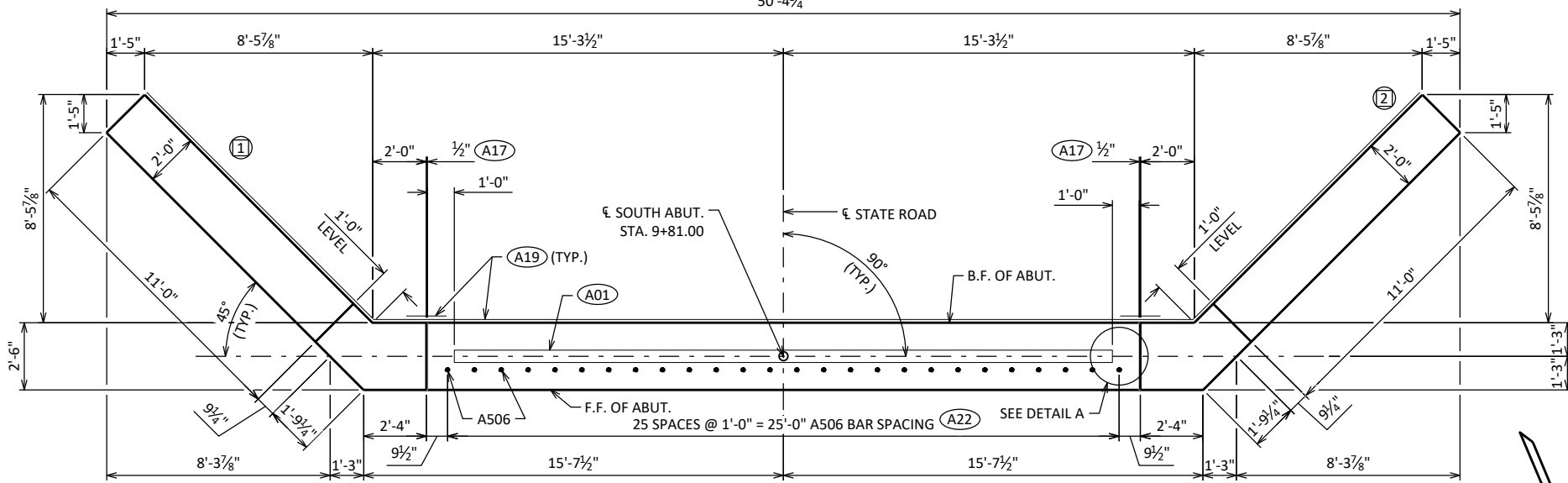
- ★ DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.
- THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".
- THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. 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.

ITEM NUMBER	BID ITEM	UNIT	SOUTH ABUT.	NORTH ABUT.	SUPER	TOTAL
203.0250.01	REMOVING STRUCTURE OVER WATERWAY REMOVE DEBRIS P-60-702	EACH	-	-	-	1
206.1001.01	EXCAVATION FOR STRUCTURES BRIDGES B-60-181	EACH	-	-	-	1
206.5001	COFFERDAMS B-60-181	EACH	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	497	550	-	1047
502.0100	CONCRETE MASONRY BRIDGES	CY	33.1	33.1	119.8	186
502.3200	PROTECTIVE SURFACE TREATMENT	SY	22	22	189	233
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2955	2955	-	5910
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1805	1805	20380	23990
513.4061	RAILING TUBULAR TYPE M	LF	-	-	109	109
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	6	6	-	12
550.2126	PILING CIP CONCRETE 12 3/4 X 0.375-INCH	LF	480	510	-	990
606.0300	RIPRAP HEAVY	CY	30	40	-	70
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	70	70	-	140
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	259	278	-	537
645.0120	GEOTEXTILE TYPE HR	SY	80	97	-	177
SPV.0090.01	FLASHING STAINLESS STEEL	LF	-	-	95	95
	NON-BID ITEMS					
	PREFORMED FILLER	SIZE				½" & ¾"

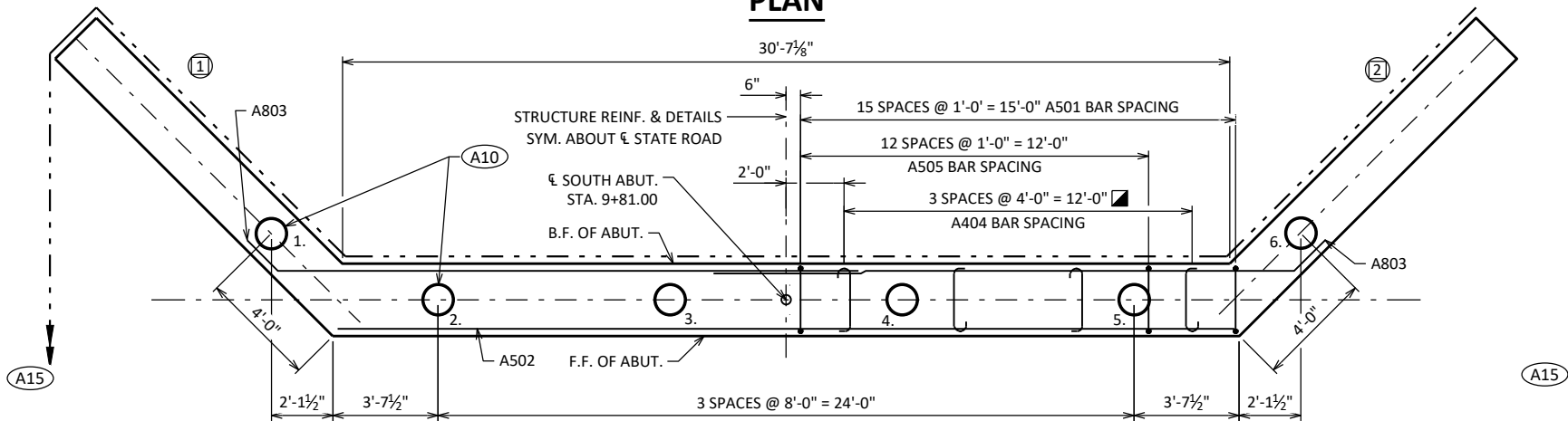
NOTE:
*FOR WING DETAILS, SEE SHEET 5



ELEVATION
(LOOKING SOUTH)



PLAN

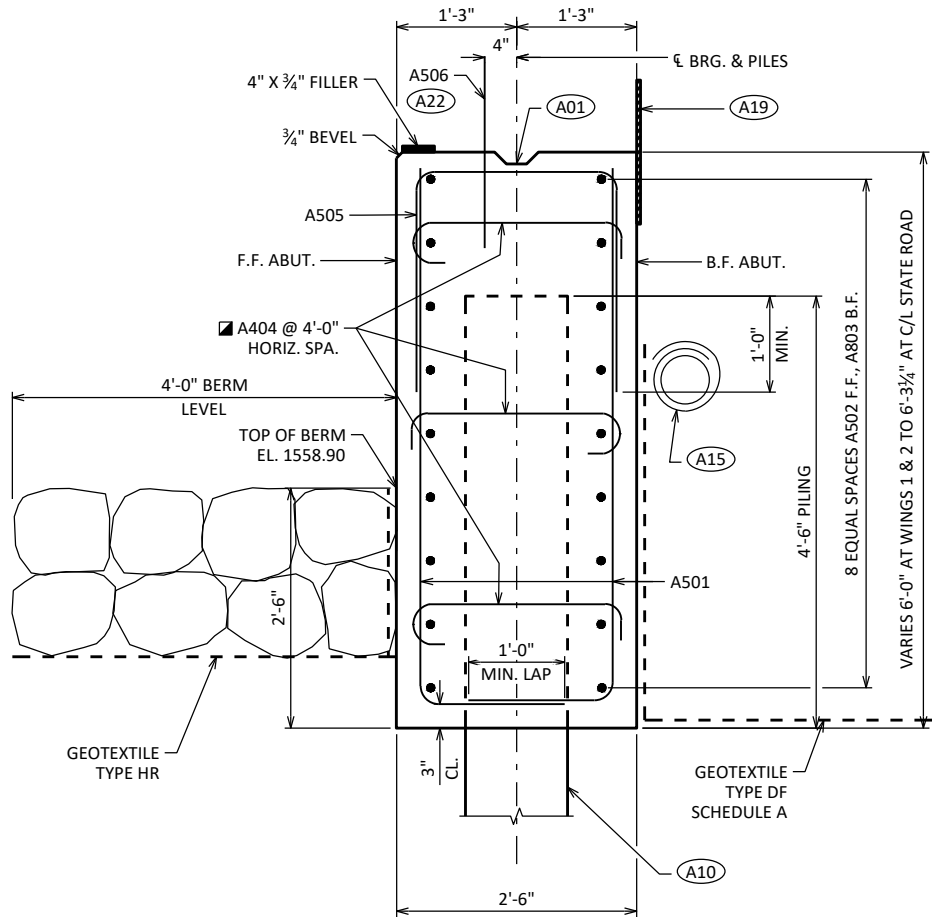


PILE PLAN

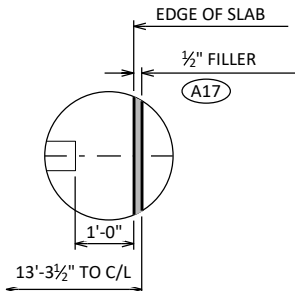
LEGEND

- ① INDICATES WING NUMBER.
- A01 CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 X 6
- A03 OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2 X 6. IF JOINT IS USED, PLACE RMW ON B.F. OF WING. COST OF RMW AT WING IS INCIDENTAL TO "CONCRETE MASONRY BRIDGES".
- A10 SUPPORT SOUTH ABUTMENT ON 12 3/4" X 0.375-INCH CIP CONCRETE PILING. ABUTMENT BODY PILES ESTIMATED 80'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE. ABUTMENT WING PILES ESTIMATED 80'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE. SEE SHEET 5 FOR PILE SPLICE DETAIL.
- A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17 1/2" FILLER, EXTEND AS SHOWN: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
- A19 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- A22 BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

F.F. - FRONT FACE B.F. - BACK FACE CL - CLEAR



SECTION THRU BODY

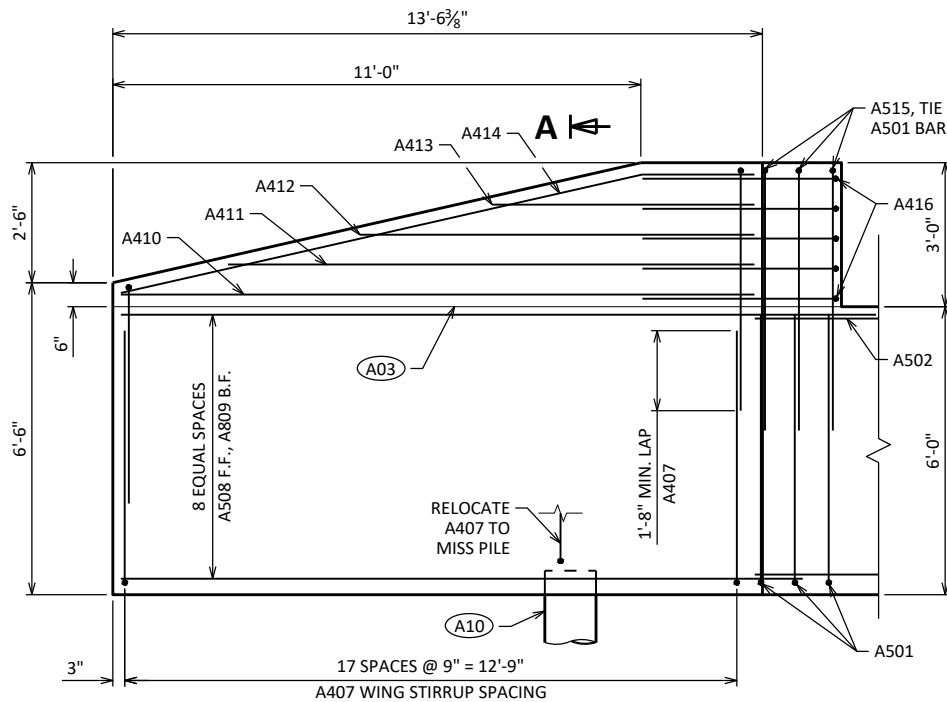


DETAIL A

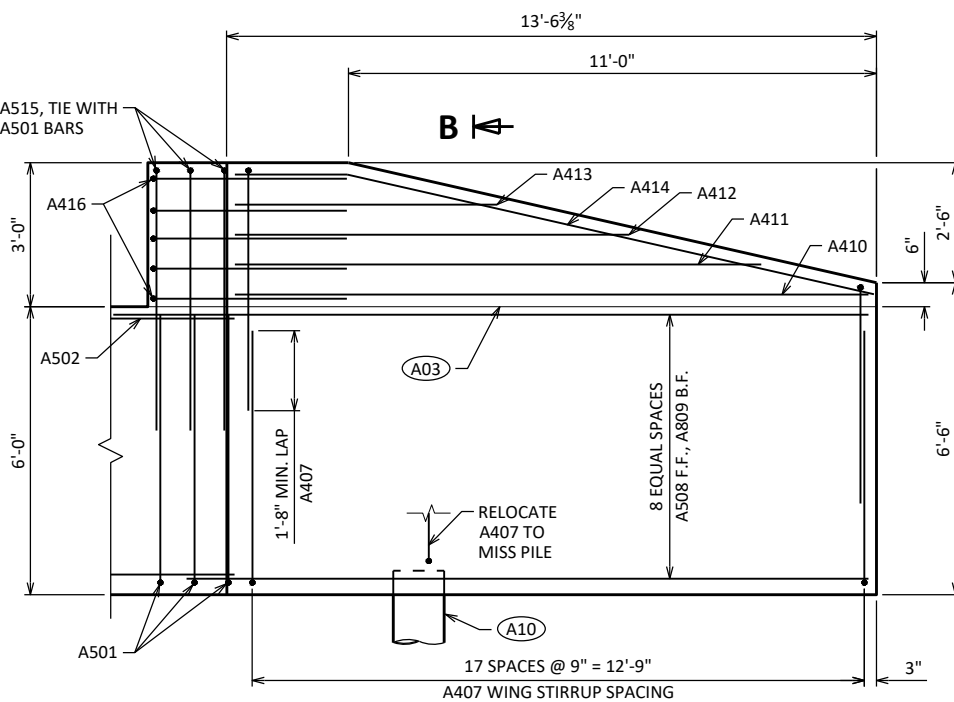
STATE PROJECT NUMBER

9545-00-72

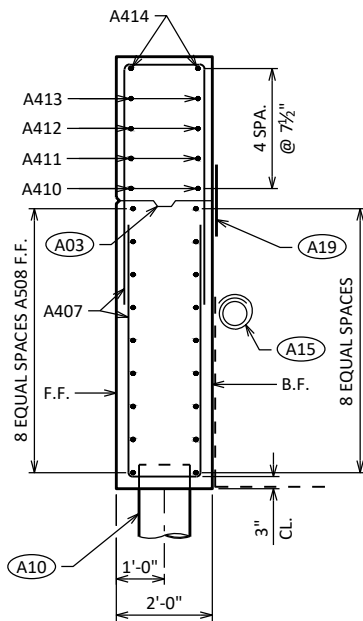
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-181			
DRAWN BY		EKK	PLANS CK'D NRT
SOUTH ABUTMENT		SHEET 4	



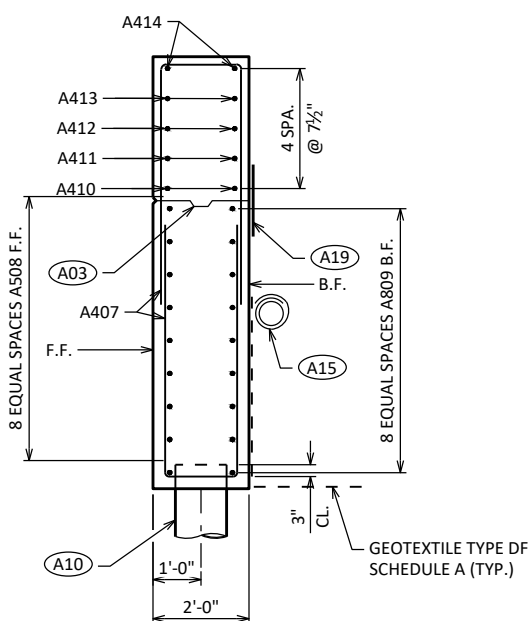
WING 1 ELEVATION
SHOWING F.F. WING



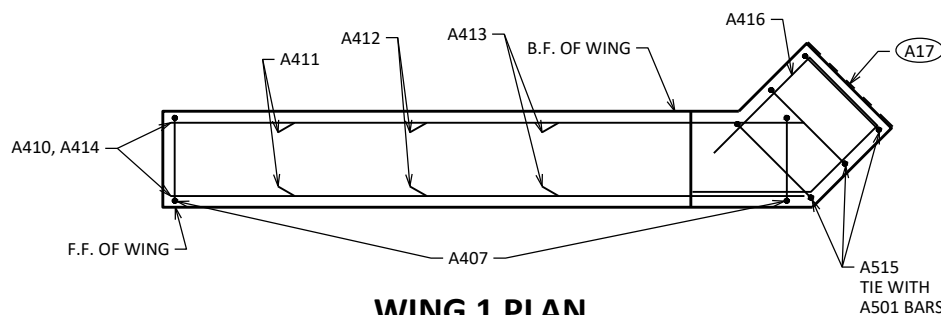
WING 2 ELEVATION
SHOWING F.F. WING



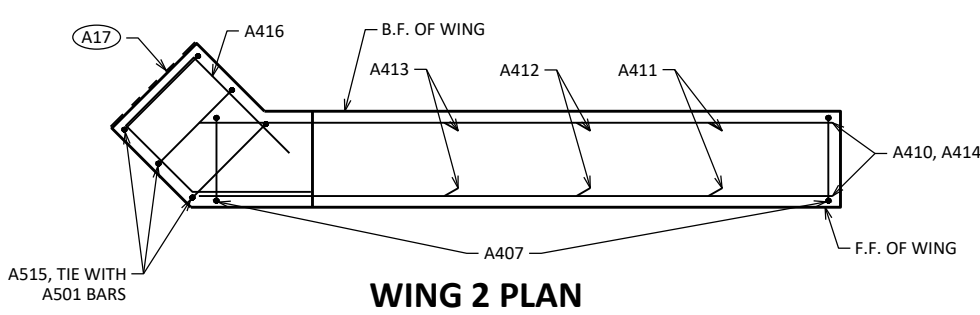
SECTION A-A THRU WING 1



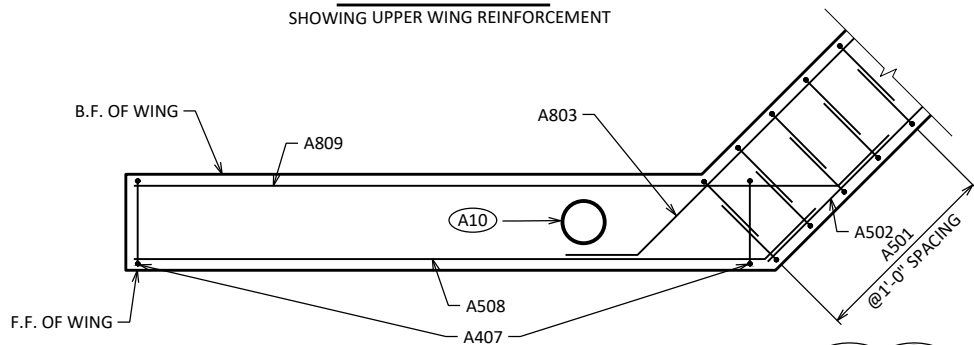
SECTION A-A THRU WING 2



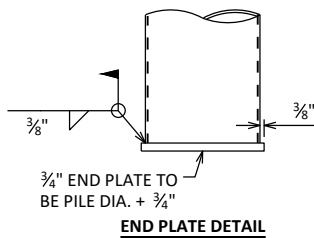
WING 1 PLAN
SHOWING UPPER WING REINFORCEMENT



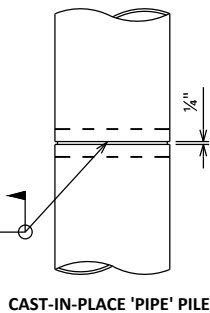
WING 2 PLAN
SHOWING UPPER WING REINFORCEMENT



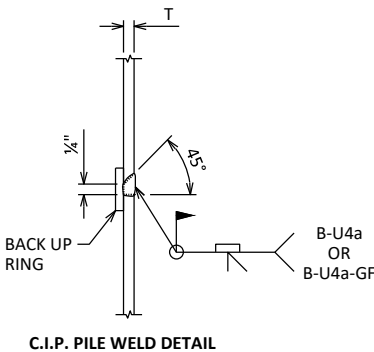
WING 1 PLAN
SHOWING LOWER WING REINFORCEMENT
WING 2 SIMILAR



END PLATE DETAIL

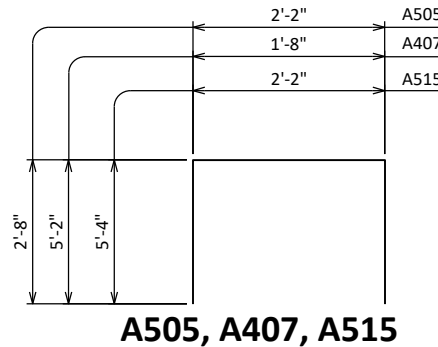


CAST-IN-PLACE 'PIPE' PILE

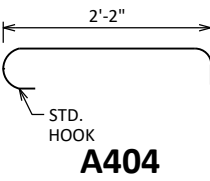


C.I.P. PILE WELD DETAIL

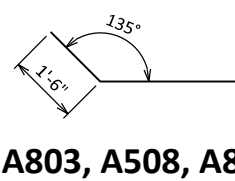
A501



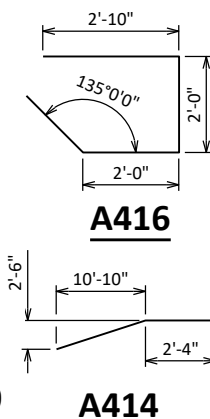
A505, A407, A515



A404



A803, A508, A809



A414

BILL OF BARS

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

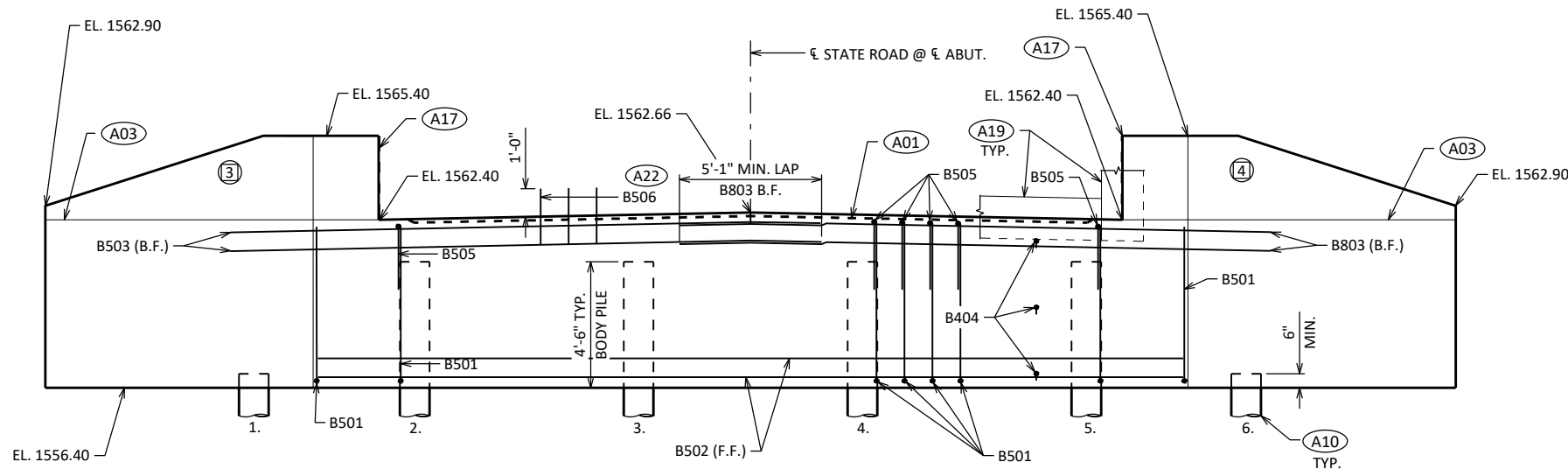
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A501		64	7'-1"	X	ABUT. BODY STIRRUPS
A502		31	31'-3"		ABUT. BODY - F.F. - HORIZ.
A803		21	21'-10"	X	ABUT. BODY - B.F. - HORIZ.
A404		24	3'-0"	X	ABUT. BODY - TIES - HORIZ.
A505		26	7'-3"	X	ABUT. BODY STIRRUPS - TOP U BAR
A506	X	26	2'-0"		ABUT. BODY - TOP DOWELS - VERT.
A407	X	72	11'-10"	X	WING STIRRUPS - VERT.
A508	X	14	14'-8"	X	WINGS LOWER HORIZ. - F.F.
A809	X	16	16'-2"	X	WINGS LOWER HORIZ. - B.F.
A410	X	4	13'-2"		WING UPPER - F.F. & B.F. - HORIZ.
A411	X	4	10'-11"		WING UPPER - F.F. & B.F. - HORIZ.
A412	X	4	8'-2"		WING UPPER - F.F. & B.F. - HORIZ.
A413	X	4	5'-5"		WING UPPER - F.F. & B.F. - HORIZ.
A414	X	4	13'-4"	X	WING - TOP - F.F. & B.F. - HORIZ.
A515	X	6	12'-7"	X	WINGS UPPER CORNER - VERT.
A416	X	10	9'-1"	X	WINGS UPPER CORNER - HORIZ.

SEE SHEET 4 FOR LEGEND OF

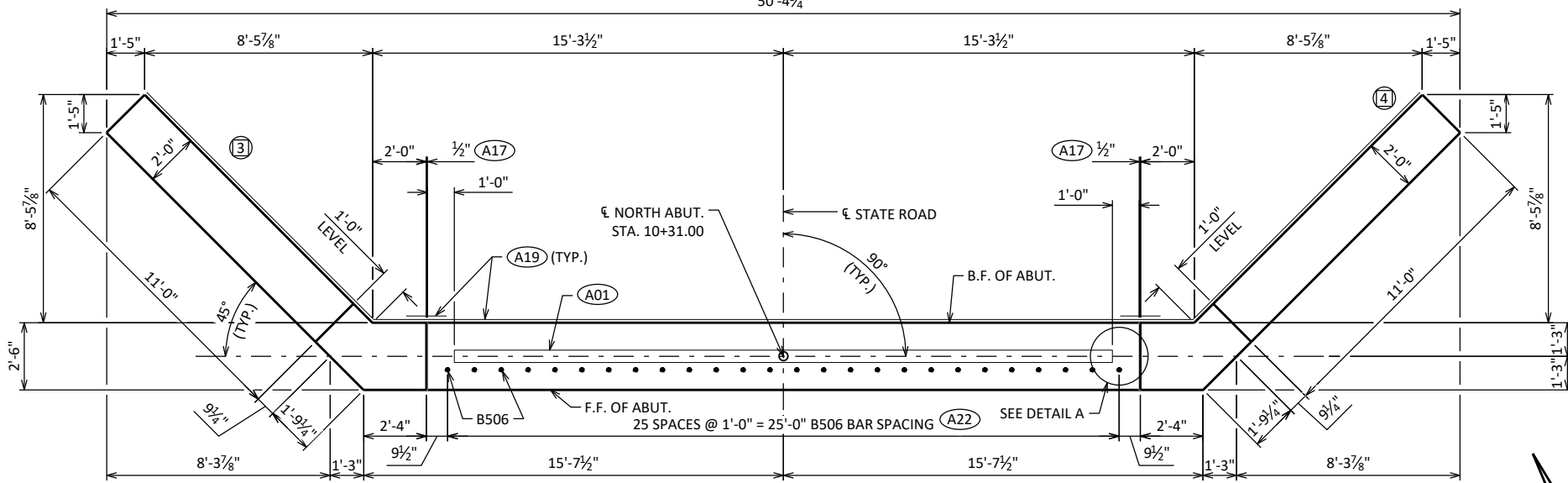
- A03 A10 A15
- A17 F.F. B.F. CL. A19

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-181			
DRAWN BY		EKK	PLANS CK'D NRT
SOUTH ABUTMENT DETAILS		SHEET 5	

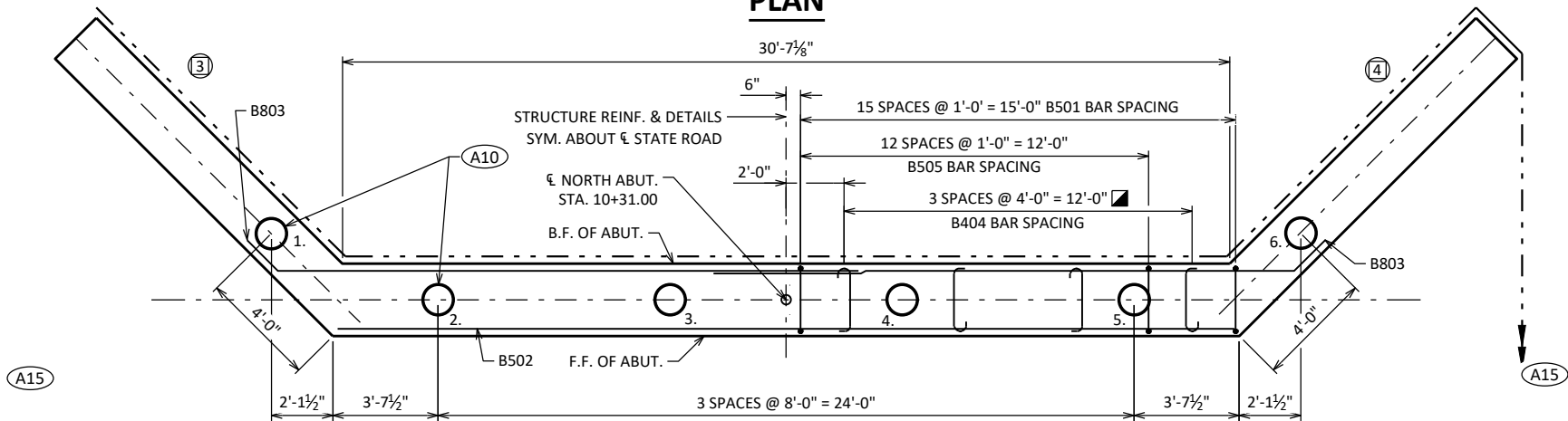
NOTE:
*FOR WING DETAILS, SEE SHEET 7



ELEVATION
(LOOKING NORTH)



PLAN

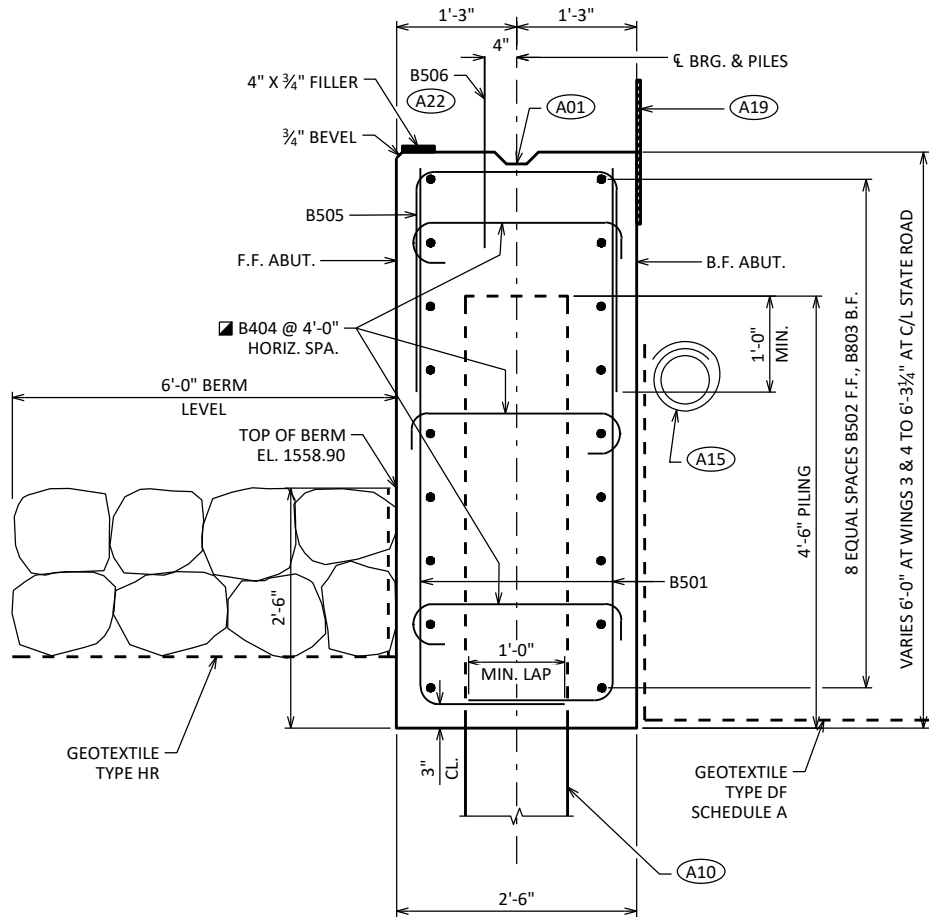


PILE PLAN

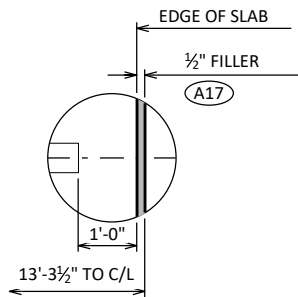
LEGEND

- ① INDICATES WING NUMBER.
- (A01) CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 X 6
- (A03) OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2 X 6. IF JOINT IS USED, PLACE RMW ON B.F. OF WING. COST OF RMW AT WING IS INCIDENTAL TO "CONCRETE MASONRY BRIDGES".
- (A10) SUPPORT NORTH ABUTMENT ON 12 $\frac{3}{4}$ X 0.375-INCH CIP CONCRETE PILING. ABUTMENT BODY PILES ESTIMATED 85'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE. ABUTMENT WING PILES ESTIMATED 85'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE. SEE SHEET 5 FOR PILE SPLICE DETAIL.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) $\frac{1}{2}$ " FILLER, EXTEND AS SHOWN: SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF $\frac{1}{2}$ " FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD $\frac{1}{8}$ " BELOW SURFACE OF CONCRETE).
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A22) BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

F.F. - FRONT FACE B.F. - BACK FACE CL - CLEAR



SECTION THRU BODY

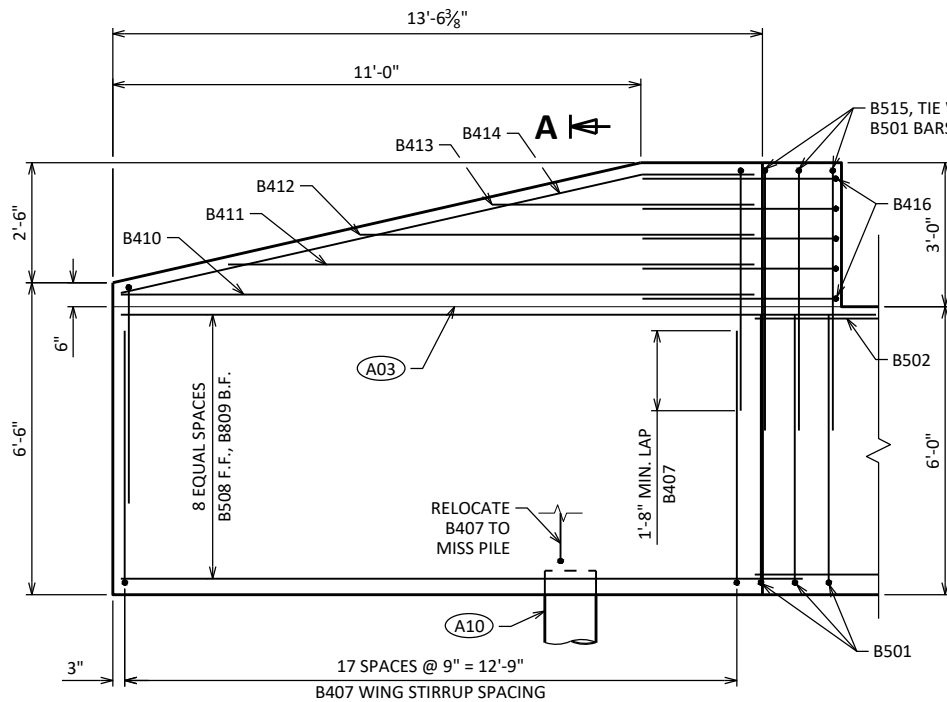


DETAIL A

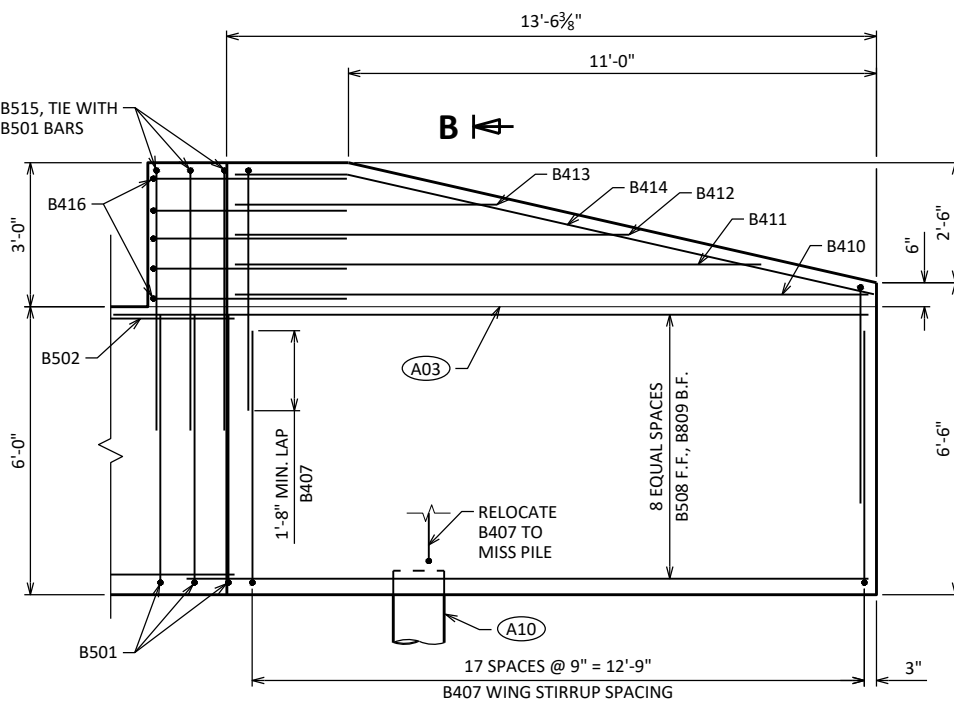
STATE PROJECT NUMBER

9545-00-72

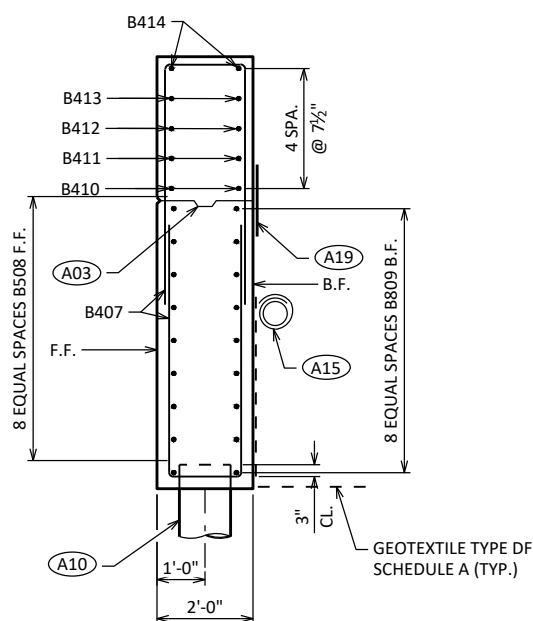
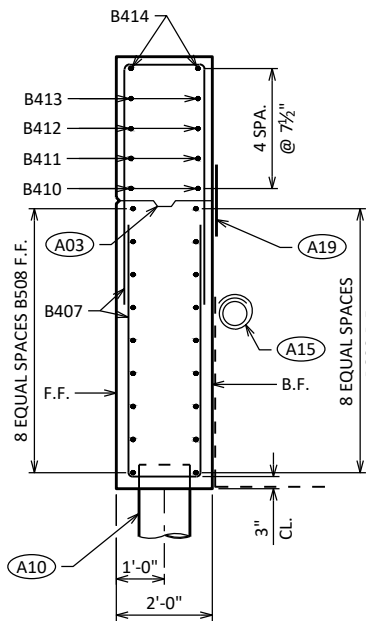
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-181			
DRAWN BY		EKK	PLANS CK'D NRT
NORTH ABUTMENT		SHEET 6	



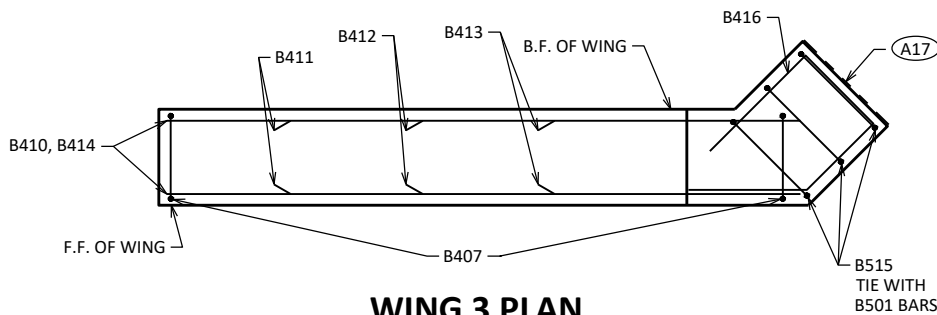
WING 3 ELEVATION
SHOWING F.F. WING



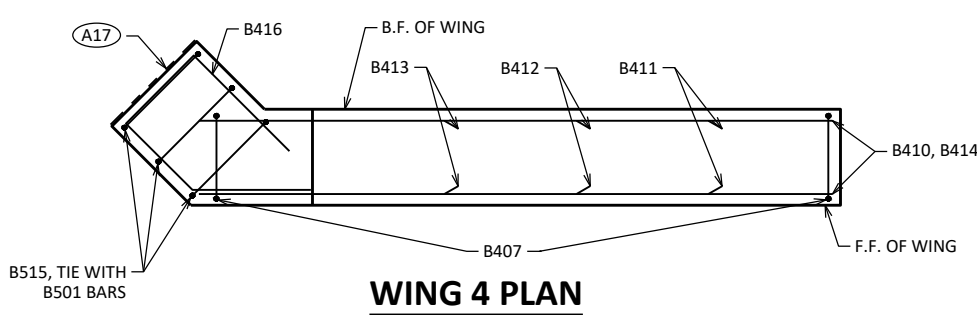
WING 4 ELEVATION
SHOWING F.F. WING



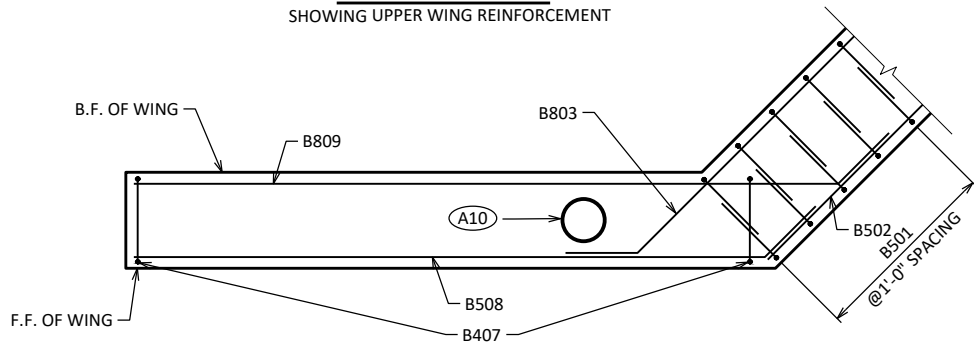
SECTION A-A THRU WING 3 **SECTION A-A THRU WING 4**



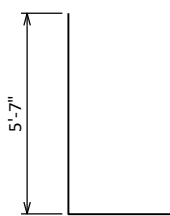
WING 3 PLAN
SHOWING UPPER WING REINFORCEMENT



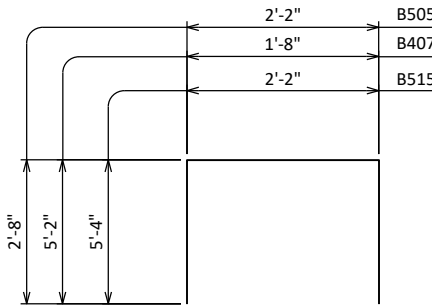
WING 4 PLAN
SHOWING UPPER WING REINFORCEMENT



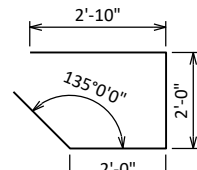
WING 3 PLAN
SHOWING LOWER WING REINFORCEMENT
WING 4 SIMILAR



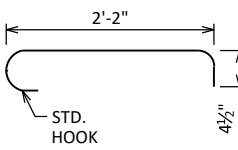
B501



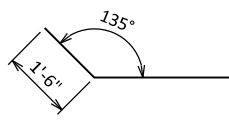
B505, B407, B515



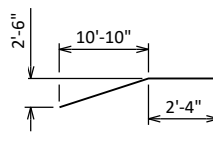
B416



B404



B803, B508, B809



B414

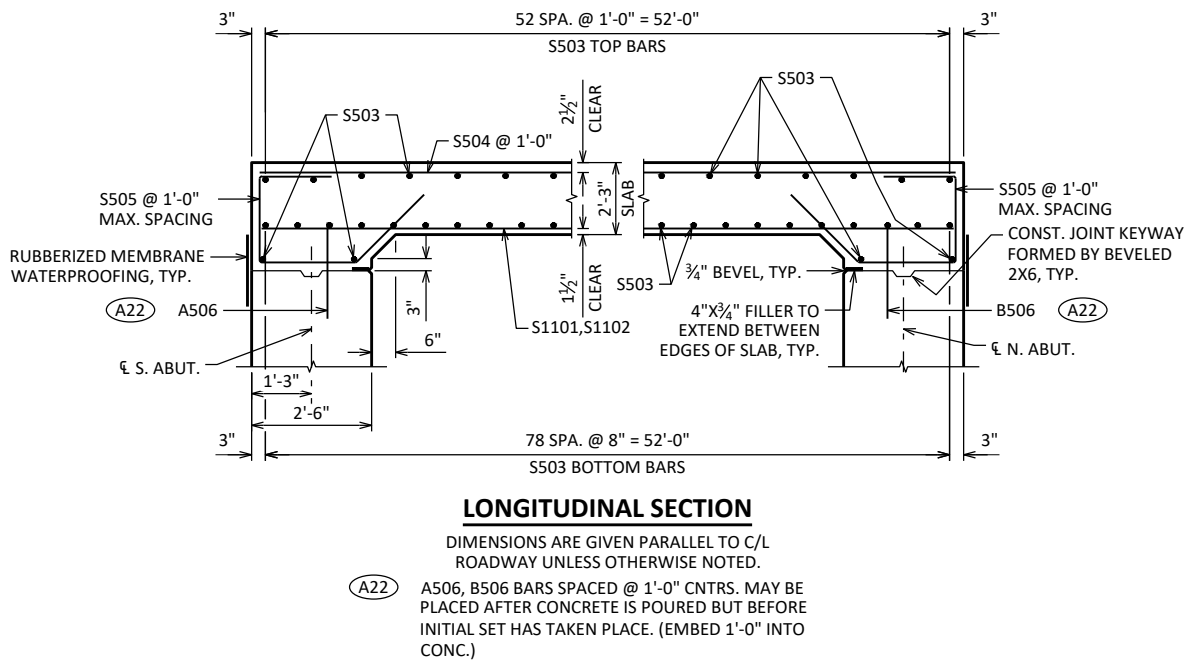
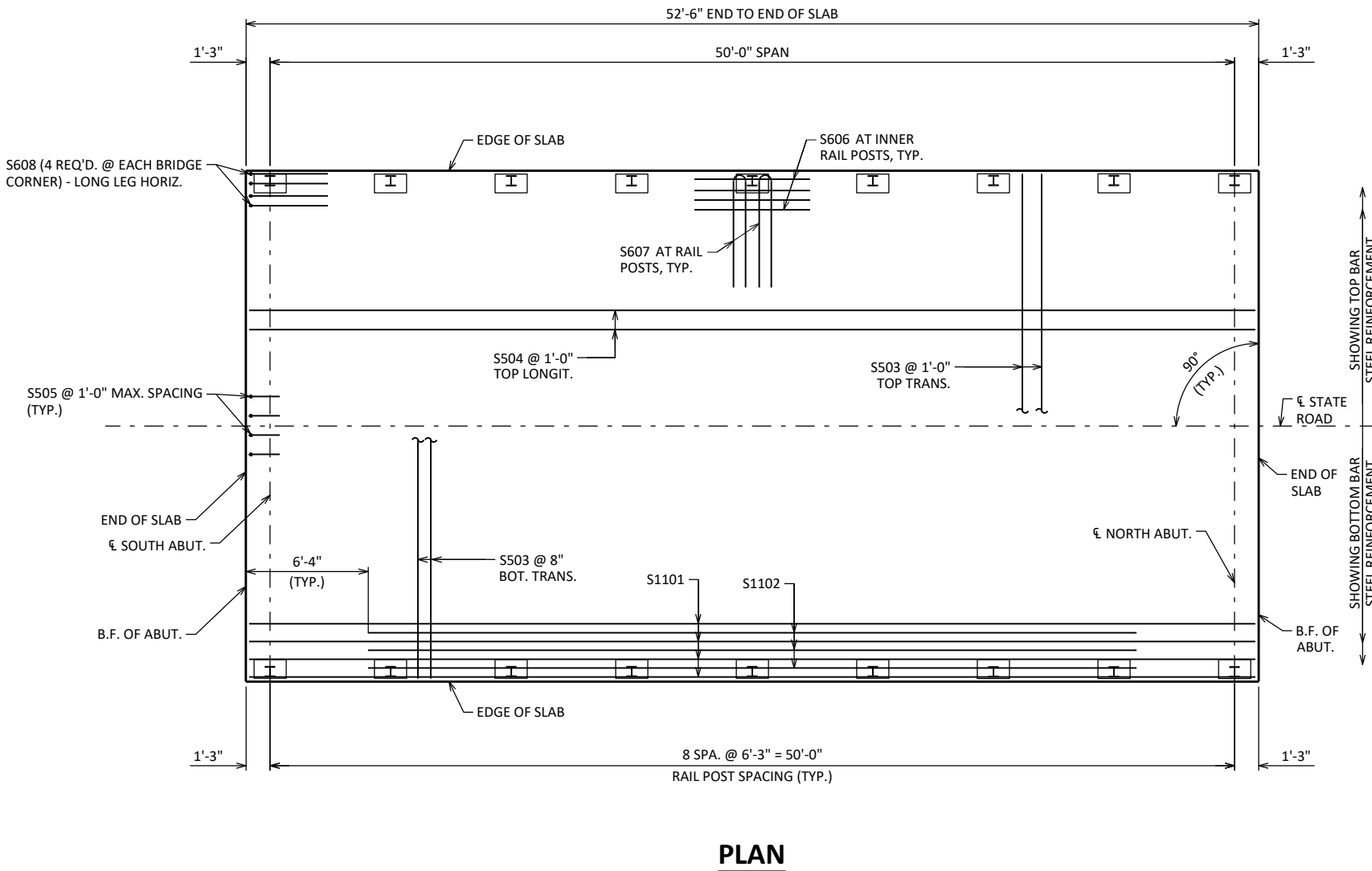
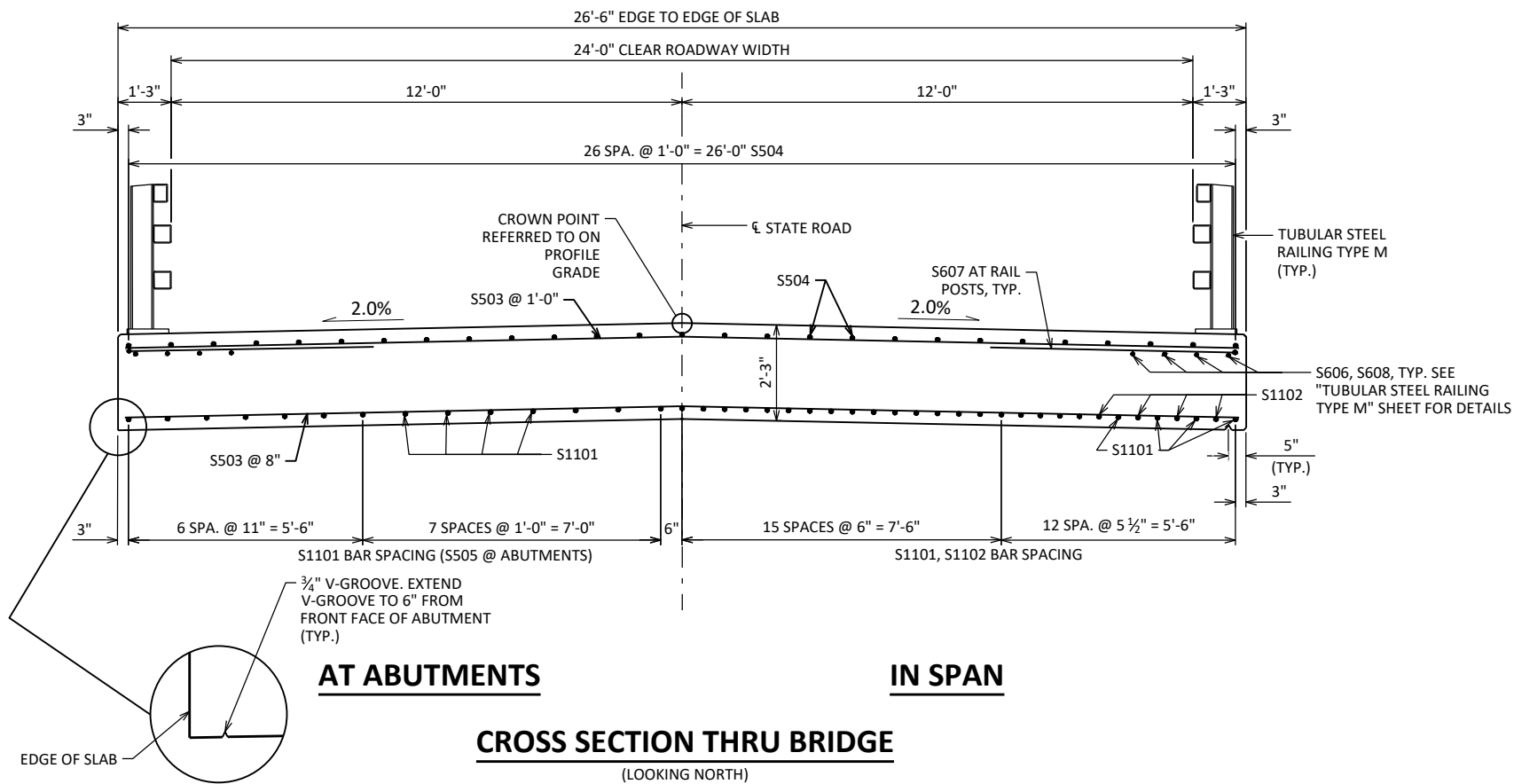
BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
B501		64	7'-1"	X	ABUT. BODY STIRRUPS
B502		31	31'-3"		ABUT. BODY - F.F. - HORIZ.
B803		21	21'-10"	X	ABUT. BODY - B.F. - HORIZ.
B404		24	3'-0"	X	ABUT. BODY - TIES - HORIZ.
B505		26	7'-3"	X	ABUT. BODY STIRRUPS - TOP U BAR
B506	X	26	2'-0"		ABUT. BODY - TOP DOWELS - VERT.
B407	X	72	11'-10"	X	WING STIRRUPS - VERT.
B508	X	14	14'-8"	X	WINGS LOWER HORIZ. - F.F.
B809	X	16	16'-2"	X	WINGS LOWER HORIZ. - B.F.
B410	X	4	13'-2"		WING UPPER - F.F. & B.F. - HORIZ.
B411	X	4	10'-11"		WING UPPER - F.F. & B.F. - HORIZ.
B412	X	4	8'-2"		WING UPPER - F.F. & B.F. - HORIZ.
B413	X	4	5'-5"		WING UPPER - F.F. & B.F. - HORIZ.
B414	X	4	13'-4"	X	WING - TOP - F.F. & B.F. - HORIZ.
B515	X	6	12'-7"	X	WINGS UPPER CORNER - VERT.
B416	X	10	9'-1"	X	WINGS UPPER CORNER - HORIZ.

SEE SHEET 6 FOR LEGEND OF

A03 A10 A15
A17 F.F. B.F. CL. A19



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-181			
DRAWN BY		PLANS CK'D	NRT
SUPERSTRUCTURE		SHEET 8	

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

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	LOCATION
S1101	X	28	52'-2"		SLAB - BOTTOM @ ABUTS. & IN SPAN - LONGIT.
S1102	X	27	39'-10"		SLAB - BOTTOM - IN SPAN - LONGIT.
S503	X	136	26'-2"		SLAB - TOP & BOTTOM - TRANS.
S504	X	27	52'-2"		SLAB - TOP @ ABUTS. & IN SPAN - LONGIT.
S505	X	56	8'-5"	X	DIAPHRAGM @ ABUTS.
S606	X	56	6'-0"		SLAB @ RAIL POST, 4 PER POST
S607	X	36	11'-4"	X	SLAB @ RAIL POST, 2 PER POST
S608	X	16	4'-8"	X	SLAB @ RAIL POST, 4 PER CORNER

THE BID ITEM "FLASHING STAINLESS STEEL" SHALL INCLUDE PROVIDING AND INSTALLING THE STAINLESS STEEL FLASHING, SILICONE CAULK AND 3/16" CONCRETE SCREWS.

FLASHING TO BE INSTALLED AFTER PROTECTIVE SURFACE
TREATMENT APPLICATION.

CONCRETE SCREWS SHALL BE 410 STAINLESS STEEL.

EXTEND FLASHING TO B.F. OF ABUTMENT DIAPHRAGM.

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

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

CAULK SHALL BE NON-STAINING, GRAY NON-BITUMINOUS JOINT SEALER.

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

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.

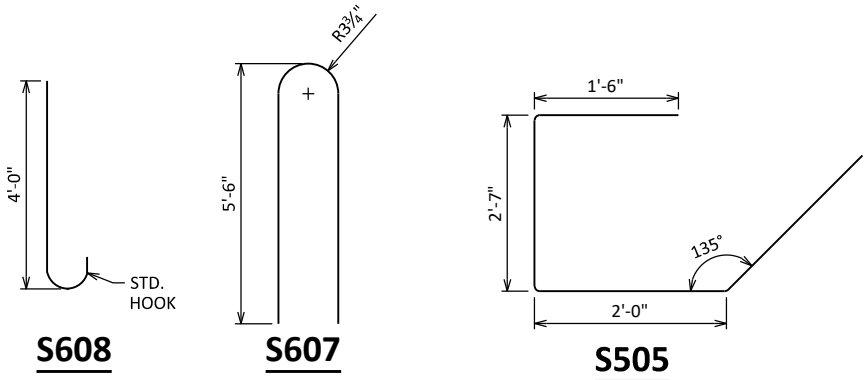
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).



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.

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	<u>TOP OF SLAB FALSEWORK ELEVATION</u>



LOCATION	S. ABUTMENT	5/10 PT.	N. ABUTMENT
E. EDGE OF SLAB			
CROWN OR R/L			
W. EDGE OF SLAB			

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

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.
E. EDGE OF SLAB	1565.40	1565.42	1565.44	1565.45	1565.46	1565.47	1565.46	1565.45	1565.44	1565.42	1565.40
CENTERLINE	1565.66	1565.69	1565.71	1565.72	1565.73	1565.73	1565.73	1565.72	1565.71	1565.69	1565.66
W. EDGE OF SLAB	1565.40	1565.42	1565.44	1565.45	1565.46	1565.47	1565.46	1565.45	1565.44	1565.42	1565.40

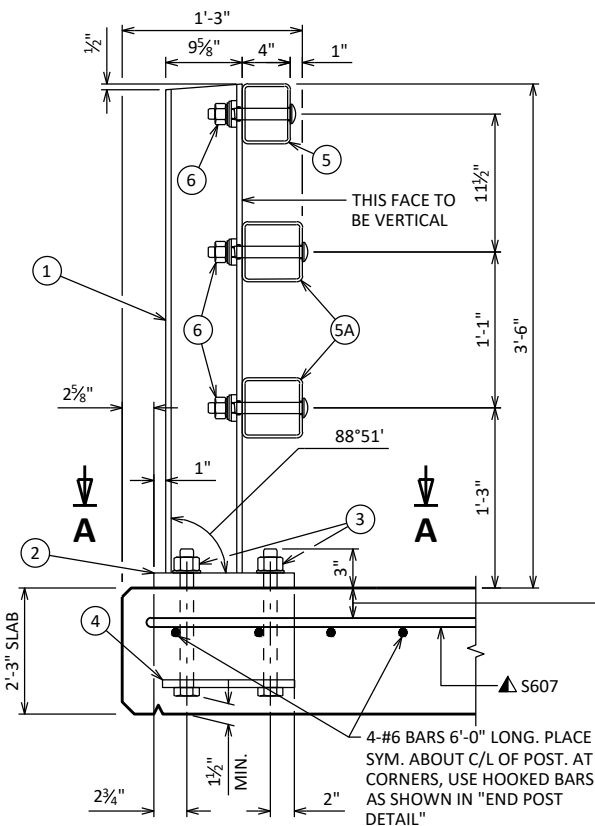
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-181			
DRAWN BY		EKK	PLANS CK'D JZ
SUPERSTRUCTURE DETAILS		SHEET 9	

LEGEND

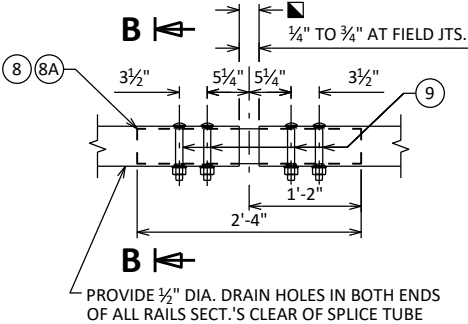
- ① W6 X 25 WITH $1\frac{1}{8}$ " X $1\frac{1}{2}$ " HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE $1\frac{1}{4}$ " X $11\frac{3}{4}$ " X 1'-8" WITH $1\frac{1}{16}$ " DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- 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 CONSTRUCTABILITY.)
- ④ $\frac{5}{8}$ " X 11" X 1'-8" ANCHOR PLATE (GALVANIZED) WITH $1\frac{3}{16}$ " 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 $1\frac{5}{16}$ " X $1\frac{1}{4}$ " LONGIT. SLOTTED HOLES IN PLATE NO. 8A. AT FIELD JOINTS AND $1\frac{5}{16}$ " X $2\frac{1}{4}$ " MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 8A. PROVIDE $1\frac{3}{16}$ " DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.

GENERAL NOTES

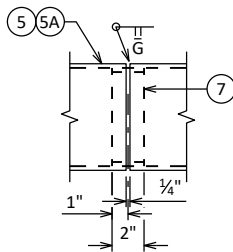
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES,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



SECTION THRU RAILING ON SLAB

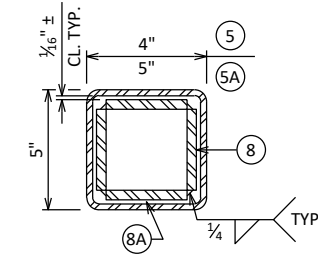


FIELD ERECTION JOINT DETAIL

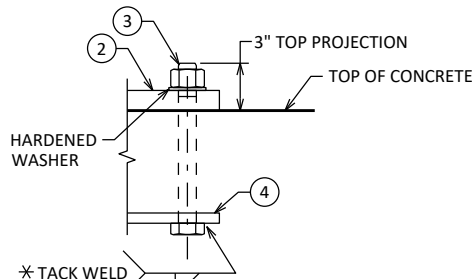


SHOP RAIL SPLICE DETAIL

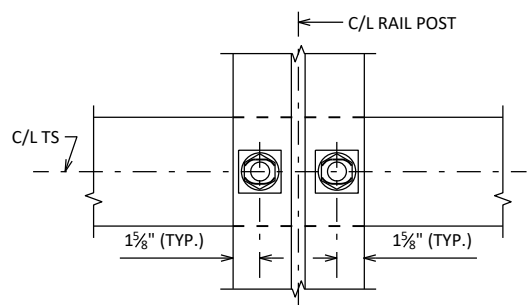
PLACE BELOW TOP MAT SLAB REINFORCEMENT



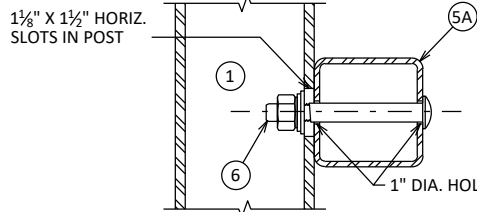
SECTION B-B



ANCHOR BOLTS



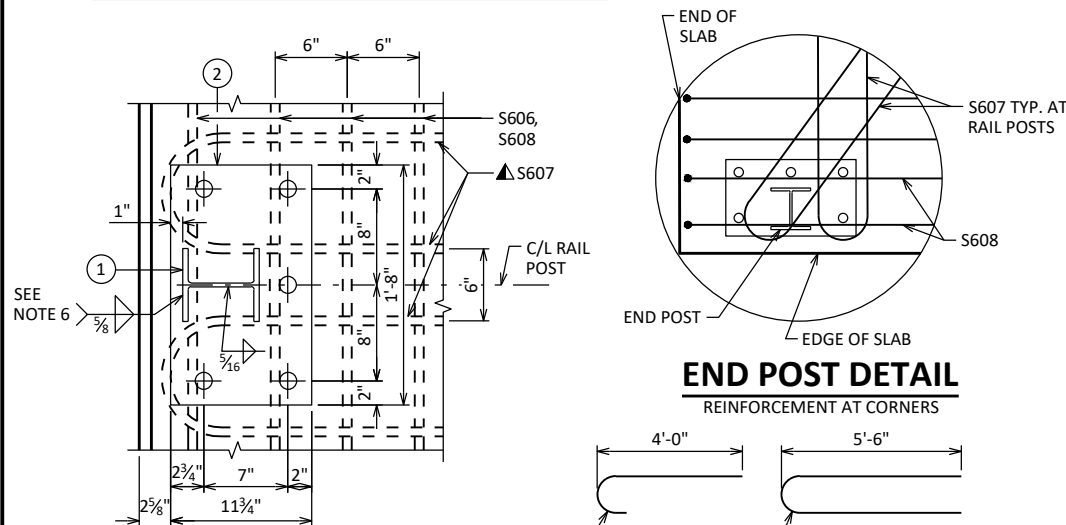
SECTION THRU POST WEB



SECTION THRU RAIL

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

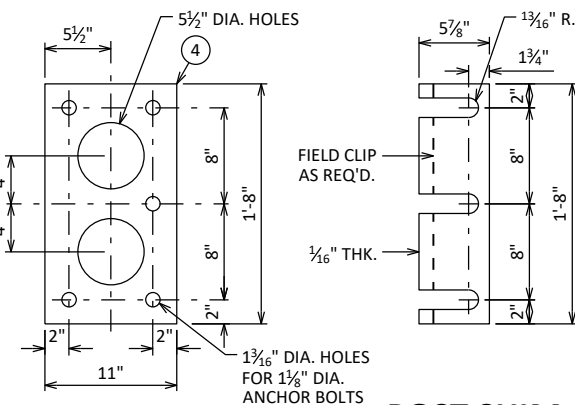
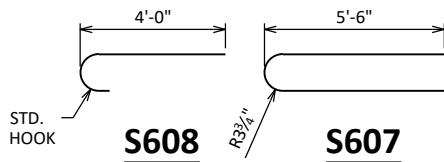
TYPICAL RAIL TO POST CONNECTIONS



END POST DETAIL

REINFORCEMENT AT CORNERS

SECTION A-A



ANCHOR PLATE

AT RAIL TO SLAB CONNECTION

POST SHIM DETAIL

FIELD CLIP AS REQ'D.

1/16" THK.

▲ TIE TO TOP MAT OF STEEL.

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

■ RDWY. OPENING OR 2 1/2" MIN. FOR STRIP SEAL EXP. JOINT & (1/4" TO 3/4") OPENING FOR A1 ABUTMENT.

NO.	DATE	REVISION	BY
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STRUCTURE B-60-181			
DRAWN BY		EKK	PLANS CK'D NRT
TUBULAR STEEL RAILING TYPE M		SHEET 10	

SCALE = 2.00

STATE ROAD SOUTH

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	1.30	NOTE 4	NOTE 6	NOTE 8
8+55.00	855.00	0.00	33.38	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0
9+00.00	900.00	45.00	15.88	0.00	16.28	0.00	41	0	14	0	41	18	0	0	23
9+50.00	950.00	50.00	0.92	0.00	31.84	0.00	16	0	45	0	57	77	0	0	-20
9+71.00	971.00	21.00	0.00	0.00	52.81	0.00	0	0	33	0	57	120	0	0	-63
9+80.00	980.00	9.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	-63

STATE ROAD NORTH

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	1.30	NOTE 4	NOTE 6	NOTE 8
10+32.00	1,032.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0
10+41.00	1041.00	9.00	0.00	0.00	33.68	0.00	0	0	0	0	0	0	0	0	0
10+50.00	1050.00	9.00	0.00	0.00	27.88	0.00	0	0	10	0	0	13	0	0	-13
11+00.00	1100.00	50.00	5.27	0.00	29.99	0.00	5	0	54	0	5	83	0	0	-78
11+50.00	1150.00	50.00	17.36	0.00	8.67	0.00	21	0	36	0	26	130	0	0	-104
11+67.00	1167.00	17.00	33.52	0.00	5.34	0.00	16	0	4	0	42	135	0	0	-93
12+00.00	1200.00	33.00	30.54	0.00	0.00	0.00	39	0	3	0	81	139	0	0	-58

NOTE: EXISTING PAVEMENT IS NOT TO BE USED IN FILL AREAS

NOTES:

- 1 - CUT

2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL

3 - FILL

4 - EXPANDED MARSH BACKFILL

6 - REDUCED MARSH IN FILL

8 - MASS ORDINATE
- CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL

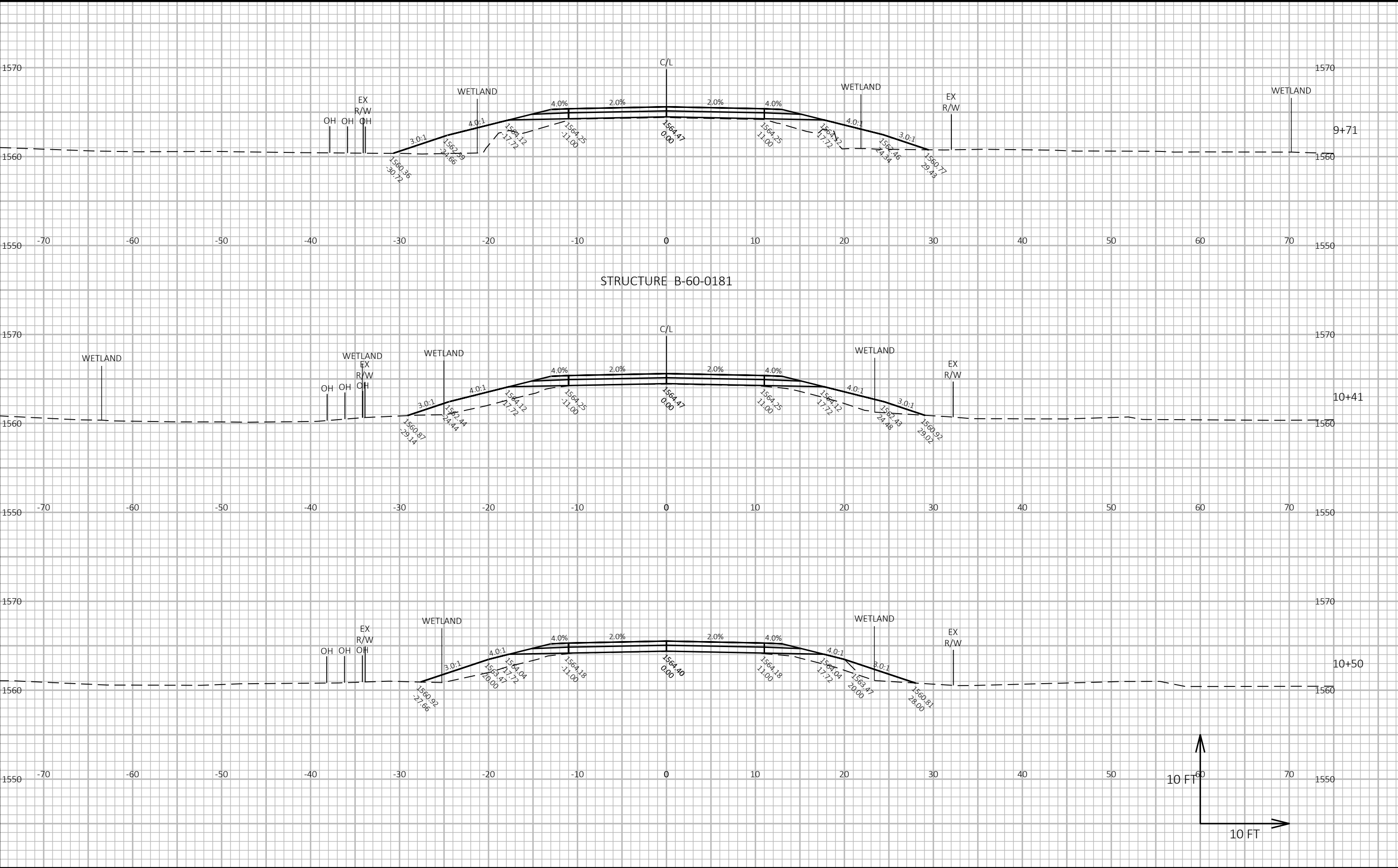
THIS DOES NOT SHOW UP IN CROSS SECTIONS

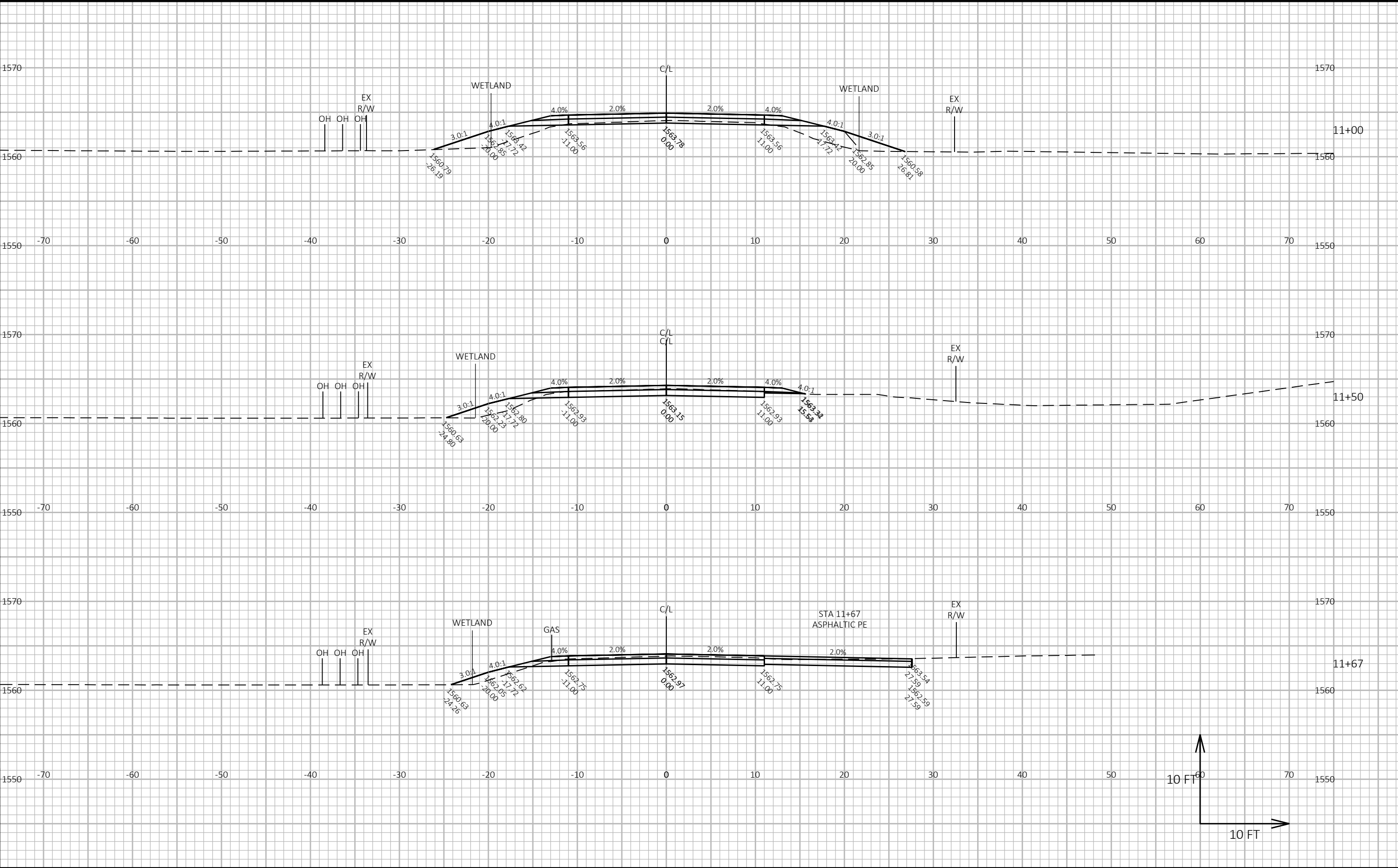
DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME

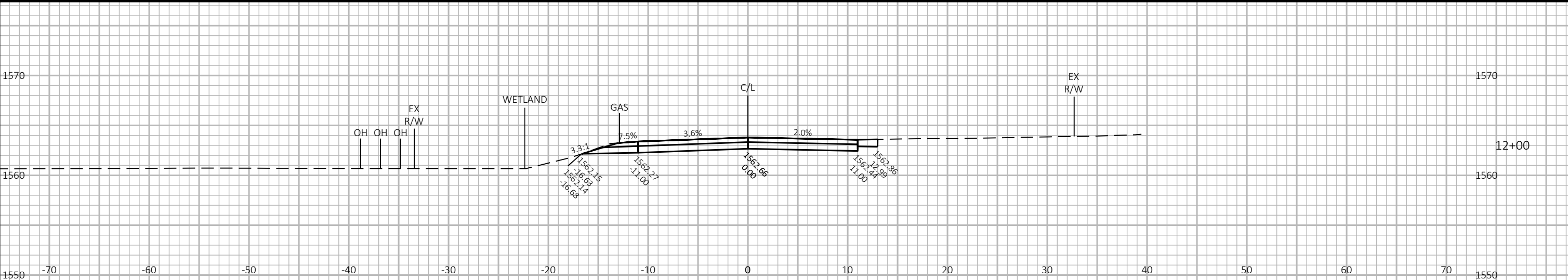
WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)

REDUCED MARSH EXCAVATION THAT CAN BE USED IN FILL

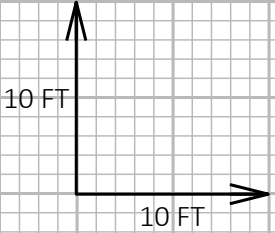
IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED MARSH EXC - EXPANDED EBS) - ((FILL - REDUCED MARSH IN FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)]



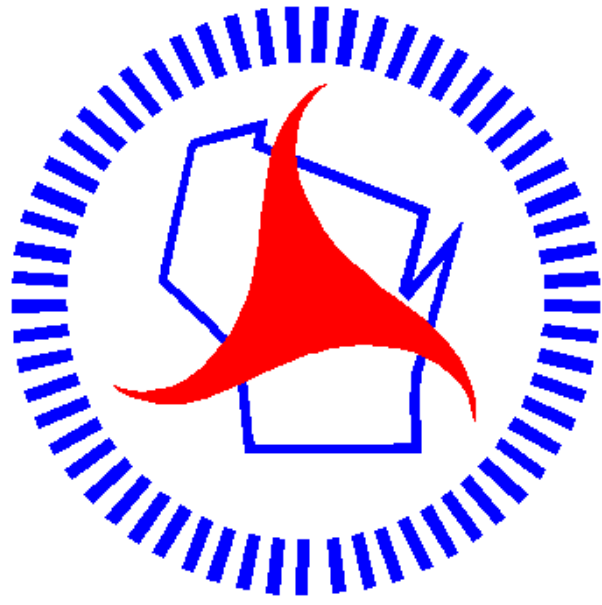




MATCH EXISTING
END PROJECT
STA 12+00



Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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