

WIS

PROJECT ID:
WITH: N/A

6792-00-70

COUNTY:

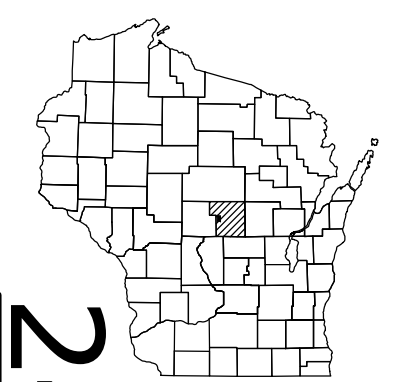
PORTAGE

NOVEMBER 2026

ORDER OF SHEETS

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

TOTAL SHEETS = 48



DESIGN DESIGNATION 6792-00-00

A.A.D.T.	2027	=	108
A.A.D.T.	2047	=	115
D.H.V.		=	12
D.D.		=	50/50
T.		=	10 %
DESIGN SPEED		=	55 MPH
ESALS		=	37,000

CONVENTIONAL SYMBOLS

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

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

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STH 66 - CTH C

BEAR CREEK BRIDGE B-49-0203

CTH II

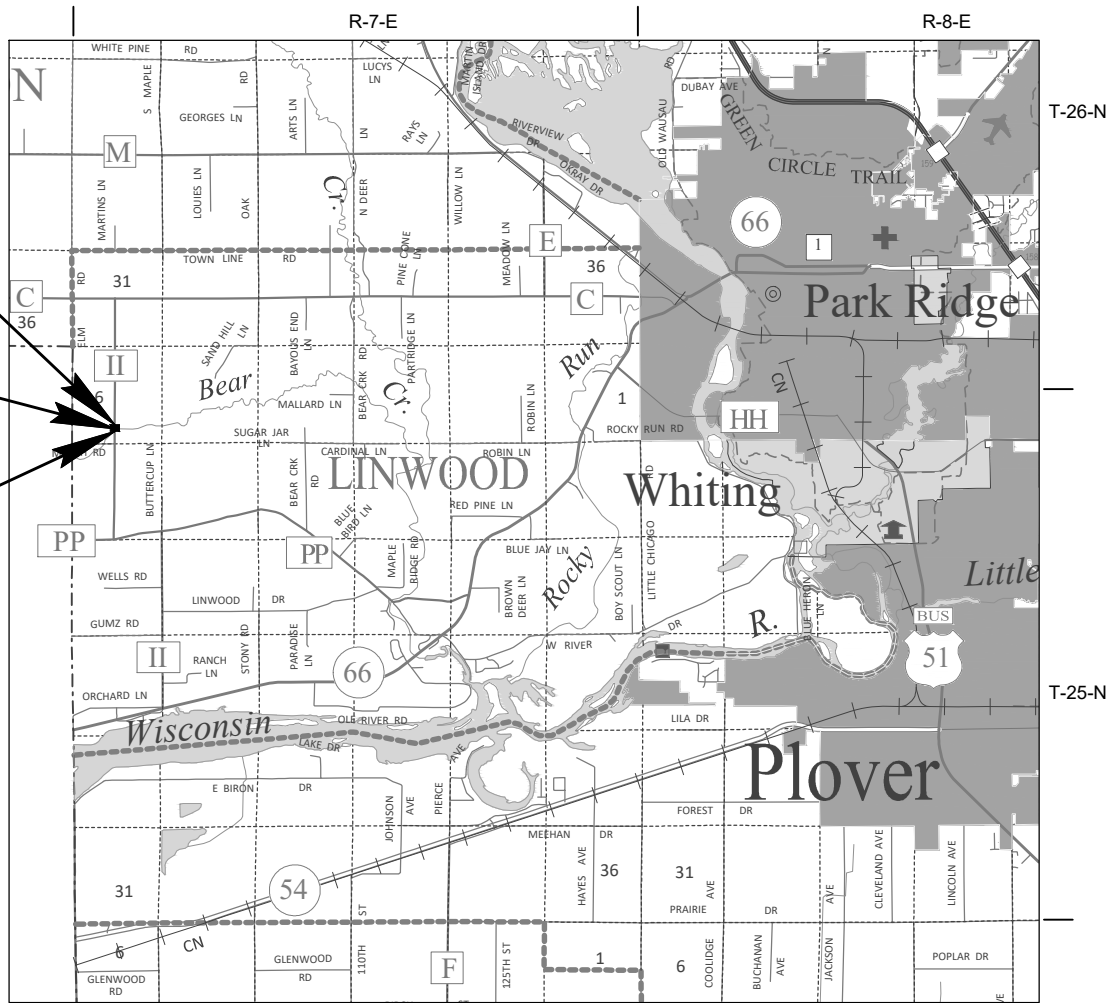
PORTAGE COUNTY

STATE PROJECT NUMBER
6792-00-70

END PROJECT
STA 11+64

STRUCTURE B-49-0203
STA 10+00

BEGIN PROJECT
STA 5+94
Y=193,710.2698
X=128,154.9314



LAYOUT
SCALE 0 2 MI

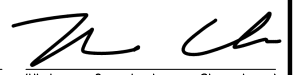
TOTAL NET LENGTH OF CENTERLINE = 0.108 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), PORTAGE 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 12A.

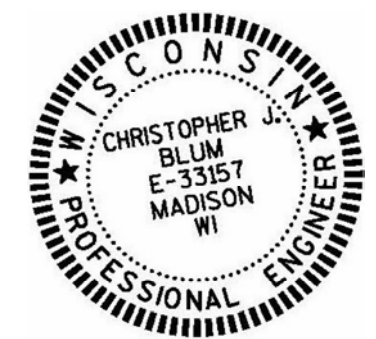
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6792-00-70	WISC 2027038	1

ACCEPTED FOR
PORTAGE COUNTY

7/8/2026
(Date) 
(Highway Commissioner Signature)

ORIGINAL PLANS PREPARED BY

 **Short Elliott Hendrickson Inc.**
6808 Odana Road, Suite 200
Madison, WI 53719-1137
608.620.6199 main | 888.908.8166 fax
Building a Better World for All of Us™ 800.732.4362 toll free | www.sehinc.com



7/9/2026
(Date) 
(Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	SEH
Designer	SEH
Project Manager	JASON SCHAEFFER
Regional Examiner	NCR
Regional Supervisor	DAN ERVA, P.E.

APPROVED FOR THE DEPARTMENT
DATE: 7/13/2026 
(Signature)

E

STANDARD ABBREVIATIONS

ABUT	ABUTMENT	SY	SQUARE YARD
AC	ACRE	SDD	STANDARD DETAIL DRAWINGS
AGG	AGGREGATE	STA	STATION
ASPH	ASPHALTIC	T OR TN	TOWN
AVG	AVERAGE	T	TRUCKS (PERCENT OF)
ADT	AVERAGE DAILY TRAFFIC	TYP	TYPICAL
BM	BENCH MARK	VAR	VARIABLE
BR	BRIDGE	VC	VERTICAL CURVE
C/L	CENTER LINE	Y	NORTH GRID COORDINATE
CONC	CONCRETE	YD	YARD
CPRC	CULVERT PIPE REINFORCED CONCRETE		
CR	CREEK		
CY	CUBIC YARD		
C&G	CURB AND GUTTER		
DHV	DESIGN HOUR VOLUME		
DISCH	DISCHARGE		
DG	DITCH GRADE		
DWY	DRIVEWAY		
X	EAST GRID COORDINATE		
EAT	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL		
EL	ELEVATION		
ENT	ENTRANCE		
ESALS	EQUIVALENT SINGLE AXLE LOADS		
EXC	EXCAVATION		
EBS	EXCAVATION BELOW SUBGRADE		
EXIST	EXISTING		
FO	FIBER OPTIC		
CWT	HUNDREDWEIGHT		
INV	INVERT		
L	LENGTH OF CURVE		
LF	LINEAR FOOT		
LS	LUMP SUM		
NC	NORMAL CROWN		
NO	NUMBER		
PAVT	PAVEMENT		
PE	PRIVATE ENTRANCE		
R	RADIUS		
REQ'D	REQUIRED		
R/W	RIGHT-OF-WAY		
R	RIVER		
RDWY	ROADWAY		
R/L	REFERENCE LINE		
SALV	SALVAGED		
SF	SQUARE FEET		

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 = 0.72 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.69 ACRES

DNR AREA LIAISON:

WI DEPT OF NATURAL RESOURCES
DNR NORTHEAST REGIONAL HEADQUARTERS
2984 SHAWANO AVE.
GREEN BAY, WI 54313
TELEPHONE: 920.360.3784
ATTENTION: JAY SCHIEFELBEIN
EMAIL: JEREMIAH.SCHIEFELBEIN@WISCONSIN.GOV

PORTAGE COUNTY:

PORTAGE COUNTY HIGHWAY DEPARTMENT
800 PLOVER ROAD
PLOVER, WI 54467
TELEPHONE: 715.345.5230
ATTENTION: NATHAN CHECK
EMAIL: CHECKN@CO.PORTAGE.WI.US

UTILITY CONTACT LIST:

AT&T DISTRIBUTION- COMMUNICATION
70 EAST DIVISION STREET
FOND DU LAC, WI 54935
TELEPHONE: 920.410.5104
ATTENTION: CHUCK BARTELT
EMAIL: CB1461@ATT.COM

WISDOT CONTACT:

WI DEPT OF TRANSPORTATION
NORTH CENTRAL REGION
1681 SECOND AVENUE SOUTH
WISCONSIN RAPIDS, WI 54495
TELEPHONE: 715.421.7309
ATTENTION: JASON SCHAEFFER
EMAIL: JASON.SCHAEFFER@DOT.WI.GOV

DESIGN CONTACT:

SHORT ELLIOTT HENDRICKSON INC
6808 ODANA ROAD, SUITE 200
MADISON, WI 53719-1137
TELEPHONE: 608.620.6192
ATTENTION: CHRISTOPHER BLUM
EMAIL: CBLUM@SEHINC.COM

WISCONSIN PUBLIC SERVICE COOPERATIVE (WPS) - ELECTRICITY
2001 PLOVER ROAD
PLOVER, WI 54467
TELEPHONE: 715.321.6933
ATTENTION: JEREMY SLOWINSKI
EMAIL:JEREMY.SLOWINSKI@WISCONSINPUBLICSERVICE.COM

GENERAL NOTES:

- THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK.
- WETLANDS, WATERWAYS, AND OTHER ENVIRONMENTALLY SENSITIVE AREAS SHALL BE PROTECTED AT ALL TIMES. DO NOT STORE EQUIPMENT OR MATERIALS NEAR THESE SITES UNLESS APPROVED BY THE ENGINEER.
- TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
- ASPHALTIC SURFACES SHALL BE SAWCUT AT THE MATCH LINE AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.
- A CONVERSION FACTOR OF 2.0 TONS/CY IS USED TO ESTIMATE QUANTITIES FOR 1 1/4-INCH BASE AGGREGATE DENSE, 1.9 TONS/CY IS USED TO ESTIMATE QUANTITIES FOR SELECT CRUSH MATERIAL AND 2.1 TONS/CY IS USED TO ESTIMATE QUANTITIES FOR 3/4- INCH BASE AGGREGATE DENSE.
- APPLY TACK COAT AT A RATE OF 0.05 GA/SY BETWEEN LAYERS OF HMA PAVEMENT.
- HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.
- TURBIDITY BARRIER MAY NOT BE REQUIRED DEPENDING ON COFFERDAM PLACEMENT. CONTRACTOR SHALL NOT BE PAID FOR TURBIDITY BARRIER ITEM IF THE ITEM IS NOT USED. IF THE CONTRACTOR DOES NOT USE A COFFERDAM, TURBIDITY BARRIER SHALL BE USED ON THE PROJECT AND THE CONTRACTOR SHALL NOT BE PAID FOR THE COFFERDAM ITEM. IF THE PROJECT CONSTRUCTION HAS WATERWAY IMPACTS PRIOR TO COFFERDAM INSTALLATION OR AFTER COFFERDAM REMOVAL, TURBIDITY BARRIER SHALL BE INSTALLED WITHIN THE WATERWAY.

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
TYPICAL SECTIONS
CONSTRUCTION DETAILS

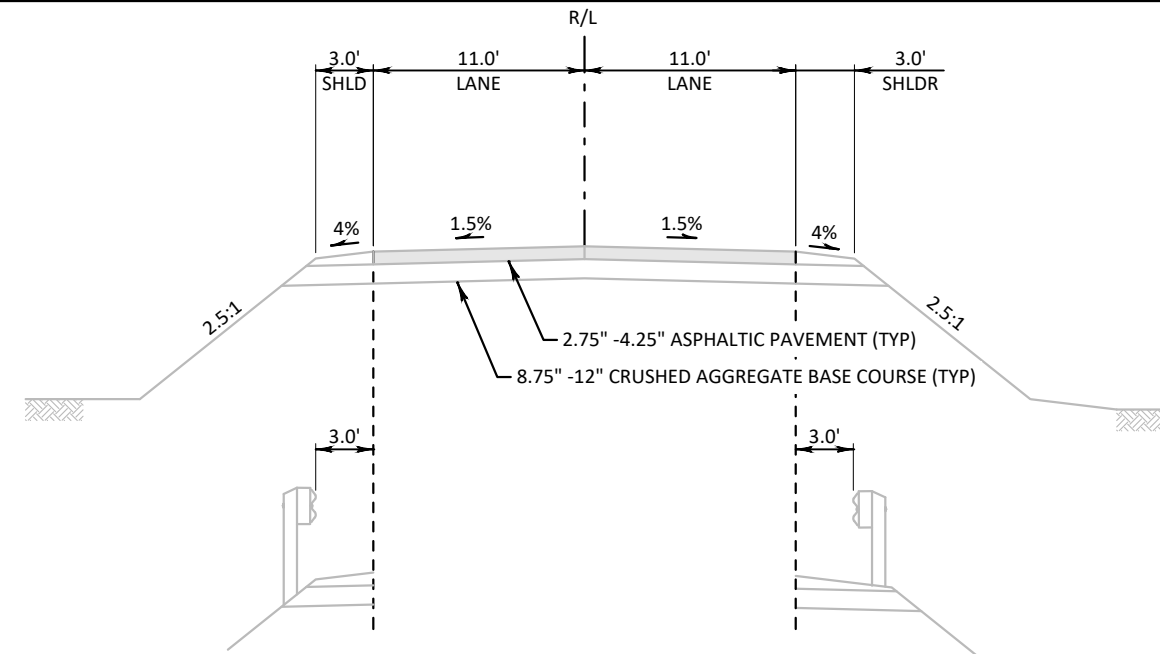
DIGGERS

HOTLINE



Dial 811 or (800)242-8511

www.DiggersHotline.com

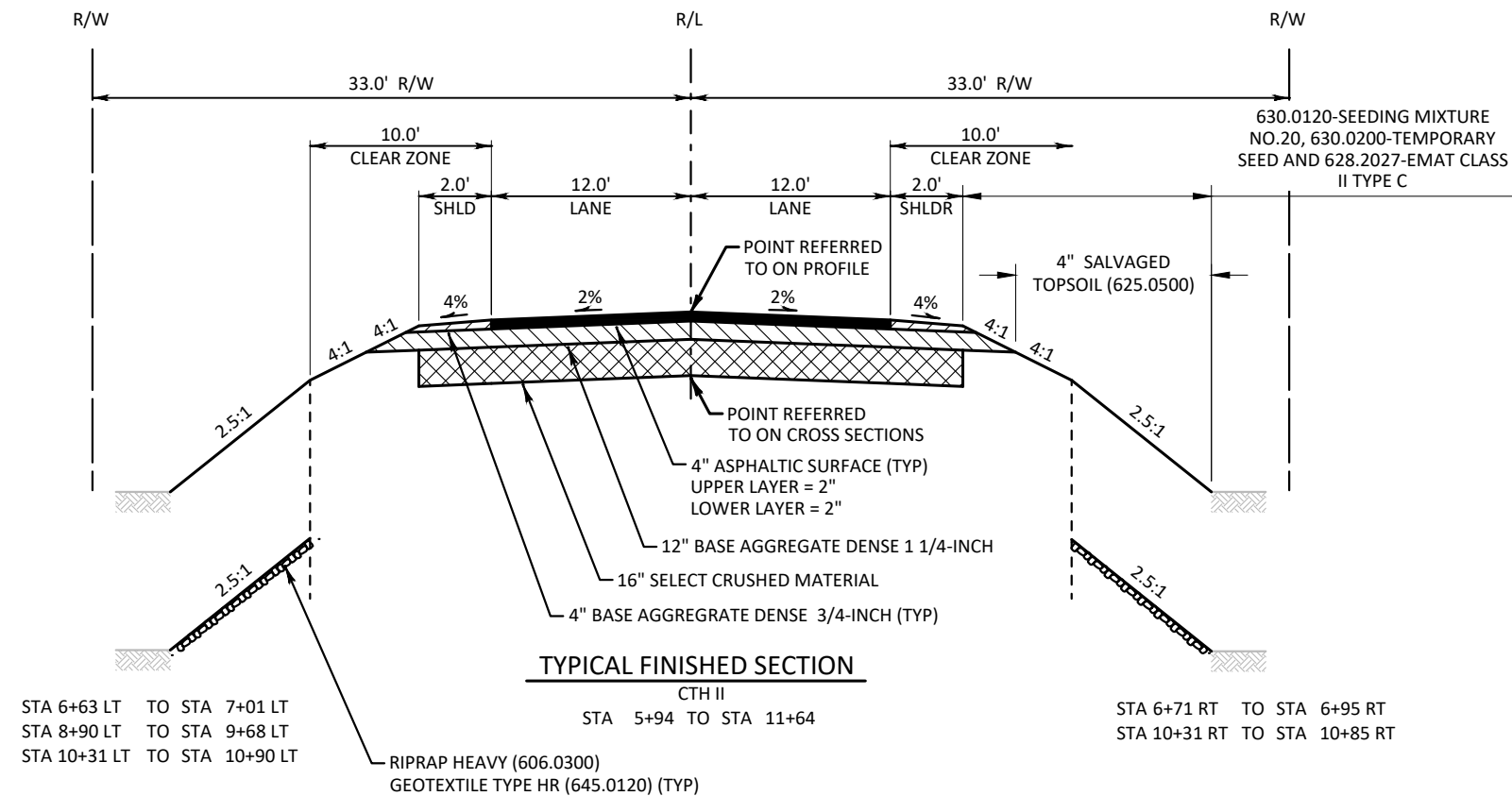


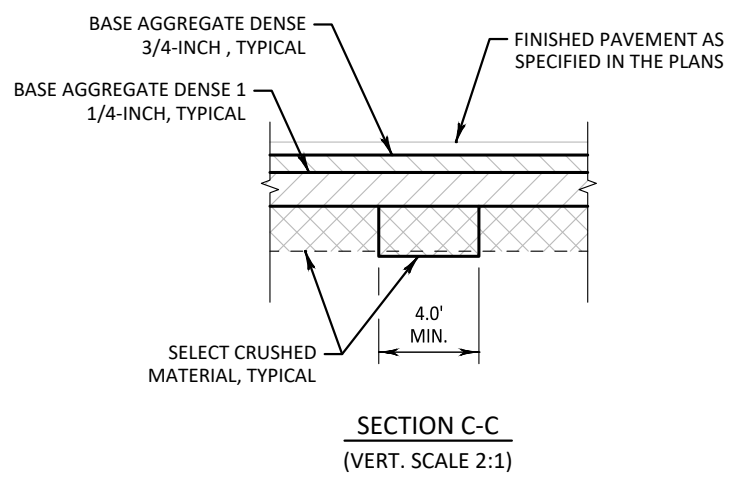
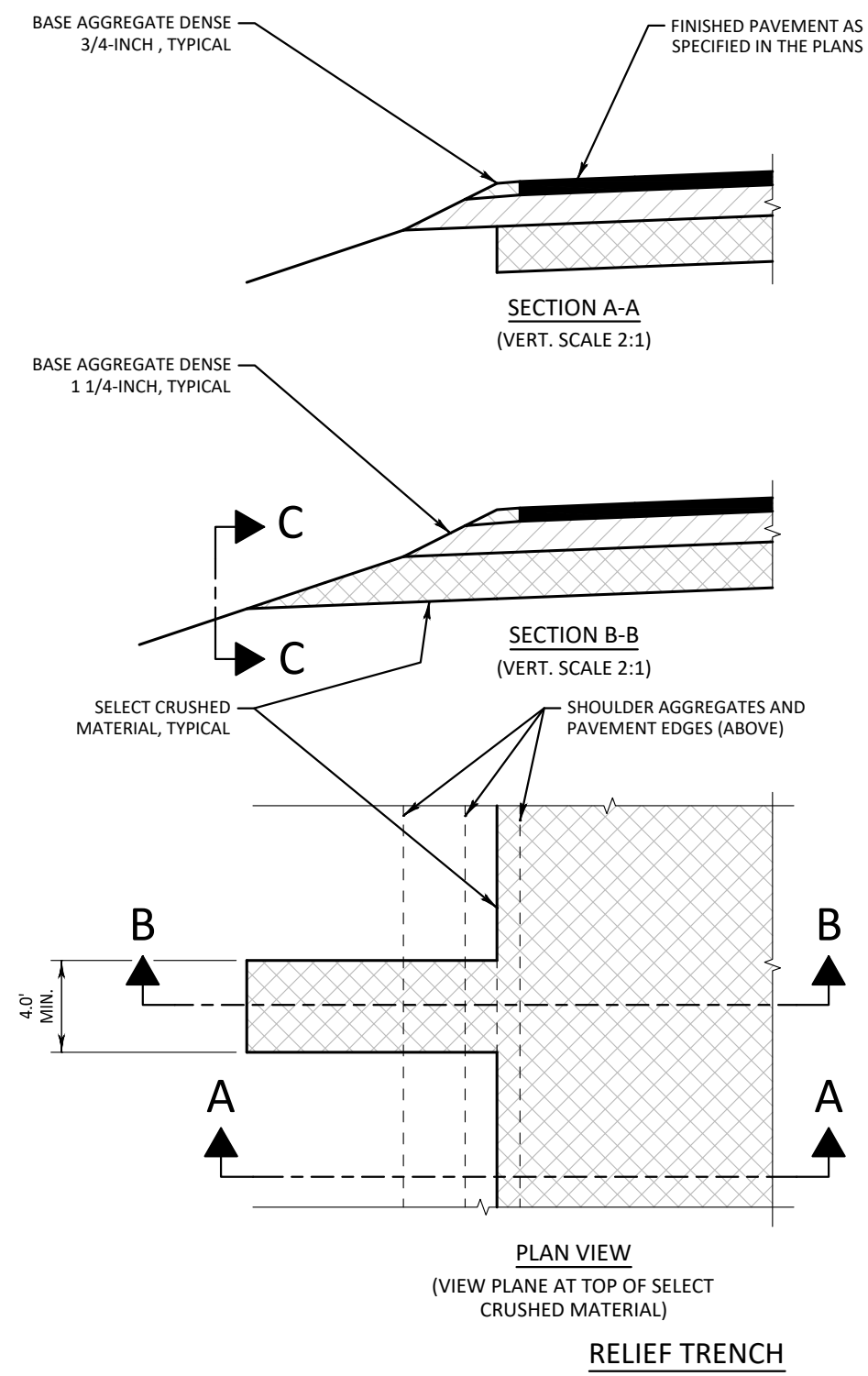
EXISTING BEAM GUARD LOCATIONS	
STA 9+12, LT & RT	TO STA 10+87, LT & RT

TYPICAL EXISTING SECTION

CTH II

STA 5+94 TO STA 11+64



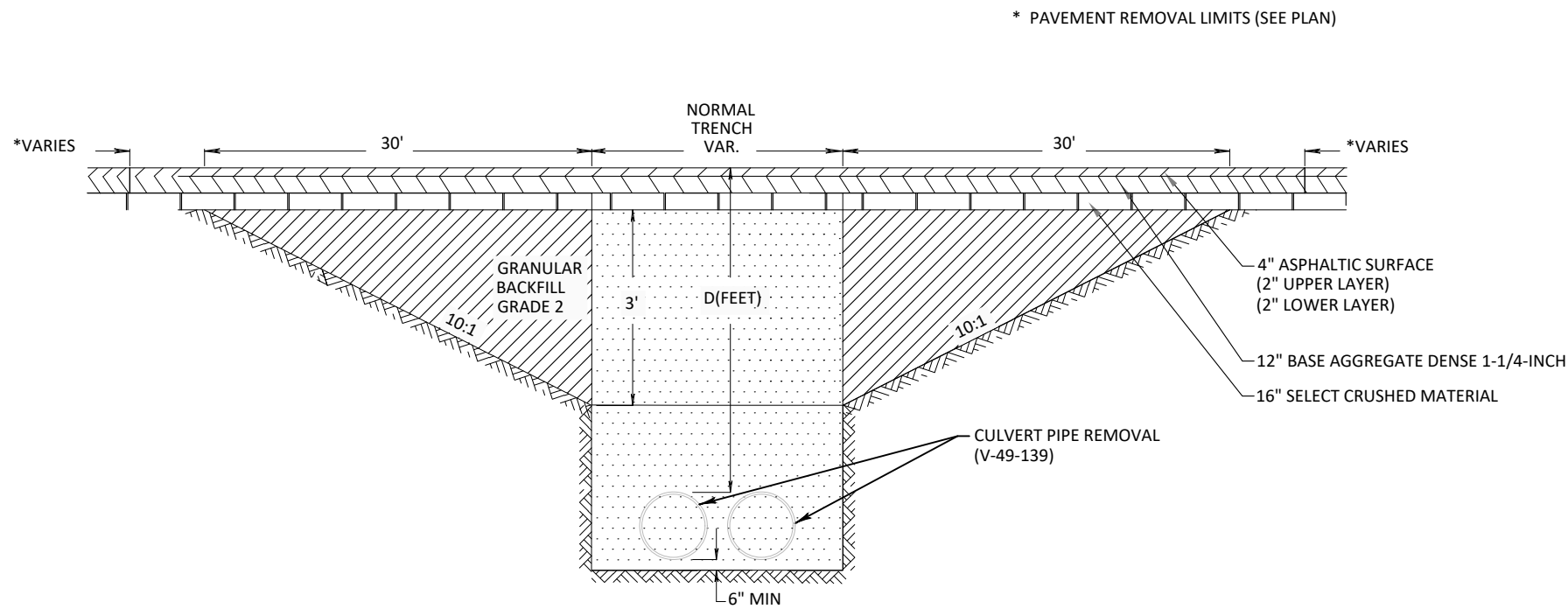


NOTE:

CONSTRUCT RELIEF TRENCHES AT STA 7+81 (LEFT AND RIGHT).

FINAL LOCATIONS TO BE APPROVED OR DETERMINED BY THE ENGINEER IN THE FIELD.

MATERIALS AND LABOR FOR RELIEF TRENCH ARE INCLUDED IN THE SELECT CRUSHED MATERIAL BID ITEM.



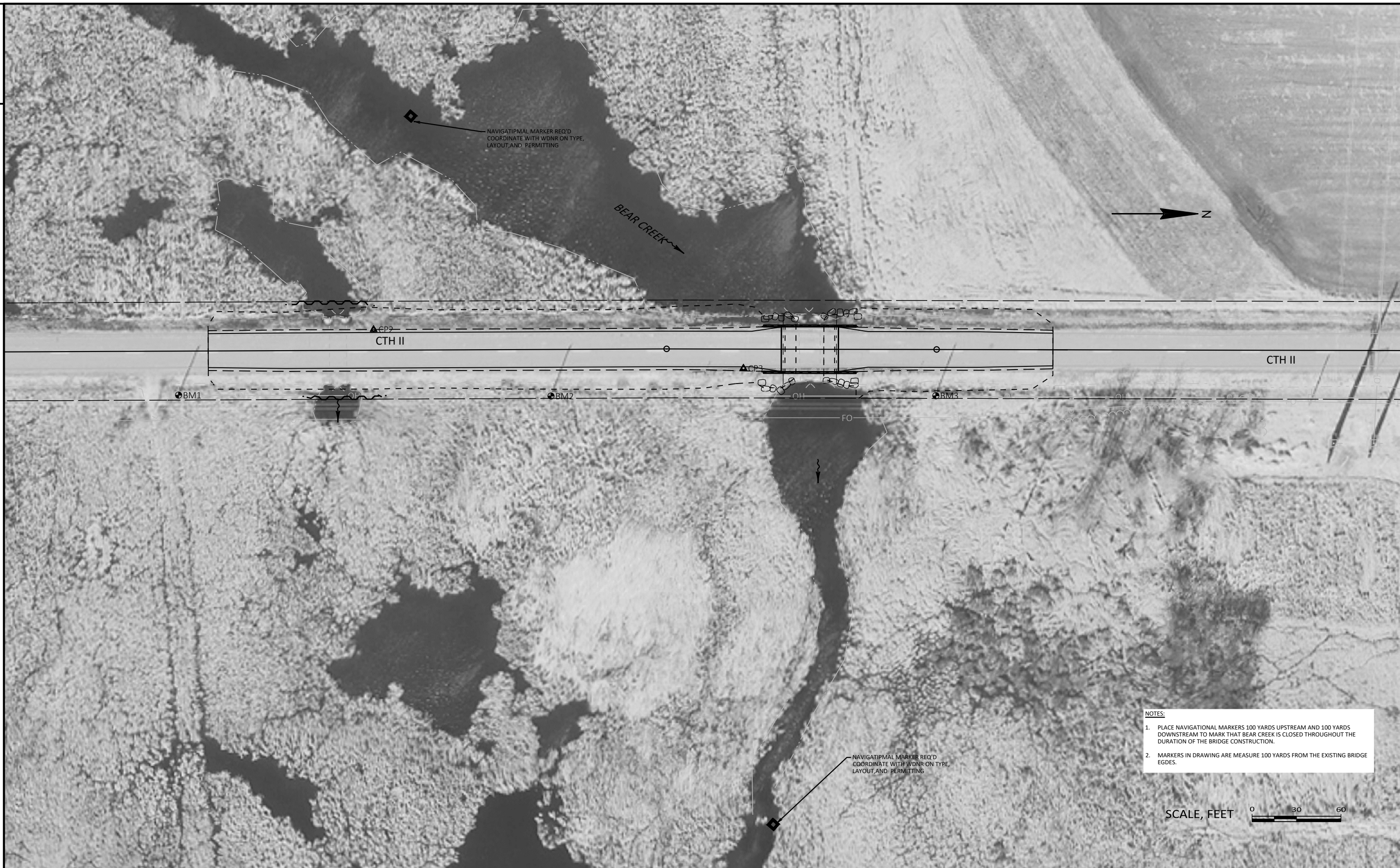
TRENCH RESTORATION CROSS SECTION DETAIL

LEGEND

- EXCAVATION COMMON & BACKFILL GRANULAR GRADE 2 PAID SEPARATELY
- EXCAVATION (INCIDENTAL TO EXCAVATION FOR STRUCTURES CULVERTS BID-ITEM) & BACKFILL GRANULAR GRADE 2

EXISTING CULVERT PIPES

STATION	WIDTH	HEIGHT	D(FT) MIN.	D(FT) MAX.
6+76	72"	54"	1.53	1.60
6+87	72"	54"	1.52	1.69



Estimate Of Quantities

6792-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0220	Removing Structure (structure) 01. P-49-0055	EACH	1.000	1.000
0004	203.0220	Removing Structure (structure) 01. V-49-0139	EACH	1.000	1.000
0006	204.0165	Removing Guardrail	LF	350.000	350.000
0008	205.0100	Excavation Common	CY	1,720.000	1,720.000
0010	206.1001	Excavation for Structures Bridges (structure) 01. B-49-0203	EACH	1.000	1.000
0012	206.2001	Excavation for Structures Culverts (structure) 01. V-49-0139	EACH	1.000	1.000
0014	206.5001	Cofferdams (structure) 01. B-49-0203	EACH	1.000	1.000
0016	206.5001	Cofferdams (structure) 01. V-49-0139	EACH	1.000	1.000
0018	209.2500	Backfill Granular Grade 2	TON	720.000	720.000
0020	210.1500	Backfill Structure Type A	TON	382.000	382.000
0022	213.0100	Finishing Roadway (project) 01. 6792-00-70	EACH	1.000	1.000
0024	305.0110	Base Aggregate Dense 3/4-Inch	TON	71.000	71.000
0026	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,390.000	1,390.000
0028	312.0110	Select Crushed Material	TON	1,410.000	1,410.000
0030	455.0605	Tack Coat	GAL	87.000	87.000
0032	465.0105	Asphaltic Surface	TON	320.000	320.000
0034	502.0100	Concrete Masonry Bridges	CY	154.000	154.000
0036	502.3200	Protective Surface Treatment	SY	161.000	161.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	4,080.000	4,080.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	19,562.000	19,562.000
0042	513.4061	Railing Tubular Type M	LF	132.000	132.000
0044	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0046	550.0020	Pre-Boring Rock or Consolidated Materials	LF	160.000	160.000
0048	550.1100	Piling Steel HP 10-Inch x 42 Lb	LF	200.000	200.000
0050	606.0300	Riprap Heavy	CY	187.000	187.000
0052	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	180.000	180.000
0054	618.0100	Maintenance and Repair of Haul Roads (project) 01. 6792-00-70	EACH	1.000	1.000
0056	619.1000	Mobilization	EACH	1.000	1.000
0058	624.0100	Water	MGAL	30.000	30.000
0060	625.0500	Salvaged Topsoil	SY	1,123.000	1,123.000
0062	628.1504	Silt Fence	LF	1,075.000	1,075.000
0064	628.1520	Silt Fence Maintenance	LF	1,075.000	1,075.000
0066	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0068	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0070	628.2027	Erosion Mat Class II Type C	SY	2,010.000	2,010.000
0072	628.6005	Turbidity Barriers	SY	340.000	340.000
0074	630.0120	Seeding Mixture No. 20	LB	91.000	91.000
0076	630.0200	Seeding Temporary	LB	55.000	55.000
0078	630.0500	Seed Water	MGAL	32.000	32.000
0080	634.0612	Posts Wood 4x6-Inch x 12-FT	EACH	4.000	4.000
0082	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0084	638.2602	Removing Signs Type II	EACH	4.000	4.000
0086	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0088	642.5001	Field Office Type B	EACH	1.000	1.000
0090	643.0420	Traffic Control Barricades Type III	DAY	2,124.000	2,124.000
0092	643.0705	Traffic Control Warning Lights Type A	DAY	3,304.000	3,304.000
0094	643.0900	Traffic Control Signs	DAY	1,652.000	1,652.000
0096	643.5000	Traffic Control	EACH	1.000	1.000
0098	645.0111	Geotextile Type DF Schedule A	SY	58.000	58.000

Estimate Of Quantities

6792-00-70

Line	Item	Item Description	Unit	Total	Qty
0100	645.0120	Geotextile Type HR	SY	306.000	306.000
0102	646.2020	Marking Line Epoxy 6-Inch	LF	150.000	150.000
0104	650.4500	Construction Staking Subgrade	LF	531.000	531.000
0106	650.5000	Construction Staking Base	LF	531.000	531.000
0108	650.6501	Construction Staking Structure Layout (structure) 01. B-49-0203	EACH	1.000	1.000
0110	650.9911	Construction Staking Supplemental Control (project) 01. 6792-00-70	EACH	1.000	1.000
0112	650.9920	Construction Staking Slope Stakes	LF	531.000	531.000
0114	690.0150	Sawing Asphalt	LF	53.000	53.000
0116	715.0502	Incentive Strength Concrete Structures	DOL	924.000	924.000
0118	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. STA 10+00	EACH	1.000	1.000
0120	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0122	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

3

REMOVING GUARDRAIL				
				204.0165 REMOVING GUARDRAIL LF
CATEGORY	STATION	LOCATION		LF
CTH II 0010	9+10 - 10+84	LT		175
	9+12 - 10+87	RT		175
	ITEM TOTALS			350

BASE AGGREGATE DENSE						
CATEGORY	STATION	LOCATION	TON	TON	TON	MGAL
CTH II 0010	8+25 - 9+81	LT & RT	21	410	420	9
	10+19 - 11+64	LT & RT	19	380	380	8
	CATEGORY 0010 TOTALS		40	790	800	17
0030	5+94 - 8+25	LT & RT	31	600	610	13
	CATEGORY 0030 TOTALS		31	600	610	13
	ITEM TOTALS		71	1390	1410	30

ASPHALTIC PAVEMENT ITEMS				
CATEGORY	STATION	LOCATION	GAL	TON
CTH II 0010	8+25 - 9+81	LT & RT	26	95
	10+19 - 11+64	LT & RT	24	87
	CATEGORY 0010 TOTALS		50	182
0030	5+94 - 8+25	LT & RT	37	138
	CATEGORY 0030 TOTALS		37	138
	ITEM TOTALS		87	320

MARKING LINE				
CATEGORY	STATION	LOCATION	LF	REMARKS
CTH II 0010	8+25 - 11+64	CL	87.5	SINGLE DASHED YELLOW CL (12.5' LINE 37.5' SKIP)
	CATEGORY 0010 TOTALS		87.5	
0030	5+94 - 8+25	CL	62.5	SINGLE DASHED YELLOW CL (12.5' LINE 37.5' SKIP)
	CATEGORY 0030 TOTALS		62.5	
	ITEM TOTAL		150	

TOPSOIL AND SEEDING						
CATEGORY	STATION	LOCATION	SY	LB	LB	MGAL
CTH II 0010	8+25 - 9+81	LT & RT	256	21	13	7.2
	10+19 - 11+64	LT & RT	247	20	12	7.0
	CATEGORY 0010 TOTALS		628	51	31	18
0030	5+94 - 8+25	LT & RT	396	32	19	11
	CATEGORY 0030 TOTALS		495	40	24	14
	ITEM TOTALS		1123	91	55	32

EROSION CONTROL ITEMS								
CATEGORY	STATION	LOCATION	CY	LF	LF	SY	SY	SY
CTH II 0010	8+25 - 9+81	LT & RT	34	210	210	460	160	50
	10+19 - 11+64	LT & RT	22	250	250	430	110	30
	CATEGORY 0010 TOTALS		70	575	575	1110	340	100
0030	5+94 - 8+25	LT & RT	20	400	400	720	-	30
	CATEGORY 0030 TOTALS		20	500	500	900	-	38
	ITEM TOTALS		90	1075	1075	2010	340	138

MOBILIZATIONS EROSION CONTROL		
CATERGORY	STATION	
CTH II 0010	8+25 - 11+64	2
	CATEGORY 0010 TOTALS	
0030	5+94 - 8+25	2
	CATEGORY 0030 TOTALS	
	ITEM TOTALS	

TRAFFIC CONTROL									

3

PERMANENT SIGNING									
CATERGORY	SIGN GROUP CODE	SIGN CODE	SIGN MESSAGE	TYPE II SIZE	634.0612 POSTS WOOD 4X6-INCH 12-FT EACH	637.2230 SIGN REFLECTIVE F SF	638.2602 REMOVING SIGN EACH	638.3000 REMOVING SMALL SIGN EACH	REMARKS
CTH II									
0010	1-1	W5-52L	CLEARANCE STRIPER	12"X36"	1	3	1	1	REPLACE
	1-2	W5-52R	CLEARANCE STRIPER	12"X36"	1	3	1	1	REPLACE
	1-3	W5-52L	CLEARANCE STRIPER	12"X36"	1	3	1	1	REPLACE
	1-4	W5-52R	CLEARANCE STRIPER	12"X36"	1	3	1	1	REPLACE
ITEM TOTALS					4	12	4	4	

CONSTRUCTION STAKING					
CATEGORY	STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.9920 SLOPE STAKES LF
CTH II					
0010	8+25 - 9+81	LT & RT	156	156	156
	10+19 - 11+64	LT & RT	145	145	145
CATEGORY 0010 TOTALS			301	301	301
0030	5+94 - 8+25	LT & RT	230	230	230
CATEGORY 0030 TOTALS			230	230	230
ITEM TOTALS			531	531	531

BIRD NETTING			
CATEGORY	STATION	LOCATION	999.2000.S INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM EACH
CTH II			
0010	10+00	LT & RT	1
ITEM TOTAL			1

SAWING ASPHALT				
CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT LF	REMARKS
CTH II				
0010	5+94	LT - RT	27	BEGIN PROJECT
	11+64	LT - RT	26	END PROJECT
ITEM TOTAL			53	

REMOVING STRUCTURES								
			203.0220		206.2001		209.2500	
			REMOVING	*205.0100	EXCAVATION	206.5001	BACKFILL	
			STRUCTURES	EXCAVATION	CULVERTS	COFFERDAMS	GRANULAR	
			V-49-139	COMMON (1)	V-49-139	V-49-139	GRADE 2	
CATEGORY	STATION	LOCATION	EACH	CY	EACH	EACH	TON	REMARKS
CTH II								
0030	6+72 - 6+92	LT & RT	1	218	1	1	320	CULVERT REMOVAL & EXCAVATION & BACKFILL
	6+42 - 6+72	LT & RT	-	-		-	210	TRENCH SLOPE BACKFILL
	6+92 - 7+21	LT & RT	-	-		-	190	TRENCH SLOPE BACKFILL
ITEM TOTALS			1	218	1	1	720	
* INCIDENTAL TO BID-TEM 206.2001 EXCAVATION FOR STRUCTURES CULVERTS (V-49-139) FOR- TRENCH EXCAVATION ONLY PER TRENCH RESTORATION CROSS SECTION DETAIL *ADDITIONAL QUANTITIES SHOWN ELSEWHERE								
NOTES: 1) UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN COMMON EXCAVATION.								

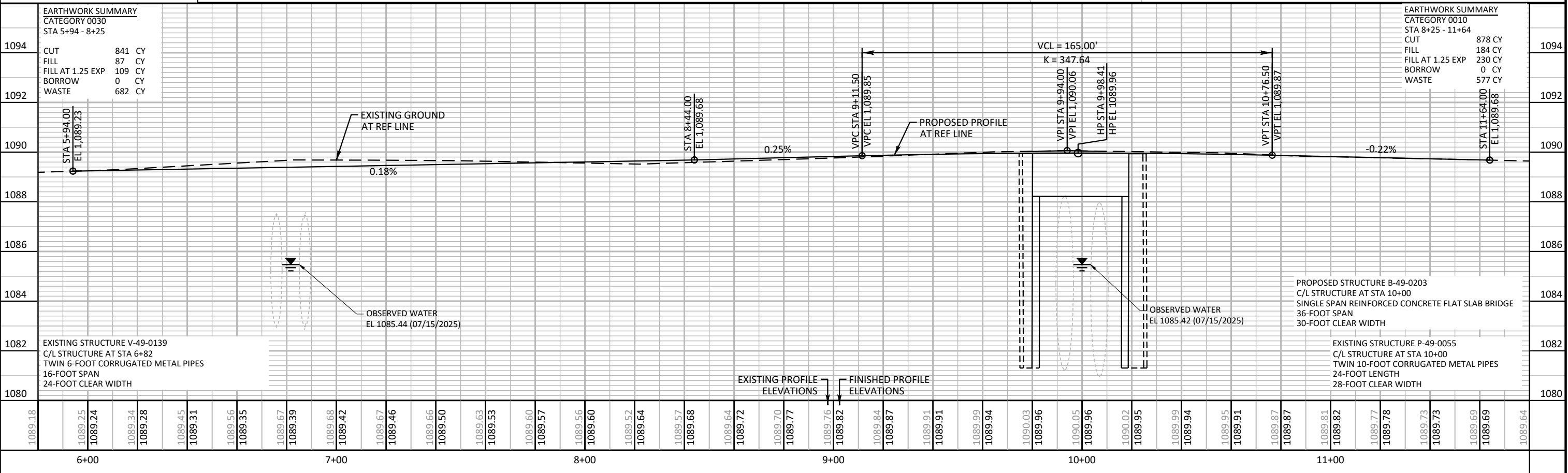
EARTHWORK SUMMARY							
CATEGORY	STATION	LOCATION	*205.0100 EXCAVATION COMMON (1) CY	SALVAGED/ UNUSABLE PAVEMENT MATERIAL CY	AVAILABLE MATERIAL (2) CY	EXPANDED FILL (3) CY	MASS ORDINATE (4) +/-
CTH II							
0010	8+25 - 9+81	LT & RT	458	38	420	113	308
	10+19 - 11+64	LT & RT	421	35	386	112	273
CATEGORY 0010 TOTALS			879	73	806	225	581
0030	5+94 - 8+25	LT & RT	841	50	791	109	682
CATEGORY 0030 TOTALS			841	50	791	109	682
ITEM TOTALS			1720	123	1597	334	1263

NOTES:
1) UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN COMMON EXCAVATION.
2) AVAILABLE MATERIAL DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
3) EXPANSION FACTOR = 1.25
4) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

3

CONTROL POINT/BENCH MARK							
N0	ID	STATION	OFFSET	DESCRIPTION	ELEVATION	NORTHING	EASTING
1249	BM1	5+73.83	29.74' RT	BM /BM1 SPK IN PP	1087.35	193,690.2230	128,184.7640
5146	BM3	10+85.02	31.22' RT	BM3 /BM3 SPK IN PP	1087.42	194,201.2160	128,185.1210

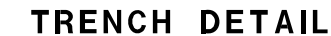


Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
15C02-10A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-10B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-10C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-12	SIGNING AND MARKING FOR TWO LANE BRIDGES
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C11-11B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



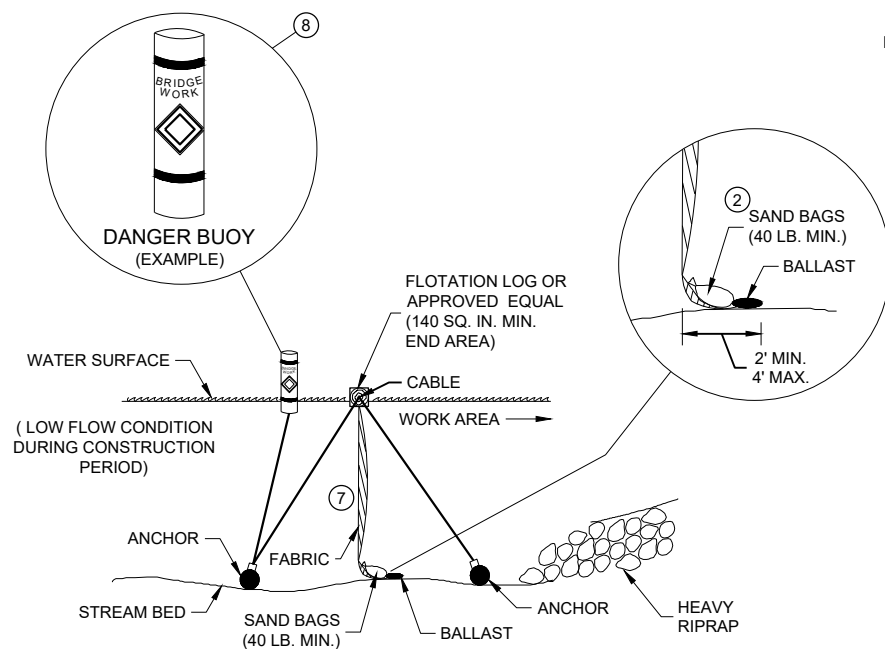
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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



SILT FENCE

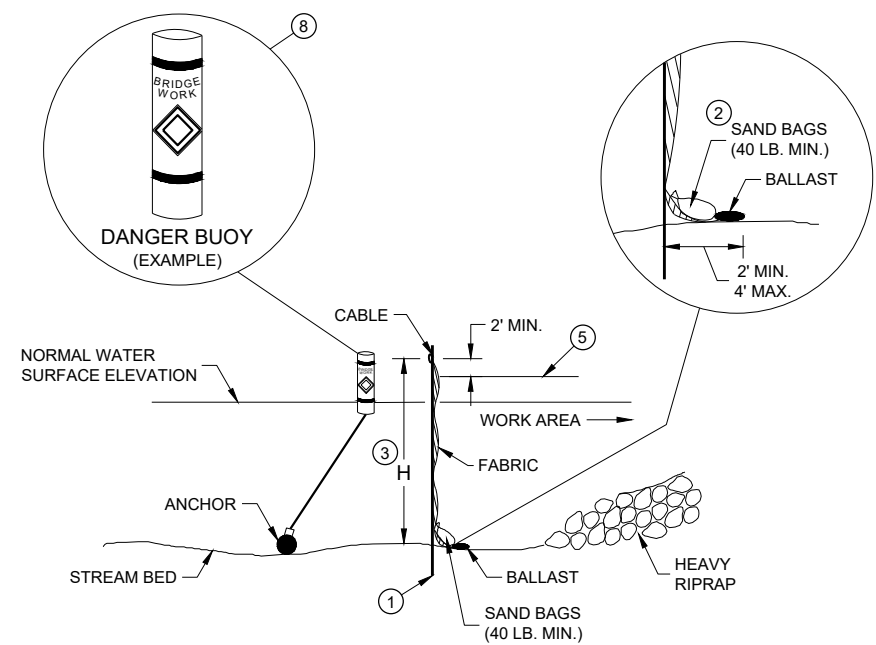
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE / S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT **13** INCHES
FHWA



SECTION B - B

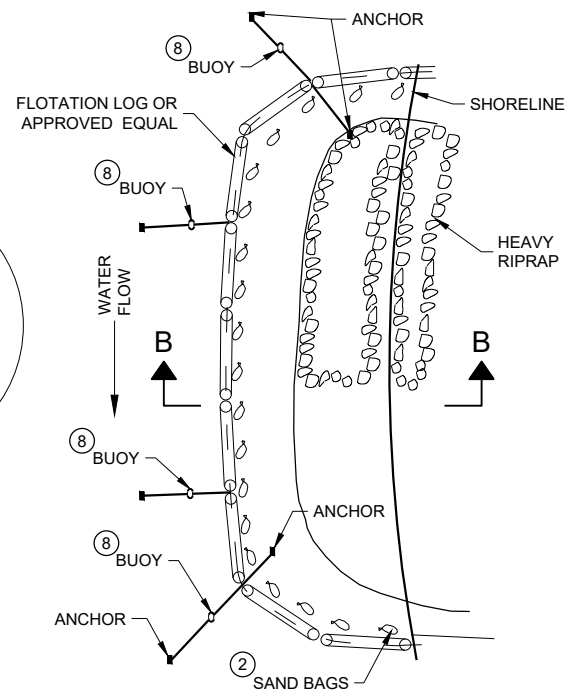
TURBIDITY BARRIER - FLOAT ALTERNATIVE CAUTION - SEE NOTE 6



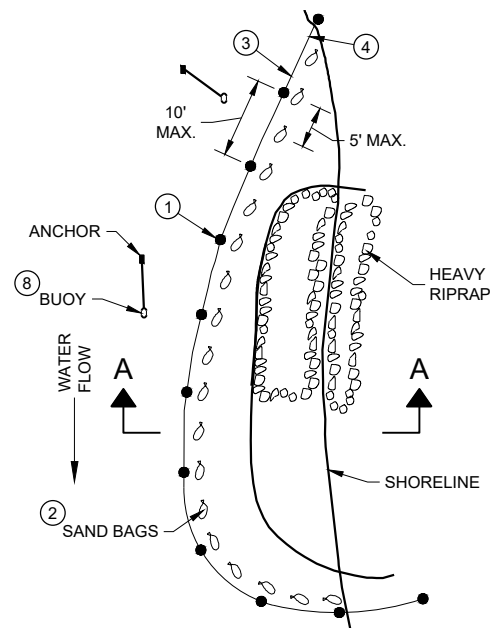
SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS



PLAN VIEW



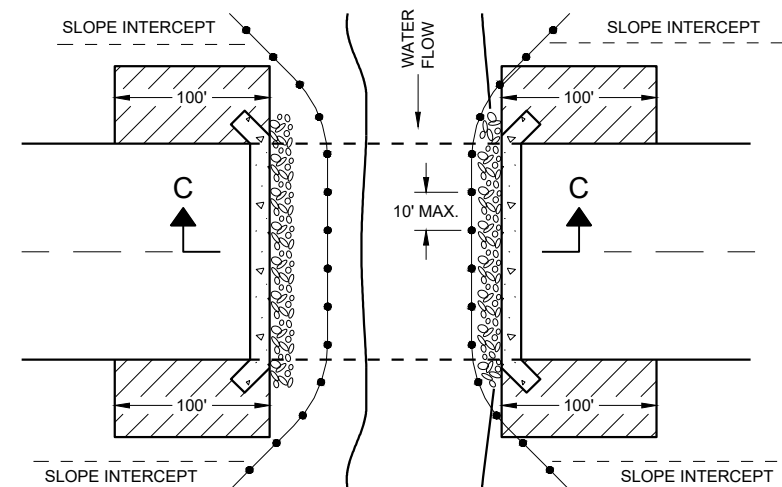
PLAN VIEW

GENERAL NOTES

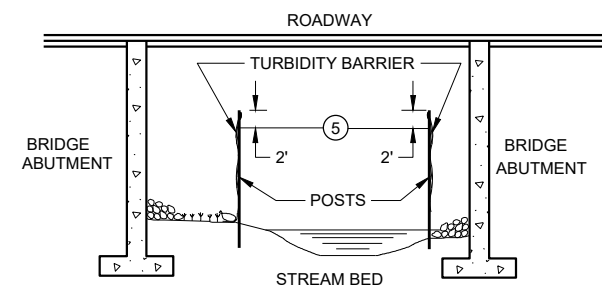
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



PLAN VIEW



SECTION C - C

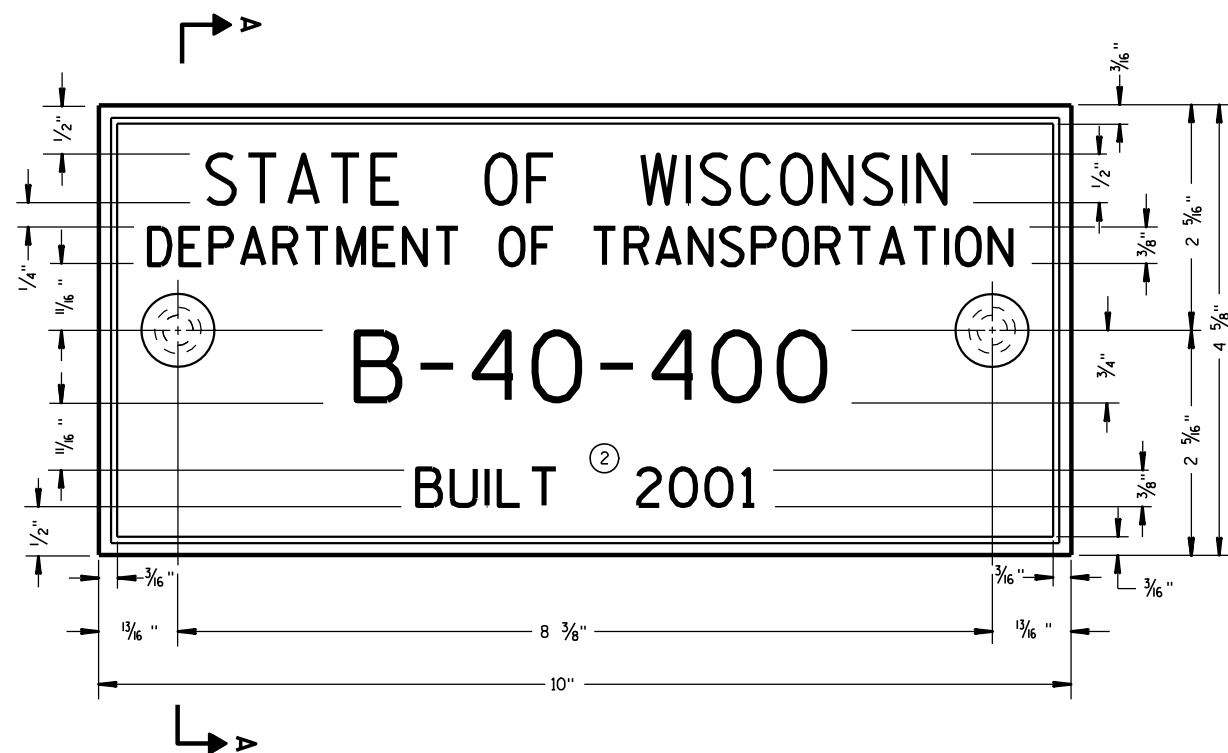
TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

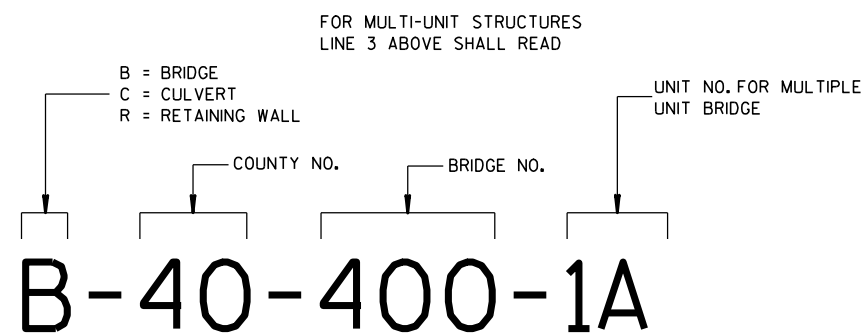
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/4/02 DATE /S/ Beth Canestra
DATE CHIEF ROADWAY DEVELOPER
ENGINEER 14

FHWA



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



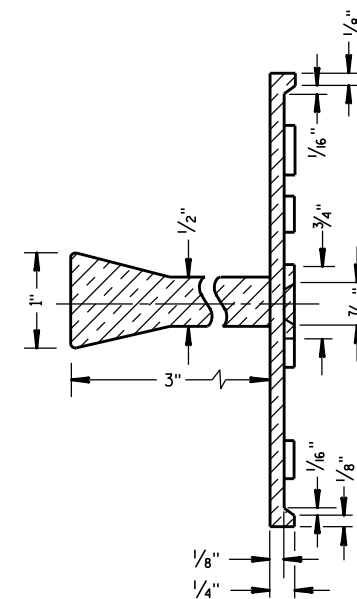
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

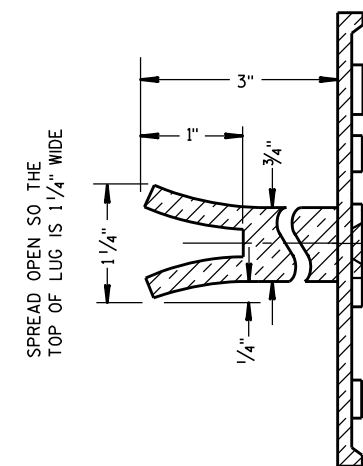
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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



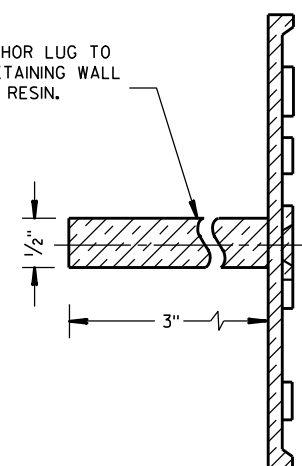
SECTION A-A



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

ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

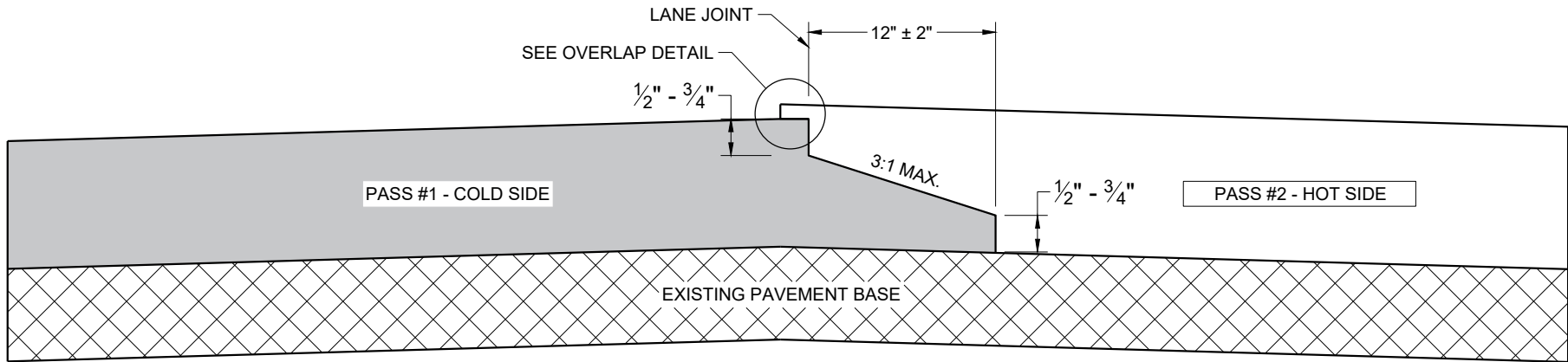
APPROVED

3/26/10
DATE

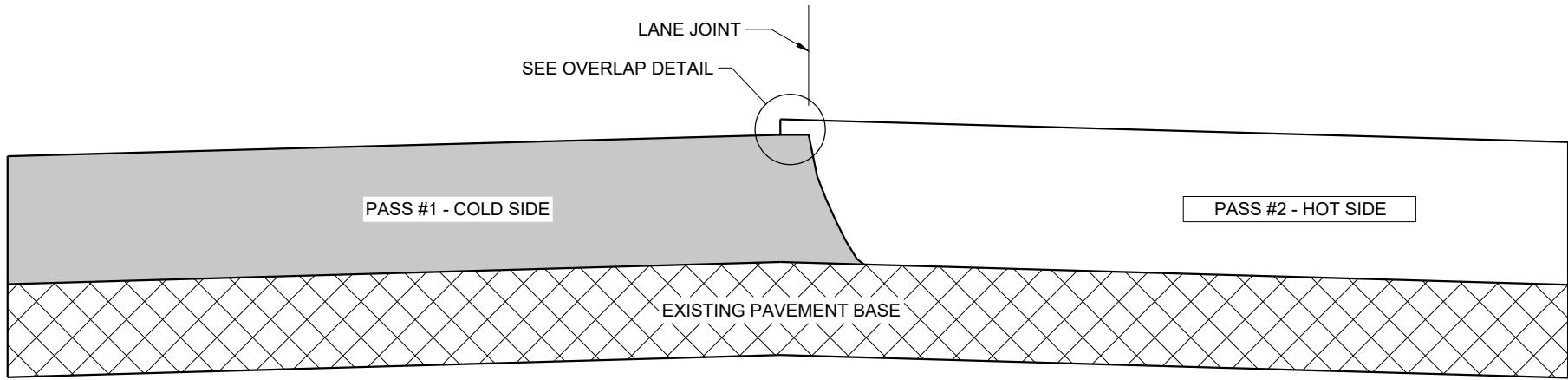
FHWA

/S/ Scot Beck
CHIEF STRUCTURAL DEVELOPER

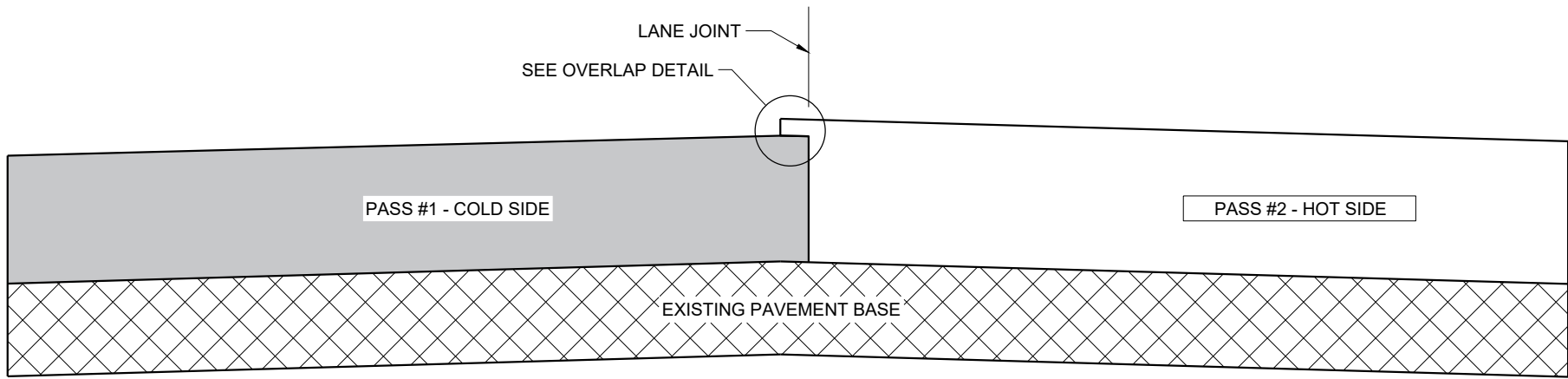
15
JEER



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

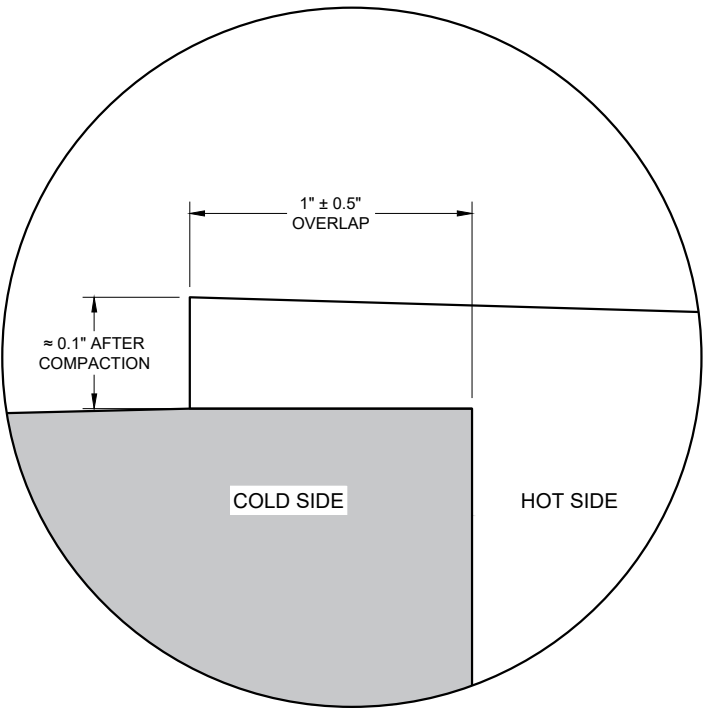
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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

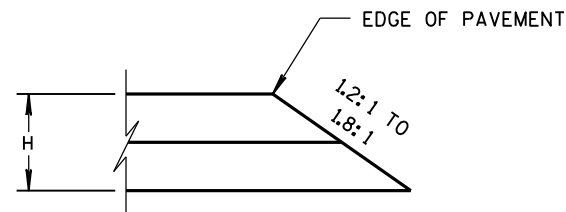


OVERLAP DETAIL (TYPICAL)

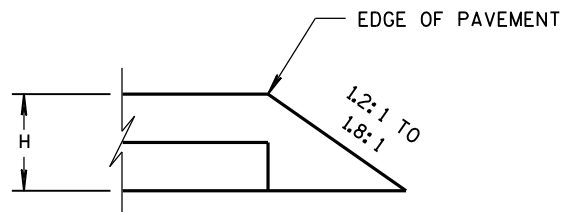
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

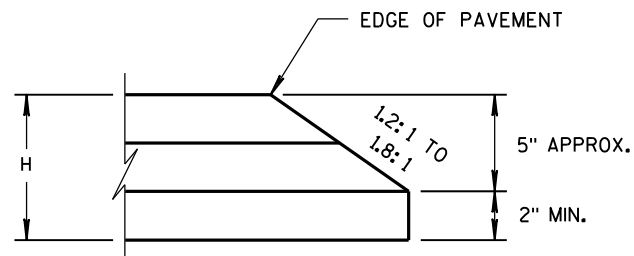
APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 16
FHWA



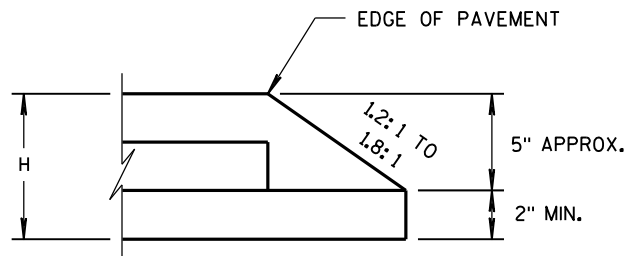
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

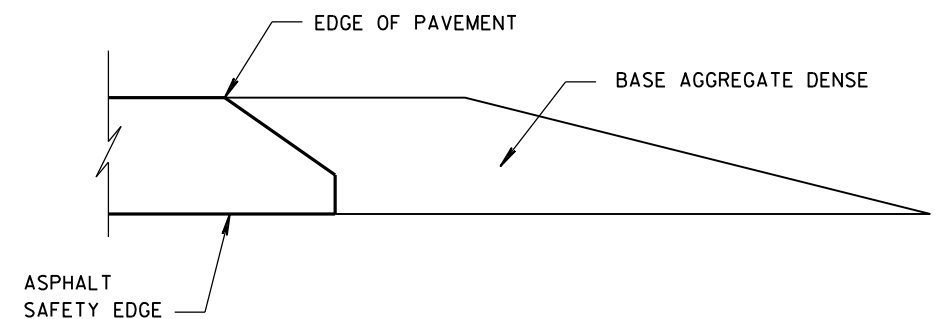


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS

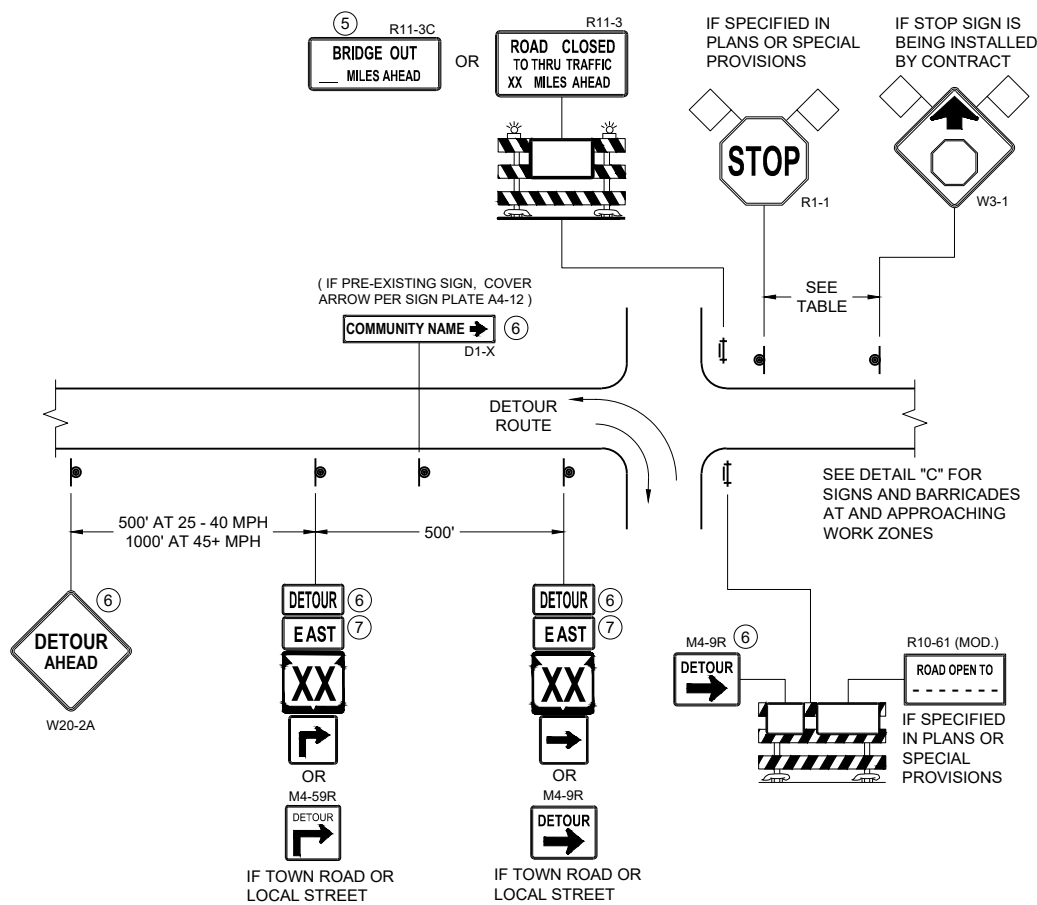


FINISHED SHOULDER AGGREGATE PLACEMENT

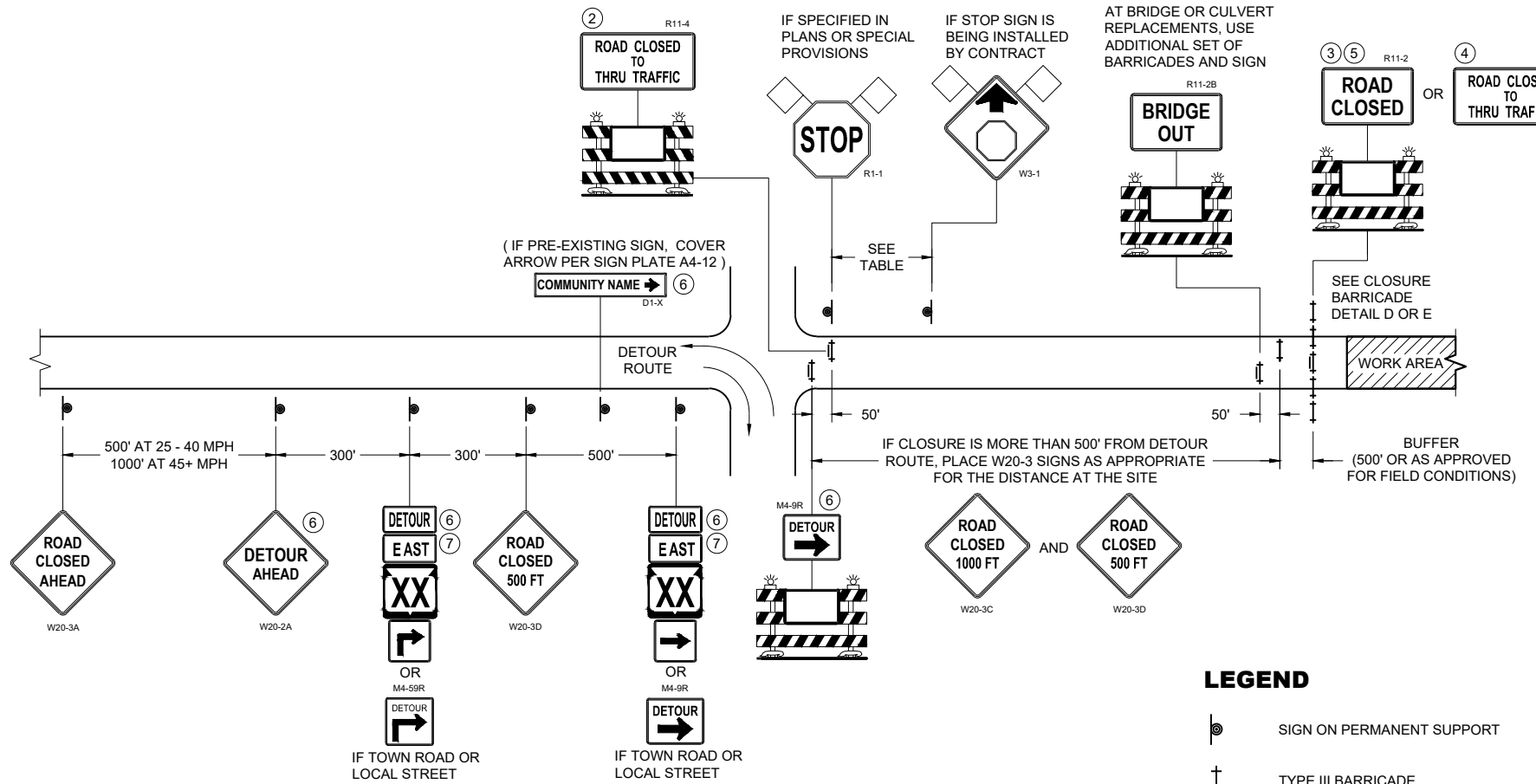
SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 11/30/2012
ROADWAY STANDARDS ENGINEER /S/ Jerry H. Zoaga
17 ENT



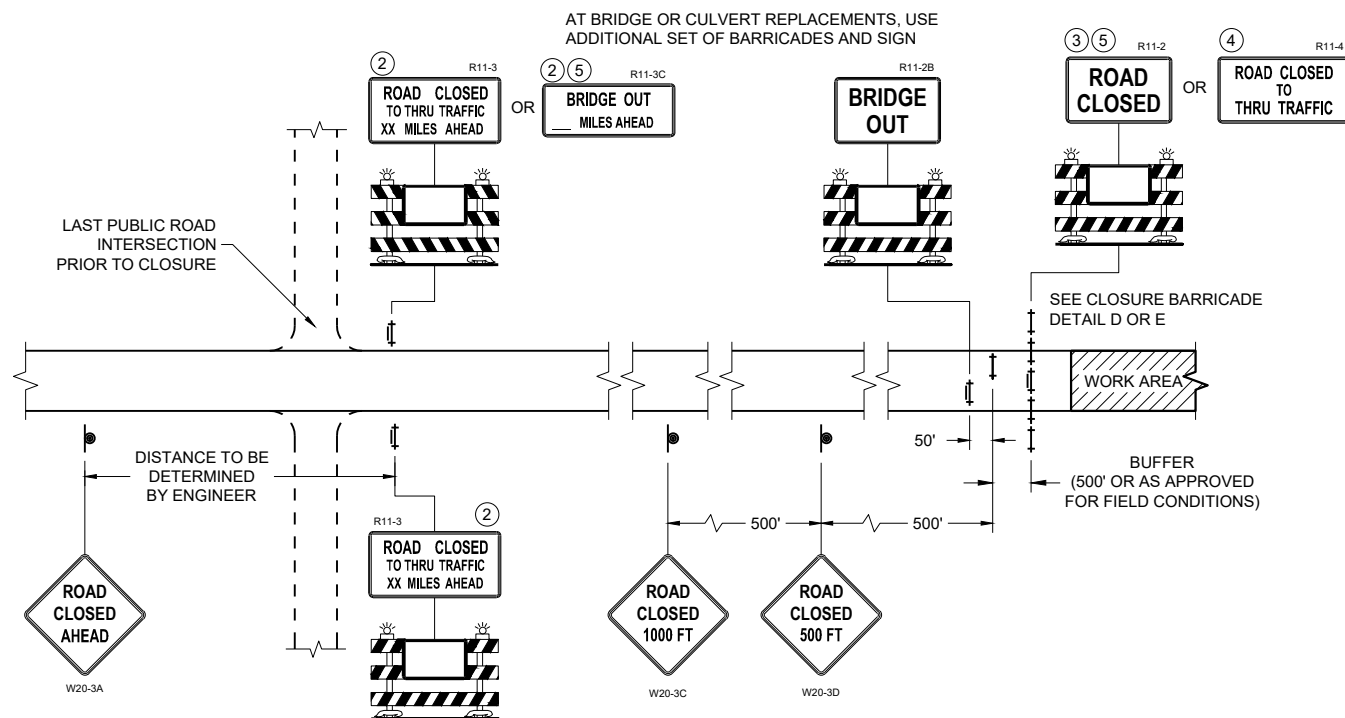
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



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

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

LEGEND

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

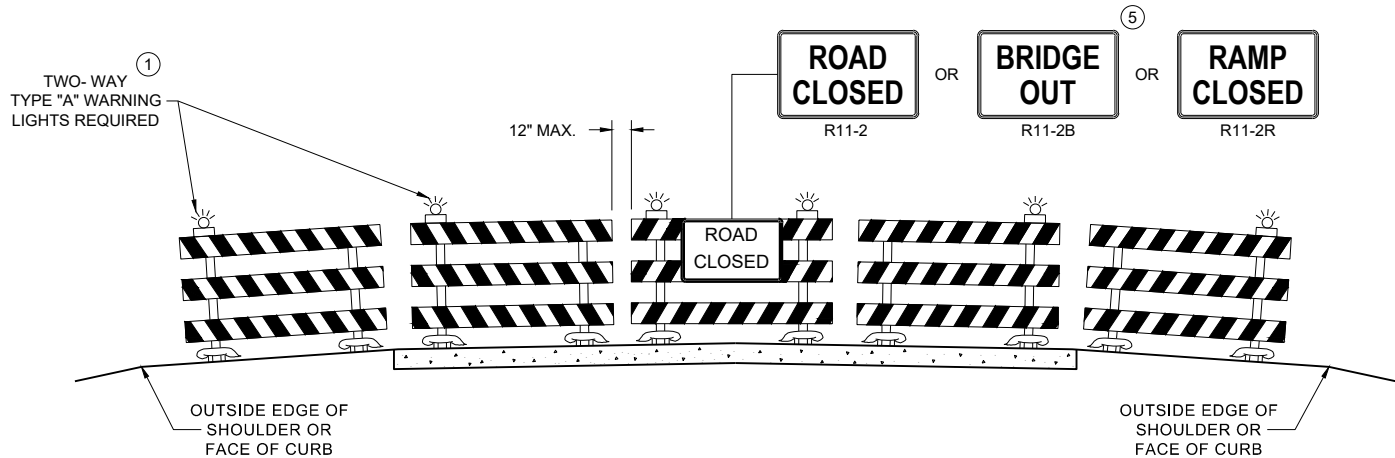
DETOUR M4 - 8
EAST M3 - X
XX OR **XX** OR **COUNTY X**
M1 - 4 M1 - 6 M1 - 5A
→ OR **→**
M05 - 1 M06 - 1

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

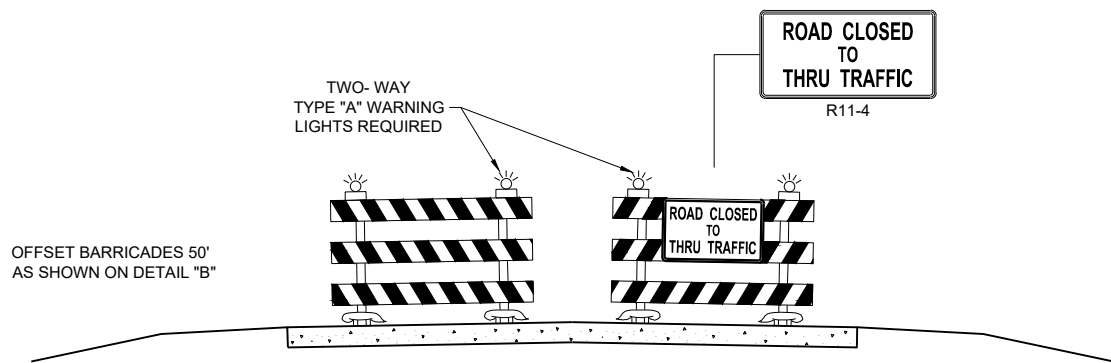
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

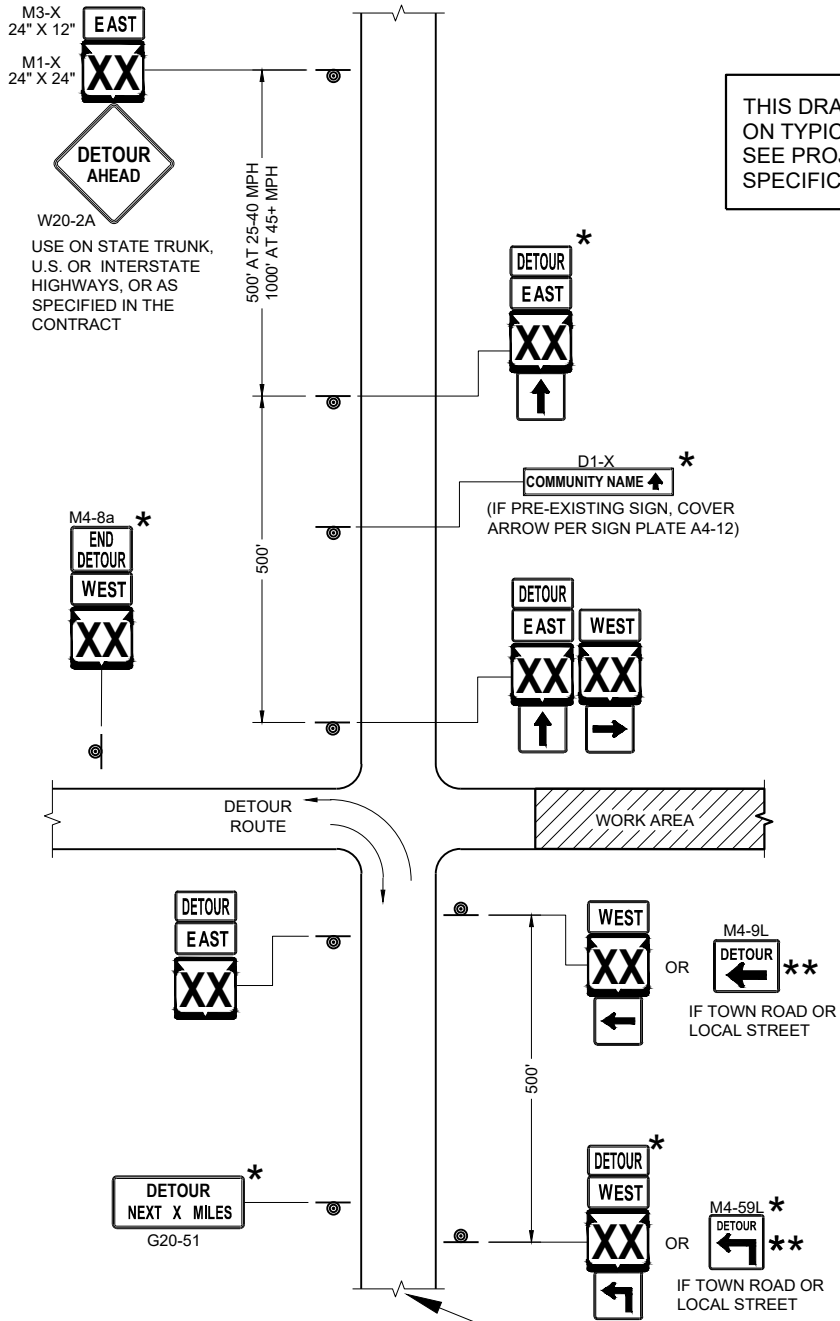
"WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

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

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

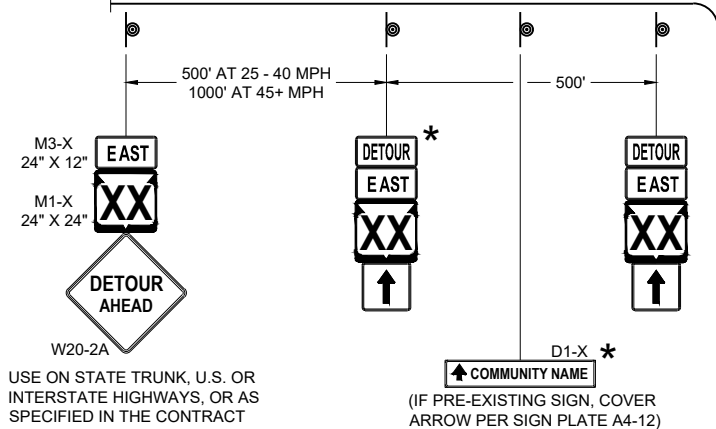
BARRICADES AND SIGNS FOR VARIOUS CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2025 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



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

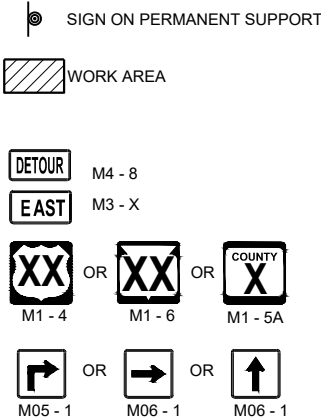
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



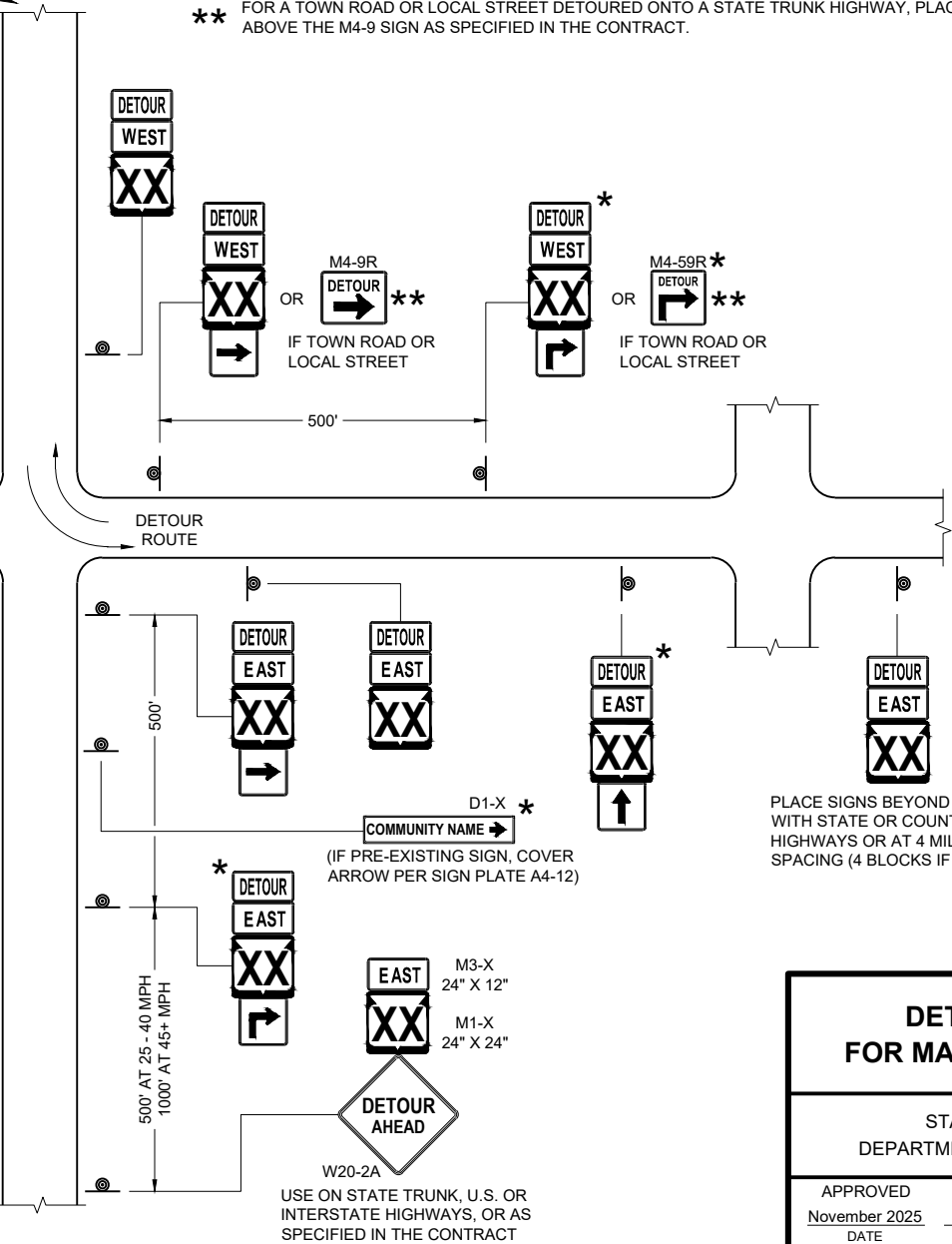
DETAIL F
DETOUR SIGNING

LEGEND



GENERAL NOTES

- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.
- THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- "MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- SIGN SIZES SHALL BE AS FOLLOWS:
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
 - M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
 - M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
 - M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
 - M4-9 AND M4-59 SHALL BE 30" X 24"
 - M4-8a SHALL BE 24" X 18"
 - G20-51 SHALL BE 60" X 24"
 - W20-2A SHALL BE 48" X 48"
 - D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



DETOUR SIGNING
FOR MAINLINE CLOSURES

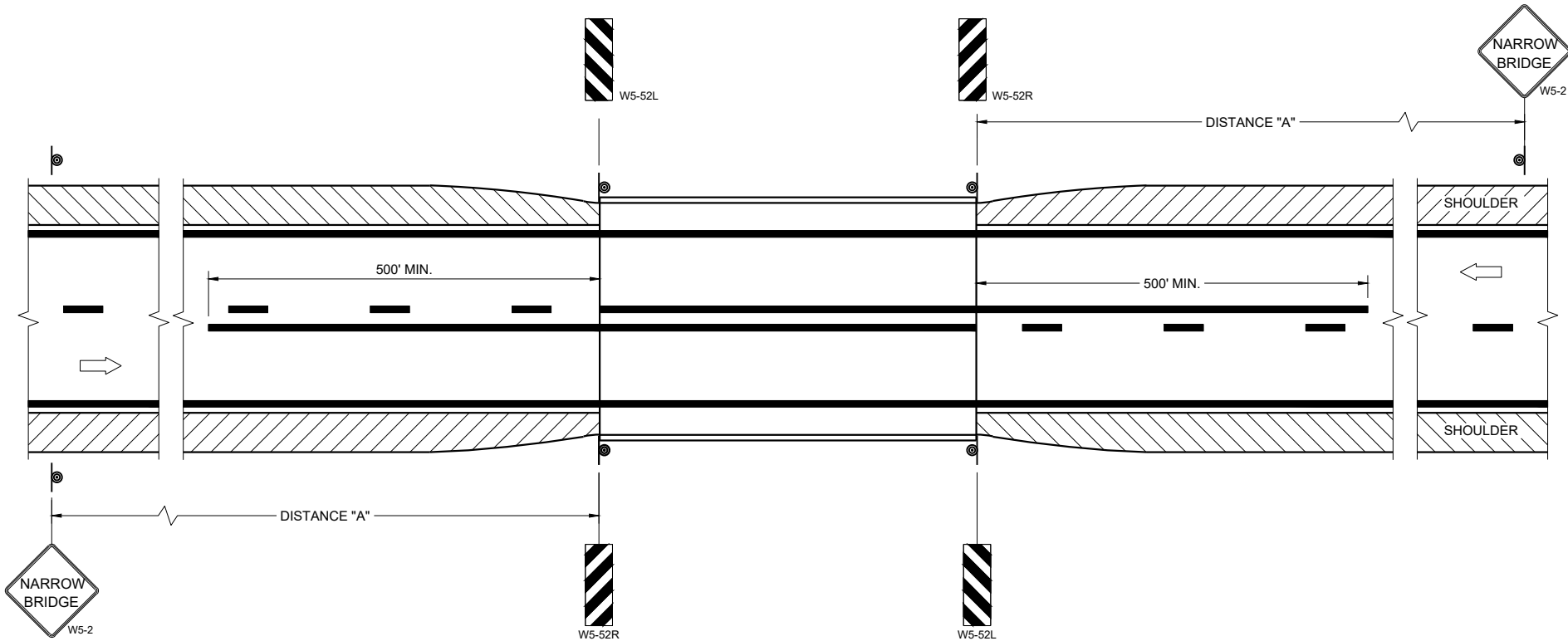
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025
DATE

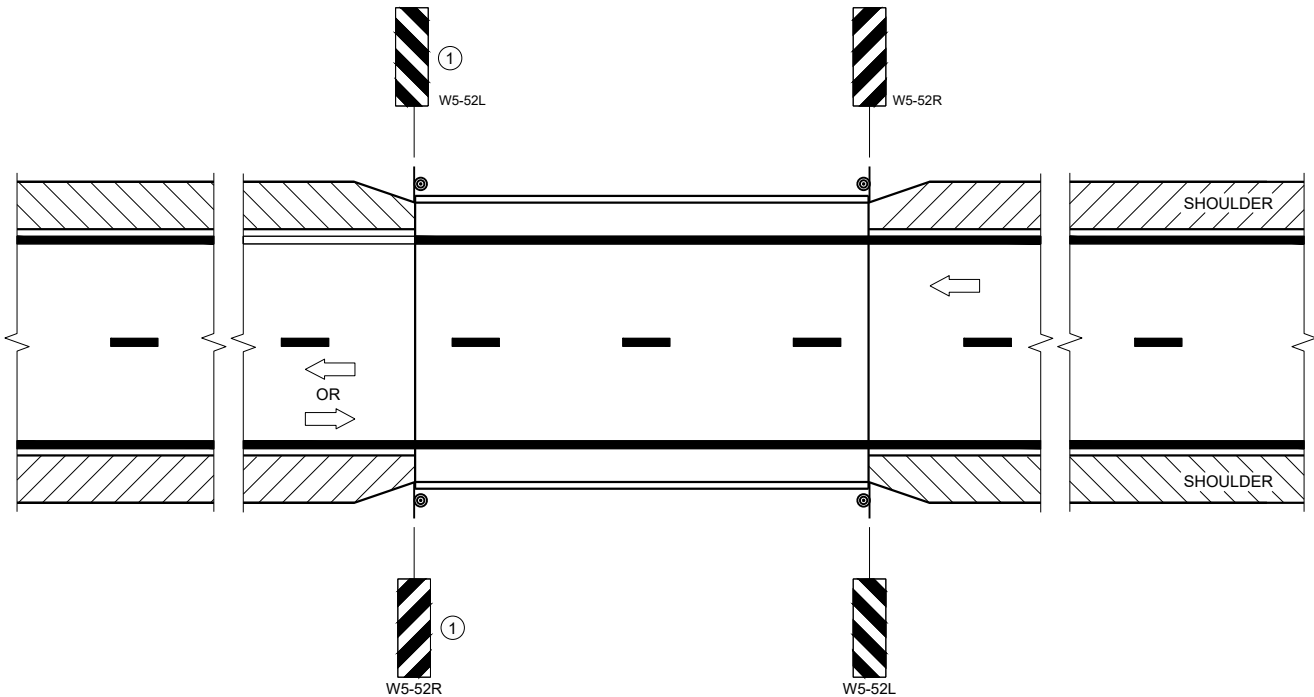
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

20



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



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

GENERAL NOTES

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

DISTANCE TABLE

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

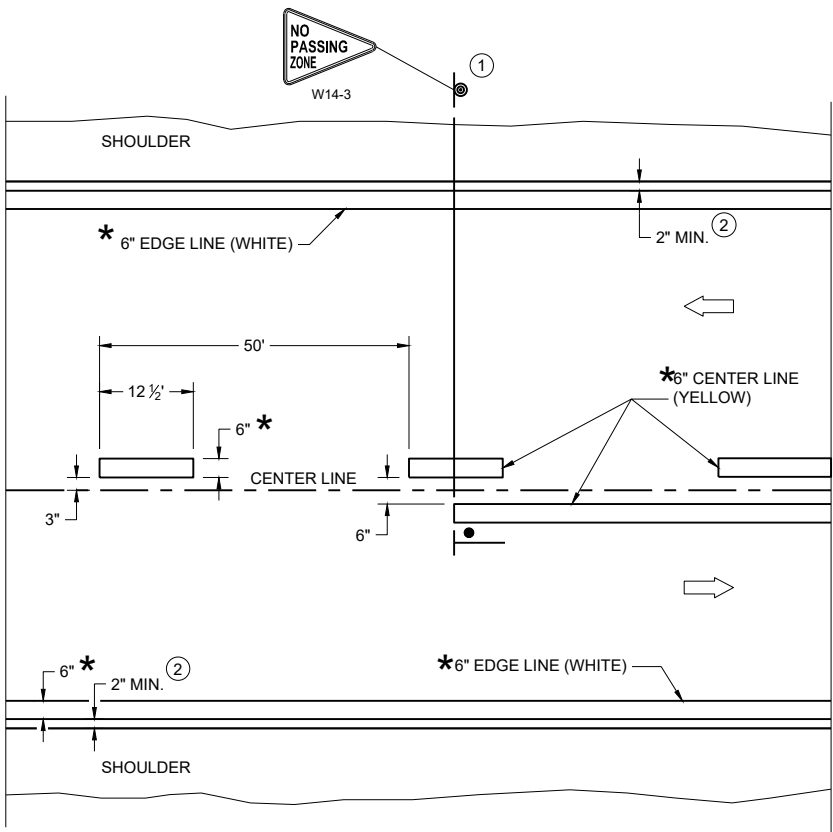
**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

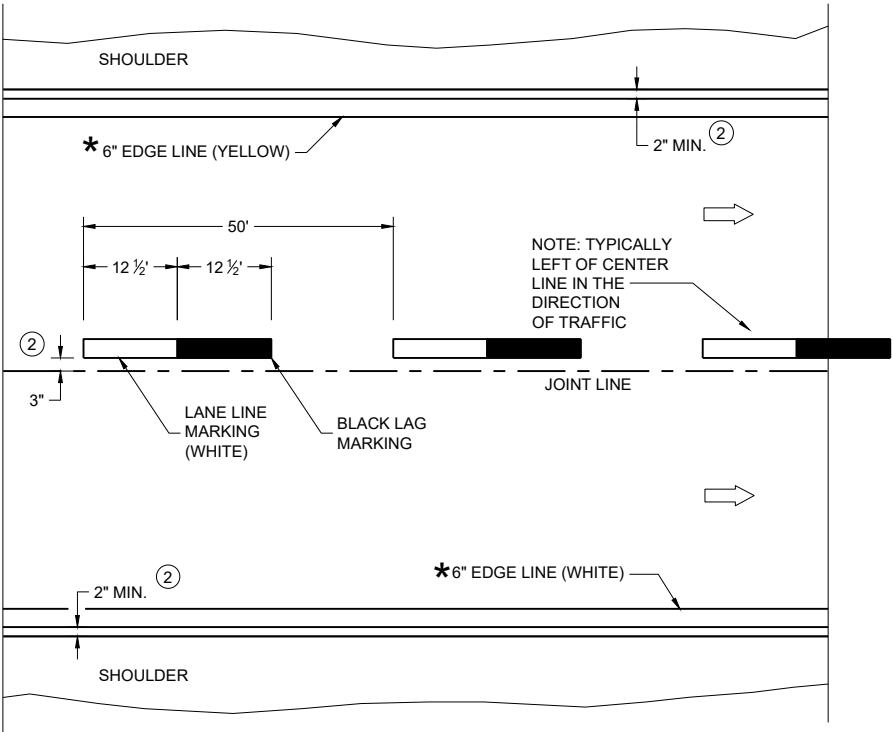
APPROVED
May 2023
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA 21



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

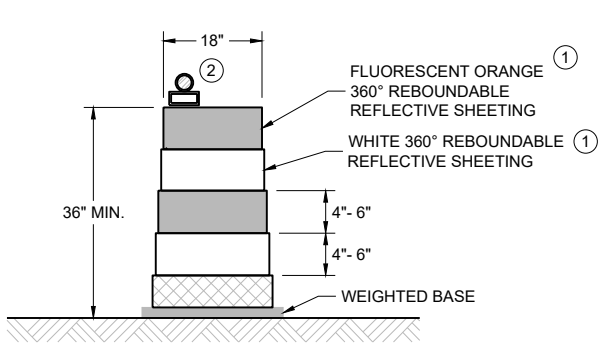
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

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

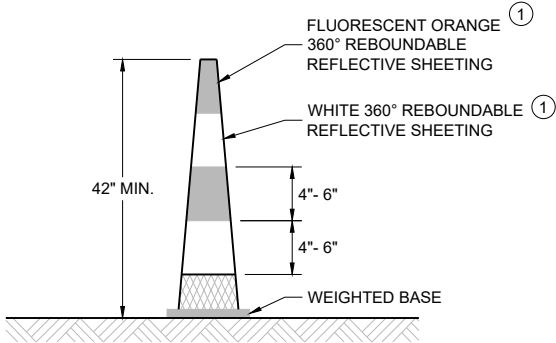
LEGEND

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

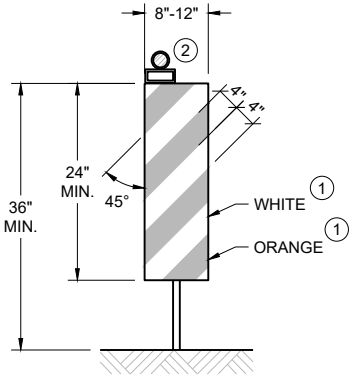
PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	22



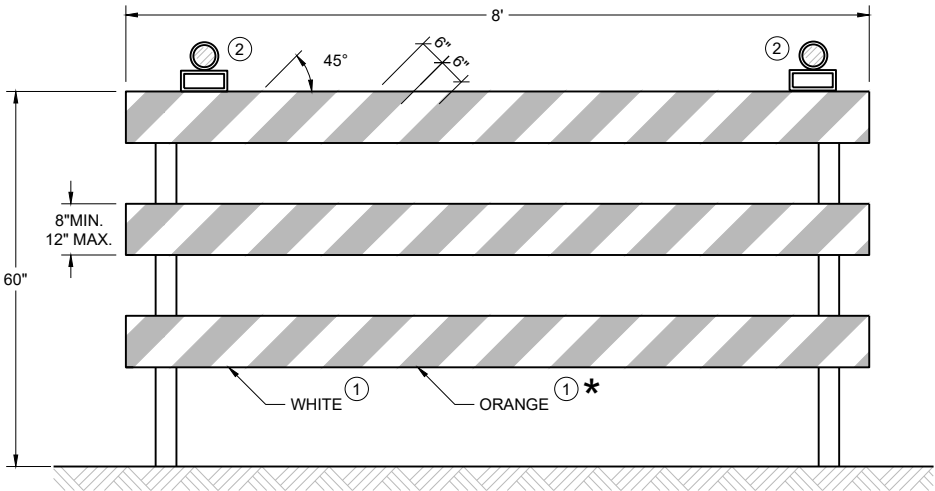
DRUM
BALLAST WIDTHS
RANGE FROM 24"-36"



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



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



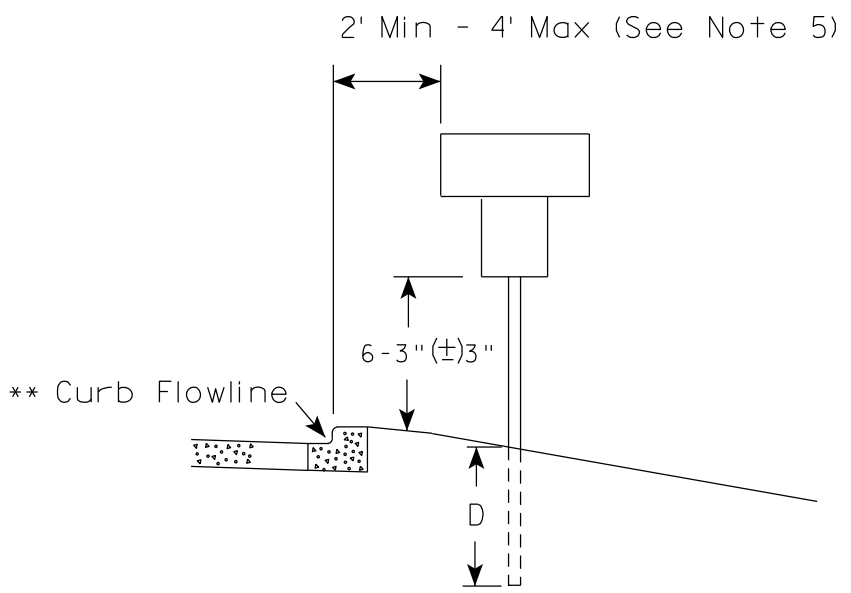
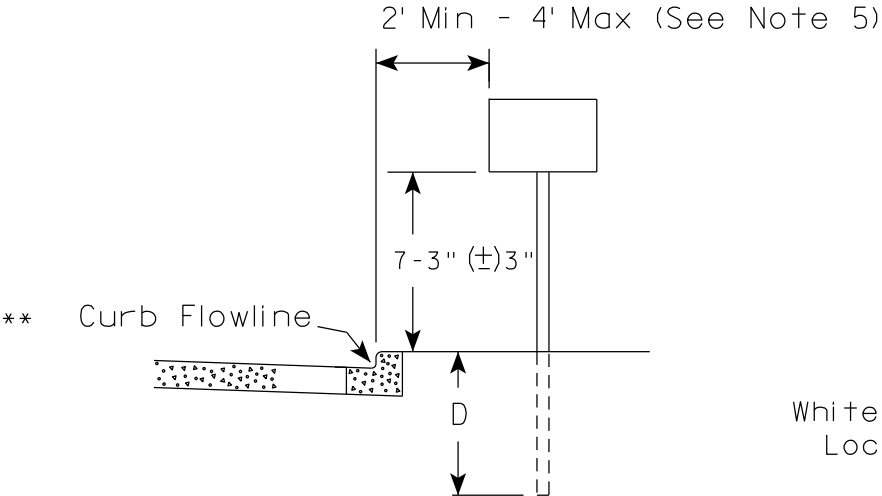
TYPE III BARRICADE
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.
★ IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

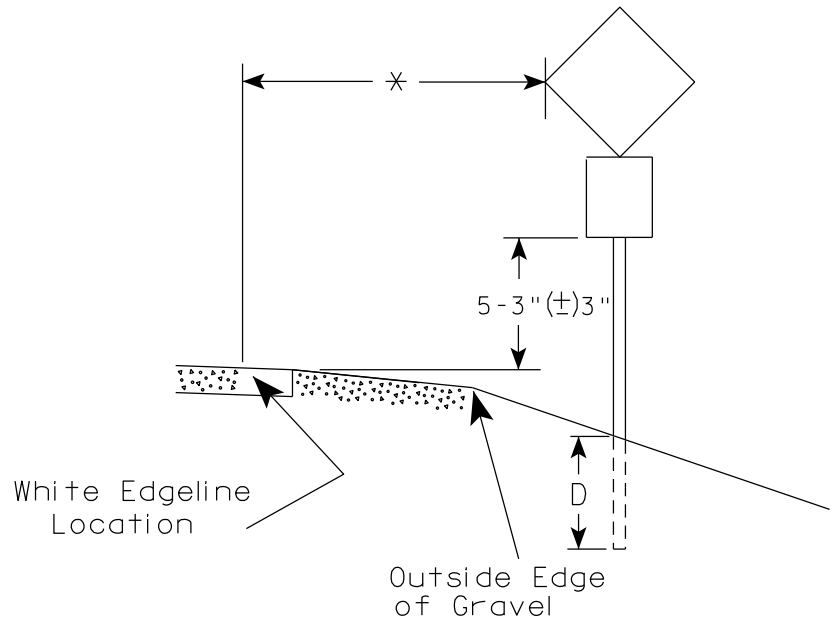
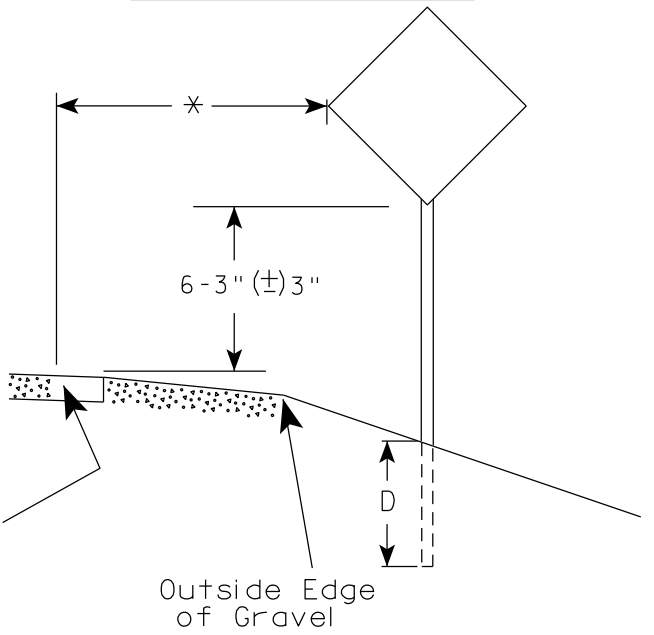
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2026 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

* * The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

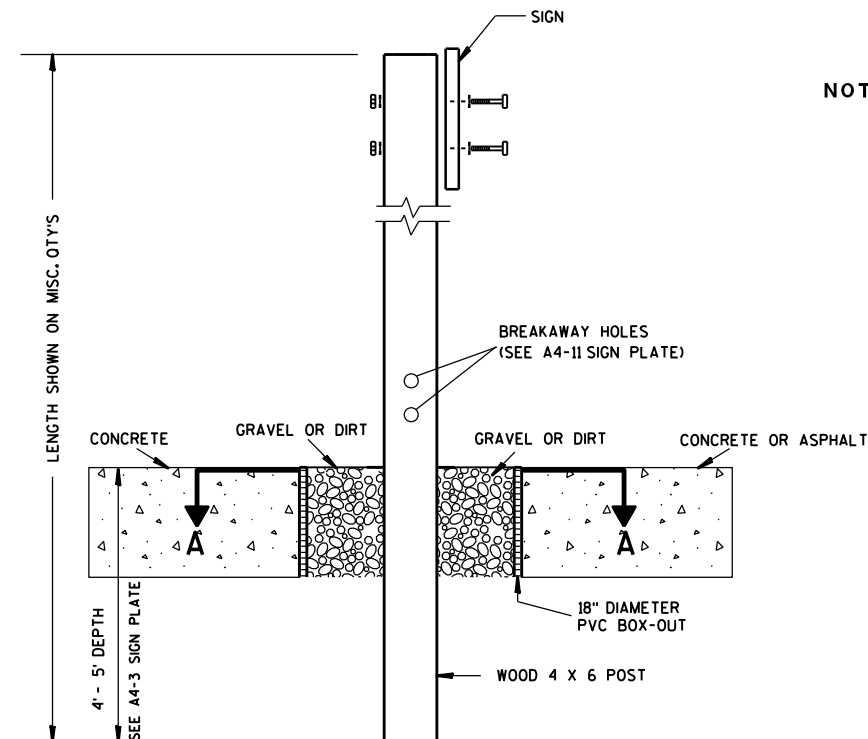
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

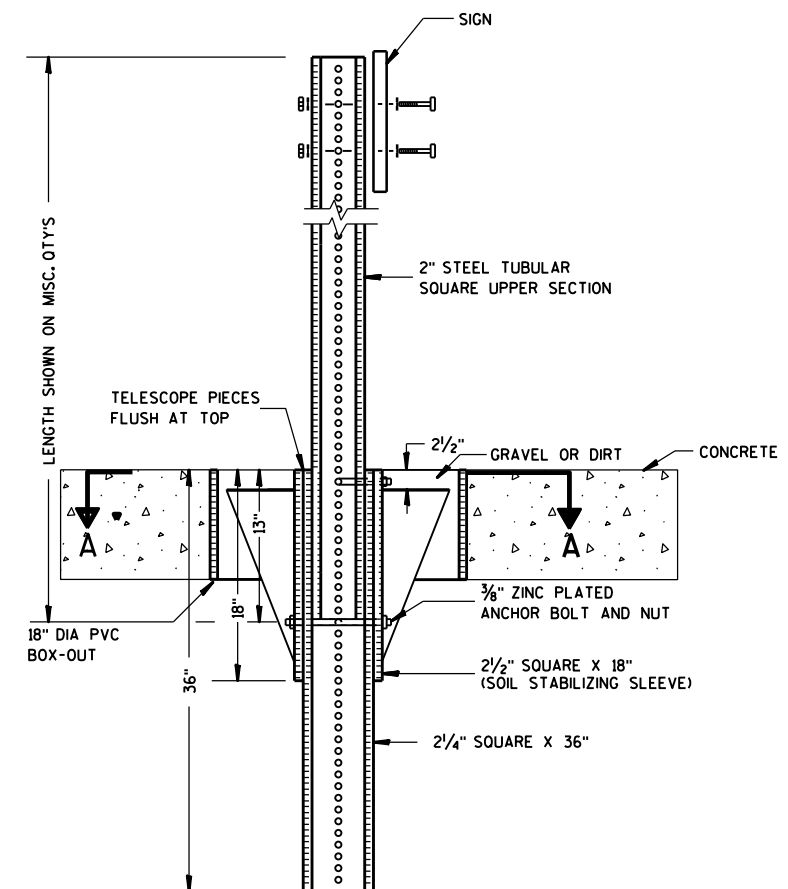
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

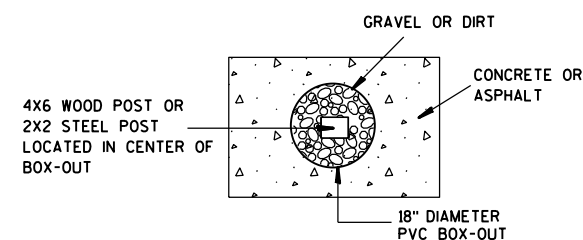
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES:**
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
 2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
 3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 25 A4-3B.1

PROJECT NO:

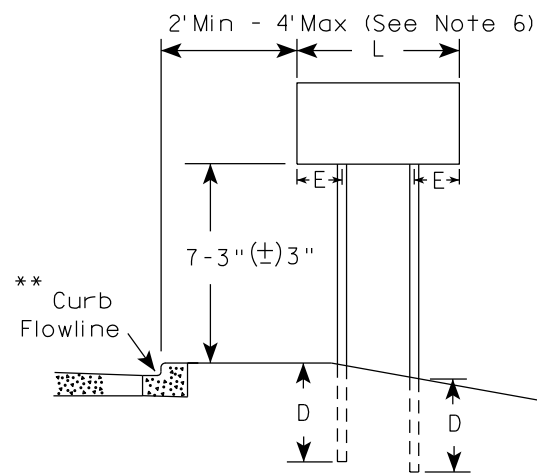
HWY:

COUNTY:

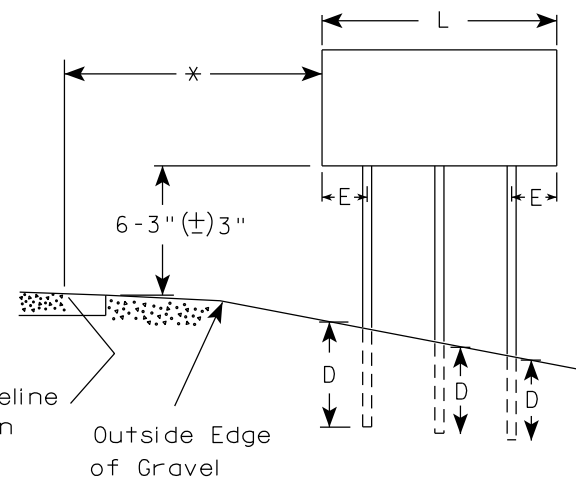
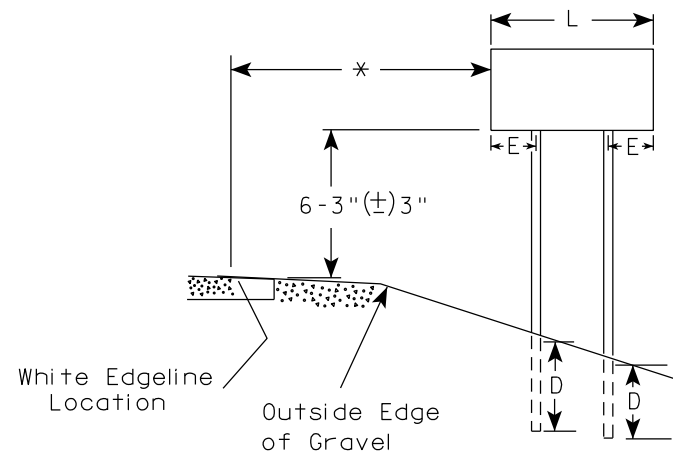
SHEET NO:

E

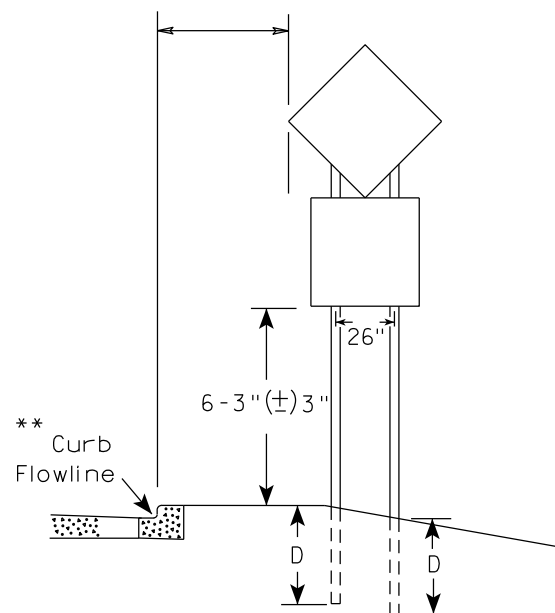
URBAN AREA



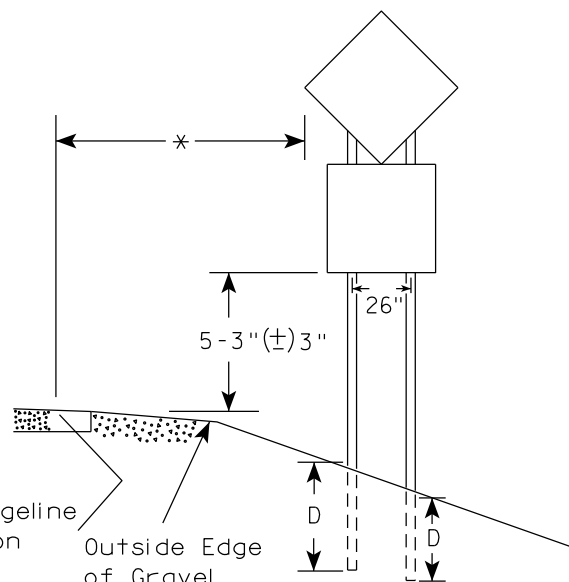
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16

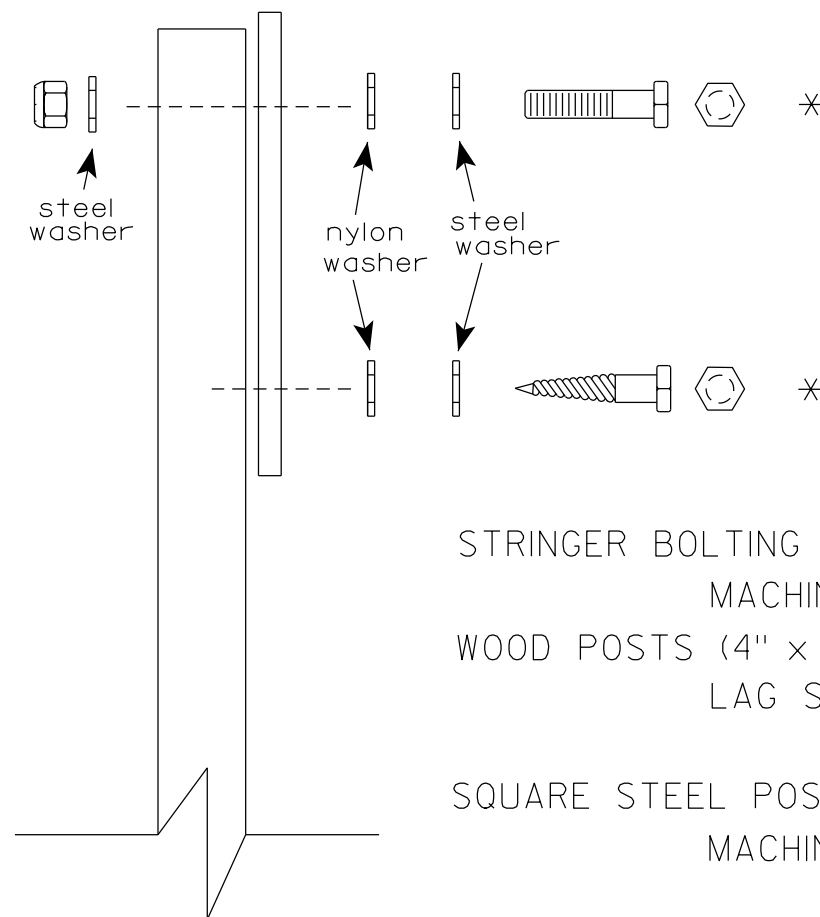
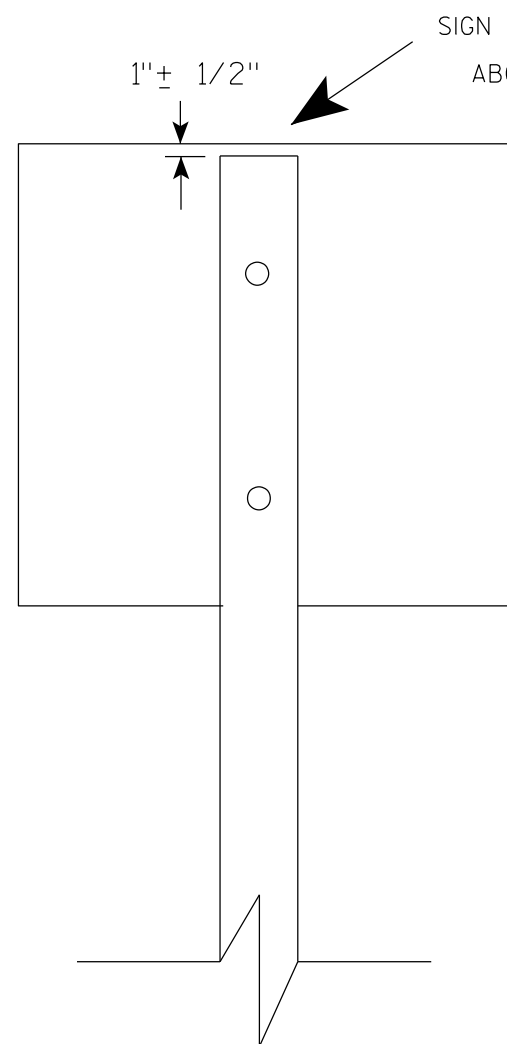
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±) 3".

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

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

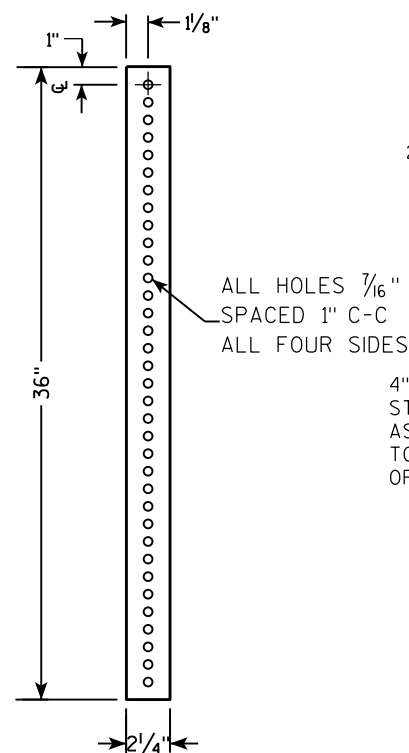
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



2 1/2" TELES PAR TUBE

4" x 10" x 10 GA. STEEL PLATE (CUT AS SHOWN) WELDED TO ALL FOUR CORNERS OF TELES PAR TUBE

4"

10"

3 1/2"

10"

TELESCOPE PIECES
FLUSH AT TOP

18" DIA SCHEDULE
40 PVC
BOX-OUT

36"

13"

18"

2 1/2" GRAVEL OR DIRT

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT

2 1/2" SQUARE X 18"
(SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

2" STEEL TUBULAR
SQUARE UPPER SECTION

ALL HOLES 7/16"
SPACED 1" C-C
ALL FOUR SIDES

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

SIGN

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

Side View (Left):

- Overall height dimension: LENGTH SHOWN ON MISC. Q'TYS
- Top section: 2" STEEL TUBULAR SQUARE UPPER SECTION
- Telescope pieces: TELESCOPE PIECES FLUSH AT TOP
- Dimensions from ground line: 36" (total height), 18" (upper section), 12" (lower section).
- Ground line with downward arrow 'A'.

End View (Right):

- Top section: 2" STEEL TUBULAR SQUARE UPPER SECTION
- Sign: SIGN (indicated by a bracket)
- Sign mounting: SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
- Anchor bolts: 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT (indicated by a bracket)
- Dimensions: 1" (spacing between anchor bolts)
- Ground line with downward arrow 'A'.
- Lower section: 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- Bottom section: 2 1/4" SQUARE X 36"

Common Specifications:

- ALL HOLES 7/16" SPACED 1" C-C
- ALL FOUR SIDES

DIRECTION
OF TRAFFIC

SECTION A-A

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

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 PLAT 78 14-9.9

SHEET NO:

E

PROJECT NO:

HWY:

COUNTY:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN

PLOT DATE : 05-FEB-2015 17:09

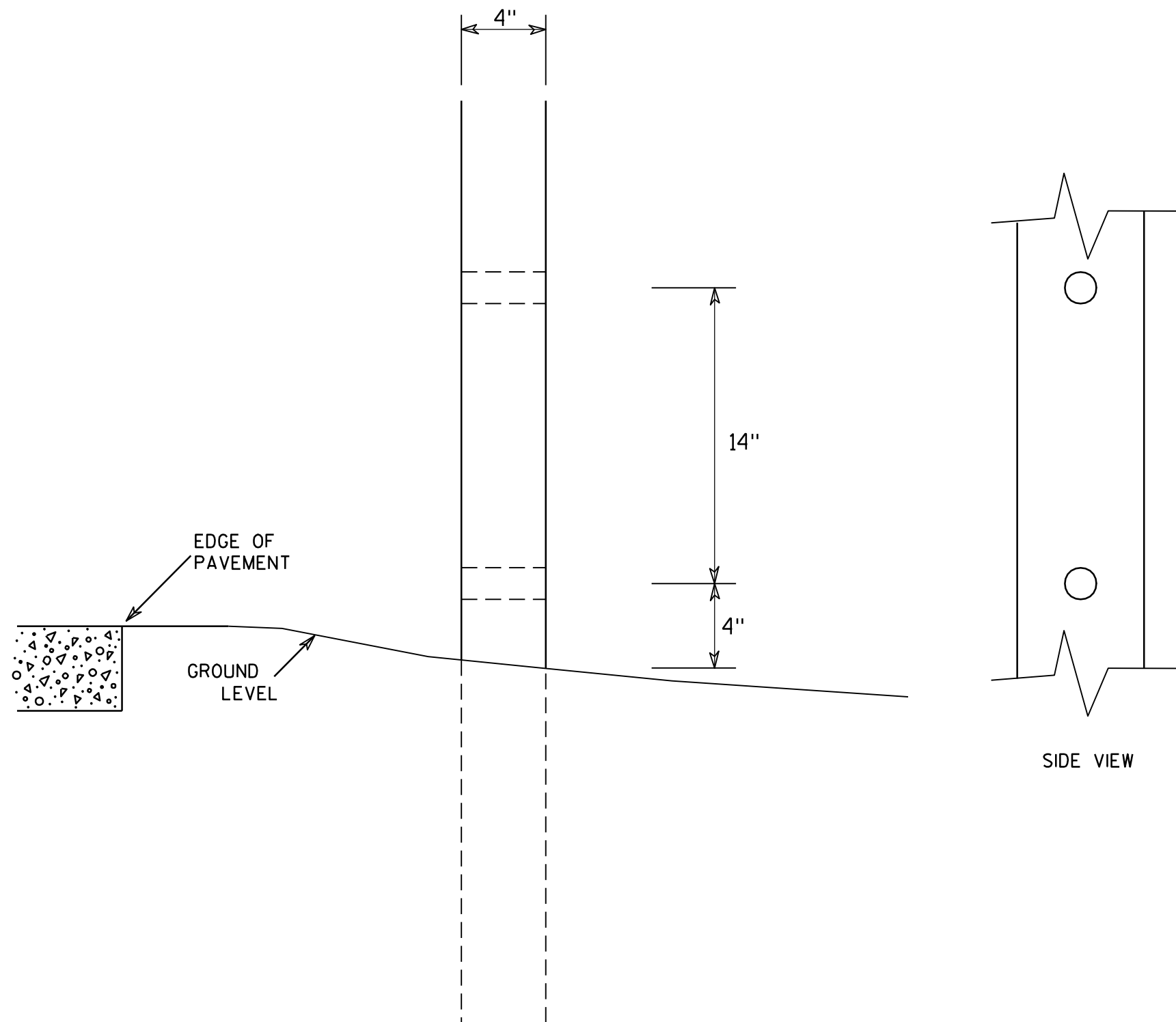
PLOT BY : mscs_ja

PLOT NAME :

PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42

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:

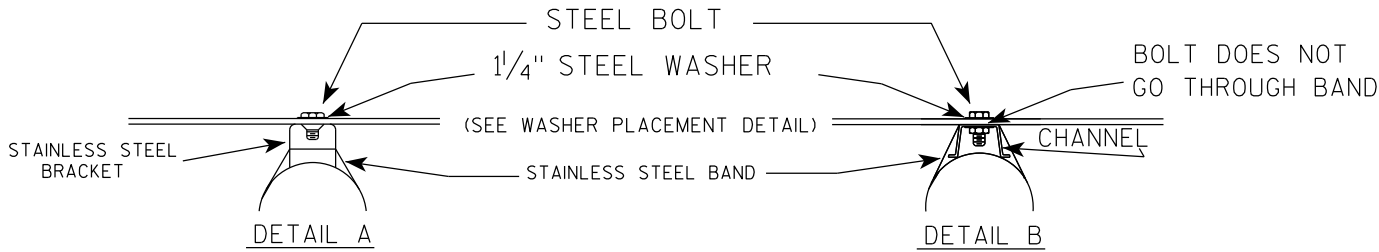
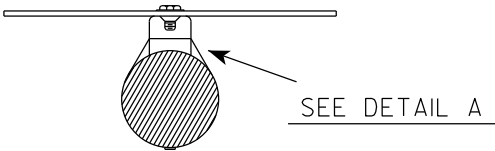
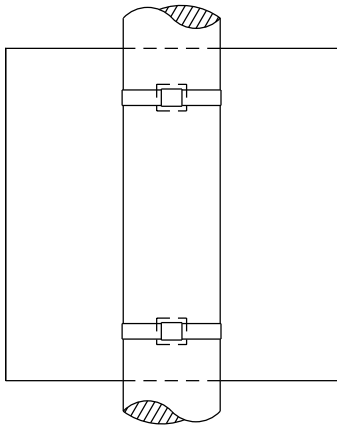
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SHEET NO: 29

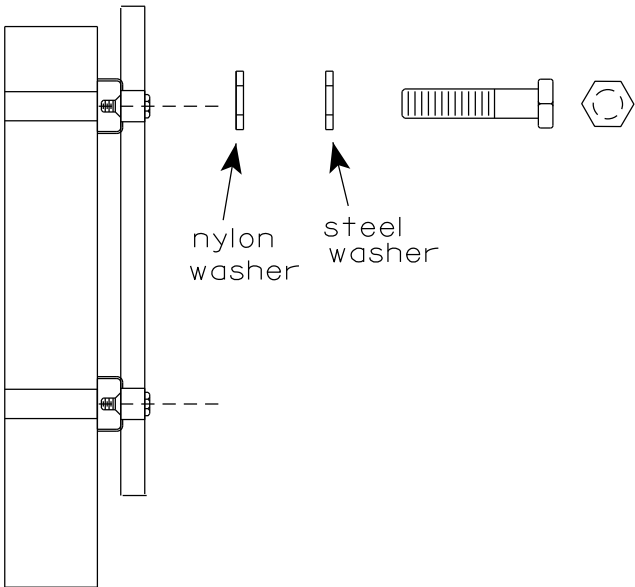
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

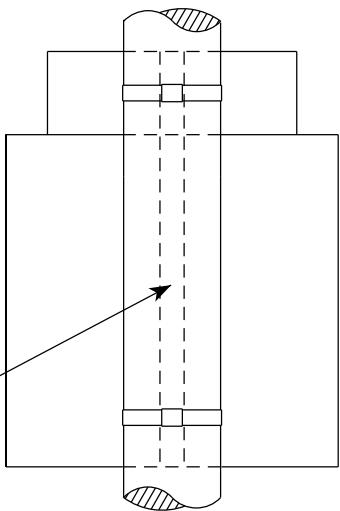


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

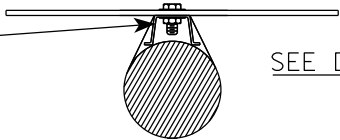
GENERAL NOTES

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

"J" ASSEMBLY



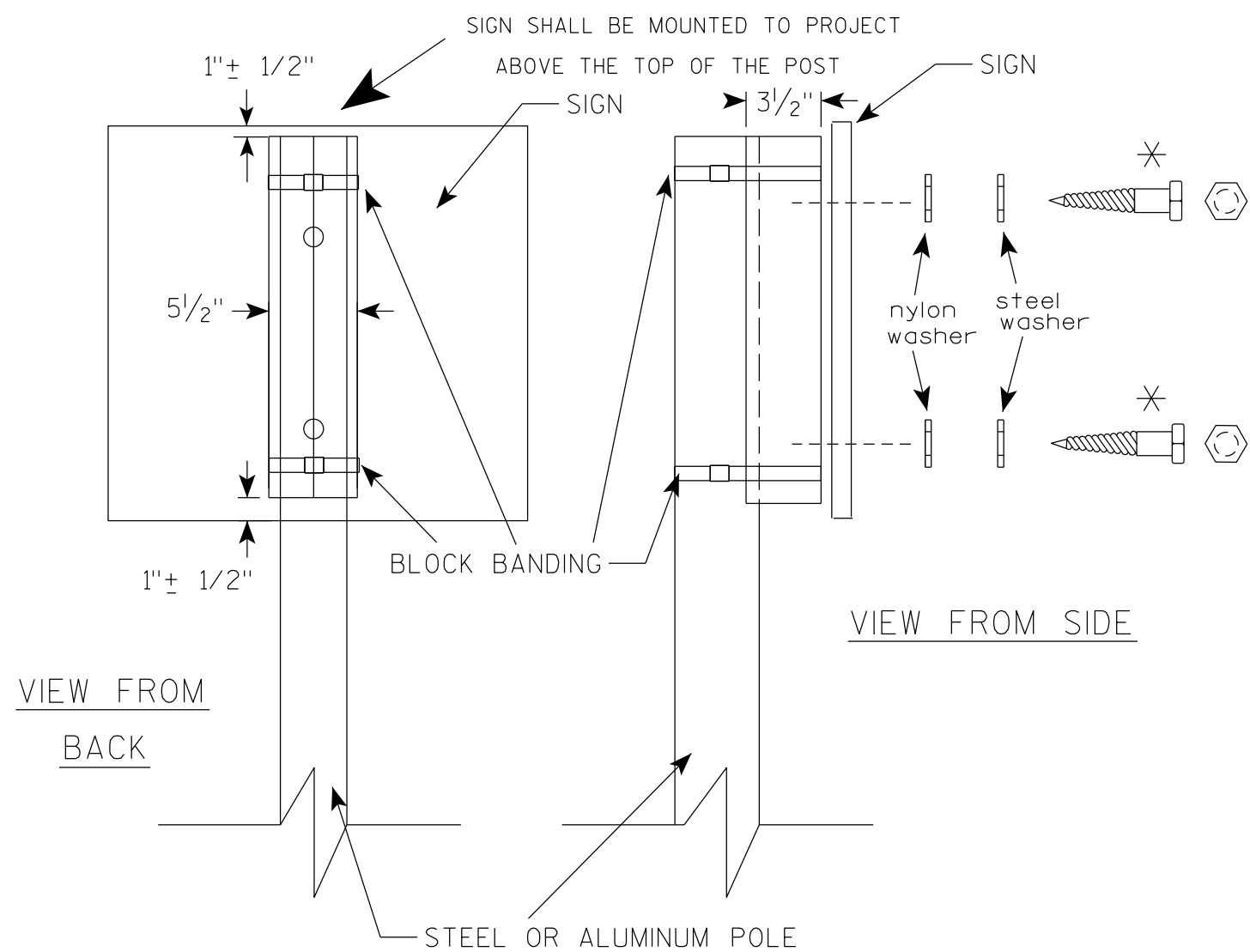
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



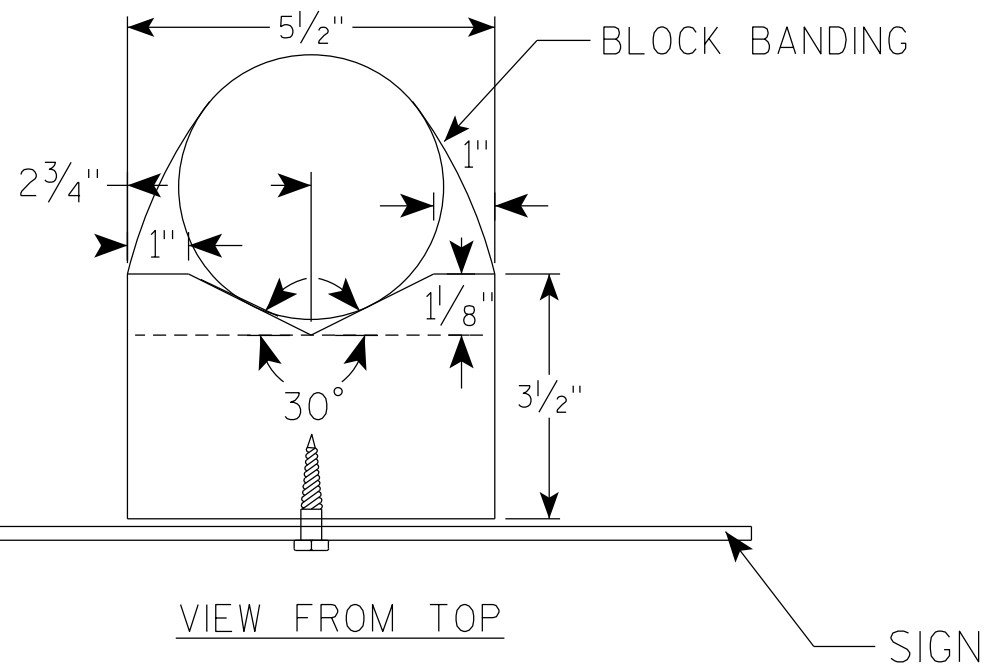
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

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



VIEW FROM
BACK



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, 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 1 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

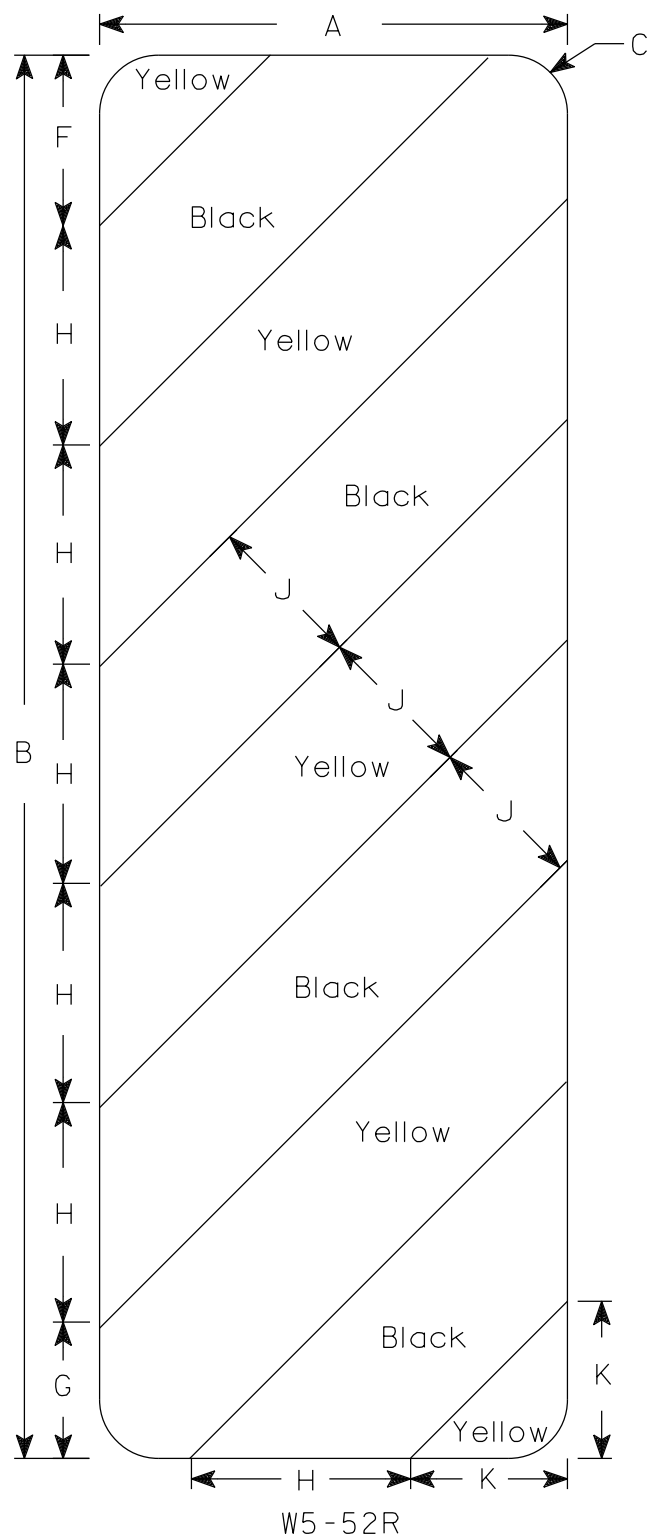
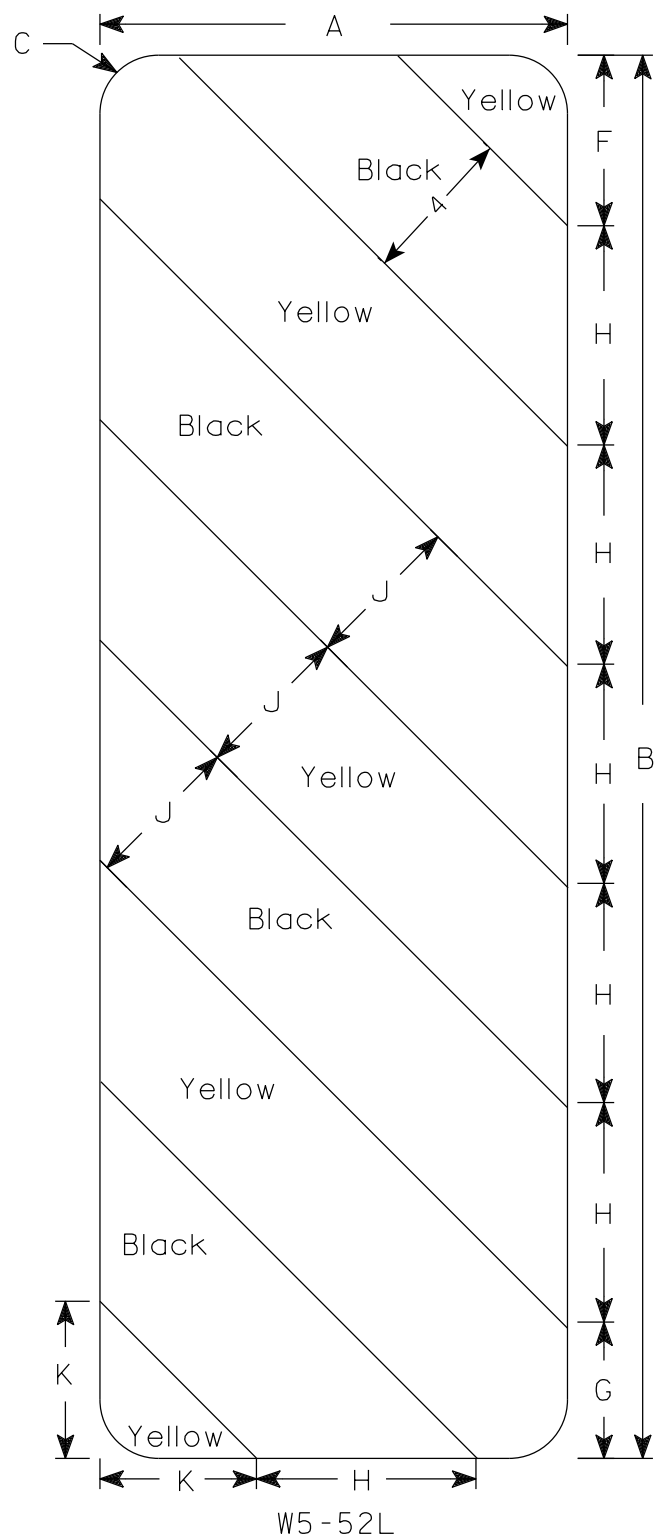
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 31

E



NOTES

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

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

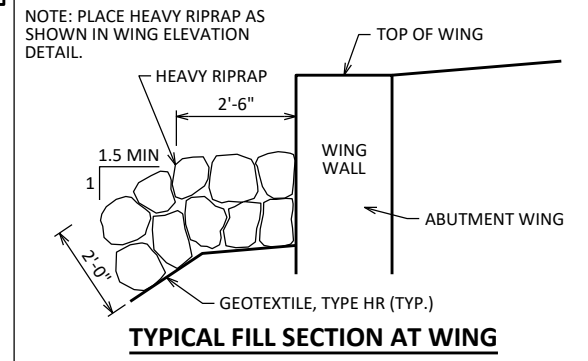
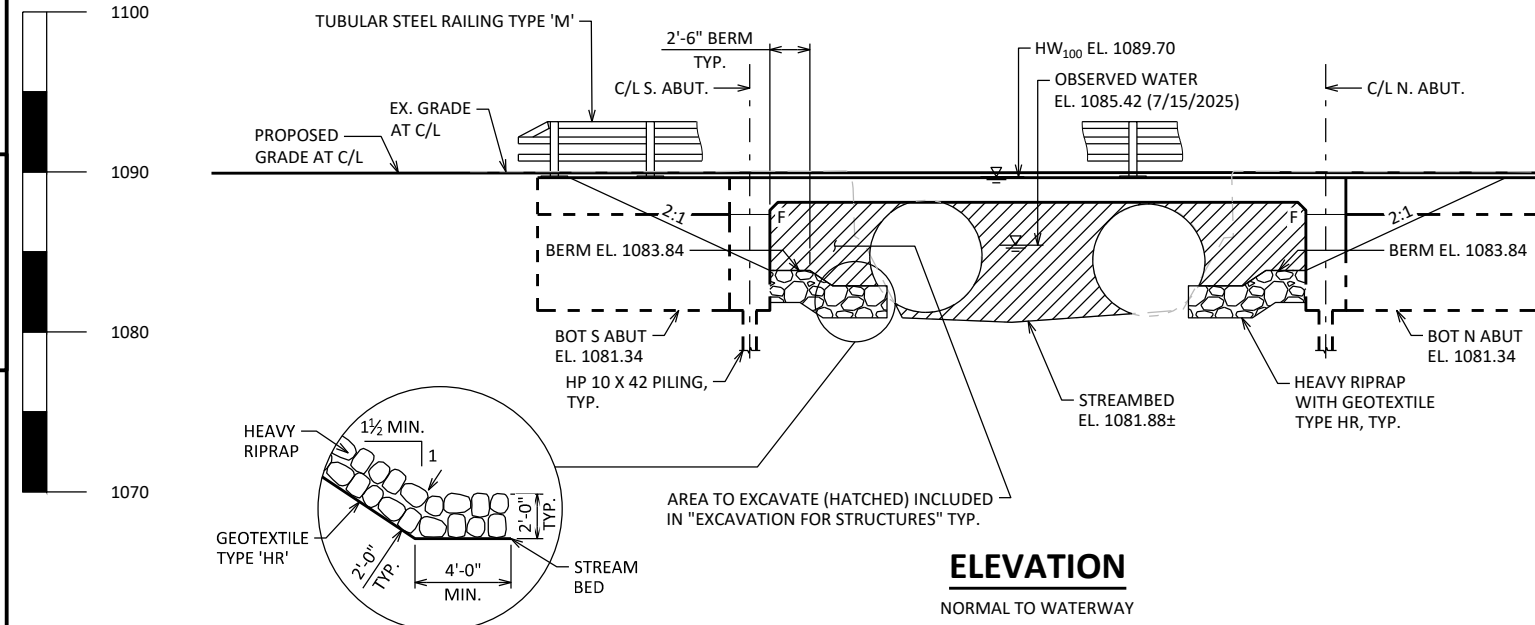
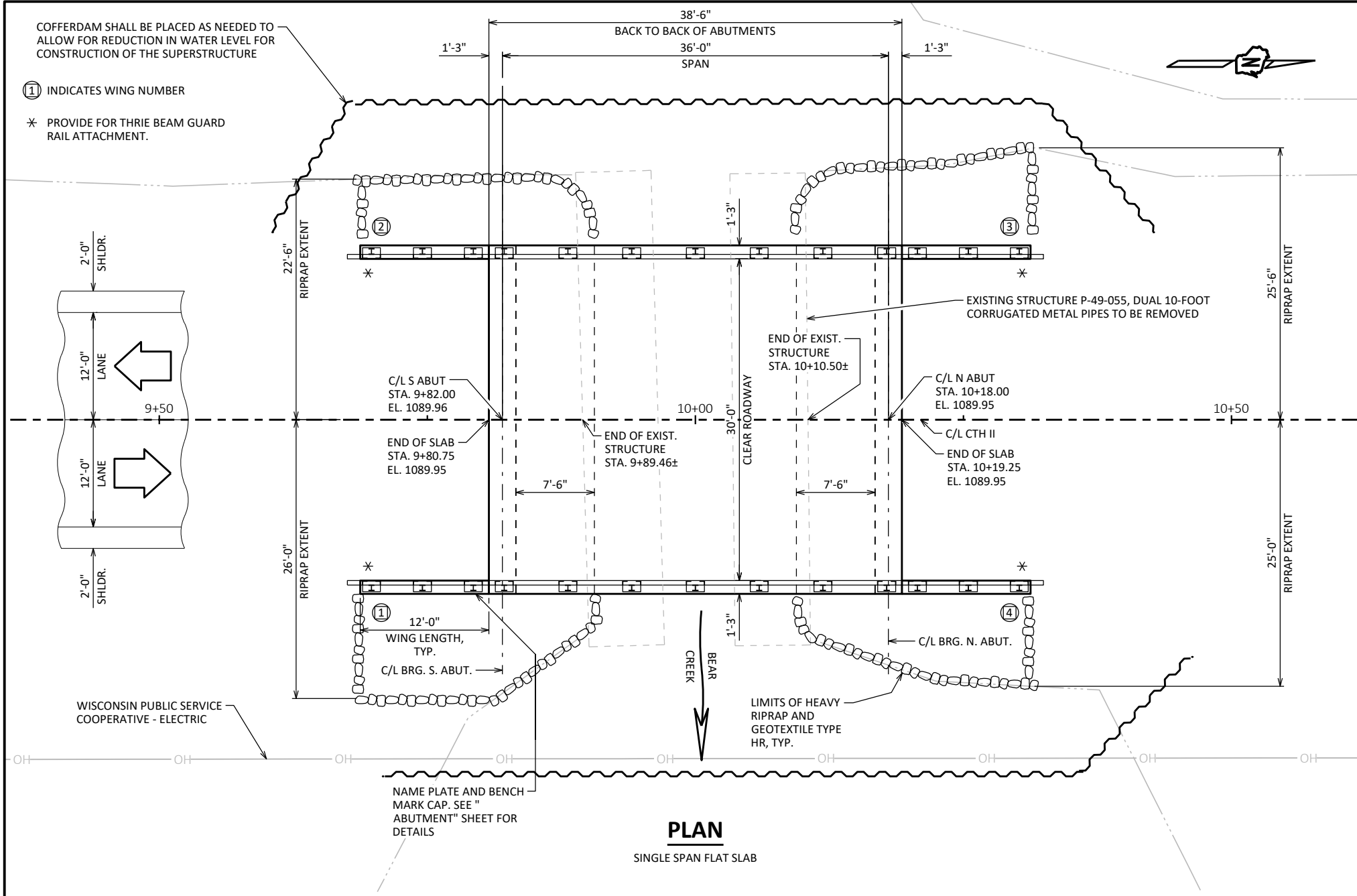
STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

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DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.03
OPERATING RATING FACTOR: RF = 1.34
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: _____ f'c = 4,000 P.S.I.
SUPERSTRUCTURE _____ f'c = 3,500 P.S.I.
ALL OTHER _____

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

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS ++ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 25 FEET LONG SOUTH ABUTMENT
ESTIMATED 15 FEET LONG 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.

FOUNDATION DATA (PRE-BORING)

BOTH ABUTMENTS TO BE SUPPORTED ON HP10X42 PILING SEATED IN PRE-BORED HOLES TERMINATED AT EL. 1062.6 AT S. ABUTMENT AND EL. 1069.2 AT N. ABUTMENT. PILES MUST BE FIRMLY SEATED WITH FIRM CONTACT BETWEEN PILE AND ROCK, PILE DRIVING NOT REQUIRED. THE FACTORED AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR DESIGN IS 150 TONS MULTIPLIED BY A RESISTANCE FACTOR OF 0.5.

PILING TO BE PREBORED A MINIMUM OF 3 FEET INTO SOLID ROCK.

HYDRAULIC DATA

100-YEAR FREQUENCY:
Q₁₀₀ = 2,160 C.F.S.
Q_{BRIDGE} = 1,063 C.F.S.
Q_{ROADWAY} = 1,097 C.F.S.
V₁₀₀ = 5.8 F.P.S.
HW₁₀₀ = EL. 1,089.70
WATERWAY AREA = 183 SQ. FT.
DRAINAGE AREA = 14.00 SQ. MI.
SCOUR CRITICAL CODE = 5

2-YEAR FREQUENCY:
Q₂ = 563 C.F.S.
V₂ = 3.6 F.P.S.
HW₂ = EL. 1,087.53

ROADWAY OVERTOPPING
FREQUENCY = 5 YEARS
Q₅ = 930 C.F.S.
HW₅ = EL. 1,088.90

TRAFFIC VOLUME

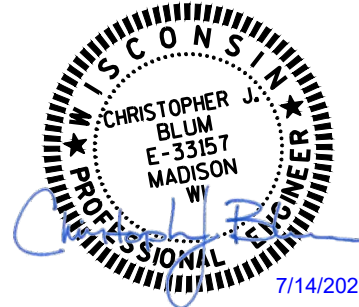
CTH II
ADT = 108 (2027)
ADT = 115 (2047)
R.D.S. = 55 M.P.H.

LIST OF DRAWINGS

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

STRUCTURE DESIGN CONTACTS:
CHRIS BLUM, P.E. 608-620-6192
AARON BONK, P.E. 608-261-0261

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



NO.	DATE	REVISION	BY
 SHORT ELLIOTT HENDRICKSON INC.			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	 CHIEF STRUCTURES DESIGN ENGINEER		08/12/26 DATE
STRUCTURE B-49-203			
CTH II OVER BEAR CREEK			
COUNTY	PORTAGE	TOWN	LINWOOD
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION			
DESIGNED BY	DESIGNED CK'D	DRAWN CJB	PLANS ZLM CK'D JGM
GENERAL PLAN			SHEET 1 OF 8 33

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STATE PROJECT NUMBER

6792-00-70

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-49-203" SHALL BE THE EXISTING GROUNDLINE.

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

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

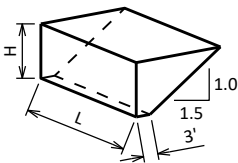
THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

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

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

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

COFFERDAM SHALL BE INSTALLED AND DESIGNED TO ALLOW THE REDUCTION IN WATER LEVEL TO A POINT THAT CONSTRUCTION AND REMOVAL OF THE FALSEWORK CAN TAKE PLACE. THE COFFERDAM SHALL NOT ALLOW FULL CLOSURE OF THE STREAM FLOW. PUMPING AND OR PIPING OR SIMILAR METHODS WILL BE REQUIRED TO LOWER THE WATER LEVEL TO AN ADEQUATE LEVEL FOR CONSTRUCTION AND REMOVAL OF THE FALSEWORK. CONSTRUCT THE COFFERDAM SO THAT THE INTERIOR AREA ALLOWS SUFFICIENT CLEARANCE FOR THE CONSTRUCTION OF FORMS. REMOVE COFFERDAM AFTER THE COMPLETION OF THE SUPERSTRUCTURE AND REMOVAL OF ALL FALSEWORK. DISTURBANCE OF THE NATURAL STREAMBED SHALL BE MINIMIZED AS MUCH AS POSSIBLE AFTER COMPLETING WORK WITHIN COFFERDAM, BACKFILL EXCAVATED AREA WITHIN THE COFFERDAM TO THE STREAMBED ELEVATION. PLACE COFFERDAMS PERTAINING TO SECTION 206 AND ACCORDING TO THESE PLANS.



ABUTMENT BACKFILL DIAGRAM

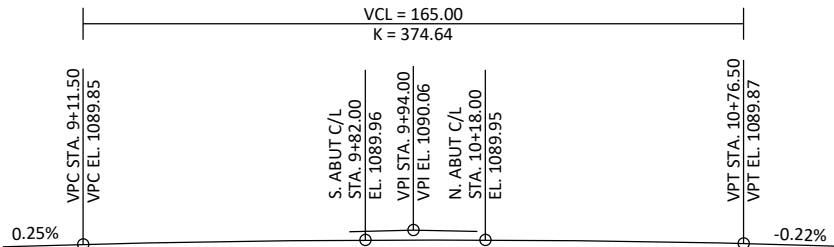
L = OUT TO OUT OF ABUTMENT BODY INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
 $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)$
 $V_{CY} = V_{CF}(EF)/27$
 $V_{TON} = V_{CY}(2.0)$

CROSS SECTION THRU ROADWAY

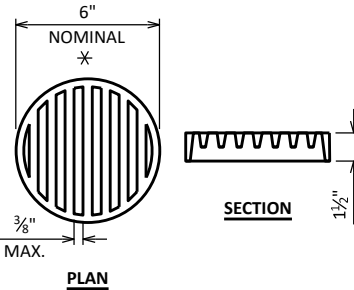
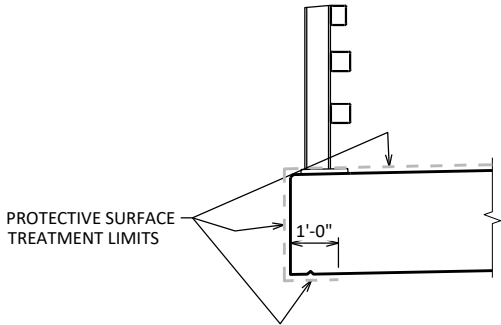
LOOKING UPSTATION
(PILING NOT SHOWN FOR CLARITY)

BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
BM2	8+25.12, 31.46' RT	SPK IN PP	1087.11
BM3	10+85.02, 31.22' RT	SPK IN PP	1087.42



PROFILE GRADE LINE

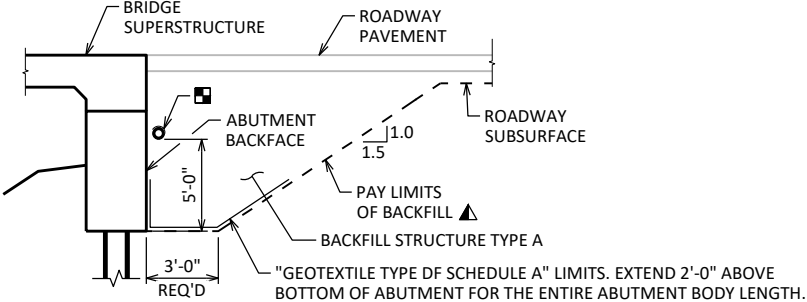


TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	SOUTH ABUT.	NORTH ABUT.	TOTALS
203.0220	REMOVING STRUCTURE P-49-055	EACH	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-49-203	EACH	---	---	---	1
206.5001	COFFERDAMS B-49-203	EACH	1	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	---	191	191	382
502.0100	CONCRETE MASONRY BRIDGES	CY	76	39	39	154
502.3200	PROTECTIVE SURFACE TREATMENT	SY	161	---	---	161
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	---	2,040	2,040	4,080
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	16,280	1,641	1,641	19,562
513.4061	RAILING TUBULAR TYPE M	LF	132	---	---	132
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---	9	9	18
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	---	95	65	160
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	---	125	75	200
606.0300	RIPPRAP HEAVY	CY	---	48	49	97
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	---	90	90	180
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	---	29	29	58
645.0120	GEOTEXTILE TYPE HR	SY	---	83	85	168
	NON-BID TEMS					
	FILLER	SIZE	---	---	---	1/2", 3/4"
	NAMEPLATE	EACH	1	---	---	1
	BENCHMARK	EACH	1	---	---	1

THIS SHEET WAS CREATED BY THE WISDOT BUREAU OF STRUCTURES STANDARD BRIDGE DESIGN TOOL VERSION 1.2.0.0 AND MODIFIED FOR PARALLEL WINGS

PROTECTIVE SURFACE TREATMENT DETAILS



TYPICAL SECTION THRU ABUTMENT

▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

■ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

RODENT SHIELD DETAIL

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

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

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-49-203			
		DRAWN BY ZLM	PLANS CK'D JGM
CROSS SECTION & QUANTITIES		SHEET 2 OF 8 34	

SCALE =

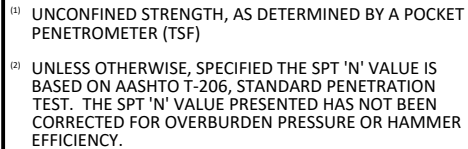


STATE PROJECT NUMBER

6792-00-70

MATERIAL SYMBOLS

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



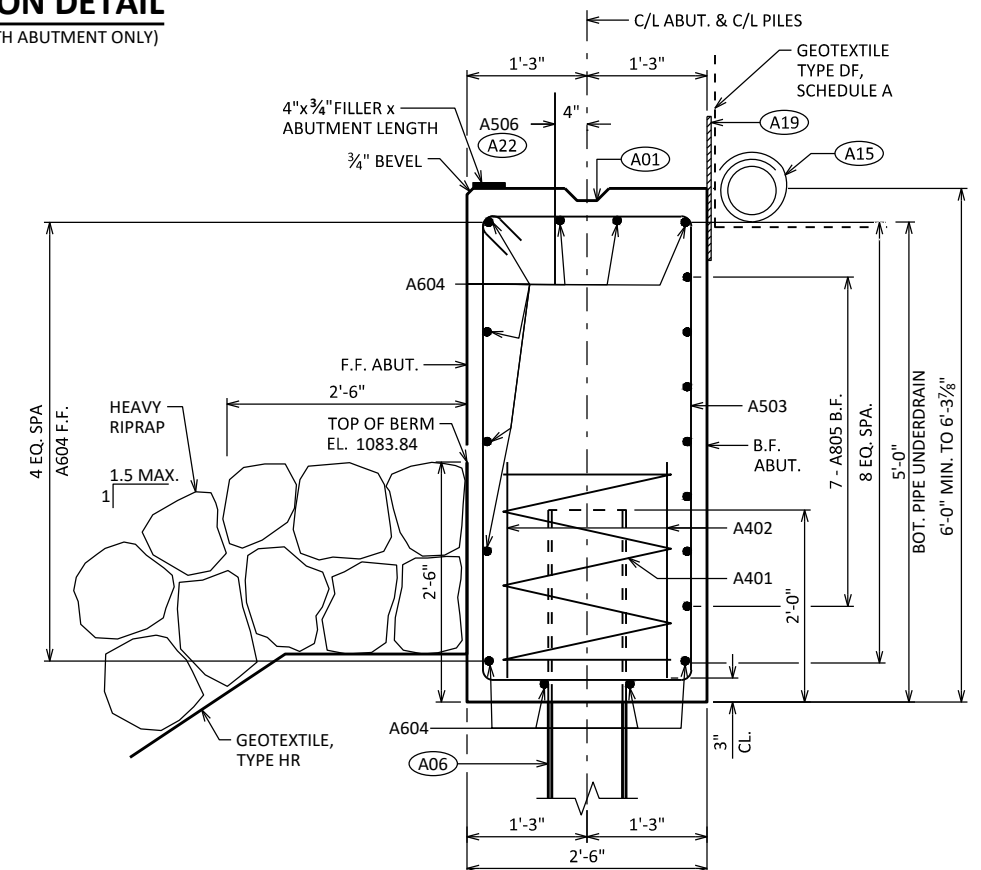
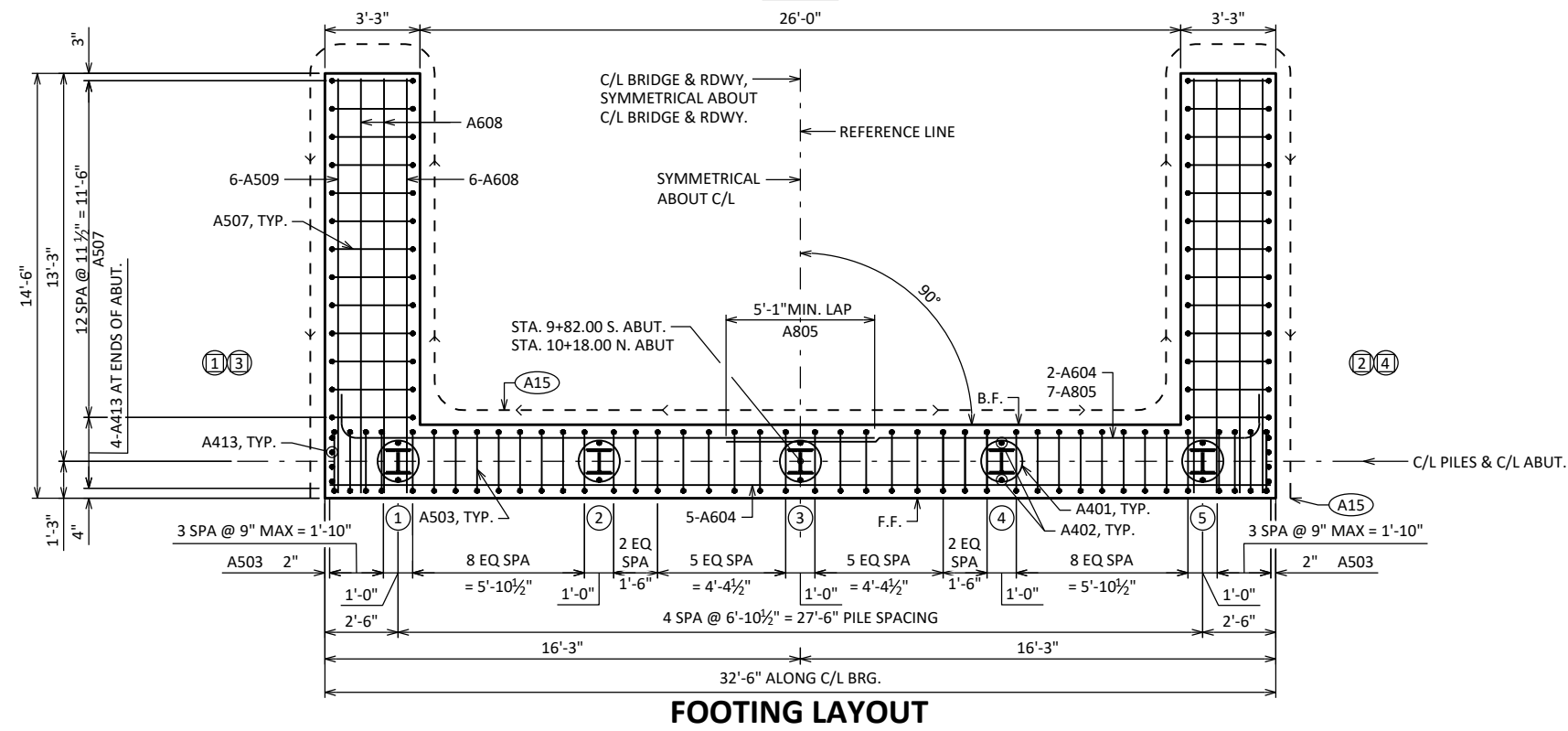
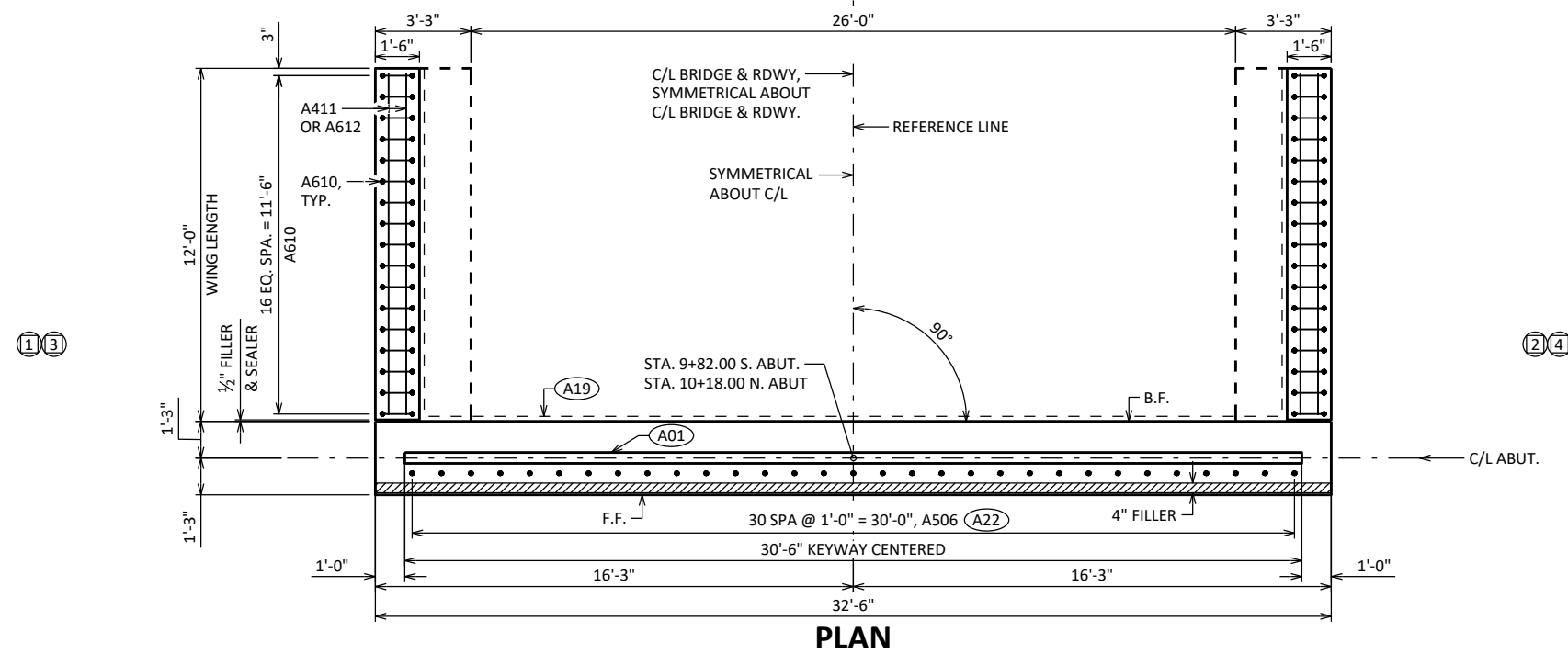
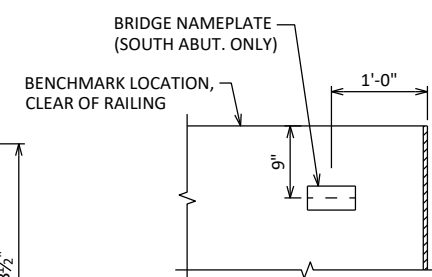
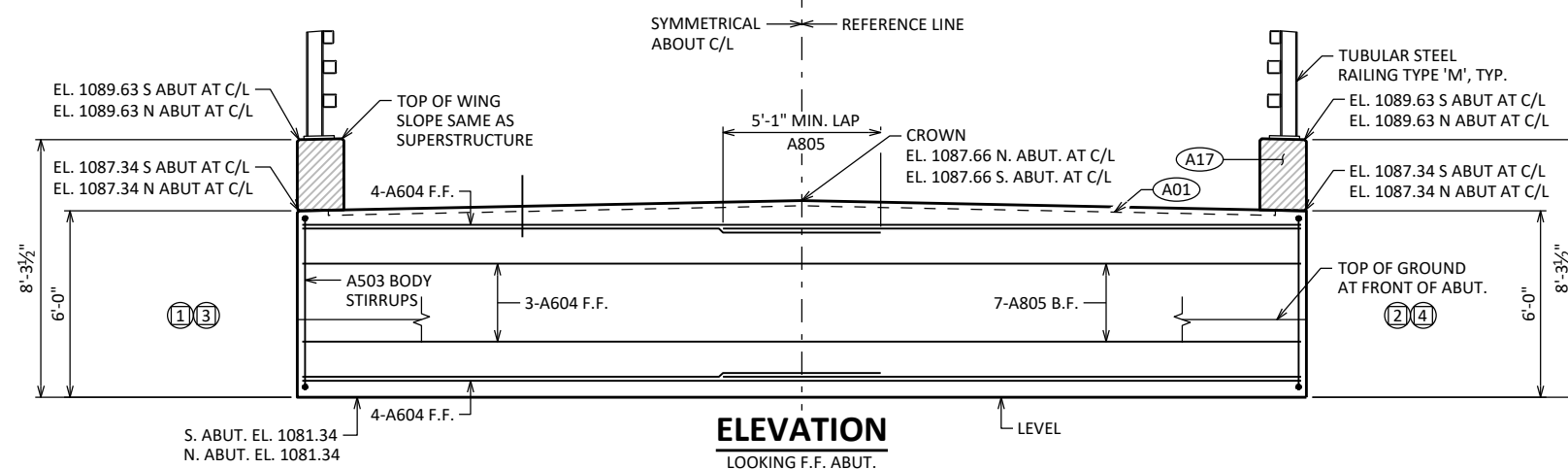
	AT TIME OF DRILLING
	END OF DRILLING
	AFTER DRILLING

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

**SUBSURFACE EXPLORATION FOR FOUNDATION
DESIGN AND BIDDERS INFORMATION**

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-49-203			
DRAWN BY		ZLM	PLANS CK'D JGM
SUBSURFACE EXPLORATION		SHEET 3 OF 8	
		35	



ABUTMENT NOTES

- A01** CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- A03** OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & ¾" "V" GROOVE @ F.F. IF JOINT IS USED).
- A06** SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.
- ESTIMATED 25'-0" LONG S. ABUT.
ESTIMATED 15'-0" LONG N. ABUT
- A15** PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17** ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ¾" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A19** 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- A22** BARS @ 1'-0" CTRS. BETWEEN BEAM SEAMS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

S. ABUT. = SOUTH ABUTMENT
N. ABUT. = NORTH ABUTMENT

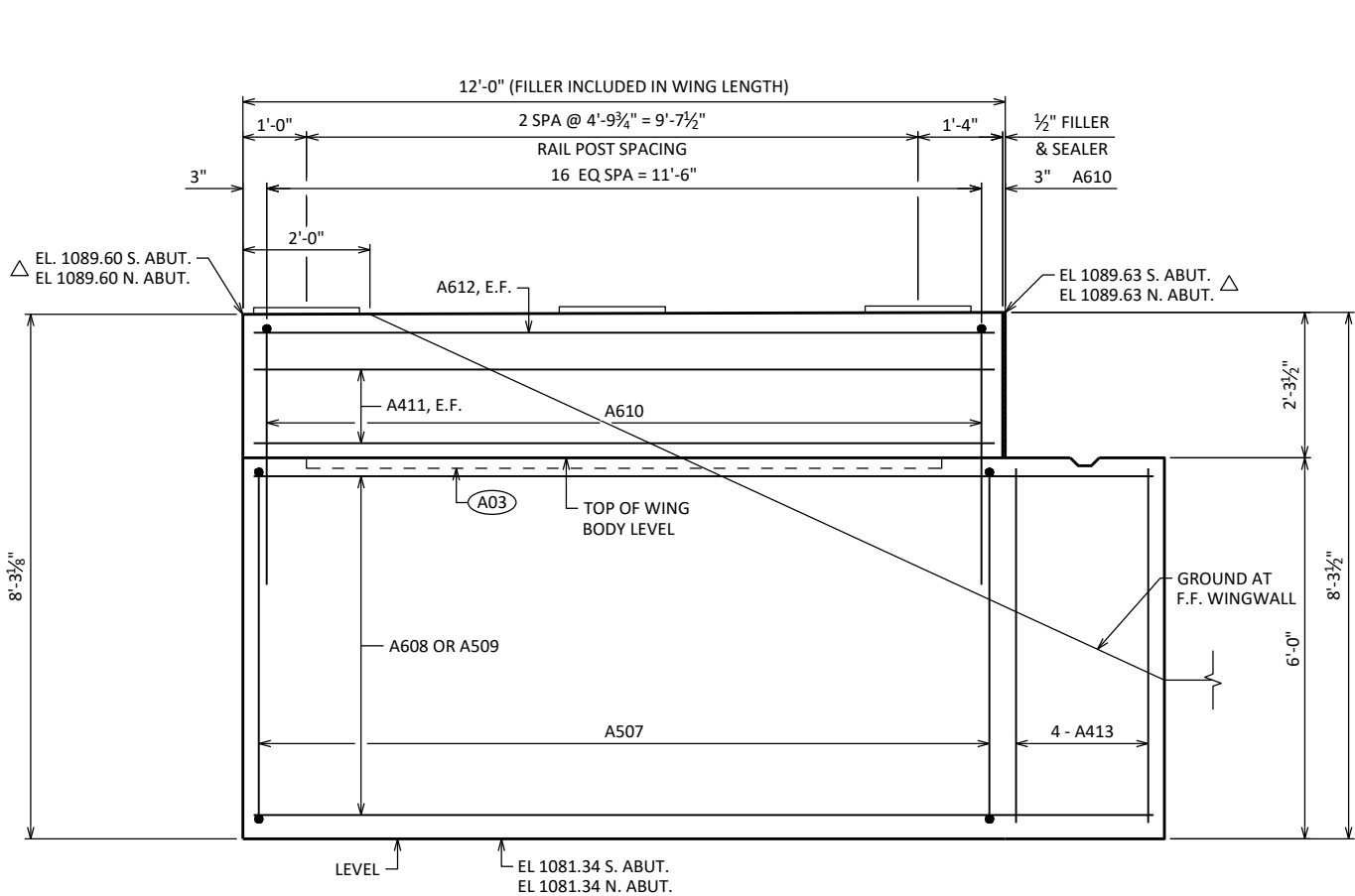
F.F. = FRONT FACE
B.F. = BACK FACE
E.F. = EACH FACE

 INDICATES WING NUMBER

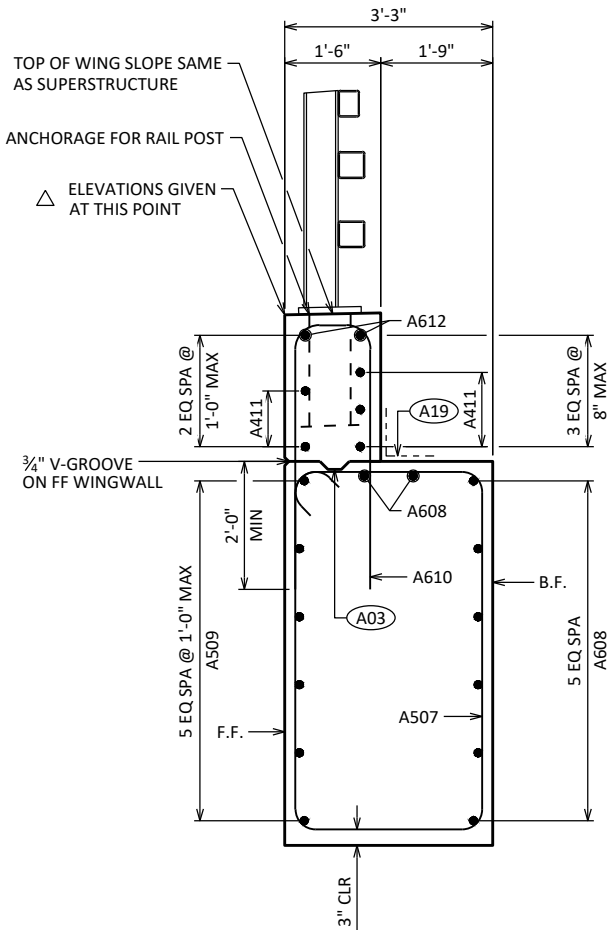
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-49-203			
		DRAWN BY	PLANS CK'D
		ZLM	JGM
NORTH & SOUTH ABUTMENT		SHEET 4 OF 8	
		36	

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8



TYPICAL WING ELEVATION



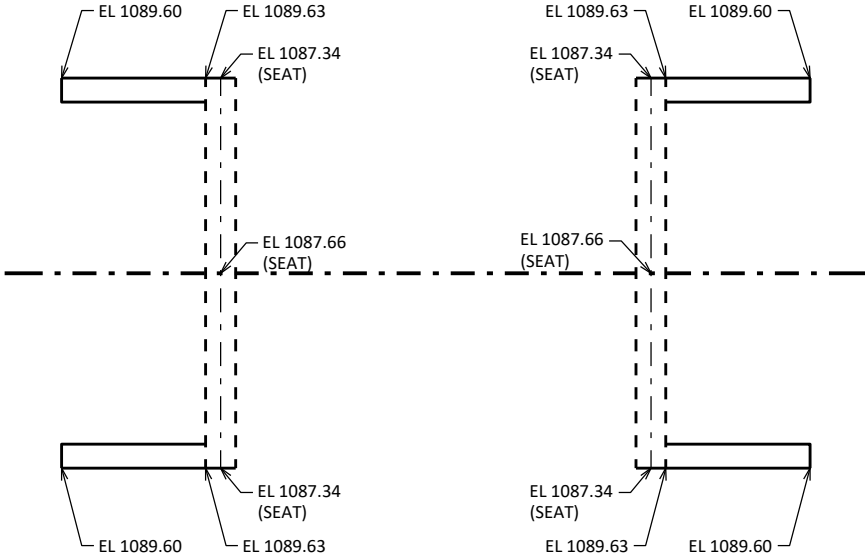
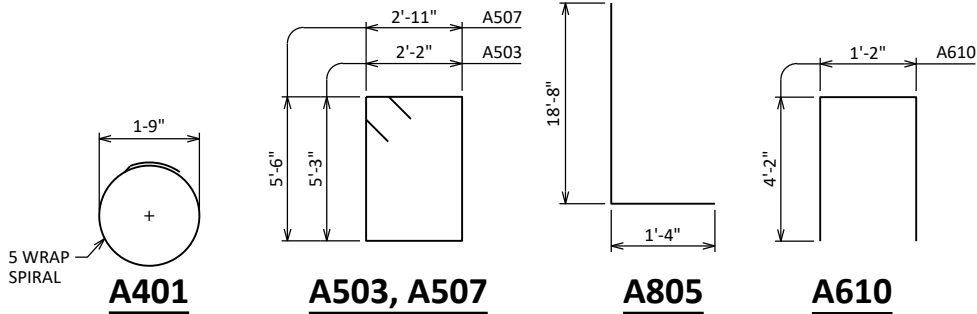
TYPICAL SECTION THRU WINGWALL

BILL OF BARS

BOTH ABUTMENTS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
* NO. REQ'D IS FOR 2 ABUTMENTS. DIVIDE BY 2 FOR EACH ABUTMENT.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A401		10	28'-0"	X		BODY AT PILES
A402		20	2'-3"			BODY AT PILES
A503		84	14'-4"	X		BODY STIRRUPS
A604		22	32'-2"			BODY HORIZONTAL FF
A805		28	19'-10"	X		BODY HORIZONTAL BF
A506	X	62	2'-0"			BODY DOWELS
A507	X	52	16'-4"	X		WING STIRRUPS
A608	X	32	14'-2"			WING HORIZONTAL BF
A509	X	24	14'-2"			WING HORIZONTAL FF
A610	X	68	9'-2"	X		WING VERTICAL
A411	X	20	11'-7"			WING HORIZONTAL EF
A612	X	8	11'-7"			WING HORIZONTAL EF TOP
A413		16	5'-7"			BODY AT ENDS



ELEVATION LOCATION DRAWING

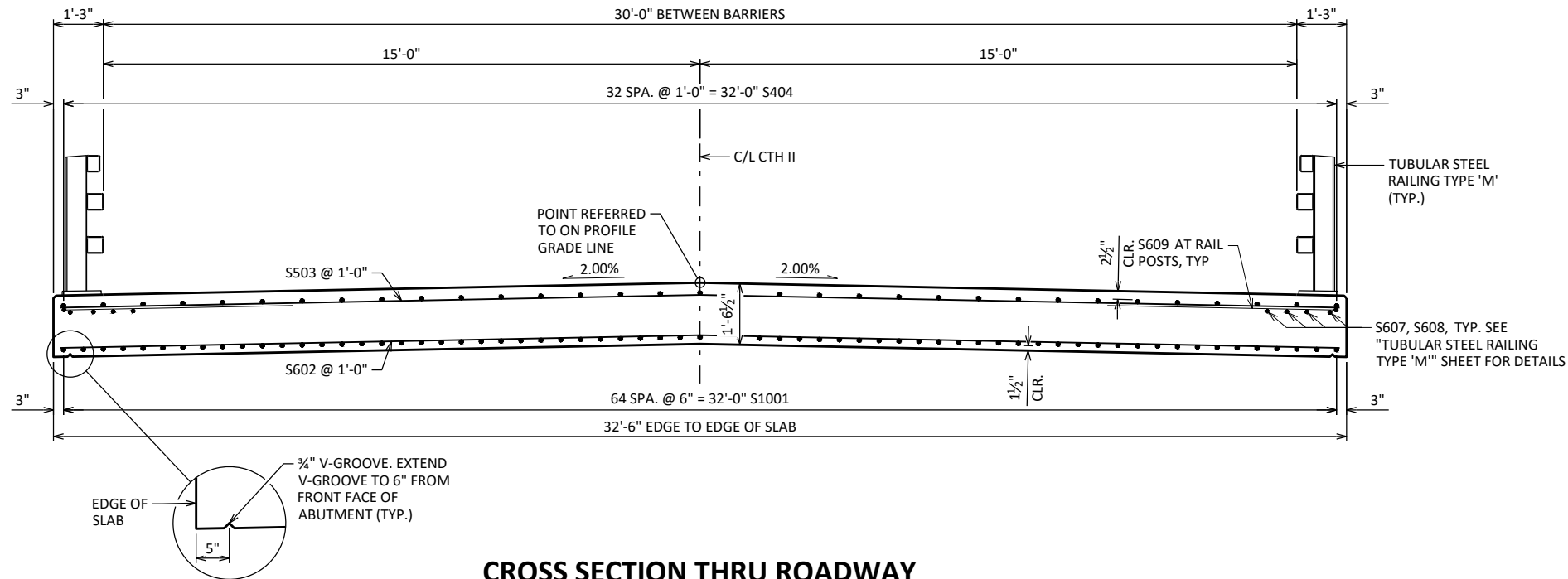
ABUTMENT NOTES

S. ABUT. = SOUTH ABUTMENT
N. ABUT. = NORTH ABUTMENT

F.F. = FRONT FACE
B.F. = BACK FACE
E.F. = EACH FACE

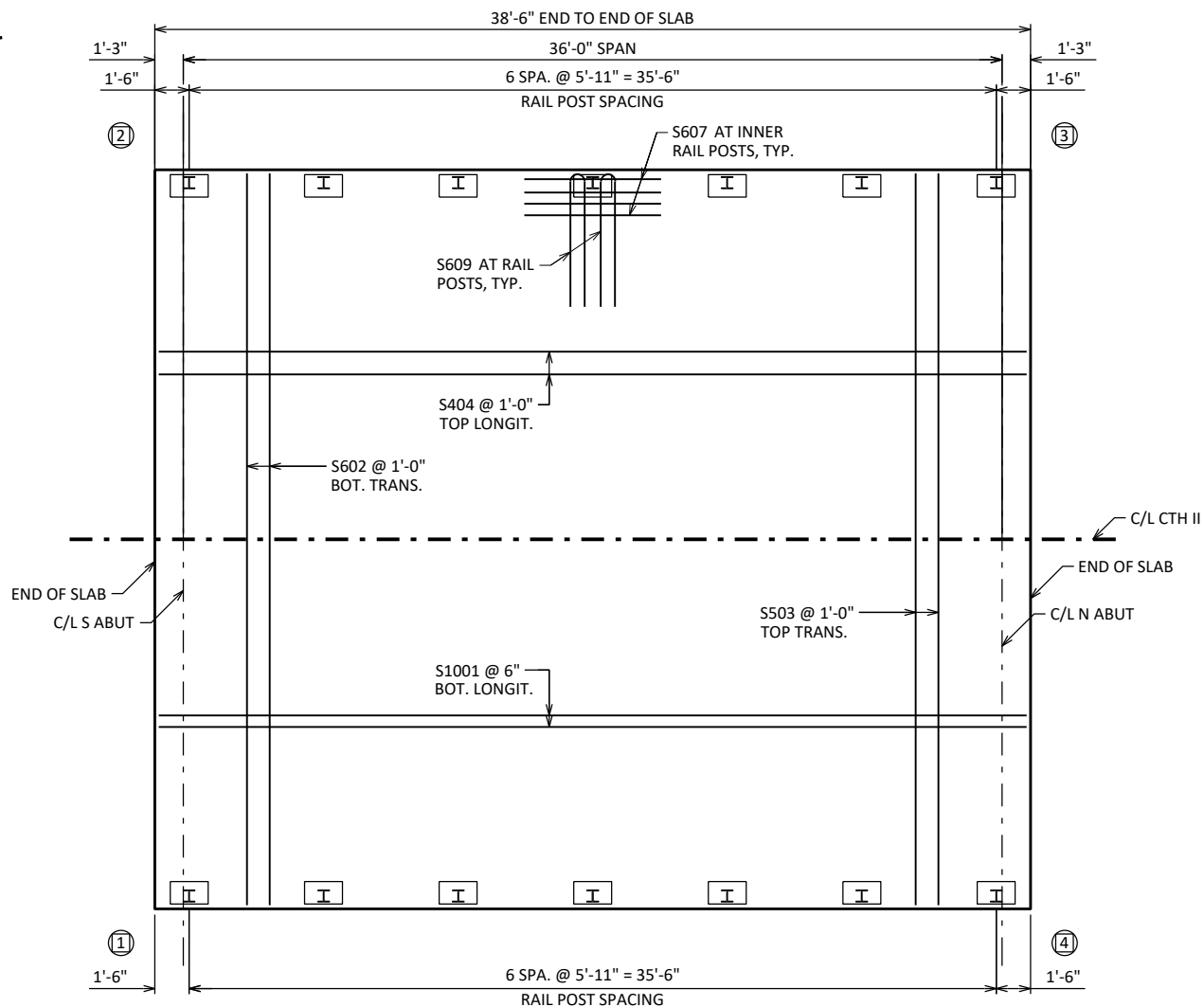
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-49-203			
DRAWN BY		ZLM	PLANS CK'D JGM
NORTH & SOUTH ABUTMENT DETAILS		SHEET 5 OF 8 37	

8

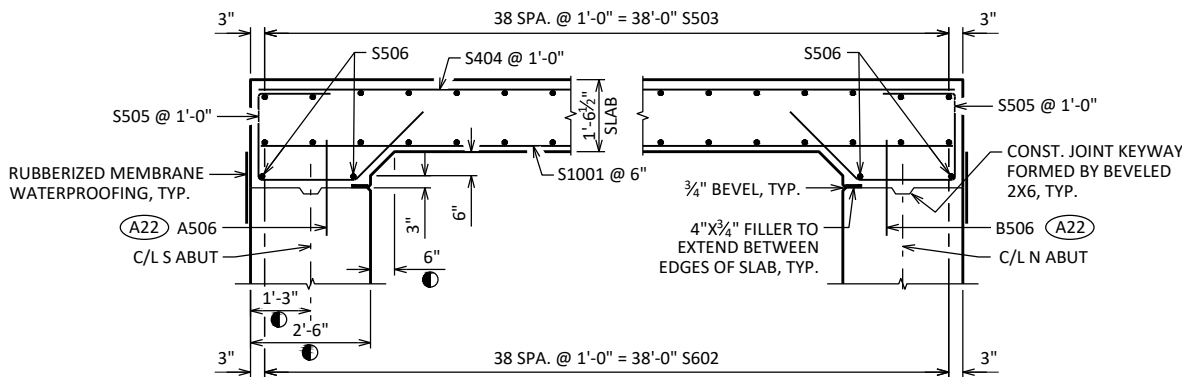


CROSS SECTION THRU ROADWAY

INDICATES WING NUMBER



PLAN

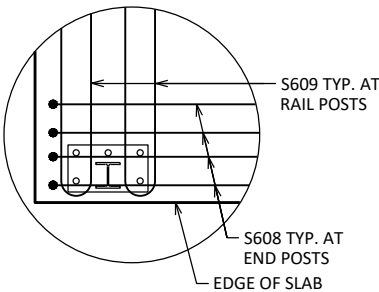


LONGITUDINAL SECTION

DIMENSIONS ARE GIVEN PARALLEL TO ϵ OF ROADWAY UNLESS OTHERWISE NOTED.

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

A22 A506 BARS SPACED @ 1'-0" CNTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

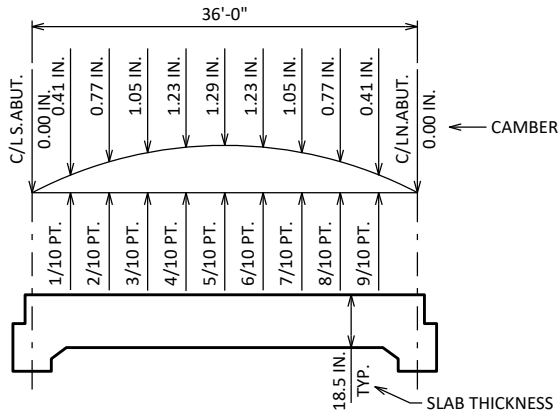


END SLAB POST DETAILS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-49-203			
DRAWN BY ZLM		PLANS CK'D JGM	
SUPERSTRUCTURE		SHEET 6 OF 8	38

SCALE =

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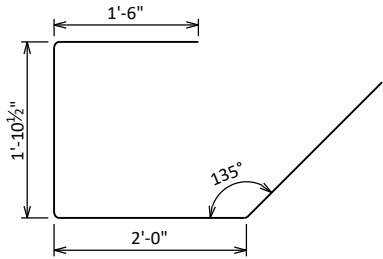


CAMBER AND SLAB THICKNESS DIAGRAM

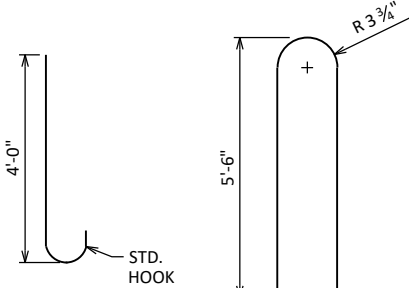
CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. PARAPETS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED, EXCEPT FOR STAGED CONSTRUCTION.

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

LESS	TOP OF SLAB ELEVATION AT FINAL GRADE
PLUS	SLAB THICKNESS
PLUS	CAMBER
PLUS	FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS	TOP OF SLAB FALSEWORK ELEVATION



S505



S608

S609

STATE PROJECT NUMBER

6792-00-70

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S1001	X	65	38'-2"			SLAB BOTTOM LONGITUDINAL
S602	X	39	32'-2"			SLAB BOTTOM TRANSVERSE
S503	X	39	32'-2"			SLAB TOP TRANSVERSE
S404	X	33	38'-2"			SLAB TOP LONGITUDINAL
S505	X	66	7'-2"	X		ABUTMENT DIAPHRAGM STIRRUPS
S506	X	4	32'-2"			ABUTMENT DIAPHRAGM LONGITUDINAL
S607	X	40	6'-0"			SLAB TOP LONGIT. UNDER RAIL POSTS
S608	X	16	4'-8"	X		SLAB TOP LONGIT. UNDER RAIL END POSTS
S609	X	28	11'-3"	X		SLAB TOP HOOKS UNDER RAIL POSTS

SURVEY TOP OF SLAB ELEVATIONS

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

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

NOTES

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

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

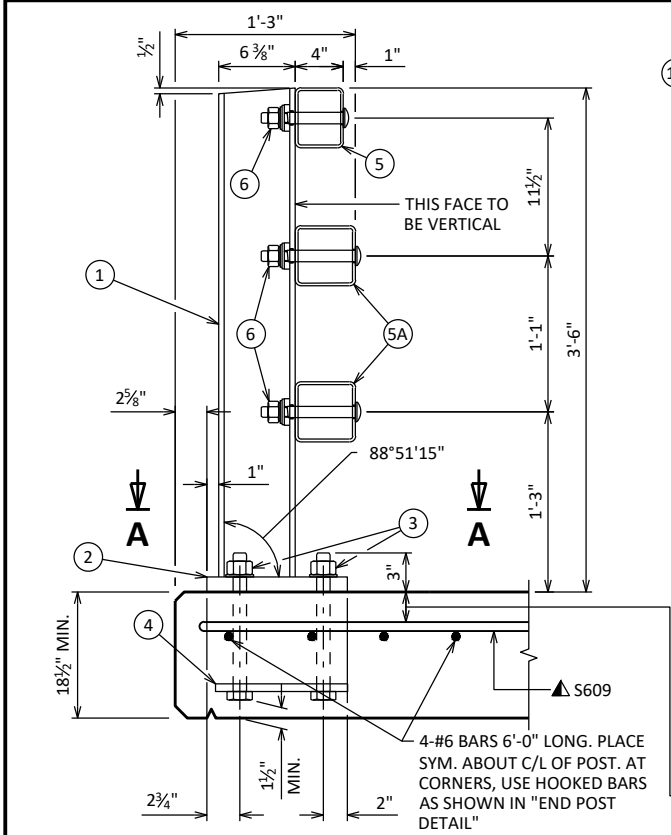
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

TOP OF SLAB ELEVATIONS

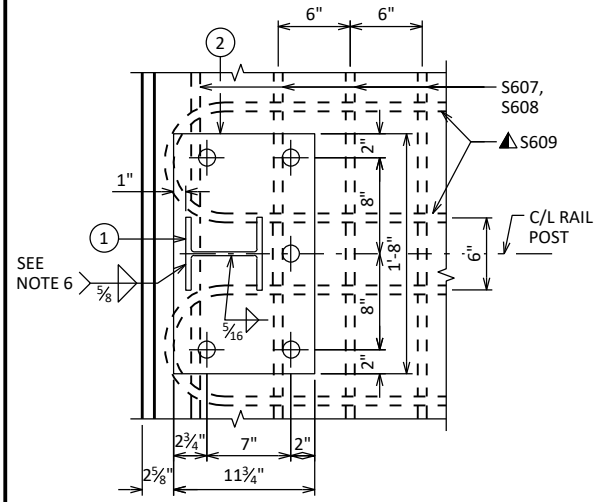
LOCATION	S ABUT C/L BRG	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	N ABUT C/L BRG
W EDGE OF DECK	1089.63	1089.63	1089.63	1089.63	1089.63	1089.63	1089.63	1089.63	1089.63	1089.63	1089.63
C/L	1089.96	1089.96	1089.96	1089.96	1089.96	1089.96	1089.96	1089.96	1089.96	1089.96	1089.95
E EDGE OF DECK	1089.63	1089.63	1089.63	1089.63	1089.63	1089.63	1089.63	1089.63	1089.63	1089.63	1089.63

THIS SHEET WAS CREATED BY THE WISDOT BUREAU OF STRUCTURES STANDARD BRIDGE DESIGN TOOL VERSION 1.2.0.0 AND MODIFIED FOR PARALLEL WINGS

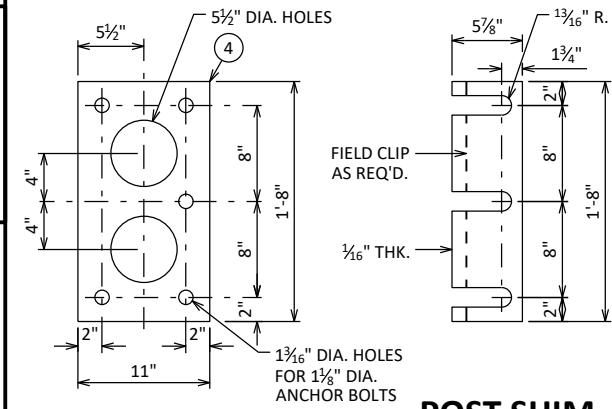
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SECTION THRU RAILING ON DECK

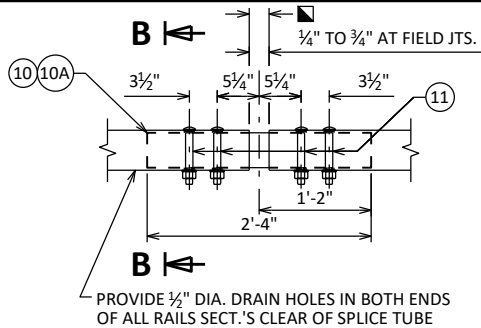


SECTION A-A

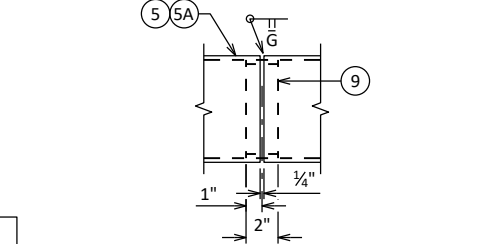


ANCHOR PLATE
AT RAIL TO DECK CONNECTION

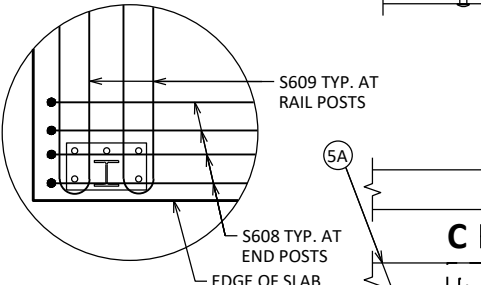
POST SHIM
DETAIL



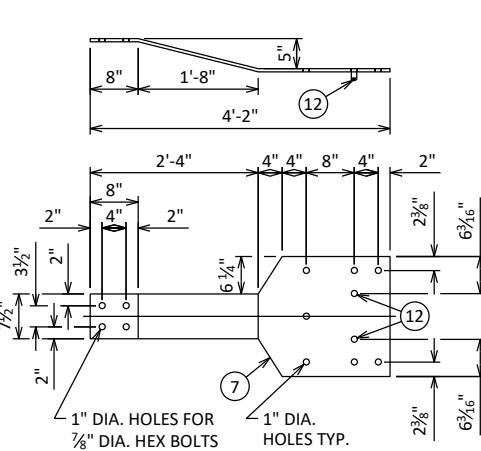
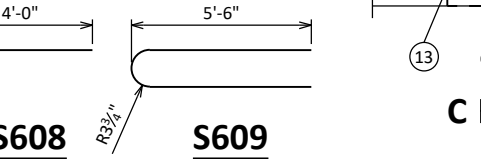
FIELD ERECTION JOINT DETAIL



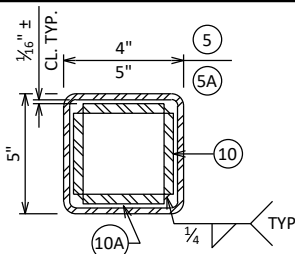
SHOP RAIL SPLICE DETAIL



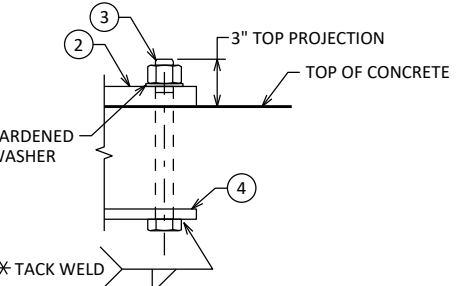
END SLAB POST
DETAILS



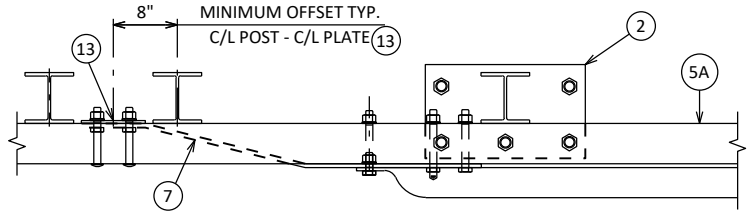
BACK-UP PLATE DETAIL
AT BEAM GUARD ATTACHMENT



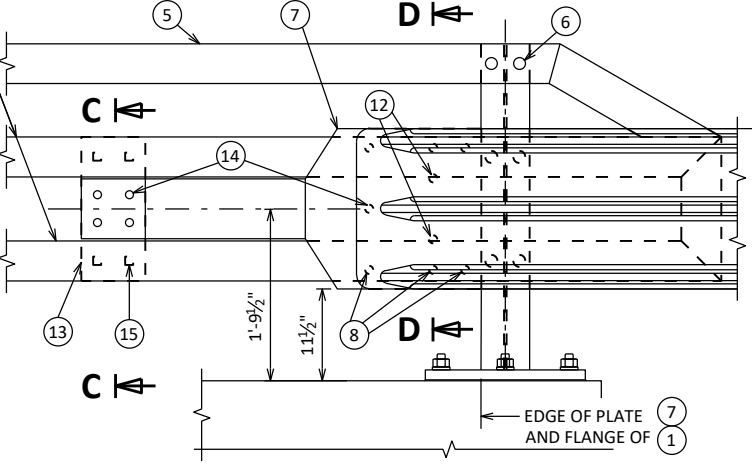
SECTION B-B



ANCHOR BOLTS



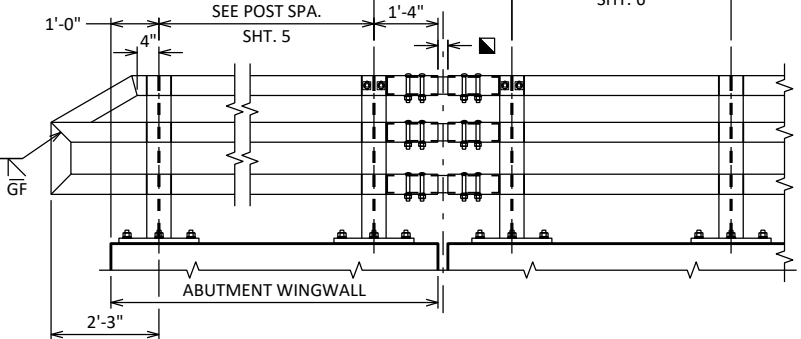
TOP VIEW AT END POST
THRIE BEAM RAIL ATTACHMENT



SECTION C-C SECTION D-D

ANCHOR PLATE
AT BEAM GUARD ATTACHMENT

DETAIL AT END POST
THRIE BEAM RAIL ATTACHMENT



PART ELEVATION OF RAILING

- ▲ TIE TO TOP MAT OF STEEL.
- * ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.
- RDWY. OPENING OR 2 1/2" MIN. FOR STRIP SEAL EXP. JOINT & (1/4" TO 3/4") OPENING FOR A1 ABUTMENT.

LEGEND

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

GENERAL NOTES

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

STATE PROJECT NUMBER			
6792-00-70			

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-49-203			
DRAWN BY		ZLM	PLANS CK'D JGM
TUBULAR STEEL RAILING TYPE 'M'		SHEET 8 OF 8 40	

DIVISION 1 - CTH II - CATEGORY 0010

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDNATE
						NOTE 1	NOTE 2	NOTE 3	1.00 NOTE 1	1.25	NOTE 4
8+25.00	825.00	0.00	76.69	6.64	11.51	0	0	0	0	0	0
8+50.00	850.00	25.00	76.73	6.61	13.74	71	6	12	71	15	50
9+00.00	900.00	50.00	77.68	6.56	17.89	143	12	29	214	51	145
9+28.75	928.75	28.75	80.26	6.56	17.24	84	7	19	298	75	198
9+50.00	950.00	21.25	83.59	6.56	20.77	64	5	15	362	94	238
9+60.75	960.75	10.75	85.12	6.56	18.11	34	3	8	396	104	259
9+80.74	980.74	19.99	82.14	6.60	0.00	62	5	7	458	113	308
10+19.25	1019.25	0.00	80.80	6.56	0.00	0	0	0	458	113	308
10+39.25	1039.25	20.00	82.66	6.46	19.57	61	5	7	519	121	355
10+50.00	1050.00	10.75	81.68	6.40	19.96	33	3	8	552	131	375
10+71.25	1071.25	21.25	78.84	6.37	19.74	63	5	16	615	151	413
11+00.00	1100.00	28.75	77.44	6.41	20.40	83	7	21	698	178	463
11+14.01	1114.01	14.01	77.39	6.41	19.77	40	3	10	738	190	487
11+50.00	1150.00	35.99	75.43	6.43	15.93	102	9	24	840	220	550
11+64.00	1164.00	14.00	74.70	6.44	0.00	39	3	4	879	225	581
Totals						879	73	180			

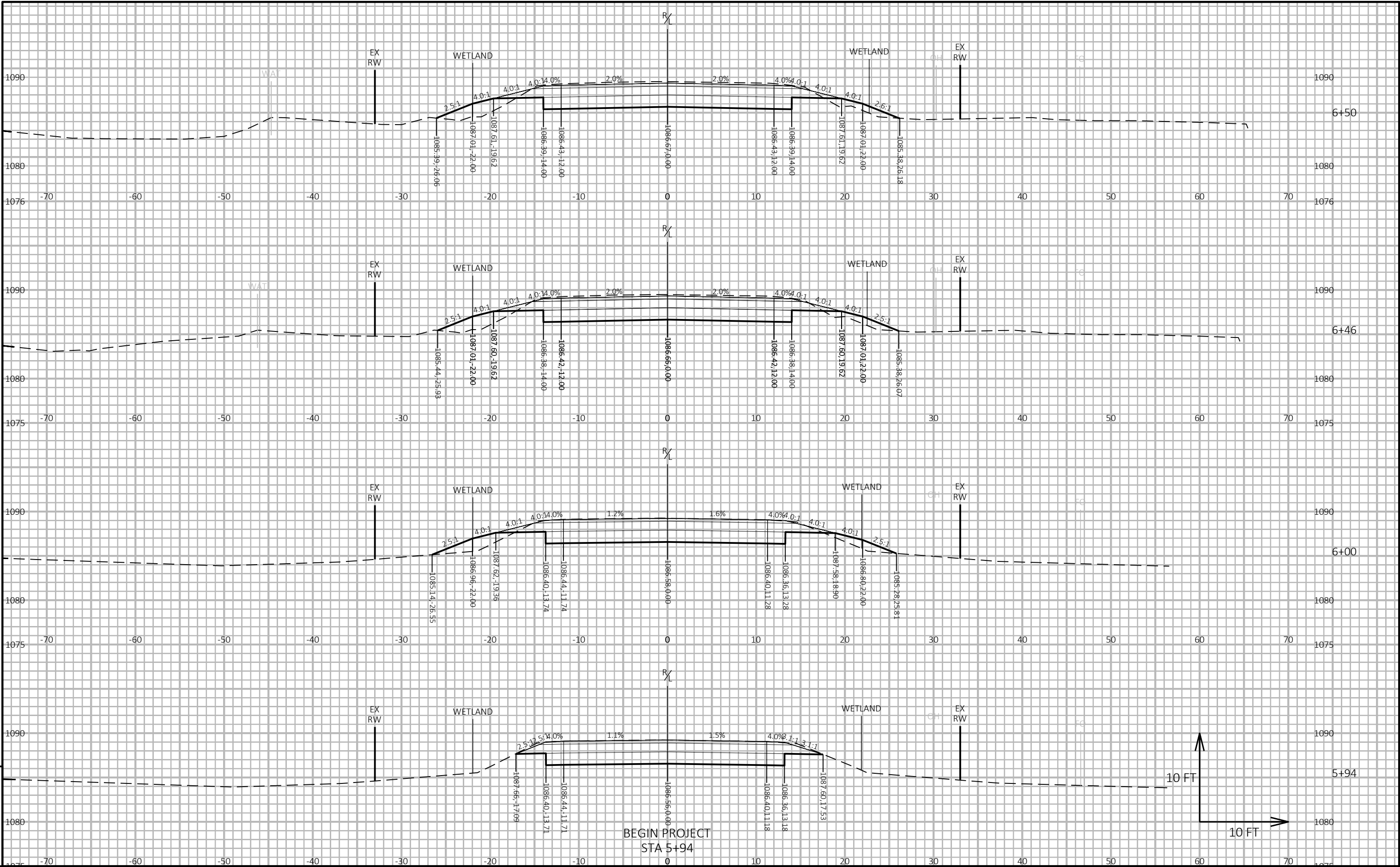
DIVISION 1 - CTH II - CATEGORY 0030

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDNATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.25	NOTE 4
5+94.00	594.00	0.00	77.72	6.67	0.00	0	0	0	0	0	0
6+00.01	600.01	6.01	78.42	6.67	12.91	17	1	1	17	1	15
6+41.89	641.89	41.88	84.44	6.71	13.47	126	10	20	143	26	106
6+46.00	646.00	4.11	119.54	6.72	13.91	16	1	2	159	29	118
6+50.00	650.00	4.00	138.44	6.72	14.36	19	1	2	178	31	134
6+71.89	671.89	21.89	255.19	6.75	13.81	160	5	11	338	45	275
6+91.89	691.89	0.00	251.75	6.75	14.81	0	0	0	338	45	275
7+00.00	700.00	8.11	210.65	6.74	14.21	69	2	4	407	50	337
7+21.39	721.39	21.39	87.10	6.72	10.39	118	5	10	525	63	438
7+50.00	750.00	28.61	85.36	6.69	9.18	91	7	10	616	75	509
8+00.00	800.00	50.00	79.45	6.66	9.68	153	12	17	769	96	629
8+25.00	825.00	25.00	76.69	6.64	11.51	72	6	10	841	109	682
Totals						841	50		87		
FOR INFORMATION ONLY - TRENCH EXCAVATION (EXCLUDING EXCAVATION SLOPES BELOW SUBGRADE)											
EXCAVATION FOR STRUCTURES CULVERTS (V-49-139)											
6+71.89	671.89	0.00	292.38	6.75	0.00	0	0	0	0	0	0
6+91.89	691.89	20.00	296.79	6.75	0.00	218	5	0	218	0	213

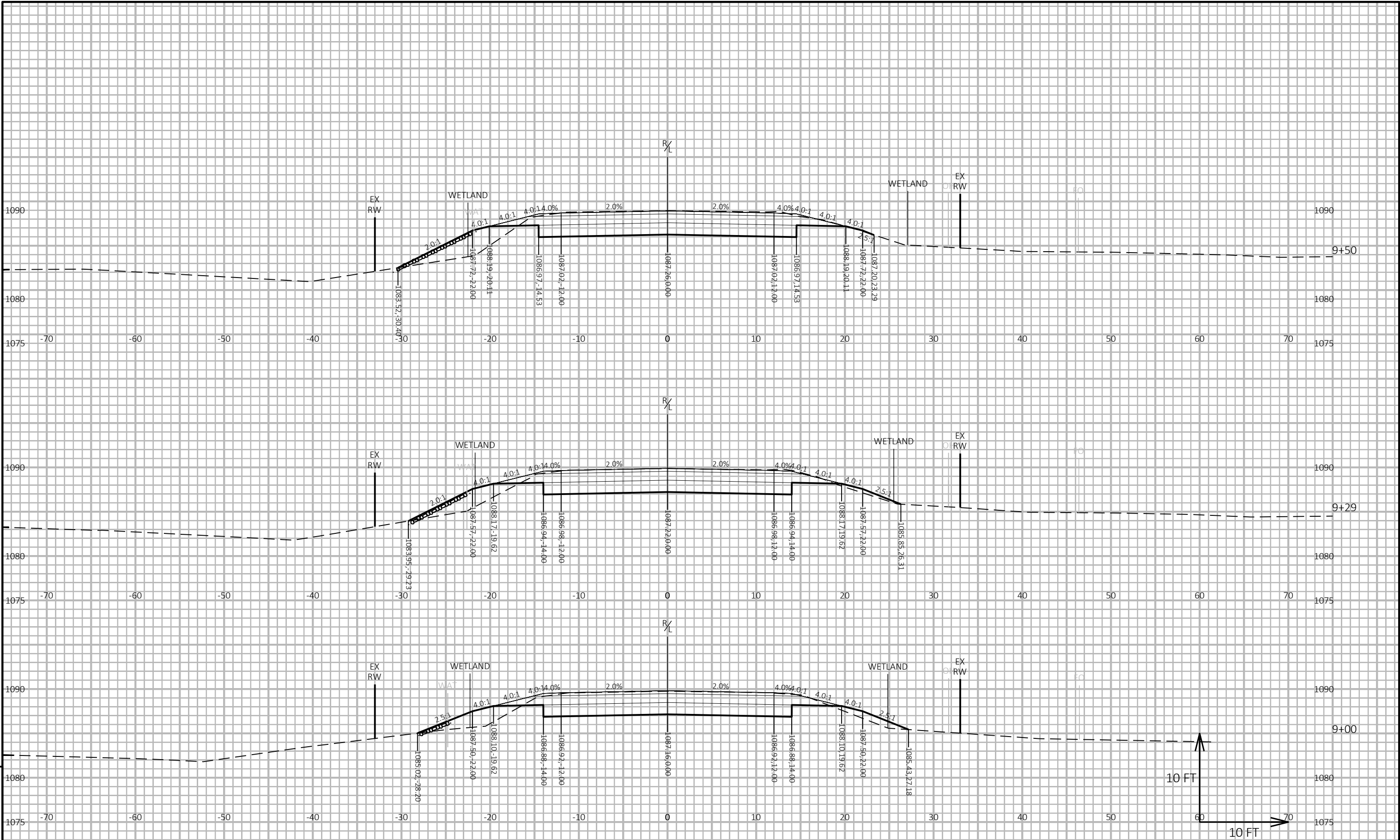
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL. ITEM NUMBER 205.0100
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDNATE	THE MASS ORDNATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

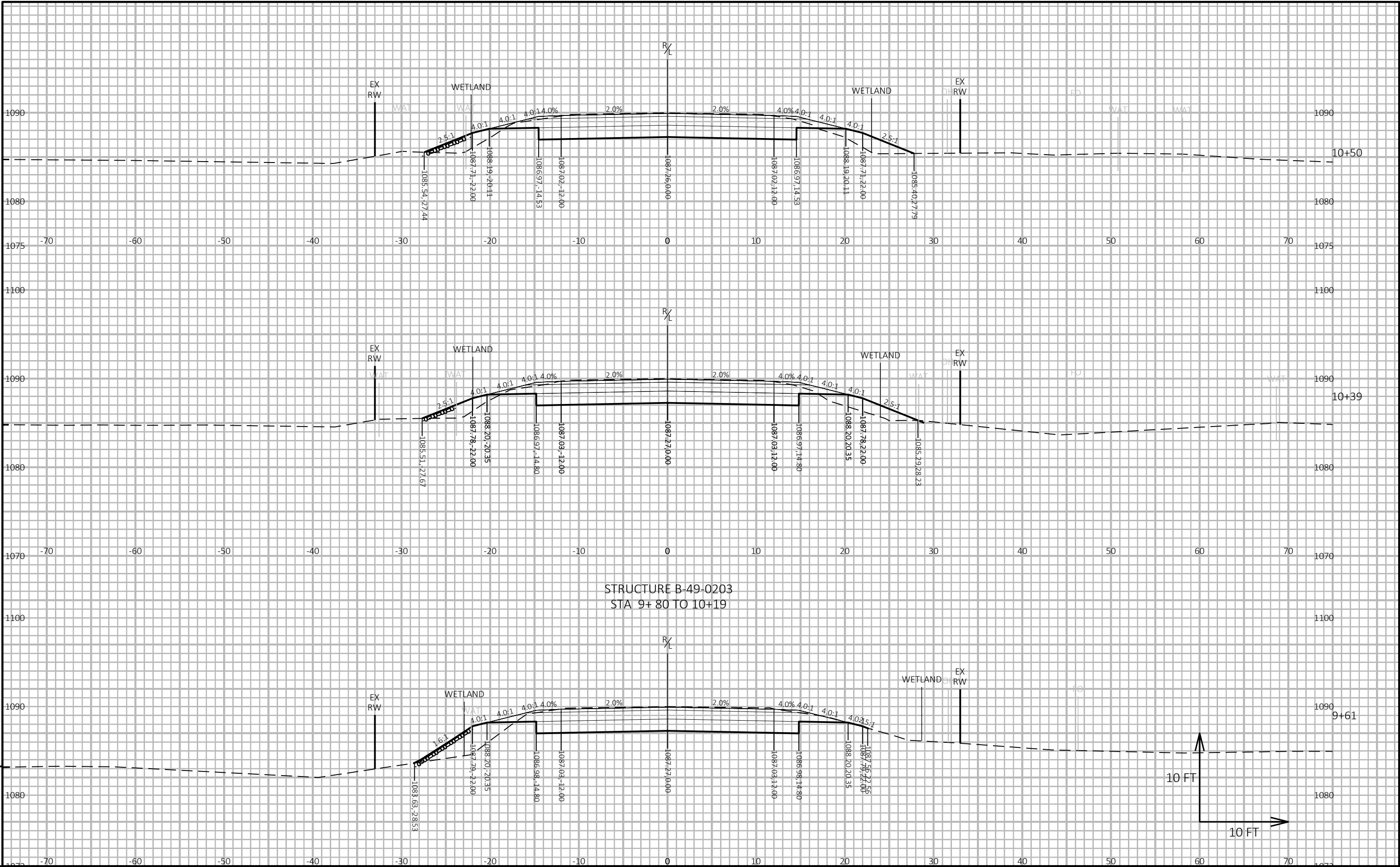
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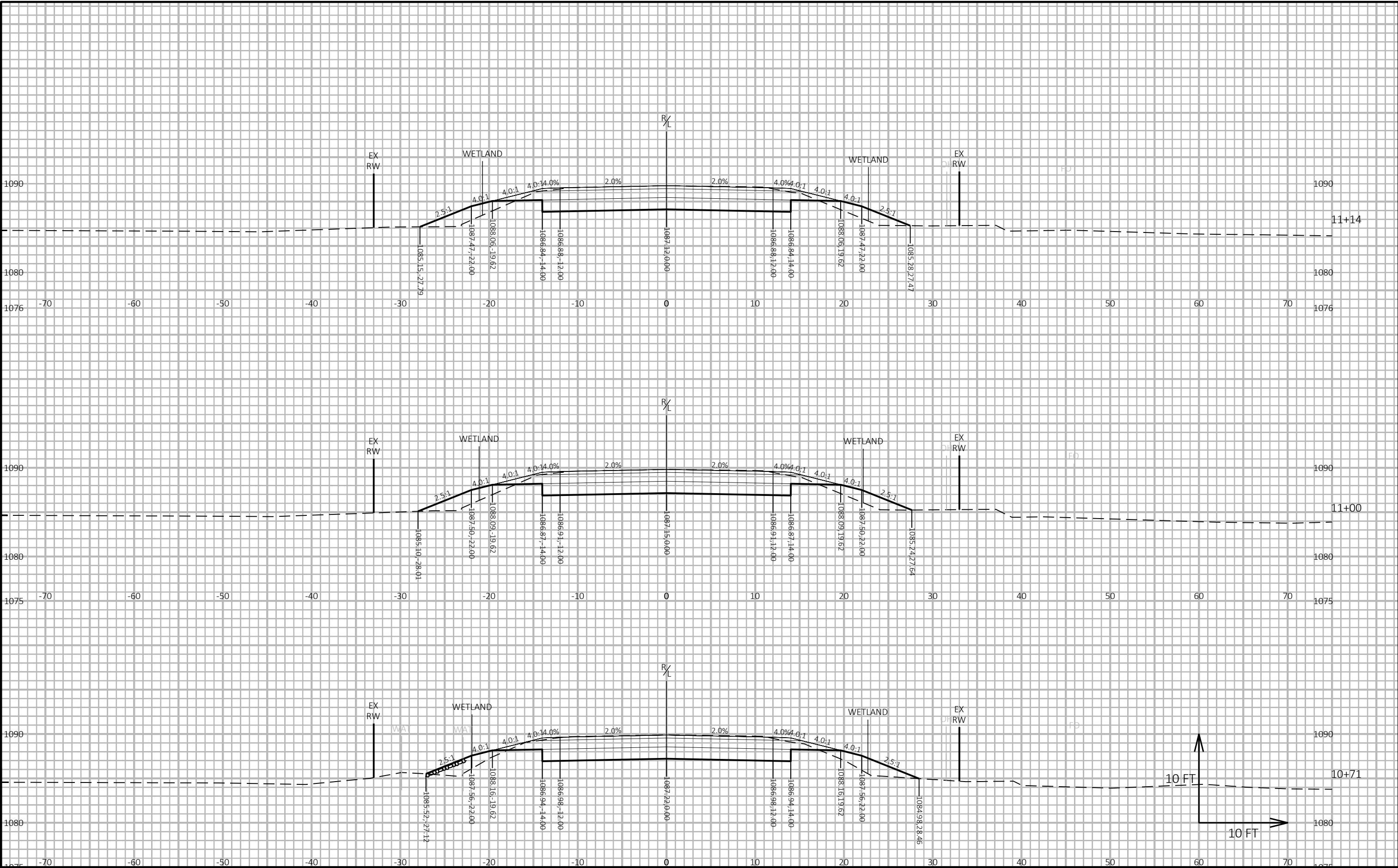


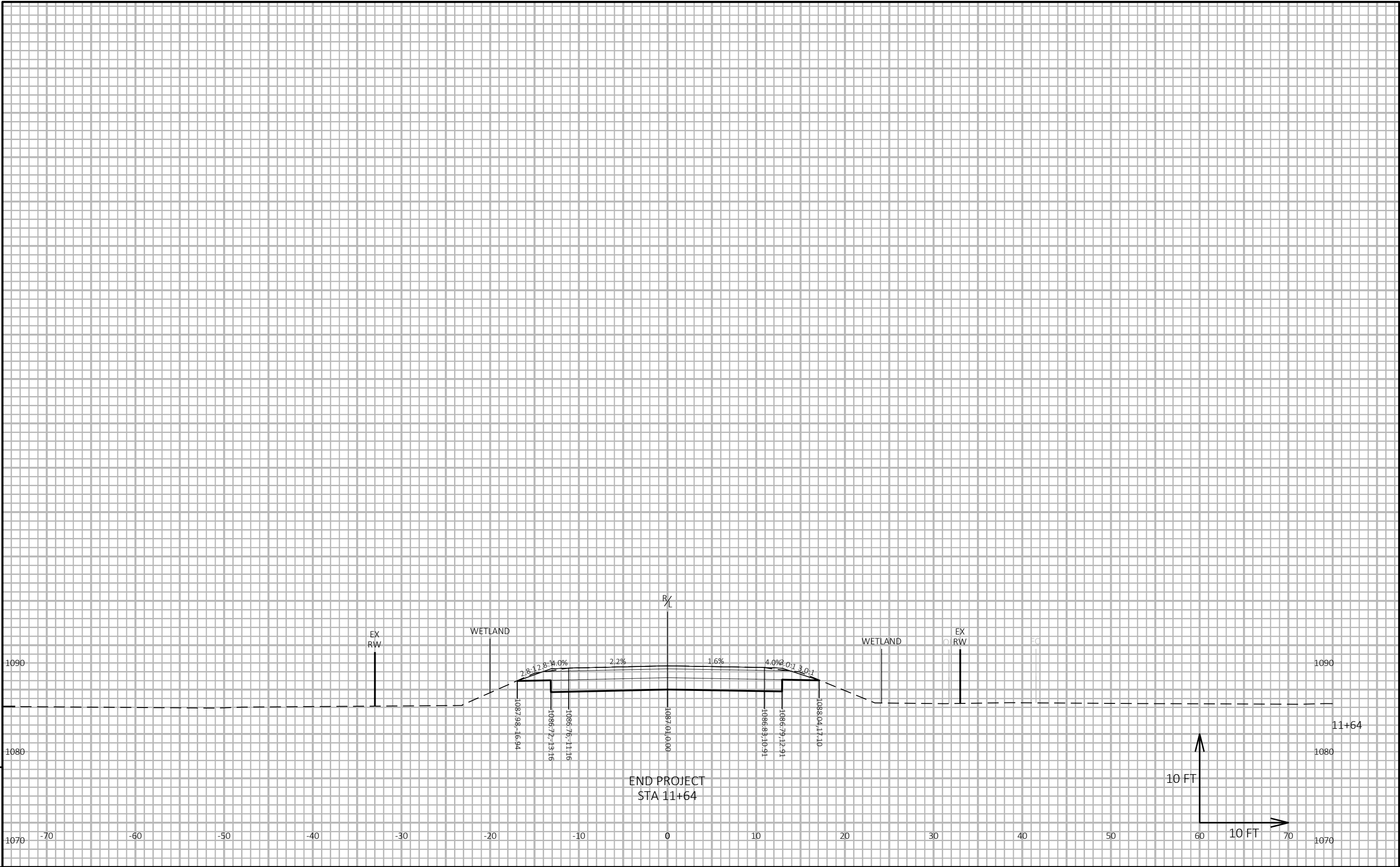


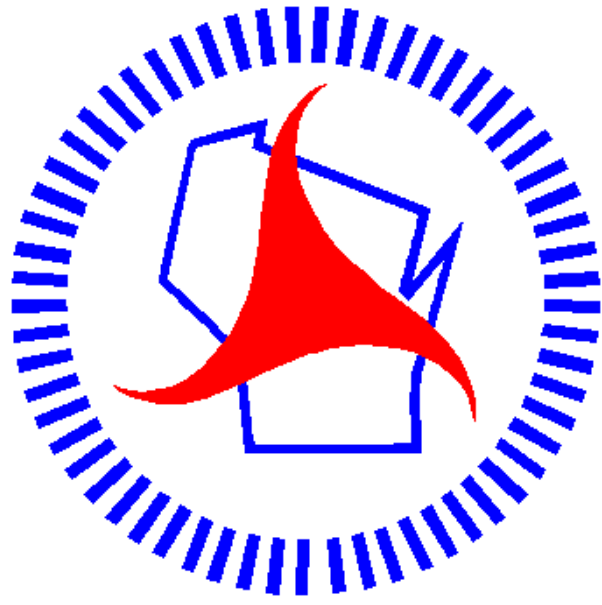




STRUCTURE B-49-0203
STA 9+ 80 TO 10+19







Wisconsin Department of Transportation

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