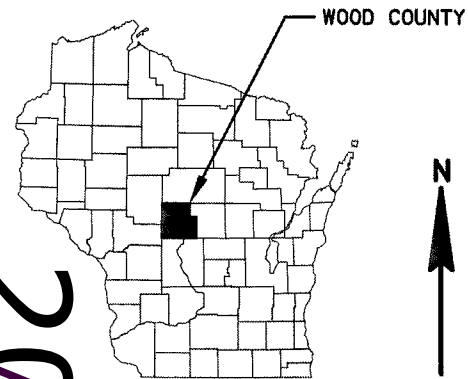


ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details (Includes Erosion Control)
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 = 70



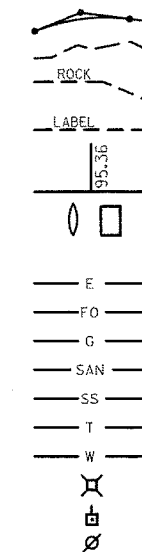
DESIGN DESIGNATION

A.A.D.T. (2016)	=	550
A.A.D.T. (2036)	=	635
D.H.V.	=	92
D.D.	=	60/40
T.	=	7.5%
DESIGN SPEED	=	35 MPH
ESALS	=	130,000

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
HIGH VOLTAGE
WETLAND 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

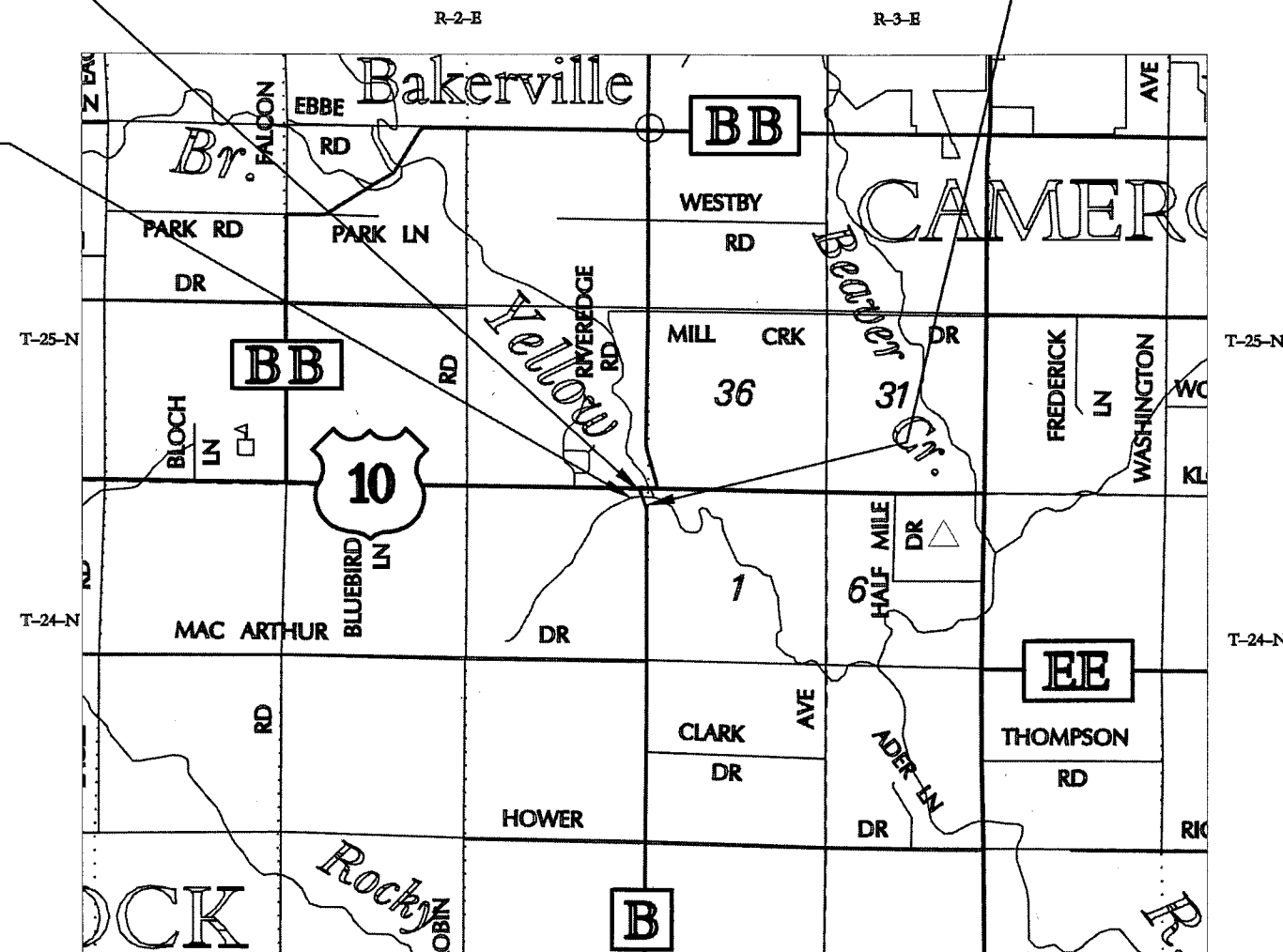
PLAN OF PROPOSED IMPROVEMENT

USH 10 - MACARTHUR DRIVE

BR YELLOW RIVER BRIDGE B-71-0193

CTH B
WOOD COUNTYSTATE PROJECT NUMBER
7391-02-70BEGIN PROJECT 7391-02-70
STA 8+20.00
Y = 527141.554
X = 627107.684END PROJECT 7391-02-70
STA 12+50

STRUCTURE B-71-193

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.081 MILES

COORDINATES ON THIS PLAN ARE REFERENCED TO
THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS),
WOOD COUNTY, NAD 1983 (91)ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED
TO THE NORTH AMERICAN VERTICAL DATUM OF 1988
NAVD 88

STATE PROJECT

7391-02-70

FEDERAL PROJECT

PROJECT

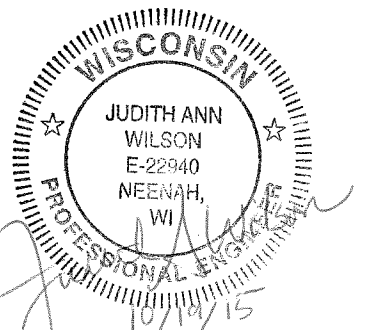
WISC 2016023

CONTRACT

1

ACCEPTED FOR
WOOD COUNTYDATE: 10-28-15 *[Signature]*
(Signature)*[Signature]*
TITLE

ORIGINAL PLANS PREPARED BY

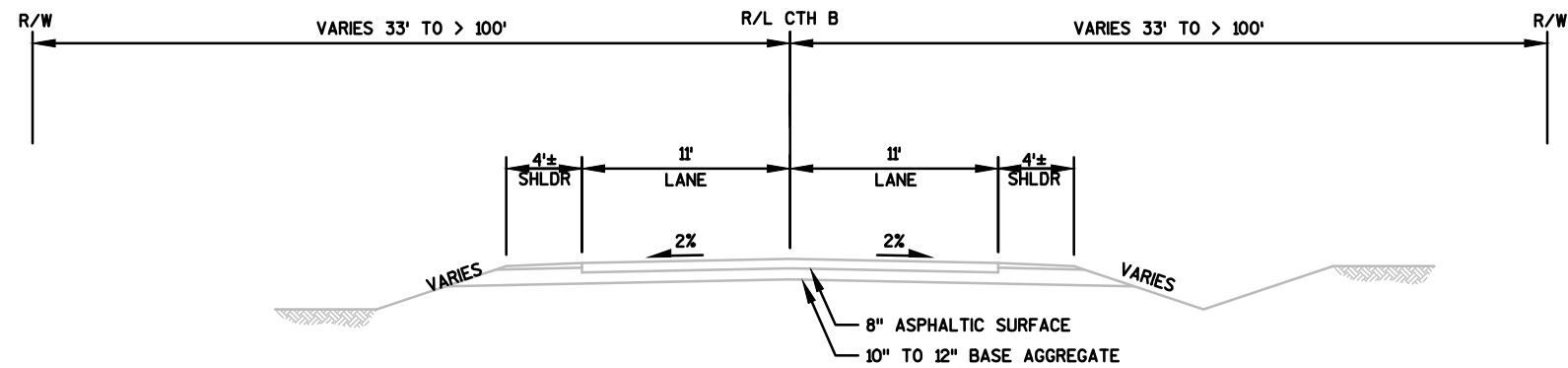
OMNI
ASSOCIATESSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATIONPREPARED BY
Surveyor OMNI ASSOCIATES
Designer OMNI ASSOCIATES
Management Consultant CEDAR CORP

APPROVED FOR THE DEPARTMENT

DATE: 10-28-2015 *[Signature]*
(Signature)

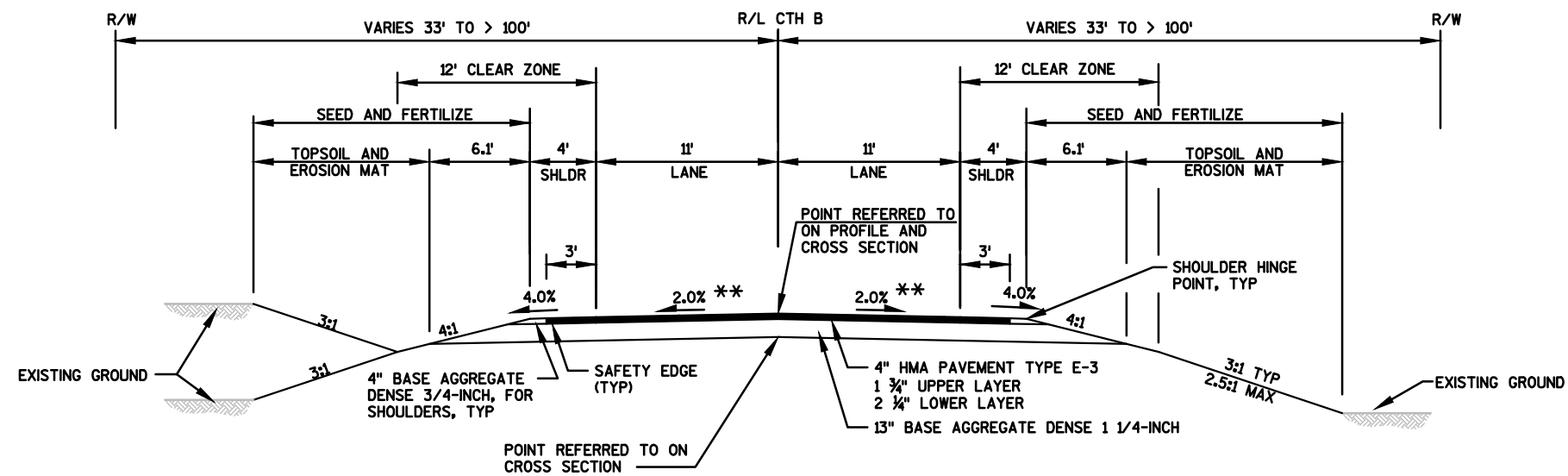
E

2	<div><div><div>GENERAL NOTES</div><div><p>THE LOCATIONS OF EXISTING AND PROPOSED UTILITY FACILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.</p><p>FILL AS SHOWN ON THE PLANS PERTAINS TO EMBANKMENTS CONSTRUCTED FROM COMMON EXCAVATION. THE ALLOWANCE USED FOR EXPANDING THE FILLS TO COMPUTE THE VOLUME OF MATERIAL REQUIRED IS 25 PERCENT. ALL FILL VOLUMES SHOWN ARE THE ACTUAL VOLUMES.</p><p>WHEN THE QUANTITY OF BASE AGGREGATE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF MATERIAL AS DIRECTED BY THE ENGINEER.</p><p>HMA PAVEMENT TYPE E-3 DEPTH 1 3/4" UPPER LAYER (12.5 mm NOMINAL SIZE AGGREGATE) 2 1/4" LOWER LAYER (19 mm NOMINAL SIZE AGGREGATE)</p><p>NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.</p><p>ALL DISTURBED AREAS, NOT OTHERWISE SURFACED ARE TO BE TOPSOILED, FERTILIZED, SEEDED AND COVERED WITH EROSION MAT.</p><p>USE SEED MIXTURE NO. 20 ON ALL DISTURBED AREAS, EXCEPT USE SEED MIXTURE NO. 60 ON WETLAND AREAS.</p><p>WETLAND AREAS ARE SHOWN ON THE PLANS. CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO WORK WITHIN THE SLOPE INTERCEPTS IN THE WETLAND AREAS.</p><p>THE EXACT LOCATIONS OF ALL EROSION CONTROL ITEMS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.</p><p>THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR A MONUMENT WHICH SHALL BE SET IN THE STRUCTURE AS DESIGNATED BY THE ENGINEER.</p><p>STOCK PILE SALVAGED RAIL IN THE RIGHT OF WAY. NOTIFY WOOD COUNTY WHEN THE SALVAGED RAIL IS READY FOR PICK UP.</p></div><div><div>EROSION CONTROL NOTES</div><div><p>RUNOFF COEFFICIENTS FOR THIS PROJECT: EXISTING PAVEMENT 0.95, EXISTING SLOPES 0.30, NEW PAVEMENT 0.95, NEW SLOPES 0.30.</p><p>TOTAL PROJECT AREA = 1.74 ACRES TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.87 ACRES</p></div></div></div></div>	2			
<div><div>CONTACTS</div><div><div><div>ELECTRIC</div><div>MARSHFIELD UTILITIES 2000 SOUTH CENTRAL AVE. PO BOX 670 MARSHFIELD, WI 54449 TELEPHONE: 715-387-1195, EXT. 336 ATTN: NICOLAS KUMM, EXT 336 SECONDARY CONTACT: ERIC LORENZEN, EXT 334 EMAIL: kumm@marshfielddutilities.org EMAIL: eric.lorenzen@marshfielddutilities.org</div></div><div><div>TELEPHONE</div><div>TDS TELECOM 10 COLLEGE AVENUE, SUITE 218A APPLETON, WI 54911 ATTN: STEVE JAKUBIEC TELEPHONE: 920-882-4166 CELL PHONE: 920-562-7221 EMAIL: steve.jakubiec@tdstelecom.com</div></div><div><div>WOOD COUNTY</div><div>ROLAND HAWK, P.E., HIGHWAY ENGINEER 555 17TH AVENUE NORTH WISCONSIN RAPIDS, WI 54495 TELEPHONE: 715-421-8875 EMAIL: rhawk@co.wood.wi.us</div></div><div><div>DESIGN CONSULTANT</div><div>JUDY WILSON, P.E. OMNNI ASSOCIATES, INC. ONE SYSTEMS DRIVE APPLETON, WI 54914 TELEPHONE: 920-830-6129 EMAIL: judy.wilson@omnni.com</div></div><div><div>DNR LIAISON</div><div>MARC HERSHFIELD DEPARTMENT OF NATURAL RESOURCES 473 GRIFFITH AVENUE WISCONSIN RAPIDS, WI 54494 TELEPHONE: 715-421-7867 EMAIL: marc.hershfield@wisconsin.gov</div></div></div></div>					
<div><div><div><div><div>DIGGERSHOTLINE</div><div><div>Dial 811 or (800)242-8511</div><div>www.DiggersHotline.com</div></div></div><div><div>** DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS</div></div></div></div></div>					
PROJECT NO: 7391-02-70	HWY: CTH B	COUNTY: WOOD	GENERAL NOTES	SHEET:	E 2.1



TYPICAL EXISTING SECTION - CTH B

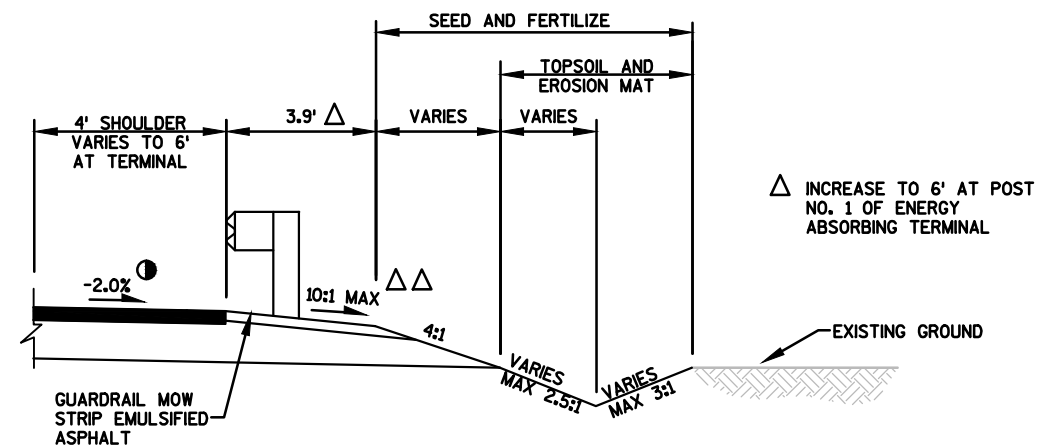
STA 8+20 TO STA 12+50



TYPICAL FINISHED SECTION - CTH B

STA 8+20 TO STA 9+63.81
STA 10+40.19 TO STA 12+50

** SUPERELEVATION STA 8+25 TO 9+75 TRANSITION
VARIES 4% TO NORMAL CROWN



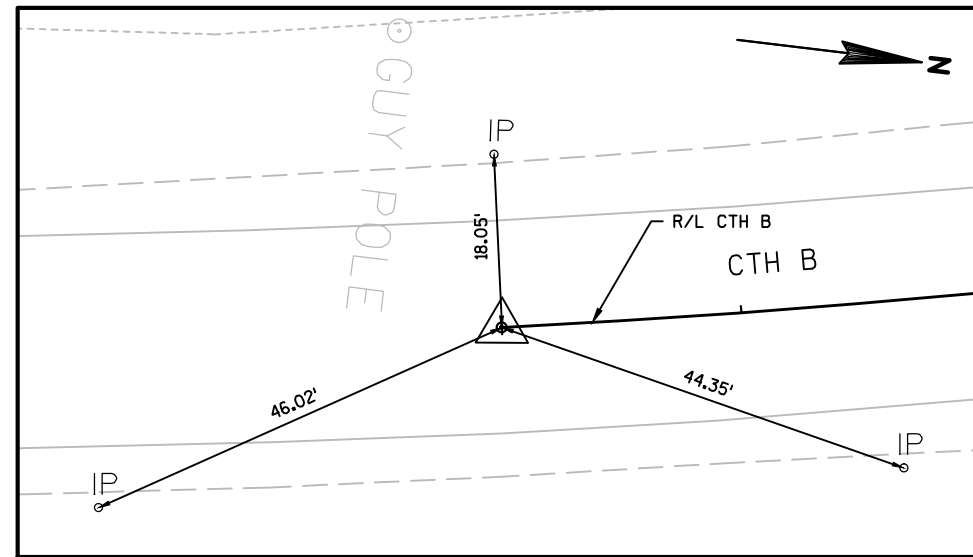
TYPICAL FINISHED SECTION AT BEAM GUARD

STA 8+65.50 TO STA 9+68.13 RT
STA 10+30.67 TO STA 12+61.60 RT
STA 8+70.81 TO STA 9+73.33 LT
STA 10+35.87 TO STA 11+38.40 LT

Δ INCREASE TO 6' AT POST
NO. 1 OF ENERGY
ABSORBING TERMINAL

ΔΔ MATCH SHOULDER SLOPE
TYPICAL, 10:1 MAX

● VARIES TO MATCH SUPERELEVATION
STA 8+25 TO 9+75



PI STA 7+00
Y=527024.717
X=627134.835

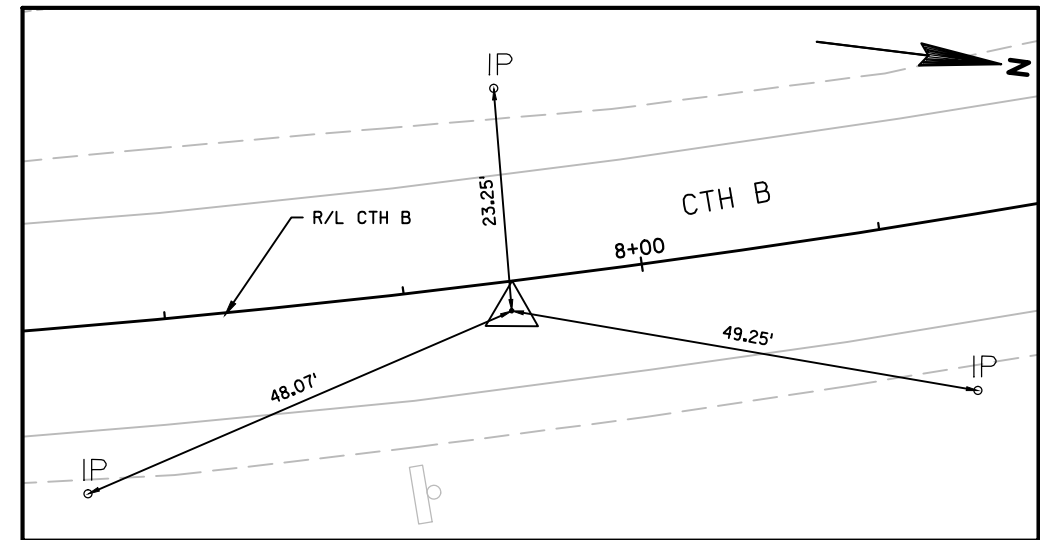
LEGEND



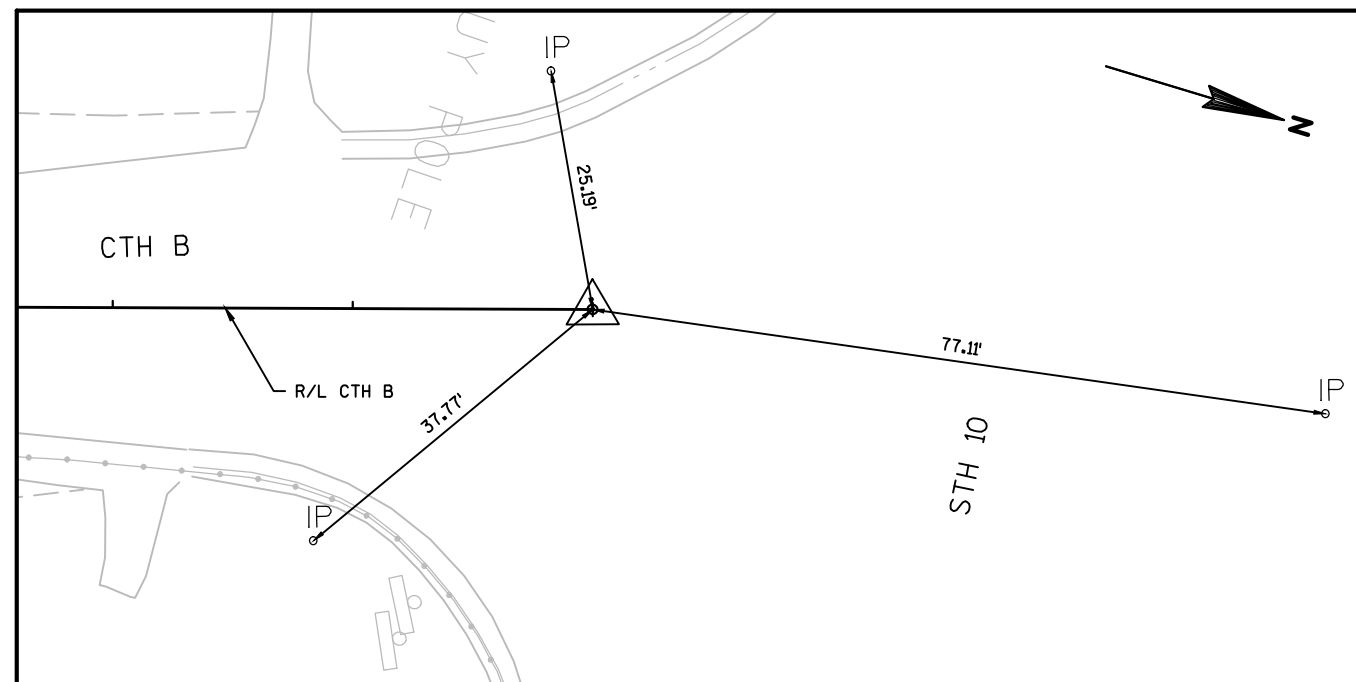
MAG SPIKE



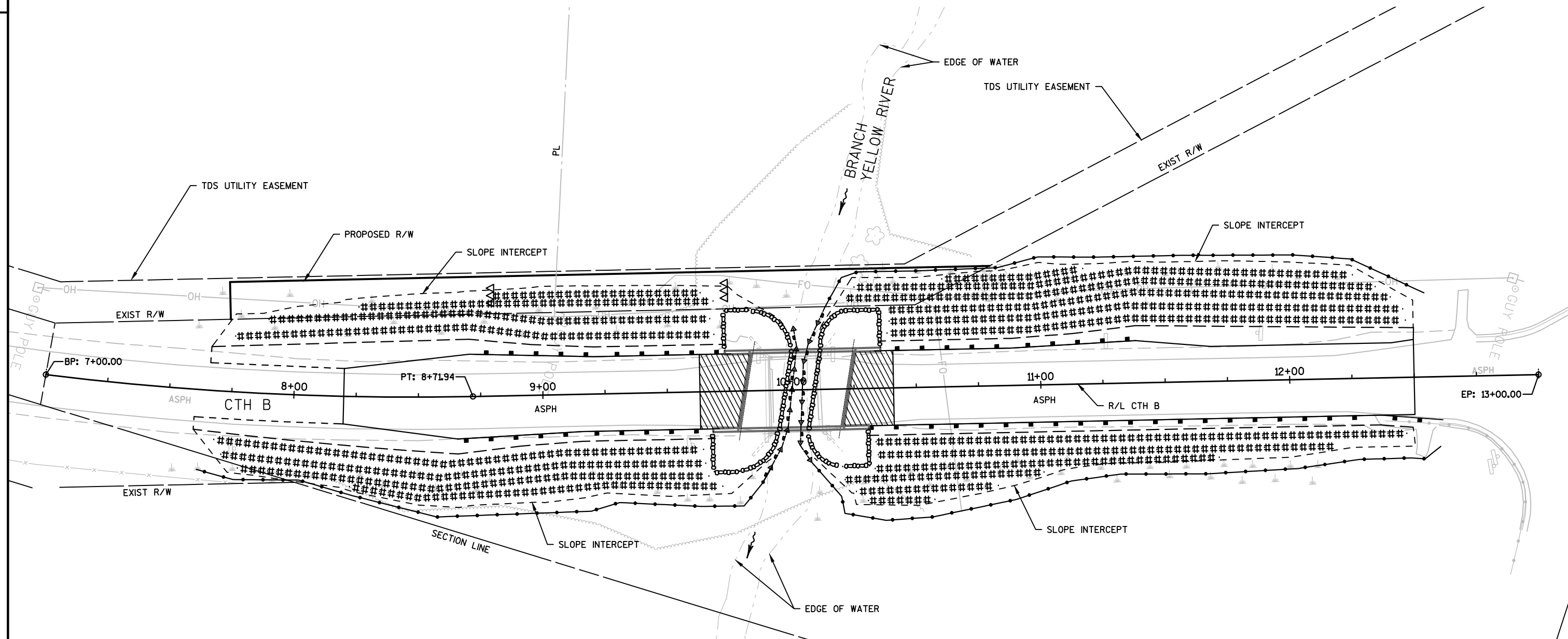
IRON PIPE PIN



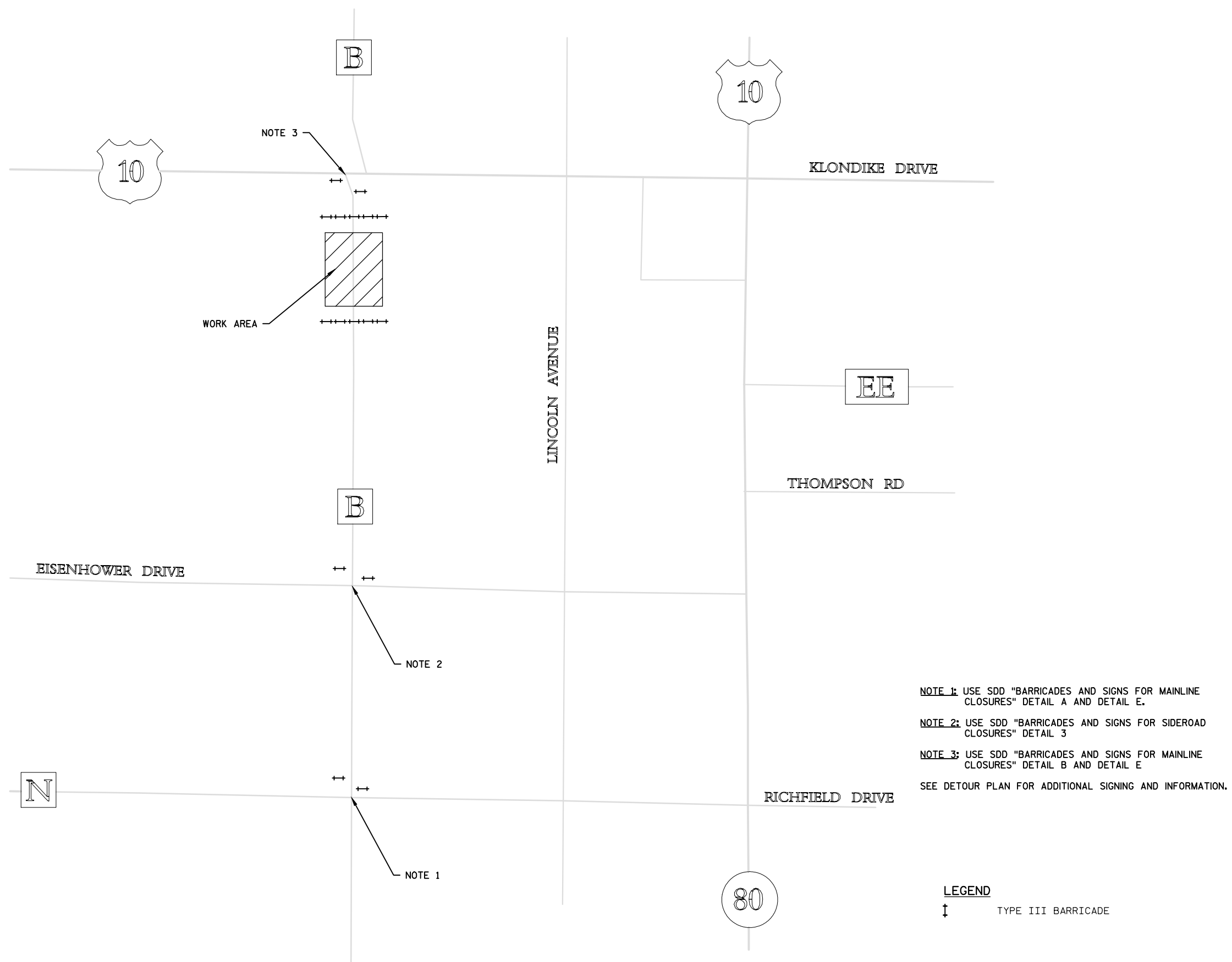
PI STA 7+86.12
Y=527109.471
X=627119.559

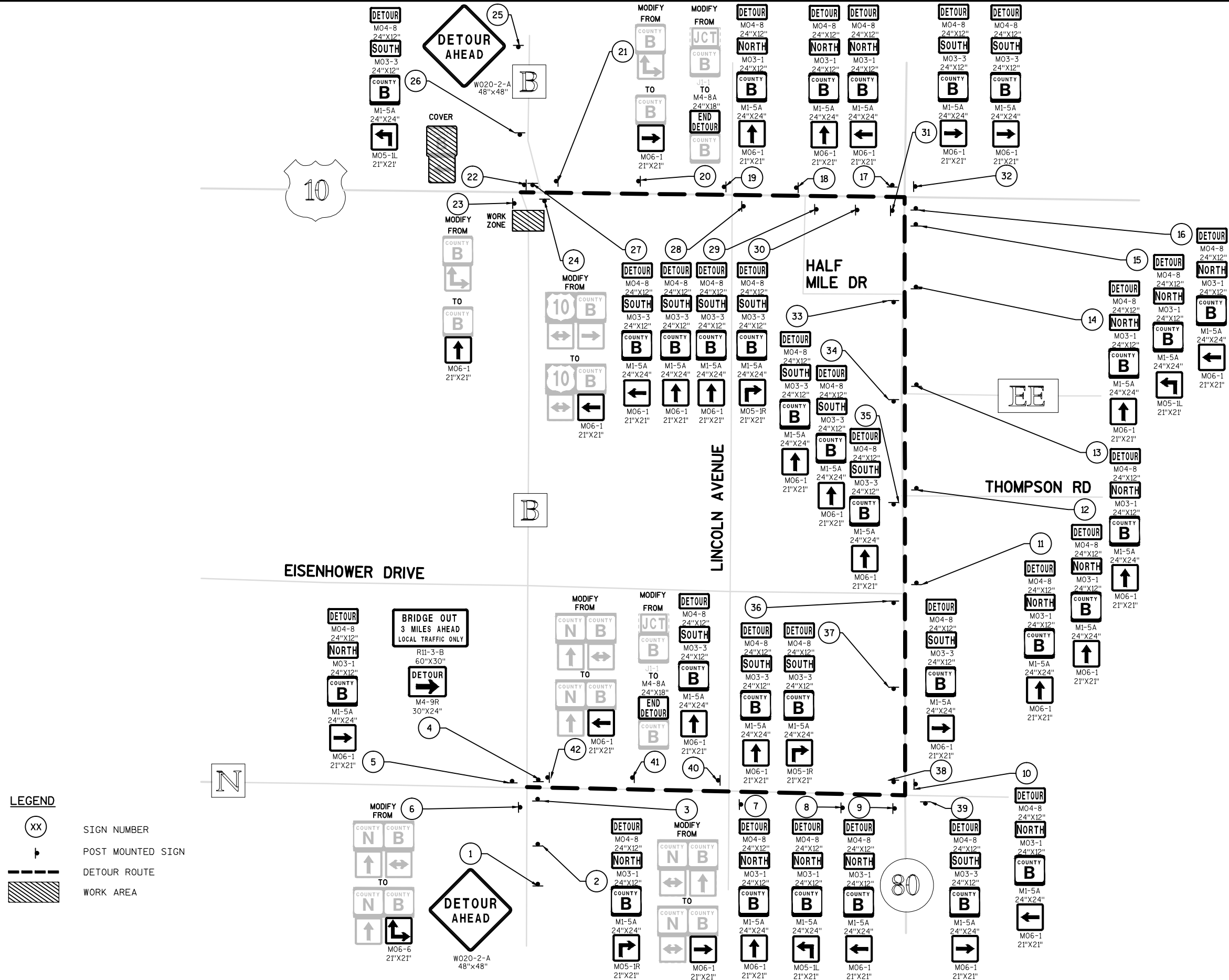


PI STA 13+00
Y=527597.282
X=626957.027

**LEGEND**

- SILT FENCE
- ##### EROSION MAT URBAN CLASS I TYPE B
- ▲—▲—▲— TURBIDITY BARRIER
- △△△ TEMPORARY DITCH CHECK





DATE 04DEC15		E S T I M A T E O F Q U A N T I T I E S			
LINE					7391-02-70
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTI TY
0010	201.0205	Grubbing	STA	3.000	3.000
0020	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+02	LS	1.000	1.000
0030	205.0100	Excavation Common **P**	CY	721.000	721.000
0040	206.1000	Excavation for Structures Bridges (structure) 01. B-71-193	LS	1.000	1.000
0050	208.0100	Borrow	CY	945.000	945.000
0060	210.0100	Backfill Structure	CY	152.000	152.000
0070	213.0100	Finishing Roadway (project) 01. 7391-02-70	EACH	1.000	1.000
0080	305.0110	Base Aggregate Dense 3/4-Inch	TON	140.000	140.000
0090	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,580.000	1,580.000
0100	415.0410	Concrete Pavement Approach Slab	SY	118.000	118.000
0110	455.0105	Asphaltic Material PG58-28	TON	15.000	15.000
0120	455.0605	Tack Coat	GAL	85.000	85.000
0130	460.1103	HMA Pavement Type E-3	TON	275.000	275.000
0140	460.2000	Incentive Density HMA Pavement	DOL	170.000	170.000
0150	502.0100	Concrete Masonry Bridges **P**	CY	159.000	159.000
0160	502.3200	Protective Surface Treatment	SY	176.000	176.000
0170	505.0400	Bar Steel Reinforcement HS Structures **P**	LB	3,820.000	3,820.000
0180	505.0600	Bar Steel Reinforcement HS Coated Structures **P**	LB	20,640.000	20,640.000
0190	513.4061	Railing Tubular Type M (structure) 01. B-49-173 **P**	LF	130.000	130.000
0200	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0210	550.0500	Pile Points	EACH	10.000	10.000
0220	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	150.000	150.000
0230	606.0300	Riprap Heavy	CY	187.000	187.000
0240	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	120.000	120.000
0250	614.0200	Steel Thrie Beam Structure Approach	LF	21.000	21.000
0260	614.0305	Steel Plate Beam Guard Class A	LF	213.000	213.000
0270	614.0396	Guardrail Mow Strip Asphalt	SY	12.000	12.000
0280	614.0397	Guardrail Mow Strip Emulsified Asphalt	SY	240.000	240.000
0290	614.0925	Salvaged Guardrail End Treatments	EACH	1.000	1.000
0300	614.2300	MGS Guardrail 3	LF	38.000	38.000
0310	614.2500	MGS Thrie Beam Transition	LF	118.000	118.000
0320	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0330	619.1000	Mobilization	EACH	1.000	1.000
0340	624.0100	Water	MGAL	11.000	11.000
0350	625.0100	Topsoil **P**	SY	2,450.000	2,450.000
0360	628.1504	Silt Fence	LF	900.000	900.000
0370	628.1520	Silt Fence Maintenance	LF	900.000	900.000
0380	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0390	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0400	628.2008	Erosion Mat Urban Class I Type B	SY	2,450.000	2,450.000
0410	628.6005	Turbidity Barriers	SY	185.000	185.000
0420	628.7504	Temporary Ditch Checks	LF	30.000	30.000
0430	629.0210	Fertilizer Type B	CWT	2.000	2.000
0440	630.0120	Seeding Mixture No. 20 **P**	LB	85.000	85.000
0450	630.0160	Seeding Mixture No. 60	LB	10.000	10.000
0460	630.0200	Seeding Temporary	LB	20.000	20.000
0470	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0480	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	2.000	2.000
0490	637.2230	Signs Type II Reflective F	SF	12.000	12.000

DATE 04DEC15		E S T I M A T E O F Q U A N T I T I E S			
LINE					7391-02-70
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0500	638.2102	Moving Signs Type II	EACH	2.000	2.000
0510	638.2602	Removing Signs Type II	EACH	6.000	6.000
0520	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0530	642.5001	Field Office Type B	EACH	1.000	1.000
0540	643.0100	Traffic Control (project) 01.7391-02-70	EACH	1.000	1.000
0550	643.0420	Traffic Control Barricades Type III	DAY	1,350.000	1,350.000
0560	643.0705	Traffic Control Warning Lights Type A	DAY	2,700.000	2,700.000
0570	643.0900	Traffic Control Signs	DAY	900.000	900.000
0580	643.0920	Traffic Control Covering Signs Type II	EACH	1.000	1.000
0590	643.2000	Traffic Control Detour (project) 01.7391-02-70	EACH	1.000	1.000
0600	643.3000	Traffic Control Detour Signs	DAY	9,900.000	9,900.000
0610	645.0120	Geotextile Fabric Type HR	SY	280.000	280.000
0620	646.0103	Pavement Marking Paint 4-Inch	LF	1,900.000	1,900.000
0630	650.4500	Construction Staking Subgrade	LF	390.000	390.000
0640	650.5000	Construction Staking Base	LF	390.000	390.000
0650	650.6500	Construction Staking Structure Layout (structure) 01. B-71-193	LS	1.000	1.000
0660	650.9910	Construction Staking Supplemental Control (project) 01. 7391-02-70	LS	1.000	1.000
0670	650.9920	Construction Staking Slope Stakes	LF	450.000	450.000
0680	690.0150	Sawing Asphalt	LF	65.000	65.000
0690	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0700	715.0502	Incentive Strength Concrete Structures	DOL	954.000	954.000
0710	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	200.000	200.000
0720	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	200.000	200.000

GRUBBING

STATION	LOCATION	201.0205 GRUBBING STATION
8+00 - 11+00	CTH B	3
TOTALS		3

CTH B EARTHWORK SUMMARY

STATION TO STATION	ROADWAY	205.0100 COMMON EXCAVATION CY	SALVAGED/ UNUSABLE PAVT MATERIAL CY	AVAILABLE MATERIAL CY	UNEXPANDED FILL CY	EXPANDED FILL CY	MASS ORDINATE +/- CY	208.0100 BORROW
						EXP FACTOR 1.25		
07+75 - 9+81	CTH B-SOUTH	333	92	241	491	614	-373	373
10+23 - 12+50	CTH B-NORTH	388	124	265	669	836	-572	572
TOTALS		721	92	506	1,160	1,450	-945	945

NOTE: SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT

BASE AGGREGATE DENSE AND WATER

		305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
STATION TO STATION	LOCATION			
7+60 - STRUCTURE	CTH B	75	720	5.0
STRUCTURE - 12+50	CTH B	65	860	6.0
TOTALS		140	1,580	11

CONCRETE PAVEMENT

		415.0410 CONCRETE PAVEMENT APPROACH SLAB SY
STATION TO STATION	LOCATION	
9+63.81 - STRUCTURE	CTH B	59
STRUCTURE - 10+40.19	CTH B	59
TOTALS		118

ASPHALTIC ITEMS

		455.0105 ASPHALTIC MATERIAL PG 58-28 TON	455.0605 TACK COAT GAL	460.1103 HMA PAVEMENT E-3 TON
STATION TO STATION	LOCATION			
8+20 - STRUCTURE	CTH B	6	35	112
STRUCTURE - 12+50	CTH B	9	50	163
TOTALS		15	85	275

SALVAGED GUARDRAIL END TREATMENTS

STATION	LOCATION	614.0925 EACH
12+36 - 12+62, RT	CTH B	1
TOTAL		1

STEEL PLATE BEAM GUARD

		614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.0396 GUARDRAIL MOW STRIP ASPHALT SY	614.0397 GUARDRAIL MOW STRIP EMULSIFIED ASPHALT SY	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
STATION TO STATION	LOCATION							
8+65.6 - STRUCTURE, RT	CTH B	---	---	---	50	12.5	39.4	1
8+70/8 - STRUCTURE, LT	CTH B	---	---	---	50	12.5	39.4	1
STRUCTURE - 12+62, RT	CTH B	20.7	212.5	12	90	---	---	---
STRUCTURE - 11+38.4, LT	CTH B	---	---	---	50	12.5	39.4	1
TOTALS		20.7	212.5	12	240	37.5	118.2	3
ROUNDED TOTALS		21	213	12	240	38	118	3

LANDSCAPING

STATION TO STATION	LOCATION	625.0100 TOPSOIL SY	630.0200 SEEDING TEMPORARY LB	630.0120 SEEDING NO 20 LB	630.0160 SEEDING NO 60 LB	629.0210 FERTILIZER TYPE B CWT
7+60 - STRUCTURE, RT	CTH B	470	---	16	2	0.4
7+60 - STRUCTURE, LT	CTH B	450	---	16	2	0.4
STRUCTURE - 12+50, RT	CTH B	410	---	15	2	0.3
STRUCTURE - 12+50, LT	CTH B	630	---	20	2	0.5
UNDISTRIBUTED	CTH B	490	20	18	2	0.4
TOTALS		2,450	20	85	10	2.0

TURBIDITY BARRIER

STATION	LOCATION	628.6005 SY
10+00	CTH B	90
10+05	CTH B	95
TOTAL		185

EROSION CONTROL ITEMS

STATION TO STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7504 TEMPORARY DITCH CHECKS LF
7+60 - STRUCTURE, RT	CTH B	240	240	---	---	470	20
7+60 - STRUCTURE, LT	CTH B	---	---	---	---	450	---
STRUCTURE - 12+50, RT	CTH B	260	260	---	---	410	---
STRUCTURE - 12+50, LT	CTH B	240	240	---	---	630	---
UNDISTRIBUTED	CTH B	160	160	4	2	490	10
TOTALS		900	900	4	2	2,450	30

REMOVING SIGNS TYPE II AND REMOVING SMALL SIGN SUPPORTS

STATION	LOCATION	DESCRIPTION	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
9+55, RT	CTH B	WEIGHT LIMIT	1	1
9+85, LT	CTH B	OBJECT MARKER	1	1
9+85, RT	CTH B	OBJECT MARKER	1	1
10+15, LT	CTH B	OBJECT MARKER	1	1
10+15, RT	CTH B	OBJECT MARKER	1	1
11+25, LT	CTH B	WEIGHT LIMIT	1	1
TOTALS			6	6

SIGNS REFLECTIVE TYPE II & POSTS WOOD

STATION	LOCATION	CODE	SIGN SIZE HORIZ X VERT IN X IN	634.0614 POSTS WOOD 4X6-INCH X 14-FT EACH	637.2230 SIGNS TYPE II RELLECTIVE F SF
9+65, RT	CTH B	W5-52R	12 X 36	1	3
9+70, LT	CTH B	W5-52L	12 X 36	1	3
10+35, RT	CTH B	W5-52L	12 X 36	1	3
10+40, LT	CTH B	W5-52R	12 X 36	1	3
TOTALS				4	12

MOVING SIGNS

FROM STATION	LOCATION	TO STATION	FACE DIR.	DESCRIPTION	638.2102 MOVING SIGNS TYPE II EACH	634.0616 POSTS WOOD 4X6-INCH X 16-FT EACH
7+75 , RT	CTH B	7+75 , RT	NB	JCT 10	1	1
11+90 , LT	CTH B	11+90 , LT	SB	COUNTY B	1	1
TOTALS					2	2

PAVEMENT MARKING PAINT

STATION	LOCATION	646.0103	
		4-INCH DOUBLE YELLOW LF	4-INCH WHITE EDGE LINE LF
8+00 - 12+75	CTH B	950	950
TOTAL		1,900	

SAWING ASPHALT

STATION	LOCATION	690.0150 SAWING ASPHALT LF
8+20	CTH B	22
12+50	CTH B	43
TOTAL		65

TRAFFIC CONTROL COVERING SIGNS

SIGN NO.	STAGE	643.0920		
		TRAFFIC CONTROL COVERING SIGNS TYPE II		
		EACH	NUMBER OF CYCLES	NUMBER OF SIGNS
22	1	1	1	1
TOTAL		1		

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

CONSTRUCTION STAKING

STATION TO STATION	LOCATION	650.4500	650.5000	CATEGORY 0020 650.6500 STRUCTURE LAYOUT LS	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
		SUBGRADE LF	BASE LF			
7+60 - STRUCTURE	CTH B	160	160	---	---	220
STRUCTURE B-71-193	CTH B	---	---	1	---	---
STRUCTURE - 12+50	CTH B	230	230	---	---	230
TOTALS		390	390	1	1	450

TRAFFIC CONTROL ROAD CLOSURE

LOCATION	APPROX. SERVICE PERIOD 75 DAYS	643.0420		643.0705		643.0900	
		BARRICADES TYPE III		WARNING LIGHTS TYPE A		SIGNS	
		NO.	DAYS	NO.	DAYS	NO.	DAYS
CTH B AT CTH N	75	2	150	4	300	--	--
CTH B AT EISENHOWER DR	75	2	150	4	300	4	300
CTH B SOUTH OF BRIDGE	75	7	525	14	1050	4	300
CTH B NORTH OF BRIDGE	75	7	525	14	1050	4	300
TOTALS		1,350		2,700		900	

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD	643.3000 DETOUR SIGNS	REMARKS
					75 DAYS	DAYS	
1	CTH B S. OF CTH N	W20-2-A	48 X 48	1	75	75	
2	CTH B S. OF CTH N	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO5-1R	21 X 21	1	75	75	
3	CTH B AT CTH N	MO6-1	21 X 21	1	75	75	MODIFY EXISTING SIGN
4	CTH B AT CTH N	R11-3B	60 X 30	1	75	75	
		M4-9R	30 X 24	1	75	75	
5	CTH B AT CTH N	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
6	CTH B AT CTH N	MO6-6	21 X 21	1	75	75	MODIFY EXISTING SIGN
7	CTH N AT LINCOLN AVENUE	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
8	CTH N WEST OF STH 80	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO5-1L	21 X 21	1	75	75	
9	CTH N AT STH 80	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
10	CTH N AT STH 80	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
11	STH 80 AT EISENHOWER DRIVE	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
12	STH 80 AT THOMPSON RD	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
13	STH 80 AT CTH EE	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
14	STH 80 AT HALF MILE DRIVE	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	

PAGE SUBTOTAL 3,375

TRAFFIC CONTROL DETOUR SIGN SUMMARY CONTINUED

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 75 DAYS	643.3000 DETOUR SIGNS DAYS	REMARKS
15	STH 80 AT USH 10	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO5-1L	21 X 21	1	75	75	
16	STH 80 AT USH 10	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
17	STH 80 AT USH 10	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
18	USH 10 AT HALF MILE DRIVE	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
19	USH 10 AT LINCOLN AVENUE	MO4-8	24 X 12	1	75	75	
		MO3-1	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
20	USH 10 E. OF CTH B	M4-8A	24 X 18	1	75	75	MODIFY EXISTING SIGN
21	USH 10 AT CTH B NORTH	MO6-1	21 X 21	1	75	75	MODIFY EXISTING SIGN
23	USH 10 AT CTH B SOUTH	MO6-1	21 X 21	1	75	75	MODIFY EXISTING SIGN
24	USH 10 AT CTH B NORTH	MO6-1	21 X 21	1	75	75	MODIFY EXISTING SIGN
25	CTH B N. OF USH 10	W20-2-A	48 X 48	1	75	75	
26	CTH B N. OF USH 10	MO4-8	24 X 12	1	75	75	
		MO3-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO5-1L	21 X 21	1	75	75	
27	CTH B N. OF USH 10	MO4-8	24 X 12	1	75	75	
		MO3-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
28	USH 10 AT LINCOLN AVENUE	MO4-8	24 X 12	1	75	75	
		MO3-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
29	USH 10 AT HALF MILE DRIVE	MO4-8	24 X 12	1	75	75	
		MO3-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO6-1	21 X 21	1	75	75	
30	USH 10 W. OF STH 80	MO4-8	24 X 12	1	75	75	
		MO3-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		MO5-1R	21 X 21	1	75	75	

PAGE SUBTOTAL 3,375

TRAFFIC CONTROL DETOUR SIGN SUMMARY CONTINUED

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 75 DAYS	643.3000 DETOUR SIGNS DAYS	REMARKS
31	USH 10 AT STH 80	M04-8	24 X 12	1	75	75	
		M03-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		M06-1	21 X 21	1	75	75	
32	USH 10 AT STH 80	M04-8	24 X 12	1	75	75	
		M03-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		M06-1	21 X 21	1	75	75	
33	STH 80 AT HALF MILE DRIVE	M04-8	24 X 12	1	75	75	
		M03-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		M06-1	21 X 21	1	75	75	
34	STH 80 AT CTH EE	M04-8	24 X 12	1	75	75	
		M03-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		M06-1	21 X 21	1	75	75	
35	STH 80 AT THOMPSON RD	M04-8	24 X 12	1	75	75	
		M03-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		M06-1	21 X 21	1	75	75	
36	STH 80 AT EISENHOWER DRIVE	M04-8	24 X 12	1	75	75	
		M03-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		M06-1	21 X 21	1	75	75	
37	STH 80 N. OF CTH N	M04-8	24 X 12	1	75	75	
		M03-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		M05-1R	21 X 21	1	75	75	
38	STH 80 AT CTH N	M04-8	24 X 12	1	75	75	
		M03-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		M06-1	21 X 21	1	75	75	
39	STH 80 AT CTH N	M04-8	24 X 12	1	75	75	
		M03-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		M06-1	21 X 21	1	75	75	
40	CTH N AT LINCOLN AVENUE	M04-8	24 X 12	1	75	75	
		M03-3	24 X 12	1	75	75	
		M1-5A	24 X 24	1	75	75	CTH B
		M06-1	21 X 21	1	75	75	
41	CTH N E. OF CTH B	M4-8A	24 X 18	1	75	75	MODIFY EXISTING SIGN
42	CTH N AT CTH B	M06-1	21 X 21	1	75	75	MODIFY EXISTING SIGN

PAGE SUBTOTAL 3,150

PROJECT TOTAL 9,900

Conventional Signs and Abbreviations

SECTION LINE	AC	ACRES	N.T.S.	NOT TO SCALE	1/16 LINE	SIXTEENTH LINE
QUARTER LINE	Δ	CENTRAL ANGLE	PC	POINT OF CURVATURE	S.	SOUTH
TOWNSHIP AND RANGE LINE	C/L	CENTERLINE	PI	POINT OF INTERSECTION	SEC	SECTION
PROPOSED OR NEW CENTERLINE	COR.	CORNER	PT	POINT OF TANGENCY	SEC LINE	SECTION LINE
PROPOSED OR NEW R/W LINE	CTH	COUNTY TRUNK HIGHWAY	PLE	PERMANENT LIMITED EASEMENT	STH	STATE TRUNK HIGHWAY
EXISTING R/W LINE	D	DEGREE OF CURVE	P/L	PROPERTY LINE	SF	SQUARE FEET
LOT LINE	E.	EAST	PC LINE	PRIVATE CLAIM LINE	STA	STATION
PROPERTY LINE	L	LENGTH OF CURVE	R	RADIUS	T	TOWN
COUNTY LIMITS LINE	LC	LONG CHORD	R.	RANGE	T	TANGENT LENGTH OF CURVE
SLOPE INTERCEPTS	LCB	LONG CHORD BEARING	R/L	REFERENCE LINE	TLE	TEMPORARY LIMITED EASEMENT
EXISTING MONUMENTATION	MI	MILE	R/W	RIGHT OF WAY	USH	UNITED STATES HIGHWAY
FENCE	N.	NORTH	1/4 LINE	QUARTER LINE	W.	WEST
SECTION OR QUARTER CORNER						
TELEPHONE						
GAS						
WATER						
ELECTRIC						
FIBER OPTIC						
SANITARY						
STORM SEWER						
NO ACCESS (BY ACQUISITION)						
NO ACCESS (BY STATUTORY AUTHORITY)						
NO ACCESS (BY PREVIOUS PROJECT)						
TEMPORARY LIMITED EASEMENT						
PERMANENT LIMITED EASEMENT						
FEE TITLE						
RIGHT-OF-WAY MONUMENTS SET AT NEWLY ACQUIRED R/W ANGLE POINTS						
PARCEL NUMBER						
UTILITY PARCEL NUMBER						
R/W POINT NUMBER						

COMPENSABLE NON-COMPENSABLE

POWER POLE

TELEPHONE POLE

TELEPHONE PEDESTAL

RIGHT OF WAY AUTHORIZATION
TDS TELECOM
VOL. 502, PG. 831 AS
DOCUMENT NO. 600949

TDS TELECOM
1 ROD EASEMENT
VOL. 651, PG. 831
OF RECORDS AS
DOCUMENT NO. 734851

10+50.15
33.18'

S44°52'30"E
33.71'

10+80.33
48.19'

LOT 1
CSM 7141
VOL 24, PG 241

FRACTIONAL
NE - NE
SECTION 2

RIGHT OF WAY AUTHORIZATION
TDS TELECOM
VOL. 502, PG. 831 AS
DOCUMENT NO. 600949

7+71.49
43.94'

S71°32'03"W
15.00'

7+72.79
28.99'

N18°27'57"W
70.58'

S82°51'51"W
33.24'

A=12.19' TO R/L
B=21.05' TO R/W

END RELOCATION ORDER

STATION 13+00.00

37.26" SOUTH OF AND 187.61' WEST OF THE NORTHEAST
CORNER OF SECTION 2, T24N, R2E, TOWN OF ROCK, WOOD
COUNTY, WISCONSIN.
Y: 527597.282
X: 626957.027

0' 50' 100'
SCALE: 1" = 100'

1/2" DRILL HOLE
FOUND
Y: 527634.540
X: 627144.636

FRACTIONAL
NW - NW
SECTION 1

CURVE "A" DATA
Δ = 8°12'35"
R = 1200.00'
T = 86.12'
L = 171.94'
LC = 171.80'
LCB = N14°19'21"W
PI STA = 7+86.12
Y = 527109.471
X = 627119.559

PT 8=71.94
Y 527191.174
X 627092.336

BEGIN RELOCATION ORDER

STATION 7+00.00

609.82' SOUTH OF AND 9.86' WEST OF THE NORTHEAST
CORNER OF SECTION 2, T24N, R2E, TOWN OF ROCK, WOOD
COUNTY WISCONSIN.
Y: 527024.717
X: 627134.835

COORDINATE TABLE

POINT	Y	X	TYPE
100	527373.643	626980.743	PROP R/W
101	527084.299	627077.364	PROP R/W
102	527089.050	627091.592	PROP R/W
555	527349.768	627004.530	EXIST R/W

HARRISON MONUMENT,
FOUND
Y: 525174.675
X: 627153.923

UTILITY INTERESTS REQUIRED

PARCEL	OWNER	INTEREST REQUIRED
90	TDS TELECOM	RELEASE OF RIGHTS
91	MARSHFIELD UTILITIES	RELEASE OF RIGHTS

SCHEDULE OF LANDS AND INTERESTS

PARCEL	OWNER	INTEREST REQUIRED	RIGHT - OF - WAY		
			NEW	EXISTING	TOTAL
1	BRIAN JOHNSON & TAMI JOHNSON	FEE	0.04 AC	---	0.04 AC
2	EDWIN DUANE MEYER	FEE	0.05 AC	---	0.05 AC

Notes:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, WOOD COUNTY, NAD 83 (2007) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT OF WAY MONUMENTS ARE TYPE 2 MONUMENTS (TYPICALLY 3/4 X 24" REBAR) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

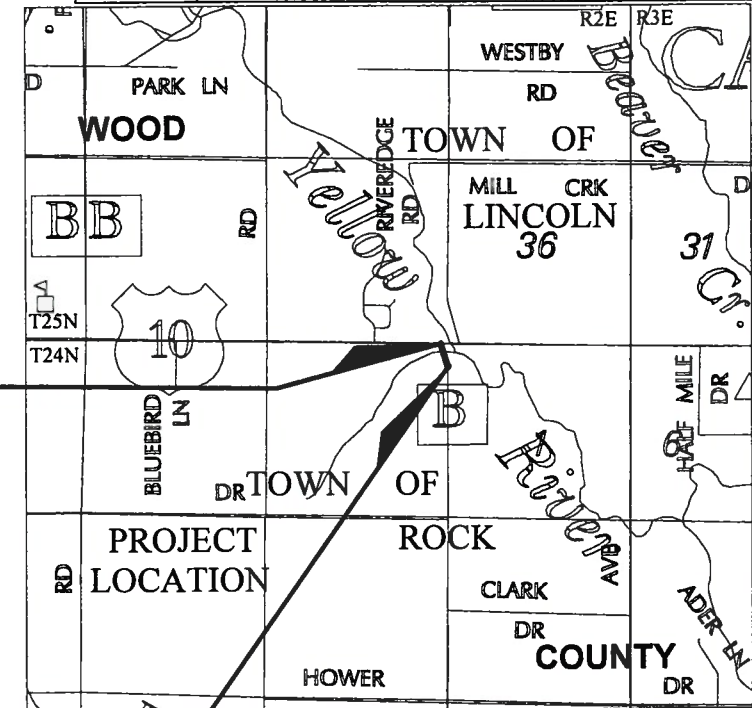
PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED OF MAPS AND DOCUMENTS OF PUBLIC RECORD AND/ OR EXISTING OCCUPATION LINES. EXCLUDING RIGHT-OF-WAY BOUNDARIES, THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

DIMENSIONS FOR THE NEW RIGHT-OF-WAY ARE MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

C.T.H. B RIGHT-OF-WAY DEFINED FROM WOOD COUNTY CERTIFIED SURVEY MAP 7141, DATED SEPTEMBER 5, 2000 AND ALSO WDOT PROJECT NUMBER 7031-I-21 FROM 1975.

U.S. HIGHWAY 10 RIGHT-OF-WAY DEFINED FROM WISCONSIN DEPARTMENT OF TRANSPORTATION PROJECT PLAT NUMBER 7030-00-20, DATED FEBRUARY 1, 2006 AND ALSO WDOT PROJECT NUMBER 7031-I-21 FROM 1975.

REVISIONS	R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
	7391-02-00	4.1	1
FEDERAL PROJECT NUMBER			
PLAT OF RIGHT-OF-WAY REQUIRED FOR			
USH 10 - MACARTHUR DRIVE			
BRANCH YELLOW RIVER BRIDGE B-71-193			
CTH B WOOD COUNTY			
CONSTRUCTION PROJECT NUMBER			
7391-02-70			



TOTAL NET LENGTH OF CENTERLINE 0.114 MI.

ACCEPTED FOR
WOOD COUNTY

May 19, 2015
(Date)

Wood County Highway Engineer
(Signature & Title of Official)

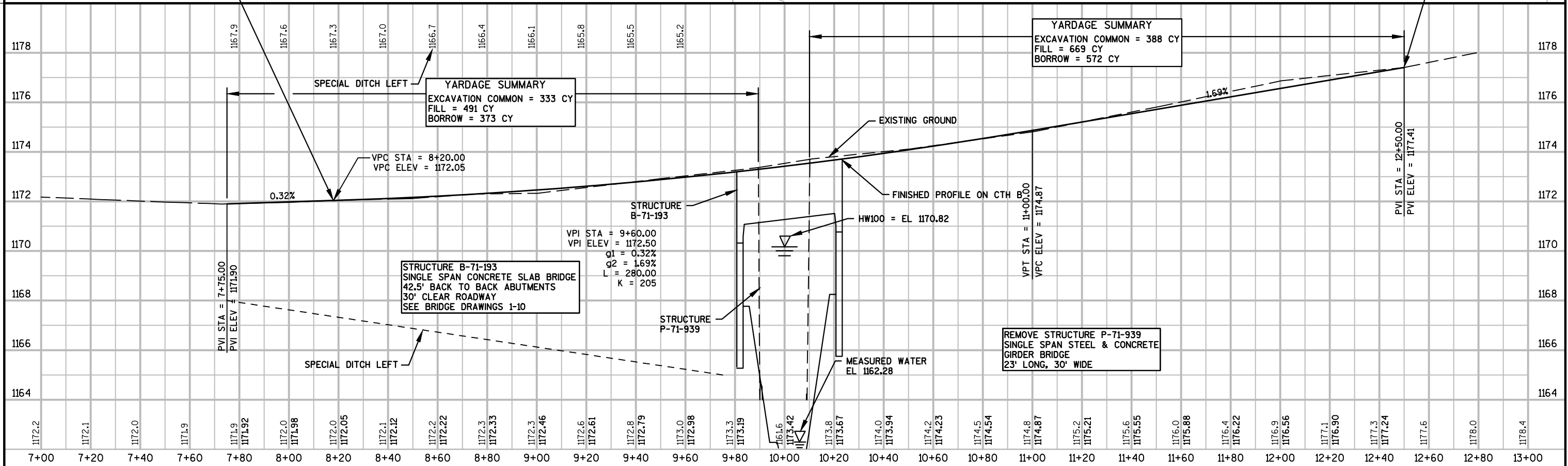
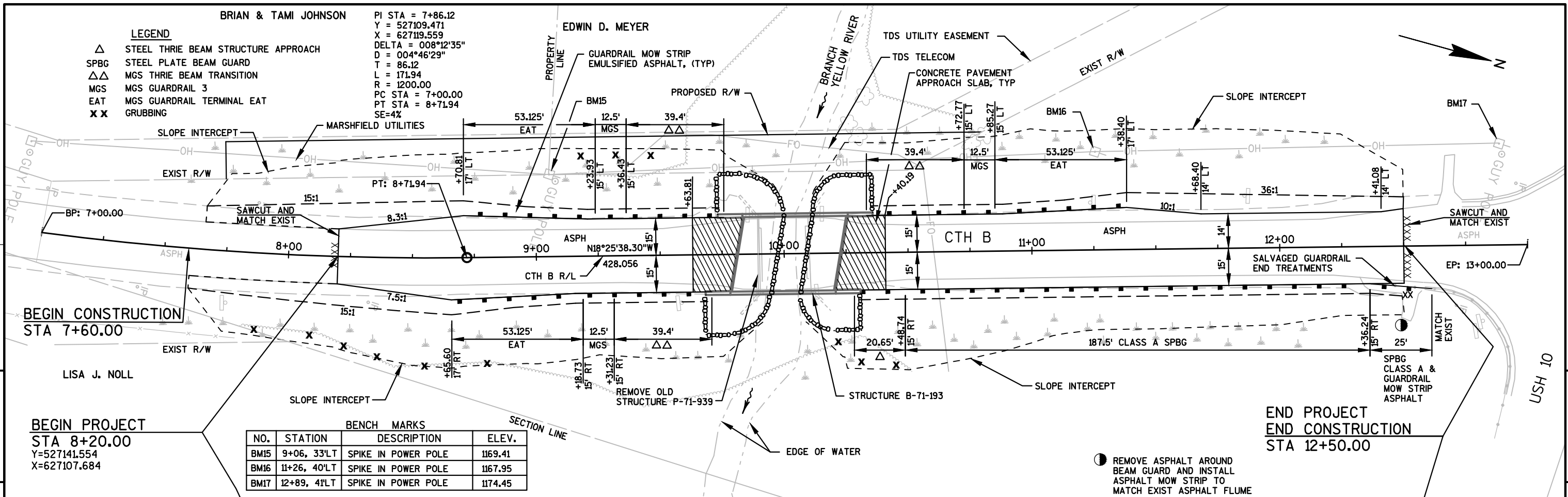
ORIGINAL PLANS PREPARED BY

OMNI
ASSOCIATES
APPLETON, WISCONSIN



May 15, 2015
(Date)

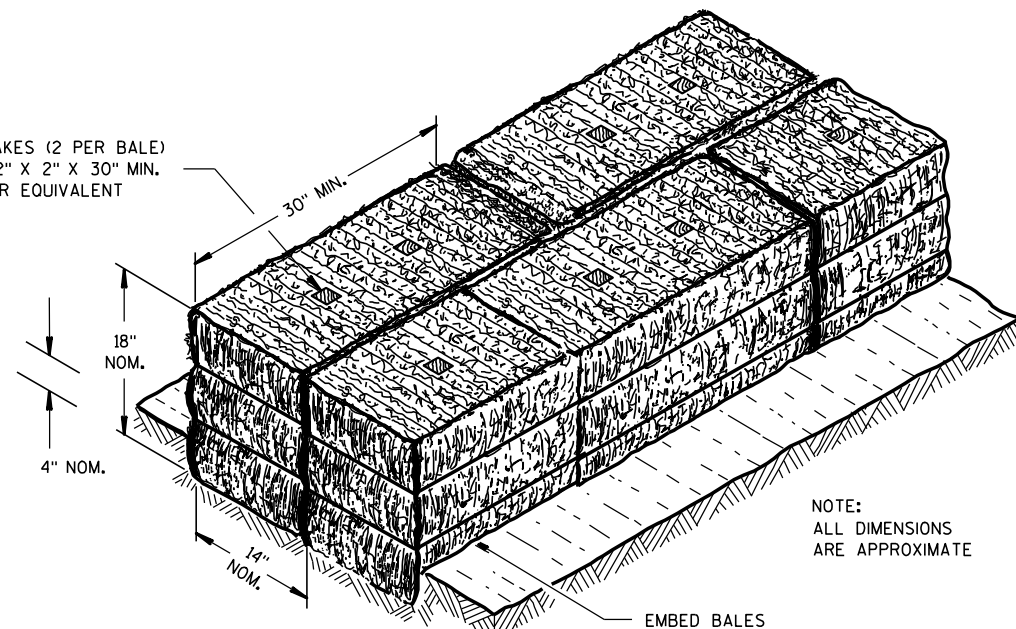
Paul Nordwig
(Signature)



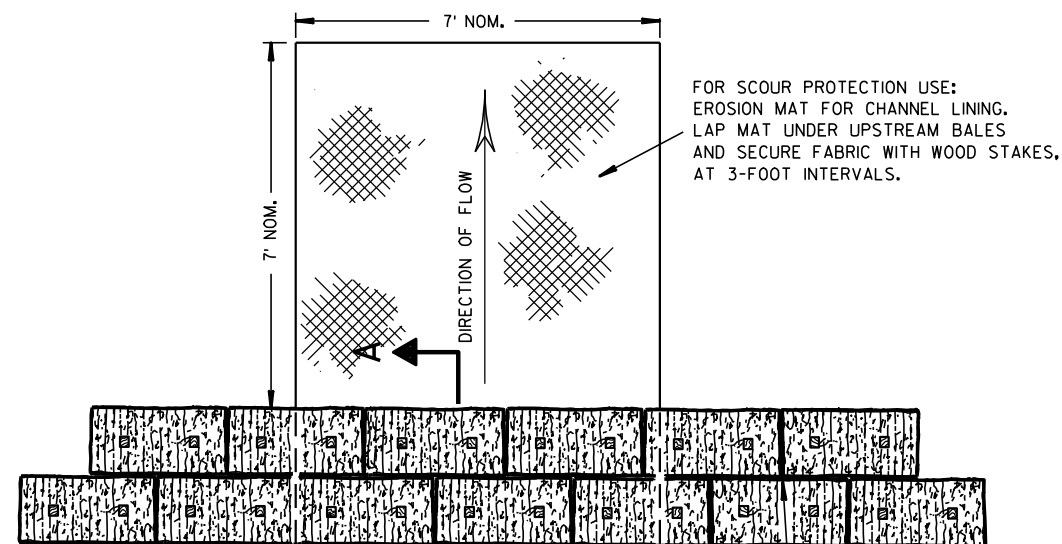
Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
14B15-08A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-08B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-08C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11F	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"
14B28-03	GUARDRAIL MOW STRIP
14B29-01	SAFETY EDGE
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)

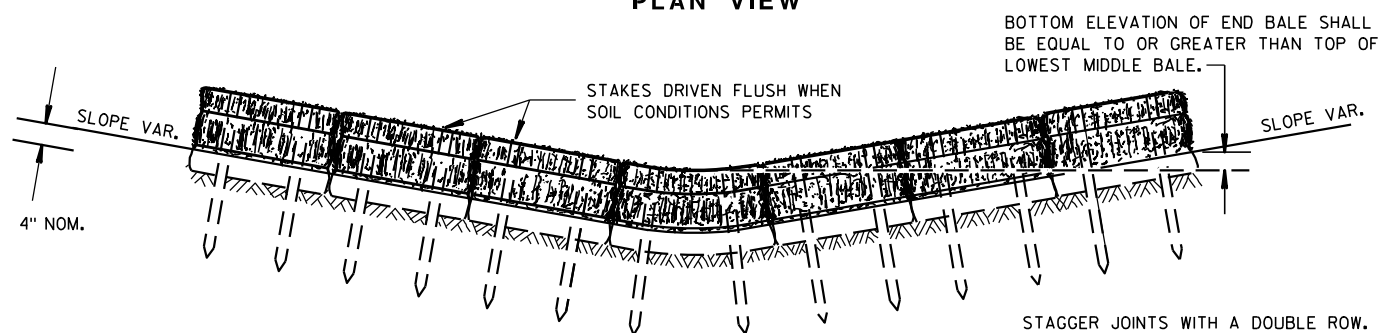
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



SECTION A-A



PLAN VIEW



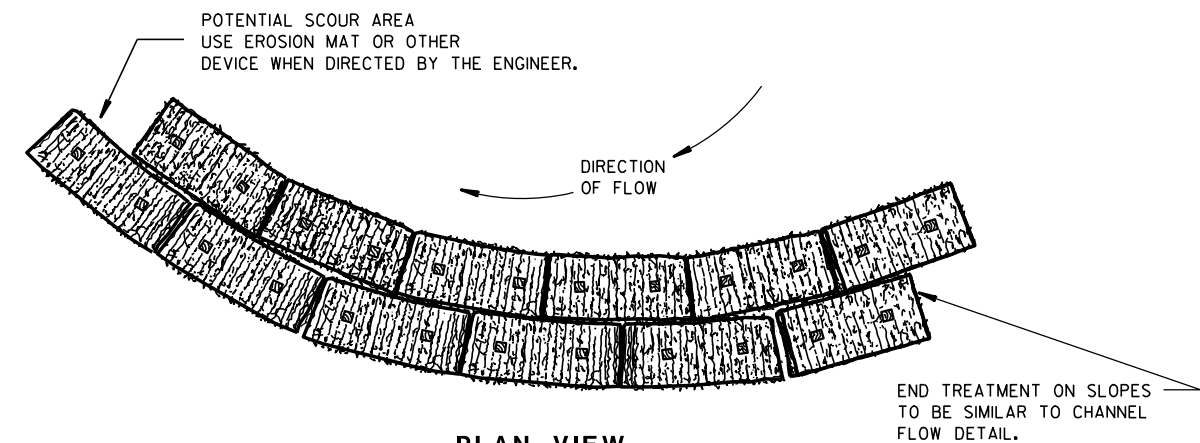
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

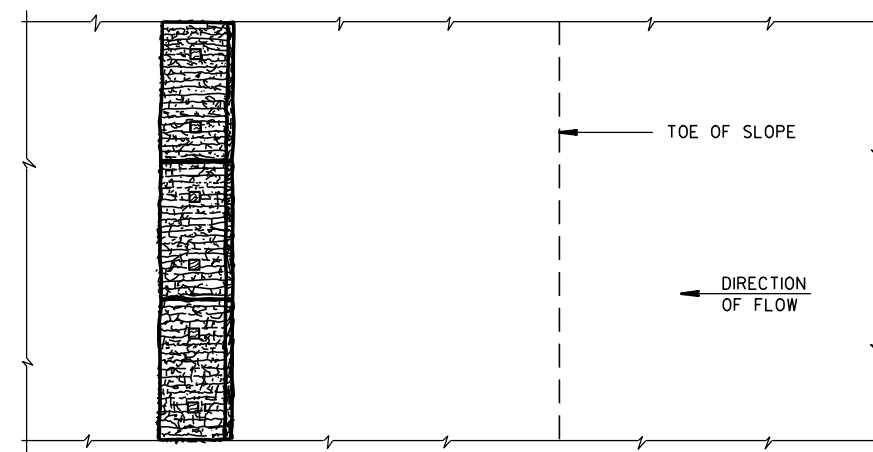
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

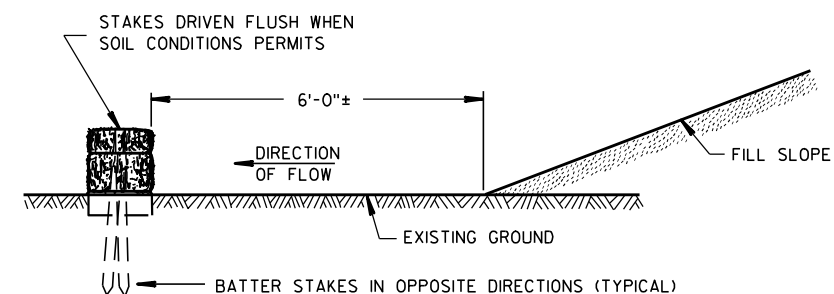


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

FHWA

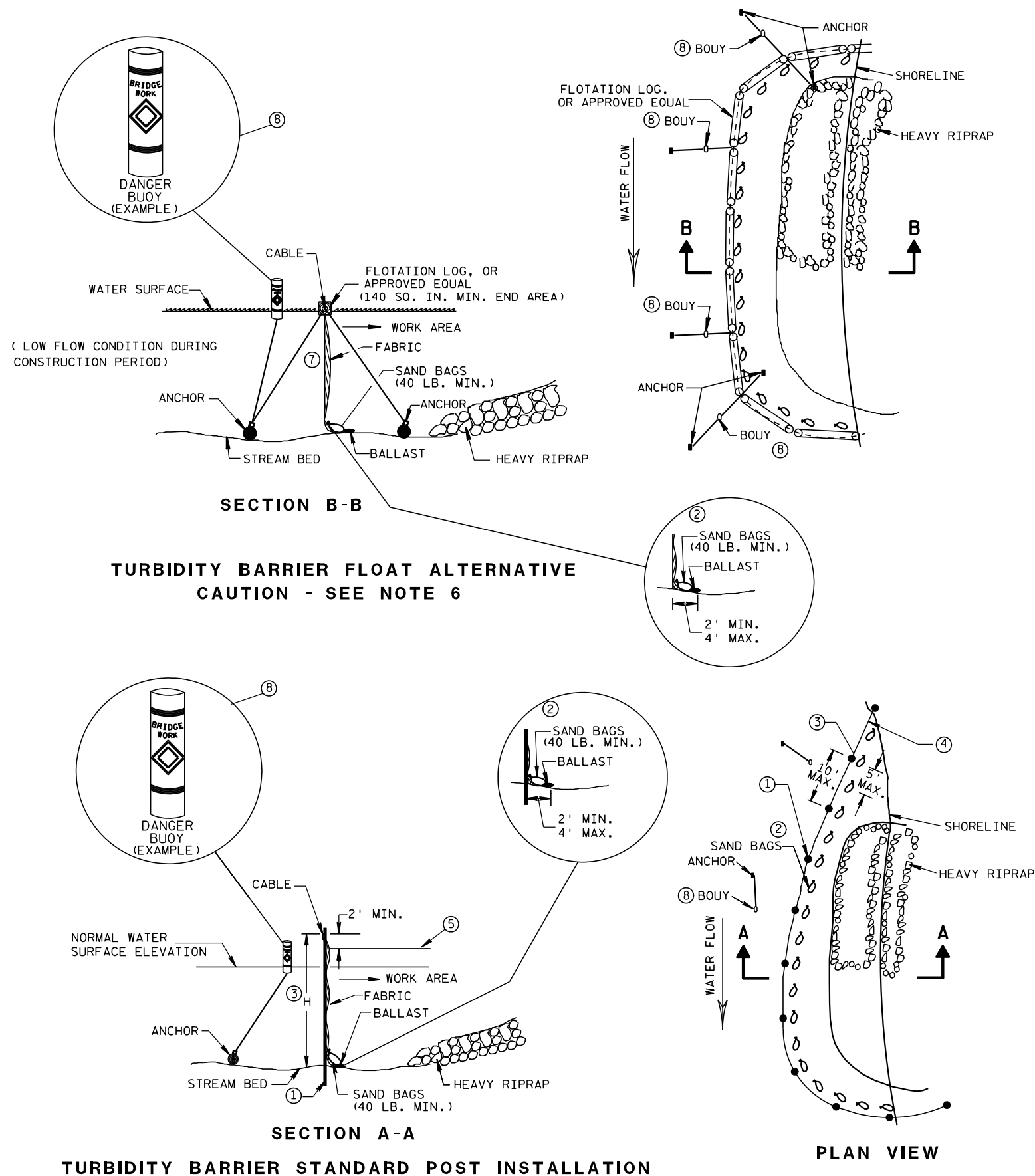
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



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



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

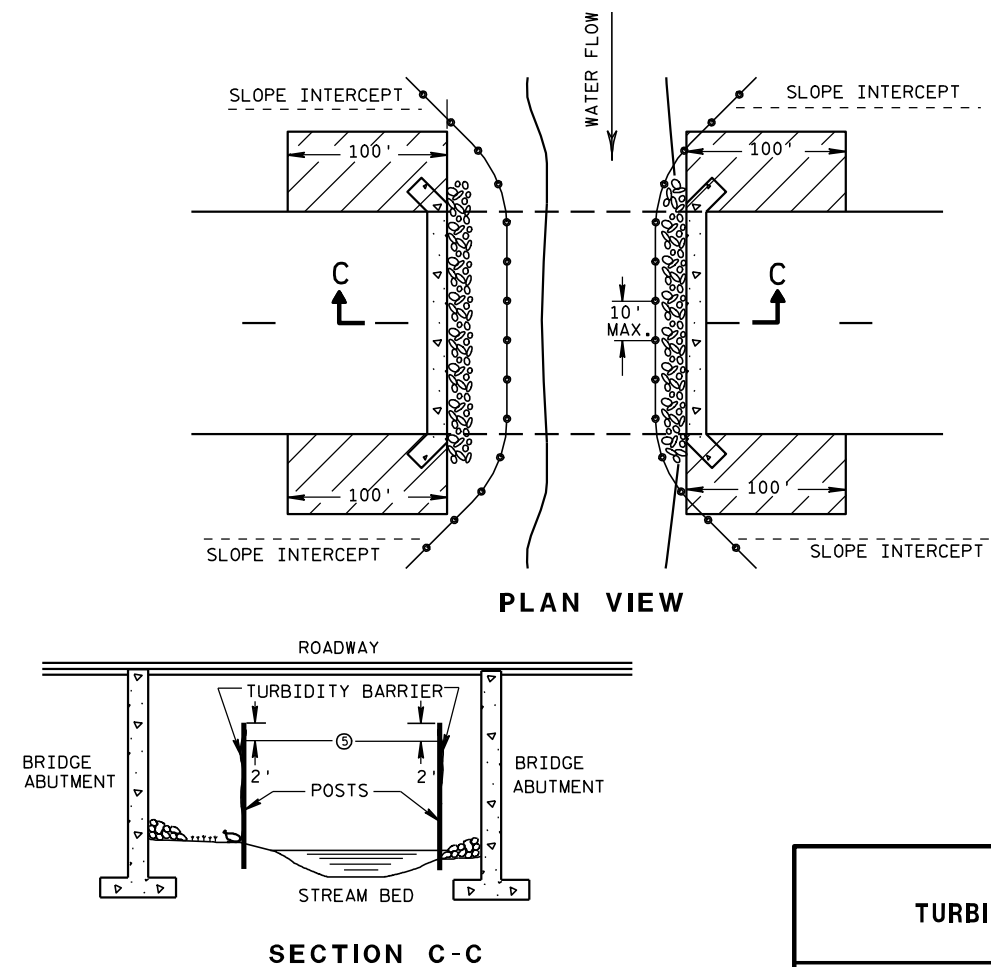


GENERAL NOTES

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 SANDBAGS 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 FT., 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 02 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 BED ROCK 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.



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

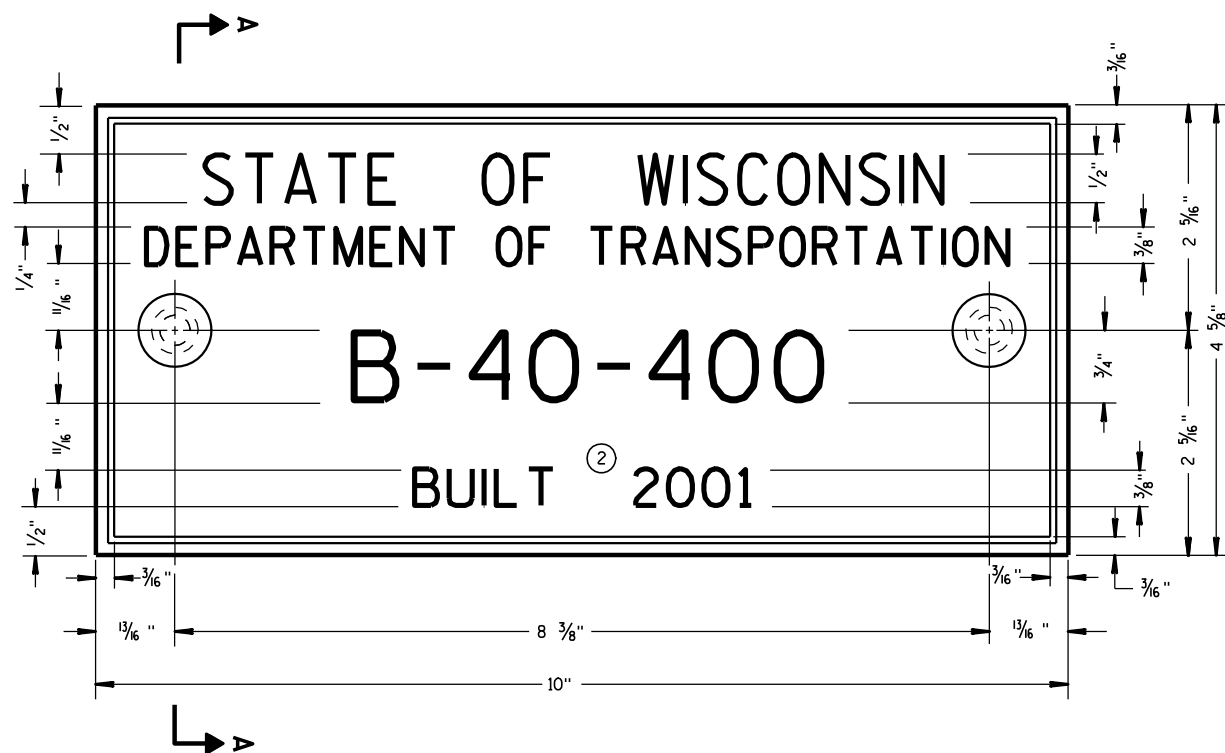
APPROVED

6/04/02

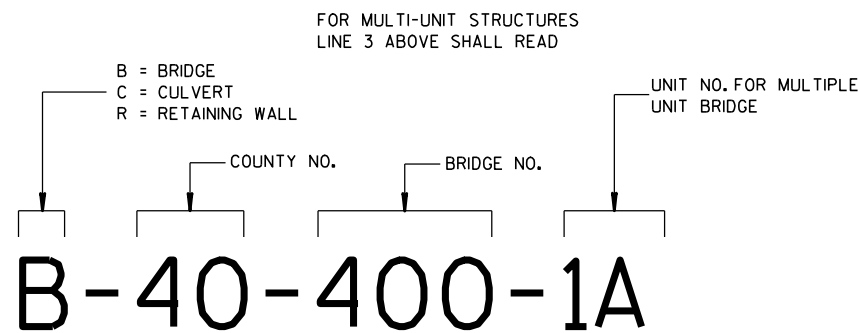
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



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



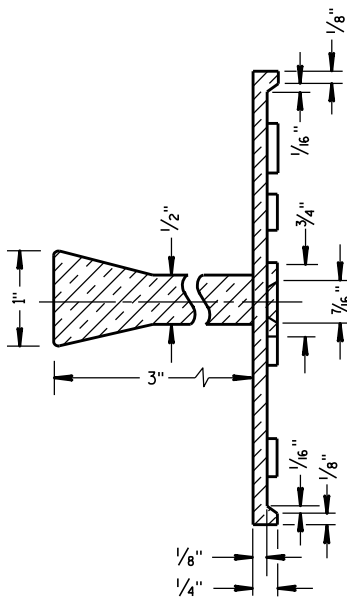
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

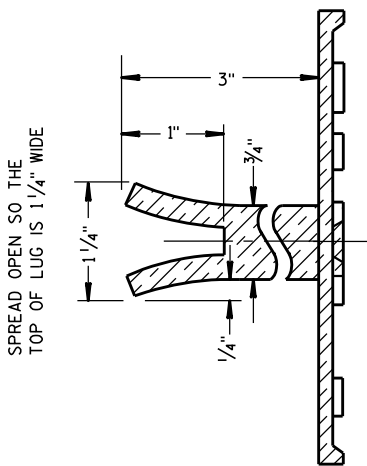
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

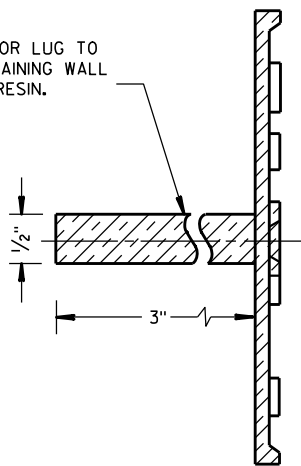


SECTION A-A



ALTERNATE LUG

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

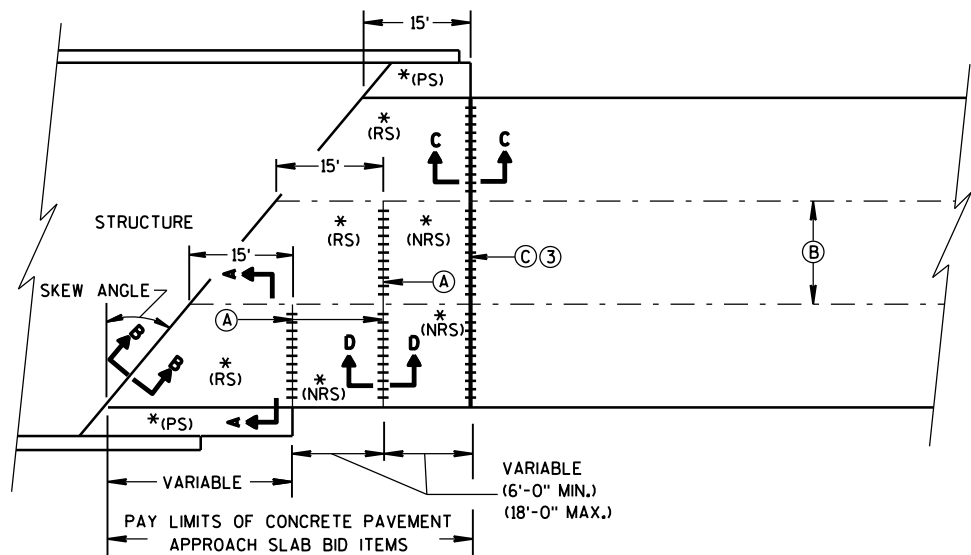


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

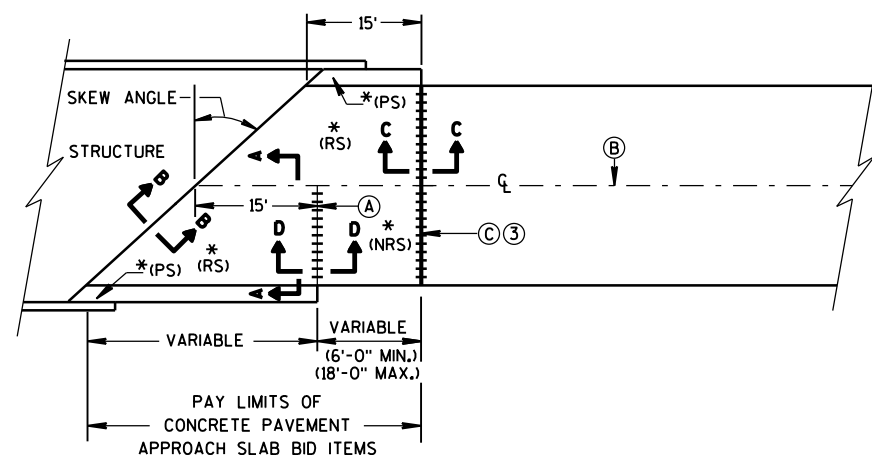
NAME PLATE
(STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

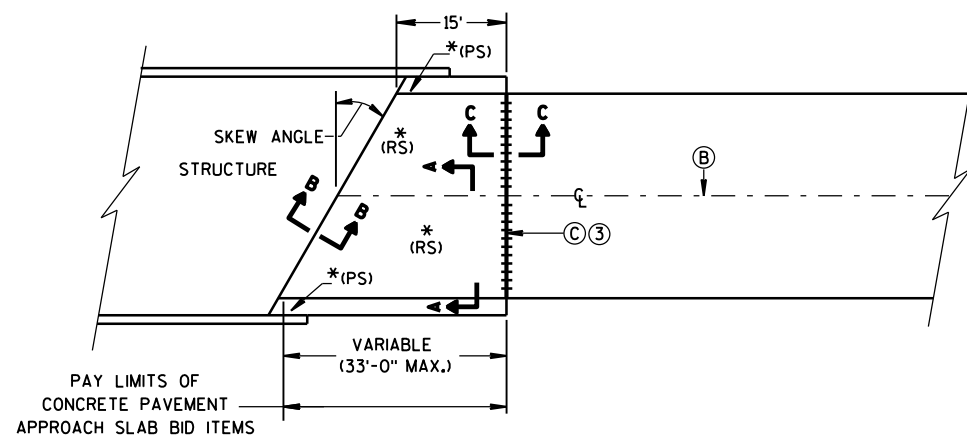
APPROVED
3/26/10
DATE
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA



**SKewed APPROACH
(PAVEMENT MORE THAN 2 LANES)**



**SKEDS > 20°
(PAVEMENT WIDTH ≤ 30')**

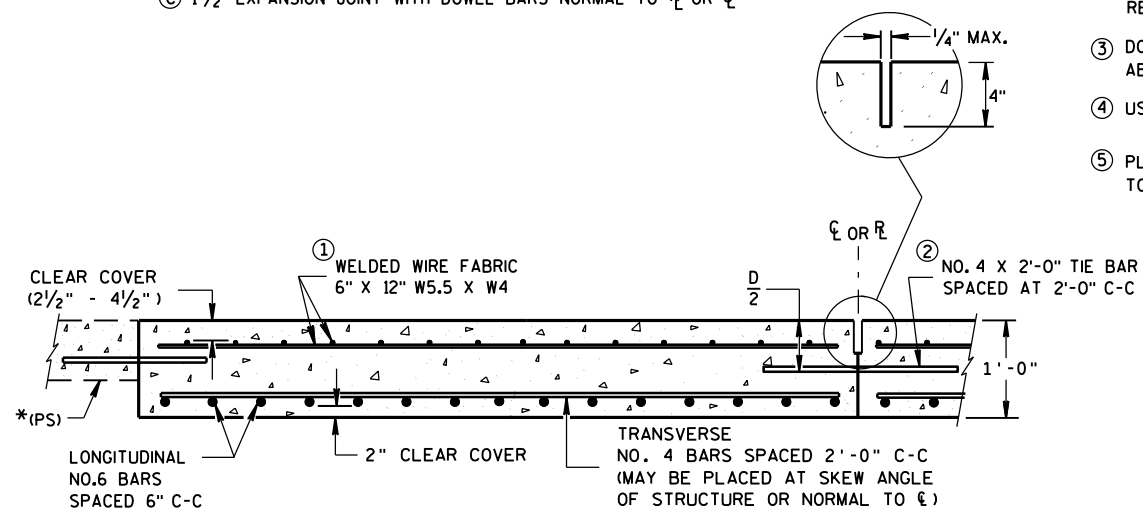


**SKEDS ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

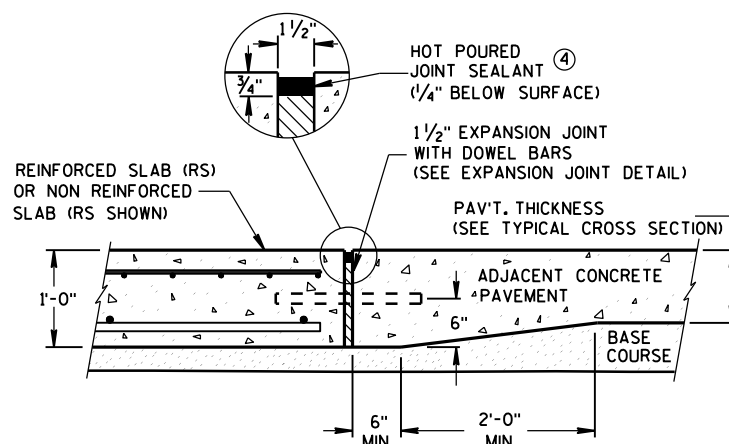
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

*** STANDARD DOWEL BAR DIAMETER
(SEE SDD 13C11, & SDD 13C13)

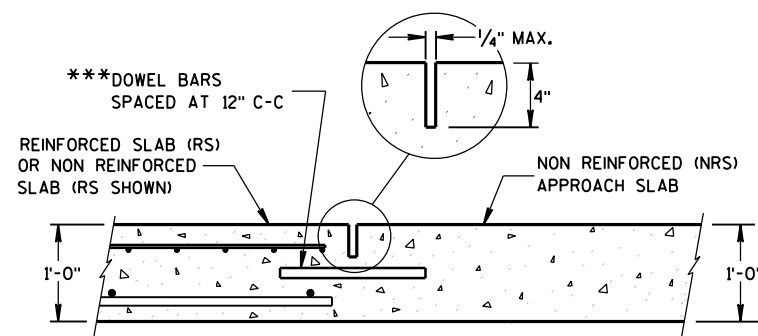
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



**SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**



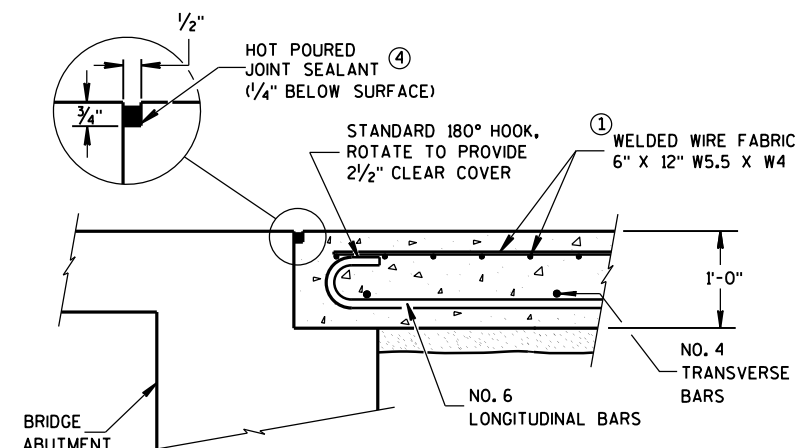
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

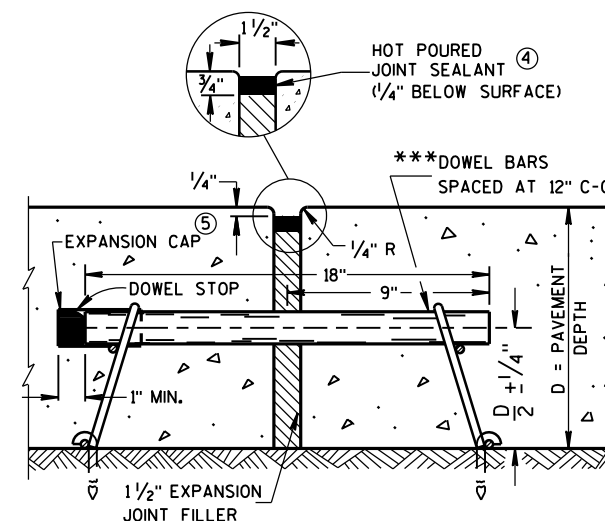
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
- PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



**SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT**



EXPANSION JOINT DETAIL

**CONCRETE PAVEMENT
APPROACH SLAB**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA

6

S.D.D. 14 B 15-8a

- 6

S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a

S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a

S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a



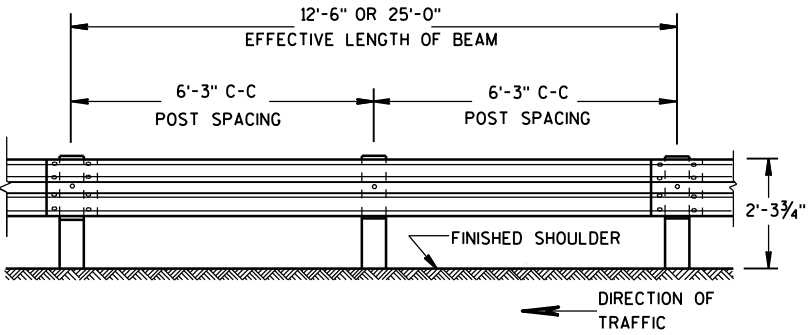
S.D.D. 14 B 15-8a



S.D.D. 14 B 15-8a

S.D.D. 14 B 15-8a

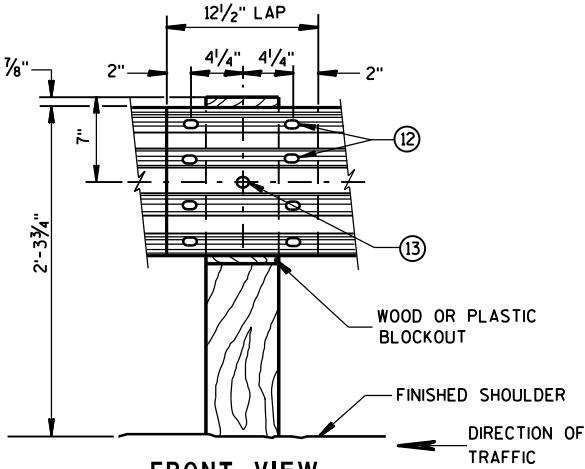
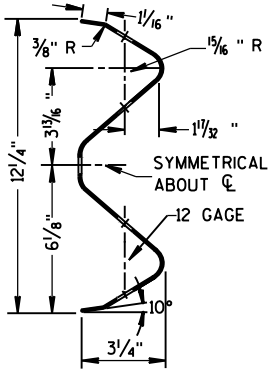
S.D.D. 14 B 15-8a



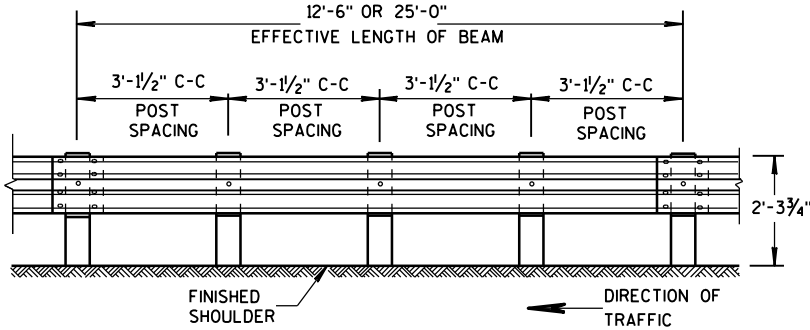
FRONT VIEW

POST SPACING STANDARD INSTALLATION

SECTION THRU W BEAM

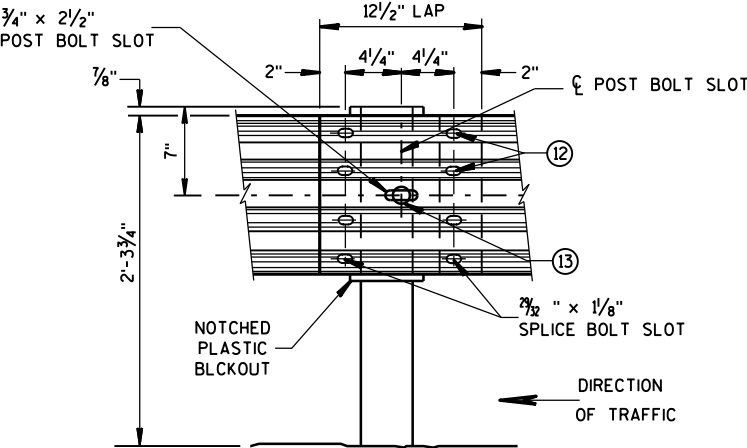


FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



FRONT VIEW

POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)

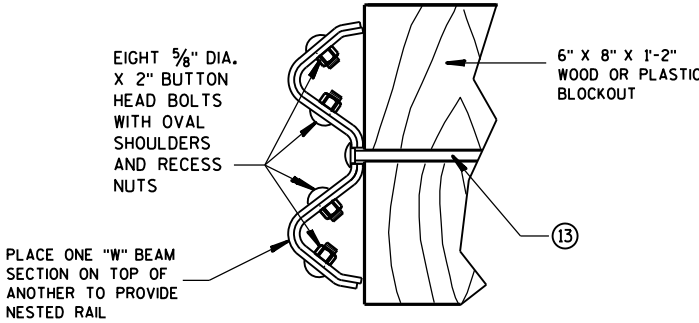


FRONT VIEW
BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

GENERAL NOTES

- ⑧ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- ⑩ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ⑪ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.

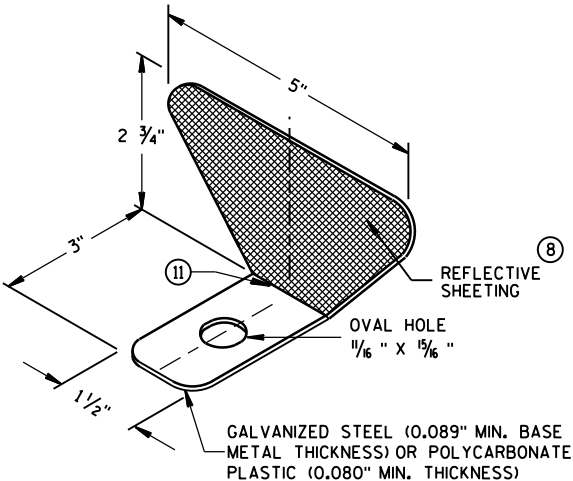
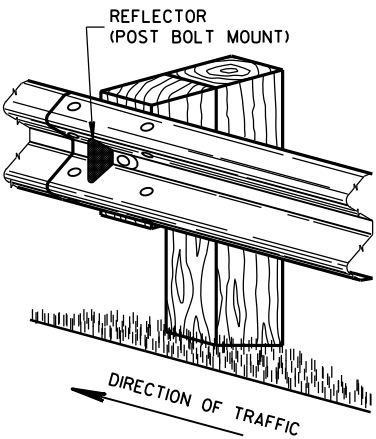


NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING ⑨

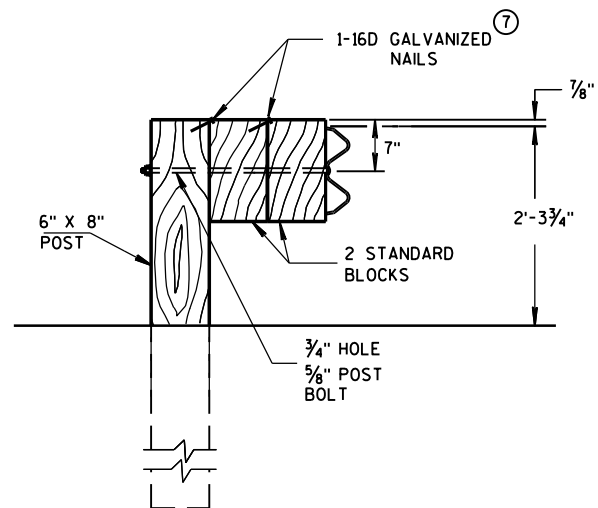
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑩	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑪	3
	> 200'	100' C-C	2	



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

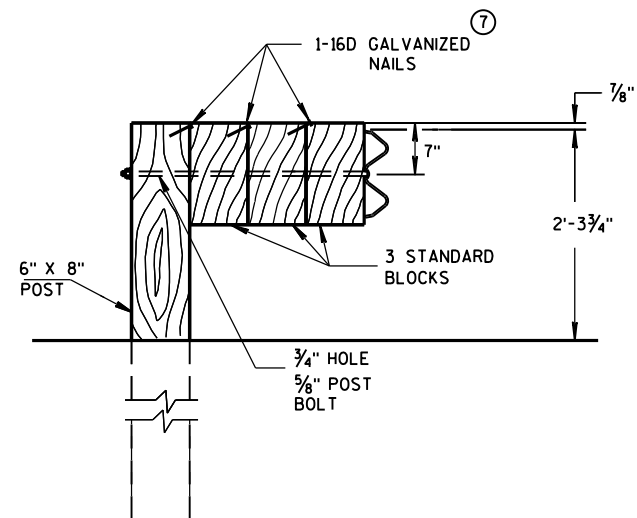
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS
WITHIN A BARRIER RUN IS UNLIMITED

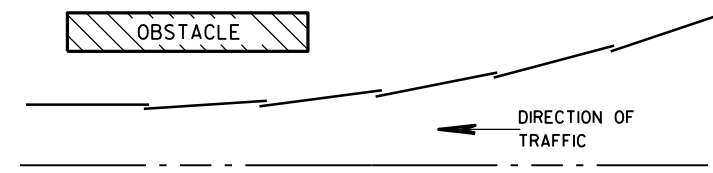


DETAIL FOR TRIPLE BLOCKS

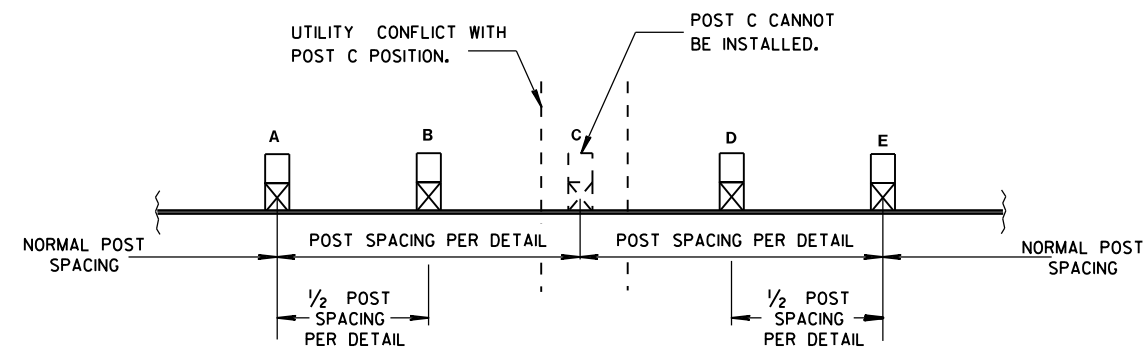
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES
PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND
SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION
DISTANCE OF THE BARRIER.



PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

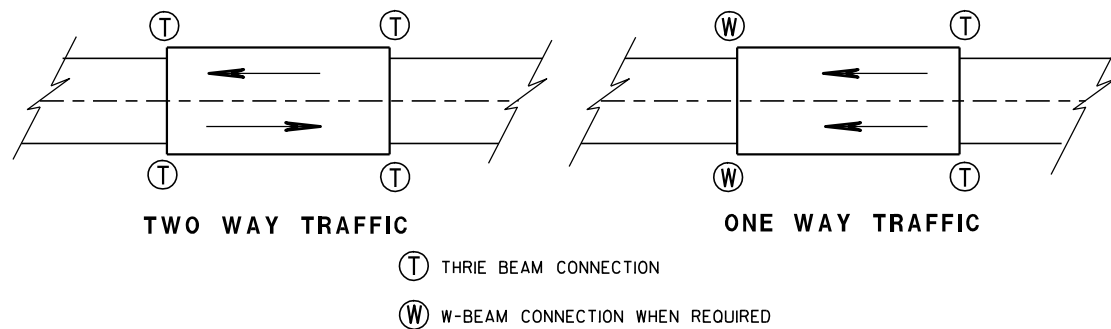
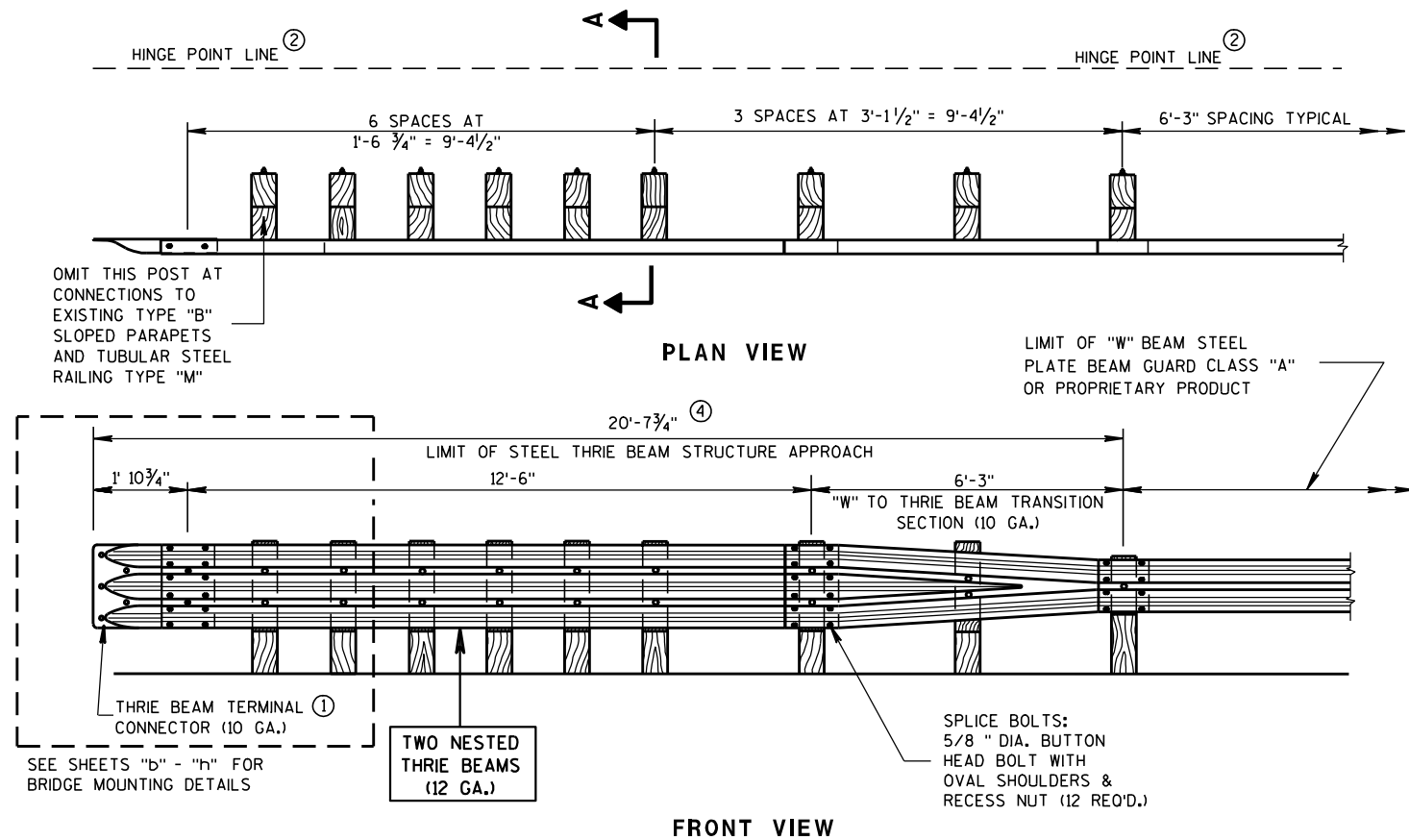
APPROVED

June 2014

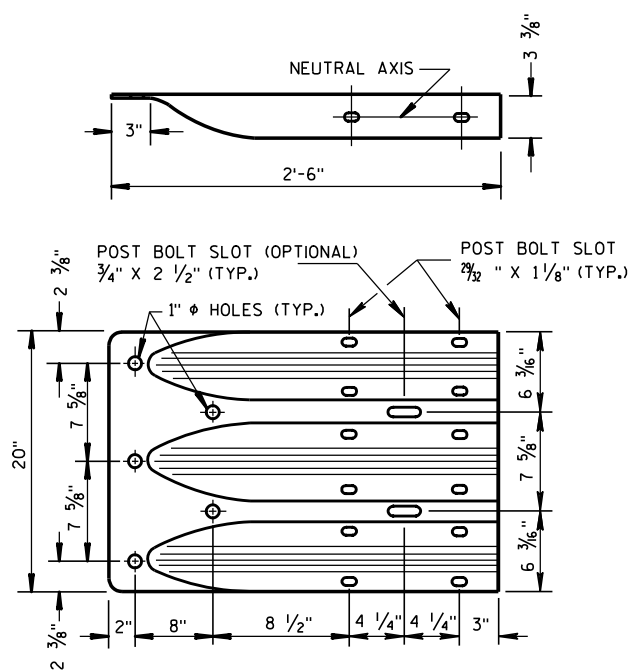
DATE

FHWA

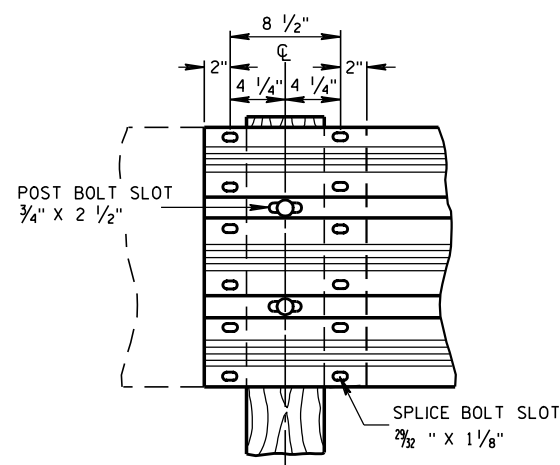
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

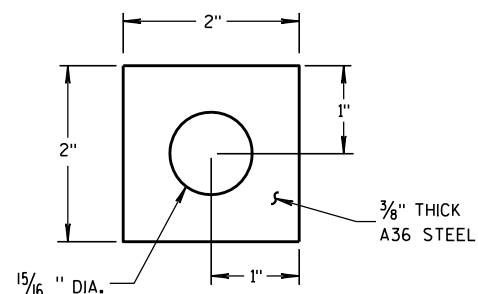
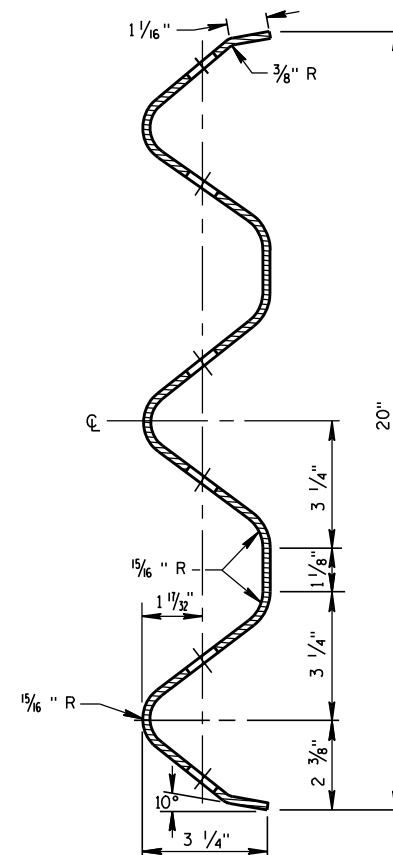


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

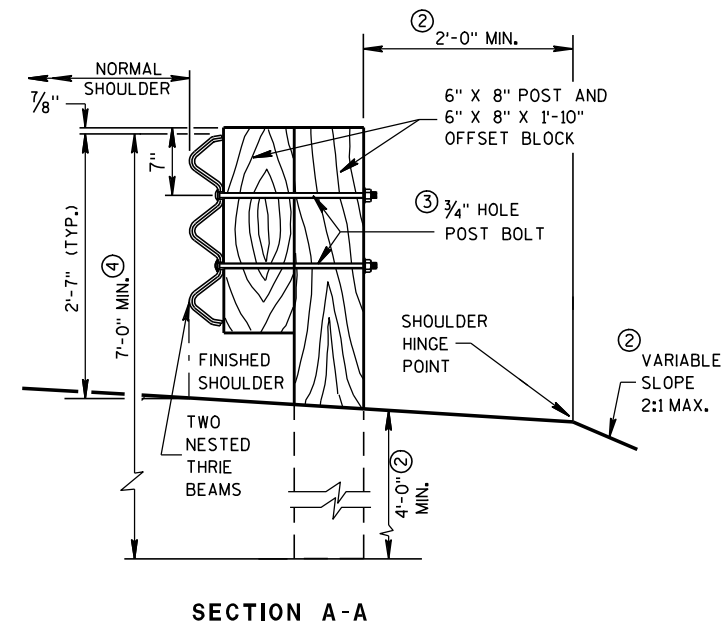
GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.
- ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
- ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

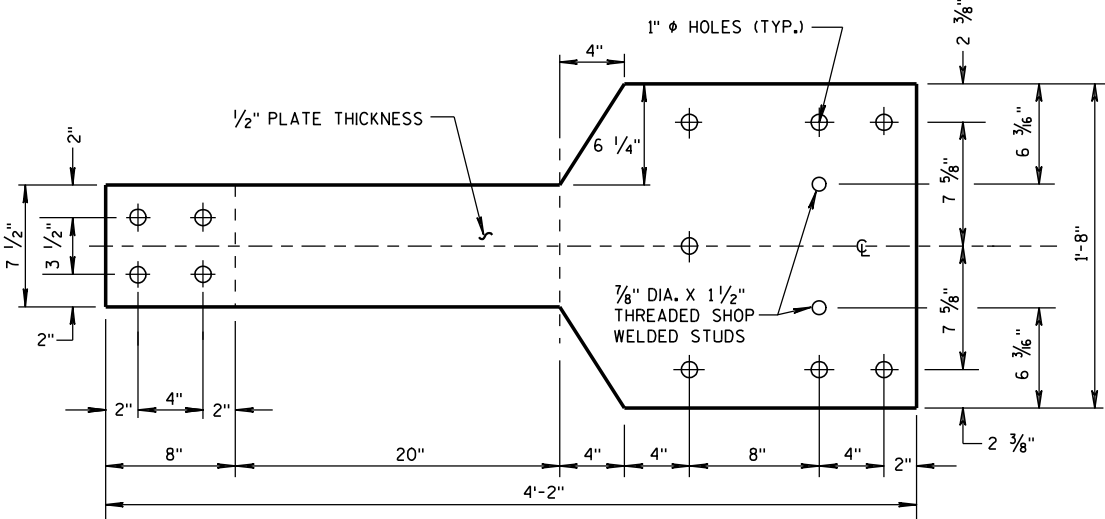
8/31/2012
DATE

FHWA

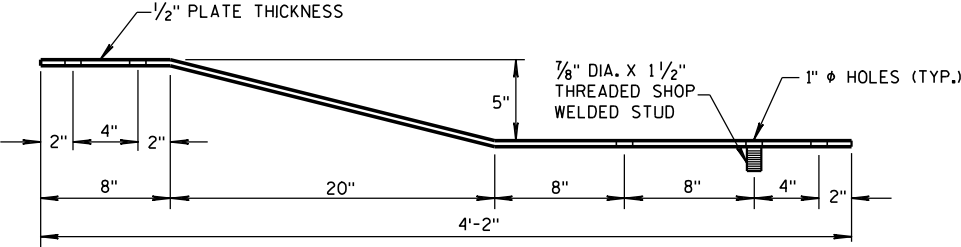
/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

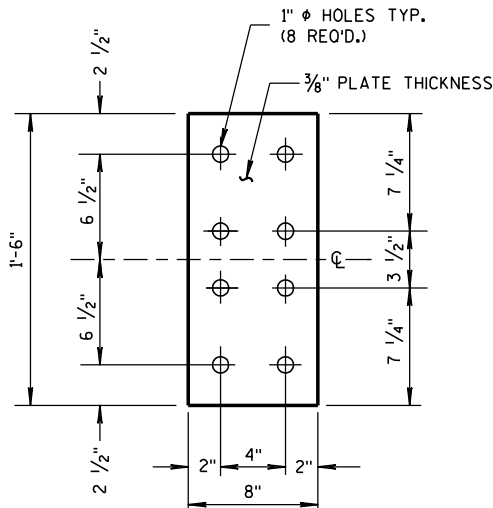
① VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL BE AS CLOSE AS FEASIBLE TO THE STEEL END POST.



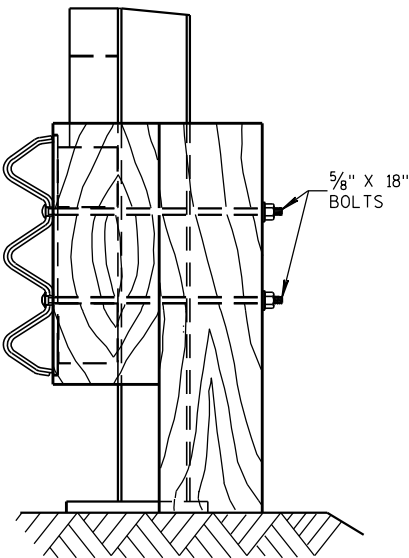
FRONT VIEW



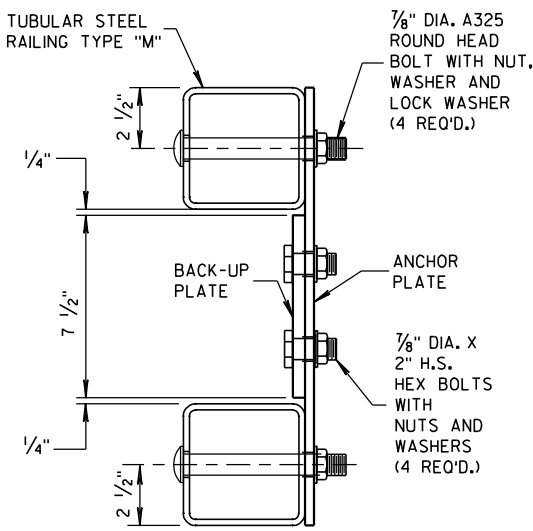
**PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"**



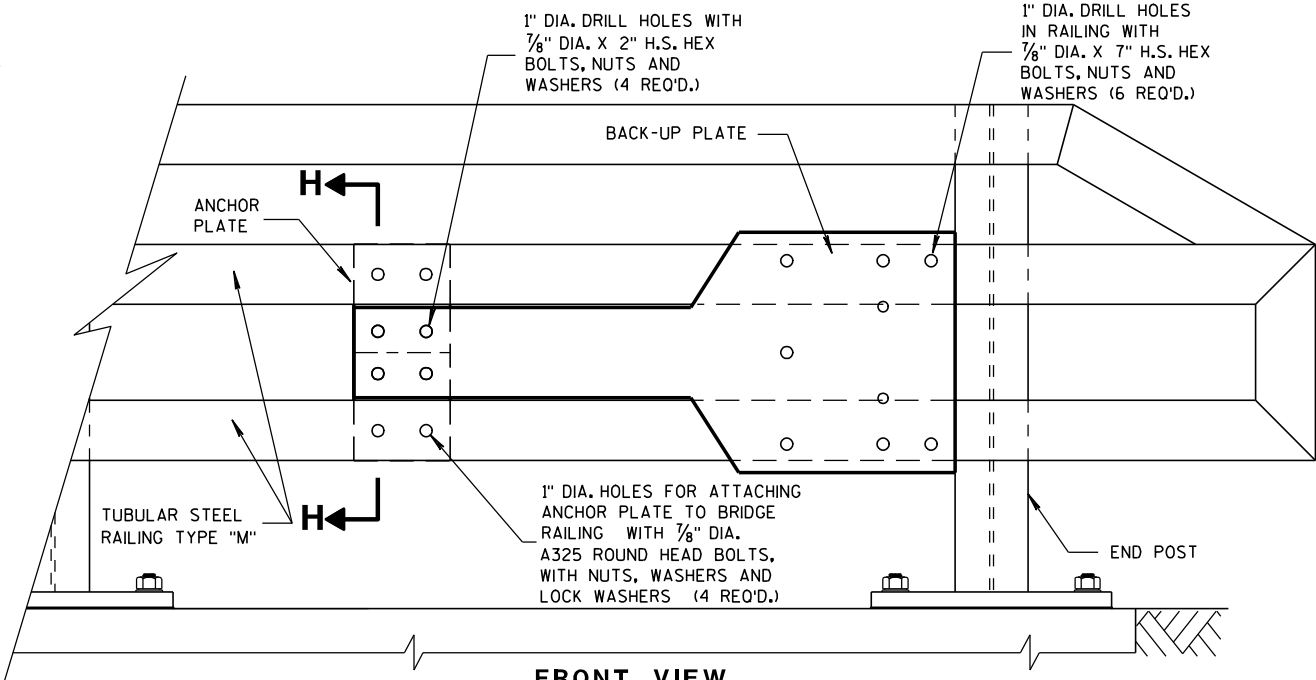
**FRONT VIEW
ANCHOR PLATE DETAIL,
TYPE "M"**



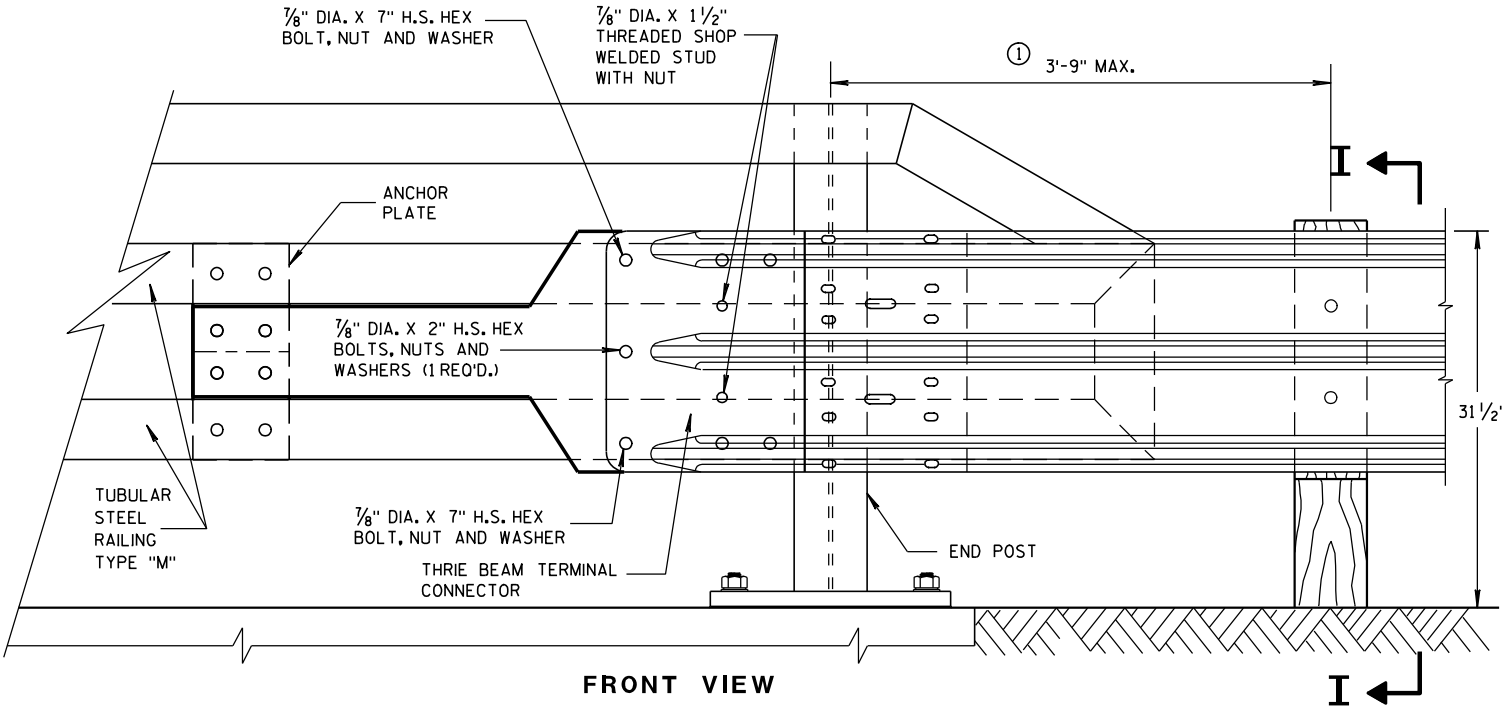
SECTION I-I



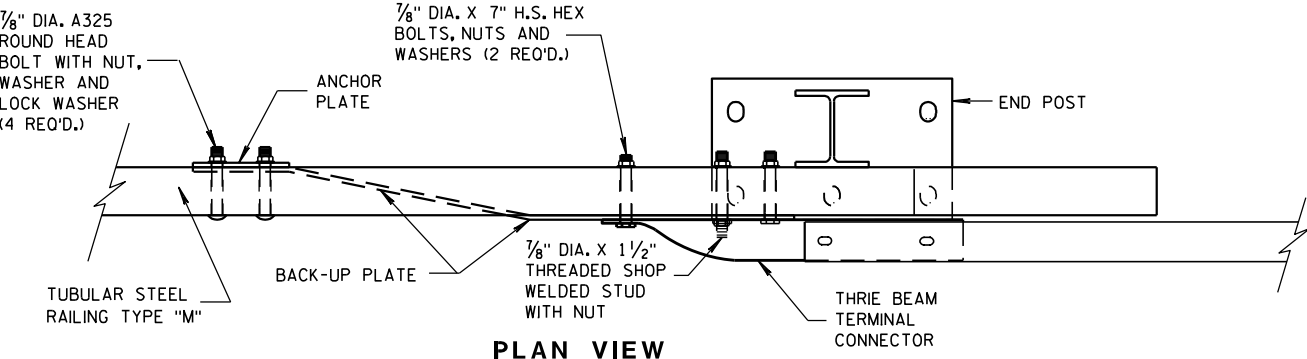
SECTION H-H



ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

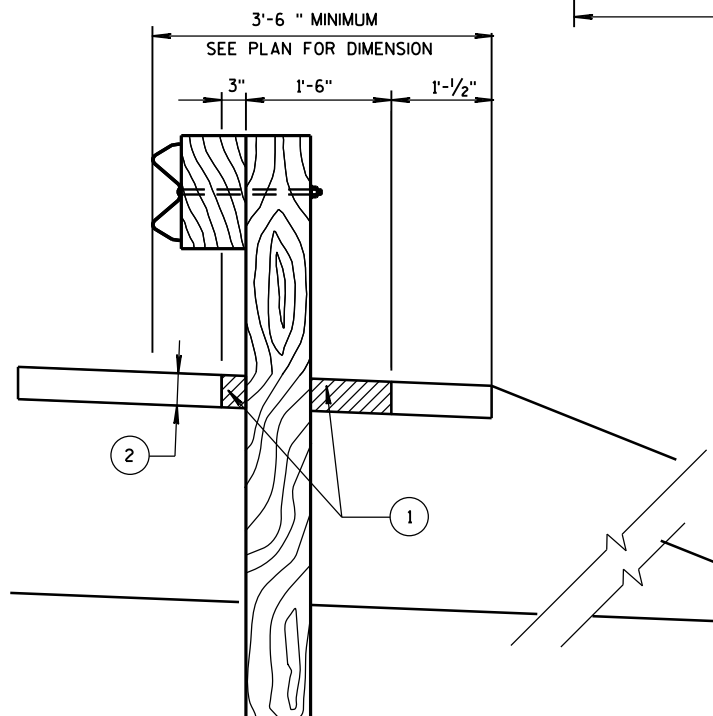
THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

**STEEL THRIE BEAM STRUCTURE
APPROACH CONNECTION TO
BRIDGE RAILING TYPE "M"**

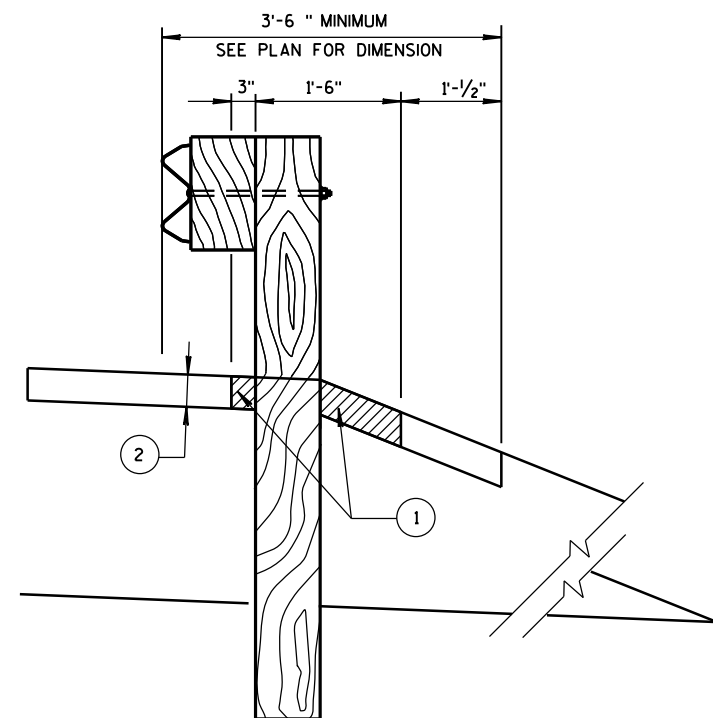
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
FHWA

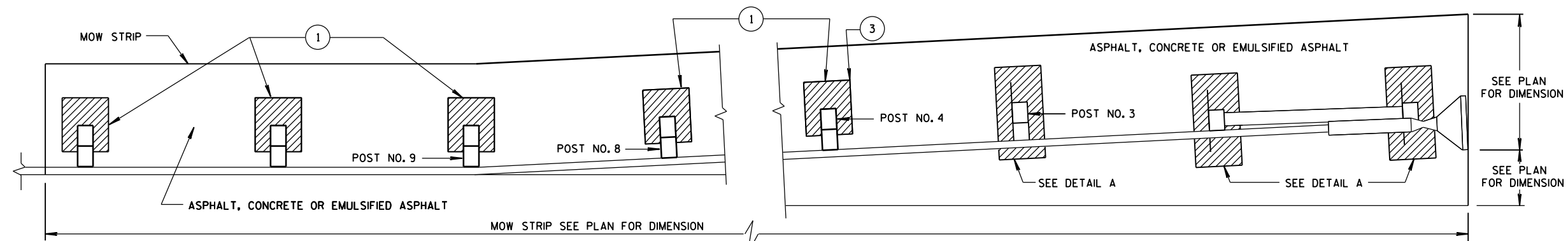
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



SECTION A-A

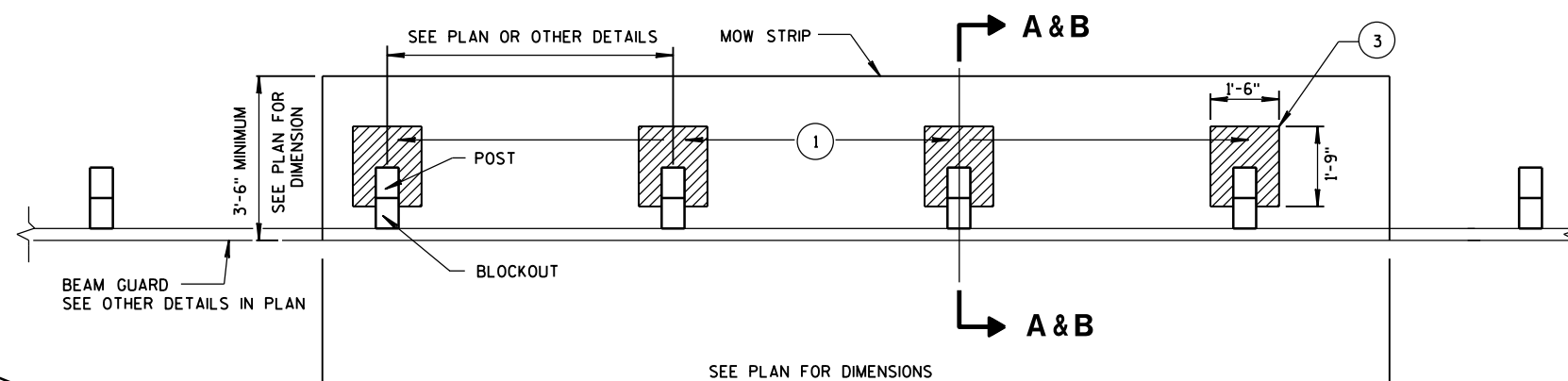


SECTION B-B



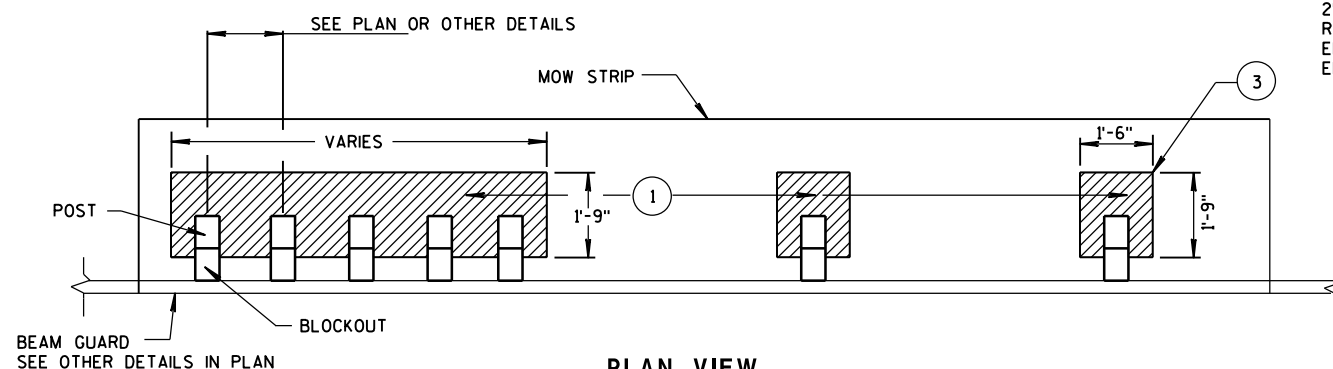
PLAN VIEW

MOW STRIP LAYOUT FOR ENERGY ABSORBING TERMINAL



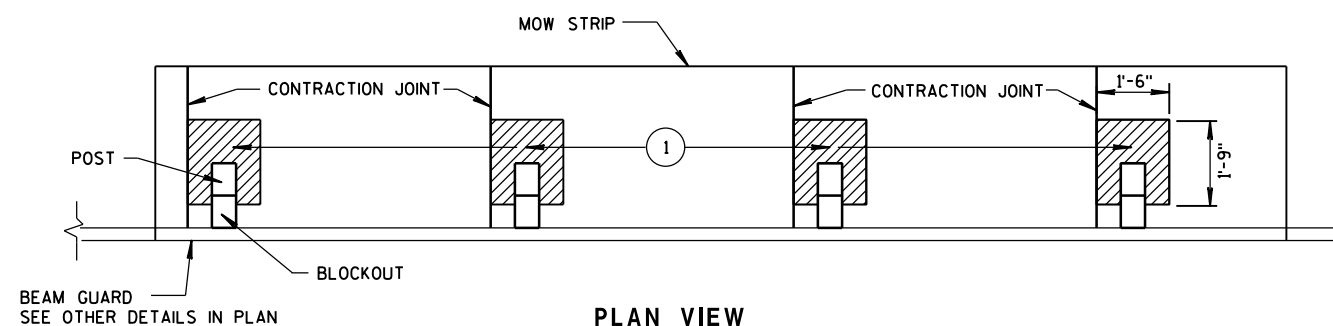
PLAN VIEW

MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT



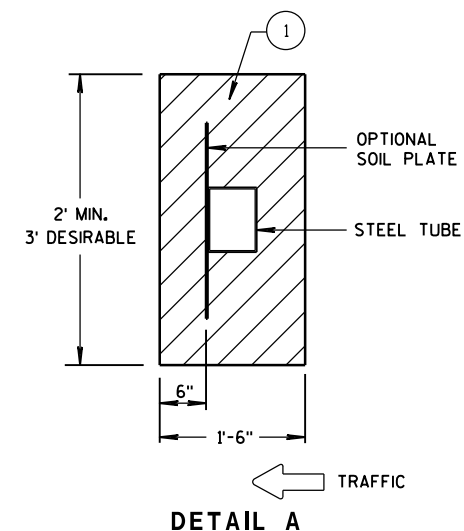
PLAN VIEW

MOW STRIP FOR TIGHT SPACING LAYOUT

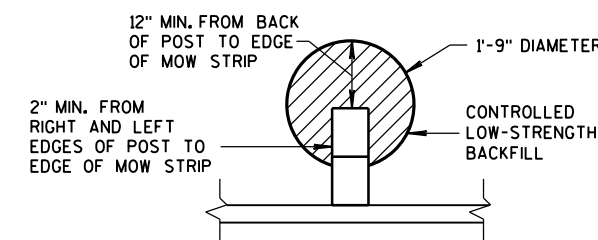


PLAN VIEW

JOINT PLACEMENT FOR CONCRETE MOW STRIP



DETAIL A

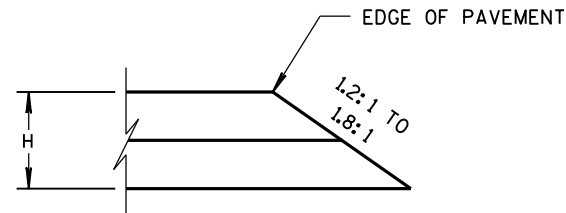
ALTERNATIVE HMA
MOW STRIP DESIGN

- ① CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
- ② DEPTH OF MOW STRIP:
ASPHALT - 4"
CONCRETE - 4"
EMULSIFIED ASPHALT - 1" OR LESS
- ③ FOR EMULSIFIED ASPHALT MOW STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS.)

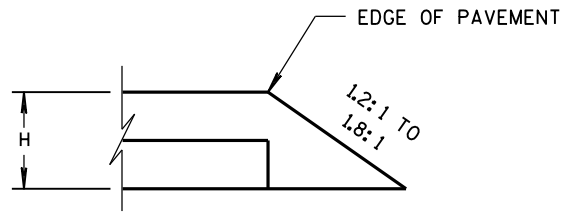
GUARDRAIL MOW STRIP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

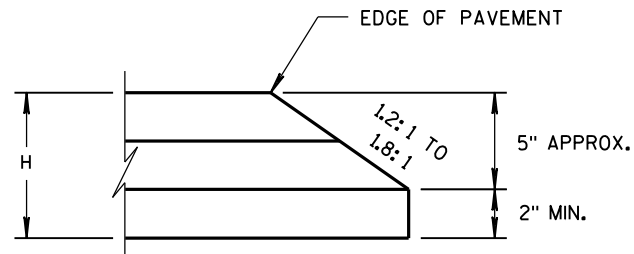
APPROVED June 2014	/S/ Jerry H. Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



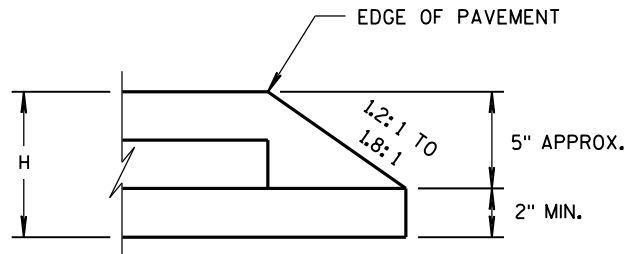
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

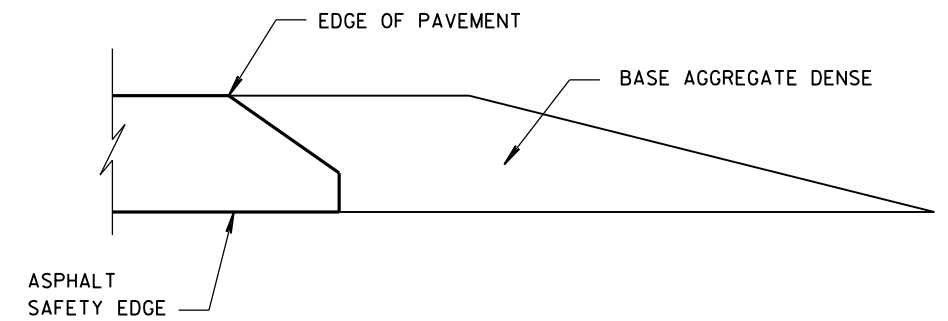


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

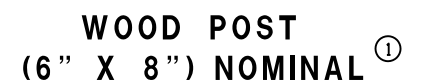
11/30/2012
DATE

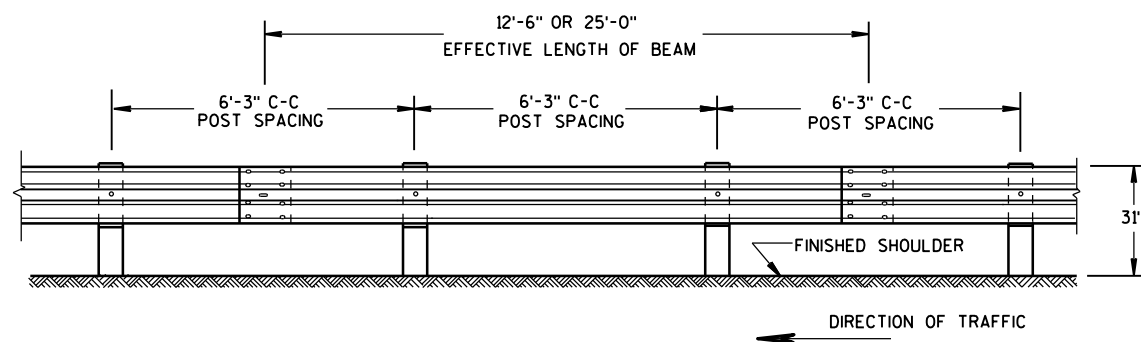
FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

S.D.D. 14 B 42-3a

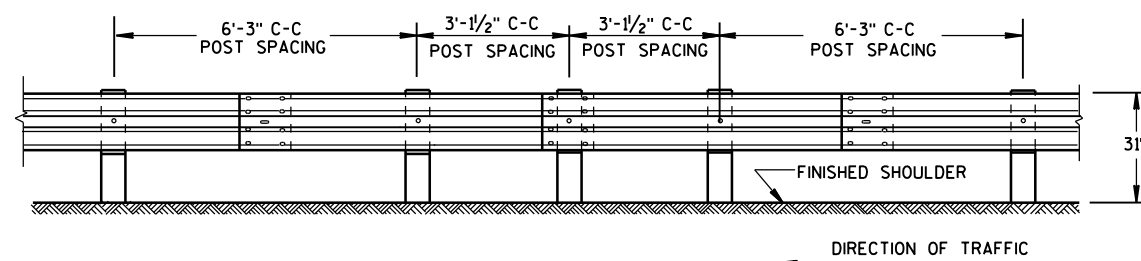
- S.D.D. 14 B 42-3a**





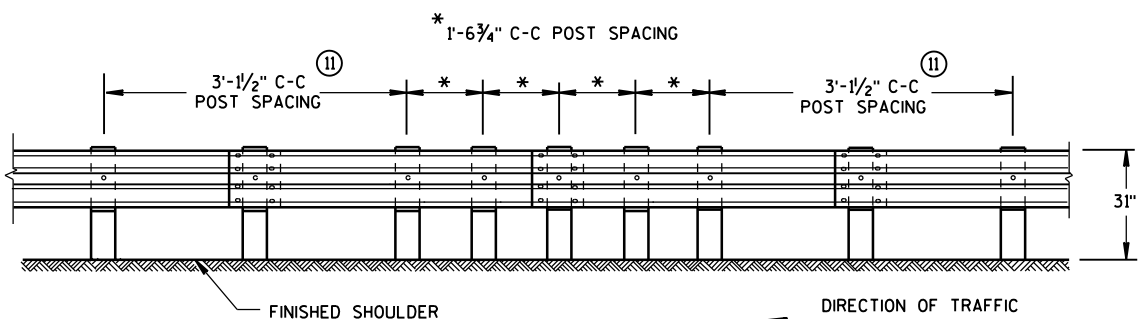
FRONT VIEW

POST SPACING STANDARD INSTALLATION



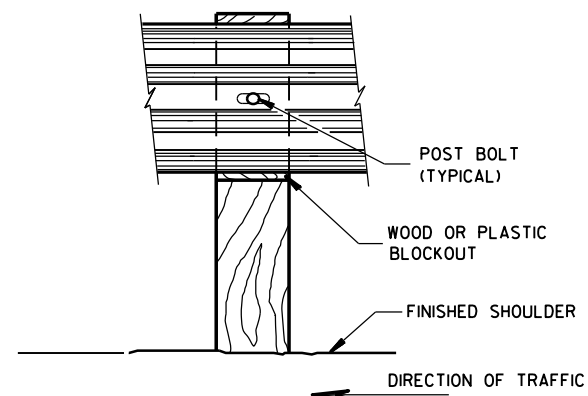
FRONT VIEW

HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)

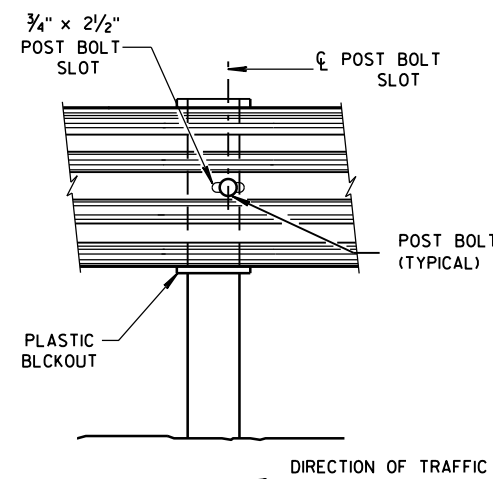


FRONT VIEW

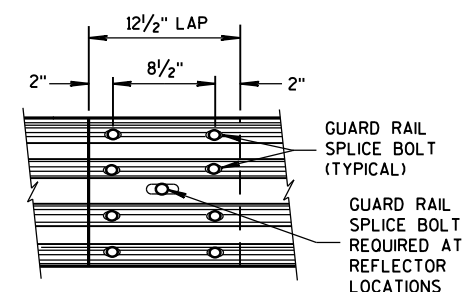
QUARTER POST SPACING (QS)



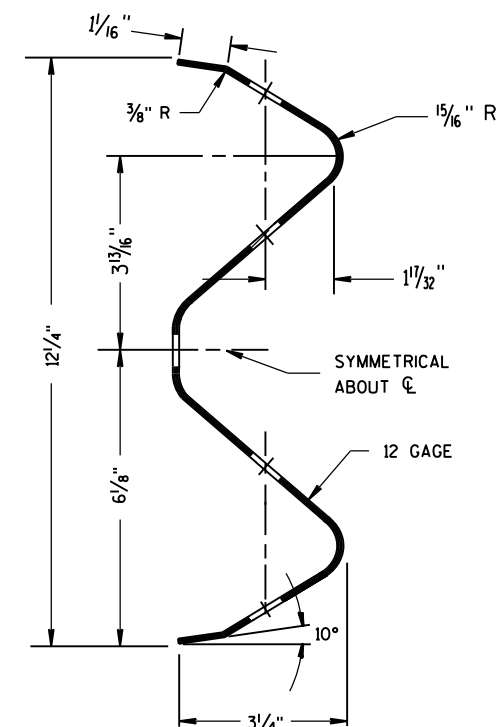
FRONT VIEW AT WOOD POST



FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL

REFLECTOR SPACING ^⑧				
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTOR
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 1 ^⑨	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 ^⑩	3

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

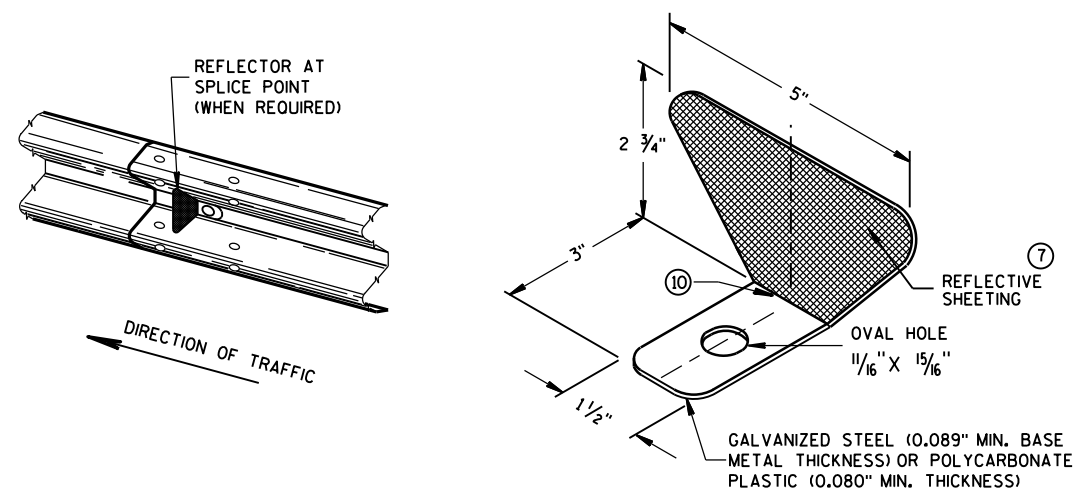
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

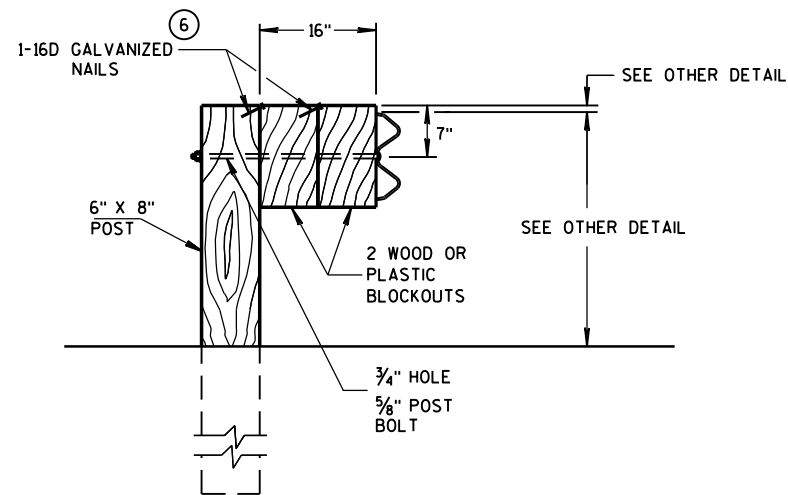
- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

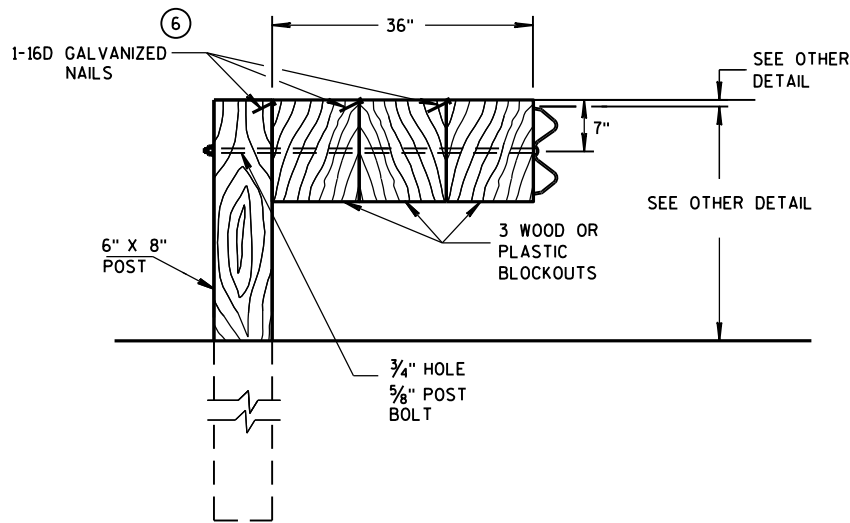


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION



DETAIL FOR 16" BLOCKOUT DEPTH

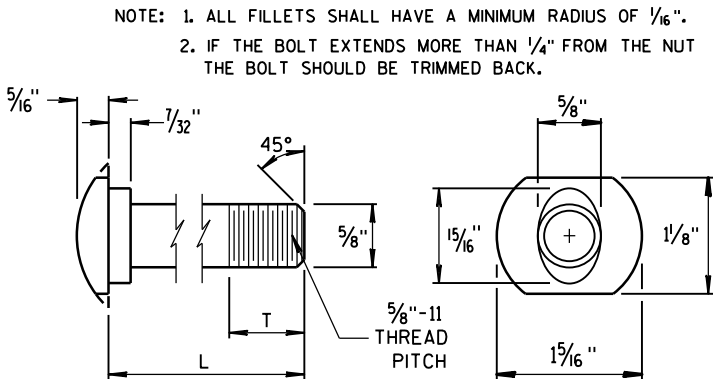
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



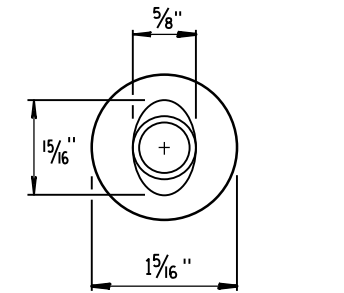
DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

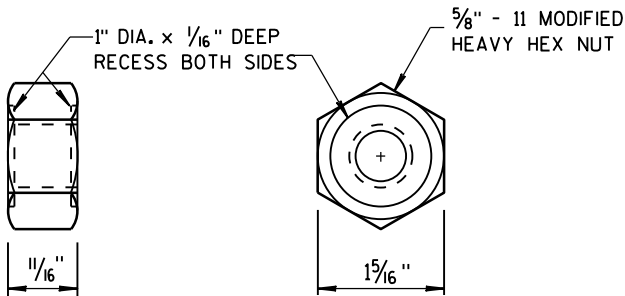
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



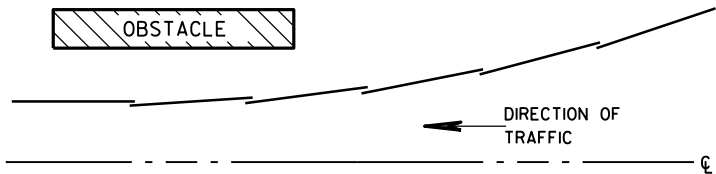
POST BOLT TABLE



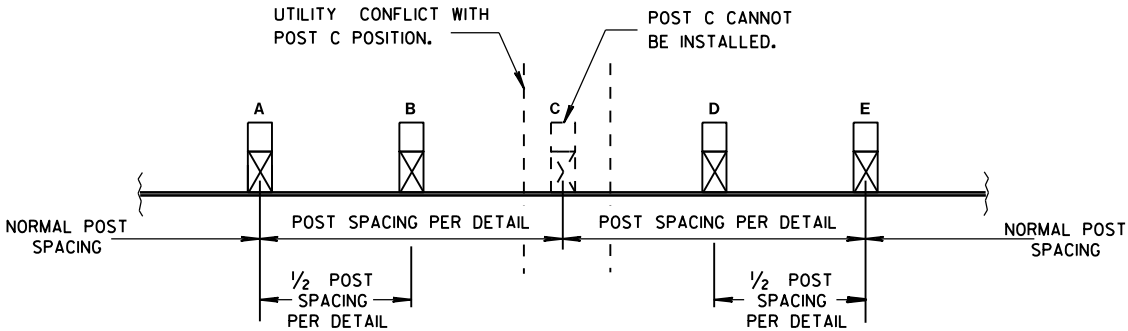
ALTERNATE BOLT HEAD



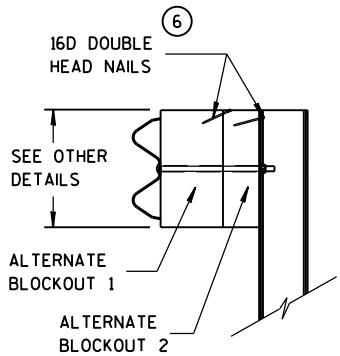
POST BOLT
AND RECESS NUT



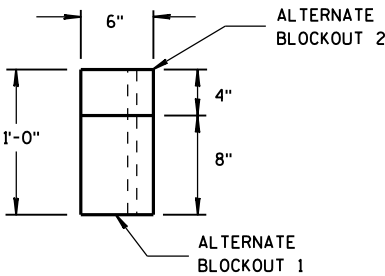
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

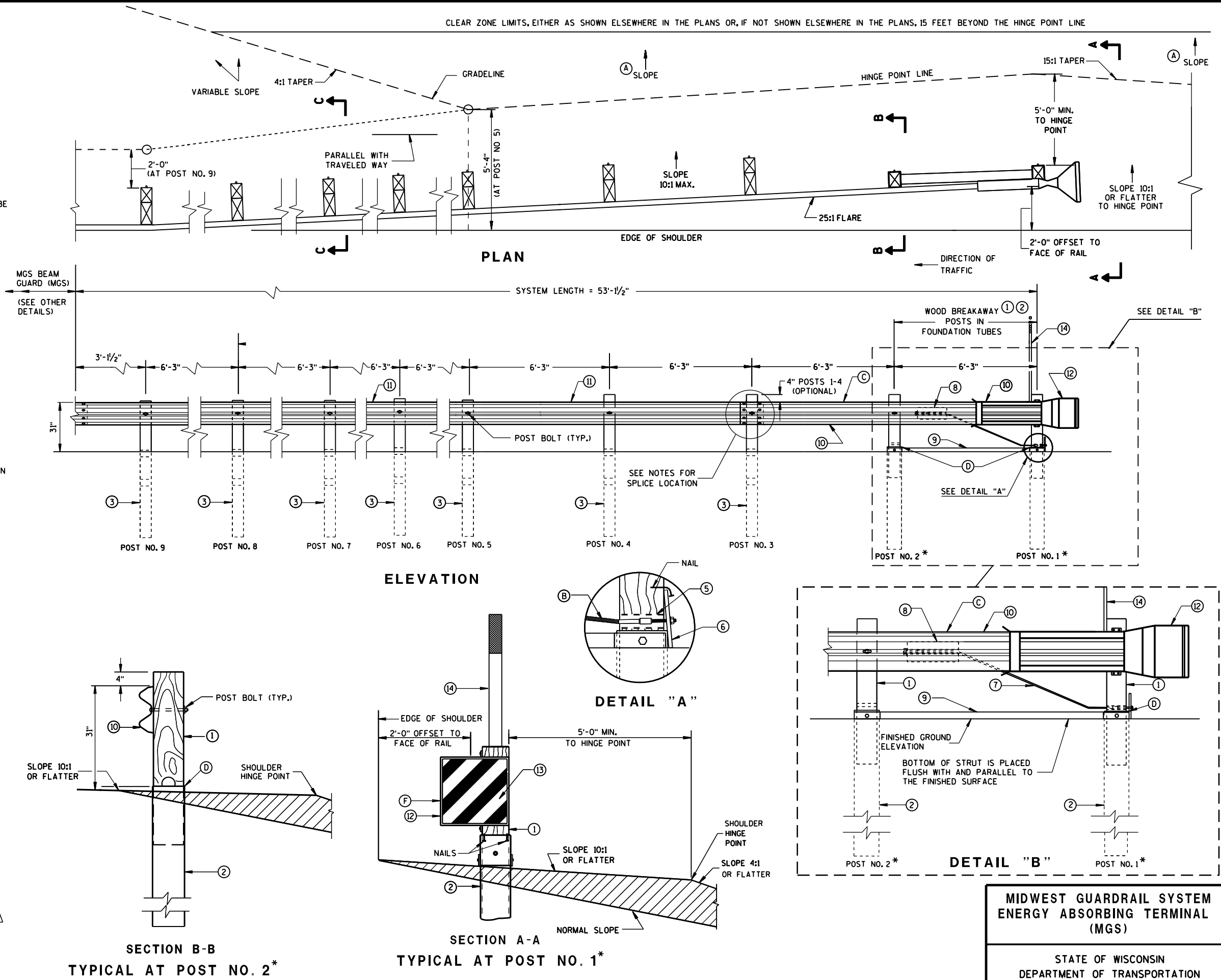
SEE SDD 14B42 FOR MORE INFORMATION.

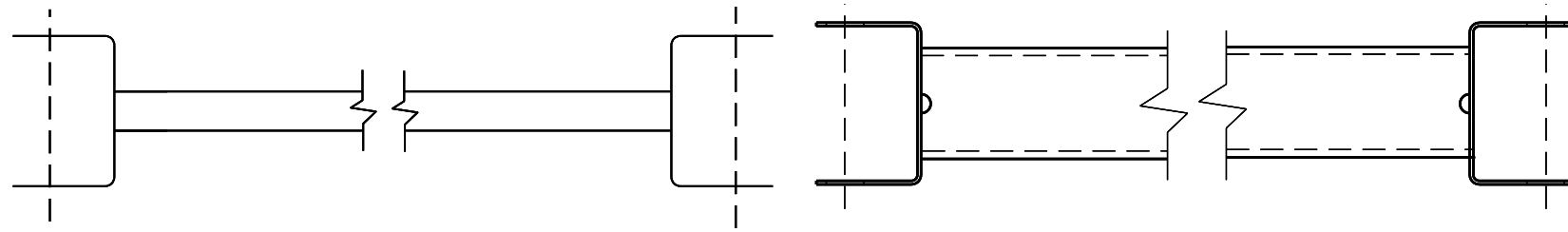
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

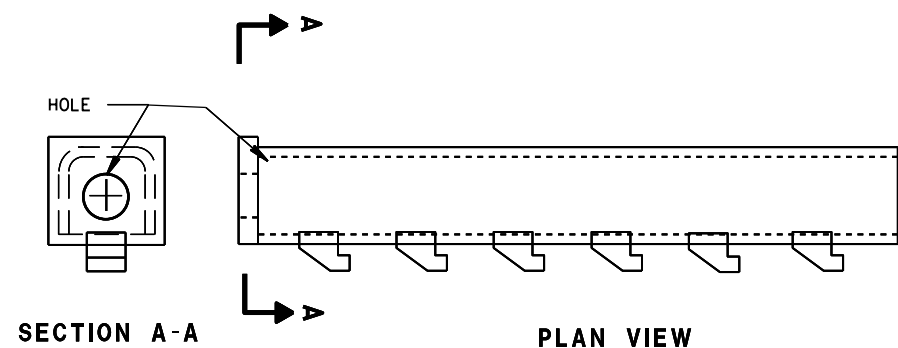
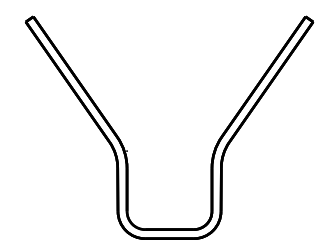
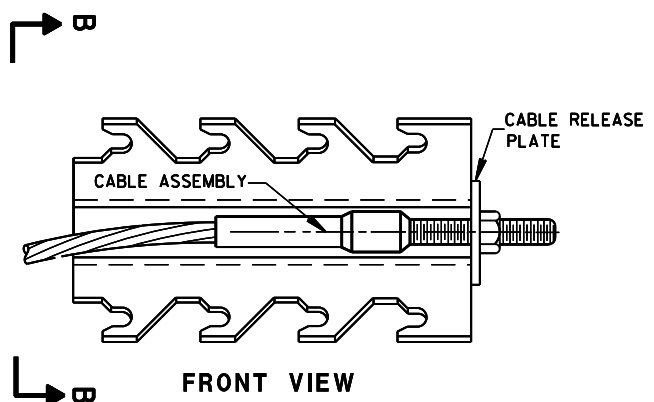
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.





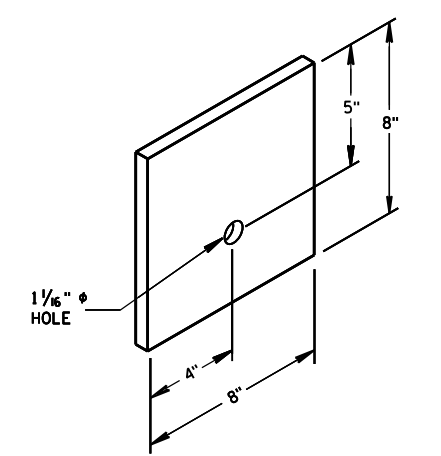
9 H
GENERIC GROUND STRUT



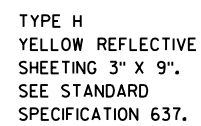
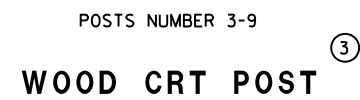
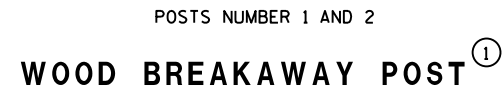
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

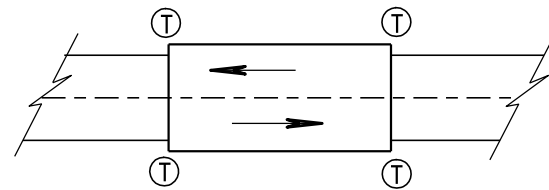
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



⑥
BEARING PLATE

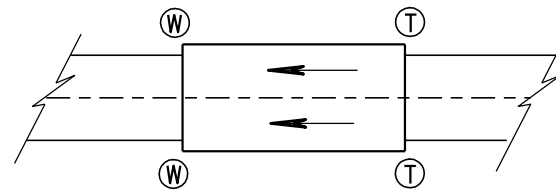


MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014	/S/ Jerry H. Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

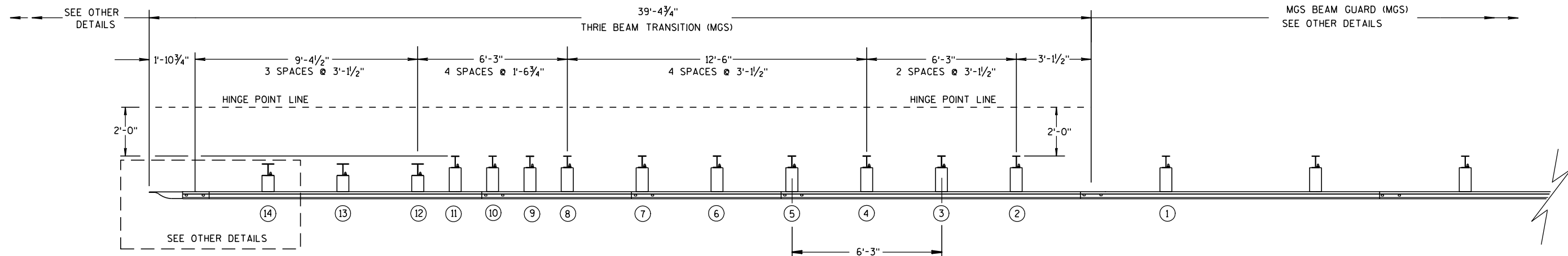
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

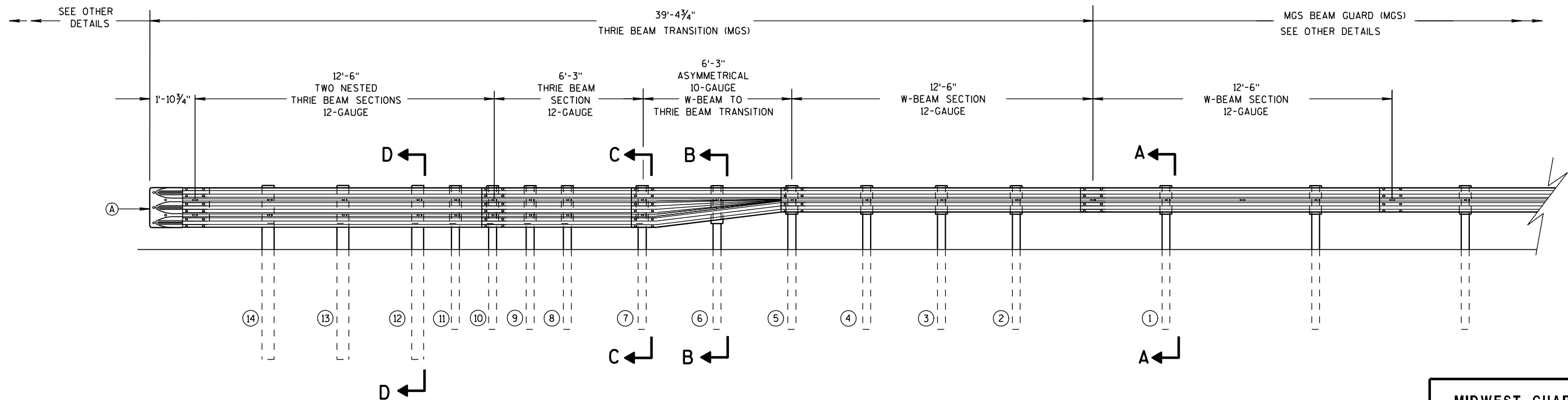
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

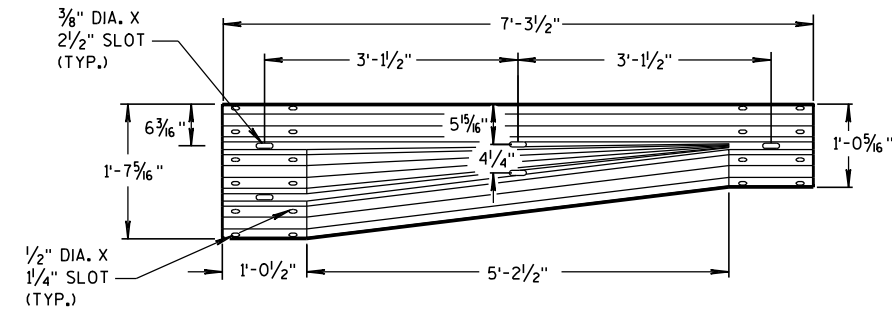
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

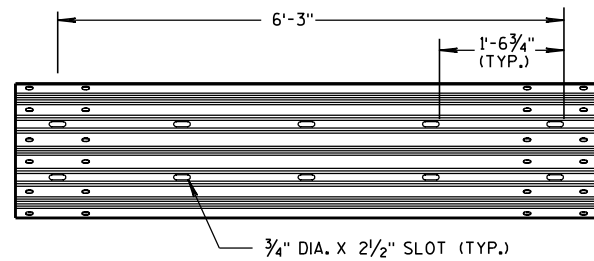
S.D.D. 14 B 45-3b



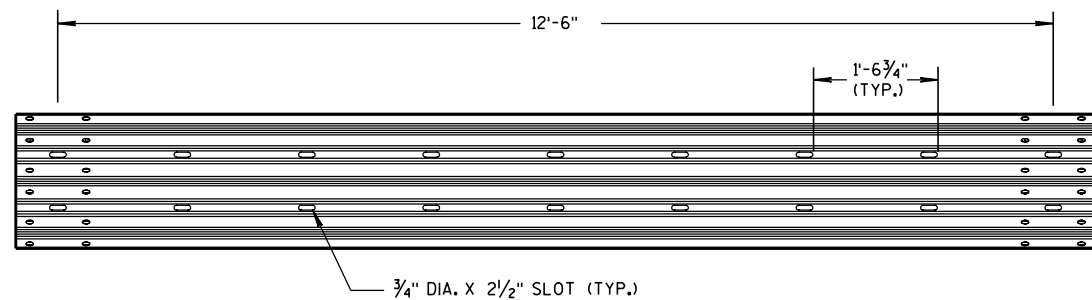
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



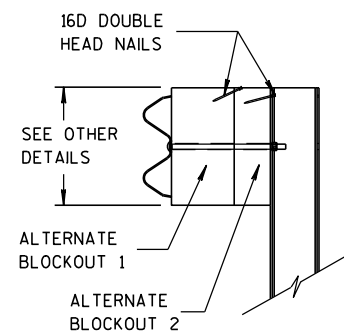
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

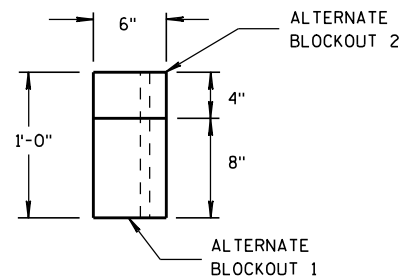


12'-6" THRIE BEAM SECTION

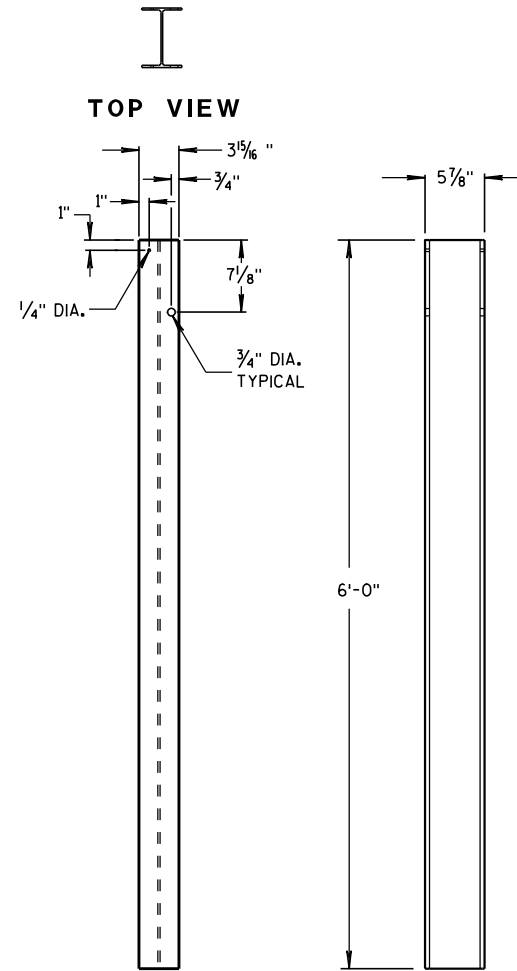


SIDE VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL



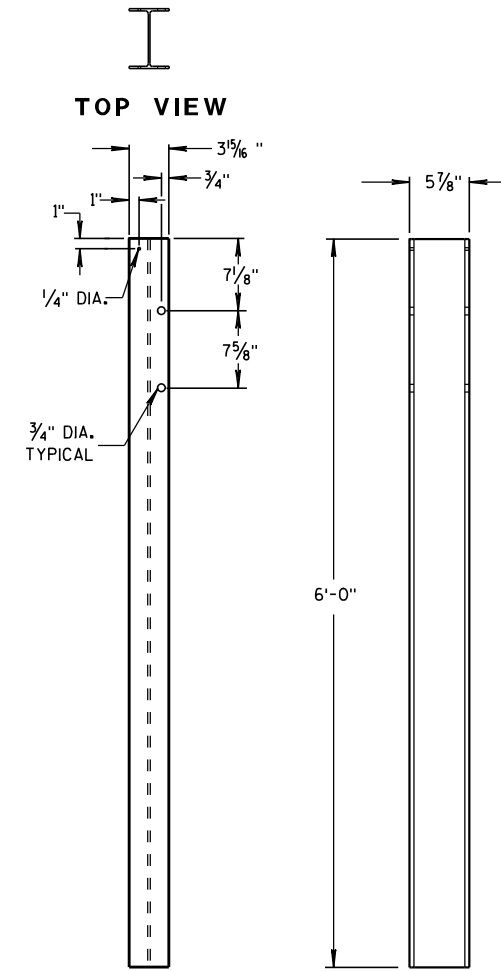
TOP VIEW



FRONT VIEW

SIDE VIEW

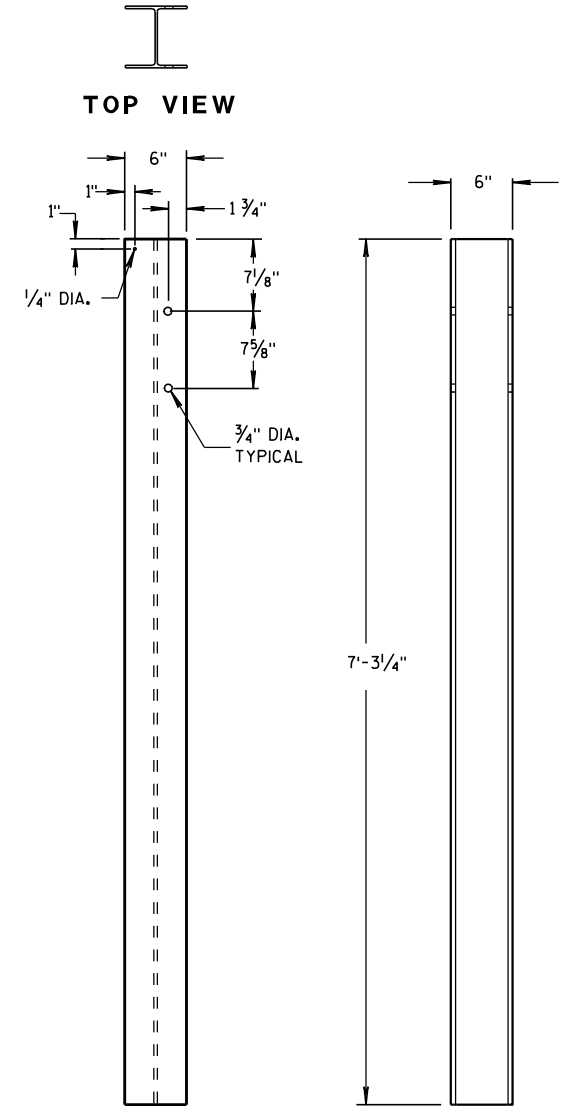
STEEL POSTS 1-5



FRONT VIEW

SIDE VIEW

STEEL POSTS 6-11

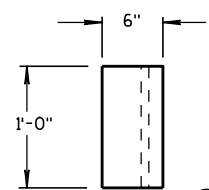


FRONT VIEW

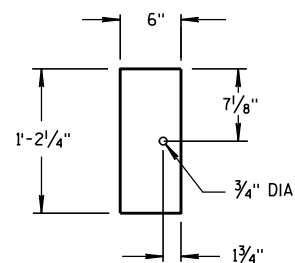
SIDE VIEW

STEEL POSTS 12-14

① WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

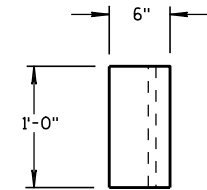


TOP VIEW

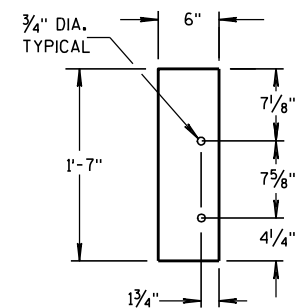


FRONT VIEW

BLOCKOUT
POSTS 1-5

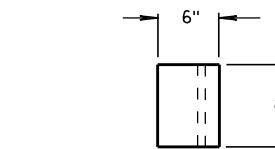


TOP VIEW

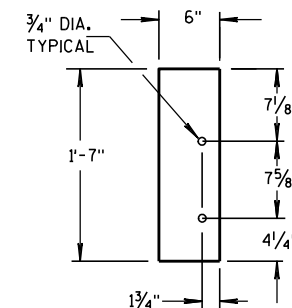


FRONT VIEW

BLOCKOUT
POSTS 6-11



TOP VIEW



FRONT VIEW

BLOCKOUT
POSTS 12-14

STEEL POST SIZES

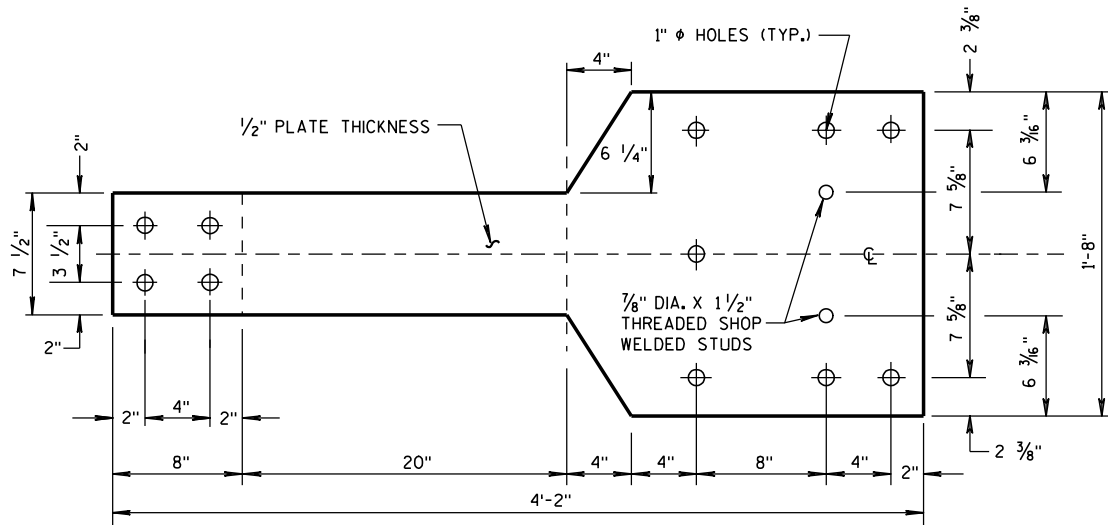
POST NUMBER	SECTION TYPE	LENGTH
①	W6x9	72"
②	W6x9	72"
③	W6x9	72"
④	W6x9	72"
⑤	W6x9	72"
⑥	W6x9	72"
⑦	W6x9	72"
⑧	W6x9	72"
⑨	W6x9	72"
⑩	W6x9	72"
⑪	W6x9	72"
⑫	W6x15	87 7/8"
⑬	W6x15	87 7/8"
⑭	W6x15	87 7/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

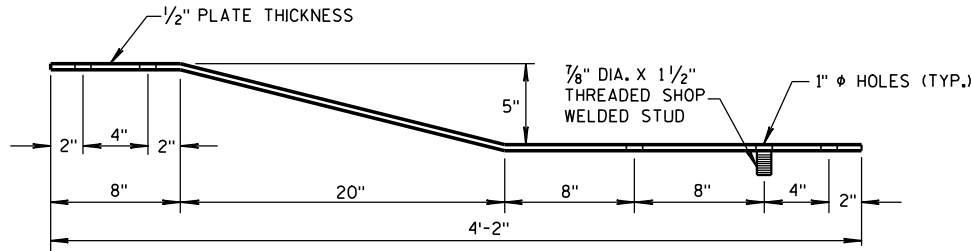
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

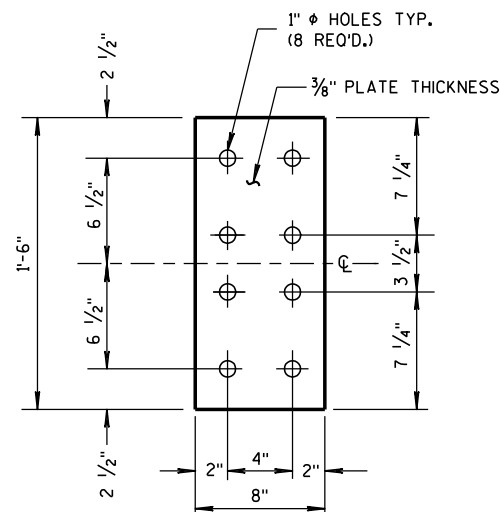
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



FRONT VIEW

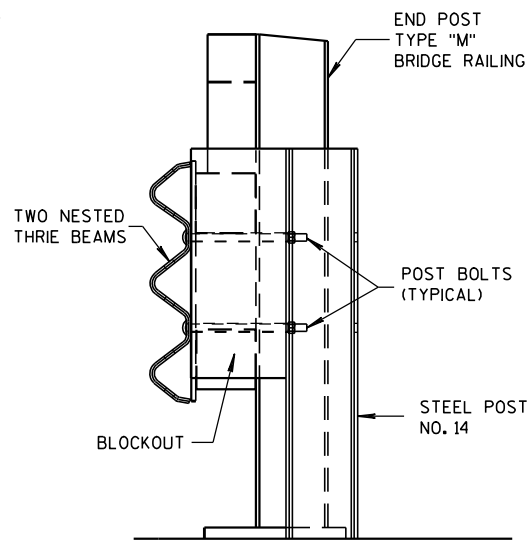


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

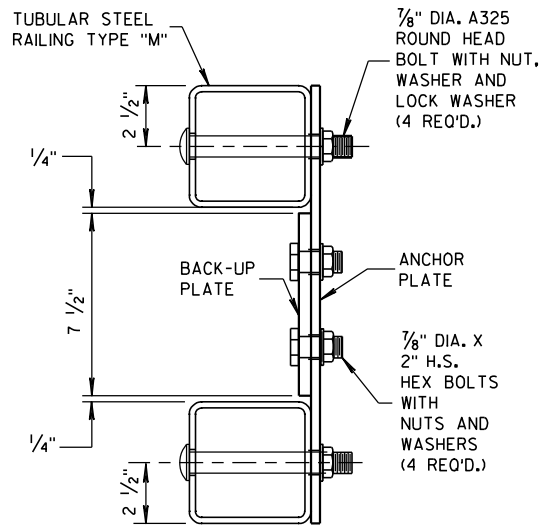


FRONT VIEW

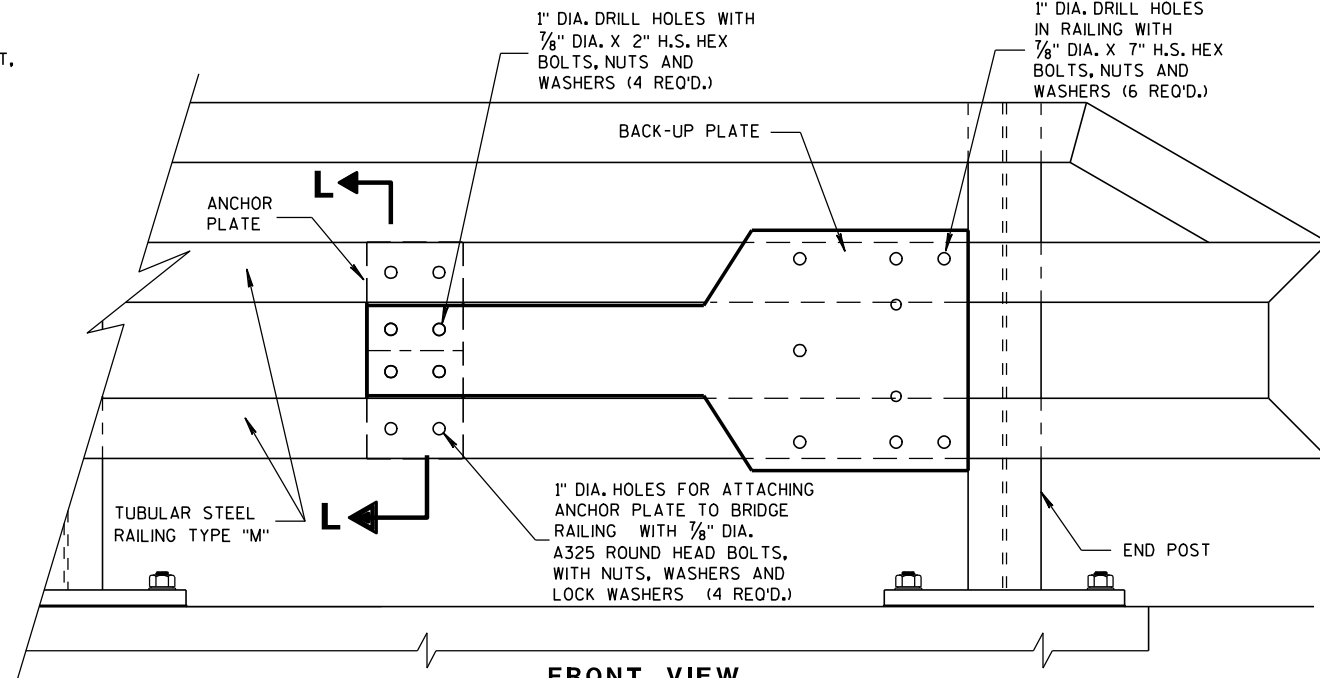
ANCHOR
PLATE DETAIL,
TYPE "M"



SECTION M-M

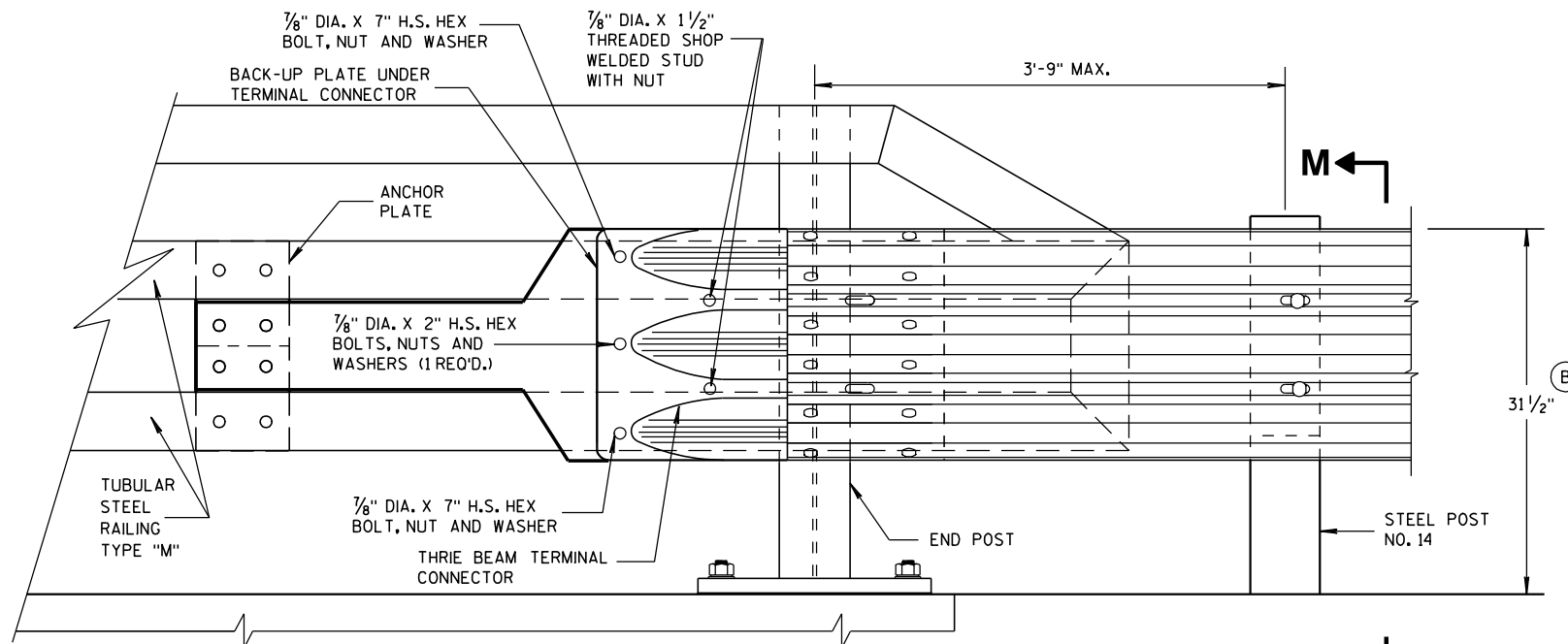


SECTION L-L

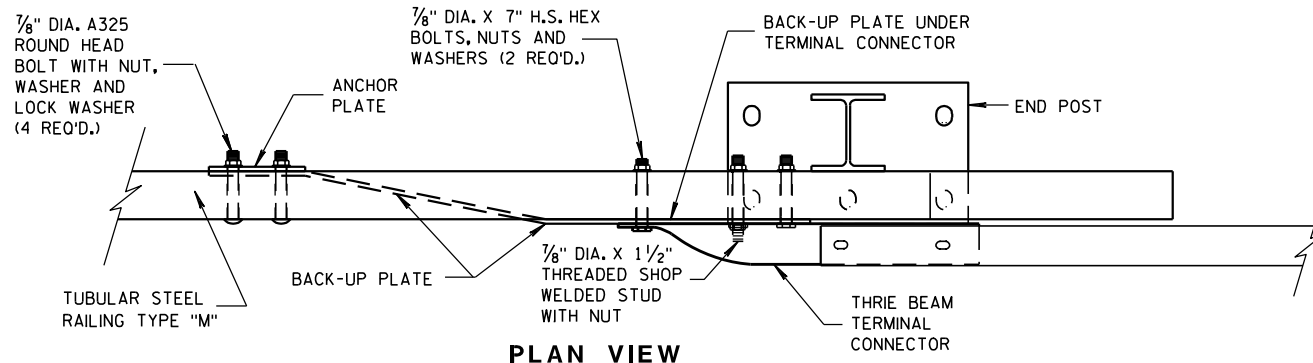


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

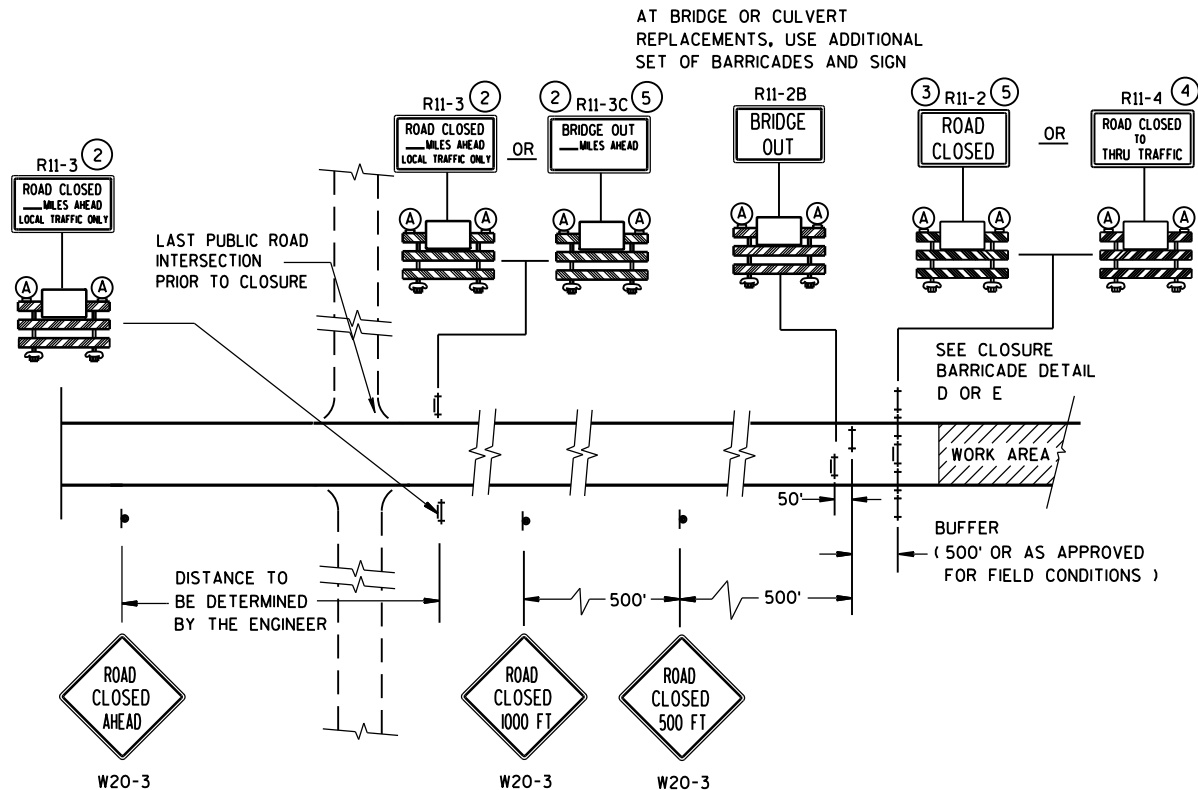
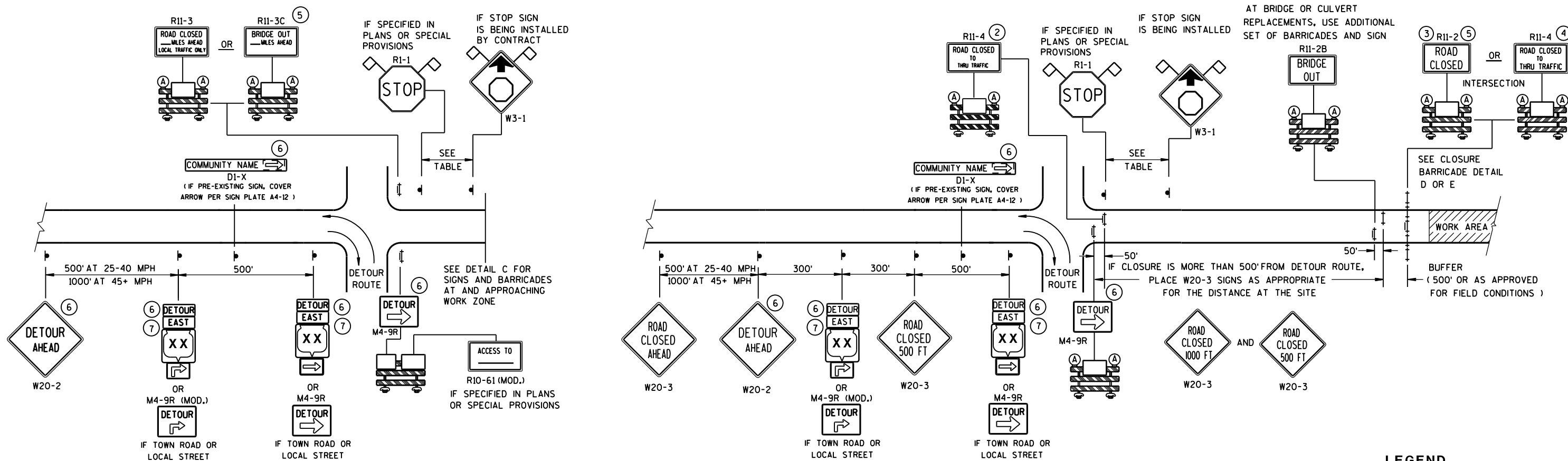
APPROVED

8-31-2012

DATE

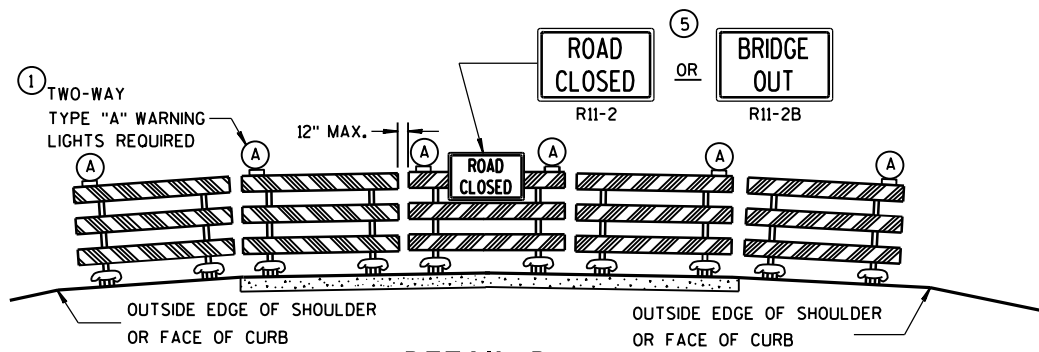
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

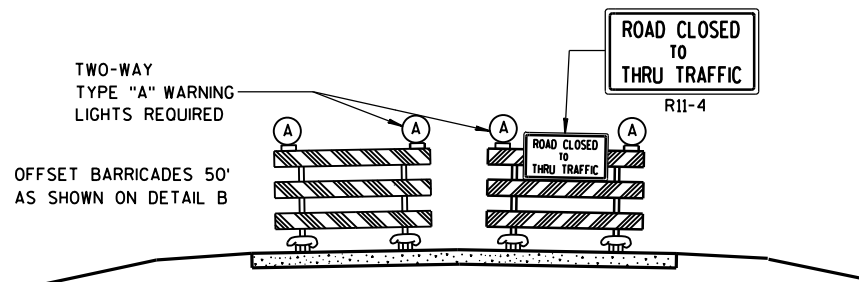


SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

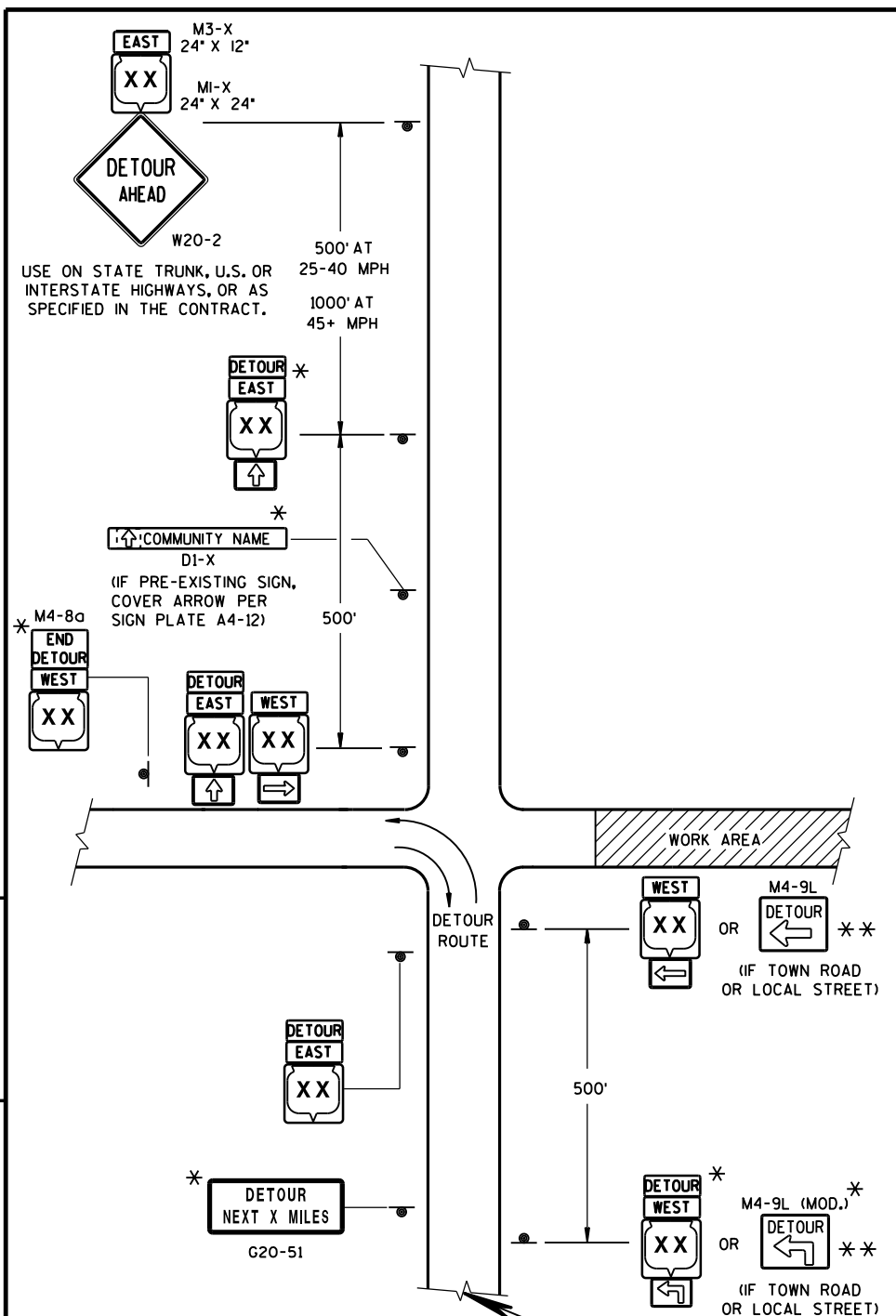
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" 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.)
- 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 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 LANE 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
MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



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

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.

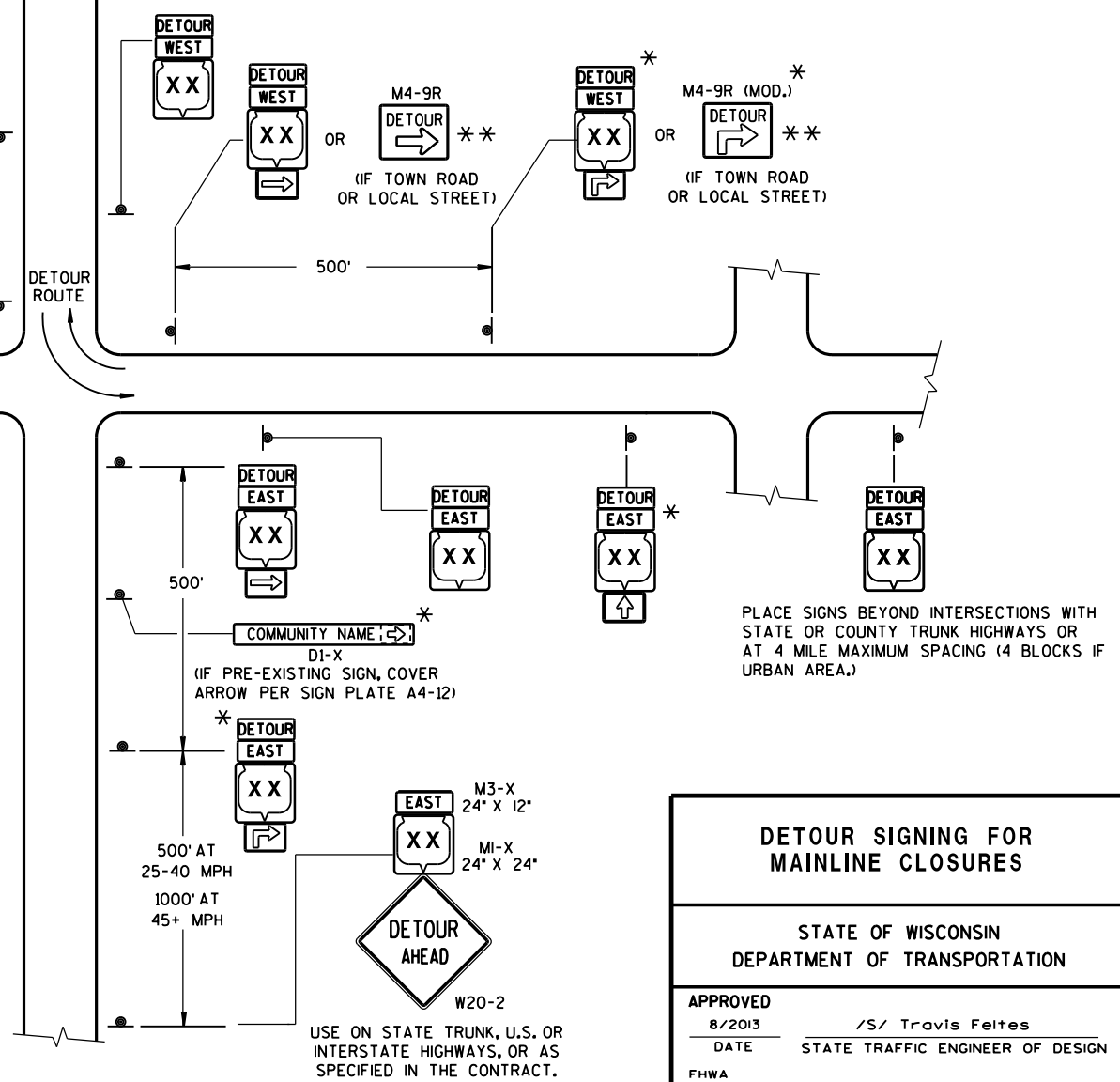
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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". (30" X 15" 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 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

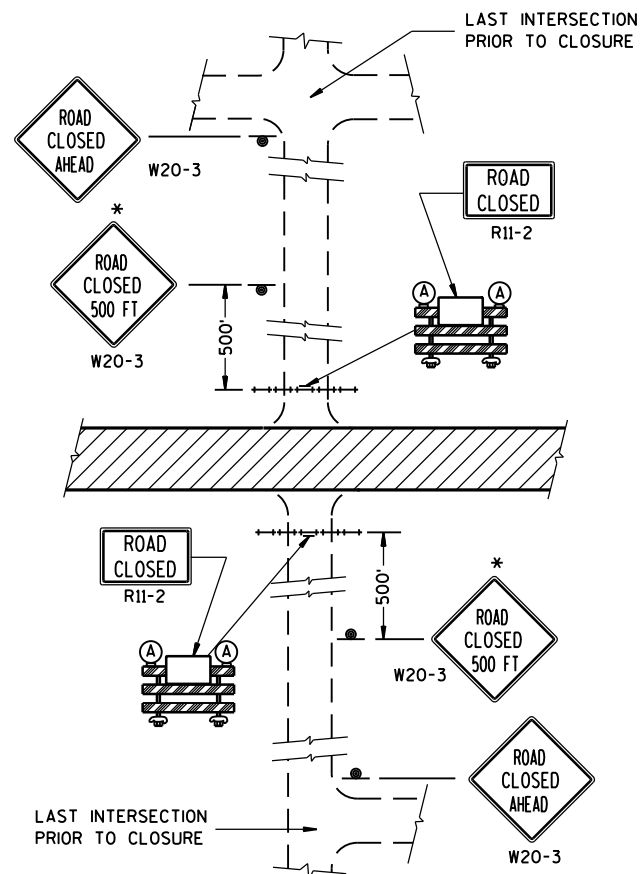
* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** 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.

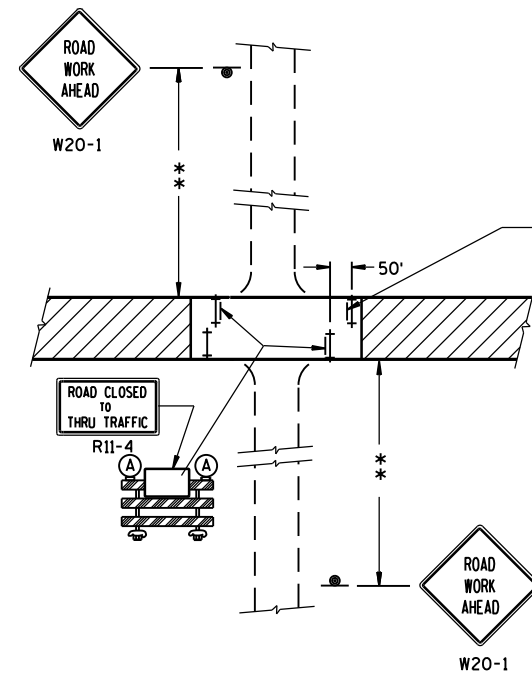


DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

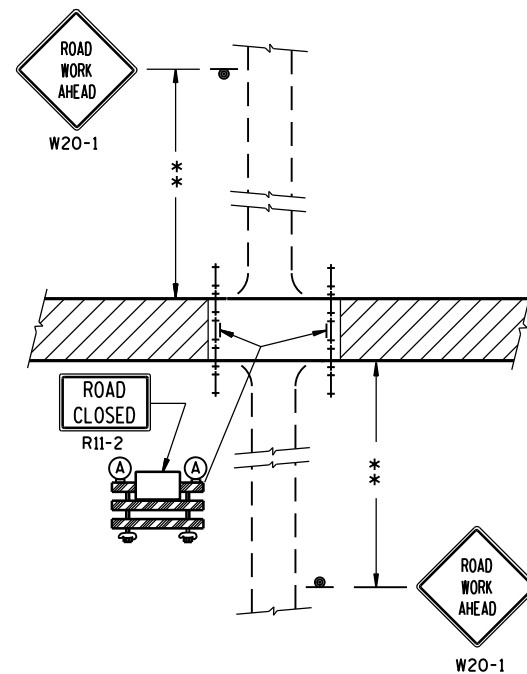
- LEGEND**
- SIGN ON PERMANENT SUPPORT
 - WORK AREA
 - M4-8
M3-X
 - MI-4
MI-5A
MI-6
 - M05-1
M06-1
M06-1



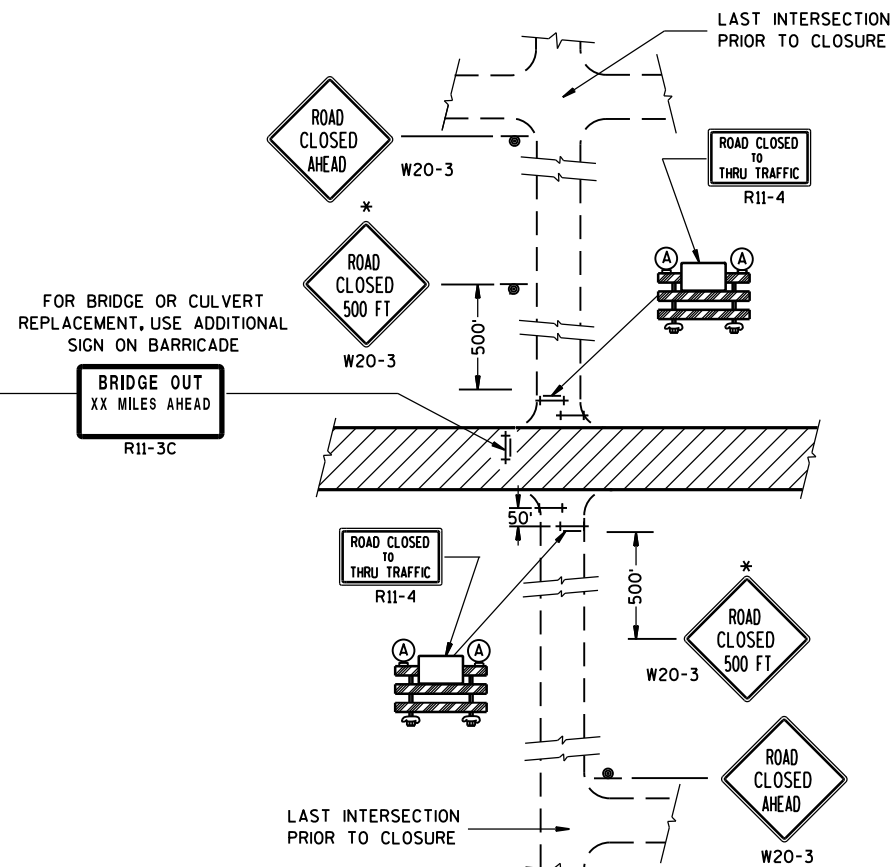
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

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.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

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 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

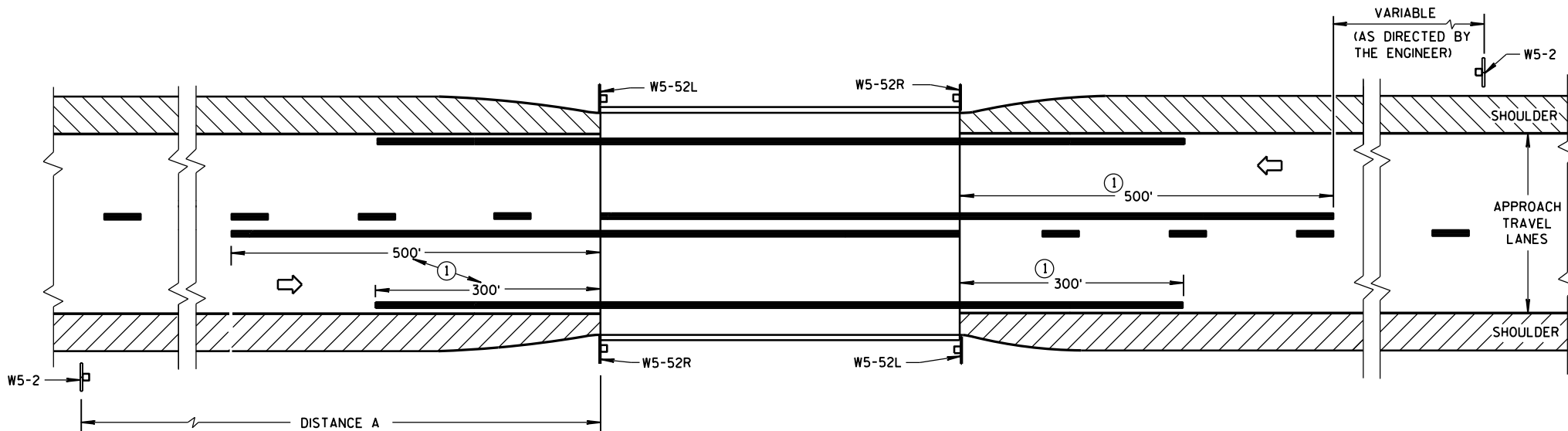
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 /S/ Travis Feltes

DATE STATE TRAFFIC ENGINEER OF DESIGN

FHWA



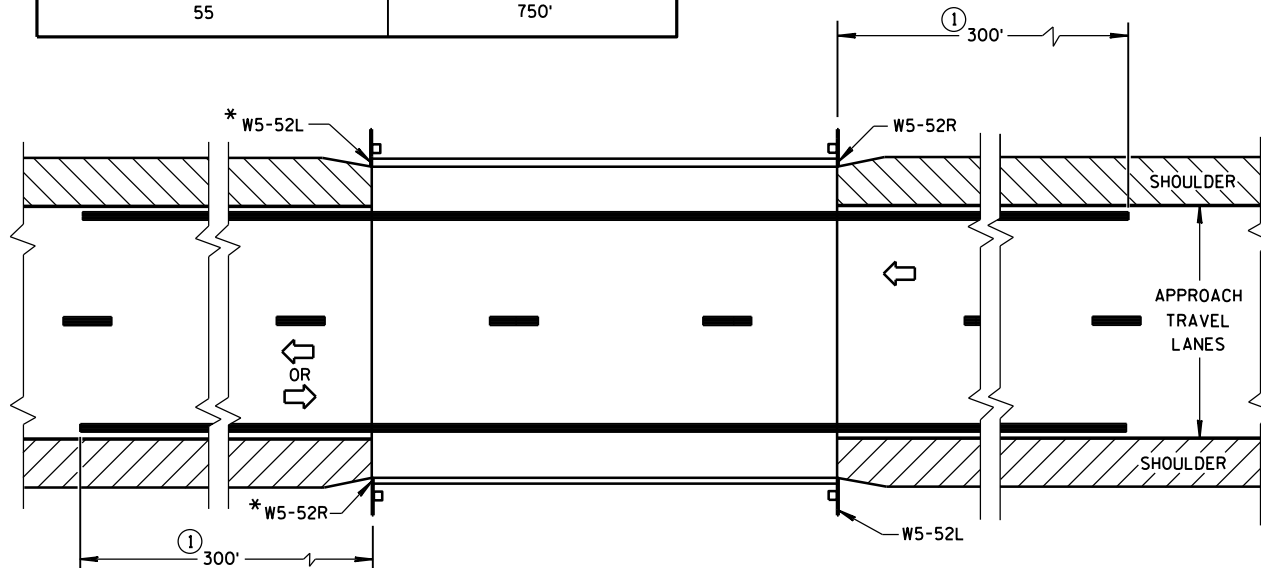
SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

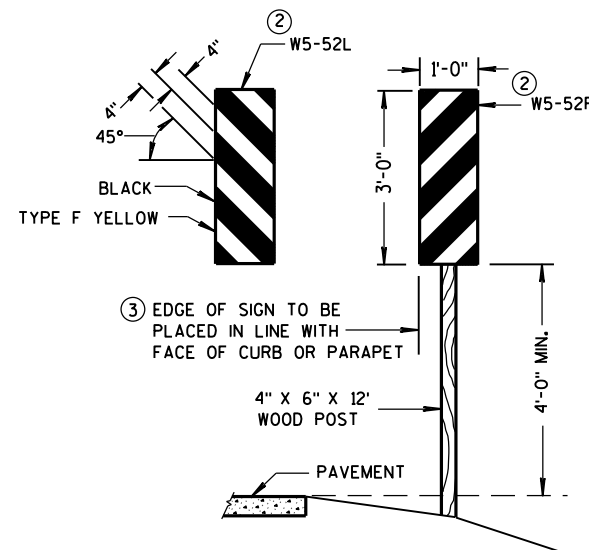


*OMIT ON ONE-WAY TRAVELLED WAYS

SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.



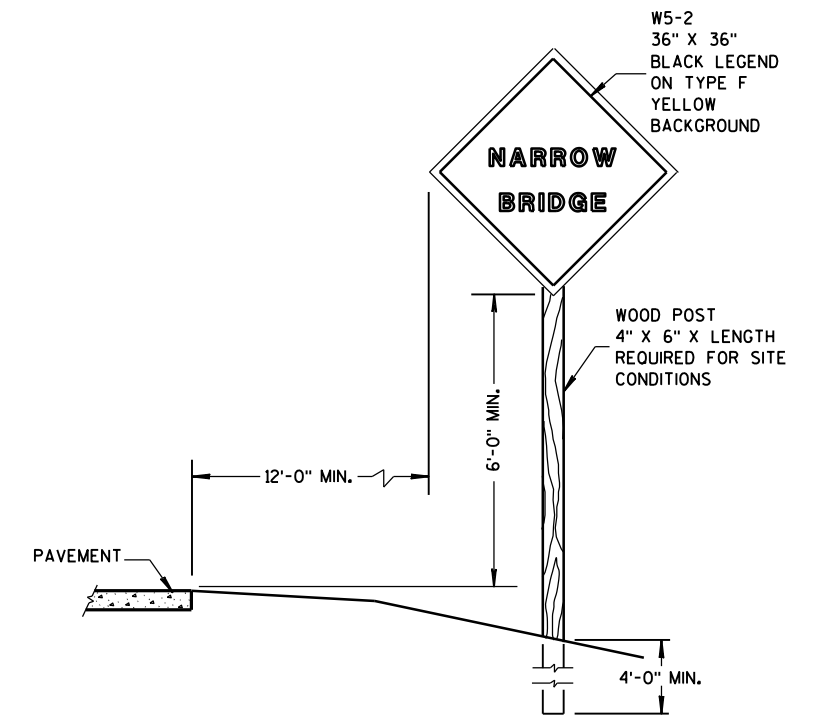
OBJECT MARKER PLACEMENT

GENERAL NOTES

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

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

- ① MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.
- ② FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.
- ③ LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.



SIGN PLACEMENT

SIGNING & MARKING FOR TWO LANE BRIDGES

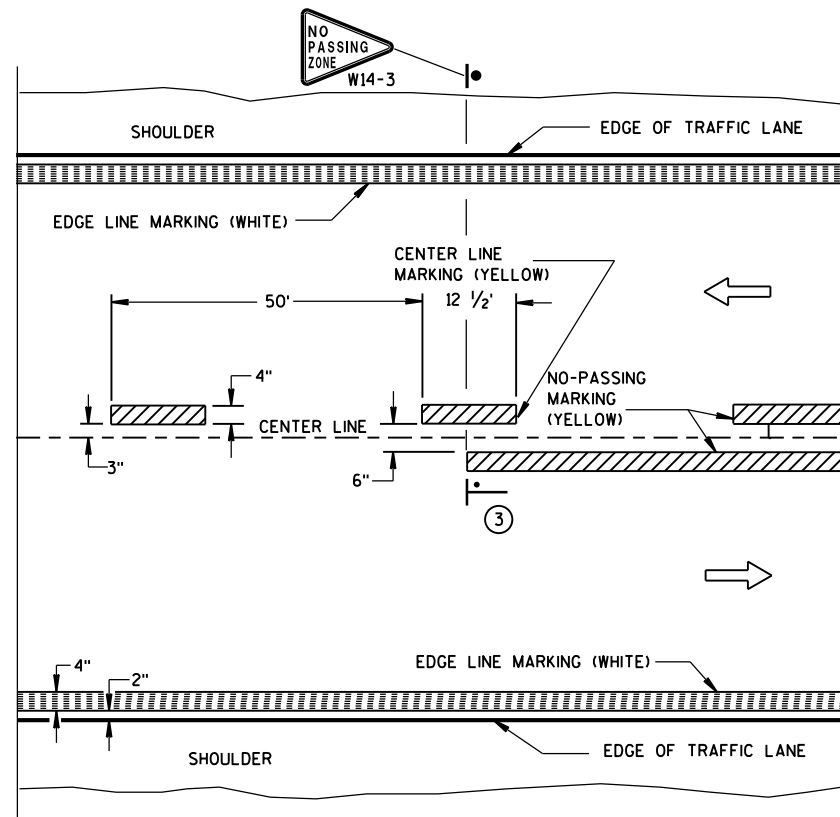
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

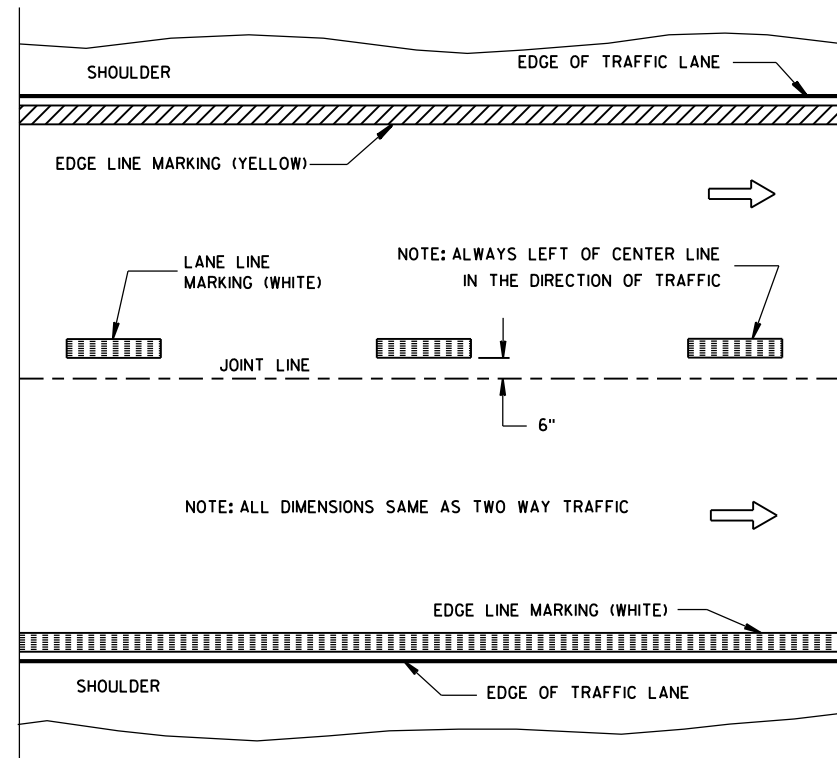
3-2014
DATE

FHWA

/S/ Travis Fettes
STATE TRAFFIC ENGINEER OF DESIGN

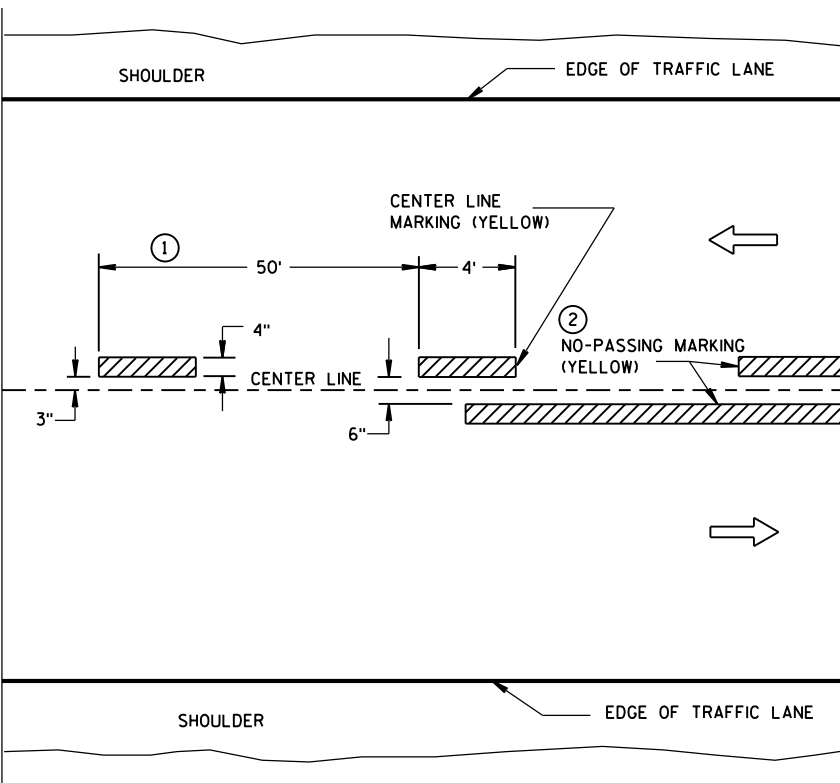


TWO WAY TRAFFIC

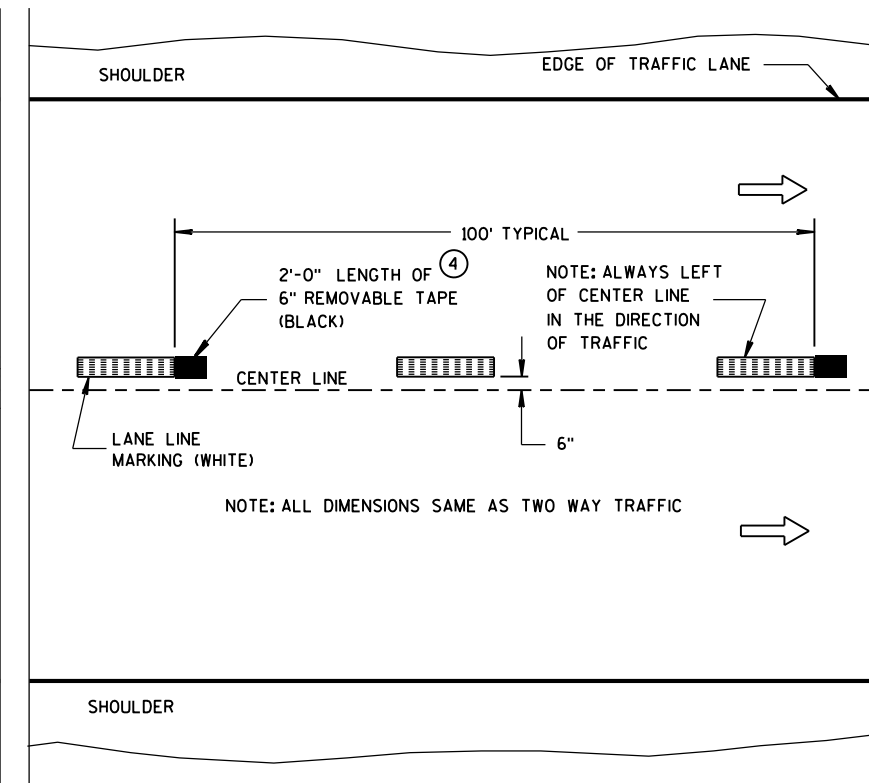


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

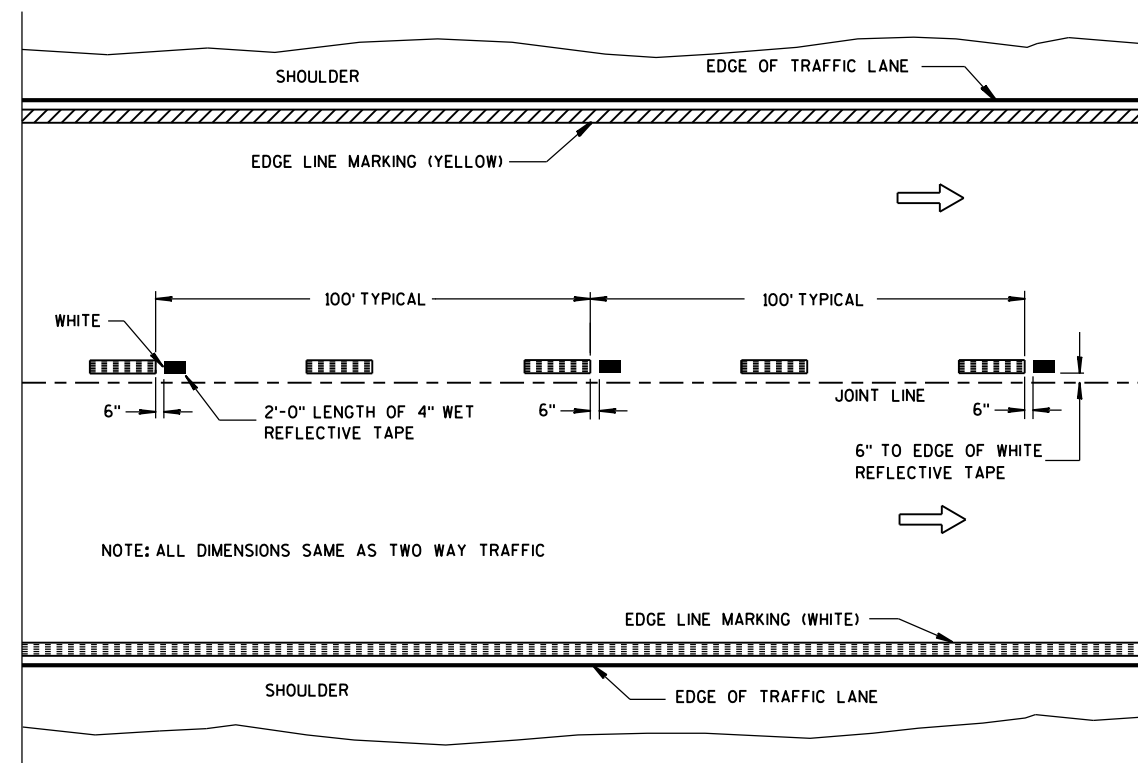
GENERAL NOTES

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

- ① HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- ② NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
- ③ NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- ④ CONCRETE ONLY.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

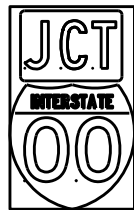
PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

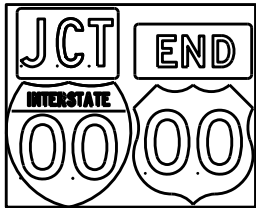
APPROVED
5-13-2013
DATE
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

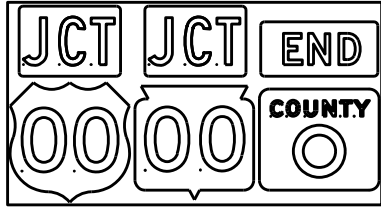
TYPICAL ASSEMBLIES



J1-1



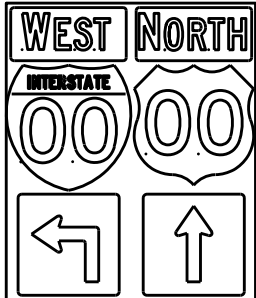
J1-2



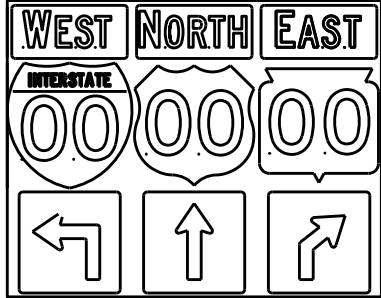
J1-3



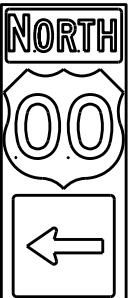
J2-1



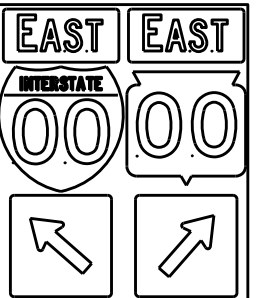
J2-2



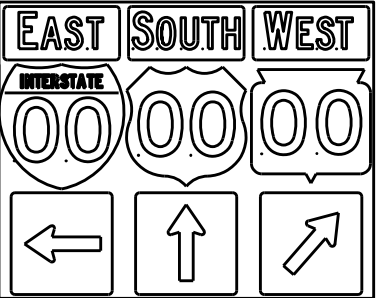
J2-3



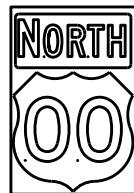
J3-1



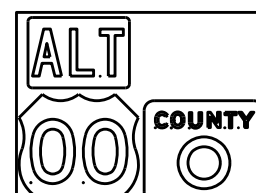
J3-2



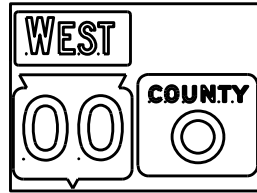
J3-3



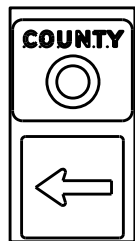
J4-1



J4-2



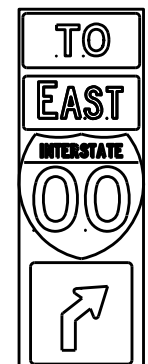
J4-2



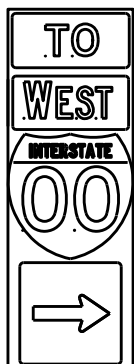
J13-1



J12-1



J32-1



J33-1



J23-1

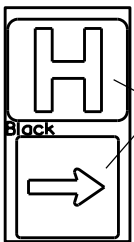


J22-1



JV

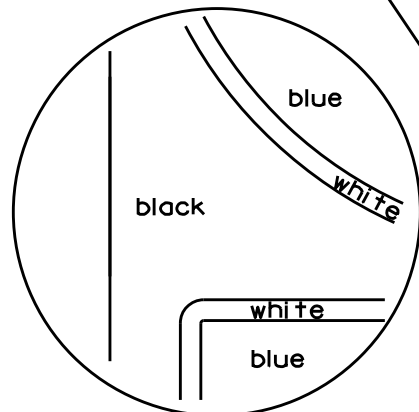
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

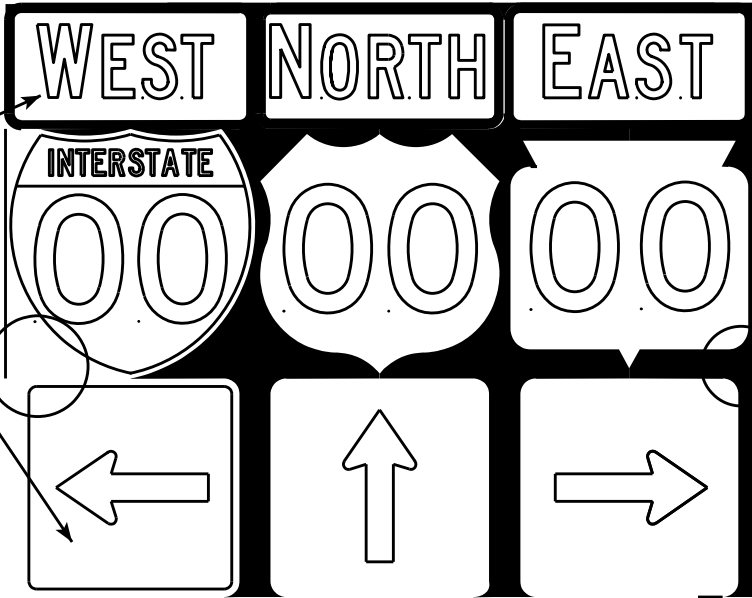
Blue Background

blue background
with interstate



NOTES

- Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Black Non-reflective
Message - see Note 5
- Message Series - See Note 5
- Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
- The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
- Certain marker heads require the component pieces to be the same color. As an example, all the components used with an MI-1 Interstate marker shall be blue.
- Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
- Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- All Vertical J Assemblies are given a Sign Code of JV
- For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.



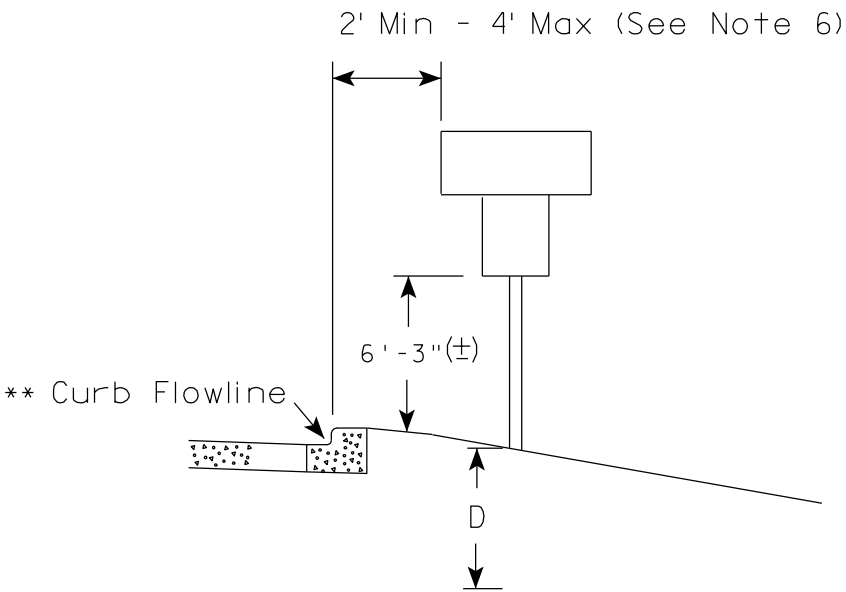
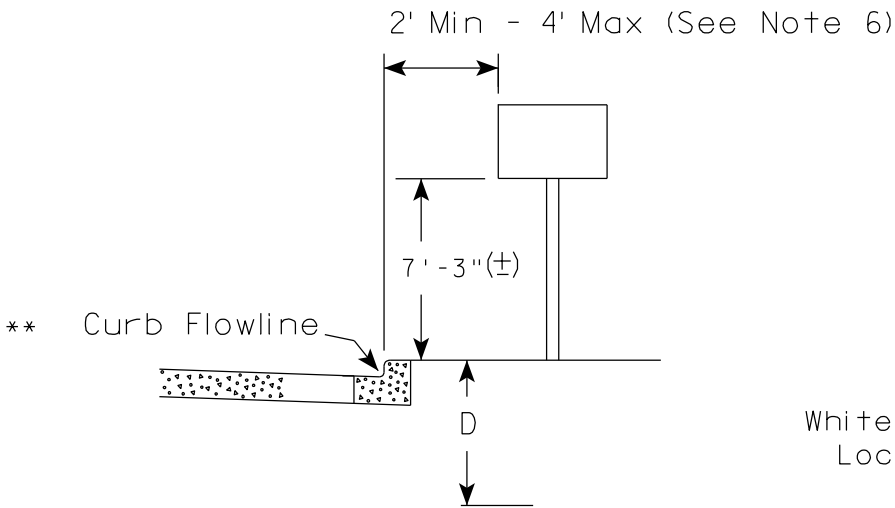
ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

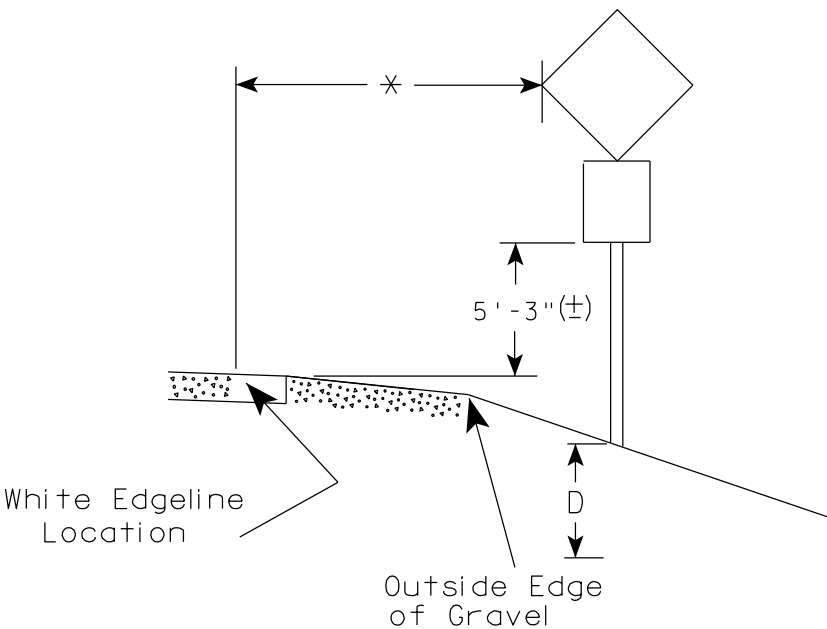
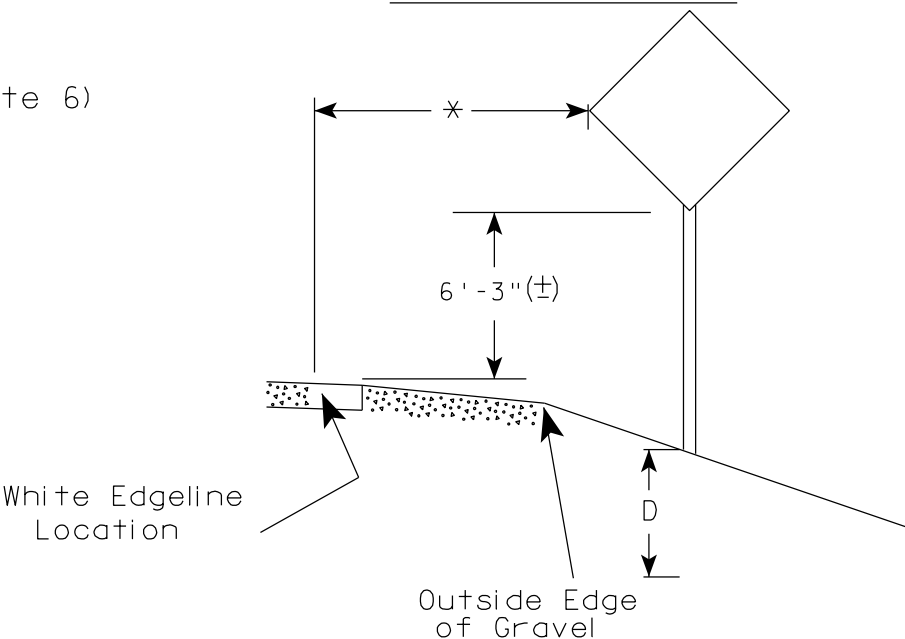
APPROVED *Matthew R. Raub*
for State Traffic Engineer

DATE 2/06/14 PLATE NO. A2-1S.8

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-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" (±).

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.

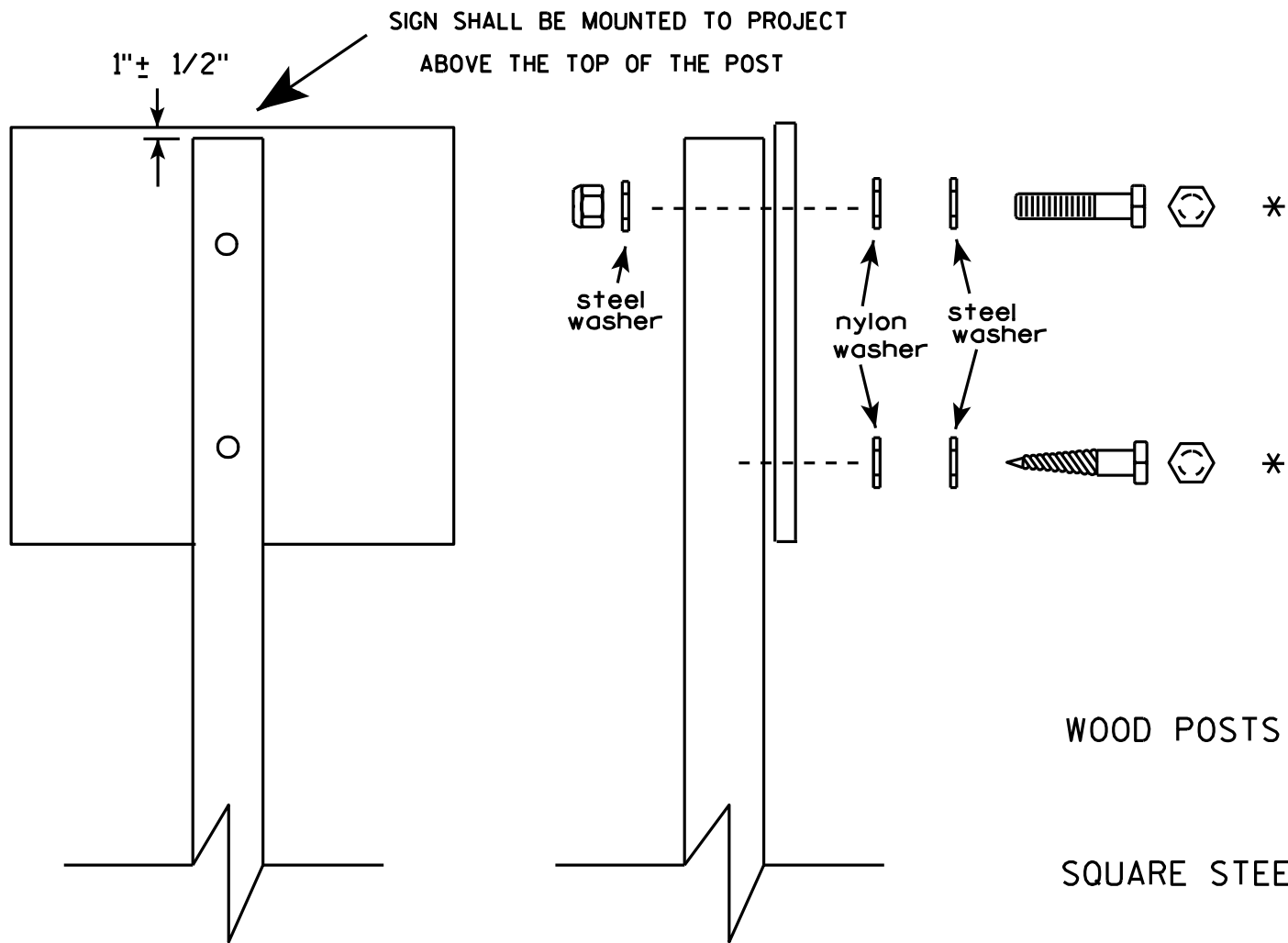
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-3.19

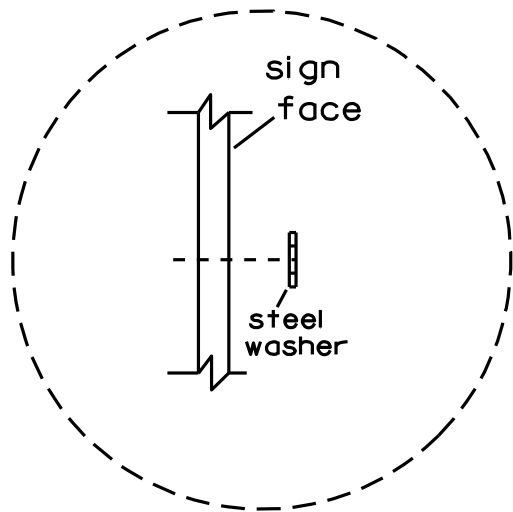


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- 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.

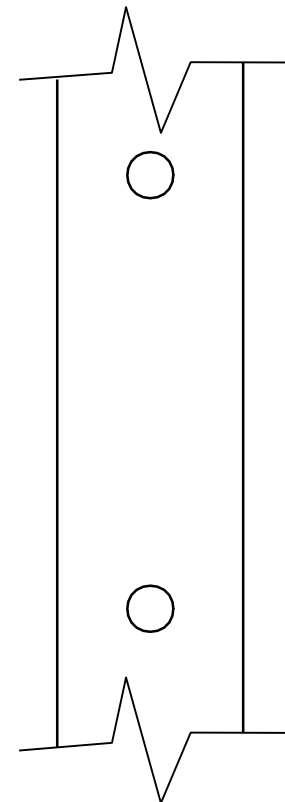
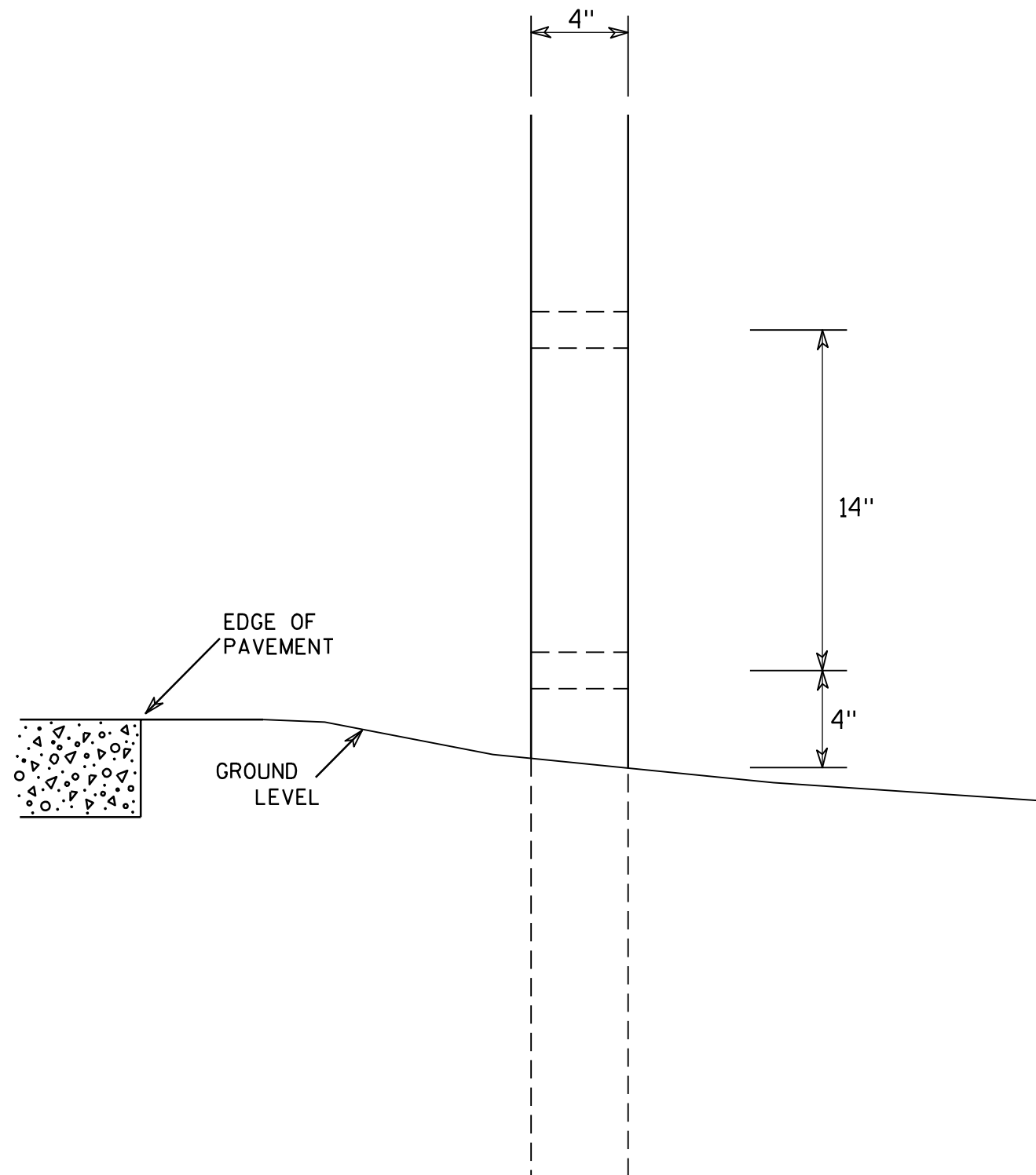
- WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
1-1/4" O.D. X 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.



Washer Placement when Sign Has Other Than Type H or Type F Face

* 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 3/23/10	PLATE NO. A4-8.7



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

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: 7391-02-70

HWY: CTH B

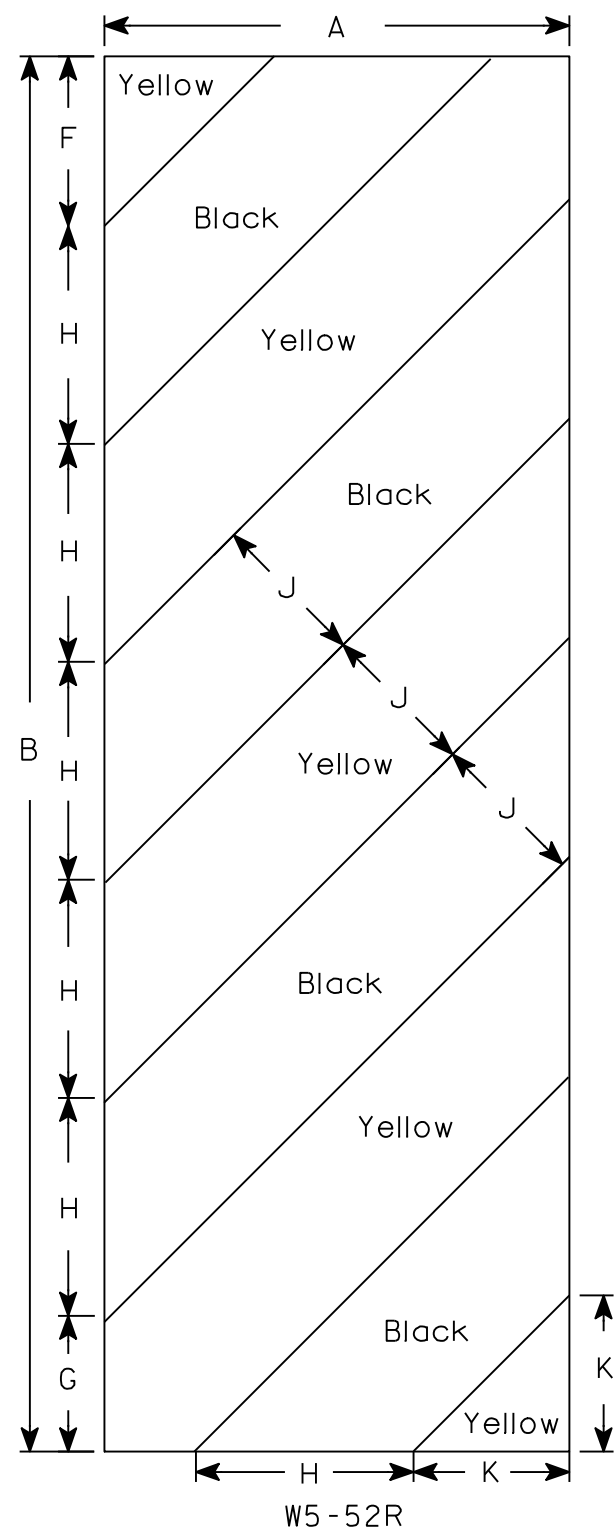
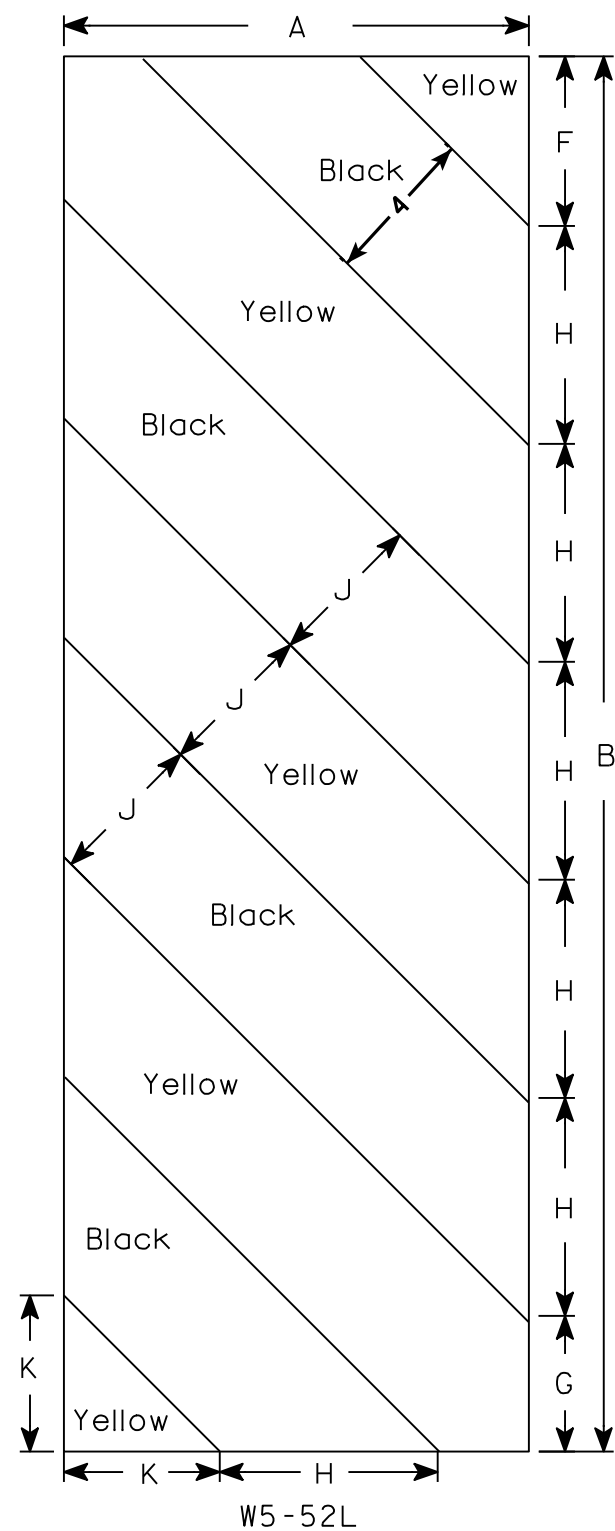
COUNTY: WOOD

SIGNS

SHEET NO:

E

7



NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Yellow
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. Alternate colors of stripes as shown.

7

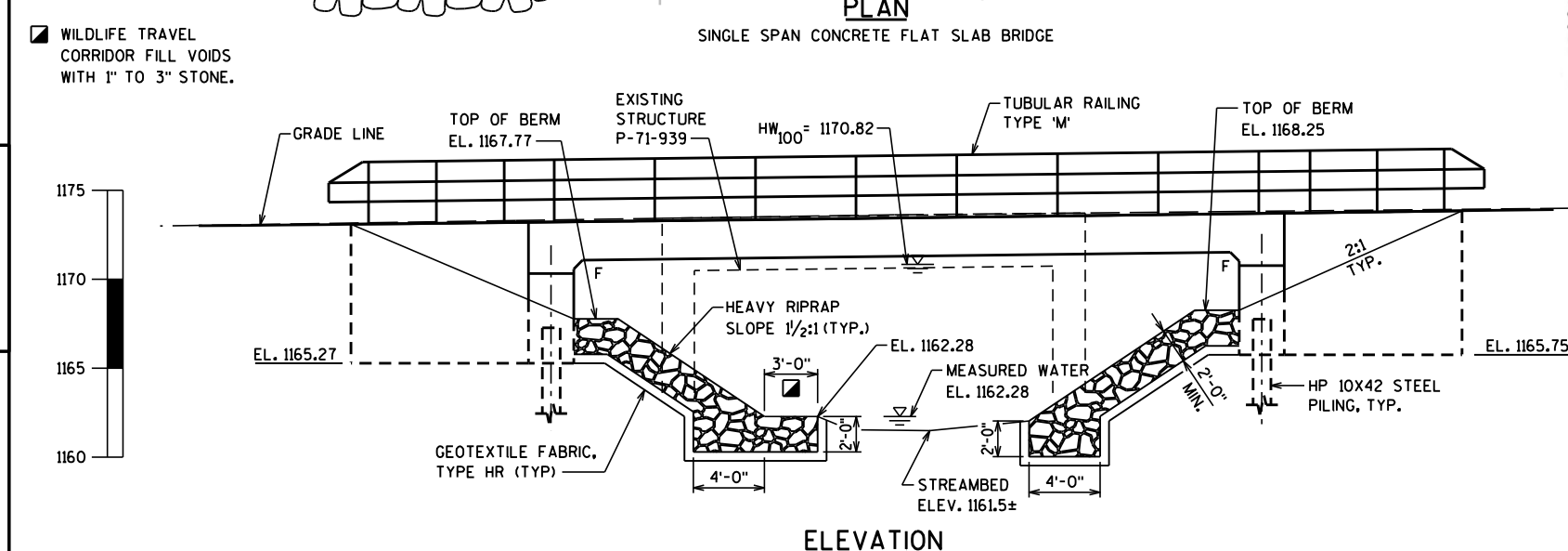
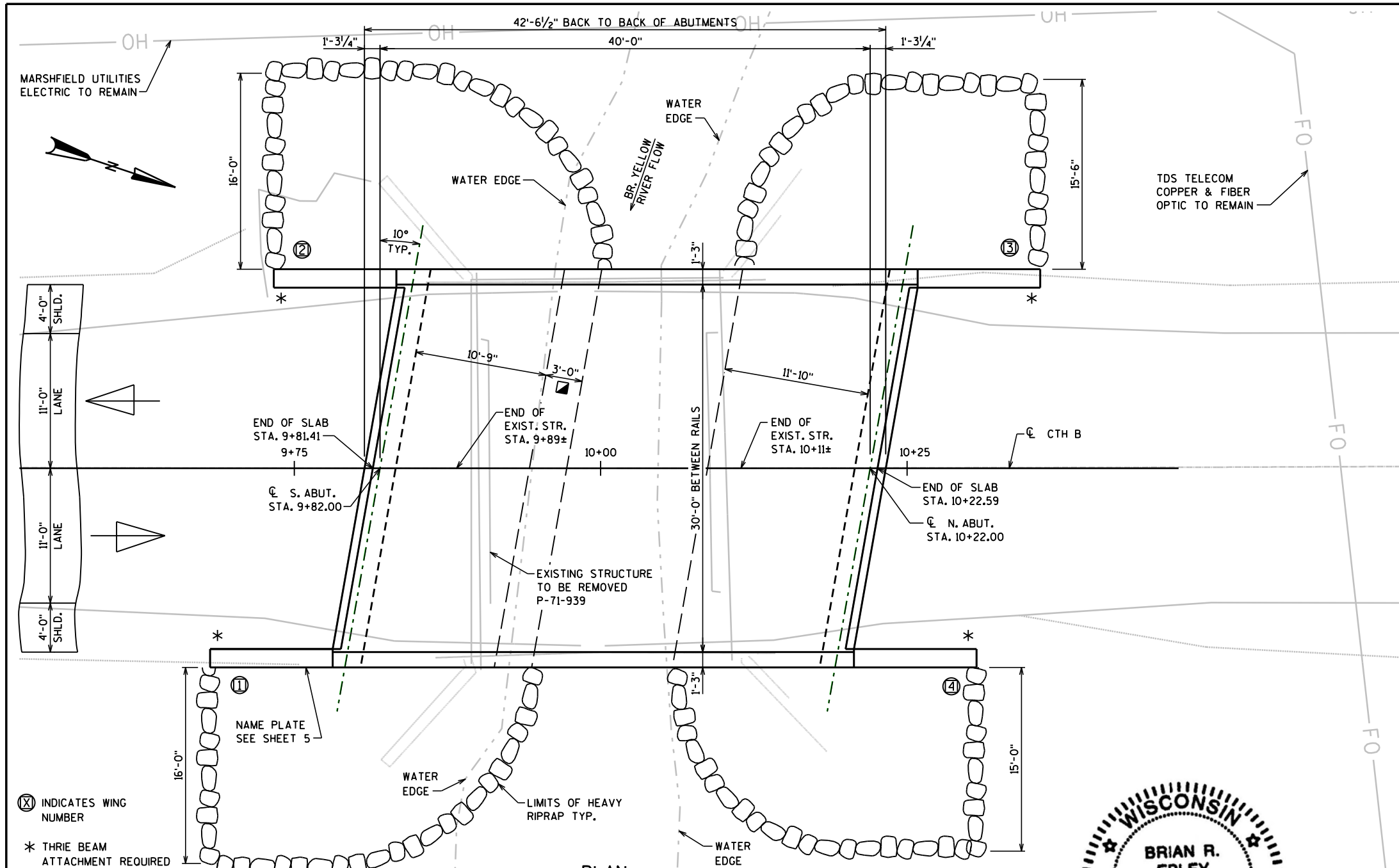
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
2M	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
3	18	54				6	5 1⁄2	8 1⁄2	45°	6	6 5⁄6																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9



TRAFFIC DATA

ADT = 550 (2016)
610 (2036)
RDS = 35 M.P.H.

DESIGN DATA

STRUCTURE IS DESIGNED FOR FUTURE WEARING
SURFACE OF 20"/SQ. FT.

LIVE LOAD:

DESIGN LOADING _____ HL-93
INVENTORY RATING FACTOR _____ RF = 1.16
OPERATING RATING FACTOR _____ RF = 1.52
WISCONSIN STANDARD PERMIT
VEHICLE (Wis-SPV) _____ 250 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY _____
SUPERSTRUCTURE _____ f'c = 4,000 PSI
ALL OTHER _____ f'c = 3,500 PSI
HIGH STRENGTH BAR STEEL
REINFORCEMENT, GRADE 60 _____ fy = 60,000 PSI

HYDRAULIC DATA

Q100 _____ 1650 C.F.S.
VELOCITY _____ 9.73 F.P.S.
HIGH WATER _____ EL. 1170.82 (100 YEAR)
HIGH WATER _____ EL. 1166.23 (2 YEAR)
WATERWAY AREA _____ 170 S.F.
DRAINAGE AREA _____ 3.9 SQ. MILES
OVERTOPPING FREQUENCY = N/A
SCOUR CRITICAL CODE = 8

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING
DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS **
PER PILE. ESTIMATED LENGTH = 15' AT EACH ABUTMENT.

ALL PILES SHALL BE FITTED WITH PILE POINTS.

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



LIST OF DRAWINGS

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

CONSULTANT CONTACT

BRIAN EPLEY
OMNI ASSOCIATES, INC.
(920) 735-6900

BRIDGE OFFICE CONTACT

WILLIAM DREHER
(608) 266-8489

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
Omni ASSOCIATES			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED <i>William C. Dreher</i> ^{SOR}		11/04/15	DATE
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-71-193			
CTH B OVER BR. YELLOW RIVER			
COUNTY	WOOD	TOWN	ROCK
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS		LOAD HL-93
DESIGNED BY	BRE	CK'D. KRO	DRAWN BY BRE
PLANS CK'D. KRO			
GENERAL PLAN			SHEET 1 OF 9

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

THE CHANNEL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

THIS BRIDGE WILL REPLACE THE EXISTING CONCRETE DECK ON CAST IN PLACE CONCRETE GIRDER BRIDGE SUPPORTED ON STONE RETAINING ABUTMENTS. THE STRUCTURE WAS BUILT IN 1930. THE BRIDGE WAS WIDENED IN 1960 WITH STEEL GIRDERS ON CONCRETE RETAINING ABUTMENTS.

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

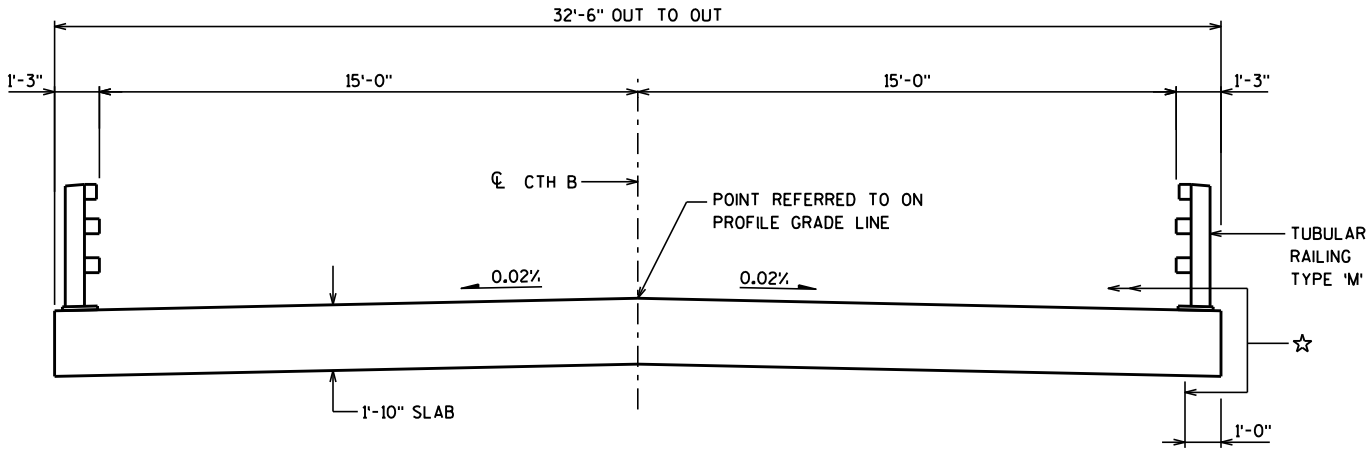
BENDING DIMENSIONS FOR REINFORCING ARE OUT TO OUT.

AT THE BACKFACE OF ABUTMENTS, ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP, SIDES, AND 1'-0" OF THE UNDERSIDE OF THE DECK.

ALL VOIDS BETWEEN HEAVY RIPRAP IN WILDLIFE TRAVEL CORRIDOR SHALL BE FILLED USING 1" TO 3" STONE, INCIDENTAL TO HEAVY RIPRAP IN ACCORDANCE WITH THE SPECIAL PROVISION.



CROSS SECT. THRU RDWY.
LOOKING UPSTATION

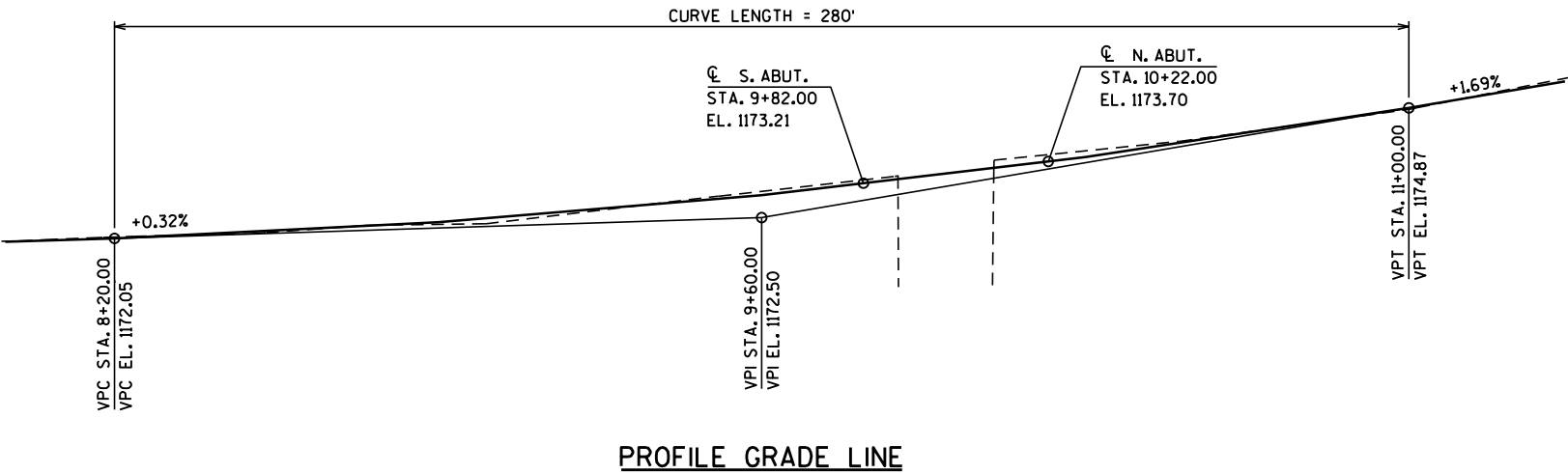
☆ APPLY PROTECTIVE
SURFACE TREATMENT

BENCH MARKS (NAVD 88)

NO.	STATION	DESCRIPTION	ELEV.
BM15	9+06, 33' LT.	SPIKE IN POWER POLE	1169.41
BM16	11+26, 40' LT.	SPIKE IN POWER POLE	1167.95
BM17	12+89, 41' LT.	SPIKE IN POWER POLE	1174.45

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	NORTH ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STA 10+02)	LS	1	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-71-193)	LS	1	-----	-----	1
210.0100	BACKFILL STRUCTURE	CY	-----	76	76	152
502.0100	CONCRETE MASONRY BRIDGES	CY	97	31	31	159
502.3200	PROTECTIVE SURFACE TREATMENT	SY	176	-----	-----	176
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	-----	1,910	1,910	3,820
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	17,860	1,390	1,390	20,640
513.4061	RAILING TUBULAR TYPE M (B-71-193)	LF	130	-----	-----	130
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-----	9	9	18
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	-----	75	75	150
550.0500	PILE POINTS	EACH	-----	5	5	10
606.0300	RIPRAP HEAVY	CY	-----	98	88	187
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	-----	60	60	120
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	-----	147	133	280
	NON-BID ITEMS					
	FILLER	SIZE	---	---	---	1/2" & 3/4"



PROFILE GRADE LINE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-71-193			
	DRAWN BY	BRE	PLANS CK'D. KRO
CROSS SECTION & QUANTITIES		SHEET 2 OF 10	

ABBREVIATIONS
F—Fine M—Medium C—Coarse
Ws—Weathered So—Sound

MATERIAL SYMBOLS
Topsoil Silt Sandstone
Sand Peat Limestone
Gravel Clay Igneous Rock

LEGEND OF PROBING
Probing No.
Sta.
Elevation
95/6=95 Blows for 6"
Penetration
Probing taken with a
350*wt.
Falling 18" on a 2"
O.D. Point.
7 Average Blows Per Foot
Refusal 95/6

LEGEND OF BORING
Boring No.
Sta.
Elev.
Unconfined
Strength—7.7
Blows Per Ft.
Using 140* Wt.
Falling 30"
Wash Sample
Shelby Tube — S.T.
Ground Water
Elevation
No Ground Water
Observed Above
This Elevation
Sandy Gravel
F.
Boulders or
Cobbles
Sand
Silty Clay
So
Limestone

Unless otherwise specified, the blows per foot at the locations indicated are based on driving a 0.0x1.4" I.D. split spoon sampler with a 140* hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

SUBSURFACE EXPLORATION FOR FOUNDATION
DESIGN AND BIDDERS INFORMATION

To obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing. The data presented herein represents the findings of the subsurface explorations made. However, because the depths investigated are limited and the area of the borings and/or soundings is very small in relation to the entire area, the Division of Highways does not warrant conditions below the depths investigated or that the classification of material encountered in these investigations is necessarily typical of the entire site.

NO.	DATE	REVISION	BY
-----	------	----------	----

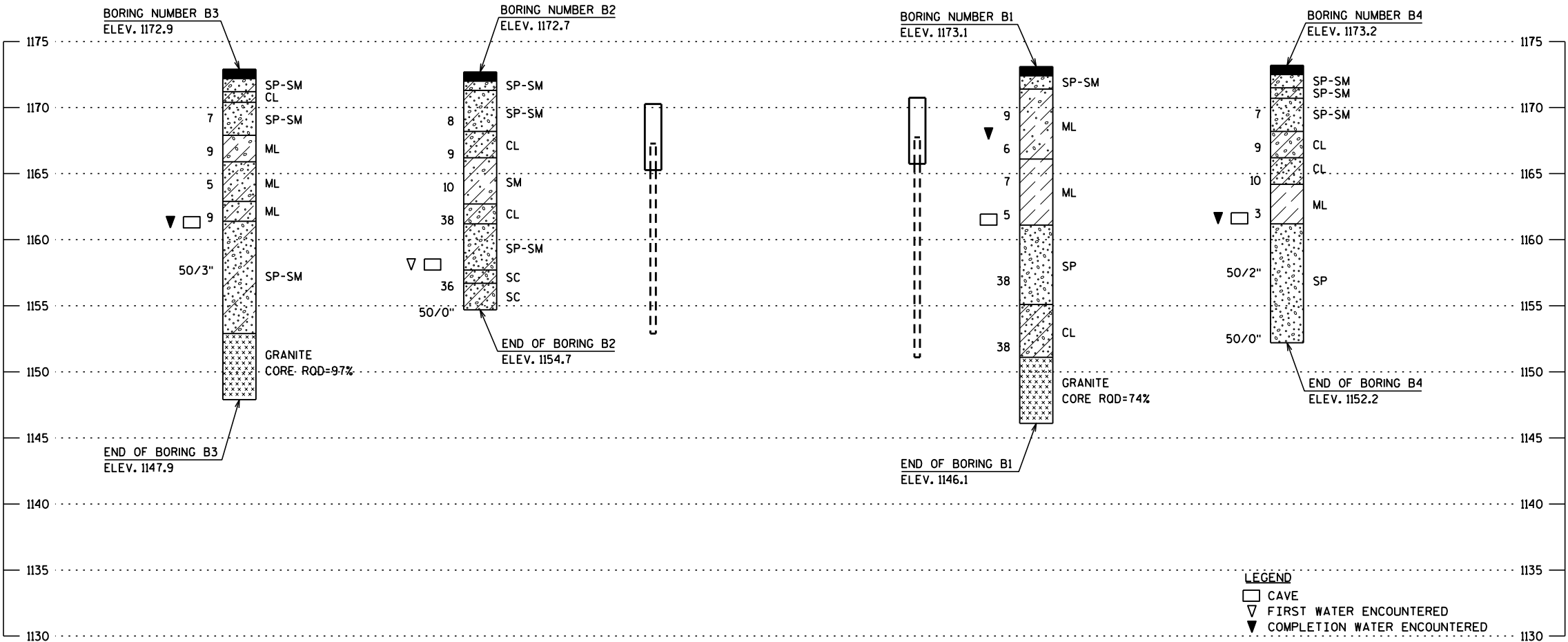
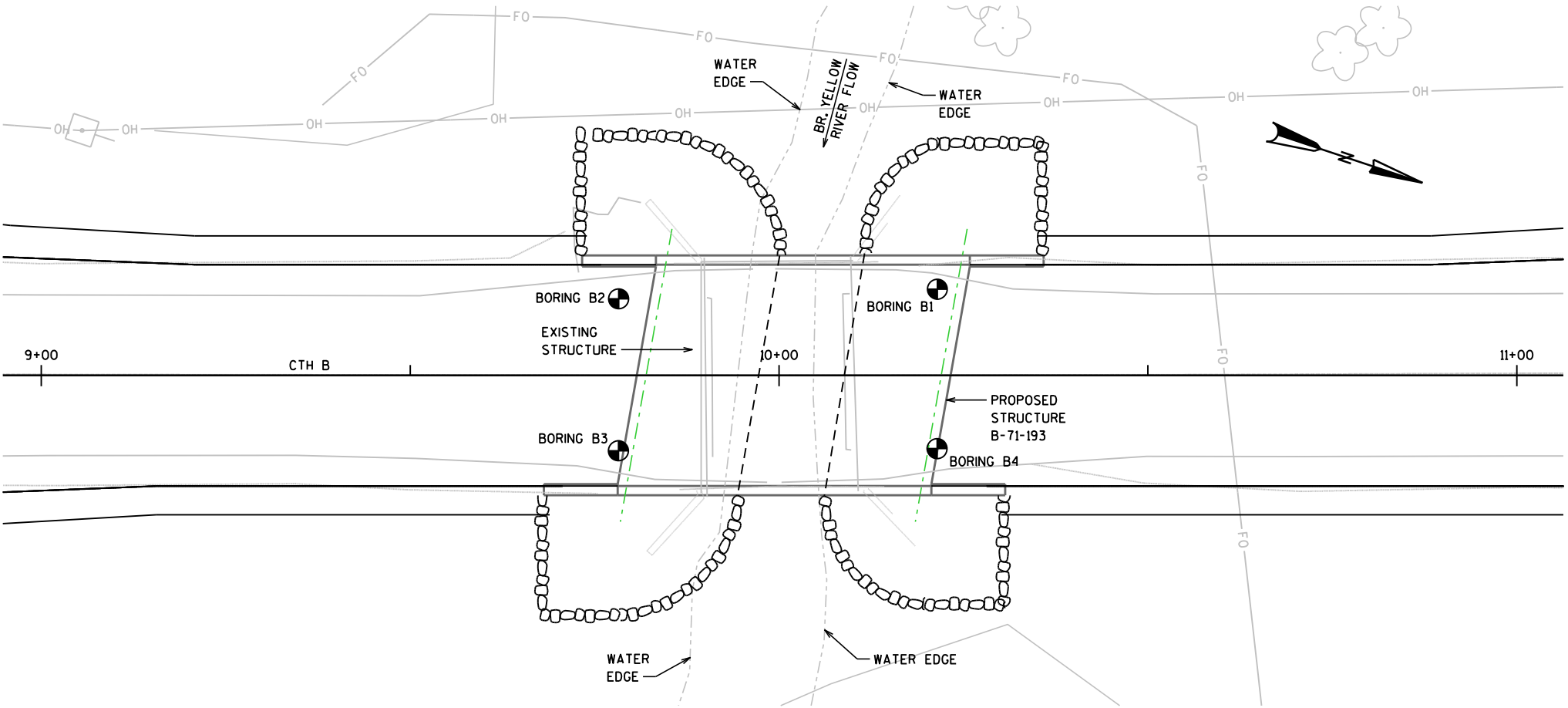
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-71-193

DRAWN BY BRE PLANS CK'D. KRO

SUBSURFACE
EXPLORATION

SHEET 3 OF 10



LEGEND
CAVE
FIRST WATER ENCOUNTERED
COMPLETION WATER ENCOUNTERED

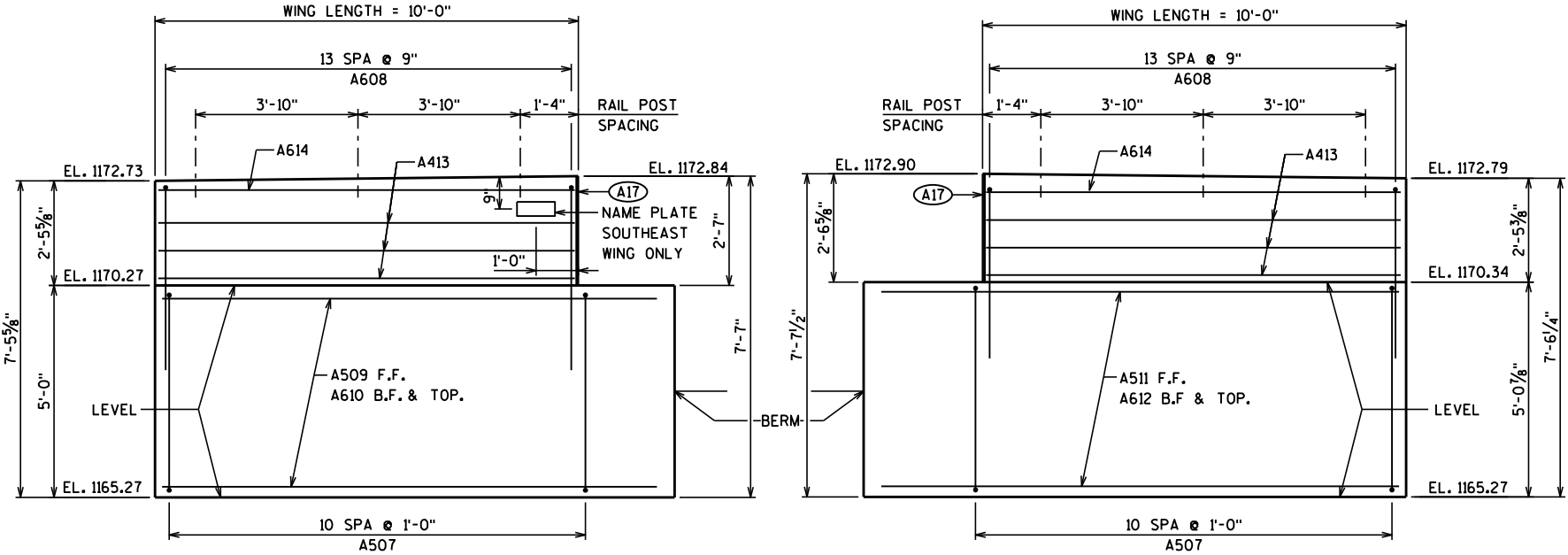


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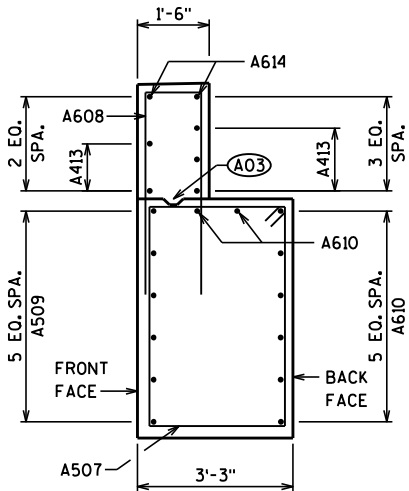
HORIZ. BARS NOT OTHERWISE
IDENTIFIED ARE A604 BARS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-71-193			
DRAWN BY		AAS	PLANS CK'D. BRE
SOUTH ABUTMENT		SHEET 4 OF 10	

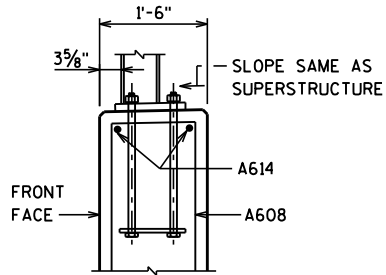


WING 1 ELEVATION

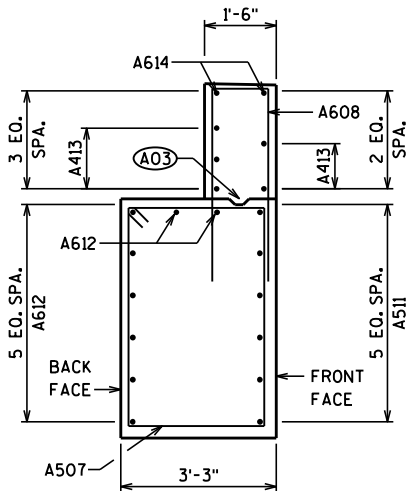
WING 2 ELEVATION



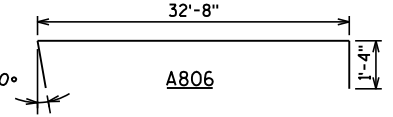
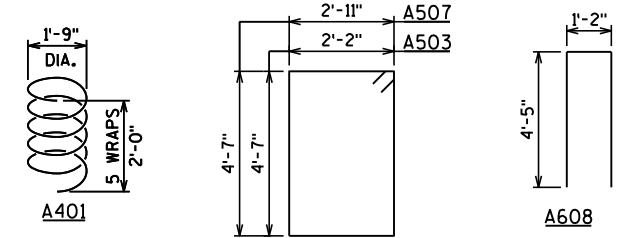
WING 1 SECTION



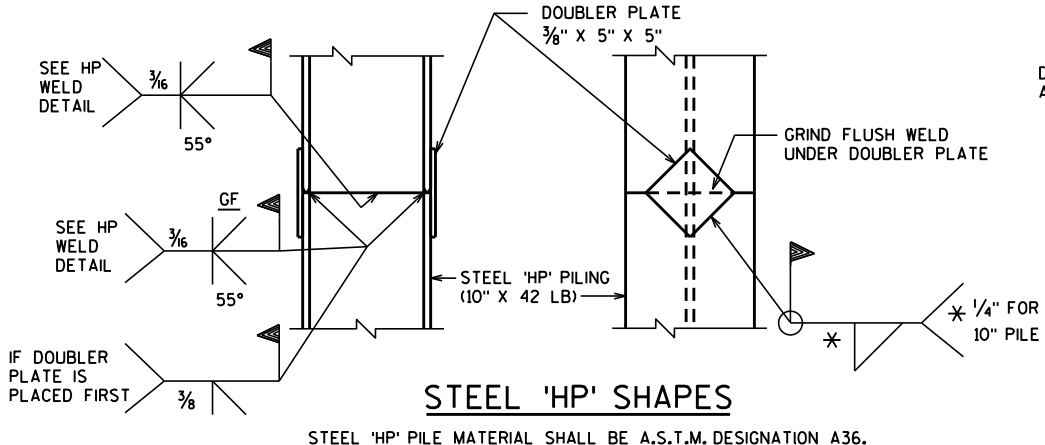
TYPE 'M' RAIL AT
TOP OF WING



WING 2 SECTION

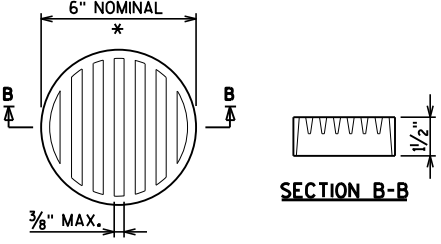


BAR BENDING DIAGRAMS



STEEL 'HP' SHAPES

HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR



RODENT SCREEN DETAIL

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

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

THE RODENT SCREEN 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 SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

- LEGEND**
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" x 6", (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
 - (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.) EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A401		5	28'-0"	X	BODY - ONE PER PILE
A402		10	2'-3"		BODY - TWO PER PILE
A503		41	14'-2"	X	BODY - STIRRUPS
A604		11	32'-8"		BODY - HORIZONTAL
A505	X	32	2'-0"		BODY - VERTICAL, DOWEL
A806		7	34'-11"	X	BODY - HORIZONTAL B.F.
A507	X	22	15'-8"	X	WINGS - STIRRUPS
A608	X	28	9'-8"	X	WINGS - VERTICAL
A509	X	6	11'-11"		WING - HORIZONTAL, F.F. W1
A610	X	8	12'-2"		WING - HORIZONTAL, B.F. & TOP, W1
A511	X	6	12'-5"		WING - HORIZONTAL, F.F. W2
A612	X	8	11'-8"		WING - HORIZONTAL, B.F. & TOP, W2
A413	X	10	9'-7"		WINGS - HORIZONTAL
A614	X	4	9'-7"		WINGS - HORIZONTAL TOP

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-71-193			
DRAWN BY AAS		PLANS CK'D. BRE	
SOUTH ABUTMENT DETAILS		SHEET 5 OF 10	



(A01) KEYED CONST. JOINT FORMED BY BEVELED 2" x 6".

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN, SEE SHEET 7 FOR DETAILS.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.) EXTEND SEALER 3" BELOW CUTTER LINE AT INSIDE FACE.

(A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

(A22) B505 BARS AT 1'-0". THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

SEE SHEET 7 FOR BILL OF BARS, BAR BENDING DIAGRAMS AND PILE SPLICE DETAILS.

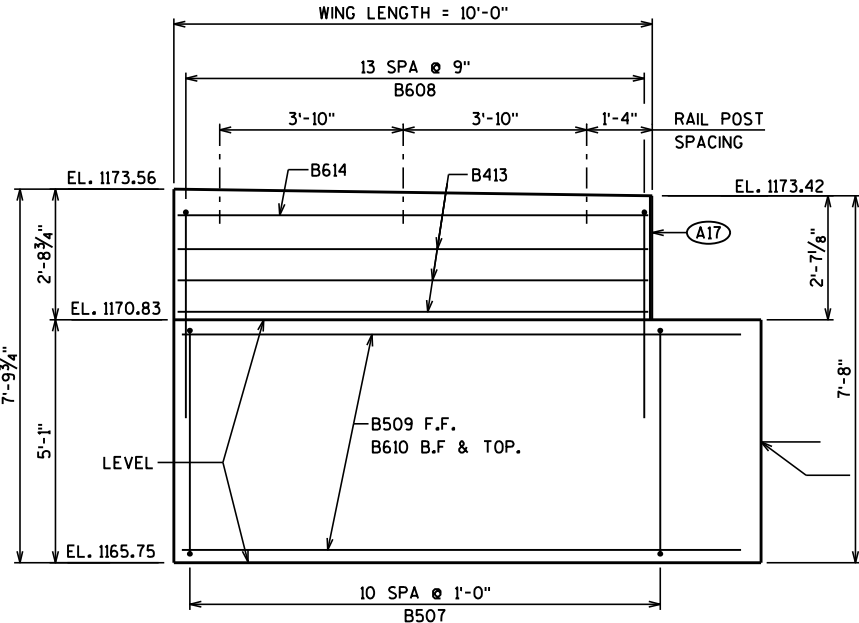
ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. ESTIMATED LENGTH = 15'-0" AT NORTH ABUTMENT

(X) INDICATES WING NUMBER

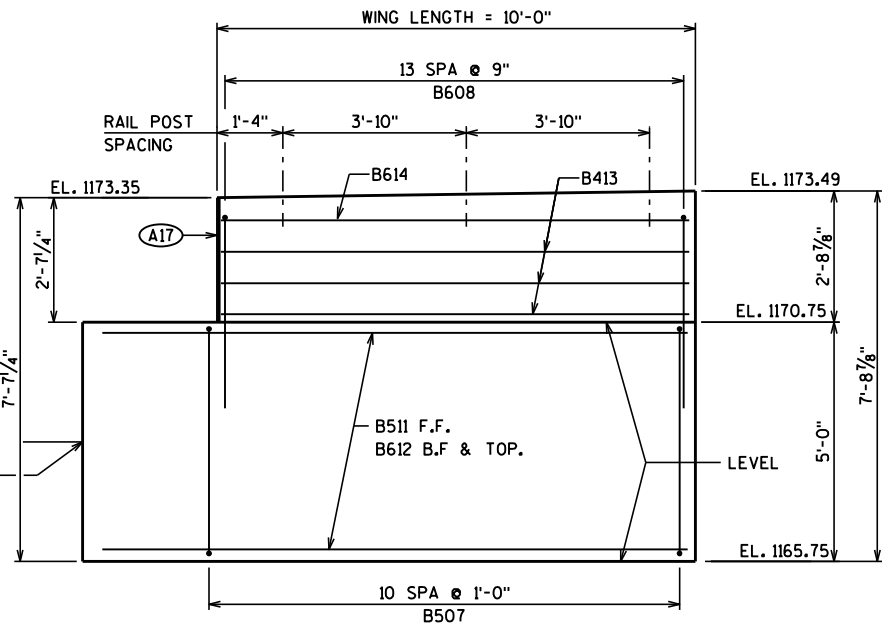


HORIZ. BARS NOT OTHERWISE
IDENTIFIED ARE B604 BARS

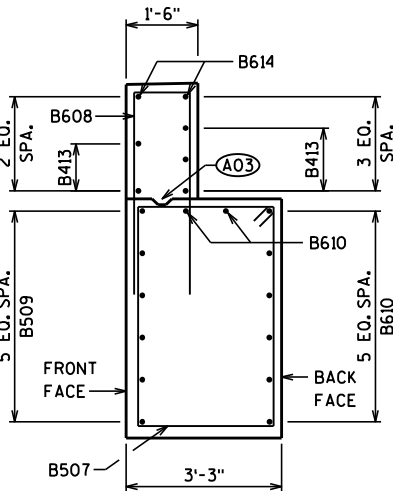
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-71-193			
DRAWN BY		AAS	PLANS CK'D. BRE
NORTH ABUTMENT		SHEET 6 OF 10	



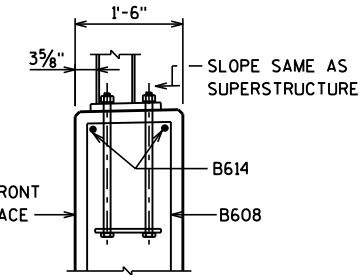
WING 3 ELEVATION



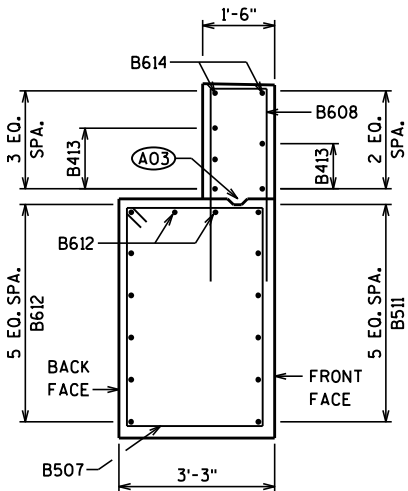
WING 4 ELEVATION



WING 3 SECTION



TYPE 'M' RAIL AT TOP OF WING



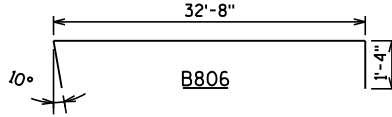
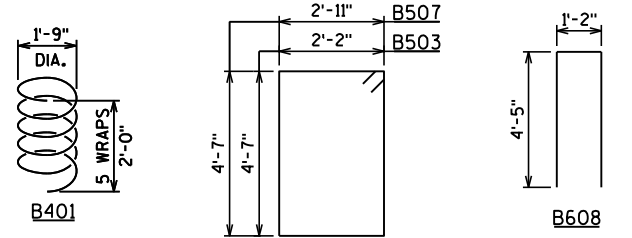
WING 4 SECTION

LEGEND

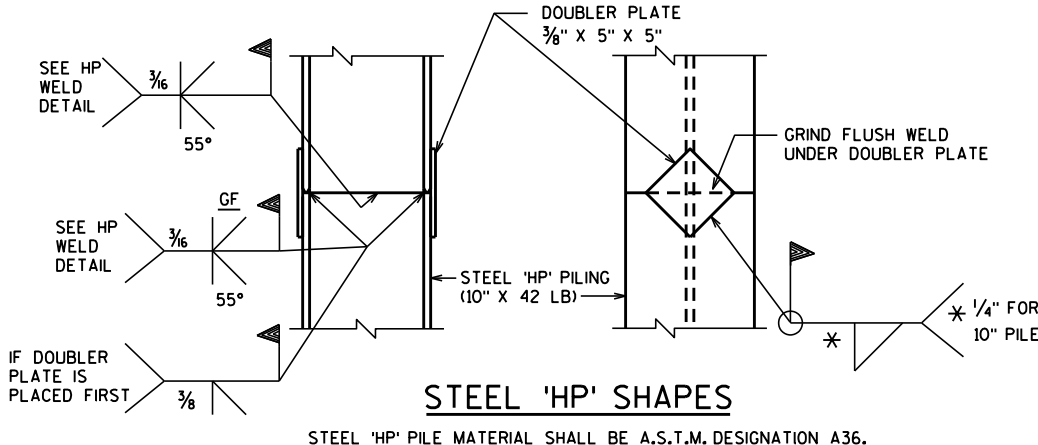
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" x 6", (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP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

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
B401		5	28'-0"	X	BODY - ONE PER PILE
B402		10	2'-3"		BODY - TWO PER PILE
B503		41	14'-2"	X	BODY - STIRRUPS
B604		11	32'-8"		BODY - HORIZONTAL
B505	X	32	2'-0"		BODY - VERTICAL, DOWEL
B806		7	34'-11"	X	BODY - HORIZONTAL B.F.
B507	X	22	15'-8"	X	WINGS - STIRRUPS
B608	X	28	9'-8"	X	WINGS - VERTICAL
B509	X	6	11'-11"		WING - HORIZONTAL, F.F. W3
B610	X	8	12'-2"		WING - HORIZONTAL, B.F. & TOP, W3
B511	X	6	12'-5"		WING - HORIZONTAL, F.F. W4
B612	X	8	11'-8"		WING - HORIZONTAL, B.F. & TOP, W4
B413	X	10	9'-7"		WINGS - HORIZONTAL
B614	X	4	9'-7"		WINGS - HORIZONTAL-TOP

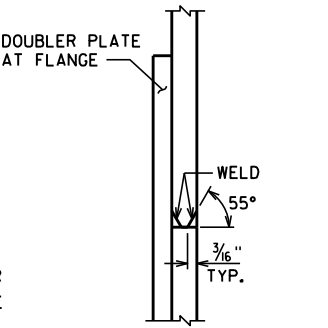


BAR BENDING DIAGRAMS



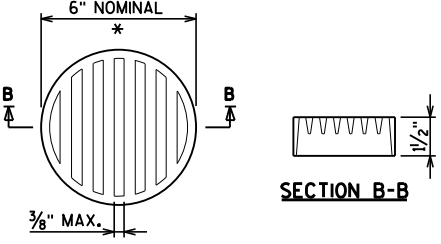
STEEL 'HP' SHAPES

STEEL 'HP' PILE MATERIAL SHALL BE A.S.T.M. DESIGNATION A36.



HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR



RODENT SCREEN DETAIL

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

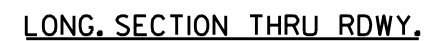
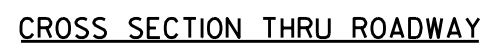
THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN 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 SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

NO.	DATE	REVISION	BY
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NORTH ABUTMENT DETAILS		SHEET 7 OF 10	



PLAN



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.

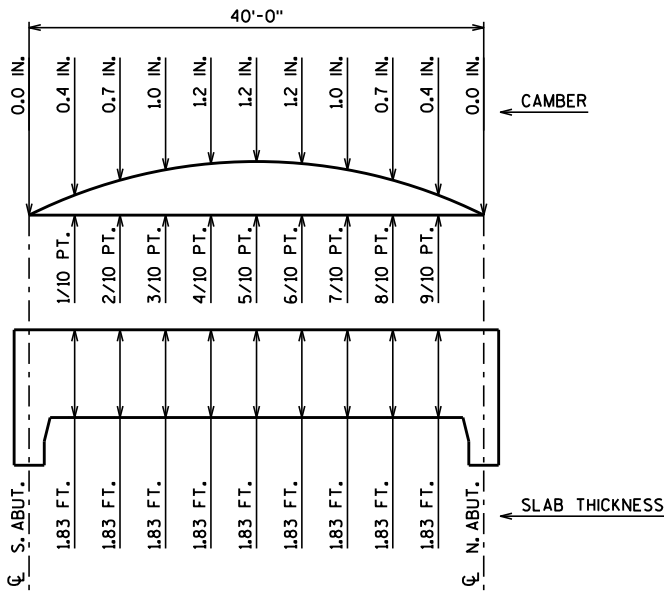
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

⊗ 3/4" V-GROOVE. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM.

☒ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

☐ PLACE BELOW AND TIE TO TOP MAT OF STEEL.

NO.	DATE	REVISION	BY
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DRAWN BY		BRE	PLANS CK'D. KRO
SUPERSTRUCTURE		SHEET 8 OF 10	

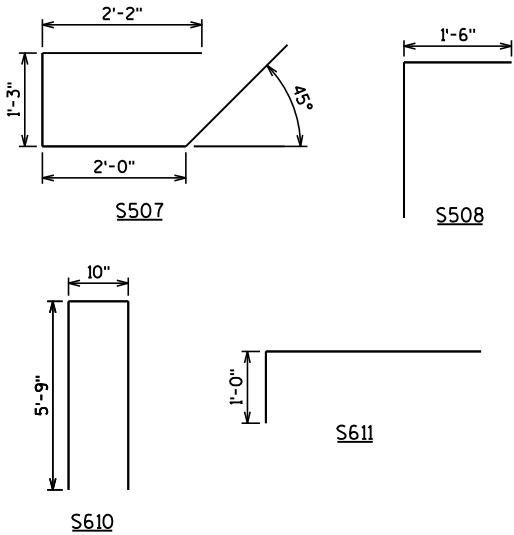


CAMBER DIAGRAM

CAMBER IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	X	29	40'-10"		LONGITUDINAL TOP
S502	X	4	42'-2"		LONGITUDINAL TOP @ EDGE
S503	X	42	32'-8"		TRANSVERSE TOP
S1004	X	33	42'-2"		LONGITUDINAL BOTTOM
S1005	X	32	34'-6"		LONGITUDINAL BOTTOM
S606	X	49	32'-8"		TRANSVERSE BOTTOM
S507	X	66	7'-3"	X	VERTICAL AT END OF SLAB
S508	X	66	3'-7"	X	VERTICAL AT END OF SLAB
S609	X	48	6'-0"		AT INTERIOR RAIL POSTS
S610	X	32	12'-0"	X	AT RAIL POSTS
S611	X	16	4'-11"	X	AT END RAIL POSTS



BAR BEND DIAGRAMS

TOP OF DECK ELEVATIONS

LOCATION	S.ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	N.ABUT.
W. EDGE	1172.92	1172.97	1173.01	1173.06	1173.11	1173.15	1173.20	1173.25	1173.31	1173.36	1173.41
C/L	1173.21	1173.26	1173.30	1173.35	1173.40	1173.44	1173.49	1173.54	1173.59	1173.64	1173.70
E. EDGE	1172.86	1172.90	1172.95	1172.99	1173.04	1173.09	1173.13	1173.18	1173.23	1173.28	1173.33

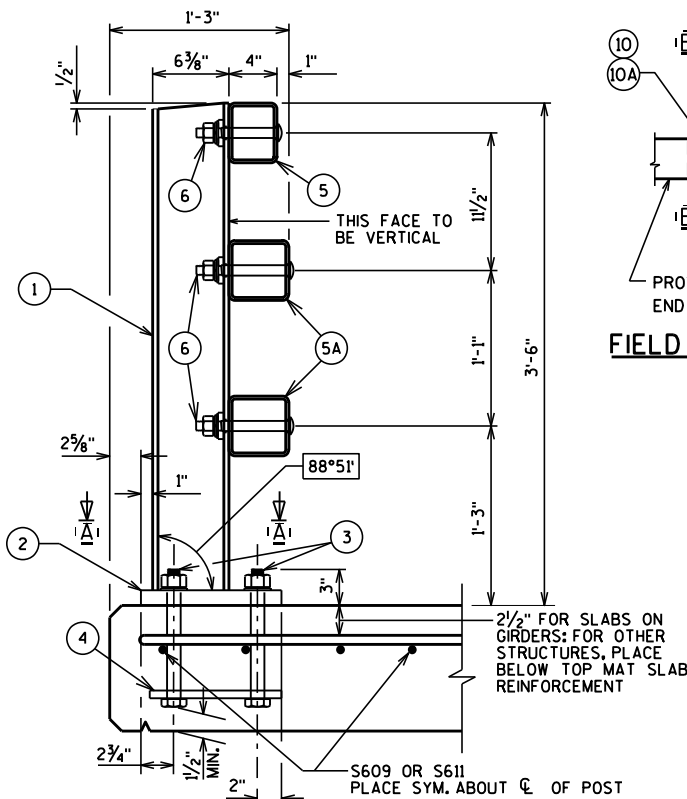
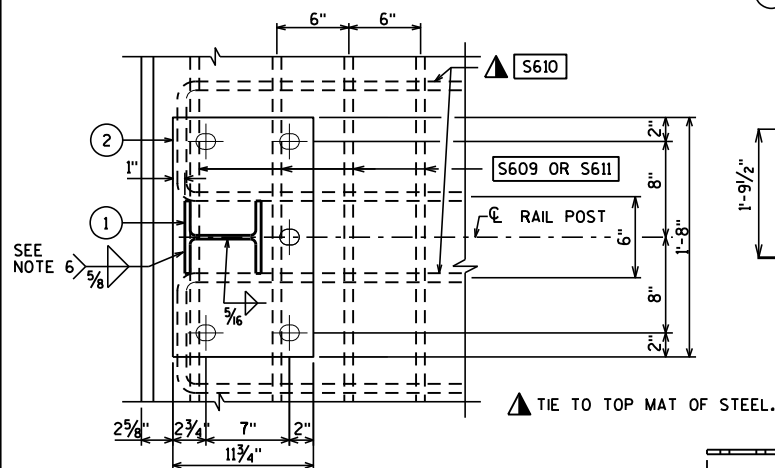
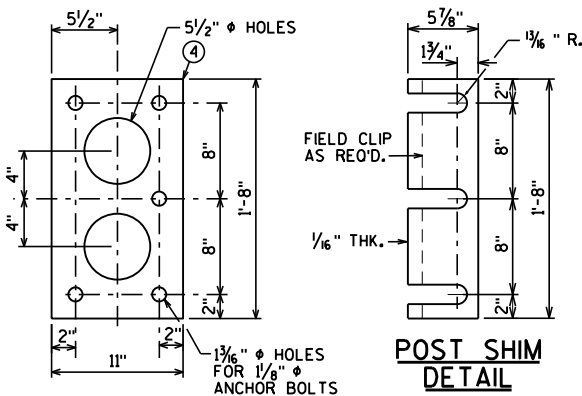
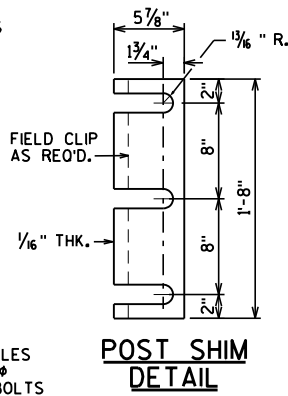
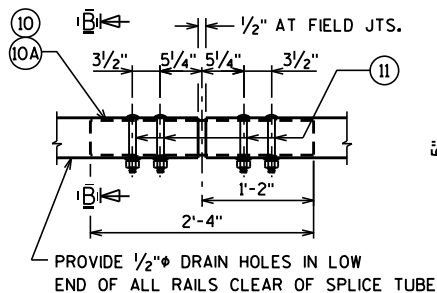
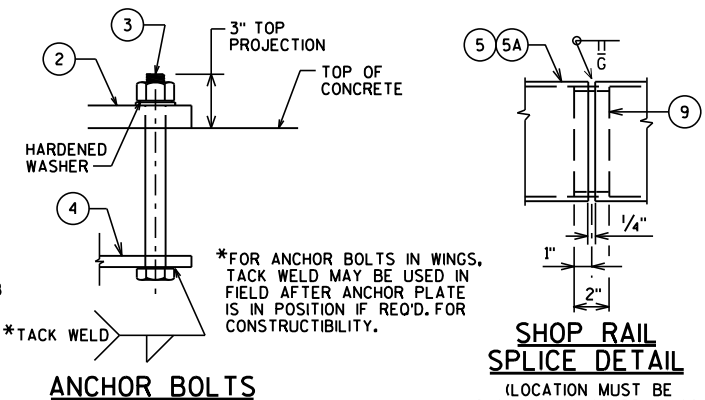
NO.	DATE	REVISION	BY
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DRAWN BY		BRE	PLANS CK'D. KRO
SUPERSTRUCTURE DETAILS		SHEET 9 OF 10	

LEGEND

- ① W6 x 25 WITH 1/8" x 1/2" HORIZONTAL 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 1/4" x 11 3/4" x 1'-8" WITH 1 5/8" x 1 5/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE
- ③ ASTM A449 - 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED), 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
- ④ 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 5/8" 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 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/8" x 1 5/8" x 1 5/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION).
- ⑦ 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" x 1/2" THREADED SHOP WELDED STUDS (ITEM 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑧ 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.
- ⑨ SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- ⑩ 3/8" x 3 5/8" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- ⑩A 3/8" x 2 5/8" x 2'-4" PLATE USED IN NO. 5, 3/8" x 3 5/8" x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪ 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/8" x 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1 5/8" x 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.
- ⑫ 7/8" DIA. x 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D.).
- ⑬ 3/8" x 8" x 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑭ 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER. (5 REQ'D.)
- ⑮ 1" DIA. HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. 4 HOLES IN TUBES.

GENERAL NOTES

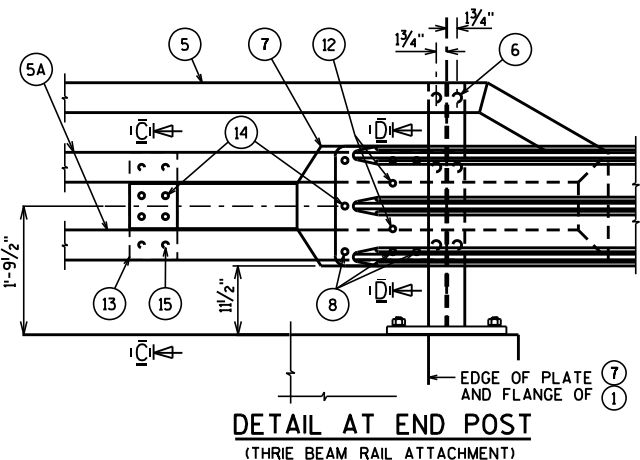
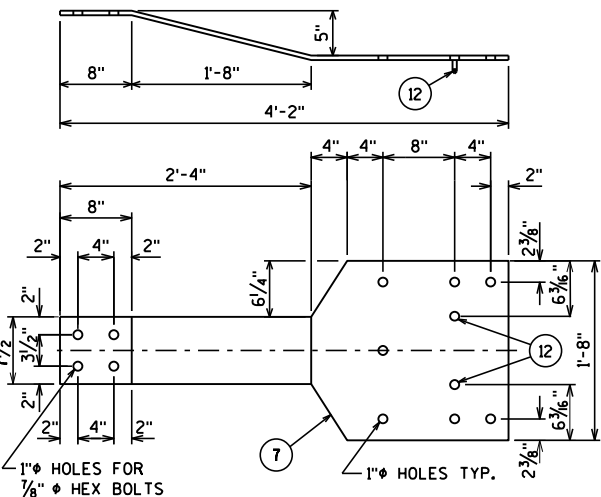
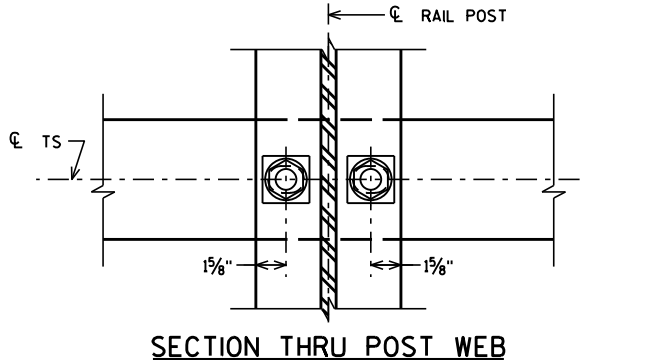
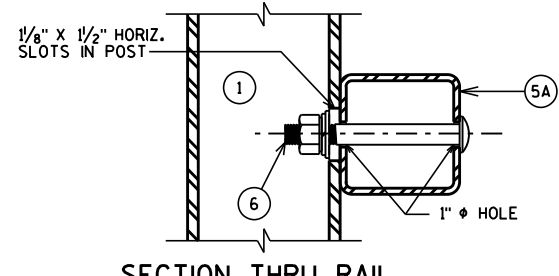
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M (B-71-193)" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR 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 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 S.S.P.C. SPECIFICATIONS.
10. WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

**SECTION THRU RAILING ON DECK****SECTION A-A****ANCHOR PLATE
AT RAIL TO DECK CONNECTION****POST SHIM
DETAIL****FIELD ERECTION JOINT DETAIL****ANCHOR BOLTS****SECTION B-B**

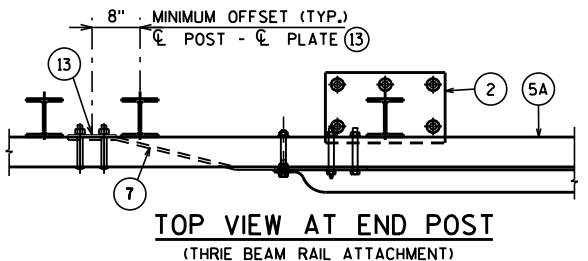
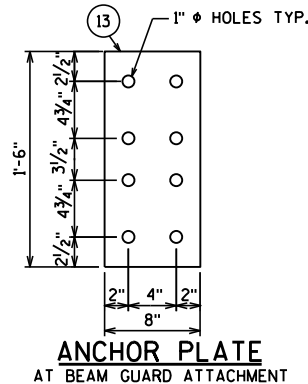
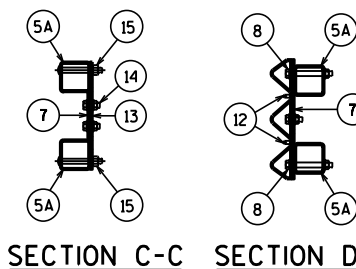
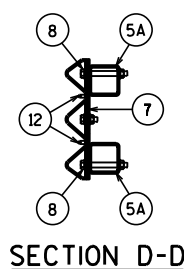
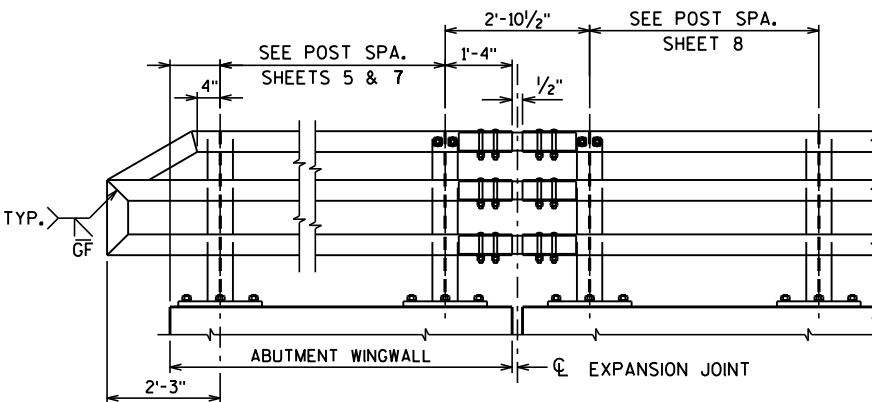
TYP.

**SHOP RAIL
SPLICE DETAIL**

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)

**DETAIL AT END POST
(THRIE BEAM RAIL ATTACHMENT)****BACK-UP PLATE DETAIL
AT BEAM GUARD ATTACHMENT****SECTION THRU POST WEB****SECTION THRU RAIL**

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

TYPICAL RAIL TO POST CONNECTIONS**TOP VIEW AT END POST
(THRIE BEAM RAIL ATTACHMENT)****ANCHOR PLATE
AT BEAM GUARD ATTACHMENT****SECTION C-C****SECTION D-D****PART ELEVATION OF RAILING**

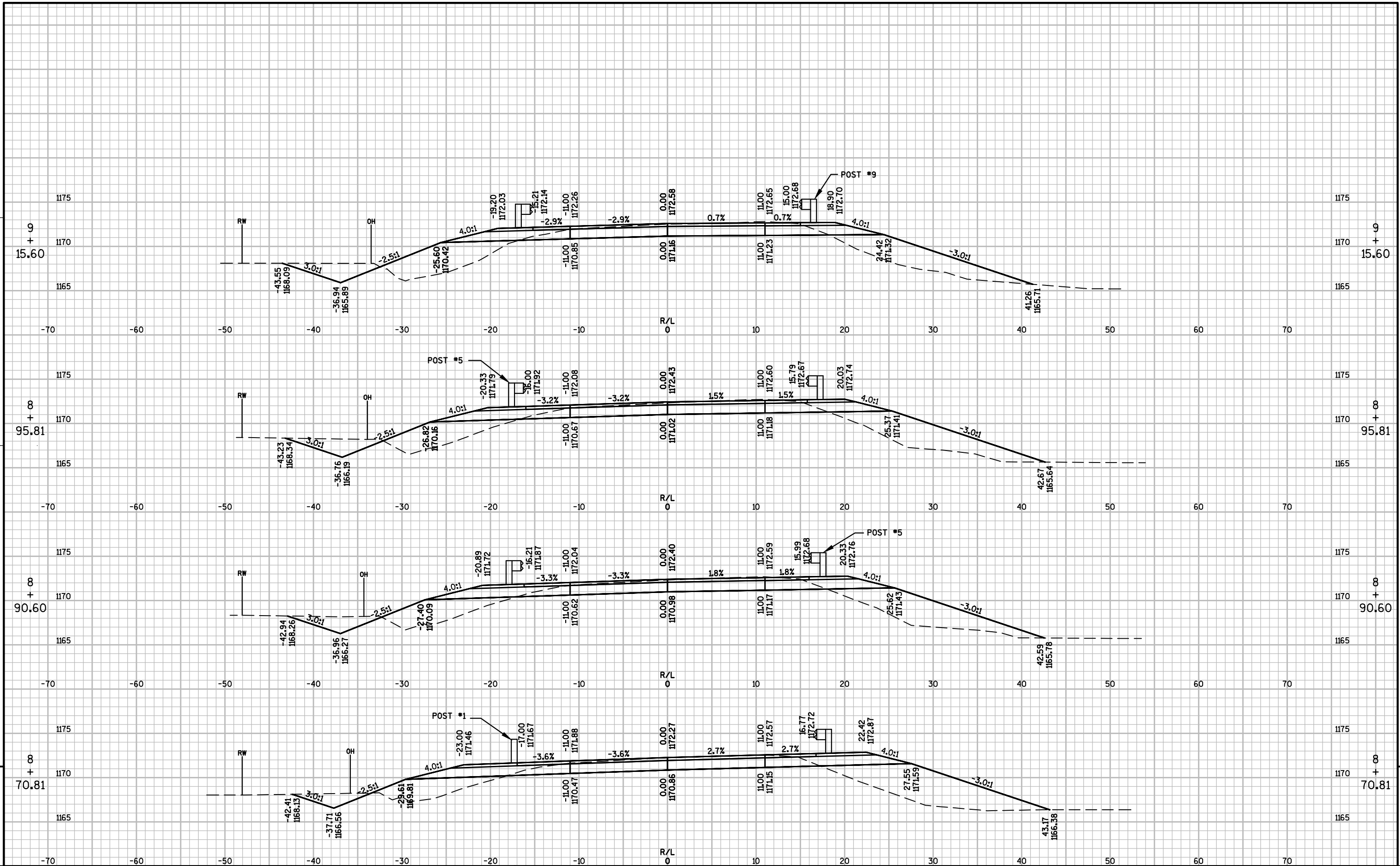
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-71-193			
DRAWN BY		BRE	PLANS CKD. KRO
RAILING TUBULAR TYPE 'M'		SHEET 10 OF 10	

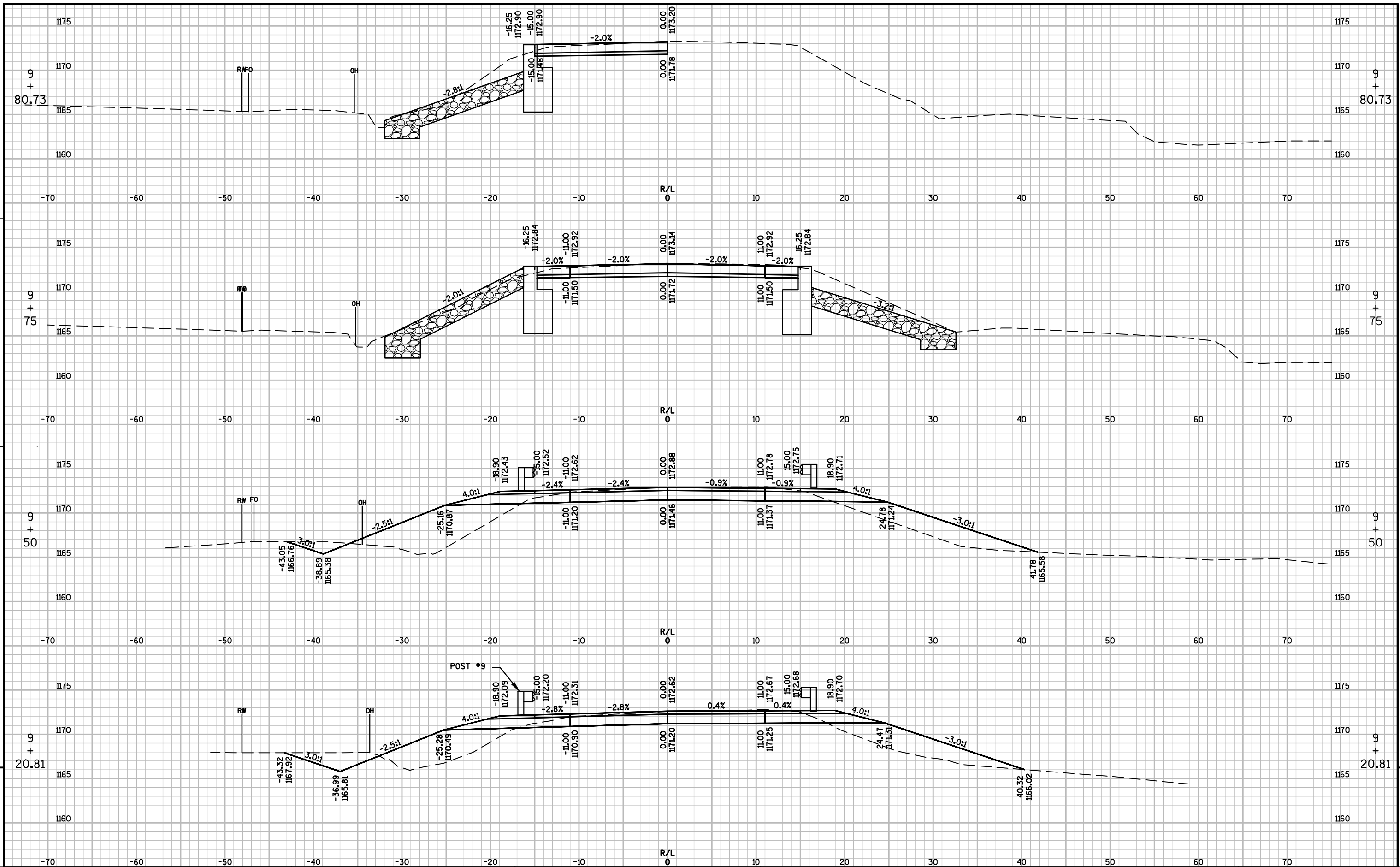
CTH B-SOUTH EARTHWORK DETAIL - CATEGORY 0010

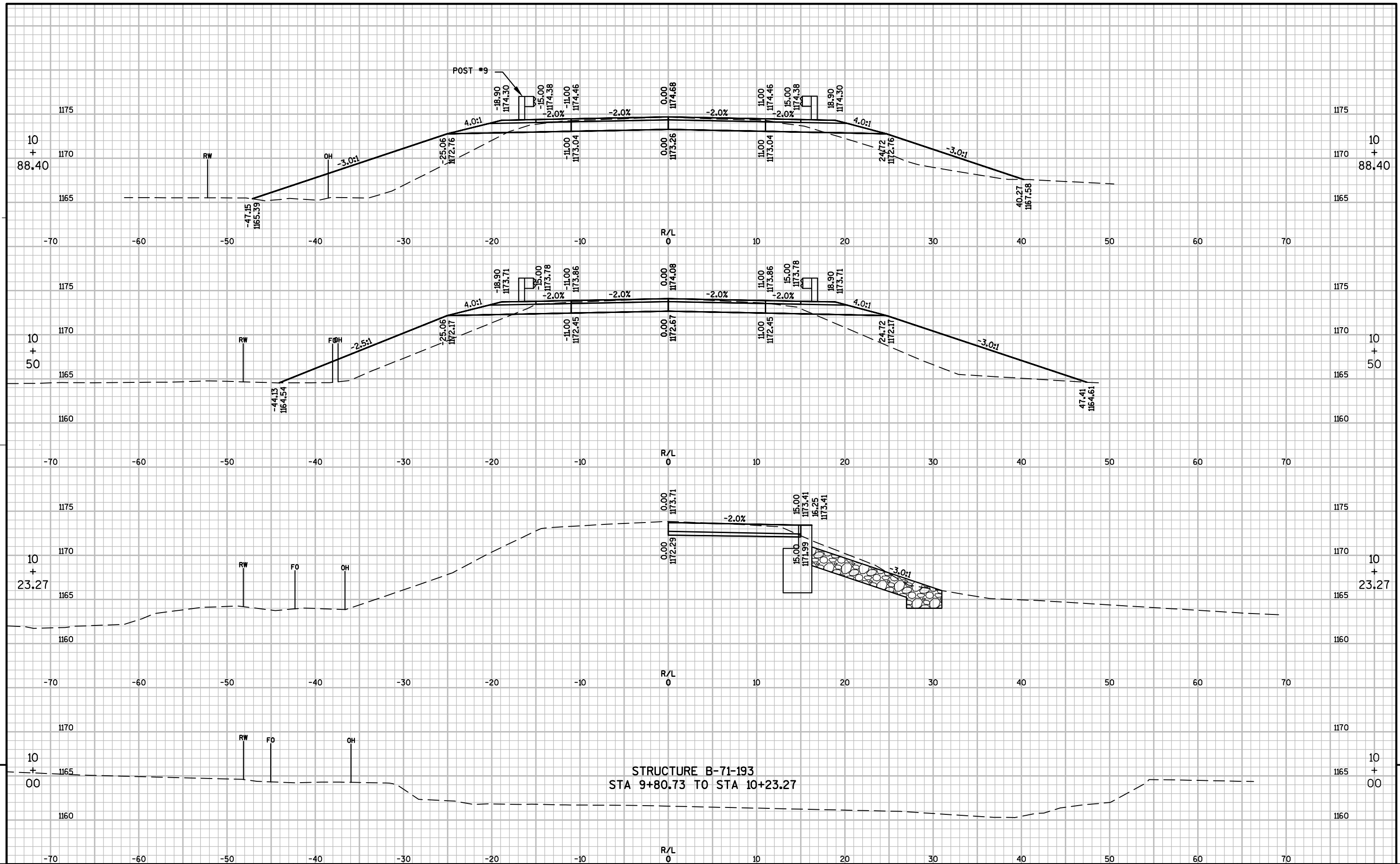
STATION	AREA (SF)			INCREMENTAL VOL (CY) (Unadjusted)			CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	SALVAGED / UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED / UNUSABLEPAVEMENT MATERIAL	FILL	CUT 1. 00	EXPANDED FILL 1. 25	
7+75. 01	19	0	18	0	0	0	0	0	0
8+00. 00	20	0	27	18	0	21	18	26	- 8
8+25. 00	48	15	47	31	7	34	49	69	- 26
8+50. 00	47	15	66	44	14	52	93	134	- 61
8+65. 60	48	15	85	27	8	44	121	188	- 97
8+70. 81	48	15	84	9	3	16	130	209	- 111
8+90. 60	51	15	73	36	11	58	166	281	- 157
8+95. 81	52	15	74	10	3	14	176	298	- 168
9+15. 60	53	15	73	38	11	54	215	366	- 208
9+20. 81	53	15	72	10	3	14	225	384	- 218
9+50. 00	48	15	85	54	16	85	279	490	- 285
9+75. 00	46	15	94	43	14	83	323	594	- 359
9+80. 73	46	15	56	10	3	16	332	614	- 373
9+81. 00	0	0	0	0	0	0	333	614	- 373

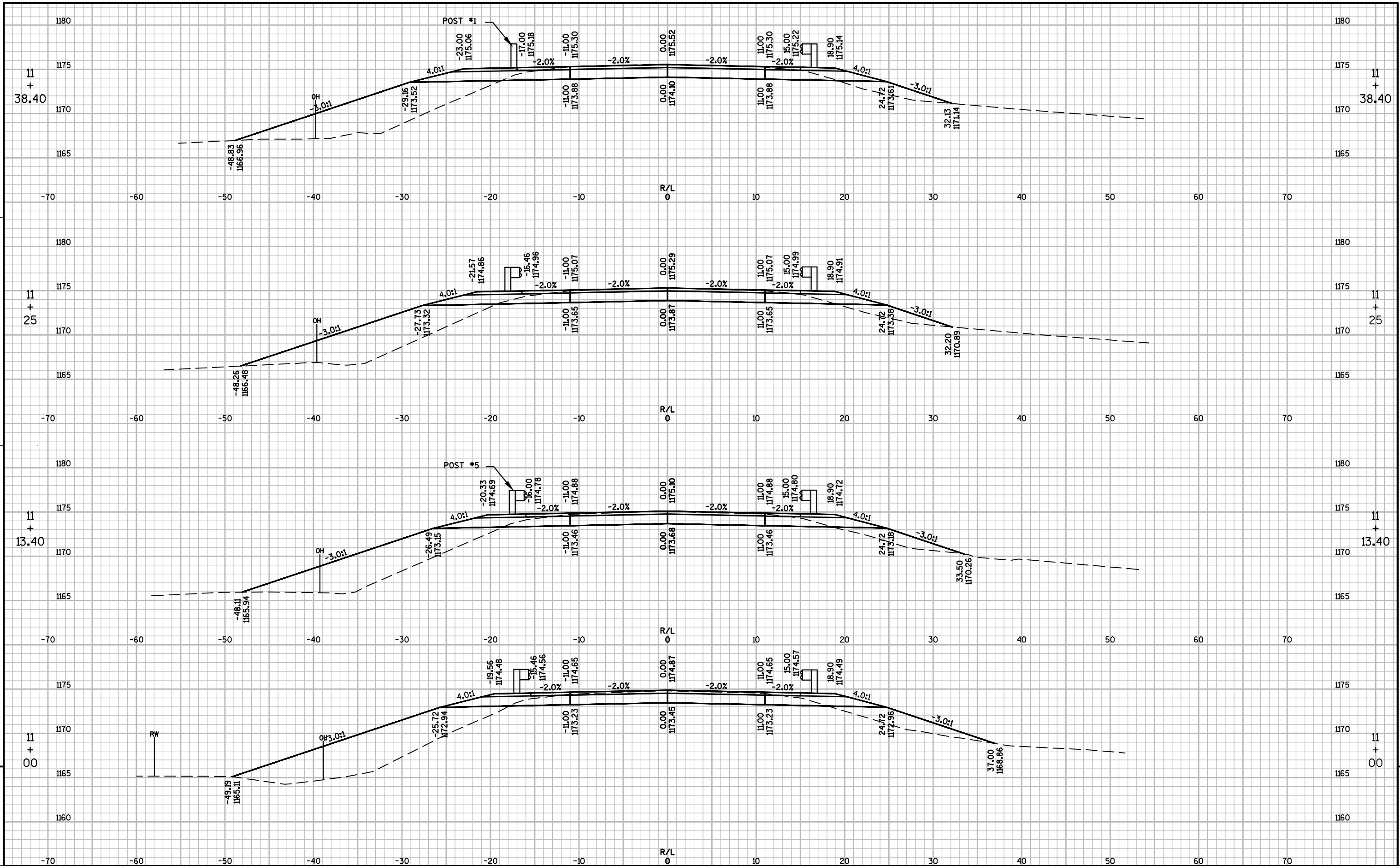
CTH B - NORTH EARTHWORK DETAIL - CATEGORY 0010

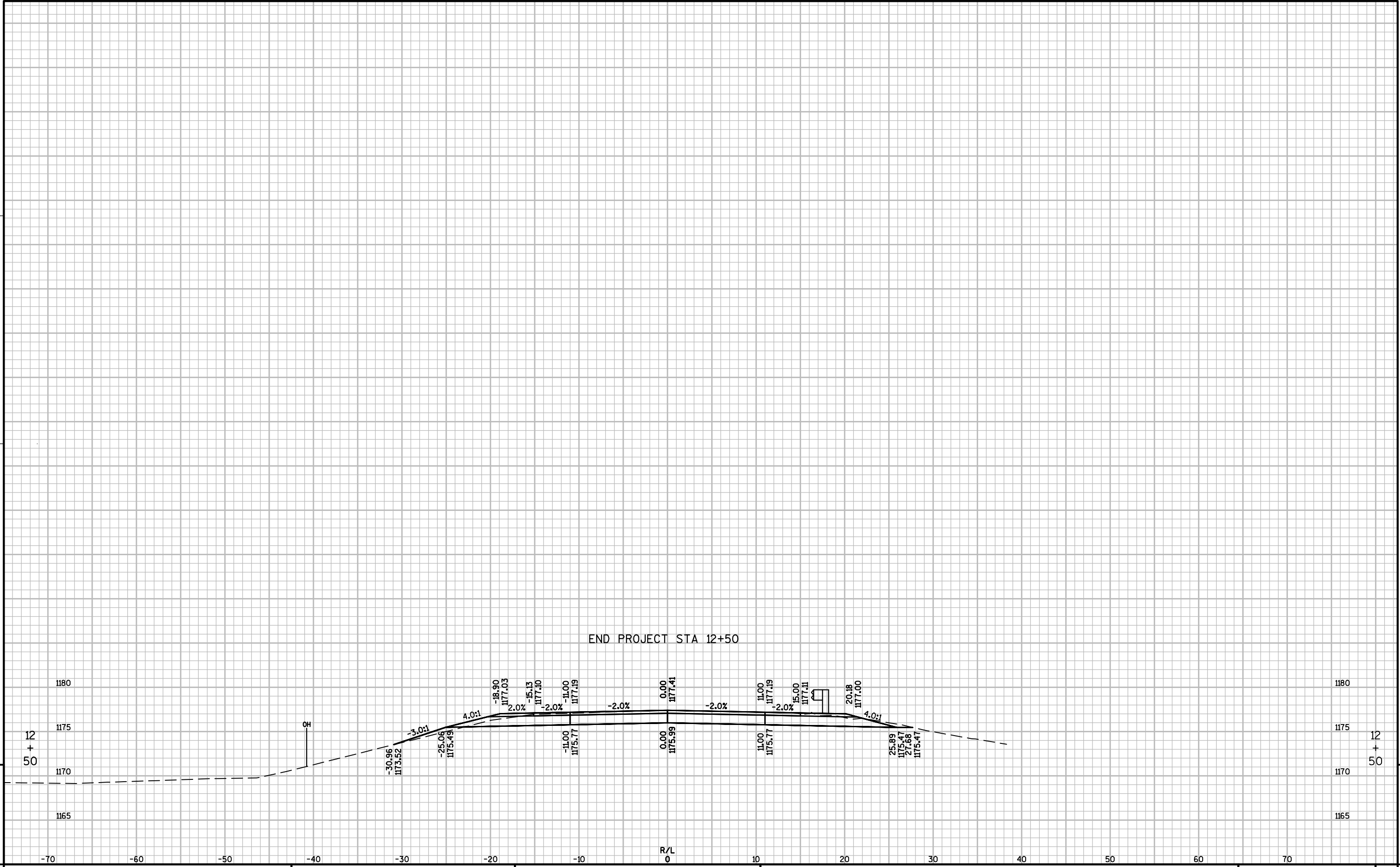
STATION	AREA (SF)			INCREMENTAL VOL (CY) (Unadjusted)			CUMULATIVE VOL (CY)		MASS ORDINATE
	CUT	SALVAGED / UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED / UNUSABLEPAVEMENT MATERIAL	FILL	CUT EXP FACTOR 1. 00	EXPANDED FILL EXP FACTOR 1. 25	
10+23. 00	0	0	0	0	0	0	0	0	0
10+23. 27	39	15	52	0	0	0	0	0	0
10+50. 00	39	15	128	39	15	89	39	111	- 87
10+88. 40	40	15	107	56	21	167	95	320	- 261
11+00. 00	40	15	111	17	6	47	112	378	- 308
11+13. 40	42	15	86	20	7	49	132	439	- 356
11+25. 00	44	15	82	19	6	36	151	484	- 389
11+38. 40	46	15	87	22	7	42	173	536	- 426
11+50. 00	47	15	87	20	6	37	193	583	- 460
11+75. 00	50	15	84	45	14	80	238	683	- 528
12+00. 00	55	15	61	48	14	67	286	767	- 577
12+25. 00	54	15	28	50	14	41	336	819	- 592
12+50. 00	58	15	2	52	14	14	388	836	- 572











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