

FEB 2017

ORDER OF SHEETS

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

TOTAL SHEETS = 70



DESIGN DESIGNATION

A.A.D.T. (2017)	=	3,500
A.A.D.T. (2037)	=	3,900
D.H.V.	=	NA
D.D.	=	NA
T.	=	NA
DESIGN SPEED	=	50
ESALS	=	1,500,000

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	CAUTION
MARSH AREA	---
WOODED OR SHRUB AREA	---

PROFILE	
GRADE LINE	---
ORIGINAL GROUND	---
MARSH OR ROCK PROFILE (To be noted as such)	---
SPECIAL DITCH	---
GRADE ELEVATION	95.36
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

CTH Q - STH 13

BLACK RIVER BRIDGE P-60-0916

CTH O TAYLOR COUNTY

STATE PROJECT NUMBER
8888-08-75

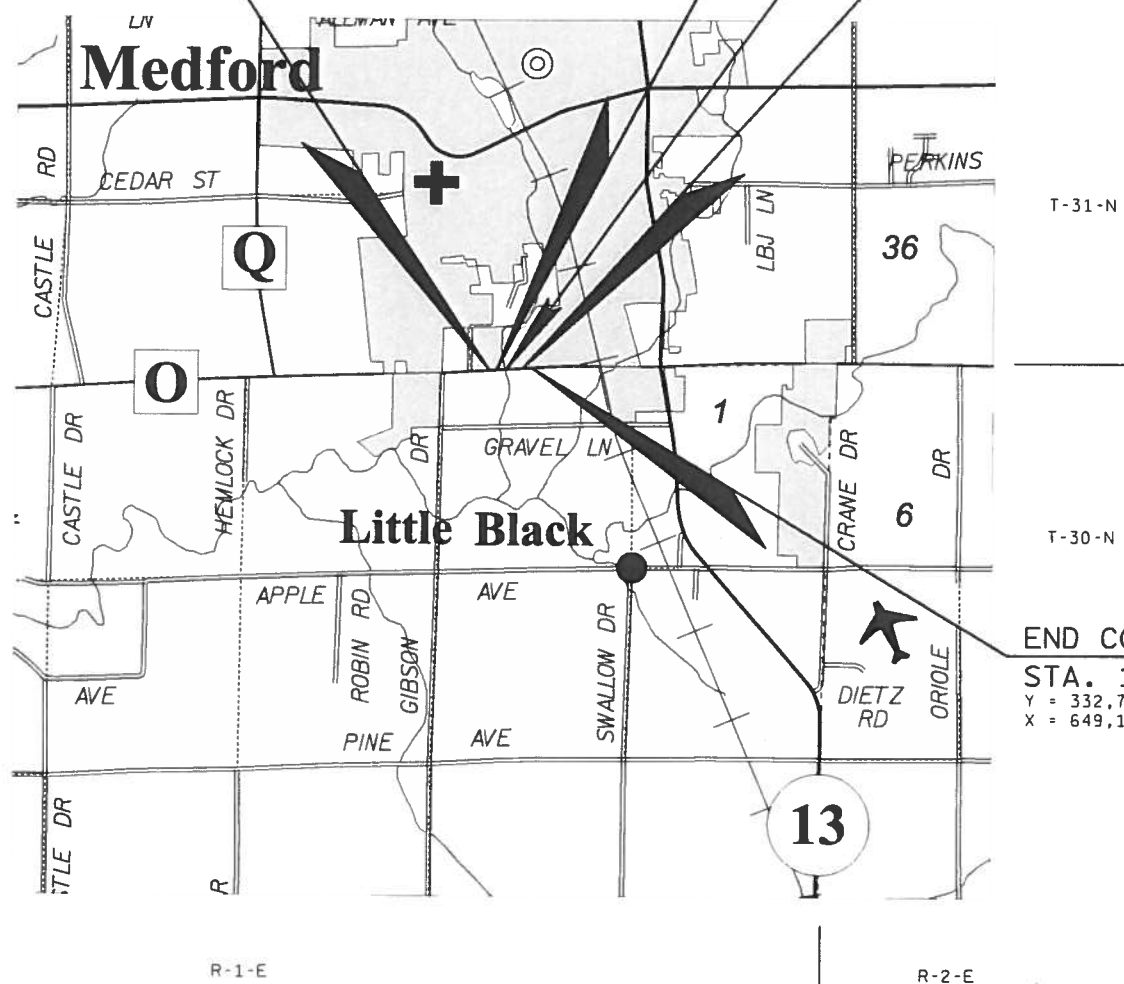
BEGIN CONSTRUCTION 8888-08-75
STA. 7+25.00
Y = 332,667.752
X = 648,572.480

BEGIN PROJECT 8888-08-75
STA. 8+05.00
Y = 332,672.550
X = 648,572.336

STRUCTURE P-60-0916
STA. 10+00.00

END PROJECT 8888-08-75
STA. 11+95.00
Y = 332,697.104
X = 649,041.561

END CONSTRUCTION 8888-08-75
STA. 12+75.00
Y = 332,702.359
X = 649,121.389



LAYOUT
SCALE 0 0.5 MI

TOTAL NET LENGTH OF CENTERLINE = 0.104 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, TAYLOR COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE PROJECT

8888-08-75

FEDERAL PROJECT

PROJECT
WISC 2017037

CONTRACT
1

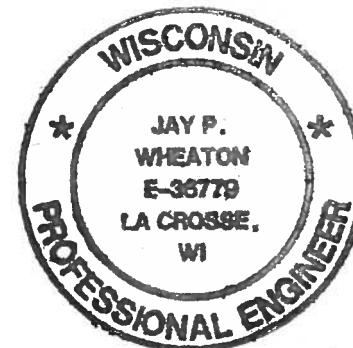
ACCEPTED FOR

COUNTY of TAYLOR

DATE: 7-6-16
JESS SACKMANN
HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY

Mead & Hunt



DATE: 7/6/2016
J.P. Wheaton
(Signature)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	MEAD & HUNT
Designer	MEAD & HUNT
Management Consultant	KNIGHT E/A, INC.

APPROVED FOR THE DEPARTMENT

DATE: 7/25/16
Ryan B. McKee
(Management Consultant Signature)

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

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

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE 4-INCH SALVAGED TOPSOILED, FERTILIZED, SEEDED AND EROSION MATTED.

BEARINGS SHOWN ON THE PLANS ARE GRID BEARINGS TO THE NEAREST SECOND.

THE LOCATION OF ALL DRIVEWAYS WILL BE DETERMINED BY THE ENGINEER.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AND PAVEMENTS AT REMOVAL LIMITS.

6-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH 2 1/4-INCH UPPER LAYERS AND A 2 1/2-INCH LOWER LAYER.

SILT FENCE IS TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, AND IN PLACE PRIOR TO BRIDGE REMOVAL. SILT FENCE IN WETLAND AREAS SHALL BE PLACED AT THE SLOPE INTERCEPT TO PREVENT DISTURBANCE OF WETLANDS.

SHRINKAGE IS ESTIMATED AT 25%.

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIP-TURF	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPE-TURF			.25			.27			.28			.30
			.32			.34			.36			.38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

TOTAL PROJECT AREA = 1.67 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.09 ACRES

CONSULTANT CONTACT
MEAD & HUNT, INC.
750 NORTH THIRD STREET
LA CROSSE, WI 54601
ATTN: JAY WHEATON, P.E.
TELEPHONE: 608-784-6040
E-MAIL: JAY.WHEATON@MEADHUNT.COM

DNR LIAISON
DEPARTMENT OF NATURAL RESOURCES
DNR NORTHERN REGION HQ
107 SUTLIFF
RHINELANDER, WI 54501
ATTN: JON SIMONSEN
TELEPHONE: 715-365-8916
E-MAIL: JONATHAN.SIMONSEN@WISCONSIN.GOV

TAYLOR COUNTY
TAYLOR COUNTY HIGHWAY DEPARTMENT
209 NORTH 8TH STREET
MEDFORD, WI 54451
ATTN: JESS SACKMANN
TELEPHONE: 715-748-2456
EMAIL: JESS.SACKMANN@CO.TAYLOR.WI.US

UTILITY CONTACTS

*MEDFORD ELECTRIC ELECTRIC 639 S 2nd STREET MEDFORD, WI 54451 ATTN: SPENCER TITERA TELEPHONE: 715-748-3211 E-MAIL: STITERA@MEDFORDWI.US	*CHARTER COMMUNICATIONS FIBER OPTIC 508 N CENTRAL AVE MARSHFIELD, WI 54449 ATTN: JESSE GRUNY TELEPHONE: 715-651-5605 E-MAIL: JESSE.GRUNY@CHARTER.COM
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* Denotes Diggers Hotline Member

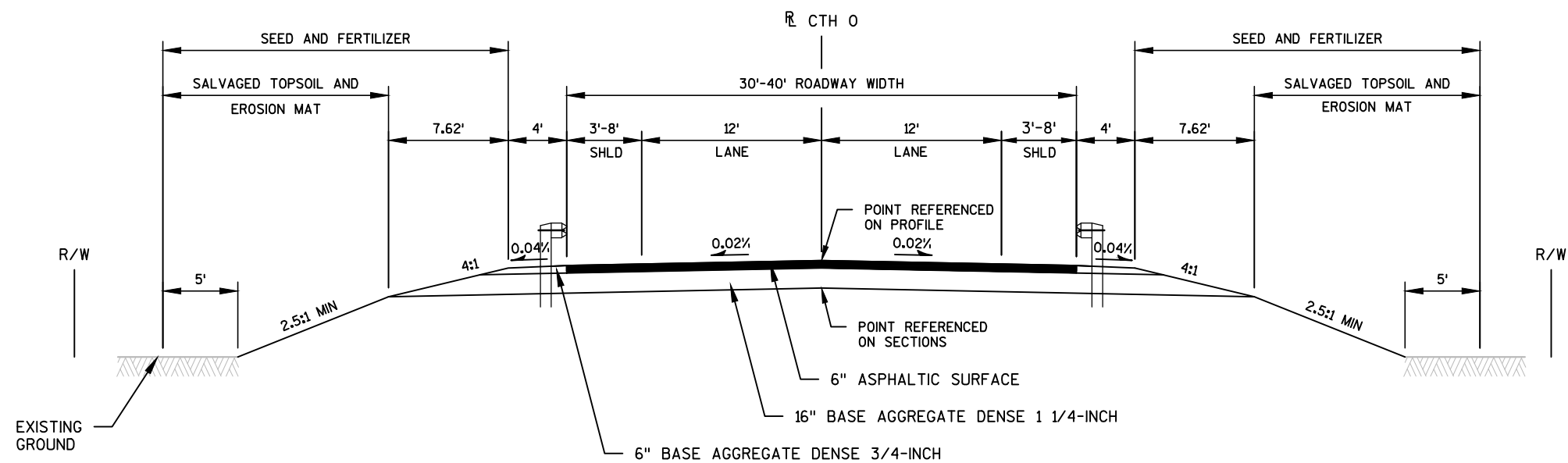
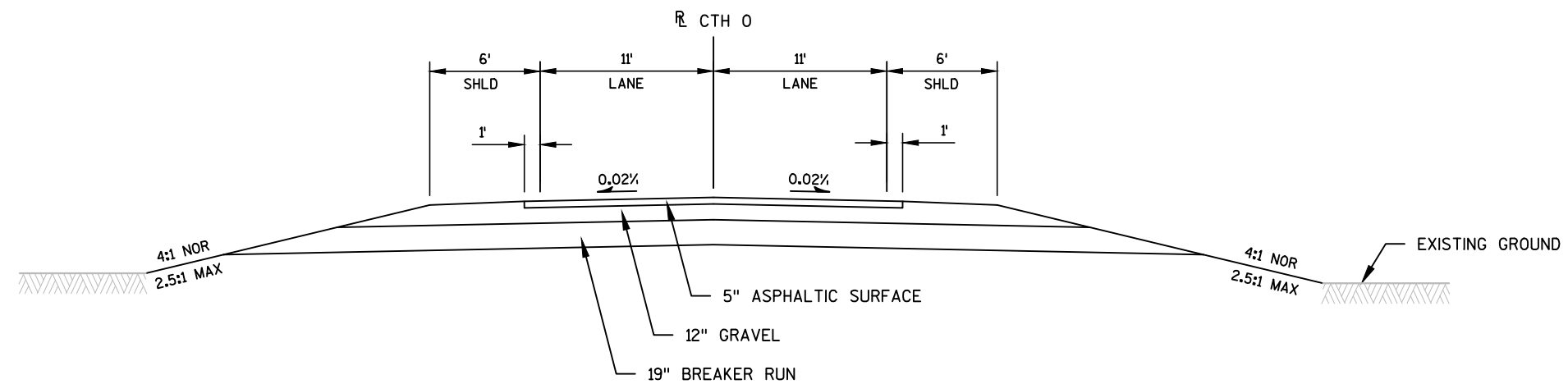


ORDER OF SECTION 2 SHEETS

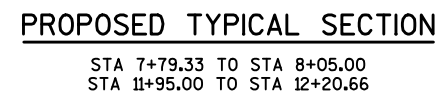
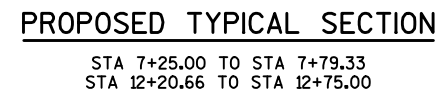
TYPICAL SECTIONS

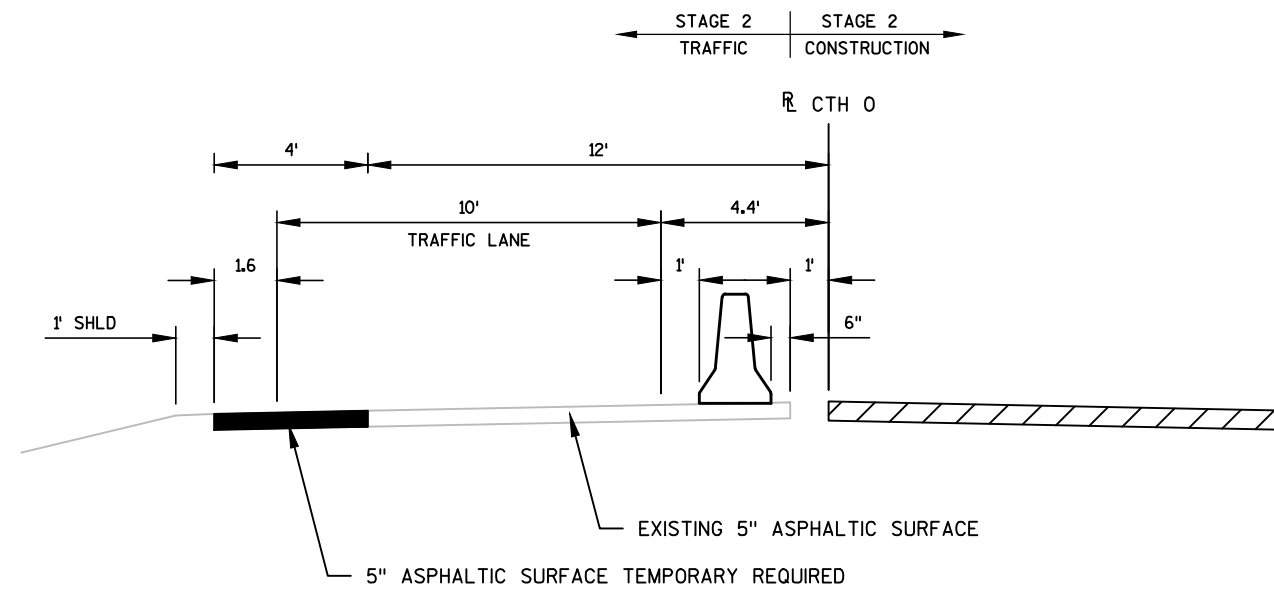
STANDARD ABBREVIATIONS

ADT	AVERAGE DAILY TRAFFIC	PI	POINT OF INTERSECTION
ASPH	ASPHALTIC	PL	PROPERTY LINE
BM	BENCH MARK	RL	REFERENCE LINE
CL	CENTERLINE	REQ'D	REQUIRED
CWT	HUNDREDWEIGHT	RHF	RIGHT-HAND FORWARD
CY	CUBIC YARD	RT	RIGHT
DHV	DESIGN HOURLY VOLUME	R/W	RIGHT-OF-WAY
DWY	DRIVEWAY	SF	SQUARE FOOT
EL	ELEVATION	SHLDR	SHOULDER
EX	EXISTING	STA	STATION
EXC	EXCAVATION	SY	SQUARE YARD
FT	FOOT	T	TRUCKS (PERCENT OF)
FTG	FOOTING	TLE	TEMPORARY LIMITED EASEMENT
LB	POUND	TYP	TYPICAL
LF	LINEAR FOOT	VAR	VARIABLE
LHF	LEFT-HAND FORWARD	VC	VERTICAL CURVE
LS	LUMP SUM	VPC	VERTICAL POINT OF CURVE
LT	LEFT	VPI	VERTICAL POINT OF INTERSECTION
NO	NUMBER	VPT	VERTICAL POINT OF TANGENCY



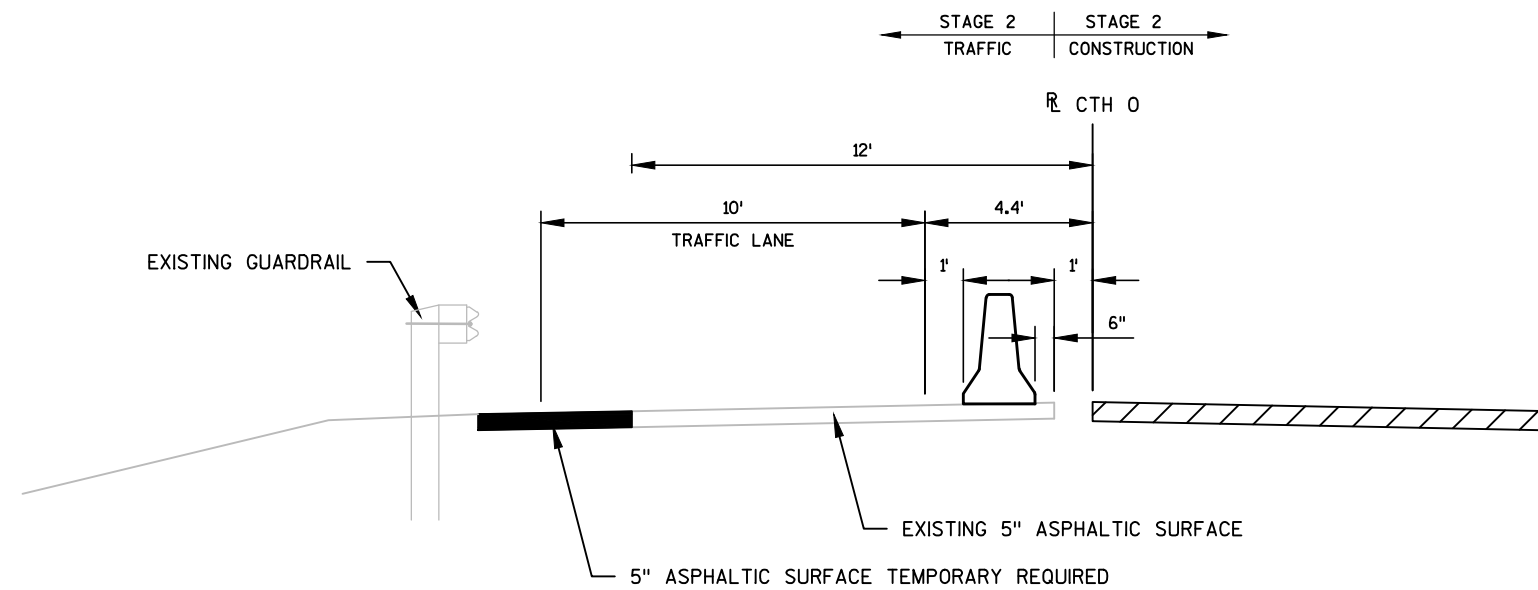
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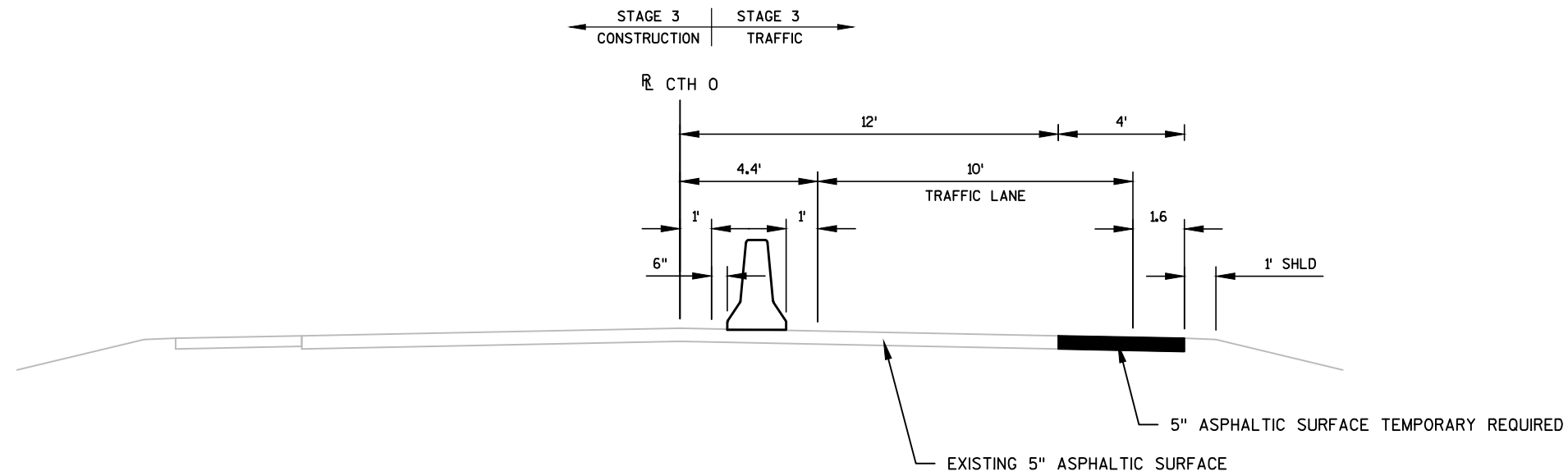
STAGE 1 CONSTRUCTION STAGING TYPICAL SECTION

STA 5+85 TO STA 8+25
STA 11+75 TO STA 14+15



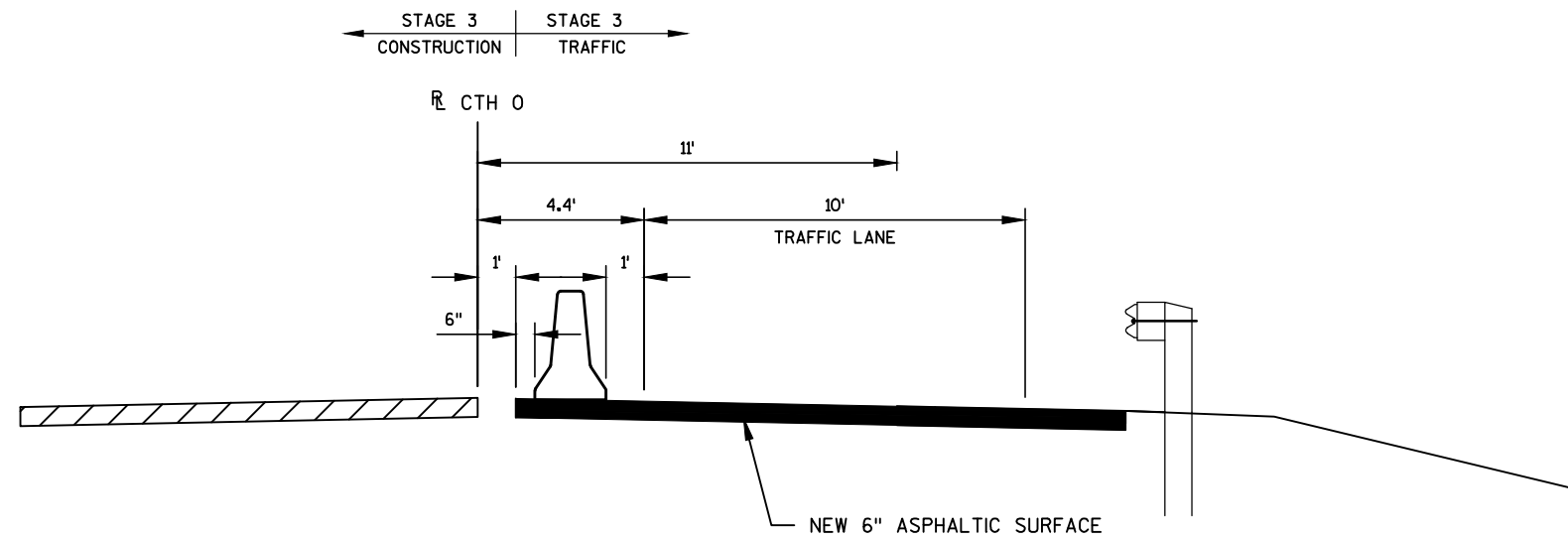
STAGE 1 CONSTRUCTION STAGING TYPICAL SECTION

STA 8+25 TO STA 9+54.75
STA 10+45.24 TO STA 11+75



STAGE 2 CONSTRUCTION STAGING TYPICAL SECTION

STA 5+85 TO STA 7+25
STA 12+75 TO STA 14+15



STAGE 2 CONSTRUCTION STAGING TYPICAL SECTION

STA 7+25 TO STA 9+54.75
STA 10+45.24 TO STA 12+75

Estimate Of Quantities

8888-08-75

Line	Item	Item Description	Unit	Total	Qty
0010	201.0105	Clearing	STA	3.000	3.000
0020	201.0205	Grubbing	STA	3.000	3.000
0030	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. Sta 10+00	LS	1.000	1.000
0040	205.0100	Excavation Common	CY	1,133.000	1,133.000
0050	206.1000	Excavation for Structures Bridges (structure) 01. P-60-916	LS	1.000	1.000
0060	208.0100	Borrow	CY	226.000	226.000
0070	209.0200.S	Backfill Controlled Low Strength	CY	4.000	4.000
0080	210.1500	Backfill Structure Type A	TON	110.000	110.000
0090	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	16.000	16.000
0100	213.0100	Finishing Roadway (project) 01. 8888-08-75	EACH	1.000	1.000
0110	305.0110	Base Aggregate Dense 3/4-Inch	TON	350.000	350.000
0120	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,350.000	2,350.000
0130	415.0080	Concrete Pavement 8-Inch	SY	20.000	20.000
0140	415.0410	Concrete Pavement Approach Slab	SY	80.000	80.000
0150	455.0605	Tack Coat	GAL	170.000	170.000
0160	465.0105	Asphaltic Surface	TON	420.000	420.000
0170	465.0125	Asphaltic Surface Temporary	TON	140.000	140.000
0180	502.0100	Concrete Masonry Bridges	CY	104.000	104.000
0190	502.3200	Protective Surface Treatment	SY	404.000	404.000
0200	502.4205	Adhesive Anchors No. 5 Bar	EACH	48.000	48.000
0210	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	20,280.000	20,280.000
0220	505.0905	Bar Couplers No. 5	EACH	255.000	255.000
0230	505.0906	Bar Couplers No. 6	EACH	4.000	4.000
0240	506.4000	Steel Diaphragms (structure) 01. P-60-916	EACH	3.000	3.000
0250	509.1500	Concrete Surface Repair	SF	2.000	2.000
0260	513.4061	Railing Tubular Type M (structure) 01. P-60-916	LF	228.000	228.000
0270	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0280	603.8000	Concrete Barrier Temporary Precast Delivered	LF	650.000	650.000
0290	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,300.000	1,300.000
0300	606.0300	Riprap Heavy	CY	155.000	155.000
0310	614.0920	Salvaged Rail	LF	484.000	484.000
0320	614.2300	MGS Guardrail 3	LF	300.000	300.000
0330	614.2500	MGS Thrie Beam Transition	LF	158.000	158.000
0340	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0350	619.1000	Mobilization	EACH	1.000	1.000
0360	625.0500	Salvaged Topsoil	SY	2,650.000	2,650.000
0370	628.1504	Silt Fence	LF	1,275.000	1,275.000
0380	628.1520	Silt Fence Maintenance	LF	2,550.000	2,550.000

Estimate Of Quantities

8888-08-75

Line	Item	Item Description	Unit	Total	Qty
0390	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0400	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0410	628.2008	Erosion Mat Urban Class I Type B	SY	2,650.000	2,650.000
0420	628.6005	Turbidity Barriers	SY	250.000	250.000
0430	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0440	629.0210	Fertilizer Type B	CWT	2.400	2.400
0450	630.0120	Seeding Mixture No. 20	LB	110.000	110.000
0460	630.0200	Seeding Temporary	LB	55.000	55.000
0470	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0480	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0490	638.2602	Removing Signs Type II	EACH	4.000	4.000
0500	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0510	642.5001	Field Office Type B	EACH	1.000	1.000
0520	643.0100	Traffic Control (project) 01. 8888-08-75	EACH	1.000	1.000
0530	643.0300	Traffic Control Drums	DAY	2,400.000	2,400.000
0540	643.0420	Traffic Control Barricades Type III	DAY	80.000	80.000
0550	643.0715	Traffic Control Warning Lights Type C	DAY	1,200.000	1,200.000
0560	643.0900	Traffic Control Signs	DAY	2,080.000	2,080.000
0570	645.0120	Geotextile Type HR	SY	320.000	320.000
0580	646.0106	Pavement Marking Epoxy 4-Inch	LF	1,868.000	1,868.000
0590	646.0600	Removing Pavement Markings	LF	1,180.000	1,180.000
0600	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	4,368.000	4,368.000
0610	649.1400	Temporary Pavement Marking Stop Line Removable Tape 24-Inch	LF	22.000	22.000
0620	650.4500	Construction Staking Subgrade	LF	460.000	460.000
0630	650.5000	Construction Staking Base	LF	460.000	460.000
0640	650.6500	Construction Staking Structure Layout (structure) 01. P-60-916	LS	1.000	1.000
0650	650.9910	Construction Staking Supplemental Control (project) 01. 8888-08-75	LS	1.000	1.000
0660	650.9920	Construction Staking Slope Stakes	LF	460.000	460.000
0670	661.0100	Temporary Traffic Signals for Bridges (structure) 01. P-60-916	LS	1.000	1.000
0680	690.0150	Sawing Asphalt	LF	756.000	756.000
0690	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0700	715.0502	Incentive Strength Concrete Structures	DOL	624.000	624.000
0710	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0720	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000

EARTHWORK SUMMARY								
FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION CUT (1)	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL (2)	UNEXPANDED FILL	EXPANDED FILL (FACTOR 1.25)	MASS ORDINATE +/- (3)	208.0100 BORROW
7+25 - 12+75	CTH O	1,133	456	677	722	903	-226	226

- (1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED
- (2) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (3) THE MASS ORDINATE + OR - QUANTITY CALCULATED. PLUS QUANTITY INDICATES AS EXCESS OF MATERIAL.
MINUS INDICATES A SHORTAGE OF MATERIAL.

CLEARING & GRUBBING

STATION TO STATION		LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
8+00 - 9+00		CTH O	1	1
11+00 - 12+75		CTH O	2	2
TOTAL			3	3

PREPARING FOUNDATION ASPHLTIC SHOULDERS

STATION TO STATION		STAGE	LOCATION	211.0400 PREPARING FOUNDATION ASPHALTIC SHOULDERS STA
5+85 - 9+54.5		1	CTH O, LT	5
5+85 - 7+25		1	CTH O, RT	3
10+45.5 - 14+15		1	CTH O, LT	5
12+75 - 14+15		1	CTH O, RT	3
TOTAL				16

CONCRETE PAVEMENT

STATION TO STATION		LOCATION	415.0080 CONCRETE PAVEMENT 8-INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY
9+39.75 - 9+54.75		CTH O	10	40
10+45.24 - 10+60.24		CTH O	10	40
TOTAL			20	80

BASE AGGREGATE DENSE

STATION TO STATION		LOCATION	305.0110 BASE AGGREGATE DENSE 3/4 INCH TON	305.0120 BASE AGGREGATE DENSE 1-1/4 INCH TON	REMARKS
7+25 - 9+54.75		CTH O	130	1,175	
10+45.24 - 12+75		CTH O	130	1,175	
5+85 - 7+25		CTH O, LT & RT	45	-	STAGE 1
12+75 - 14+15		CTH O, LT & RT	45	-	STAGE 1
TOTAL			350	2,350	

SALVAGED RAIL

STATION TO STATION		LOCATION	614.0920 SALVAGED RAIL LF
8+24 - 9+45		CTH O, LT	121
8+24 - 9+45		CTH O, RT	121
10+55 - 11+76		CTH O, LT	121
10+55 - 11+76		CTH O, RT	121
TOTAL			484

ASPHALT SUMMARY

STATION TO STATION		LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON	465.0125 ASPHALTIC SURFACE TEMPORARY TON	REMARKS
7+25 - 9+39.75		CTH O	85	210	-	
10+60.24 - 12+75		CTH O	85	210	-	
5+85 - 9+54		CTH O, LT	-	-	50	STAGE 1 (4' WIDE, 5" THICK)
5+85 - 7+25		CTH O, RT	-	-	20	STAGE 1 (4' WIDE, 5" THICK)
10+45 - 14+15		CTH O, LT	-	-	50	STAGE 1 (4' WIDE, 5" THICK)
12+75 - 14+15		CTH O, RT	-	-	20	STAGE 1 (4' WIDE, 5" THICK)
TOTAL			170	420	140	

TACK COAT ESTIMATED AT 0.07 GAL/SY

BEAMGUARD SUMMARY

STATION TO STATION		LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
7+79 - 9+46		CTH O, LT	75	39.4	1
7+79 - 9+46		CTH O, RT	75	39.4	1
10+54 - 12+21		CTH O, LT	75	39.4	1
10+54 - 12+21		CTH O, RT	75	39.4	1
TOTAL			300	158	4

NOTE: ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED AS 0020.

SILT FENCE

				628.1504	628.1520
				SILT FENCE	SILT FENCE
STATION	TO	STATION	LOCATION	LF	MAINTENANCE
				LF	LF
7+25	-	9+75	CTH O, LT	270	540
7+25	-	9+85	CTH O, RT	285	570
10+15	-	11+45	CTH O, LT	140	280
12+65	-	12+75	CTH O, LT	35	70
10+30	-	12+75	CTH O, RT	295	590
UNDISTRIBUTED			VARIOUS	250	500
TOTAL				1,275	2,550

EROSION CONTROL SUMMARY

STATION TO STATION		LOCATION		628.1910		
				628.1905 MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.7504 TEMPORARY DITCH CHECKS LF
7+25	-	9+80	CTH O, LT & RT	-	-	20
10+20	-	12+75	CTH O, LT & RT	-	-	20
UNDISTRIBUTED			VARIOUS	5	2	10
TOTAL				5	2	50

TURBIDITY BARRIERS

		628.6005
		TURBIDITY
		BARRIERS
STATION	LOCATION	SY
9+85	CTH O	120
10+15	CTH O	130
	TOTAL	250

TRAFFIC CONTROL ITEMS

STAGE	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0715 TRAFFIC CONTROL WARNING LIGHT TYPE C DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	REMARKS
1	1200	40	600	1,040	40 DAYS
2	1200	40	600	1,040	40 DAYS
TOTAL	2,400	80	1,200	2,080	

NOTE: ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED AS 0020.

PAVEMENT MARKING

STATION TO STATION		LOCATION	STAGE	646.0106 PAVEMENT MARKING EPOXY 4-INCH LF	646.0600 REMOVING PAVEMENT MARKINGS LF	649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH LF	649.0400 TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH LF	REMARKS
5+85	- 7+25	CTH O	1	-	35	-	-	DASHED CENTERLINE
12+75	- 14+15	CTH O	1	-	35	-	-	DASHED CENTERLINE
5+85	- 14+15	CTH O, LT	1	-	830	-	-	EDGE LINE
	- 5+85	CTH O	1	-	-	700	-	YELLOW SOLID CENTERLINE
	5+85	CTH O	1	-	-	-	11	
5+85	- 14+15	CTH O, LT	1	-	-	830	-	WHITE EDGE LINE
6+75	- 13+25	CTH O, RT	1	-	-	654	-	WHITE EDGE LINE
14+15	- 21+15	CTH O	1	-	-	700	-	YELLOW SOLID CENTERLINE
	14+15	CTH O	1	-	-	-	11	
5+85	- 7+25	CTH O, RT	2	-	140	-	-	EDGE LINE
12+75	- 14+15	CTH O, RT	2	-	140	-	-	EDGE LINE
5+85	- 14+15	CTH O, RT	2	-	-	830	-	WHITE EDGE LINE
6+75	- 13+25	CTH O, LT	2	-	-	654	-	WHITE EDGE LINE
5+85	- 14+15	CTH O, LT & RT	2	1,660	-	-	-	WHITE EDGE LINES
5+85	- 14+15	CTH O	2	208	-	-	-	YELLOW DASHED CENTERLINE
TOTAL				1,868	1,180	4,368	22	

CONSTRUCTION STAKING

CATEGORY	STATION TO STATION		LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6500 CONSTRUCTION STAKING STRUCTURE LAYOUT (P-60-0916) LS	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
0010	7+25	- 9+55	CTH O	230	230	-	-	230
0010	10+45	- 12+75	CTH O	230	230	-	-	230
0020		10+00	CTH O	-	-	1	-	-
0010		PROJECT	CTH O	-	-	-	1	-
TOTAL				460	460	1	1	460

SAWING ASPHALT

STATION TO STATION		STAGE	LOCATION	690.0150 SAWING ASPHALT LF	REMARKS
7+25	- 8+05	1	CTH O	93	
8+05	- 9+55	1	CTH O, LT	150	1' LT OF CENTERLINE
10+45	- 11+95	1	CTH O, LT	230	1' LT OF CENTERLINE
11+95	- 12+75	1	CTH O	93	
7+25	- 8+05	2	CTH O	95	
11+95	- 12+75	2	CTH O	95	
TOTAL				756	

NOTE: ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED AS 0020.

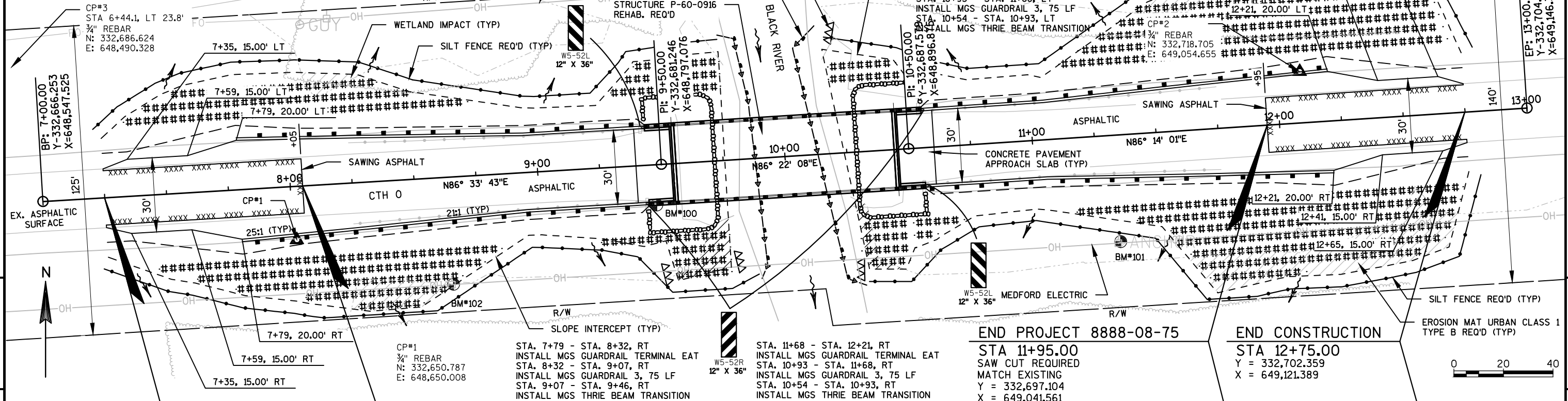
BENCH MARKS				
NO.	STATION	OUT	DESCRIPTION	ELEV.
100	9+47	RT 16.3'	CHISELED SQ. IN SW WING	1402.22
101	11+33	RT 43.1'	NAIL IN POWER POLE	1396.52
102	8+63	RT 43.3'	NAIL IN POWER POLE	1394.86

STA. 7+79 - STA. 8+32, LT
INSTALL MGS GUARDRAIL TERMINAL EAT
STA. 8+32 - STA. 9+07, LT
INSTALL MGS GUARDRAIL 3, 75 LF
STA. 9+07 - STA. 9+46, LT
INSTALL MGS THRIE BEAM TRANSITION

TEMPORARY DITCH CHECKS REQ'D (TYP)
TURBIDITY BARRIERS REQ (TYP)
CHARTER COMMUNICATIONS

EROSION MAT URBAN CLASS 1 TYPE B REQ'D (TYP)

WETLAND IMPACT (TYP)



BEGIN CONSTRUCTION

STA 7+25.00
Y = 332,667.752
X = 648,572.480

BEGIN PROJECT 8888-08-75

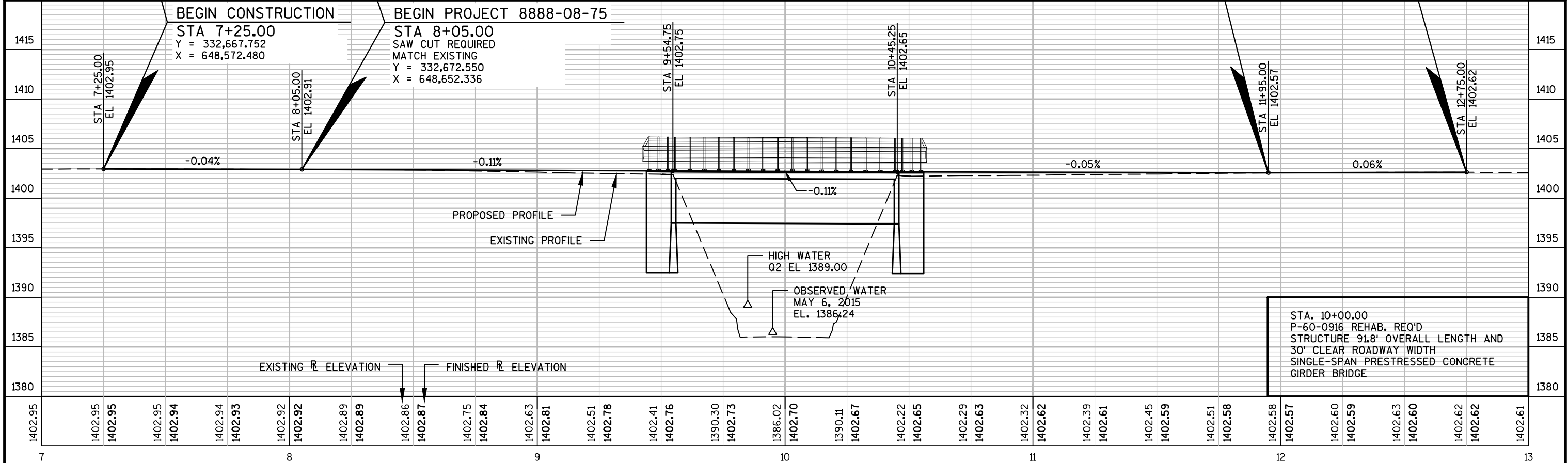
STA 8+05.00
SAW CUT REQUIRED
MATCH EXISTING
Y = 332,672.550
X = 648,652.336

END PROJECT 8888-08-75

STA 11+95.00
SAW CUT REQUIRED
MATCH EXISTING
Y = 332,697.104
X = 649,041.561

END CONSTRUCTION

STA 12+75.00
Y = 332,702.359
X = 649,121.389



PROJECT NO: 8888-08-75

HWY: CTH 0

COUNTY: TAYLOR

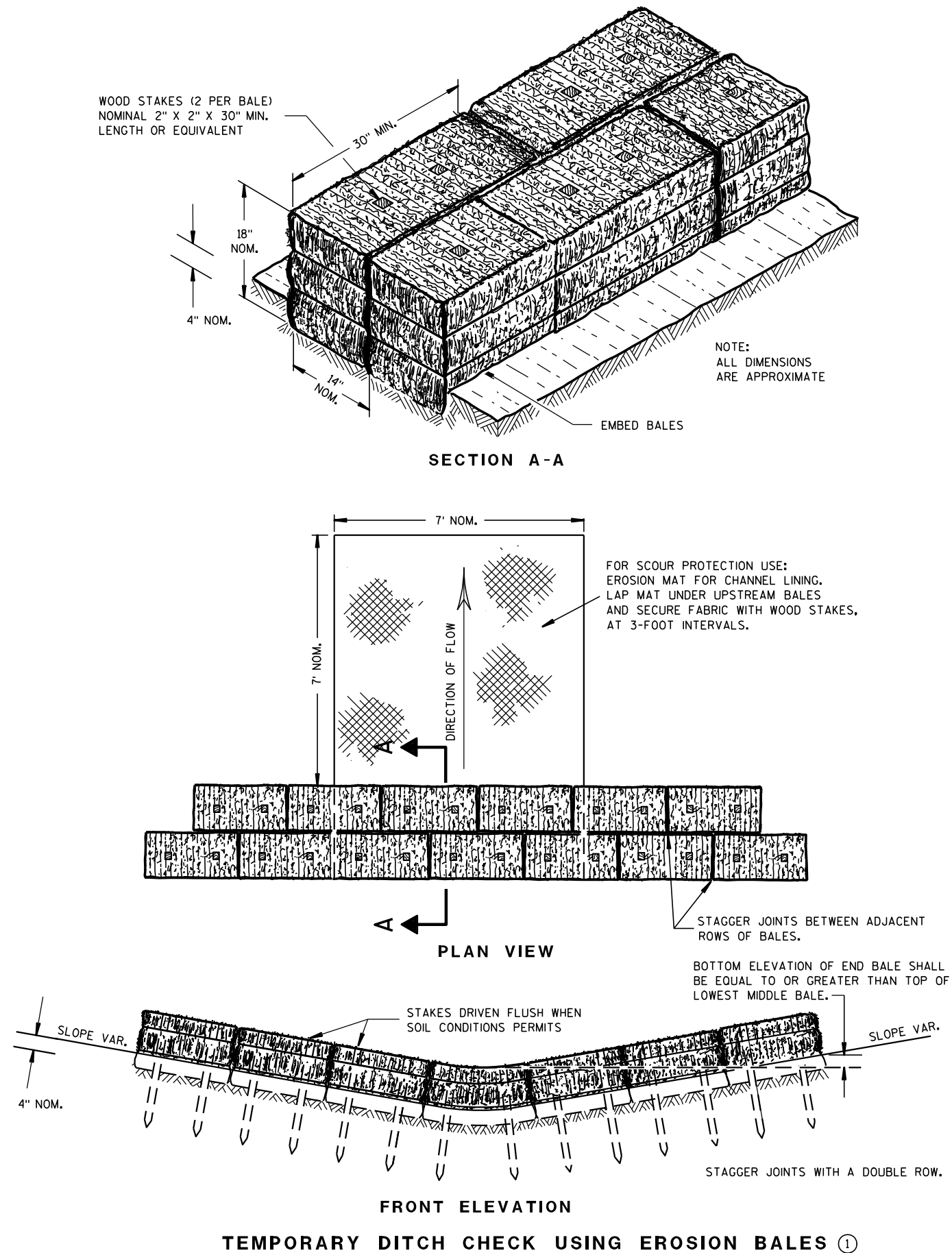
PLAN AND PROFILE: CTH 0

SHEET

E

Standard Detail Drawing List

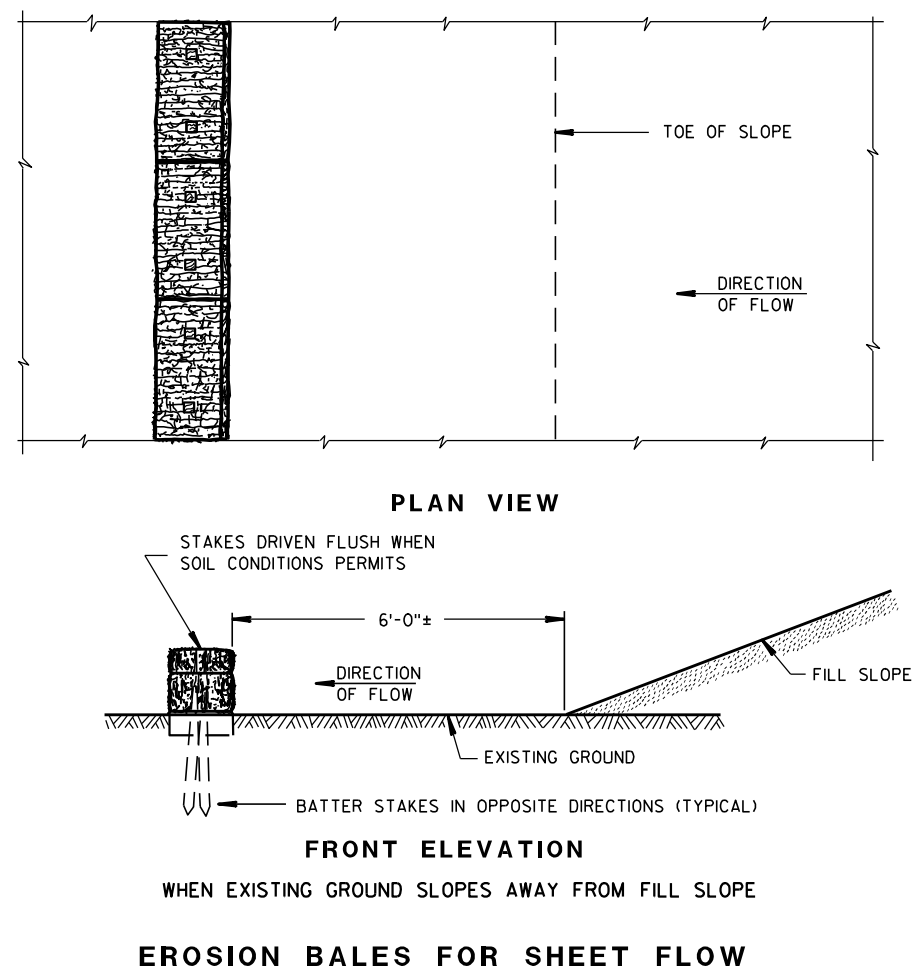
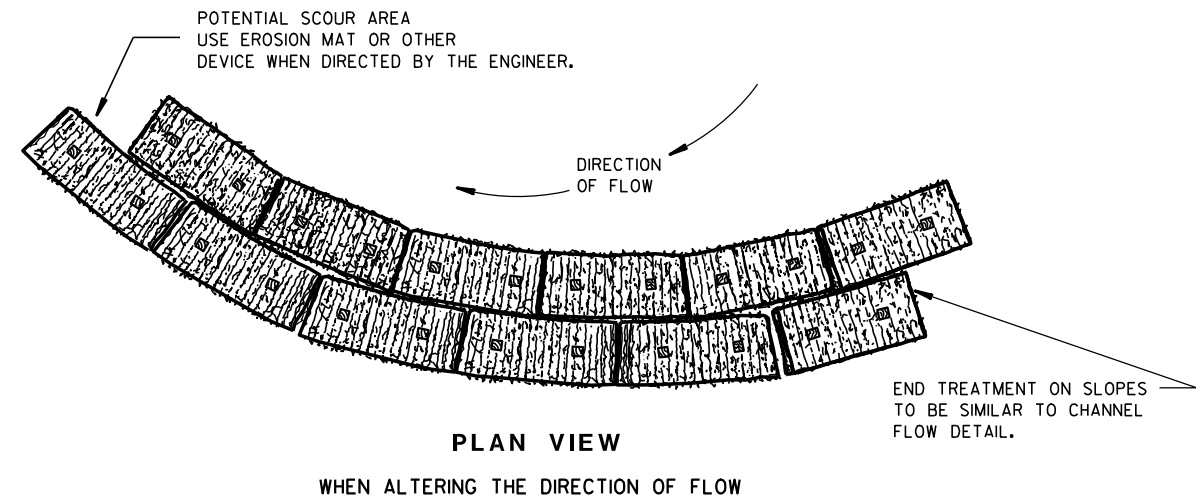
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
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)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15D33-04	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

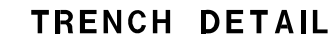
APPROVED

6/04/02
DATE/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

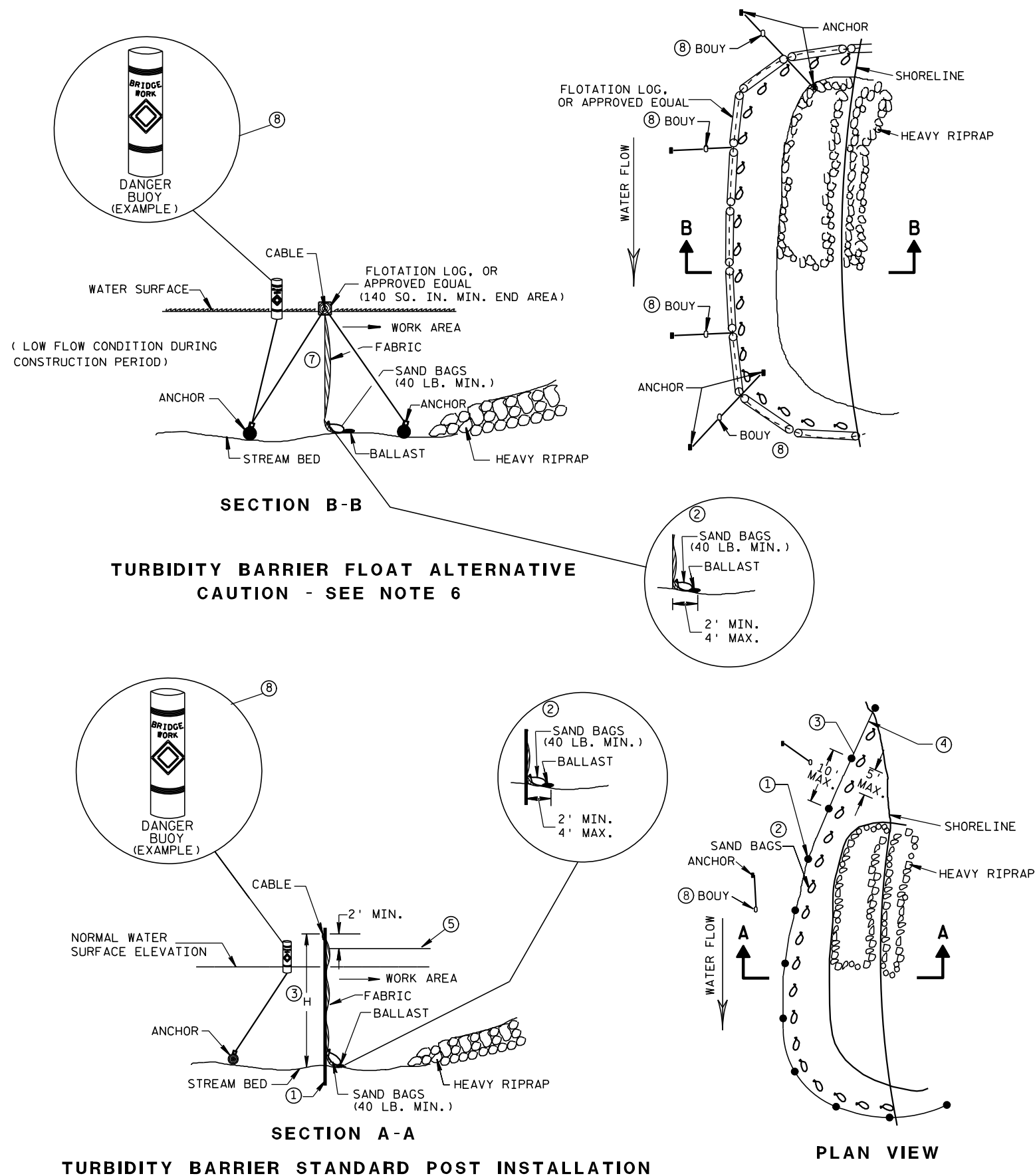
FHWA



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



<div style="text-align: center;">SILT FENCE</div>	
<div style="text-align: center;">STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</div>	
<div>APPROVED <u>4-29-05</u> DATE</div>	<div><u>/S/ Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER</div>

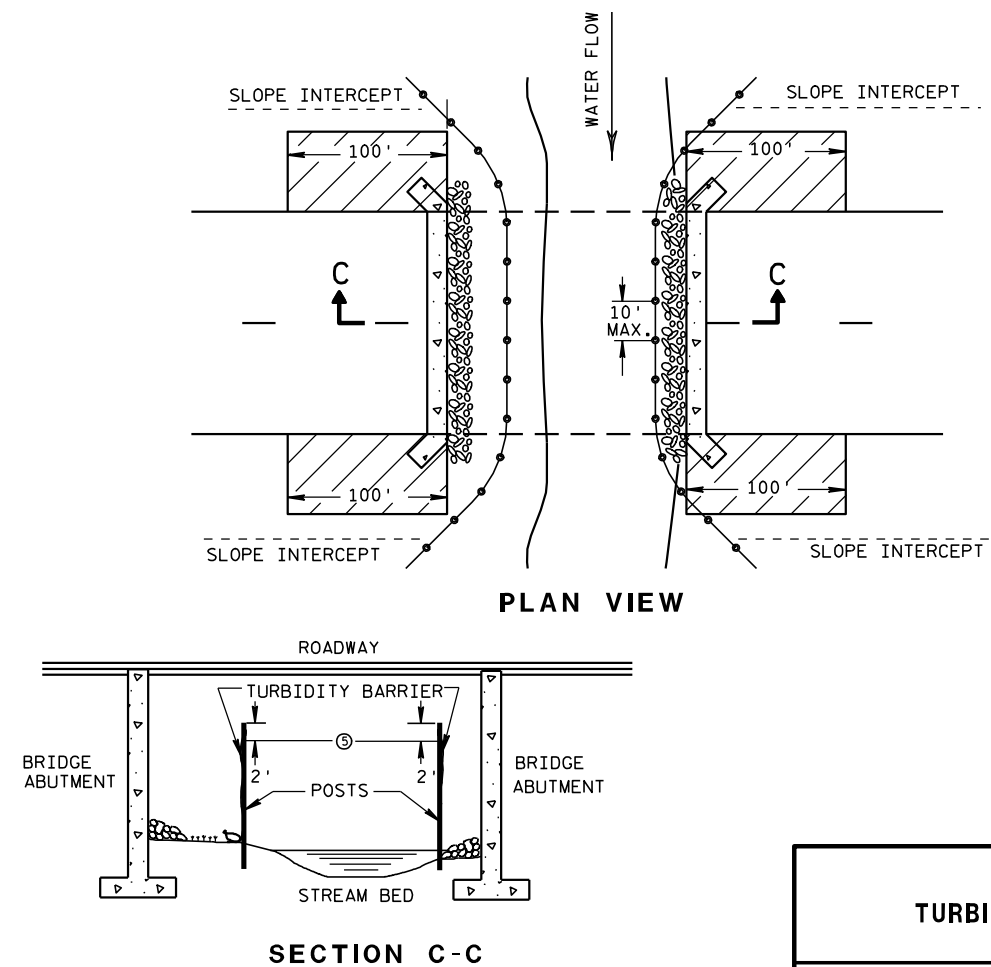


GENERAL NOTES

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

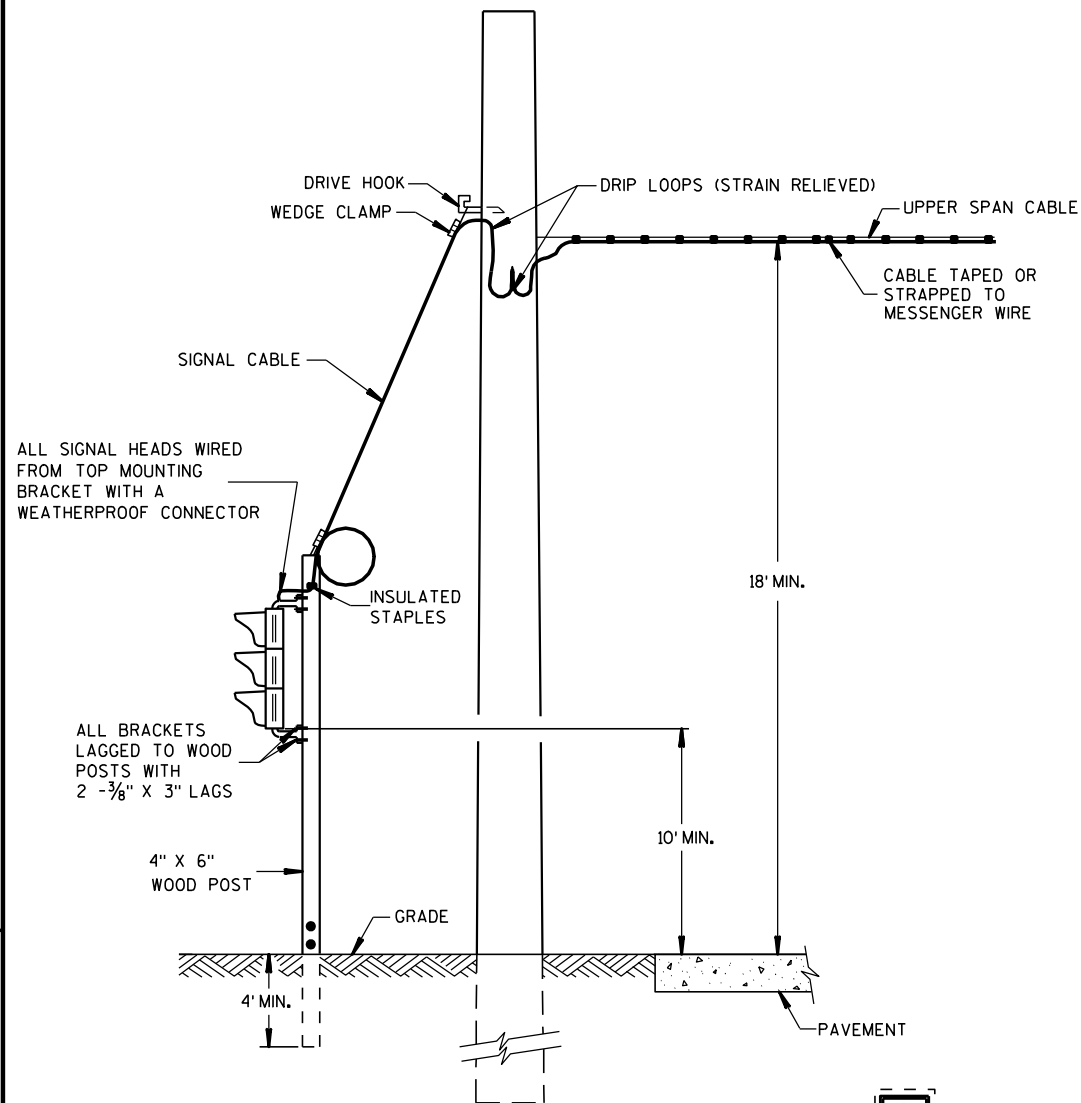
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

FWHA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

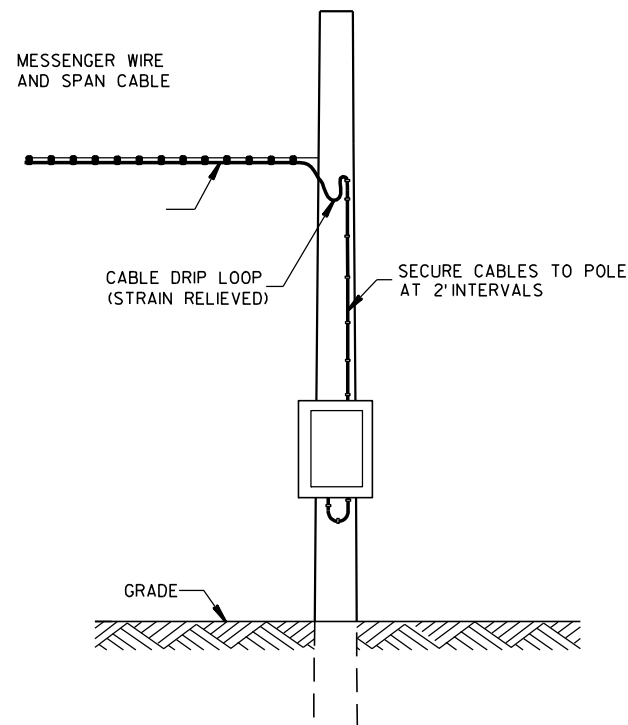


**TYPICAL DROP
TO TRAFFIC SIGNAL FACE**

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT

**NOTE: OFFSET MEASURED FROM OUTER EDGE OF
OUTSIDE THRU LANE.

MINIMUM POLE LENGTHS	CLASS	MINIMUM BURIAL DEPTHS
25 FEET	V	5 FEET
30 FEET	V	6 FEET
35 FEET	IV	7 FEET
40 FEET	IV	8 FEET
45 FEET	IV	9 FEET



**POLE MOUNT
CABINET INSTALLATION**

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAYBE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY POLES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.

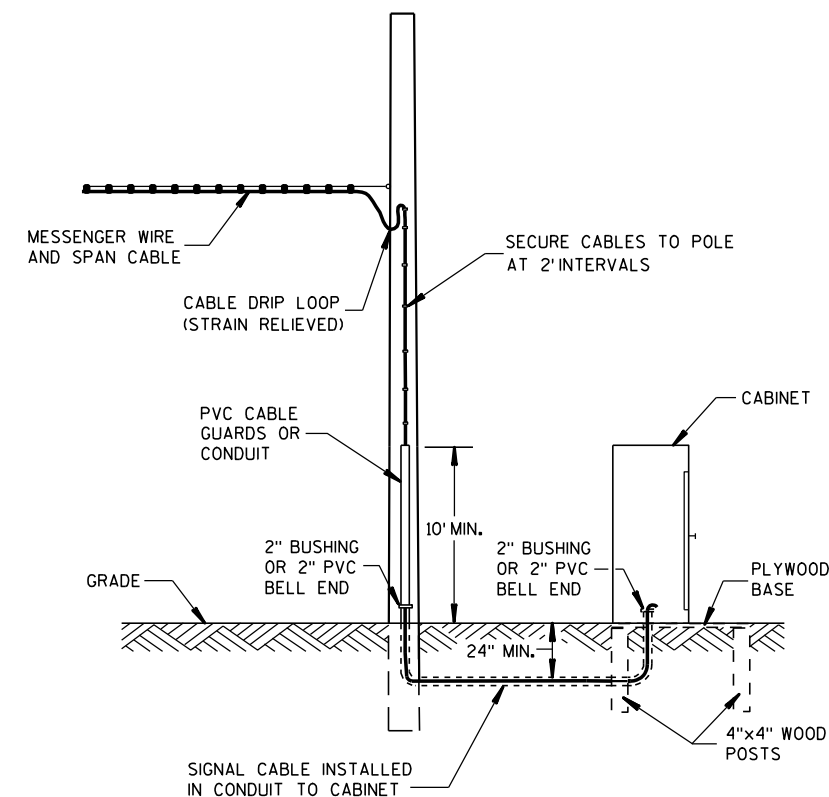
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

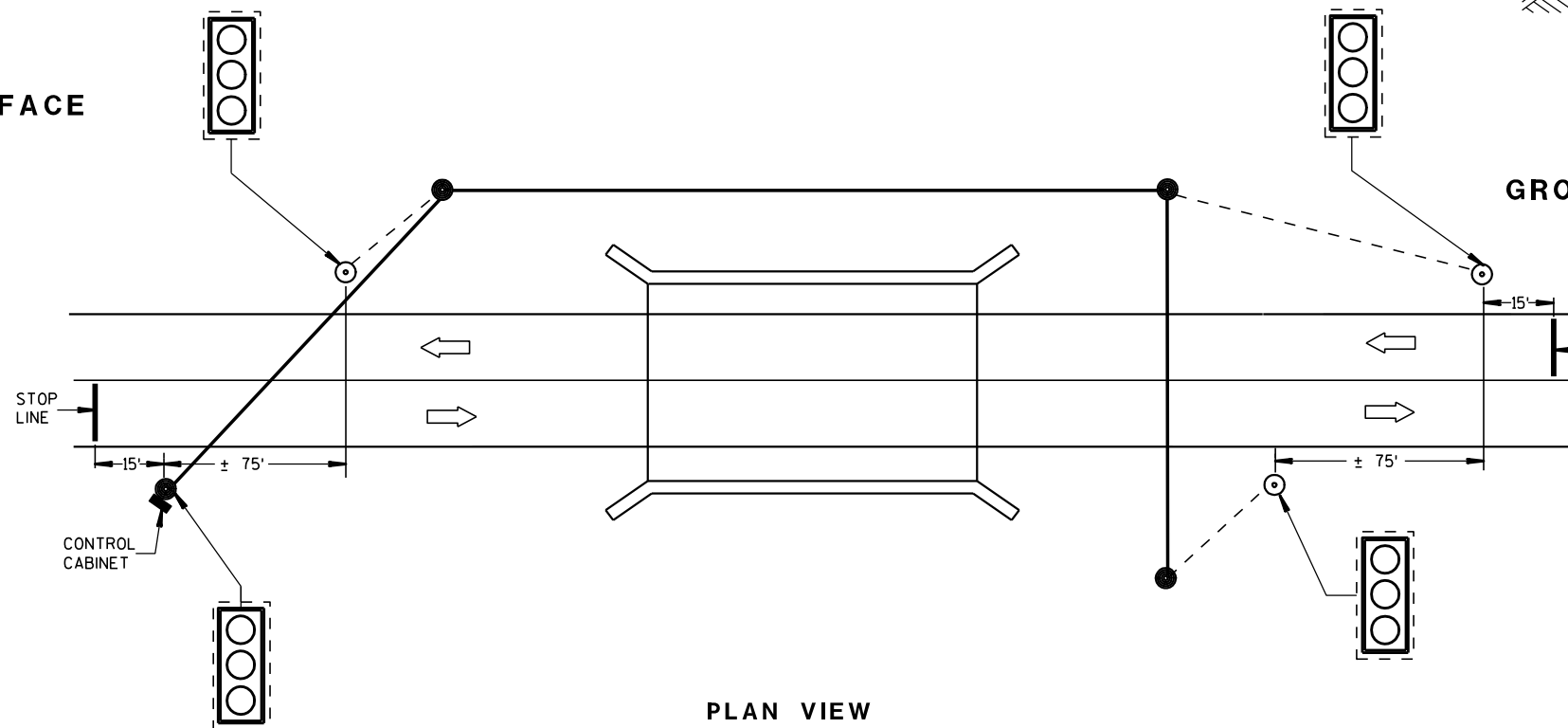
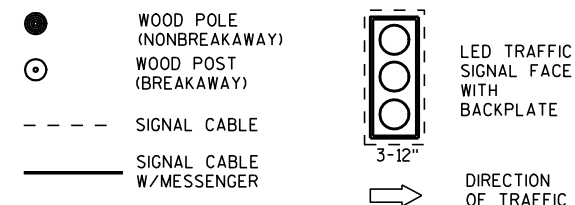
TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



GROUND MOUNT CABINET INSTALLATION

LEGEND



**PLAN VIEW
TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION**

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

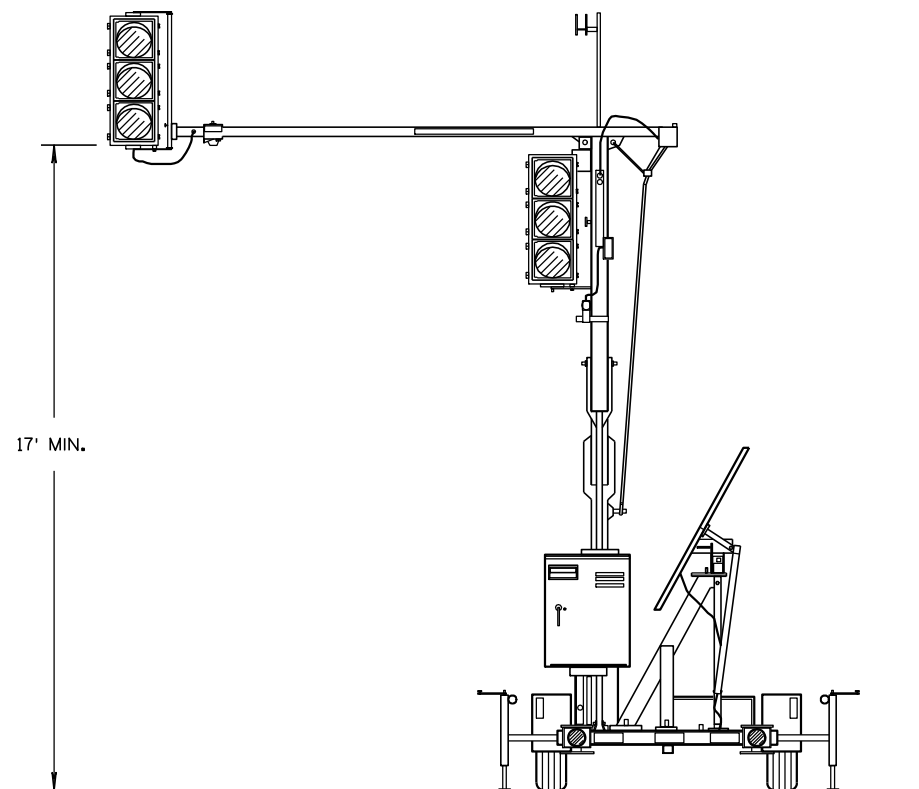
3/2/2011
DATE

/S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS

FHWA



<p>BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION</p>	
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>	
<p>APPROVED</p> <p><u>3/2/2011</u> DATE</p>	<p><u>/S/ Thomas J. Goring</u> STATE ELECTRICAL ENGINEER FOR HWYS</p>
<p>FWHA</p>	

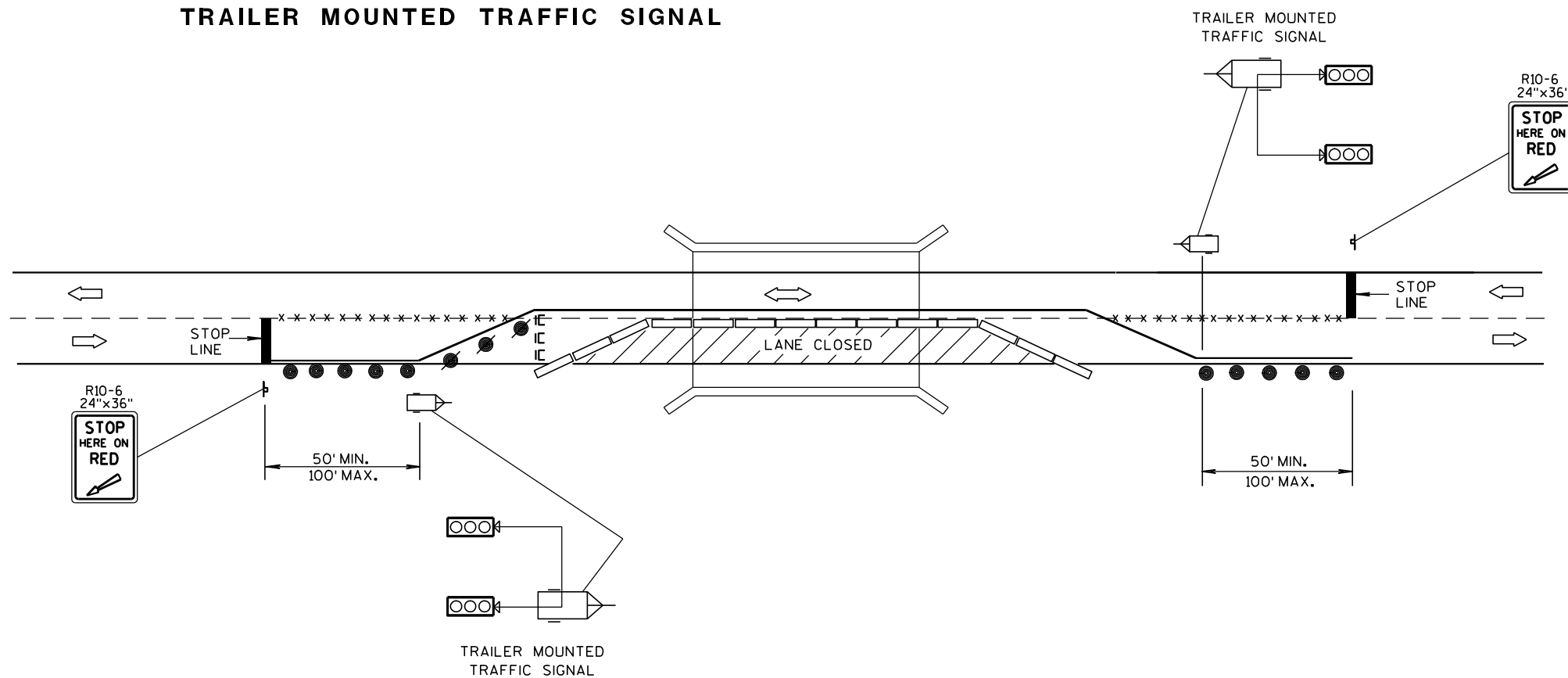


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

- ⌵ POST MOUNTED SIGN
- *-x-* REMOVING PAVEMENT MARKING
- IC TYPE III BARRICADE WITH SIGN
- /● DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- ▬ TEMPORARY PRECAST CONCRETE BARRIER
- ⌵ TRAILER MOUNTED TRAFFIC SIGNAL
- ➡ DIRECTION OF TRAFFIC FLOW

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

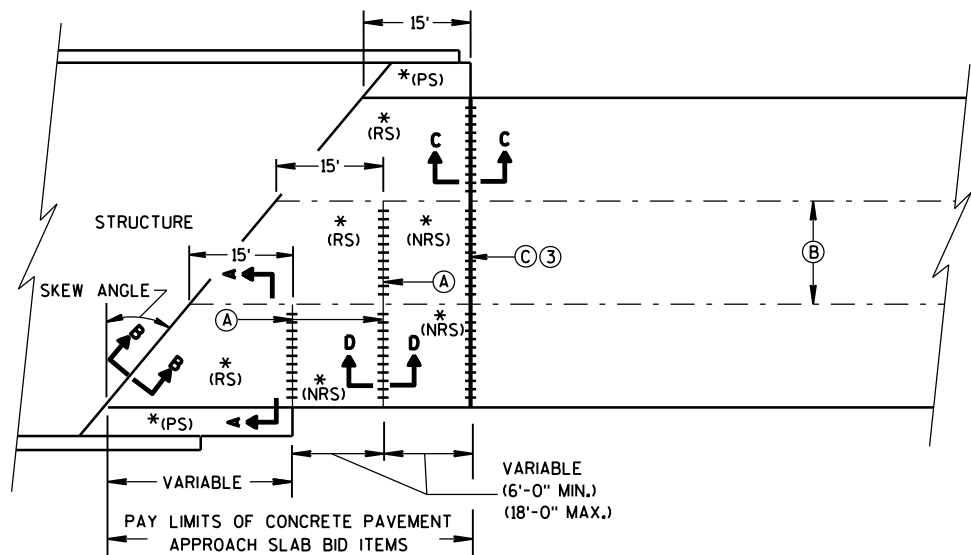
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

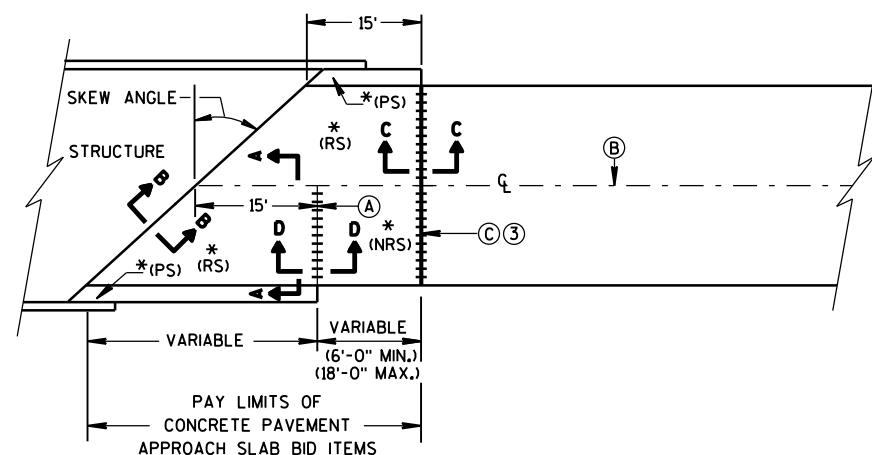
3/2/2011
DATE

FHWA

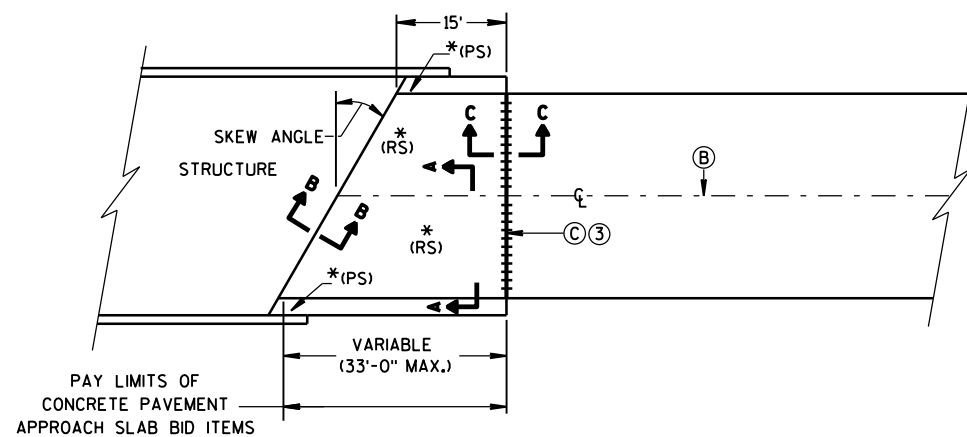
/S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS



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



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

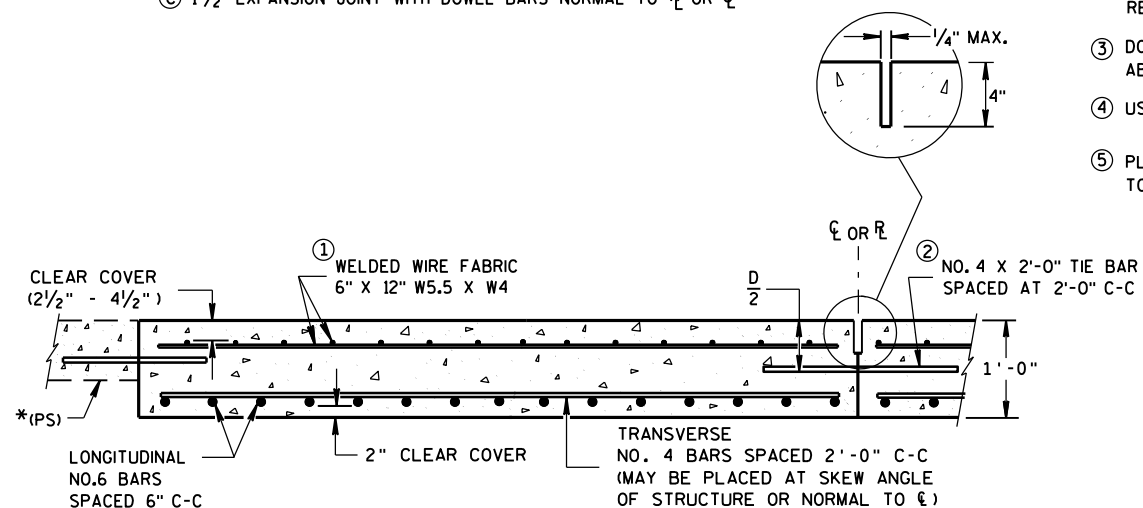


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

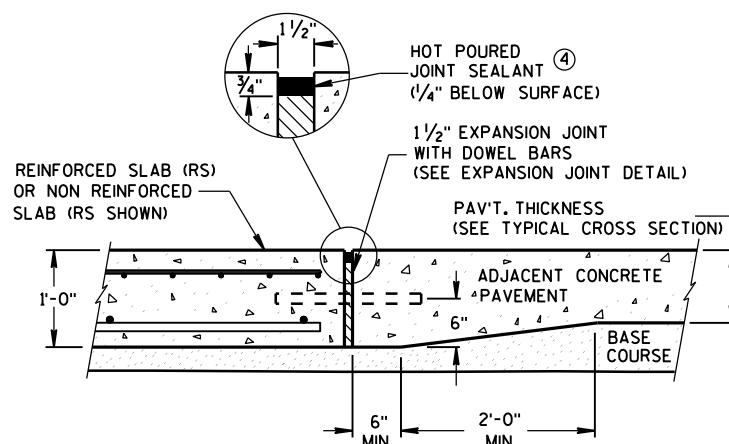
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

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

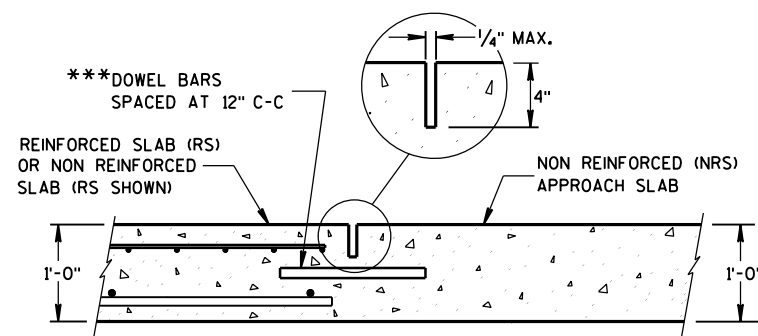
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



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



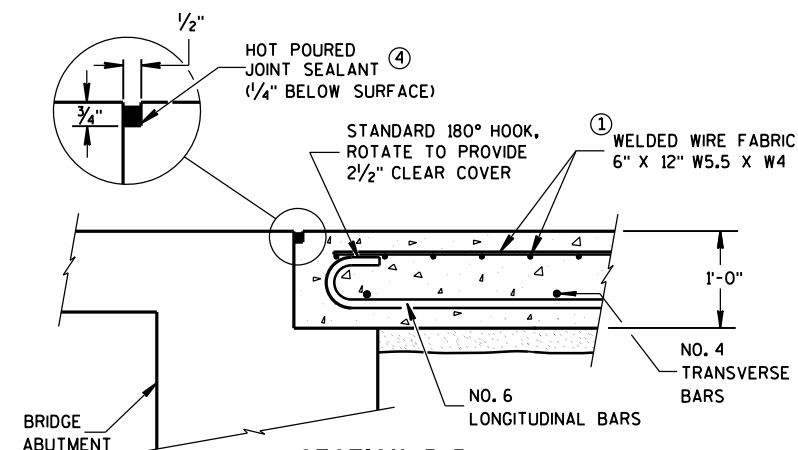
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

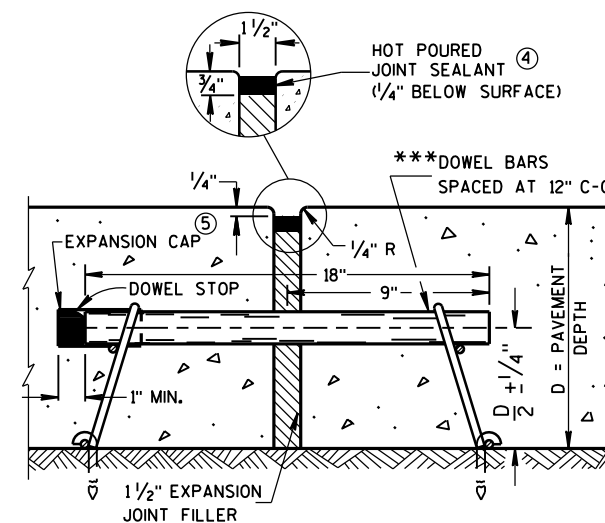
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

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**

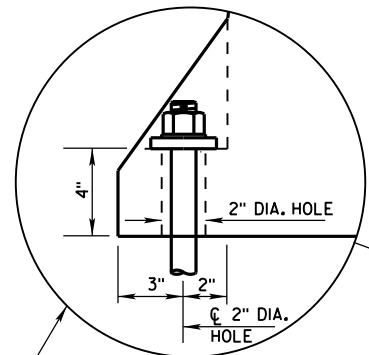


EXPANSION JOINT DETAIL

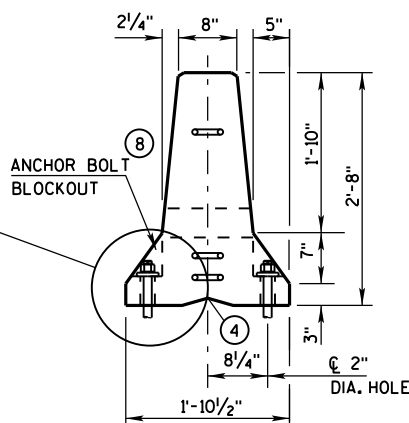
CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

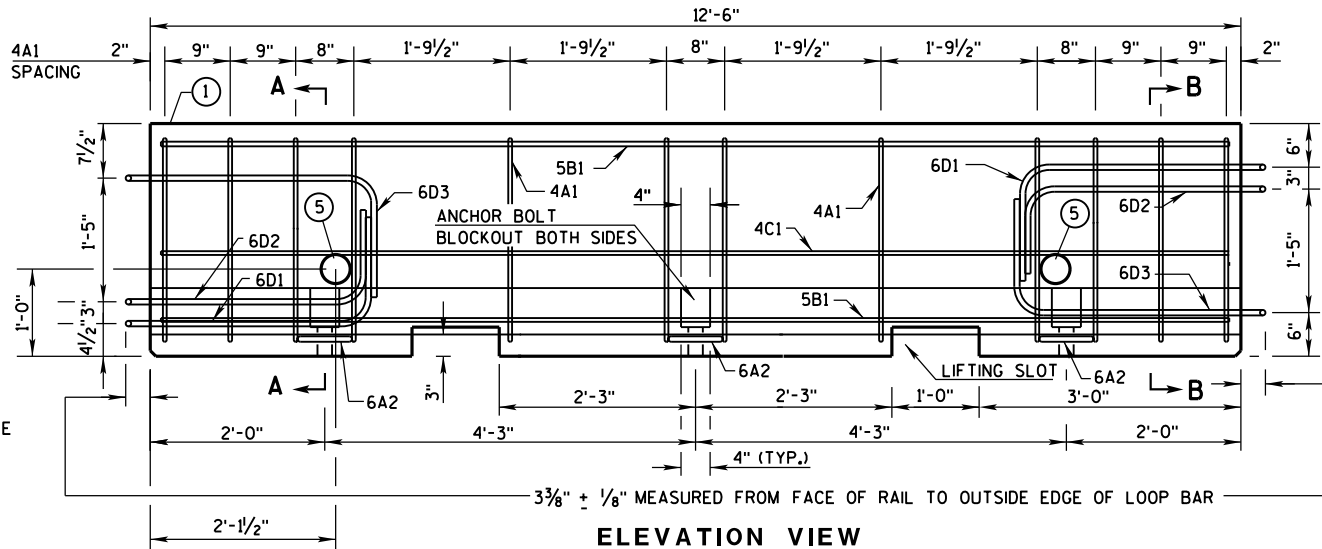
APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



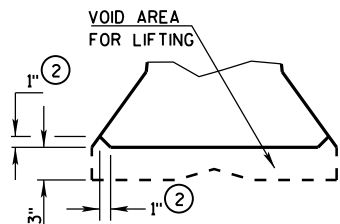
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



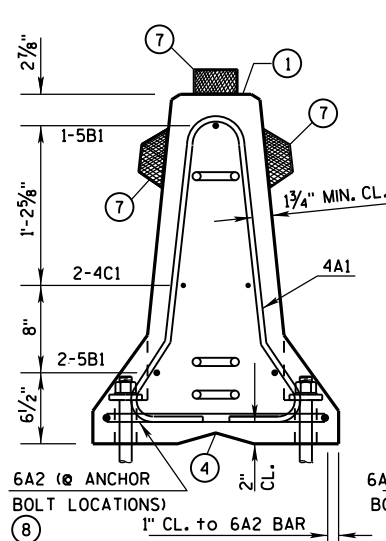
END VIEW



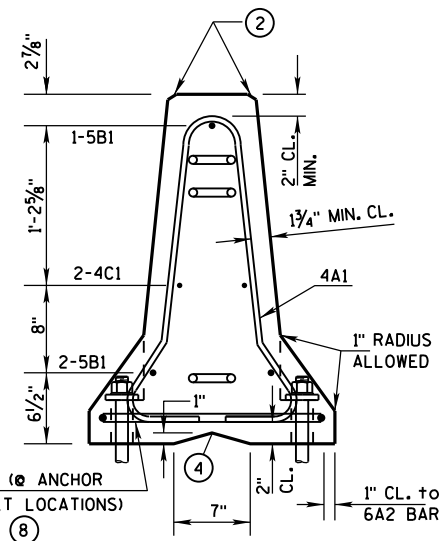
ELEVATION VIEW



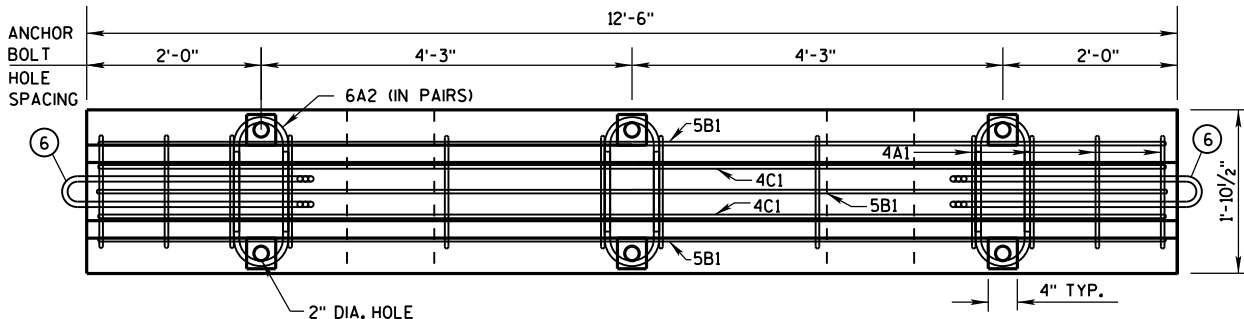
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

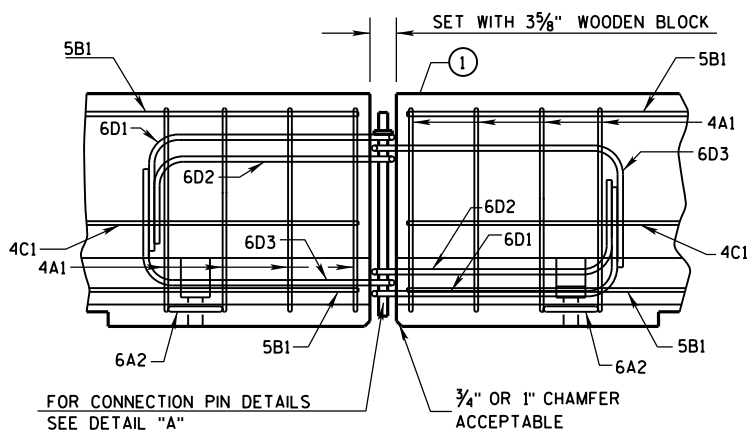


SECTION B-B
(STIRRUP PLACEMENT)

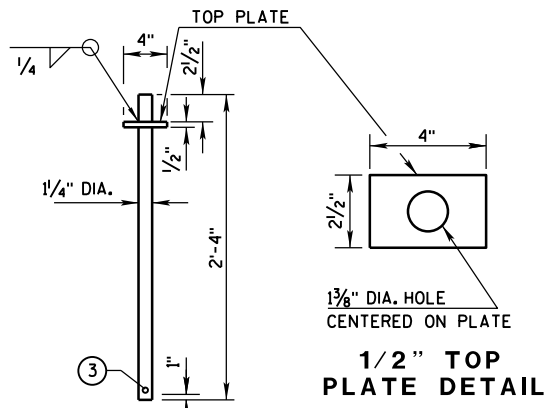


PLAN VIEW

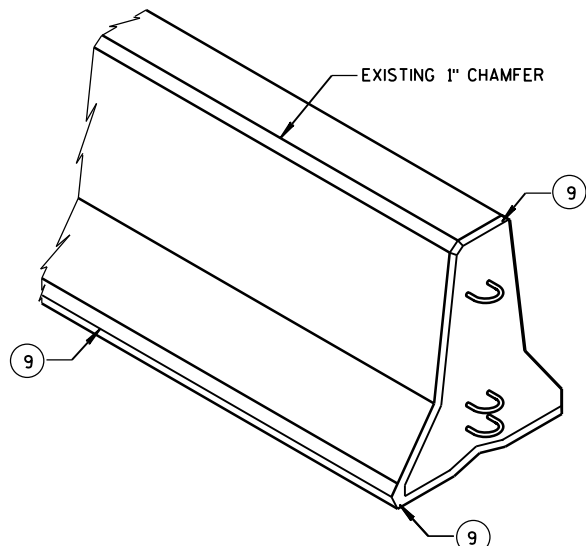
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-14(g) THRU 14B7-14(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

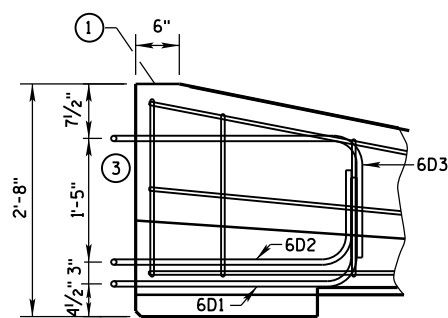
LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

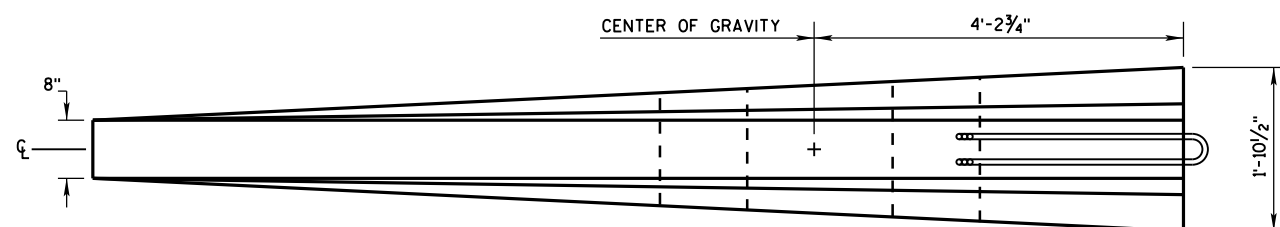
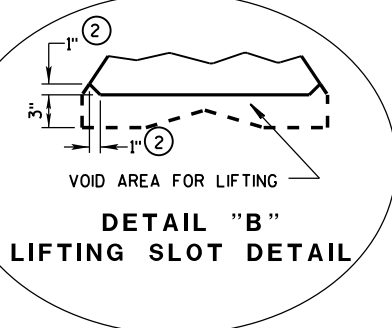
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - TYPE: WICBTP
 - MANUFACTURER
 - DATE MANUFACTURED (MONTH AND YEAR)
- 1" CHAMFER TO PREVENT SPALLING.
- A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- "V" NOTCH IS OPTIONAL.
- THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURER'S INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- SEE SHEET D FOR ANCHORING CRITERIA.
- 1" CHAMFER OPTIONAL.



- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)



**CHAMFER
DETAIL**

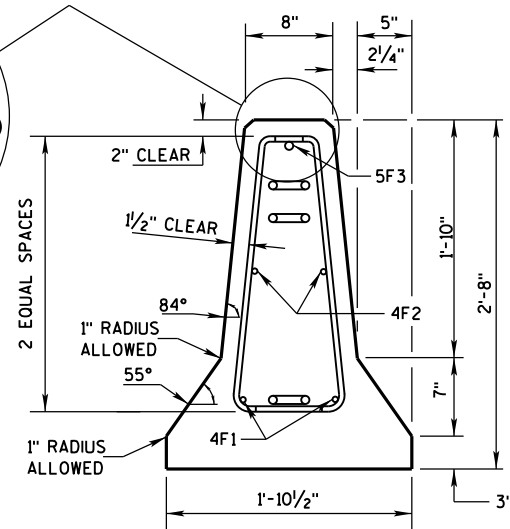


Diagram illustrating the barrier on a curve. The diagram shows a cross-section of a barrier with a 10"± OFFSET and a 5°± MAX. angle. The barrier is divided into sections with dimensions of 12'-6" and 12'-6". The text "BARRIER ON CURVE" is prominently displayed. The "END SECTION" is also indicated.

FLARE AT BARRIER END

POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

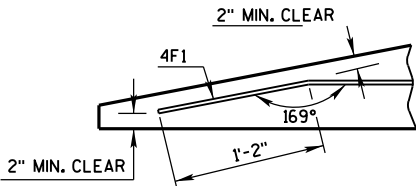
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

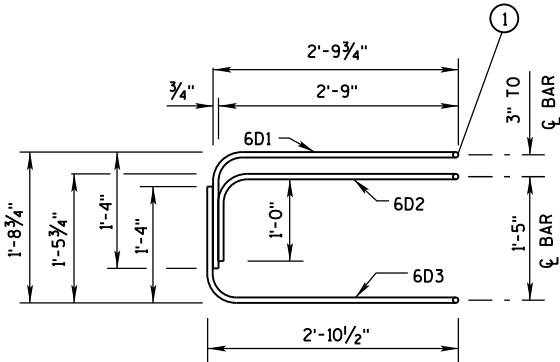
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

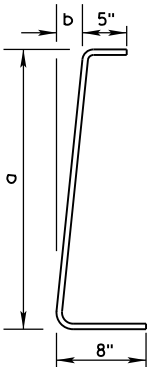
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

TAPER BARRIER SECTION

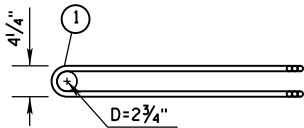
GENERAL NOTES

① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

BARRIER SECTION
BILL OF MATERIALS

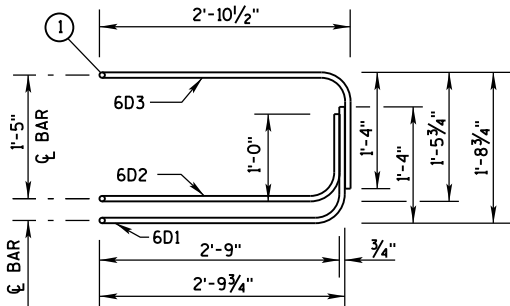
(PER 12'-6" BARRIER SECTION)

BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"

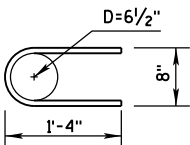


PLAN VIEW
LOOP BAR ASSEMBLY

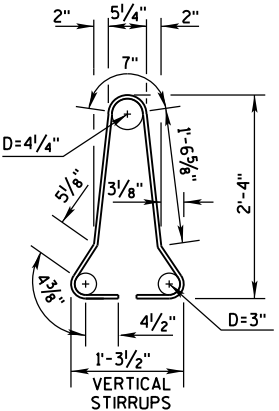
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

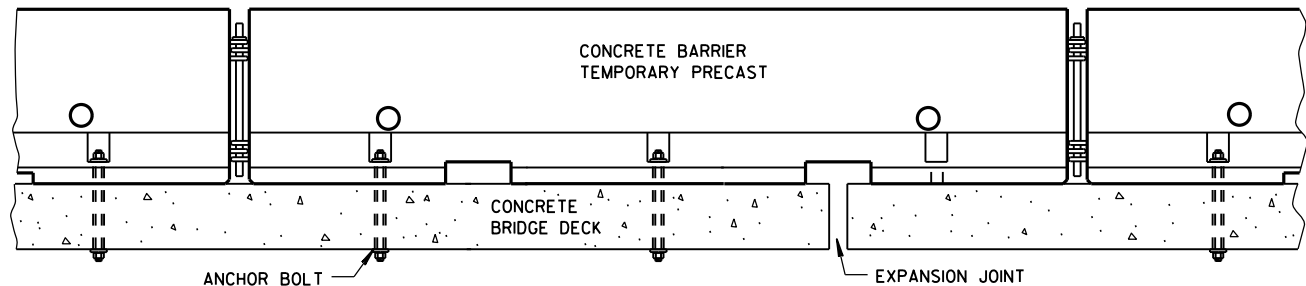
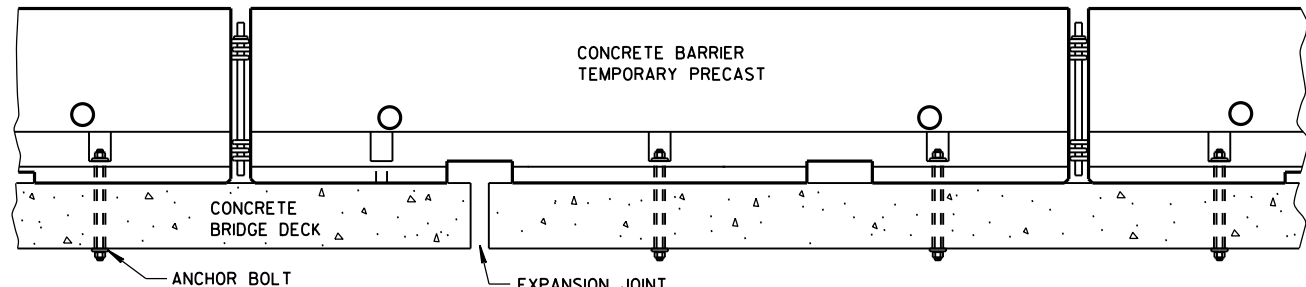


4A1

BARRIER SECTION

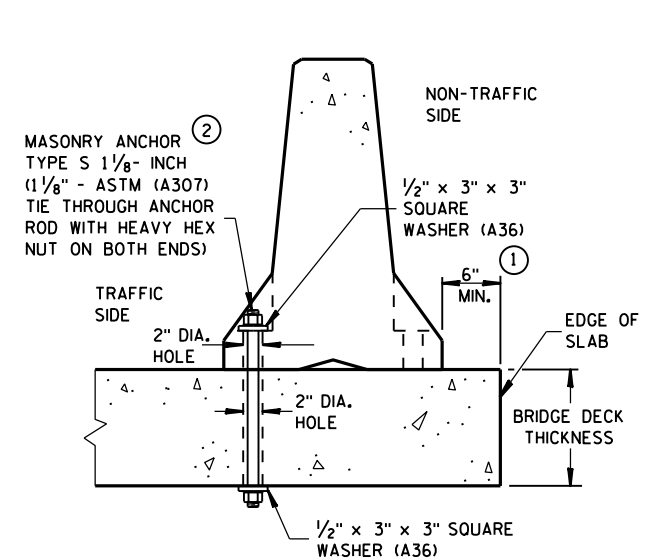
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



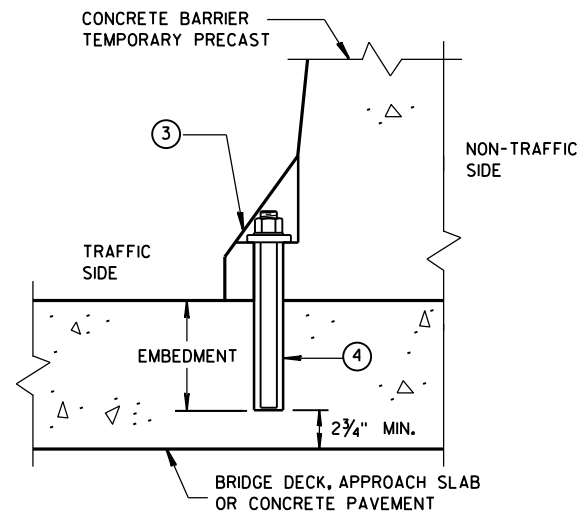
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



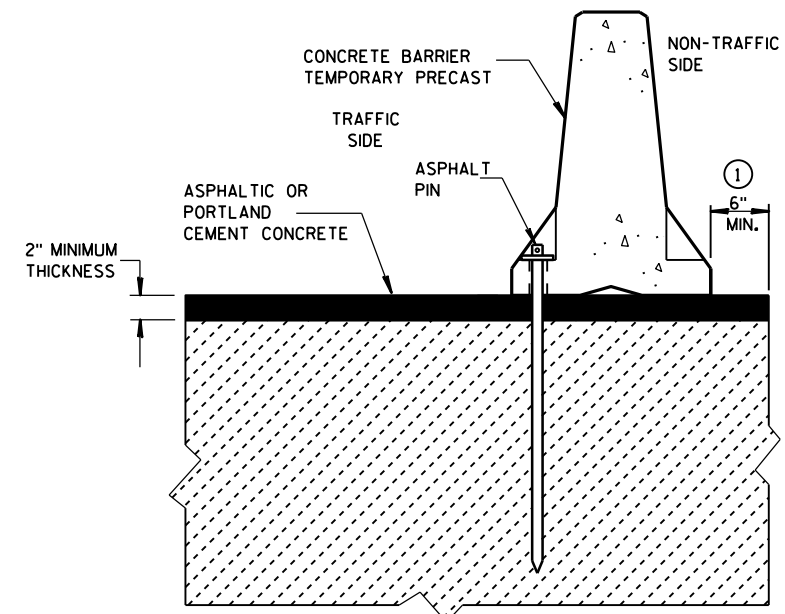
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



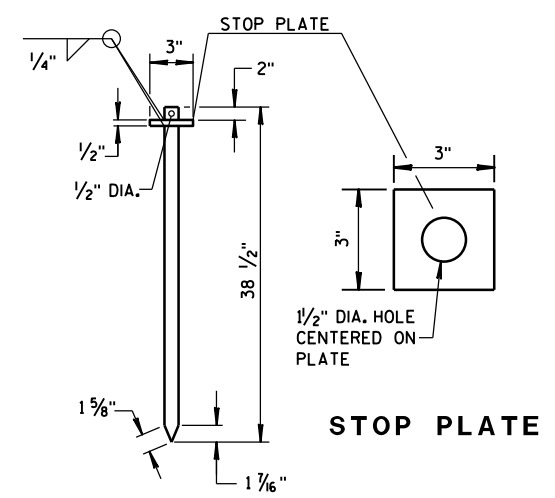
REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

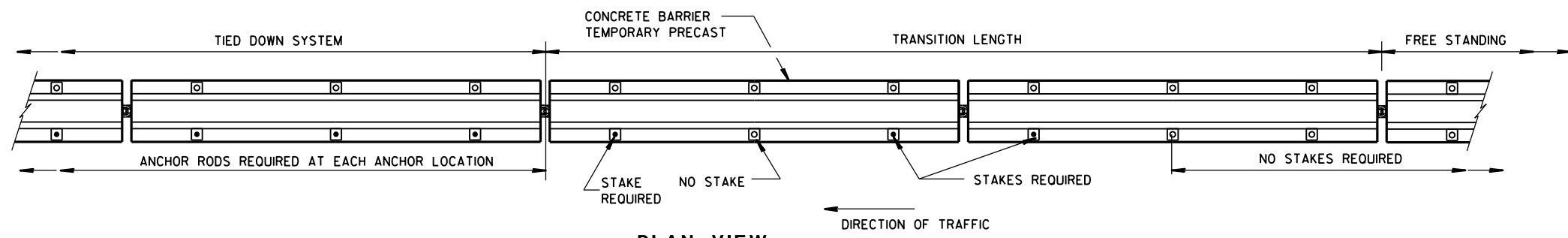


STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



ASPHALT PIN
(ASTM A36 STEEL)



PLAN VIEW FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

- ① CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V,
FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT,
IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF
AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

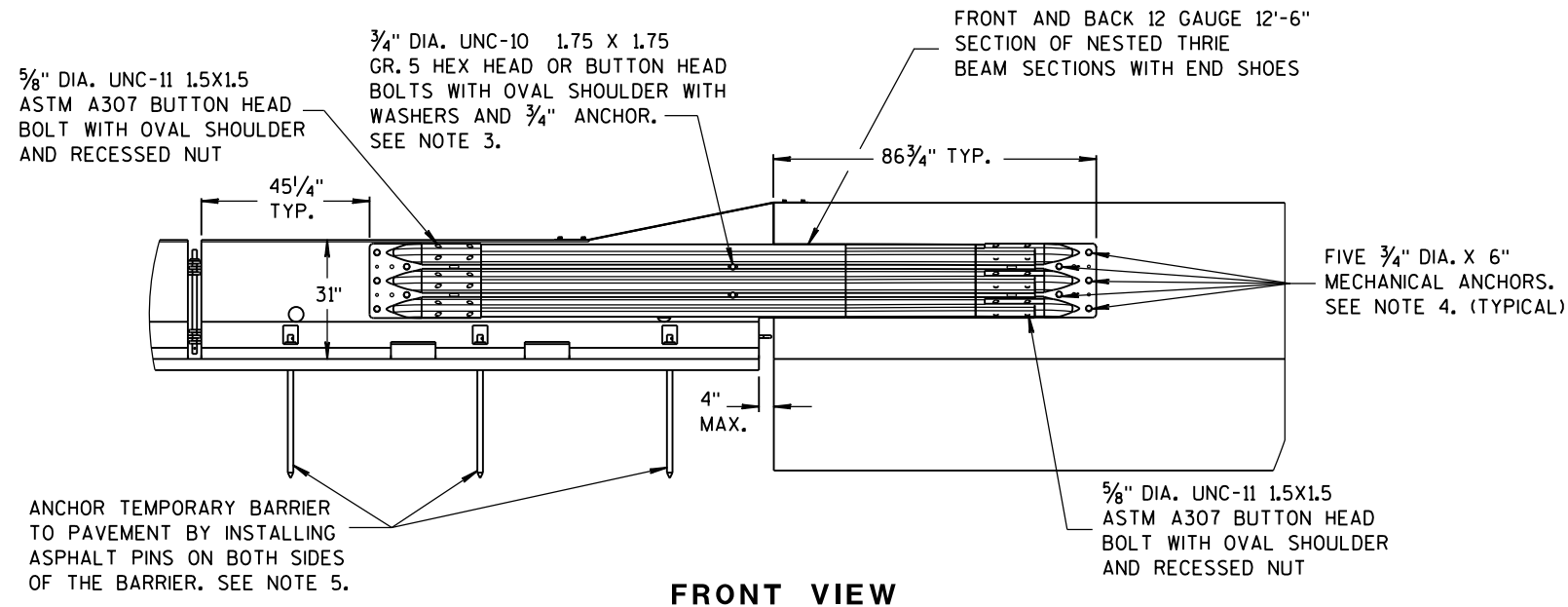
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V,
FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT,
IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF
AND THE POSTED SPEED IS 40 MPH OR LESS.
- ② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED ANCHOR BOLT
INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE
BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE
S 1 1/8"-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE
ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY
FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CON-
CRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERCIAL GROUT OR MATERIAL
IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.
- ③ 1/8" DIAMETER A307 THREADED ROD, 1/2" x 3" x 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL,
ASTM A563A HEAVY HEX NUT.
- ④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2
AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



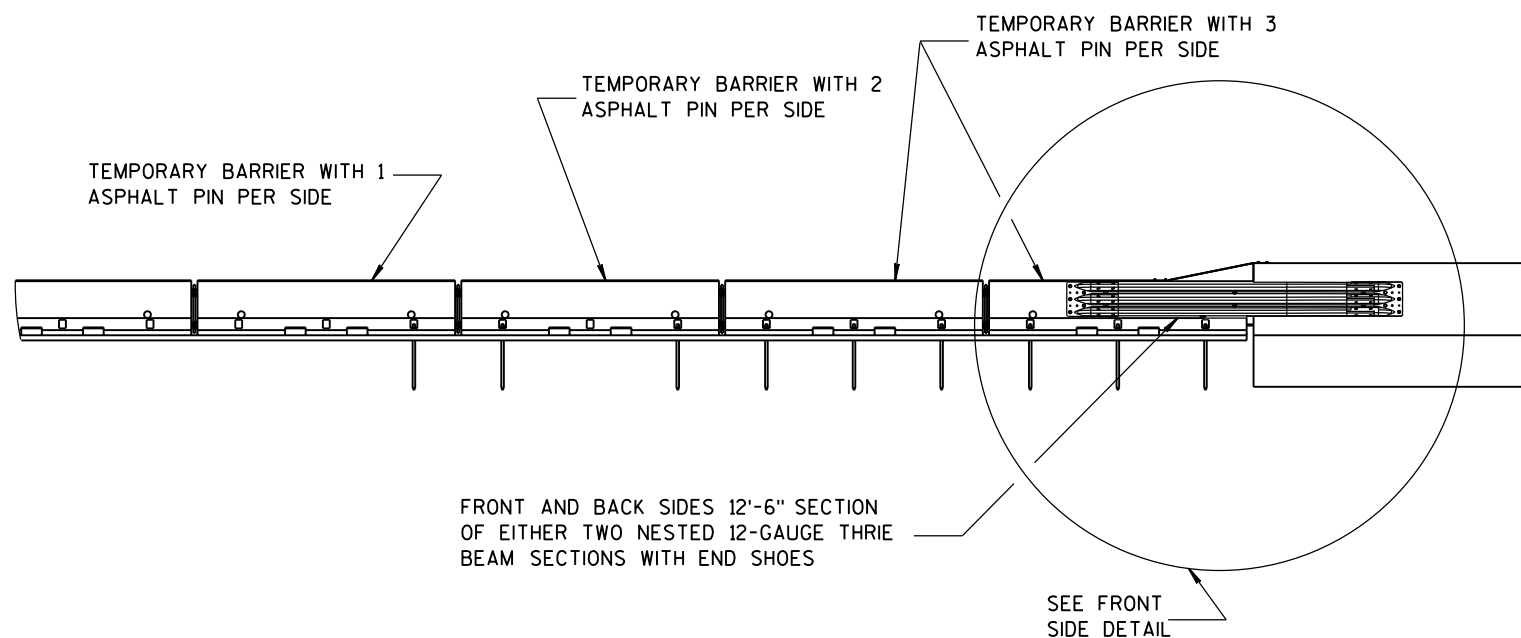
FRONT VIEW

NOTES

NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

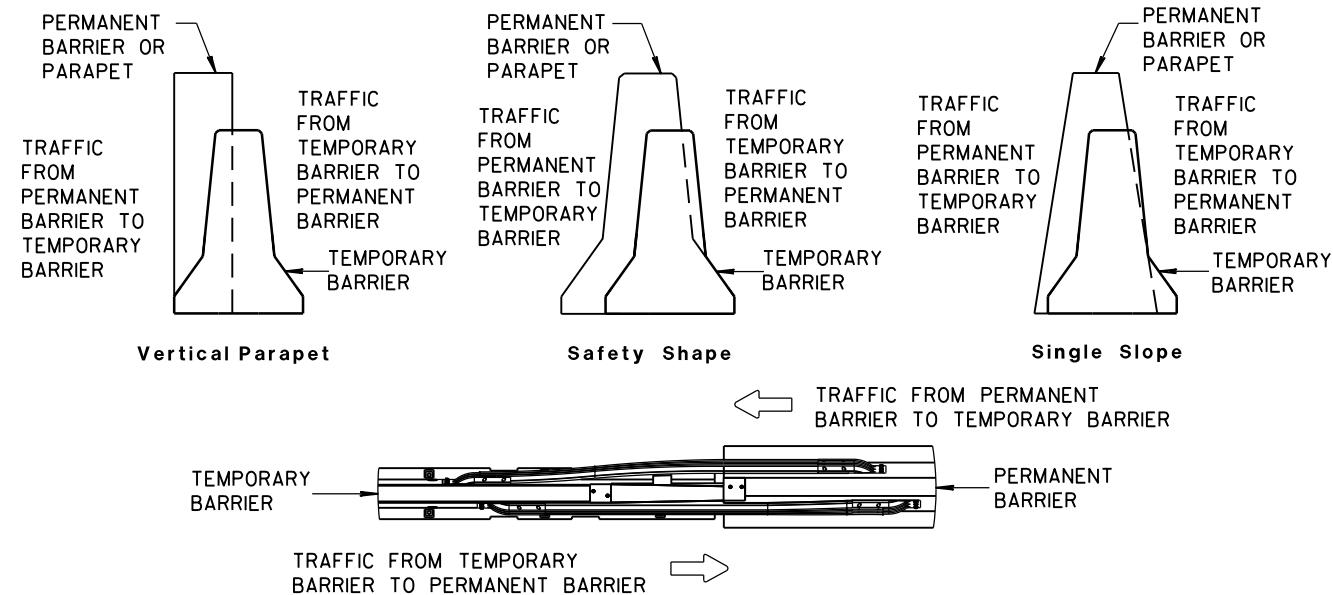
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.

4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

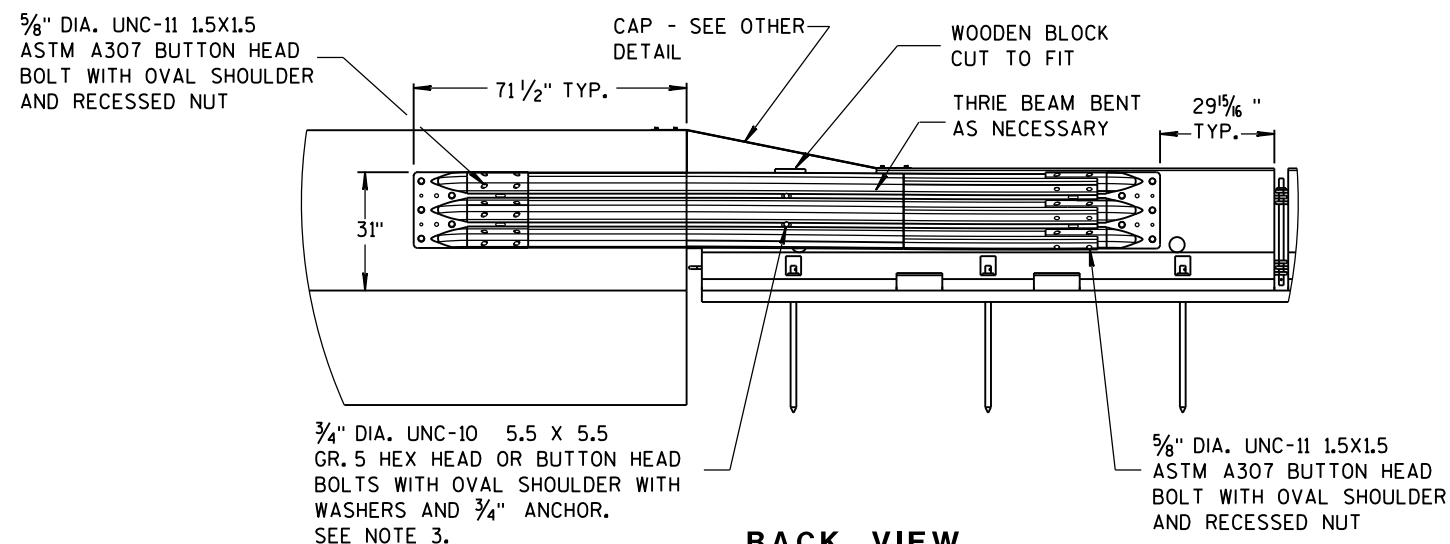


FRONT VIEW

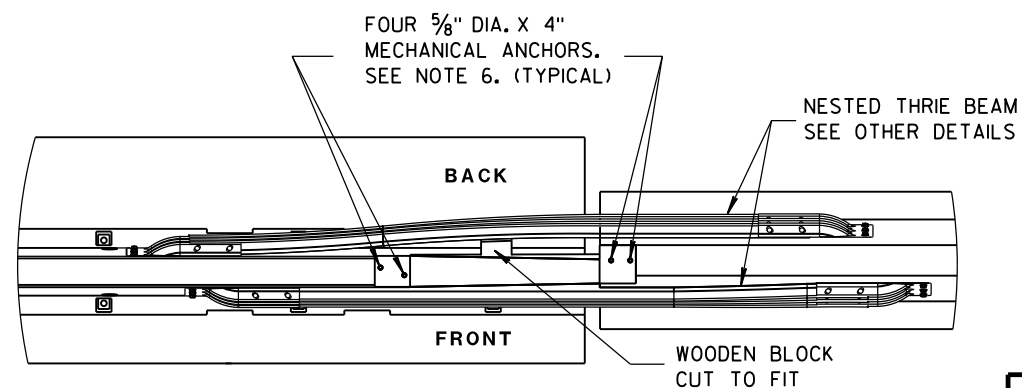
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



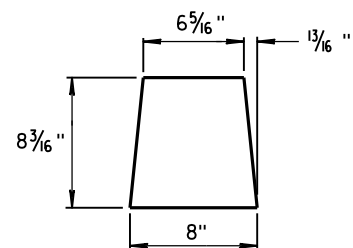
BACK VIEW



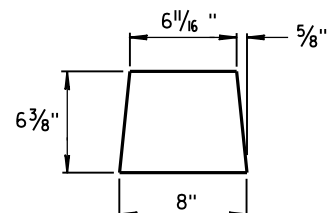
PLAN VIEW

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

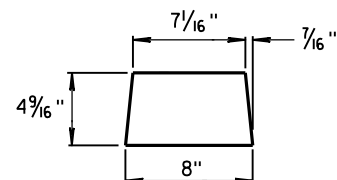
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



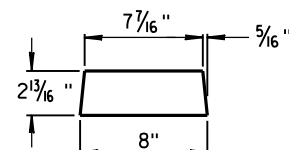
GUSSET 1



GUSSET 2

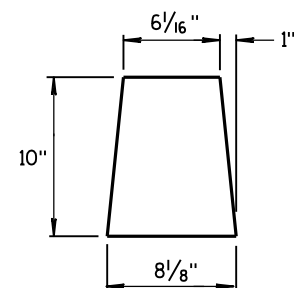


GUSSET 3

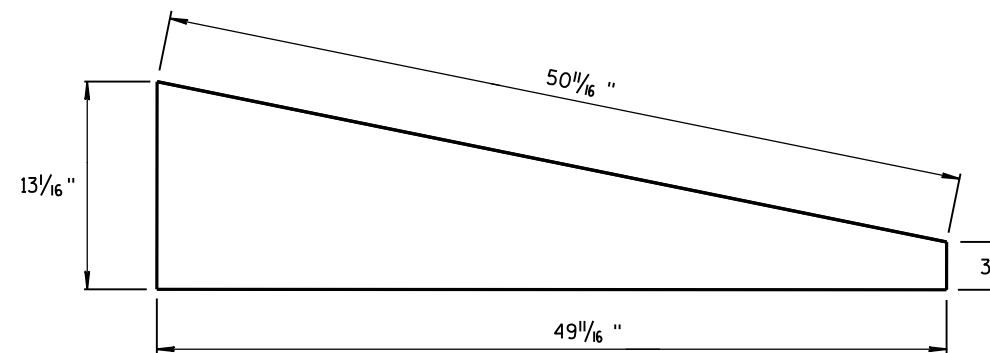


GUSSET 4

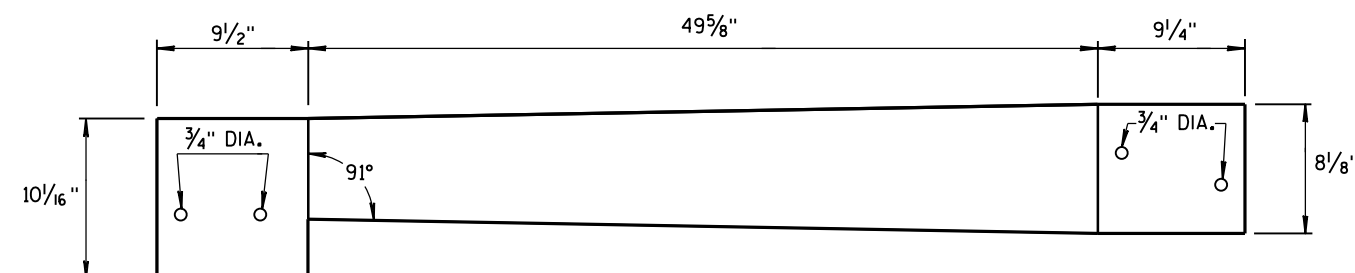
GUSSETS



END PLATE



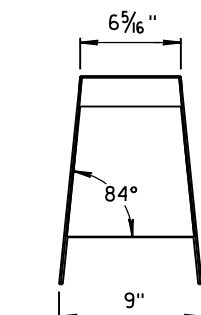
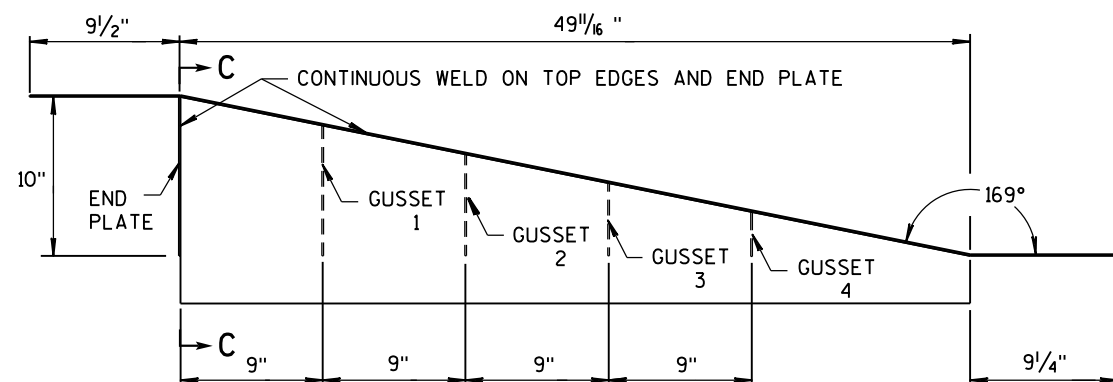
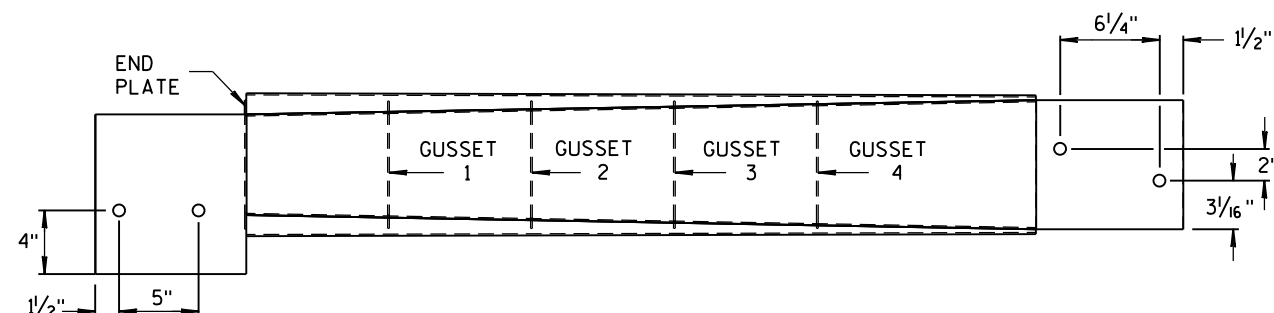
SIDE PLATE



TOP PLATE

**SIDE, TOP AND END PLATES FOR CAP
FROM TEMPORARY CONCRETE BARRIER
TO 42" PERMANENT CONCRETE BARRIER**

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.



SECTION C-C

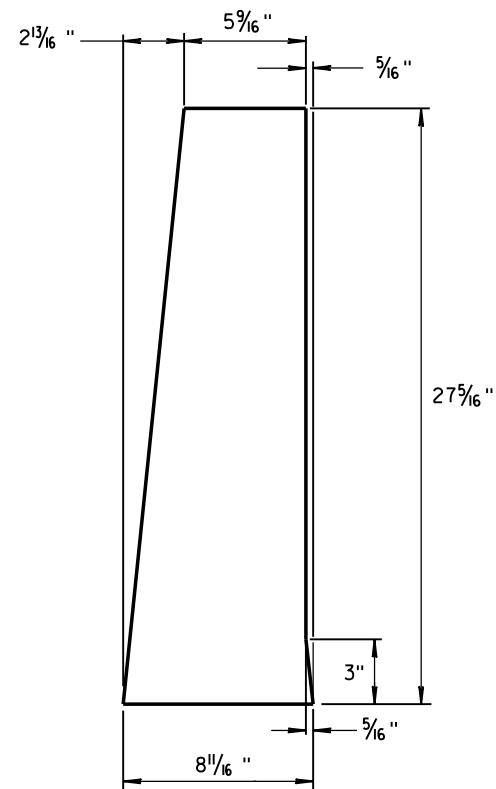
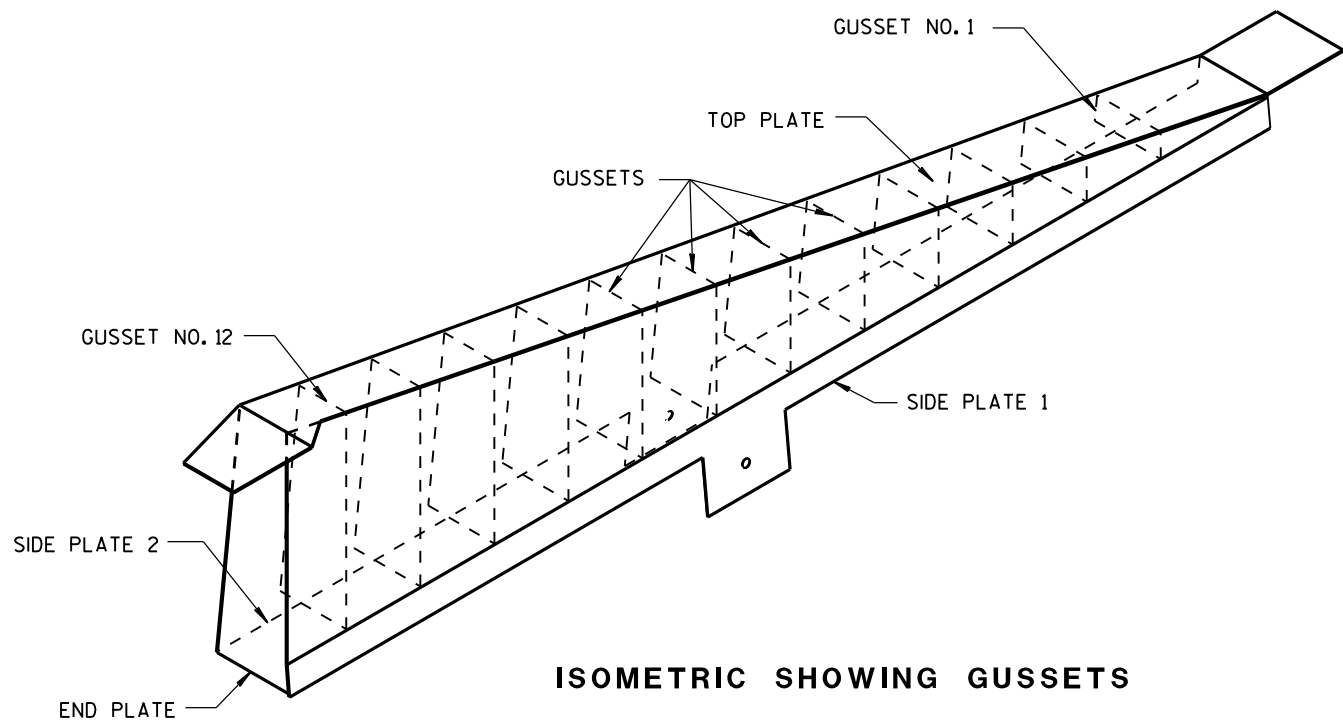
NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

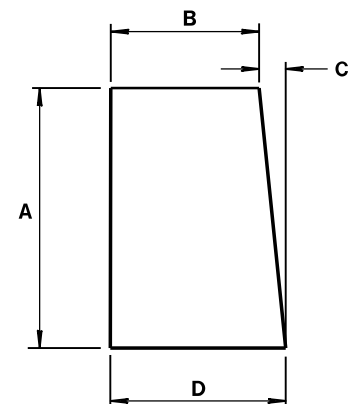
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



1/8" STEEL PLATE

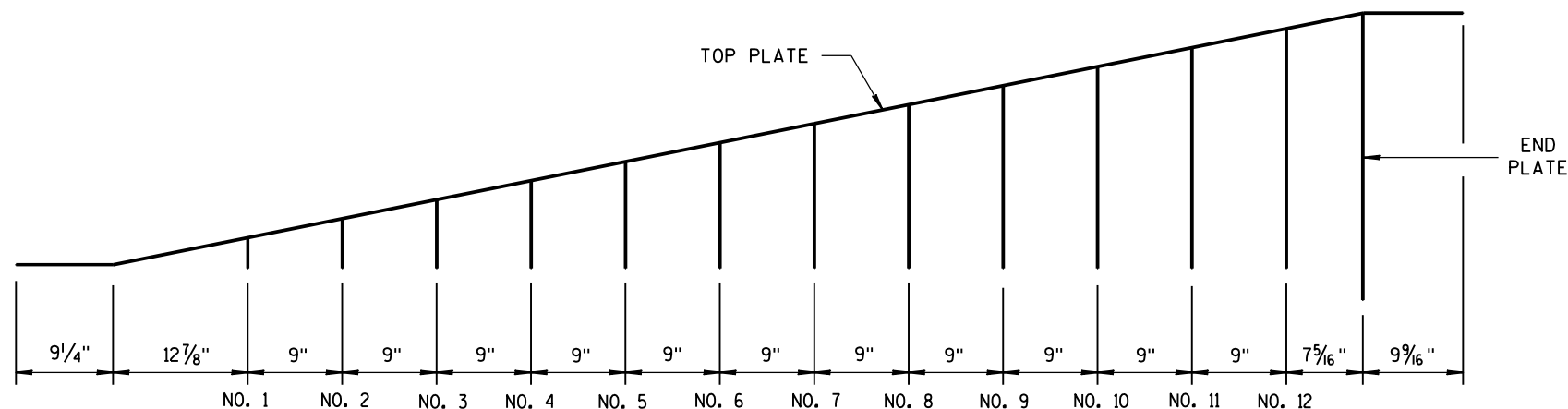


ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 1/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	1 1/16 "	8 1/16 "
4	8 5/16"	7 3/16"	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 5/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16"	6 1/16"	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16"	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16"	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

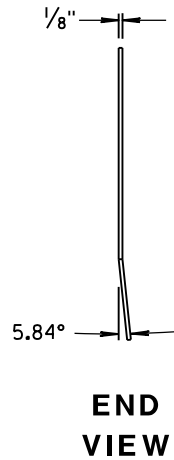
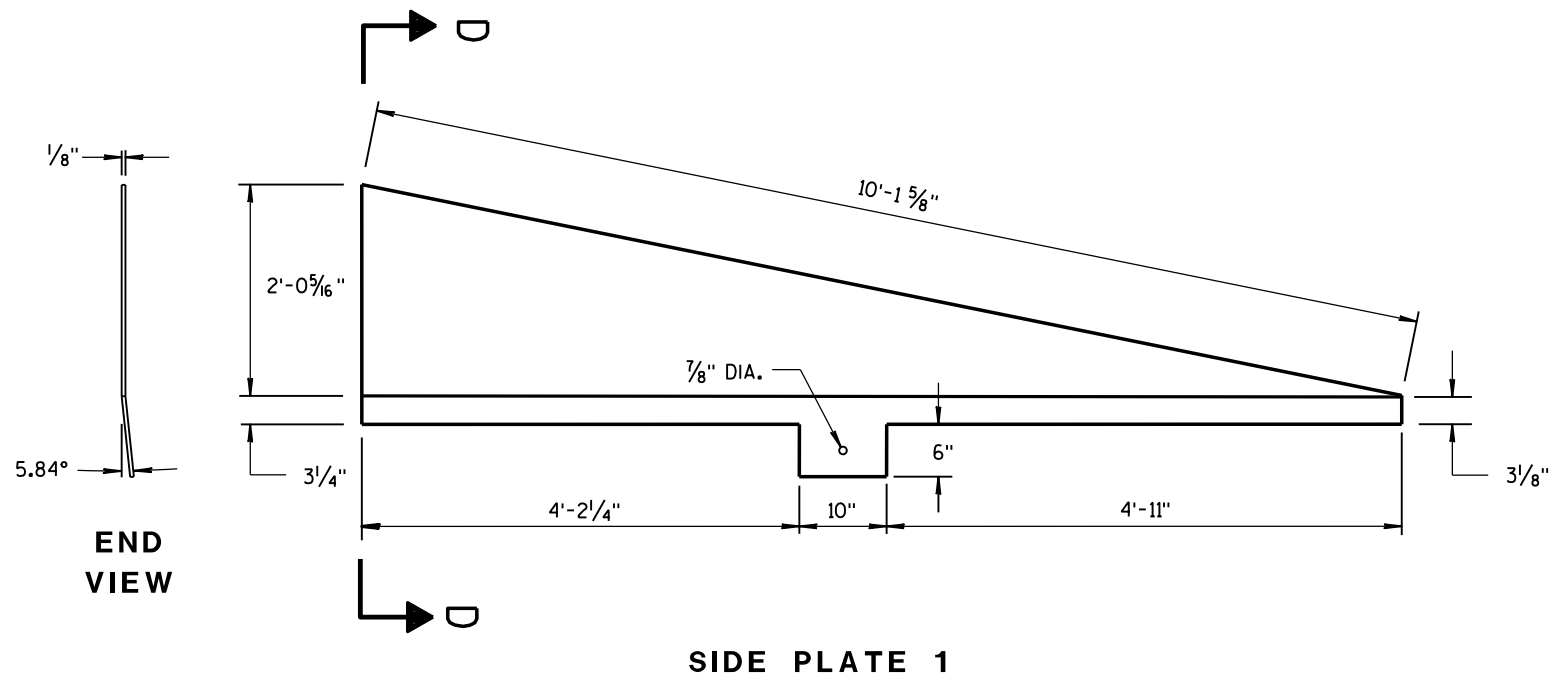
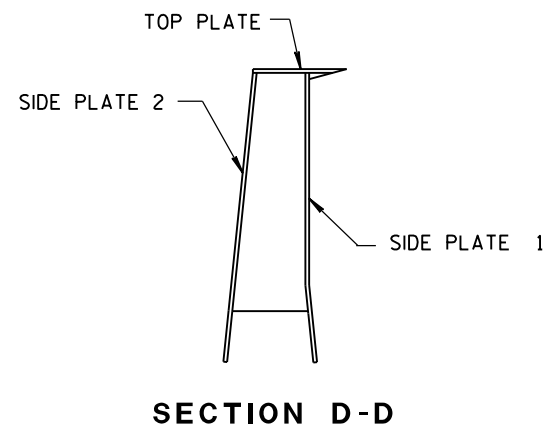
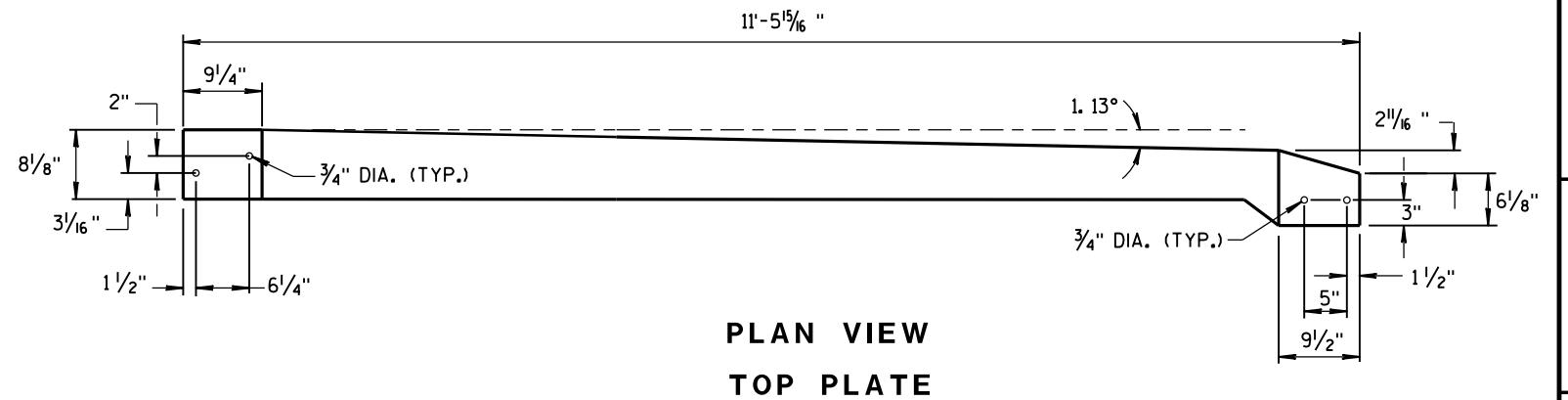
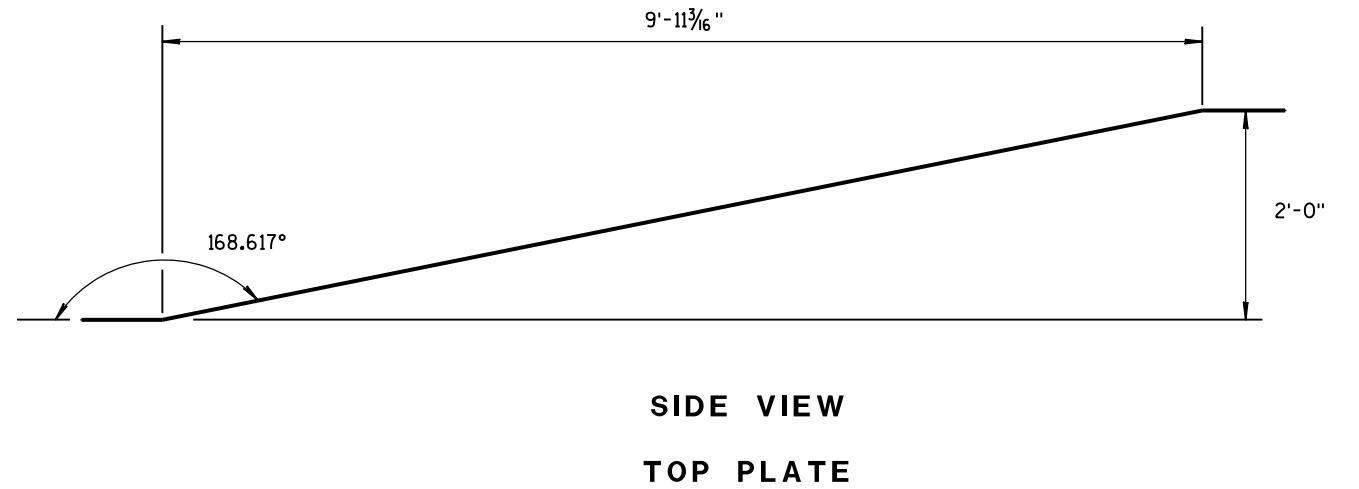
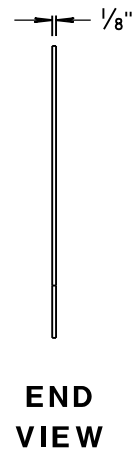
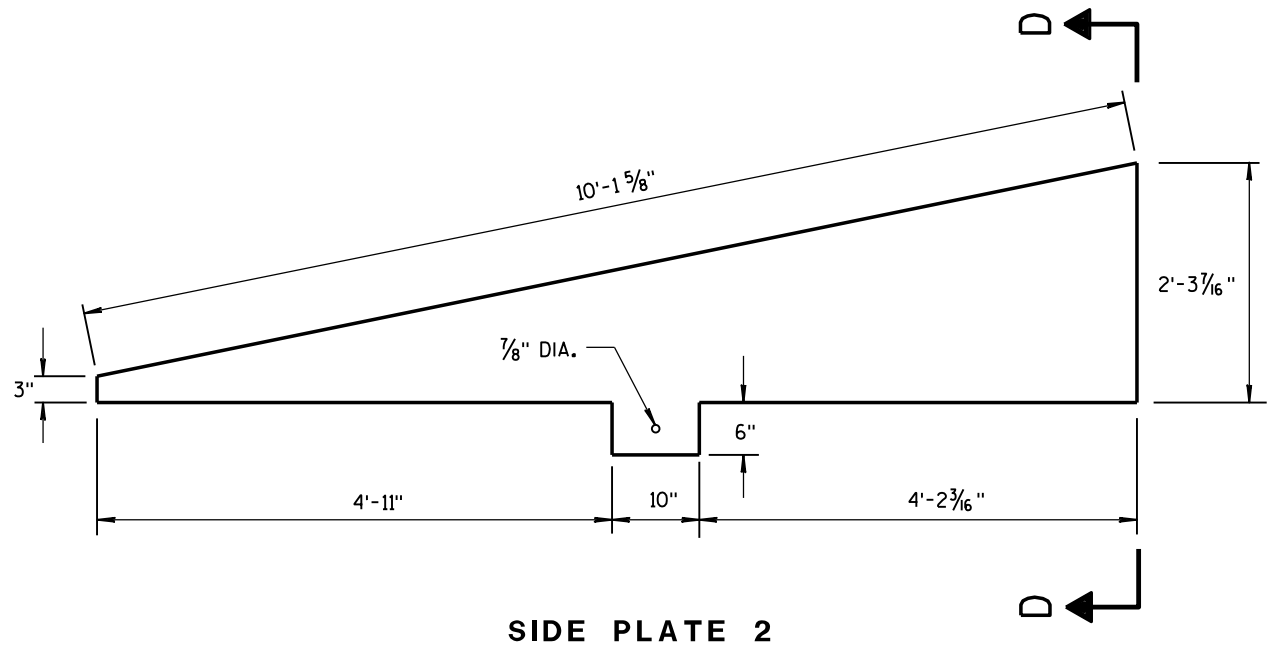
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

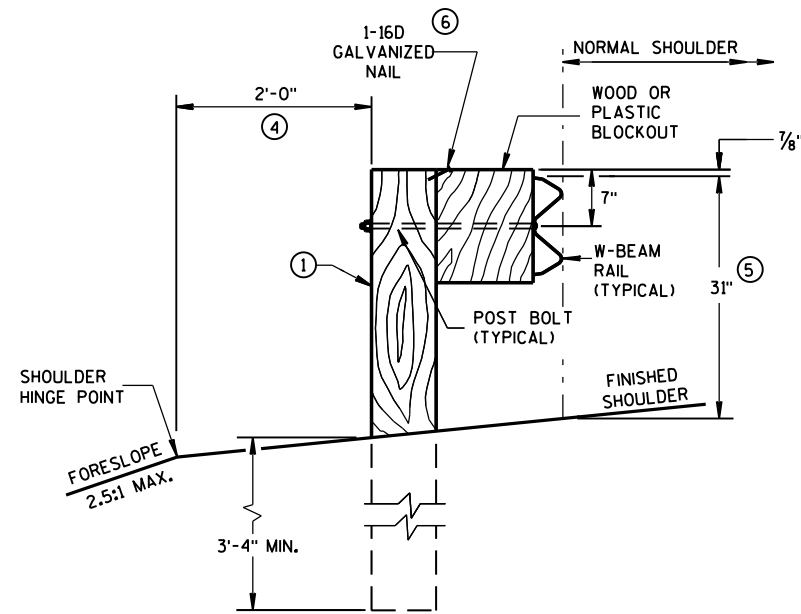


CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER

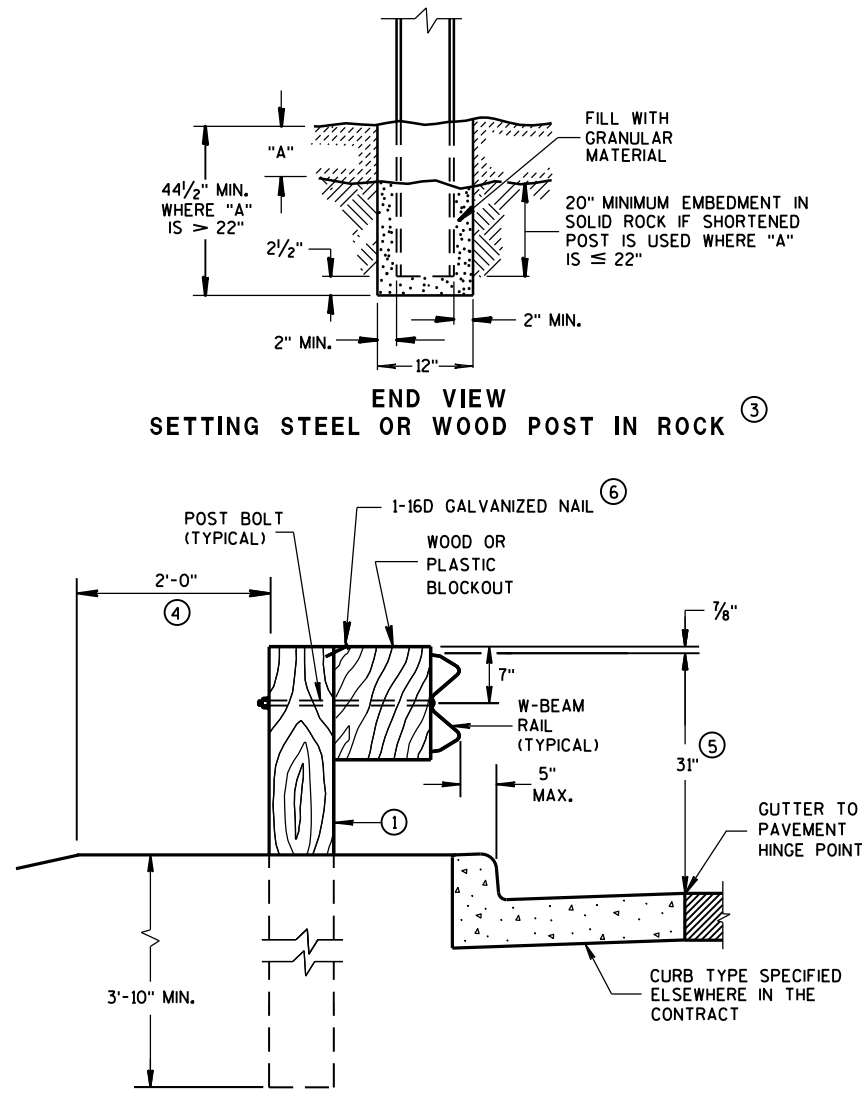
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014 DATE	/S/ Jerry H. Zogg ROADWAY STANDARD DEVELOPMENT ENGINEER
FHWA	

GENERAL NOTES

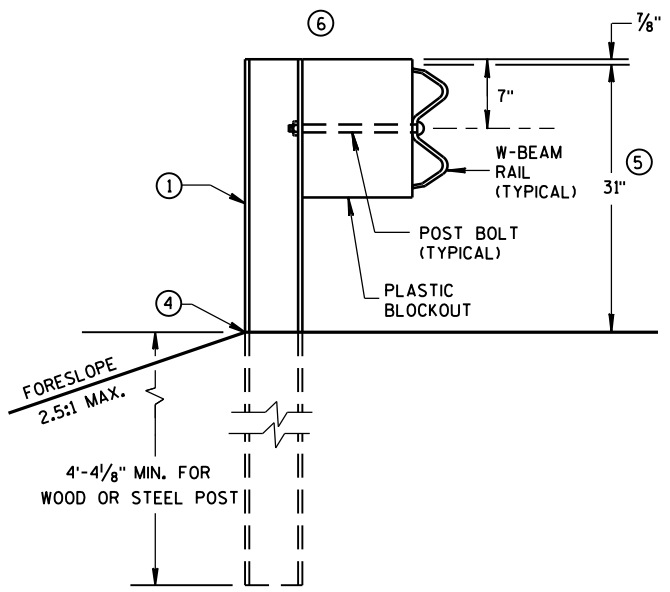
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2 INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



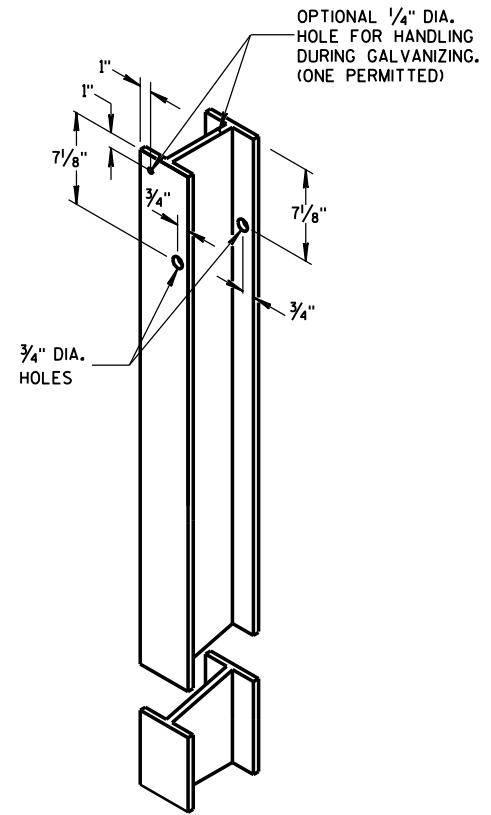
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



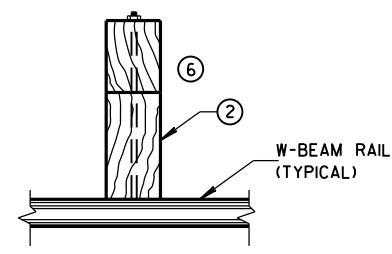
END VIEW
LOCATED ALONG A CURBED ROADWAY



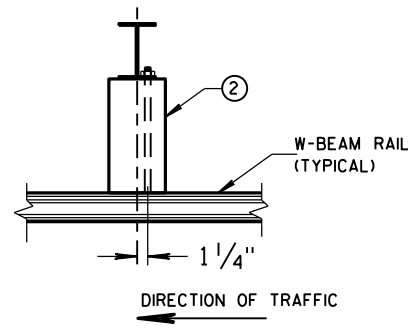
END VIEW
MGS LONGER POST AT HALFPST SPACING W BEAM (K)



STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



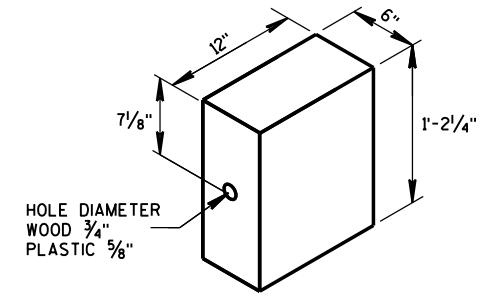
PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



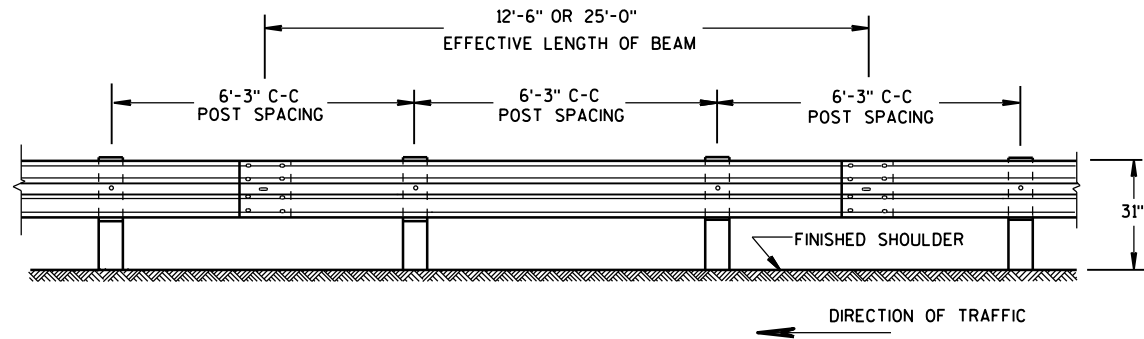
PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM



WOOD POST
(6" X 8") NOMINAL ①

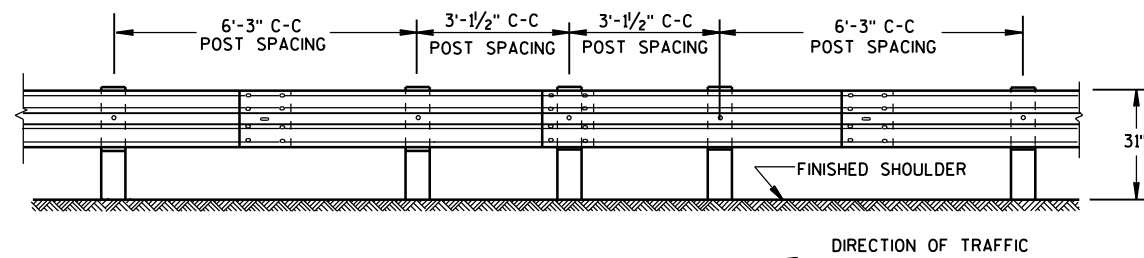


WOOD OR
PLASTIC BLOCKOUT ②



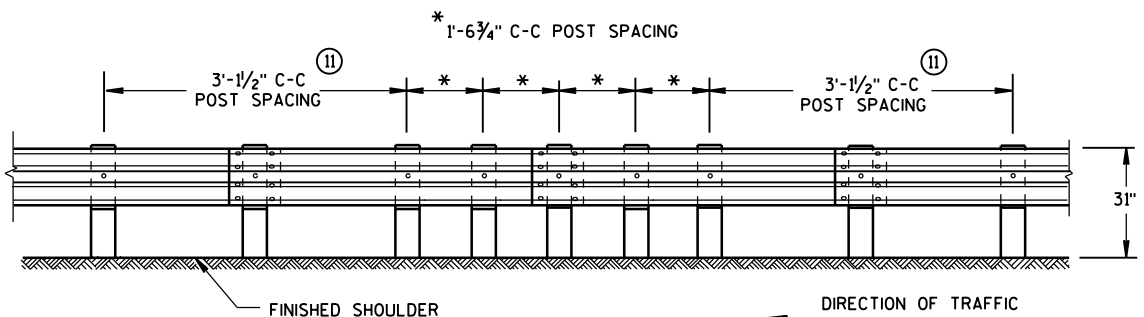
FRONT VIEW

POST SPACING STANDARD INSTALLATION



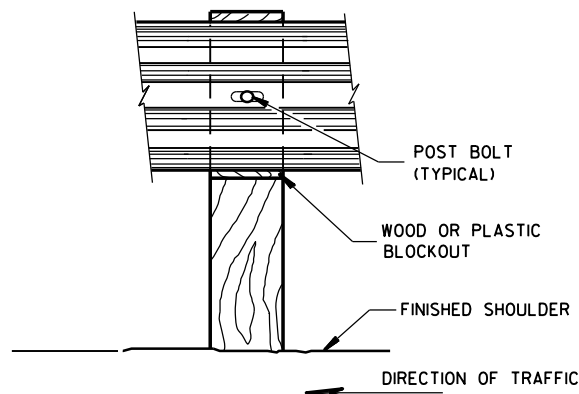
FRONT VIEW

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

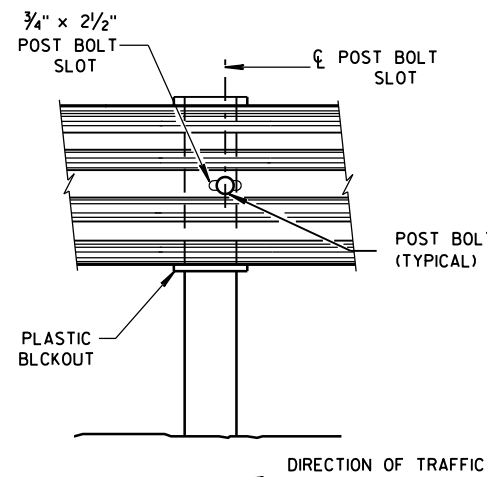


FRONT VIEW

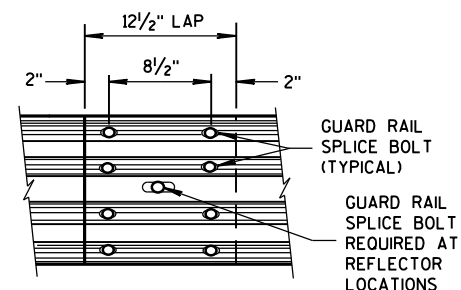
QUARTER POST SPACING (QS)



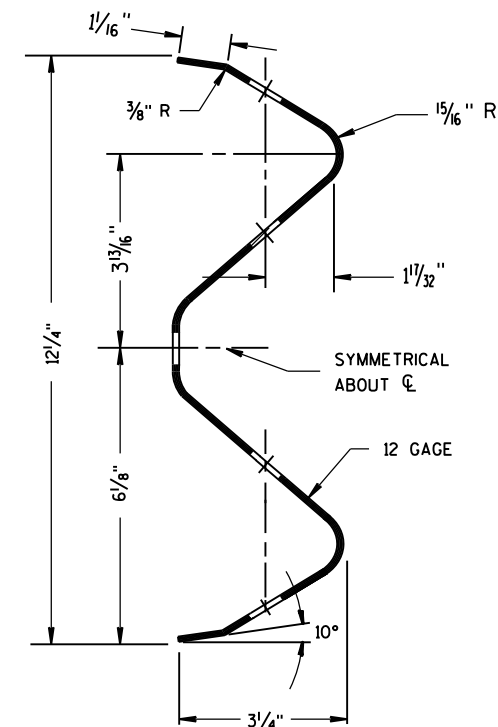
FRONT VIEW AT WOOD POST



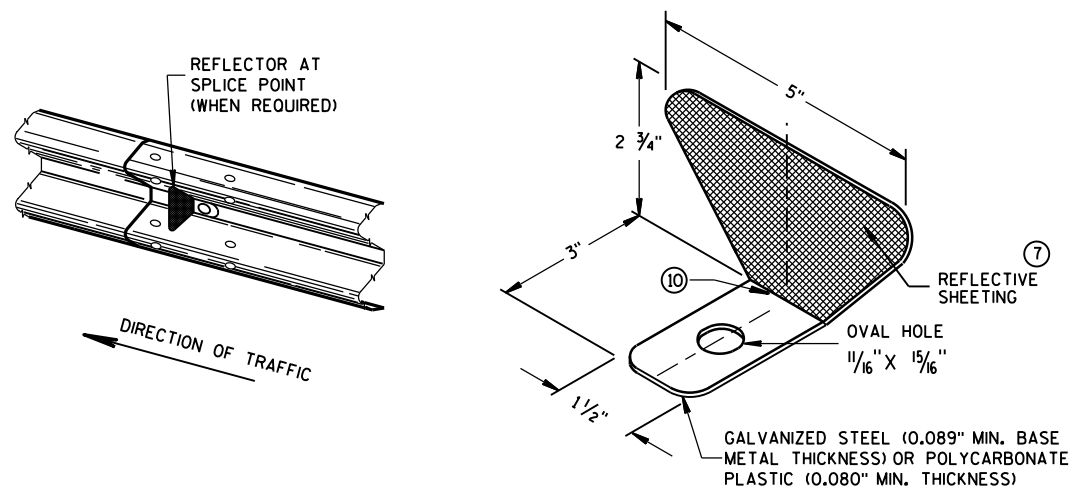
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

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

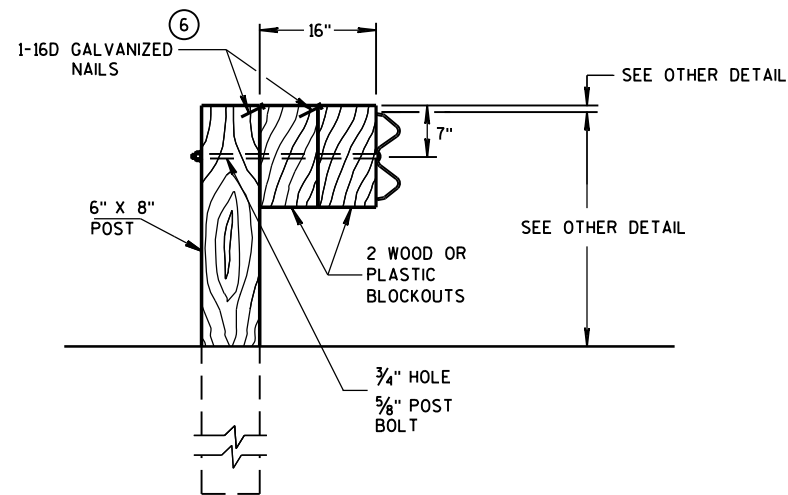
GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING

	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 ⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑩	3
	> 200'	100' C-C	2	

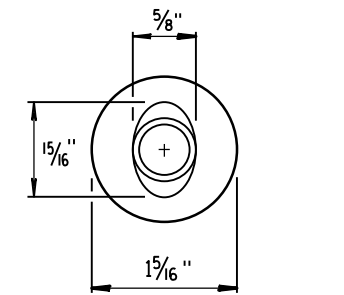
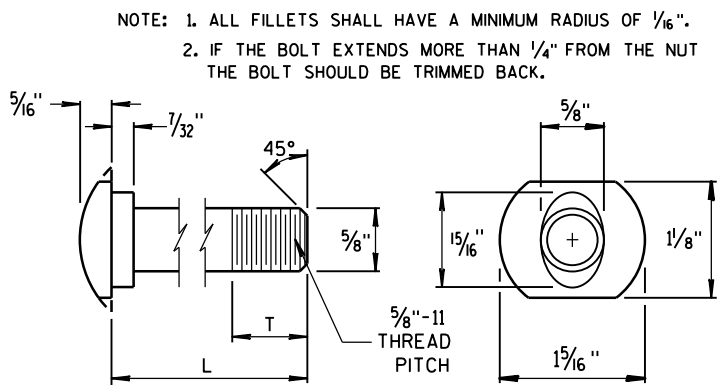
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

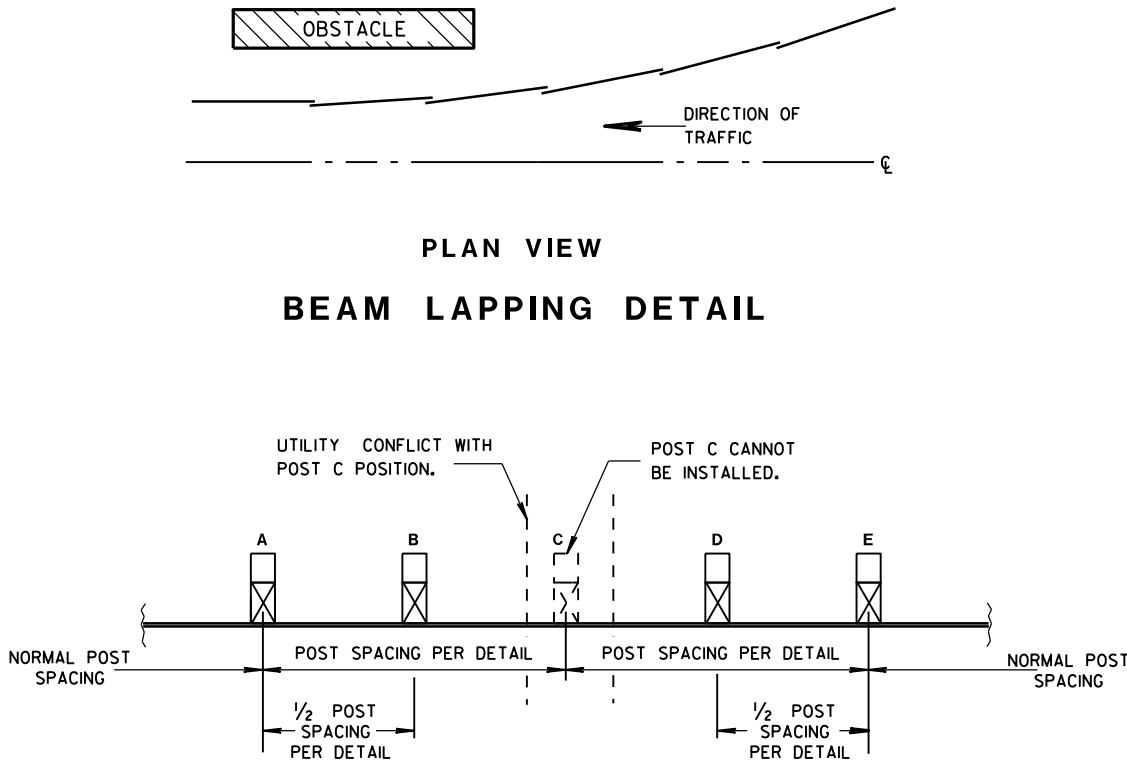


DETAIL FOR 16" BLOCKOUT DEPTH

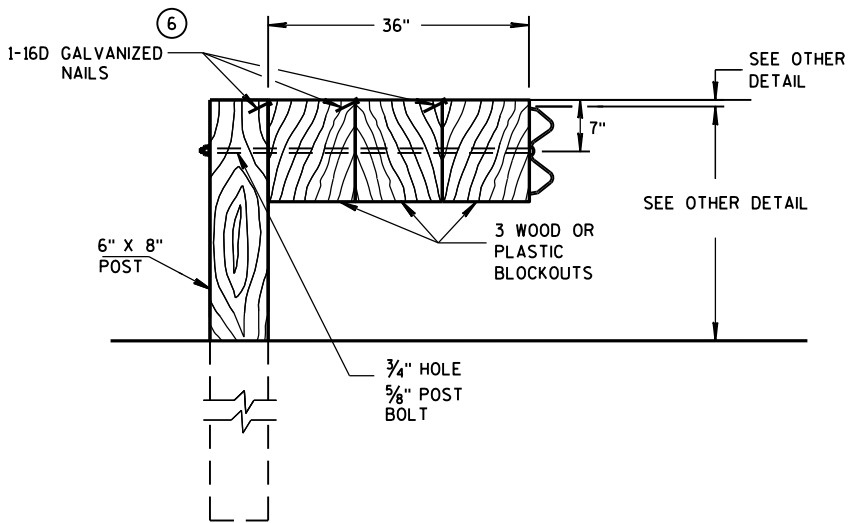
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



ALTERNATE BOLT HEAD



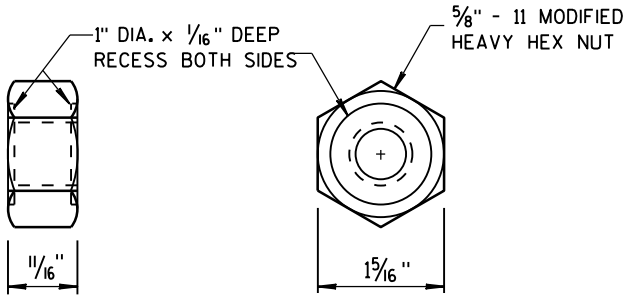
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



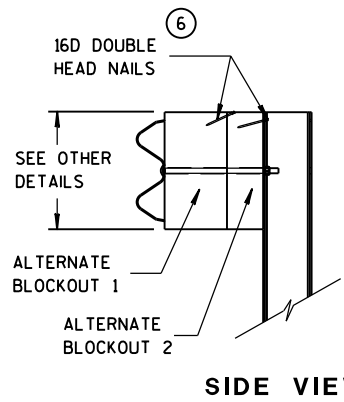
DETAIL FOR 36" BLOCKOUT DEPTH

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.

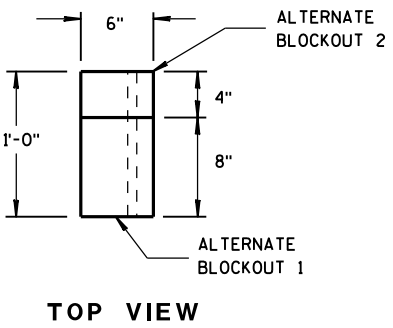
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



POST BOLT AND RECESS NUT



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
FHWA	

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.

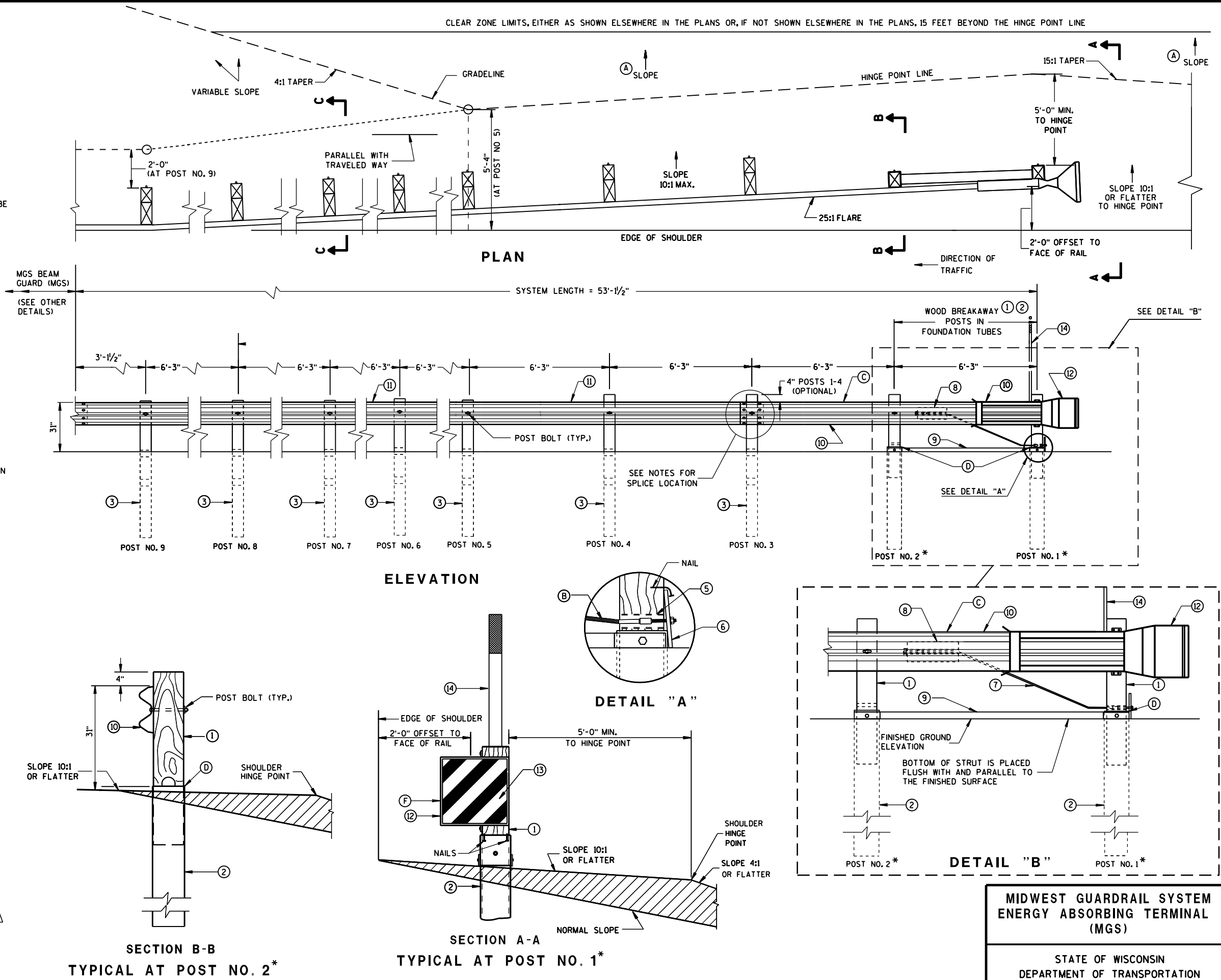
SEE SDD 14B42 FOR MORE INFORMATION.

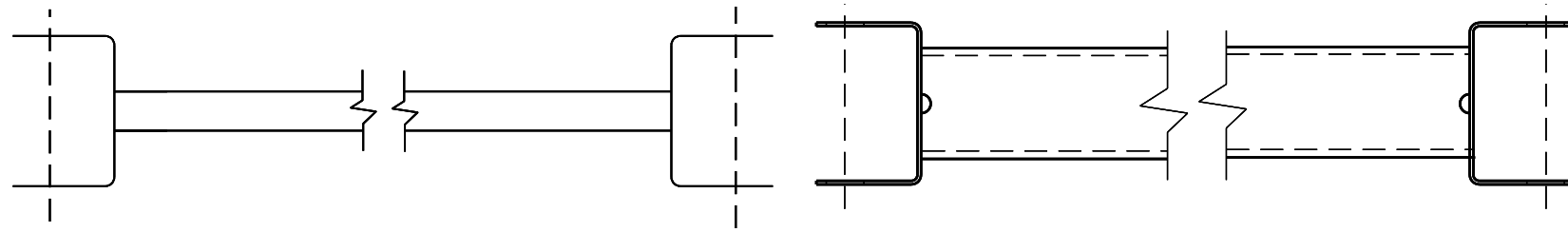
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

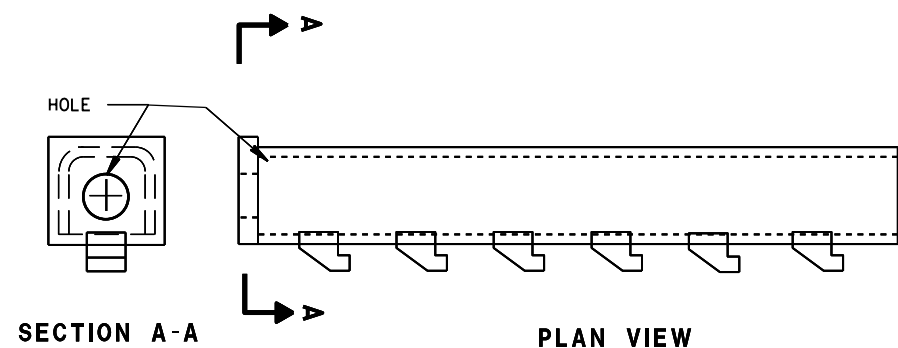
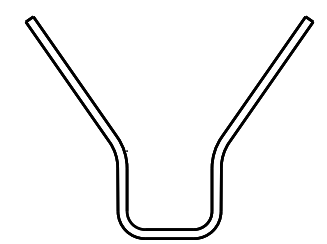
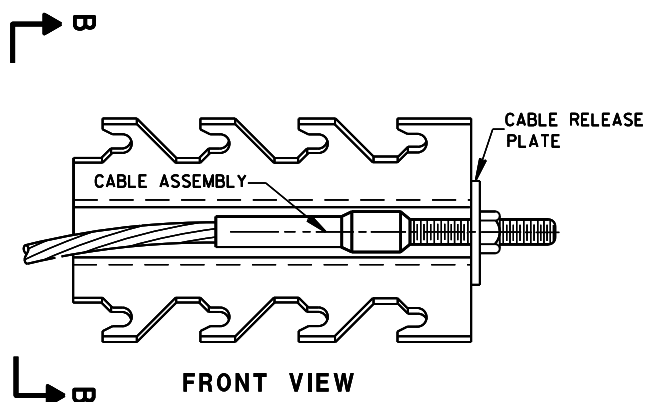
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

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.





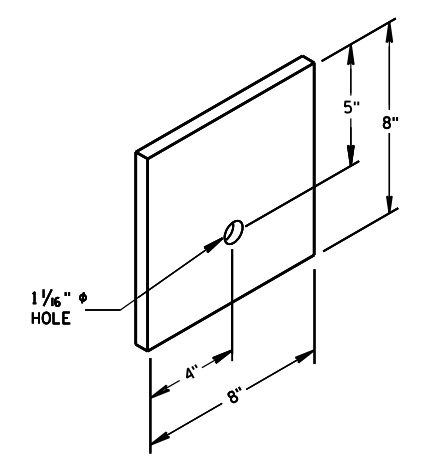
9 H
GENERIC GROUND STRUT



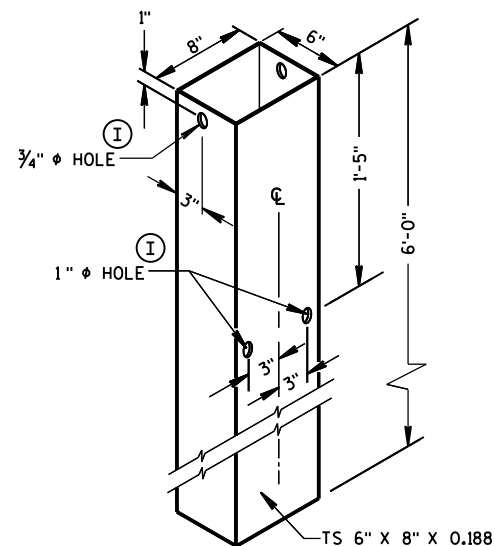
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

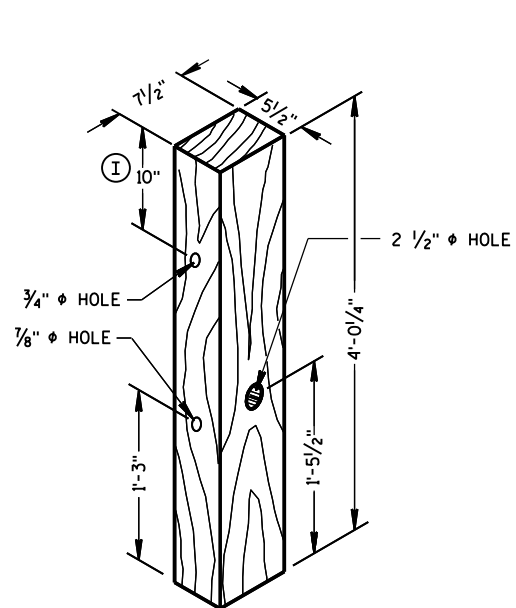
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND 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)



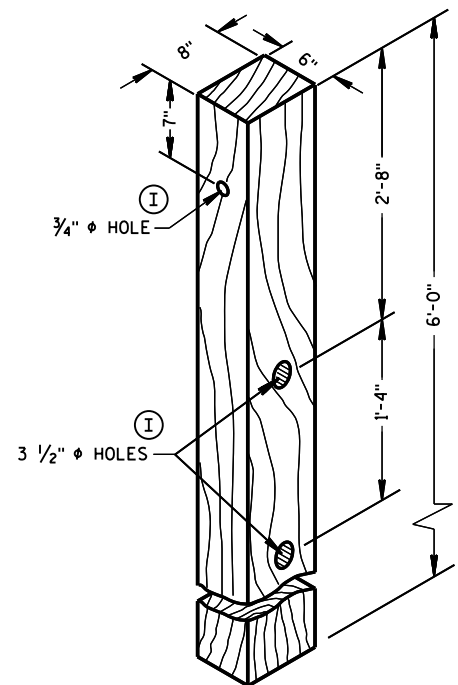
⑥
BEARING PLATE



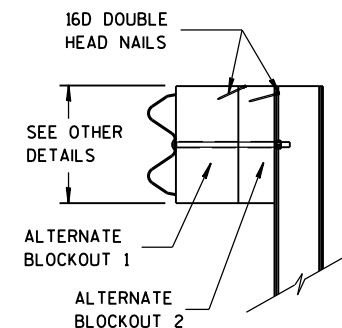
FOUNDATION TUBE ②



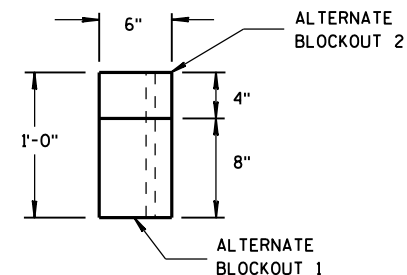
POSTS NUMBER 1 AND 2
WOOD BREAKAWAY POST ①



POSTS NUMBER 3-9
WOOD CRT POST ③

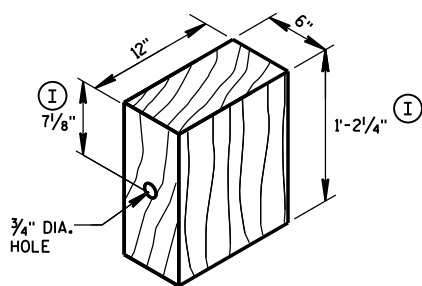


SIDE VIEW



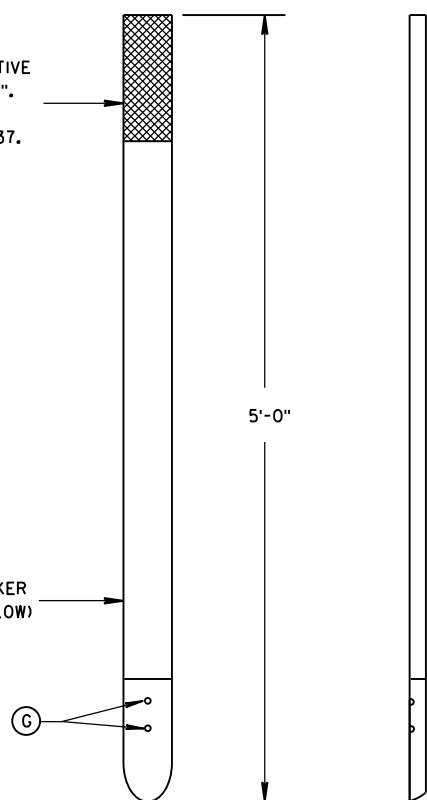
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL



WOOD BLOCKOUT ④
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

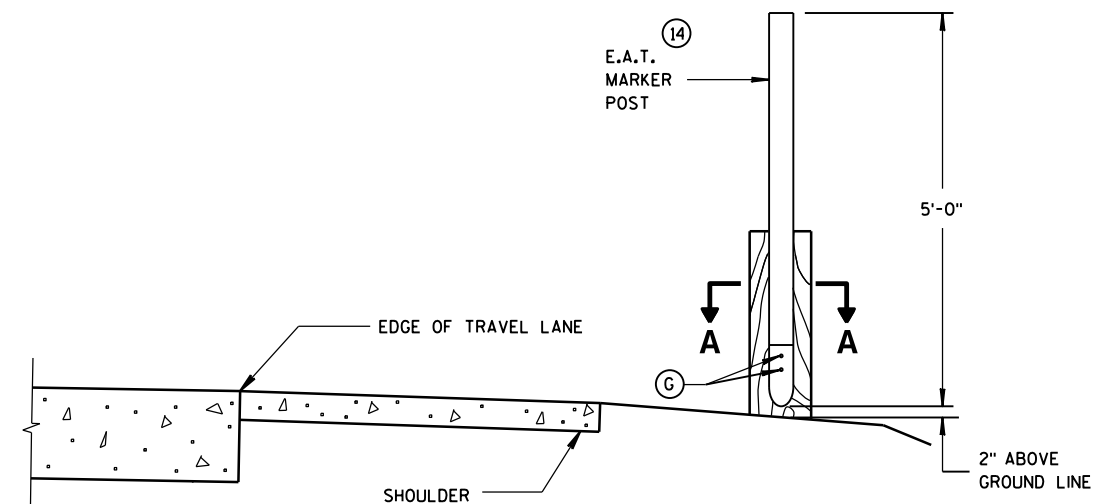
TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.



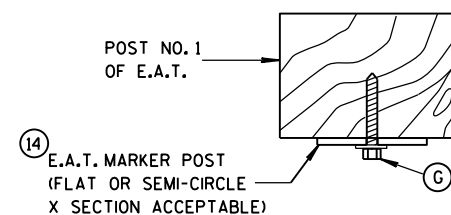
FRONT VIEW

SIDE VIEW

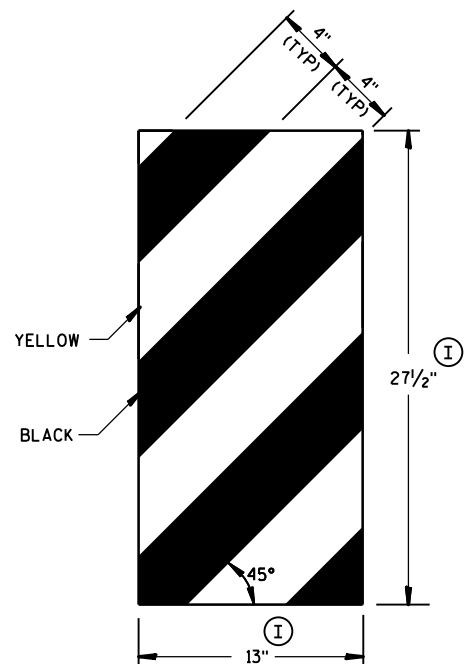
E.A.T. MARKER POST ⑭



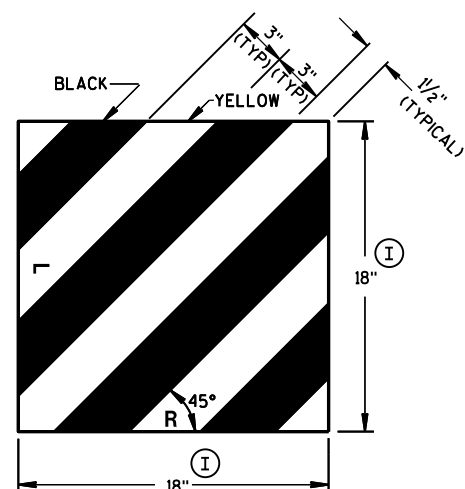
TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A



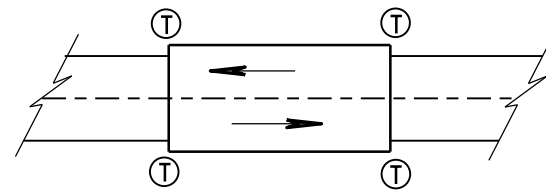
GENERIC REFLECTIVE SHEETING ⑬ ①



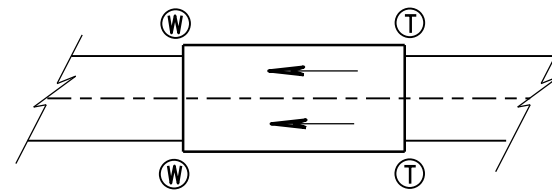
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

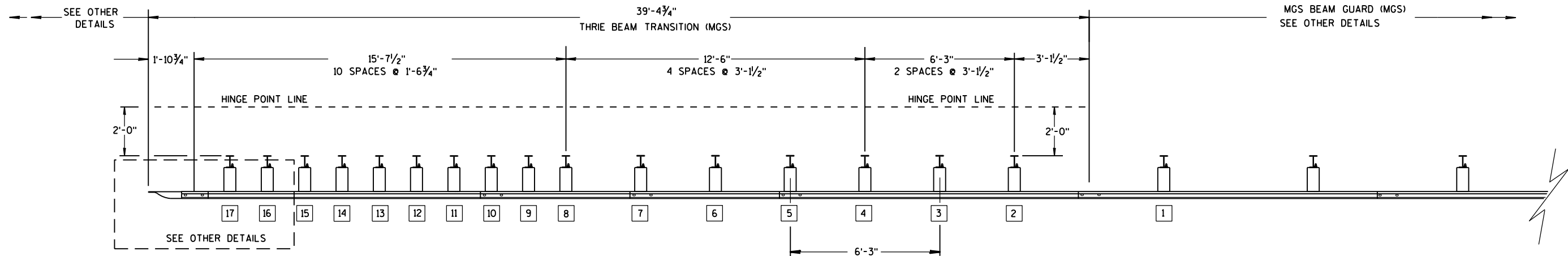
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

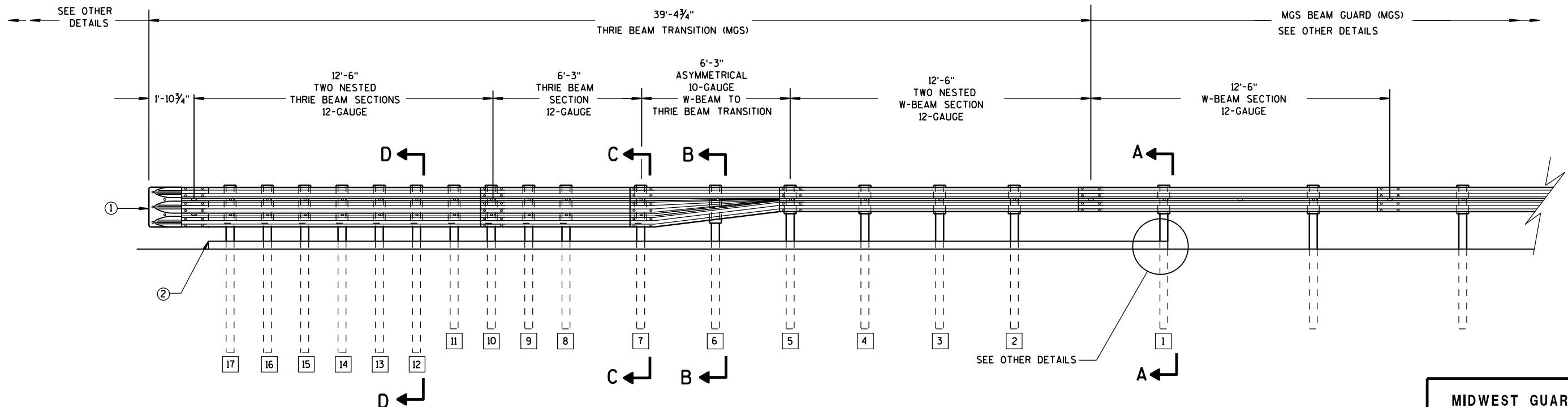
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.



PLAN VIEW



ELEVATION VIEW

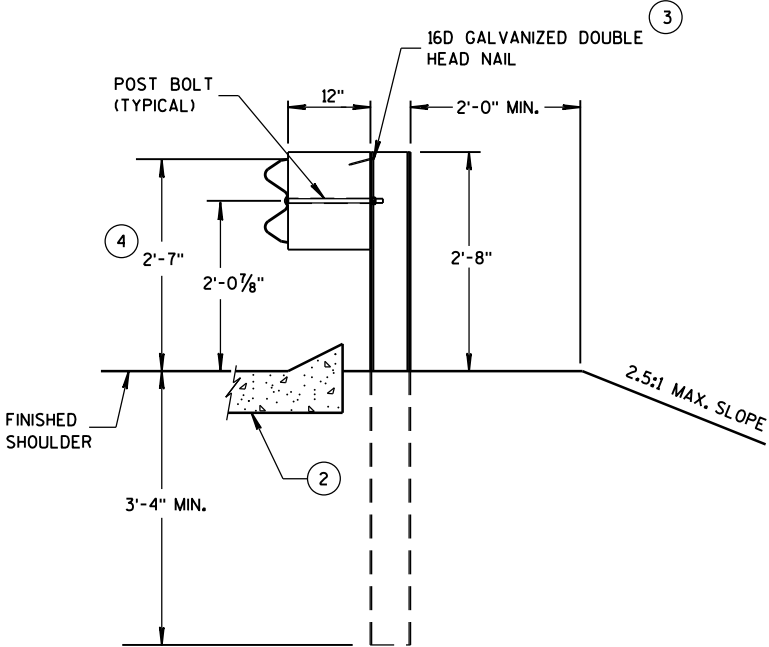
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

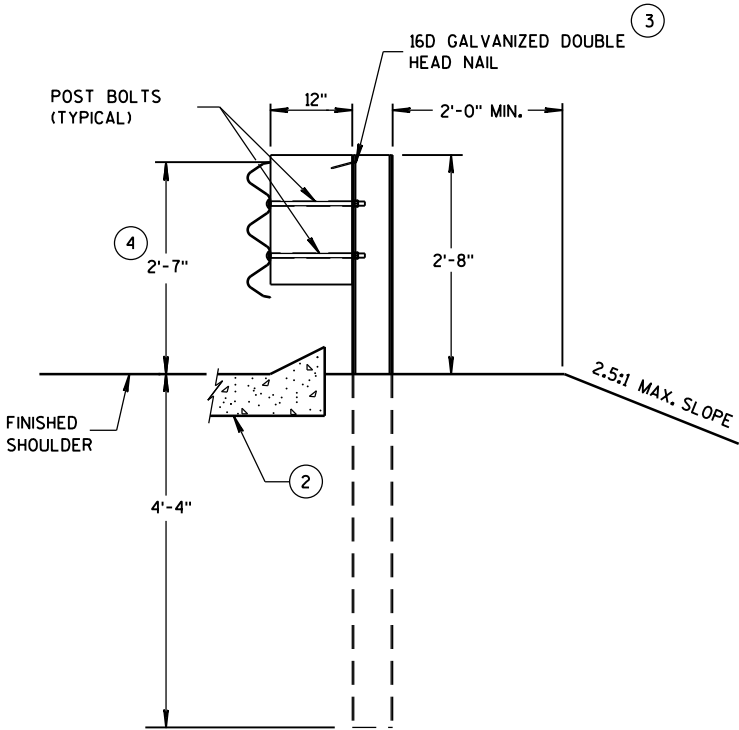
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

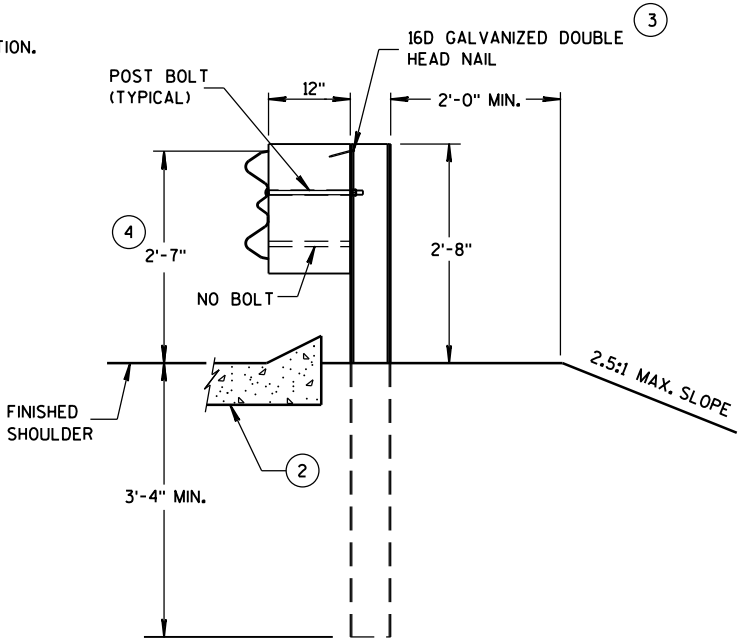
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



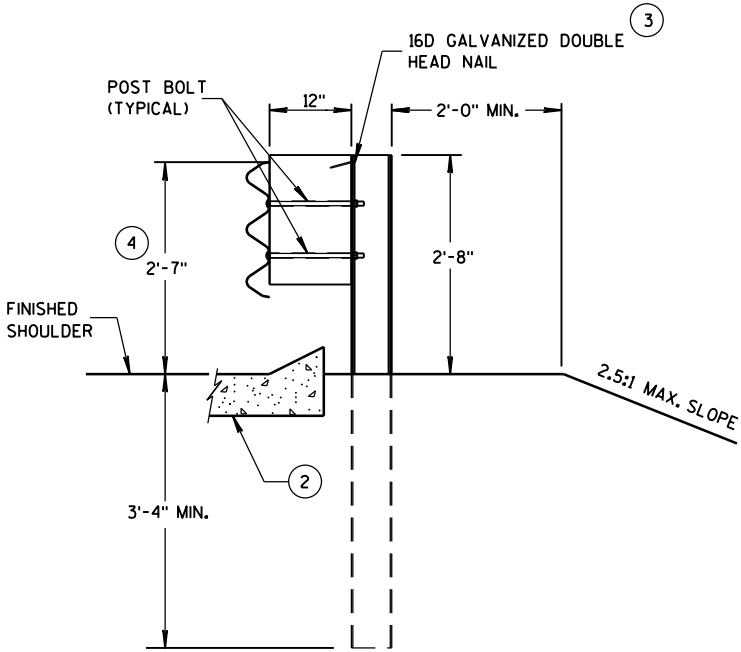
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

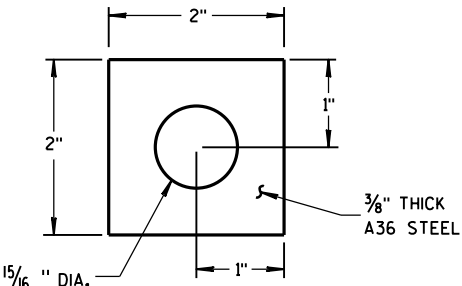
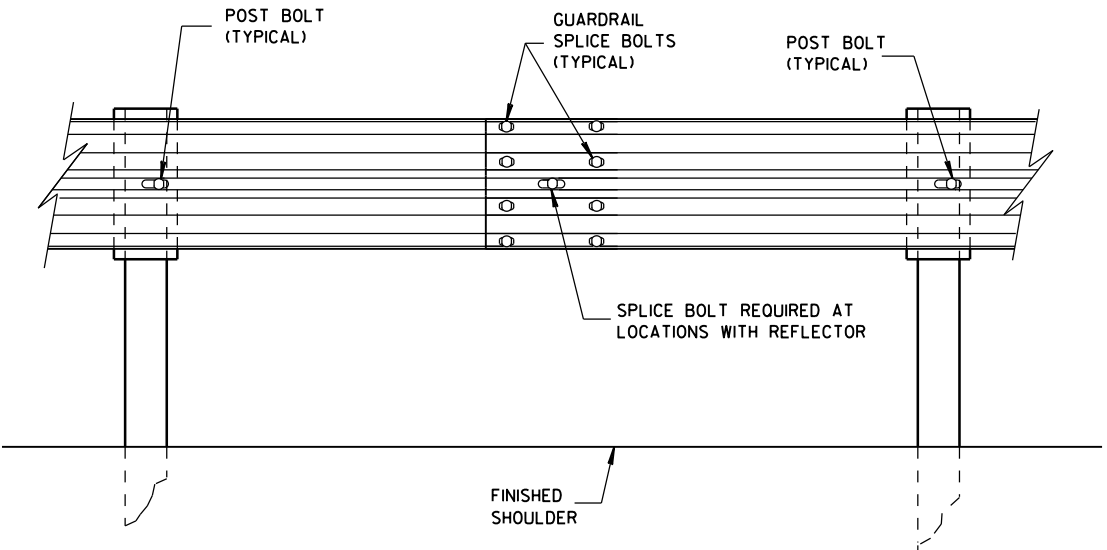
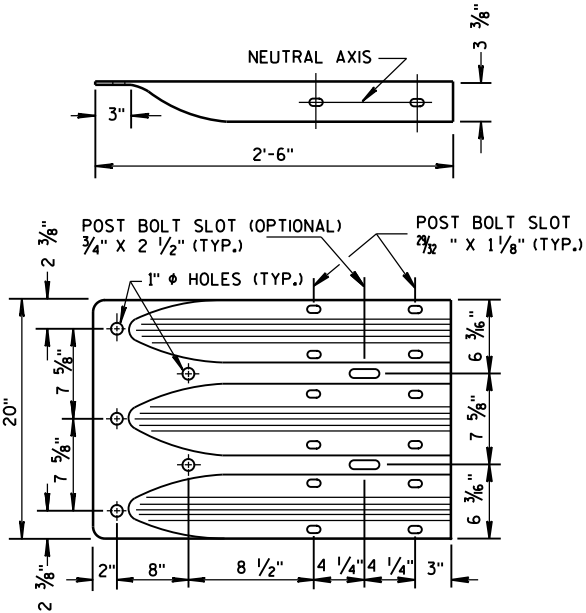


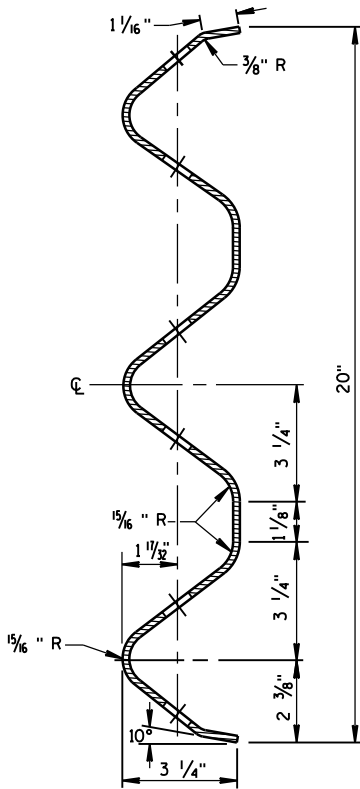
PLATE WASHER DETAIL



SPlice DETAIL



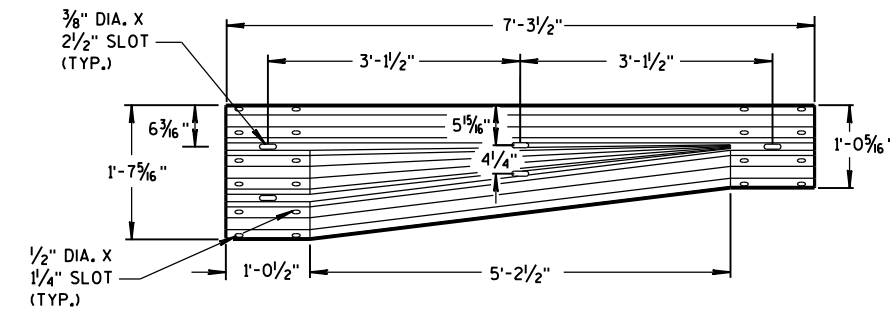
THRIE BEAM
TERMINAL CONNECTOR



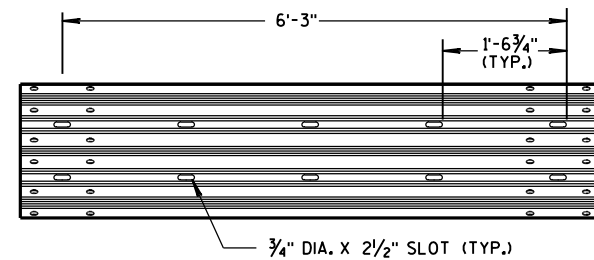
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

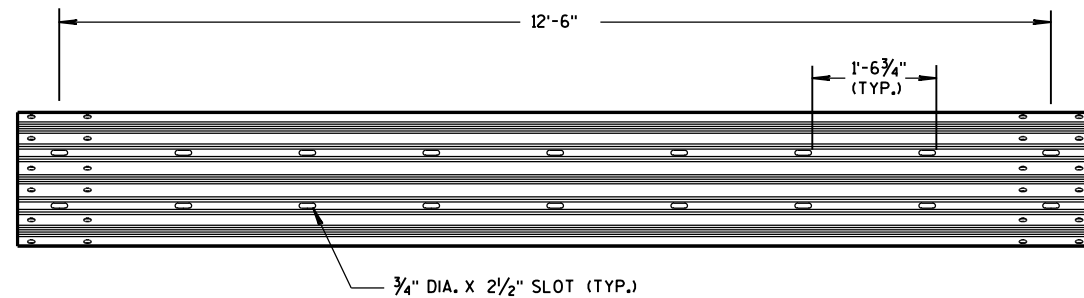
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



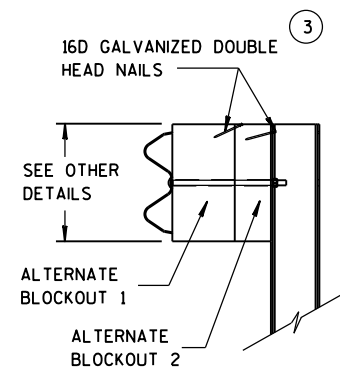
W-BEAM TO THRIE BEAM TRANSITION SECTION



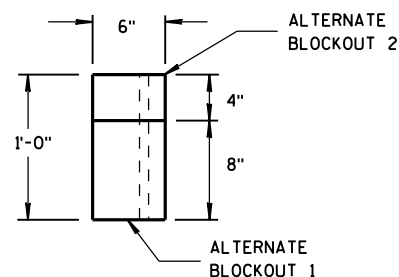
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

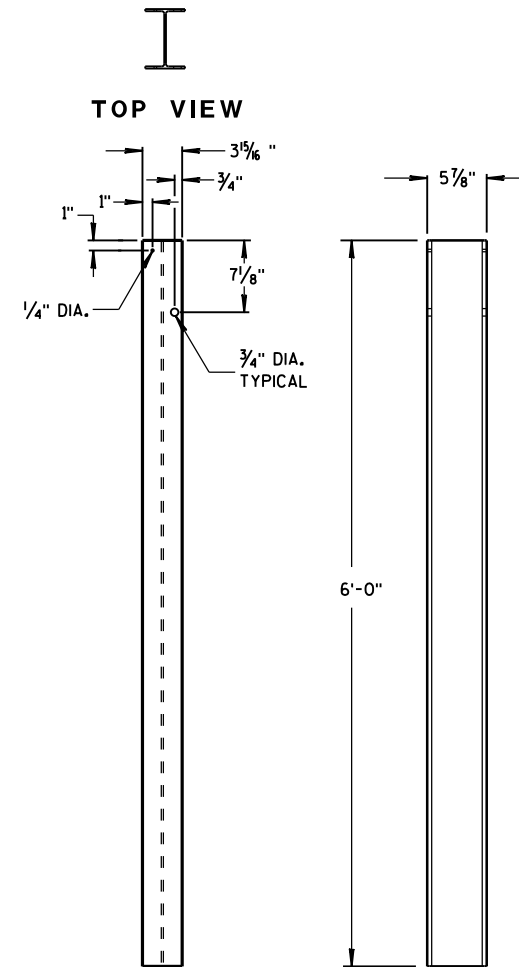


SIDE VIEW



TOP VIEW

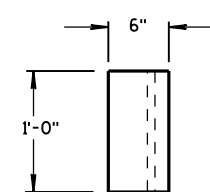
ALTERNATE WOOD BLOCKOUT DETAIL



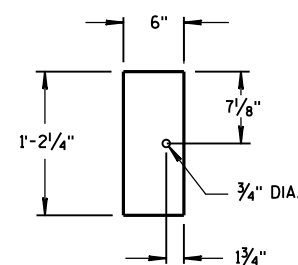
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

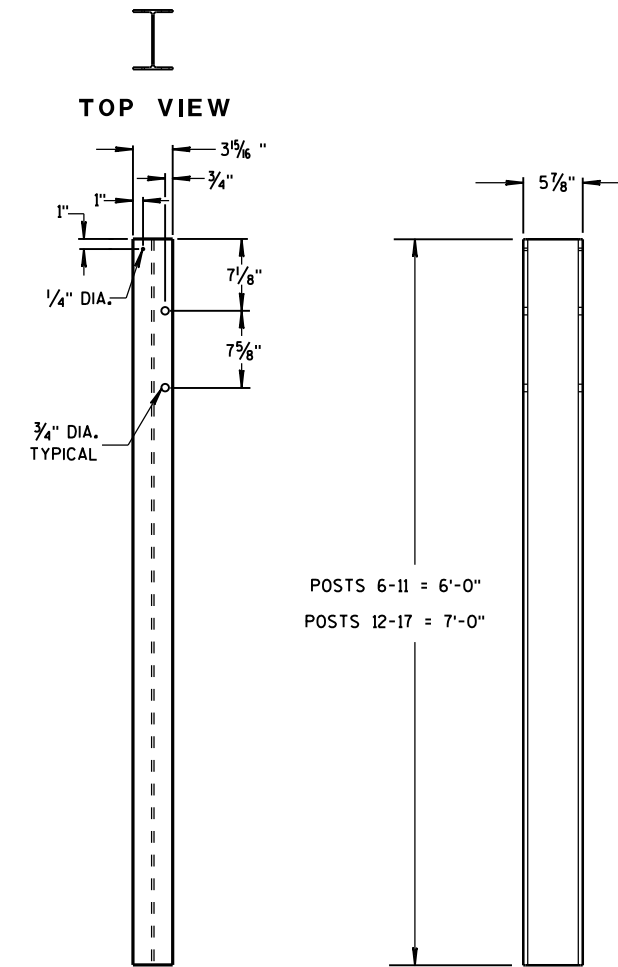


TOP VIEW



FRONT VIEW

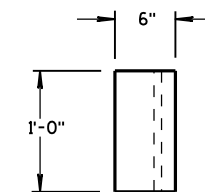
BLOCKOUT
POSTS 1-5



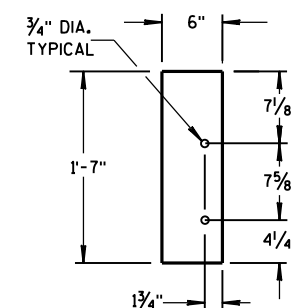
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT
POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 45-4h

- 6



6



6



6

6



6



6



6

6



6



6

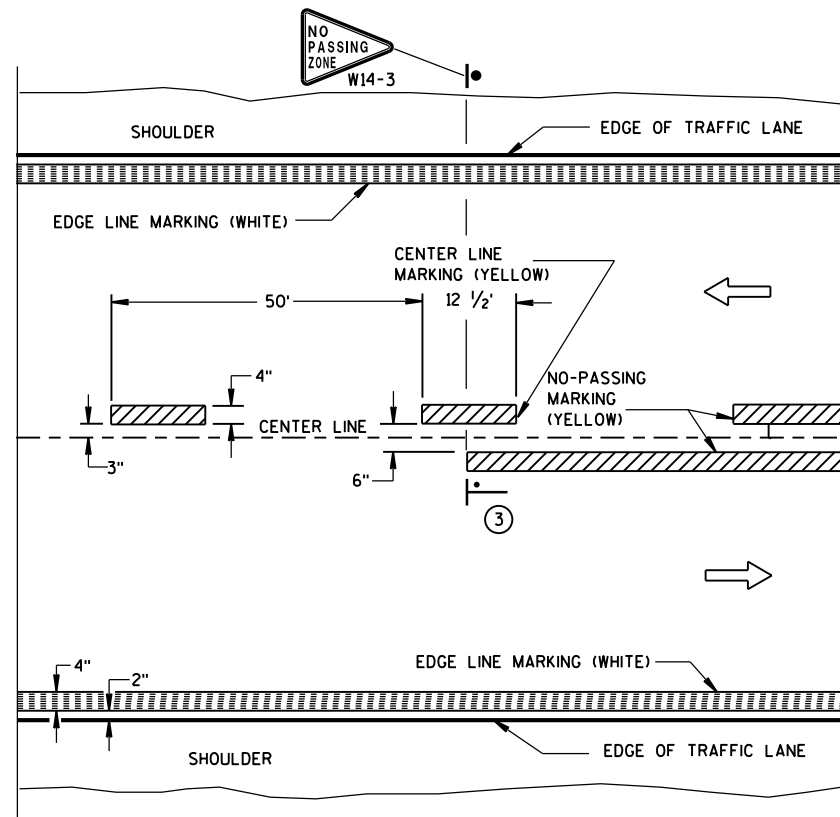
6

6

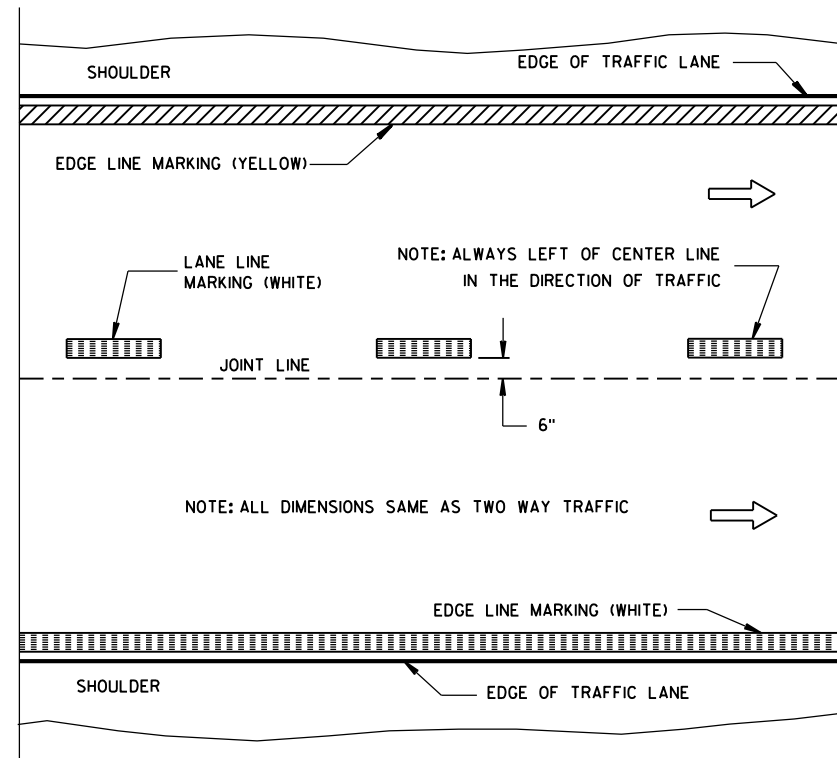
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6

S.D.D. 14 B 45-4h

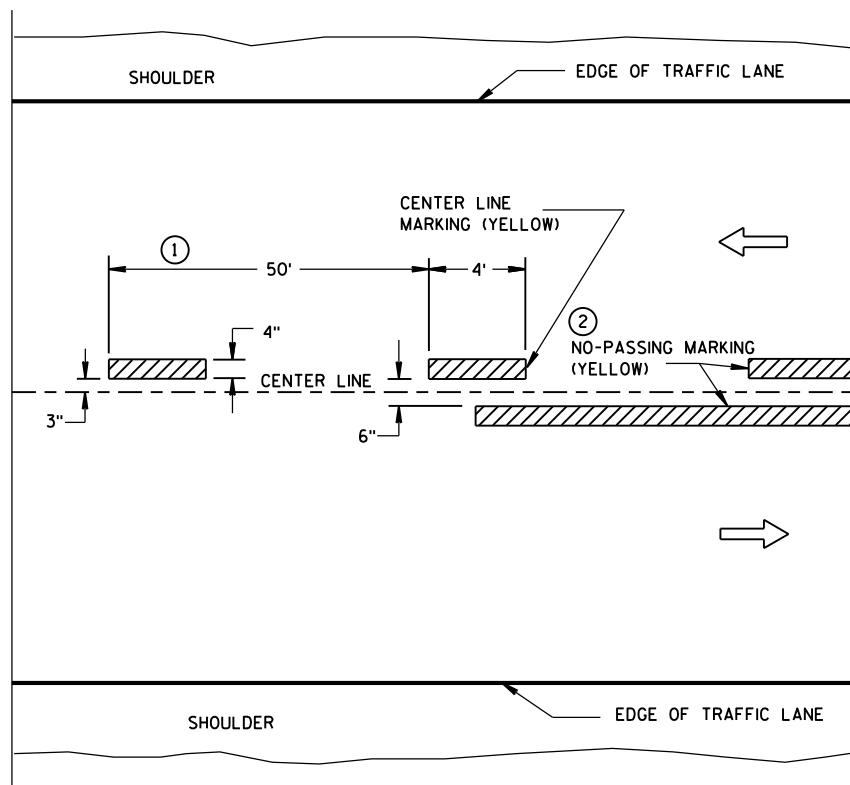


TWO WAY TRAFFIC

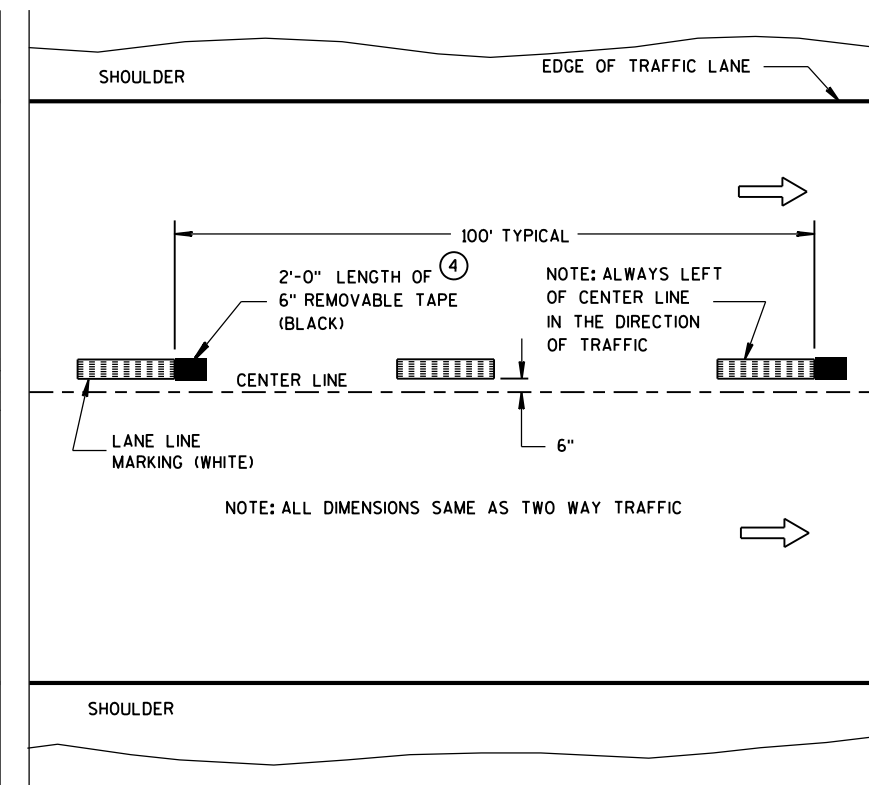


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

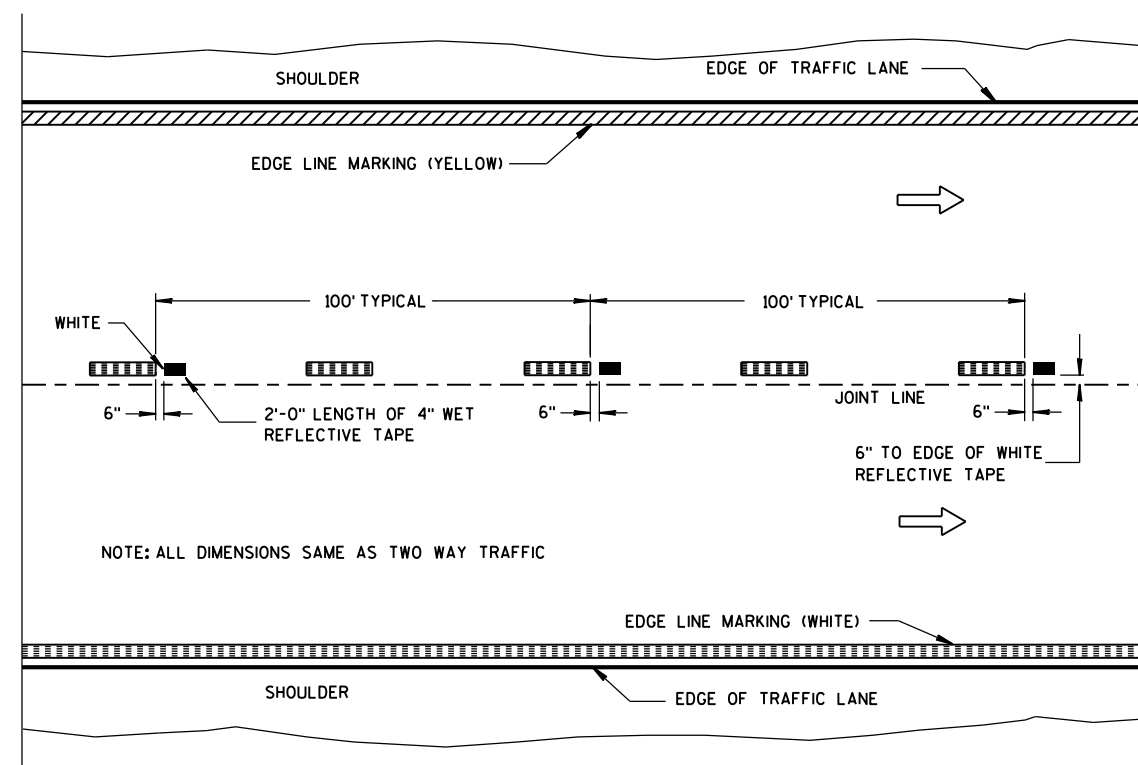
GENERAL NOTES

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

LEGEND

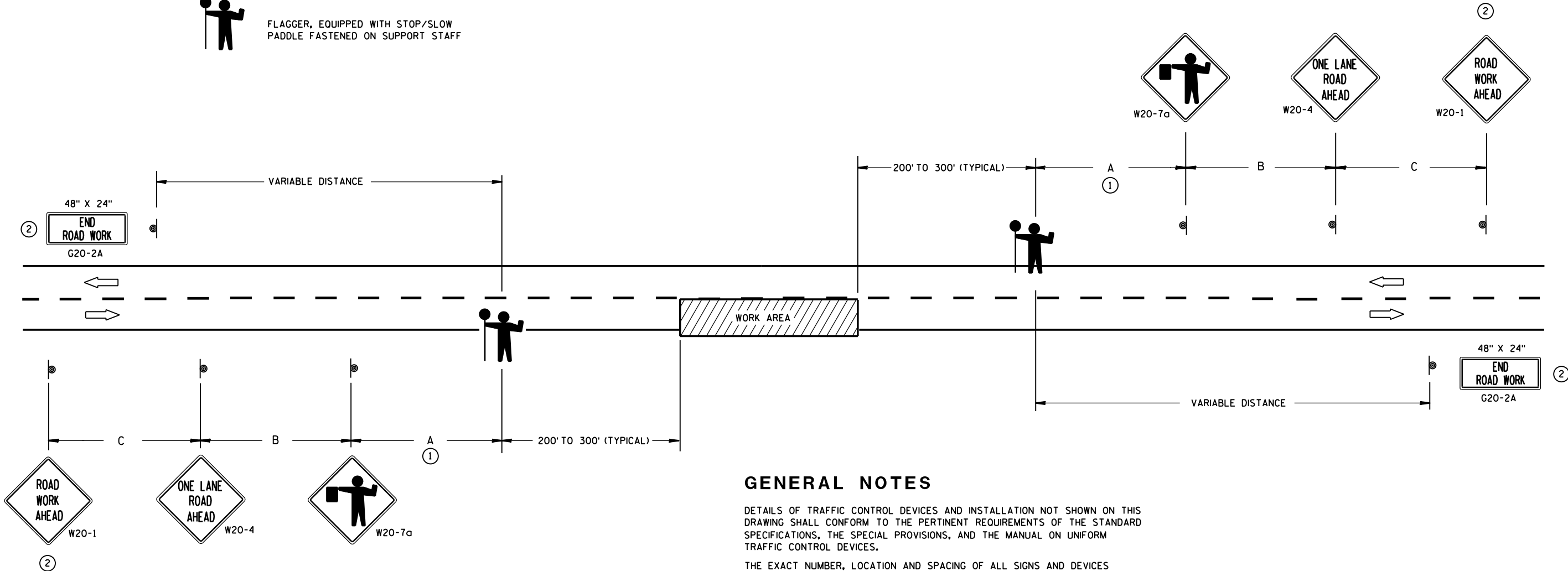
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



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.

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC
- 4" X 6" WOOD POST
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET.)

GENERAL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

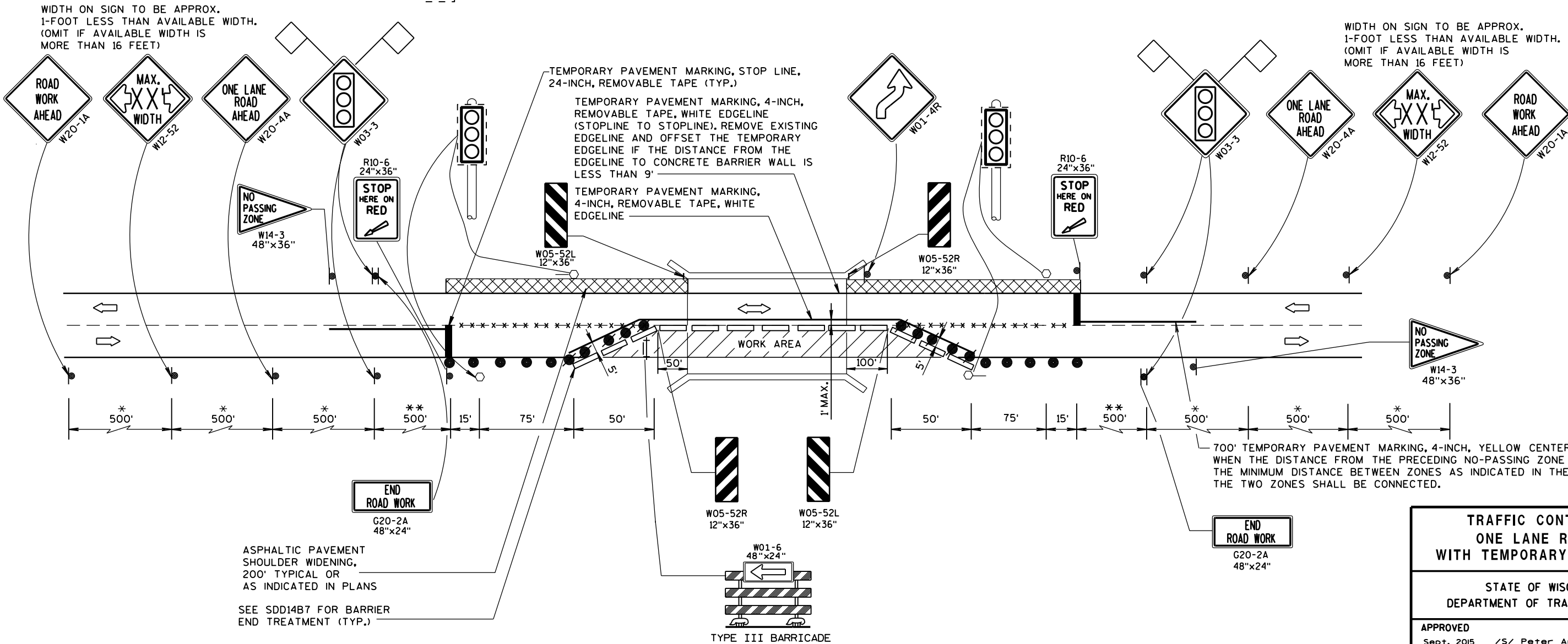
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350-FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200-FOOT TYPICAL SPACING.

** USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.

6



6

TRAFFIC CONTROL,
ONE LANE ROAD
WITH TEMPORARY SIGNALS

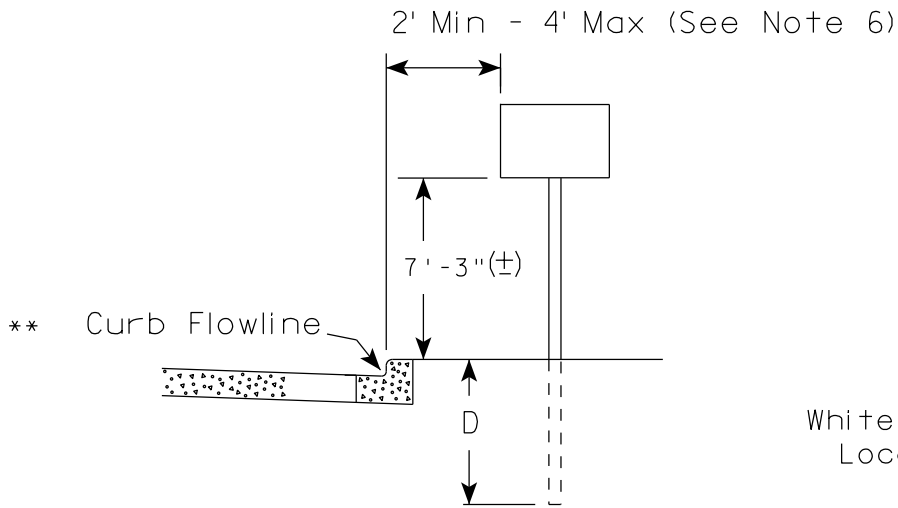
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER

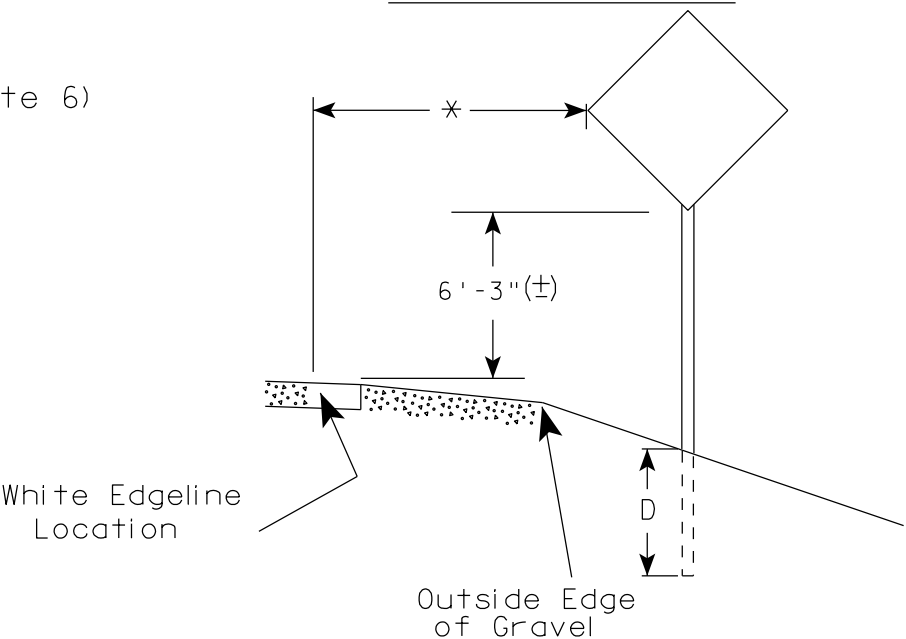
S.D.D. 15 D 33-4

S.D.D. 15 D 33-4

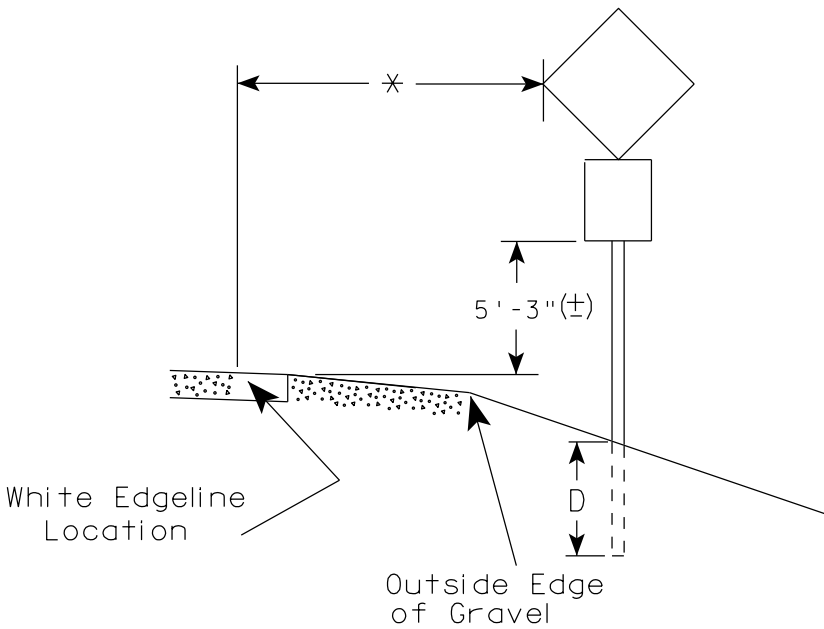
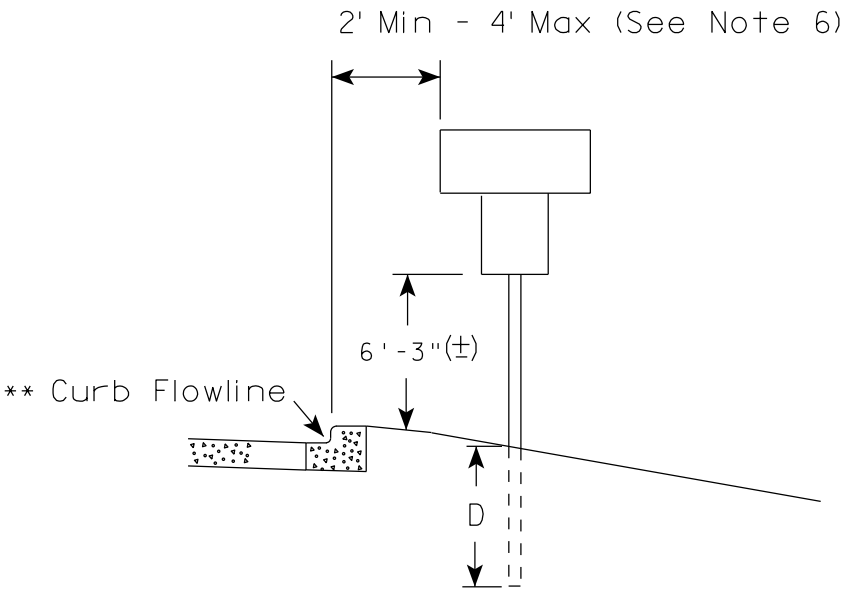
URBAN AREA



RURAL AREA (See Note 2)



- GENERAL NOTES
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
 2. If signs are mounted on 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.

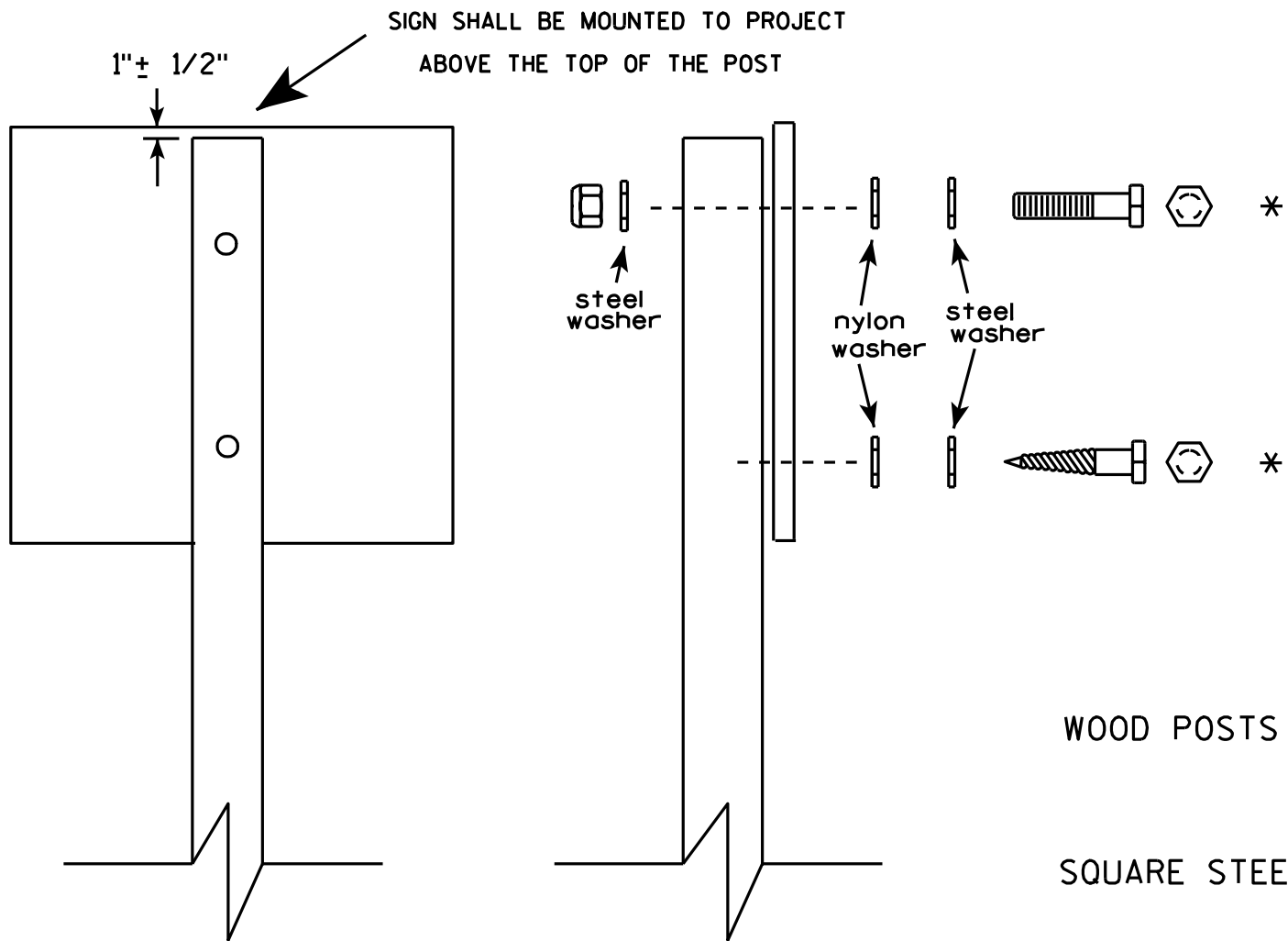
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20

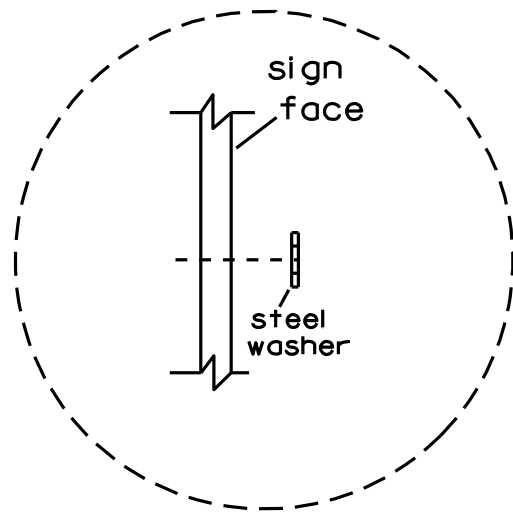


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- 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.

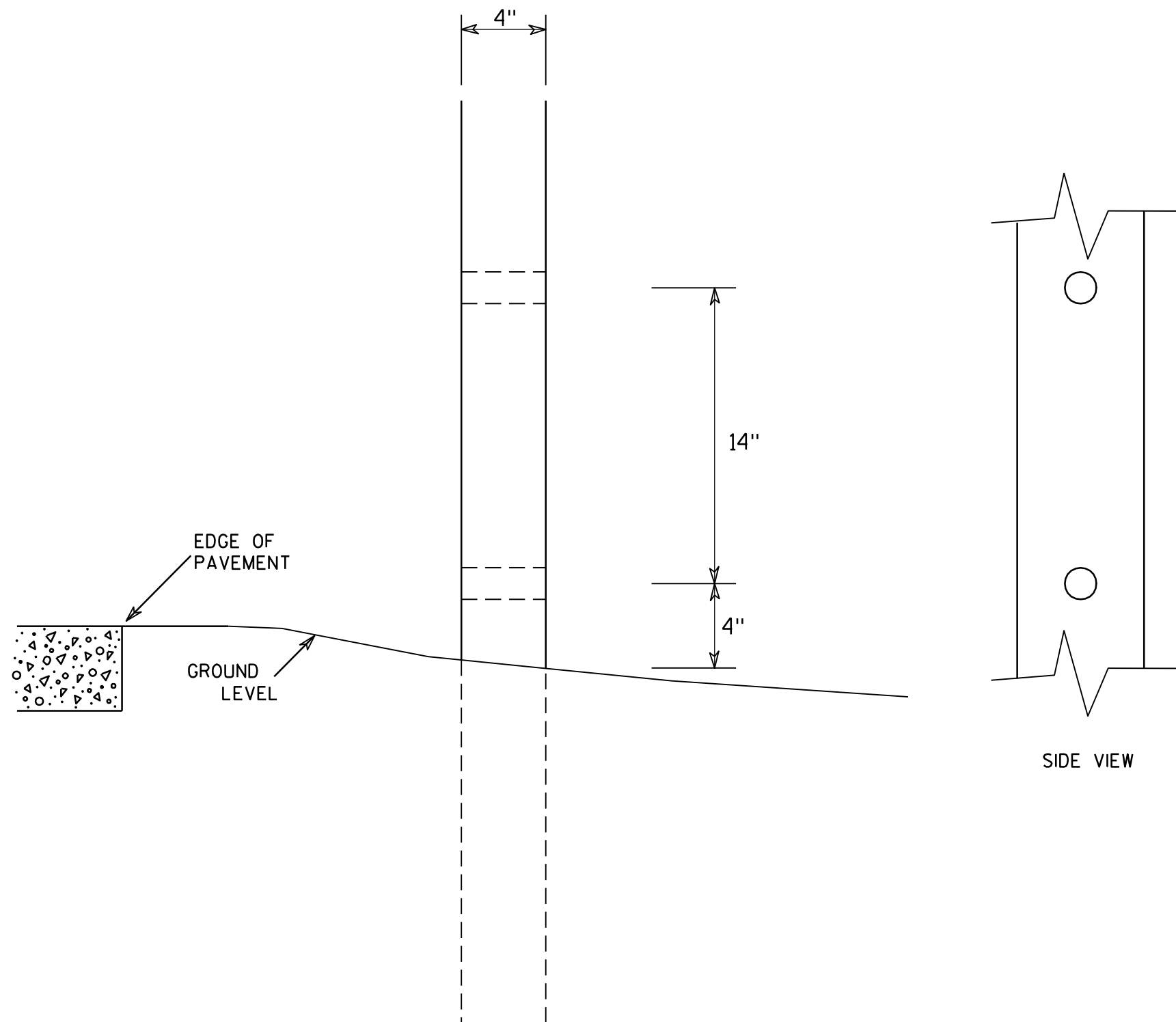


Washer Placement when Sign Has Other Than Type H or Type F Face

* 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

7

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

**4 X 6 WOOD POST
MODIFICATIONS**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

DESIGN LOADING	HS20
INVENTORY RATING	HS21
OPERATING RATING	HS35
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV)	210 KIPS

DESIGN LOADING _____ HL-93


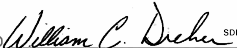
CONCRETE MASONRY BRIDGES - SUPERSTRUCTURE ——— f'_c = 4,000 psi
ALL OTHER ——— f'_c = 3,500 psi
HIGH STRENGTH BAR STEEL REINFORCEMENT ——— f_y = 60 ksi

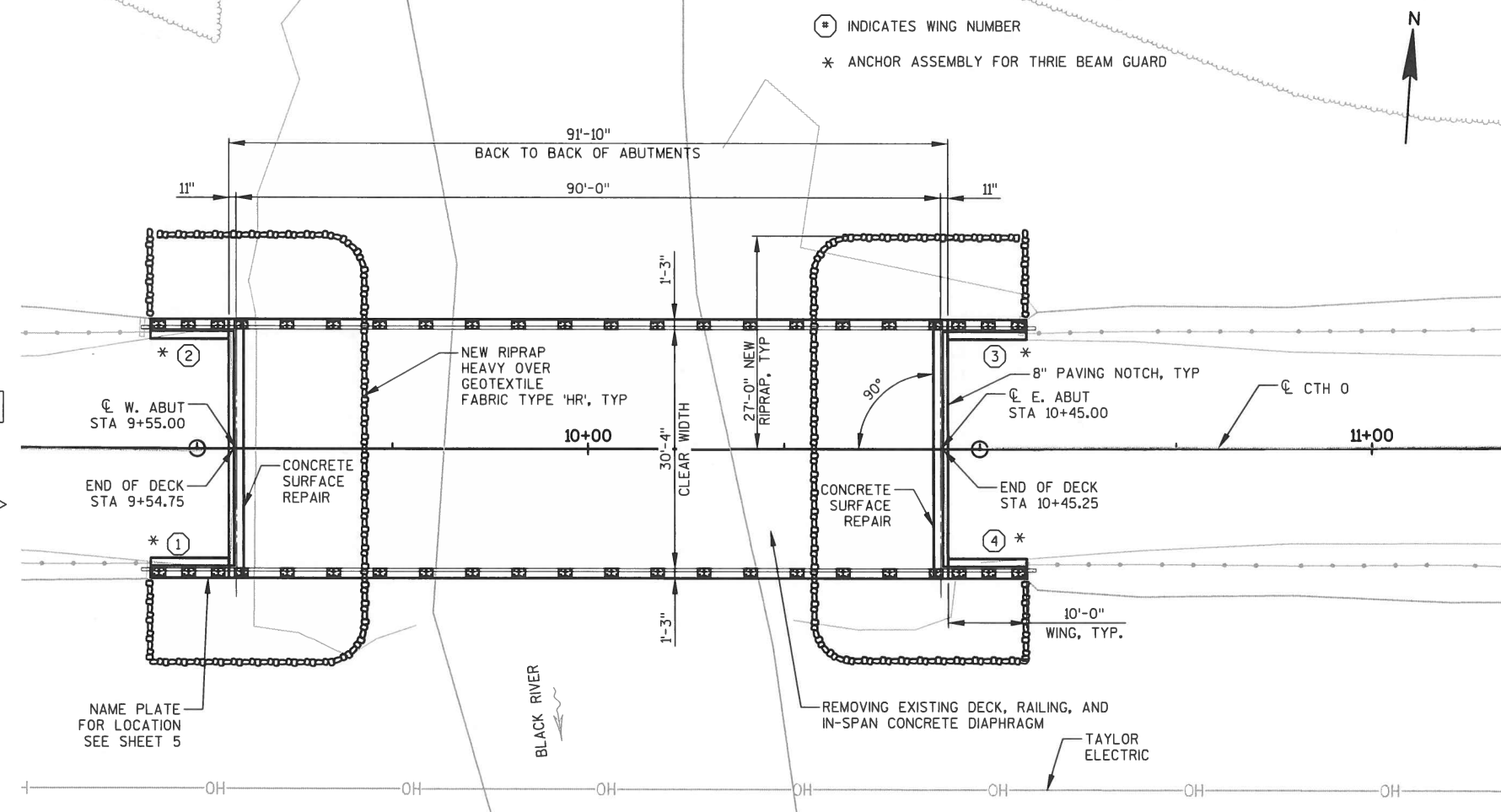
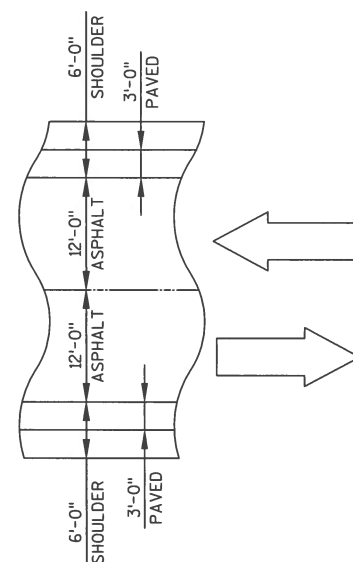
ADT (2016) = 3500
ADT (2036) = 3900
DESIGN SPEED = 50 MPH

BASED ON ORIGINAL STRUCTURE PLANS
(FOR INFORMATION ONLY)

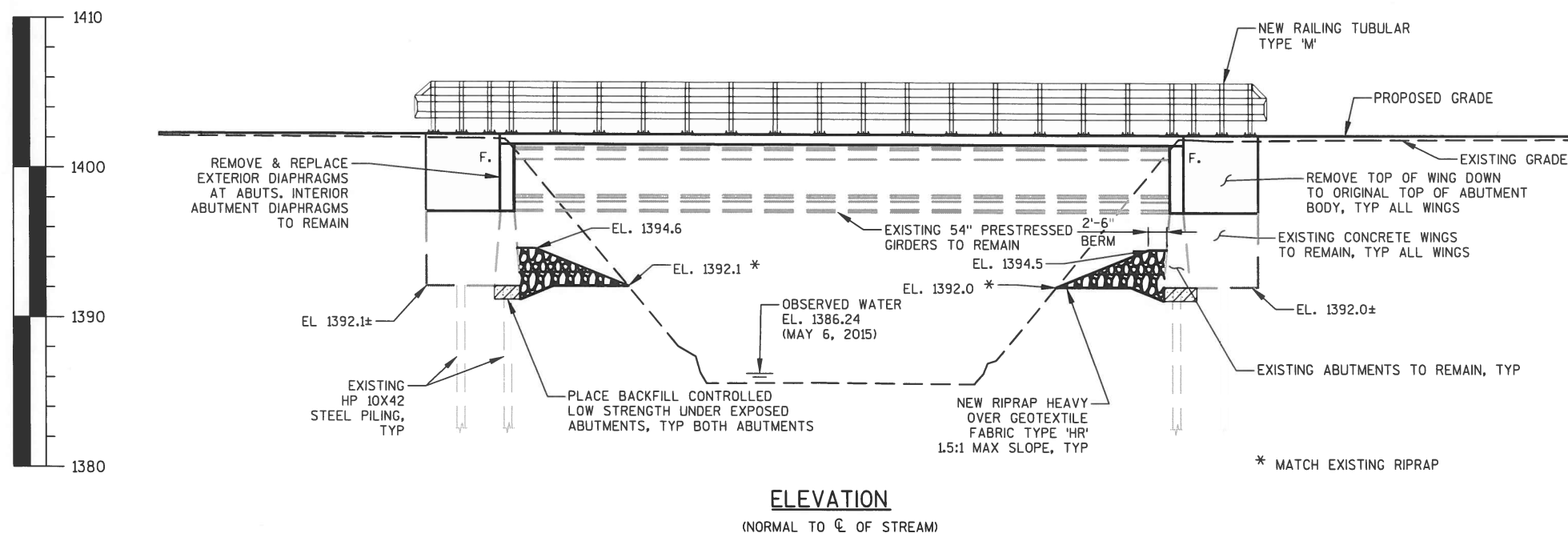
WATERWAY AREA	= 600 SQ. FT.
STREAM VELOCITY	= 8.7 F.P.S.
Q50	= 5,220 C.F.S.
DRAINAGE AREA	= 45 SQ. MI.
HIGH WATER	= EL. 1395.60

- 1 GENERAL PLAN
- 2 TYPICAL SECTION, GENERAL NOTES & QUANTITIES
- 3 CONSTRUCTION STAGING
- 4 WEST ABUTMENT
- 5 WEST ABUTMENT DETAILS
- 6 EAST ABUTMENT
- 7 EAST ABUTMENT DETAILS
- 8 INTERMEDIATE STEEL DIAPHRAGMS
- 9 SUPERSTRUCTURE
- 10 SUPERSTRUCTURE DETAILS
- 11 SUPERSTRUCTURE DETAILS
- 12 TUBULAR STEEL RAILING TYPE 'M'

NO.	DATE	REVISION			BY
		Mead & Hunt, Inc. 2440 Deming Way Middleton, WI 53562 608.273.6380 www.meadhunt.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION					
ACCEPTED				SDR	11/23/16
CHIEF		STRUCTURES DESIGN ENGINEER		DATE	
STRUCTURE P-60-916					
C/T H O OVER BLACK RIVER					
COUNTY	TAYLOR		TOWN/CITY/VILLAGE		MEDFORD
DESIGN SPEC.					
REHABILITATION N/A					
DESIGNED	DESIGN	DRAWN	PLANS		
BY	RCP	CK'D.	GAR	BY	MJB
			CK'D.	GAR	
GENERAL PLAN				SHEET 1 OF 1	



PLAN P-60-916
(DECK REPLACEMENT - SINGLE SPAN 54-INCH
PRESTRESSED CONCRETE GIRDER BRIDGE)



* MATCH EXISTING RIPRAP

BRIDGE OFFICE CONTACT
WILLIAM DREHER, P.E.
TELEPHONE: (608) 266-8489
CONSULTANT CONTACT
MATTHEW BUCKLI, P.E.
TELEPHONE: (608) 273-6380

FILE NAME : X:\3224200\150187.01\TECH\CAD\88880805\DESIGN\STRUCTURE\080101-GP.DWG

PLOT DATE : 11/22/2016

PLOT BY :

PLOT SCALE :1:1

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

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

THE EXISTING STRUCTURE TO BE REHABILITATED IS A 91'-10" LONG BY 30.0' CLEAR ROADWAY WIDTH, SINGLE SPAN PRESTRESSED CONCRETE GIRDER STRUCTURE (P-60-0916)

- PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND SIDES OF THE DECK AND UNDERNEATH DECK (1-FOOT FROM DECK EDGES). SEE DETAIL THIS SHEET.

DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

VARIATIONS TO THE NEW GRADE LINE OVER ½" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

REMOVAL OF DECK, RAILINGS, DIAPHRAGMS, PARTIAL REMOVAL OF THE WINGS AND ALL ASSOCIATED DEMOLITION SHALL BE PAID FOR AS "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STA 10+00)" AND PERFORMED TO THE LIMITS SHOWN IN THE PLANS.

- ★ ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1988 (NAVD88).

¾" V-GROOVE, EXTEND TO 6" FROM FRONT FACE OF ABUTMENT.

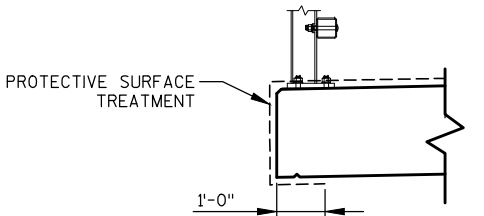
THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAILS SHEET.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

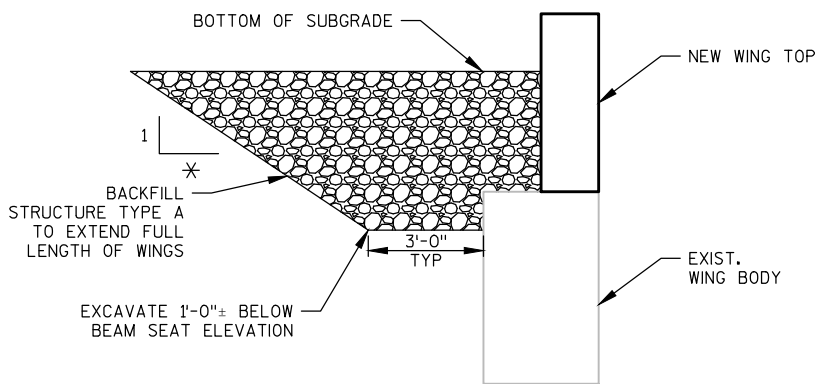
THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.2.11 OF THE STANDARD SPECIFICATIONS AND STANDARD DETAIL DRAWINGS.

NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR.

- ▲ LIMITS OF CONCRETE SURFACE REPAIR AT LOCATIONS ON THE WEST AND EAST ABUTMENT BODIES AND INTERIOR DIAPHRAGMS TO BE DETERMINED BY THE FIELD ENGINEER.



● PROTECTIVE SURFACE TREATMENT DETAIL



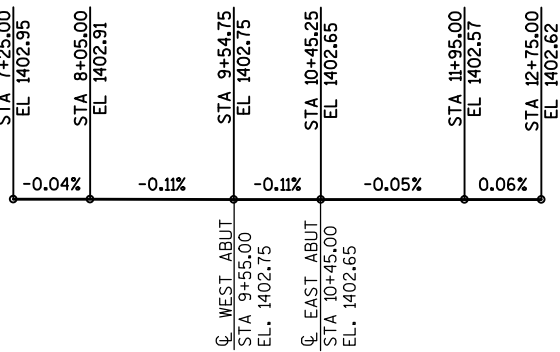
WING BACKFILL DETAIL

(TYPICAL AT ALL WINGS)

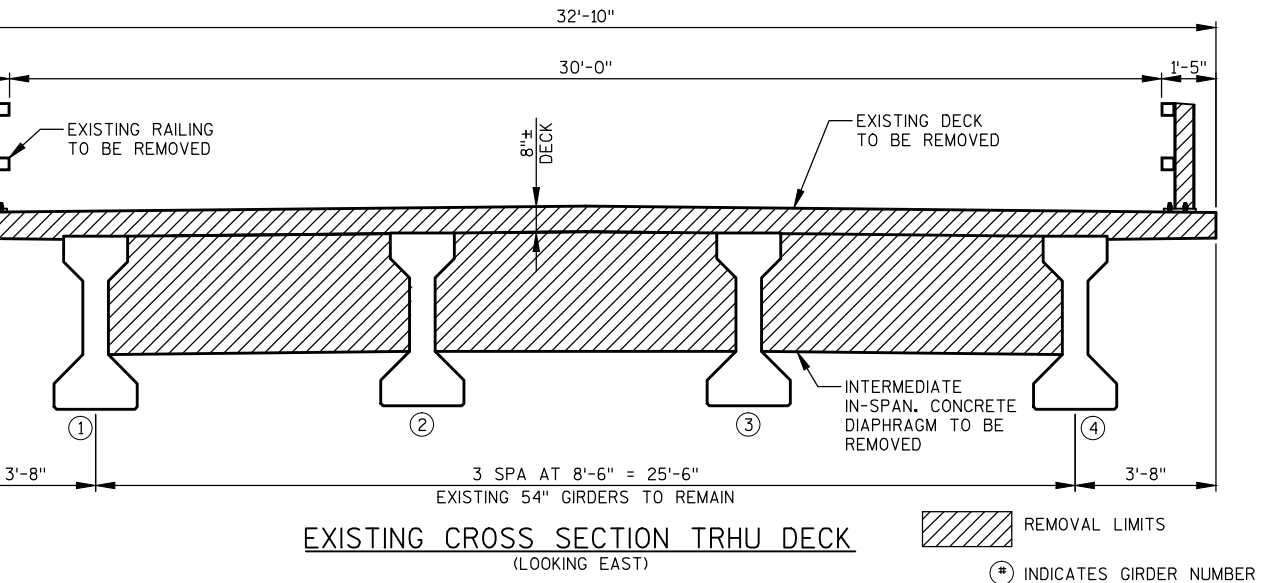
* OSHA SLOPE:
1.5:1 USED FOR STRUCTURAL
BACKFILL CALCULATIONS.

★ BENCH MARKS

NO.	STATION	OFFSET	DESCRIPTION	ELEV.
100	9+47	RT. 16.3'	CHISELED SQ. IN SW WING	1402.22
101	11+33	RT 43.1'	NAIL IN POWER POLE	1396.52
102	8+63	RT 43.3'	NAIL IN POWER POLE	1394.86



PROFILE GRADE LINE, CTH 0

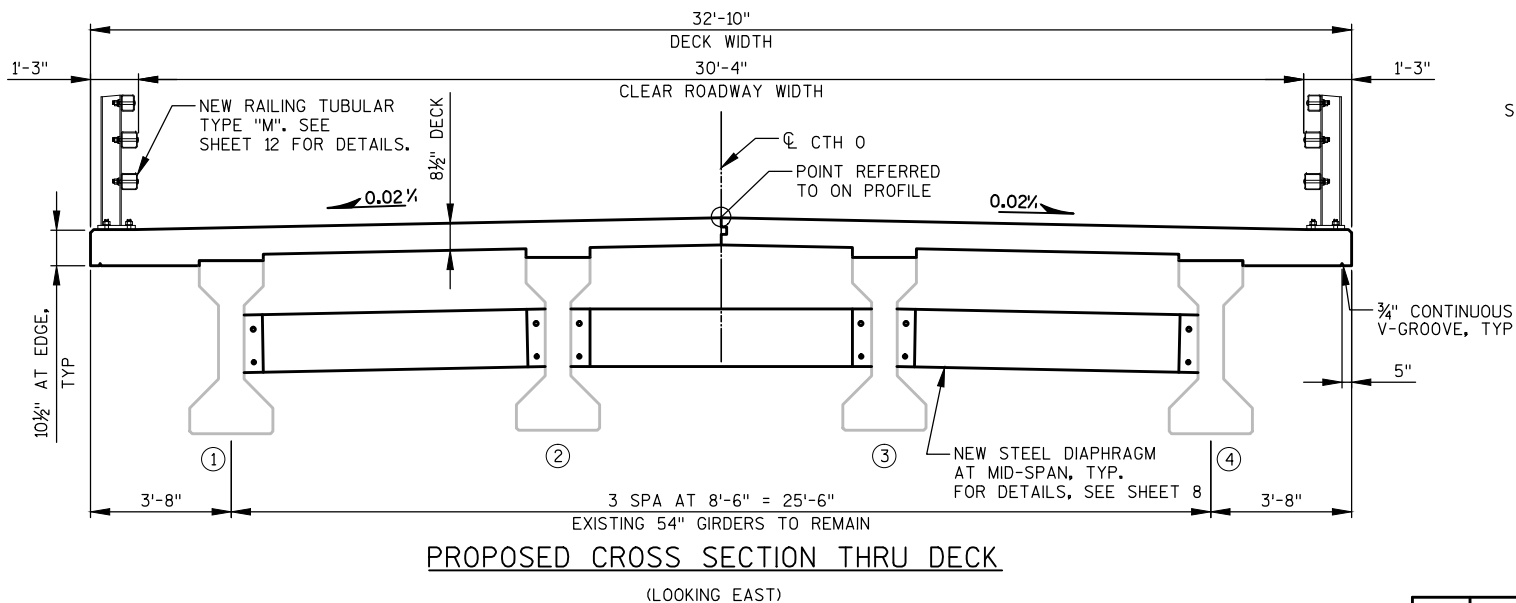


EXISTING CROSS SECTION THRU DECK

(LOOKING EAST)

REMOVAL LIMITS

⊙ INDICATES GIRDER NUMBER



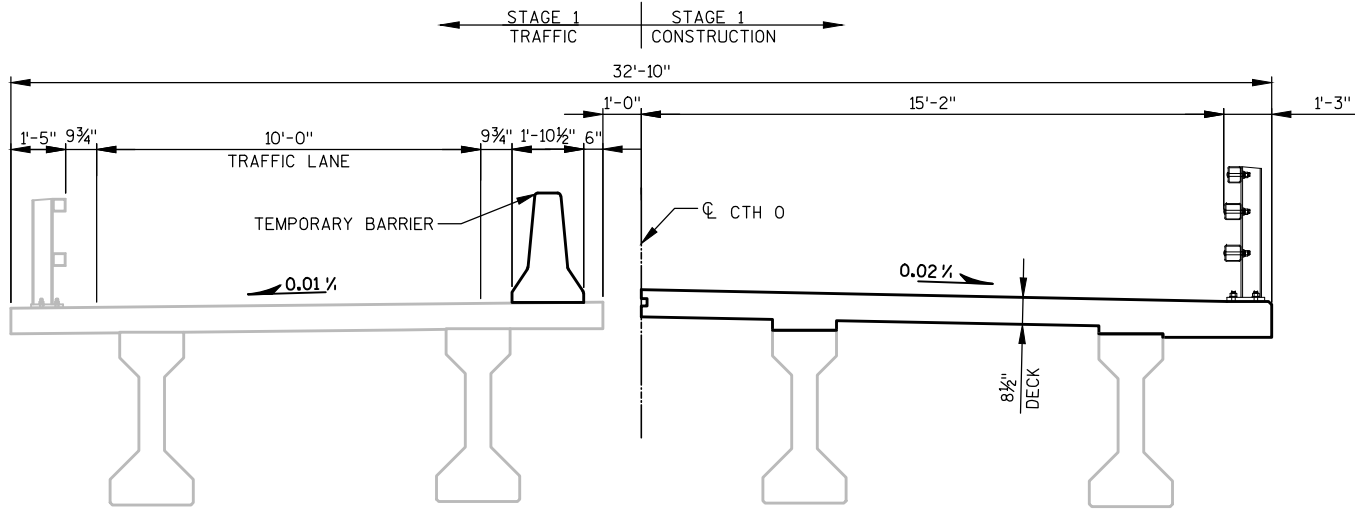
PROPOSED CROSS SECTION THRU DECK

(LOOKING EAST)

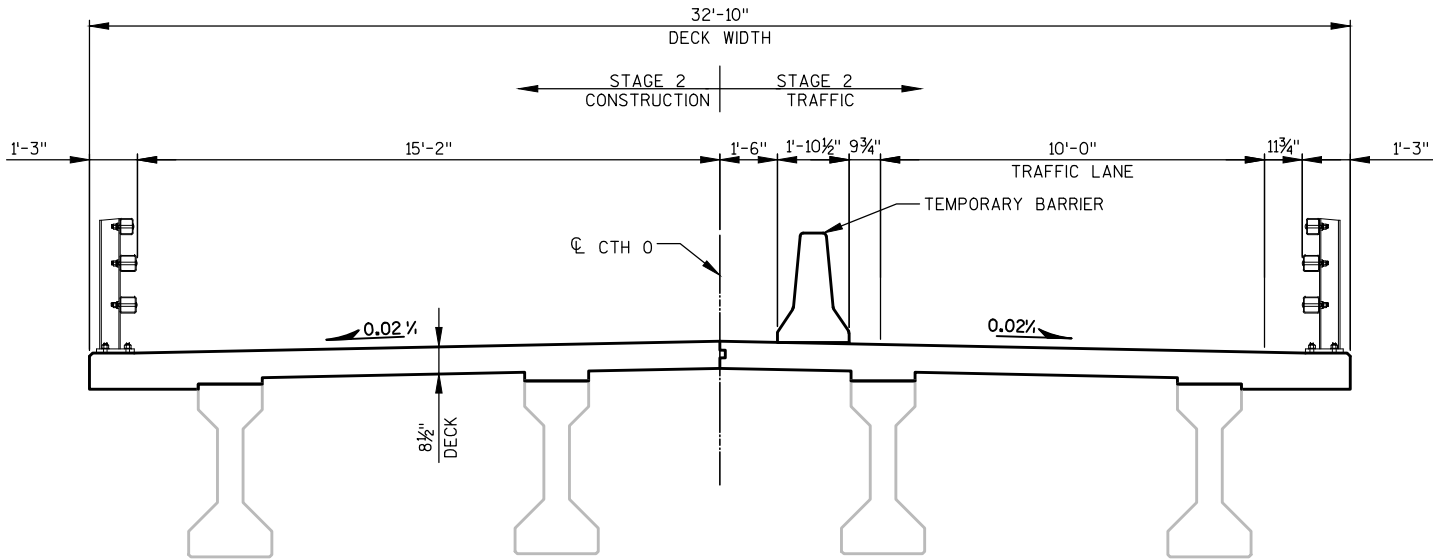
TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00	LS	---	---	---	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES P-60-916	LS	---	---	---	1
209.0200.S	BACKFILL CONTROLLED LOW STRENGTH	CY	1	3	---	4
210.1500	BACKFILL STRUCTURE TYPE A	TON	55	55	---	110
502.0100	CONCRETE MASONRY BRIDGES	CY	6	6	92	104
502.3200	PROTECTIVE SURFACE TREATMENT	SY	15	15	374	404
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EA	24	24	---	48
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	700	700	18880	20280
505.0905	BAR COUPLERS NO. 5	EA	---	---	255	255
505.0906	BAR COUPLERS NO. 6	EA	---	---	4	4
506.4000	STEEL DIAPHRAGMS P-60-916	EA	---	---	3	3
509.1500	CONCRETE SURFACE REPAIR	SF	---	---	---	2
513.4061	RAILING TUBULAR TYPE M P-60-916	LF	22	22	184	228
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	6	6	---	12
606.0300	RIPRAP HEAVY	CY	75	80	---	155
645.0120	GEOTEXTILE FABRIC TYPE 'HR'	SY	160	160	---	320
NON BID ITEMS						
	FILLER	SIZE			1/2" & 3/4"	

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-60-916			
DRAWN BY		MJB	PLANS CK'D. GAR
TYPICAL SECTION, GENERAL NOTES & QUANTITIES			SHEET 2 OF 12

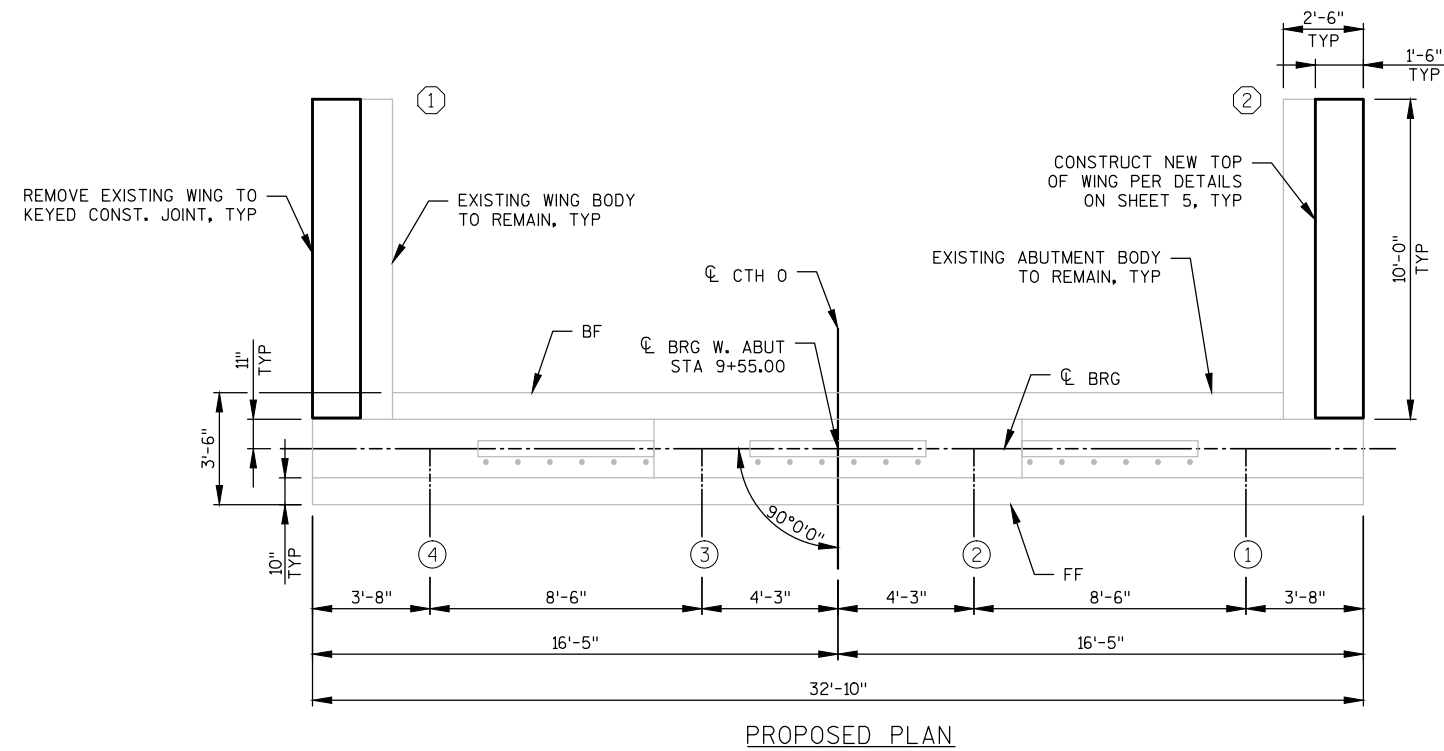


CROSS SECTION - STAGE 1



CROSS SECTION - STAGE 2

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-60-916			
		DRAWN BY	PLANS CK'D.
		MJB	GAR
CONSTRUCTION STAGING		SHEET 3 OF 12	



NOTES

SEE SHEET 2 FOR STRUCTURE BACKFILL DETAIL.

SALVAGE EXISTING REINFORCEMENT AND EXTEND FULL LENGTH INTO NEW CONSTRUCTION.

- 1 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- 2 ½" FILLER - EXTENDED FROM BEARING SEAT TO TOP OF WING. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ½" BELOW SURFACE OF CONCRETE.

Ⓝ INDICATES GIRDER NUMBER

INDICATES WING NUMBER

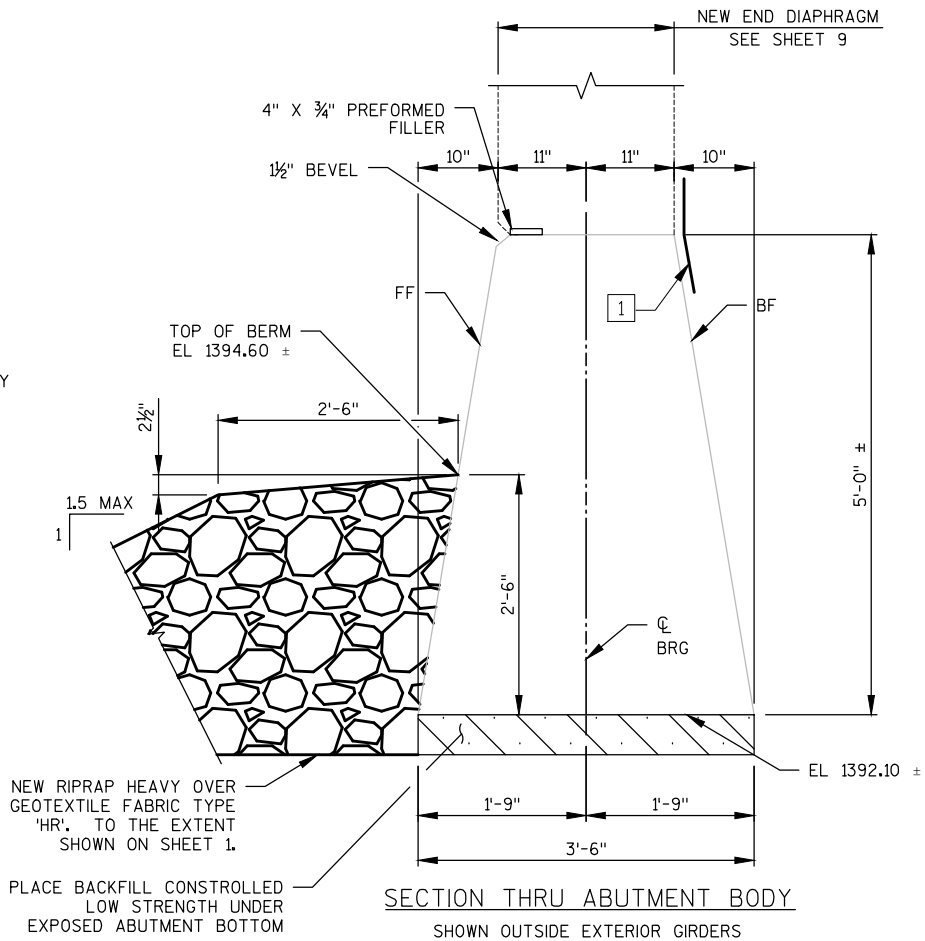
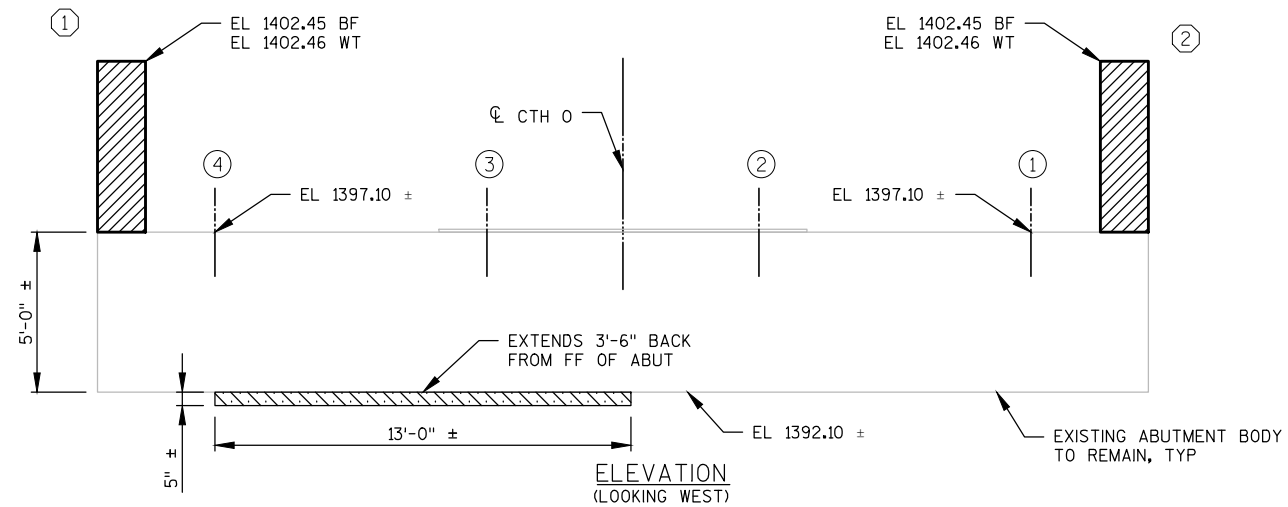
 LIMITS OF BACKFILL CONTROLLED
LOW STRENGTH UNDER ABUTMENT.

FF - FRONT FACE

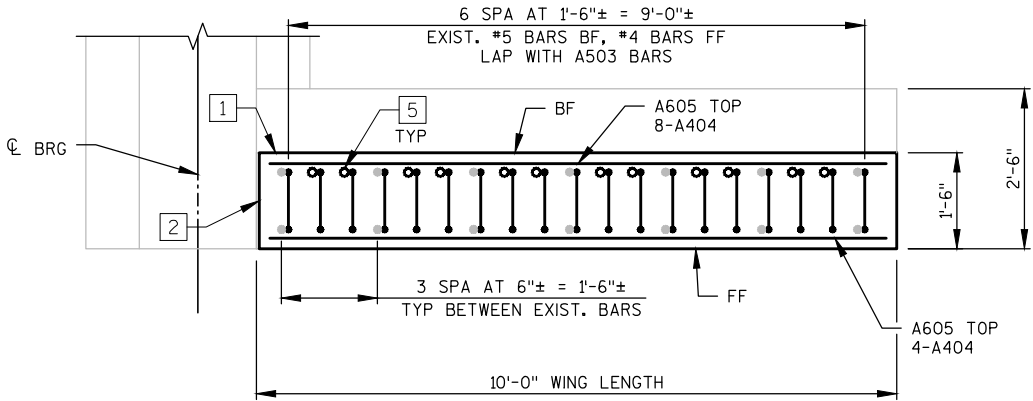
BF - BACK FACE

EF - EACH FACE

WT - WING TIP



NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION					
STRUCTURE P-60-916					
		DRAWN BY	MJB	PLANS CK'D.	GAR
WEST ABUTMENT				SHEET 4 OF 12	



WING PLAN
(WING 2 SHOWN, WING 1 SIMILAR)

- DENOTES EXISTING #4 OR #5 BAR
- DENOTES A501 BAR WITH ADHESIVE ANCHOR

NOTES

- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
 - ½" FILLER - EXTENDED FROM BEARING SEAT TO TOP OF WING, INCLUDED IN WING LENGTH. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.
 - SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
 - EXIST. 2X6 KEYED CONST. JOINT. REMOVE EXISTING WING TOP CONCRETE TO THIS POINT.
 - ADHESIVE ANCHORS NO. 5 BAR. EMBED 1'-0" IN CONCRETE WITH A501 BARS.
- # INDICATES WING NUMBER

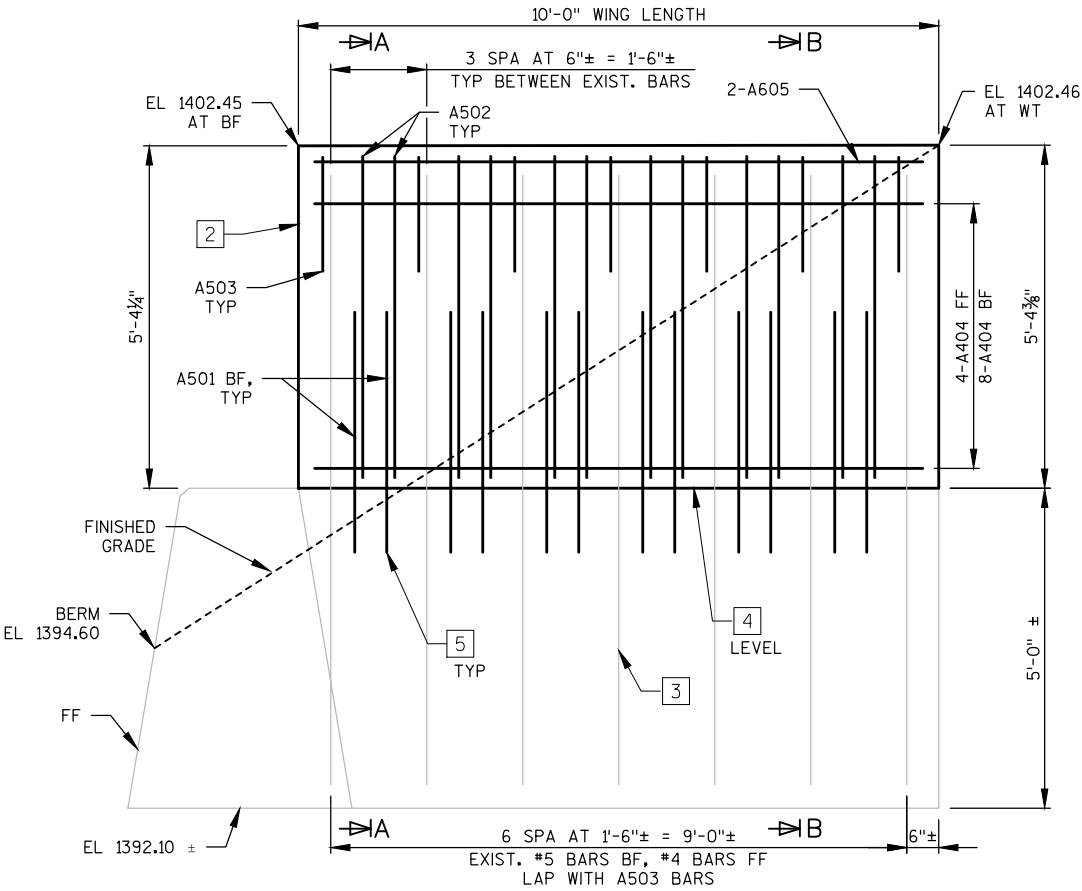
FF - FRONT FACE
BF - BACK FACE
EF - EACH FACE
WT - WING TIP

BILL OF BARS
WEST ABUTMENT

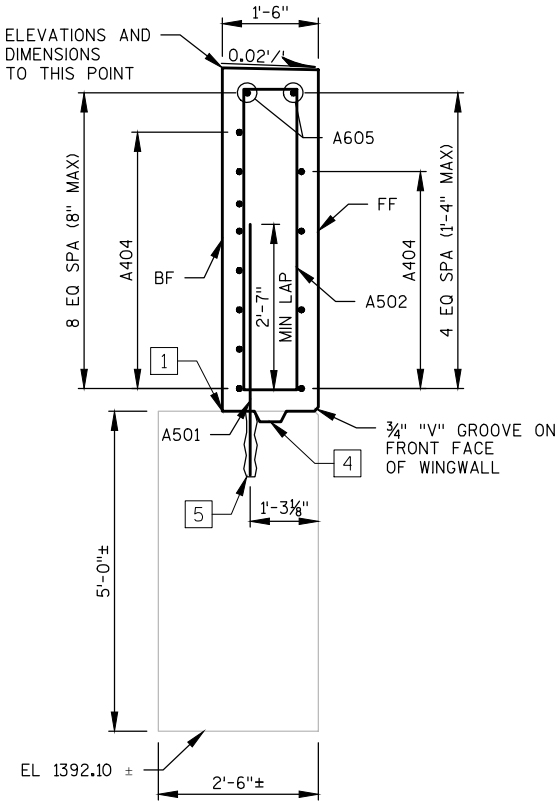
COATED= 700 LBS.
UNCOATED= 0 LBS.

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
			FT - IN			
A501	24		3 - 9			WING TOP - DOWELS - BF VERT
A502	24		12 - 10	X		WING TOP - STIRRUPS VERT
A503	14		4 - 10	X		WING TOP - TIES VERT
A404	24		9 - 7			WING TOP - FF & BF HORIZ
A605	4		9 - 7			WING TOP - TOP HORIZ

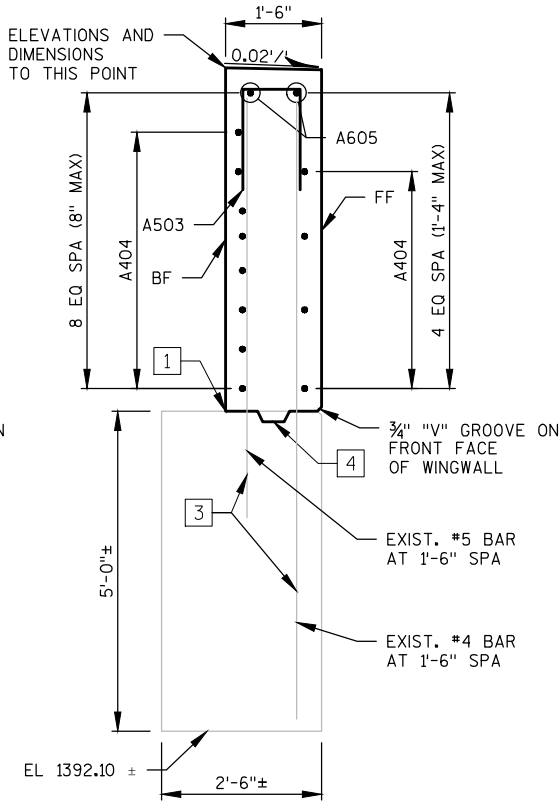
BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.



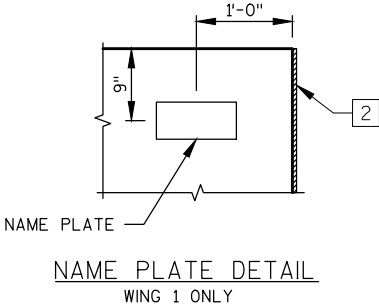
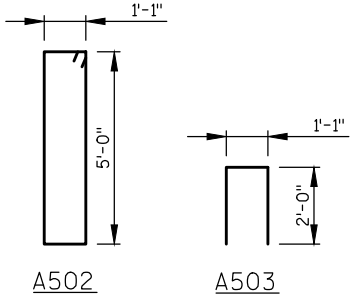
WING ELEVATION
(WING 2 SHOWN, WING 1 SIMILAR)



WING SECTION A-A



WING SECTION B-B



NAME PLATE DETAIL
WING 1 ONLY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-60-916			
DRAWN BY		MJB	PLANS CK'D. GAR
WEST ABUTMENT DETAILS		SHEET 5 OF 12	

NOTES

SEE SHEET 2 FOR STRUCTURE BACKFILL DETAIL.

SALVAGE EXISTING REINFORCEMENT AND EXTEND FULL LENGTH INTO NEW CONSTRUCTION.

- 1 18" RUBBERIZED MEMBRANE WATERPROOFING, SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- 2 ½" FILLER - EXTENDED FROM BEARING SEAT TO TOP OF WING. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.

INDICATES GIRDER NUMBER

INDICATES WING NUMBER

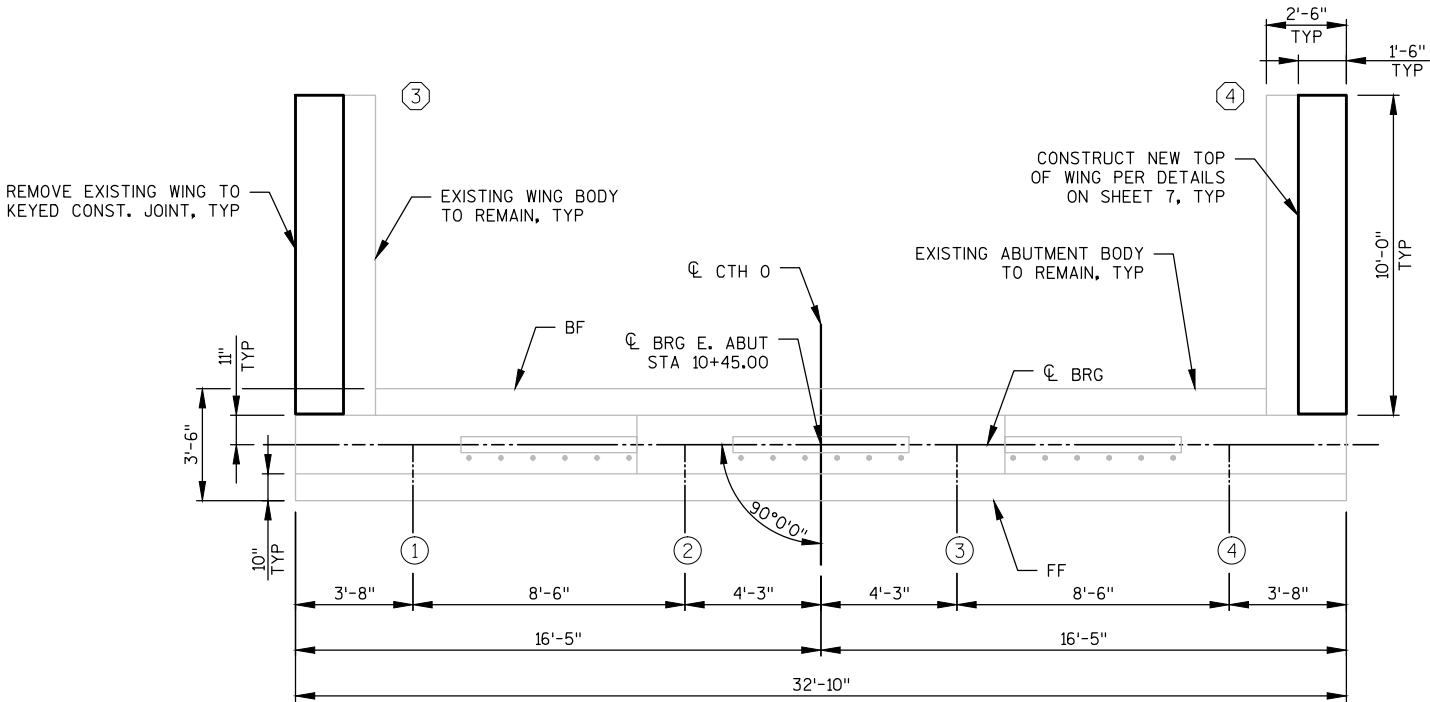
LIMITS OF BACKFILL CONTROLLED LOW STRENGTH UNDER ABUTMENT.

FF - FRONT FACE

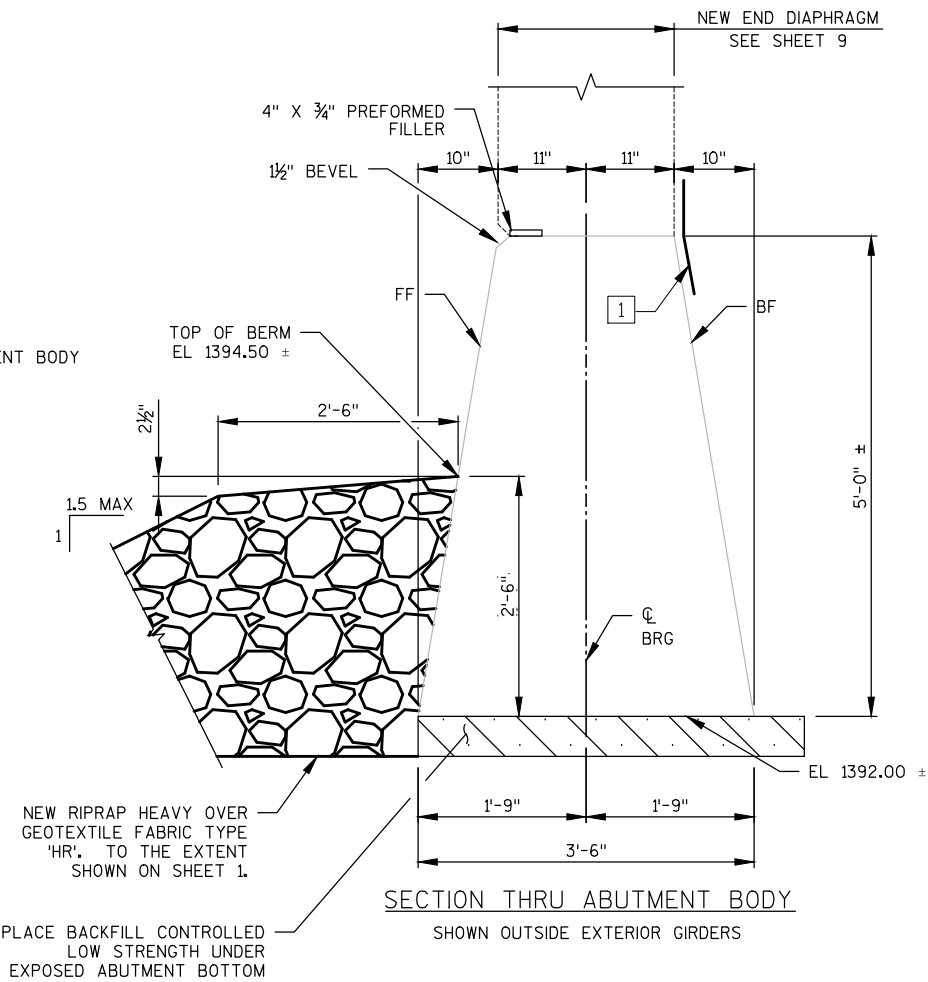
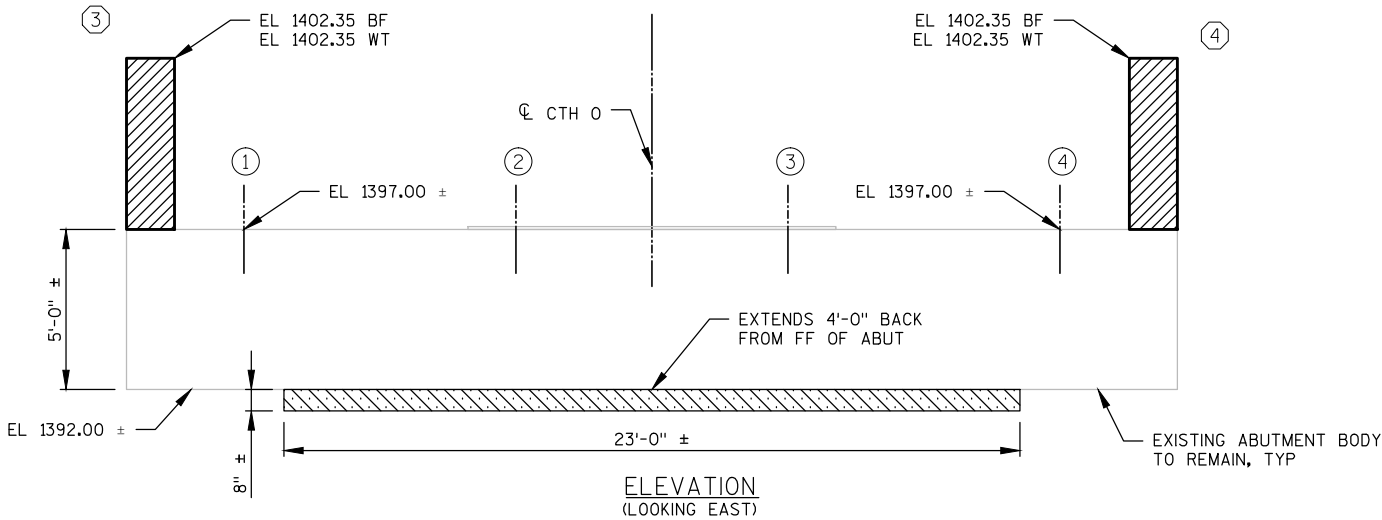
BF - BACK FACE

EF - EACH FACE

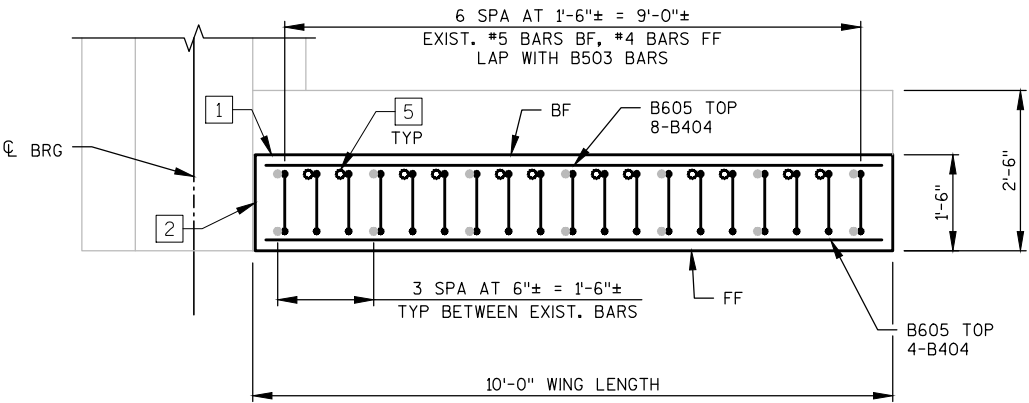
WT - WING TIP



PROPOSED PLAN



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-60-916			
DRAWN BY		MJB	PLANS CK'D. GAR
EAST ABUTMENT			SHEET 6 OF 12



WING PLAN
(WING 4 SHOWN, WING 3 SIMILAR)

- DENOTES EXISTING #4 OR #5 BAR
- DENOTES B501 BAR WITH ADHESIVE ANCHOR

NOTES

- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
 - ½" FILLER - EXTENDED FROM BEARING SEAT TO TOP OF WING, INCLUDED IN WING LENGTH. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.
 - SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
 - EXIST. 2X6 KEYED CONST. JOINT. REMOVE EXISTING WING TOP CONCRETE TO THIS POINT.
 - ADHESIVE ANCHORS NO. 5 BAR. EMBED 1'-0" IN CONCRETE WITH B501 BARS.
- # INDICATES WING NUMBER

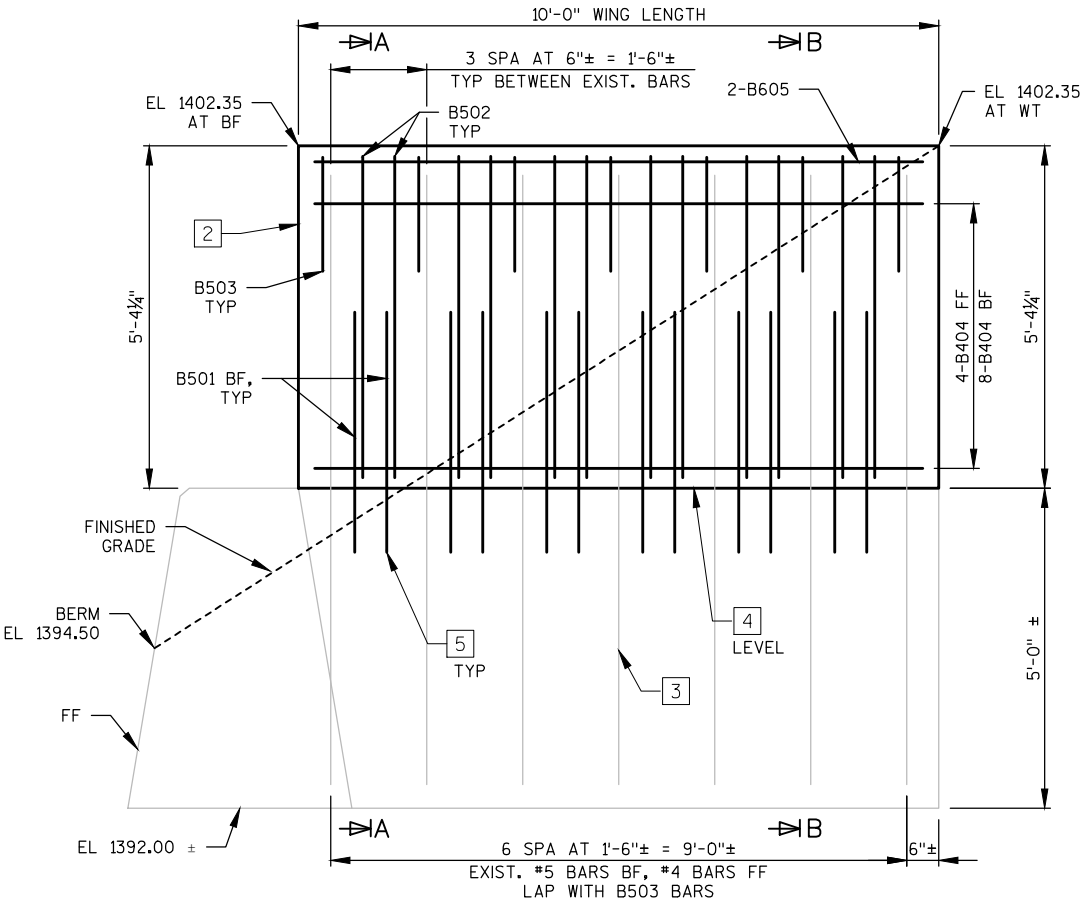
FF - FRONT FACE
BF - BACK FACE
EF - EACH FACE
WT - WING TIP

BILL OF BARS
EAST ABUTMENT

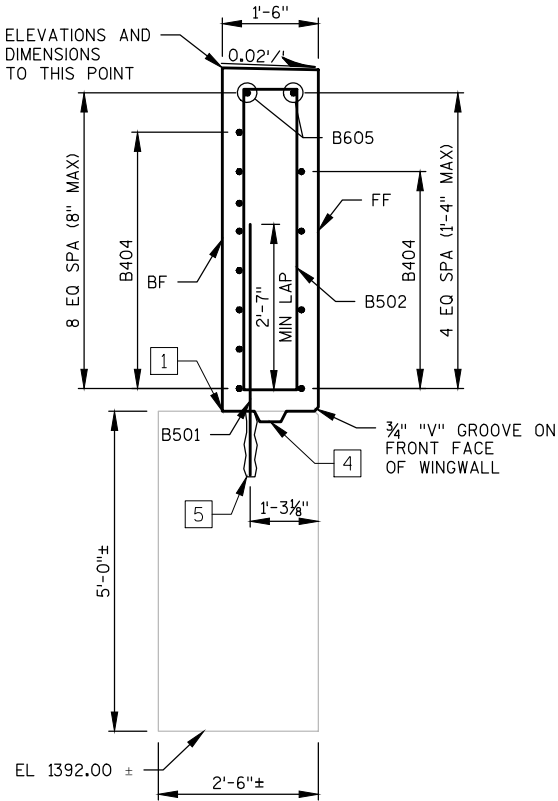
COATED= 700 LBS.
UNCOATED= 0 LBS.

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
			FT - IN			
B501	24		3 - 9			WING TOP - DOWELS - BF
B502	24		12 - 10	X		WING TOP - STIRRUPS
B503	14		4 - 10	X		WING TOP - TIES
B404	24		9 - 7			WING TOP - FF & BF
B605	4		9 - 7			WING TOP - TOP

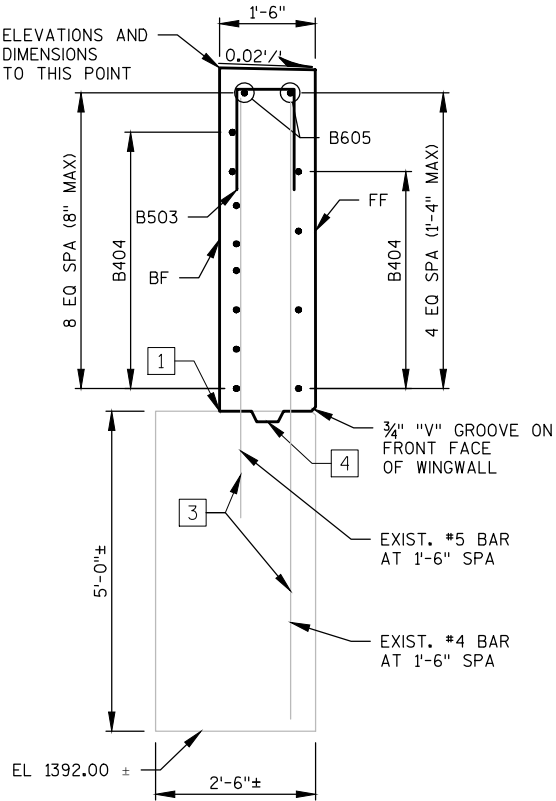
BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.



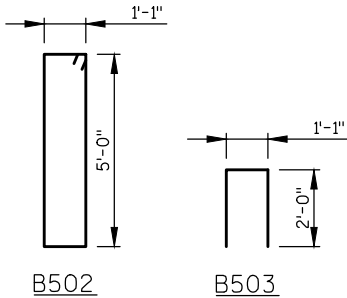
WING ELEVATION
(WING 4 SHOWN, WING 3 SIMILAR)



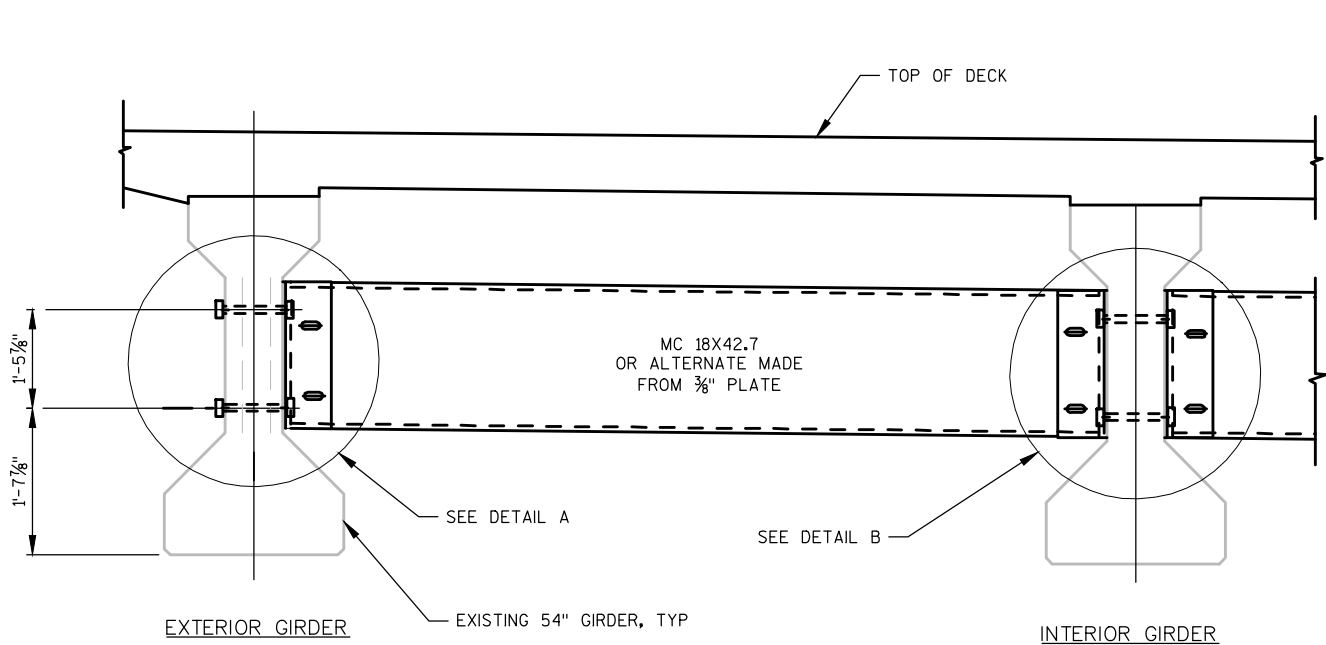
WING SECTION A-A



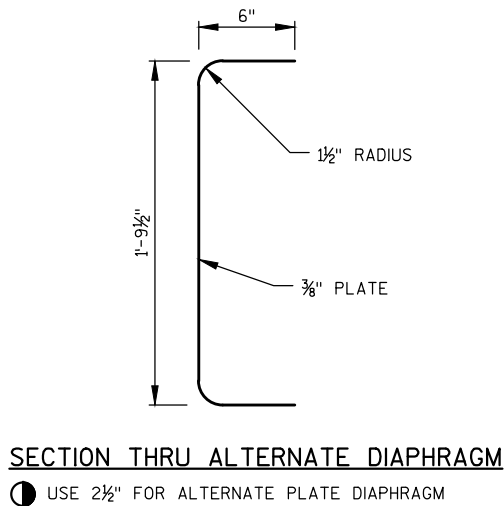
WING SECTION B-B



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-60-916			
		DRAWN BY	PLANS CK'D.
		MJB	GAR
EAST ABUTMENT DETAILS		SHEET 7 OF 12	



PART TRANSVERSE SECTION AT DIAPHRAGM



SECTION THRU ALTERNATE DIAPHRAGM

USE 2 1/2" FOR ALTERNATE PLATE DIAPHRAGM

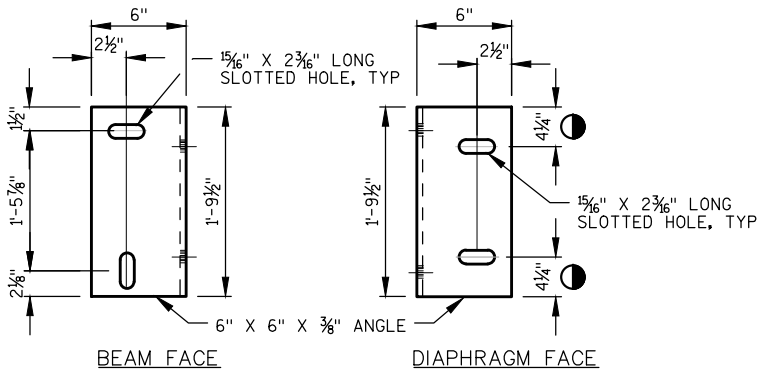
NOTES

ALL DIAPHRAGM MATERIAL AND CORED HOLES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS P-60-916", EACH.

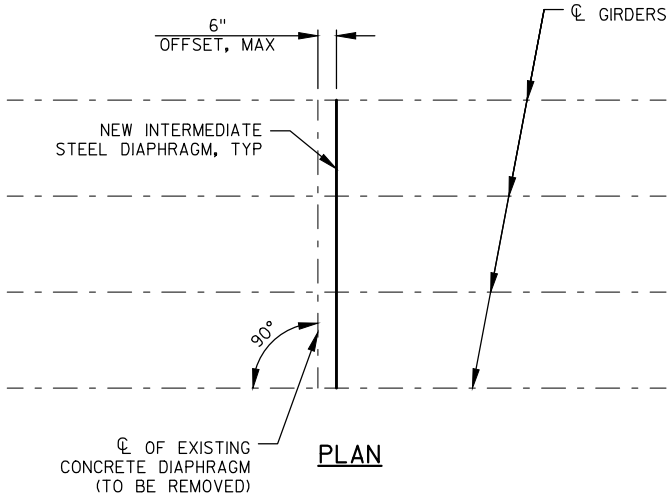
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

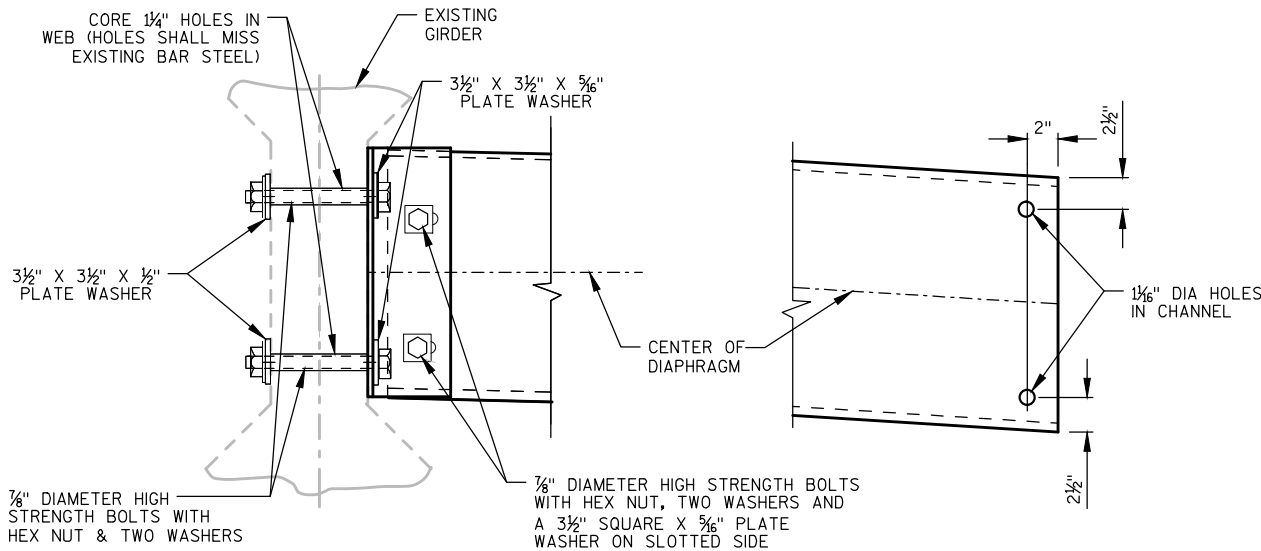
ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.



DIAPHRAGM SUPPORT

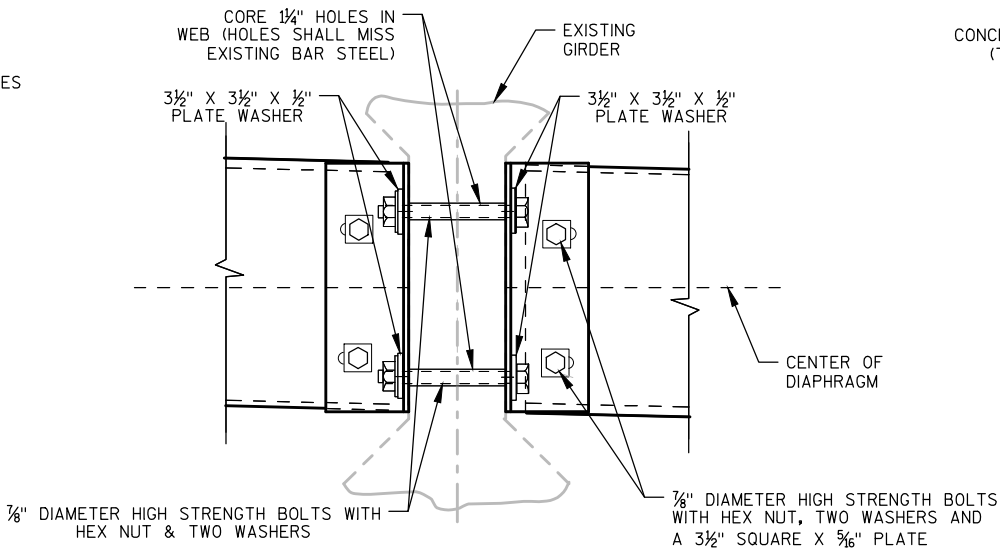


PLAN



DETAIL A

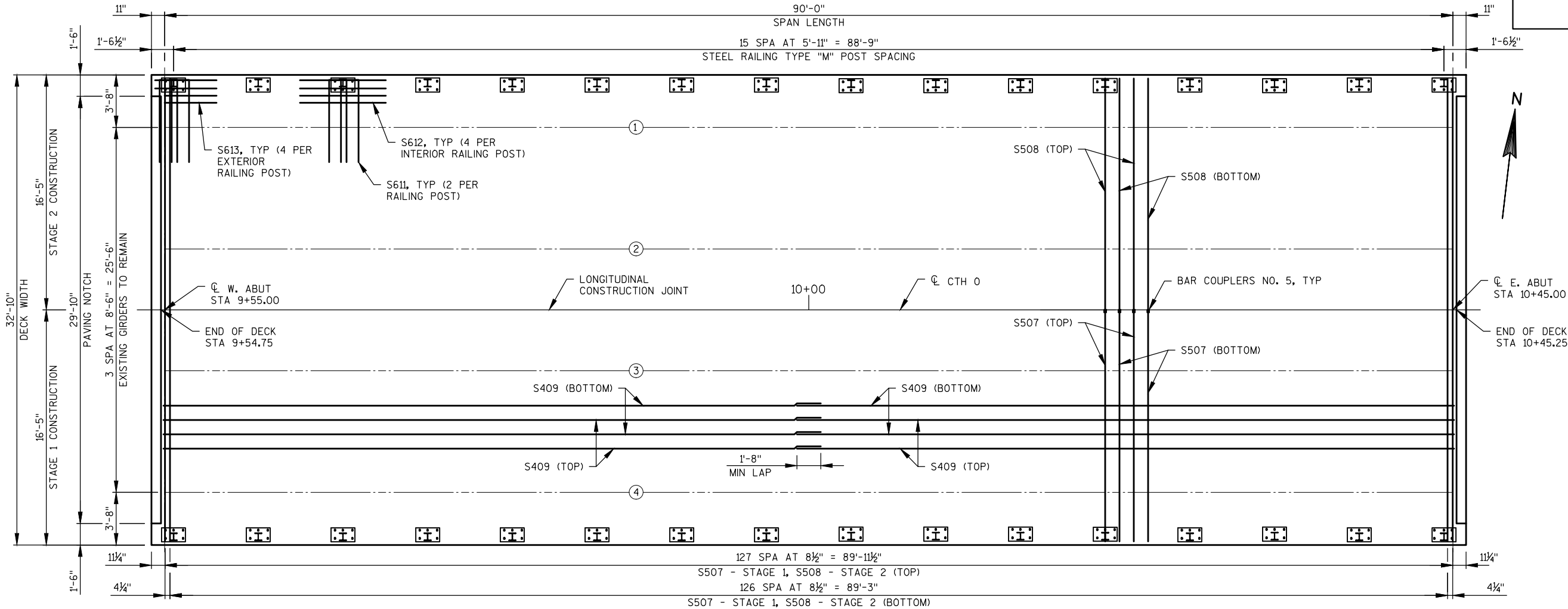
(FOR EXTERIOR ATTACHMENT)



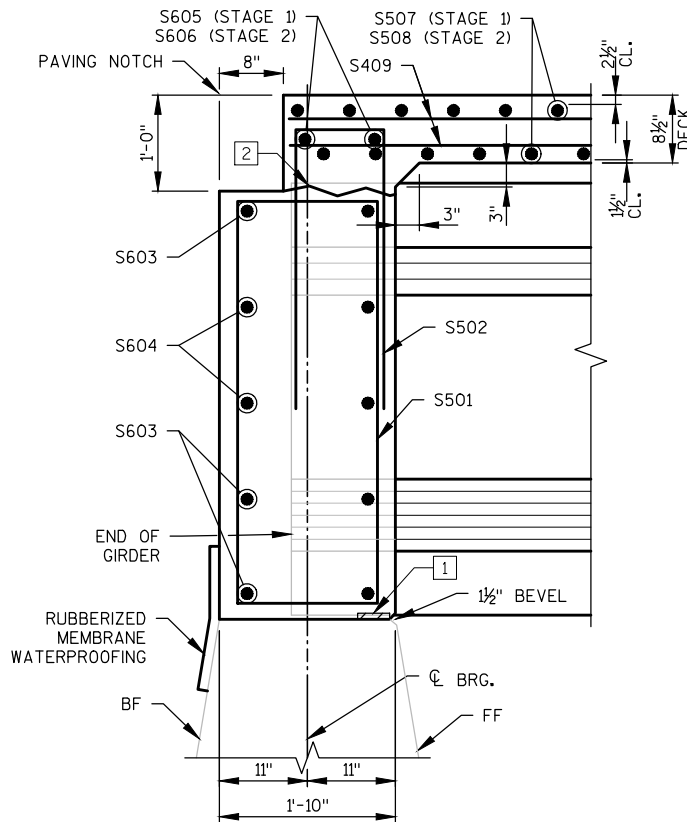
DETAIL B

(FOR INTERIOR ATTACHMENT)

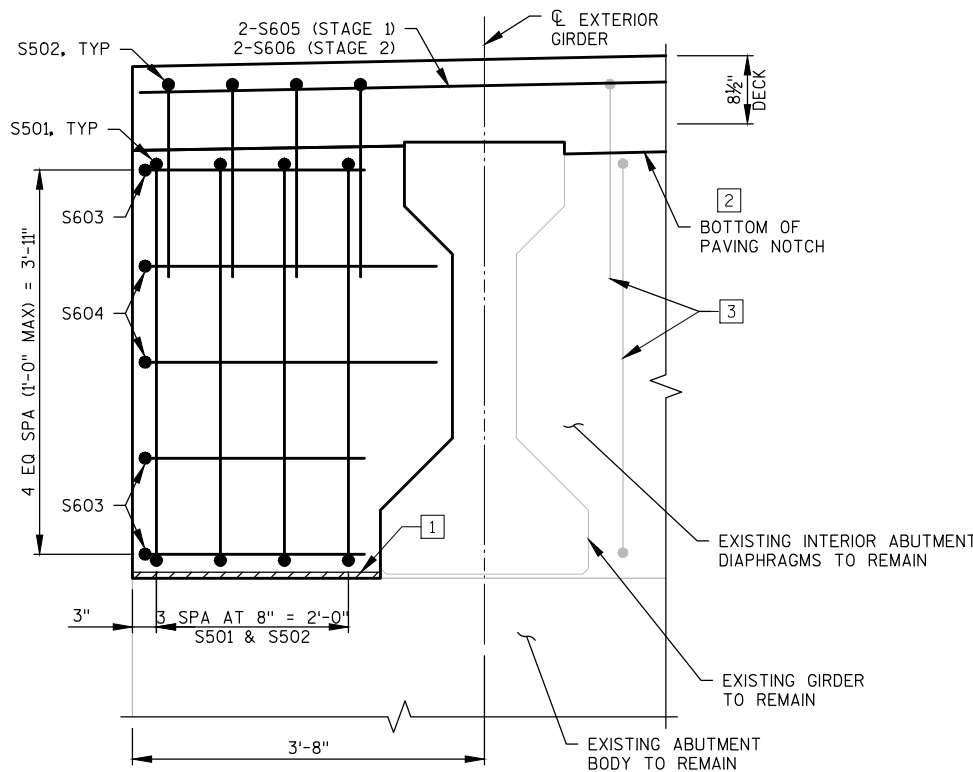
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-60-916			
DRAWN BY		MJB	PLANS CK'D. GAR
INTERMEDIATE STEEL DIAPHRAGMS			SHEET 8 OF 12



DECK REINFORCEMENT PLAN



PARTIAL LONGITUDINAL SECTION



END DIAPHRAGM REPLACEMENT

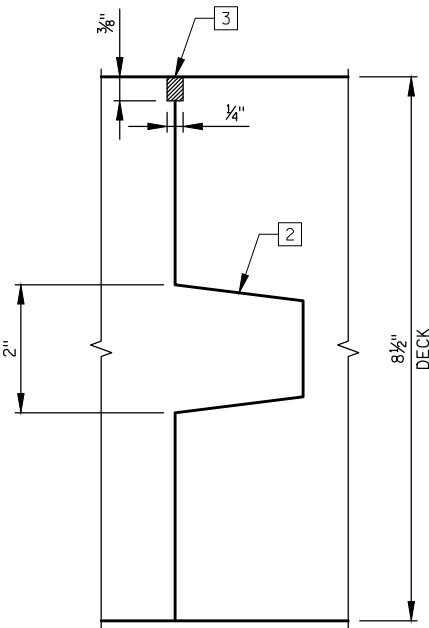
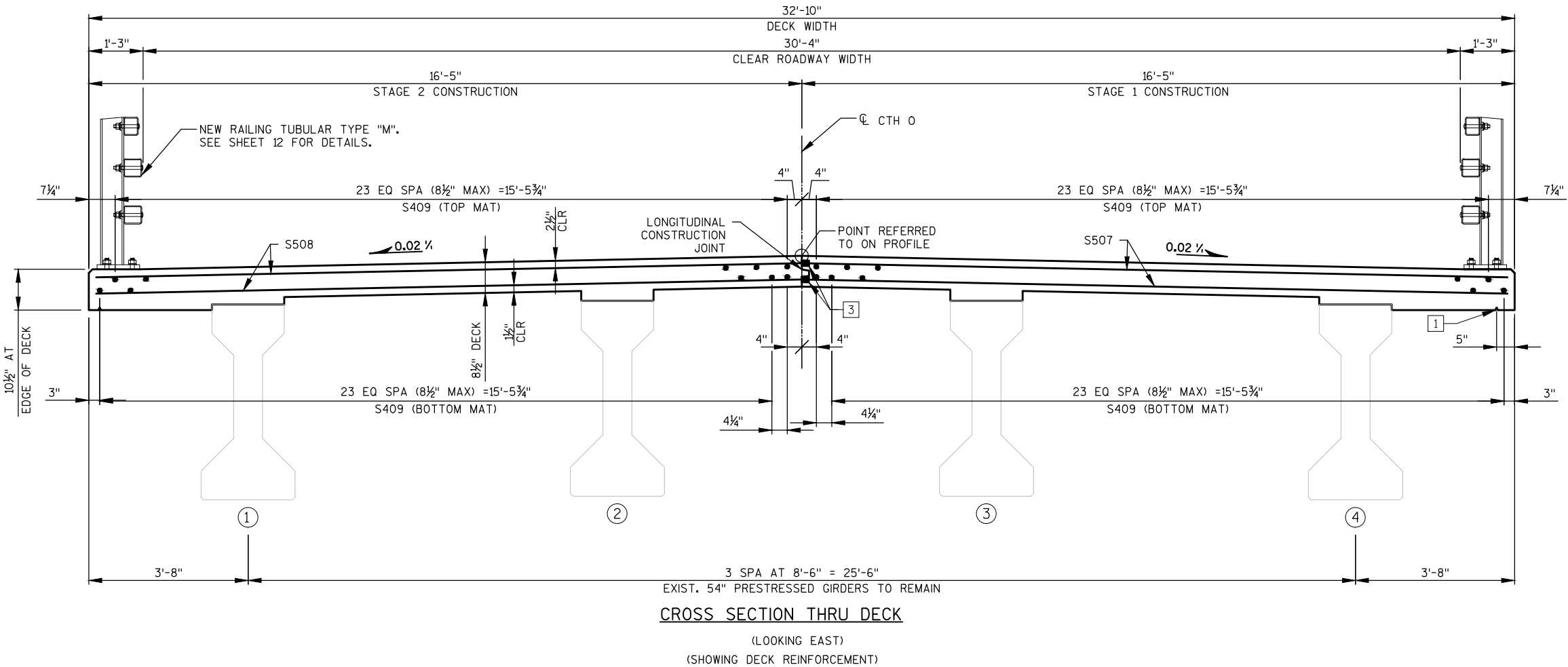
NOTES:

- 1 3/4" PREFORMED FILLER.
 - 2 OPTIONAL CONSTRUCTION JOINT AT BOTTOM OF PAVING NOTCH. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.
 - 3 SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
 - # INDICATES GIRDER NUMBER
- FF - FRONT FACE
BF - BACK FACE
EF - EACH FACE

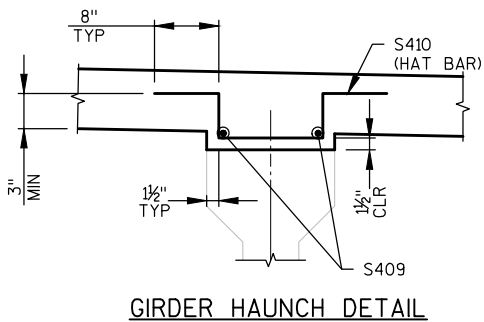
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-60-916			
		DRAWN BY MJB	PLANS CK'D. GAR
SUPERSTRUCTURE		SHEET 9 OF 12	

NOTES:

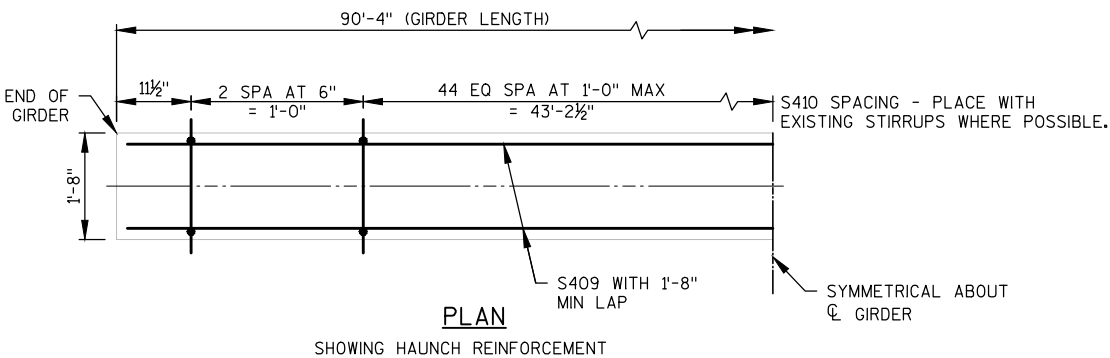
- 1 3/4" V-GROOVE. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM.
- 2 LONGITUDINAL CONSTRUCTION JOINT IN DECK FORMED BY 2" X 2" BEVELED KEYWAY.
- 3 ROUTE OUT 1/2" X 3/8" DEEP AT JOINT. FILL IN WITH LOW VISCOSITY CRACK SEALER PER THE APPROVED PRODUCTS LIST. (INCIDENTAL TO "CONCRETE MASONRY BRIDGES")
- * INDICATES GIRDER NUMBER



LONGITUDINAL CONSTRUCTION JOINT DETAIL

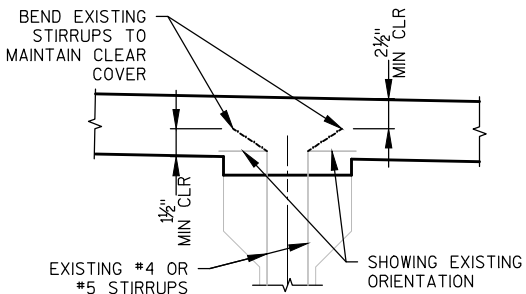


GIRDER HAUNCH DETAIL



PLAN

SHOWING HAUNCH REINFORCEMENT



EXISTING GIRDER STIRRUPS

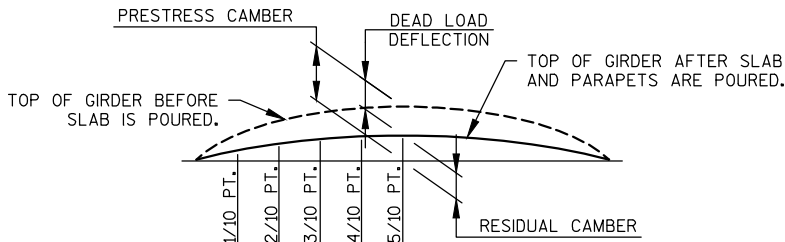
ANY REQUIRED BENDING OF EXISTING STIRRUPS SHALL BE INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY BRIDGES".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-60-916			
DRAWN BY		MJB	PLANS CK'D. GAR
SUPERSTRUCTURE DETAILS			SHEET 10 OF 12

ELEVATION TABLE

SPAN POINT	STATION	NORTH EOD ELEV.	GIRDER 1		GIRDER 2		C/L CTH O ELEVATION	GIRDER 3		GIRDER 4		SOUTH EOD ELEV.
			TD	TG	TD	TG		TD	TG	TD	TG	
W ABUT	9+55.00	1402.42	1402.50	1401.63	1402.67	1401.71	1402.75	1402.67	1401.71	1402.50	1401.63	1402.42
0.1	9+64.00	1402.41	1402.49		1402.66		1402.74	1402.66		1402.49		1402.41
0.2	9+73.00	1402.40	1402.48		1402.65		1402.73	1402.65		1402.48		1402.40
0.3	9+82.00	1402.39	1402.47		1402.64		1402.72	1402.64		1402.47		1402.39
0.4	9+91.00	1402.38	1402.46		1402.63		1402.71	1402.63		1402.46		1402.38
0.5	10+00.00	1402.37	1402.45		1402.62		1402.70	1402.62		1402.45		1402.37
0.6	10+09.00	1402.36	1402.44		1402.61		1402.69	1402.61		1402.44		1402.36
0.7	10+18.00	1402.35	1402.43		1402.60		1402.68	1402.60		1402.43		1402.35
0.8	10+27.00	1402.34	1402.42		1402.59		1402.67	1402.59		1402.42		1402.34
0.9	10+36.00	1402.33	1402.41		1402.58		1402.66	1402.58		1402.41		1402.33
E ABUT	10+45.00	1402.32	1402.40	1401.53	1402.57	1401.61	1402.65	1402.57	1401.61	1402.40	1401.53	1402.32

TD = TOP OF DECK
TG = TOP OF GIRDER
EOD = EDGE OF DECK



DEAD LOAD DEFLECTION DIAGRAM

SPAN	GIRDER	GIRDER LENGTH 'L'	DEAD LOAD DEFL. (IN.)								
			0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.
1	1 & 4	90'-4"	1/4	5/8	7/8	1	1	1	7/8	5/8	1/4
1	2 & 3	90'-4"	1/4	5/8	3/4	7/8	1	7/8	3/4	5/8	1/4

BILL OF BARS
SUPERSTRUCTURE

COATED= 18880 LBS.
UNCOATED= 0 LBS.

MARK	NUMBER		LENGTH FT - IN	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
S501	16		11 - 10	X		ABUTMENT DIAPHRAGM STIRRUPS VERT
S502	16		4 - 9	X		ABUTMENT DIAPHRAGM TO SLAB TIES VERT
S603	12		5 - 8	X		ABUTMENT DIAPHRAGM AT ENDS HORIZ
S604	8		7 - 2	X		ABUTMENT DIAPHRAGM AT ENDS HORIZ
S605	4		16 - 3			ABUTMENT DIAPHRAGM TOP - STAGE 1 HORIZ
S606	4		16 - 3			ABUTMENT DIAPHRAGM TOP - STAGE 2 HORIZ
S507	255		16 - 3			SLAB BOTTOM & TOP - STAGE 1 TRANS
S508	255		16 - 3			SLAB BOTTOM & TOP - STAGE 2 TRANS
S409	212		45 - 11			SLAB BOTTOM & TOP AND GIRDER HAUNCH LONG
S410	372		3 - 2	X		GIRDER HAUNCH HAT BAR VERT
S611	64		12 - 0	X		RAILING ANCHOR TRANS
S612	112		6 - 0			RAILING ANCHOR - INTERMEDIATE LONG
S613	16		5 - 0	X		RAILING ANCHOR - ENDS LONG

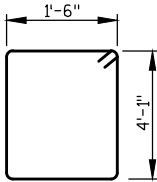
FF - FRONT FACE
BF - BACK FACE
EF - EACH FACE

BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

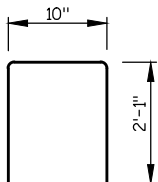
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.

★ "BAR COUPLERS NO. 6" USED AT LONGITUDINAL CONSTRUCTION JOINT. BAR LENGTHS AND DIMENSIONS ARE GIVEN TO CENTER OF CONSTRUCTION JOINT. CONTRACTOR SHOULD ADJUST BAR LENGTHS AS REQUIRED BY BAR COUPLER MANUFACTURER.

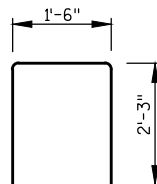
● "BAR COUPLERS NO. 5" USED AT LONGITUDINAL CONSTRUCTION JOINT. BAR LENGTHS AND DIMENSIONS ARE GIVEN TO CENTER OF CONSTRUCTION JOINT. CONTRACTOR SHOULD ADJUST BAR LENGTHS AS REQUIRED BY BAR COUPLER MANUFACTURER.



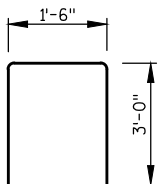
S501



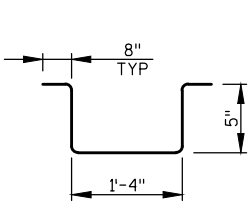
S502



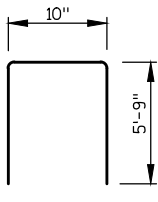
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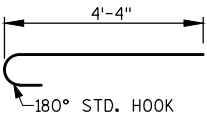
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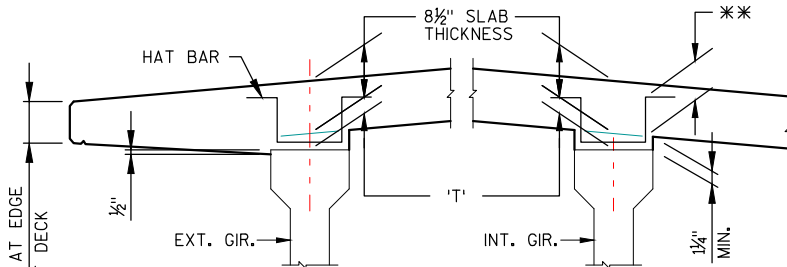
S410



S611



S613



SLAB HAUNCH DETAIL

IF 1 1/2" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR.

** IF 3" MINIMUM DECK EMBEDMENT OF HAT BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT C OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

- TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
- + DEAD LOAD DEFLECTION
- SLAB THICKNESS
- = HAUNCH HEIGHT 'T'

AN AVERAGE HAUNCH HEIGHT OF 2 5/8" WAS USED FOR CALCULATING VOLUME FOR "CONCRETE MASONRY BRIDGES".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-60-916			
		DRAWN BY MJB	PLANS CK'D. GAR
SUPERSTRUCTURE DETAILS			SHEET 11 OF 12

LEGEND

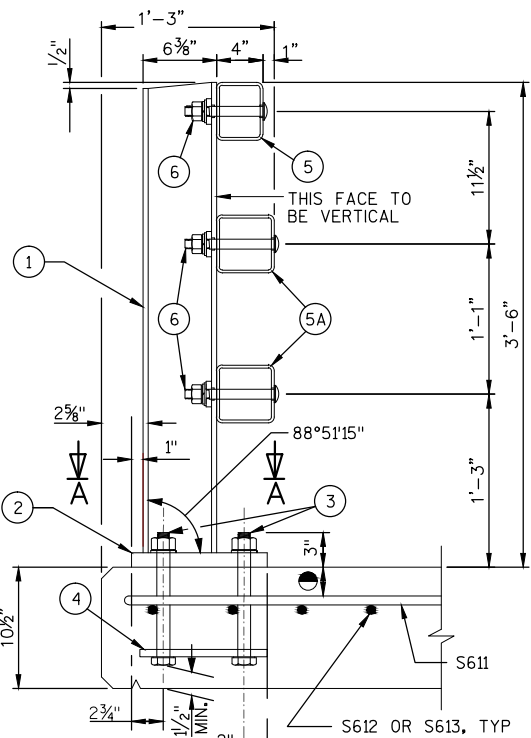
- ① W6 x 25 WITH 1/8" x 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1 1/4" x 1 3/4" x 1'-8" WITH 1 5/8" x 1 5/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③ ASTM A449 - 1 1/4" 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 WINGS AND 10 3/4" LONG IN SLAB. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
- ④ 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/8" 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 (NO. 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" φ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/8" x 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1 5/8" x 2 3/4" 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. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- ⑭ 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- ⑮ 1" φ HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M P-60-916" 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.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
10. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).

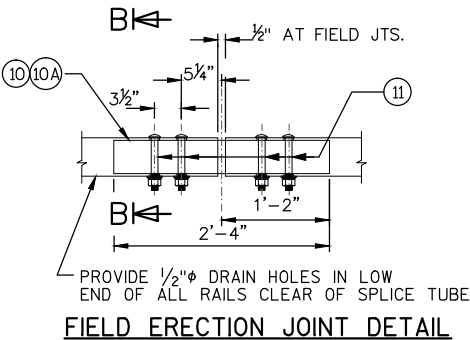
■ 1/2" JOINT FILLER

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE P-60-916			
DRAWN BY		MJB	PLANS CK'D. GAR
TUBULAR STEEL RAILING TYPE 'M'			SHEET 12 OF 12

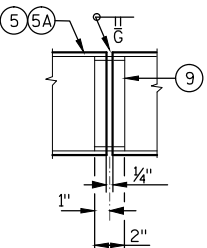


SECTION THRU RAILING ON DECK

● 2 1/2" FOR SLABS ON GIRDERS

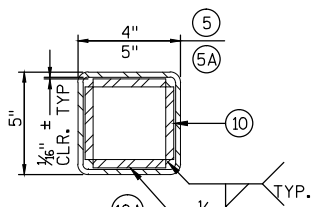


FIELD ERECTION JOINT DETAIL

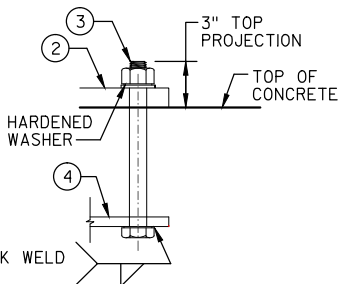


SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)

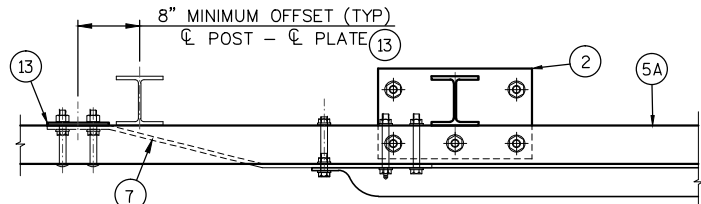


SECTION B-B



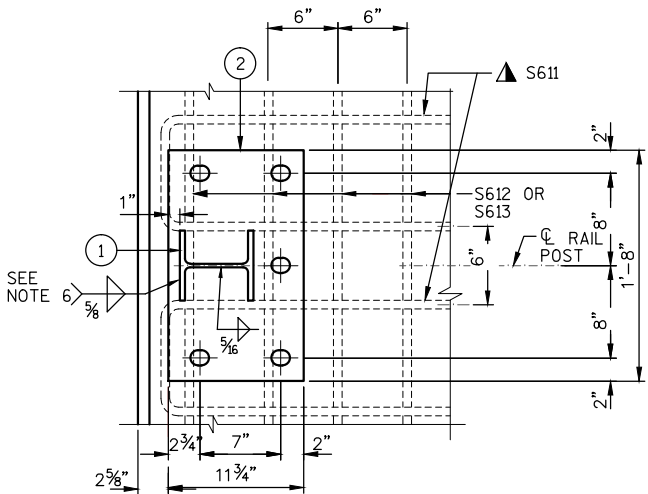
ANCHOR BOLTS

* FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTABILITY.



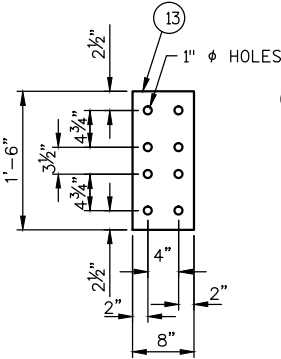
TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT

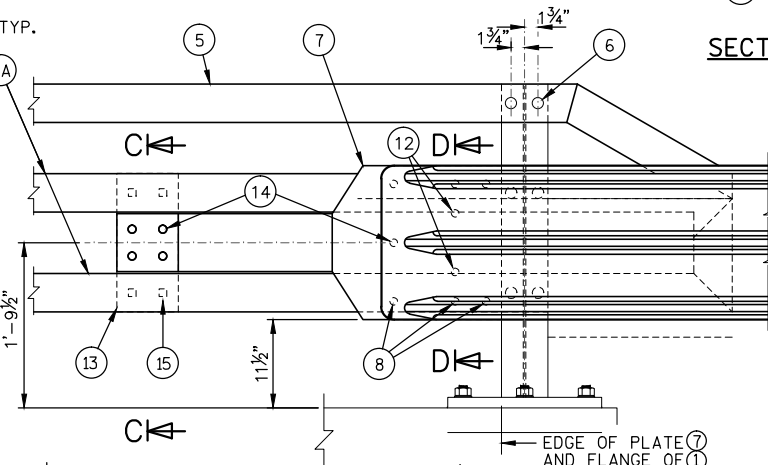


SECTION A-A

▲ TIE TO TOP MAT OF STEEL.

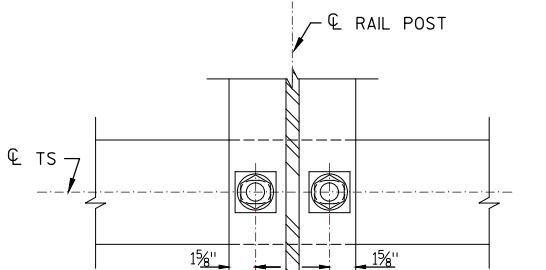


ANCHOR PLATE
AT BEAM GUARD ATTACHMENT

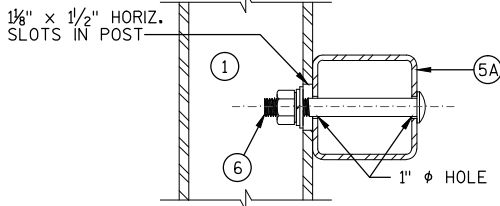


DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



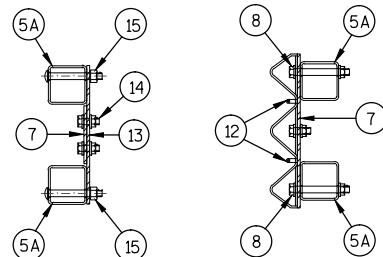
SECTION THRU POST WEB



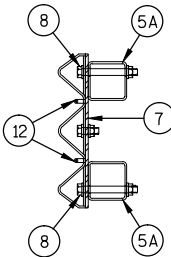
SECTION THRU RAIL

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

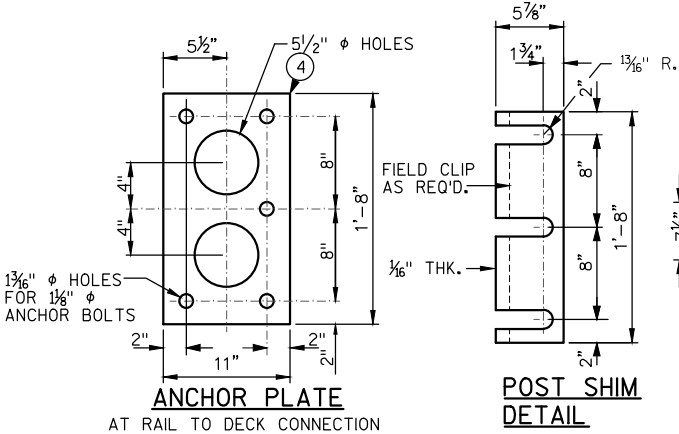
TYPICAL RAIL TO POST CONNECTIONS



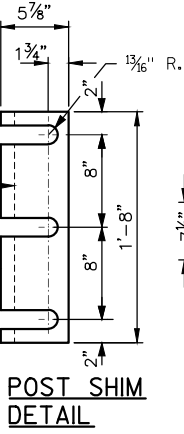
SECTION C-C



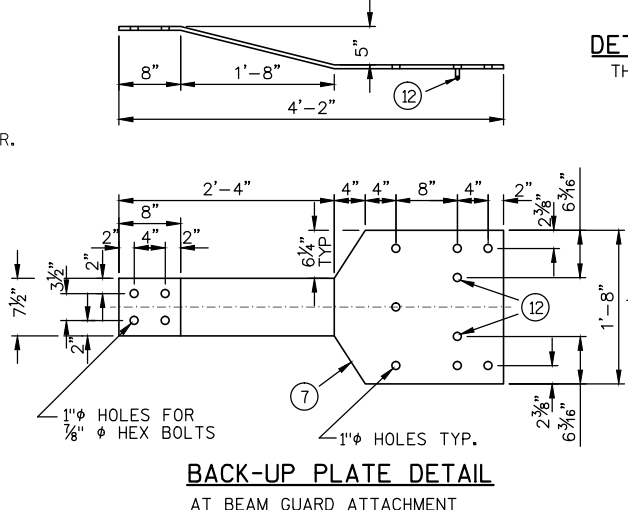
SECTION D-D



ANCHOR PLATE
AT RAIL TO DECK CONNECTION

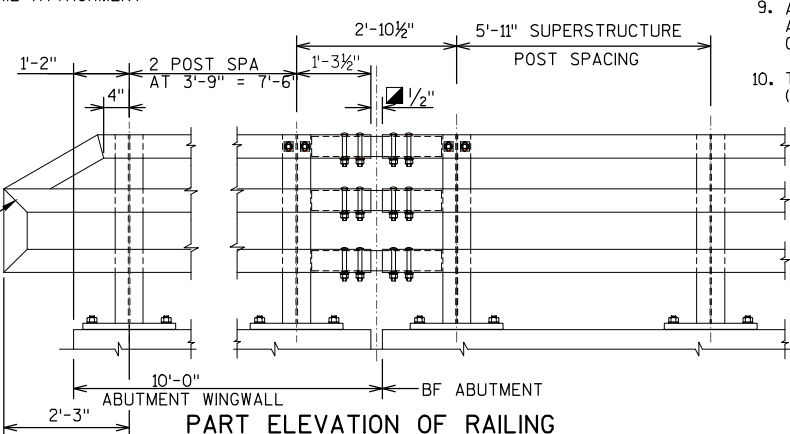


POST SHIM
DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT

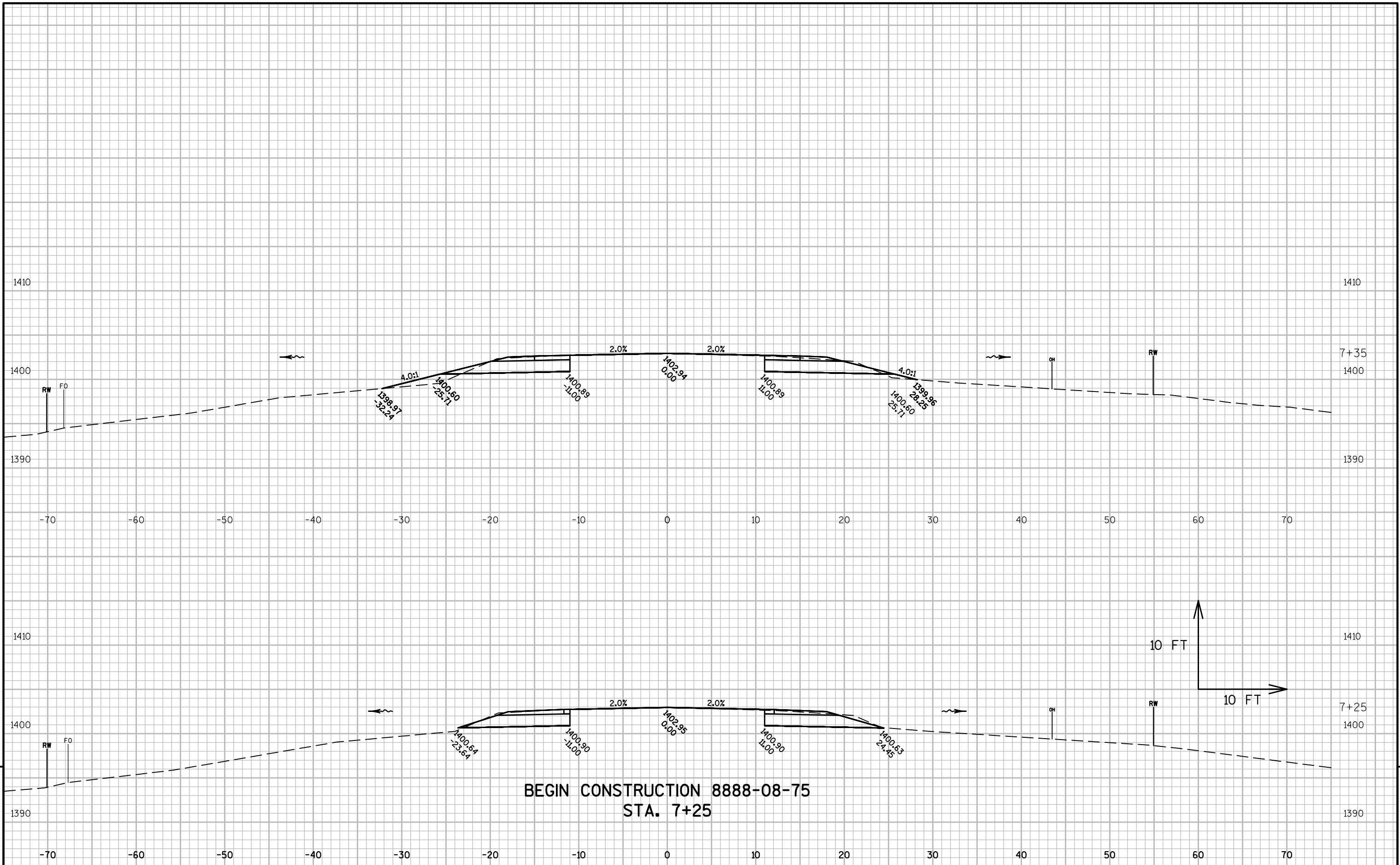


PART ELEVATION OF RAILING

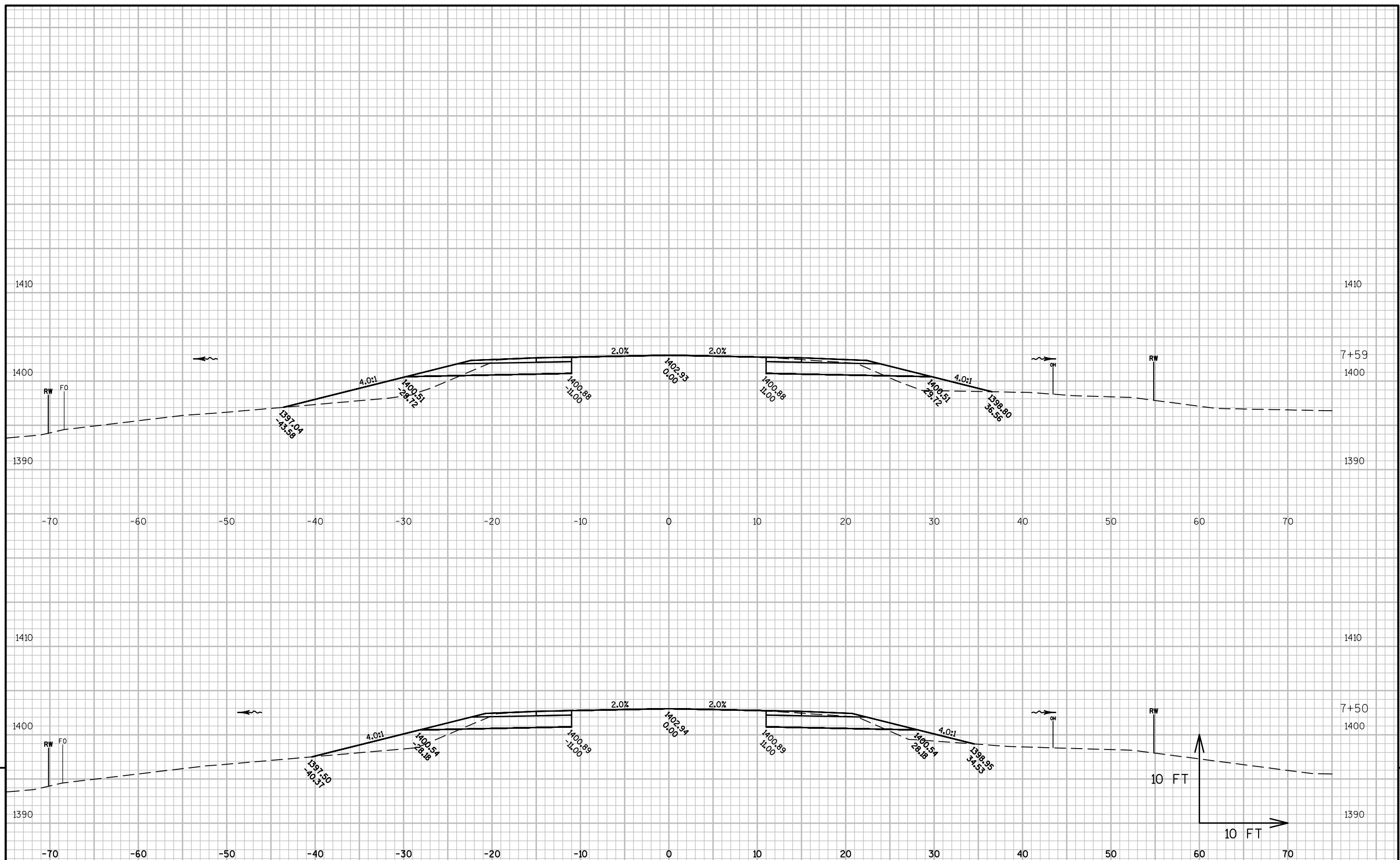
STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate Note 4
	Cut	Salvaged/Unusable Pavement Material	Fill	Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Cut 1.00 Note 1	Expanded Fill 1.25	
7+25	35	10	0	0	0	0	0	0	0
7+35	36	10	6	13	13	1	13	1	-1
7+50	37	10	23	20	14	8	33	11	-5
7+59	37	10	34	12	14	9	46	23	-18
7+79	37	10	62	27	14	35	73	67	-49
8+05	38	10	65	36	14	61	109	144	-103
8+05	78	10	65	0	29	0	109	144	-132
8+29	80	10	68	70	30	59	179	217	-165
8+50	80	10	44	62	29	43	241	271	-187
8+95	76	10	0	130	28	37	371	317	-131
9+39	63	10	16	113	23	13	484	333	-57
9+53	63	10	16	60	23	15	544	352	-39
9+54	0	0	0	0	0	0	544	352	-39
10+45	0	0	0	0	0	0	544	352	-39
10+46	55	10	17	71	10	22	615	379	-5
10+61	55	10	17	53	20	16	668	399	7
11+05	71	10	1	103	26	14	771	417	66
11+50	72	10	35	120	27	30	891	455	121
11+71	75	10	77	57	28	44	948	509	96
11+95	77	10	90	68	29	74	1016	602	43
11+95	37	10	90	0	14	0	1016	602	29
12+21	43	10	114	39	16	98	1055	724	-70
12+41	41	10	83	31	15	73	1086	815	-146
12+50	39	10	81	13	15	27	1099	849	-181
12+65	35	10	43	21	13	34	1120	892	-216
12+75	35	10	0	13	13	8	1133	902	-226
Column Total				1133	456	722			

Notes:
1 - Cut (Salvaged/Unusable Pavement Material is Included)
2 - Salvaged/Unusable Pavement Material (This does not show up in cross sections.)
3 - Fill (Does not include Unuseable Pavement volume.)
4 - The Mass Ordinate + or - quantity calculated. Plus quantity indicates as excess of material. Minus indicates a shortage of

No Marsh or EBS is anticipated.

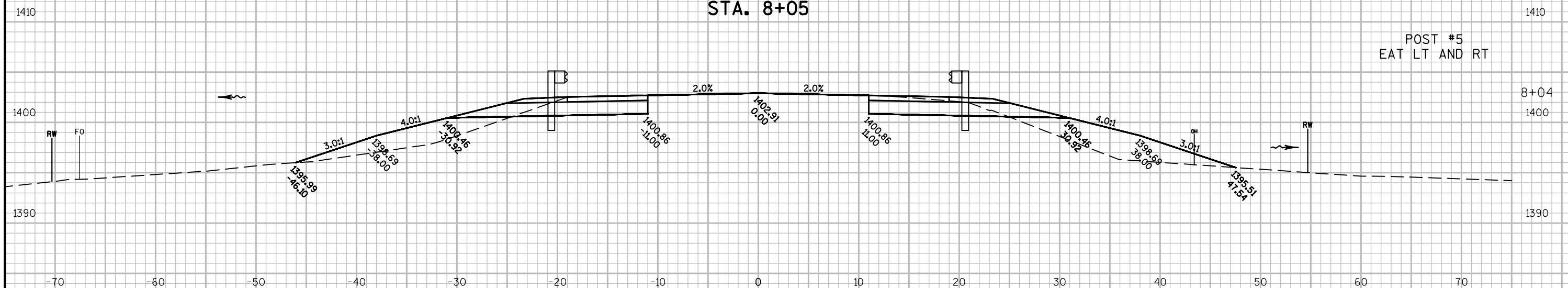


BEGIN CONSTRUCTION 8888-08-75
STA. 7+25

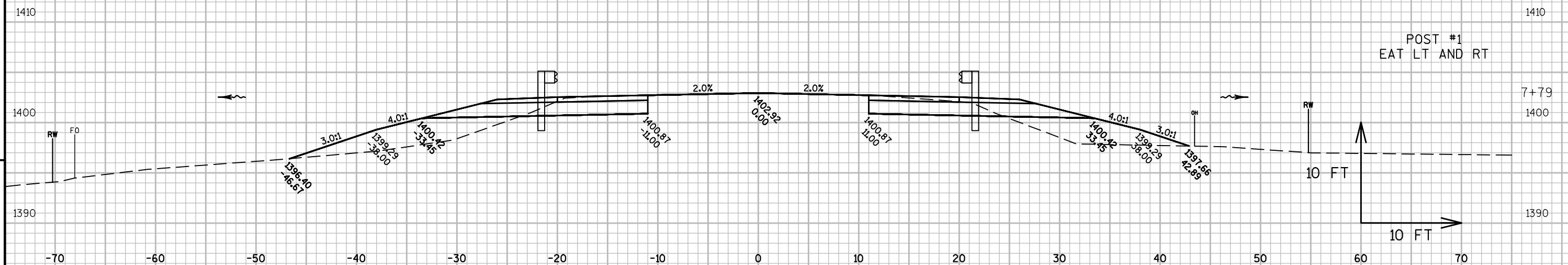


BEGIN PROJECT 8888-08-75
STA. 8+05

POST #5
EAT LT AND RT



POST #1
EAT LT AND RT



PROJECT NO: 8888-08-75

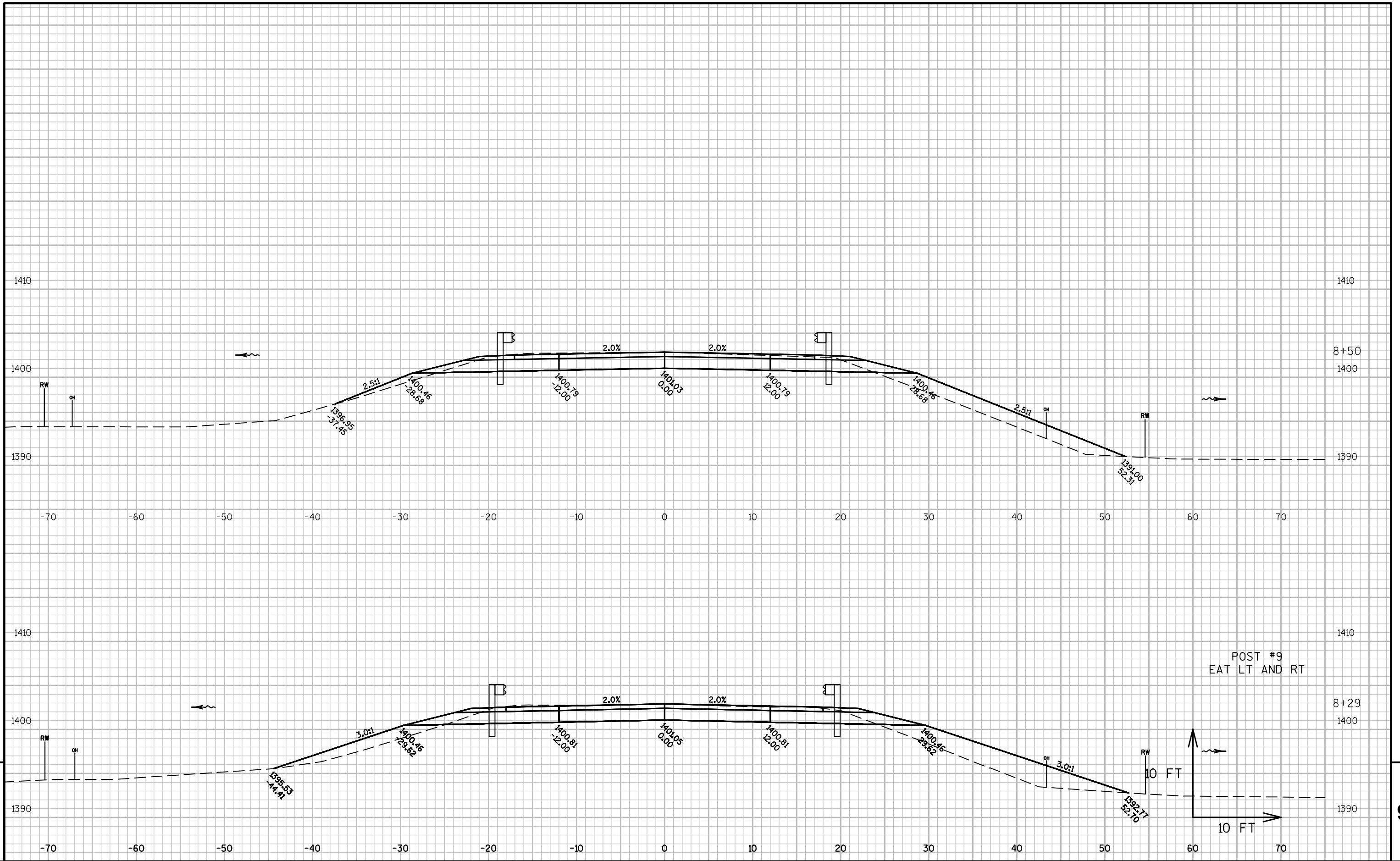
HWY: CTH 0

COUNTY: TAYLOR

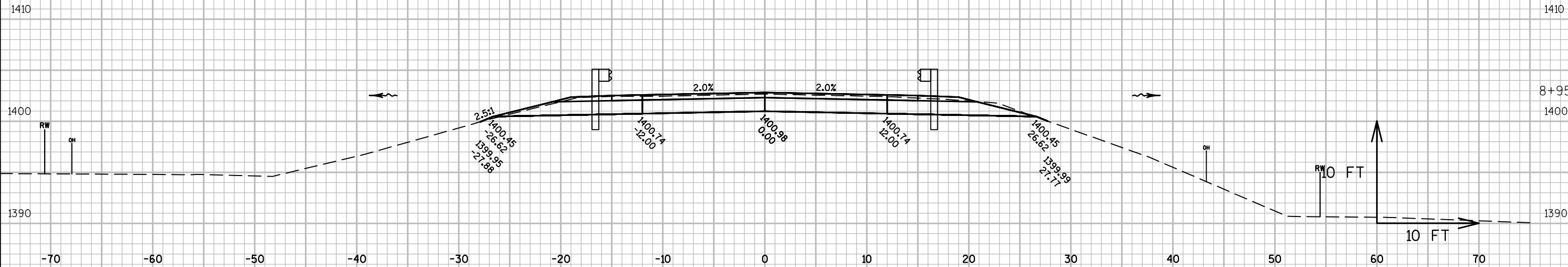
CROSS SECTIONS: MAINLINE

SHEET

E



STRUCTURE P-60-0916
AT STA. 10+00



PROJECT NO: 8888-08-75

HWY: CTH 0

COUNTY: TAYLOR

CROSS SECTIONS: MAINLINE

SHEET

E

FILE NAME : X:\3224200\150187.01\TECH\CAD\88880805\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - SECTION SHEET - (5)

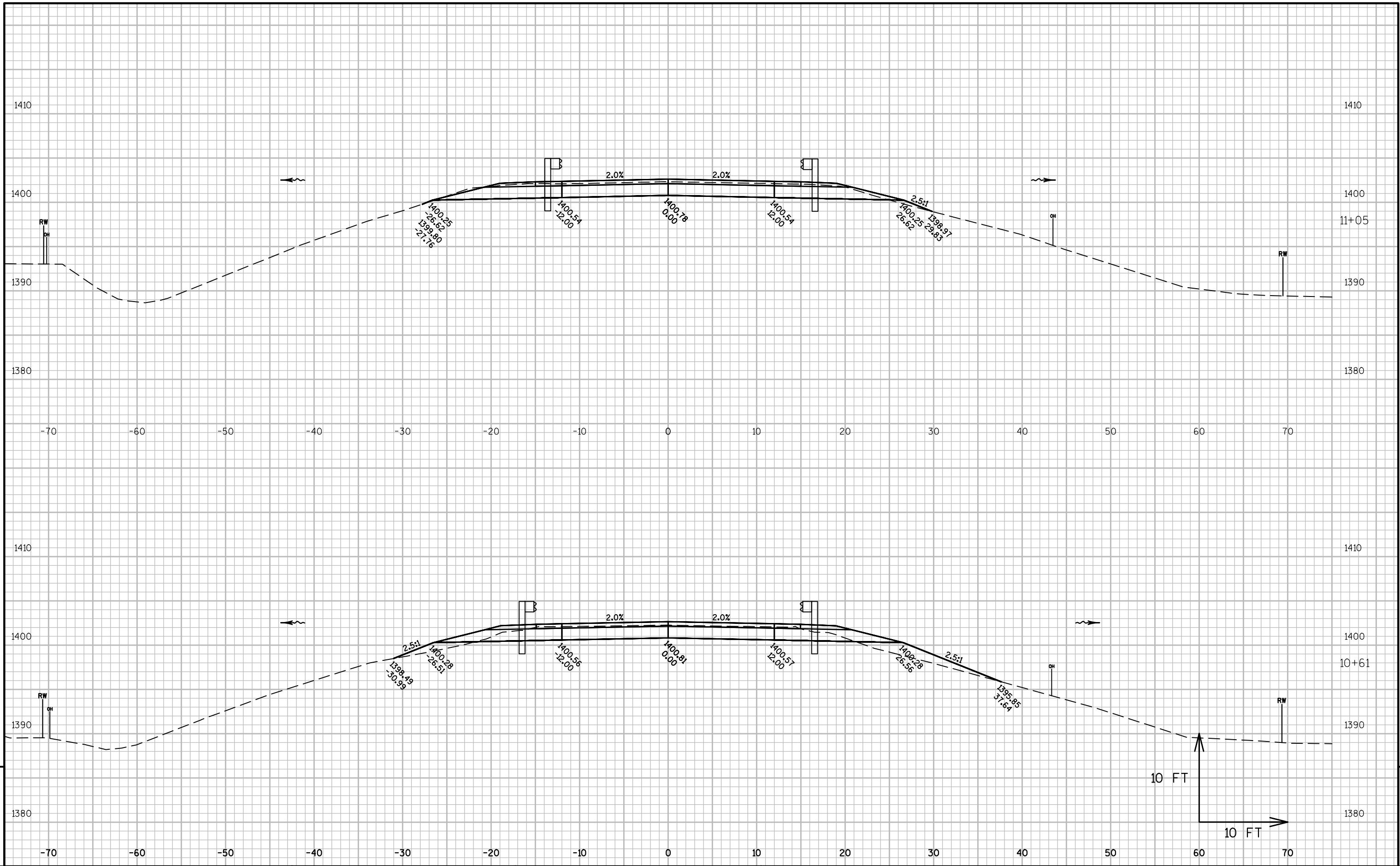
PLOT DATE : 6/15/2016 6:56 PM

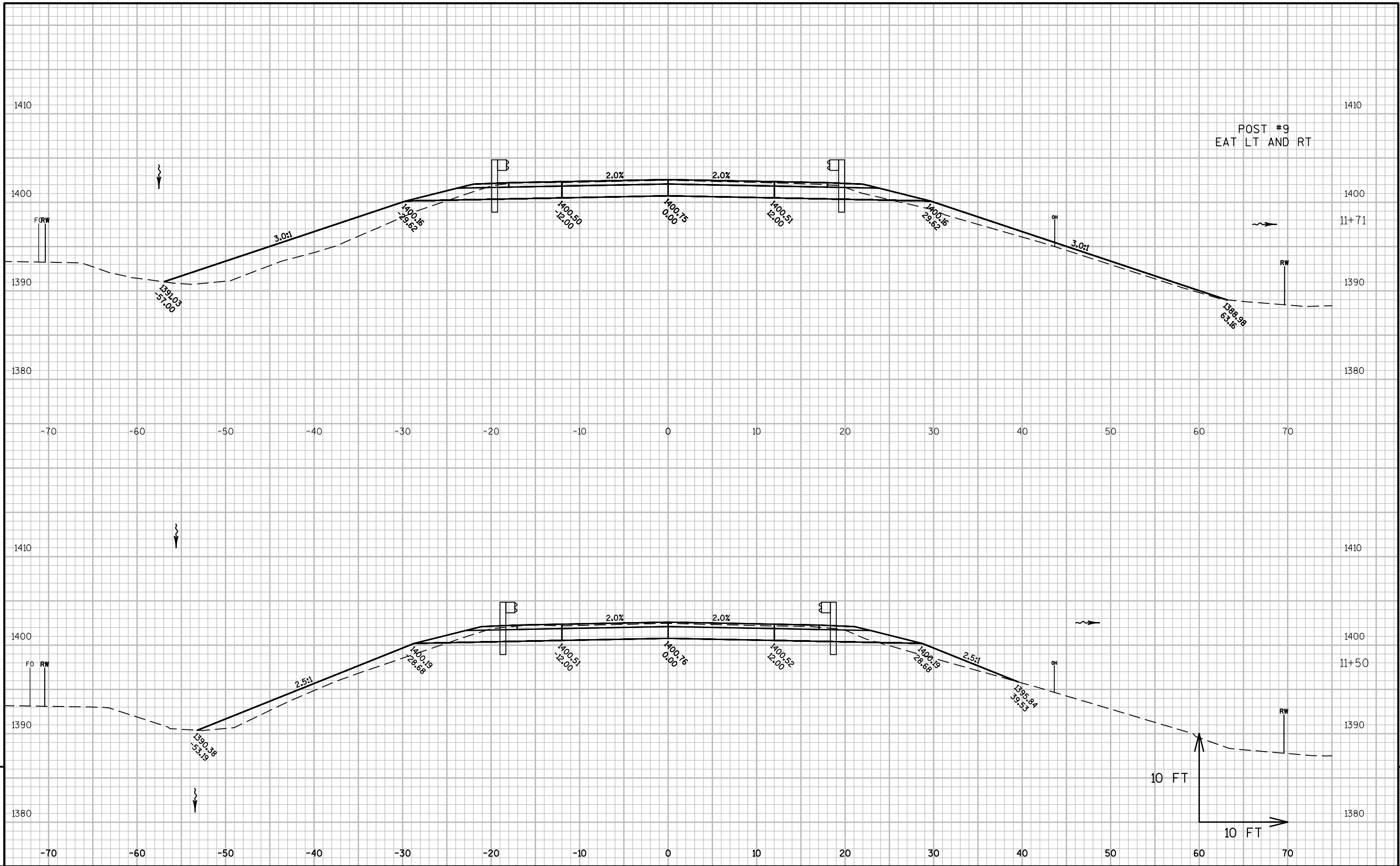
PLOT BY : JEFF BREU

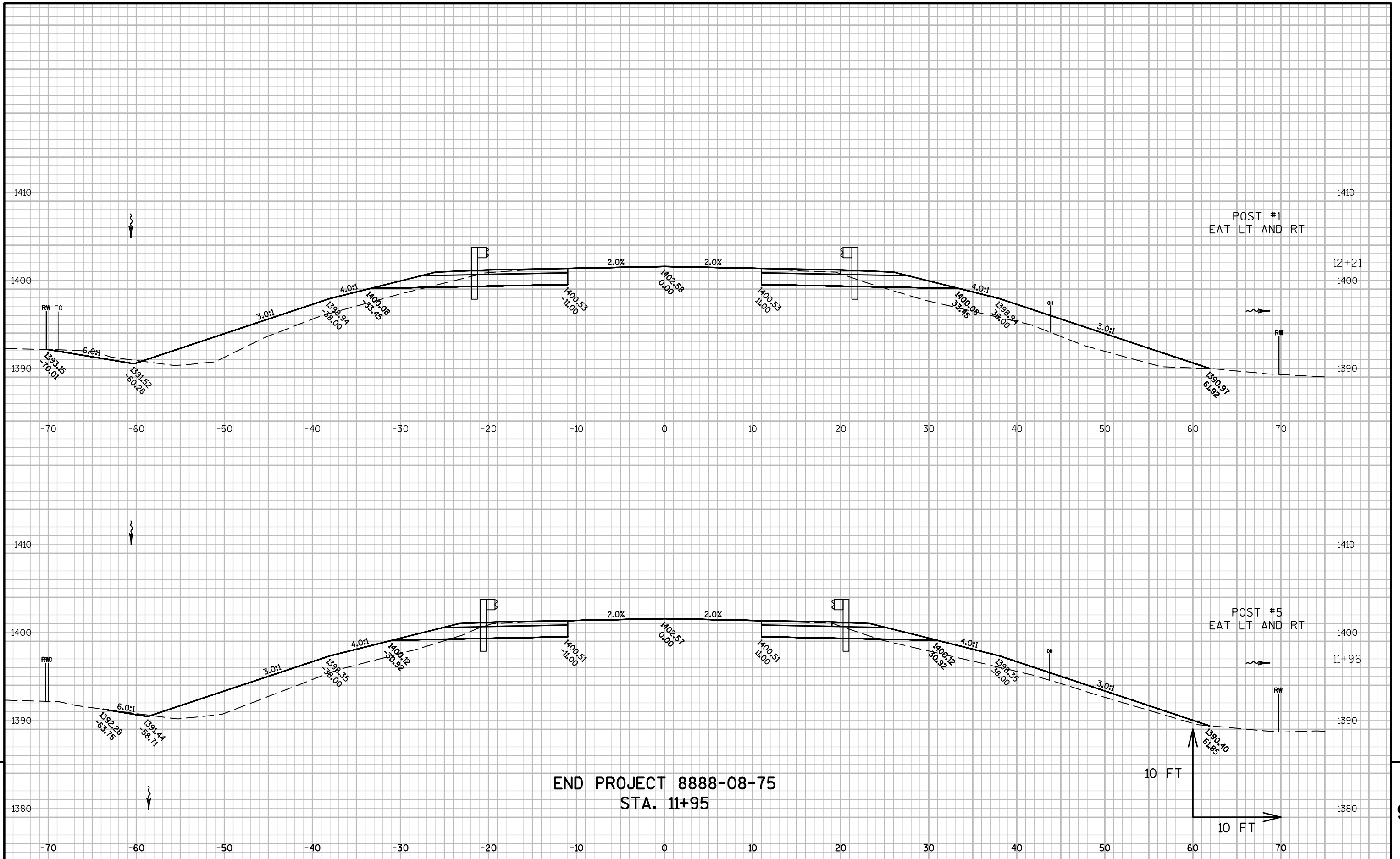
PLOT NAME :

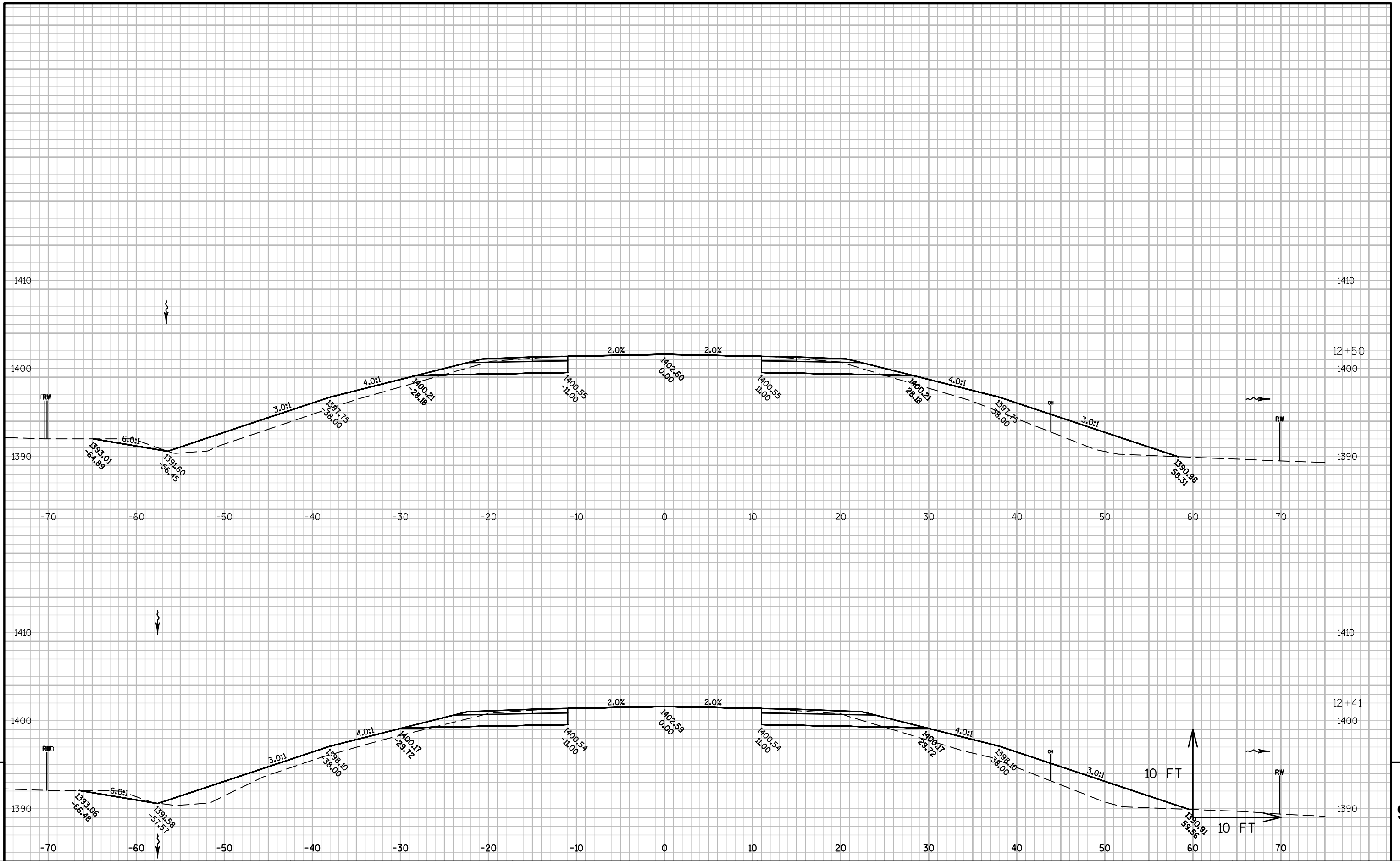
PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

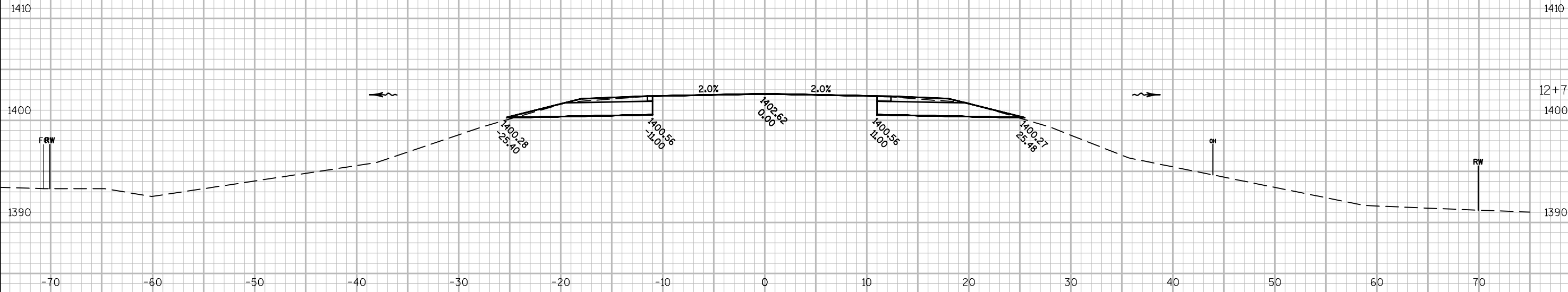








END CONSTRUCTION 8888-08-75
STA. 12+75



Notes



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