RHI

MAR 2017

PROJECT ID: 1175-19-70

WITH:

COUNTY: IRON

ORDER OF SHEETS

TOTAL SHEETS = 96

20

N

DESIGN DESIGNATION

A.A.D.T.	2012	= 2000
A.A.D.T.	2034	= 2400
D.H.V.		= 420
D.D.		= 67/33
T.		= 14.8%
DESIGN SPEED		= 60 MPH
ESALS		=

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) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MANITOWISH - HURLEY

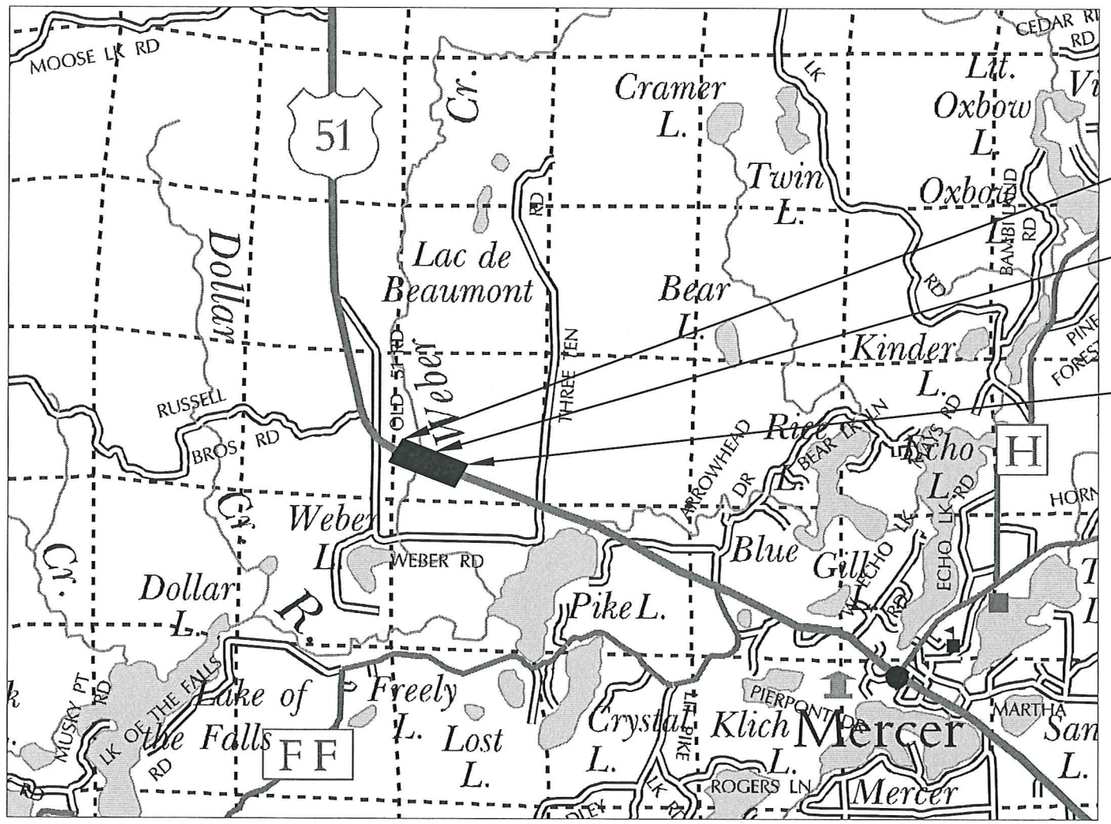
WEBER CREEK BRIDGE B-26-0038

USH 51

IRON COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1175-19-70	WISC 2017109	1

STATE PROJECT NUMBER
1175-19-70



LAYOUT
SCALE 0 0.5

TOTAL NET LENGTH OF CENTERLINE = 0.1136

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, IRON 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.

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) GEOID 12.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	MSA
Designer	FRED McCUE
Project Manager	JIM VOLKMANN
Regional Examiner	CHERYL SIMON
Regional Supervisor	MICHAEL WENDT

APPROVED FOR THE DEPARTMENT

DATE: 12/15/16 Michael B. Wendt P.E. (Signature)

E

FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\010101_TI.DWG

PLOT DATE : 12/15/2016 9:28 AM PLOT BY : MCCUE, FREDRICK T PLOT NAME :

WISDOT/CADDS SHEET 10

GENERAL NOTES

1. WHEN THE QUANTITY OF THE ITEM HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLAN IS APPROXIMATE & THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION ON THE MATERIAL AS DIRECTED BY THE ENGINEER.

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

3. NOT ALL UTILITIES ARE PART OF DIGGERS HOTLINE AND WILL NEED TO BE CONTACTED DIRECTLY.

AS-BUILT PLANS USED

Dj7890

T-0005-4(19)

1172-08-74

1175-16-70

CONTACTS

DEPARTMENT OF NATURAL RESOURCES
NORTH CENTRAL DISTRICT
107 SUTLIFF AVENUE
RHINELANDER, WI. 54501
JON SIMONSEN
715-365-8916

XCEL ENERGY
MURRAY SMERER
2400 FARM ROAD
ASHLAND, WI 54806
murray.j.smerer@xcelenergy.com
715-682-6928

CENTURYLINK - COMMUNICATION LINE
BRIAN HUHN
425 ELLINGSON AVE/ PO BOX 78 CENTURY
HAWKINS, WI 54530
brian.huhn@centurylink.com
715-532-0023

SIGNAL TIMING

1175-19-70
8/29/2016
USH 51 CAD
IRON COUNTY

Temporary Signal Timing

note: stop bar placement at 700 FT spacing

Temporary Signal Timing # 1 7:00am to 7:00pm

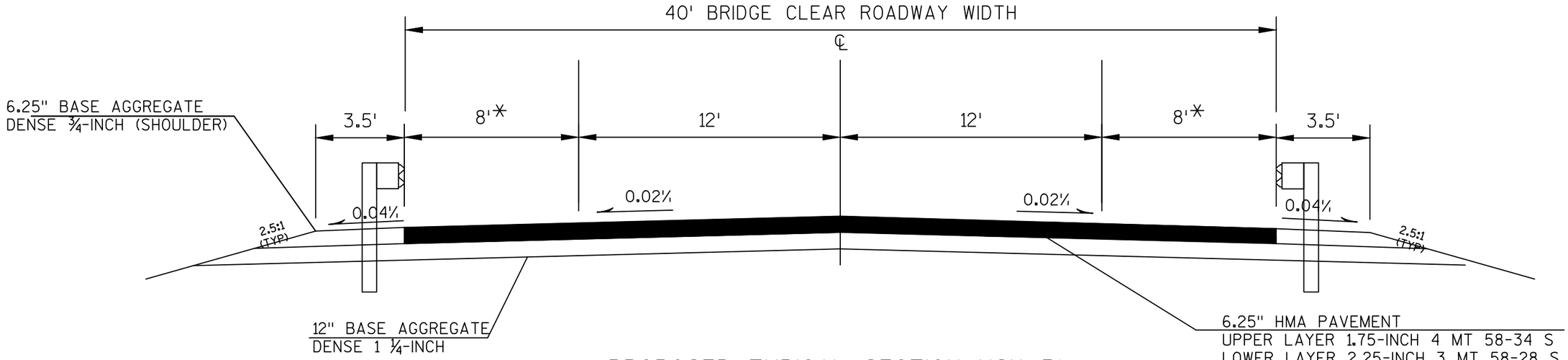
EB	WB	Yellow	All Red	Green
red	red		23.0 sec	
green	red			25.0 sec
yellow	red	5.0 sec		
red	red		23.0 sec	
red	green			25.0 sec
red	yellow	5.0 sec		

Total cycle length 106.0 sec= 10.0 sec 46.0 sec 50.0 sec

Temporary Signal Timing # 2 7:00pm to 7:00am

EB	WB	Yellow	All Red	Green
red	red		23.0 sec	
green	red			17.0 sec
yellow	red	5.0 sec		
red	red		23.0 sec	
red	green			17.0 sec
red	yellow	5.0 sec		

Total cycle length 90.0 sec = 10.0 sec 46.0 sec 34.0 sec



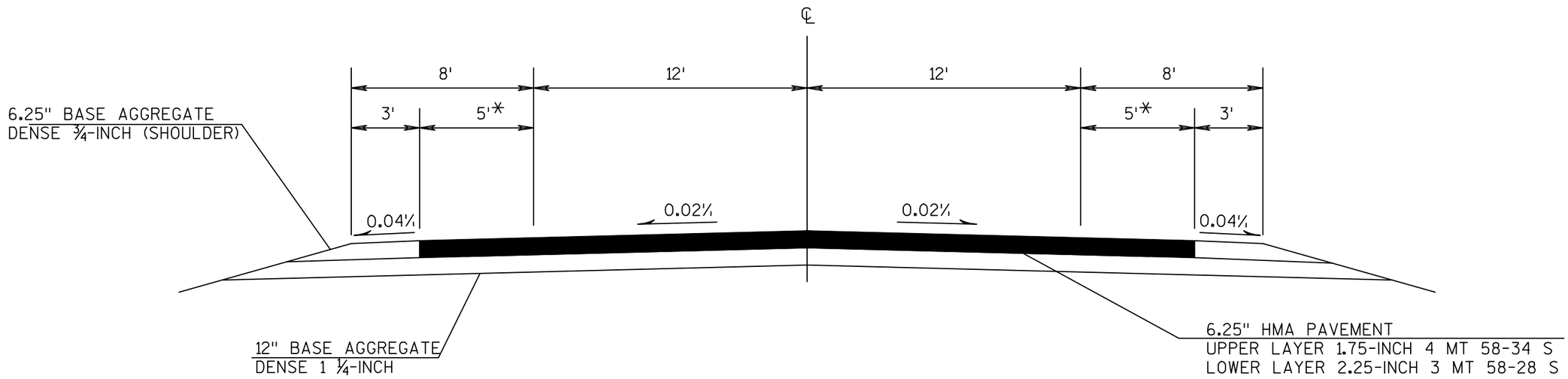
PROPOSED TYPICAL SECTION USH 51

STA 8+53 TO STA 12+34

BRIDGE EXCEPTION

STA 9+28.75 TO STA 10+71.25

* NOTE:
SEE PLAN DETAIL SHEET
FOR ADDITIONAL INFORMATION
ON TAPER LOCATIONS AND WIDTHS



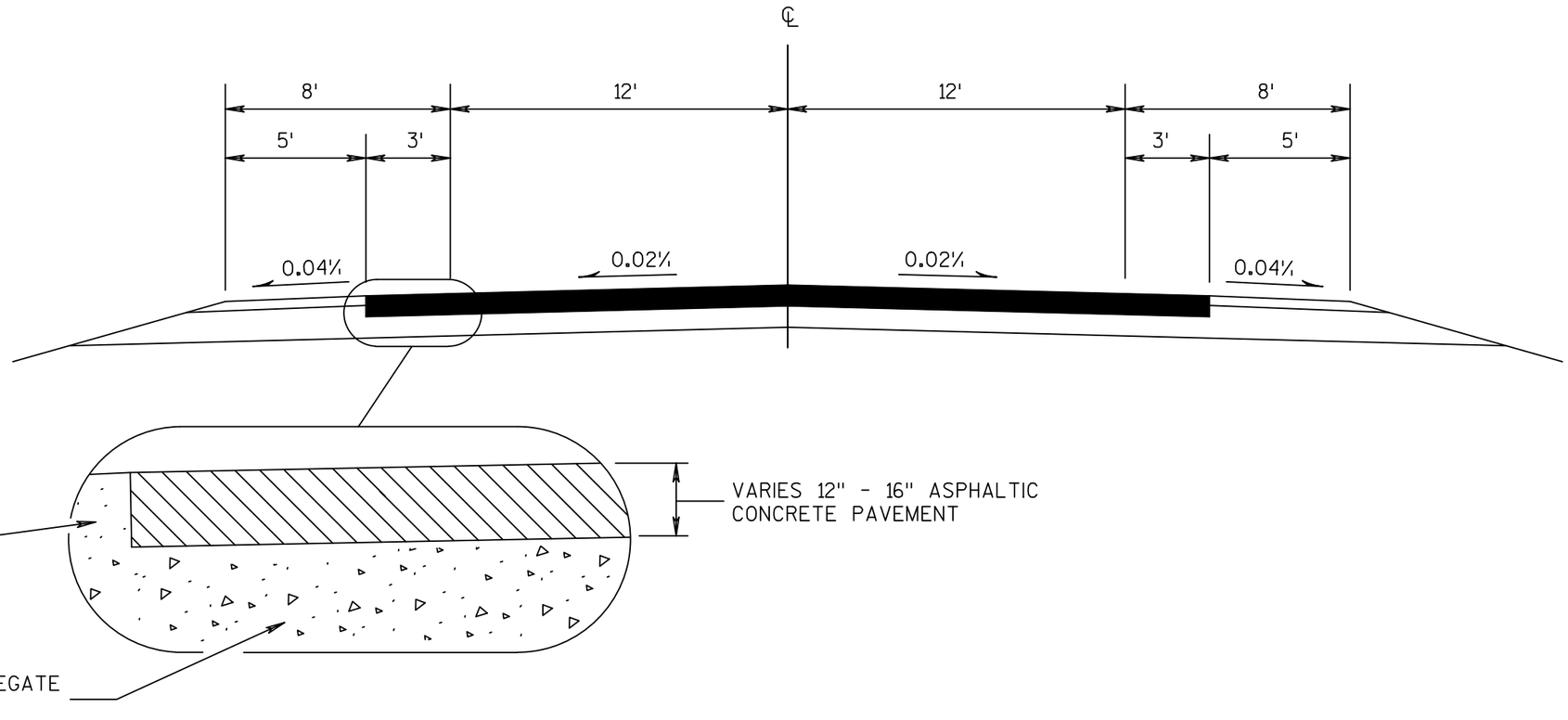
PROPOSED TYPICAL SECTION USH 51

STA 7+50 TO STA 8+53

STA 12+34 TO STA 13+50

PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	PLAN: PROPOSED TYPICAL SECTION	SHEET 3	E

2

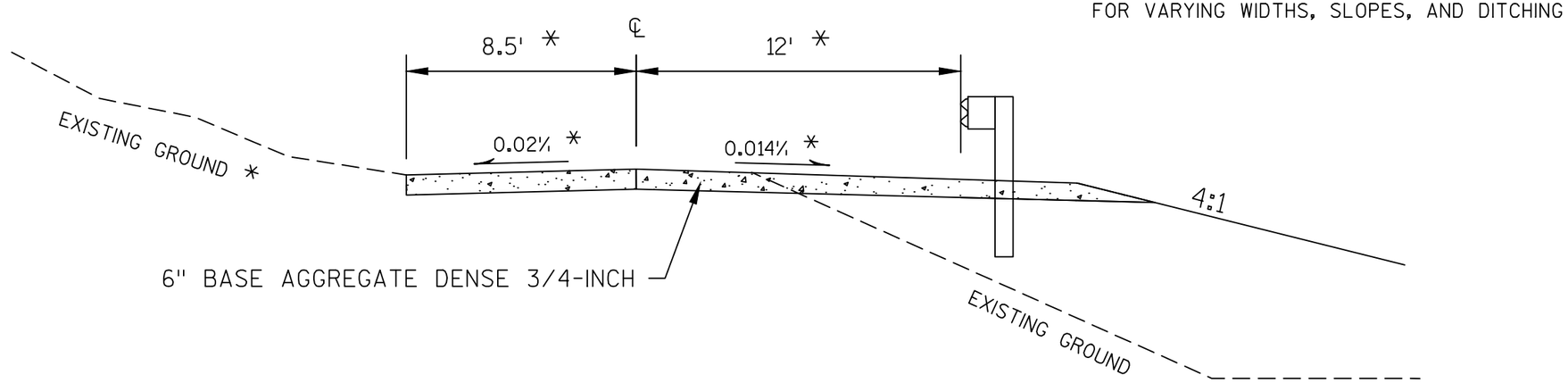


EXISTING TYPICAL SECTION USH 51

STA 7+50 TO STA 13+50

PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	PLAN: EXISTING TYPICAL SECTION	SHEET 4	E

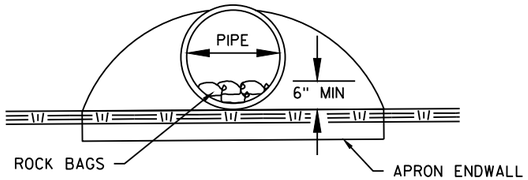
2



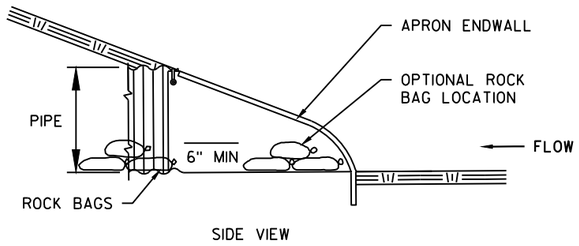
PROPOSED TYPICAL SECTION - DRIVEWAY

STA 8+68 45' RT

PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	PLAN: PROPOSED TYPICAL SECTION - DRIVEWAY STA 8+68	SHEET 5	E



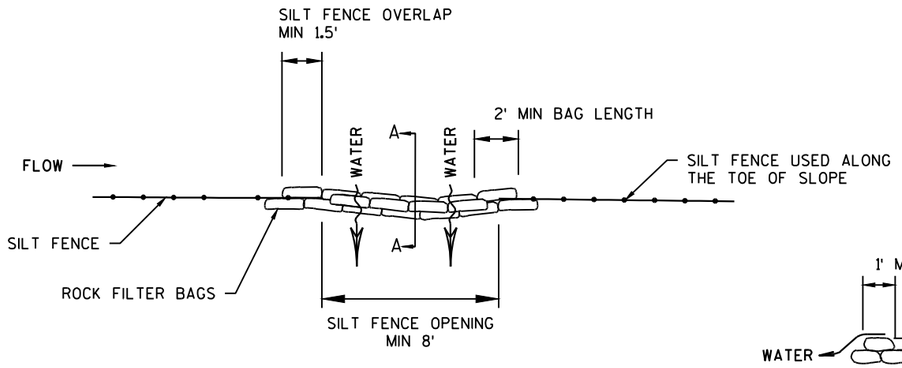
END VIEW



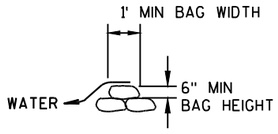
SIDE VIEW

ROCK BAGS USED FOR CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)



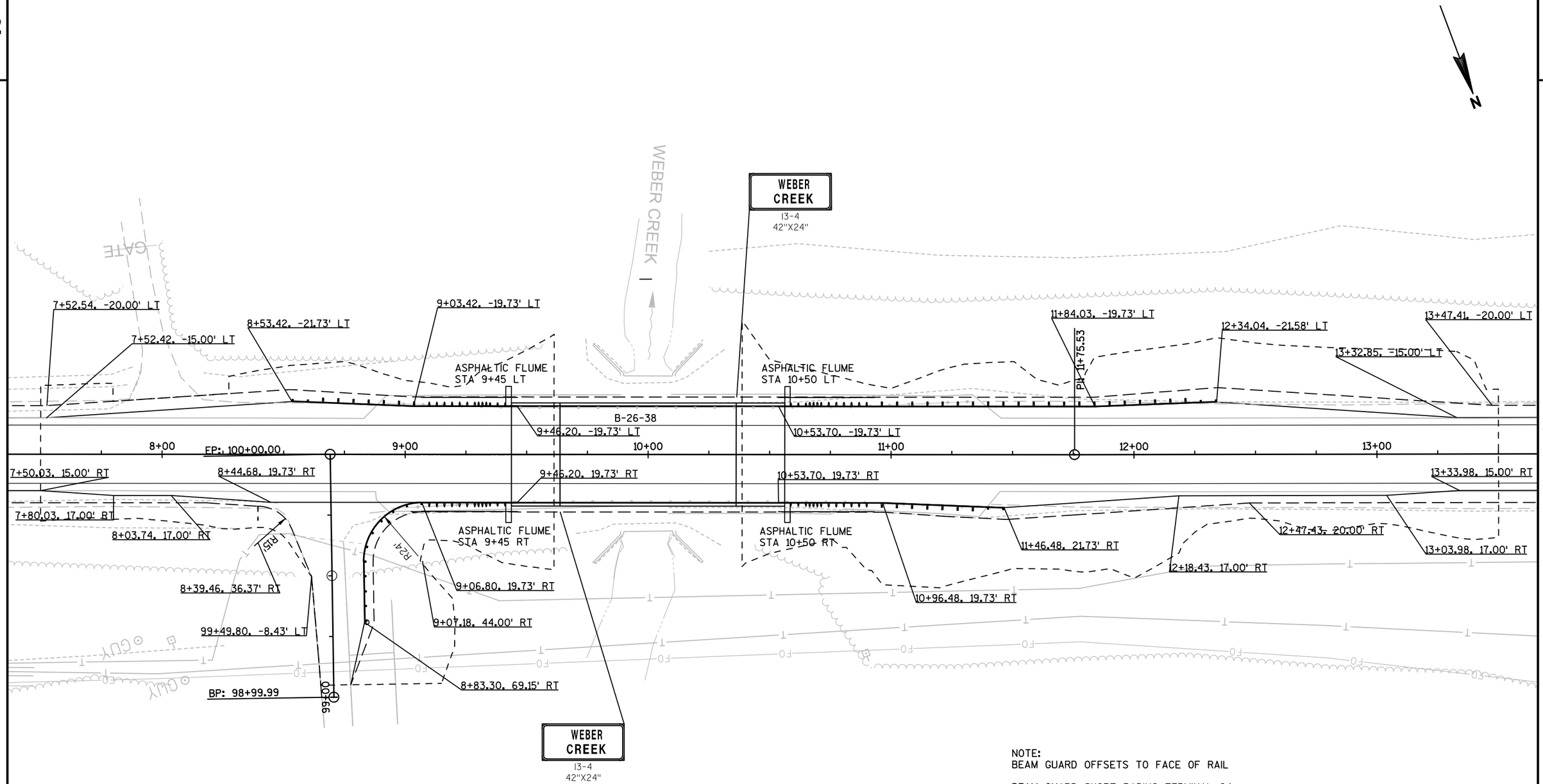
TOP VIEW



SECTION A-A

ROCK BAGS USED FOR SILT FENCE RELIEF

2



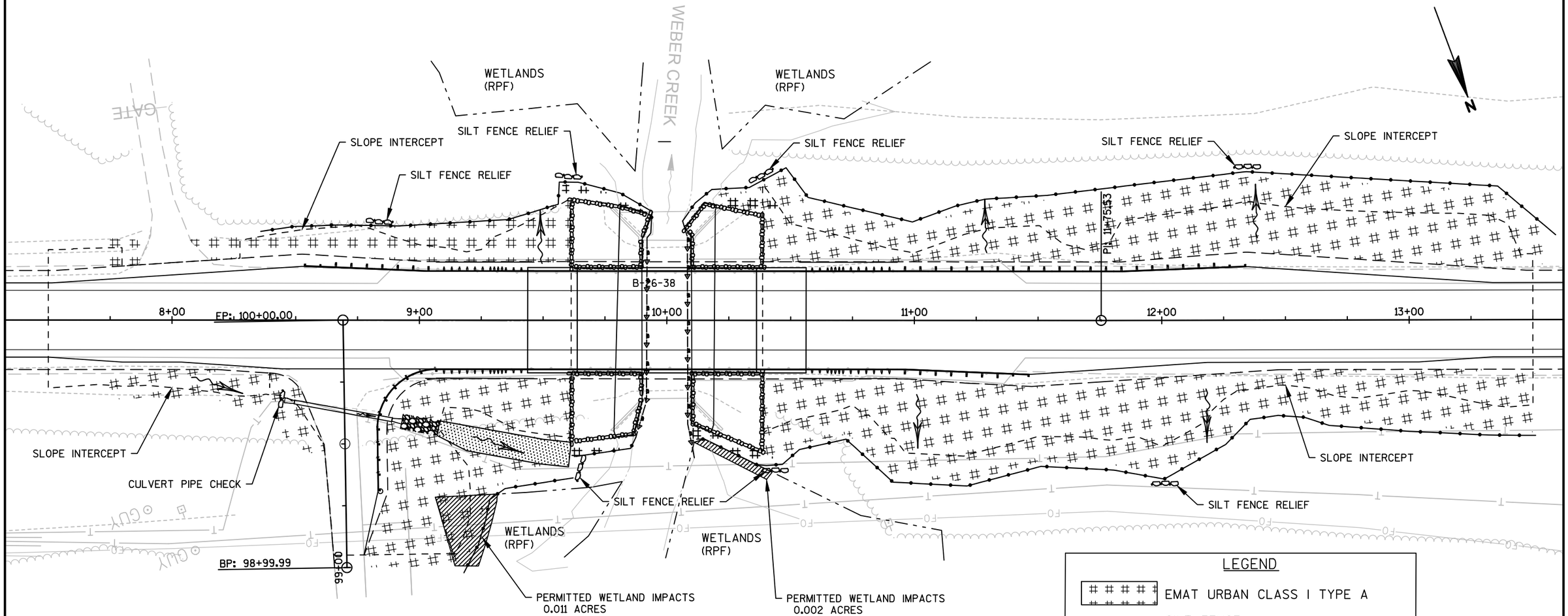
NOTE:
BEAM GUARD OFFSETS TO FACE OF RAIL

BEAM GUARD SHORT RADIUS TERMINAL 24 FOOT RADIUS TO BACK OF RAIL

PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	WEBER CREEK BRIDGE	SHEET 7	E

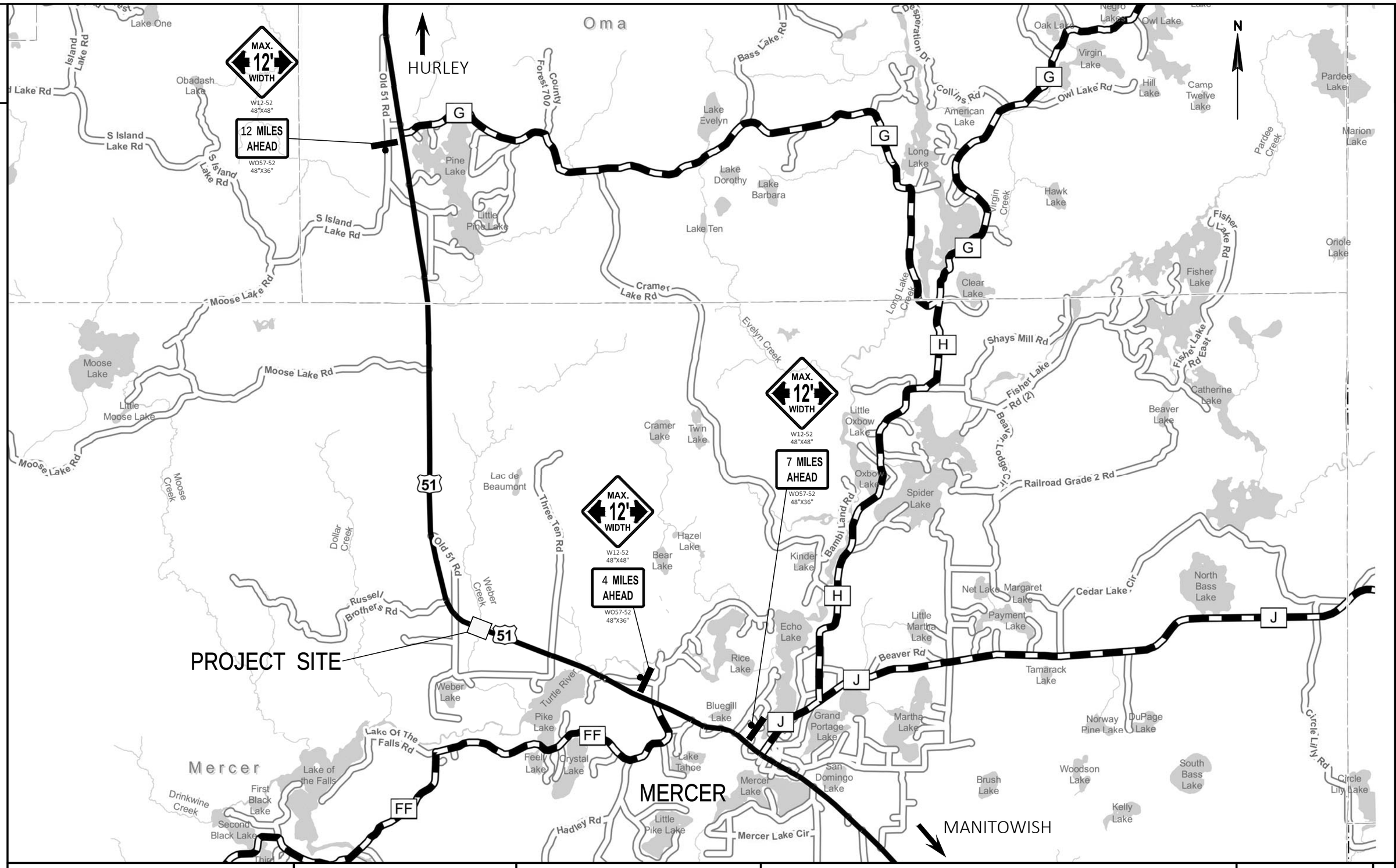
FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\021201_PD.DWG
LAYOUT NAME - 021201_PD
PLOT DATE : 12/15/2016 9:35 AM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1:40_XREF
WISDOT/CADDS SHEET 42

2



PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	EROSION CONTROL	SHEET 8	E

FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022001_EC
PLOT DATE : 9/7/2016 9:58 AM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1:40_XREF
WISDOT/CADDS SHEET 42



PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	TRAFFIC CONTROL	SHEET 9	E

FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\020201-PO.DWG
LAYOUT NAME - 020201-po

PLOT DATE : 9/1/2016 4:03 PM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1 IN:2 MI

WISDOT/CADDS SHEET 42

2

LEGEND

- TRAFFIC COTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- CONCRETE BARRIER TEMPORARY PRECAST
- TEMPORARY PAVEMENT MARKING, STOP LINE, 24-INCH, REMOVABLE TAPE (TYP)
- ASPHALTIC SURFACE TEMPORARY, 4-INCH

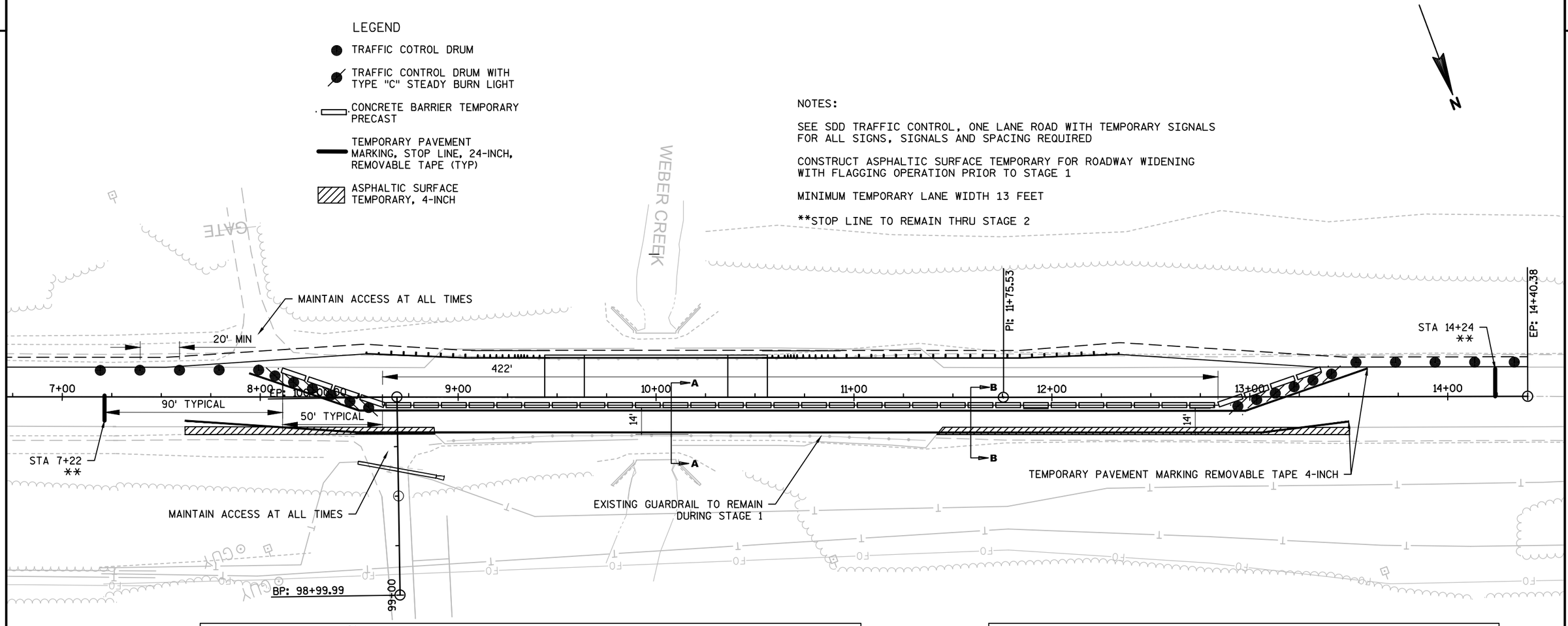
NOTES:

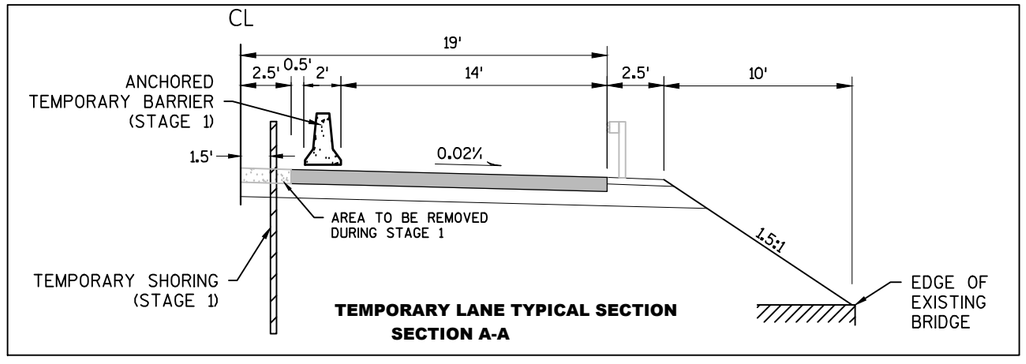
SEE SDD TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS FOR ALL SIGNS, SIGNALS AND SPACING REQUIRED

CONSTRUCT ASPHALTIC SURFACE TEMPORARY FOR ROADWAY WIDENING WITH FLAGGING OPERATION PRIOR TO STAGE 1

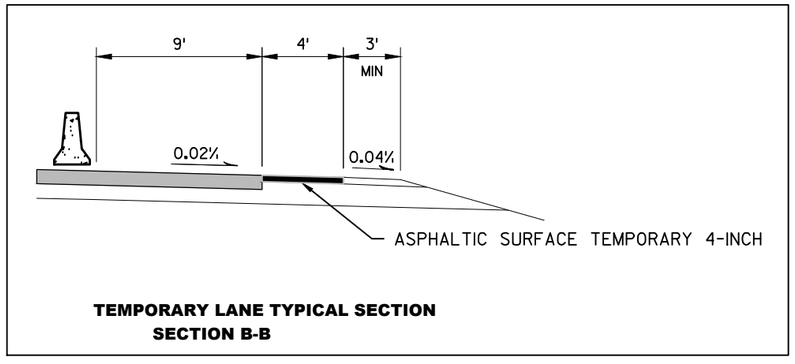
MINIMUM TEMPORARY LANE WIDTH 13 FEET

**STOP LINE TO REMAIN THRU STAGE 2





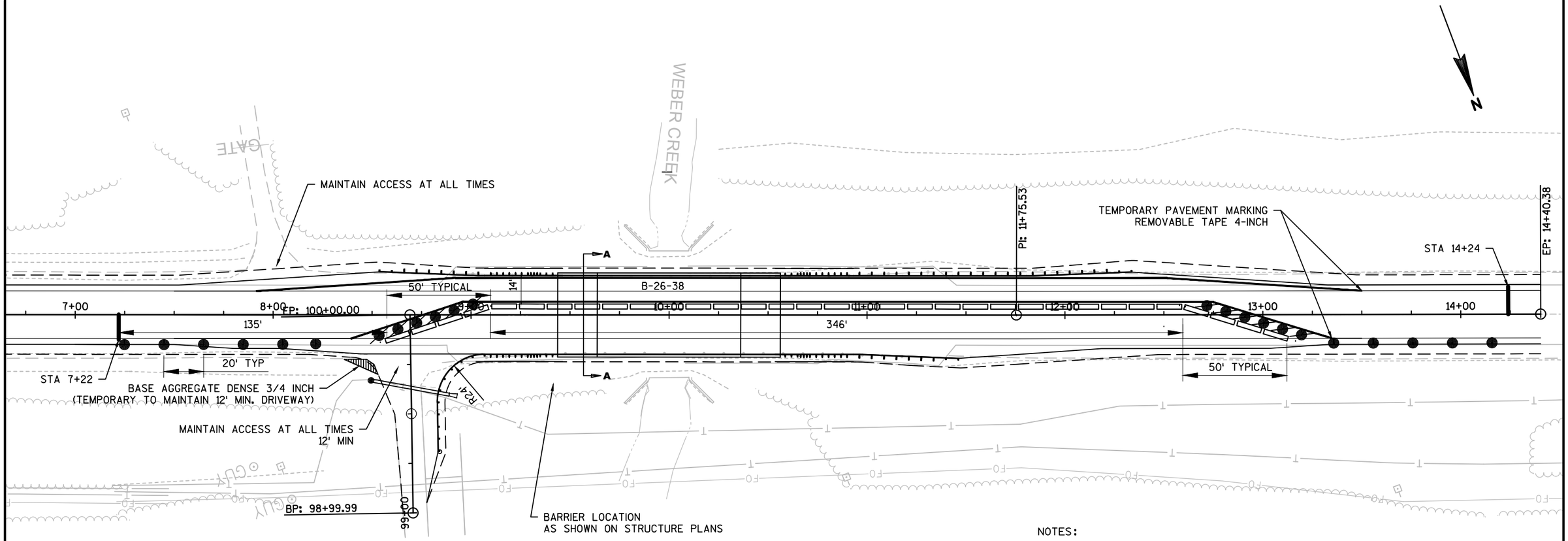
TEMPORARY LANE TYPICAL SECTION
SECTION A-A

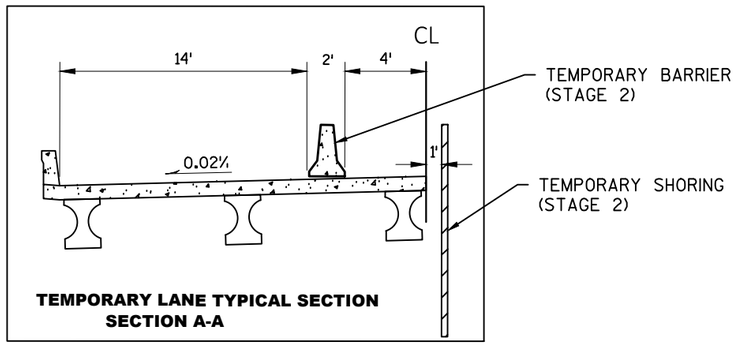


TEMPORARY LANE TYPICAL SECTION
SECTION B-B

PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	TRAFFIC CONTROL STAGE 1	SHEET 10	E

2





TEMPORARY LANE TYPICAL SECTION
SECTION A-A

NOTES:

SEE SDD TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS FOR ALL SIGNS, SIGNALS AND SPACING REQUIRED

MINIMUM TEMPORARY LANE WIDTH 14 FEET

LEGEND	
●	TRAFFIC COTROL DRUM
●	TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
▭	CONCRETE BARRIER TEMPORARY PRECAST
▬	TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH (TYP)

1175-19-70

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	203.0500.S	Removing Old Structure Over Waterway (station) 01. 10+00	LS	1.000	1.000
0040	204.0165	Removing Guardrail	LF	476.000	476.000
0050	205.0100	Excavation Common	CY	1,058.000	1,058.000
0060	206.1000	Excavation for Structures Bridges (structure) 01. B-26-38	LS	1.000	1.000
0070	208.0100	Borrow	CY	294.000	294.000
0080	210.1500	Backfill Structure Type A	TON	240.000	240.000
0090	213.0100	Finishing Roadway (project) 01. 1175-19-70	EACH	1.000	1.000
0100	305.0110	Base Aggregate Dense 3/4-Inch	TON	350.000	350.000
0110	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,871.000	2,871.000
0120	450.4000	HMA Cold Weather Paving	TON	715.000	715.000
0130	455.0605	Tack Coat	GAL	285.000	285.000
0140	460.2000	Incentive Density HMA Pavement	DOL	456.000	456.000
0150	460.6223	HMA Pavement 3 MT 58-28 S	TON	515.000	515.000
0160	460.6244	HMA Pavement 4 MT 58-34 S	TON	200.000	200.000
0170	465.0125	Asphaltic Surface Temporary	TON	35.000	35.000
0180	465.0315	Asphaltic Flumes	SY	40.000	40.000
0190	465.0475	Asphalt Center Line Rumble Strips 2-Lane Rural	LF	438.000	438.000
0200	502.0100	Concrete Masonry Bridges	CY	337.000	337.000
0210	502.3200	Protective Surface Treatment	SY	500.000	500.000
0220	502.3210	Pigmented Surface Sealer	SY	94.000	94.000
0230	503.0137	Prestressed Girder Type I 36W-Inch	LF	426.000	426.000
0240	505.0400	Bar Steel Reinforcement HS Structures	LB	4,960.000	4,960.000
0250	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	45,120.000	45,120.000
0260	505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB	1,460.000	1,460.000
0270	505.0905	Bar Couplers No. 5	EACH	301.000	301.000
0280	505.0906	Bar Couplers No. 6	EACH	16.000	16.000
0290	505.0908	Bar Couplers No. 8	EACH	24.000	24.000
0300	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	12.000	12.000
0310	506.4000	Steel Diaphragms (structure) 01. B-26-38	EACH	5.000	5.000
0320	511.1200	Temporary Shoring (structure) 01. B-26-38	SF	1,840.000	1,840.000
0330	516.0500	Rubberized Membrane Waterproofing	SY	26.000	26.000
0340	520.1018	Apron Endwalls for Culvert Pipe 18-Inch	EACH	2.000	2.000
0350	521.0118	Culvert Pipe Corrugated Steel 18-Inch	LF	40.000	40.000
0360	550.0500	Pile Points	EACH	16.000	16.000
0370	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	1,280.000	1,280.000
0380	603.8000	Concrete Barrier Temporary Precast Delivered	LF	530.000	530.000

1175-19-70

Line	Item	Item Description	Unit	Total	Qty
0390	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,010.000	1,010.000
0400	606.0100	Riprap Light	CY	3.500	3.500
0410	606.0300	Riprap Heavy	CY	528.000	528.000
0420	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	146.000	146.000
0430	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0440	614.0345	Steel Plate Beam Guard Short Radius	LF	38.000	38.000
0450	614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH	1.000	1.000
0460	614.2300	MGS Guardrail 3	LF	87.500	87.500
0470	614.2500	MGS Thrie Beam Transition	LF	158.000	158.000
0480	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0490	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1175-19-70	EACH	1.000	1.000
0500	619.1000	Mobilization	EACH	1.000	1.000
0510	624.0100	Water	MGAL	2.000	2.000
0520	625.0100	Topsoil	SY	2,055.000	2,055.000
0530	628.1104	Erosion Bales	EACH	12.000	12.000
0540	628.1504	Silt Fence	LF	1,030.000	1,030.000
0550	628.1520	Silt Fence Maintenance	LF	245.000	245.000
0560	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0570	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0580	628.2006	Erosion Mat Urban Class I Type A	SY	1,990.000	1,990.000
0590	628.2008	Erosion Mat Urban Class I Type B	SY	60.000	60.000
0600	628.6005	Turbidity Barriers	SY	140.000	140.000
0610	628.7570	Rock Bags	EACH	140.000	140.000
0620	629.0210	Fertilizer Type B	CWT	1.300	1.300
0630	630.0120	Seeding Mixture No. 20	LB	40.000	40.000
0640	634.0816	Posts Tubular Steel 2x2-Inch X 16-FT	EACH	2.000	2.000
0650	637.2210	Signs Type II Reflective H	SF	14.000	14.000
0660	642.5001	Field Office Type B	EACH	1.000	1.000
0670	643.0100	Traffic Control (project) 01. 1175-19-70	EACH	1.000	1.000
0680	643.0300	Traffic Control Drums	DAY	5,356.000	5,356.000
0690	643.0420	Traffic Control Barricades Type III	DAY	206.000	206.000
0700	643.0715	Traffic Control Warning Lights Type C	DAY	2,472.000	2,472.000
0710	643.0900	Traffic Control Signs	DAY	4,738.000	4,738.000
0720	645.0120	Geotextile Type HR	SY	792.000	792.000
0730	645.0130	Geotextile Type R	SY	10.000	10.000
0740	646.0106	Pavement Marking Epoxy 4-Inch	LF	1,950.000	1,950.000
0750	646.0600	Removing Pavement Markings	LF	800.000	800.000
0760	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	2,455.000	2,455.000
0770	649.1400	Temporary Pavement Marking Stop Line Removable	LF	24.000	24.000

1175-19-70

Line	Item	Item Description	Unit	Total	Qty
		Tape 24-Inch			
0780	650.4500	Construction Staking Subgrade	LF	682.000	682.000
0790	650.5000	Construction Staking Base	LF	682.000	682.000
0800	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000
0810	650.6500	Construction Staking Structure Layout (structure) 01. B-26-38	LS	1.000	1.000
0820	650.9910	Construction Staking Supplemental Control (project) 01. 1175-19-70	LS	1.000	1.000
0830	650.9920	Construction Staking Slope Stakes	LF	682.000	682.000
0840	661.0100	Temporary Traffic Signals for Bridges (structure) 01. B-26-38	LS	1.000	1.000
0850	690.0150	Sawing Asphalt	LF	60.000	60.000
0860	715.0502	Incentive Strength Concrete Structures	DOL	2,020.000	2,020.000
0870	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	300.000	300.000
0880	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	600.000	600.000
0890	SPV.0195	Special 01. Select Crushed Material For Travel Corridor	TON	66.000	66.000

CLEARING AND GRUBBING

				201.0105 CLEARING	201.0205 GRUBBING
STA	STA	LOCATION		STA	STA
8+75	9+80	RT	MAINLINE	1.0	1.0
10+10	10+60	RT	MAINLINE	0.5	0.5
8+30	9+00	LT	MAINLINE	1.0	1.0
9+50	9+90	LT	MAINLINE	0.5	0.5
			TOTAL	3.0	3.0

REMOVING GUARDRAIL

			204.0165 REMOVING GUARDRAIL
STATION	STATION	LOCATION	LF
8+95	11+33	LT	238
8+95	11+33	RT	238
	TOTAL		476

BASE AGGREGATE DENSE

			305.0110 3/4-INCH	305.0120 1 1/4-INCH
STATION	STATION	LOCATION	TON	TON
7+50	9+44	MAINLINE	0	960
10+56	13+50	MAINLINE	0	1575
7+50	9+44	SHOULDER	75	0
10+56	13+50	SHOULDER	170	0
		PE RT	90	0
UNDISTRIBUTED		PROJECT	15	50
		TOTAL	350	2585

HMA PAVEMENT, TACK COAT, RUMBLE STRIPS, ASPHALTIC SURFACE TEMPORARY, ASPHALTIC FLUMES

			460.6223 HMA PAVEMENT 3 MT 58-28 S	460.6244 HMA PAVEMENT 4 MT 58-34 S	450.4000 HMA COLD WEATHER PAVING	455.0605 TACK COAT	465.0475 ASPHALT CENTER LINE RUMBLE STRIP 2-LANE RURAL	465.0125 ASPHALTIC SURFACE TEMPORARY	465.0315 ASPHALTIC FLUMES
STATION	STATION	LOCATION	TON	TON	TON	GALLONS	LF	TON	SY
7+50	9+44	USH 51	205	80	285	114	169	0	20
10+56	13+50	USH 51	310	120	430	171	269	0	20
7+50	8+90	RT	0	0	0	0	0	15	0
11+40	13+50	RT	0	0	0	0	0	20	0
		TOTALS	515	200	715	285	438	35	40

CULVERT PIPE

		521.0118 CULVERT PIPE CORRUGATED STEEL 18-INCH	520.1018 APRON ENDWALLS FOR CULVERT PIPE 18-INCH	INVERT ELEVATION	
STATION	LOCATION	LF	EACH	INLET	OUTLET
99+64	PE RT	40	2	1613.17	1612.37
		40	2		

BEAM GUARD

			614.2300 MGS GUARDRAIL 3	614.2500 MGS THRIE BEAM TRANSITION	614.2610 MGS GUARDRAIL TERMINAL EAT	614.0345 STEEL PLATE BEAM GUARD SHORT RADIUS *	614.0390 STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	
STATION	STATION	LOCATION	(LF)	(LF)	(EACH)	(LF)	(EACH)	REMARKS
8+83	9+22	RT	0.0	39.4	0	38	1	* 24 FOOT RADIUS TO BACK OF RAIL
8+68	9+61	LT	0.0	39.4	1	0	0	
10+39	11+32	RT	0.0	39.4	1	0	0	
10+39	12+19	LT	87.5	39.4	1	0	0	
	TOTAL		87.5	158	3	38	1	

CONCRETE BARRIER TEMPORARY

			603.8000 DELIVERED	603.8125 INSTALLED	
STATION	STATION	LOCATION	LF	LF	REMARKS
8+11	13+40	MAINLINE	530	530	STAGE 1
8+61	13+40	MAINLINE	0	480	STAGE 2
	TOTAL		530	1010	

RIPRAP AND GEOTEXTILE

			606.01 RIPRAP LIGHT	645.013 GEOTEXTILE TYPE R
STATION	STATION	LOCATION	CY	SY
8+92	9+10	RT	3.5	10.0
		TOTALS	3.5	10.0

ALL ITEMS CATEGORY 0010

3

EROSION CONTROL

STATION	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.1104 EROSION BALES EACH	628.6005 TURBIDITY BARRIER SY	628.7570 ROCK BAGS EACH
7+50	13+50	RT	460	115	0	0	0	0	60
7+50	13+50	LT	520	130	0	0	0	0	80
		CREEK	0	0	0	0	0	140	0
	UNDISTRIBUTED		50	0	3	3	12	0	0
		TOTALS	1030	245	3	3	12	140	140

TOPSOIL, MULCHING, FERTILIZER, AND SEEDING

STATION	STATION	LOCATION	625.0100 TOPSOIL SY	628.2006 EROSION MAT URBAN CLASS 1 TYPE A SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	624.0100 WATER MGAL
7+50	13+50	LT	815	815	0	0.52	15.0	
7+50	13+50	RT	1140	1080	60	0.72	21.0	
		UNDISTRIBUTED	100	95	0	0.06	4.0	2
		TOTAL	2055	1990	60	1.30	40	2

SIGNS AND SUPPORTS

STATION	LOCATION	SIGN CODE	637.2210 SIGNS REFLECTIVE TYPE II SF	634.0816 POSTS TUBULAR STEEL 2X2 INCH X 16 FOOT EACH	DESCRIPTION
9+65	RT	I3-4	7	1	WEBER CREEK
10+35	LT	I3-4	7	1	WEBER CREEK
	TOTAL		14	2	

CONSTRUCTION STAKING

STATION	STATION	LOCATION	650.4500 CONSTRUCTIONG STAKING SUBGRADE (LF)	650.5000 CONSTRUCTIONG STAKING BASE (LF)	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.6500 CONSTRUCTION STAKING STRUCTURE LAYOUT (B-26-38) (EACH)	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (LS)	650.9920 CONSTRUCTION STAKING SLOPE STAKES (LF)
7+50	13+50	MAINLINE	600	600	0	1	1	600
99+00	99+82	PE RT	82	82	1	0	0	82
		TOTAL	682	682	1	1	1	682

ALL ITEMS CATAGORY 0010

PAVEMENT MARKING EPOXY 4-INCH

STATION	STATION	LOCATION	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE (LF)	646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW (LF)
7+50	13+50	USH 51	1200	750
		TOTAL	1,950	

TRAFFIC CONTROL

LOCATION	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0715 WARNING LIGHTS TYPE C DAYS	643.0900 TRAFFIC CONTROL SIGNS DAYS	661.0100 TEMPORARY TRAFFIC SIGNALS FOR BRIDGES LS	REMARKS
USH 51	2678	103	1236	2369		STAGE 1
USH 51	2678	103	1236	2369		STAGE 2
	5,356	206	2,472	4,738	1	

REMOVING PAVEMENT MARKINGS

		LOCATION	646.0600 REMOVING PAVEMENT MARKINGS LF	REMARKS
7+50	8+50	C/L	100	STAGE 1, 2
7+50	13+50	RT	600	STAGE 1
13+00	14+00	C/L	100	STAGE 1, 2
			800	

TEMPORARY PAVEMENT MARKING

STA	STA	LOCATION	649.0400 REMOVABLE TAPE 4-INCH LF	649.1400 STOP LINE REMOVABLE TAPE 24-INCH LF	REMARKS
7+22		USH 51	0	12	STAGE 1, 2
14+24		USH 51	0	12	STAGE 1, 2
7+60	13+50	LT/RT	1155	0	STAGE 1 (WHITE)
7+60	13+50	LT/RT	1200	0	STAGE 2 (WHITE)
7+50	8+50	C/L	100	0	STAGE 2 (YELLOW)
			2,455	24	

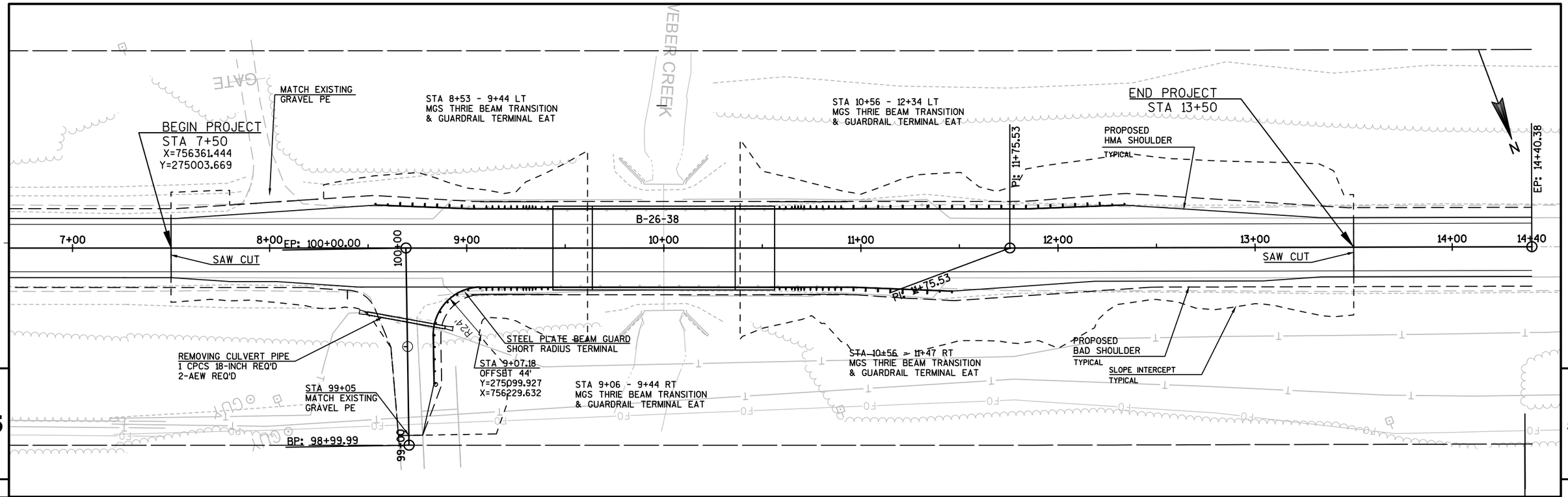
SAWING

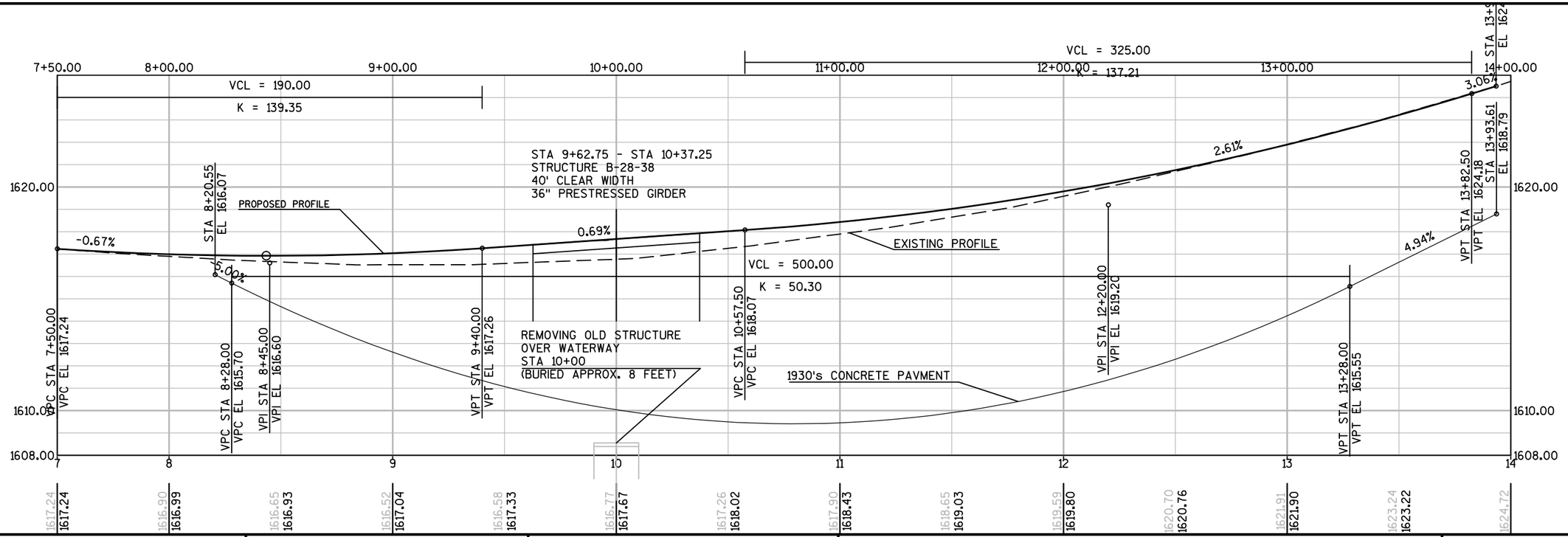
STATION	LOCATION	690.0150 SAWING ASPHALT LF	REMARKS
7+50	USH 51	30	BEGIN PROJECT
13+50	USH 51	30	END PROJECT
	TOTAL	60	

Division	From/To Station	Location	Common Excavation (1)	(item # 205.0100)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Borrow	Comment:
			Cut (2)	EBS Excavation (3)			Factor 1.25			(item #208.0100)	
Division 1											
51-EwkDetail.xml	07+50/13+50		1,031	0	1,031	205	256	775	775	0	
Division 1 Subtotal			1,031	0	1,031	205	256	775	775	0	
Division 2											
Dvwy-EwkDetail.xm	07+50/99+95		26	0	26	256	321	-294	0	294	
Division 2 Subtotal			26	0	26	256	321	-294	0	294	
Grand Total			1,058	0.00	1,057.57	461.64	577.05	480.52	774.92	294	
Total Common Exc				1,058							

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 20505
13) Expanded Fill. Factor = 1.25
Depending on selections: **Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor**
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Divisior

ALL ITEMS CATEGORY 0010



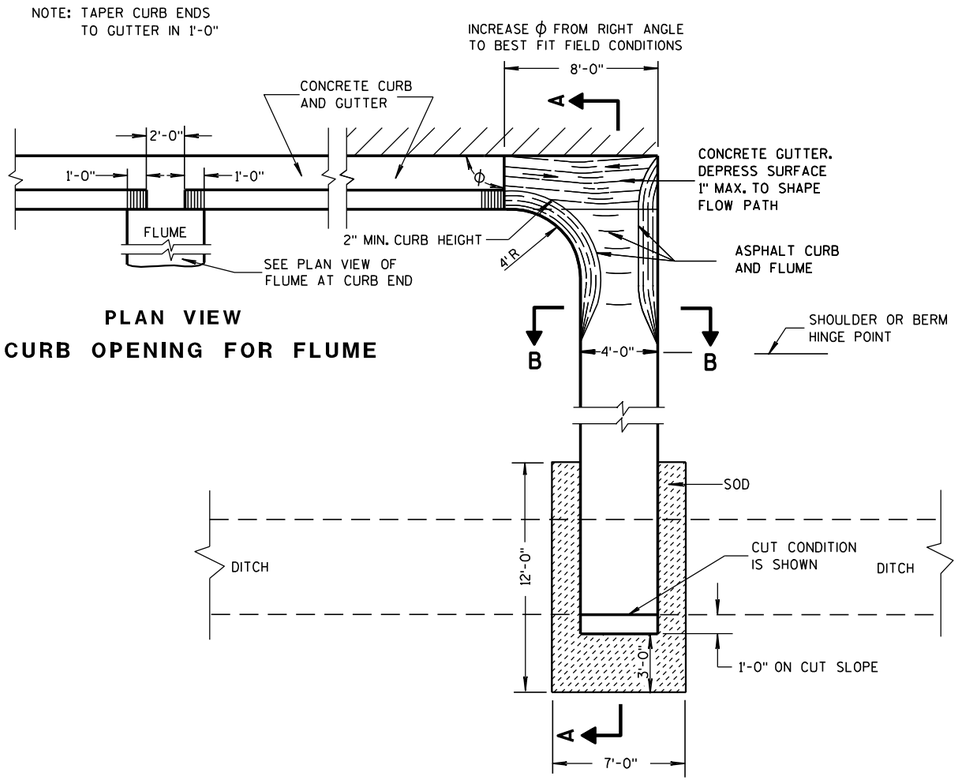


PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	PLAN AND PROFILE: WEBER CREEK BRIDGE	SHEET 18	E

Standard Detail Drawing List

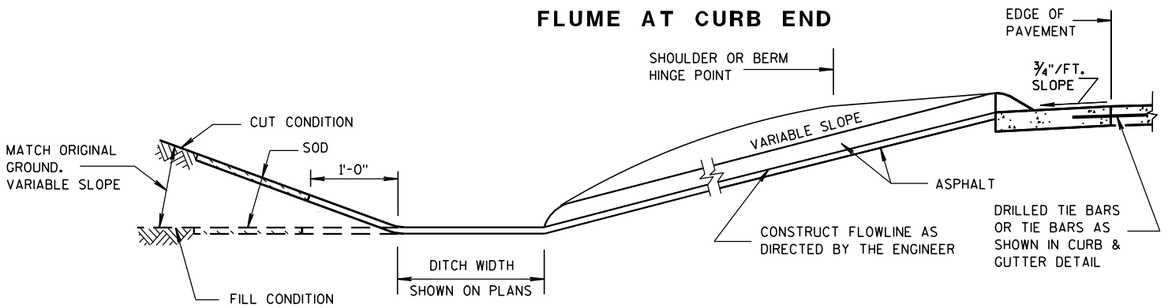
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10	NAME PLATE (STRUCTURES)
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
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"
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B42-04A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04C	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)
14B45-04I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
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

ASPHALTIC FLUME

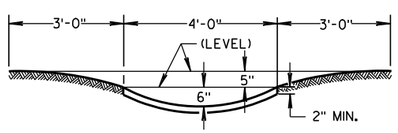


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

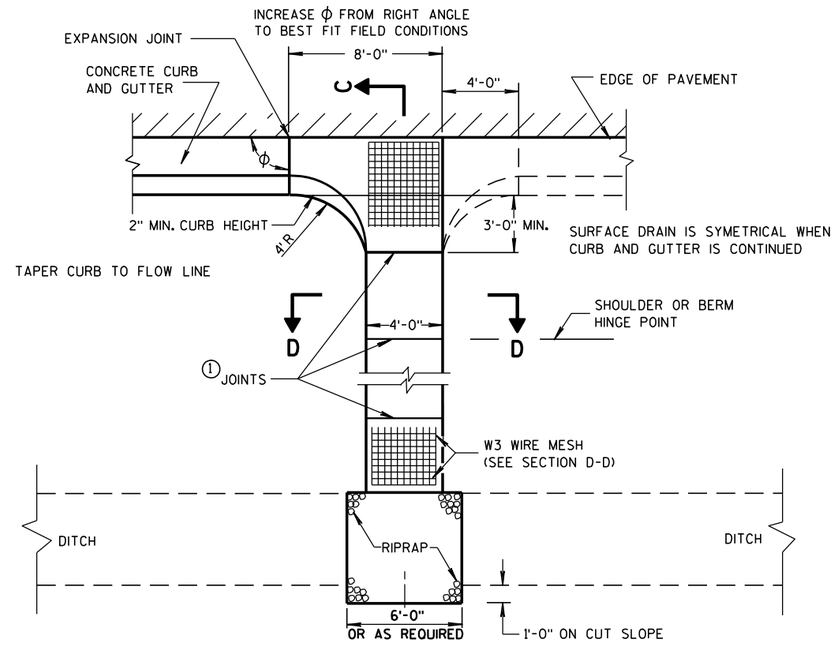
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

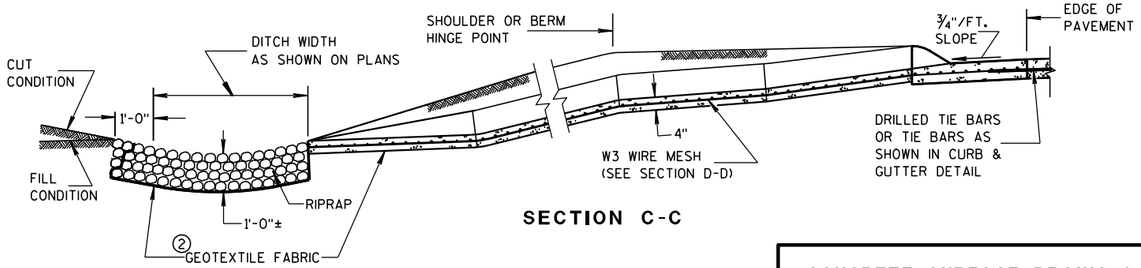
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

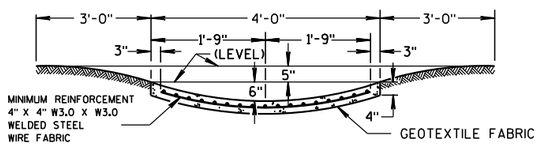
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C

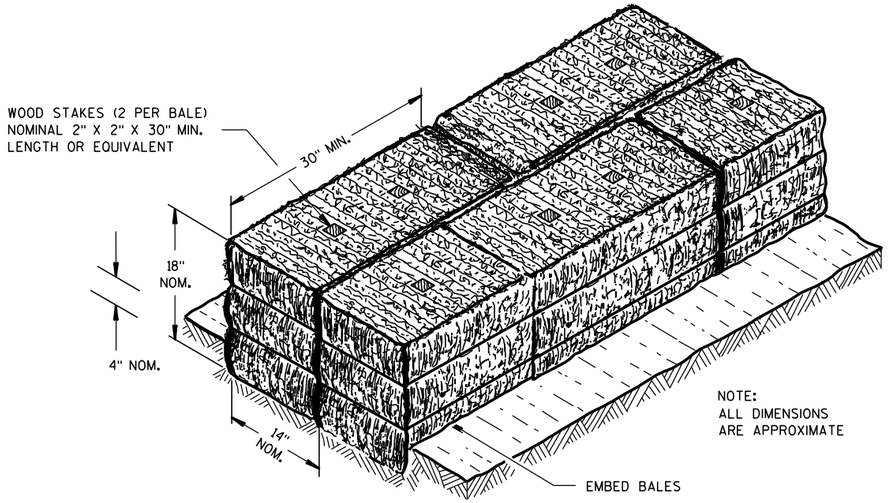


SECTION D-D

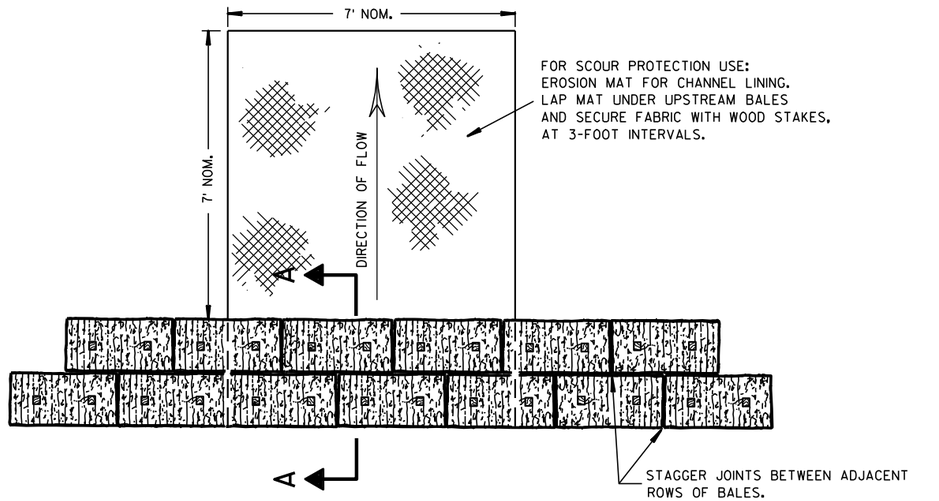
CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

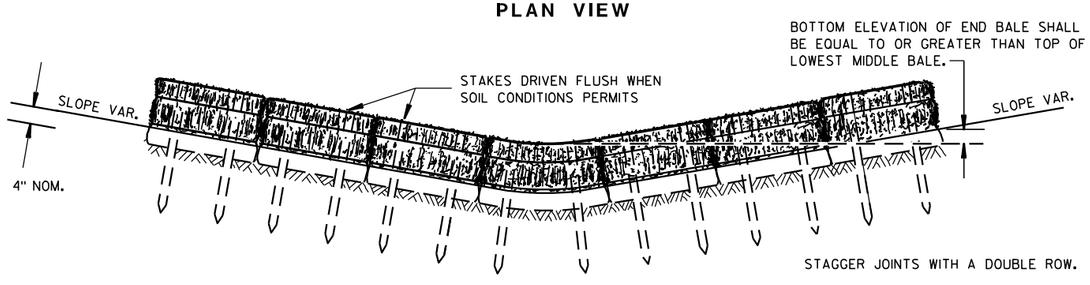
APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
MENT
FHWA



SECTION A-A



PLAN VIEW



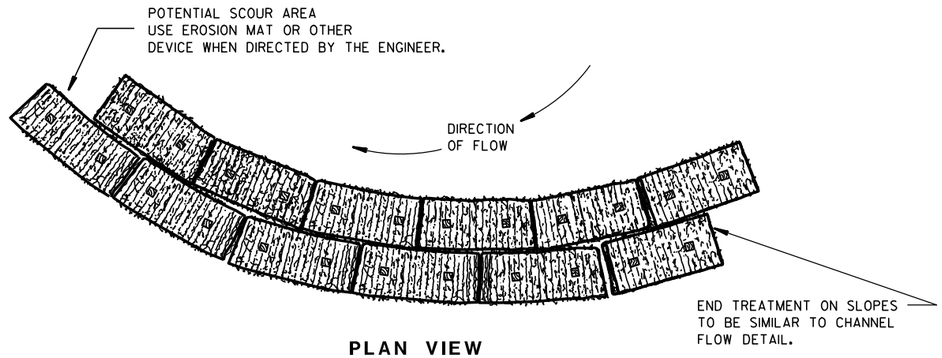
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

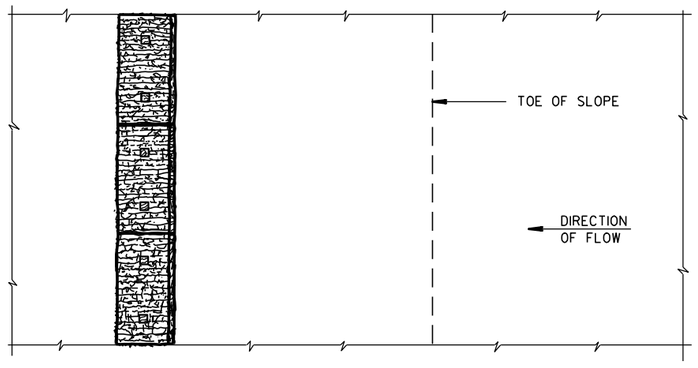
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

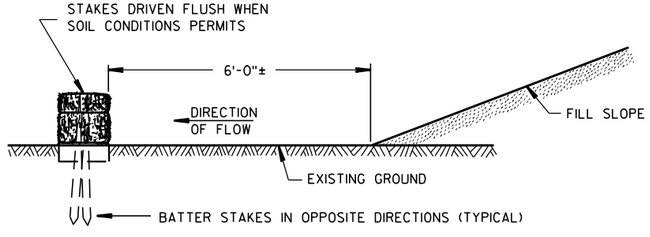


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

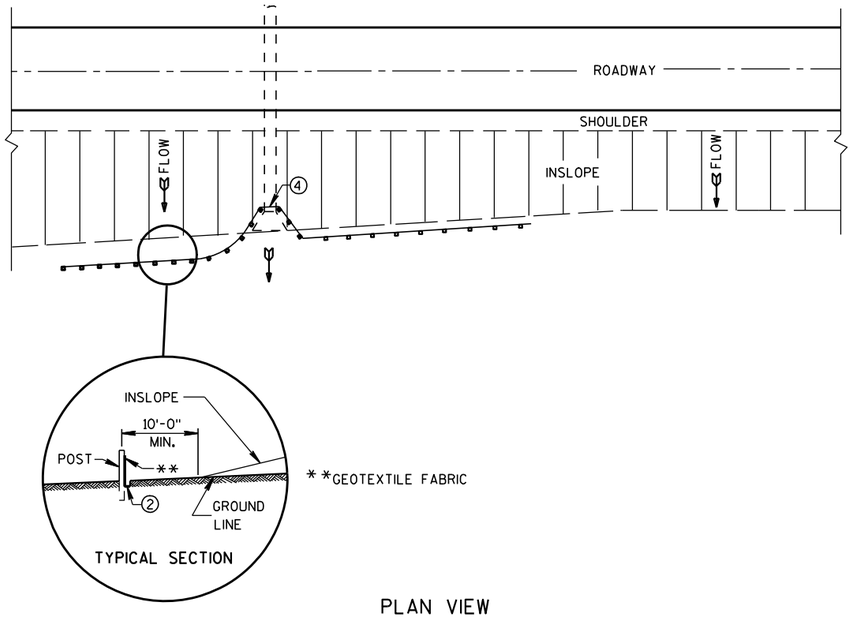
6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

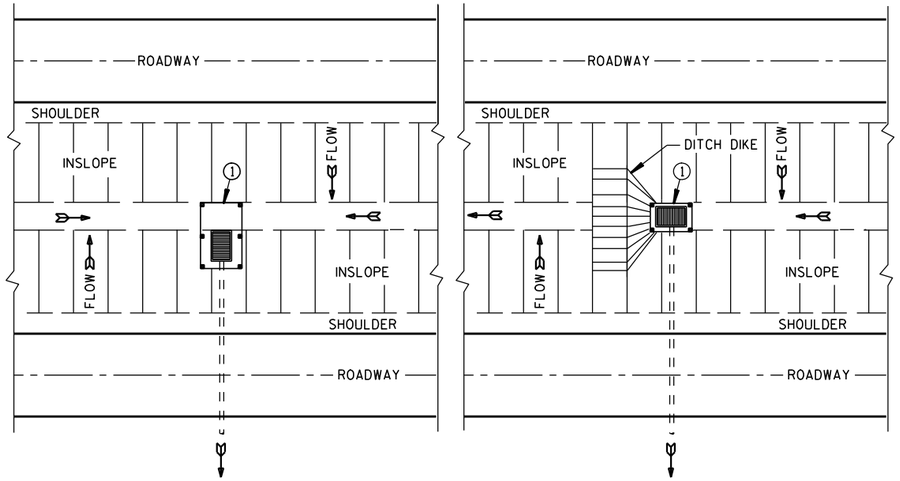
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



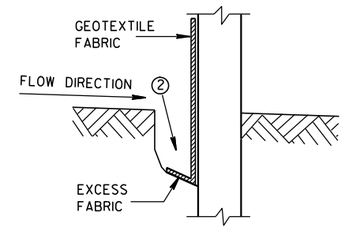
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

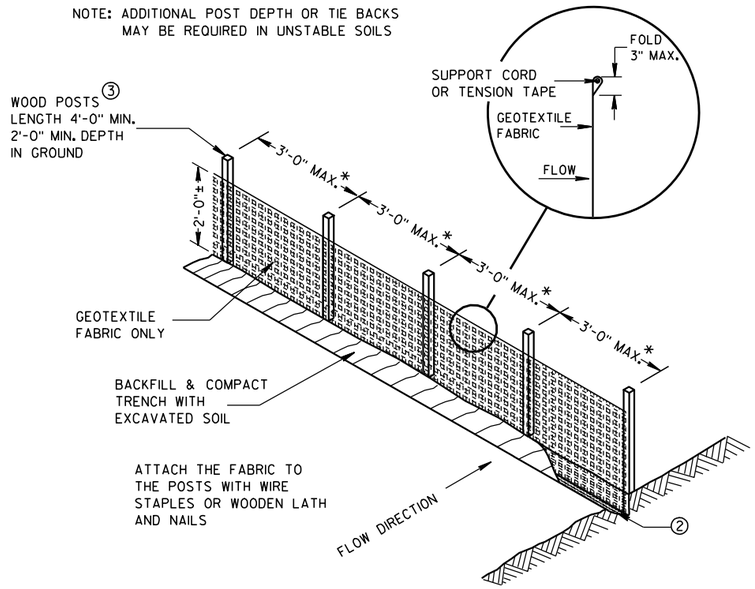
GENERAL NOTES

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

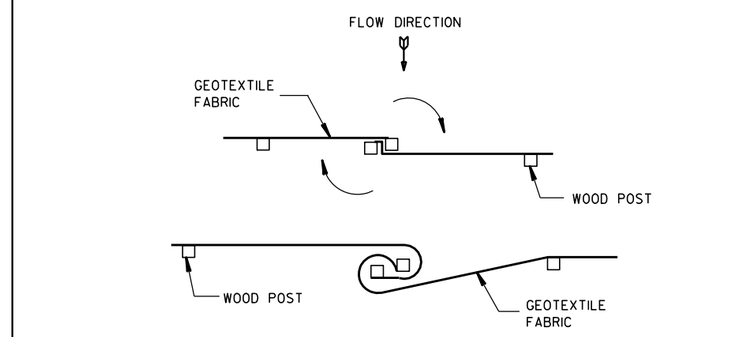
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" 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.



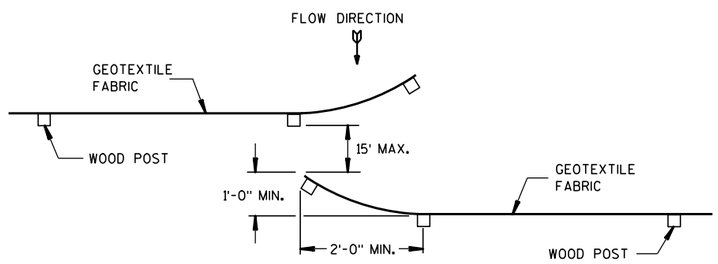
TRENCH DETAIL



SILT FENCE

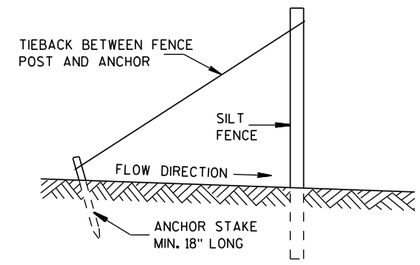


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

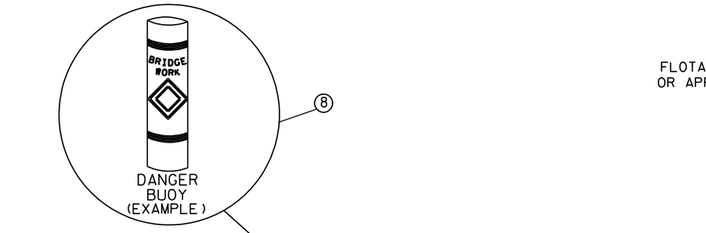
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

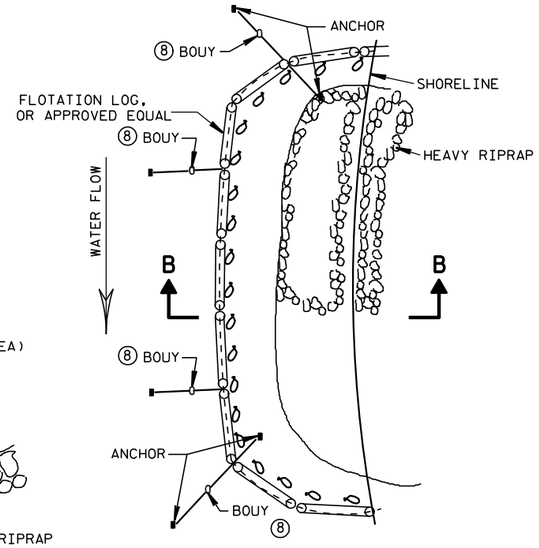
S.D.D. 8 E 9-6

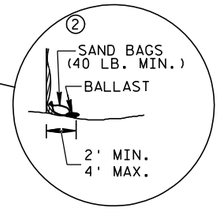
6

S.D.D. 8 E 9-6

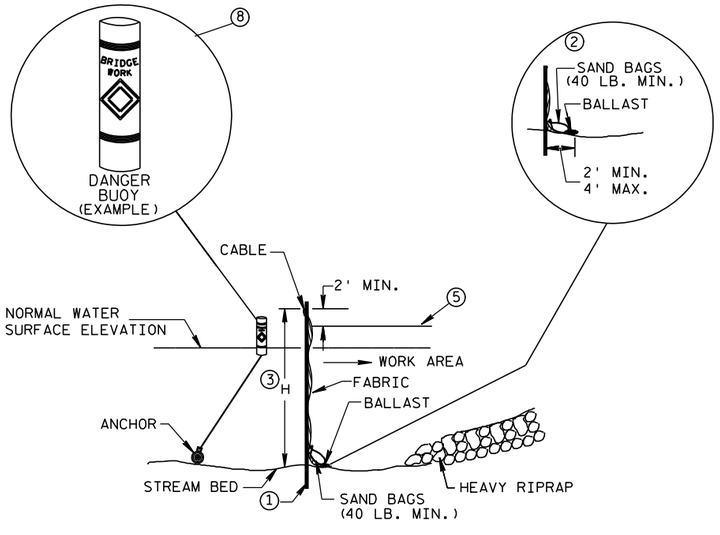


SECTION B-B

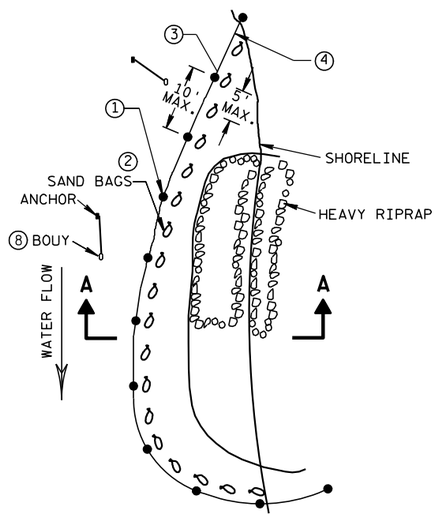




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② 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.

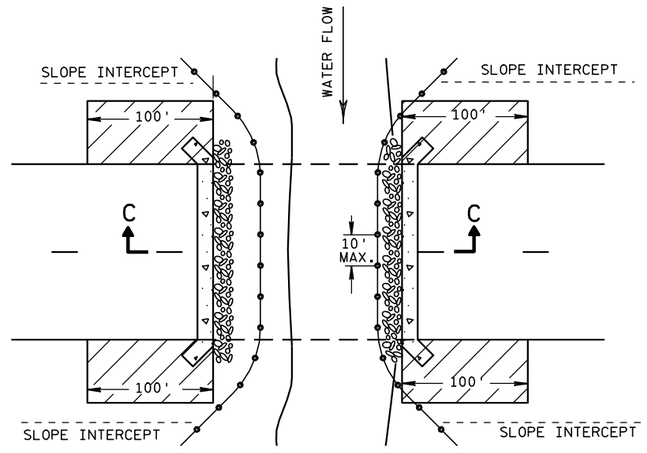
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

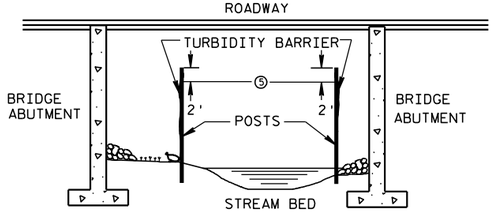
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 11-2

6

S.D.D. 8 E 11-2

METAL APRON ENDWALLS

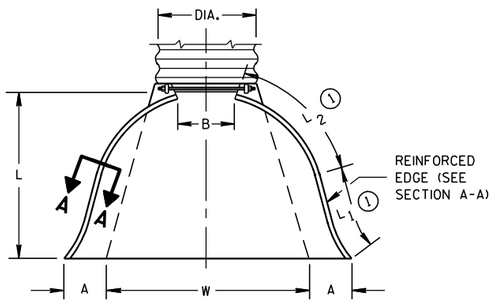
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

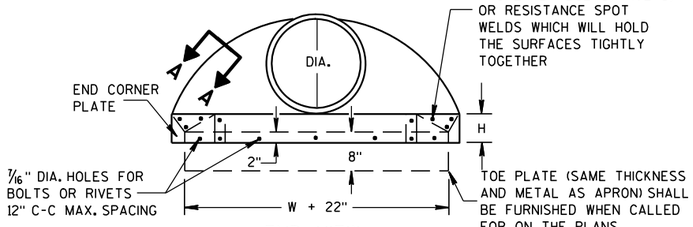
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

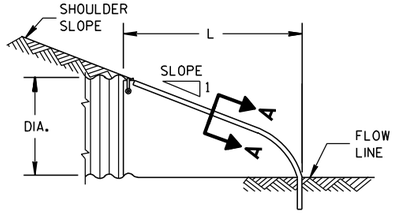
*MINIMUM
**MAXIMUM



PLAN VIEW

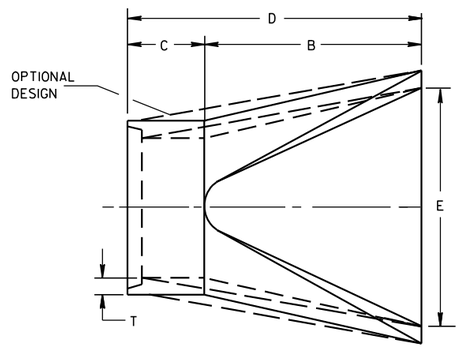


END VIEW

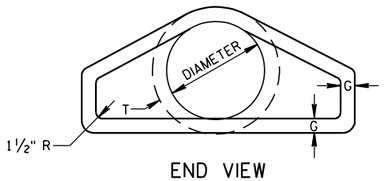


SIDE ELEVATION

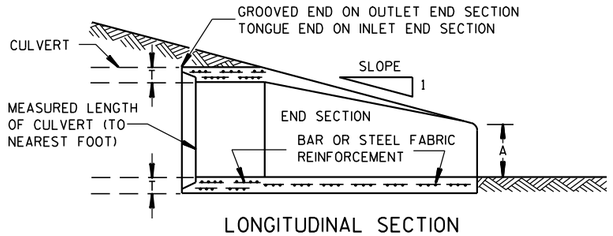
METAL ENDWALLS



PLAN

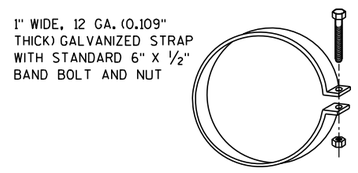


END VIEW



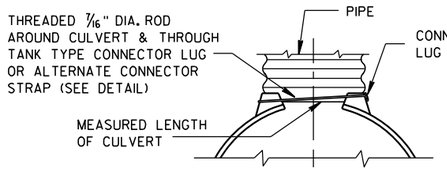
LONGITUDINAL SECTION

CONCRETE ENDWALLS

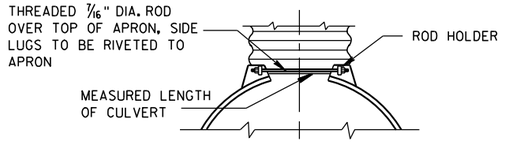


ALTERNATE FOR TYPE 1 CONNECTION

END SECTION CONNECTOR STRAP

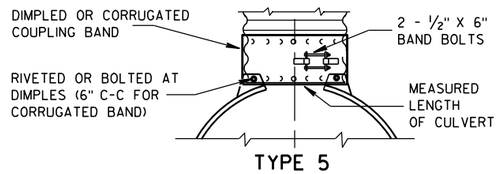


TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE

TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

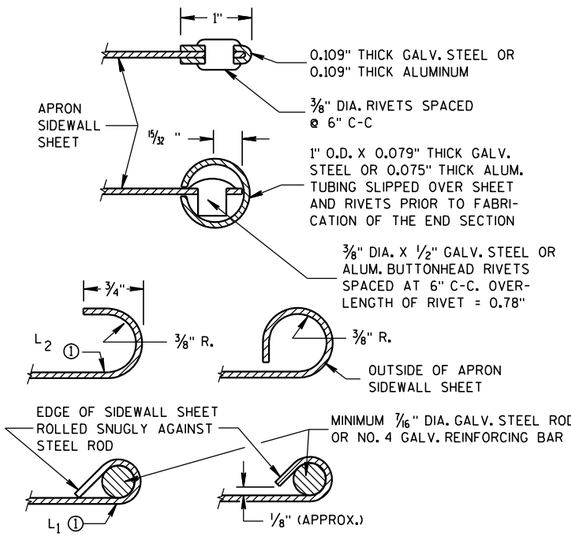
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

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.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

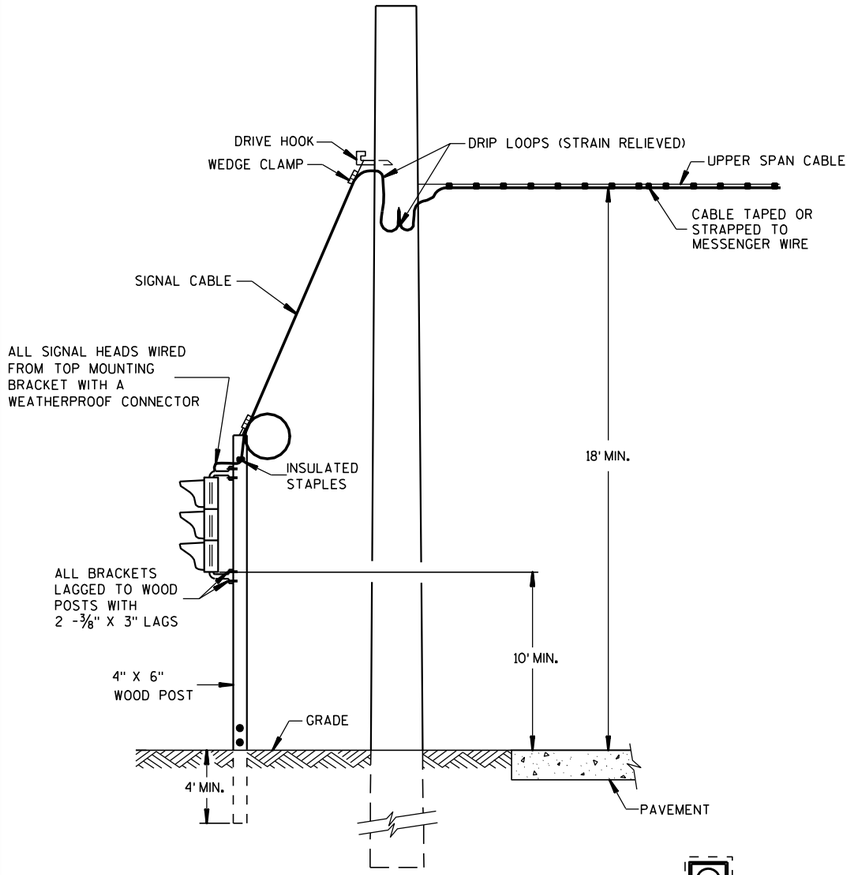
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

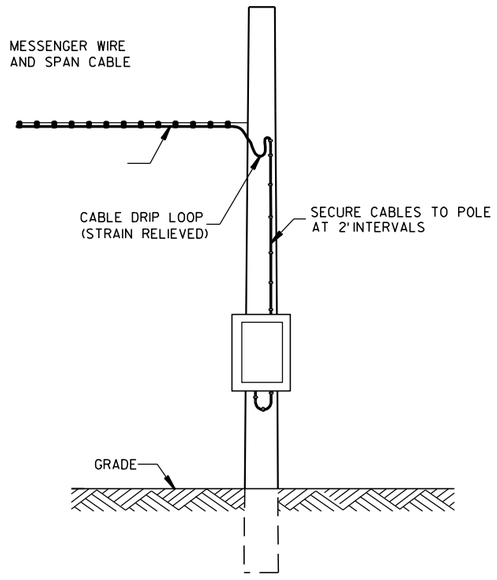
APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 F 1-11



TYPICAL DROP TO TRAFFIC SIGNAL FACE



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 PLOLES 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.

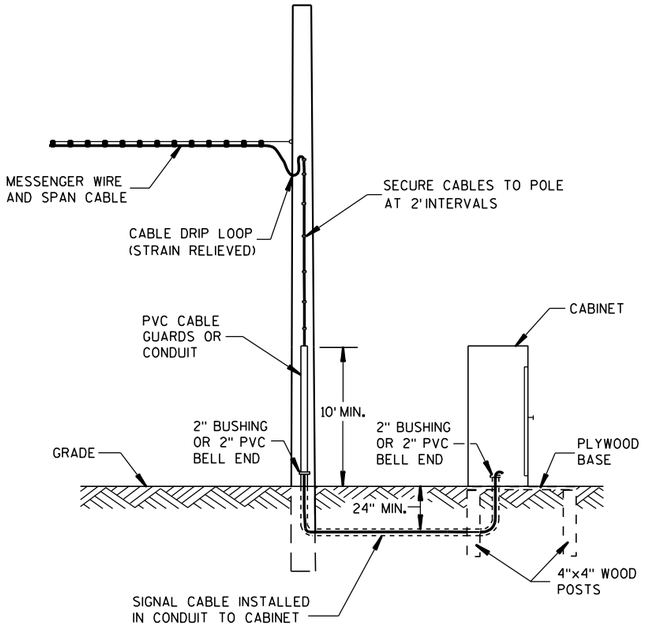
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

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.

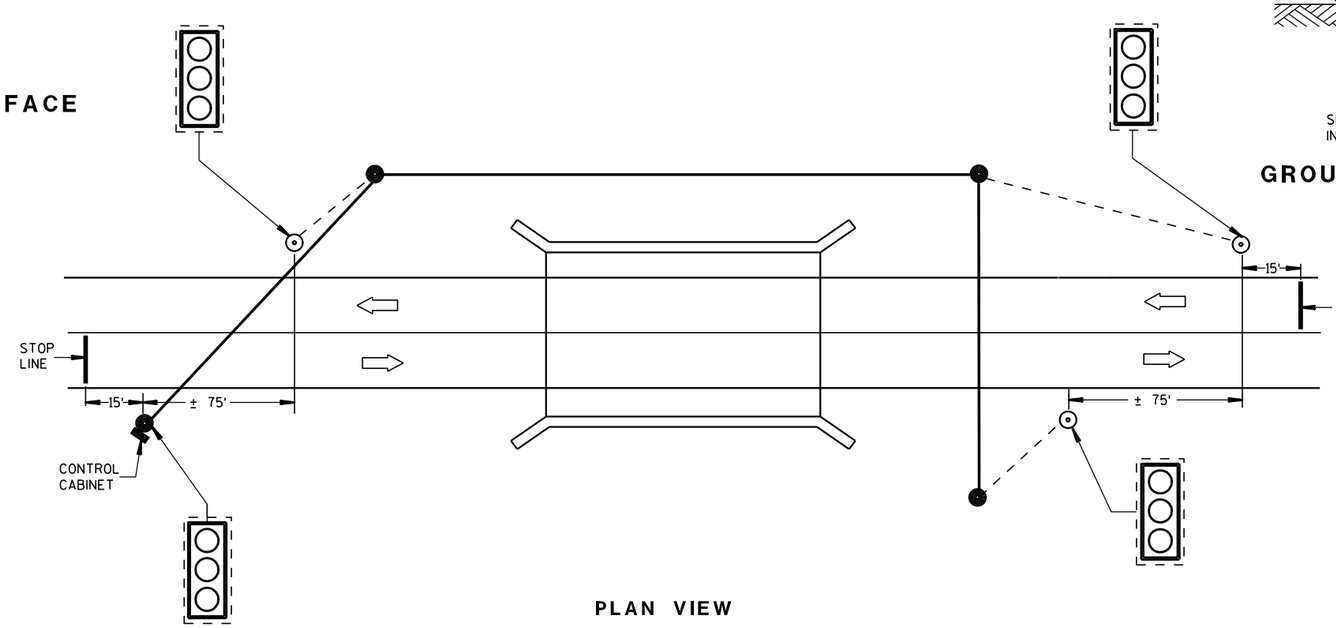
EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



GROUND MOUNT CABINET INSTALLATION

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.



PLAN VIEW

TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

LEGEND

- WOOD POLE (NONBREAKAWAY)
- WOOD POST (BREAKAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- LED TRAFFIC SIGNAL FACE WITH BACKPLATE (3-12")
- DIRECTION OF TRAFFIC

MINIMUM POLE LENGHTS	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

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

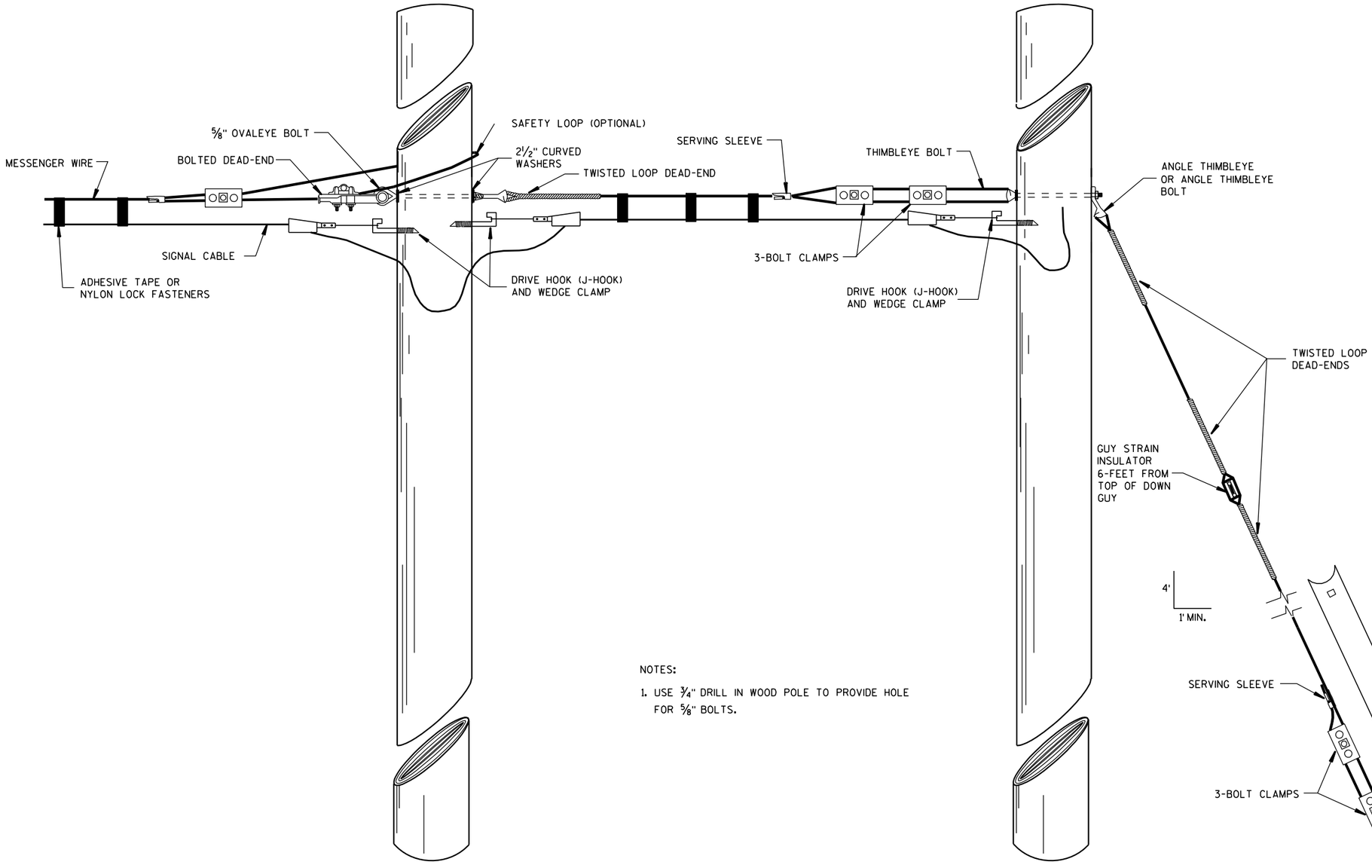
APPROVED
3/2/2011 DATE
/S/ Thomas J. Gosling STATE ELECTRICAL ENGI
25 HWYS
FHWA

6

S.D.D. 9 G 2-3a

6

S.D.D. 9 G 2-3a



SPAN WIRE POLE

GUY POLE

NOTES:

1. USE 3/4" DRILL IN WOOD POLE TO PROVIDE HOLE FOR 5/8" BOLTS.

TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 DATE

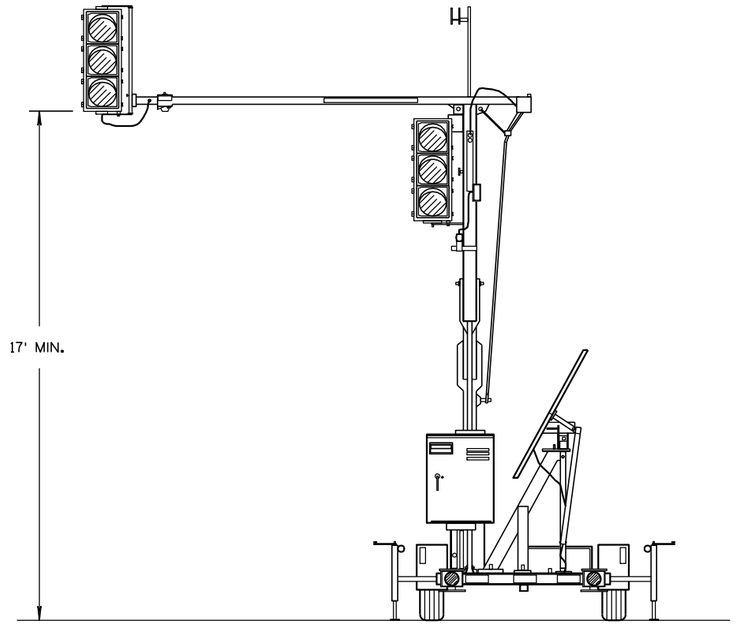
/S/ Thomas J. G... STATE ELECTRICAL ENGI

HWYS

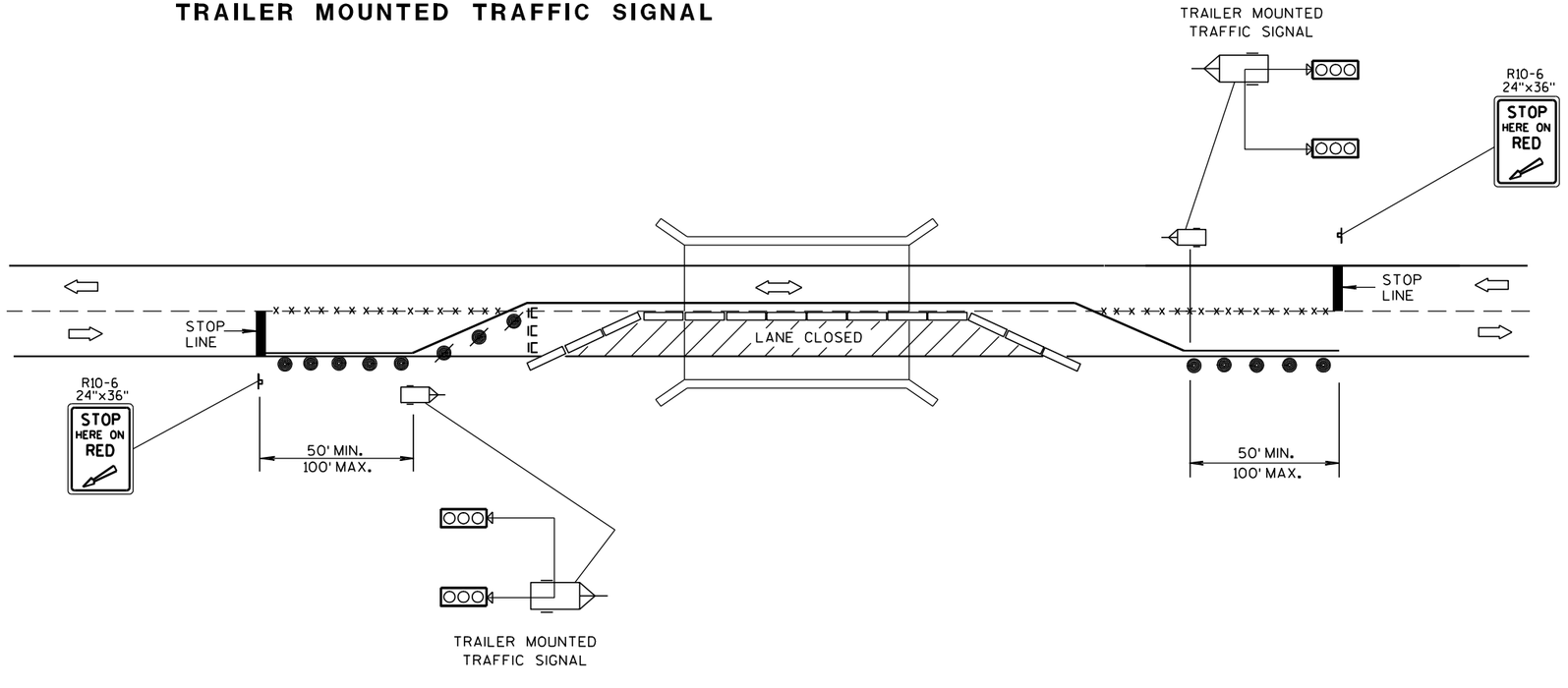
FHWA

6

S.D.D. 9 G 2-3b



TRAILER MOUNTED TRAFFIC SIGNAL



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

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.

LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- 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

/S/ Thomas J. Gosling
STATE ELECTRICAL ENGI 27

FHWA

HWYS

6

S.D.D. 9 G 2-3c

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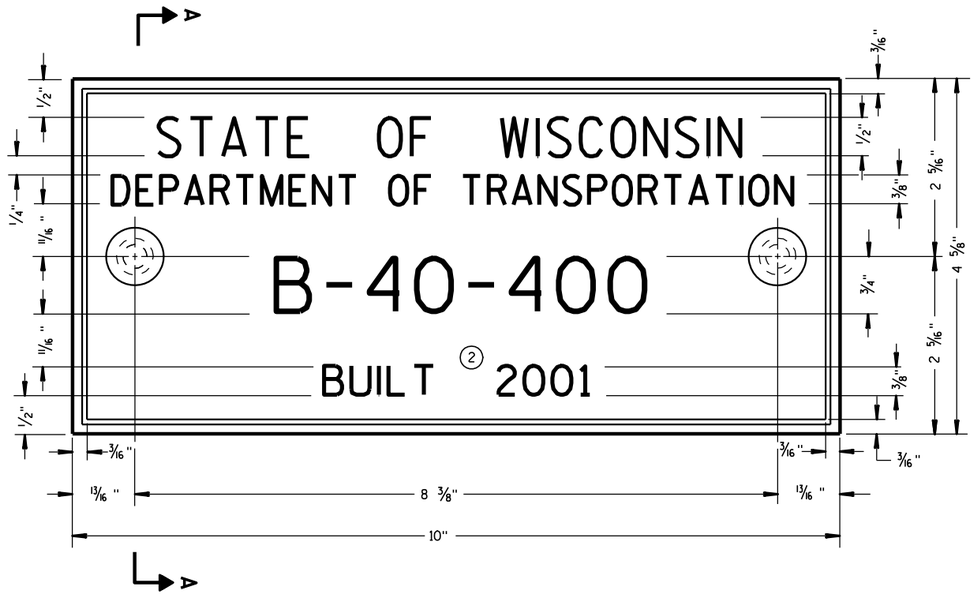
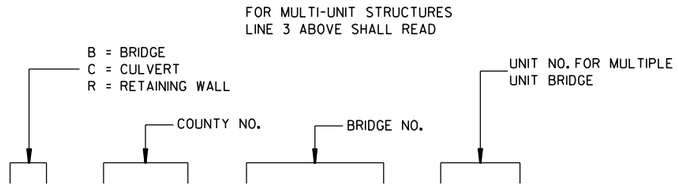
S.D.D. 9 G 2-3c



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

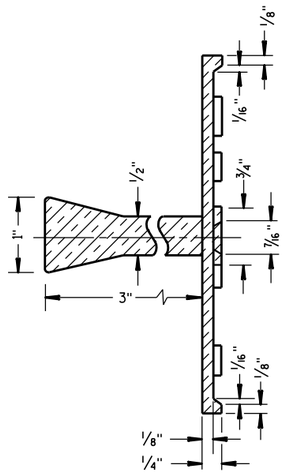
GENERAL NOTES

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

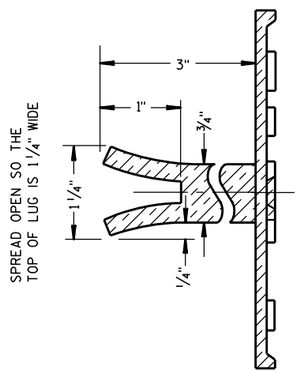
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

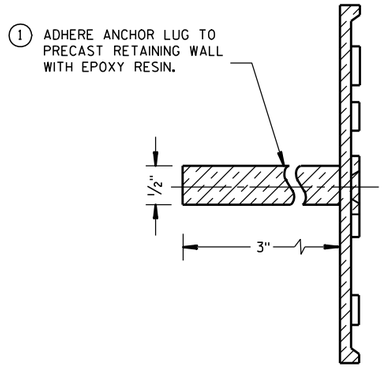
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE — /S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

6

S.D.D. 12 A 3-10

GENERAL NOTES

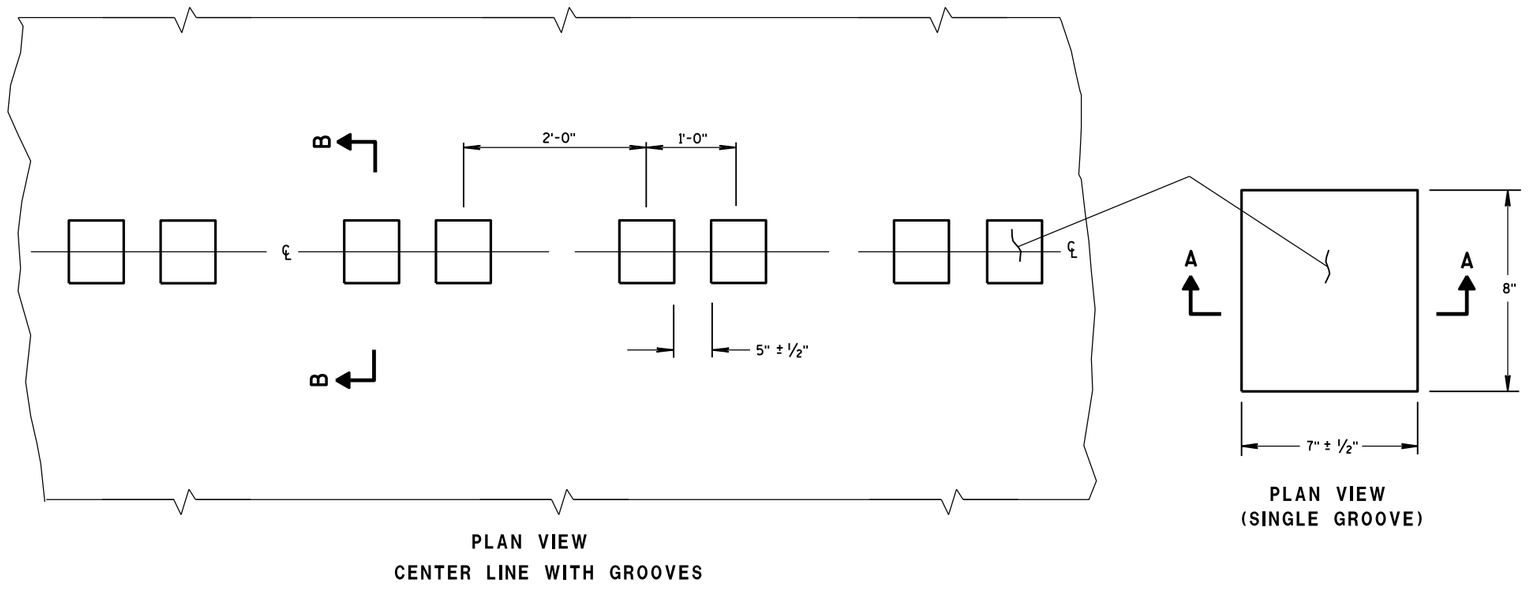
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTER LINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

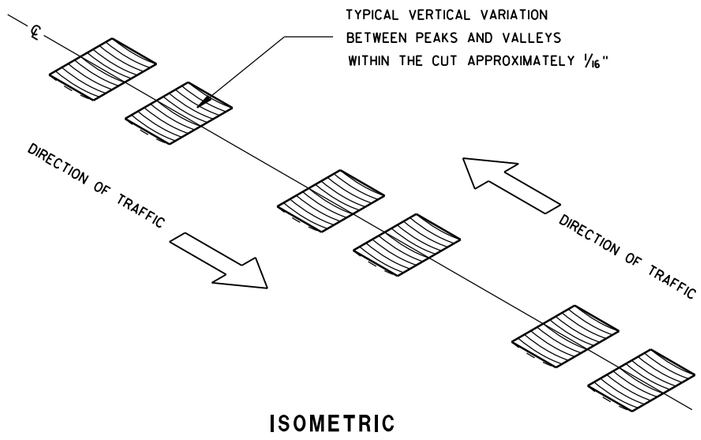
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



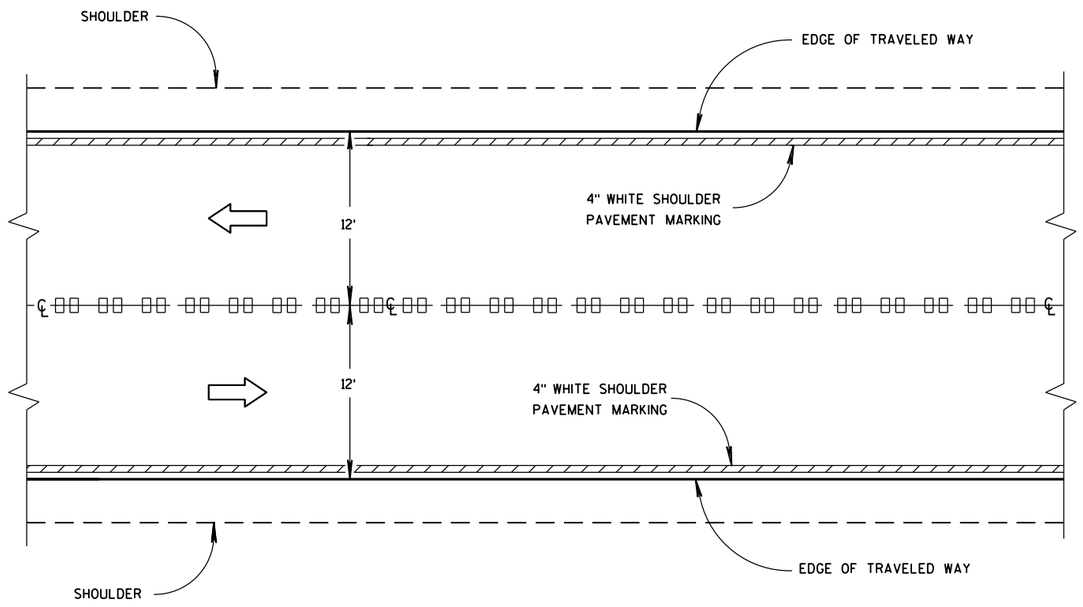
PLAN VIEW
CENTER LINE WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

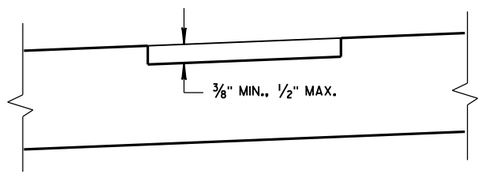
PLACEMENT DETAIL FOR MILLED RUMBLE STRIP



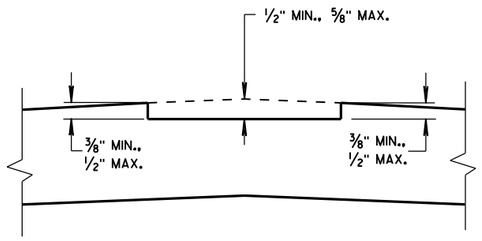
ISOMETRIC



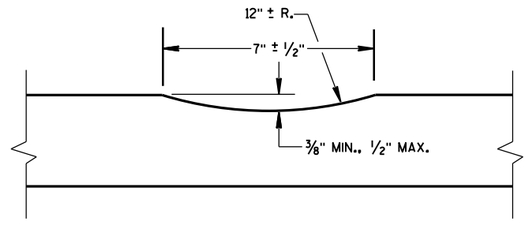
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



SECTION B-B
CROWNED ROADWAY



SECTION A-A

6

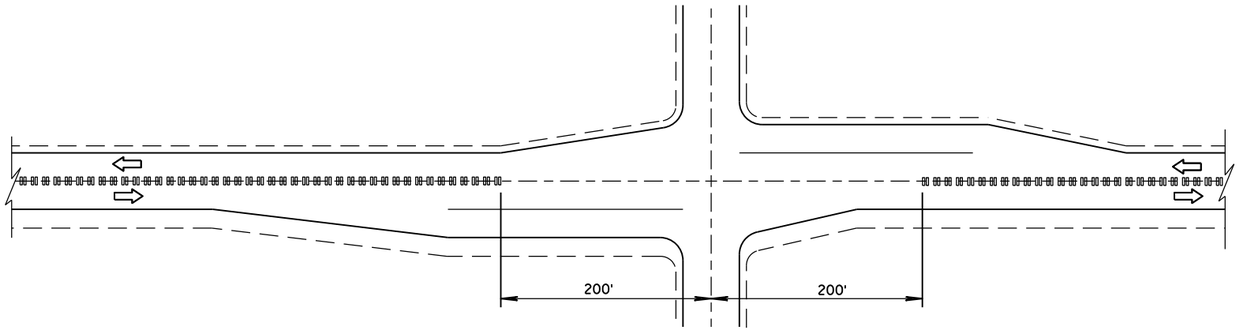
S.D.D. 13 A 11-2a

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

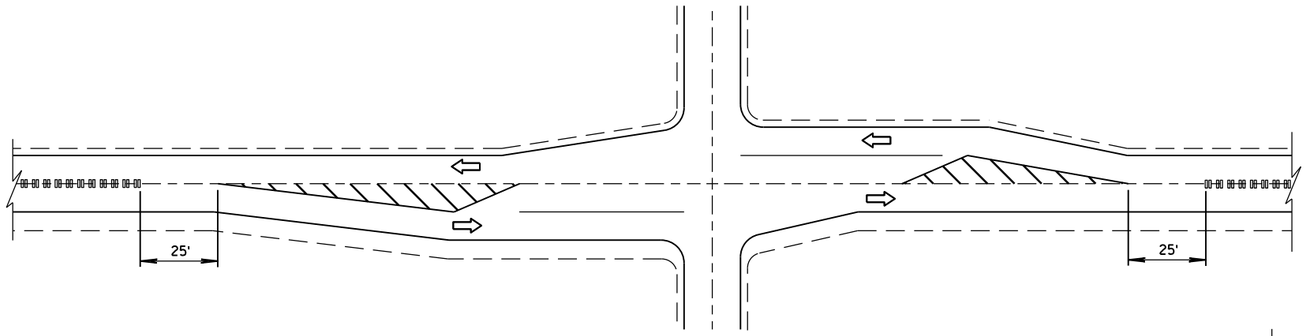
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

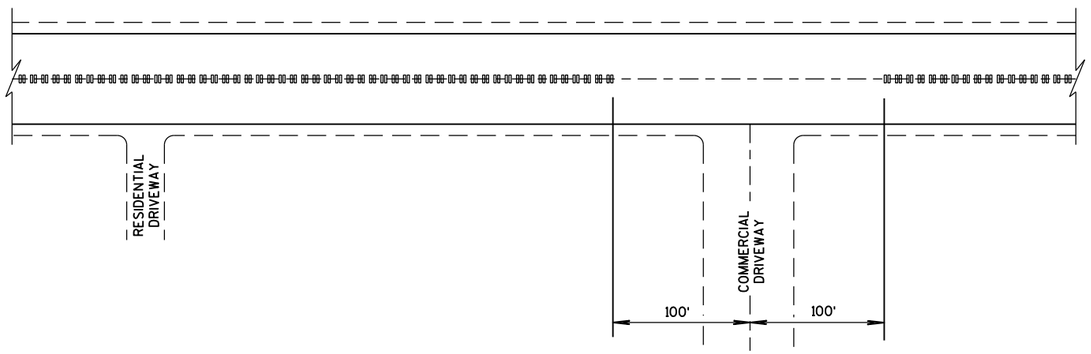
S.D.D. 13 A 11-2a



CENTER LINE GROOVES AT INTERSECTIONS

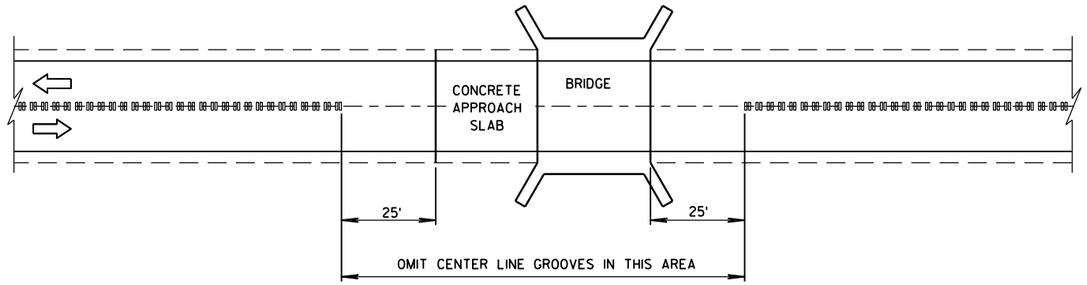


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

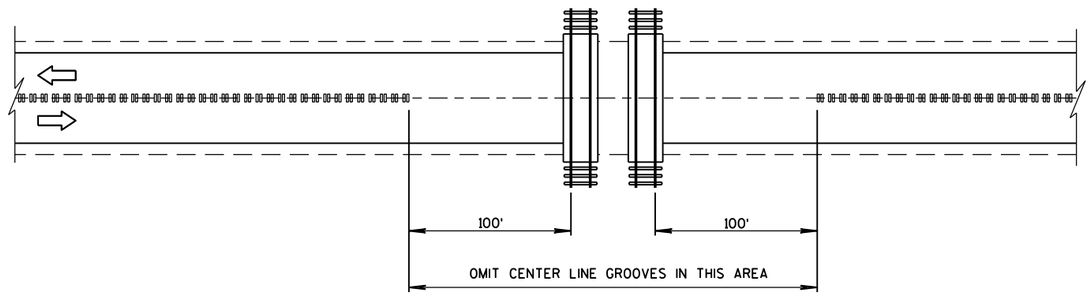


CENTER LINE GROOVES AT DRIVEWAYS (1)

(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



CENTER LINE GROOVES AT BRIDGES



CENTER LINE GROOVES AT RAILROADS

6

S.D.D. 13 A 11-2b

6

S.D.D. 13 A 11-2b

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

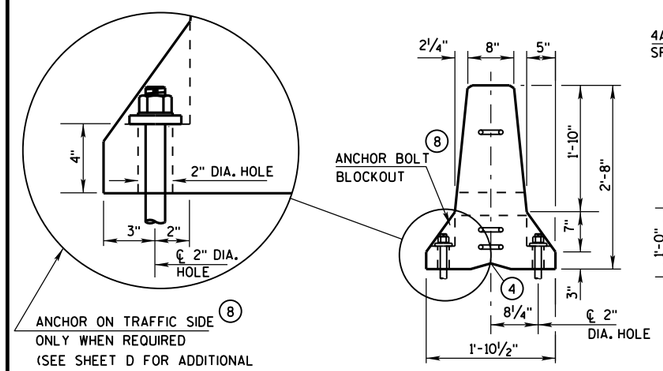
APPROVED

5/15/2013 — DATE

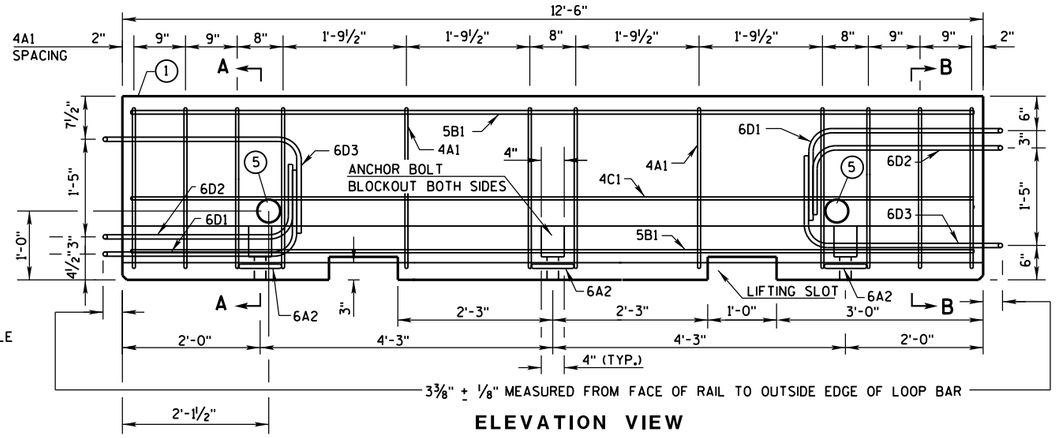
/S/ Jerry H. Zoda — ROADWAY STANDARDS DEVELOPMENT ENGINEER

NT

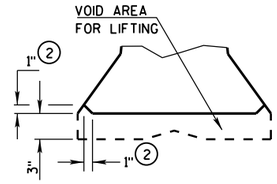
FHWA



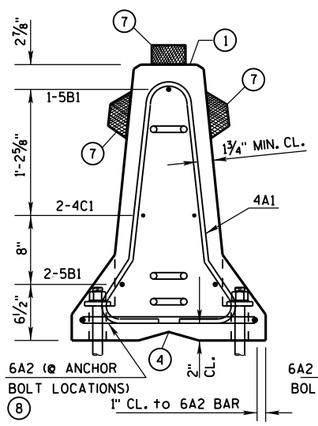
END VIEW



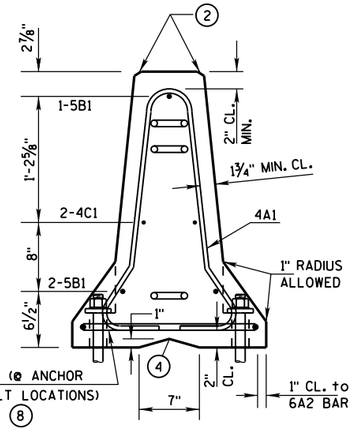
ELEVATION VIEW



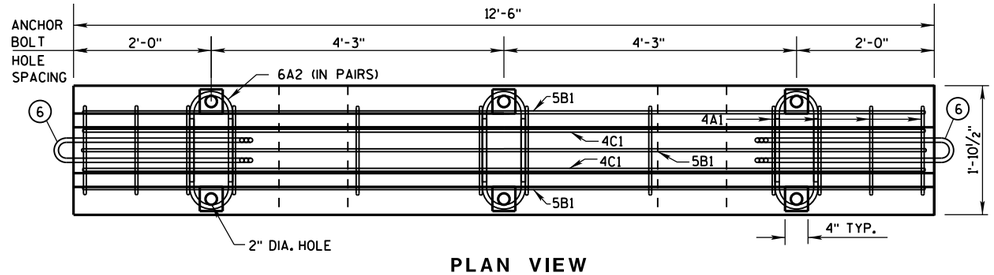
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

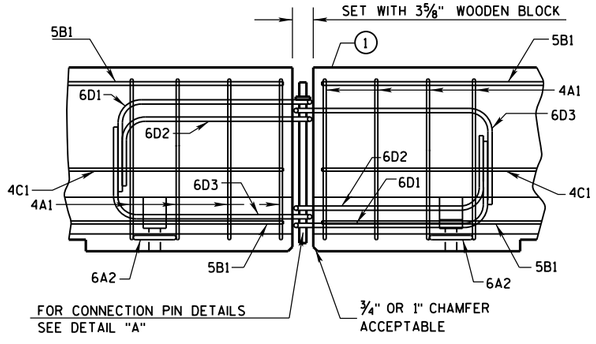


SECTION B-B
(STIRRUP PLACEMENT)

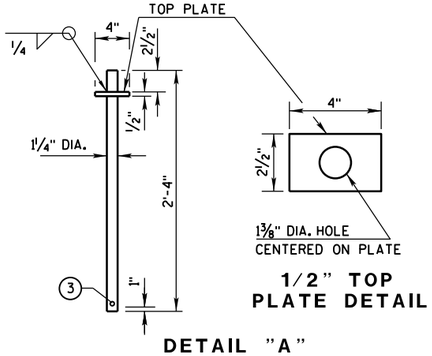


PLAN VIEW

DETAILS OF BARRIER SECTION

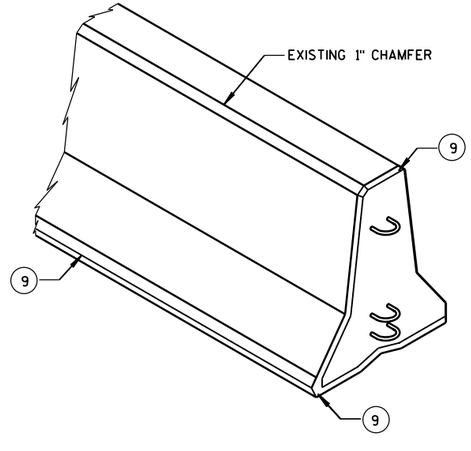


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

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



GENERAL NOTES

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

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRCAST, 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 ¾" 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 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" 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.

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WI CBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

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

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES 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.

(8) SEE SHEET D FOR ANCHORING CRITERIA.

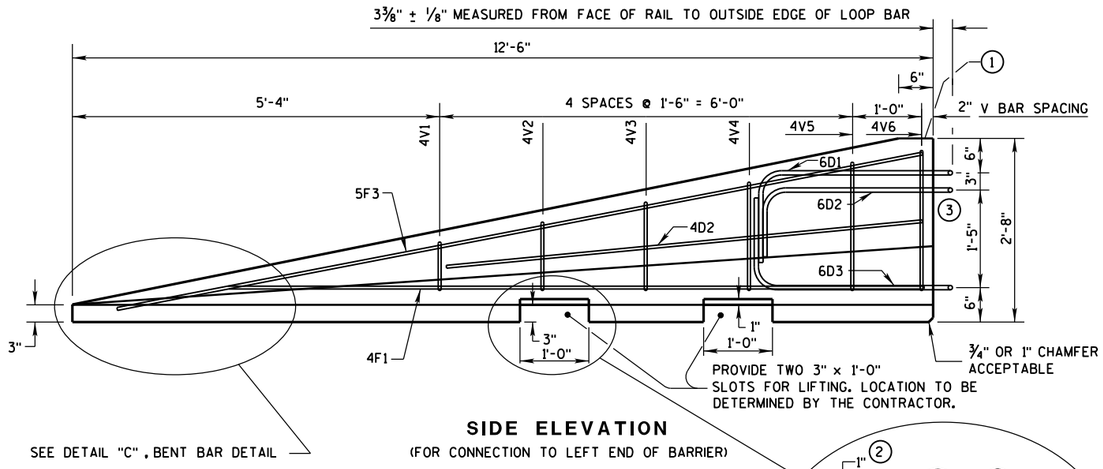
(9) 1" CHAMFER OPTIONAL.

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

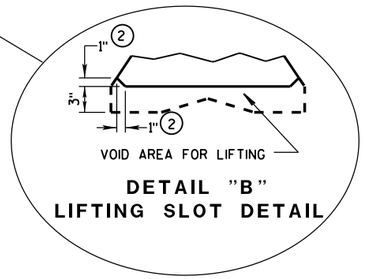
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

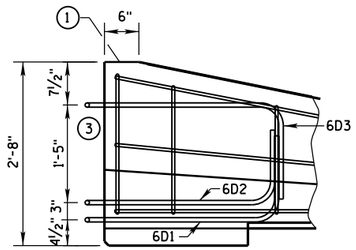
S.D.D. 14 B 7-14a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



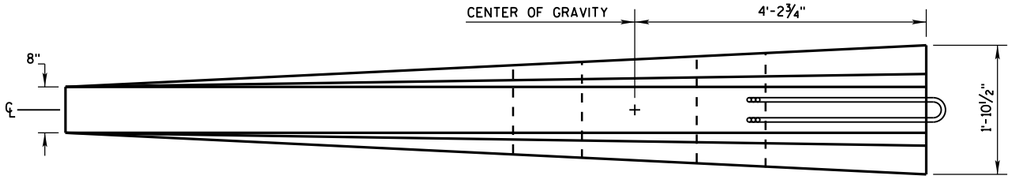
DETAIL "B"
LIFTING SLOT DETAIL



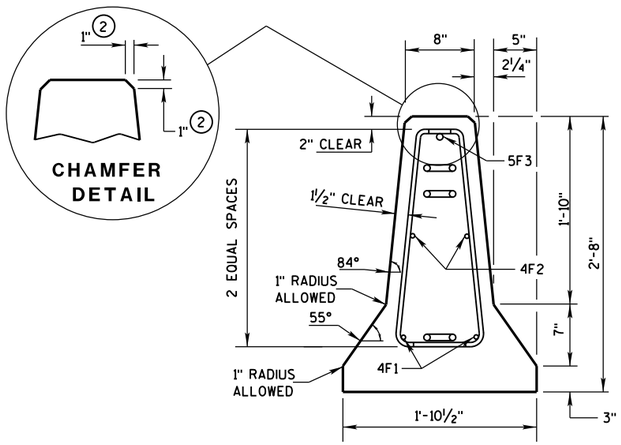
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

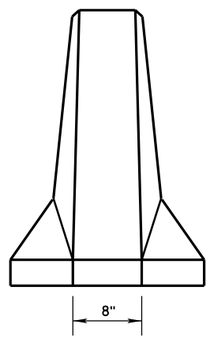
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



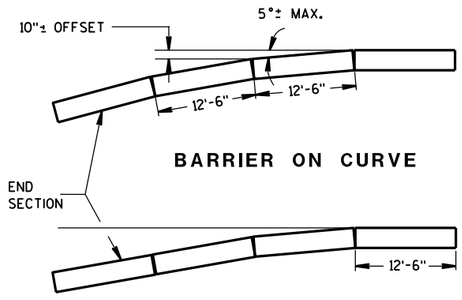
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

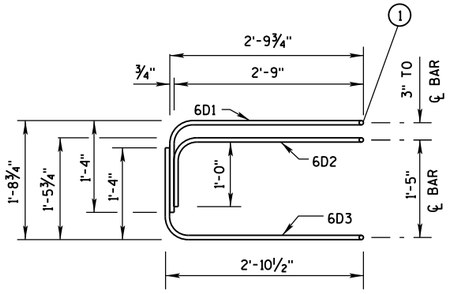
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 7-14b

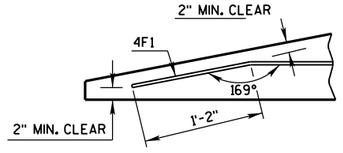
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

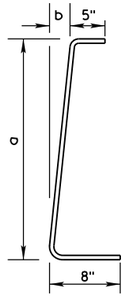
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

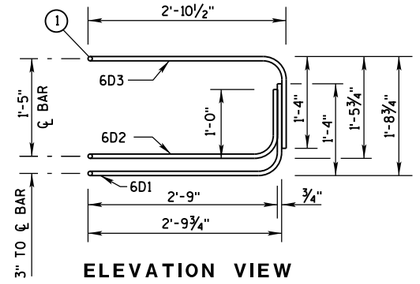
GENERAL NOTES

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

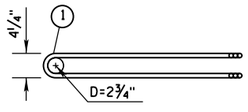
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

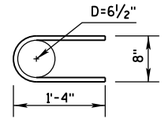
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



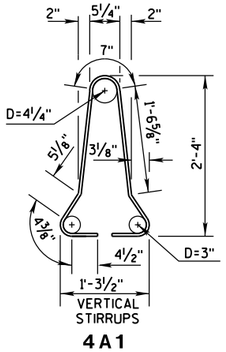
ELEVATION VIEW



PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2



4A1

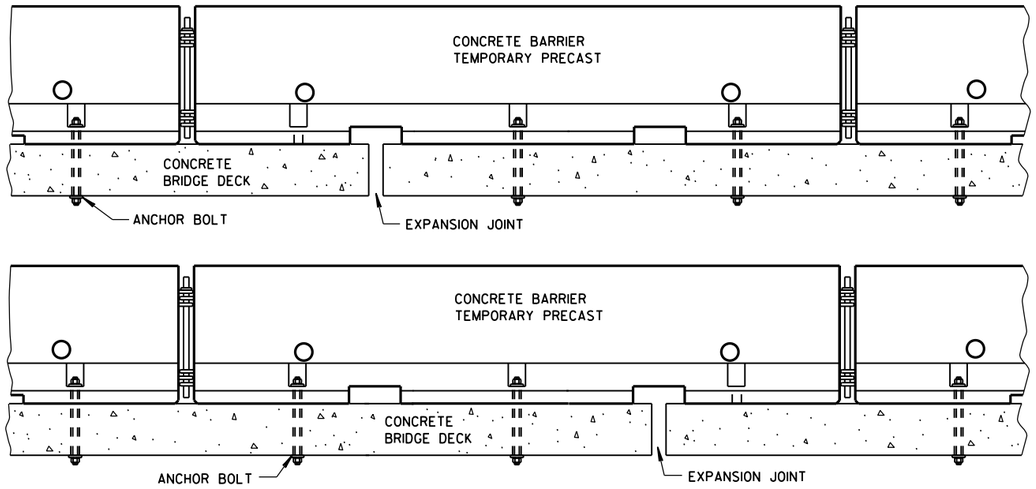
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

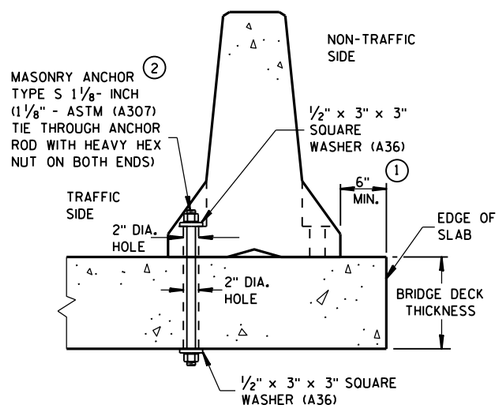
6

S.D.D. 14 B 7-14c



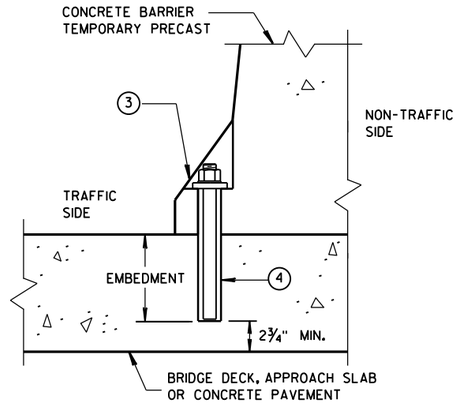
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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 NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT ②

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

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.

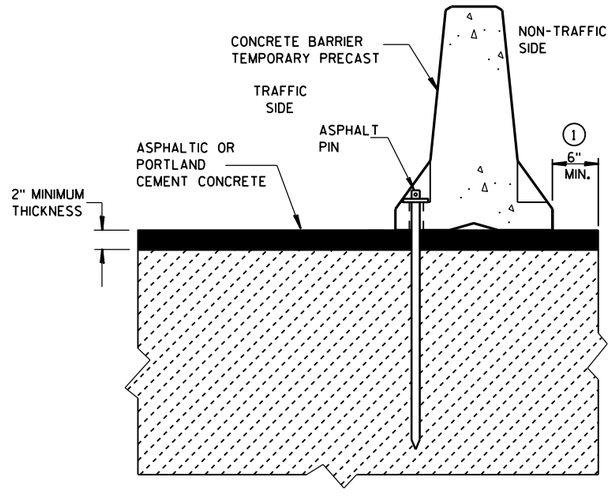
② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

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 1⅛-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 CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.

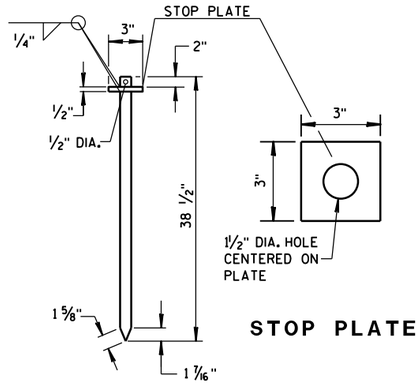
③ 1⅛" DIAMENTER A307 THREADED ROD, ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.

④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

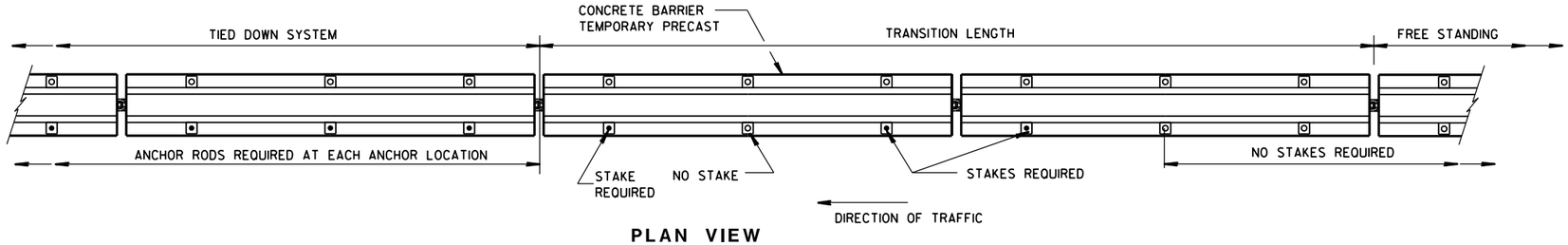
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

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.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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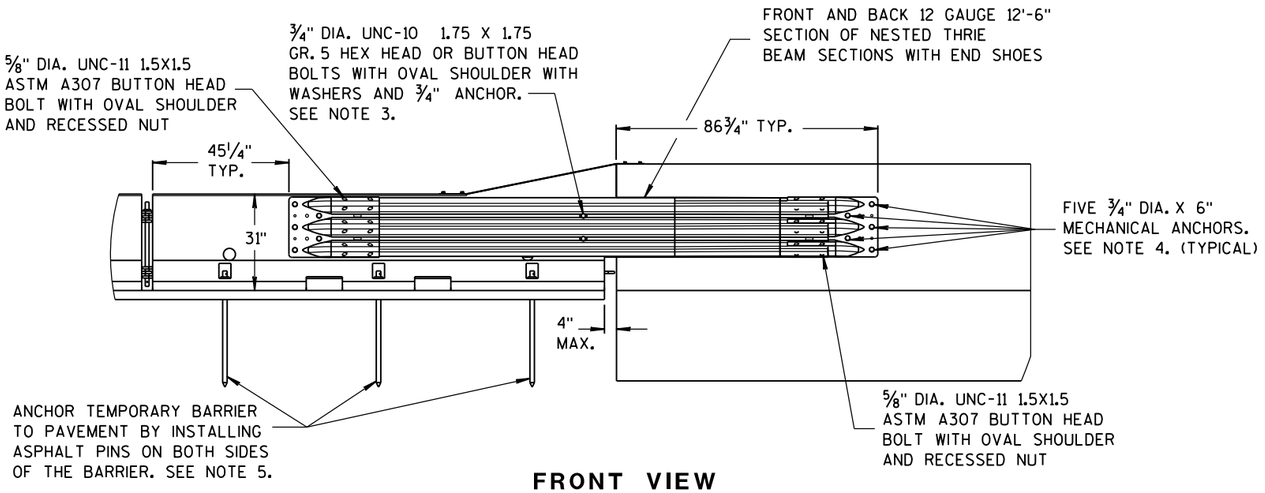
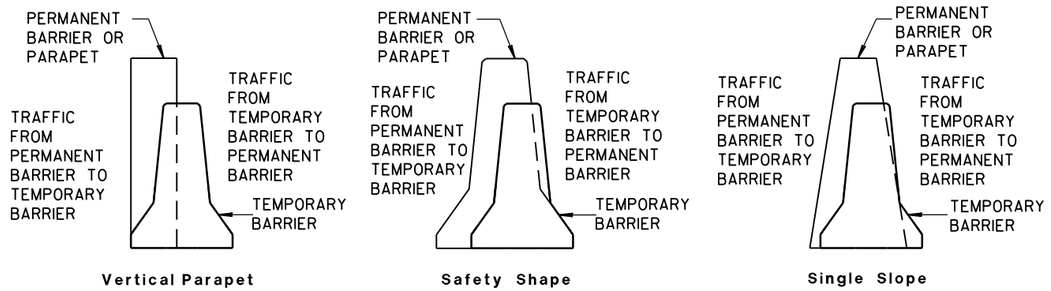
S.D.D. 14 B 7-14d



FRONT VIEW

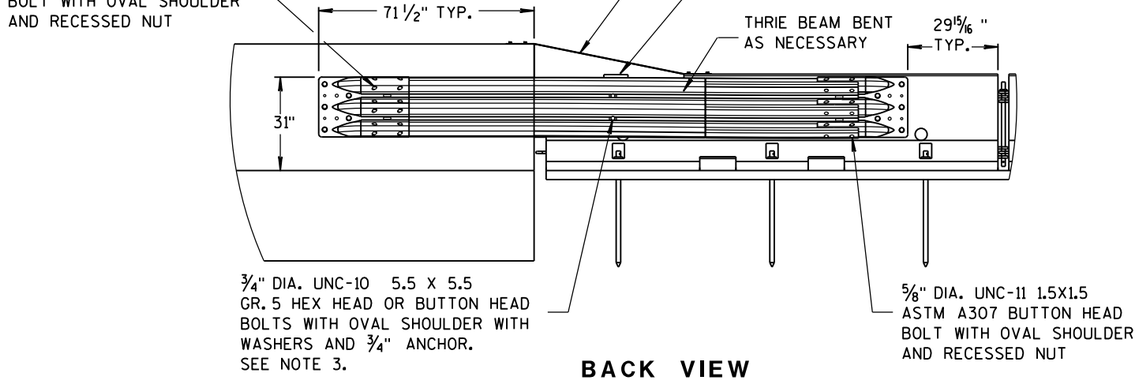


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

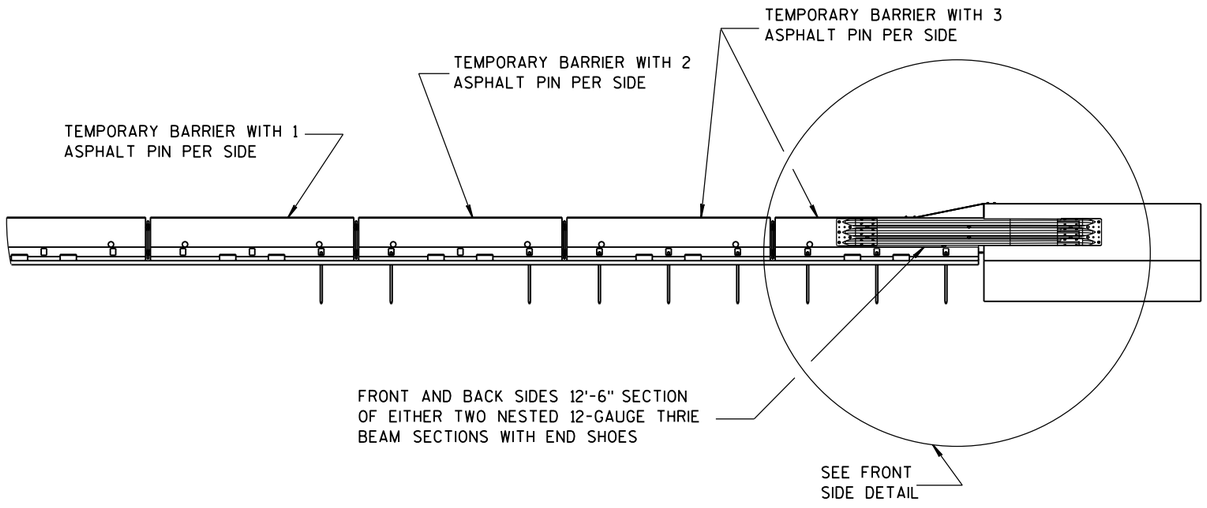
NOTES

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

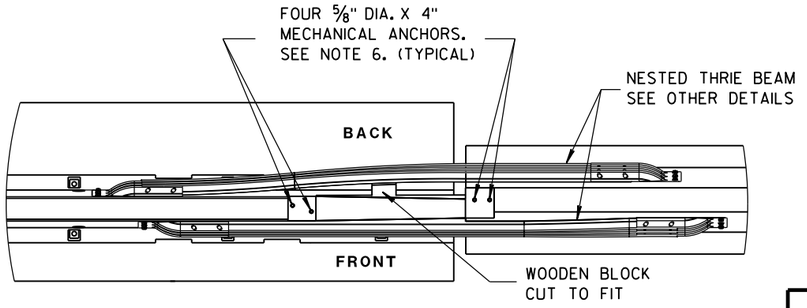
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD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



BACK VIEW



FRONT VIEW



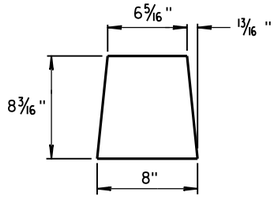
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

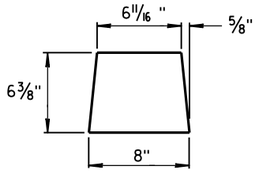
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

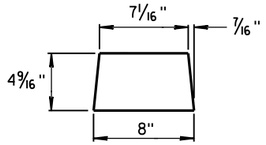
6
S.D.D. 14 B 7-14e



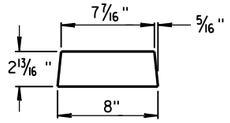
GUSSET 1



GUSSET 2

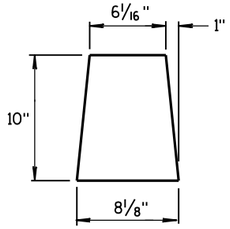


GUSSET 3

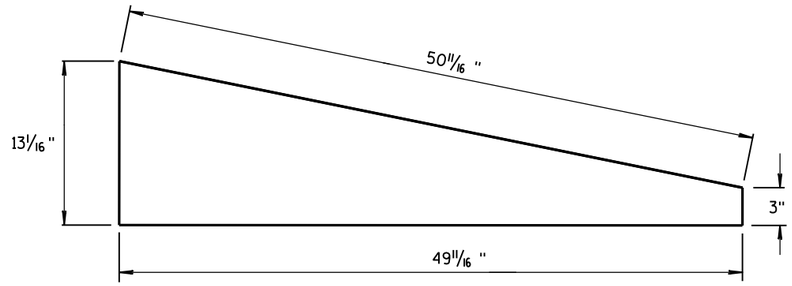


GUSSET 4

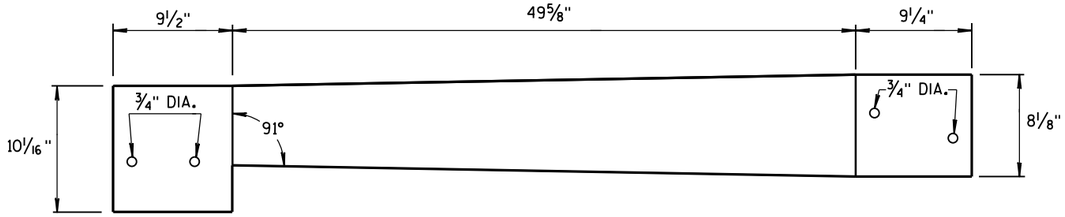
GUSSETS

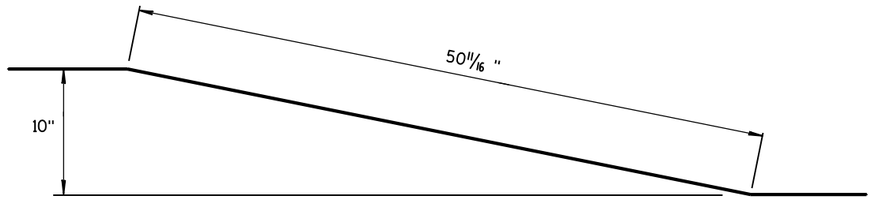


END PLATE



SIDE PLATE

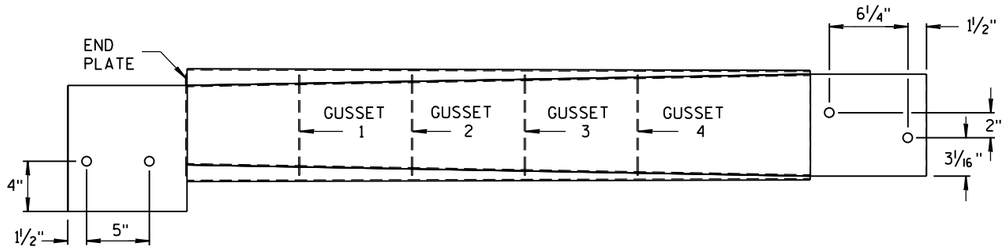


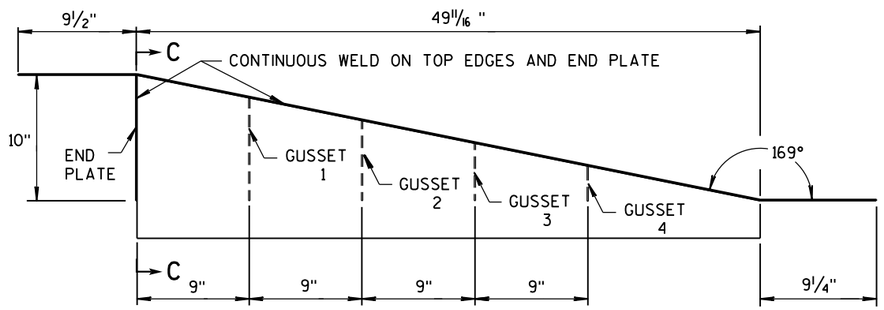


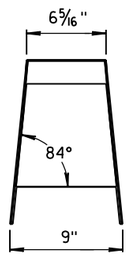
TOP PLATE

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 TRANSPOI

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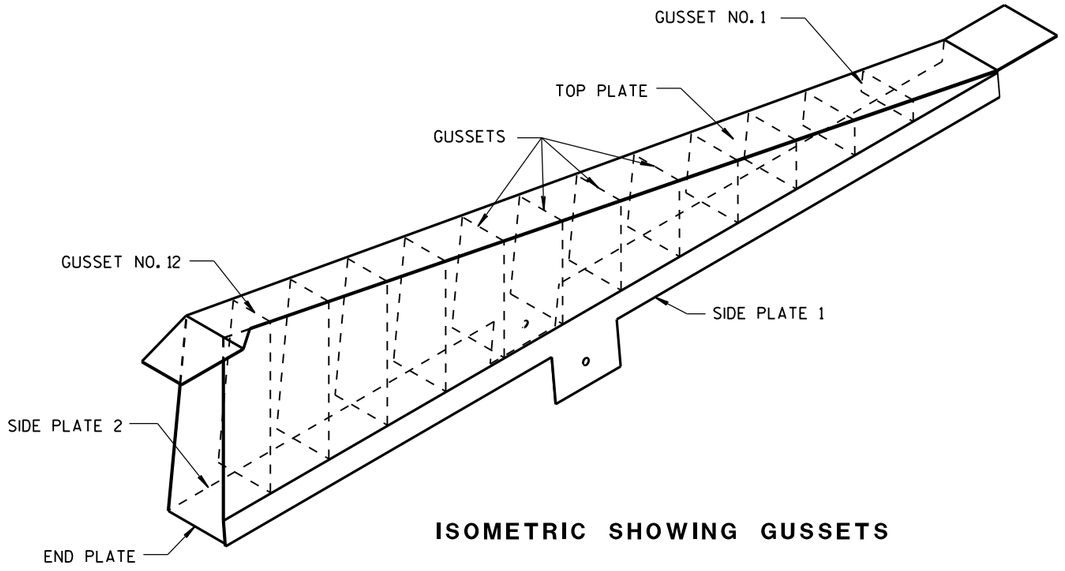
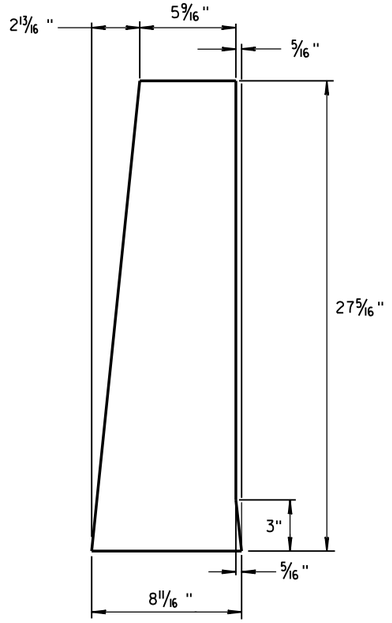
S.D.D. 14 B 7-14f

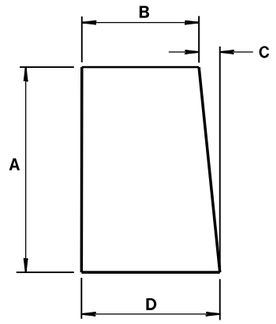


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



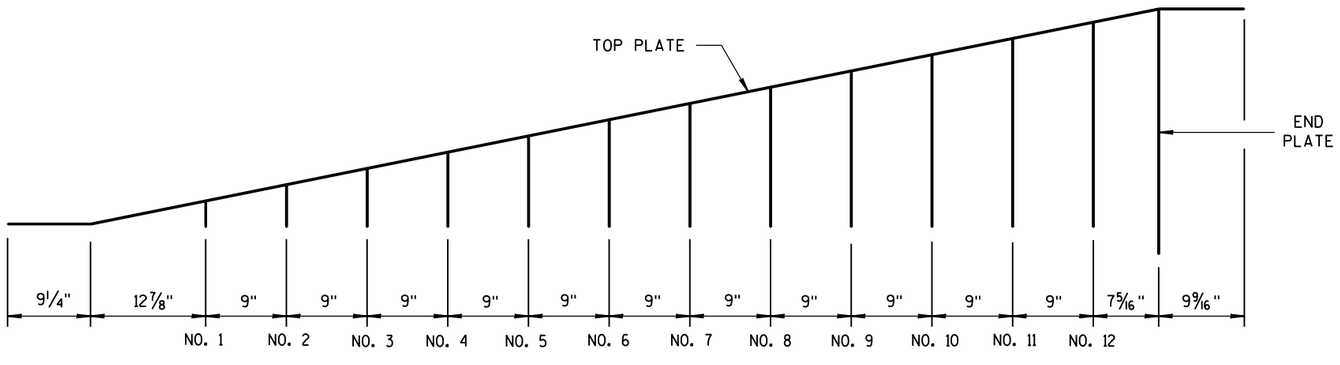
GUSSETS 1 - 12

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 11/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	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 15/16 "	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.



GUSSET LOCATION

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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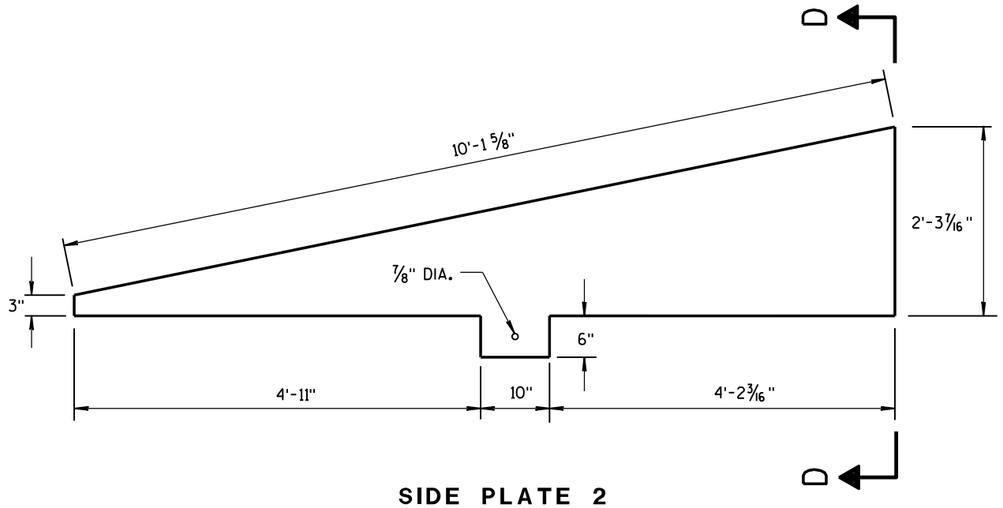
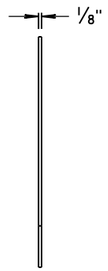
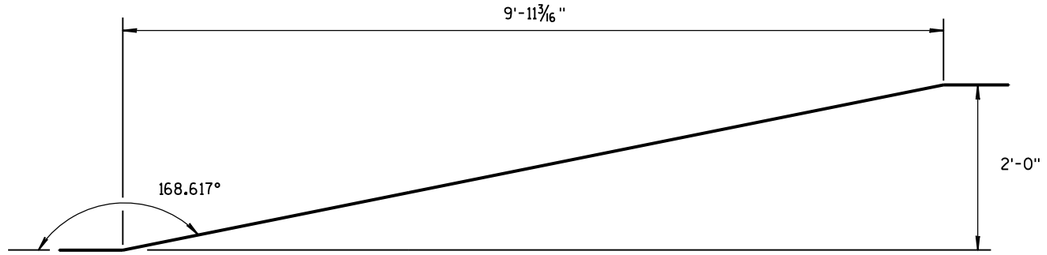
S.D.D. 14 B 7-14g



SIDE PLATE 2

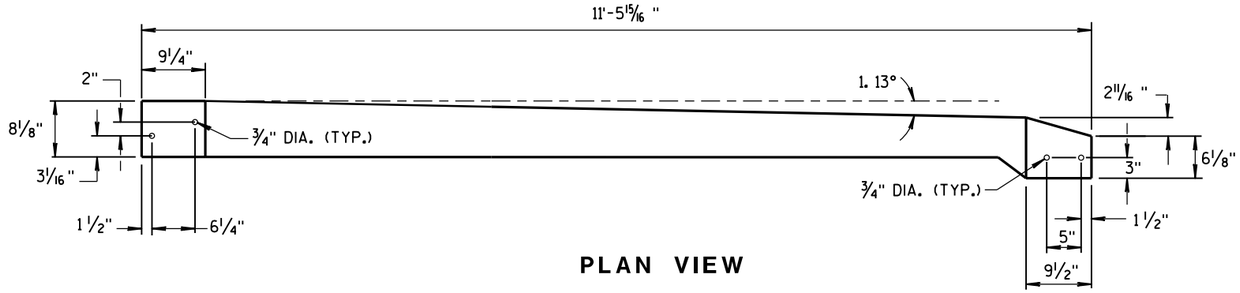


END VIEW



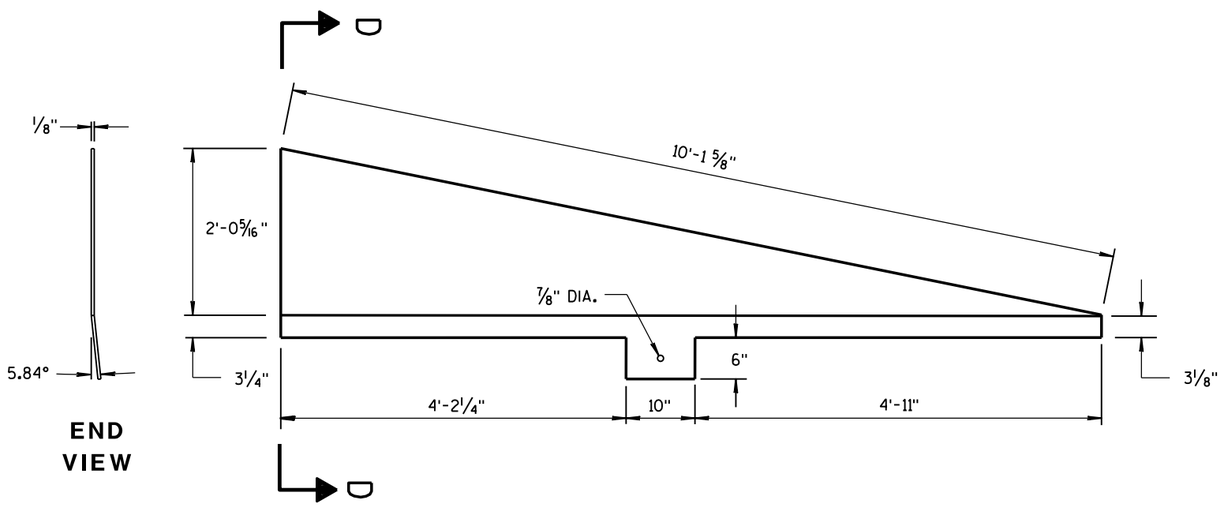
SIDE VIEW

TOP PLATE



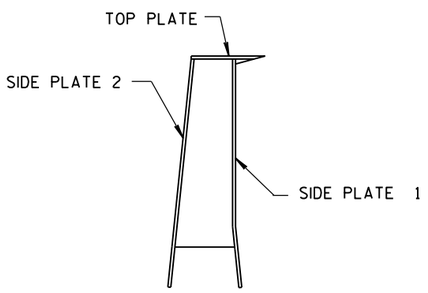
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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. Zoda — ROADWAY STANDARD DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 7-14h

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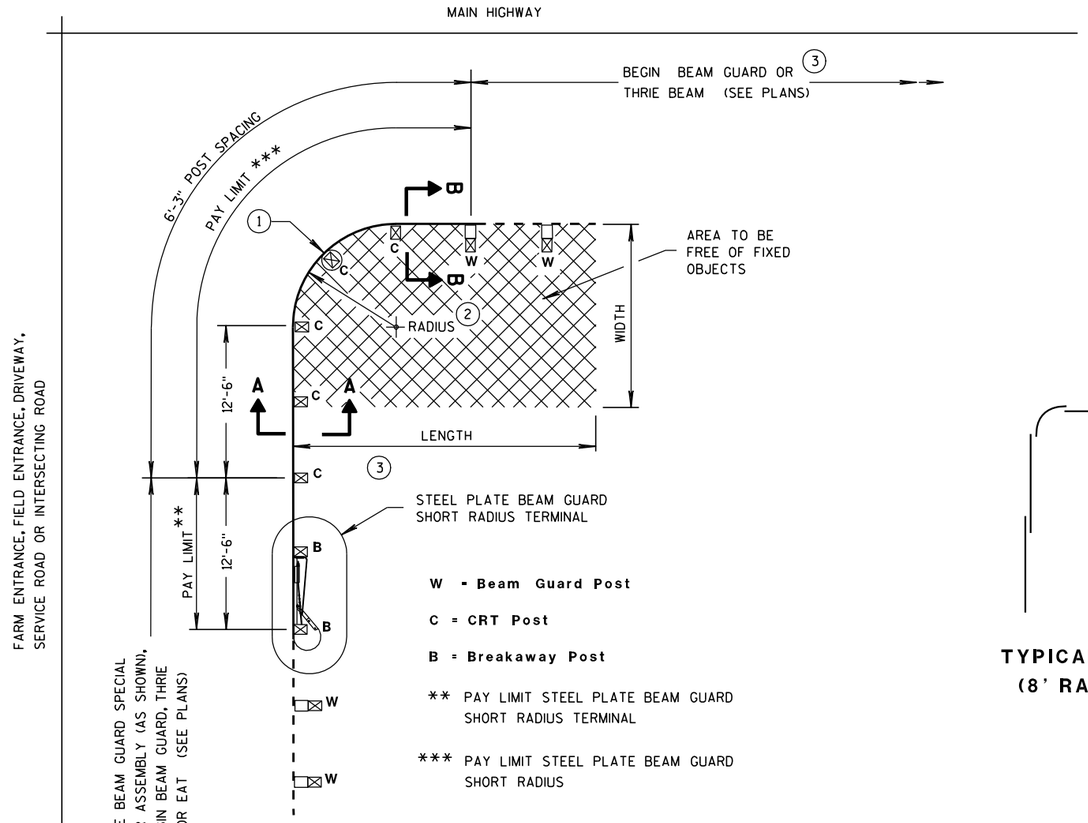
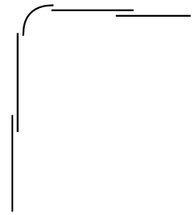
S.D.D. 14 B 7-14h



TYPICAL LAYOUT
(8' RADIUS SHOWN)



TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2. UNLESS NOTED OTHERWISE.

SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

(1) ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.

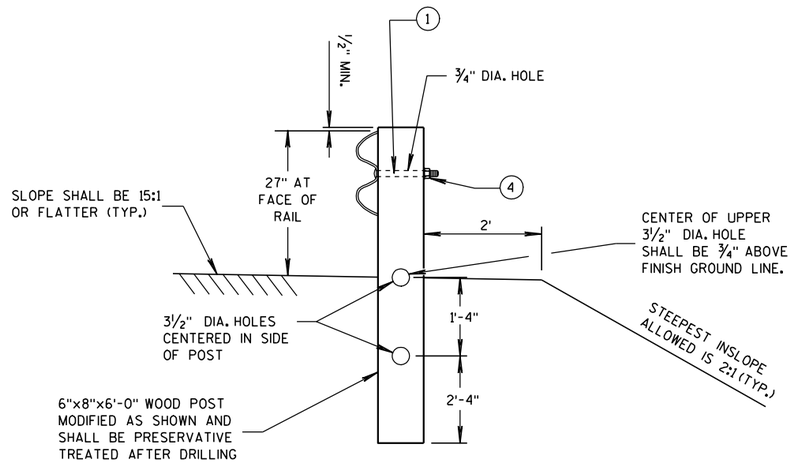
(2) RADIUS FROM 8' - 36'. SEE PLAN.

(3) HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.

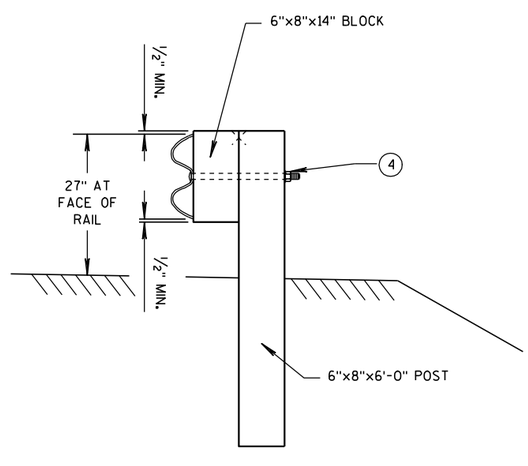
(4) 5/8" ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



SECTION A-A
(CRT POST)



SECTION B-B
(BEAM GUARD POST)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 27-1a

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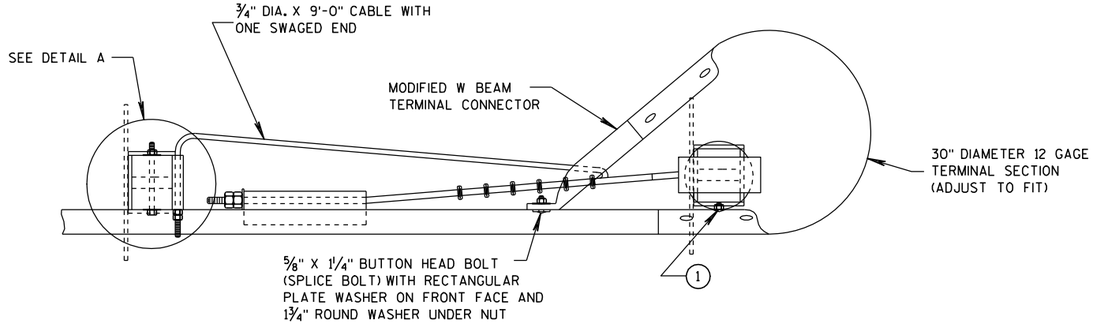
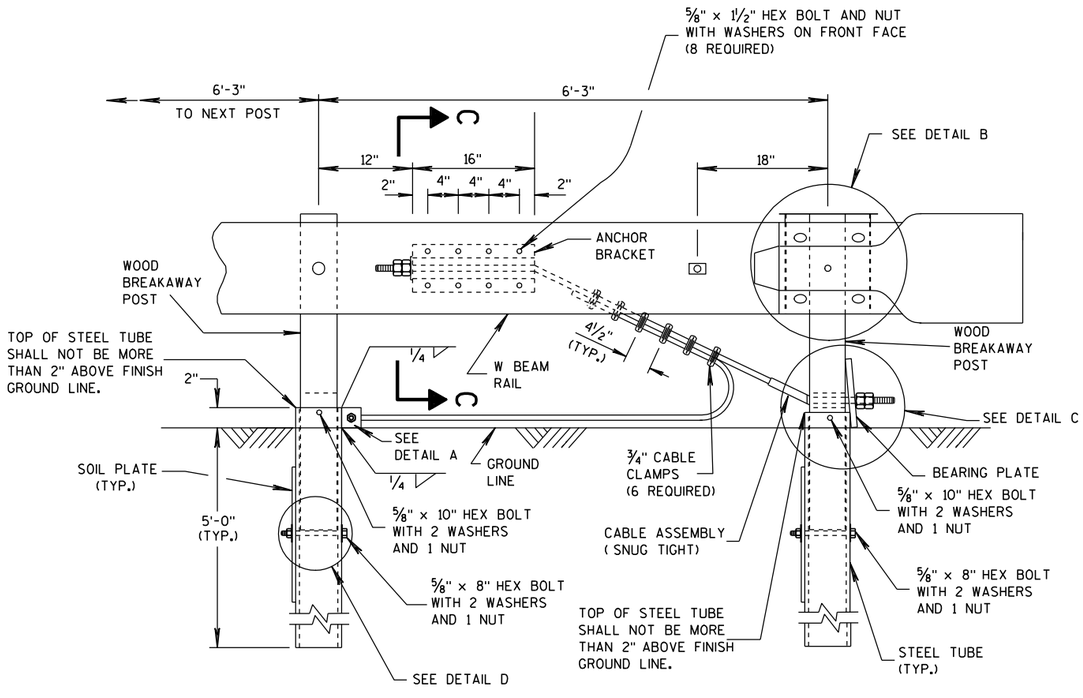
S.D.D. 14 B 27-1a



PLAN VIEW



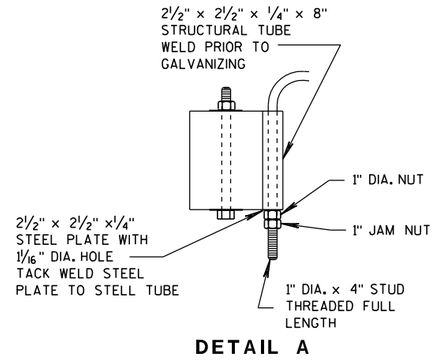
ELEVATION VIEW

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

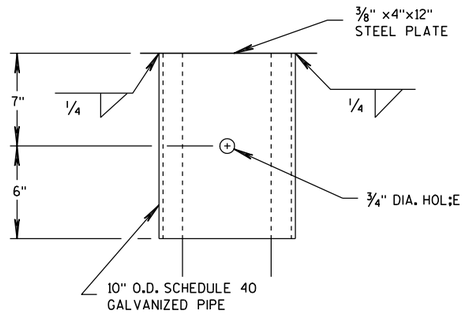
GENERAL NOTES

(1) ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A ⅝" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.

INSTALL GALVANIZED ¾" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



DETAIL A



DETAIL B

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 27-1b

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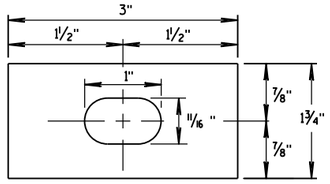
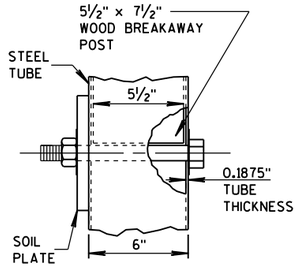
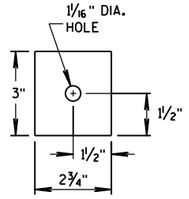
S.D.D. 14 B 27-1b



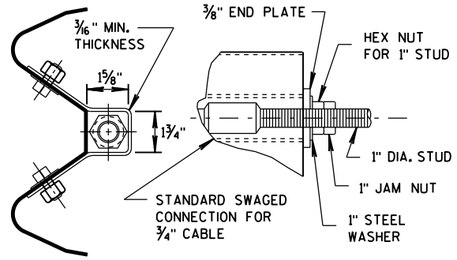
RECTANGULAR PLATE WASHER



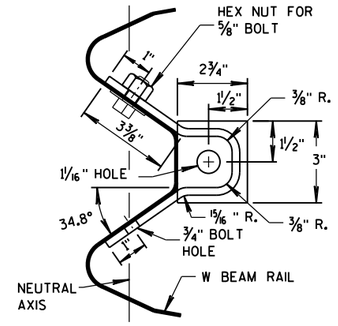
DETAIL D



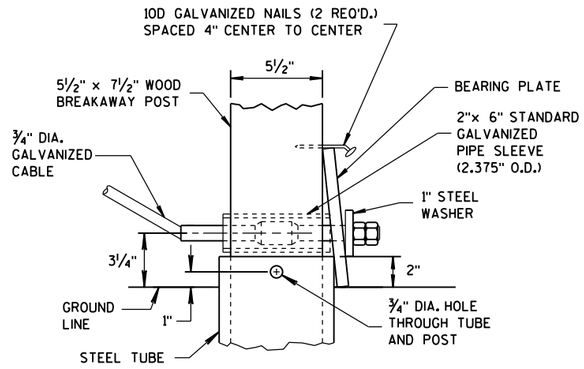
END PLATE



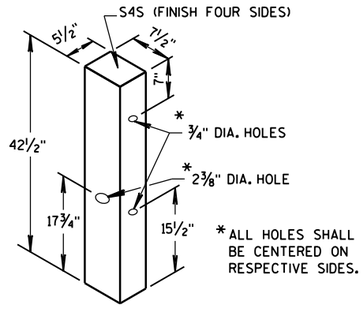
SECTION C-C
(END PLATE REMOVED)



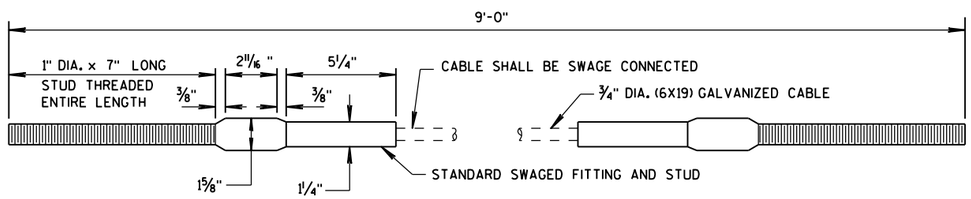
ANCHOR BRACKET



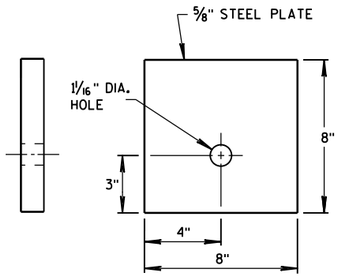
DETAIL C



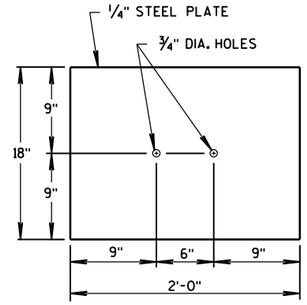
WOOD BREAKAWAY POST



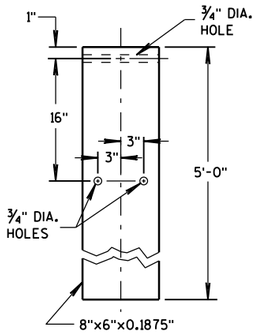
CABLE ASSEMBLY



BEARING PLATE



SOIL PLATE



STEEL TUBE

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/18/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 27-1c

6

S.D.D. 14 B 27-1c

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.

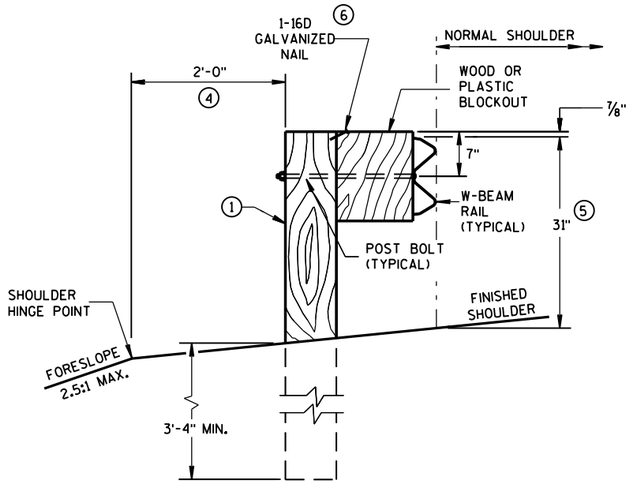
② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH 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).

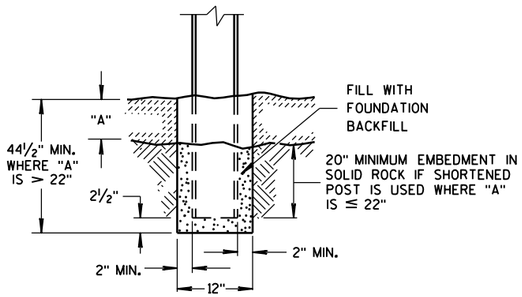
⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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.



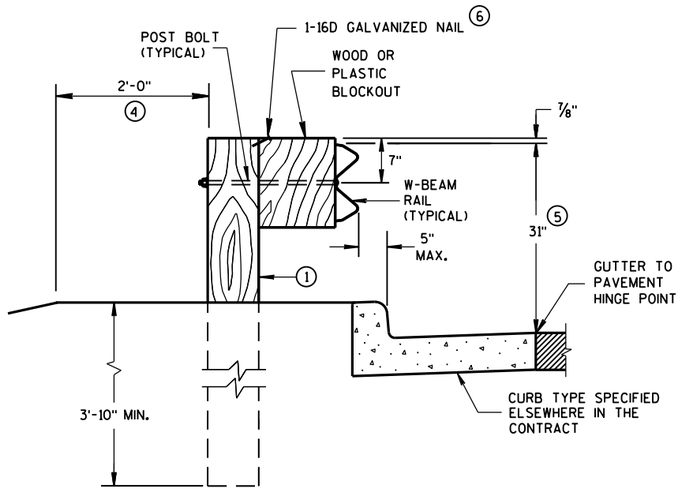
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



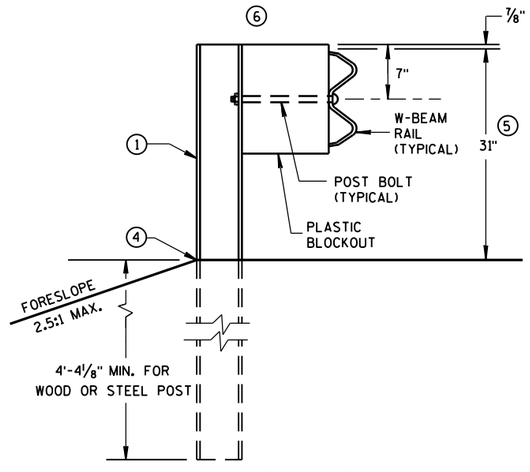
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



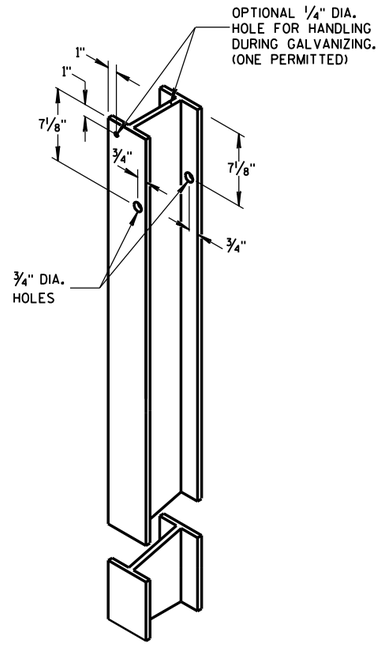
END VIEW

LOCATED ALONG A CURBED ROADWAY

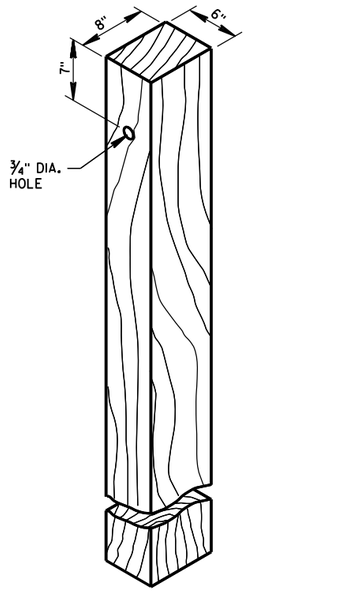


END VIEW

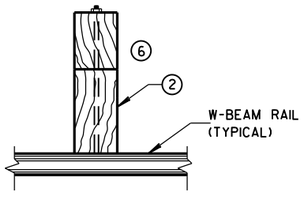
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



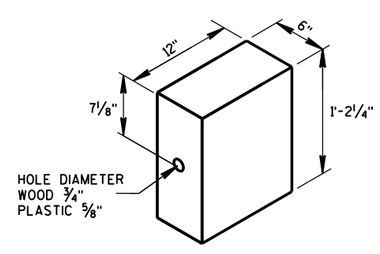
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



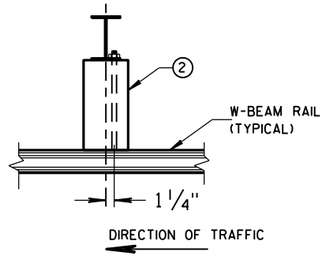
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②



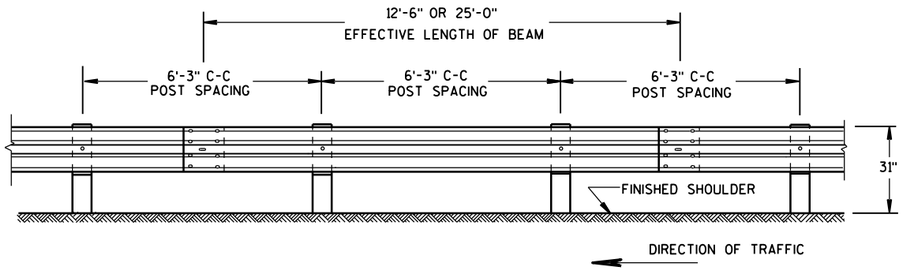
PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

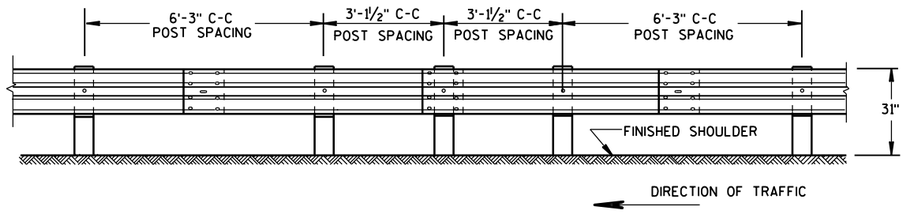
6

S.D.D. 14 B 42-4a



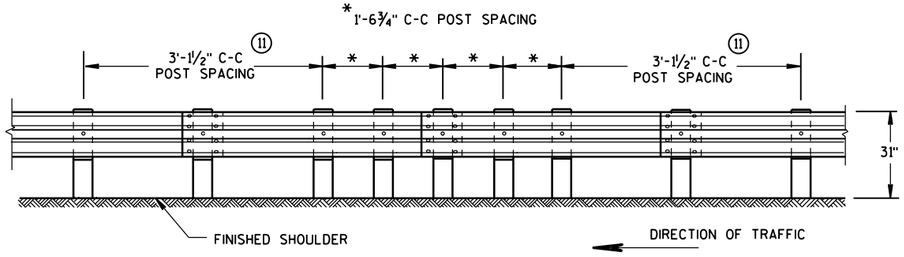
FRONT VIEW

POST SPACING STANDARD INSTALLATION



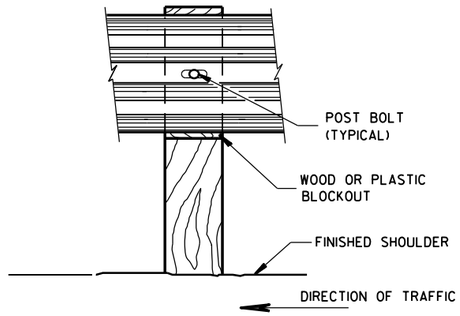
FRONT VIEW

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

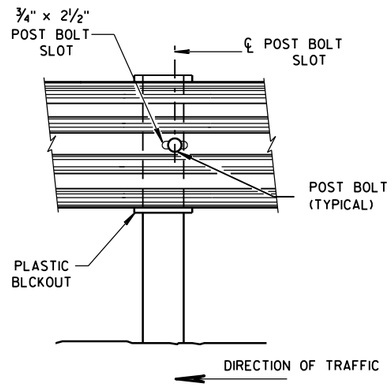


FRONT VIEW

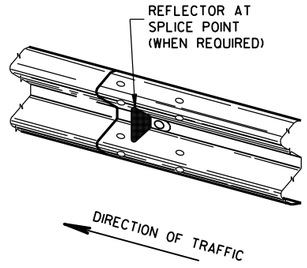
QUARTER POST SPACING (QS)

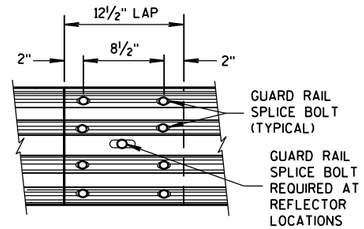


FRONT VIEW AT WOOD POST



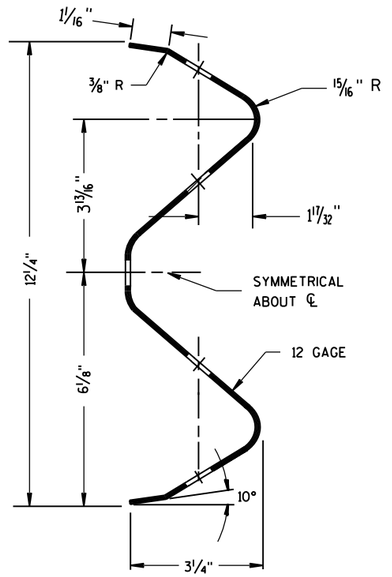
FRONT VIEW AT STEEL POST



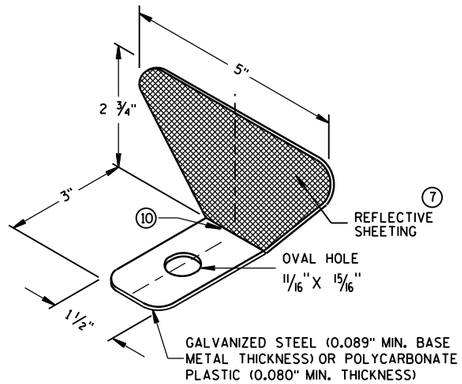


FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ⑦

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° ± 1° 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 ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

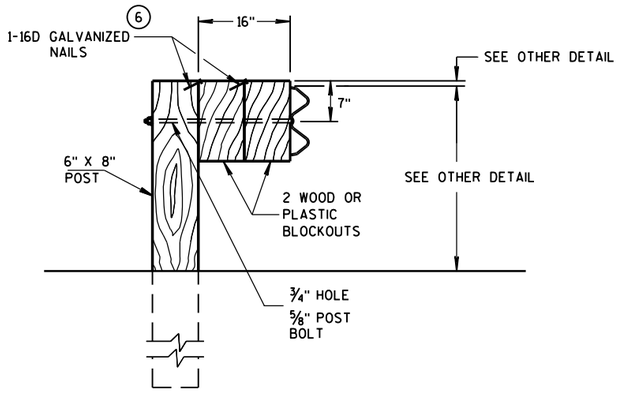
REFLECTOR SPACING ⑧

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

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

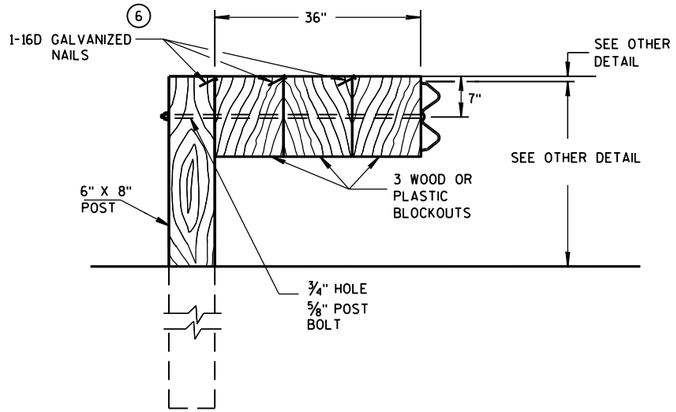
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6
S.D.D. 14 B 42-4b



DETAIL FOR 16" BLOCKOUT DEPTH

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

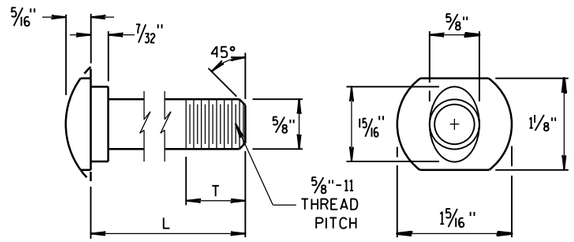


DETAIL FOR 36" BLOCKOUT DEPTH

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

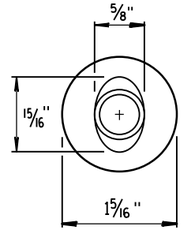
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

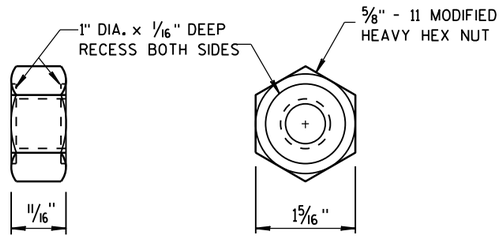


POST BOLT TABLE

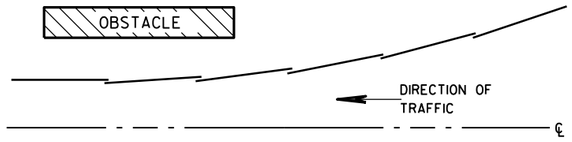
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

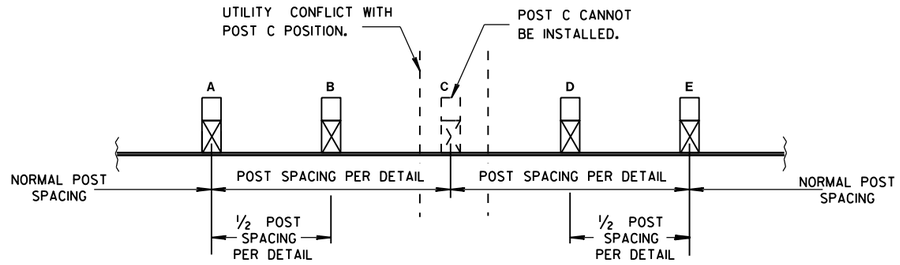


POST BOLT, SPLICE BOLT AND RECESS NUT

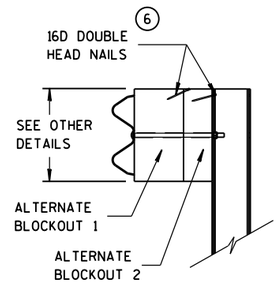


PLAN VIEW

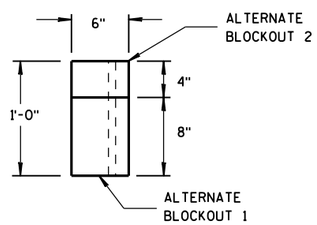
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS 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.

(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

(G) ½" 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.

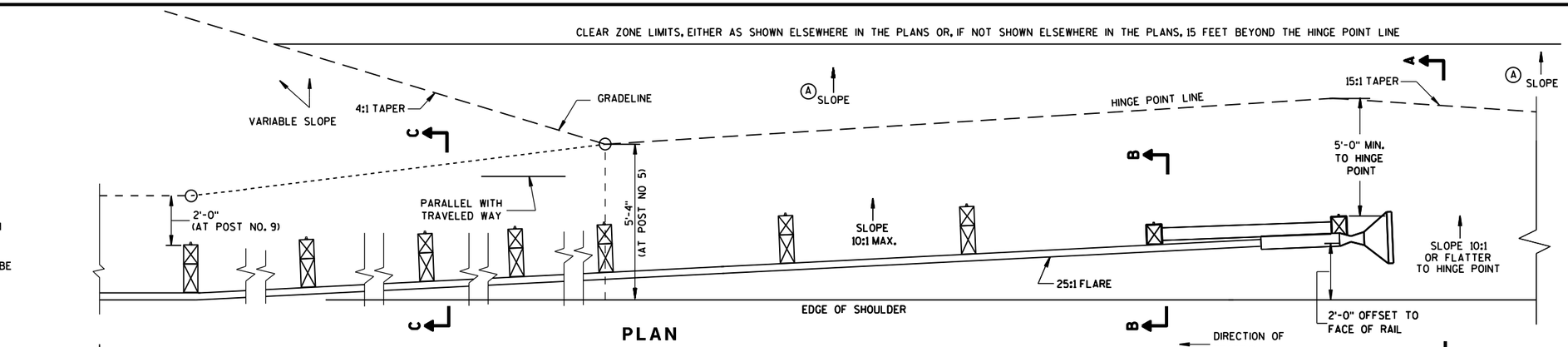
SEE SDD 14B42 FOR MORE INFORMATION.

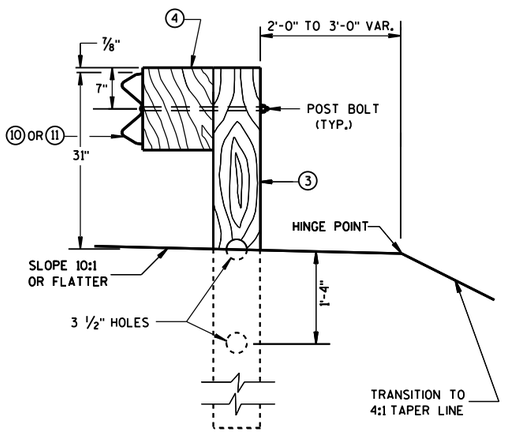
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

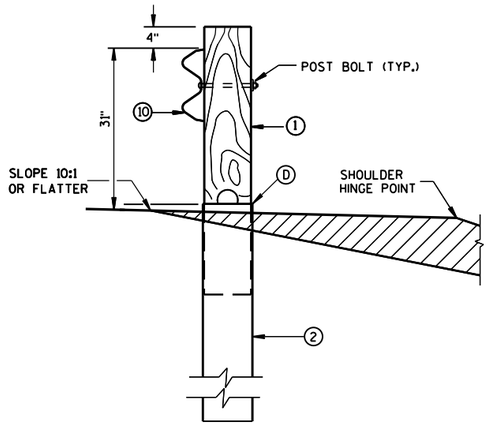
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" 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.

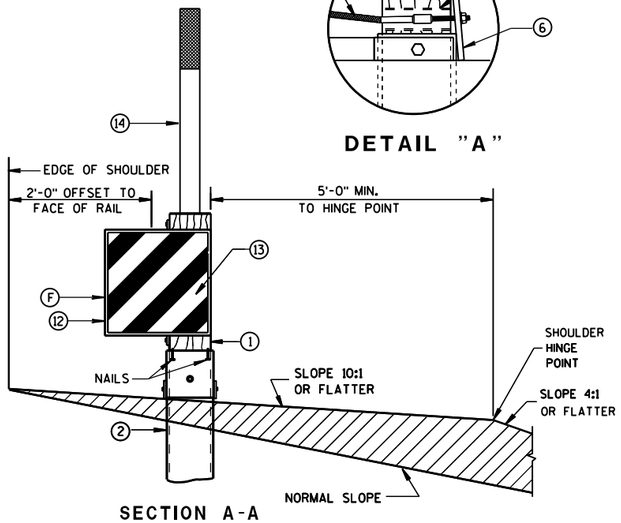




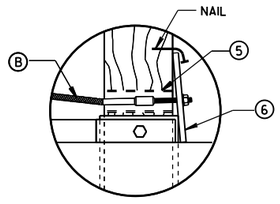
SECTION C-C
TYPICAL AT POST NOS. 3-9



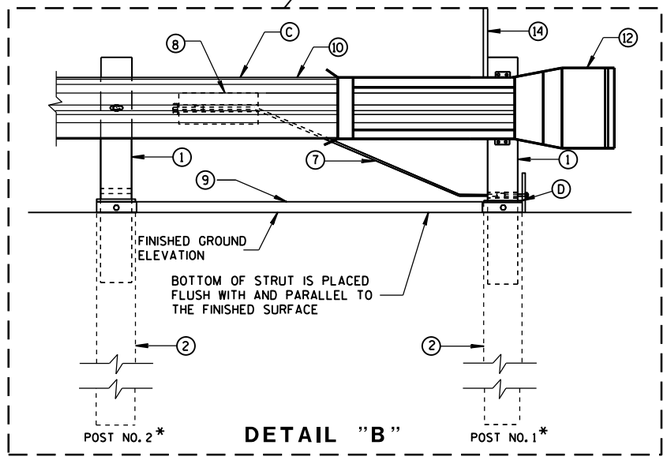
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

S.D.D. 14 B 44-2a

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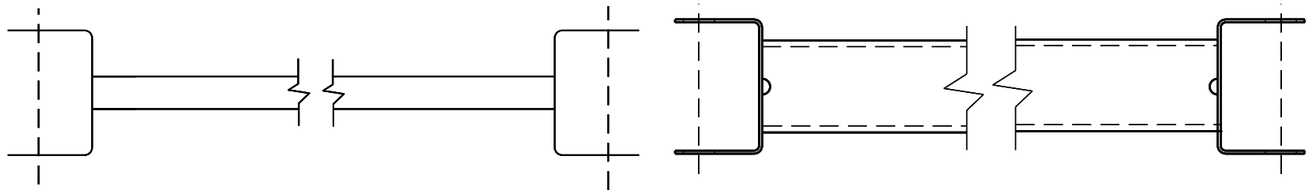
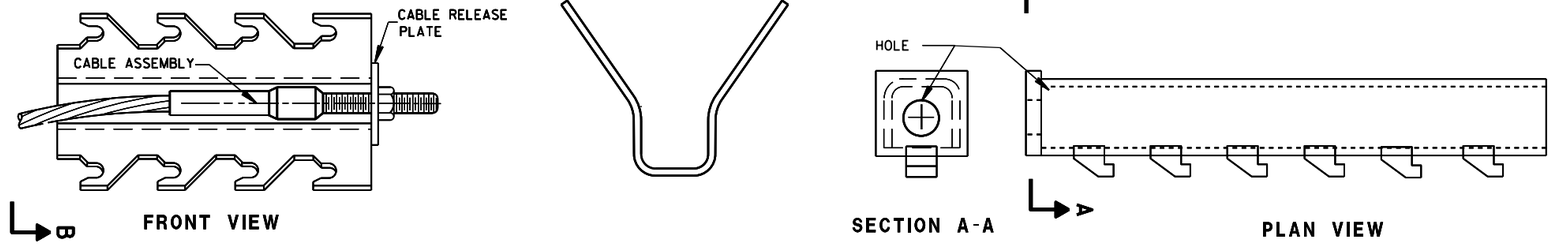


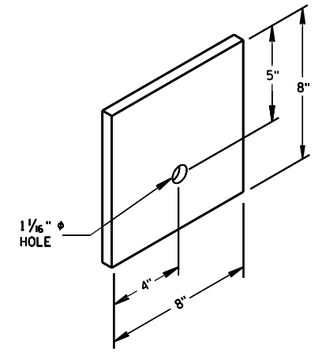
GENERIC GROUND STRUT (9) (H)

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)



GENERIC ANCHOR CABLE BOX (8) (H)



BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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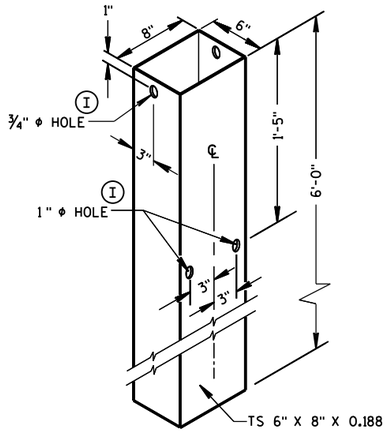
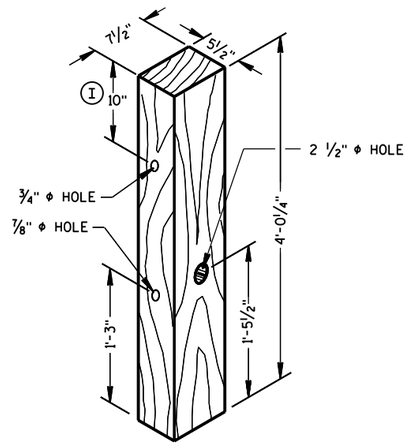
S.D.D. 14 B 44-2b

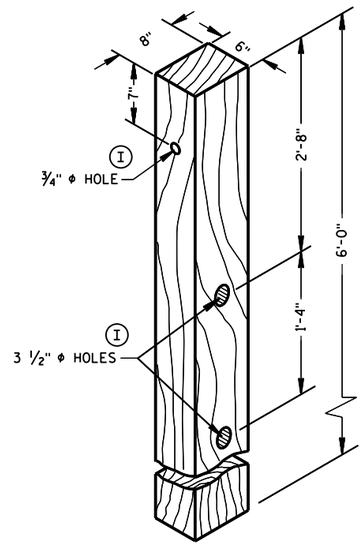


FOUNDATION TUBE (2)



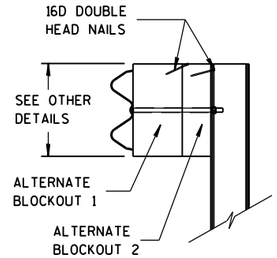
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

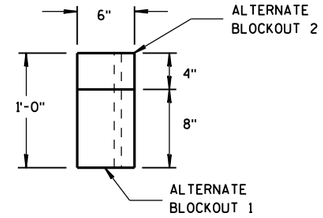


POSTS NUMBER 3-9

WOOD CRT POST (3)

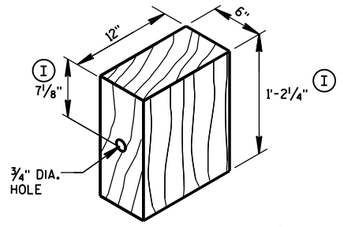


SIDE VIEW



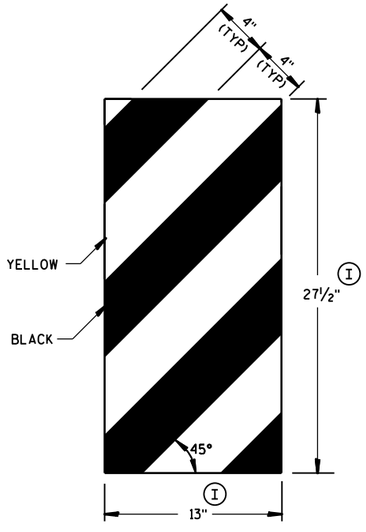
TOP VIEW

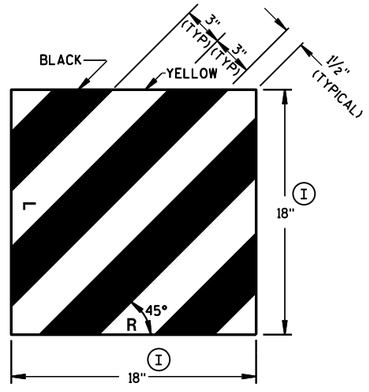
ALTERNATE WOOD BLOCKOUT DETAIL



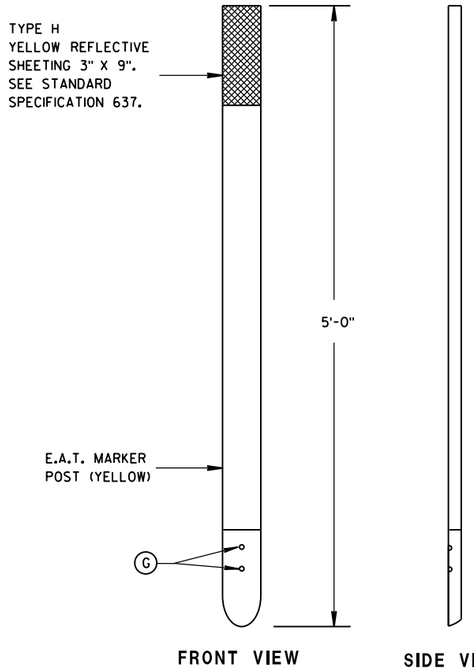
WOOD BLOCKOUT (4)

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





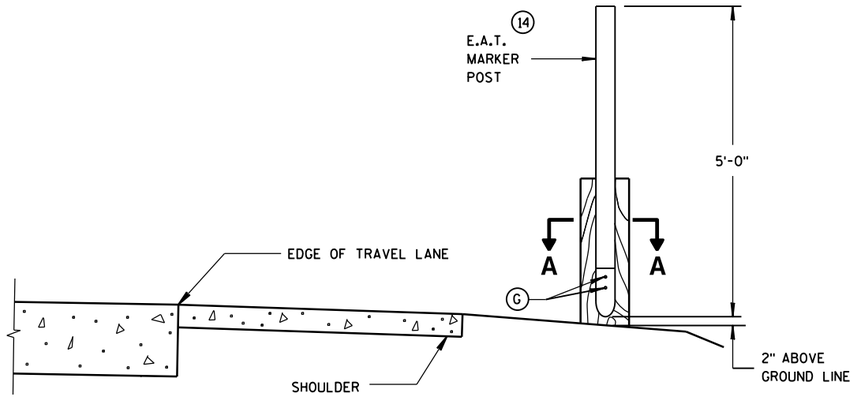
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

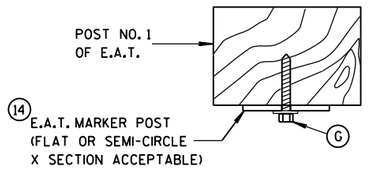
SIDE VIEW

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

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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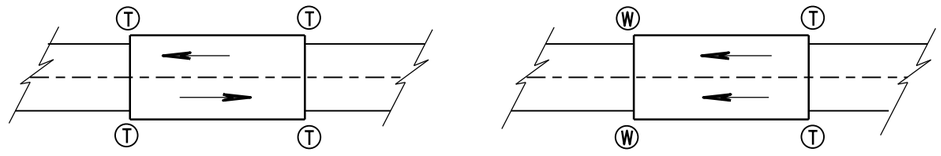
S.D.D. 14 B 44-2c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

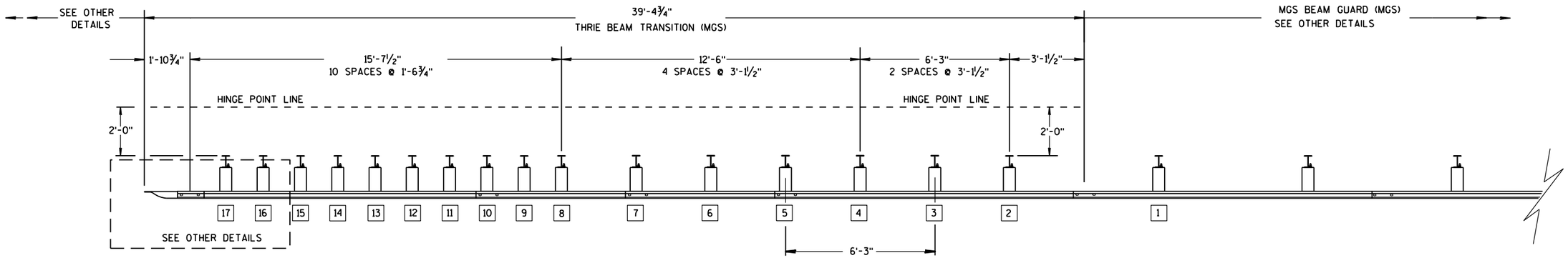
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

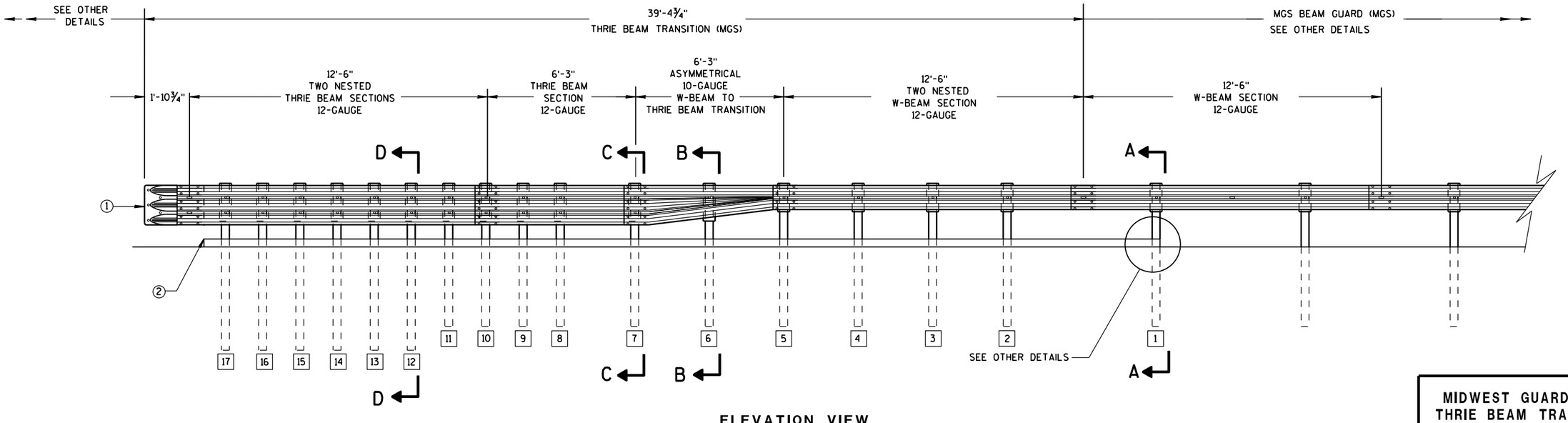
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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 TRANSPOI

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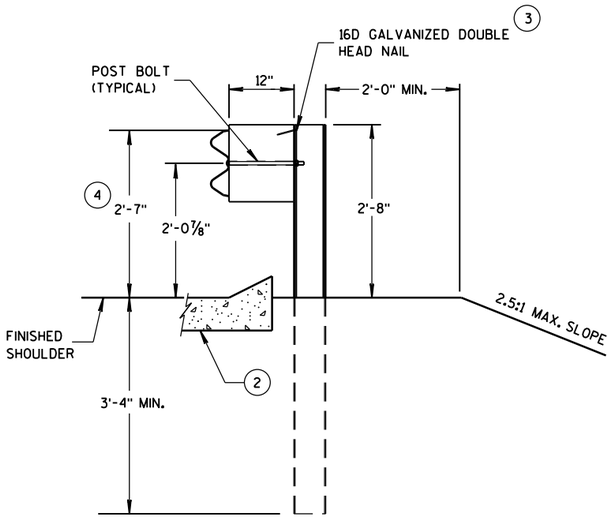
S.D.D. 14 B 45-4a

GENERAL NOTES

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE_FEATURE SEE PLAN FOR INFORMATION.

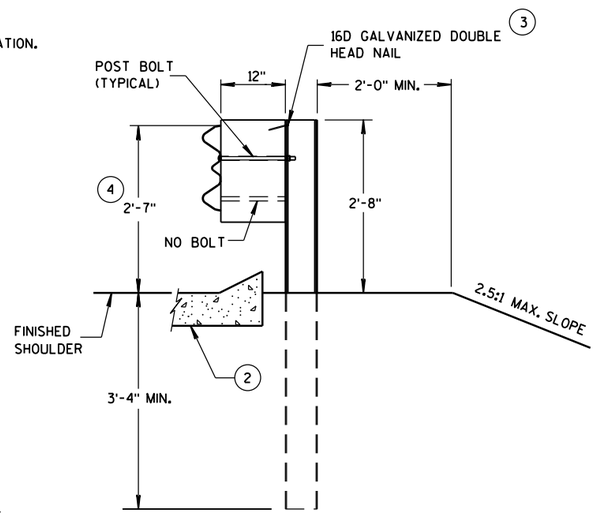
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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



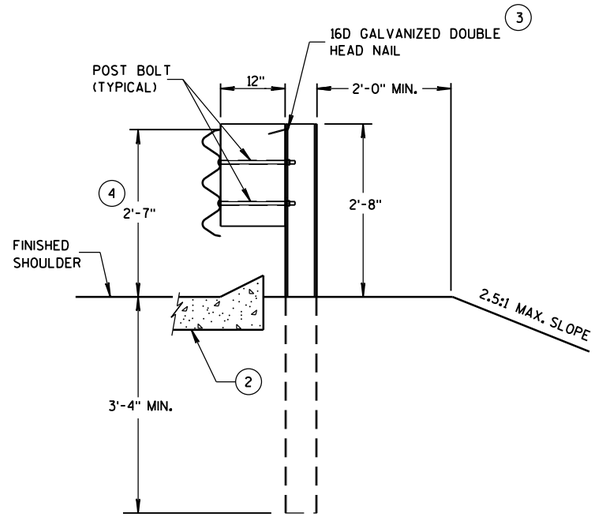
SECTION A-A

POSTS 1-5



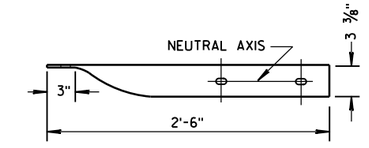
SECTION B-B

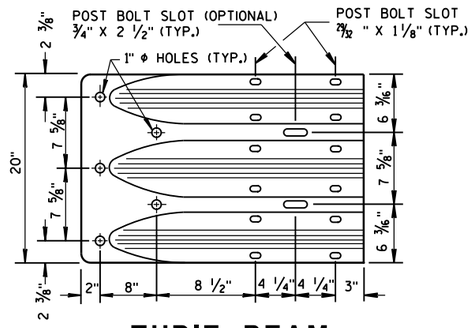
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

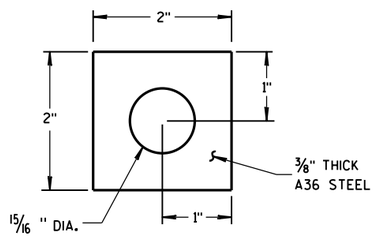
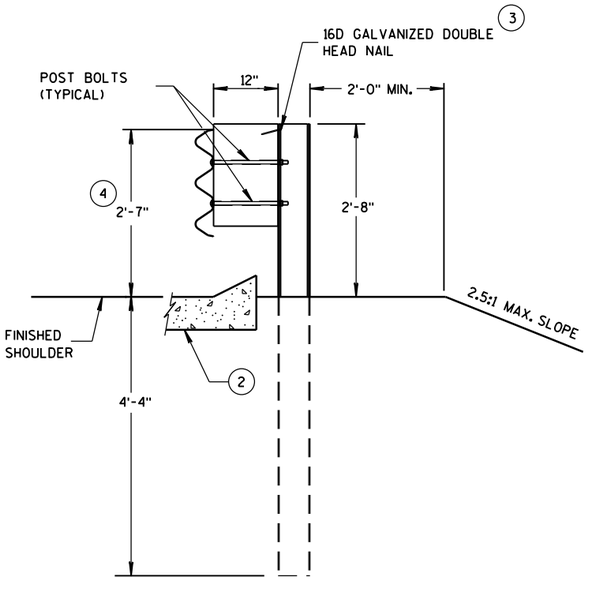
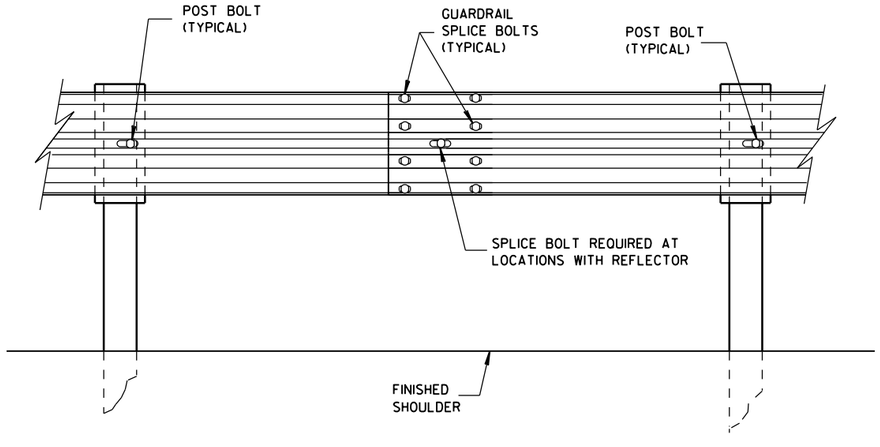


PLATE WASHER DETAIL

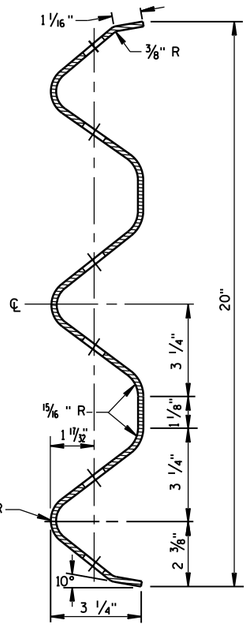


SECTION D-D

POSTS 12-17



SPLICE DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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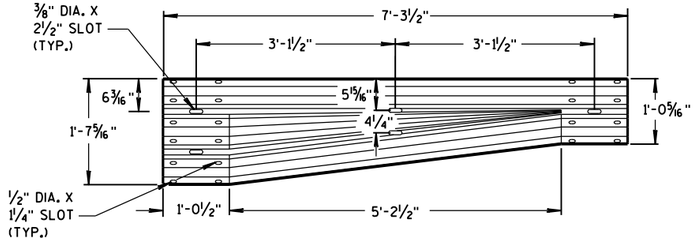
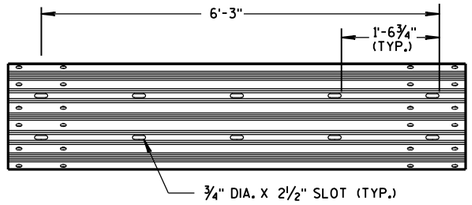
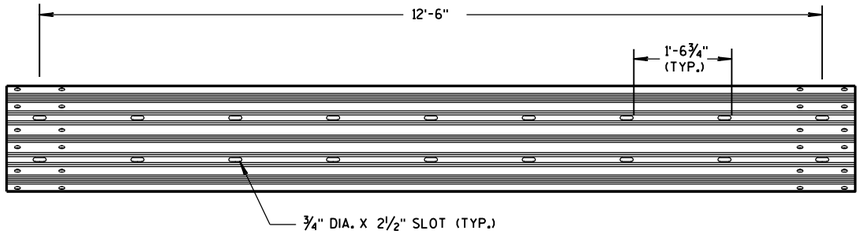
S.D.D. 14 B 45-4b



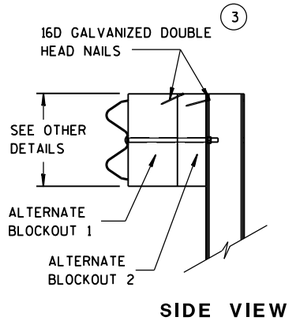
W-BEAM TO THRIE BEAM TRANSITION SECTION



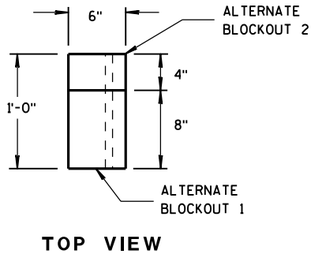
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

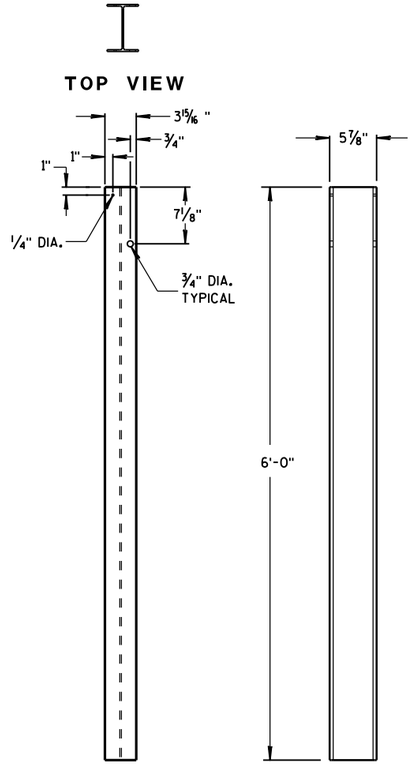


SIDE VIEW



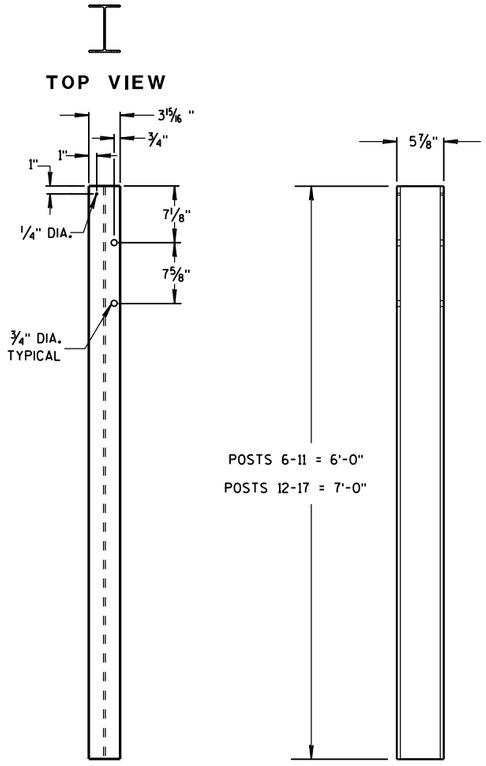
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



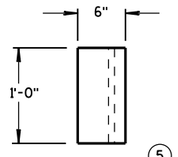
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5

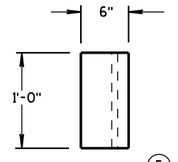


FRONT VIEW SIDE VIEW

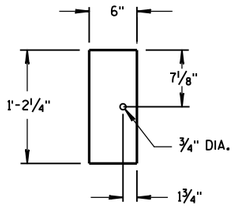
STEEL POSTS 6-17



TOP VIEW (5)

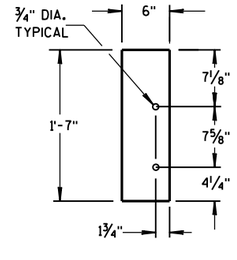


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



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 TRANSPOR

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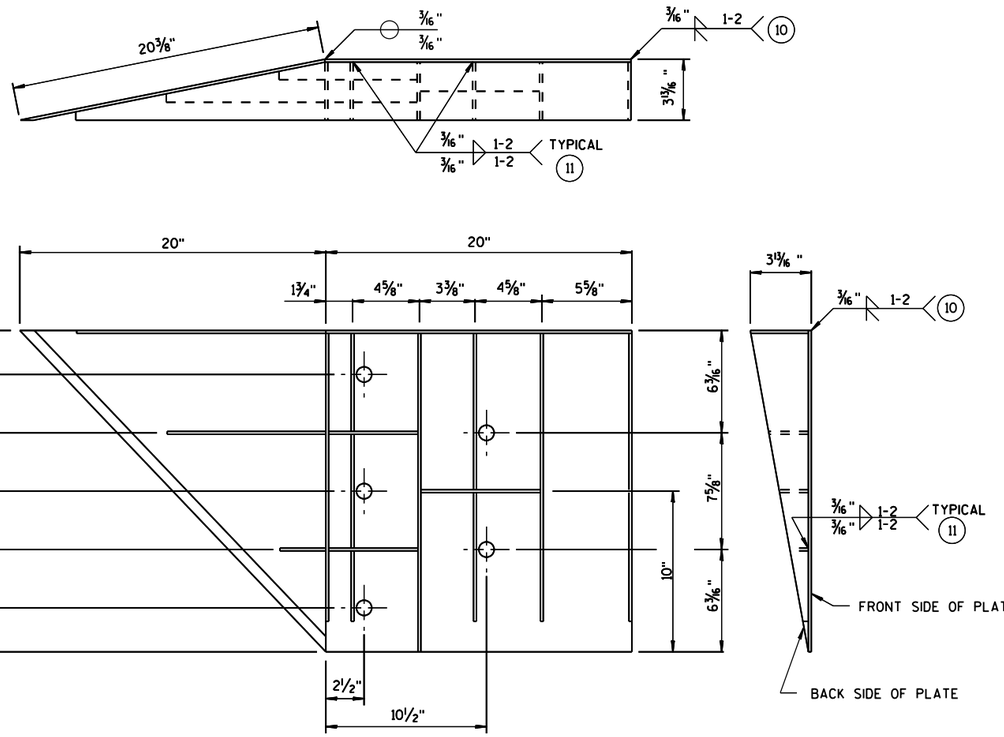
S.D.D. 14 B 45-4c
S.D.D. 14 B 45-4c



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(10) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

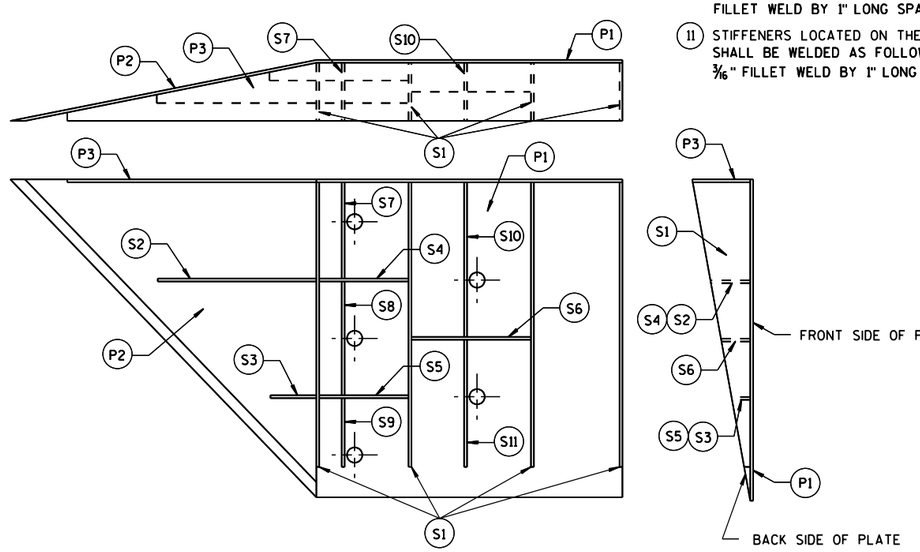


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 3/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 1/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

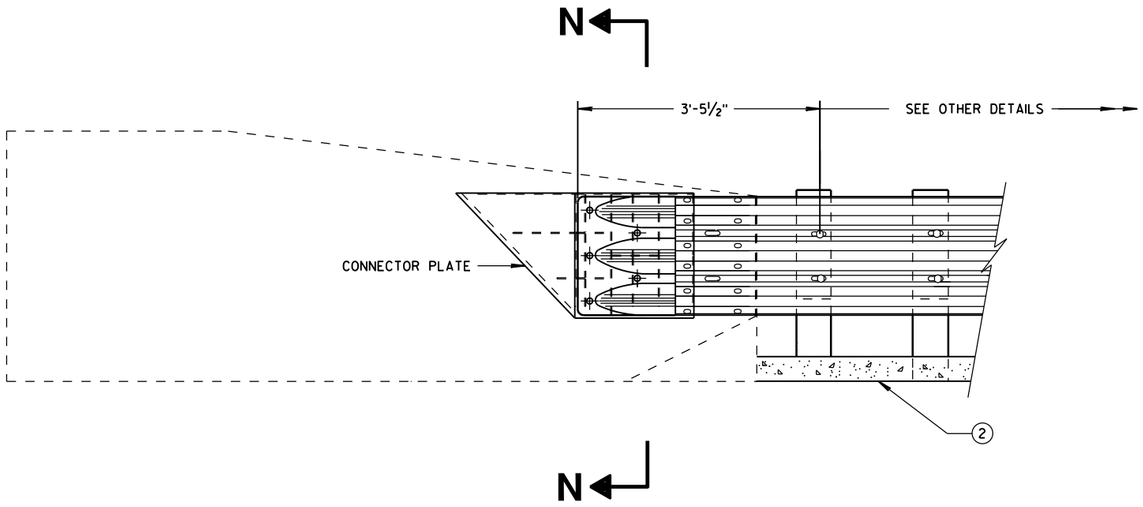
SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

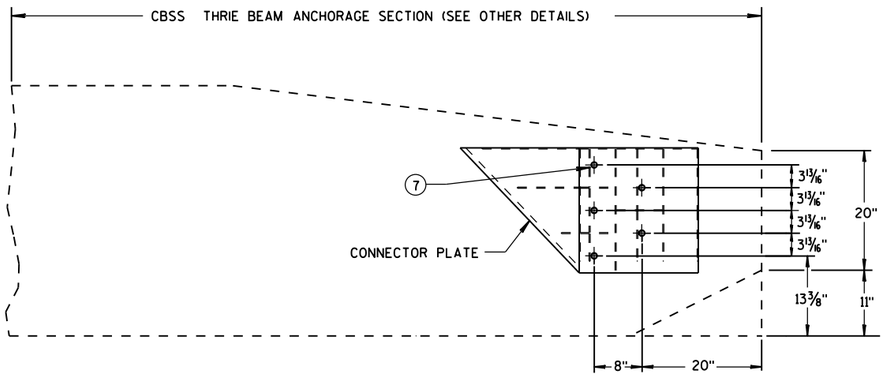
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6
S.D.D. 14 B 45-4i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



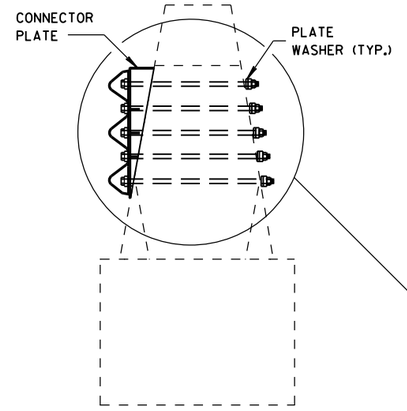
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

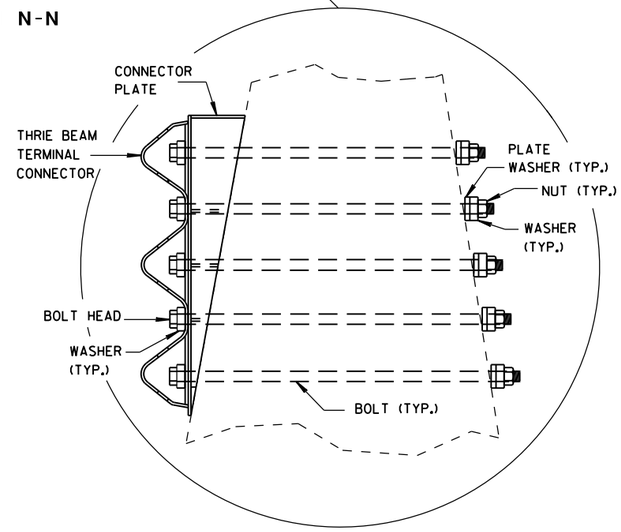
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

(7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

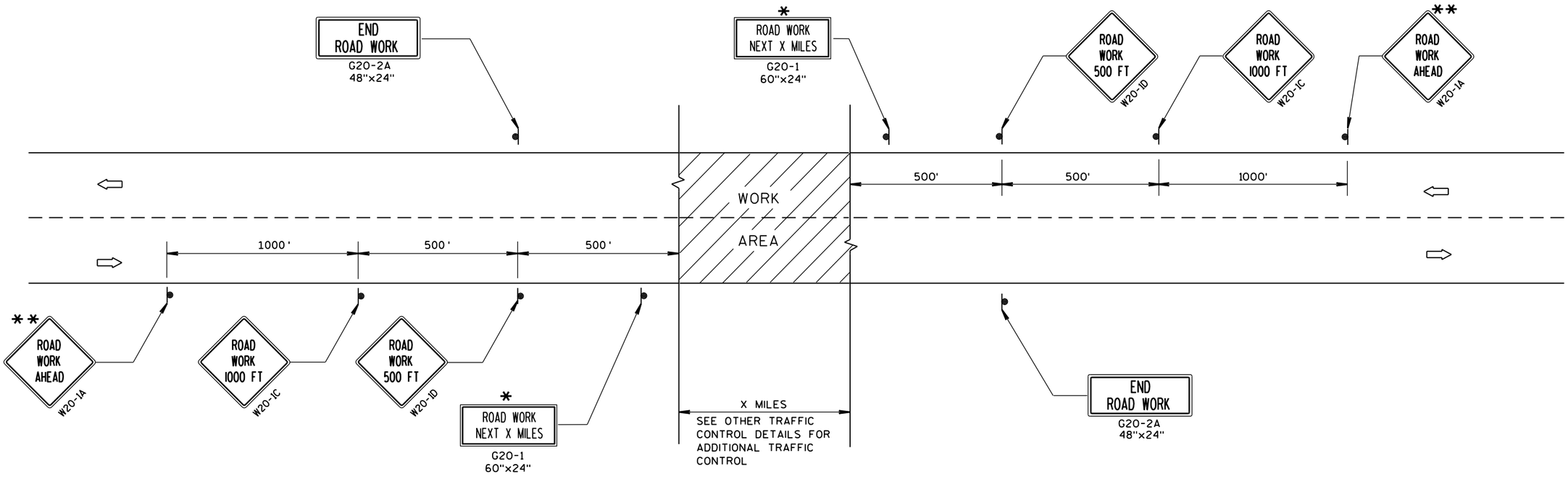
APPROVED
June, 2015 — DATE
/S/ Jerry H. Zoga — ROADWAY STANDARDS DEVELOPMENT ENGINEER
NT
FHWA

6

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

6

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



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

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.

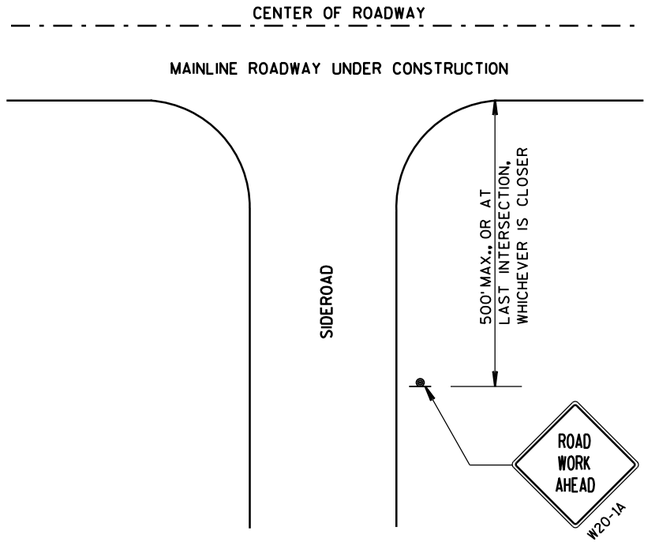
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

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

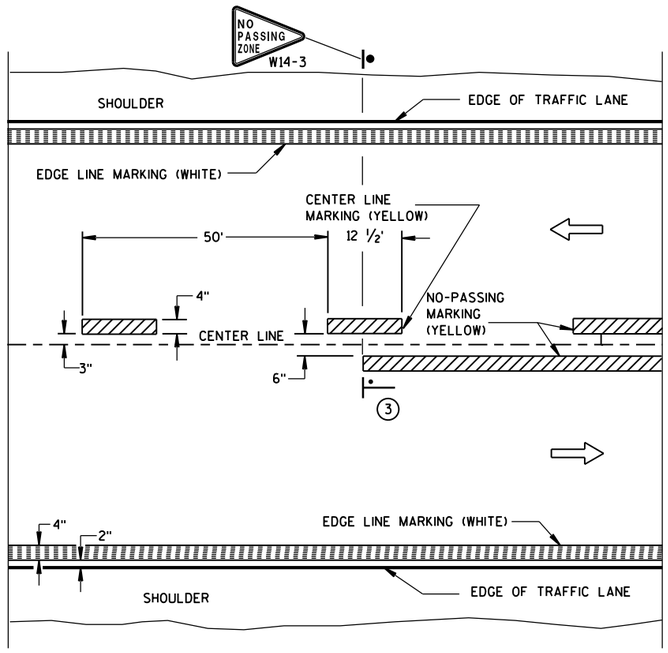
FHWA

6

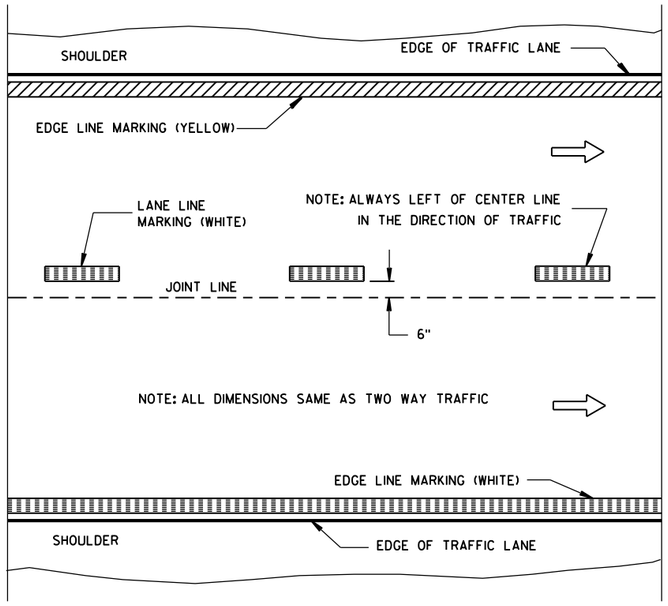
S.D.D. 15 C 4-3

6

S.D.D. 15 C 4-3

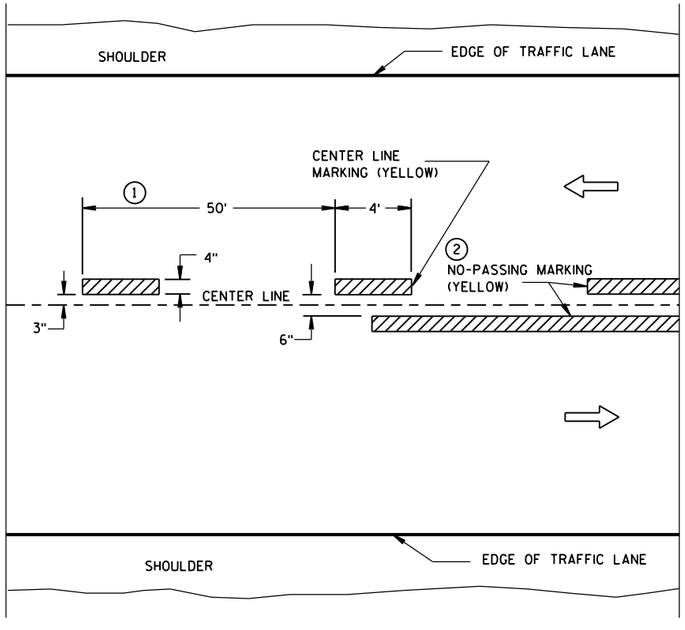


TWO WAY TRAFFIC

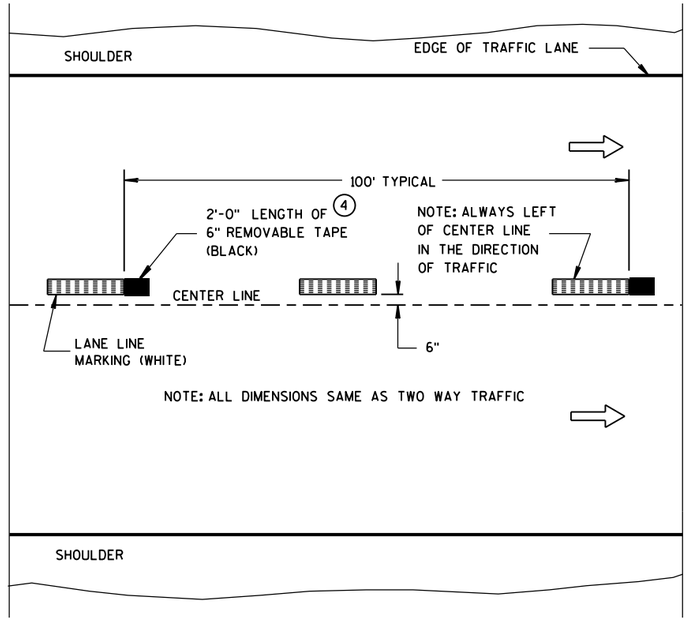


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

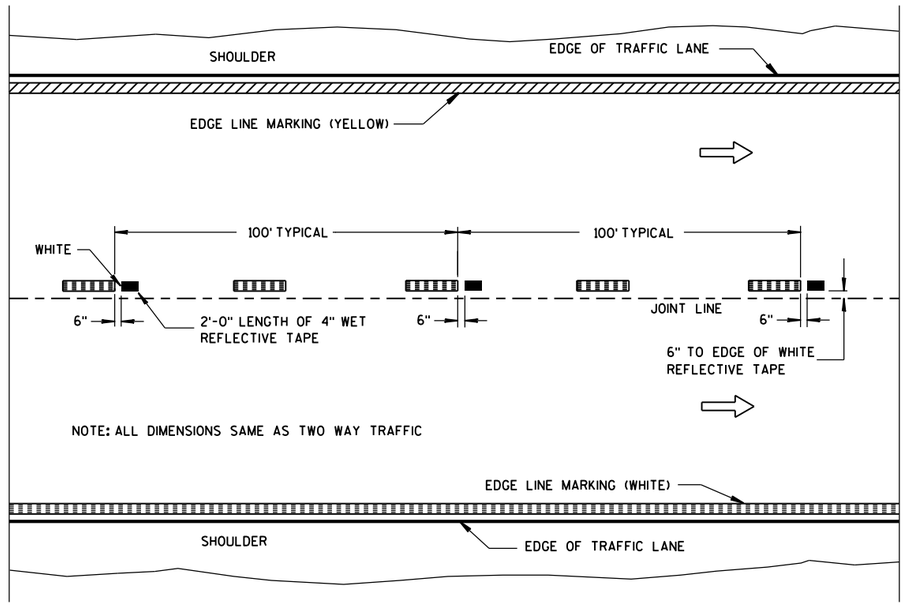
GENERAL NOTES

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

/S/ Travis Feltes
STATE TRAFFIC E

FHWA

6

S.D.D. 15 C 8-16a

6

S.D.D. 15 C 8-16a

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

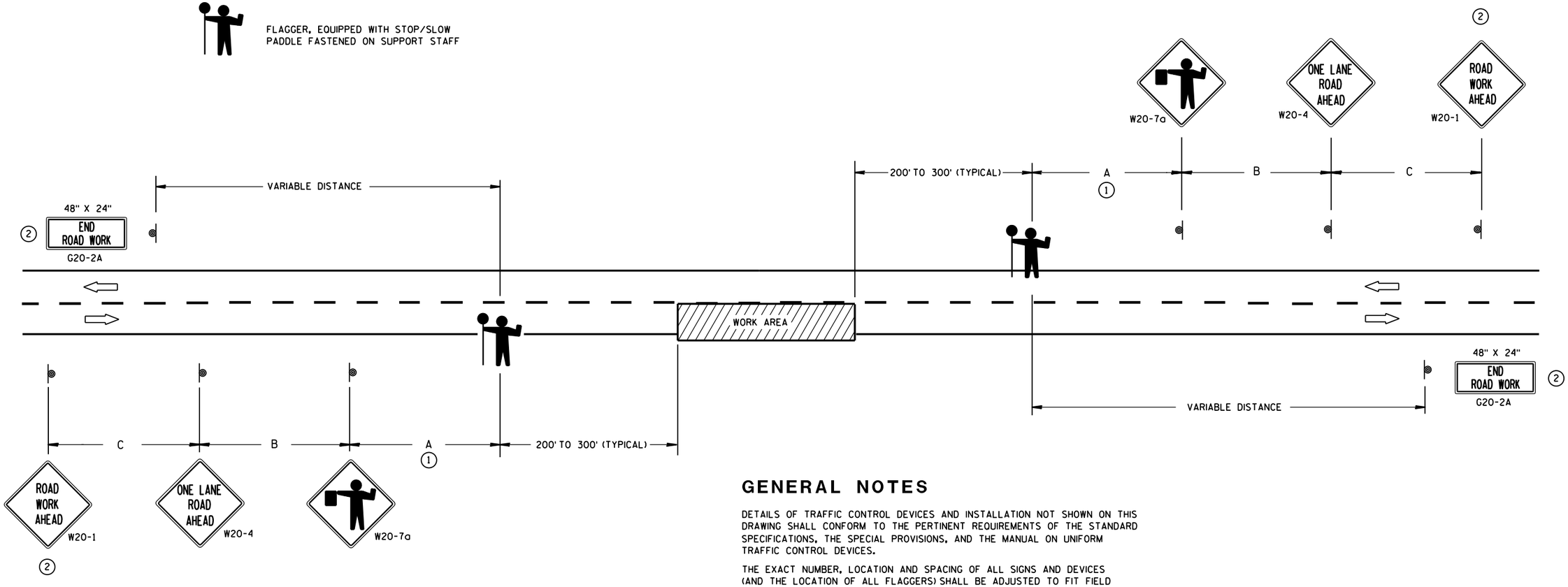
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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

W3-4

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.



(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.

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.

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 15 C 12-4

6

S.D.D. 15 C 12-4

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

W057-52
36"x24"

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.

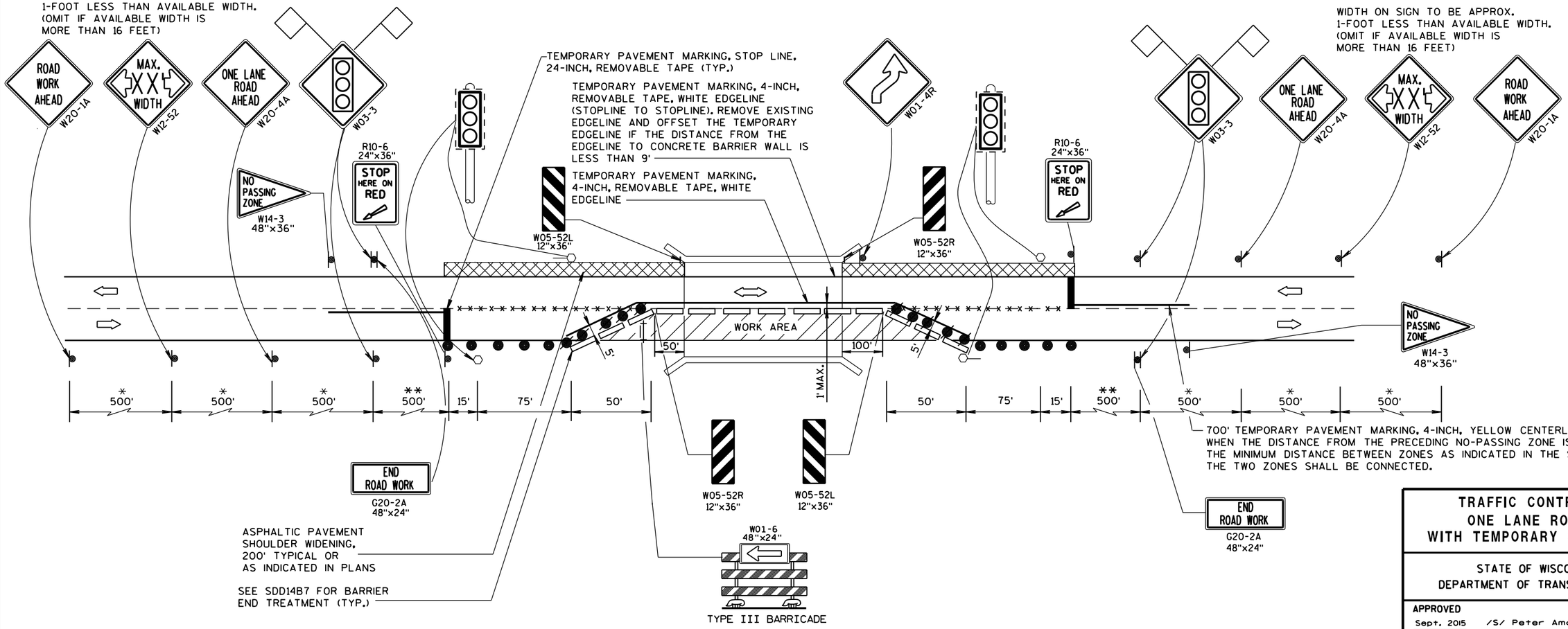
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.



TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE SAFETY ENGINEER

FHWA

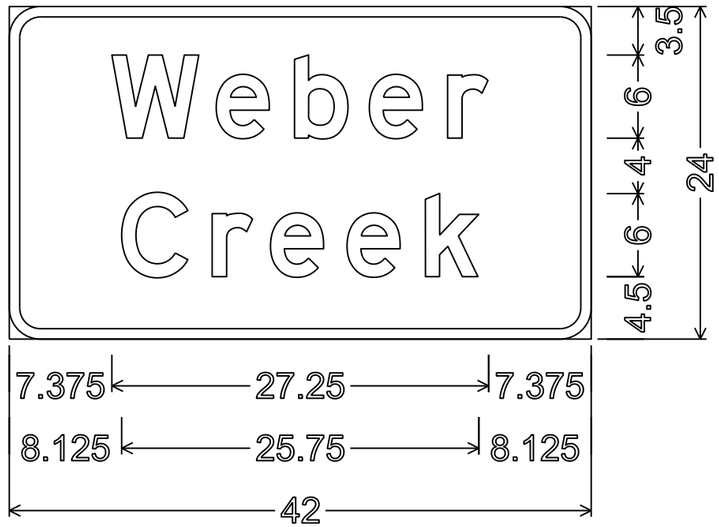
C

6

S.D.D. 15 D 33-4

NOTES

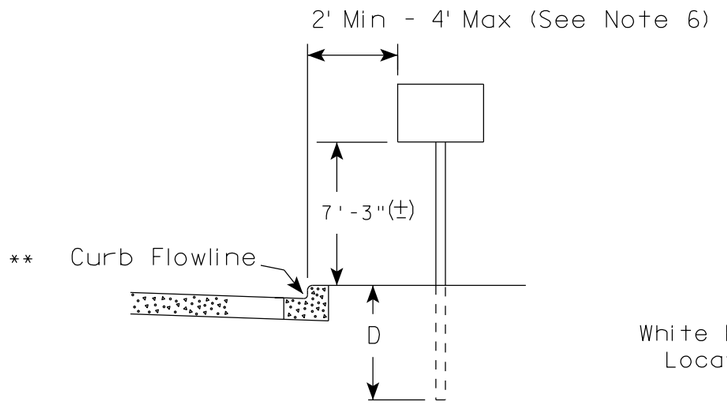
1. All Signs Type II - Type H Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E



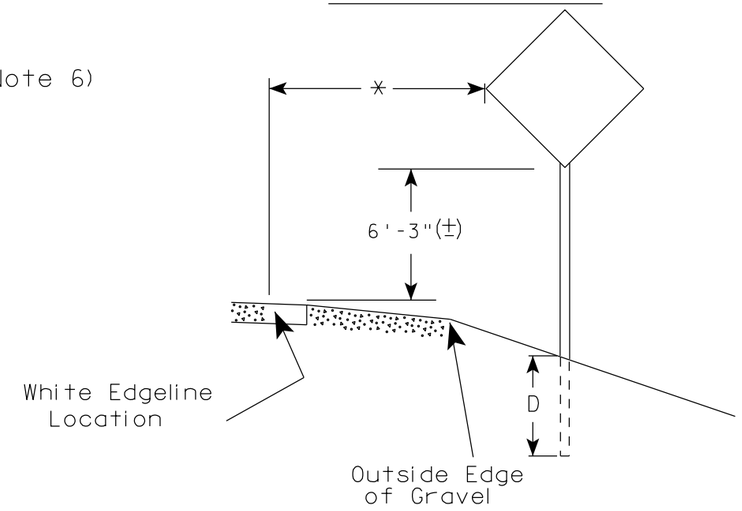
PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	PERMANENT SIGNING	SHEET NO:	E

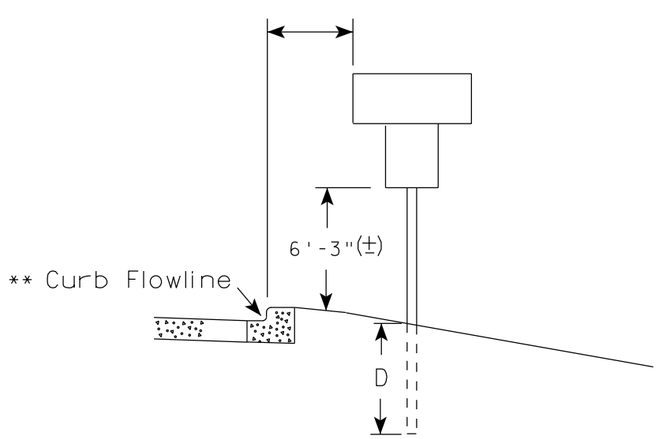
FILE NAME : C:\CAEfiles\Projects\tr_d7\7262d916.DGN PLOT DATE : 01-SEP-2016 14:27 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 10.933084:1.000000

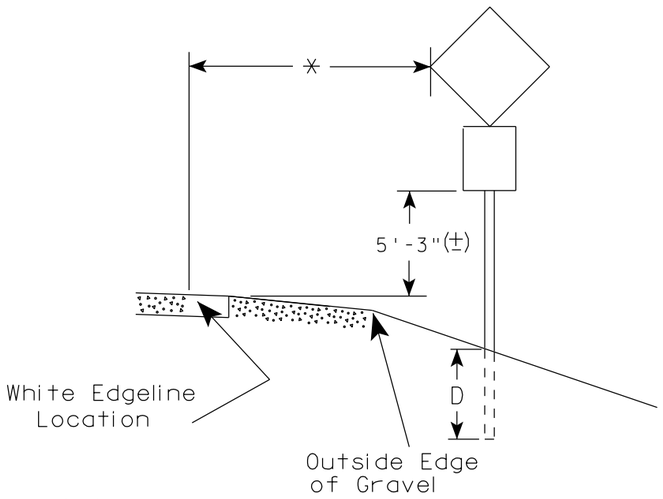
URBAN AREA



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 directd 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.

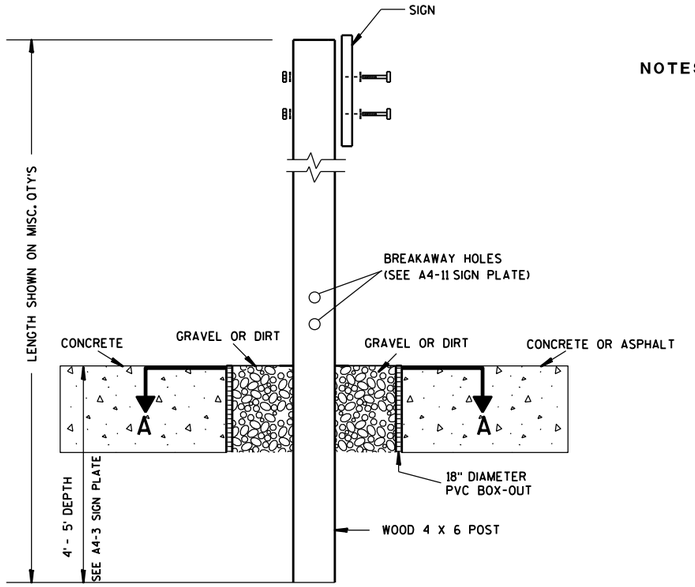
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

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

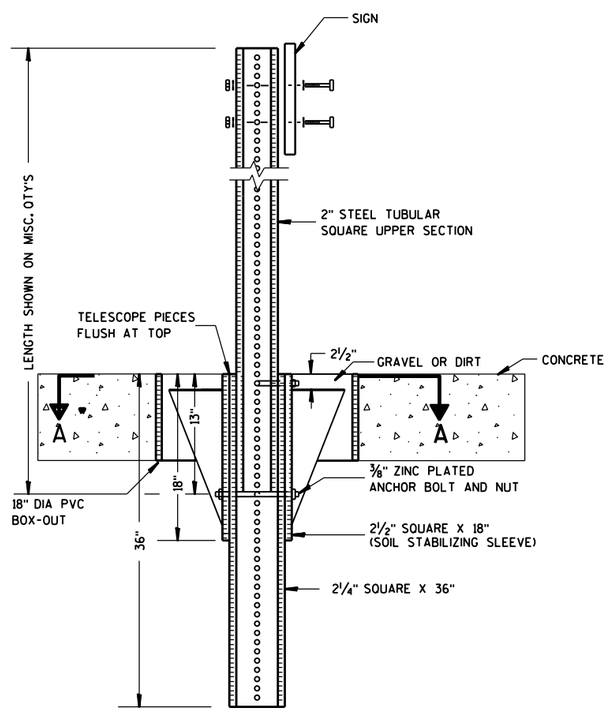
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

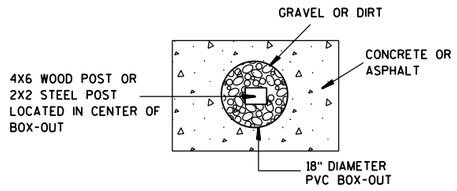
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

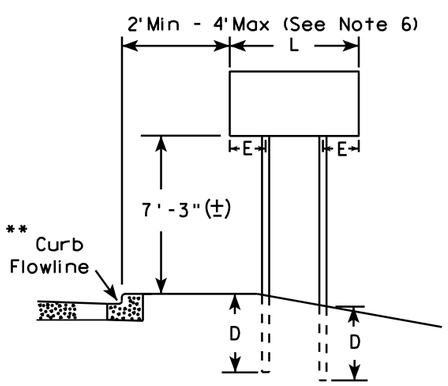
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

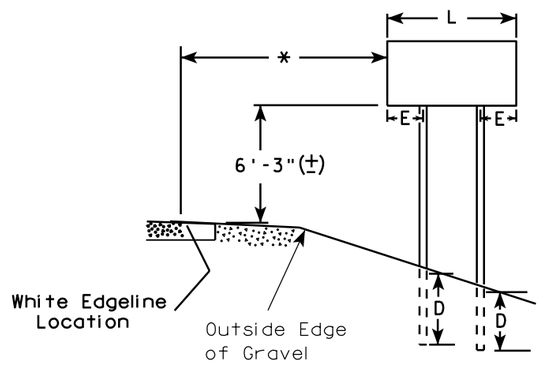
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

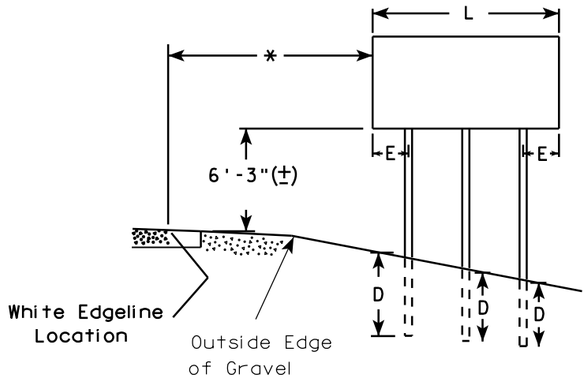
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

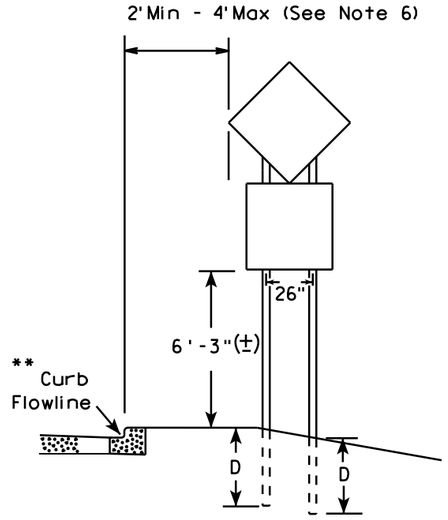
URBAN AREA



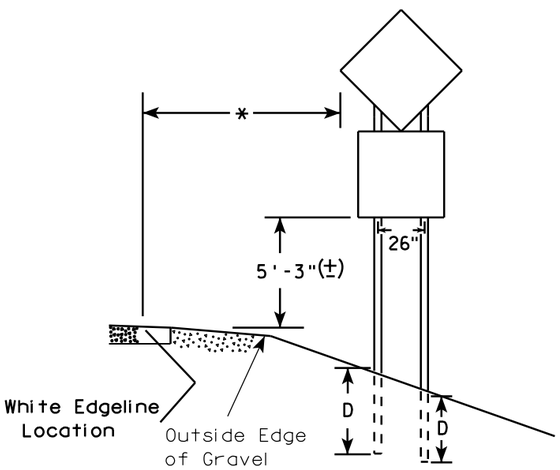
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. 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), 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" (±).

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

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

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

***

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

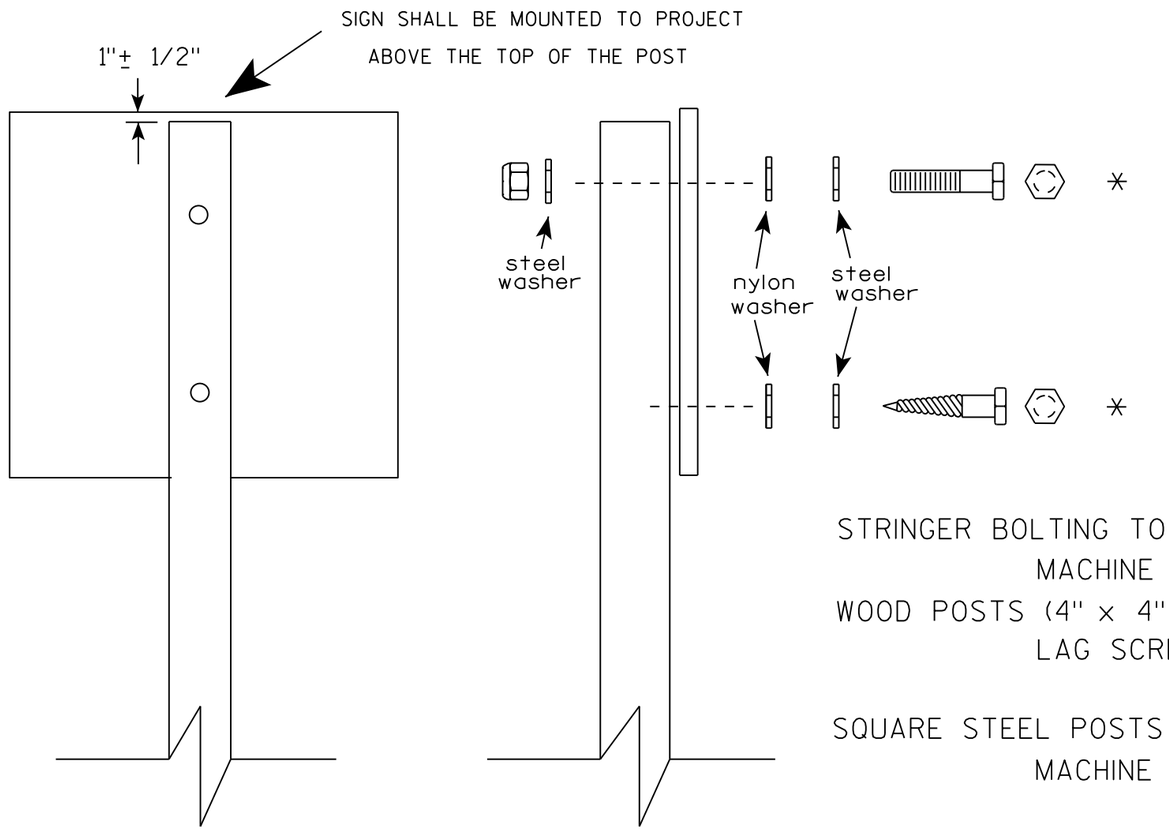
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-4 60 14

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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

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

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

* 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

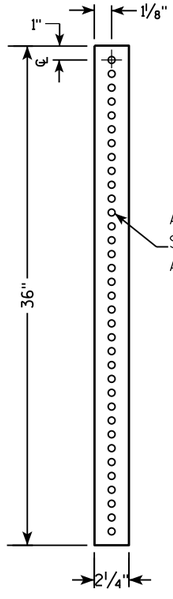
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8

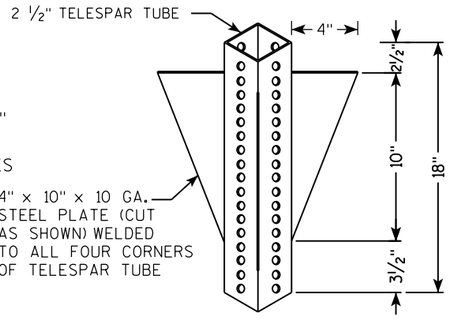
PROJECT NO: SHEET NO: E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

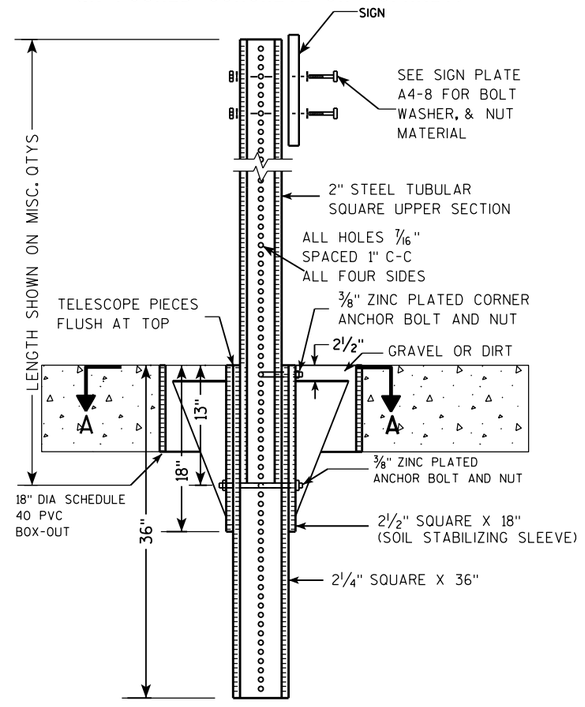
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



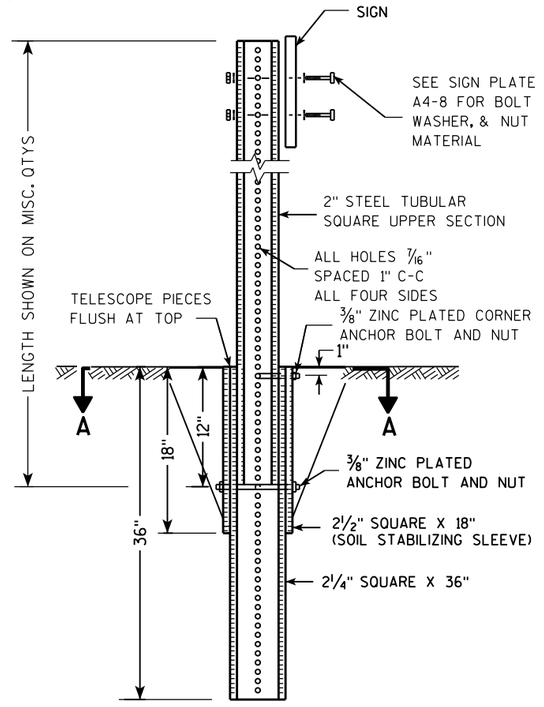
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

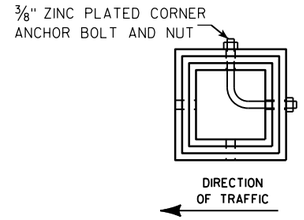


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)





SECTION A-A

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

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

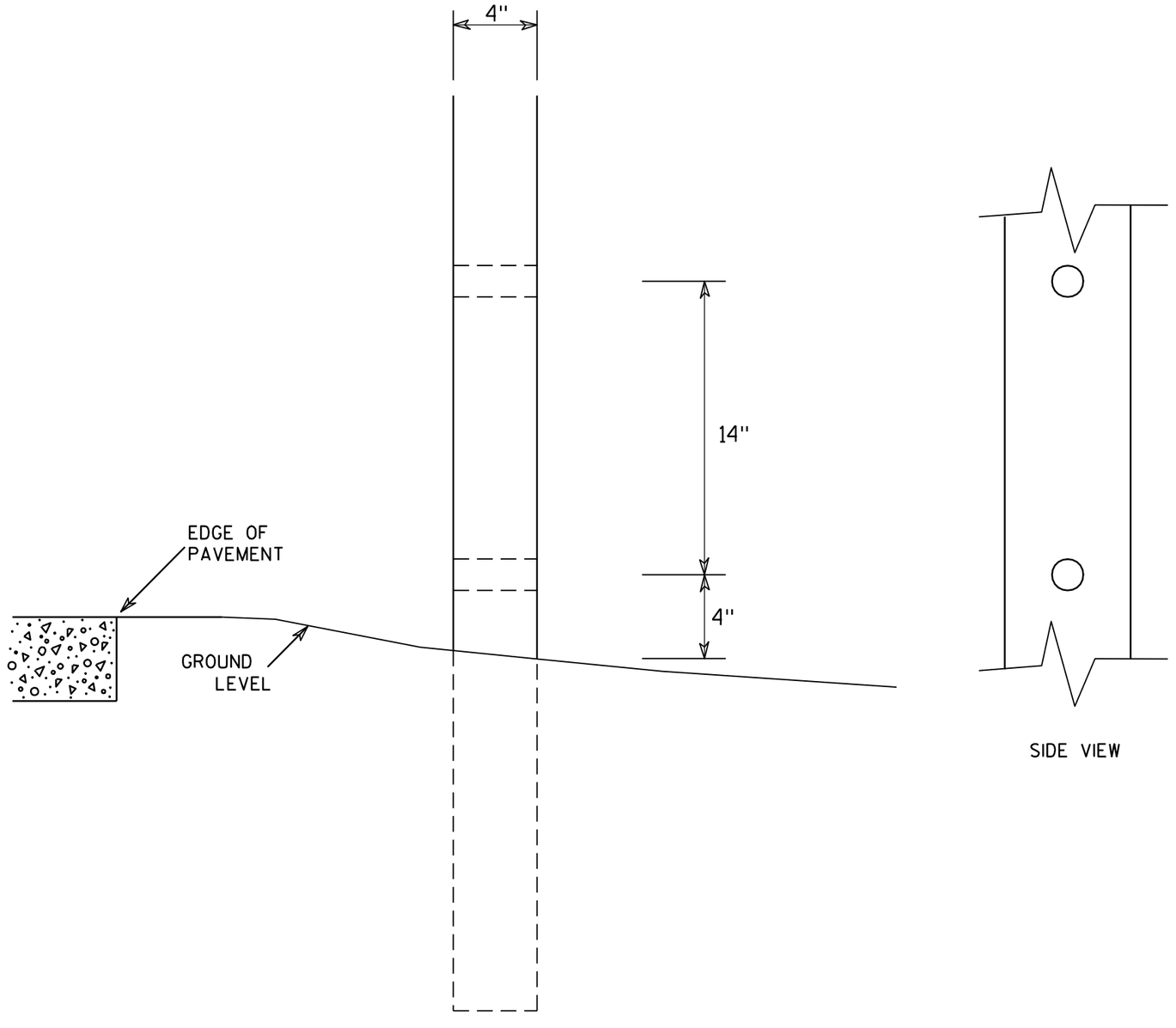
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

62

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



SIDE VIEW

GENERAL NOTES

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

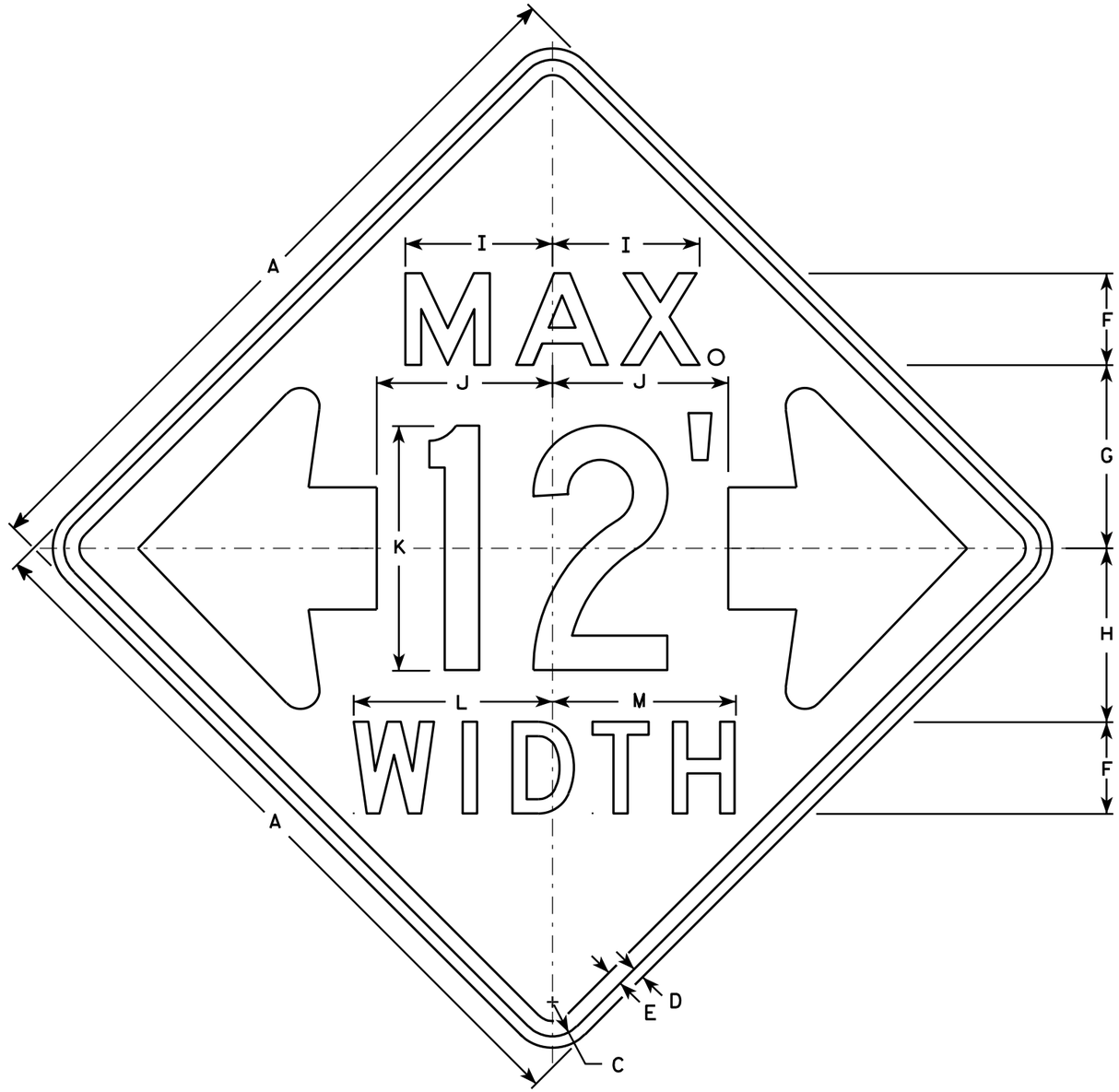
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

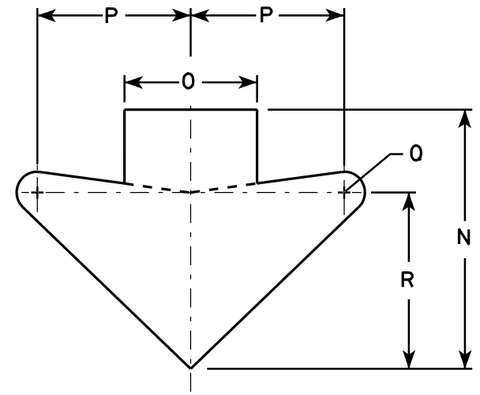
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 63	E



W12-52

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

STANDARD SIGN
W12-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

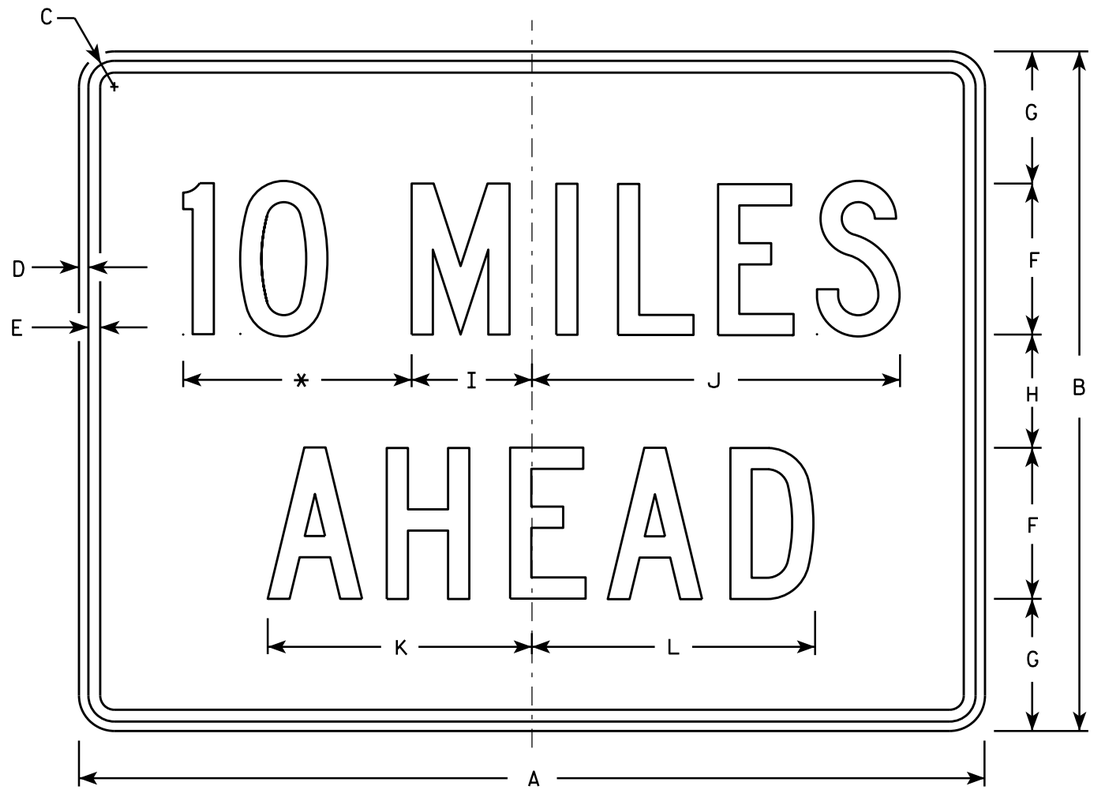
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 64	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W1252.DGN PLOT DATE : 16-MAR-2011 14:45 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.137199:1.000000

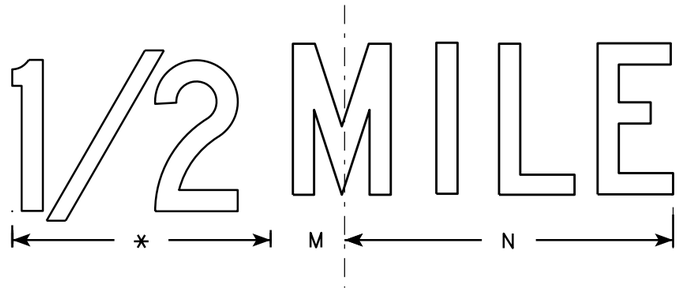
WISDOT/CADDS SHEET 42

7

7



W057-52



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

* See note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	13													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0

STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

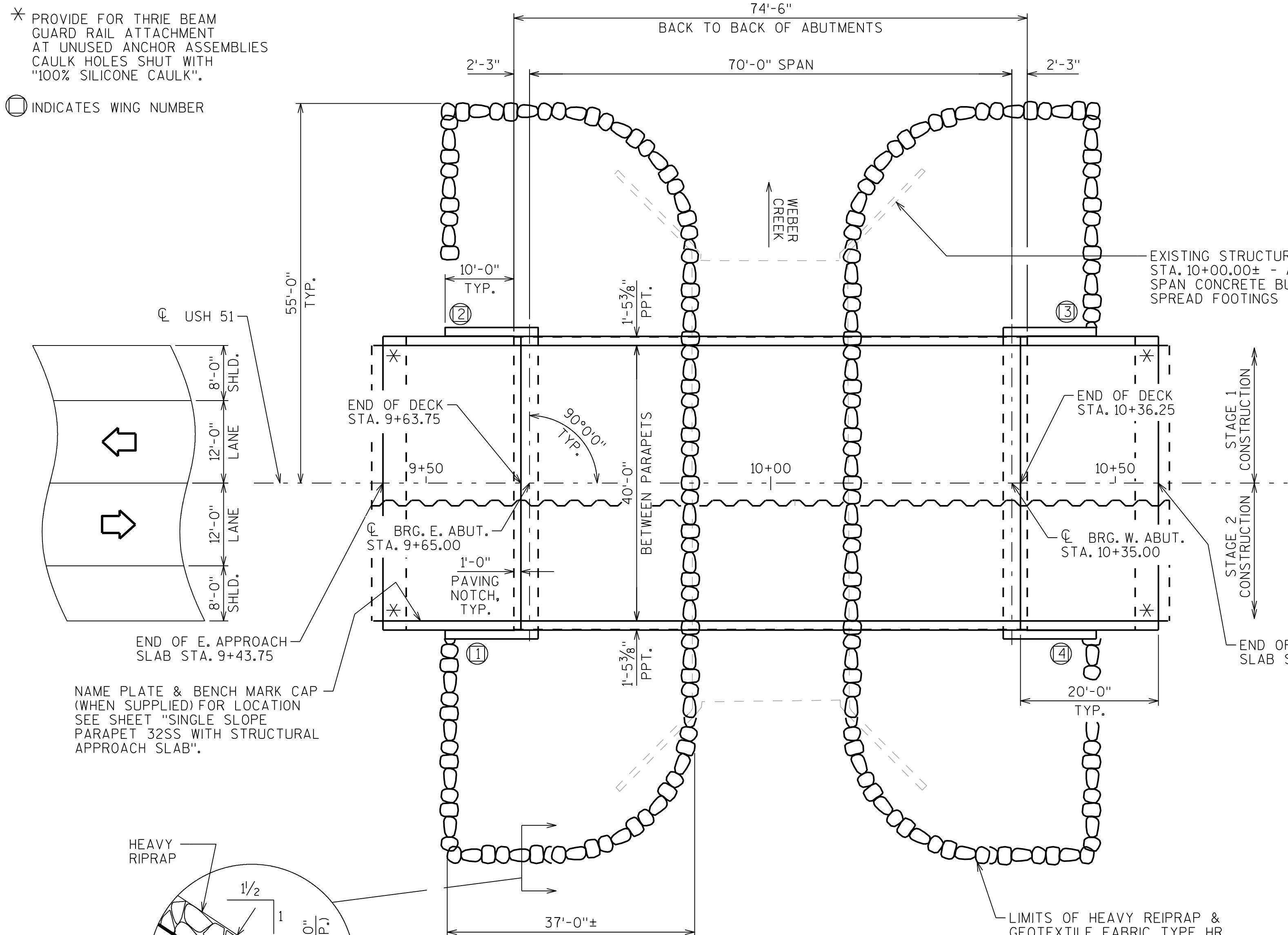
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W057-52.1

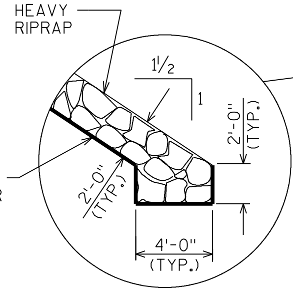
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

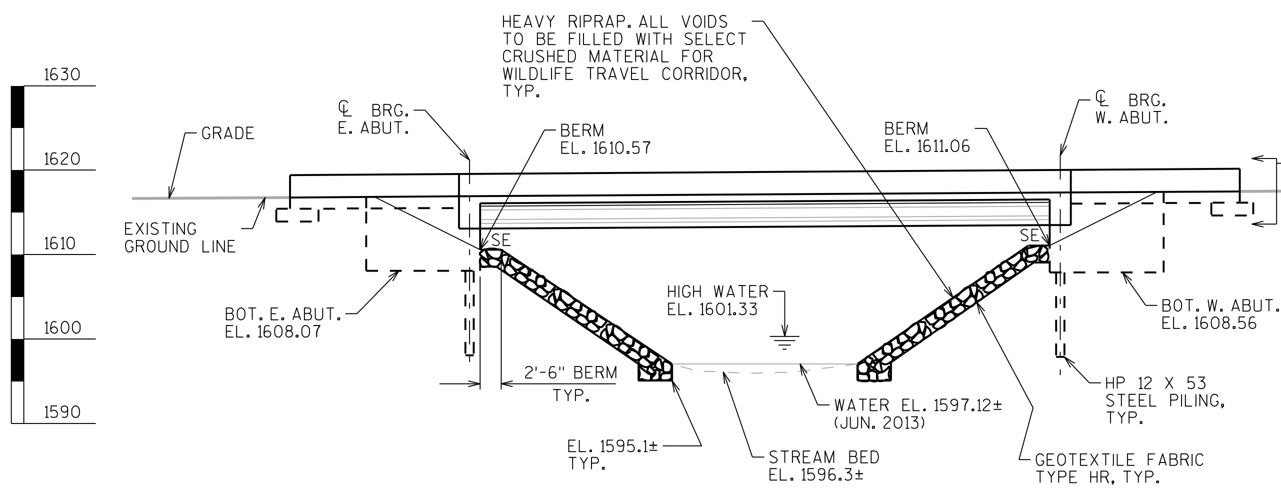
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W05752.DGN PLOT DATE : 28-FEB-2014 11:42 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 8.026599:1.000000 WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER
1175-19-70



PLAN
SINGLE SPAN - 36W" PRESTRESSED CONCRETE GIRDER





ELEVATION
NORMAL TO WEBER CREEK (LOOKING SOUTH)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.26
OPERATING RATING FACTOR: RF=1.62
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SUPERSTRUCTURE	f'c = 4,000 P.S.I.
CONCRETE MASONRY ALL OTHER	f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60	fy = 60,000 P.S.I.
BAR STEEL REINFORCEMENT STAINLESS, GRADE 60	fy = 60,000 P.S.I.
36W" PRESTRESSED GIRDERS, CONCRETE MASONRY	f'c = 8,000 P.S.I.

STRANDS - 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 12 X 53 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 200 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 80 FEET LONG. PILES POINTS REQUIRED.

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

HYDRAULIC DATA

100 YEAR FREQUENCY

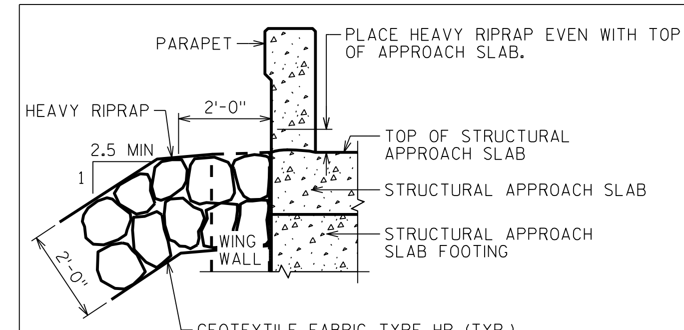
Q_{100} = 520 C.F.S.
VEL. = 5.3 F.P.S.
HW.= EL. 1601.33
WATERWAY AREA= 98 SQ. FT.
DRAINAGE AREA= 7.1 SQ. MI.
ROAD OVERTOPPING = NA
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

Q_2 = 150 C.F.S.
HW. = EL. 1599.00

TRAFFIC VOLUME

USH 51
A.D.T.= 3,000 (2034)
R.D.S.= 60 M.P.H.



TYPICAL FILL SECTION AT END OF STRUCTURAL APPROACH SLABS

LIST OF DRAWINGS

STRUCTURE DESIGN CONTACTS:
JONATHON RESHESKE (608) 266-8491
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher 1/4/17
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-26-38

USH 51 OVER WEBER CREEK

COUNTY IRON	TOWN/~~CITY/VILLAGE~~ MERCER

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JLR	DLM	MJH	JLR

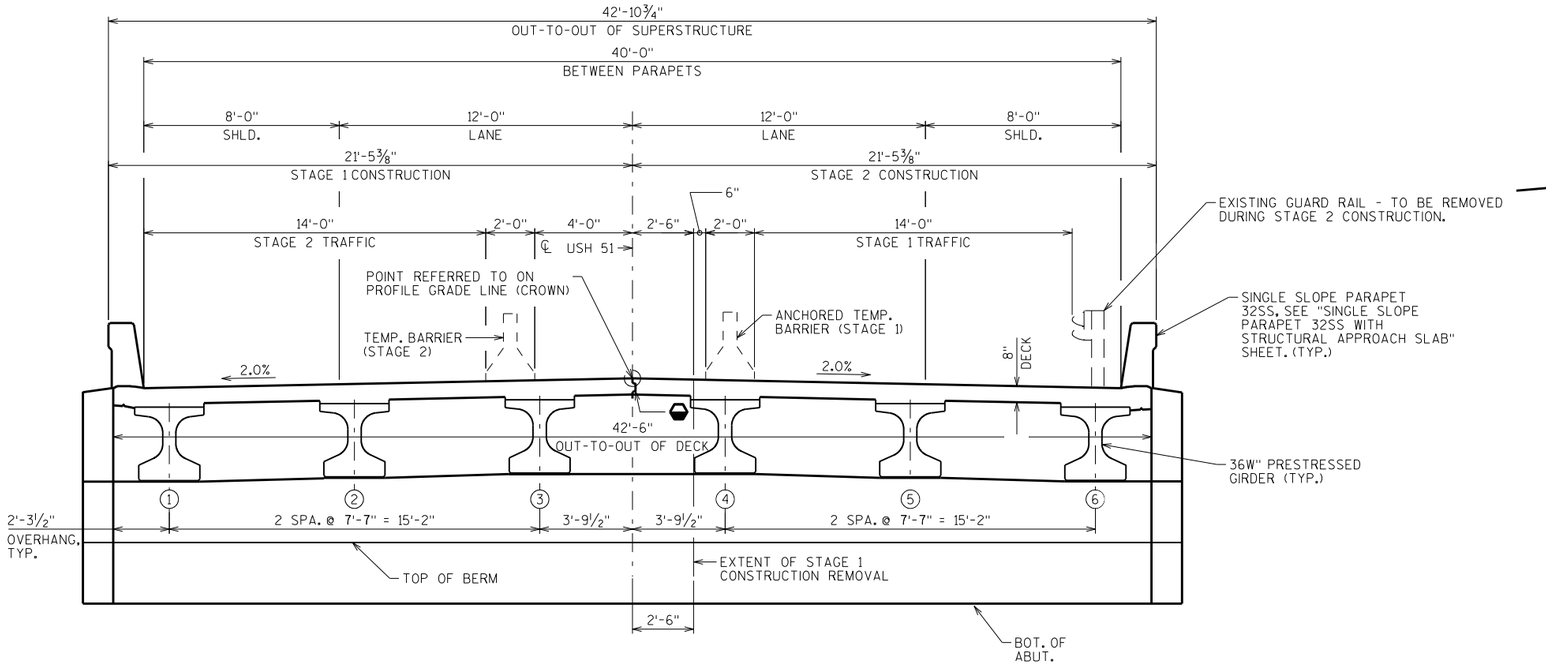
GENERAL PLAN

SHEET 1 OF 15

8 8

SCALE = 11.0

I.D. 1175-19-00A DATE: AUG. 2016



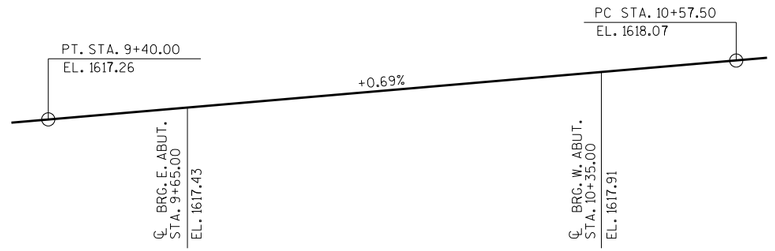
SECTION THRU ROADWAY LOOKING WEST

⬬ = LONGITUDINAL CONSTRUCTION JOINT. SEE "SUPERSTRUCTURE" SHEET FOR DETAILS

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	EAST APPROACH	EAST ABUT.	SUPER.	WEST ABUT.	WEST APPROACH	TOTALS
203.0500.S	REMOVING OLD STRUCTURE OVER WATERWAY STA. 10+00	LS						1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-26-38	LS						1
210.1500	BACKFILL STRUCTURE TYPE A	TON		240		240		480
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	143				143	286
502.0100	CONCRETE MASONRY BRIDGES	CY	58	45	131	45	58	337
502.3200	PROTECTIVE SURFACE TREATMENT	SY	89		322		89	500
502.3210	PIGMENTED SURFACE SEALER	SY	17		60		17	94
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF			426			426
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB		2,480		2,480		4,960
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	9,880	1,260	22,830	1,270	9,880	45,120
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB			1,460			1,460
505.0905	BAR COUPLERS NO. 5	EACH	42		217		42	301
505.0906	BAR COUPLERS NO. 6	EACH			16			16
505.0908	BAR COUPLERS NO. 8	EACH	12				12	24
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH		6		6		12
506.4000	STEEL DIAPHRAGMS B-26-38	EACH			5			5
511.1200	TEMPORARY SHORING B-26-38	SF			1,840			1,840
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY		13		13		26
550.0500	PILE POINTS	EACH		8		8		16
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF		640		640		1,280
606.0300	RIPRAP HEAVY	CY		264		264		528
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF		73		73		146
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2				2	4
645.0120	GEOTEXTILE FABRIC TYPE HR	SY		396		396		792
SPV. 0195	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON		33		33		66
	NON-BID ITEMS							
	BRIDGE SEAT PROTECTION	L.S.						1
	FILLER	SIZE						½", ¾", & 1½"

STATE PROJECT NUMBER
1175-19-70



PROFILE GRADE LINE USH 51

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.

AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL. ALSO EXCLUDED IS THE "BASE AGGREGATE DENSE 1 1/4-INCH" AS DETAILED ON THE STRUCTURAL APPROACH SLAB SHEETS.

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

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK AND STRUCTURAL APPROACH SLAB SURFACE.

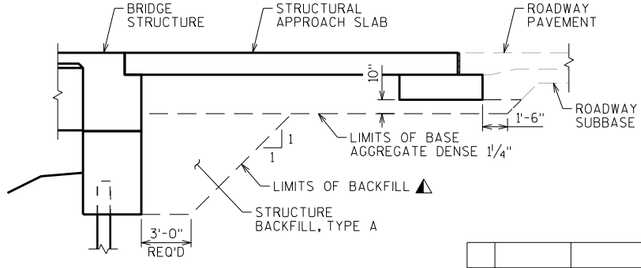
PIGMENTED SURFACE SEALER TO BE APPLIED TO THE INSIDE FACE AND TOP OF PARAPETS, INCLUDING PARAPETS ON STRUCTURAL APPROACH SLABS.

REMOVE AND SALVAGE THE EXISTING RAILINGS (INCLUDING RAILS, POSTS, AND ALL ASSOCIATED HARDWARE). AFTER REMOVAL, THE RAILINGS ARE TO BE SET ASIDE AND SHALL REMAIN THE PROPERTY OF THE STATE OF WISCONSIN. THE CONTRACTOR WILL COORDINATE WITH IRON COUNTY HIGHWAY DEPARTMENT AS TO WHEN THE RAILINGS ARE READY TO BE PICKED UP. THIS SHALL BE INCIDENTAL TO "EXCAVATION FOR STRUCTURES BRIDGES B-26-38".

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

SEAL LONGITUDINAL CONSTRUCTION JOINT WITH CRACK SEALER PER SECTION 502.3.13 OF THE STANDARD SPEC.

ALL VOIDS BETWEEN HEAVY RIPRAP SHALL BE FILLED USING SELECT CRUSHED MATERIAL. WORK SHALL BE PAID FOR AS "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR".



TYPICAL SECTION THRU ABUTMENT

(A1 ABUTMENT WITH STRUCTURAL APPROACH)

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

DRAWN BY MJH | PLANS CK'D. JLR

CROSS SECTION & QUANTITIES

SHEET 2

67

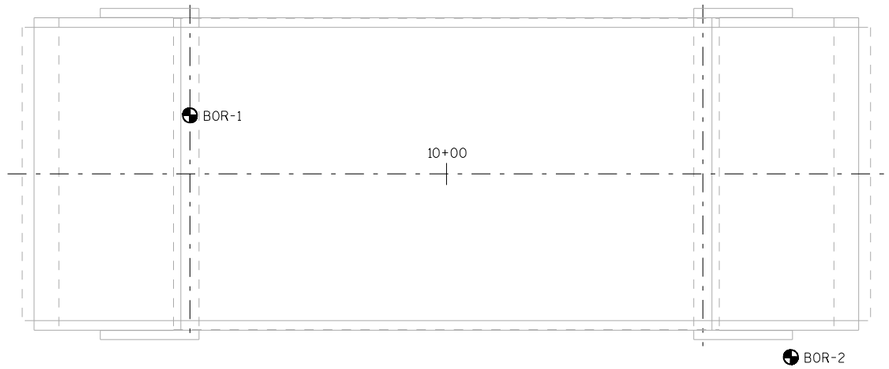
8

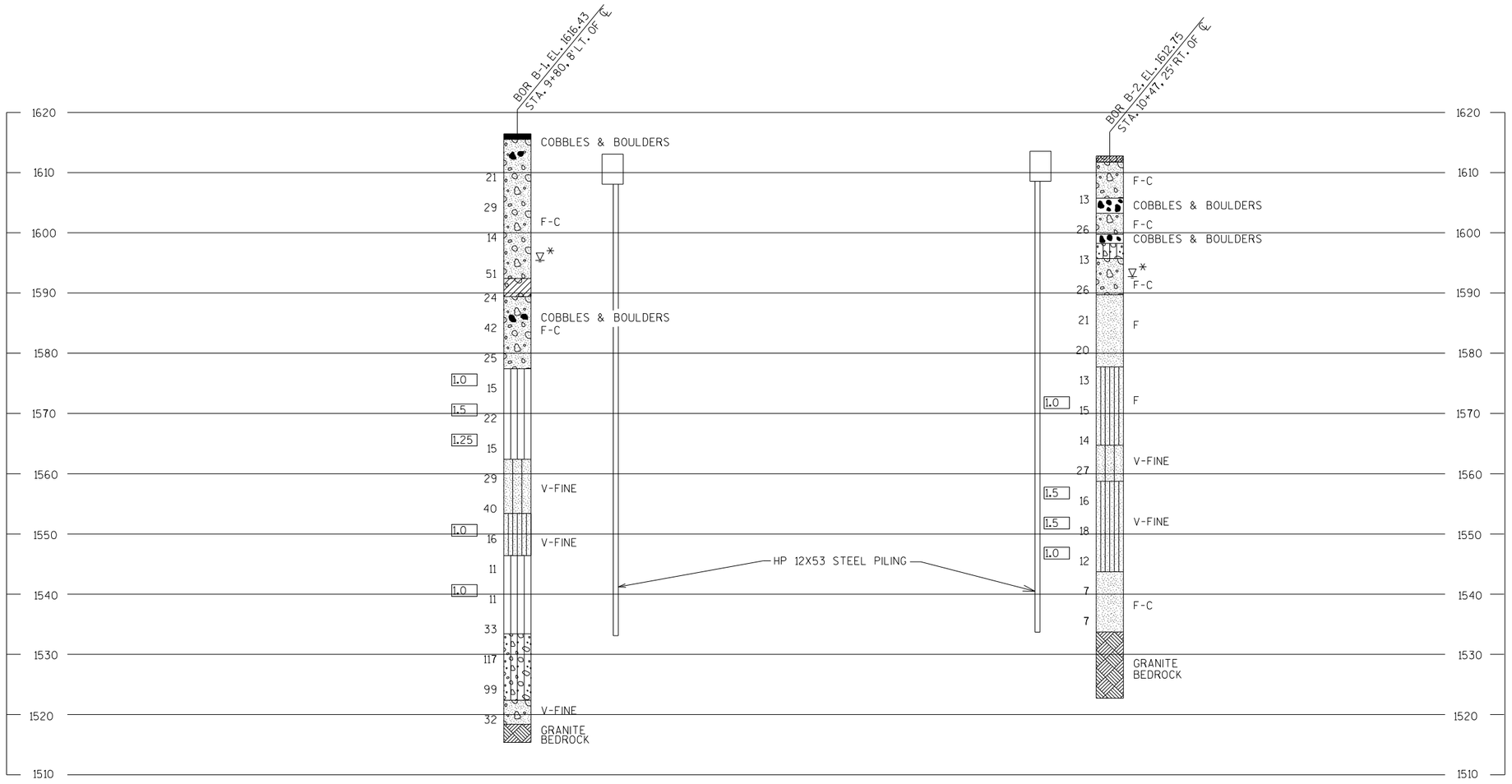
8

SCALE = 3

MANITOWISH - HURLEY
USH 51 OVER WEBER CREEK

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	5/14/2014	275076	756142
2	6/11/2014	275145	756092
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) IRON COUNTY			





* THE GROUND WATER ELEVATION WAS DETERMINED FROM WHERE THE SOIL SAMPLE WAS DESCRIBED AS WET.

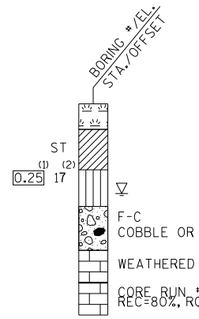
STATE PROJECT NUMBER

1175-19-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

DRAWN BY PR | PLANS CK'D. JLR

SUBSURFACE EXPLORATION

SHEET 3

68

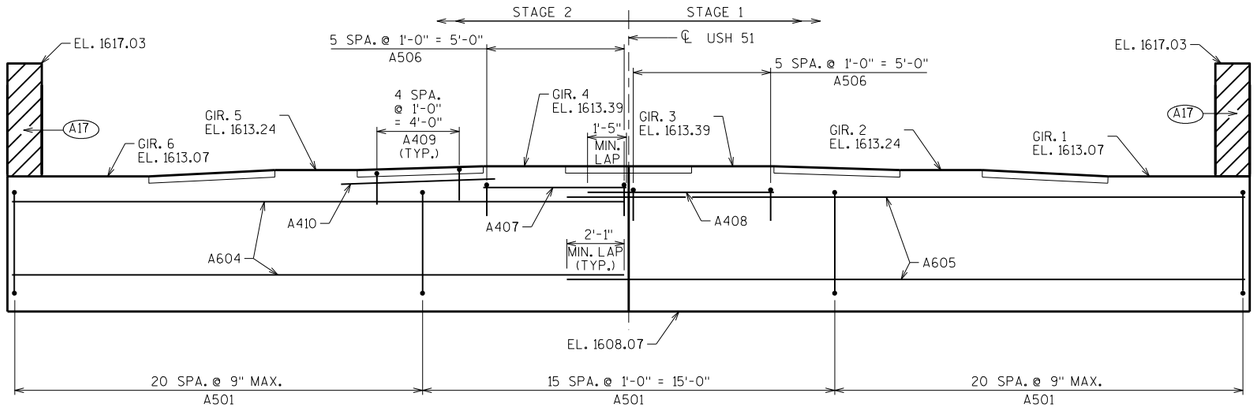
8

8

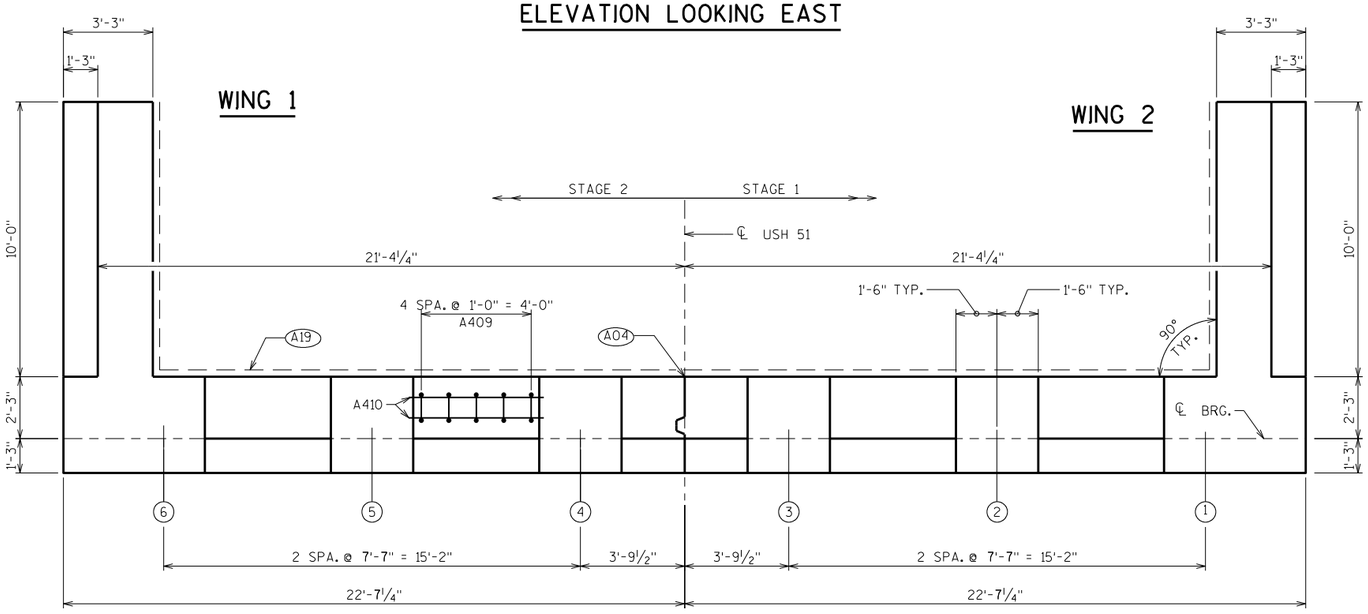
SCALE =

STATE PROJECT NUMBER

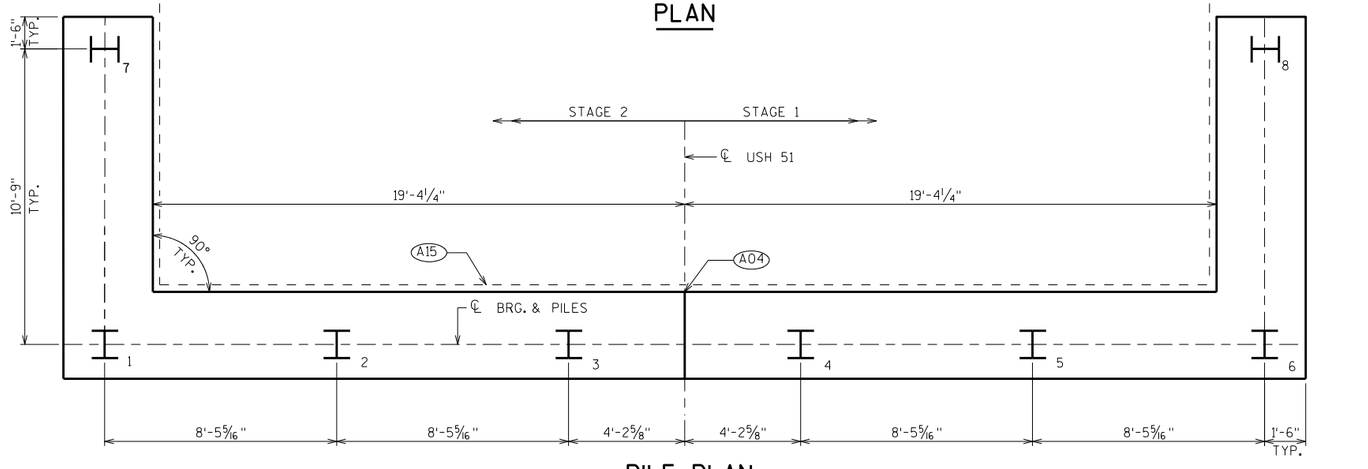
1175-19-70



ELEVATION LOOKING EAST

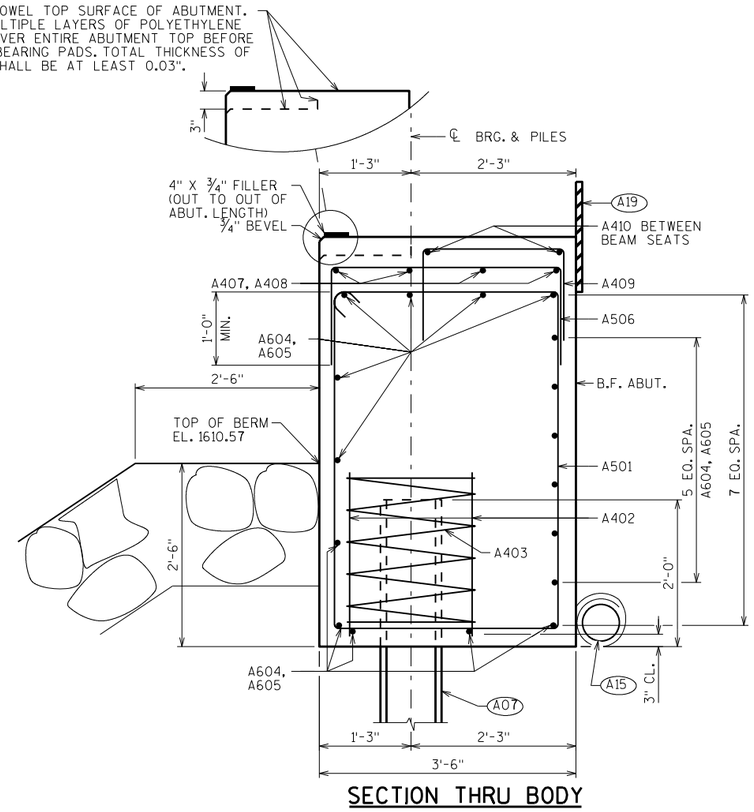


PLAN



PILE PLAN

STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".



SECTION THRU BODY

(A04) VERT. CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 8. 3/4" "V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE.

(A07) SUPPORT ABUTMENT ON HP 12 x 53 STEEL PILING. ESTIMATED 80 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED. SEE DETAIL ON "STRUCTURAL APPROACH SLAB" SHEET.

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

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

DRAWN BY MJH | PLANS CK'D. JLR

EAST ABUTMENT

SHEET 4

69

SCALE = 2.67

8

8

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(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

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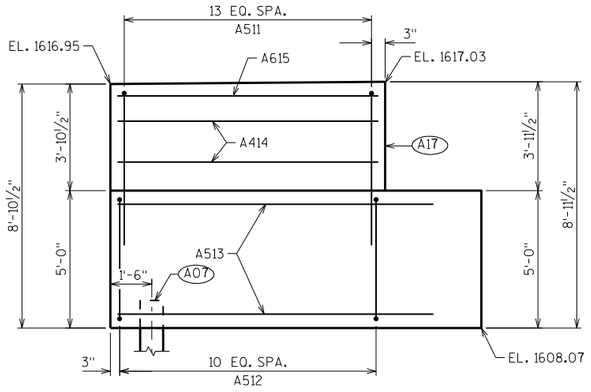
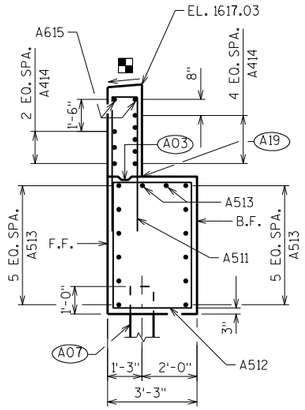
BILL OF BARS

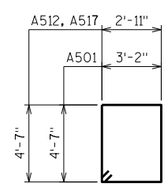
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A501		56	16'-2"	X	BODY - STIRRUPS
A402		12	2'-3"		PILES - 2 PER BODY PILE
A403		6	28'-0"	X	PILES - 1 PER BODY PILE
A604		17	22'-3"		BODY - HORIZONTAL - BF - STAGE 2
A605		17	24'-9"		BODY - HORIZONTAL - BF - STAGE 1
A506		12	5'-3"	X	BODY - UNDER BEAM SEATS 3 & 4
A407		4	5'-4"		BODY - UNDER BEAM SEAT 4 - STAGE 2
A408		4	7'-1"		BODY - UNDER BEAM SEAT 3 - STAGE 1
A409		25	4'-3"	X	BODY - VERTICAL - BTWN. BEAM SEATS
A410		10	5'-0"		BODY - HORIZONTAL - BTWN. BEAM SEATS
A511	X	14	12'-4"	X	WING 1 - VERTICAL
A512	X	11	15'-8"	X	WING 1 - STIRRUP
A513	X	14	13'-0"		WING 1 - HORIZONTAL
A414	X	8	9'-8"		WING 1 - HORIZONTAL
A615	X	2	9'-8"		WING 1 - HORIZONTAL - TOP
A516	X	14	12'-4"	X	WING 2 - VERTICAL
A517	X	11	15'-8"	X	WING 2 - STIRRUP
A518	X	14	13'-0"		WING 2 - HORIZONTAL
A419	X	8	9'-8"		WING 2 - HORIZONTAL
A620	X	2	9'-8"		WING 2 - HORIZONTAL - TOP



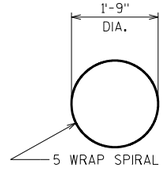
WING 1 ELEVATION



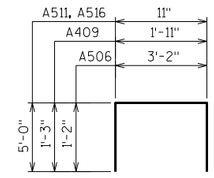
WING 1 SECTION



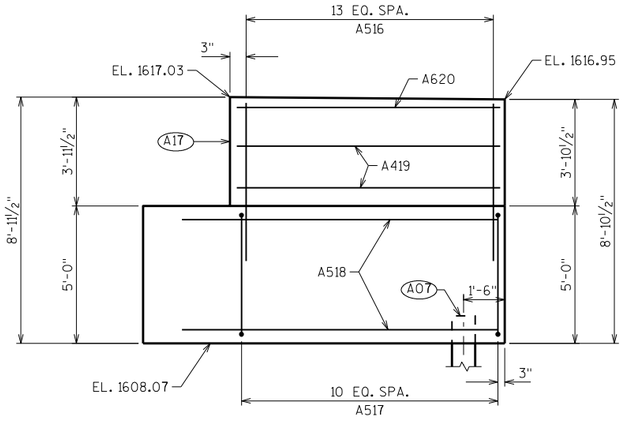
A501, A512, A517



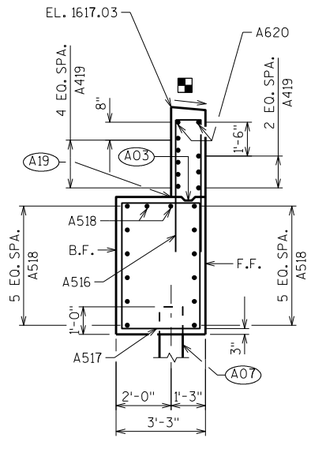
A403



A506, A409, A511, A516



WING 2 ELEVATION



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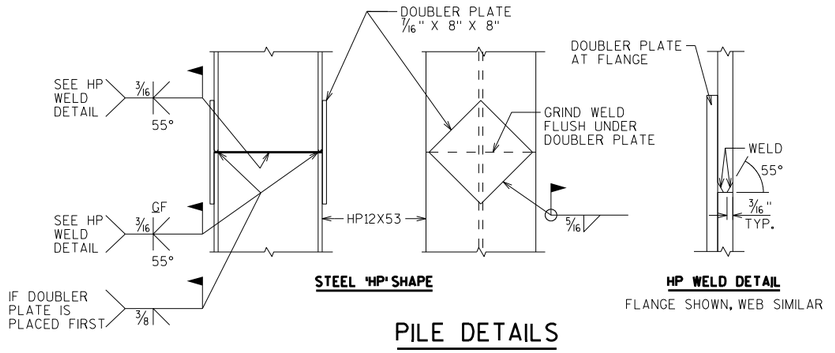

PILE DETAILS

SLOPE 2.0% FOR DRAINAGE

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

DRAWN BY MJH | PLANS CK'D. JLR

EAST ABUTMENT DETAILS

SHEET 5

70

SCALE = 2.67

8

8

STATE PROJECT NUMBER

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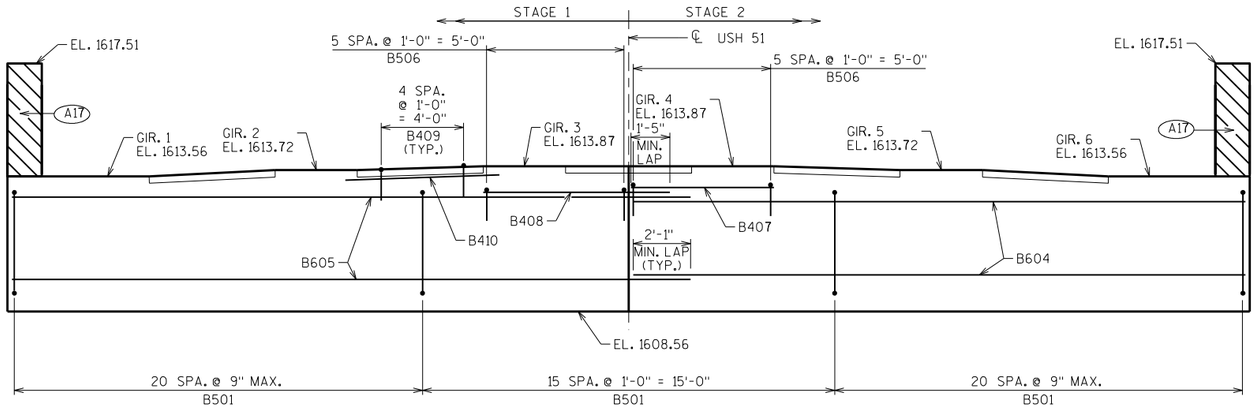
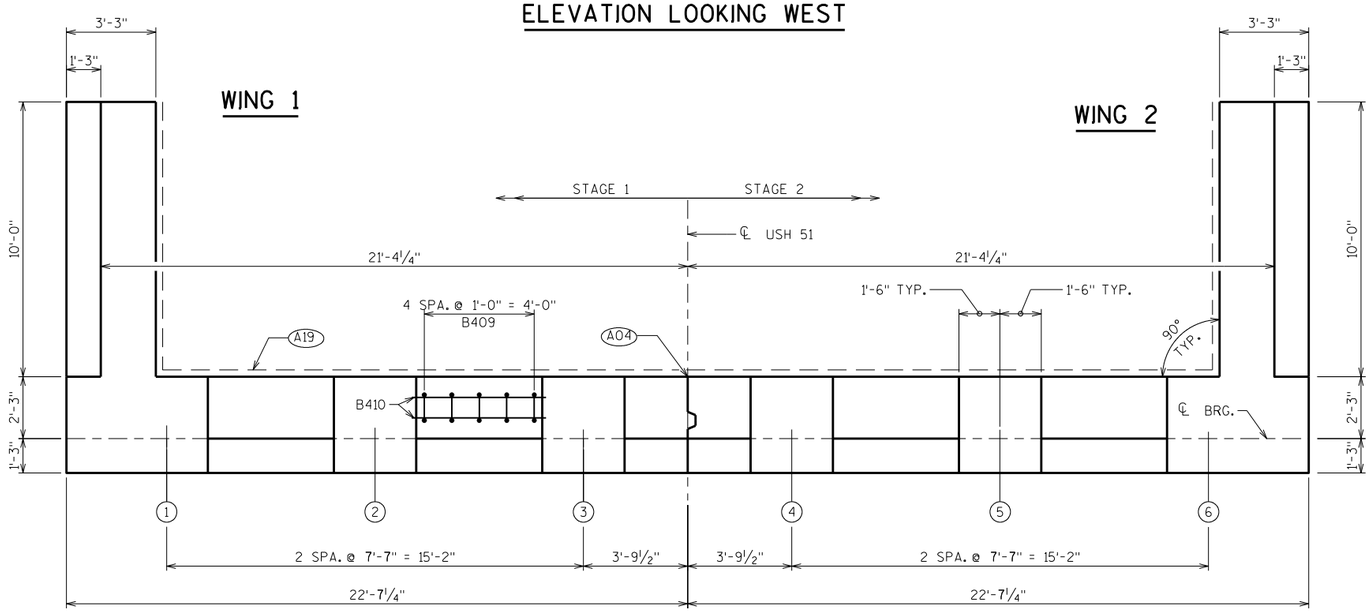
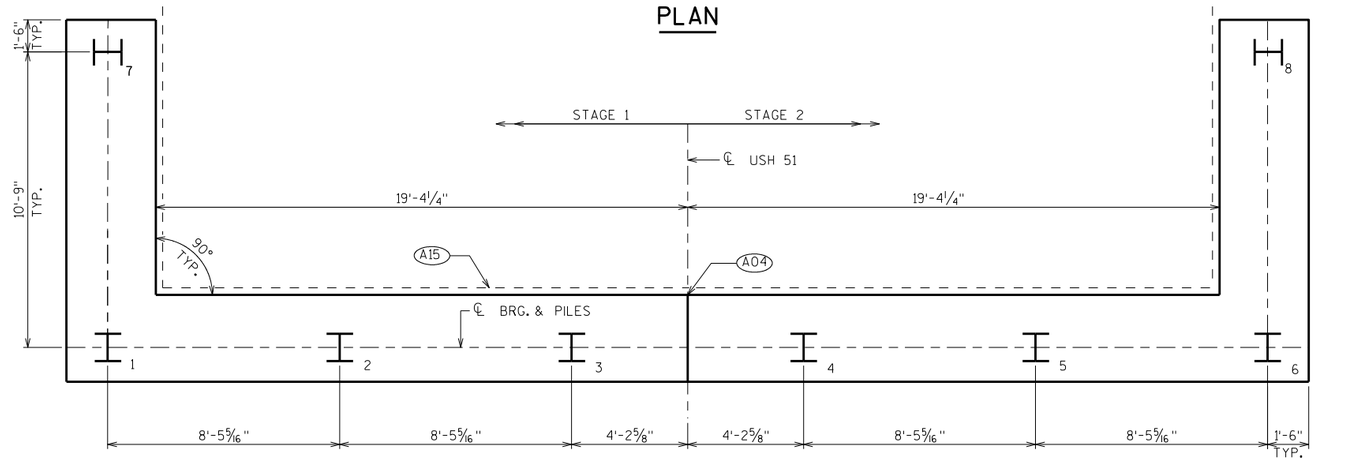


ELEVATION LOOKING WEST



PLAN



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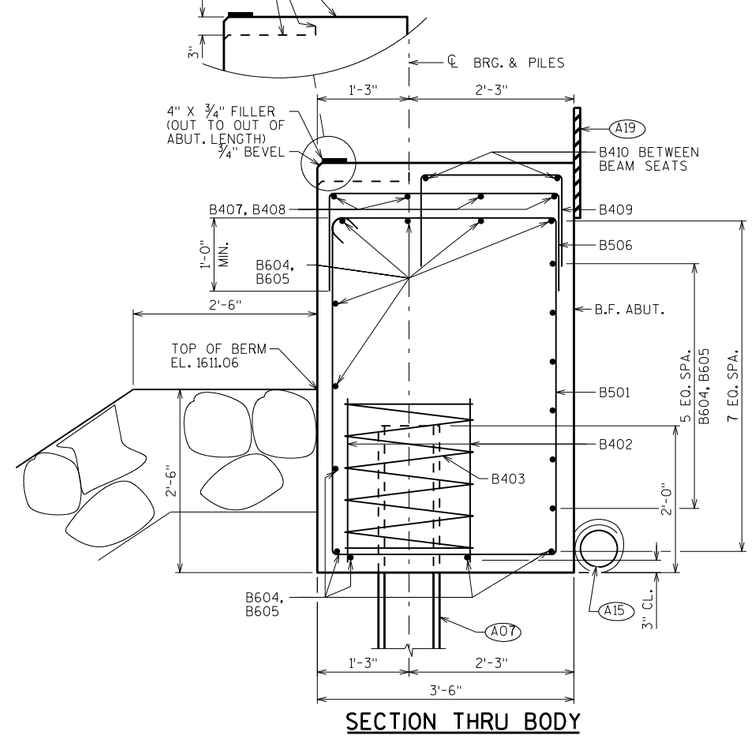

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A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

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STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

DRAWN BY MJH | PLANS CK'D. JLR

WEST ABUTMENT

SHEET 6

71

SCALE = 2.67

8

8

STATE PROJECT NUMBER

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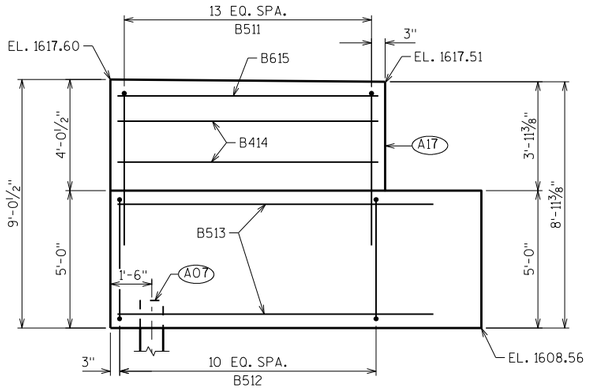
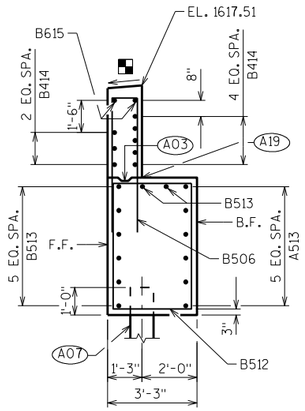
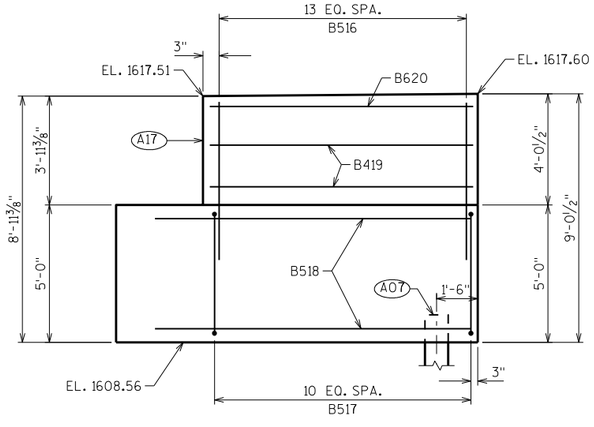


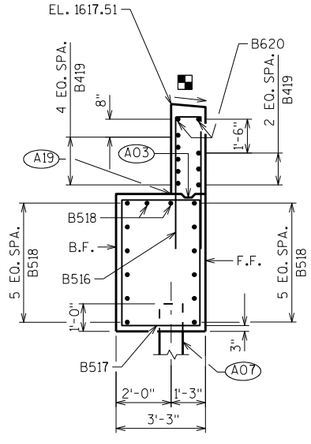
WING 1 ELEVATION



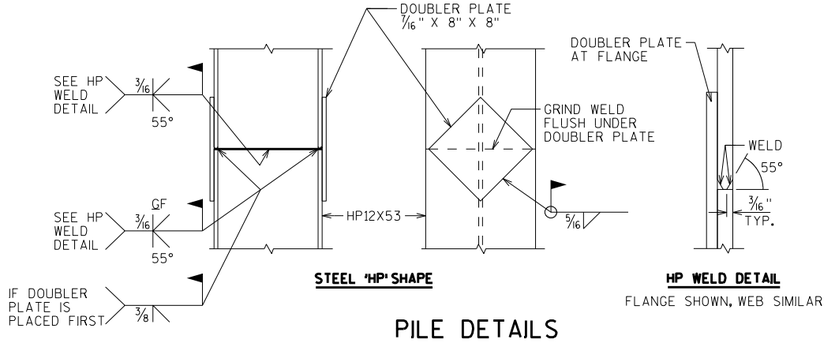
WING 1 SECTION



WING 2 ELEVATION



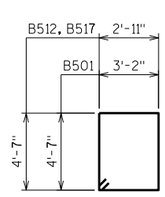
WING 2 SECTION



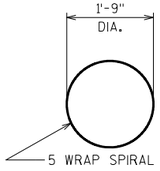
STEEL 'HP' SHAPE

HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

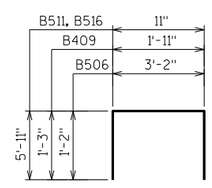
PILE DETAILS



B501, B512, B517



B403



B506, B409, B511, B516

SLOPE 2.0% FOR DRAINAGE

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

DRAWN BY MJH | PLANS CK'D. JLR

WEST ABUTMENT DETAILS

SHEET 7

72

SCALE = 2.67

8

8

STATE PROJECT NUMBER

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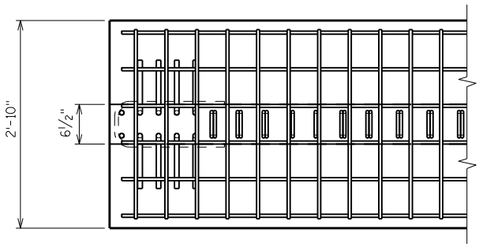
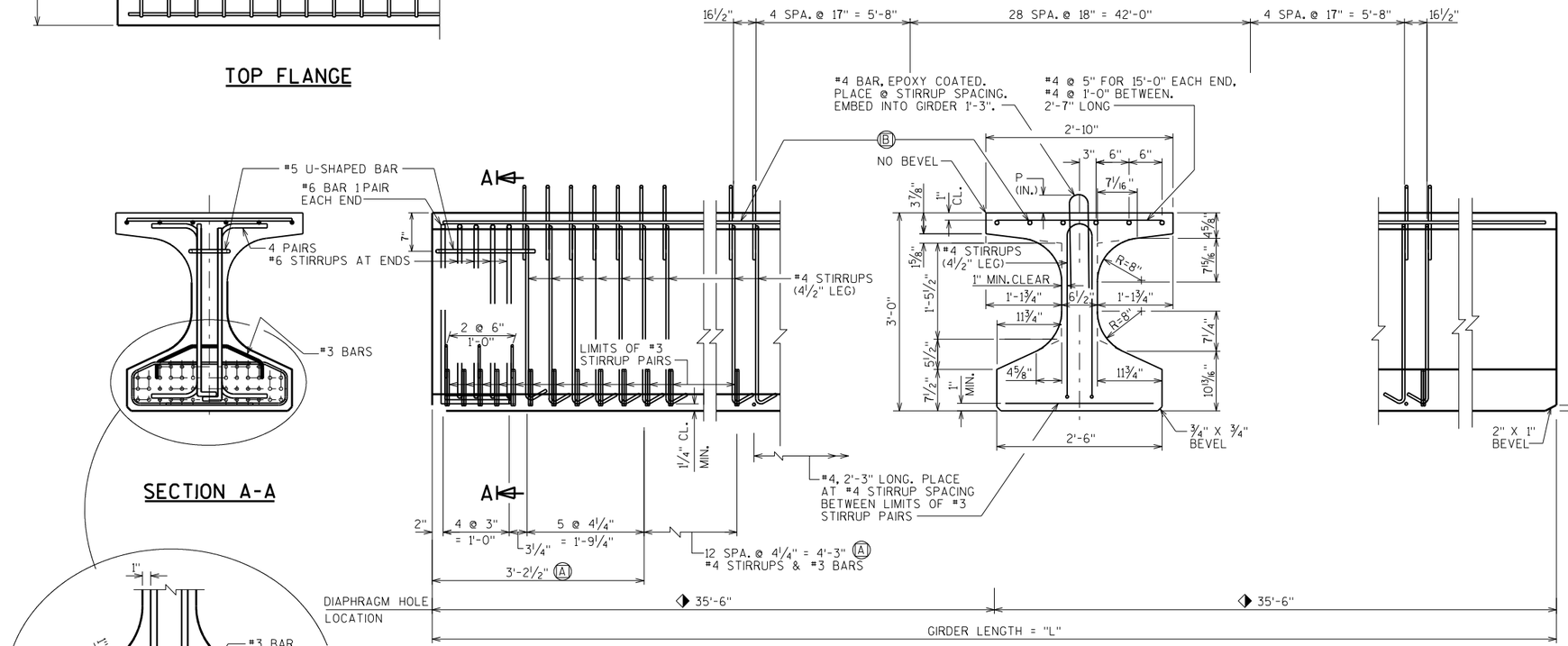


TOP FLANGE

SECTION A-A

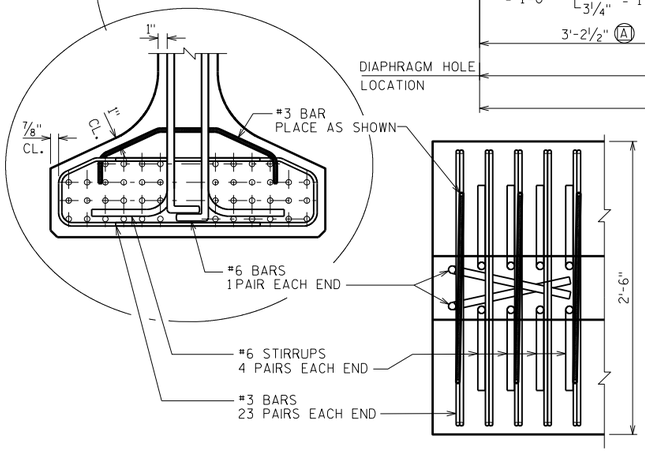


SIDE VIEW & TYPICAL SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"

◆ INSERT/HOLES SPACING FOR STEEL DIAPHRAGMS TO GIRDER WEB CONNECTION FOR ALL GIRDERS



BOTTOM FLANGE

NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER OR EPOXY TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECT. 503.3.3 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

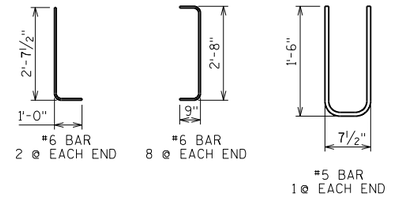
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)									CONC. STRGTH. f'c (p.s.i.)	"P" 1ST ⅓ OF GIRDER	"P" MID ⅓ OF GIRDER	"P" END ⅓ OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN						UNDRAPED PATTERN	
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10						TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳
1	1-6	71'-0"	0.2	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.2	8,000	7"	7"	7"	0.6	20	6,400	32	11	14	4		

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STRUCTURE B-26-38

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36W" PRESTRESSED GIRDER DETAILS 1

SHEET 8

73

SCALE = 1

8

8

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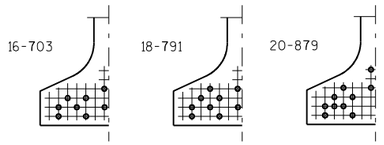
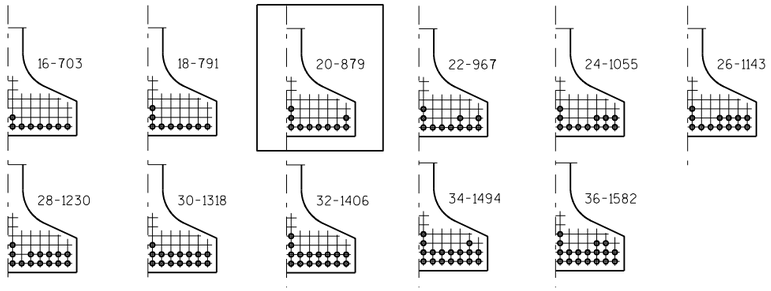
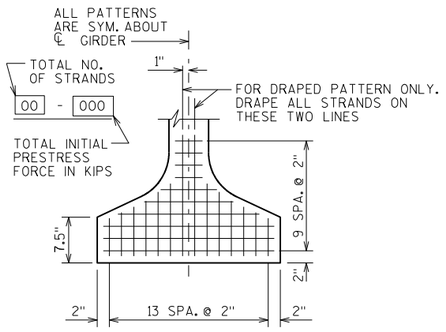


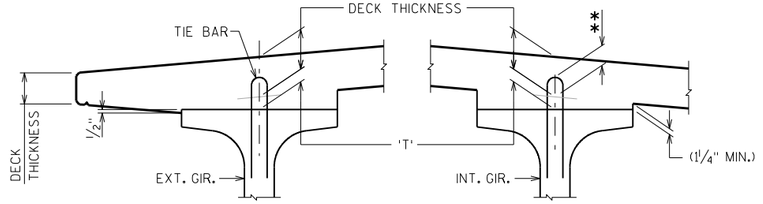
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6"Φ STRANDS





TYP. STRAND PATTERN



DECK HAUNCH DETAIL

IF 1¼" 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 DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

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

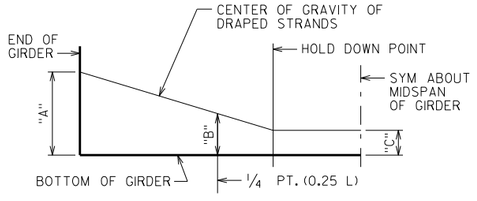
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

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

NOTE: AN AVERAGE HAUNCH ('T') OF 2.67" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6"Φ STRANDS



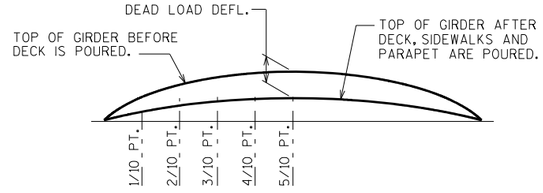
DRAPED STRAND PROFILE

*THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	1.58

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



DEAD LOAD DEFLECTION DIAGRAM

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

DRAWN BY MJH | PLANS CK'D. JLR

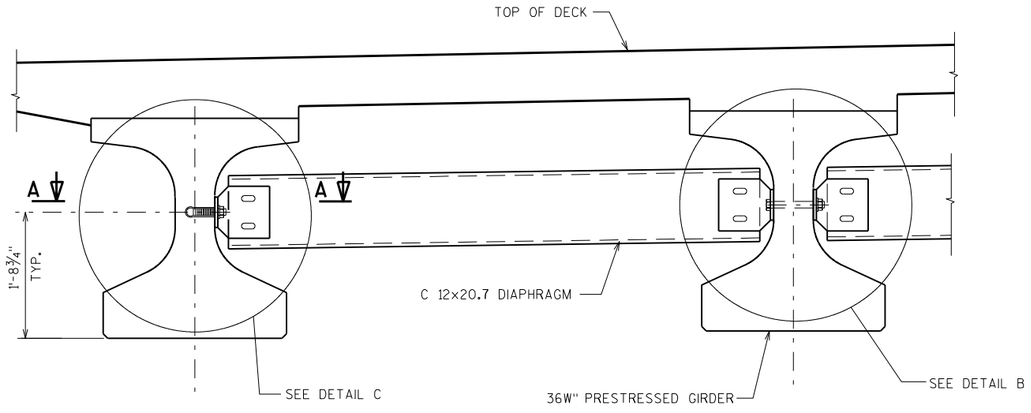
36W" PRESTRESSED GIRDER DETAILS 2

SHEET 9

74

SCALE =

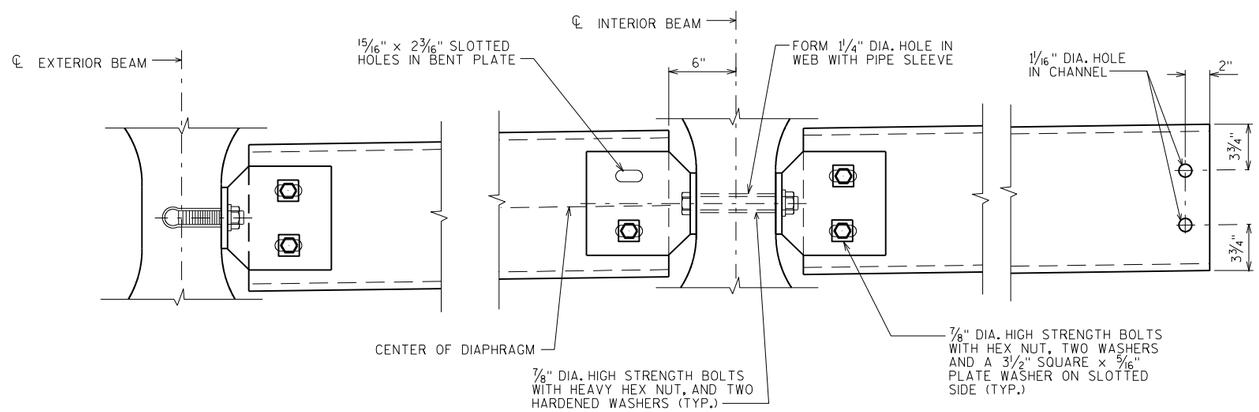
STATE PROJECT NUMBER
1175-19-70



EXTERIOR GIRDER

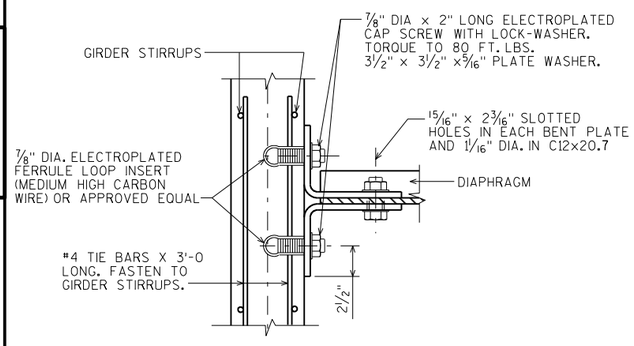
INTERIOR GIRDER

PART TRANSVERSE SECTION AT DIAPHRAGM

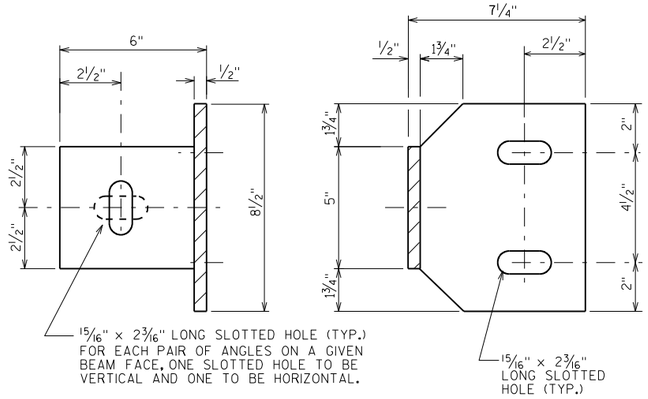


DETAIL C

DETAIL B

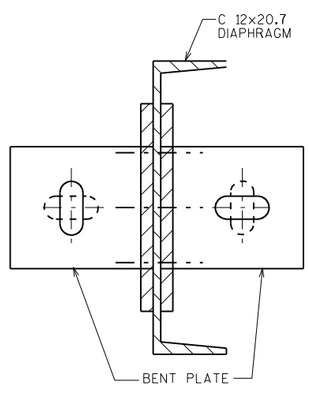


SECTION A-A
(FOR EXTERIOR ATTACHMENT)



BEAM FACE

DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-26-38 ", 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 OVERSIZE 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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

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STEEL DIAPHRAGM

SHEET 10

75

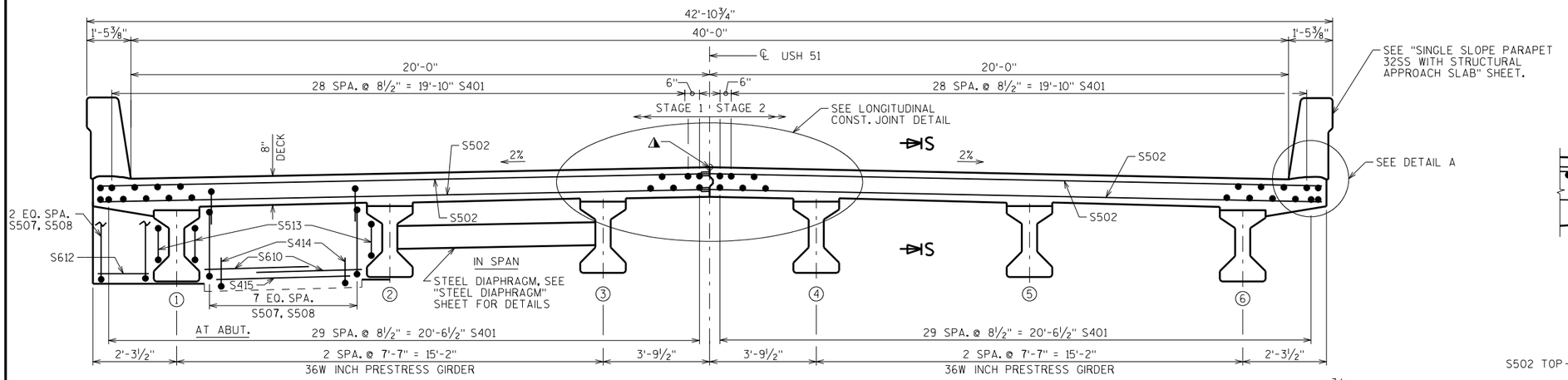
8

8

SCALE =

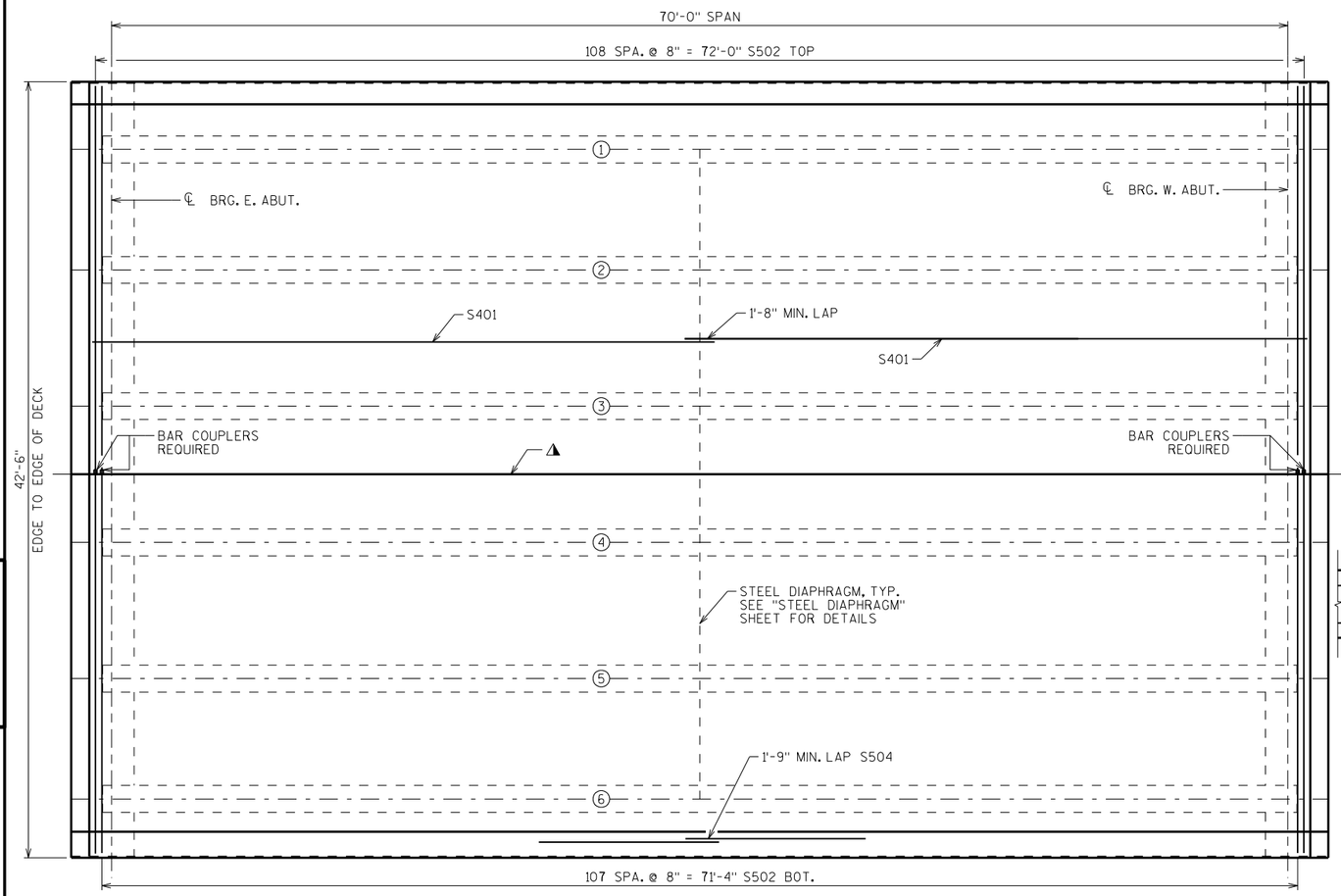
STATE PROJECT NUMBER

1175-19-70

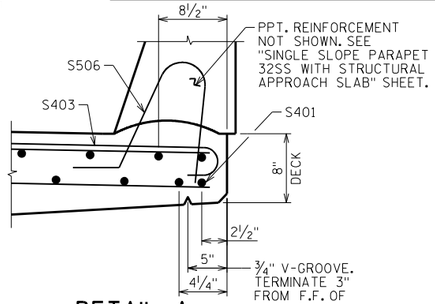


CROSS SECTION THRU ROADWAY

(LOOKING WEST)

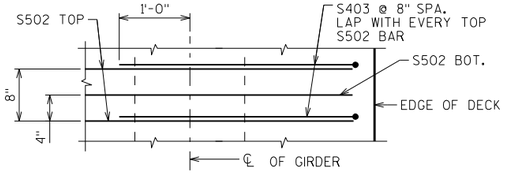


PLAN



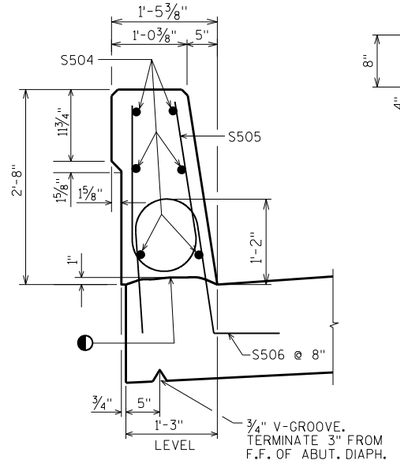
DETAIL A

(TYP. BOTH SIDES)

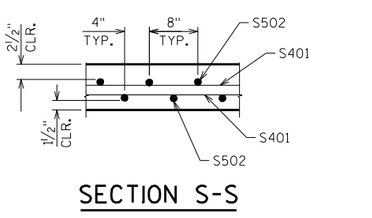


PLAN

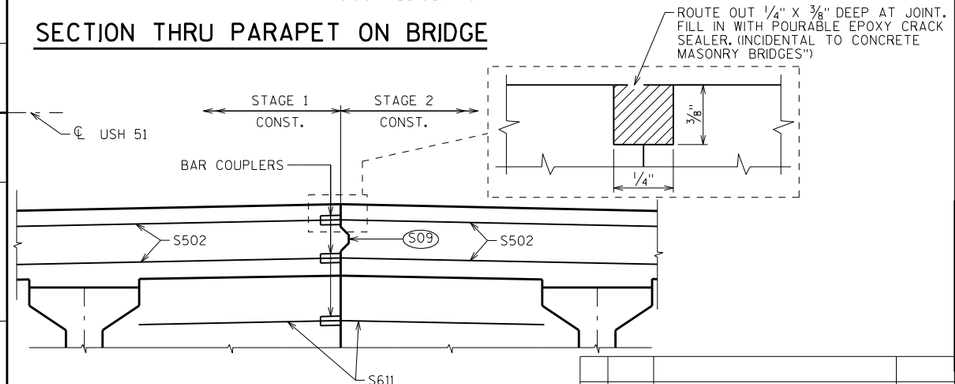
ADDITIONAL OVERHANG REINFORCEMENT DETAIL



SECTION THRU PARAPET ON BRIDGE



SECTION S-S



LONGITUDINAL CONST. JOINT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

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SUPERSTRUCTURE

SHEET 11

76

S09 HORIZONTAL KEYWAY CONSTRUCTION JOINT: KEYWAY FORMED BY BEVELED 2" X 2".

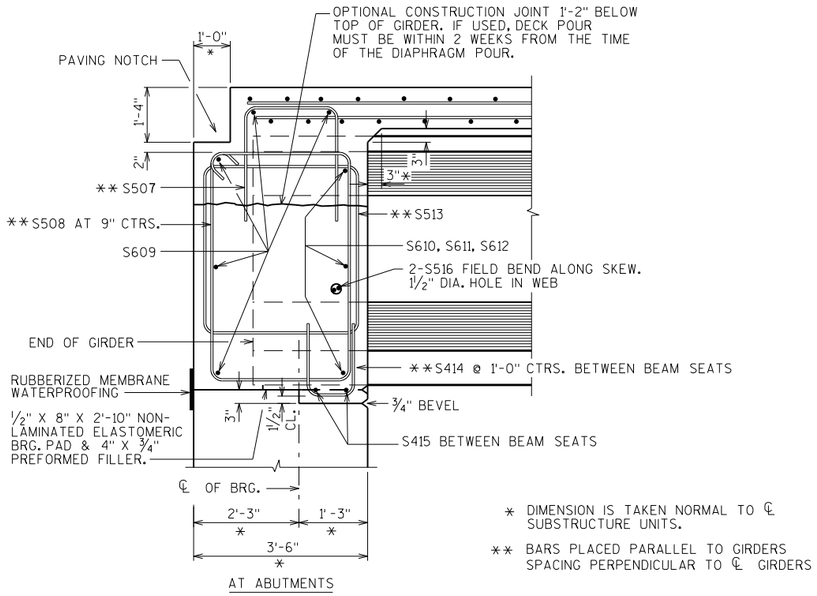
▲ LONGITUDINAL CONST. JOINT

8

SCALE = 8

STATE PROJECT NUMBER

1175-19-70



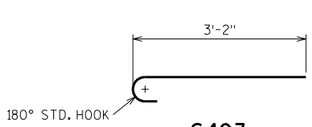
AT ABUTMENTS

PART LONGIT. SECTION

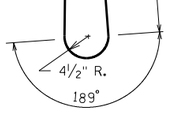
BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
S401	X	248	37'-11"		LONGITUDINAL - TOP & BOTTOM
◆ S502	X	434	21'-1"		TRANSVERSE - TOP & BOT.
S403	X	218	3'-8"	X	TRANSVERSE - TOP ADDITIONAL REINFORCEMENT
S504	X	24	37'-0"		PARAPET 32SS - HORIZONTAL
S505	X	218	5'-0"	X	PARAPET 32SS
S506	X	218	4'-5"	X	PARAPET 32SS
S507	X	92	6'-5"	X	ABUT. DIAPHRAGM
S508	X	92	11'-6"	X	ABUT. DIAPHRAGM
◆ S609	X	20	21'-1"		ABUT. DIAPHRAGM
S610	X	60	4'-9"		ABUT. DIAPHRAGM
◆ S611	X	12	2'-7"		ABUT. DIAPHRAGM
S612	X	12	1'-2"		ABUT. DIAPHRAGM
S513	X	24	9'-8"	X	ABUT. DIAPHRAGM
S414	X	50	3'-3"	X	ABUT. DIAPHRAGM
S415	X	20	4'-3"		ABUT. DIAPHRAGM
S516	X	24	6'-0"		ABUT. DIAPHRAGM
SS901		86	5'-0"	X	ABUT. DIAPH./APPROACH SLAB - VERTICAL

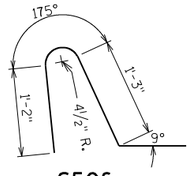
◆ BAR LENGTH HAS BEEN COMPUTED TO ℄ OF CONSTRUCTION JOINT AND SHALL BE MODIFIED TO BAR COUPLER MANUFACTURER RECOMMENDATIONS.



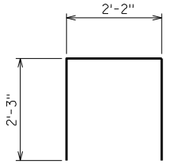
S403



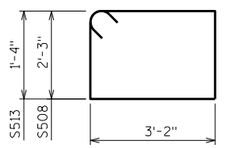
S505



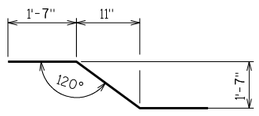
S506



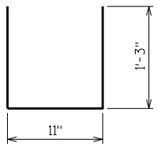
S507



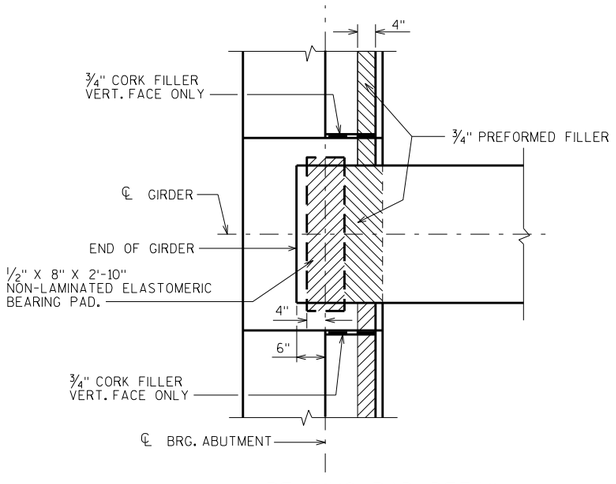
S508; S513



SS901



S414



BEARING PAD DETAIL

TOP OF DECK ELEVATIONS

	W. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	E. ABUT.
EOD	1617.03	1617.08	1617.13	1617.18	1617.23	1617.27	1617.32	1617.37	1617.42	1617.47	1617.51
GIR. 1	1617.05	1617.10	1617.15	1617.20	1617.25	1617.29	1617.34	1617.39	1617.44	1617.49	1617.54
GIR. 2	1617.20	1617.25	1617.30	1617.35	1617.40	1617.45	1617.49	1617.54	1617.59	1617.64	1617.69
GIR. 3	1617.36	1617.40	1617.45	1617.50	1617.55	1617.60	1617.65	1617.69	1617.74	1617.79	1617.84
GIR. 4	1617.36	1617.40	1617.45	1617.50	1617.55	1617.60	1617.65	1617.69	1617.74	1617.79	1617.84
GIR. 5	1617.20	1617.25	1617.30	1617.35	1617.40	1617.45	1617.49	1617.54	1617.59	1617.64	1617.69
GIR. 6	1617.05	1617.10	1617.15	1617.20	1617.25	1617.29	1617.34	1617.39	1617.44	1617.49	1617.54
EOD	1617.03	1617.08	1617.13	1617.18	1617.23	1617.27	1617.32	1617.37	1617.42	1617.47	1617.51

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

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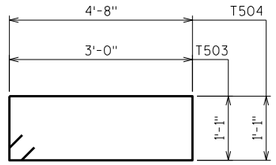
SUPERSTRUCTURE DETAILS

SHEET 12

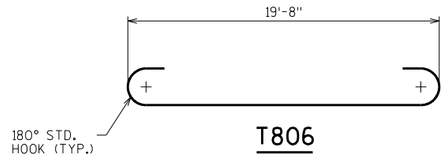
77

SCALE = 1.33

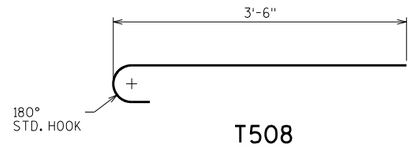
STATE PROJECT NUMBER
1175-19-70



T503, T504



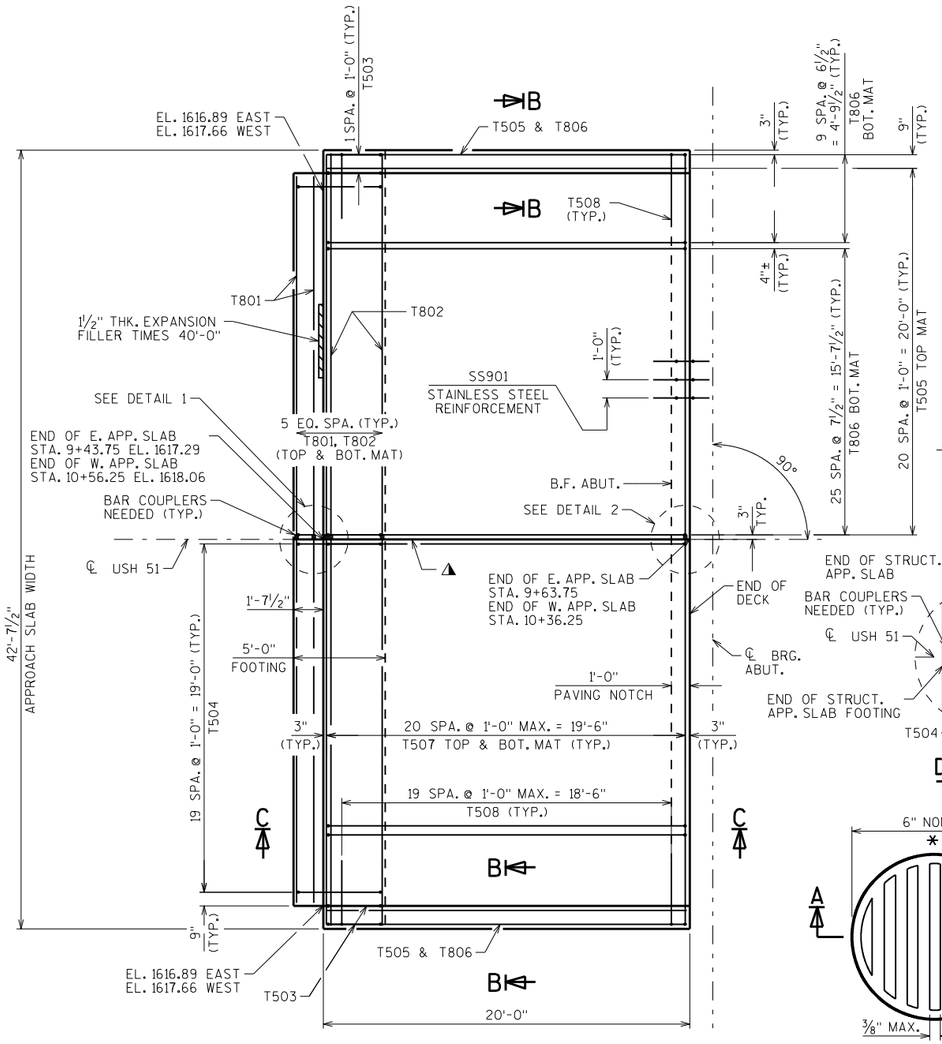
T806



T508

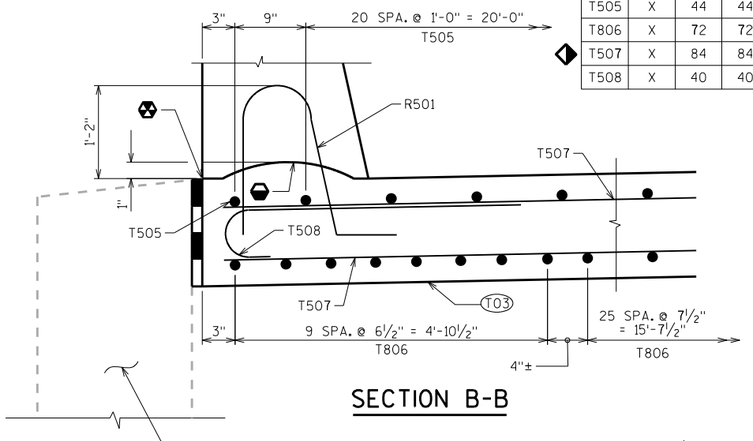
BILL OF BARS

	BAR MARK	COAT	NO. REQ'D. EAST SLAB	NO. REQ'D. WEST SLAB	LENGTH	BENT	LOCATION
◆	T801	X	8	8	19'-9"		FOOTING - HORIZONTAL
◆	T802	X	16	16	21'-0"		FOOTING - HORIZONTAL
	T503	X	4	4	8'-10"	X	FOOTING - STIRRUP
	T504	X	40	40	12'-2"	X	FOOTING - STIRRUP
	T505	X	44	44	19'-8"		APPROACH SLAB - LONGITUDINAL - TOP
	T806	X	72	72	21'-6"	X	APPROACH SLAB - LONGITUDINAL - BOTTOM
◆	T507	X	84	84	21'-0"		APPROACH SLAB - TRANSVERSE - TOP & BOTTOM
	T508	X	40	40	4'-1"	X	APPROACH SLAB - TRANSVERSE - TOP EDGES OF SLAB

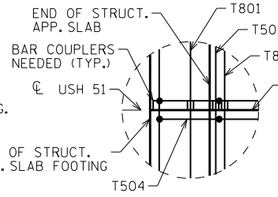


PLAN

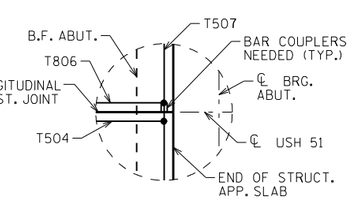
EAST STRUCTURAL APPROACH SLAB SHOWN
WEST STRUCTURAL APPROACH SLAB SIMILAR



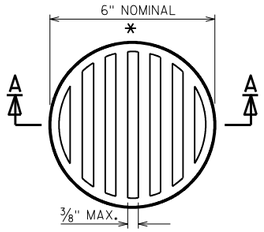
SECTION B-B

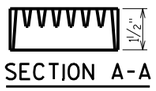


DETAIL 1



DETAIL 2





SECTION A-A

RODENT SHIELD DETAIL

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

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

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

◆ APPLY PROTECTIVE SURFACE TREATMENT TO ENTIRE PAVING NOTCH SURFACE PRIOR TO POURING THE STRUCTURAL APPROACH SLAB.

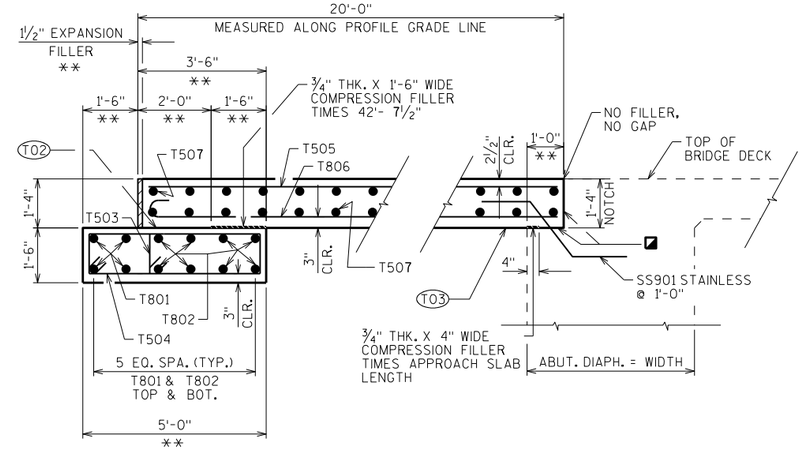
▲ LONGITUDINAL CONST. JOINT

** DIMENSION MEASURED NORMAL TO ABUTMENT BODY

◓ CONST. JOINT - STRIKE OFF AS SHOWN

◆ BAR LENGTH HAS BEEN COMPUTED TO ℄ OF CONSTRUCTION JOINT AND SHALL BE MODIFIED TO BAR COUPLER MANUFACTURER RECOMMENDATIONS.

⊗ 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) EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.



SECTION C-C

(T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN.) TOTAL THK. OF POLYETHELENE SHEETS OVER THE ENTIRE TOP OF FOOTING.

(T03) PLACE MULTIPLE LAYERS (0.03" MIN.) TOTAL THK. OF POLYETHELENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

DRAWN BY MJH | PLANS CK'D. JLR

STRUCTURAL APPROACH SLAB

SHEET 13

78

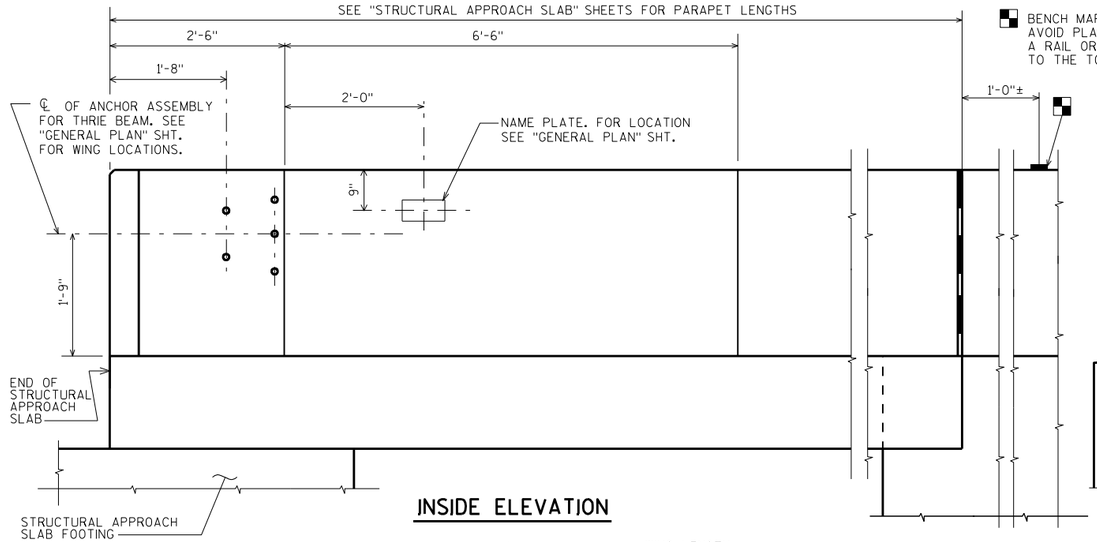
SCALE = 4

8

8

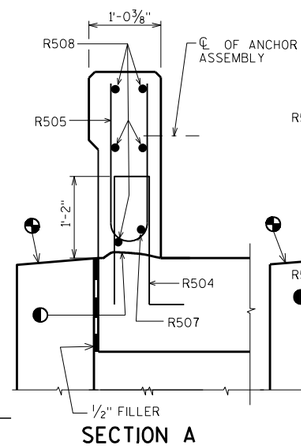
STATE PROJECT NUMBER

1175-19-70

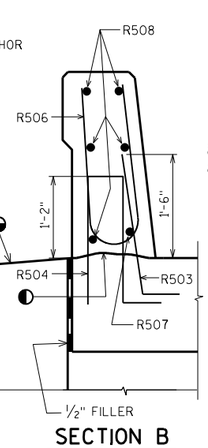


INSIDE ELEVATION

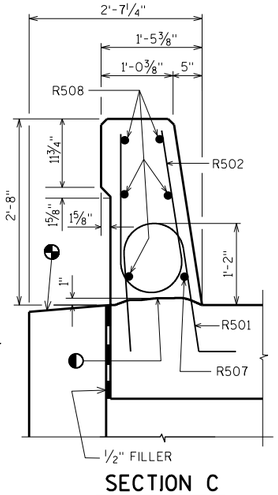
BENCH MARK CAP (WHEN SUPPLIED). AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.



SECTION A



SECTION B

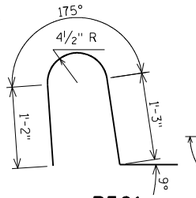


SECTION C

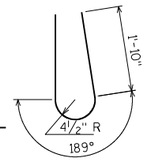
BILL OF BARS

FOR STRUCTURAL APPROACH SLAB PARAPETS

BAR MARK	COAT	EAST ABUT.	WEST ABUT.	LENGTH	BENT	LOCATION
R501	X	34	34	4'-5"	X	PARAPET VERT.
R502	X	34	34	5'-0"	X	PARAPET VERT.
R503	X	24	24	2'-9"	X	PARAPET VERT.
R504	X	34	34	4'-4"	X	PARAPET VERT.
R505	X	22	22	4'-9"	X	PARAPET VERT.
R506	X	12	12	4'-10"	X	PARAPET VERT.
R507	X	2	2	19'-7"	X	PARAPET HORIZ.
R508	X	10	10	19'-8"		PARAPET HORIZ.

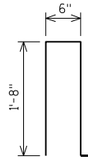


R501



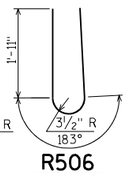
R502

R503

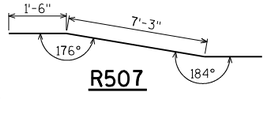


R504

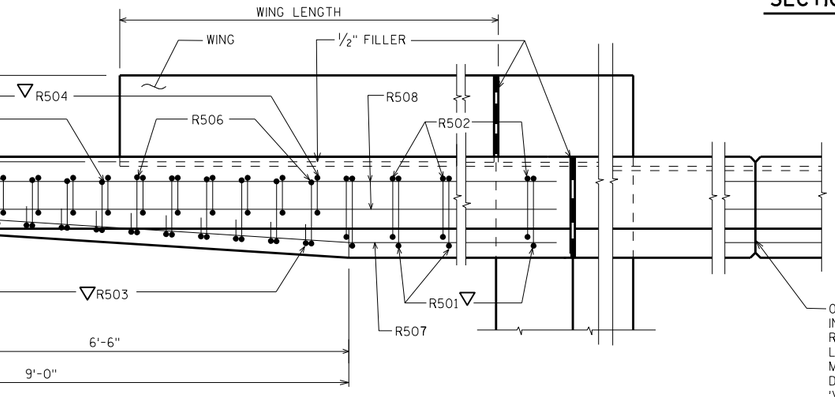
R505



R506

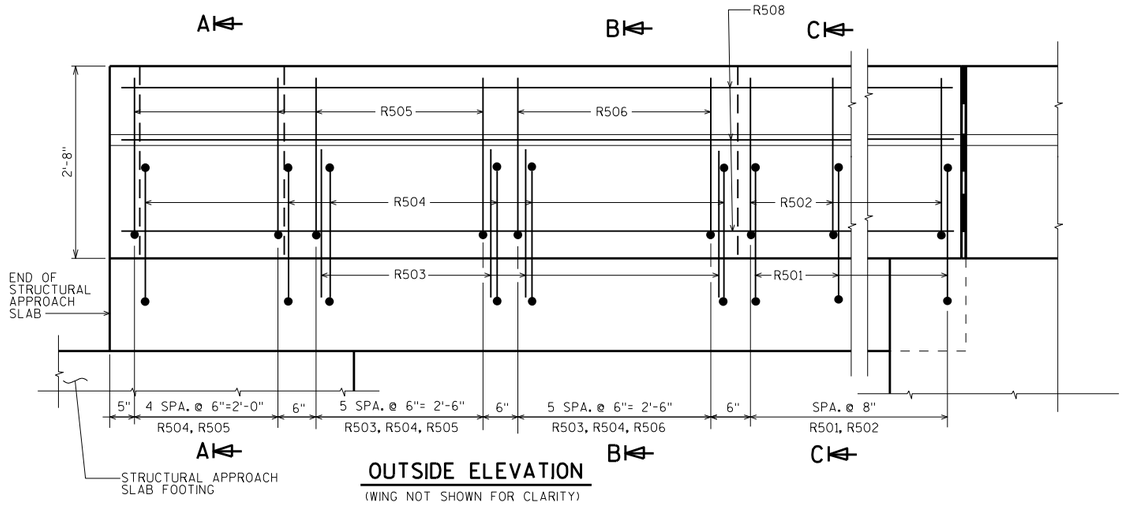


R507



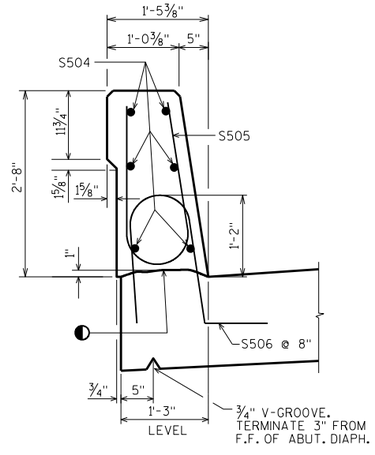
PLAN

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A ¾" - 'V' GROOVE.

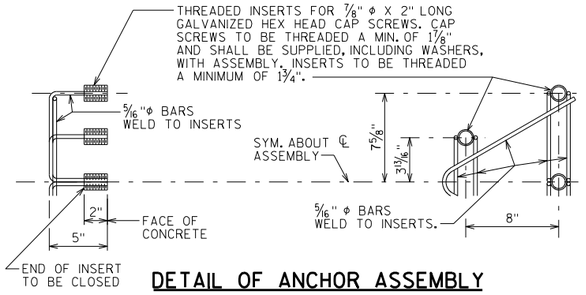


OUTSIDE ELEVATION

(WING NOT SHOWN FOR CLARITY)



SECTION THRU PARAPET ON BRIDGE



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

◒ SLOPE 0.02¼ FOR DRAINAGE

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

▽ R501, R503 AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

DRAWN BY MJH | PLANS CK'D. JLR

SINGLE SLOPE PARAPET 32SS WITH STRUCTURAL APPROACH SLAB

SHEET 14

79

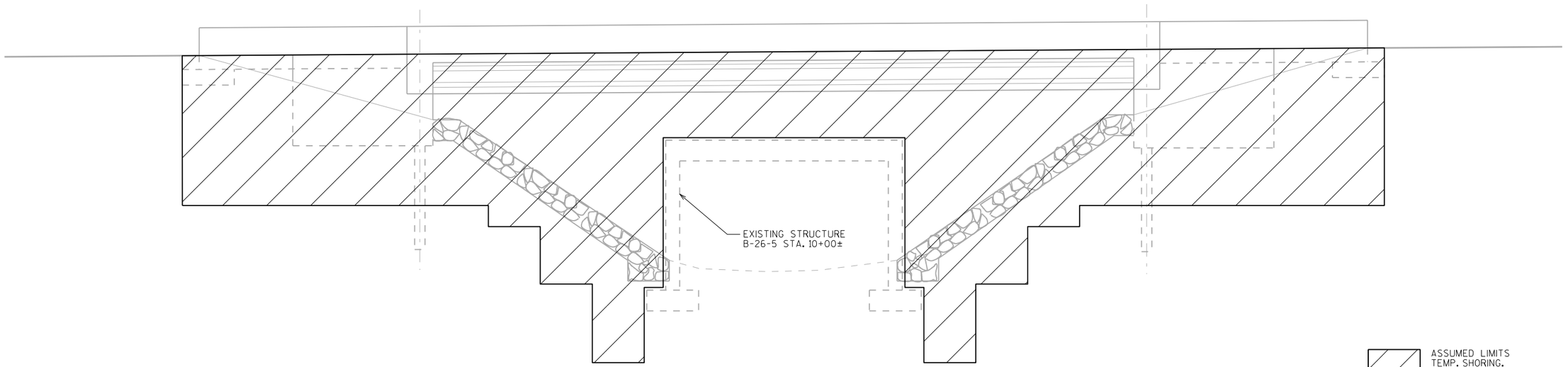
SCALE = 1.05

8

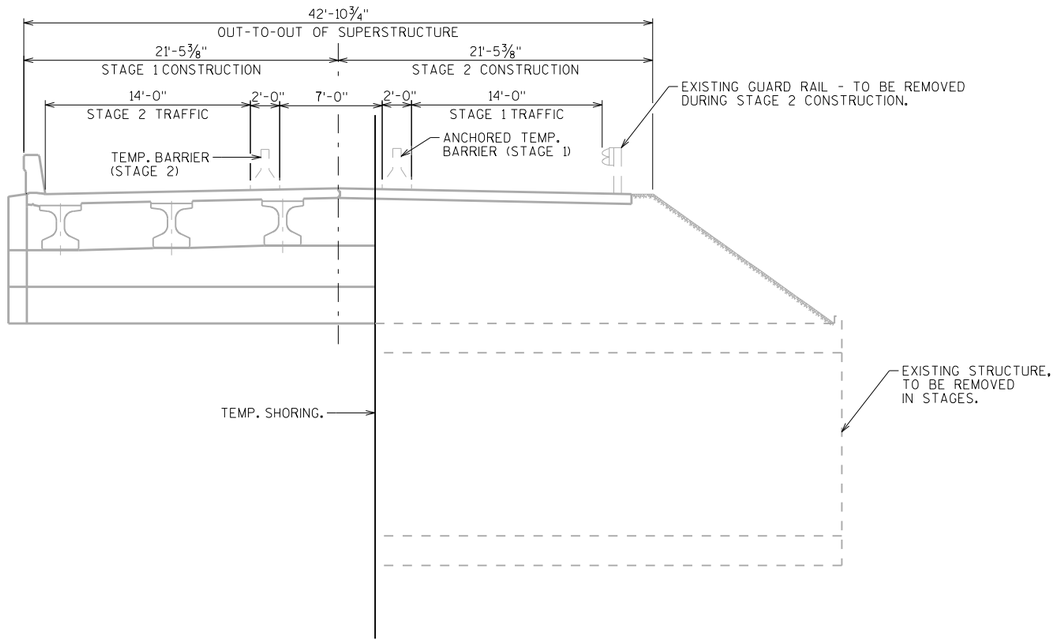
8

STATE PROJECT NUMBER

1175-19-70



ASSUMED LIMITS
TEMP. SHORING.



8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-26-38

DRAWN BY MJH | PLANS CK'D. JLR

TEMPORARY SHORING

SHEET 15

80

SCALE = 5

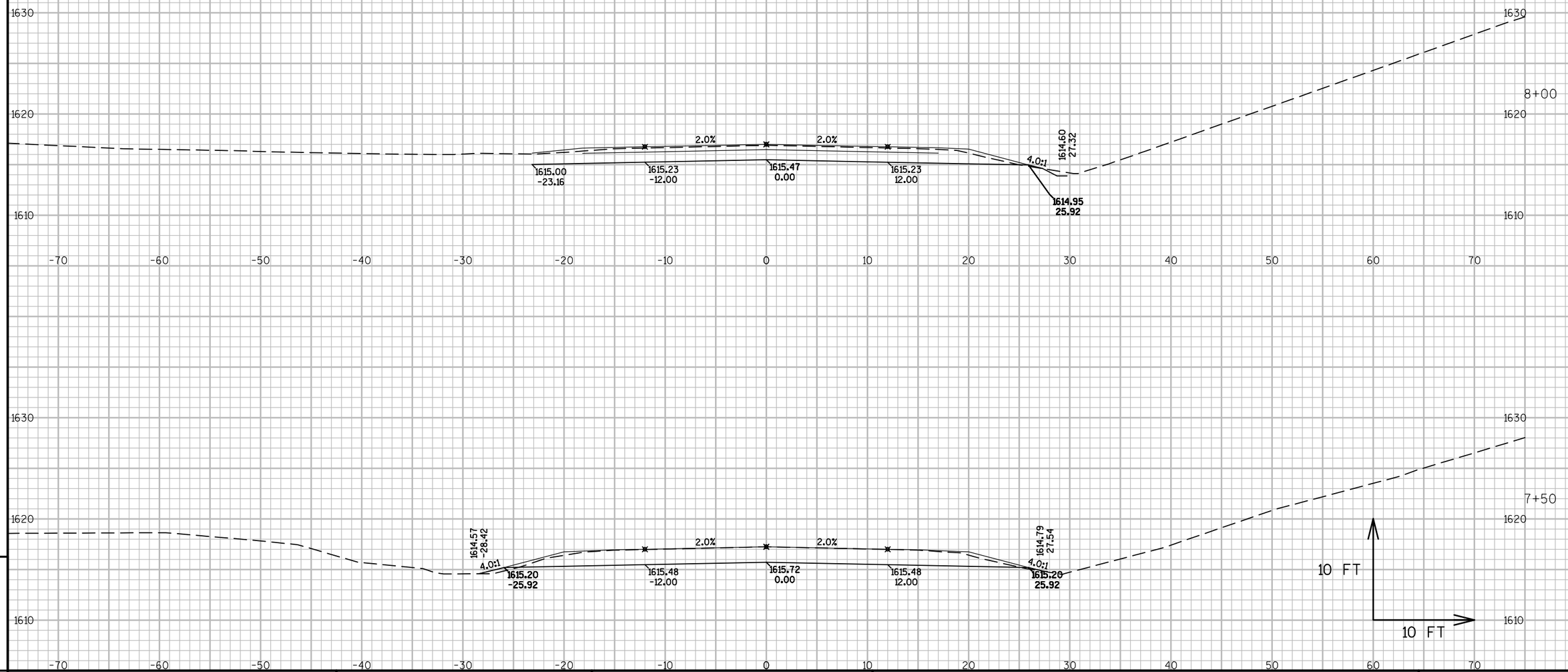
STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) (Unadjusted) Fill	Cumulative Vol (CY) Cut 1.00	Expanded Fill 1.25	Mass Ordinate
					Note 1	Note 3	Note 1		Note 8
07+50	750.00	0.00	64.20	1.07	0	0	0	0	0.00
07+75	775.00	25.00	63.43	0.74	59	1	59	1	58.04
08+00	800.00	25.00	61.22	0.14	58	0	117	2	115.24
08+25	825.00	25.00	57.93	0.84	55	0	172	2	169.83
08+30	830.00	5.00	56.73	2.44	11	0	183	3	180.07
08+35	835.00	5.00	55.41	4.17	10	1	193	3	189.69
08+40	840.00	5.00	51.66	5.76	10	1	203	4	198.45
08+45	845.00	5.00	51.22	6.57	10	1	212	6	206.55
08+50	850.00	5.00	50.51	4.44	9	1	222	7	214.70
08+53.71	853.71	3.71	48.39	5.01	7	1	229	8	220.68
08+55	855.00	1.29	46.48	5.09	2	0	231	8	222.64
08+60	860.00	5.00	38.90	5.33	8	1	239	9	229.34
08+65	865.00	5.00	31.41	5.50	7	1	245	11	234.60
08+70	870.00	5.00	26.18	5.58	5	1	251	12	238.65
08+75	875.00	5.00	30.77	5.58	5	1	256	13	242.63
08+78.75	878.75	3.75	33.96	3.90	4	1	260	14	246.31
08+80	880.00	1.25	34.98	3.84	2	0	262	14	247.68
08+85	885.00	5.00	38.68	2.47	7	1	269	15	253.77
08+90	890.00	5.00	45.25	0.45	8	0	277	15	261.20
08+95	895.00	5.00	45.33	0.13	8	0	285	15	269.52
09+00	900.00	5.00	44.20	1.52	8	0	293	16	277.62
09+03.68	903.68	3.68	43.26	3.24	6	0	299	16	283.17
09+05	905.00	1.32	42.88	3.11	2	0	301	16	285.08
09+10	910.00	5.00	46.38	2.62	8	1	310	17	292.69
09+15	915.00	5.00	44.62	3.79	8	1	318	18	300.37
09+20	920.00	5.00	42.91	4.72	8	1	326	19	307.49
09+25	925.00	5.00	41.11	6.99	8	1	334	20	313.91
09+30	930.00	5.00	39.27	10.79	7	2	341	22	319.30
09+35	935.00	5.00	37.37	16.57	7	3	348	25	323.23
09+50	950.00	15.00	30.04	46.34	19	17	367	47	320.11
09+61.3	961.30	11.30	27.91	76.53	12	26	379	79	300.10
Structure Gap									
10+38.69	1038.69	0.00	27.02	59.02	0	0	379	79	300.10
10+50	1050.00	11.31	29.95	31.90	12	19	391	103	288.22
10+75	1075.00	25.00	38.72	10.20	32	19	423	127	295.66
10+96.22	1096.22	21.22	45.71	17.20	33	11	456	141	315.38
11+00	1100.00	3.78	47.05	18.16	6	2	463	144	318.78
11+21.15	1121.15	21.15	56.15	14.76	40	13	503	160	343.07
11+25	1125.00	3.85	58.79	13.56	8	2	511	163	348.75
11+46.19	1146.19	21.19	62.57	9.84	48	9	559	174	384.89
11+50	1150.00	3.81	61.18	7.74	9	1	568	176	392.08
11+75	1175.00	25.00	53.50	13.82	53	10	621	188	432.69
11+83.77	1183.77	8.77	54.68	17.54	18	5	638	194	443.90
12+00	1200.00	16.23	57.27	18.44	34	11	672	208	464.02
12+08.7	1208.70	8.70	58.23	14.90	19	5	691	215	475.92
12+25	1225.00	16.30	59.64	11.34	36	8	726	225	501.59
12+33.74	1233.74	8.74	60.77	12.62	19	4	746	229	516.23
12+50	1250.00	16.26	62.99	9.26	37	7	783	238	545.26
12+75	1275.00	25.00	65.27	6.15	59	7	842	247	595.71
13+00	1300.00	25.00	67.18	3.91	61	5	904	252	651.21
13+25	1325.00	25.00	69.37	1.56	63	3	967	256	711.26
13+50	1350.00	25.00	70.08	0.00	65	1	1,031	256	774.92
					1,031	205			

			AREA (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		
STATION	Real Station	Distance	Cut	Fill	Cut	Fill	Cut	Expanded Fill	Mass Ordinate
							1.00	1.25	
					Note 1	Note 3	Note 1		Note 8
99+05	9905.00	0.00	7.72	77.59	0	0	0	0	0.00
99+10	9910.00	5.00	7.69	93.65	1	16	1	20	-18.39
99+20	9920.00	10.00	7.73	125.08	3	41	4	70	-66.17
99+30	9930.00	10.00	7.84	147.67	3	51	7	134	-126.42
99+40	9940.00	10.00	7.89	146.02	3	54	10	202	-191.49
99+48.43	9948.43	8.43	6.46	110.45	2	40	12	252	-239.32
99+50	9950.00	1.57	6.12	100.92	0	6	13	259	-246.62
99+55	9955.00	5.00	3.55	76.82	1	16	14	280	-266.29
99+60	9960.00	5.00	1.47	64.81	0	13	14	296	-282.22
99+65	9965.00	5.00	0.20	42.47	0	10	14	309	-294.48
99+70	9970.00	5.00	0.00	21.89	0	6	14	316	-301.91
99+75	9975.00	5.00	1.11	4.88	0	2	14	319	-304.91
99+80	9980.00	5.00	4.33	3.39	1	1	15	320	-305.36
99+85	9985.00	5.00	31.96	0.00	3	0	18	321	-302.40
99+90	9990.00	5.00	21.71	0.00	5	0	23	321	-297.43
99+95	9995.00	5.00	11.06	0.00	3	0	26	321	-294.39
					26	256			

◅ RIGHT OF WAY APPROX. 100' FROM C/L

RIGHT OF WAY APPROX. 100' FROM C/L ▻

FIBER OPTIC LINE APPROX. 90' FROM C/L ▻



9

9

PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: WEBER CREEK BRIDGE	SHEET 83	E

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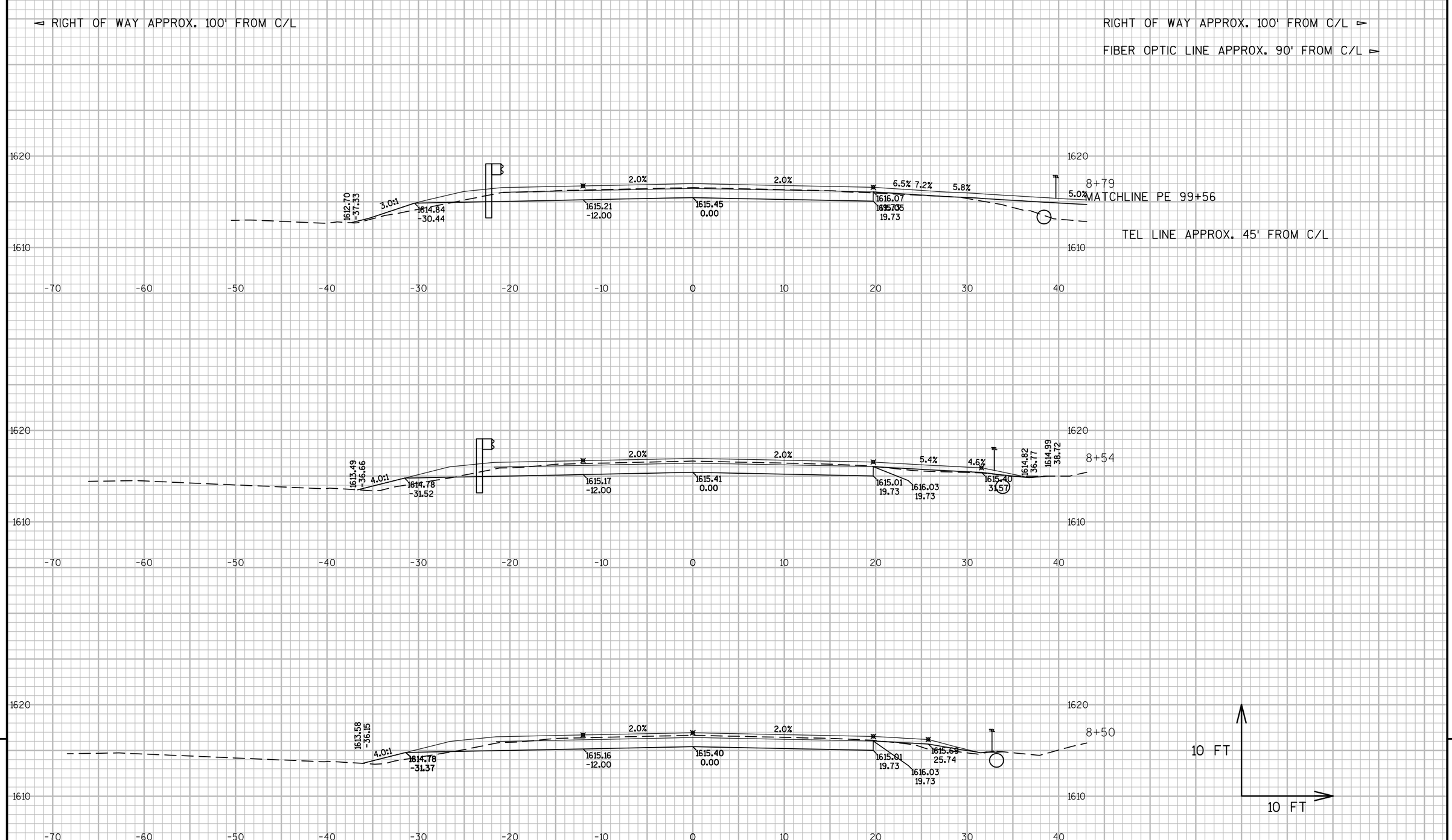
LAYOUT NAME - 090201-XS

PLOT DATE : 9/27/2016 3:20 PM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: WEBER CREEK BRIDGE	SHEET 84	E

FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090202-XS

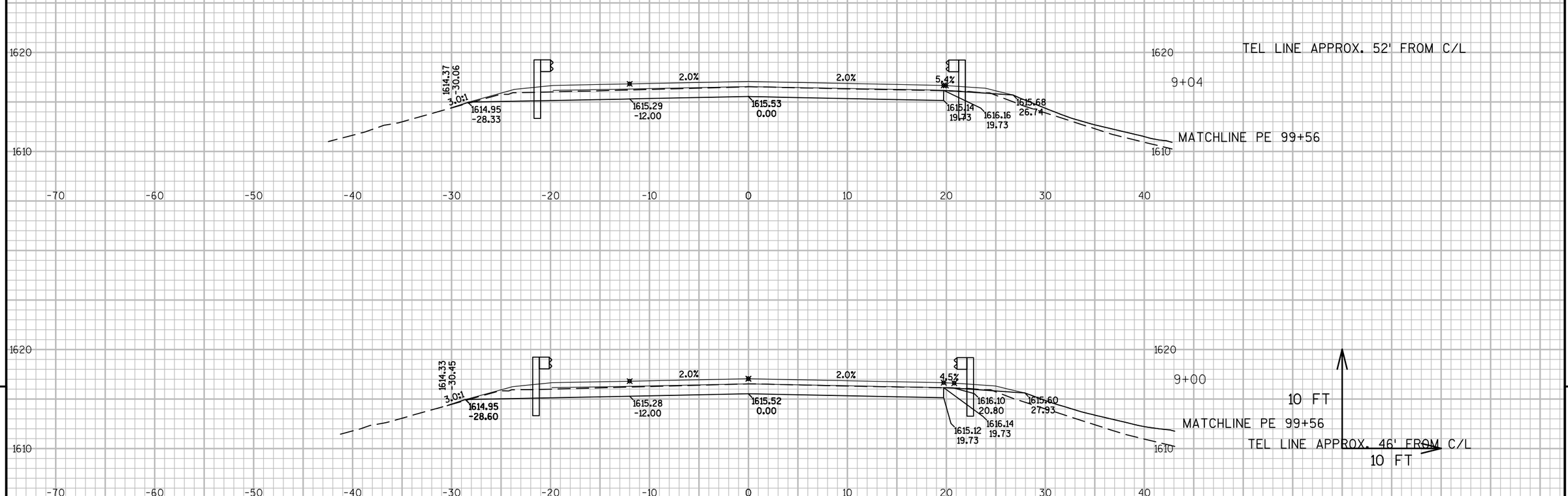
PLOT DATE : 9/27/2016 3:20 PM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49

◄ RIGHT OF WAY APPROX. 100' FROM C/L

RIGHT OF WAY APPROX. 100' FROM C/L ►

FIBER OPTIC LINE APPROX. 90' FROM C/L ►



9

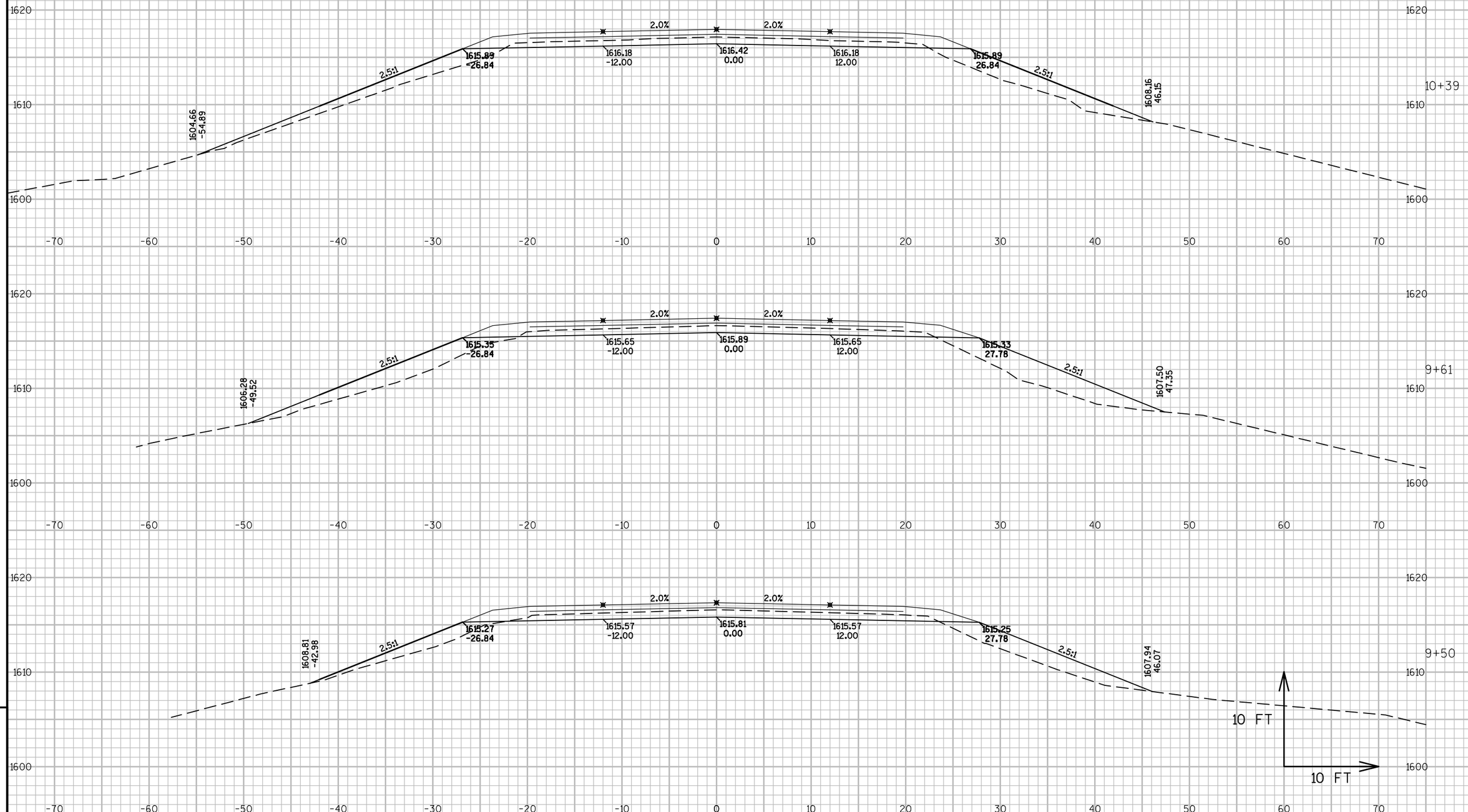
9

PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: WEBER CREEK BRIDGE	SHEET 85	E

◁ RIGHT OF WAY APPROX. 100' FROM C/L

RIGHT OF WAY APPROX. 100' FROM C/L ▷

FIBER OPTIC LINE APPROX. 80' FROM C/L ▷



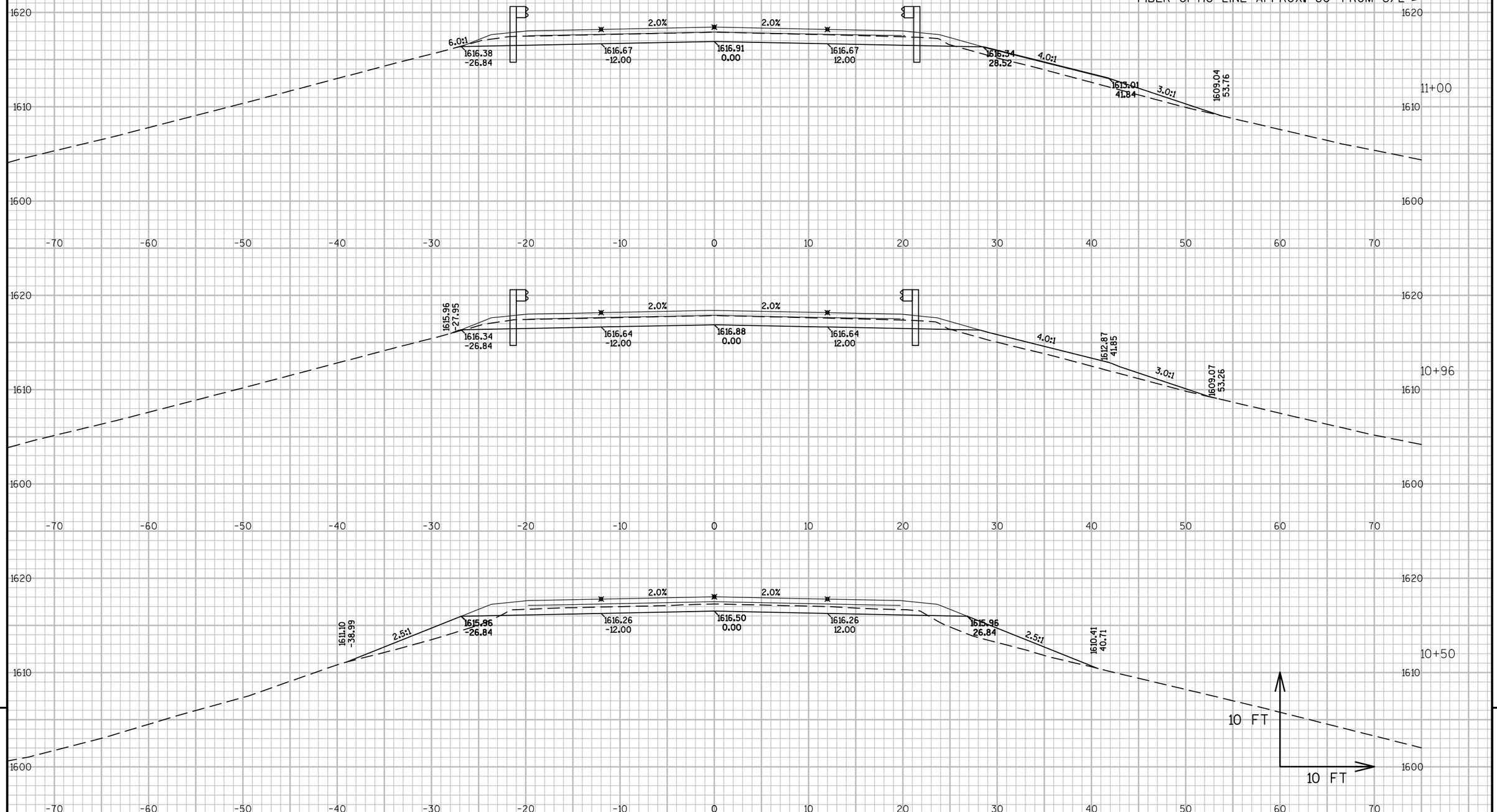
9 9

PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: WEBER CREEK BRIDGE	SHEET 86	E

◁ RIGHT OF WAY APPROX. 100' FROM C/L

RIGHT OF WAY APPROX. 100' FROM C/L ▷

FIBER OPTIC LINE APPROX. 80' FROM C/L ▷



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PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: WEBER CREEK BRIDGE	SHEET 87	E

FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090205-XS

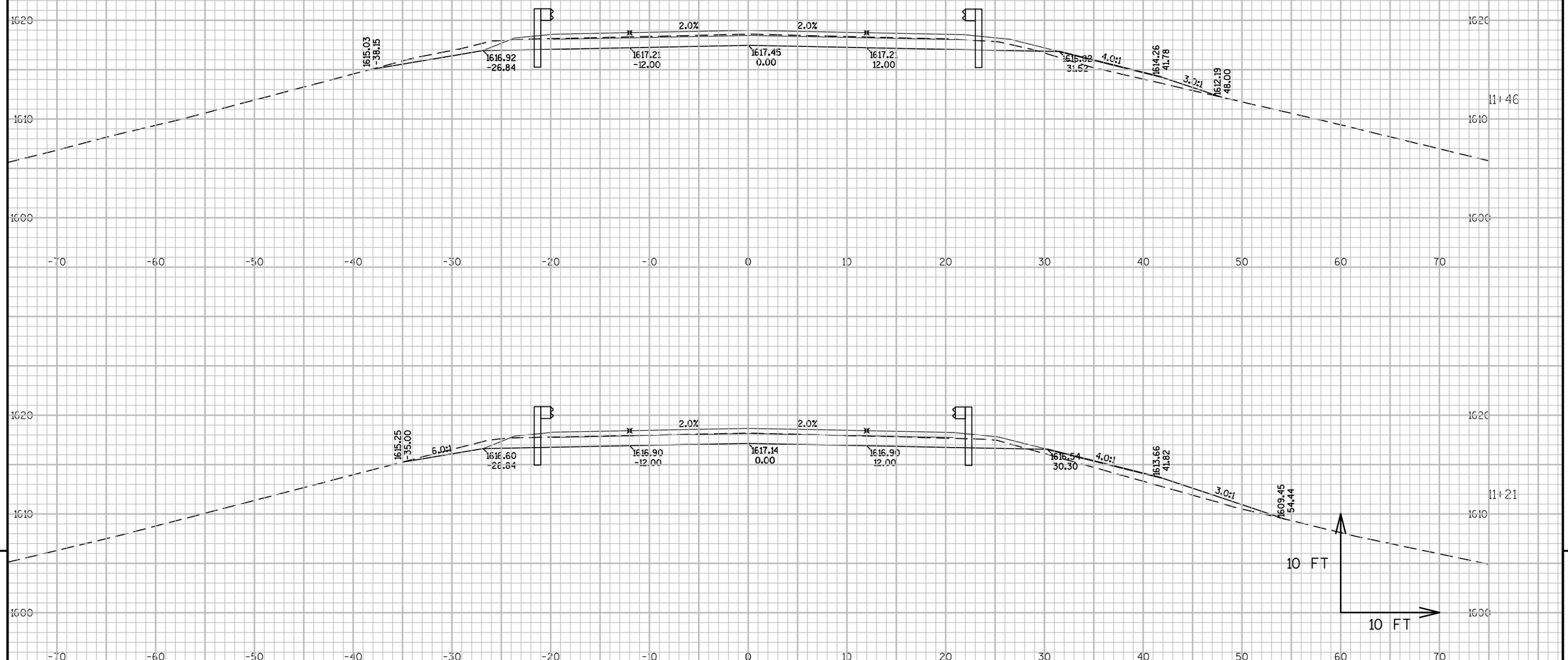
PLOT DATE : 9/27/2016 3:20 PM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49

◄ RIGHT OF WAY APPROX. 100' FROM C/L

RIGHT OF WAY APPROX. 100' FROM C/L ►

FIBER OPTIC LINE APPROX. 80' FROM C/L ►



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PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: WEBER CREEK BRIDGE	SHEET 88	E

FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090206-XS

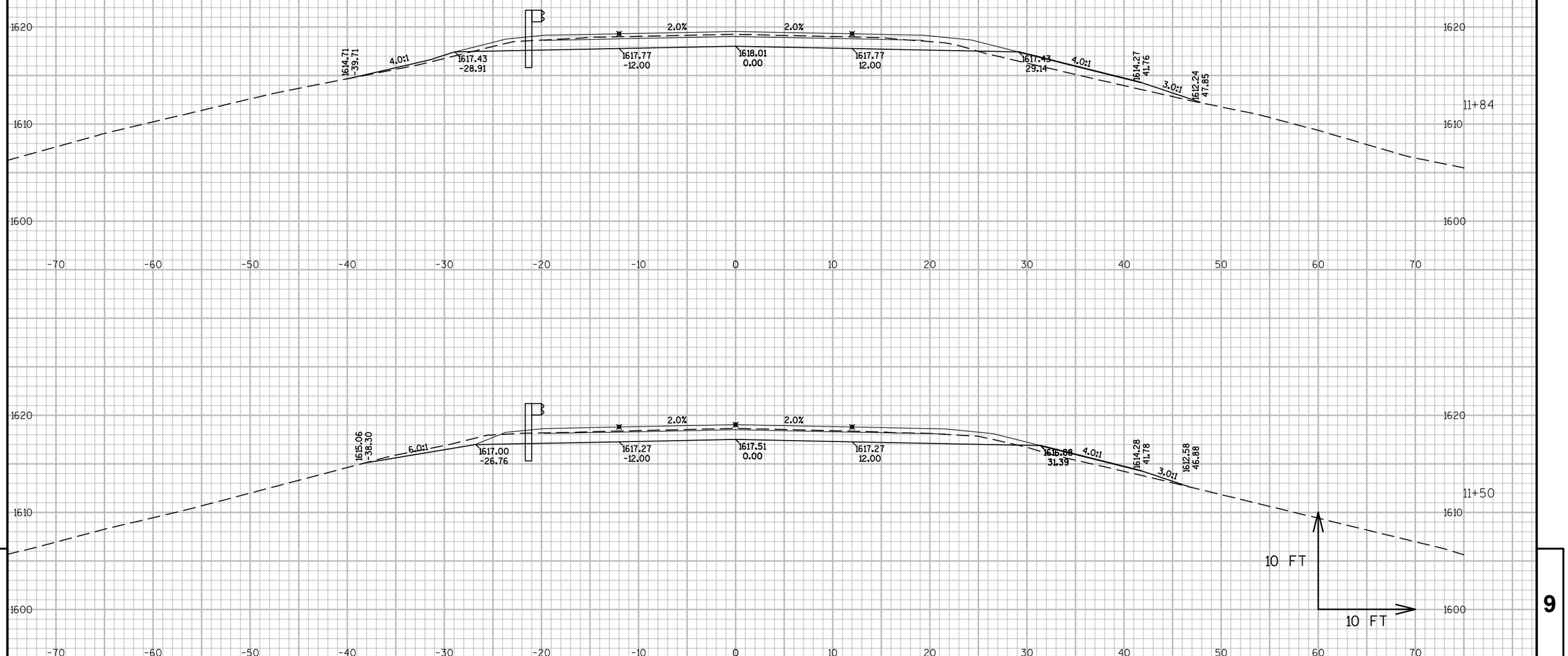
PLOT DATE : 9/27/2016 3:20 PM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49

◁ RIGHT OF WAY APPROX. 100' FROM C/L

RIGHT OF WAY APPROX. 100' FROM C/L ▷

FIBER OPTIC LINE APPROX. 80' FROM C/L ▷



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9

PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: WEBER CREEK BRIDGE	SHEET 89	E

FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090207-XS

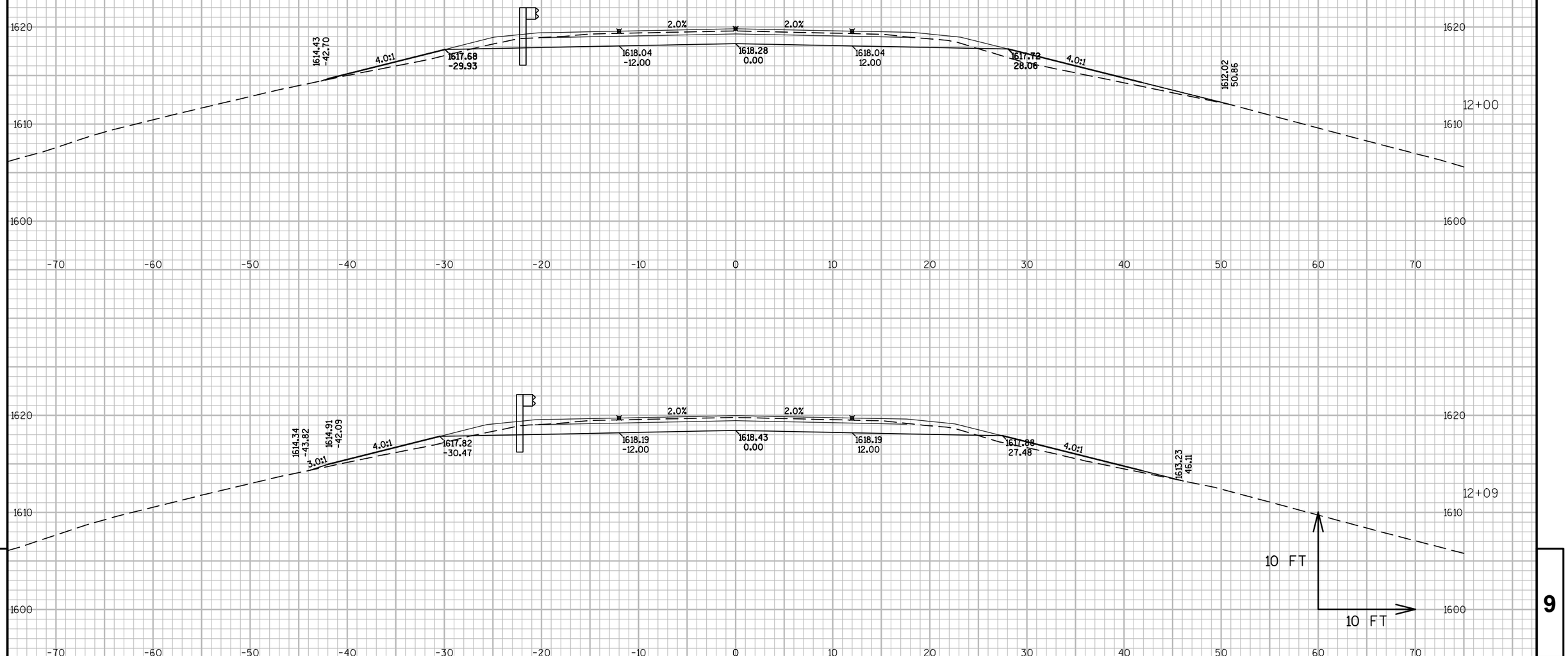
PLOT DATE : 9/27/2016 3:20 PM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49

◁ RIGHT OF WAY APPROX. 100' FROM C/L

RIGHT OF WAY APPROX. 100' FROM C/L ▷

FIBER OPTIC LINE APPROX. 80' FROM C/L ▷



PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: WEBER CREEK BRIDGE	SHEET 90	E

FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090208-XS

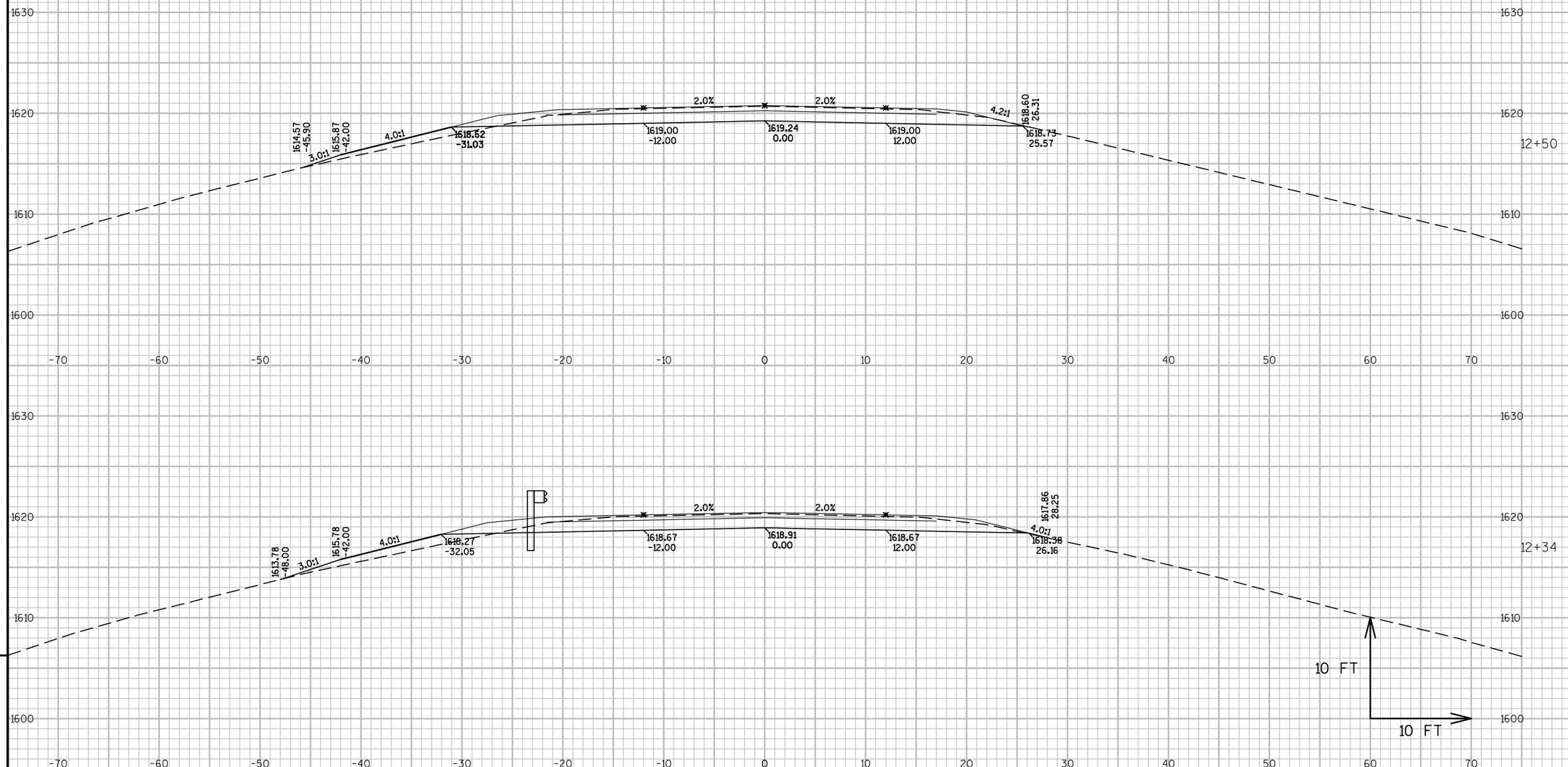
PLOT DATE : 9/27/2016 3:20 PM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49

◁ RIGHT OF WAY APPROX. 100' FROM C/L

RIGHT OF WAY APPROX. 100' FROM C/L ▷

FIBER OPTIC LINE APPROX. 80' FROM C/L ▷

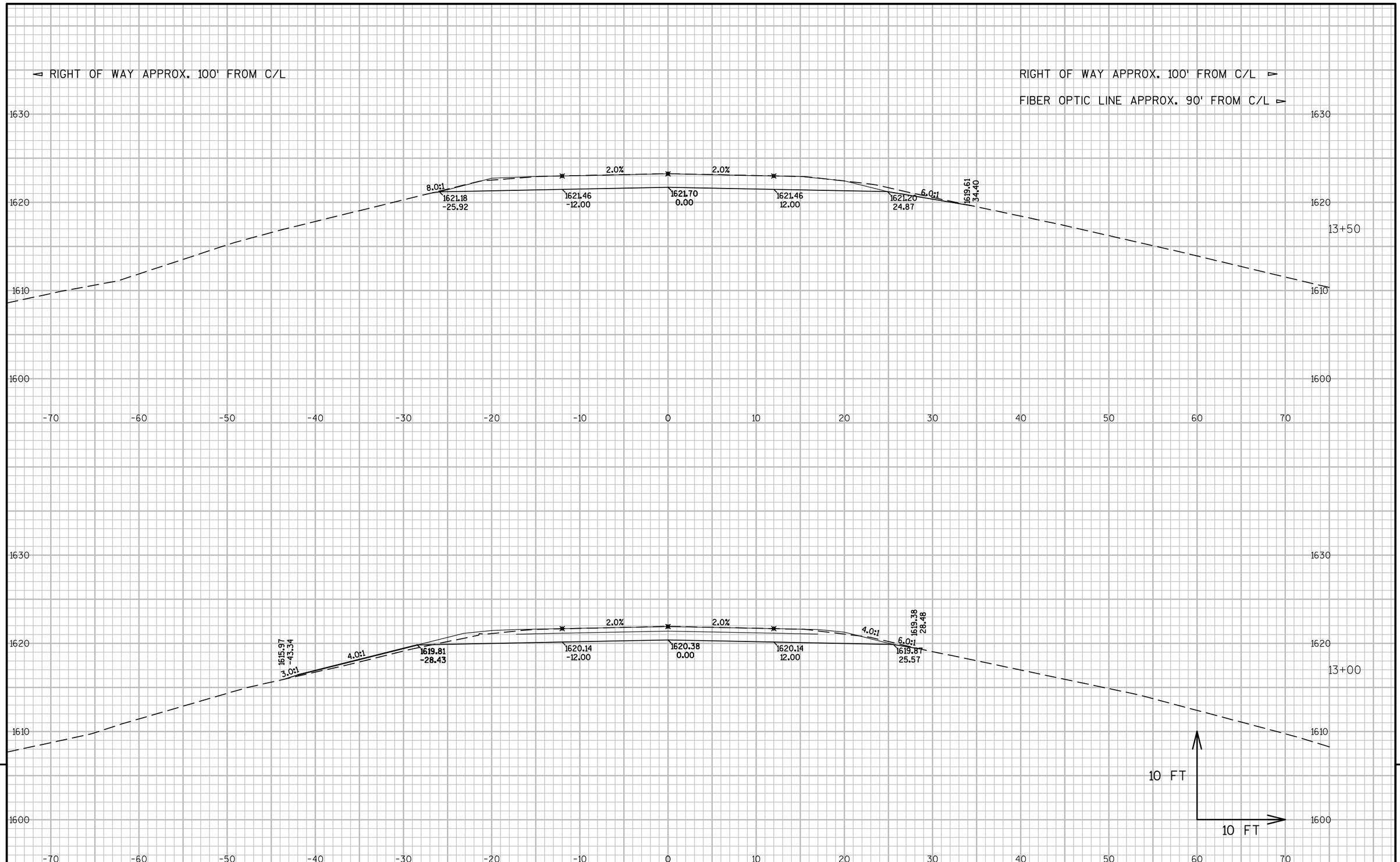


PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: WEBER CREEK BRIDGE	SHEET 91	E

FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090209-XS

PLOT DATE : 9/27/2016 3:20 PM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49

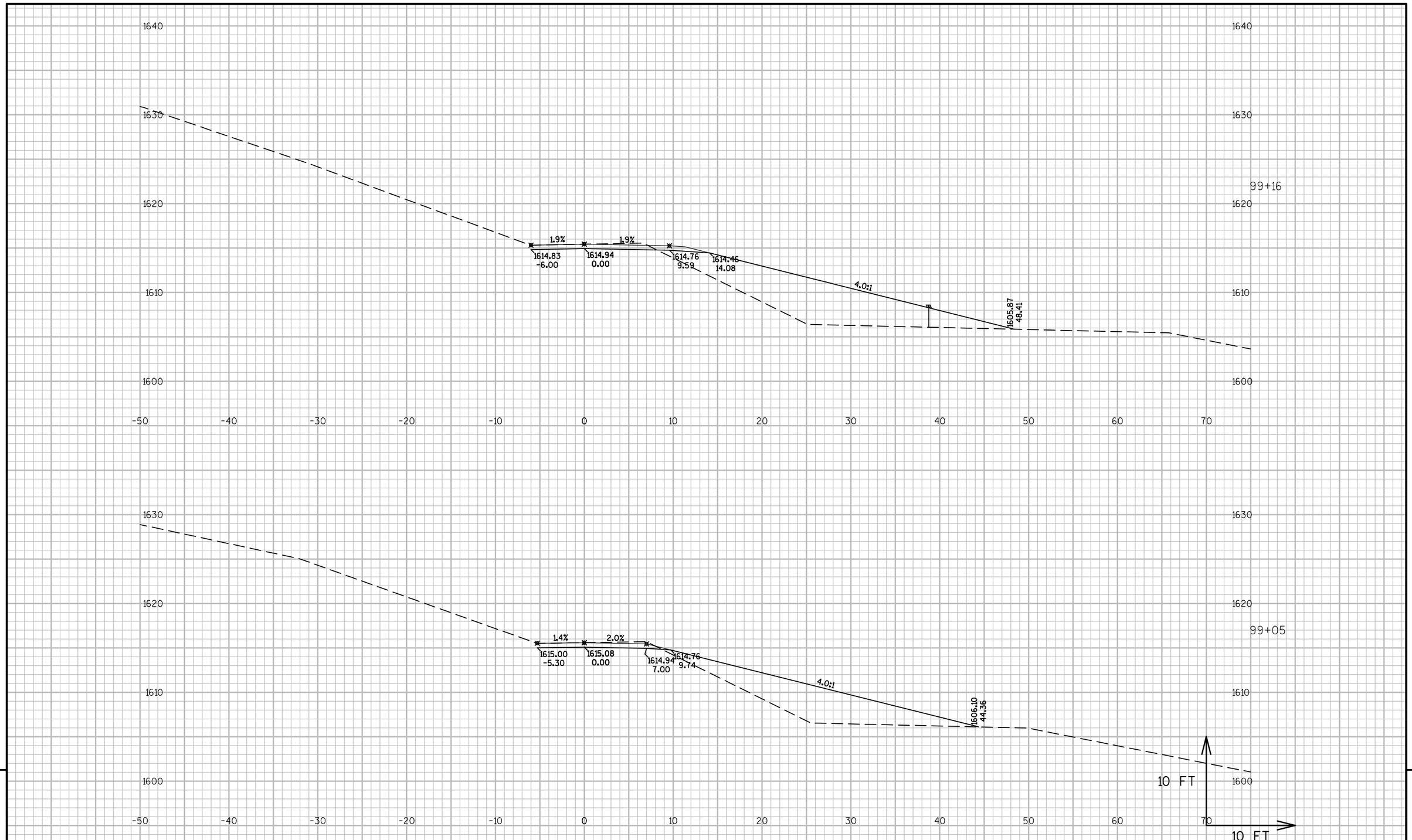


PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: WEBER CREEK BRIDGE	SHEET 92 E

FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090210-XS

PLOT DATE : 9/27/2016 3:20 PM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49

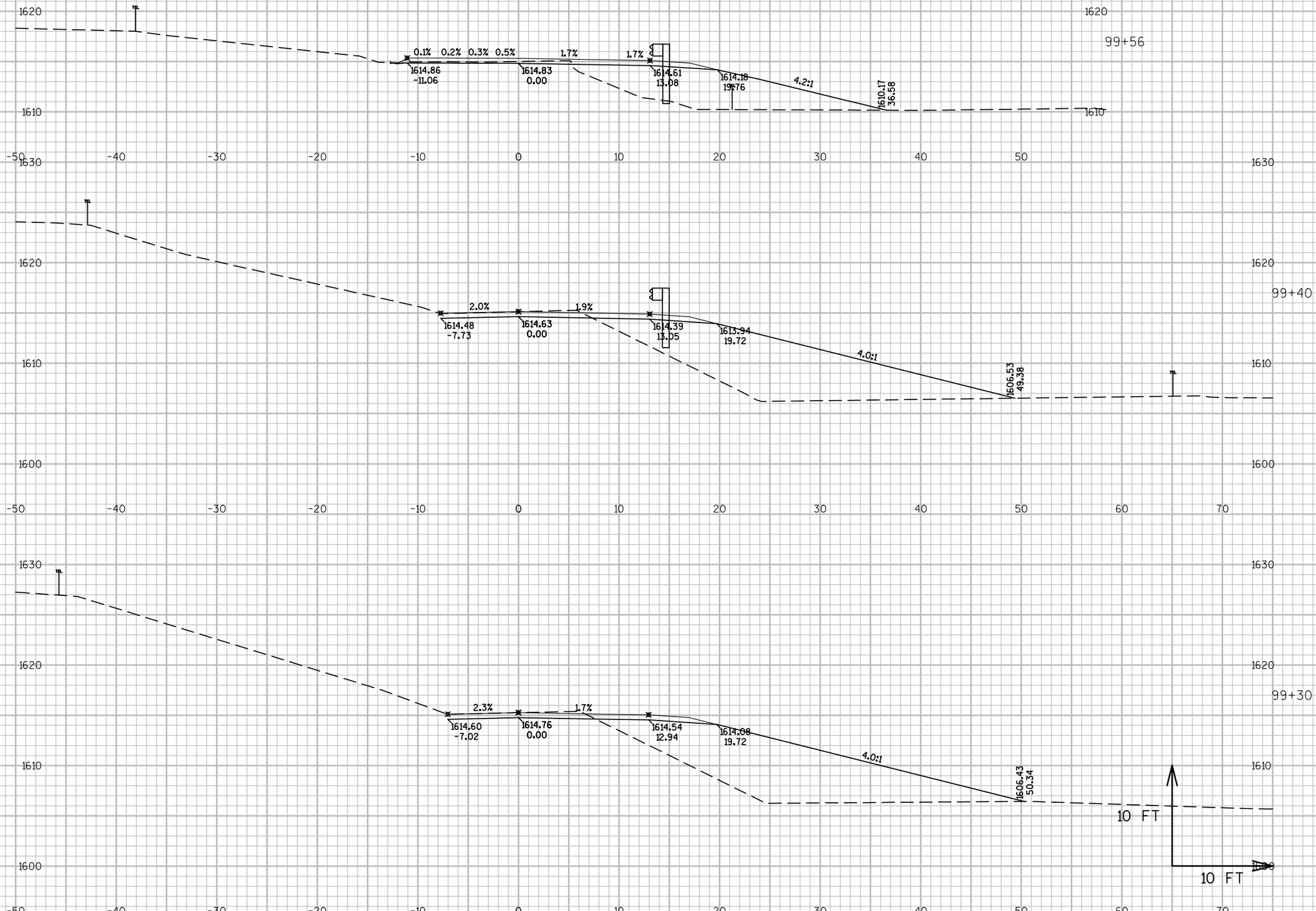


PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: PE RIGHT	SHEET 93	E

FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090211-XS

PLOT DATE : 9/27/2016 3:21 PM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



PROJECT NO: 1175-19-70	HWY: USH 51	COUNTY: IRON	CROSS SECTIONS: PE RIGHT	SHEET 94	E

FILE NAME : N:\PDS\C3D\11751900\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090212-XS

PLOT DATE : 9/27/2016 3:21 PM PLOT BY : MCCUE, FREDRICK T PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49

Notes

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