NWL

NOVEMBER 2017

PROJECT ID: 7899-04-71

WITH: N/A

COUNTY: PIERCE

24

ORDER OF SHEETS

TOTAL SHEETS = 72

N

DESIGN DESIGNATION

A.A.D.T.	(2017)	= 400
A.A.D.T.	(2037)	= 480
D.H.V.		= 40
D.D.		= 50/50
T.		= 10%
DESIGN SPEED		= 60
ESALS		= 36,500

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	
PROPERTY LINE		ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY		GRADE ELEVATION	955.36
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)	
SLOPE INTERCEPT		UTILITIES	
REFERENCE LINE	300'EBF	ELECTRIC	E
EXISTING CULVERT		FIBER OPTIC	FO
PROPOSED CULVERT (Box or Pipe)		GAS	G
COMBUSTIBLE FLUIDS	CAUTION	SANITARY SEWER	SAN
MARSH AREA		STORM SEWER	SS
WOODED OR SHRUB AREA		TELEPHONE	T
		WATER	W
		UTILITY PEDESTAL	
		POWER POLE	
		TELEPHONE POLE	

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH CC - PLUM CITY

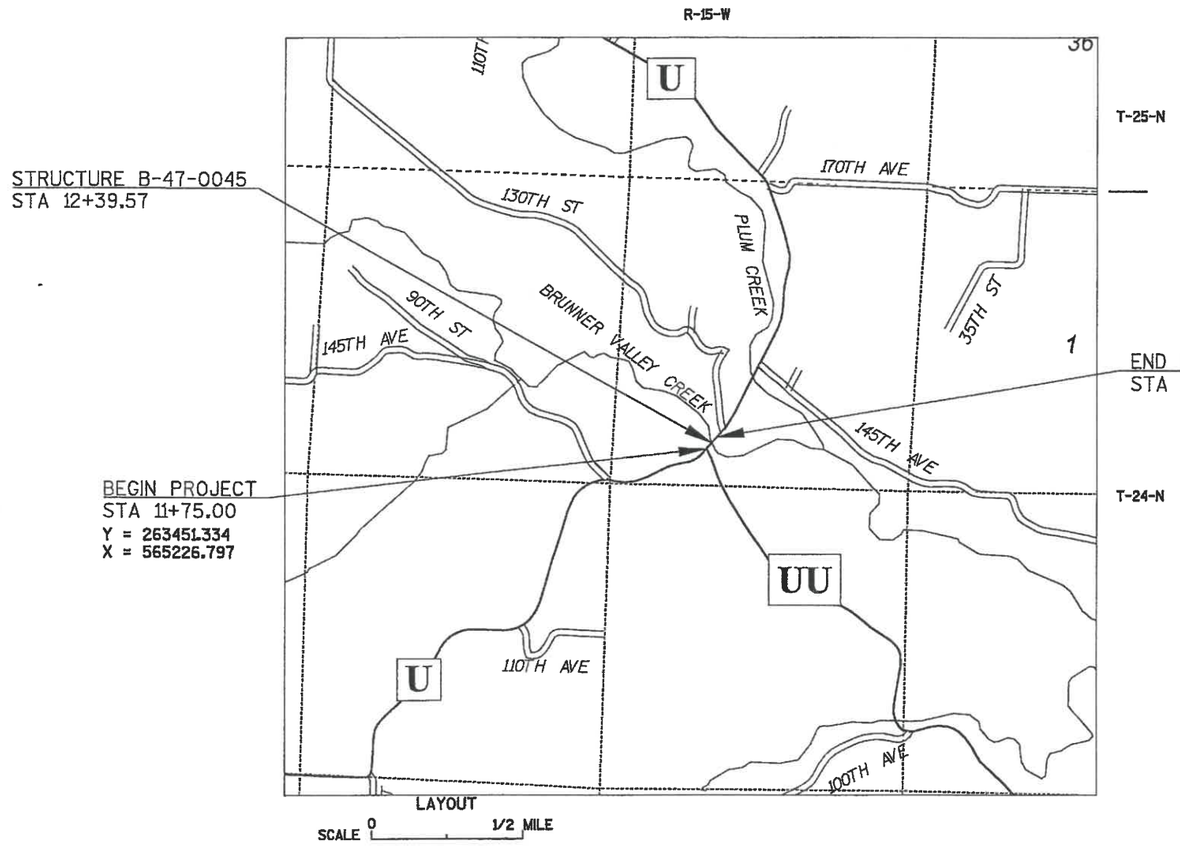
BRUNNER VALLEY CREEK BRIDGE B-47-0045

CTH U

PIERCE COUNTY

STATE PROJECT NUMBER
7899-04-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7899-04-71	WISC 2017523	1



TOTAL NET LENGTH OF CENTERLINE = 0.052 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, PIERCE COUNTY, NAD83 (1997), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

Accepted For
County of
PIERCE

DATE: 5/1/17 Highway Commissioner
(Signature and Title of Official)

ORIGINAL PLANS PEREPARED BY

SRF Consulting Group, Inc.

RACHEL A. BURNHAM
E-43588
MADISON
WIS.
WISCONSIN
PROFESSIONAL ENGINEER

DATE: 4/26/17 (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: SRF CONSULTING GROUP, INC.
Designer: SRF CONSULTING GROUP, INC.

Management Consultant
KNIGHT E/A INC.

APPROVED FOR THE DEPARTMENT
DATE: 5/1/17 (Management Consultant Signature)

E

FILE NAME : C:\USERS\RBURNHAM\APPDATA\ROAMING\VAULT\PROJSRF01\PROJECTS01\8785\7899-04-71\SHEETSPLAN\010101-TI.DWG
LAYOUT NAME - 010101-TI

PLOT DATE : 4/21/2017 11:58 AM

PLOT BY : RACHEL BURNHAM

PLOT NAME :

WISDOT/CADDS SHEET 10

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1983 .

HORIZONTAL COORDINATES ARE BASED ON THE THE WISCONSIN STATE PLANE COORDINATES SYSTEM COORDINATES, PIERCE COUNTY

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

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

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE FINISHED WITH 6" SALVAGED TOPSOIL, SEED, FERTILIZED MULCH, AND RESTORED AS DIRECTED BY THE ENGINEER.

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 2" UPPER LAYERS AND A 2" LOWER LAYER.

DNR CONTACT

ENVIRONMENTAL ANALYSIS AND REVIEW SPECIALIST
1300 W CLAIREMONT AVE
EAU CLAIRE, WI 54701
TELEPHONE: (715) 839-1609
EMAIL: CHRISTOPHERJ.WILLGER@WISCONSIN.GOV
ATTENTION: CHRIS WILLGER

DESIGNER CONTACT

1 CARLSON PARKWAY NORTH SUITE 150
MINNEAPOLIS, MN 55447
TELEPHONE: (763) 452-4751
EMAIL: CBLACK@SRFCONSULTING.COM
ATTENTION: CASEY BLACK

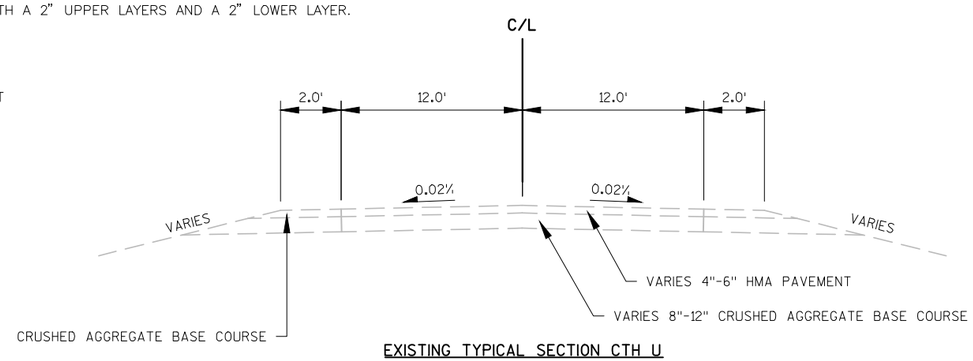
UTILITY CONTACTS

PIERCE-PEPIN COOPERATIVE
W7725 US HIGHWAY 10
PO BOX 420
ELLSWORTH, WI 54011
TELEPHONE: (715) 273-2473
EMAIL: BRISTOW@PIERCEPEPIN.COM
ATTENTION: BRADLEY E. RISTOW

PROJECT SPONSOR

PIERCE COUNTY HIGHWAY COMMISSIONER
621 WEST CAIRNS STREET
ELLSWORTH, WI 54011
TELEPHONE: (715) 273-5096 EXT 6791
EMAIL: CHAD.JOHNSON@CO.PIERCE.WI.US
ATTENTION: CHAD JOHNSON

DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

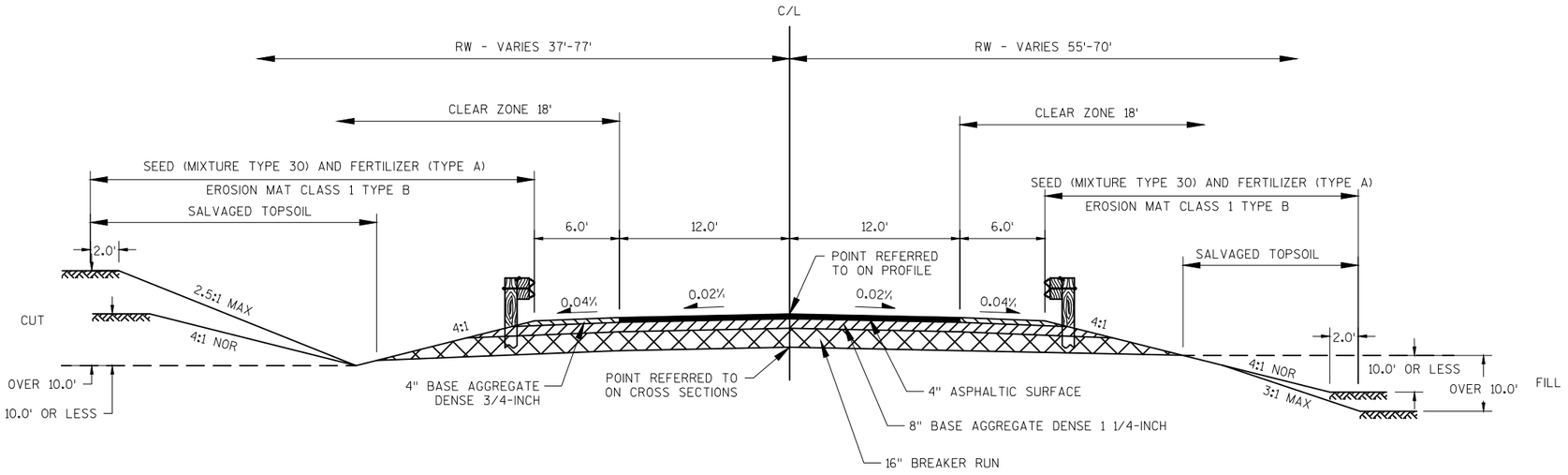


EXISTING TYPICAL SECTION CTH U
STA 11+75.00 TO STA 14+50.00

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 1.02 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.53 ACRES



TYPICAL FINISHED SECTION CTH U
STA 11+75.00 TO STA 12+39.75
STA 13+07.25 TO STA 14+50.00

PROJECT NO: 7899-04-71	HWY: CTH U	COUNTY: PIERCE	TYPICAL SECTIONS	SHEET 2	E

Estimate Of Quantities

7899-04-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	8.000	8.000
0004	201.0205	Grubbing	STA	8.000	8.000
0006	203.0210.S	Abatement of Asbestos Containing Material (structure) 01. B-47-45	LS	1.000	1.000
0008	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 12+73.50	LS	1.000	1.000
0010	204.0165	Removing Guardrail	LF	213.000	213.000
0012	204.0170	Removing Fence	LF	63.000	63.000
0014	205.0100	Excavation Common	CY	828.000	828.000
0016	206.1000	Excavation for Structures Bridges (structure) 01. B-47-45	LS	1.000	1.000
0018	208.0100	Borrow	CY	1,947.000	1,947.000
0020	210.1500	Backfill Structure Type A	TON	134.000	134.000
0022	213.0100	Finishing Roadway (project) 01. 7899-04-71	EACH	1.000	1.000
0024	305.0110	Base Aggregate Dense 3/4-Inch	TON	124.000	124.000
0026	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	742.000	742.000
0028	311.0115	Breaker Run	CY	964.000	964.000
0030	416.1010	Concrete Surface Drains	CY	5.000	5.000
0032	455.0605	Tack Coat	GAL	62.000	62.000
0034	465.0105	Asphaltic Surface	TON	196.000	196.000
0036	502.0100	Concrete Masonry Bridges	CY	97.000	97.000
0038	502.3200	Protective Surface Treatment	SY	244.000	244.000
0040	502.3210	Pigmented Surface Sealer	SY	56.000	56.000
0042	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	19,940.000	19,940.000
0044	506.0605	Structural Steel HS	LB	75,070.000	75,070.000
0046	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	10.000	10.000
0048	506.3015	Welded Stud Shear Connectors 7/8x6-Inch	EACH	750.000	750.000
0050	509.1500	Concrete Surface Repair	SF	48.000	48.000
0052	516.0500	Rubberized Membrane Waterproofing	SY	16.000	16.000
0054	606.0200	Riprap Medium	CY	2.000	2.000
0056	606.0300	Riprap Heavy	CY	140.000	140.000
0058	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0060	614.0200	Steel Thrie Beam Structure Approach	LF	20.700	20.700
0062	614.0305	Steel Plate Beam Guard Class A	LF	75.000	75.000
0064	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	1.000	1.000
0066	614.2300	MGS Guardrail 3	LF	12.500	12.500
0068	614.2500	MGS Thrie Beam Transition	LF	120.000	120.000
0070	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0072	616.0205	Fence Chain Link 5-FT	LF	63.000	63.000
0074	619.1000	Mobilization	EACH	1.000	1.000

7899-04-71

Line	Item	Item Description	Unit	Total	Qty
0076	624.0100	Water	MGAL	32.000	32.000
0078	625.0500	Salvaged Topsoil	SY	897.000	897.000
0080	627.0200	Mulching	SY	91.000	91.000
0082	628.1504	Silt Fence	LF	1,000.000	1,000.000
0084	628.1520	Silt Fence Maintenance	LF	2,000.000	2,000.000
0086	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0088	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0090	628.2002	Erosion Mat Class I Type A	SY	1,110.000	1,110.000
0092	628.2004	Erosion Mat Class I Type B	SY	1,110.000	1,110.000
0094	629.0205	Fertilizer Type A	CWT	1.000	1.000
0096	630.0130	Seeding Mixture No. 30	LB	40.000	40.000
0098	630.0200	Seeding Temporary	LB	50.000	50.000
0100	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	7.000	7.000
0102	637.2210	Signs Type II Reflective H	SF	32.375	32.375
0104	638.2602	Removing Signs Type II	EACH	9.000	9.000
0106	638.3000	Removing Small Sign Supports	EACH	7.000	7.000
0108	642.5001	Field Office Type B	EACH	1.000	1.000
0110	643.0100	Traffic Control (project) 01. 7899-04-71	EACH	1.000	1.000
0112	643.0420	Traffic Control Barricades Type III	DAY	1,080.000	1,080.000
0114	643.0705	Traffic Control Warning Lights Type A	DAY	1,680.000	1,680.000
0116	643.0900	Traffic Control Signs	DAY	960.000	960.000
0118	645.0120	Geotextile Type HR	SY	188.000	188.000
0120	646.0103	Pavement Marking Paint 4-Inch	LF	275.000	275.000
0122	650.4500	Construction Staking Subgrade	LF	380.000	380.000
0124	650.5000	Construction Staking Base	LF	380.000	380.000
0126	650.6500	Construction Staking Structure Layout (structure) 01. B-47-45	LS	1.000	1.000
0128	650.9910	Construction Staking Supplemental Control (project) 01. 7899-04-71	LS	1.000	1.000
0130	650.9920	Construction Staking Slope Stakes	LF	380.000	380.000
0132	690.0150	Sawing Asphalt	LF	330.000	330.000
0134	715.0502	Incentive Strength Concrete Structures	DOL	582.000	582.000
0136	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,200.000	1,200.000
0138	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	300.000	300.000

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010 UNLESS OTHERWISE NOTED.

CLEARING AND GRUBBING

STATION - STATION	LOC.	CLEARING 201.0105 STA	GRUBBING 201.0205 STA
10+70 - 12+60	LT.	2	2
11+04 - 12+60	RT.	2	2
12+81 - 15+05	LT.	2	2
12+81 - 14+50	RT.	2	2
	TOTAL	8	8

EROSION CONTROL ITEMS

STATION - STATION	LOC.	EROSION MATCLASS I TYPE B 628.2002 SY	SILT FENCE 628.1504 LF	SILT FENCE MAINTENANCE 628.152 LF
10+70 - 12+60	LT.	373	195	390
11+04 - 12+60	RT.	368	250	500
12+81 - 15+05	LT.	164	285	570
12+81 - 14+50	RT.	206	150	300
UNDISTRIBUTED	RT.		120	240
	TOTAL	1110	1000	2000

MOBILIZATION

	MOBILIZATION 619.1000 EACH
PROJECT 7899-04-71 (CATEGORY 0010)	0.2
PROJECT 7899-04-71 (CATEGORY 0020)	0.8
TOTAL	1

SAWING ASPHALT

STATION - STATION	690.0150 LF
11+75	300
14+50	30
TOTAL	330

RIPRAP MEDIUM

STATION	LOC.	606.0200 CY
13+16	LT.	1
13+16	RT.	1
	TOTAL	2

SEEDING, MULCHING, AND FERTILIZER

STATION - STATION	LOC.	SALVAGED TOPSOIL 625.0500 SY	SEEDING MIXTURE NO. 30 630.0130 LB	TEMPORARY SEEDING TYPE 630.0200 LB	MULCHING 627.0200 SY	FERTILIZER TYPE A 629.0205 CWT	WATER 624.0100 MGAL
10+70 - 12+60	LT.	328	15	17		0.2	12
11+04 - 12+60	RT.	285	13	17		0.2	10
12+81 - 15+05	LT.	125	6	7		0.1	5
12+81 - 14+50	RT.	159	7	9		0.1	6
UNDISTRIBUTED (10%)					91		
TOTAL		897	40	50	91	1	32

REMOVING FENCE

STATION - STATION	LOC.	204.0170 LF
11+21 - 11+84	LT.	63
	TOTAL	63

FENCE - CHAINLINK 5-FT

STATION - STATION	LOC.	616.0205 LF
11+21 - 11+84	LT.	63
	TOTAL	63

GUARDRAIL ITEMS

STATION - STATION	LOC.	STEEL THRIE BEAM STRUCTURE APPROACH 614.0200 LF	STEEL PLATE BEAM GUARD CLASS A 614.0305 LF	STEEL PLATE BEAM GUARD EAT 614.0370 EACH	MGS GUARDRAIL 3 614.2300 LF	MGS THRIE BEAM TRANSITION 614.2500 LF	MGS GUARDRAIL TERMINAL EAT 614.2610 EACH
13+34.45 - 12+39.57	LT.				12.5	40	1
11+43.39 - 12+39.57	RT.	20.7	75	1			
13+07.07 - 13+99.49	LT.					40	1
13+07.07 - 13+99.70	RT.					40	1
TOTAL		20.7	75	1	12.5	120	3

REMOVING GUARDRAIL

STATION	LOC.	204.0165 LF
11+31 - 12+40	LT.	109
13+07 - 14+10	LT.	104
13+07 - 13+99	RT.	93
50+83 (UU) - 12+40 (U)	RT.	133
	TOTAL	213

ASPHALTIC ITEMS

STATION - STATION	465.0105 TON	455.0605 GAL
10+96 - 12+40	83	27
13+07 - 14+50	113	36
TOTAL	196	62

CONCRETE SURFACE DRAINS

STATION	LOC.	416.1010 CY
13+16	LT.	2
13+16	RT.	3
	TOTAL	5

TRAFFIC CONTROL

	DAYS	TRAFFIC CONTROL BARRICADES TYPE III EACH	TRAFFIC CONTROL BARRICADES TYPE III 643.0420 DAYS	WARNING LIGHTS TYPE A EACH	WARNING LIGHTS TYPE A 643.0705 DAYS	TRAFFIC CONTROL SIGNS EACH	TRAFFIC CONTROL SIGNS 643.09 DAYS
BRIDGE CLOSURE	60	18	1080	28	1680	16	960
	TOTAL		1080		1680		960

CONSTRUCTION STAKING

	SUBGRADE 650.4500 LF	BASE 650.5000 LF	SLOPE STAKES 650.9920 LF	SUPPLEMENTAL CONTROL 650.9910 LS
STA				
10+70 - 14+50	380	380	380	1
TOTAL	380	380	380	1

BASE AGGREGATE DENSE

STATION - STATION	LOC.	1 1/4" 305.0110 TON	3/4" 305.0120 TON
10+70 - 12+40	LT.		29
11+00 - 12+40	RT.		35
13+07 - 15+05	LT.		33
13+07 - 14+50	RT.		26
10+70 - 12+40		351	
13+07 - 15+05		392	
	TOTAL	742	124

PERMANENT SIGNS TYPE II AND SIGN SUPPORTS

SIGN NO	SIGN CODE	STATION		DESCRIPTION	SIGN DIMENSIONS WXH INXIN	REMOVING SMALL SIGN SUPPORTS EACH 638.3000	REMOVING SIGNS TYPE II EACH 638.2302	WOOD POSTS 4"X6" 16 FT 634.0616	SIGNS TYPE II REFLECTIVE H SF 637.2210	NOTES
1	R1-1	11+65	RT	STOP	30X30	1	1	1	6.25	
2	M1-5A	11+70	LT	COUNTY ROUTE SIGN	24X24	1	1	1	4.00	
3	M6-4	11+70	LT	DIRECTIONAL ARROW	21X21		1		3.06	SAME SUPPORT AS SIGN 2
4	W5-58L	12+38	LT	OBJECT MARKER	12X36	1	1	1	3	
5	W5-58R	12+38	RT	OBJECT MARKER	12X36	1	1	1	3	
6	W5-58L	13+08	LT	OBJECT MARKER	12X36	1	1	1	3	
7	W5-58R	13+08	RT	OBJECT MARKER	12X36	1	1	1	3	
8	M1-5A	11+70	LT	COUNTY ROUTE SIGN	24X24	1	1	1	4.00	
9	M6-4	11+70	LT	DIRECTIONAL ARROW	21X21		1		3.06	SAME SUPPORT AS SIGN 8
					TOTAL	7	9	7	32.375	

BREAKER RUN

STATION - STATION	311.0115 C.Y.
10+70 - 12+40	470
13+07 - 15+05	493
TOTAL	964

PAVEMENT MARKING

STATION - STATION	PAVEMENT MARKING PAINT 4-INCH (YELLOW) 646.0103 LF
11+75 - 14+50	275
TOTAL	275

MOBILIZATIONS EROSION CONTROL & EMERGENCY EROSION CONTROL

	MOBILIZATIONS EROSION CONTROL 628.1905 EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL 628.191 EACH
PROJECT 7899-04-71	2	2
TOTAL	2	2

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010.

EARTHWORK SUMMARY TABLE

Division	From/To Station	Location	Common Excavation (1)	(item # 205.0100)	Salvaged/Unusable Pavement Material (3)	Available Material (4)	Unexpanded Fill	Expanded Fill (5)	Mass Ordinate +/- (6)	Borrow
			Cut (2)	EBS Excavation				Factor 1.25		(item #208.0100)
1	10+62 - 14+55	CTH U	709	0	1111	-402	147	184	-587	
Division 1 Subtotal			709	0	1111	-402	147	184	-587	
2	50+00 to 100+00	CTH UU	119	0	1389	-1270	72	90	-1360	
Division 2 Subtotal			119	0	1389	-1270	72	90	-1360	1947
Grand Total			828	0	2500	-1672	220	275	-1947	1947
			Total Common Exc	828						

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) Salvaged/Unusable Pavement Material
4) Available Material = Cut - Salvaged/Unusuable Pavement Material
5) Expanded Fill. Factor = 1.25
6) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

STA 11+37.57 - STA 11+87.57, LT
MGS GUARDRAIL TERMINAL EAT REQ'D
STA 11+37.57, -11.2' LT - POST #1

STA 11+87.57 - STA 12+00.07, LT
MGS GUARDRAIL 3 REQ'D

STA 12+00.07 - STA 12+39.57, LT
MGS THRIE BEAM TRANSITION REQ'D

1 ROBERT C. EASTLING JR.

PIERCE-PEPIN COOPERATIVE SERVICES

+20.80, -40.40' LT
20'
+36.65, -41.68' LT
CHAIN LINK FENCE
+54.16, -61.82' LT
102
TLE
103
101
104
+82.38, -11.15' LT
+37.57, 18.67' LT
+87.57, 16.67' LT
8 COUNTY U M1-5A 24"X24"
9 M6-1 21"X21"

MEDIUM RIP RAP
CONCRETE SURFACE DRAIN
13+96.36, -18.67' LT

BENCHMARK 2
14+53.43 -27.94' LT
EL 767.47'

STA 13+07.07 - STA 13+46.36, LT
MGS THRIE BEAM TRANSITION REQ'D
U1

STA 13+46.36 - STA 13+96.36, LT
MGS GUARDRAIL TERMINAL EAT REQ'D
STA 13+96.36, 18.7' LT - POST #1

PI STA = 51+16.56UU
Y = 263336.734
X = 565277.238
DELTA = 10°59'08"
D = 9°10'02"
T = 60.10'
L = 119.83'
R = 625.00'
PC STA = 50+56.46UU
Y = 263385.585
X = 565242.228
PT STA = 51+76.30UU
Y = 263282.106
X = 565302.298
BK = S35°37'40.8"E
AH = S24°38'32.7"E

BEGIN CONSTRUCTION
STA 10+82.38

PI: 12+23.28
BRIDGE B-47-0045
N39° 24' 04"E 13+00 U
PI: 13+23.28
N39° 45' 53"E 14+00 U
+46.36, -16.67' LT
+48.79, -11.44' LT
11+00 U N39° 45' 29"E
12+00 U
15+00 U
100
105 100.00'
161.24'
CTH U 190.02'
+10.15, 16.67' RT
+54.60, 12.51' RT
+46.57, 16.66' RT

ALIGNMENT END
STA 15+13.30
Y=263711.7854
X=565442.6920

END PAVEMENT MARKING
STA 14+50.00

PIERCE-PEPIN COOPERATIVE SERVICES

BENCHMARK 1
10+36.565 17.46' RT
EL 773.49'

1 COUNTY U M1-5A 24"X24"
2 M6-4 21"X21"

ALIGNMENT START
STA 10+62.04
Y=263364.4957
X=565154.5538

UU1

BEGIN PAVEMENT MARKING
STA 11+75.00

PC: 50+56.46
PI: 50+47.58
+46.59, -23.24' LT
BRUNNER VALLEY CREEK
CONCRETE SURFACE DRAIN
SILT FENCE (TYP)
MEDIUM RIP RAP
DRIVE1
4" CENTERLINE DOUBLE YELLOW, NO PASSING

TOWN OF MAIDEN ROCK

REPLACE EXISTING PRESTRESSED DOUBLE-TEE BEAM AND CONCRETE DECK BRIDGE SUPERSTRUCTURE WITH NEW 27-INCH STEEL GIRDER AND CONCRETE DECK SUPERSTRUCTURE.

PIERCE COUNTY

BEGIN PROJECT
STA 11+75.00
Y=263451.334
X=565226.797
MATCH EXISTING
SAWCUT REQ'D

END PROJECT
STA 14+50.00
MATCH EXISTING
SAWCUT REQ'D

DOUGLAS & JUDI BRUNNER

S2

PT: 51+76.30

END CONSTRUCTION
STA 51+81.84

+81.84, -11.52' LT

CTH UU
S32° 29' 56"E 47.58'
51+00 UU
+96.49, -23.27' LT
EXIST. R/W (TYP)
SLOPE INTERCEPT (TYP)

3 STOP R1-1 30"X30"
4 W5-58R 12"X36"
5 W05-52L 12"X36"
6 W5-58R 12"X36"
7 W05-52L 12"X36"

+96.57, 18.66' RT

STA 13+07.07 - STA 13+46.57, RT
MGS THRIE BEAM TRANSITION REQ'D
STA 13+46.57 - STA 13+96.57, RT
MGS GUARDRAIL TERMINAL EAT REQ'D
STA 13+96.57, 18.7' RT - POST #1

STA 50+96.49 UU - STA 50+46.59 UU, RT
STEEL PLATE BEAM GUARD EAT REQ'D
STA 50+96.49, 23.3 LT - POST #1

STA 11+59+00 - STA 12+19.03, RT
STEEL PLATE BEAM GUARD CLASS "A" REQ'D

STA 12+19.03 - STA 12+39.57, RT
STEEL THRIE BEAM STRUCTURE APPROACH REQ'D

STA 12+39.75
STRUCTURE B-47-0045
EXISTING BRIDGE SUPERSTRUCTURE TO BE REPLACED.

BENCHMARK 3
14+13.22 20.70' RT
EL 767.90'

JEFFREY L. & KELLY J. VON HOLTOM

SCALE, FEET 0 25 50

LEGEND
- EROSION MAT CLASS 1 TYPE B
- TEMPORARY LIMITED EASEMENT AREA

BENCH MARKS

NO.	STATION	OFFSET	DESCRIPTION OR NAME	X-COORD.	Y-COORD.	ELEVATION (FT)
1	10+35.83	17.2 RT.	UU1	565150.992	263333.369	773.49
2	14+13.22	20.7 RT.	DRIVE1	565394.584	263621.616	767.90
3	14+53.43	27.9 LT.	U1	565382.922	263683.632	767.47

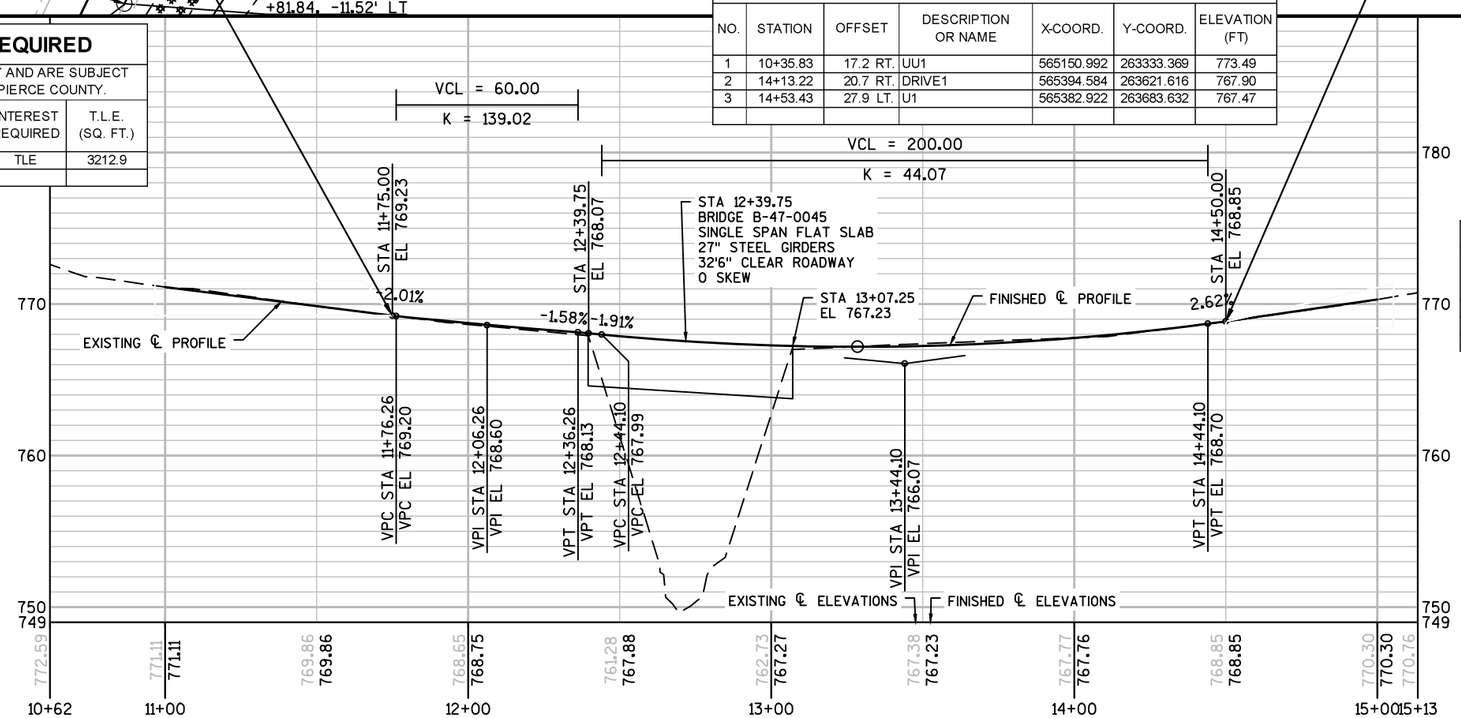
SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO PIERCE COUNTY.

PARCEL NUMBER	OWNERS	INTEREST REQUIRED	T.L.E. (SQ. FT.)
1	ROBERT C EASTLING JR	TLE	3212.9

POINT	STATION	OFFSET (FT)
100	10+79.75	0.00 LT.
101	10+79.75	36.94 LT.
102	10+79.66	59.10 LT.
103	12+40.03	59.63 LT.
104	12+39.99	39.63 LT.
105	12+39.99	0.00 LT.

POINT	-	POINT	BEARING	DISTANCE (FT)
100	-	101	N 50°14'31" W	36.94
101	-	102	N 50°28'05" W	22.16'
102	-	103	N 39°31'55" E	160.00'
103	-	104	S 50°28'05" E	20.00'
104	-	105	S 50°35'56" E	39.63'
100	-	S1	S 55°25'37" E	1085.59'
S1	-	S2	N 89°52'10" W	2625.44'
S2	-	100	N 70°35'32" E	1835.87'



NOTE:
EXISTING RIGHT-OF-WAY ESTABLISHED FROM THE CENTERLINE OF EXISTING PAVEMENTS AND STATE STATUTE 82.31.

POSITIONS SHOWN ON THE PLAT ARE WISCONSIN COUNTY COORDINATES, PIERCE COUNTY, NAVD88, IN U.S. SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

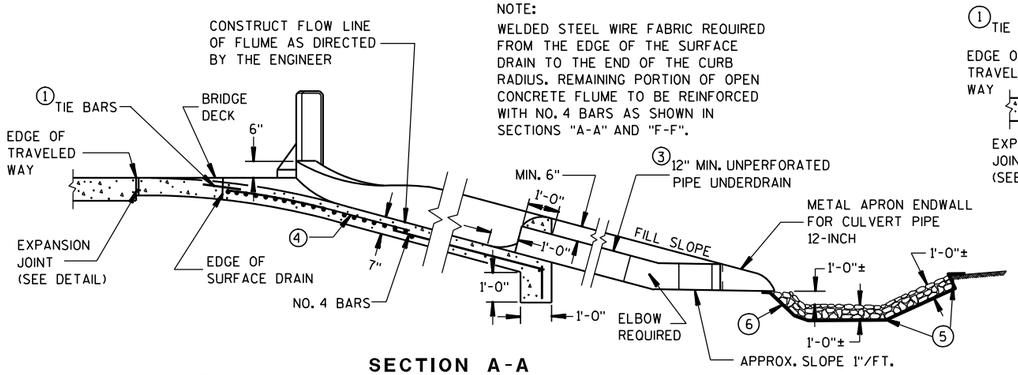
SECTION CORNERS

NO.	DESCRIPTION OR NAME	X-COORD.	Y-COORD.
S1	S QUARTER CORNER SEC. 2, T24, R15	566031.360	262785.710
S2	SW CORNER SEC. 2, T24, R15	563405.930	262791.690

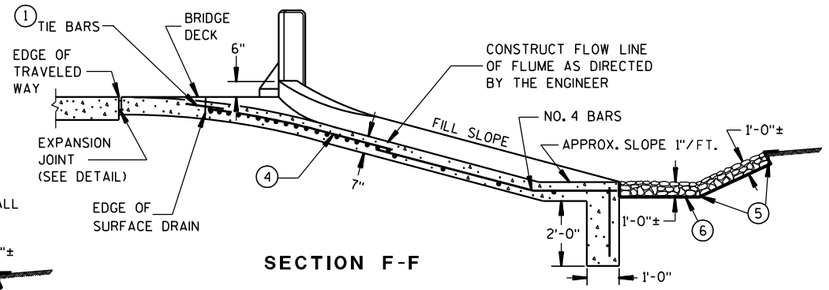
PROJECT NO: 7899-04-71	HWY: CTH U	COUNTY: PIERCE	PLAN AND PROFILE: CTH U	SHEET 7	E

Standard Detail Drawing List

08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E09-06	SILT FENCE
14B15-09A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-09B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-09C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11D	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B20-11H	STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT
14B24-08A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08C	STEEL PLATE BEAM GUARD ENERGY ABSORBING 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)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A06-02	DELINEATOR LAYOUT
15B03-15A	FENCE CHAIN LINK
15B03-15B	FENCE CHAIN LINK
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C35-01A	PAVEMENT MARKING (INTERSECTIONS)



SECTION A-A



SECTION F-F

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.

ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

(2) NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.

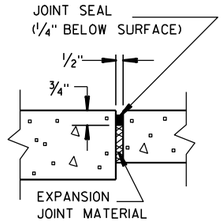
(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

(5) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

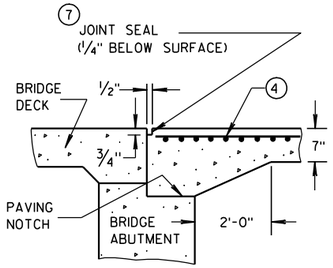
(6) GEOTEXTILE FABRIC, TYPE 'R"

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

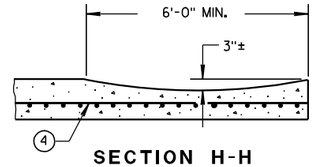
(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".



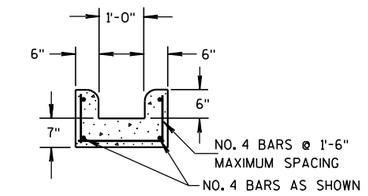
EXPANSION JOINT DETAIL



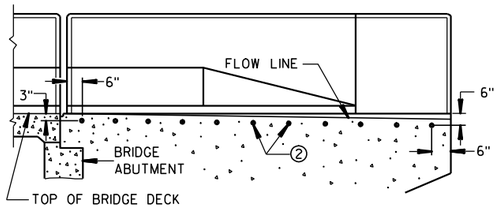
SECTION D-D



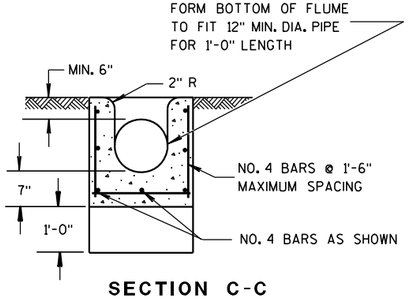
SECTION H-H



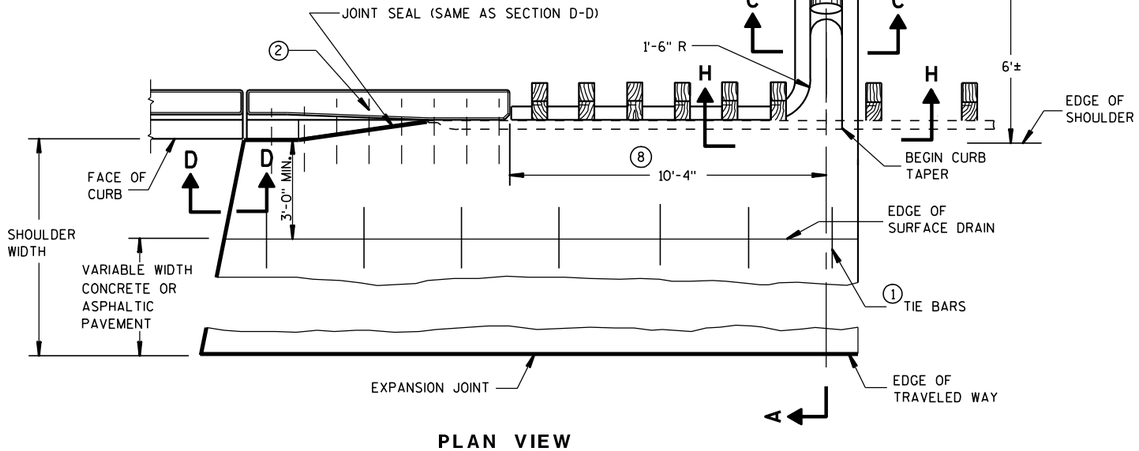
SECTION E-E



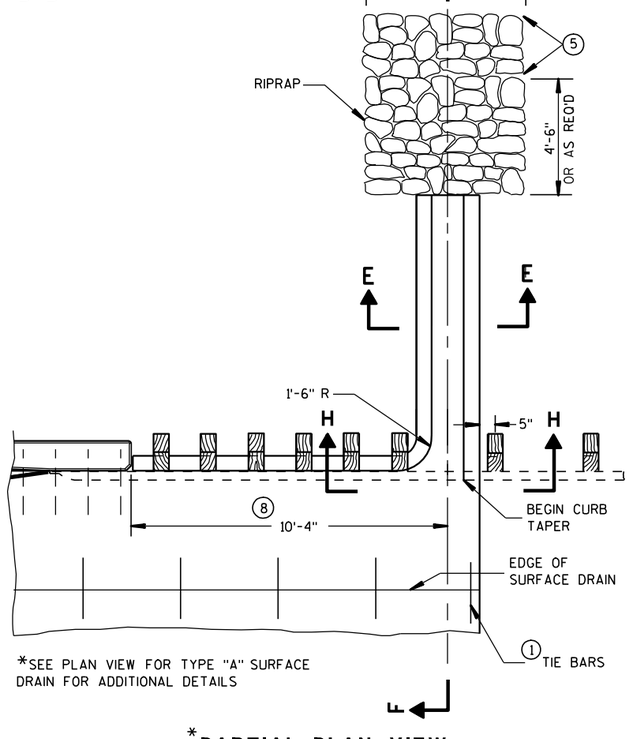
LOCATION OF TIE BARS IN WINGWALL



SECTION C-C



PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"



*SEE PLAN VIEW FOR TYPE "A" SURFACE DRAIN FOR ADDITIONAL DETAILS

*PARTIAL PLAN VIEW
SURFACE DRAIN WITHOUT PIPE
TYPE "B"

CONCRETE SURFACE DRAINS
FLUME TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

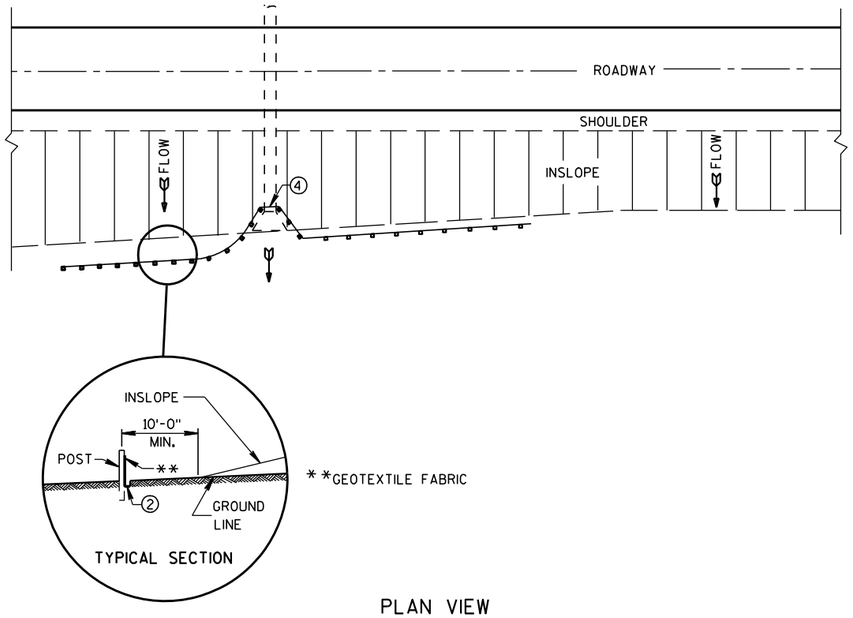
APPROVED
9/4/08
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 D 2-6

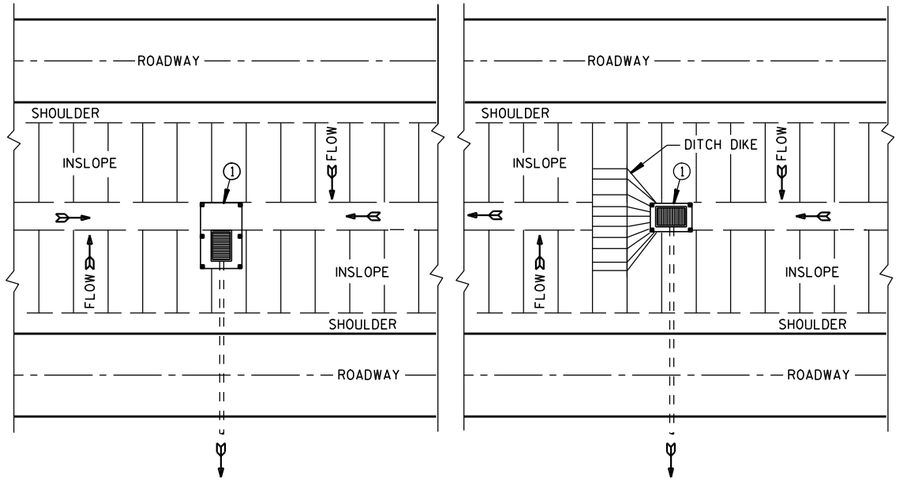
6

S.D.D. 8 D 2-6



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



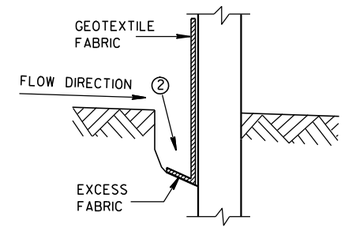
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

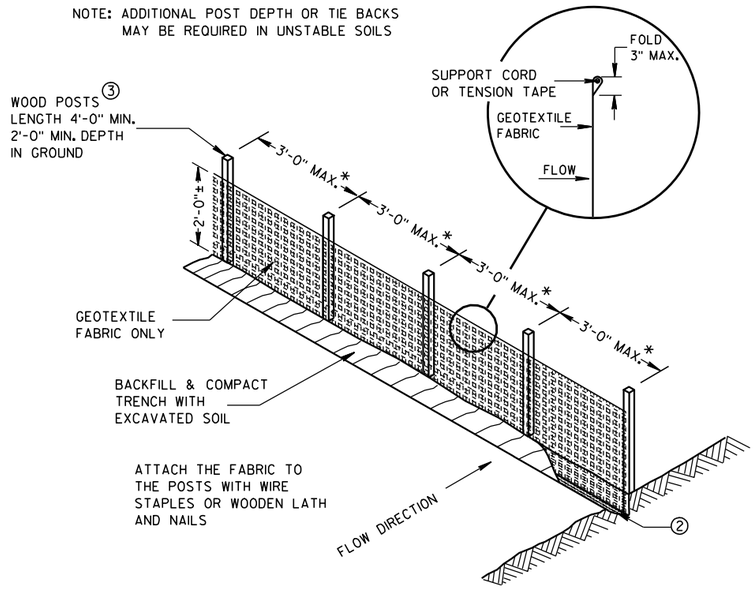
GENERAL NOTES

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.

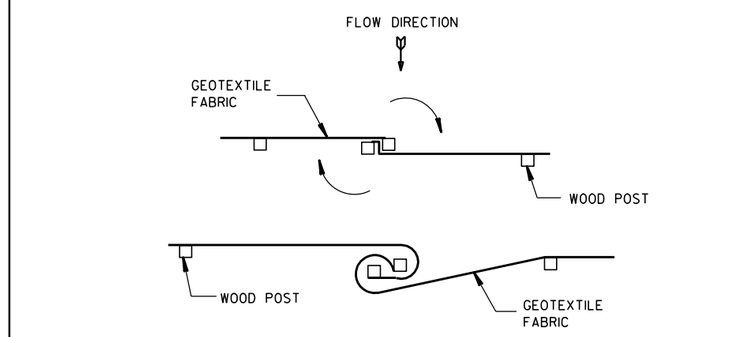


TRENCH DETAIL

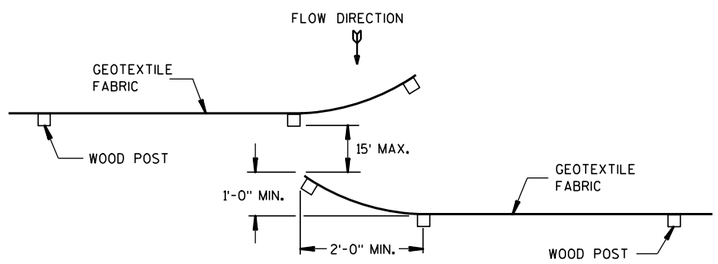


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

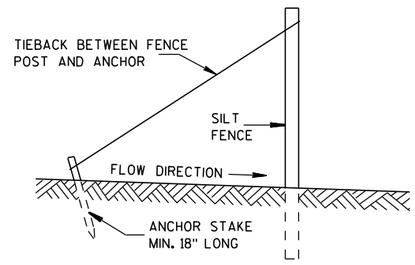


TWIST METHOD



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

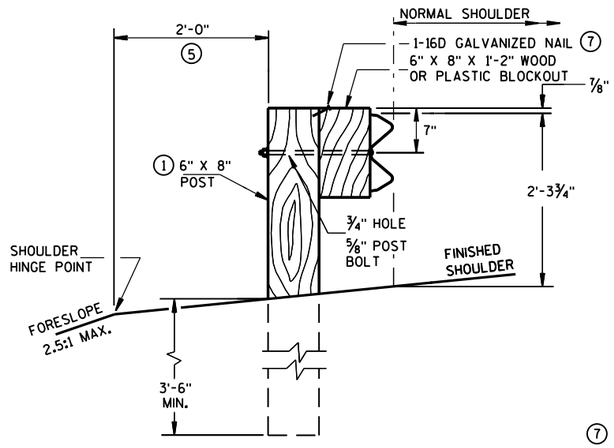
6

S.D.D. 8 E 9-6

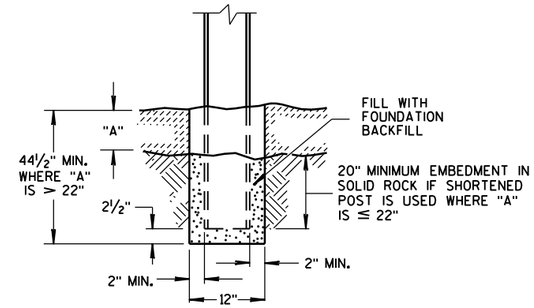
GENERAL NOTES

1. W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.
   DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.
2. USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.
3. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
4. USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
5. IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
6. IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.
7. 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.

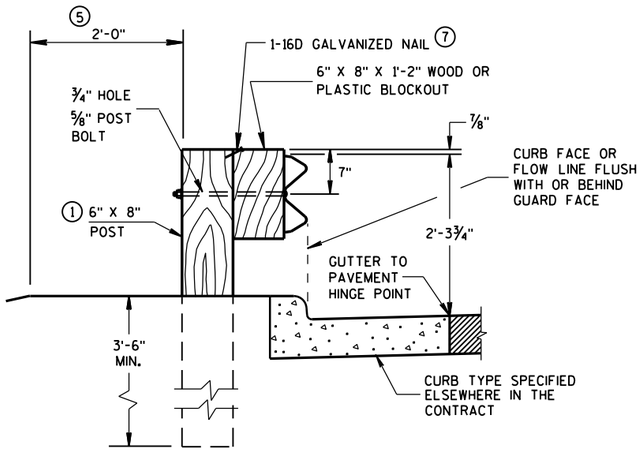
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



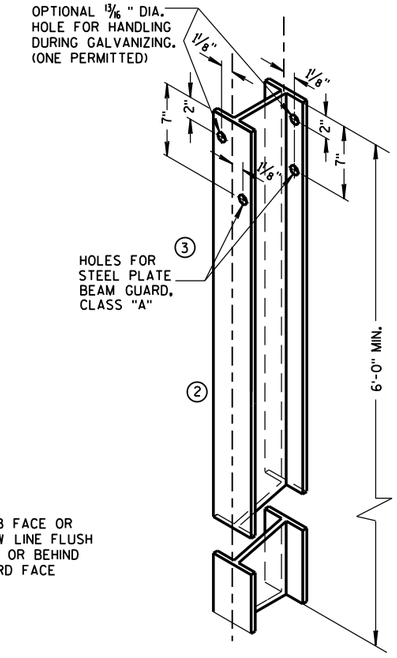
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



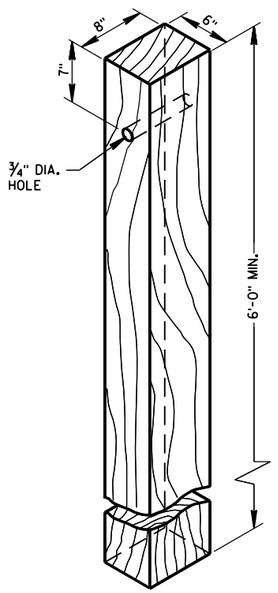
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥



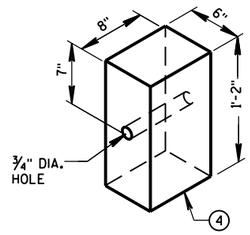
END VIEW
LOCATED ALONG A CURBED ROADWAY



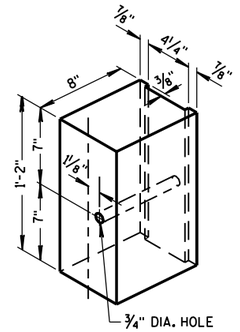
STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



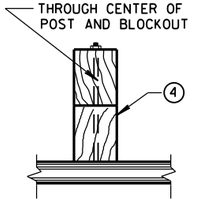
WOOD POST
(6"X8") NOMINAL



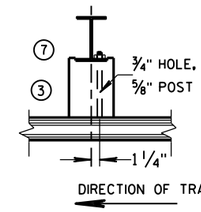
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



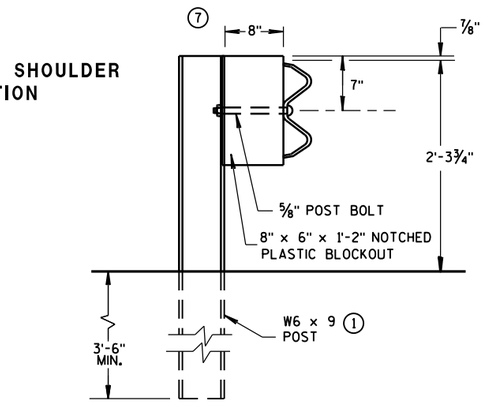
TYPICAL NOTCHED ①
PLASTIC BLOCKOUT
FOR STEEL POSTS



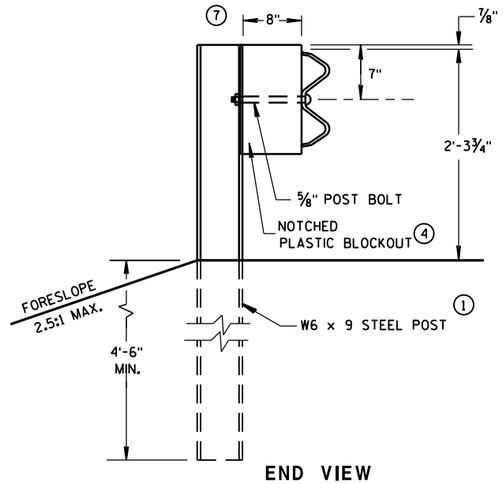
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



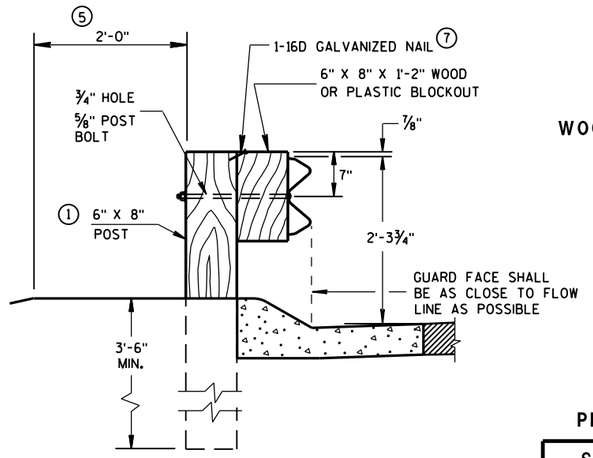
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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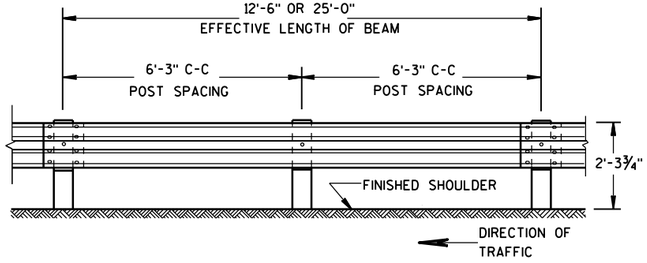
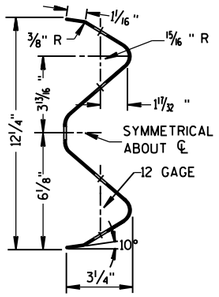
S.D.D. 14 B 15-9a

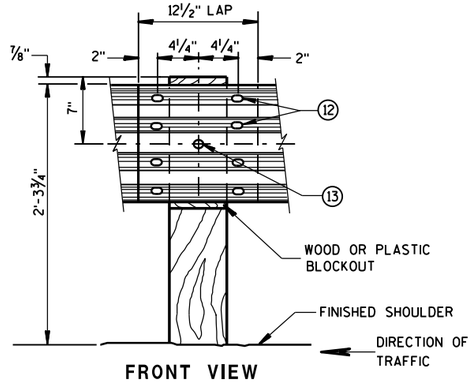


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

(8) PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

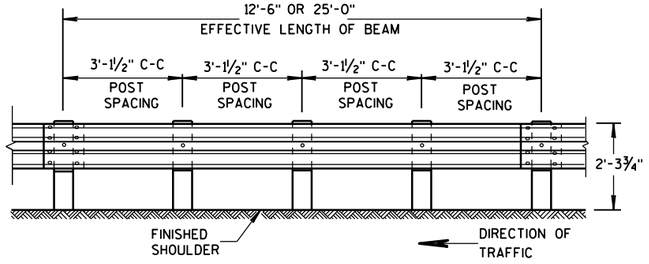
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

(10) REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

(11) PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

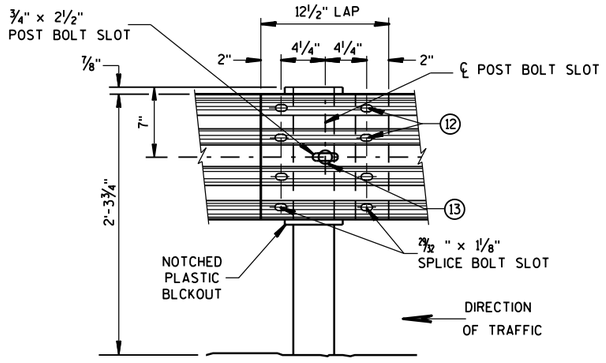
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) ⅝" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH ⅝" DIA. F844 FLAT WASHER UNDER NUT.



FRONT VIEW

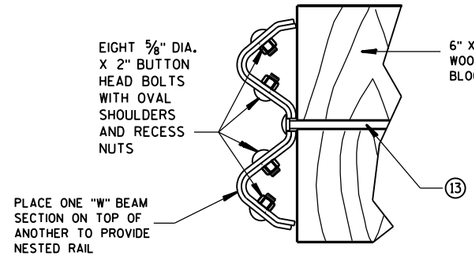
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

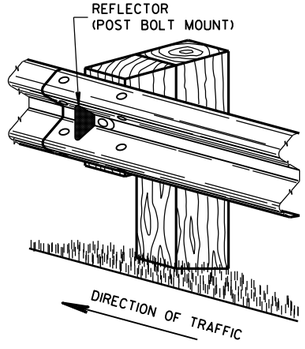


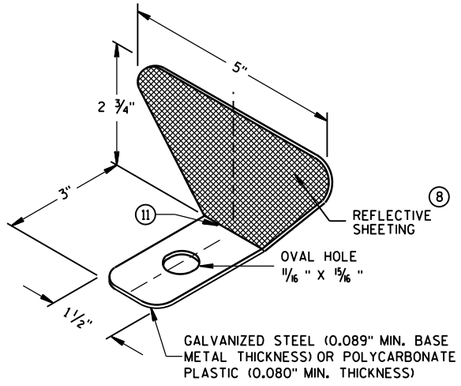
NESTED W BEAM (NW)

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

REFLECTOR SPACING (9)

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





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (8)

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

STATE OF WISCONSIN
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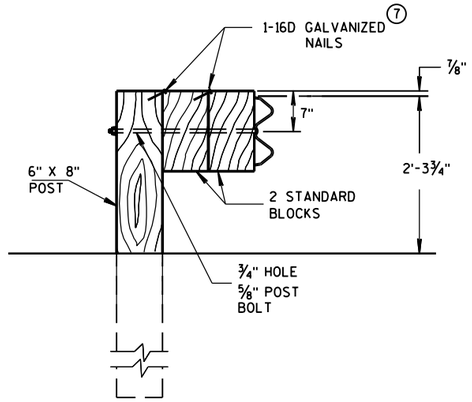
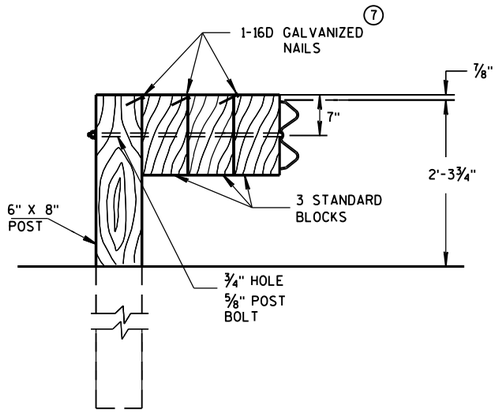


DETAIL FOR DOUBLE BLOCKS

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

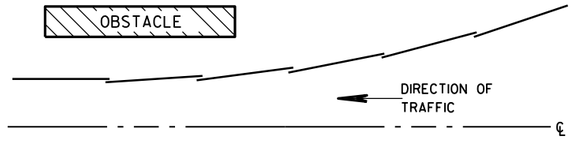


DETAIL FOR TRIPLE BLOCKS

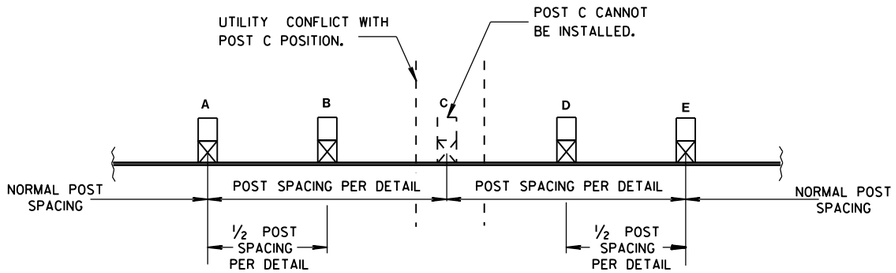
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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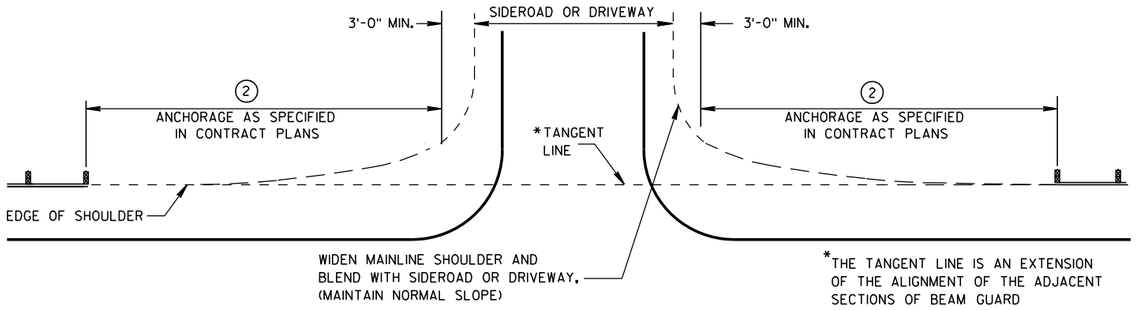
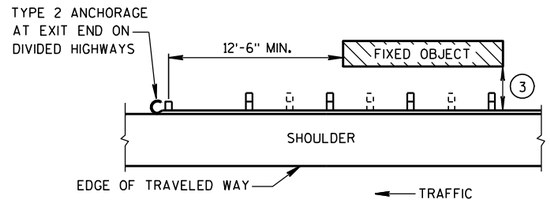
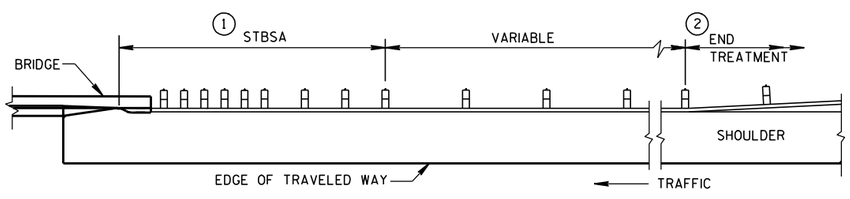


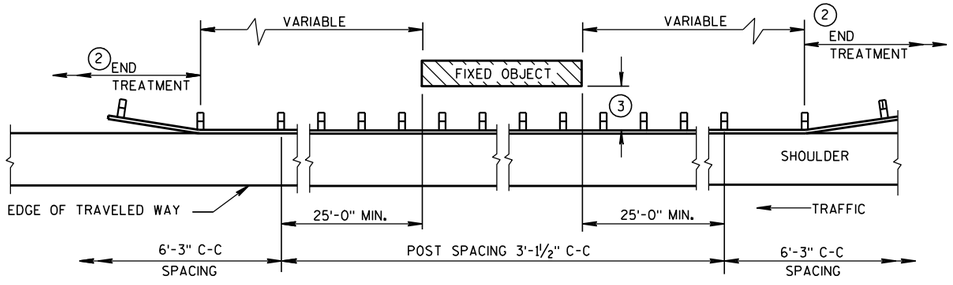
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

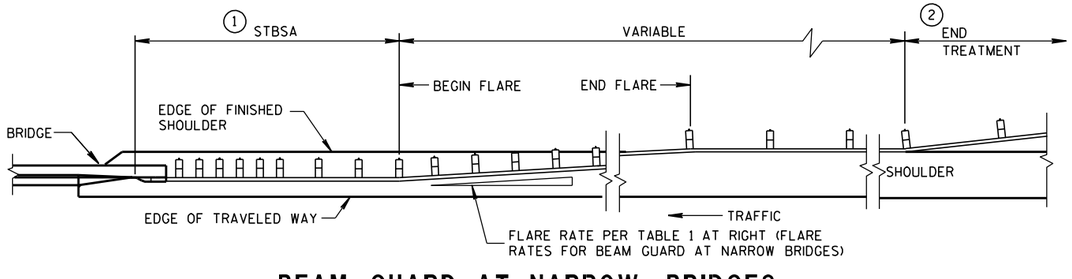


BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")



BEAM GUARD AT NARROW BRIDGES

(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

TABLE 1
FLARE RATES FOR BEAM GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

(1) STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.

(2) USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

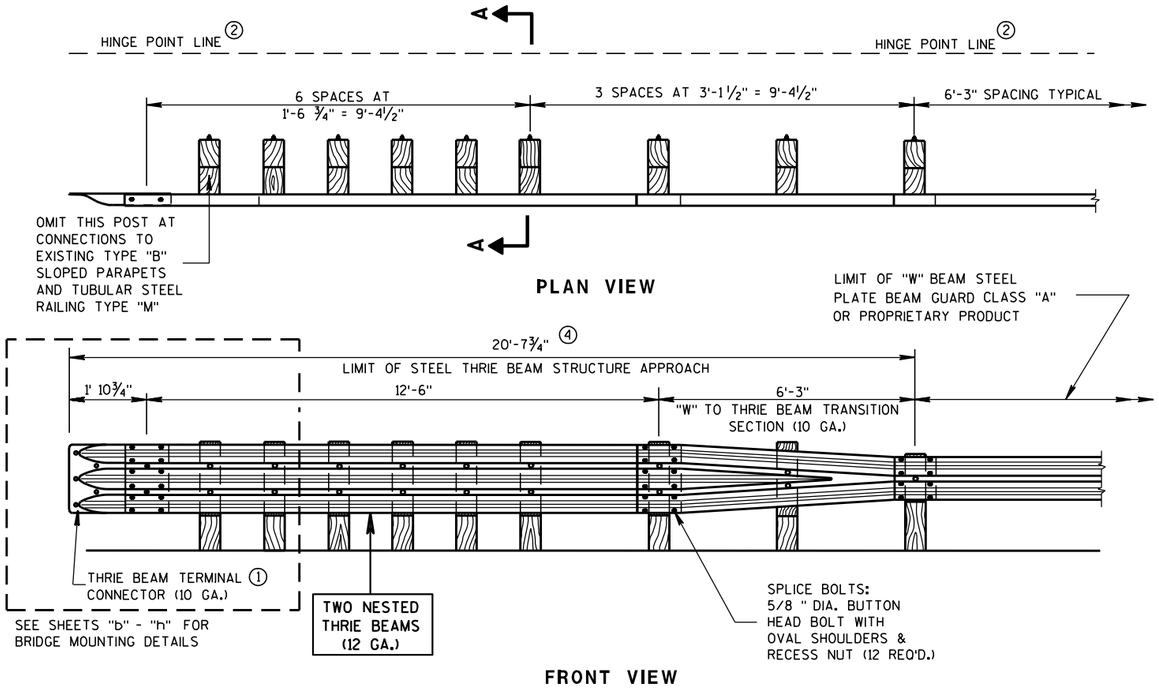
(3)

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1½"
4'-6"	6' - 3"

STEEL PLATE BEAM GUARD CLASS "A" AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-21-07 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



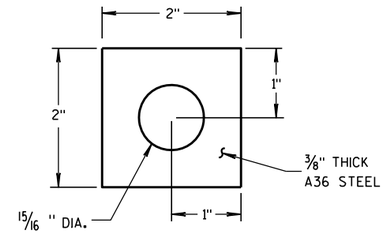


PLATE WASHER DETAIL

GENERAL NOTES

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

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

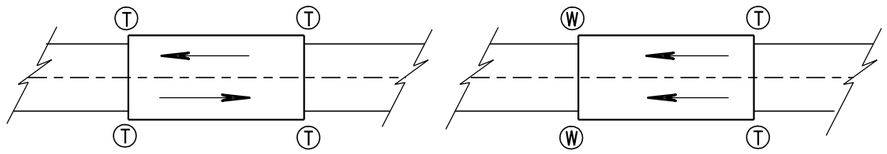
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



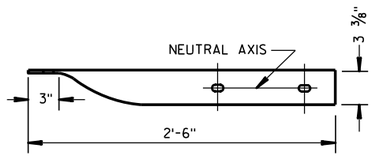
TWO WAY TRAFFIC

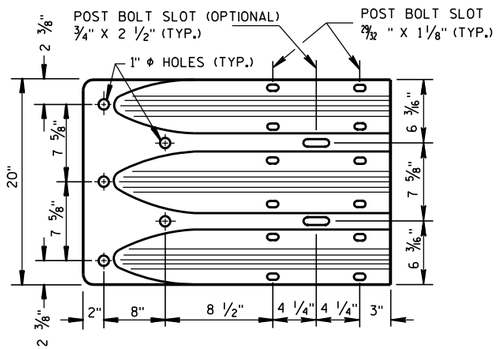
ONE WAY TRAFFIC

T THRIE BEAM CONNECTION

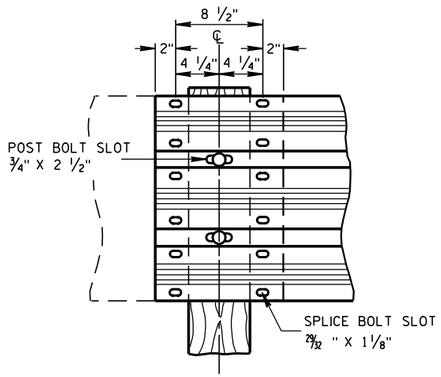
W W-BEAM CONNECTION WHEN REQUIRED

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

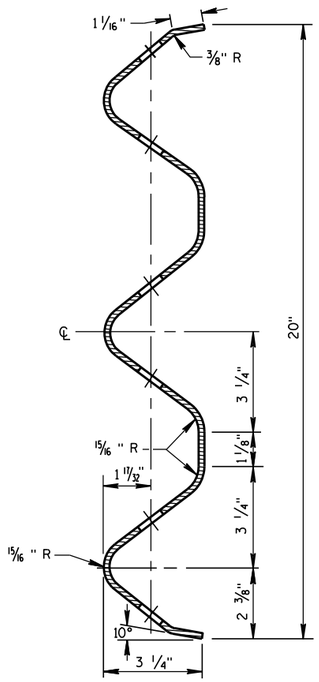




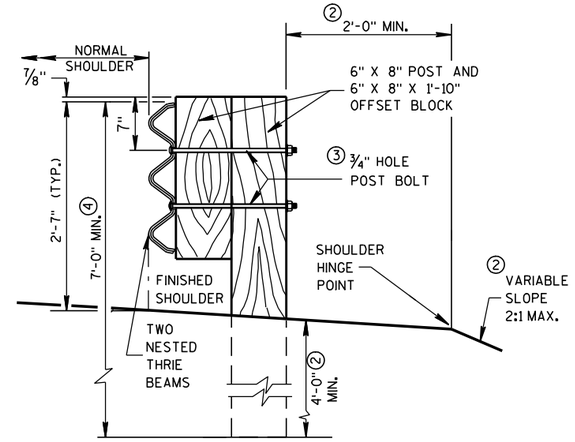
THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE



SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION A-A

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

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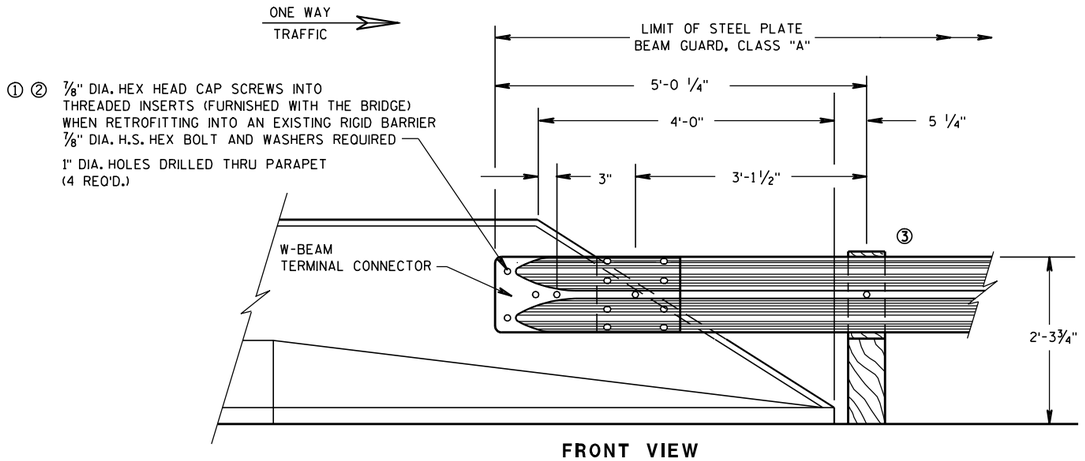


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

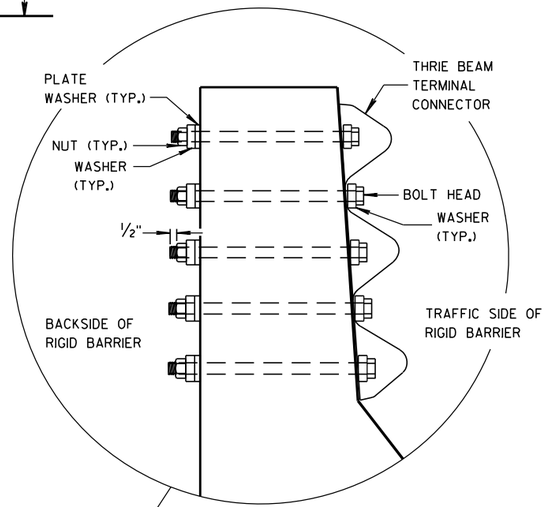
BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

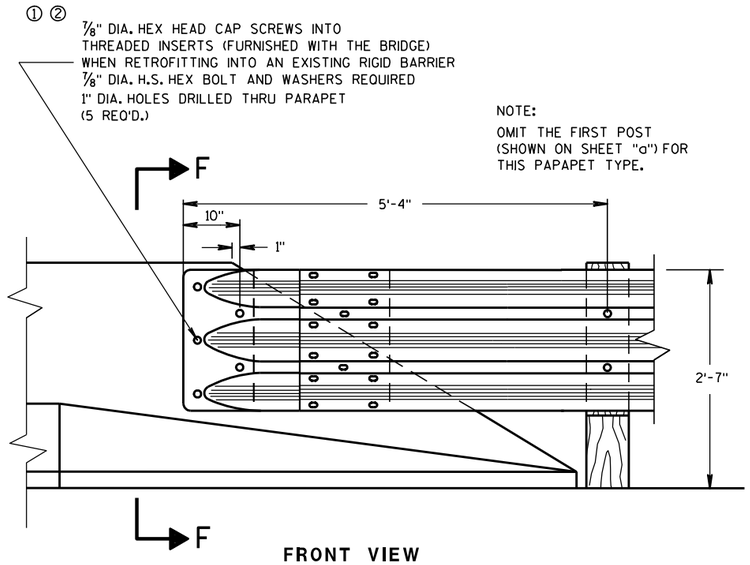
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. 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.

③ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

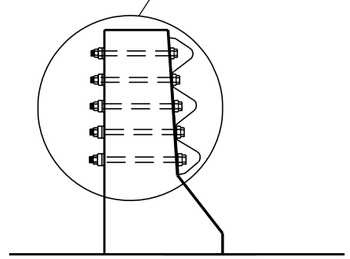
DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.



DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION F-F

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
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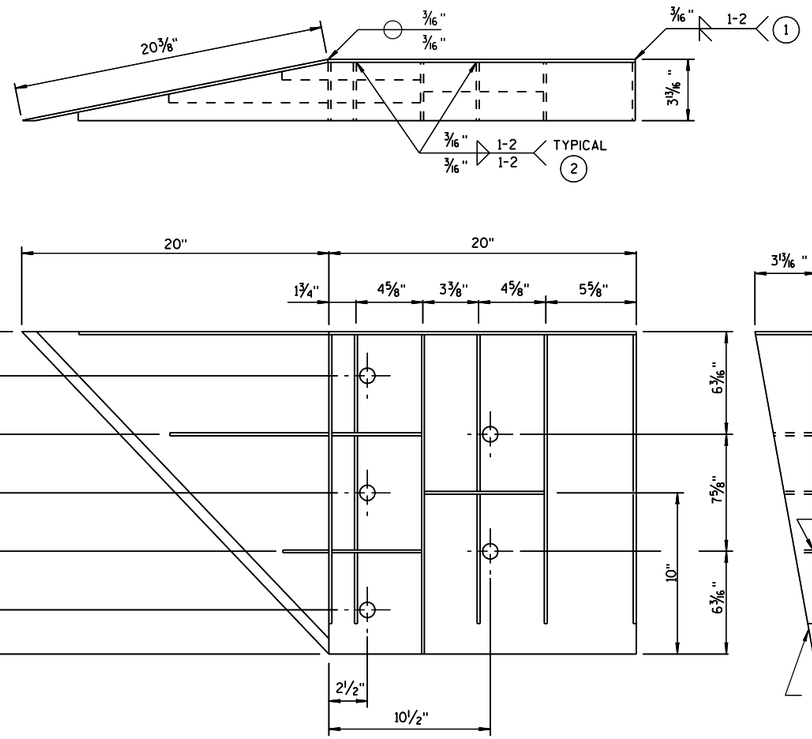

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

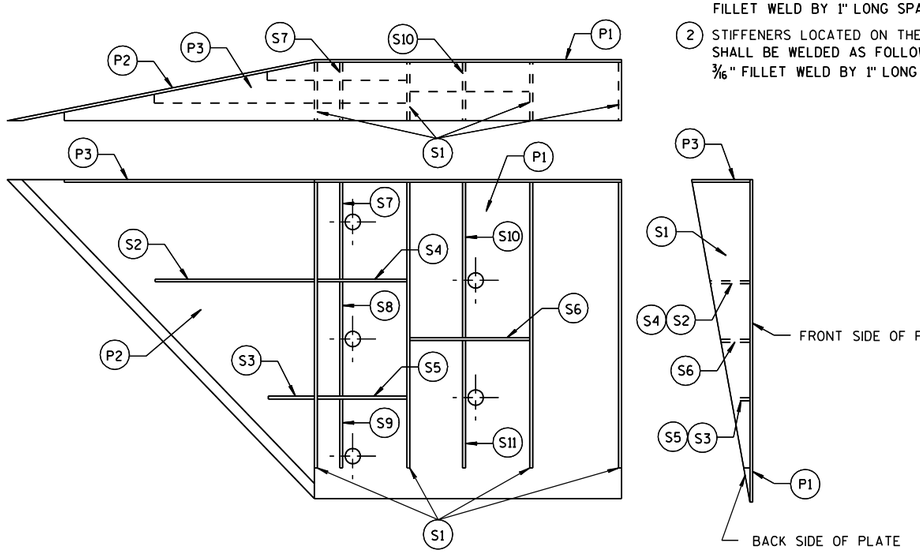

PLATE AND STIFFENER IDENTIFICATION

(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.

(1) 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.

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

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 5/8" 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 3/32"	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"

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 14 B 20-11g

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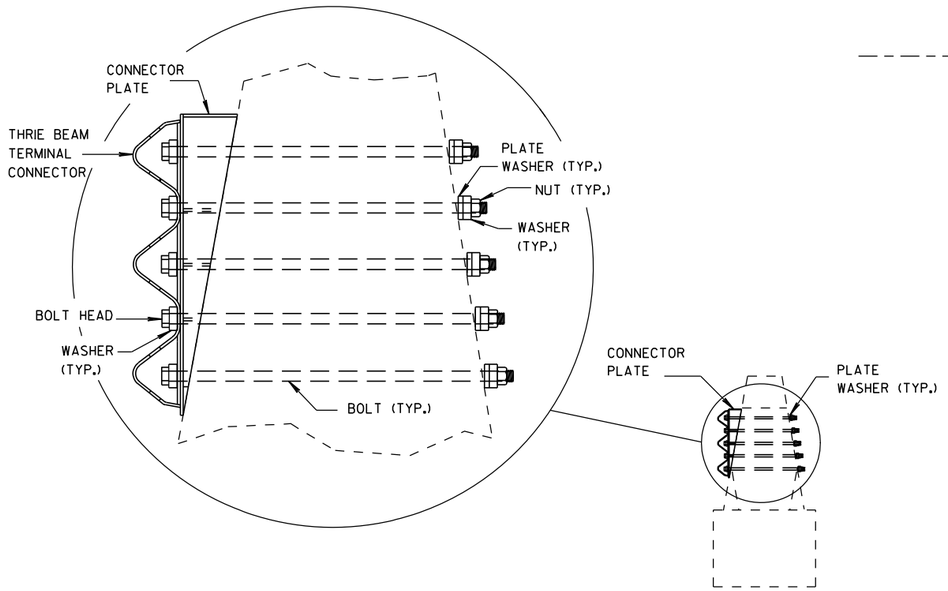
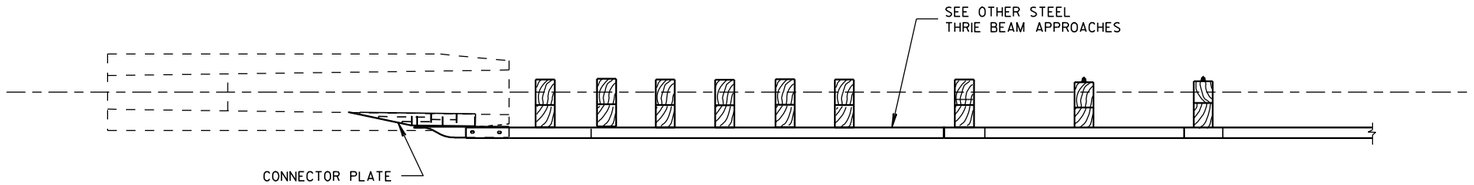
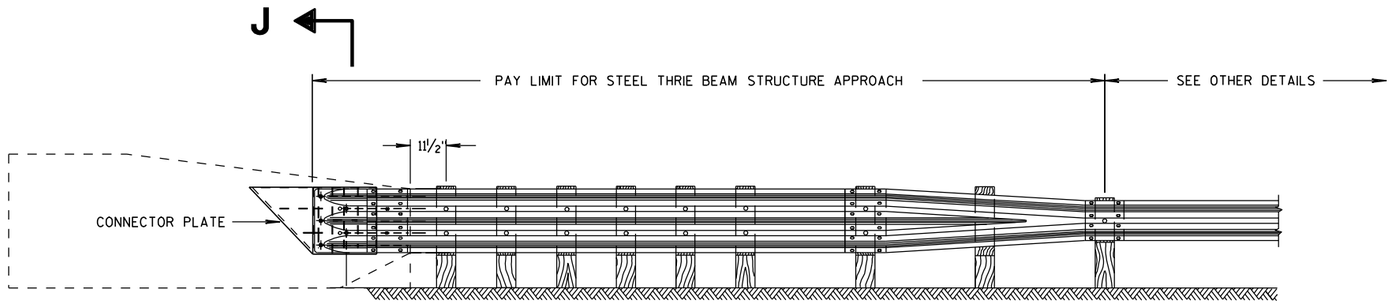
S.D.D. 14 B 20-11g



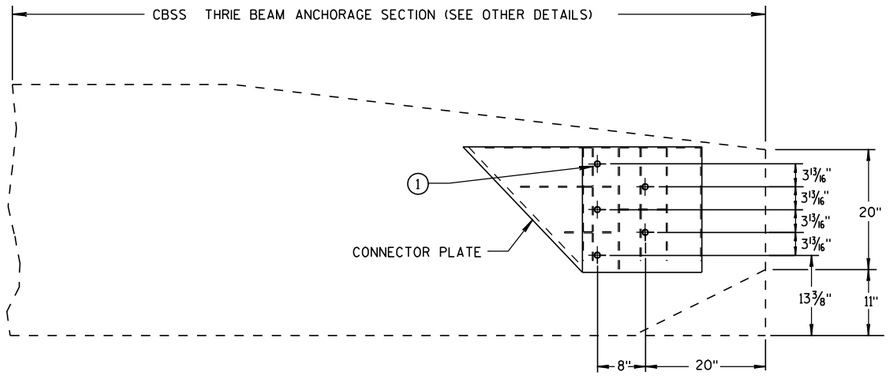
SECTION J-J



PLAN VIEW



FRONT VIEW



CONNECTOR PLATE LOCATION

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 614.

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

(1) 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 TERMINAL CONNECTOR. 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.

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

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S.D.D. 14 B 20-11h

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
(1)	4	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
(2)	**	STEEL TUBE: OPTION 1 - QUANITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
(3)	2	SOIL PLATE: 2'-0" X 1'-6" X ¼" **
(4)	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
(5)	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
(6)	1	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
(7)	1	BEARING PLATE
(8)	1	BCT CABLE ASSEMBLY
(9)	1	CABLE ANCHOR BOX
(10)	1	STRUT & YOKE
(11)	1	STEEL PLATE BEAM, END PANEL 12 GA. 13'-6½" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
(12)	3	STEEL PLATE BEAM: 12 GA. 13'-6½"
(13)	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
(14)	1	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(15)	1	E.A.T. MARKER POST

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL ⅝" ø X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

(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) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

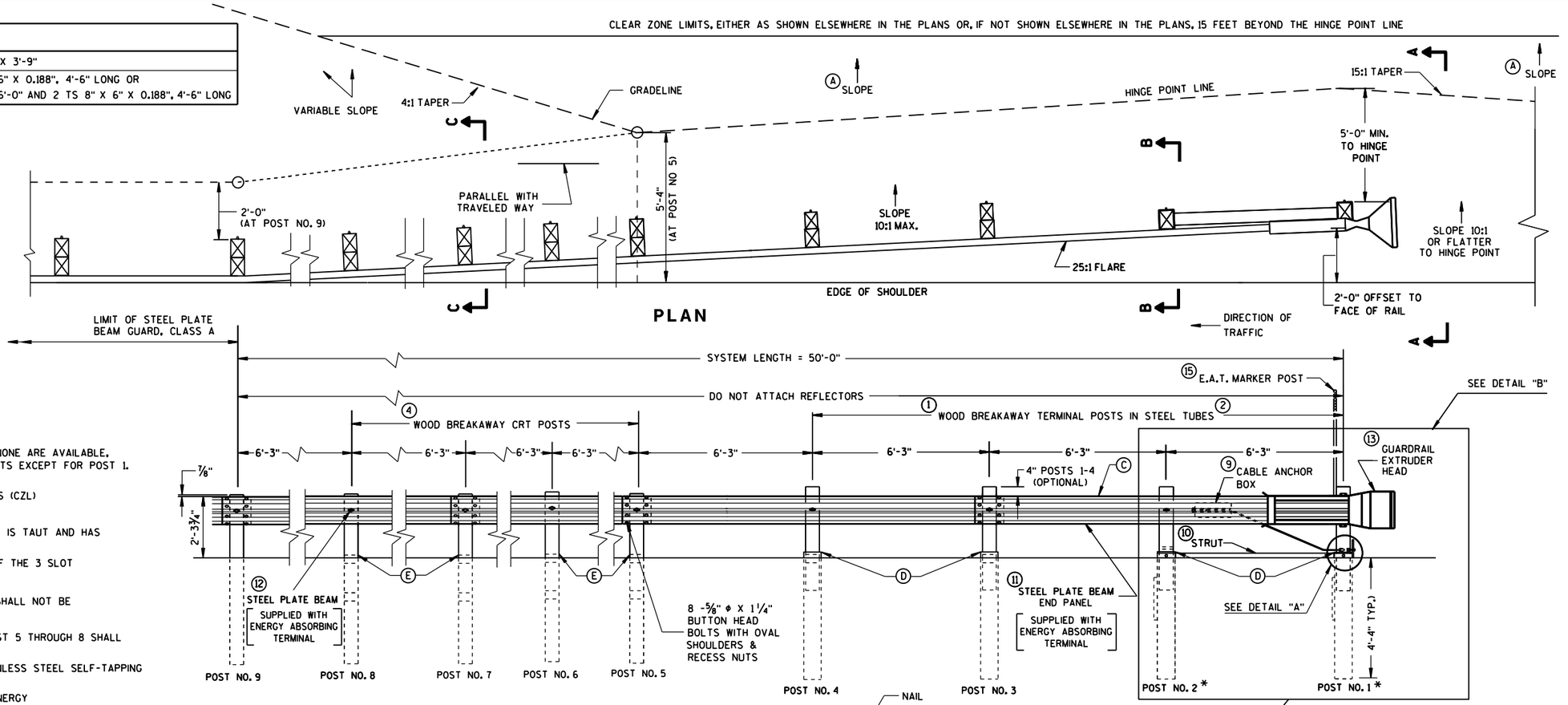
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

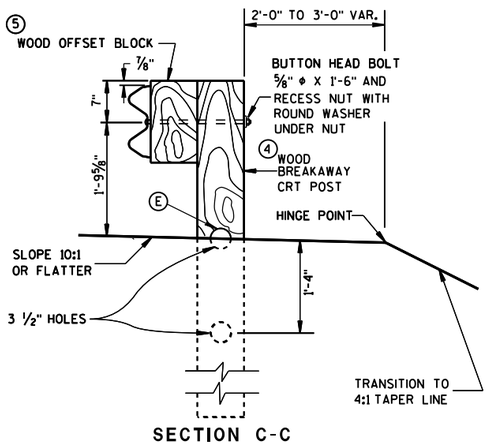
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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

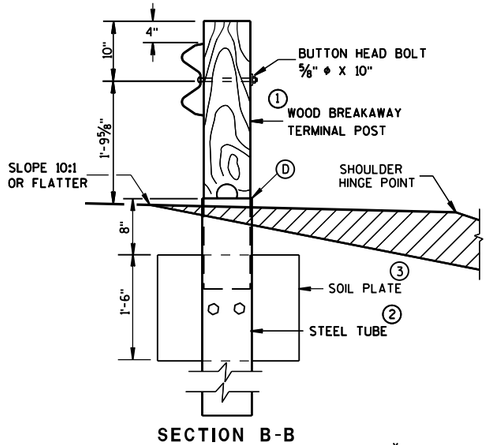
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.

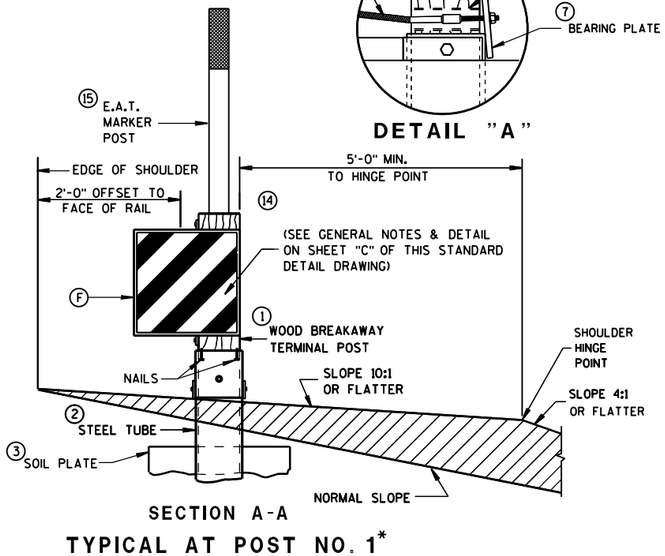




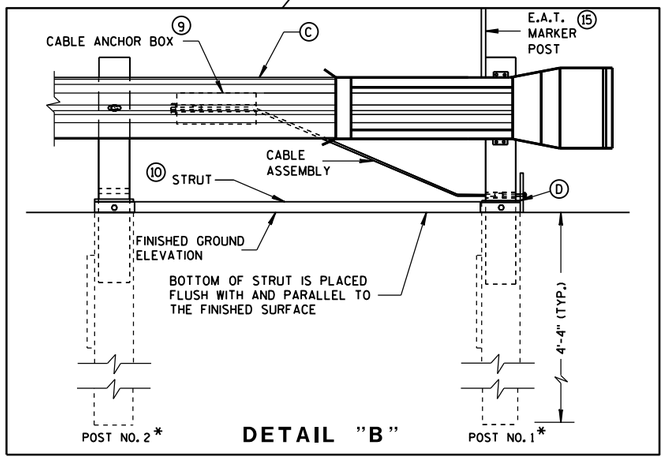
SECTION C-C
TYPICAL AT POST NOS. 6, 8



SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



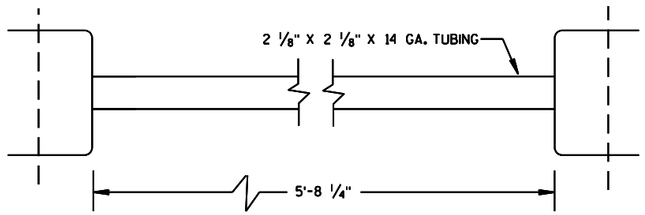
DETAIL "B"

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

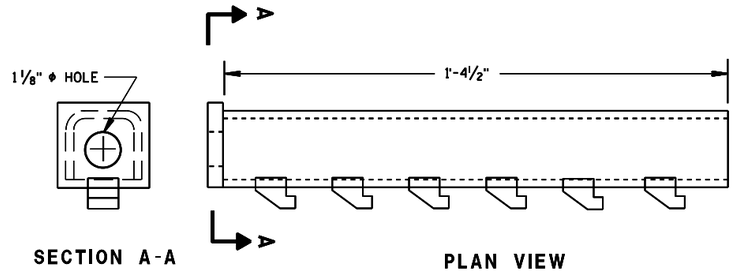
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

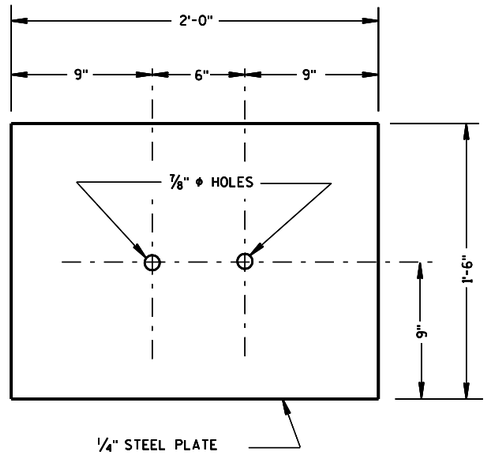
S.D.D. 14 B 24-8a



⑩ STRUT DETAIL (SKT-350)

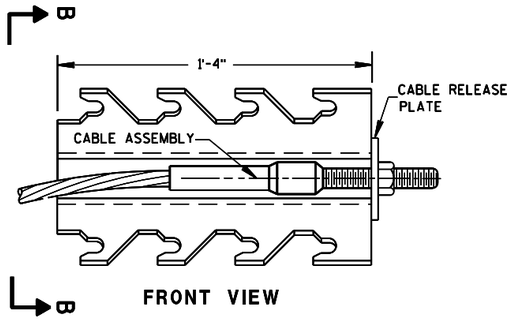


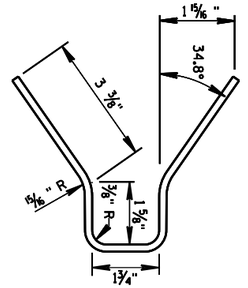
⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



③ SOIL PLATE

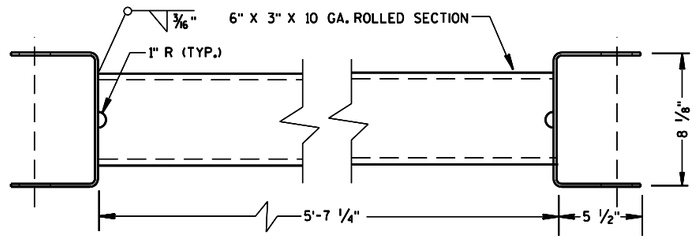
(SKT-350, ET-2000/ET-2000 PLUS)





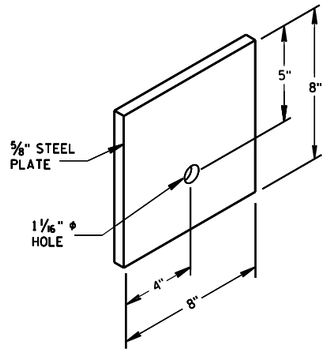
⑨ CABLE ANCHOR BOX (SKT-350)

(SKT-350)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



⑦ STEEL BEARING PLATE

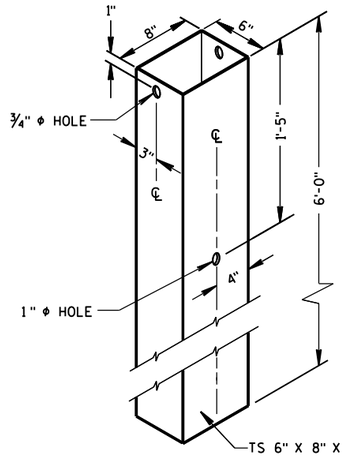
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

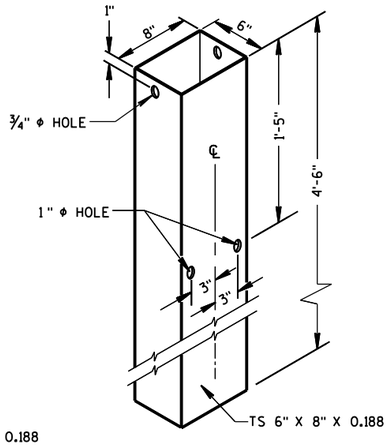
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

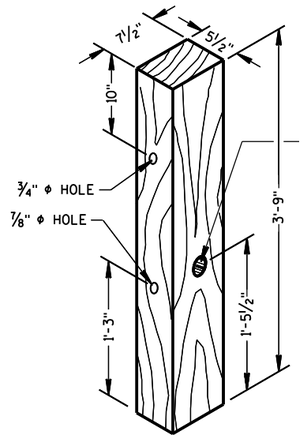
S.D.D. 14 B 24-8b



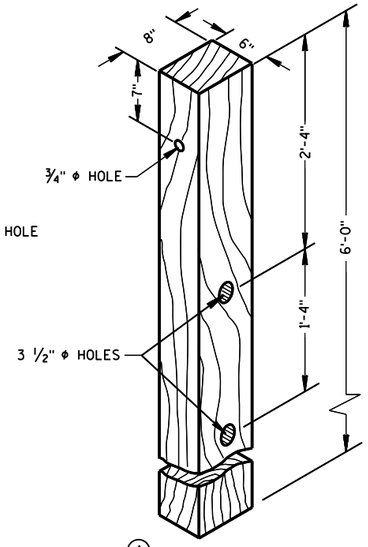
② 72" STEEL TUBE
(POSTS NO. 1-4



② 54" STEEL TUBE
(POSTS NO. 1-4



① TERMINAL POST
(POSTS NO. 1-4



④ CRT POST
(POSTS NO'S 5-8

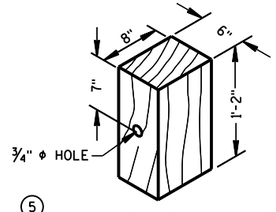
WOOD BREAKAWAY POSTS

GENERAL NOTES

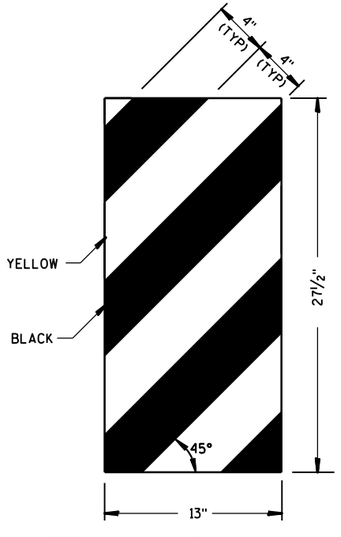
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

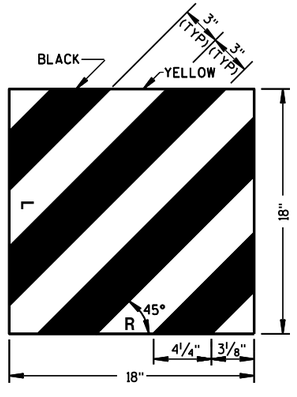
(G) ½" DIA. X 3" LAG BOLT WITH WASHER.



⑤ WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

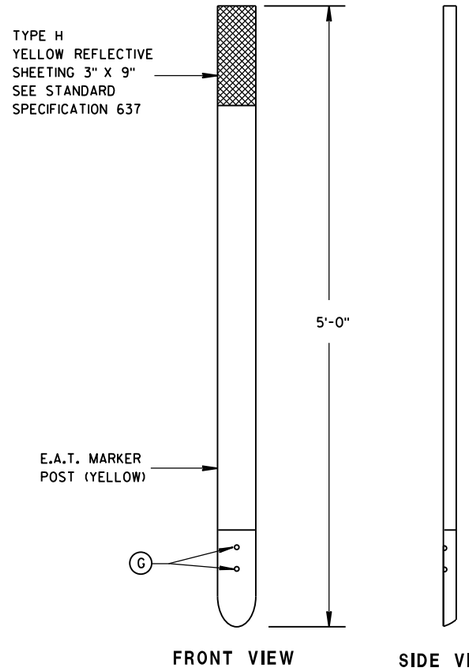


ET-2000 PLUS ONLY



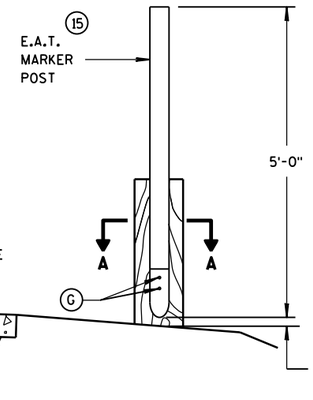
ET-2000 AND SKT-350

⑭ REFLECTIVE SHEETING DETAILS

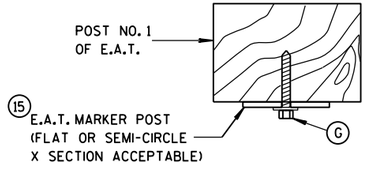


FRONT VIEW SIDE VIEW

⑮ E.A.T. MARKER POST



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



SECTION A-A

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 14 B 24-8c

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S.D.D. 14 B 24-8c

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.

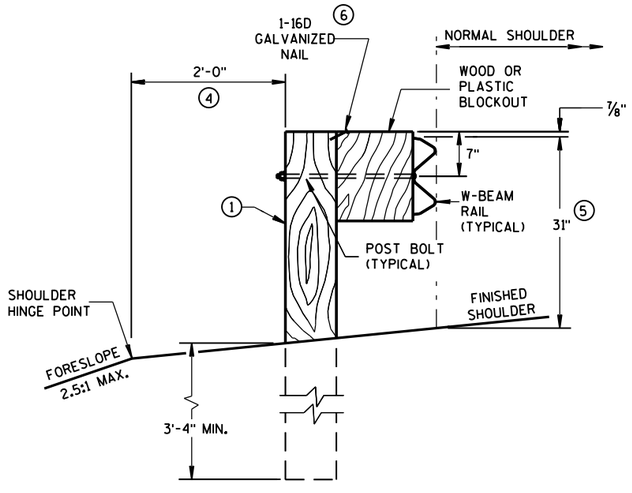
② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

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).

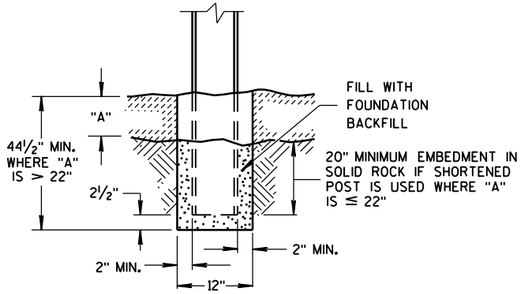
⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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.



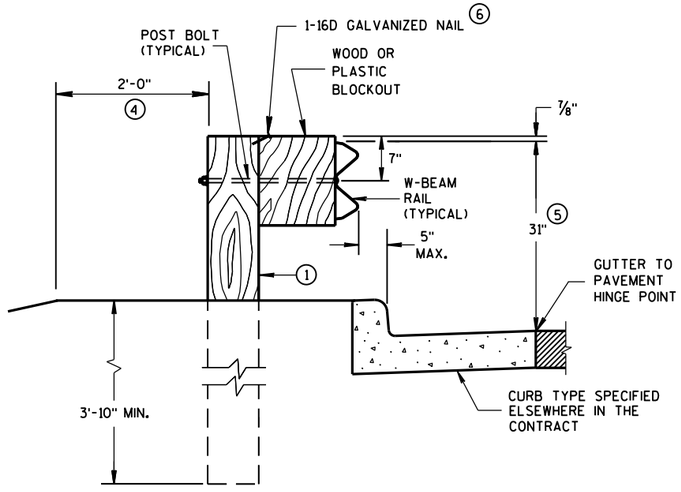
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



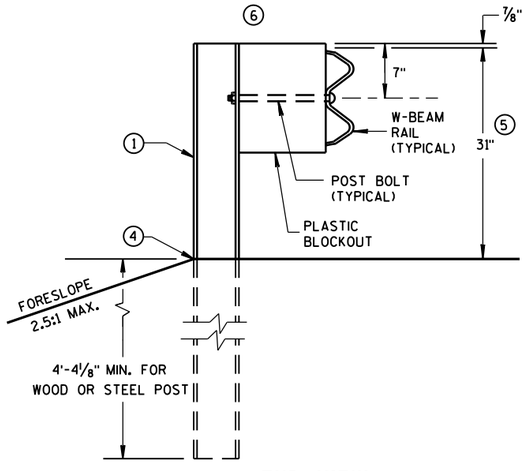
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



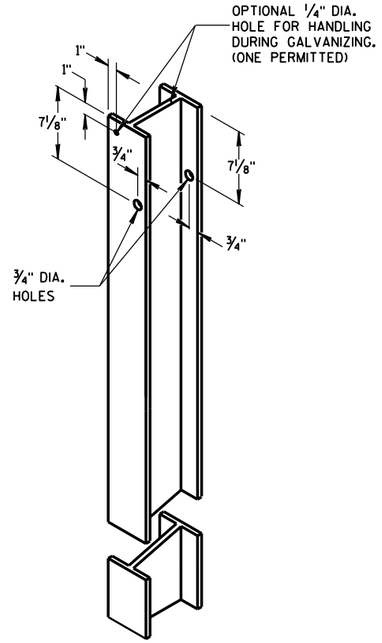
END VIEW

LOCATED ALONG A CURBED ROADWAY

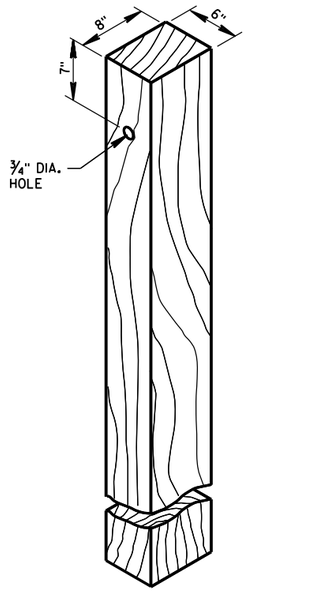


END VIEW

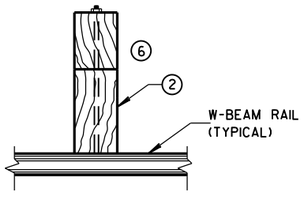
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



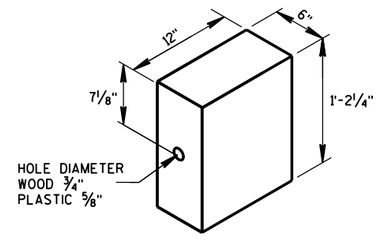
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



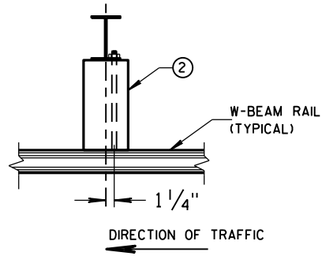
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②



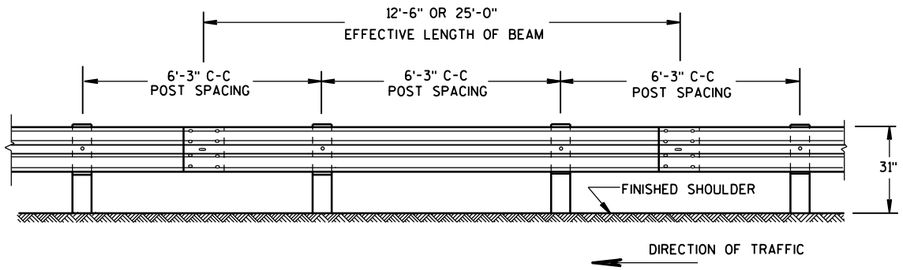
PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

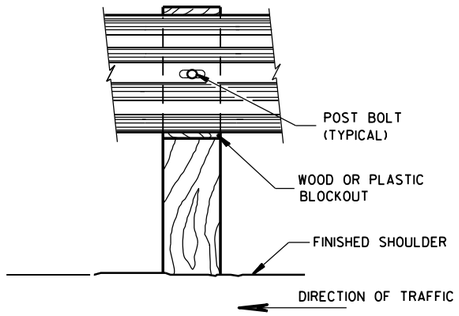
6

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



FRONT VIEW

POST SPACING STANDARD INSTALLATION



FRONT VIEW AT WOOD POST

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.

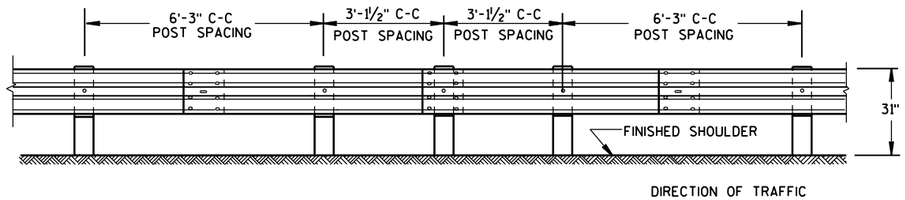
9. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

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.

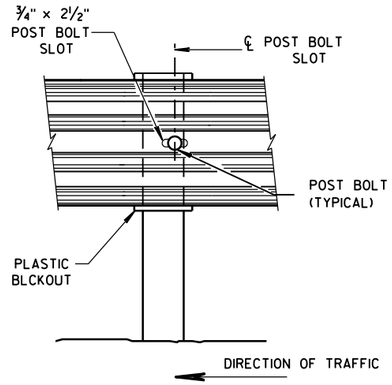
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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

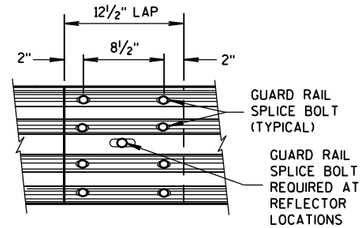


FRONT VIEW

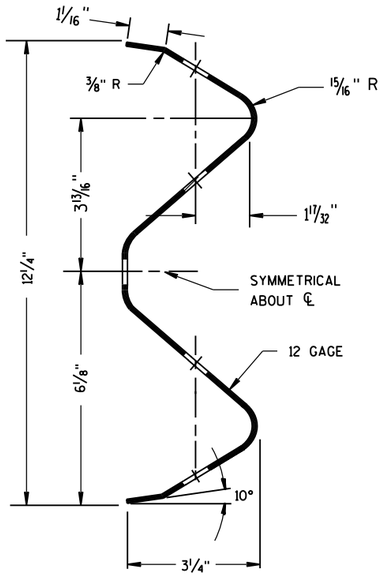
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



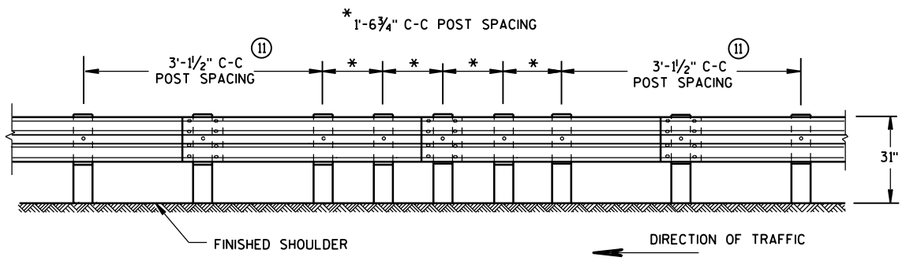
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE

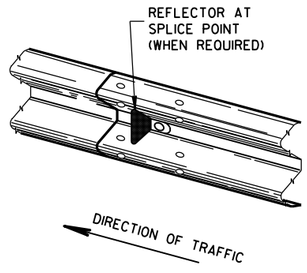


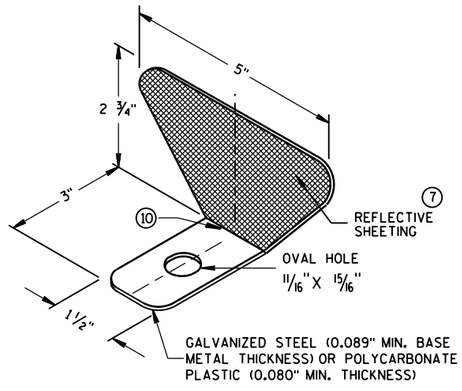
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (7)

REFLECTOR SPACING (8)

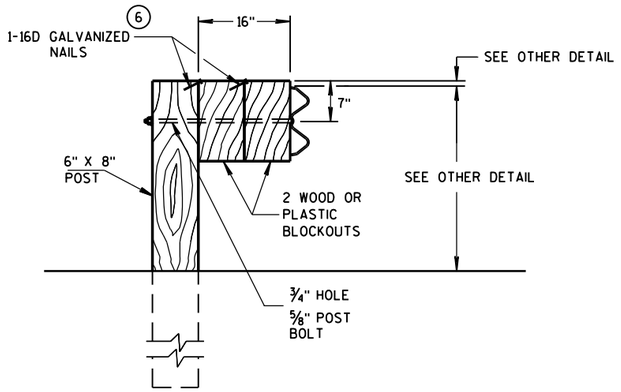
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 (9) 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 (10)	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

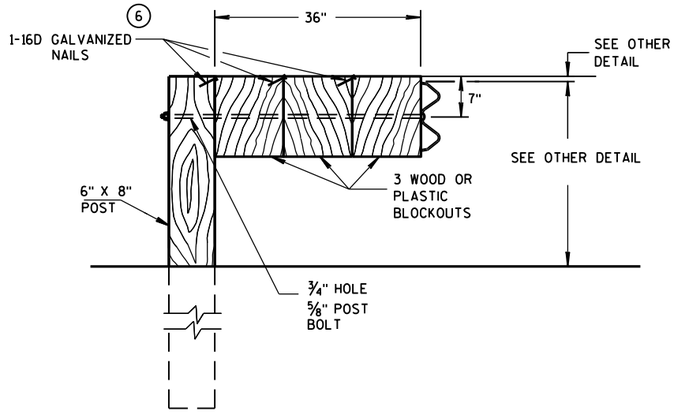
6

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.

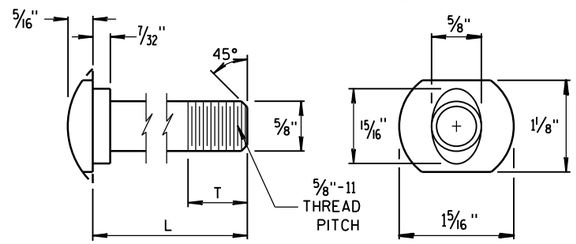


DETAIL FOR 36" BLOCKOUT DEPTH

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.

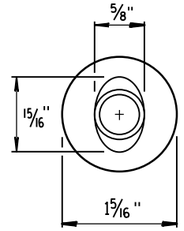
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

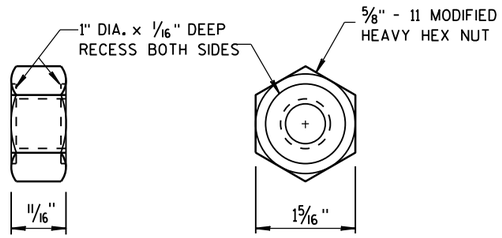


POST BOLT TABLE

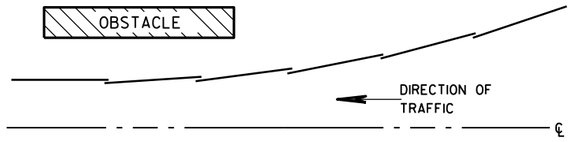
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

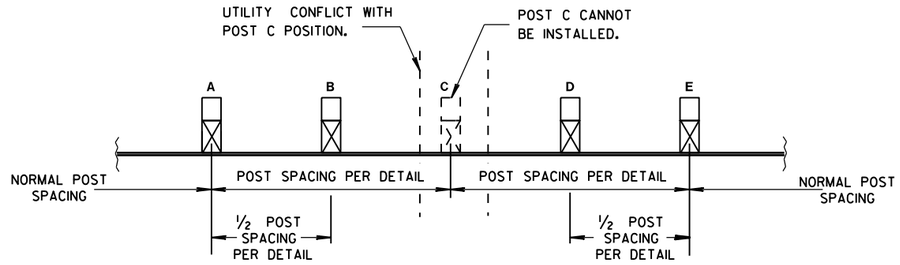


POST BOLT, SPLICE BOLT AND RECESS NUT

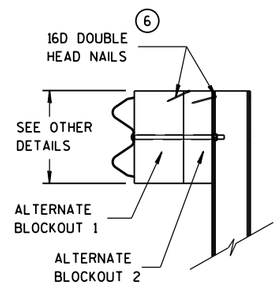


PLAN VIEW

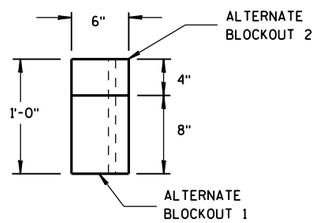
BEAM LAPPING DETAIL



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.

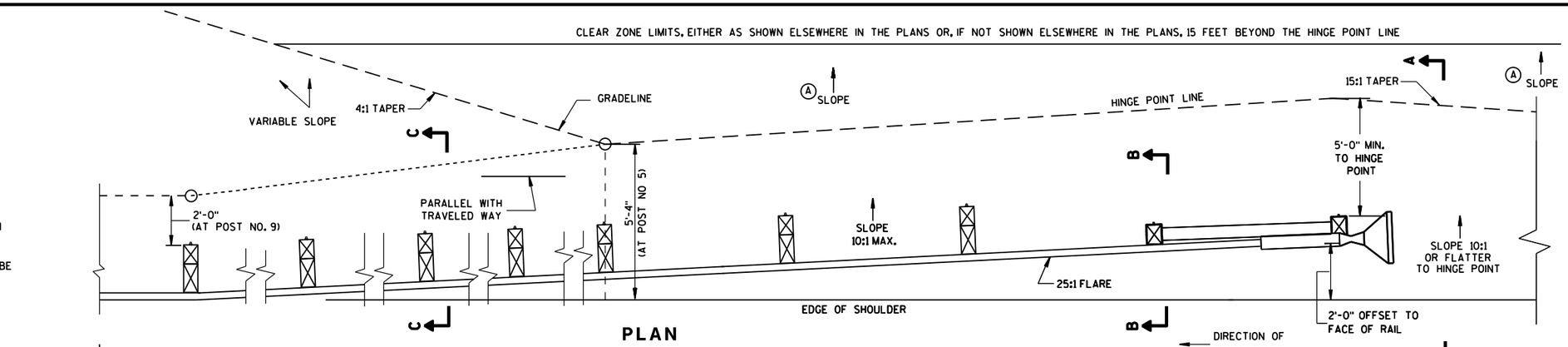
SEE SDD 14B42 FOR MORE INFORMATION.

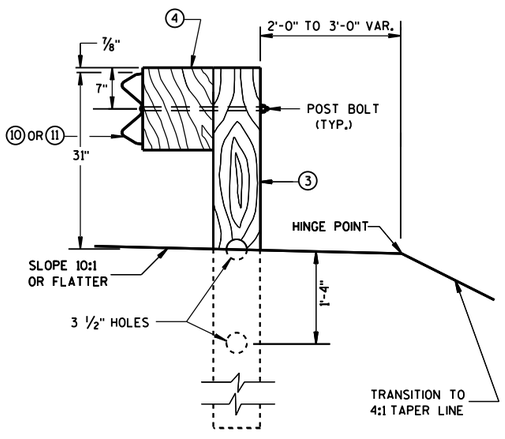
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

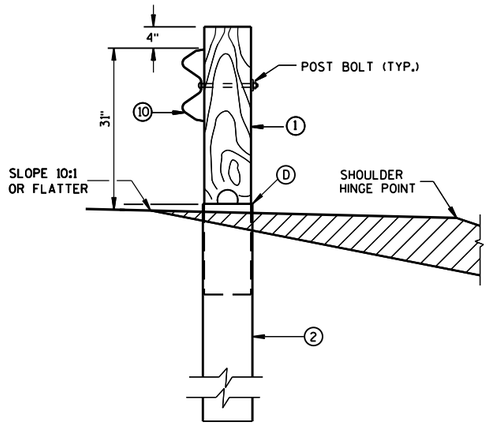
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

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.

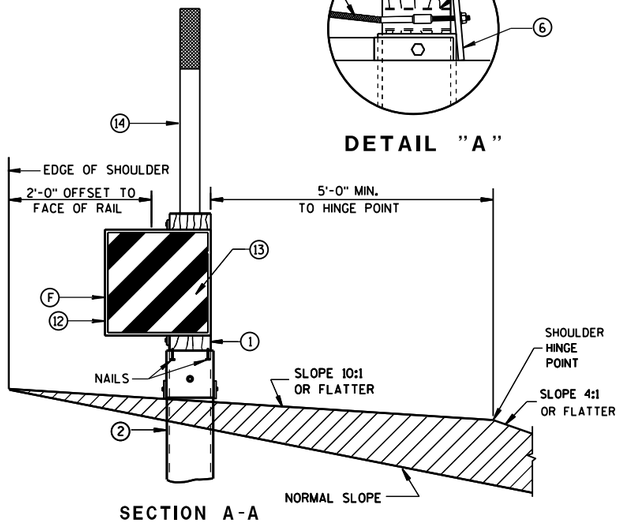




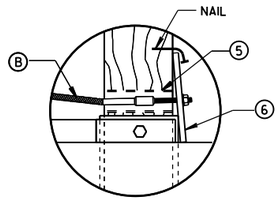
SECTION C-C
TYPICAL AT POST NOS. 3-9



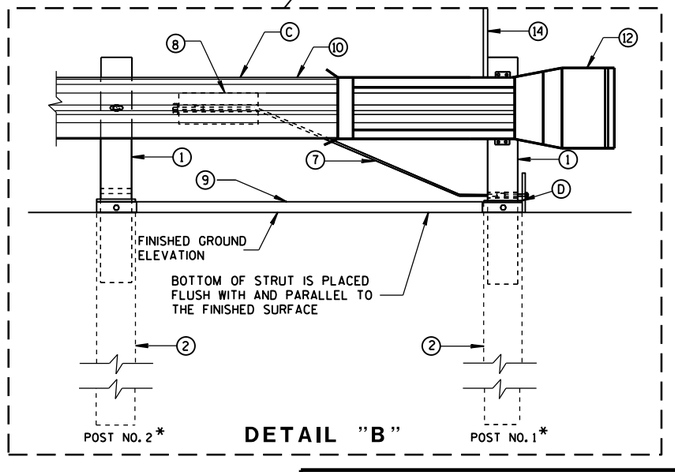
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



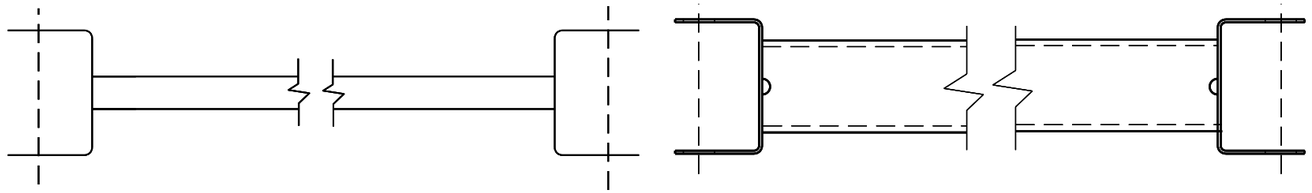
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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

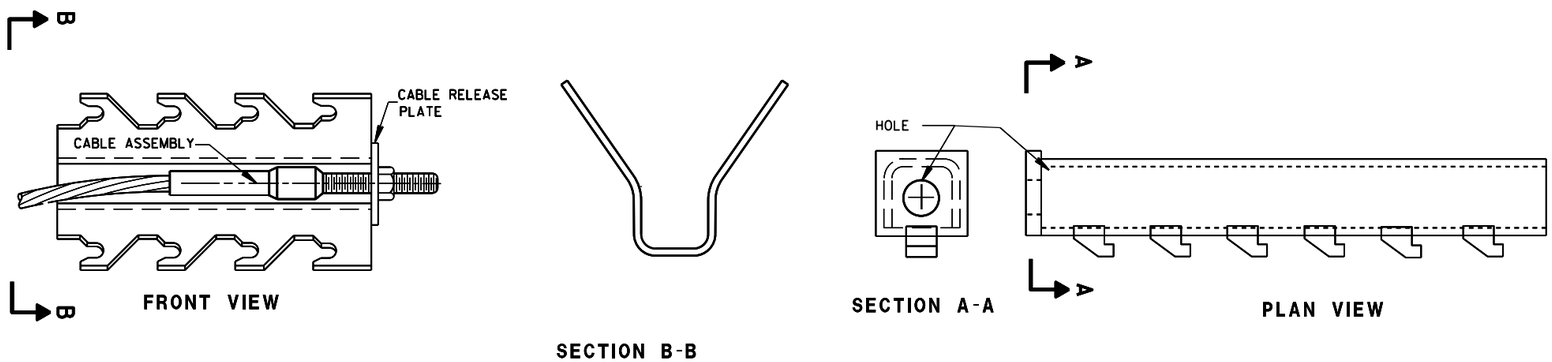
S.D.D. 14 B 44-2a



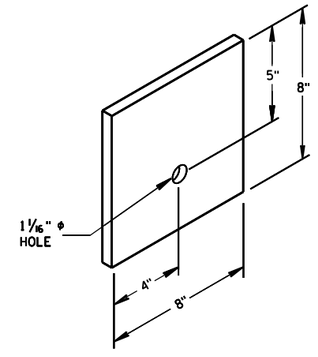
GENERIC GROUND STRUT (9) (H)

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)



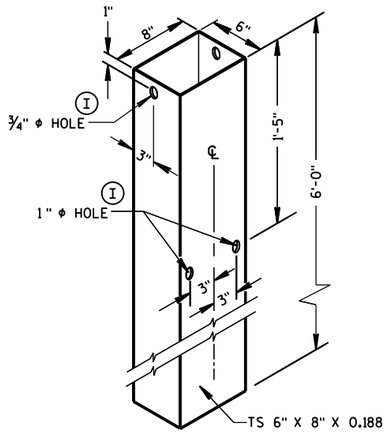
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

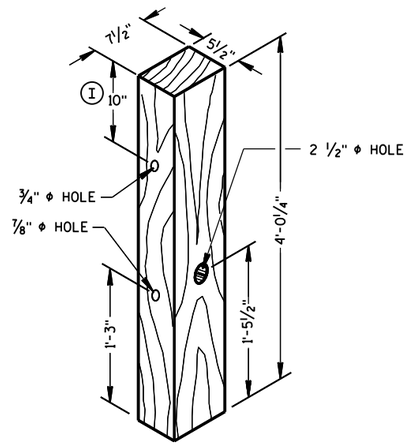
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

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

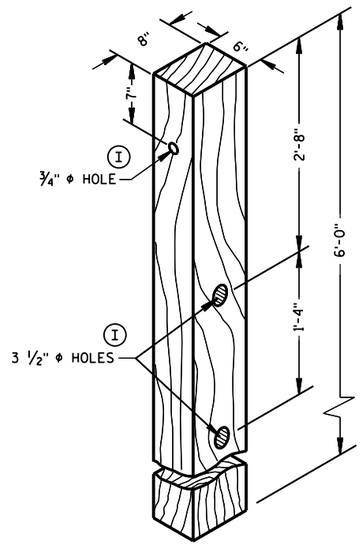


FOUNDATION TUBE (2)



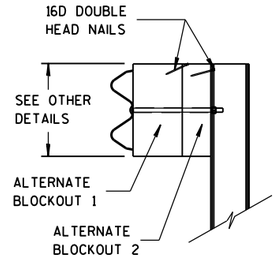
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

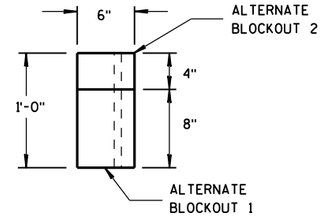


POSTS NUMBER 3-9

WOOD CRT POST (3)

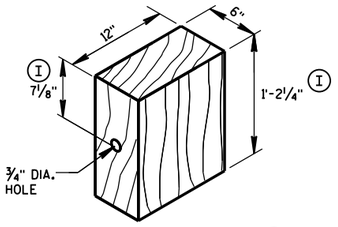


SIDE VIEW



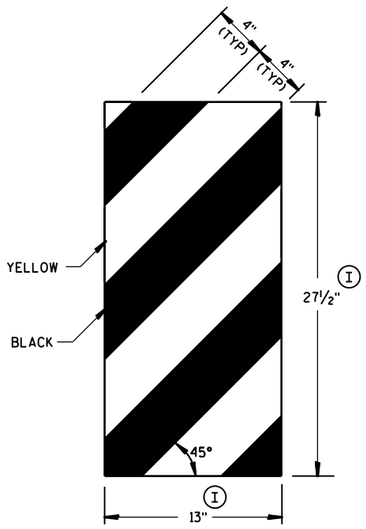
TOP VIEW

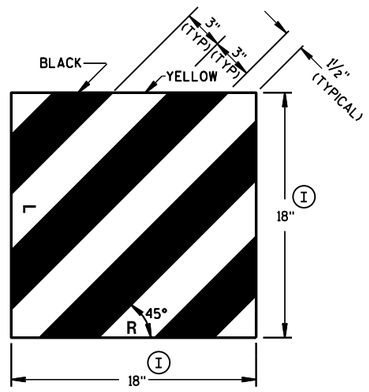
ALTERNATE WOOD BLOCKOUT DETAIL



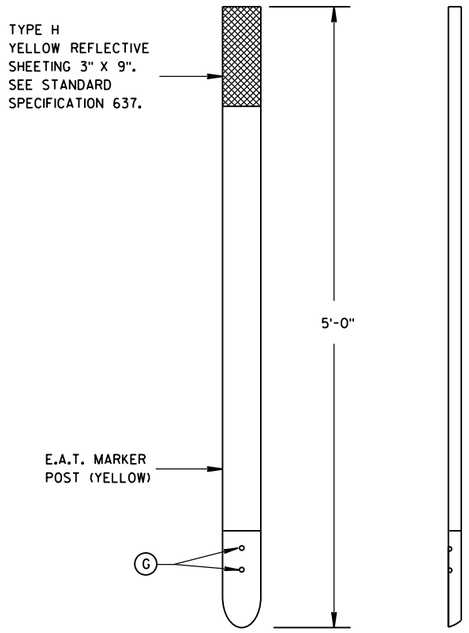
WOOD BLOCKOUT (4)

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





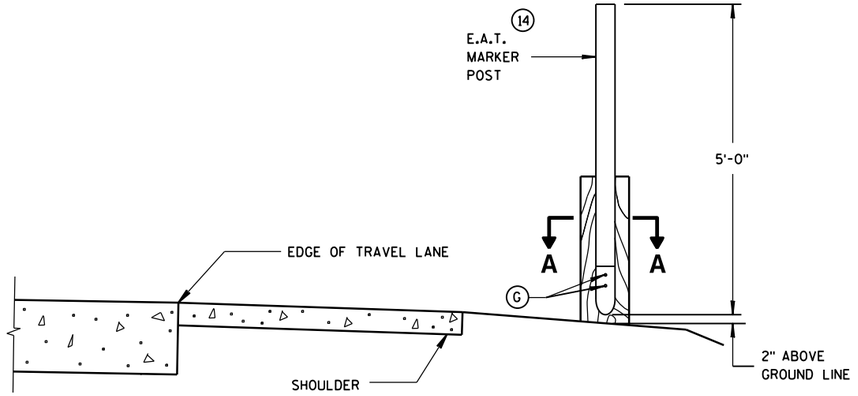
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

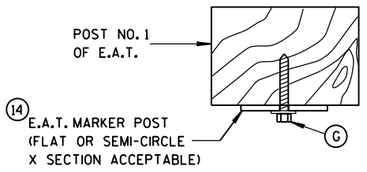
SIDE VIEW

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

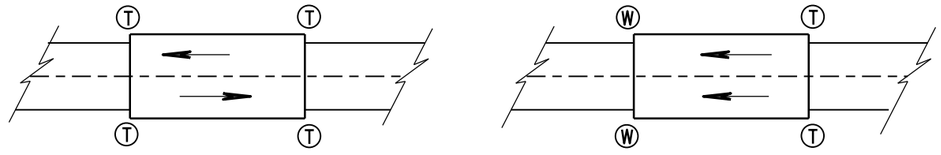
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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

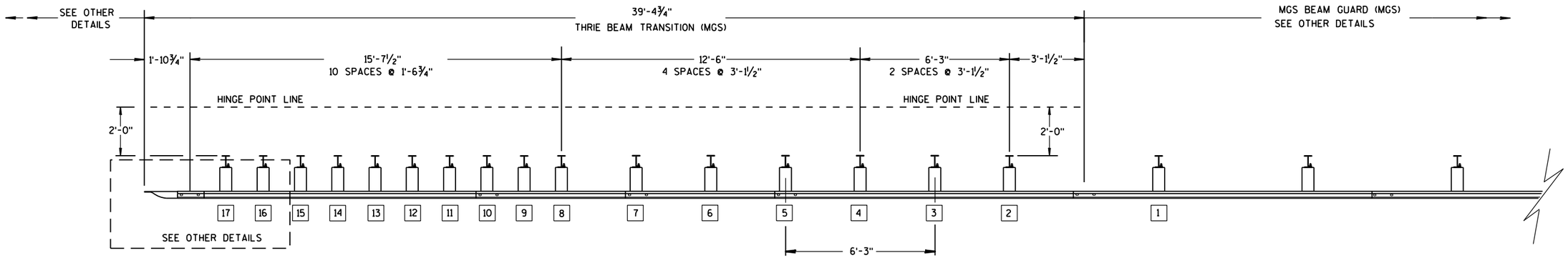
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

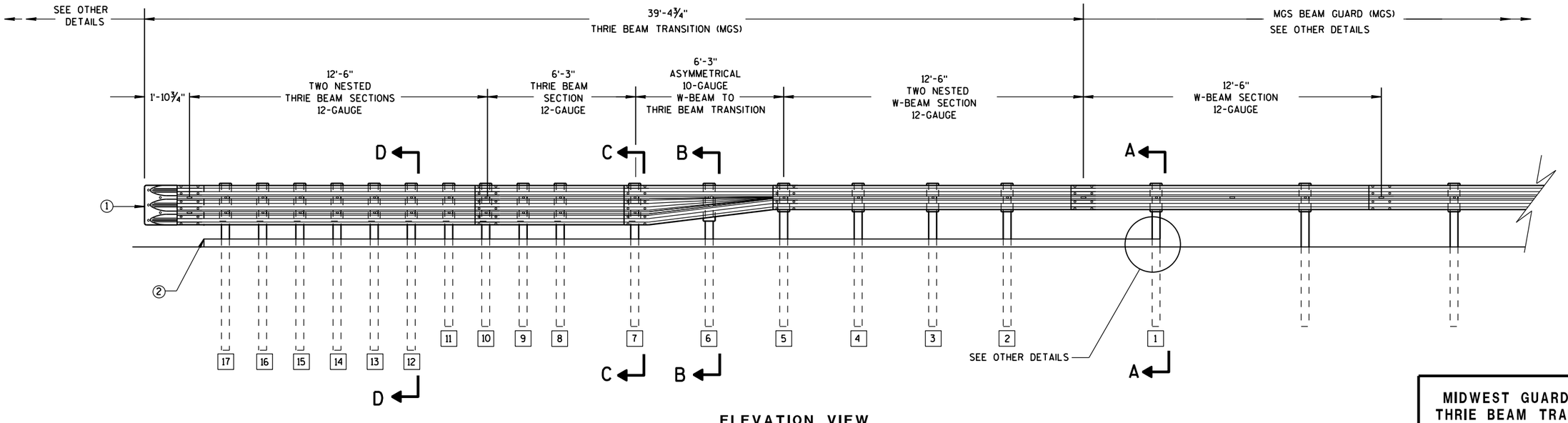
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

6

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

6

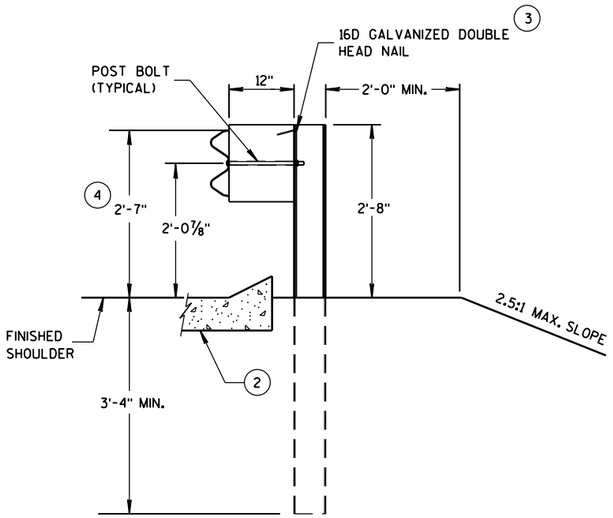
S.D.D. 14 B 45-4a

GENERAL NOTES

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

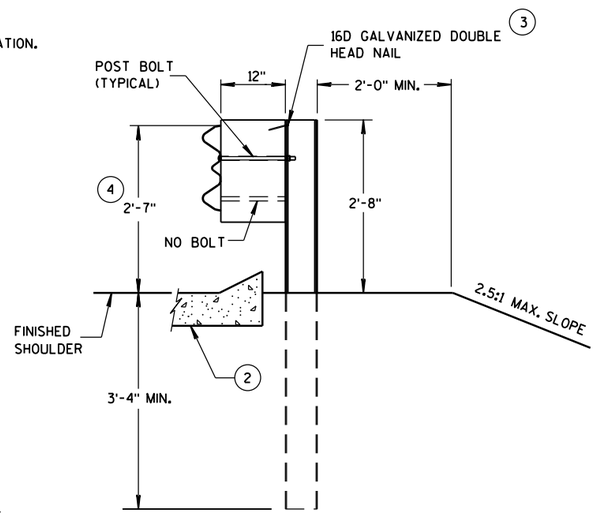
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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



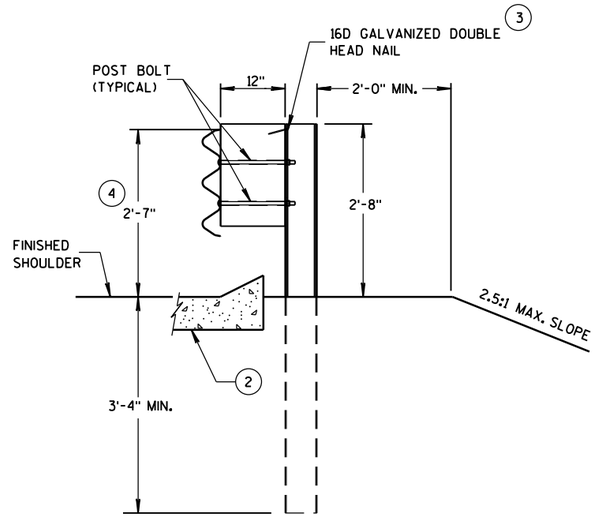
SECTION A-A

POSTS 1-5



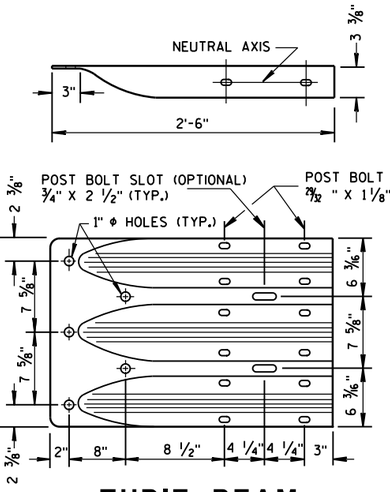
SECTION B-B

POST 6



SECTION C-C

POSTS 7-11



THRIE BEAM TERMINAL CONNECTOR

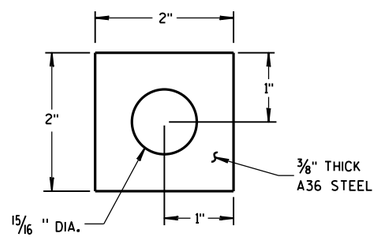
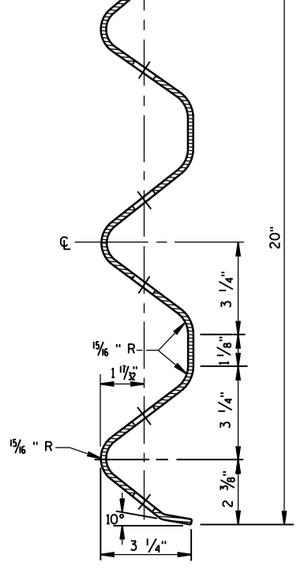
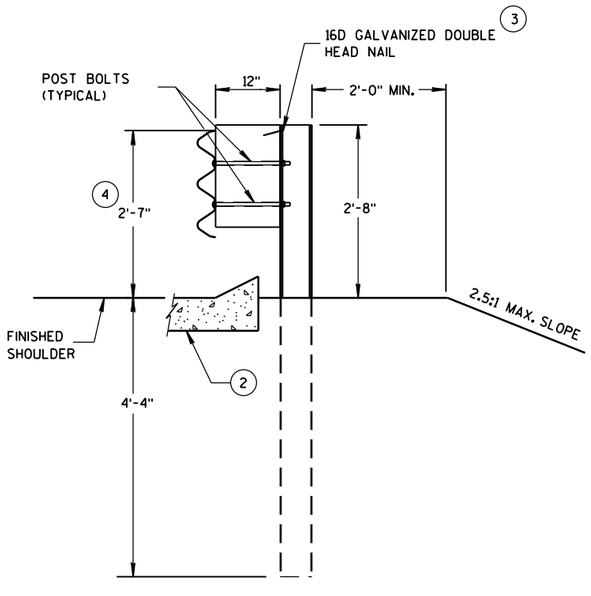


PLATE WASHER DETAIL

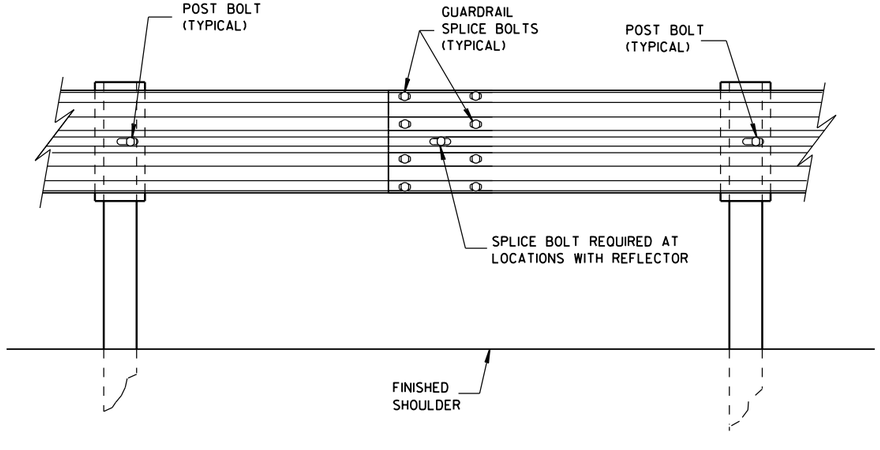


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-17



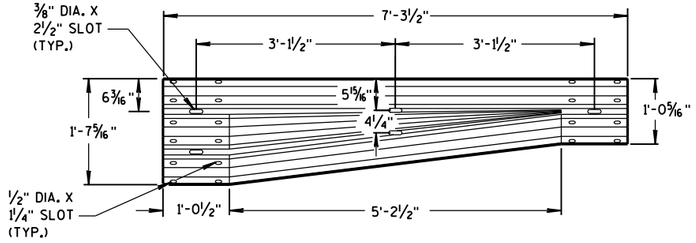
SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

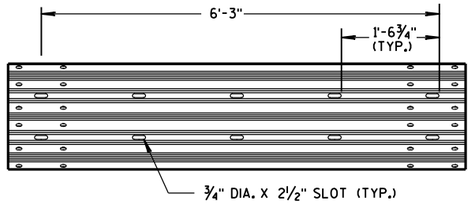
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

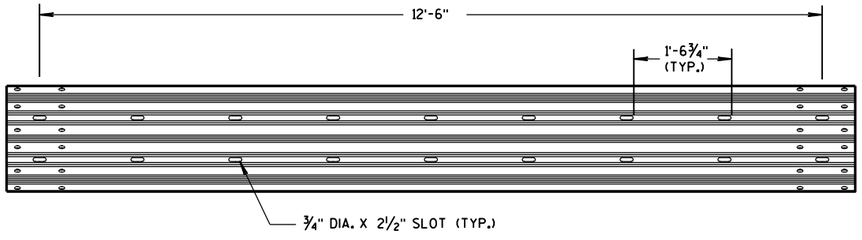
S.D.D. 14 B 45-4b



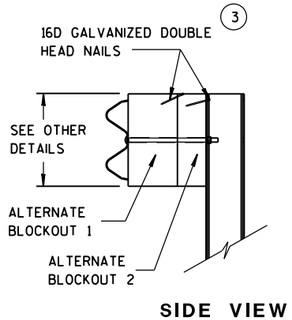
W-BEAM TO THRIE BEAM TRANSITION SECTION



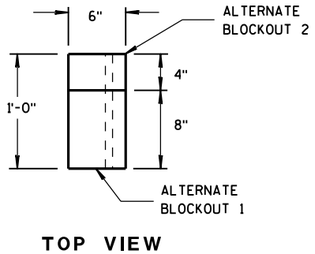
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

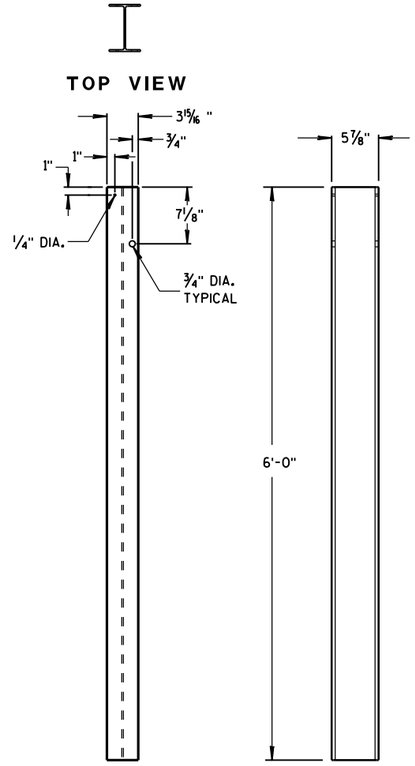


SIDE VIEW



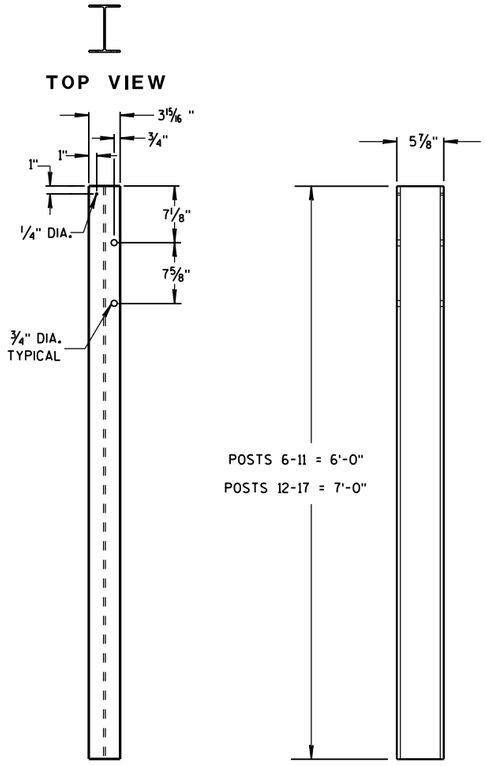
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



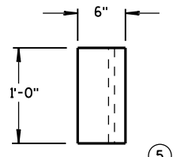
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5

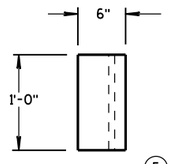


FRONT VIEW SIDE VIEW

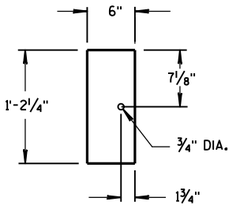
STEEL POSTS 6-17



TOP VIEW (5)

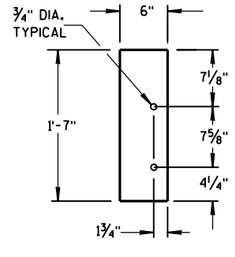


TOP VIEW (5)



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.

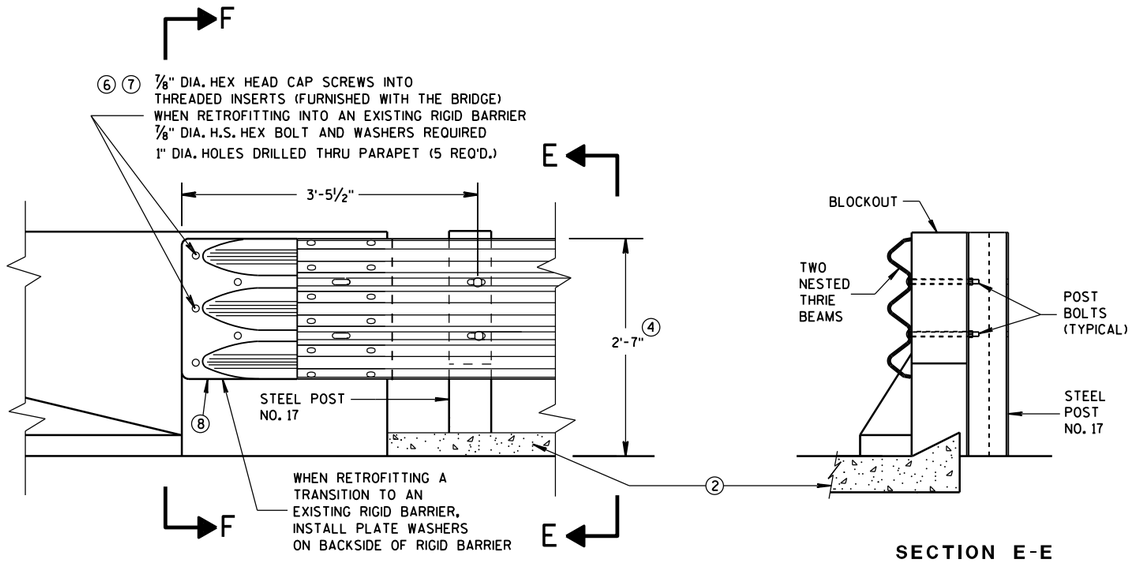
(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

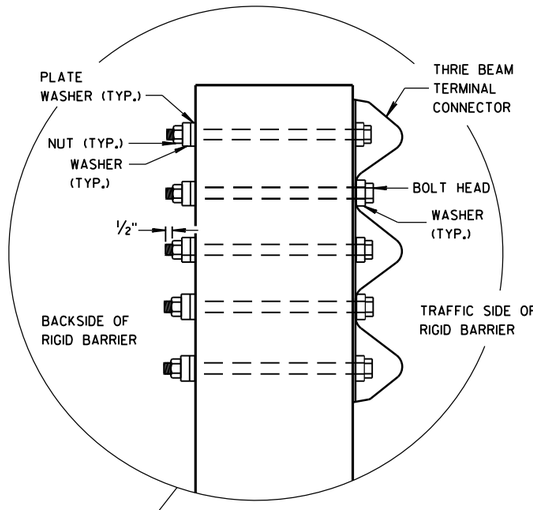
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

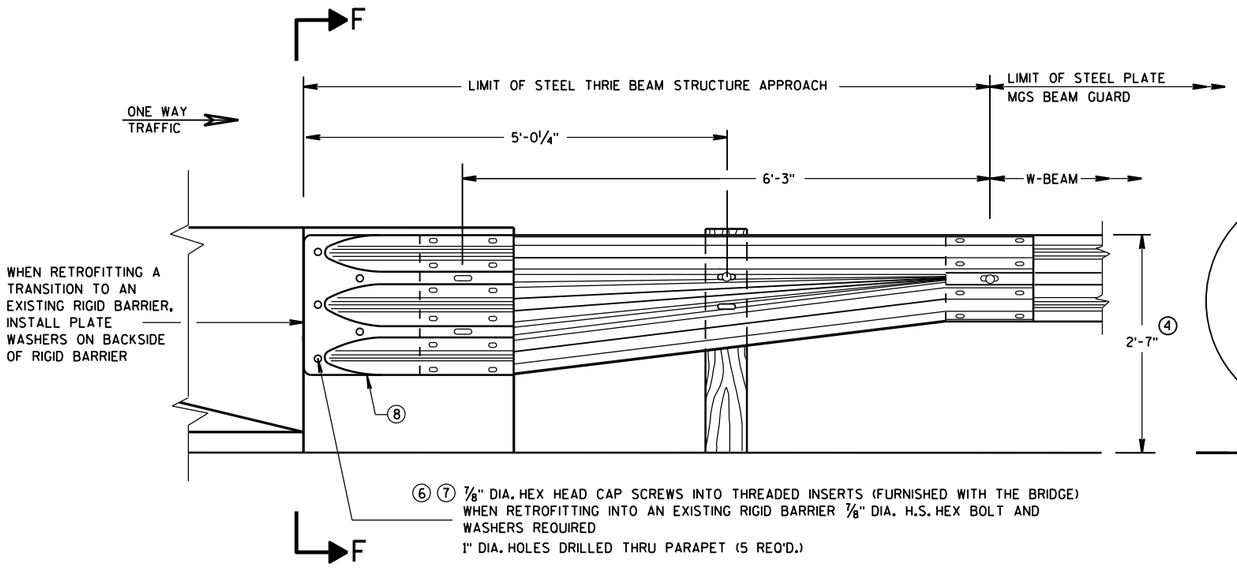
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

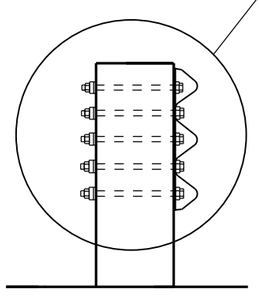
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. 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.

⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

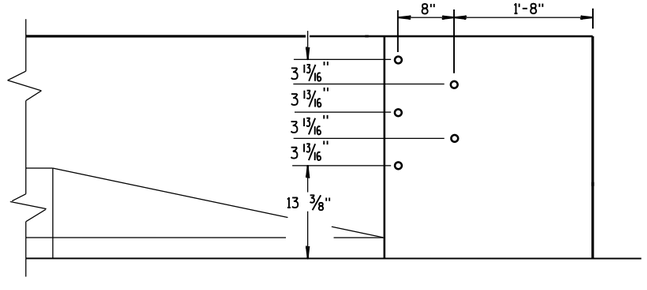




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

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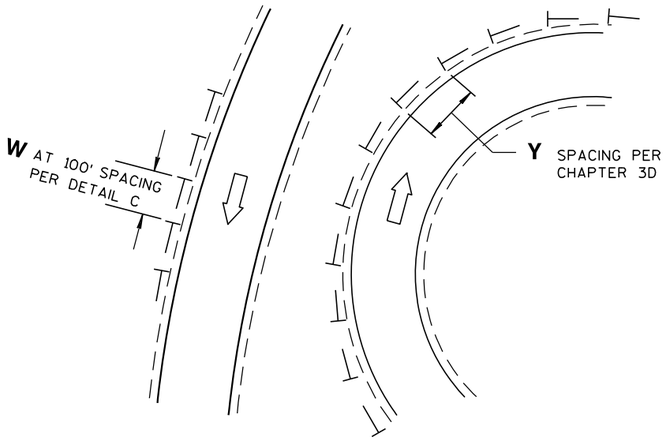
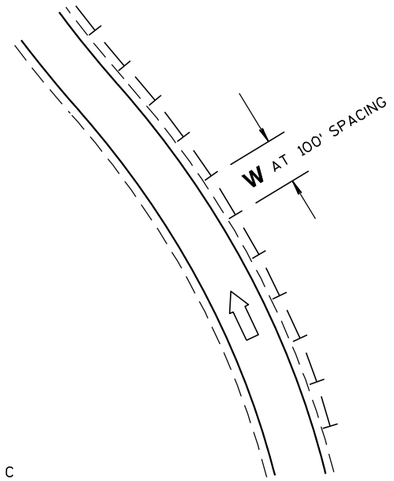
S.D.D. 14 B 45-4d

GENERAL NOTES

* USE DOUBLE DELINEATOR ALONG ACCELERATION-DECELERATION LANES AND TAPERS. USE SINGLE DELINEATOR WHEN RAMP PAVEMENT IS FULL WIDTH.



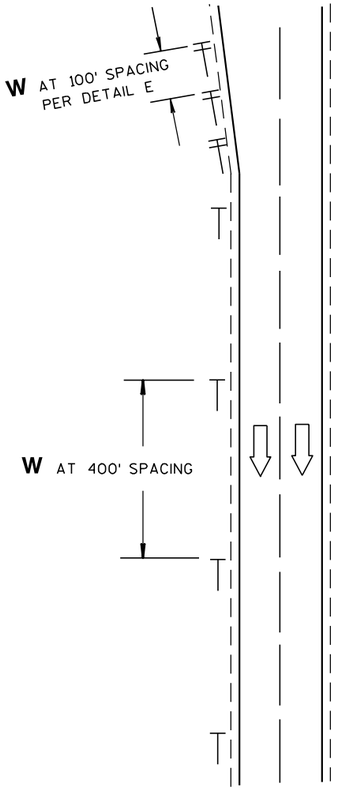
DETAIL A
DELINEATOR LAYOUT AT CURVED RAMP



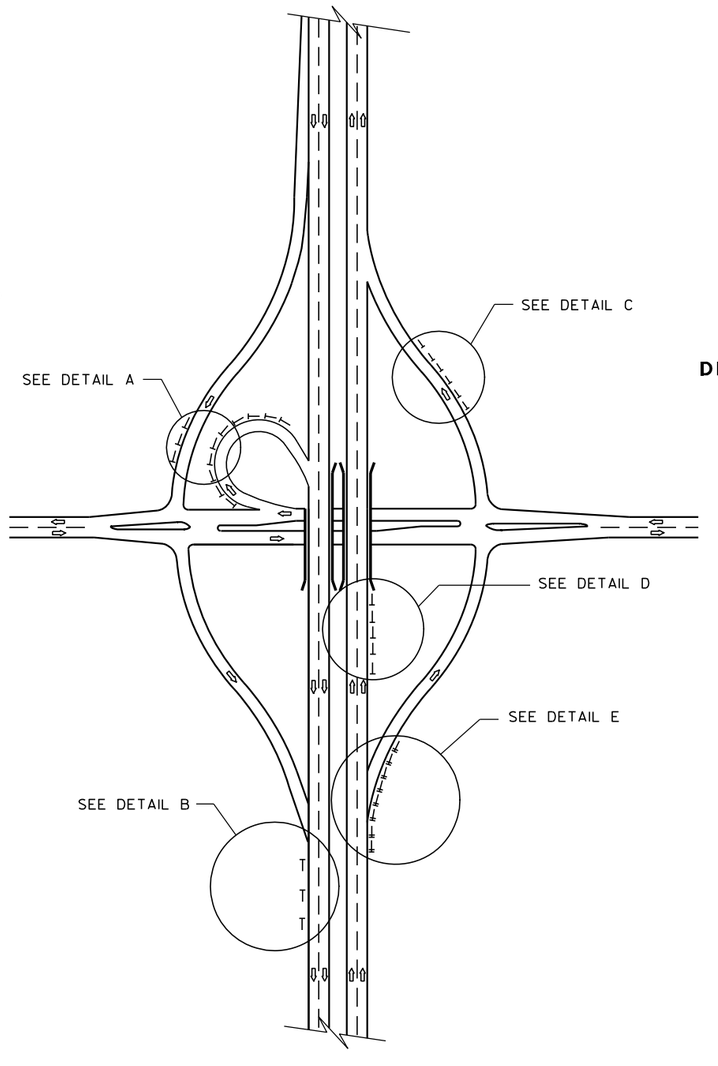
DETAIL C
DELINEATOR LAYOUT ALONG RAMP

LEGEND

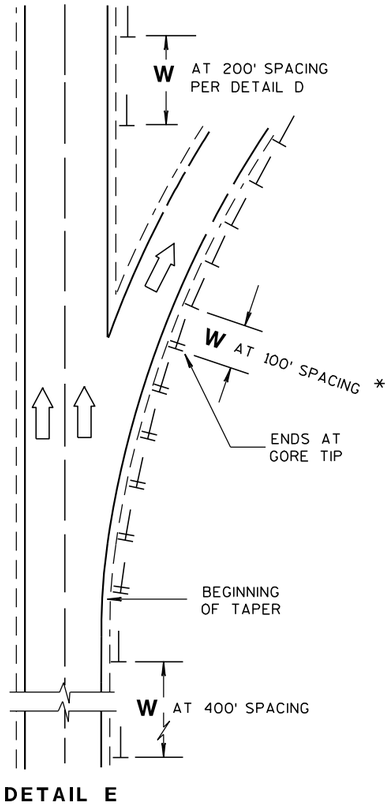
- DIRECTION OF TRAFFIC FLOW
- SINGLE DELINEATOR
- DOUBLE DELINEATOR
- W — WHITE
- Y — YELLOW



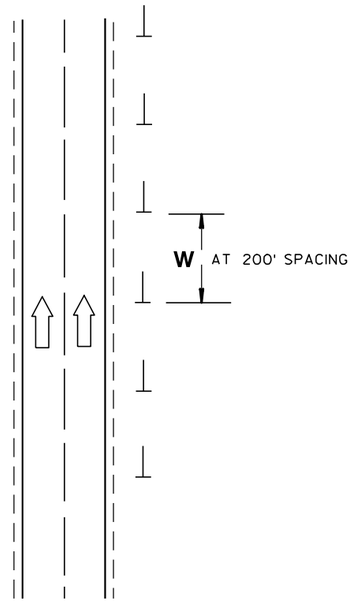
DETAIL B
DELINEATOR LAYOUT ALONG MAINLINE



DELINEATOR LAYOUT



DETAIL E
DELINEATOR LAYOUT FOR ACCELERATION - DECELERATION LANES AND TAPERS AT RAMPS



DETAIL D
DELINEATOR LAYOUT BETWEEN INTERCHANGE RAMPS

DELINEATOR LAYOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/5/09 DATE
/S/ Thomas N. Nothdurft STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 A 6-2

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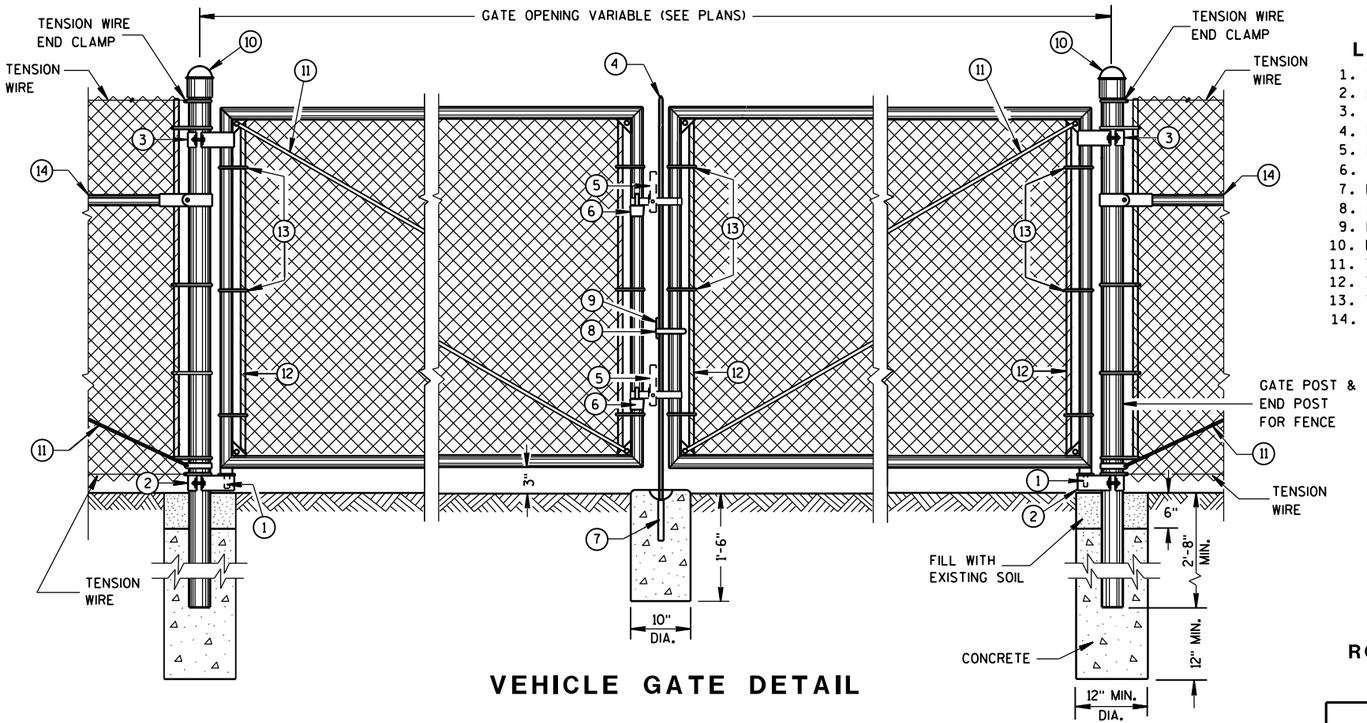
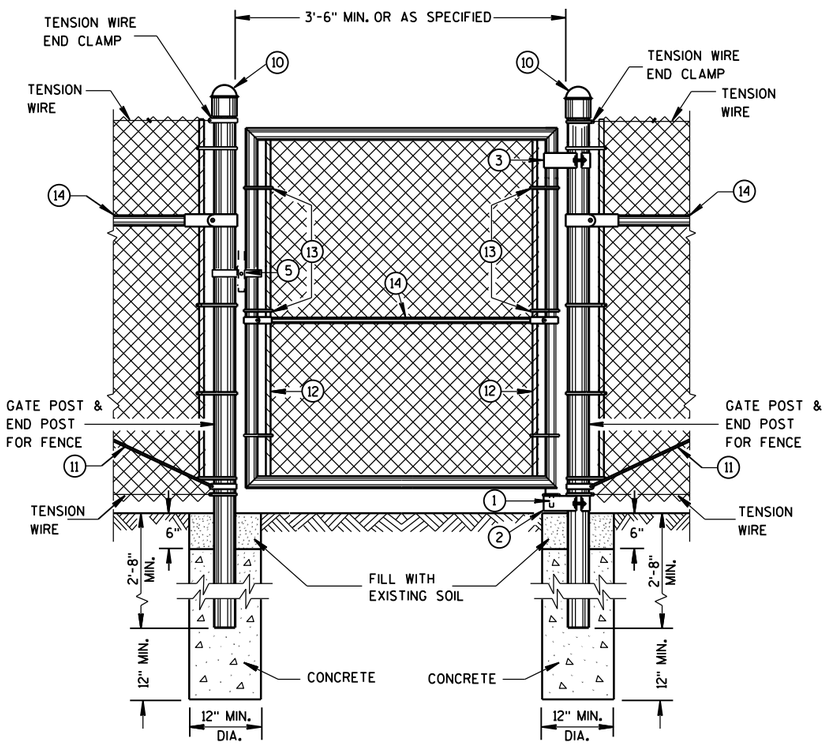
S.D.D. 15 A 6-2



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

LEGEND

1. STRAIGHT PLUG
2. BOTTOM HINGE
3. TOP HINGE
4. PLUNGER ROD
5. FULCRUM LATCH
6. FORK CATCH *
7. PLUNGER ROD CATCH
8. LOCK KEEPER GUIDE
9. LOCK KEEPER
10. DOME TOPS
11. TRUSS RODS
12. TENSION BAR
13. TENSION BANDS
14. BRACE RAIL

*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

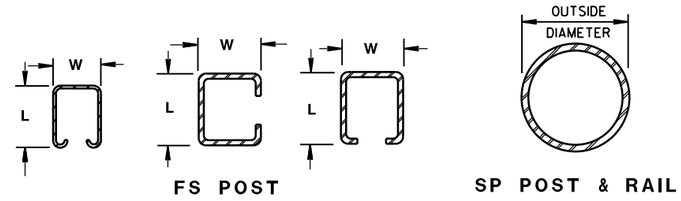
USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.

USE TYPE 2, CLASS 3, MARCELLED/CRIMPED, TENSION WIRE PER ASTM A 817.



CROSS SECTIONS OF POSTS AND RAILS

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2†
	GREATER THAN OR EQUAL TO 8 FT.	FS3

BRACE RAIL TYPES

USE		TYPE
BRACE RAIL		SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

ROLLED-FORMED STEEL FENCE POST (2.0 OZ./SQ. FT. COATING)

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

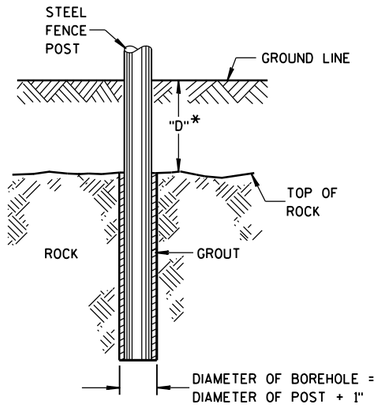
ROUND STEEL FENCE POST (1.8 OZ./SQ. FT. COATING)

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

FENCE CHAIN LINK

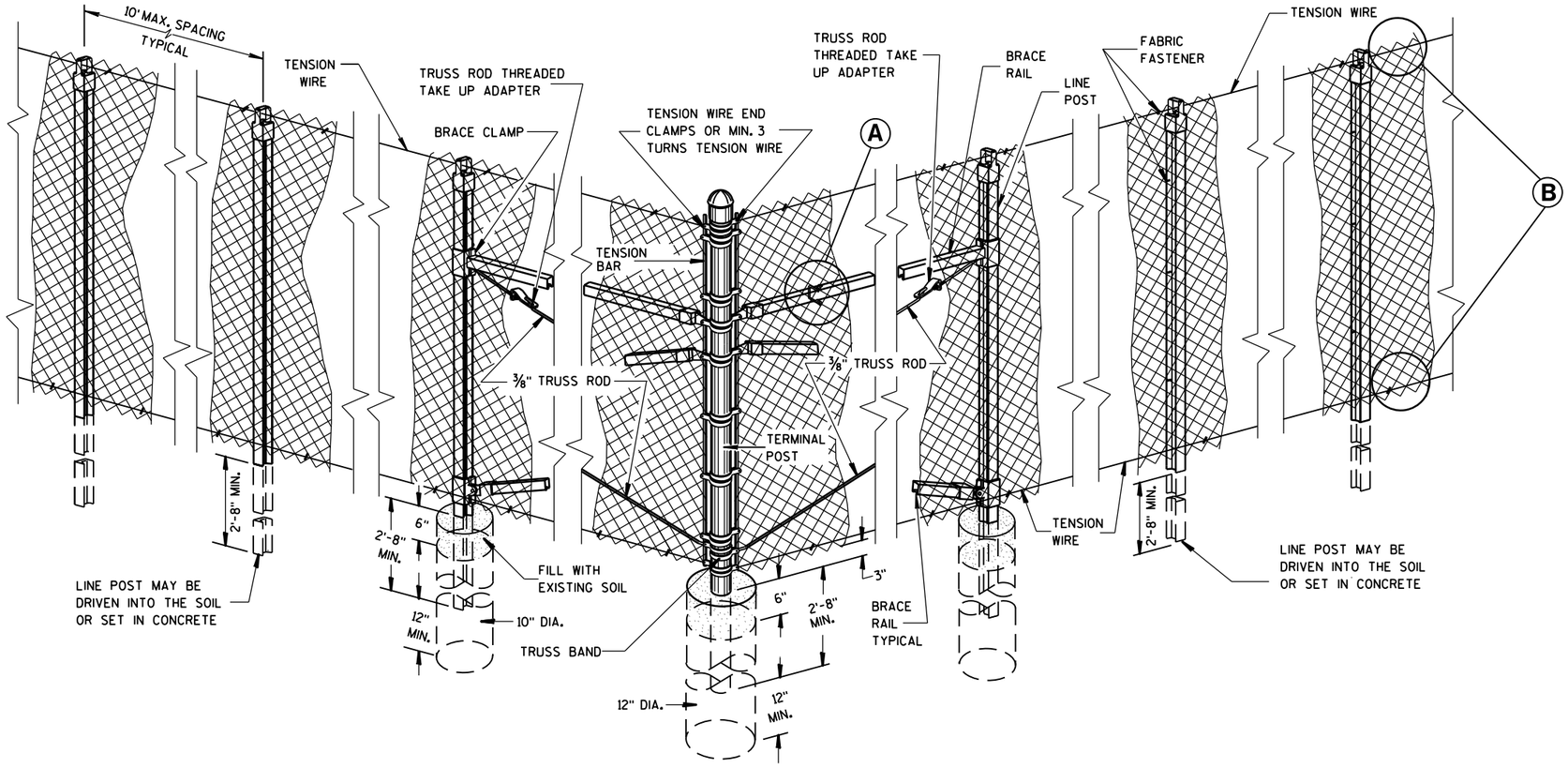
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 15 B 3-15a

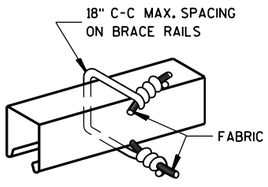


*IF "D" IS LESS THAN 2'-6", DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST



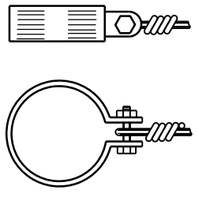
END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



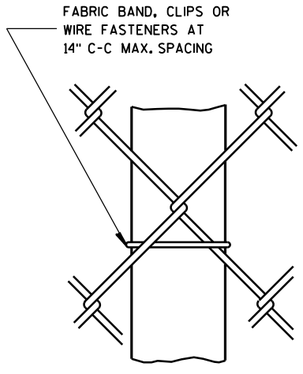
BRACE RAIL

FABRIC FASTENER

Ⓐ



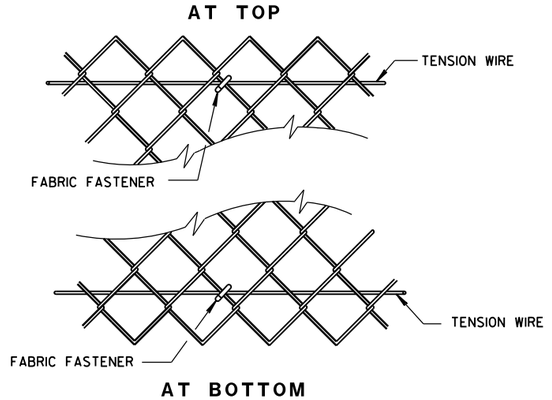
TENSION WIRE END CLAMP



LINE POST

FABRIC FASTENER

AT TOP



AT BOTTOM

SELVAGES

Ⓑ

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

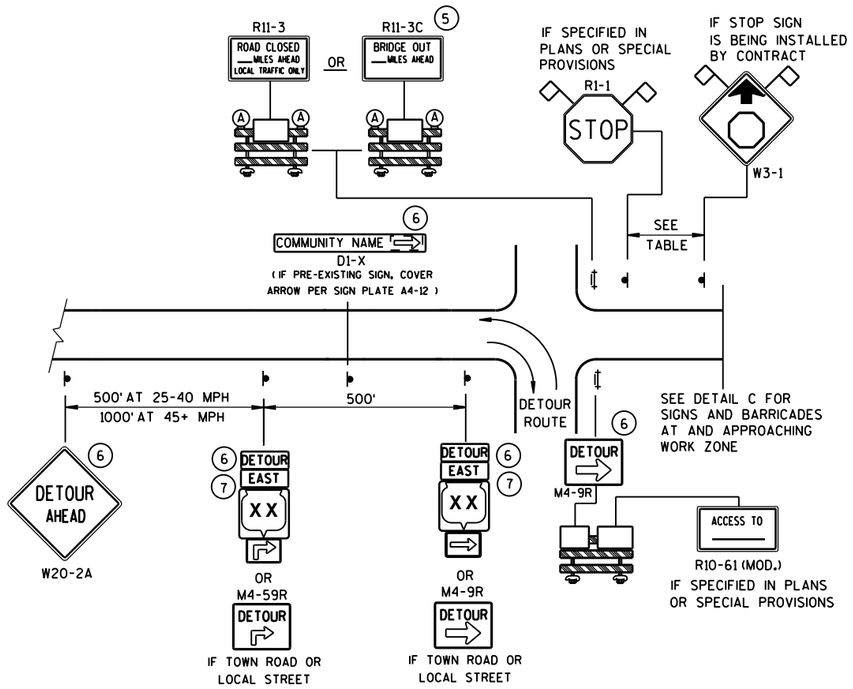
APPROVED
FEB. 2015 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 15 B 3-15b

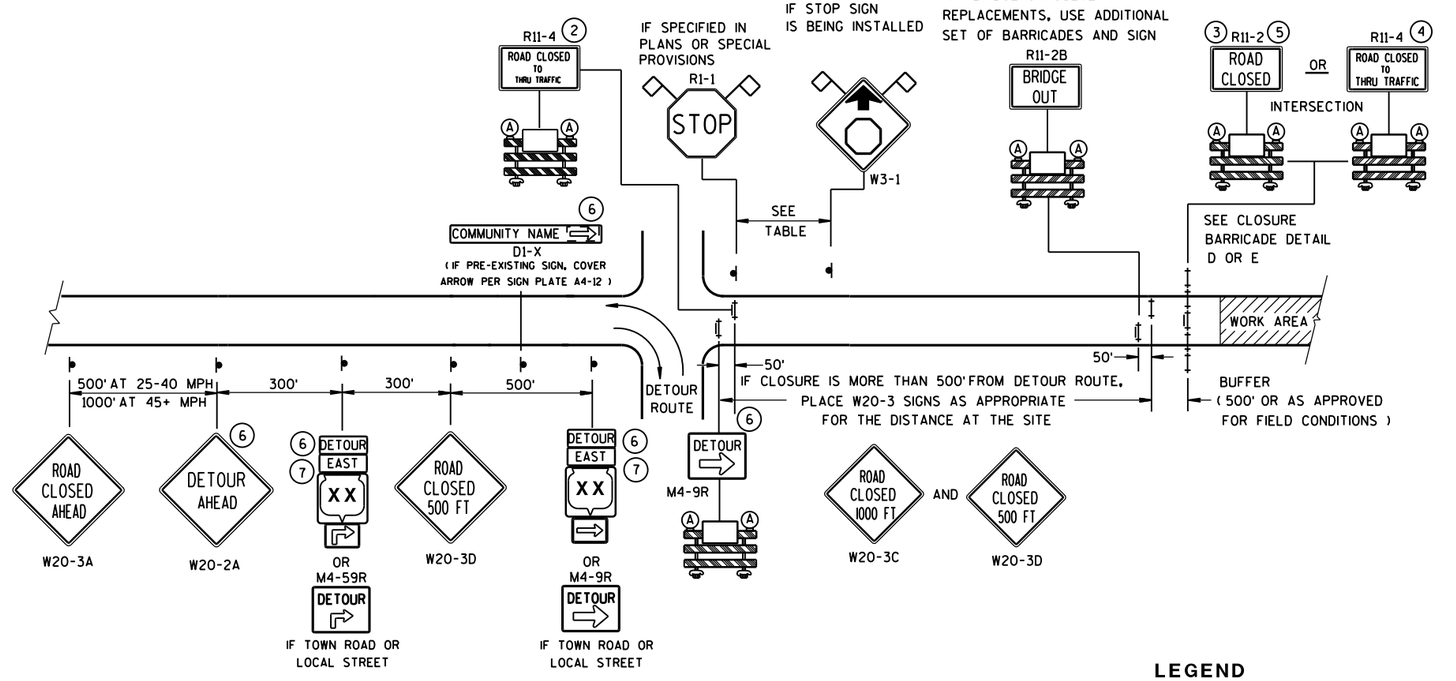
6

S.D.D. 15 B 3-15b



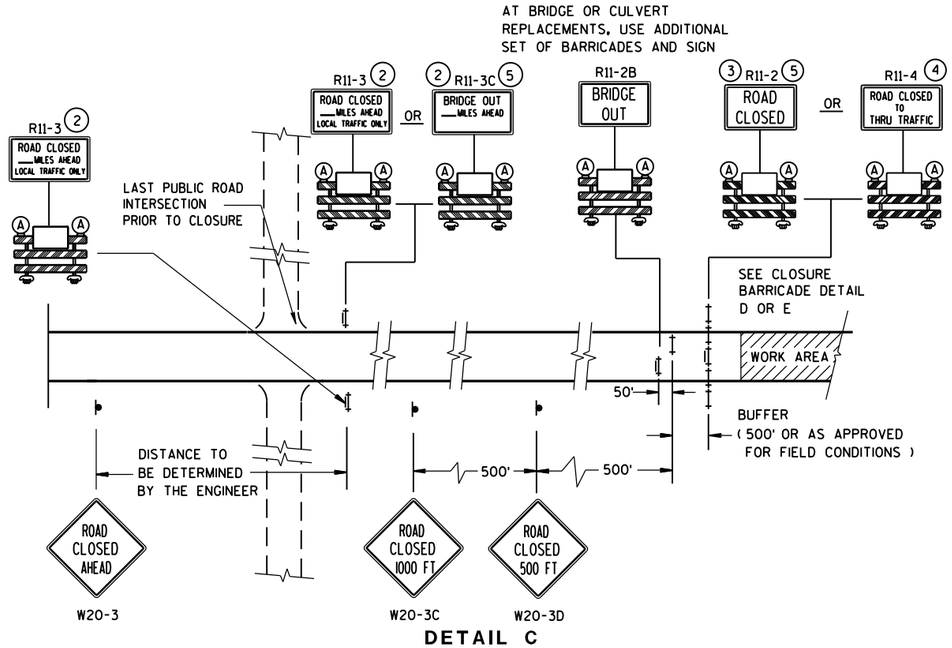
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

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

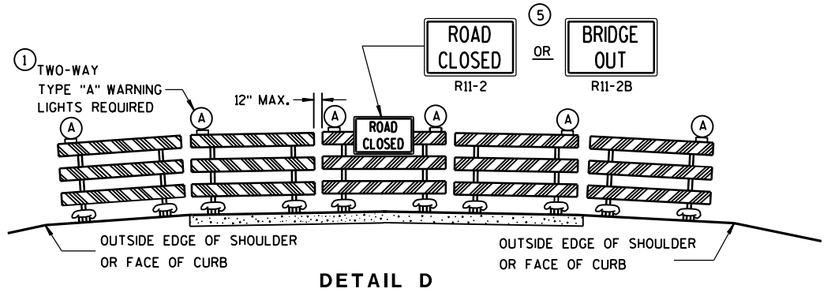
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

S.D.D. 15 C 2-6a

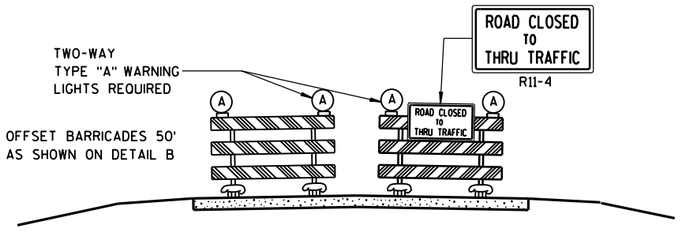
6



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

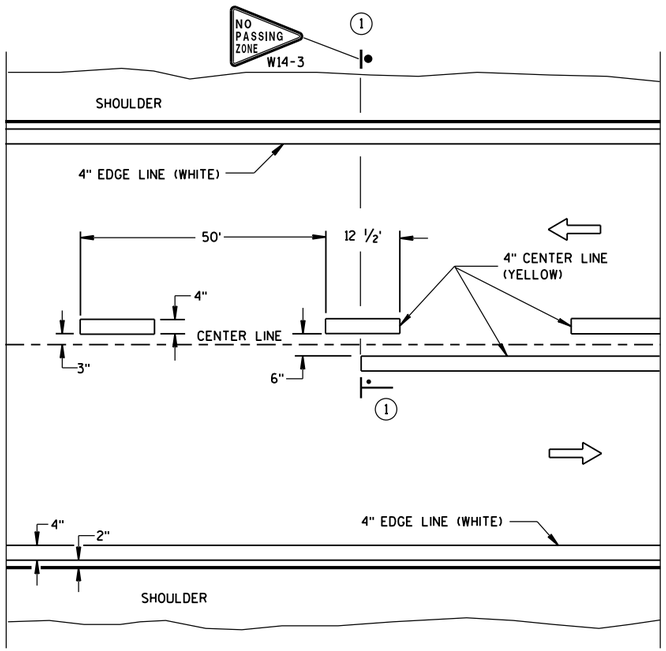
Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI — FIC

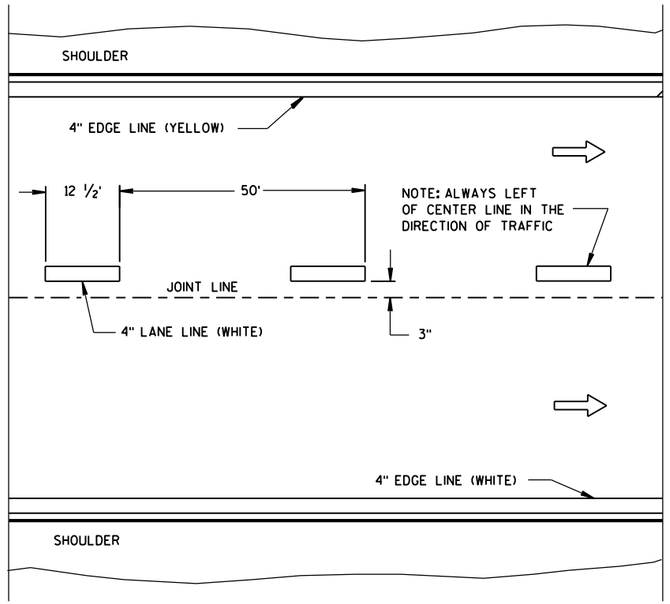
FHWA

6

S.D.D. 15 C 2-6b



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

(1) NO PASSING ZONE W14-3 SIGN SHALL BE LOCATED WITHIN 50 FEET OF THE "T" MARKING.

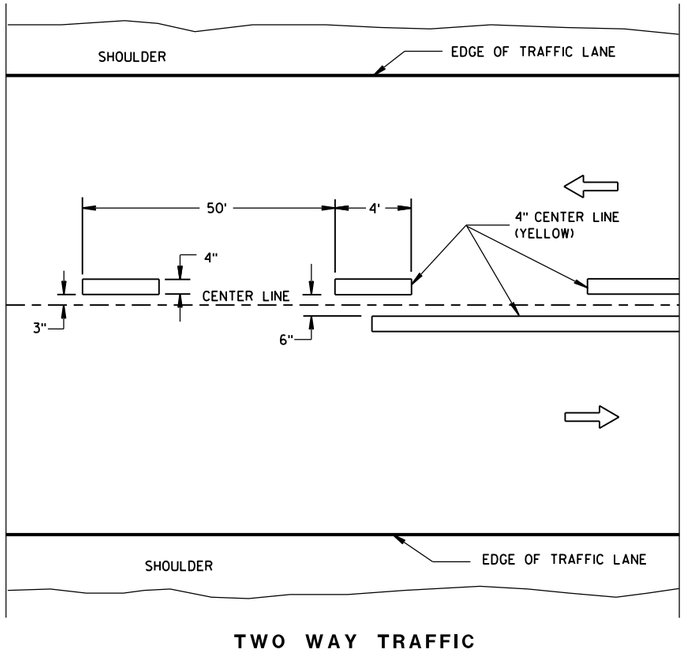
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

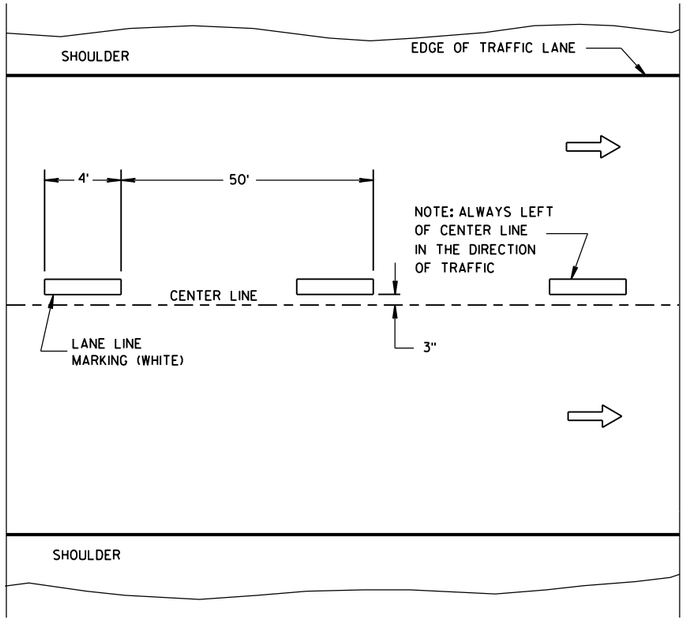
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

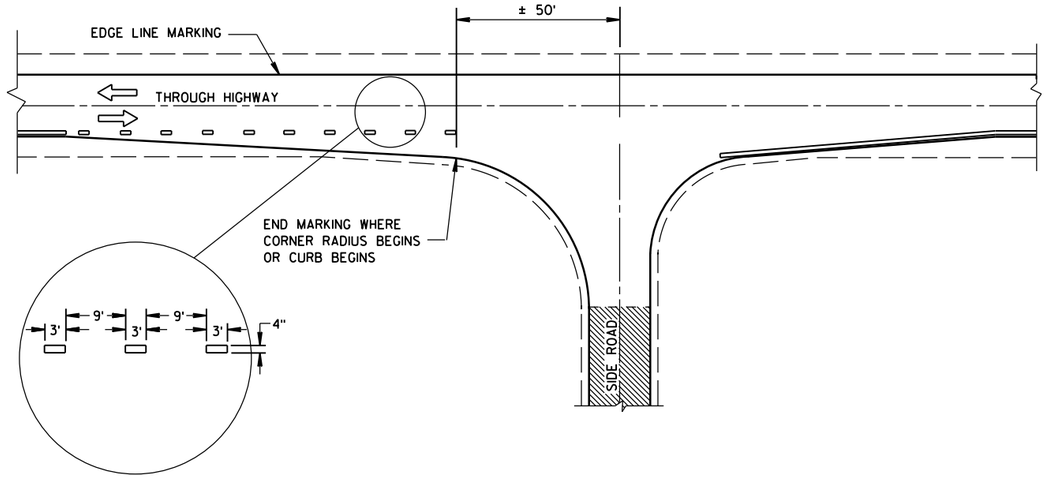
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

6

S.D.D. 15 C 8-17a



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

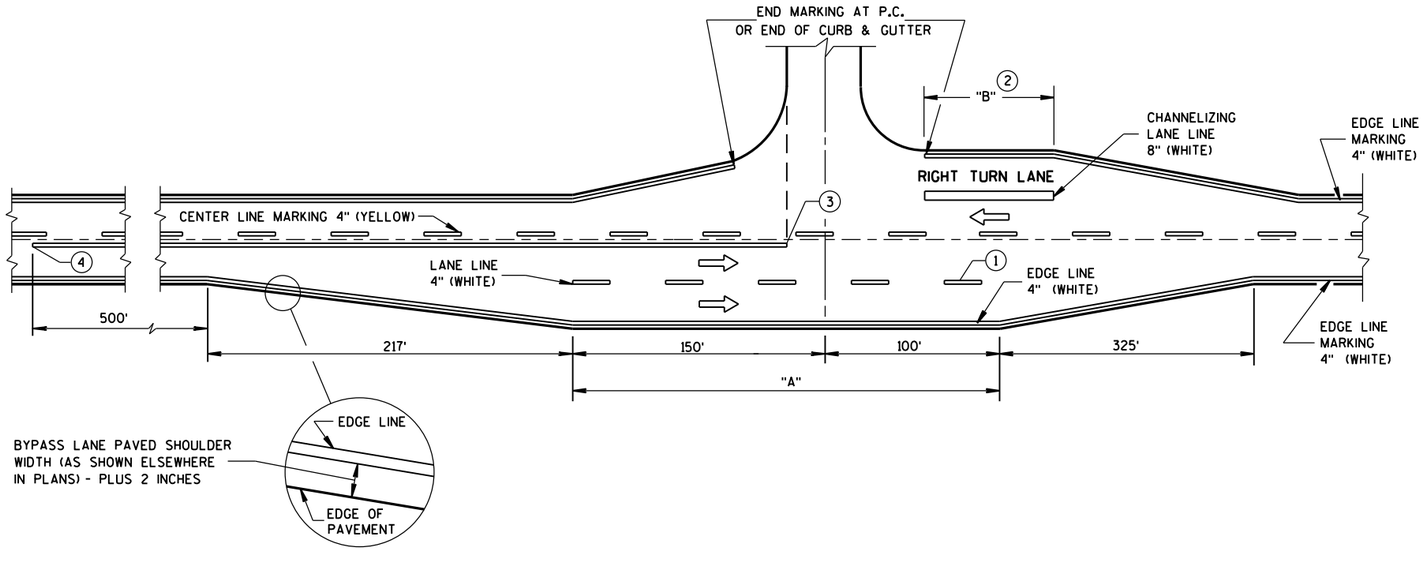
(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(4) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)

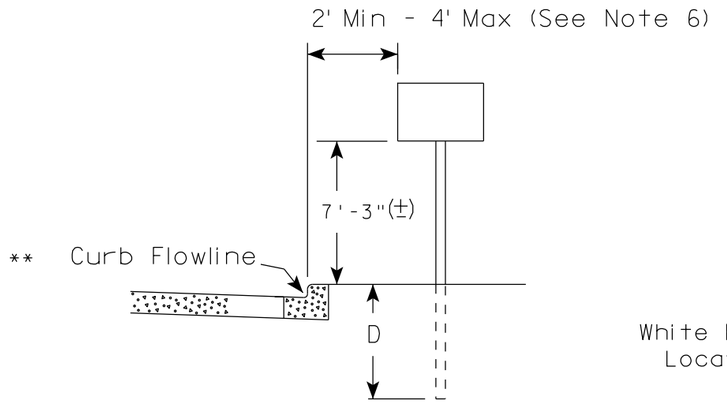
PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

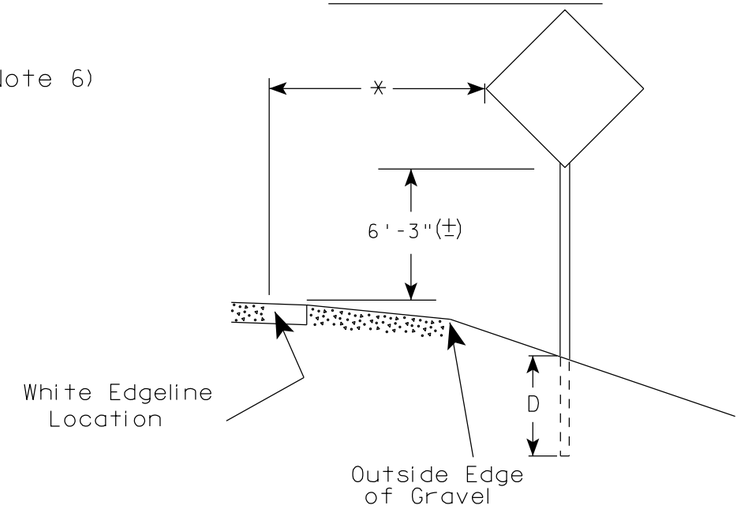
6

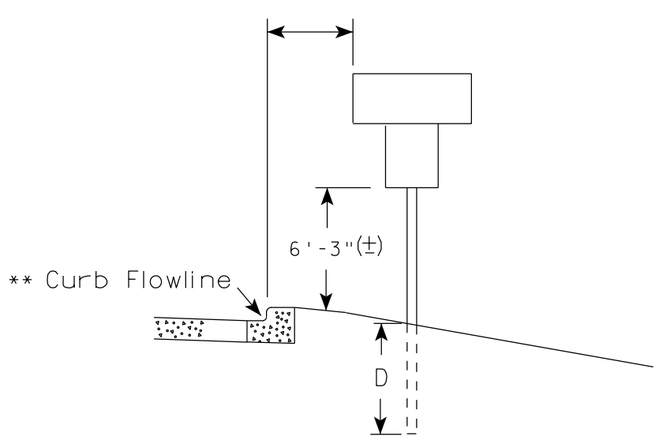
S.D.D. 15 C 35-1a

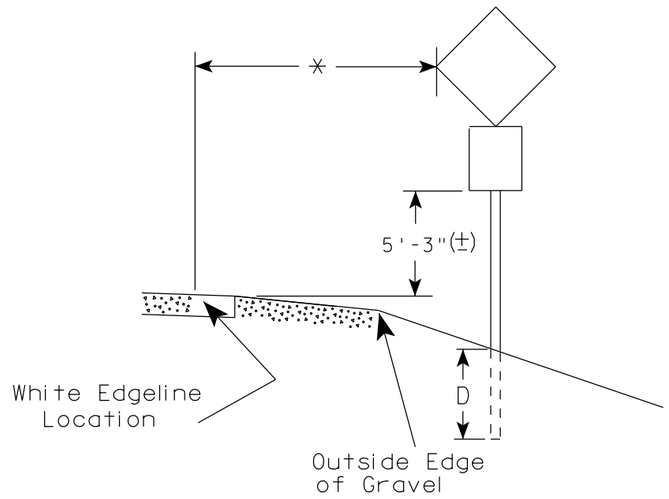
URBAN AREA



RURAL AREA (See Note 2)







** 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.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

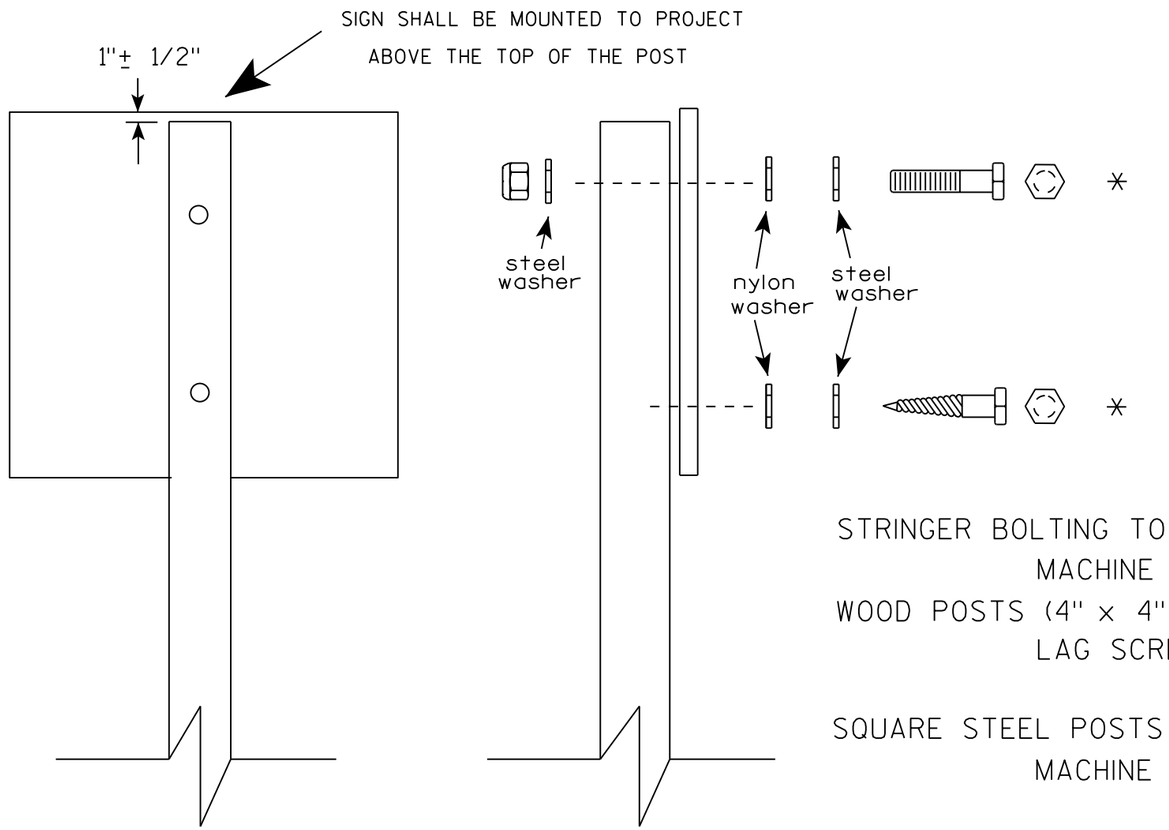
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

7



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

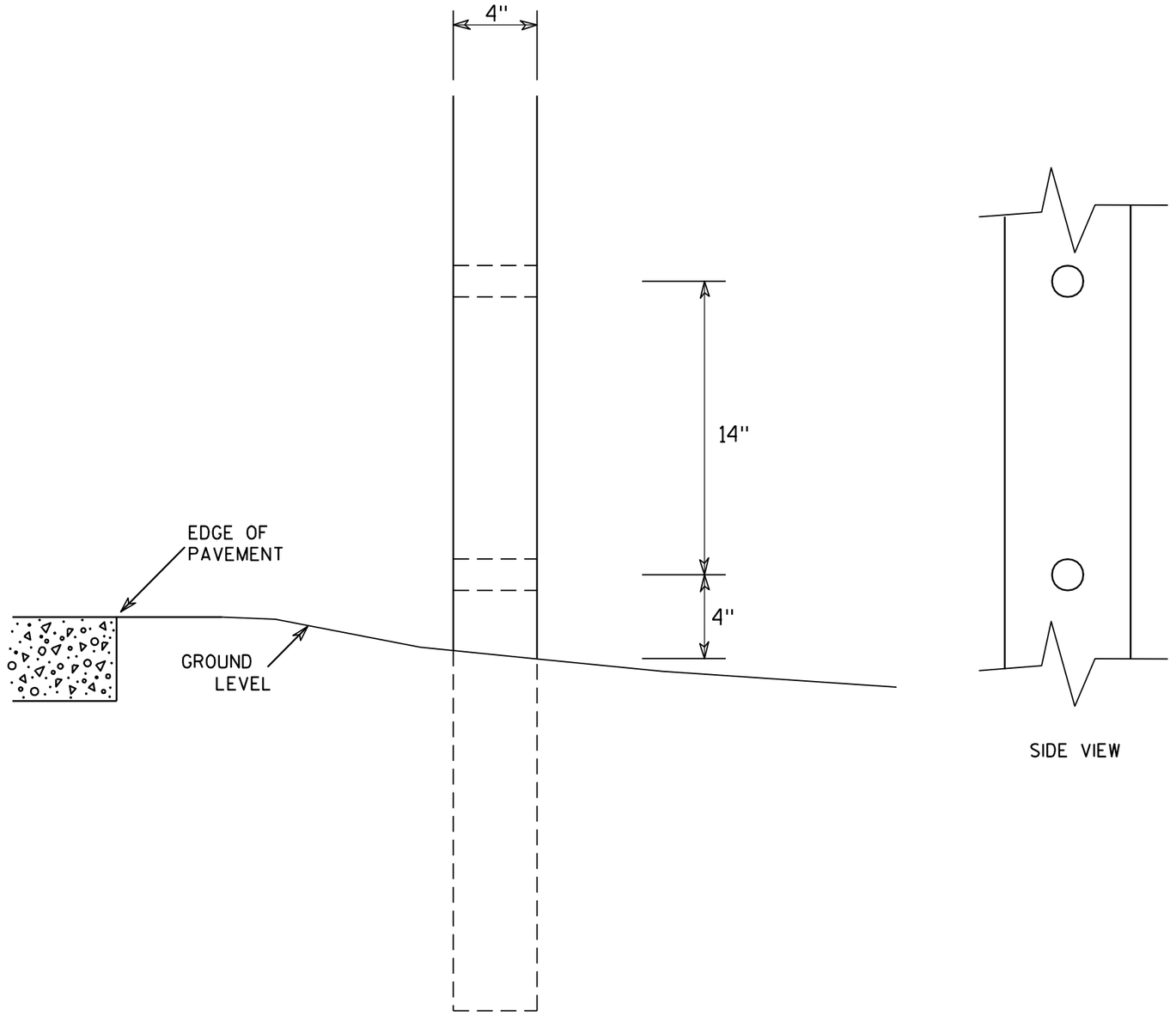
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO: SHEET NO: E

FILE NAME : C:\CADfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$



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.

7

7

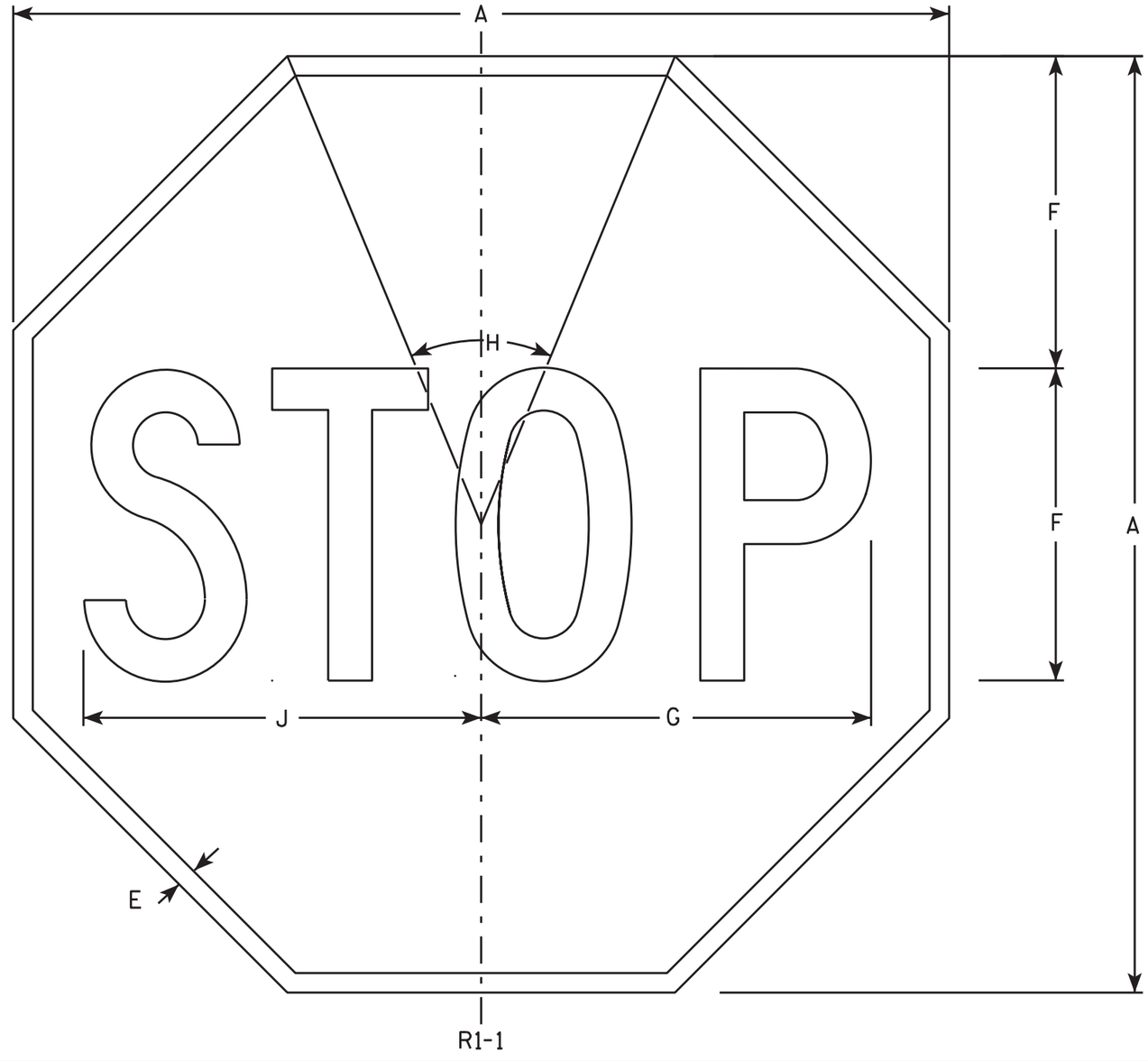
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 41	E



NOTES

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

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

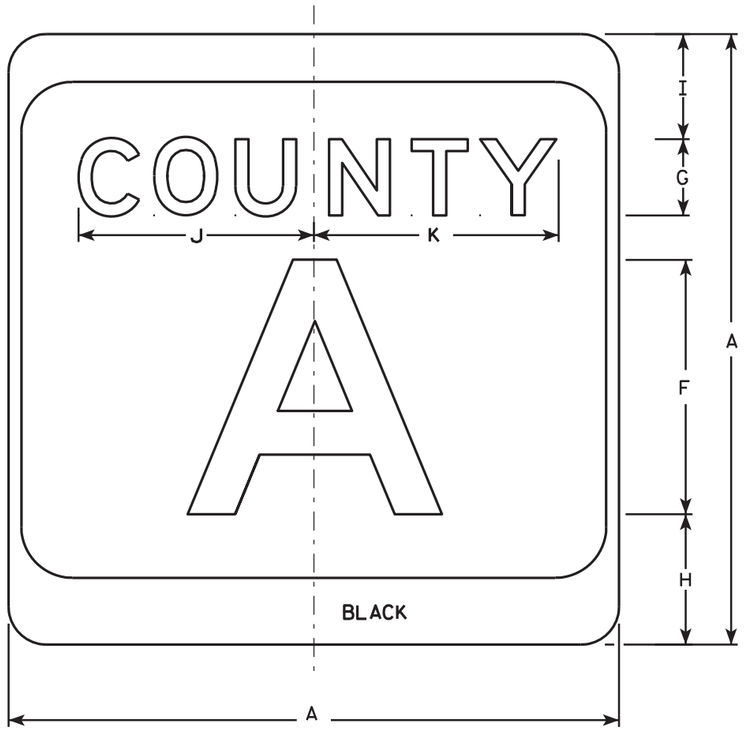
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

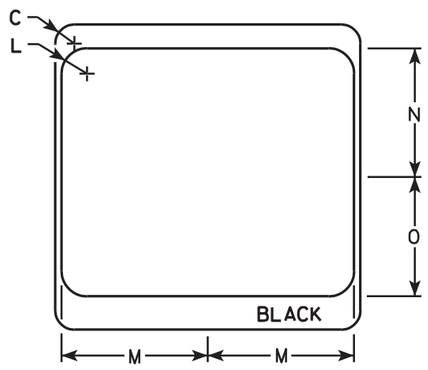
APPROVED Matthew R Rauch
for State Traffic Engineer

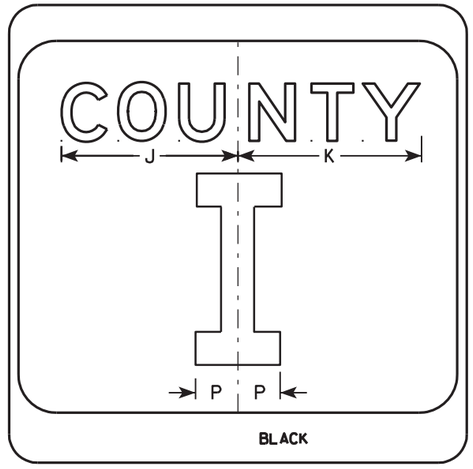
DATE 11/12/15 PLATE NO. R1-1.12

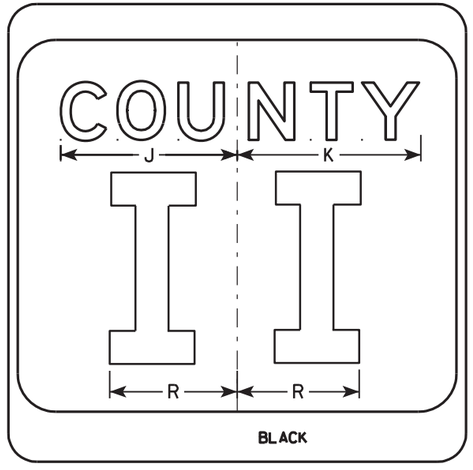
PROJECT NO:	HWY:	COUNTY:		SHEET NO. 42	E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   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. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

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																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

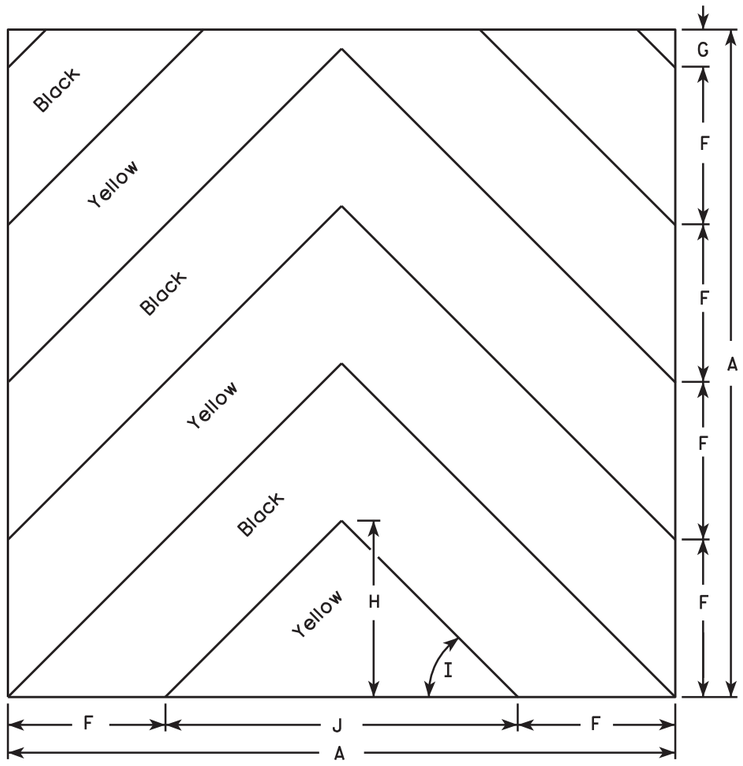
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

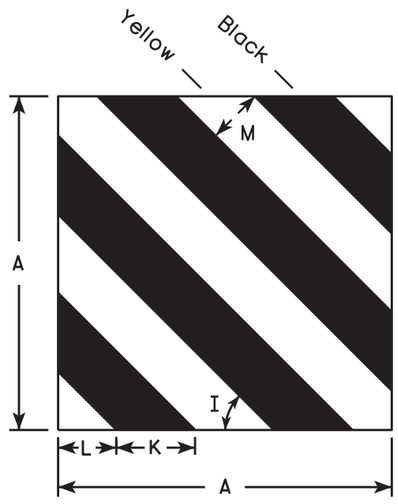
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 43	E

NOTES

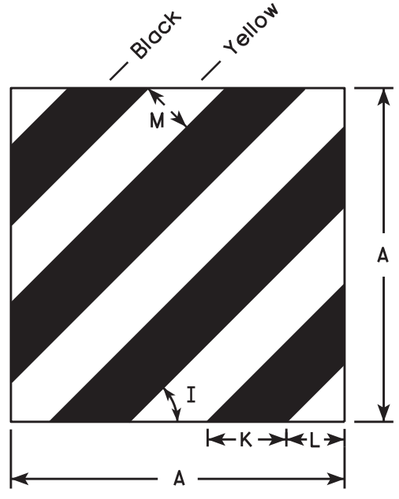
1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Sign shall be a sheeting overlay no aluminum base material
4. Overall sign size varies depending upon manufacturer of crash cushion.



W5-58D



W5-58L



W5-58R

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	VARIES					8 ½	2	9 ½	45°	19	8 ½	6 ¼	6														VARIES
2M	VARIES					8 ½	2	9 ½	45°	19	8 ½	6 ¼	6														VARIES
3																											
4																											
5																											

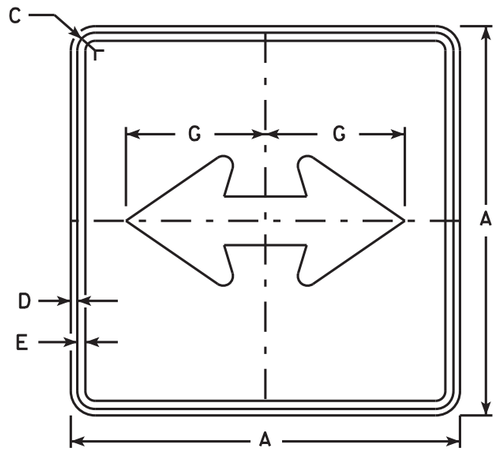
STANDARD SIGN
W5-58D & W5-58L&R

WISCONSIN DEPT OF TRANSPORTATION

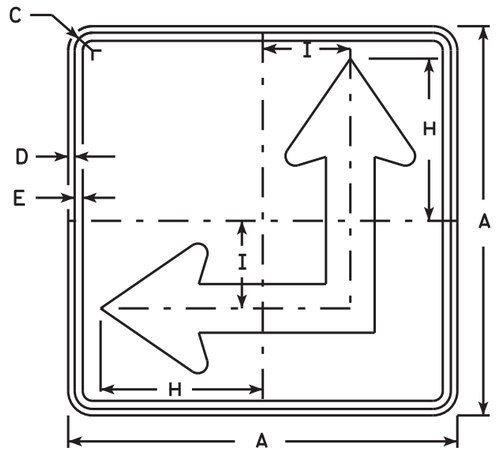
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE 44 W5-58.9

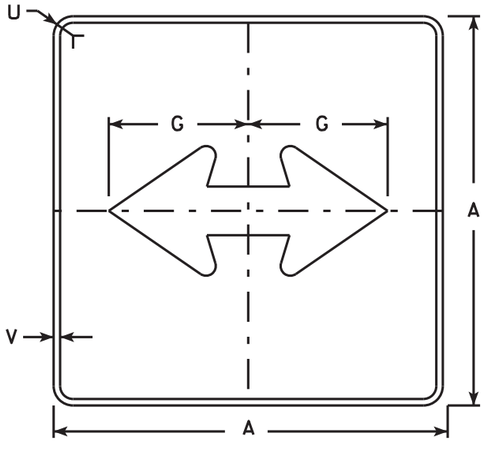
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



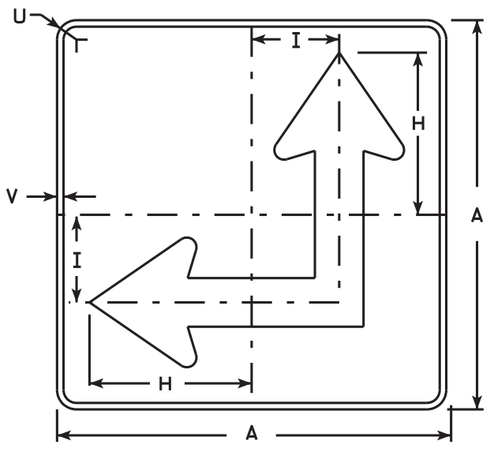
M6-4
MM6-4
MO6-4
MP6-4



M6-6
MM6-6
MO6-6
MP6-6



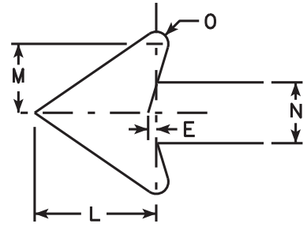
MB6-4
MK6-4
MN6-4
MR6-4



MB6-6
MK6-6
MN6-6
MR6-6

NOTES

1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See Note 4
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-4 and M6-6 Background - White
   Message - Black
   MB6-4 and MB6-6 Background - Blue
   Message - White
   MK6-4 and MK6-6 Background - Green
   Message - White
   MM6-4 and MM6-6 Background - White
   Message - Green
   MN6-4 and MN6-6 Background - Brown
   Message - White
   MO6-4 and MO6-6 Background - Orange - Type F Reflective
   Message - Black
   MP6-4 and MP6-6 Background - White
   Message - Blue
   MR6-4 and MR6-6 Background - Brown
   Message - Yellow
5. M6-6R same as M6-6L except arrow points ahead and right.



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																											
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

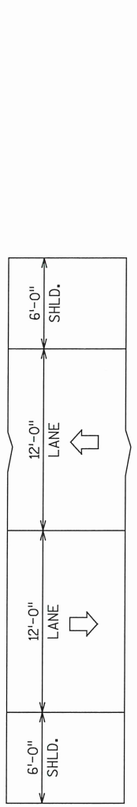
STANDARD SIGN
M6-4 & M6-6
SERIES

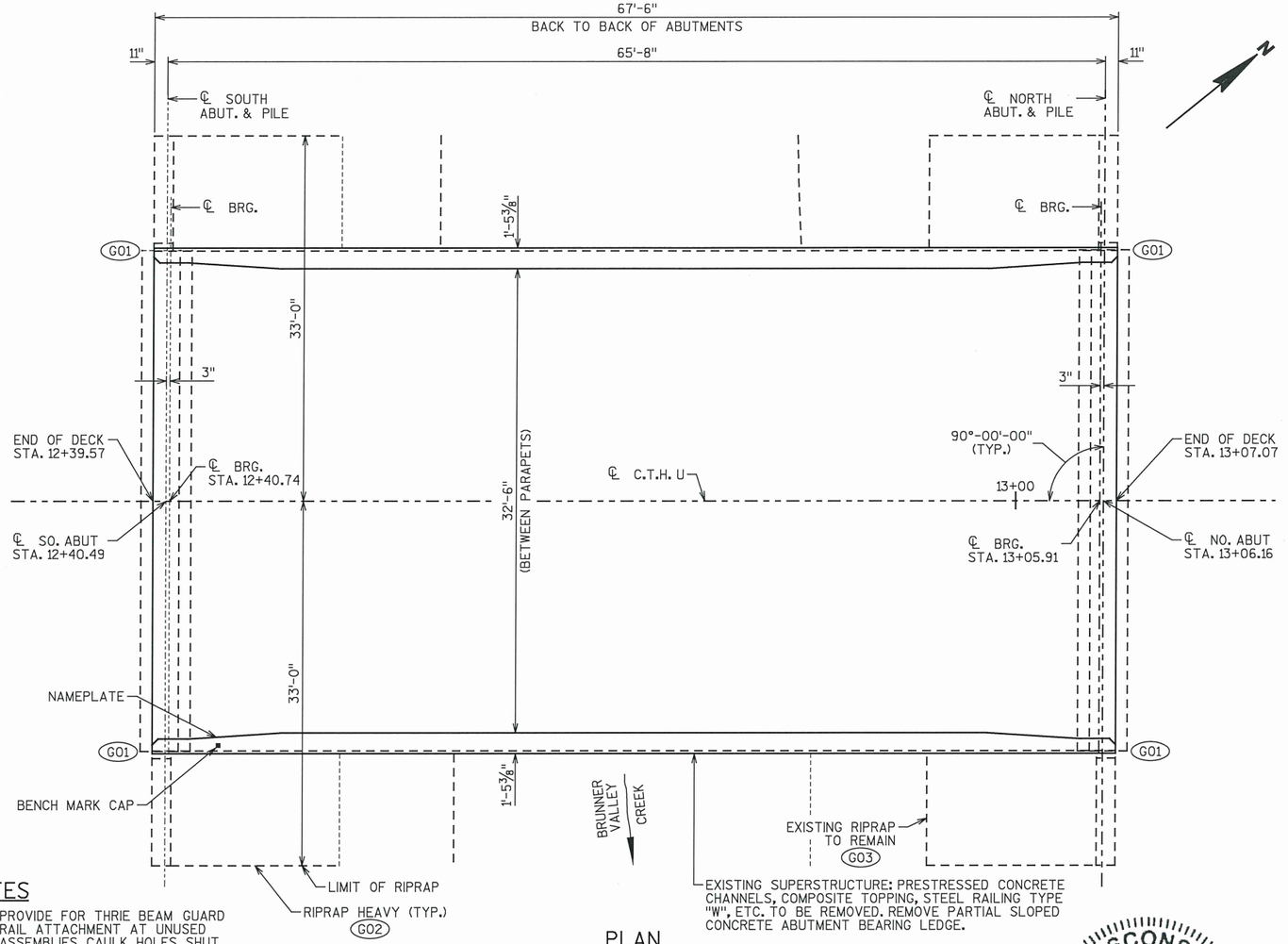
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-4.10

PROJECT NO: | HWY: | COUNTY: | SHEET NO. 45 | E





PLAN

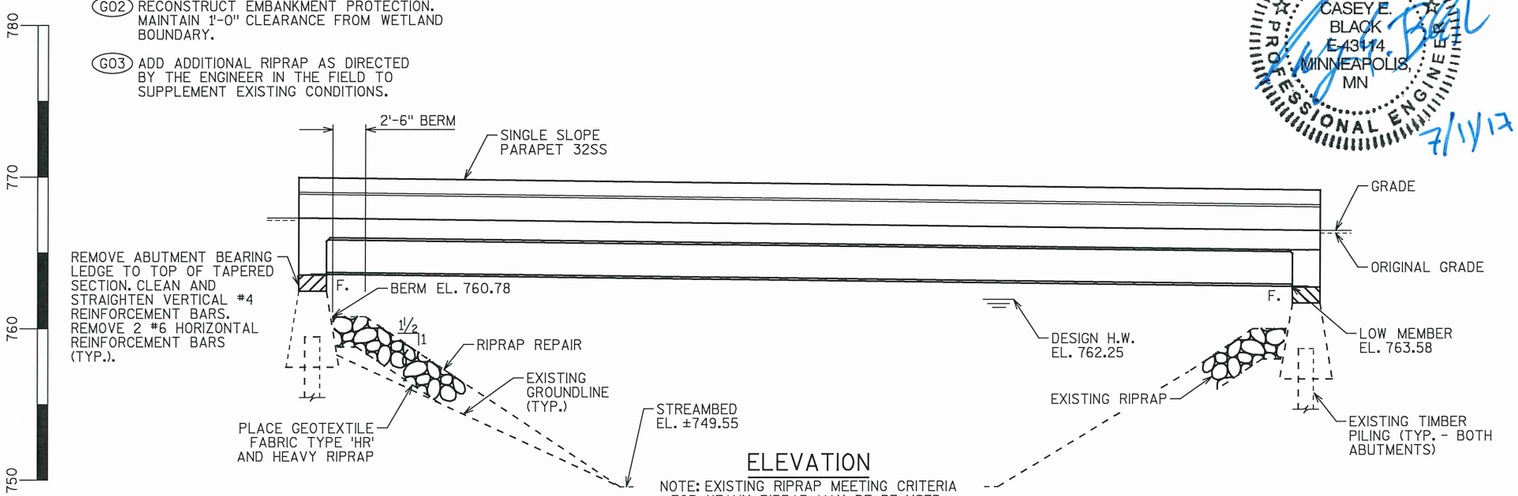
(SINGLE SPAN - 27" ROLLED STEEL GIRDERS)

NOTES

G01 PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT AT UNUSED ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK"

G02 RECONSTRUCT EMBANKMENT PROTECTION. MAINTAIN 1'-0" CLEARANCE FROM WETLAND BOUNDARY.

G03 ADD ADDITIONAL RIPRAP AS DIRECTED BY THE ENGINEER IN THE FIELD TO SUPPLEMENT EXISTING CONDITIONS.



ELEVATION

NOTE: EXISTING RIPRAP MEETING CRITERIA FOR HEAVY RIPRAP MAY BE RE-USED.

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING: RF=1.65
OPERATING RATING: RF=2.13

WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

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

MATERIAL PROPERTIES

CONCRETE SUPERSTRUCTURE	F'C = 4,000 P.S.I.
CONCRETE SUBSTRUCTURE	F'C = 3,500 P.S.I.
BAR STEEL REINFORCEMENT	FY = 60,000 P.S.I.
STRUCTURAL STEEL ASTM A709 GRADE 50W	FY = 50,000 P.S.I.

HYDRAULIC DATA

100 YEAR FREQUENCY (1975 ANALYSIS)

Q_{100} = 4000 C.F.S.
Q_{100} THRU BRIDGE = 4,000 C.F.S.
VELOCITY = 7.6 F.P.S.
HIGH WATER EL. = 762.25 FT.
WATERWAY AREA = 525 SQ. FT.
DRAINAGE AREA = 10.15 SQ MILES

ROAD OVERTOPPING FREQUENCY

OVERTOPPING HIGH WATER EL. = 767.23 FT.

TRAFFIC DATA

A.D.T. (2015) = 407
A.D.T. (2035) = 447
DESIGN SPEED = 40 M.P.H.

LIST OF DRAWINGS

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

ALL FEILD CONNECTIONS SHALL BE MADE WITH ¾" DIAMETER FRICTION TYPE HIGH-TENSILE STRENGTH BOLTS UNLESS SHOWN OR NOTED OTHERWISE.

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

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

SLOPE IN FRONT OF THE NORTH ABUTMENT SHALL REMAIN IN PLACE.

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.

DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1 INCH DEEP SAW CUT.

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

VARIATIONS TO THE NEW GRADE LINE OVER 1/4" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR OF 1976.

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

CONCRETE SURFACE REPAIR AS DIRECTED BY THE ENGINEER.

THE QUANTITY FOR BACKFILL STRUCTURE TYPE A, BID ITEM 210.1500, IS CALCULATED BASED ON THE APPLICABLE FIGURES 12.6-1 AND 12.6-2 IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.

BRIDGE OFFICE CONTACT:
BILL DREHER
(608)266-8489

CONSULTANT CONTACT:
CASEY BLACK
(763)457-4751

NO.	DATE	REVISION	BY

SRF Consulting Group, Inc. — Engineers Planners Designers

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 07/13/17
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STATE PROJECT NUMBER
7899-04-71

STRUCTURE B-47-45

CTH U OVER BRUNNER VALLEY CREEK

COUNTY	TOWN/~~CITY/VILLAGE~~
PIERCE	MAIDEN ROCK

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
SMN	CEB	ERJ	CEB

GENERAL PLAN, ELEVATION & NOTES

SHEET 46 OF 12

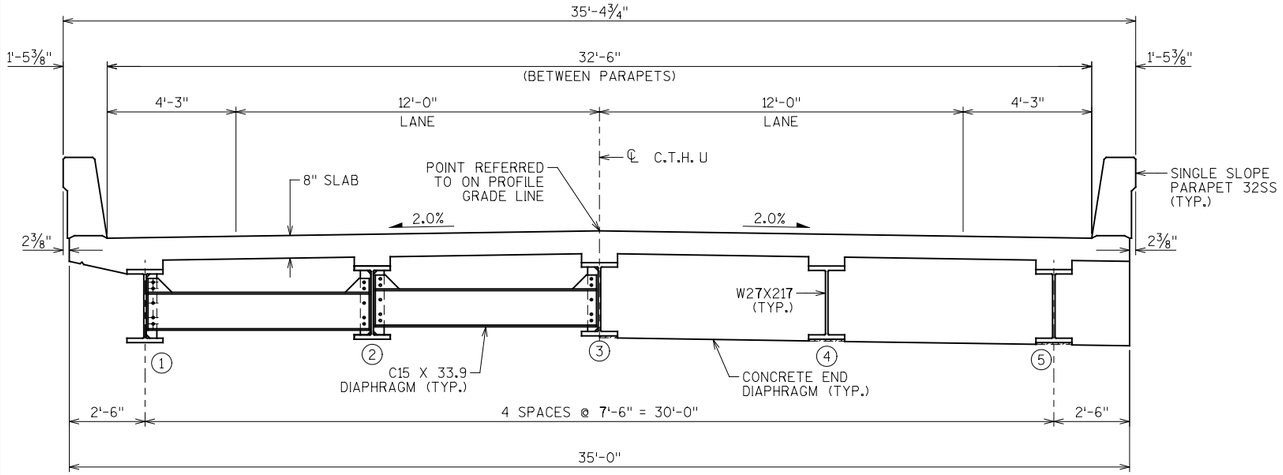
8

8

STATE PROJECT NUMBER
7899-04-71

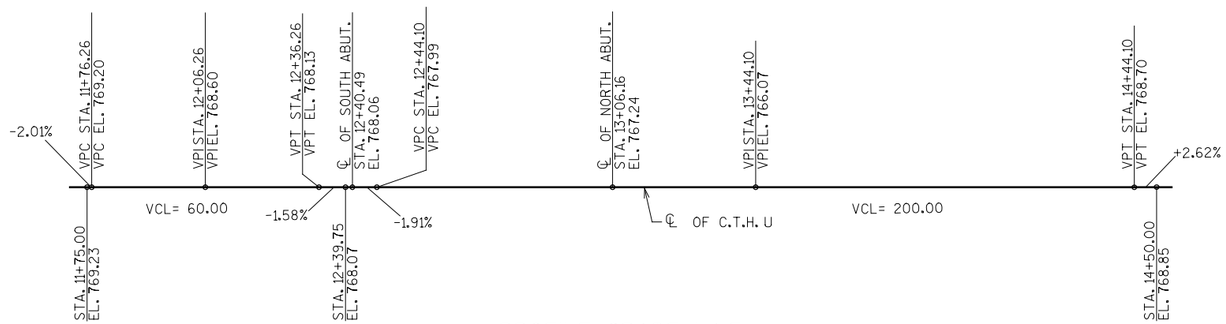
B-47-45 TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEM	UNIT	SOUTH ABUTMENT	NORTH ABUTMENT	SUPER-STRUCTURE	TOTAL
203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-47-45	LS	-	-	-	1
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 12+73.50	LS	-	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-47-45	LS	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	67	67	-	134
502.0100	CONCRETE MASONRY BRIDGES	CY	3	3	91	97
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	244	244
502.3210	PIGMENTED SURFACE SEALER	SY	-	-	56	56
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	150	150	19640	19940
506.0605	STRUCTURAL STEEL HS	LB	-	-	75070	75070
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	-	-	10	10
506.3015	WELDED STUD SHEAR CONNECTORS 7/8X6-INCH	EACH	-	-	750	750
509.1500	CONCRETE SURFACE REPAIR	SF	24	24	-	48
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	8	8	-	16
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-	-	4	4
606.0300	RIPRAP HEAVY	CY	100	40	-	140
645.0120	GEOTEXTILE TYPE HR	SY	188	-	-	188
	NON-BID ITEMS					
	PREFORMED JOINT FILLER	SIZE	3/4" X 4"	3/4" X 4"	-	1
	FILLER	SIZE	1/2"	1/2"	-	1
	BENCH MARK	EACH	-	-	1	1
	NAME PLATE	EACH	-	-	1	1



CROSS SECTION OF ROADWAY
(LOOKING NORTH)

Ⓧ DENOTES GIRDER NUMBER.



PROFILE GRADE LINE
(C.T.H. U)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

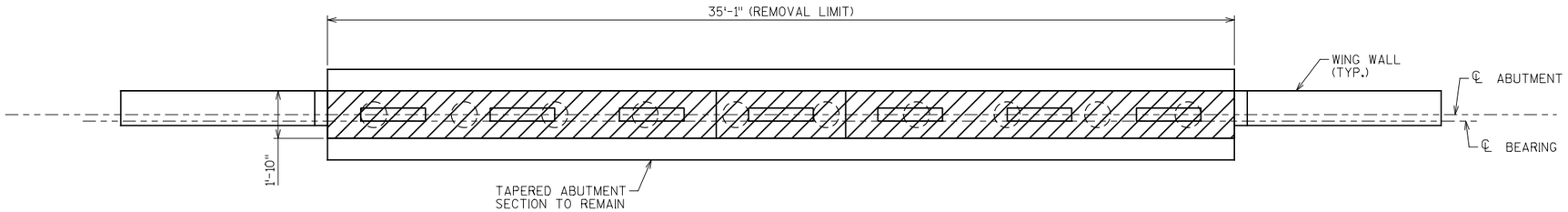
STRUCTURE B-47-45

DRAWN BY ERJ | PLANS CK'D. CEB

TYPICAL SECTION & QUANTITIES

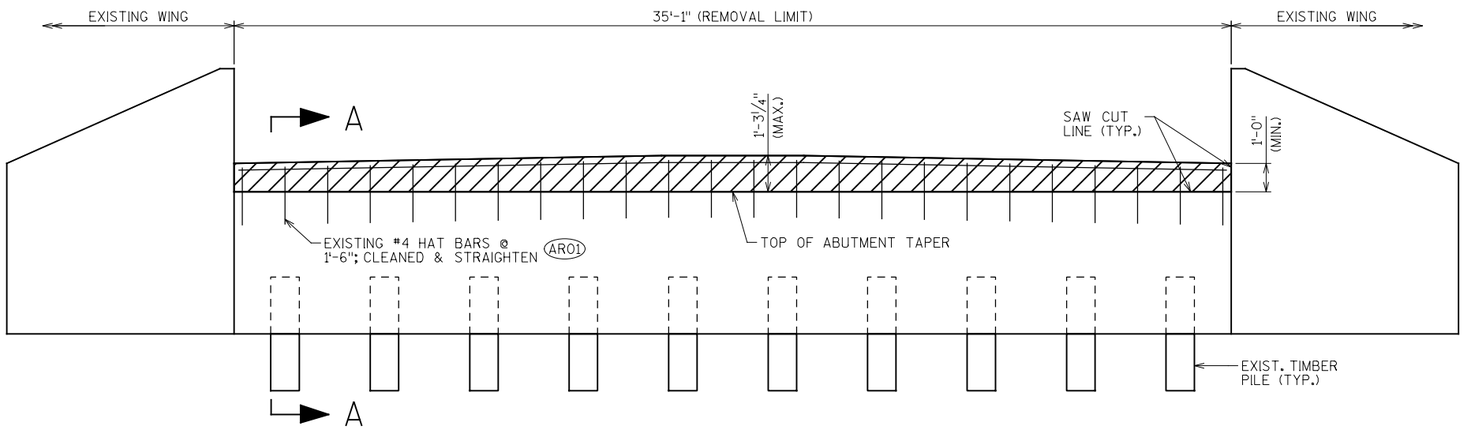
SHEET 2 OF 12
47

STATE PROJECT NUMBER
7899-04-71



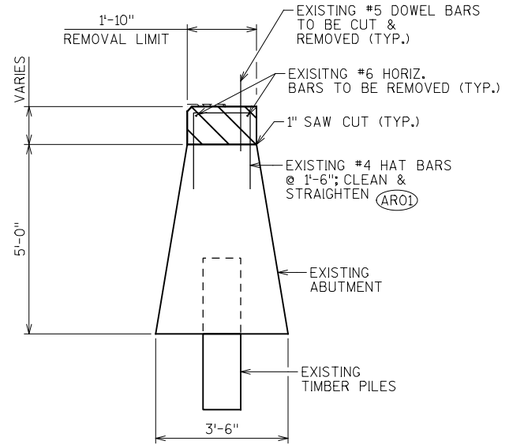
PLAN

(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR)



ELEVATION

(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR)



SECTION A-A

REMOVAL NOTES

HATCHED AREAS INDICATE CONCRETE TO BE REMOVED.

NO CUTTING WILL BE PERMITTED UNTIL THE CUTTING LIMITS HAVE BEEN OUTLINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

(AR01) IF EXISTING BAR IS EPOXY COATED, REPAIR EPOXY COATING WITH A TWO-PART EPOXY COATING REPAIR KIT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-47-45

DRAWN BY ERJ | PLANS CK'D. CEB

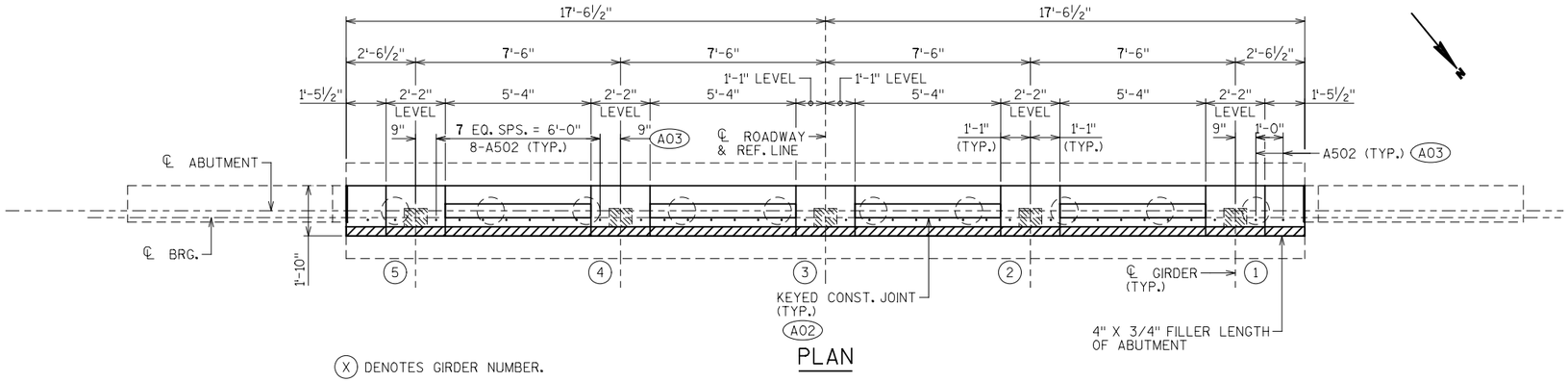
ABUTMENT REMOVAL DETAILS

SHEET 3 OF 12
48

8

8

STATE PROJECT NUMBER
7899-04-71



(X) DENOTES GIRDER NUMBER.

PLAN

NOTES

(A01) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

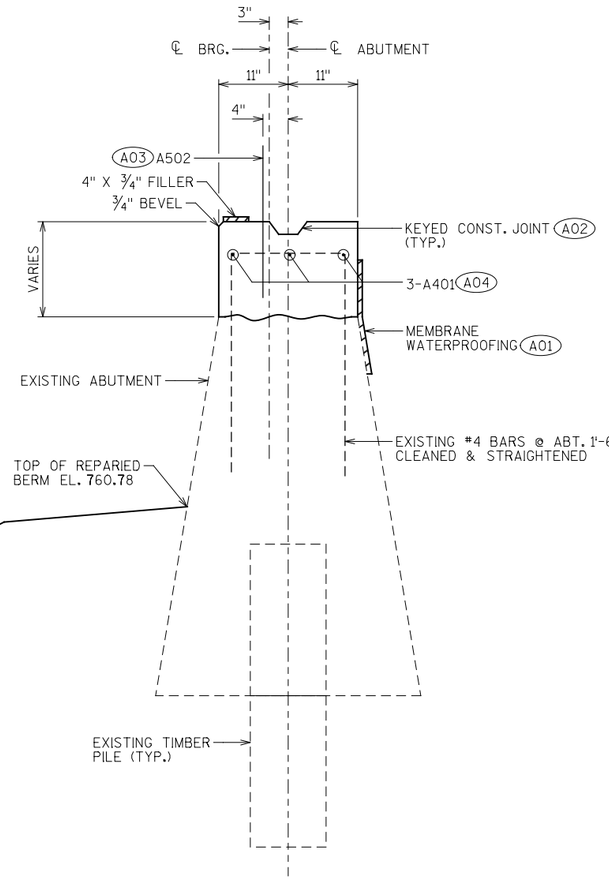
(A02) KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6".

(A03) A502 (COATED) AT 1'-0" (2'-0" LONG). THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

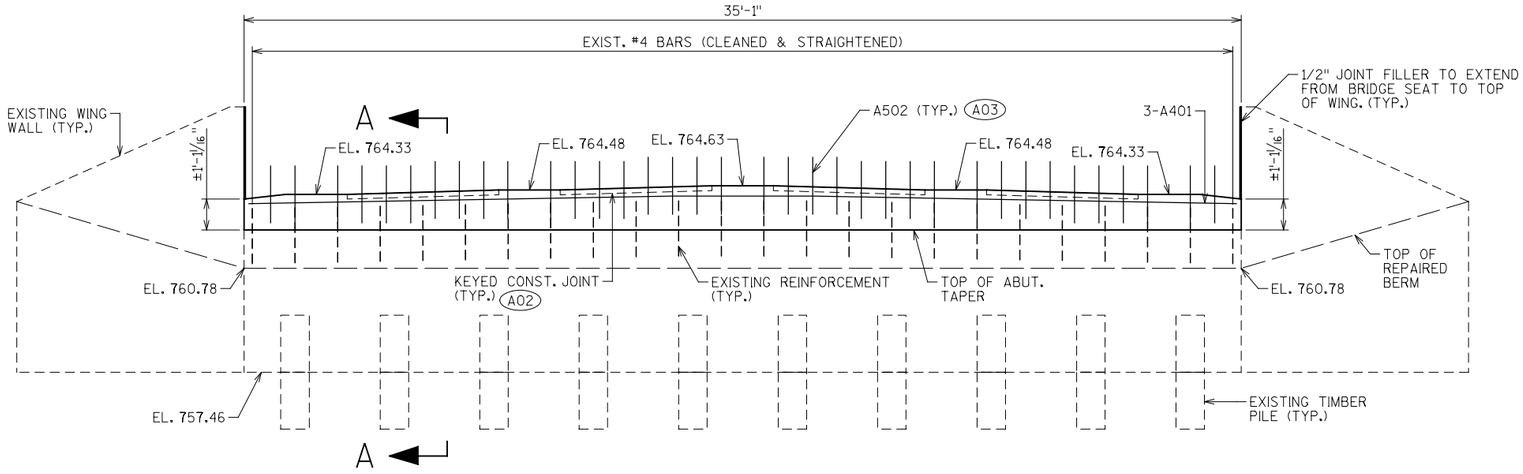
(A04) FIELD BEND BARS TO PROVIDE A 3" MINIMUM CLEAR COVER.

BILL OF BARS

BAR NO.	COATED	NO. REQ'D.	LENGTH	BENT	BUNDLED	SERIES	0 LB. PLAIN / 150 LB. COATED / LOCATION
A401	X	3	34 - 9				STEM - LONG TOP
A502	X	36	2 - 0				STEM - VERT DOWEL
			-				
			-				



SECTION A-A



ELEVATION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-47-45

DRAWN BY ERJ | PLANS CK'D. CEB

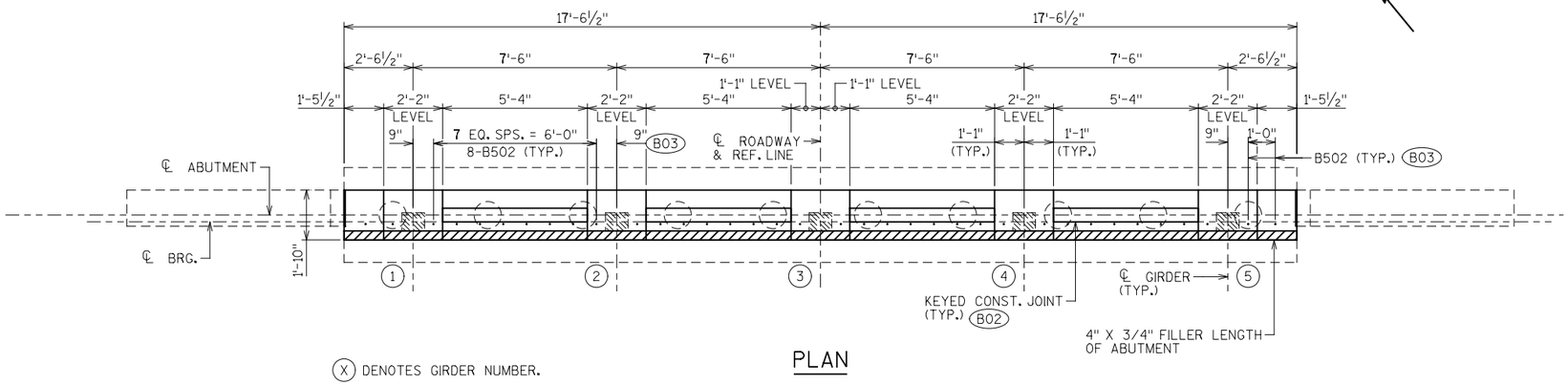
SOUTH ABUTMENT DETAILS

SHEET 4 OF 12
49

8

8

STATE PROJECT NUMBER
7899-04-71



(X) DENOTES GIRDER NUMBER.

PLAN

NOTES

(B01) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

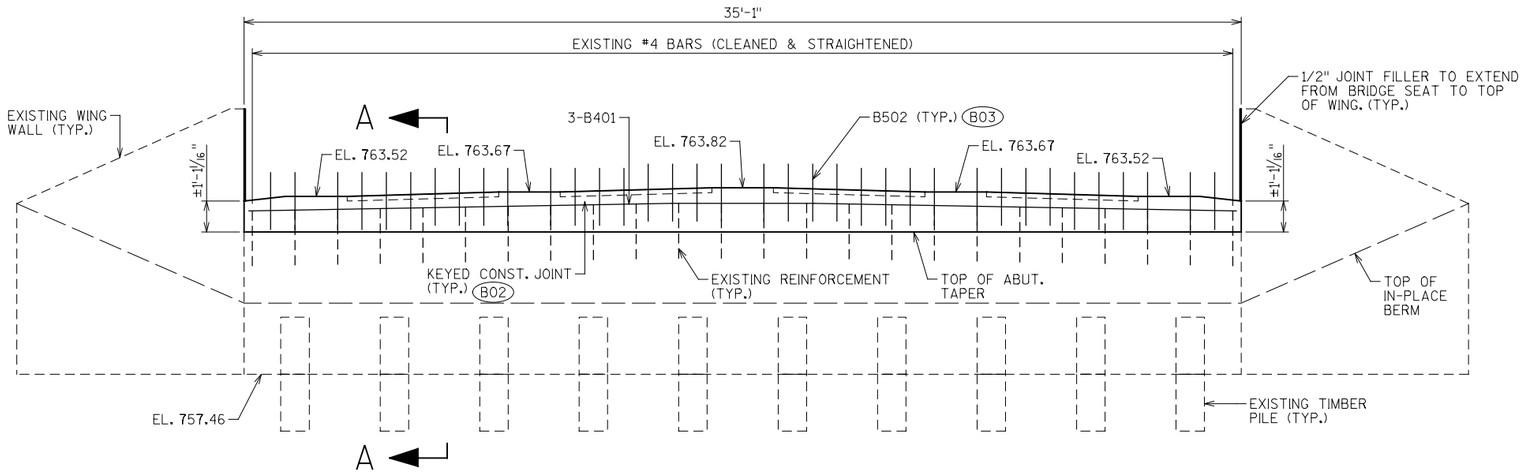
(B02) KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6".

(B03) B502 (COATED) AT 1'-0" (2'-0" LONG). THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

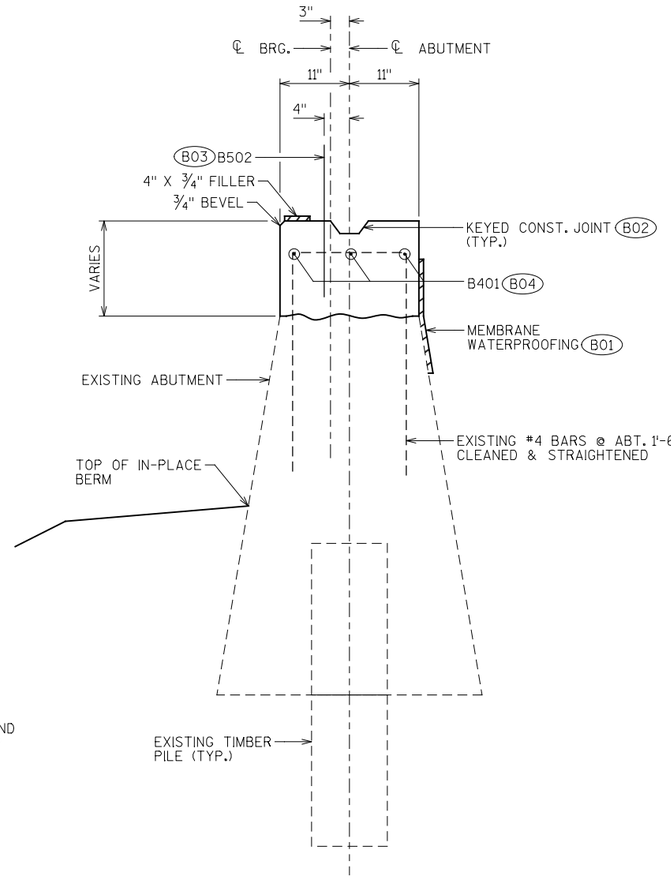
(B04) FIELD BEND BARS TO PROVIDE A 3" MINIMUM CLEAR COVER.

BILL OF BARS

BAR NO.	COATED	NO. REQ'D.	LENGTH	BENT	BUNDLED	SERIES	0 LB. PLAIN / 150 LB. COATED / LOCATION
B401	X	3	34 - 9				STEM - LONG TOP
B502	X	36	2 - 0				STEM - VERT DOWEL
			-				
			-				



ELEVATION



SECTION A-A

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-47-45

DRAWN BY ERJ | PLANS CK'D. CEB

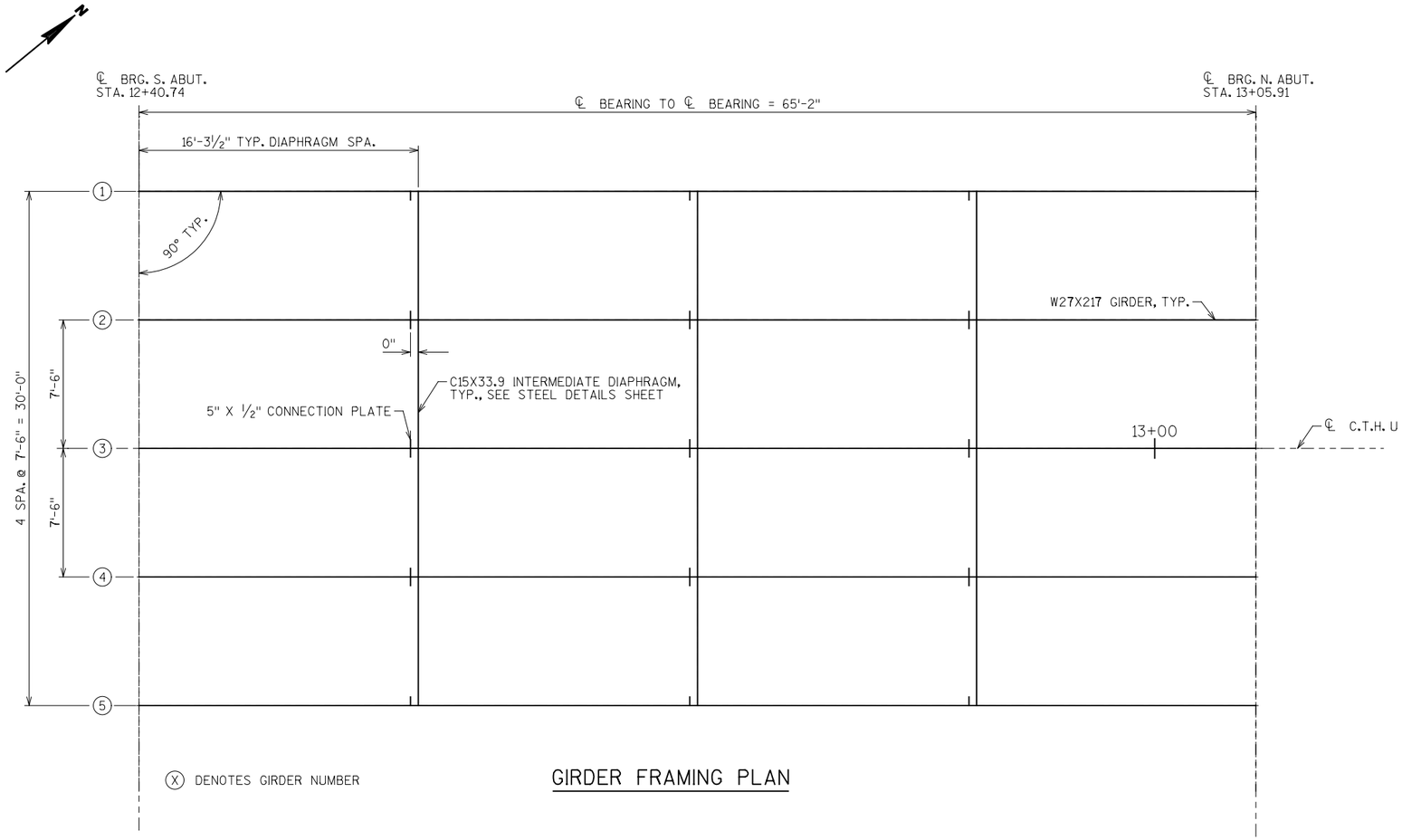
NORTH ABUTMENT DETAILS

SHEET 5 OF 12
50

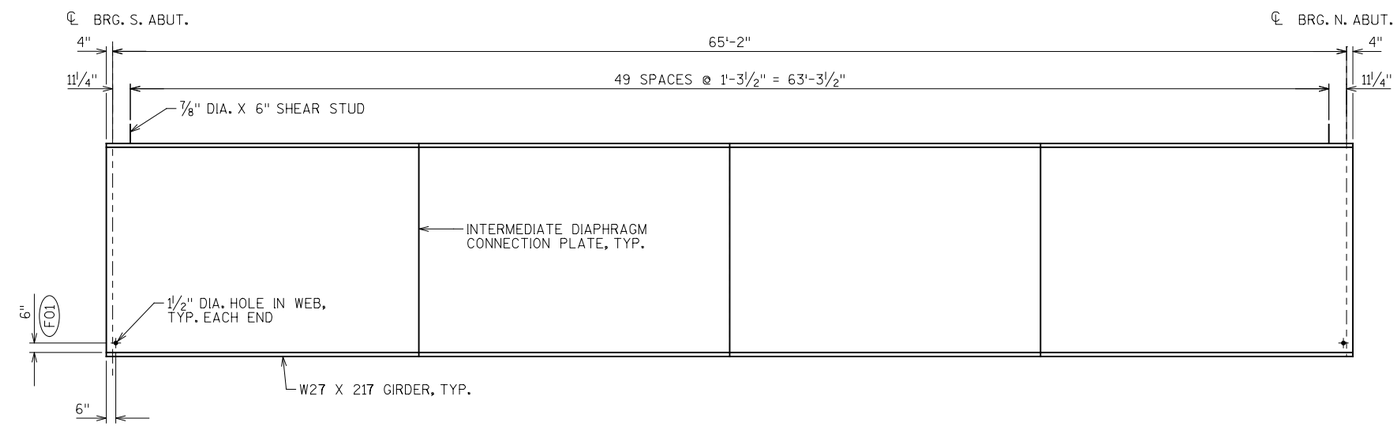
8

8

STATE PROJECT NUMBER
7899-04-71



GIRDER FRAMING PLAN



TYPICAL GIRDER ELEVATION

VERTICAL SCALE EXAGGERATED

NOTES

(F01) DIMENSION MEASURED FROM TOP OF BOTTOM FLANGE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-47-45

DRAWN BY ERJ | PLANS CK'D. CEB

FRAMING PLAN & GIRDER ELEVATION

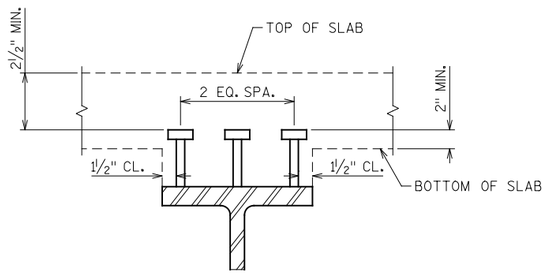
SHEET 6 OF 12
51

8

8

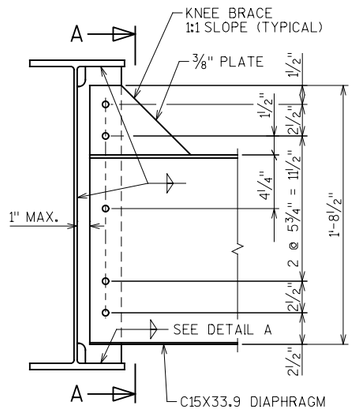
STATE PROJECT NUMBER
7899-04-71

NOTE: USE THREE SHOP OR FIELD WELDED 7/8" DIA. X 6" LONG ⊖STUDS EQUALLY SPACED WITH A MIN. OF 1 1/2" CL. FROM THE FLANGE EDGE.



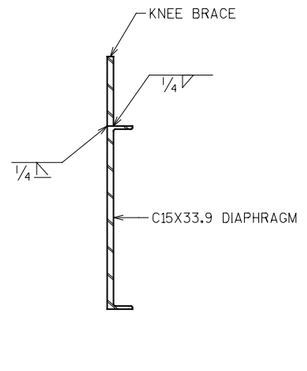
⊖USE DIFFERENT LENGTH STUDS IF 2 1/2" MIN. CLEARANCE OR 2" EXTENSION CRITERIA IS VIOLATED.

SHEAR CONN. DETAILS



INTERMEDIATE DIAPHRAGM DETAIL

TYPICAL ALL GIRDERS



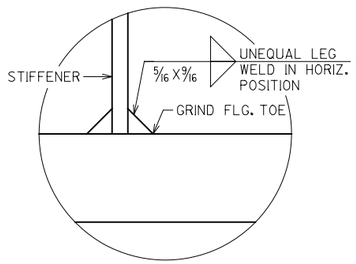
SECTION A-A

NOTES

DIAPHRAGMS SHALL BE HORIZONTAL EXCEPT WHEN THE DIFFERENCE IN ADJACENT GIRDER ELEVATIONS IS OF A MAGNITUDE THAT NECESSITATES SLOPING THE DIAPHRAGMS.

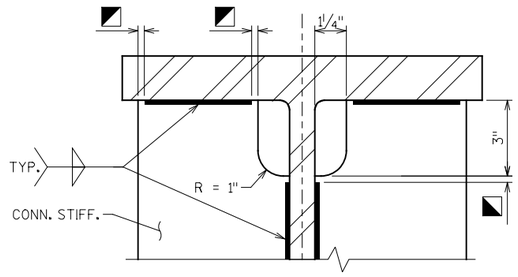
WHEN THE DIAPHRAGMS ARE SLOPED, PLACE CENTER OF DIAPHRAGM AT MID-DEPTH OF GIRDER.

ALL BOLTED CONNECTIONS SHALL BE MADE WITH 3/4" DIA. HIGH STRENGTH ASTM A325 BOLTS.



DETAIL A

CONNECTION STIFFENER DETAIL @ TENSION FLANGE



◪ 1/8" MIN., 1/4" MAX. TYP.

CONN. STIFF. TO WEB/FLANGE CONN. WELDS

* TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED	† MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	△ 5/16"
OVER 1 1/2"	△ 3/8"

† EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.

△ MIN. PASS SIZE IS 5/16"

* MINIMUM WELD SIZES SHOWN SHALL BE USED WHEN A SIZE IS NOT OTHERWISE SPECIFIED OR SHOWN.

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-47-45

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STEEL DETAILS

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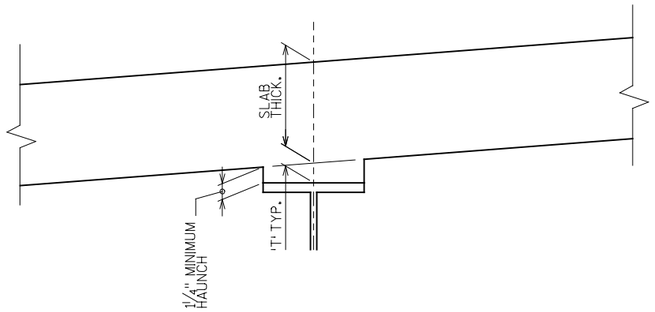


HAUNCH DETAIL

NOTES

'T' = HAUNCH HEIGHT AT CENTERLINE OF GIRDER.

TO DETERMINE 'T': AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED. ELEVATIONS OF THE TOP FLANGES SHALL BE TAKEN AT CENTERLINE OF BEARINGS AND AT 0.1 POINTS.

TOP OF DECK ELEVATION AT FINAL GRADE
- TOP OF STEEL ELEVATION AFTER STEEL ERECTION
+ CONC. ONLY DEFLECTION; DOWNWARD DEFLECTION IS ADDED; UPWARD DEFLECTION IS SUBTRACTED

- SLAB THICKNESS

= 'T' VALUE FOR SETTING HAUNCH

ELEVATIONS AT TOP OF DECK (T.O.D.) & TOP OF STEEL (T.O.S.)

		CL BRG. S. ABUT.	SPAN 0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. N. ABUT.
GIRDER 1	T.O.D.	767.75	767.63	767.51	767.41	767.31	767.22	767.15	767.08	767.02	766.97	766.94
	T.O.S.	766.76										765.95
GIRDER 2	T.O.D.	767.90	767.78	767.66	767.56	767.46	767.37	767.30	767.23	767.17	767.12	767.09
	T.O.S.	766.91										766.10
GIRDER 3 & CL C.T.H. U	T.O.D.	768.05	767.93	767.81	767.71	767.61	767.52	767.45	767.38	767.32	767.27	767.24
	T.O.S.	767.06										766.25
GIRDER 4	T.O.D.	767.90	767.78	767.66	767.56	767.46	767.37	767.30	767.23	767.17	767.12	767.09
	T.O.S.	766.91										766.10
GIRDER 5	T.O.D.	767.75	767.63	767.51	767.41	767.31	767.22	767.15	767.08	767.02	766.97	766.94
	T.O.S.	766.76										765.95

ELEVATIONS ARE TO THE TOP OF STEEL AND ARE FOR THE MATERIAL AS ERECTED.

DEAD LOAD DEFLECTIONS

GIRDERS 1 & 5	CL BRG. S. ABUT.	SPAN 0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. N. ABUT.
CONCRETE ONLY	0.000	0.037	0.066	0.088	0.103	0.110	0.105	0.090	0.066	0.037	0.000
TOTAL	0.000	0.048	0.087	0.116	0.135	0.144	0.137	0.117	0.087	0.048	0.000

GIRDERS 2 & 4	CL BRG. S. ABUT.	SPAN 0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. N. ABUT.
CONCRETE ONLY	0.000	0.038	0.069	0.092	0.107	0.114	0.109	0.093	0.069	0.038	0.000
TOTAL	0.000	0.050	0.090	0.119	0.139	0.148	0.142	0.121	0.090	0.050	0.000

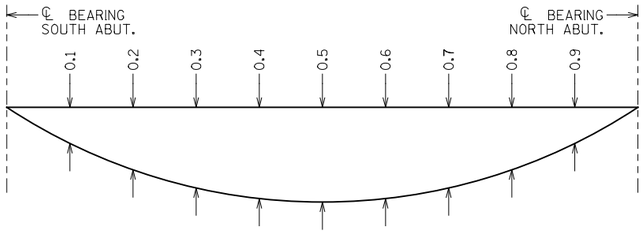
GIRDER 3	CL BRG. S. ABUT.	SPAN 0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. N. ABUT.
CONCRETE ONLY	0.000	0.039	0.070	0.093	0.108	0.115	0.110	0.094	0.070	0.039	0.000
TOTAL	0.000	0.050	0.091	0.121	0.140	0.150	0.143	0.122	0.091	0.050	0.000

NOTES

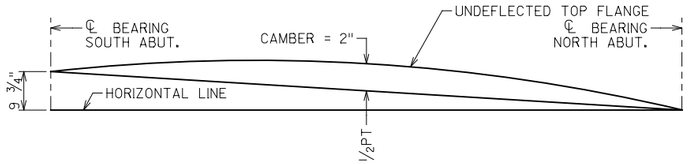
DEFLECTIONS ARE GIVEN IN DECIMALS OF A FOOT.

CONCRETE DEFLECTION INCLUDES CONCRETE SLAB, HAUNCH, AND PARAPETS.

TOTAL DEFLECTION INCLUDES ALL OF ABOVE PLUS DEFLECTIONS DUE TO SELF-WEIGHT OF STEEL.

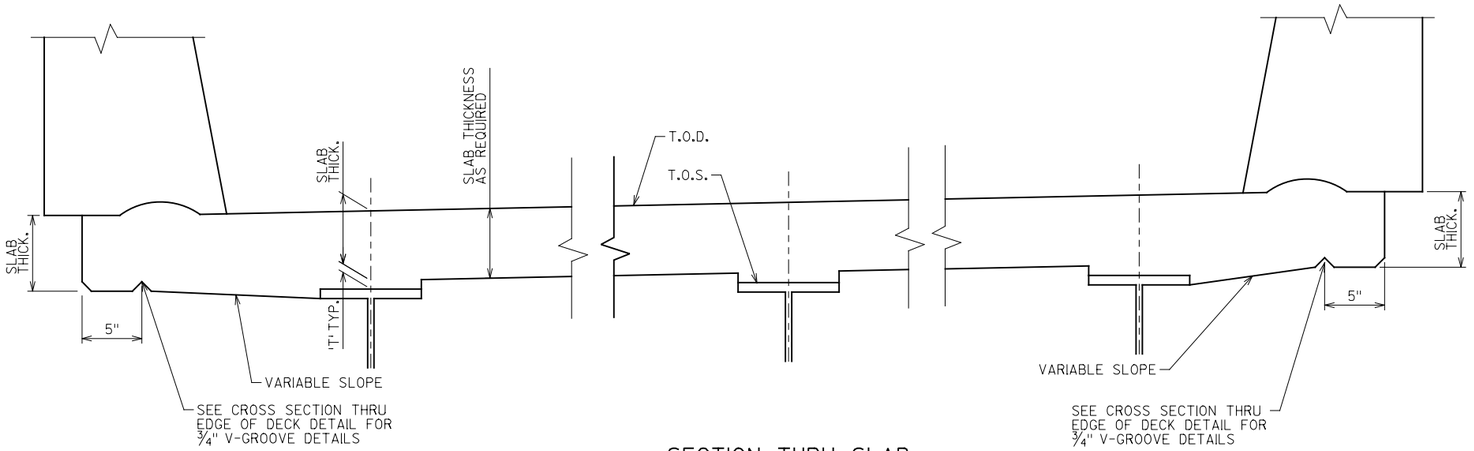


DEFLECTION DIAGRAM



CAMBER AND BLOCKING DIAGRAM

TYPICAL ALL GIRDERS



SECTION THRU SLAB

8

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-47-45

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CAMBER, BLOCKING & DEFLECTION DIAGRAMS

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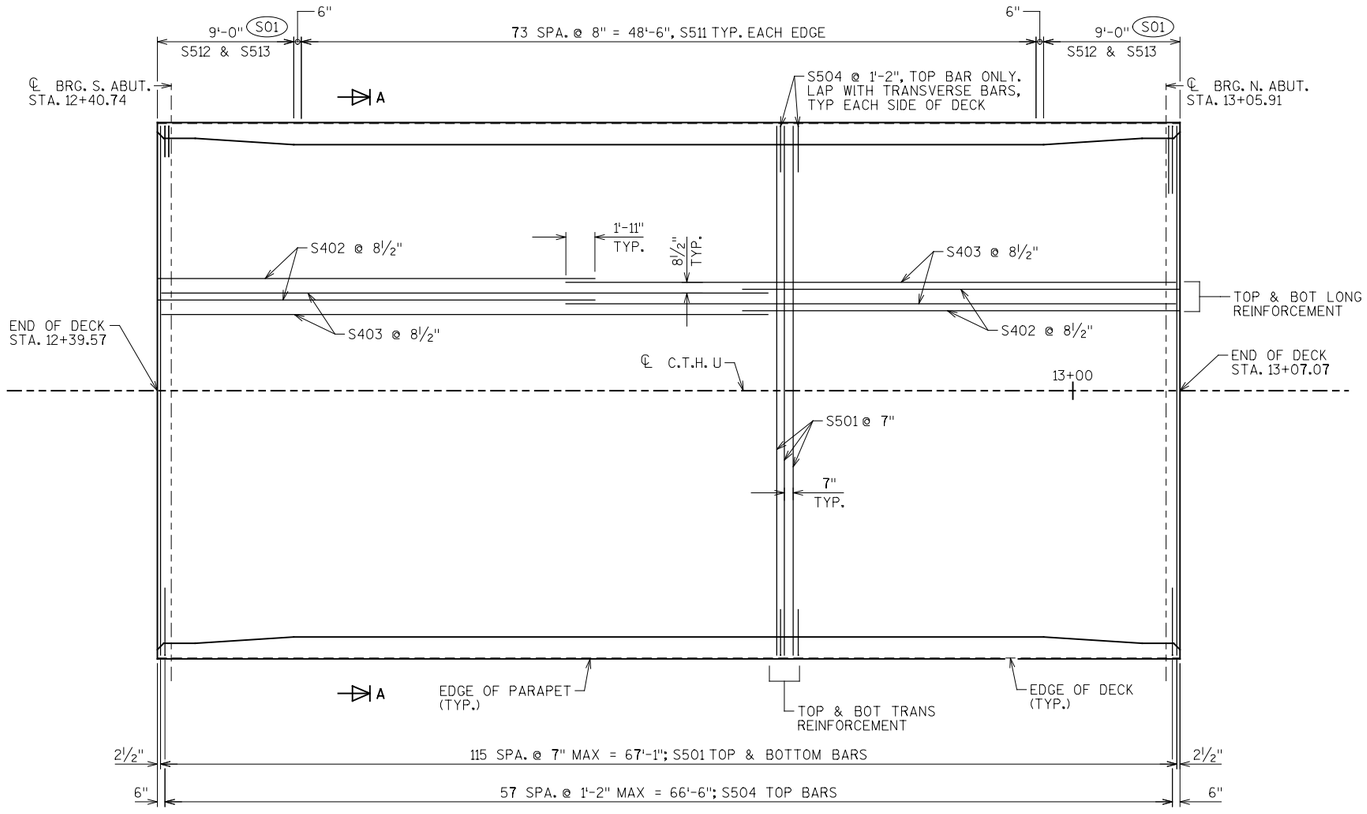
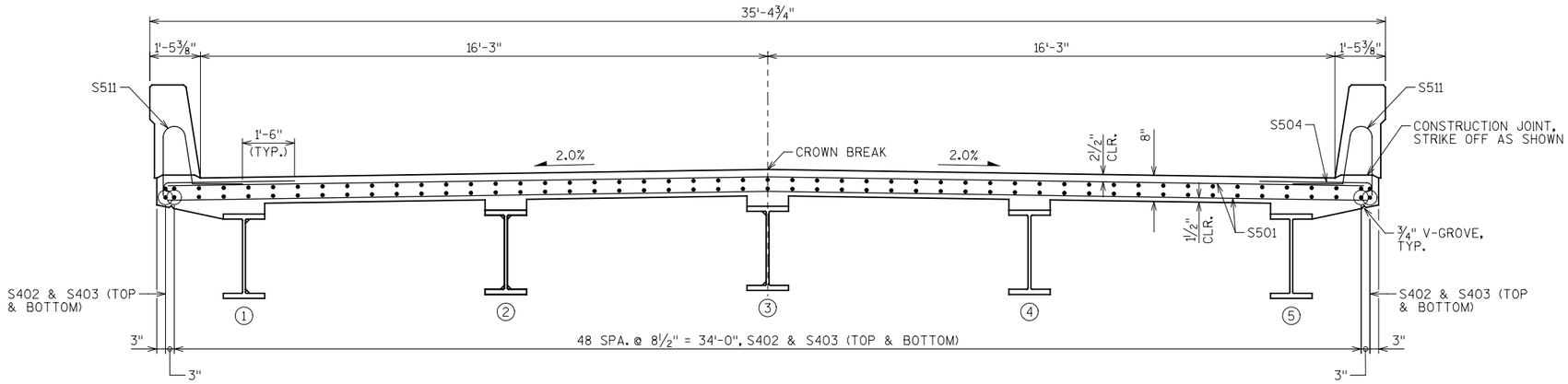


PLAN



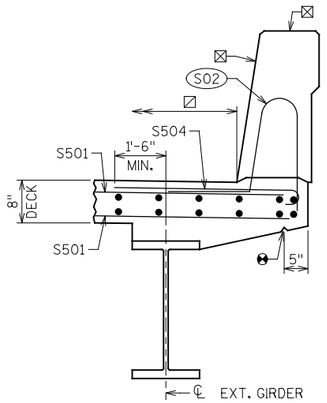
Ⓧ DENOTES GIRDER NUMBER.

SECTION A-A
(LOOKING NORTH)

NOTES

(S01) SEE SINGLE SLOPE PARAPET 32SS DETAIL FOR SPACING.

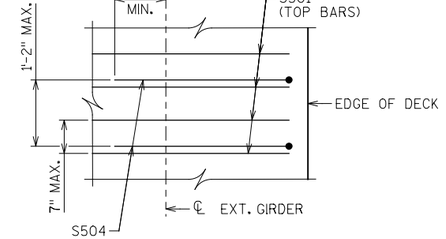
(S02) SEE SINGLE SLOPE PARAPET 32SS DETAIL FOR REINFORCEMENT DETAILS.



SECTION

NOTES

- ¾" V-GROOVE REQ'D. EXTEND TO 6" FROM F.F. OF ABUT. DIAPH.
- ☒ COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS.
- ☒ COAT WITH "PIGMENTED SURFACE SEALER" AS PER THE STANDARD SPECIFICATIONS.



PLAN

ADDITIONAL REINFORCEMENT
AT EDGE OF DECK (TYP.)

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DEPARTMENT OF TRANSPORTATION

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SUPERSTRUCTURE REINFORCEMENT

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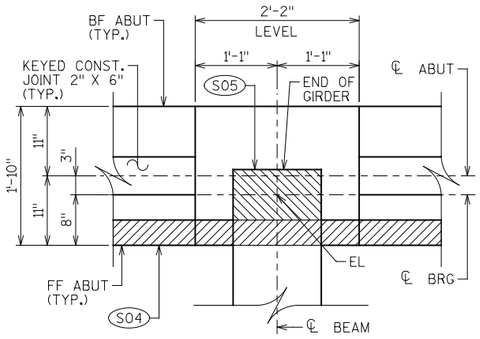
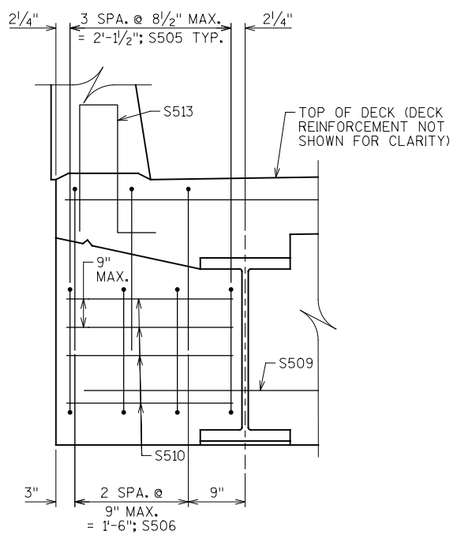
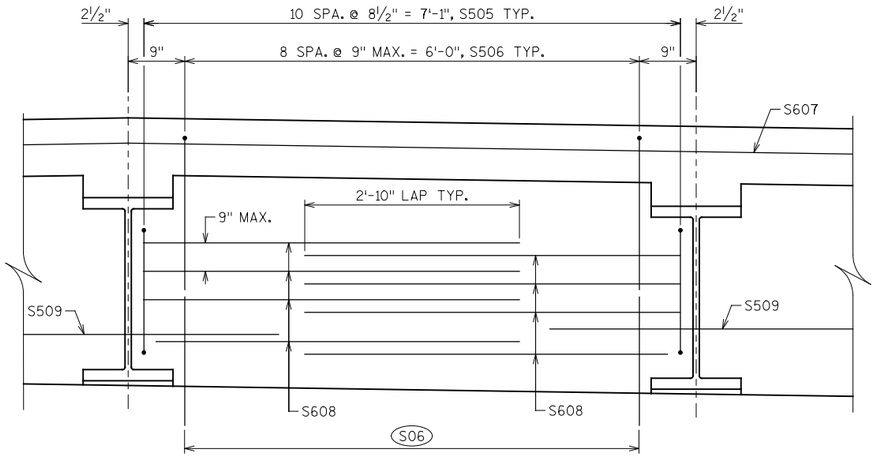


TYPICAL BEAM SEAT DETAIL

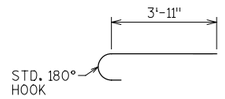




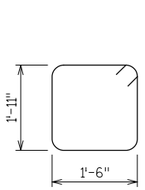
ABUTMENT DIAPHRAGM ELEVATION

BILL OF BARS

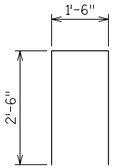
BAR NO.	COATED	NO. REQD.	LENGTH	BENT	BUNDLED	SERIES	0 LB. PLAIN / 19640 LB. COATED / LOCATION
S501	X	232	34 - 8				SLAB TRANS. TOP & BOT.
S402	X	102	29 - 1				SLAB LONG. TOP & BOT.
S403	X	102	40 - 0				SLAB LONG. TOP & BOT.
S504	X	116	4 - 6	X			SLAB TRANS. TOP
S505	X	104	7 - 9	X			ABUT. DIAPH. VERT.
S506	X	84	6 - 6	X			ABUT. DIAPH. VERT.
S607	X	16	34 - 8				ABUT. DIAPH. LONG.
S608	X	64	5 - 0				ABUT. DIAPH. LONG.
S509	X	20	6 - 0				ABUT. DIAPH. THRU BEAM
S510	X	16	2 - 1				ABUT. DIAPH. LONG.
S511	X	148	4 - 5	X			SLAB @ PARAPET VERT.
S512	X	48	2 - 9	X			SLAB @ PARAPET VERT.
S513	X	68	4 - 4	X			SLAB @ PARAPET VERT.
S514	X	148	5 - 0	X			PARAPET VERT.
S515	X	44	4 - 9	X			PARAPET VERT.
S516	X	24	4 - 10	X			PARAPET VERT.
S517	X	4	35 - 2	X			PARAPET LONG.
S518	X	20	35 - 0				PARAPET LONG.
			-				
			-				



R504



R505



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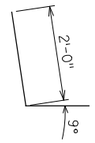

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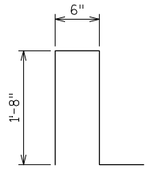

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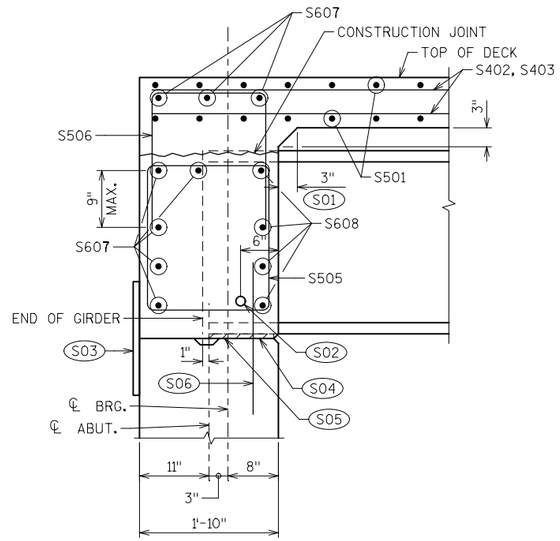
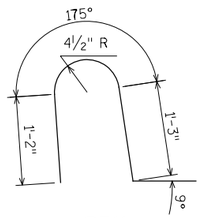
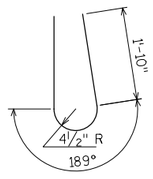


STEEL GIRDER WITH FIXED SEAT



S511



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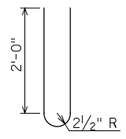

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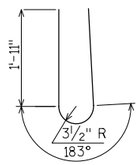

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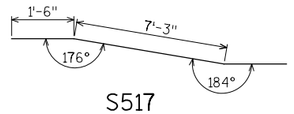

S517

NOTES

(S01) DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

(S02) 1½" DIA. HOLE IN WEB FOR TWO S509 HORIZONTAL BARS PLACED ABOUT ℄ INTERIOR GIRDER. FOR EXTERIOR GIRDERS SHIFT BARS TO PROVIDE 2" CLEAR @ END OF DIAPHRAGM.

(S03) 1'-6" RUBBERIZED MEMBRANE WATERPROOFING

(S04) 4" X ¾" FILLER X LENGTH OF ABUTMENT. FILLER THICKNESS UNDER FLANGE = BEARING HEIGHT + ¼".

(S05) ELASTOMERIC BEARING PAD SIZE EQUALS ¾" X 8" X 14".

(S06) A502 OR B502. SEE ABUTMENT DETAILS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-47-45

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SUPERSTRUCTURE DETAILS

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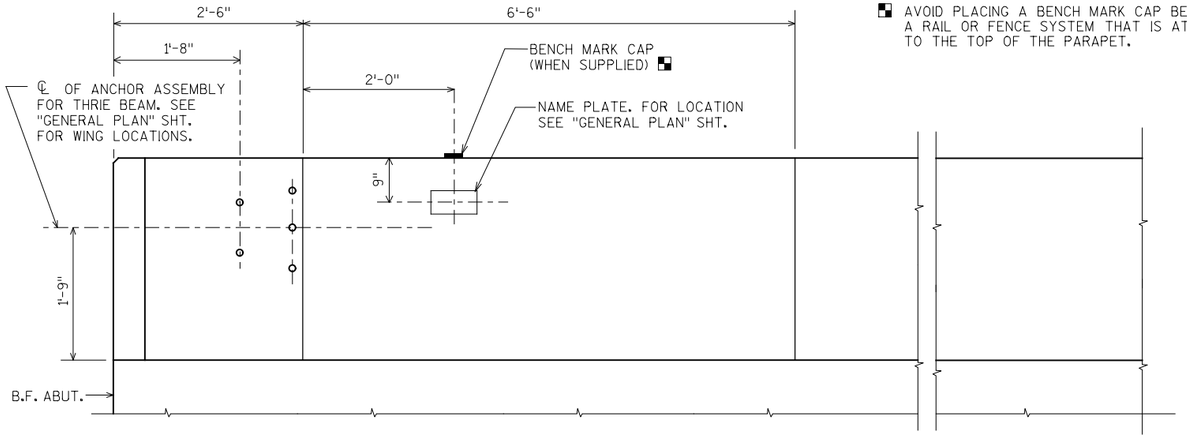
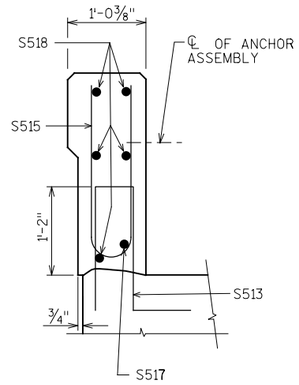
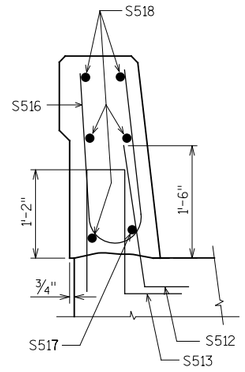


AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.

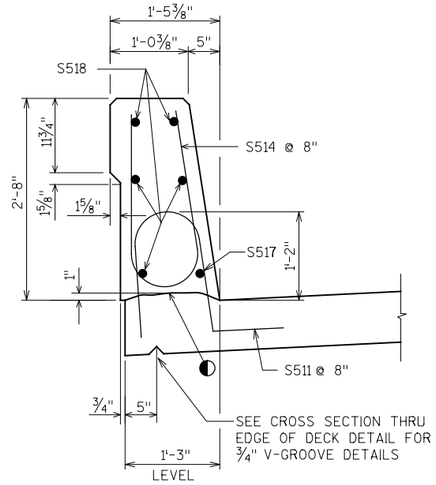
INSIDE ELEVATION



SECTION A

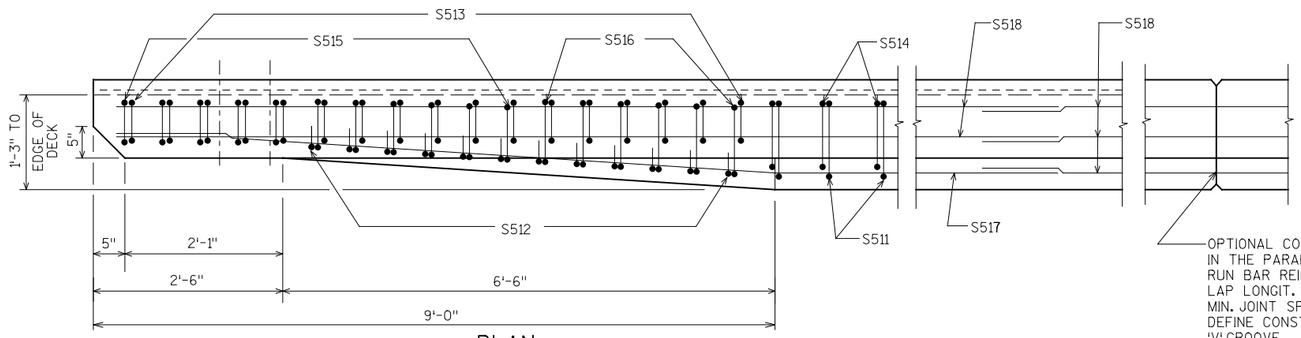


SECTION B



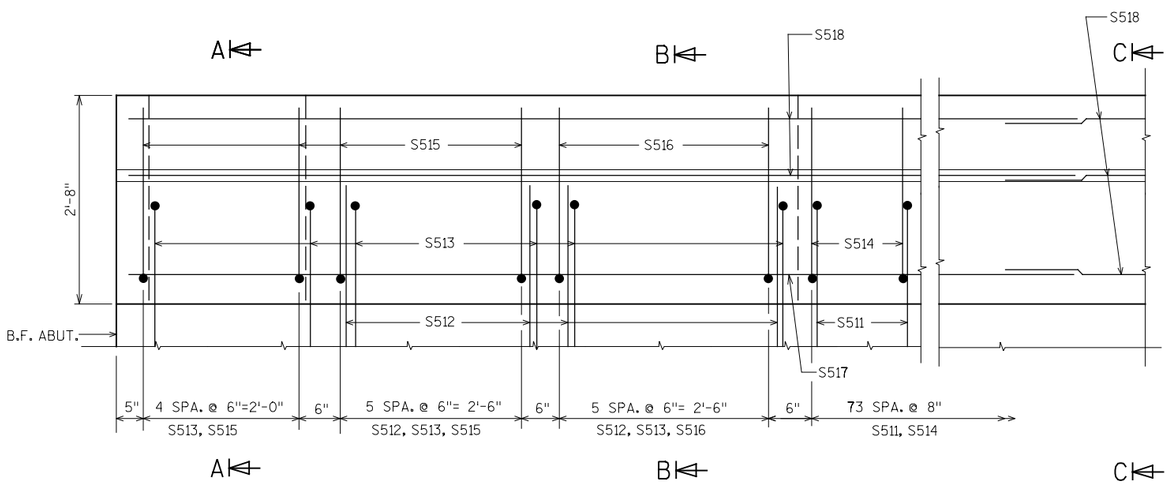
SECTION C

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

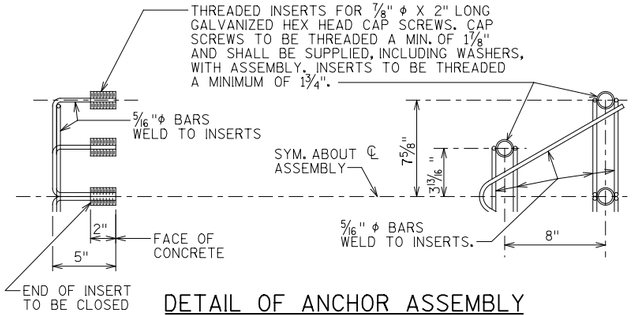


PLAN

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 3/4" - 'V' GROOVE.



OUTSIDE ELEVATION



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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-47-45

DRAWN BY ERJ | PLANS CK'D. CEB

SINGLE SLOPED PARAPET 32SS

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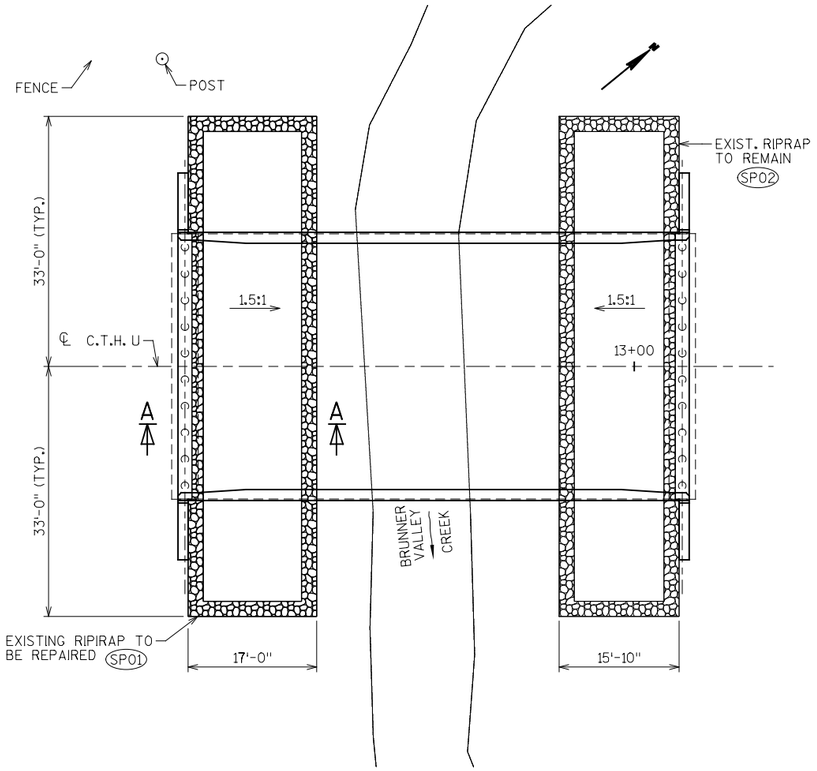
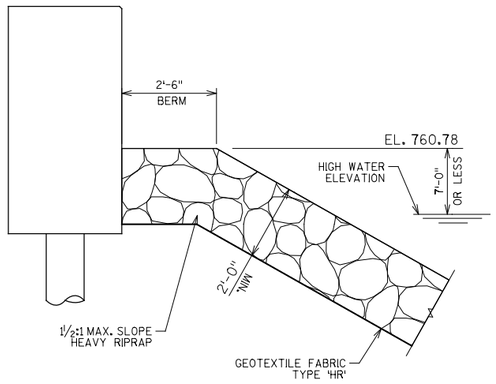
PLOT DATE : 7/11/2017

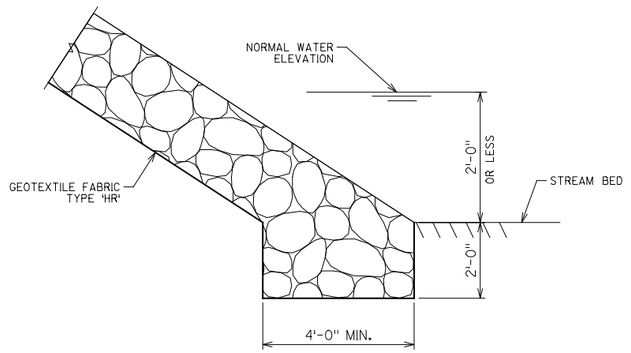
PLOT BY : SRF Consulting Group

STATE PROJECT NUMBER
7899-04-71





SECTION A-A



TOE DETAIL

NORMAL WATER ELEVATION </= 2'-0" ABOVE STREAM BED

NOTES

HEAVY RIPRAP. PLACE GEOTEXTILE FABRIC TYPE "HR" BELOW IT.

(SP01) RECONSTRUCT EMBANKMENT PROTECTION. MAINTAIN 1'-0" CLEARANCE FROM WETLAND BOUNDARY.

(SP02) ADD ADDITIONAL RIPRAP AS DIRECTED BY THE ENGINEER IN THE FIELD TO SUPPLEMENT EXISTING CONDITIONS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-47-45

DRAWN BY ERJ | PLANS CK'D. CEB

SLOPE PAVING DETAILS

SHEET 12 OF 12
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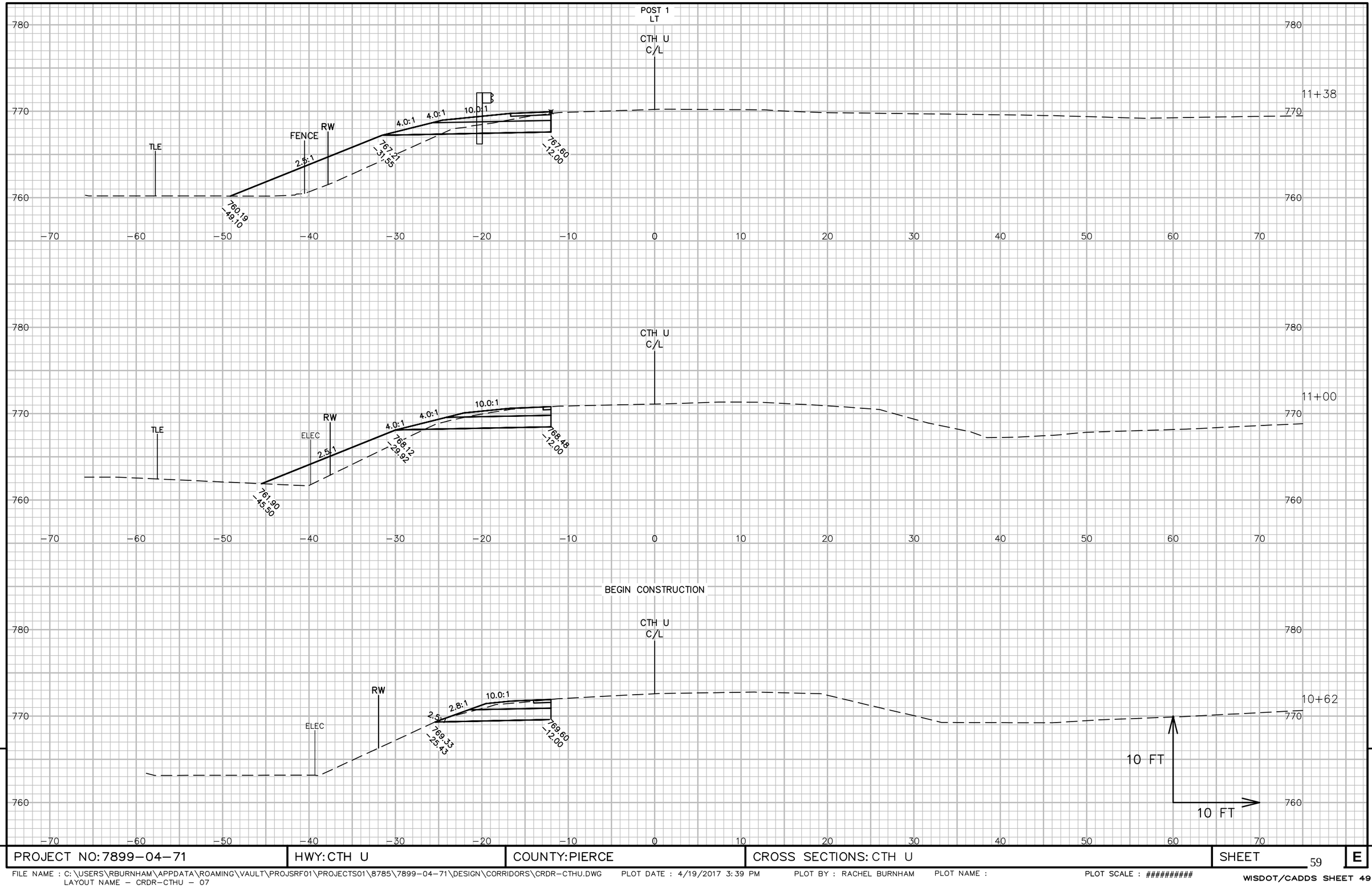
EARTHWORK DATA SHEET

STATION	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)							
	Cut	Salvaged/ Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/ Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Expanded Fill	Expanded Marsh Backfill	Expanded Rock	Expanded EBS Backfill	Reduced Marsh in Fill	Reduced EBS In Fill	Mass Ordinate
													1.00	1.25	1.50	1.10	1.30	0.60	0.80	
							Note 1	**Note 2**	**Note 3**				**Note 1**		**Note 4**		**Note 5**	**Note 6**	**Note 7**	**Note 8**
10+62.040	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11+00.000	23	0	29	0	0	0	31	0	20	0	0	0	31	26	0	0	0	0	0	5
11+37.572	16	0	52	0	0	0	27	0	57	0	0	0	58	96	0	0	0	0	0	-38
11+50.000	16	0	46	0	0	0	7	0	23	0	0	0	65	125	0	0	0	0	0	-59
11+62.572	17	0	32	0	0	0	8	0	18	0	0	0	73	147	0	0	0	0	0	-75
11+87.572	104	0	6	0	0	0	56	0	18	0	0	0	129	170	0	0	0	0	0	-41
12+00.000	100	0	4	0	0	0	47	0	2	0	0	0	176	173	0	0	0	0	0	3
12+50.000	0	0	0	0	0	0	92	0	4	0	0	0	268	178	0	0	0	0	0	90
13+00.000	0	0	0	0	0	0	0	0	0	0	0	0	268	178	0	0	0	0	0	90
13+46.362	107	0	0	0	0	0	0	0	0	0	0	0	268	178	0	0	0	0	0	90
13+46.574	107	0	0	0	0	0	1	0	0	0	0	0	269	178	0	0	0	0	0	91
13+50.000	108	0	0	0	0	0	14	0	0	0	0	0	283	178	0	0	0	0	0	105
13+71.362	109	0	1	0	0	0	85	0	1	0	0	0	368	178	0	0	0	0	0	189
13+71.574	109	0	1	0	0	0	1	0	0	0	0	0	369	178	0	0	0	0	0	190
13+96.364	113	0	3	0	0	0	100	0	2	0	0	0	469	181	0	0	0	0	0	288
13+96.574	113	0	3	0	0	0	1	0	0	0	0	0	470	181	0	0	0	0	0	288
14+00.000	113	0	2	0	0	0	14	0	0	0	0	0	484	182	0	0	0	0	0	302
14+50.000	73	0	0	0	0	0	209	0	2	0	0	0	693	184	0	0	0	0	0	509
14+54.598	83	0	0	0	0	0	16	0	0	0	0	0	709	184	0	0	0	0	0	524
50+46.594	18	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50+50.000	18	0	5	0	0	0	2	0	1	0	0	0	1572	137	0	0	0	0	0	-134
50+72.480	21	0	15	0	0	0	16	0	8	0	0	0	12892	1640	0	0	0	0	0	-1621
50+96.490	20	0	31	0	0	0	19	0	20	0	0	0	25722	5366	0	0	0	0	0	-5328
51+00.000	21	0	29	0	0	0	3	0	4	0	0	0	27580	6084	0	0	0	0	0	-6044
51+50.000	25	0	7	0	0	0	43	0	34	0	0	0	57210	12356	0	0	0	0	0	-12273
51+84.603	32	0	1	0	0	0	37	0	5	0	0	0	82626	13300	0	0	0	0	0	-13181
								0												
Column totals							828	0	220	0	0	0								

Notes:		
1 - Cut	Cut includes Salvaged/Unusable Pavement material	
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections	
3 - Fill	Does not include Unusable Pavement Exc volume	
4 - Expanded Marsh Backfill	Will be backfilled with Granular Backfill (or Cut, or Borrow)	Note 4 - Select one based on input dialog selection
5 - Expanded EBS	Will be backfilled with Granular Backfill (or Cut, or Borrow)	Note 5 - Select one based on input dialog selection
6 - Reduced Marsh in Fill	Reduced Marsh Excavation that can be used in Fill	Note 6 - If excavated Marsh can be used in Fill
7 - Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill	Note 7 - If excavated EBS can be used in Fill
8 - Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) - ((Fill - Reduced Marsh in Fill) - (Reduced EBS in Fill) - Expanded Rock) * Fill Factor)]	Note 8 - Select one based on mass haul input dialog selection. EBS and Marsh Exc used outside 1:1 in fill slopes
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [(Cut + EBS + Marsh Exc) - ((Fill - (Reduced Marsh in Fill) - (Reduced EBS in Fill) - (Expanded Rock)) * Fill Factor))]	EBS and Marsh Exc used outside 1:1 in fill slopes
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [(Cut) - ((Fill - Expanded Rock) * Fill Factor))]	Marsh and EBS are not usable outside the 1:1 slopes
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Cut or Borrow: [(Cut) - ((Fill - Expanded Rock) * Fill Factor))]	Marsh and EBS are not usable outside the 1:1 slopes



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PROJECT NO: 7899-04-71	HWY: CTH U	COUNTY: PIERCE	CROSS SECTIONS: CTH U	SHEET 59	E

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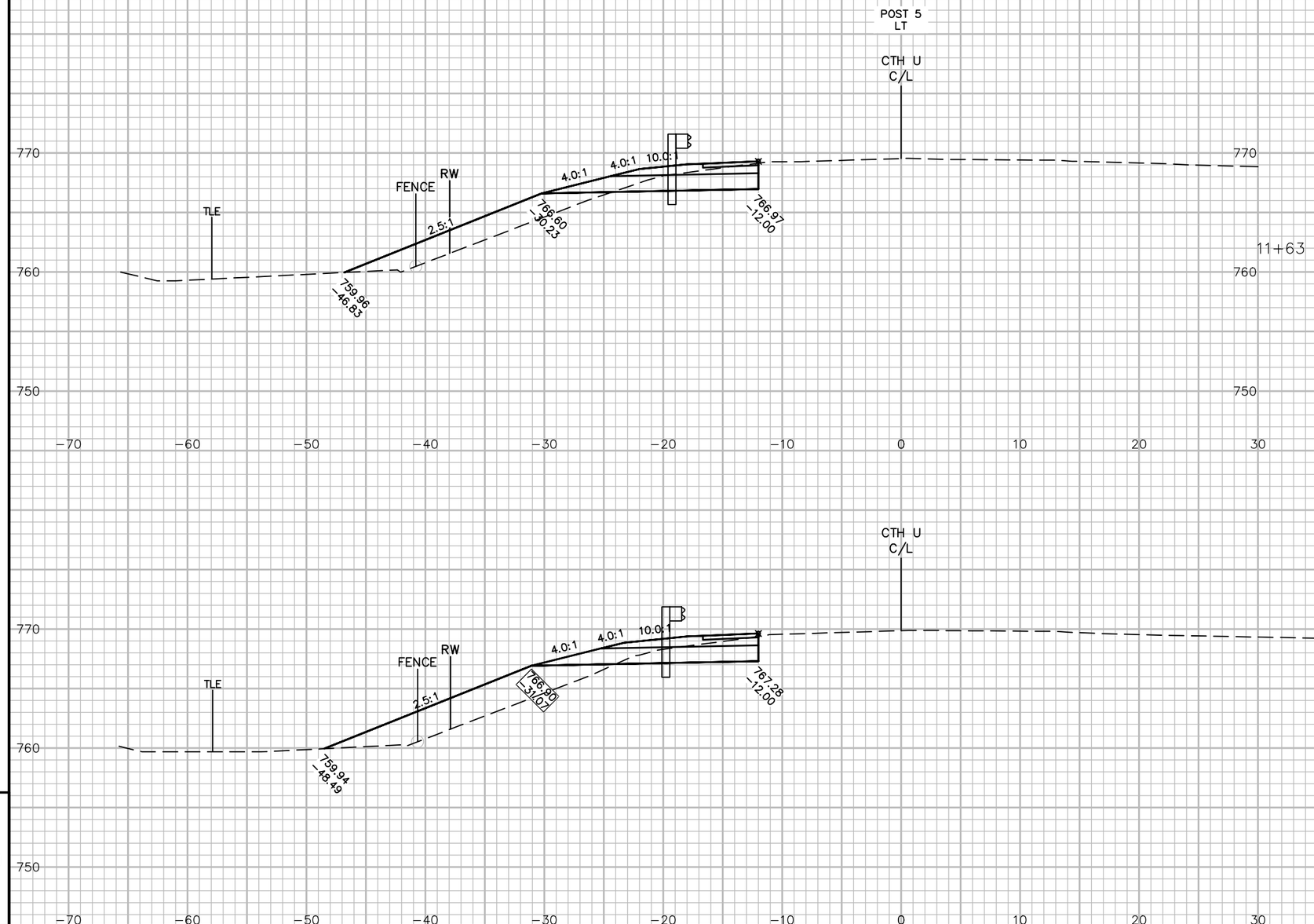
LAYOUT NAME - CRDR-CTHU - 07
PLOT DATE : 4/19/2017 3:39 PM
PLOT BY : RACHEL BURNHAM
PLOT NAME :
PLOT SCALE : ##########

WISDOT/CADDS SHEET 49



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LAYOUT NAME - CRDR-CTHU - 07
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PLOT BY : RACHEL BURNHAM
PLOT NAME :
PLOT SCALE : ##########
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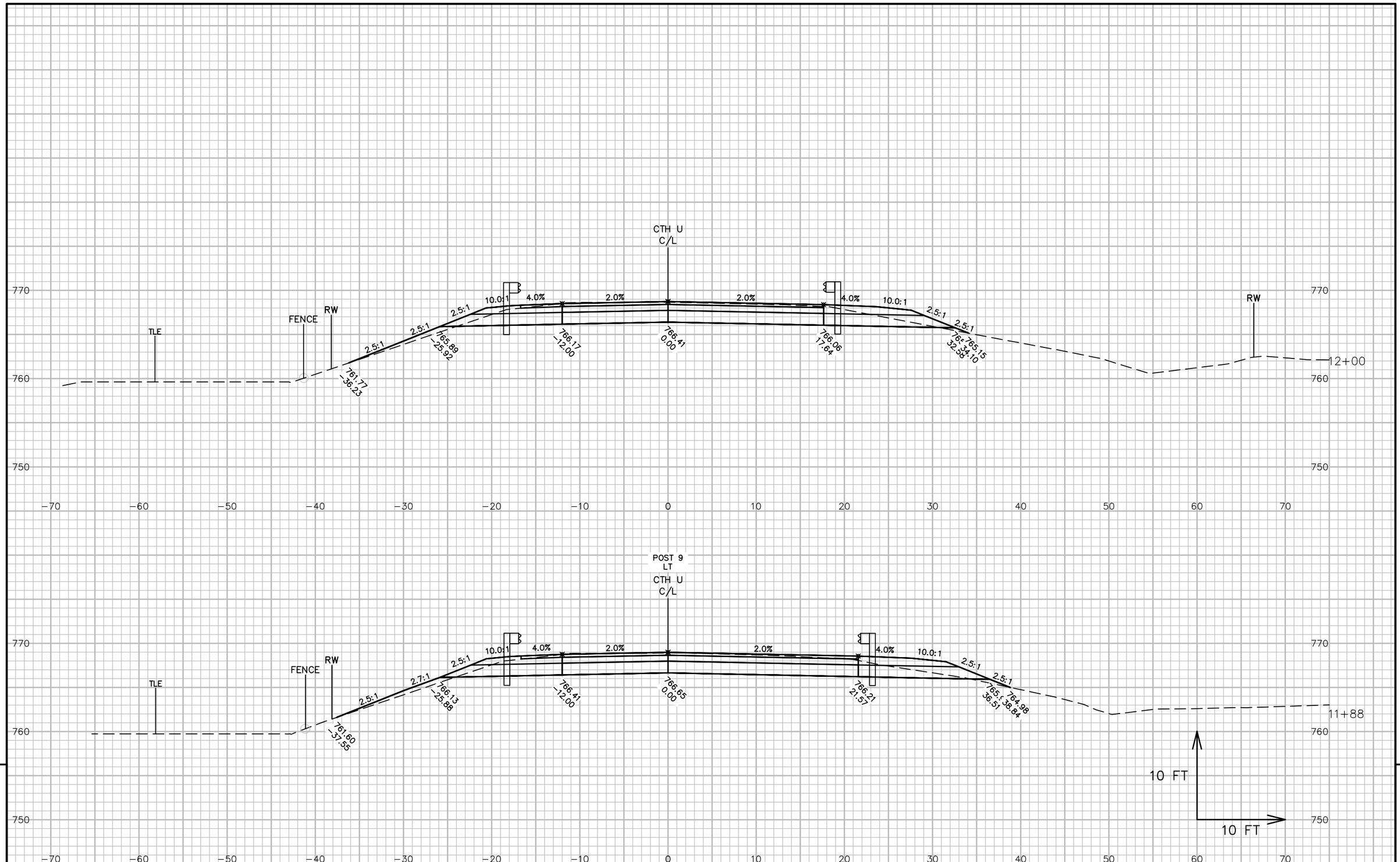

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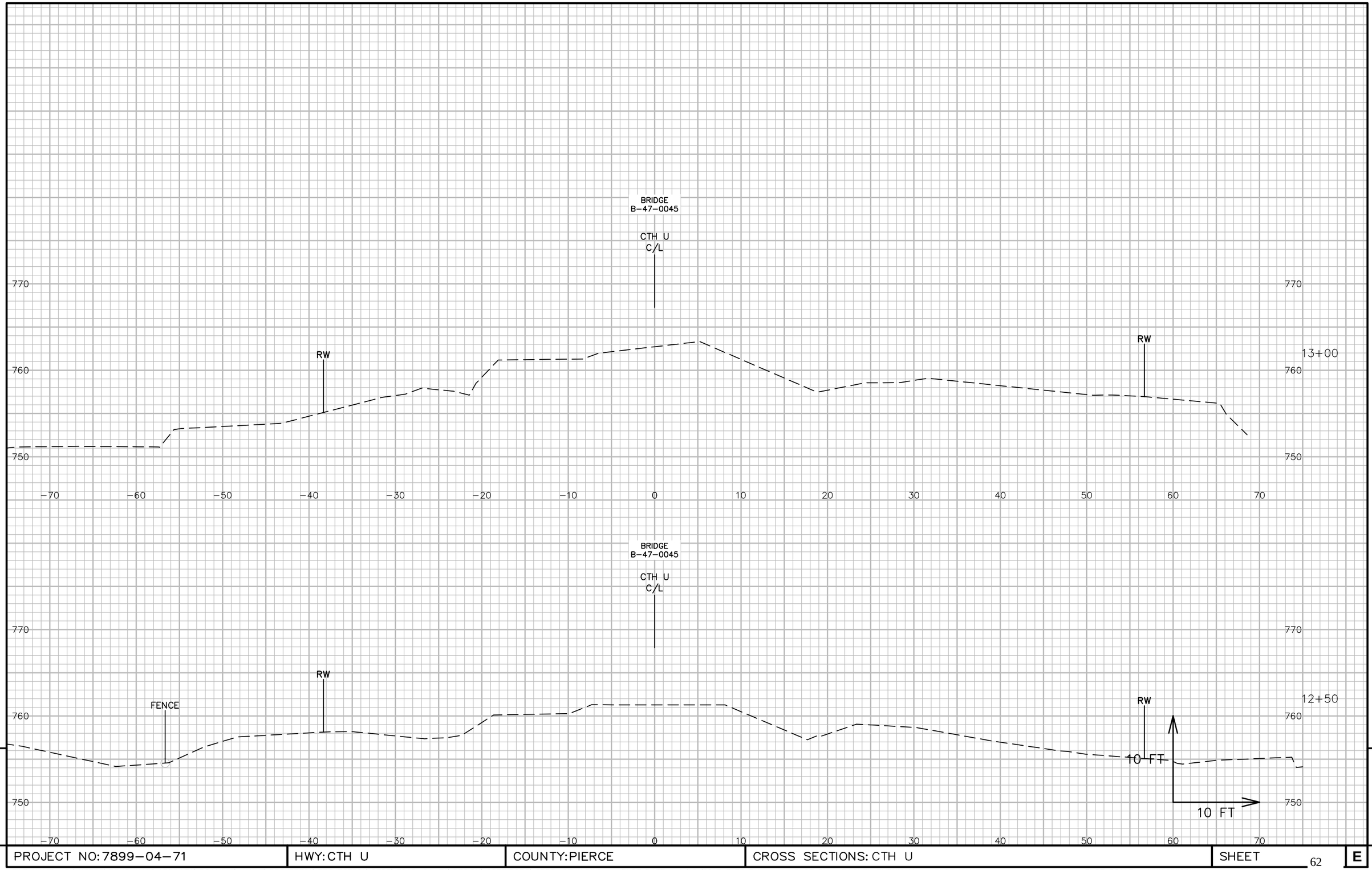
LAYOUT NAME - CRDR-CTHU - 07
PLOT DATE : 4/19/2017 3:33 PM
PLOT BY : RACHEL BURNHAM
PLOT NAME :
PLOT SCALE : ##########



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PROJECT NO: 7899-04-71	HWY: CTH U	COUNTY: PIERCE	CROSS SECTIONS: CTH U	SHEET 62	E

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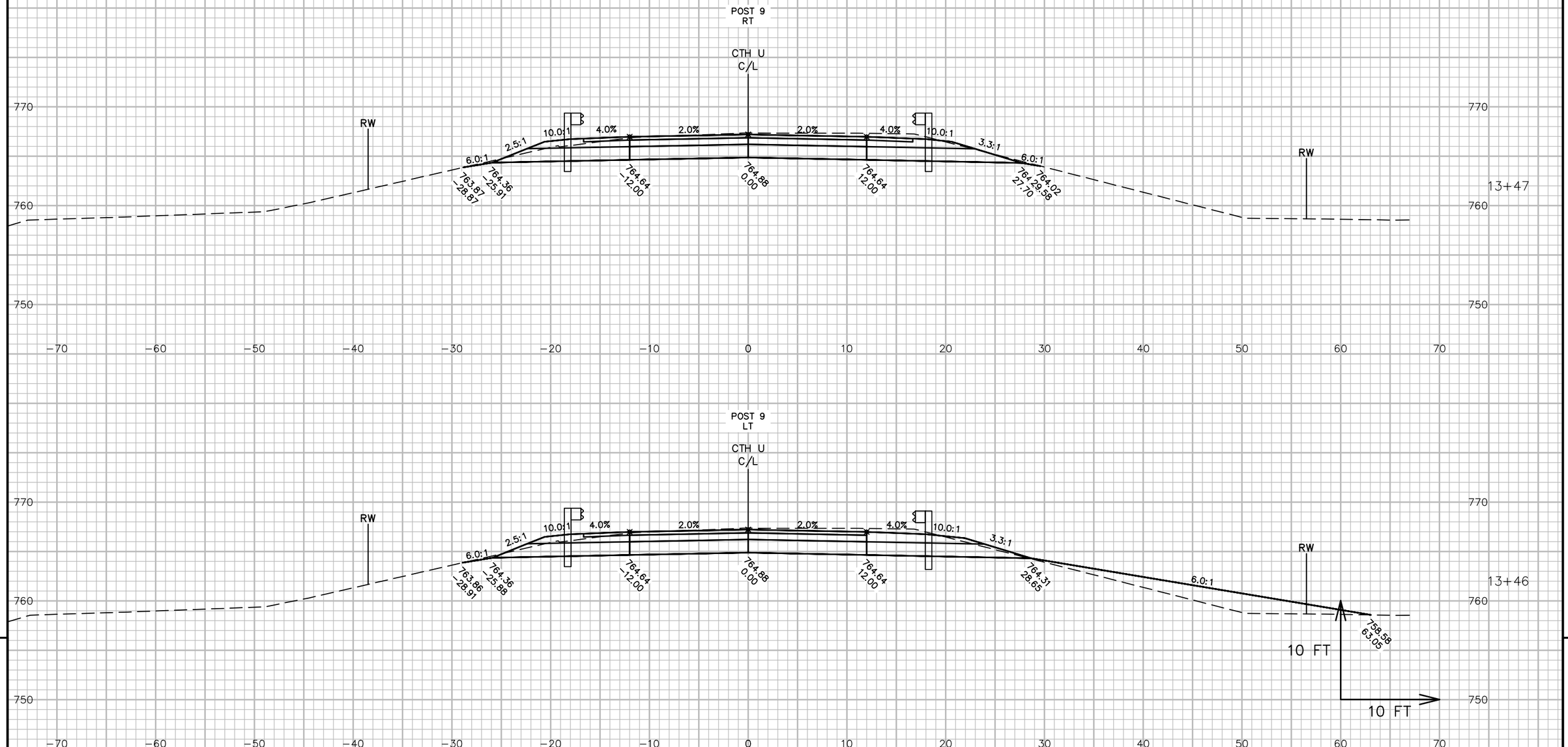
LAYOUT NAME - CRDR-CTHU - 07

WISDOT/CADDS SHEET 49



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LAYOUT NAME - CRDR-CTHU - 07
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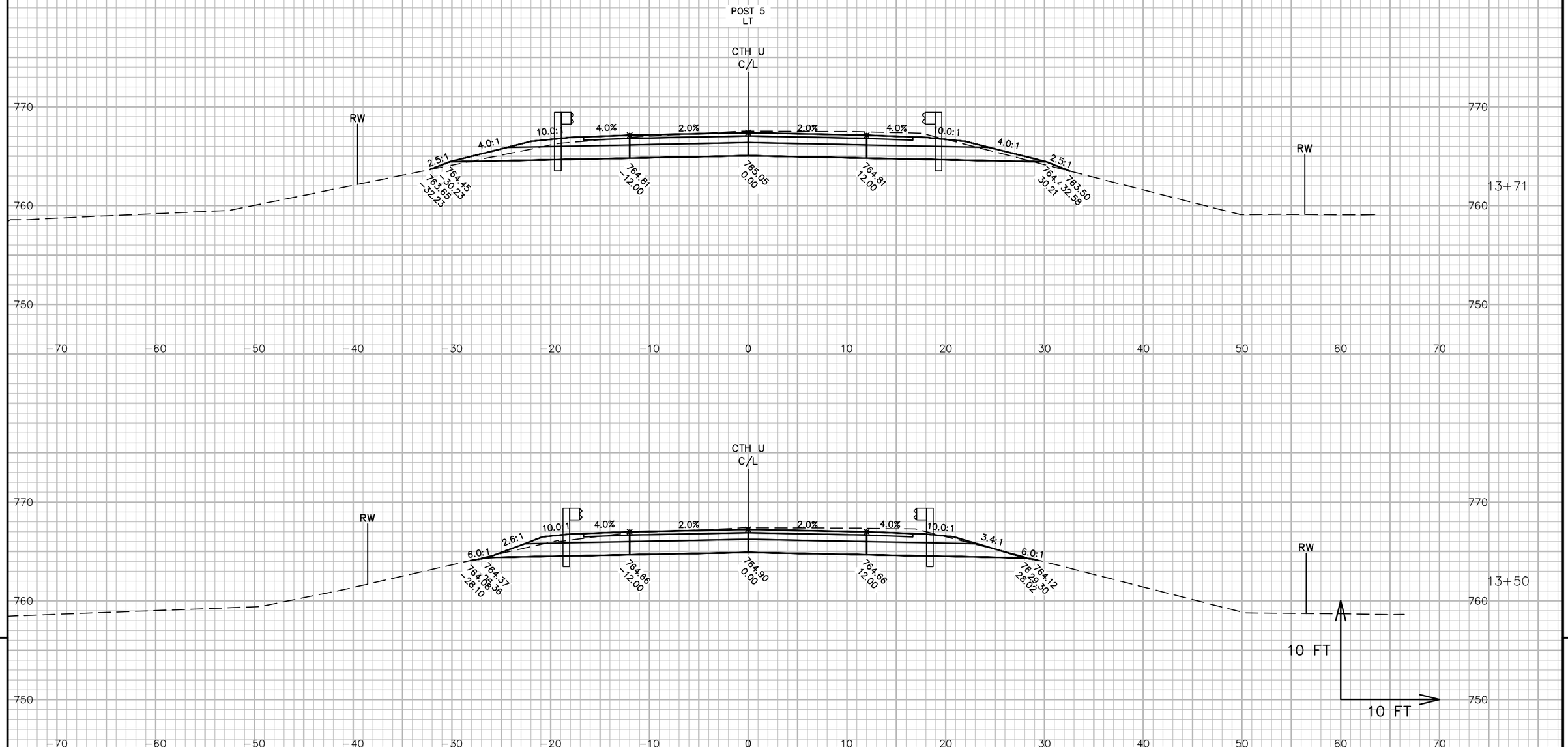
PLOT BY : RACHEL BURNHAM
PLOT NAME :
PLOT SCALE : ##########
WISDOT/CADDS SHEET 49



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LAYOUT NAME - CRDR-CTHU - 07
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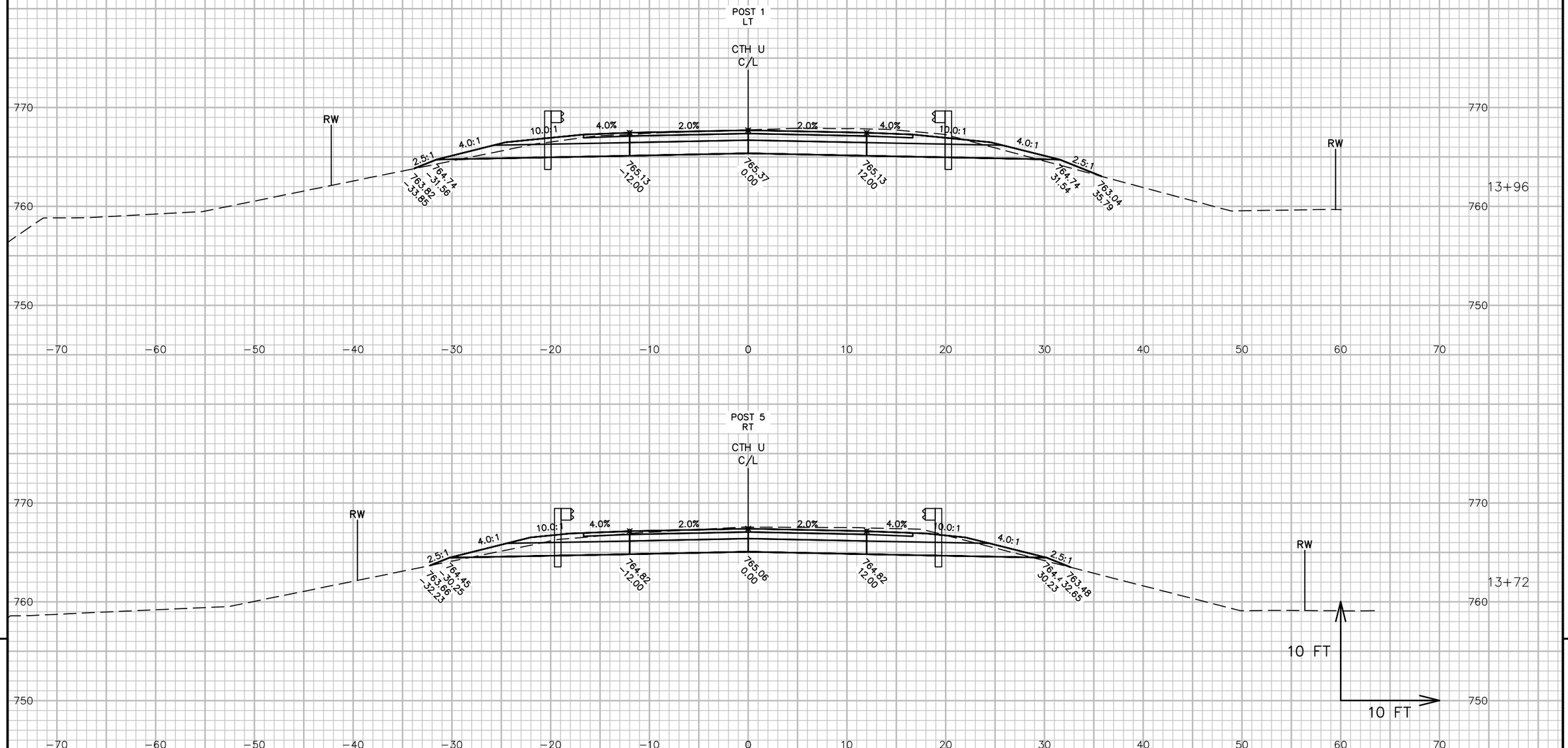
PLOT BY : RACHEL BURNHAM
PLOT NAME :
PLOT SCALE : ##########
WISDOT/CADDS SHEET 49



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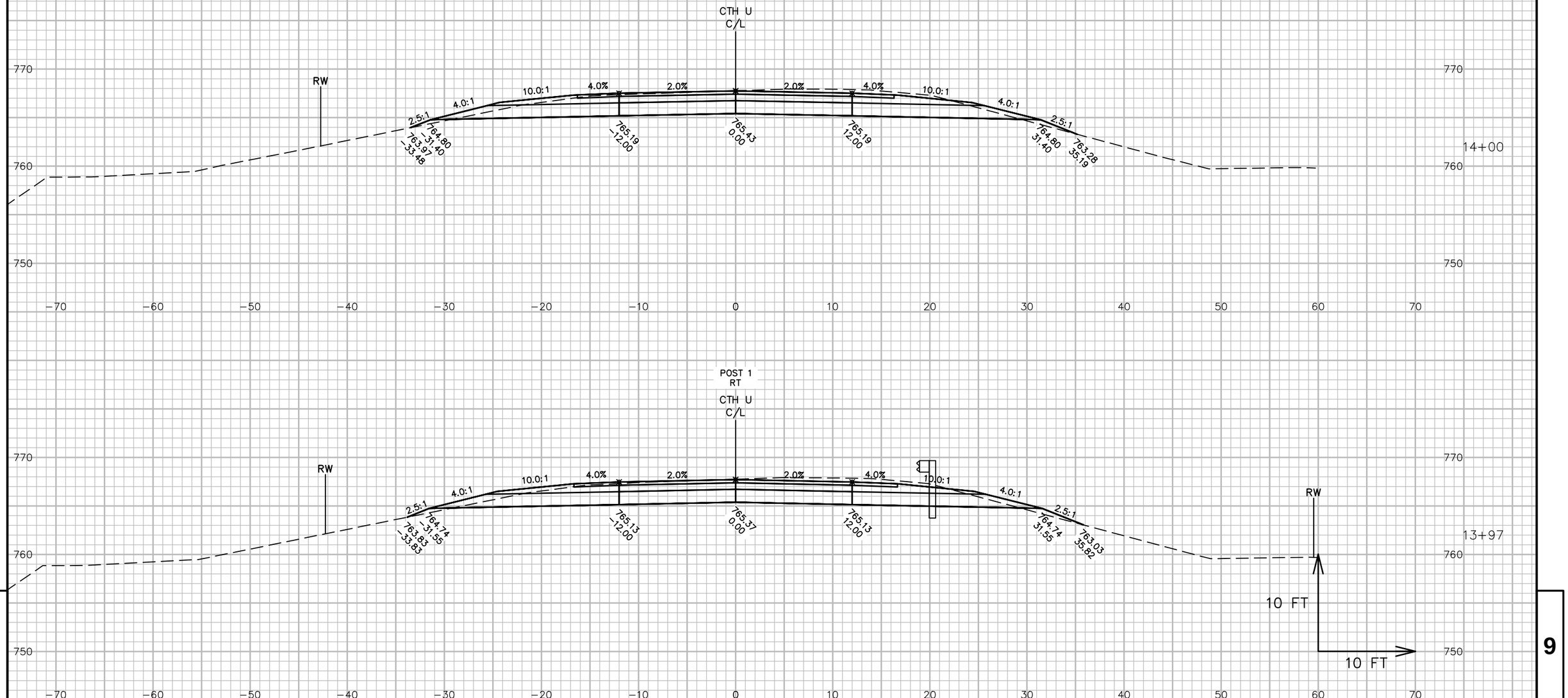
LAYOUT NAME - CRDR-CTHU - 07
PLOT DATE : 4/19/2017 3:34 PM PLOT BY : RACHEL BURNHAM PLOT NAME : PLOT SCALE : ##########



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PROJECT NO: 7899-04-71	HWY: CTH U	COUNTY: PIERCE	CROSS SECTIONS: CTH U	SHEET	E

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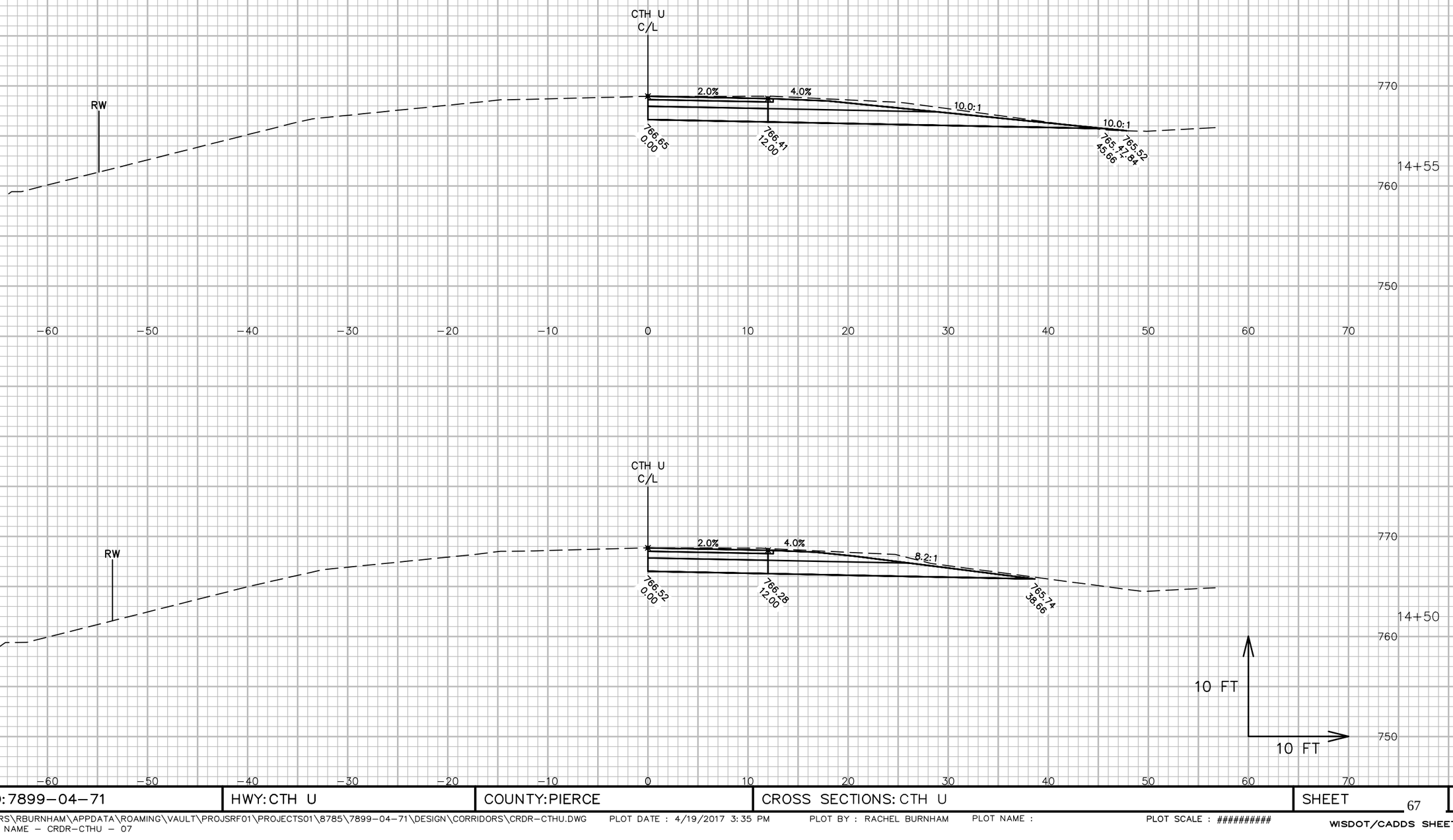
LAYOUT NAME - CRDR-CTHU - 07

PLOT DATE : 4/19/2017 3:34 PM PLOT BY : RACHEL BURNHAM PLOT NAME : PLOT SCALE : ##########

WISDOT/CADDS SHEET 49

END CONSTRUCTION



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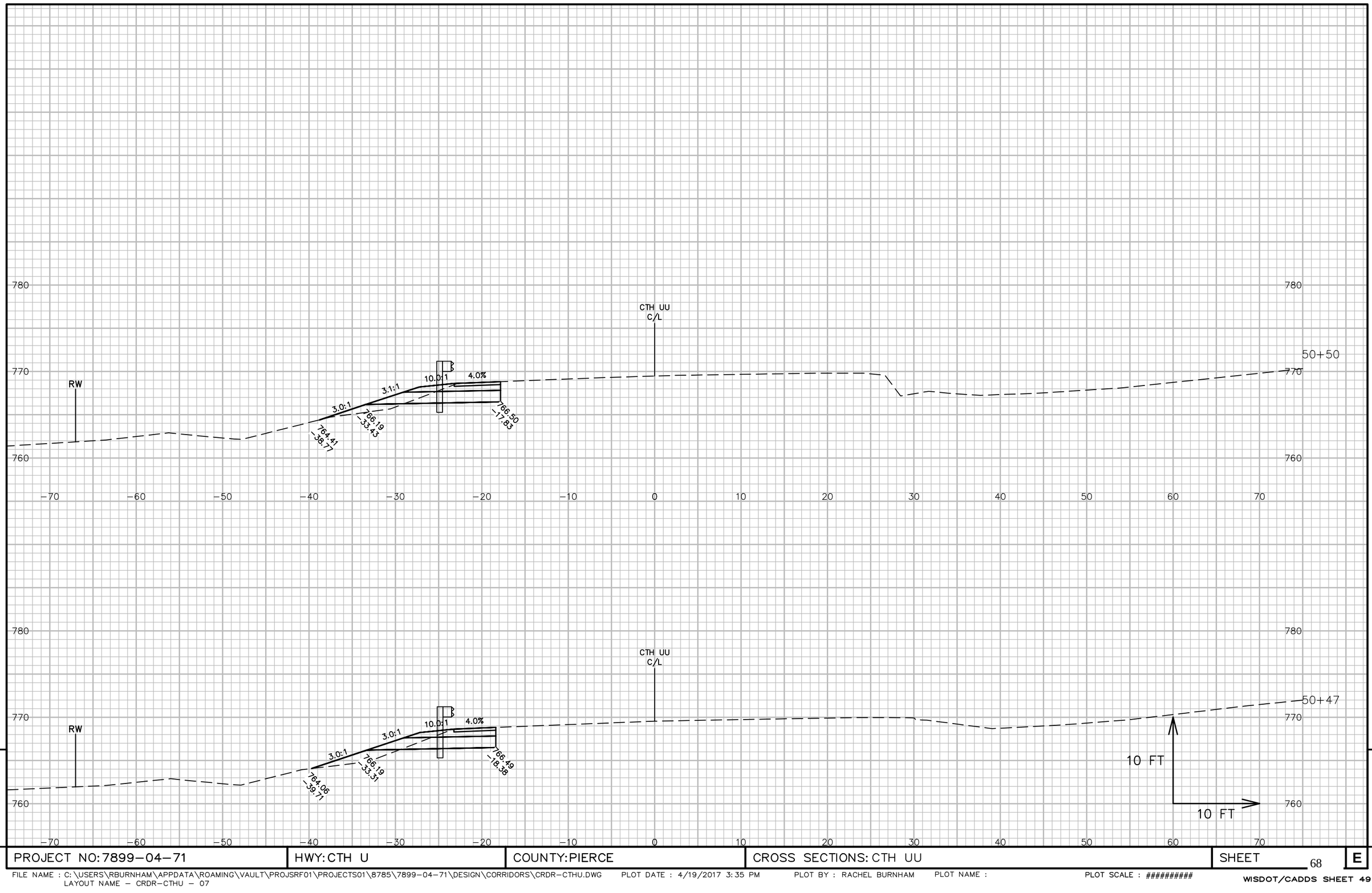

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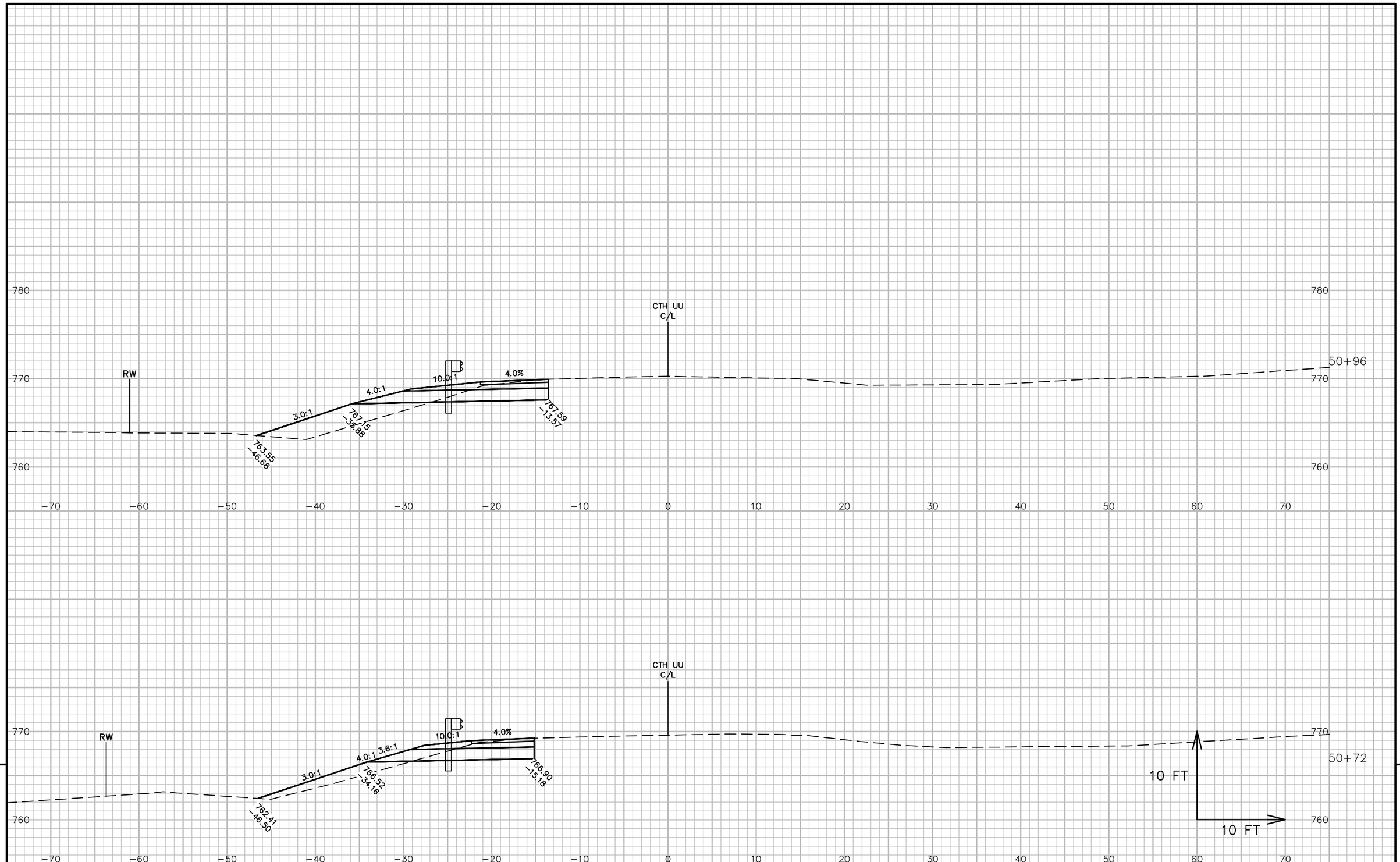
PROJECT NO: 7899-04-71	HWY: CTH U	COUNTY: PIERCE	CROSS SECTIONS: CTH UU	SHEET 68	E



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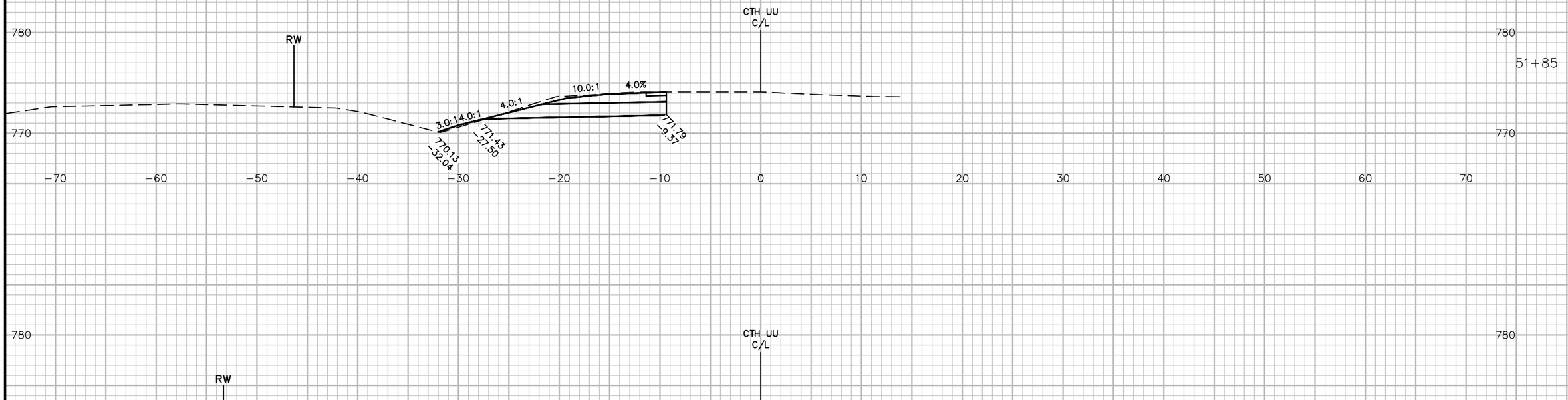
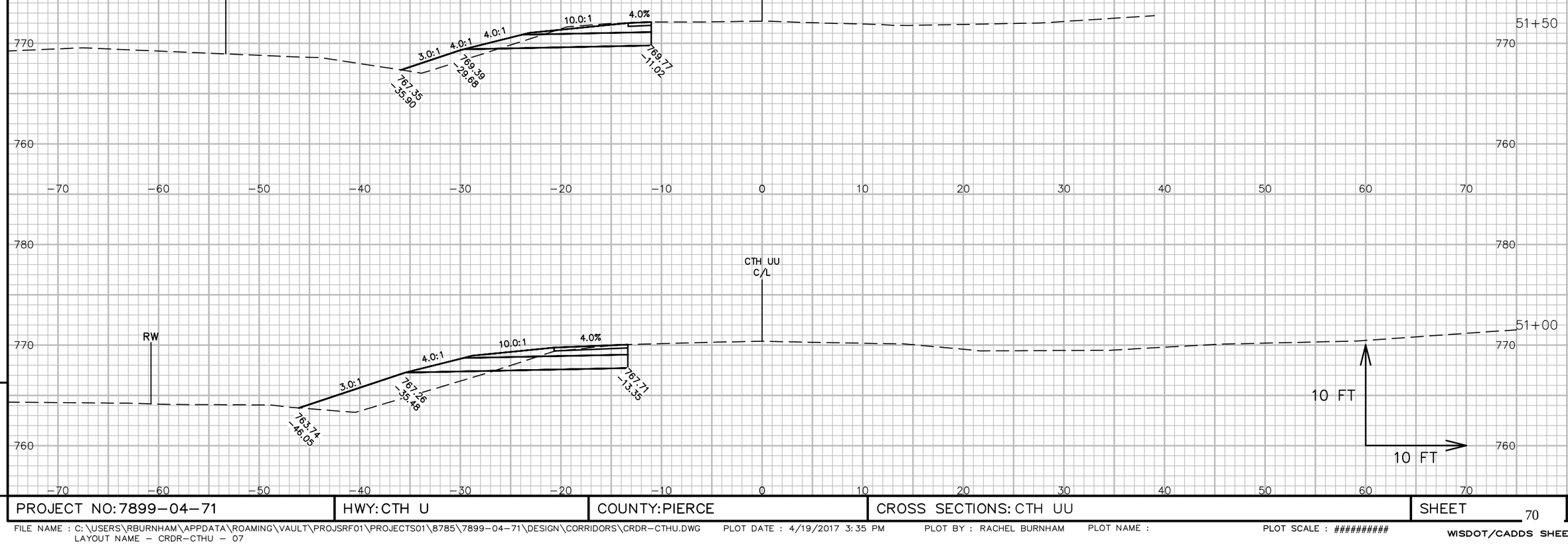
PROJECT NO: 7899-04-71	HWY: CTH U	COUNTY: PIERCE	CROSS SECTIONS: CTH UU	SHEET 69	E

FILE NAME : C:\USERS\RBURNHAM\APPDATA\ROAMING\VAULT\PROJSRF01\PROJECTS01\8785\7899-04-71\DESIGN\CORRIDORS\CRDR-CTHU.DWG
LAYOUT NAME - CRDR-CTHU - 07
PLOT DATE : 4/19/2017 3:35 PM
PLOT BY : RACHEL BURNHAM
PLOT NAME :
PLOT SCALE : ##########

END CONSTRUCTION





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PROJECT NO: 7899-04-71	HWY: CTH U	COUNTY: PIERCE	CROSS SECTIONS: CTH UU	SHEET 70	E

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LAYOUT NAME - CRDR-CTHU - 07
PLOT DATE : 4/19/2017 3:35 PM
PLOT BY : RACHEL BURNHAM
PLOT NAME :
PLOT SCALE : ##########

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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