EAU

PROJECT ID: 8793-00-70

WITH:

COUNTY: RUSK

43

MARCH 2018

ORDER OF SHEETS

TOTAL SHEETS = 82

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH P - GLEN FLORA

MAIN CREEK BRIDGE (B-54-0124)

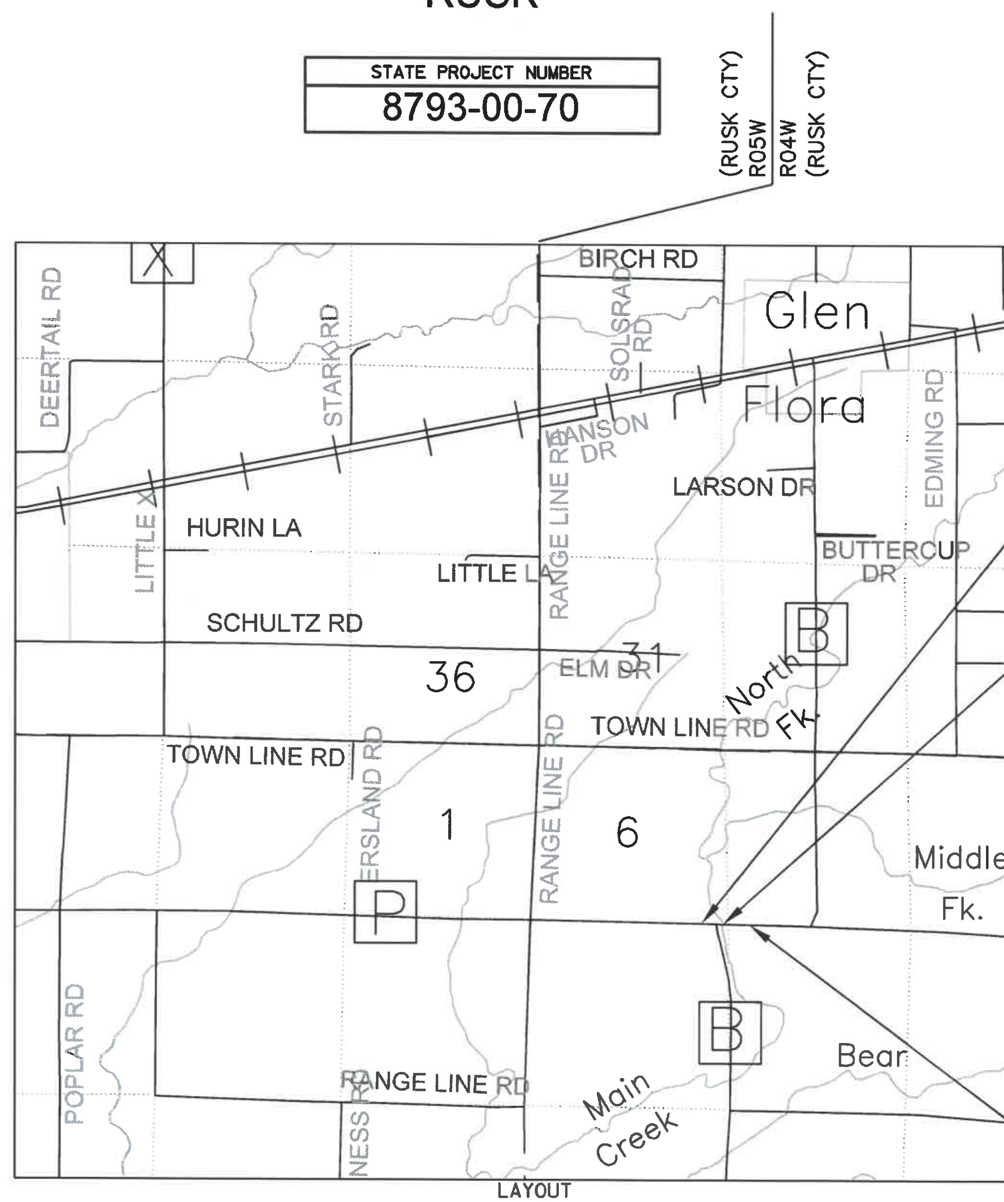
CTH B

RUSK

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8793-00-70		

STATE PROJECT NUMBER
8793-00-70

N



BEGIN PROJECT
STA. 7+00.00
Y: 558,712.25
X: 863,447.77

STRUCTURE
EX. P-54-091
PRO. B-54-0124

T35N (RUSK CTY)
T34N (RUSK CTY)

END PROJECT
STA. 13+00.00
Y: 558,706.76
X: 864,047.75

ACCEPTED FOR COUNTY OF RUSK

DATE: 10/11/17

(Signature)

ORIGINAL PLANS PREPARED BY:
MORGAN & PARMLEY, LTD.
PROFESSIONAL CONSULTING ENGINEERS
115 W. 2ND STREET SOUTH
LADYSMITH, WI 54848

STATE OF WISCONSIN ... GOTHAM E-19463 NEW AUBURN, WI PROFESSIONAL ENGINEER

10-16-17

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	MORGAN & PARMLEY, LTD.
Designer	MORGAN & PARMLEY, LTD.
Project Manager	KNIGHT A&E, INC.

APPROVED FOR THE DEPARTMENT

DATE: 10/27/17 (Signature)

E

DESIGN DESIGNATION 8793-00-70

A.A.D.T.	2018	=	450
A.A.D.T.	2038	=	600
D.H.V.		=	7.5
D.D.		=	60/40
T.		=	10%
DESIGN SPEED		=	55 MPH
ESALS		=	160,000

CONVENTIONAL SYMBOLS

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

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

UTILITIES
- ELECTRIC — E
- OVERHEAD UTILITY — OH
- FIBER OPTIC — FO
- GAS — G
- SANITARY SEWER — SAN
- STORM SEWER — SS
- TELEPHONE — T
- WATER — W
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

TOTAL NET LENGTH OF CENTERLINE = 0.114 MI

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

GENERAL NOTES:

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

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

ASPHALTIC SURFACE SHALL USE ½" (12.5mm) NOMINAL AGGREGATE IN BOTH THE UPPER AND LOWER LAYERS OF THE ASPHALT SURFACE.

WETLANDS ARE PRESENT AND MACHINERY SHALL NOT BE OPERATED OUTSIDE OF THE THE SLOPE INTERCEPT.

ALL DISTURBED AREAS WITHIN THE RIGHT OF WAY OUTSIDE OF THE IMPROVED SURFACES SHALL BE COVERED WITH SALVAGED TOPSOIL, FERTILIZER, SEED, TEMPORARY SEED AND MULCHED/EMAT AS DIRECTED ON THE PLANS AND BY THE ENGINEER.

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 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
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 = _____ ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = _____ACRES

LIST OF STANDARD ABBREVIATIONS

ABUT	ABUTMENT
AC	ACRES
AGG	AGGREGATE
ADDT	AVG. DAILY DESIGN TRAFFIC
ADT	AVERAGE DAILY TRAFFIC
AVG	AVERAGE
ASPH	ASPHALTIC
B-#	BORING - NUMBER
BAD	BASE AGGREGATE DENSE
BK	BACK
BM	BENCHMARK
BRG	BEARING
℄ , C/L	CENTERLINE
CONC	CONCRETE
CONST	CONSTRUCTION
COR	CORNER
CTH	COUNTY TRUNK HIGHWAY
CTR	CENTER
CY	CUBIC YARD
CWT	HUNDRED WEIGHT
DIA	DIAMETER
D	DEGREE OF CURVE
DHV	DESIGN HOURLY VOLUME
EBS	EXC. BELOW SUBGRADE
ELEV, EL	ELEVATION
ELEC	ELECTRICAL
EXC	EXCAVATION
EX	EXISTING
E	EAST
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HW	HIGH WATER
L, LEN	LENGTH
LF	LINEAR FOOT
LON	LENGTH OF NEED
L	LENGTH OF CURVE
LT	LEFT
LS	LUMP SUM
MAX	MAXIMUM
MIN	MINIMUM
N	NORTH
NE	NORTHEAST
NORM	NORMAL
NW	NORTHWEST
OHE	OVERHEAD ELECTRIC
P#	POST NUMBER
PAVT	PAVEMENT
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PRO	PROPOSED
PT	POINT OF TANGENCY
Q	FLOW
R	RANGE , RADIUS
REBAR	REINFORCEMENT BAR
RT	RIGHT
R/W	RIGHT-OF-WAY
S	SOUTH
SDD	STANDARD DETAIL DRAWING
SE	SOUTHEAST , SUPERELEVATION
SF	SQUARE FEET
SPECS	SPECIFICATIONS
SQ	SQUARE
STA	STATION
SW	SOUTHWEST
SY	SQUARE YARD
TAN	TANGENT
T	TRUCKS
TEL, T	TELEPHONE
TYP	TYPICAL
UNCL	UNCLASSIFIED
UG	UNDERGROUND
UGT	UNDERGROUND TELEPHONE
V	DESIGN SPEED
VEL	VELOCITY
VERT	VERTICAL
VPC	VERTICAL POINT OF CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
W	WEST

OTHER CONTACTS

DNR LIASON

AMY CRONK
D.N.R. NORTHWESTERN DISTRICT H.Q.
810 W. MAPLE STREET
SPOONER, WI. 54801 (715) 635-4229
EMAIL: Amy.Cronk@wisconsin.gov

DESIGN CONSULTANT

LARRY GOTHAM, PE
MORGAN & PARMLEY LTD.
115 W. 2ND STREET SOUTH
LADYSMITH WI. 54848 (715) 532-3721
EMAIL:lgotham@centurytel.net

RUSK COUNTY SURVEYOR

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RUSK COUNTY SURVEYOR
311 MINER AVE. EAST
LADYSMITH, WI 54848
(715) 532-2165
john@ruskcountywi.us

RUSK COUNTY HIGHWAY DEPARTMENT

SCOTT EMCH
RUSK COUNTY HIGHWAY COMMISSIONER
N2711 STH 27
LADYSMITH, WI 54848
(715) 532-2633
semch@ruskcountywi.us

UTILITIES

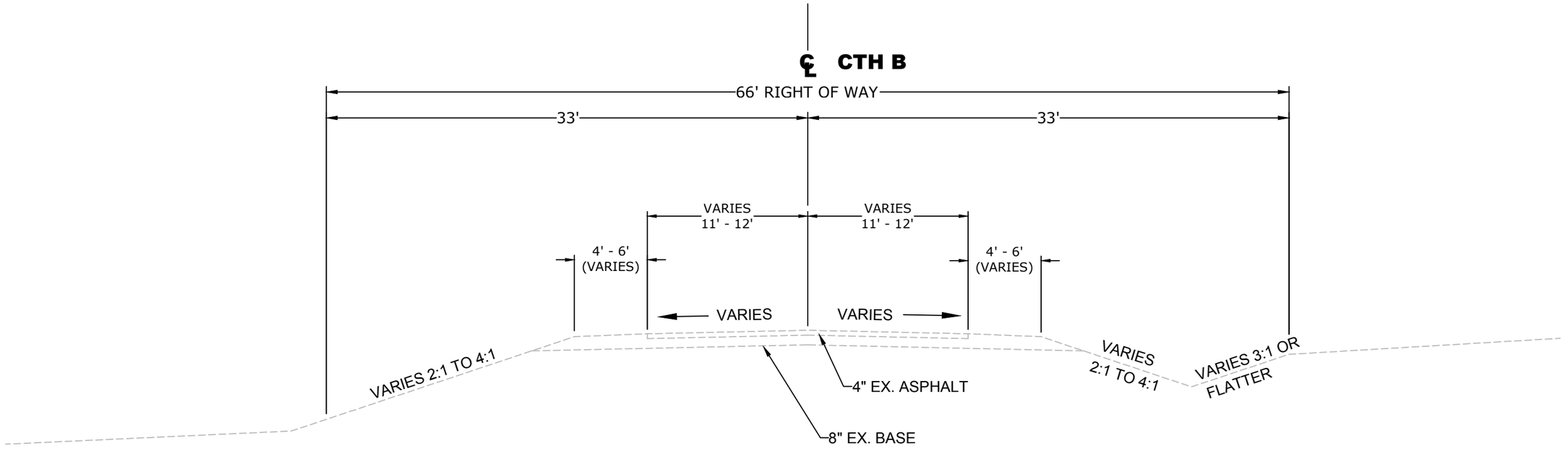
ELECTRIC

JUMP RIVER ELECTRIC CO-OPERATIVE
1102 W. 9TH STREET NORTH
LADYSMITH, WI 54848
ATTN: HANK LEW
(715) 532-5524
hlew@jrec.net

TELEPHONE

CENTURYLINK
425 ELLINGSON AVENUE
P.O. BOX 78
HAWKINNS, WISCONSIN 54530
ATTN: BRIAN HUHN
(715) 532-0023
brian.huhn@centurylink.com

2

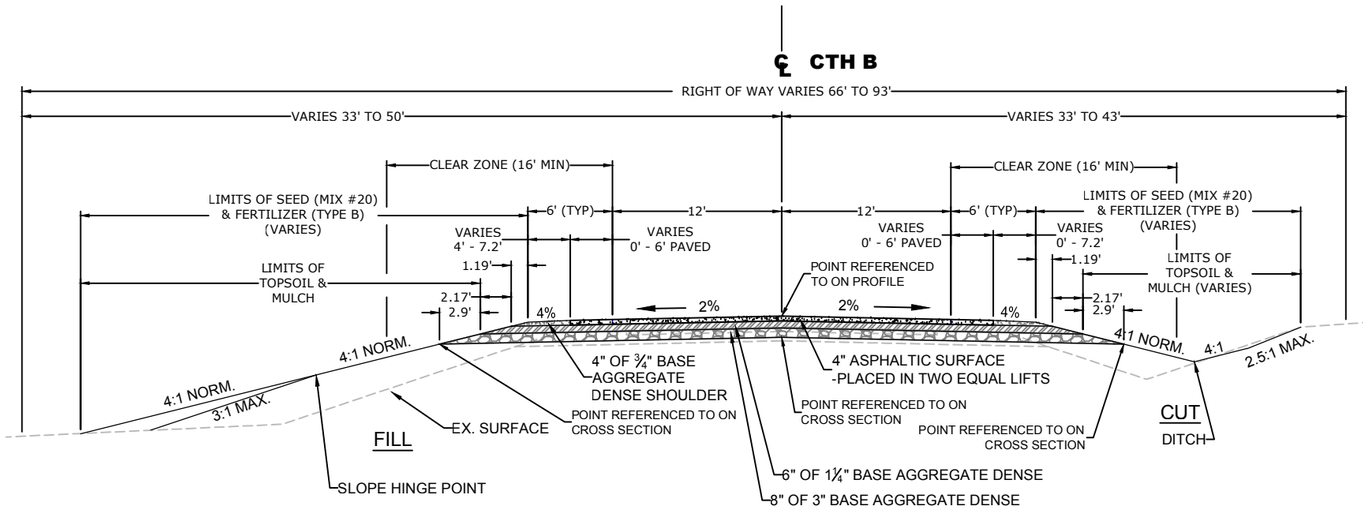


EXISTING TYPICAL SECTION - CTH B

-NOT TO SCALE-

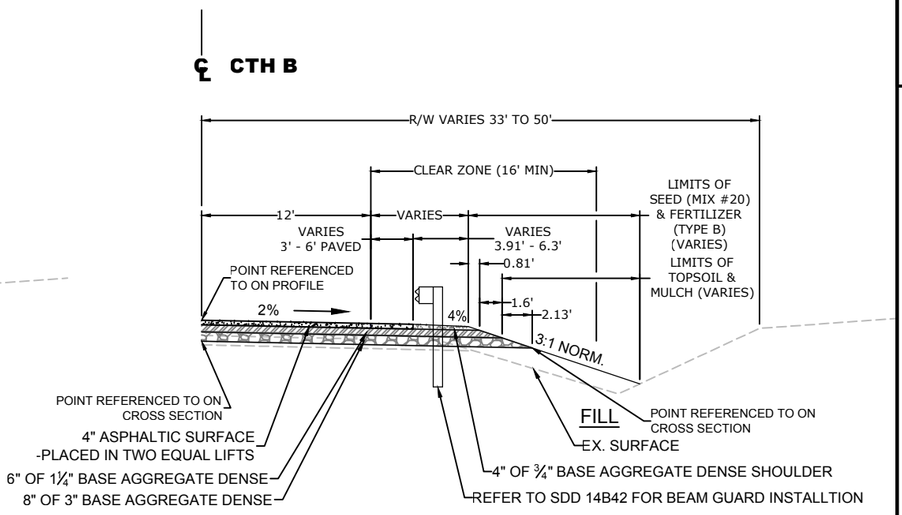
-STA. 7+00 TO STA. 13+00-

PROJECT NO:8793-00-70	HWY:CTH B	COUNTY:RUSK	EXISTING TYPICAL SECTION	SHEET 3	E



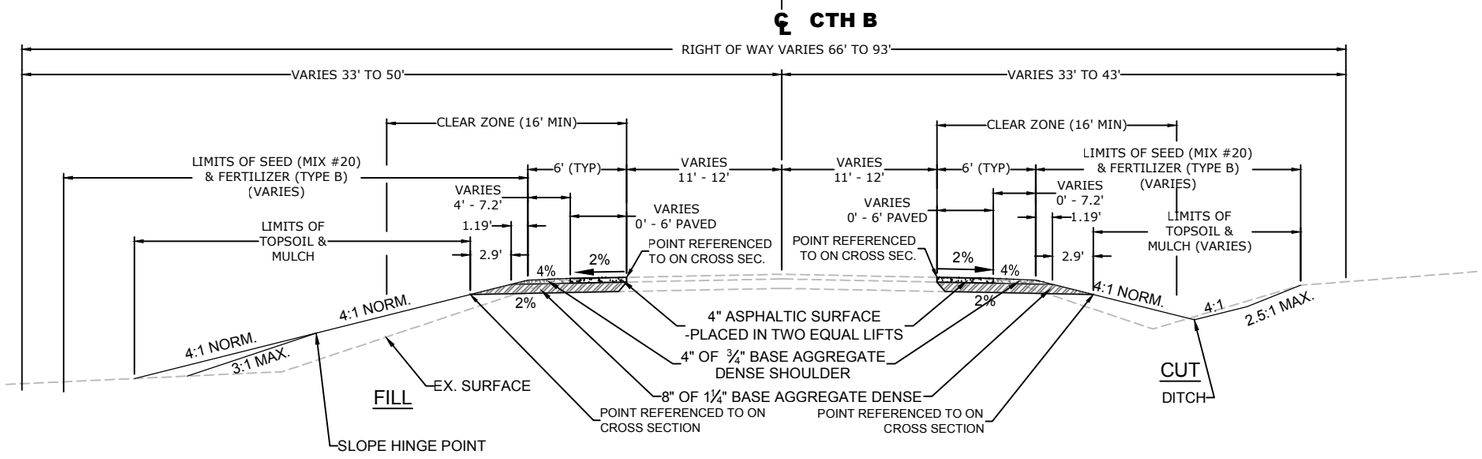
FINISHED TYPICAL SECTION - CTH B

-NOT TO SCALE-
-STA. 9+00 TO STA. 9+49.75-
-STA. 10+54.25 TO STA. 12+25-



FINISHED TYPICAL 1/2 SECTION w/ BEAM GUARD

-NOT TO SCALE-
-STA. 9+00 TO STA. 9+49.75-
-STA. 10+54.25 TO STA. 12+25-



FINISHED TYPICAL SECTION - CTH B SHOULDER WIDENING

-NOT TO SCALE-
-STA. 7+00 LT TO STA. 9+00 LT-
-STA. 12+25 TO STA. 13+00-

2

2

CL CTH B

R/W (TYP.)

MAIN CREEK

WETLAND PIT W2-1W

WETLAND PIT W2-1U

WETLAND PIT UPL-CON-NE

WETLAND PIT UPL-CON-SW

WETLAND PIT W1-1W

B-1

B-2

B-3

7+00 CL CTH P

8+00

9+00

10+00

11+00

12+00 CL CTH B

13+00

N 89° 28' 33" W

SE CORNER
Sec. 6, T34N-R4W
FOUND PK NAIL

S 0° 31' 27" W CL CTH B

6" ELM w/SIGN

CL CTH P

GRAPHIC SCALE
20 0 10 20 40 80
FEET

PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	EXISTING SITE PLAN	SHEET 5	E

FILE NAME : M:\M DRIVE\2015\2015-115 RUSK COUNTY MAIN CREEK BRIDGE - CTH B 8793-00-00\DRAWINGS\8793-00-70 EXISTING.DWG
LAYOUT NAME - ****

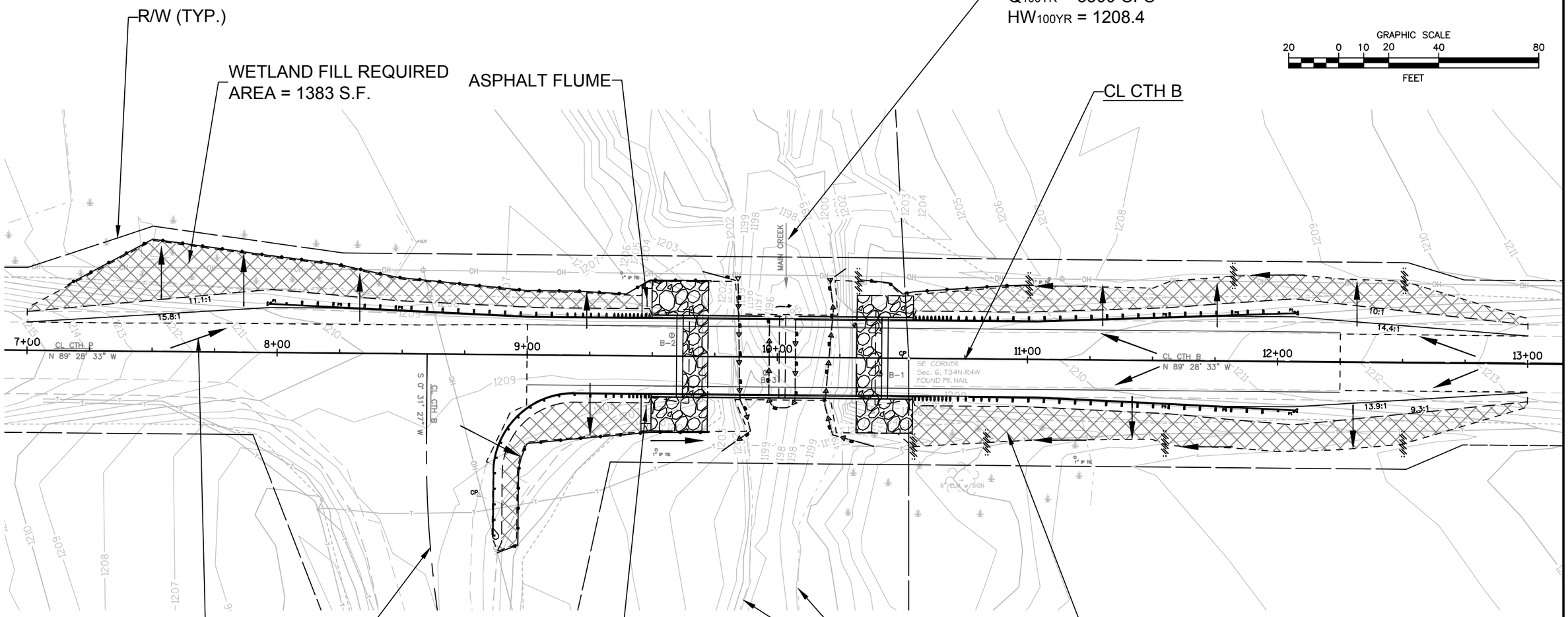
PLOT DATE : 10/11/2017 2:59 PM PLOT BY : ZECH GOTHAM PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

LEGEND

EROSION MAT (CLASS 1 TYPE B)
HEAVY RIP RAP
DITCH CHECK
SILT FENCE
SLOPE INTERCEPT
TURBIDITY BARRIER
WETLAND

GRAPHIC SCALE
20 0 10 20 40 80
FEET



PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	EROSION CONTROL	SHEET 6	E

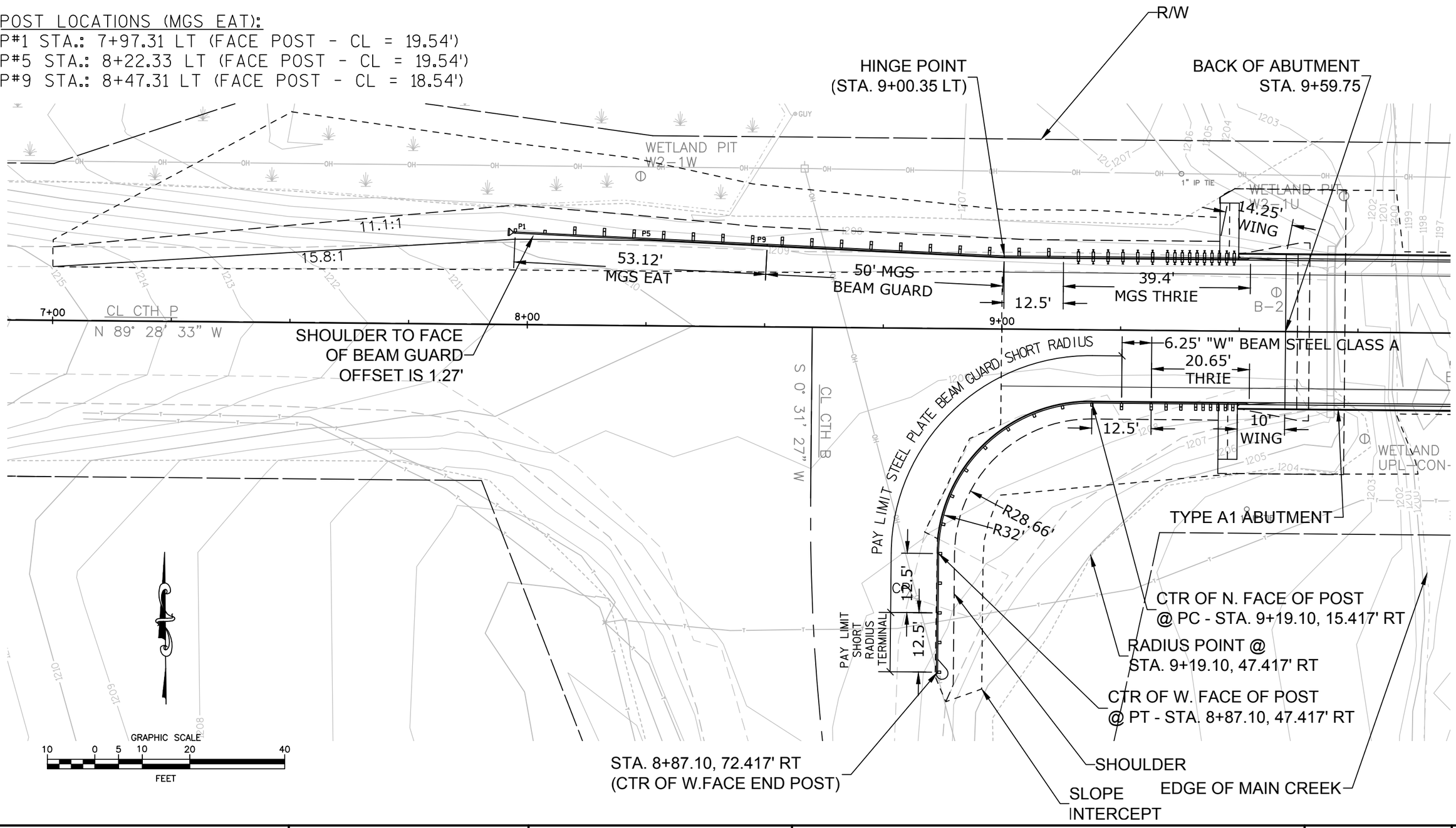
2

REFER TO STANDARD DETAIL DRAWINGS:

14 B 42	14 B 20
14 B 44	14 B 18
14 B 45	14 B 27

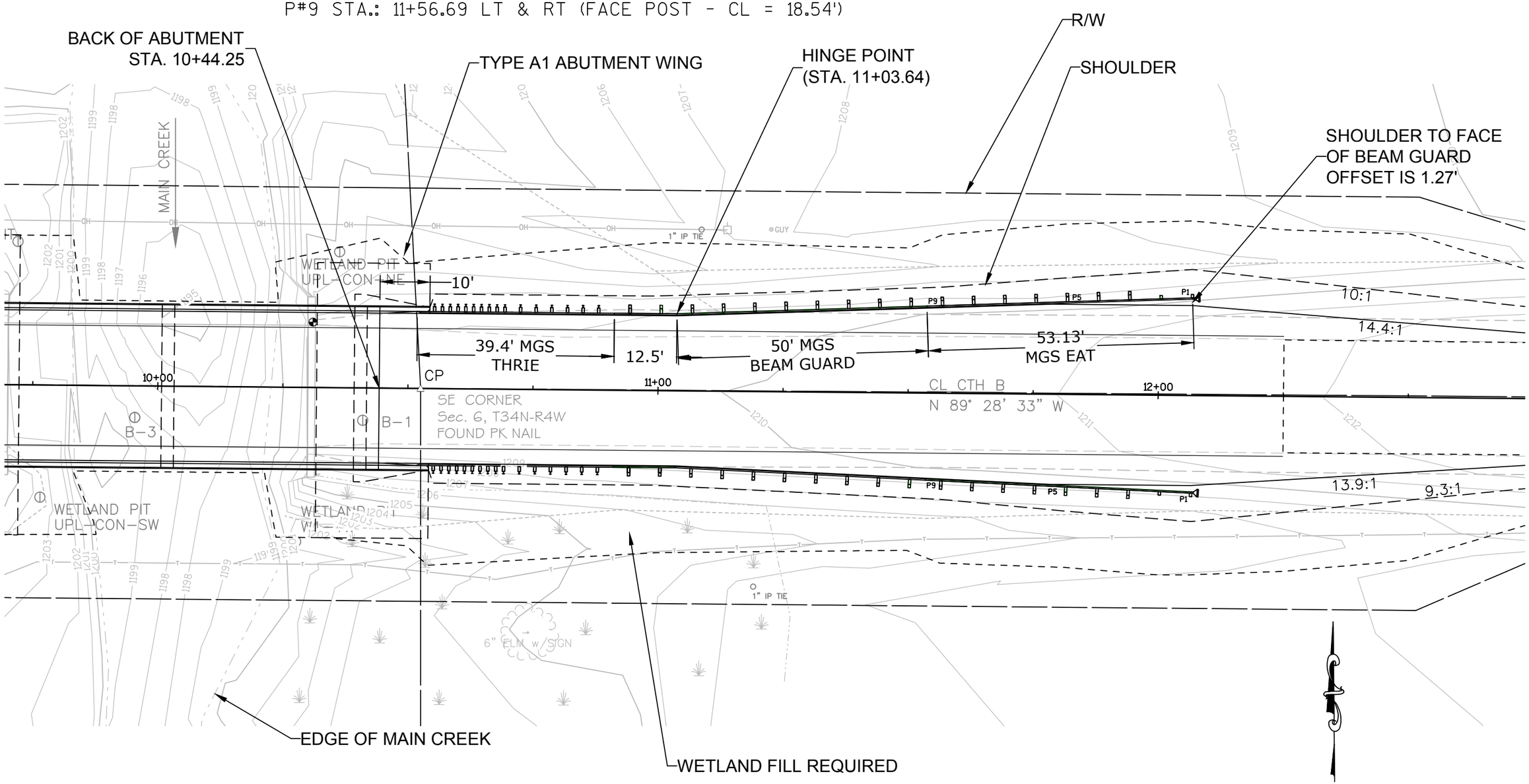
NOTE:
L.O.N. = 142'
Lprovided = 152' (NW, NE, SE QUADRANT)

POST LOCATIONS (MGS EAT):
P#1 STA.: 7+97.31 LT (FACE POST - CL = 19.54')
P#5 STA.: 8+22.33 LT (FACE POST - CL = 19.54')
P#9 STA.: 8+47.31 LT (FACE POST - CL = 18.54')



PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	CONSTRUCTION DETAIL: BEAM GUARD NW & SW QUADRANTS	SHEET 7	E

POST LOCATIONS (MGS EAT):
P#1 STA.: 12+06.69 LT & RT (FACE POST - CL = 19.54')
P#5 STA.: 11+81.67 LT & RT (FACE POST - CL = 19.54')
P#9 STA.: 11+56.69 LT & RT (FACE POST - CL = 18.54')



REFER TO STANDARD DETAIL DRAWINGS:
14 B 42
14 B 44
14 B 45

NOTE:
L.O.N. = 142'
Lprovided = 152'

GRAPHIC SCALE
10 0 5 10 20 40
FEET

PROJECT NO:8793-00-70	HWY:CTH B	COUNTY:RUSK	CONSTRUCTION DETAIL: MGS BEAM GUARD SE & NE QUADRANT	SHEET 8	E

8793-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00	LS	1.000	1.000
0008	205.0100	Excavation Common	CY	530.000	530.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-54-0124	LS	1.000	1.000
0012	208.1100	Select Borrow	CY	50.000	50.000
0014	210.1500	Backfill Structure Type A	TON	220.000	220.000
0016	213.0100	Finishing Roadway (project) 01. 8793-00-70	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	130.000	130.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	595.000	595.000
0022	305.0130	Base Aggregate Dense 3-Inch	TON	570.000	570.000
0024	455.0605	Tack Coat	GAL	71.000	71.000
0026	465.0105	Asphaltic Surface	TON	226.000	226.000
0028	465.0315	Asphaltic Flumes	SY	12.000	12.000
0030	502.0100	Concrete Masonry Bridges	CY	282.000	282.000
0032	502.3200	Protective Surface Treatment	SY	282.000	282.000
0034	502.3210	Pigmented Surface Sealer	SY	85.000	85.000
0036	505.0400	Bar Steel Reinforcement HS Structures	LB	6,040.000	6,040.000
0038	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	43,720.000	43,720.000
0040	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0042	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	440.000	440.000
0044	606.0300	Riprap Heavy	CY	140.000	140.000
0046	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	200.000	200.000
0048	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0050	614.0200	Steel Thrie Beam Structure Approach	LF	21.000	21.000
0052	614.0305	Steel Plate Beam Guard Class A	LF	7.000	7.000
0054	614.0345	Steel Plate Beam Guard Short Radius	LF	70.000	70.000
0056	614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH	1.000	1.000
0058	614.2300	MGS Guardrail 3	LF	188.000	188.000
0060	614.2500	MGS Thrie Beam Transition	LF	120.000	120.000
0062	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0064	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8793-00-70	EACH	1.000	1.000
0066	619.1000	Mobilization	EACH	1.000	1.000
0068	624.0100	Water	MGAL	1.000	1.000
0070	625.0500	Salvaged Topsoil	SY	850.000	850.000
0072	627.0200	Mulching	SY	100.000	100.000
0074	628.1504	Silt Fence	LF	500.000	500.000

8793-00-70

Line	Item	Item Description	Unit	Total	Qty
0076	628.1520	Silt Fence Maintenance	LF	500.000	500.000
0078	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0080	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0082	628.2004	Erosion Mat Class I Type B	SY	1,000.000	1,000.000
0084	628.6005	Turbidity Barriers	SY	280.000	280.000
0086	628.7504	Temporary Ditch Checks	LF	100.000	100.000
0088	629.0210	Fertilizer Type B	CWT	1.000	1.000
0090	630.0120	Seeding Mixture No. 20	LB	30.000	30.000
0092	630.0200	Seeding Temporary	LB	30.000	30.000
0094	633.5100	Markers Row	EACH	8.000	8.000
0096	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0098	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0100	638.2102	Moving Signs Type II	EACH	7.000	7.000
0102	638.4000	Moving Small Sign Supports	EACH	7.000	7.000
0104	642.5001	Field Office Type B	EACH	1.000	1.000
0106	643.0420	Traffic Control Barricades Type III	DAY	360.000	360.000
0108	643.0705	Traffic Control Warning Lights Type A	DAY	480.000	480.000
0110	643.0900	Traffic Control Signs	DAY	480.000	480.000
0112	643.5000	Traffic Control	EACH	1.000	1.000
0114	645.0111	Geotextile Type DF Schedule A	SY	70.000	70.000
0116	645.0120	Geotextile Type HR	SY	310.000	310.000
0118	650.4500	Construction Staking Subgrade	LF	241.000	241.000
0120	650.5000	Construction Staking Base	LF	241.000	241.000
0122	650.6500	Construction Staking Structure Layout (structure) 01. B-54-0124	LS	1.000	1.000
0124	650.9910	Construction Staking Supplemental Control (project) 01. 8793-00-70	LS	1.000	1.000
0126	650.9920	Construction Staking Slope Stakes	LF	496.000	496.000
0128	690.0150	Sawing Asphalt	LF	56.000	56.000
0130	715.0502	Incentive Strength Concrete Structures	DOL	2,820.000	2,820.000
0132	SPV.0195	Special 01. Select Crushed Material for Travel Corridor	TON	20.000	20.000

DETAILED SUMMARY OF MISCELLANEOUS QUANTITIES

CLEARING AND GRUBBING

STATION	TO	STATION	LOCATION	CLEARING 201.0105 (STA.)	GRUBBING 201.0205 (STA.)
11+00	TO	13+00	LT & RT	2	2
----	TO	----	--	-	-
ITEM TOTAL				2	2

EXCAVATION SUMMARY

Division	From/To Station	Location	Common Excavation (1) (Item 205.0100) (CY) Cut (2)	EBS Excavation (3)	Available Material	Unexpanded Fill	Expanded Fill (13) Factor 1.30	Mass Ordinate +/- (14)	Waste	Borrow (15)	Comment:
1	7+00 to 9+49.75	MAINLINE	226	0	226	178	231	-5			
Division 1 Subtotal			226	0	226	178	231	-5		5	See Note 15
2	10+54.25 to13+00	MAINLINE	304	0	304	261	339	-35			
Division 2 Subtotal			304	0	304	261	339	-35		35	See Note 15
Grand Total(s)			530	0	530	439	570	-40	0	40	
Total Common Excavation (CY)				530							

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100

2) Salvaged/Unsuable Pavement Material is included in Cut.

3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.

4) Salvaged/Unusable Pavement Material

5) Available Material = Cut - Salvaged/Unusuable Pavement Material

6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 205.0500

7) Rock Excavation item number 205.0200

8) Reduced Marsh in Fill - Excavated Marsh material is usuable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6

9) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8

10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.11

11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.11

12) Expanded Rock - Factor = 1.1.

13) Expanded Fill. Factor = 1.30

Depending on selections:	Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor
Or	Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor
Or	Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor
Or	***Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor***

14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

15) Both Division 1 and 2 require offsite borrow material to be imported. Borrow Excavation item number 208.0100

SELECT BORROW

DIVISION	STATION	TO	STATION	LOCATION	BORROW 208.1100 (CY)
1	7+00	TO	9+49.75	CTH B	5
2	10+54.25	TO	13+00	CTH B	35
UNDISTRIBUTED				CTH B	10
ITEM TOTAL					50

FINISHING ROADWAY (PROJECT)

STATION	TO	STATION	LOCATION	FINISHING 213.0100 (EACH)
7+00	TO	13+00	PROJECT	1
ITEM TOTAL				1

BASE AGGREGATE DENSE

STATION	TO	STATION	LOCATION	3/4" BAD [1] 305.0110 (TON)[2]	1 1/4" BAD 305.0120 (TON)[2]	3" BAD 305.0130 (TON)[2]
7+00 LT	TO	9+00 LT	CTH B	40	125	---
9+00	TO	9+59.75	CTH B	15	90	140
10+44.25	TO	12+25	CTH B	50	295	430
12+25	TO	13+00	CTH B	25	85	---
ITEM TOTAL				130	595	570

NOTES:
1. 3/4" B.A.D. IS TO BE USED AS SHOULDER MATERIAL.
2. UNIT WEIGHT OF 135 LBS/CF WAS UTILIZED IN CALCULATIONS.

TACK COAT

STATION	TO	STATION	LOCATION	TACK COAT 455.0605 (GAL)
7+00 LT	TO	9+00 LT	CTH B	7
9+00	TO	9+59.75	CTH B	15
10+44.25	TO	12+25	CTH B	46
12+25	TO	13+00	CTH B	3
ITEM TOTAL				71

ASPHALTIC SURFACE

STATION	TO	STATION	LOCATION	ASPHALTIC SURFACE 465.0105 (TON)
7+00 LT	TO	9+00 LT	CTH B	22
9+00	TO	9+59.75	CTH B	46
10+44.25	TO	12+25	CTH B	148
12+25	TO	13+00	CTH B	10
ITEM TOTAL				226

ASPHALTIC FLUME

STATION	TO	STATION	LOCATION	ASPH. FLUME 465.0315 (SY)
		9+47.75	LT	6
		9+47.75	RT	6
ITEM TOTAL				12

DETAILED SUMMARY OF MISCELLANEOUS QUANTITIES

BEAM GUARD SUMMARY

STATION	TO	STATION	LOCATION	STEEL PLATE BG THRIE BEAM 614.0200 (LF)	STEEL PLATE BG CLASS A 614.0305 (LF)	STL. PLATE BG SHORT RADIUS 614.0345 (LF) 1,2	STL. PLATE BG SHORT RADIUS TERMINAL 614.0390 (EACH)	MGS GUARDRAIL 614.2300 (LF)	MGS THRIE BEAM 614.2500 (LF)	MGS TERMINAL EAT 614.2610 (EACH)
7+97.31	TO	9+52.25	LT	---	---	---	---	62.5	39.4	1
8+87.1	TO	9+52.25	RT	20.65	6.25	69.02	1	---	---	---
10+51.25	TO	12+06.69	LT	---	---	---	---	62.5	39.4	1
10+51.25	TO	12+06.69	RT	---	---	---	---	62.5	39.4	1
ITEM TOTAL				21	7	70	1	188	120	3

NOTES:
1. STEEL PLATE BEAM GUARD SHORT RADIUS WITH A RADIUS OF 32'.
2. STEEL PLATE BEAM GUARD SHORT RADIUS HAS 11 CRT POST REQ'D.

MOBILIZATION

STATION	TO	STATION	LOCATION	MOBILIZATION 619.1000 (EACH)
7+00	TO	13+00	CTH B	0.4
		10+02	BRIDGE	0.6
ITEM TOTAL				1

SILT FENCE & SILT FENCE MAINTENANCE

STATION	TO	STATION	LOCATION	SILT FENCE 628.1504 (LF)	MAINTENANCE 628.1520 (LF)
7+16	TO	9+73	LT	266	266
9+00	TO	9+73	RT	123	123
10+33	TO	11+00	LT	69	69
		UNDISTRIBUTED	--	42	42
ITEM TOTAL				500	500

MOBILIZATION EROSION CONTROL

STATION	TO	STATION	LOCATION	EC MOBILIZATION 628.1905 (EACH)
7+00	TO	13+00	PROJECT	2
ITEM TOTAL				2

MOBILIZATION EMERGENCY EROSION CONTROL

STATION	TO	STATION	LOCATION	EM. MOBILIZATION 628.1910 (EACH)
7+00	TO	13+00	PROJECT	2
ITEM TOTAL				2

EROSION MAT CLASS 1 TYPE B

STATION	TO	STATION	LOCATION	EROSION MAT CL. 1 TYPE B 628.2004 (SY)
7+00	TO	9+46	LT	306
9+00	TO	9+46	RT	99
10+54	TO	13+00	LT	252
10+54	TO	13+00	RT	312
		UNDISTRIBUTED	--	31
ITEM TOTAL				1000

TURBIDITY

STATION	TO	STATION	LOCATION	TURBIDITY BARRIER 628.6005 (SY)
		9+85	W.ABUT	80
		10+02	PIER	107
		10+20	E.ABUT	80
		UNDISTRIBUTED	---	13
ITEM TOTAL				280

TEMPORARY DITCH CHECKS

STATION	TO	STATION	LOCATION	TEMPORARY DITCH CHECK 628.7504 (LF)
10+32	TO	12+50	LT	40
10+54	TO	12+50	RT	40
		UNDISTRIBUTED	--	20
ITEM TOTAL				100

SITE RESTORATION

STATION	TO	STATION	LOCATION	TOPSOIL SALVAGED 625.0500 (SY)	MULCHING 627.0200 (SY)	FERTILIZER TYPE B 629.0210 (CWT)	SEED MIX #20 630.0120 (LBS)	SEED TEMPORARY 630.0200 (LBS)
7+00	TO	9+46	LT	250	---	0.2	9	9
9+00	TO	9+46	RT	85	---	0.1	3	3
10+30	TO	13+00	LT	200	---	0.2	7	7
10+44	TO	13+00	RT	275	---	0.3	9	9
		UNDISTRIBUTED	---	40	100	0.2	2	2
ITEM TOTAL				850	100	1	30	30

MARKERS R.O.W.

STATION	LOCATION	MARKERS R.O.W. 633.5100 (EACH)
7+00	33.1' LT	1
7+50	50.09' LT	1
8+26.08	40.08' LT	1
9+33.61	42.57' RT	1
12+51.88	42.57' RT	1
12+51.88	40.08' LT	1
12+74.38	33.37' LT	1
12+74.38	32.63' RT	1
ITEM TOTAL		8

DETAILED SUMMARY OF MISCELLANEOUS QUANTITIES

OBJECT MARKER (B-54-0118)

STATION	LOCATION	POST-WOOD 4"X6"X14' 634.0614 (EACH)	SIGNS TYPE II REFLECTIVE F 637.2230 (SF)
9+49.75	LT & RT	2	6
10+54.25	LT & RT	2	6
ITEM TOTAL		4	12

MOVING SIGN SUPPORTS AND SIGNS

STATION	LOCATION	EXISTING SIGN COMMENTS	MOVING SIGNS TYPE II 638.2102 (EACH)	MOVING SIGN SUPPORT 638.4000 (EACH)
8+32.91	22.3' LT	ADVISORY	1	1
8+38.91	22.7' LT	ROAD NAME	1	1
8+41.41	22.9' LT	ROAD NAME	1	1
8+69.53	23.0' LT	ROUTE	1	1
8+94.85	32.6' RT	STOP SIGN	1	1
11+75.74	18.6' LT	ROAD NAME	1	1
11+76.19	21.0' LT	ROAD NAME	1	1
--	--	--	--	--
ITEM TOTAL			7	7

FIELD OFFICE

STATION	TO	STATION	LOCATION	FIELD OFFICE (B) 642.5001 (EACH)
7+00	TO	13+00	MAINLINE	0.25
9+59.75	TO	10+44.25	BRIDGE	0.75
ITEM TOTAL				1

TRAFFIC CONTROL

	LOCATION	BARRICADE TYPE III 643.0420 (DAY)	WARNING LIGHT TYPE A 643.0705 (DAY)	SIGNS 643.0900 (DAY)	TRAFFIC CNTL PROJECT 643.5000 (EACH)
CTH B	PER SDD 15C2-5A & B	360	480	480	1
CTH P	PER SDD 15C3-2	--	--	--	--
ITEM TOTAL		360	480	480	1

CONSTRUCTION STAKING

STATION	TO	STATION	LOCATION	STAKING SUBGRADE 650.4500 (LF)	STAKING BASE 650.5000 (LF)	STAKING STRUCTURE B-54-0124 650.6500 (LS) [1]	STAKING SUPPLIMENTAL CONTROL 650.9910 (LS)	STAKING SLOPE STAKES 650.9920 (LF)
7+00	TO	9+00	WIDENING LT	---	---	----	---	200
7+00	TO	13+00	PROJECT	---	---	---	1	--
9+00	TO	9+59.75	MAINLINE	60	60	---	---	50
9+49.75	TO	10+54.25	STRUCTURE	---	---	1	---	---
10+44.25	TO	12+25	MAINLINE	181	181	---	---	171
12+25	TO	13+00	MAINLINE	---	---	---	---	75
ITEM TOTAL				241	241	1	1	496

NOTES:
1. THIS IS A CATEGORY 0020 ITEM; THIS ITEM TO BE PAID FOR UNDER STRUCTURE PROJECT.

SAWING ASPHALT

STATION	TO	STATION	LOCATION	SAWING ASPHALT 690.0150 (LF)
		9+00	CTH B	33
		12+25	CTH B	23
		---	---	---
ITEM TOTAL				56

WATER

STATION	TO	STATION	LOCATION	WATER 624.0100 (MGAL)
UNDISTRIBUTED			CTH B	1
ITEM TOTAL				1

PROJECT ID: 8793-00-00
WITH: PROJECTID4

COUNTY: RUSK

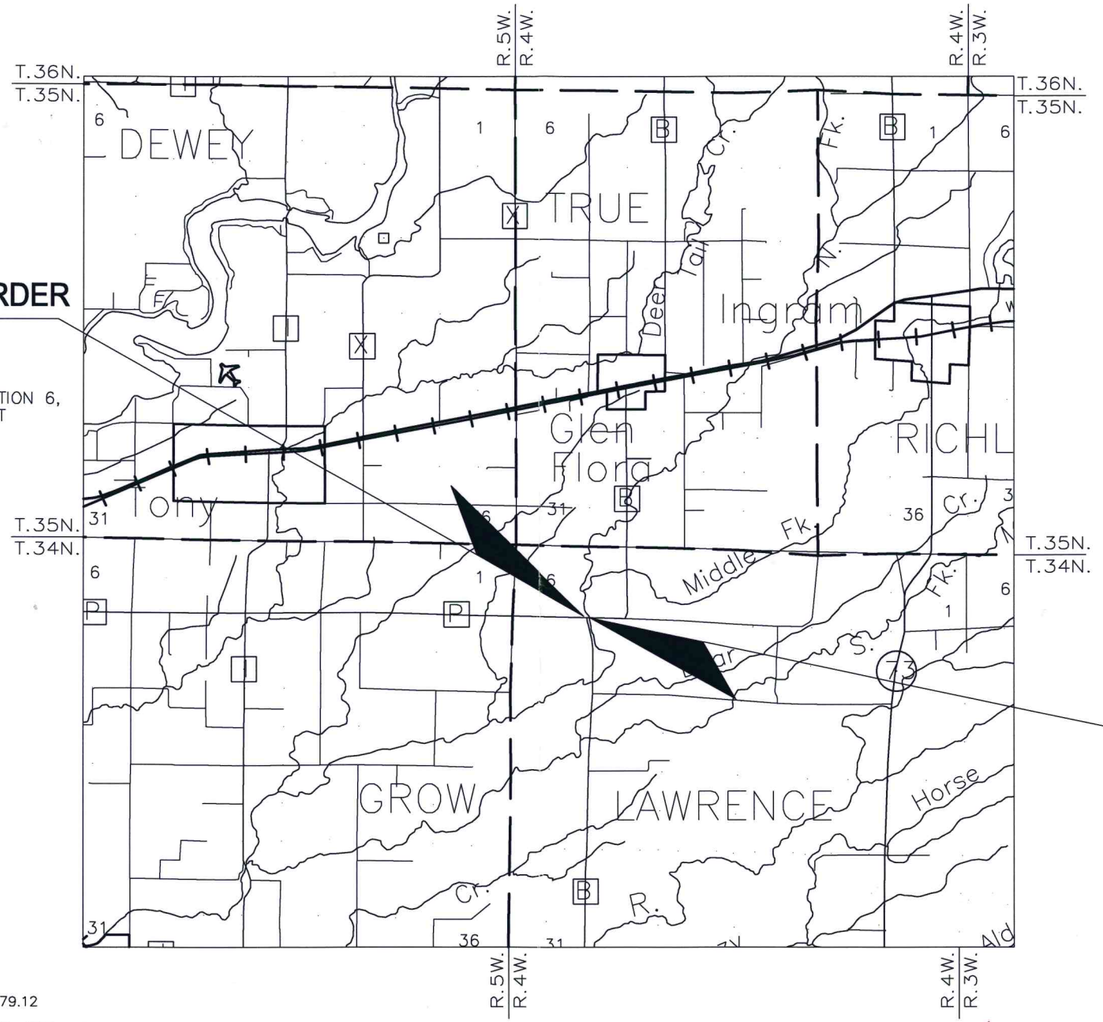
R/W PROJECT NUMBER	NUMBER	SHEET NUMBER	TOTAL NUMBER
8793-00-00		4.01	2
FEDERAL PROJECT NUMBER			

PLAT OF THE RIGHT-OF-WAY REQUIRED FOR

CTH P – GLEN FLORA
MAIN CREEK BRIDGE B-54-0124

CTH B — RUSK COUNTY

CONSTRUCTION PROJECT NUMBER
8793-00-70



BEGIN RELOCATION ORDER

PROJECT NO. 8793-00-00
STA. 7+00
22.07' SOUTH AND 2360.47' EAST
OF THE SOUTH ¼ CORNER OF, SECTION 6,
TOWNSHIP 34 NORTH, RANGE 4 WEST
Y: 558712.247
X: 863447.775

END RELOCATION ORDER

PROJECT NO. 8793-00-00
STA. 12+74.38
18.29' NORTH AND 2428.88' WEST OF THE
SOUTH ¼ CORNER OF, SECTION 5, TOWNSHIP
34 NORTH, RANGE 4 WEST
Y: 558706.991
X: 864022.133

N

CONVENTIONAL ABBREVIATIONS

CENTER LINE	CL
COUNTY TRUNK HIGHWAY	CTH
GRID NORTH	GN
LEFT	LT.
RIGHT	RT.
PAGE	P.
VOLUME	V.
PERMANENT LIMITED EASEMENT	PLE
PROPERTY LINE	PL
TEMPORARY LIMITED EASEMENT	TLE
STATION	STA
TOWNSHIP	T.
NORTH	N.
RANGE	R.
WEST	W.
SOUTH	S.
EAST	E.
NORTH GRID COORDINATE	Y
EAST GRID COORDINATE	X
CERTIFIED SURVEY MAP	CSM
RIGHT OF WAY	R/W

CONVENTIONAL SYMBOLS

REFERENCE LINE/CENTER LINE	
FENCE LINE	-x-x-x-x-x-
PROPERTY LINE	
SECTION LINE	
TEMPORARY LIMITED EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
SECTION CORNER	
TEMPORARY LIMITED EASEMENT	
FEE SIMPLE (HATCH VARIES)	
PERMANENT LIMITED EASEMENT	

STATION	4+79.12
DIMENSION LINE	
PARCEL NUMBER	(1)
UTILITY NUMBER	(42)
POINT NUMBER	(209)
FOUND 1" IRON PIPE	■
CALCULATED POINT	○
R/W MONUMENT 1"X18" IRON PIPE SET WEIGHING 1.68 LBS./LN. FT.	●

UTILITIES

OVER HEAD ELECTRIC	OHE
FIBER OPTIC	FO
GAS	G
SANITARY SEWER	SAN
STORM SEWER	SS
TELEPHONE	T
WATER	W
UTILITY PEDESTAL	
POWER POLE WITH GUY WIRE	
TELEPHONE POLE	

NOTES:

HORIZONTAL POSITIONS ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, RUSK COUNTY, NAD 83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

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

LAYOUT
SCALE 0 1 MI. 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.109 MI.

WISCONSIN
EZRA C. GOTHAM
S-3049
NEW AUBURN WI
SURVEYOR

EZRA GOTHAM
S-3049
MORGAN & PARMLEY LTD.

REVISION DATE:	

RUSK COUNTY

APPROVED FOR RUSK COUNTY
DATE: 3/2/17 (Signature)

E

FILE NAME : M:\M DRIVE\2015\2015-115 RUSK COUNTY MAIN CREEK BRIDGE – CTH B 8793-00-00\DRAWINGS\8793-00-70 RIGHT OF WAY MAP 3.DWG PLOT DATE : 3/8/2017 11:39 AM PLOT BY : EZRA GOTHAM PLOT NAME :

TOWN

OF

LAWRENCE

(1) DAVID BOESL II
V.595 P.572

(42) CENTURYLINK
V.232 P.131

JUMP RIVER ELECTRIC COOPERATIVE,
NOT OF RECORD IN TITLE REPORT

(2) JEFF MEULI AND DIANE MEULI
V.577 P.667

(42) CENTURYLINK
V.232 P.131

JUMP RIVER ELECTRIC COOPERATIVE,
NOT OF RECORD IN TITLE REPORT

CENTURYLINK
NOT OF RECORD IN TITLE REPORT
SW-SW SECTION 5

SE-SE SECTION 6

RUSK COUNTY CSM #1153

NW-NW SECTION 8

NE-NE SECTION 7

(3) BARRY S. CANFIELD
V.539 P.203

(41) JUMP RIVER ELECTRIC COOPERATIVE,
V.211 P.48

(42) CENTURYLINK
V.232 P.139

(4) DAVE MESSER, A MARRIED PERSON AND DENNIS ELLSWORTH, A MARRIED PERSON
V.481 P.114

(42) CENTURYLINK
V.232 P.150

T 34 N
R 4 W
6 / 7

T 34 N
R 4 W
5 / 8

T 34 N
R 4 W
6 5
7 8

GN

1" STEEL NAIL MARKER
Y: 558734.317
X: 861087.308
(225)

(202) 7+00.00 0.10' LT.
(203) 7+00.00 33.10' LT.
(204) 7+50.00 50.09' LT.
(205) 8+26.08 40.08' LT.
(206) 10+52.52 33.04' LT.
(207) 12+51.88 40.08' LT.
(222) 12+74.38 0.37' LT.
(208) 12+74.38 33.37' LT.
(224) 2" IRON PIPE
Y: 558688.700
X: 866451.011

52.81' N 71°45'16" E
76.74' S 81°58'44" E

PROPOSED SLOPE INTERCEPT

MAIN CREEK

S 89°28'33" E 425.80'
S 89°28'00" E 352.52'
N 89°33'36" W 221.86'
S 89°28'00" E 116.93'
S 89°33'36" E 221.82'
S 89°28'00" E 90.68'

PROPOSED B-54-0124

CL CTH P
CL CTH B
REFERENCE LINE /CL
SEC. LINE / PL

7+00 8+00 9+00 10+00 11+00 12+00 13+00

33' 66' 33'

(209) 7+00.00 32.90' RT.
(210) 7+90.68 32.92' RT.
N 21°11'35" W 148.36'
(211) 170.75' RT. 8+45.57
S 77°34'00" W 66.00'
(212) 9+09.89 155.95' RT.
(213) 9+33.61 42.57' RT.
S 12°20'27" W 115.84'
(214) 9+35.63 32.94' RT.
(215) 9+42.53 0.06' LT.
(218) 10+52.56 32.96' RT.
(219) 12+51.88 42.57' RT. N 66°42'33" E 24.60'
(220) 12+74.38 32.63' RT.
(221) 10+52.54 0.04' LT. FOUND PK NAIL Y: 558709.060 X: 863800.300

OHE

BEGIN RELOCATION ORDER

PROJECT NO. 8793-00-00
STA. 7+00
(201)
Y: 558712.247
X: 863447.775

(223) END RELOCATION ORDER

PROJECT NO. 8793-00-00
STA. 12+74.38
Y: 558706.991
X: 864022.133

BASIS OF EXISTING RIGHT OF WAY
66' PRESCRIPTIVE EASEMENT BASED ON RUSK COUNTY CSM # 1153 DEPICTING THE RIGHT OF WAY AS CENTERED ON THE SECTION LINE, THE SOUTH LEG OF CTH B IS BASED ON RIGHT OF WAY DEED V.65 P.440

LINE TABLE	
PT-PT	BEARING DISTANCE
215-214	S 12°20'27" W 33.71'
213-219	S 89°28'33" E 318.27'
225-221	S 89°28'00" E 2713.11'
221-224	N 89°33'36" W 2650.79'
222-221	N 89°33'36" W 221.84'
224-222	N 89°33'36" W 2428.95'
225-202	S 89°28'00" E 2360.57'
221-202	N 89°28'00" W 352.54'
209-203	N 00°31'27" E 66.00'
209-201	N 00°31'27" E 32.90'
201-202	N 00°31'27" E 0.10'
202-203	N 00°31'27" E 33.00'
201-223	S 89°28'33" E 574.38'
221-215	N 89°28'00" W 110.01'
220-222	N 00°31'27" E 33.00'
220-223	N 00°31'27" E 32.63'
223-222	N 00°31'27" E 0.37'
208-222	S 00°31'27" W 33.00'

Point No.	Northing (Y)	Easting (X)
201	558712.247	863447.775
202	558712.342	863447.776
203	558745.340	863448.078
204	558761.874	863498.231
205	558751.166	863574.218
206	558742.059	863800.581
207	558747.270	863999.999
208	558740.355	864022.438
209	558679.343	863447.474
210	558678.499	863538.146
211	558540.173	863591.780
212	558554.383	863656.232
213	558667.545	863680.989
214	558677.150	863683.091
215	558710.084	863690.296
218	558676.061	863800.020
219	558664.632	863999.243
220	558674.357	864021.834
221	558709.060	863800.300
222	558707.356	864022.136
223	558706.991	864022.133
224	558688.700	866451.011
225	558734.317	861087.308

SCHEDULE OF LANDS & INTERESTS REQUIRED

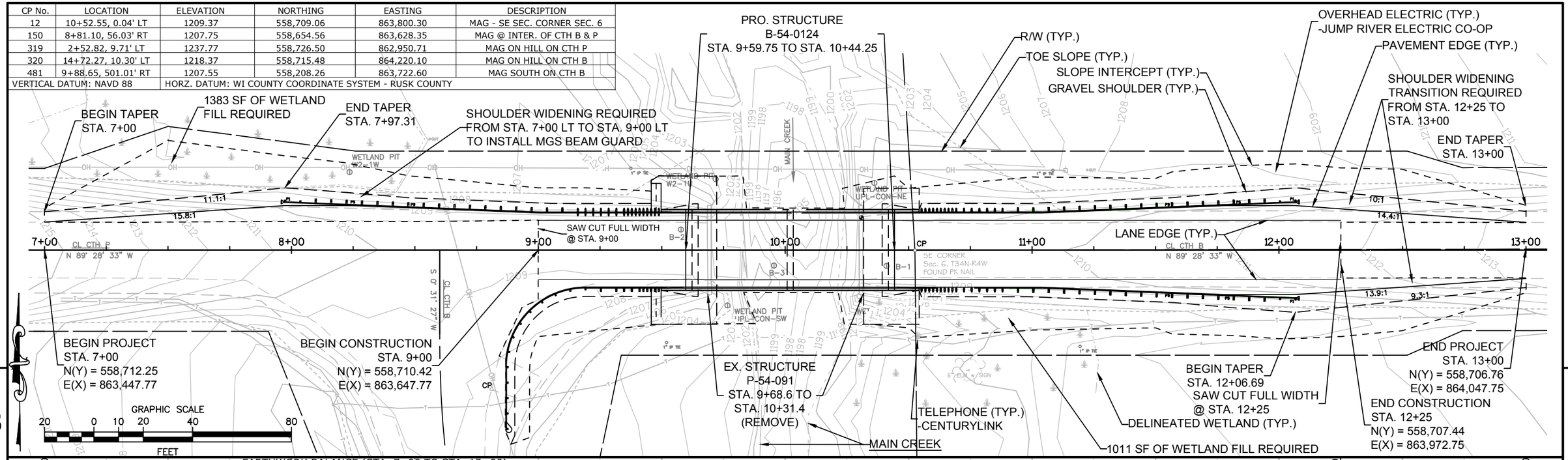
OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO RUSK COUNTY.

PARCEL NUMBER	SHEET NUMBER	OWNER(S)	INTEREST REQUIRED	NEW R/W	EXISTING R/W	TOTAL R/W	TLE ACRES	PLE ACRES
(1)	4.2	DAVID BOESL II V.595 P.572	FEE	0.06	0.23	0.29	----	----
(2)	4.2	JEFF MEULI AND DIANE MEULI V.577 P.667	FEE	0.04	0.21	0.25	----	----
(3)	4.2	BARRY S. CANFIELD V.539 P.203	FEE	0.03	0.09	0.12	----	----
(4)	4.2	DAVE MESSER, A MARRIED PERSON AND DENNIS ELLSWORTH, A MARRIED PERSON V.481 P.114	FEE	0.05	0.17	0.22	----	----
(41)	4.2	JUMP RIVER ELECTRIC COOPERATIVE	RELEASE OF RIGHTS	----	----	----	----	----
(42)	4.2	CENTURYLINK	RELEASE OF RIGHTS	----	----	----	----	----

NOTES: HORIZONTAL POSITIONS ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, RUSK COUNTY, NAD 83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

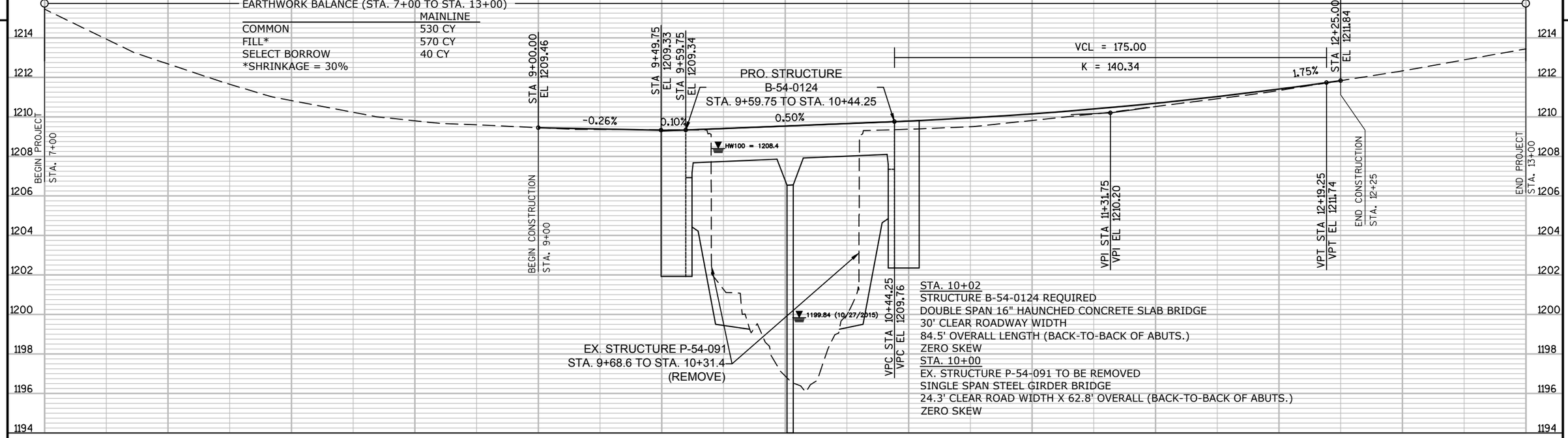
REVISION DATE	DATE 1/9/2017	SCALE FEET 0 25 50 75	HWY: CTH B	PROJECT NUMBER 8793-00-00	SHEET 4.02	
	GRID FACTOR		COUNTY: RUSK	CONSTRUCTION PROJECT NUMBER 8793-00-70	PS&E SHEET 15	E

CP No.	LOCATION	ELEVATION	NORTHING	EASTING	DESCRIPTION
12	10+52.55, 0.04' LT	1209.37	558,709.06	863,800.30	MAG - SE SEC. CORNER SEC. 6
150	8+81.10, 56.03' RT	1207.75	558,654.56	863,628.35	MAG @ INTER. OF CTH B & P
319	2+52.82, 9.71' LT	1237.77	558,726.50	862,950.71	MAG ON HILL ON CTH P
320	14+72.27, 10.30' LT	1218.37	558,715.48	864,220.10	MAG ON HILL ON CTH B
481	9+88.65, 501.01' RT	1207.55	558,208.26	863,722.60	MAG SOUTH ON CTH B
VERTICAL DATUM: NAVD 88		HORZ. DATUM: WI COUNTY COORDINATE SYSTEM - RUSK COUNTY			



EARTHWORK BALANCE (STA. 7+00 TO STA. 13+00)

	MAINLINE
COMMON	530 CY
FILL*	570 CY
SELECT BORROW	40 CY
*SHRINKAGE = 30%	



PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	PLAN AND PROFILE: CTH B	SHEET 16	E

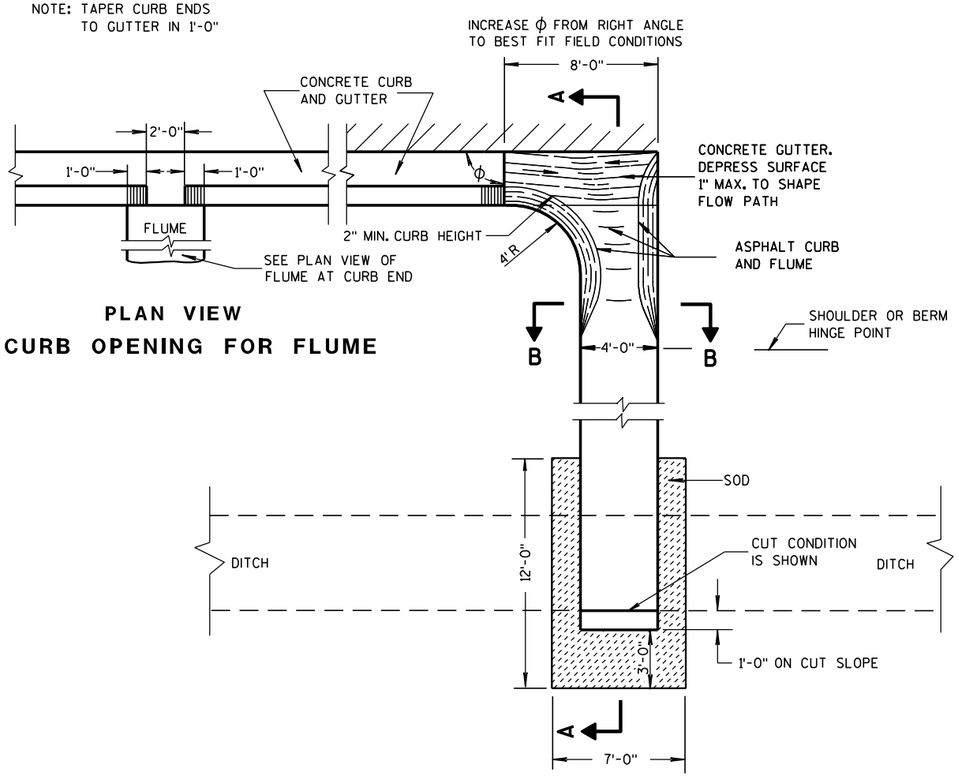
FILE NAME : M:\M DRIVE\2015\2015-115 RUSK COUNTY MAIN CREEK BRIDGE - CTH B 8793-00-00\DRAWINGS\8793-00-70 PLANS.DWG
LAYOUT NAME - ****
PLOT DATE : 10/11/2017 2:41 PM PLOT BY : ZECH GOTHAM PLOT NAME : PLOT SCALE : **********

WISDOT/CADDS SHEET 44

Standard Detail Drawing List

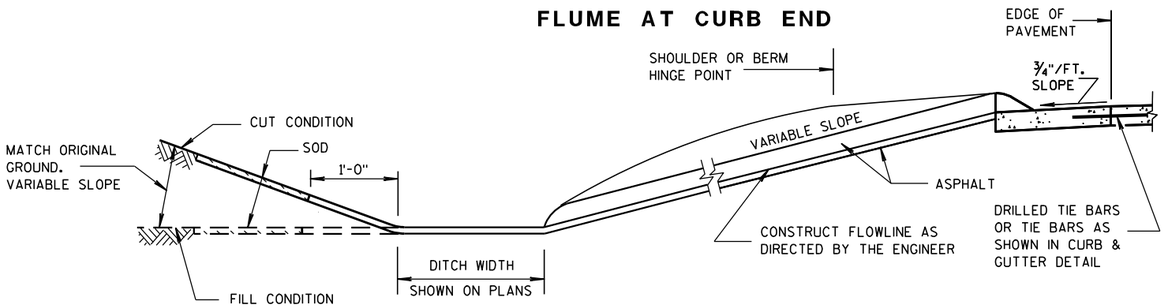
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
12A03-10	NAME PLATE (STRUCTURES)
14B15-10A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-10B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-10C	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
14B20-11B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-03A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03C	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)
14B53-01A	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01B	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01C	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01D	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01E	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01F	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01G	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01H	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01I	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
15A01-13A	MARKER POST FOR RIGHT-OF-WAY
15A01-13B	FLEXIBLE MARKER POST FOR RIGHT-OF-WAY
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C03-03	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES

ASPHALTIC FLUME

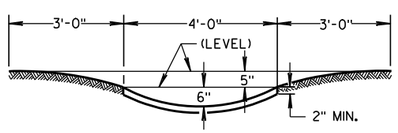


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

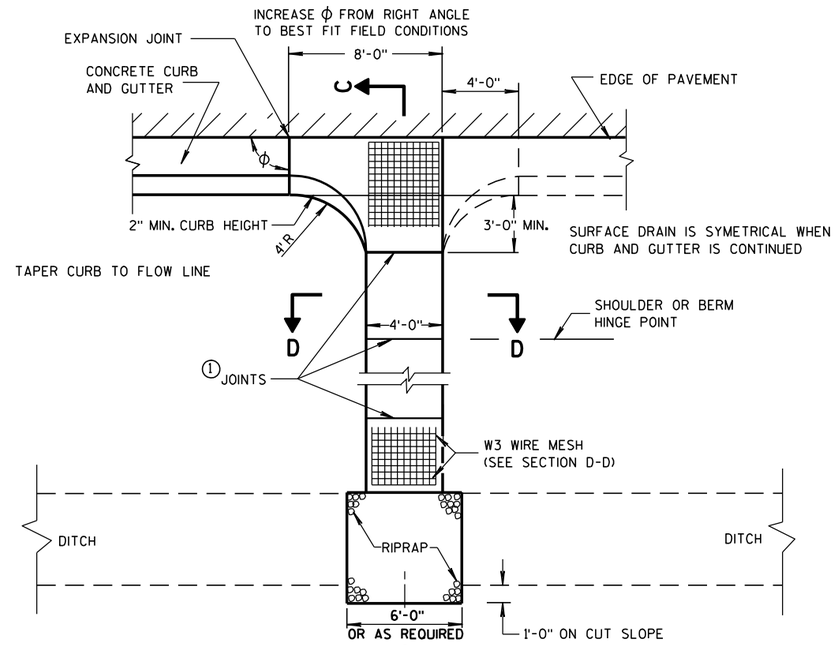
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

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

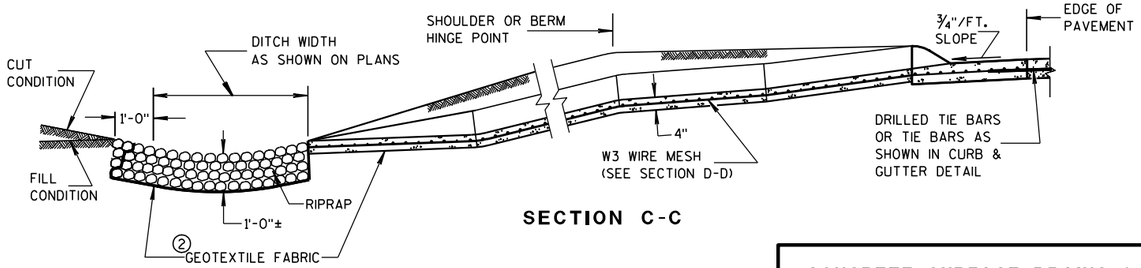
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

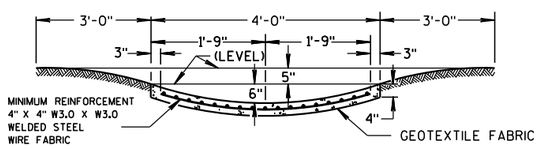
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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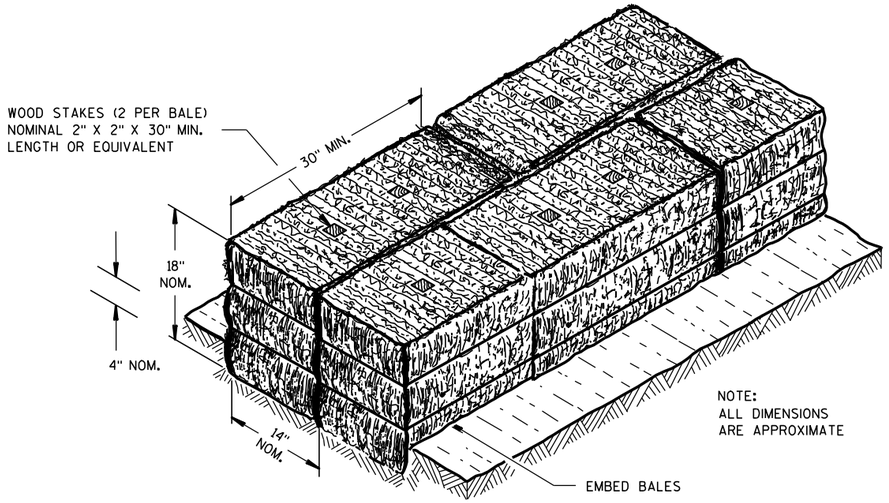
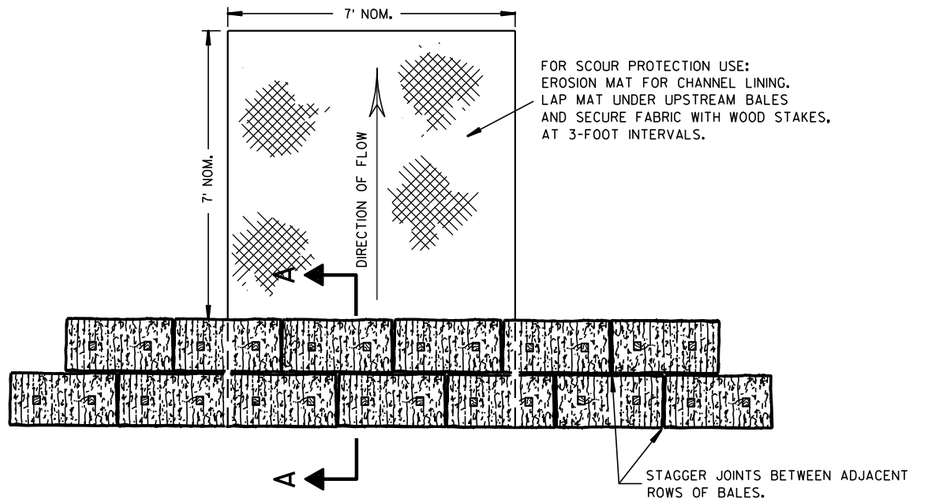
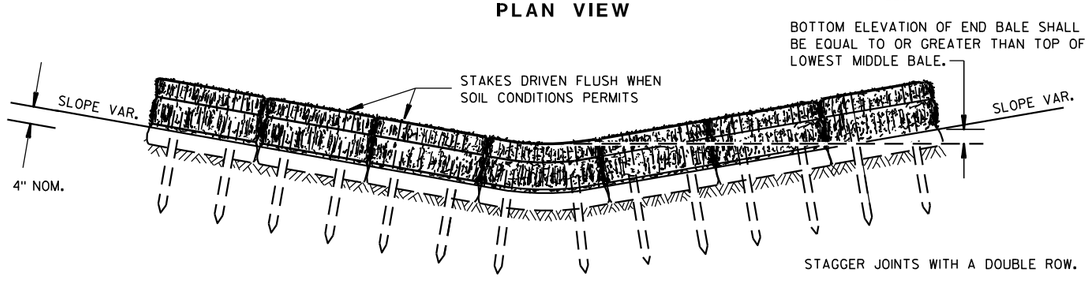


SECTION A-A



PLAN VIEW



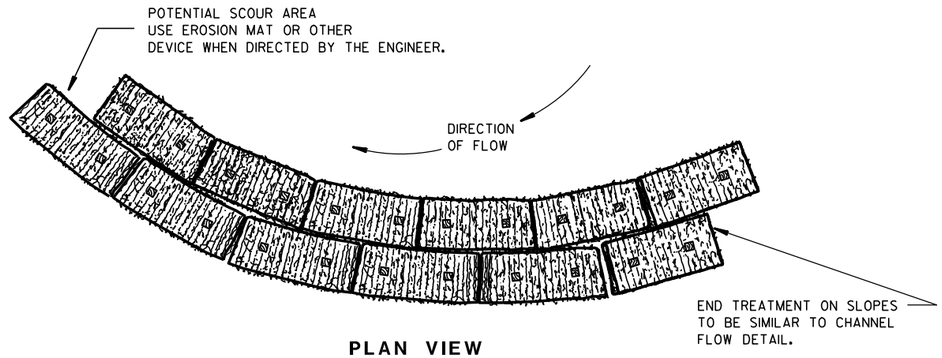
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

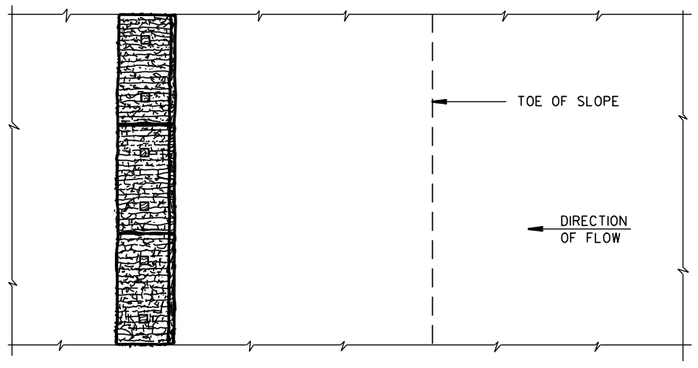
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

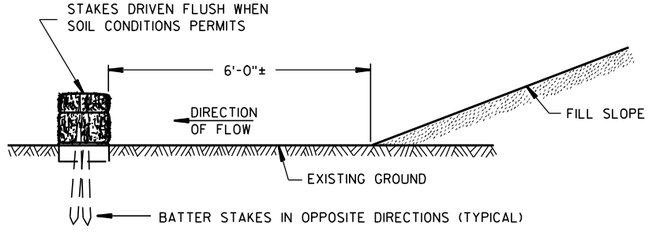


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

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

FHWA

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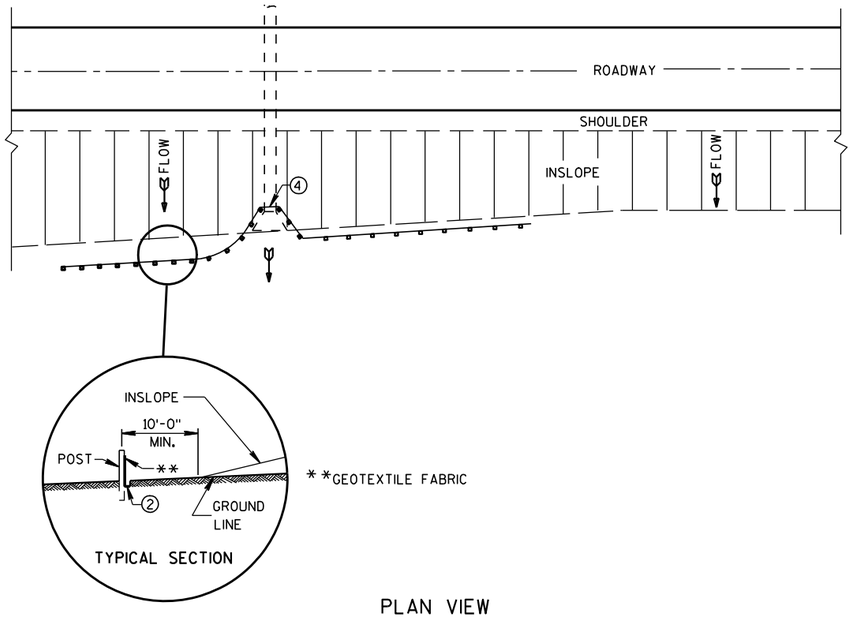
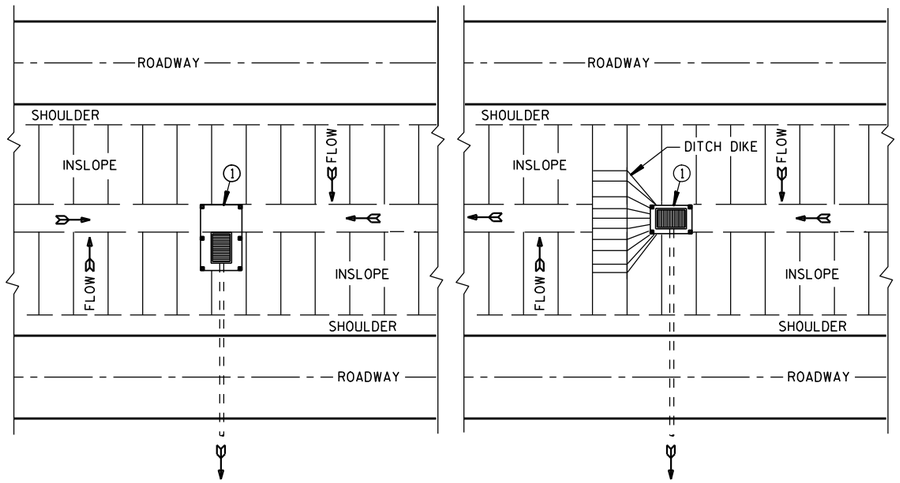
S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



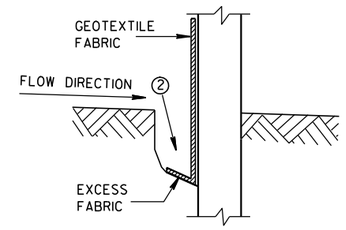
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

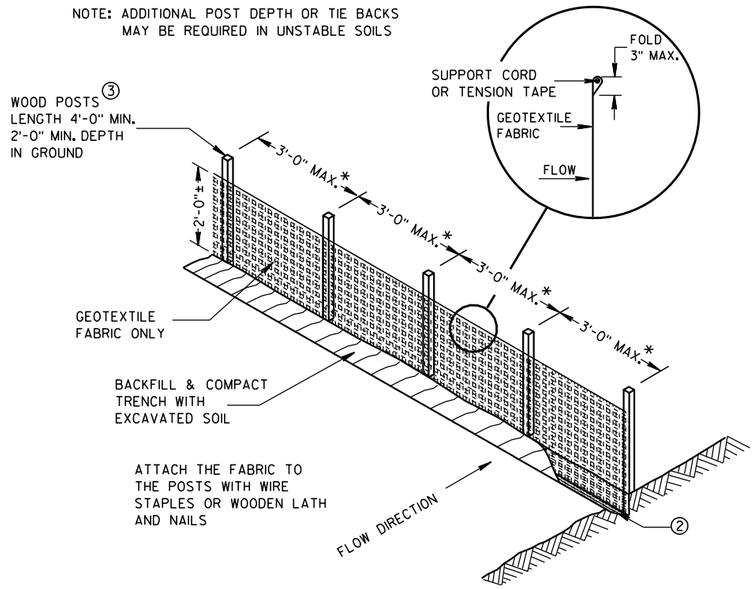
GENERAL NOTES

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

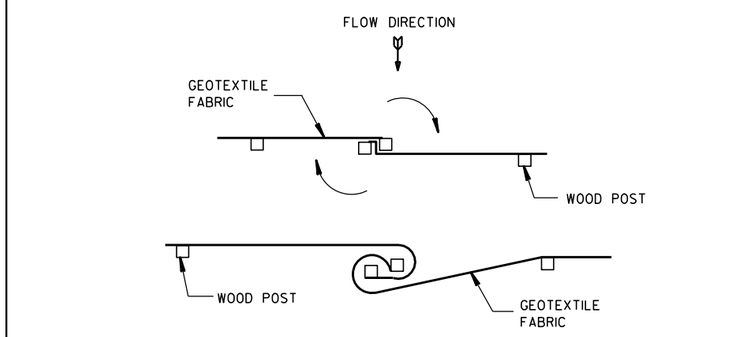
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



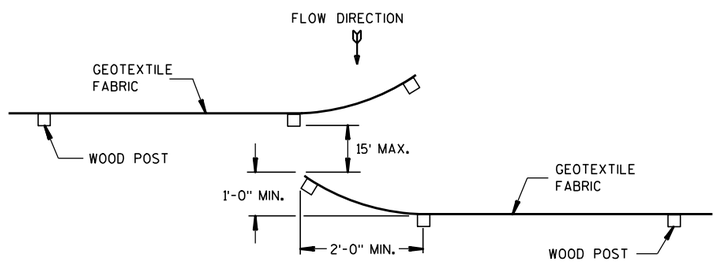
TRENCH DETAIL



SILT FENCE

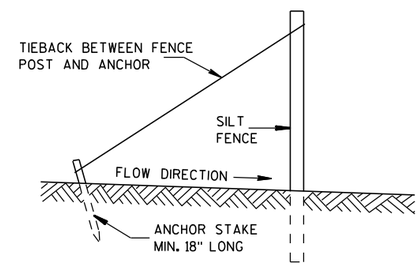


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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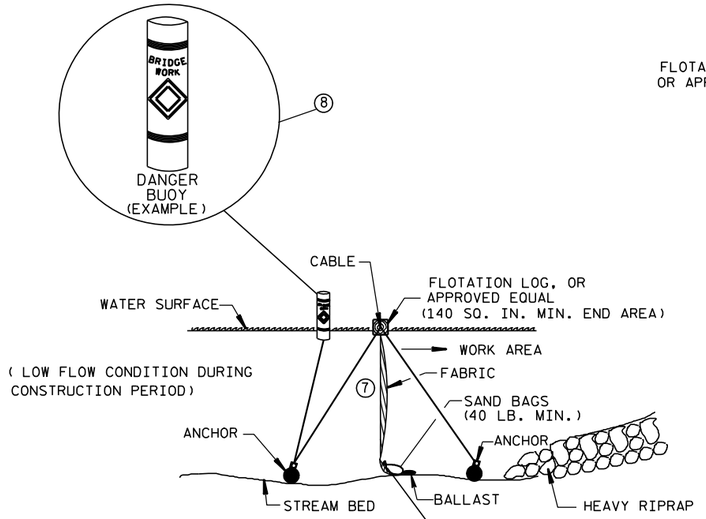
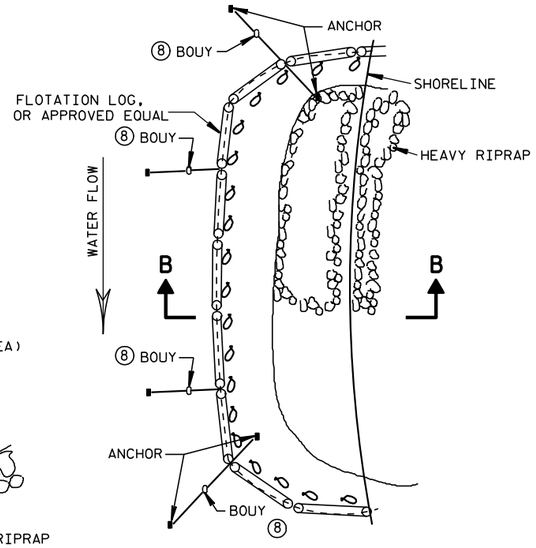
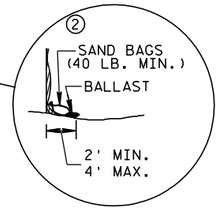
S.D.D. 8 E 9-6

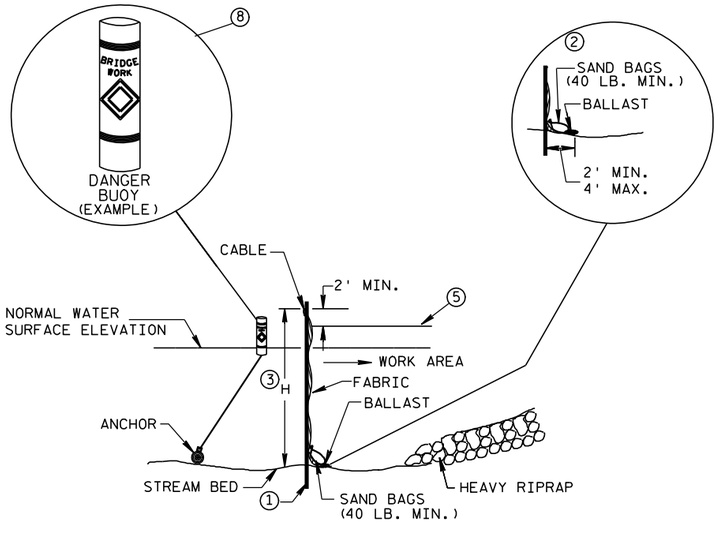


SECTION B-B

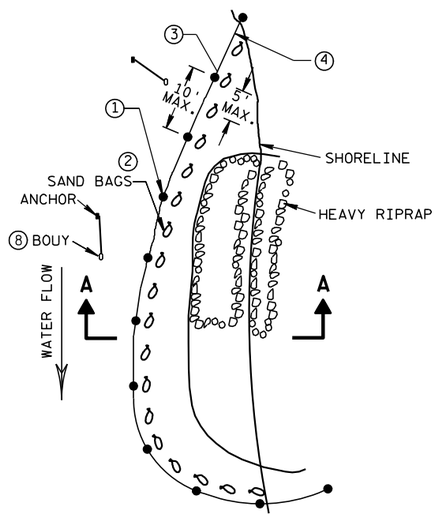




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

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

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

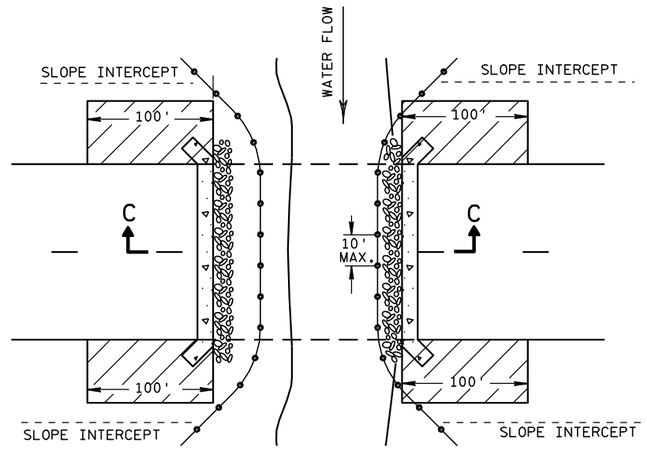
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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

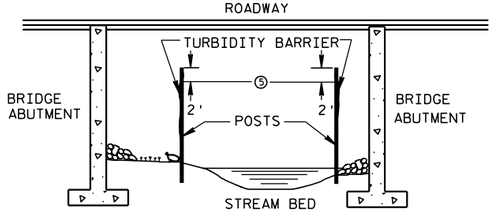
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 11-2

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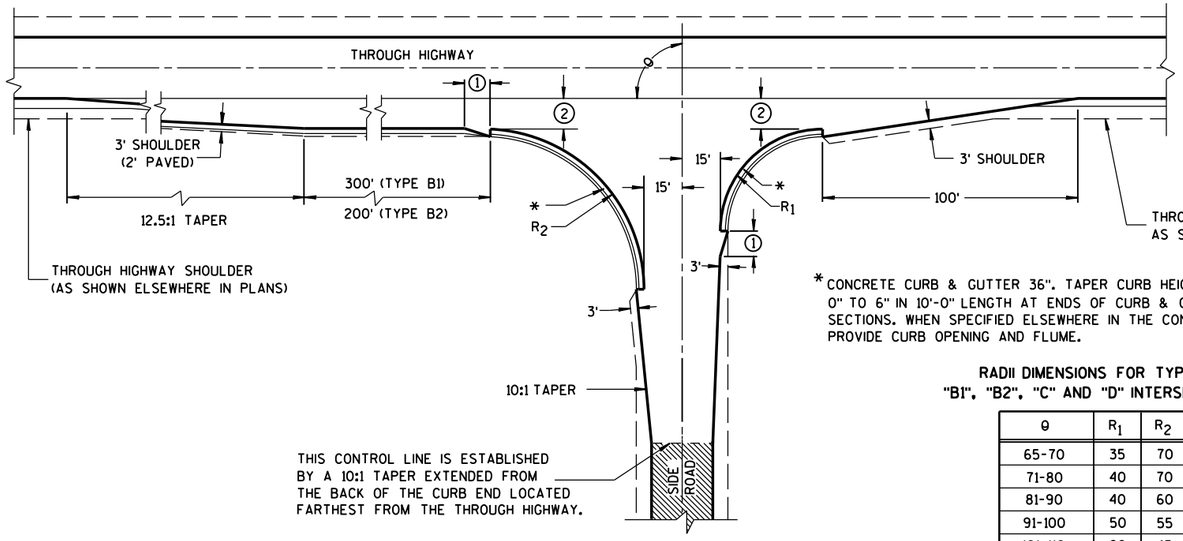
S.D.D. 8 E 11-2

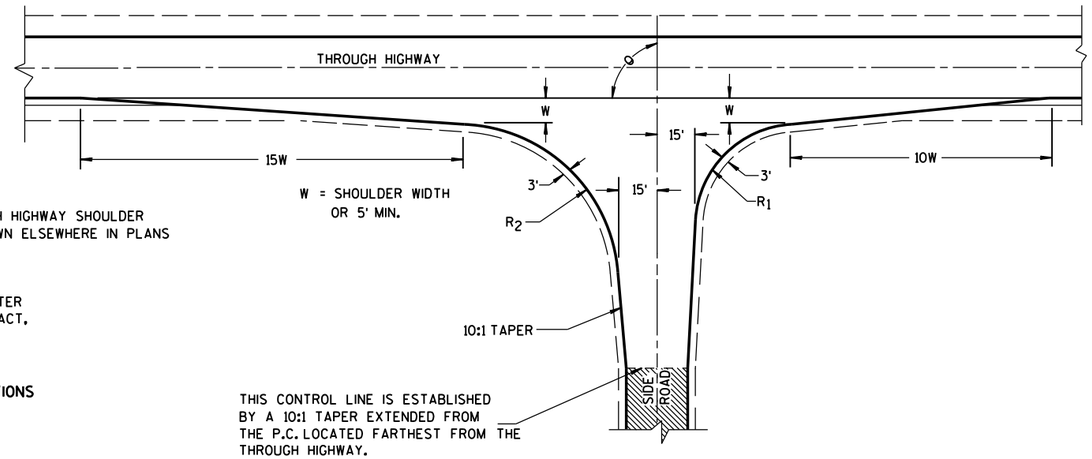


TYPE "B1" AND "B2"

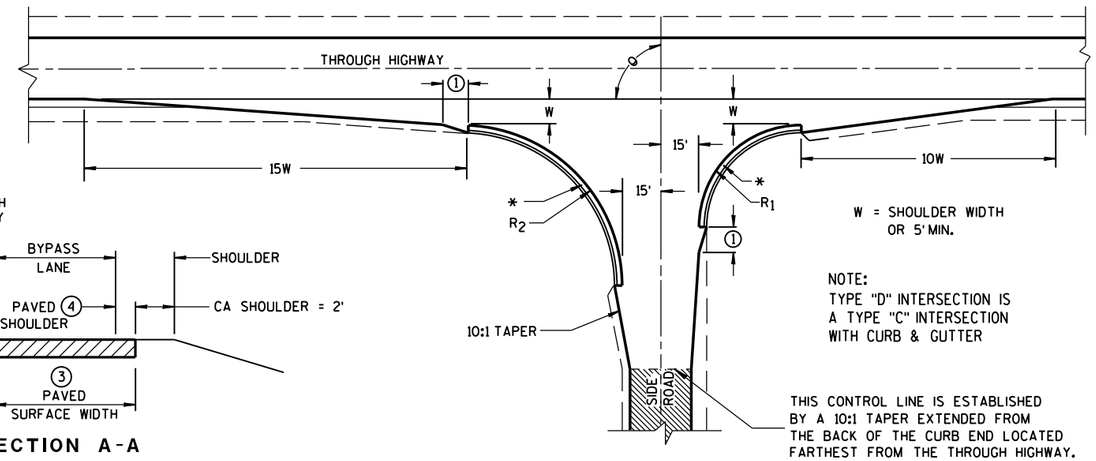
*CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45



TYPE "C"



TYPE "D"

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

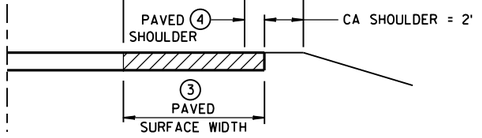
(1) 10-FT TYPICAL.

(2) 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

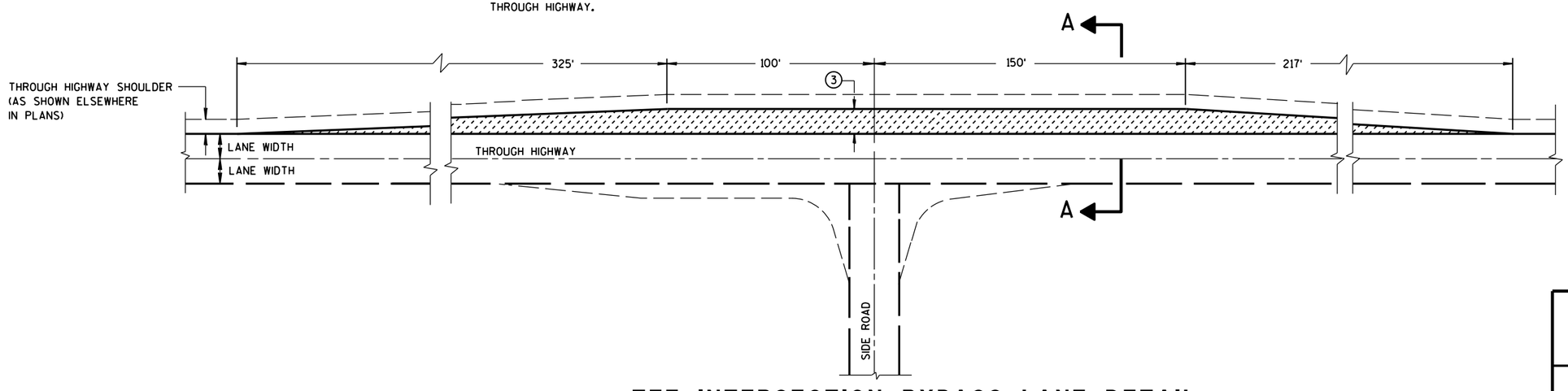
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

(3) BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.

(4) BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)



TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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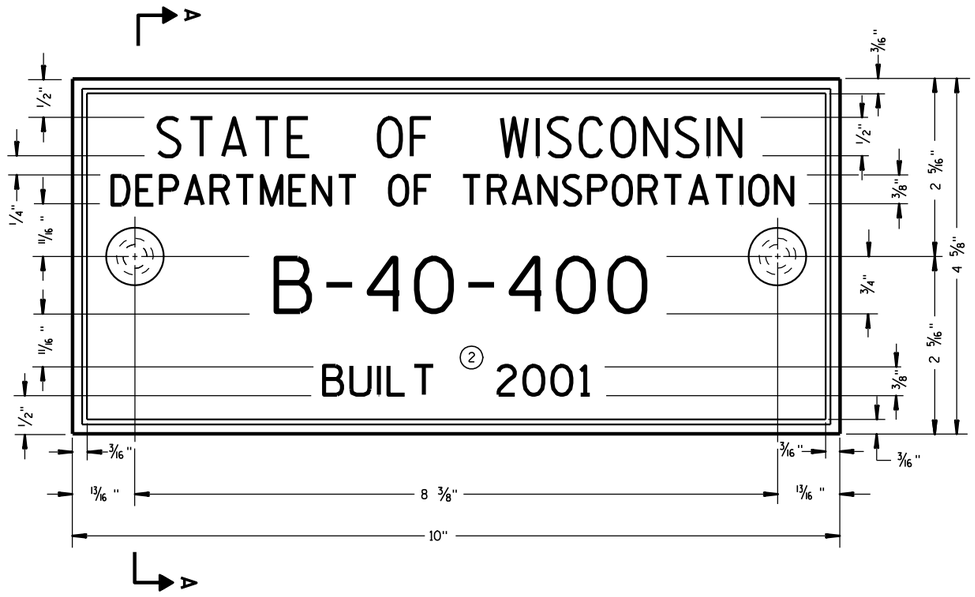
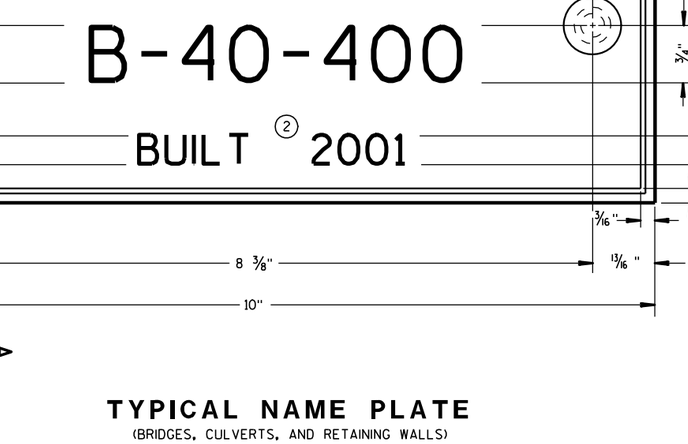
S.D.D. 9 A 1-13a



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

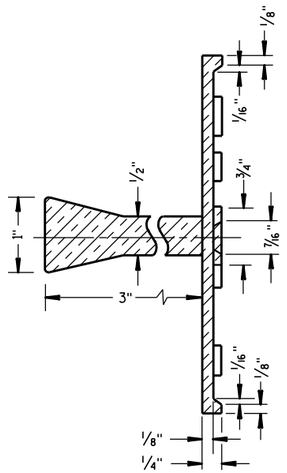
GENERAL NOTES

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

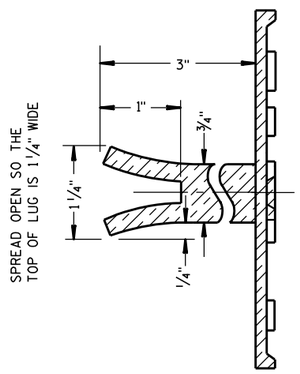
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

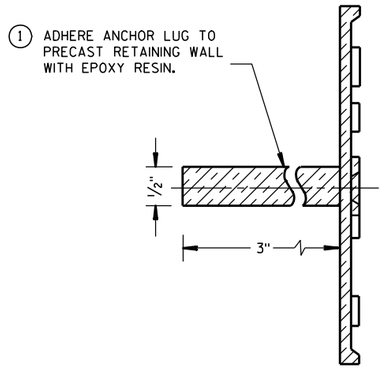
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
3/26/10 DATE	/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER
FHWA	

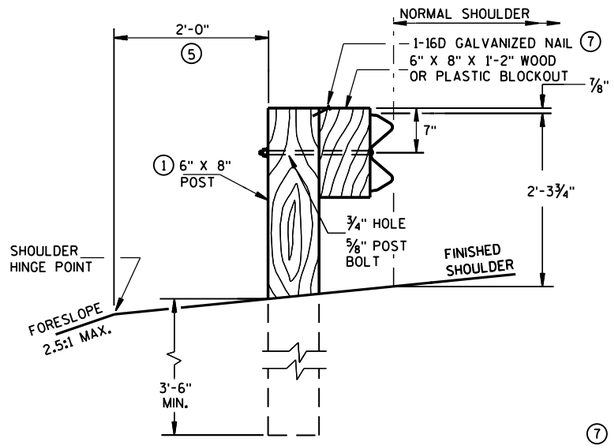
6

S.D.D. 12 A 3-10

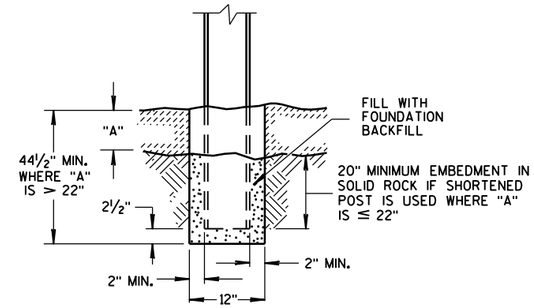
GENERAL NOTES

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.

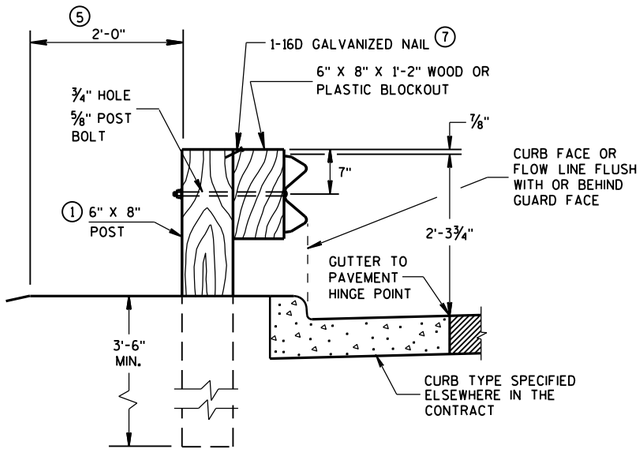
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



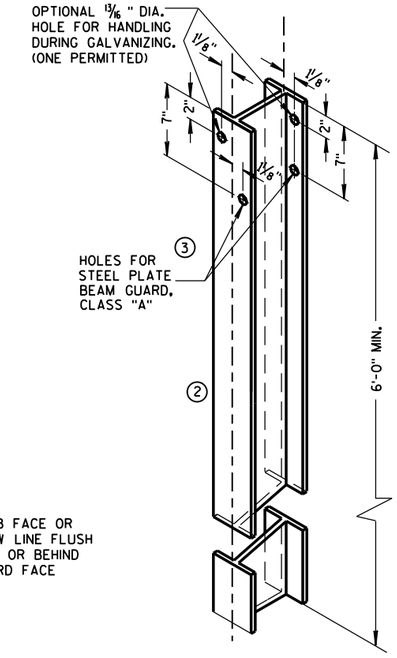
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



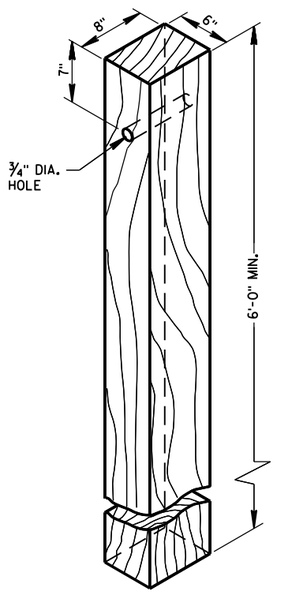
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥



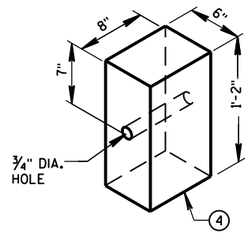
END VIEW
LOCATED ALONG A CURBED ROADWAY



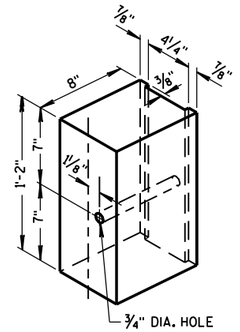
STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



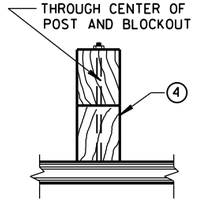
WOOD POST
(6"X8") NOMINAL



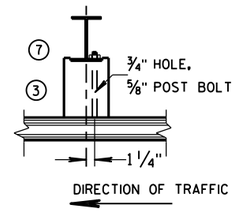
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



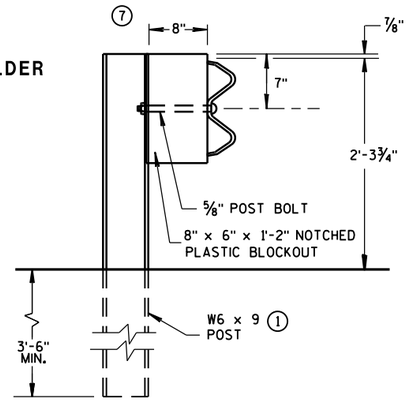
TYPICAL NOTCHED ①
PLASTIC BLOCKOUT
FOR STEEL POSTS



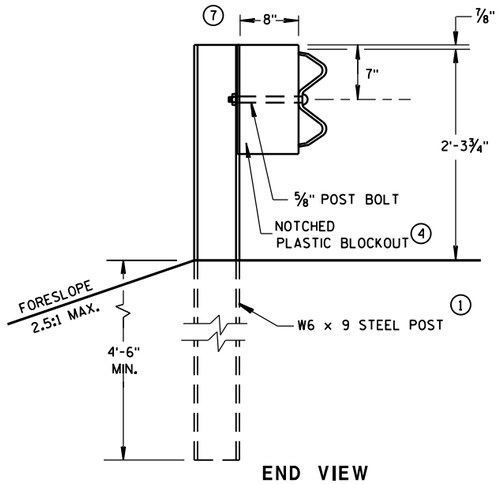
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



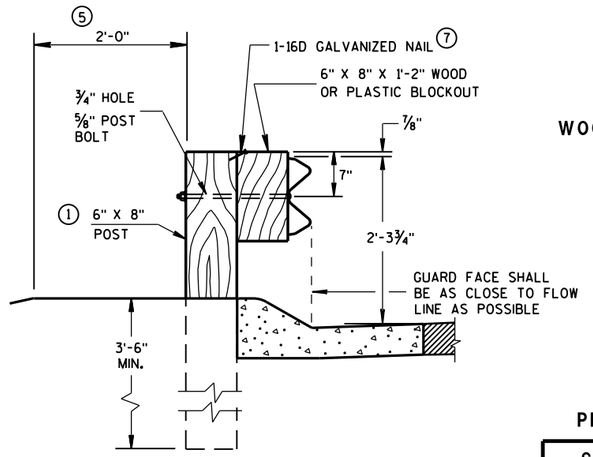
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



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



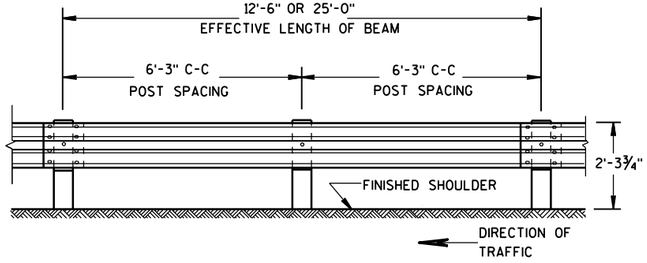
END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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

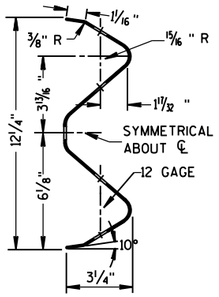
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6
S.D.D. 14 B 15-10a

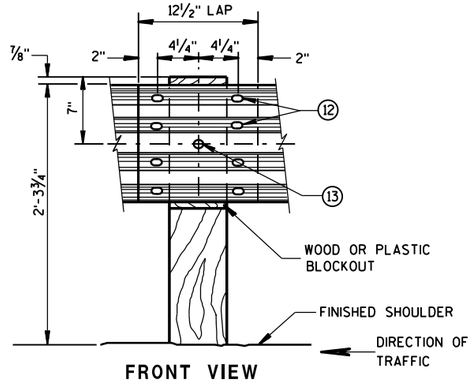


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

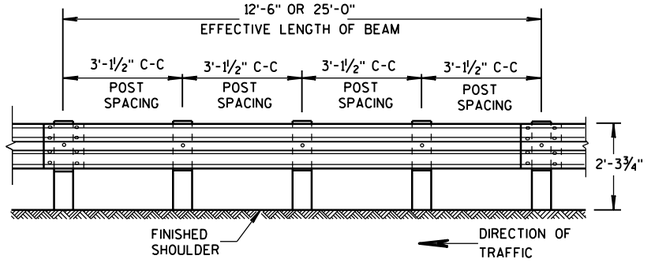
BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

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

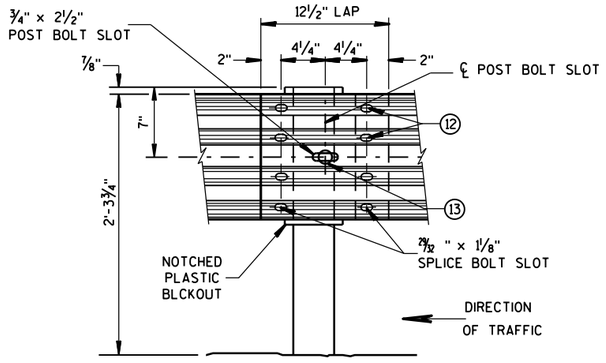
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

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



FRONT VIEW

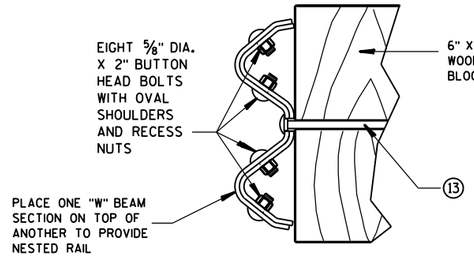
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

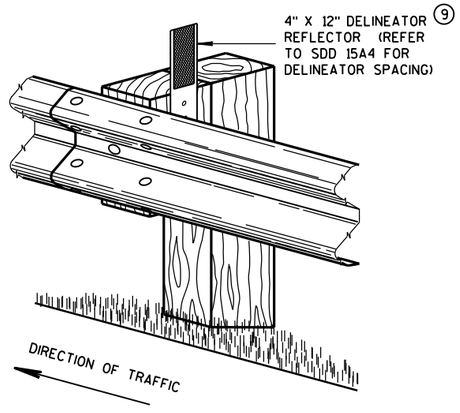
BEAM SPLICE AT STEEL POST

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)

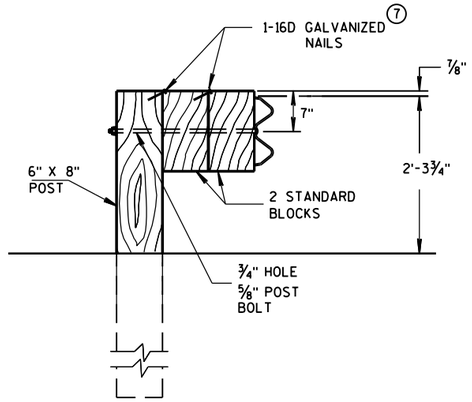


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

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

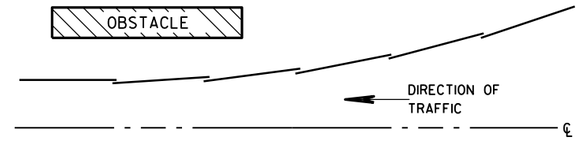
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6
S.D.D. 14 B 15-10b

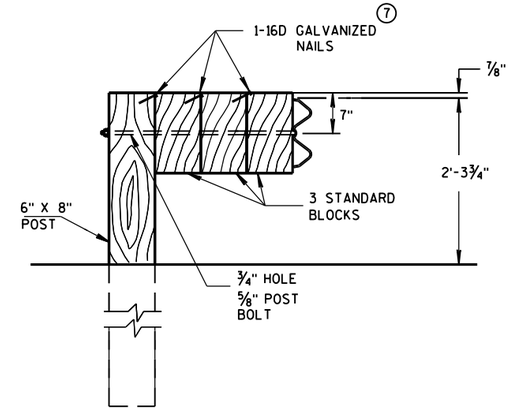


DETAIL FOR DOUBLE BLOCKS

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

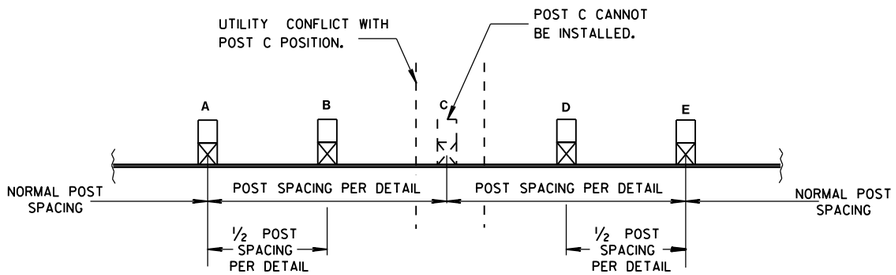


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

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



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D[illegible] UNIT SUPERVI[illegible]
[illegible]NT
FHWA

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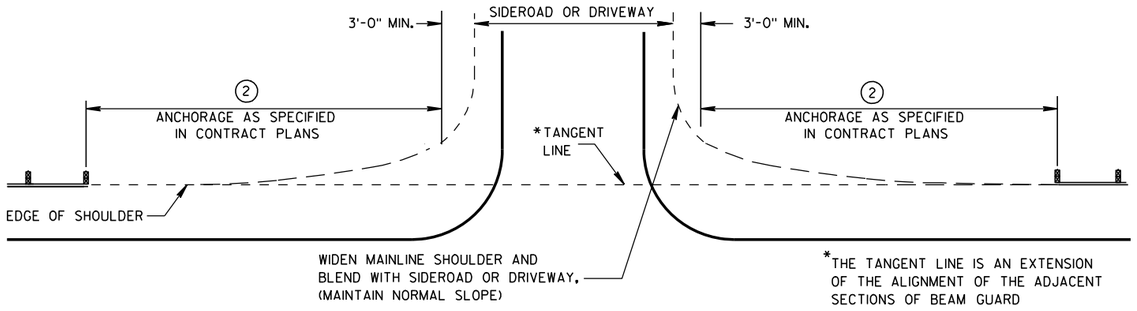
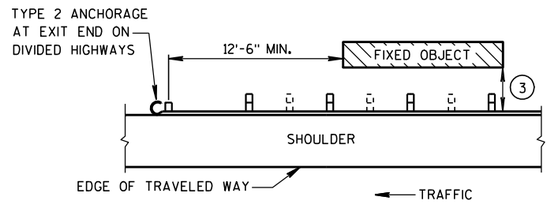
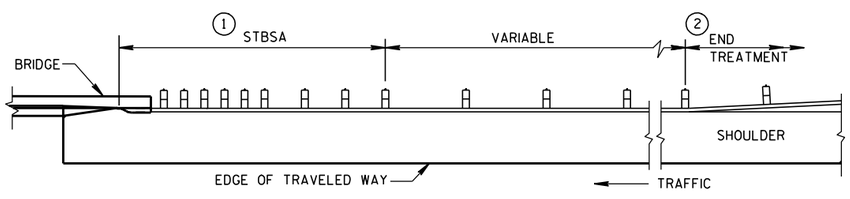
S.D.D. 14 B 15-10c



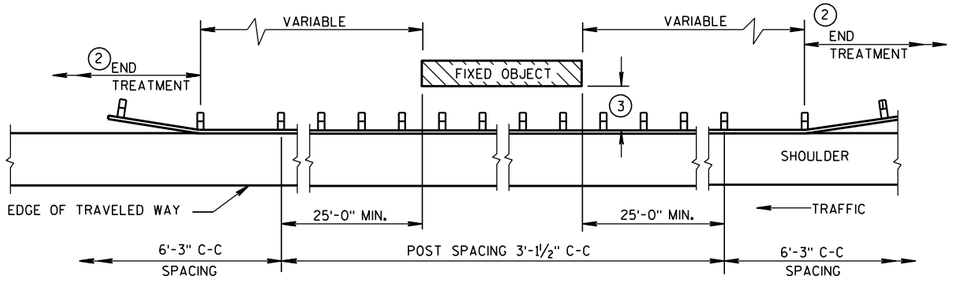
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

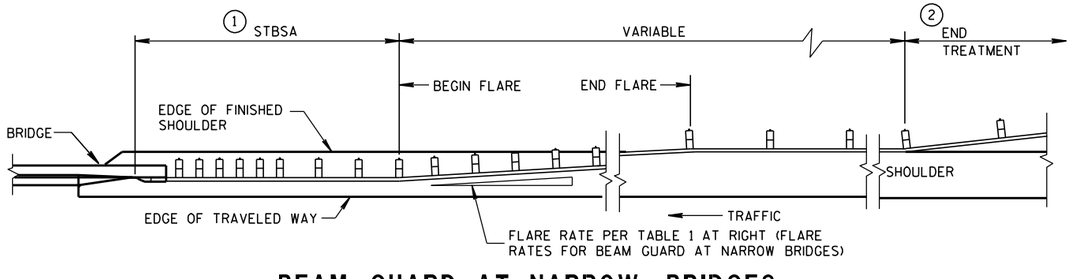


BEAM GUARD AT FULL WIDTH BRIDGES



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.

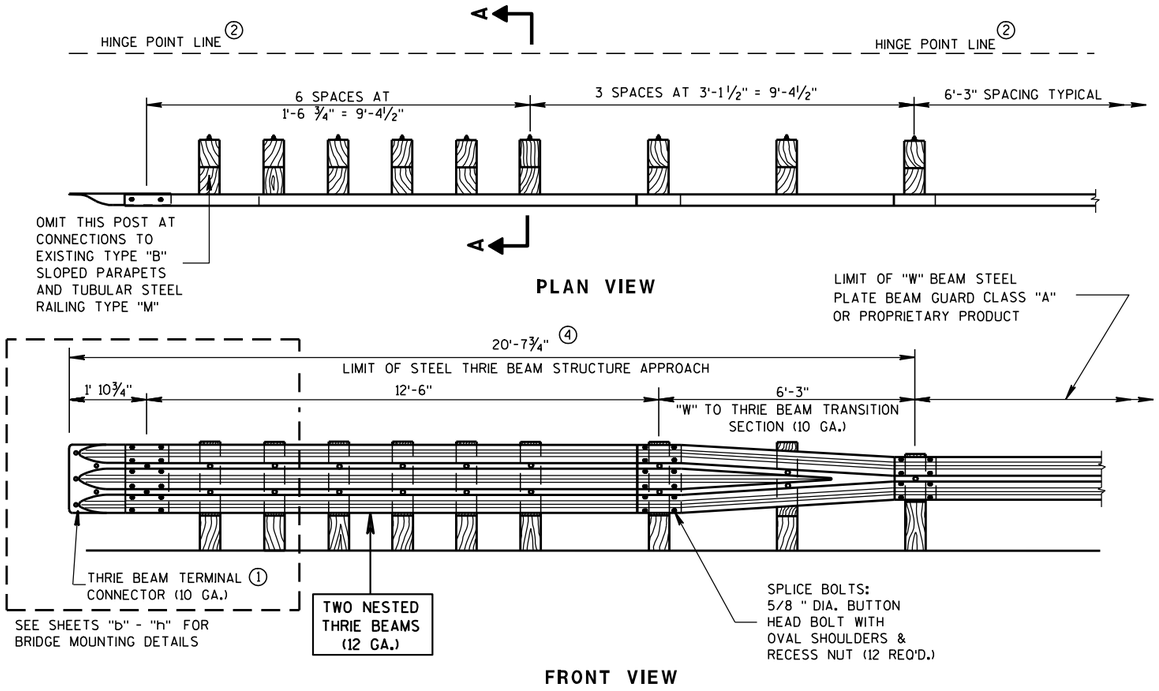
(3)

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



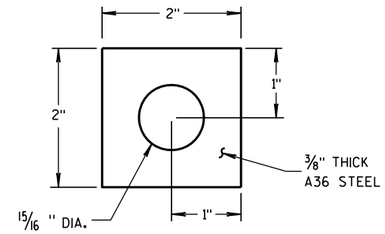


PLATE WASHER DETAIL

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.

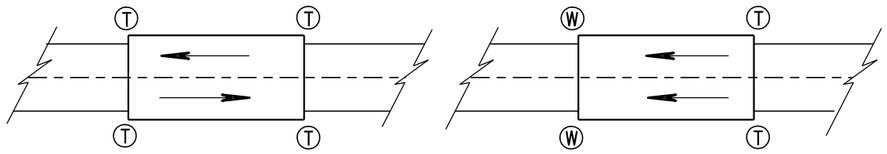
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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.



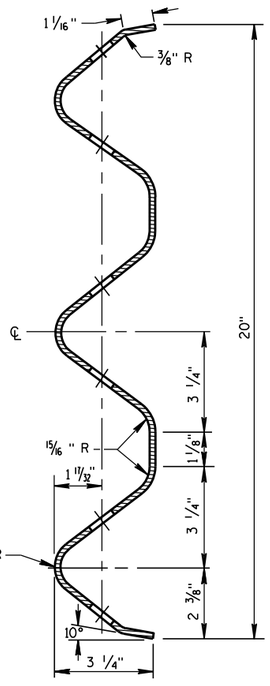
TWO WAY TRAFFIC

ONE WAY TRAFFIC

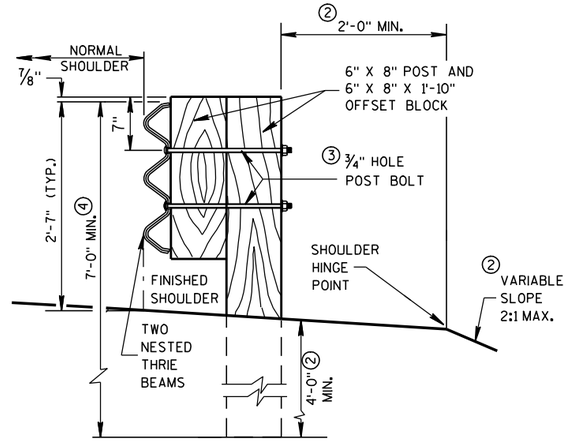
(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

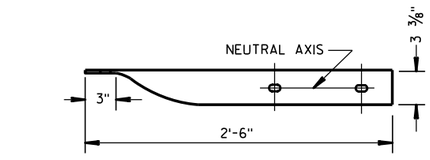
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

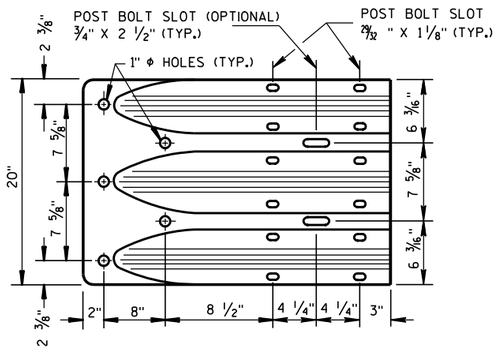


SECTION THRU THRIE BEAM RAIL ELEMENT

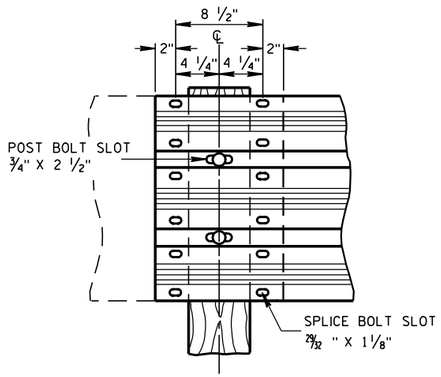


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

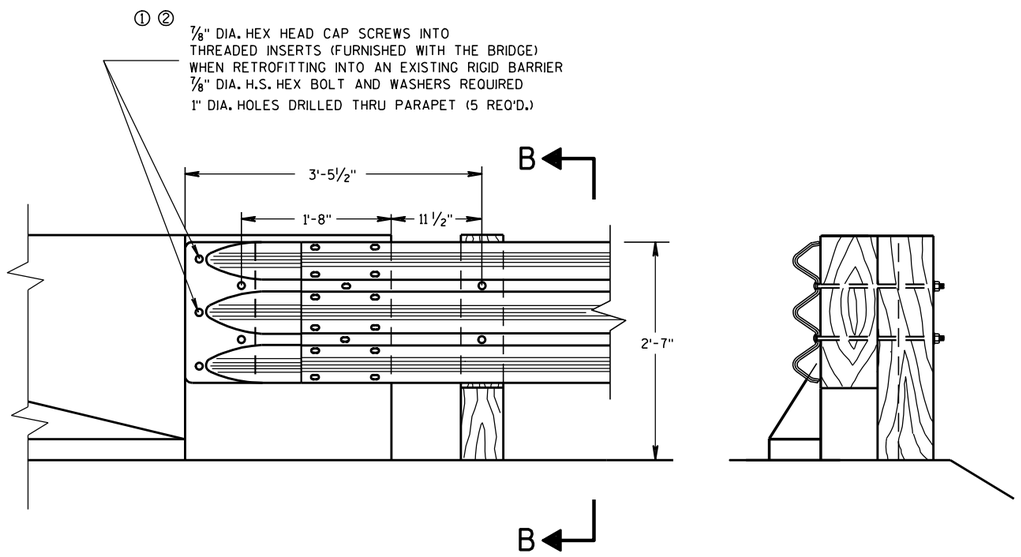
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

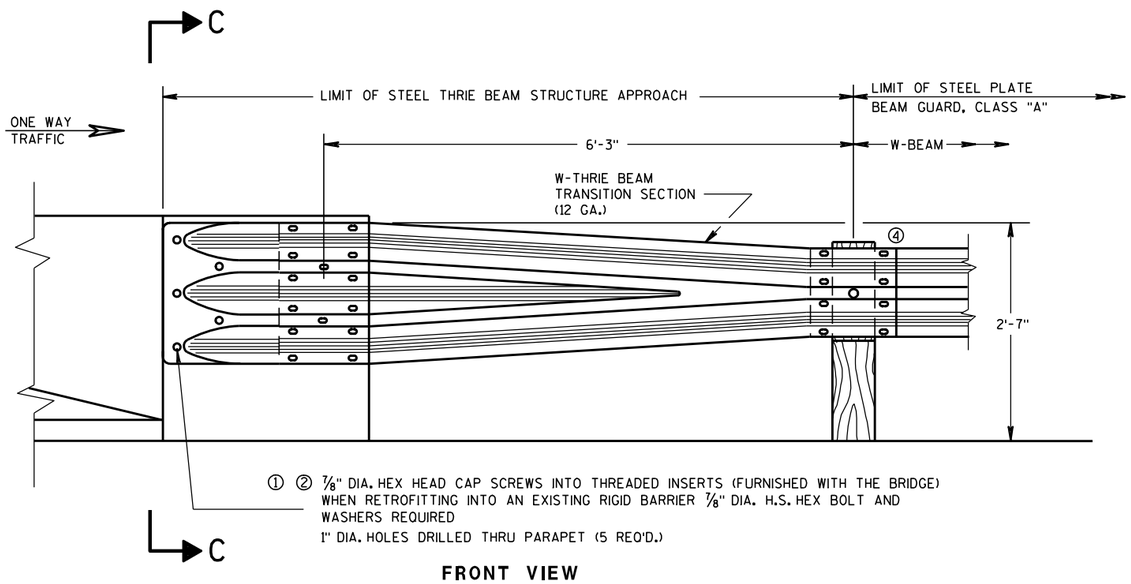
FHWA



FRONT VIEW

SECTION B-B

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET (5 REQ'D.)

FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

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.

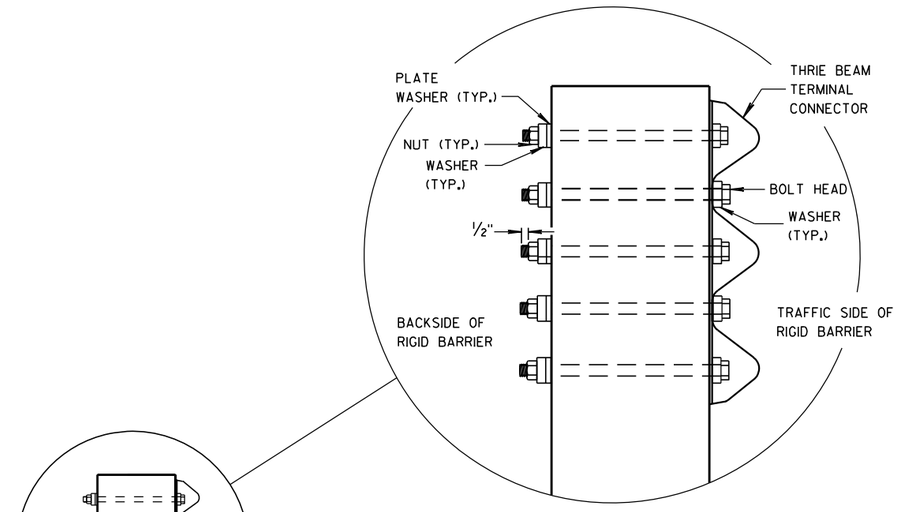
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

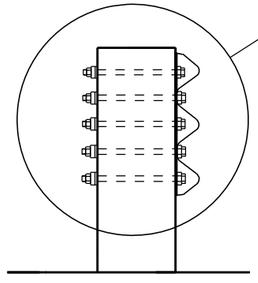
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ 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 ½".

④ 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.





SECTION C-C

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

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.

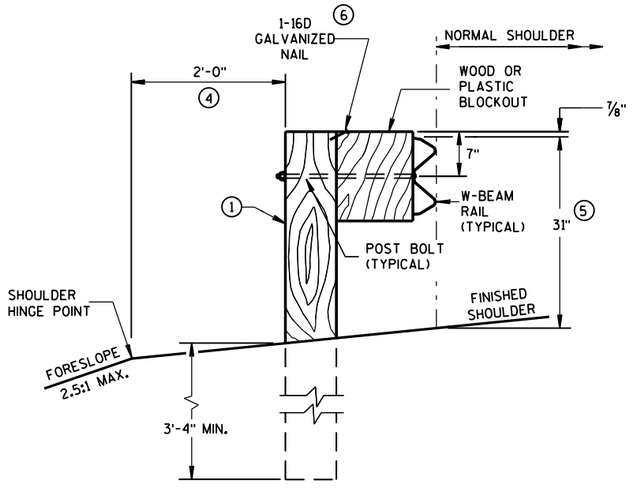
② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

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).

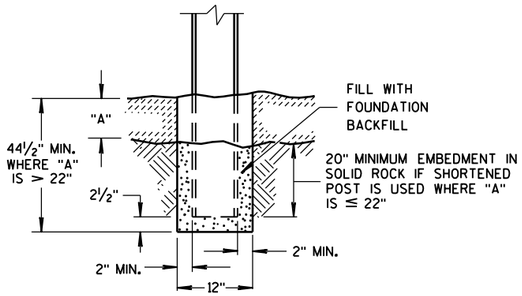
⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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.



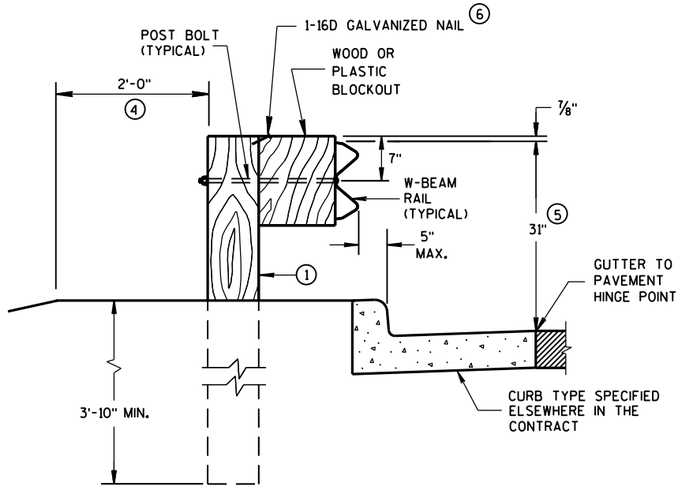
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



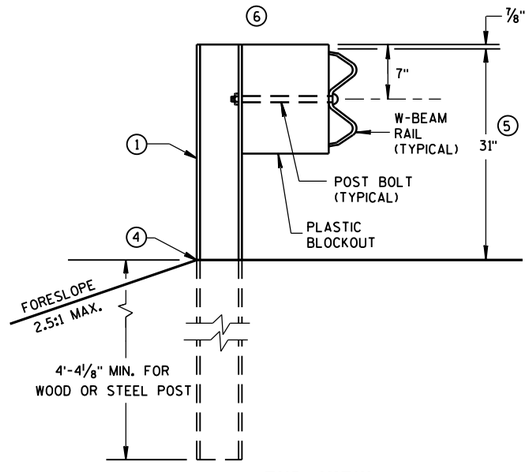
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



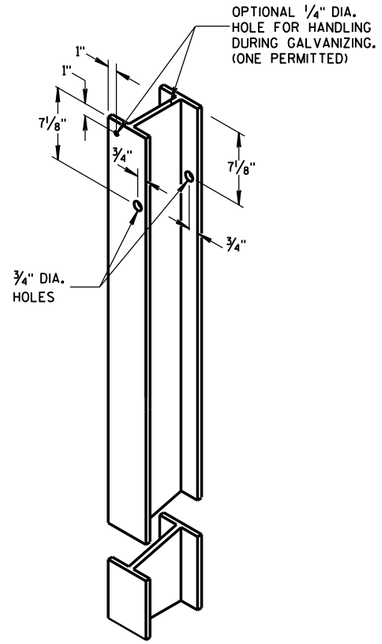
END VIEW

LOCATED ALONG A CURBED ROADWAY

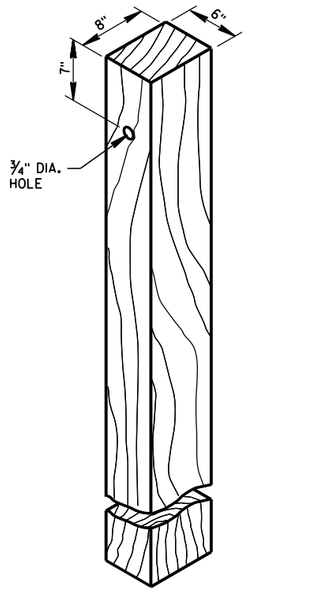


END VIEW

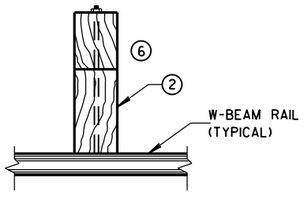
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



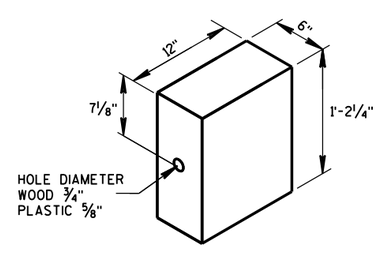
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



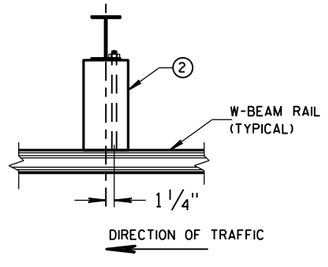
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②



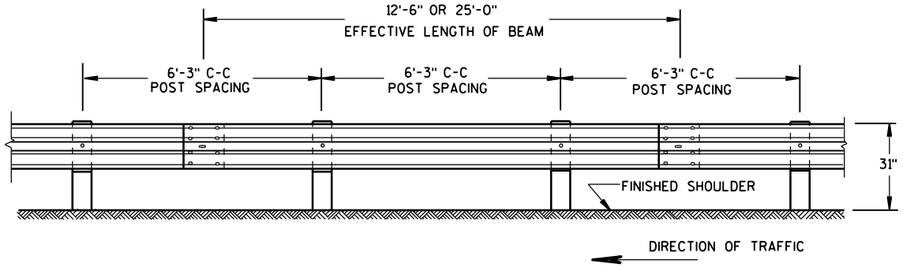
PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

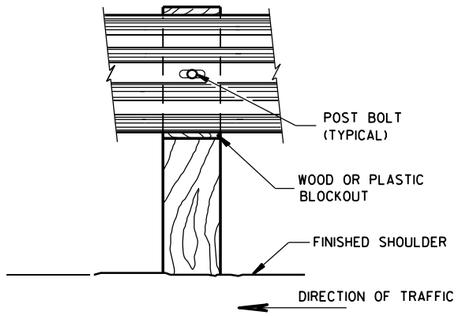
6

S.D.D. 14 B 42-5a



FRONT VIEW

POST SPACING STANDARD INSTALLATION



FRONT VIEW AT WOOD POST

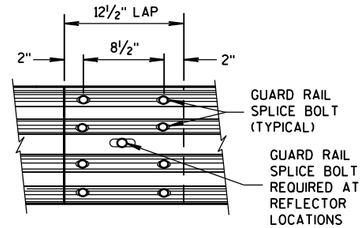
GENERAL NOTES

(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.

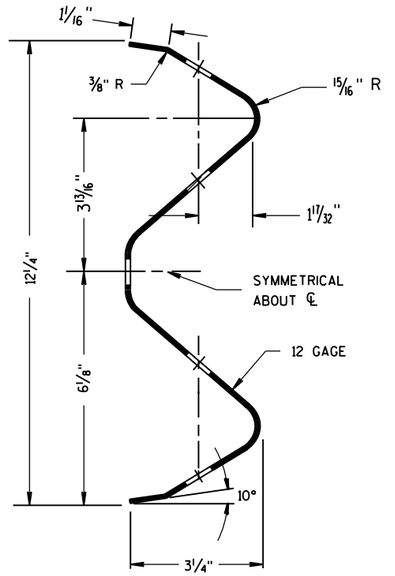
(11) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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.

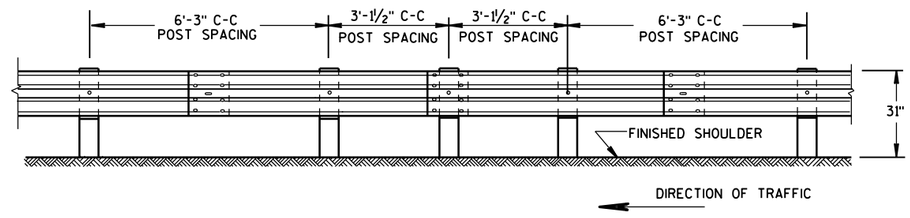
GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



FRONT VIEW
MID-SPAN BEAM SPLICE

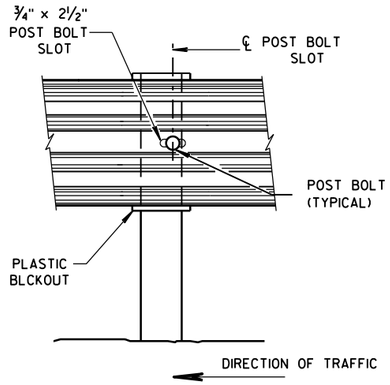


SECTION THRU W-BEAM RAIL

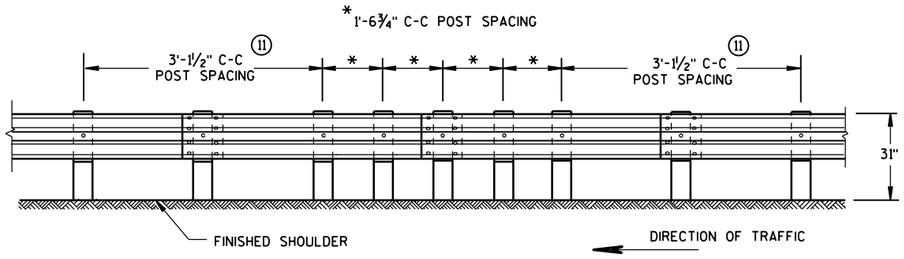


FRONT VIEW

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

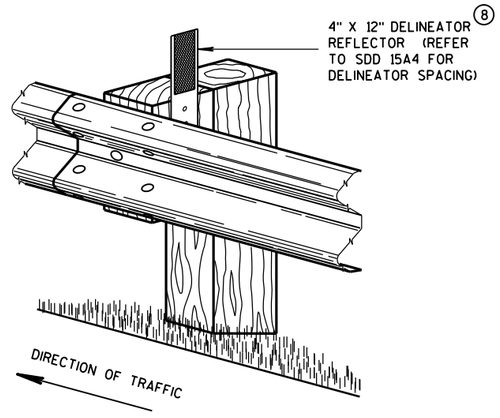


FRONT VIEW AT STEEL POST



FRONT VIEW

QUARTER POST SPACING (QS)



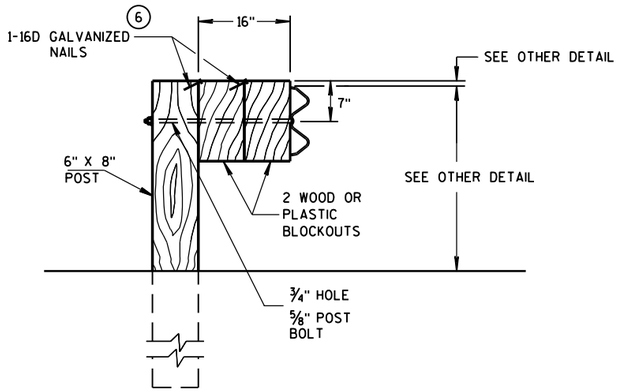
ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

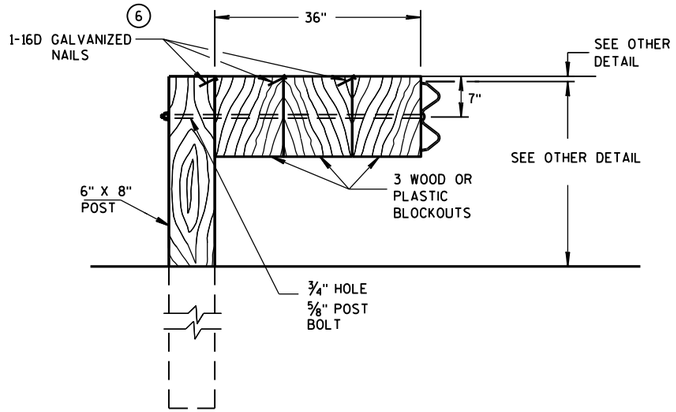
6

S.D.D. 14 B 42-5b



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.

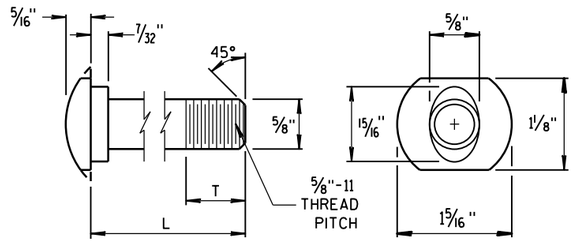


DETAIL FOR 36" BLOCKOUT DEPTH

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.

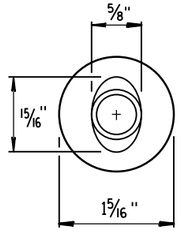
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

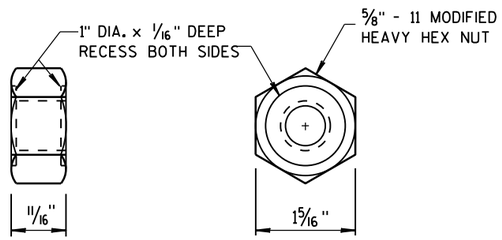


POST BOLT TABLE

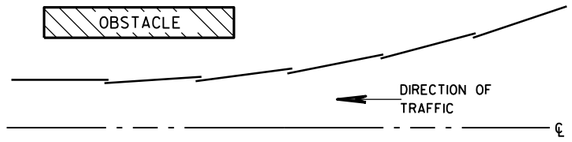
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

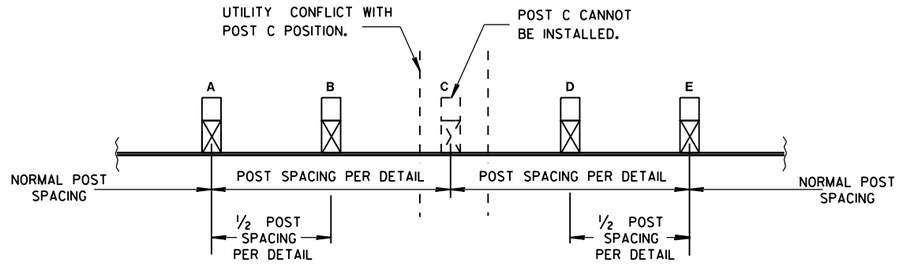


POST BOLT, SPLICE BOLT AND RECESS NUT

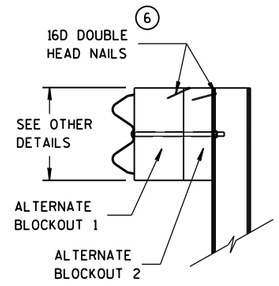


PLAN VIEW

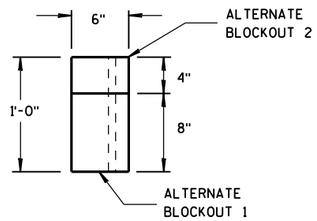
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

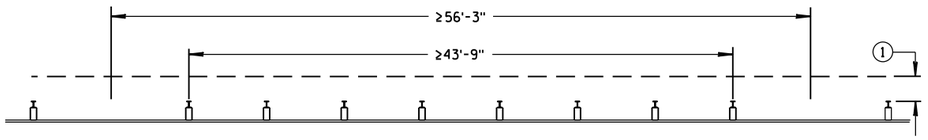
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

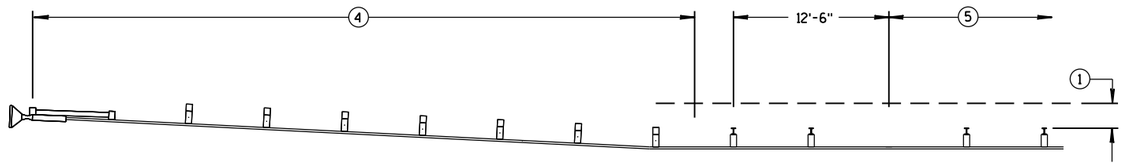
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

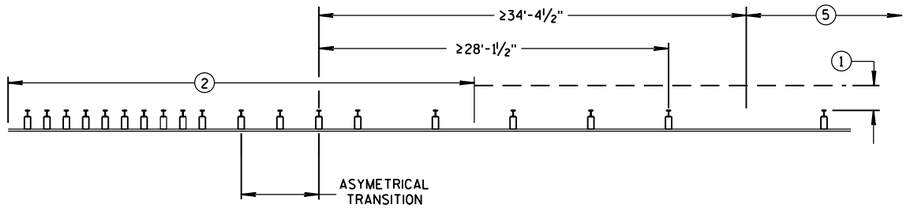
S.D.D. 14 B 42-5c



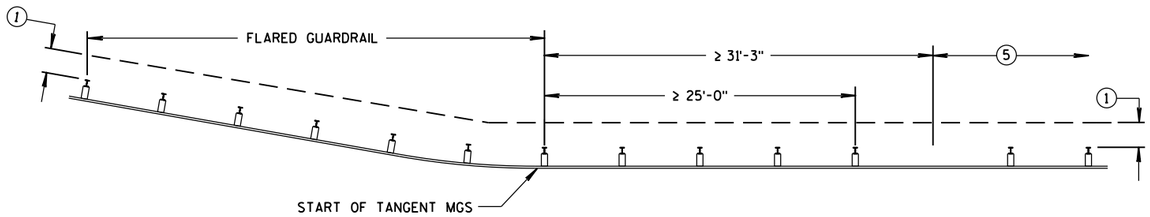
MISSING POST IN NORMAL BEAM GUARD RUN



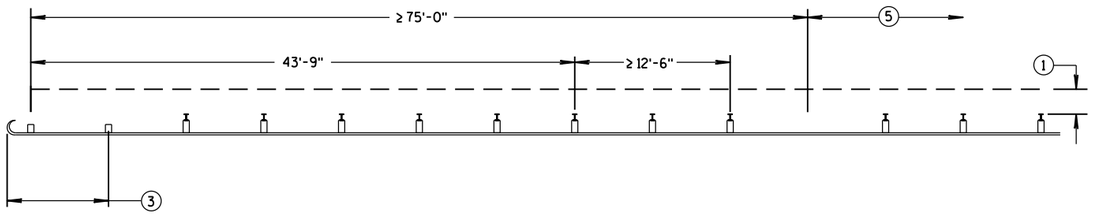
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



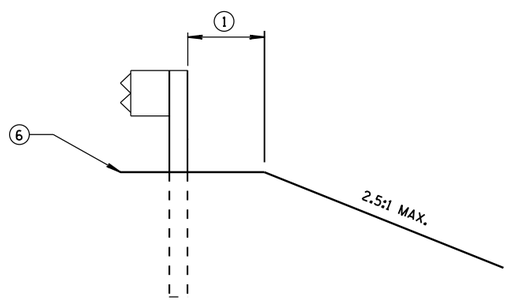
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

1. MINIMUM OF 2 FEET OF GRADING BEHIND POST.
2. SEE SDD 14B45 FOR MORE DETAILS.
3. SEE SDD 14B47 FOR MORE DETAILS.
4. SEE SDD 14B44 FOR MORE DETAILS.
5. SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
6. SEE PLAN FOR SHOULDER DESIGN.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

6

S.D.D. 14 B 42-5d

6

S.D.D. 14 B 42-5d

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.

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

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

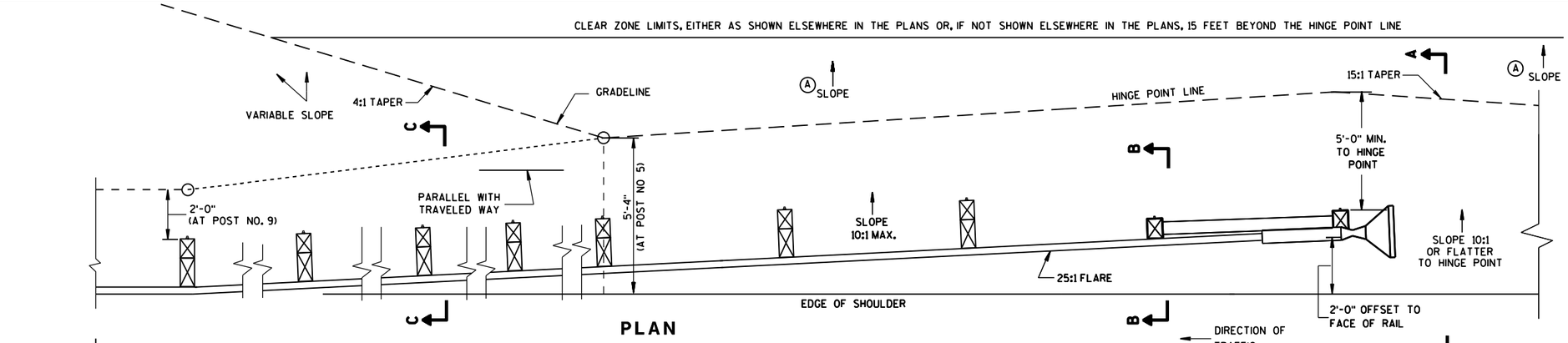
SEE SDD 14B42 FOR MORE INFORMATION.

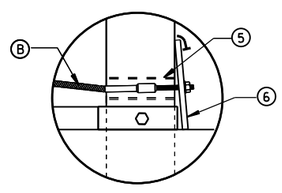
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

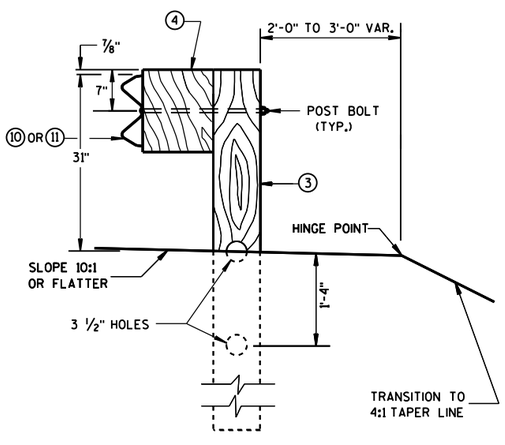
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

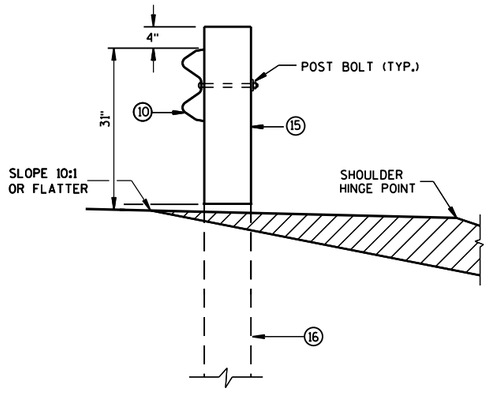
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

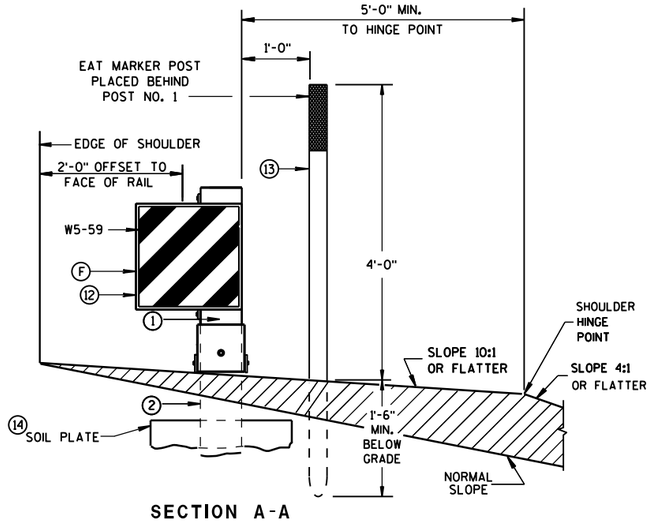
THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.

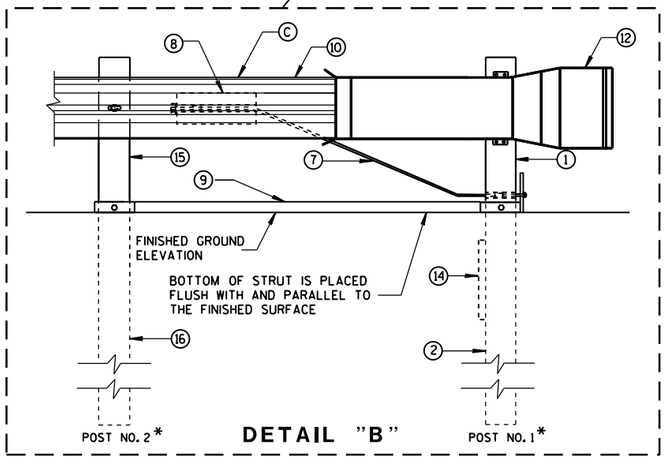








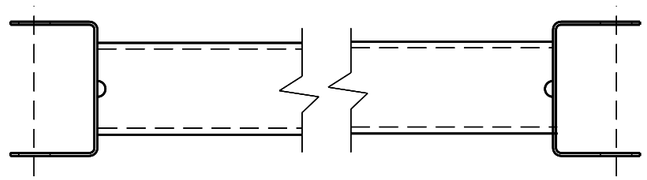




MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

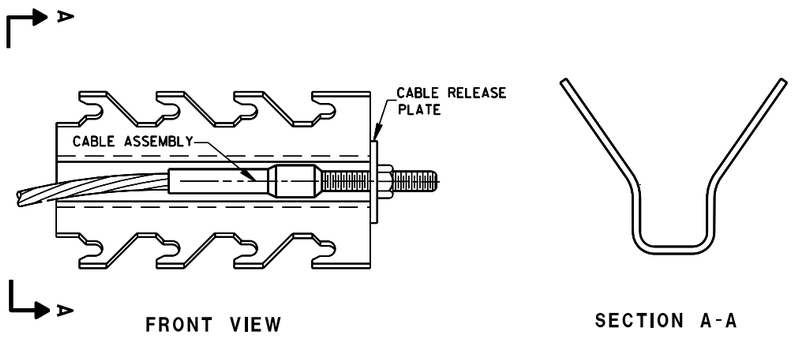
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6
S.D.D. 14 B 44-3a



(9) (H)

GENERIC GROUND STRUT



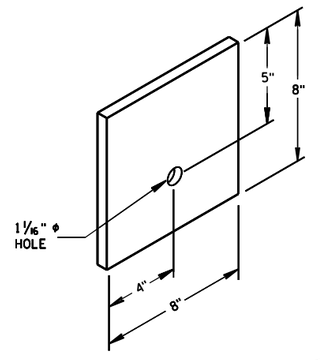
FRONT VIEW

SECTION A-A

GENERIC ANCHOR CABLE BOX (8) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	UPPER POST NO. 1 6" X 6" TUBE
(2)	LOWER POST NO. 1
(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)	IMPACT HEAD
(13)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
(14)	SOIL PLATE
(15)	UPPER POST NO. 2
(16)	LOWER POST NO. 2



BEARING PLATE (6)

6

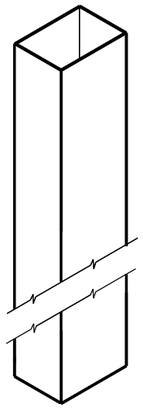
6

S.D.D. 14 B 44-3b

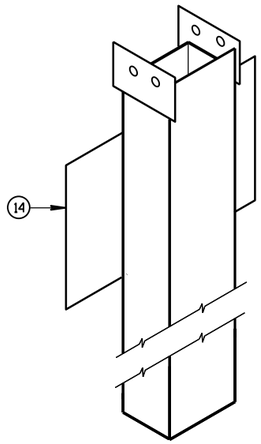
S.D.D. 14 B 44-3b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

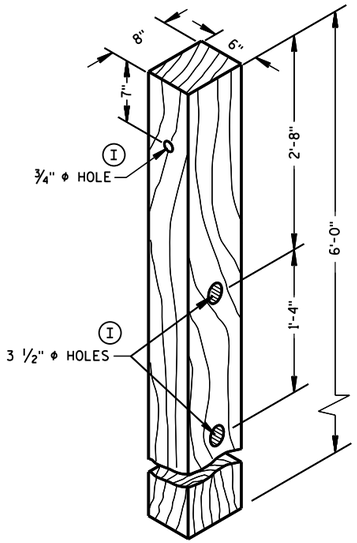
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR



UPPER POST NO. 1 (1)

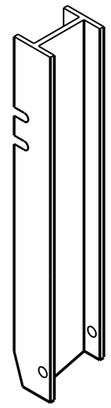


LOWER POST NO. 1 (2)

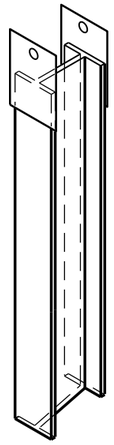


POSTS NUMBER 3-9

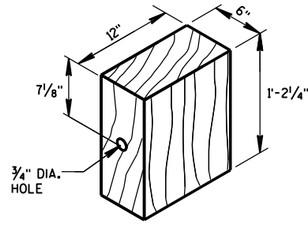
WOOD CRT POST (3)



UPPER POST NO. 2 (15)

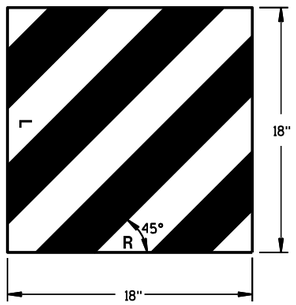


LOWER POST NO. 2 (16)



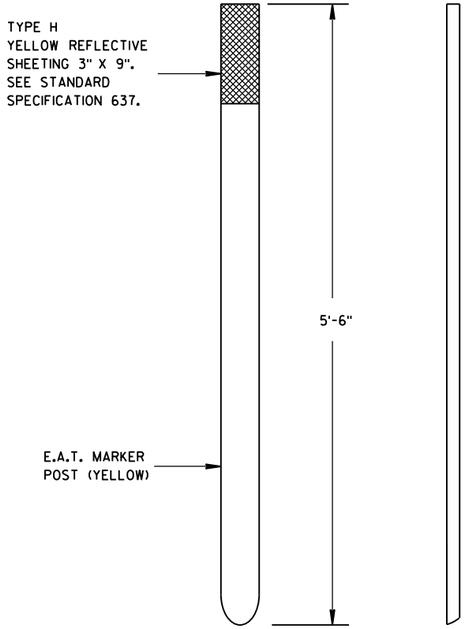
WOOD BLOCKOUT (4)

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



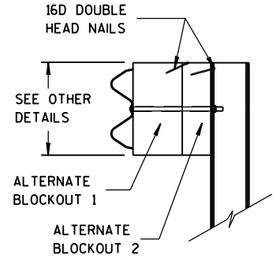
W5-59

REFLECTIVE SHEETING DETAIL (H)

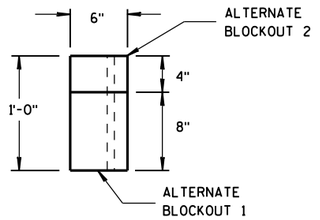


FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

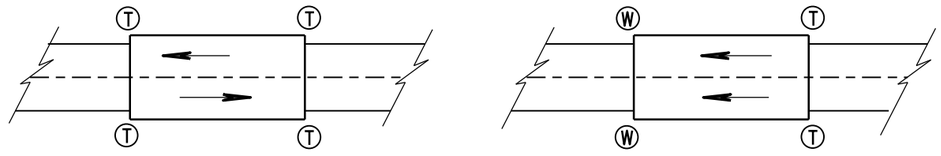
June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS
UNIT SUPERVISOR

FHWA

6

S.D.D. 14 B 44-3c



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

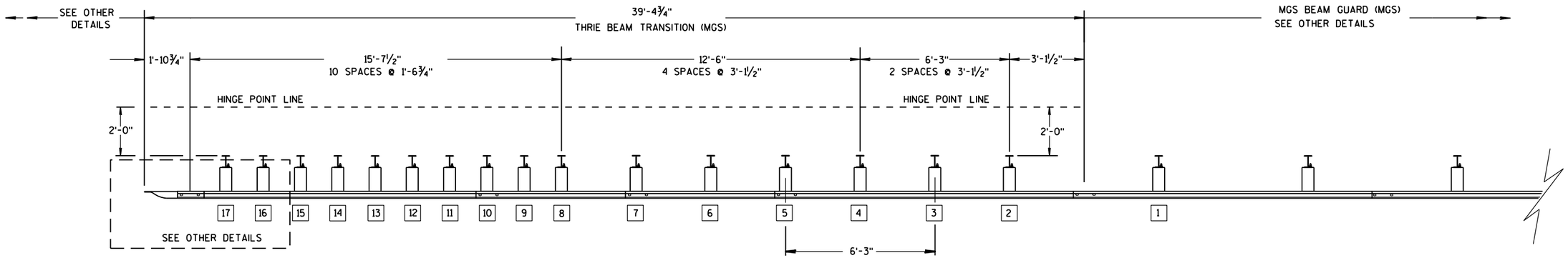
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

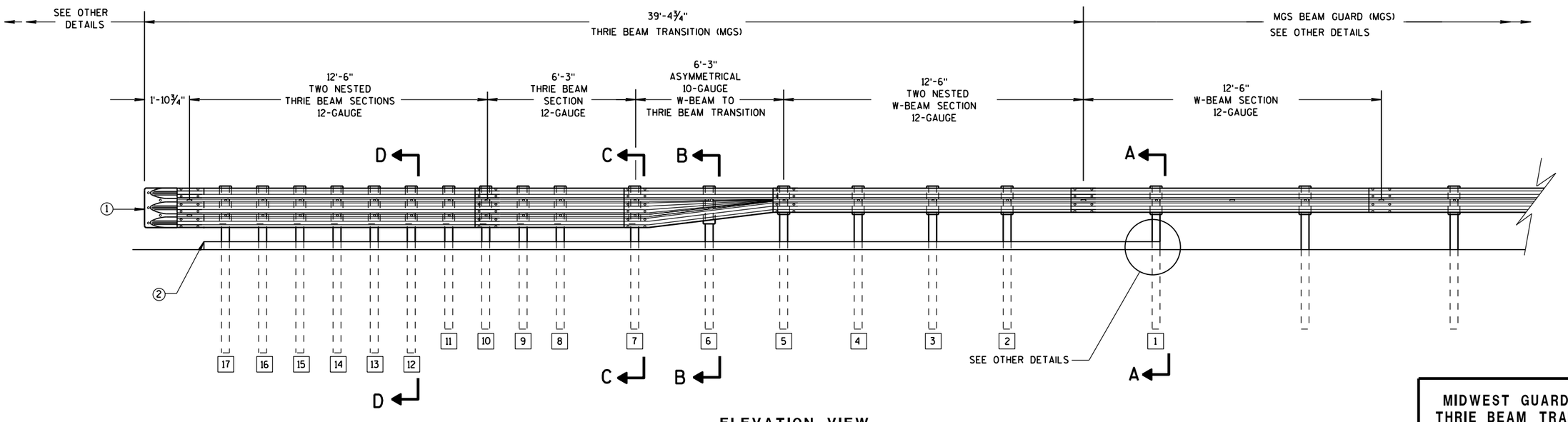
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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 TRANSPOR

6

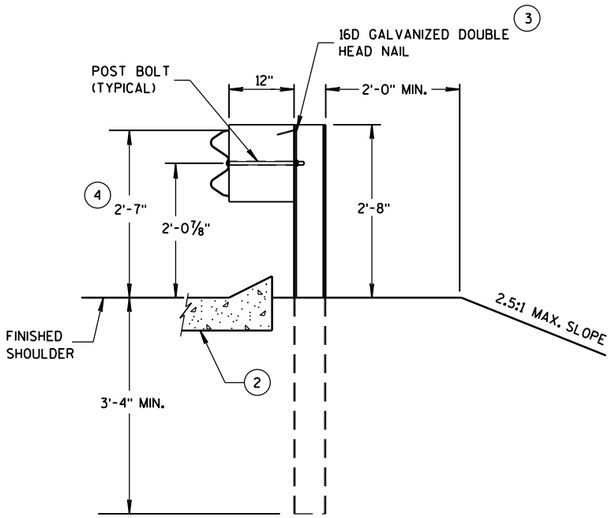
S.D.D. 14 B 45-4a

GENERAL NOTES

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

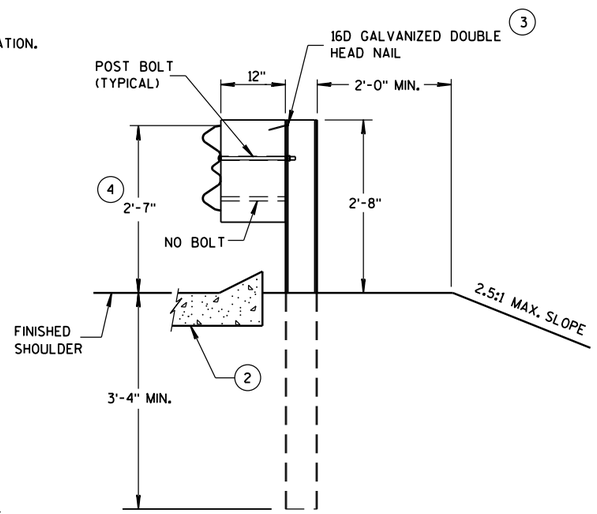
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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



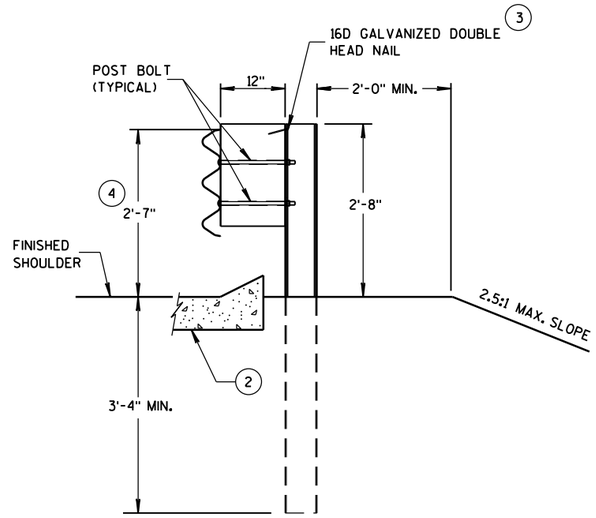
SECTION A-A

POSTS 1-5



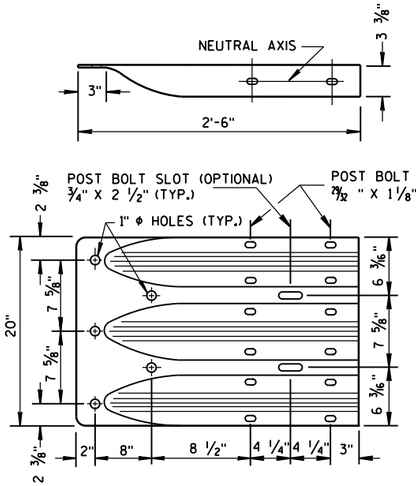
SECTION B-B

POST 6



SECTION C-C

POSTS 7-11



THRIE BEAM TERMINAL CONNECTOR

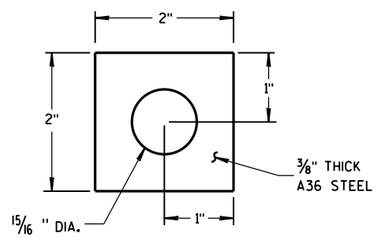
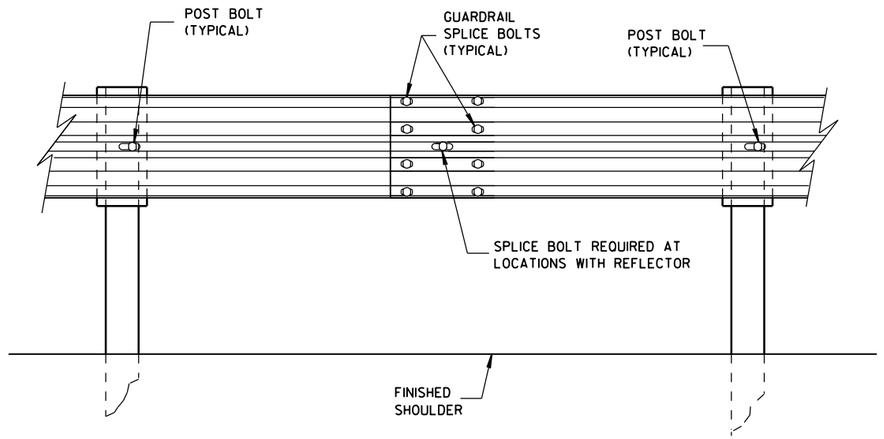
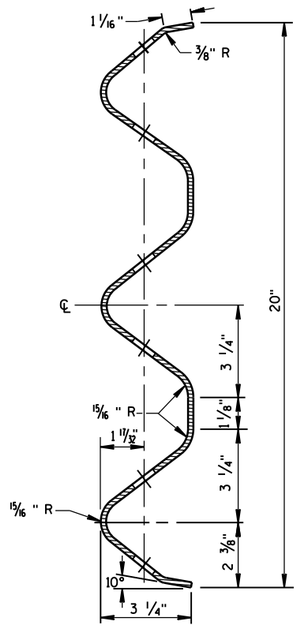


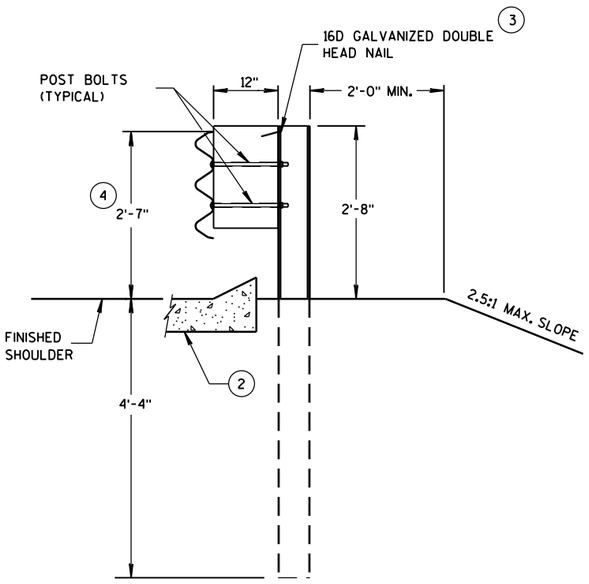
PLATE WASHER DETAIL



SPLICE DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

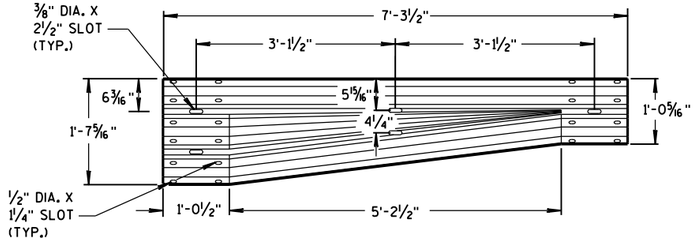
POSTS 12-17

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

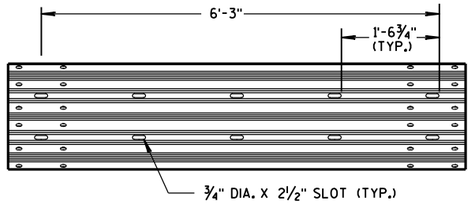
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

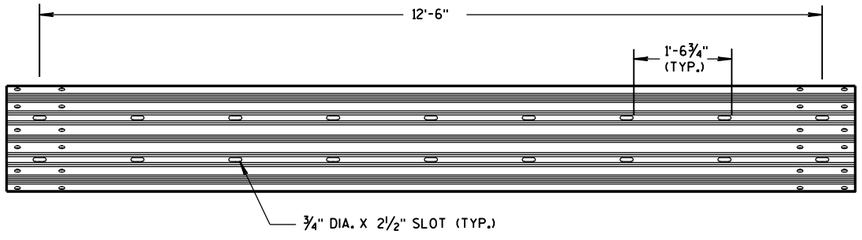
S.D.D. 14 B 45-4b



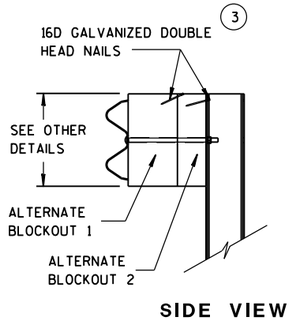
W-BEAM TO THRIE BEAM TRANSITION SECTION



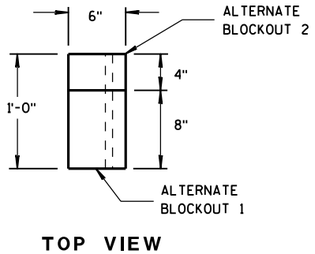
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

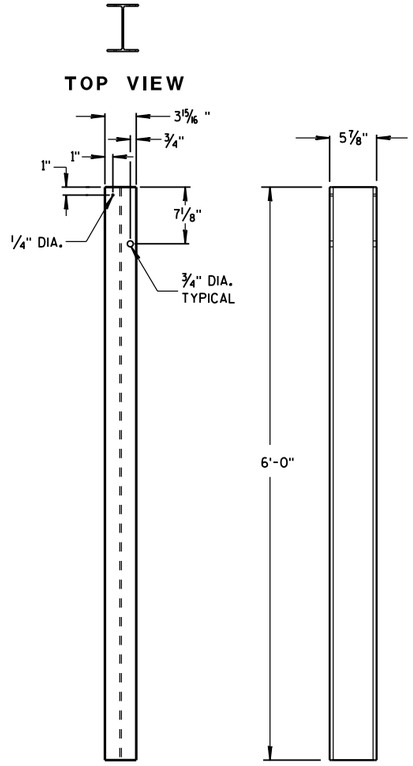


SIDE VIEW



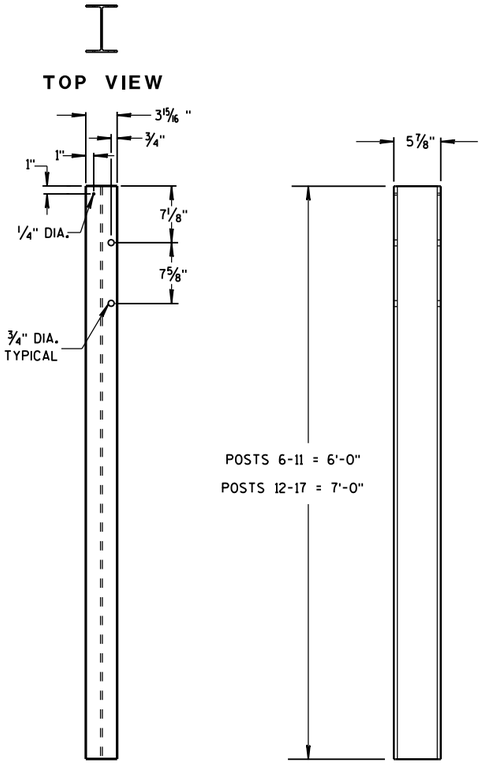
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



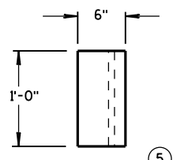
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5

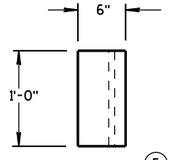


FRONT VIEW SIDE VIEW

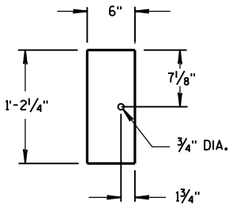
STEEL POSTS 6-17



TOP VIEW (5)

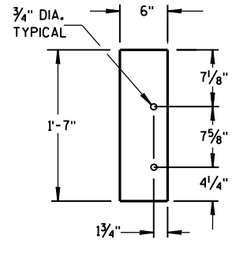


TOP VIEW (5)



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.

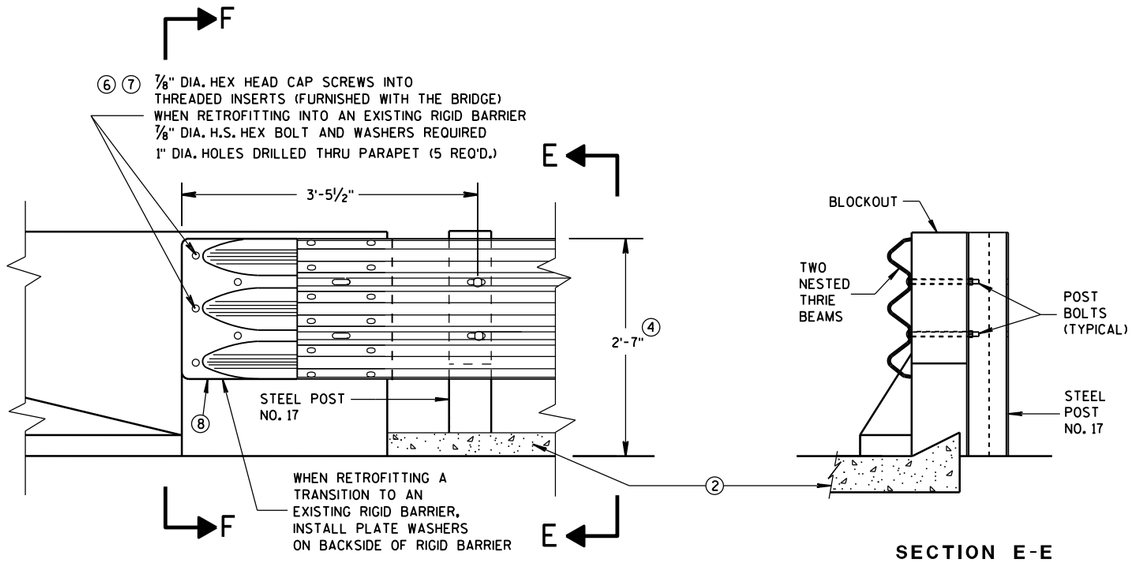
(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

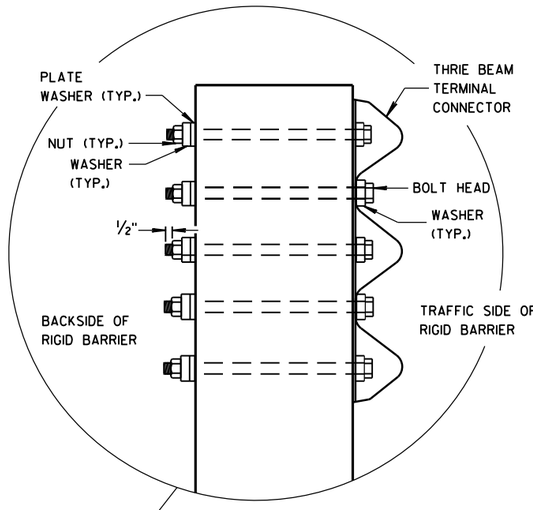
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

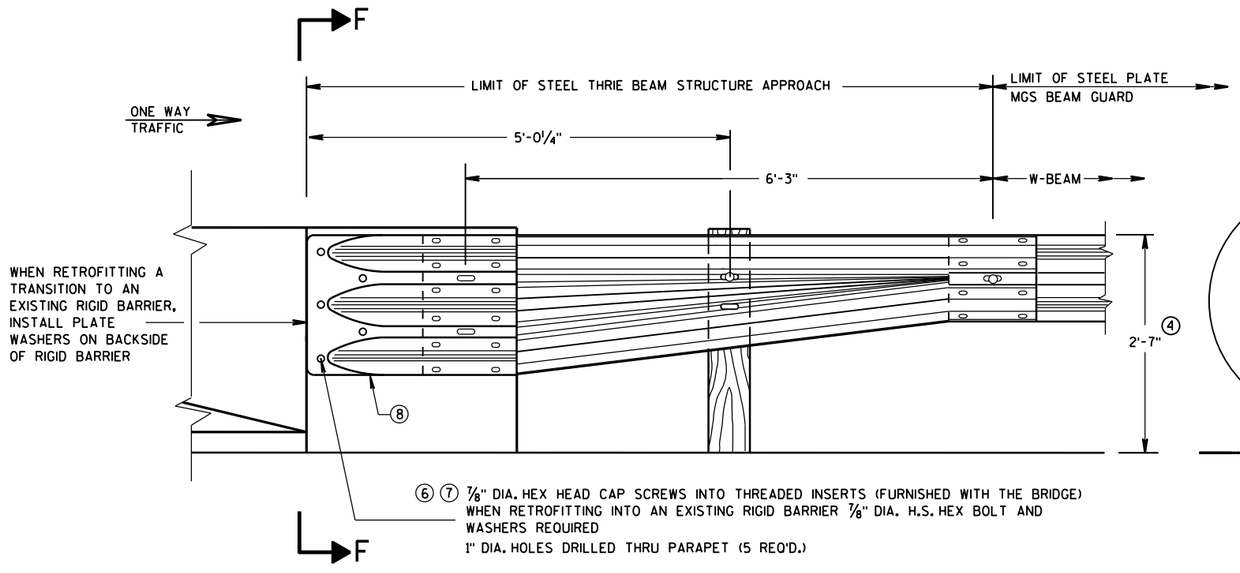
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

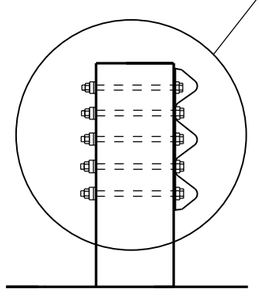
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

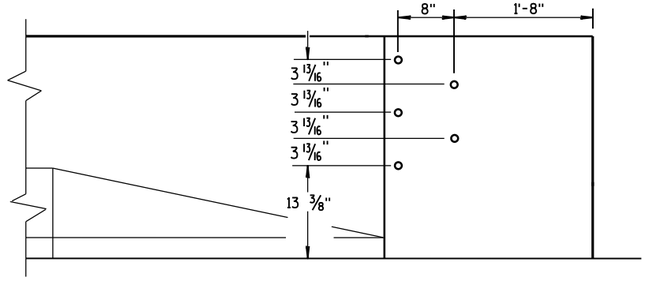




FRONT VIEW



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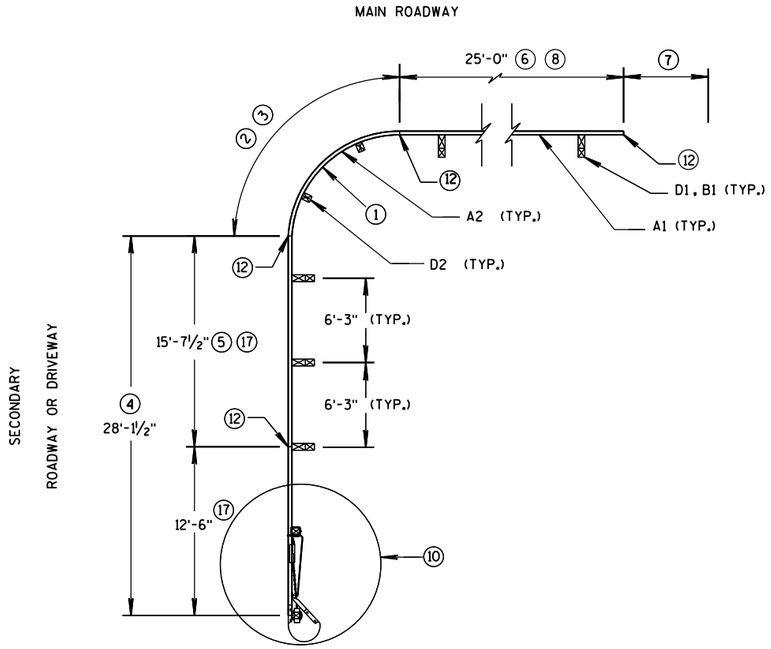
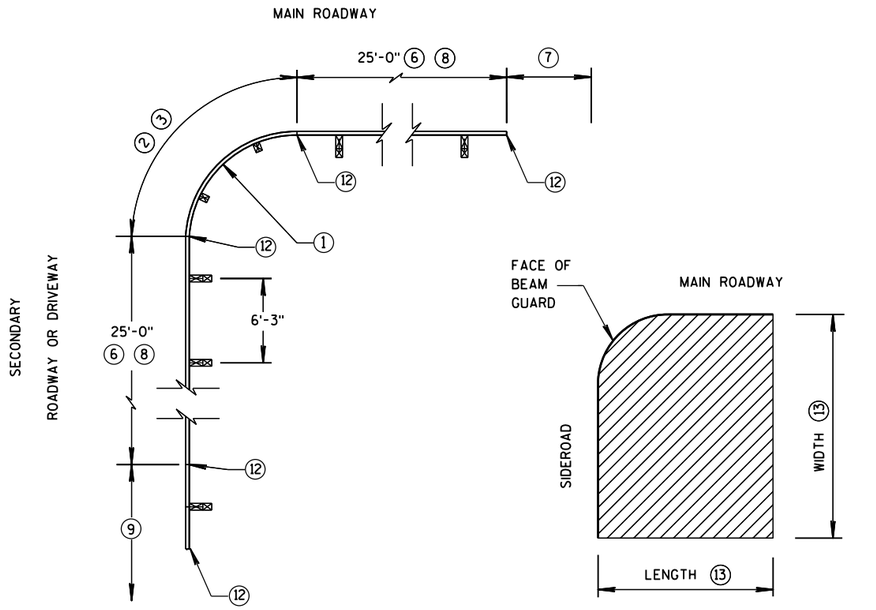
S.D.D. 14 B 45-4d



SHORT RADIUS BEAM GUARD WITH SHORT RADIUS TERMINAL ON SECONDARY ROAD OR DRIVEWAY PLAN VIEW



SHORT RADIUS BEAM GUARD WITH EAT, ADDITIONAL BEAM GUARD OR TRANSITION TO RIGID BARRIER ON SECONDARY ROAD OR DRIVEWAY PLAN VIEW

AREA FREE OF FIXED OBJECTS FOR RADIUS 32' AND LESS (16)

TABLE FOR RADIUS OF 32' AND LESS

RADIUS FT	LENGTH FT	WIDTH FT
8	25	15
16	30	15
24	40	20
32	50	30

GENERAL NOTES

SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.

SEE 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.

GALVANIZE PARTS AFTER FABRICATION.

WELDING IS TO FOLLOW CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1

UNLESS NOTED OTHERWISE, ALL PLATES ARE FLAT AND FREE OF WARP.

UNLESS NOTED OTHERWISE, ALL EDGES ARE SMOOTH, STRAIGHT AND VERITCAL.

ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUTS.

UNLESS NOTED OTHERWISE CUT OR PROVIDE BOLTS THAT ARE ¼" TO ½" BEYOND THE NUT

DRAWINGS ARE NOT TO SCALE.

(1) RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.

(2) CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6'-3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE TERMINAL (CRT) POSTS.

(3) WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAILS RESTED ON TOP OF LAG SCREW.

(4) MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID FOR WITH BEAM GUARD ITEM.

(5) ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.

(6) MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.

(7) BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. SEE PLAN.

(8) TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.

(9) ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.

(10) SHORT RADIUS TERMINAL (SEE OTHER DETAILS)

(11) HEIGHT VARIES. SEE NOTE (8) AND (17).

(12) BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRE PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.

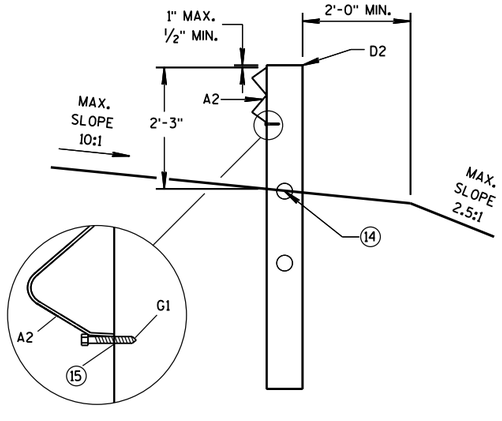
(13) SEE TABLE FOR VALUES.

(14) MAXIMUM HEIGHT FOR CENTER OF HOLE IS ¾" ABOVE FINISHED GROUND ±1".

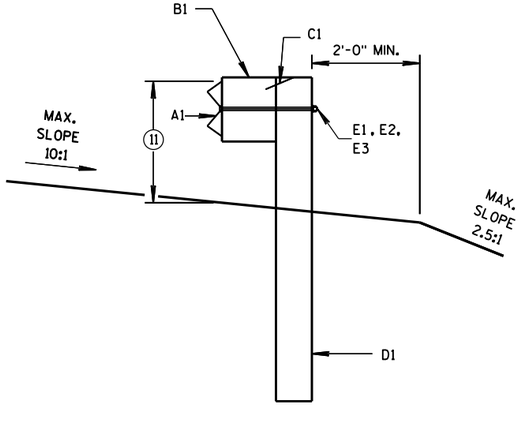
(15) DRILL 15/64" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.

(16) SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.

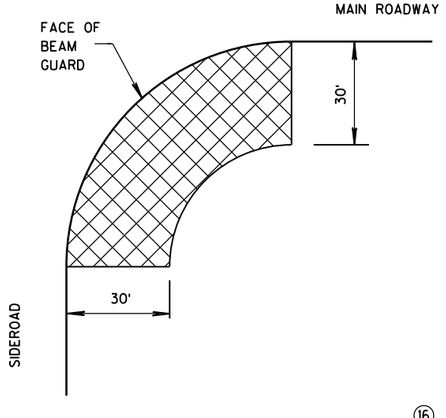
(17) TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL.



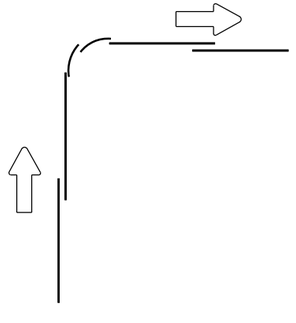
CONTROLLED RELEASE TERMINAL POST (CRT) IN RADIUS



BEAM GUARD POSTS IN HEIGHT TRANSITION



AREA FREE OF FIXED OBJECTS (16) RADIUS GREATER THAN 32'



LAP SPLICE DETAIL

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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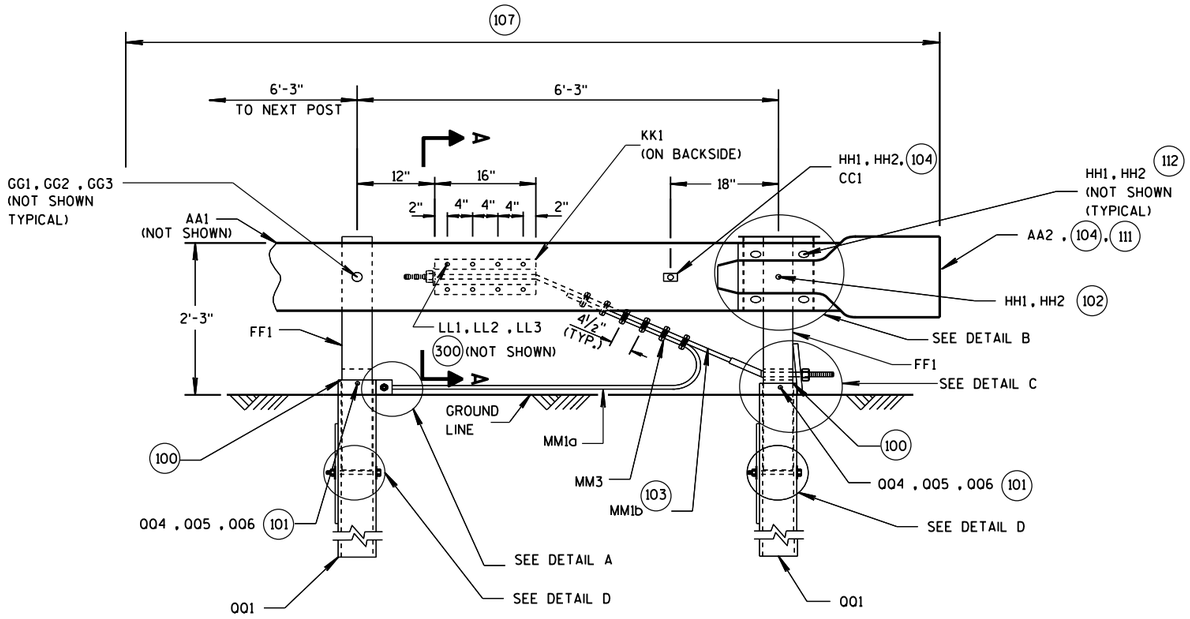
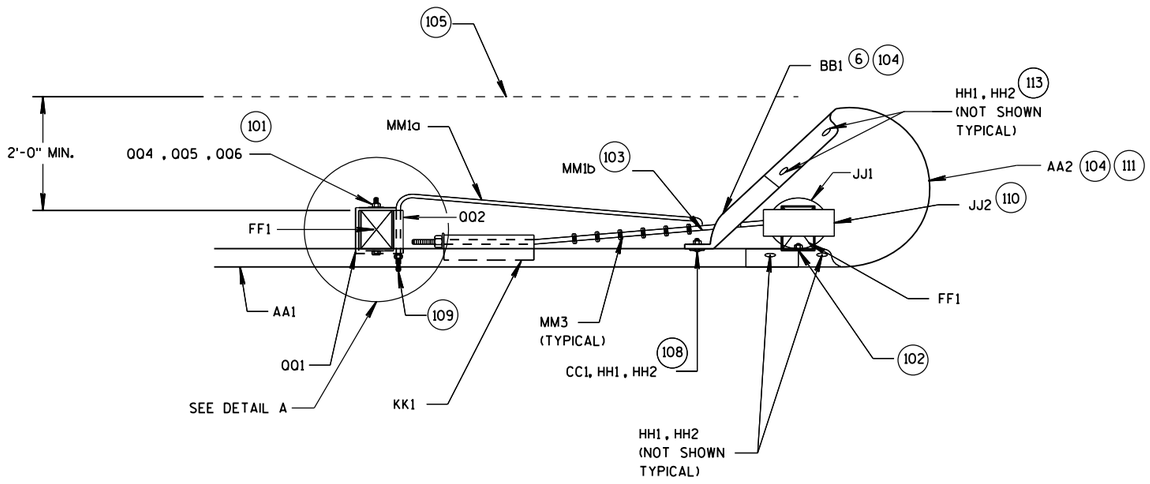
S.D.D. 14 B 53-1a



SHORT RADIUS TERMINAL
PROFILE VIEW



SHORT RADIUS TERMINAL
TOP VIEW

100 TOP OF FOUNDATION TUBE 2 INCHES MAXIMUM ABOVE FINISHED GROUND.

101 WASHERS REQUIRED BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.

102 SPLICE BOLT AND NUT CONNECTS BEAM GUARD RAIL, W-BEAM END SECTION BUFFER, AND STEEL PIPE ASSEMBLY. NO WASHER REQUIRED. SEE DETAIL B.

103 CABLE IS TAUT.

104 ADJUST AA2 AND BB1 TO FIT.

105 BREAK POINT OF SHOULDER.

106 TACK WELD CABLE CONNECTOR TUBE PLATE TO CABLE CONNECTION TUBE. SEE DETAIL A PROFILE VIEW.

107 PAY LIMIT FOR BEAM GUARD.

108 SQUARE WASHER BETWEEN HEAD OF BOLT AND TRAFFIC FACE OF BEAM GUARD. ROUND WASHER REQUIRED BETWEEN NUT AND BB1.

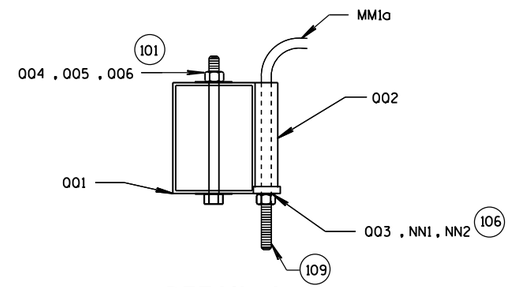
109 CUT OR PROVIDE THREADED STUD THAT IS FLUSH WITH FACE OF BEAM GUARD RAIL KK1 (PLUS OR MINUS ½" TOLERANCE). DEBURR AFTER CUTTING.

110 SEE STEEL PIPE ASSEMBLY DETAILS.

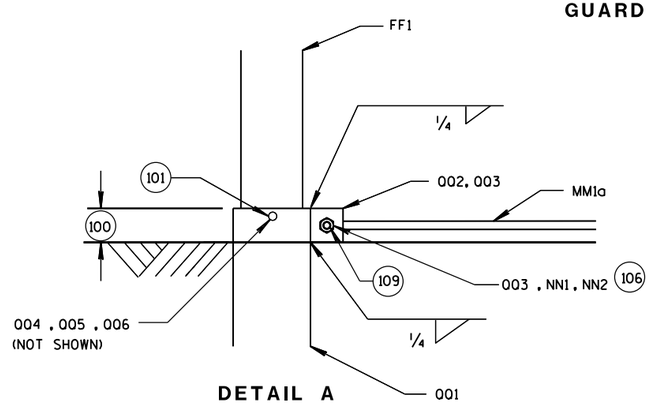
111 ATTACH UU2 WITH UU3. SHOP APPLY UU1 TO UU2.

112 FOUR HH1 AND HH2 REQUIRED TO ATTACH AA1 TO AA2.

113 FOUR HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.



DETAIL A
TOP VIEW
(WOOD BREAKAWAY AND BEAM GUARD RAIL POSTS NOT SHOWN)



DETAIL A
PROFILE VIEW

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL
MGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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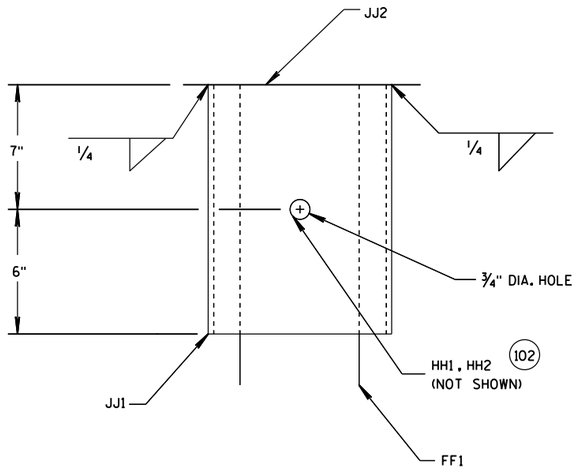
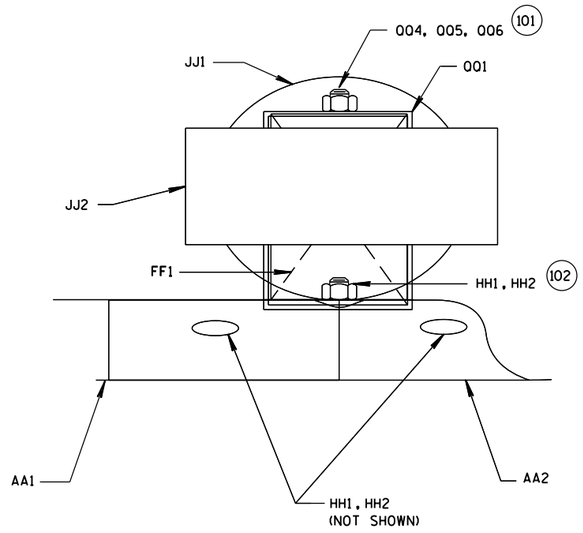
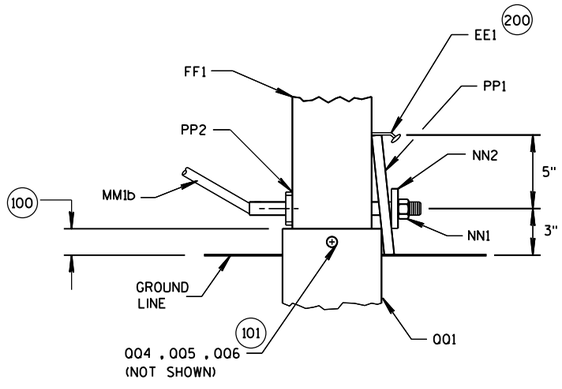


DETAIL B
PROFILE VIEW OF STEEL PIPE ASSEMBLY
(BEAM GUARD AND W-BEAM
END SECTION NOT SHOWN)

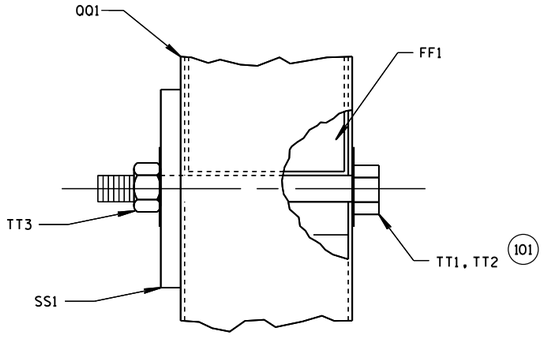


DETAIL B
PLAN VIEW OF STEEL PIPE ASSEMBLY

200 2 NAILS SPACED 4 INCHES CENTER TO CENTER.



DETAIL C
PROFILE VIEW



DETAIL D
PROFILE VIEW

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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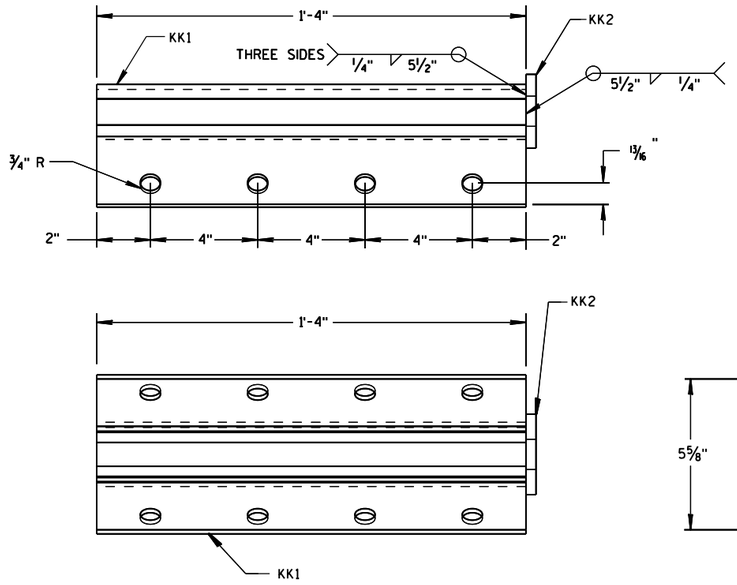
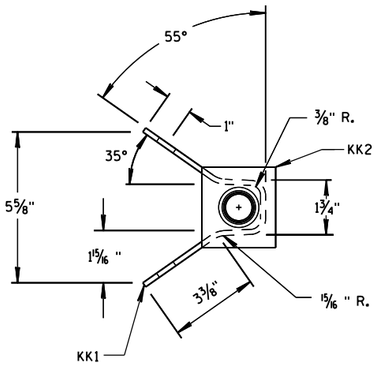
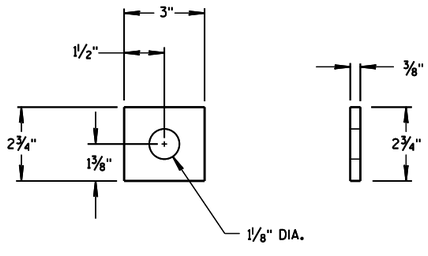
(300) WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT LL1 AND LL3 REQUIRED. SIXTEEN LL2 REQUIRED.

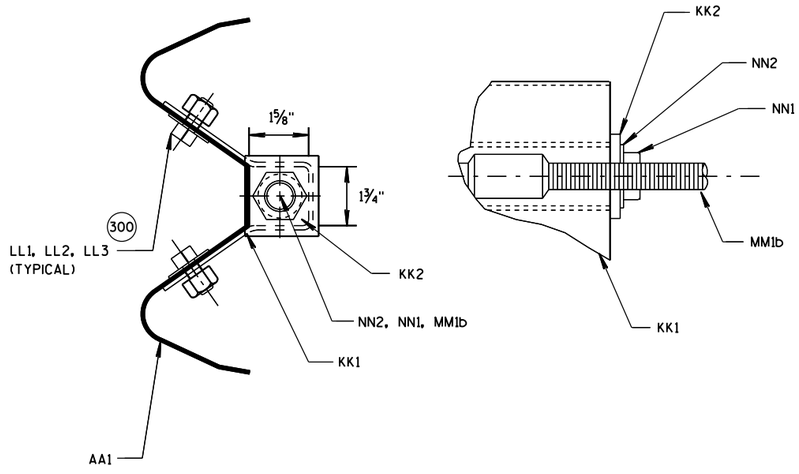




ANCHOR BRACKET (KK1, KK2)



ANCHOR BRACKET BEARING PLATE (KK2)



SECTION A-A

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
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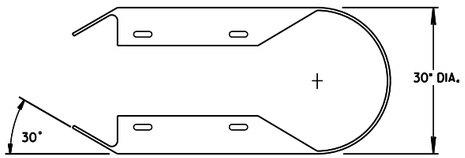
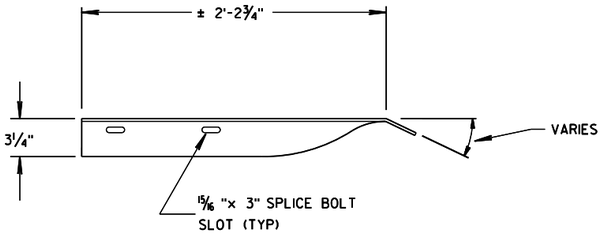


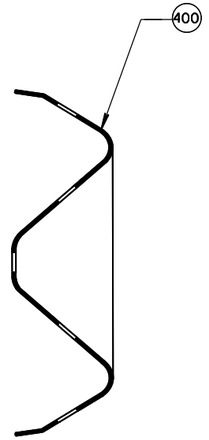
TOP VIEW



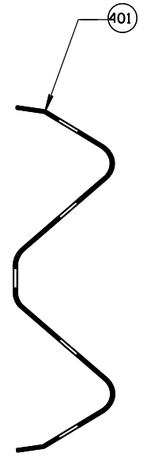
TOP VIEW

(400) CROSS SECTON OF PART IS TO FIT OVER AA1.

(401) CROSS SECTON OF PART IS TO FIT OVER OR UNDER AA1.

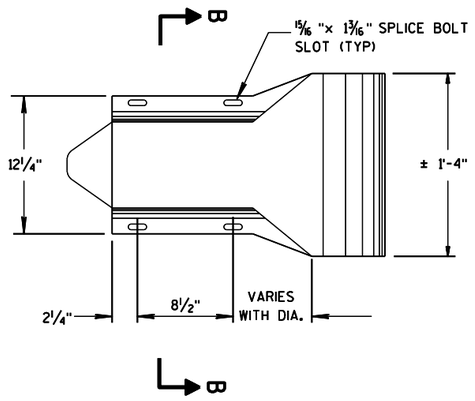


SECTION B-B



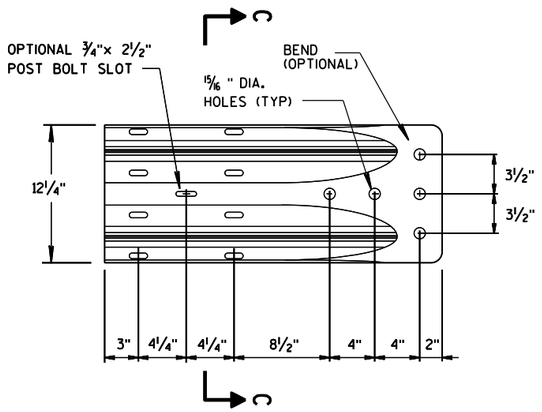
SECTION C-C

6



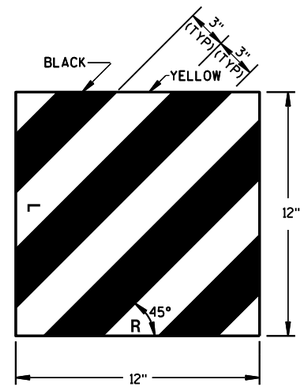
W-BEAM
END SECTION BUFFER (AA2)

PROFILE VIEW



W-BEAM
TERMINAL CONNECTOR (BB1)

PROFILE VIEW



REFLECTIVE SHEETING
(UU1, UU2)

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S.D.D. 14 B 53-1e

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

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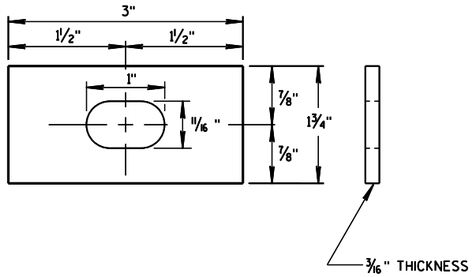
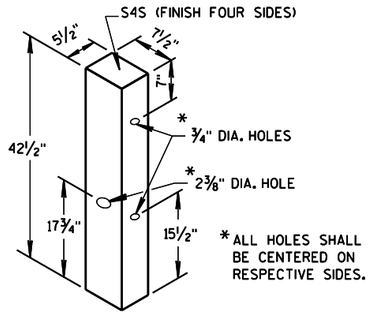
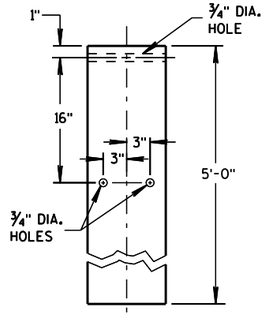


RECTANGULAR PLATE WASHER (CC1)



WOOD BREAKAWAY POST (FF1)



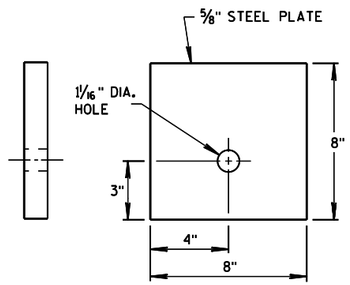
FOUNDATION TUBE (QQ1) (500)

(500) SEE DETAIL "D" FOR LOCATION AND ATTACHING SS1.

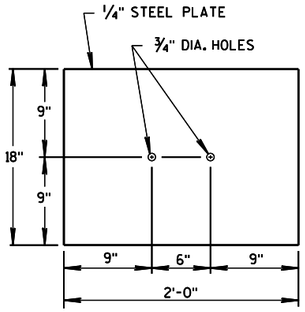
(501) FOR MM1a THREADED STUD ONLY REQUIRED ON ONE END. SWAGED FITTING REQUIRED.

(502) LOCATE HOLES ON THE CENTERLINE OF THE SIDE OF THE POST.

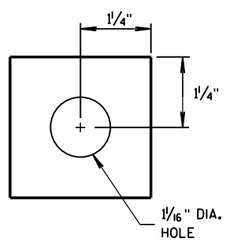
(503) MM1a MAY HAVE ONE THREADED STUD 4 INCHES LONG. SEE NOTE (109).



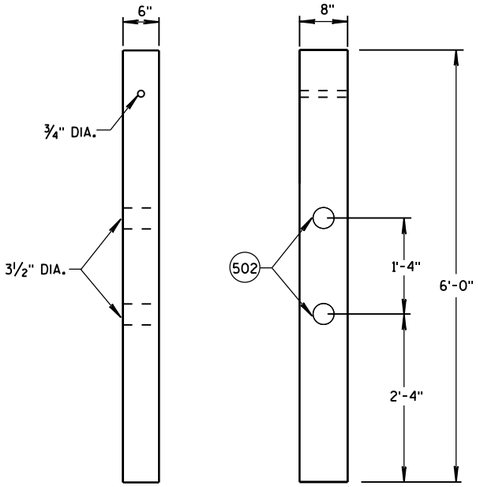
BEARING PLATE (PP1)



SOIL PLATE (SS1)

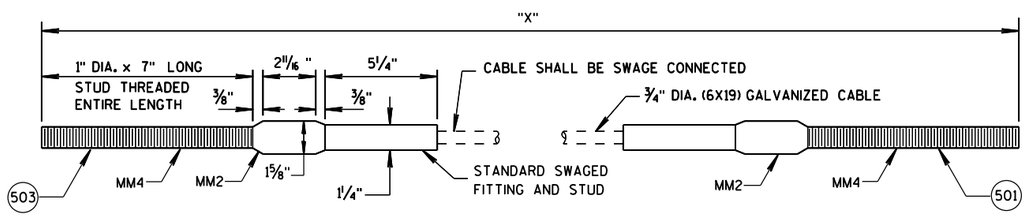


TUBE END PLATE (QQ3)



FRONT VIEW SIDE VIEW

CONTROLLED RELEASE TERMINAL POST (CRT) (D2)



"X" LENGTH	
MM1a	9'-0"
MM1b	6'-8"

CABLE ASSEMBLY (MM1a , MM1b)

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

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BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	BEAM GUARD RAIL	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
A2	BEAM GUARD RAIL - SHOP BENT	INDICATE ON BACK OF RAIL RADIUS THAT RAIL WAS BENT TO. SHOP BEND RADIUS IS TO THE NEAREST FOOT. FOLLOW AASHTO M180 ON HOW TO MARK RADIUS INFORMATION.	
		AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
B1	BLOCK - WOOD	WISDOT SPEC. 614	SEE SDD 14B42
C1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEAD)	
D1	POST-STRONG POST-WOOD	WISDOT SPEC. 614	SEE SDD 14B42
D2	POST-CRT-WOOD	WISDOT SPEC. 614	
E1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
E2	POST BOLT-WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	5/8" DIA.
		GALV. AASHTO M111/ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329	
E3	POST BOLT - NUT		5/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
F1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY AND OTHER INFORMATION
		UNC	
		AASHTO M180	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
F2	SPLICE BOLT - NUT	ASTM A563 GRADE A	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
G1	LAG SCREW	ASTM A308 GRADE A ASTM A153 CLASS D	3/8" DIA. 3" LONG
H1	DELINEATOR - BEAM GUARD		SEE SDD 14B42 FOR MORE INFORMATION
H2	DELINEATION - SHEETING	YELLOW OR WHITE	
		WISDOT SPEC 637 TYPE SH	
		APPROVED PRODUCT LIST	
J1	FOUNDATION BACKFILL	STANDARD SPEC. 614	
AA1	BEAM GUARD RAIL - PUNCHED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
AA2	BEAM GUARD RAIL - END SECTION BUFFER	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
BB1	BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
CC1	SHORT RADIUS - SQUARE WASHER	AASHTO M180	
		GALV. AASHTO M111 / ASTM A123	
EE1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)	
FF1	POST - BCT - WOOD	S4S FINISH ON 4 SIDES	
		WISDOT SPEC. 614	
GG1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	3/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
GG2	POST BOLT - WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	3/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI 47

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S.D.D. 14 B 53-1g

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
GG3	POST BOLT - NUT	ASTM A563 GRADE A	3/8" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	SEE 14B42 FOR GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
HH1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	3/8" DIA. SEE 14B42 FOR GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180 HEAD GEOMETRY	
HH2	SPLICE BOLT - NUT	ASTM A563 GRADE A	3/8" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	SEE 14B42 FOR GEOMETRY
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
JJ1	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	10" O.D.
JJ2	TOP PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 3/8" X 4" X 1'-0"
		GALV. AASHTO M111 / ASTM A123	
KK1	ANCHOR BRACKET	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
KK2	ANCHOR BRACKET - BEARING PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
LL1	ANCHOR BRACKET - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
LL2	ANCHOR BRACKET - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
LL3	ANCHOR BRACKET - NUT	ASTM A563 GRADE A	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A563	
		UNC	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
MM1a	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM1b	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM2	ANCHOR CABLE - SWAGE FITTING	ASTM A576 GRADE 1035	
		SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. WITH A BREAKING STRENGTH 40,000 LBS.	
		GALV. AASHTO M111 / ASTM A123	
		ASME B30.26 FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING INTO CONNECTION: NAME OF MANUFACTURER OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE.	
MM3	WIRE ROPE CABLE CLAMPS	FF-C-450D TYPE 1 CLASS 1	3/4"
		ASTM A153 HOT DIP CLASS D	
MM4	ANCHOR CABLE - SWAGE FITTING - STUD	ASTM F3125 GRADE A325 TYPE 1 OR SAE GRADE 5 OR ASTM A449 TYPE 1 HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
NN1	ANCHOR CABLE - NUT	ASTM A563 GRADE A	1" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A563	
		UNC	
NN2	ANCHOR CABLE - NUT - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	1" DIA.
		GALV. AASHTO M111 / ASTM A123 OR5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
PP1	BEARING PLATE AT POST	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
PP2	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	2" DIA. x 6" LONG
QQ1	FOUNDATION TUBE	ASTM A500 GRADE B	8" X 6" X 3/16"
		GALV. AASHTO M111 / ASTM A123	
QQ2	SHORT RADIUS - FOUNDATION TUBE - ANCHOR CABLE - TUBE	ASTM A500 GRADE B	DIMENSIONS 2 1/2" X 2 1/4" X 1/4" X 8"
		GALV. AASHTO M111 / ASTM A123	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 53-1h

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
003	SHORT RADIUS - SOIL TUBE - ANCHOR CABLE - TUBE - END PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 2½" X 2½" X ¼"
		GALV. AASHTO M111 / ASTM A123	
004	GROUND STRUT AND YOKE - BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	⅝" DIA.
		ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	
		UNC	
005	GROUND PLATE AND YOKE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	⅝" DIA.
		GALV. AASHTO M111 / ASTM A123 OR5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
006	GROUND STRUT AND YOKE - NUT	HEAVY HEX	⅝" DIA.
		UNC	
		ASTM A563 GRADE A	
		OVER TAPPED NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
SS1	SOIL PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
TT1	SOIL PLATE - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	⅝" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
TT2	SOIL PLATE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	⅝" DIA.
		GALV. AASHTO M111 / ASTM A123 OR5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
TT3	SOIL PLATE - NUT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	⅝" DIA.
UU1	OBJECT MARKER - SHEETING	MUTCD / WISDOT OBJECT MARKER TYPE 3	PATTERN AND COLOR FOR SHEETING SHEETING TYPE FOR MARKER
		WISDOT SPEC 637 TYPE F	
		APPROVED PRODUCT LIST	
UU2	OBJECT MARKER - ALUMINUM PLATE	WISDOT SPEC 637 ALUMINUM PLATE	MATERIAL AND THICKNESS OF MATERIALS
UU3	OBJECT MARKER - SCREWS	STAINLESS SELF-TAPPING SCREWS	
VV1	FOUNDATION BACKFILL	WISDOT SPEC 614	

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S.D.D. 14 B 53-1i

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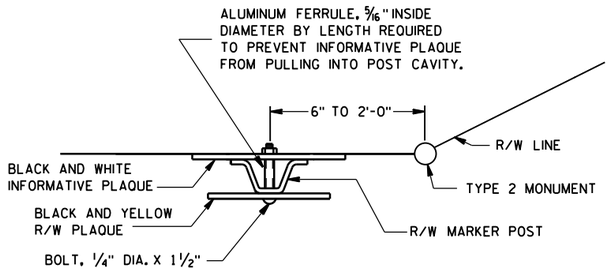
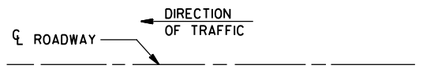
S.D.D. 14 B 53-1i

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

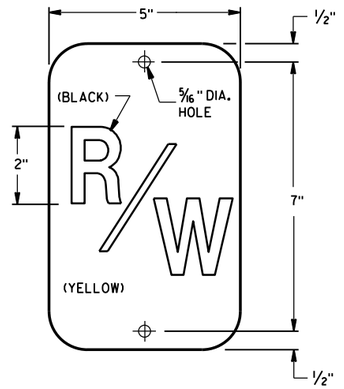
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVI
FHWA



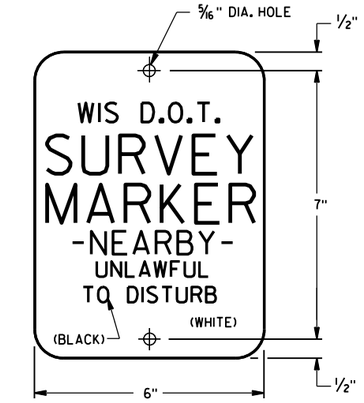


PLAN VIEW



R/W PLAQUE

THE RIGHT-OF-WAY PLAQUE AND INFORMATIVE PLAQUE WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.



INFORMATIVE PLAQUE

GENERAL NOTES

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

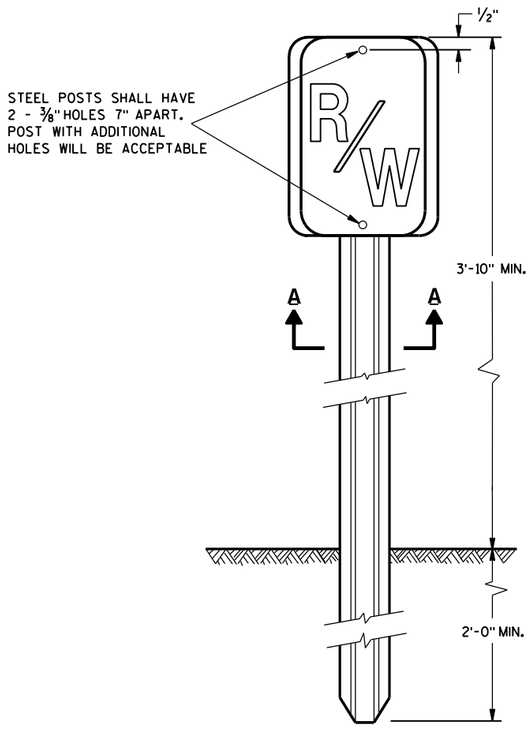
A STEEL MARKER POST FOR RIGHT-OF-WAY SHALL BE PLACED IN THE RIGHT-OF-WAY, WITH THE BACK OF THE POST ON THE LONGER RIGHT-OF-WAY TANGENT, 6 INCHES TO 24 INCHES FROM EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. R/W AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE DEPARTMENT OF TRANSPORTATION.

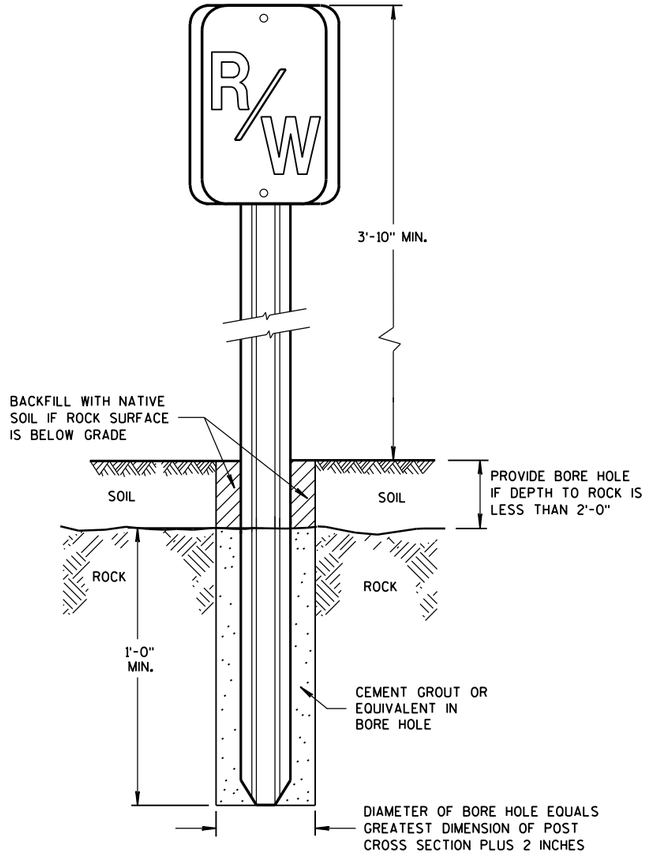
STEEL MARKER POSTS SHALL MEET THE MINIMUM MATERIAL REQUIREMENTS FOR STEEL DELINEATOR POSTS; EXCEPT POSTS PAINTED WITH FEDERAL YELLOW ENAMEL NEED NOT BE ZINC COATED.

(1) IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK TO A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3'10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR.

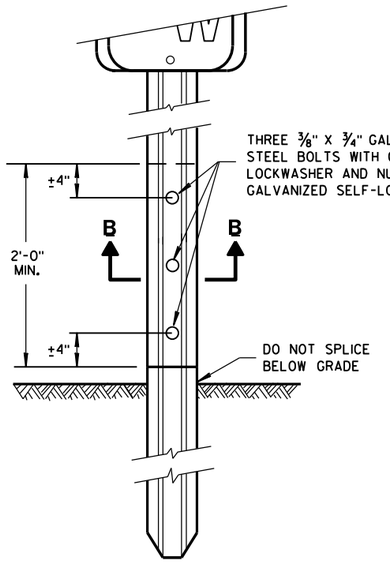
FILL THE BORE HOLE WITH CEMENT GROUT, OR EQUIVALENT. DEPENDING ON THE STABILITY OF THE ROCK.



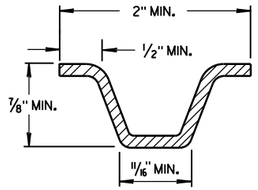
FRONT VIEW
STEEL MARKER POST



FRONT VIEW
ROCK INSTALLATION (1)

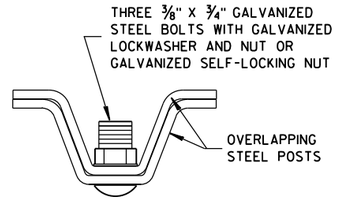


FRONT VIEW
SPLICE DETAIL



MIN. WEIGHT 1.12 LB./FT.

SECTION A-A



SECTION B-B

MARKER POST FOR RIGHT-OF-WAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/18/2016 — DATE
/S/ Ray Kumapayi — CHIEF SURVEYING AND MA[illegible]INEER
FHWA

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S.D.D. 15 A 1-13a

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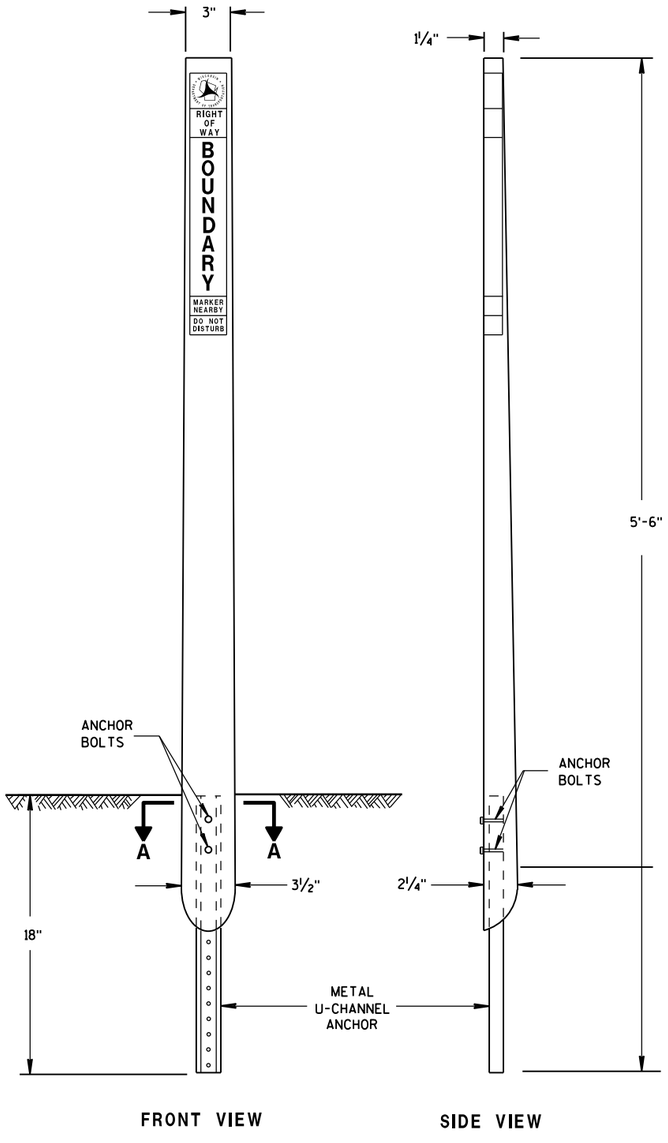
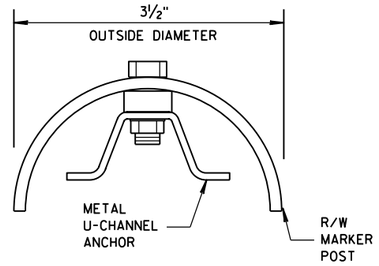
S.D.D. 15 A 1-13a

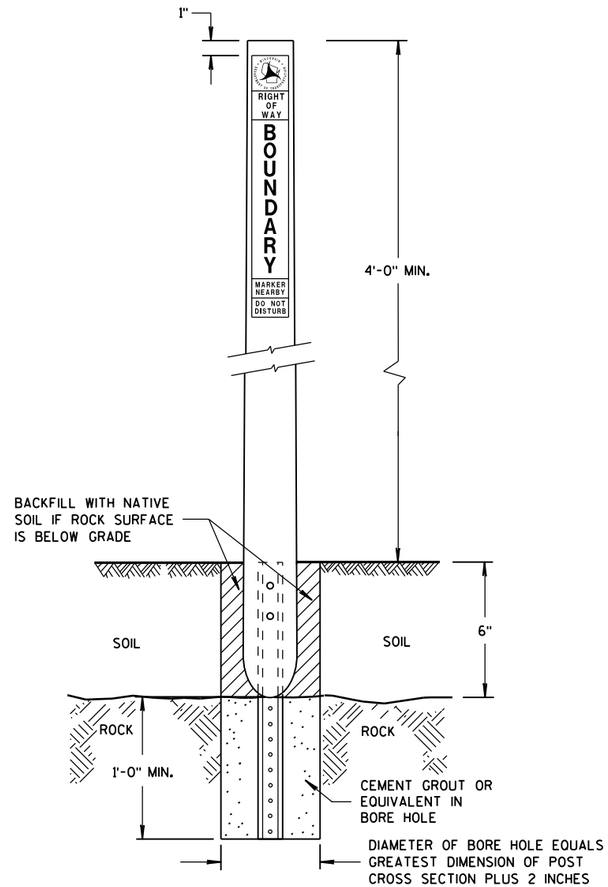


FRONT VIEW SIDE VIEW

FLEXIBLE MARKER POST FOR RIGHT-OF-WAY ①

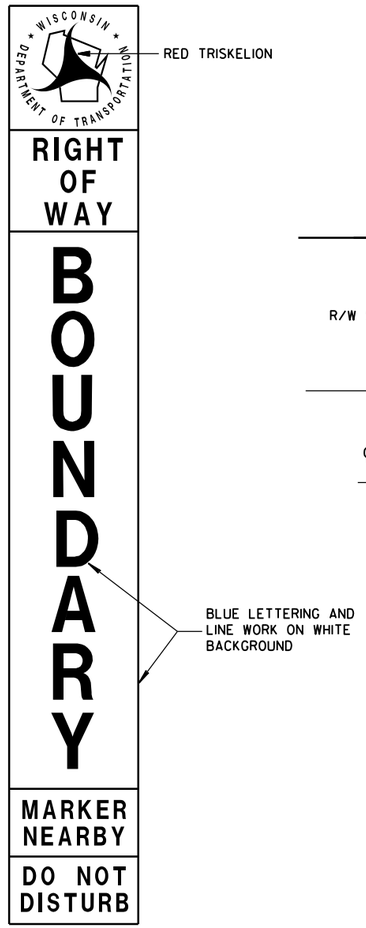


SECTION A-A



FRONT VIEW

ROCK INSTALLATION ①②



RIGHT-OF-WAY STICKER

THE RIGHT-OF-WAY STICKER SHALL BE ATTACHED 1" FROM THE TOP OF THE RIGHT-OF-WAY POST PRIOR TO DELIVERY.

GENERAL NOTES

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

A FLEXIBLE MARKER POST FOR RIGHT-OF-WAY SHALL BE PLACED IN THE RIGHT-OF-WAY, WITH THE BACK OF THE POST ON THE LONGER RIGHT-OF-WAY TANGENT, 6 INCHES TO 24 INCHES FROM EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

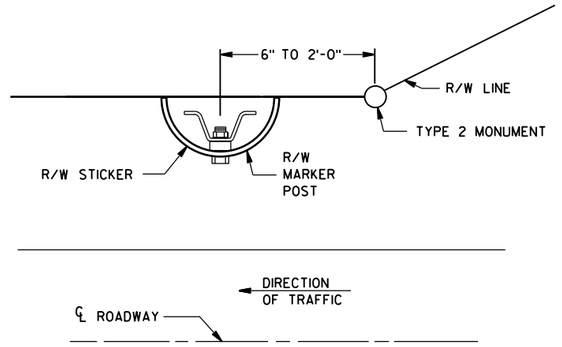
THE RIGHT-OF-WAY STICKER DIMENSIONS SHALL BE 2¼" X 17" AND THE STICKER SHALL BE MADE OF A NON-REFLECTIVE VINYL MATERIAL. THE RIGHT-OF-WAY STICKER SHALL FACE THE ROADWAY.

INSTALL PER DEPTH OF MANUFACTURER'S RECOMMENDATIONS BUT NOT LESS THAN 18 INCHES BELOW GRADE FROM THE BOTTOM OF THE METAL U-CHANNEL ANCHOR.

① FLEXIBLE MARKER POSTS SHALL BE INCLUDED IN THE APPROVED PRODUCTS LIST FOR MARKER POSTS AND SHALL BE FEDERAL YELLOW IN COLOR.

② IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK TO A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 4'-0" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR.

FILL THE BORE HOLE WITH CEMENT GROUT, OR EQUIVALENT, DEPENDING ON THE STABILITY OF THE ROCK.



PLAN VIEW

FLEXIBLE MARKER POST FOR RIGHT-OF-WAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/18/2016 — DATE
/S/ Ray Kumapayi — CHIEF SURVEYING AND MAPPING ENGINEER
FHWA

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S.D.D. 15 A 1-13b

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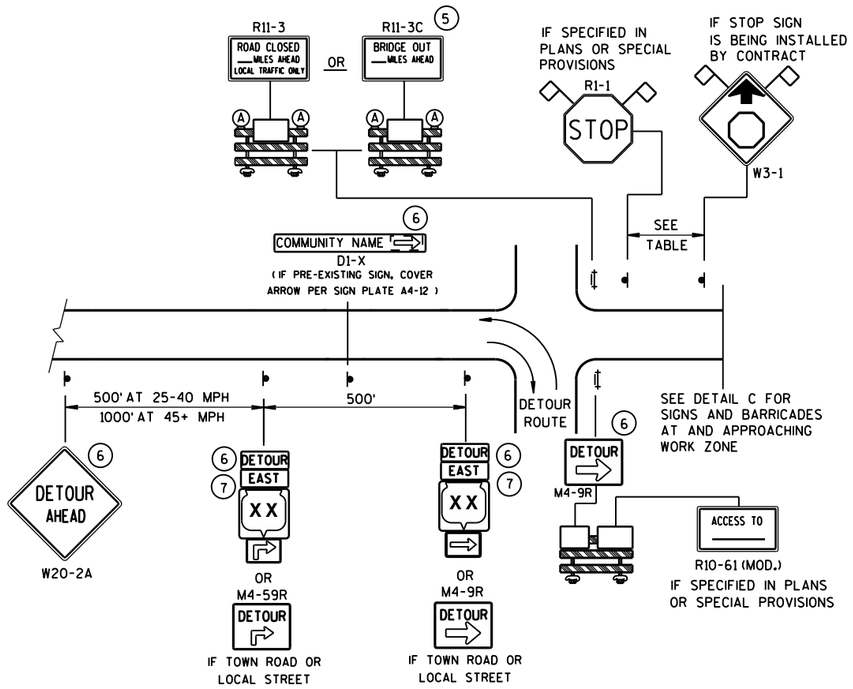
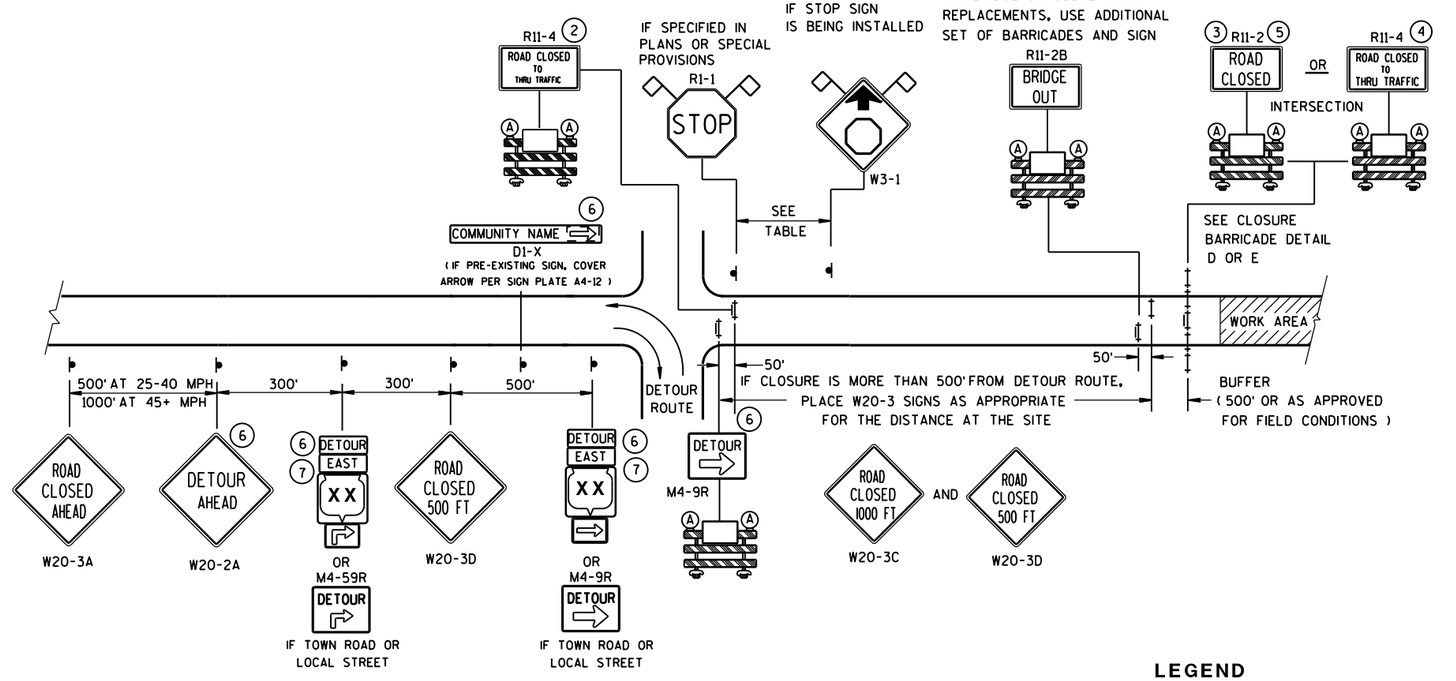
S.D.D. 15 A 1-13b



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

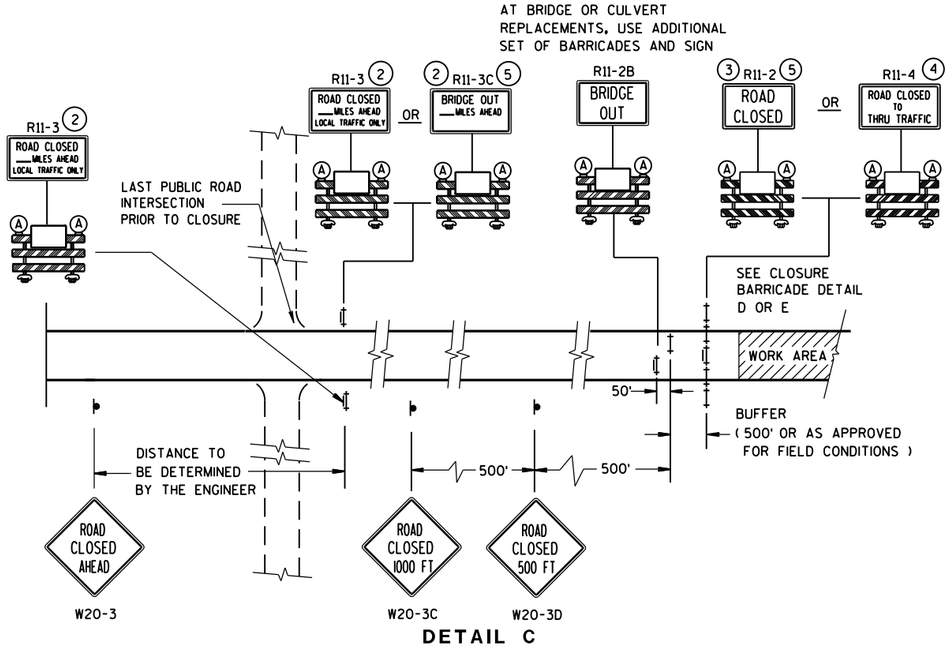
WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



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

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

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)

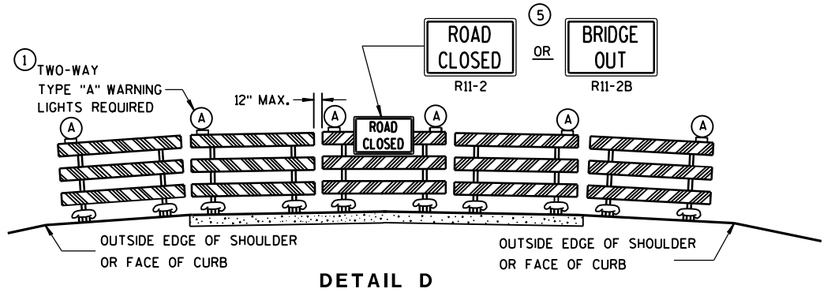
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

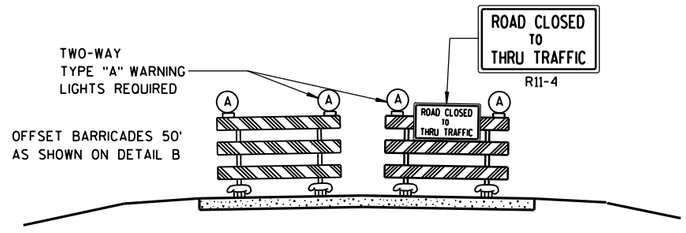
S.D.D. 15 C 2-6a



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

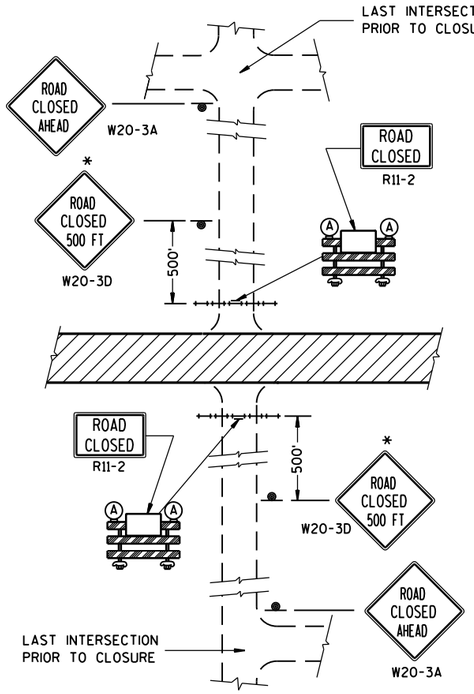
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

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

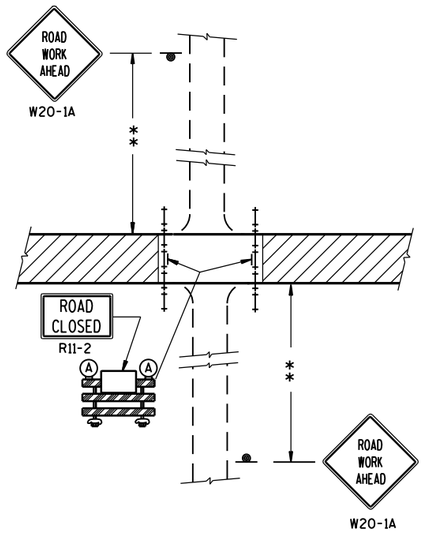
6

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



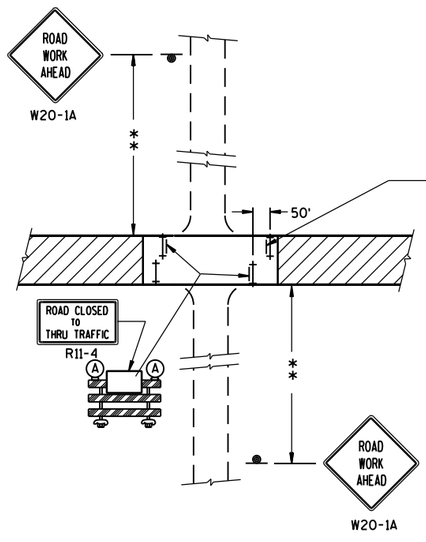
DETAIL 1

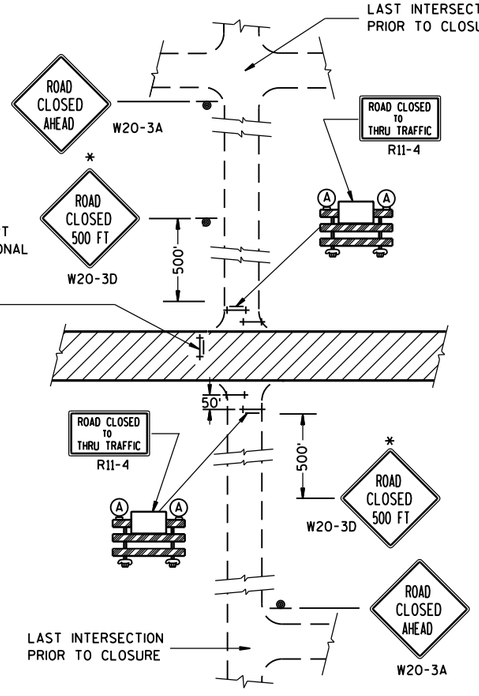
(NO ACCESS TO PROJECT)



DETAIL 2

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





DETAIL 3

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

DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

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

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

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

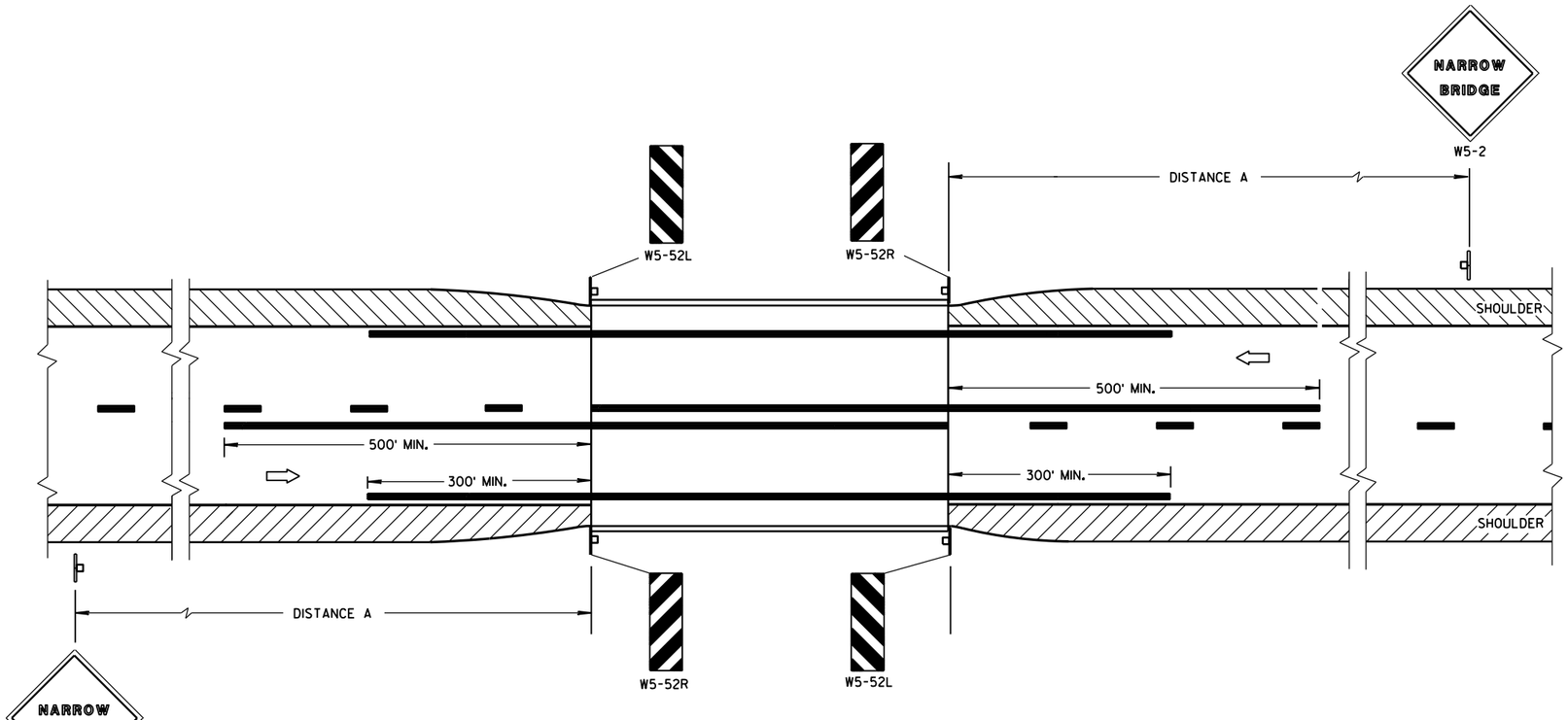
APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO... SAFETY ENGI... — FHWA

6

S.D.D. 15 C 3-3

6

S.D.D. 15 C 3-3



SITUATION 1

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

DISTANCE TABLE

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

GENERAL NOTES

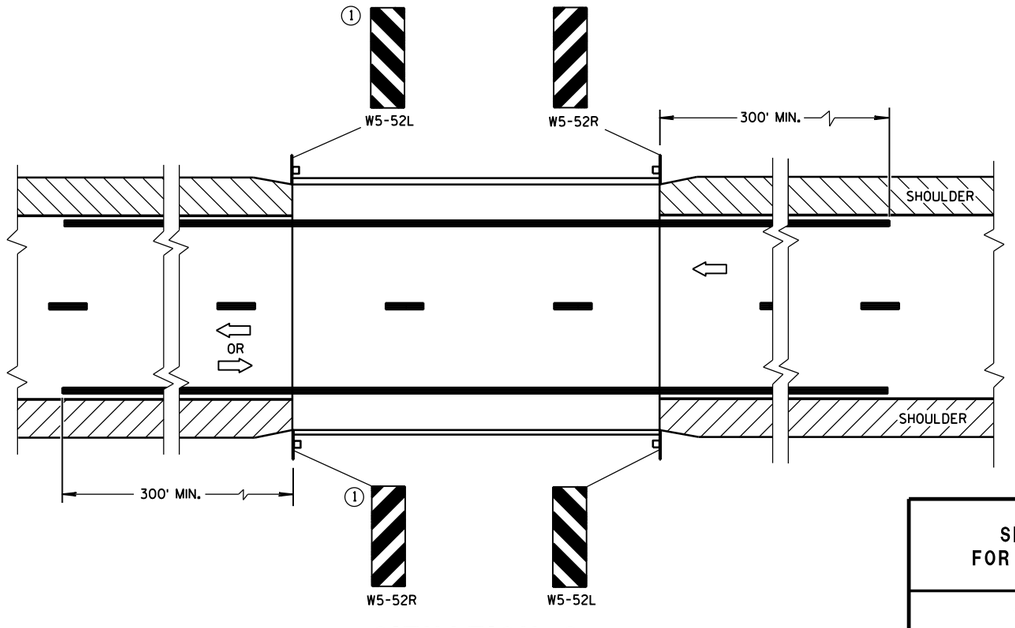
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

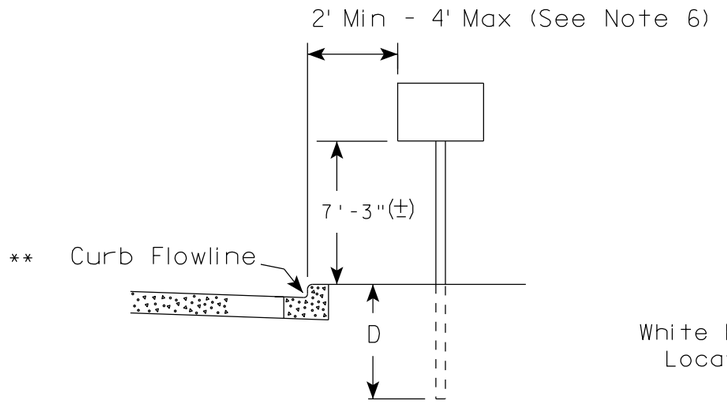
6

S.D.D. 15 C 6-9

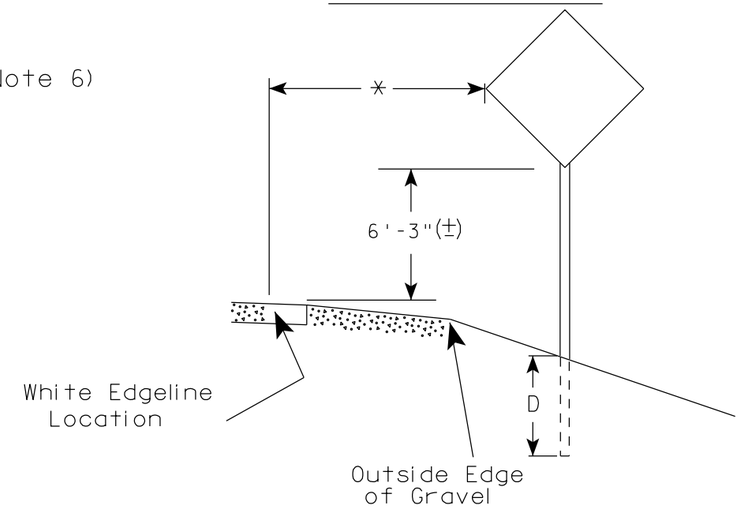
6

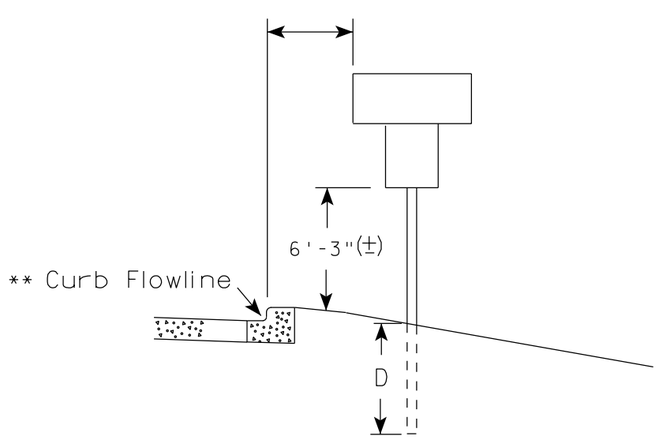
S.D.D. 15 C 6-9

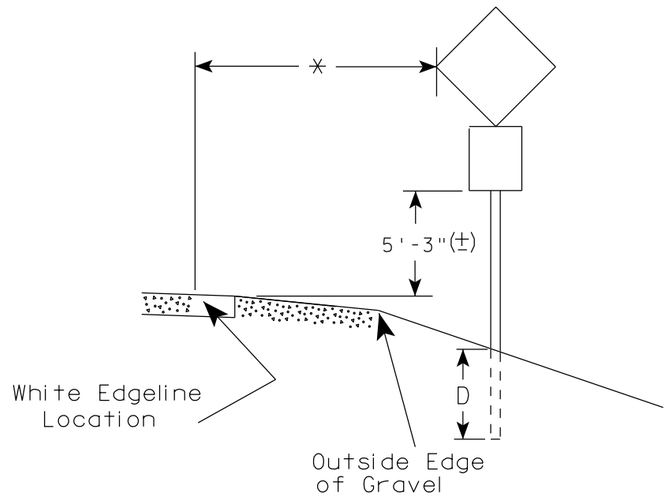
URBAN AREA



RURAL AREA (See Note 2)







GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

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

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

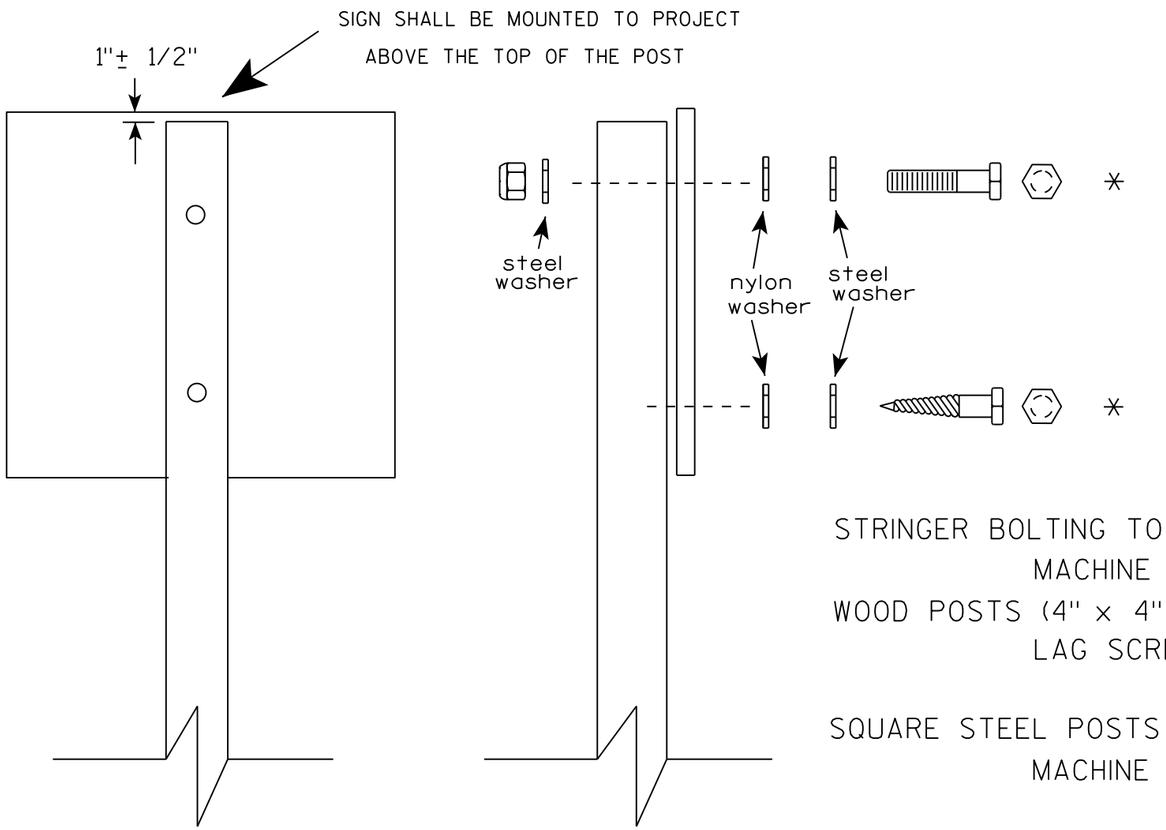
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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.

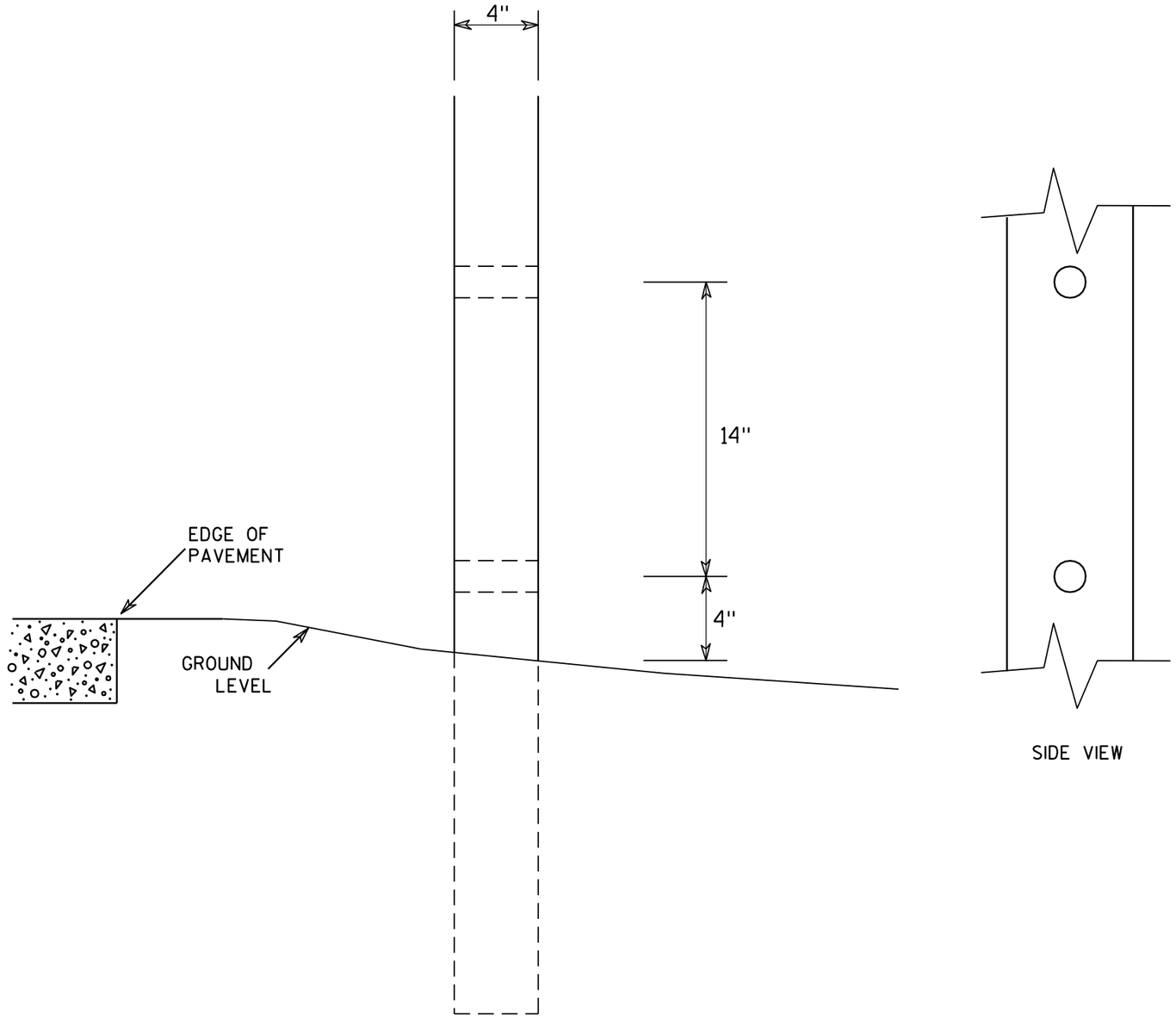
ATTACHMENT OF SIGNS TO POSTS

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



SIDE VIEW

GENERAL NOTES

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

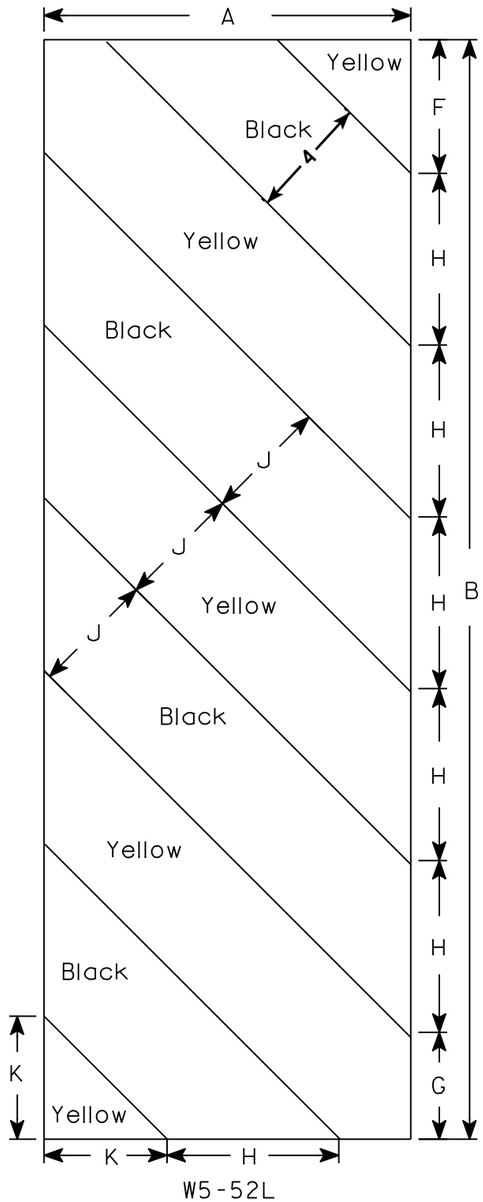
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

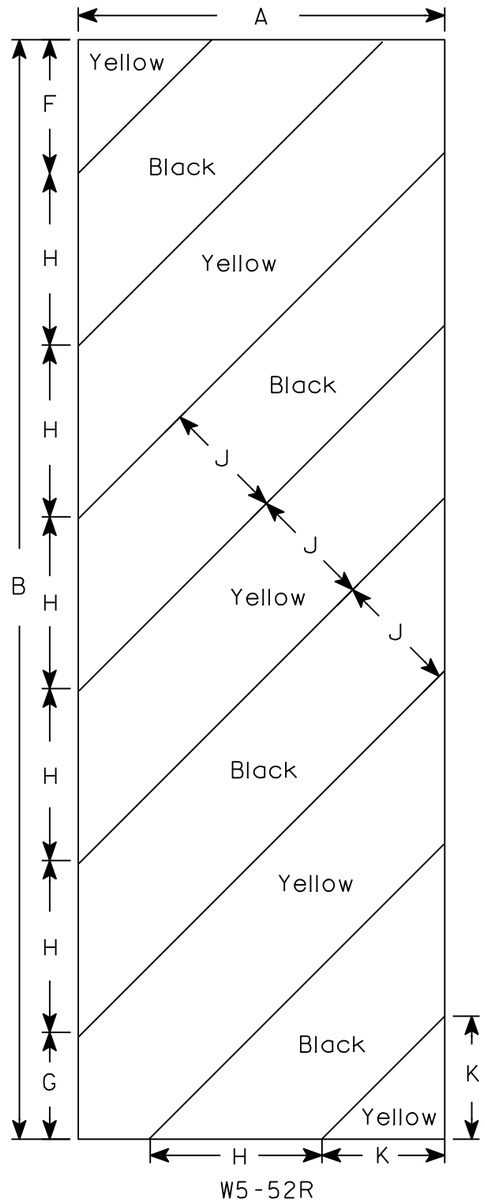
APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 58	E



W5-52L



W5-52R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

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

STANDARD SIGN

W5-52L & W5-52R

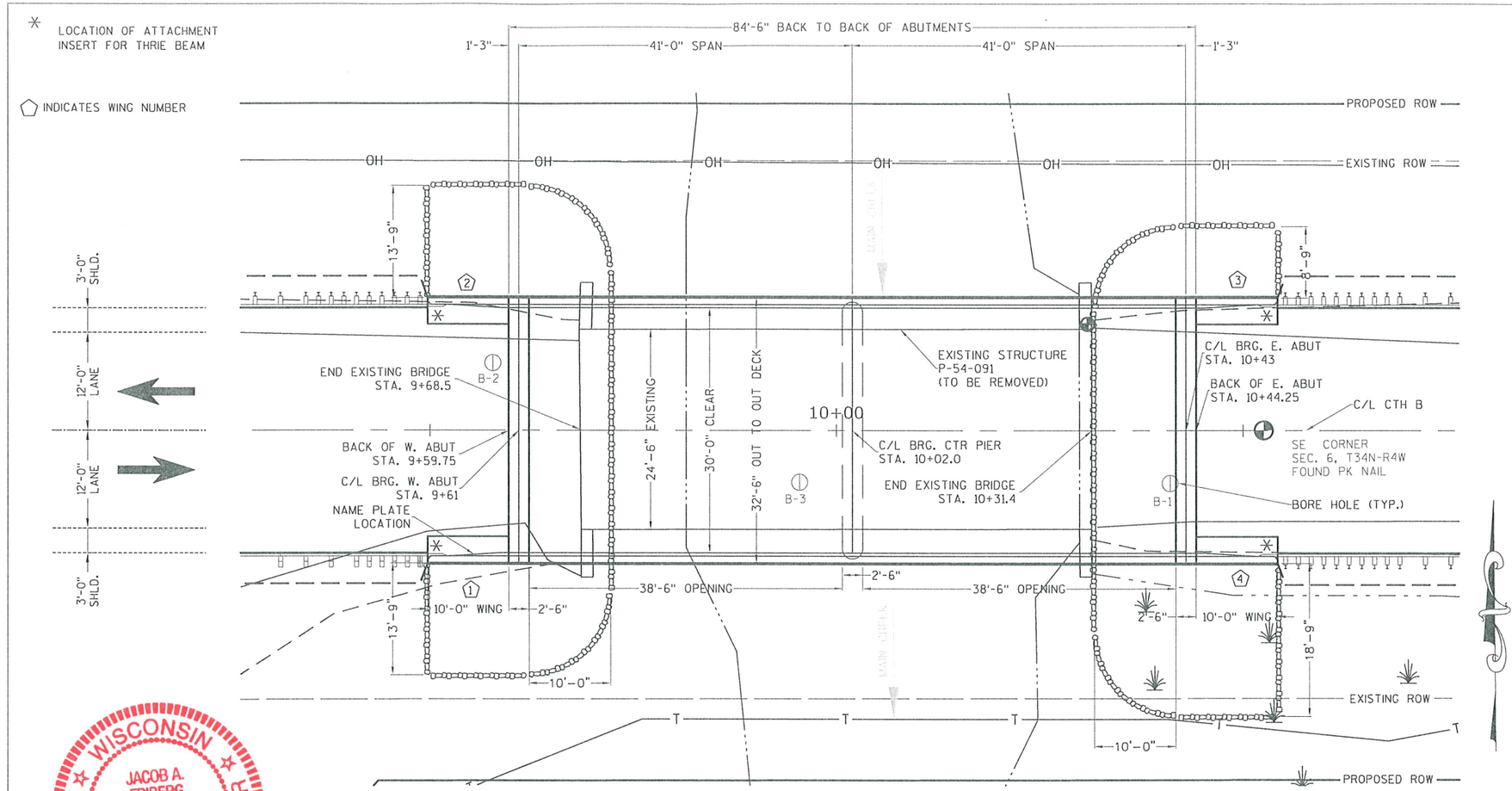
WISCONSIN DEPT OF TRANSPORTATION

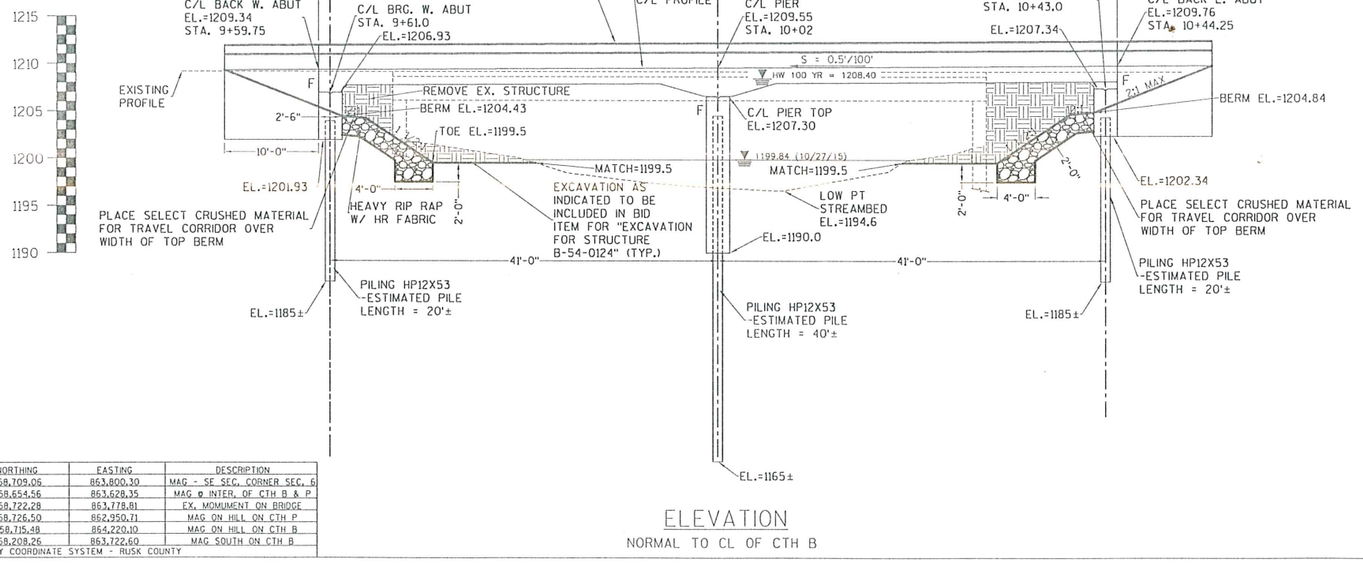
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 59 | E

STATE PROJECT NUMBER
8793-00-70





CP NO.	LOCATION	ELEVATION	NORTHING	EASTING	DESCRIPTION
12	10+52.55, 0.04' LT	1209.37	558,709.06	863,800.30	MAG - SE SEC. CORNER SEC. 6
150	8+81.10, 56.03' RT	1207.75	558,654.56	863,628.35	MAG ⌀ INTER. OF CTH B & P
151	10+30.93, 13.06' LT	1209.10	558,722.28	863,778.81	EX. MONUMENT ON BRIDGE
319	2+52.82, 9.71' LT	1237.77	558,726.50	862,950.71	MAG ON HILL ON CTH P
320	14+72.27, 10.30' LT	1218.37	558,715.48	864,220.10	MAG ON HILL ON CTH B
481	9+88.65, 501.01' RT	1207.55	558,208.26	863,722.60	MAG SOUTH ON CTH B

VERTICAL DATUM: NAVD 88 | HORZ. DATUM: WI COUNTY COORDINATE SYSTEM - RUSK COUNTY

WISCONSIN
JACOB A. FRIBERG
E-43328
RICE LAKE
WI
PROFESSIONAL ENGINEER
10/19/17

DESIGN DATA

LIVE LOADS:
DESIGN RATING = HL-93
INVENTORY RATING FACTOR = 1.06
OPERATING RATING FACTOR = 1.38
WI STANDARD PERMIT VEHICLE LOAD = 230 KIPS

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

MATERIAL PROPERTIES:
CONCRETE MASONRY SLAB & PARAPET---------- F'C = 4,000 PSI
BAR STEEL REINFORCEMENT (GRADE 60)---------- FY = 60,000 PSI
CONCRETE MASONRY OTHER ---------- F'C = 3,500 PSI

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 12X53 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 20'-0" LONG AT ABUTMENTS.

PIER TO BE SUPPORTED ON HP 12X53 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATE 40'-0" LONG AT PIER.

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

TRAFFIC DATA

A.D.T. (2017) = 450 A.D.T. (2037) = 600
R.D.S. = 55 MPH

HYDRAULIC DATA

100 YEAR FREQUENCY
Q100 = 3500 CFS Q100 BRIDGE = 3500 CFS
VEL. = 6.5 FPS HW ELEV. = 1208.40
WATERWAY AREA = 520 SF DRAINAGE AREA = 45.8 SQ.MI.
SCOUR CODE = 5

2 YEAR FREQUENCY
Q2 = 1037 CFS
HW ELEV. = 1204.23

CONTACTS

BRIDGE OFFICE:
CONTACT: WILLIAM DREHER
PHONE: (608) 266-8489

CONSULTANT:
MORGAN & PARMLEY, LTD.
(715) 532-3721

LIST OF DRAWINGS

NO.	DATE	REVISION	BY

MORGAN & PARMLEY, LTD.
PROFESSIONAL CONSUTLING ENGINEERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 11/07/17
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-54-124

CTH B BRIDGE OVER MAIN CREEK

COUNTY RUSK | TOWN/~~CITY/VILLAGE~~ LAWRENCE

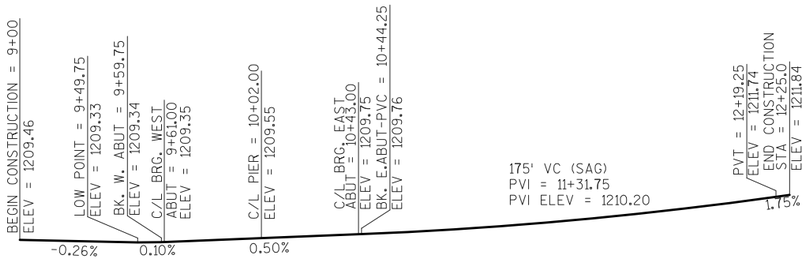
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JF	SP	ZG	LG

GENERAL PLAN

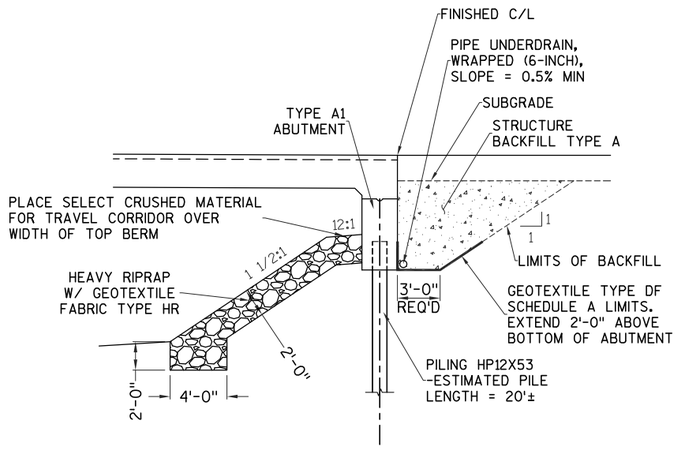
SHEET 1 OF 11
60

STATE PROJECT NUMBER
8793-00-70



C/L PROFILE ALONG CTH B

LOOKING NORTH



CROSS SECTION THRU BRIDGE

-DO NOT SCALE-

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE EXISTING STRUCTURE IS A 62.9' LONG BY 24.3' WIDE (CLEAR ROADWAY) SINGLE SPAN ASPHALT OVERLAY CONCRETE DECK STEEL GIRDER STRUCTURE WITH CONCRETE ABUTMENTS (P-54-091).

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-54-0124" SHALL BE THE EXISTING GROUNDLINE.

THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

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

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

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

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

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

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

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

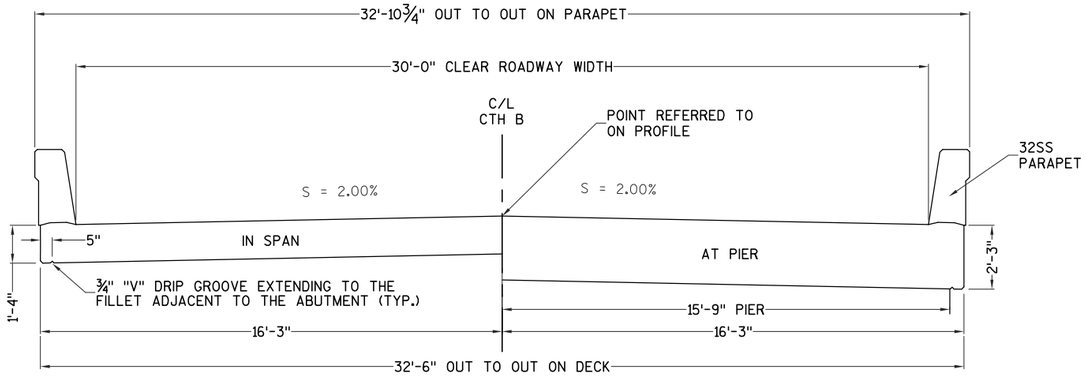
PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP SURFACE OF THE SLAB.

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE FRONT FACE AND TOP SURFACES OF THE PARAPETS.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

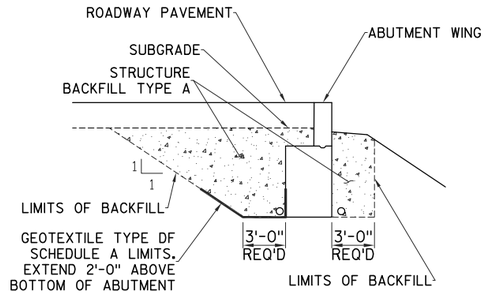
ELEVATIONS SHOWN ON THE PLANS ARE REFERENCES TO THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).

THE COORDINATE SYSTEM FOR THIS PROJECT IS WISCONSIN COUNTY COORDINATE SYSTEM (WCCS) - RUSK COUNTY.



CROSS SECTION THRU BRIDGE

LOOKING EAST



CROSS SECTION THRU WING

-DO NOT SCALE-

TOTAL ESTIMATED QUANTITIES

ITEM No.	BID ITEMS	UNIT	SUPER.	W. ABUT	CTR PIER	E. ABUT	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, STA. 10+00	LS	----	----	----	----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-54-0124)	LS	----	----	----	----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	----	110	----	110	220
502.0100	CONCRETE MASONRY BRIDGES	CY	169	32	49	32	282
502.3200	PROTECTIVE SURFACE TREATMENT	SY	282	----	----	----	282
502.3210	PIGMENTED SURFACE SEALER	SY	69	8	----	8	85
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	----	1870	2300	1870	6040
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	40290	1715	----	1715	43720
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	----	6	----	6	12
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	----	100	240	100	440
606.0300	RIPRAP HEAVY	CY	----	70	----	70	140
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	----	100	----	100	200
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GAURD	EACH	----	2	----	2	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	----	35	----	35	70
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	----	155	----	155	310
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	----	10	----	10	20
*	4" x 3/4" FILLER	LF	----	32.5	68	32.5	133

* = NON BID ITEM

NO.	DATE	REVISION	BY

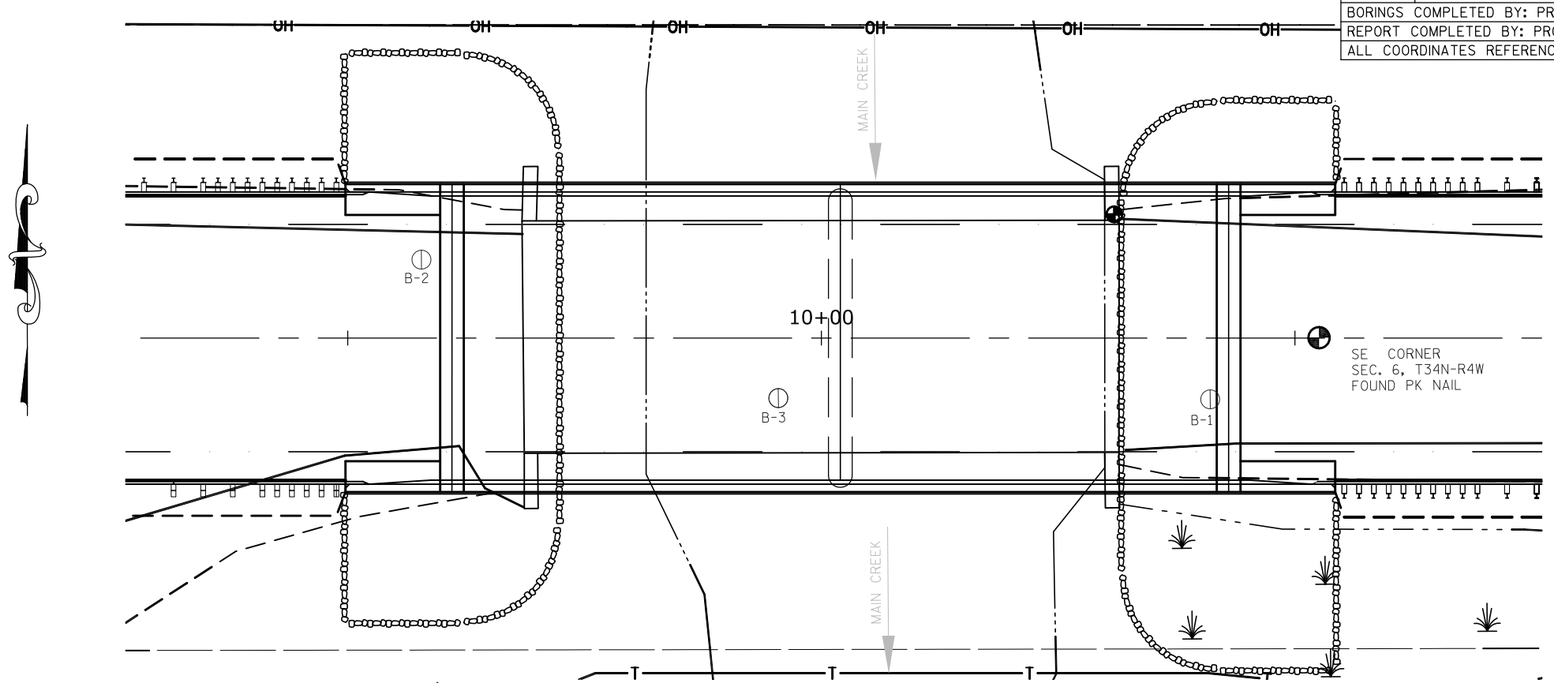
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

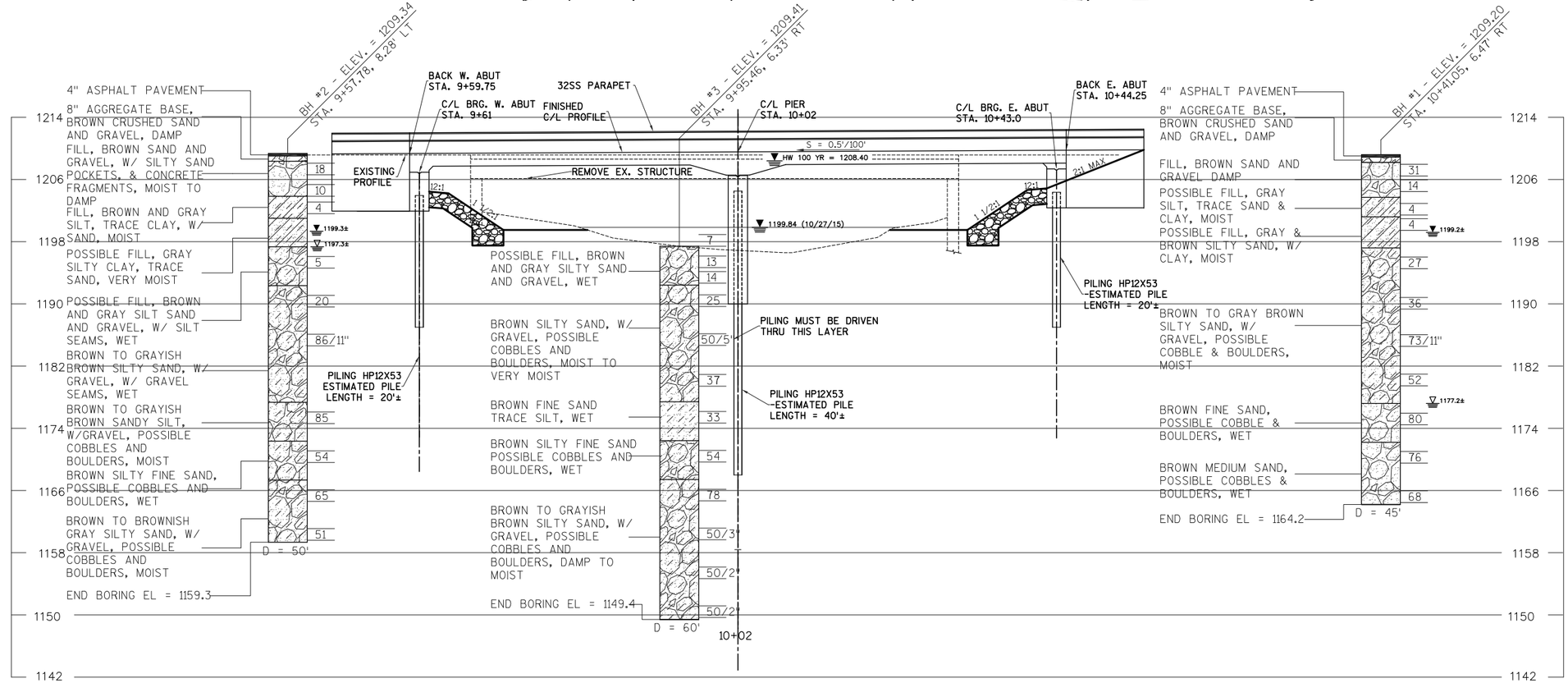
STRUCTURE B-54-124

DRAWN BY ZG | PLANS CK'D. LG

CROSS SECTION & QUANTITIES

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	7/29/2015	558,702.66	863,788.75
2	7/29/2015	558,718.16	863,705.62
3	7/30/2015	558,703.21	863,743.16
BORINGS COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC.			
REPORT COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) RUSK COUNTY			





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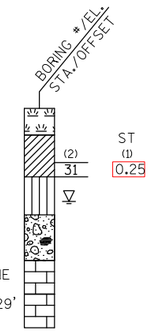
MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
boulders or cobbles	LIMESTONE	BEDROCK (unknown)
shale	SANDSTONE	IGNEOUS/ meta

LEGEND OF BORING



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

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY. ('N' = # BLOWS FOR 6-INCHES)

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

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SUBSURFACE EXPLORATION

SHEET 3 OF 11
62

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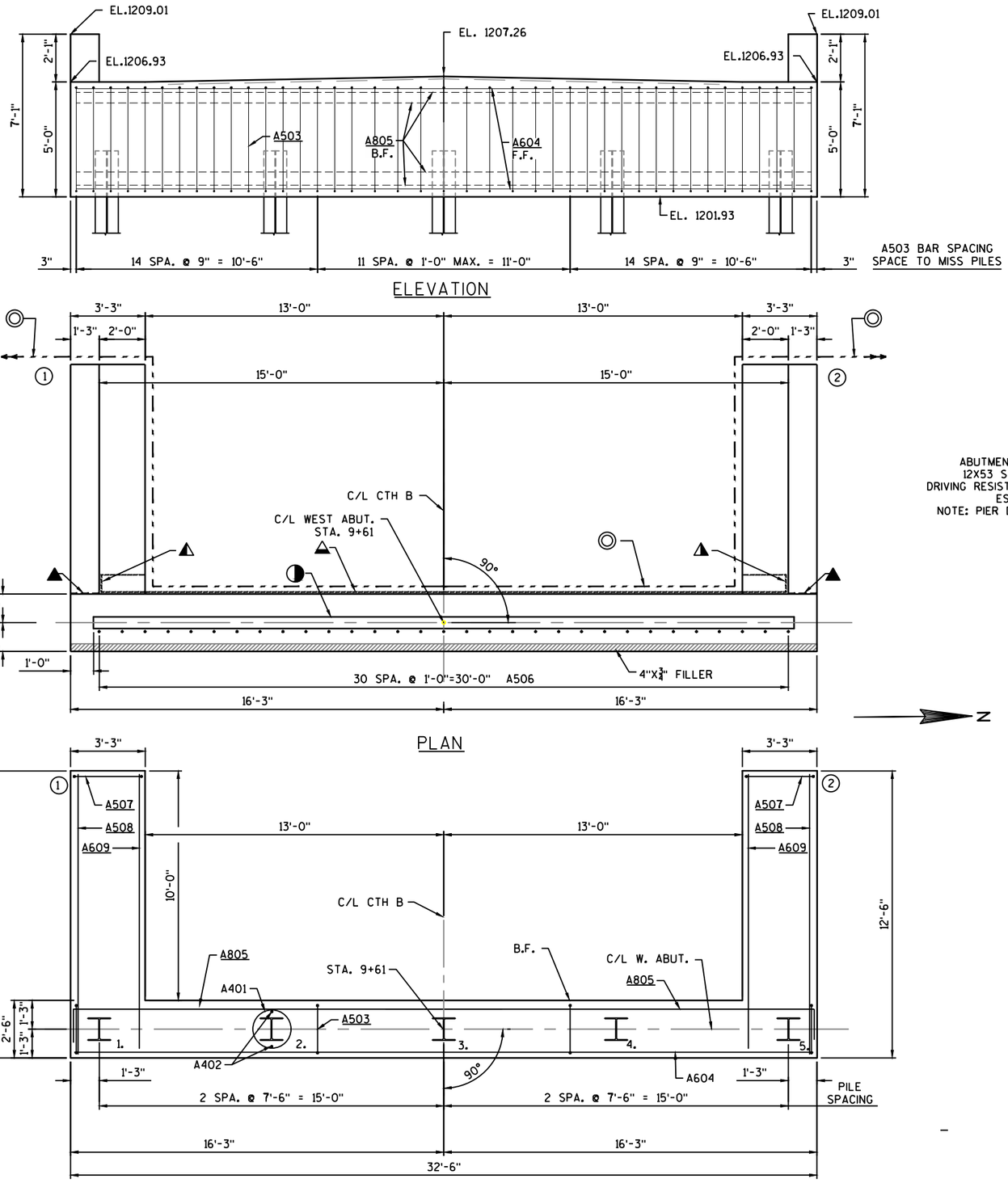

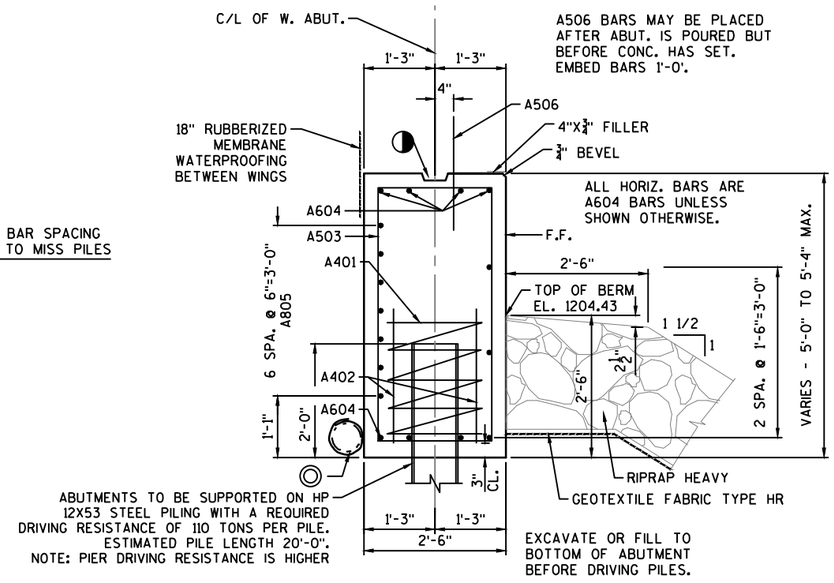

TYP. SECTION THRU ABUTMENT BODY

LEGEND

- (1) INDICATES WING NUMBER
- KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2X6.
- PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE.
- 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.
- VERT. 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW), EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
- HORIZ. 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW), EXTEND BETWEEN WINGS.
- OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2X6. IF JOINT IS USED, POUR CONCRETE ABOVE JOINT AFTER DECK IS IN PLACE AND PLACE 18" RMW ON BACK FACE OF WING. COST OF RMW INCLUDED IN BID ITEM "CONCRETE MASONRY BRIDGES".
- 3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.

F.F. = FRONT FACE B.F. = BACK FACE CL. = CLEAR

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STRUCTURE B-54-124

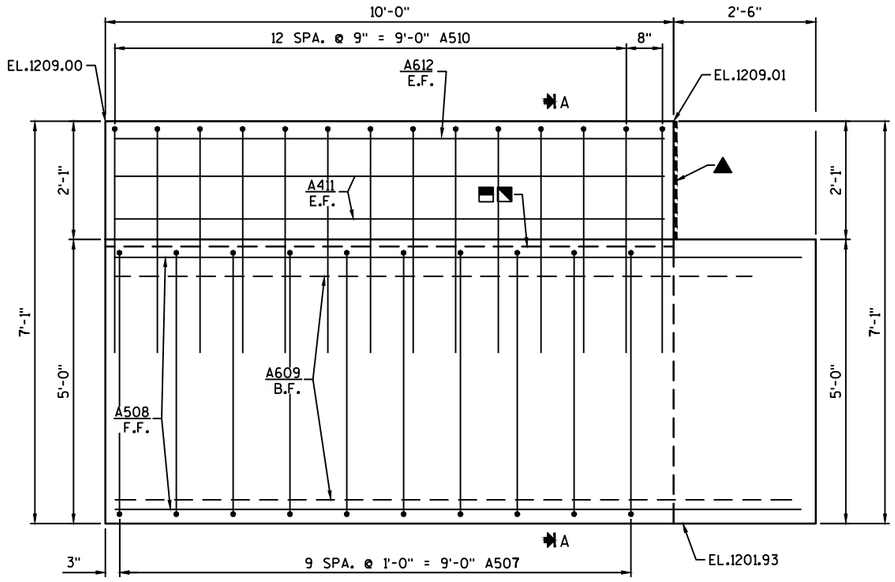
DRAWN BY JMM | PLANS CK'D. LG

WEST ABUTMENT

SHEET 4 OF 11
63

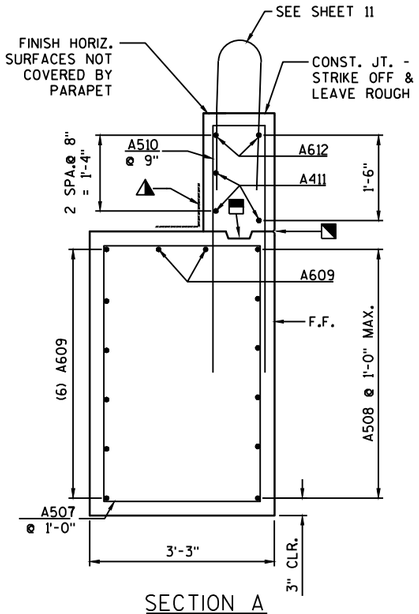
8

8

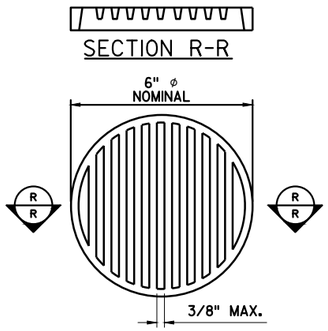


ELEVATION WING 1

WING 2 SIMILAR



SECTION A



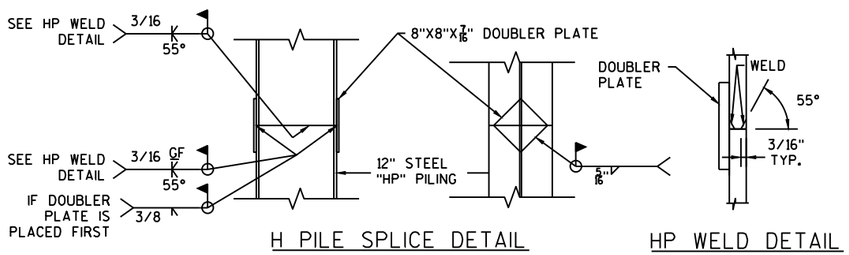
RODENT SHIELD

DIMENSIONS ARE APPROX.. THE GRATE IS SIZED TO FIT INTO PIPE COUPLING.

RODENT SHIELD NOTES:

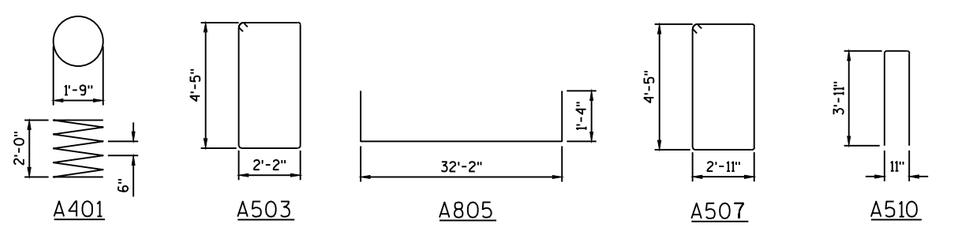
ORIENT SHIELD SO SLOTS ARE VERTICAL.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO.10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS. THE RODENT SHIELD SHALL BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".



H PILE SPLICE DETAIL

HP WELD DETAIL



BILL OF BARS

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
A401		5	28'-0"	X		ABUT. BODY @ PILES
A402		10	2'-3"			ABUT. BODY @ PILES
A503		40	13'-8"	X		ABUT. BODY VERT.
A604		10	32'-2"			ABUT. BODY HORIZ.
A805		7	34'-5"	X		ABUT. BODY HORIZ. B.F.
A506		31	2'-0"			ABUT. BODY DOWELS
A507	X	20	15'-2"	X		WINGS VERT.
A508	X	12	12'-2"			WINGS HORIZ. F.F.
A609	X	16	12'-2"			WINGS HORIZ. B.F.
A510	X	28	8'-6"	X		WINGS VERT.
A411	X	6	9'-8"			WINGS HORIZ. E.F.
A612	X	4	9'-8"			WINGS HORIZ. E.F. TOP

NOTES:
1. BAR TABLE APPLIES TO WEST ABUTMENT ONLY.
2. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

LEGEND

(1) INDICATES WING NUMBER

KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2X6.

PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE.

1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.

18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW), SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE OF ABUTMENT.

HORIZ. 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW), EXTEND BETWEEN WINGS.

OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2X6. IF JOINT IS USED, POUR CONCRETE ABOVE JOINT AFTER DECK IS IN PLACE AND PLACE 18" RMW ON BACK FACE OF WING. COST OF RMW INCLUDED IN BID ITEM "CONCRETE MASONRY BRIDGES".

3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.

F.F. = FRONT FACE B.F. = BACK FACE CL. = CLEAR

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STRUCTURE B-54-124

DRAWN BY JMM | PLANS CK'D. LG

WEST ABUTMENT WING DETAILS

SHEET 5 OF 11
64

8

8

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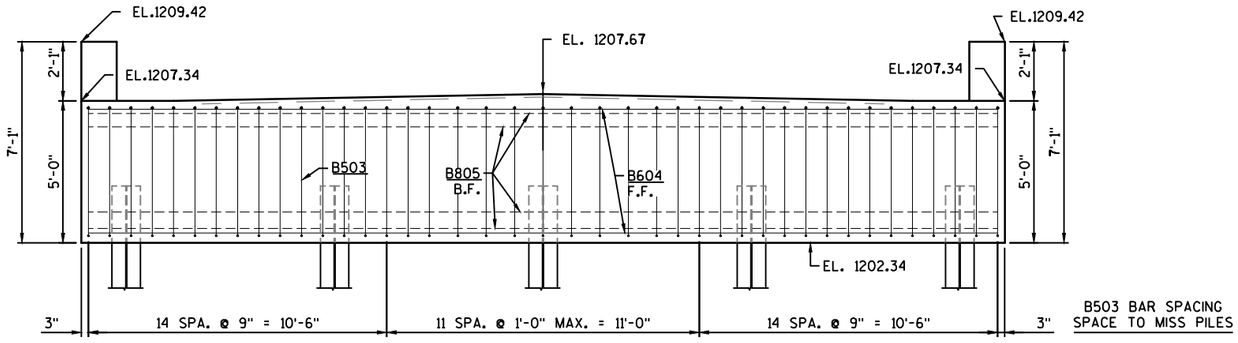
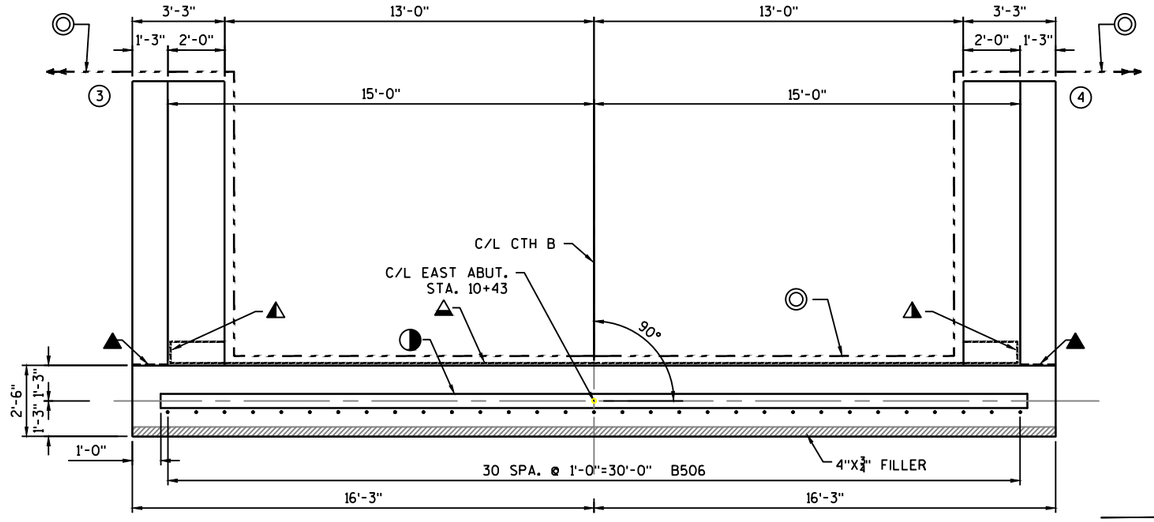
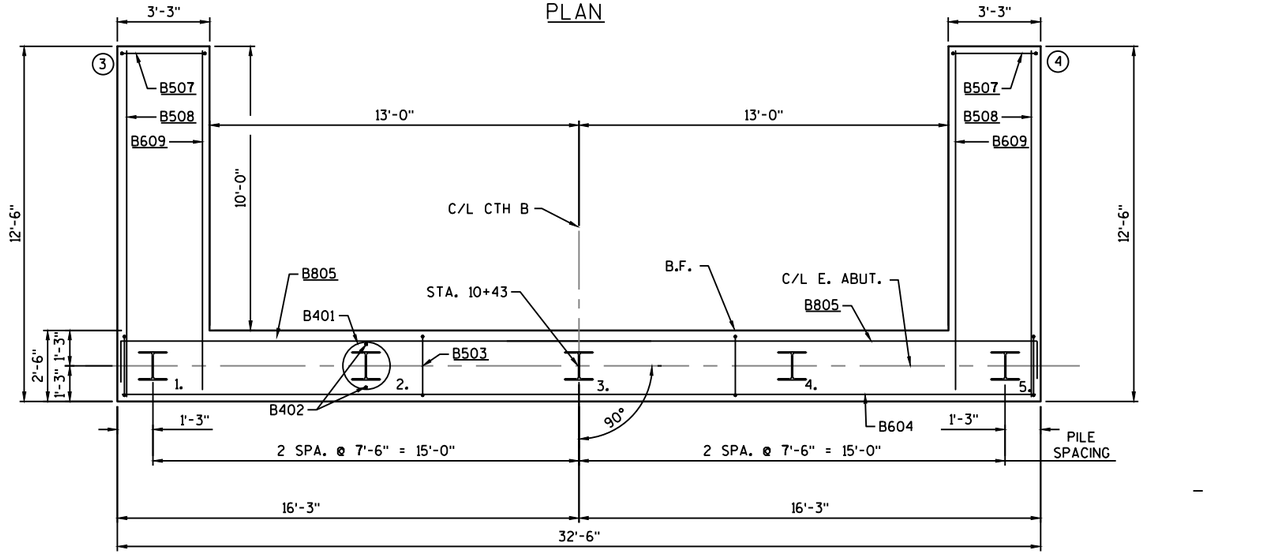


B503 BAR SPACING
SPACE TO MISS PILES

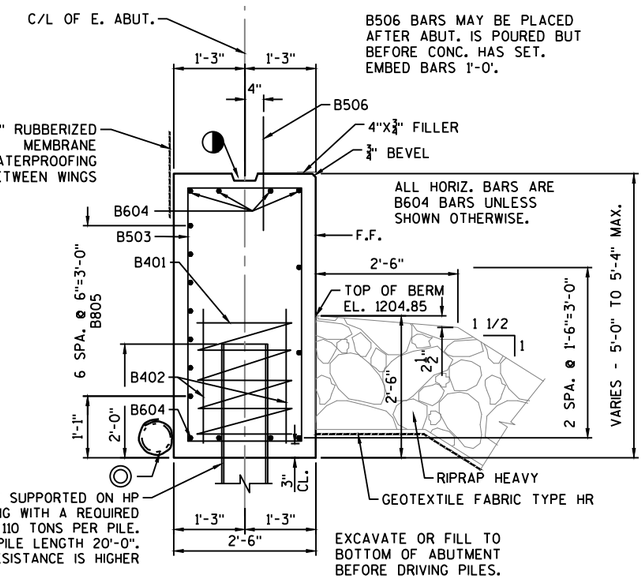
ELEVATION



PLAN



PILE LAYOUT



ABUTMENTS TO BE SUPPORTED ON HP 12X53 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE. ESTIMATED PILE LENGTH 20'-0". NOTE: PIER DRIVING RESISTANCE IS HIGHER

EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.

TYP. SECTION THRU ABUTMENT BODY

LEGEND

- (3) INDICATES WING NUMBER
- KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2X6.
- PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE.
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STRUCTURE B-54-124

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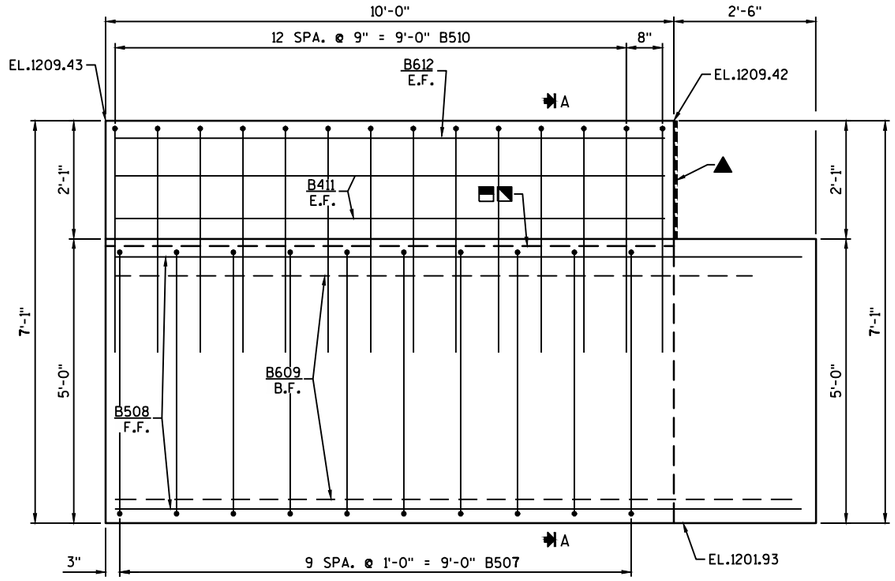
EAST ABUTMENT

SHEET 65 OF 11

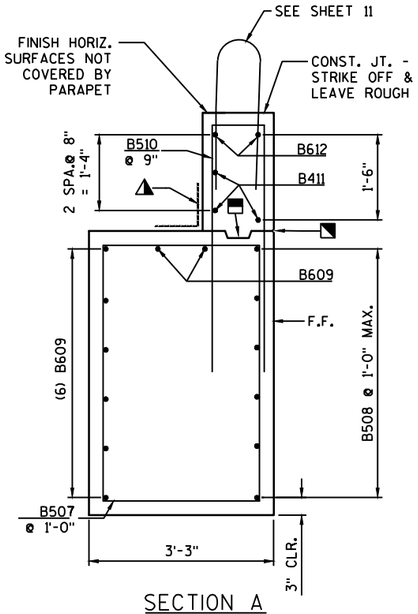
8

8

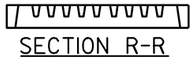


ELEVATION WING 3

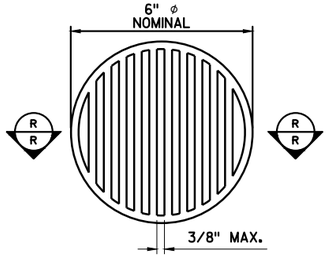
WING 4 SIMILAR



SECTION A



SECTION R-R



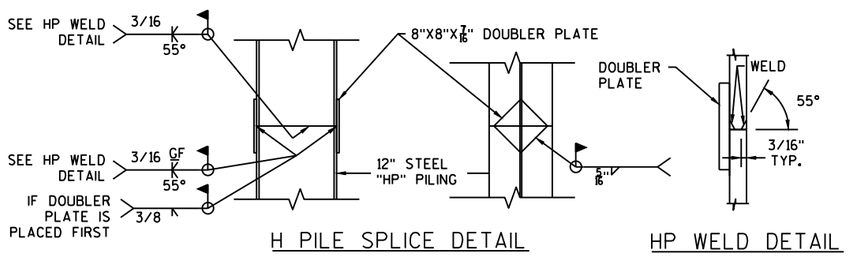
RODENT SHIELD

DIMENSIONS ARE APPROX.. THE GRATE IS SIZED TO FIT INTO PIPE COUPLING.

RODENT SHIELD NOTES:

ORIENT SHIELD SO SLOTS ARE VERTICAL.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO.10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS. THE RODENT SHIELD SHALL BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".



H PILE SPLICE DETAIL

HP WELD DETAIL

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BILL OF BARS

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
B401		5	28'-0"	X		ABUT. BODY @ PILES
B402		10	2'-3"			ABUT. BODY @ PILES
B503		40	13'-8"	X		ABUT. BODY VERT.
B604		10	32'-2"			ABUT. BODY HORIZ.
B805		7	34'-5"	X		ABUT. BODY HORIZ. B.F.
B506		31	2'-0"			ABUT. BODY DOWELS
B507	X	20	15'-2"	X		WINGS VERT.
B508	X	12	12'-2"			WINGS HORIZ. F.F.
B609	X	16	12'-2"			WINGS HORIZ. B.F.
B510	X	28	8'-6"	X		WINGS VERT.
B411	X	6	9'-8"			WINGS HORIZ. E.F.
B612	X	4	9'-8"			WINGS HORIZ. E.F. TOP

NOTES:
1. BAR TABLE APPLIES TO EAST ABUTMENT ONLY.
2. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

LEGEND

(1) INDICATES WING NUMBER

KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2X6.

PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE.

1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.

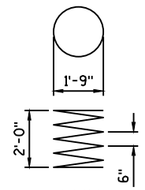
18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW), SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE OF ABUTMENT.

HORIZ. 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW), EXTEND BETWEEN WINGS.

OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2X6. IF JOINT IS USED, POUR CONCRETE ABOVE JOINT AFTER DECK IS IN PLACE AND PLACE 18" RMW ON BACK FACE OF WING. COST OF RMW INCLUDED IN BID ITEM "CONCRETE MASONRY BRIDGES".

3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.

F.F. = FRONT FACE B.F. = BACK FACE CL. = CLEAR



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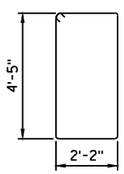

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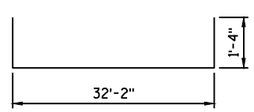

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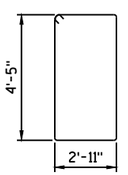

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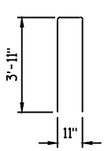

B510

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-124

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EAST ABUTMENT WING DETAILS

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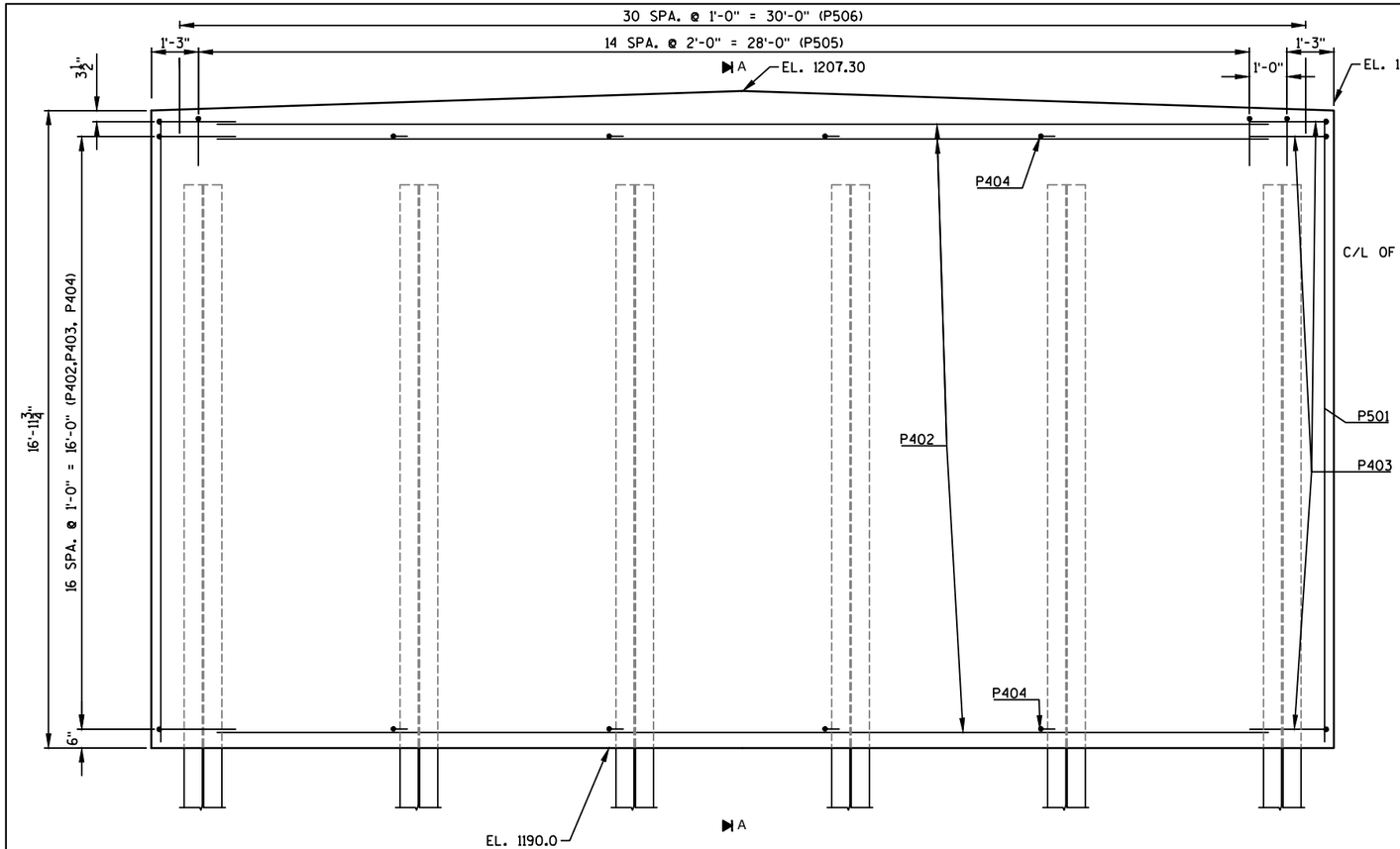
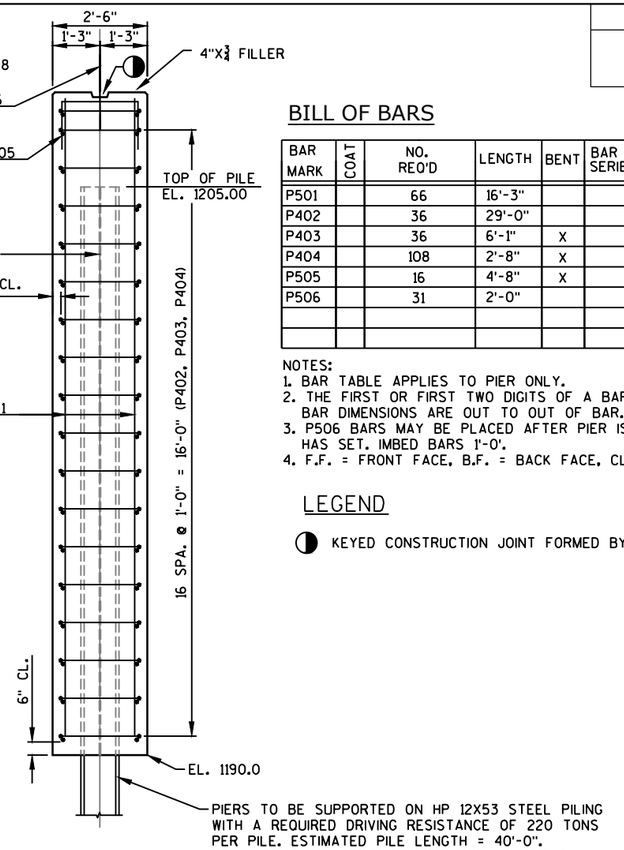


ELEVATION



SECTION A

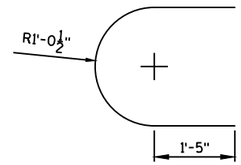
BILL OF BARS

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
P501		66	16'-3"			COLUMN VERT.
P402		36	29'-0"			COLUMN HORIZ.
P403		36	6'-1"	X		COLUMN HORIZ.
P404		108	2'-8"	X		COLUMN TIES
P505		16	4'-8"	X		COLUMN TOP
P506		31	2'-0"			COLUMN DOWELS

NOTES:
1. BAR TABLE APPLIES TO PIER ONLY.
2. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.
3. P506 BARS MAY BE PLACED AFTER PIER IS POURED BUT BEFORE CONC. HAS SET. IMBED BARS 1'-0'.
4. F.F. = FRONT FACE, B.F. = BACK FACE, CL. = CLEAR

LEGEND

◑ KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2X6.



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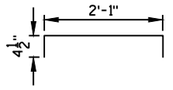

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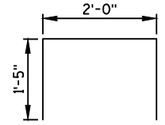

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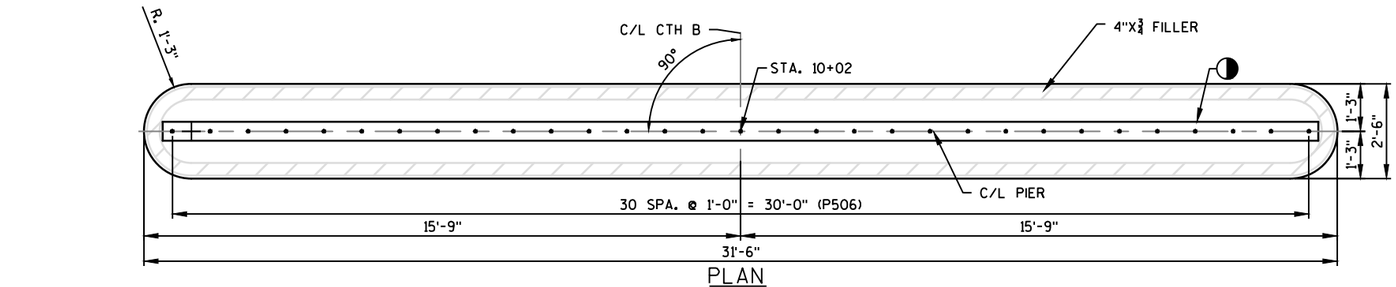
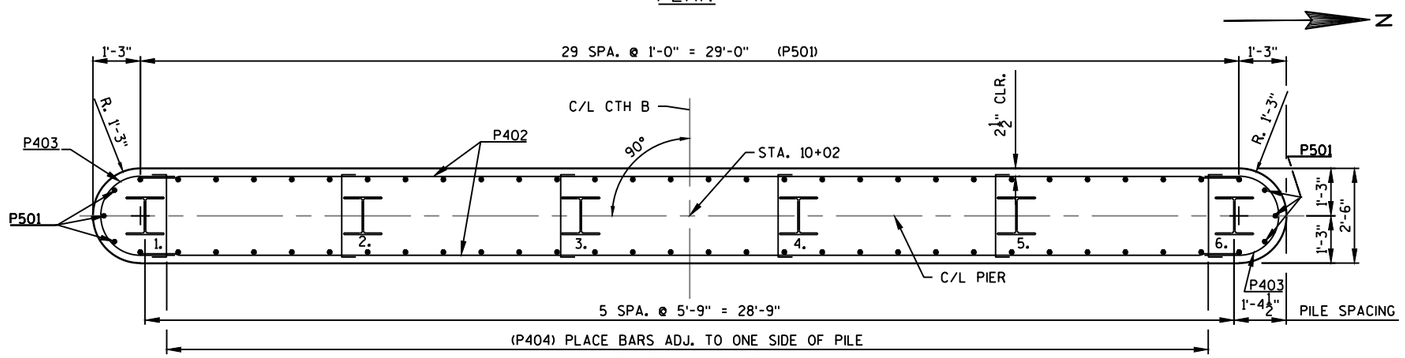


PLAN



PILE LAYOUT

8

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-124

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PIER

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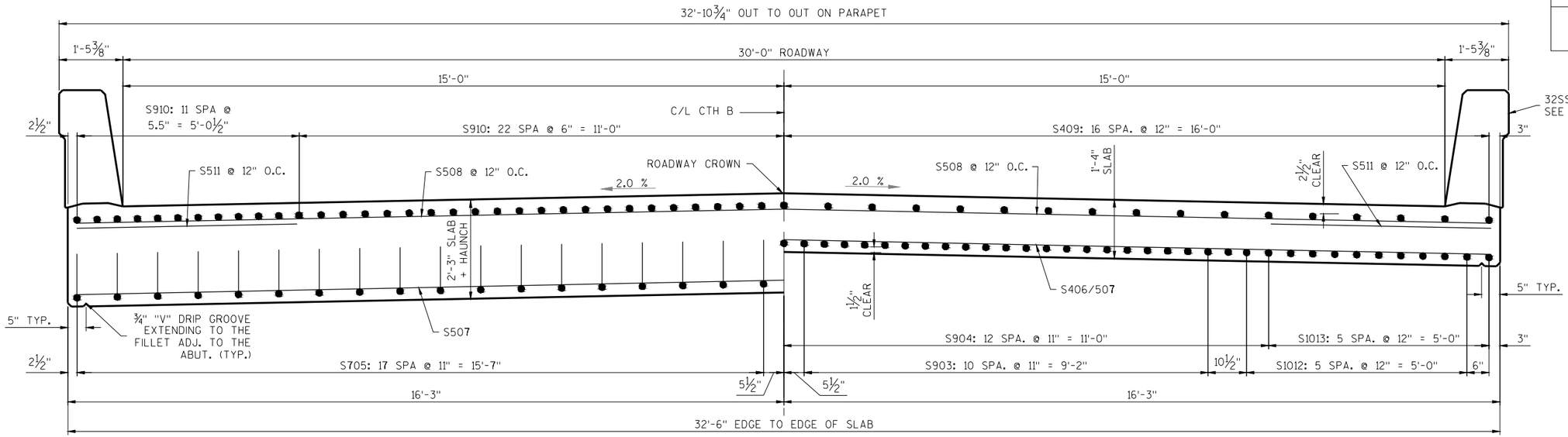
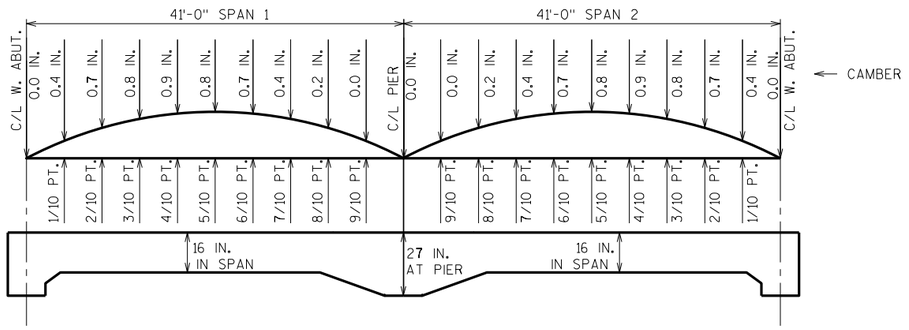


CROSS SECTION THRU BRIDGE
LOOKING EAST



CAMBER AND SLAB THICKNESS DIAGRAM

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

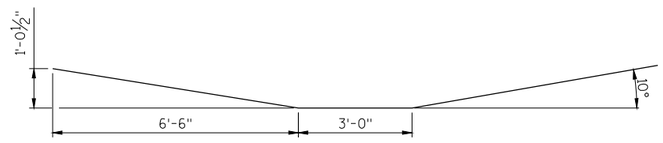
TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE FOLLOW THIS PROCEDURE:

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

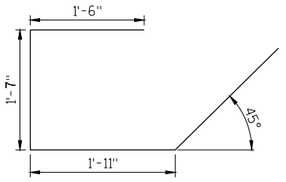
BILL OF BARS

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	LOCATION
S501	X	66	6-8	X	DIAPHRAGM @ ABUTS. - LONGIT.
S502	X	4	32-2		DIAPHRAGM @ ABUTS. - TRANS.
S903	X	44	31-9		SLAB, BOTTOM, LONGIT. IN SPAN
S904	X	46	39-9		SLAB, BOTTOM, LONGIT. IN SPAN
S705	X	36	16-2	X	SLAB, BOTTOM, LONGIT. @ PIER
S406	X	22	32-2		SLAB, BOTTOM, TRANSVERSE
S507	X	70	32-2		SLAB, BOTTOM, TRANSVERSE
S508	X	85	32-2		SLAB, TOP, TRANSVERSE
S409	X	66	17-0		SLAB, TOP, LONGIT. IN SPAN
S910	X	67	41-1		SLAB, TOP, LONGIT. @ PIER
S511	X	168	5-0		SLAB, TOP, TRANS. @ PARAPET
S1012	X	24	31-9		SLAB, BOTTOM, LONGIT. @ EDGE
S1013	X	24	39-9		SLAB, BOTTOM, LONGIT. @ EDGE

NOTES:
-THE FIRST OR FIRST TWO DIGITS THE OF A BAR MARK SIGNIFIES BAR SIZE.
-DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
-EPOXY COAT ALL SUPERSTRUCTURE BAR STEEL REINFORCEMENT.



S705



S501

GENERAL NOTES

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

TRANSVERSE BARS SHALL BE PLACED PARALLEL TO THE % OF SUBSTRUCTURE UNITS.

THE SLAB THICKNESS DIMENSION IS MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C/L OF ABUTMENTS, AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND C/L.

TOP OF DECK ELEVATIONS

SPAN 1 / SPAN 2

	C/L BRG. W. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	C/L BRG. PIER	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	C/L BRG. E. ABUT.	
N. EDGE OF DECK	1209.02	1209.04	1209.06	1209.08	1209.10	1209.12	1209.14	1209.16	1209.18	1209.20	1209.22	1209.24	1209.26	1209.28	1209.30	1209.32	1209.34	1209.36	1209.38	1209.40	1209.42	N. EDGE OF DECK
CROWN OR C/L	1209.35	1209.37	1209.39	1209.41	1209.43	1209.45	1209.47	1209.49	1209.51	1209.53	1209.55	1209.57	1209.59	1209.61	1209.63	1209.65	1209.67	1209.69	1209.71	1209.73	1209.75	CROWN OR C/L
S. EDGE OF DECK	1209.02	1209.04	1209.06	1209.08	1209.10	1209.12	1209.14	1209.16	1209.18	1209.20	1209.22	1209.24	1209.26	1209.28	1209.30	1209.32	1209.34	1209.36	1209.38	1209.40	1209.42	S. EDGE OF DECK

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SUPERSTRUCTURE

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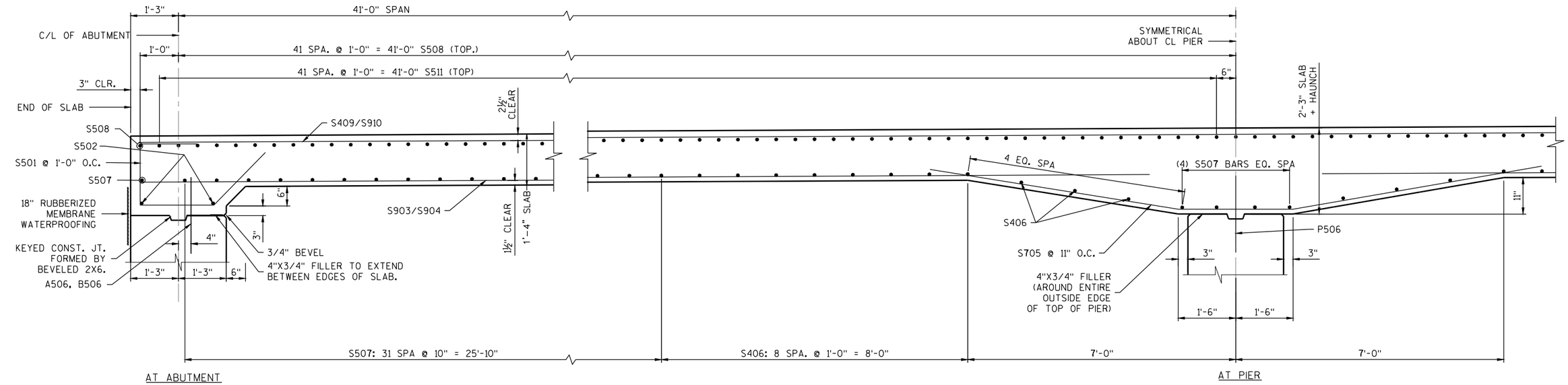
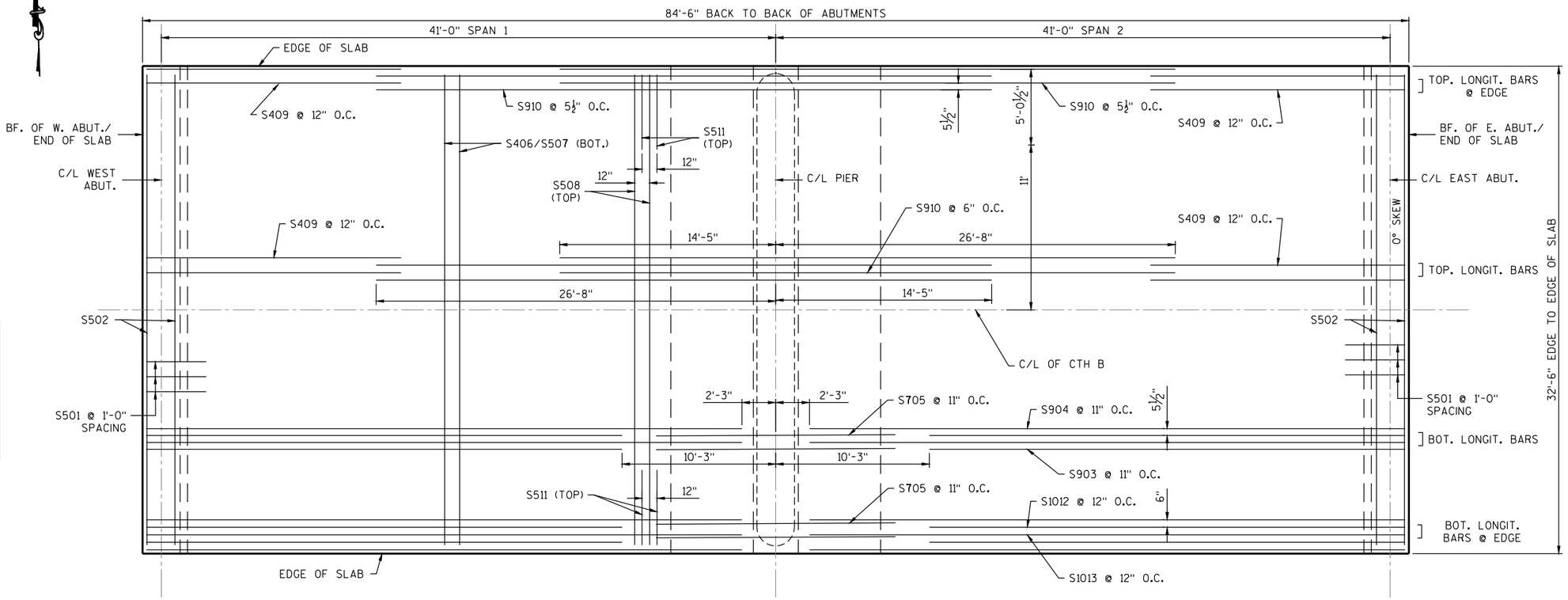


PART LONGITUDINAL SECTION



PLAN

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8

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-54-124

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SUPERSTRUCTURE DETAILS

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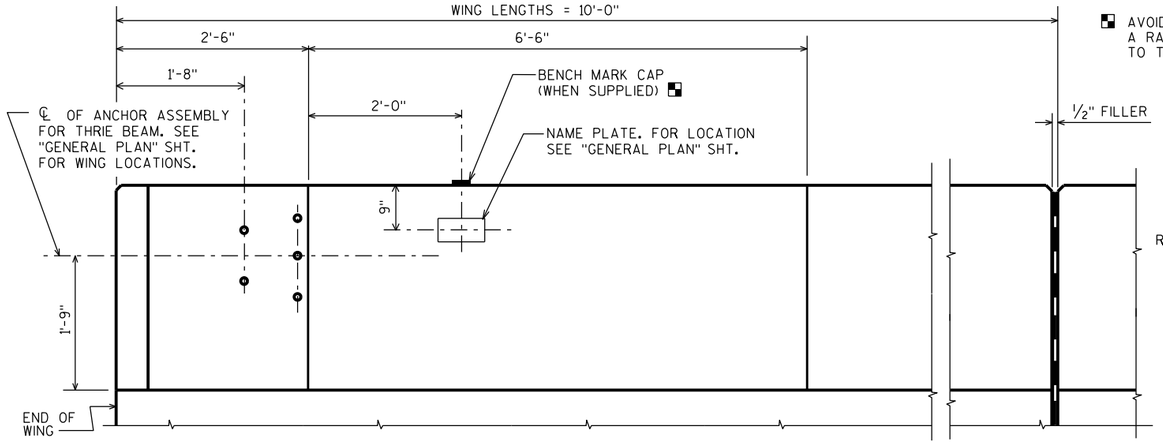
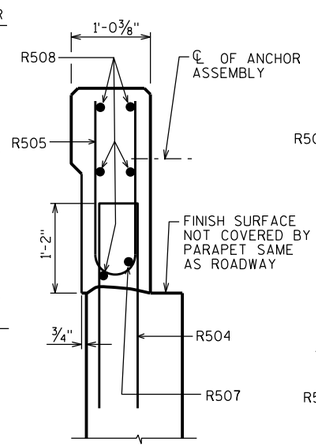
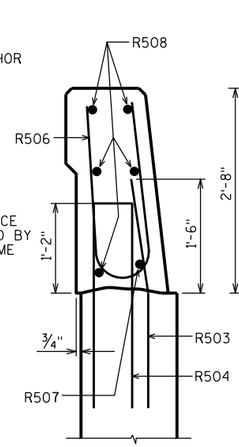


INSIDE ELEVATION

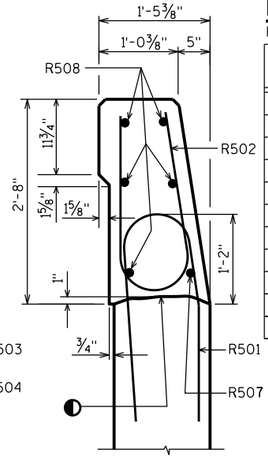
■ AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.



SECTION A



SECTION B

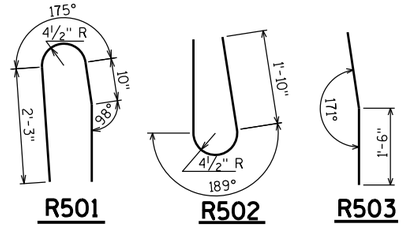


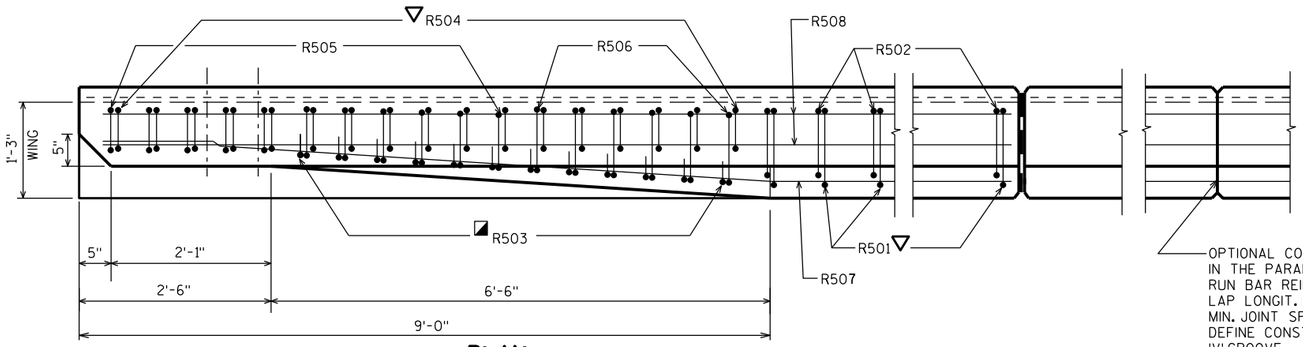
SECTION C

BILL OF BARS

FOR ABUTMENT PARAPETS

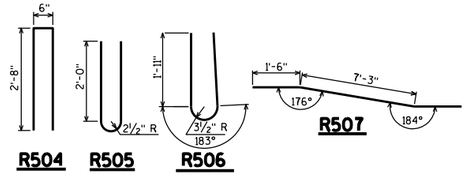
BAR MARK	COAT	WEST ABUT.	EAST ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	4	4	5-10	X		PARAPET VERT.
R502	X	128	128	5-0	X		PARAPET VERT.
R503	X	24	24	3-0	X		PARAPET VERT.
R504	X	34	34	5-7	X		PARAPET VERT.
R505	X	22	22	4-9	X		PARAPET VERT.
R506	X	12	12	4-10	X		PARAPET VERT.
R507	X	2	2	9-6	X		PARAPET HORIZ.
R508	X	10	10	9-6			PARAPET HORIZ.
R509	X	124	124	4-5	X		PARAPET HORIZ.
R510	X	12	12	42-6			PARAPET HORIZ.

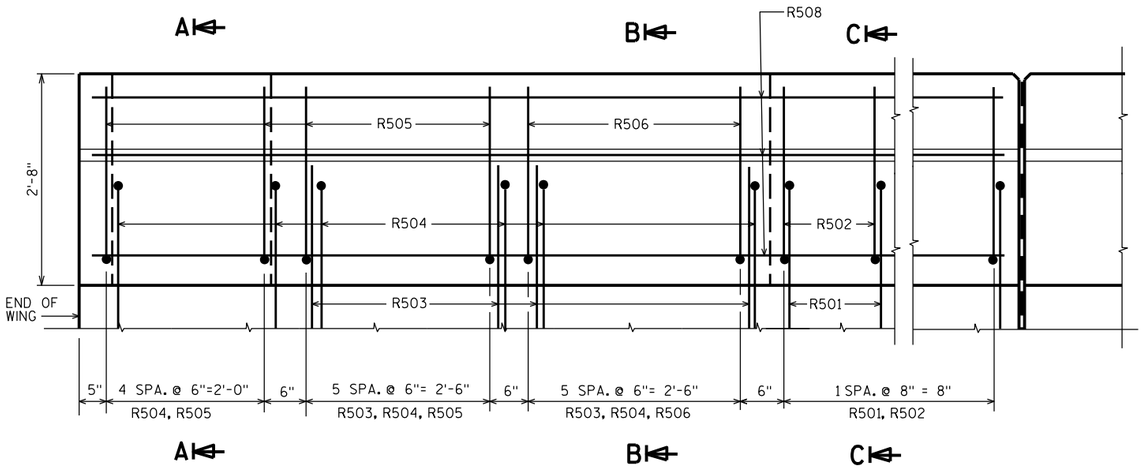




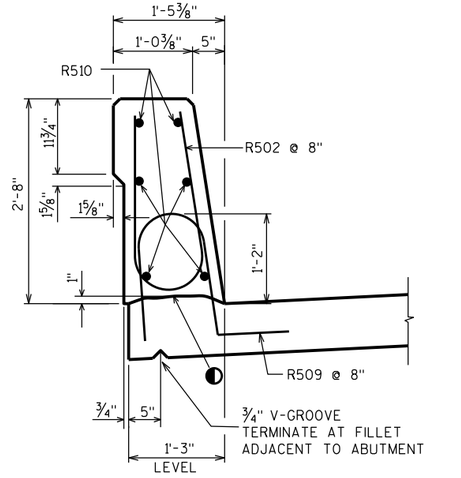
PLAN

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

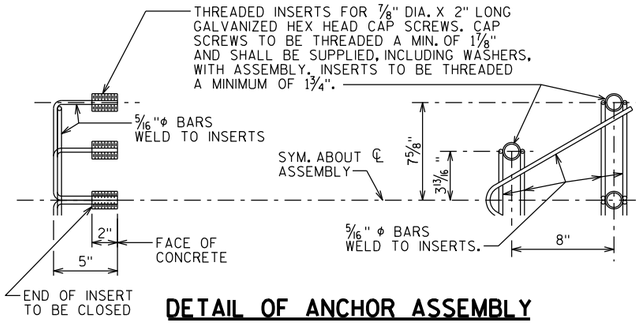




OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE



DETAIL OF ANCHOR ASSEMBLY

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

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

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◪ R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 OR S503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

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STRUCTURE B-54-124

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PARAPET 32SS ENDING ON WING

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32SSWIN
7-17

SCALE = 1

8 12 7 1 2 3 4 8

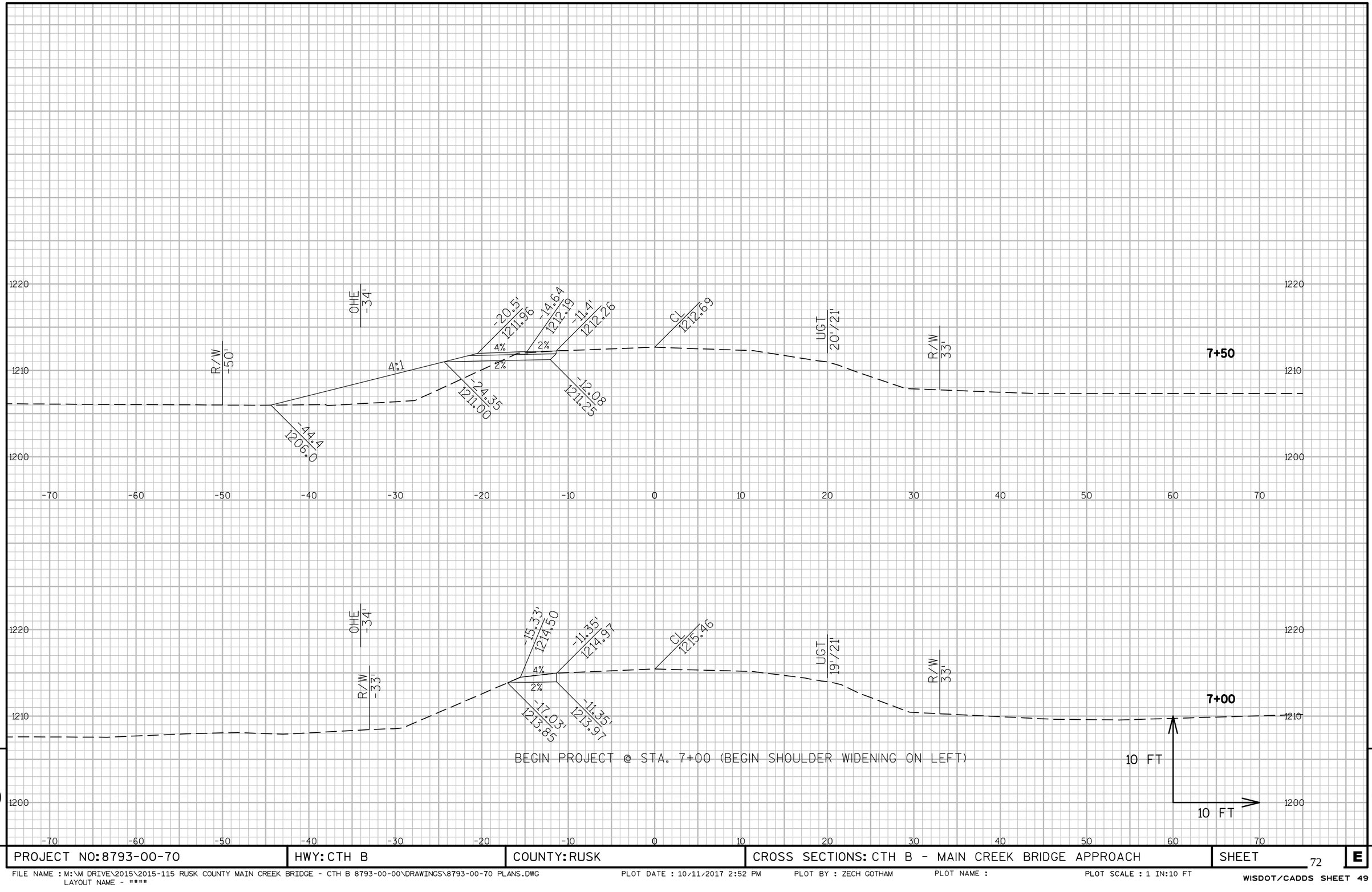
DIVISION 1 - CTH B (STA. 7+00 TO STA. 9+49.75) EARTHWORK CALCULATIONS

REAL DISTANCE (LF)	STATION	CROSS SECTIONAL AREA		INCREMENTAL VOLUME (UNADJUSTED)		CUMULATIVE VOLUME			
		CUT(1) (SF)	FILL (SF)	CUT(1) (CY)	FILL (CY)	CUT (CY)	FILL UNADJ. (CY)	FILL ADJUSTED (CY)	MASS (8) ORDINATE + OR - (CY)
700	7+00	4	0						
750	7+50	5	53	8	49	8	49	64	-56
797	7+97.31	5	29	8	72	16	122	158	-142
822	8+22.33	5	23	4	24	20	146	190	-169
847	8+47.31	4	8	4	15	24	161	209	-184
900	9+00	75	1	77	10	101	170	221	-120
919	9+19.1	57	2	47	1	148	171	223	-74
950	9+49.75	80	10	78	7	226	178	231	-5
TOTAL CUT (INPLACE VOLUME) (C.Y.)									226
TOTAL FILL REQUIRED (INPLACE VOLUME) (C.Y.)									178
*SURPLUS MATERIAL TO WASTE ((CUT+EBS) -(FILL*1.3)) =(CY)									-5
* IF VALUE IS NEGATIVE THEN BORROW IS REQUIRED *									

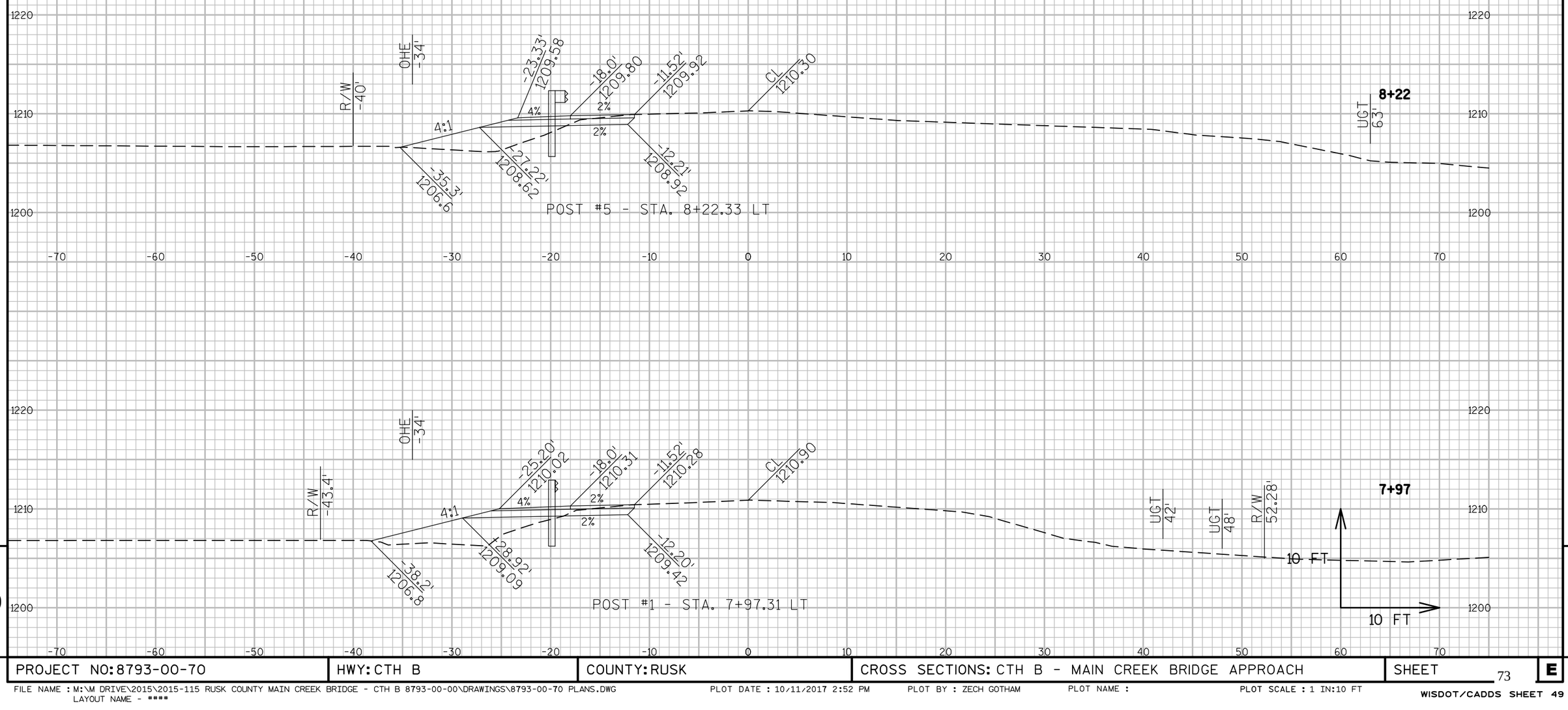
DIVISION 2 - CTH B (STA. 10+54.25 TO STA. 13+00) EARTHWORK CALCULATIONS

REAL DISTANCE (LF)	STATION	CROSS SECTIONAL AREA		INCREMENTAL VOLUME (UNADJUSTED)		CUMULATIVE VOLUME			
		CUT(1) (SF)	FILL (SF)	CUT(1) (CY)	FILL (CY)	CUT (CY)	FILL UNADJ. (CY)	FILL ADJUSTED (CY)	MASS (8) ORDINATE + OR - (CY)
1054	10+54.25	34	39						
1100	11+00	34	28	58	57	58	57	74	-16
1150	11+50	44	23	72	47	130	104	135	-4
1157	11+56.69	45	31	11	7	141	110	143	-2
1182	11+81.67	46	37	42	31	183	141	184	0
1200	12+00	48	38	32	25	215	167	217	-1
1207	12+06.69	49	39	12	10	227	176	229	-2
1225	12+25	51	33	34	24	261	201	261	0
1250	12+50	9	33	28	30	289	231	300	-11
1300	13+00	8	0	16	30	304	261	339	-35
TOTAL CUT (INPLACE VOLUME) (C.Y.)									304
TOTAL FILL REQUIRED (INPLACE VOLUME) (C.Y.)									261
*SURPLUS MATERIAL TO WASTE ((CUT+EBS) -(FILL*1.3)) =(CY)									-35
* IF VALUE IS NEGATIVE THEN BORROW IS REQUIRED *									

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 SELECTIONS
5 - EXPANDED EBS	WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT OR BORROW)	NOTE 5 - SELECT ONE BASED ON INPUT DIALOG SELECTIONS
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: 2(CUT + MARSH EXC.+EBS) - ((FILL-REDUCED MARSH IN FILL - REDUCED EBS FILL - EXPANDED ROCK)*FILL FACTOR)3	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: 2(CUT + MARSH EXC.+EBS) - ((FILL-REDUCED MARSH IN FILL - REDUCED EBS FILL - EXPANDED ROCK)*FILL FACTOR)3	EBS AND MARSH EXC USED OUTSIDE 1:1 IN FILL SLOPES
8 - MASS ORDINATE	IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR: 2(CUT) - ((FILL - EXPANDED ROCK)*FILL FACTOR)3	MARSH AND EBS ARE NOT USABLE OUTSIDE 1:1 SLOPES
8 - MASS ORDINATE	IF MARSH AND EBS TO BE BACKFILLED WITH CUT OR BORROW: 2(CUT) - ((FILL - EXPANDED ROCK)*FILL FACTOR)3	MARSH AND EBS ARE NOT USABLE OUTSIDE 1:1 SLOPES

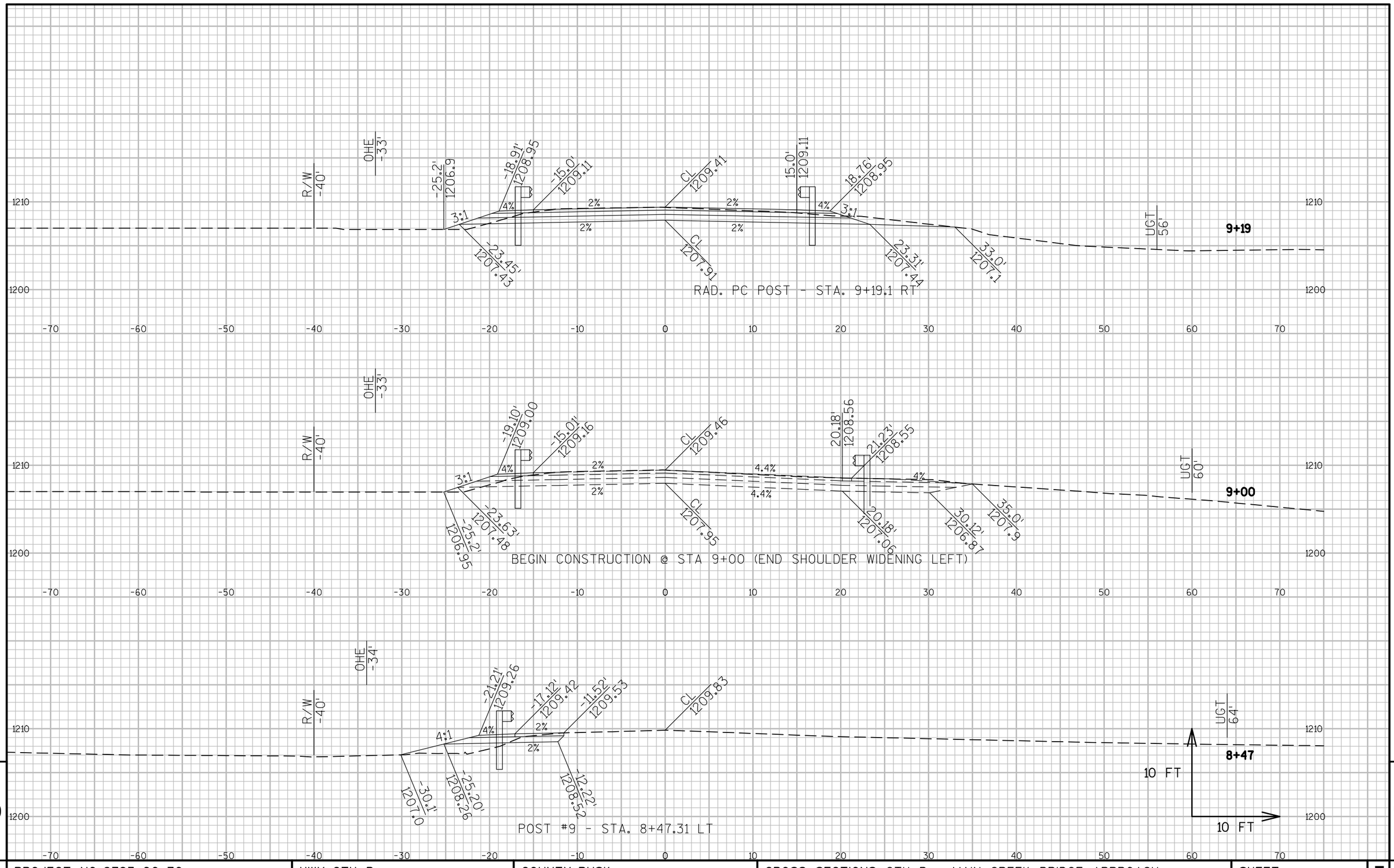


PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	CROSS SECTIONS: CTH B - MAIN CREEK BRIDGE APPROACH	SHEET 72	E



PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	CROSS SECTIONS: CTH B - MAIN CREEK BRIDGE APPROACH	SHEET	E

FILE NAME : M:\M DRIVE\2015\2015-115 RUSK COUNTY MAIN CREEK BRIDGE - CTH B 8793-00-00\DRAWINGS\8793-00-70 PLANS.DWG
LAYOUT NAME - ****
PLOT DATE : 10/11/2017 2:52 PM PLOT BY : ZECH GOTHAM PLOT NAME : PLOT SCALE : 1 IN:10 FT



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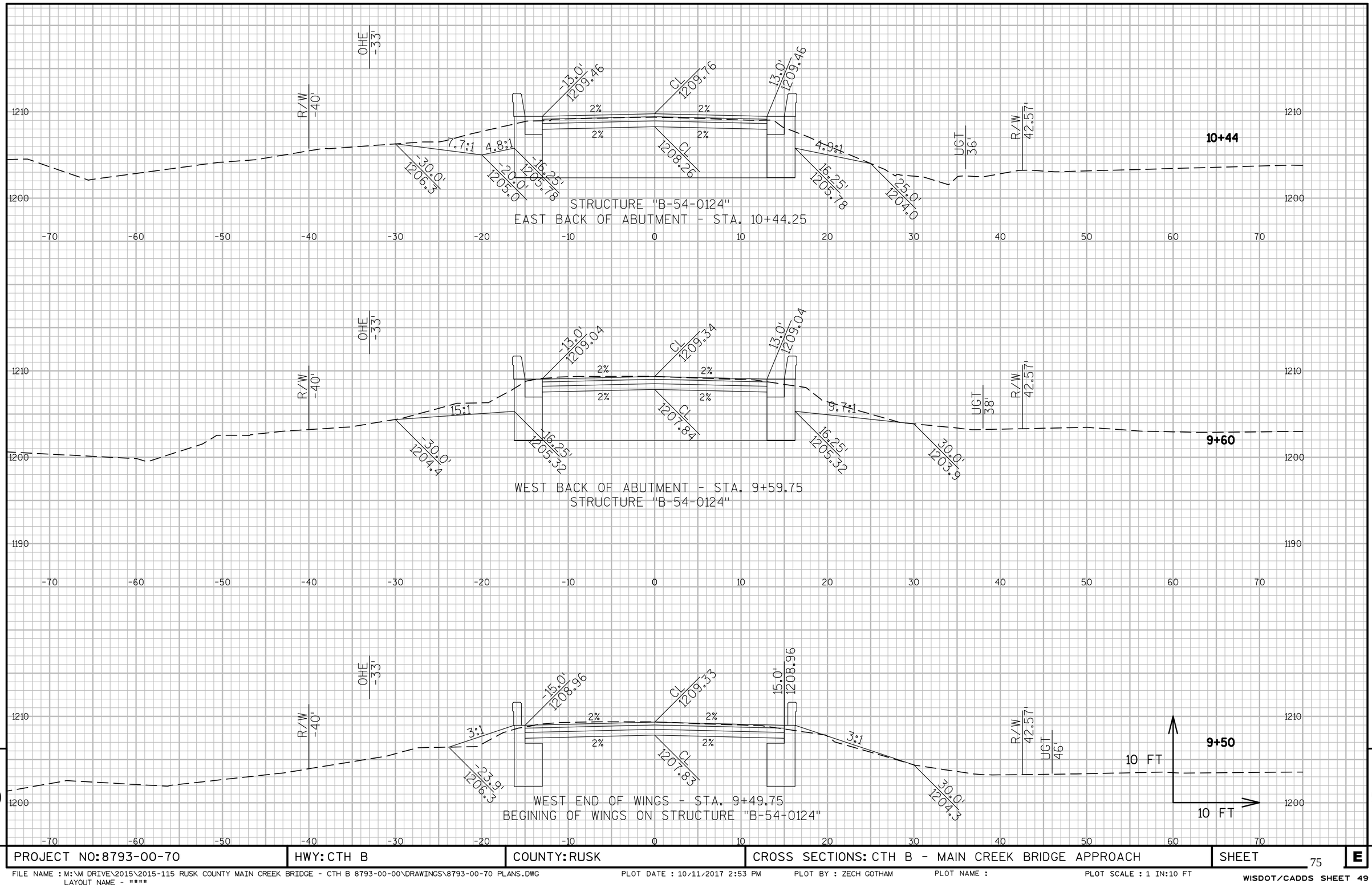
PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	CROSS SECTIONS: CTH B - MAIN CREEK BRIDGE APPROACH	SHEET 74	E



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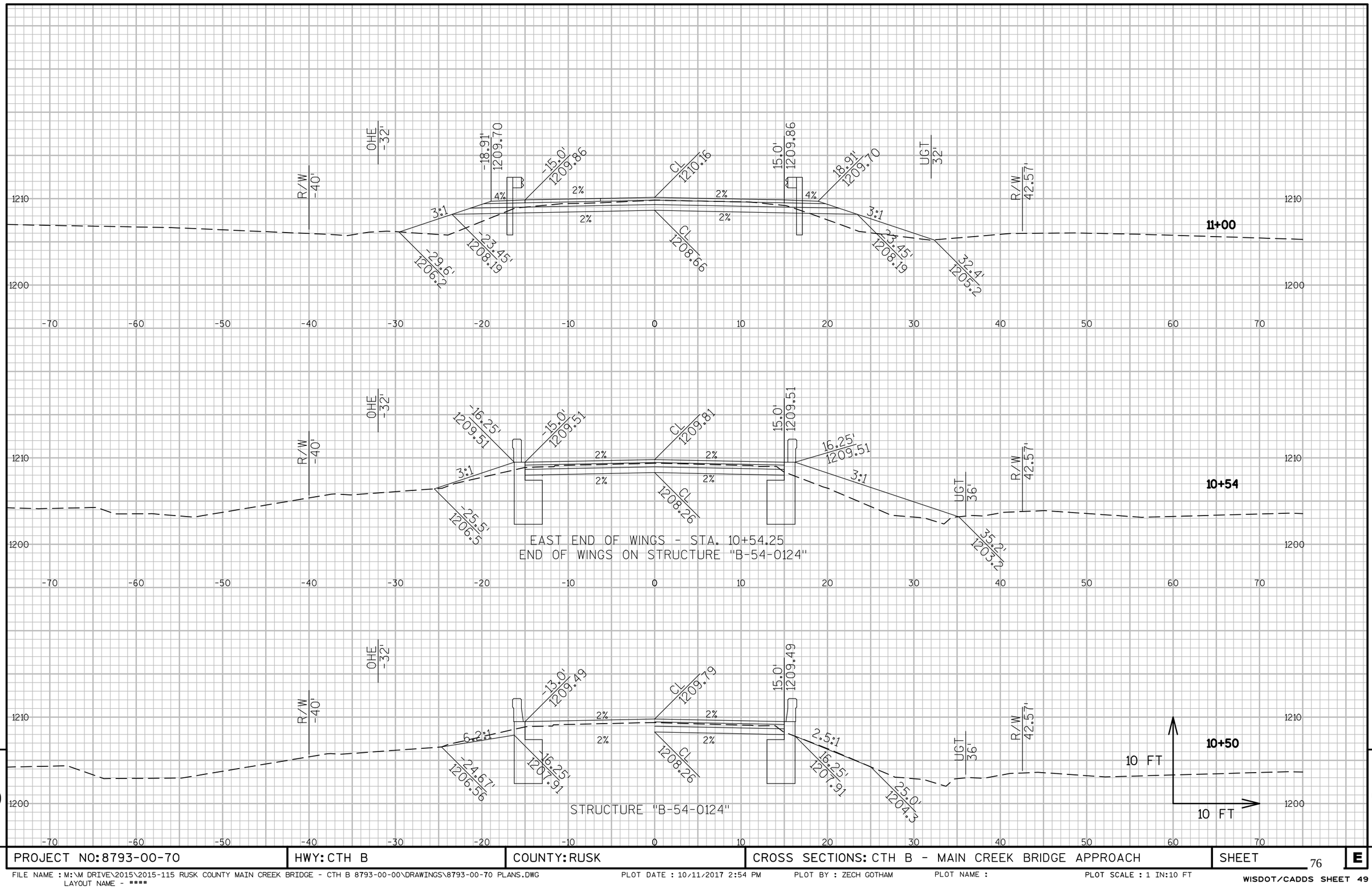
PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	CROSS SECTIONS: CTH B - MAIN CREEK BRIDGE APPROACH	SHEET 75	E



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PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	CROSS SECTIONS: CTH B - MAIN CREEK BRIDGE APPROACH	SHEET	E

FILE NAME : M:\M DRIVE\2015\2015-115 RUSK COUNTY MAIN CREEK BRIDGE - CTH B 8793-00-00\DRAWINGS\8793-00-70 PLANS.DWG
LAYOUT NAME - ****
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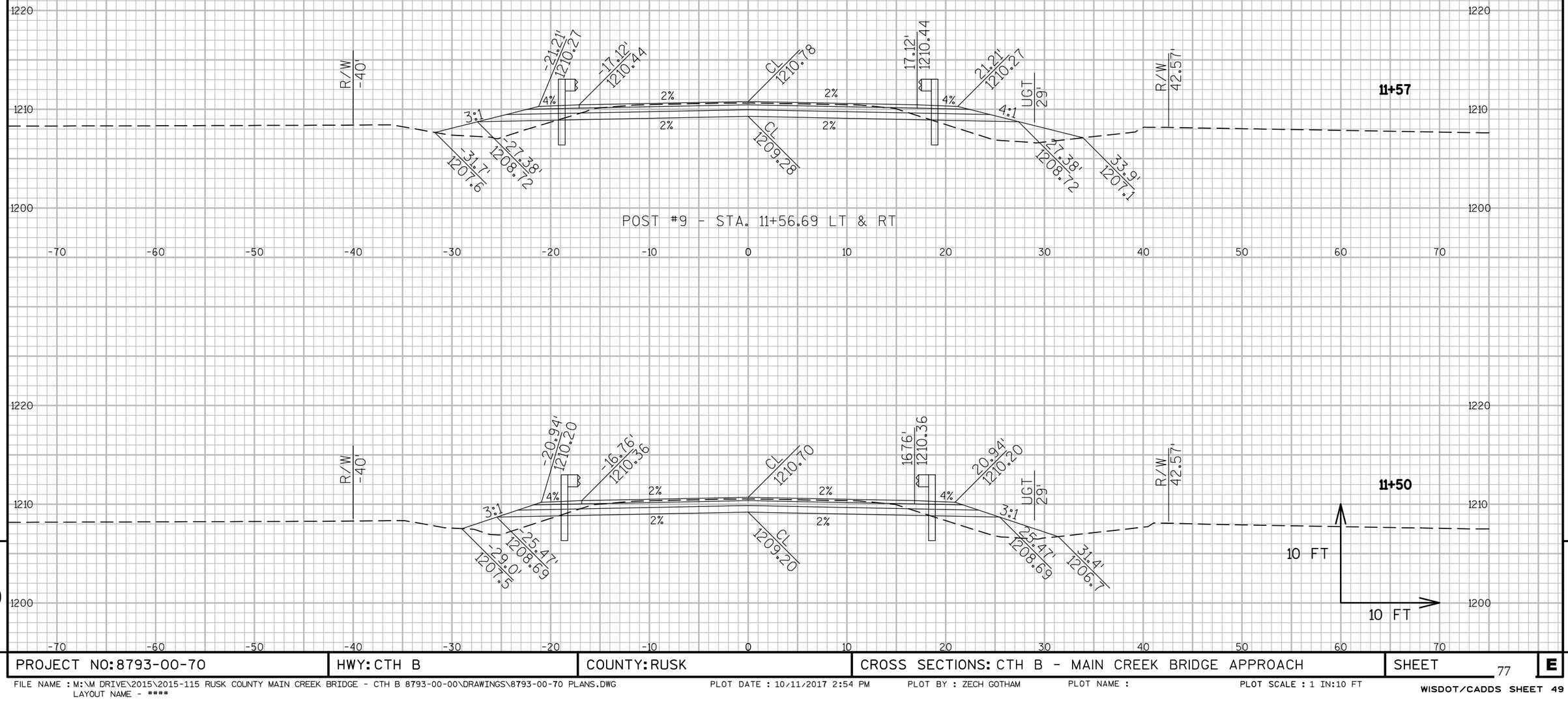

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PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	CROSS SECTIONS: CTH B - MAIN CREEK BRIDGE APPROACH	SHEET 77	E

FILE NAME : M:\M DRIVE\2015\2015-115 RUSK COUNTY MAIN CREEK BRIDGE - CTH B 8793-00-00\DRAWINGS\8793-00-70 PLANS.DWG
LAYOUT NAME - ****
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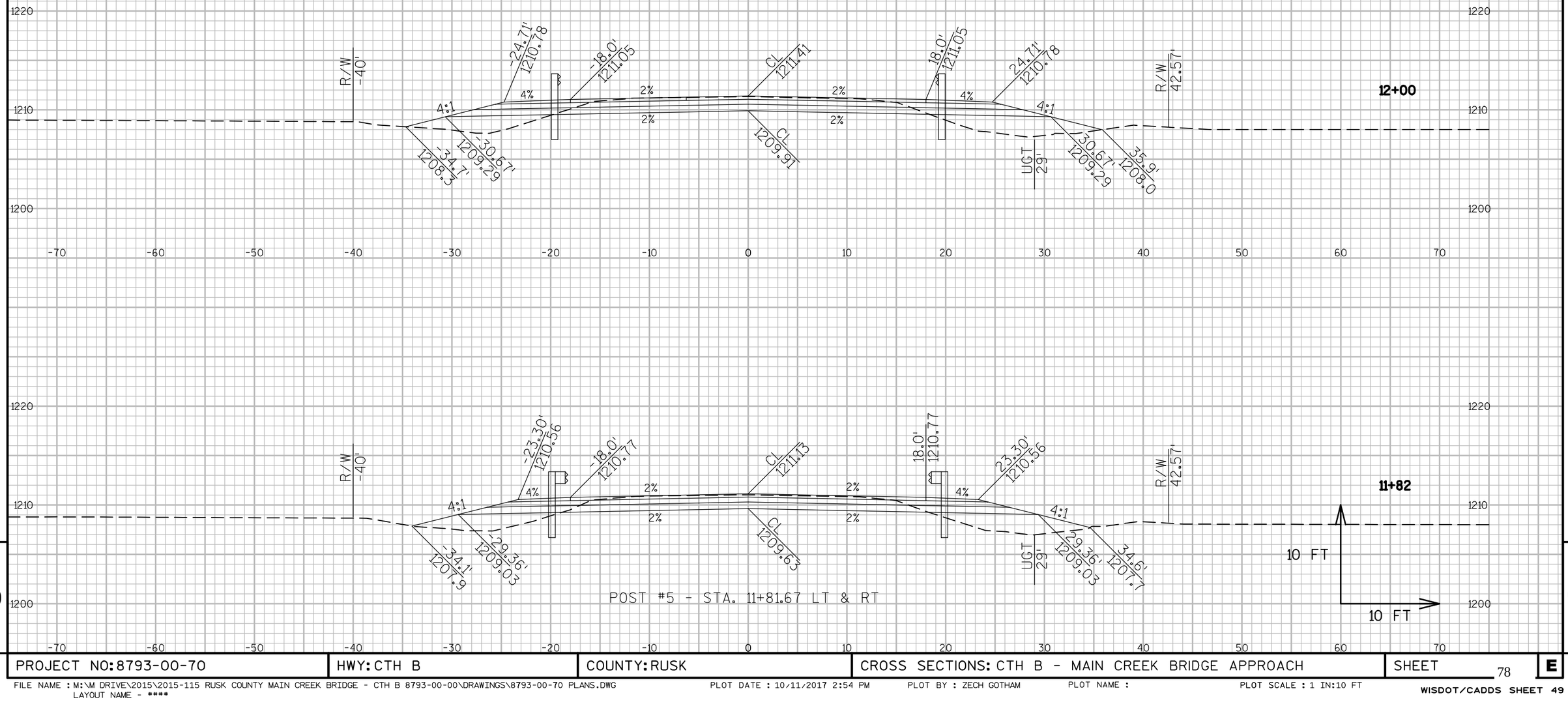
WISDOT/CADDS SHEET 49



PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	CROSS SECTIONS: CTH B - MAIN CREEK BRIDGE APPROACH	SHEET 78	E

FILE NAME : M:\M DRIVE\2015\2015-115 RUSK COUNTY MAIN CREEK BRIDGE - CTH B 8793-00-00\DRAWINGS\8793-00-70 PLANS.DWG
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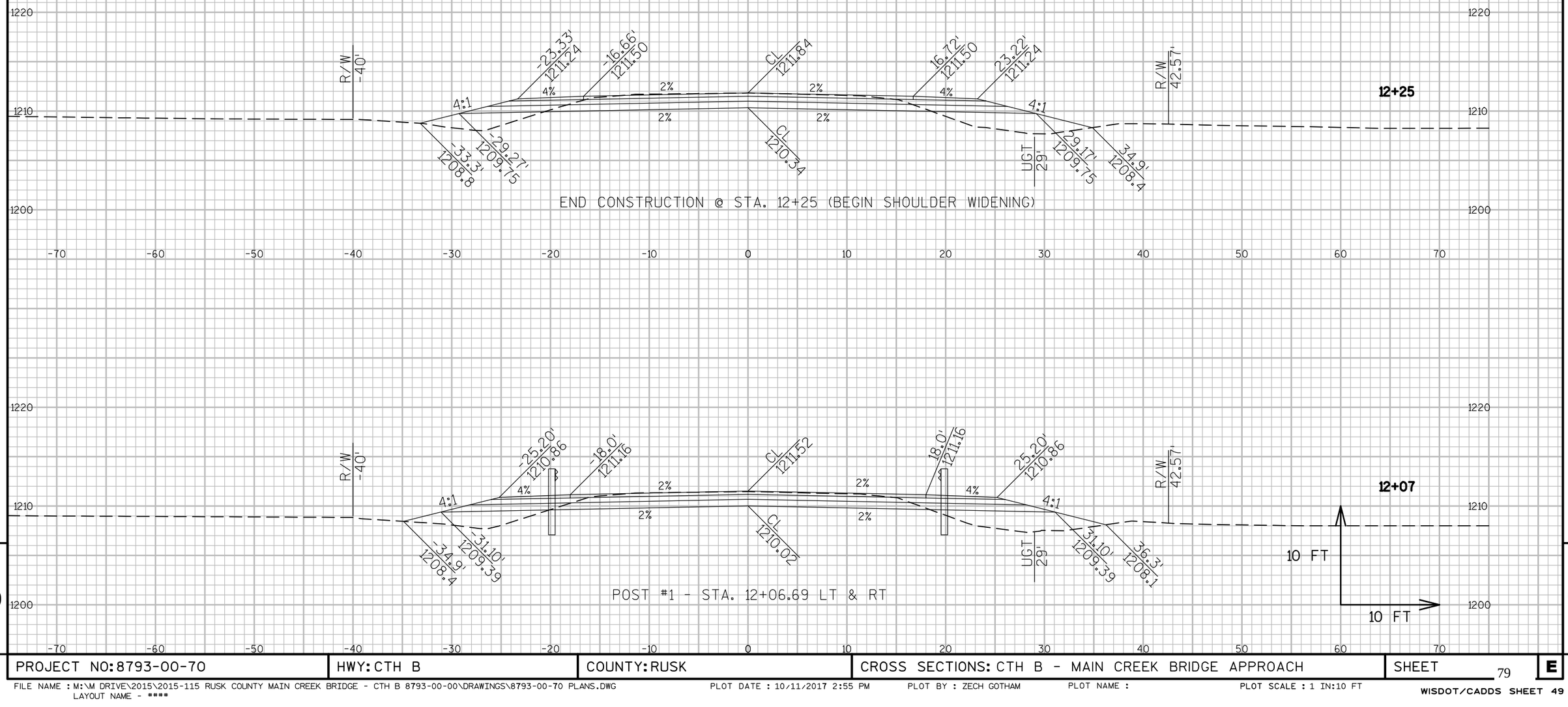
WISDOT/CADDS SHEET 49



PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	CROSS SECTIONS: CTH B - MAIN CREEK BRIDGE APPROACH	SHEET 79	E

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LAYOUT NAME - ****
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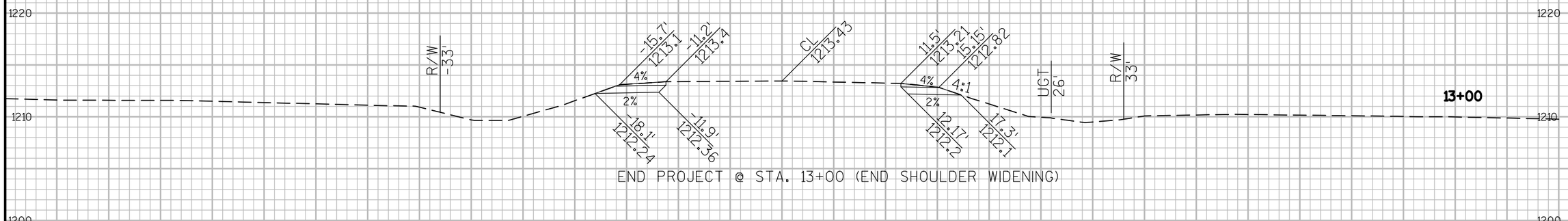
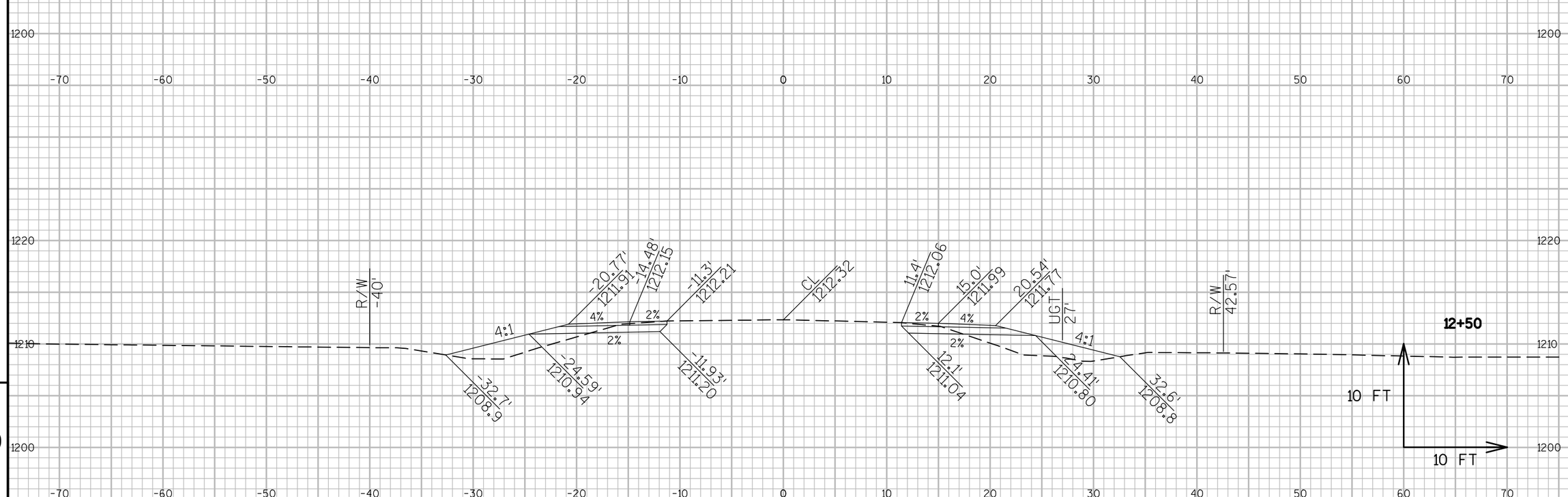
WISDOT/CADDS SHEET 49



END PROJECT @ STA. 13+00 (END SHOULDER WIDENING)



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PROJECT NO: 8793-00-70	HWY: CTH B	COUNTY: RUSK	CROSS SECTIONS: CTH B - MAIN CREEK BRIDGE APPROACH	SHEET 80	E

FILE NAME : M:\M DRIVE\2015\2015-115 RUSK COUNTY MAIN CREEK BRIDGE - CTH B 8793-00-00\DRAWINGS\8793-00-70 PLANS.DWG
LAYOUT NAME - ****
PLOT DATE : 10/11/2017 2:55 PM
PLOT BY : ZECH GOTHAM
PLOT NAME :
PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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