

EAU
PROJECT ID: 7846-04-70
WITH: N/A
COUNTY: CLARK

JANUARY 2018

ORDER OF SHEETS

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

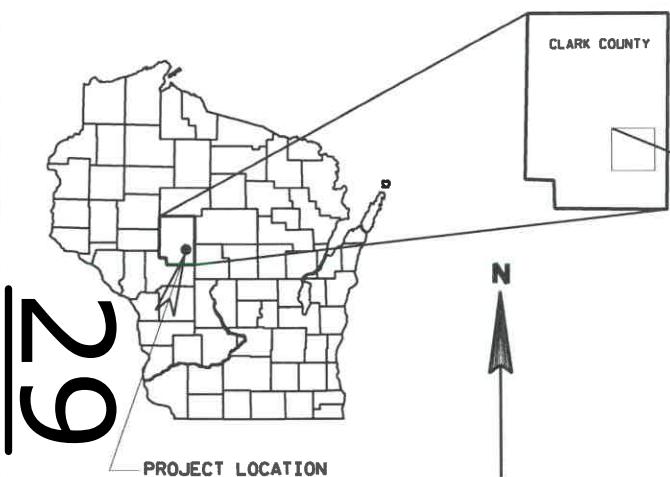
TOTAL SHEETS = 92

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT

GRANTON - LOYAL
MIDDLE BR ONEILL CR BRIDGE B100234
CTH K
CLARK COUNTY

STATE PROJECT NUMBER
7846-04-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7846-04-70	WISC 2018060	1



DESIGN DESIGNATION

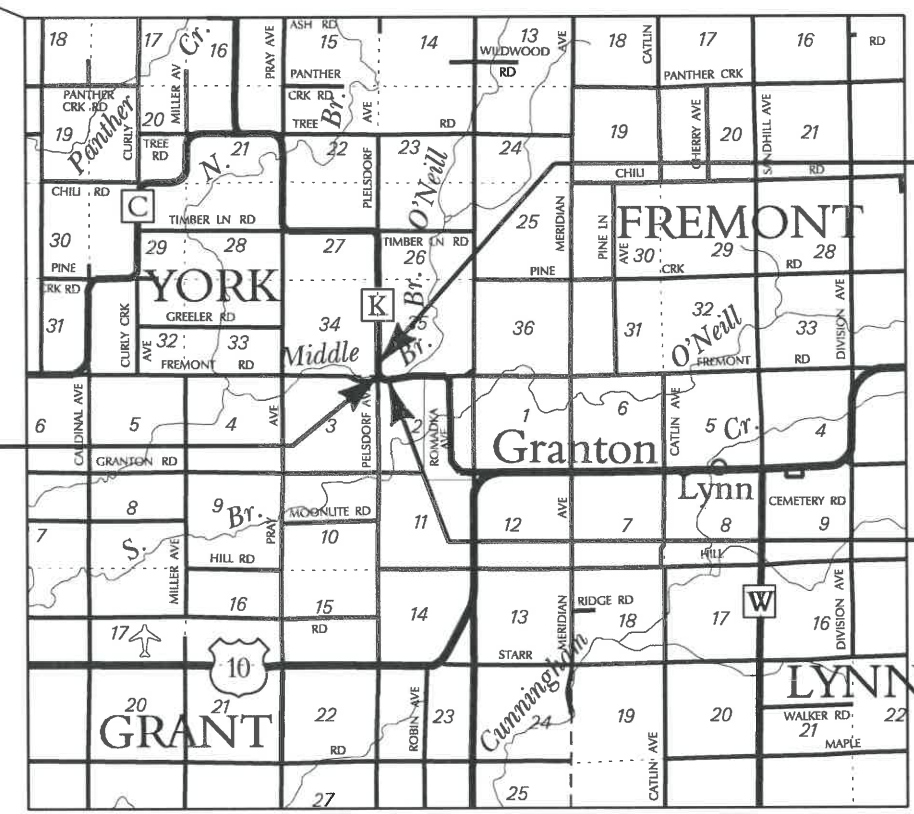
A.D.T. (2018)	=	440
A.D.T. (2038)	=	600
D.H.V.	=	60
D.	=	50/50
T.	=	5%
DESIGN SPEED	=	40 MPH
ESALS	=	44,000

CONVENTIONAL SYMBOLS
PLAN

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

PROFILE	
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
OVERHEAD ELECTRIC	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

STRUCTURE B-10-234



END PROJECT
STA. 34+00.00
Y = 363735.31
X = 716320.82

T-25-N
T-24-N

BEGIN PROJECT
STA. 26+00.00
Y = 363142.96
X = 716736.59

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.152 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO
THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS),
CLARK COUNTY.

ACCEPTED FOR
County of Clark
7-11-17
Randy J. Anderson
Highway Commissioner

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

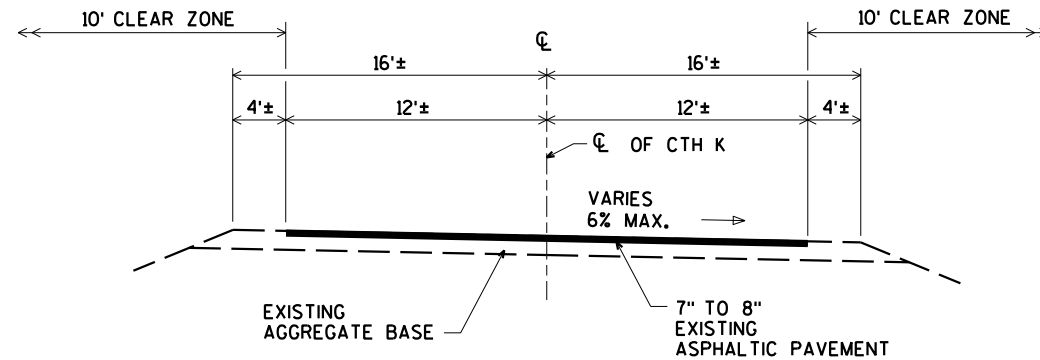
WISCONSIN
DANIEL N. SYDOW
E-38363
WI
PROFESSIONAL ENGINEER
DATE 7/5/2017

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

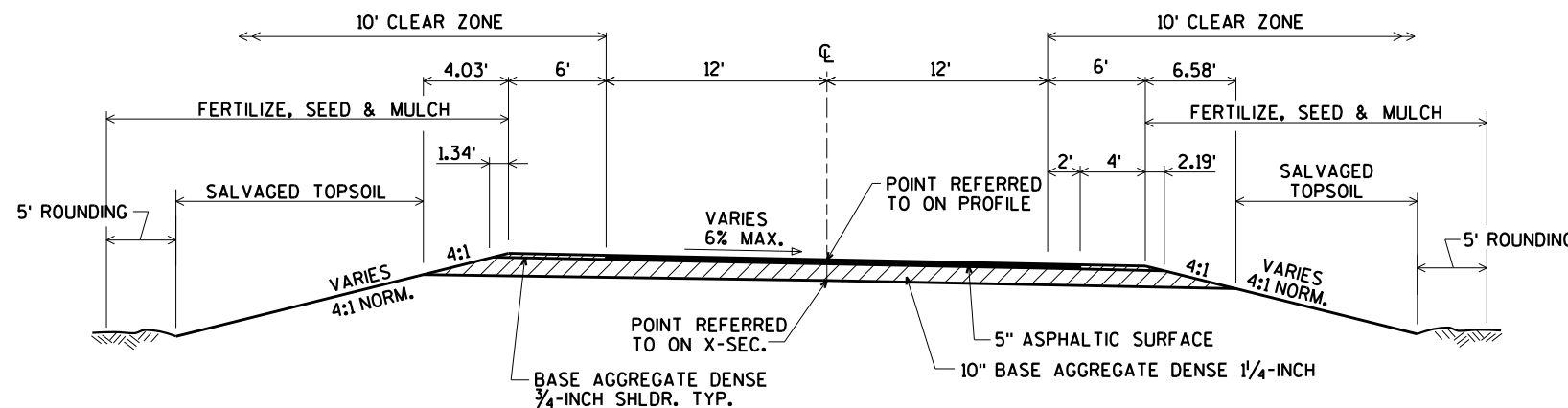
PREPARED BY
Surveyor AYRES ASSOCIATES INC
Designer AYRES ASSOCIATES INC
Management Consultant KNIGHT EA INC.
C.O. Examiner

APPROVED FOR THE DEPARTMENT
DATE: 7/25/17
Management Consultant Signature

E

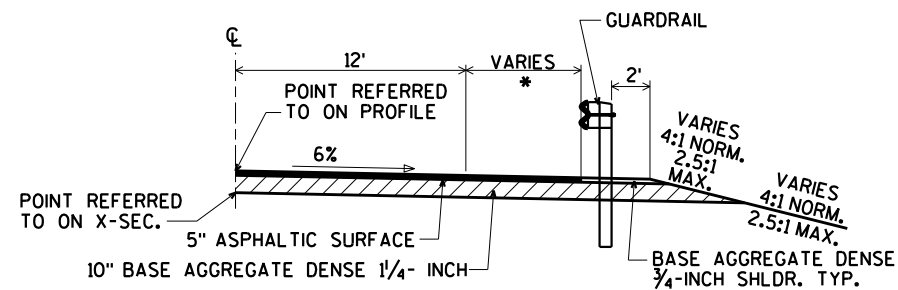


EXISTING TYPICAL SECTION - CTH K



TYPICAL FINISHED SECTION - CTH K

STA. 26+00 TO STA. 34+00



TYPICAL FINISHED HALF SECTION WITH BEAM GUARD - CTH K

* 6' NORMAL
3' MIN. (AT END OF BRIDGE)
8' MAX. (AT END TERMINAL)

GENERAL NOTES

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

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

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 DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCLUSIVE OF THE ROADBED, SHALL BE FERTILIZED, SEEDED, AND MULCHED AS DIRECTED BY THE ENGINEER.

SEED MIXTURE NO. 20 AND SEEDING TEMPORARY SHALL BE USED IN THE PROJECT AND SHALL BE PLACED AS SHOWN IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.

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

ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 2" UPPER LAYER AND A 3" LOWER LAYER.

UTILITIES

CLARK ELECTRIC COOPERATIVE
124 NORTH MAIN STREET
P.O. BOX 190
GREENWOOD, WI 54437
ATTN: RICK SUDA
715-267-6188
rsuda@cecoop.com

TDS TELECOM
10 COLLEGE AVE.
SUITE 218A
APPLETON, WI 54911
ATTN: STEVE JAKUBIEC
920-882-4166
steve.jakubiec@tdstelecom.com

WE ENERGIES
1921 8TH STREET SOUTH
WISCONSIN RAPIDS, WI 54494
ATTN: RYAN MEINTKE
715-421-7249
meintke.ryan@we-energies.com

* * DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

DIGGERS HOTLINE

Dial **811** or (800)242-8511

www.DiggersHotline.com

DESIGNER

AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: DANIEL N. SYDOW
715-834-3161
sydowd@AyresAssociates.com

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:

CHRIS WILLGER
1300 W. CLAIREMONT AVE.
EAU CLAIRE, WI. 54702
715-839-1609
christopher.j.willger@wisconsin.gov

Diagram illustrating the existing typical section of Pelisdorf Ave. The section shows a 10' CLEAR ZONE on both sides of the roadway. The roadway width is divided into four lanes, each 13'± wide. The total roadway width is 52'±. The centerline (CL) of Pelisdorf Ave is indicated. The existing aggregate base is shown below the roadway surface. The diagram also indicates that the lane widths vary (VARIES) on either side of the centerline.

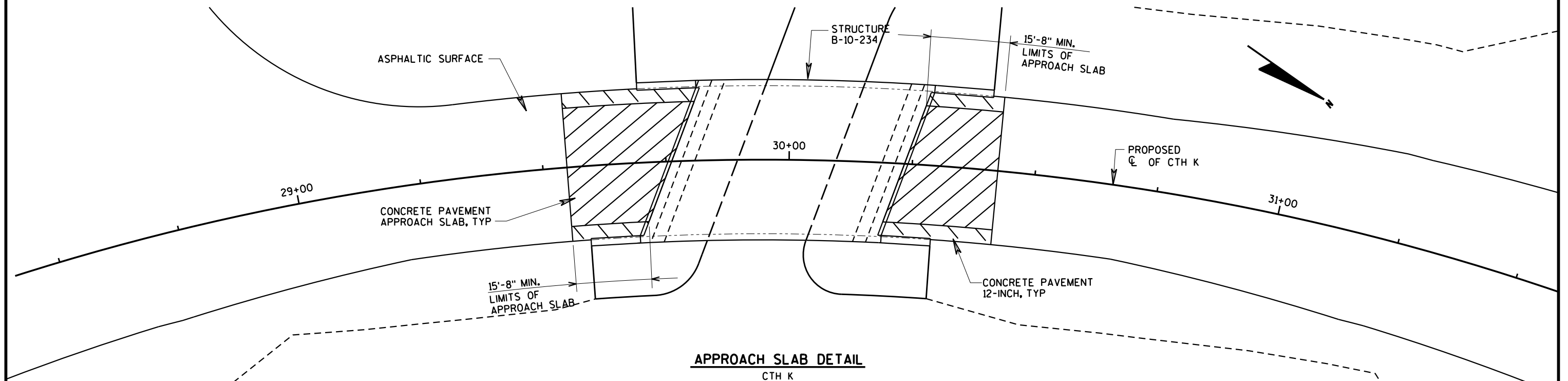
EXISTING TYPICAL SECTION - PELSDORF AVE

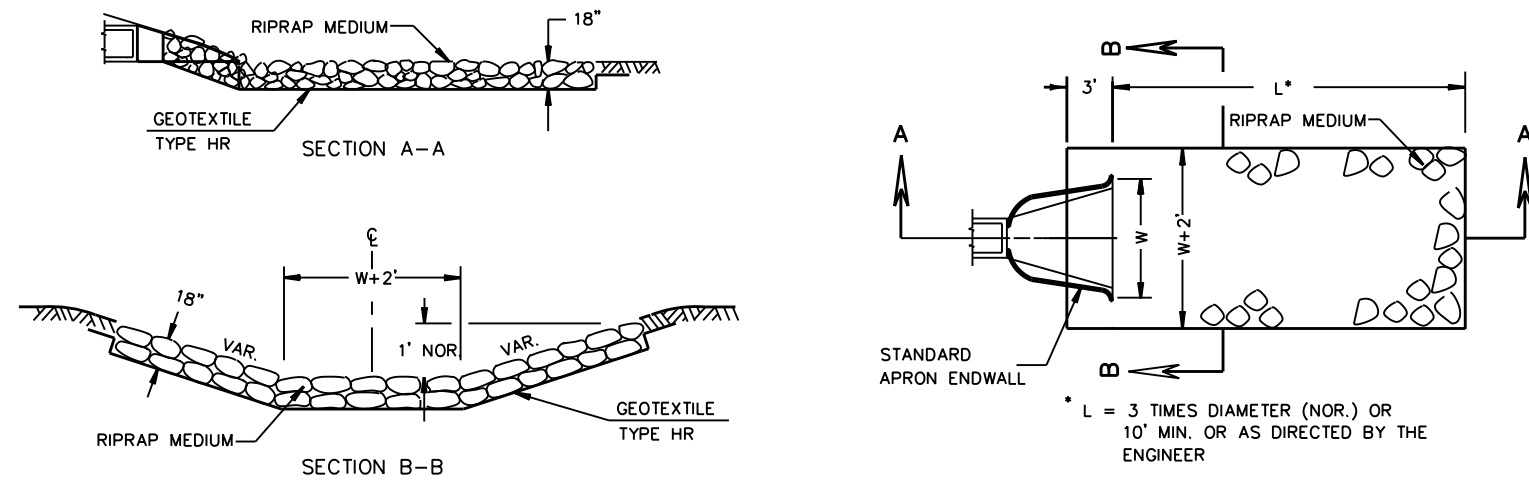
[illegible]

STA. 0+15.05 TO STA. 0+91.29

[illegible]

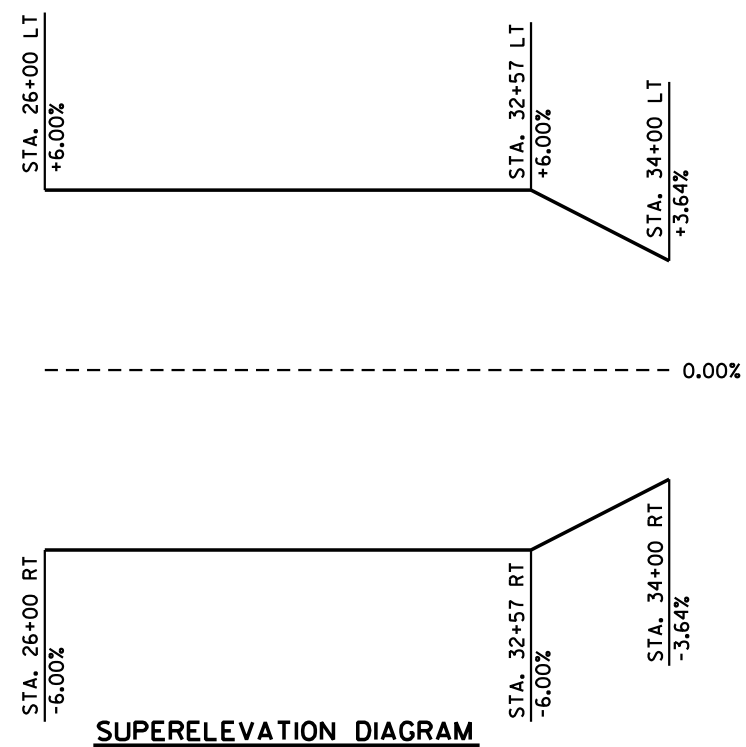
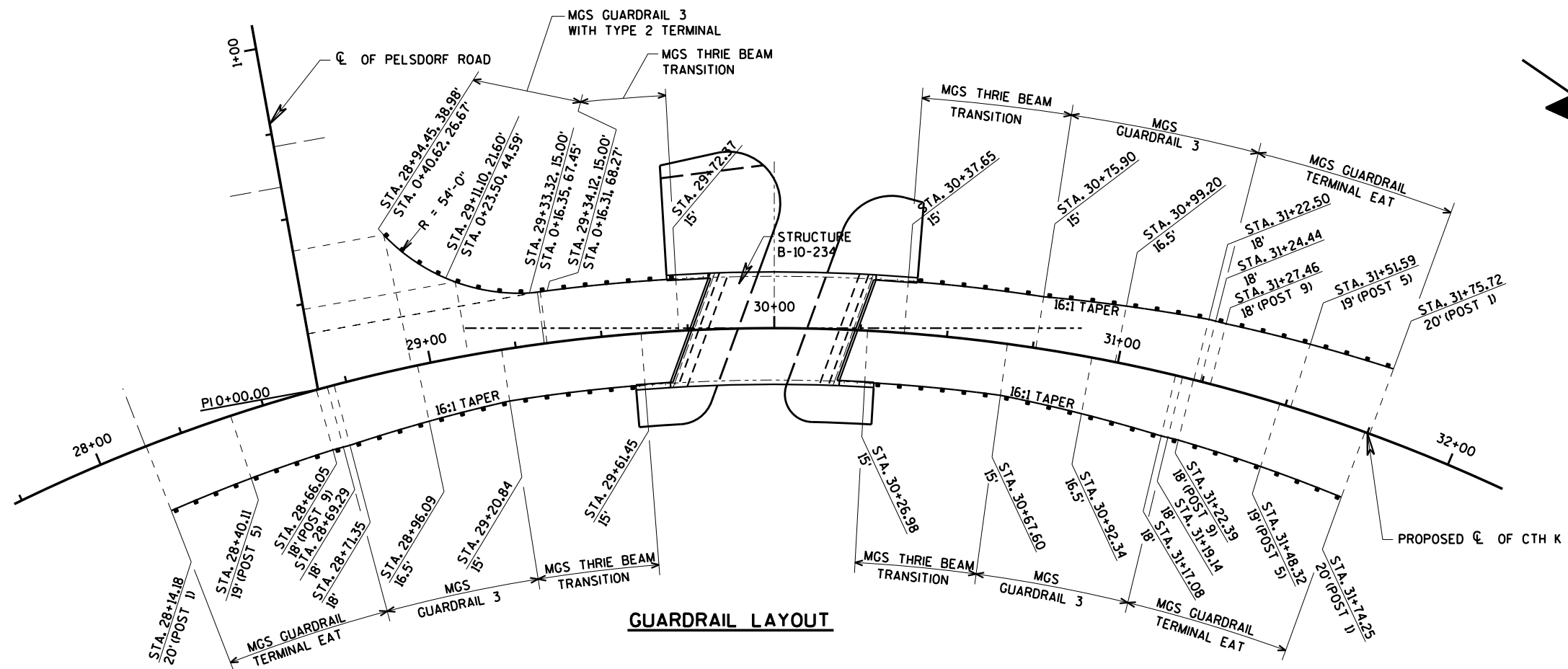
STA. 0+91.29 TO STA. 1+25.00

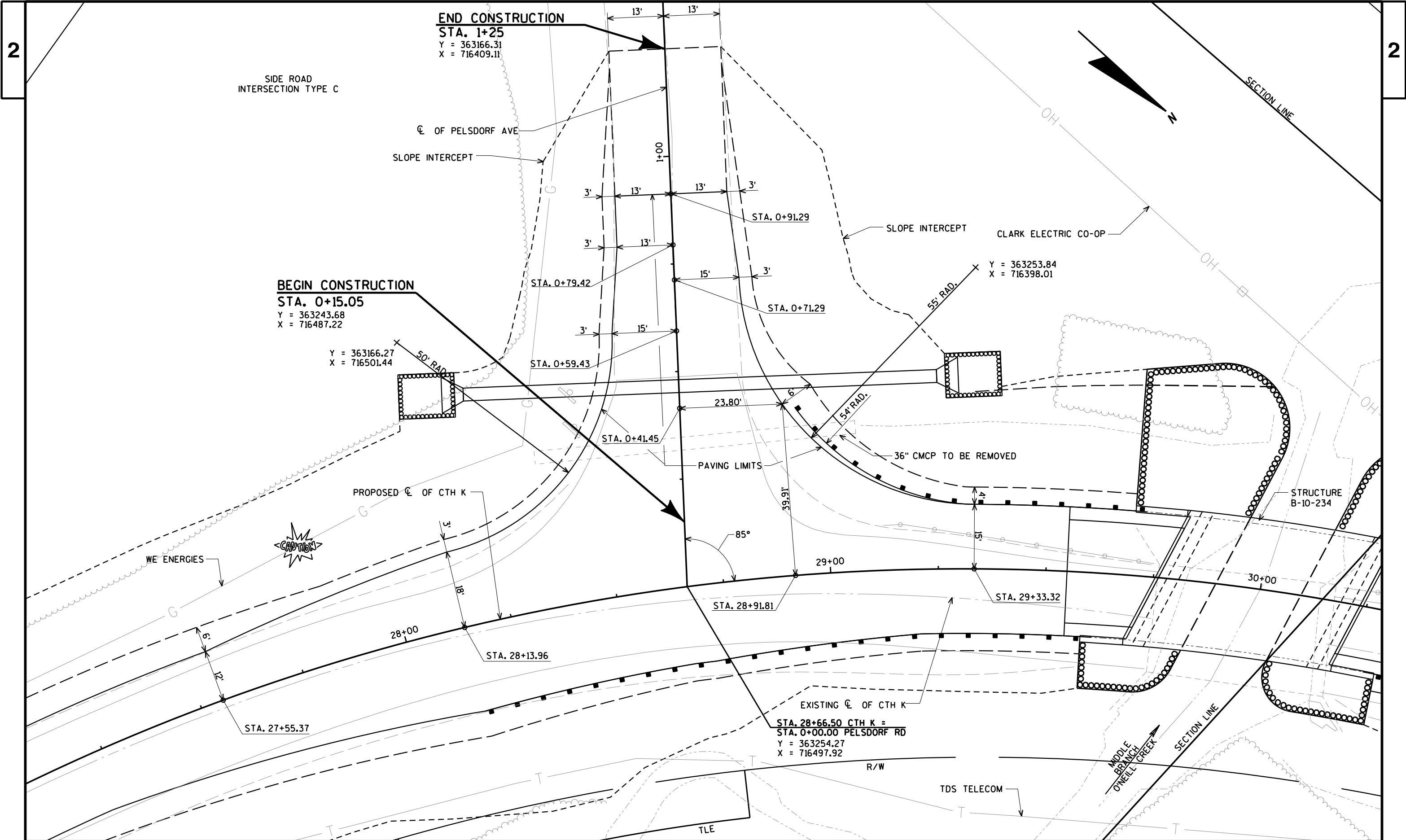


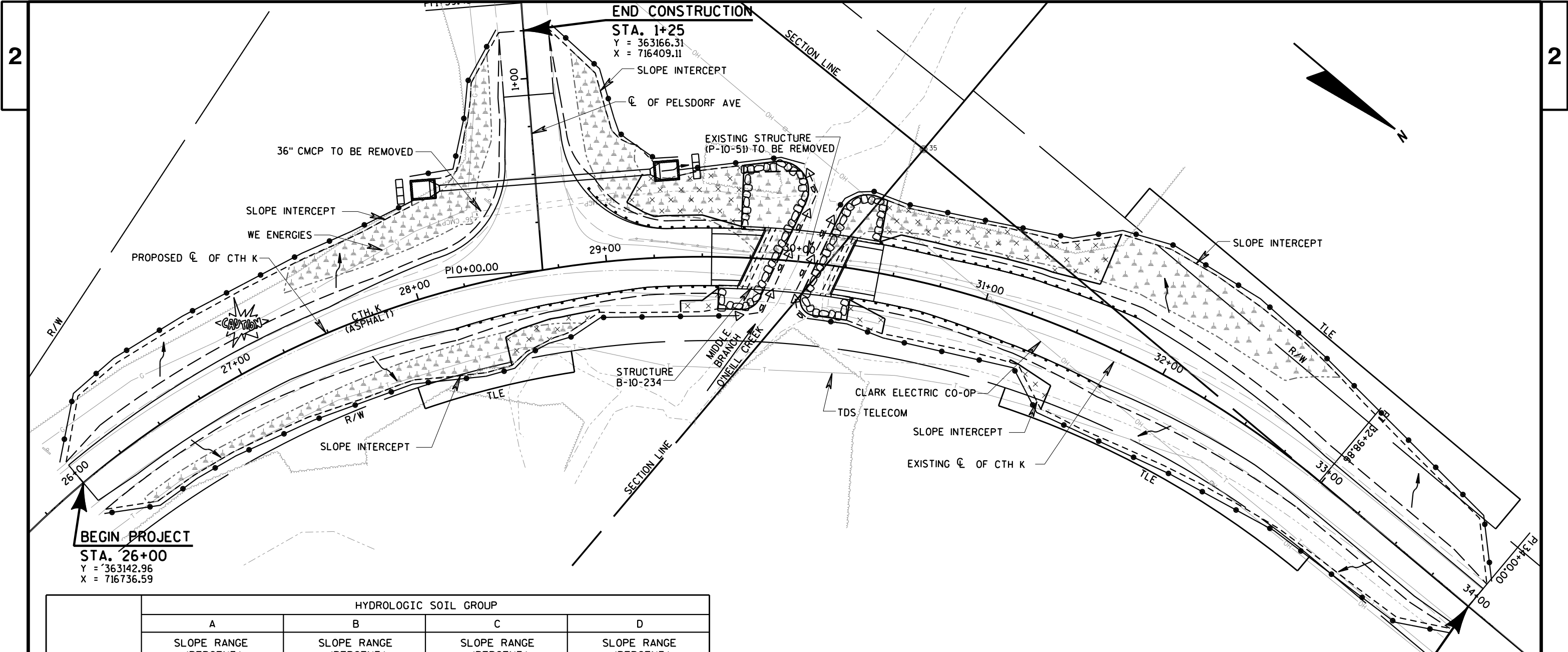


RIPRAP AND GEOTEXTILE DETAIL
AT APRON ENDWALLS









	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 = 2.726 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.520 ACRES

HIGH WATER 2 EL. 1109.74

NOTE: NO DISTURBANCE OR TOPSOIL STOCKPILING IS ALLOWED OUTSIDE OF THE SLOPE INTERCEPTS. WETLANDS EXIST IN THE PROJECT AREA. WETLAND IMPACTS PERMITTED INCLUDE ALL WETLANDS WITHIN SLOPE INTERCEPTS.

- LEGEND
- × × × EROSION MAT CLASS II TYPE C
 - □ □ TEMPORARY DITCH CHECKS (UNDISTRIBUTED)
 - ● ● SILT FENCE
 - ◀ ◻ ▶ ◻ ▶ TURBIDITY BARRIER
 - RIPRAP MEDIUM
 - RIPRAP HEAVY
 - △ △ △ △ WETLANDS

Estimate Of Quantities

7846-04-70					
Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	8.000	8.000
0004	201.0205	Grubbing	STA	8.000	8.000
0006	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0008	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 29+97	LS	1.000	1.000
0010	204.0165	Removing Guardrail	LF	140.000	140.000
0012	205.0100	Excavation Common	CY	1,080.000	1,080.000
0014	206.1000	Excavation for Structures Bridges (structure) 01. B-10-234	LS	1.000	1.000
0016	208.0100	Borrow	CY	2,164.000	2,164.000
0018	210.1500	Backfill Structure Type A	TON	270.000	270.000
0020	213.0100	Finishing Roadway (project) 01. 7846-04-70	EACH	1.000	1.000
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	320.000	320.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,335.000	2,335.000
0026	415.0120	Concrete Pavement 12-Inch	SY	25.000	25.000
0028	415.0410	Concrete Pavement Approach Slab	SY	108.000	108.000
0030	455.0605	Tack Coat	GAL	167.000	167.000
0032	465.0105	Asphaltic Surface	TON	805.000	805.000
0034	502.0100	Concrete Masonry Bridges	CY	204.000	204.000
0036	502.3200	Protective Surface Treatment	SY	210.000	210.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	4,440.000	4,440.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	27,210.000	27,210.000
0042	513.4061	Railing Tubular Type M (structure) 01. B-10-234	LF	142.000	142.000
0044	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0046	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	2.000	2.000
0048	530.0136	Culvert Pipe Corrugated Polyethylene 36-Inch	LF	110.000	110.000
0050	550.0500	Pile Points	EACH	12.000	12.000
0052	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	420.000	420.000
0054	606.0200	Riprap Medium	CY	18.000	18.000
0056	606.0300	Riprap Heavy	CY	240.000	240.000
0058	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	160.000	160.000
0060	614.2300	MGS Guardrail 3	LF	200.000	200.000
0062	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0064	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0066	614.2620	MGS Guardrail Terminal Type 2	EACH	1.000	1.000
0068	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7846-04-70	EACH	1.000	1.000
0070	619.1000	Mobilization	EACH	1.000	1.000
0072	624.0100	Water	MGAL	49.000	49.000
0074	625.0500	Salvaged Topsoil	SY	2,890.000	2,890.000

Estimate Of Quantities

7846-04-70

Line	Item	Item Description	Unit	Total	Qty
0076	627.0200	Mulching	SY	3,990.000	3,990.000
0078	628.1504	Silt Fence	LF	2,090.000	2,090.000
0080	628.1520	Silt Fence Maintenance	LF	4,175.000	4,175.000
0082	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0084	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0086	628.2027	Erosion Mat Class II Type C	SY	1,055.000	1,055.000
0088	628.6005	Turbidity Barriers	SY	255.000	255.000
0090	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0092	629.0210	Fertilizer Type B	CWT	3.500	3.500
0094	630.0120	Seeding Mixture No. 20	LB	130.000	130.000
0096	630.0200	Seeding Temporary	LB	110.000	110.000
0098	633.5200	Markers Culvert End	EACH	2.000	2.000
0100	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	6.000	6.000
0102	637.2230	Signs Type II Reflective F	SF	29.680	29.680
0104	638.2102	Moving Signs Type II	EACH	3.000	3.000
0106	638.2602	Removing Signs Type II	EACH	7.000	7.000
0108	638.3000	Removing Small Sign Supports	EACH	5.000	5.000
0110	638.4000	Moving Small Sign Supports	EACH	3.000	3.000
0112	642.5001	Field Office Type B	EACH	1.000	1.000
0114	643.0420	Traffic Control Barricades Type III	DAY	1,679.000	1,679.000
0116	643.0705	Traffic Control Warning Lights Type A	DAY	2,190.000	2,190.000
0118	643.0900	Traffic Control Signs	DAY	1,095.000	1,095.000
0120	643.5000	Traffic Control	EACH	1.000	1.000
0122	645.0111	Geotextile Type DF Schedule A	SY	80.000	80.000
0124	645.0120	Geotextile Type HR	SY	487.000	487.000
0126	646.1020	Marking Line Epoxy 4-Inch	LF	3,200.000	3,200.000
0128	650.4500	Construction Staking Subgrade	LF	862.000	862.000
0130	650.5000	Construction Staking Base	LF	862.000	862.000
0132	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000
0134	650.6500	Construction Staking Structure Layout (structure) 01. B-10-234	LS	1.000	1.000
0136	650.9910	Construction Staking Supplemental Control (project) 01. 7846-04-70	LS	1.000	1.000
0138	650.9920	Construction Staking Slope Stakes	LF	862.000	862.000
0140	690.0150	Sawing Asphalt	LF	47.000	47.000
0142	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0144	715.0502	Incentive Strength Concrete Structures	DOL	1,224.000	1,224.000
0146	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0148	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000

EARTHWORK SUMMARY (CATEGORY 0010)

DIVISION	STATION TO STATION	LOCATION	**p**	SALVAGED/ UNUSABLE	AVAILABLE MATERIAL (4) CY	UNEXPANDED FILL (3) CY	EXPANDED FILL (5) CY	MASS ORDINATE ±(6) CY	WASTE CY	**p**	COMMENTS:
			205.0100	PAVEMENT						208.0100	
			EXCAVATION COMMON	MATERIAL						BORROW	
			CUT (1) CY	(2) CY							
1	16+00 TO 29+76	CTH K	477	0	477	903	1,174	-697	0	697	
	30+23 TO 34+00	CTH K	506	0	506	1,296	1,685	-1,179	0	1179	
2	0+15 TO 1+25	PELSDORF ROAD	97	0	97	296	385	-288	0	288	
GRANDTOTAL			1,080	0	1,080	2,495	3,244	-2,164	0	2,164	
TOTAL EXCAVATION COMMON			1,080 CY	TOTAL BORROW 2,164 CY							

NOTES:
1) EXCAVATION COMMON IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100
2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
5) EXPANDED FILL FACTOR = 1.30
EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
6) THE MASS ORDINATE ± QTY CALCUTATED FOR THE DIVISION.
PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

p PAY PLAN QUANTITY

CLEARING AND GRUBBING (CATEGORY 0010)

STATION TO STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
Sta. 26+00 to Sta. 34+00	CTH K	8	8

203.0100 REMOVING SMALL PIPE CULVERTS (CATEGORY 0010)

LOCATION	EACH
PROJECT 7846-04-70	1

204.0165 REMOVING GUARDRAIL (CATEGORY 0010)

STATION TO STATION	LOCATION	LF
Sta. 29+13 to Sta. 29+75	CTH K, LT	64
Sta. 30+19 to Sta. 30+94	CTH K, LT	76
TOTALS		140

213.0100 FINISHING ROADWAY (CATEGORY 0010)

LOCATION	EACH
PROJECT 7846-04-70	1

BASE AGGREGATE DENSE (CATEGORY 0010)

STATION TO STATION	LOCATION	305.0110	305.0120
		3/4-INCH 1	1/4-INCH
		TON	TON
Sta. 26+00 to Sta. 29+55	CTH K	110	920
Sta. 29+55 to Sta. 29+75	CTH K	---	10
Sta. 30+24 to Sta. 30+42	CTH K	---	10
Sta. 30+42 to Sta. 34+00	CTH K	140	1025
Sta. 0+15 to Sta 0+91	PELSDORF ROAD	35	295
Sta. 0+91 to Sta 1+25	PELSDORF ROAD	35	75
TOTALS		320	2,335

415.0120 CONCRETE PAVEMENT 12-INCH (CATEGORY 0010)

STATION TO STATION	LOCATION	SY
Sta. 29+55 to Sta. 29+82	CTH K, LT.	8
Sta. 29+55 to Sta. 29+70	CTH K, RT.	5
Sta. 30+28 to Sta. 30+41	CTH K, LT.	5
Sta. 30+19 to Sta. 30+41	CTH K, RT.	7
TOTALS		25

415.0410 CONCRETE PAVEMENT APPROACH SLAB (CATEGORY 0010)

STATION TO STATION	LOCATION	SY
Sta. 29+55 to Sta. 29+76	CTH K	57
Sta. 30+20 to Sta. 30+43	CTH K	51
TOTALS		108

PAVING QUANTITIES (CATEGORY 0010)

STATION TO STATION	LOCATION	455.0605	465.0105
		TACK COAT GAL	ASPHALTIC SURFACE TON
Sta. 26+00 to Sta. 29+55	CTH K	70	335
Sta. 30+42 to Sta. 34+00	CTH K	74	360
Sta. 0+15 to Sta 0+91	PELSDORF ROAD	23	110
TOTALS		167	805

NOTE: TACK COAT APPLICATION RATE IS 0.06 GAL/SY.

520.1036 APRON ENDWALLS FOR CULVERT PIPE 36-INCH (CATEGORY 0010)

LOCATION	EACH
STA. 0+47, 60-FT. RT. PELSDORF ROAD	1
STA. 0+47, 50-FT. LT. PELSDORF ROAD	1
TOTAL	2

530.0136 CULVERT PIPE CORRUGATED
POLYETHYLENE 36-INCH (CATEGORY 0010)

LOCATION	LF
STA. 0+47, PELSDORF ROAD	110
TOTAL	110

606.0200 RIPRAP MEDIUM (CATEGORY 0010)

STATION TO STATION	LOCATION	CY
Sta. 0+47, 60-FT. RT.	PELSDORF ROAD	9
Sta. 0+47, 50-FT. LT.	PELSDORF ROAD	9
TOTALS		18

614.2300 MGS GUARDRAIL 3 (CATEGORY 0010)

STATION TO STATION	LOCATION	LF
Sta. 28+69.29 to Sta. 29+20.84	CTH K, RT.	50
Sta. 30+67.60 to Sta. 31+19.14	CTH K, RT.	50
Sta. 28+94.45 to Sta. 29+34.12	CTH K, LT.	50
Sta. 30+75.90 to Sta 31+24.44	CTH K, LT.	50
TOTALS		200

614.2500 MGS THRIE BEAM TRANSITION (CATEGORY 0010)

STATION TO STATION	LOCATION	LF
Sta. 29+20.84 to Sta. 29+61.45	CTH K, RT.	40
Sta. 30+26.98 to Sta. 30+67.60	CTH K, RT.	40
Sta. 29+34.12 to Sta. 29+72.37	CTH K, LT.	40
Sta. 30+37.65 to Sta 30+75.90	CTH K, LT.	40
TOTALS		160

614.2610 MGS GUARDRAIL TERMINAL EAT (CATEGORY 0010)

STATION	LOCATION	EACH
Sta. 28+14.18 to Sta. 28+69.29	CTH K, RT.	1
Sta. 31+19.14 to Sta. 31+74.25	CTH K, RT.	1
Sta. 31+24.44 to Sta. 31+75.72	CTH K, LT.	1
TOTAL		3

614.2620 MGS GUARDRAIL TERMINAL TYPE 2 (CATEGORY 0010)

STATION	LOCATION	EACH
Sta. 28+94.45 to Sta. 29+34.12	CTH K, LT.	1
TOTAL		1

619.1000 MOBILIZATION

LOCATION	EACH
PROJECT 7846-04-00 (CATEGORY 0010)	0.4
PROJECT 7846-04-70 (CATEGORY 0020)	0.6
TOTAL	1

WATER (CATEGORY 0010)

		624.0100 WATER MGAL
TYPE	LOCATION	
COMPACTION	PROJECT	40
DUST CONTROL	PROJECT	9
TOTALS		49

SALVAGED TOPSOIL, MULCHING, FERTILIZER, SEED & TEMPORARY SEED (CATEGORY 0010)

STATION TO STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING NO. 20 LB	630.0200 SEEDING TEMPORARY LB
Sta. 26+00 to Sta. 29+76	CTH K	1,150	3,115	2.5	107.0	84
Sta. 30+23 to Sta. 34+00	CTH K	1,430				
Undistributed		---	315			
Sta. 0+15 to Sta. 1+25	PELSDORF ROAD	310	510	0.3	14	14
Undistributed		---	50			
Undistributed (Project)				0.7	9	12
TOTALS		2,890	3,990	3.5	130	110

SILT FENCE & SILT FENCE MAINTENANCE (CATEGORY 0010)

STATION TO STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
Sta. 26+00 to Sta. 28+13	CTH K, LT.	245	490
Sta. 28+27 to Sta. 28+64	CTH K, LT.	85	170
Sta. 28+87 to Sta. 29+23	CTH K, LT.	95	190
Sta. 29+39 to Sta. 29+99	CTH K, LT.	70	140
Sta. 30+16 to Sta. 34+00	CTH K, LT.	435	870
Sta. 26+00 to Sta. 29+70	CTH K, RT.	355	710
Sta. 30+08 to Sta. 34+00	CTH K, RT.	385	770
Undistributed		420	835
TOTALS		2,090	4,175

MOBILIZATIONS EROSION CONTROL & EMERGENCY EROSION CONTROL (CATEGORY 0010)

LOCATION	628.1905	628.1910
	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT 7846-04-70	4	2

628.2027 EROSION MAT CLASS II TYPE C (CATEGORY 0010)

STATION TO STATION	LOCATION	SY
Sta. 28+40 to Sta. 28+93	CTH K, RT.	85
Sta. 29+13 to Sta. 29+70	CTH K, LT.	265
Sta. 29+38 to Sta. 29+59	CTH K, RT.	30
Sta. 30+30 to Sta. 30+51	CTH K, RT.	40
Sta. 30+40 to Sta. 31+52	CTH K, LT.	400
Sta. 31+23 to Sta. 31+48	CTH K, RT.	25
Undistributed		210
TOTALS		1,055

628.6005 TURBIDITY BARRIER (CATEGORY 0010)

LOCATION	SY
SOUTH ABUTMENT	125
NORTH ABUTMENT	80
UNDISTRIBUTED	50
TOTALS	255

628.7504 TEMPORARY DITCH CHECKS (CATEGORY 0010)

LOCATION	LF
UNDISTRIBUTED	50

633.5200 MARKERS CULVERT END (CATEGORY 0010)

STATION TO STATION	LOCATION	EACH
Sta. 0+47, 60-FT. RT.	PELSDORF ROAD	1
Sta. 0+47, 50-FT. LT.	PELSDORF ROAD	1
TOTALS		2

634.0612 WOOD POSTS 4X6 INCH X 12 FT (CATEGORY 0010)

STATION	LOCATION	DESCRIPTION	EACH
Sta. 28+67	CTH K, RT	W1-7 ("TWO WAY ARROW")	1
Sta. 29+59	CTH K, RT	W5-52R (OBJECT MARKER)	1
Sta. 29+70	CTH K, LT	W5-52L (OBJECT MARKER)	1
Sta. 30+30	CTH K, RT	W5-52L (OBJECT MARKER)	1
Sta. 30+40	CTH K, LT	W5-52R (OBJECT MARKER)	1
Sta. 0+29	PELSDORF ROAD, LT	R1-1 ("STOP")	1
TOTAL			6

637.2230 SIGNS TYPE II REFLECTIVE F (CATEGORY 0010)

STATION	LOCATION	DESCRIPTION	SF
SOUTH OF PROJECT LIMITS	CTH K, RT.	W13-1 ("35 MPH")	2.25
Sta. 28+67	CTH K, RT.	W1-7 (TWO WAY ARROW)	8
Sta. 29+59	CTH K, RT.	W5-52R (OBJECT MARKER)	3
Sta. 29+70	CTH K, LT.	W5-52L (OBJECT MARKER)	3
Sta. 30+30	CTH K, RT.	W5-52L (OBJECT MARKER)	3
Sta. 30+40	CTH K, LT.	W5-52R (OBJECT MARKER)	3
NORTH OF PROJECT LIMITS	CTH K, LT.	W13-1 ("35 MPH")	2.25
Sta. 0+29	PELSDORF ROAD, LT	R1-1 (STOP)	5.18
TOTAL			29.68

638.2102 MOVING SIGNS TYPE II (CATEGORY 0010)

STATION	LOCATION	DESCRIPTION	EACH
Sta. 26+00	CTH K, LT	W1-6 ("ONE WAY ARROW")	1
Sta. 32+00	CTH K, LT	W1-6 ("ONE WAY ARROW")	1
Sta. 0+46	PELSDORF ROAD, LT (INTERSECTION)	("STREET SIGNS")	1
TOTAL			3

638.2602 REMOVING SIGNS TYPE II (CATEGORY 0010)

LOCATION	DESCRIPTION	EACH
SOUTH OF PROJECT LIMITS	W13-1 - "25 MPH" CURVE SIGN	1
Sta. 0+38, LT.	R1-1 - "STOP"	1
Sta. 29+76, RT.	W5-52R - OBJECT MARKER	1
Sta. 29+76, LT.	W5-52L - OBJECT MARKER	1
Sta. 30+19, RT.	W5-52L - OBJECT MARKER	1
Sta. 30+17, LT.	W5-52R - OBJECT MARKER	1
NORTH OF PROJECT LIMITS	W13-1 - "25 MPH" CURVE SIGN	1
TOTAL		7

638.3000 REMOVING SMALL SIGN SUPPORTS (CATEGORY 0010)

LOCATION	DESCRIPTION	EACH
Sta. 0+38, LT.	R1-1 - "STOP"	1
Sta. 29+76, RT.	W5-52R - OBJECT MARKER	1
Sta. 29+76, LT.	W5-52L - OBJECT MARKER	1
Sta. 30+19, RT.	W5-52L - OBJECT MARKER	1
Sta. 30+17, LT.	W5-52R - OBJECT MARKER	1
TOTAL		5

638.4000 MOVING SMALL SIGN SUPPORTS (CATEGORY 0010)

STATION	LOCATION	DESCRIPTION	EACH
Sta. 26+00	CTH K, LT	W1-6 ("ONE WAY ARROW")	1
Sta. 32+00	CTH K, LT	W1-6 ("ONE WAY ARROW")	1
Sta. 0+46	PELSDORF ROAD, LT	("STREET SIGNS")	1
TOTAL			3

642.5001 FIELD OFFICE TYPE B (CATEGORY 0010)

LOCATION	EACH
PROJECT 7846-04-70 CATEGORY 0010	1
TOTAL	1

CONSTRUCTION STAKING

CATEGORY LOCATION		650.4500 SUBGRADE LF	650.5000 BASE LF	650.6000 PIPE CULVERTS EACH	650.6500 STRUCTURE LAYOUT LS	650.9910 SUPPLEMENTARY CONTROL LS	650.9920 SLOPE STAKES LF
0010	Sta. 26+00 to Sta. 34+00 CTH K	752	752	---	---	1	752
0010	Sta. 0+15.05 to Sta. 1+25 PELSDORF ROAD	110	110	1	---	---	110
0020	B-10+234 CTH K	---	---	---	1	---	---
TOTALS		862	862	1	1	1	862

643.5000 TRAFFIC CONTROL (CATEGORY 0010)

LOCATION	EACH
PROJECT 7846-04-70	1
TOTAL	1

TRAFFIC CONTROL ITEMS (CATEGORY 0010)

PROJECT ID	DURATION DAYS	643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS TYPE A		643.0900 SIGNS	
		NO.	DAYS	NO.	DAYS	NO.	DAYS
7846-04-70	73	23	1679	30	2190	15	1095

645.0120 GEOTEXTILE TYPE HR (CATEGORY 0010)

STATION	LOCATION	SY
Sta. 0+47, 60-FT. RT.	PELSDORF ROAD	16
Sta. 0+47, 50-FT. LT.	PELSDORF ROAD	16
TOTAL		32

646.1020 MARKING LINE EPOXY 4-INCH (CATEGORY 0010)

LOCATION	TYPE	LF
CTH K	DOUBLE YELLOW CENTERLINE	1600
CTH K	WHITE EDGELINE	1600
TOTAL		3200

690.0150 SAWING ASPHALT (CATEGORY 0010)

STATION	LOCATION	LF
STA. 26+00	CTH K	24
STA. 34+00	CTH K	23
TOTAL		47

THIS PLAT IS APPROVED BY CLARK COUNTY
Randy T. Anderson 6-19-17
HIGHWAY COMMISSIONER DATE

NO.	STA.	BENCH MARKS		ELEV.
		DESCRIPTION		
1	30+20	60d SPIKE IN NE WINGWALL PILE, 27' RT		1109.33

CURVE TABLE					
CURVE	COURSE	LENGTH	RADIUS	LONG CHORD	LONG CHORD BEARING
C1	TLE1-TLE2	99.07'	488.67'	98.90'	S42°55'45"E
C2	TLE3-TLE4	80.10'	445.00'	79.99'	S53°54'33"W
C3	TLE5-TLE2	82.13'	488.67'	82.03'	N53°33'05"W

SCHEDULE OF LANDS & INTERESTS REQUIRED			
PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE ACRES
1	EUGENE AND JUDITH WALTER	TLE	0.021

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

NOTES:
FOR GUARDRAIL LAYOUT, SEE "GUARDRAIL LAYOUT/SUPERELEVATION" SHEET

FOR ALIGNMENT CONTROL POINTS, TIES, BEARINGS, CURVE DATA, AND COORDINATES, SEE "ALIGNMENT CONTROLS" SHEET

FOR INTERSECTION DETAILS, SEE "INTERSECTION DETAIL" SHEET

SEE SHEET 3 FOR APPROACH SLAB DETAIL

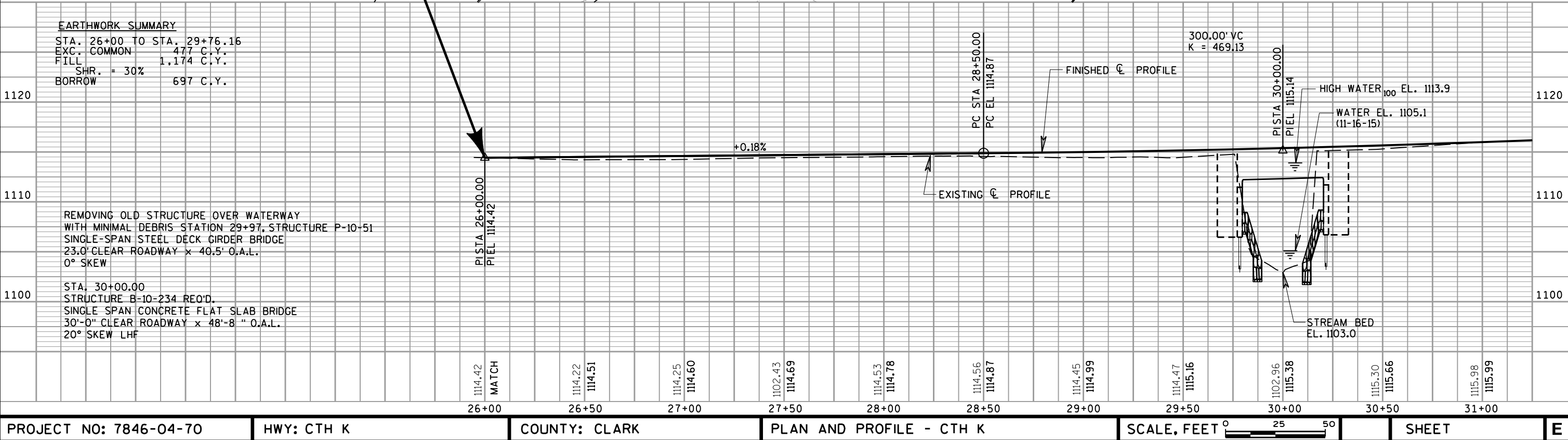
POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), CLARK COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

TLE COURSE TABLE		
COURSE	BEARING	DISTANCE
TLE1-TLE2	SEE CURVE TABLE C1	
TLE2-TLE3	N41°14'51"E	11.07'
TLE3-TLE4	SEE CURVE TABLE C2	
TLE4-TLE5	S30°56'03"W	11.59'
TLE5-TLE2	SEE CURVE TABLE C3	

PI= 30+17.14
N= 363072.276
E= 716322.918
R= 500.00'
Delta= 96°40'21" RT
T= 561.90'
L= 843.63'
E= 252.15'
PC=24+55.24
PT=32+98.87
BACK TANGENT = S83°08'47"W

BEGIN PROJECT
STA. 26+00
SAWCUT REQ'D
Y = 363142.96
X = 716736.59

END CONSTRUCTION
STA. 1+25
Y = 363166.31
X = 716409.11



2" BRASS CAPPED
IRON PIPE
Y=716,321.991
X=363,365.330



CURVE TABLE					
CURVE	COURSE	LENGTH	RADIUS	LONG CHORD	LONG CHORD BEARING
C4	TLE1-TLE11	129.62'	488.67'	129.24'	N29°31'21"W
C5	TLE11-TLE12	182.22'	488.67'	181.17'	N11°14'28"W
C6	TLE13-TLE14	178.74'	478.67'	177.71'	S11°15'50"E

TLE COURSE TABLE		
COURSE	BEARING	DISTANCE
TLE1-TLE11	SEE CURVE TABLE C4	
TLE11-TLE12	SEE CURVE TABLE C5	
TLE12-TLE13	N89°49'08"E	10.00'
TLE13-TLE14	SEE CURVE TABLE C6	
TLE14-TLE11	S69°53'43"W	10.01'

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
2	32+54	60d SPIKE IN PP, 34' RT	1113.51

THIS PLAT IS APPROVED BY CLARK COUNTY
Randy S. D. [Signature] 6-19-17
HIGHWAY COMMISSIONER DATE

TLE COURSE TABLE		
COURSE	BEARING	DISTANCE
TLE6-TLE7	N00°10'52"W	103.07'
TLE7-TLE8	S89°49'08"W	20.00'
TLE8-TLE9	N00°10'52"W	251.83'
TLE9-TLE10	N89°49'08"E	20.00'
TLE10-TLE7	S00°10'52"E	251.83'

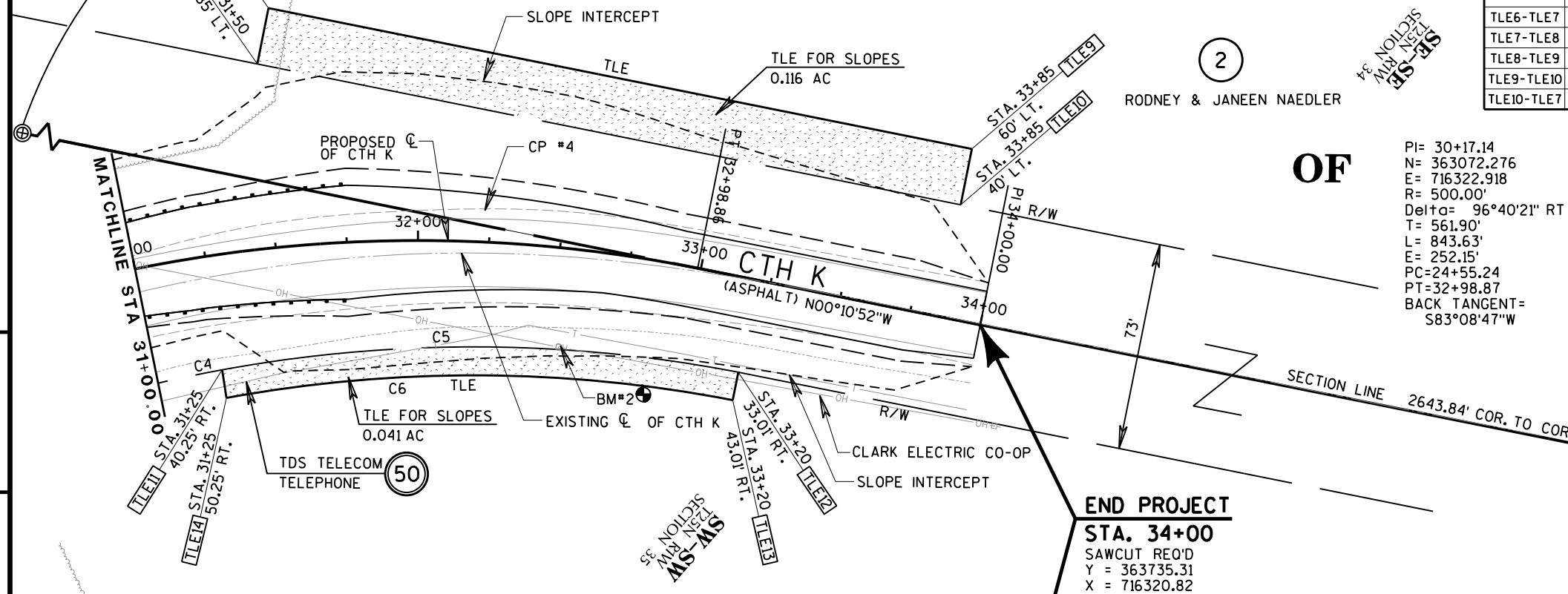
POSITIONS SHOWN ON THIS PLAT ARE
WISCONSIN COORDINATE REFERENCE SYSTEM
COORDINATES (WISCRS), CLARK COUNTY,
NAD83 (2011), IN U.S. SURVEY FEET.
VALUES SHOWN ARE GRID COORDINATES,
GRID BEARINGS, AND GRID DISTANCES.
GRID DISTANCES MAY BE USED AS GROUND
DISTANCES.

SCHEDULE OF LANDS & INTERESTS REQUIRED			
PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE ACRES
2	RODNEY & JANEEN NAEDLER	TLE	0.157
50	TDS TELECOM	RELEASE OF RIGHTS	-----

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

PI= 30+17.14
N= 363072.276
E= 716322.918
R= 500.00'
Delta= 96°40'21" RT
T= 561.90'
L= 843.63'
E= 252.15'
PC=24+55.24
PT=32+98.87
BACK TANGENT=
S83°08'47"W

5



END PROJECT
STA. 34+00
SAWCUT REQ'D
Y = 363735.31
X = 716320.82

YORK



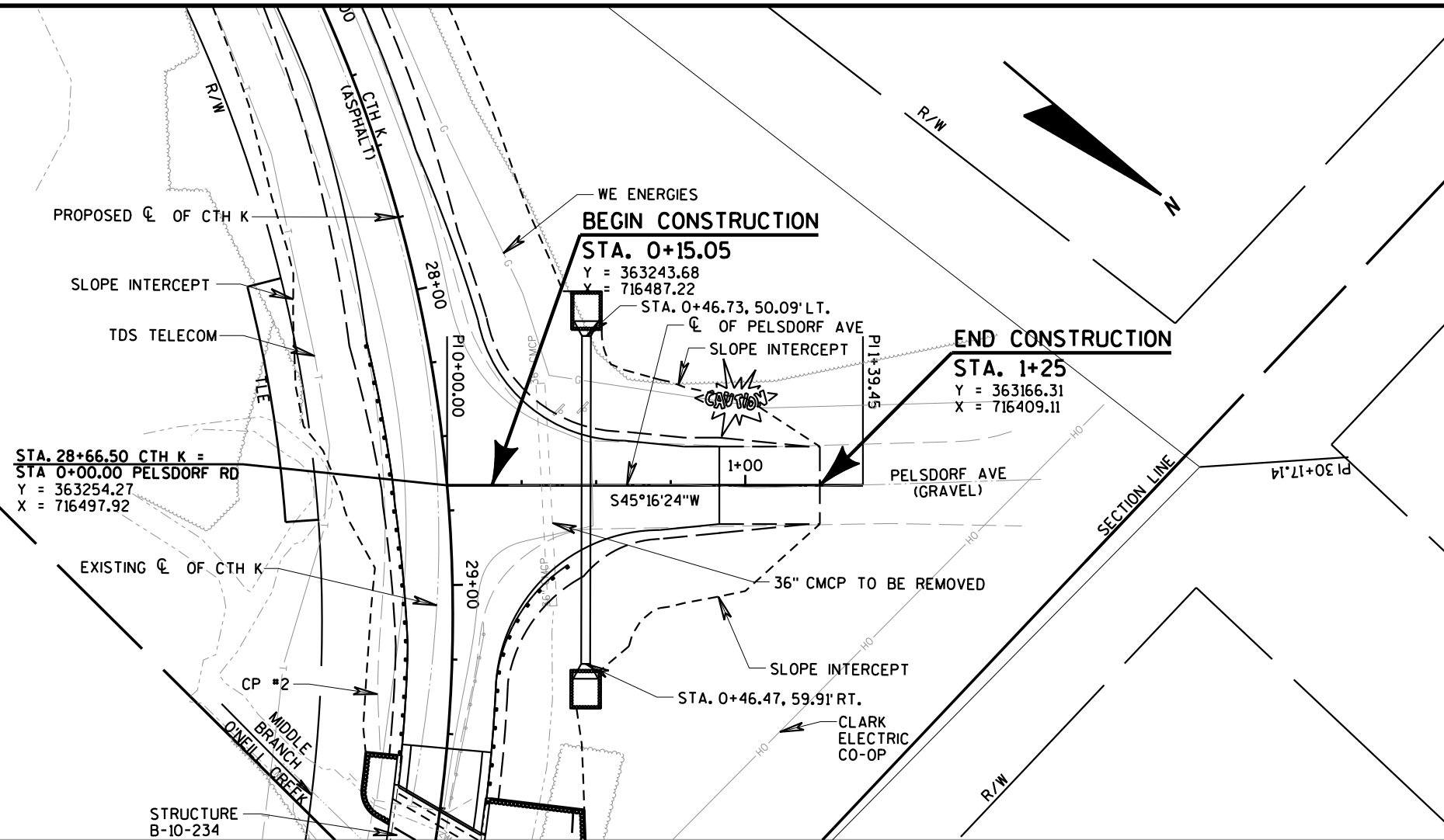
EARTHWORK SUMMARY			
STA. 30+23.43	TO STA. 34+00.00		
EXC. COMMON	506 C.Y.		
FILL	1,296 C.Y.		
SHR. = 30%			
BORROW	1,179 C.Y.		

5

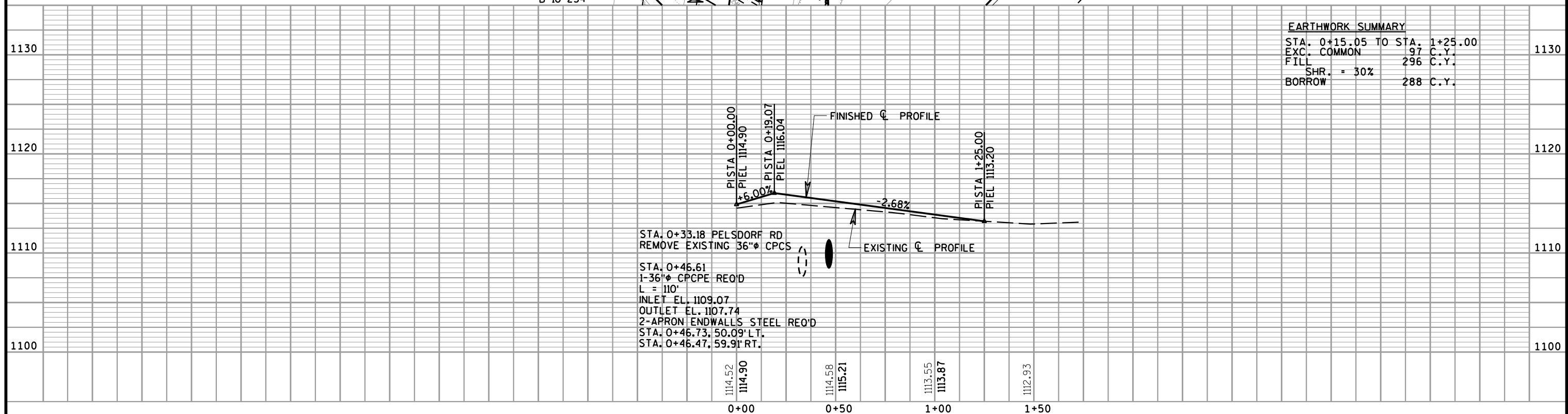
NOTES:
FOR GUARDRAIL LAYOUT, SEE "GUARDRAIL
LAYOUT/SUPERELEVATION" SHEET

FOR ALIGNMENT CONTROL POINTS, TIES, BEARINGS,
CURVE DATA, AND COORDINATES, SEE "ALIGNMENT
CONTROL" SHEET

FOR INTERSECTION DETAILS, SEE "INTERSECTION
DETAIL" SHEET



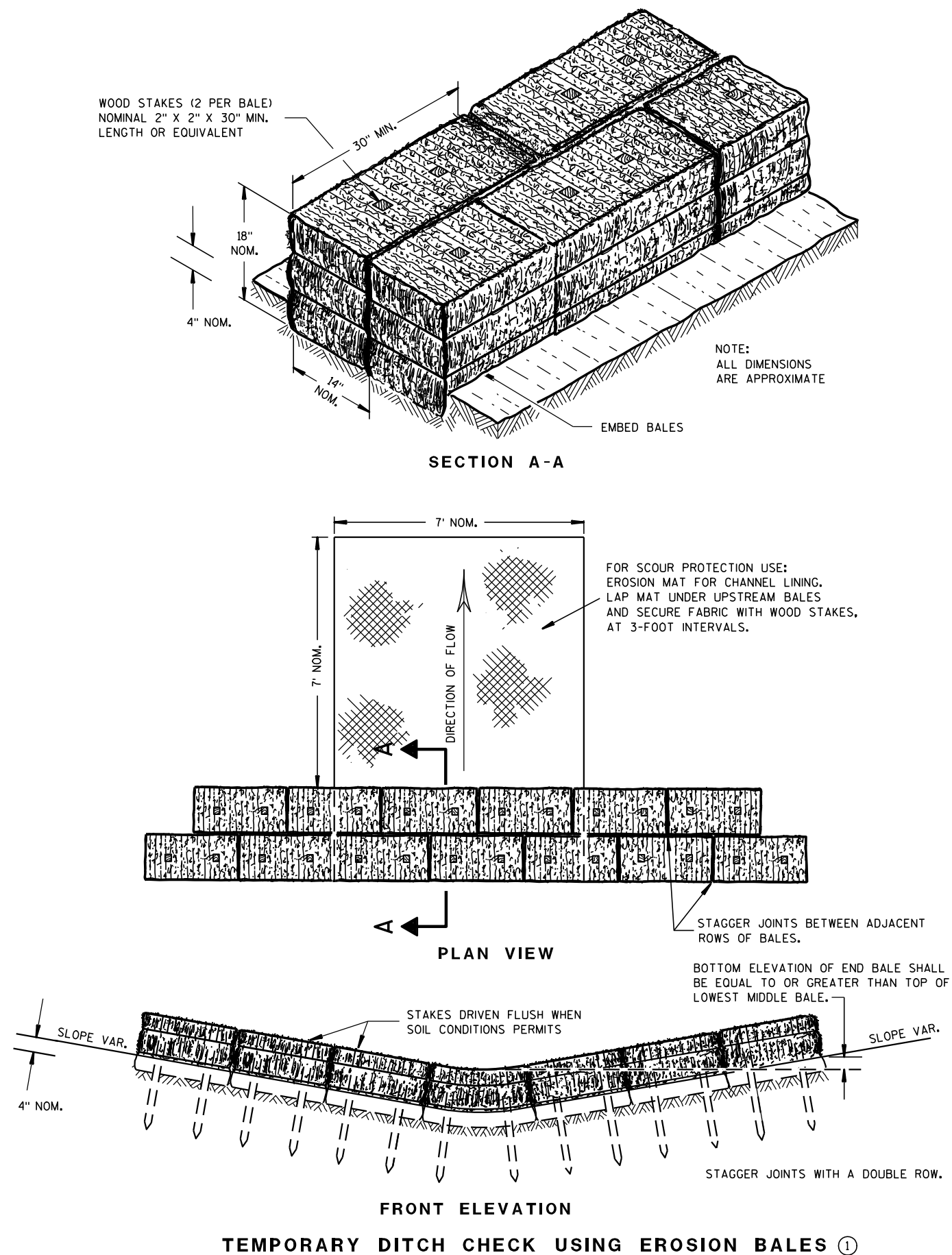
5



EARTHWORK SUMMARY	
STA. 0+15.05 TO STA. 1+25.00	
EXC. COMMON	97 C.Y.
FILL	296 C.Y.
SHR. = 30%	
BORROW	288 C.Y.

Standard Detail Drawing List

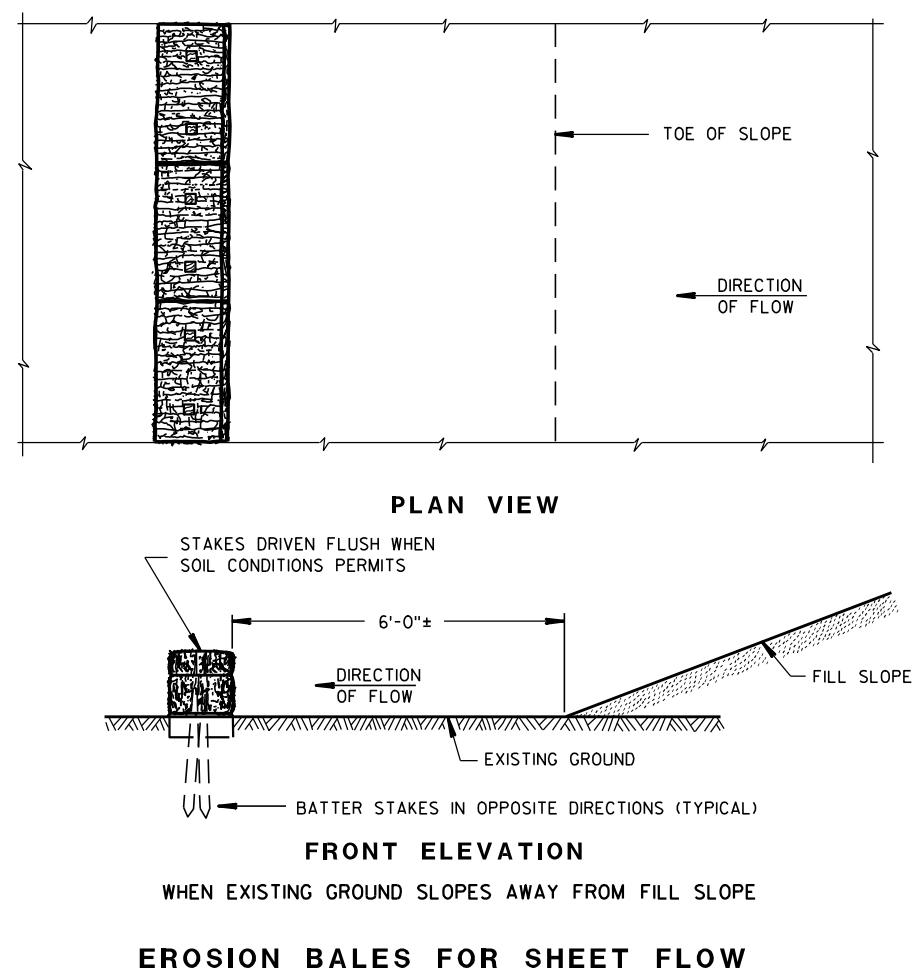
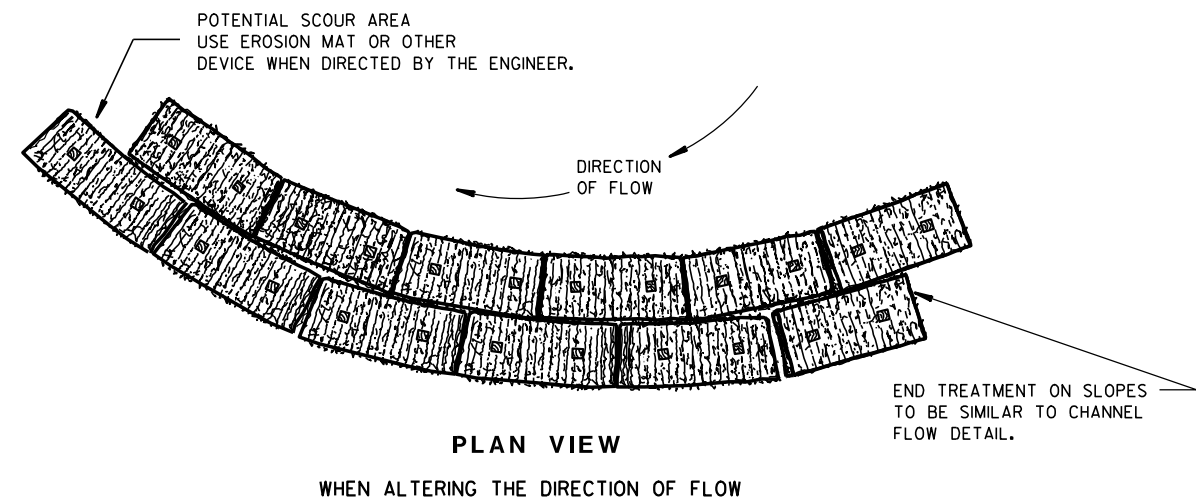
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
12A03-10	NAME PLATE (STRUCTURES)
13A03-06	CONCRETE PAVEMENT SHOULDERS
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	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)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B47-02A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
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
15C08-18A	LONGITUDINAL MARKING (MAINLINE)



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

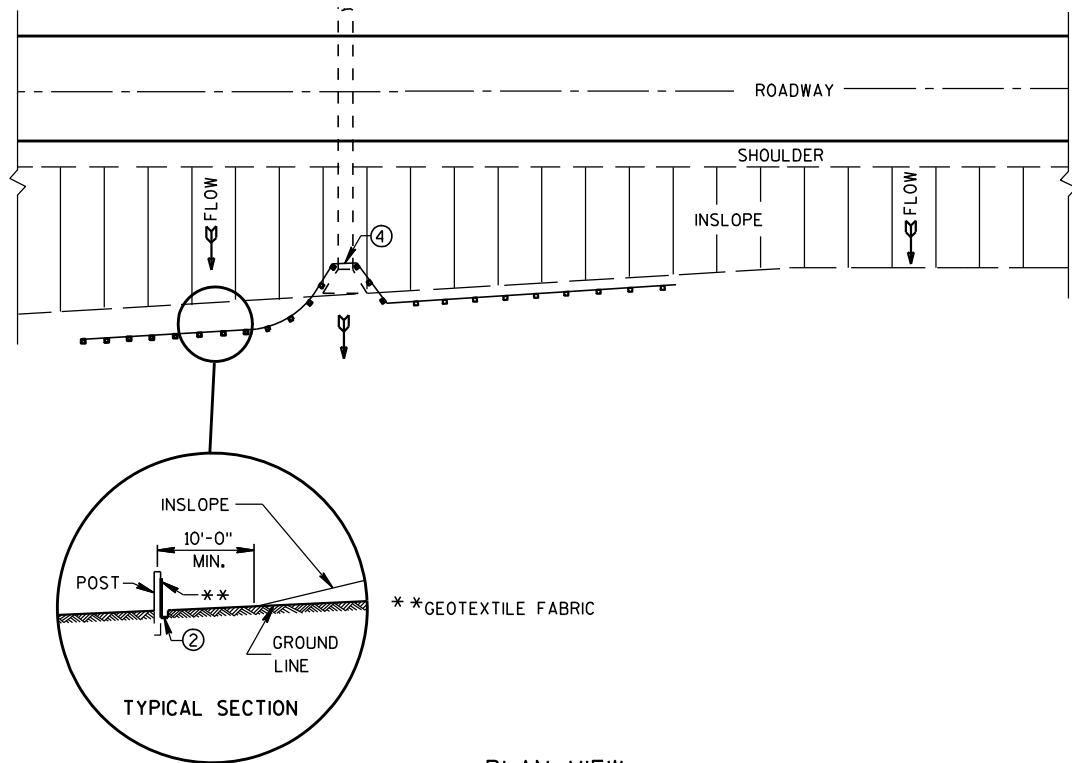
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

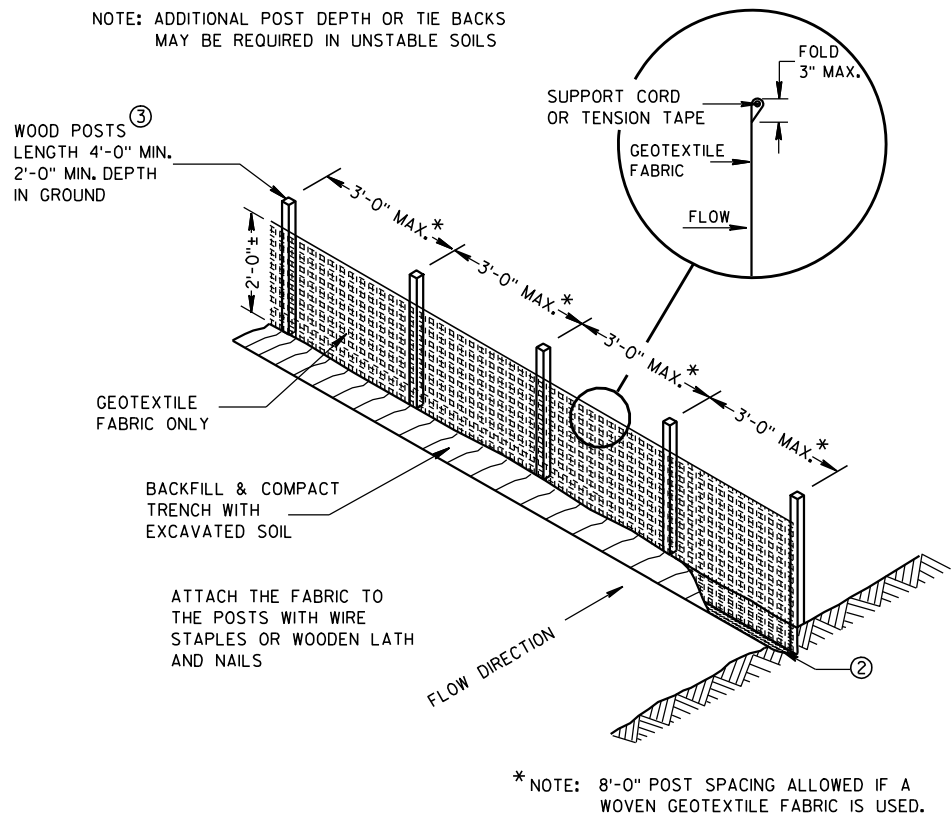
6/04/02
DATE

FHWA

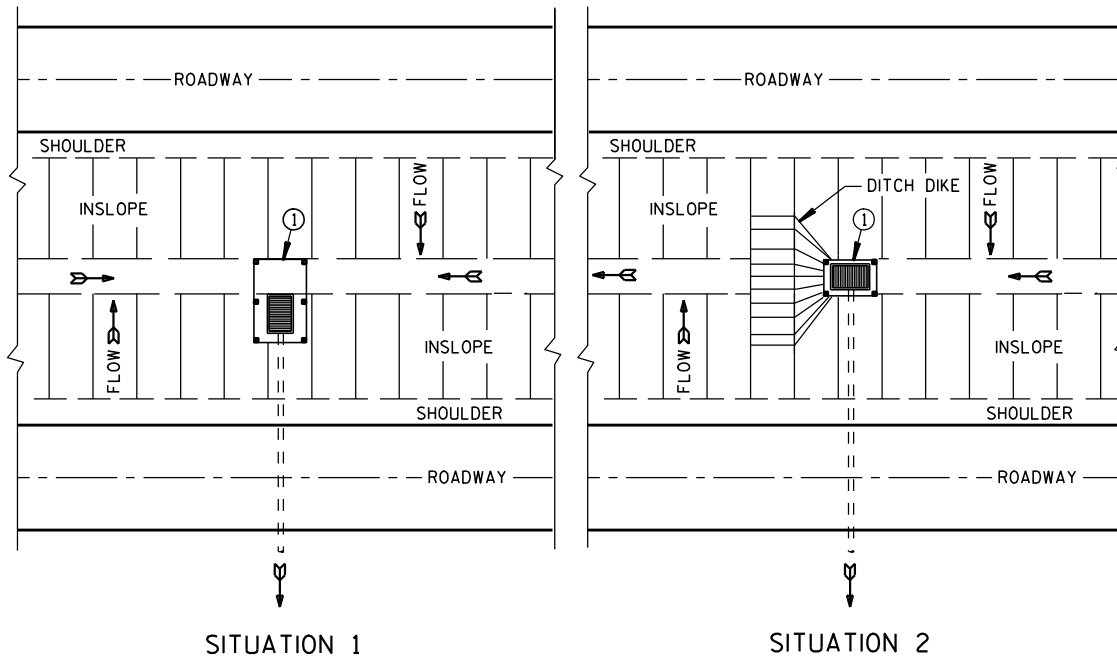
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



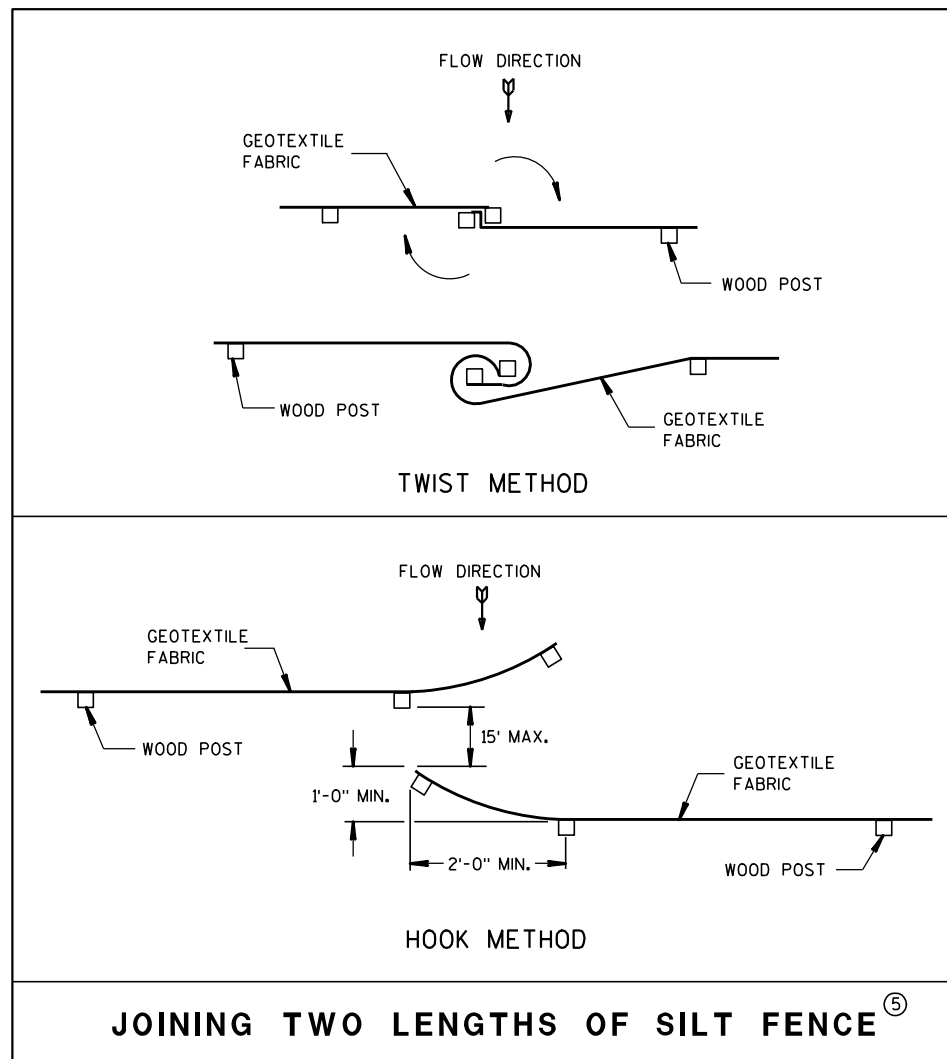
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

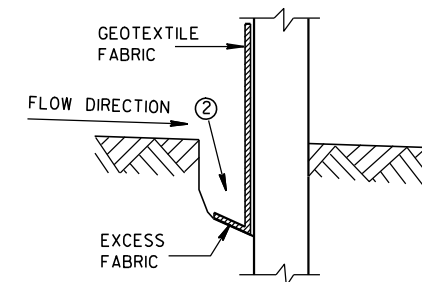


JOINING TWO LENGTHS OF SILT FENCE^⑤

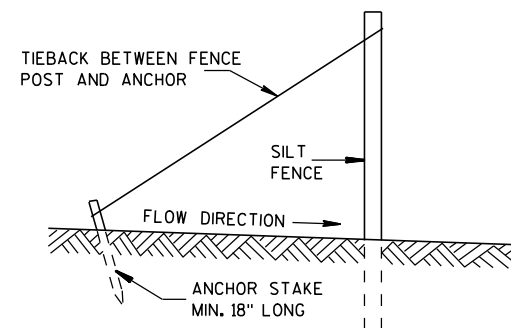
GENERAL NOTES

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 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

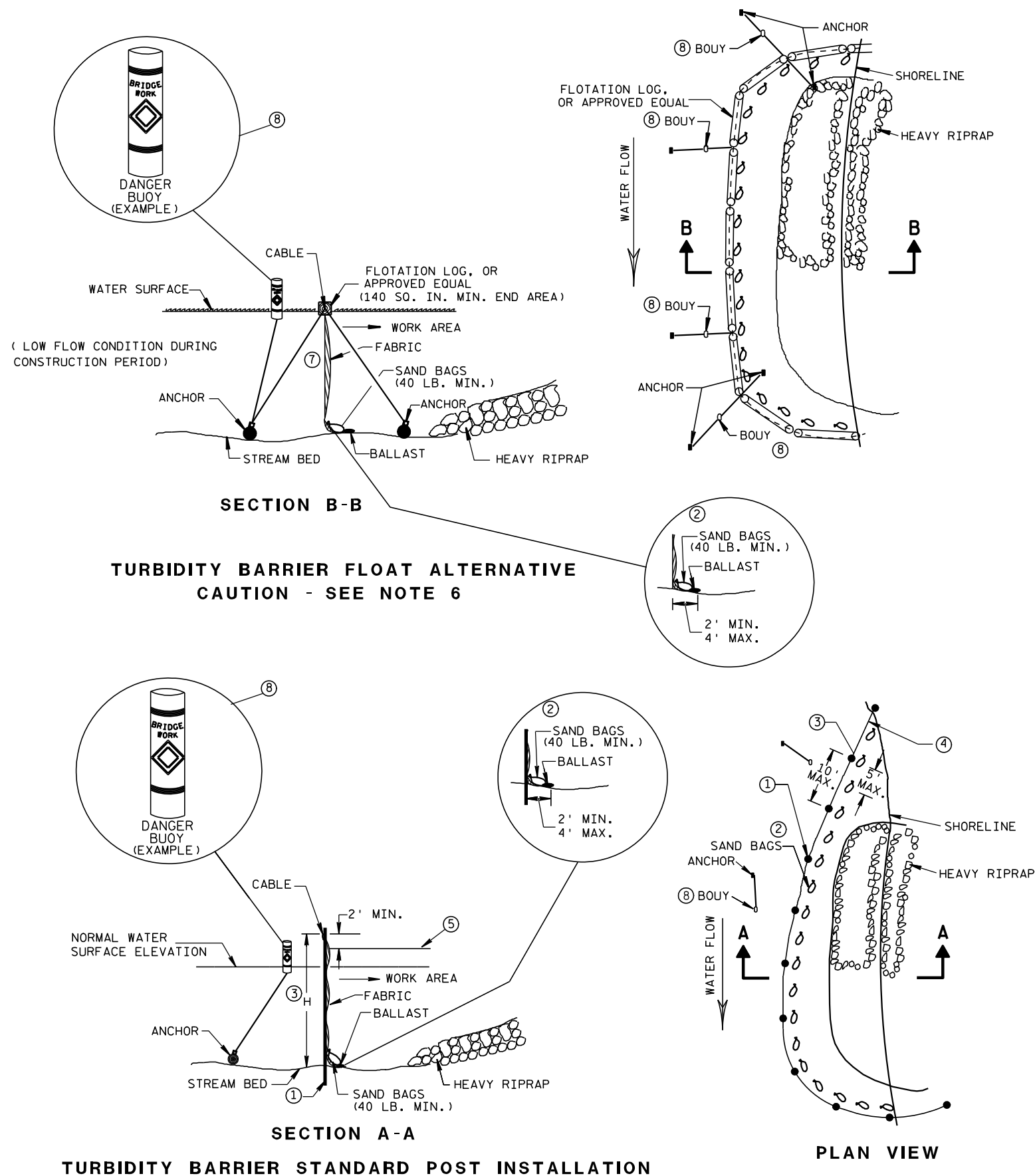


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

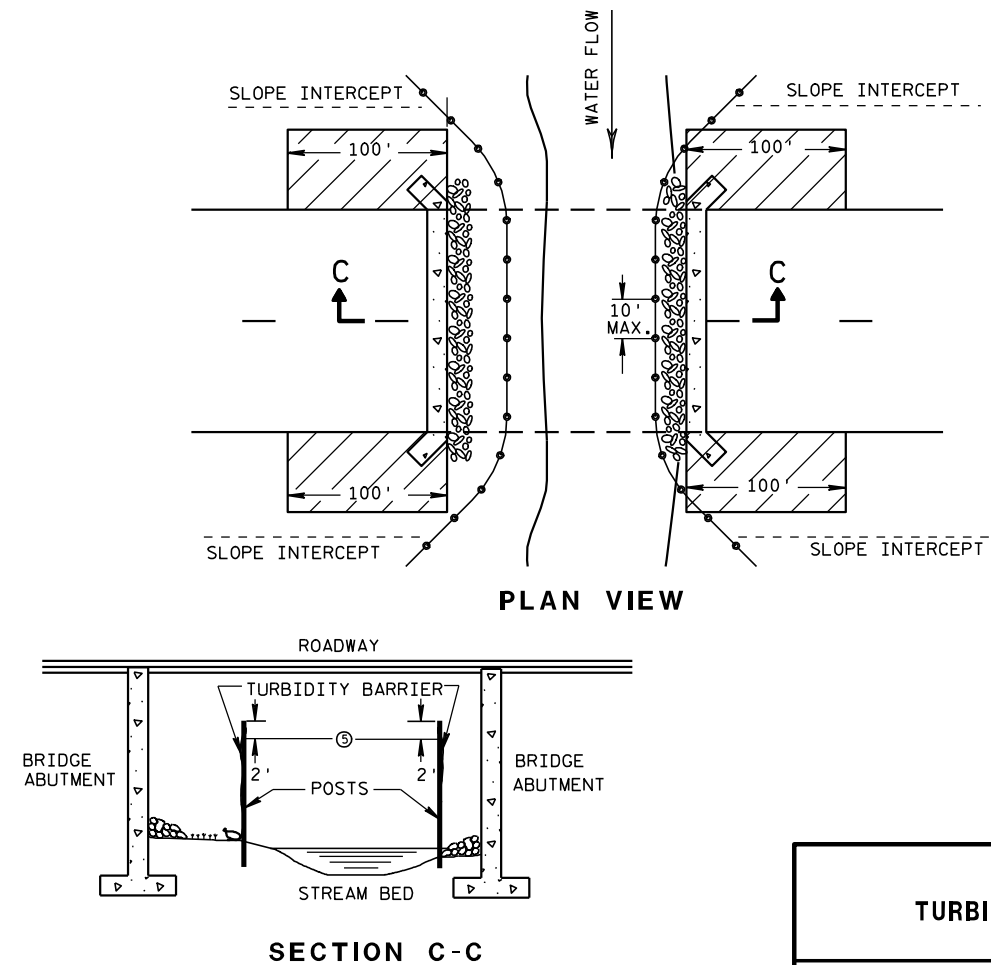


GENERAL NOTES

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

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

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

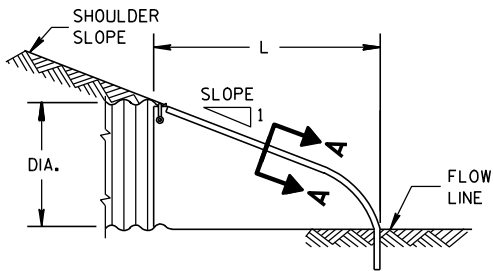
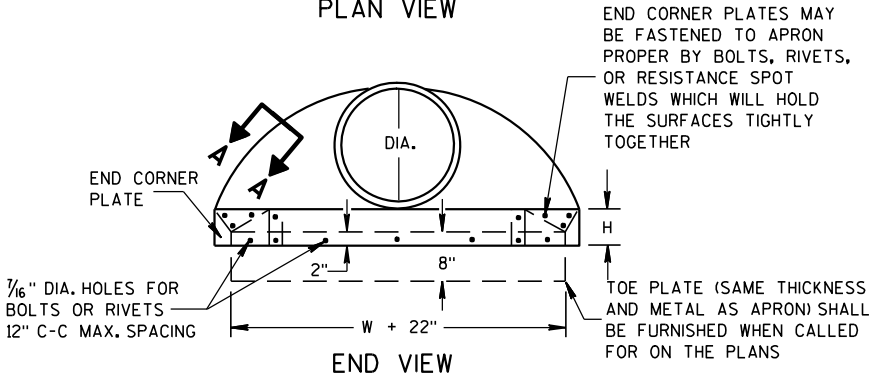
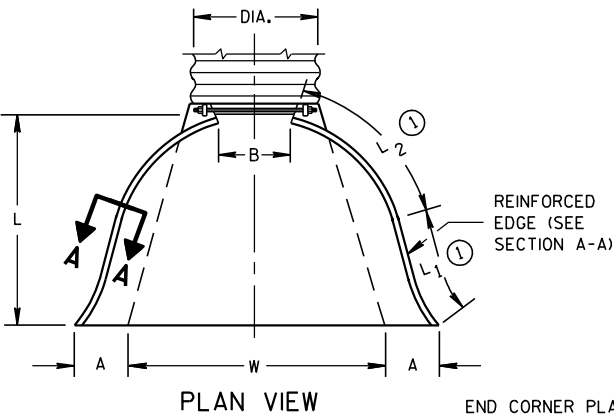
6/04/02
DATE

FHWA

/S/ Beth Connestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

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

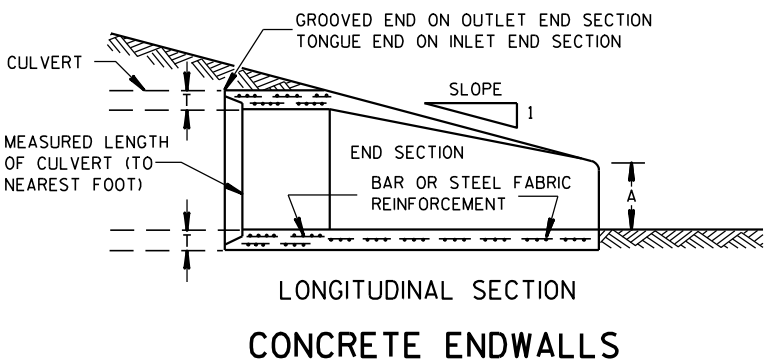
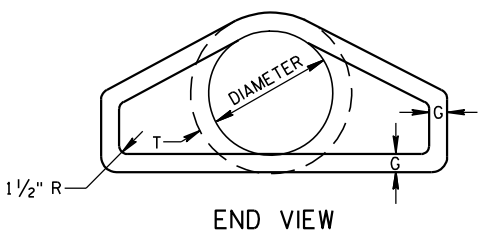
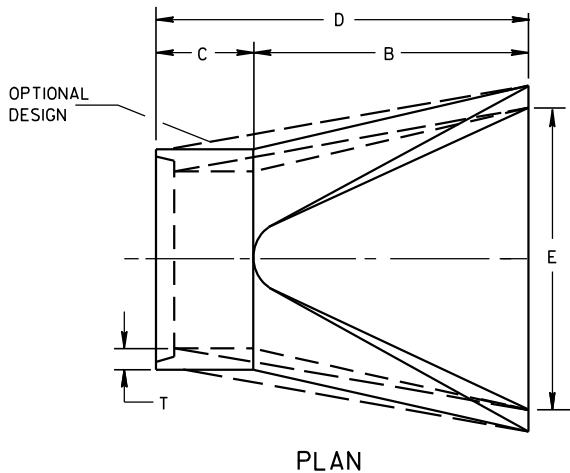
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



METAL ENDWALLS

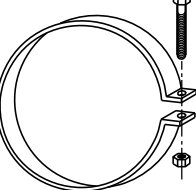
REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1			
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1			
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1			
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1			
24	3	9 1/2	43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

* MINIMUM
** MAXIMUM

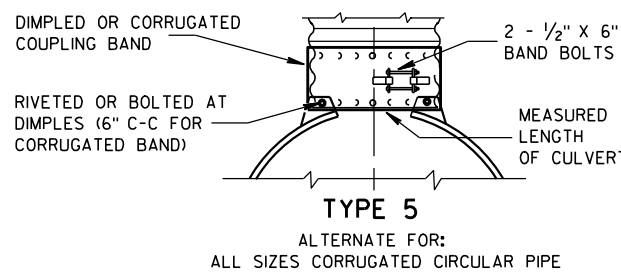
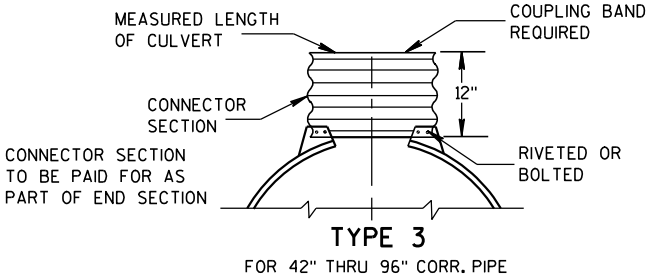
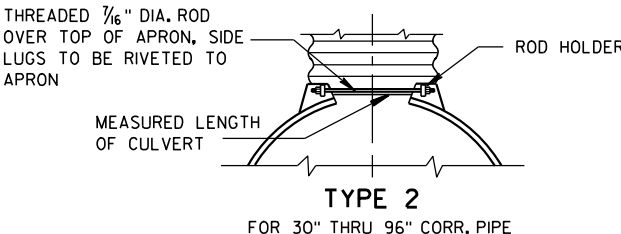
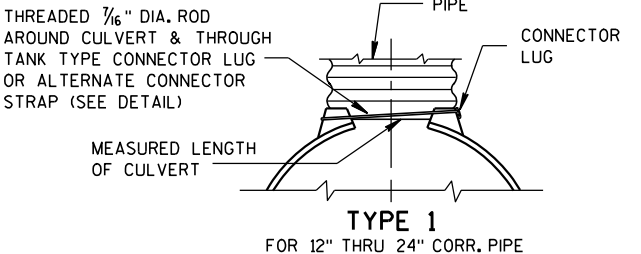


CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



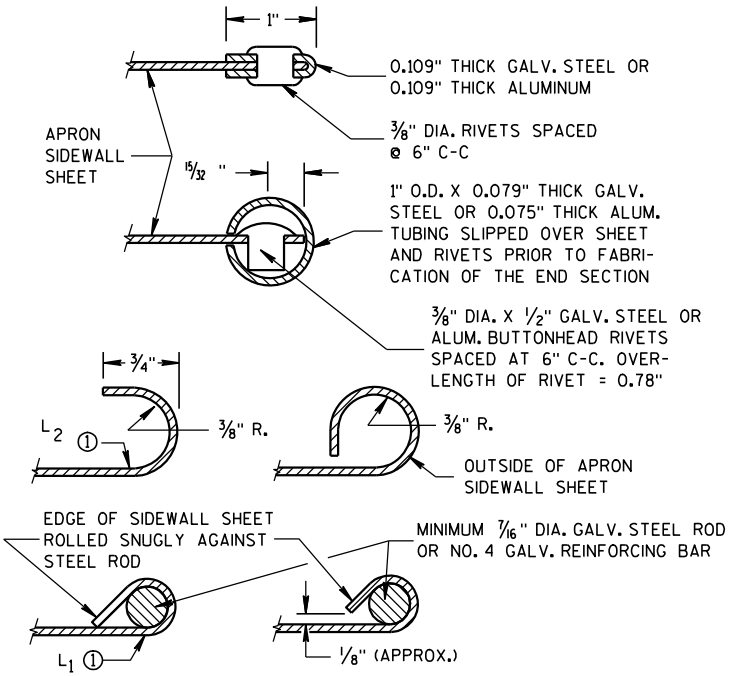
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



GENERAL NOTES

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

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

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

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

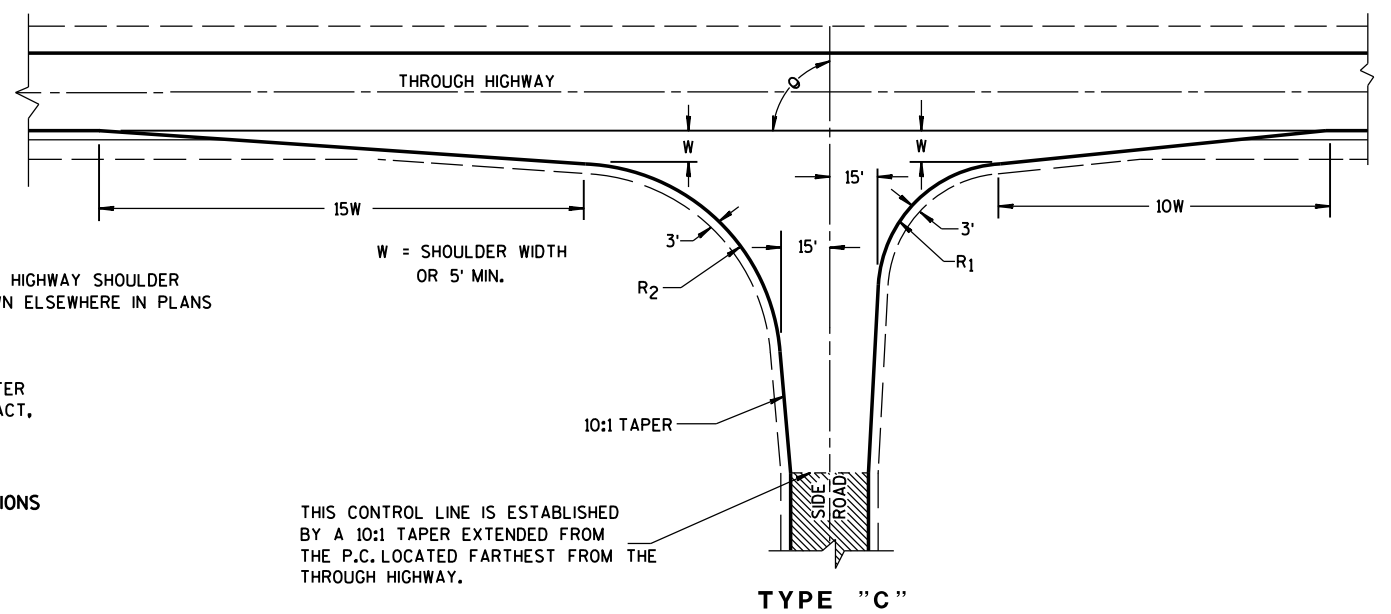
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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

9	R ₁	R ₂
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45

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

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.

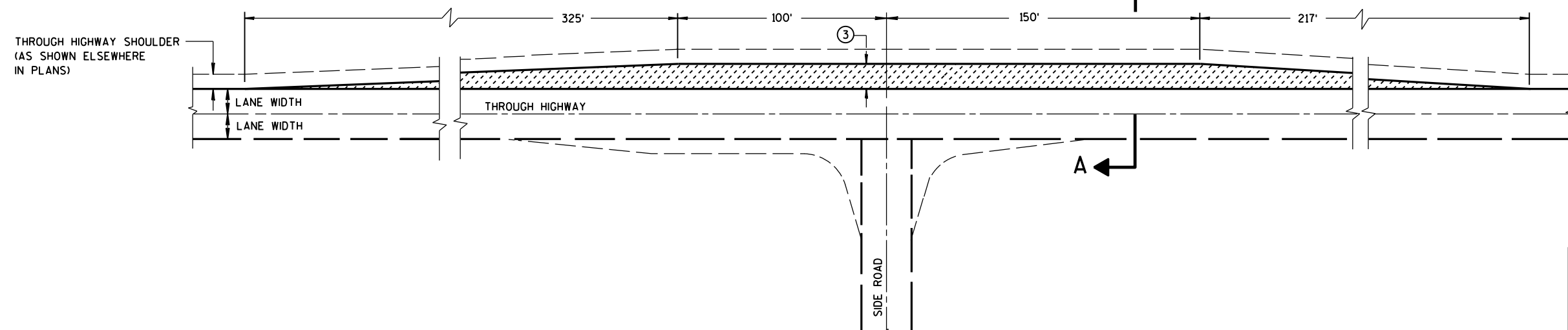
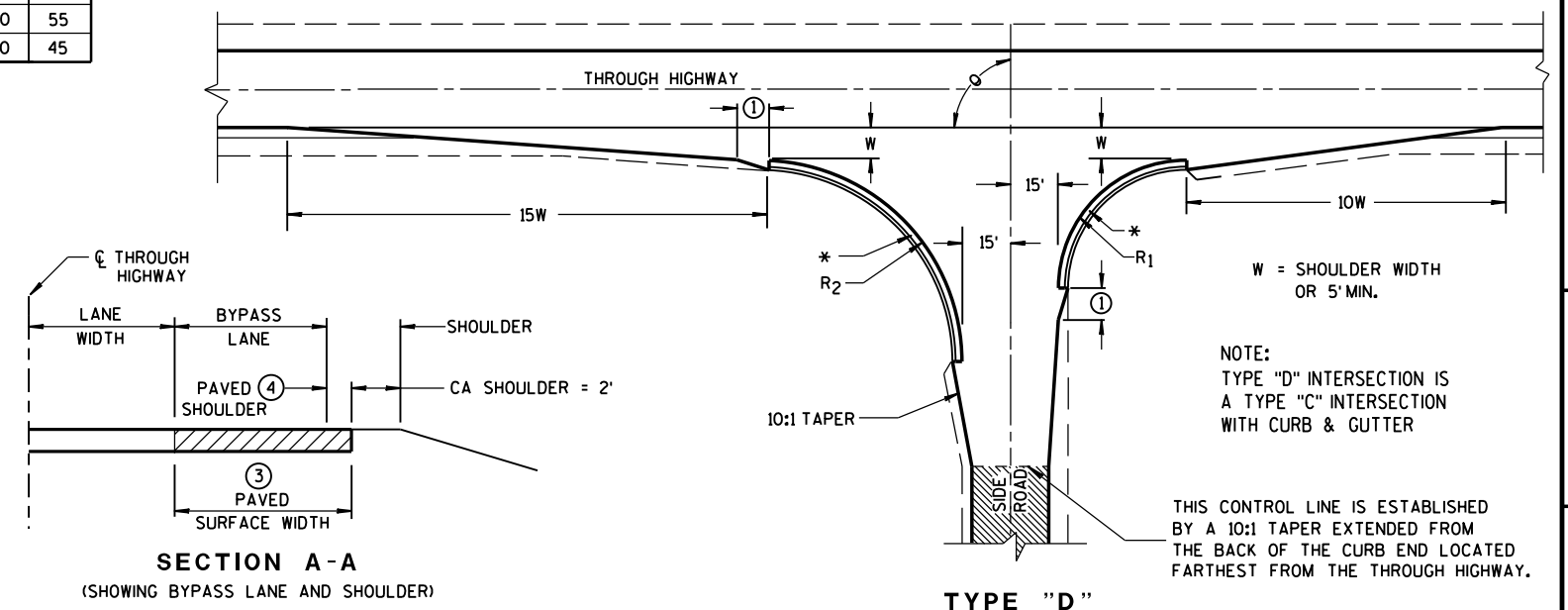
WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

-  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 CONCRETE = 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.

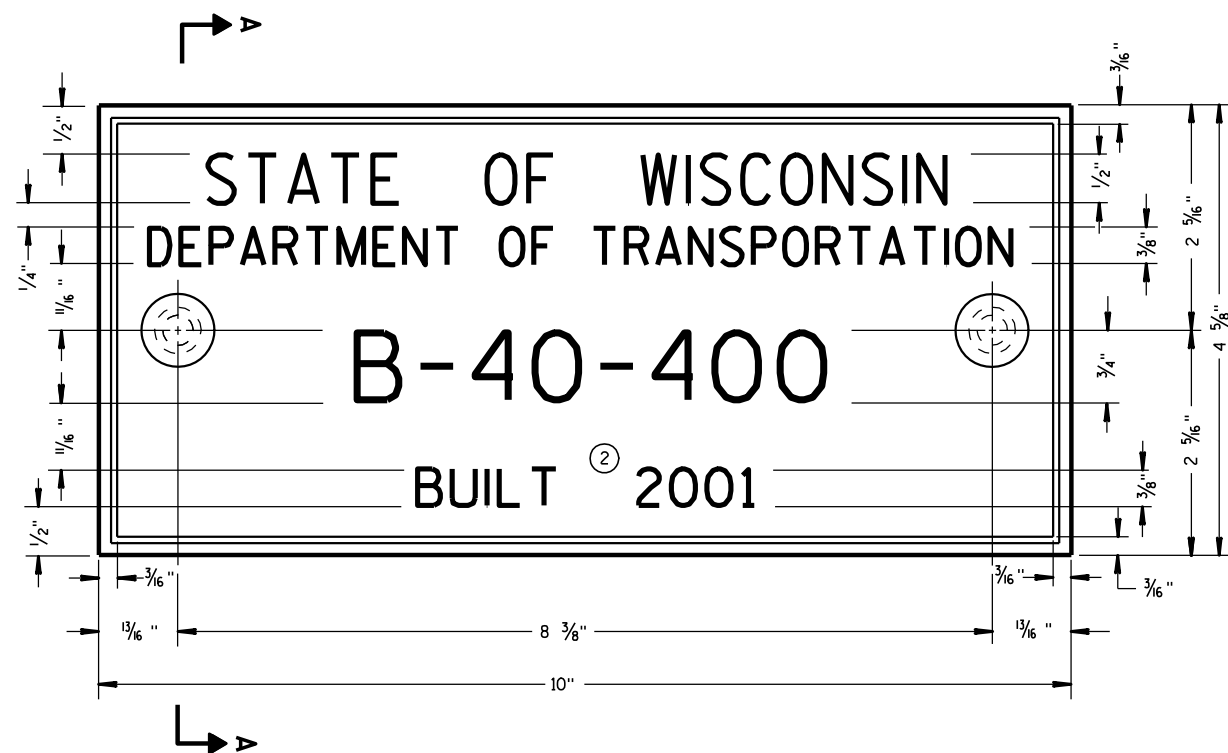
SECTION A-A
(INCLUDING BYPASS LANE AND SHOULDER)



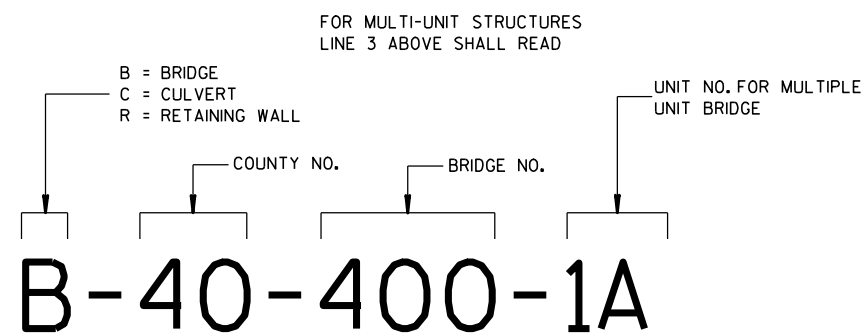
TEE INTERSECTION BYPASS LANE DETAIL

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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



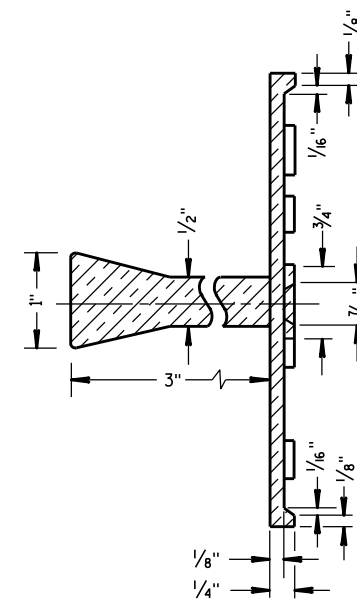
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

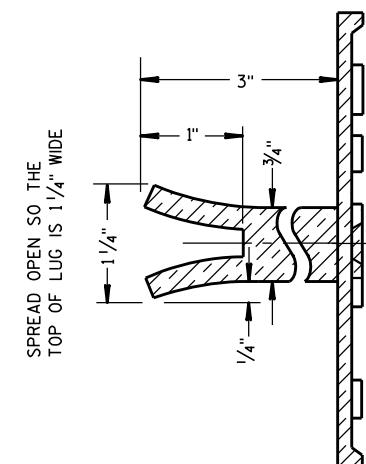
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

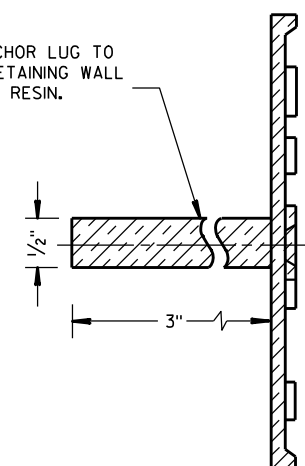


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

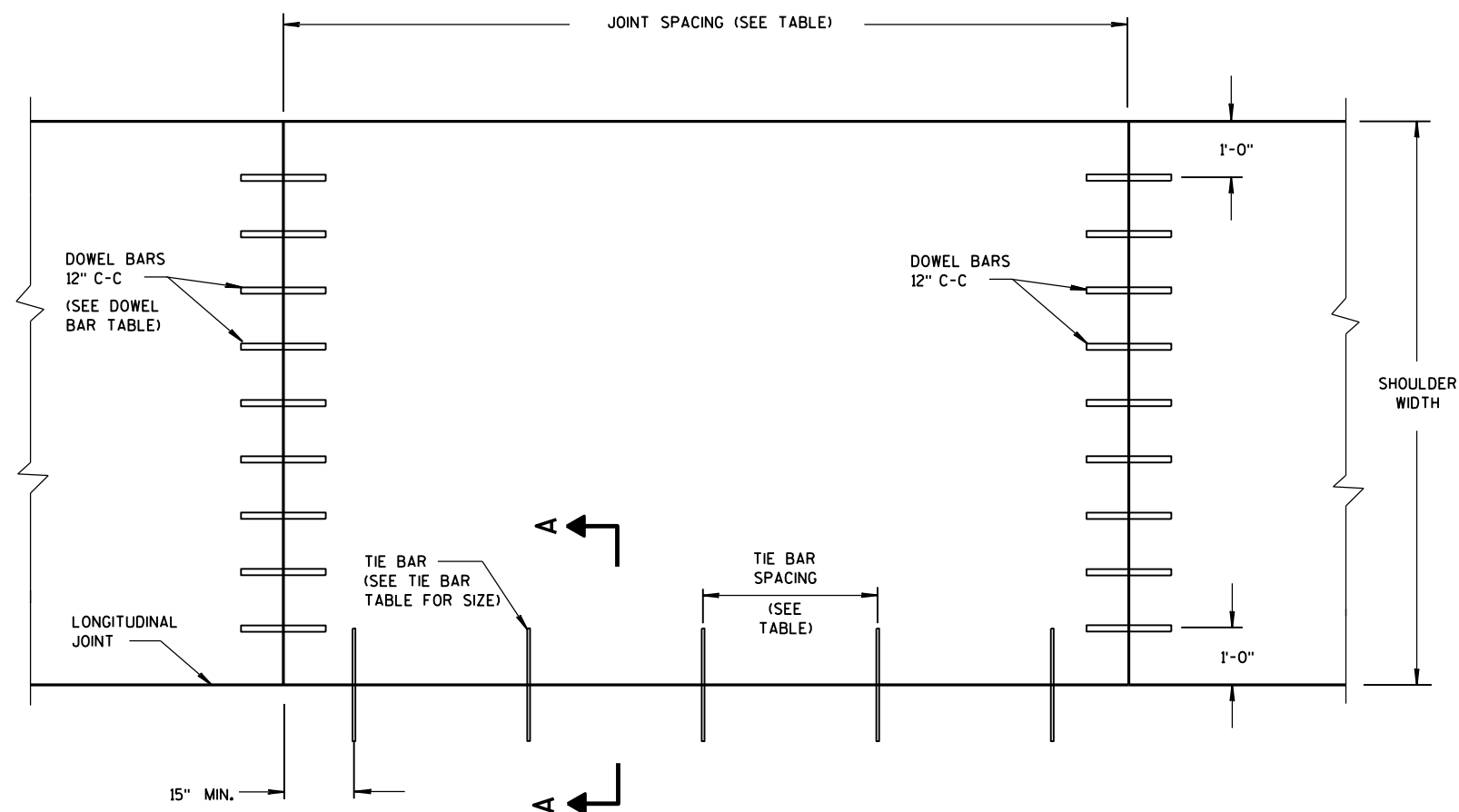
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10
DATE

FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



PLAN VIEW
CONCRETE PAVEMENT SHOULDER

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g., AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

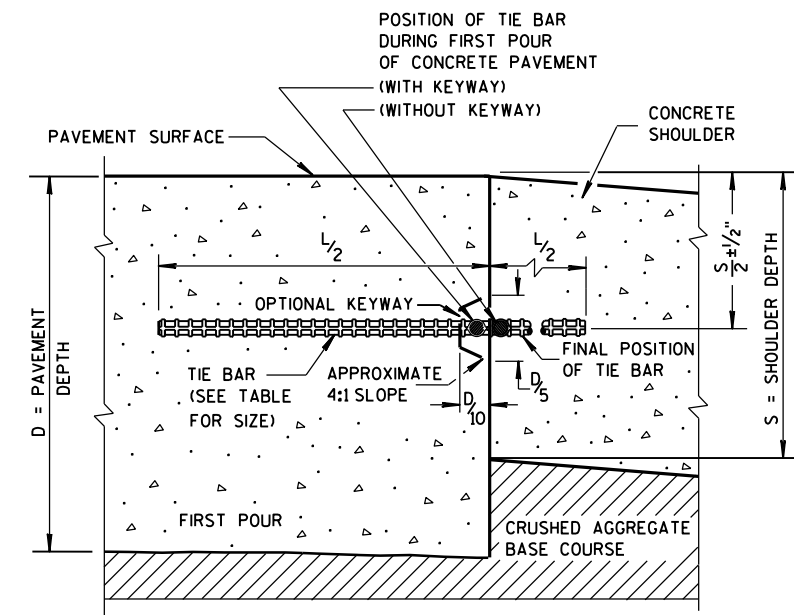
GENERAL NOTES

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.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE
AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER***	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

*** FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

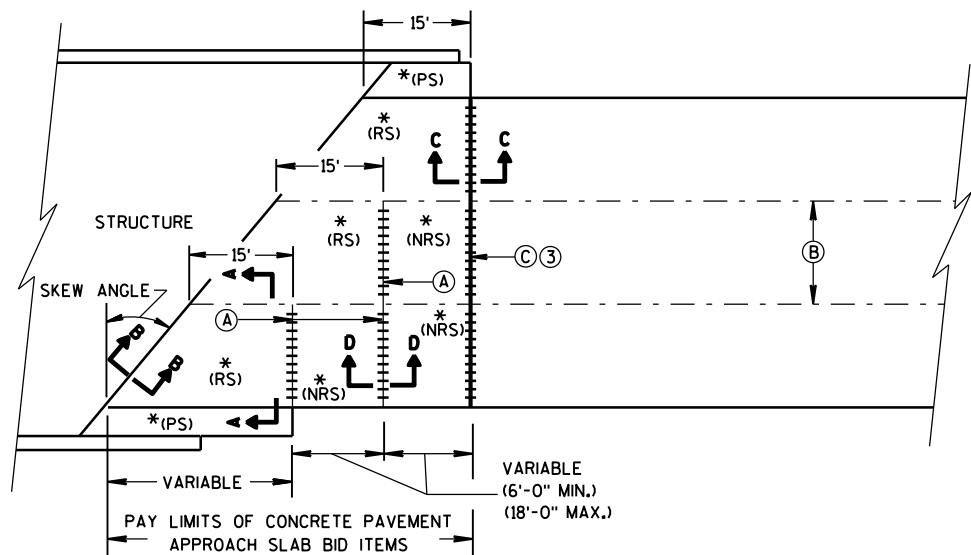
June, 2015

DATE

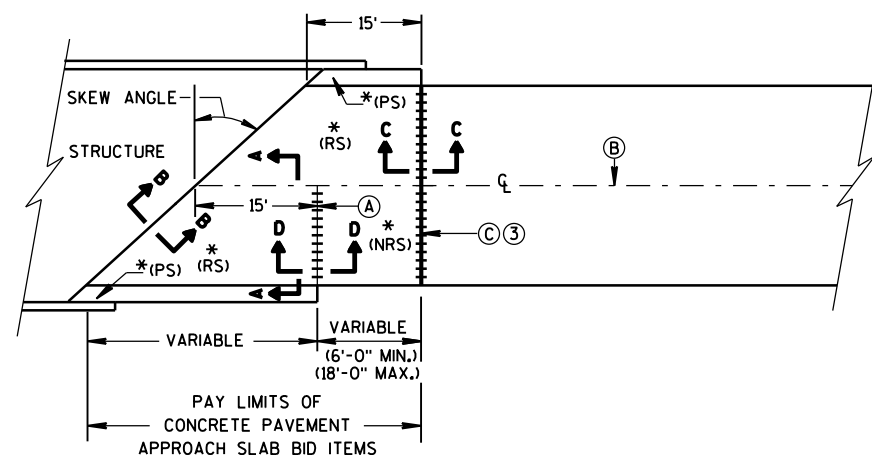
FHWA

/S/ Peter Kemp, P.E.

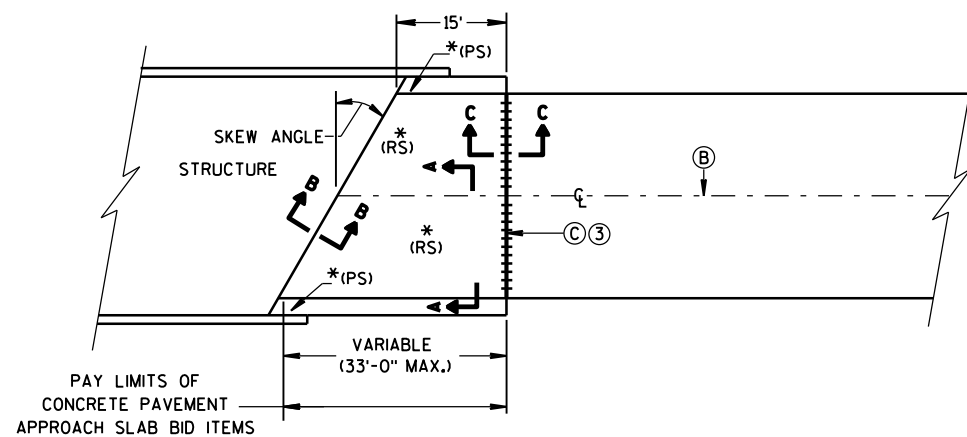
PAVEMENT SUPERVISOR



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



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

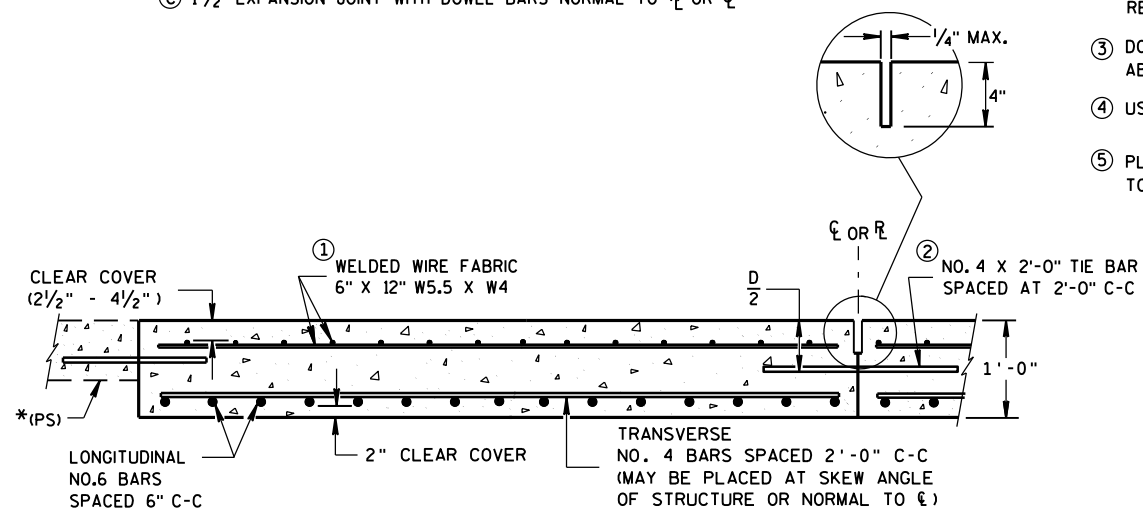


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

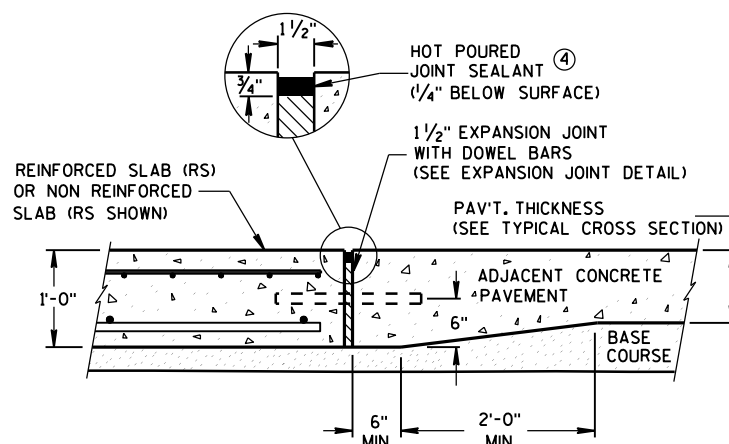
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

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

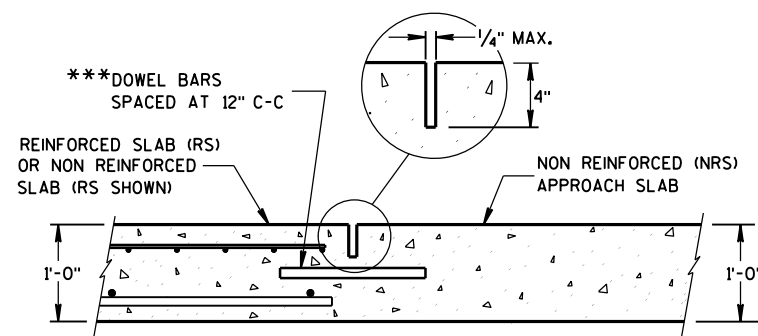
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



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



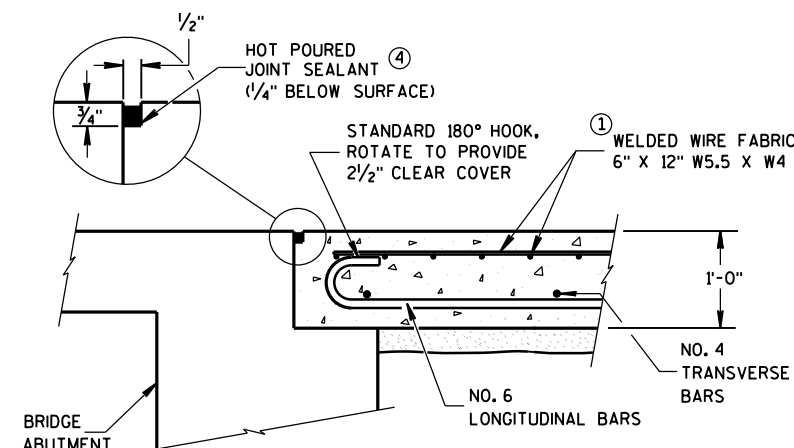
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

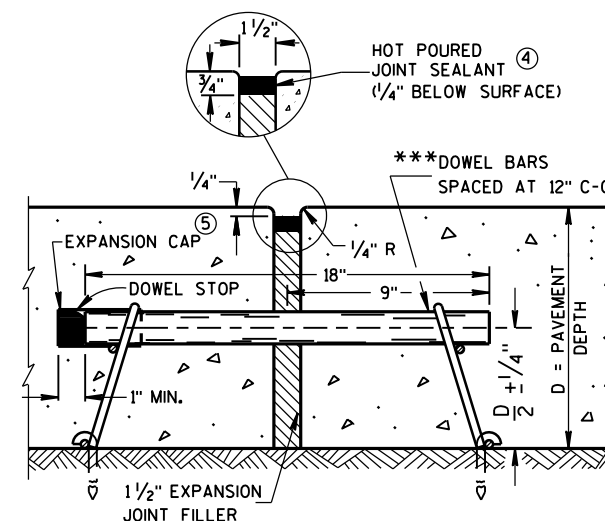
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

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



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



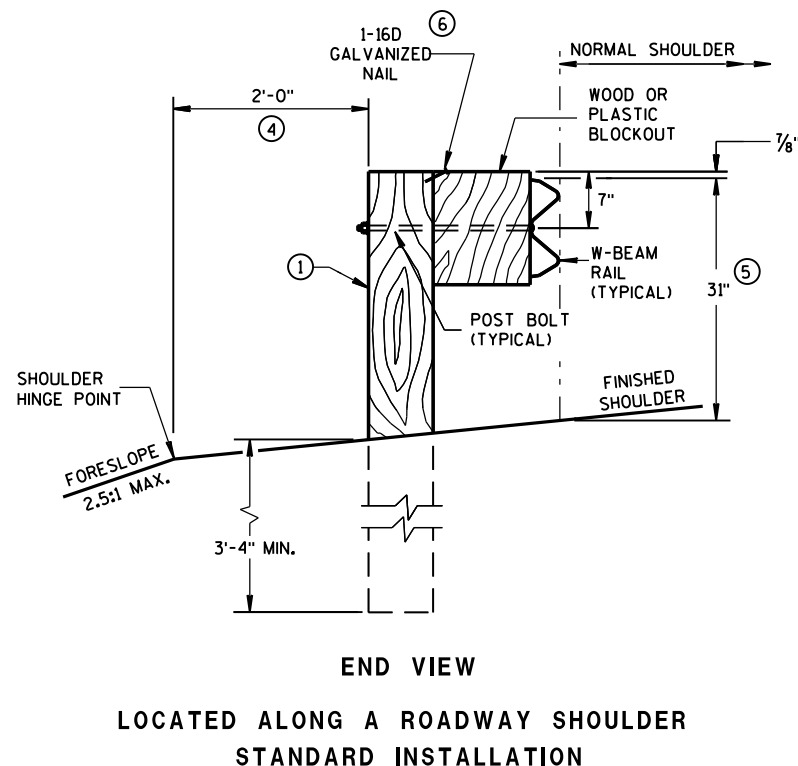
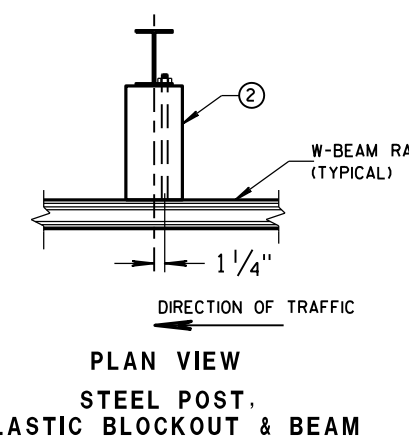
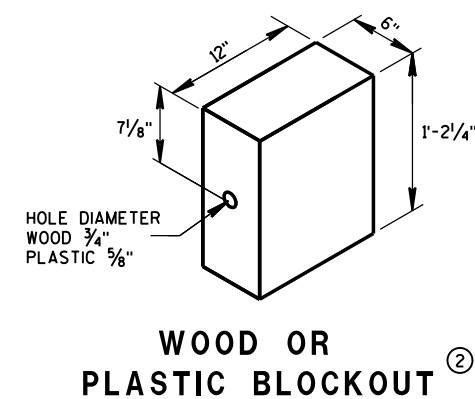
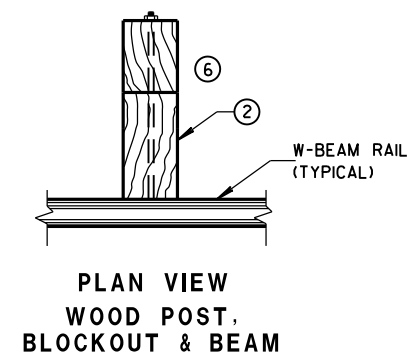
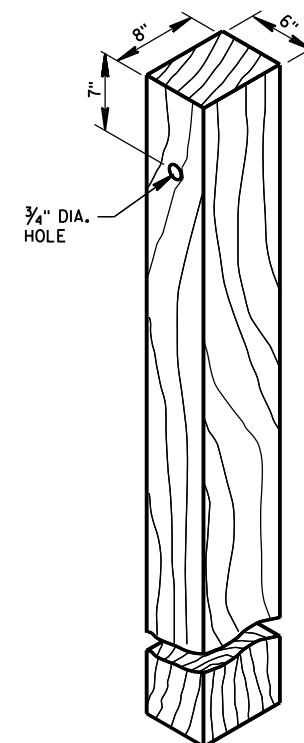
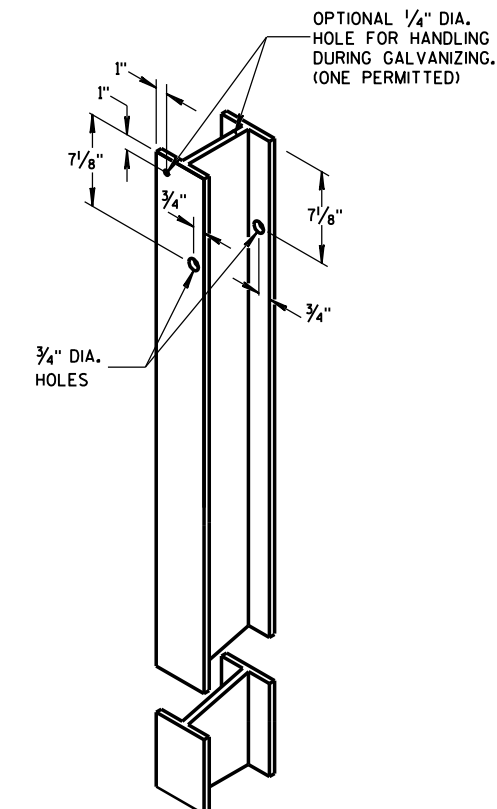
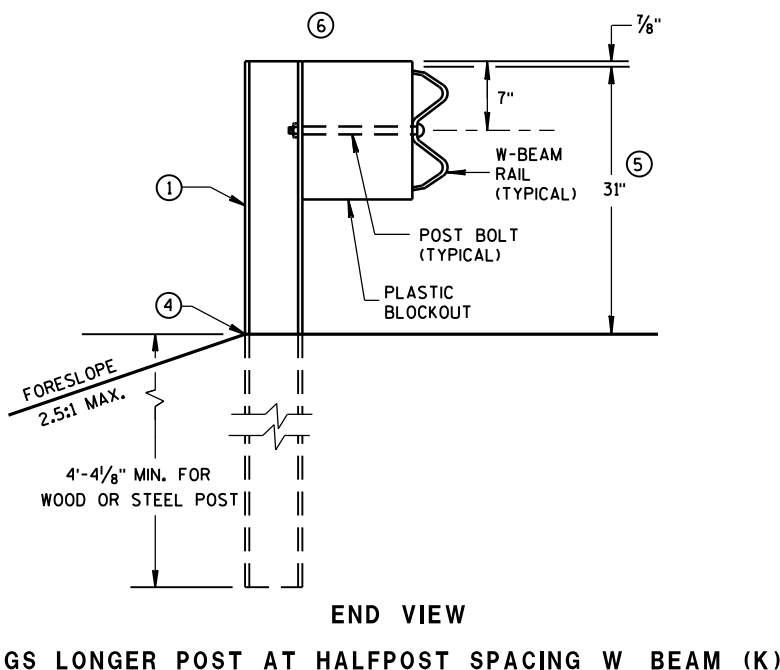
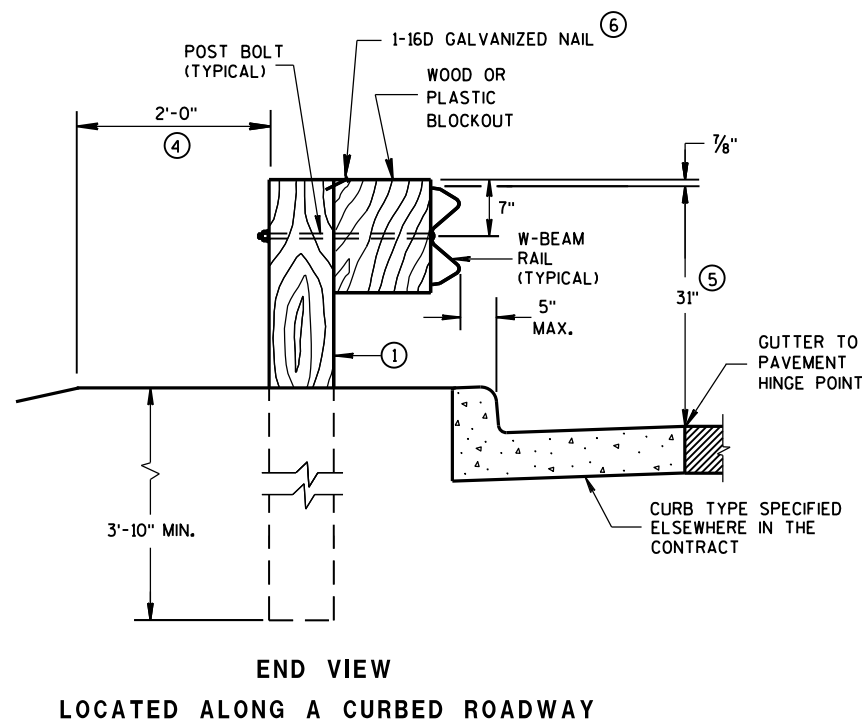
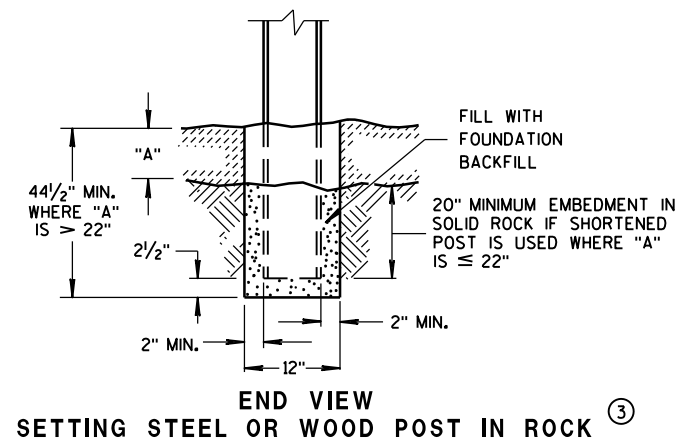
EXPANSION JOINT DETAIL

**CONCRETE PAVEMENT
APPROACH SLAB**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

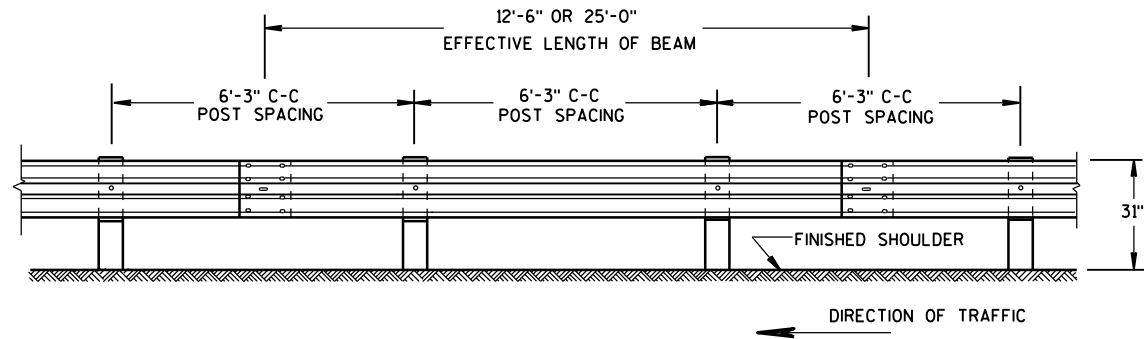
APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA

- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2 INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND 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 $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



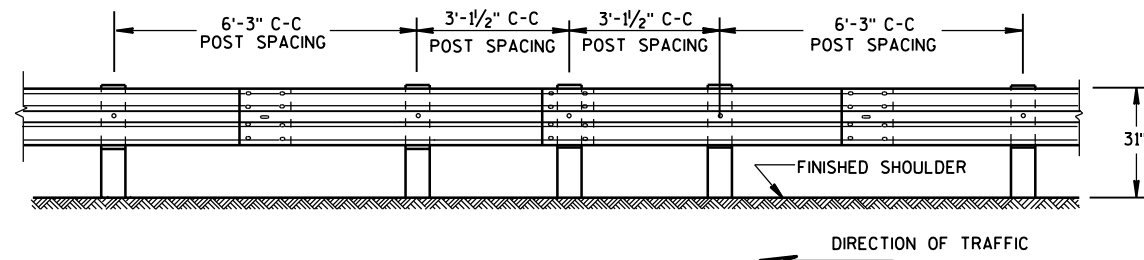
MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



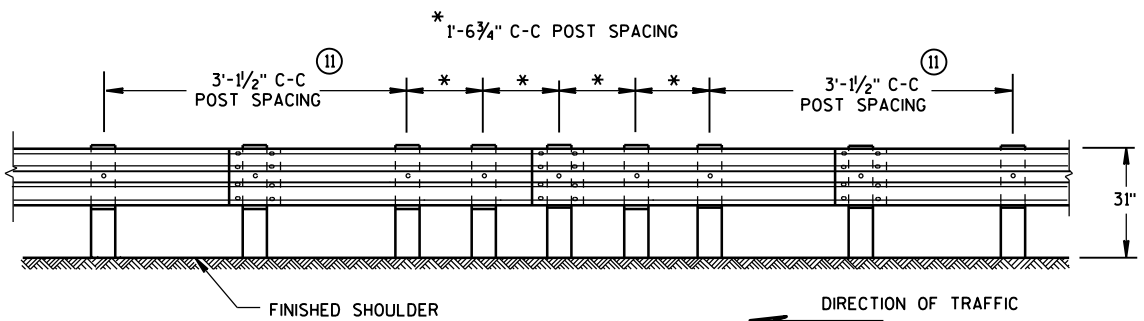
FRONT VIEW

POST SPACING STANDARD INSTALLATION



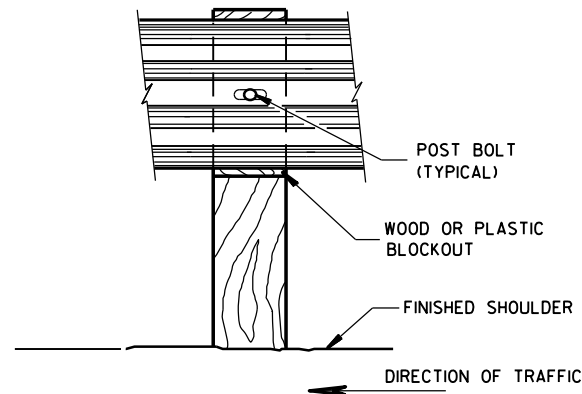
FRONT VIEW

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

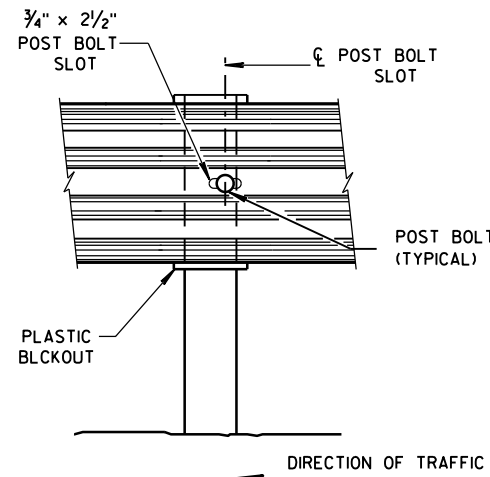


FRONT VIEW

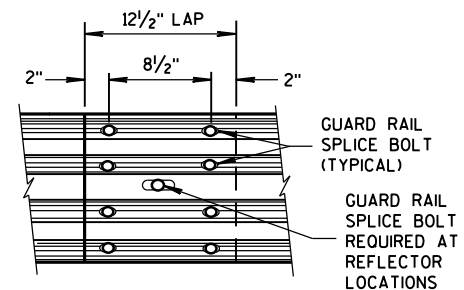
QUARTER POST SPACING (QS)



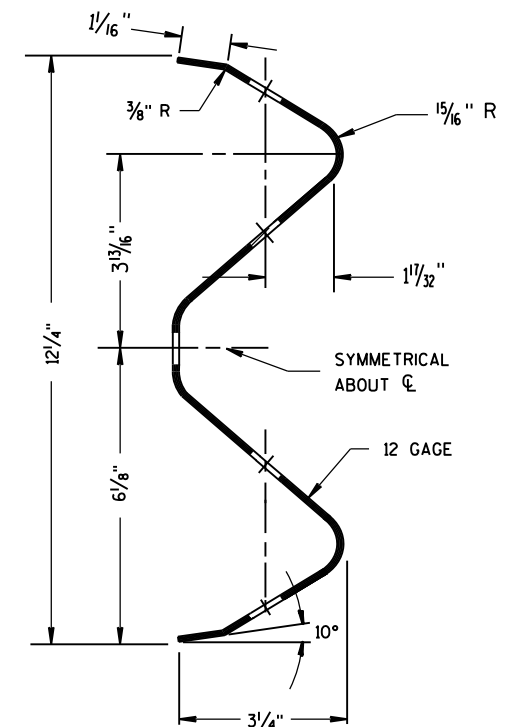
FRONT VIEW AT WOOD POST



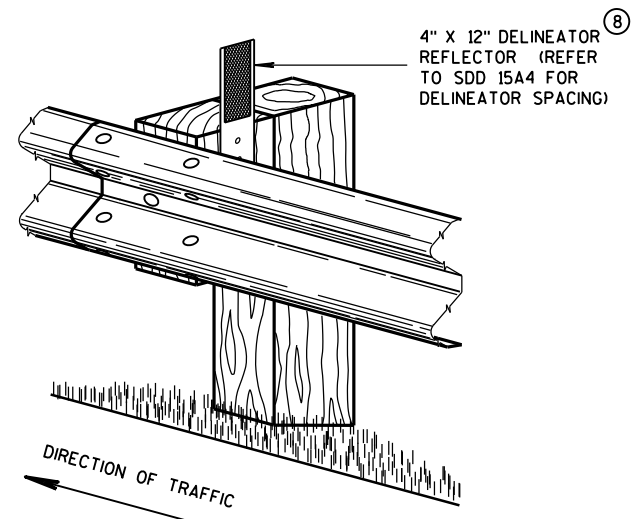
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



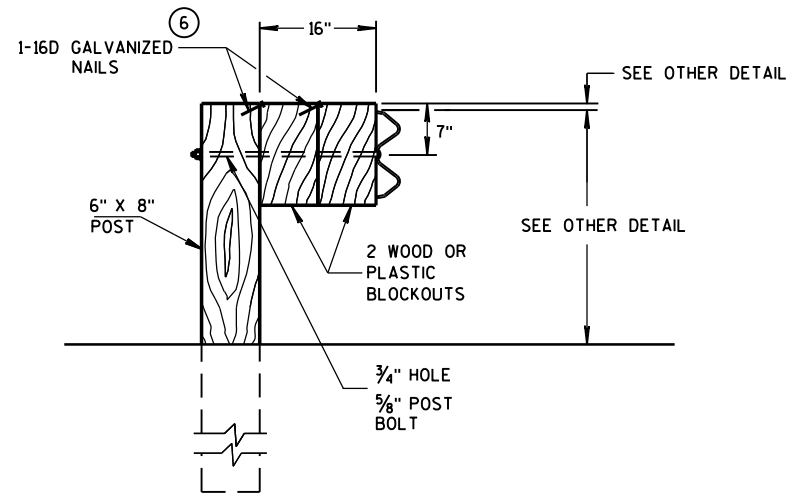
SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

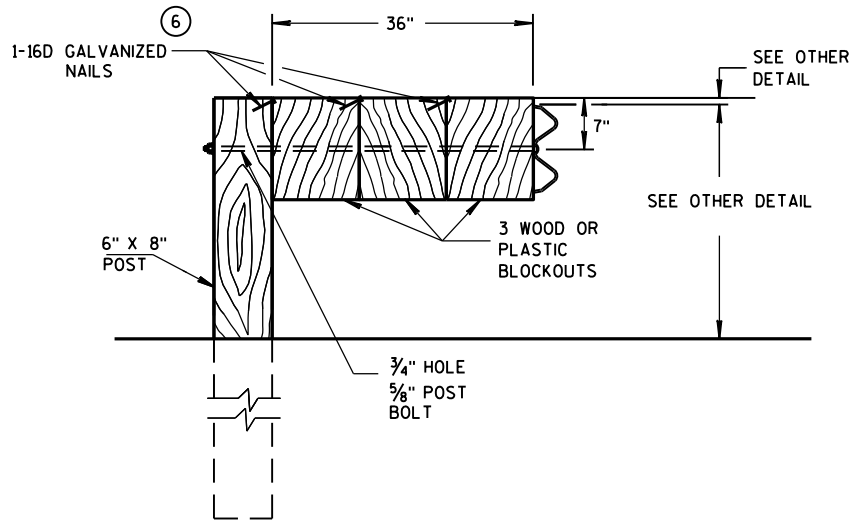
GENERAL NOTES

- 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.



DETAIL FOR 16" BLOCKOUT DEPTH

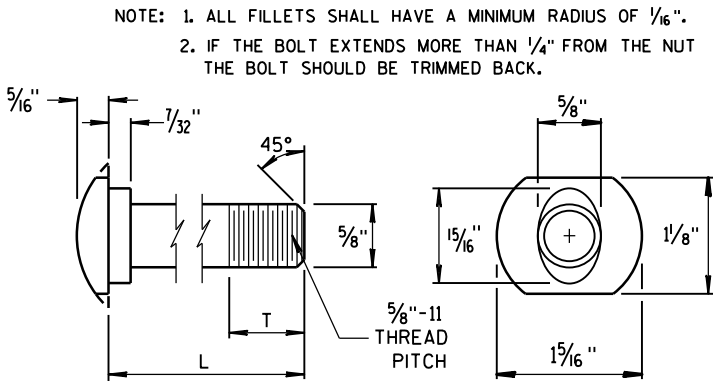
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

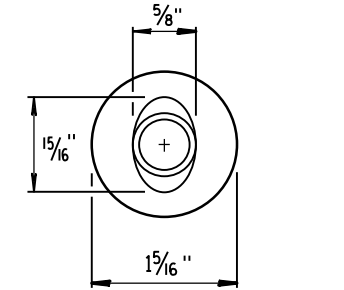
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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

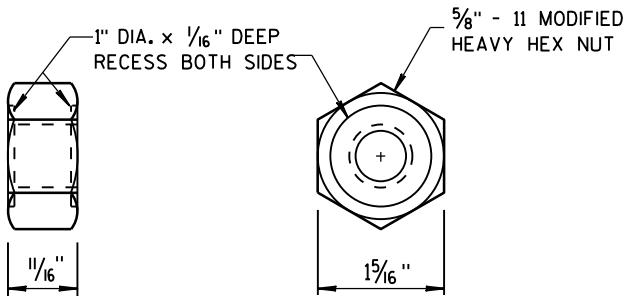


POST BOLT TABLE

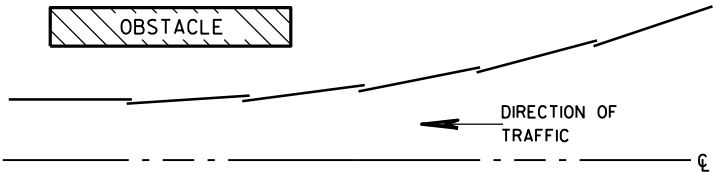
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



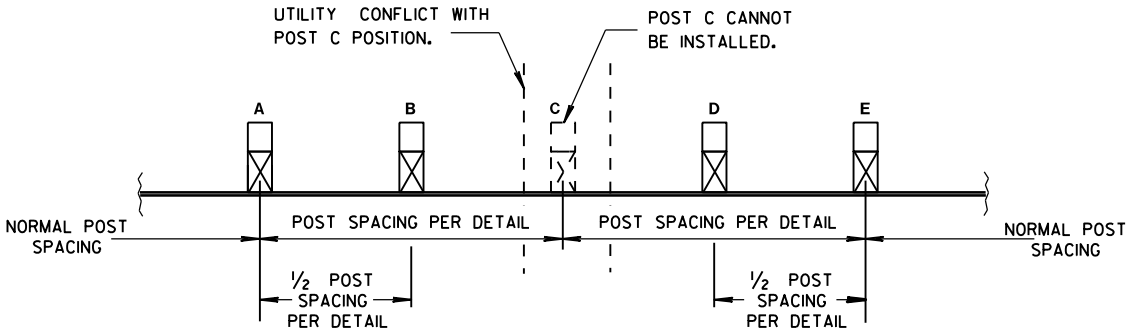
ALTERNATE BOLT HEAD



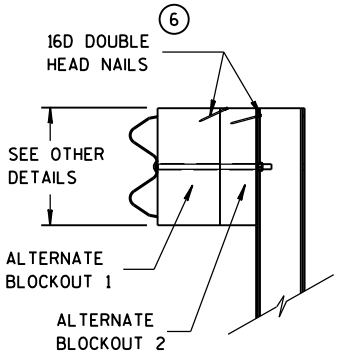
POST BOLT, SPLICE BOLT AND RECESS NUT



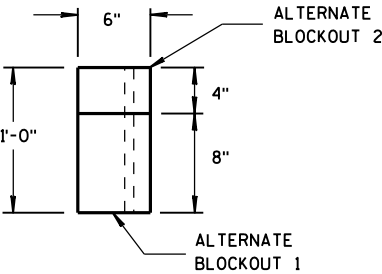
PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

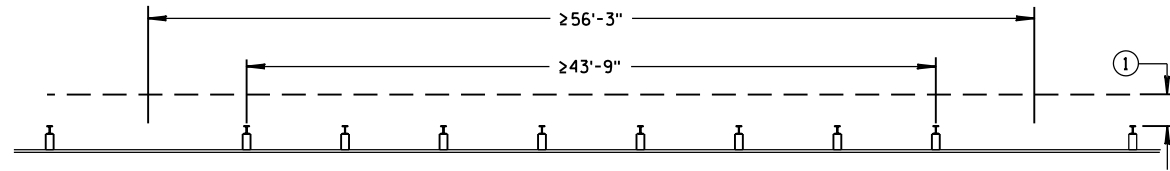


TOP VIEW

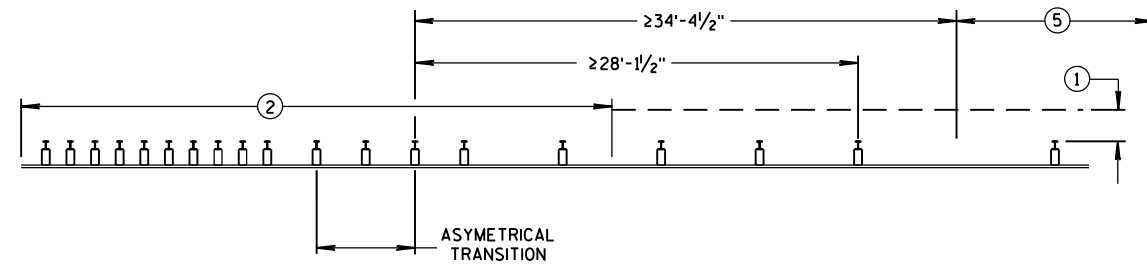
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

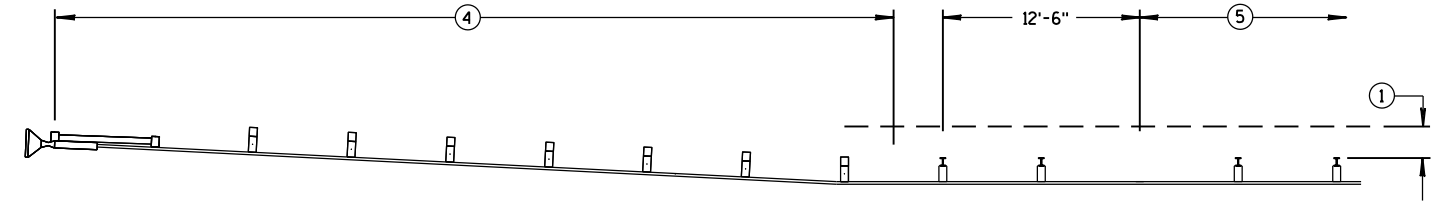
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



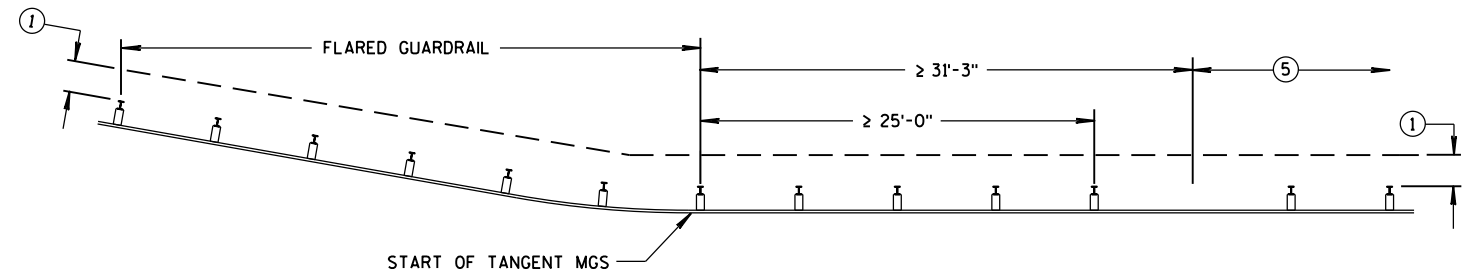
MISSING POST IN NORMAL BEAM GUARD RUN



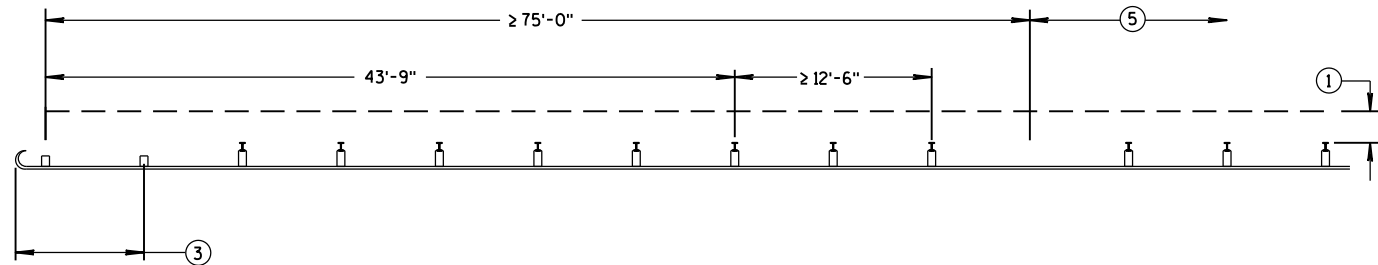
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT

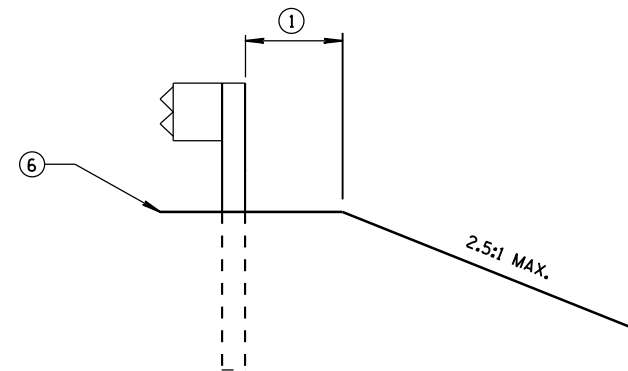


MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL

- 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.



CROSS SECTION VIEW

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

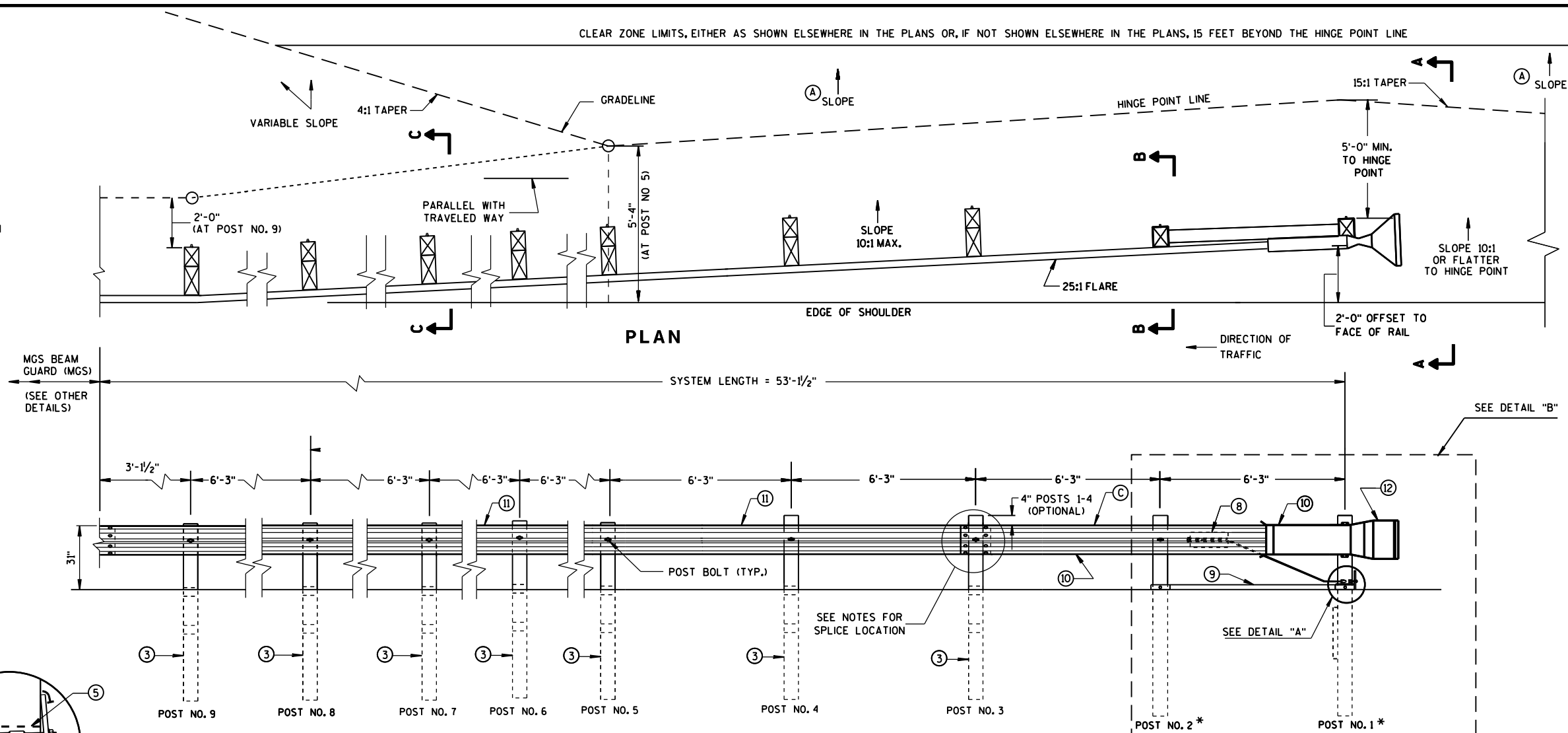
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

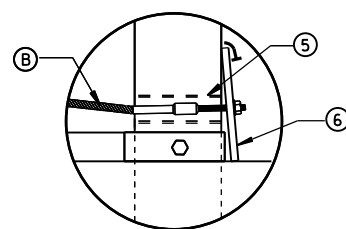
6

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

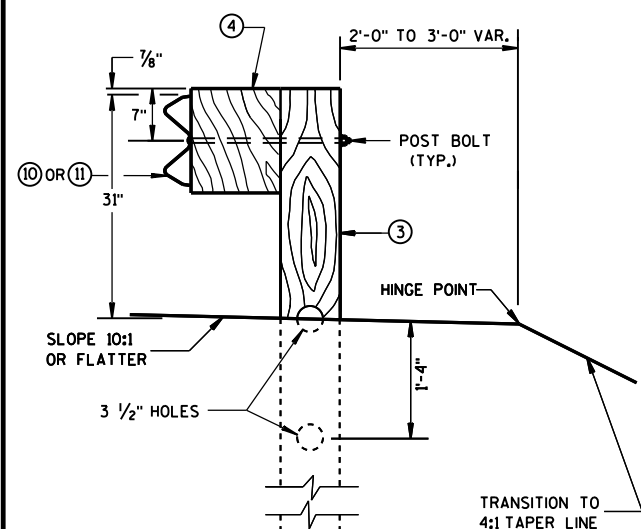
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



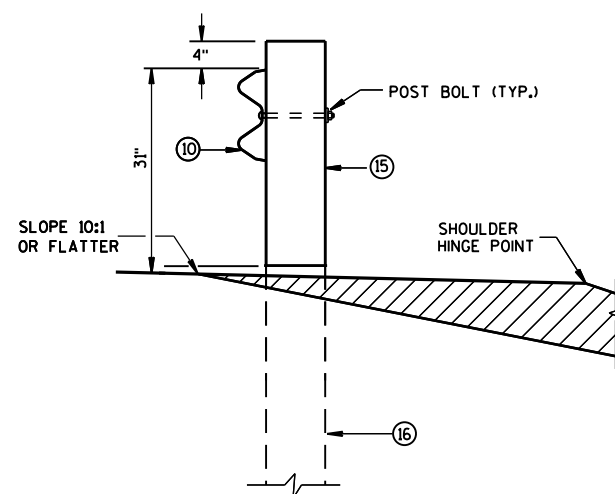
ELEVATION



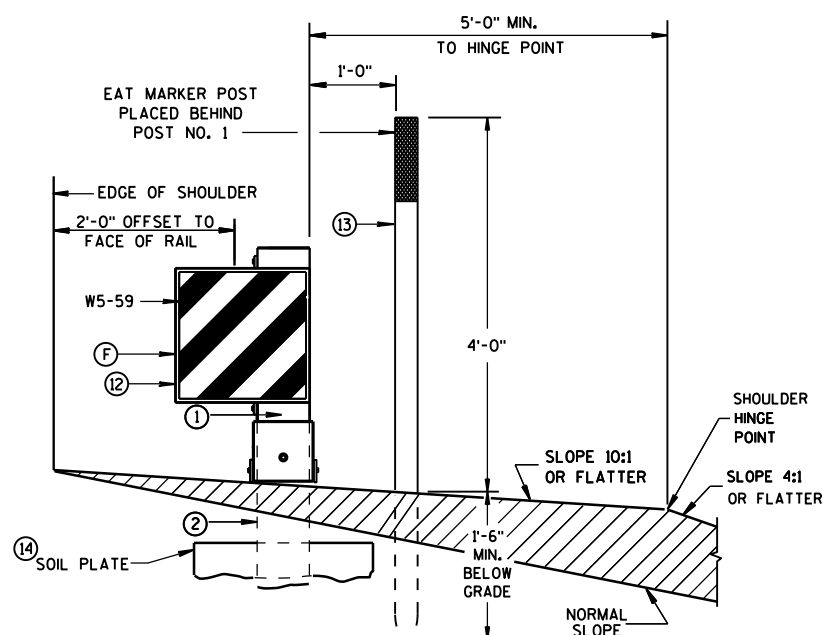
DETAIL "A"



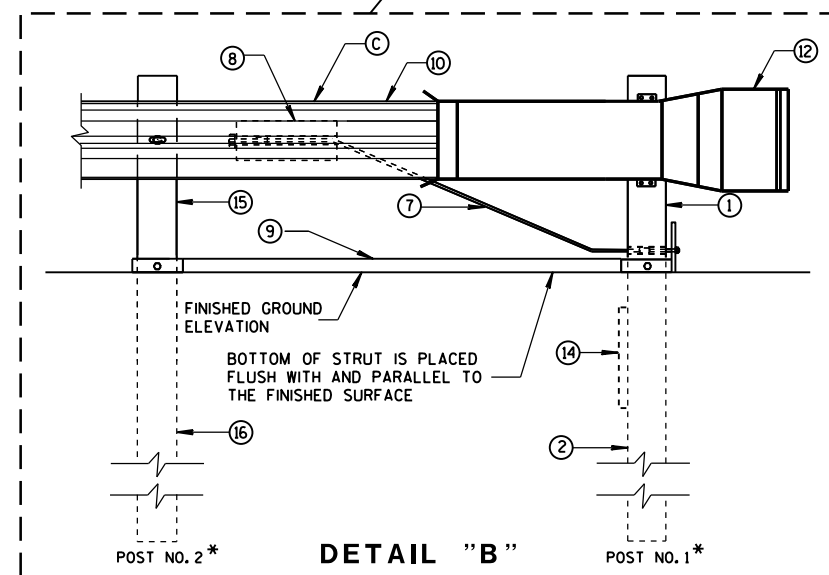
SECTION C-C
TYPICAL AT POST NOS. 3-9



SECTION B-B
TYPICAL AT POST NO. 2*



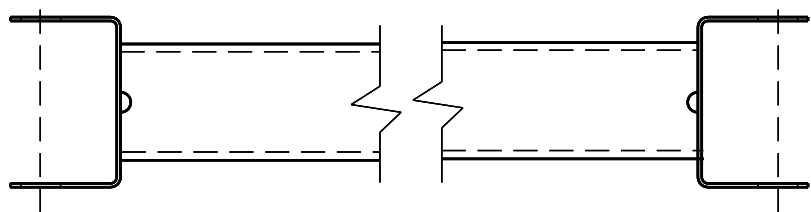
SECTION A-A
TYPICAL AT POST NO. 1 *



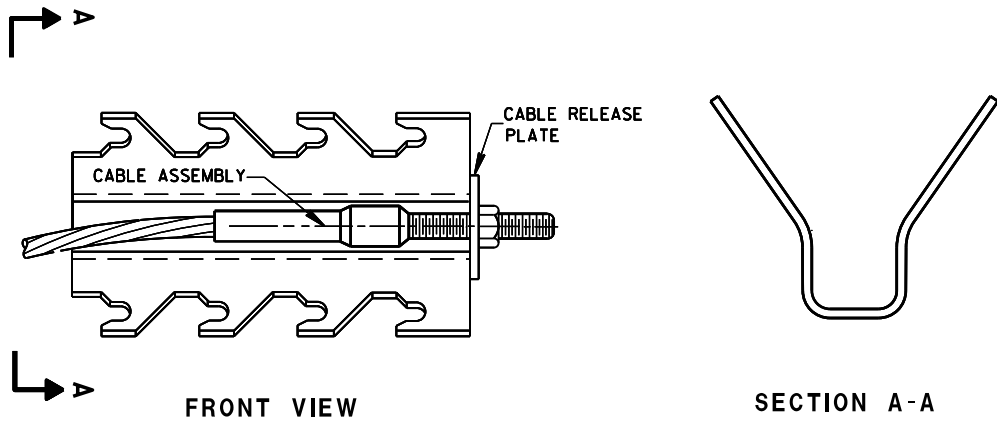
DETAIL "B"

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

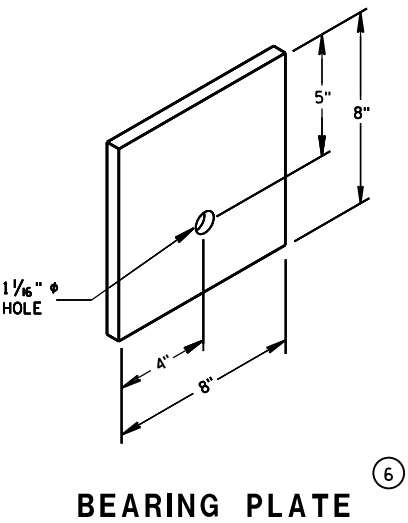


GENERIC GROUND STRUT (9) (H)

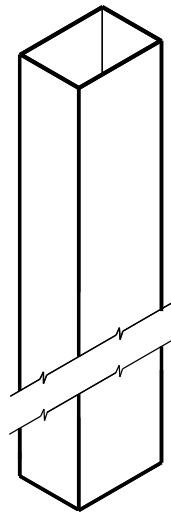


GENERIC ANCHOR CABLE BOX (8) (H)

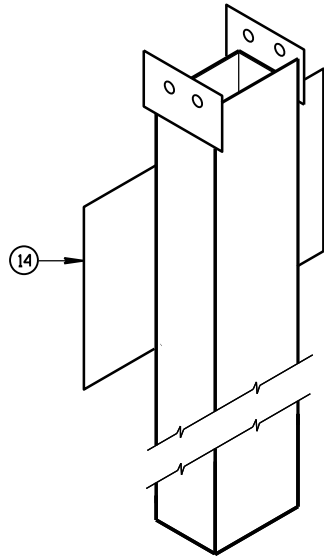
BILL OF MATERIALS	
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
(1)	UPPER POST NO.1 6" X 6" TUBE
(2)	LOWER POST NO.1
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND 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



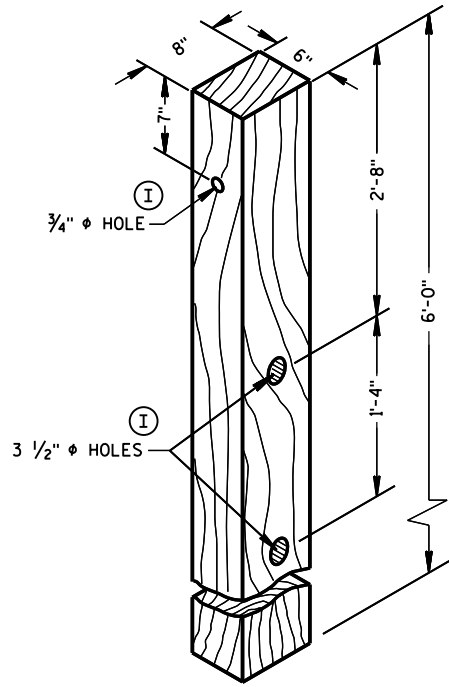
BEARING PLATE (6)



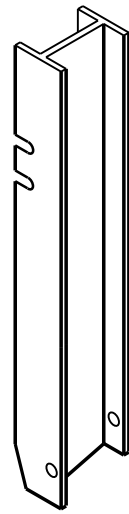
UPPER POST NO. 1⁽¹⁾



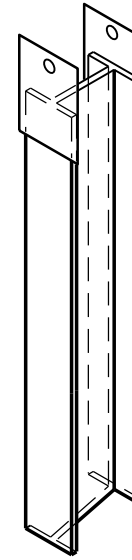
LOWER POST NO. 1⁽²⁾



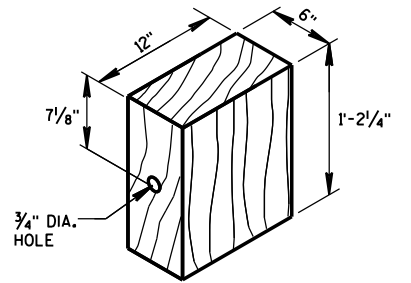
POSTS NUMBER 3-9
WOOD CRT POST⁽³⁾



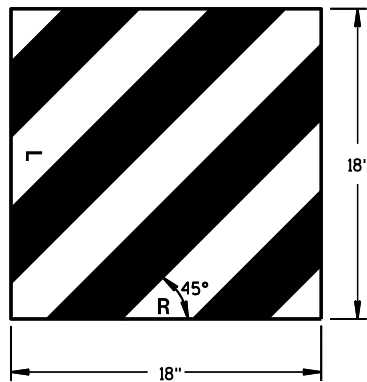
UPPER POST NO. 2⁽¹⁵⁾



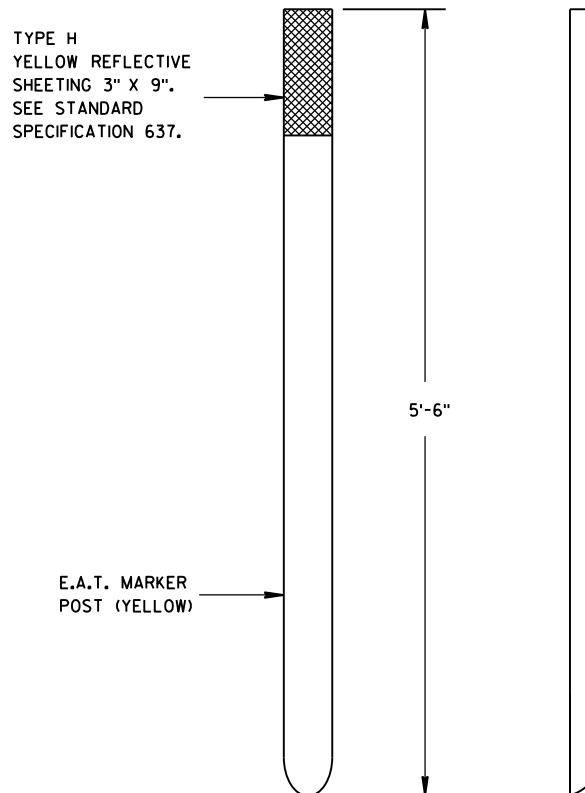
LOWER POST NO. 2⁽¹⁶⁾



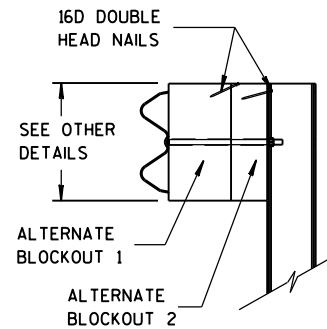
WOOD BLOCKOUT⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



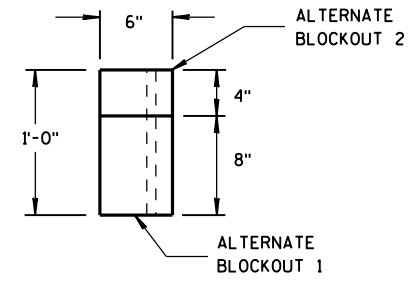
W5-59
REFLECTIVE SHEETING DETAIL^(H)



FRONT VIEW
SIDE VIEW
E.A.T. MARKER POST⁽¹³⁾



SIDE VIEW



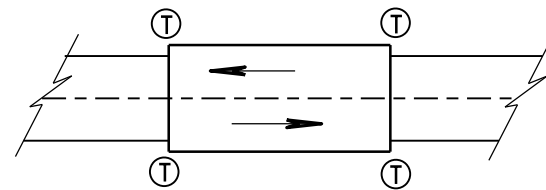
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

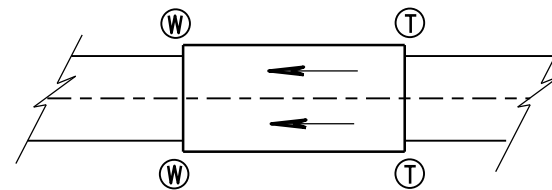
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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.

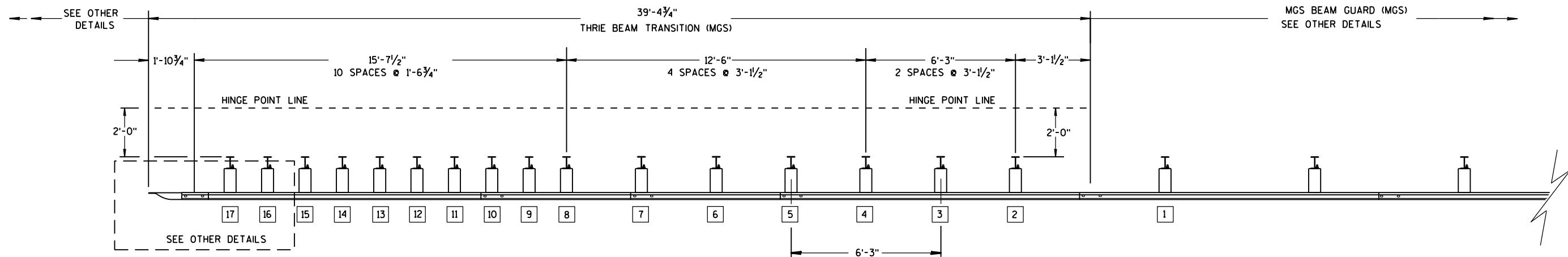
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

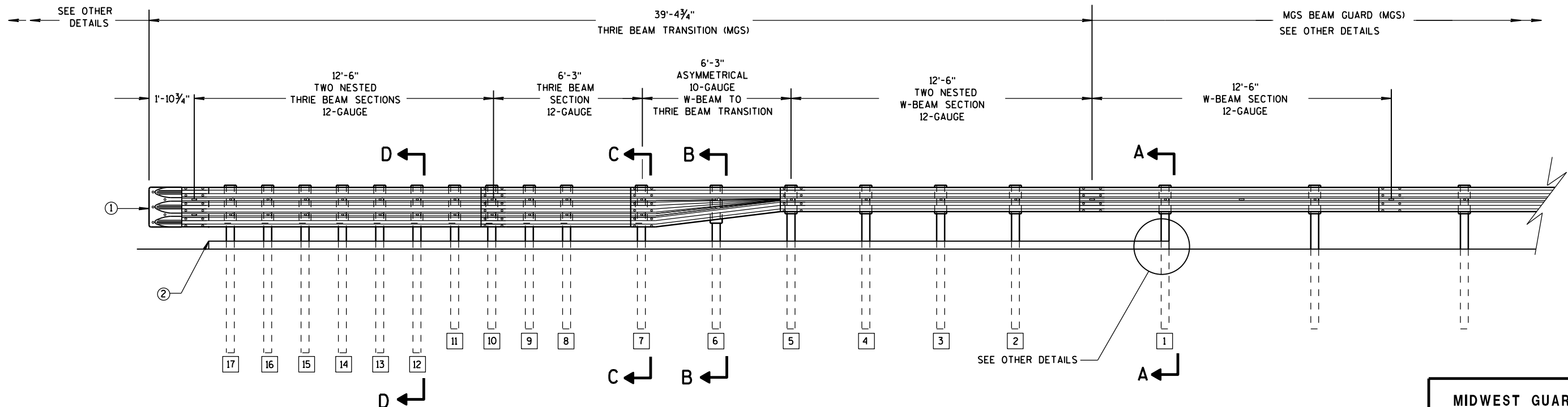
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

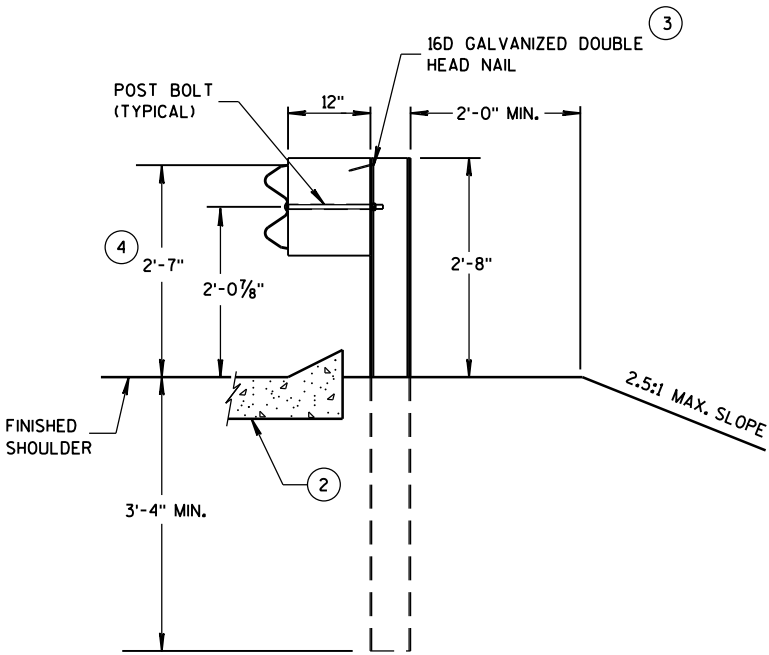
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

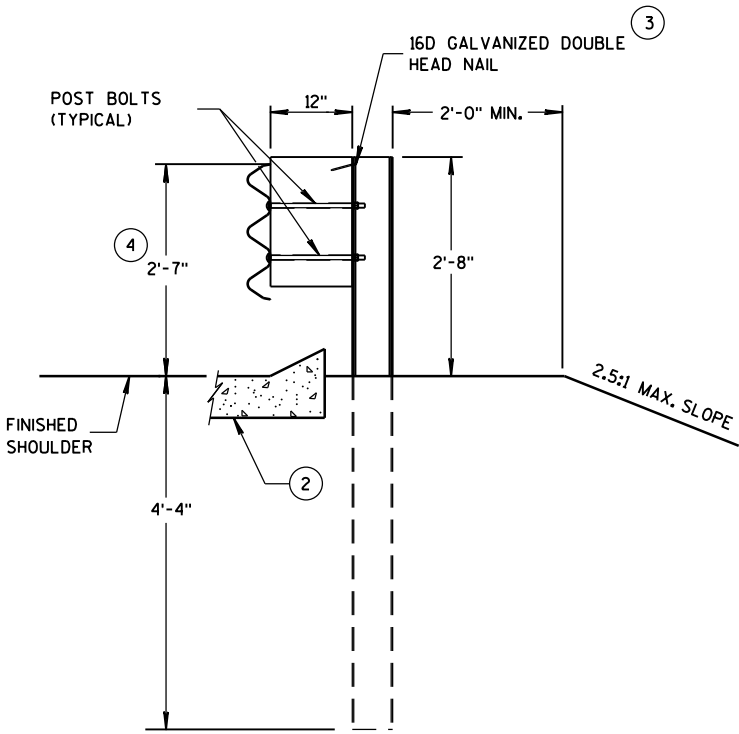
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

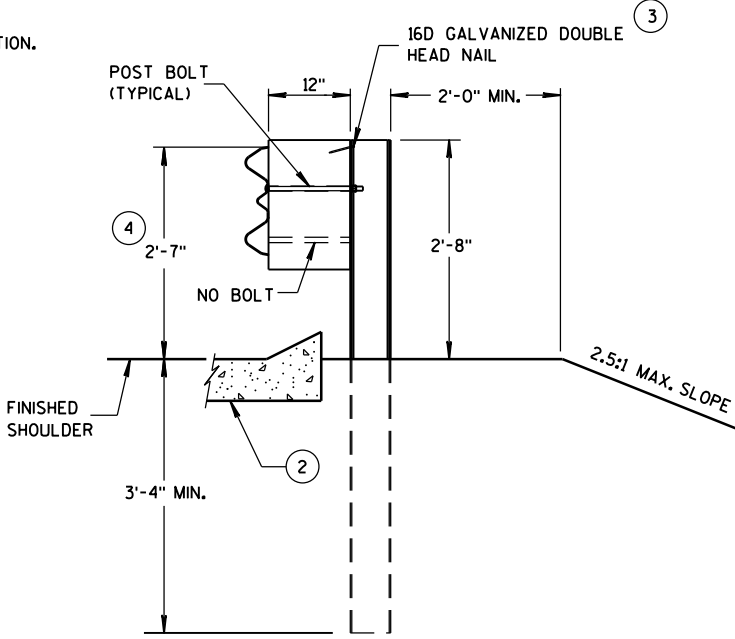
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



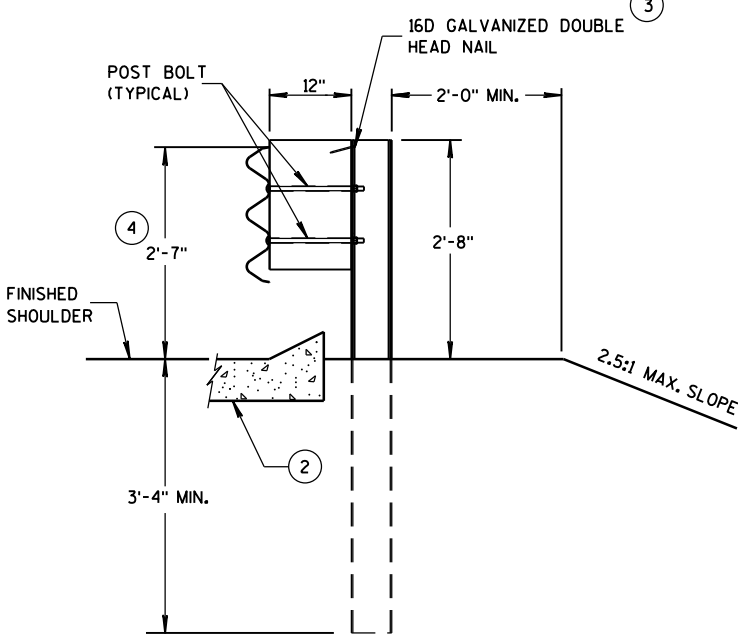
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

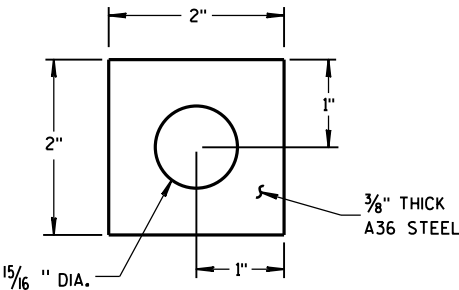
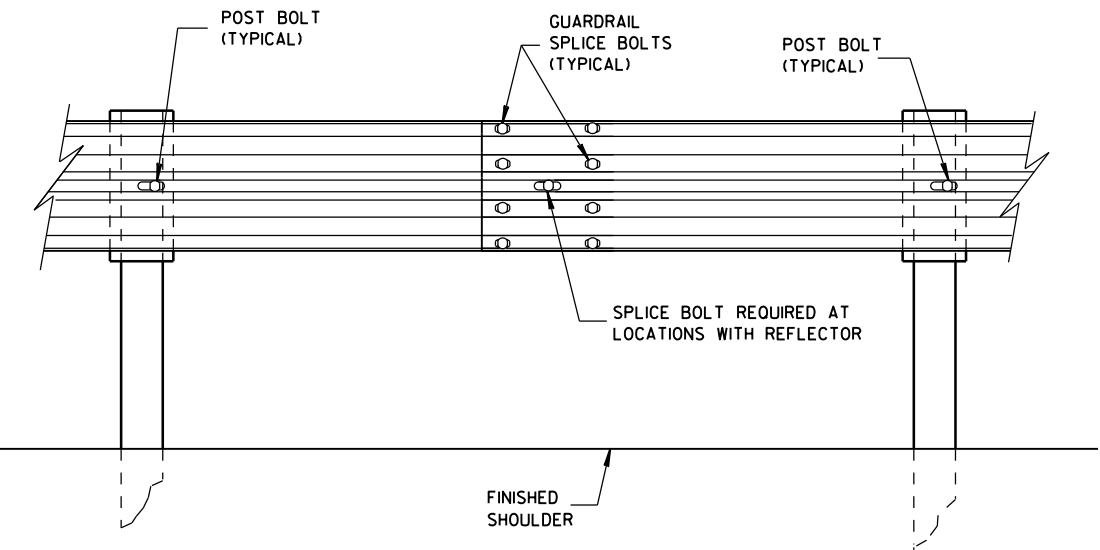
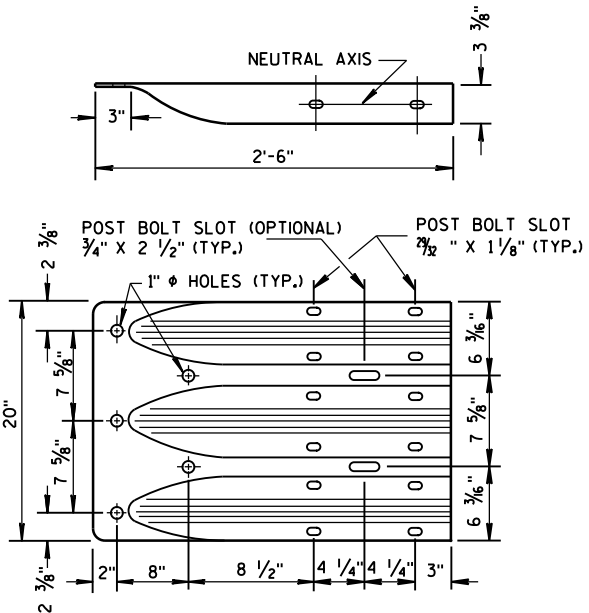


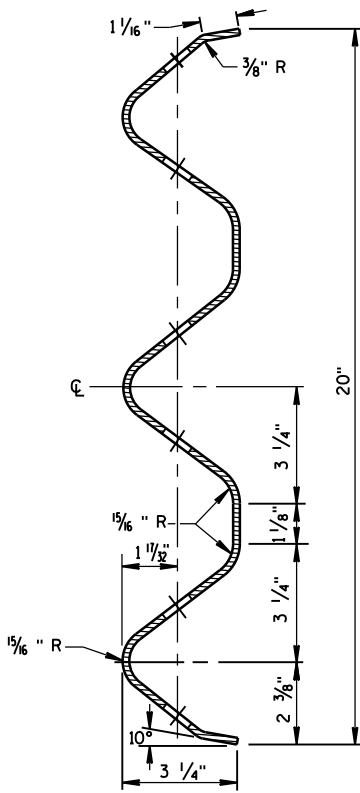
PLATE WASHER DETAIL



SPlice DETAIL



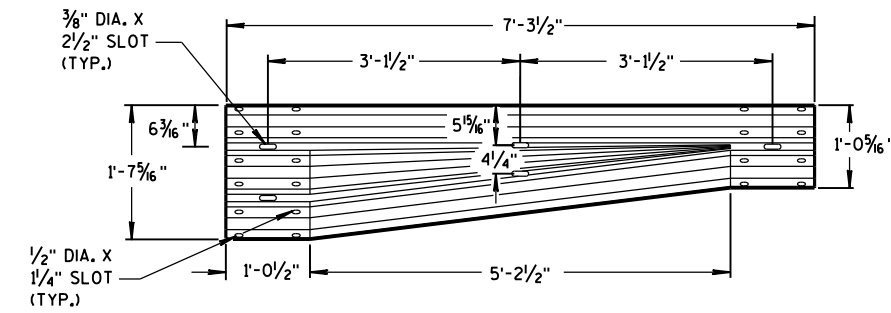
THRIE BEAM
TERMINAL CONNECTOR



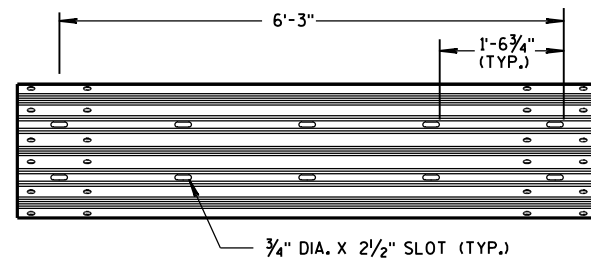
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

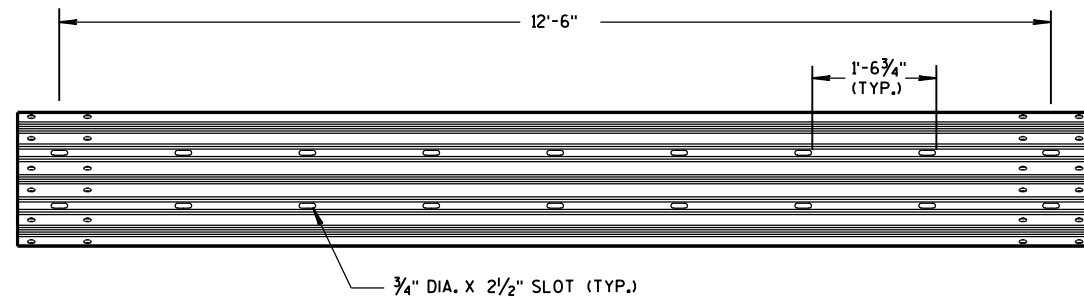
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



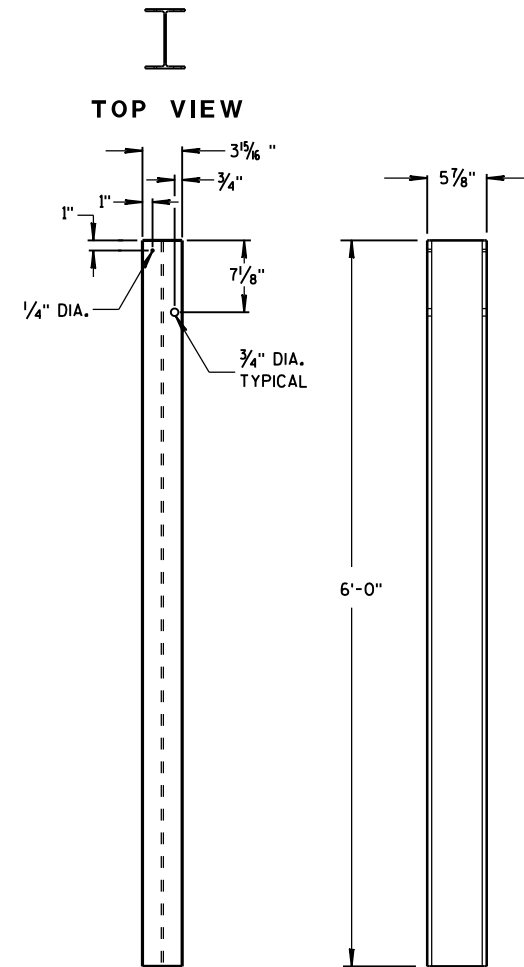
W-BEAM TO THRIE BEAM TRANSITION SECTION



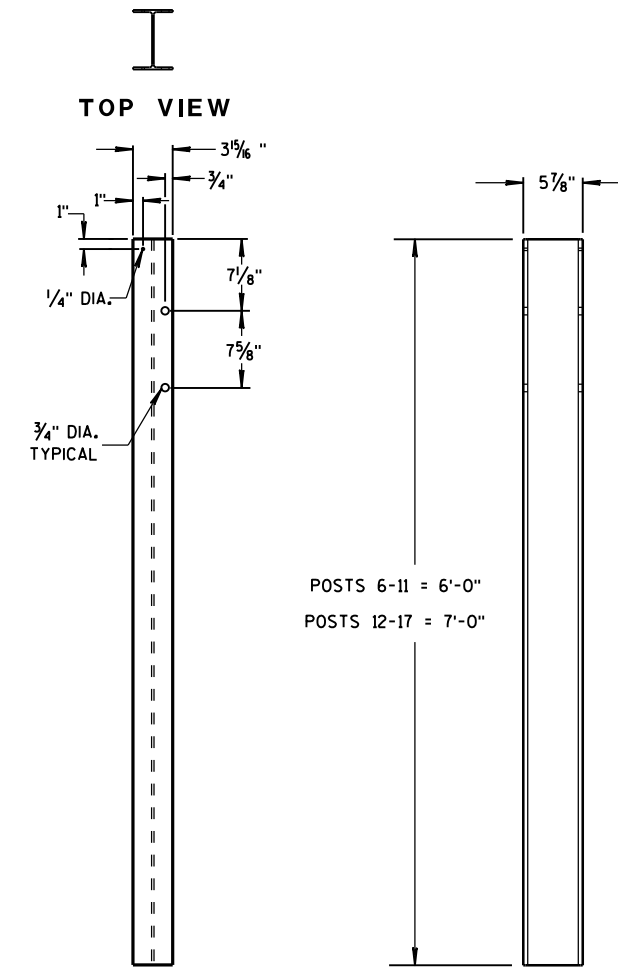
6'-3" THRIE BEAM SECTION



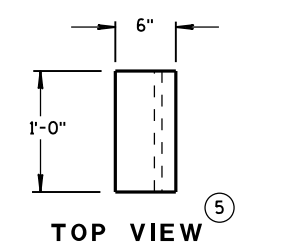
12'-6" THRIE BEAM SECTION



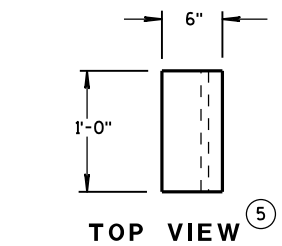
STEEL POSTS 1-5



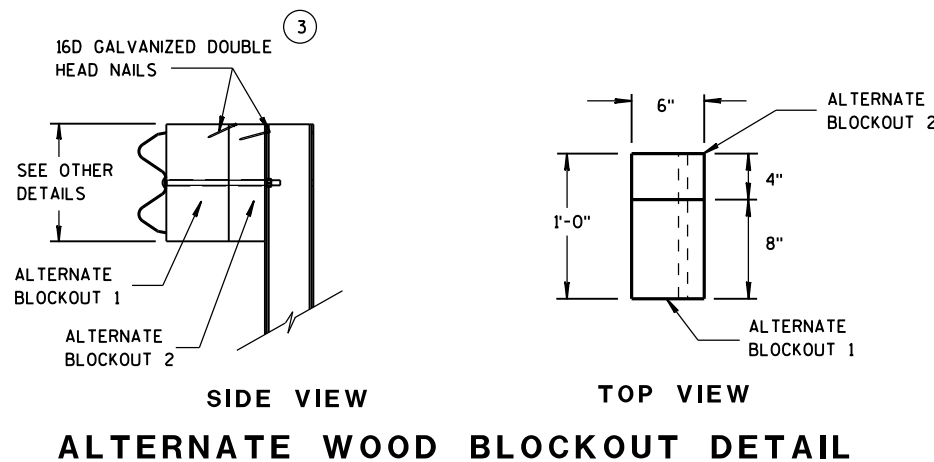
STEEL POSTS 6-17



BLOCKOUT POSTS 1-5



BLOCKOUT POSTS 6-17



GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

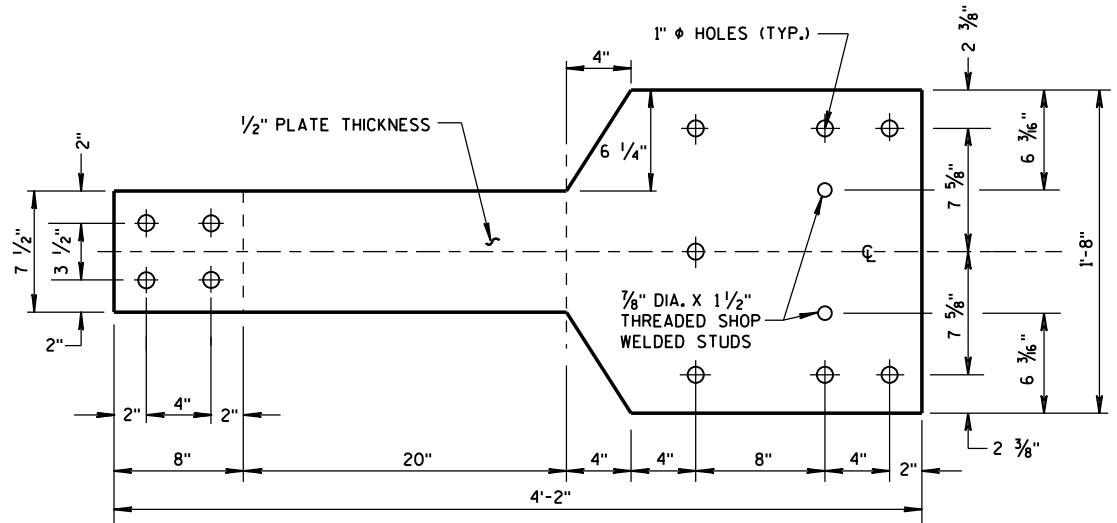
(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

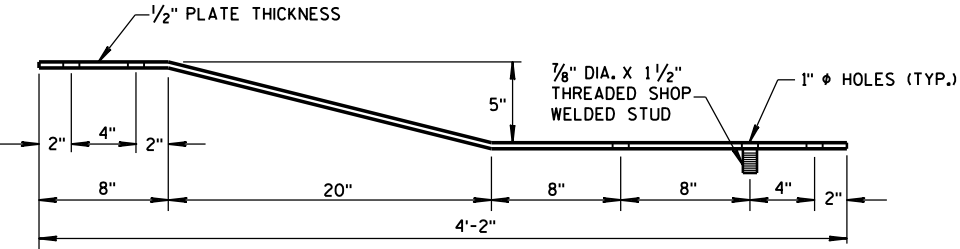
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.

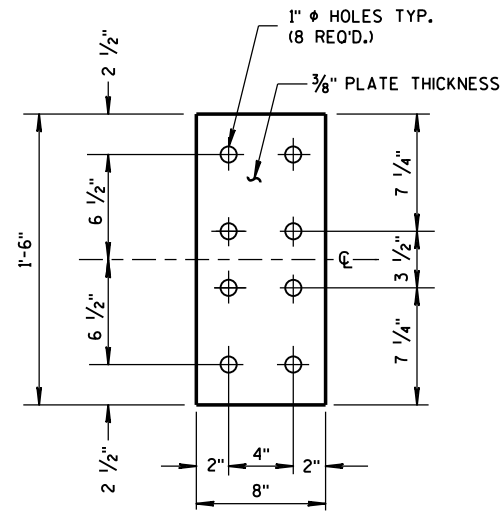


FRONT VIEW



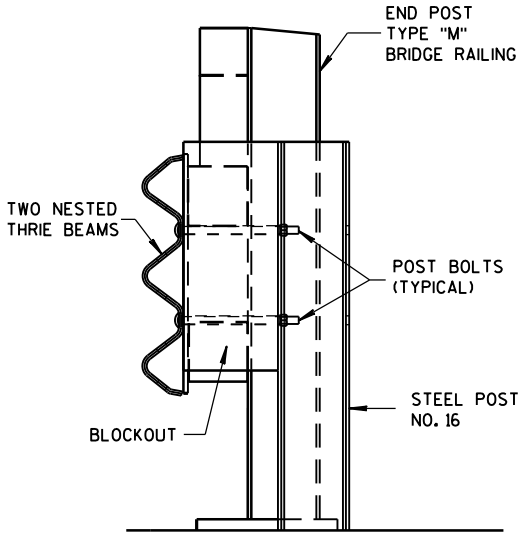
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

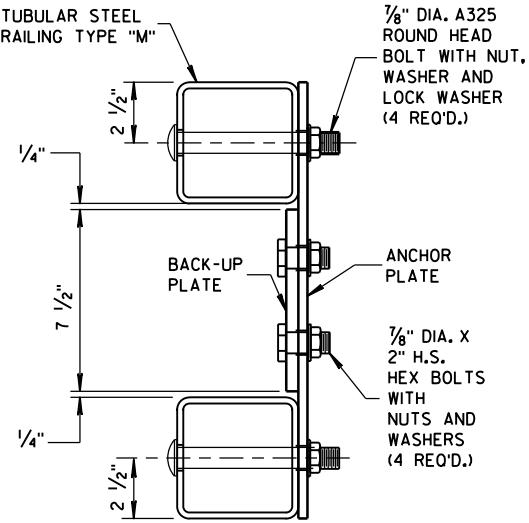


FRONT VIEW

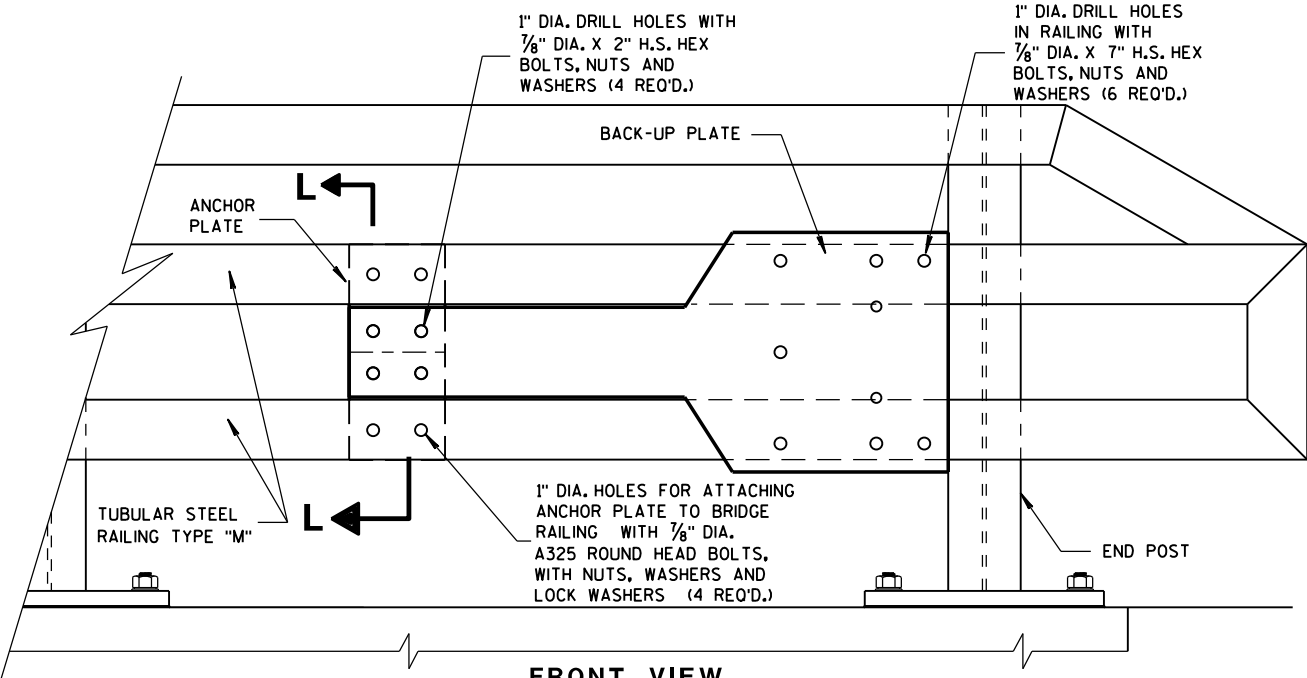
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

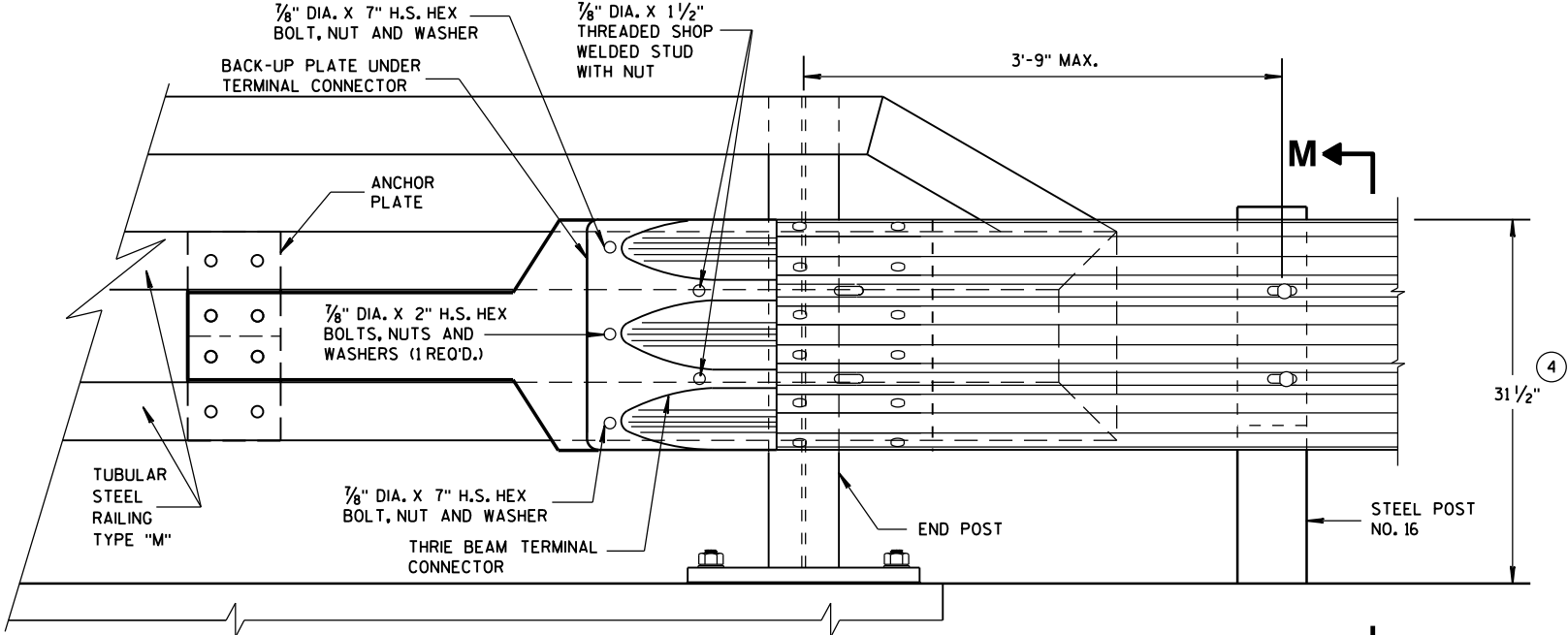


SECTION L-L

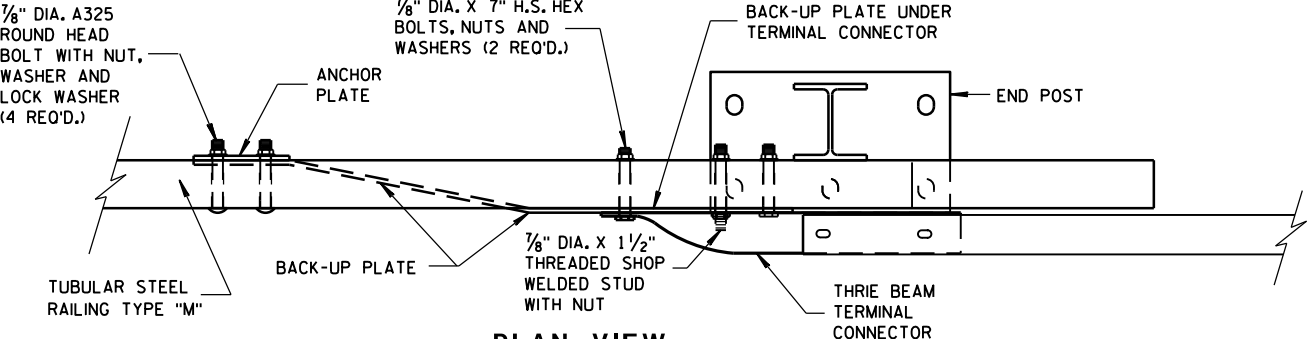


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

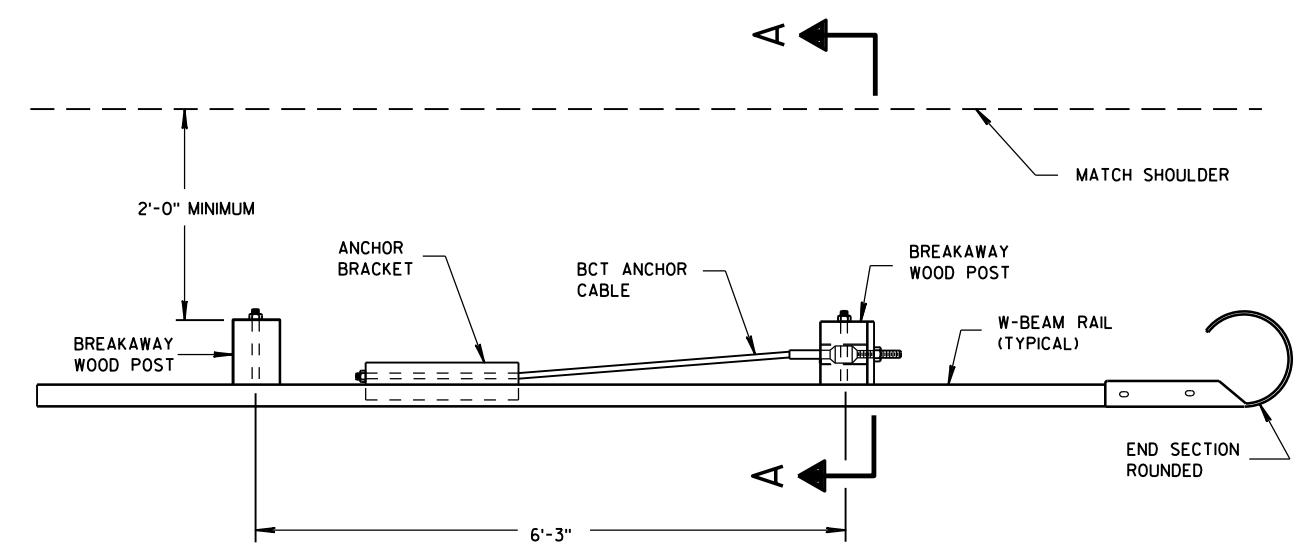
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

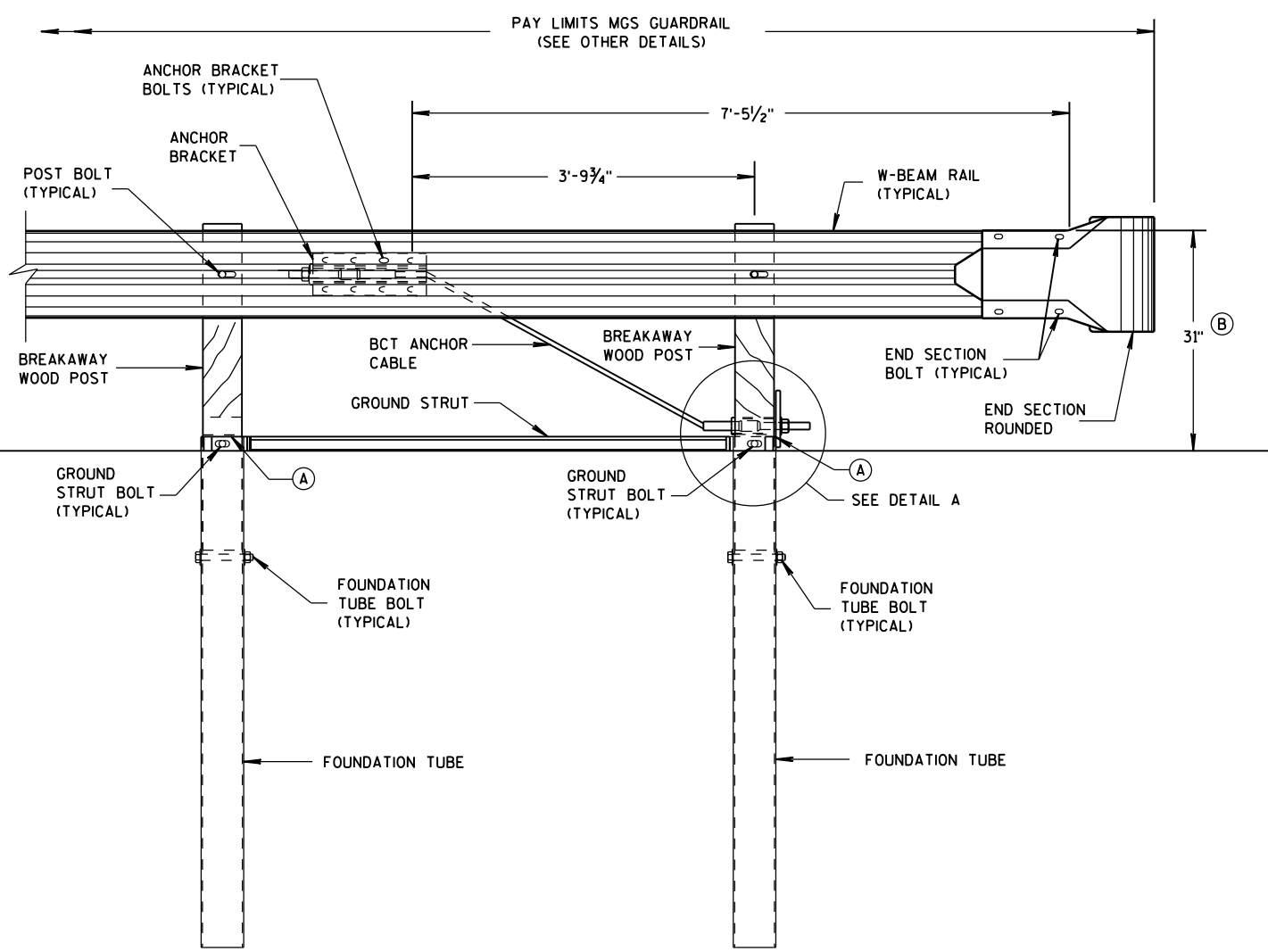
APPROVED
June, 2015
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

6

S.D.D. 14 B 47-2a

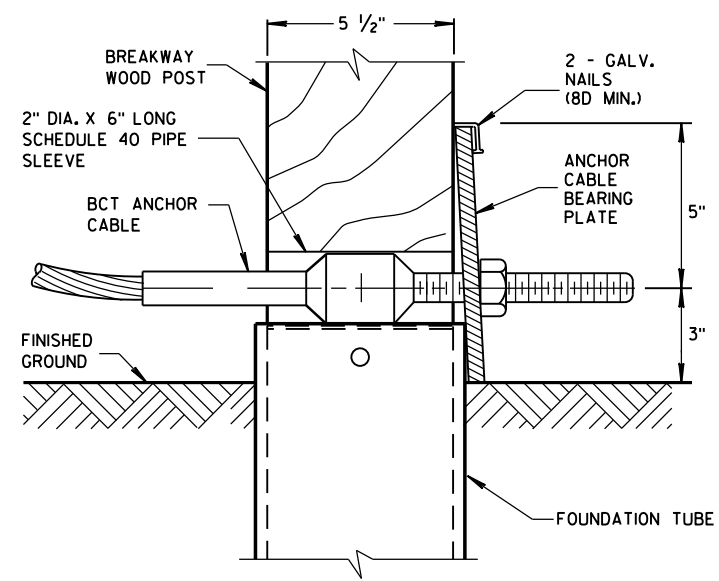


PLAN VIEW



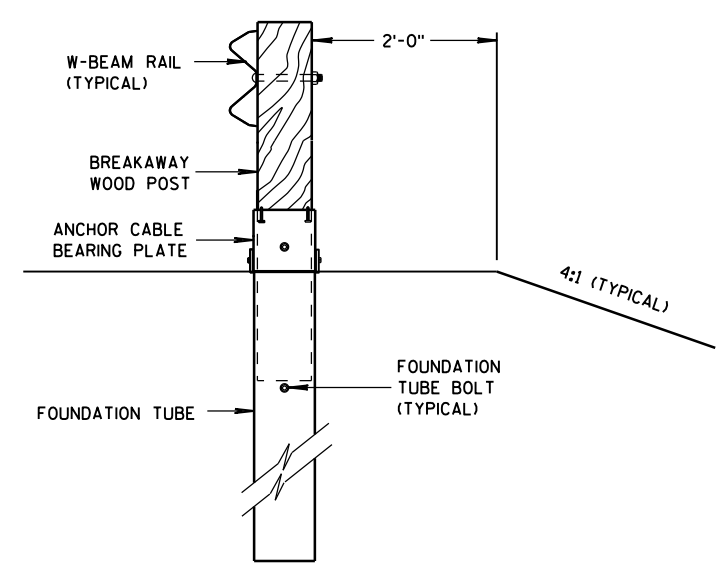
FRONT VIEW

END RAIL DETAIL



DETAIL A

POST NO. 1
GROUND STRUT NOT SHOWN FOR CLARITY.



SECTION A-A

GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

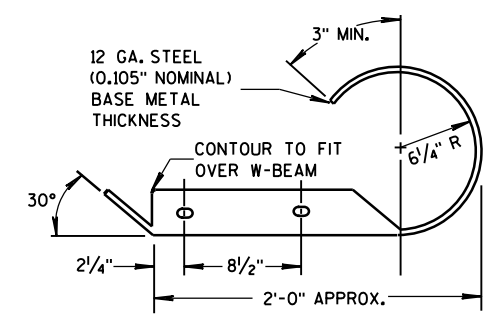
END SECTION BOLTS AND NUTS HAVE THE SAME MATERIAL REQUIREMENTS AS SPLICE BOLTS.

FOUNDATION TUBE BOLTS ARE 7/8" DIAMETER ASTM A307 HEX HEAD BOLT. FOUNDATION TUBE BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 7/8" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

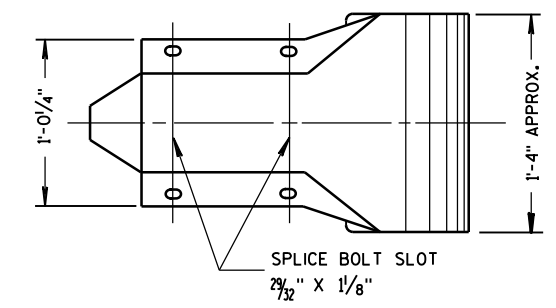
ANCHOR BRACKET AND GROUND STRUT BOLTS ARE A 5/8" DIAMETER ASTM A307 HEX HEAD BOLT. ANCHOR BRACKET BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 5/8" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

W-BEAM END SECTION ROUNDED HAS THE SAME MATERIAL PROPERTIES AS STANDARD STEEL RAIL.

- (A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.
- (B) FOR NEW CONSTRUCTION TOP OF RAIL IS 31" ± 1".
FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN 27 3/4" TO 32" ± 1".



PLAN VIEW



FRONT VIEW

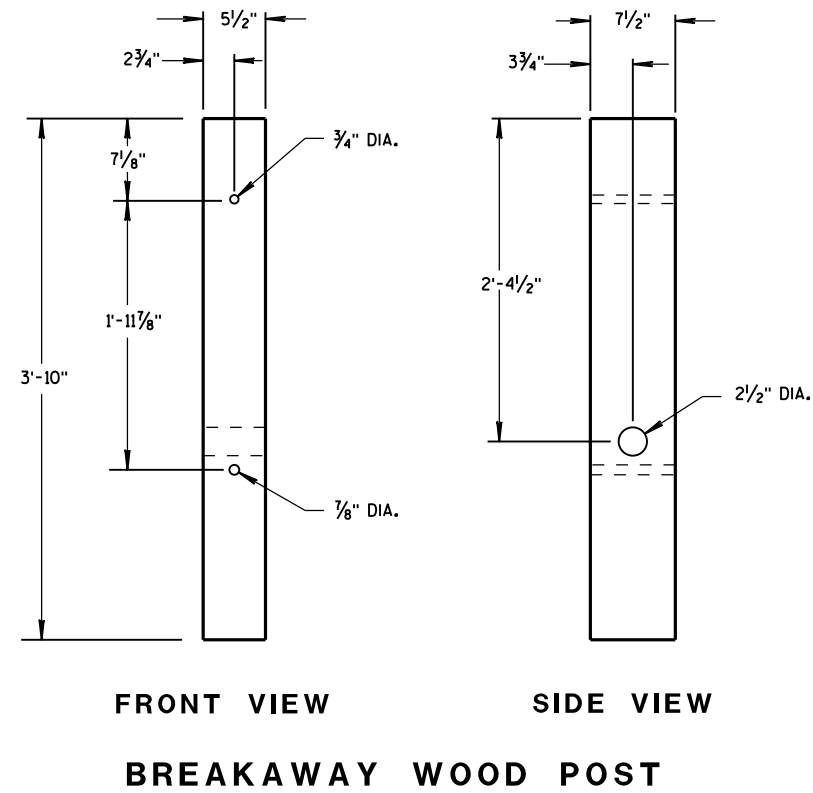
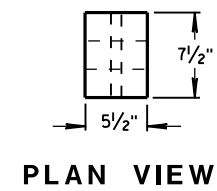
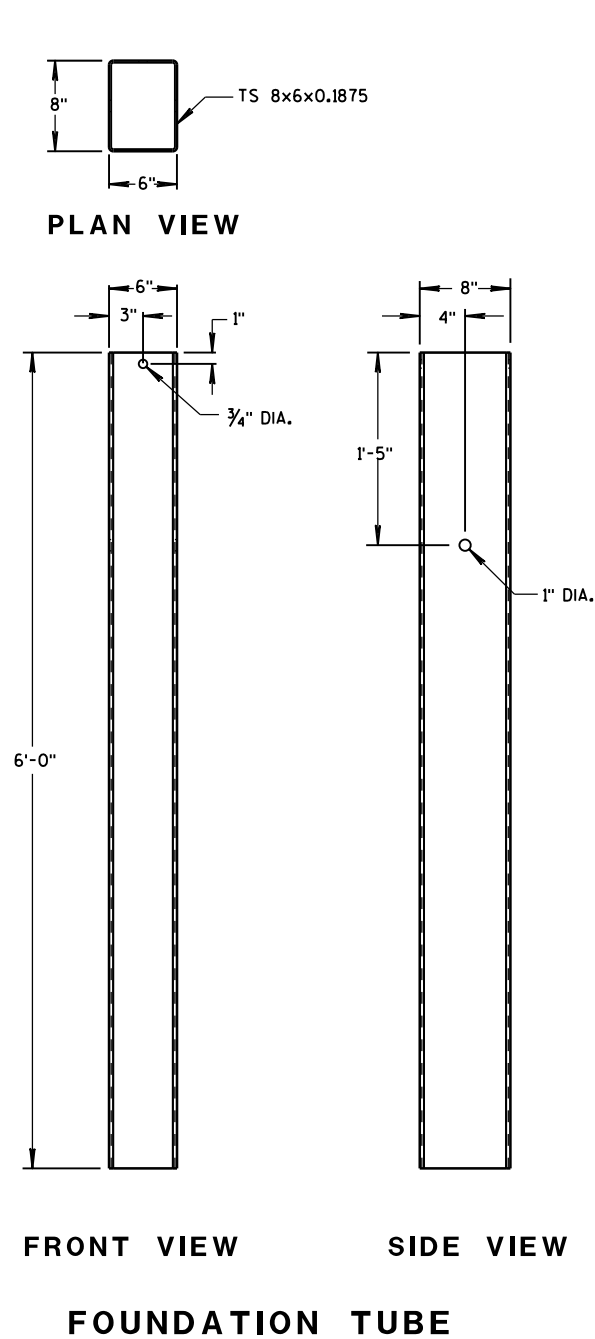
W BEAM END
SECTION ROUNDED

MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

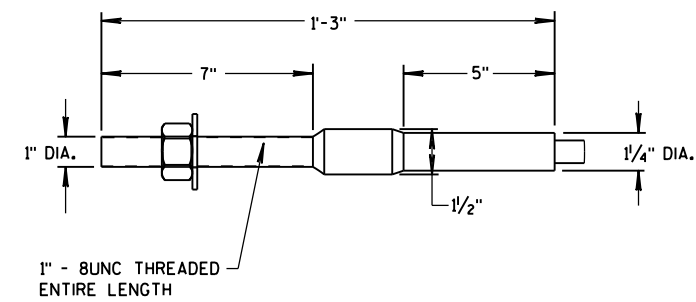
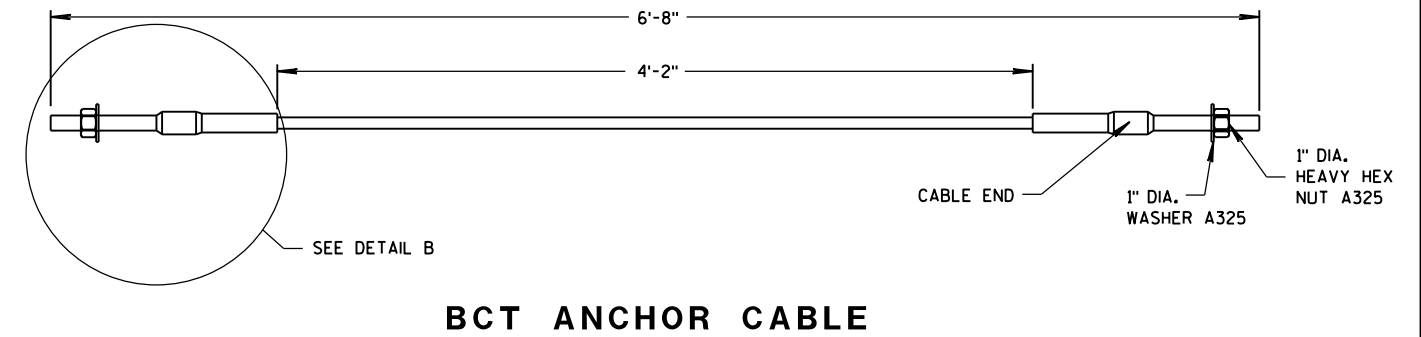
6

S.D.D. 14 B 47-2a

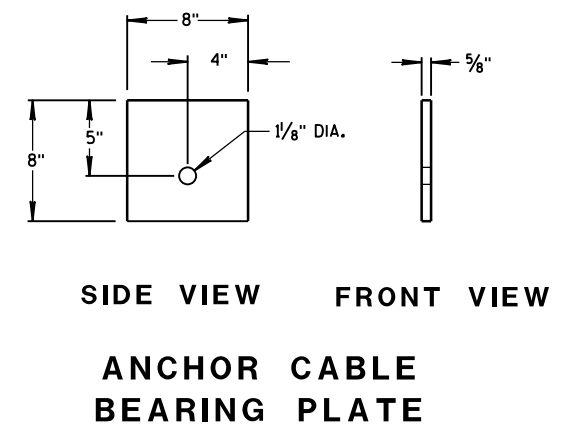


GENERAL NOTES

BCT ANCHOR CABLE IS A 3/4" DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. TREADED STUD SHALL CONFORM TO ASTM A325 OR SAE GRADE 5. MINIMUM BREAKING STRENGTH OF WIRE ROPE IS 43,000 LB. WIRE ROPE IS TO BE TAUT.

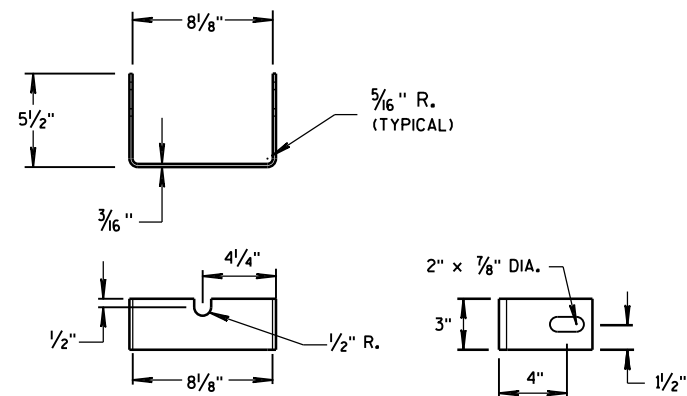


DETAIL B

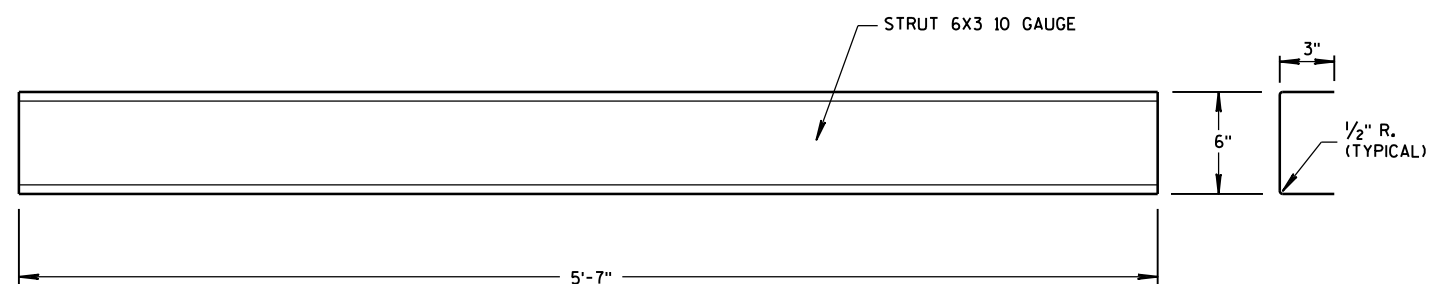


MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

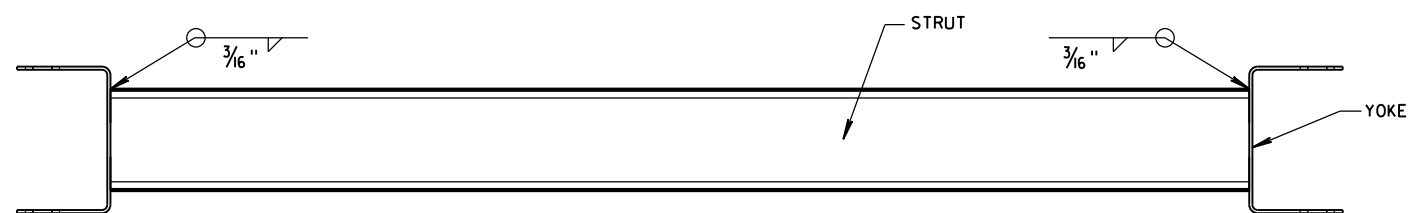
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



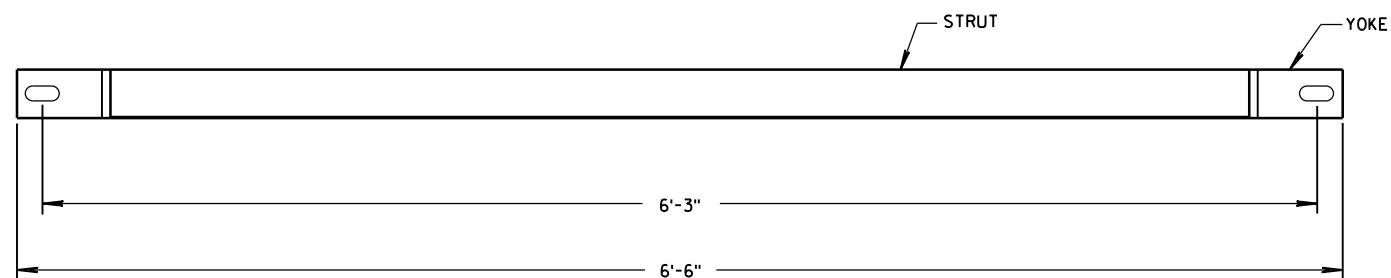
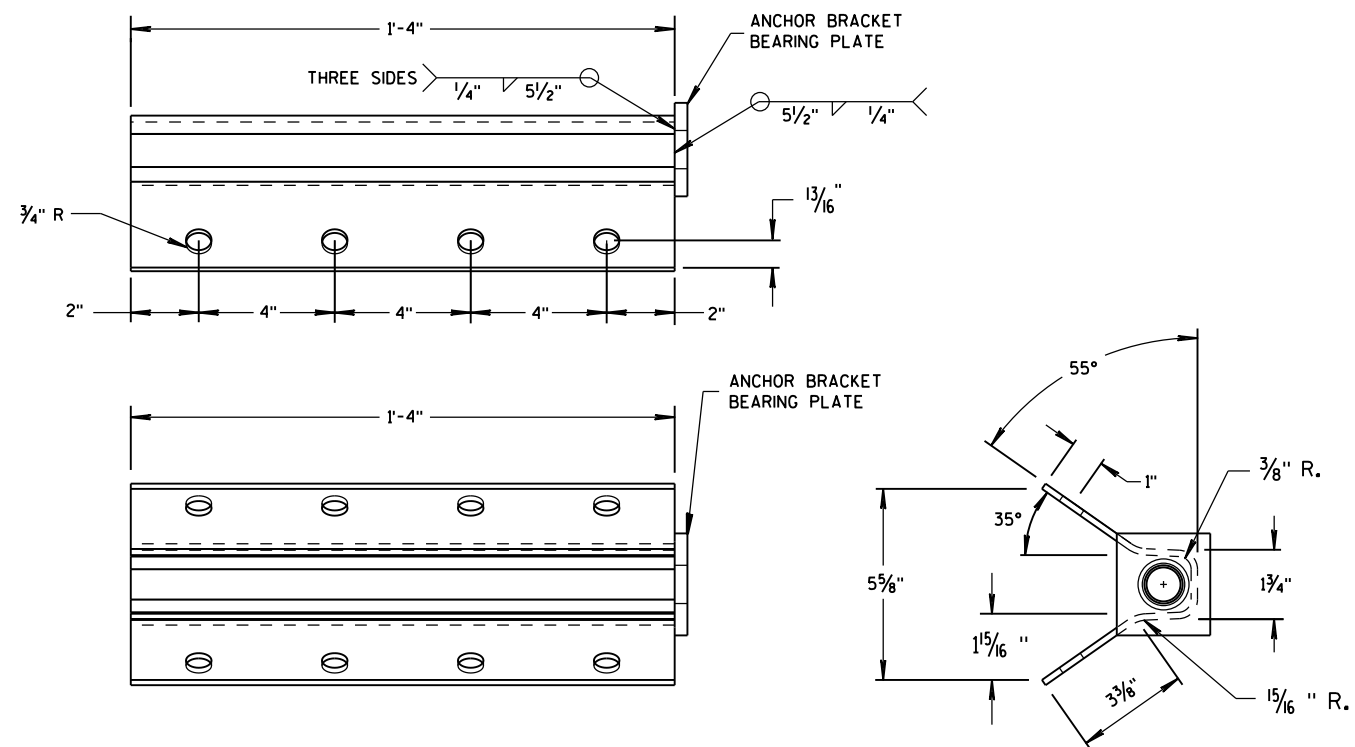
YOKE DETAIL



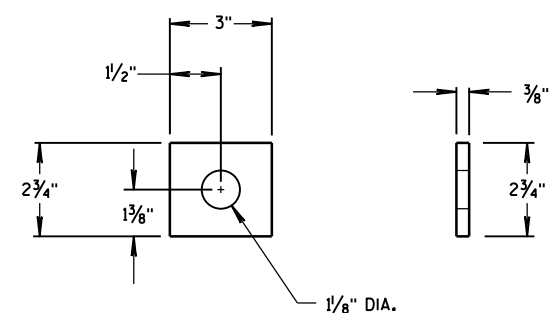
STRUT DETAIL



PLAN VIEW

FRONT VIEW
GROUND STRUT DETAIL

ANCHOR BRACKET

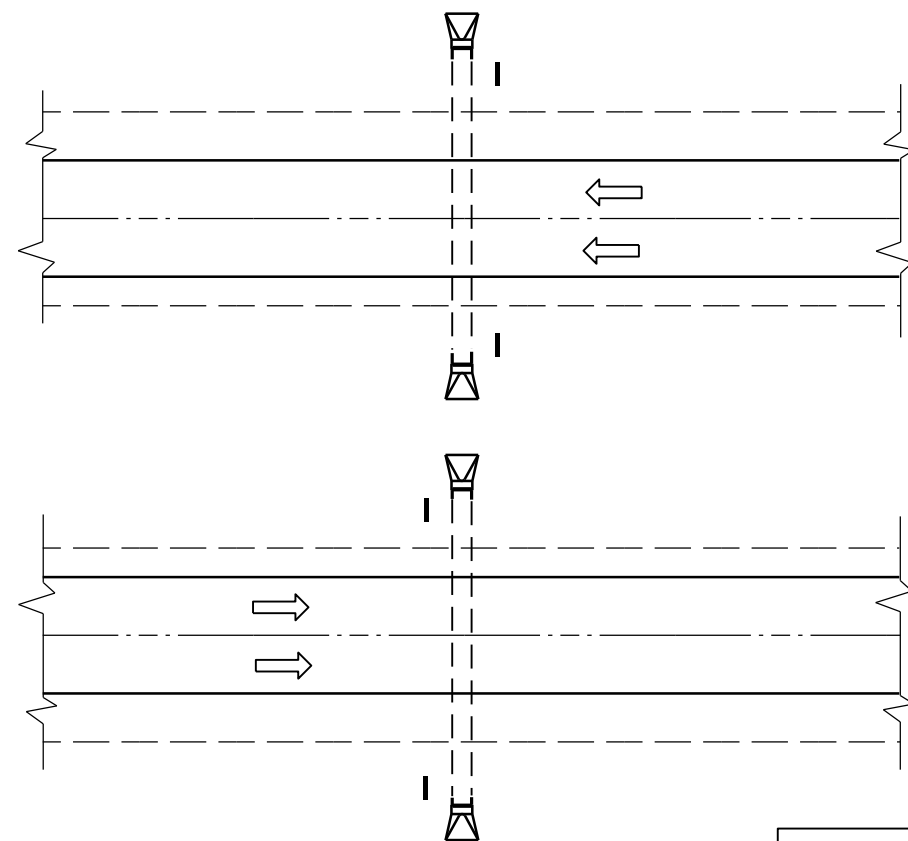
ANCHOR BRACKET
BEARING PLATEMIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINALSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

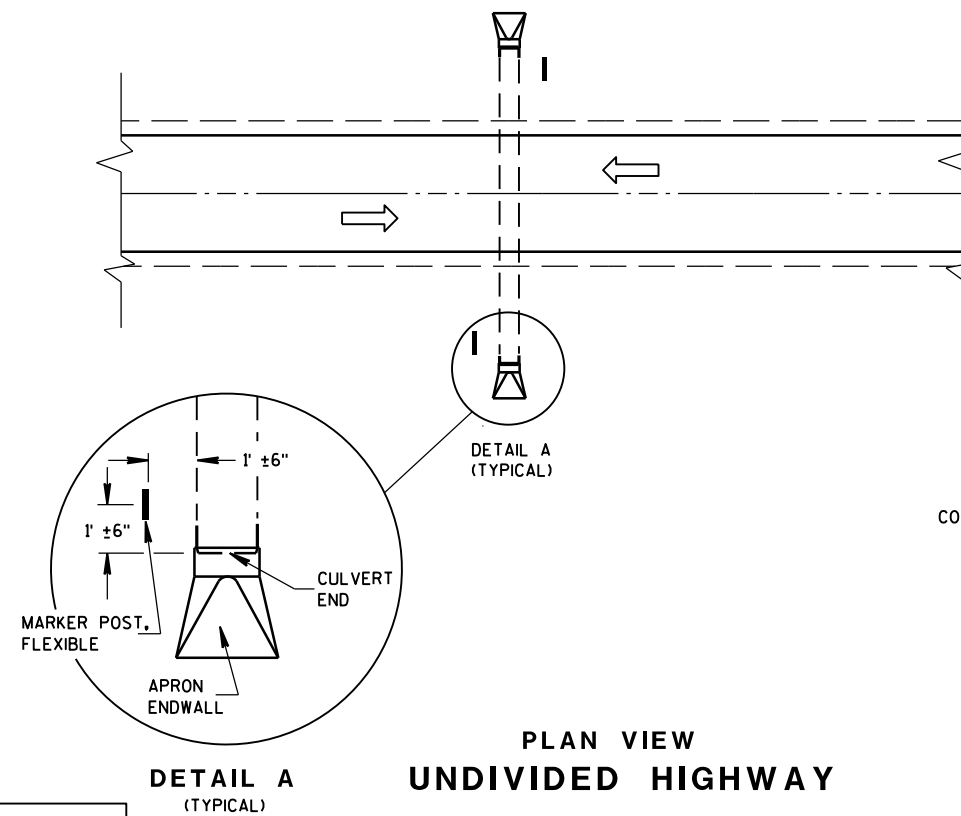
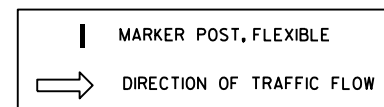
June 2014
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PLAN VIEW
DIVIDED HIGHWAY

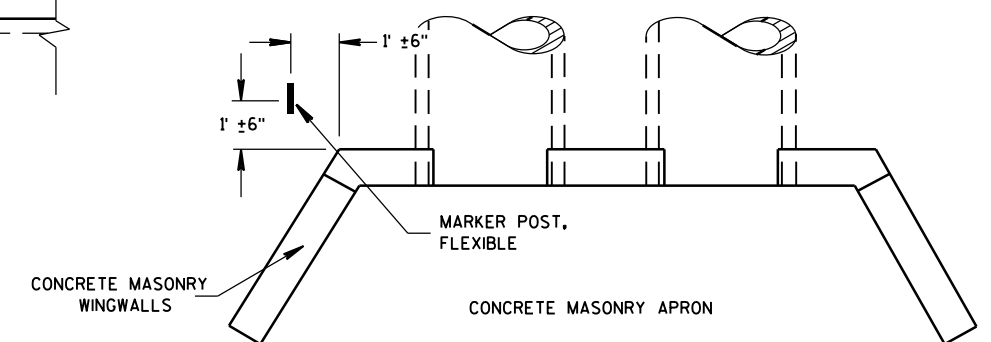


PLAN VIEW
UNDIVIDED HIGHWAY

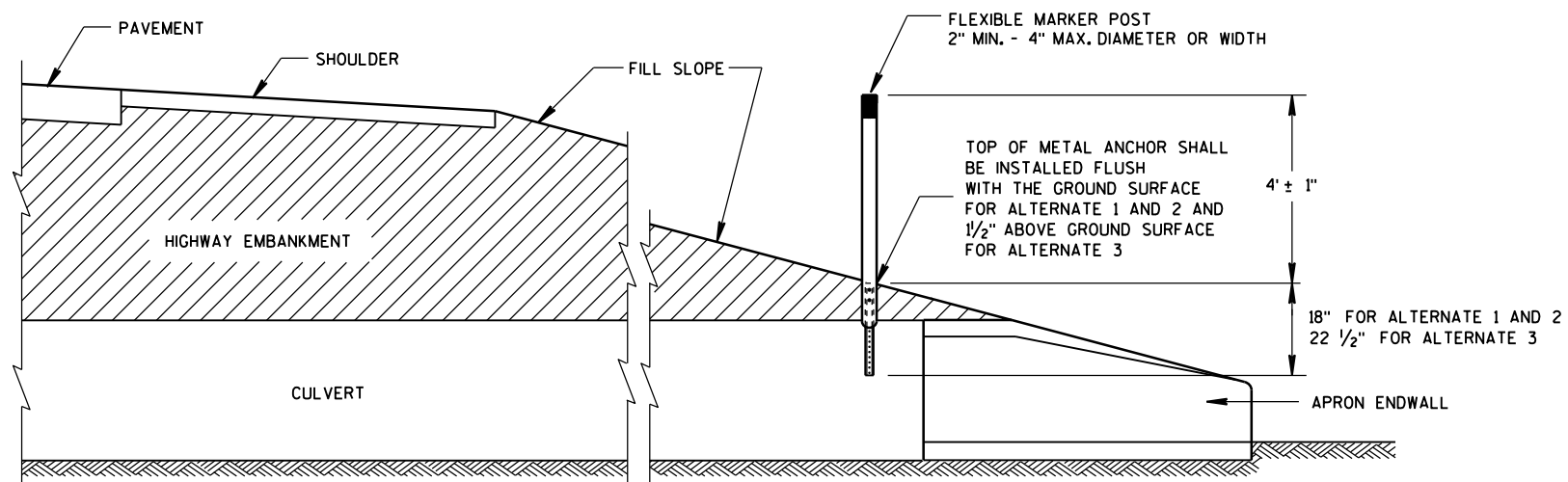
FLEXIBLE MARKER POST LOCATION

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.



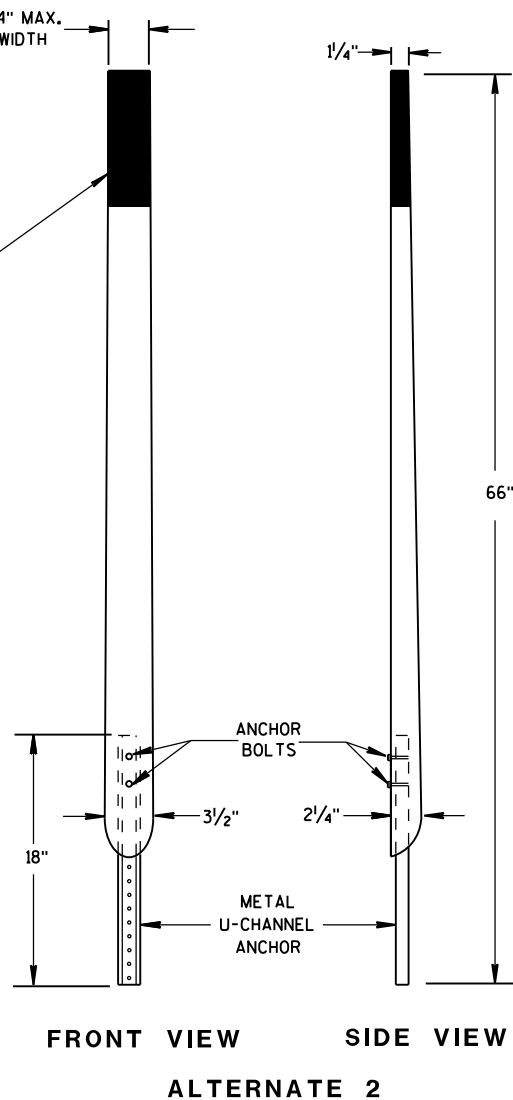
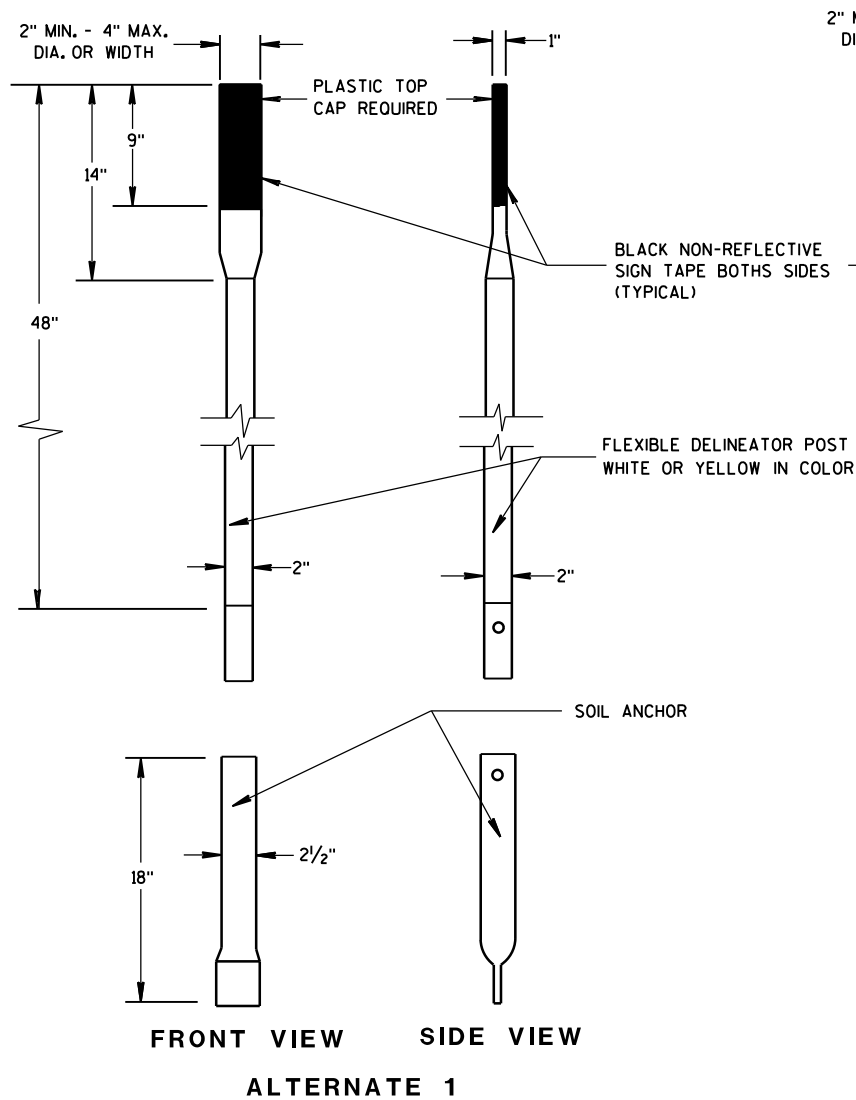
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



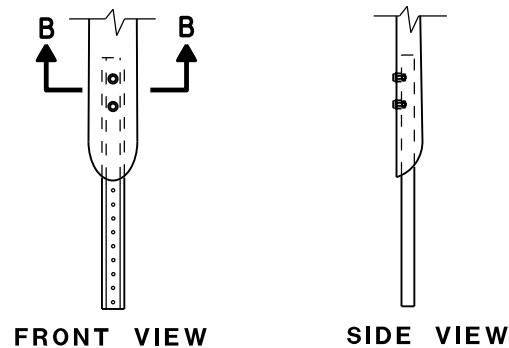
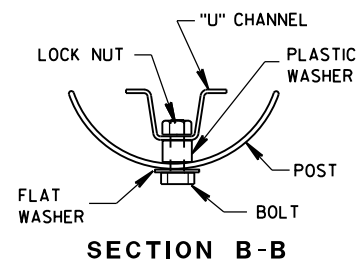
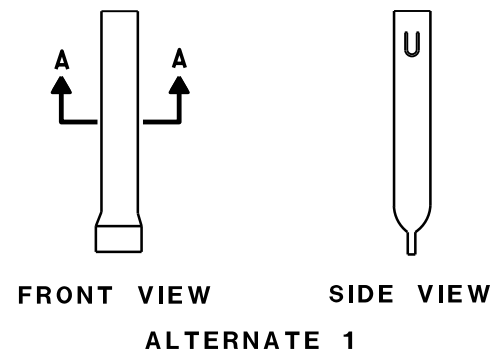
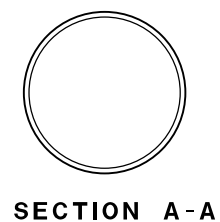
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

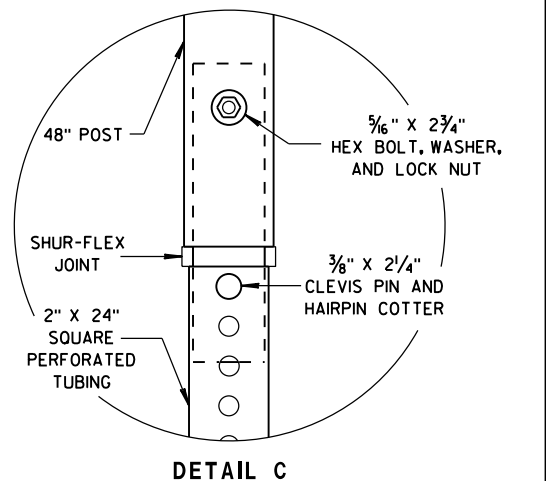
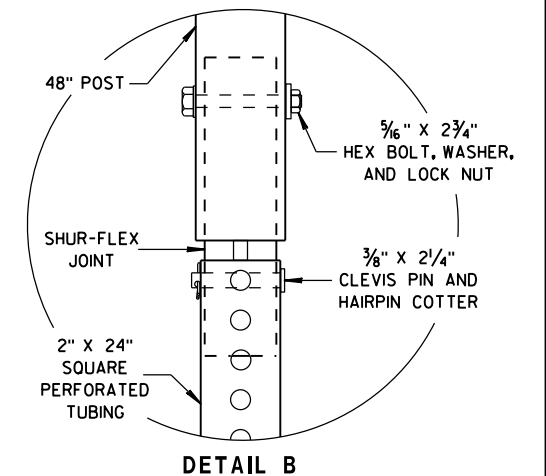
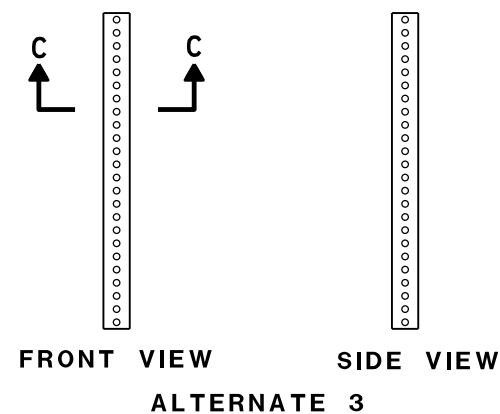
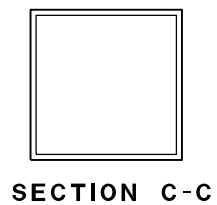
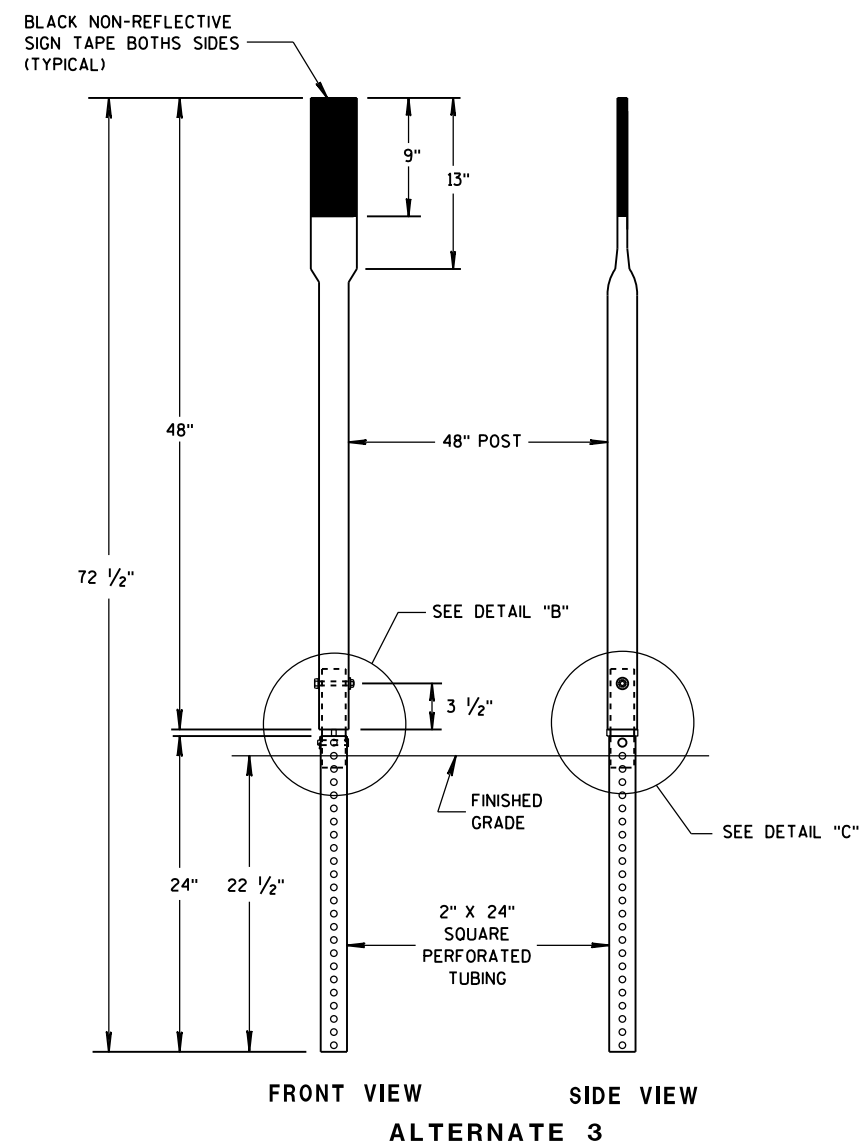
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



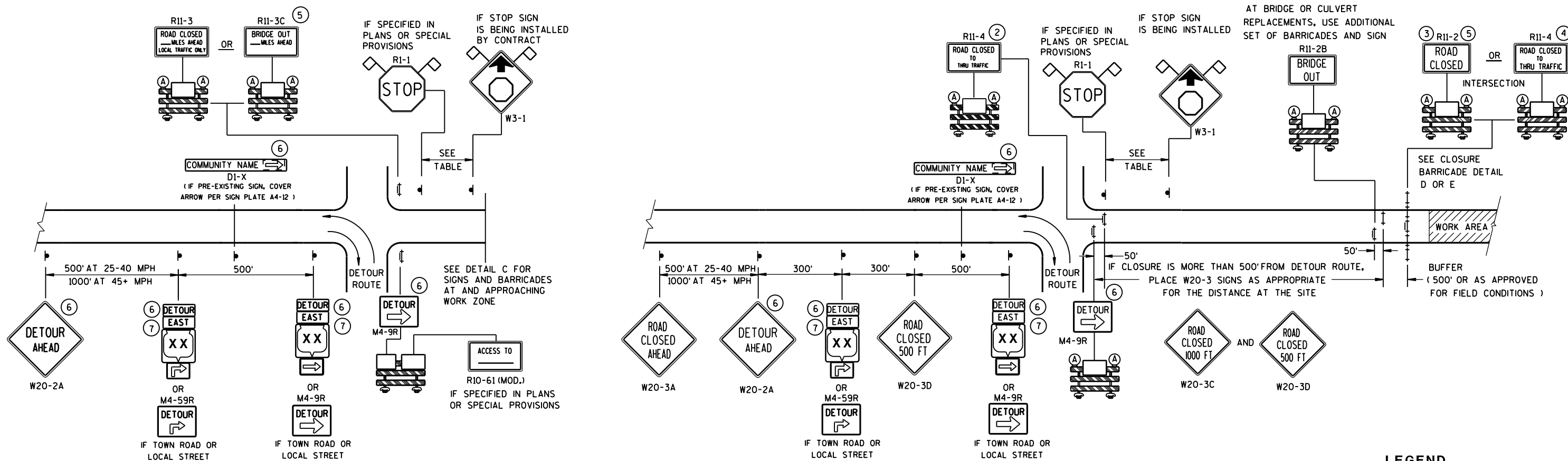
FLEXIBLE MARKER POSTS



FLEXIBLE MARKER POST ANCHORS



FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

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

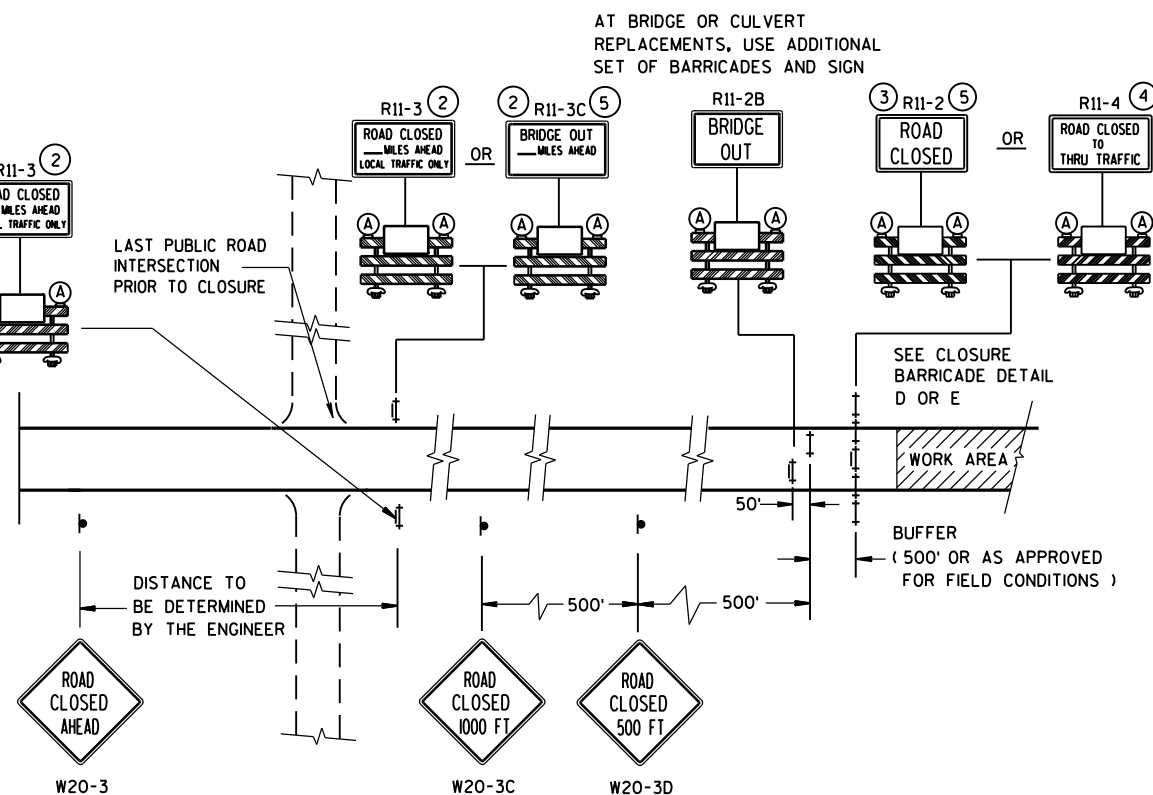
WORK AREA

DETOUR EAST M4-8
M3-X
XX OR COUNTY XX OR XX
M1-4 M1-5A M1-6

M05-1 OR M06-1

FLAGS, 16" X 16" MIN., (ORANGE)

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



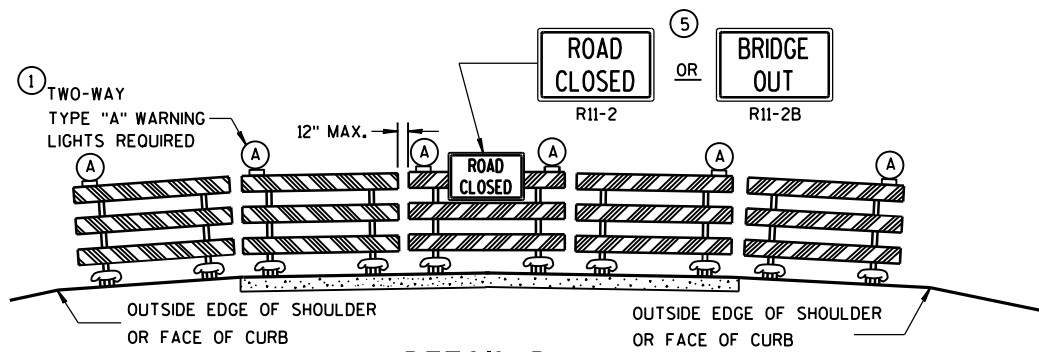
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

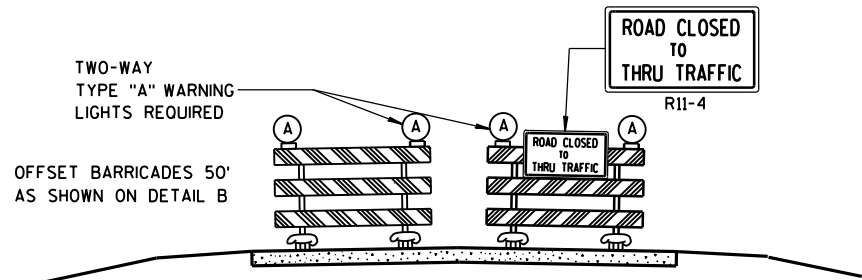
**BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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:

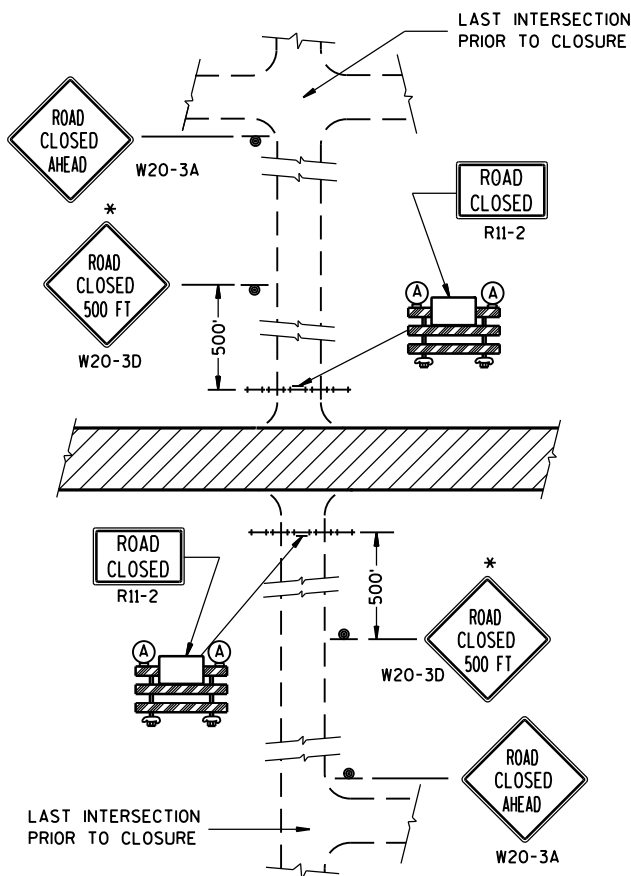
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36"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

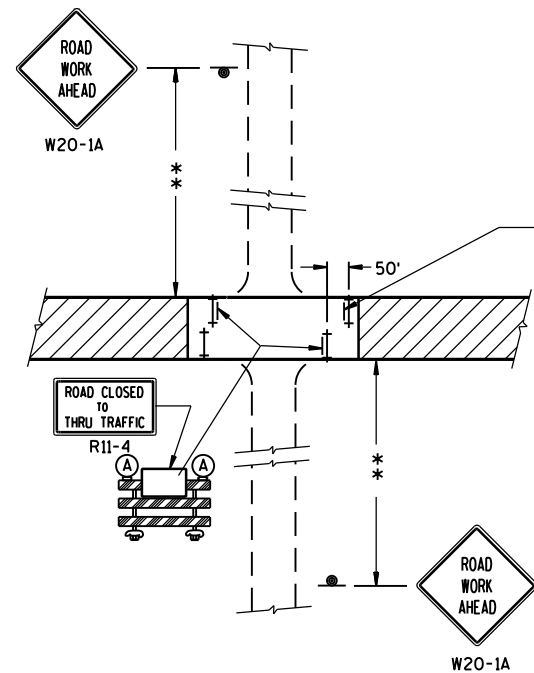
BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

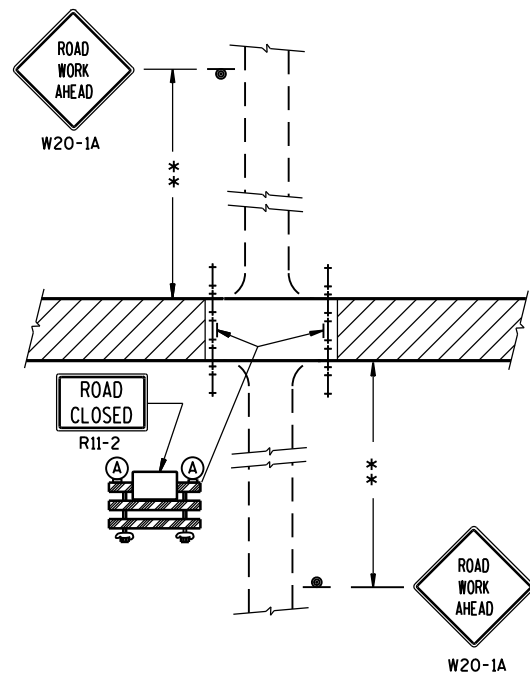
Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



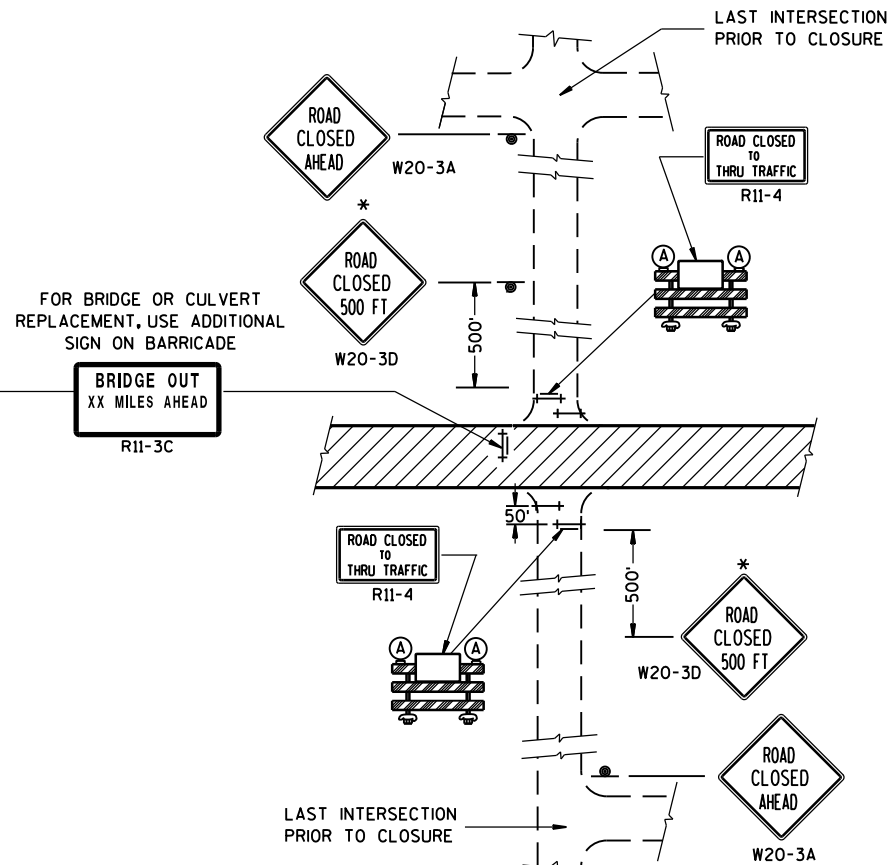
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

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

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

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

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015

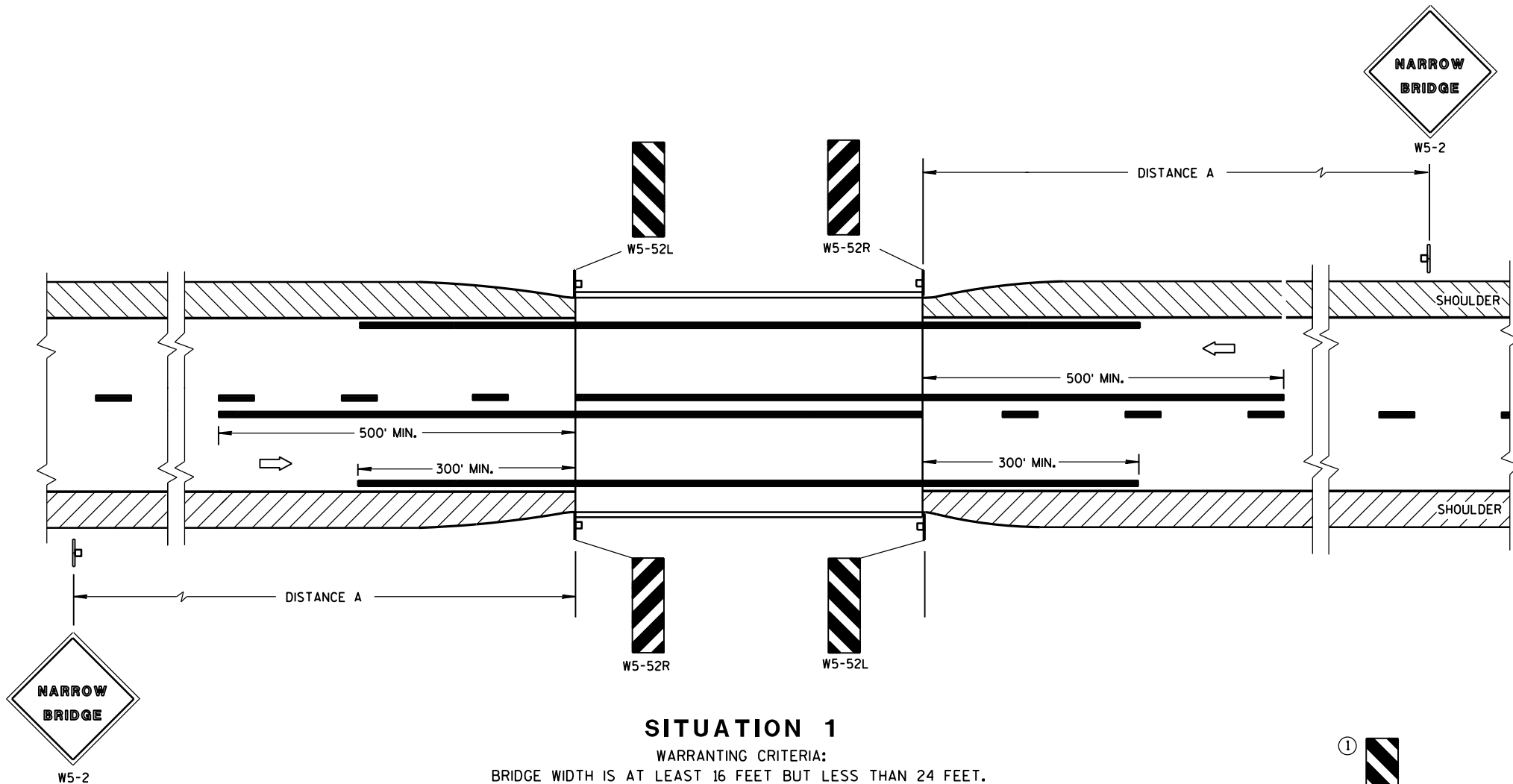
DATE

FHWA

/S/ Peter Amakobe Atepe

STATEWIDE WORK ZONE TRAFFIC

SAFETY ENGINEER

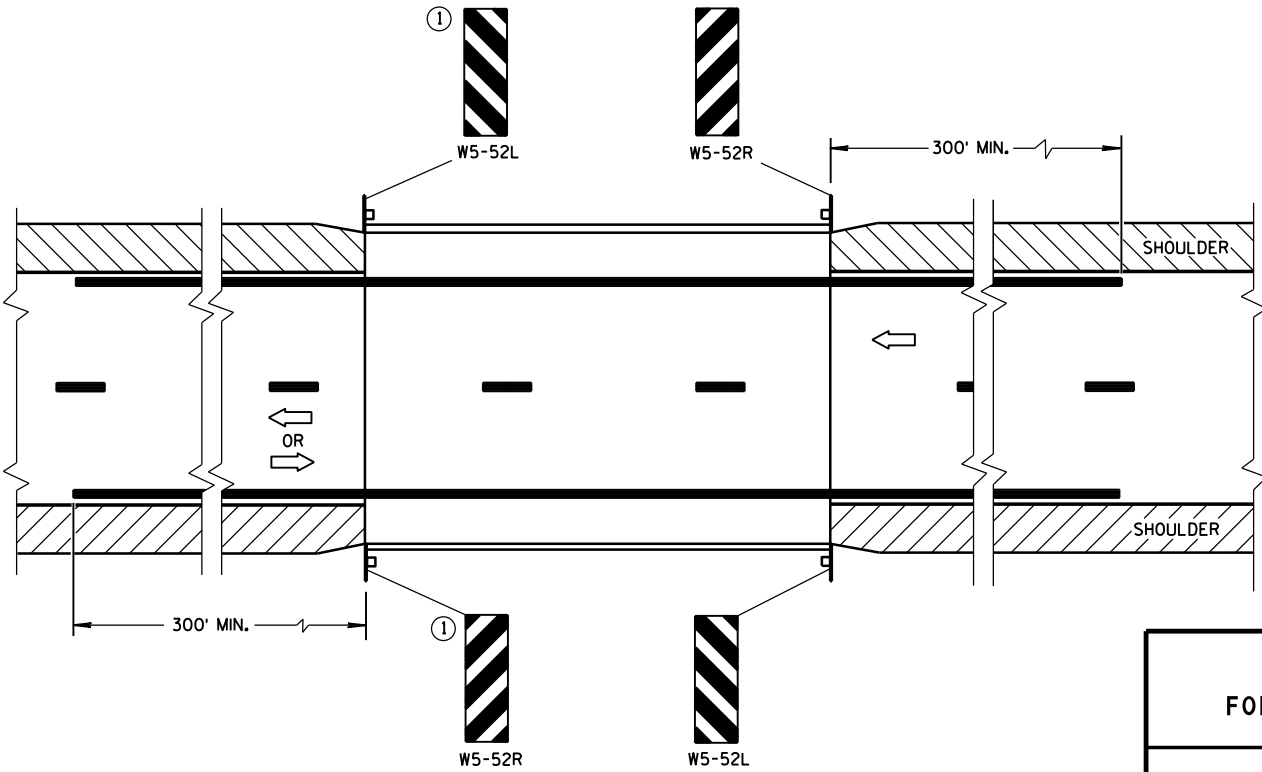


SITUATION 1

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'



SITUATION 2

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

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.

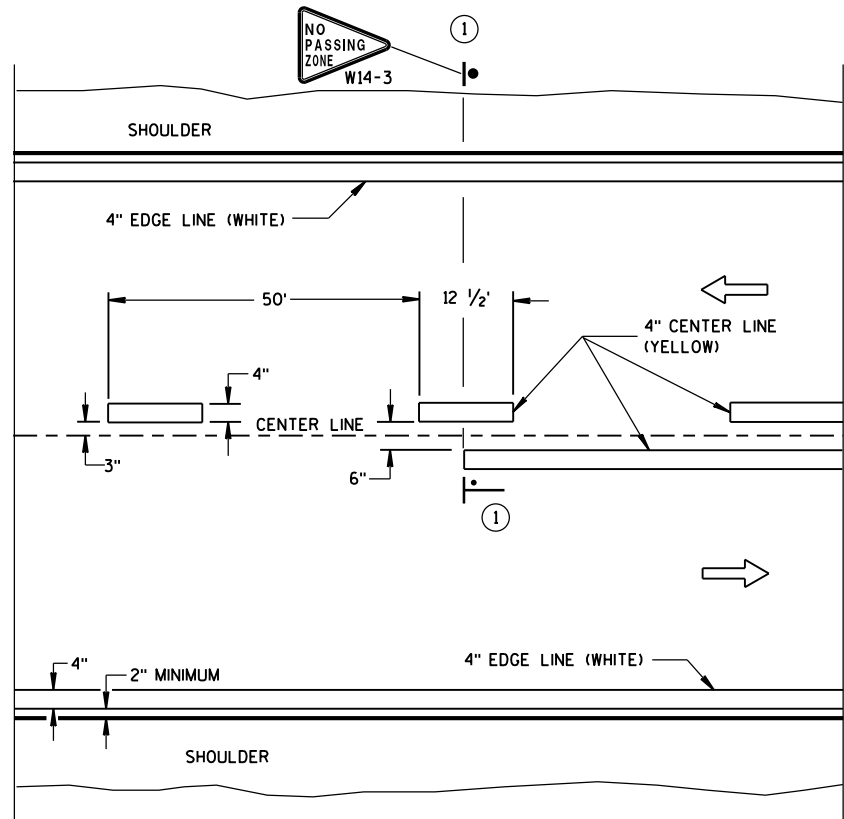
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC

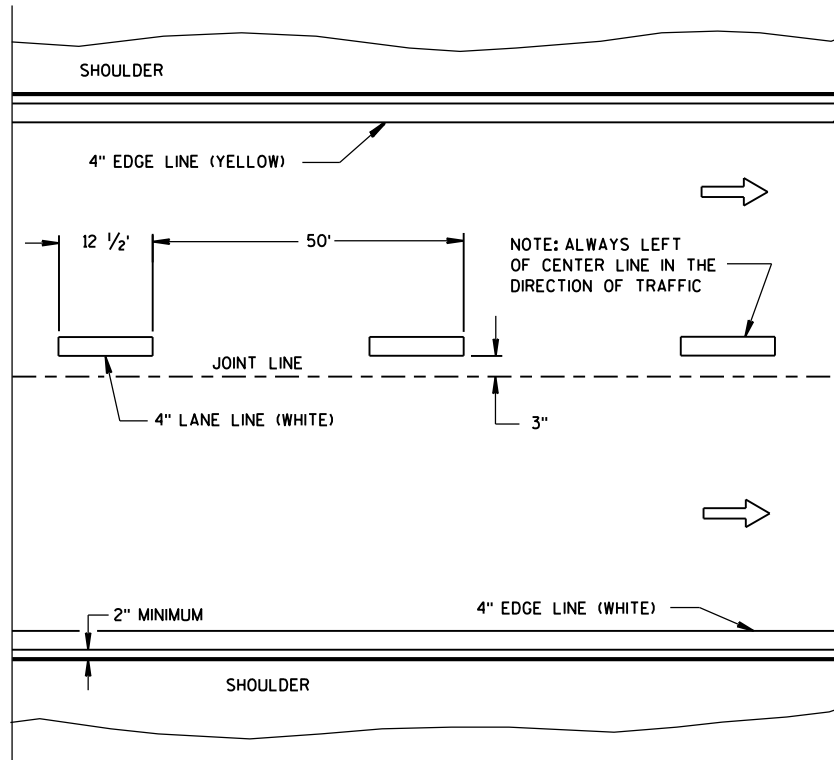
**SIGNING & MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

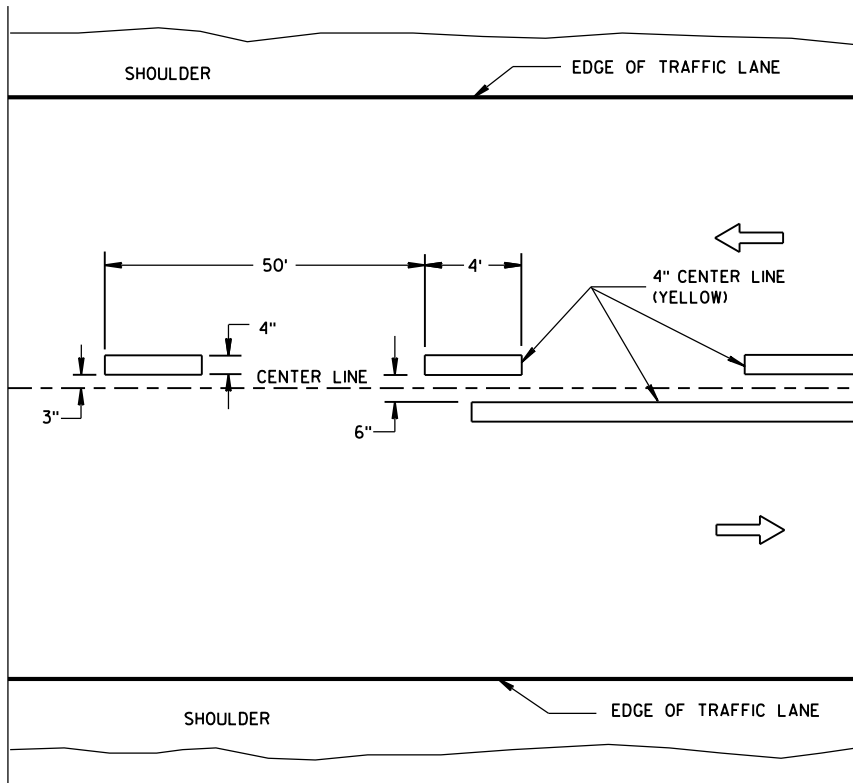


TWO WAY TRAFFIC

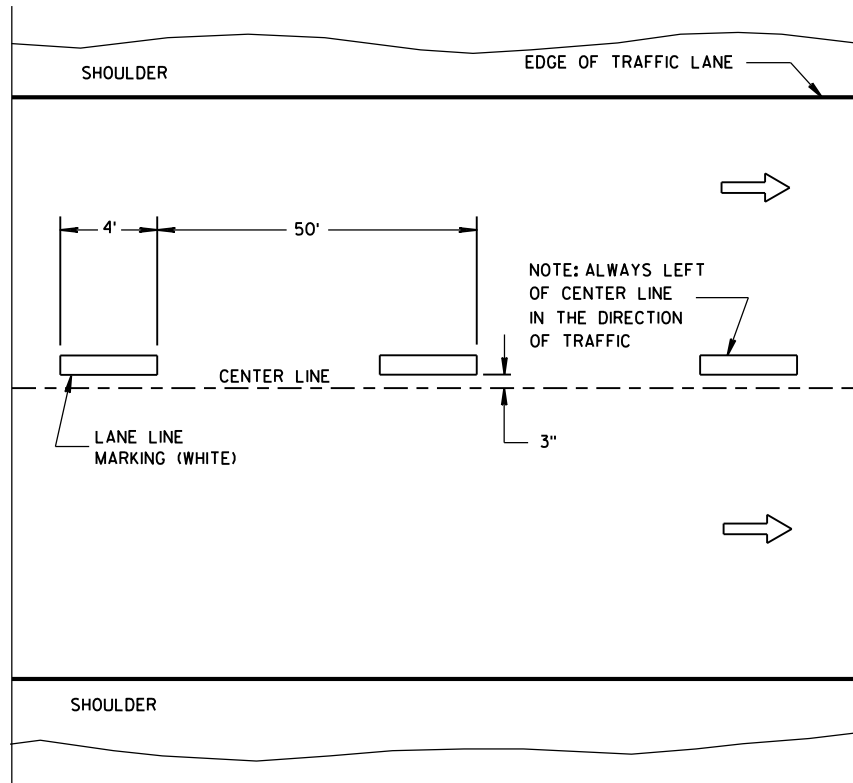


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

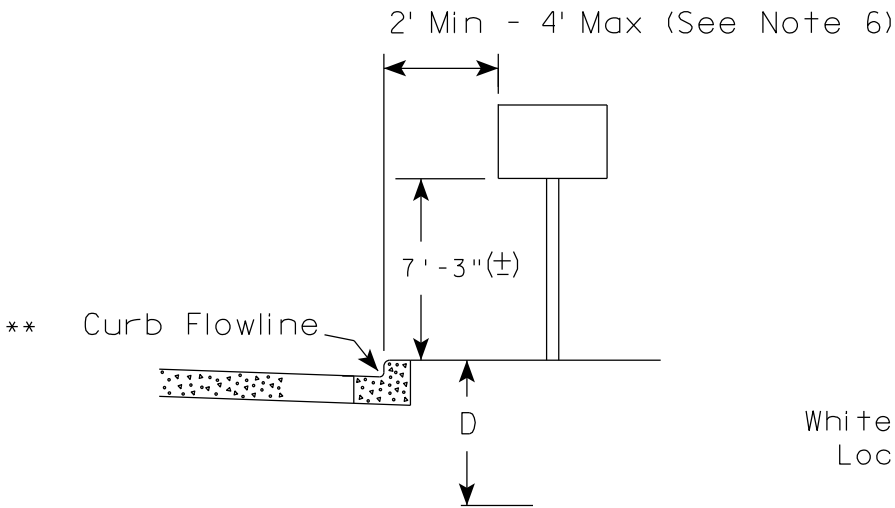
- ├── "T" MARKING
- POST MOUNTED SIGN

LONGITUDINAL MARKING
(MAINLINE)

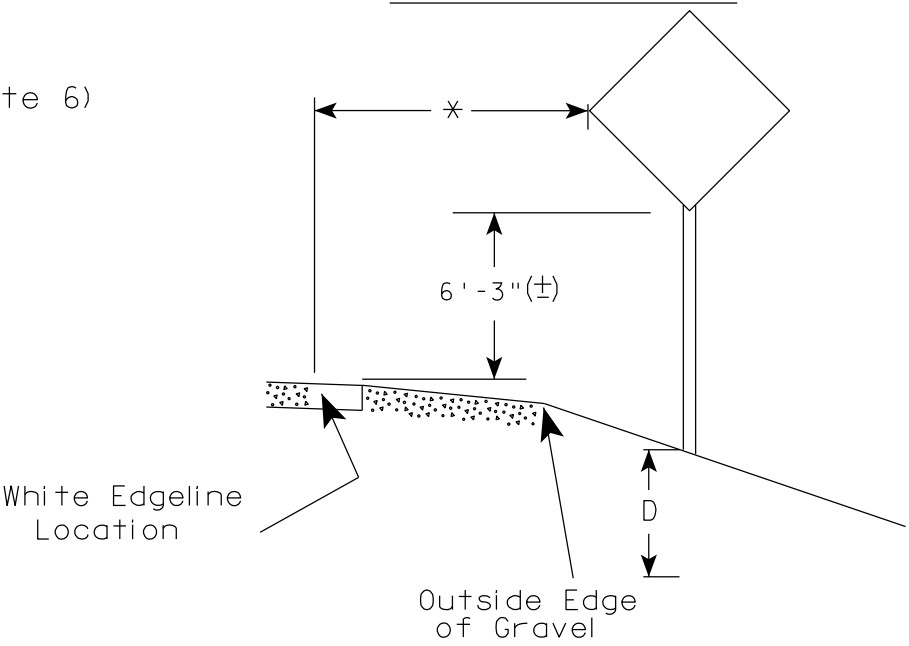
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

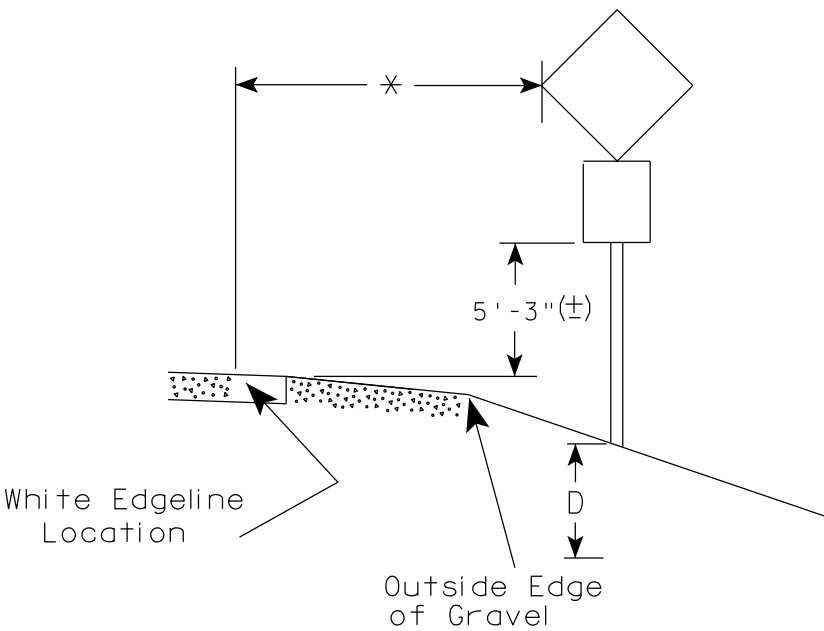
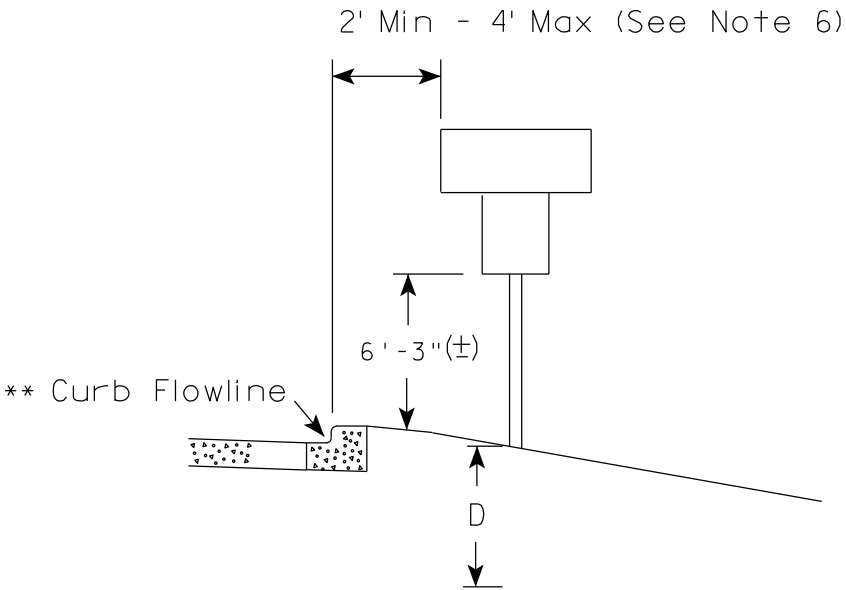
URBAN AREA



RURAL AREA (See Note 2)



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



POST EMBEDMENT DEPTH

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

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

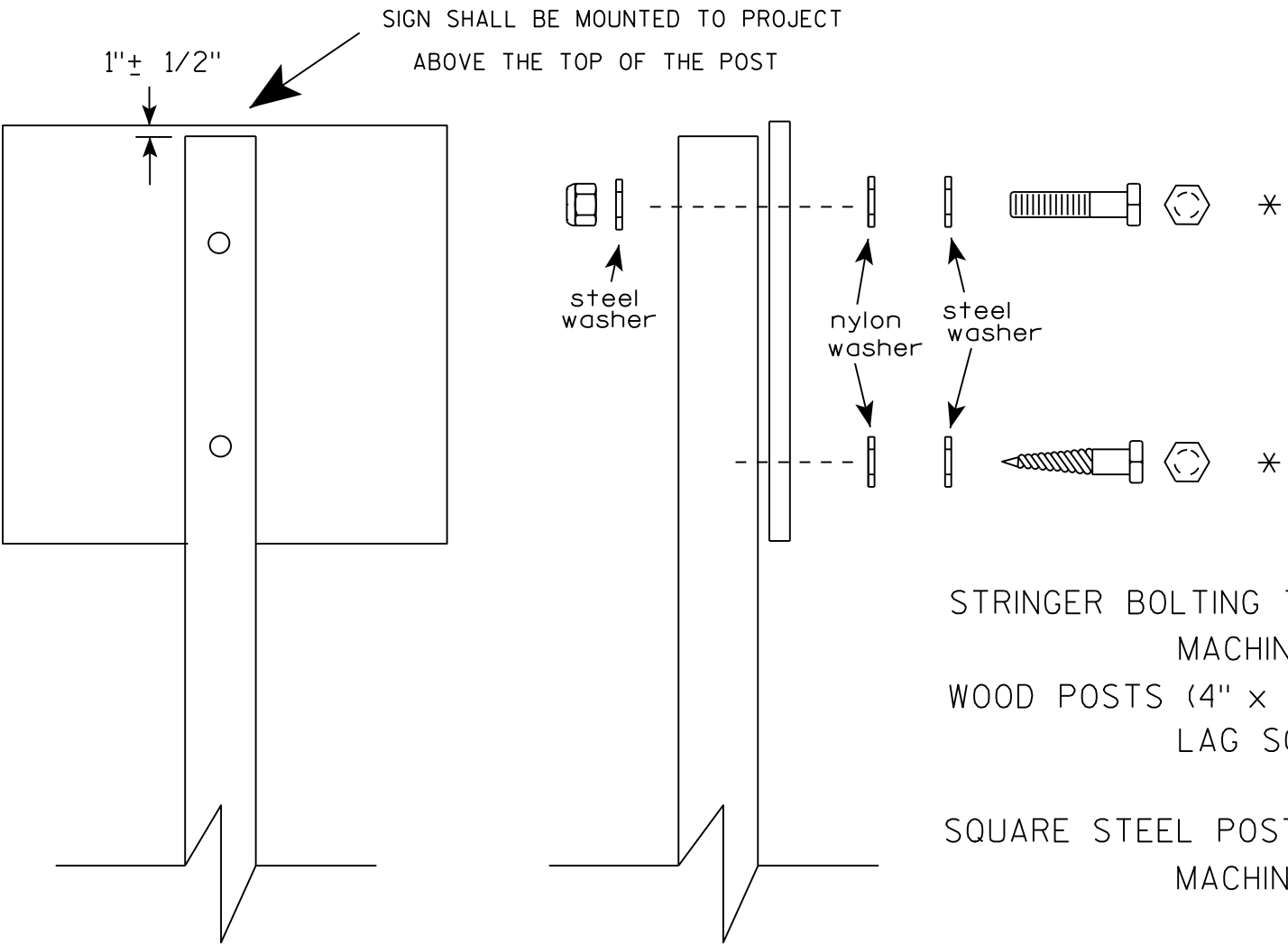
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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



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

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

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

- 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

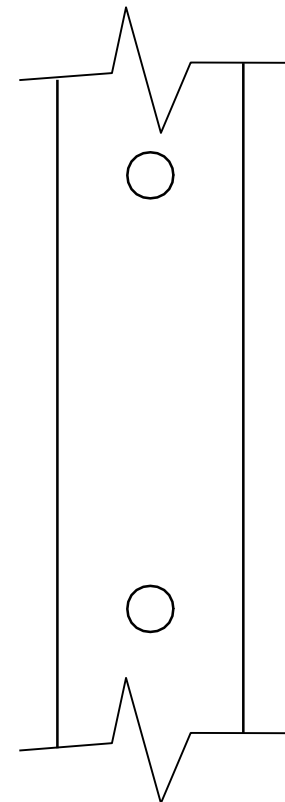
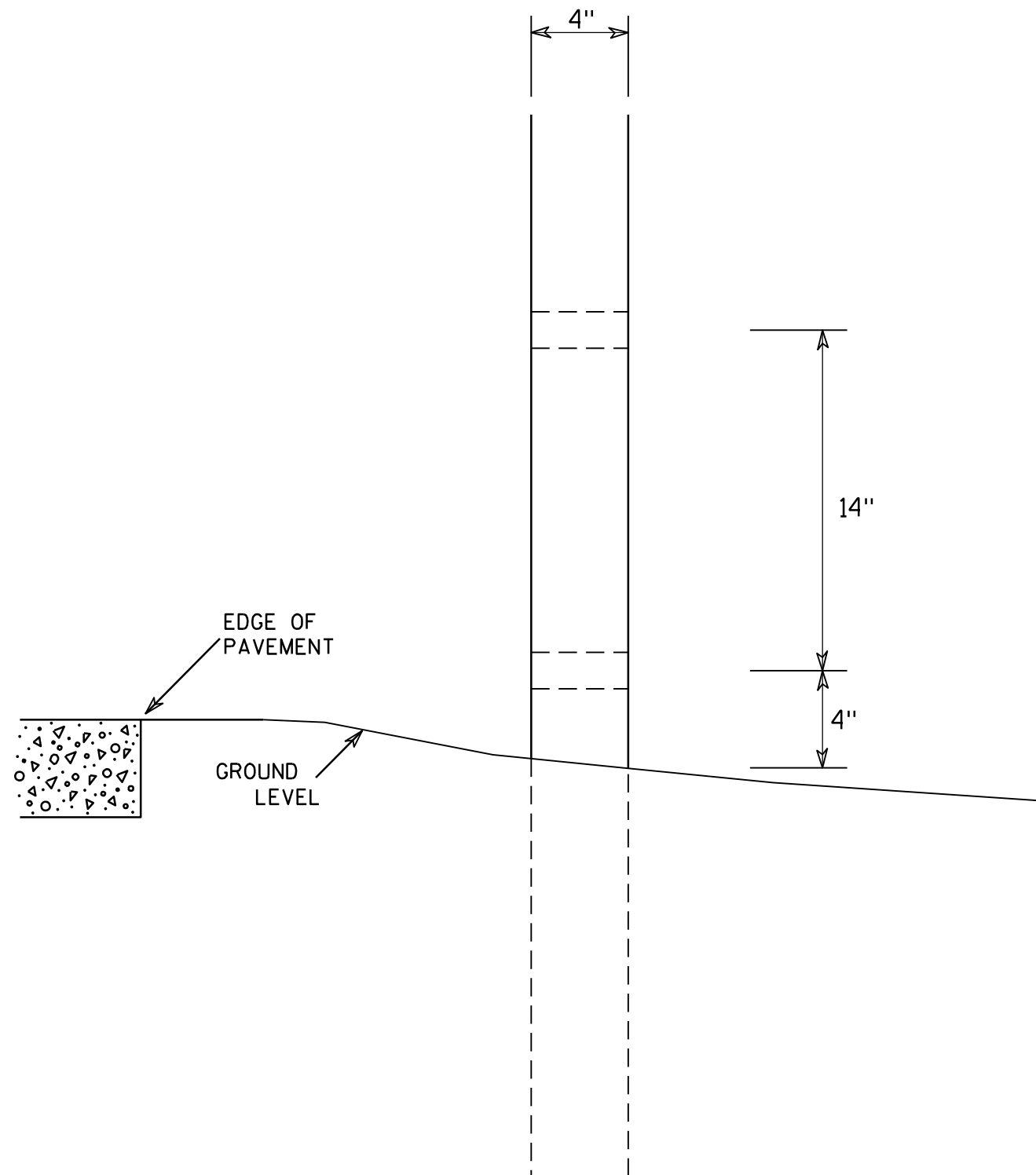
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require 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



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: 7846-04-70

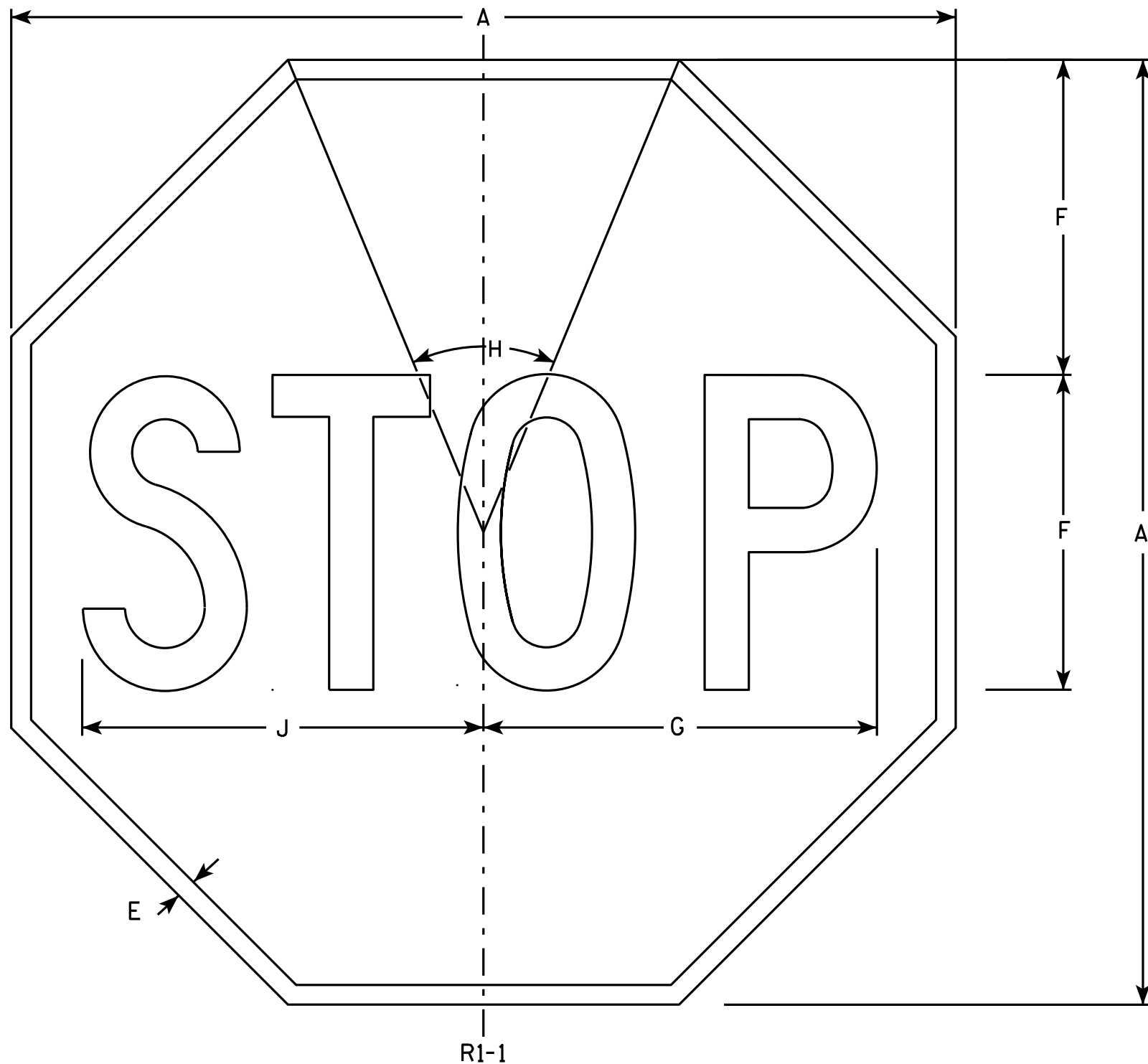
HWY: CTH K

COUNTY: CLARK

SHEET NO:

E

7



NOTES

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

7

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

STANDARD SIGN
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

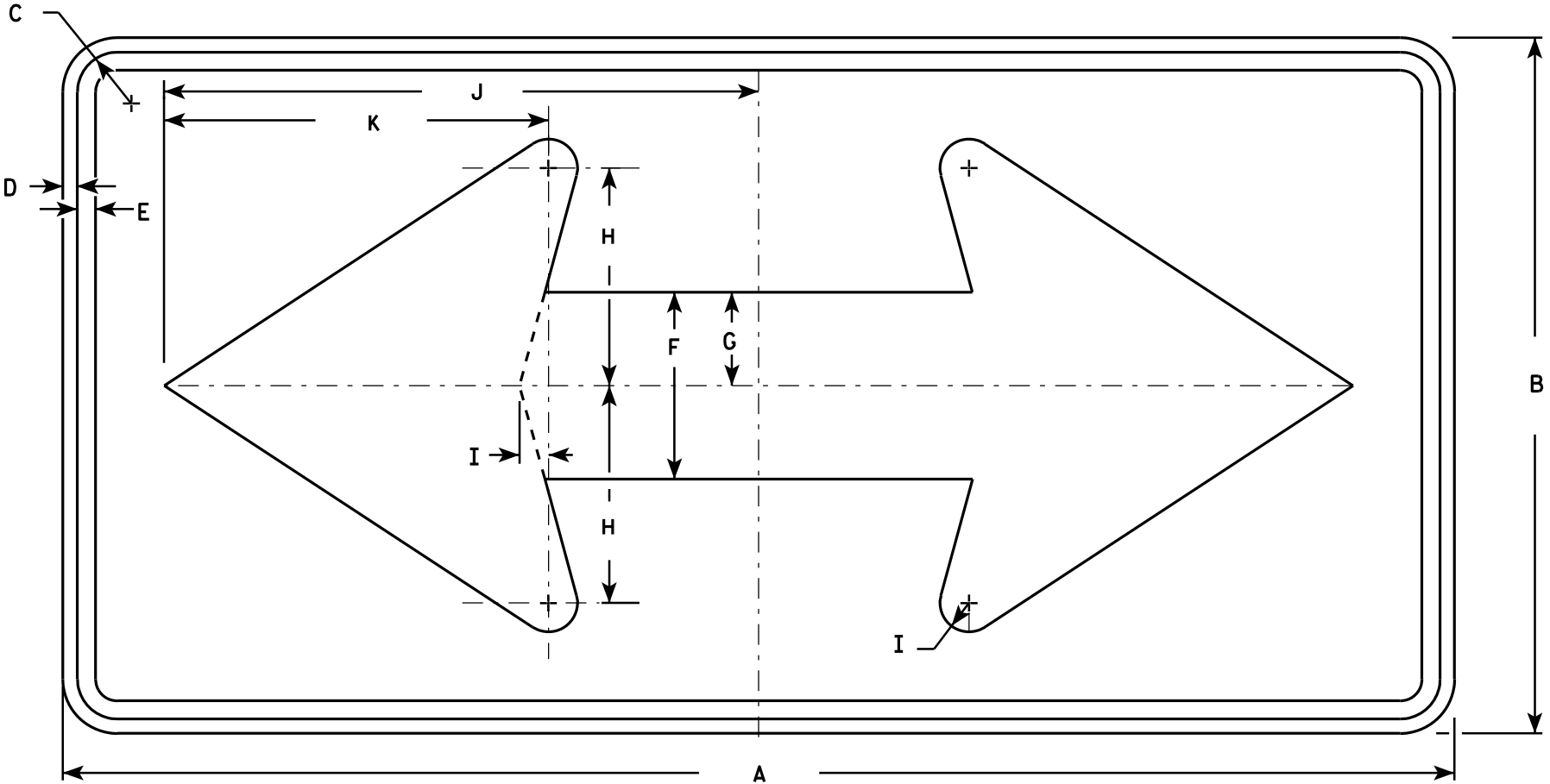
PROJECT NO: 7846-04-70

HWY: CTH K

COUNTY: CLARK

SHEET NO:

E



W1-7

NOTES

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

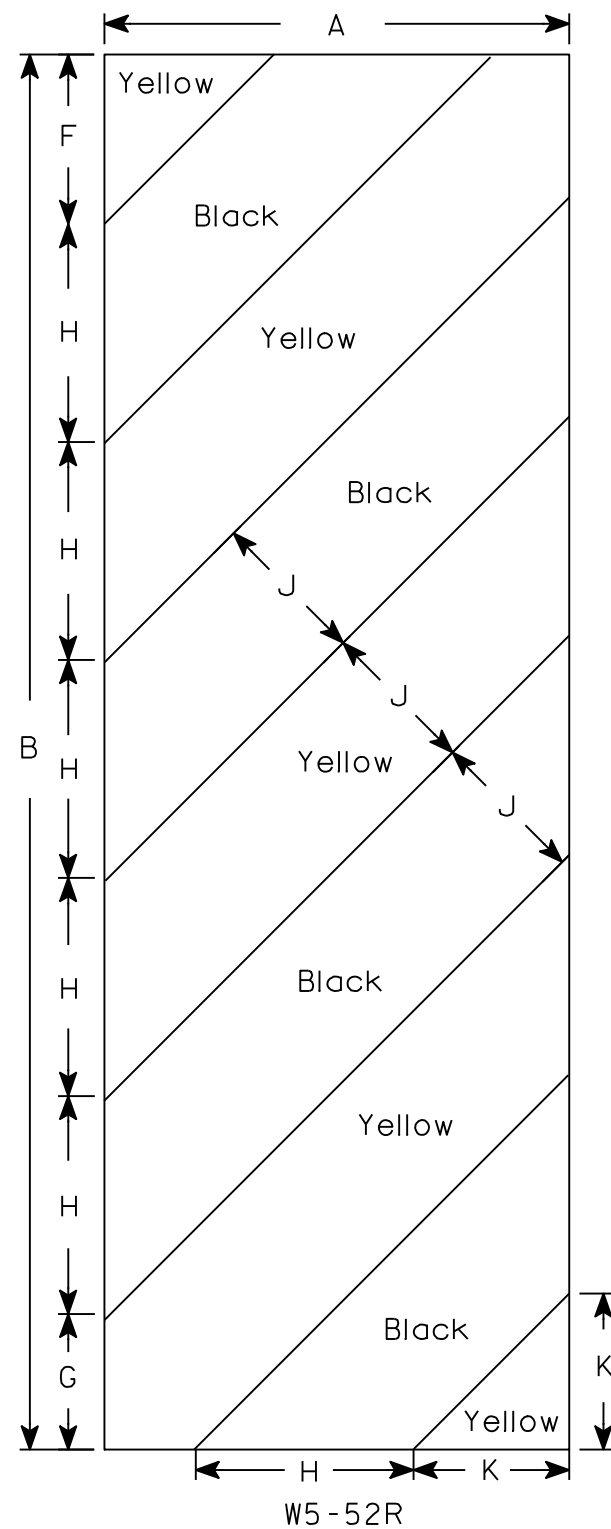
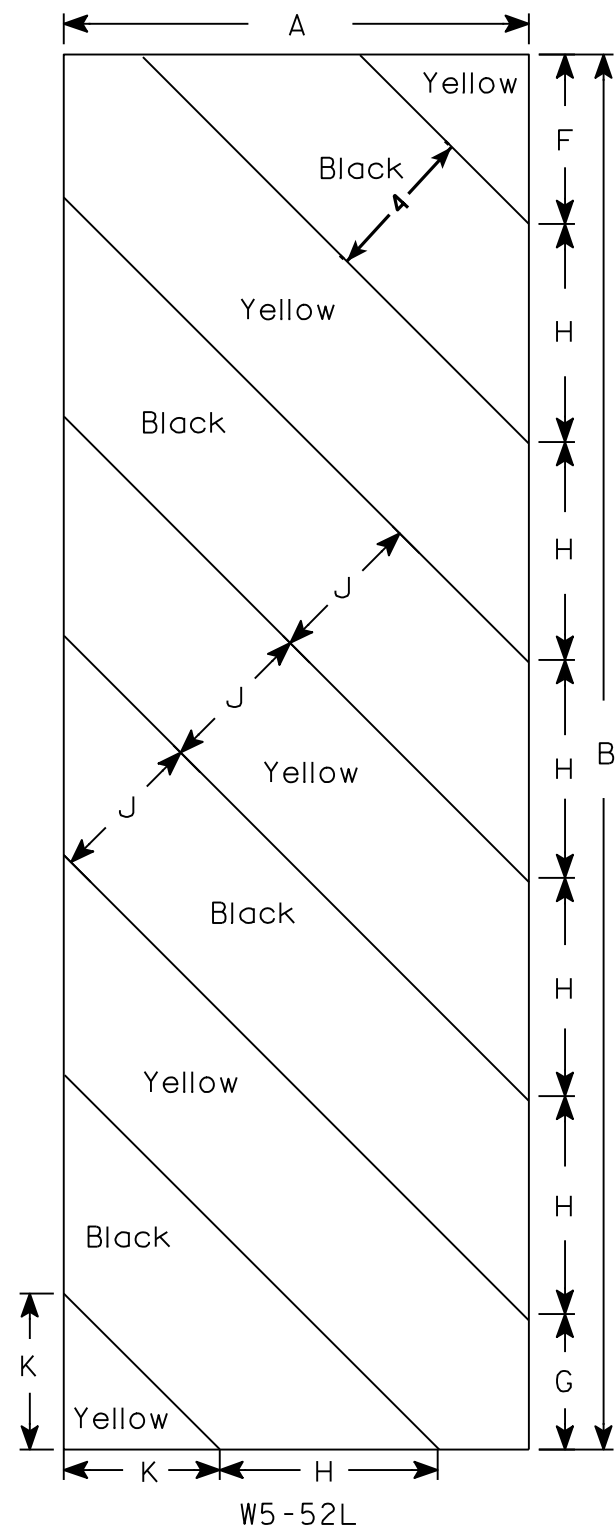
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

STANDARD SIGN
W1-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-7.7



NOTES

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

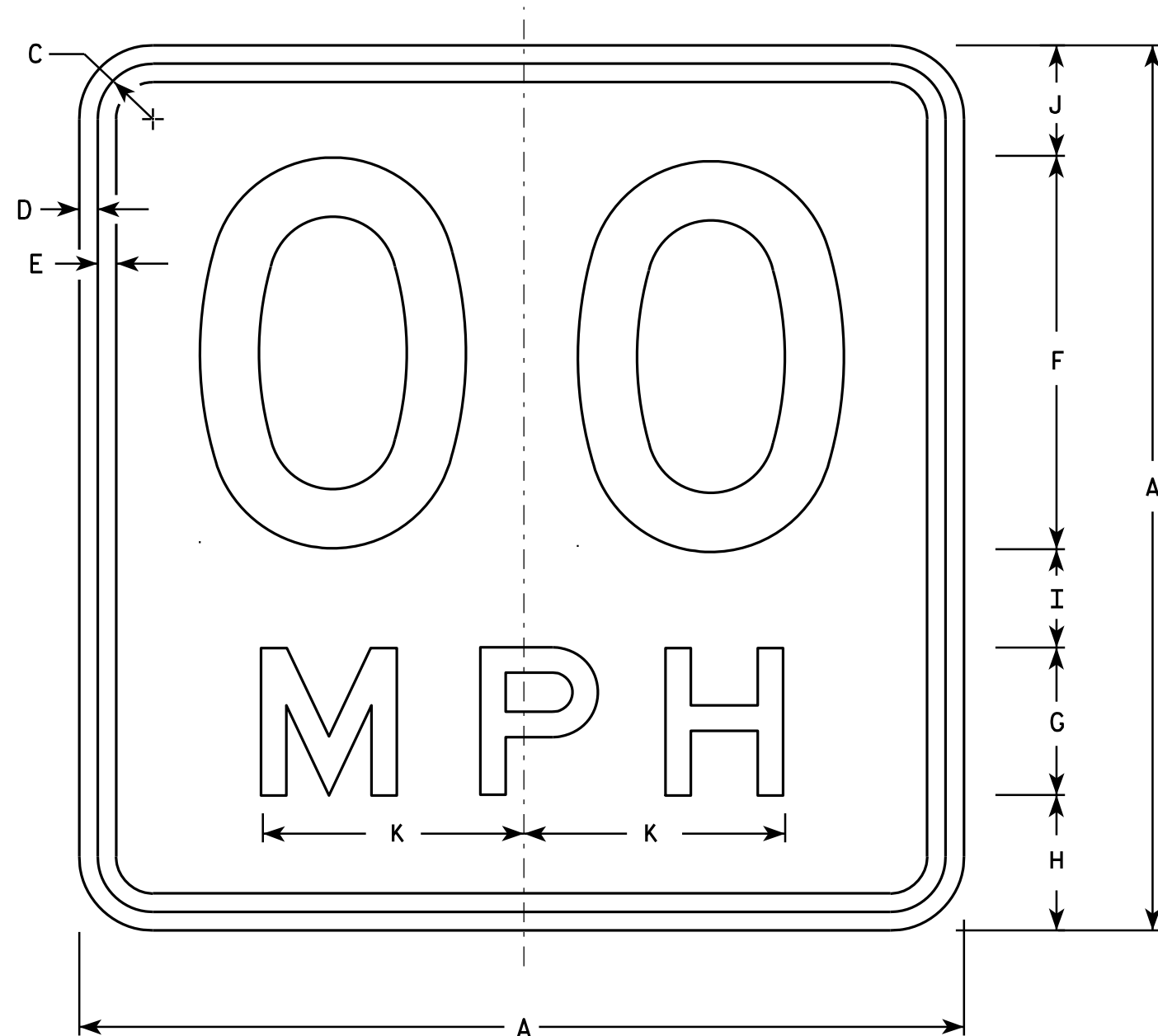
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
2M	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
3	18	54				6	5 1⁄2	8 1⁄2	45°	6	6 9⁄16																6.75
4																											
5																											

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



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. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

W13-1

- * For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

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.
* 2S	1	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25
	2	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25
* 2M	3	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25
	4	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8															4.00
5	4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8															9.00
	5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8															9.00

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO: 7846-04-70

HWY: CTH K

COUNTY: CLARK

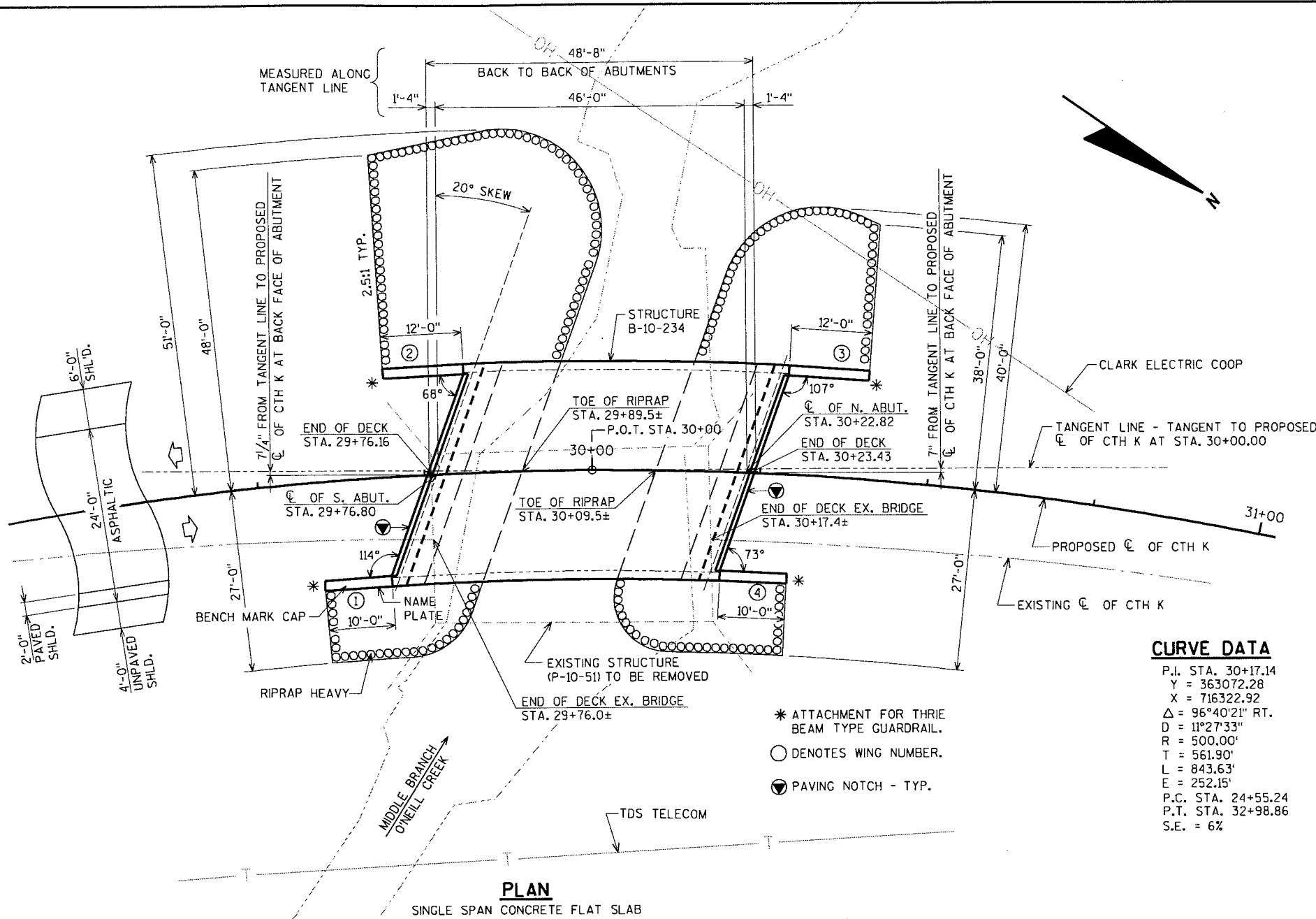
SHEET NO:

E

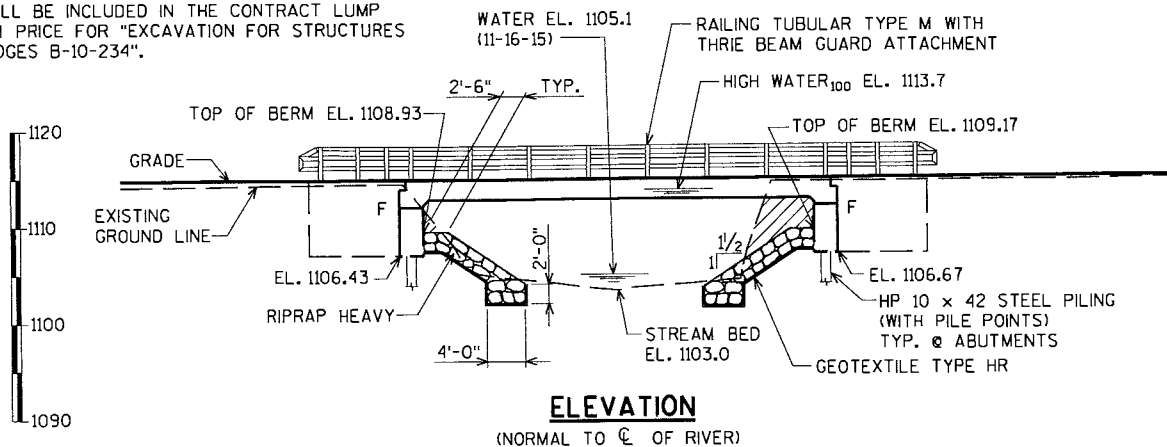
\$PRNAME\$
U:\42-1012.00 - Clark Co. CTH K+BRIDGE+421012 gp.dgn

DATE: DATE: DATE:
CHECKED BY: BACK CHECKED BY: CORRECTED BY:

8



COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-10-234".



LIST OF DRAWINGS

1. GENERAL PLAN
2. QUANTITIES AND NOTES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT WING 1 DETAILS
6. SOUTH ABUTMENT WING 2 DETAILS
7. SOUTH ABUTMENT DETAILS & BILL OF BARS
8. NORTH ABUTMENT
9. NORTH ABUTMENT WING 3 DETAILS
10. NORTH ABUTMENT WING 4 DETAILS
11. NORTH ABUTMENT DETAILS & BILL OF BARS
12. SUPERSTRUCTURE
13. SUPERSTRUCTURE PLAN
14. RAILING TUBULAR TYPE M

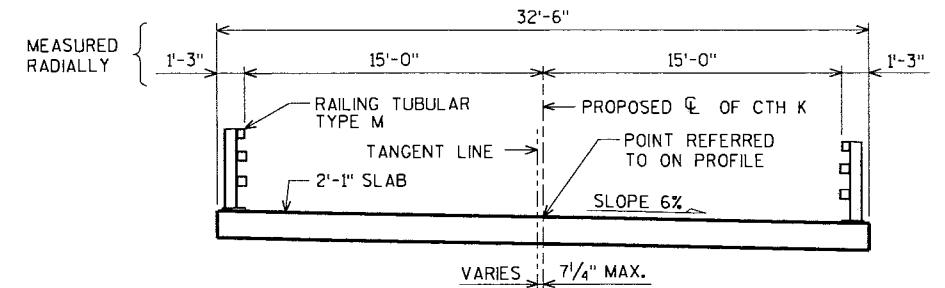


BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

STATE PROJECT NUMBER

7846-04-70



TYPICAL SECTION THRU BRIDGE (LOOKING NORTH)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.30
OPERATING RATING FACTOR: 1.69
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20" S.F.

MATERIAL PROPERTIES:

CONCRETE MASONRY { SUPERSTRUCTURE $f'_c = 4,000$ p.s.i.
ALL OTHER $f'_c = 3,500$ p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) $f_y = 60,000$ p.s.i.

HYDRAULIC DATA:

100 YEAR FREQUENCY
 $Q_{100} = 1,810$ c.f.s.
VEL. = 7.2 f.p.s.
HW₁₀₀ EL. 1113.7
DRAINAGE AREA = 7.2 sq. mi.
WATERWAY AREA = 252 sq. ft.
RDWY. OVERFLOW = N/A
SCOUR CRITICAL CODE = 8
DATUM = NAVD 88

2 YEAR FREQUENCY
 $Q_2 = 400$ c.f.s.
VEL. = 2.6 f.p.s.
HW₂ EL. 1109.74

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA, ESTIMATED LENGTH 35'-0".

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

TRAFFIC DATA:

A.A.D.T. = 440 (2018)
A.A.D.T. = 600 (2038)
R.D.S. = 40 M.P.H.

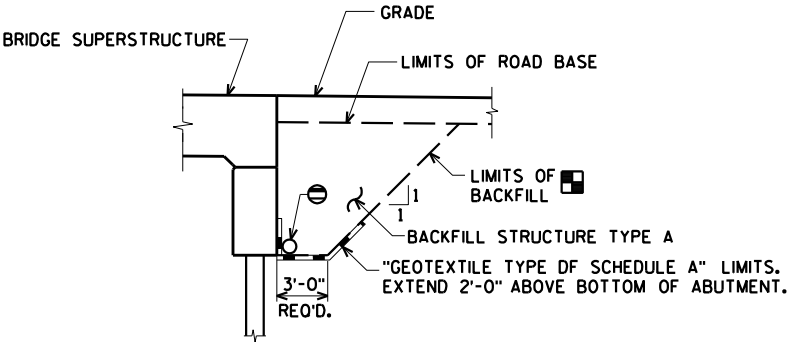
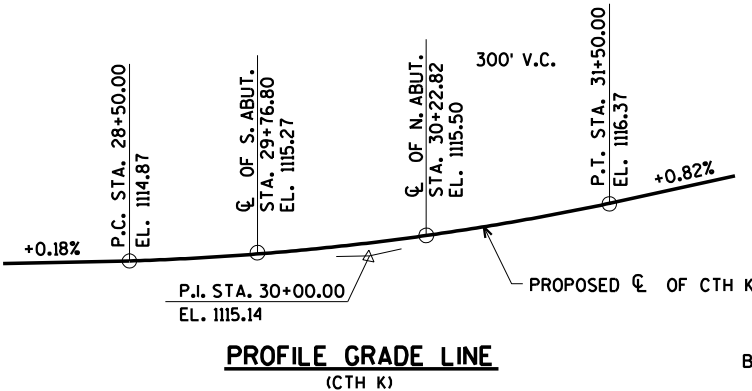
NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	William C. Dreher CHIEF STRUCTURES DESIGN ENGINEER		08/25/17 DATE
STRUCTURE B-10-234			
CTH K OVER MIDDLE BR O'NEILL CREEK			
COUNTY	CLARK	TOWN/CITY/VILLAGE	YORK/GRANT
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	CKJ	DESIGN CK'D.	CJM
DRAWN BY	CJM	BY CJM/CLS	PLANS CK'D. DNS
GENERAL PLAN			SHEET 1 OF 14

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER.	TOTAL
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 29+97	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-10-234	LS	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	135	135	-----	270
502.0100	CONCRETE MASONRY BRIDGES	CY	39	39	126	204
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	210	210
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,250	2,190	-----	4,440
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,620	1,620	23,970	27,210
513.4061	RAILING TUBULAR TYPE M B-10-234	LF	-----	-----	142	142
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	10	-----	20
550.0500	PILE POINTS	EACH	6	6	-----	12
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	210	210	-----	420
606.0300	RIPRAP HEAVY	CY	140	100	-----	240
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	80	80	-----	160
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	40	40	-----	80
645.0120	GEOTEXTILE TYPE HR	SY	260	195	-----	455
NON-BID ITEMS						
	FILLER	SIZE	-----	-----	-----	1/2" & 3/4"

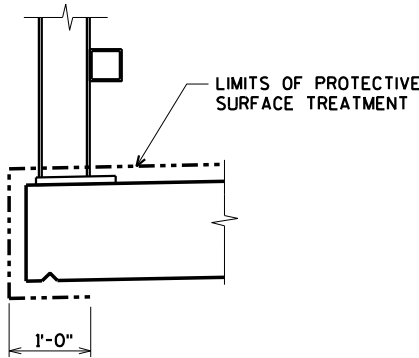
GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.
THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.
JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.
THE EXISTING STRUCTURE, P-10-51, TO BE REMOVED, IS A SINGLE SPAN STEEL DECK GIRDER BRIDGE, 40.5 FT. LONG WITH A 23 FT. CLEAR ROADWAY WIDTH.
AT BACKFACE OF ABUTMENTS ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.
BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.
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.

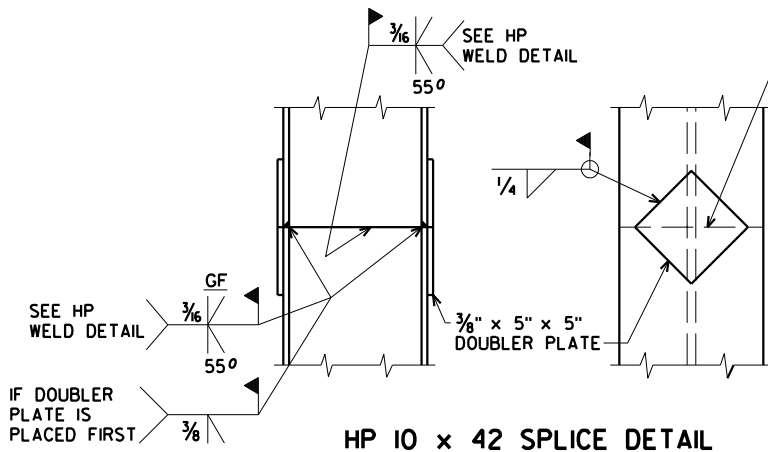


BACKFILL STRUCTURE LIMITS

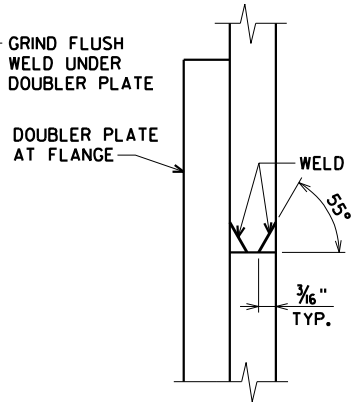
- BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 7.



PROTECTIVE SURFACE TREATMENT DETAIL



HP 10 x 42 SPLICE DETAIL



HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

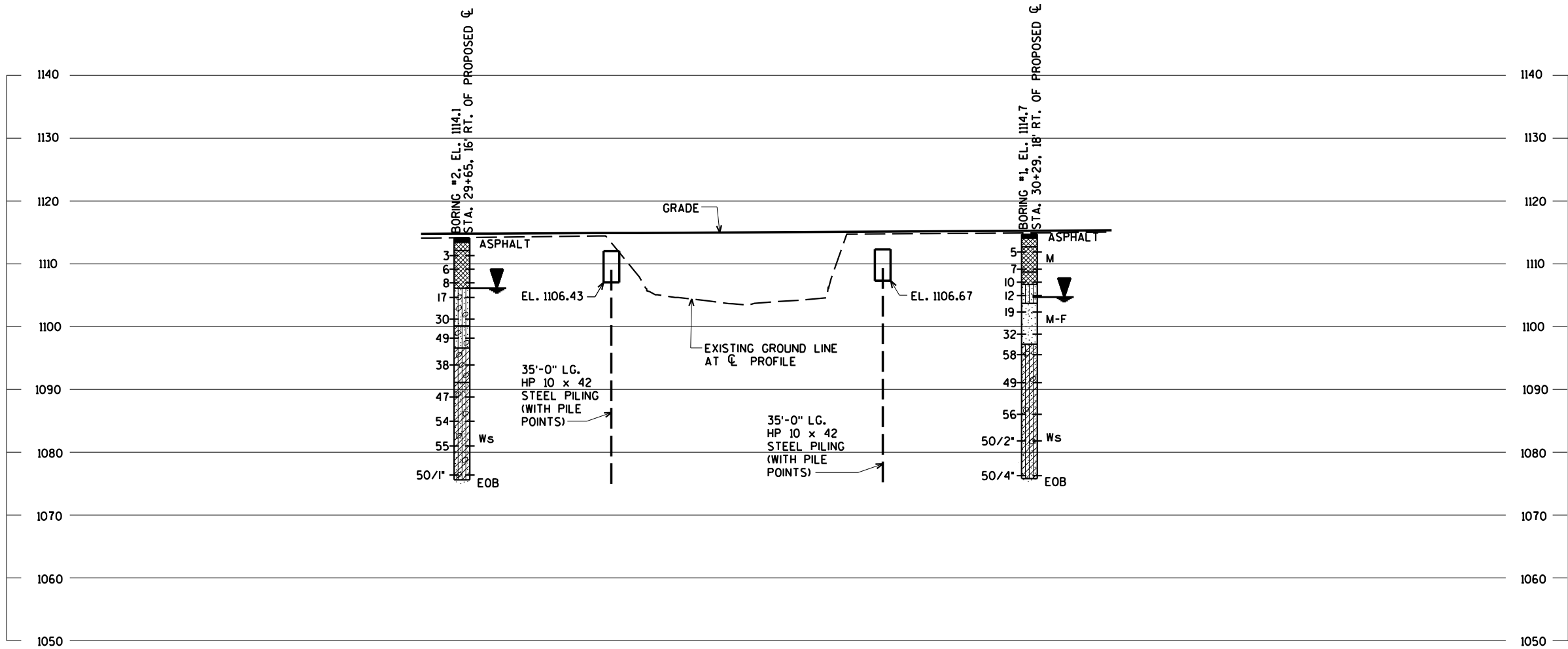
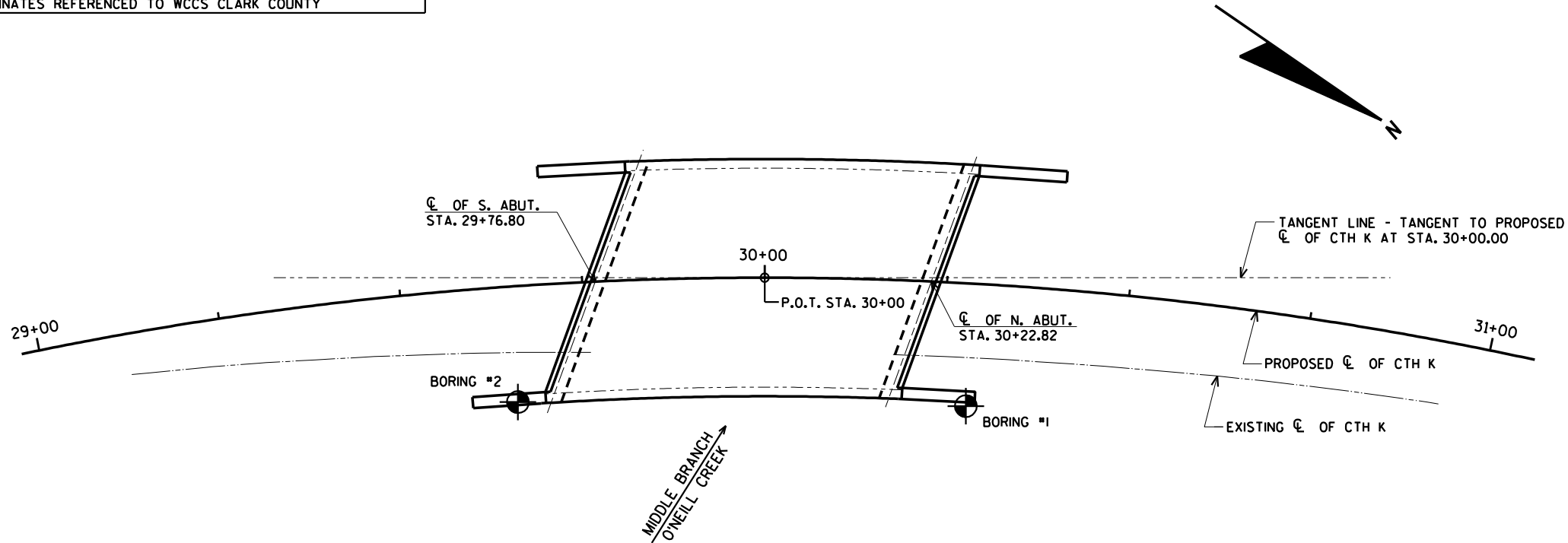
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-234			
DRAWN BY		CLS	PLANS CK'D. AEB
QUANTITIES AND NOTES		SHEET 2 OF 14	

\$PRNAME\$
U:\42-1012.00 - Clark Co, CTH K\BRIDGE\421012 soils.dgn

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	AUGUST 16, 2016	363335.05	716441.98
2	AUGUST 16, 2016	363386.63	716408.68

BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC
REPORT COMPLETED BY: RIVER VALLEY TESTING CORP.
ALL COORDINATES REFERENCED TO WCCS CLARK COUNTY



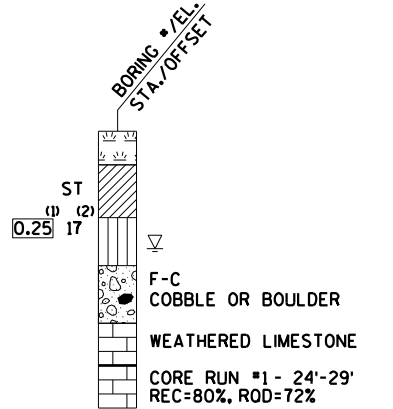
STATE PROJECT NUMBER

7846-04-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

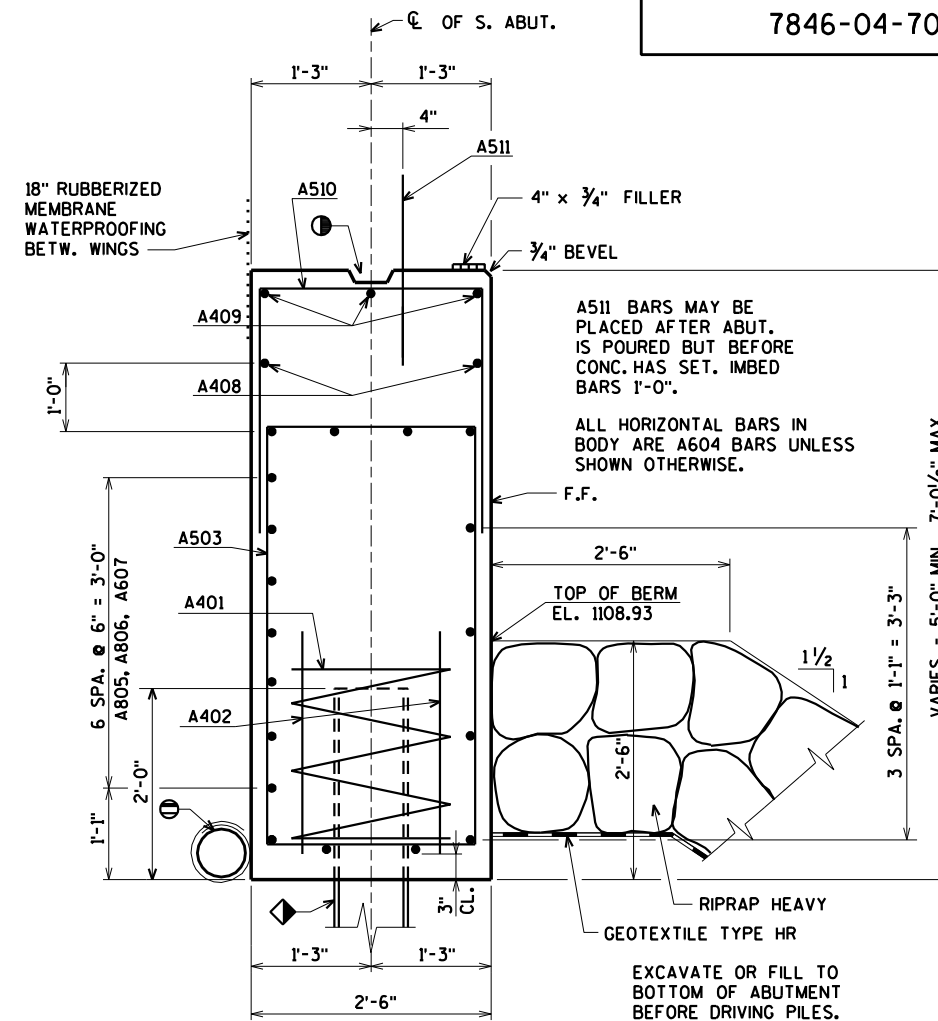
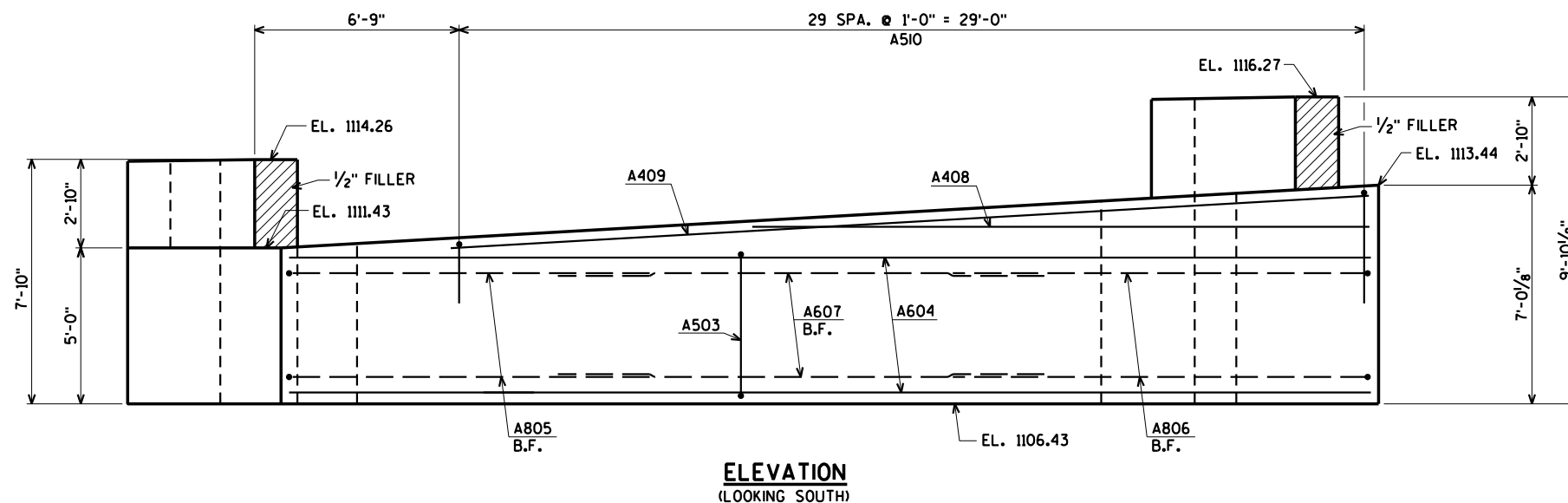
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-234			
DRAWN BY		CJM	PLANS CK'D. AEB
SUBSURFACE EXPLORATION		SHEET 3 OF 14	

\$PRNAME\$
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NOTE:
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF
1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT
SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).

STATE PROJECT NUMBER

7846-04-70



TYPICAL SECTION THRU BODY

- ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQ'D. DRIVING RESISTANCE OF 160 TONS PER PILE ESTIMATED LENGTH 35'-0".

PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 7. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

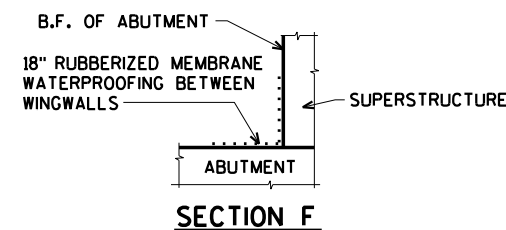
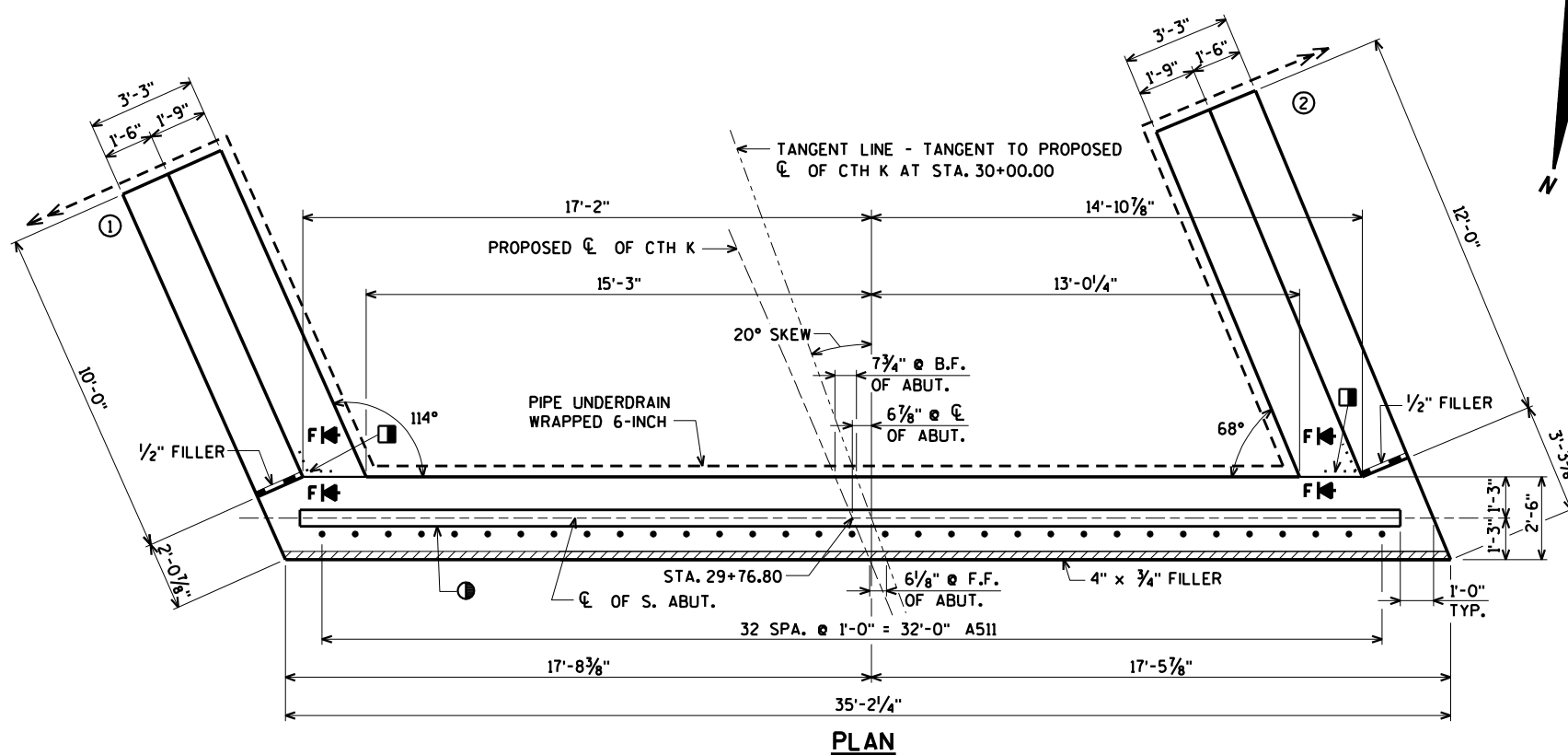
VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE



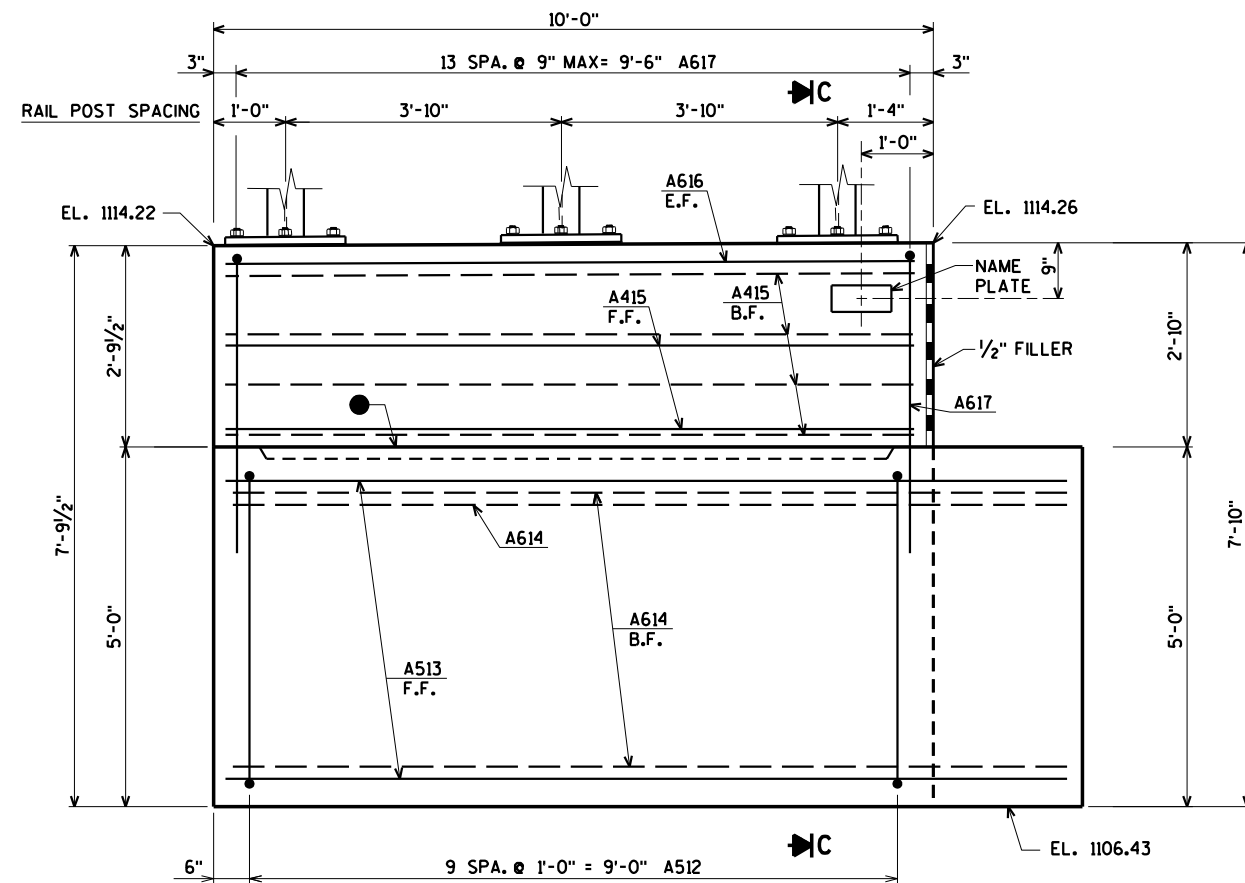
SECTION F

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

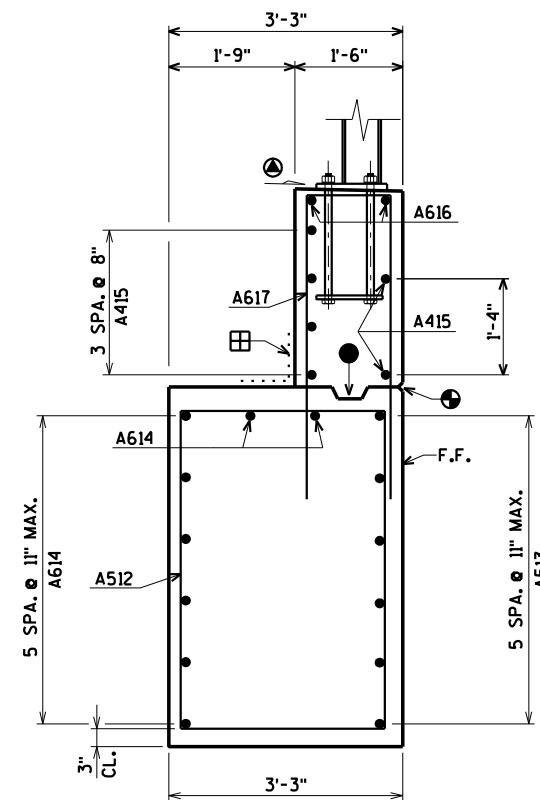
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-234			
DRAWN BY		CLS	PLANS CK'D. AEB
SOUTH ABUTMENT		SHEET 4 OF 14	

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8



ELEVATION - WING 1



SECTION C

- ⊗ SLOPE SAME AS SUPERSTRUCTURE.
- ⊕ 3/4" "V" GROOVE ON FRONT FACE OF WINGWALL.
- OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6".
- ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.
- B.F. DENOTES BACK FACE.
- F.F. DENOTES FRONT FACE.
- E.F. DENOTES EACH FACE.

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-234			
DRAWN BY		CLS	PLANS CK'D. AEB
SOUTH ABUTMENT WING 1 DETAILS			SHEET 5 OF 14

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
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- | | | | |
|--|------|--------------|------------------------|
| | | | |
| NO. | DATE | REVISION | BY |
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-10-234 | | | |
| | | DRAWN
BY | CLS PLANS
CK'D. AEB |
| SOUTH
ABUTMENT | | SHEET 6 OF 1 | |
| WING 2 DETAILS | | | |



⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR MARK	NO REQ'D.	LENGTH
A510	1 SERIES OF 30	4'-7" TO 7'-9"

BUNDLE AND TAG EACH SERIES SEPARATELY.

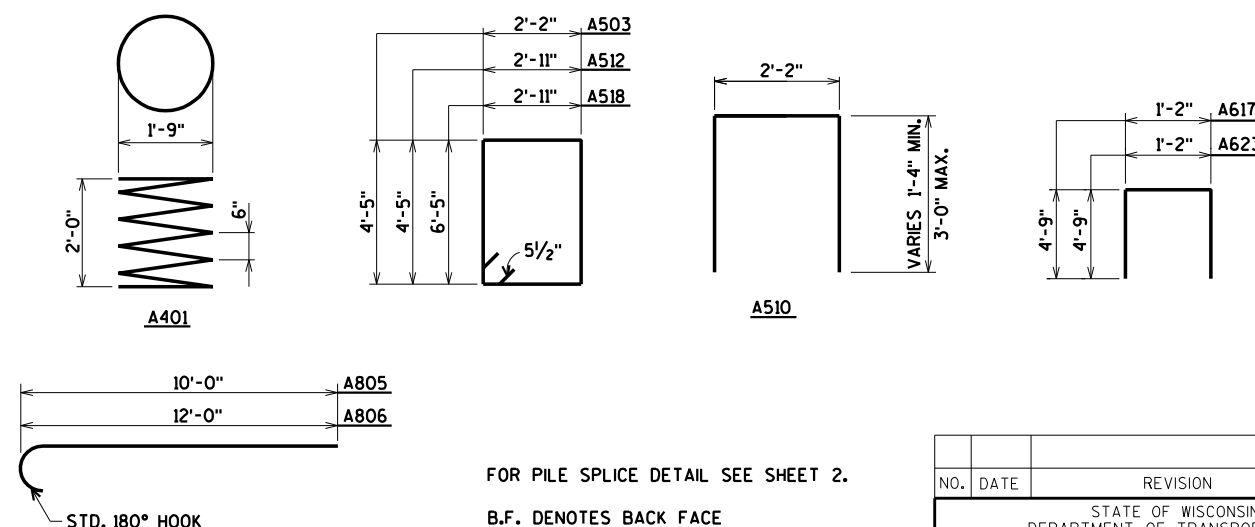


* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

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

RODENT SHIELD DETAIL



FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

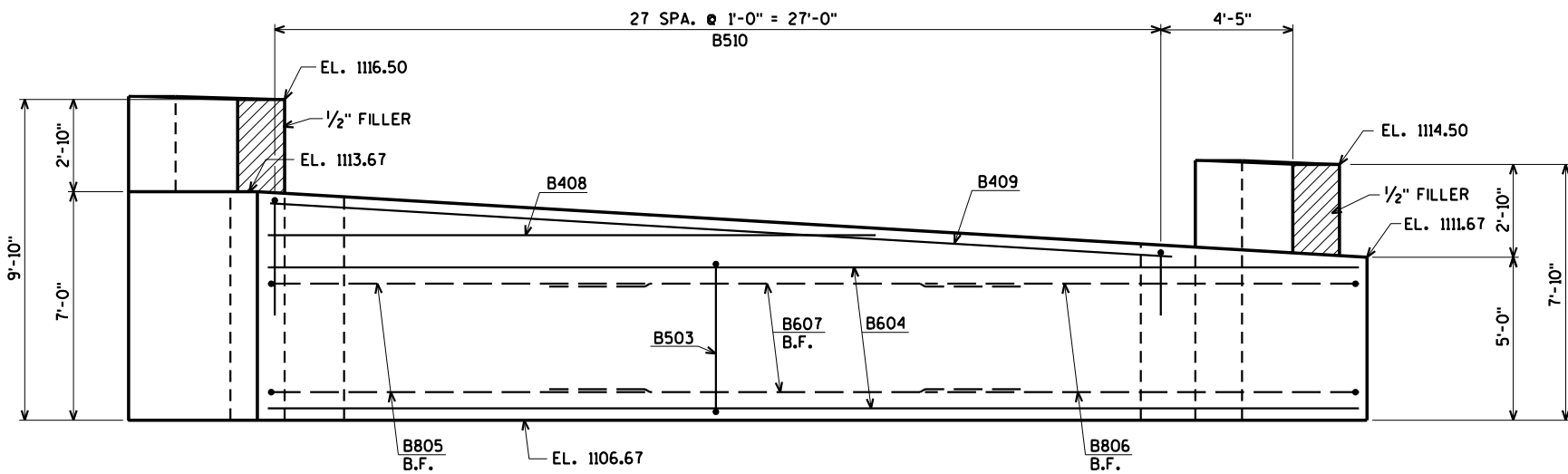
F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-234			
DRAWN BY		CLS	PLANS CK'D. AEC
SOUTH ABUTMENT DETAILS & BILL OF BARS		SHEET 7 OF	

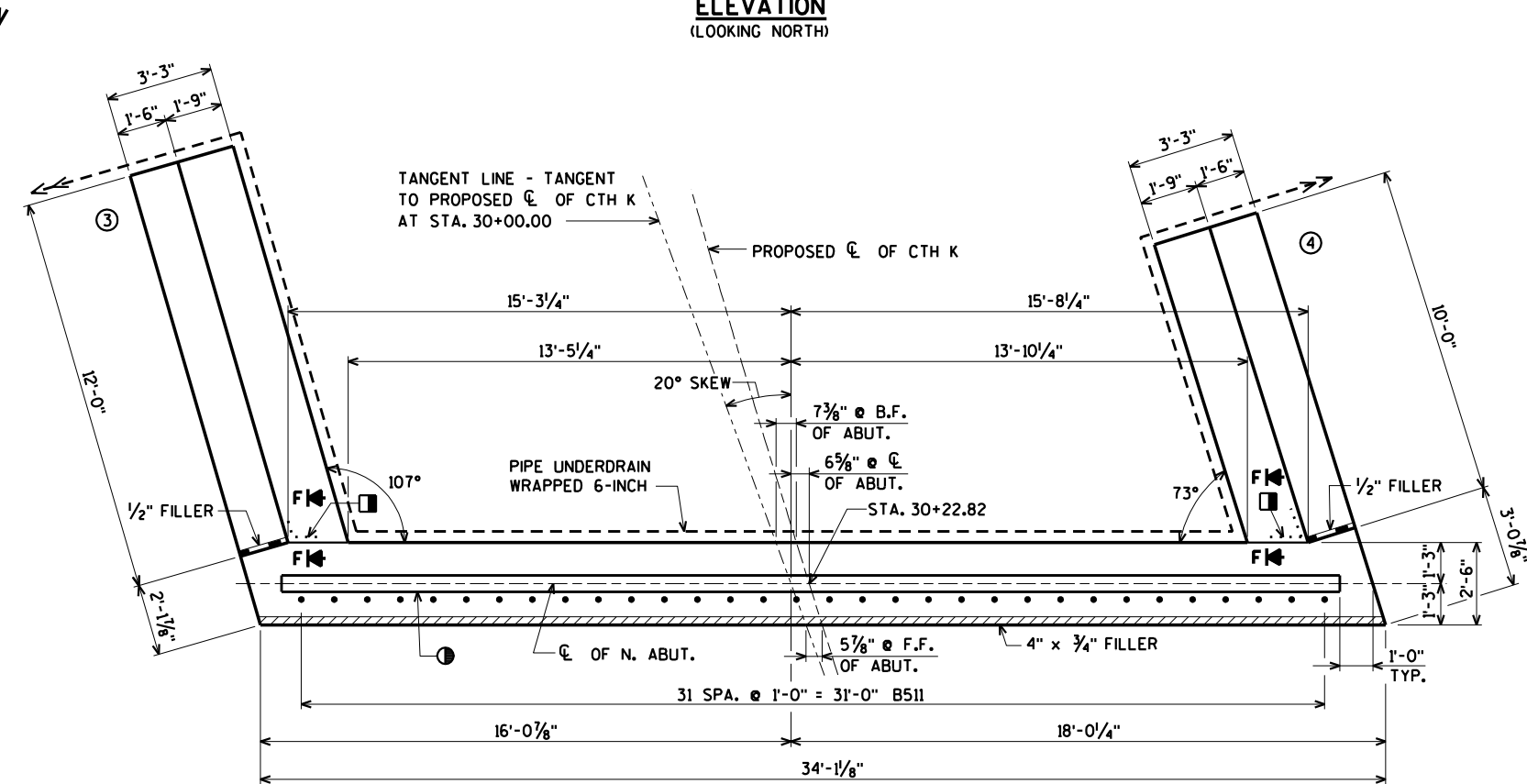
\$PRNAME\$
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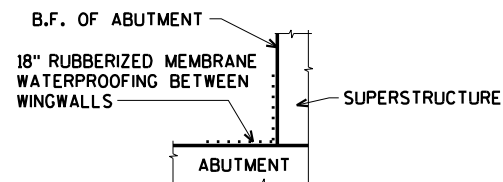
NOTE:
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF
1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT
SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).



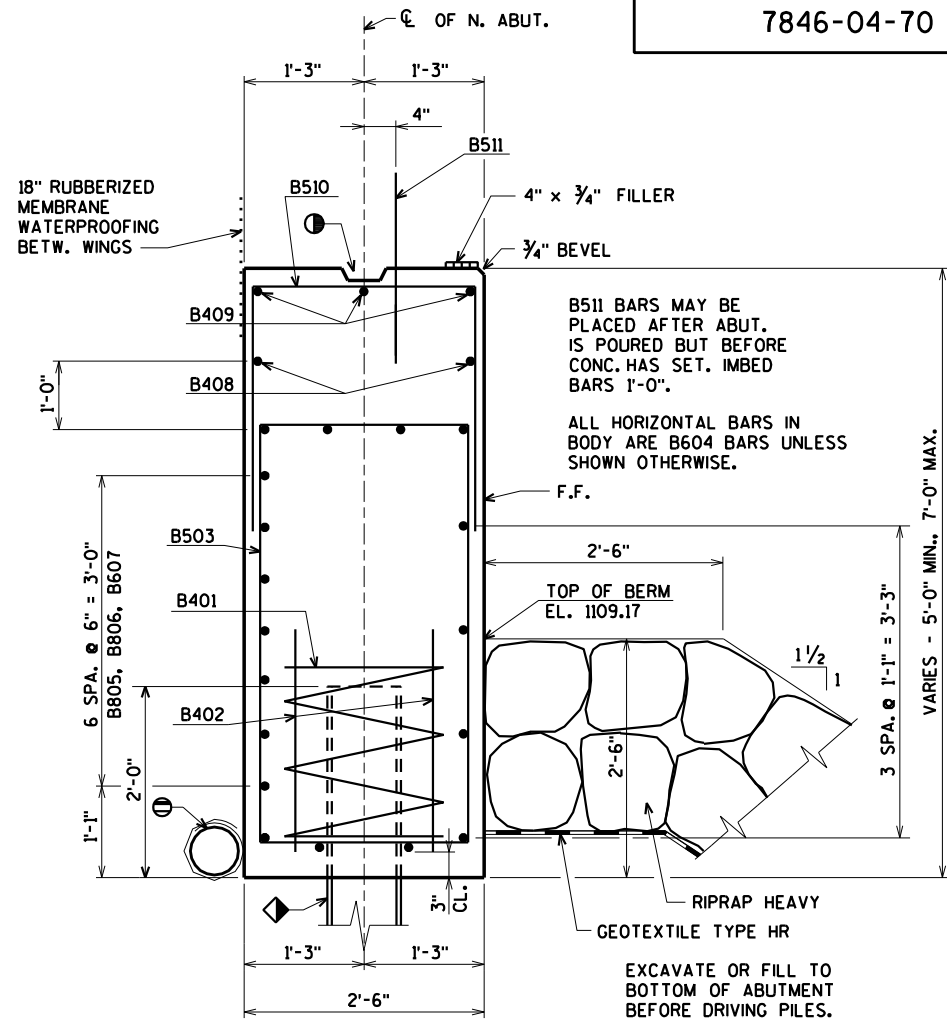
ELEVATION
(LOOKING NORTH)



PLAN



SECTION F



TYPICAL SECTION THRU BODY

ABUTMENT TO BE SUPPORTED ON
HP 10 x 42 STEEL PILING
(WITH PILE POINTS)
DRIVEN TO A REQ'D. DRIVING
RESISTANCE OF 160 TONS PER PILE
ESTIMATED LENGTH 35'-0".

PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5%
MIN. TO SUITABLE DRAINAGE. ATTACH RODENT
SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED
ON SHEET 7. RODENT SHIELD TO BE INCIDENTAL TO
BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

KEYED CONST. JOINT - FORMED
BY A BEVELED 2" x 6".

VERTICAL 18" RUBBERIZED MEMBRANE
WATERPROOFING TO EXTEND FROM
BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

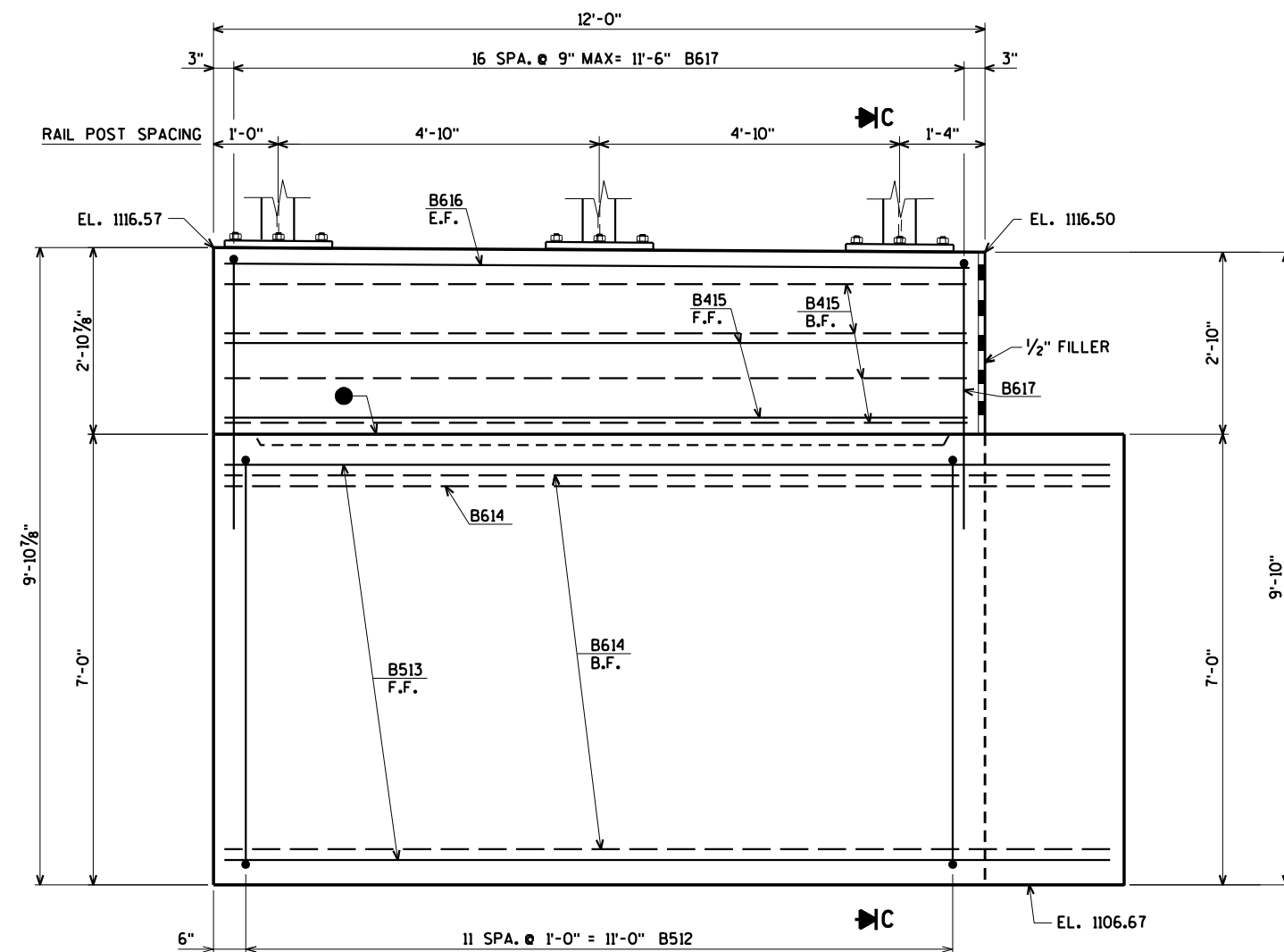
STATE PROJECT NUMBER

7846-04-70

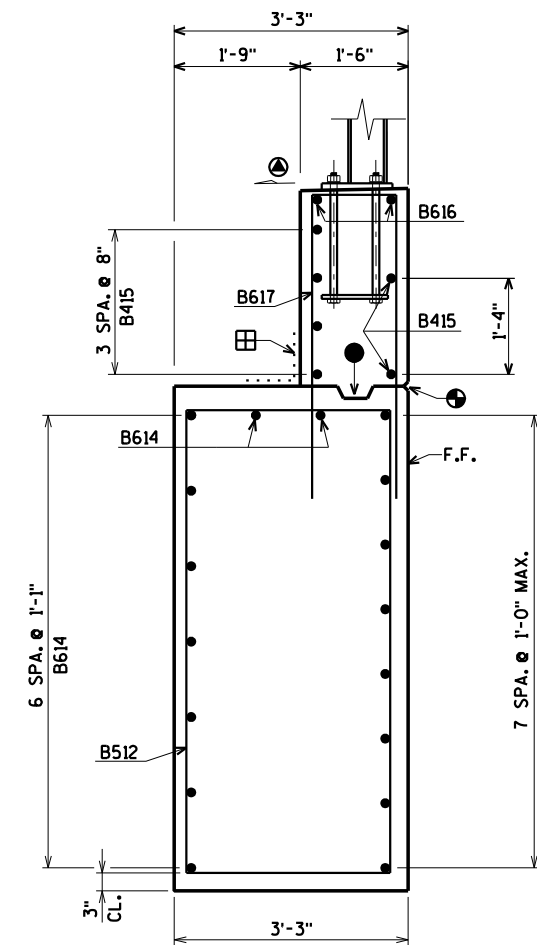
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-234			
DRAWN BY		CLS	PLANS CK'D. AEB
NORTH ABUTMENT		SHEET 8 OF 14	

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8



ELEVATION - WING 3



SECTION C

- Ⓐ SLOPE SAME AS SUPERSTRUCTURE.
- ⊕ 3/4" "V" GROOVE ON FRONT FACE OF WINGWALL.
- OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6".
- ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.
- B.F. DENOTES BACK FACE.
- F.F. DENOTES FRONT FACE.
- E.F. DENOTES EACH FACE.

8

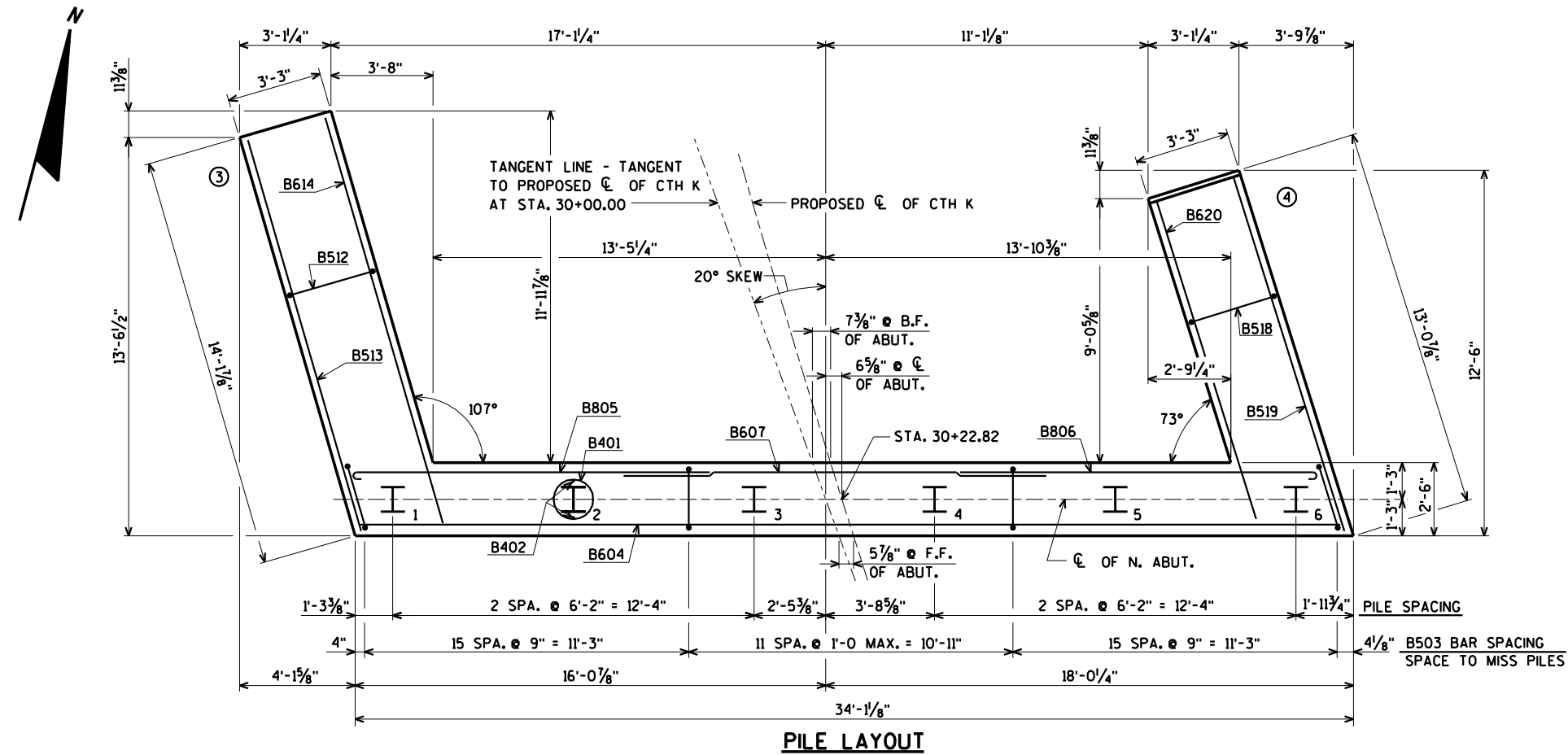
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-234			
DRAWN BY	CLS	PLANS CK'D.	AEB
NORTH ABUTMENT WING 3 DETAILS			SHEET 9 OF 14

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



- ▲ SLOPE SAME AS SUPERSTRUCTURE.
 - ⊕ $\frac{3}{4}$ " V" GROOVE ON FRONT FACE OF WINGWALL.
 - OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6".
 - ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.
- B.F. DENOTES BACK FACE.
F.F. DENOTES FRONT FACE.
E.F. DENOTES EACH FACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-234			
	DRAWN BY	CLS	PLANS CK'D. AEB
NORTH ABUTMENT WING 4 DETAILS		SHEET 10 OF 14	



BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	1,620 [±] COATED 2,190 [±] UNCOATED
							LOCATION
B401		6	28-0	X			BODY @ PILES
B402		12	2-3				BODY @ PILES
B503		42	13-10	X			BODY VERT.
B604		11	33-7				BODY HORIZ.
B805		7	12-11	X			BODY HORIZ. B.F. @ WING 3
B806		7	10-11	X			BODY HORIZ. B.F. @ WING 4
B607		7	17-8				BODY HORIZ. B.F.
B408		2	18-7				BODY HORIZ. E.F.
B409		3	27-4				BODY HORIZ.
B510		28	6-4	X	⊗		BODY VERT.
B511	X	32	2-0				BODY DOWELS
B512	X	12	19-2	X			WING 3 VERT.
B513	X	8	13-10				WING 3 HORIZ. F.F.
B614	X	9	14-5				WING 3 HORIZ.
B415	X	6	11-7				WING 3 HORIZ. E.F.
B616	X	2	11-7				WING 3 HORIZ. E.F.
B617	X	17	10-4	X			WING 3 VERT.
B518	X	10	15-2	X			WING 4 VERT.
B519	X	6	12-8				WING 4 HORIZ. F.F.
B620	X	8	11-4				WING 4 HORIZ.
B421	X	6	9-7				WING 4 HORIZ. E.F.
B622	X	2	9-7				WING 4 HORIZ. E.F.
B623	X	14	10-4	X			WING 4 VERT.

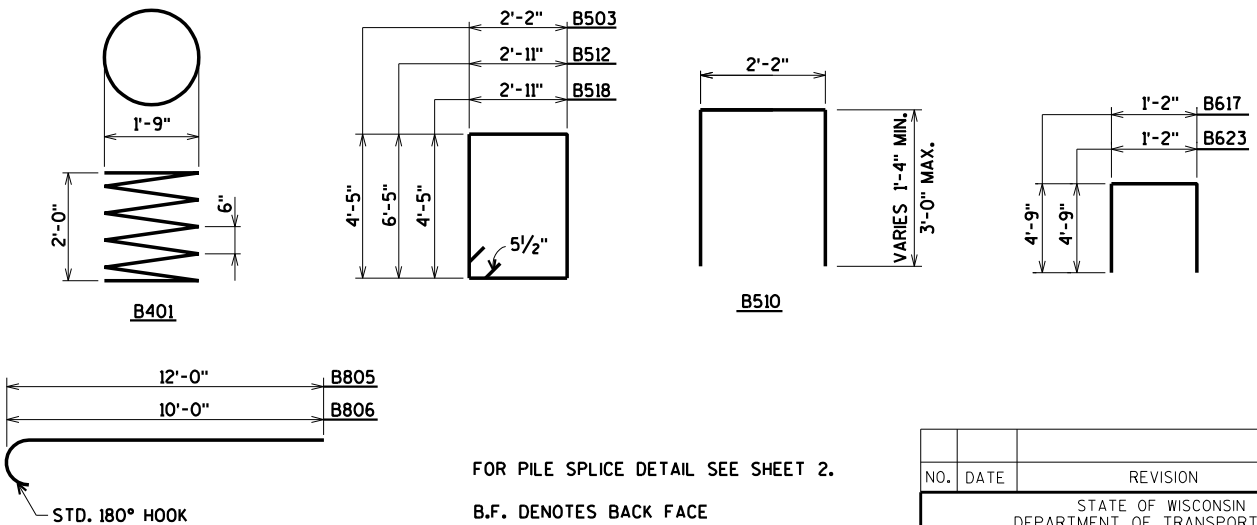
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
B510	1 SERIES OF 28	4' - 7" TO 7' - 9"

BUNDLE AND TAG EACH SERIES SEPARATELY.



FOR PILE SPLICE DETAIL SEE SHEET 2.

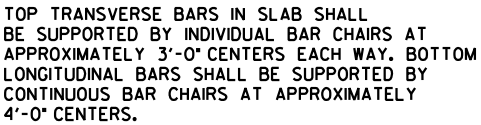
B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-234			
DRAWN BY		CLS	PLANS CK'D. AEB
NORTH ABUTMENT DETAILS & BILL OF BARS		SHEET 11 OF 14	



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

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	23,970" COATED
							LOCATION
S501	X	66	6-10	X			SLAB @ ABUT.
S502	X	66	3-9	X			SLAB @ ABUT.
S1103	X	65	41-7				SLAB LONG. BOT.
S504	X	152	18-9				SLAB TRANS. BOT.
S505	X	144	19-3				SLAB TRANS. TOP
S506	X	66	25-0				SLAB LONG. TOP
S607	X	32	12-0	X			SLAB @ RAIL POSTS
S608	X	56	6-0				SLAB @ INT. RAIL POSTS
S609	X	16	6-0	X			SLAB @ END RAIL POSTS
S610	X	4	12-0	X			SLAB @ END RAIL POSTS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

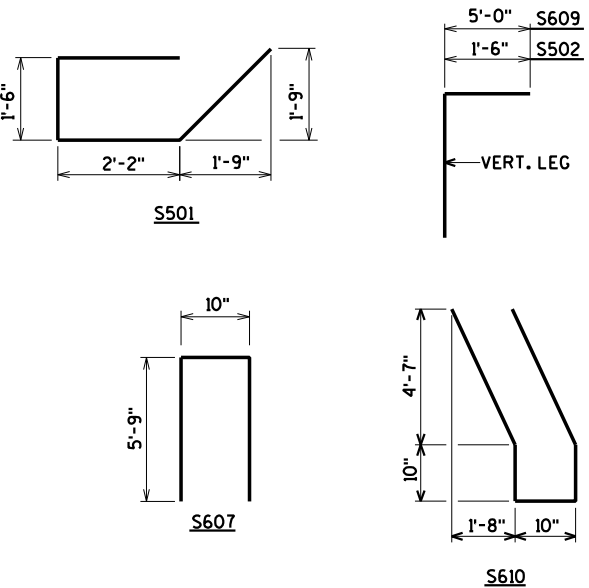
⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

▲ BEND IN FIELD TO FOLLOW CURVE IN ROAD CENTERLINE.



CAMBER SPANS AS SHOWN TO PROVIDE
FOR DEAD LOAD DEFLECTION & FUTURE
CREEP. CAMBER DOES NOT INCLUDE
ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C OF ABUTMENTS, AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF DECK AND CROWN OR C.



PART LONGITUDINAL SECTION WITH PAVING NOTCH

● DIMENSIONS MEASURED ALONG TANGENT LINE.

▲ DIMENSIONS MEASURED NORMAL TO $\mathcal{C}$
OF SUBSTRUCTURE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-234			
DRAWN BY		CLS	PLANS CK'D. AEB
SUPERSTRUCTURE		SHEET 12 OF 14	

ORIGINAL PLANS PREPARED BY

AYRES
ASSOCIATES

3433 Oakwood Hills Parkway
Eau Claire, WI 54701
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	' A '	' B '	' C '	' D '	' E '
DIM. "A"	---	16'-1 $\frac{7}{8}$ "	16'-3"	16'-1 $\frac{7}{8}$ "	15'-10 $\frac{3}{8}$ "
DIM. "B"	4 $\frac{3}{4}$ "	1 $\frac{1}{4}$ "	0"	1 $\frac{1}{4}$ "	4 $\frac{3}{4}$ "
DIM. "C"	16'-3 $\frac{1}{4}$ "	16'-3 $\frac{1}{4}$ "	16'-3"	16'-3 $\frac{1}{8}$ "	---

LOCATION	€ OF S. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	€ OF N. ABUT.
W. EDGE OF SLAB	1116.27	1116.30	1116.32	1116.34	1116.36	1116.38	1116.41	1116.43	1116.45	1116.48	1116.50
TANGENT LINE	1115.30	1115.31	1115.32	1115.34	1115.36	1115.38	1115.40	1115.43	1115.46	1115.50	1115.53
PROPOSED € OF CTH K	1115.27	1115.29	1115.31	1115.33	1115.36	1115.38	1115.40	1115.43	1115.48	1115.48	1115.50
E. EDGE OF SLAB	1114.26	1114.28	1114.31	1114.33	1114.35	1114.37	1114.40	1114.42	1114.45	1114.47	1114.50

ORIGINAL PLANS PREPARED BY

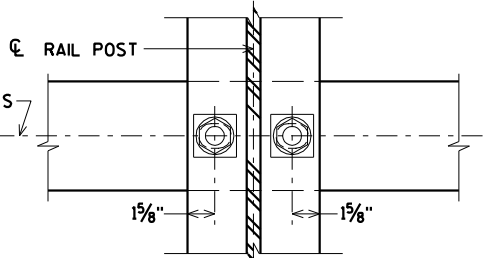
AYRES
ASSOCIATES

3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

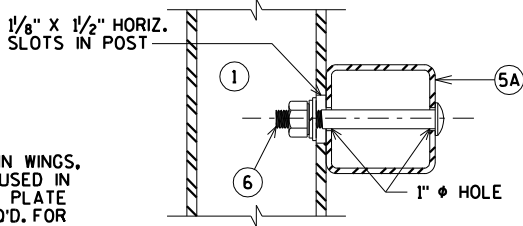
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-234			
DRAWN BY		CLS	PLANS CK'D. AEB
SUPERSTRUCTURE PLAN			SHEET 13 OF 14

LEGEND

- W6 x 25 WITH 1/8" x 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- PLATE 1/4" x 11 3/4" x 1'-8" WITH 1 5/8" x 1 5/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ASTM A449 - 1/6" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED), 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. ~~USE 10 3/4" LONG AT ALL OTHER LOCATIONS.~~ (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
- 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 5/8" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/8" x 1 5/8" x 1 5/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" x 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- 3/8" x 3 5/8" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- 3/8" x 2 5/8" x 2'-4" PLATE USED IN NO. 5. 3/8" x 3 5/8" x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- 7/8" A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/8" x 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS ~~AND 5/8" x 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.~~
- 7/8" DIA. x 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D.).
- 3/8" x 8" x 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- 1" HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.



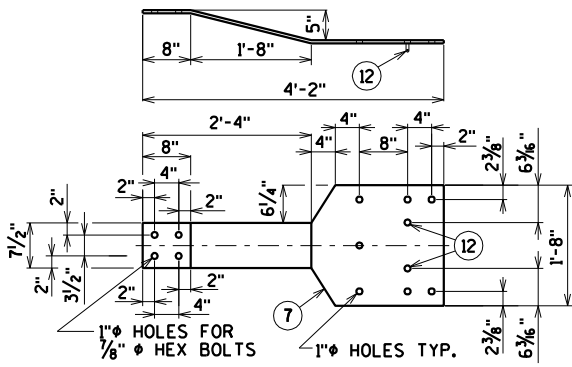
SECTION THRU POST WEB



SECTION THRU RAIL

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

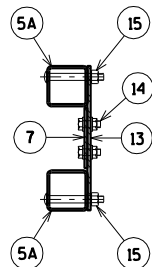
TYPICAL RAIL TO POST CONNECTIONS



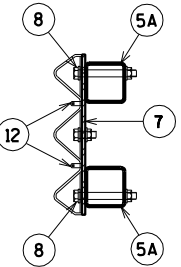
BACK-UP PLATE DETAIL
(AT BEAM GUARD ATTACHMENT)

GENERAL NOTES

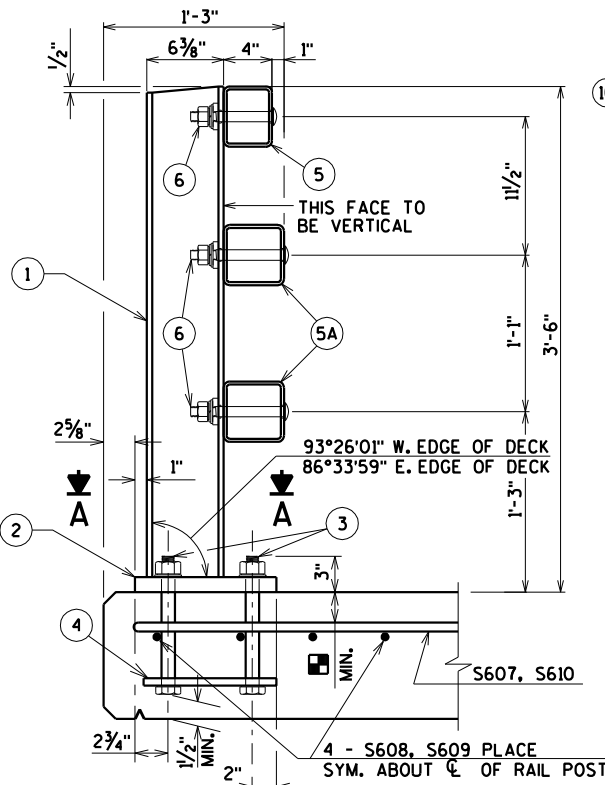
- BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-10-234" WHICH INCLUDES ALL ITEMS SHOWN.
- RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
- THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
- RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
- ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
- WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
- FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
- POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
- ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
- ~~WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.~~
- THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
- PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.



SECTION C

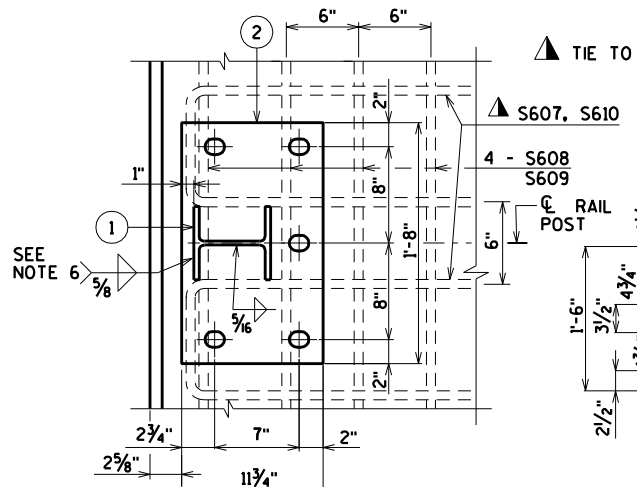


SECTION D

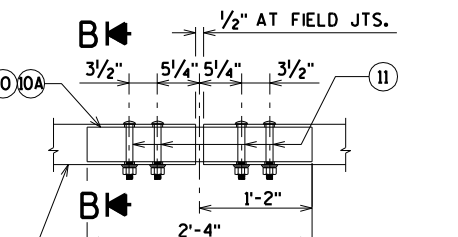


SECTION THRU RAILING ON DECK

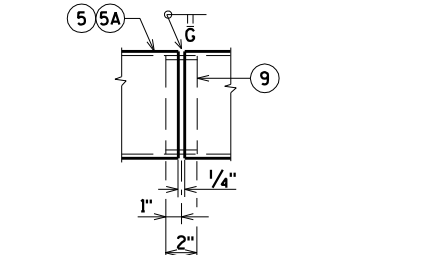
PLACE BELOW TOP MAT SLAB REINFORCEMENT.



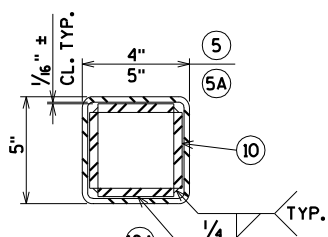
SECTION A



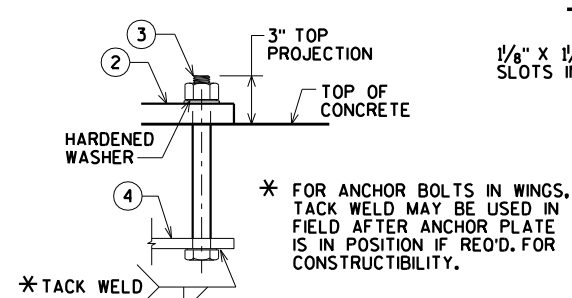
FIELD ERECTION JOINT DETAIL



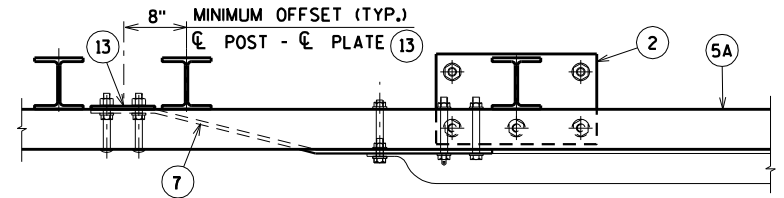
SHOP RAIL SPLICE DETAIL
(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)



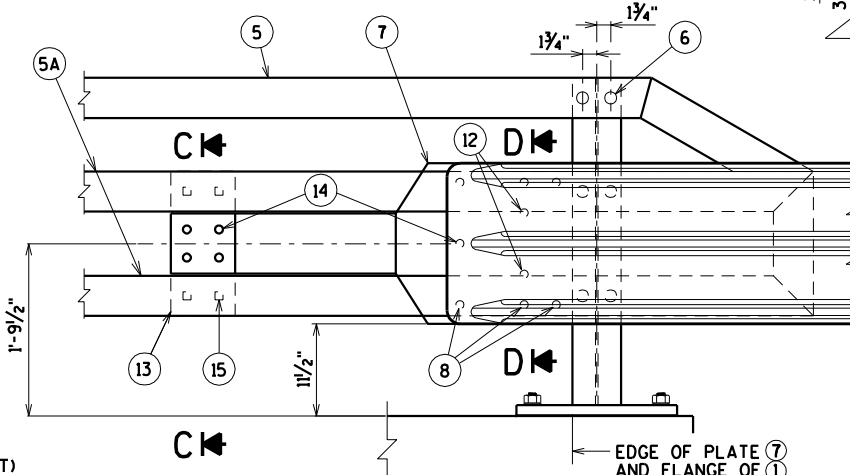
SECTION B



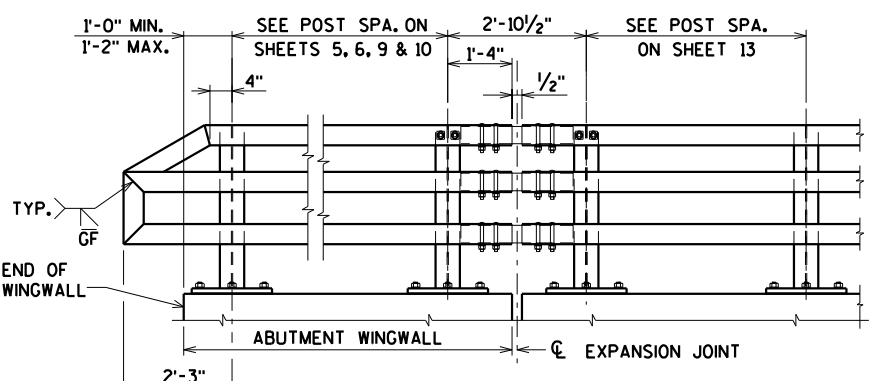
ANCHOR BOLTS



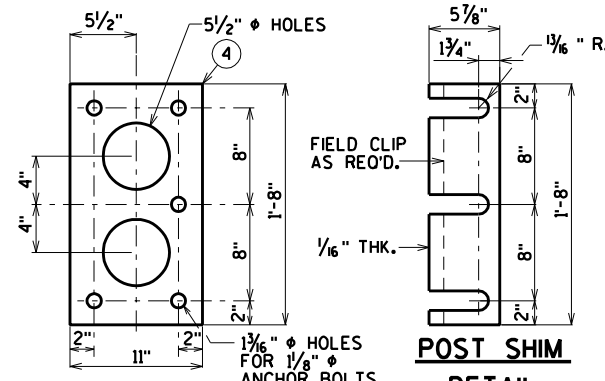
TOP VIEW AT END POST
(THRIE BEAM RAIL ATTACHMENT)



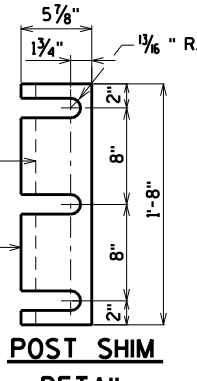
DETAIL AT END POST
(THRIE BEAM RAIL ATTACHMENT)



PART ELEVATION OF RAILING



ANCHOR PLATE
(AT RAIL TO DECK CONNECTION)

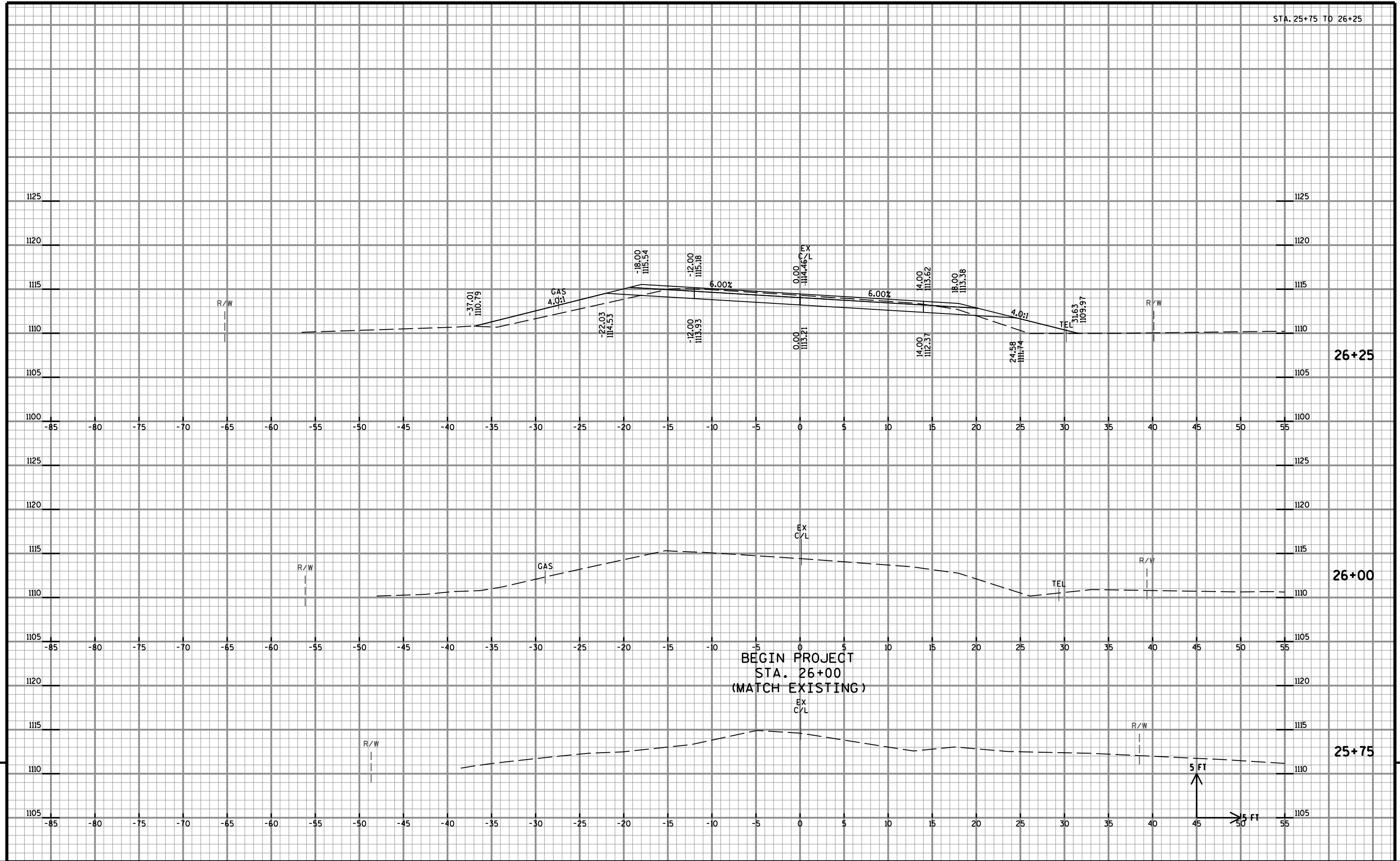


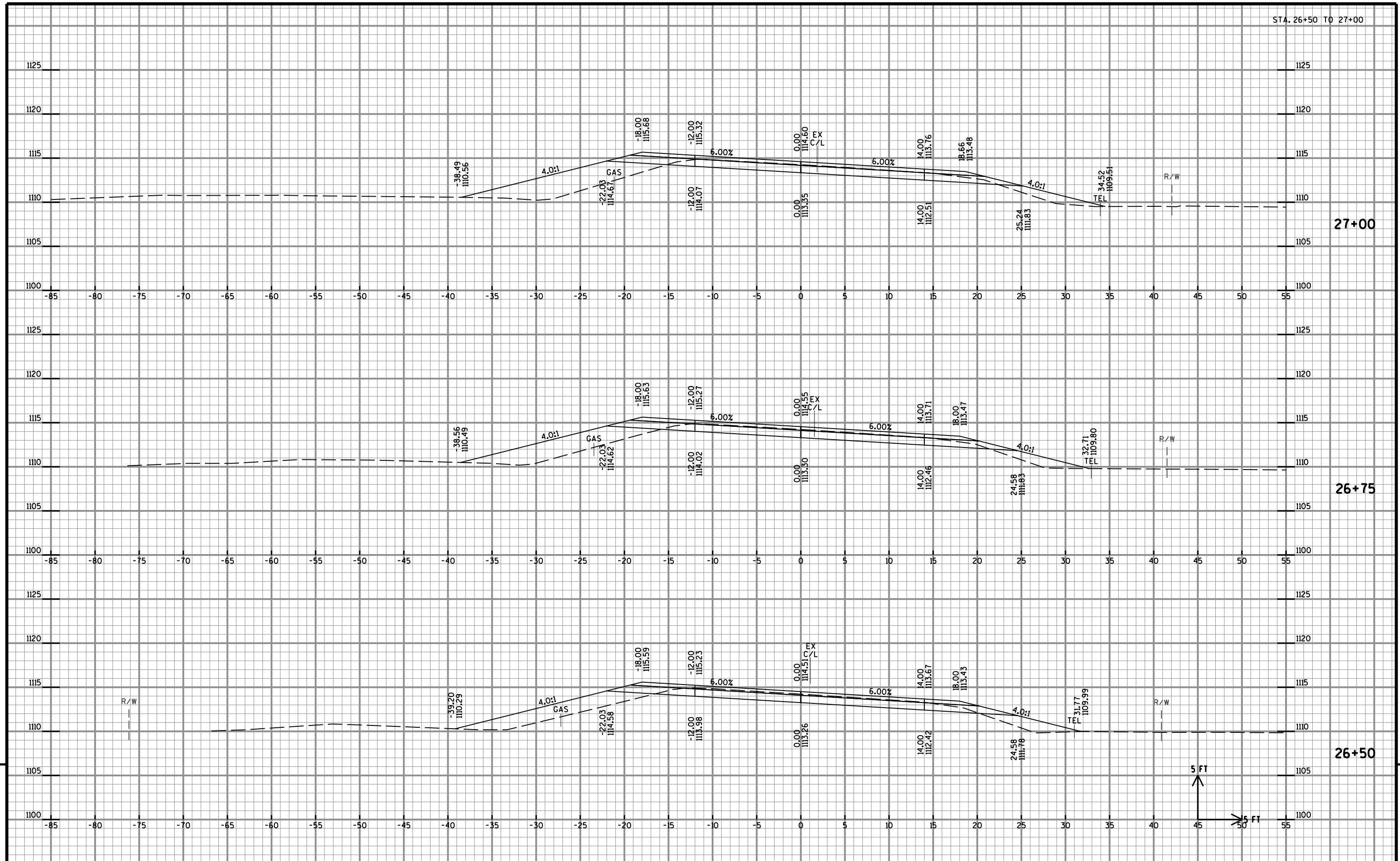
POST SHIM
DETAIL

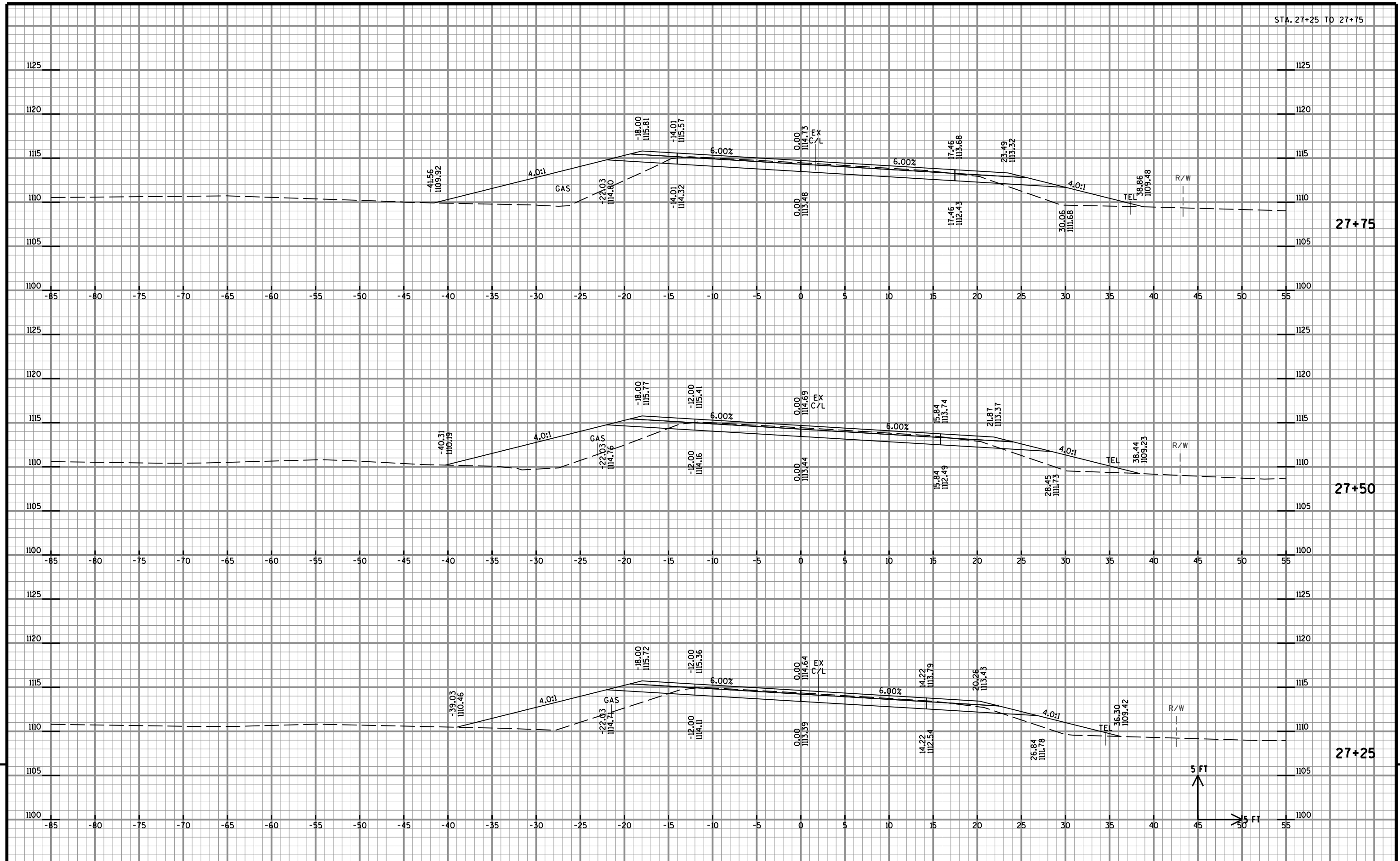
SPRNAME\$ U:42-1012.00 - Clark Co, CTH K+BRIDGE+421012 Mrail.dgn

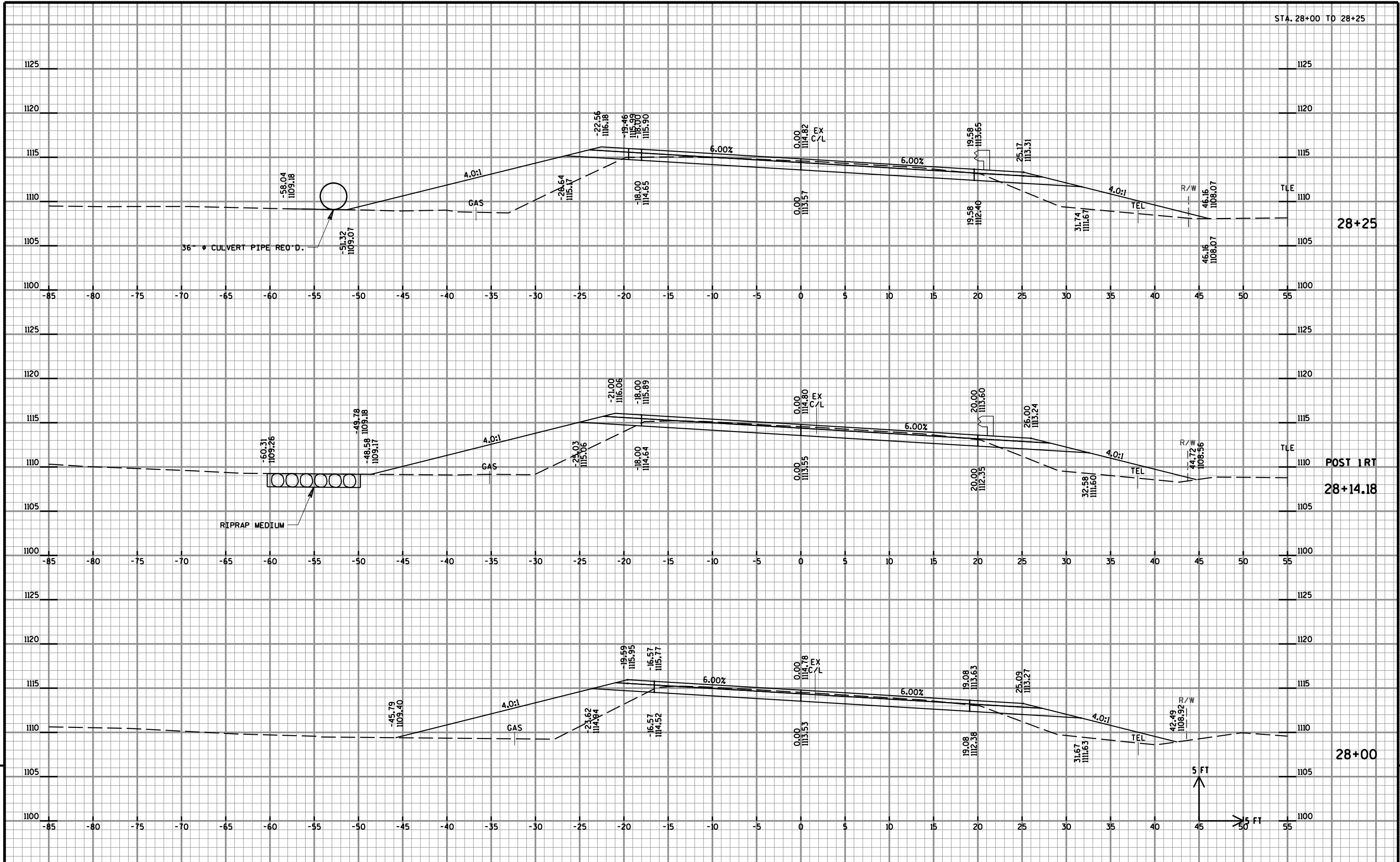
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-10-234			
DRAWN BY CLS		PLANS CK'D. AEB	
RAILING TUBULAR TYPE M			SHEET 14 OF 14

EARTHWORK SUMMARY (CATEGORY 0010)												
		AREA			INCREMENTAL VOLUME			CUMULATIVE VOLUME				
		CUT SF	SALVAGED/ UNUSABLE PAVEMENT MATERIAL SF	FILL SF	CUT (1) CY	SALVAGED/ UNUSABLE PAVEMENT MATERIAL (2) CY	FILL (3) CY	CUT (1) 1.00 CY	EXPANDED FILL (4) 1.30 CY	MASS ORDNATE ±(5)		
DIVISION	STATION									CY	CY	
1 CTH K	26+00	48	0	24	38	0	22	38	29	9		
	26+25	36	0	24	31	0	28	69	65	4		
	26+50	31	0	37	28	0	36	97	112	-15		
	26+75	30	0	41	27	0	41	124	165	-41		
	27+00	29	0	47	28	0	47	152	226	-74		
	27+25	32	0	55	30	0	56	182	299	-117		
	27+50	33	0	67	31	0	66	213	385	-172		
	27+75	34	0	75	32	0	80	245	489	-244		
	28+00	35	0	97	33	0	98	278	616	-338		
	28+25	36	0	114	36	0	63	314	698	-384		
	28+50	42	0	22	40	0	13	354	715	-361		
	28+75	44	0	5	41	0	44	395	772	-377		
	29+00	45	0	90	34	0	92	429	892	-463		
	29+25	28	0	108	24	0	104	453	1,027	-574		
	29+50	24	0	117	24	0	113	477	1,174	-697		
	29+76	24	0	117	0	0	0	477	1,174	-697		
	STRUCTURE (B-10-234)											
		30+23	36	0	68	36	0	67	36	87	-51	
		30+50	36	0	68	36	0	63	72	169	-97	
		30+75	41	0	67	38	0	67	110	256	-146	
		31+00	42	0	78	38	0	72	148	350	-202	
		31+25	41	0	77	37	0	105	185	486	-301	
		31+50	38	0	150	36	0	148	221	679	-458	
		31+75	39	0	171	35	0	154	256	879	-623	
		32+00	38	0	163	34	0	142	290	1,063	-773	
		32+25	36	0	144	32	0	124	322	1,225	-903	
		32+50	33	0	124	31	0	102	353	1,357	-1,004	
		32+75	33	0	96	30	0	78	383	1,459	-1,076	
		33+00	32	0	73	29	0	62	412	1,539	-1,127	
	33+25	30	0	61	28	0	51	440	1,606	-1,166		
	33+50	31	0	49	30	0	42	470	1,660	-1,190		
	33+75	35	0	41	36	0	19	506	1,685	-1,179		
	34+00	43	0	0	0	0	0	506	1,685	-1,179		
2 PELSDORF ROAD	0+15	0	0	0	2	0	25	2	33	-31		
	0+25	13	0	137	18	0	120	20	189	-169		
	0+50	25	0	122	24	0	87	44	302	-258		
	0+75	26	0	66	23	0	47	67	363	-296		
	1+00	24	0	36	30	0	17	97	385	-288		
	1+25	41	0	0	0	0	0	97	385	-288		
TOTALS					1,080	0	2,495			-2,164		
205.0100 EXCAVATION COMMON =					SAY 1,080		208.0100 BORROW =		SAY 2,164			
NOTES:												
1) EXCAVATION COMMON IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100												
2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.												
3) DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.												
4) EXPANDED FILL FACTOR = 1.30 EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR												
5) THE MASS ORDNATE ± QTY CALCULATED FOR THE DIVISION.												
PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.												
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.												
PROJECT NO: 7846-04-70		HWY: cth k		COUNTY: CLARK		EARTHWORK SUMMARY				SHEET		
										E		









PROJECT NO: 7846-04-70

HWY: CTH K

COUNTY: CLARK

CROSS SECTIONS

MAINLINE

SHEET

E

FILE NAME : U:\42-1012.00 - Clark Co, CTH K\Roadway\421012-xs.dgn

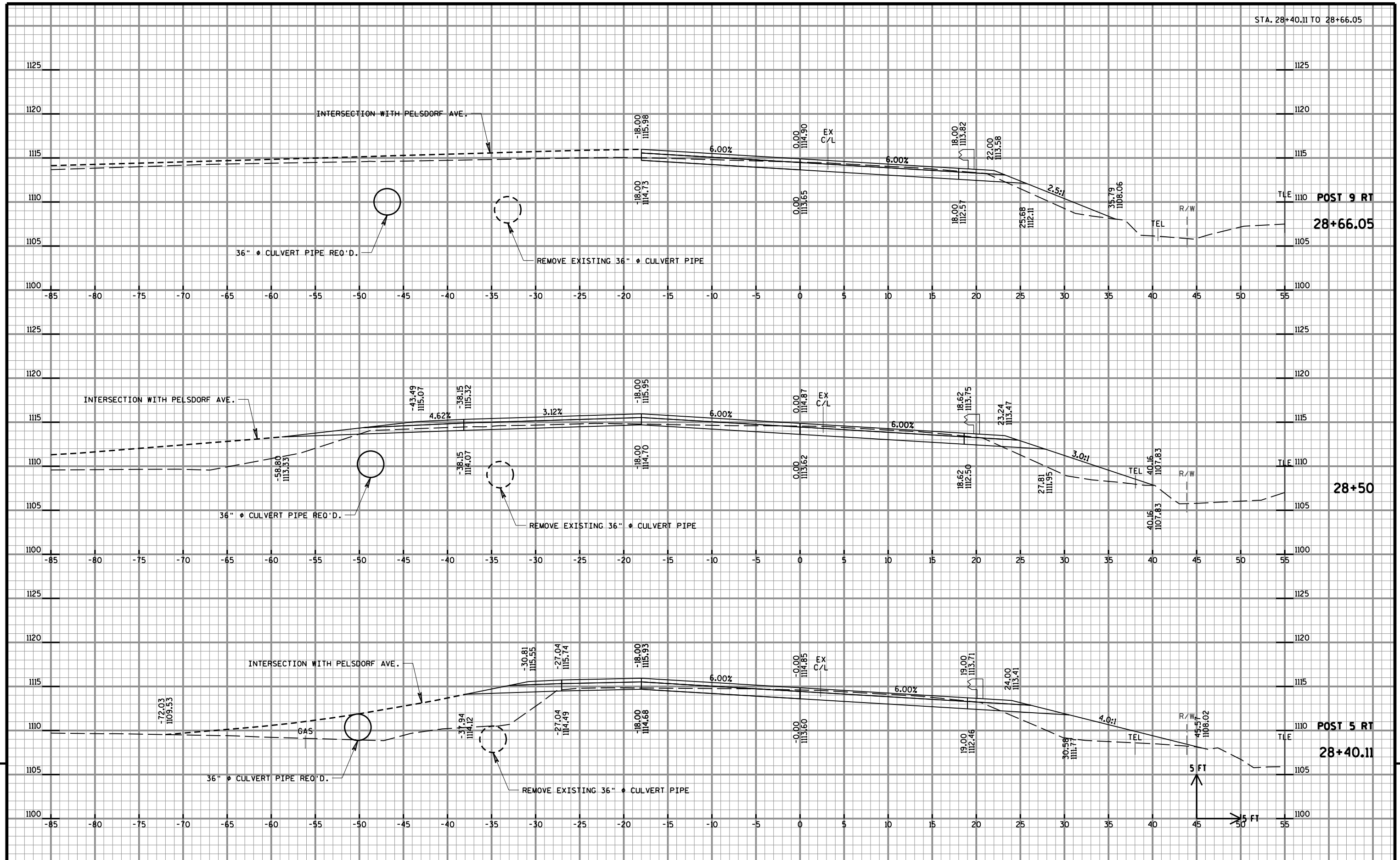
PLOT DATE : 7/11/2017

PLOT BY : AYRES-EC

PLOT NAME :

PLOT SCALE : 1:10

WISDOT/CADDs SHEET 21



PROJECT NO: 7846-04-70

HWY: CTH K

COUNTY: CLARK

CROSS SECTIONS

MAINLINE

SHEET

E

FILE NAME : U:\42-1012.00 - Clark Co, CTH K\Roadway\421012_xs.dgn

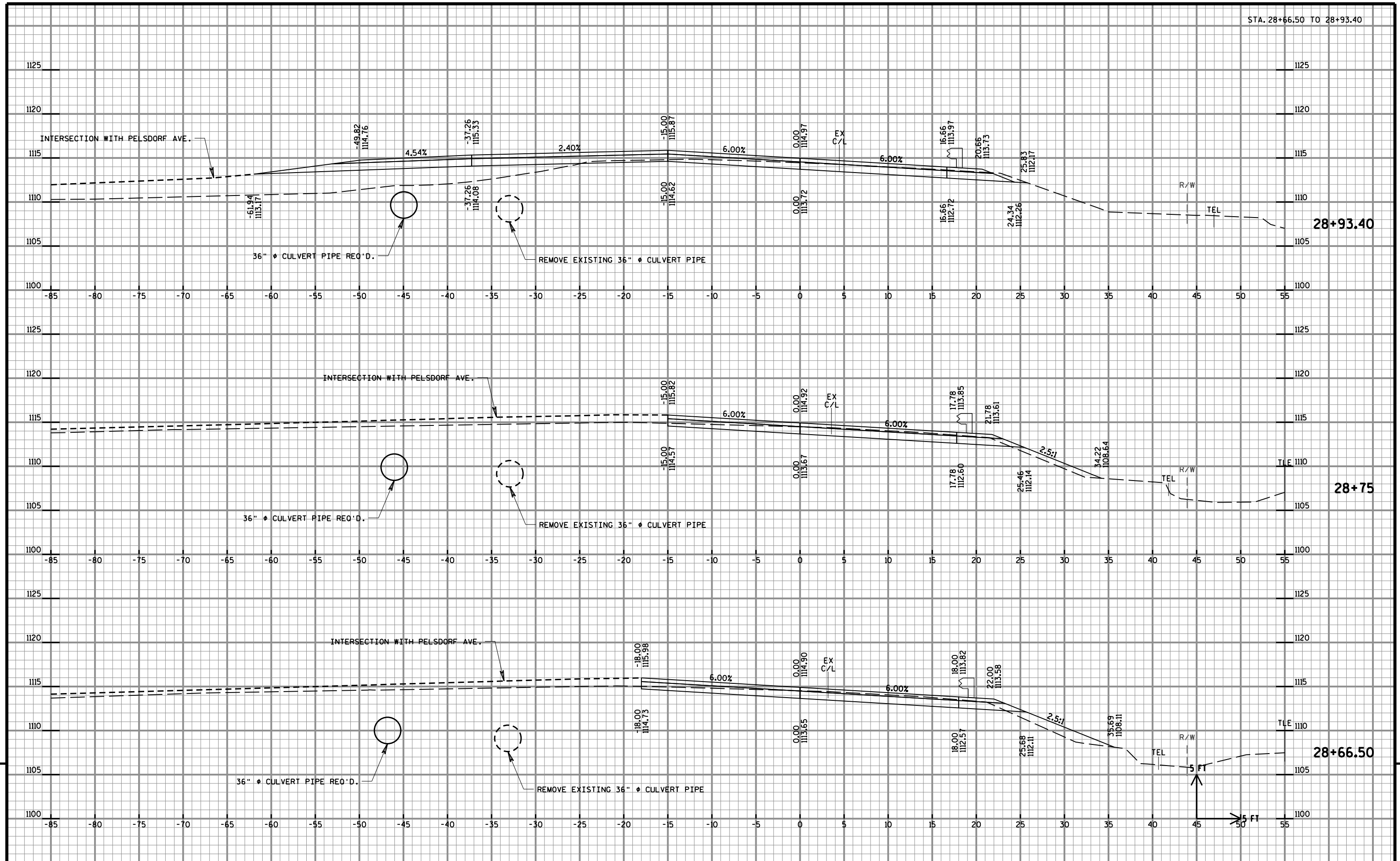
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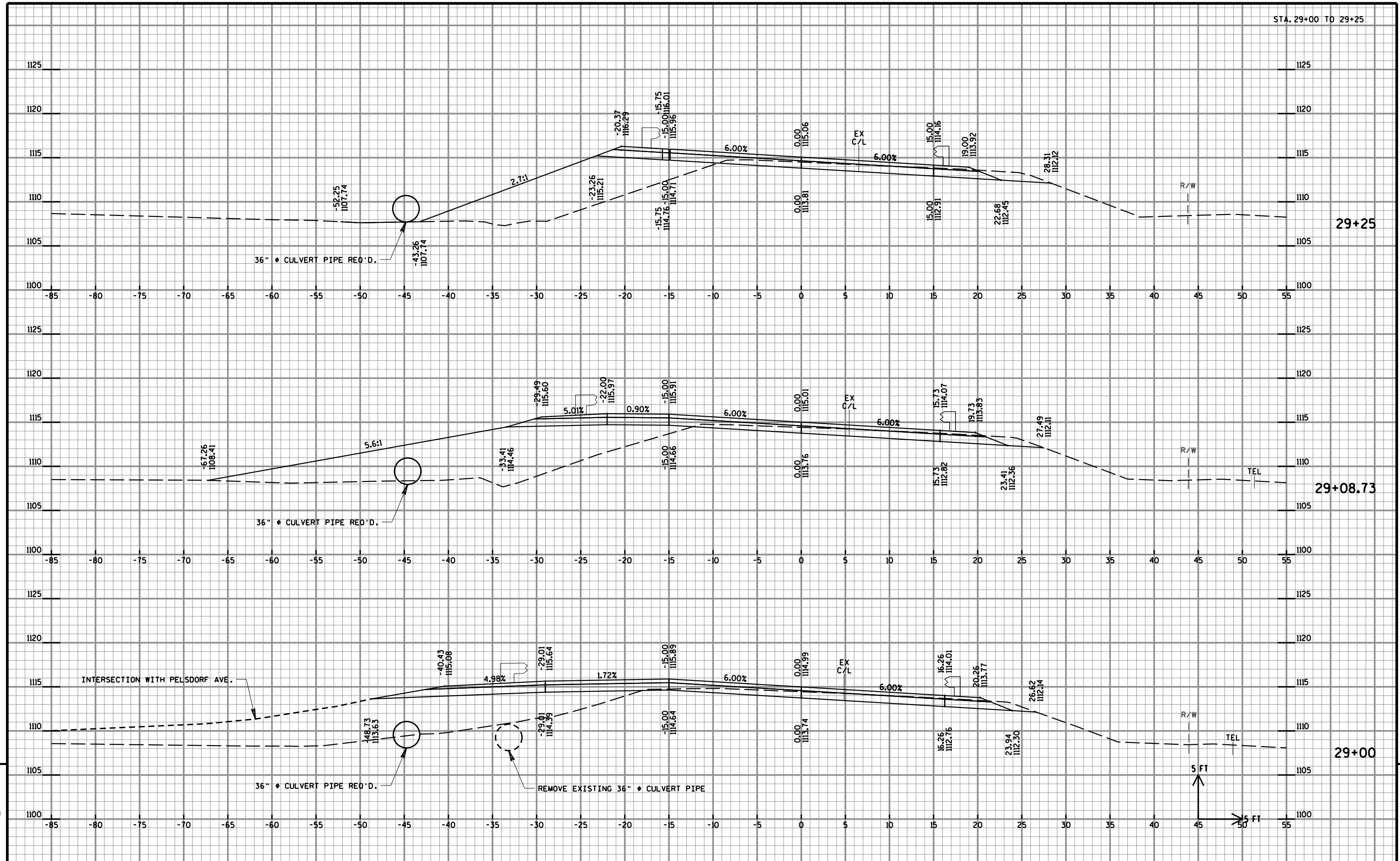
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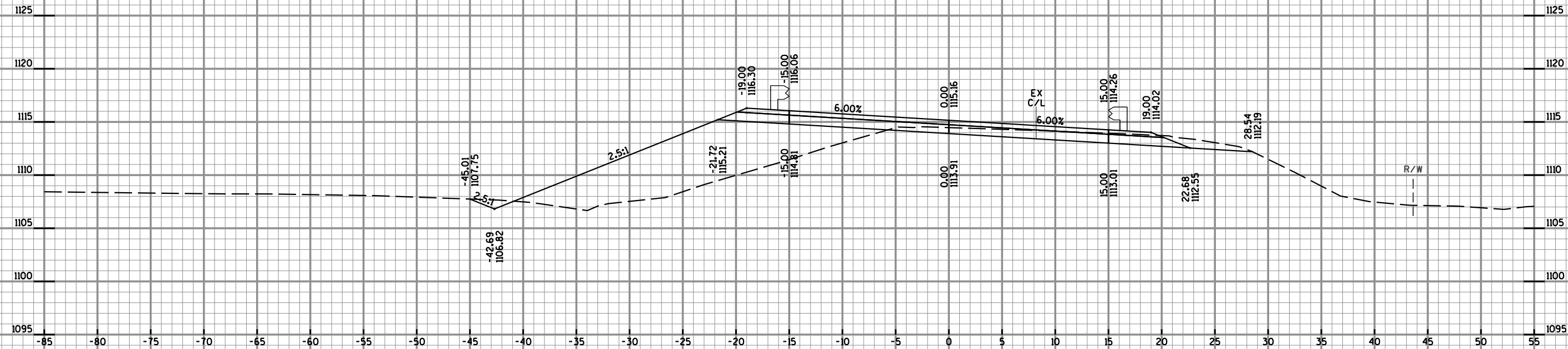
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PLOT SCALE : 1:10

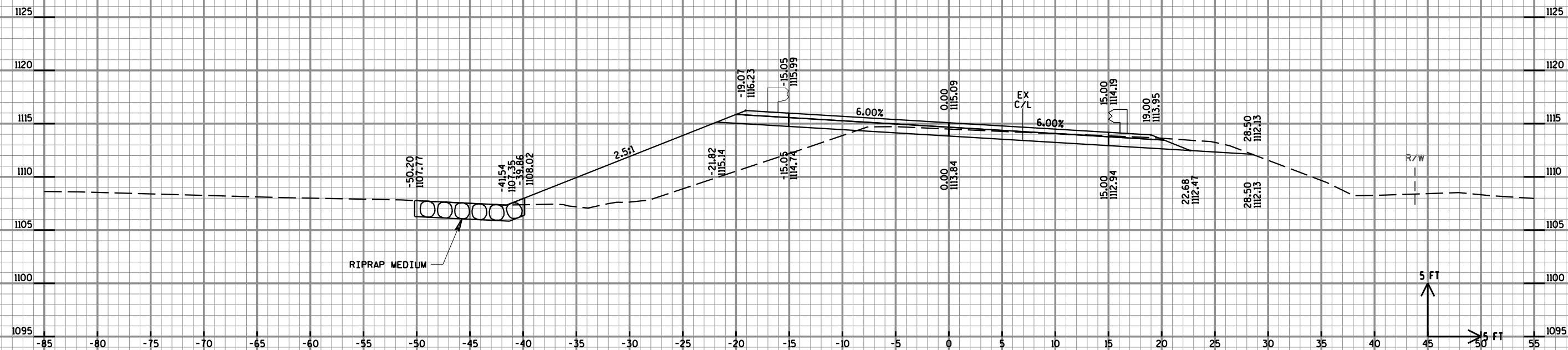
WISDOT/CADDs SHEET 21







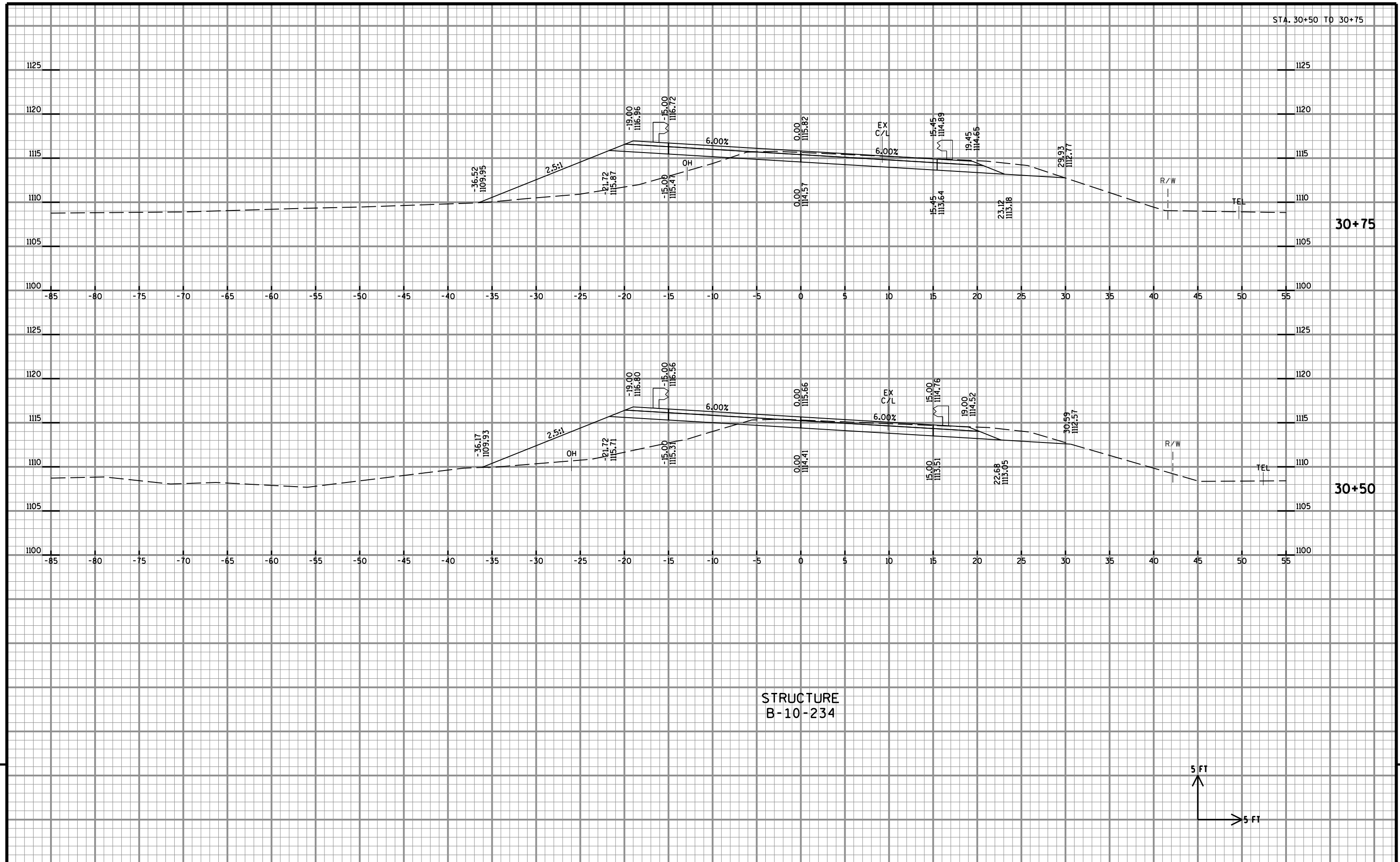
29+50

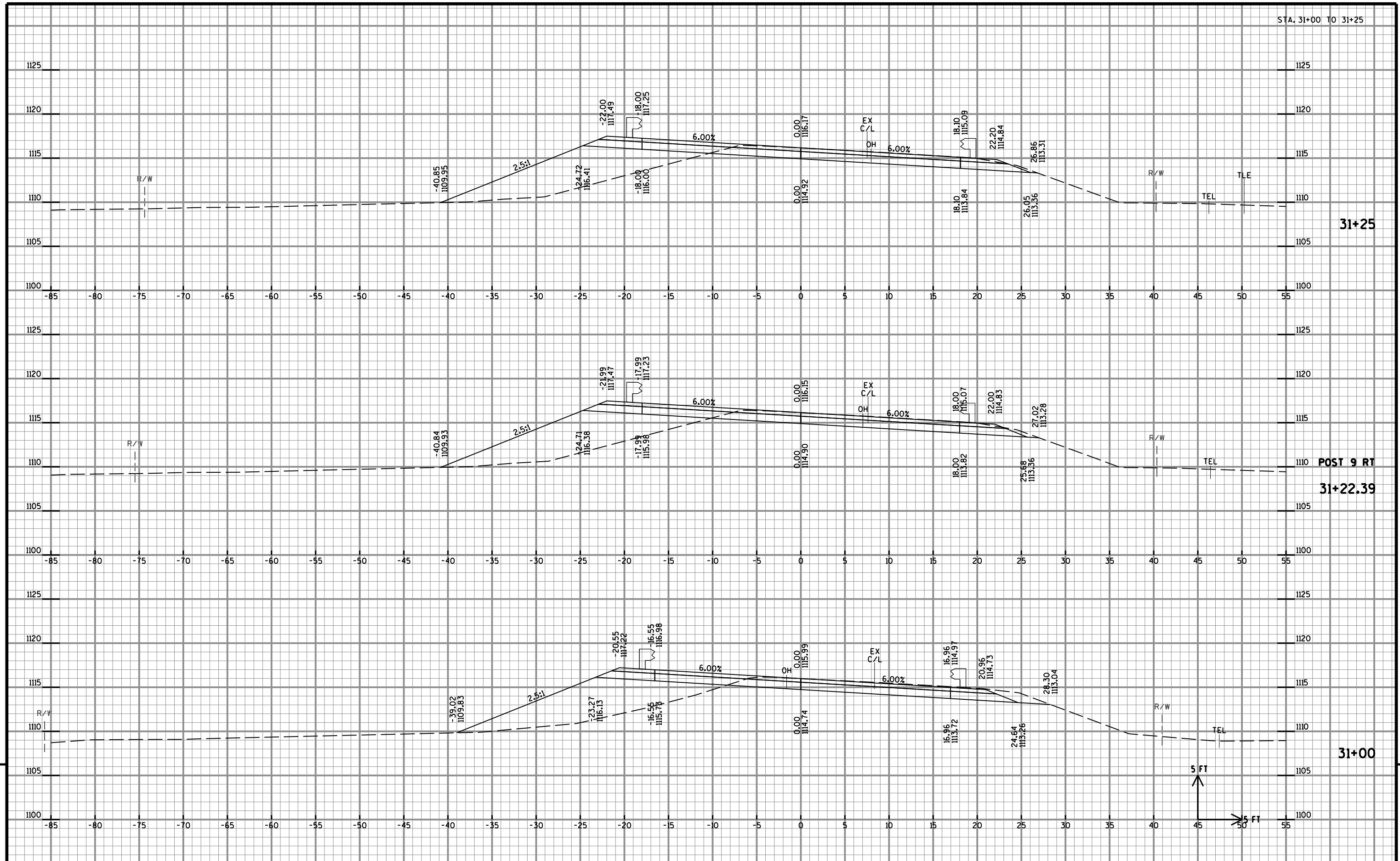


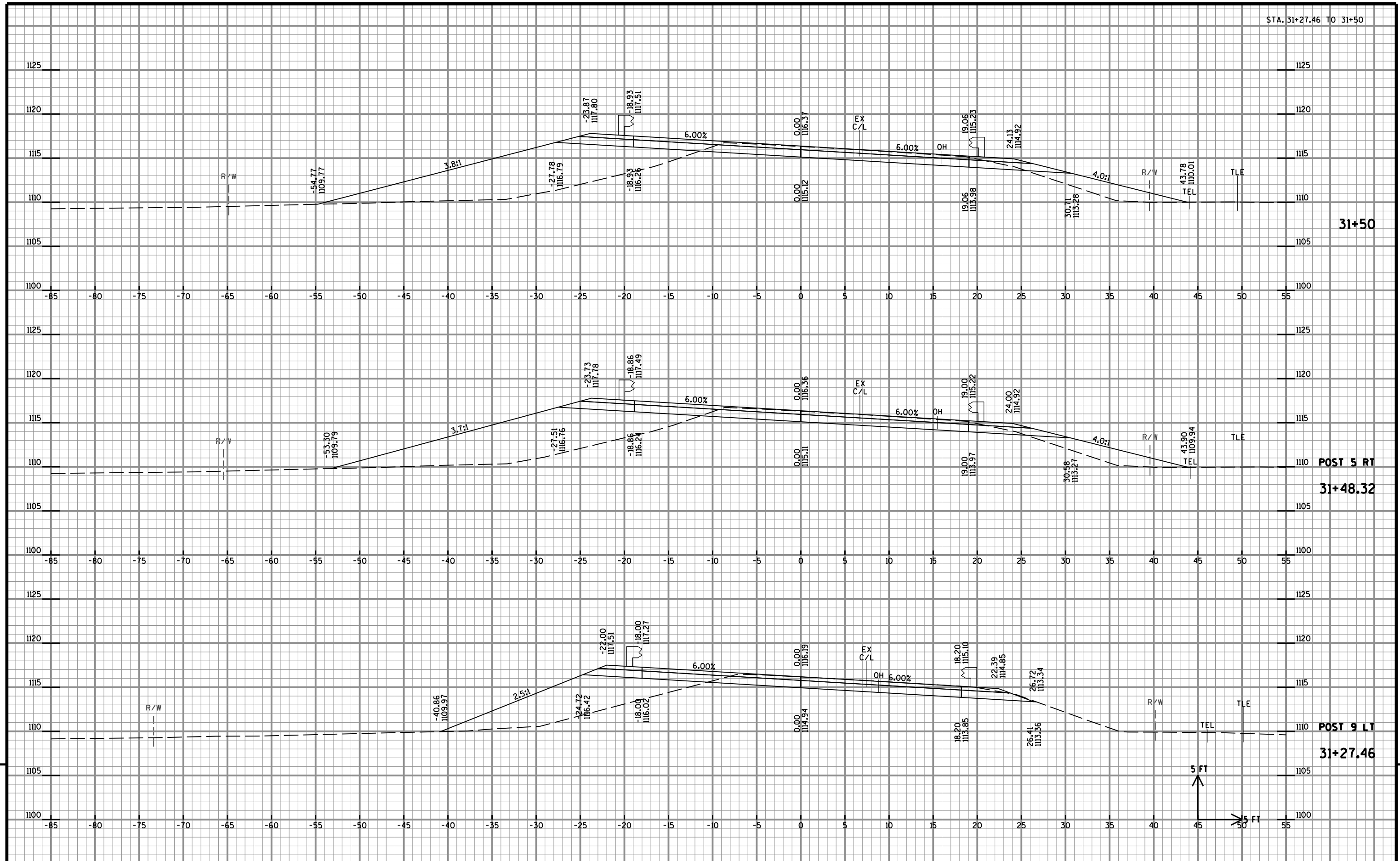
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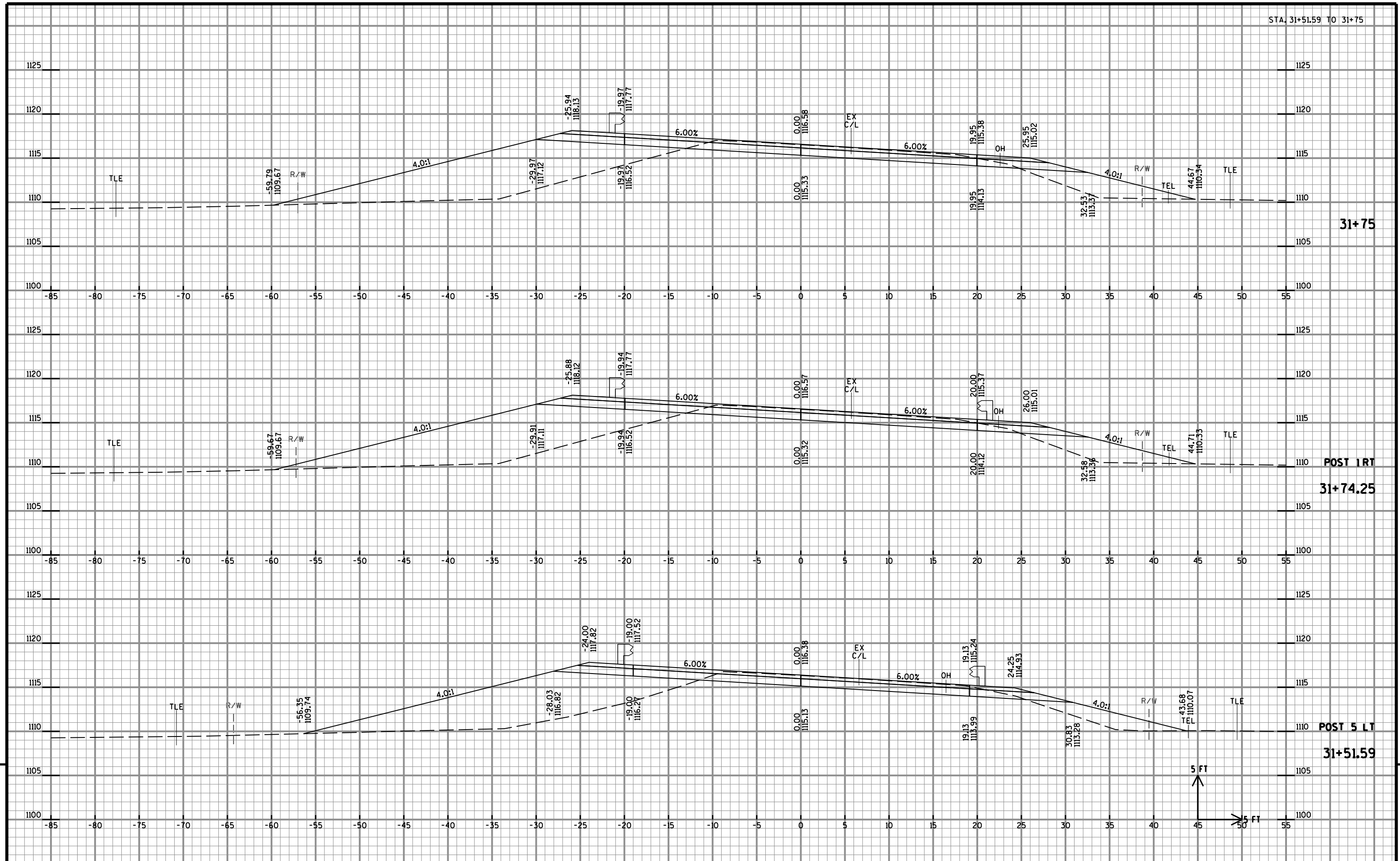
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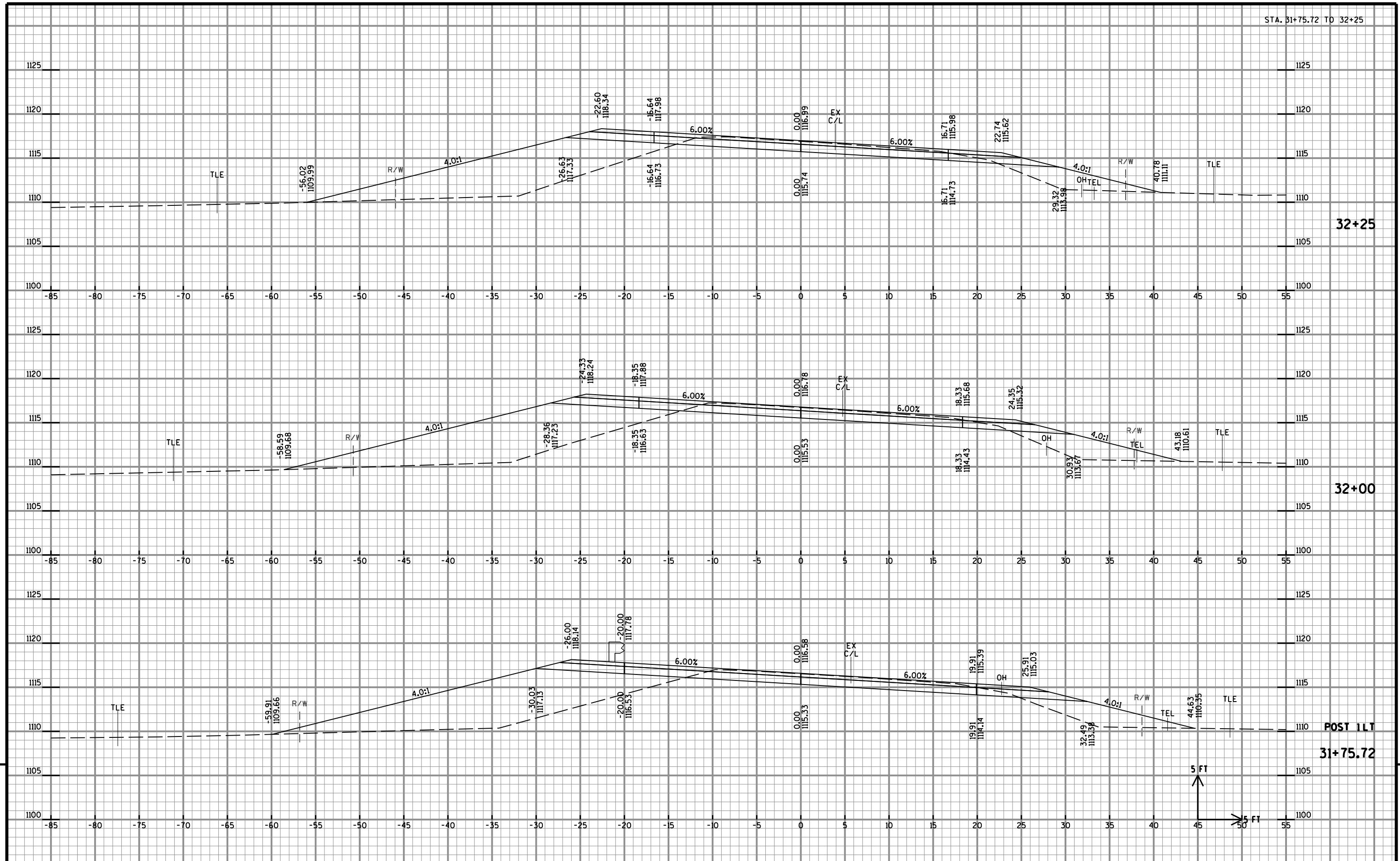
5 FT
5 FT

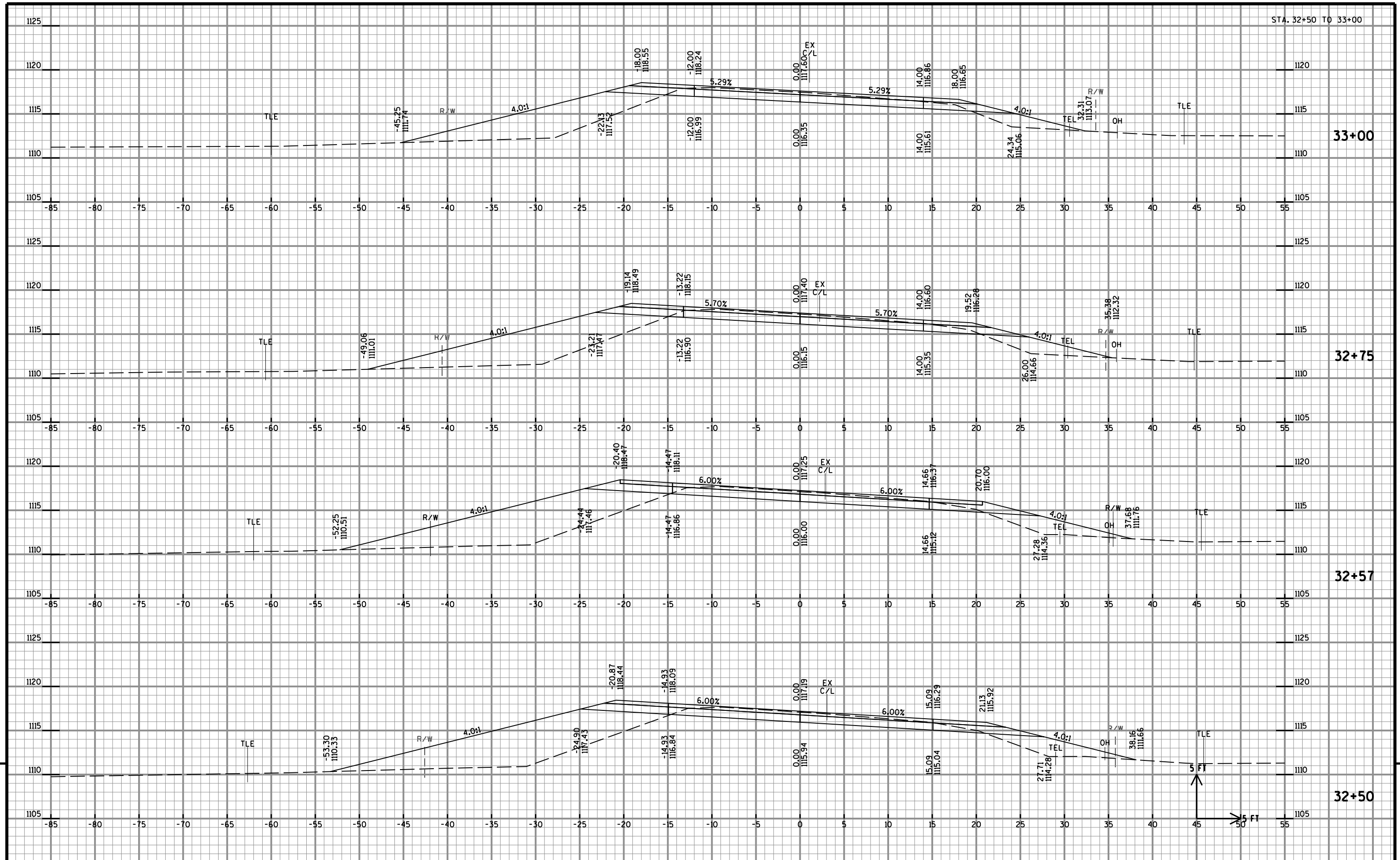


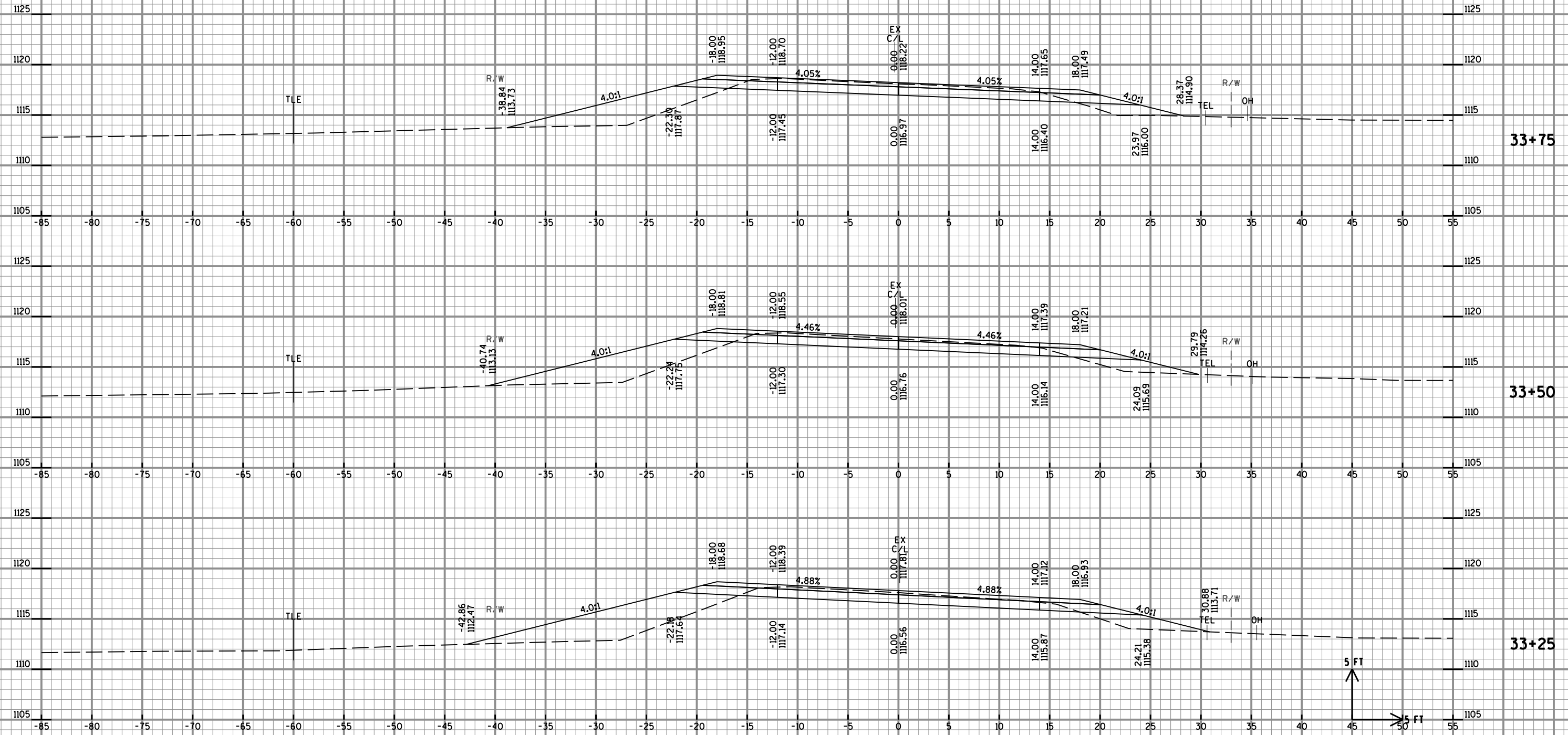












9

9

STA. 34+00 TO 34+00

END PROJECT
STA. 34+00
(MATCH EXISTING)



PROJECT NO: 7846-04-70

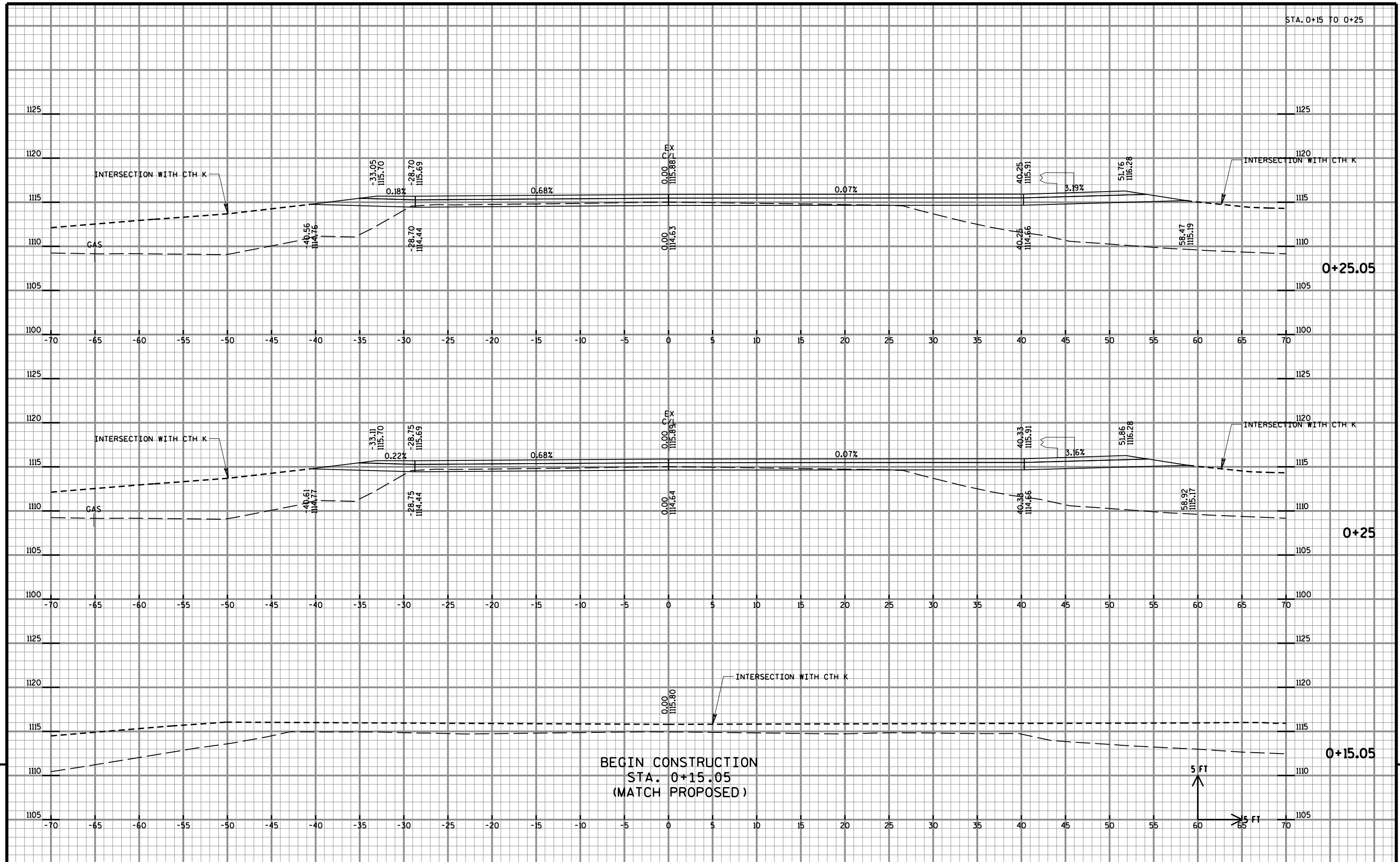
HWY: CTH K

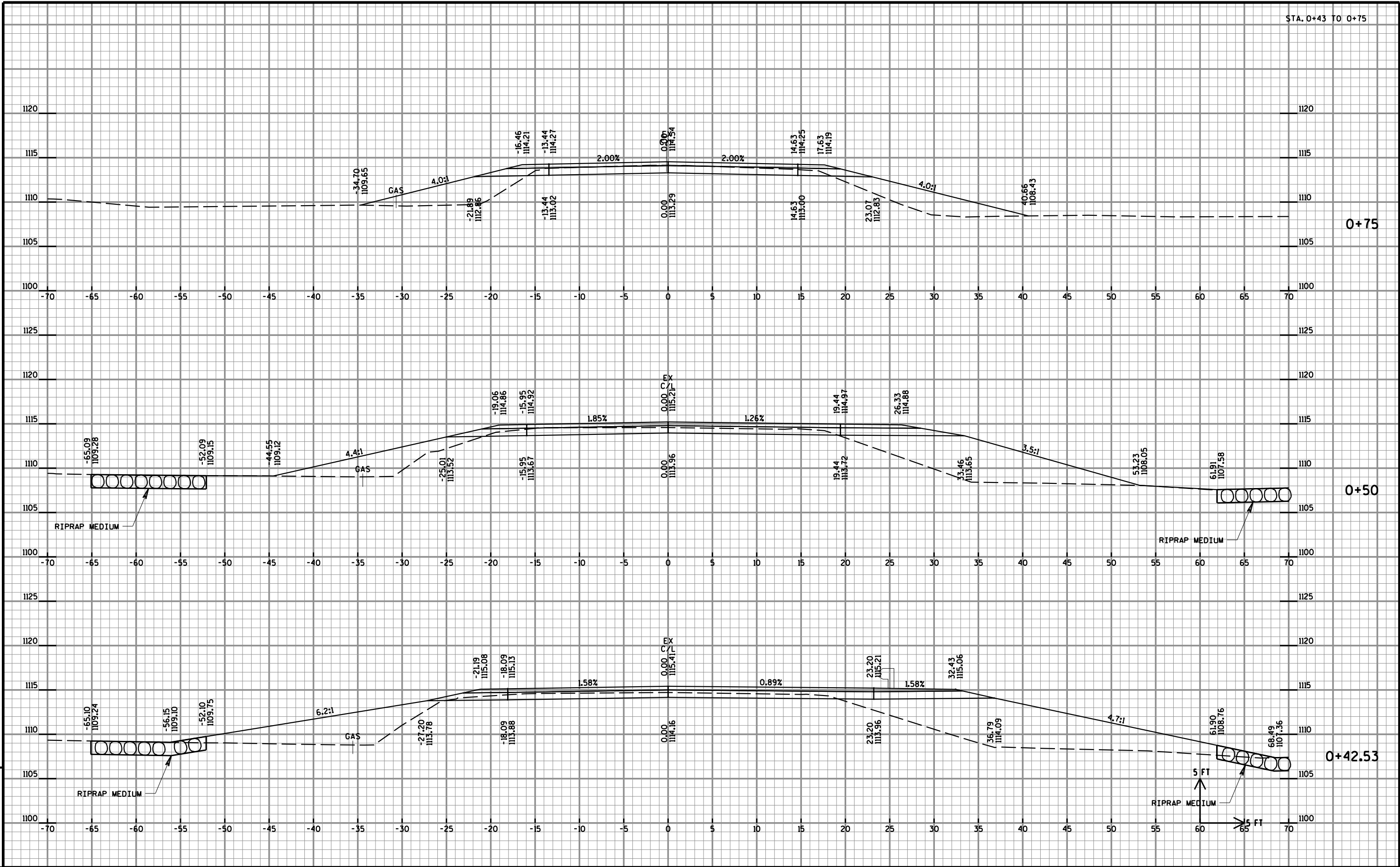
COUNTY: CLARK

CROSS SECTIONS	MAINLINE
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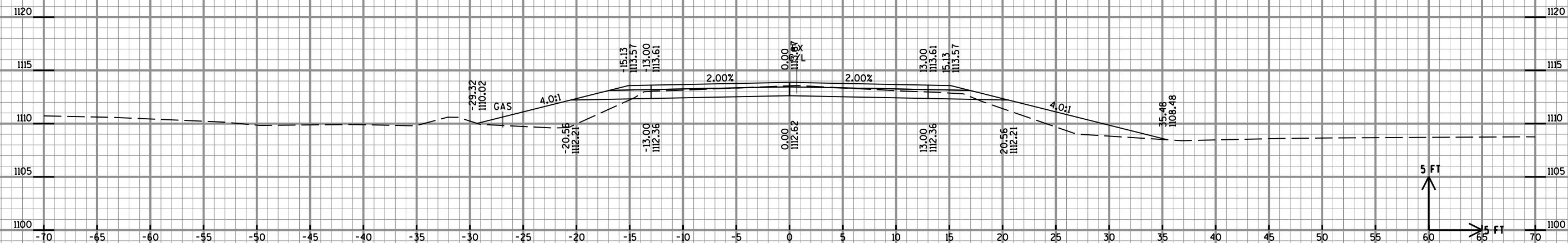
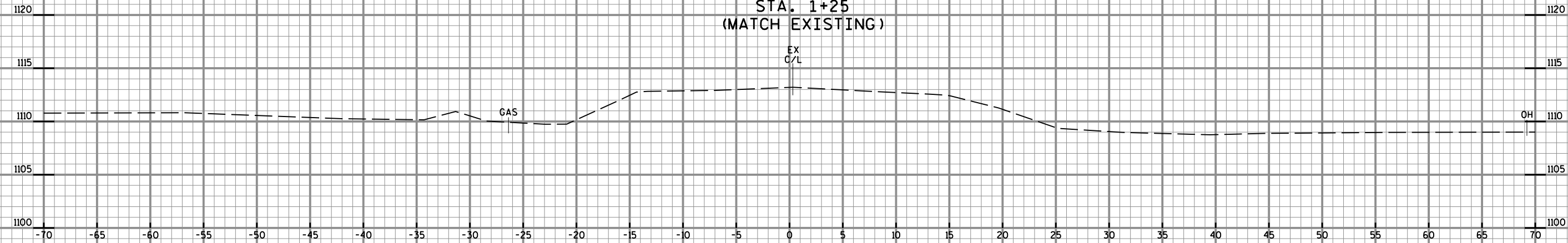
SHEET

1





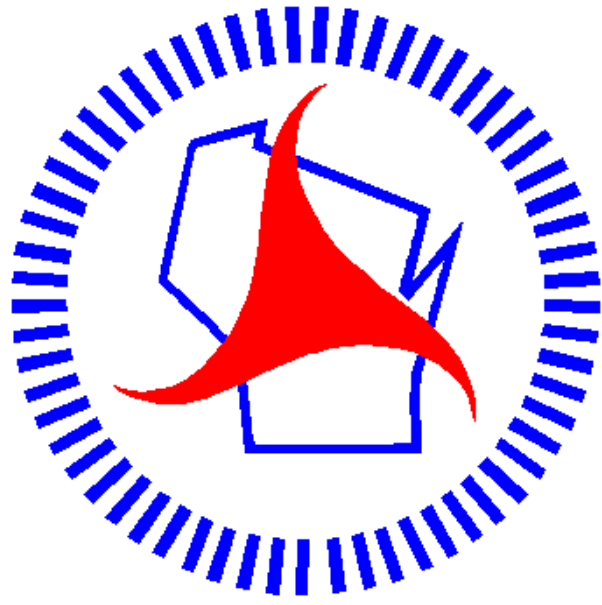
END CONSTRUCTION
STA. 1+25
(MATCH EXISTING)



9

9

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

<http://www.dot.wisconsin.gov>