

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 Plat
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 62

PROJECT LOCATION



DESIGN DESIGNATION

A.A.D.T. 2017	=	795
A.A.D.T. 2037	=	1010
D.H.V.	=	165
D.D.	=	60-40
T.	=	3.8%
DESIGN SPEED	=	60 MPH
ESALS	=	94,900

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 UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T PELLA, SWAMP ROAD

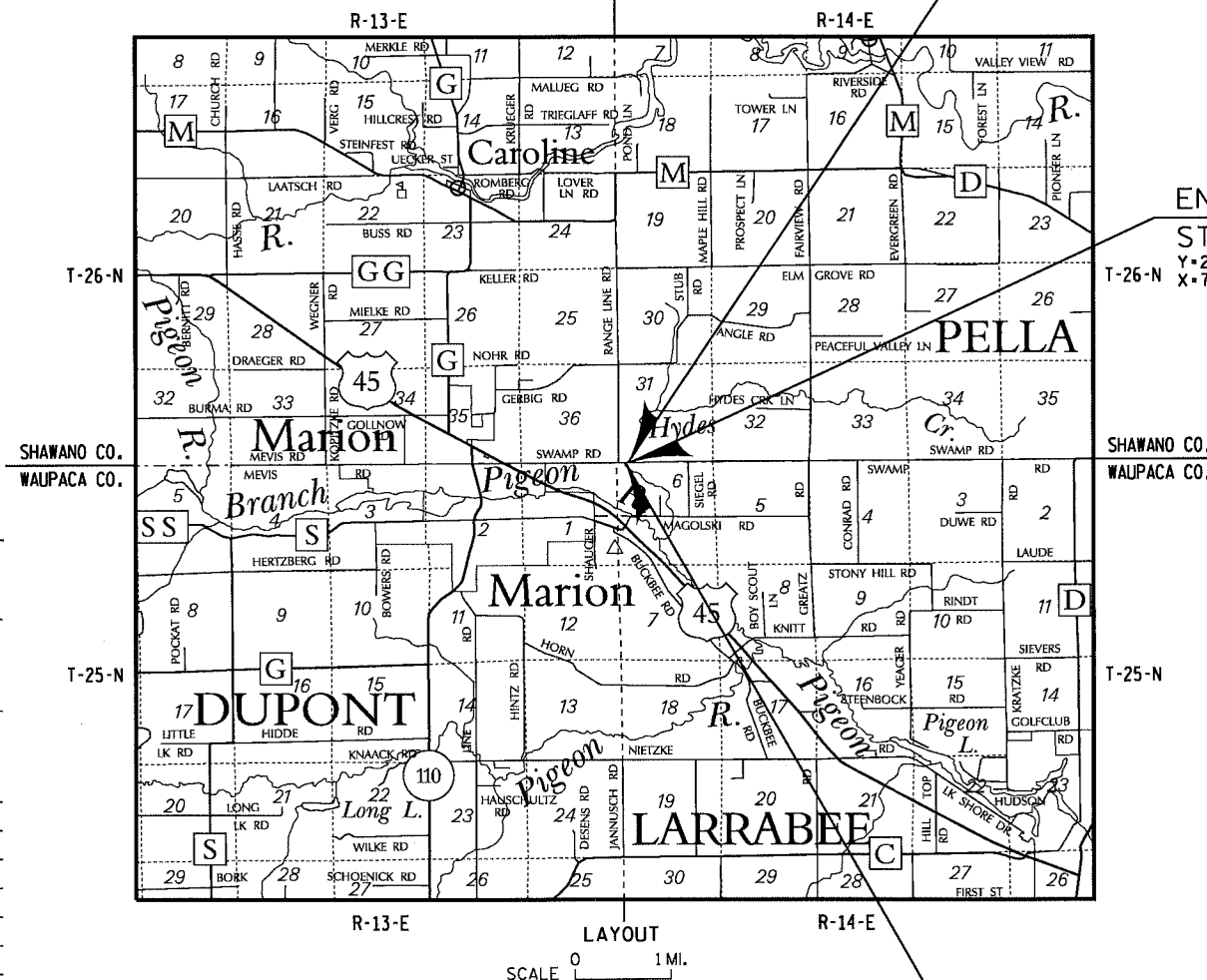
HYDES CREEK BRIDGE B-58-0126

LOCAL STREET

SHAWANO COUNTY

STATE PROJECT NUMBER

6097-05-70

EXISTING STRUCTURE P-58-53 (TO BE REPLACED)
STRUCTURE B-58-126

END PROJECT 6097-05-70

STA. 12+70.60
Y=234709.545
X=795957.836

BEGIN PROJECT 6097-05-70

STA. 7+34.16
Y=234721.202
X=795421.519

TOTAL NET LENGTH OF CENTERLINE = 0.102 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE
WISCONSIN COUNTY COORDINATE SYSTEM, SHAWANO COUNTY.

STATE PROJECT

6097-05-70

FEDERAL PROJECT

PROJECT

WISC 2017110

CONTRACT

1

ACCEPTED FOR
TOWN OF
PELLA
BY10/20/16 Charles Bartz
DATE TOWN CHAIRMANACCEPTED FOR
COUNTY OF
SHAWANO
BY10/19/16 Grant Bartz
DATE HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY

AECOM

10/18/2016 Kevin R. Hagen
(Date) (Signature)STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

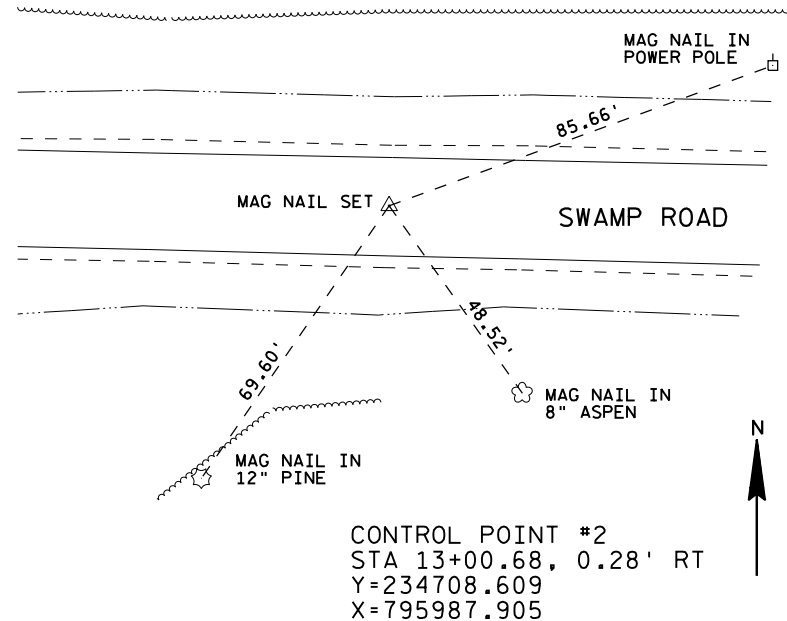
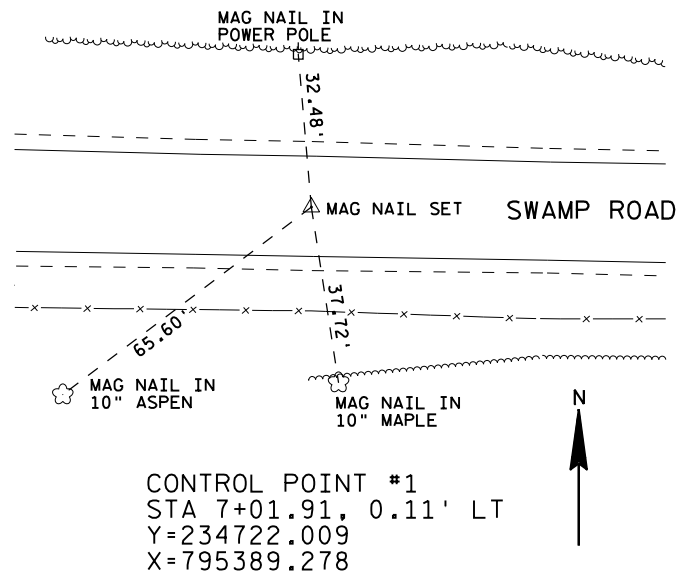
PREPARED BY

Surveyor	AECOM
Designer	AECOM
Management Consultant	CEDAR CORPORATION

APPROVED FOR THE DEPARTMENT

DATE: 10-28-2016 [Signature]
(Management Consultant Signature)

E



RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 0.630 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.614 ACRES

GENERAL NOTES

THE LOCATION 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.

SEED MIXTURE SHALL BE AS SHOWN ON THE TYPICAL SECTIONS.

WHERE THE QUANTITY OF BASE AGGREGATE DENSE AND HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE COURSE, AS SHOWN ON THE PLANS, IS APPROXIMATE. THE ACTUAL THICKNESS WILL DEPEND UPON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

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

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IF REQUIRED, SHALL BE MEASURED AND PAID FOR AS EXCAVATION COMMON. LOCATION FOR EBS WILL BE DETERMINED BY THE ENGINEER.

SECTIONS AS SHOWN ON THE CROSS SECTION SHEETS INCLUDE THE THICKNESS OF TOPSOIL.

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREA WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDDED AND TEMPORARY SEEDDED AS DIRECTED BY THE ENGINEER.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

SILT FENCE AS SHOWN ON THE PLANS SHALL BE FIELD ADJUSTED TO FIT EXISTING CONDITIONS.

ELEVATIONS SHOWN ON THIS PLAN ARE BASED ON NAVD 88 DATUM.

DISTANCES SHOWN ON THIS PLAN ARE GROUND DISTANCES.

FILL AS SHOWN ON THE PLAN SHEETS PERTAINS TO EMBANKMENTS CONSTRUCTED FROM EXCAVATION COMMON OR BORROW. THE SHRINKAGE ALLOWANCE USED TO COMPUTE THE VOLUME OF MATERIAL NECESSARY TO COMPLETE THE FILL IS 25 PERCENT.

THE 4" ASPHALTIC PAVEMENT SHALL CONSIST OF A 1.75 INCH UPPER LAYER A 2.25 INCH LOWER LAYER.

THE RUNOFF COEFFICIENTS OF SURFACE DRAINAGE AT THE PROJECT SITE WILL NOT BE CHANGED FROM BEFORE TO AFTER CONSTRUCTION. THE TOTAL AREA IS 0.630 ACRE AND THE TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES IS 0.614 ACRE.

WETLANDS ARE PRESENT WITHIN THE PROJECT LIMITS. DO NOT OPERATE EQUIPMENT OUTSIDE THE SLOPE INTERCEPTS.

THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT WHICH SHALL BE SET IN THE STRUCTURE AS DESIGNATED BY THE ENGINEER.

UTILITY CONTACTS

FRONTIER COMMUNICATIONS (TELEPHONE)
ATTN: JAMES JASKOLSKI
FRONTIER COMMUNICATIONS OF WISCONSIN
26 WEST 12TH STREET
CLINTONVILLE, WI 54924
(715)823-1227 PHONE
(715)823-1373 FAX
(715)853-6843 CELL
james.jaskolski@ftr.com

CENTURYLINK (FIBER OPTIC)
ATTN: RUDY WHEELER
2177 GARDEN GROVE LANE
BELLEVUE, WI 50311
(920) 362-1184
rufus.wheeler@centurylink.com

ALLIANT ENERGY (OVERHEAD ELECTRIC)
ATTN: JASON HOGAN
4902 NORTH BALTIMORE LANE
MADISON, WI 53718
(920) 458-4871
jasonhogan@alliantenergy.com

WDNR CONTACT

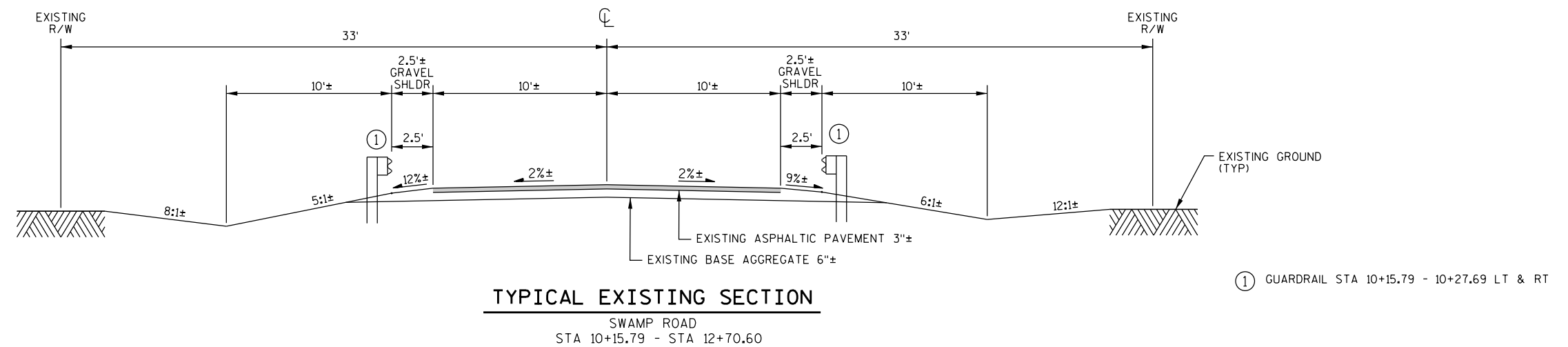
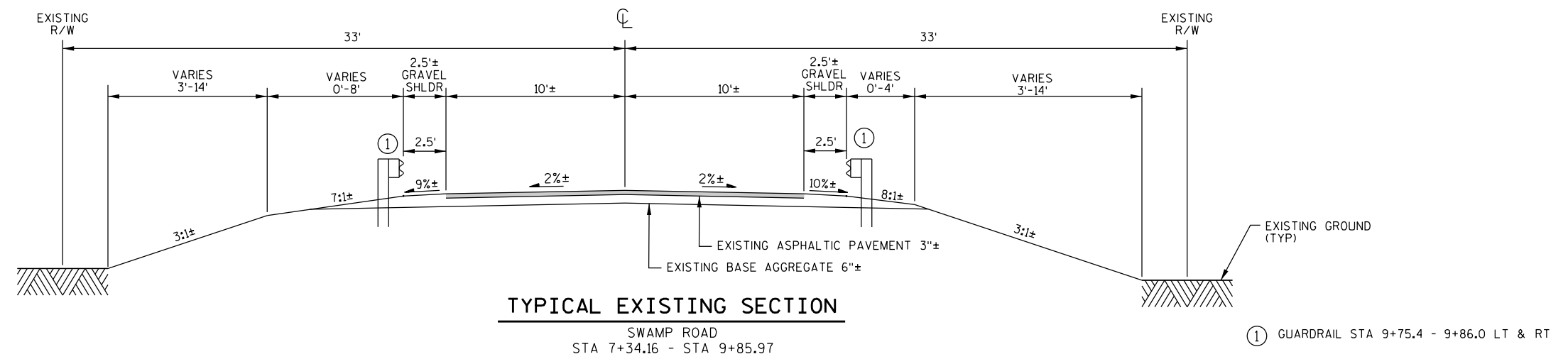
DEPARTMENT OF NATURAL RESOURCES
ATTN: JIM DOPERALSKI, JR.
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
(920)-662-5119
james.doperalski@wisconsin.gov

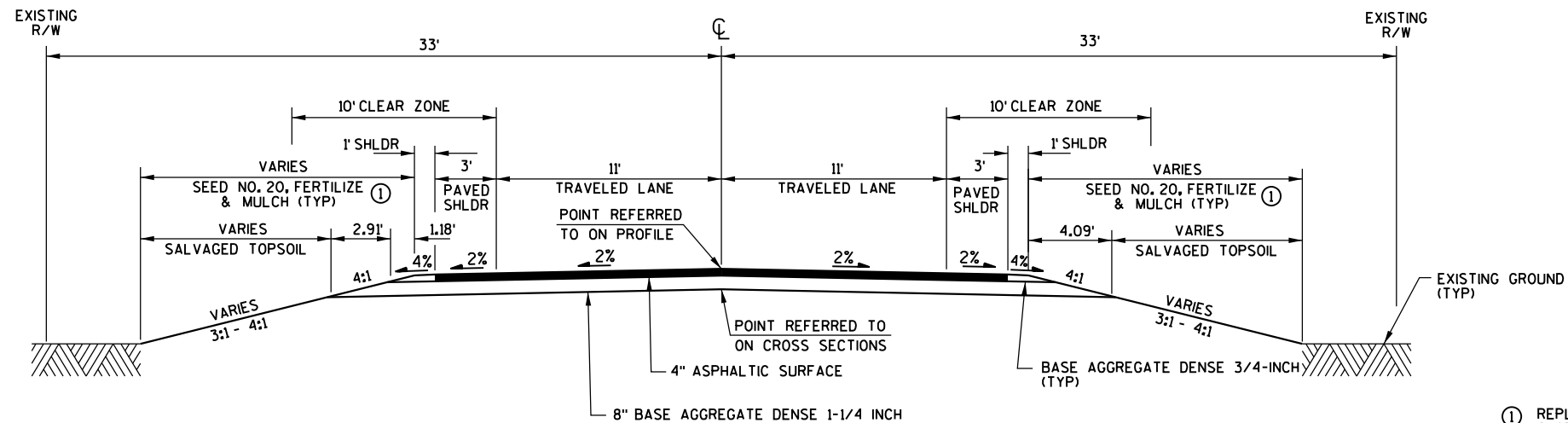
DESIGNER CONTACT

AECOM
ATTN: KEVIN HAGEN
200 INDIANA AVENUE
STEVENS POINT, WI 54481
(715)-342-3053
kevin.hagen@aecom.com
AECOM PROJECT NO. 60186938



** DENOTES UTILITIES THAT ARE NOT DIGGER'S HOTLINE MEMBERS

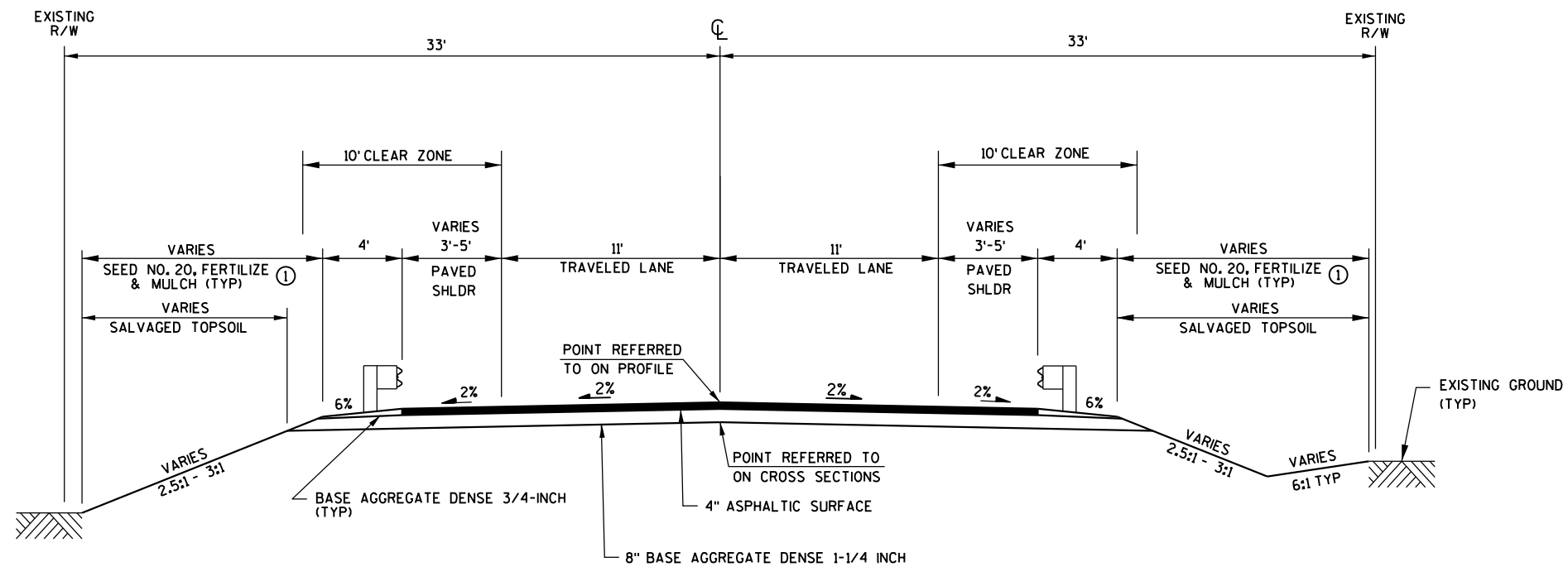




① REPLACE MULCH WITH E-MAT WHEN SLOPES ARE GREATER THAN 3:1

TYPICAL FINISHED SECTION

STA 7+34.16 RT - STA 8+61.43 RT
 STA 7+34.16 LT - STA 8+14.60 LT
 STA 11+22.69 RT - STA 12+70.60 RT
 STA 12+01.07 LT - STA 12+70.60 LT



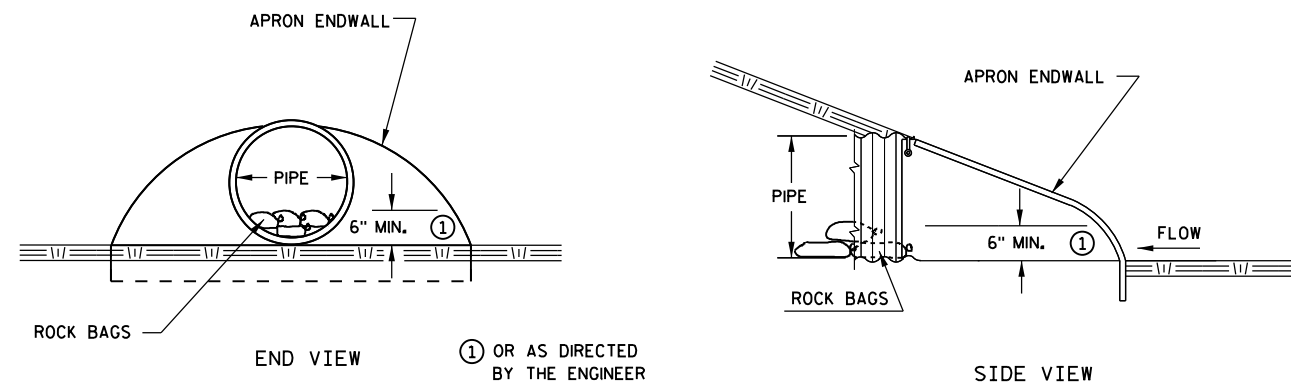
CUT SECTION

① REPLACE MULCH WITH E-MAT WHEN SLOPES ARE GREATER THAN 3:1

FILL SECTION

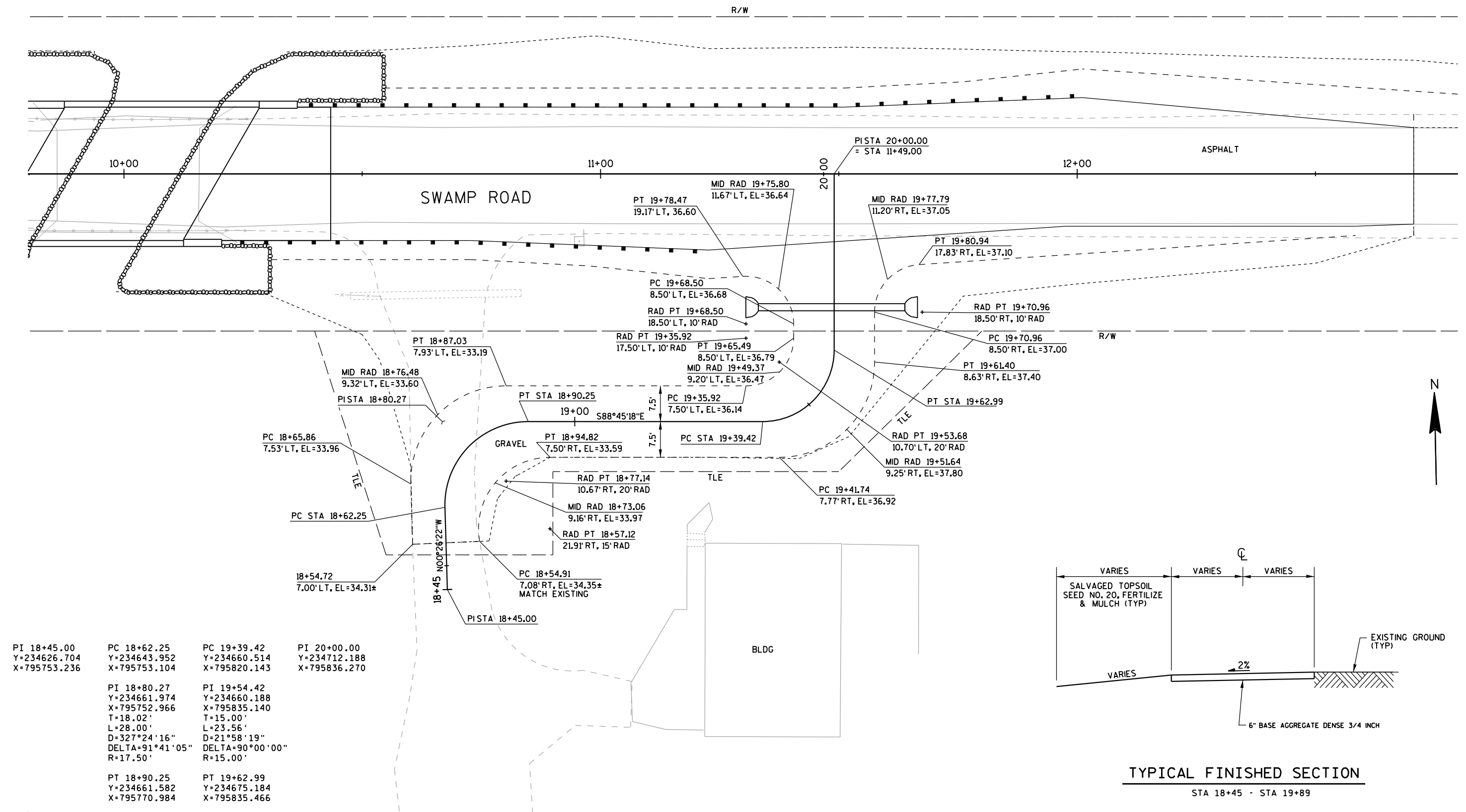
TYPICAL FINISHED SECTION

STA 8+61.43 RT - STA 9+66.45 RT
 STA 8+14.60 LT - STA 9+82.32 LT
 STA 10+17.67 RT - STA 11+22.69 RT
 STA 10+33.55 LT - STA 12+01.07 LT

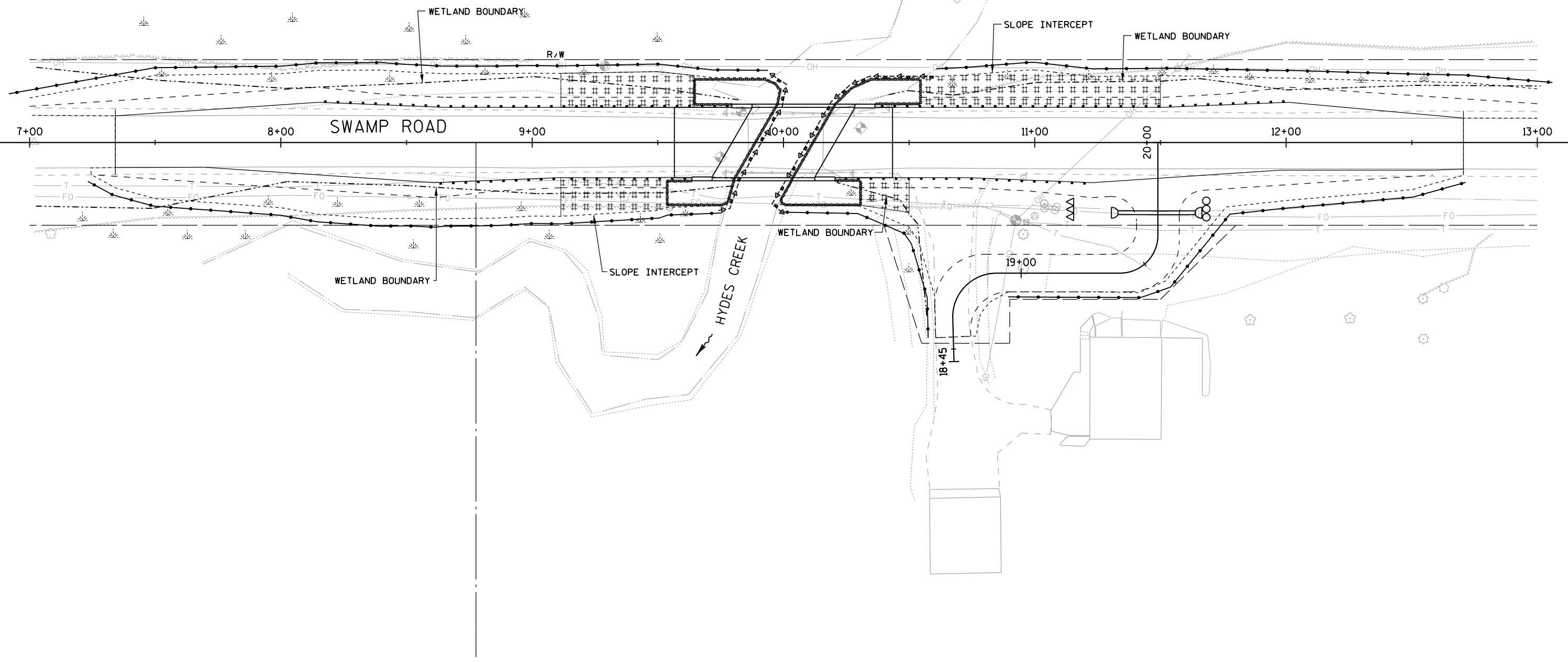


CULVERT PIPE CHECK

NTS



EROSION CONTROL LEGEND	
	SILT FENCE
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	TURBIDITY BARRIER
	EROSION MAT CLASS I, TYPE A



Estimate Of Quantities

6097-05-70

Line	Item	Item Description	Unit	Total	Qty
0010	201.0105	Clearing **P**	STA	4.000	4.000
0020	201.0205	Grubbing **P**	STA	4.000	4.000
0030	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0040	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+01	LS	1.000	1.000
0050	205.0100	Excavation Common	CY	450.000	450.000
0060	206.1000	Excavation for Structures Bridges (structure) 01. B-58-126	LS	1.000	1.000
0070	208.0100	Borrow	CY	100.000	100.000
0080	210.1500	Backfill Structure Type A	TON	400.000	400.000
0090	213.0100	Finishing Roadway (project) 01. 6097-05-70	EACH	1.000	1.000
0100	305.0110	Base Aggregate Dense 3/4-Inch	TON	140.000	140.000
0110	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	980.000	980.000
0120	415.0410	Concrete Pavement Approach Slab **P**	SY	142.000	142.000
0130	455.0605	Tack Coat	GAL	40.000	40.000
0140	465.0105	Asphaltic Surface	TON	320.000	320.000
0150	502.0100	Concrete Masonry Bridges **P**	CY	153.000	153.000
0160	502.3200	Protective Surface Treatment **P**	SY	184.000	184.000
0170	505.0400	Bar Steel Reinforcement HS Structures **P**	LB	4,220.000	4,220.000
0180	505.0600	Bar Steel Reinforcement HS Coated Structures **P**	LB	19,190.000	19,190.000
0190	513.4061	Railing Tubular Type M (structure) 01. B-58-126 **P**	LF	127.000	127.000
0200	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0210	520.1018	Apron Endwalls for Culvert Pipe 18-Inch	EACH	2.000	2.000
0220	530.0118	Culvert Pipe Corrugated Polyethylene 18-Inch	LF	32.000	32.000
0230	550.2126	Piling CIP Concrete 12 3/4 X 0.375-Inch	LF	1,120.000	1,120.000
0240	606.0300	Riprap Heavy	CY	154.000	154.000
0250	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	130.000	130.000
0260	614.2300	MGS Guardrail 3 **P**	LF	175.000	175.000
0270	614.2500	MGS Thrie Beam Transition **P**	LF	157.600	157.600
0280	614.2610	MGS Guardrail Terminal EAT **P**	EACH	4.000	4.000
0290	619.1000	Mobilization	EACH	1.000	1.000
0300	625.0100	Topsoil **P**	SY	1,110.000	1,110.000
0310	627.0200	Mulching **P**	SY	880.000	880.000
0320	628.1504	Silt Fence	LF	1,050.000	1,050.000
0330	628.1520	Silt Fence Maintenance	LF	1,050.000	1,050.000
0340	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0350	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0360	628.2002	Erosion Mat Class I Type A	SY	330.000	330.000
0370	628.6005	Turbidity Barriers	SY	180.000	180.000

Estimate Of Quantities

6097-05-70

Line	Item	Item Description	Unit	Total	Qty
0380	628.7504	Temporary Ditch Checks	LF	8.000	8.000
0390	628.7555	Culvert Pipe Checks	EACH	6.000	6.000
0400	629.0210	Fertilizer Type B **P**	CWT	1.000	1.000
0410	630.0120	Seeding Mixture No. 20 **P**	LB	35.000	35.000
0420	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0430	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0440	638.2602	Removing Signs Type II	EACH	6.000	6.000
0450	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0460	642.5001	Field Office Type B	EACH	1.000	1.000
0470	643.0100	Traffic Control (project) 01. 6097-05-70	EACH	1.000	1.000
0480	643.0420	Traffic Control Barricades Type III	DAY	952.000	952.000
0490	643.0705	Traffic Control Warning Lights Type A	DAY	1,360.000	1,360.000
0500	643.0900	Traffic Control Signs	DAY	952.000	952.000
0510	645.0120	Geotextile Type HR	SY	310.000	310.000
0520	650.4500	Construction Staking Subgrade **P**	LF	450.000	450.000
0530	650.5000	Construction Staking Base **P**	LF	450.000	450.000
0540	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000
0550	650.6500	Construction Staking Structure Layout (structure) 01. B-58-126	LS	1.000	1.000
0560	650.9910	Construction Staking Supplemental Control (project) 01. 6097-05-70	LS	1.000	1.000
0570	650.9920	Construction Staking Slope Stakes **P**	LF	450.000	450.000
0580	690.0150	Sawing Asphalt **P**	LF	40.000	40.000
0590	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0600	715.0502	Incentive Strength Concrete Structures	DOL	1,104.000	1,104.000
0610	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	150.000	150.000
0620	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0630	SPV.0120	Special 01. Water for Seeded Areas	MGAL	20.000	20.000

EARTHWORK																
From/To Station	Location	Excavation Common (1) (item # 205.0100)		Salvaged/Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6)	Reduced Marsh in Fill (7)	Expanded Marsh Backfill (8)	Unexpanded Fill	Expanded Fill (9)	Mass Ordinate +/- (10)	Waste	Borrow	Comment:		
		Cut (2)	EBS Excavation (3)			(item #205.0400)	Factor 0.60	Factor 1.50		Factor 1.25			(item #208.0100)			
06+92.19 - 09+79.50	West Approach	140	0	0	140	0	0	0	260	350	-210	0	210			
10+20.50 - 13+50.00	East Approach	310	0	0	310	0	0	0	160	200	110	110	0			
Grand Total		450	0	0	450	0	0	0	420	550	-100	110	210			
		Total Exc Common		450											Total Borrow	100

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

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

3) EBS Excavation to be backfilled with Subbase Material

4) Salvaged/Unusable Pavement Material = Existing Asphalt

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

6) Marsh Excavation - to be backfilled with Subbase Material

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

8) Expanded Marsh Backfill - This is to be filled with Subbase Material

9) Expanded Fill. Factor = 1.25

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor

Depending on selections:

or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor

or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor

or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor
- 10) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division.
Minus indicates a shortage of material within the Division.

CLEARING AND GRUBBING

STATION		-	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
8+00		-	12+00	RT & LT	4	4
TOTAL					4	4

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	203.0100 EACH	DESCRIPTION
10+66	RT	1	18" CCR
TOTAL		1	

BASE AGGREGATE DENSE

STATION		-	STATION	LOCATION	305.0110 3/4-INCH TONS	305.0120 1 1/4-INCH TONS
7+34		-	9+80	SWAMP ROAD	20	460
10+20		-	12+71	SWAMP ROAD	25	470
18+55		-	19+89	DRIVEWAY	80	---
UNDISTRIBUTED					15	50
TOTAL					140	980

CONCRETE PAVEMENT APPROACH SLAB

LOCATION		415.0410 CONCRETE PAVEMENT APPROACH SLABS SY
WEST APPROACH		71
EAST APPROACH		71
TOTAL		142

ASPHALT PAVEMENT ITEMS

STATION		-	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TONS
7+34		-	9+57	SWAMP ROAD	20	160
10+43		-	12+71	SWAMP ROAD	20	160
TOTAL					40	320

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED

CULVERT PIPE

STATION - STATION		LOCATION	INLET ELEVATION	OUTLET ELEVATION	SLOPE	530.0118 CULVERT PIPE CORRUGATED POLYETHYLENE 18-INCH LF	520.1018 APRON ENDWALLS FOR CULVERT PIPE 18-INCH EACH
1133.10	1163.86	RT	834.10	833.80	0.94%	32	2
TOTAL						32	2

GUARDRAIL

STATION - STATION		LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
8+15	9+82	LT	75	39.4	1
8+61	9+66	RT	12.5	39.4	1
10+34	12+02	LT	75	39.4	1
10+18	11+23	RT	12.5	39.4	1
TOTAL			175	157.6	4

LANDSCAPING

QUADRANT	625.0100 TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	SPV.0120.01 WATER FOR SEEDED AREAS MGAL
NW	246	188	0.2	7	4
SW	225	178	0.1	7	4
NE	211	113	0.1	6	4
SE	376	358	0.2	11	6
UNDISTRIBUTED	52	40	0.4	4	2
TOTAL	1,110	880	1	35	20

EROSION CONTROL

		628.1504	628.1520	628.2002	628.7555	628.7504
			SILT FENCE	EROSION MAT CLASS I	CULVERT PIPE	TEMPORARY
STATION	LOCATION	FENCE LF	MAINTENANCE LF	TYPE A SY	CHECKS EACH	DITCH CHECKS LF
NW	LT	304	304	81	---	---
SW	RT	255	255	66	---	---
NE	LT	246	246	140	---	---
SE	RT	198	198	27	6	8
UNDISTRIBUTED		47	47	16	---	---
TOTAL		1,050	1,050	330	6	8

MOBILIZATIONS EROSION CONTROL

628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
3	2
TOTAL	

TURBIDITY BARRIER

LOCATION	628.6005 TURBIDITY BARRIERS SY
WEST APPROACH	74
EAST APPROACH	106
TOTAL	180

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED

PERMANENT SIGNING

SIGN	CODE	INCHES		EXISTING		PROPOSED		638.2602 REMOVING SIGNS TYPE II	638.3000 REMOVING SMALL SIGN SUPPORTS	637.2230 SIGNS TYPE II REFLECTIVE F	634.0612 POSTS WOOD 4X6-INCH X12-FT
		W	L	STATION	OFF	STATION	OFF	EACH	EACH	SF	EACH
WEIGHT LIMIT	---	---	---	9+34	RT	---	---	1	1	---	---
WEIGHT LIMIT	---	---	---	10+41	LT	---	---	1	1	---	---
BRIDGE HASH MARKS	W5-52L	12	36	9+77	LT	9+77	LT	1	1	3	1
BRIDGE HASH MARKS	W5-52R	12	36	9+77	RT	9+62	RT	1	1	3	1
BRIDGE HASH MARKS	W5-52L	12	36	10+27	LT	10+38	LT	1	1	3	1
BRIDGE HASH MARKS	W5-52R	12	36	10+27	RT	10+22	RT	1	1	3	1
TOTAL								6	6	12	4

TRAFFIC CONTROL

LOCATION	DAYS IN SERVICE	643.0100 TRAFFIC CONTROL PROJECT 6097-05-70	643.0420 TRAFFIC CONTROL BARRICADES TYPE III	DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAYS	643.0900 TRAFFIC CONTROL SIGNS	DAYS
		EACH	NO.		NO.		NO.	
PROJECT	68	1	---	---	---	---	---	---
WEST APPROACH	68	---	7	476	10	680	7	476
EAST APPROACH	68	---	7	476	10	680	7	476
TOTAL		1		952		1,360		952

CONSTRUCTION STAKING

	STA.	-	STA.	650.4500	650.5000	650.6000	CAT. 0020 650.6500.01 CONSTRUCTION STAKING STRUCTURE LAYOUT B-58-126	650.9910	650.9920
				CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING PIPE CULVERT EACH	CONSTRUCTION STAKING PIPE LAYOUT B-58-126 LF	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL LS	CONSTRUCTION STAKING SLOPE STAKES LF
WEST APPROACH	7+34	-	9+56.60	223	223	---	---	0.5	223
B-58-126	9+56.60	-	10+43.40	---	---	---	1	---	---
EAST APPROACH	10+43.40	-	12+71	227	227	1	---	0.5	227
TOTAL				450	450	1	1	1	450

SAWING PAVEMENT

STATION	-	STATION	LOCATION	690.0150 SAWING ASPHALT LF
7+34			BEGIN	20
12+71			END	20
TOTAL				40

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED

CONVENTIONAL SIGNS AND ABBREVIATIONS

STATE LINE	---	SECTION CORNER		FOUNDATION OR RUIN BUILDING	
COUNTY LINE	---	NOTATION FOR COMBUSTIBLE FLUIDS		CEMETERY	
TOWNSHIP AND RANGE LINES	---	NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES		R/W MONUMENT	
SECTION LINE	---	BRIDGE		NON-MONUMENTED R/W POINT	
QUARTER LINE	---	STREAM OR RIVER		IRON PIN	
SIXTEENTH LINE	---	LAKE		VALVE	
NEW REFERENCE LINE	---	CULVERT (Box, Pipe Or Cattle Pass)		WINDMILL	
NEW R/W LINE	---	SIGN		MANHOLE, SEPTIC VENT, WELL, ETC.	
EXISTING R/W LINE	---	ELECTRIC POLE		GAS PUMPS	
PROPERTY LINE	---	TELEPHONE POLE		BUSHES	
CORPORATE LIMITS	---	PEDESTAL (Label Type - Communications, Electric)		TREES (Deciduous)	
LOT, TIE AND OTHER MINOR LINES	---	NO ACCESS (By Acquisition)		TREES (Coniferous)	
SLOPE INTERCEPTS	---	NO ACCESS (By Statutory Authority)		WOODS	
UNDERGROUND FACILITY (Communications, Electric, Etc.)	---	NO ACCESS (By Previous Project)		ENCROACHING SIGN	
FENCE	---				
FEE INTEREST	---				
TEMPORARY INTEREST	---				
EASEMENT (Highway, Permanent Limited or Restricted Development)	---				
BEAM GUARD	---				
TRANSMISSION STRUCTURES (Line Optional)	---				
RAIL LINE	---				

P.I.	Point of Intersection	ST.	Street
or PI		IP	Iron Pipe or Iron Pin
°.	Deflection Angle	C.S.M.	Certified Survey Map
D.	Degree of Curve	COR.	Corner
T.	Tangent Length	L.C.	Long Chord
L.	Length	L.C.B.	Long Chord Bearing
R.	Radius	MI.	Miles
CATV	Cable Television Line	MISC	Miscellaneous
FO	Fiber Optic Cable	N/A	Not Available or Applicable
G	Gas Line	P.L.	Property Line
GUY	Guy Wire	P.L.E.	Permanent Limited Easement
GV	Gas Valve	P.O.B.	Point of Beginning
SAN	Sanitary Sewer Line	PC	Point of Curvature
SEPV.	Septic Vent	PG.	Page
T	Telephone Line	PROP	Property Corner
W	Water Line	PT	Point of Tangency
ANT.	Antenna	R/W	Right of Way
B	Barn or Building	RD.	Road
G	Garage	REM.	Remnant
H	House	S.F.	Square Feet
S	Shed	SEC.	Section
C.T.H.	County Trunk Highway	STA.	Station
CORP	Corporation	T.L.E.	Temporary Limited Easement
LLC	Limited Liability Corporation	or TLE	
RR.	Railroad	VOL.	Volume
S.T.H.	State Trunk Highway		

NOTES

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATES REFERENCE SYSTEM COORDINATES (WISCRS), SHAWANO COUNTY, NAD 83 (2007) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS AND GRID DISTANCES. GRID DISTANCES MAY BE USED FOR GROUND DISTANCES.

RIGHT OF WAY MONUMENTS ARE TYPE 2 MONUMENTS (TYPICALLY 3/4 " X 24" REBAR) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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

FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE SHAWANO COUNTY AND/OR WAUPACA COUNTY HIGHWAY DEPARTMENT, THE TOWN OF PELLA AND/OR THE TOWN OF LARRABEE.

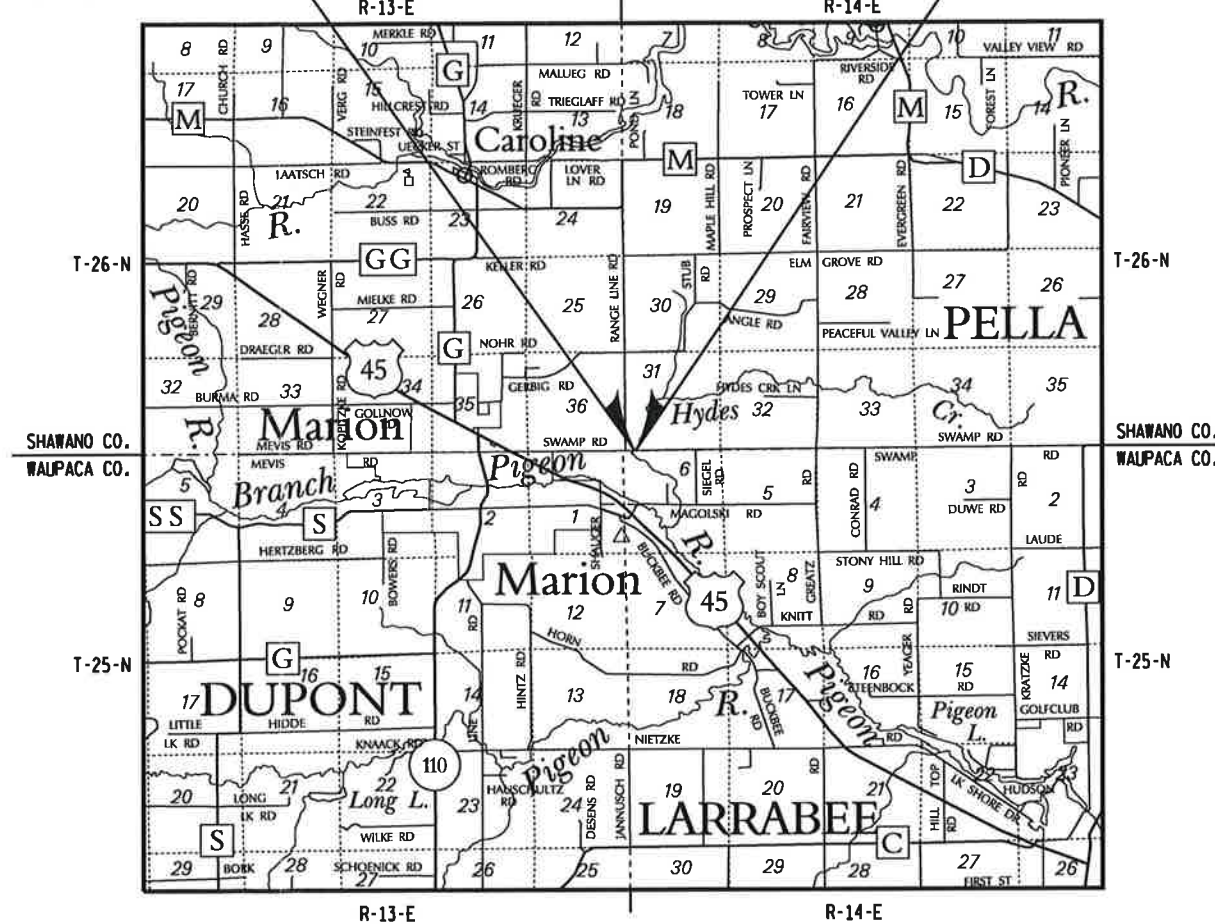
PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. EXCLUDING RIGHT OF WAY LINES, THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

BEGIN RELOCATION ORDER

STA. 10+40.00
13.07' SOUTH AND 60.33' EAST
OF THE NORTHWEST CORNER
OF SECTION 6, T25N, R14E.

END RELOCATION ORDER

STA. 11+80.00
16.11' SOUTH AND 74.30' EAST
OF THE NORTHWEST CORNER
OF SECTION 6, T25N, R14E.



LAYOUT
SCALE 0 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.027 MI.



ORIGINAL PLAT PREPARED BY

AECOM

LANCE J. HABECK, PLS-1444

DATE: 9/12/2016

REVISION DATE	TOWN OF PELLA	SHAWANO COUNTY HIGHWAY DEPARTMENT
APPROVED FOR THE TOWN	APPROVED FOR THE DEPARTMENT	
DATE: 10/31/16	DATE: 10/5/16	

P.I. = 6+80.00
Y 234722.379
X 795367.376

P.I. = 13+60.00
Y 234707.603
X 796047.215

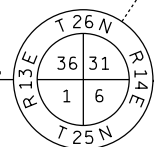
NOTE: EXISTING RIGHT OF WAY FOR SWAMP ROAD
ESTABLISHED BY GOVERNMENT LAND LINES.



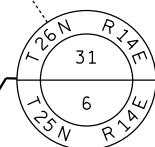
BEGIN RELOCATION ORDER
STA. 10+40.00
Y=234714.556
X=795727.291

END RELOCATION ORDER
STA. 11+80.00
Y=234711.514
X=795867.258

CAST IRON MON.
FOUND
Y=234727.626
X=795125.960



PK NAIL
FOUND
Y=234673.817
X=797601.668



4

4

TOWN

CREEK

OF

THE REFERENCE LINE AND THE
TOWNSHIP LINE ARE COINCIDENTAL.

PELLA

R/W

OH

OH

OH

OH

OH

R/W

OH

TOWNSHIP LINE

10+00

R/L=S88°45'18"E 11+00

12+00

SHAWANO COUNTY

WAUPACA COUNTY

SWAMP ROAD

FO

FO

FO

FO

FO

FO

FO

R/W

HYDES

TLE FOR
DRIVEWAY

SLOPE
INTERCEPTS

OF
NW-NW
SEC. 6

CORY A. DES ROCHERS &
MOLLY L. DES ROCHERS

LARRABEE

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	OWNER (S)	INTEREST REQUIRED
20	FRONTIER COMMUNICATIONS OF WI, LLC (TELEPHONE)	RELEASE OF RIGHTS

SCHEDULE OF LANDS & INTERESTS REQUIRED

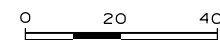
PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED	TLE ACRES
1	CORY A. DES ROCHERS & MOLLY L. DES ROCHERS	TLE	0.10

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

REVISION DATE

DATE

SCALE, FEET



HWY: SWAMP ROAD

STATE R/W PROJECT NUMBER 6097-05-00

PLAT SHEET 4.02

GRID FACTOR N/A

COUNTY: WAUPACA

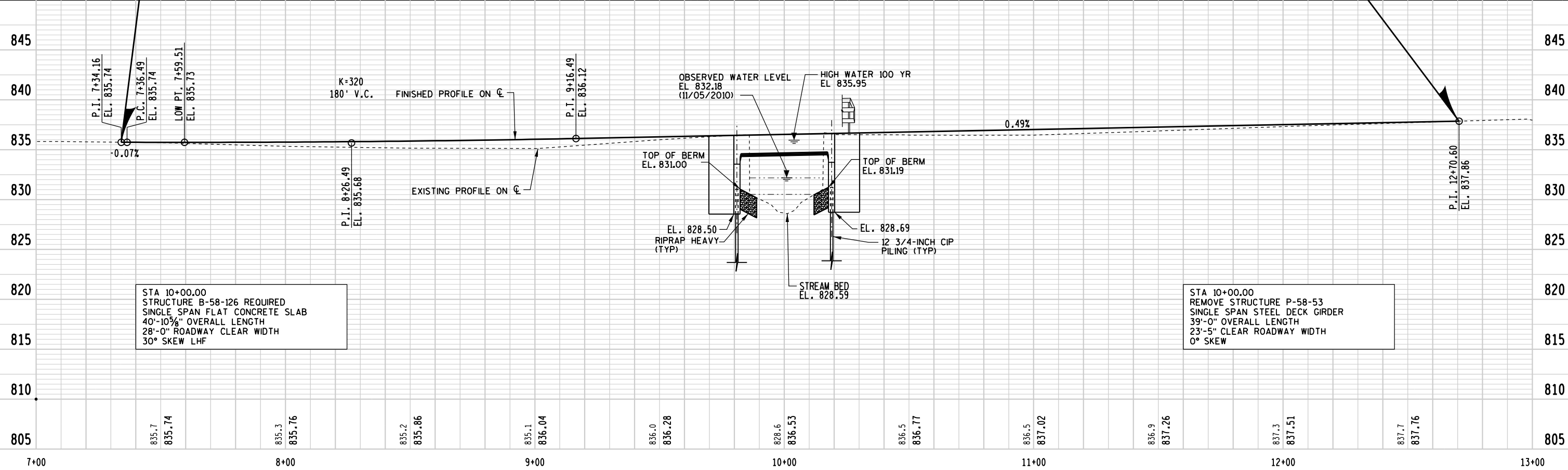
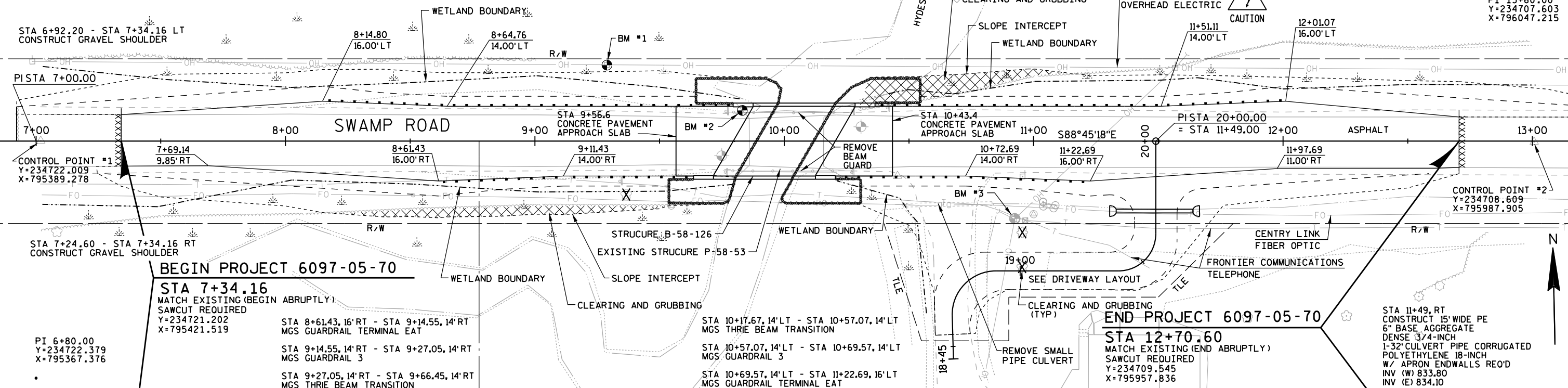
CONSTRUCTION PROJECT NUMBER 6097-05-70

PS&E SHEET

E

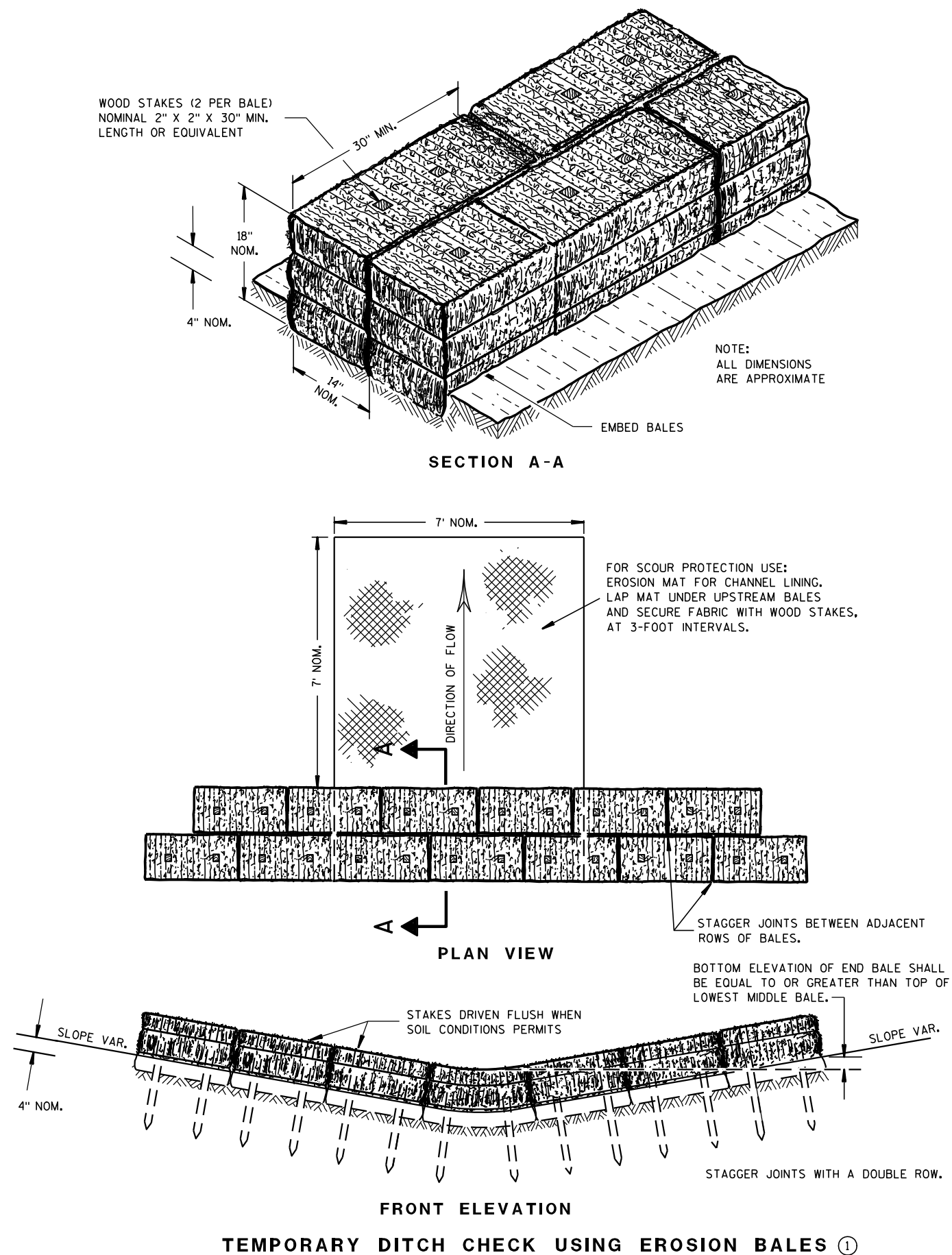
BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEVATION
1	9+28.90	MAG NAIL IN PP 26-14-31, NORTH SIDE	832.92
2	9+83.18	CHISELED SQUARE ON NW WING OF BRIDGE	835.62
3	10+92.30	MAG NAIL IN PP 25-14-6, SOUTH SIDE	833.78



Standard Detail Drawing List

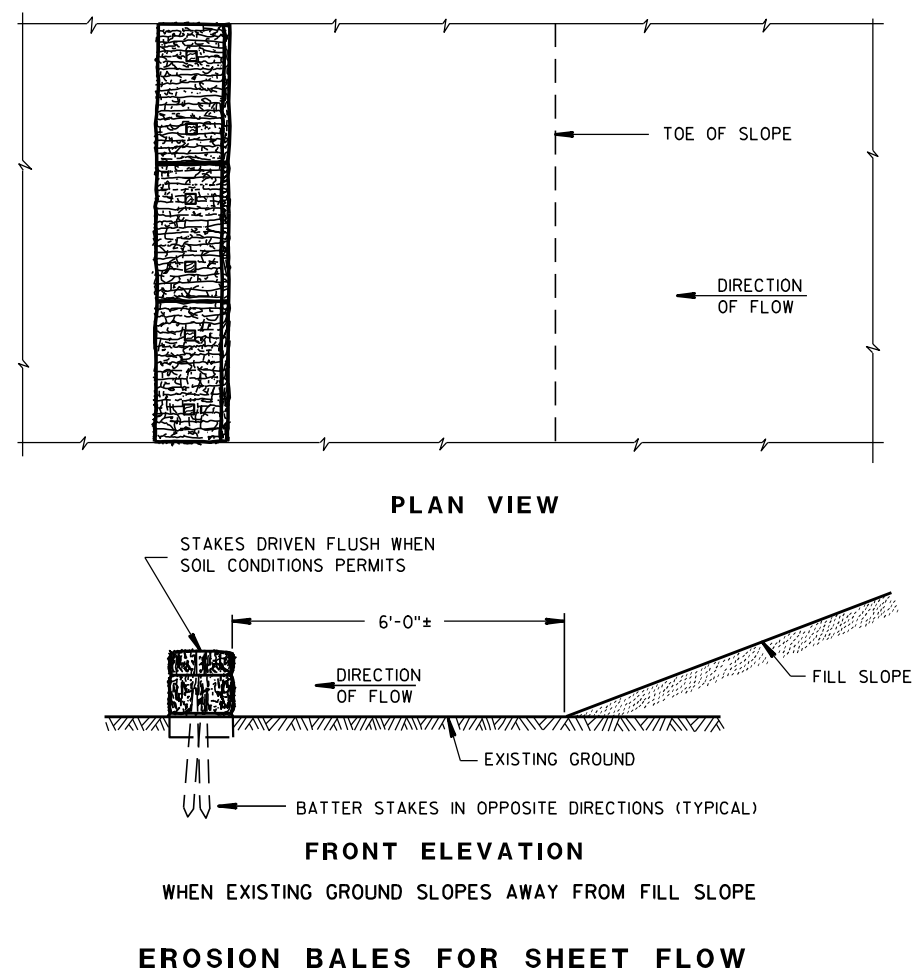
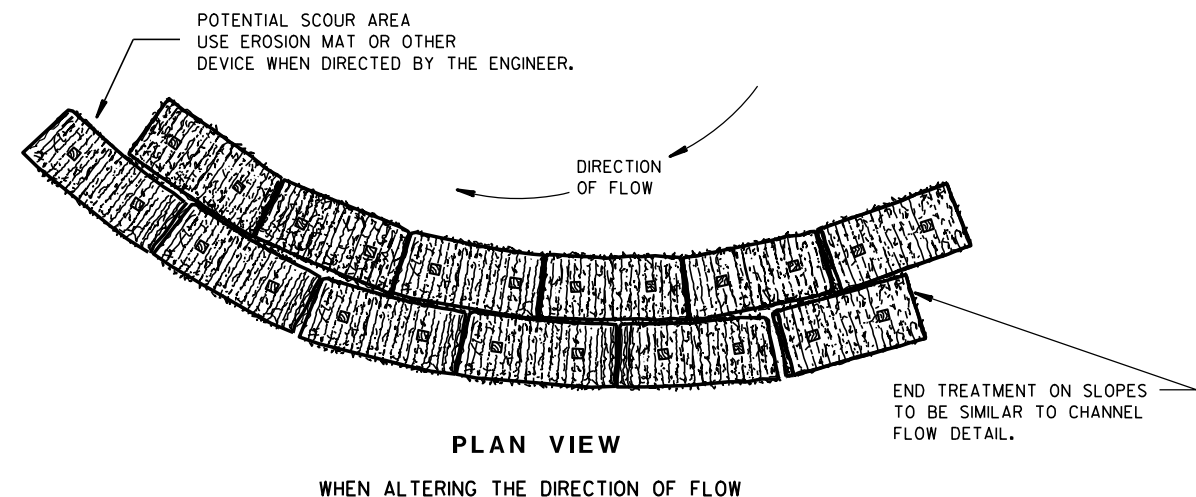
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
14B42-04A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-08	SIGNING & MARKING FOR TWO LANE BRIDGES



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

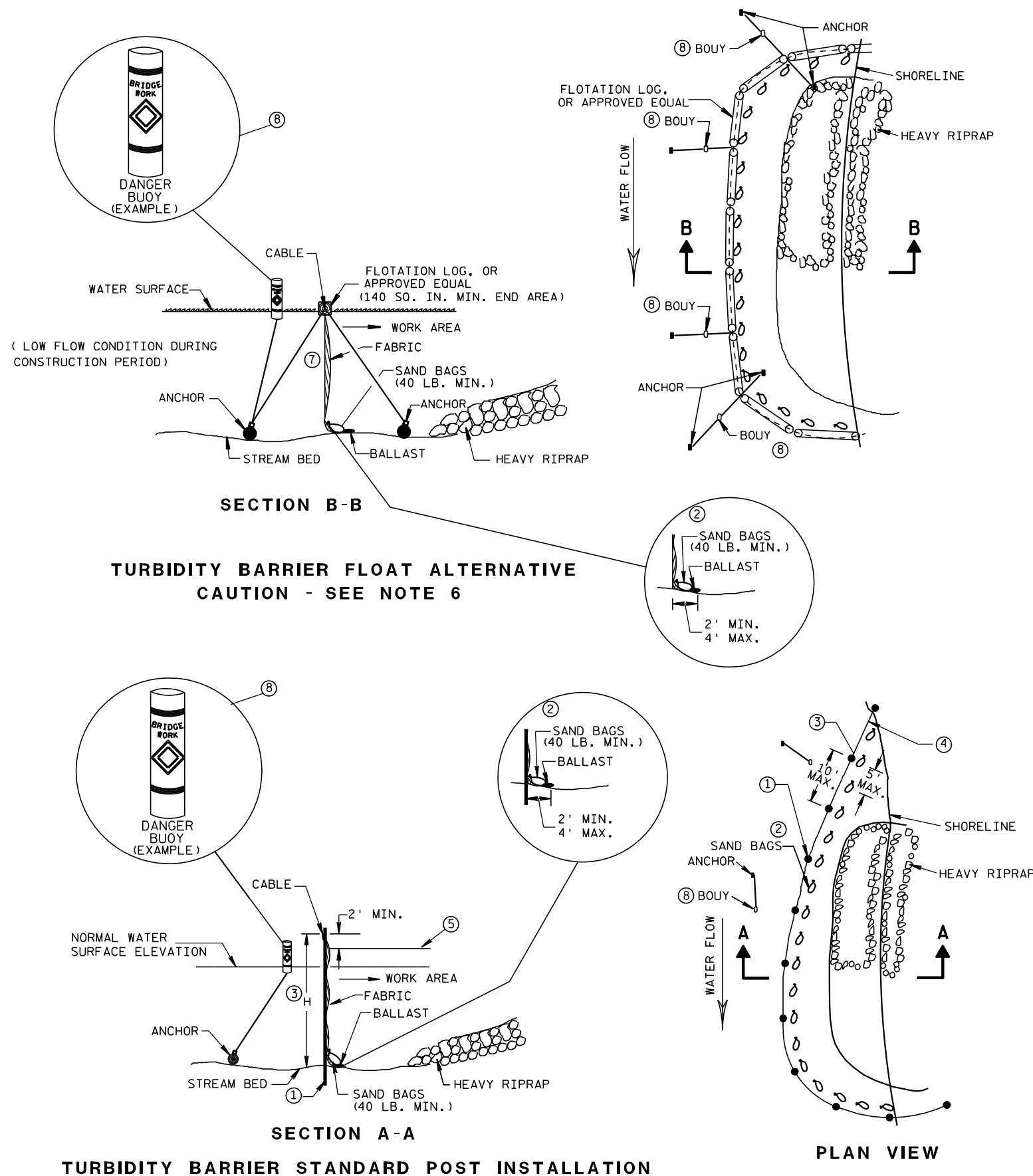
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



- 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 1½" X 1½" 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.



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

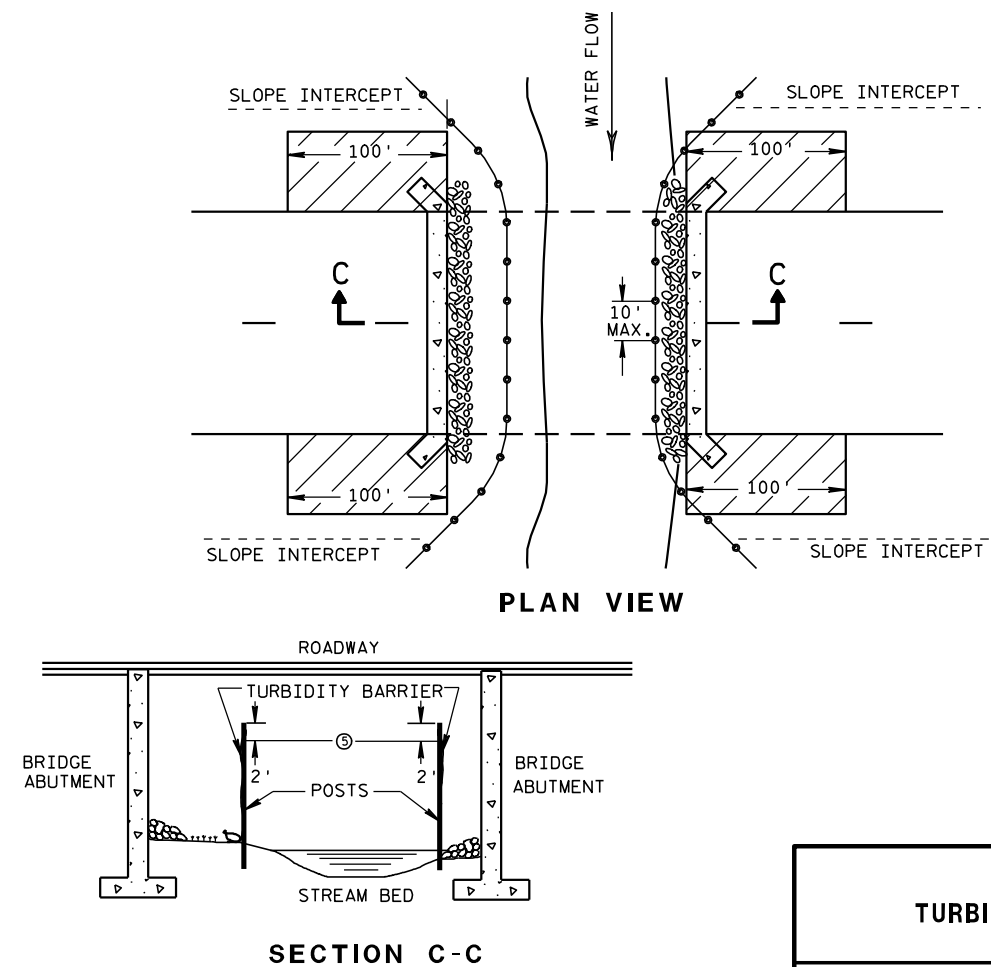


GENERAL NOTES

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

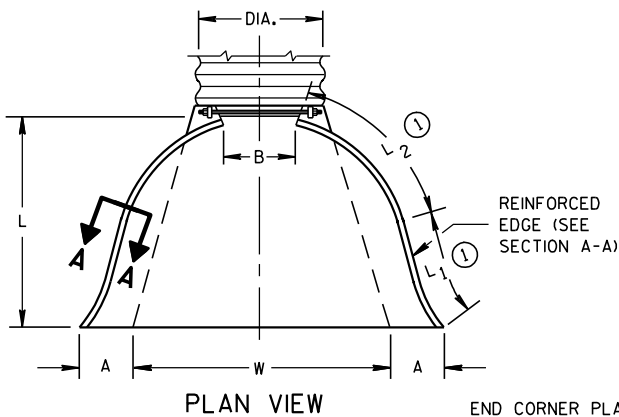
6/04/02
DATE

FWHA

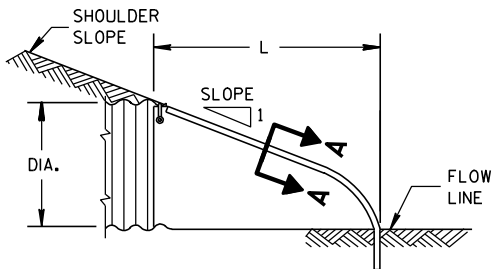
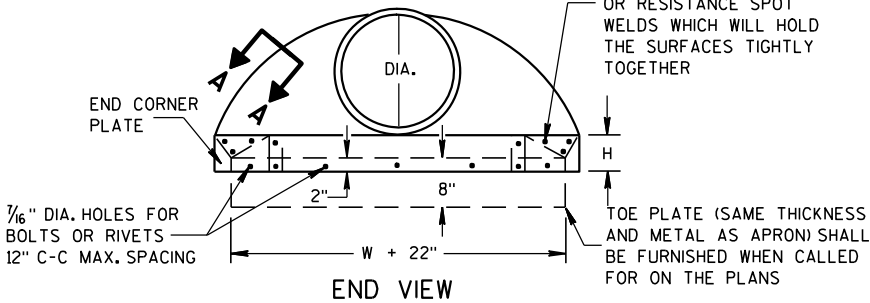
/S/ Beth Connestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

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



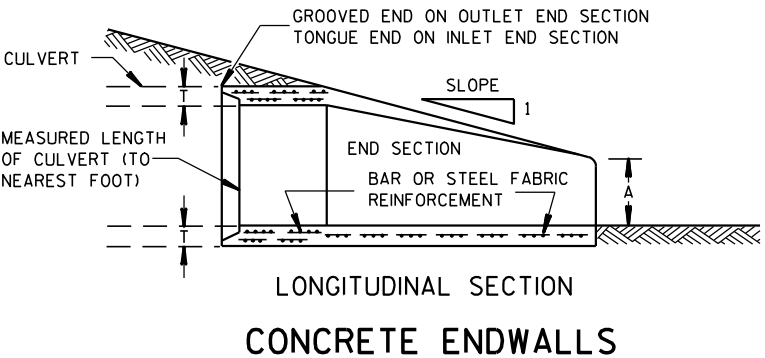
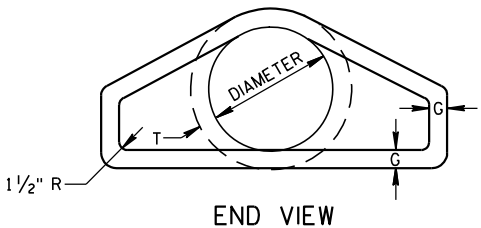
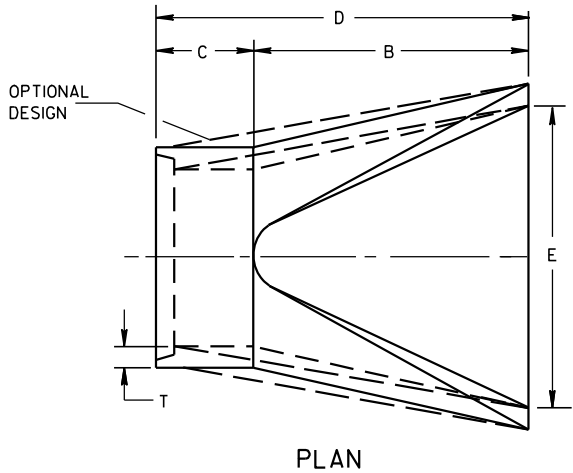
END CORNER PLATES MAY
BE FASTENED TO APRON
PROPER BY BOLTS, RIVETS,
OR RESISTANCE SPOT
WELDS WHICH WILL HOLD
THE SURFACES TIGHTLY
TOGETHER



SIDE ELEVATION
METAL ENDWALLS

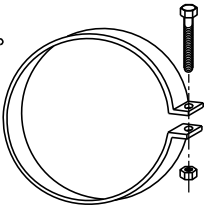
REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1			
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1			
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1			
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1			
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1			
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1			
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1			
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1			
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1			
48	5	24	72	26	98	84	5	3 to 1			
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 1/2 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

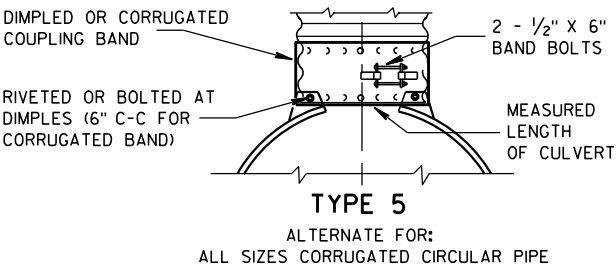
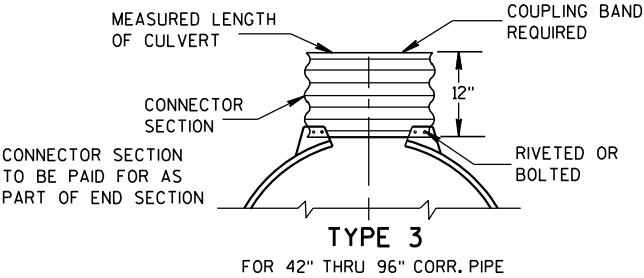
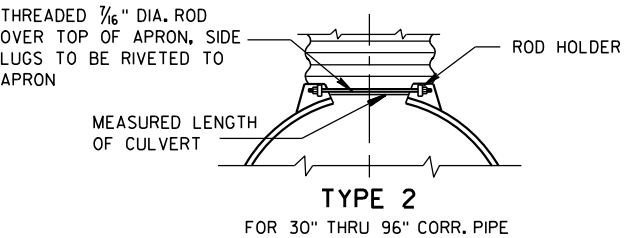
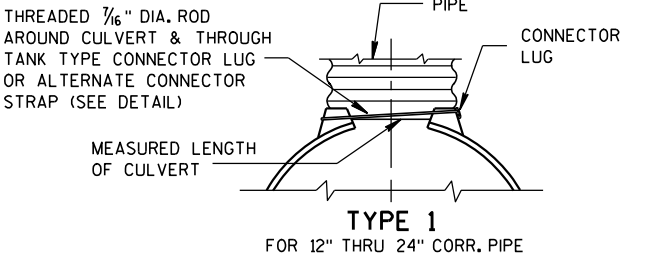


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



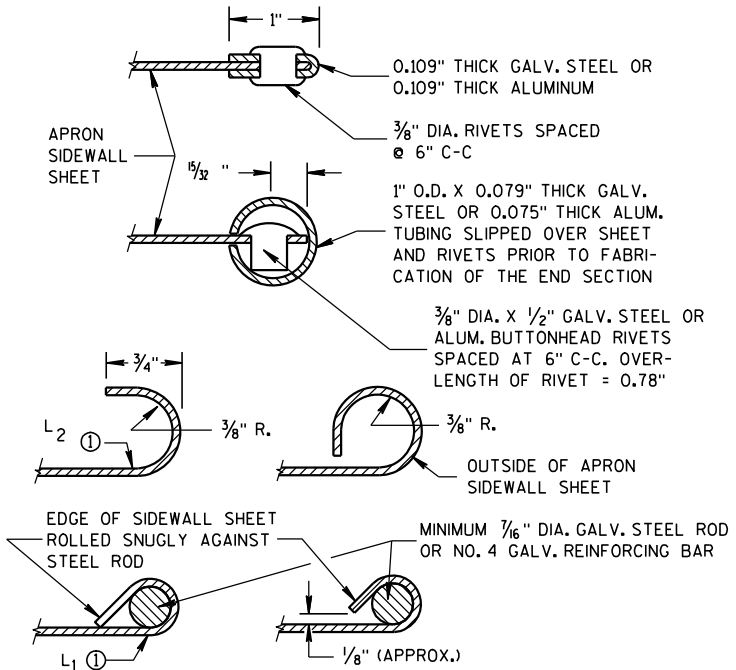
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

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



SECTION A-A

GENERAL NOTES

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

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

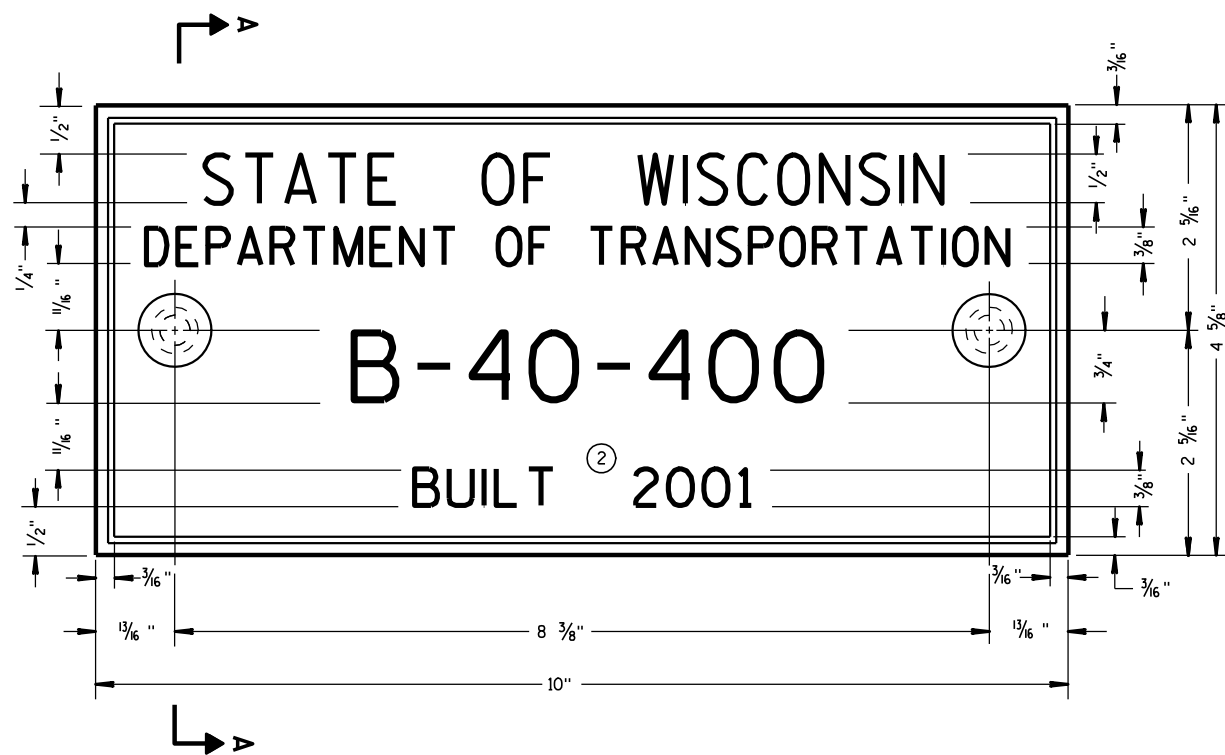
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL
THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH
OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

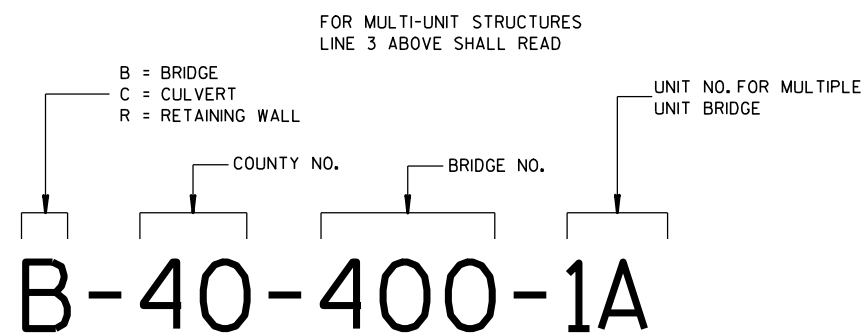
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR CULVERT PIPE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinesmith CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



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



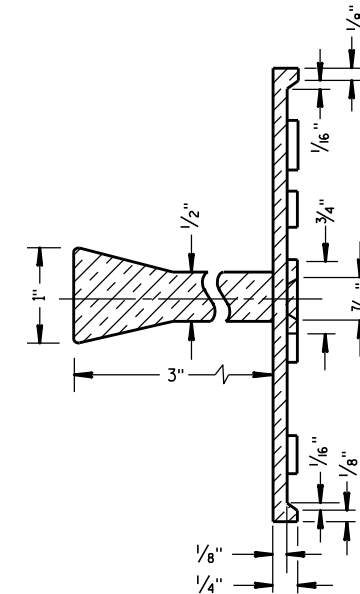
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

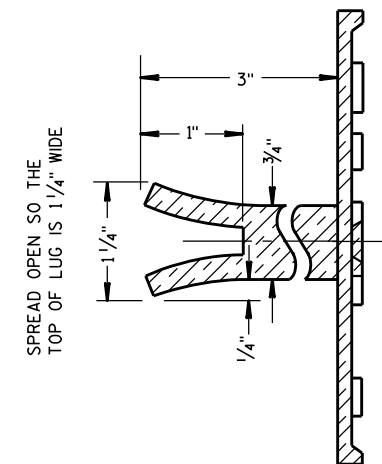
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

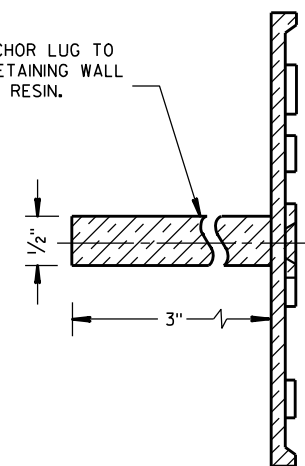


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

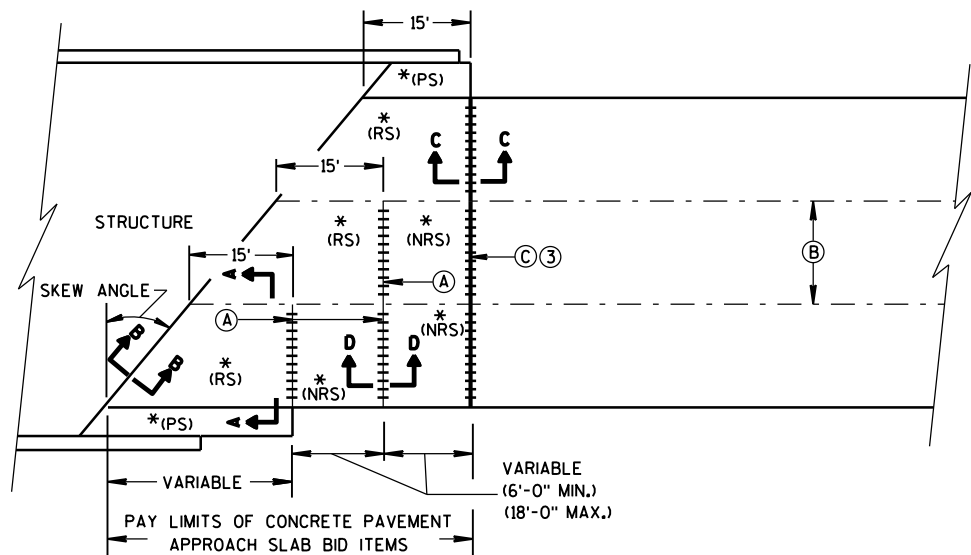
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

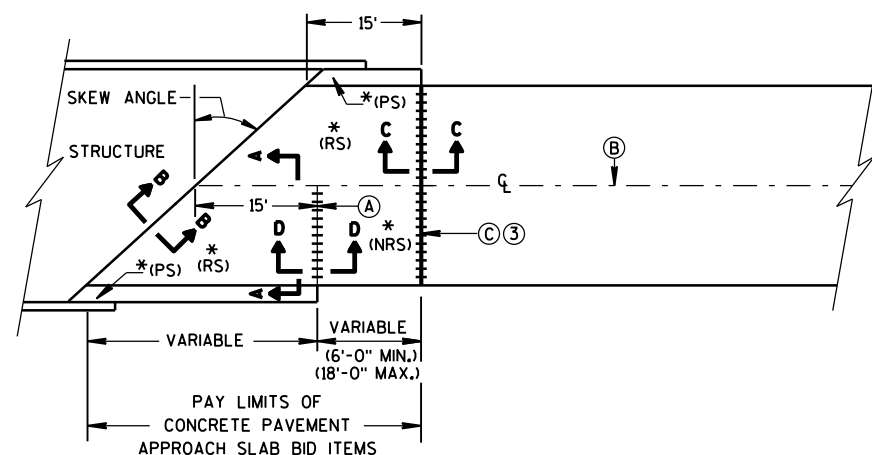
3/26/10
DATE

FHWA

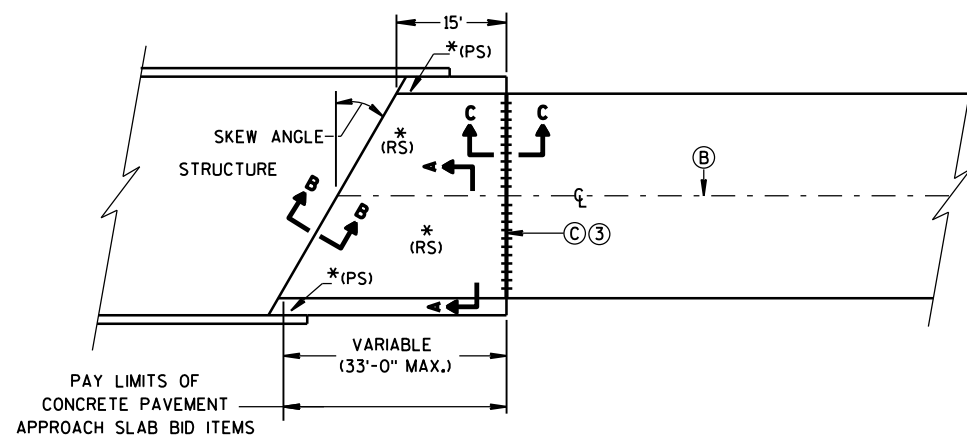
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



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



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

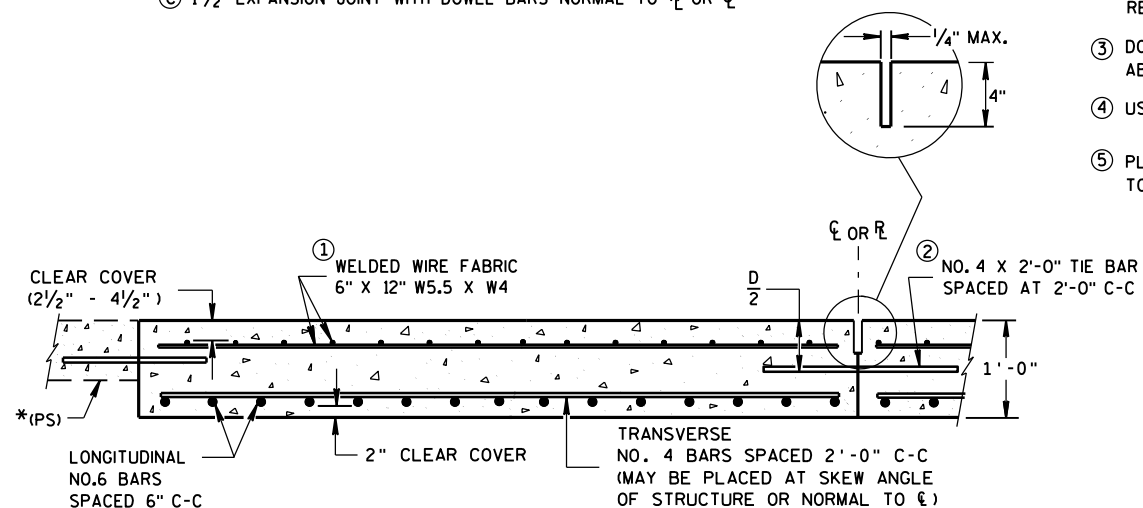


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

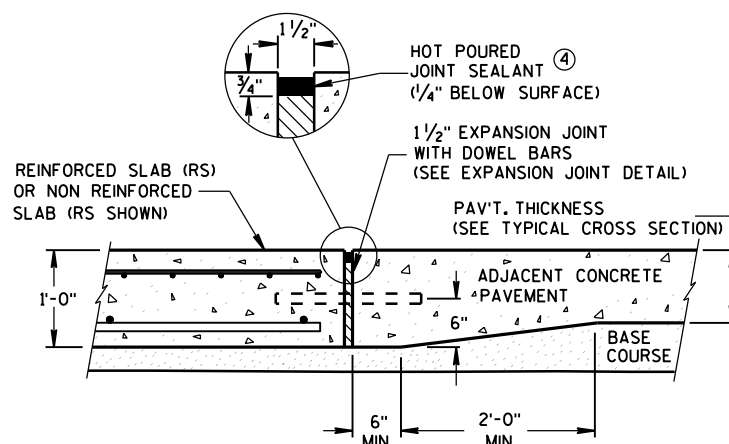
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

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

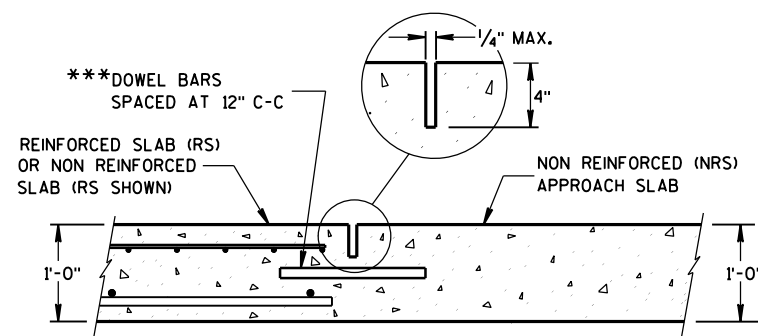
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



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



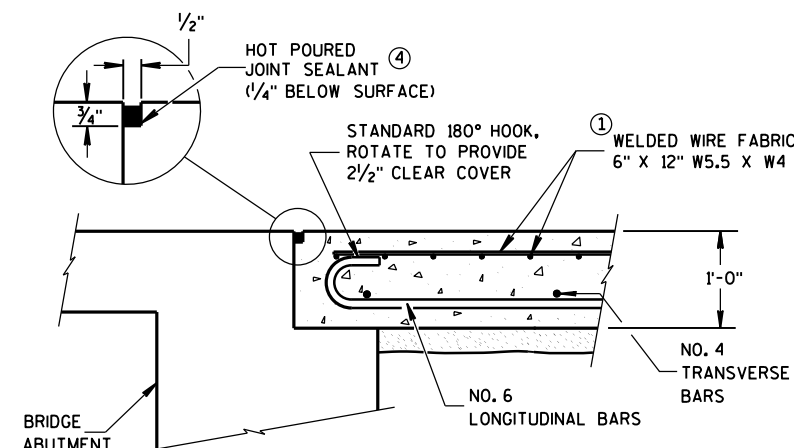
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

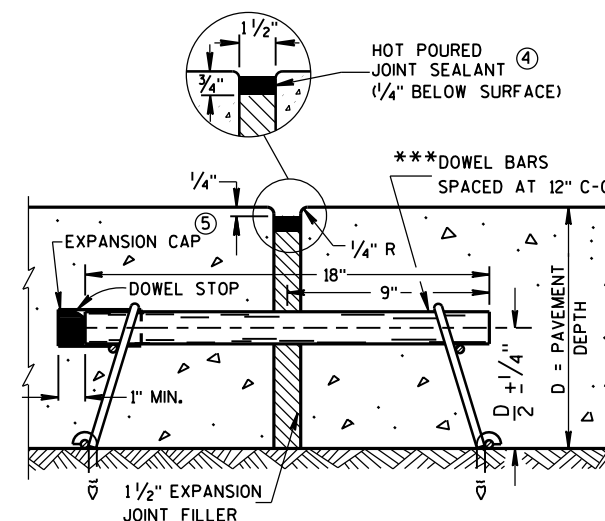
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

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**



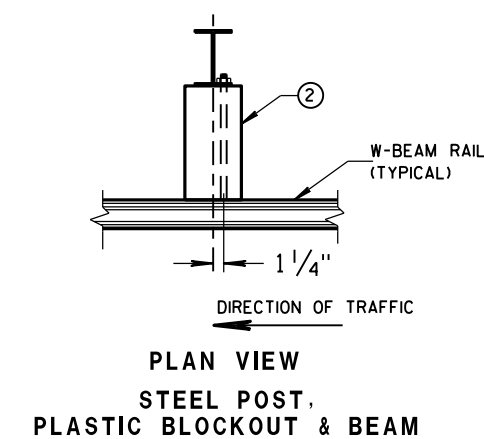
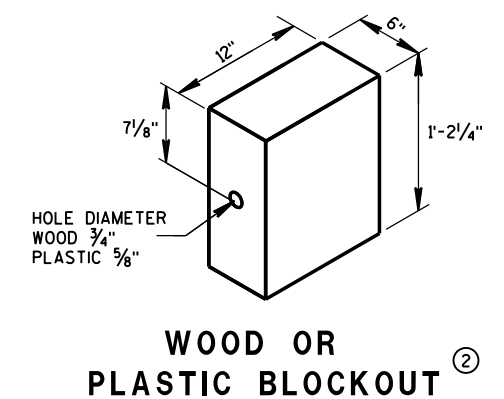
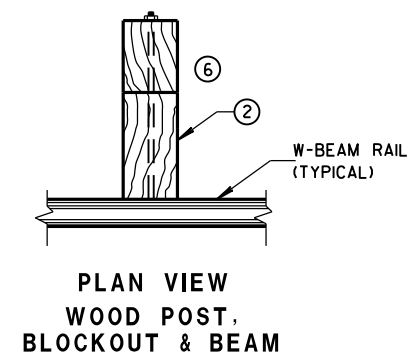
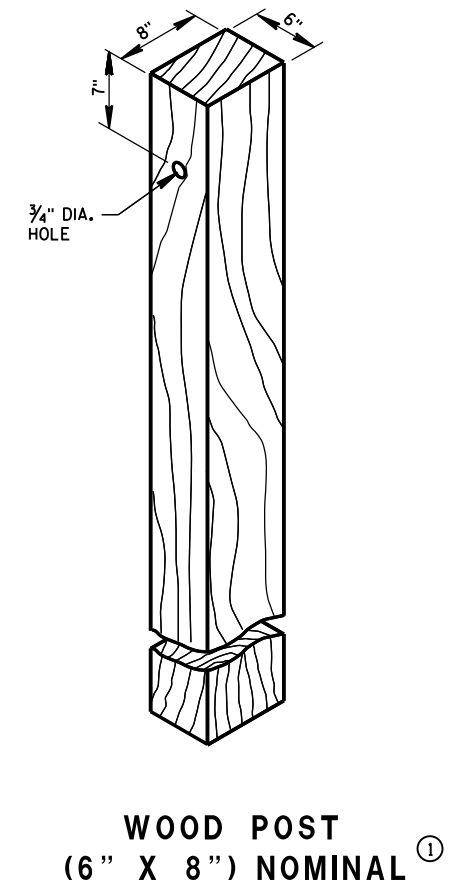
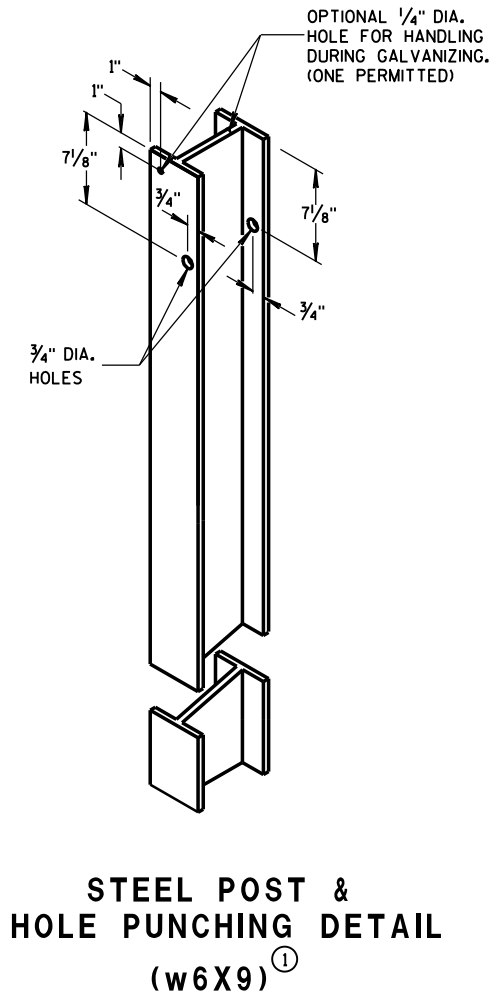
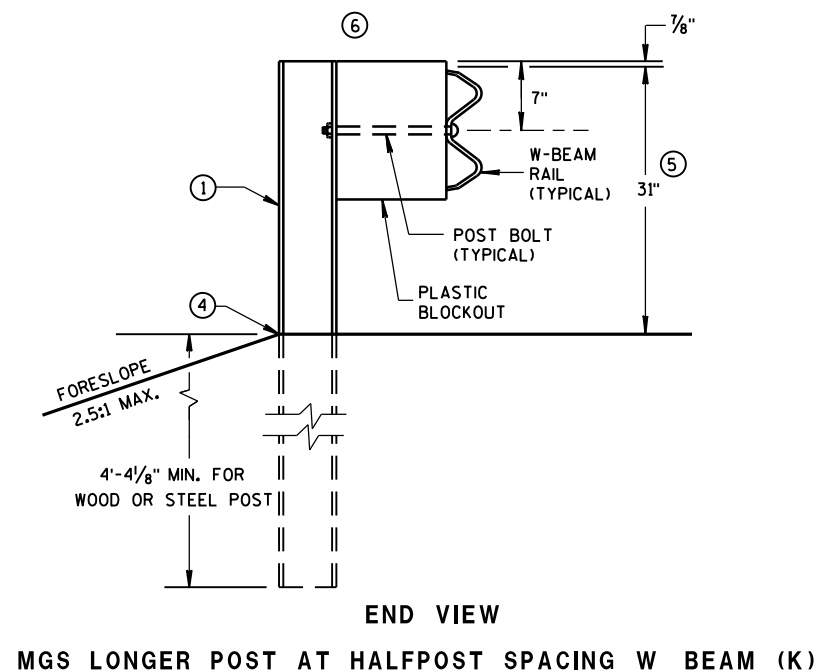
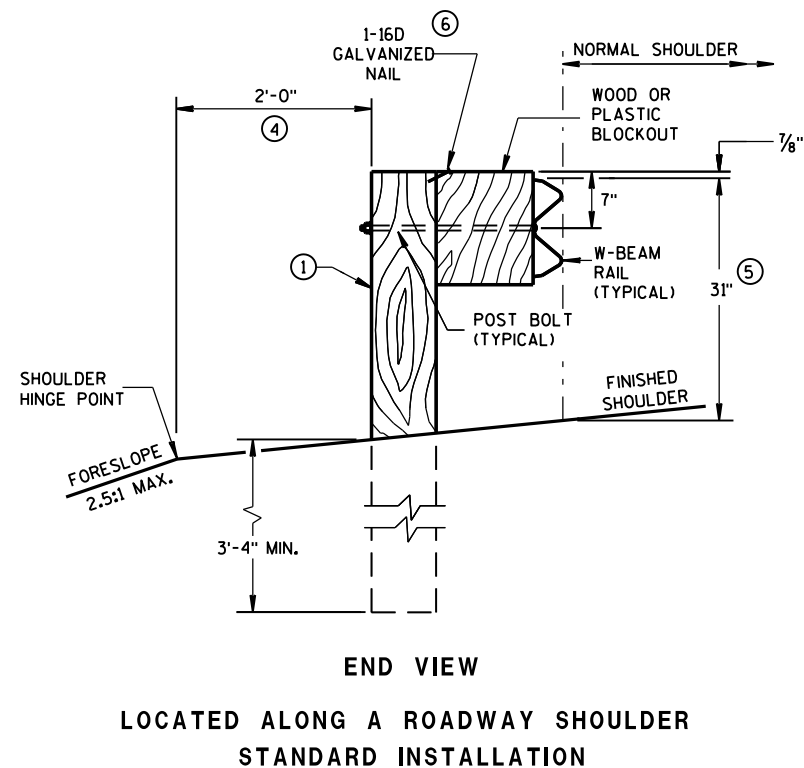
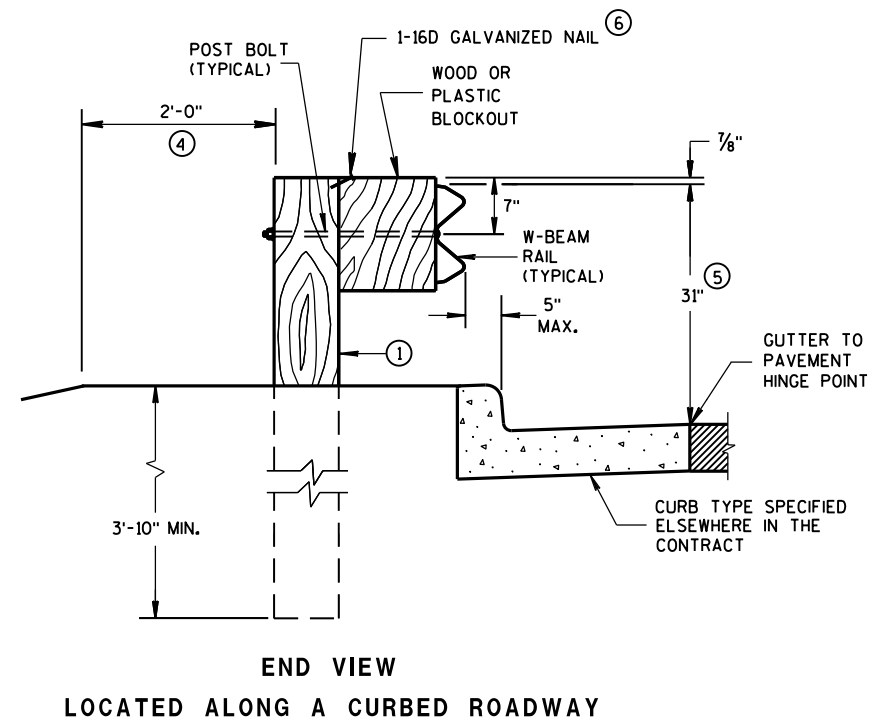
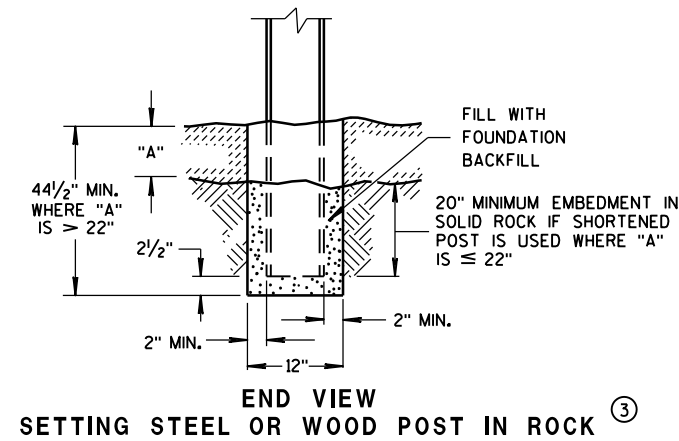
EXPANSION JOINT DETAIL

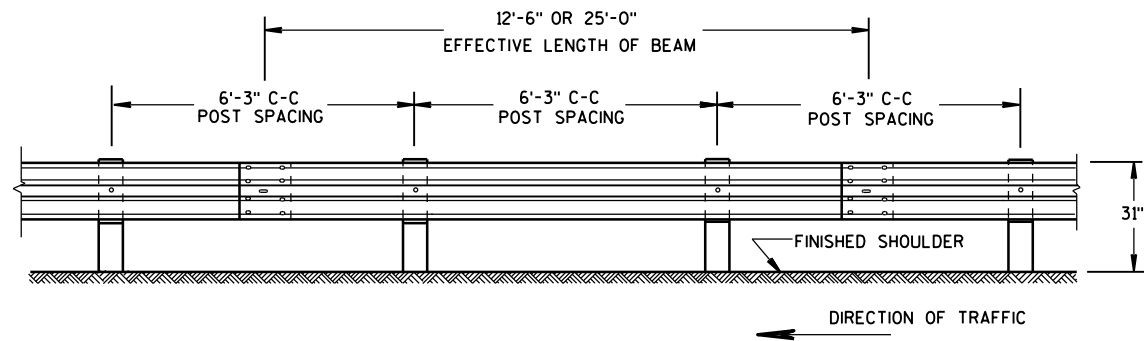
CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

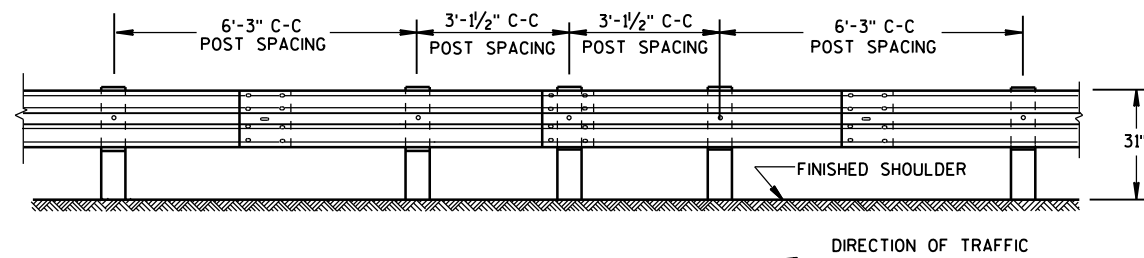
- ① WOOD OR STEEL POSTS (W6X9 OR W6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. 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 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS 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 ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.





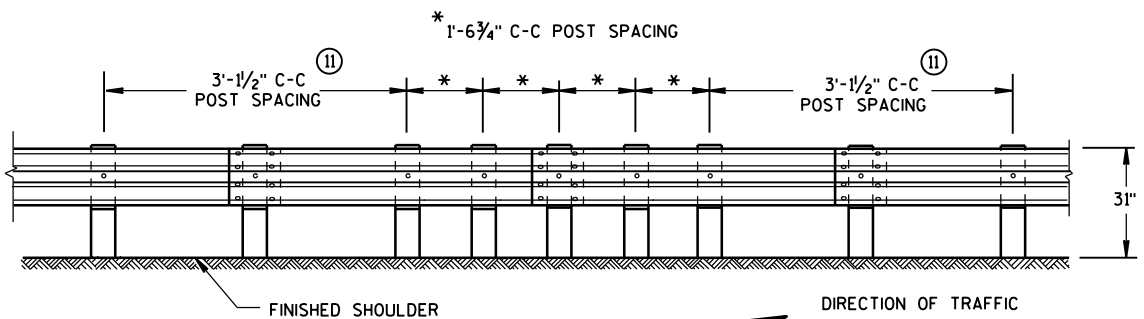
FRONT VIEW

POST SPACING STANDARD INSTALLATION



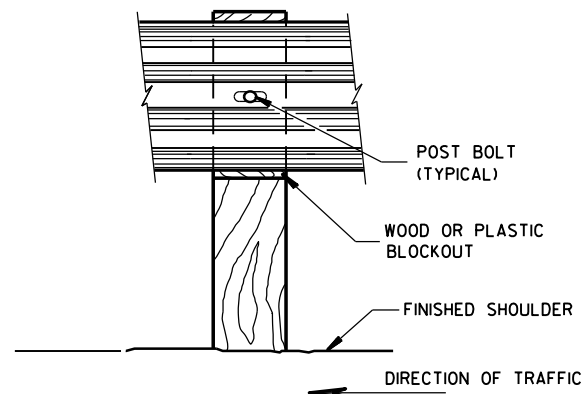
FRONT VIEW

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

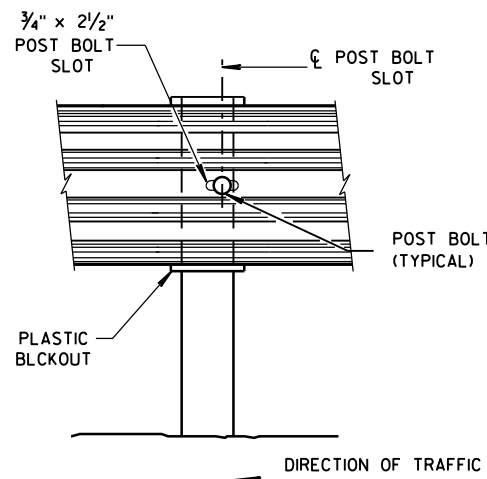


FRONT VIEW

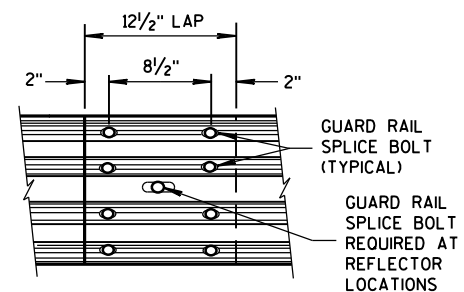
QUARTER POST SPACING (QS)



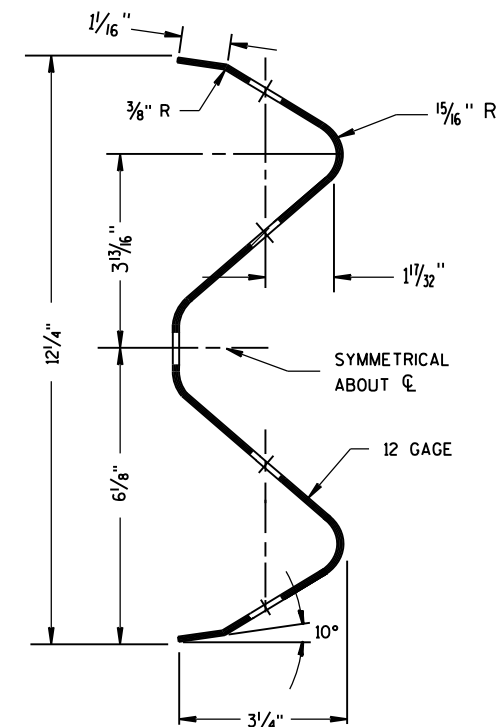
FRONT VIEW AT WOOD POST



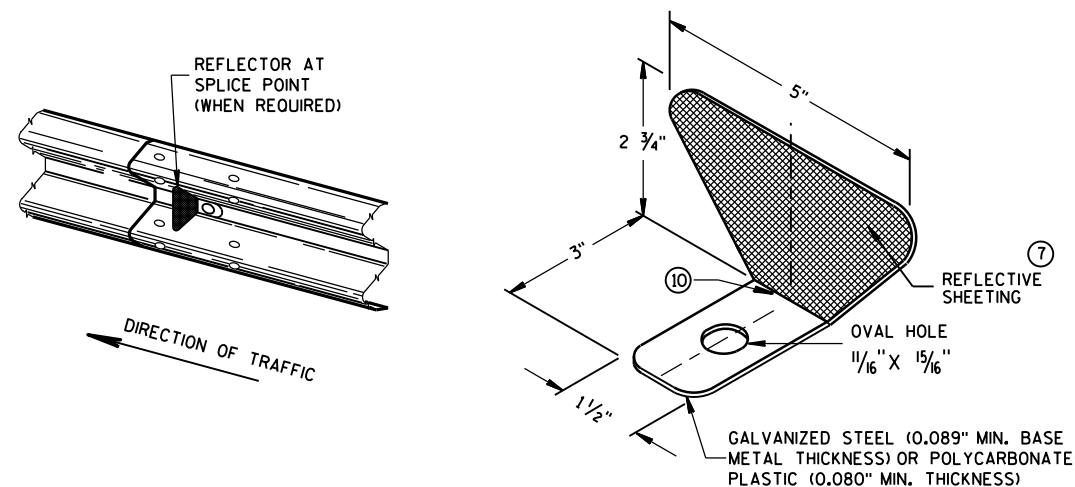
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

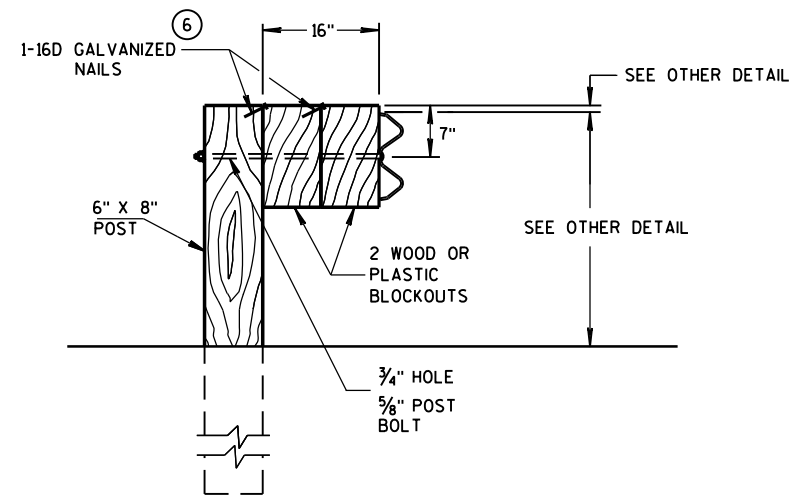
- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
 - ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
 - ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING

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

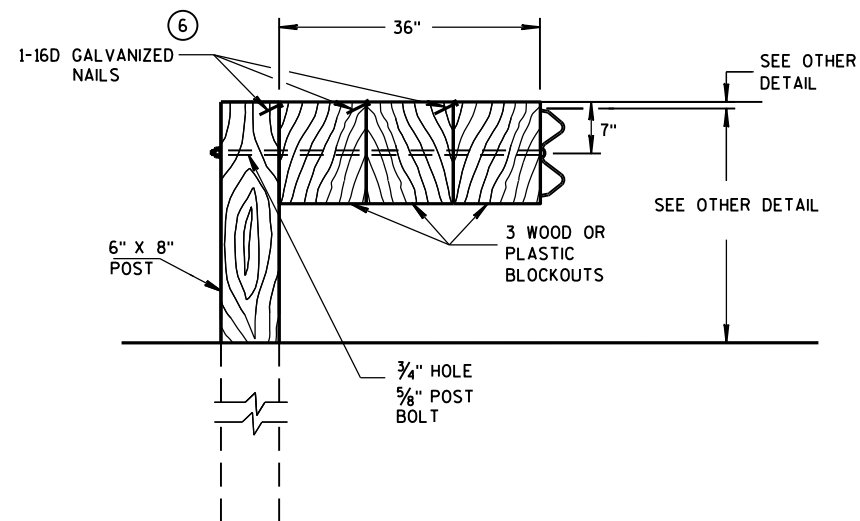
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

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

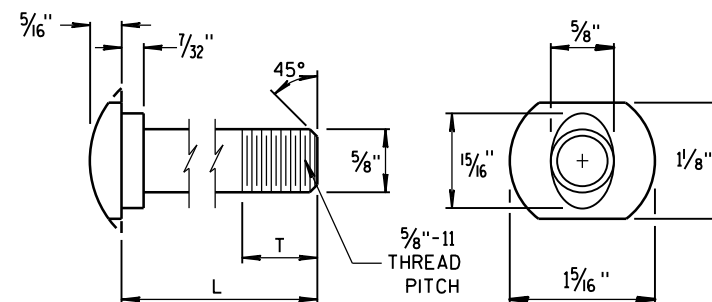


DETAIL FOR 36" BLOCKOUT DEPTH

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

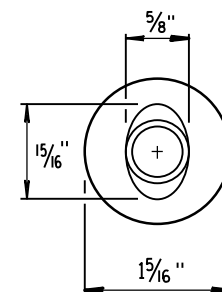
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

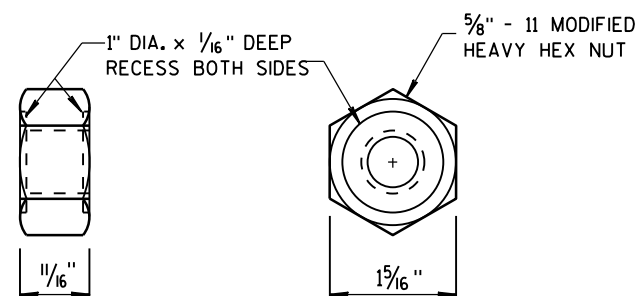


POST BOLT TABLE

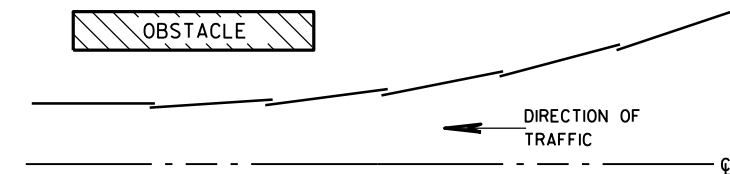
L	T (MIN.)
1¼"	1⅛"
2"	1¾"
10"	4"
14"	4⅞"
18"	4"
21"	4⅞"
25"	4"



ALTERNATE BOLT HEAD

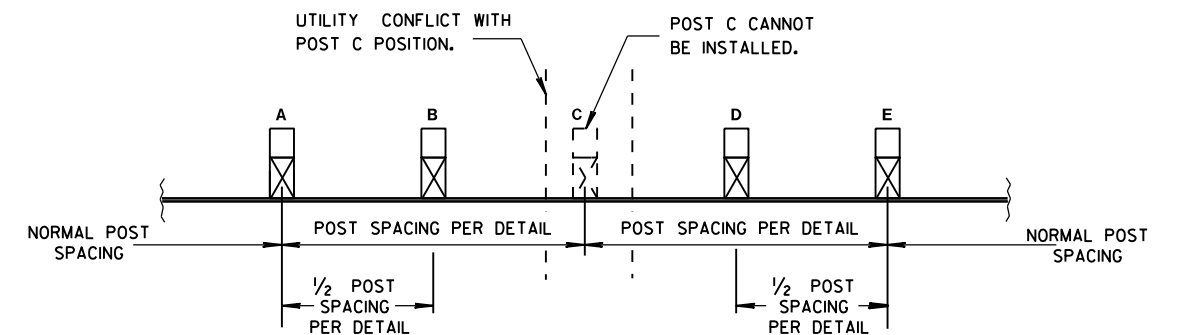


POST BOLT, SPLICE BOLT AND RECESS NUT

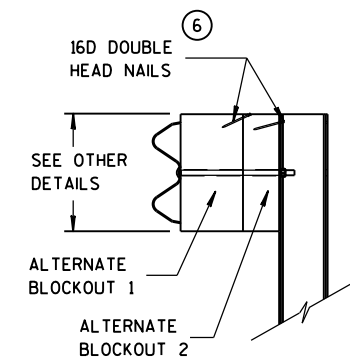


PLAN VIEW

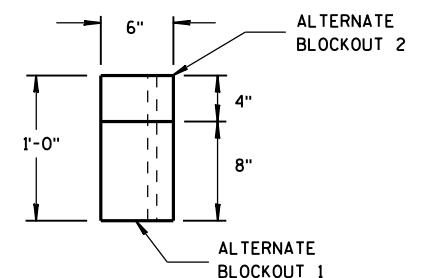
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

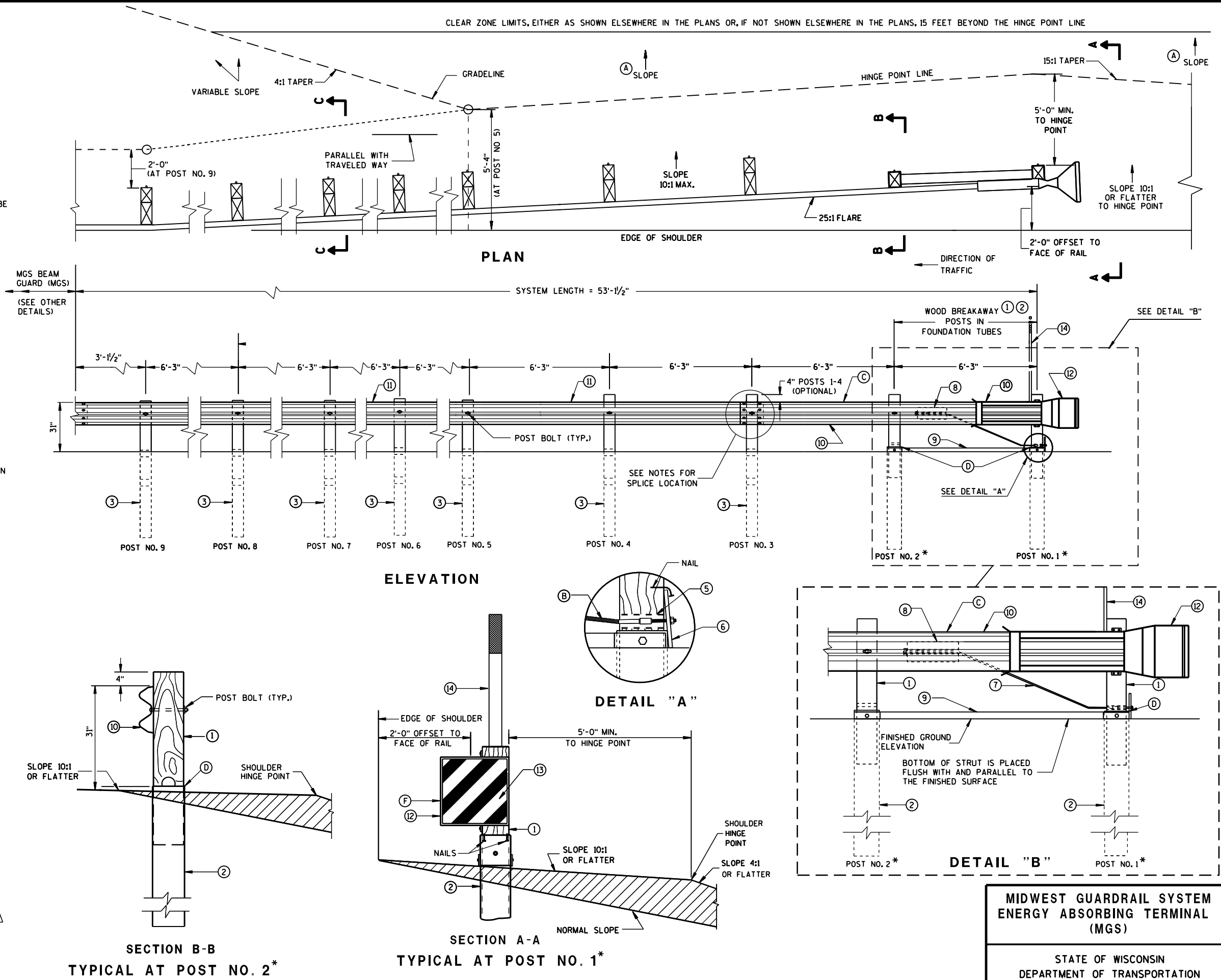
SEE SDD 14B42 FOR MORE INFORMATION.

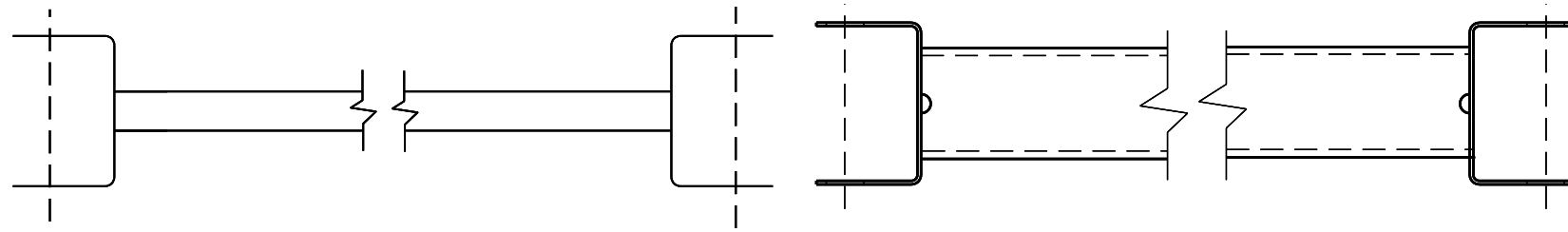
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

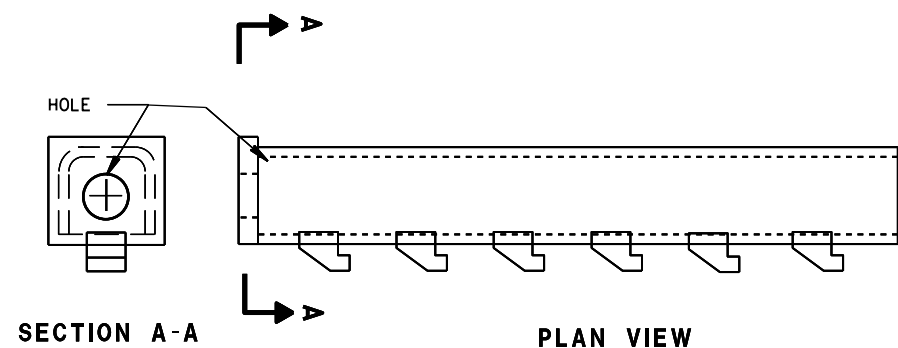
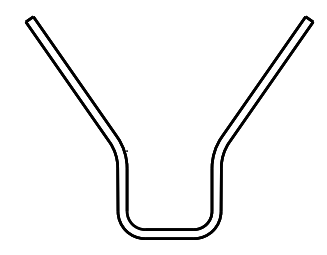
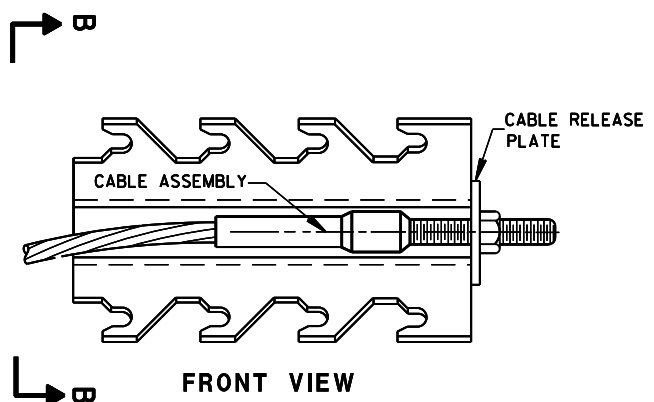
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

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





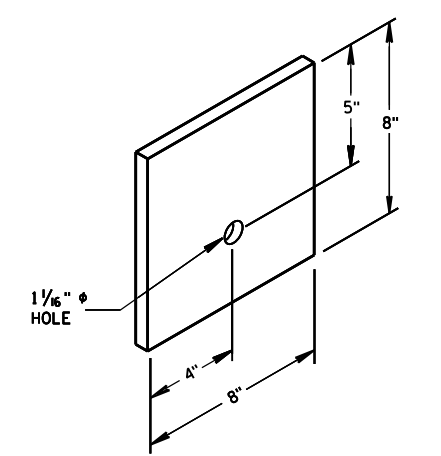
9 H
GENERIC GROUND STRUT



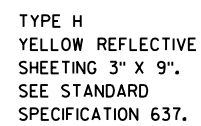
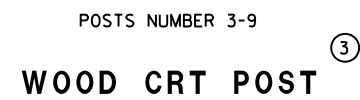
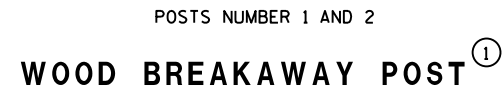
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

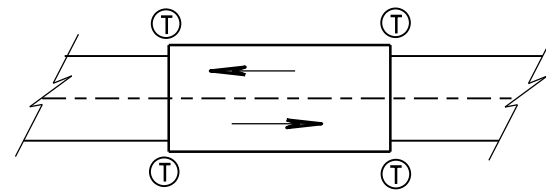
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



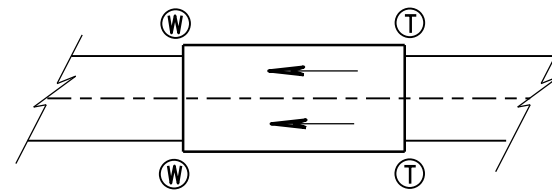
⑥
BEARING PLATE



MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014	/S/ Jerry H. Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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.

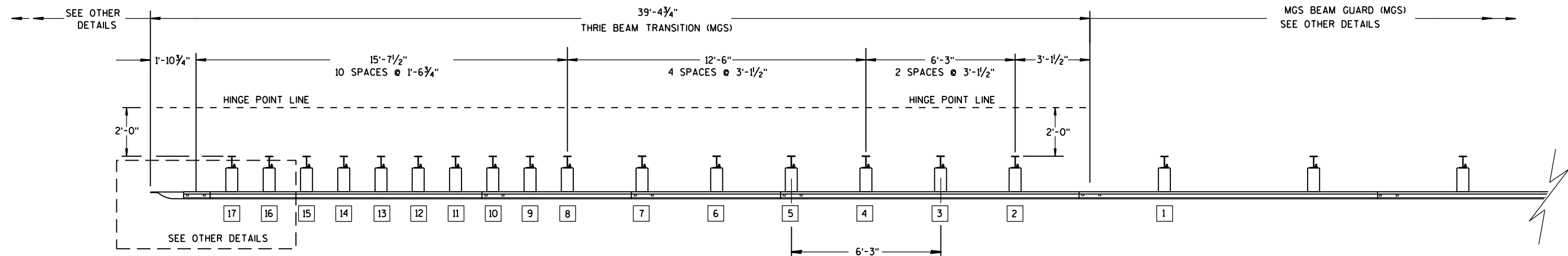
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

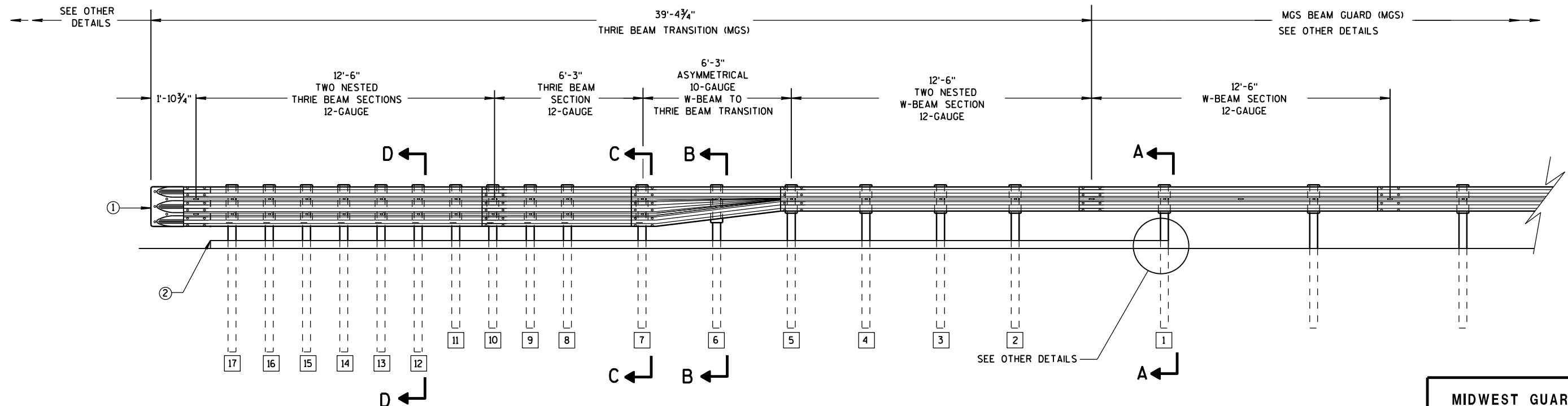
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

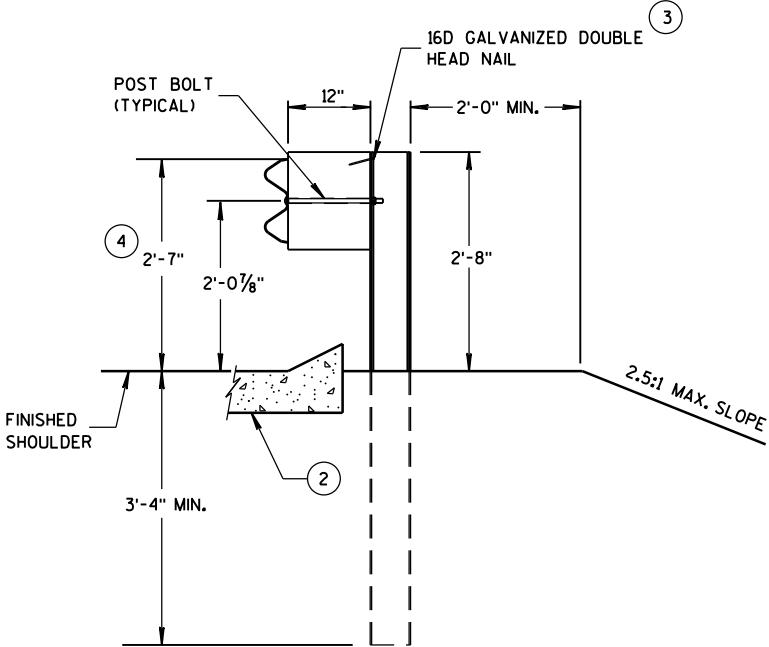
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

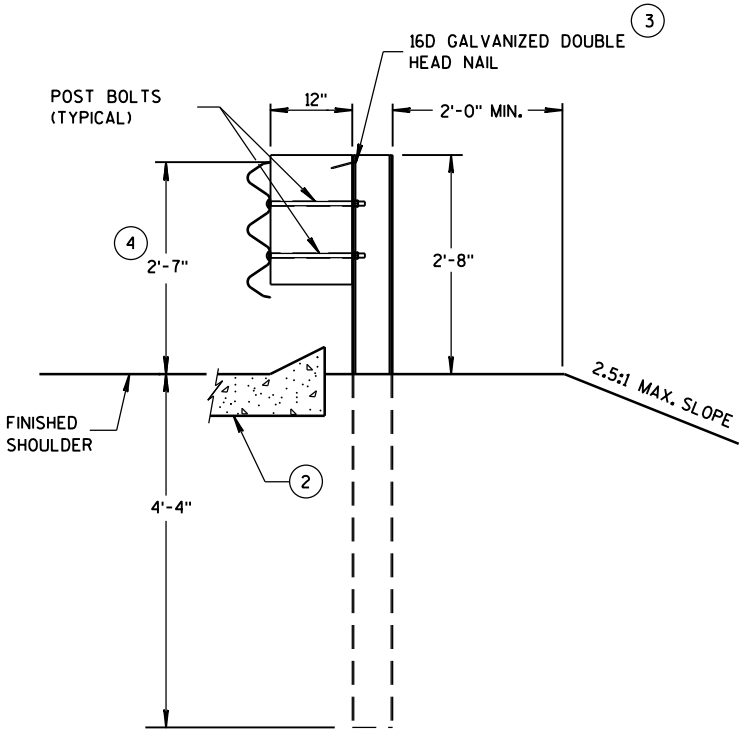
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

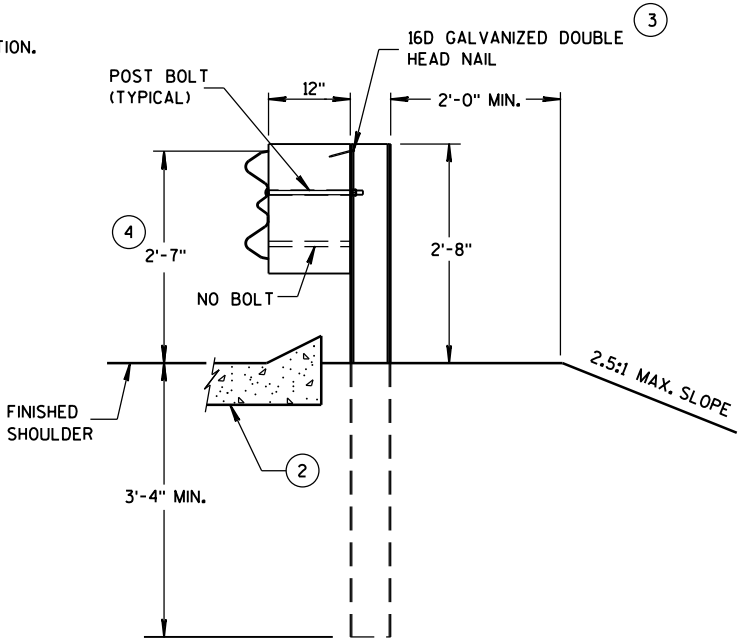
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



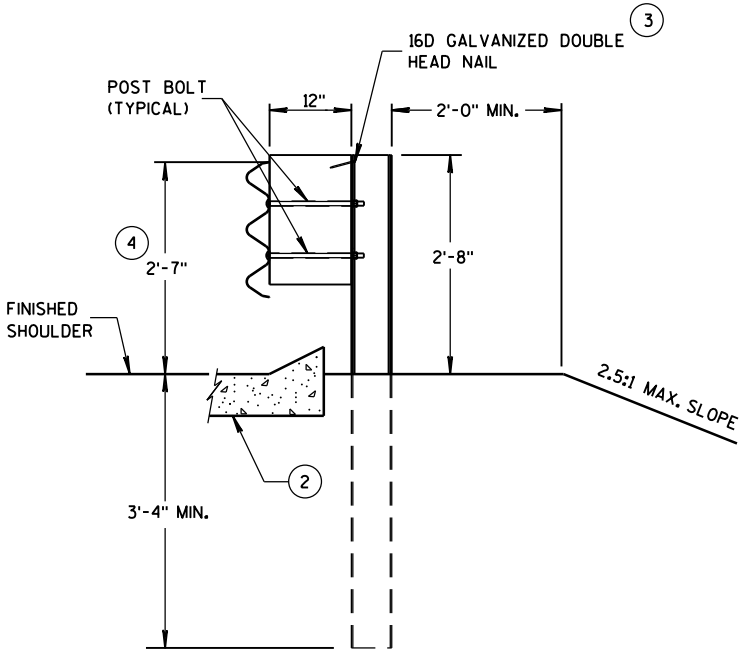
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

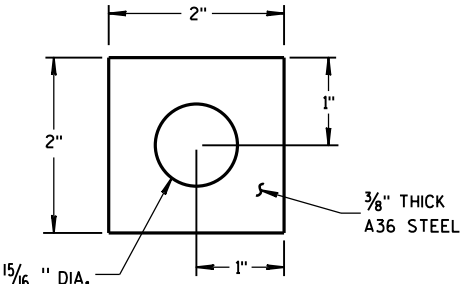
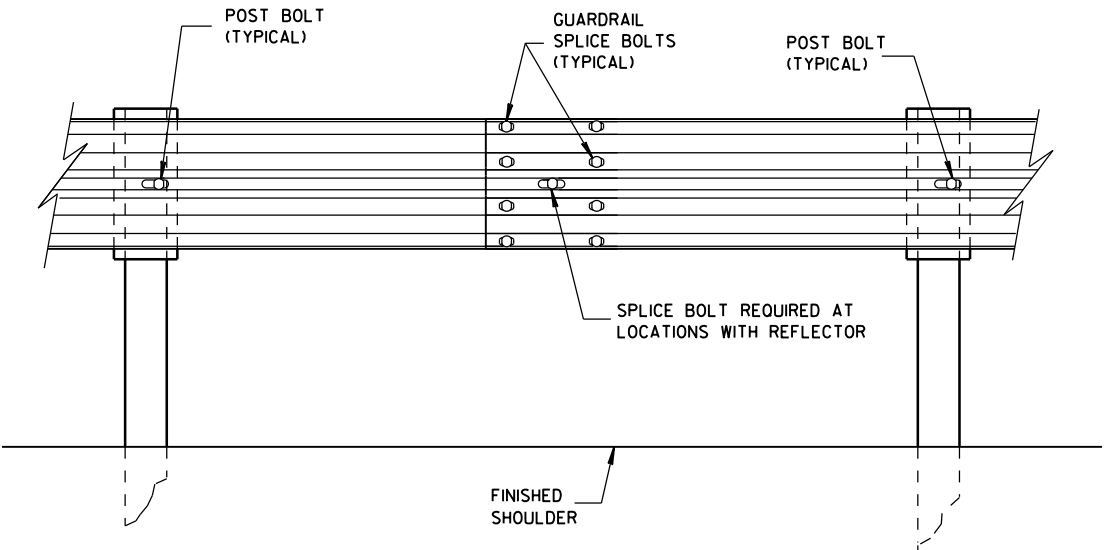
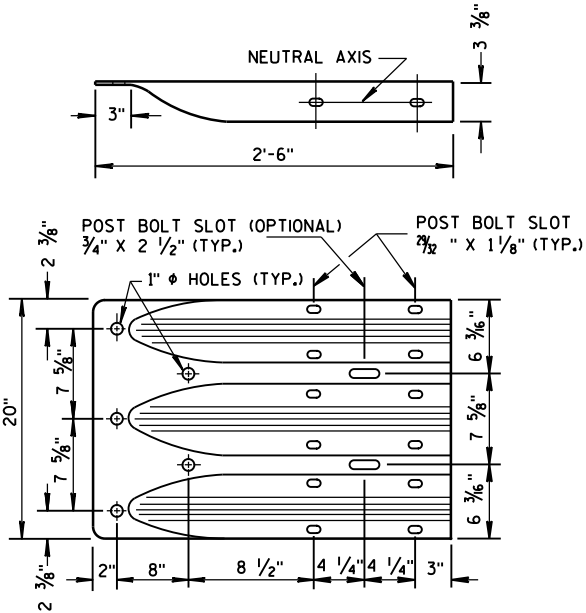


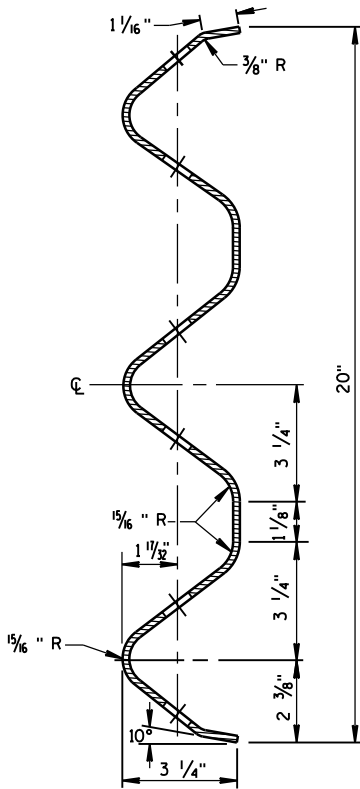
PLATE WASHER DETAIL



SPlice DETAIL



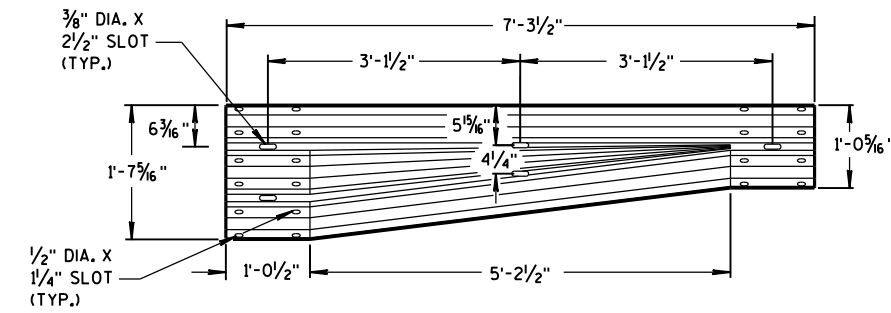
THRIE BEAM
TERMINAL CONNECTOR



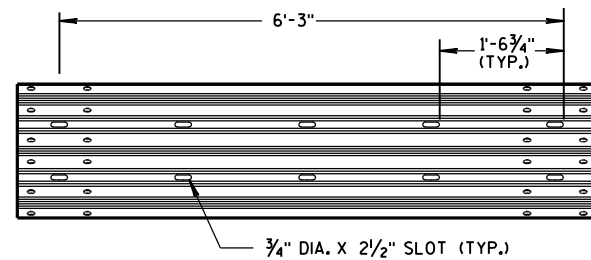
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

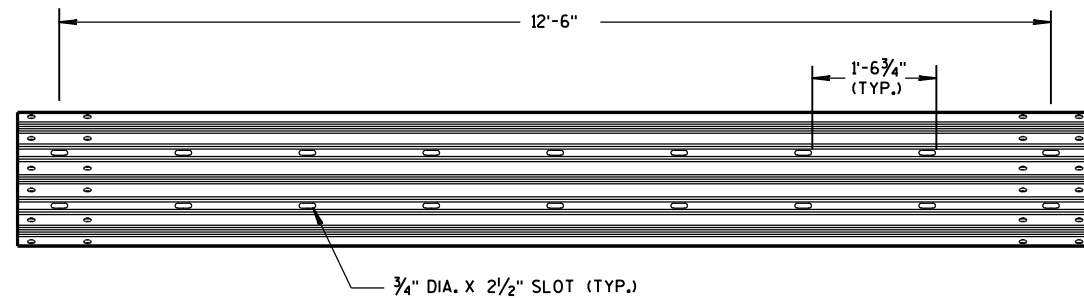
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



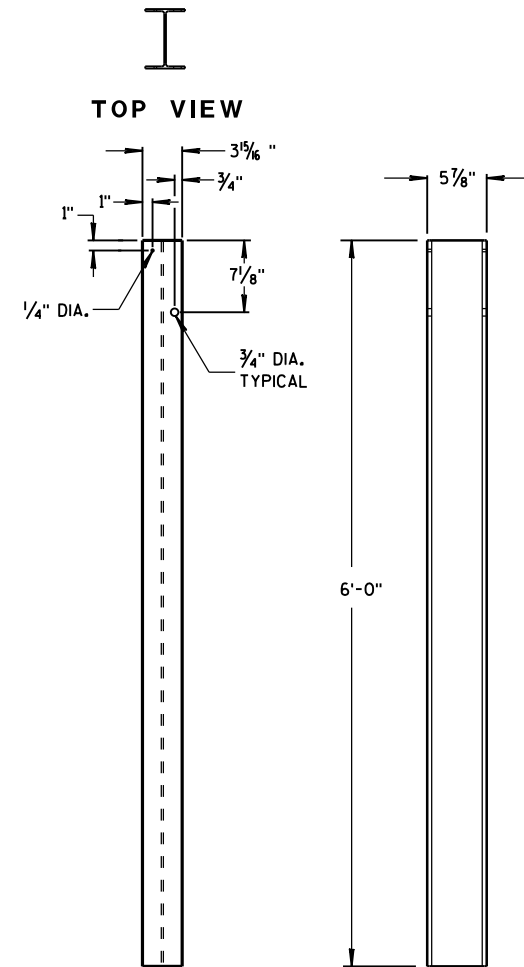
W-BEAM TO THRIE BEAM TRANSITION SECTION



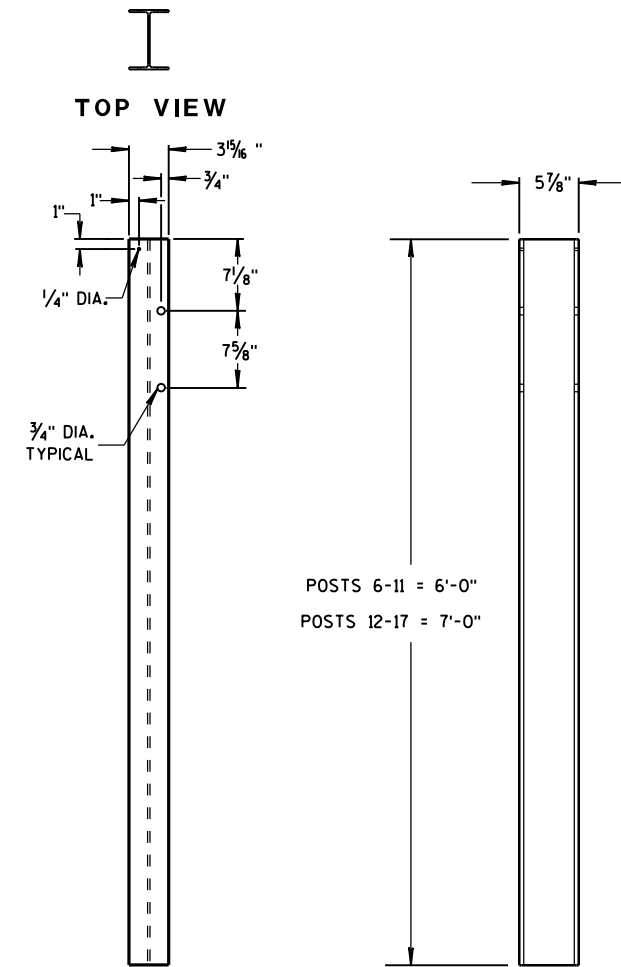
6'-3" THRIE BEAM SECTION



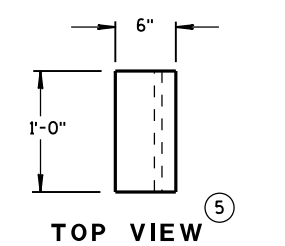
12'-6" THRIE BEAM SECTION



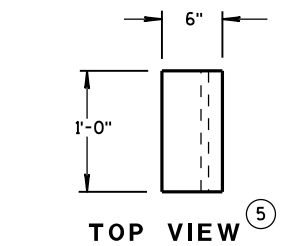
FRONT VIEW SIDE VIEW
STEEL POSTS 1-5



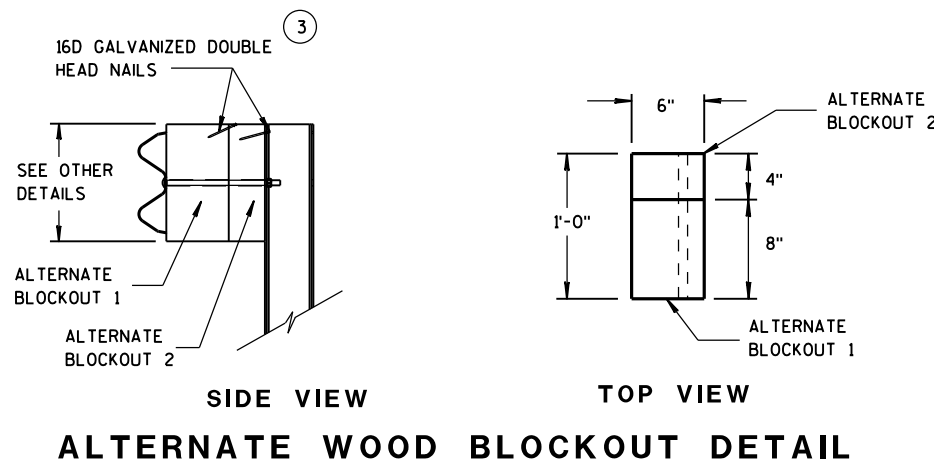
FRONT VIEW SIDE VIEW
STEEL POSTS 6-17



FRONT VIEW
BLOCKOUT
POSTS 1-5



FRONT VIEW
BLOCKOUT
POSTS 6-17



GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

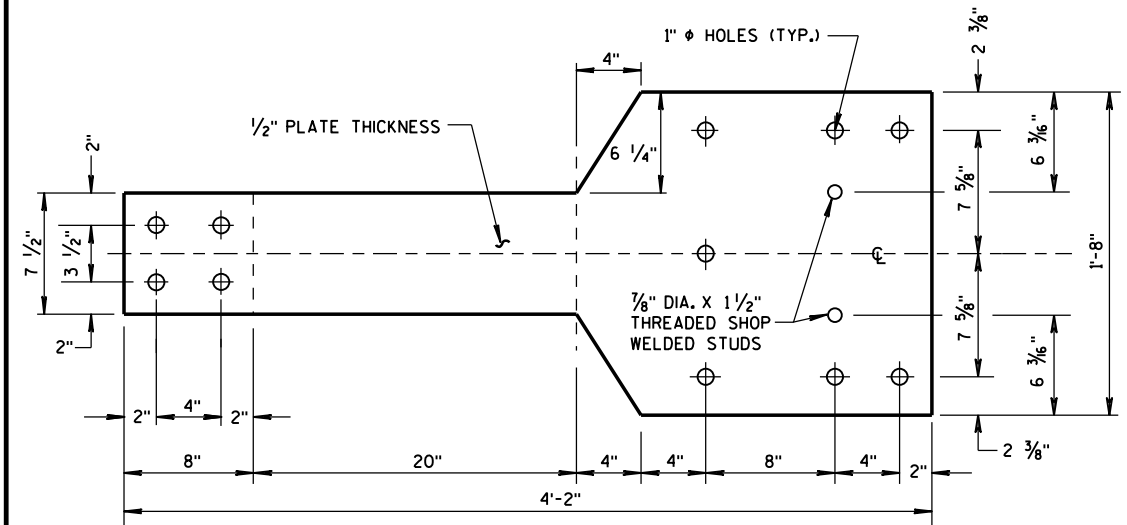
⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

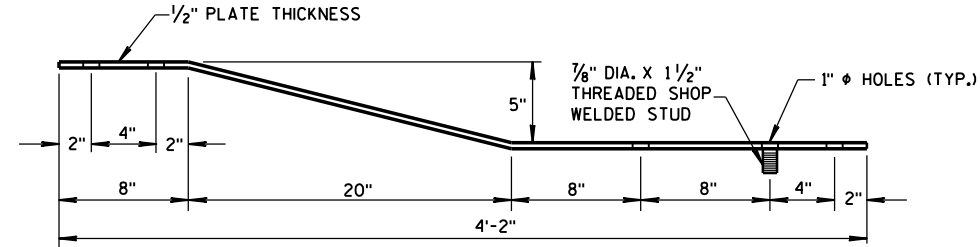
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

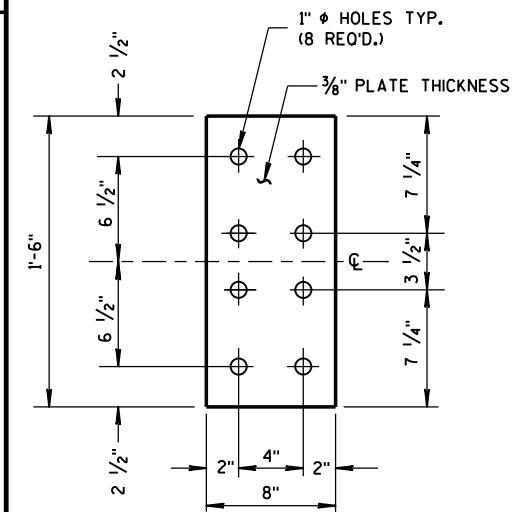


FRONT VIEW



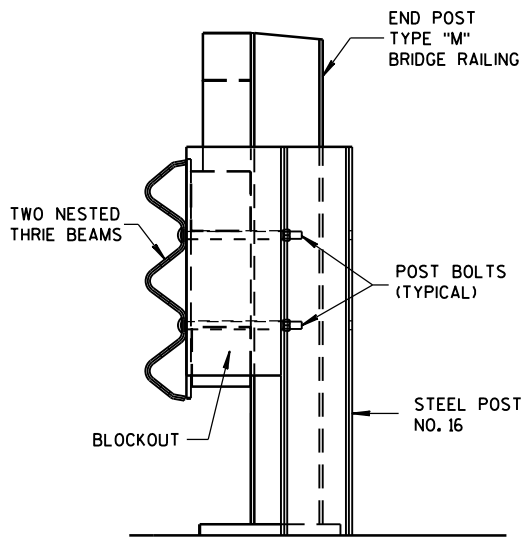
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

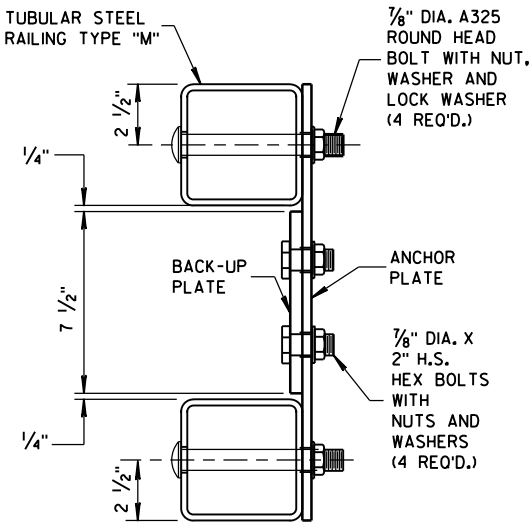


FRONT VIEW

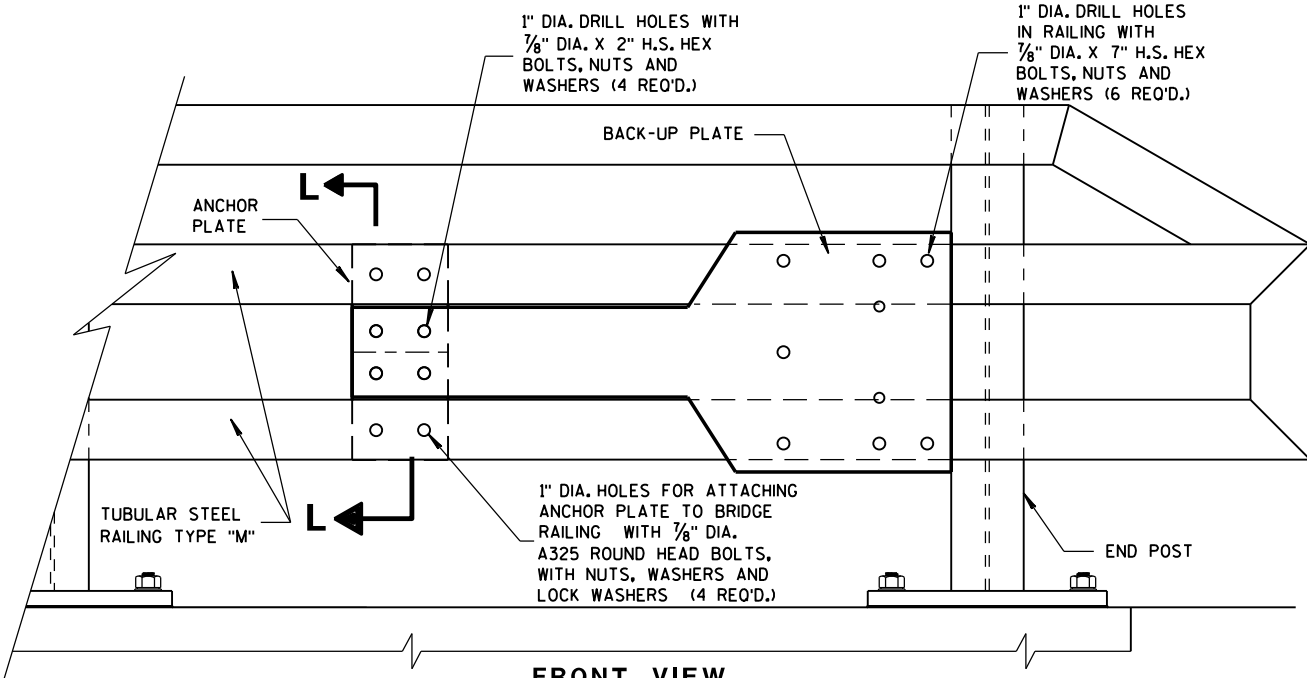
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

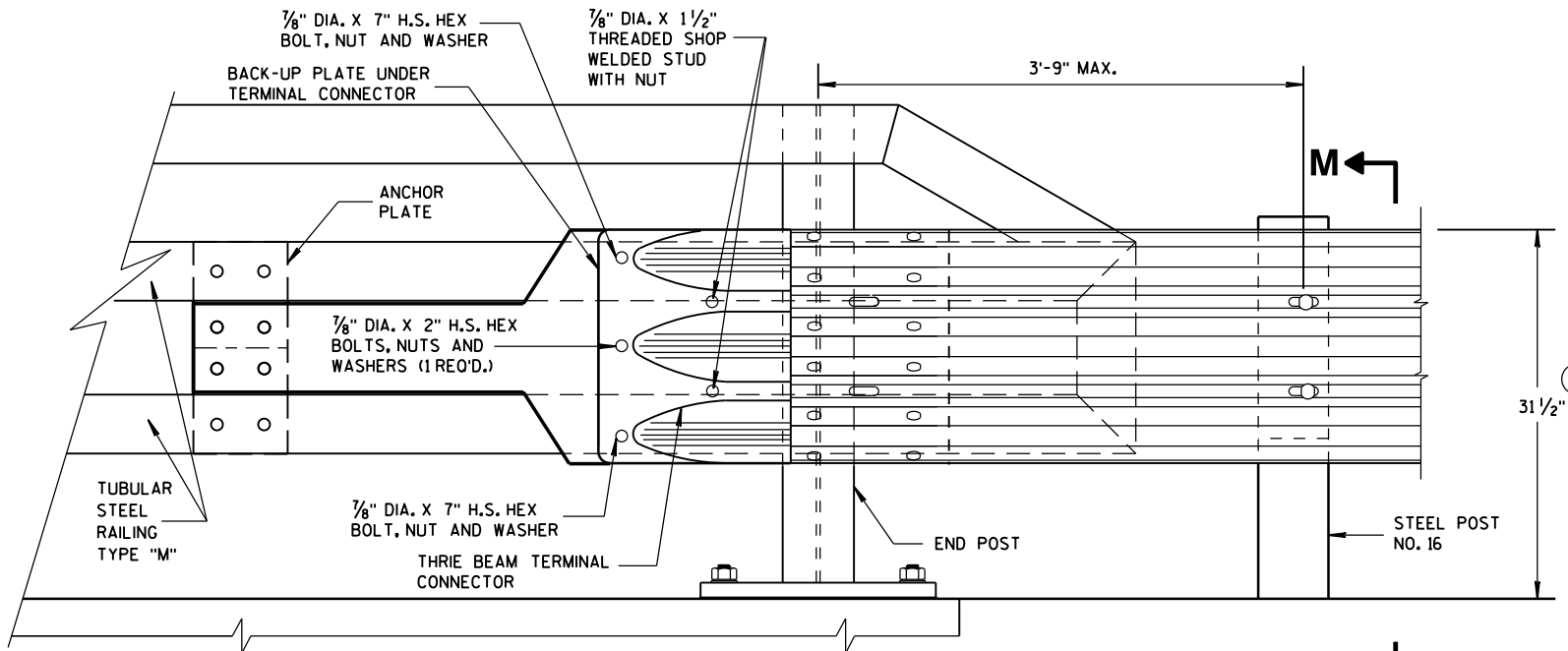


SECTION L-L

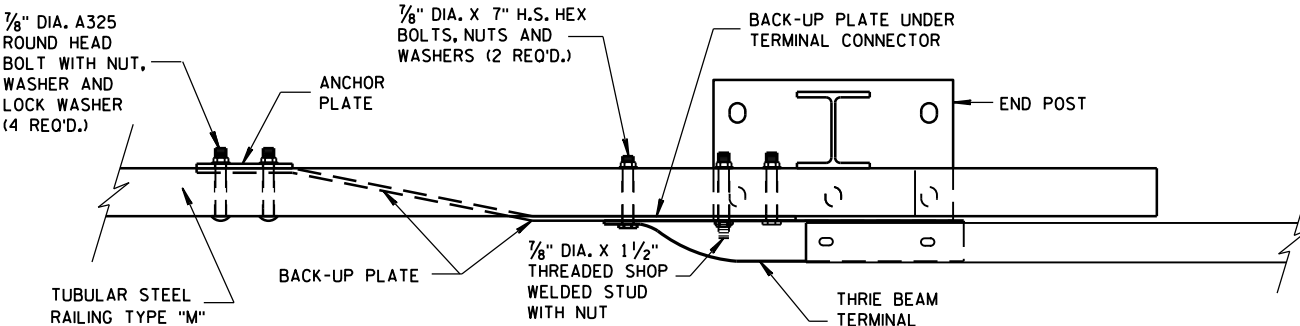


FRONT VIEW

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



FRONT VIEW



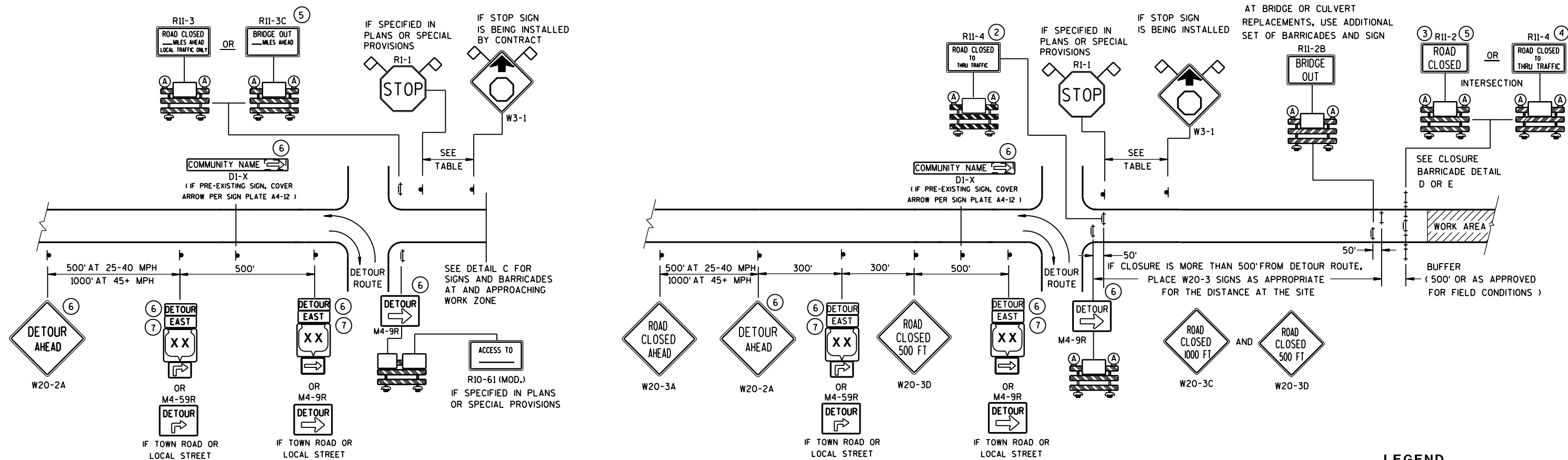
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

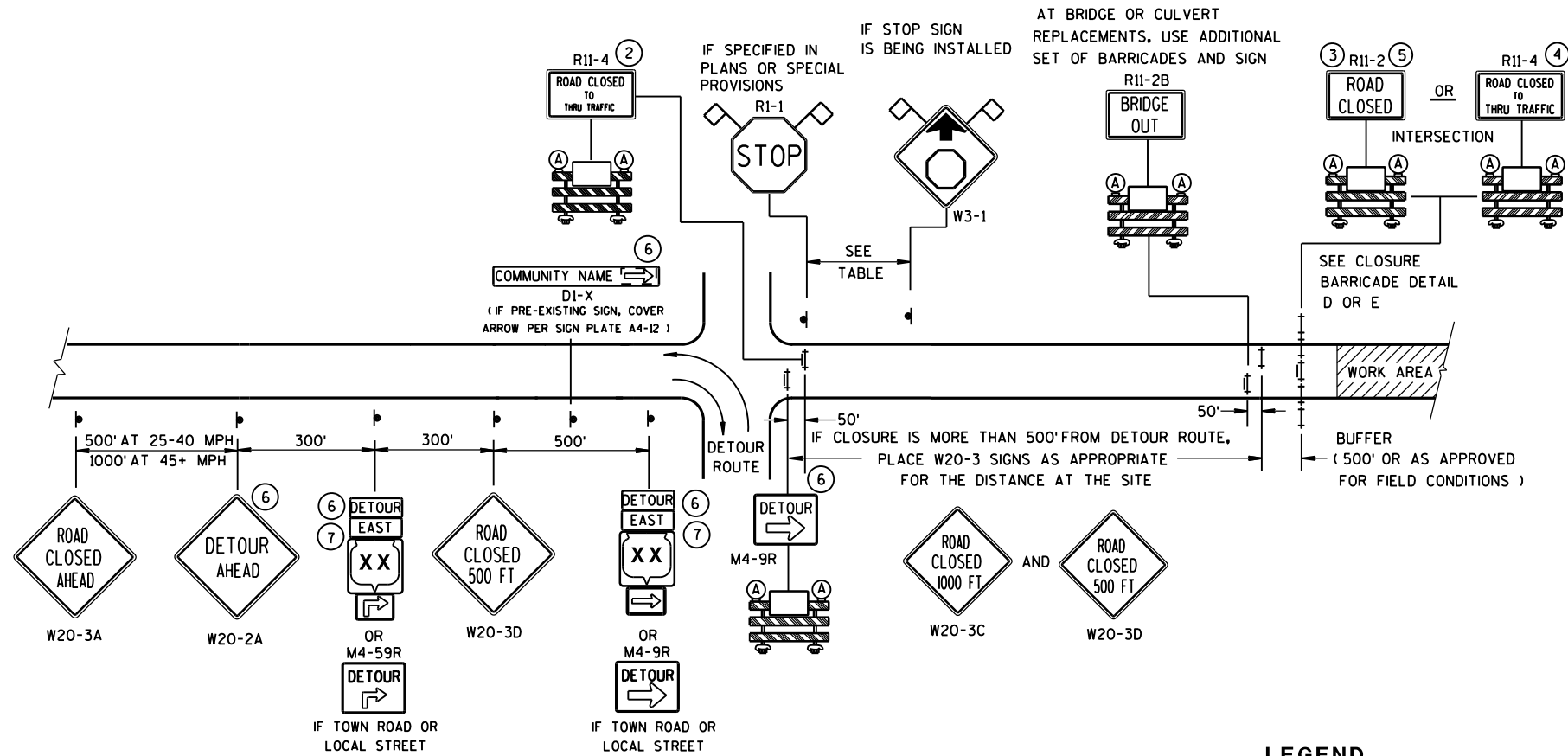
APPROVED
June, 2015
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

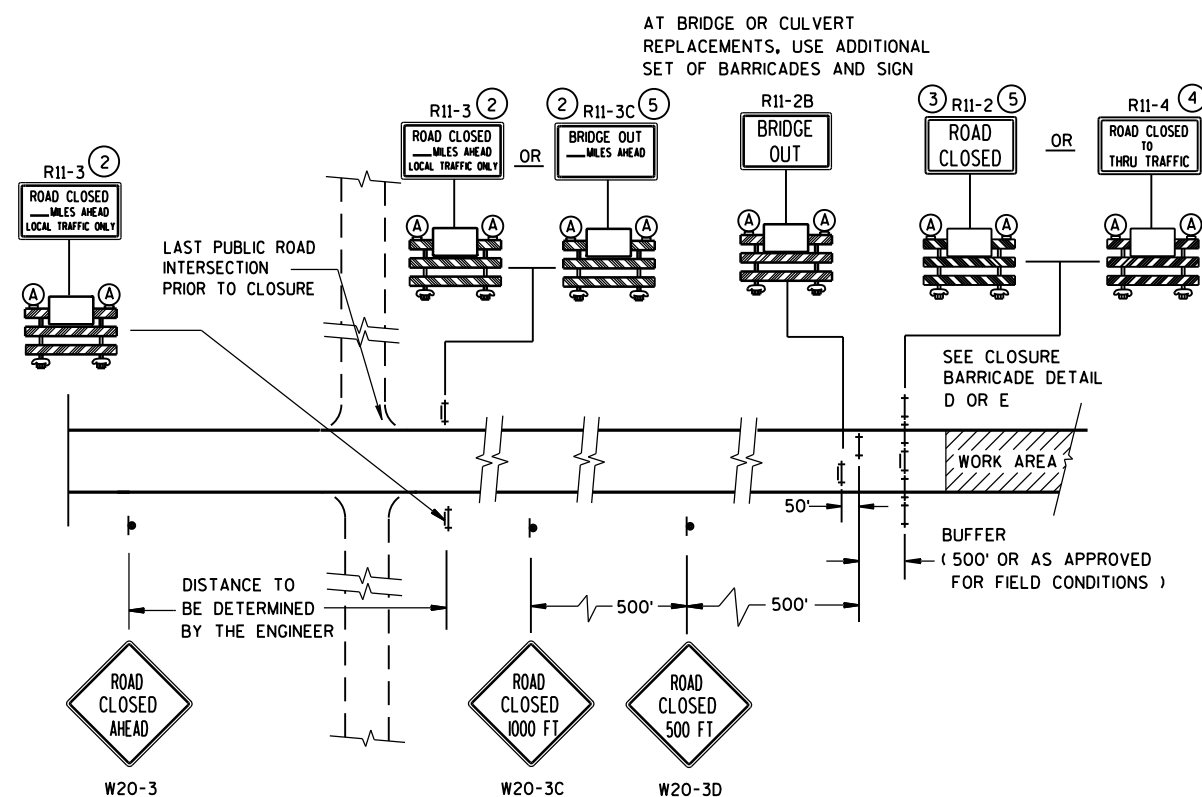
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B













MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

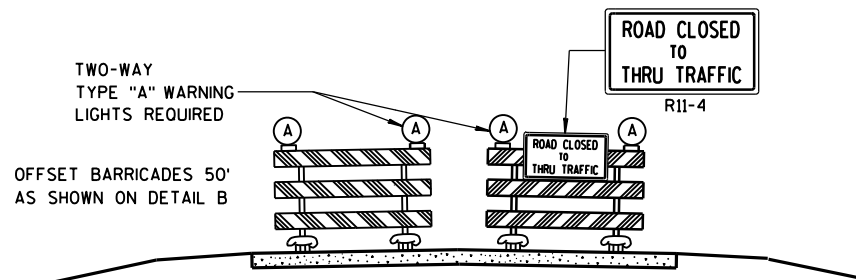
- ## LEGEND
- | | |
|---|---------------------------------------|
|  | SIGN ON PERMANENT SUPPORT |
|  | TYPE III BARRICADE |
|  | TYPE III BARRICADE WITH ATTACHED SIGN |
|  | TYPE "A" WARNING LIGHT (FLASHING) |
|  | WORK AREA |
|  | M4-8
M3-X |
|  | MI-4 |
| OR | |
|  | COUNTY
MI-5A |
| OR | |
|  | MI-6 |
|  | M05-1 |
| OR | |
|  | M06-1 |
|  | FLAGS, 16" X 16" MIN., (ORANGE) |

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
<u>Sept. 2015</u>	<u>/S/ Peter Amakobe Atepe</u>
DATE	STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



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.

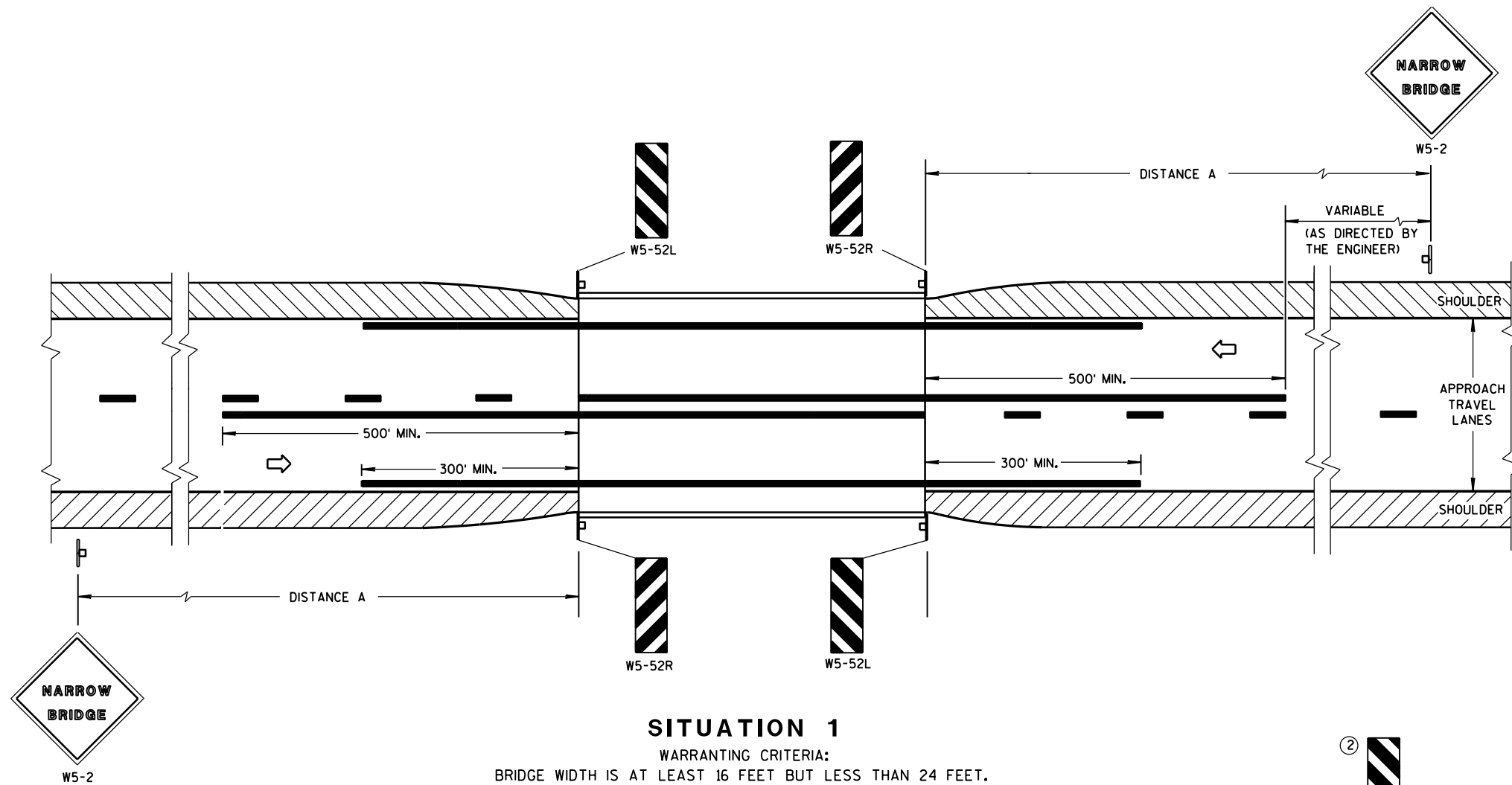
R1-1 SHALL BE 36" X 36".

- 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



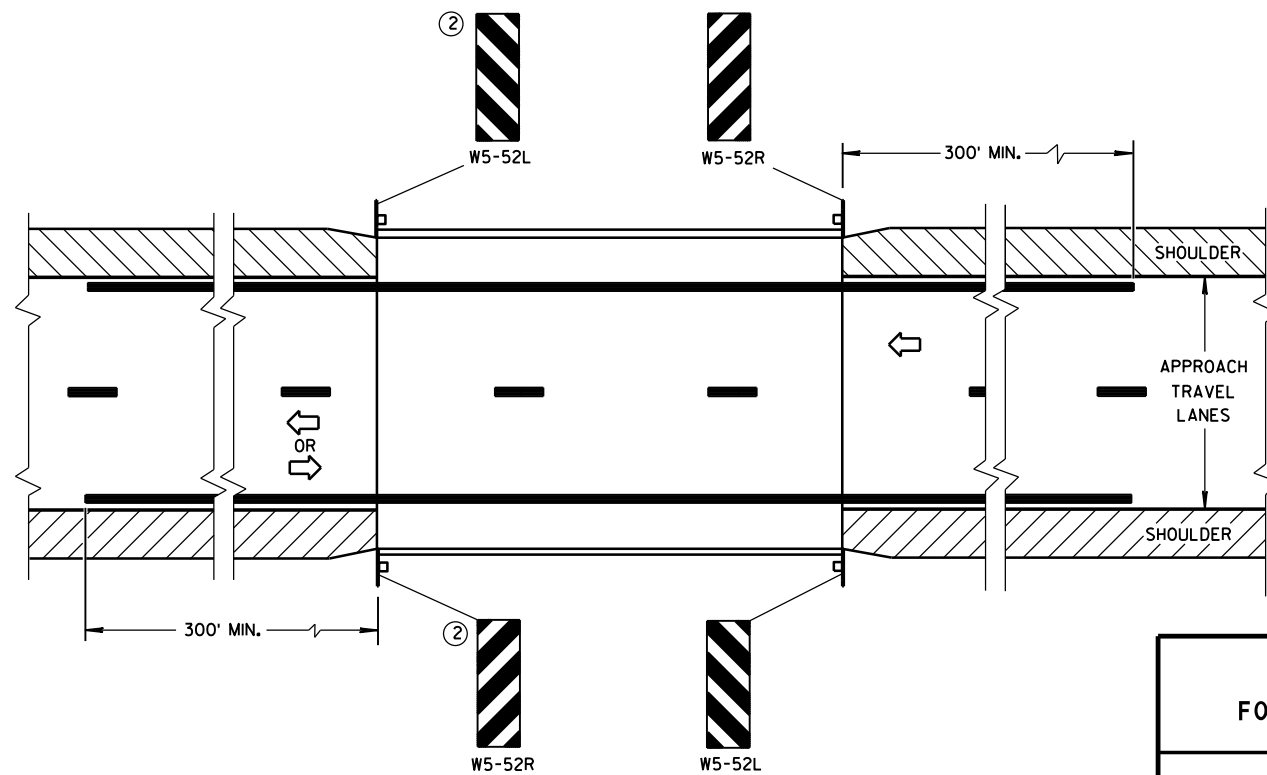
DISTANCE TABLE

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

GENERAL NOTES

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

- ① LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.
- ② OMIT ON ONE-WAY TRAVELLED WAYS.
- ③ EDGE OF W5-52 SIGN SHALL BE PLACED IN LINE WITH FACE OF CURB OR PARAPET.

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

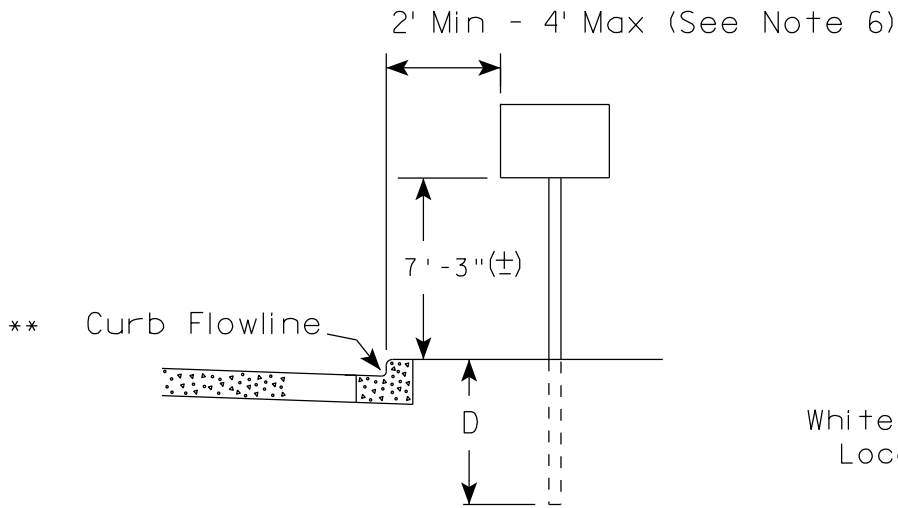
4-18-16

DATE

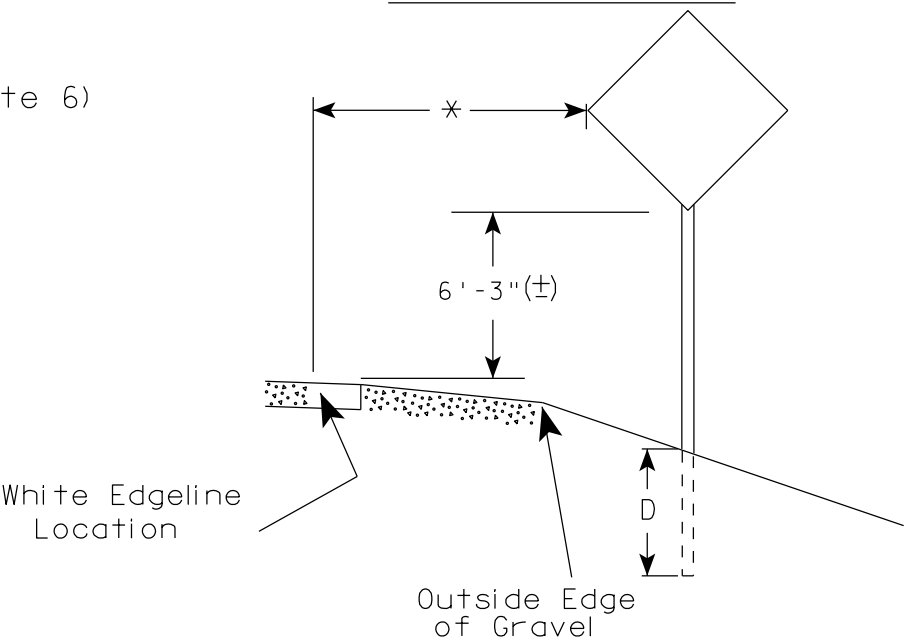
FHWA

/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER

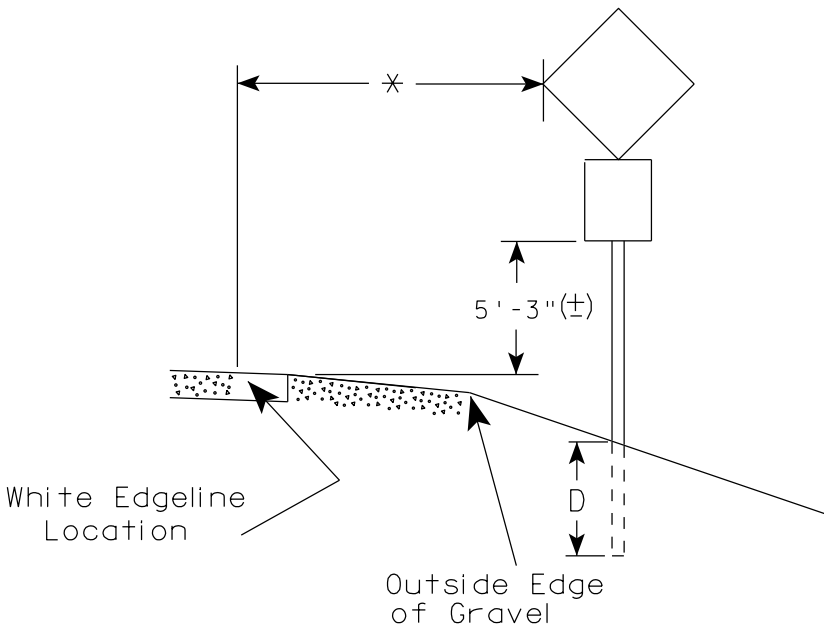
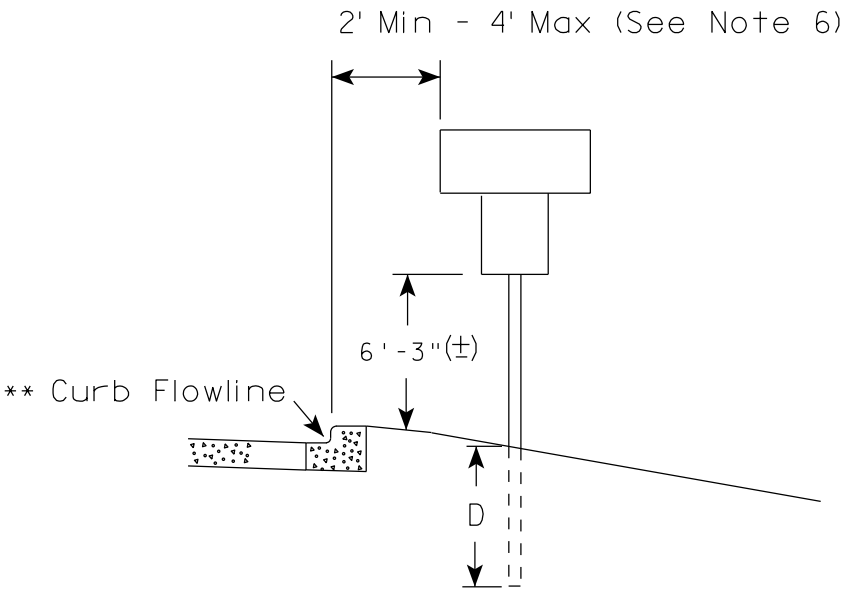
URBAN AREA



RURAL AREA (See Note 2)



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



POST EMBEDMENT DEPTH

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

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

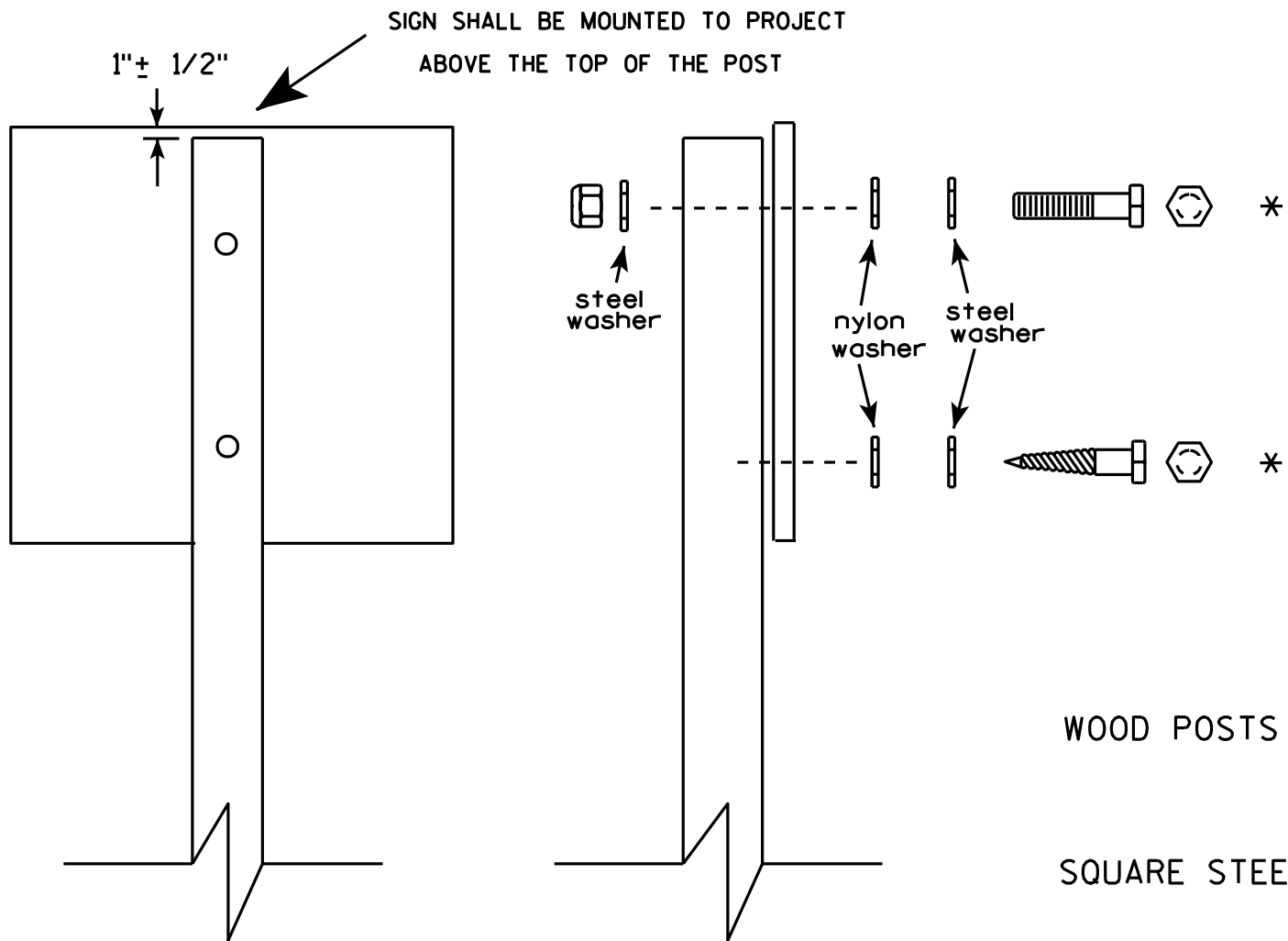
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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

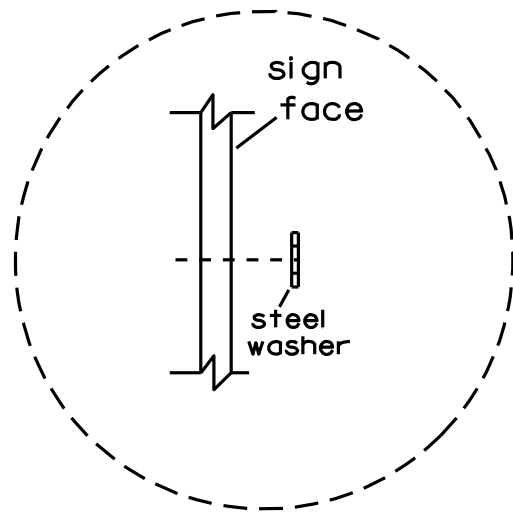


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

- WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.

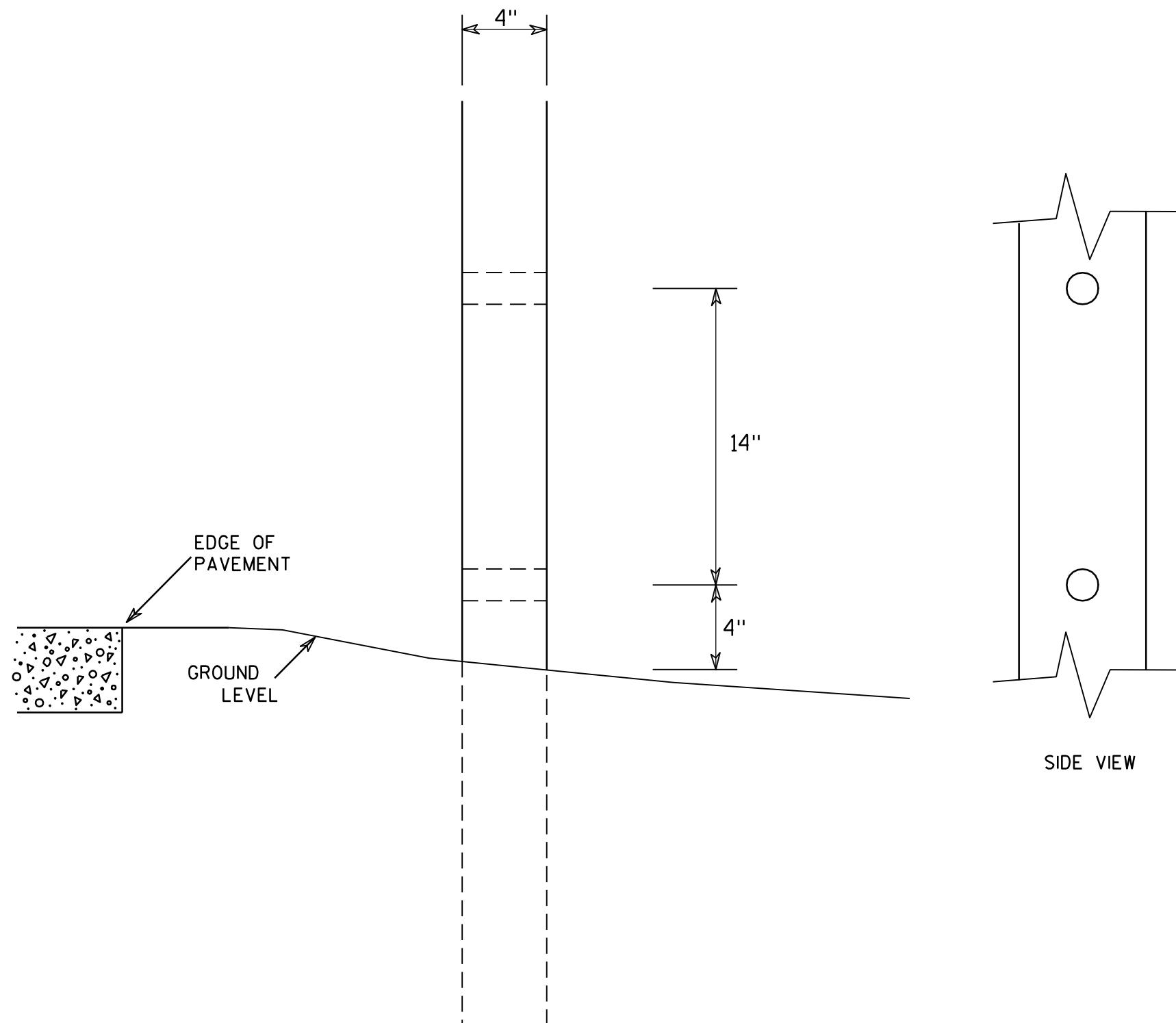


Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

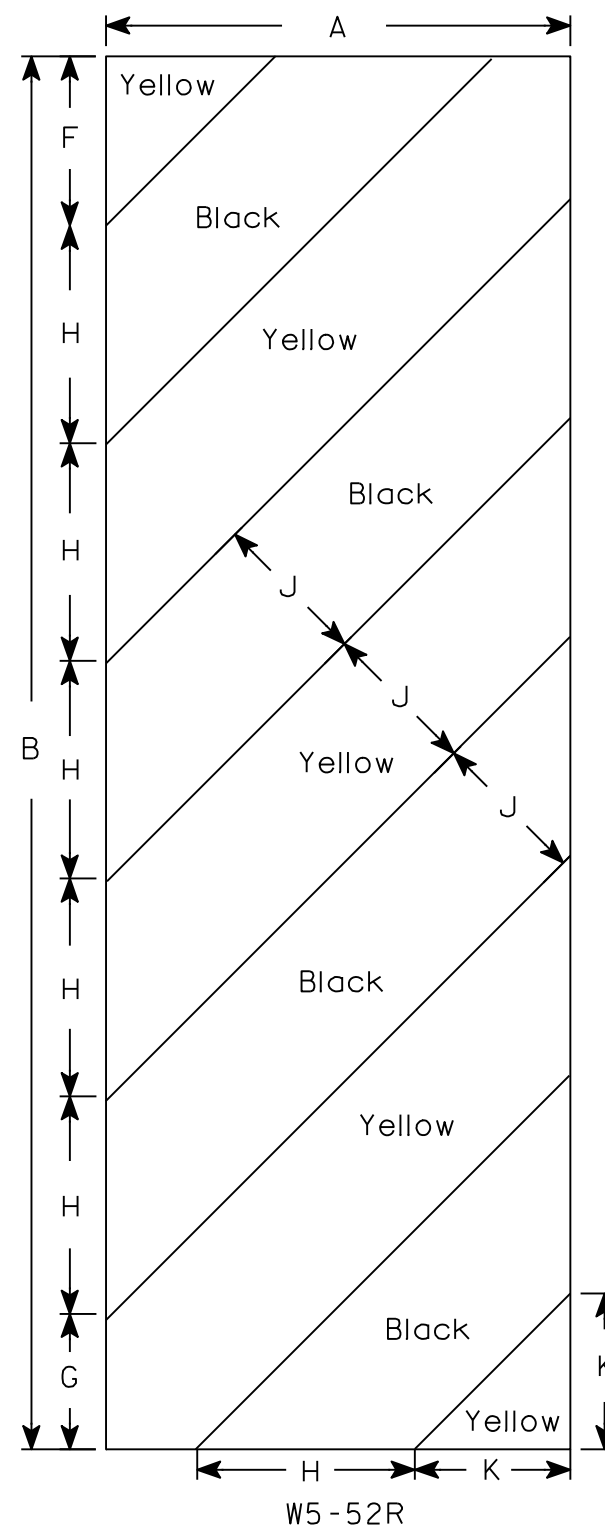
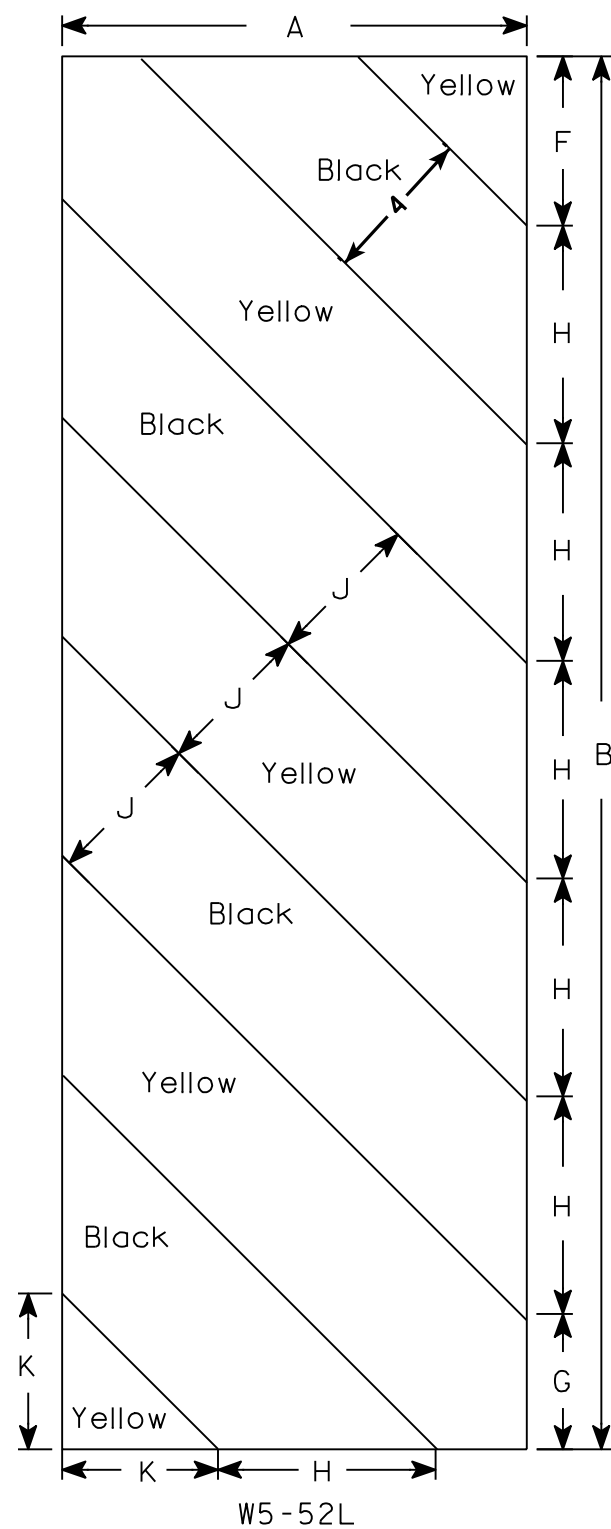
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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.

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO:

HWY:

COUNTY:

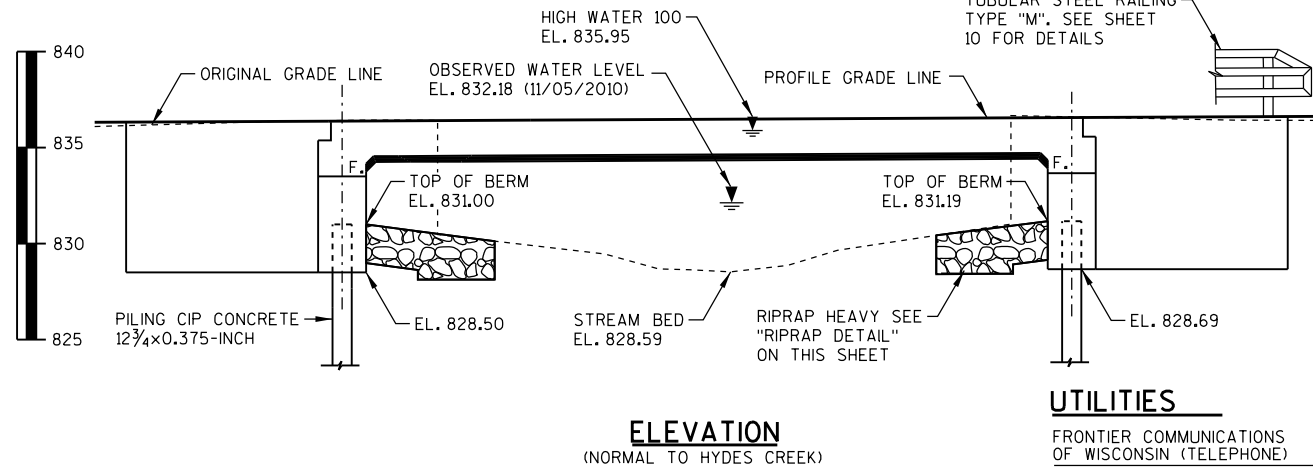
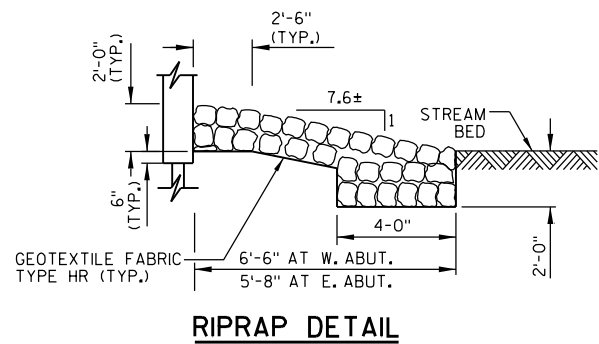
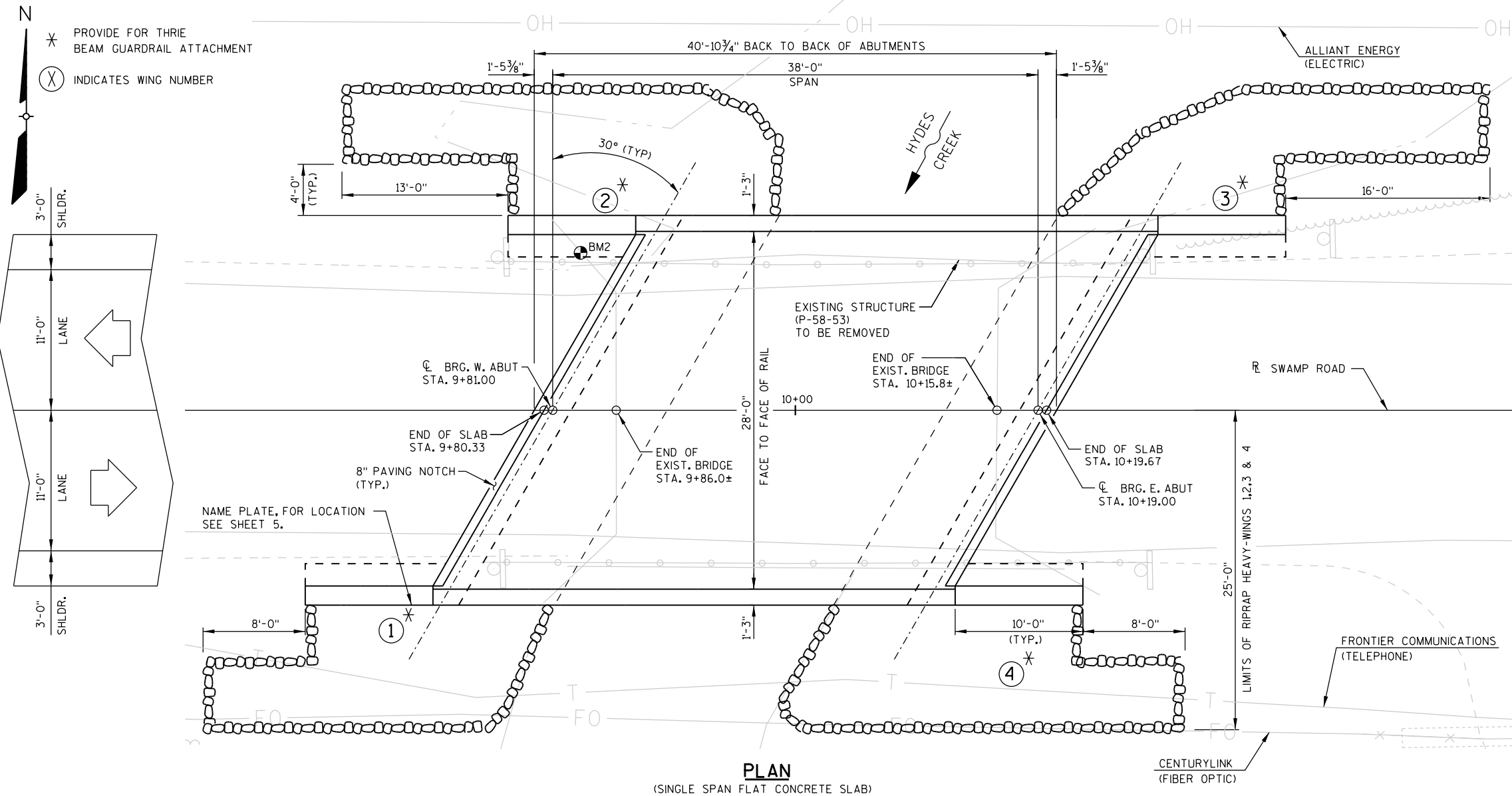
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PLOT DATE: 10/17/2016

BATCH PRINT SHEET 1 OF 1
PLOT TIME: 10:48:11 AM

8



BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEVATION
1	9+28.90	MAG NAIL IN PP 26-14-31, NORTH SIDE OF SWAMP ROAD 75± W. OF BRIDGE.	832.92
2	9+83.18	CHISELED SQUARE ON NW WING OF BRIDGE	835.62
3	10+92.30	MAG NAIL IN PP 25-14-6, SOUTH SIDE OF SWAMP ROAD 100± E. OF BRIDGE.	833.78

ELEVATIONS SHOWN ON THIS PLAN ARE NAVD 88

UTILITIES

FRONTIER COMMUNICATIONS OF WISCONSIN (TELEPHONE)
ATTN: JAMES JASKOLSKI
715-823-1227

CENTURYLINK (FIBER OPTIC)
ATTN: RUDY WHEELER
920-362-1184

ALLIANT ENERGY (ELECTRIC)
ATTN: JASON HOGAN
608-458-4871



10/17/2016

STATE PROJECT NUMBER

6097-05-70

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR = 1.14
OPERATIONAL RATING FACTOR = 1.48
MAXIMUM STANDARD PERMIT VEHICLE LOAD = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES:

CONCRETE MASONRY - SLAB f'_c = 4,000 P.S.I.
ALL OTHER f'_c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 f'_c = 60,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 12 $\frac{3}{4}$ ×0.375-INCH. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 80'-0" LONG FOR THE WEST AND EAST ABUTMENTS.

**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 THE MODIFIED GATES DYNAMIC FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC VOLUME

SWAMP ROAD

A.D.T. (2017) = 795
A.D.T. (2037) = 1010
DESIGN SPEED = 60 MPH

HYDRAULIC DATA

100 YEAR FREQUENCY

Q100 750 CFS
VELOCITY 5.98 FPS
HIGH WATER ELEVATION 835.95±
WATERWAY AREA 125 SQ. FT.
DRAINAGE AREA 14.0 SQ. MI.
ROAD OVERTOPPING N/A
SCOUR CRITICAL CODE 8

2 YEAR FREQUENCY

Q2 240 CFS
HIGH WATER 2 ELEVATION 833.55±

LIST OF DRAWINGS

- GENERAL PLAN
- CROSS SECTION & QUANTITIES
- SUBSURFACE EXPLORATION
- ABUTMENTS
- WINGS 1 & 2
- WINGS 3 & 4
- ABUTMENT DETAILS
- SUPERSTRUCTURE
- SUPERSTRUCTURE DETAILS
- TUBULAR STEEL RAILING TYPE M

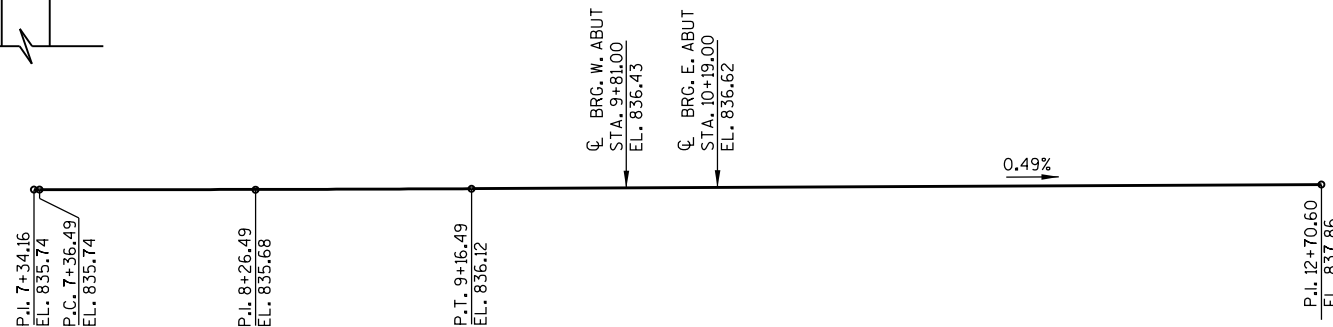
BRIDGE OFFICE:
BILL DREHER (608) 266-8489

CONSULTANT:
KEVIN HAGEN (715) 342-3053

AECOM PROJECT NO. 60186938

NO.	DATE	REVISION	BY
AECOM			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	<i>William C. Dreher</i>	SDR	11/25/16
CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-58-126			
SWAMP ROAD OVER HYDES CREEK			
COUNTY	SHAWANO	TOWN/CITY/VILLAGE	PELLA
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	EAN	DESIGN CK'D.	KRH
DRAWN BY	ALB/KAM	PLANS CK'D.	EAN
GENERAL PLAN			SHEET 1 OF 10

THE QUANTITY FOR BACKFILL STRUCTURE, BID ITEM 210.1500, IS CALCULATED IN ACCORDANCE WITH SECTION 12.6.2 OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.



BID ITEM NUMBER	BID ITEM	UNIT	WEST ABUTMENT	EAST ABUTMENT	SUPER.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+01	LS				1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-58-126	LS				1
210.1500	BACKFILL STRUCTURE TYPE A	TON	200	200		400
502.0100	CONCRETE MASONRY BRIDGES	CY	32	32	89	153
502.3200	PROTECTIVE SURFACE TREATMENT	SY	12	12	160	184
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,110	2,110		4,220
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,400	1,400	16,390	19,190
513.4061	RAILING TUBULAR TYPE M B-58-126	LF			127	127
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	9		18
550.2126	PILING CIP CONCRETE 12 3/4 X 0.375-INCH	LF	560	560		1,120
606.0300	RIPRAP HEAVY	CY	79	75		154
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	65	65		130
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	157	153		310
	NON-BID ITEMS					
	FILLER	SIZE				1/2" & 3/4"

THE RODENT SHIELD SHALL BE A 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.

ELEVATIONS AND DIMENSIONS ARE GIVEN AT THE \odot OF ABUTMENT. FOR WING DETAILS AND ELEVATIONS SEE SHEETS 5 AND 6.

WING LENGTH INCLUDES 1/2" FILLER.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENTS.

☆ SUPPORT ABUTMENTS ON PILING CIP CONCRETE 12 $\frac{3}{4}$ ×0.375-INCH. SEE FOUNDATION DATA ON SHEET 1 AND PILE SPLICE DETAIL ON SHEET 7.

● PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. DRAIN BOTH ABUTMENTS TO DOWNSTREAM SIDE OF BRIDGE. ATTACH RODENT SHIELD AT ENDS OF PIPE. SEE SHT. 2.

■ $\frac{1}{2}$ " FILLER TO EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF $\frac{1}{2}$ " FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD $\frac{1}{8}$ " BELOW SURFACE OF CONCRETE.)

◆ A506 AT 1'-0", COATED. BARS MAY BE PLACED AFTER CONCRETE HAS BEEN POURED BUT PRIOR TO ITS INITIAL SET. EMBED 1'-0".

▽ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.

◀ 4"× $\frac{3}{4}$ " FILLER - TO EXTEND FULL LENGTH OF ABUTMENT BODY.

◻ KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"×6".

◻ OPTIONAL CONSTRUCTION JOINT KEYWAY FORMED BY A BEVELED 2"×6", WITH RUBBERIZED MEMBRANE WATERPROOFING ON BACKFACE.

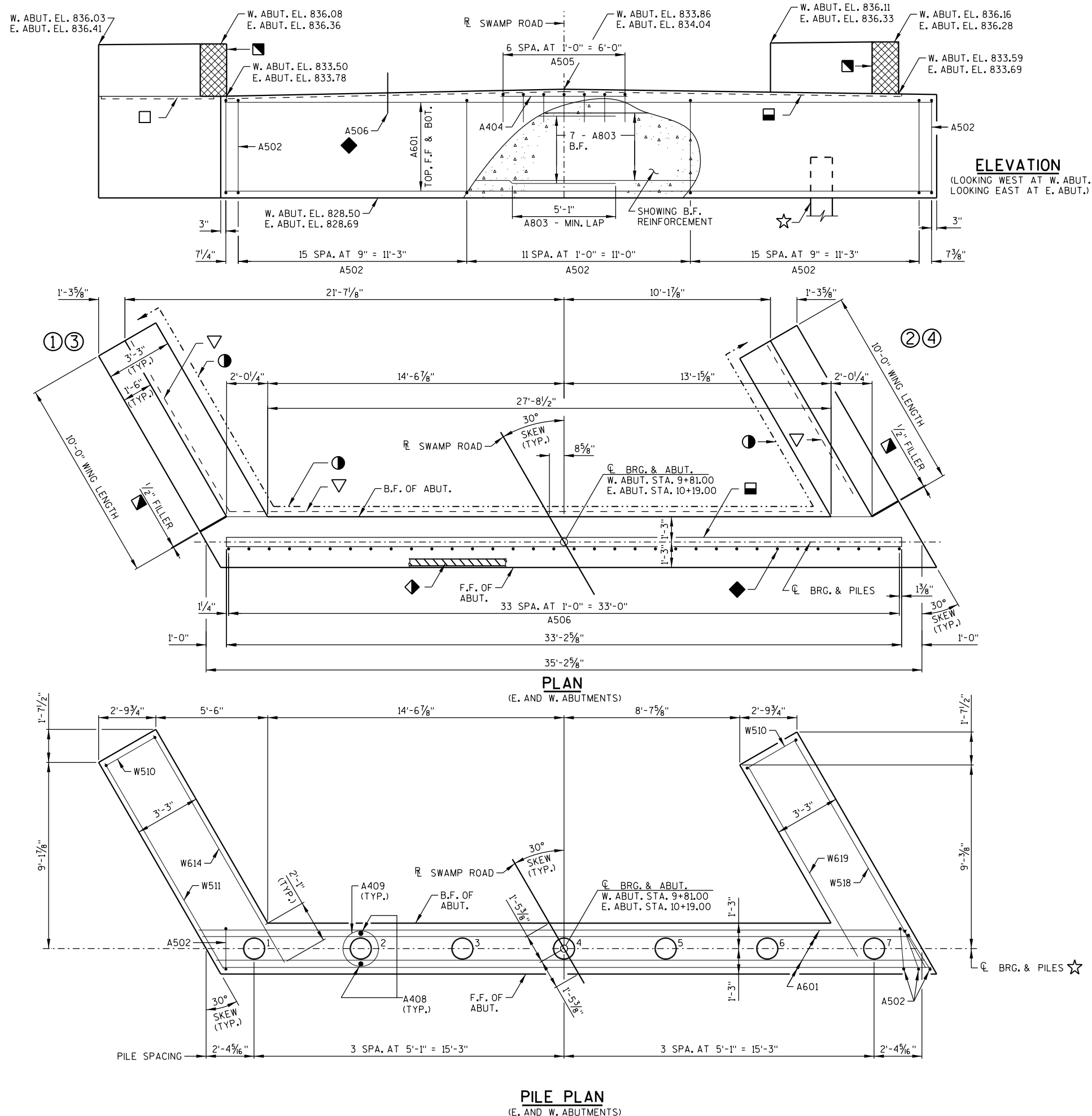
△ PLACE BOTTOM HALF OF RUBBERIZED MEMBRANE WATERPROOFING, HORIZONTAL IN THIS AREA.

⊗ INDICATES WING NUMBER

4" → ← C BRG. AND PILES

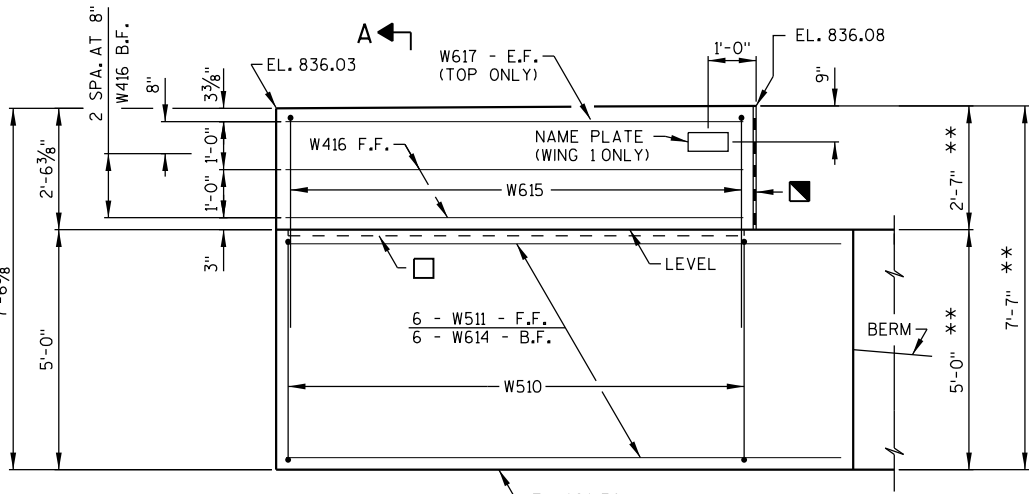


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-58-126			
DRAWN BY		KAM	PLANS CK'D. EAM
ABUTMENTS		SHEET 4 OF 10	

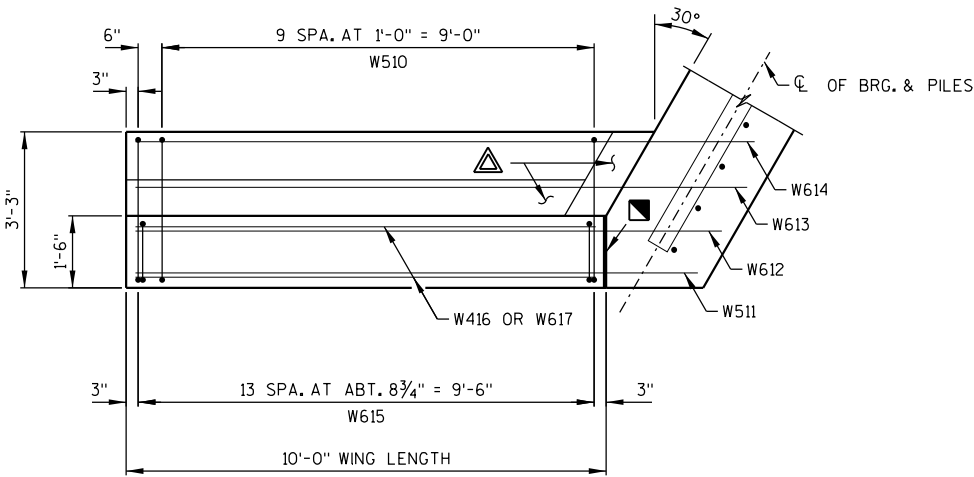


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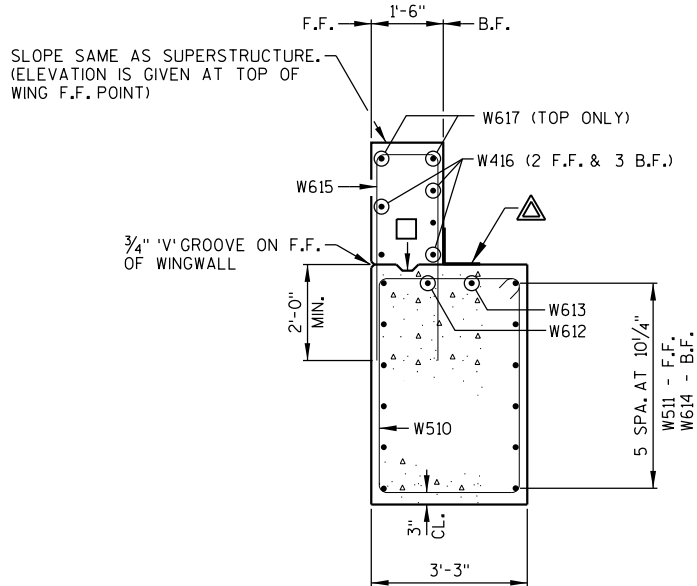
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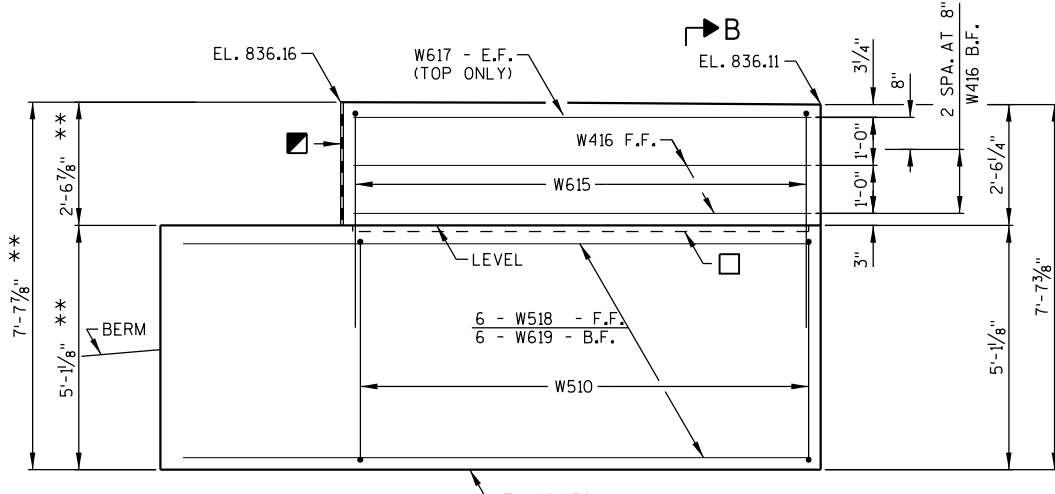
ELEVATION WING - 1



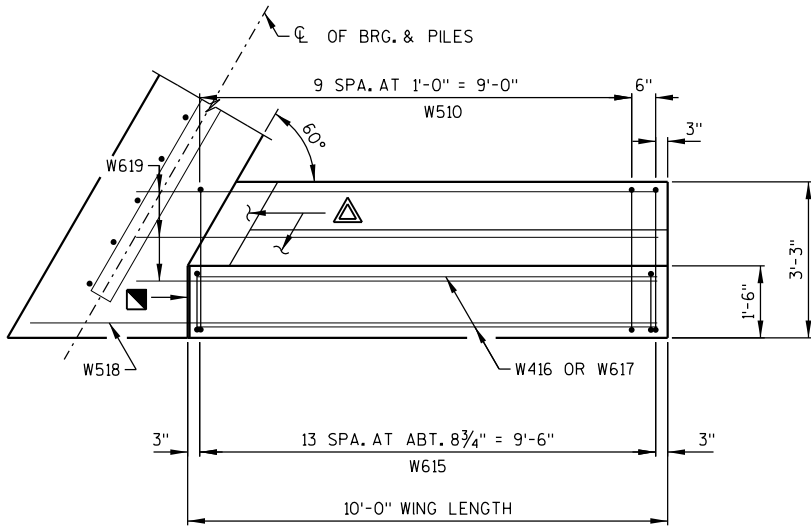
PLAN - WING 1



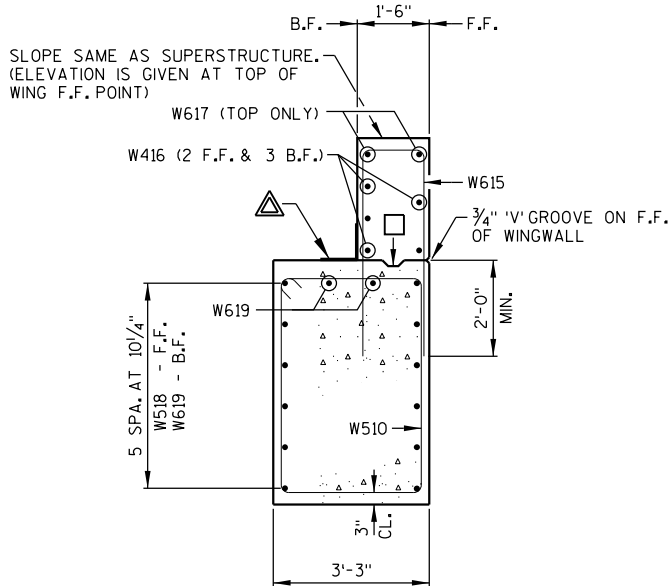
SECTION A-A



ELEVATION WING - 2



PLAN - WING 2



SECTION B-B

LEGEND

** DIMENSIONS AND ELEVATIONS ARE GIVEN AT THE B.F. OF ABUTMENT.
FOR ADDITIONAL SYMBOL DESCRIPTIONS SEE SHT. 4.

STATE PROJECT NUMBER

6097-05-70

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-58-126			
DRAWN BY		KAM	PLANS CK'D. EAN
WINGS 1 & 2		SHEET 5 OF 10	

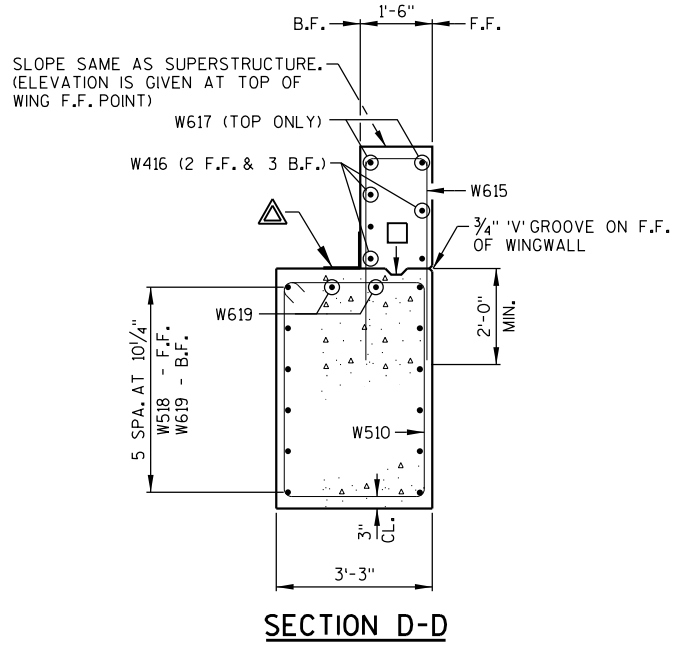
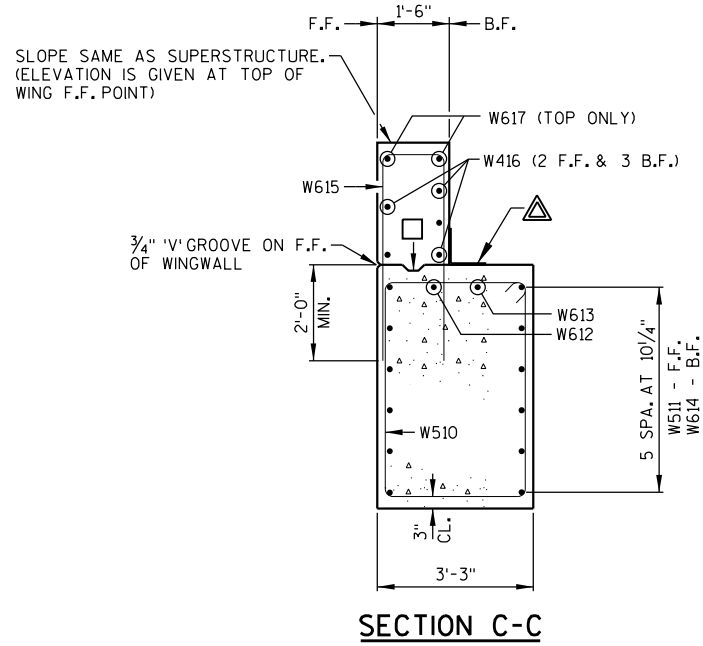
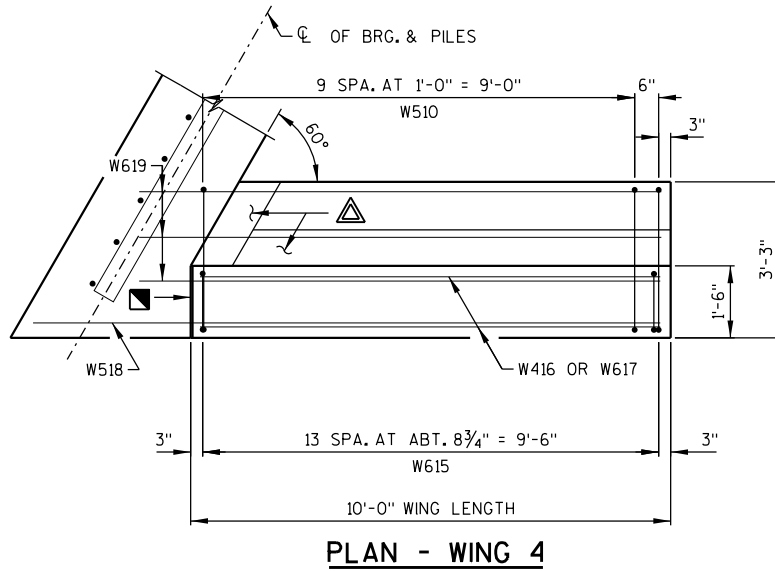
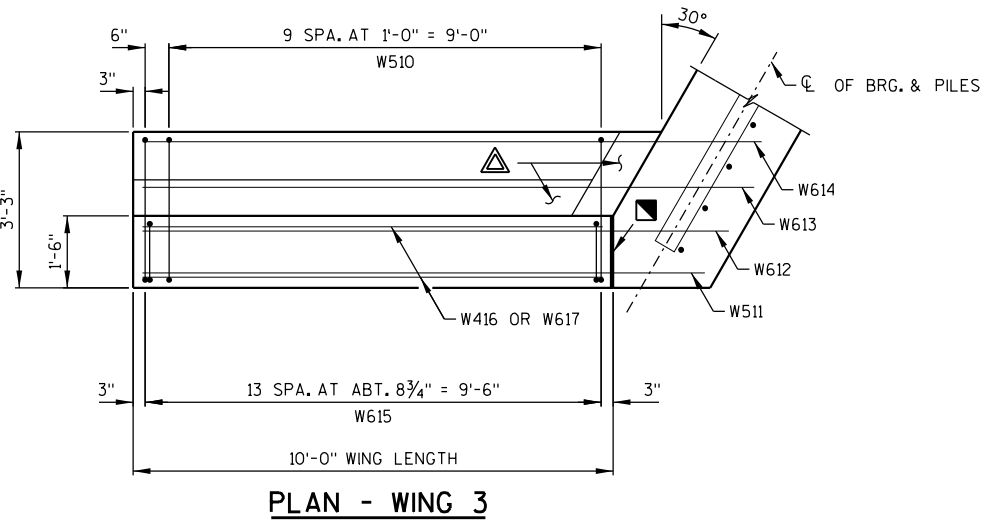
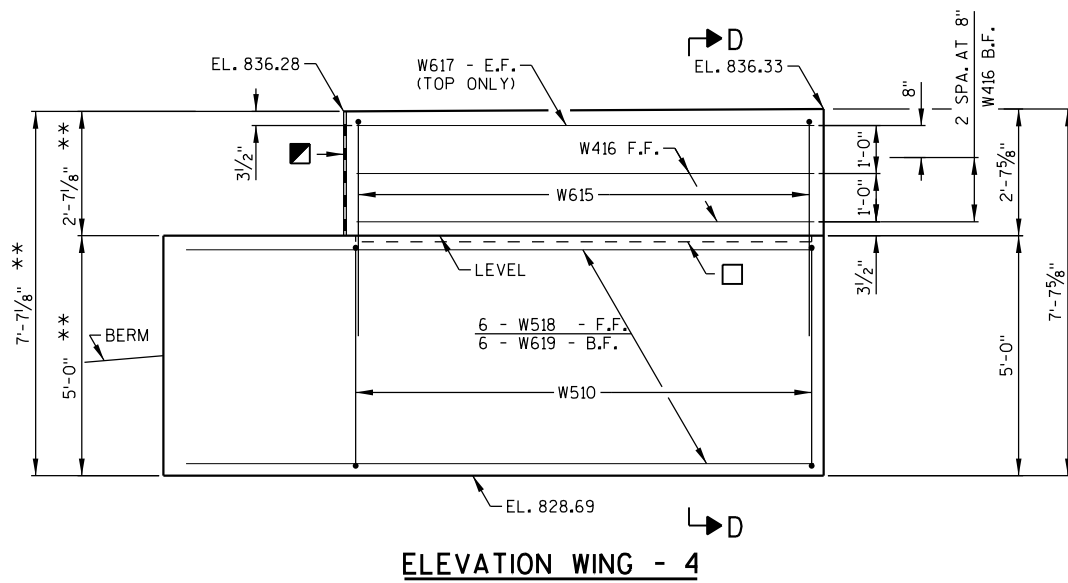
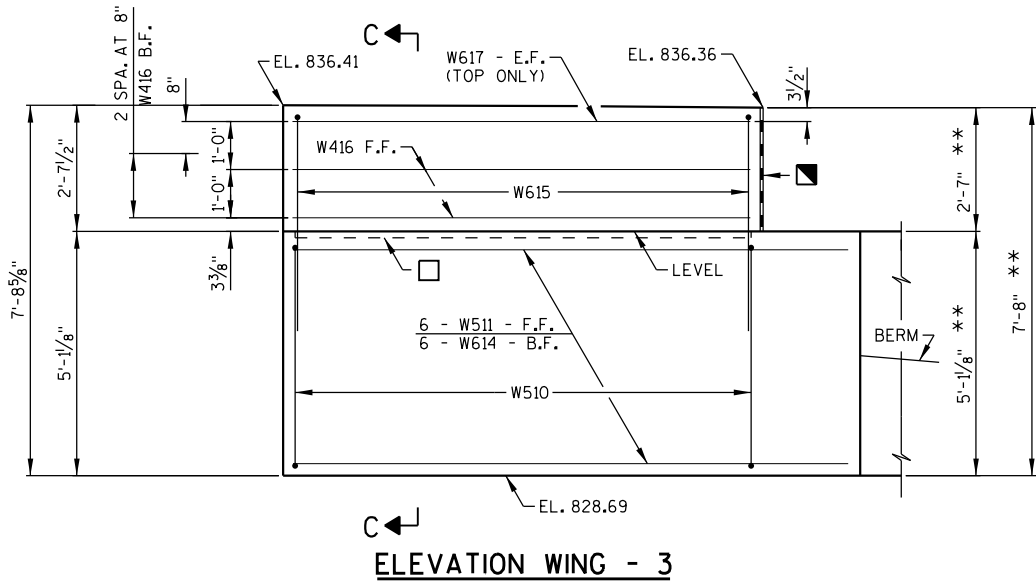
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BATCH PRINT SHEET 6 OF 10

8



LEGEND

** DIMENSIONS AND ELEVATIONS ARE GIVEN AT THE B.F. OF ABUTMENT.
FOR ADDITIONAL SYMBOL DESCRIPTIONS SEE SHT. 4.

STATE PROJECT NUMBER

6097-05-70

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-58-126			
DRAWN BY		KAM	PLANS CK'D. EAN
WINGS 3 & 4			SHEET 6 OF 10

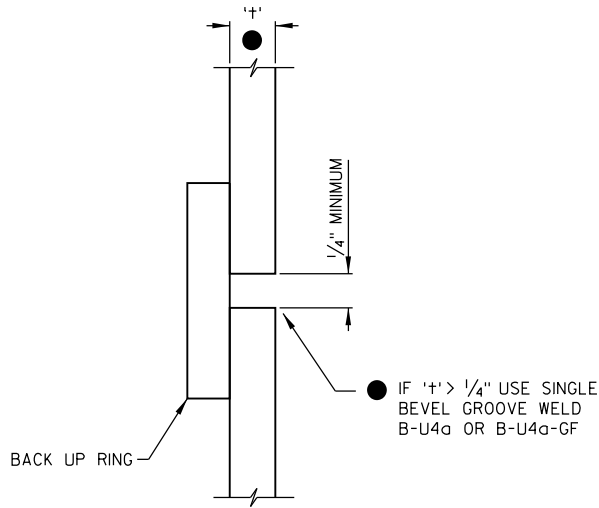
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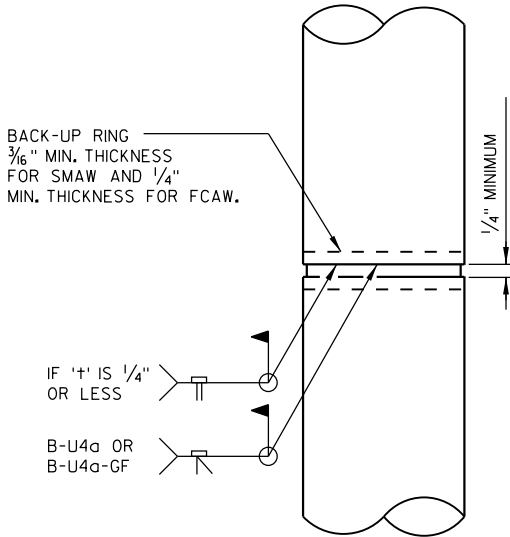
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BATCH PRINT SHEET 7 OF 10

8



C.I.P. PILE WELD DETAIL



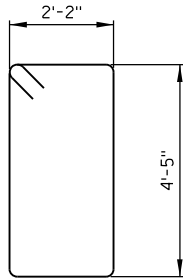
C.I.P. PILE SPLICE DETAIL

BILL OF BARS - ABUTMENTS

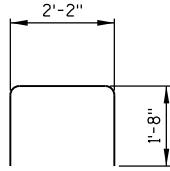
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
NON-COATED BARS TOTAL WEIGHT = 4,220 LBS				
A601	20	34-10		ABUT. - F.F., TOP & BOTTOM HORIZ.
A502	88	13-10	X	ABUT. - STIRRUPS VERT.
A803	28	20-0		ABUT. - B.F. HORIZ.
A404	6	6-0		ABUT. - TOP HORIZ.
A505	14	5-3	X	ABUT. - TOP VERT.
A408	28	2-3		ABUT. - DOWELS - PILES VERT.
A409	14	28-0	X	ABUT. - PILES VERT.
COATED BARS TOTAL WEIGHT = 2,800 LBS				
A506	68	2-0		ABUT. - DOWELS VERT.
W510	44	15-4	X	ABUT. - WING STIRRUPS VERT.
W511	12	11-7		ABUT. - WING 1 & 3 F.F. HORIZ.
W612	2	12-0		ABUT. - WING 1 & 3 TOP HORIZ.
W613	2	12-5		ABUT. - WING 1 & 3 TOP HORIZ.
W614	12	12-10		ABUT. - WING 1 & 3 B.F. HORIZ.
W615	56	9-10	X	ABUT. - WINGS VERT.
W416	20	9-6		ABUT. - WINGS HORIZ.
W617	8	9-6		ABUT. - WINGS HORIZ.
W518	12	13-3		ABUT. 2 & 4 F.F. HORIZ.
W619	16	11-0		ABUT. 2 & 4 TOP, B.F. HORIZ.

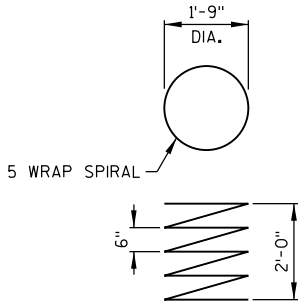
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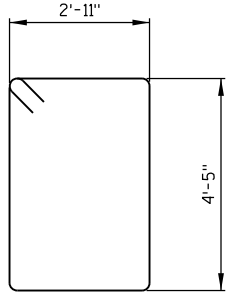
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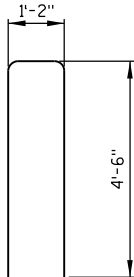
A505



A409



W510



W615

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-58-126			
DRAWN BY		KAM	PLANS CK'D. EAN
ABUTMENT DETAILS		SHEET 7 OF 10	

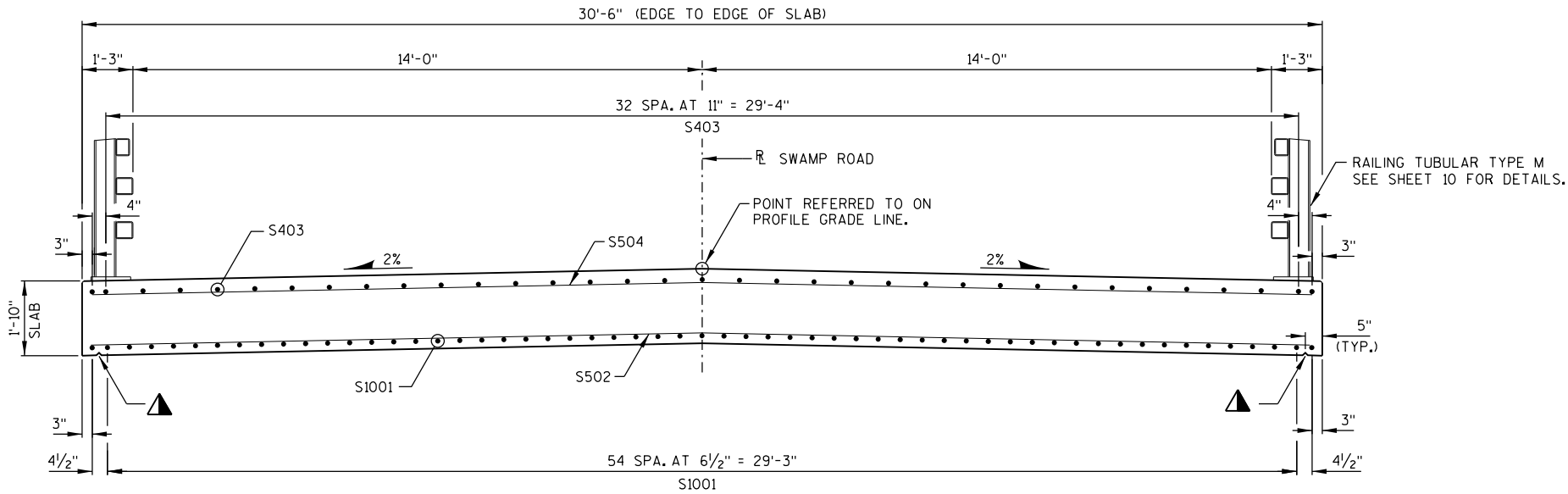
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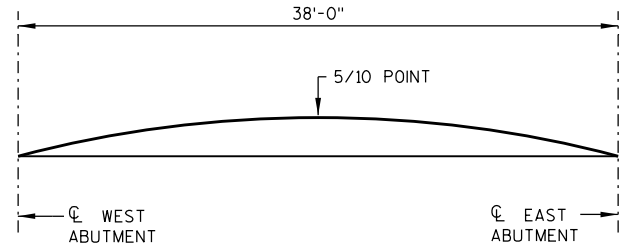
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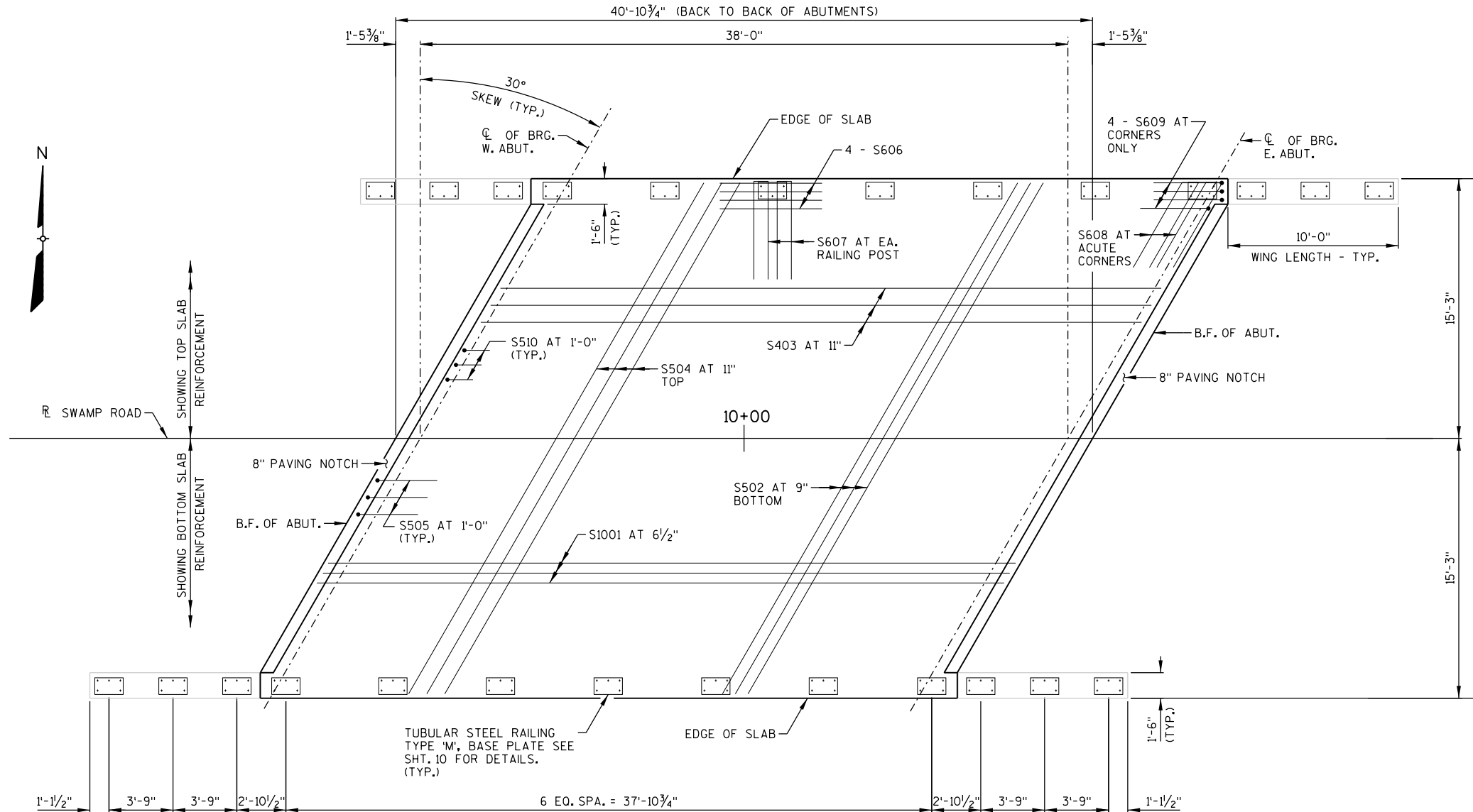


CROSS SECTION THRU ROADWAY
(LOOKING EAST)



CAMBER DIAGRAM

	CL BRG. W. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. E. ABUT.
CAMBER (IN.)	0.0	0.4	0.7	0.9	1.1	1.1	1.1	0.9	0.7	0.4	0.0



PLAN

NOTES

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

CAMBER SPAN AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

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

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

LEGEND

▲ 3/4" V-GROOVE, TERMINATE 6" FROM FRONT FACE OF ABUTMENTS.

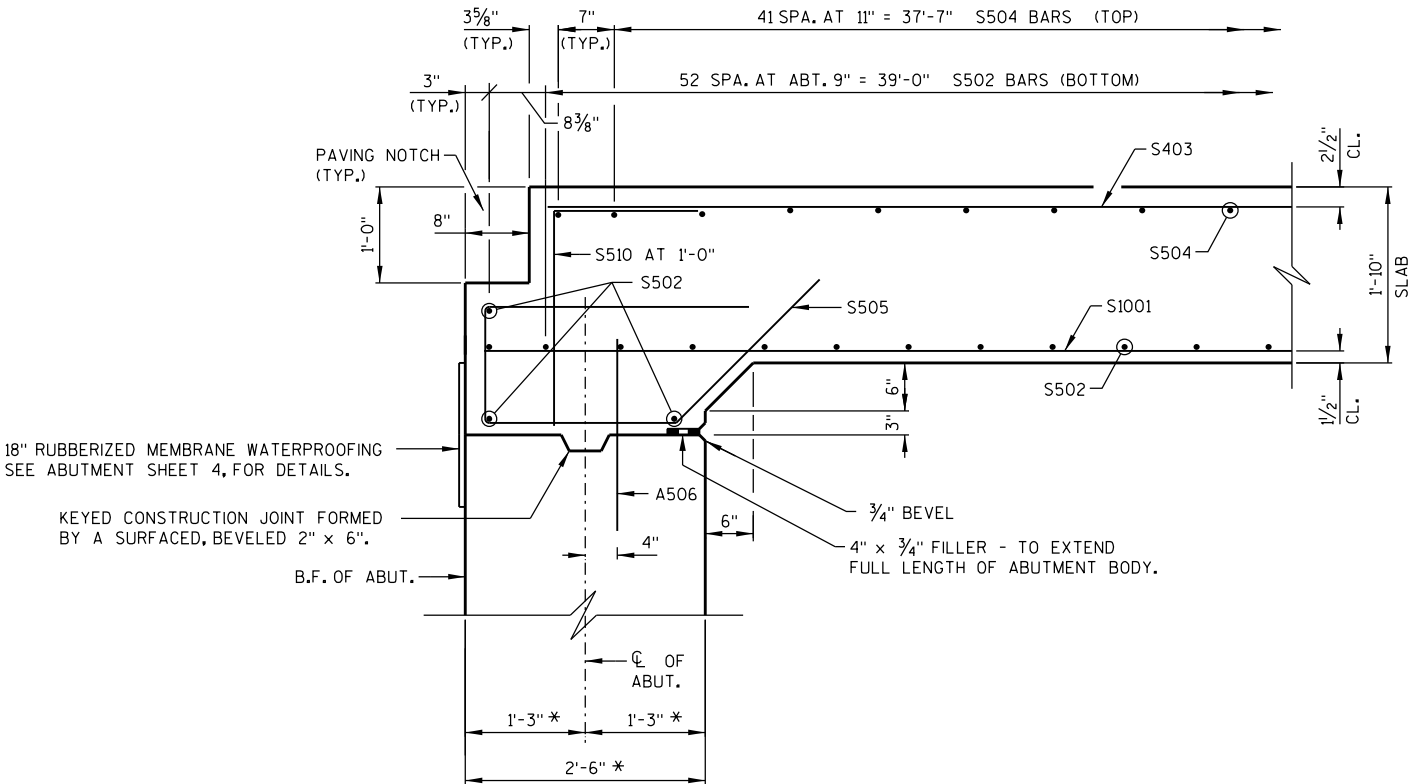
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-58-126			
DRAWN BY		KAM	PLANS CK'D. EAN
SUPERSTRUCTURE		SHEET 8 OF 10	

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BATCH PRINT SHEET 1 OF 1



PARTIAL LONGITUDINAL SECTION

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
ALL BAR STEEL REINFORCEMENT SHOWN IN THIS BILL SHALL BE EPOXY COATED.

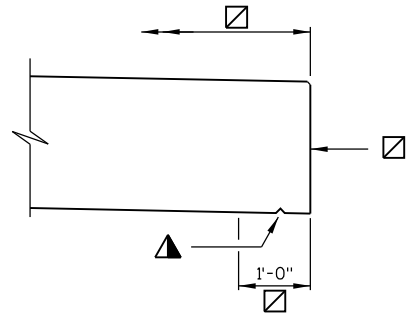
MARK	NO.	REQ'D.	LENGTH	BENT	LOCATION	TOTAL WEIGHT =
						16,390 LBS
S1001	57	40 - 6			SLAB - BOTTOM	LONGIT.
S502	61	34 - 8			SLAB - BOTTOM	TRANS.
S403	35	39 - 0			SLAB - TOP	LONGIT.
S504	44	34 - 8			SLAB - TOP	TRANS.
S505	62	8 - 4	X		SLAB - ABUTMENT TIES	LONGIT.
S606	40	6 - 0			SLAB - INT. POSTS - 4 PER POST	LONGIT.
S607	24	12 - 0	X		SLAB - AT INT. POSTS & OBTUSE EXT. POSTS - 2 PER POST	TRANS.
S608	4	12 - 0	X		SLAB - AT EXT. POSTS W/. ACUTE CRNR. - 2 PER POST	TRANS.
S609	16	4 - 10	X		SLAB - AT EXT. POSTS - 4 PER POST	LONGIT.
S510	62	3 - 6	X		SLAB - ABUTMENT TIES	VERT.

TOP OF DECK ELEVATIONS

	℄ BRG. W. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ BRG. E. ABUT.
NORTH EDGE OF DECK	836.17	836.19	836.21	836.23	836.24	836.26	836.28	836.30	836.32	836.34	836.36
℄ OF DECK	836.44	836.46	836.47	836.49	836.51	836.53	836.55	836.57	836.59	836.60	836.62
SOUTH EDGE OF DECK	836.08	836.10	836.12	836.14	836.16	836.18	836.20	836.21	836.23	836.25	836.27

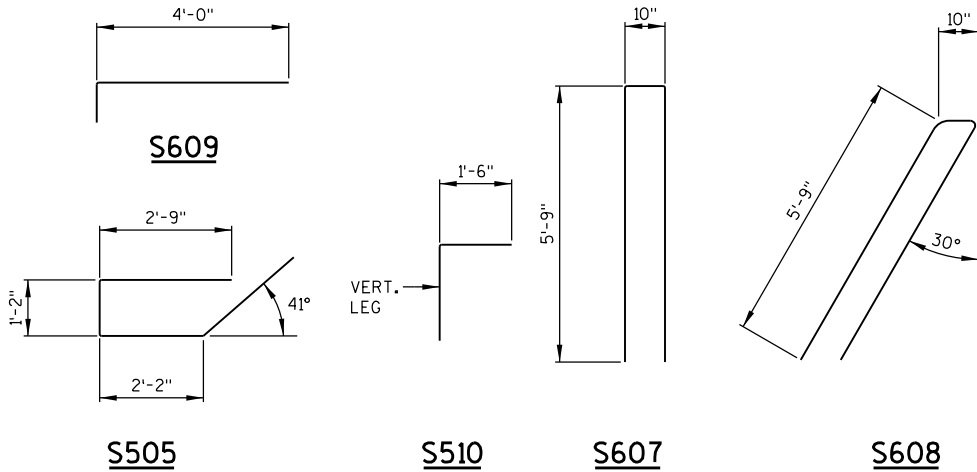
LEGEND

- * DIMENSION TAKEN NORMAL TO SUBSTRUCTURE UNIT.
- ☑ COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS.
- ▲ 3/4" V-GROOVE, TERMINATE 6" FROM FRONT FACE OF ABUTMENTS.



PROTECTIVE SURFACE TREATMENT
DETAIL AT SUPERSTRUCTURE

(RAILING AND REINFORCEMENT
NOT SHOWN FOR CLARITY)



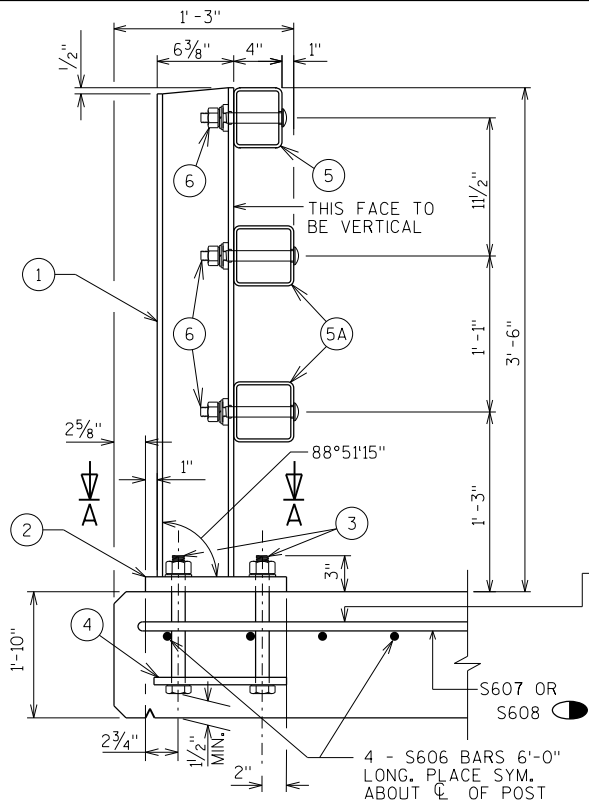
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-58-126			
DRAWN BY		KAM	PLANS CK'D. EAN
SUPERSTRUCTURE DETAILS		SHEET 9 OF 10	

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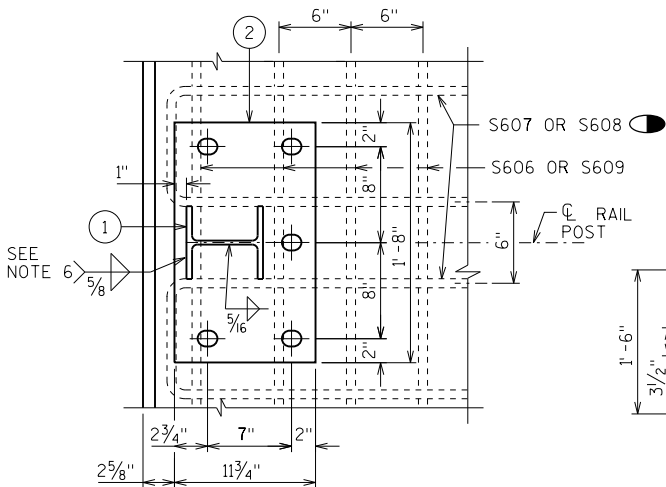
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PLOT DATE: 9/1/2016 PLOT TIME: 9:32:32 AM

BATCH PRINT SHEET 10 OF 10

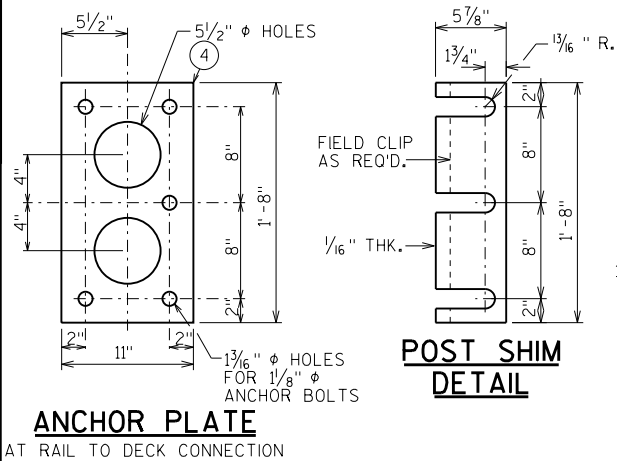
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SECTION THRU RAILING ON DECK

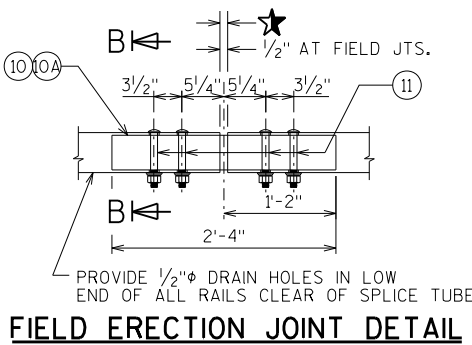


SECTION A-A

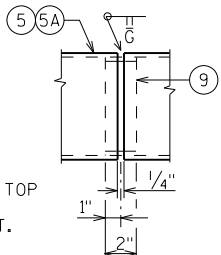


ANCHOR PLATE

AT RAIL TO DECK CONNECTION

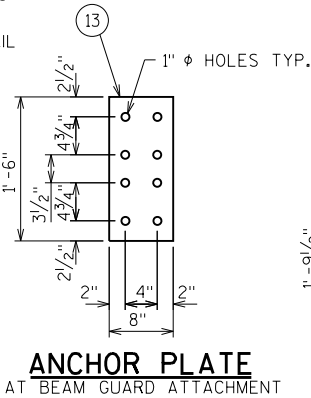


FIELD ERECTION JOINT DETAIL



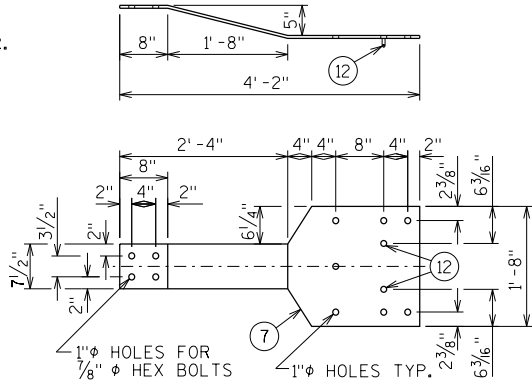
SHOP RAIL SPLICE DETAIL

LOCATION MUST BE SHOWN ON SHOP DRAWINGS



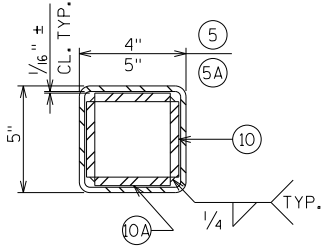
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT

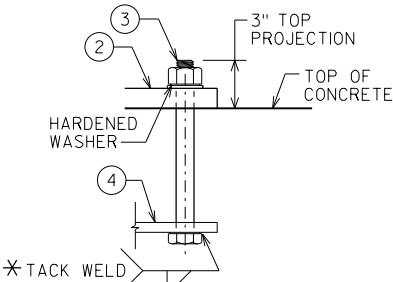


BACK-UP PLATE DETAIL

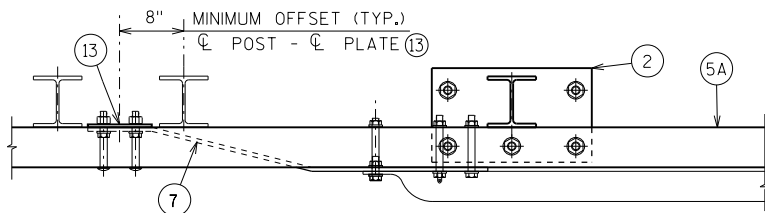
AT BEAM GUARD ATTACHMENT



SECTION B-B

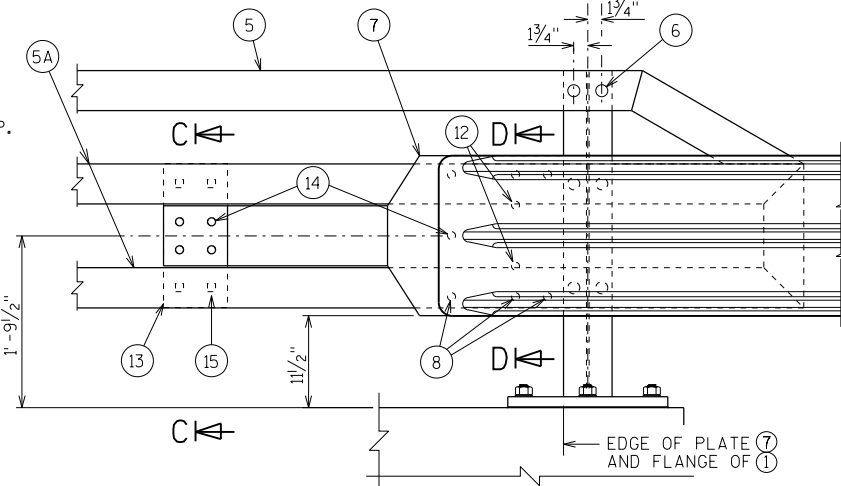


ANCHOR BOLTS



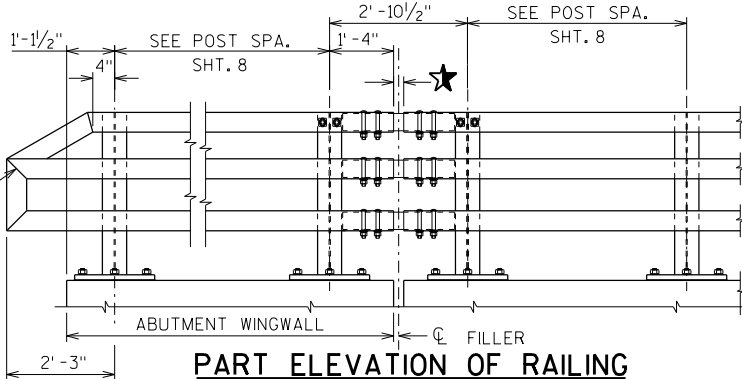
TOP VIEW AT END POST

THREE BEAM RAIL ATTACHMENT

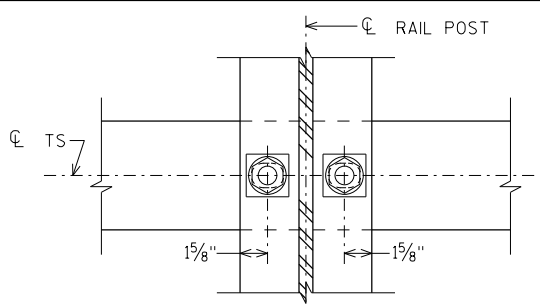


DETAIL AT END POST

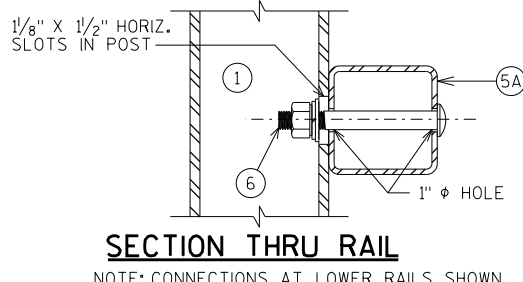
THREE BEAM RAIL ATTACHMENT



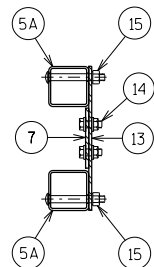
PART ELEVATION OF RAILING



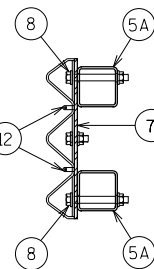
SECTION THRU POST WEB



TYPICAL RAIL TO POST CONNECTIONS



SECTION C-C



SECTION D-D

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 5/16" 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 - 1/8" 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 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 5A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" 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 THREE 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" phi A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/16" x 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1 5/16" x 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.
- 7/8" DIA. x 1 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 THREE 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" phi HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

- BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-58-126" 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 SSPC SPECIFICATIONS.
- THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).

TIE TO TOP MAT OF STEEL.

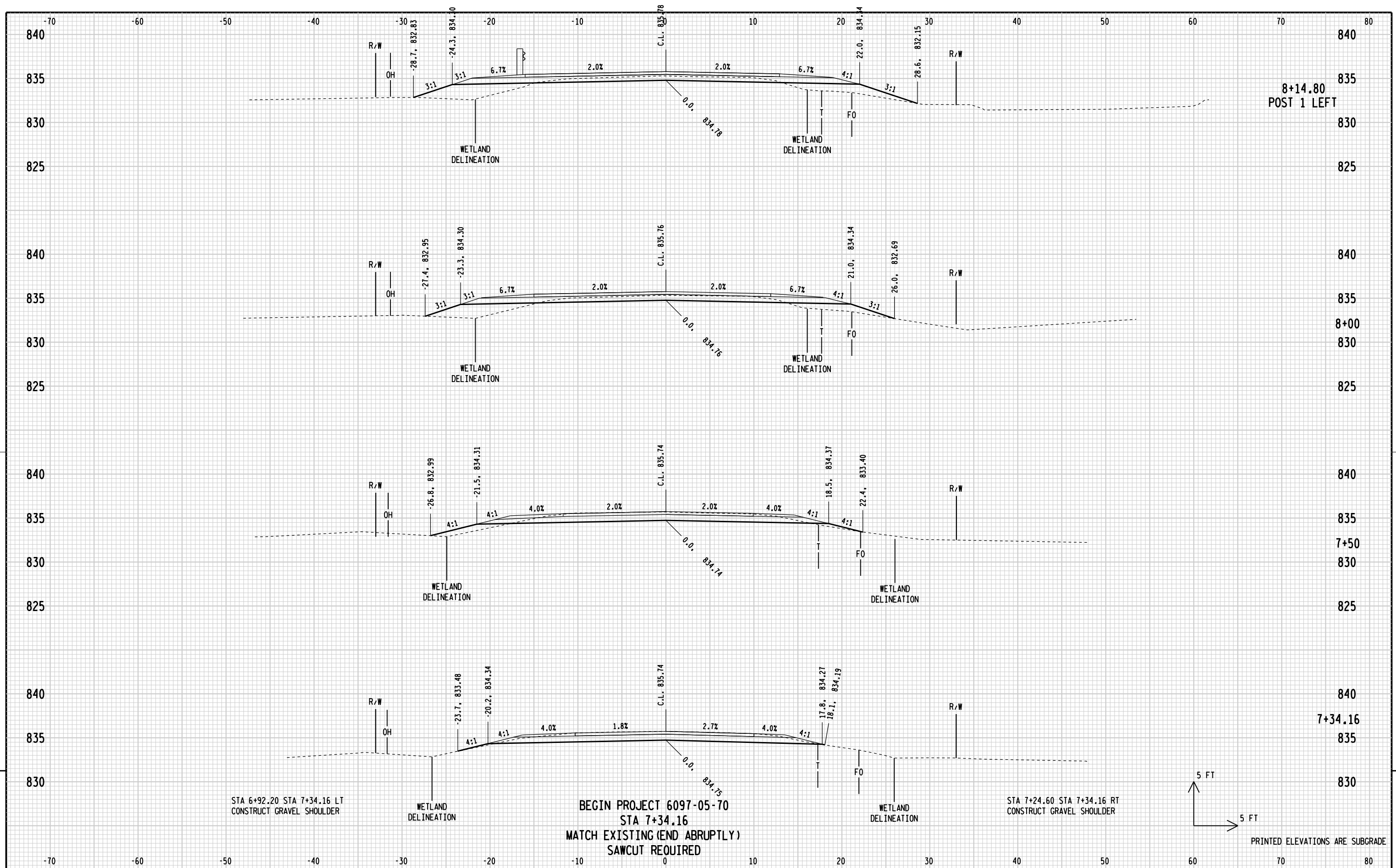
* FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.

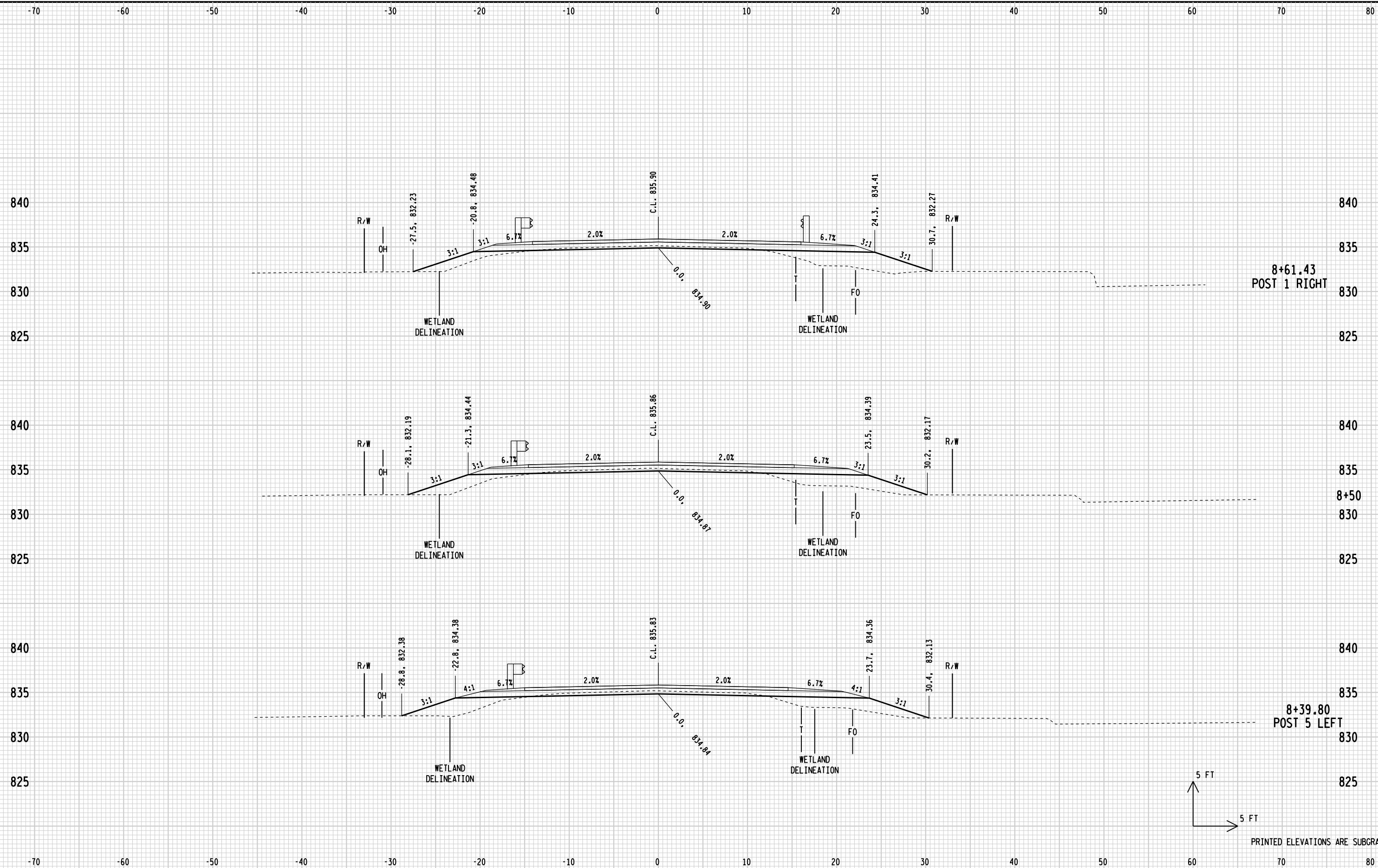
★ 1/2" OPENING FOR A1 ABUTMENT.

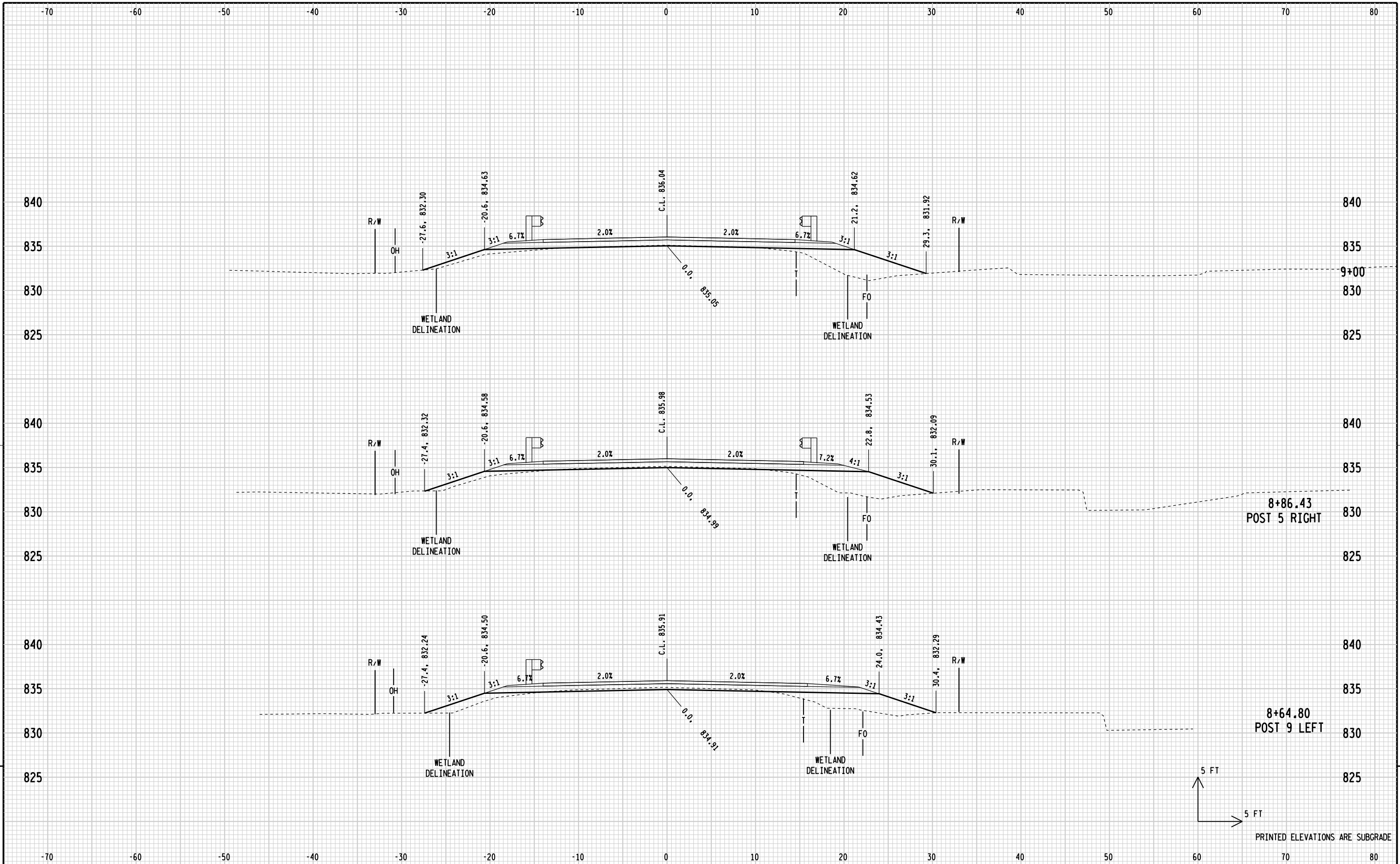
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-58-126			
DRAWN BY		KAM	PLANS CKD. EAN
TUBULAR STEEL RAILING TYPE M		SHEET 10 OF 10	

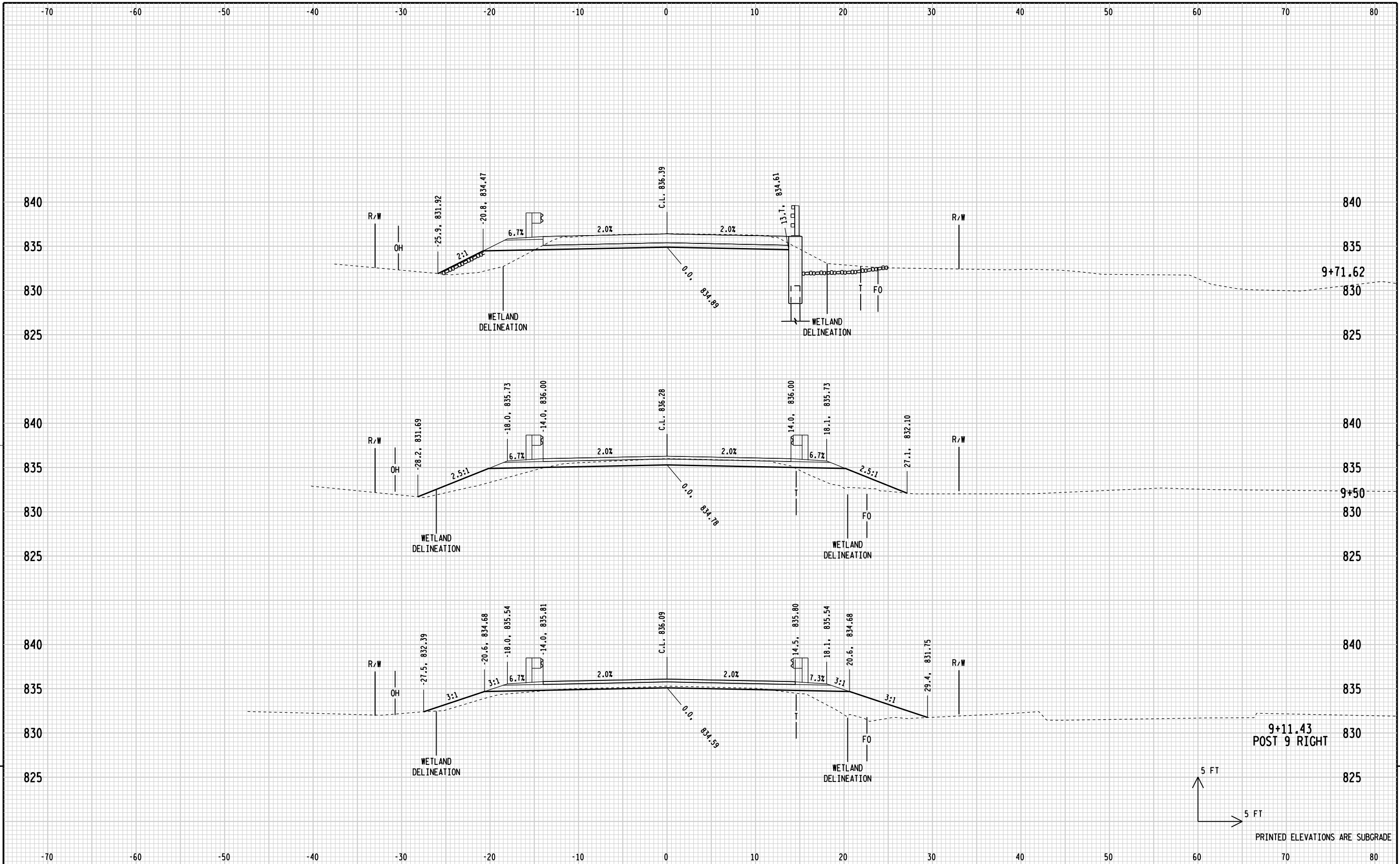
STATION	Real Station	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)								Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill	Expanded Marsh Backfill	Expanded Rock	Expanded EBS Backfill	Reduced Marsh in Fill	Reduced EBS In Fill		
																1.25	1.50	1.10	1.30	0.60	0.80		
																Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7	
06+92.19	692		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07+34.00	734	42	30.57	0	0.32	0	0	0	24	0	0	0	0	0	24	0	0	0	0	0	0	23	
07+50.00	750	16	27.64	0	5.17	0	0	0	17	0	2	0	0	0	41	2	0	0	0	0	0	39	
08+00.00	800	50	14.27	0	15.94	0	0	0	39	0	20	0	0	0	80	27	0	0	0	0	0	53	
08+14.81	815	15	11.78	0	24.24	0	0	0	7	0	11	0	0	0	87	41	0	0	0	0	0	46	
08+39.77	840	25	7.51	1	30.41	0	0	0	9	0	25	0	0	0	96	72	0	0	0	0	0	23	
08+39.77	840	0	7.51	0	30.41	0	0	0	0	0	0	0	0	0	96	72	0	0	0	0	0	23	
08+50.00	850	10	5.83	0	29.12	0	0	0	3	0	11	0	0	0	98	86	0	0	0	0	0	12	
08+61.13	861	11	4.82	0	31	0	0	0	2	0	12	0	0	0	101	102	0	0	0	0	0	-2	
08+64.77	865	4	4.49	0	30.84	0	0	0	1	0	4	0	0	0	101	107	0	0	0	0	0	-6	
08+86.13	886	21	2.41	0	32.62	0	0	0	3	0	25	0	0	0	104	138	0	0	0	0	0	-35	
09+00.00	900	14	0.99	0	31.34	0	0	0	1	0	16	0	0	0	105	159	0	0	0	0	0	-55	
09+11.13	911	11	0	0	62.22	0	0	0	0	0	19	0	0	0	105	183	0	0	0	0	0	-78	
09+50.00	950	39	0	0	47.75	0	0	0	0	0	79	0	0	0	105	282	0	0	0	0	0	-177	
09+71.62	972	22	40.58	1	14.47	0	0	0	16	0	25	0	0	0	121	313	0	0	0	0	0	-193	
09+79.50	980	8	21.05	0	0	0	0	0	9	0	2	0	0	0	130	316	0	0	0	0	0	-186	
Swamp Road West Approach Sub-Totals									140	10	260	0	0	0									

STATION	Real Station	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)								Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill	Expanded Marsh Backfill	Expanded Rock	Expanded EBS Backfill	Reduced Marsh in Fill	Reduced EBS In Fill		
																1.25	1.50	1.10	1.30	0.60	0.80		
																Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7	
10+20.50	1021		19.14	0	0.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10+28.38	1028	8	37.52	0	10.52	0	0	0	8	0	2	0	0	0	8	2	0	0	0	0	0	6	
10+50.00	1050	22	21.45	0	24.54	0	0	0	24	0	14	0	0	0	32	19	0	0	0	0	0	12	
10+72.69	1073	23	89.68	0	18.73	0	0	0	47	0	18	0	0	0	79	42	0	0	0	0	0	36	
10+97.69	1098	25	20.10	0	29.06	0	0	0	51	0	22	0	0	0	129	70	0	0	0	0	0	60	
11+00.00	1100	2	23.02	1	28.43	0	0	0	2	0	2	0	0	0	131	73	0	0	0	0	0	58	
11+00.00	1100	0	23.02	0	28.43	0	0	0	0	0	0	0	0	0	131	73	0	0	0	0	0	58	
11+22.69	1123	23	30.05	0	21.11	0	0	0	22	0	21	0	0	0	154	99	0	0	0	0	0	55	
11+50.00	1150	27	19.29	0	34.45	0	0	0	25	0	28	0	0	0	178	134	0	0	0	0	0	44	
11+51.11	1151	1	19.87	0	34.19	0	0	0	1	0	1	0	0	0	179	136	0	0	0	0	0	43	
11+76.11	1176	25	22.35	0	10.82	0	0	0	20	0	21	0	0	0	199	162	0	0	0	0	0	37	
12+00.00	1200	24	23.18	0	9.17	0	0	0	20	0	9	0	0	0	219	173	0	0	0	0	0	46	
12+01.07	1201	1	23.31	0	9.12	0	0	0	1	0	0	0	0	0	220	173	0	0	0	0	0	46	
12+50.00	1250	49	27.91	0	3.46	0	0	0	46	0	11	0	0	0	266	188	0	0	0	0	0	79	
13+00.00	1300	50	4.33	0	3.51	0	0	0	30	0	6	0	0	0	296	196	0	0	0	0	0	100	
13+50.00	1350	50	0.00	0	0.00	0	0	0	4	0	3	0	0	0	300	200	0	0	0	0	0	100	
Swamp Road East Approach Sub-Totals									310	10	160	0	0	0									



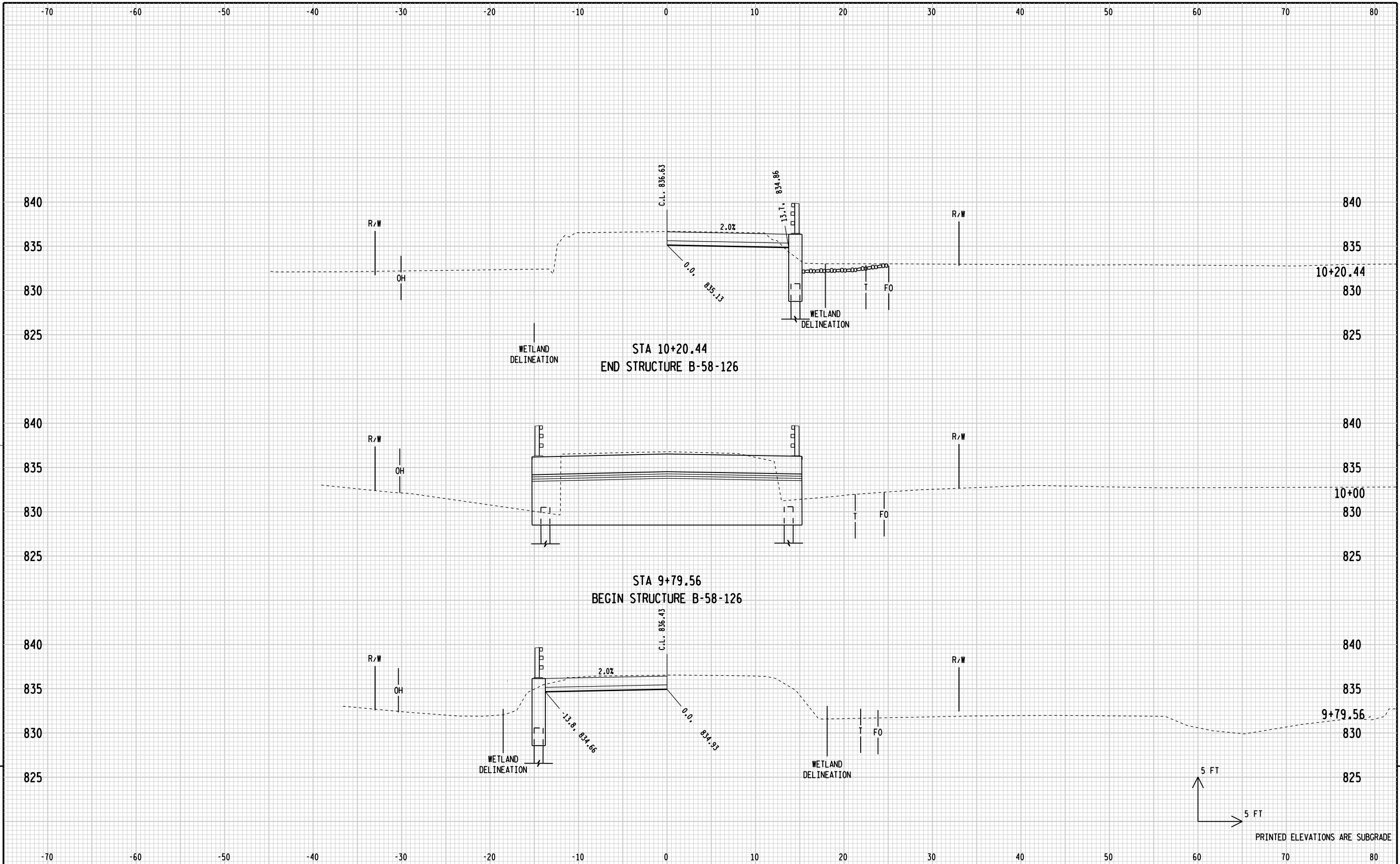






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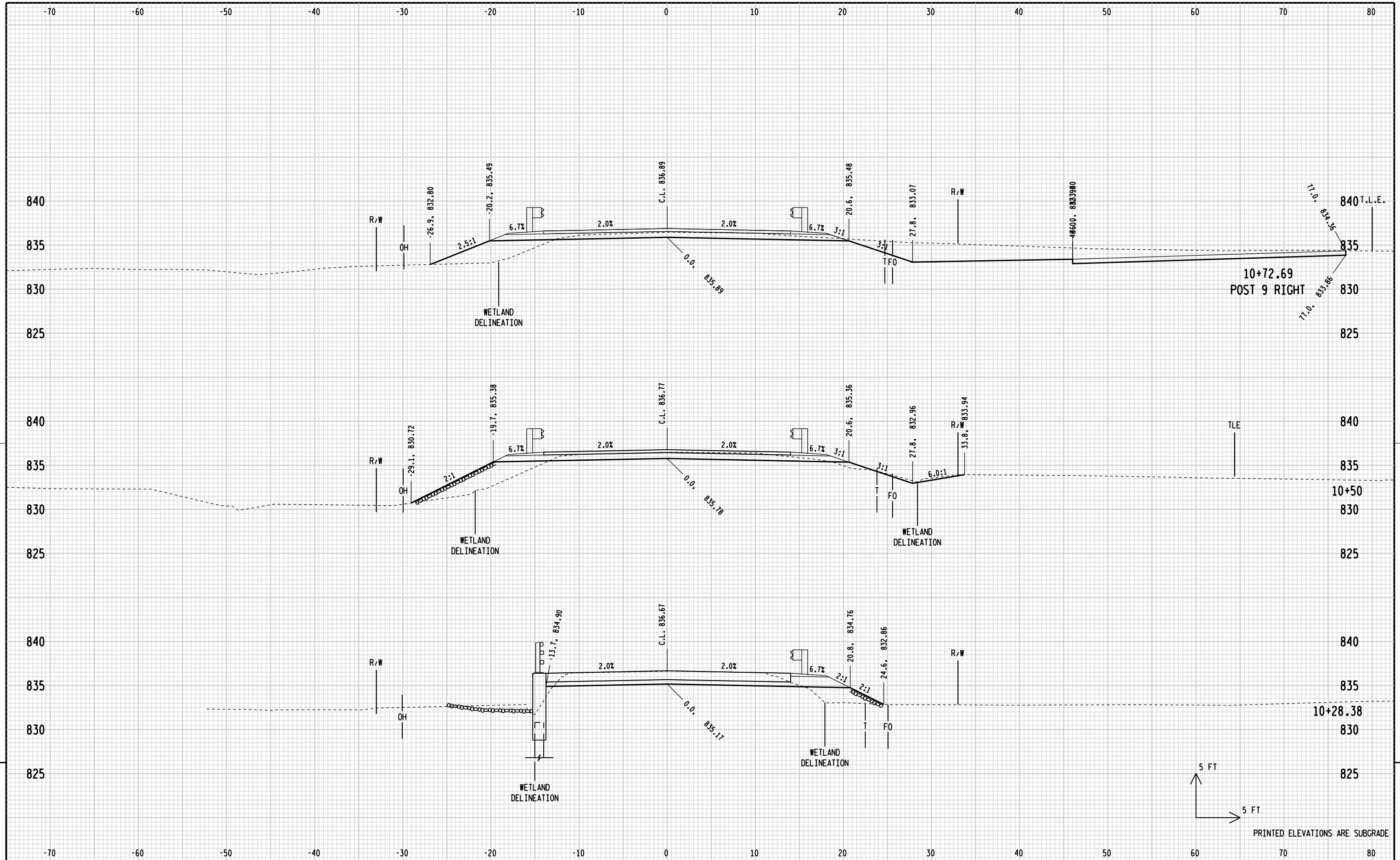
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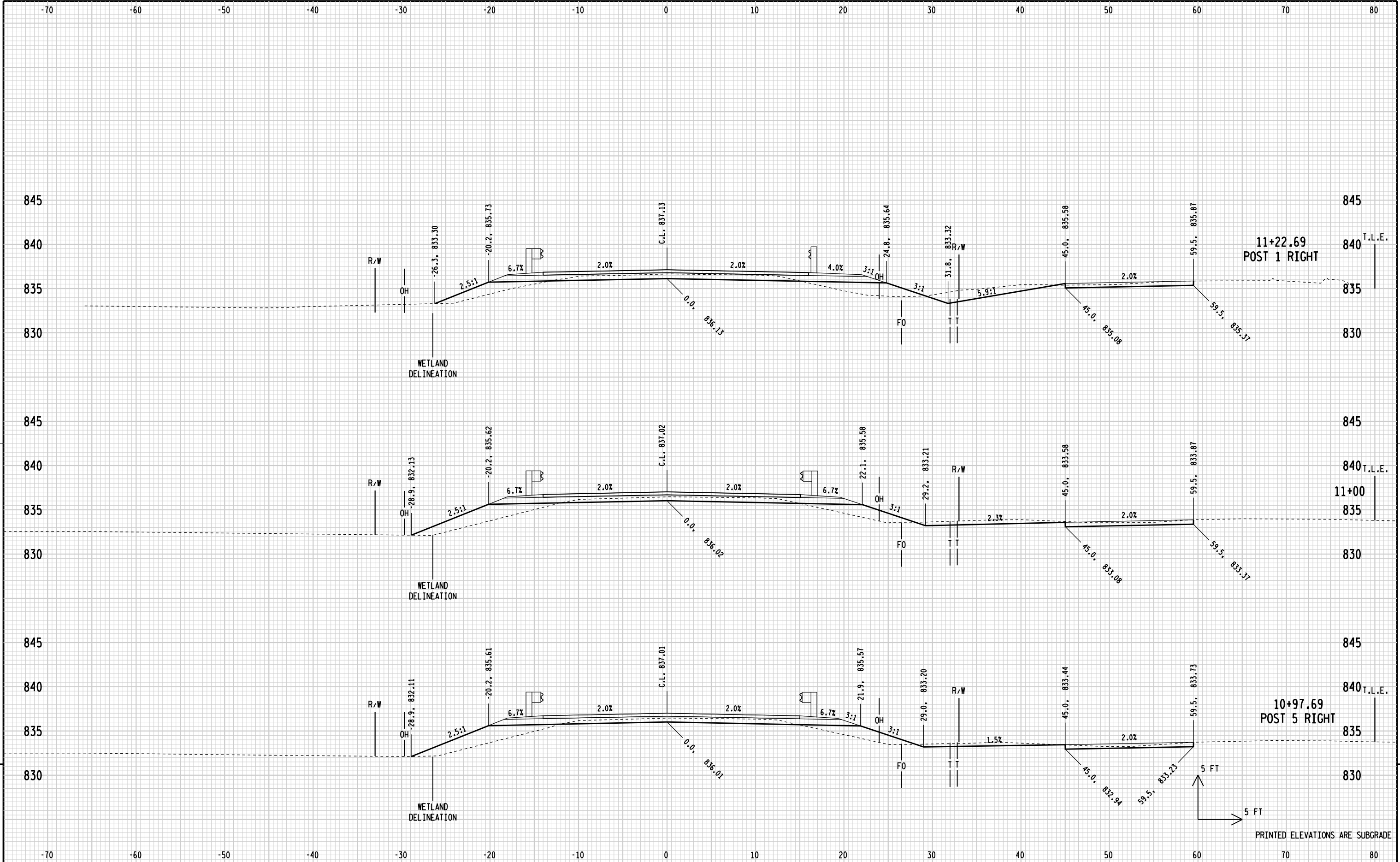


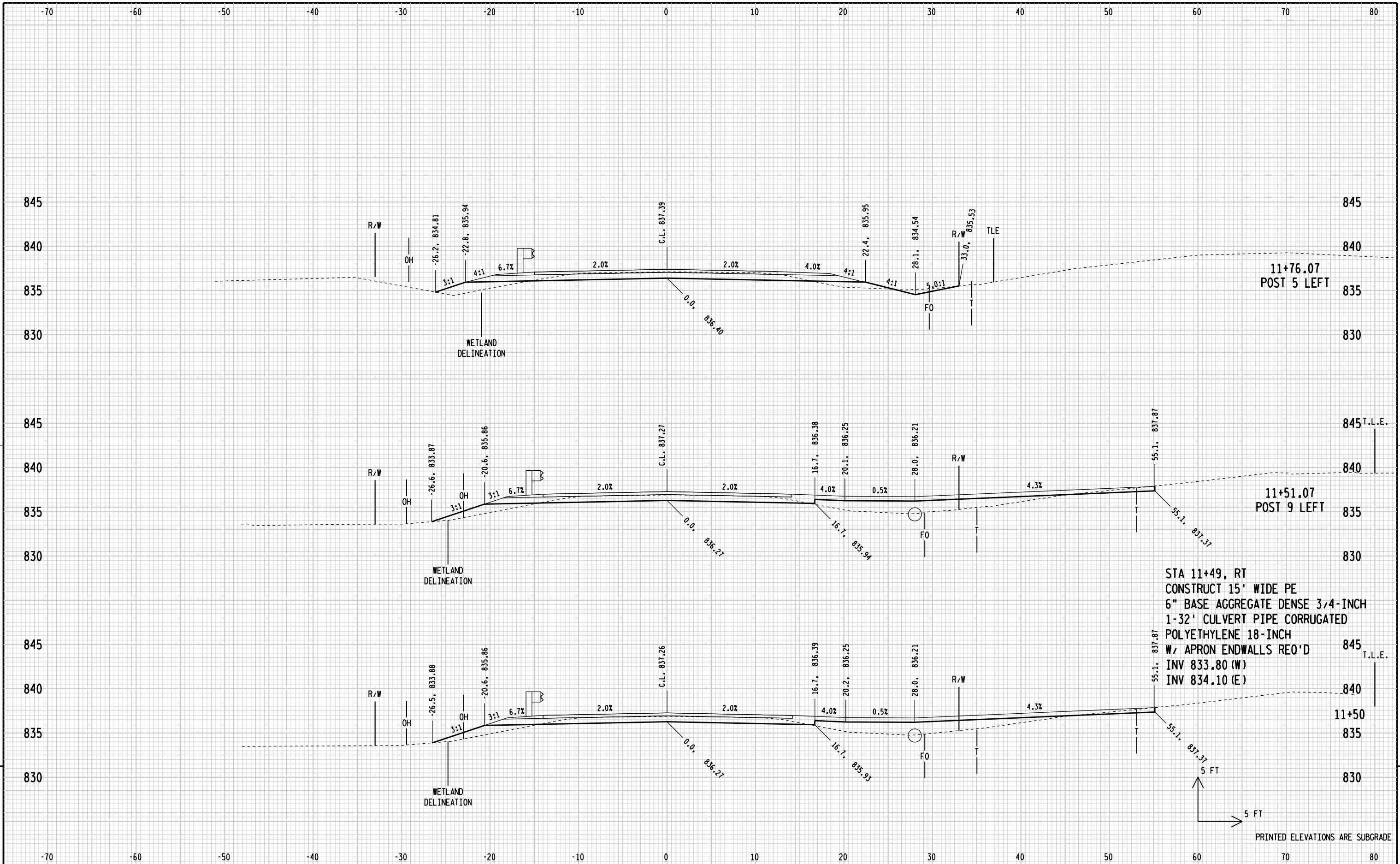
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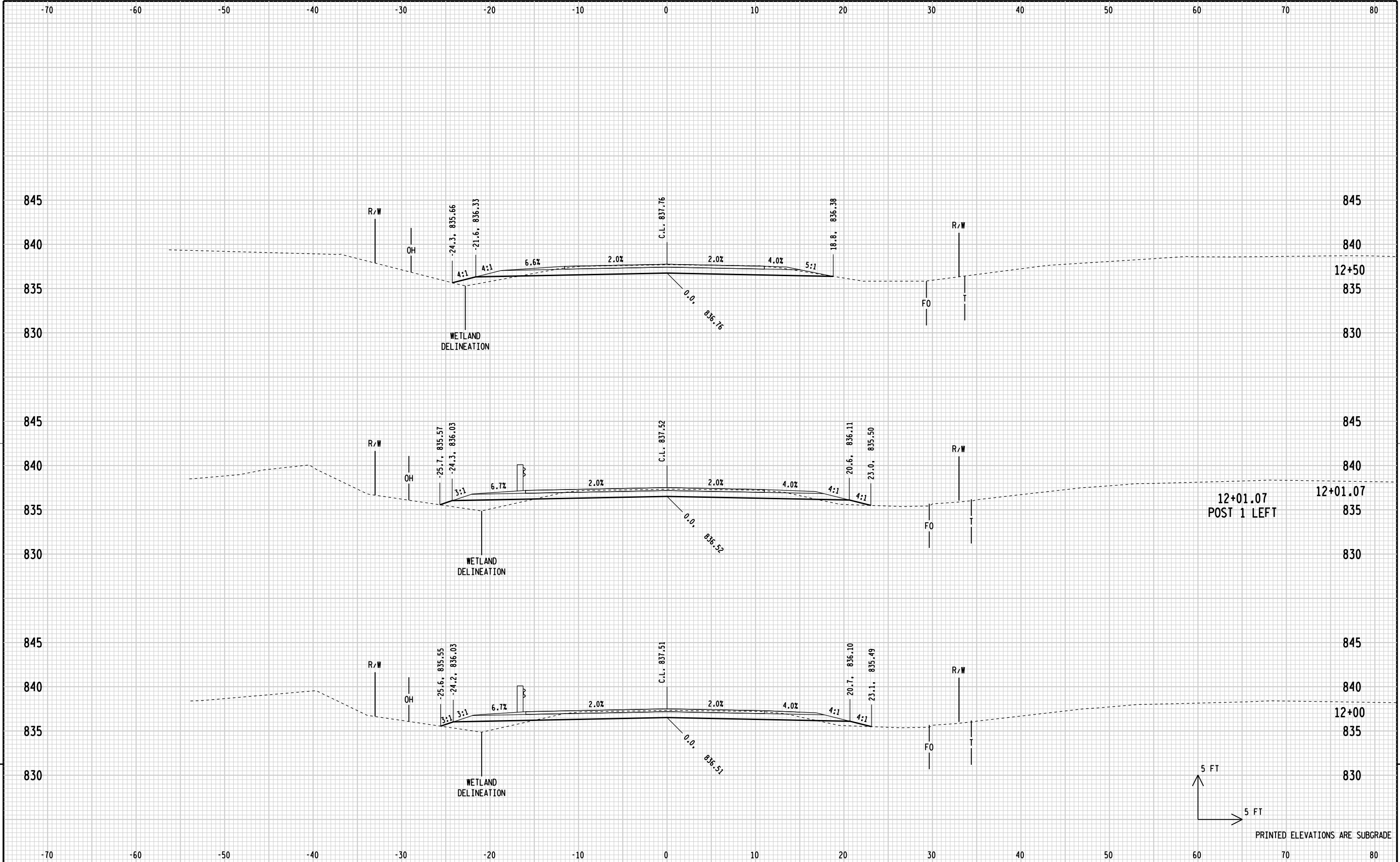
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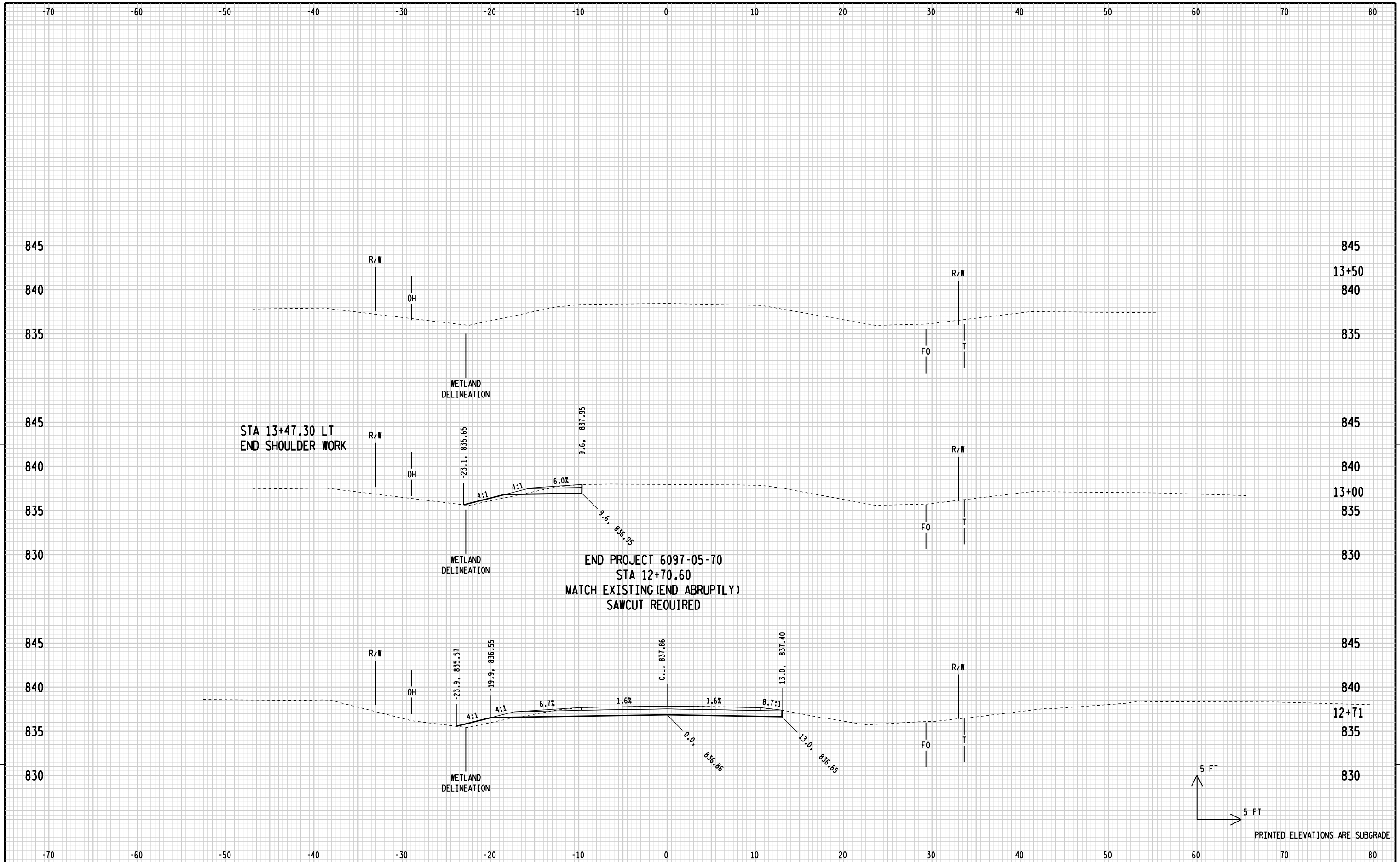
STATE PROJECT NUMBER:6097-05-70			HWY: SWAMP ROAD			COUNTY: SHAWANO			CROSS SECTIONS: SWAMP ROAD			SHEET			E
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STATE PROJECT NUMBER:6097-05-70	HWY:SWAMP ROAD	COUNTY:SHAWANO	CROSS SECTIONS: SWAMP ROAD	SHEET	E
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Notes



Wisconsin Department of Transportation

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