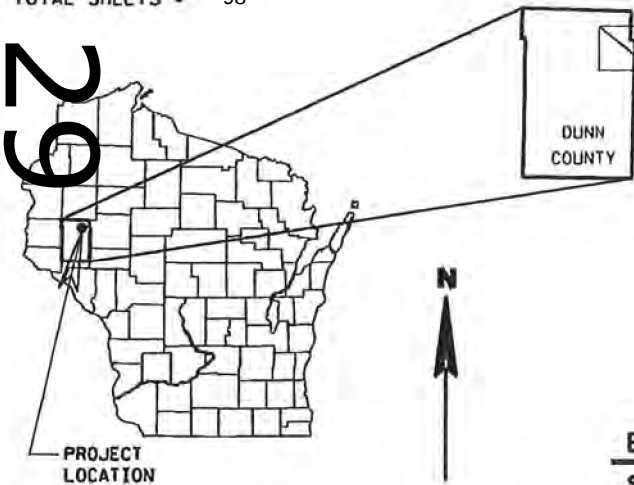


ORDER OF SHEETS

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

TOTAL SHEETS = 98



DESIGN DESIGNATION

A.D.T. (2021)	=	330
A.D.T. (2041)	=	440
D.H.V.	=	30
D.	=	50/50
T.	=	4.5%
DESIGN SPEED	=	35 MPH
ESALS	=	37,000

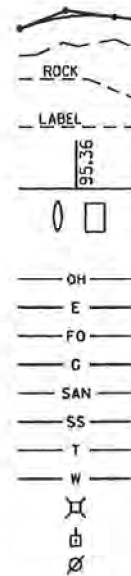
CONVENTIONAL SYMBOLS
PLAN

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



PROFILE

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



END PROJECT
STA. 32+50
Y = 253661.53
X = 214101.30

T-31-N
T-30-N



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.114 MI.

STRUCTURE B-17-0210
BEGIN PROJECT
STA. 26+50
Y = 253073.71
X = 214035.66

SURVEY PERFORMED IN 2014.
COORDINATES ON THIS PLAN ARE REFERENCED TO
THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS),
DUNN COUNTY.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
890TH STREET - CTH S
POPPLE CREEK BRIDGE B-17-0210
CTH W
DUNN COUNTY

STATE PROJECT NUMBER
8929-06-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8929-06-70		

ACCEPTED FOR	
County	Dunn
Date	7/14/2020
ORIGINAL PLANS PREPARED BY	
AYRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com	
DANIEL N. SYDOW E-38363 WI PROFESSIONAL ENGINEER	
DATE 7/14/2020	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	AYRES ASSOCIATES INC
Surveyor	AYRES ASSOCIATES INC
Designer	AYRES ASSOCIATES INC
Project Manager	MATTHEW THORNSEN PE
Regional Examiner	NORTHWEST REGION
Regional Supervisor	ANDREW STENSLAND PE
APPROVED FOR THE DEPARTMENT	
DATE: 07/29/2020	(Signature)

GENERAL NOTES

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

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

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

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

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

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

ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 2" UPPER LAYER AND A 2" LOWER LAYER. ASPHALTIC SURFACE SHALL USE 12.5 mm NOMINAL AGGREGATE SIZE.

UTILITIES

DUNN ENERGY COOPERATIVE	MOSAIC TELECOM
N5725 600th ST.	401 S. 1st STREET
P.O. BOX 220	CAMERON, WI 54822
MENOMONIE, WI 54751	ATTN: DENNIS RUSSETT
ATTN: MIKE ANDRASCHKO	715-458-5378
715-232-6240	715-458-5518 (cell)
715-308-1543 (cell)	DRussett@experiencemosaic.com
mandra@dunnenergy.com	

* * DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS



Dial 811 or (800)242-8511

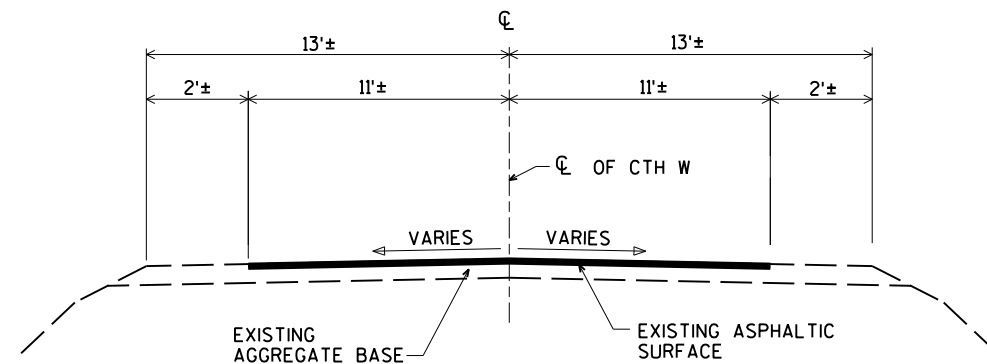
www.DiggersHotline.com

WISCONSIN DEPARTMENT OF
NATURAL RESOURCES CONTACT:

AMY LESIK
1300 W. CLAIREMONT AVE.
EAU CLAIRE, WI. 54701
715-495-1903
AmyL.Lesik@wisconsin.gov

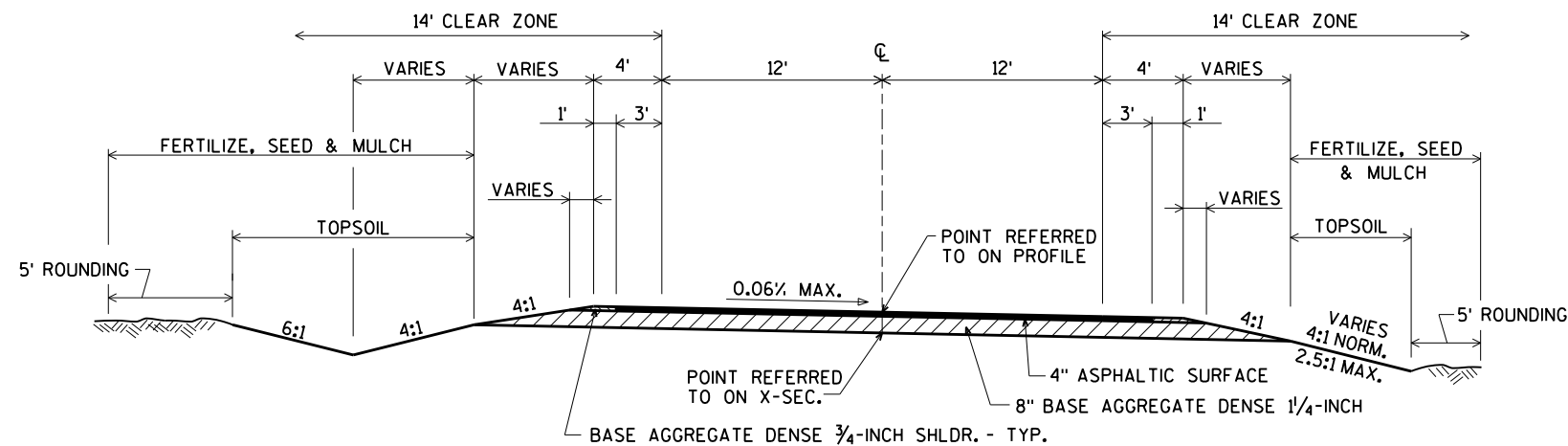
DESIGNER

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



TYPICAL EXISTING SECTION

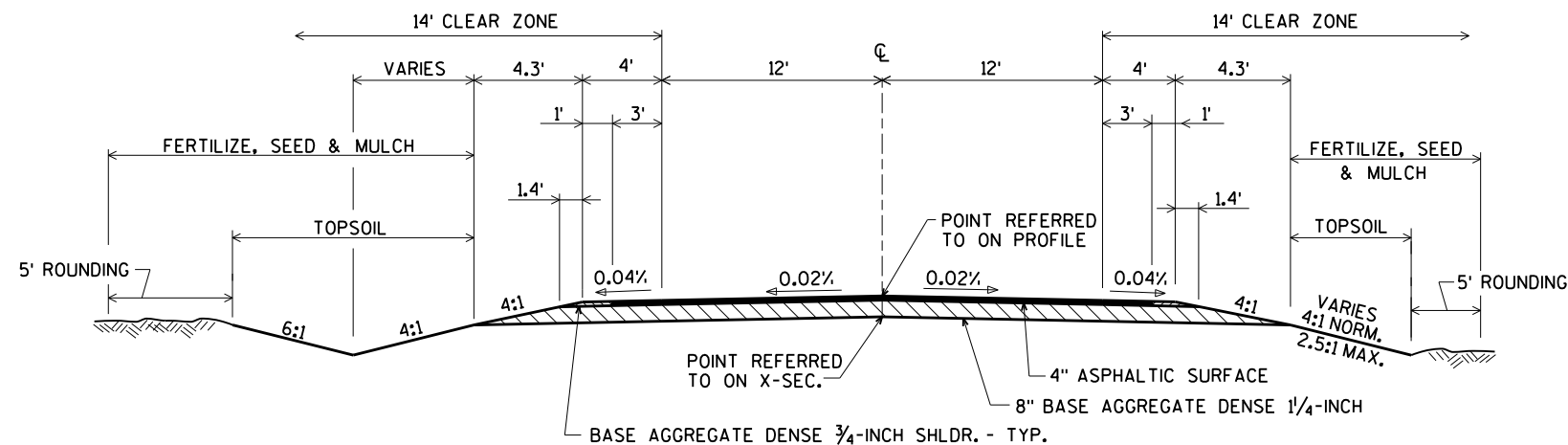
CTH W



TYPICAL FINISHED SECTION

CTH W

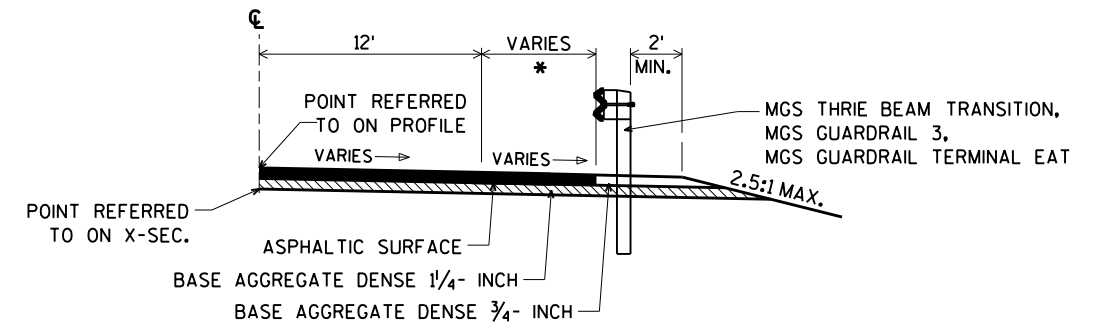
STA. 26+50 TO STA. 29+74.56
STA. 30+35.16 TO STA. 32+40



TYPICAL FINISHED SECTION

CTH W

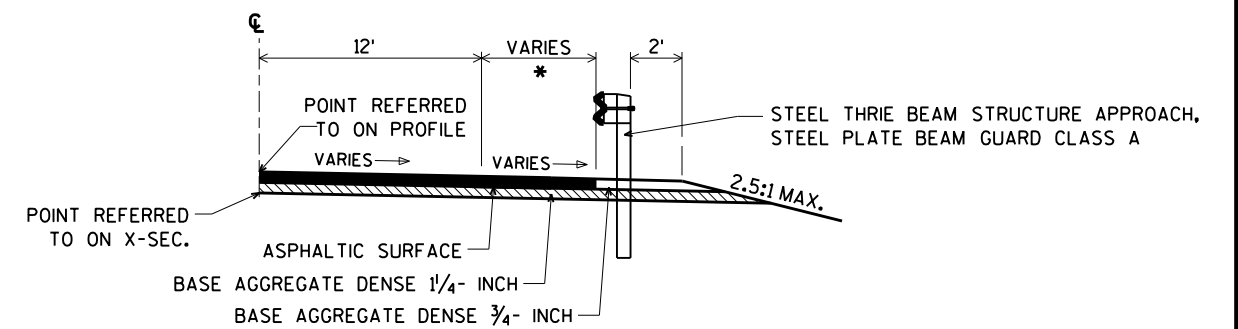
STA. 32+40 TO STA. 32+50



TYPICAL FINISHED HALF SECTION WITH GUARDRAIL

STA. 28+54.06 TO STA. 29+81.89, LT
STA. 30+28.79 TO STA. 31+59.97, RT
STA. 30+36.30 TO STA. 31+77.78, LT

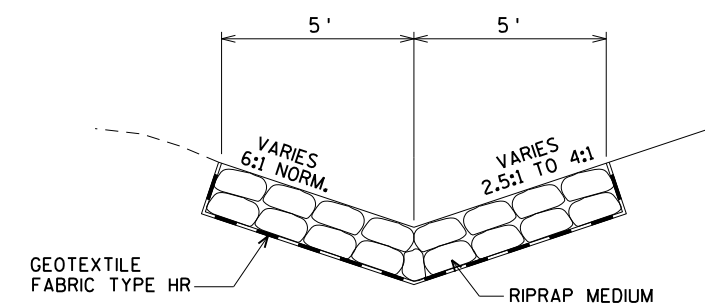
* 4' NORMAL
3' MIN. (AT END OF BRIDGE)
6' MAX. (AT END TERMINAL)



TYPICAL FINISHED HALF SECTION WITH GUARDRAIL

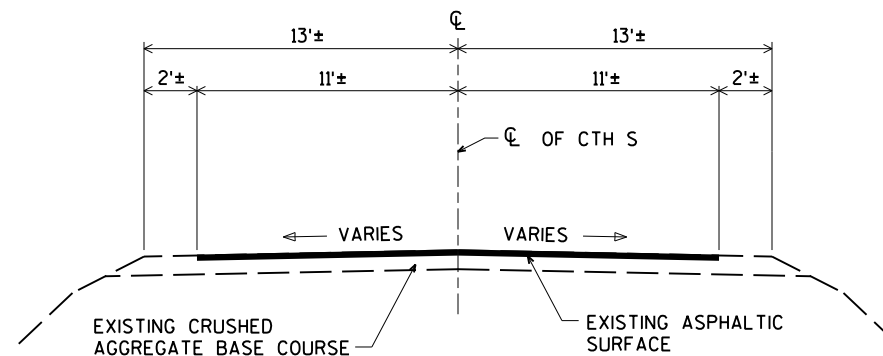
STA. 26+45.92 TO STA. 29+72.17, RT

* 4' NORMAL
3' MIN. (AT END OF BRIDGE)



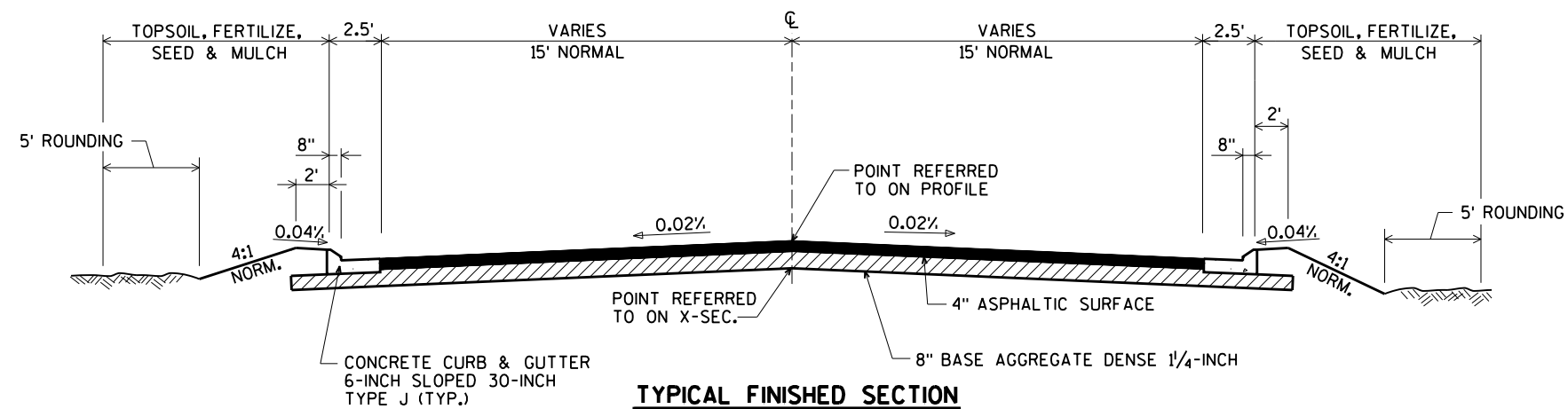
DITCH SECTION

STA. 28+07 TO STA. 29+50 LT.



TYPICAL EXISTING SECTION

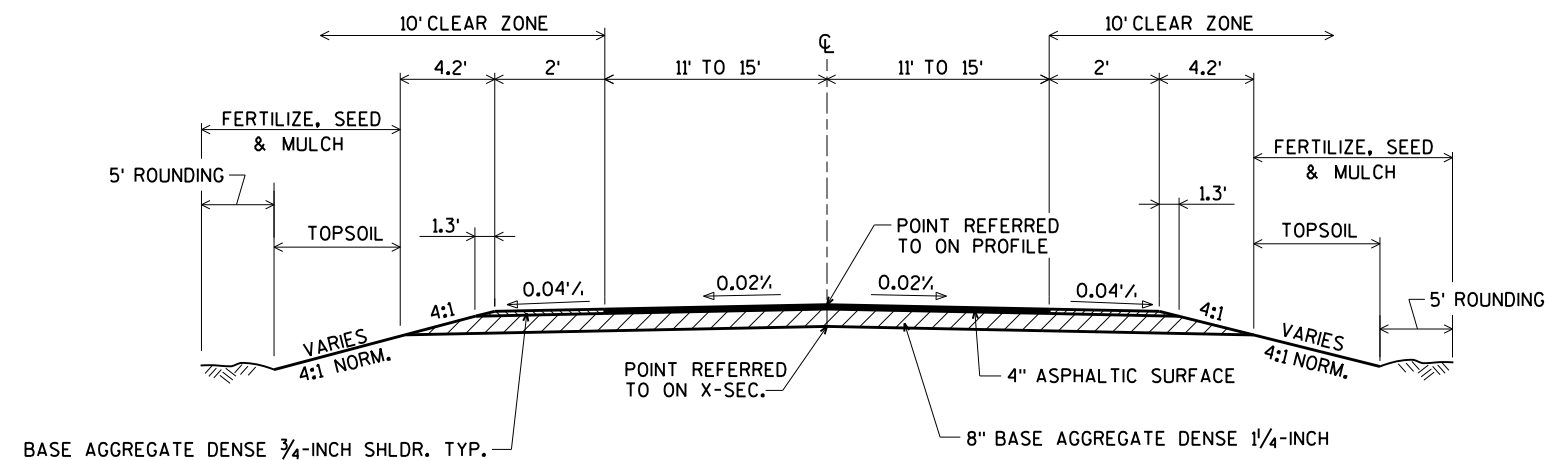
CTH S



TYPICAL FINISHED SECTION

CTH S

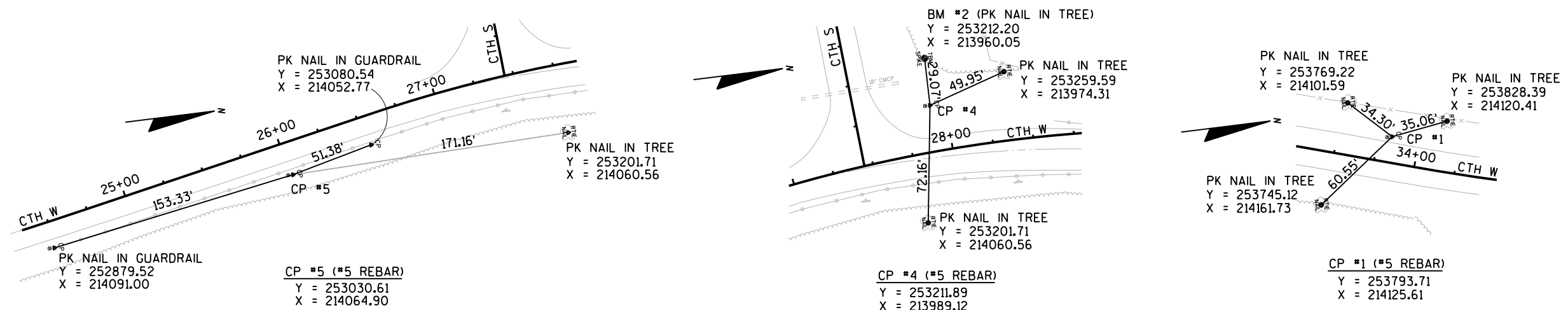
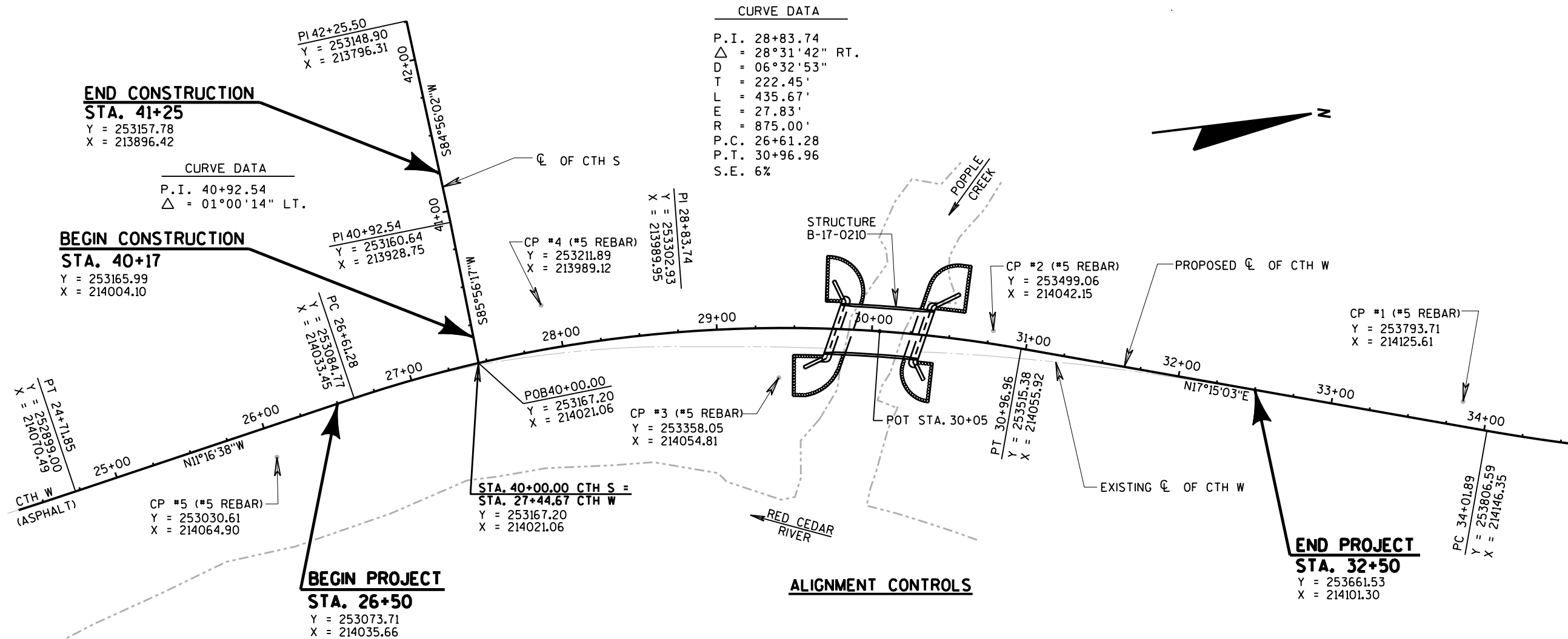
STA. 40+17 TO STA. 40+76.19

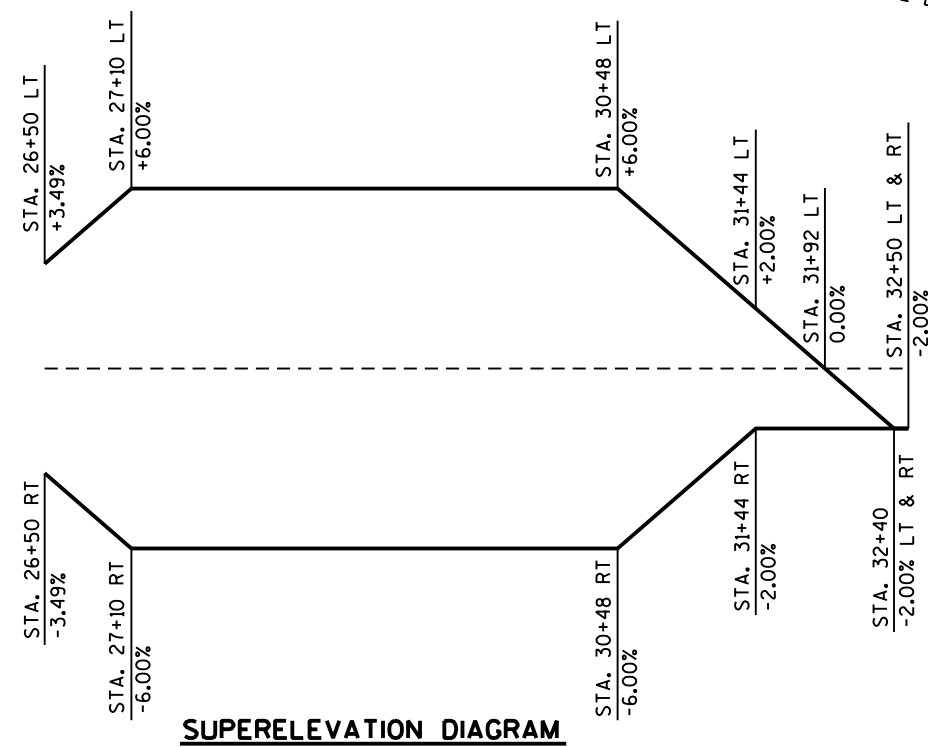
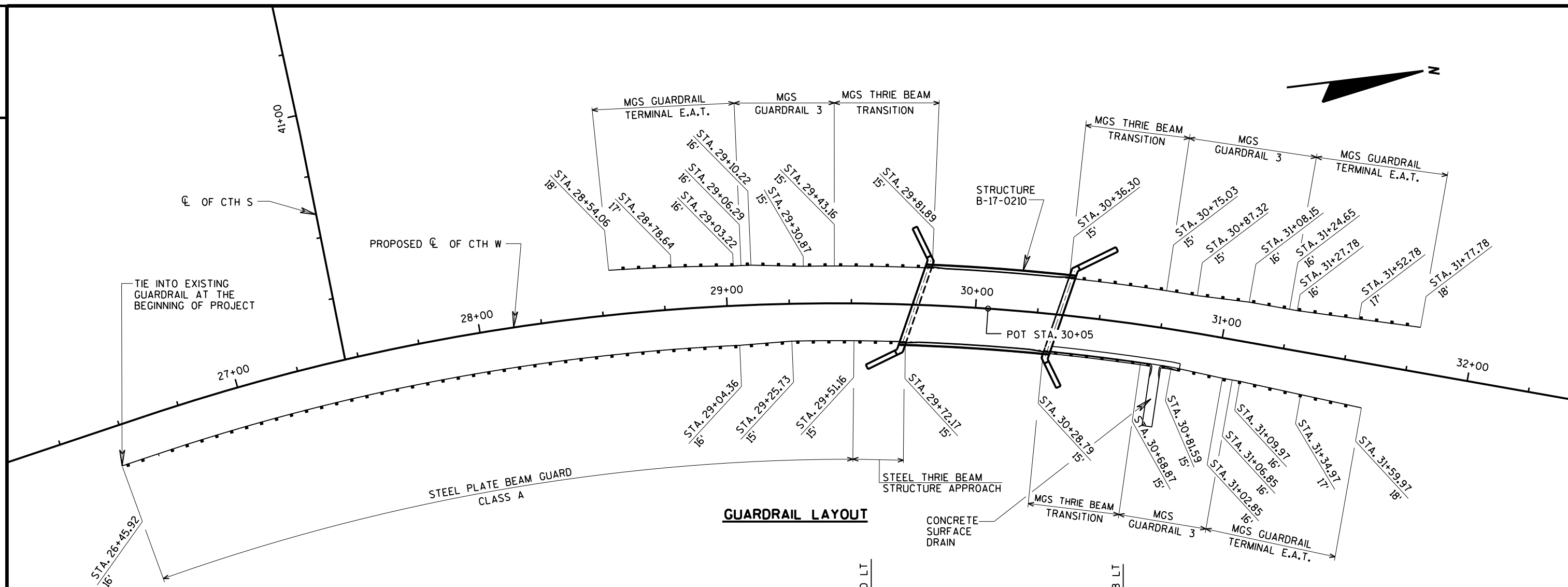


TYPICAL FINISHED SECTION

CTH S

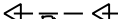
STA. 40+76.19 TO STA. 41+25



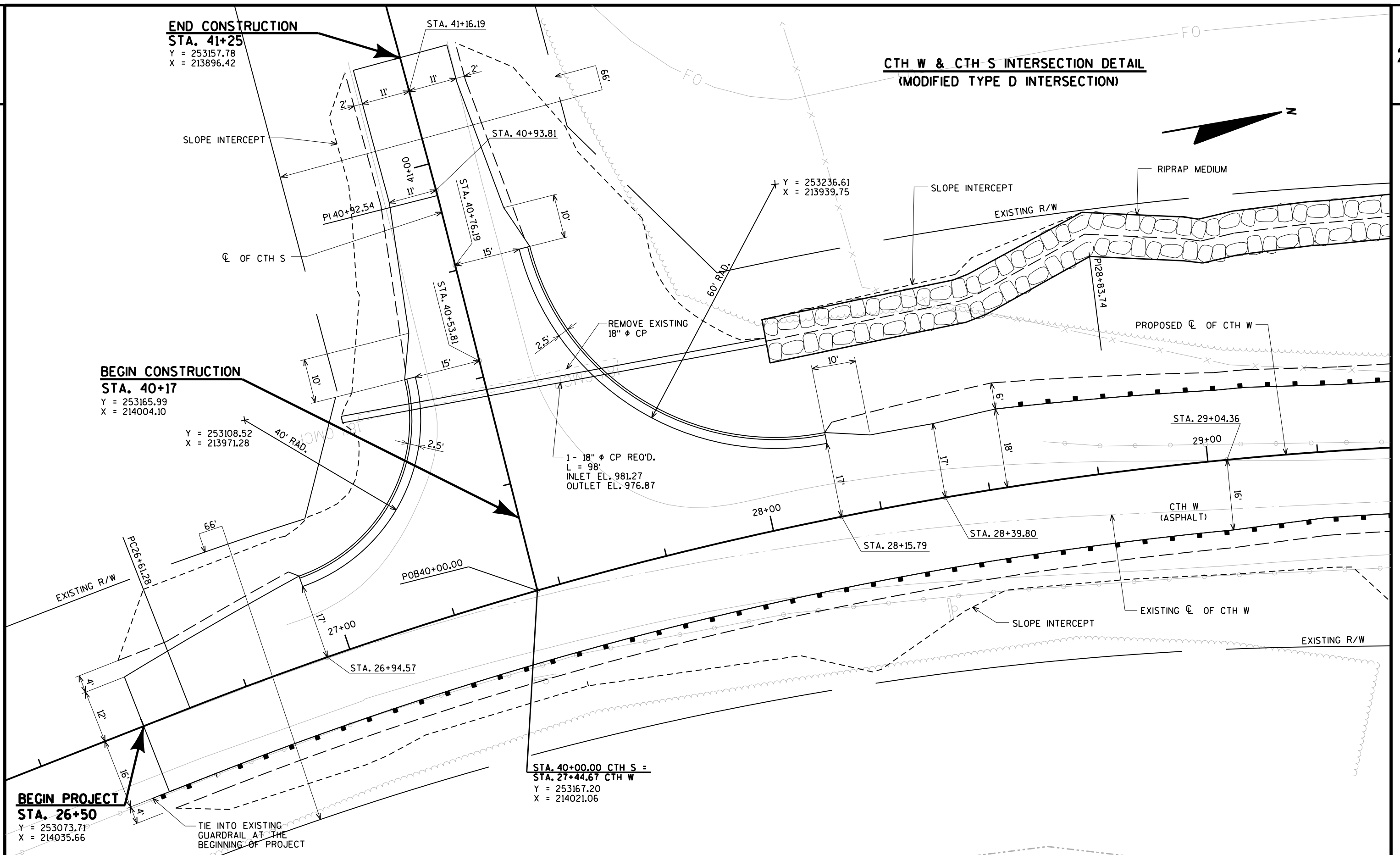


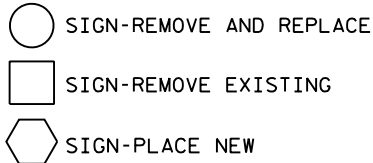


HIGH WATER 2 EL. 959.6

	EROSION MAT CLASS II TYPE B
	TEMPORARY DITCH CHECKS (UNDISTRIBUTED)
	SILT FENCE
	RIPRAP HEAVY
	RIPRAP MEDIUM
	TURBIDITY BARRIER
	CULVERT PIPE CHECKS

000 CULVERT PIPE CHECKS





Estimate Of Quantities

8929-06-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	6.000	6.000
0004	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 30+05	LS	1.000	1.000
0008	204.0165	Removing Guardrail	LF	488.000	488.000
0010	205.0100	Excavation Common	CY	538.000	538.000
0012	206.1000	Excavation for Structures Bridges (structure) 01. B-17-210	LS	1.000	1.000
0014	208.0100	Borrow	CY	3,818.000	3,818.000
0016	210.1500	Backfill Structure Type A	TON	1,700.000	1,700.000
0018	213.0100	Finishing Roadway (project) 01. 8929-06-70	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	130.000	130.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,410.000	1,410.000
0024	416.1010	Concrete Surface Drains	CY	2.000	2.000
0026	455.0605	Tack Coat	GAL	172.000	172.000
0028	465.0105	Asphaltic Surface	TON	595.000	595.000
0030	502.0100	Concrete Masonry Bridges	CY	219.000	219.000
0032	502.3200	Protective Surface Treatment	SY	205.000	205.000
0034	502.3210	Pigmented Surface Sealer	SY	60.000	60.000
0036	503.0137	Prestressed Girder Type I 36W-Inch	LF	236.000	236.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	5,630.000	5,630.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	25,770.000	25,770.000
0042	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	8.000	8.000
0044	506.4000	Steel Diaphragms (structure) 01. B-17-210	EACH	3.000	3.000
0046	516.0500	Rubberized Membrane Waterproofing	SY	26.000	26.000
0048	520.3318	Culvert Pipe Class III-A 18-Inch	LF	98.000	98.000
0050	550.0500	Pile Points	EACH	14.000	14.000
0052	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	490.000	490.000
0054	601.0415	Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type J	LF	152.000	152.000
0056	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	54.000	54.000
0058	606.0200	Riprap Medium	CY	105.000	105.000
0060	606.0300	Riprap Heavy	CY	285.000	285.000
0062	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	180.000	180.000
0064	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0066	614.0200	Steel Thrie Beam Structure Approach	LF	19.000	19.000
0068	614.0305	Steel Plate Beam Guard Class A	LF	300.000	300.000
0070	614.2300	MGS Guardrail 3	LF	125.000	125.000
0072	614.2500	MGS Thrie Beam Transition	LF	120.000	120.000
0074	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000

Estimate Of Quantities

8929-06-70					
Line	Item	Item Description	Unit	Total	Qty
0076	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8929-06-70	EACH	1.000	1.000
0078	619.1000	Mobilization	EACH	1.000	1.000
0080	624.0100	Water	MGAL	35.000	35.000
0082	625.0100	Topsoil	SY	1,700.000	1,700.000
0084	627.0200	Mulching	SY	1,530.000	1,530.000
0086	628.1504	Silt Fence	LF	1,640.000	1,640.000
0088	628.1520	Silt Fence Maintenance	LF	4,920.000	4,920.000
0090	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0092	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0094	628.2023	Erosion Mat Class II Type B	SY	1,295.000	1,295.000
0096	628.6005	Turbidity Barriers	SY	165.000	165.000
0098	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0100	628.7555	Culvert Pipe Checks	EACH	2.000	2.000
0102	629.0210	Fertilizer Type B	CWT	2.000	2.000
0104	630.0120	Seeding Mixture No. 20	LB	65.000	65.000
0106	630.0200	Seeding Temporary	LB	65.000	65.000
0108	630.0300	Seeding Borrow Pit	LB	23.000	23.000
0110	630.0500	Seed Water	MGAL	54.000	54.000
0112	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	9.000	9.000
0114	637.2210	Signs Type II Reflective H	SF	46.760	46.760
0116	637.2230	Signs Type II Reflective F	SF	20.000	20.000
0118	638.2602	Removing Signs Type II	EACH	22.000	22.000
0120	638.3000	Removing Small Sign Supports	EACH	11.000	11.000
0122	642.5001	Field Office Type B	EACH	1.000	1.000
0124	643.0420	Traffic Control Barricades Type III	DAY	1,900.000	1,900.000
0126	643.0705	Traffic Control Warning Lights Type A	DAY	3,000.000	3,000.000
0128	643.0900	Traffic Control Signs	DAY	1,700.000	1,700.000
0130	643.5000	Traffic Control 01. 8929-06-70	EACH	1.000	1.000
0132	645.0111	Geotextile Type DF Schedule A	SY	130.000	130.000
0134	645.0120	Geotextile Type HR	SY	825.000	825.000
0136	646.1020	Marking Line Epoxy 4-Inch	LF	2,589.000	2,589.000
0138	650.4500	Construction Staking Subgrade	LF	648.000	648.000
0140	650.5000	Construction Staking Base	LF	648.000	648.000
0142	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	206.000	206.000
0144	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000
0146	650.6500	Construction Staking Structure Layout (structure) 01. B-17-210	LS	1.000	1.000
0148	650.9910	Construction Staking Supplemental Control (project) 01. 8929-06-70	LS	1.000	1.000

Estimate Of Quantities

8929-06-70

Line	Item	Item Description	Unit	Total	Qty
0150	650.9920	Construction Staking Slope Stakes	LF	648.000	648.000
0152	690.0150	Sawing Asphalt	LF	68.000	68.000
0154	715.0502	Incentive Strength Concrete Structures	DOL	1,314.000	1,314.000

GRUBBING (CATEGORY 0010)

ROADWAY	STATION TO STATION	201.0205 GRUBBING STA
CTH W	Sta. 27+50 to Sta. 32+50	5
	Sta. 40+25 to Sta. 41+25	1
TOTAL		6

204.0165 REMOVING GUARDRAIL (CATEGORY 0010)

ROADWAY	STATION TO STATION	LOCATION	LF
CTH W	Sta. 26+46.56 to Sta. 29+74.82	RT	312
	Sta. 28+63.66 to Sta. 29+75.62	LT	113
	Sta. 30+329.40 to Sta. 30+68.12	LT	24
	Sta. 30+31.46 to Sta. 30+56.32	RT	39
TOTAL			488

203.0100 REMOVING SMALL PIPE CULVERTS CATEGORY 0010)

ROADWAY	LOCATION	DESCRIPTION	EACH
CTH S	Sta. 40+46.98	18" DIA. CPCS	1

EARTHWORK SUMMARY (CATEGORY 0010)

DIVISION	STATION TO STATION	LOCATION	205.0100 EXCAVATION COMMON	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL	UNEXPANDED FILL (3)	EXPANDED FILL (5)	MASS ORDINATE ±(6)	WASTE	208.0100 BORROW	COMMENTS:
			CUT (1) CY	(2) CY	(4) CY	CY	CY	CY	CY	CY	
1	Sta. 26+50 to Sta. 29+74.56	CTH W	188	0	188	1,870	2,431	-2,243	0	2243	
	Sta. 30+35.16 to Sta. 32+50	CTH W	276	0	276	1,325	1,723	-1,447	0	1447	
SUBTOTAL			464	0	464	3,195	4,154	-3,690	0	3,690	
2	Sta. 40+17 to Sta. 41+25	CTH S	74	0	74	155	202	-128	0	128	
GRANDTOTAL			538	0	538	3,350	4,355	-3,818	0	3,818	
TOTAL EXCAVATION COMMON			538 CY							TOTAL BORROW 3,818 CY	

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

BASE AGGREGATE DENSE (CATEGORY 0010)

ROADWAY	STATION TO STATION	LOCATION	305.0110	305.0120
			3/4-INCH TON	1 1/4-INCH TON
CTH W	Sta. 26+50 to Sta. 29+79.1	LT	25	340
	Sta. 26+47.03 to Sta. 29+69.9	RT	40	345
	Sta. 30+31.6 to Sta. 32+50	RT	28	240
	Sta. 30+38.6 to Sta. 31+26.81	LT	27	230
CTH S	Sta. 40+17 to Sta. 41+25	LT	5.5	115
	Sta. 40+17 to Sta. 41+25	RT	4.5	140
TOTALS			130	1,410

455.0605 TACK COAT (CATEGORY 0010)

ROADWAY	STATION TO STATION	LOCATION	GAL
CTH W	Sta. 26+50 to Sta. 29+79.1	LT	45
	Sta. 26+47.03 to Sta. 29+69.9	RT	41
	Sta. 30+31.6 to Sta. 32+50	RT	27
	Sta. 30+38.6 to Sta. 31+26.81	LT	27
CTH S	Sta. 40+17 to Sta. 41+25	LT	14
	Sta. 40+17 to Sta. 41+25	RT	18
TOTAL			172

465.0105 ASPHALTIC SURFACE (CATEGORY 0010)

ROADWAY	STATION TO STATION	LOCATION	TON
CTH W	Sta. 26+50 to Sta. 29+79.1	LT	155
	Sta. 26+47.03 to Sta. 29+69.9	RT	135
	Sta. 30+31.6 to Sta. 32+50	RT	95
	Sta. 30+38.6 to Sta. 31+26.81	LT	95
CTH S	Sta. 40+17 to Sta. 41+25	LT	50
	Sta. 40+17 to Sta. 41+25	RT	65
TOTAL			595

416.1010 CONCRETE SURFACE DRAIN (CATEGORY 0010)

ROADWAY	STATION TO STATION	LOCATION	CY
CTH W	Sta. 30+75	RT	2

DRAINAGE (CATEGORY 0010)

ROADWAY	STATION	520.3318	628.7555
		CULVERT PIPE CLASS III-A 18-INCH* LF	CULVERT PIPE CHECKS EACH
CTH S	Sta. 40+46.33	98	2
* STEEL PIPE MINIMUM THICKNESS = 0.064 INCHES ALUMINUM PIPE MINIMUM THICKNESS = 0.060 INCHES			

601.0415 CONCRETE CURB AND GUTTER 6-SLOPED 30-INCH TYPE J (CATEGORY 0010)

ROADWAY	STATION TO STATION	LOCATION	LF
CTH S	Sta. 40+17 to Sta. 40+53.81	LT	60
	Sta. 40+17 to Sta. 40+76.19	RT	92
TOTAL			152

601.0588 CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT (CATEGORY 0010)

ROADWAY	STATION TO STATION	LOCATION	LF
CTH W	Sta. 30+31 to Sta.30+85	RT	54

RIPRAP (CATEGORY 0010)

ROADWAY	STATION TO STATION	LOCATION	606.0200	645.0120
			RIPRAP MEDIUM CY	GEOTEXTILE FABRIC TYPE HR SY
CTH W	Sta. 28+07 to Sta. 29+70	LT	100	260
	Sta. 30+75	RT	5	15
TOTALS			105	275

GUARDRAIL (CATEGORY 0010)

ROADWAY	STATION TO STATION	LOCATION	614.0200	614.0305	614.2300	614.2500	614.2610
			STEEL THRIE BEAM STRUCTURE APPROACH LF	STEEL PLATE BEAM GUARD CLASS A LF	MGS GUARDRAIL 3 LF	MGS THRIE BEAM TRANSITION LF	MGS GUARDRAIL TERMINAL EAT EACH
CTH W	Sta. 26+46.56 to Sta. 29+51.16	RT	---	300	---	---	---
	Sta. 28+54.06 to Sta. 29+06.29	LT	---	---	---	---	1
	Sta. 29+06.29 to Sta. 29+43.16	LT	---	---	37.5	---	---
	Sta. 29+43.16 to Sta. 29+81.89	LT	---	---	---	40	---
	Sta. 29+51.16 to Sta. 29+72.17	RT	19	---	---	---	---
	Sta. 30+28.79 to Sta. 30+68.87	RT	---	---	---	40	---
	Sta. 30+36.30 to Sta. 30+75.03	LT	---	---	---	40	---
	Sta. 30+68.87 to Sta. 31+06.85	RT	---	---	37.5	---	---
	Sta. 30+75.03 to Sta. 31+24.65	LT	---	---	50	---	---
	Sta. 31+06.85 to Sta. 31+59.97	RT	---	---	---	---	1
	Sta. 31+24.65 to Sta. 31+77.78	LT	---	---	---	---	1
TOTALS			19	300	125	120	3

624.0100 WATER (CATEGORY 0010)

PURPOSE	MGAL
COMPACTION	20
DUST CONTROL	15
TOTAL	35

TOPSOIL, MULCHING, FERTILIZER, SEED, TEMPORARY SEED, SEED BORROW PIT & SEED WATER (CATEGORY 0010)

ROADWAY	STATION TO STATION	625.0100	627.0200	629.0210	630.0120	630.0200	630.0300	630.0500
		TOPSOIL	MULCHING	FERTILIZER	SEEDING	SEEDING	SEEDING	SEEDING
		SY	SY	TYPE B	NO. 20	TEMPORARY	BORROW PIT	WATER
				CWT	LB	LB	LB	MGAL
CTH W	Sta. 26+50 to Sta. 32+50	1,415	820	1.0	41	41	17	34
CTH S	Sta. 40+17 to Sta. 41+25	285	405	0.3	11	11	1	9
	Undistributed	- - -	305	0.7	13	13	5	11
TOTALS		1,700	1,530	2.0	65	65	23	54

SILT FENCE & SILT FENCE MAINTENANCE (CATEGORY 0010)

ROADWAY	STATION TO STATION	LOCATION	628.1504	628.1520
			LF	MAINTENANCE
				LF
CTH W	Sta. 26+50 to Sta. 29+79	RT	340	1,020
	Sta. 26+50 to Sta. 27+35	LT	170	510
	Sta. 27+78 to Sta. 29+96	LT	280	840
	Sta. 30+13 to Sta. 32+50	RT	285	855
	Sta. 30+44 to Sta. 32+50	LT	235	705
	Undistributed		330	990
TOTALS			1,640	4,920

MOBILIZATIONS EROSION CONTROL & EMERGENCY EROSION CONTROL (CATEGORY 0010)

LOCATION	628.1905	628.1910
	MOBILIZATIONS	MOBILIZATIONS
	EROSION CONTROL	EROSION CONTROL
	EACH	EACH
PROJECT 8929-06-70	4	2

628.2023 EROSION MAT CLASS II TYPE B (CATEGORY 0010)

ROADWAY	STATION TO STATION	LOCATION	SY
CTH W	Sta. 27+50 to Sta. 29+49	RT	120
	Sta. 29+00 to Sta. 29+70	LT	220
	Sta. 30+42 to Sta. 32+50	RT	350
	Sta. 30+59 to Sta. 32+50	LT	345
	Undistributed		260
TOTAL			1,295

628.6005 TURBIDITY BARRIERS (CATEGORY 0010)

ROADWAY	LOCATION	SY
CTH W	South Abutment	55
	North Abutment	75
	Undistributed	35
TOTAL		165

628.7504 TEMPORARY DITCH CHECKS (CATEGORY 0010)

LOCATION	LF
Undistributed	50

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

ROADWAY	STATION	LOCATION	DESCRIPTION	EACH
CTH W	Sta. 27+41	RT	County S & Left Arrow (M1-5A & M6-1) County W & Up Arrow (M1-5A & M6-1) Double Arrow (W1-7)	1
	Sta. 28+18	LT	County W & Up Arrow (M1-5A & M6-1) County S & Right Arrow (M1-5A & M6-1)	1
	Sta. 28+38	RT	County W (M1-5A)	1
	Sta. 29+68	RT	Bridge Hash Marker (W5-52R)	1
	Sta. 29+78	LT	Bridge Hash Marker (W5-52L)	1
	Sta. 30+33	RT	Bridge Hash Marker (W5-52L)	1
	Sta. 30+40	LT	Bridge Hash Marker (W5-52R)	1
CTH W	Sta. 40+30	LT	Stop Sign (R1-1)	1
	Sta. 40+30	LT	County W & Double Arrow (M1-5A & M6-4)	1
TOTAL				9

637.2210 SIGNS TYPE II REFLECTIVE H (CATEGORY 0010)

ROADWAY	STATION	LOCATION	DESCRIPTION	SIZE	SF
CTH W	Sta. 27+41	RT	County S (M1-5A)	24" x 24"	4
			Left Arrow (M6-1)	21" x 21"	3.06
			County W (M1-5A)	24" x 24"	4
			Up Arrow (M6-1)	21" x 21"	3.06
	Sta. 28+18	LT	County W (M1-5A)	24" x 24"	4
			Up Arrow (M6-1)	21" x 21"	3.06
			County S (M1-5A)	24" x 24"	4
			Right Arrow (M6-1)	21" x 21"	3.06
	Sta. 28+38	RT	County W (M1-5A)	24" x 24"	4
	CTH S	Sta. 40+30	LT	Stop Sign (R1-1)	36" x 36"
Sta. 40+30		LT	County W (M1-5A)	24" x 24"	4
			Double Arrow (M6-4)	21" x 21"	3.06
TOTAL					46.76

637.2230 SIGNS TYPE II REFLECTIVE F (CATEGORY 0010)

ROADWAY	STATION	LOCATION	DESCRIPTION	SIZE	SF
CTH W	Sta. 27+41	RT	Double Arrow (W1-7)	48" x 24"	8
	Sta. 29+68	RT	Bridge Hash Marker (W5-52R)	12" x 36"	3
	Sta. 29+78	LT	Bridge Hash Marker (W5-52L)	12" x 36"	3
	Sta. 30+33	RT	Bridge Hash Marker (W5-52L)	12" x 36"	3
	Sta. 30+40	LT	Bridge Hash Marker (W5-52R)	12" x 36"	3
TOTAL					20

REMOVING (CATEGORY 0010)

				638.2602 SIGNS TYPE II EACH	638.3000 SMALL SIGN SUPPORTS EACH
ROADWAY	STATION	LOCATION	DESCRIPTION		
CTH W	Before Sta. 22+00	RT	Narrow Bridge (W5-2)	1	1
	Sta. 27+41	RT	County S (M1-5A)	1	
			Left Arrow (M6-1)	1	
			County W (M1-5A)	1	1
			Up Arrow (M6-1)	1	
			Double Arrow (W1-7)	1	
	Sta. 27+92	LT	County W (M1-5A)	1	
			Up Arrow (M6-1)	1	1
			County S (M1-5A)	1	
			Right Arrow (M6-1)	1	
	Sta. 28+38	RT	County W (M1-5A)	1	
35 Ton Bridge 200 Feet Ahead (R12-55)			1	1	
Sta. 29+77	LT	Bridge Hash Marker (W5-52L)	1	1	
Sta. 29+77	RT	Weight Limit 35 Tons (R12-1)	1		
		Bridge Hash Marker (W5-52R)	1	1	
Sta. 30+29	LT	Weight Limit 35 Tons (R12-1)	1		
		Bridge Hash Marker (W5-52R)	1	1	
Sta. 30+29	RT	Bridge Hash Marker (W5-52L)	1	1	
	After Sta. 37+00	RT	Narrow Bridge (W5-2)	1	1
CTH S	Sta. 40+23	LT	Stop Sign (R1-1)	1	1
	Sta. 40+23	LT	County W (M1-5A)	1	
			Double Arrow (M6-4)	1	1
TOTALS				22	11

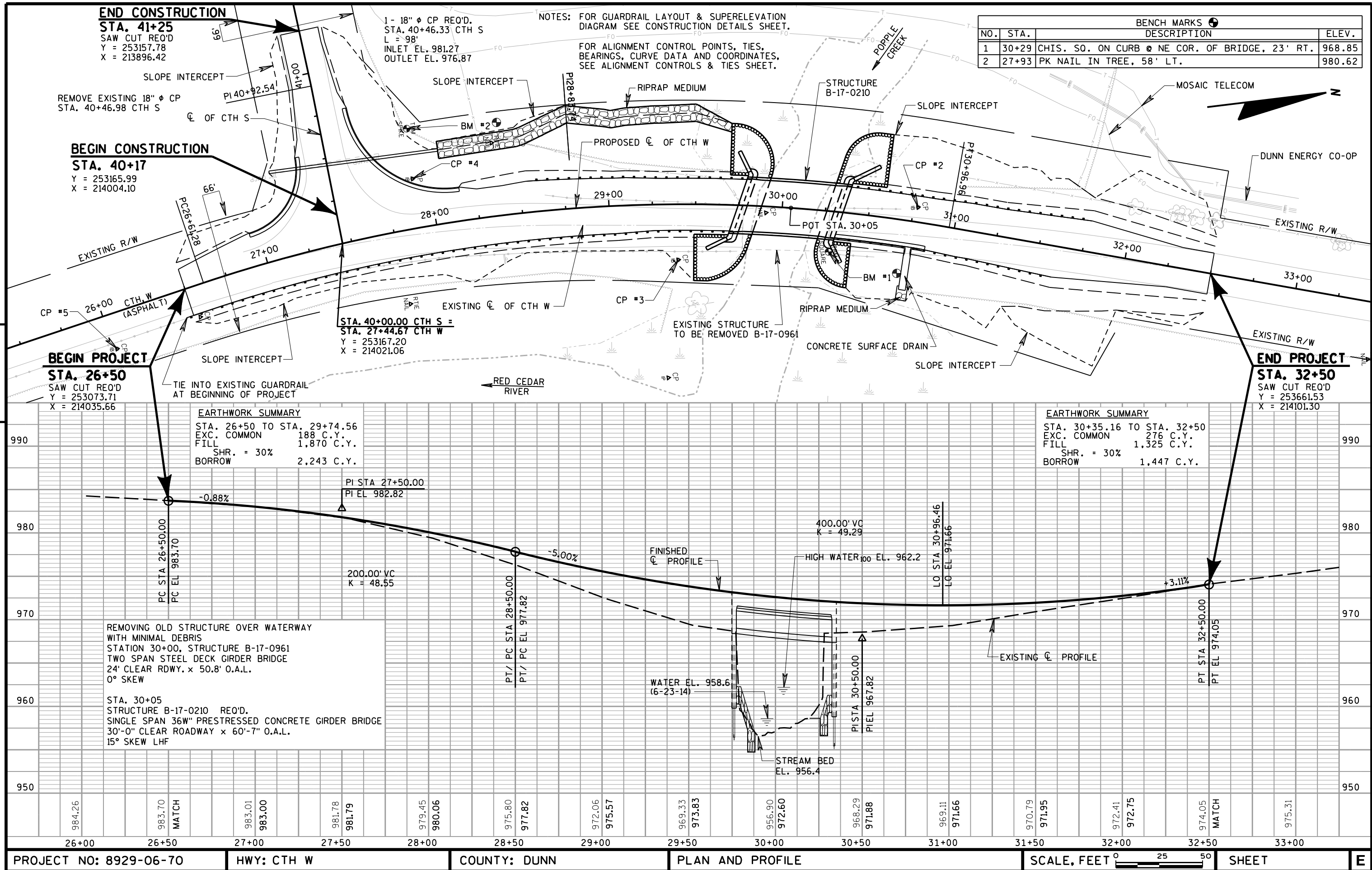
TRAFFIC CONTROL ITEMS							
LOCATION	DURATION DAYS	643.0420		643.0705		643.0900	
		BARRICADES		WARNING LIGHTS		SIGNS	
		TYPE III		TYPE A			
		NO.	DAY	NO.	DAY	NO.	DAY
PER SDD 15C2	100	19	1,900	30	3,000	17	1,700
TOTALS			1,900		3,000		1,700

TRAFFIC CONTROL PLACEMENT SUBJECT TO ENGINEER APPROVAL
TRAFFIC MAINTAINED THROUGH CTH S & CTH W DURING CONSTRUCTION

646.1020 MARKING LINE EPOXY 4-INCH (CATEGORY 0010)					
ROADWAY	STATION TO STATION	LOCATION	DESCRIPTION	LF	
CTH W	Sta. 26+50 to Sta 32+50	---	YELLOW DOUBLE CENTERLINE	1,200	
	Sta. 26+50 to Sta 32+50	RT	WHITE EDGELINE	600	
	Sta. 26+50 to Sta 26+95	LT	WHITE EDGELINE	45	
	Sta. 28+16 to Sta 32+50	LT	WHITE EDGELINE	434	
CTH S	Sta. 40+30 to Sta 41+25	---	YELLOW DOUBLE CENTERLINE	190	
	Sta. 40+54 to Sta 41+25	LT	WHITE EDGELINE	71	
	Sta. 40+54 to Sta 41+25	RT	WHITE EDGELINE	49	
TOTAL				2,589	

CONSTRUCTION STAKING (CATEGORY 0010)						
CATEGORY	LOCATION	650.4500	650.5000	650.5500	650.6000	650.9920
		SUBGRADE LF	BASE LF	CURB GUTTER AND CURB & GUTTER LF	PIPE CULVERTS EACH	SLOPE STAKES LF
0010	CTH W	540	540	54	---	540
0010	CTH S	108	108	152	1	108
TOTALS		648	648	206	1	648

690.0150 SAWING ASPHALT (CATEGORY 0010)		
ROADWAY	STATION	LF
CTH W	Sta. 26+50	23
	Sta. 32+50	23
CTH S	Sta. 41+25	22
TOTAL		68



FOR GUARDRAIL LAYOUT SEE CONSTRUCTION
DETAILS SHEET.

BEGIN PROJECT

STA. 26+50

SAW CUT REQ'D

$$Y = 253073.71$$

TIE INTO EXISTING GUARDRAIL
AT THE BEGINNING OF PROJECT

RED CEDAR
RIVER

SLOPE
INTERCEPT-

STA. 40+00.00 CTH S =

STA. 27+44.67 CTH W

$$Y = 253167.20$$

X = 214021.06

PROPOSED $\mathbb{Q}$ OF CTH W

EXISTING 6' OF CTR W

BEGIN CONSTRUCTION

STA. 40+17

$$Y = 253165.99$$
$$X = 214004.10$$

END CONSTRUCTION

STA. 41+25

SAW CUT REQ'D

$$Y = 253157.78$$
$$X = 213896.42$$

EARTHWORK SUMMARY

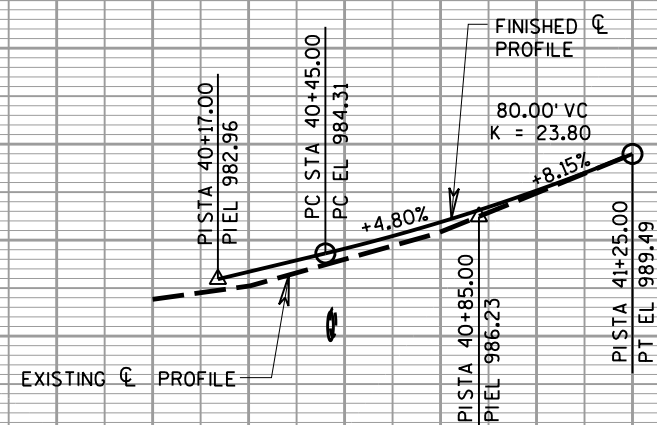
STA. 40+17 TO STA. 41+25

STA. 40+17 TO STA. 41+25
EXC. COMMON 74 C.Y.

FILL 155 C.Y.

SHR. = 30%
BORROW 128 C Y

BORROW	128 C.Y.
--------	----------



REMOVE EXISTING 18" ϕ CP
STA. 40+46.98

1 - 18" ϕ CP REQ'D.

STA. 40+46.33

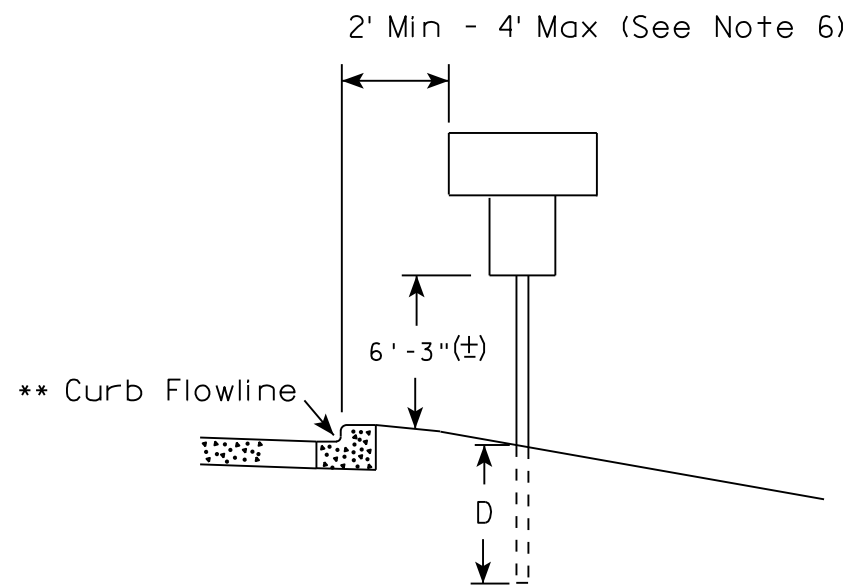
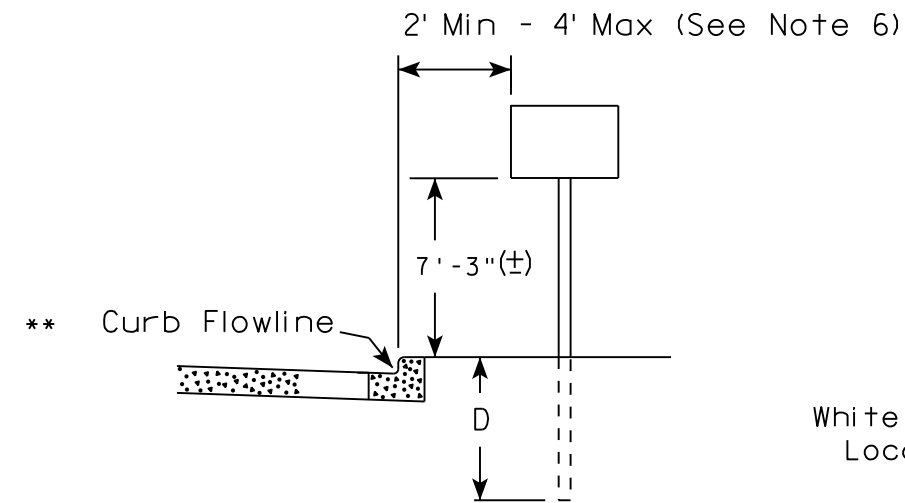
L = 98'

INLET EL. 981.2'

OUTLET EL. 976.87

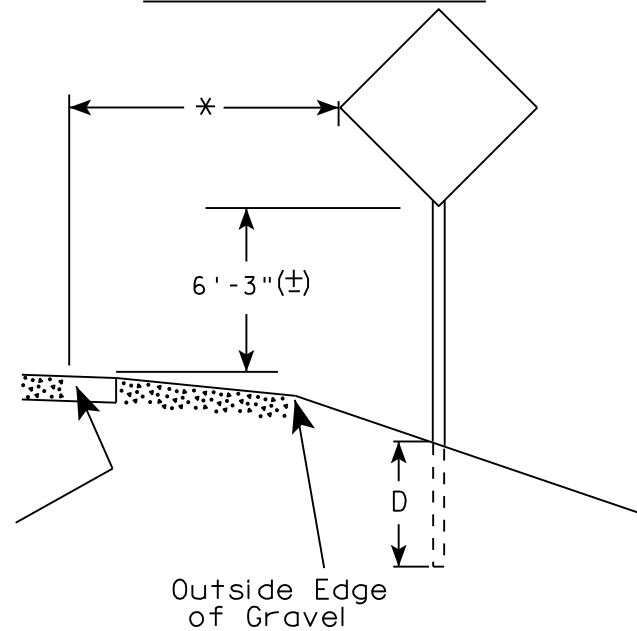
E

URBAN AREA

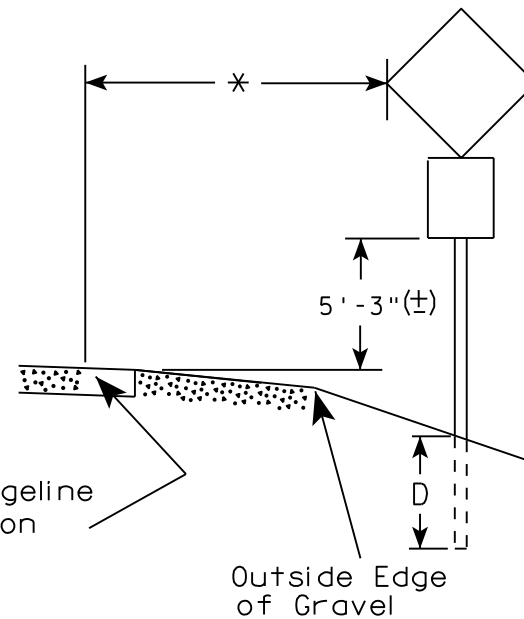


White Edgeline
Location

RURAL AREA (See Note 2)



White Edgeline
Location



Outside Edge
of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
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" (±).

✱✱ 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 8/21/17

PLATE NO. A4-3.21

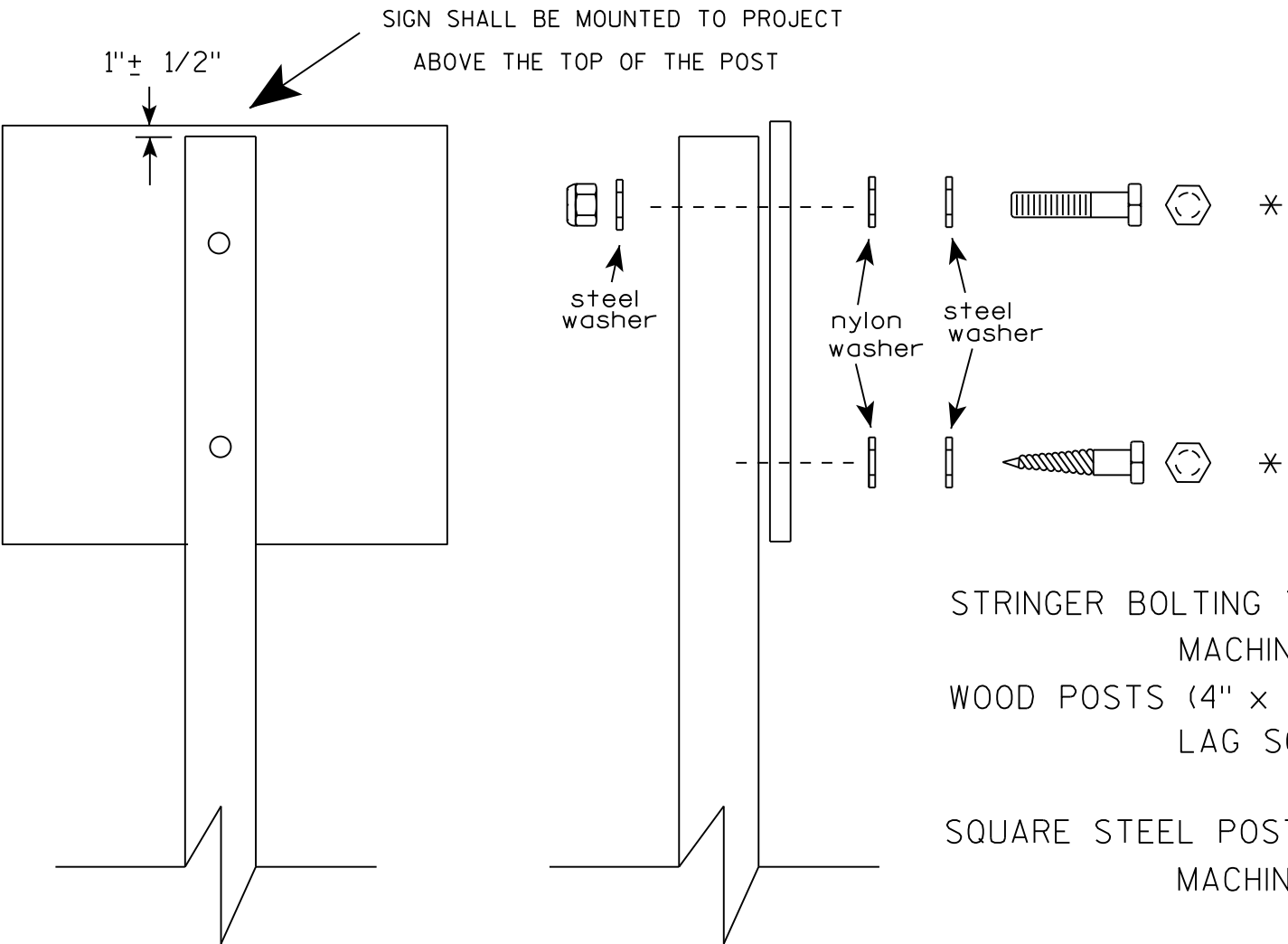
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

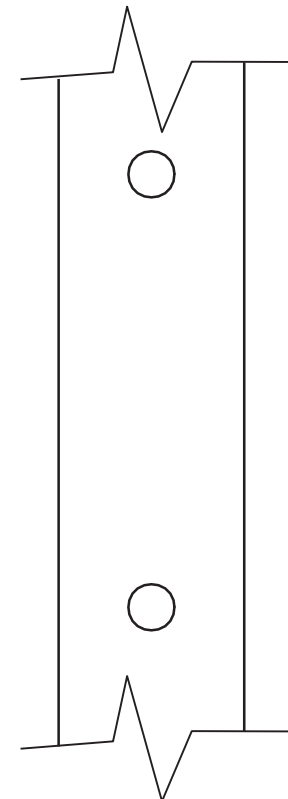
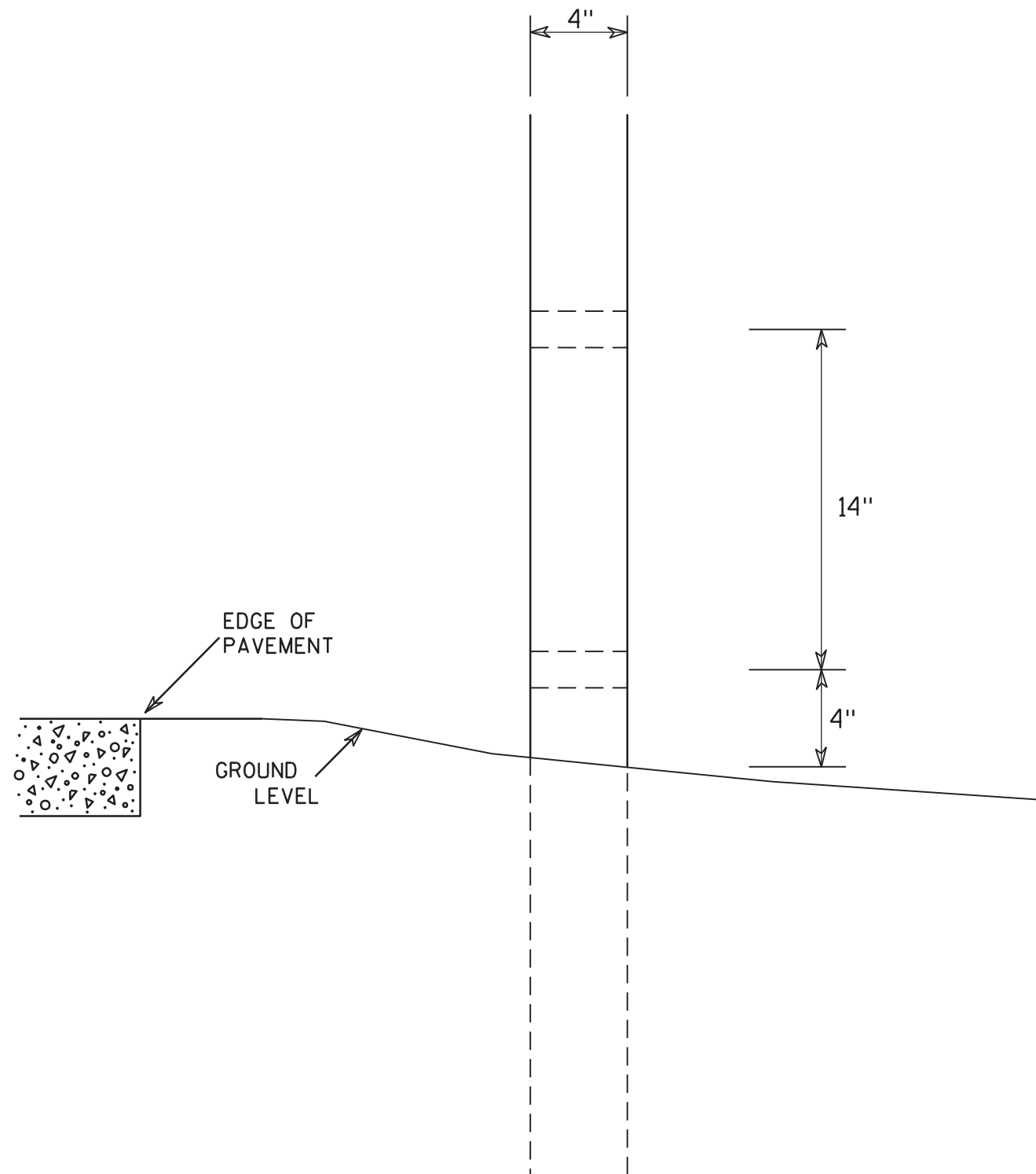
- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO: 8929-06-70

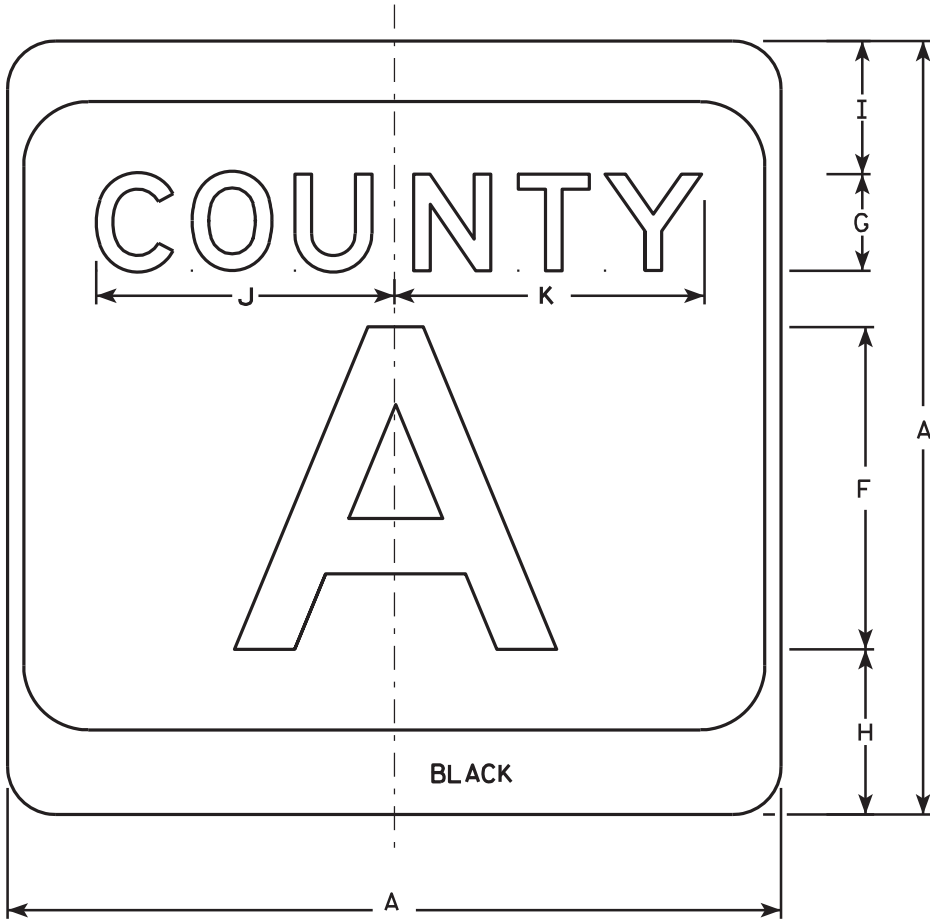
HWY: CTH W

COUNTY: DUNN

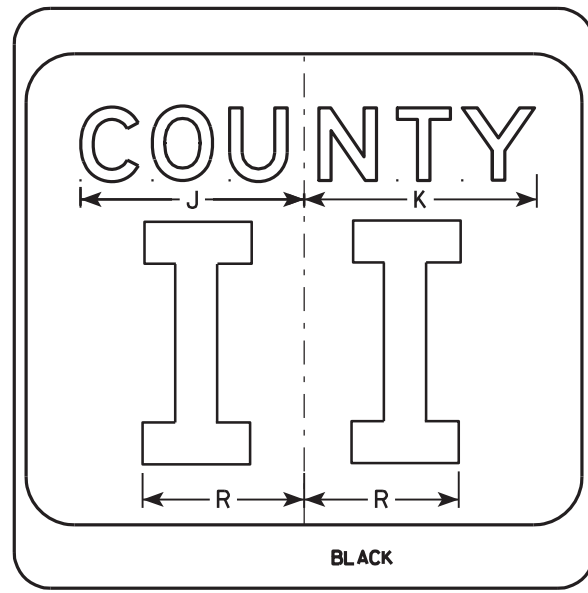
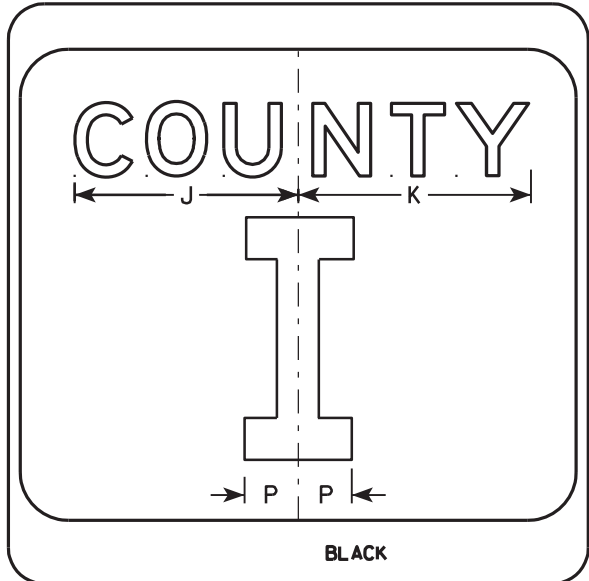
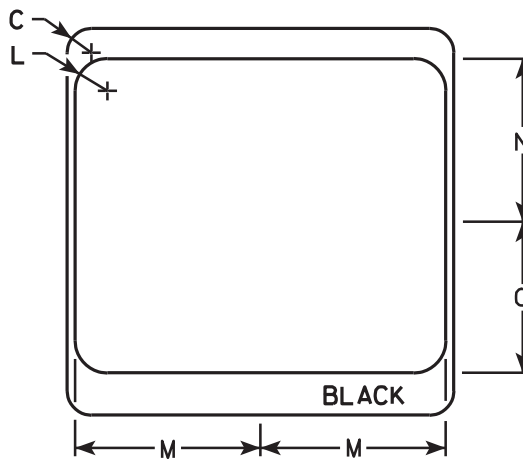
SHEET NO:

E

7



M1-5A



NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 7
Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER

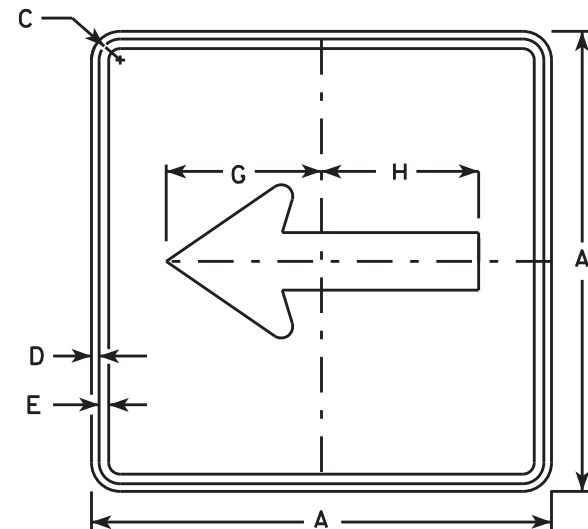
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

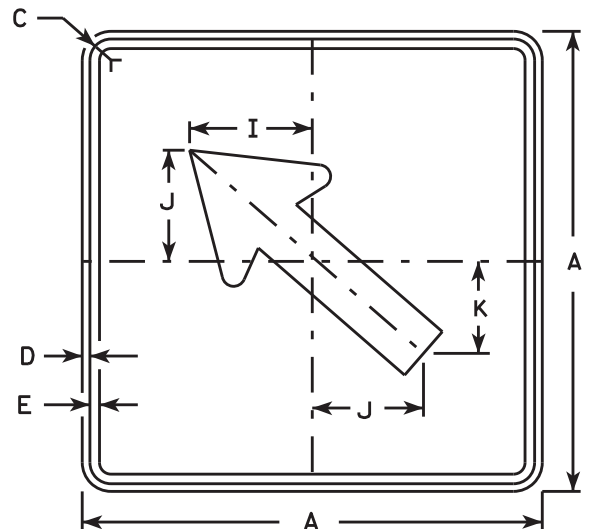
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

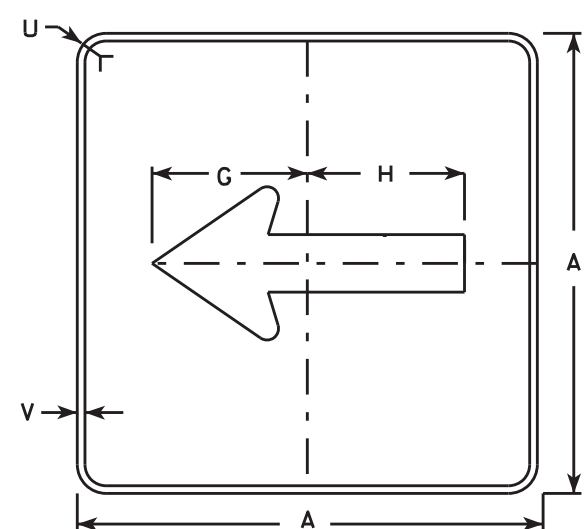
7



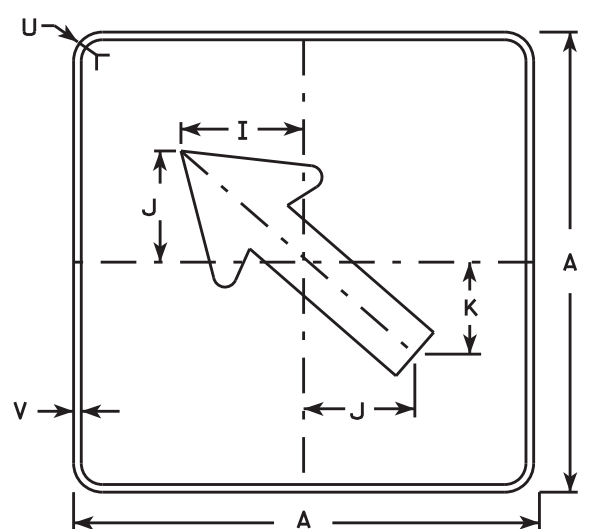
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



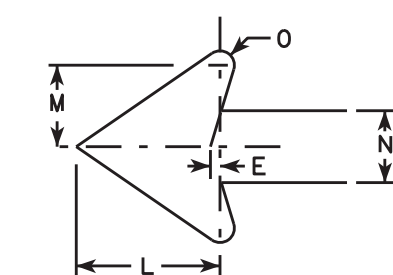
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



MB6 - 1
MK6 - 1
MN6 - 1
MR6 - 1



MB6 - 2
MK6 - 2
MN6 - 2
MR6 - 2



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

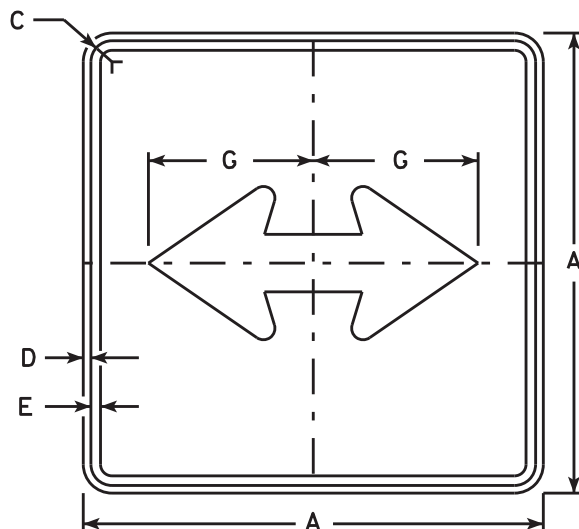
PROJECT NO: 8929-06-70 HWY: CTH W COUNTY: DUNN SHEET NO: E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

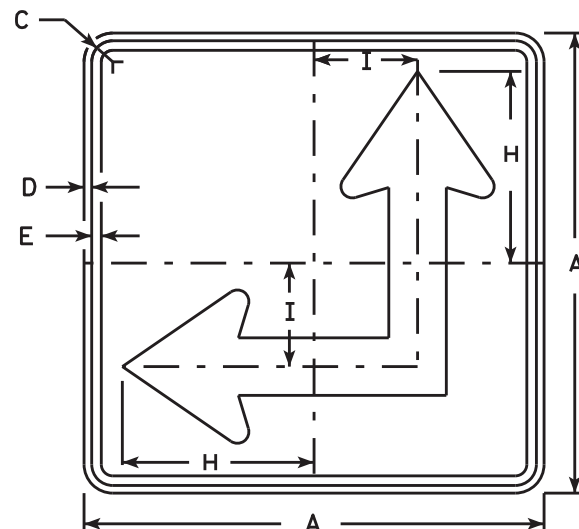
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

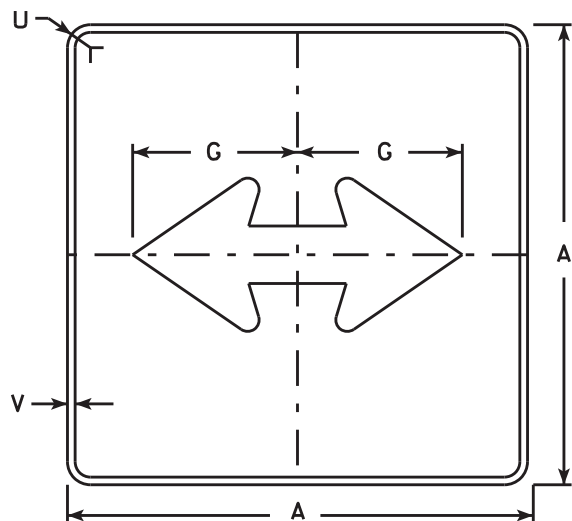
DATE 10/15/15 PLATE NO. M6-1.15



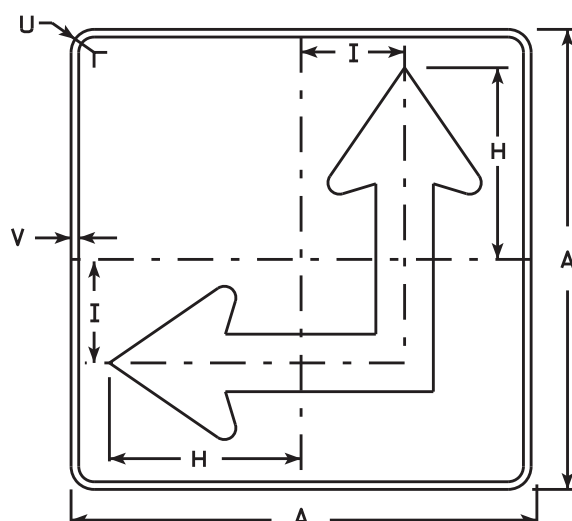
M6-4
MM6-4
MO6-4
MP6-4



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



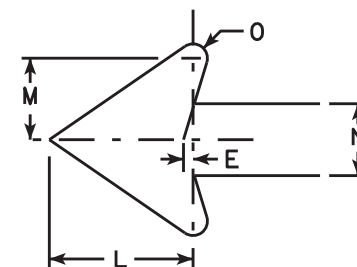
MB6-4
MK6-4
MN6-4
MR6-4



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

NOTES

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



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

PROJECT NO: 8929-06-70

HWY: CTH W

COUNTY: DUNN

STANDARD SIGN
M6-4 & M6-6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

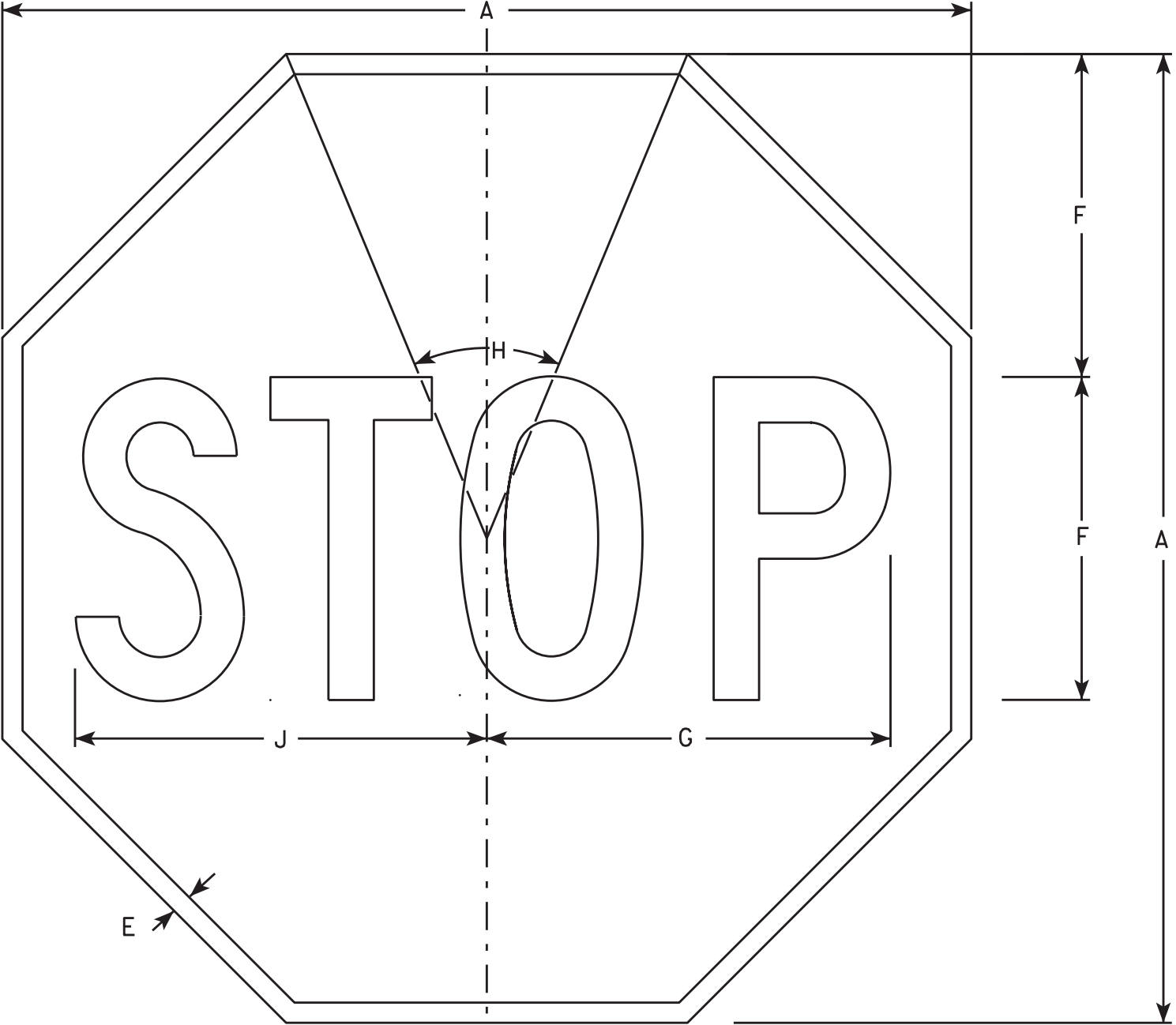
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15

PLATE NO. M6-4.10

SHEET NO:

E



R1-1

NOTES

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

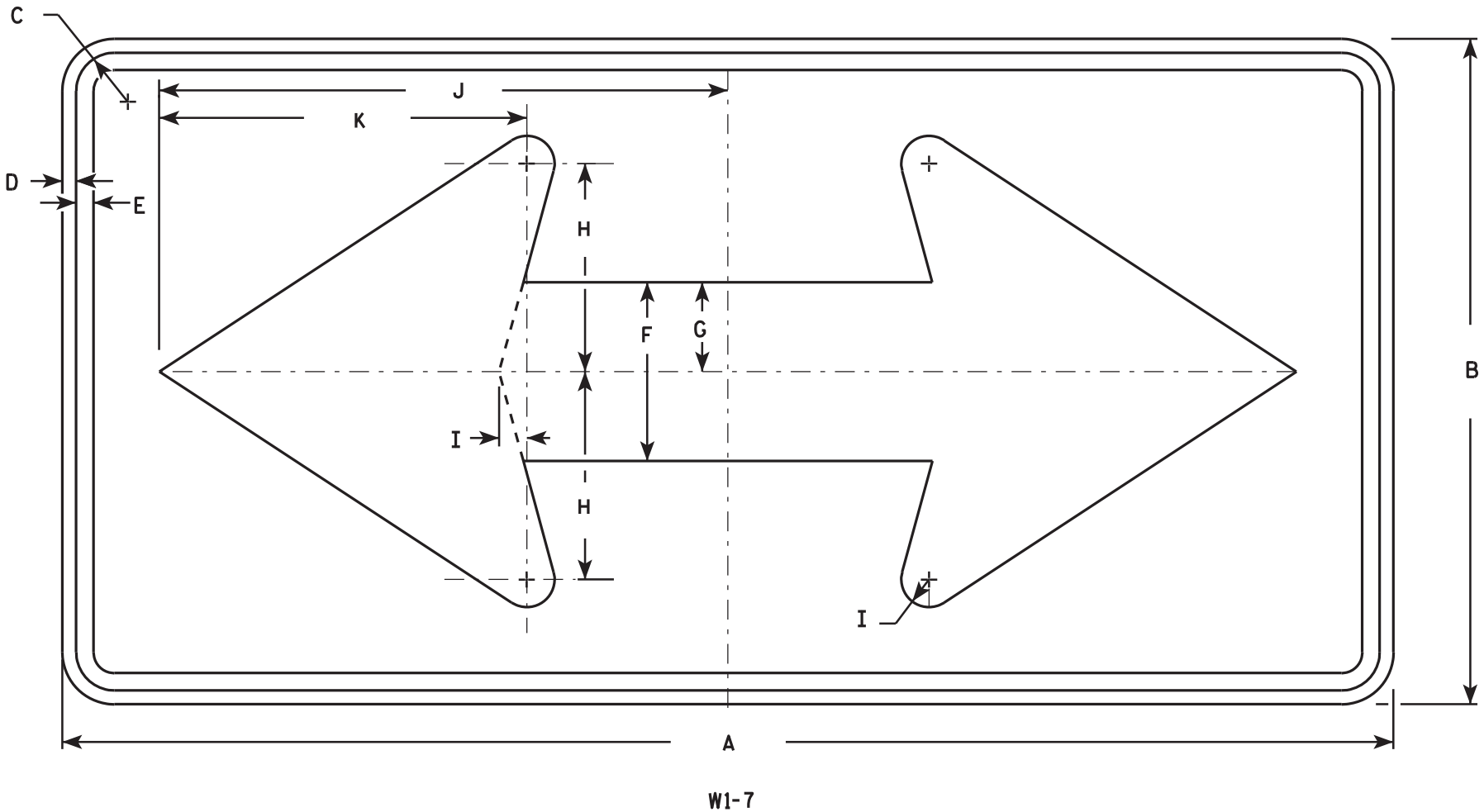
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°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

STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



NOTES

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

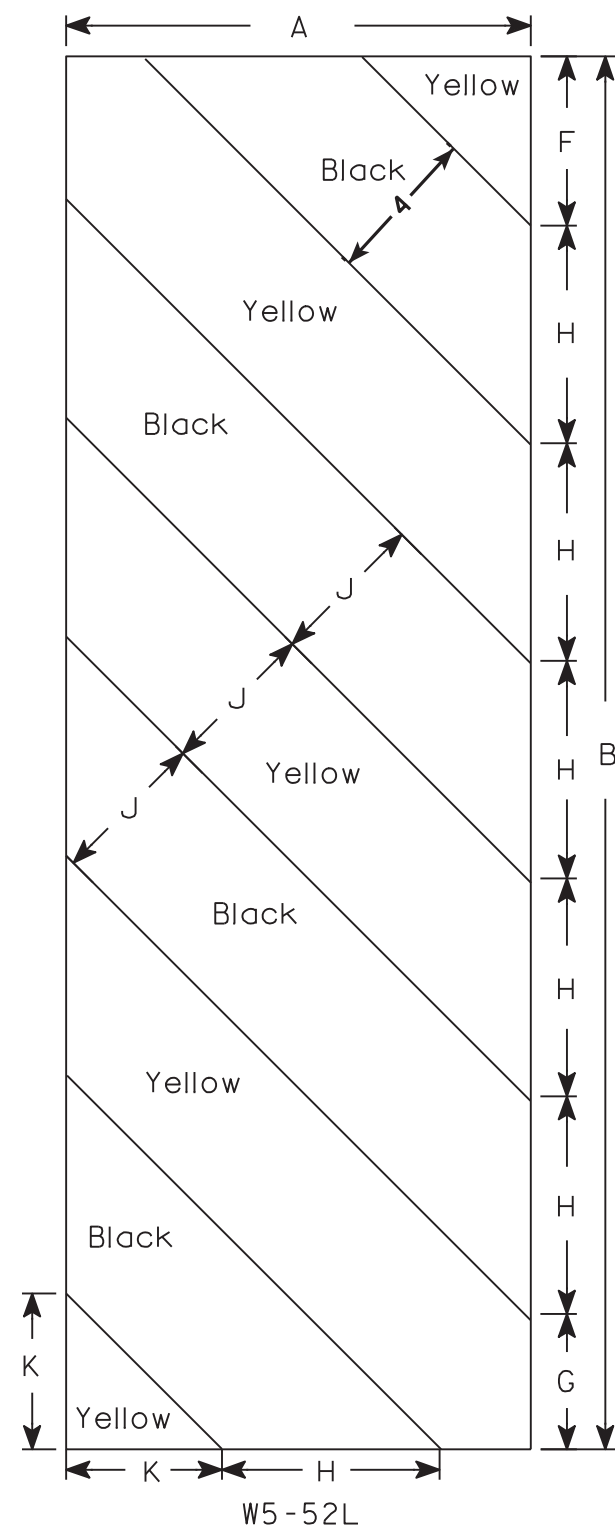
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30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

STANDARD SIGN
W1 - 7

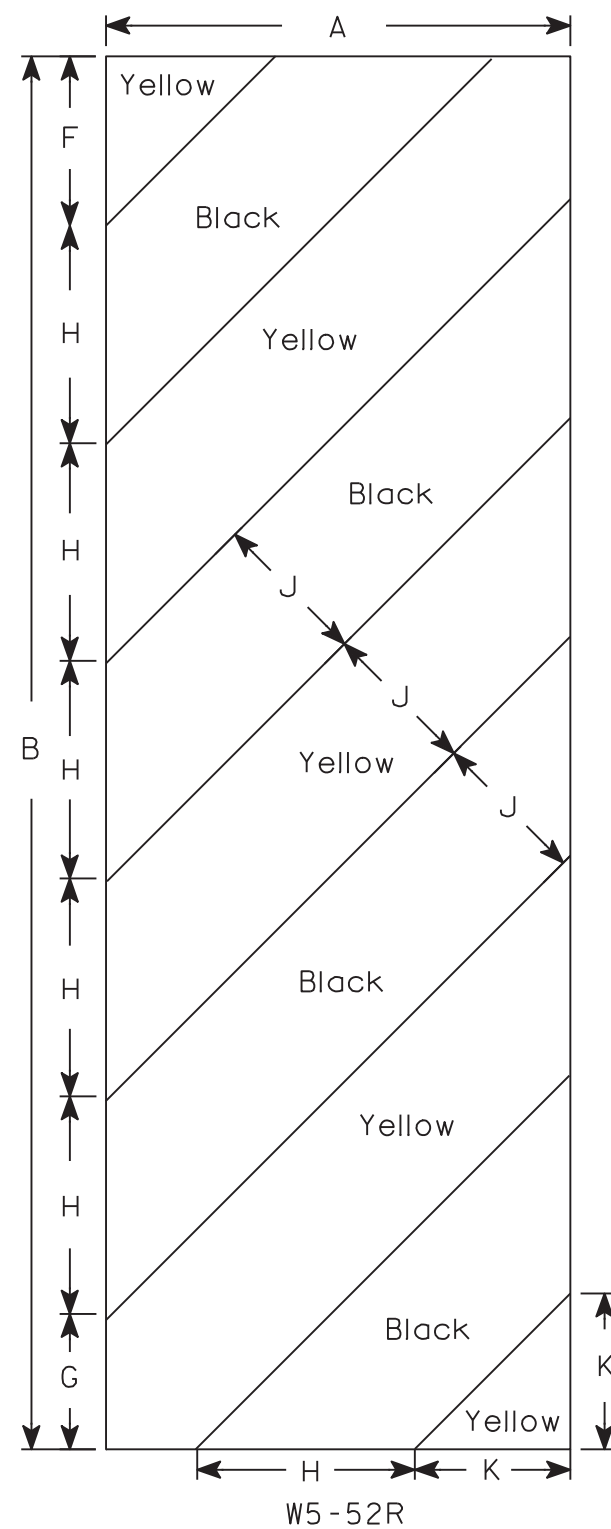
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN
W5-52L & W5-52R

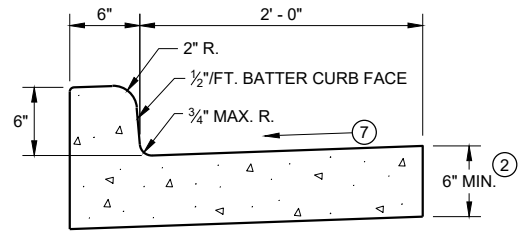
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

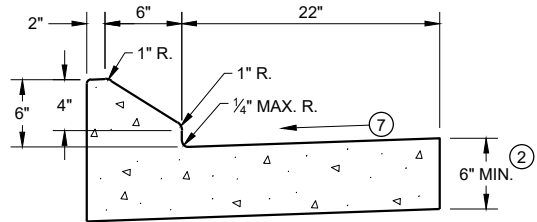
DATE 5/29/12 PLATE NO. W5-52.9

Standard Detail Drawing List

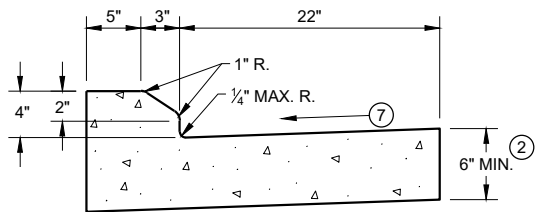
08D01-21A	CONCRETE CURB & GUTTER
08D01-21B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-07A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E15-01	CULVERT PIPE CHECK
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
12A03-10	NAME PLATE (STRUCTURES)
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



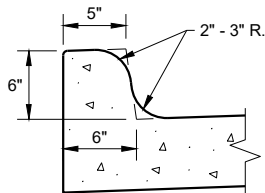
TYPES A^① & D



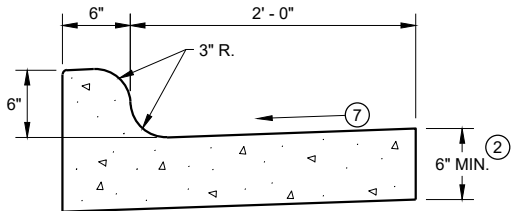
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

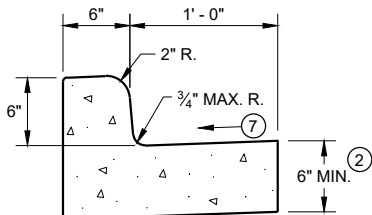


TYPES K^① & L
(OPTIONAL CURB SHAPE)



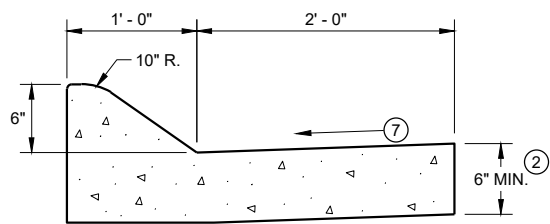
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

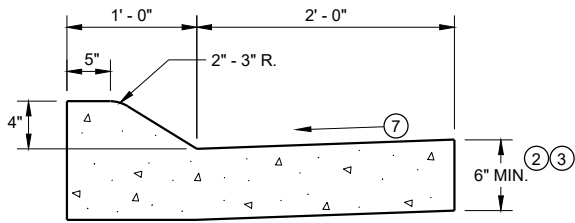


TYPES A^① & D

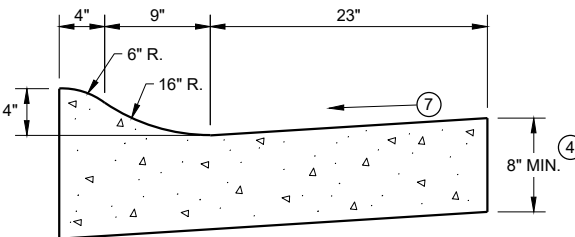
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A^① & D



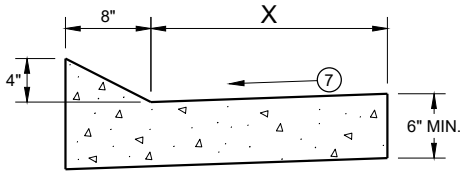
4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

CONCRETE CURB AND GUTTER 36"

TBT & TBTT	X
30"	22"
36"	28"

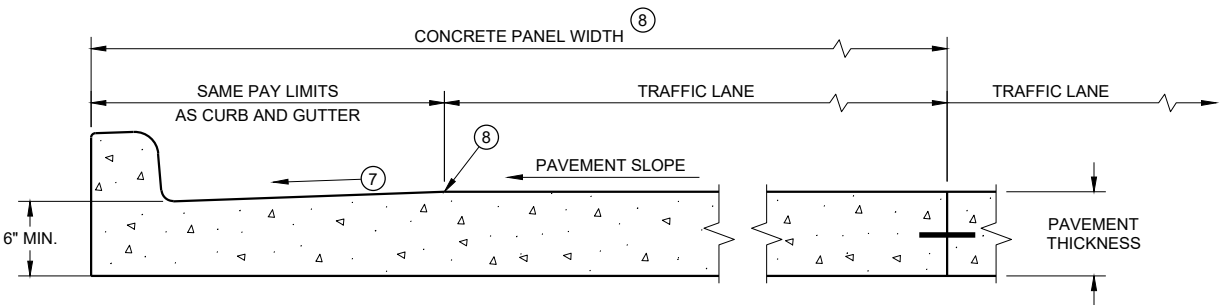


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

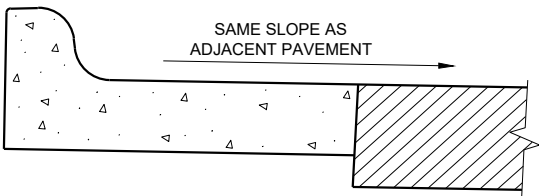
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

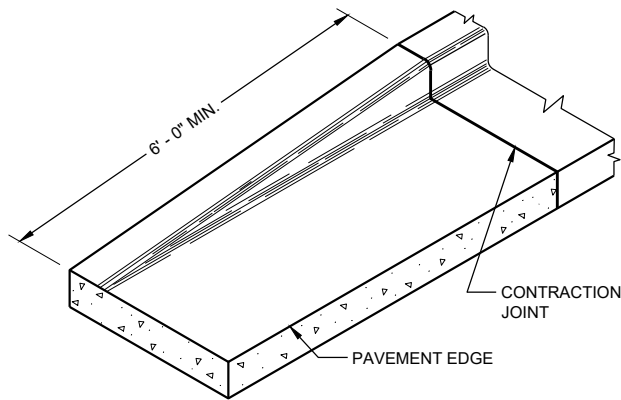
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

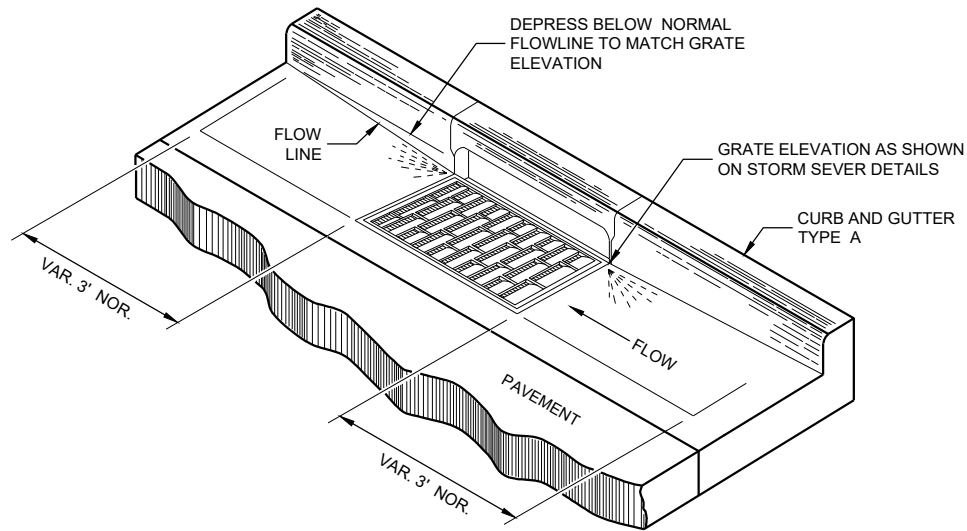
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

CONCRETE CURB AND GUTTER

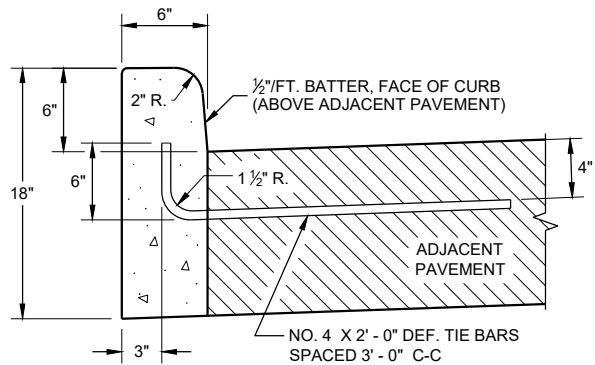
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



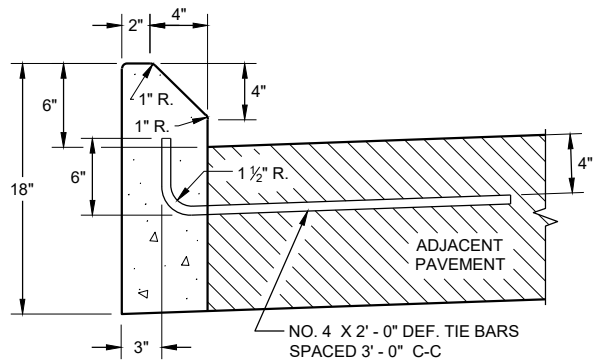
END SECTION CURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

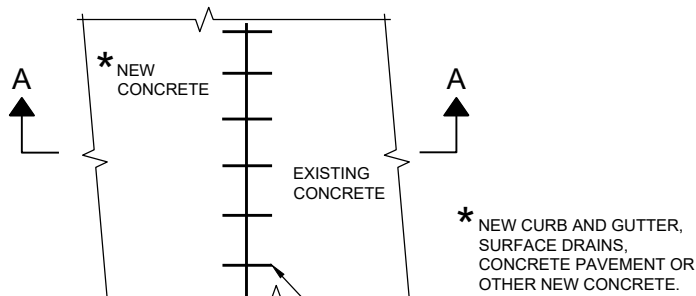


TYPES A^① & D

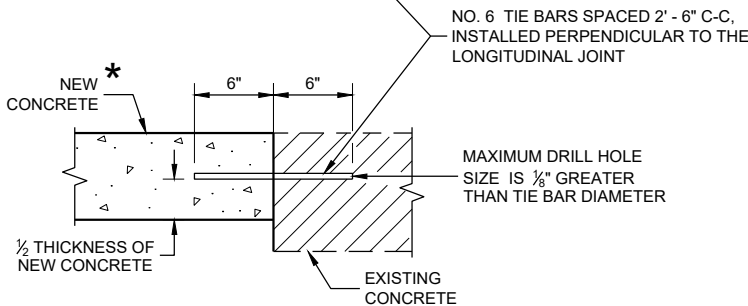


TYPES G^① & J

CONCRETE CURB



PLAN VIEW



SECTION A - A

TIE BARS DRILLED
INTO EXISTING PAVEMENT

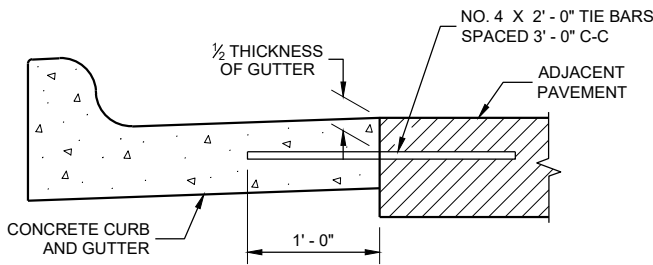
GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

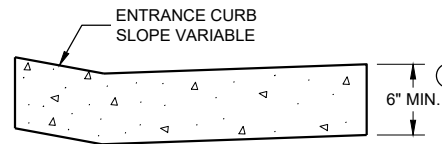
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

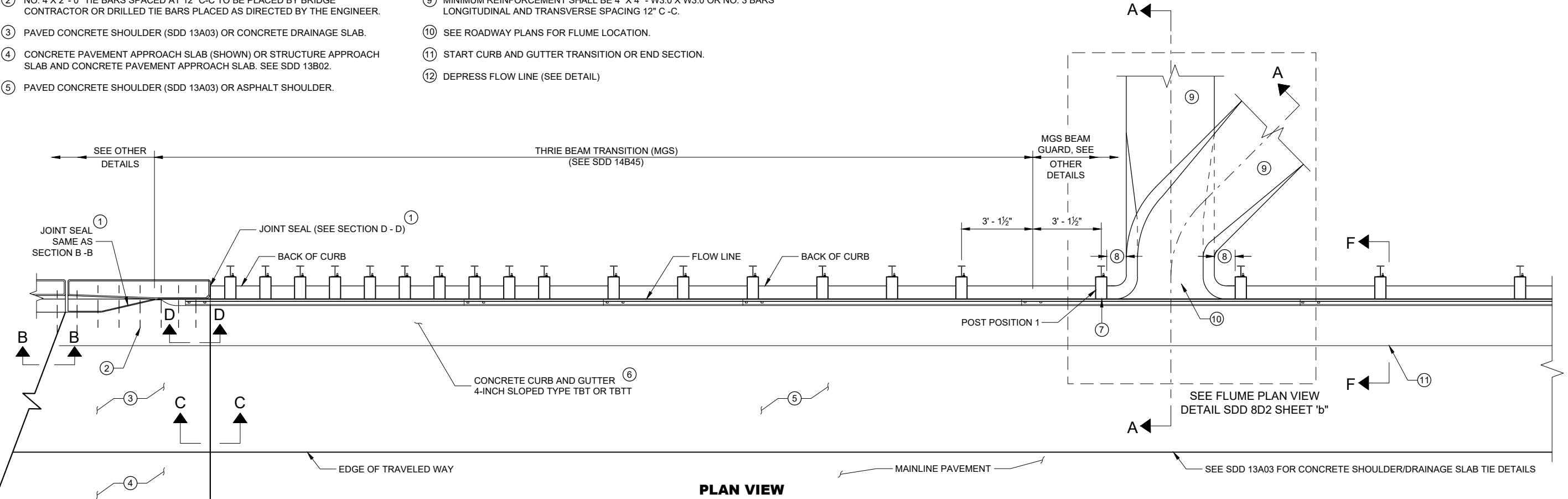
GENERAL NOTES

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.

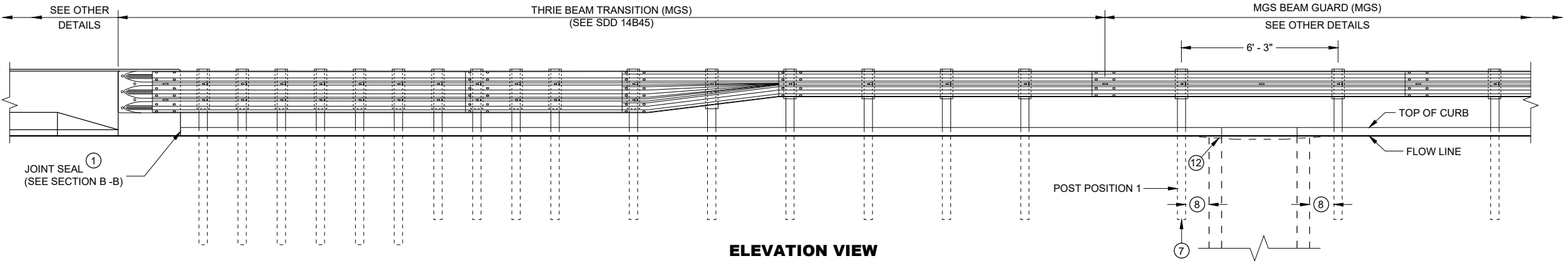
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- 1 USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- 2 NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- 3 PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- 4 CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
- 5 PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

- 6 CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- 7 PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- 8 CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- 9 MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- 10 SEE ROADWAY PLANS FOR FLUME LOCATION.
- 11 START CURB AND GUTTER TRANSITION OR END SECTION.
- 12 DEPRESS FLOW LINE (SEE DETAIL)



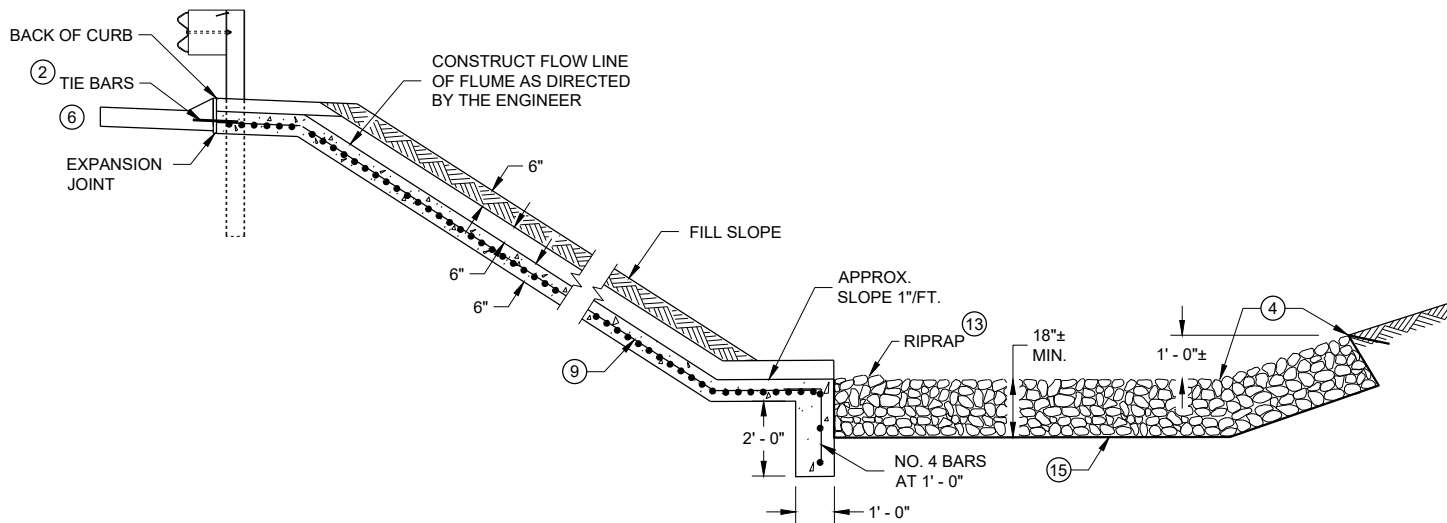
PLAN VIEW



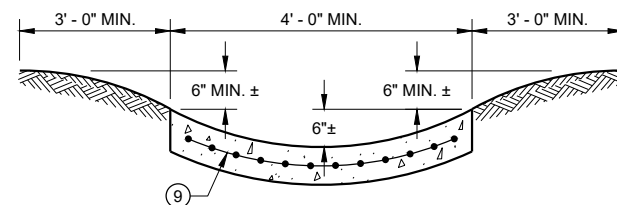
ELEVATION VIEW

CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES

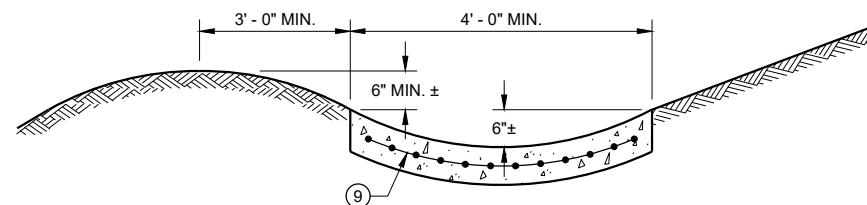
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



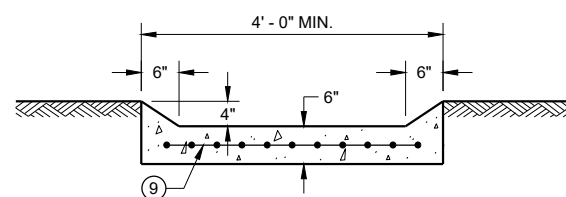
SECTION A - A



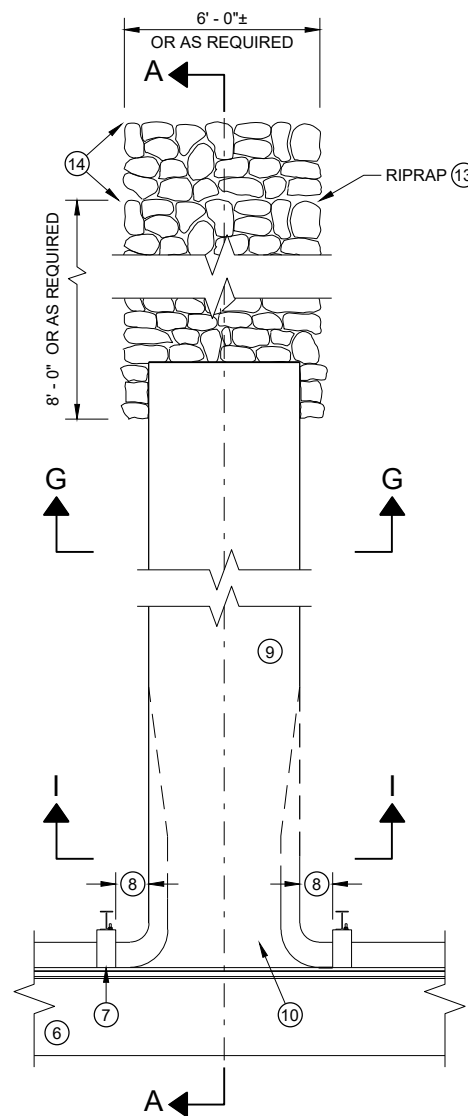
SECTION G - G



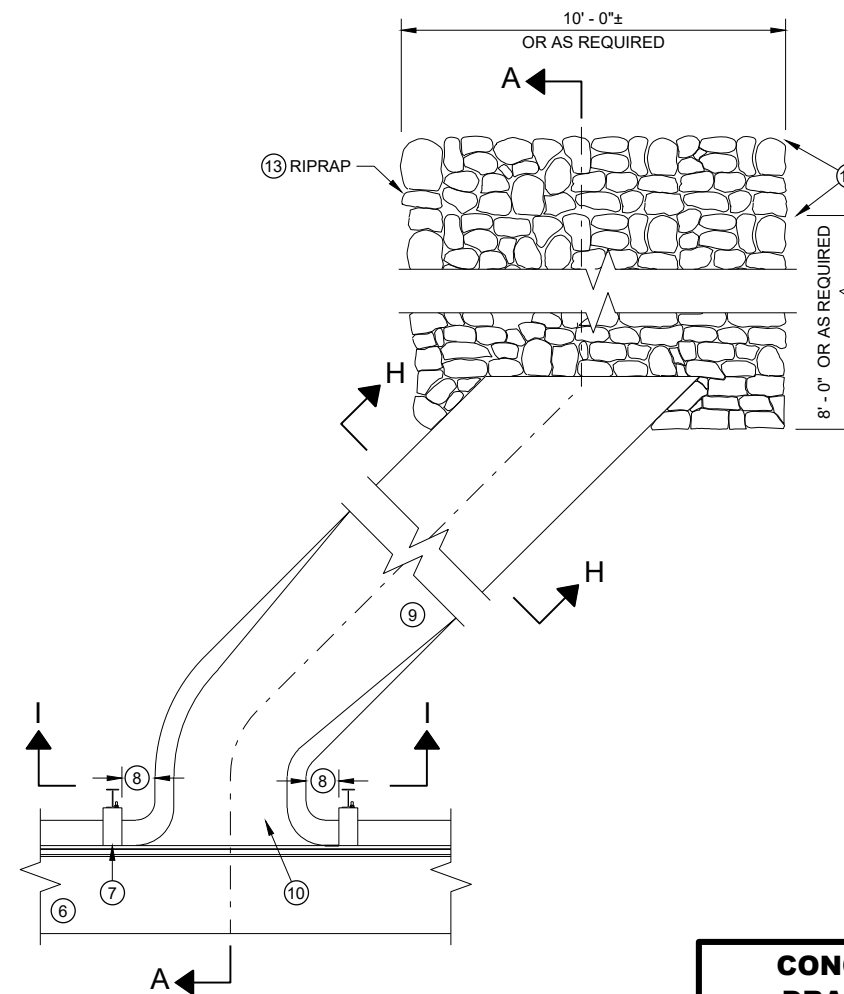
SECTION H - H



SECTION I - I



**PLAN VIEW
PERPENDICULAR FLUME**



**PLAN VIEW
SKEWED FLUME**

GENERAL NOTES

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

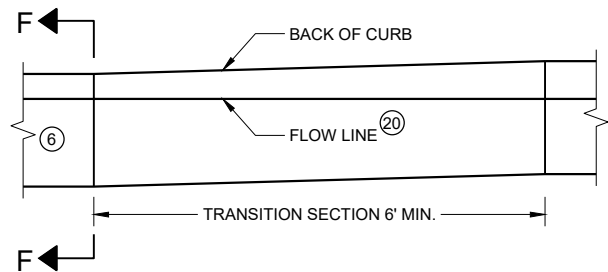
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBT. USE TYPE TBT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

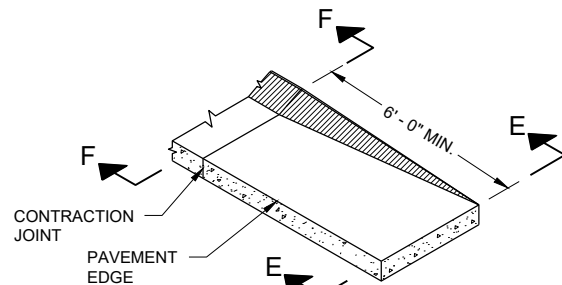
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH AS REQUIRED.
- ⑮ GEOTEXTILE FABRIC TYPE HR.

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

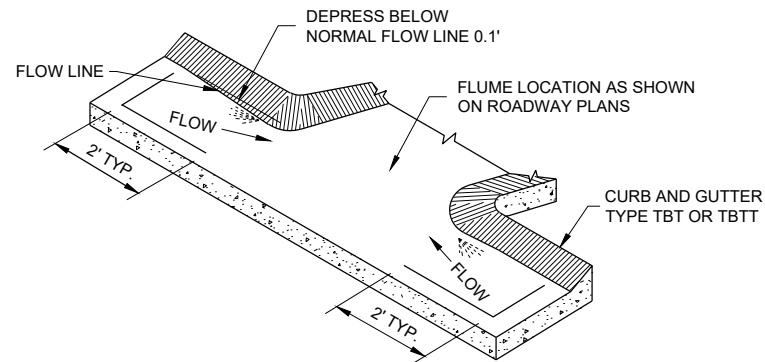
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



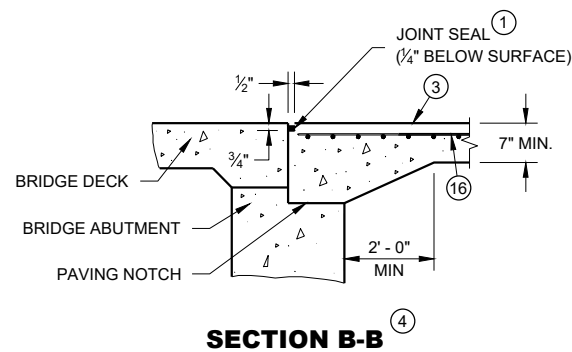
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



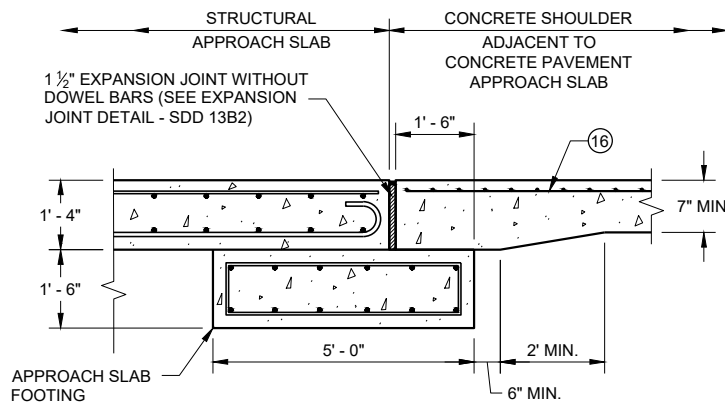
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



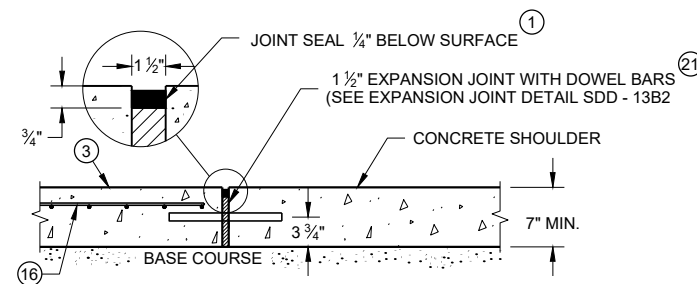
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



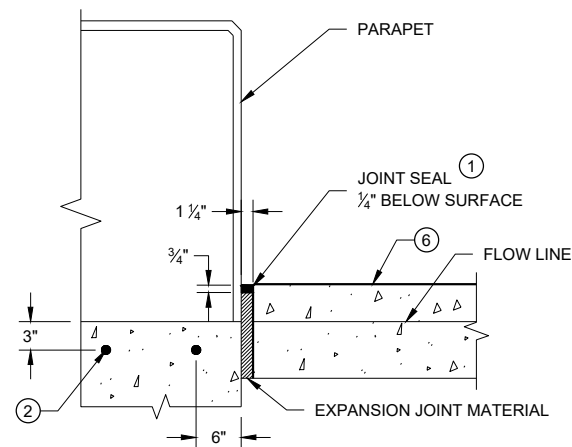
SECTION B-B



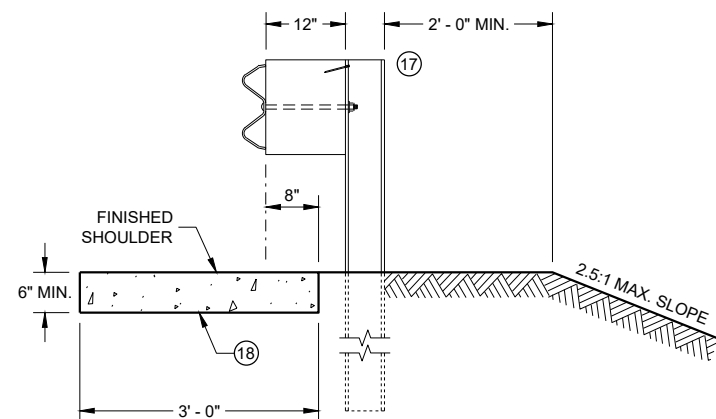
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



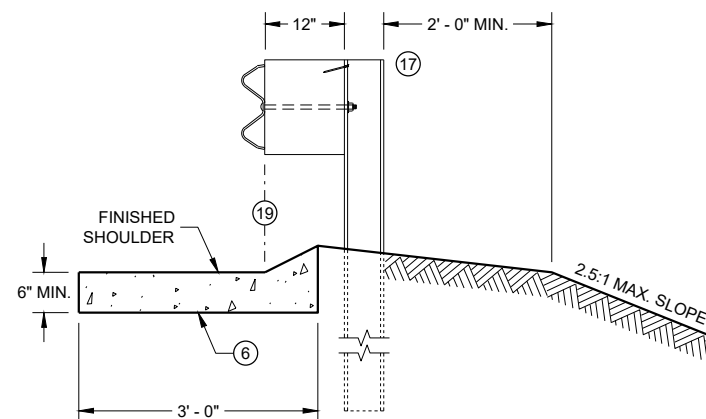
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

GENERAL NOTES

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

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

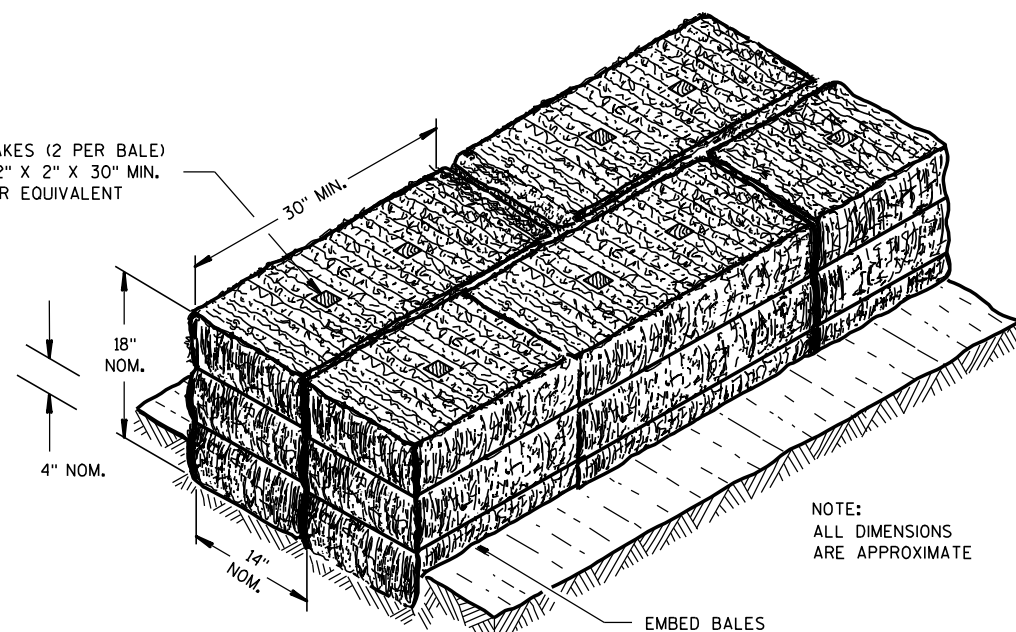
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- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑮ GEOTEXTILE FABRIC TYPE HR.
- ⑯ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑰ MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- ⑱ MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ⑲ ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- ⑳ MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- ㉑ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

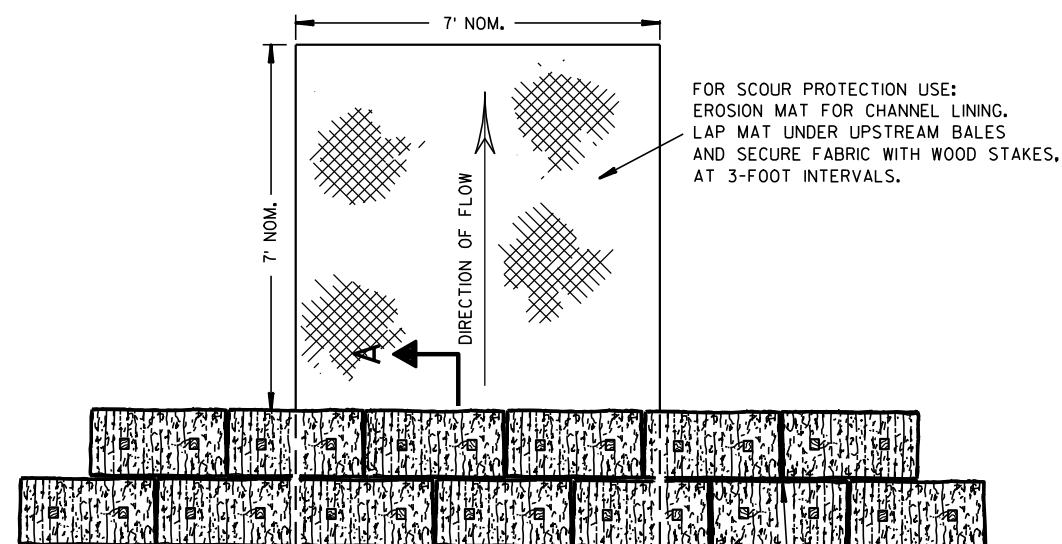
APPROVED
February 2020 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



SECTION A-A

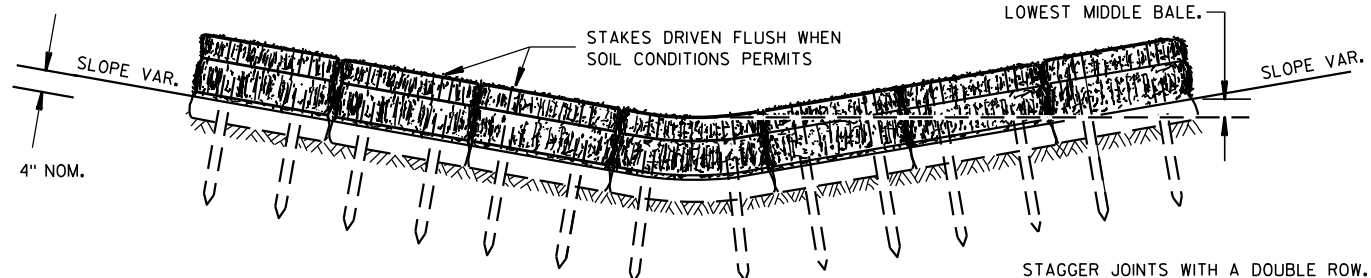
NOTE:
ALL DIMENSIONS
ARE APPROXIMATE



PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



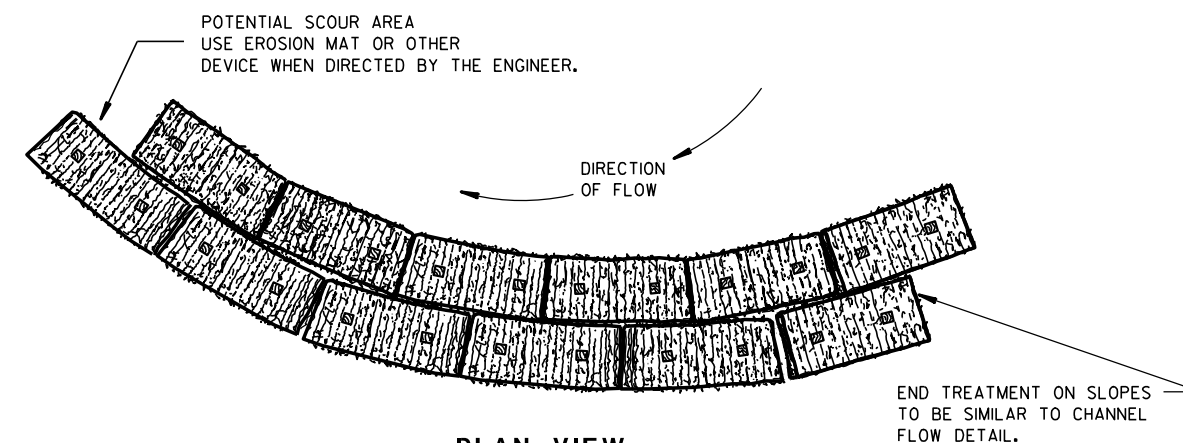
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

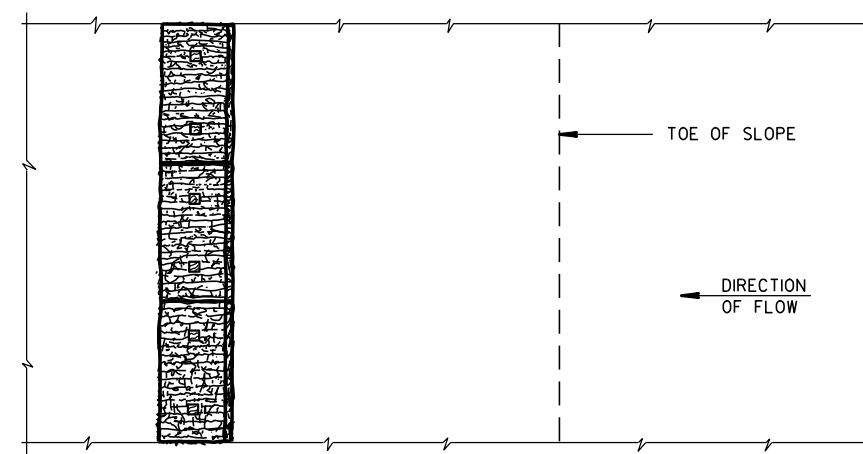
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

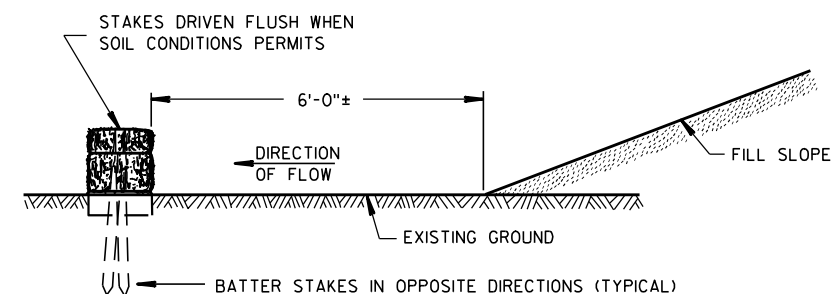


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

FHWA

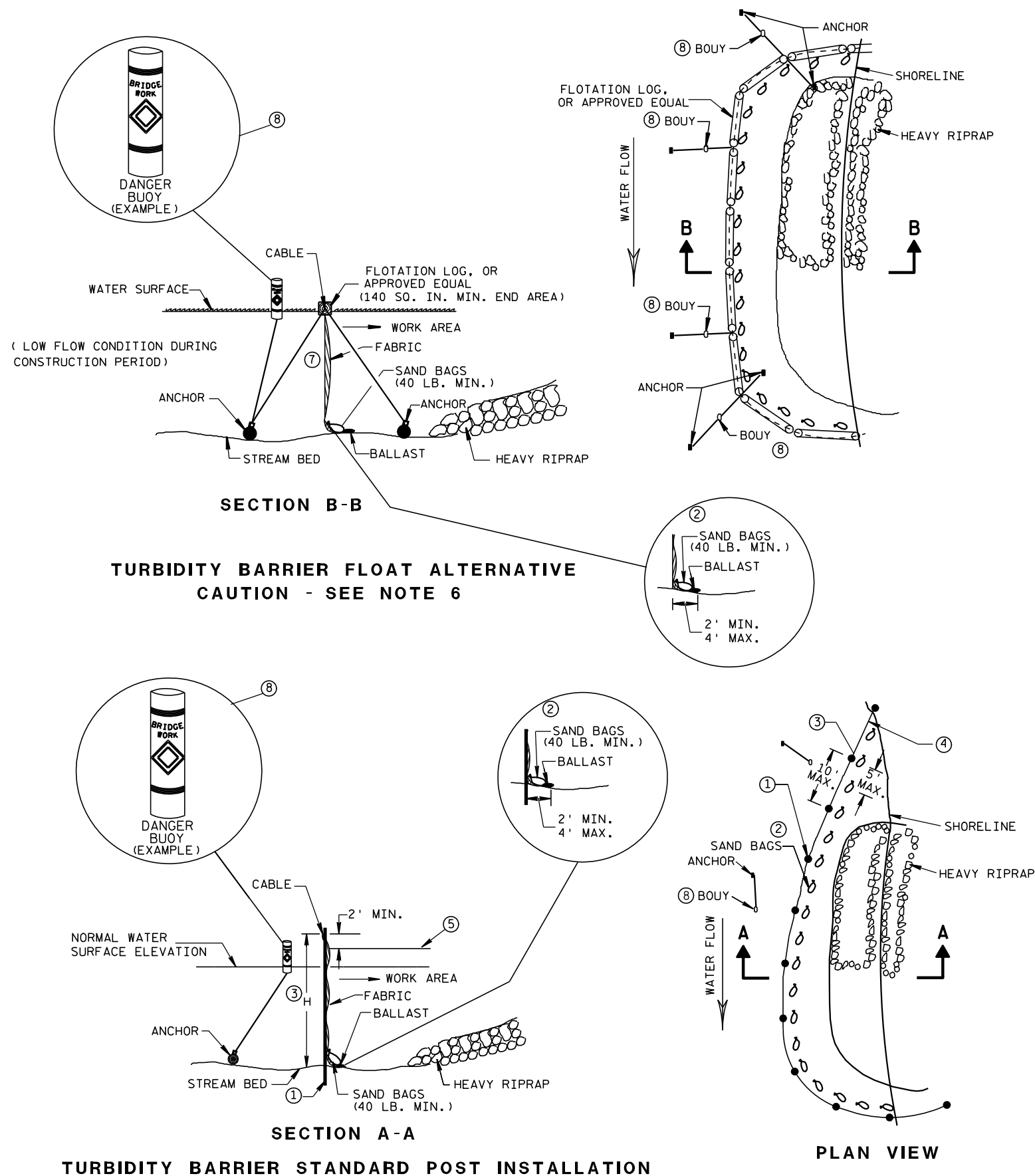
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



- 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 4-29-05 DATE	/S/ <u>Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER

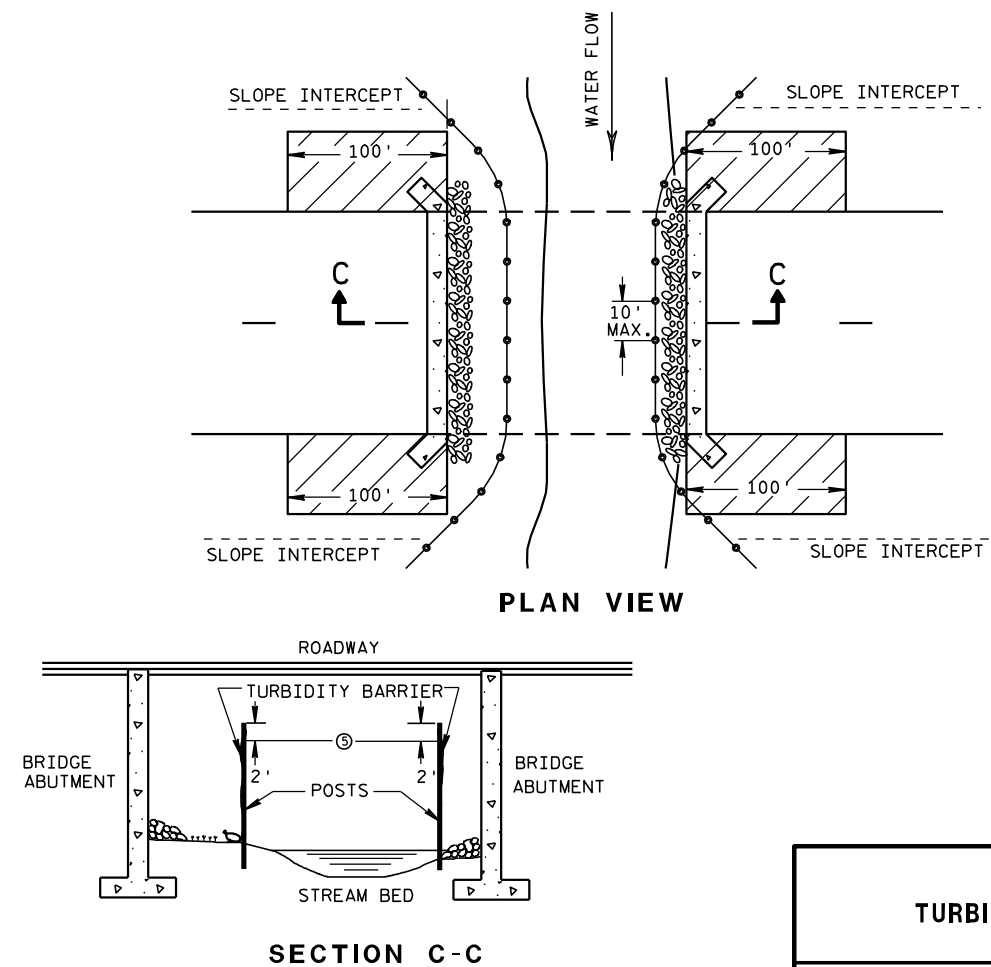


GENERAL NOTES

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

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

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



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

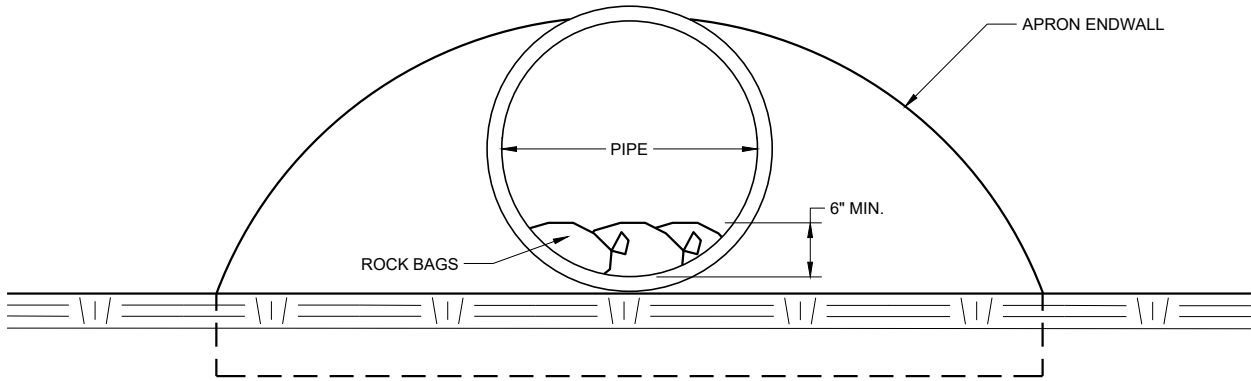
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

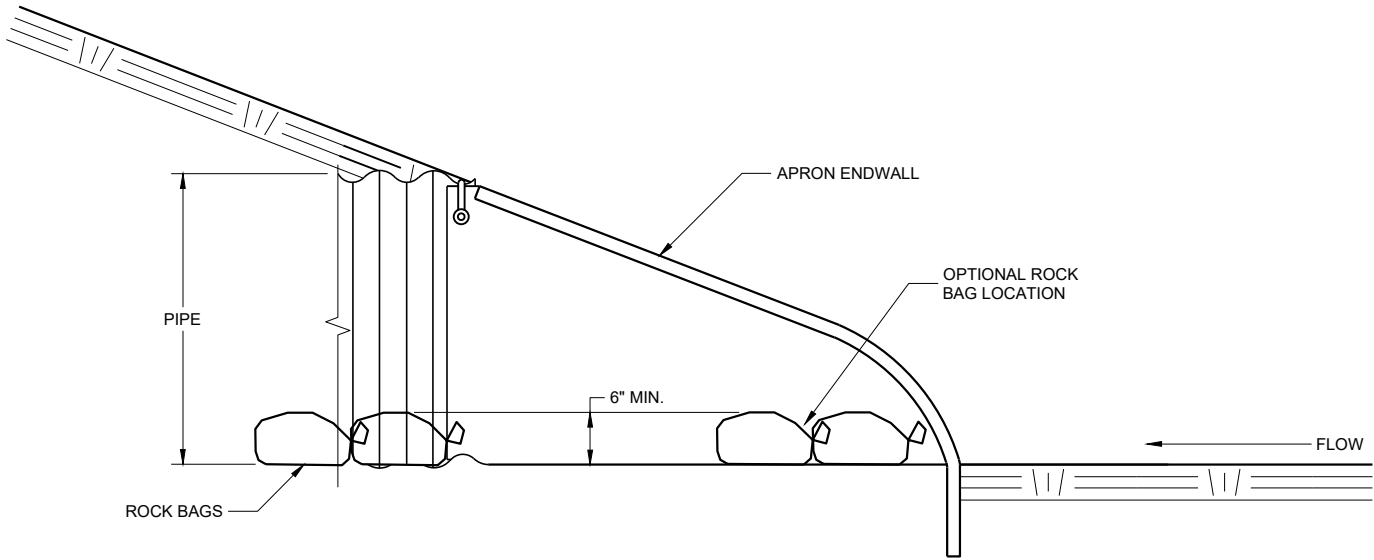
6/04/02
DATE

FHWA

/S/ Beth Connestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW

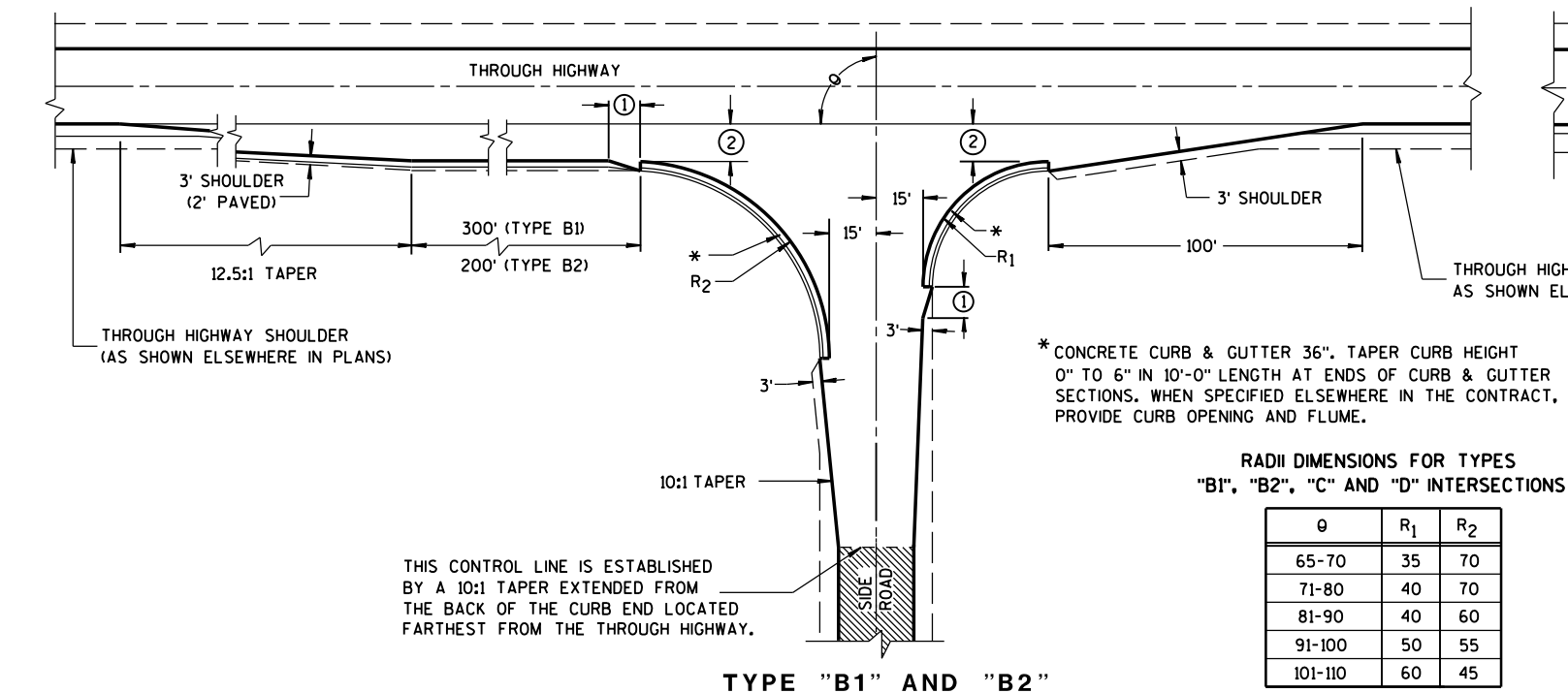


SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGINEER

FHWA



GENERAL NOTES

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

SIDE ROAD SURFACING NOTE

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

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

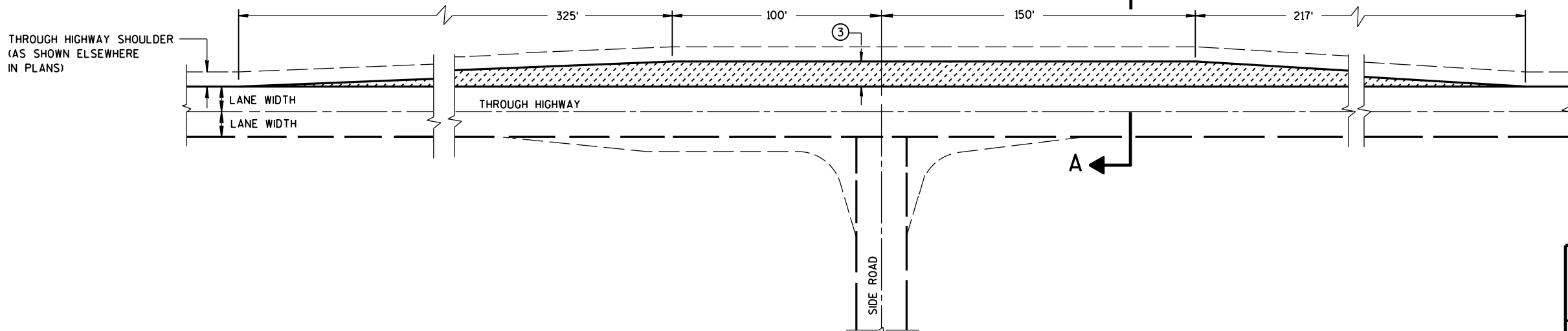
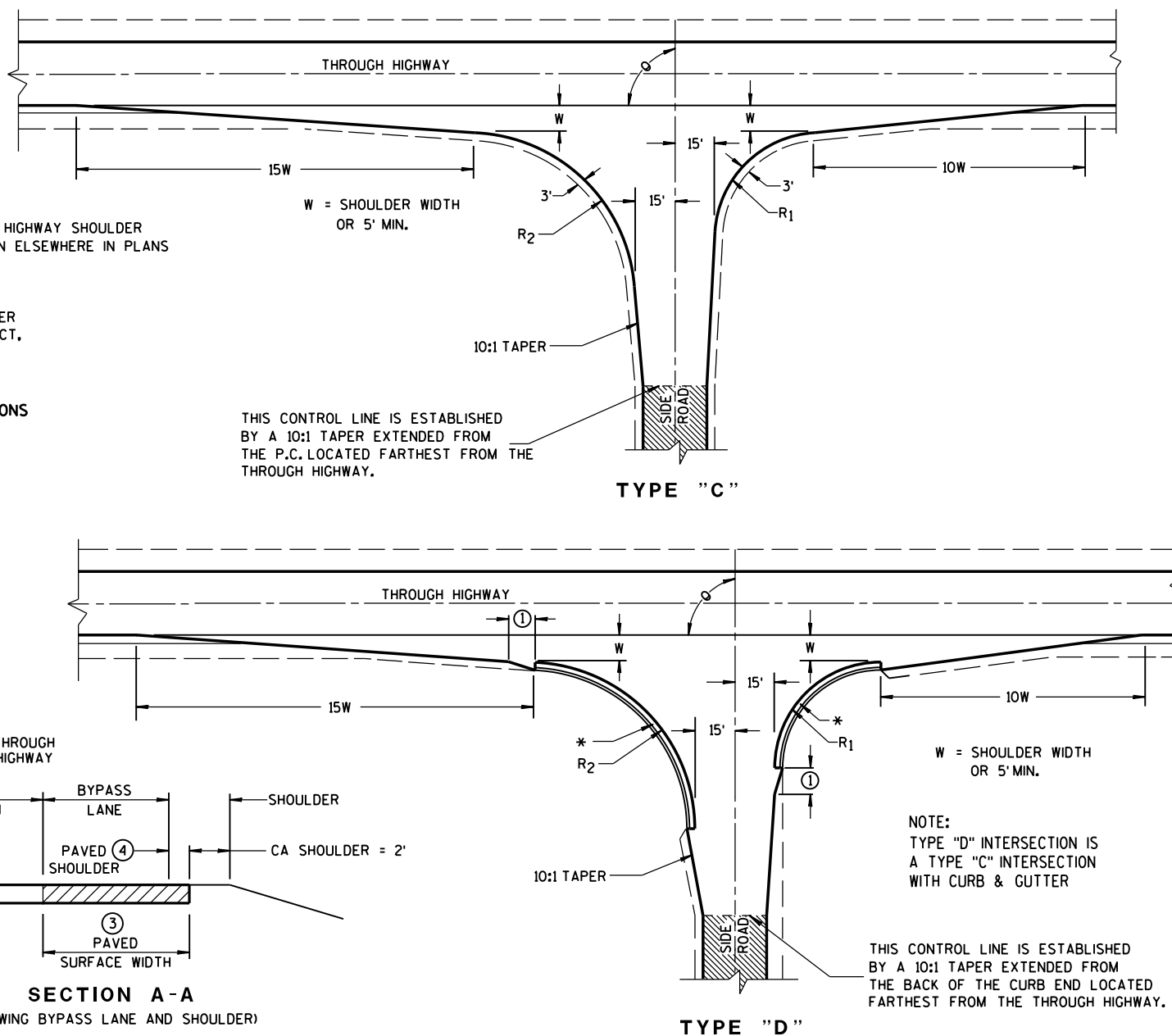
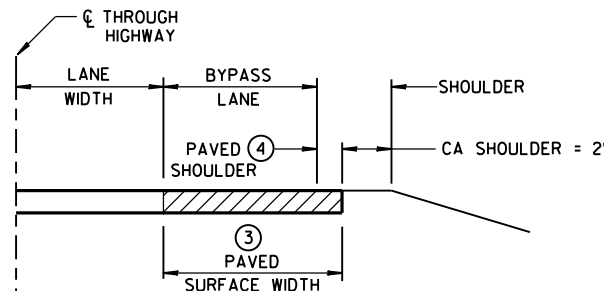
WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

- 10-FT TYPICAL.
- 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

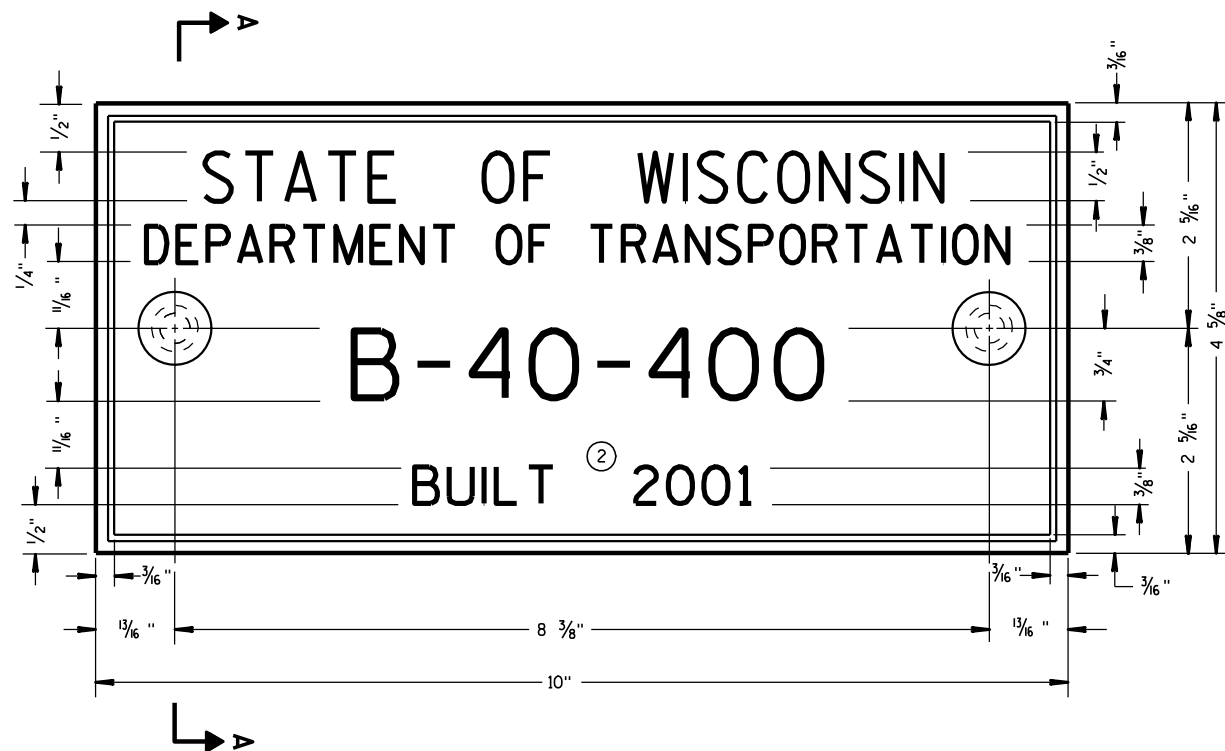
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



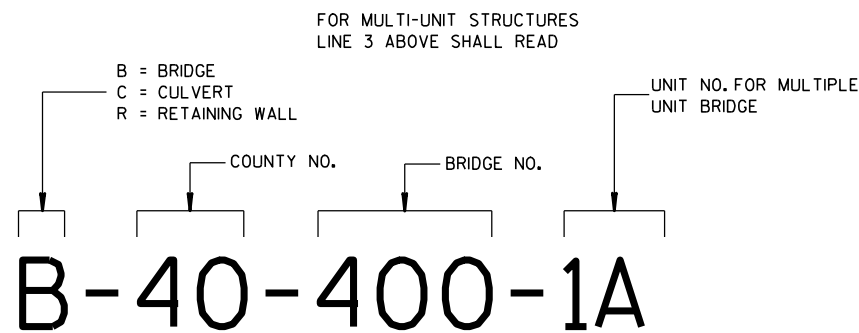
TEE INTERSECTION BYPASS LANE DETAIL

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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



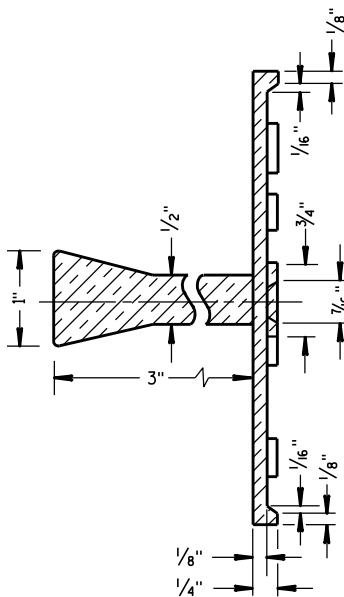
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

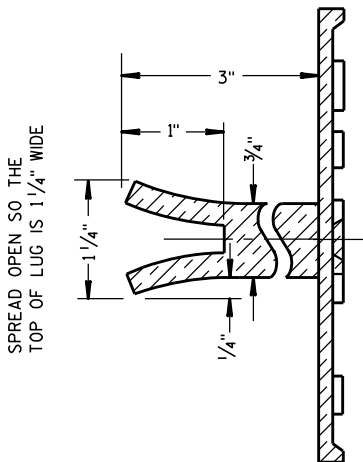
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

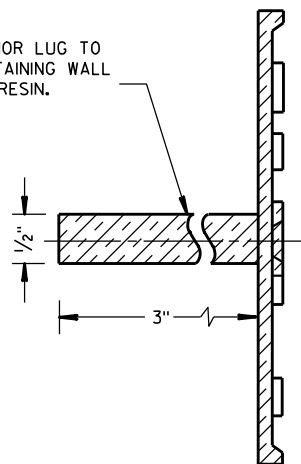


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE
(STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/26/10
DATE
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA

6

- S.D.D. 14 B 15-11a**

S.D.D. 14 B 15-11a



6



S.D.D. 14 B 15-11a



6



6



S.D.D. 14 B 15-11a

S.D.D. 14 B 15-11a



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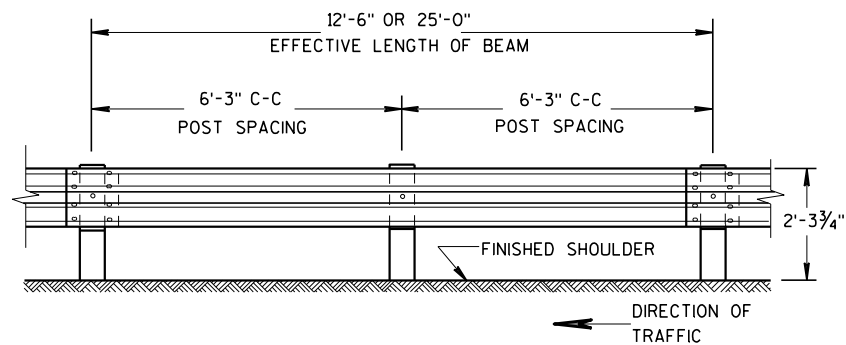
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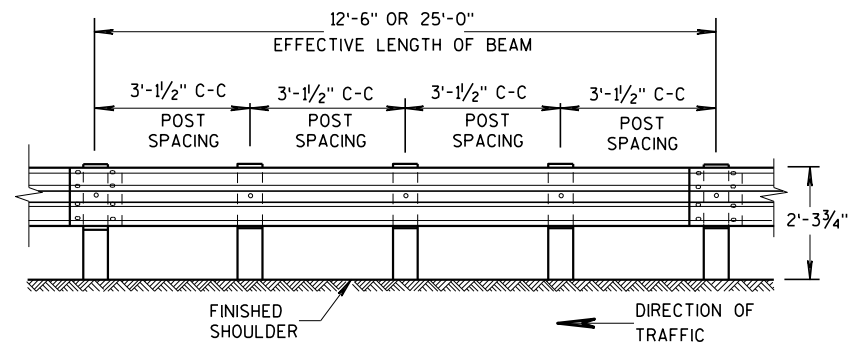
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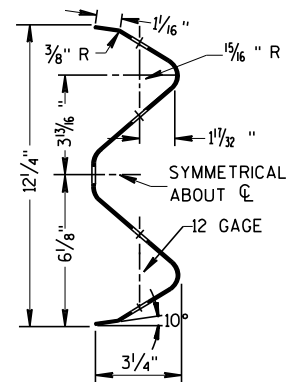


FRONT VIEW

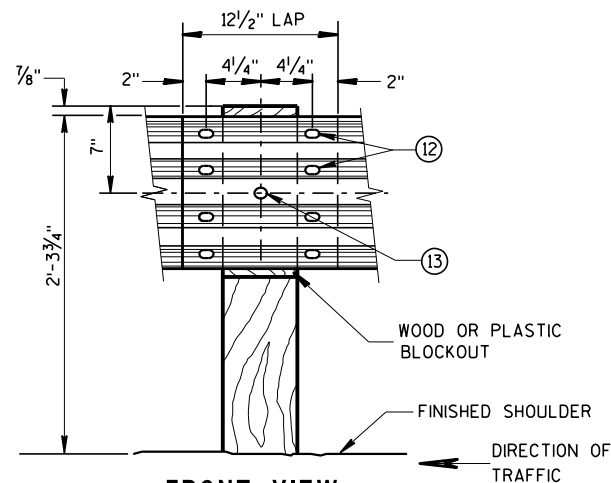
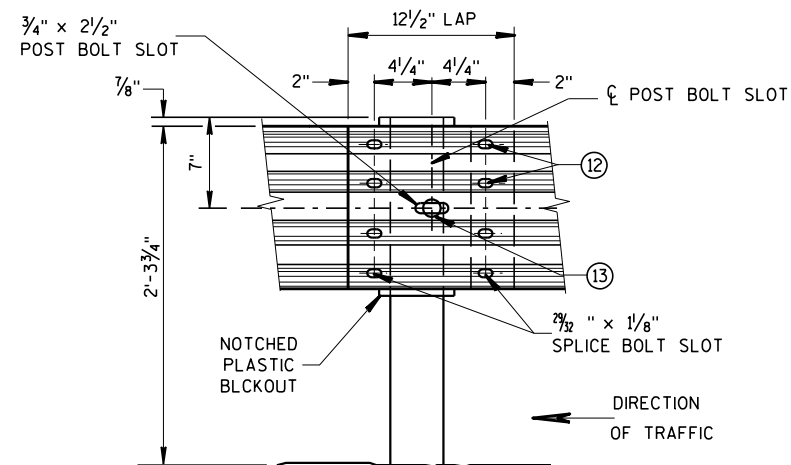
POST SPACING STANDARD INSTALLATION



FRONT VIEW

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

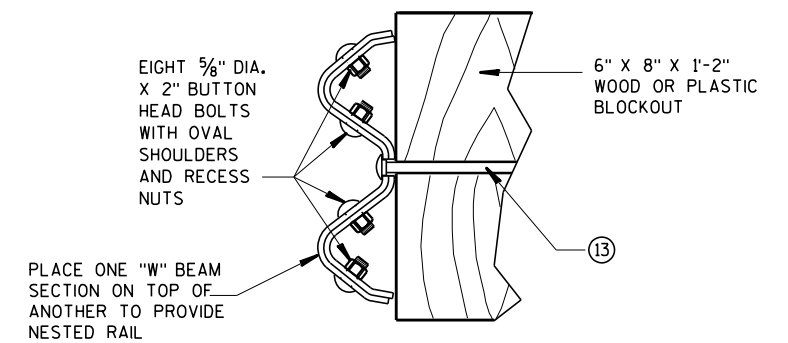
SECTION THRU W BEAM

FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAILFRONT VIEW
BEAM SPLICE AT STEEL POSTTYPICAL SPLICING DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

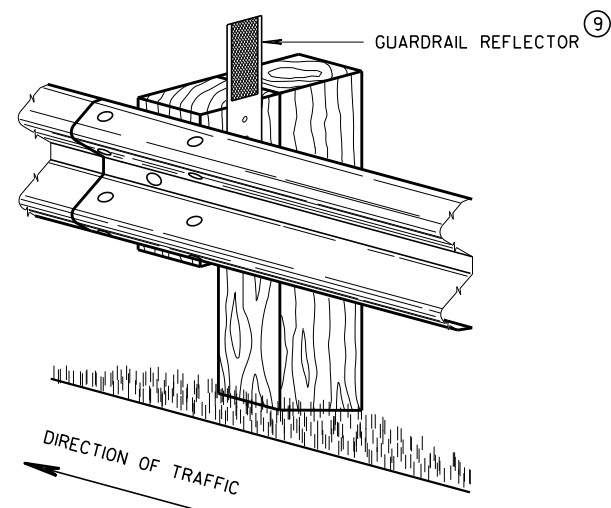
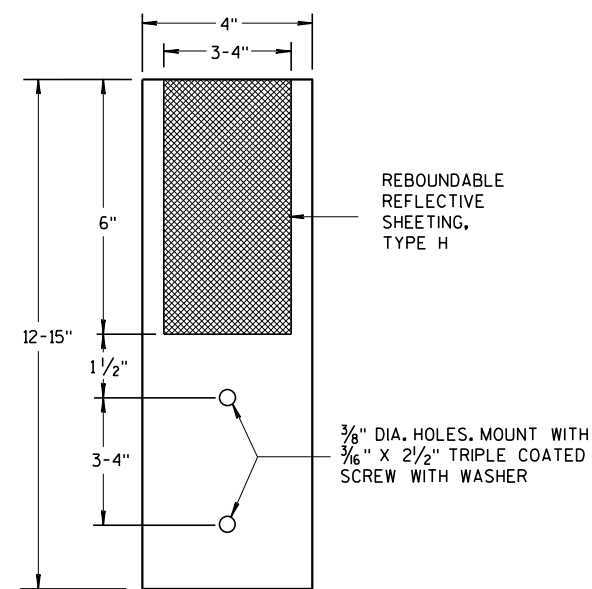
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



NESTED W BEAM (NW)

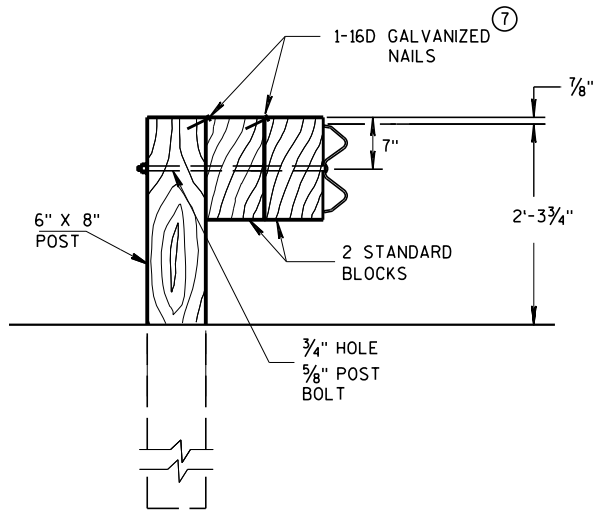
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUARDRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.

4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *

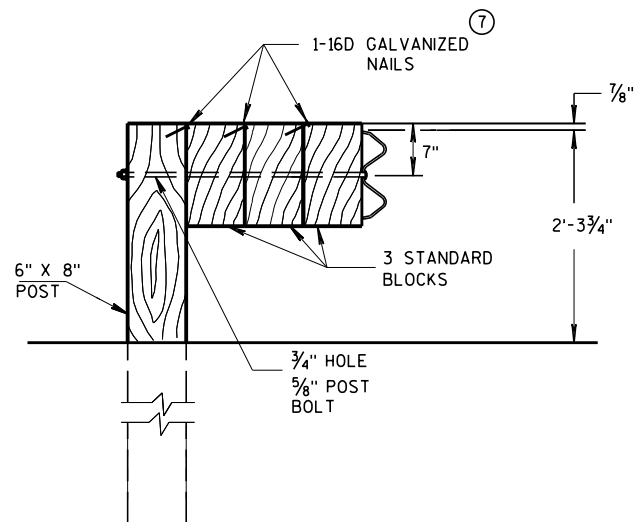
4"x 12" GUARDRAIL REFLECTOR

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTSSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

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

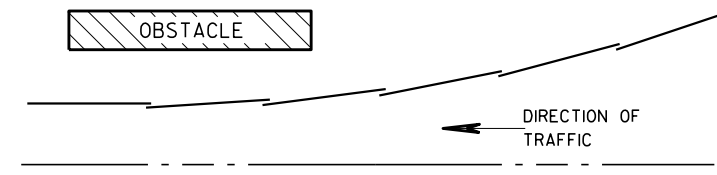


DETAIL FOR TRIPLE BLOCKS

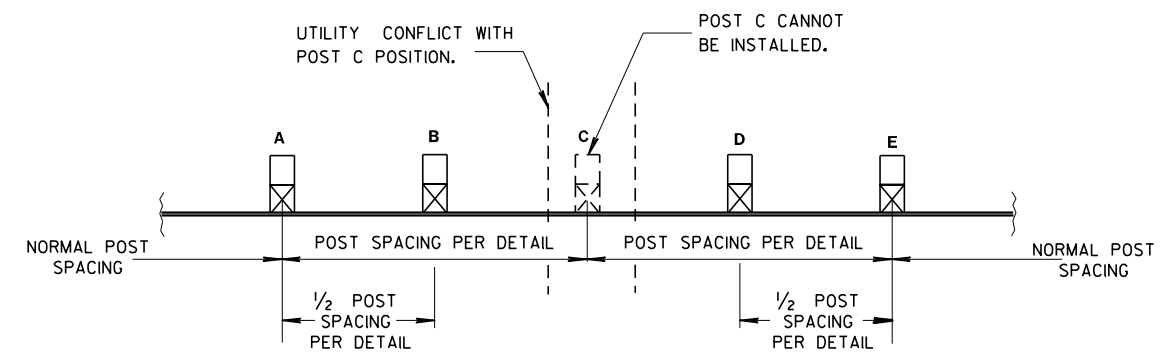
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW BEAM LAPPING DETAIL

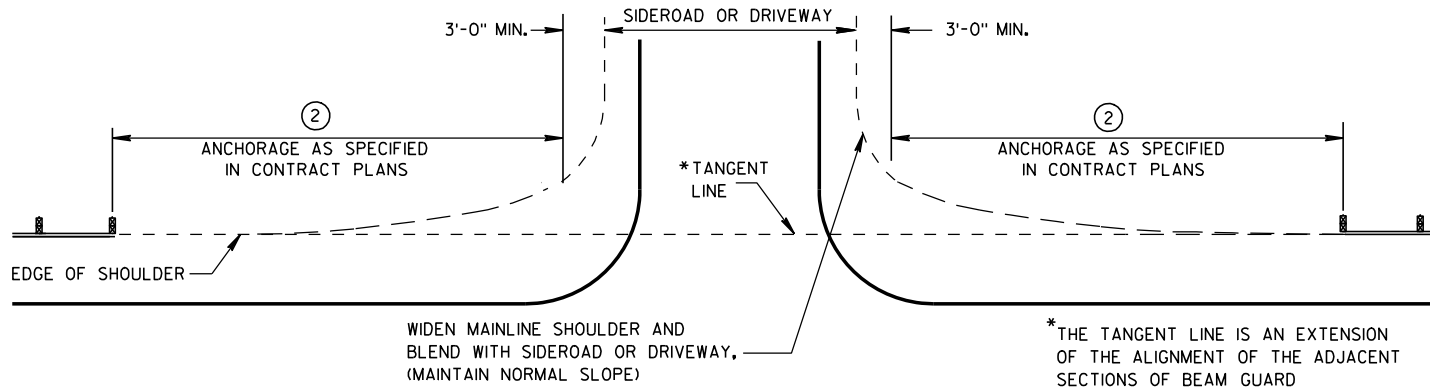


POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

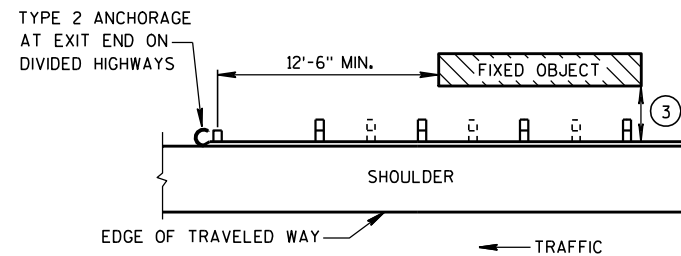
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

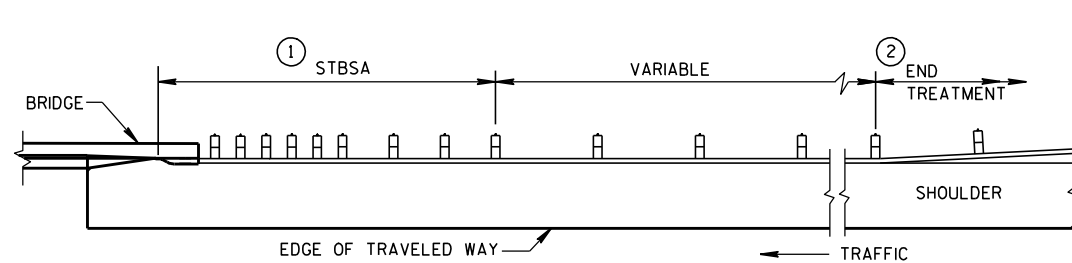
APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



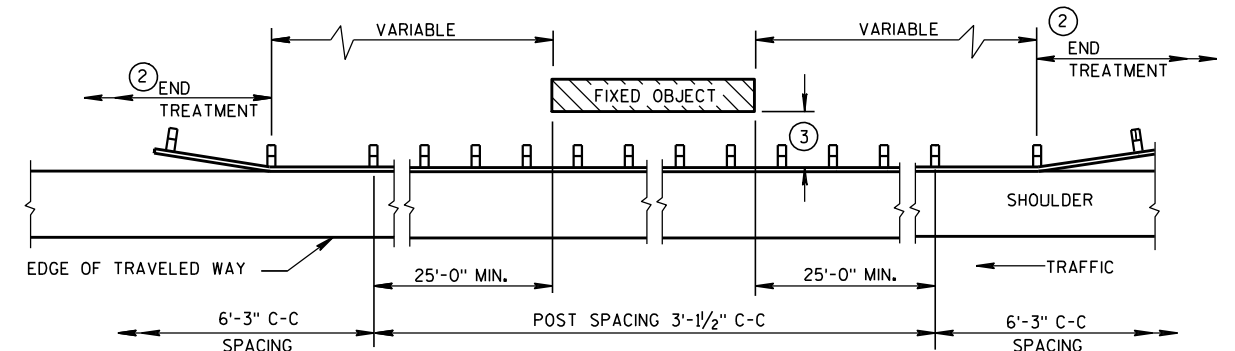
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC



BEAM GUARD AT FULL WIDTH BRIDGES

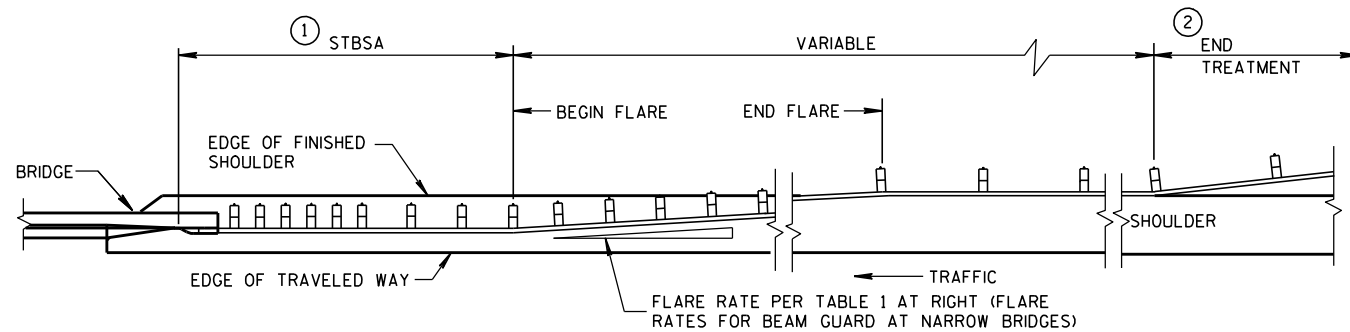


BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

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

TABLE 1
FLARE RATES FOR BEAM
GUARD AT NARROW BRIDGES

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



BEAM GUARD AT NARROW BRIDGES (FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

GENERAL NOTES

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

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

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

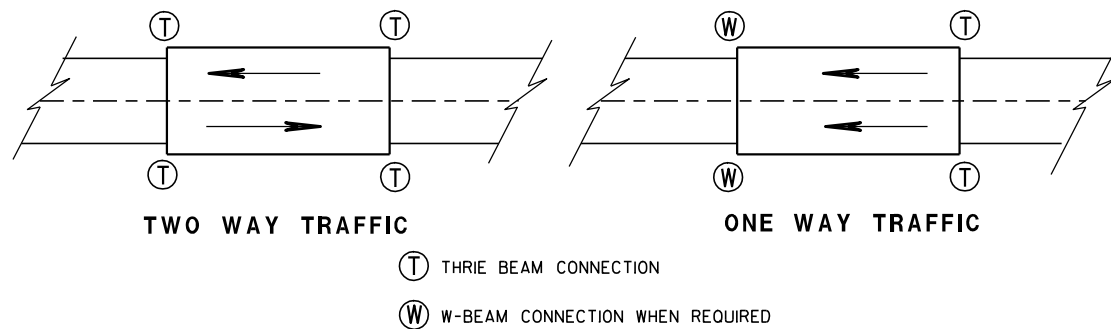
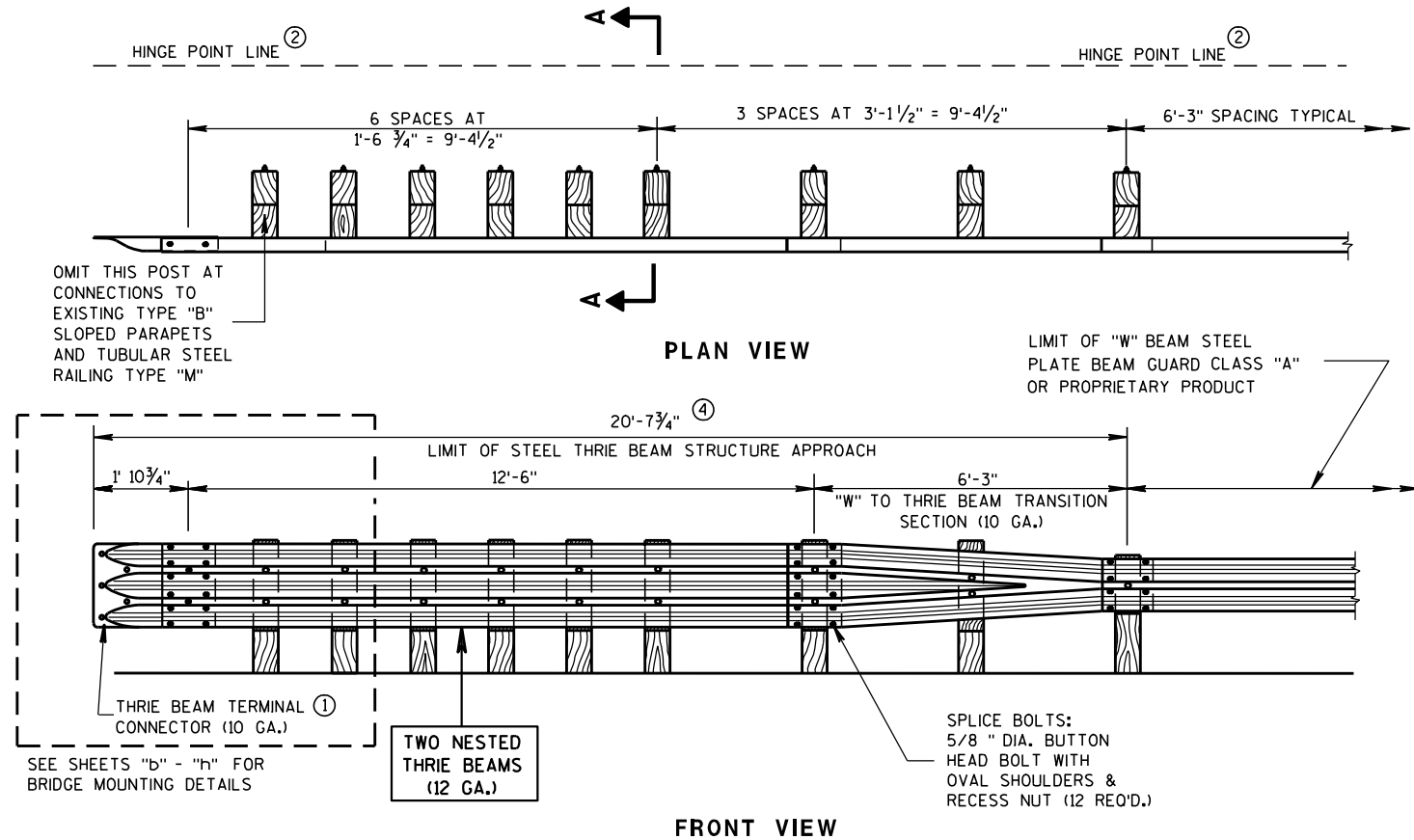
- STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1 1/2"
4'-6"	6' - 3"

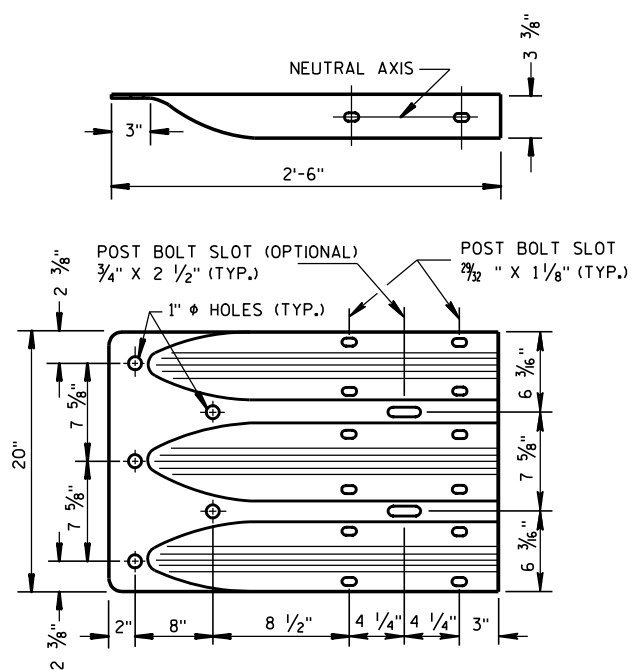
STEEL PLATE BEAM GUARD
CLASS "A"
AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

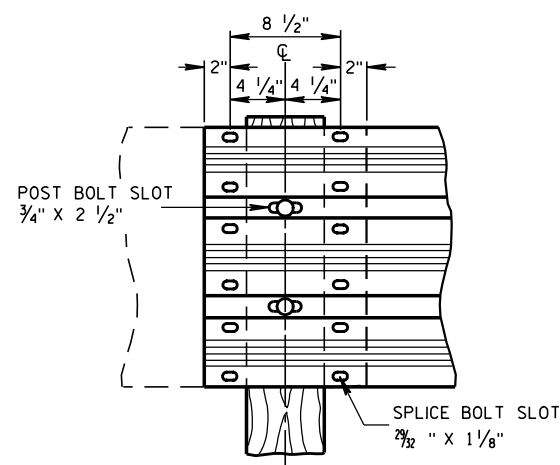
APPROVED
8-21-07
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



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



THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

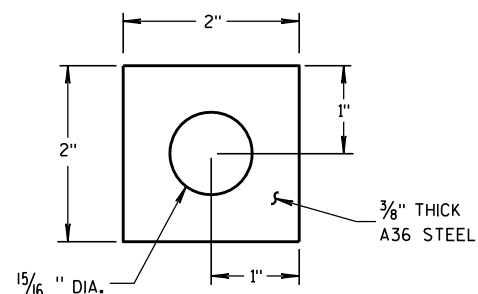
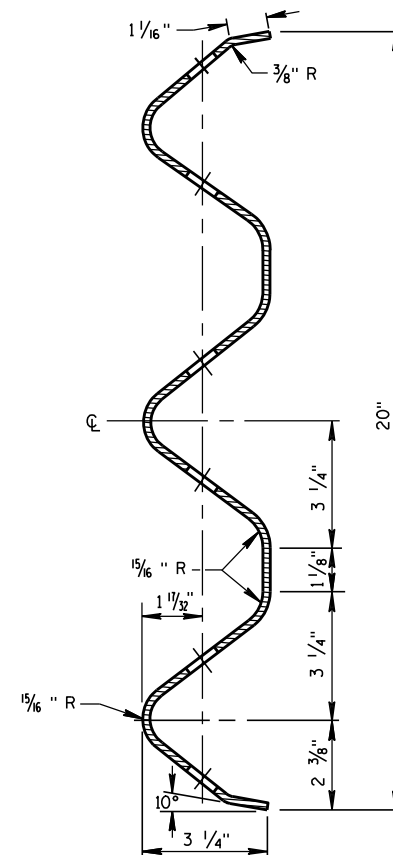


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

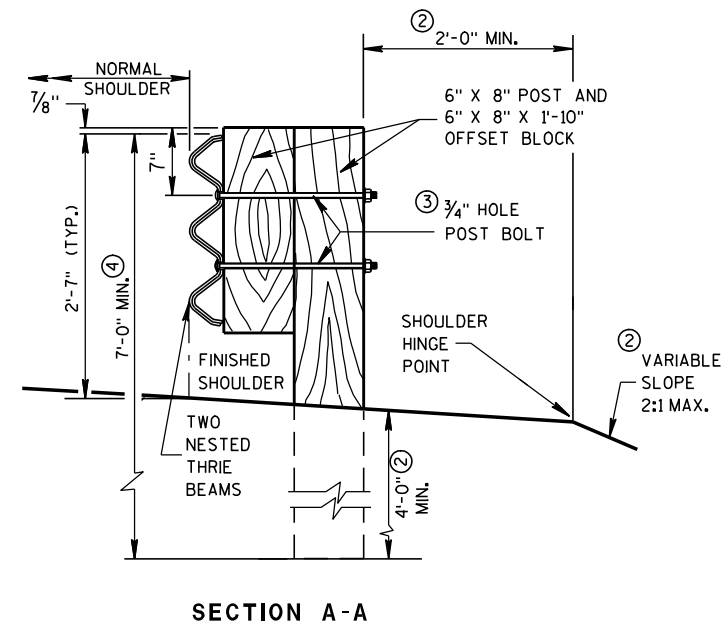
GENERAL NOTES

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

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

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

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.
- ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
- ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



STEEL THRIE BEAM STRUCTURE APPROACH

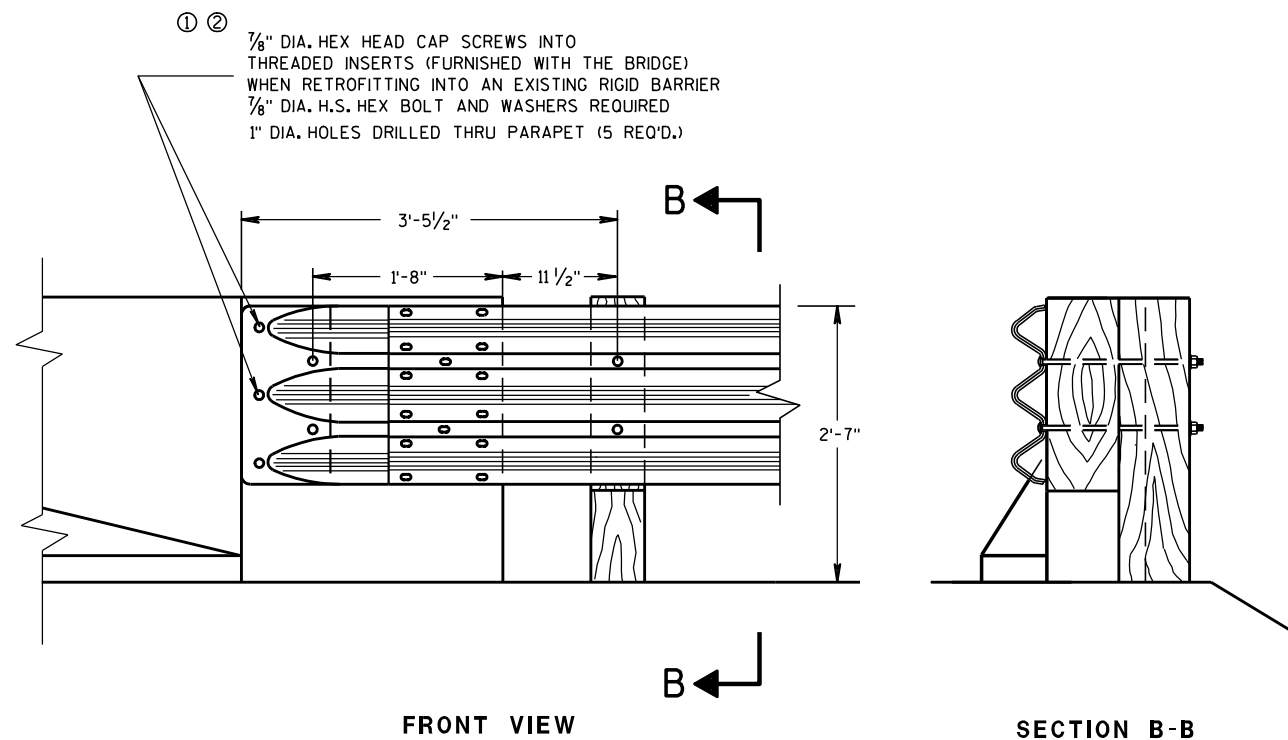
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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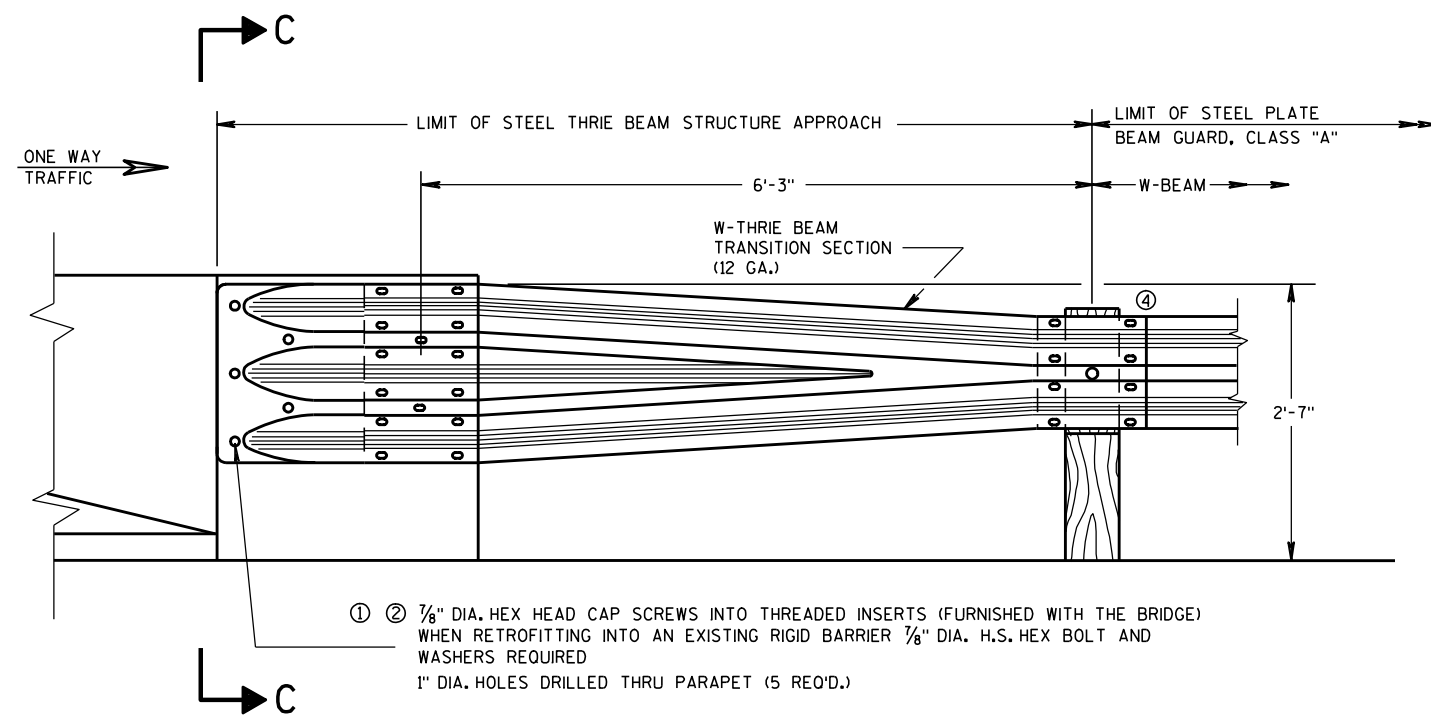
8/31/2012
DATE

FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS



W BEAM TRANSITION AND CONNECTION TO
BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

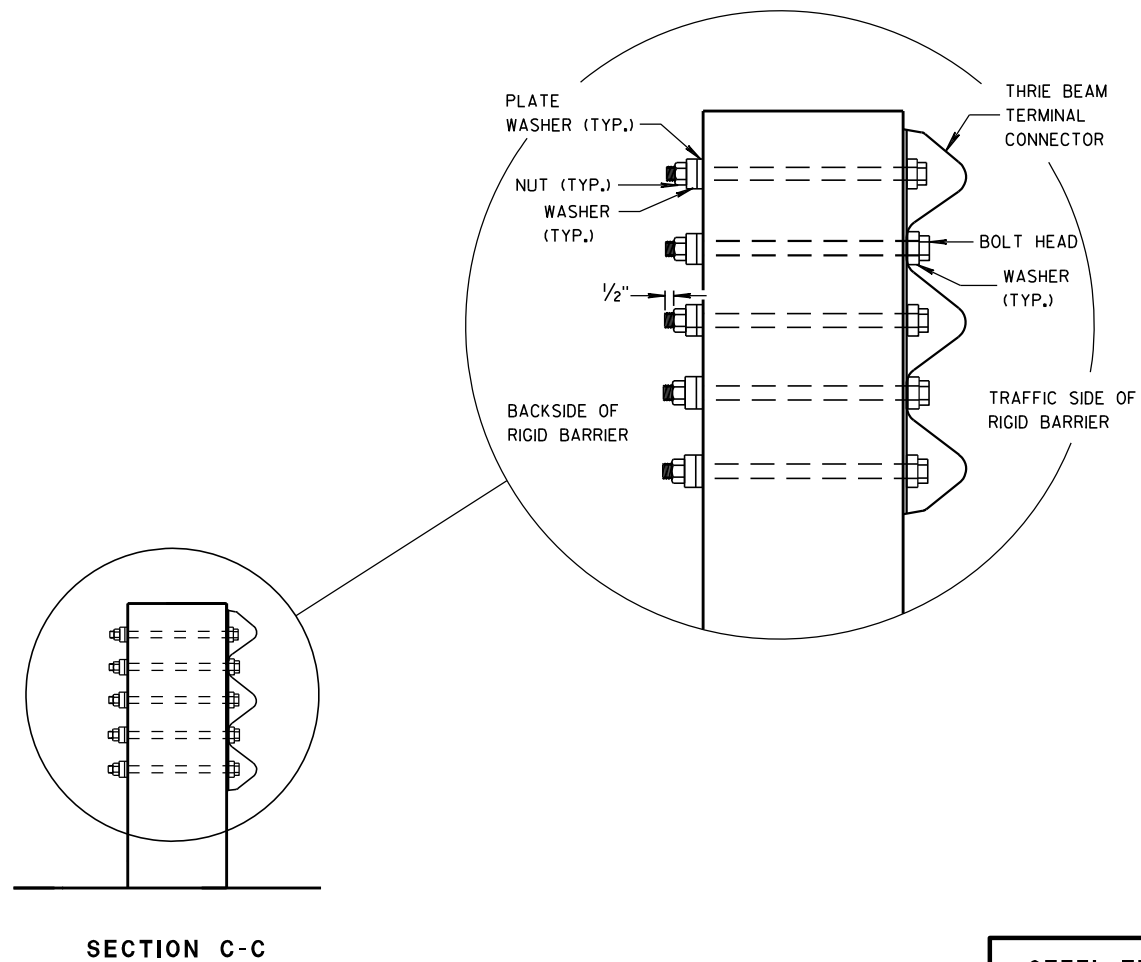
GENERAL NOTES

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

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

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

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



STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

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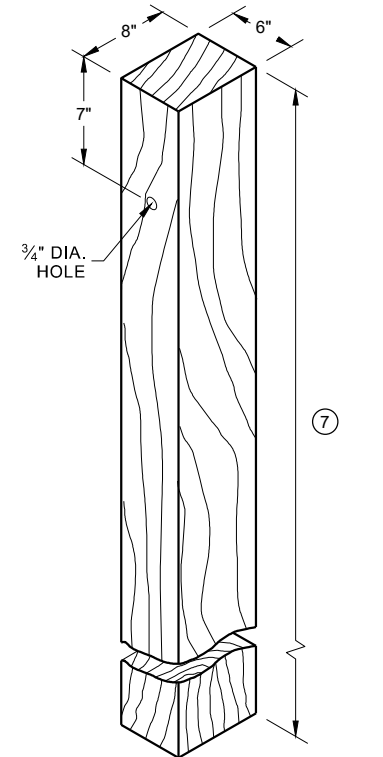
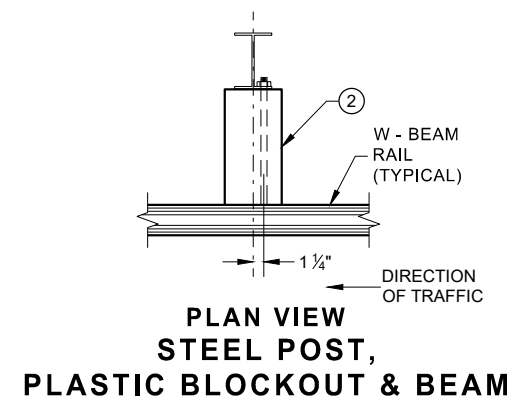
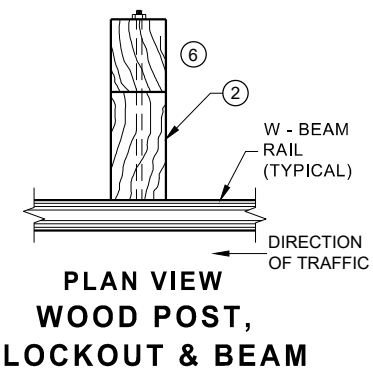
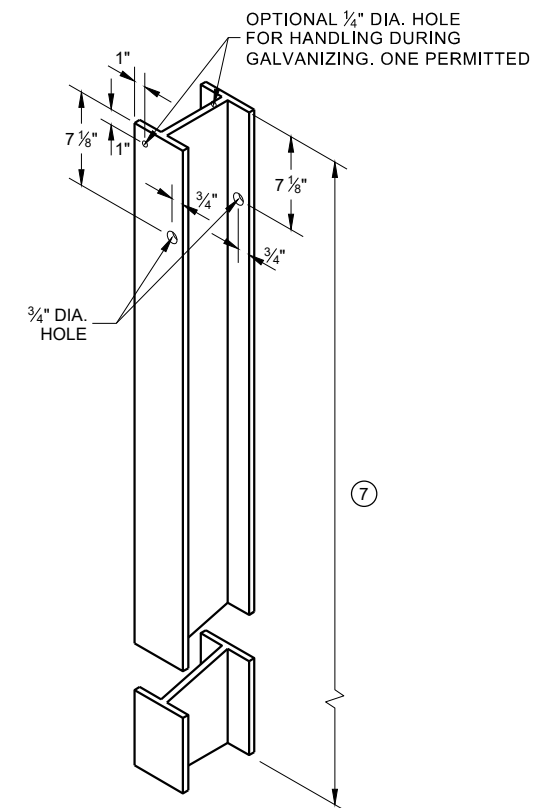
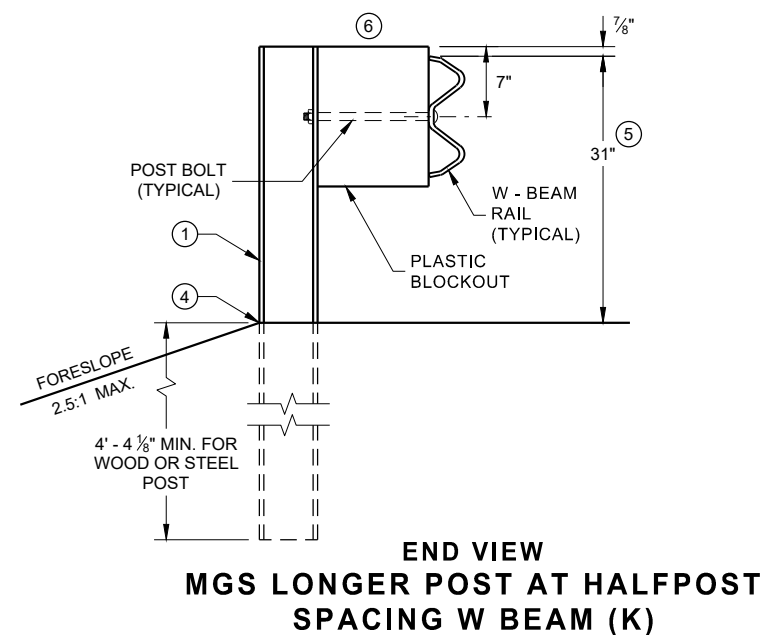
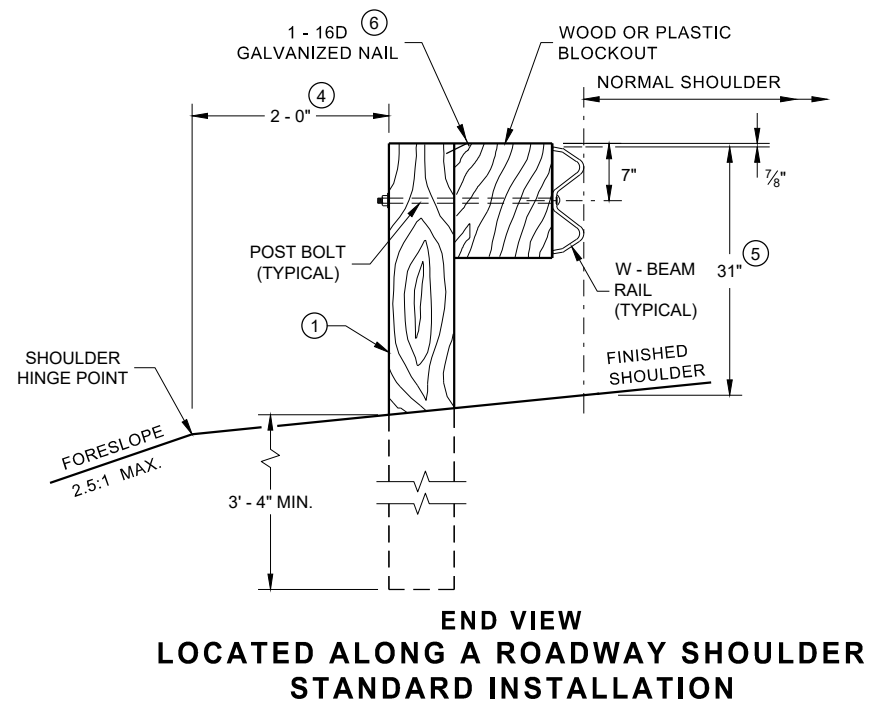
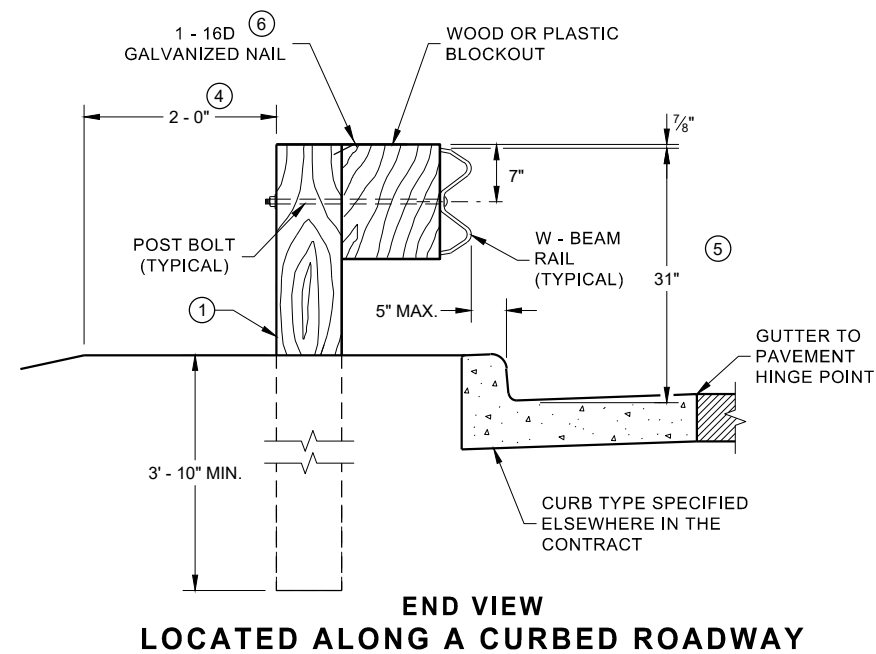
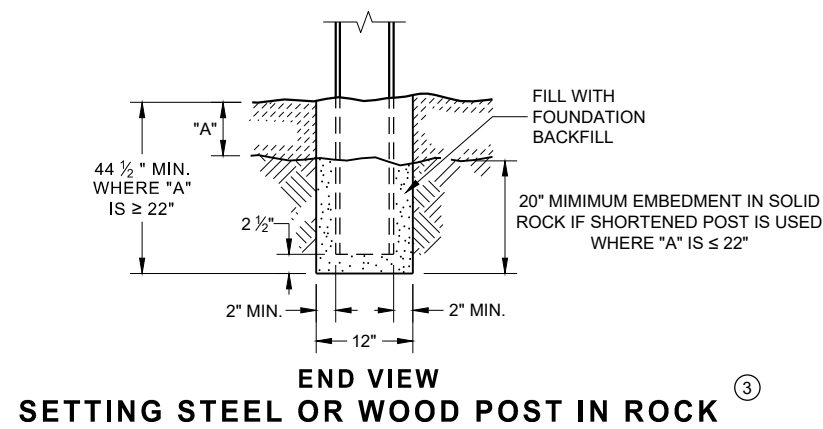
APPROVED

8/31/2012
DATE

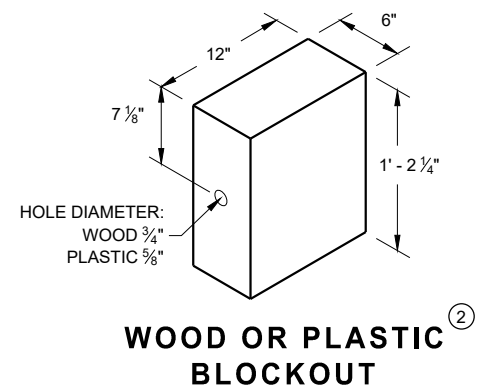
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



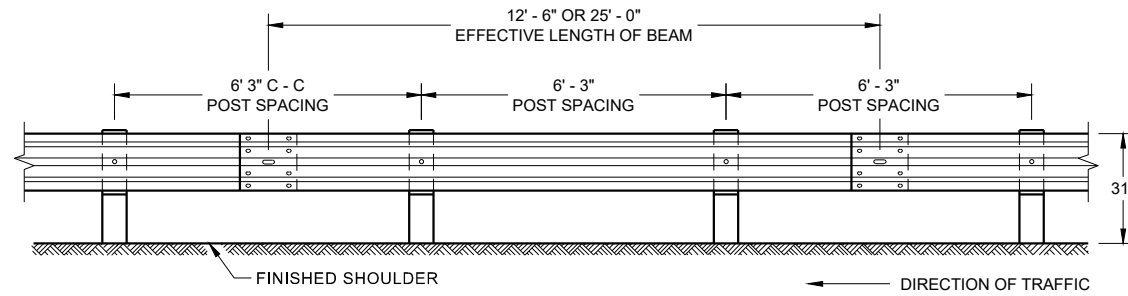
WOOD POST (6" X 8") NOMINAL ^①



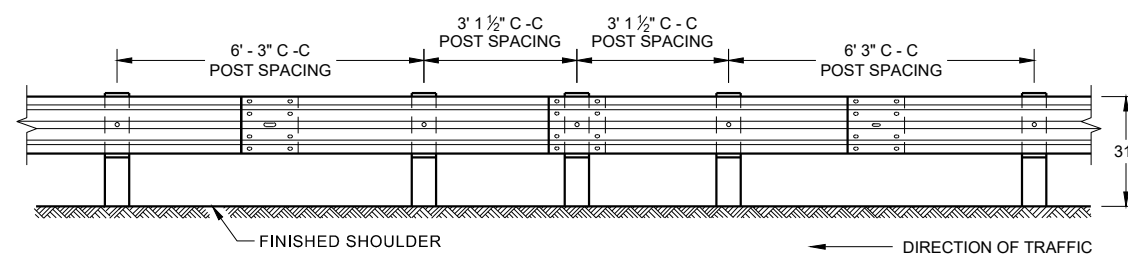
**WOOD OR PLASTIC
BLOCKOUT**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

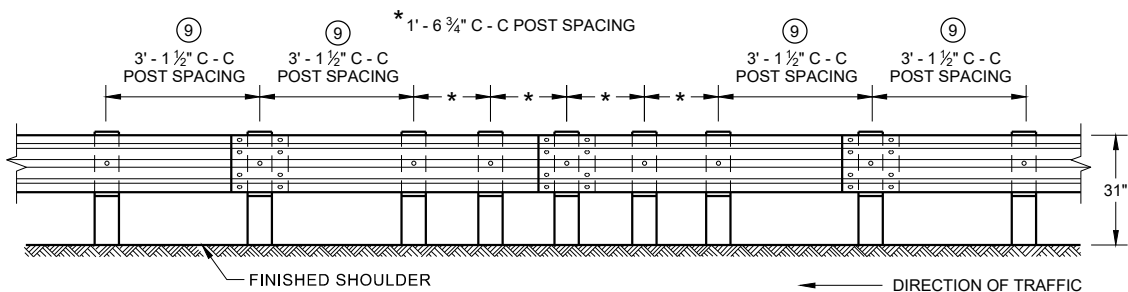
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



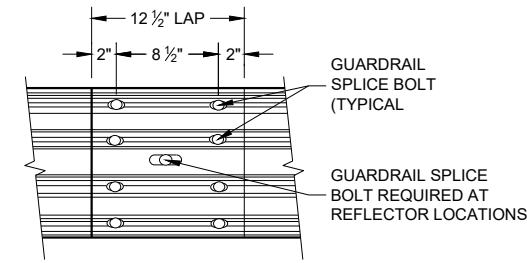
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



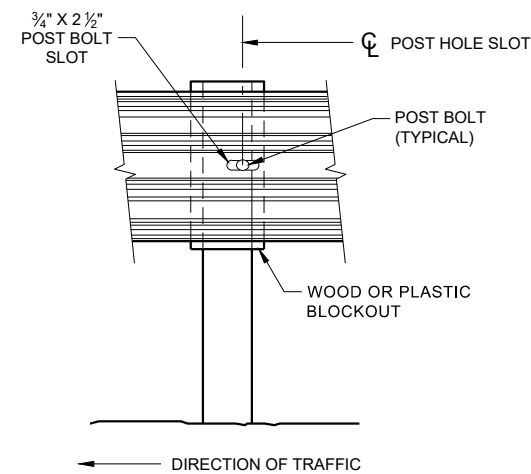
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



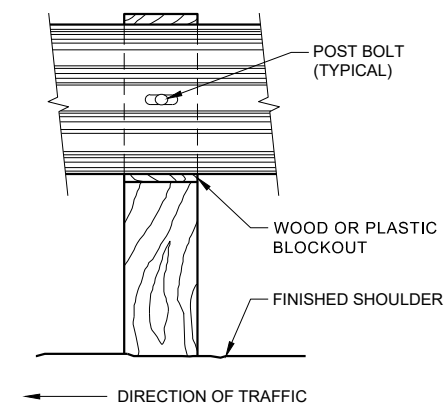
**FRONT VIEW
QUARTER POST SPACING (QS)**



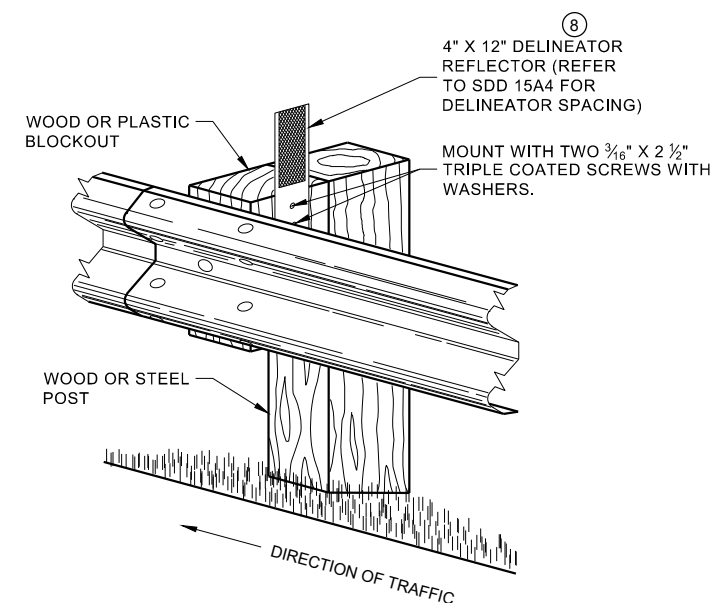
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



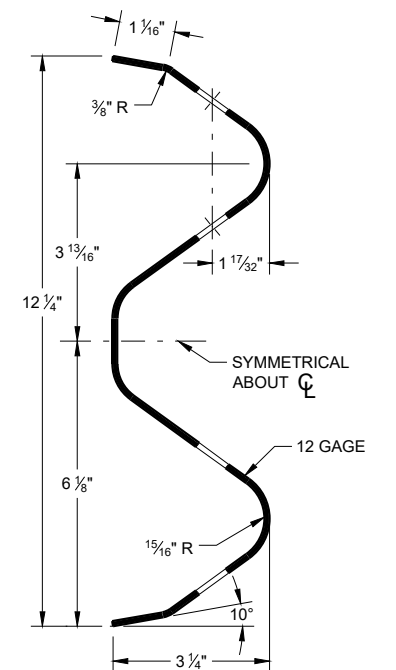
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

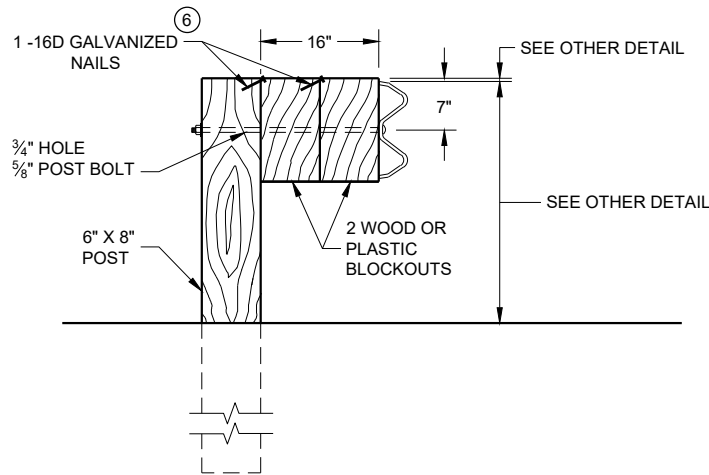
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

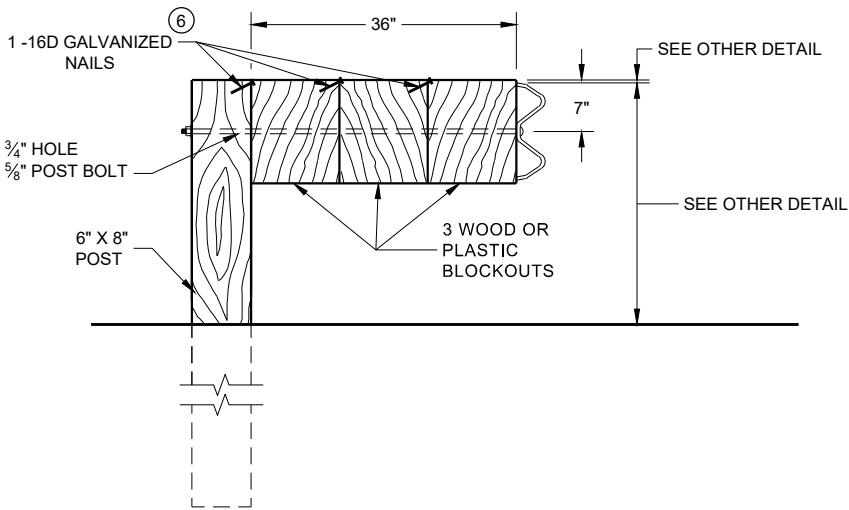
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
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DETAIL FOR 16" BLOCKOUT DEPTH

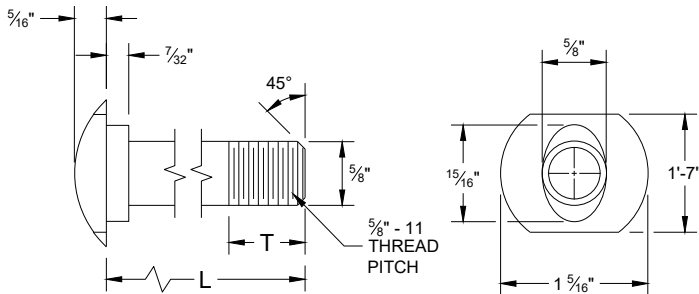
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

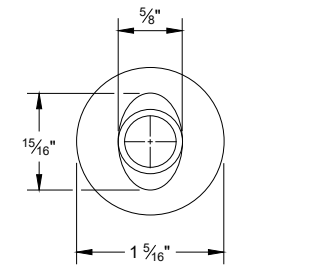
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

- NOTE:
- 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
 - 2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

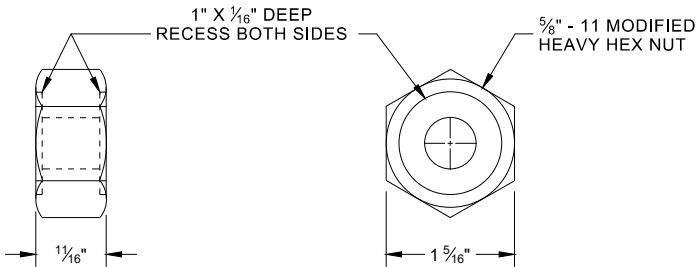


POST BOLT TABLE

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

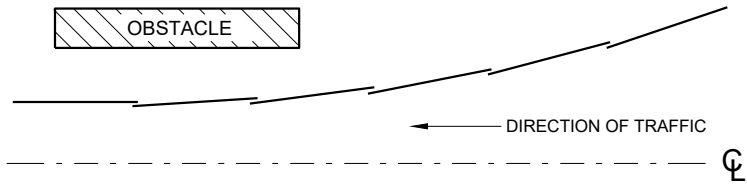


ALTERNATE BOLT HEAD

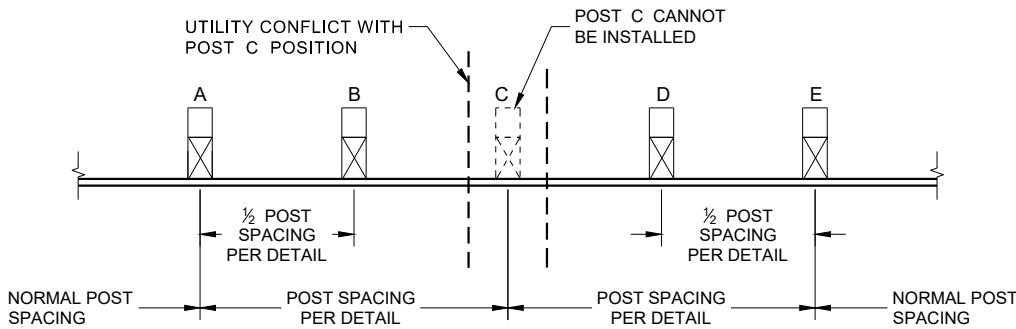


POST BOLT, SPLICE BOLT
AND RECESS NUT

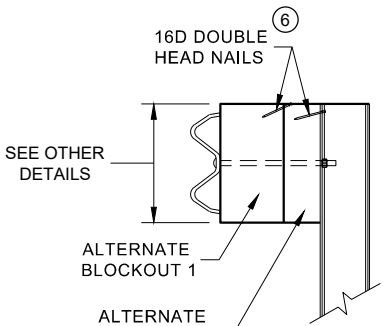
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



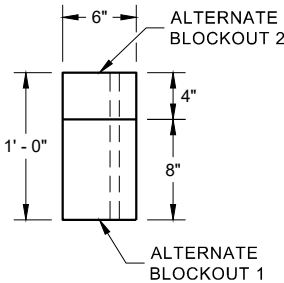
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

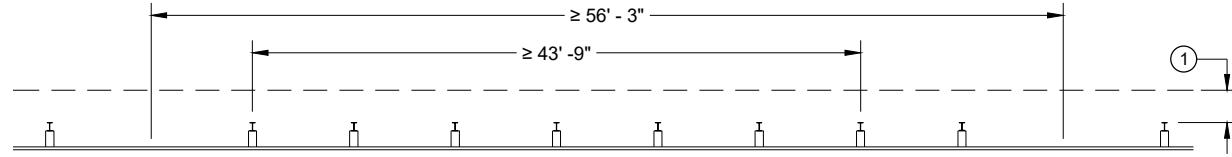


PLAN VIEW

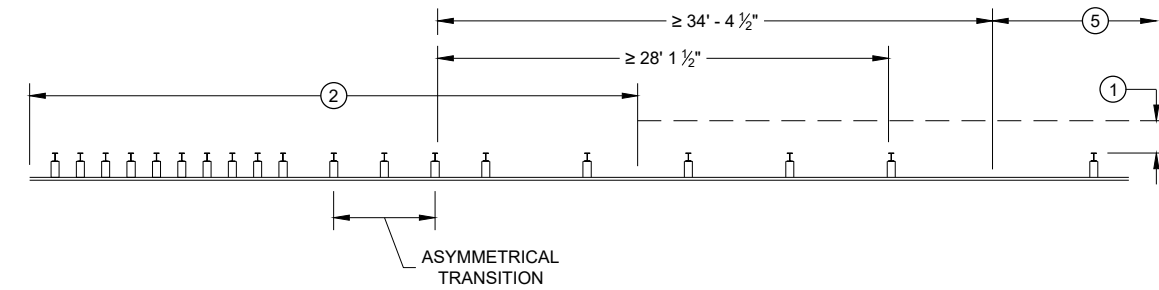
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

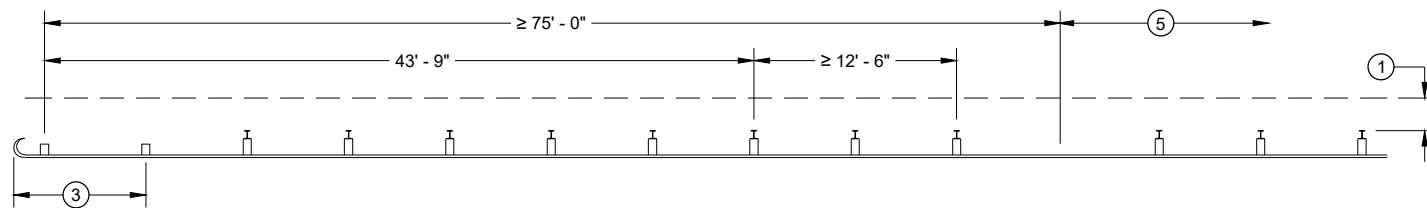
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



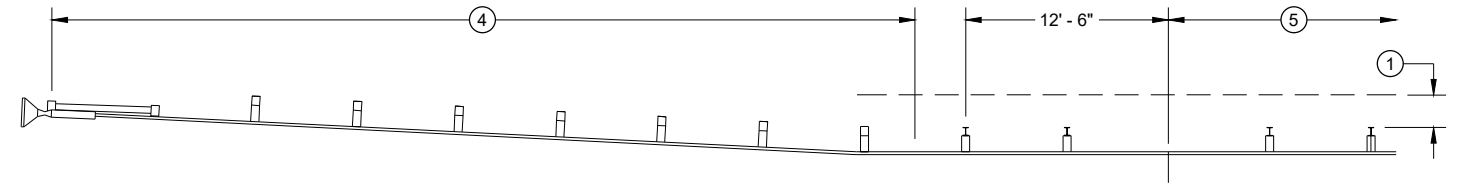
MISSING POST IN NORMAL BEAM GUARD RUN



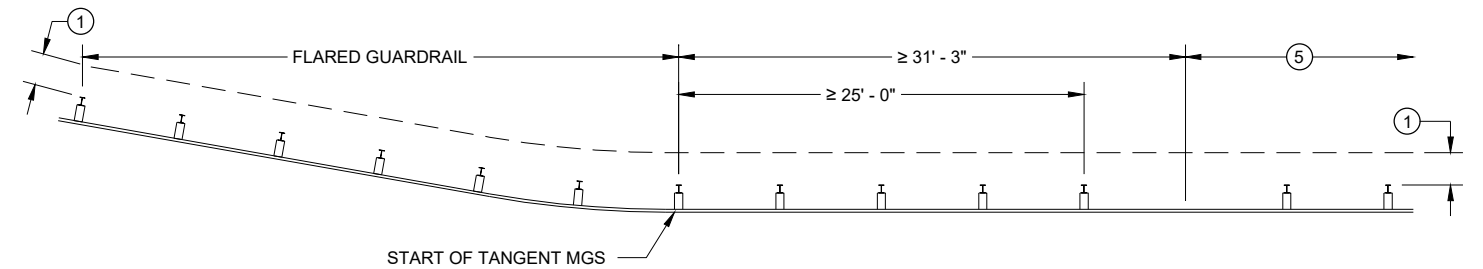
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



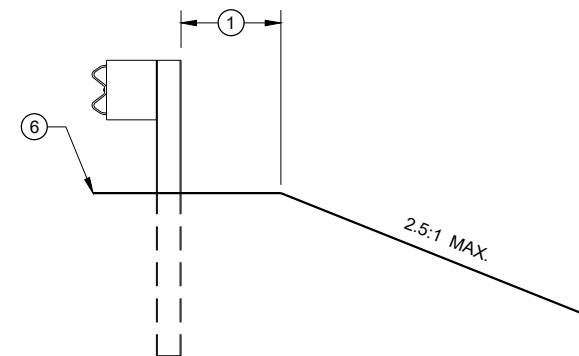
MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



CROSS SECTION VIEW

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

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

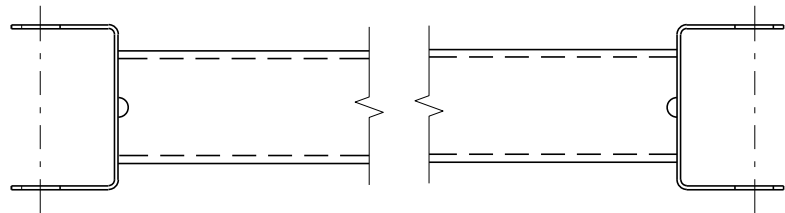
- A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
- D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
- E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

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

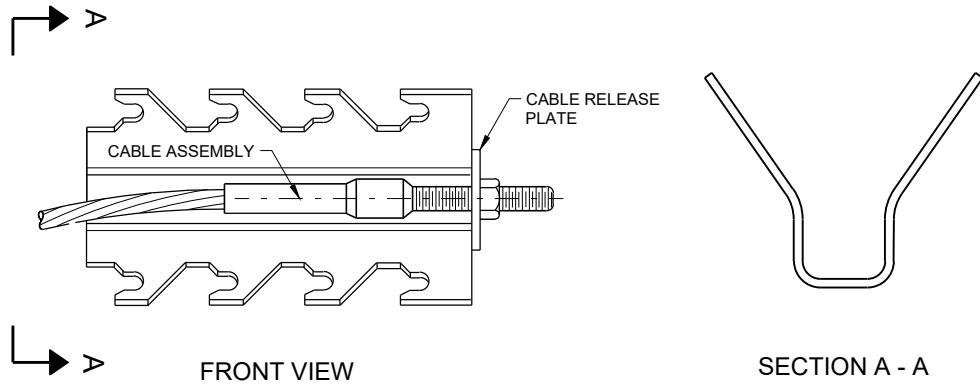


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

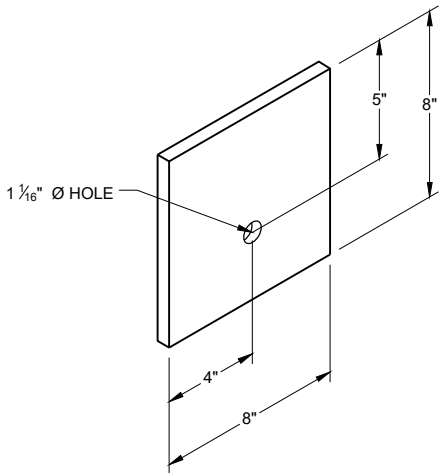


GENERIC GROUND STRUT^⑨ [Ⓔ]

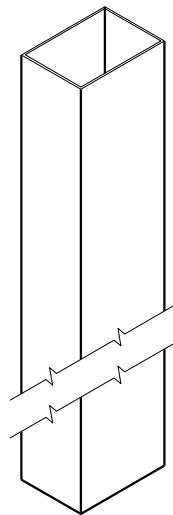
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



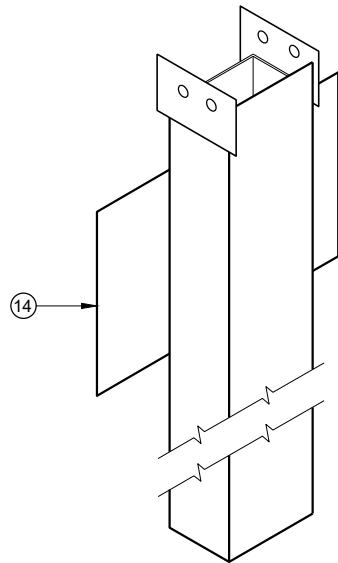
GENERIC ANCHOR CABLE BOX^⑨ [Ⓔ]



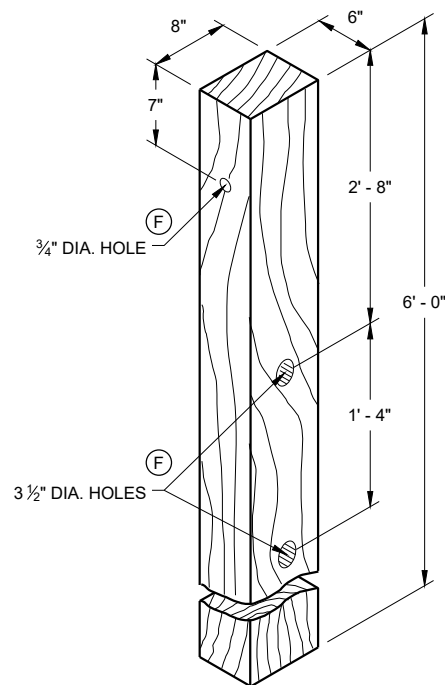
BEARING PLATE^⑥ [Ⓔ]



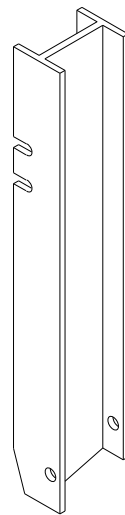
UPPER POST NO. 1 ⁽¹⁾ (E)



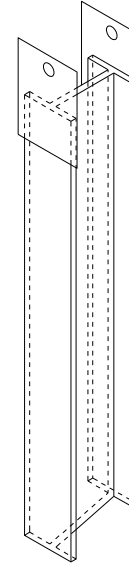
LOWER POST NO. 1 ⁽²⁾ (E)



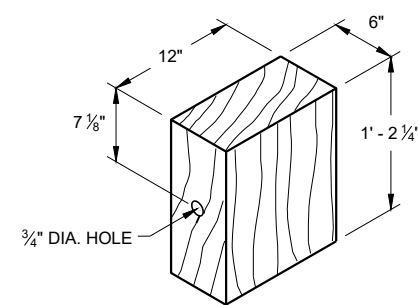
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



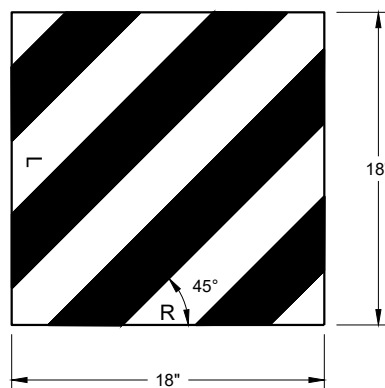
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



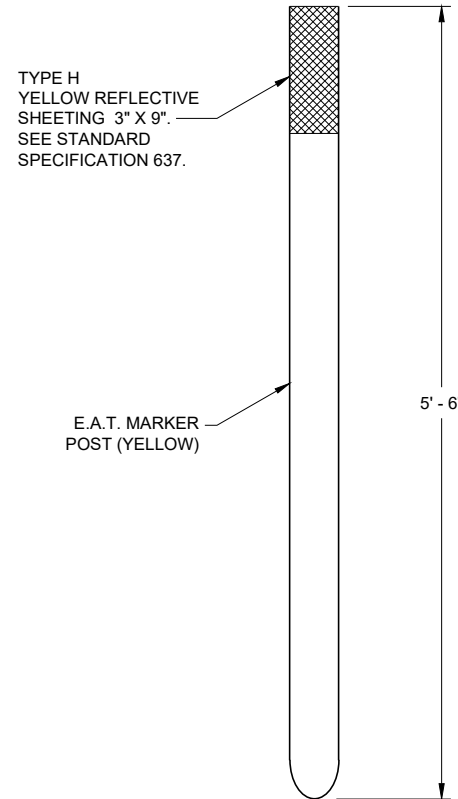
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



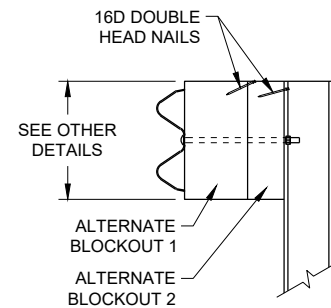
REFLECTIVE SHEETING DETAIL ^(E)
W5 - 59



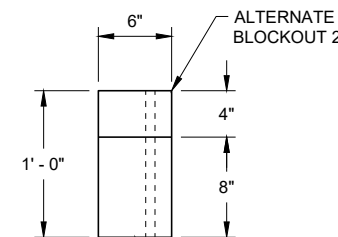
FRONT VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



SIDE VIEW



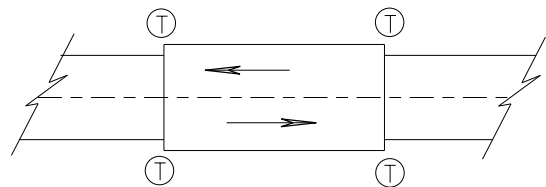
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

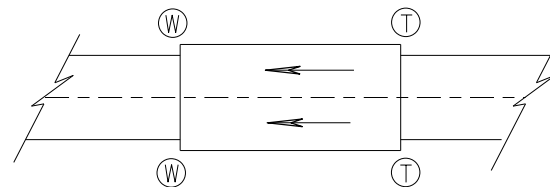
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

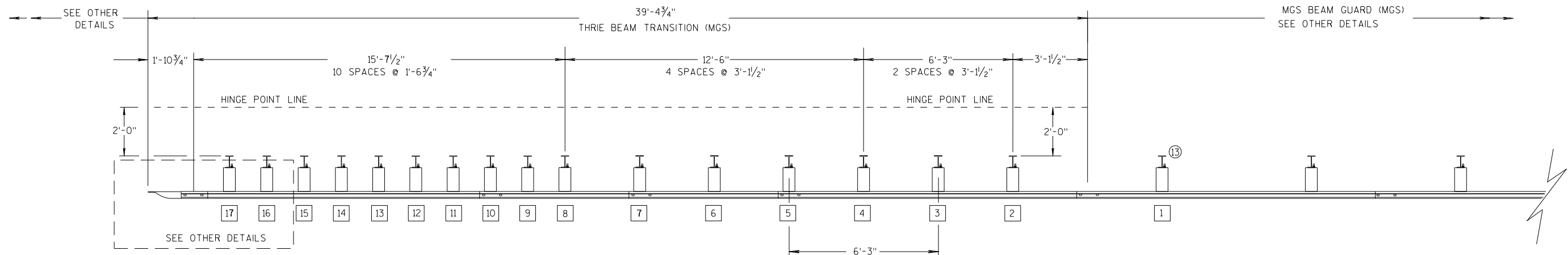
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

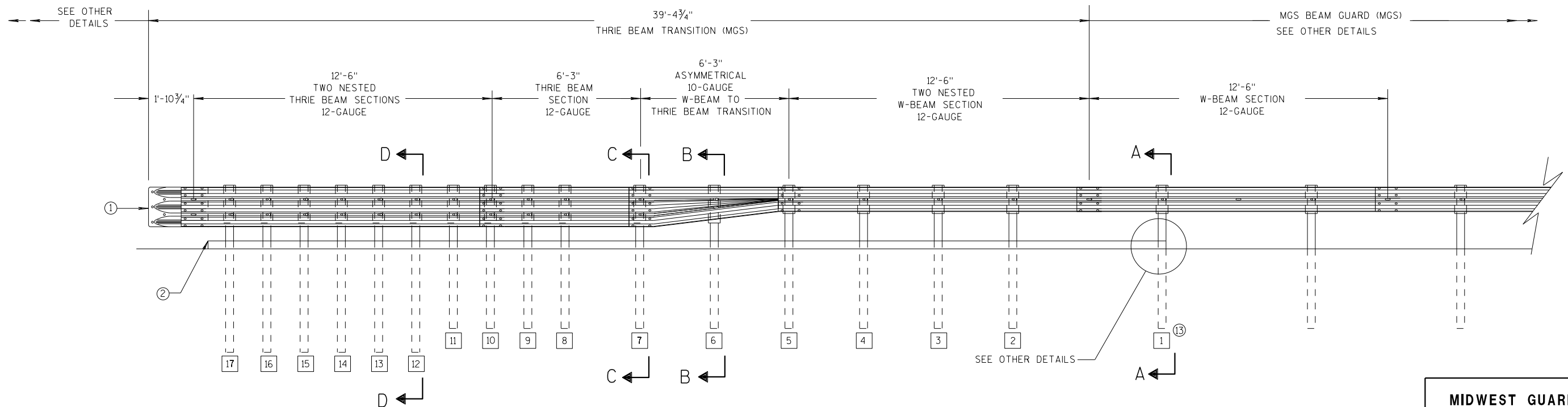
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

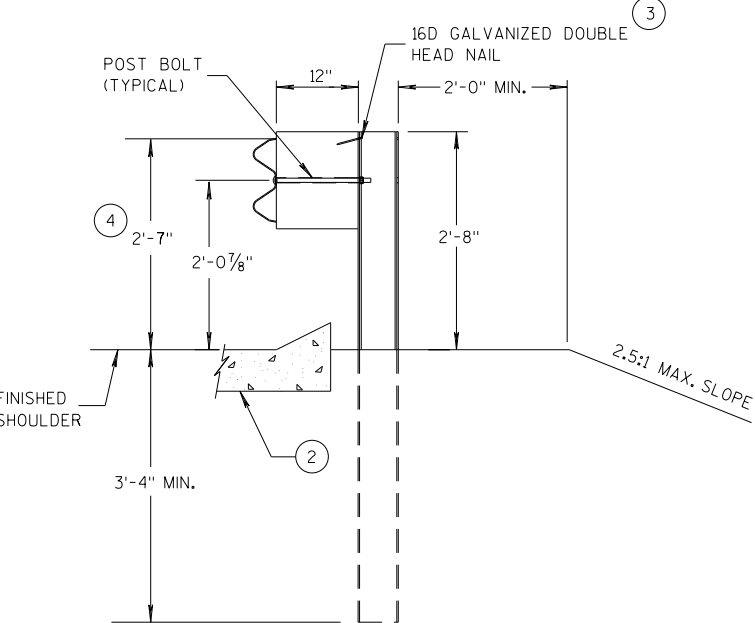
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

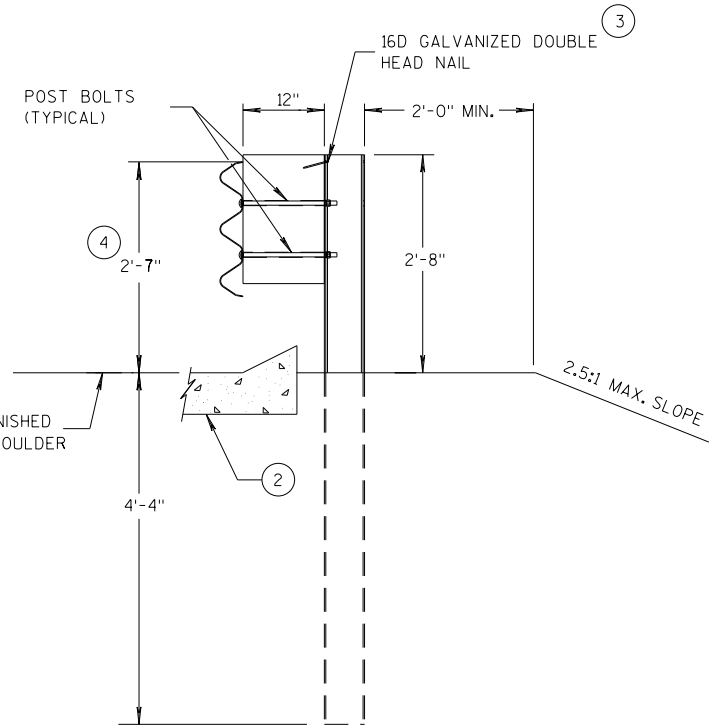
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

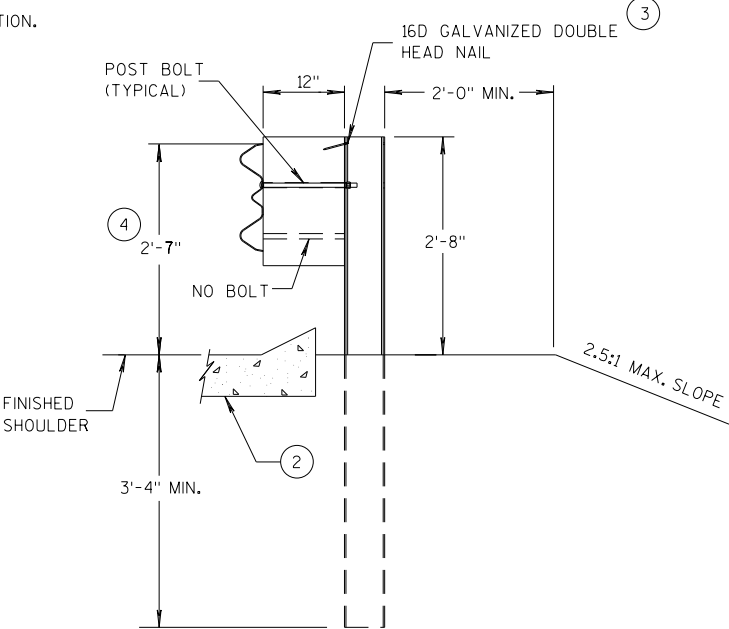
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.
- 13 STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



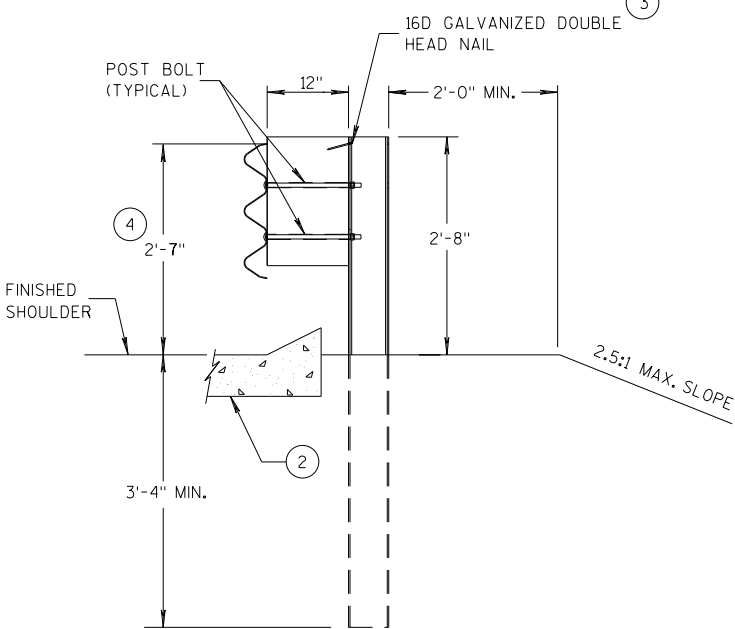
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

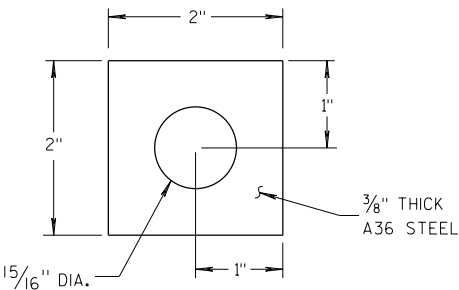
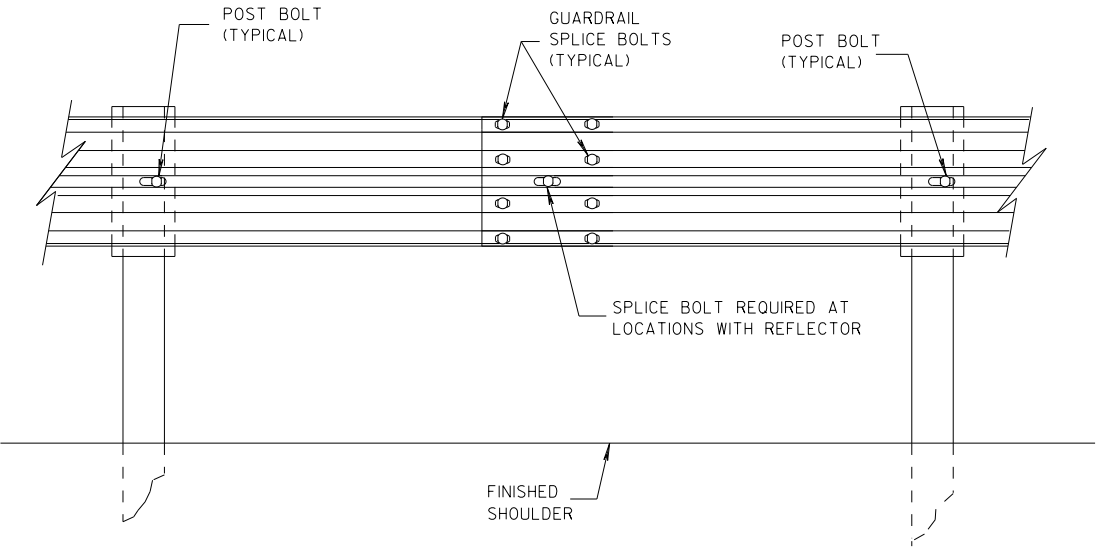
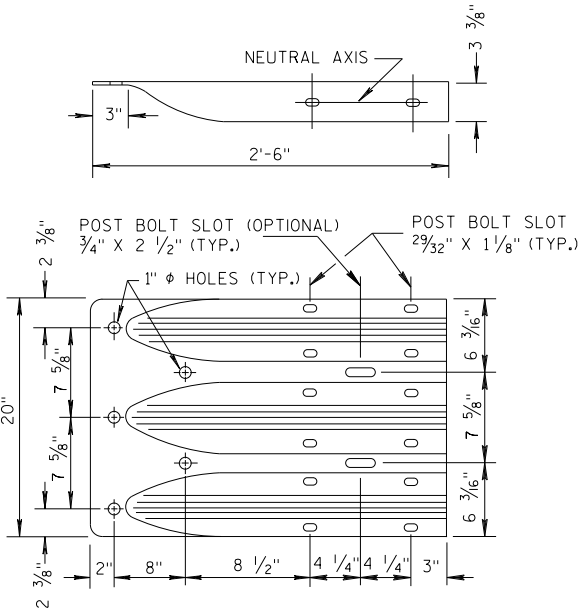


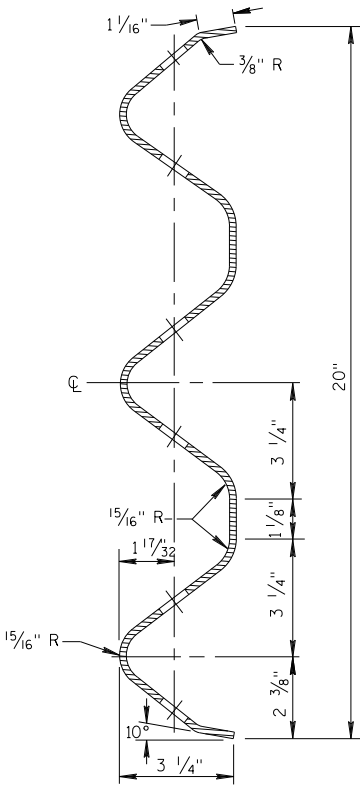
PLATE WASHER DETAIL



SPLICE DETAIL



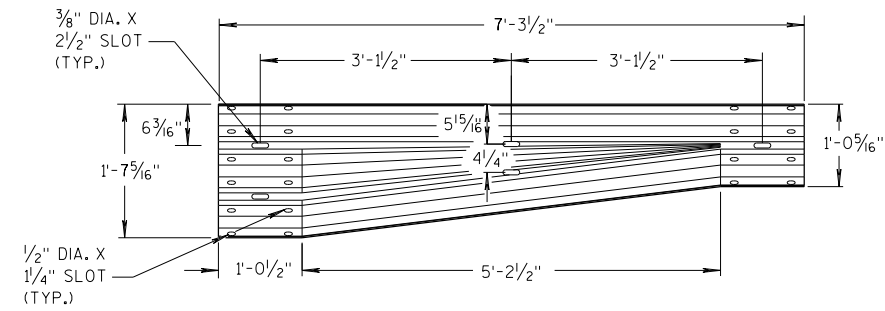
THRIE BEAM
TERMINAL CONNECTOR



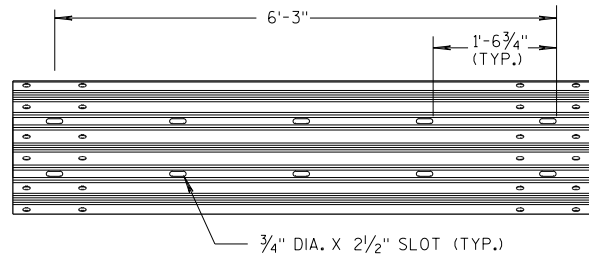
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

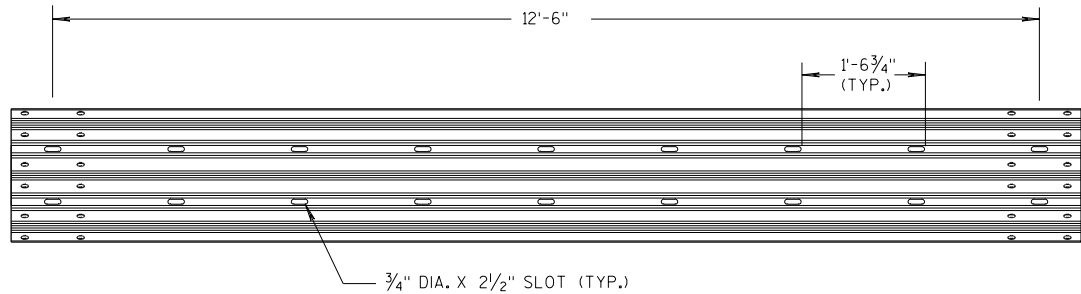
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



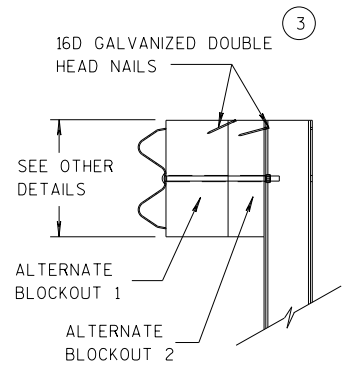
W-BEAM TO THRIE BEAM TRANSITION SECTION



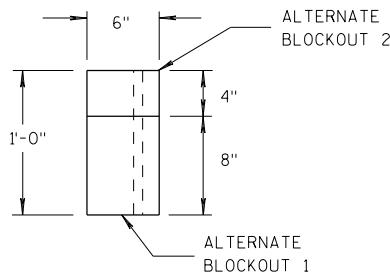
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

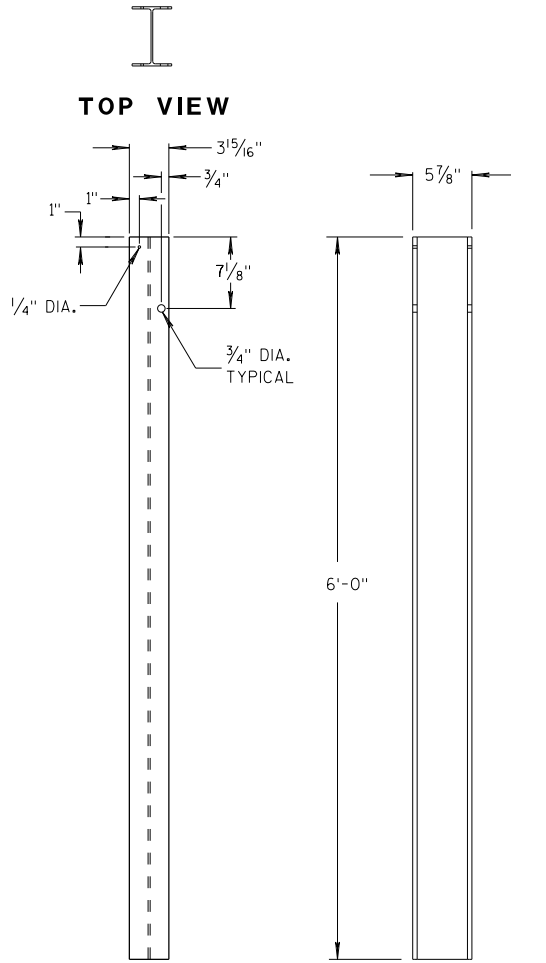


SIDE VIEW



TOP VIEW

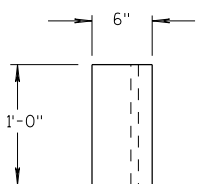
ALTERNATE WOOD BLOCKOUT DETAIL



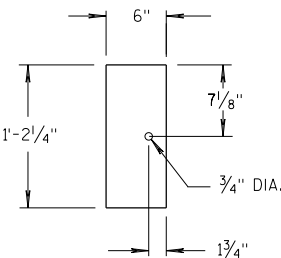
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

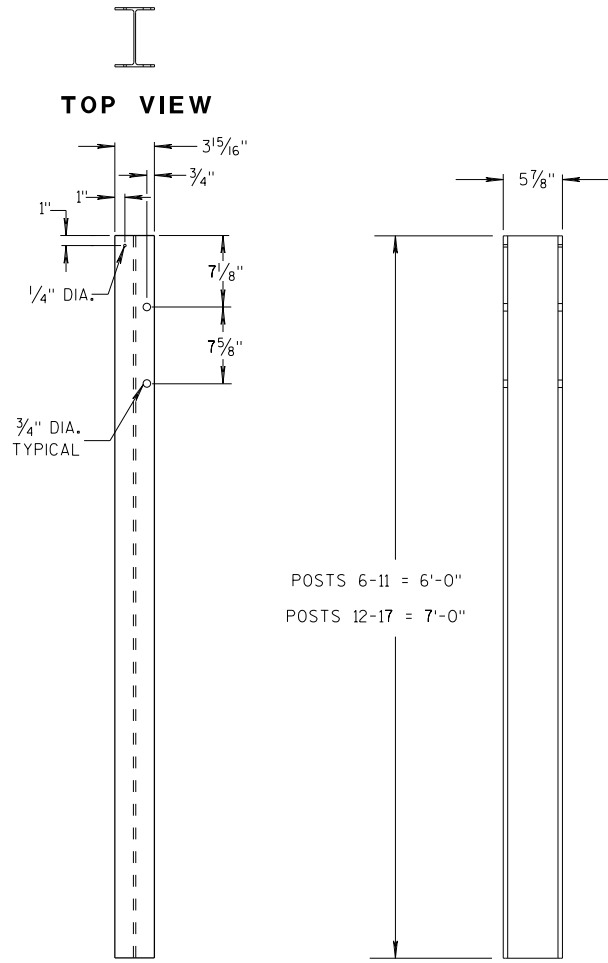


TOP VIEW



FRONT VIEW

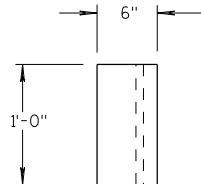
BLOCKOUT POSTS 1-5



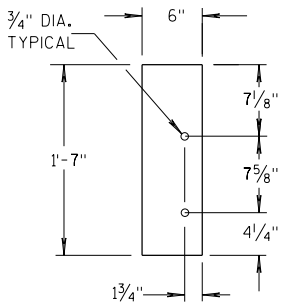
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



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.

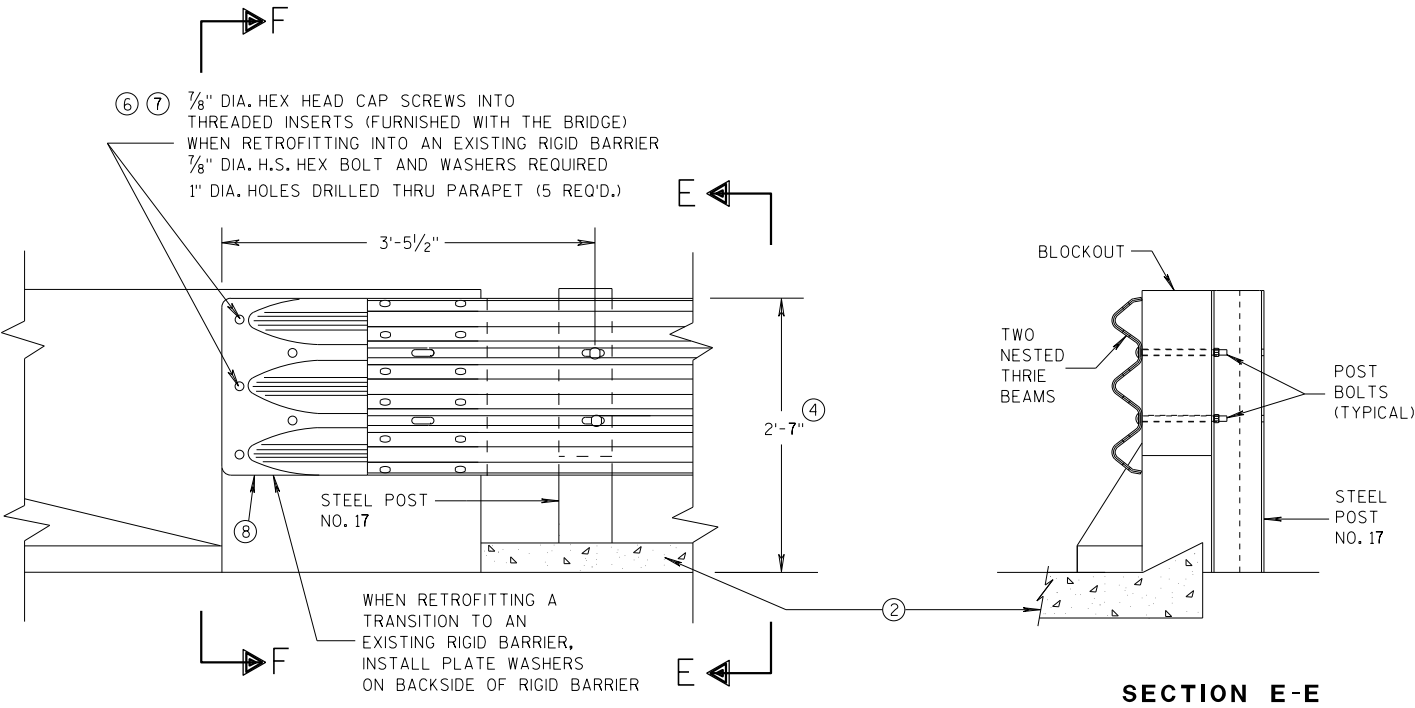
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

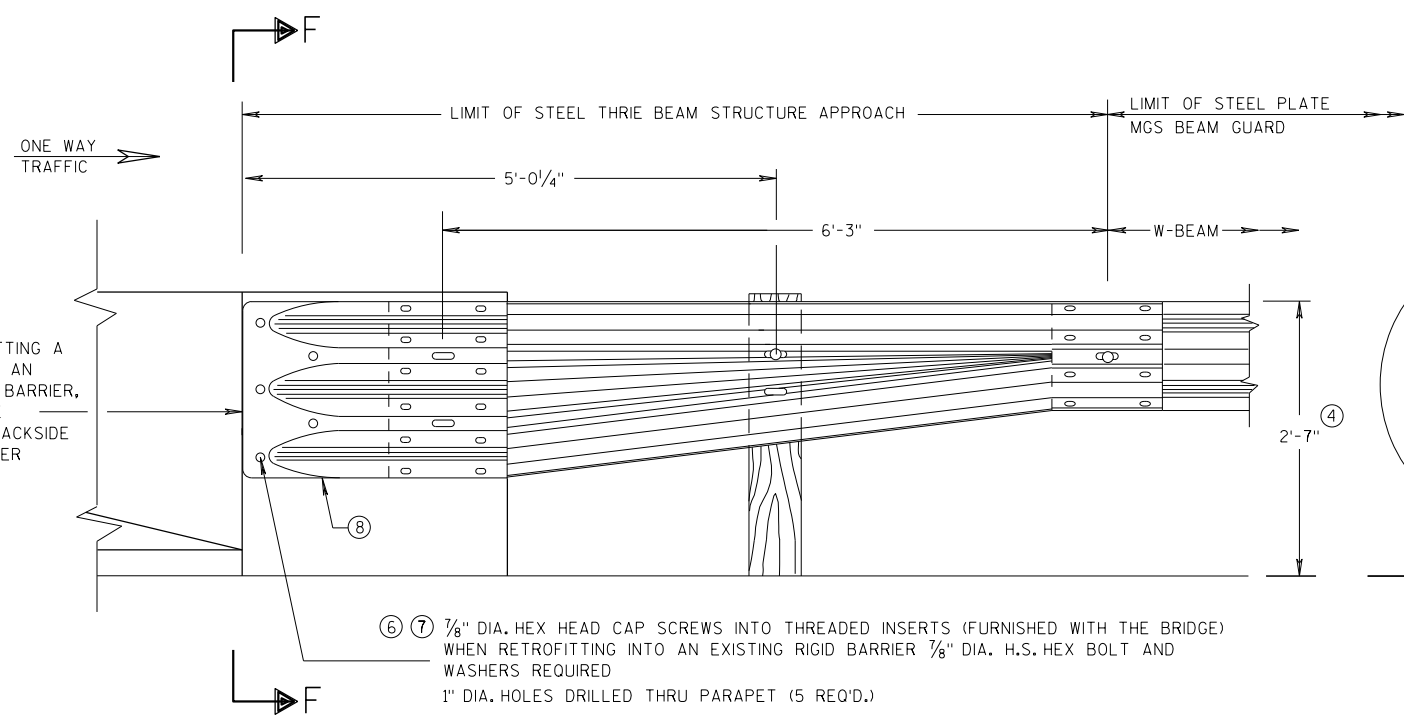
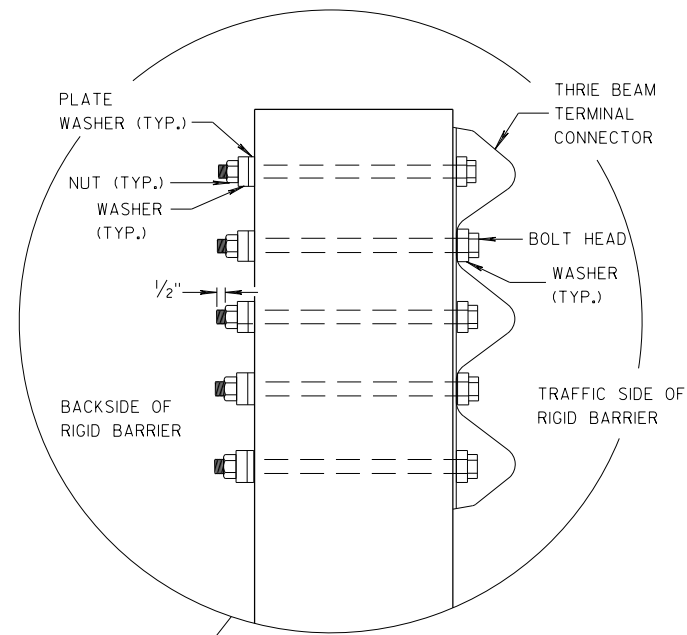
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

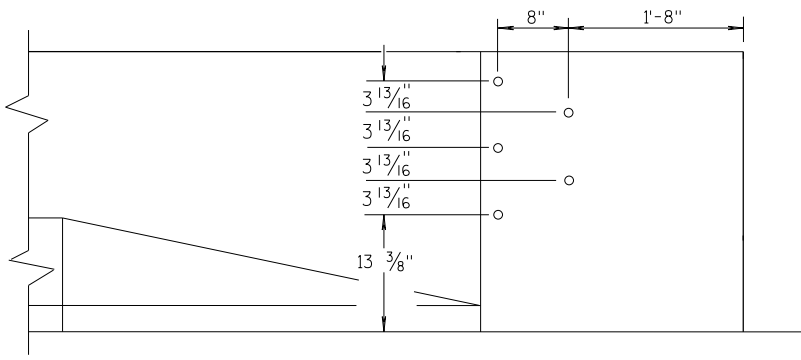


GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

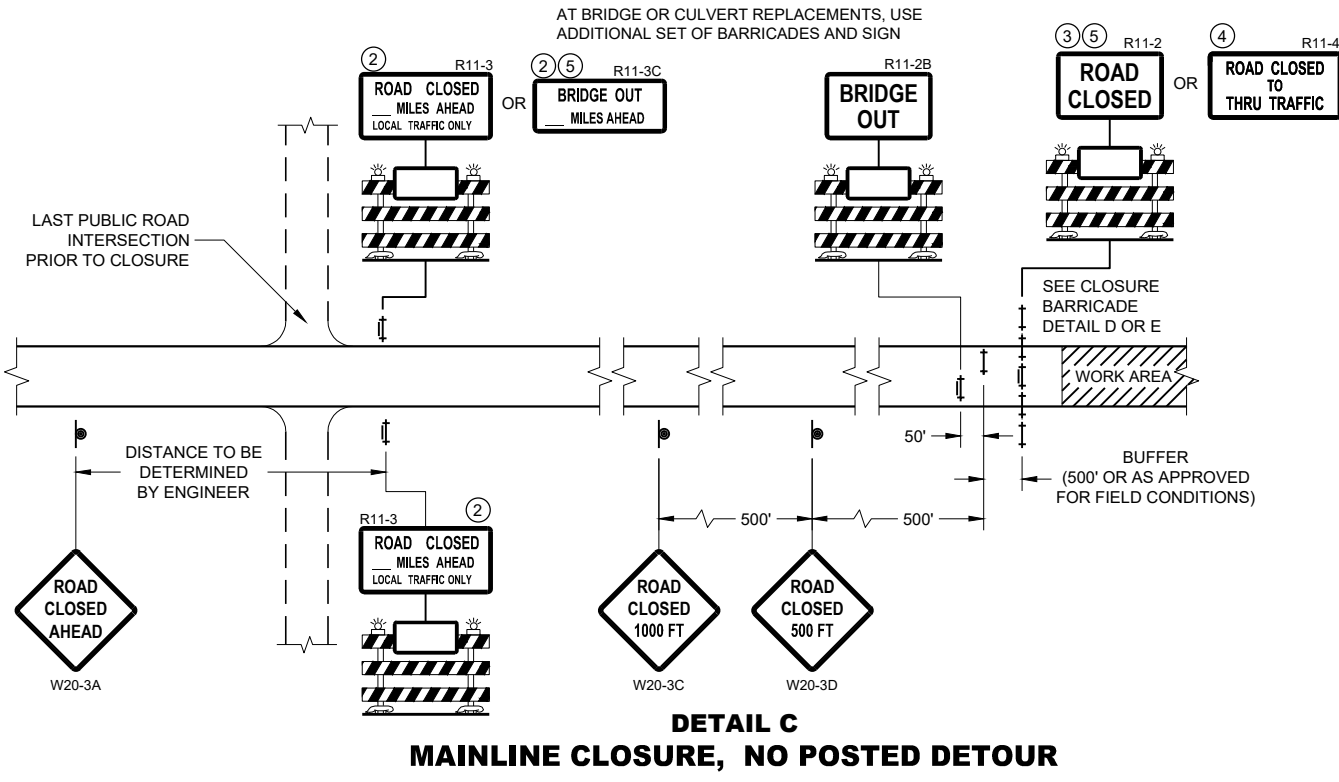
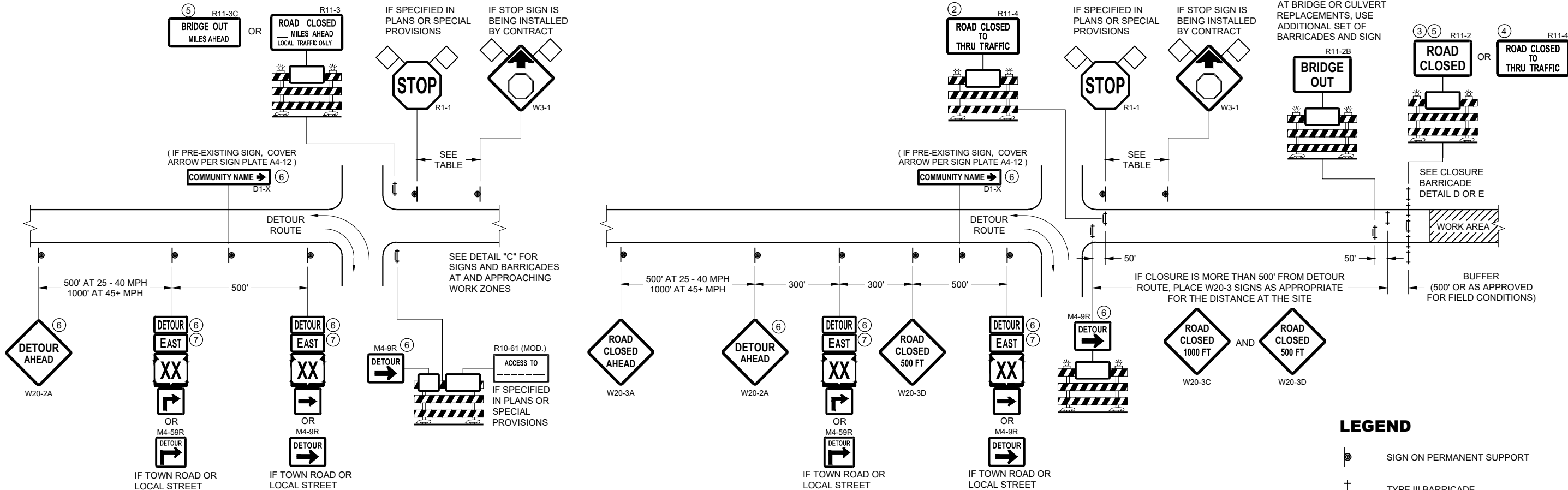


SECTION F-F



DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



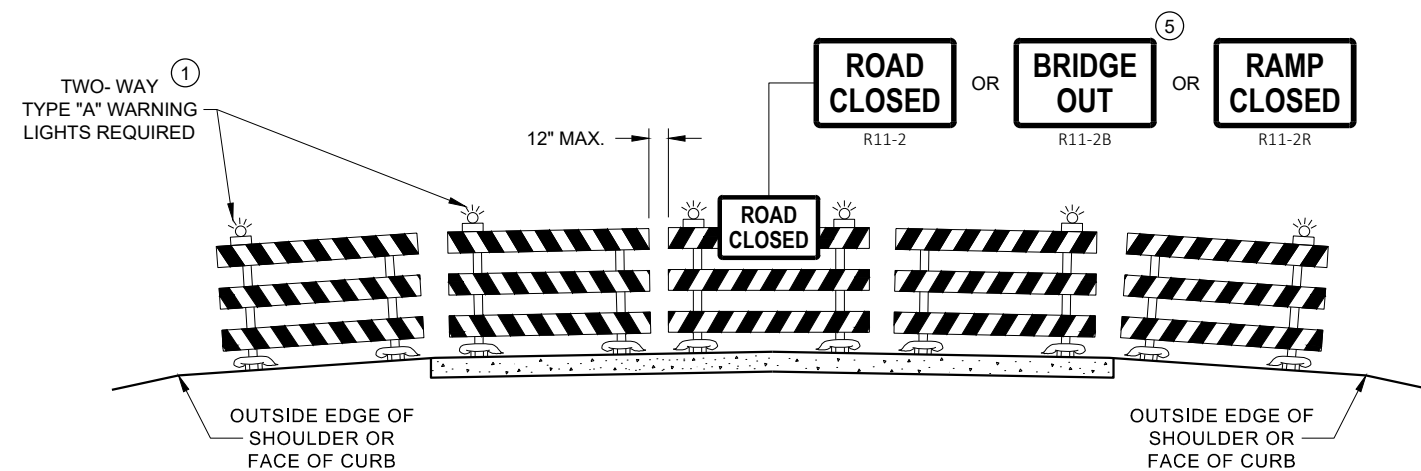
SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

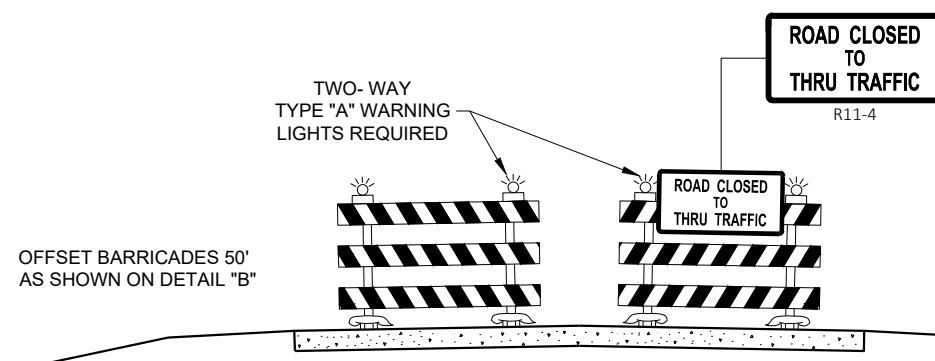
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE 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 THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL 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 SHALL, 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" (36" X 18" 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)

MO5 - 1 AND MO6 - 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 AN 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 ROAD 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.

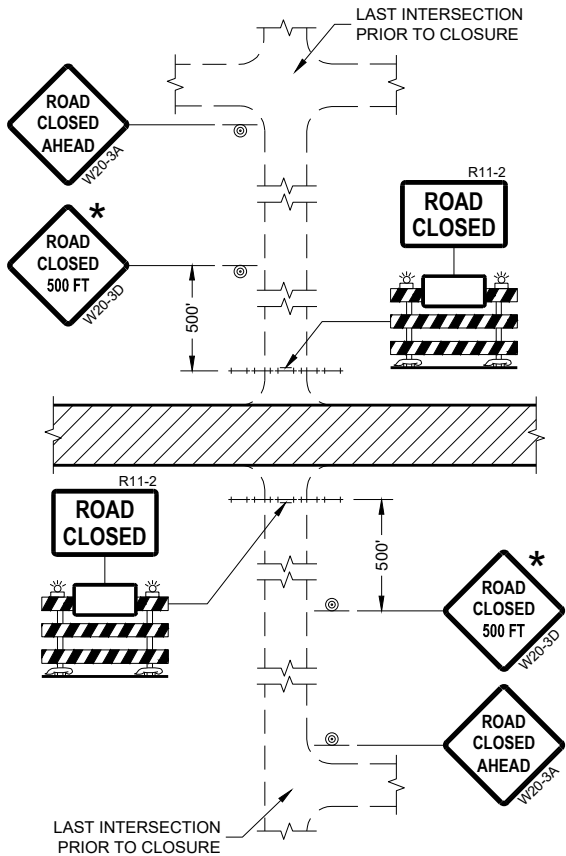
BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

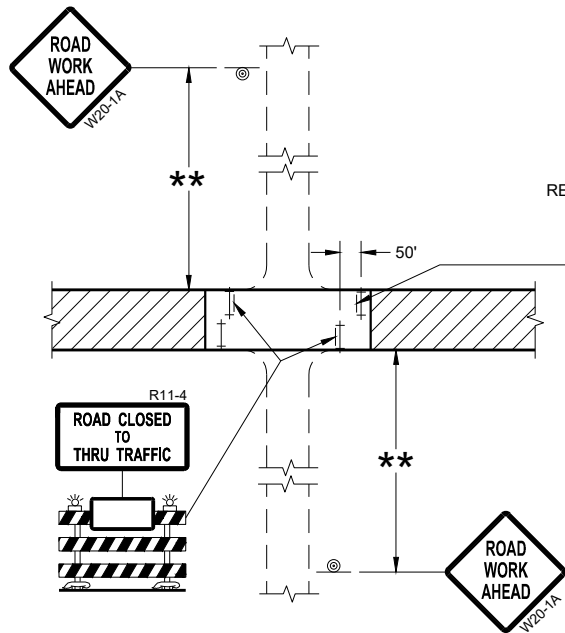
APPROVED
February 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

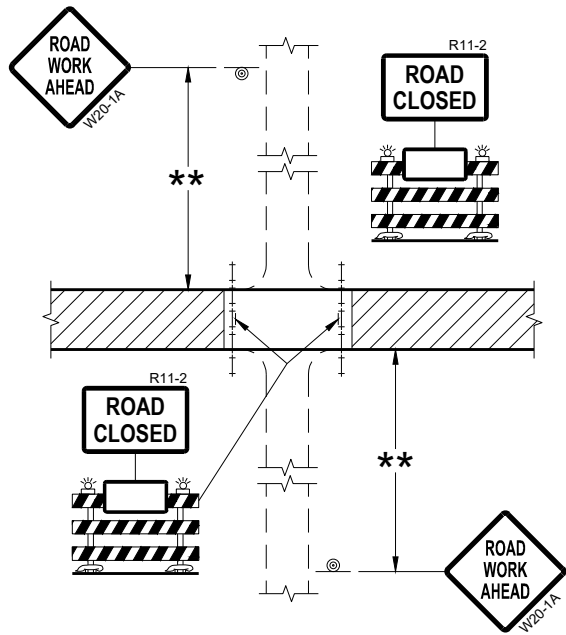
FHWA



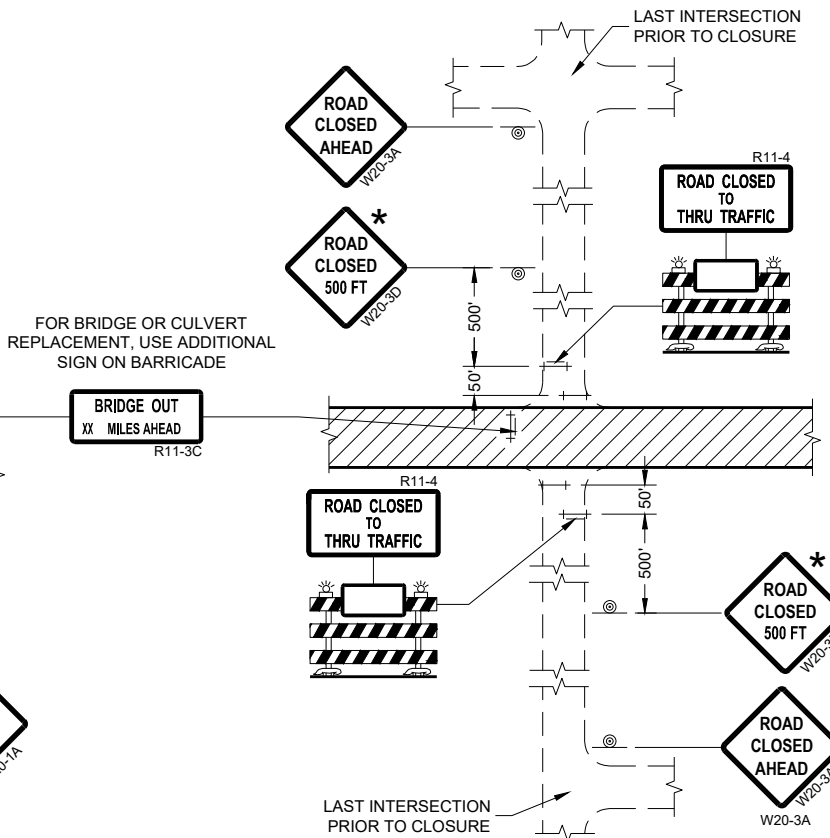
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE (500 FEET DESIRABLE) TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

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

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

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

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

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

- * OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.
- ** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

LEGEND

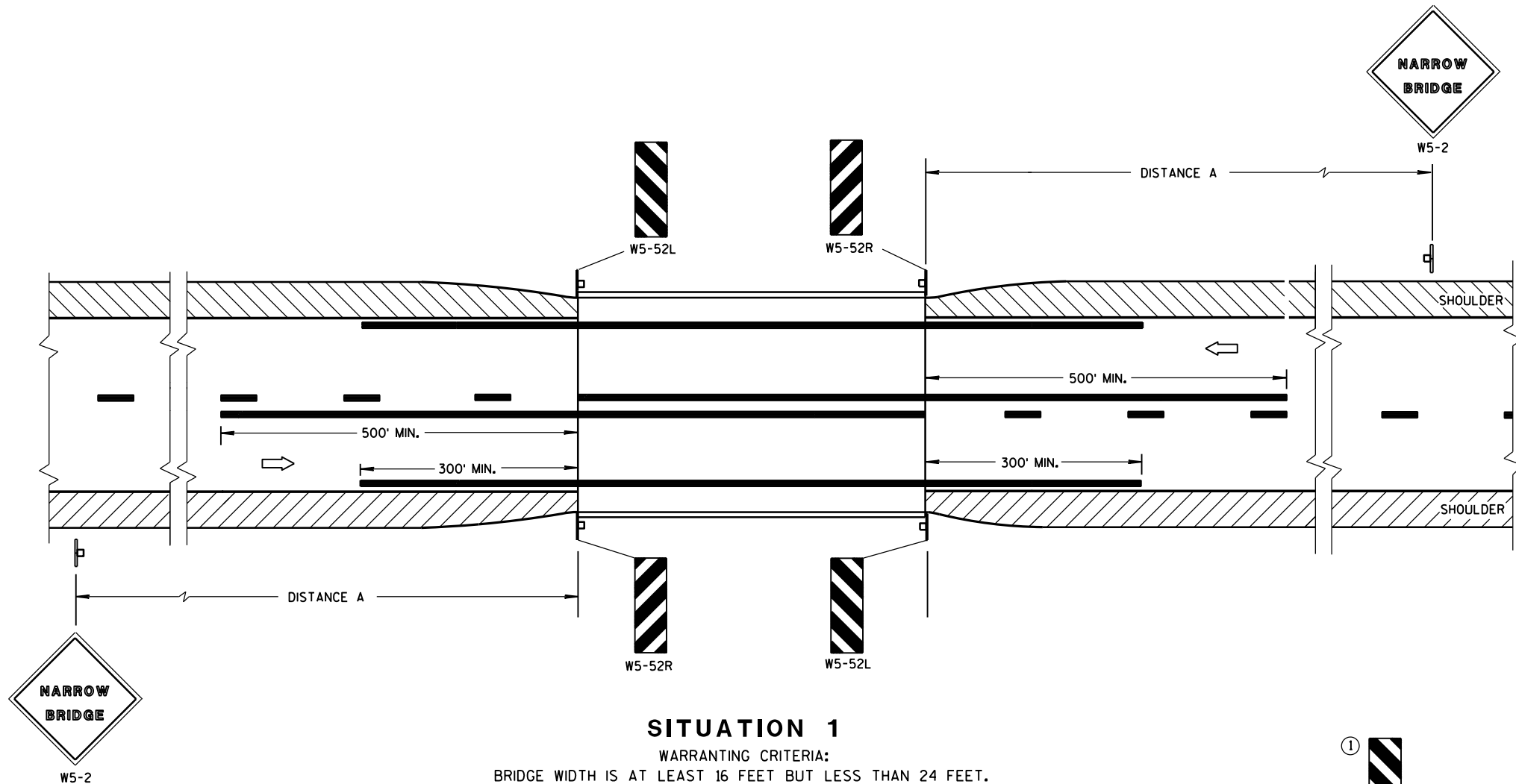
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



SITUATION 1

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

DISTANCE TABLE

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

GENERAL NOTES

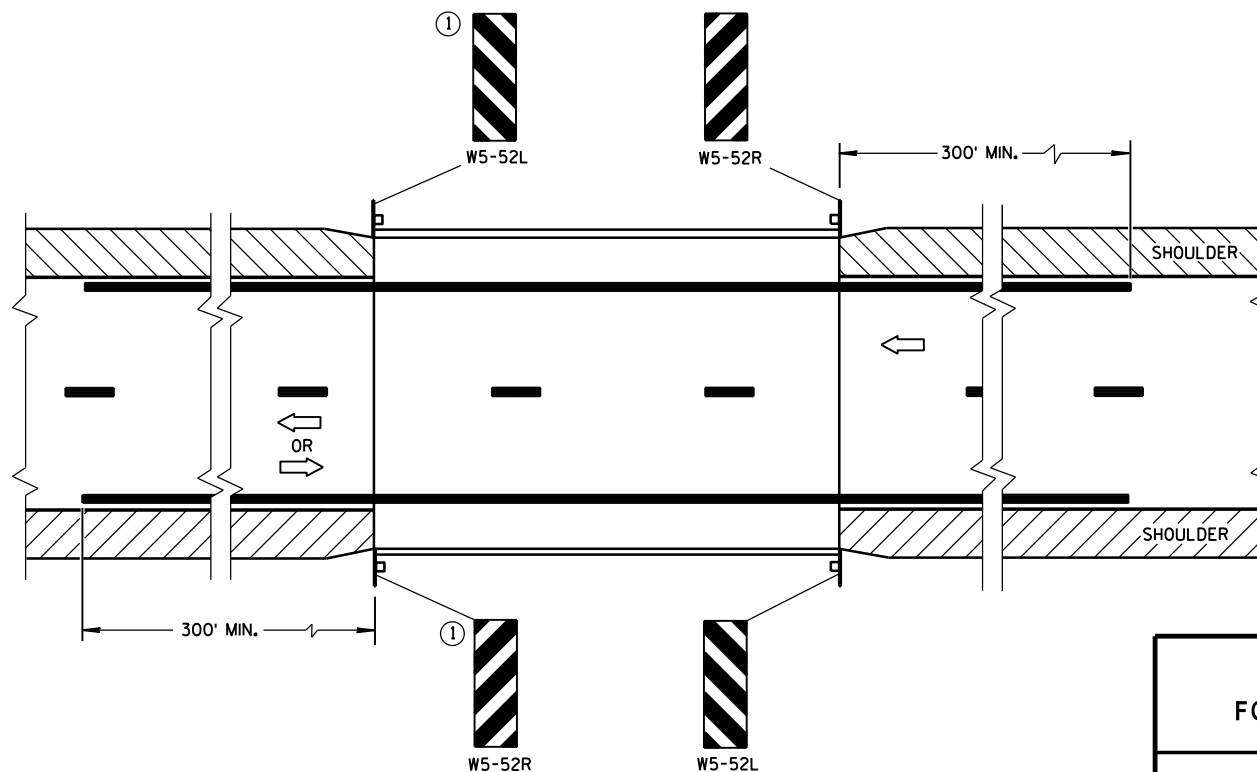
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 2

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

SIGNING & MARKING FOR TWO LANE BRIDGES

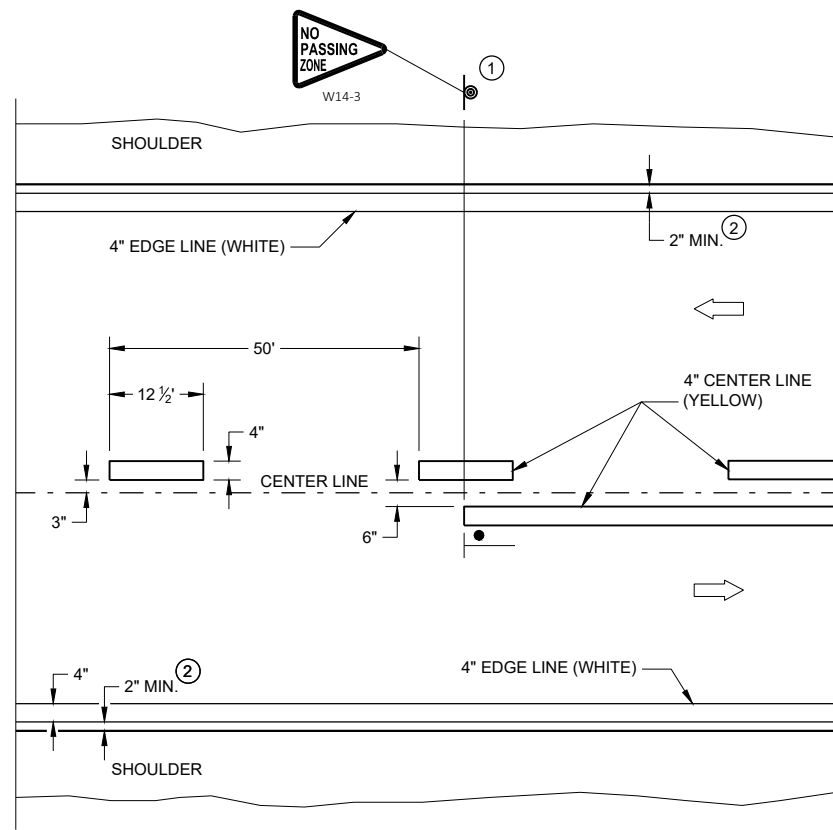
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

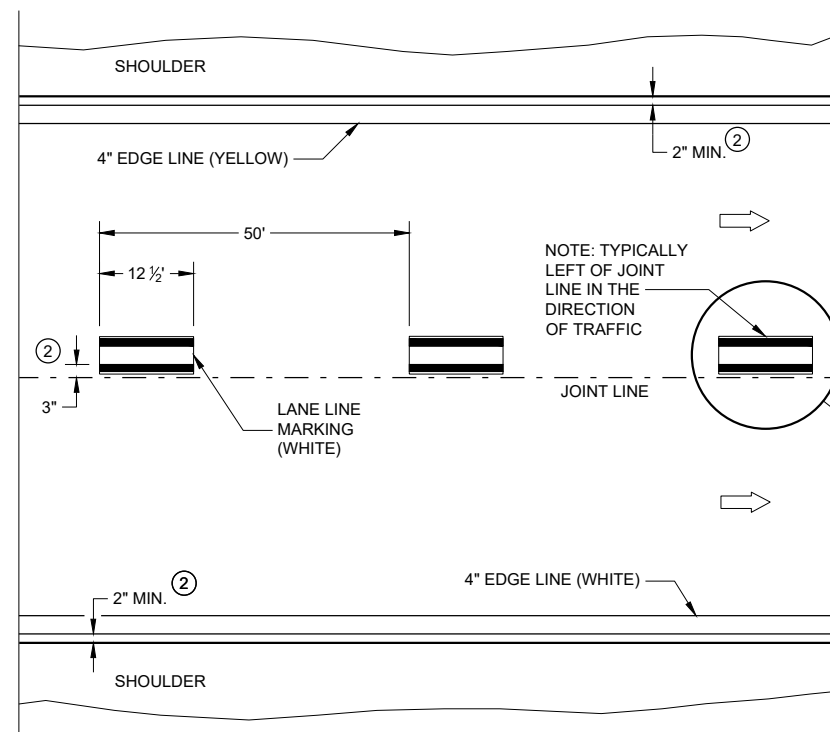
June 2017
DATE

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

FHWA

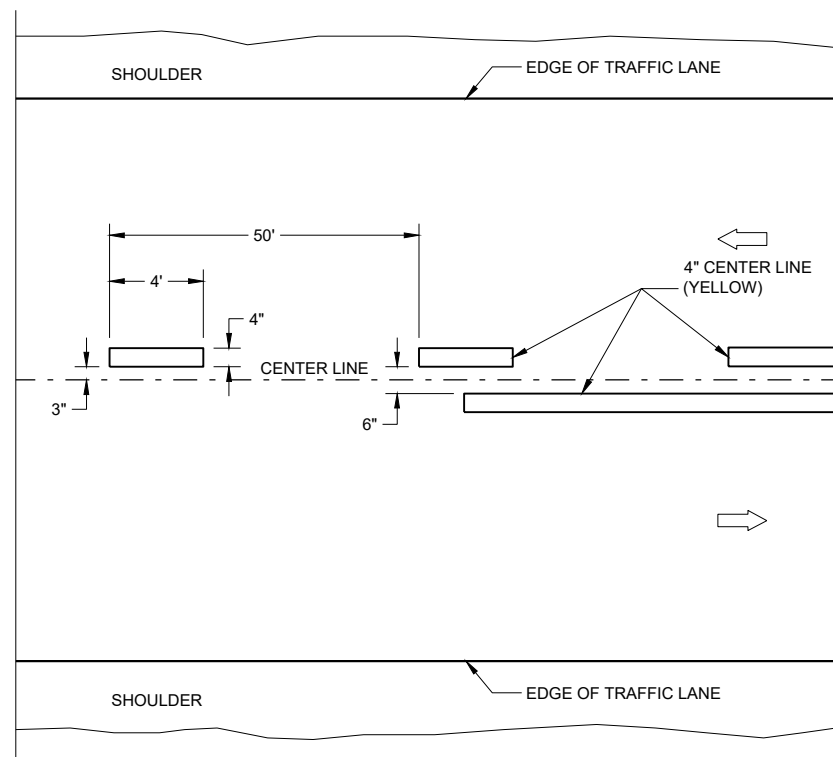


TWO WAY TRAFFIC

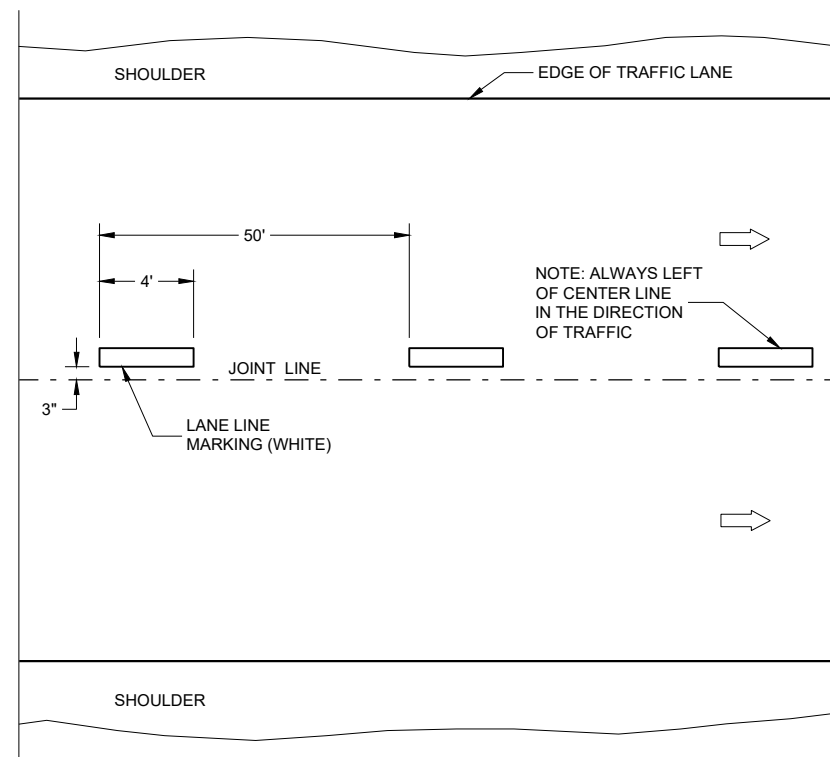


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

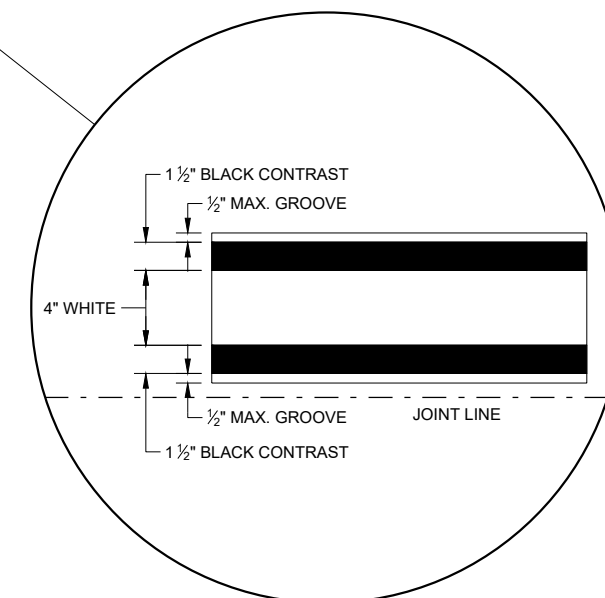
GENERAL NOTES

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITH 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

-  "T" MARKING
 SIGN ON PERMANENT SUPPORT
 DIRECTION OF TRAFFIC

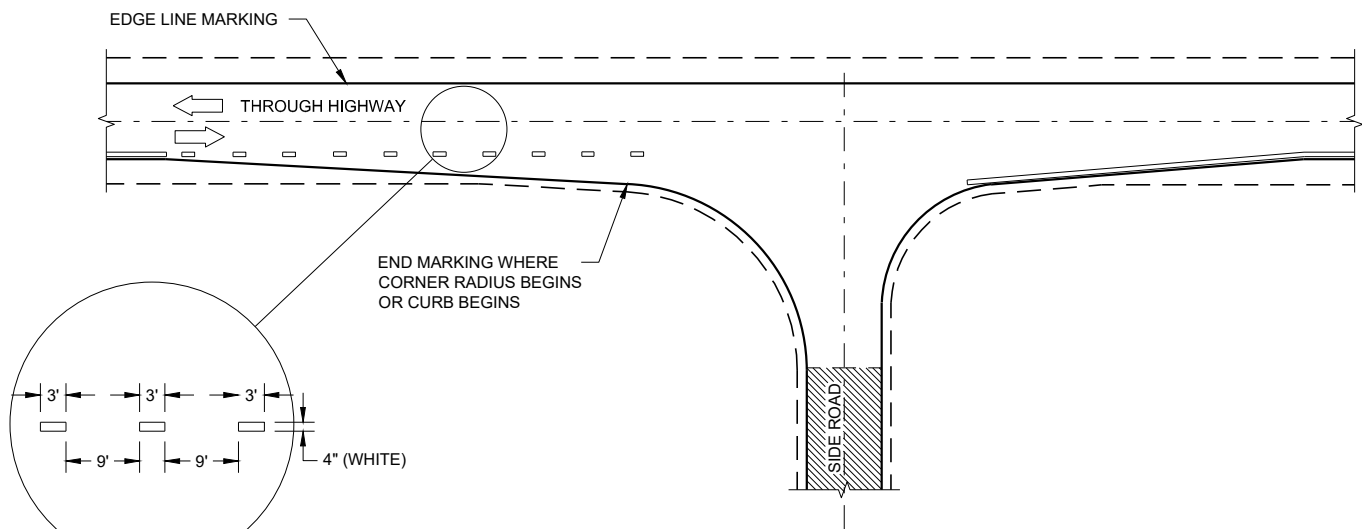


LONGITUDINAL MARKING (MAINLINE)

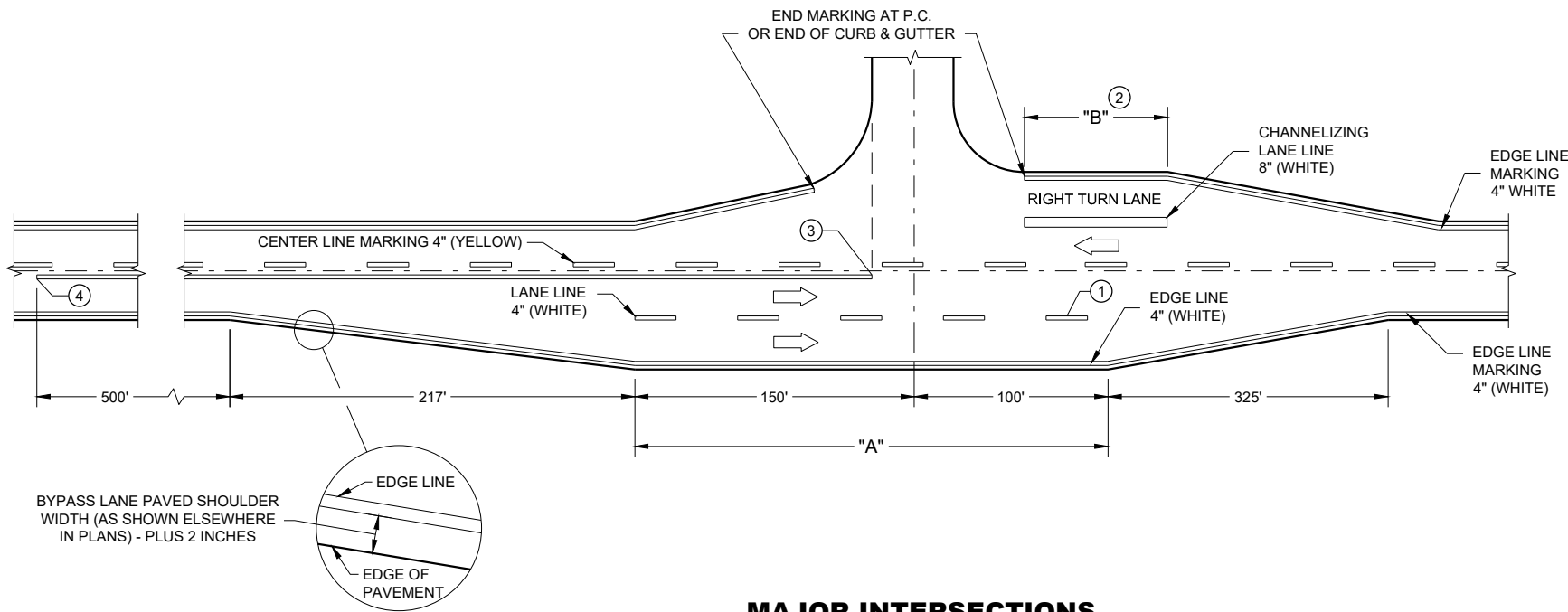
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Matthew Rauch
STATEWIDE SIGNING AND MARKING
ENGINEER



MINOR INTERSECTION



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

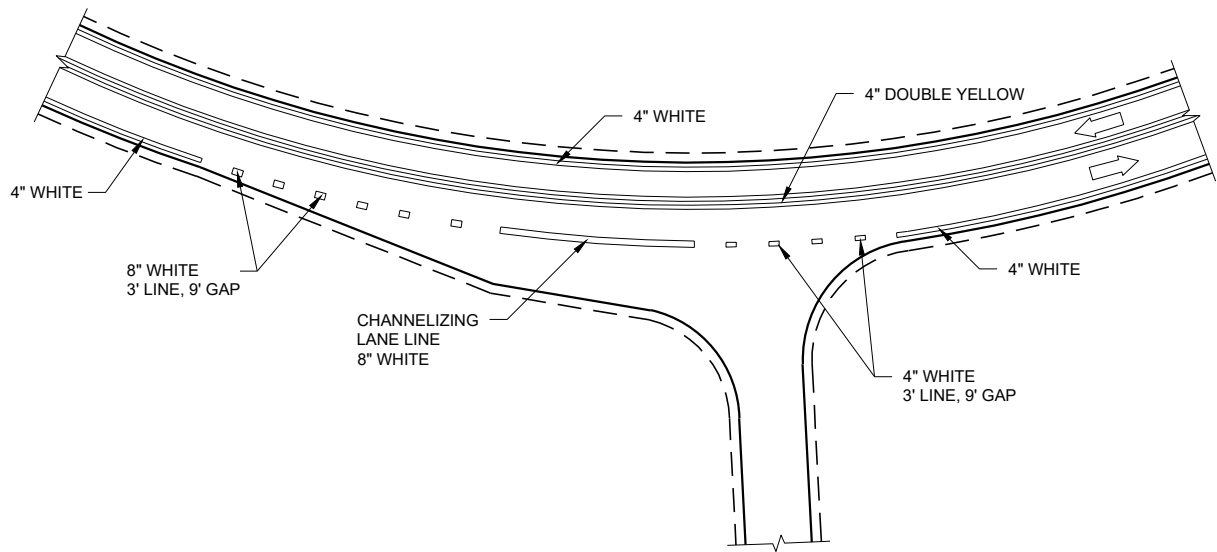
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

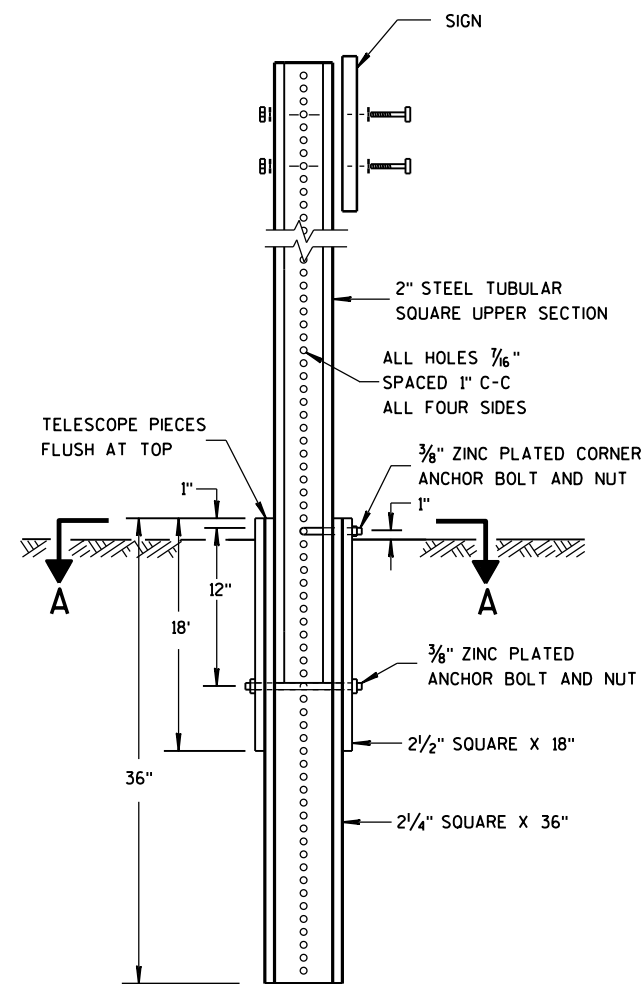
➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



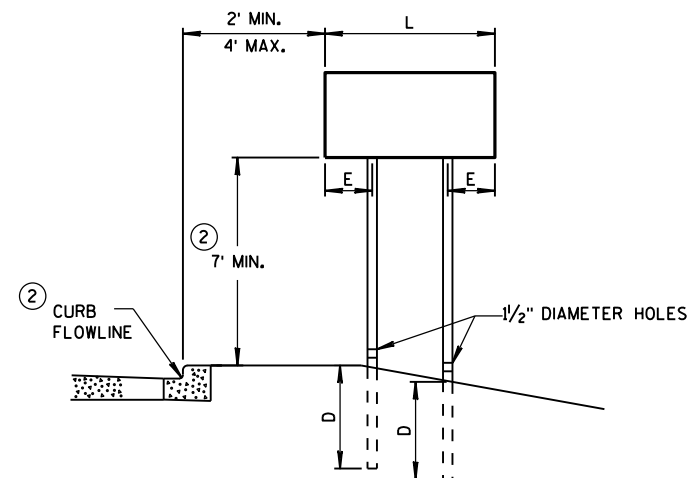
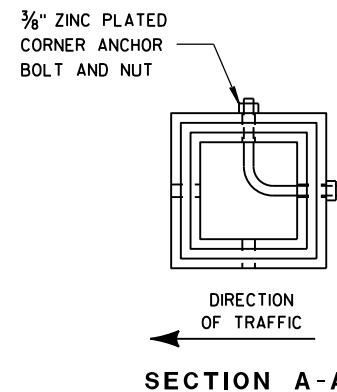
DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED
ON TUBULAR STEEL POSTS.

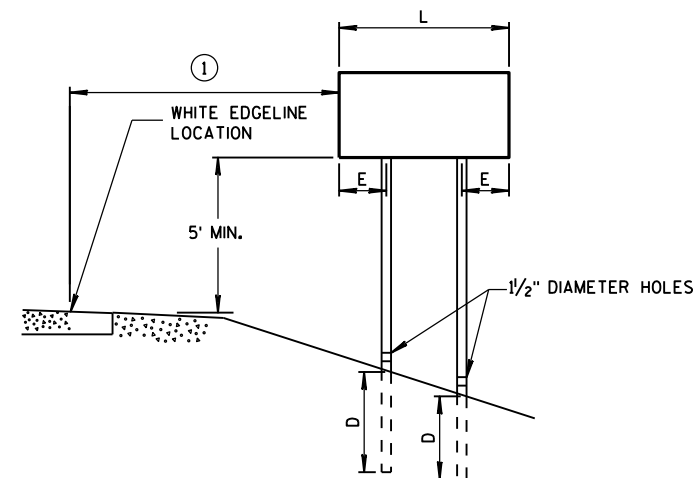
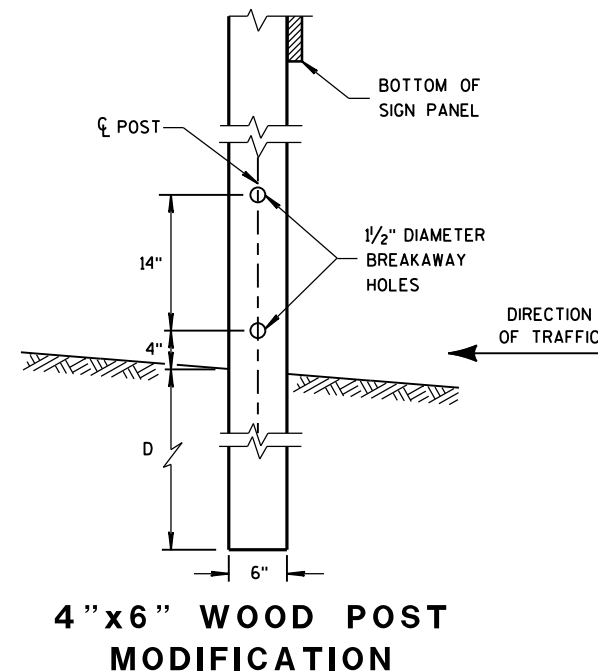


URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



RURAL AREA

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

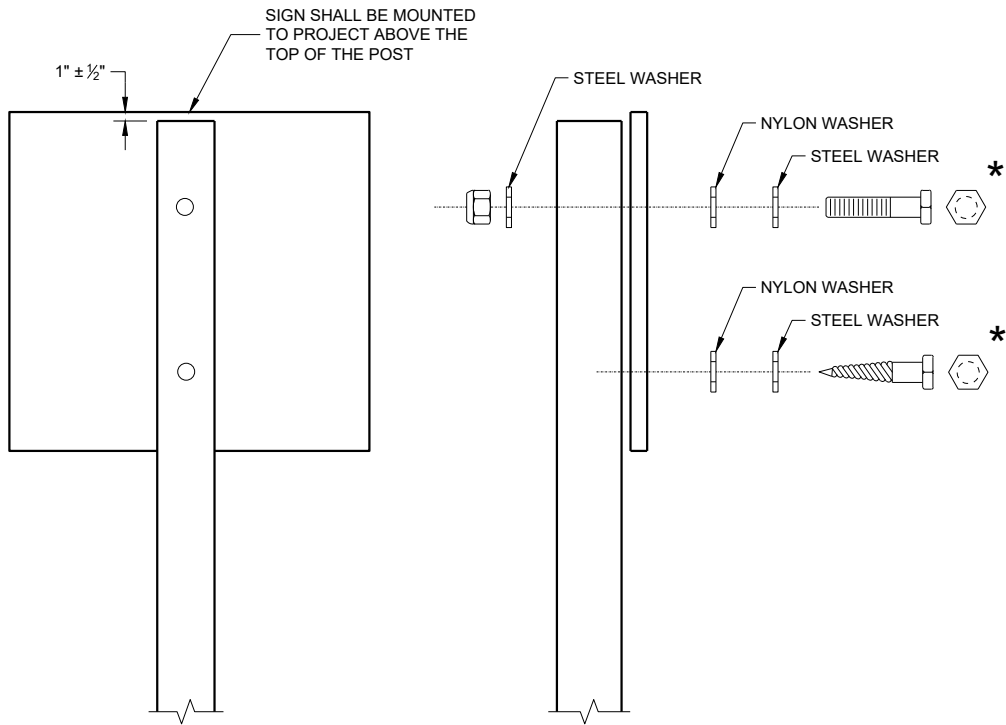
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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 POST (4" x 6")
LAG SCREWS - 3/8" x 3"
MACHINE BOLTS - 5/16" x 6 1/2" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS
RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
GRIP RANGE 0.042 - 0.375 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 0.080 NYLON

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION
PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM
SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH
THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER
THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

**ATTACHMENT OF SIGNS
TO POSTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
 INVENTORY RATING FACTOR: RF = 1.12
 OPERATING RATING FACTOR: RF = 1.45
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 240 KIPS

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

MATERIAL PROPERTIES:

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

36W" PRESTRESSED GIRDER
 CONCRETE MASONRY f'_c = 8,000 p.s.i.
 STRANDS - 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF = 270,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FREQUENCY

Q_{100} = 600 c.f.s.
 VEL. = 3.4 f.p.s.
 HW₁₀₀ = EL. 962.24
 WATERWAY AREA = 177 sq. ft.
 DRAINAGE AREA = 8.0 sq. mi.
 ROADWAY OVERTOPPING = N/A
 SCOUR CRITICAL CODE = 8
 DATUM = NAVD88 (2012)

2 YEAR FREQUENCY

Q_2 = 108 c.f.s.
 VEL. = ??? f.p.s.
 HW₂ = EL. 959.59

FOUNDATION DATA:

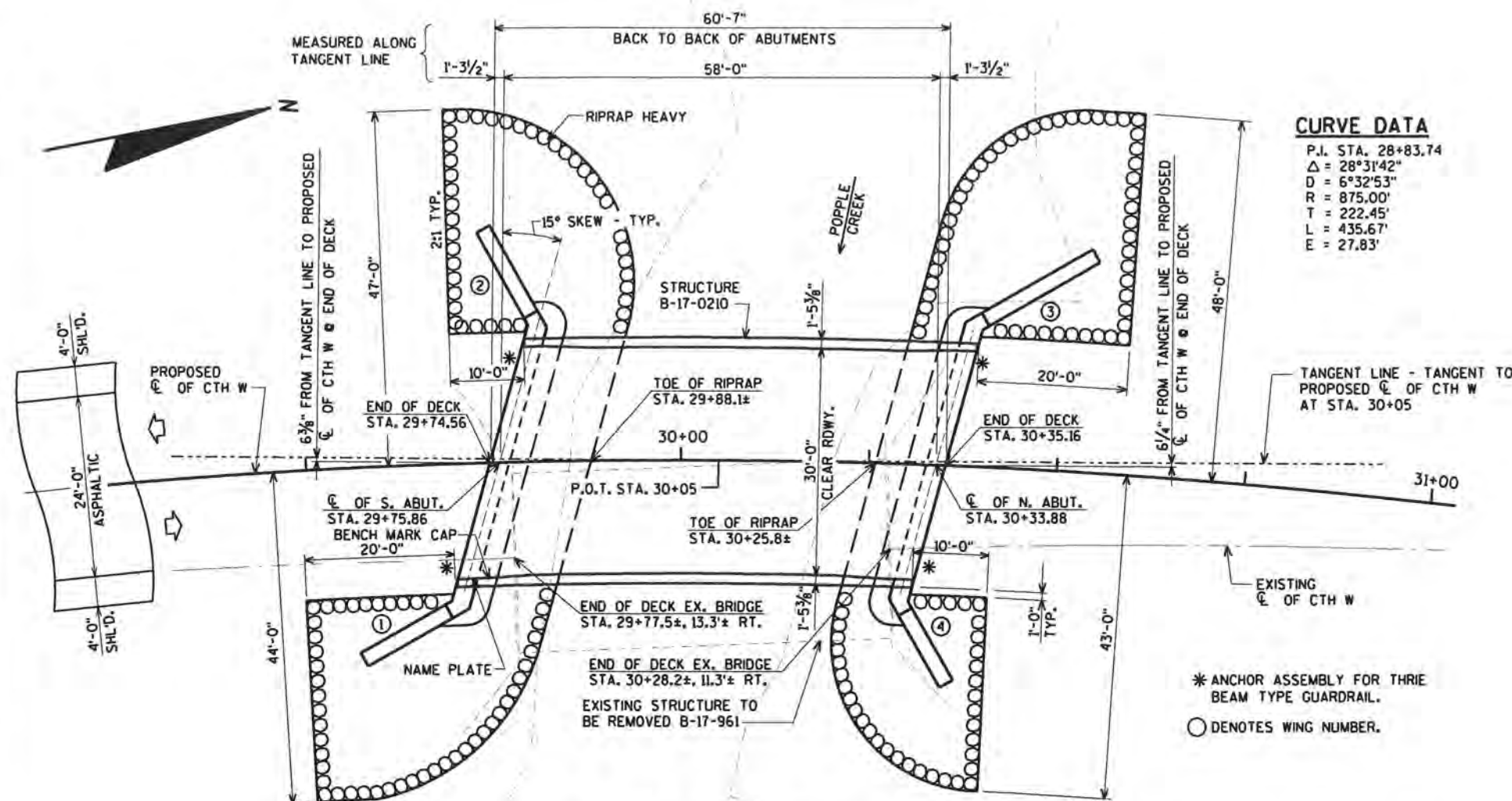
SOUTH ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS)
 DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 170 TONS * PER PILE AS DETERMINED BY
 THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 30'-0".

NORTH ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS)
 DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 170 TONS * PER PILE AS DETERMINED BY
 THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 40'-0".

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

TRAFFIC DATA:

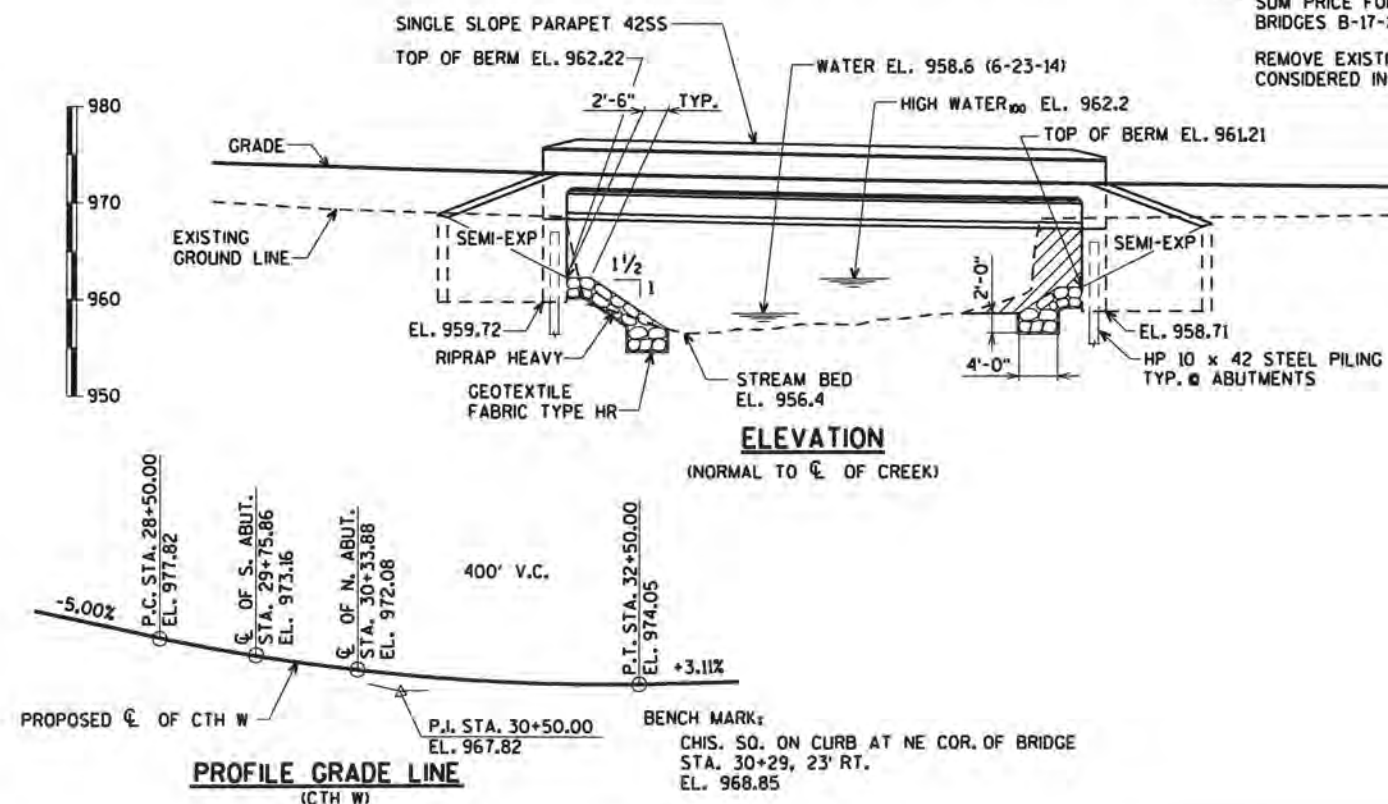
A.A.D.T. = 330 (2021)
 A.A.D.T. = 440 (2041)
 R.D.S. = 35 M.P.H.



PLAN
 SINGLE SPAN, 36W" PRESTRESSED CONCRETE GIRDER BRIDGE

COST OF EXCAVATION AND FILL IN THE HATCHED
 AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP
 SUM PRICE FOR "EXCAVATION FOR STRUCTURES
 BRIDGES B-17-210".

REMOVE EXISTING SUBSTRUCTURES AS NEEDED. COST
 CONSIDERED INCIDENTAL TO "REMOVING OLD STRUCTURE" ITEM.



ELEVATION
 (NORMAL TO C. OF CREEK)

LIST OF DRAWINGS

1. GENERAL PLAN
2. QUANTITIES AND NOTES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. SOUTH ABUTMENT WING 1 DETAILS
7. SOUTH ABUTMENT WING 2 DETAILS
8. NORTH ABUTMENT
9. NORTH ABUTMENT DETAILS
10. NORTH ABUTMENT WING 3 DETAILS
11. NORTH ABUTMENT WING 4 DETAILS
12. ABUTMENT BILL OF BARS
13. STEEL INTER. DIAPHRAGM DETAILS
14. 36W" PRESTRESSED GIRDER DETAILS
15. 36W" PRESTRESSED GIRDER DETAILS
16. SUPERSTRUCTURE
17. SUPERSTRUCTURE PLAN
18. SINGLE SLOPE PARAPET 42SS



BRIDGE OFFICE CONTACT:
 AARON BONK
 (608)-261-0261

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

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
AYRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	SDR 08/25/20		DATE
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-17-210			
CTH W OVER POPPLE CREEK			
COUNTY	DUNN	TOWN/VILLAGE	GRANT
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	JWZ	DESIGN CK'D.	CJM
DRAWN BY	CLP	PLANS CK'D.	DNS
GENERAL PLAN			SHEET 1 OF 18

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

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

PROTECTIVE SURFACE TREATMENT AND PIGMENTED SURFACE SEALER TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.

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

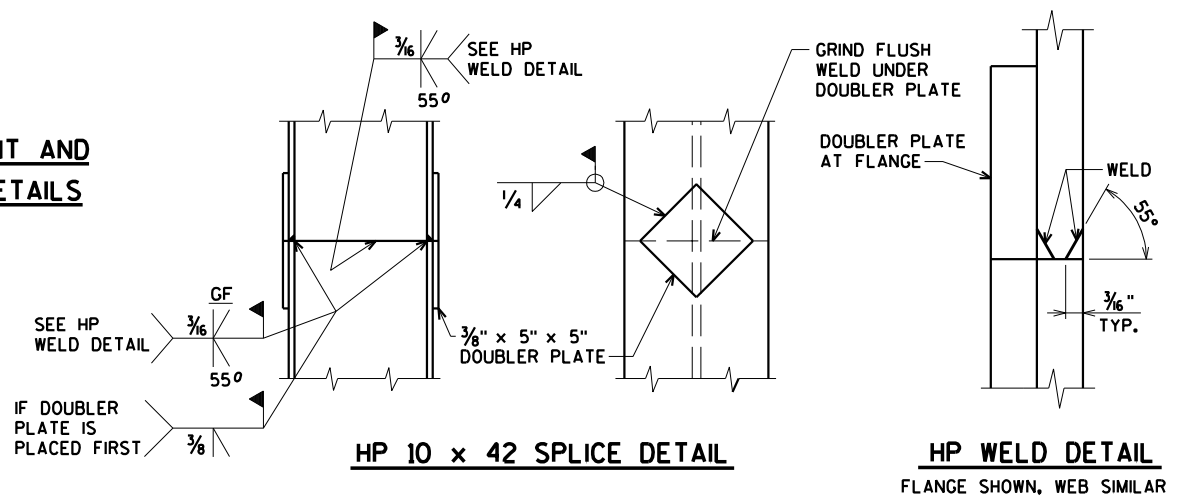
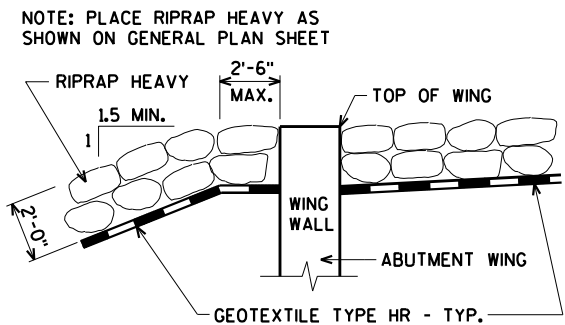
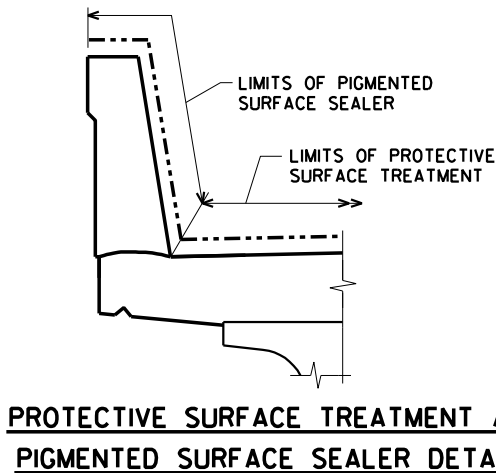
BEVEL EXPOSED EDGES OF CONCRETE $\frac{3}{4}$ " UNLESS NOTED OTHERWISE.

THE EXISTING STRUCTURE, B-17-961, TO BE REMOVED, IS A TWO SPAN STEEL DECK GIRDER BRIDGE ON TIMBER SUBSTRUCTURES, 50.8 FT. LONG WITH A 24 FT. CLEAR ROADWAY WIDTH.

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-17-210" SHALL BE THE EXISTING GROUNDLINE.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

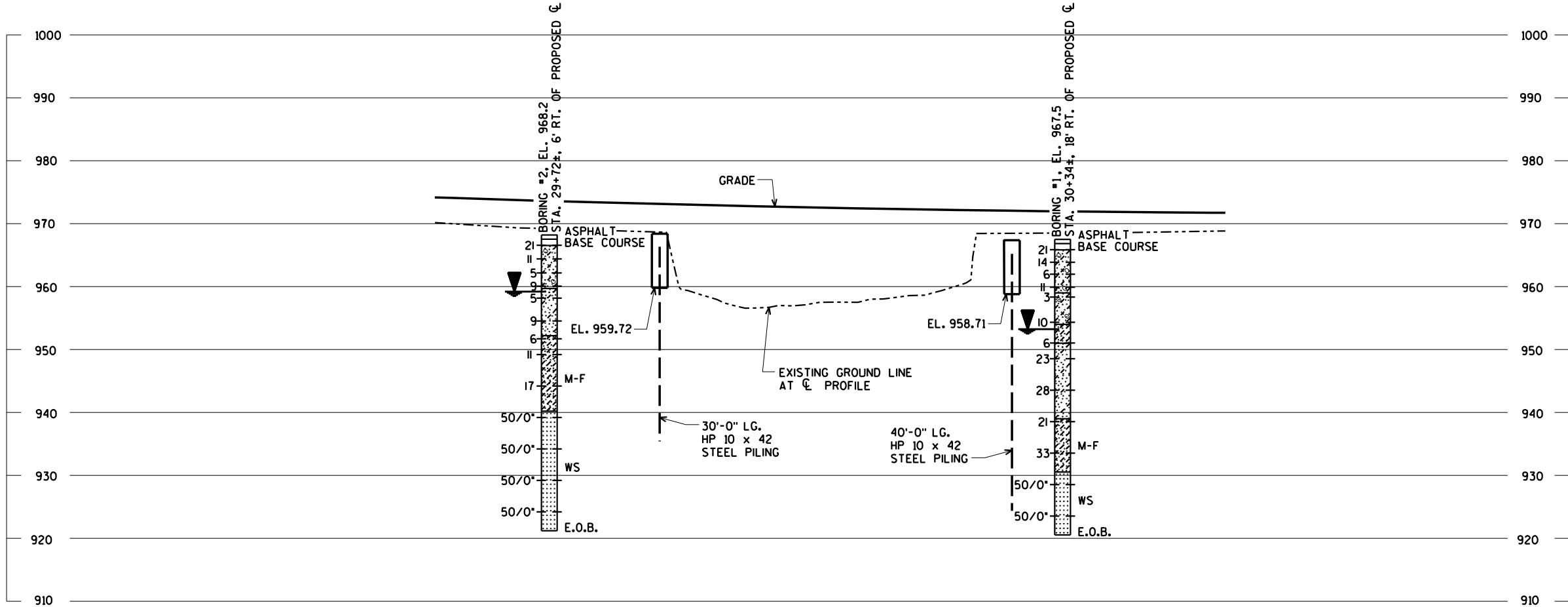


ORIGINAL PLANS PREPARED BY

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

\$PRNAME\$
I:\42\42-0931.00 - Dunn County, CTH W, Popple Creek\BRIDGE\420931 soils.dgn

8



SOILS REPORT BY:
RIVER VALLEY TESTING CORP.
NEENAH, WI.
OCTOBER 10, 2014

BORINGS TAKEN BY:
GEOTECHNICAL DRILLING CONTRACTORS
WAUSAU, WI.
AUGUST 26, 2014

STATE PROJECT NUMBER

8929-06-70

ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL SILT SANDSTONE
SAND PEAT LIMESTONE
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6
95/6=95 BLOWS FOR 6" PENETRATION
PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

BORING NO.
STA.
ELEV.
UNCONFINED STRENGTH 7.7
BLOWS PER FT. USING 140# WT. FALLING 30"
WASH SAMPLE
SHELBY TUBE — S.T.
GROUND WATER ELEVATION
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
SANDY GRAVEL
F. BOULDERS OR COBBLES
SAND
SILTY CLAY
SO
LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A Cased OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

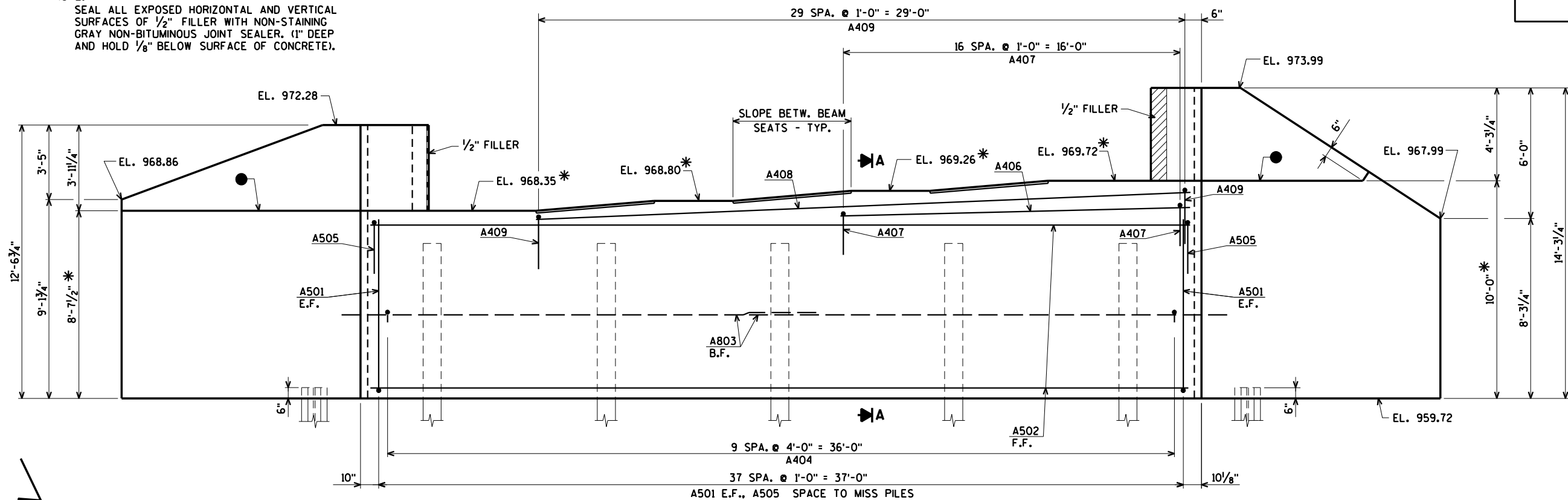
TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

8

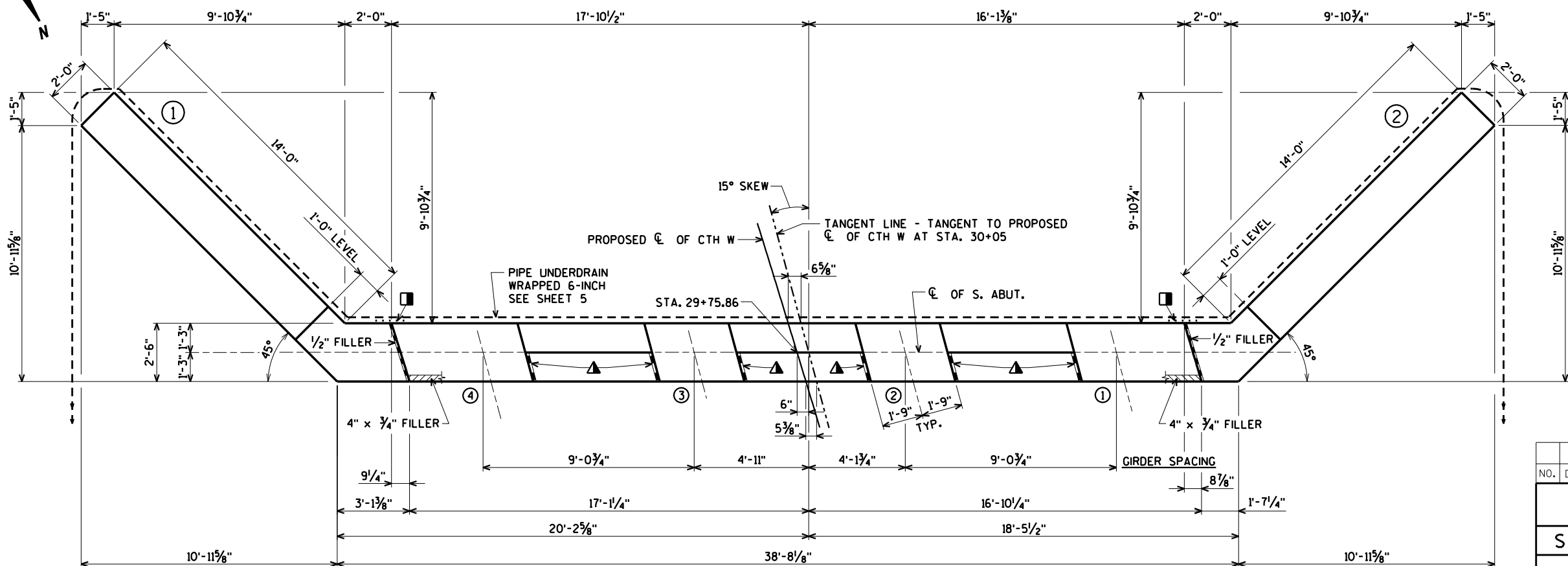
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY		CLP	PLANS CK'D. CJM
SUBSURFACE EXPLORATION			SHEET 3 OF 18

NOTE:

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).



ELEVATION
(LOOKING SOUTH)



PLAN

* ELEVATIONS AND DIMENSIONS TAKEN AT ∇ OF ABUT.

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

FOR SECTION A SEE SHEET 5.

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

▲ $\frac{3}{4}$ " CORK FILLER ON VERTICAL FACE ONLY.

FOR PILE SPLICE DETAIL SEE SHEET 2.

F.F. DENOTES FRONT FACE

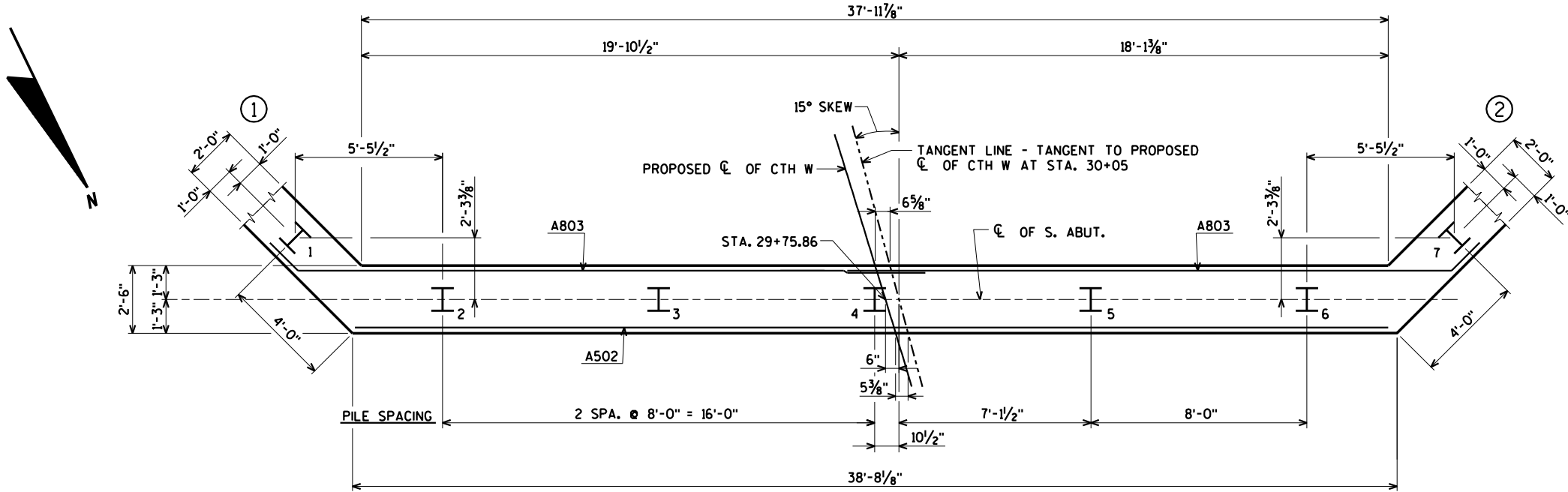
B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

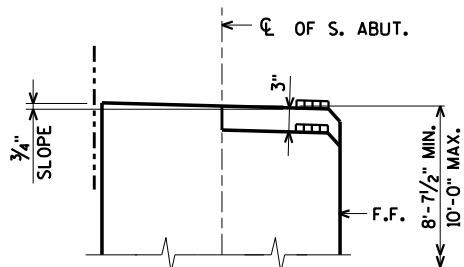
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY		CLP	PLANS CK'D. CJM
SOUTH ABUTMENT		SHEET 4 OF 18	

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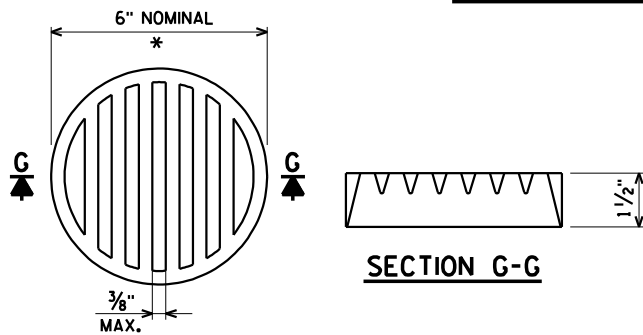
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PILE LAYOUT



SLOPED BEAM SEAT DETAIL

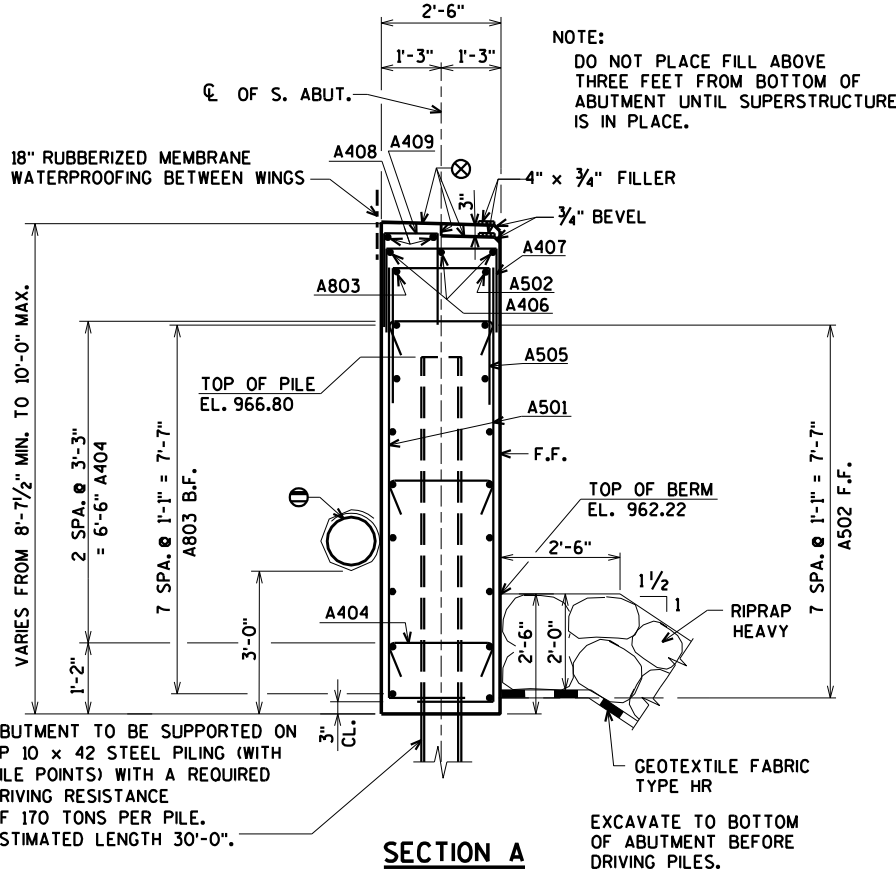


* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

THE RODENT SHIELD SHALL BE 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 SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH SHEET METAL SCREWS.

RODENT SHIELD DETAIL



SECTION A

NOTE:
DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON THIS SHEET.

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

FOR PILE SPLICE DETAIL SEE SHEET 2.

FOR LOCATION OF SECTION A SEE SHEET 4.

F.F. DENOTES FRONT FACE.

B.F. DENOTES BACK FACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY CLP		PLANS CK'D. CJM	
SOUTH ABUTMENT DETAILS			SHEET 5 OF 18



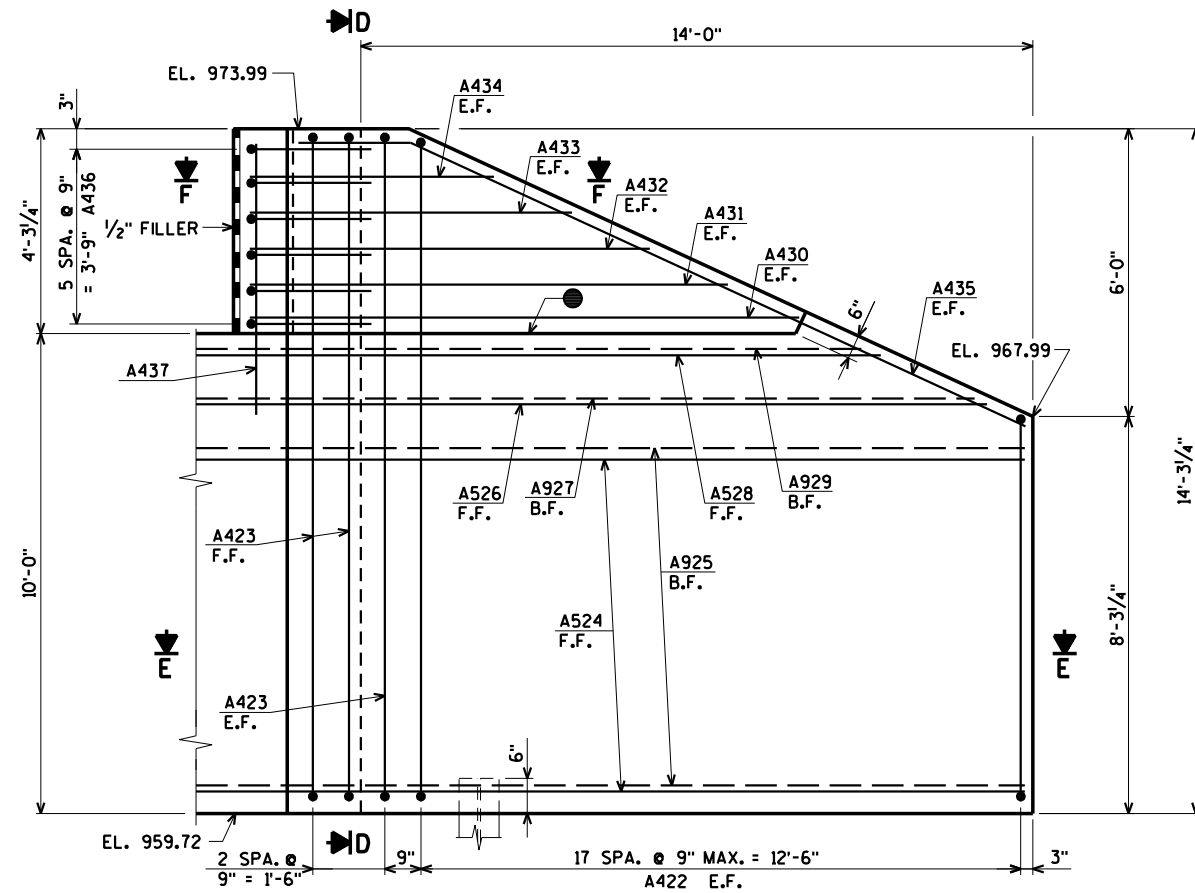
- FOR PILE SPLICE DETAIL SEE SHEET 2.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
		DRAWN BY	CLP
		PLANS CK'D.	CJM
SOUTH ABUTMENT WING 1 DETAILS		SHEET 6 OF 18	

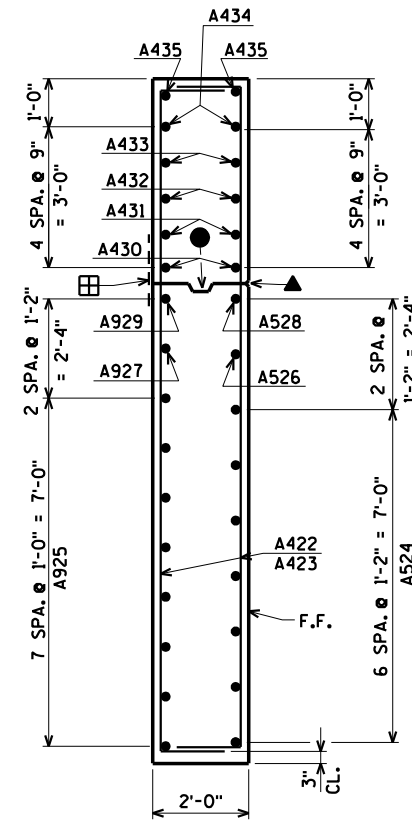
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STATE PROJECT NUMBER

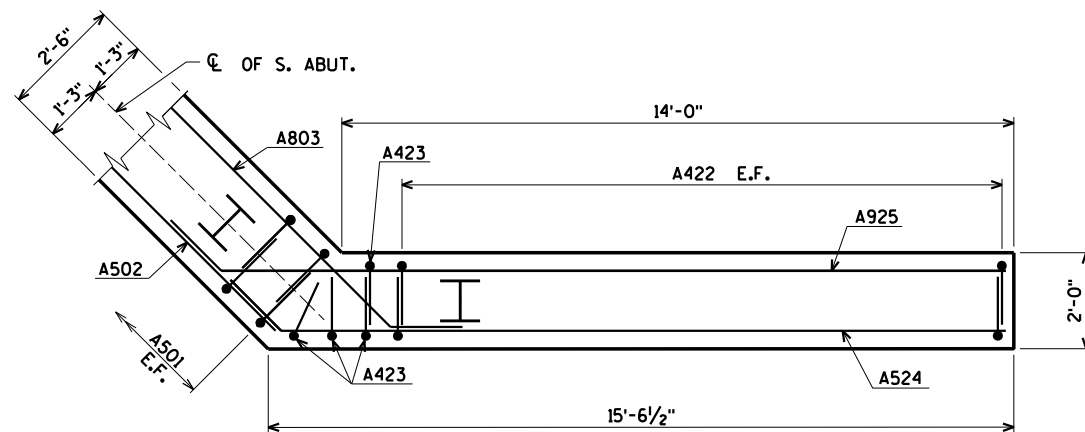
8929-06-70



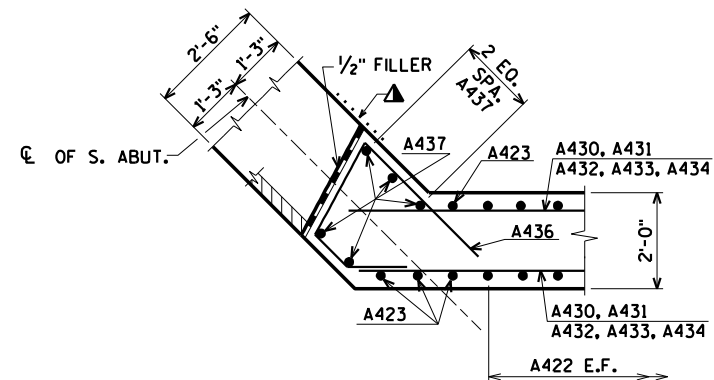
ELEVATION - WING 2



SECTION D



SECTION E



SECTION F

- ▲ 3/4" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.
- OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
- ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BEAM SEAT TO TOP OF WINGWALL.
- ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.
- B.F. DENOTES BACK FACE.
F.F. DENOTES FRONT FACE.
E.F. DENOTES EACH FACE.

FOR PILE SPlice DETAIL SEE SHEET 2.

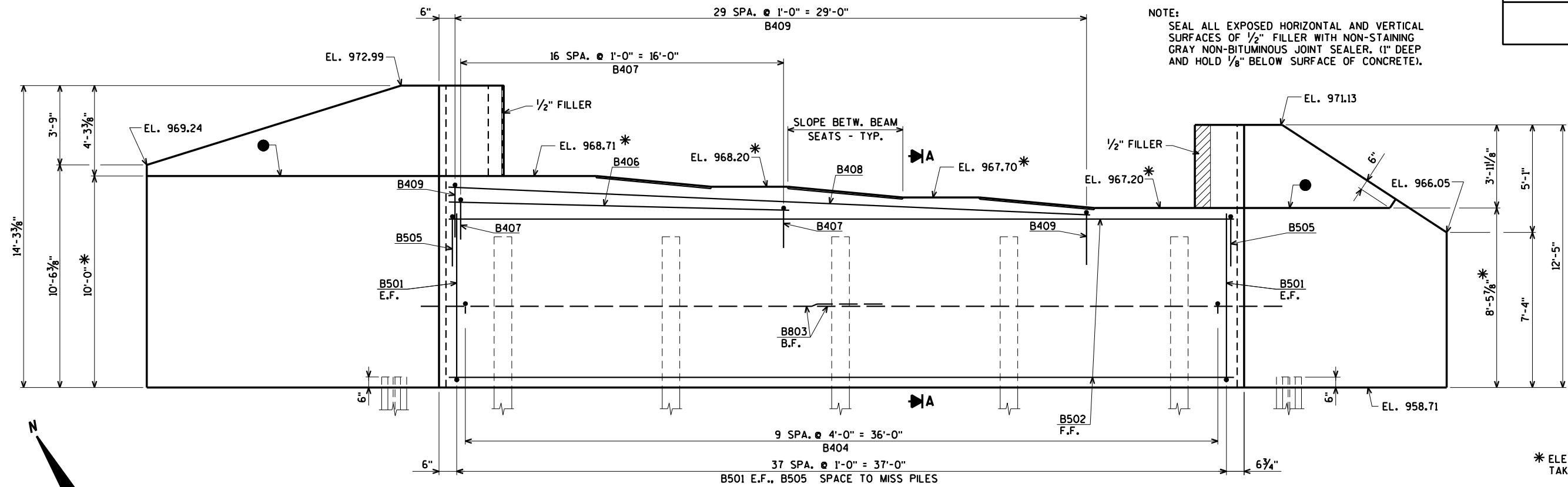
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY		CLP	PLANS CK'D. CJM
SOUTH ABUTMENT WING 2 DETAILS			SHEET 7 OF 18

ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
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www.AyresAssociates.com

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STATE PROJECT NUMBER

8929-06-70



ELEVATION
(LOOKING NORTH)

* ELEVATIONS AND DIMENSIONS
TAKEN AT ϕ OF ABUT.

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

FOR SECTION A SEE SHEET 9.

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

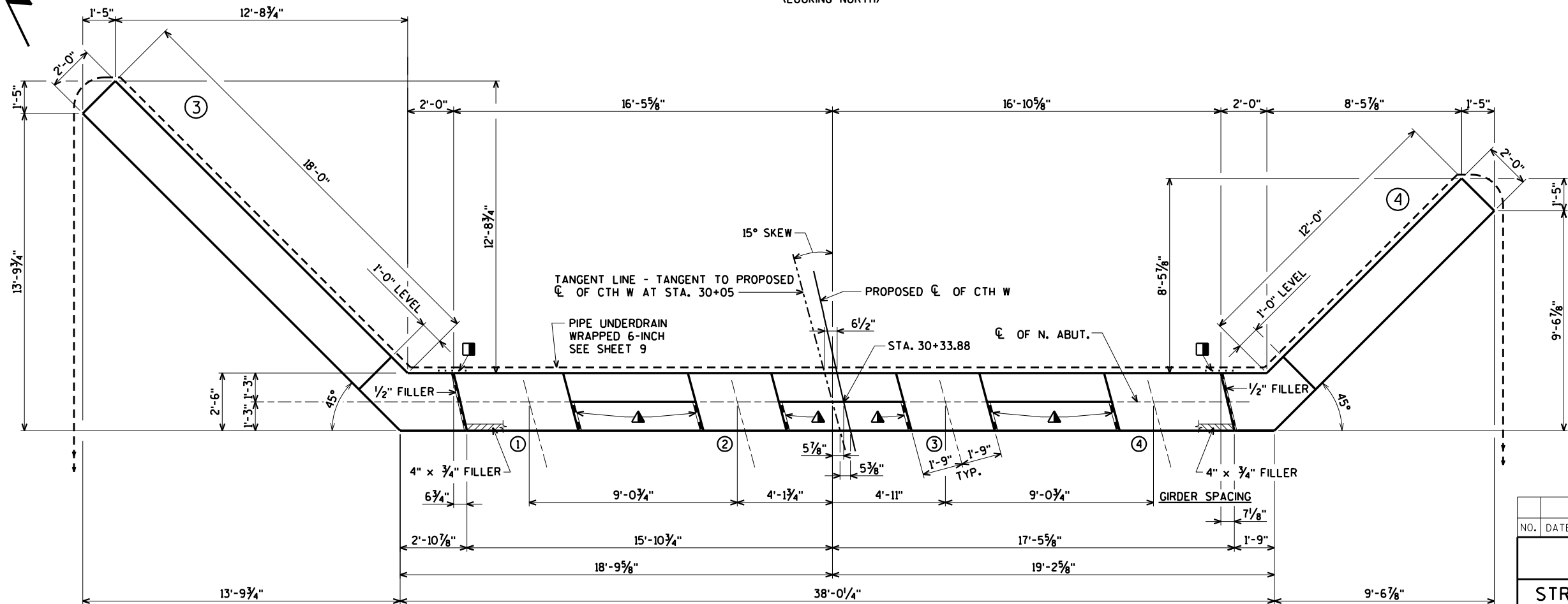
▲ 3/4" CORK FILLER ON VERTICAL
FACE ONLY.

FOR PILE SPlice DETAIL
SEE SHEET 2.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE



PLAN

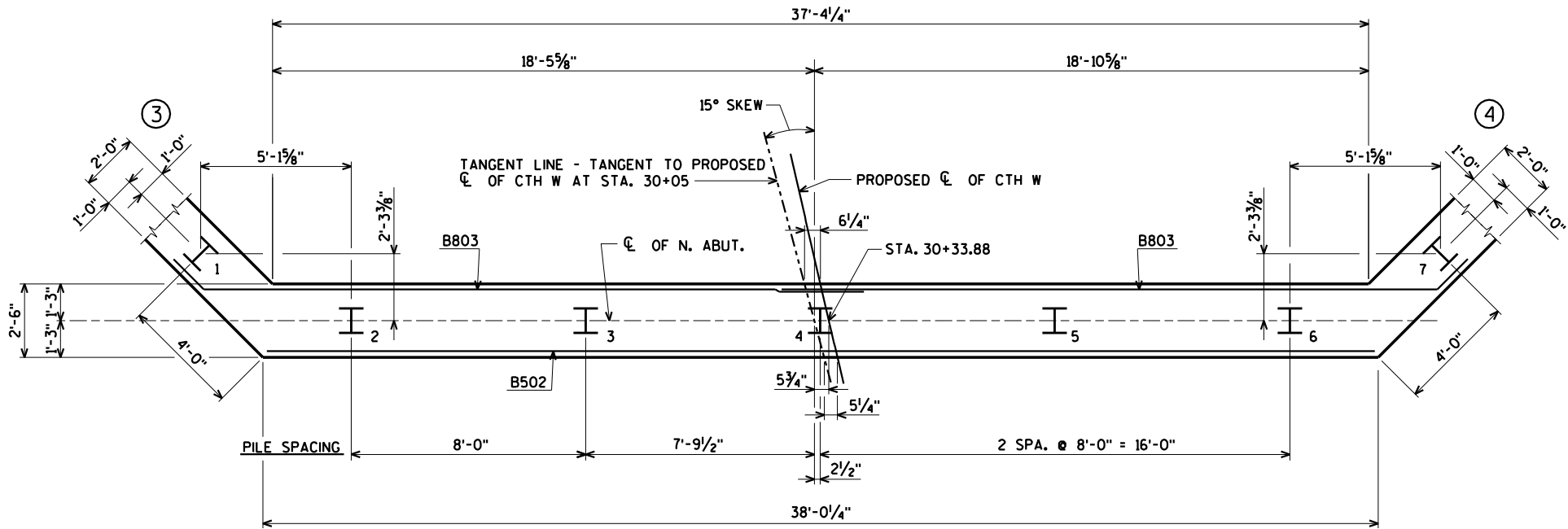
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY		CLP	PLANS CK'D. CJM
NORTH ABUTMENT		SHEET 8 OF 18	

ORIGINAL PLANS PREPARED BY

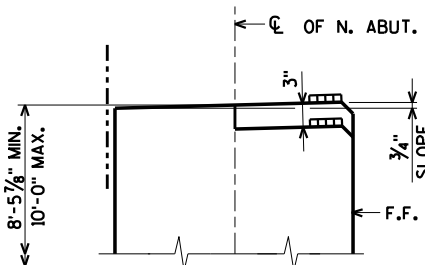
AYRES

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www.AyresAssociates.com

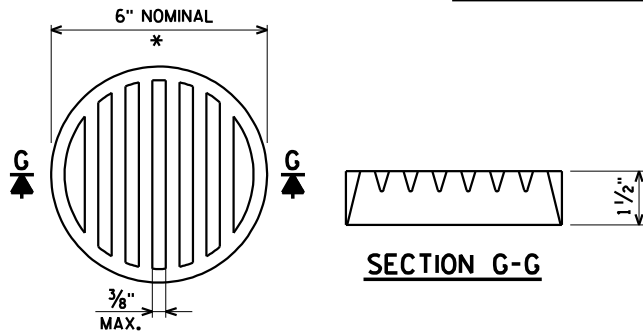
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PILE LAYOUT



SLOPED BEAM SEAT DETAIL

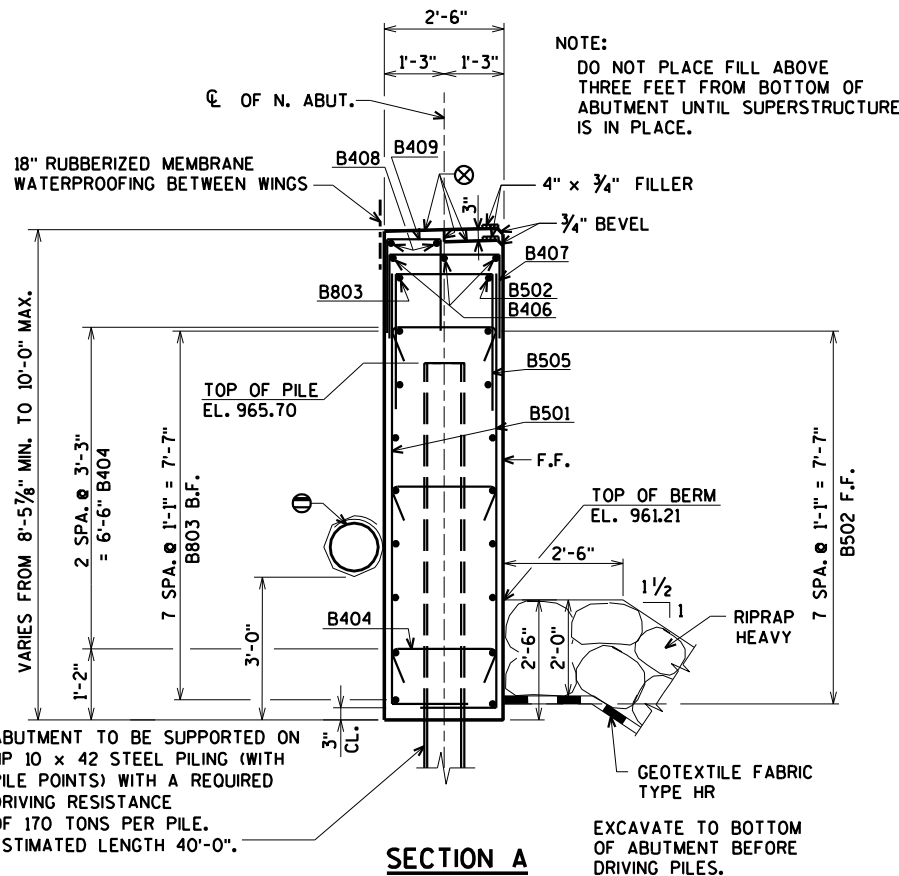


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RODENT SHIELD DETAIL



SECTION A

NOTE:
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⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON THIS SHEET.

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

FOR PILE SPLICE DETAIL SEE SHEET 2.

FOR LOCATION OF SECTION A SEE SHEET 8.

F.F. DENOTES FRONT FACE.

B.F. DENOTES BACK FACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY		CLP	PLANS CK'D. CJM
NORTH ABUTMENT DETAILS			SHEET 9 OF 18

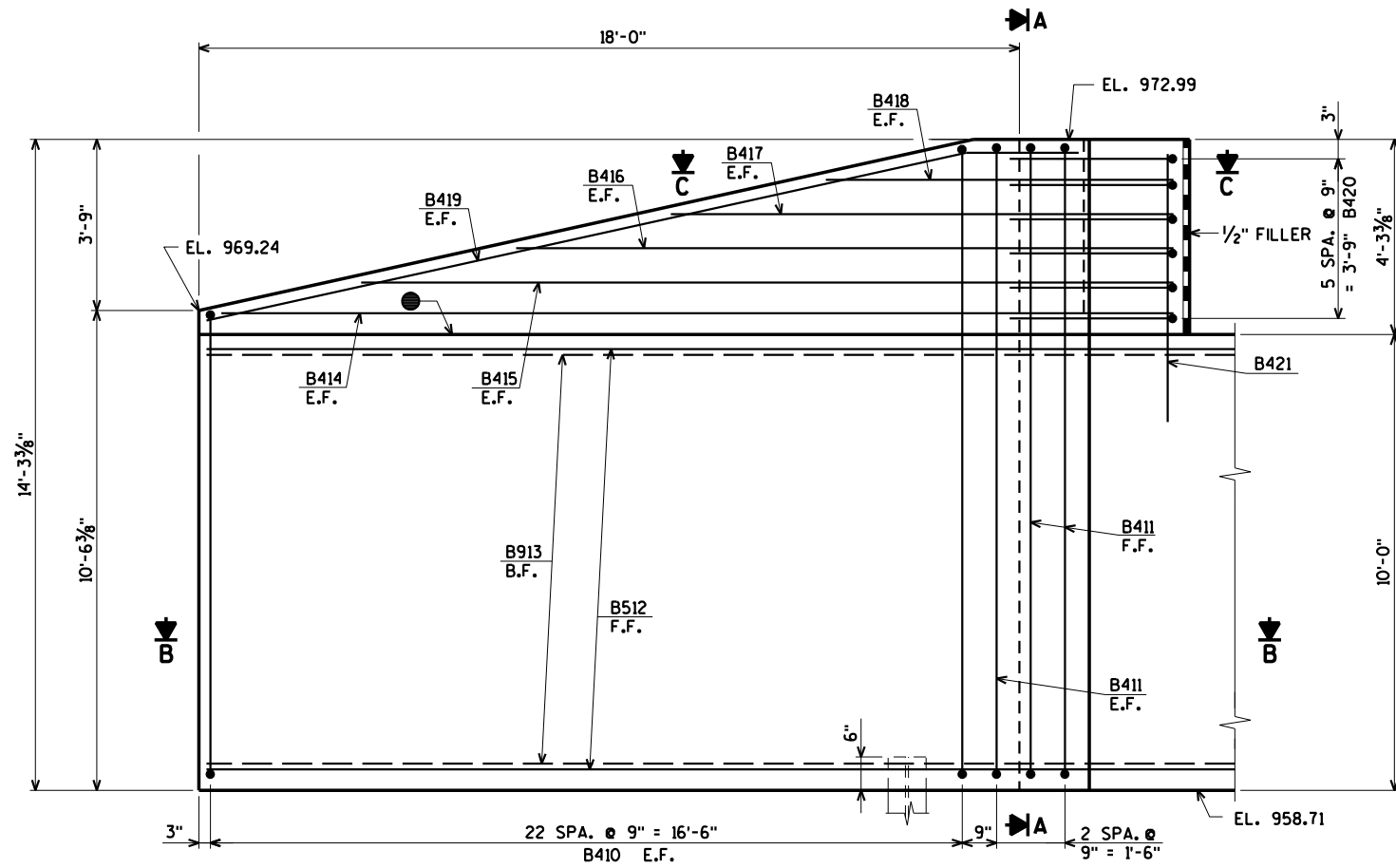
ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

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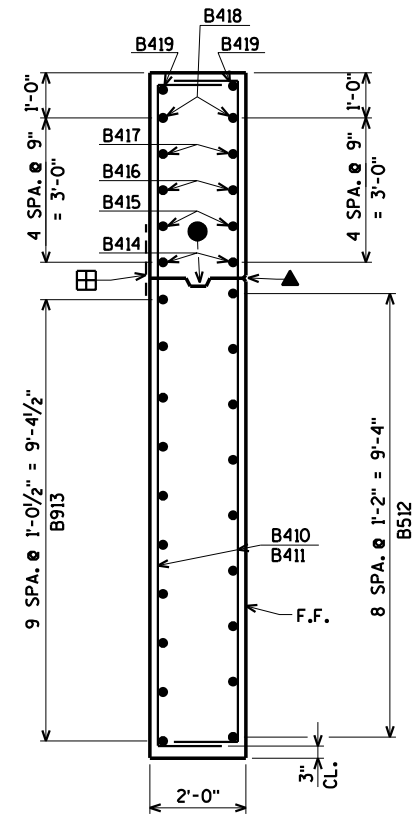
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STATE PROJECT NUMBER

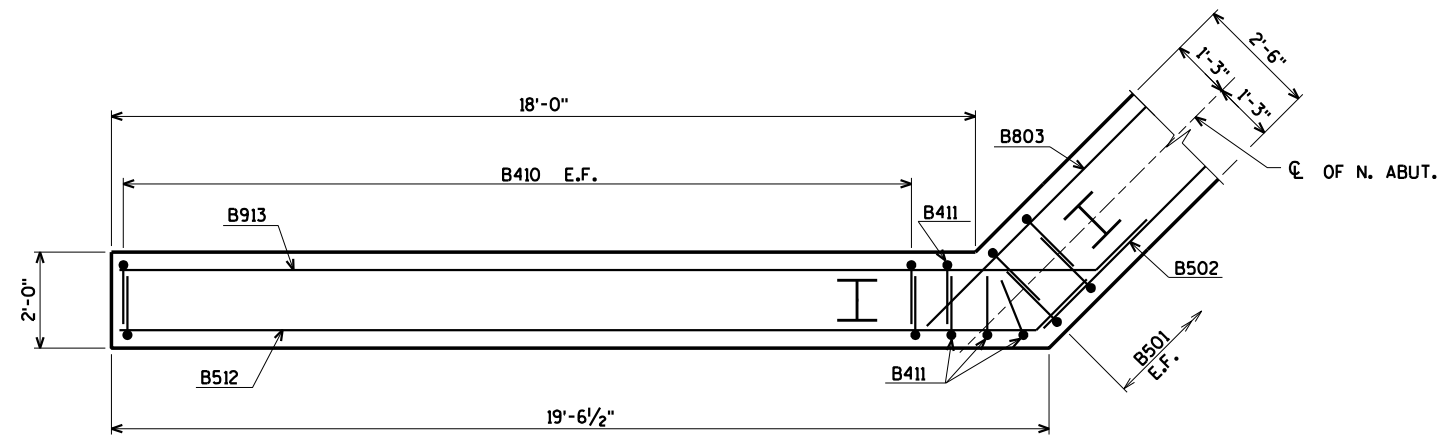
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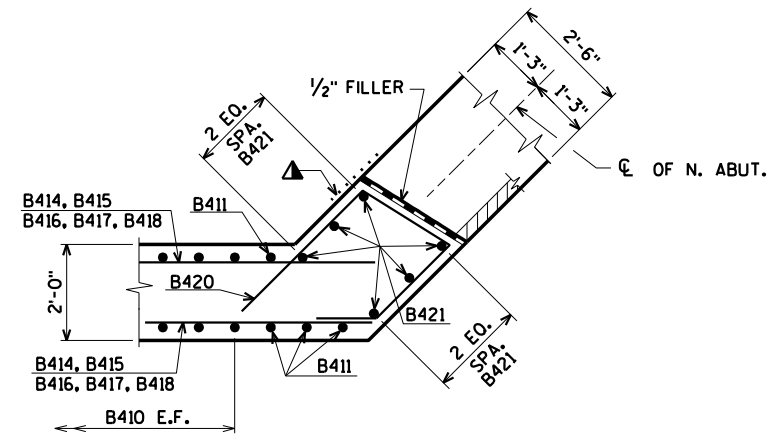
ELEVATION - WING 3



SECTION A



SECTION B



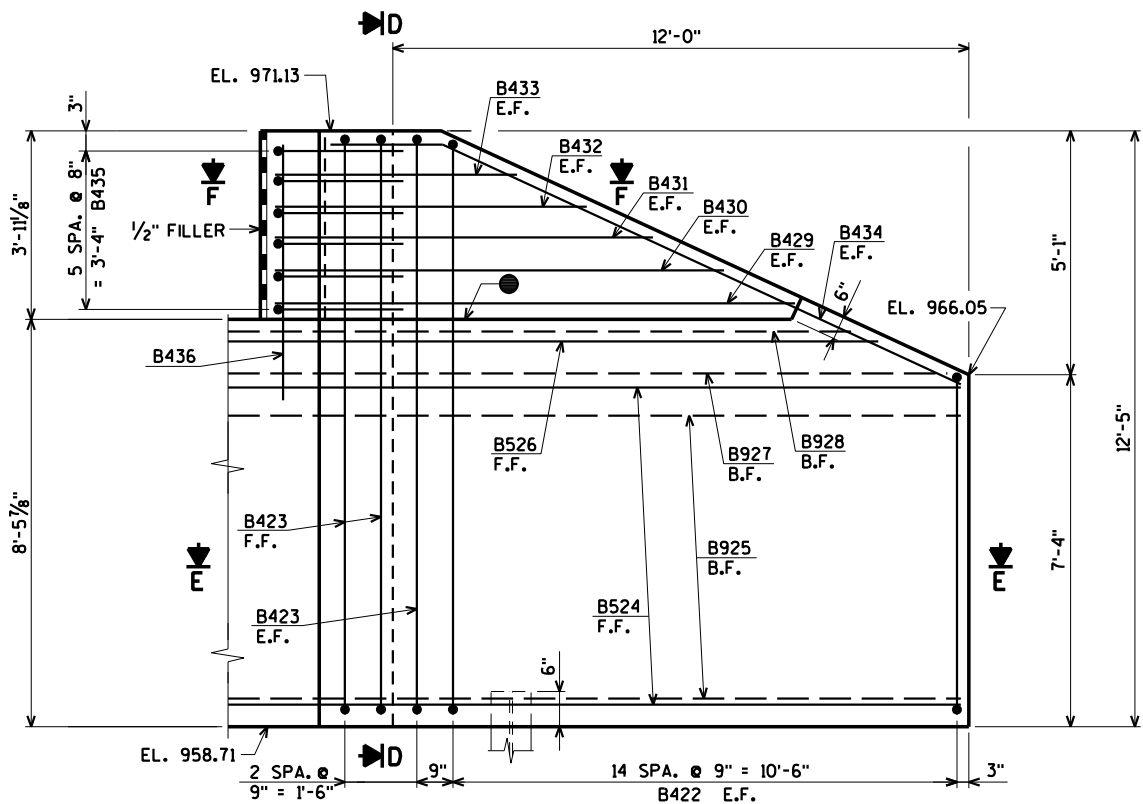
SECTION C

- ▲ 3/4" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.
- OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
- ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BEAM SEAT TO TOP OF WINGWALL.
- ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.
- B.F. DENOTES BACK FACE.
- F.F. DENOTES FRONT FACE.
- E.F. DENOTES EACH FACE.
- FOR PILE SPLICE DETAIL SEE SHEET 2.

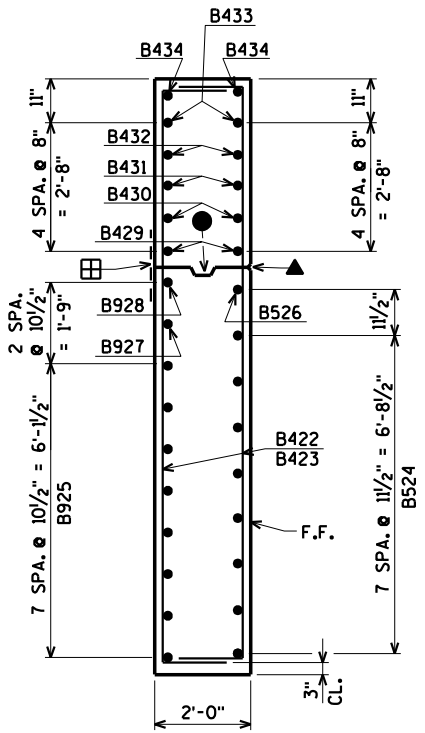
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY		CLP	PLANS CK'D. CJM
NORTH ABUTMENT WING 3 DETAILS			SHEET 10 OF 18

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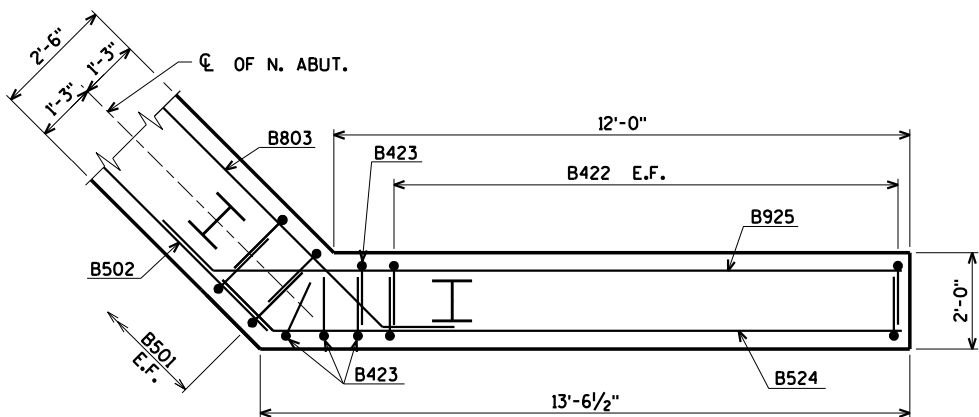
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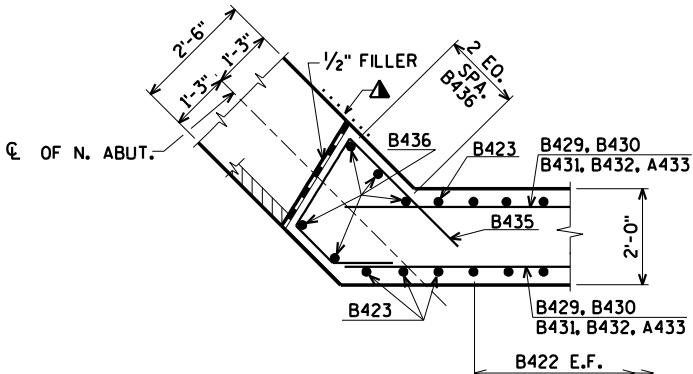
ELEVATION - WING 4



SECTION D



SECTION E



SECTION F

- ▲ 3/4" 'V' GROOVE ON F.F. OF WING WALL - NOT REQUIRED IF CONST. JT. IS NOT USED.
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 - B.F. DENOTES BACK FACE.
F.F. DENOTES FRONT FACE.
E.F. DENOTES EACH FACE.
- FOR PILE SPlice DETAIL SEE SHEET 2.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY		CLP	PLANS CK'D. CJM
NORTH ABUTMENT WING 4 DETAILS			SHEET 11 OF 18

ORIGINAL PLANS PREPARED BY
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STATE PROJECT NUMBER

8929-06-70

BILL OF BARS - SOUTH ABUTMENT

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR BUNDLED	BAR SERIES	2,840* UNCOATED 2,520* COATED
						LOCATION
A501		76	9'-7"	X		BODY VERT. E.F.
A502		9	38'-4"			BODY HORIZ. F.F.
A803		18	24'-8"	X		BODY HORIZ. B.F.
A404		30	2'-9"	X		BODY TIES
A505		38	6'-7"	X		BODY VERT. TOP
A406		3	16'-5"			BODY HORIZ. TOP
A407		17	4'-8"	X		BODY VERT. TOP
A408		2	29'-6"			BODY HORIZ. TOP
A409		30	4'-5"	X		BODY VERT. TOP
A410	X	36	12'-10"	X	⊗	WING 1 VERT. E.F.
A411	X	4	14'-7"	X		WING 1 VERT. E.F.
A512	X	9	16'-9"	X		WING 1 HORIZ. F.F.
A913	X	10	18'-4"	X		WING 1 HORIZ. B.F.
A414	X	2	15'-3"			WING 1 HORIZ. E.F.
A415	X	2	12'-10"			WING 1 HORIZ. E.F.
A416	X	2	10'-4"			WING 1 HORIZ. E.F.
A417	X	2	7'-10"			WING 1 HORIZ. E.F.
A418	X	2	5'-3"			WING 1 HORIZ. E.F.
A419	X	2	14'-7"	X		WING 1 DIAG. E.F.
A420	X	6	9'-5"	X		WING 1 HORIZ.
A421	X	6	5'-3"			WING 1 VERT.
A422	X	36	13'-3"	X	⊗	WING 2 VERT. E.F.
A423	X	4	16'-4"	X		WING 2 VERT. E.F.
A524	X	7	16'-9"	X		WING 2 HORIZ. F.F.
A925	X	8	18'-4"	X		WING 2 HORIZ. B.F.
A526	X	1	16'-0"	X		WING 2 HORIZ. F.F.
A927	X	1	17'-8"	X		WING 2 HORIZ. B.F.
A528	X	1	13'-5"	X		WING 2 HORIZ. F.F.
A929	X	1	15'-2"	X		WING 2 HORIZ. B.F.
A430	X	2	10'-8"			WING 2 HORIZ. E.F.
A431	X	2	9'-1"			WING 2 HORIZ. E.F.
A432	X	2	7'-8"			WING 2 HORIZ. E.F.
A433	X	2	5'-10"			WING 2 HORIZ. E.F.
A434	X	2	4'-2"			WING 2 HORIZ. E.F.
A435	X	2	15'-5"	X		WING 2 DIAG. E.F.
A436	X	6	7'-8"	X		WING 2 HORIZ.
A437	X	5	5'-7"			WING 2 VERT.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

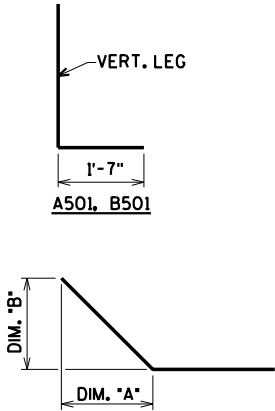
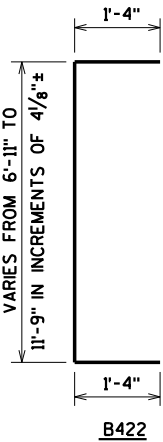
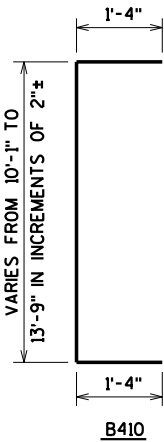
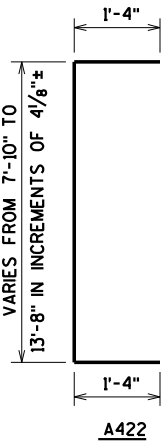
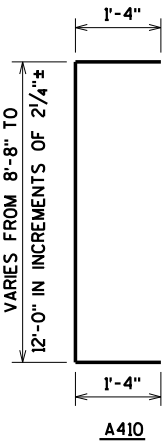
BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
A410	2 SERIES OF 18	11'-2" TO 14'-6"
A422	2 SERIES OF 18	10'-4" TO 16'-2"
B410	2 SERIES OF 23	12'-7" TO 16'-3"
B422	2 SERIES OF 15	9'-5" TO 14'-3"

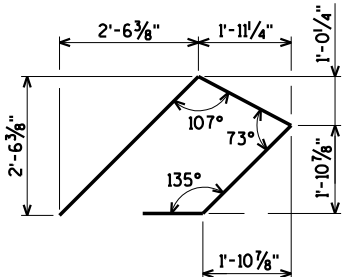
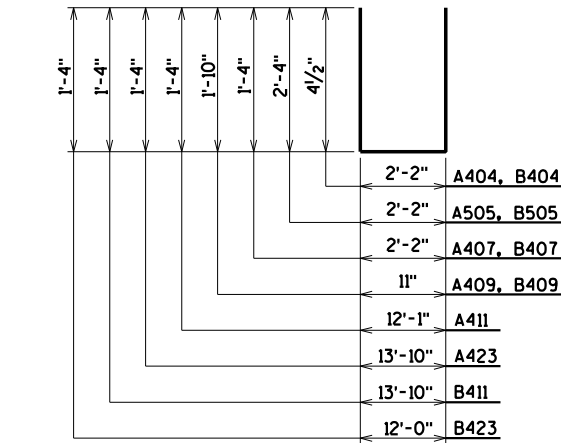
BUNDLE AND TAG EACH SERIES SEPARATELY.

BILL OF BARS - NORTH ABUTMENT

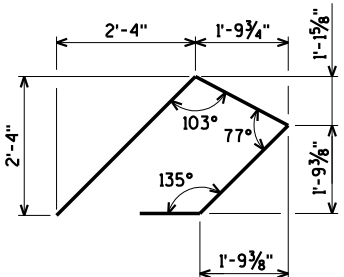
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR BUNDLED	BAR SERIES	2,790* UNCOATED 2,690* COATED
						LOCATION
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B502		9	37'-8"			BODY HORIZ. F.F.
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B408		2	30'-0"			BODY HORIZ. TOP
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B410	X	46	14'-5"	X	⊗	WING 3 VERT. E.F.
B411	X	4	16'-4"	X		WING 3 VERT. E.F.
B512	X	9	20'-9"	X		WING 3 HORIZ. F.F.
B913	X	10	22'-4"	X		WING 3 HORIZ. B.F.
B414	X	2	19'-1"			WING 3 HORIZ. E.F.
B415	X	2	16'-3"			WING 3 HORIZ. E.F.
B416	X	2	12'-10"			WING 3 HORIZ. E.F.
B417	X	2	9'-6"			WING 3 HORIZ. E.F.
B418	X	2	6'-1"			WING 3 HORIZ. E.F.
B419	X	2	18'-6"	X		WING 3 DIAG. E.F.
B420	X	6	8'-11"	X		WING 3 HORIZ.
B421	X	6	5'-7"			WING 3 VERT.
B422	X	30	11'-10"	X	⊗	WING 4 VERT. E.F.
B423	X	4	14'-6"	X		WING 4 VERT. E.F.
B524	X	8	14'-9"	X		WING 4 HORIZ. F.F.
B925	X	8	16'-4"	X		WING 4 HORIZ. B.F.
B526	X	1	13'-2"	X		WING 4 HORIZ. F.F.
B927	X	1	17'-10"	X		WING 4 HORIZ. B.F.
B928	X	1	15'-11"	X		WING 4 HORIZ. B.F.
B429	X	2	9'-9"			WING 4 HORIZ. E.F.
B430	X	2	8'-4"			WING 4 HORIZ. E.F.
B431	X	2	6'-11"			WING 4 HORIZ. E.F.
B432	X	2	5'-5"			WING 4 HORIZ. E.F.
B433	X	2	4'-0"			WING 4 HORIZ. E.F.
B434	X	2	13'-4"	X		WING 4 DIAG. E.F.
B435	X	6	7'-9"	X		WING 4 HORIZ.
B436	X	5	5'-3"			WING 4 VERT.



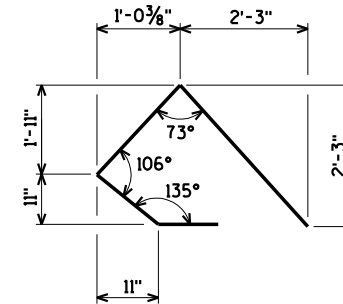
BAR NO.	DIM. "A"	DIM. "B"
A803	1'-0 3/4"	1'-0 3/4"
A512	1'-0 3/4"	1'-0 3/4"
A913	1'-0 3/4"	1'-0 3/4"
A419	12'-10"	3'-4"
A524	1'-0 3/4"	1'-0 3/4"
A925	1'-0 3/4"	1'-0 3/4"
A526	1'-0 3/4"	1'-0 3/4"
A927	1'-0 3/4"	1'-0 3/4"
A528	1'-0 3/4"	1'-0 3/4"
A929	1'-0 3/4"	1'-0 3/4"
A435	12'-10"	5'-11"
B803	1'-0 3/4"	1'-0 3/4"
B512	1'-0 3/4"	1'-0 3/4"
B913	1'-0 3/4"	1'-0 3/4"
B419	16'-10"	3'-8"
B524	1'-0 3/4"	1'-0 3/4"
B925	1'-0 3/4"	1'-0 3/4"
B526	1'-0 3/4"	1'-0 3/4"
B927	1'-0 3/4"	1'-0 3/4"
B928	1'-0 3/4"	1'-0 3/4"
B434	10'-10"	5'-0"



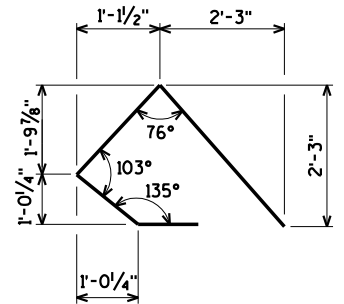
A420



B420



A436



B435

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY		CLP	PLANS CK'D. CJM
ABUTMENT BILL OF BARS			SHEET 12 OF 18

ORIGINAL PLANS PREPARED BY
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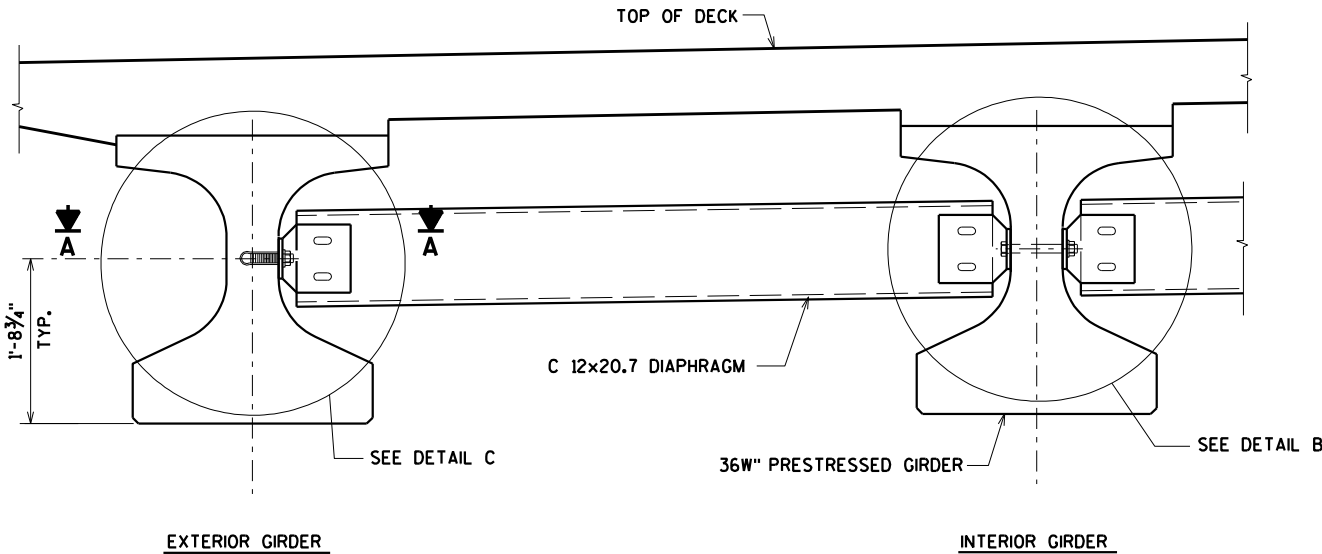
NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-17-210", EACH.

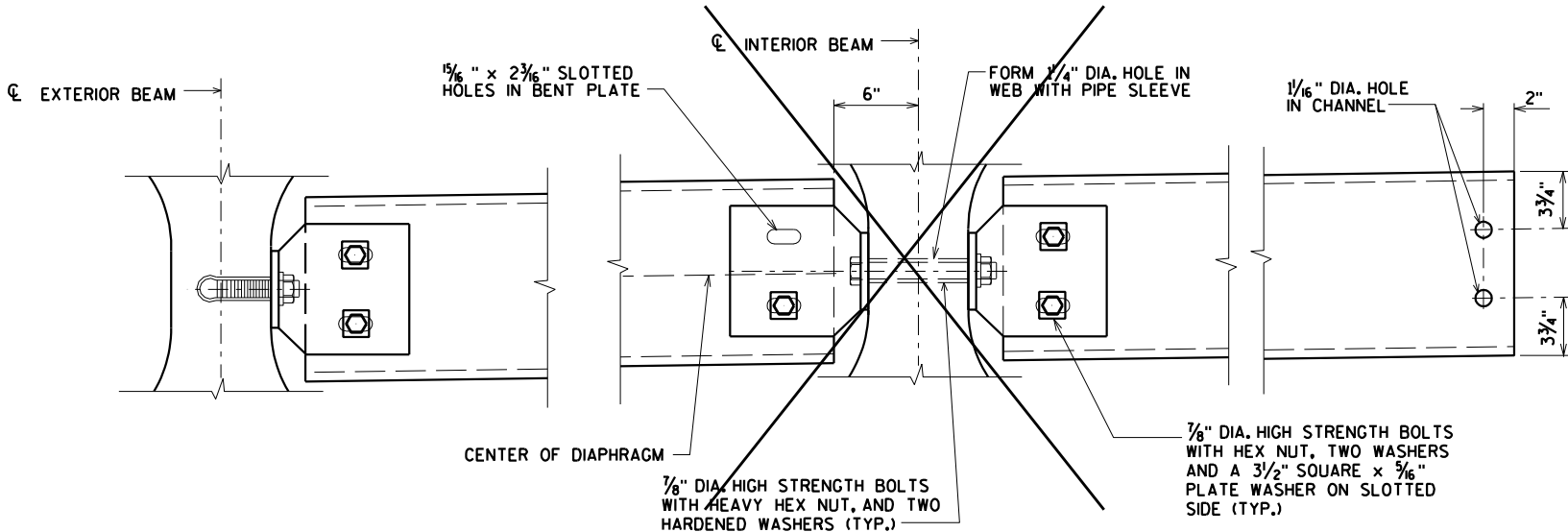
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

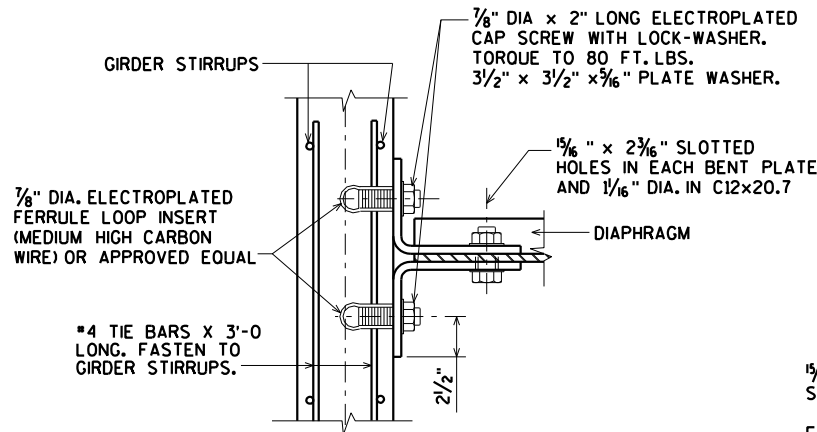


PART TRANSVERSE SECTION AT DIAPHRAGM

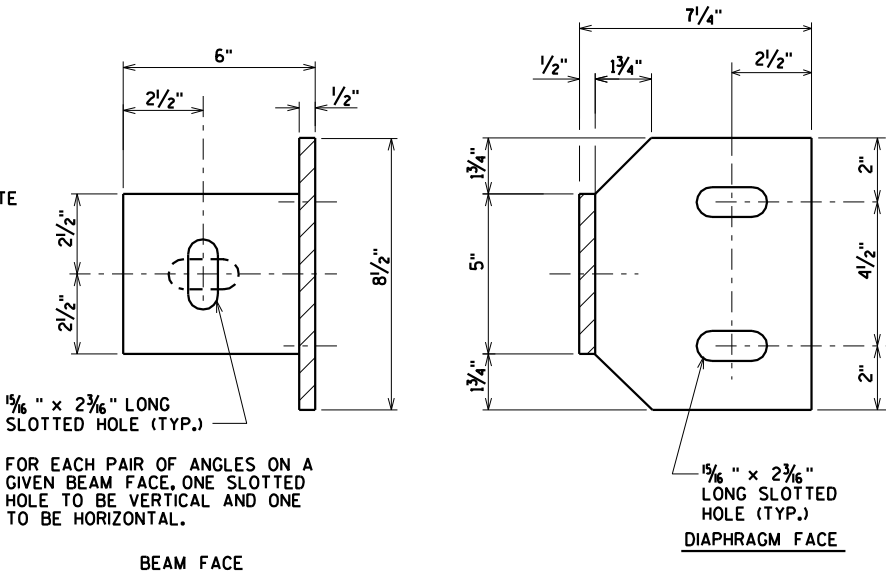


DETAIL C

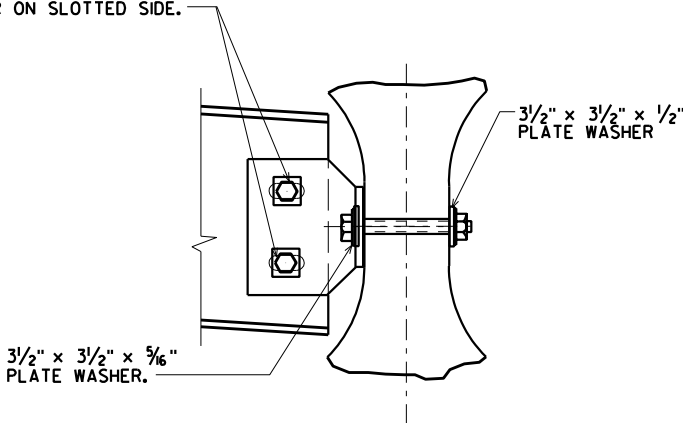
DETAIL B



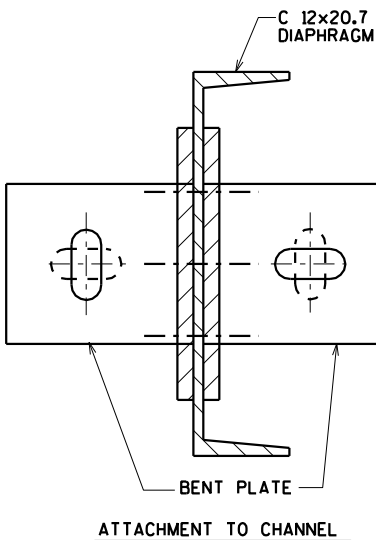
SECTION A-A
(FOR EXTERIOR ATTACHMENT)



7/8\"/>

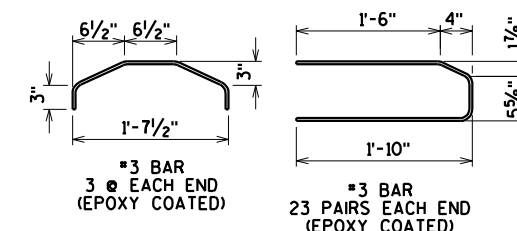


SECTION AT INTERIOR GIRDERS THRU
DIAPHRAGM FOR SKEW ANGLES > 10°



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY CLP		PLANS CK'D. CJM	
STEEL INTER. DIAPHRAGM DETAILS			SHEET 13 OF 18

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



(A) DETAIL TYP. AT EACH END

(B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 2'-4"

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

[illegible]

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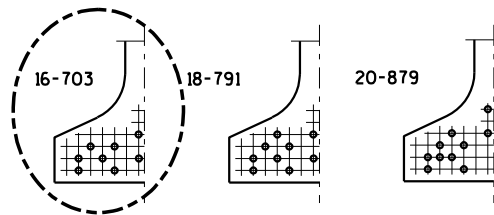
SHEET 14 OF 18

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8

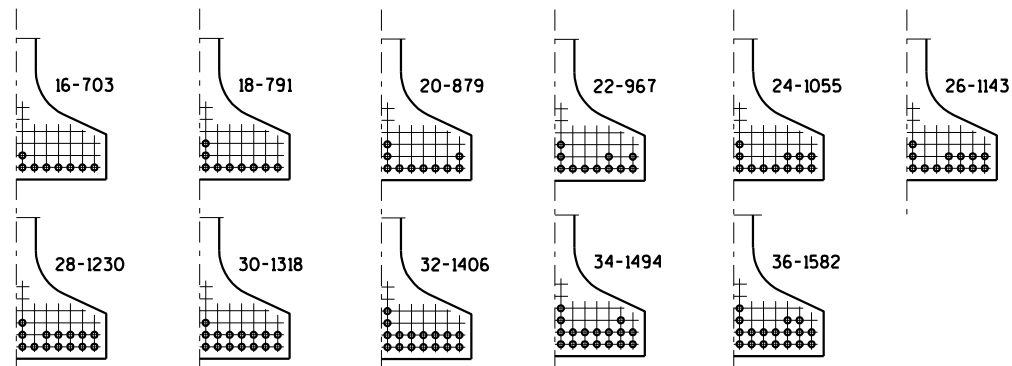
STATE PROJECT NUMBER

8929-06-70



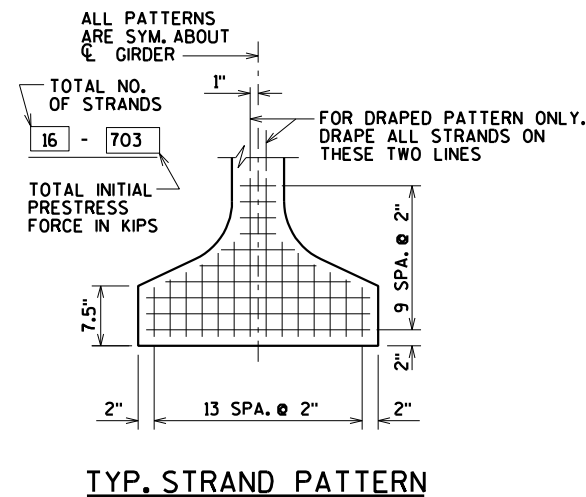
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6"Ø STRANDS



ARRANGEMENT AT $\mathcal{C}$ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6"Ø STRANDS

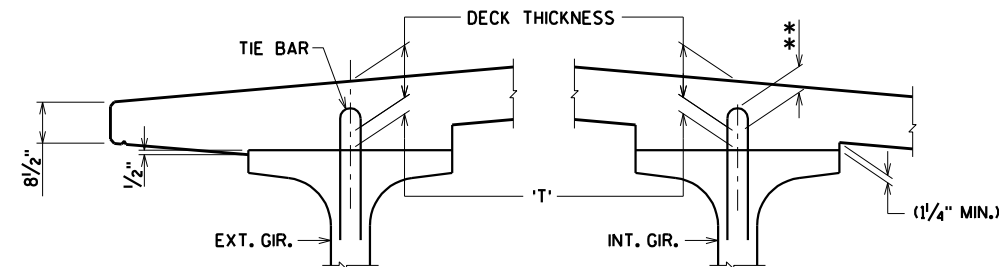


TYP. STRAND PATTERN

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

SPAN	CAMBER (IN.) *
1	0.9

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T'.
USE ACTUAL GIRDER SHOTS.
THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



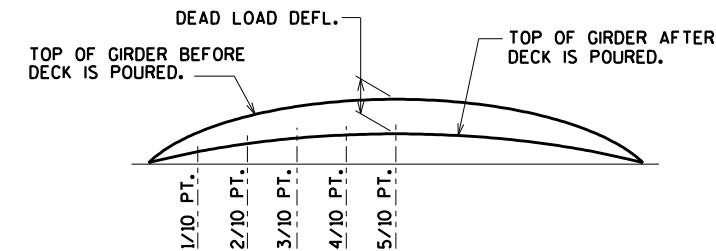
DECK HAUNCH DETAIL

IF 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, ** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

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

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

NOTE: AN AVERAGE HAUNCH ('T') OF 3 1/2" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
	DRAWN BY	CLP	PLANS CK'D. CJM
36W" PRESTRESSED GIRDER DETAILS			SHEET 15 OF 18

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STATE PROJECT NUMBER

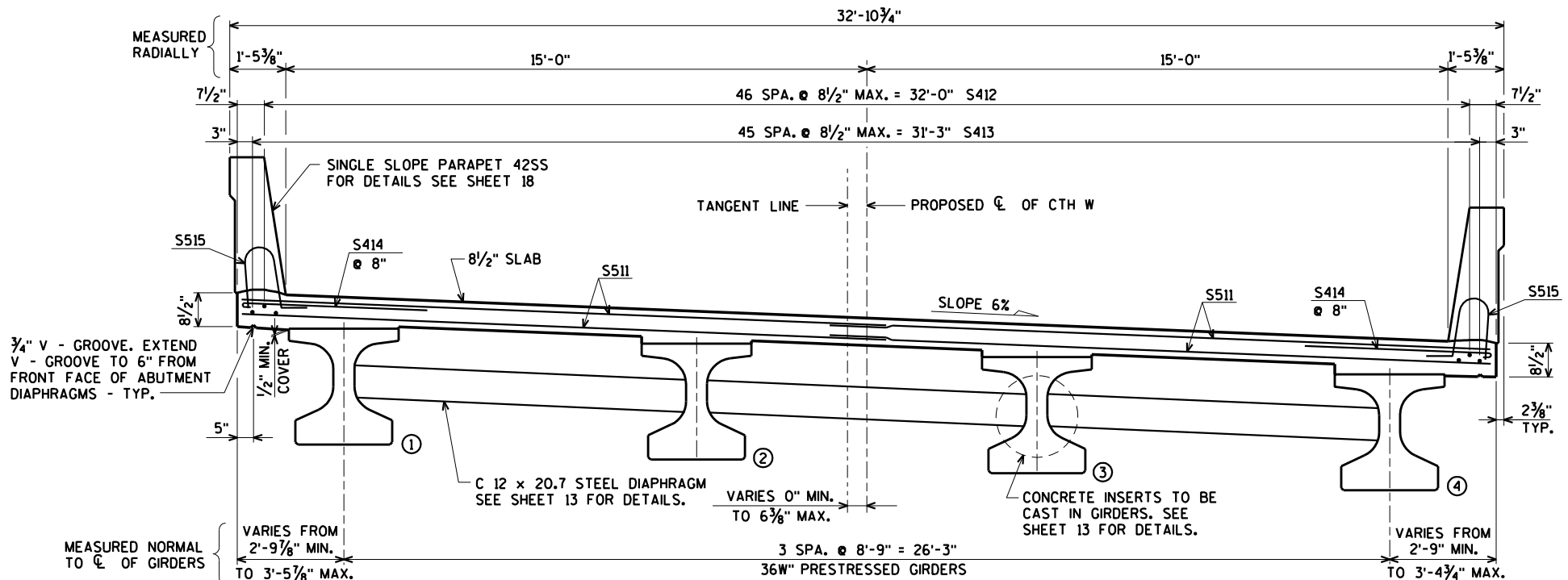
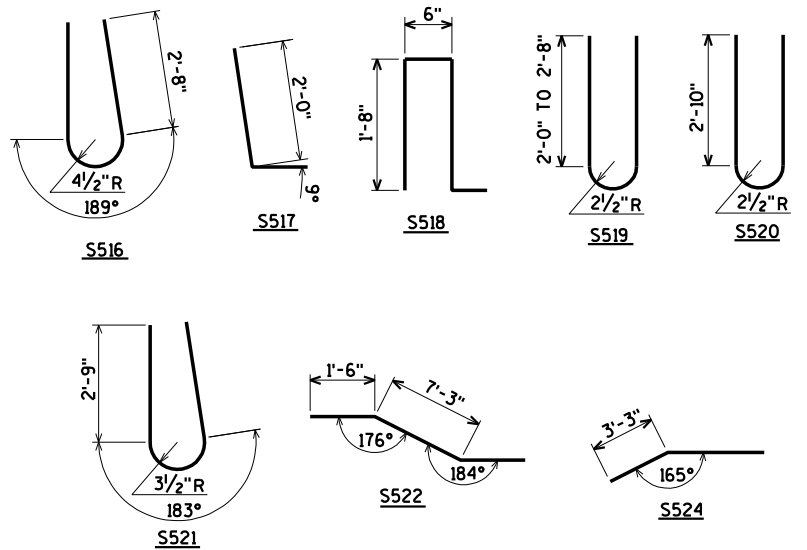
8929-06-70

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	20,560# COATED
						LOCATION
S401	X	36	3-2	X		DIAPH. @ ABUT. VERT. @ NOTCH
S402	X	12	4-7			DIAPH. @ ABUT. HORIZ. @ NOTCH
S503	X	66	9-11	X		DIAPH. @ ABUT. VERT.
S504	X	16	7-10	X		DIAPH. @ ABUT. VERT. @ GIRDERS
S505	X	66	5-9	X		DIAPH. @ ABUT. VERT.
S606	X	20	18-7			DIAPH. @ ABUT. HORIZ.
S607	X	4	1-2			DIAPH. @ ABUT. HORIZ. EXT. GIRDERS
S608	X	36	5-2			DIAPH. @ ABUT. HORIZ. BETW. GIRDERS
S609	X	8	2-1			DIAPH. @ ABUT. HORIZ. EXT. GIRDERS
S510	X	16	6-0			DIAPH. @ ABUT. HORIZ. THRU GIRDER
S511	X	366	18-2			SLAB TRANS. TOP & BOT.
S412	X	94	31-0			SLAB LONG. BOT.
S413	X	92	31-0			SLAB LONG. TOP
S414	X	182	5-0	X		SLAB TRANS. @ OVERHANGS
S515	X	132	4-5	X		SLAB @ PARAPET VERT.
S516	X	132	6-8	X		PARAPET VERT.
S517	X	48	2-9	X		SLAB @ PARAPET VERT.
S518	X	68	4-4	X		SLAB @ PARAPET VERT.
S519	X	24	5-5	X		SLAB @ PARAPET VERT.
S520	X	20	6-5	X		SLAB @ PARAPET VERT.
S521	X	24	6-6	X		SLAB @ PARAPET VERT.
S522	X	4	11-6	X		PARAPET HORIZ. @ ENDS OF SLAB
S523	X	20	11-6	X		PARAPET HORIZ. @ ENDS OF SLAB
S524	X	8	11-9	X		PARAPET HORIZ. @ ENDS OF SLAB
S525	X	14	42-6			PARAPET HORIZ.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

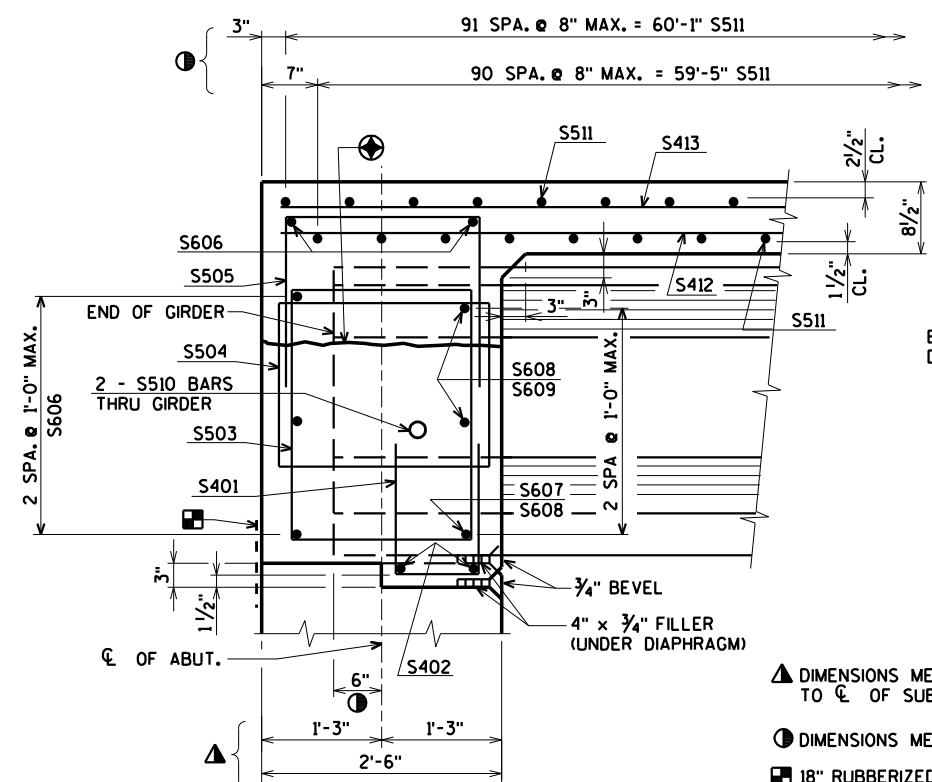
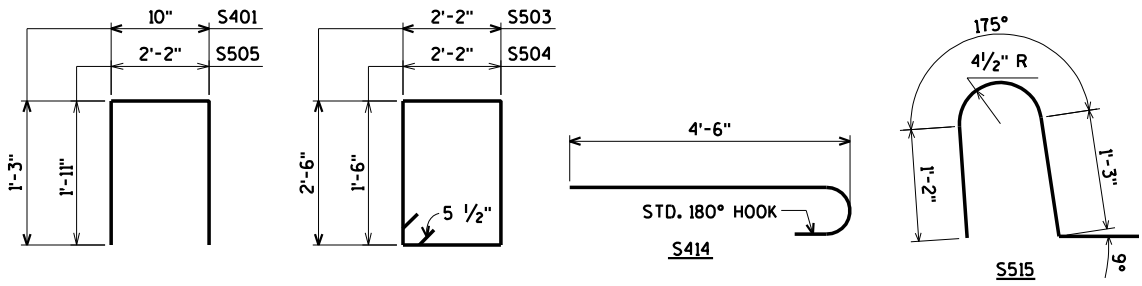


CROSS SECTION THRU ROADWAY
(LOOKING NORTH)

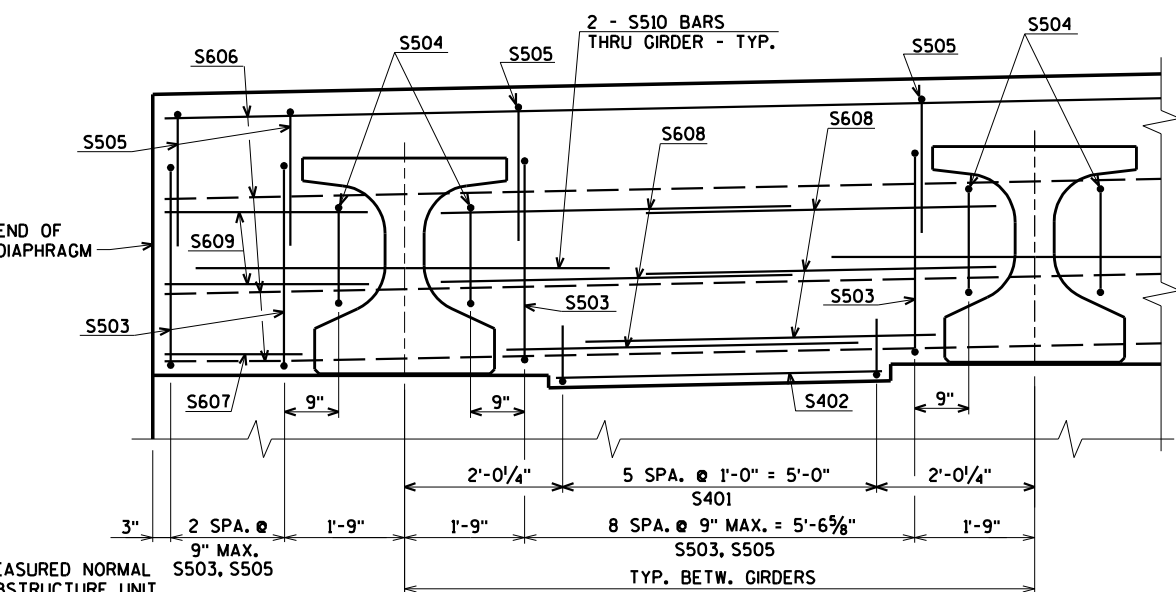
BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
S519	4 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.



PART LONGITUDINAL SECTION



PART SECTION AT ABUTMENT

- ▲ DIMENSIONS MEASURED NORMAL TO CL OF SUBSTRUCTURE UNIT.
- DIMENSIONS MEASURED ALONG CL OF GIRDER.
- 18" RUBBERIZED MEMBRANE WATERPROOFING
- ⊕ OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDER. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.

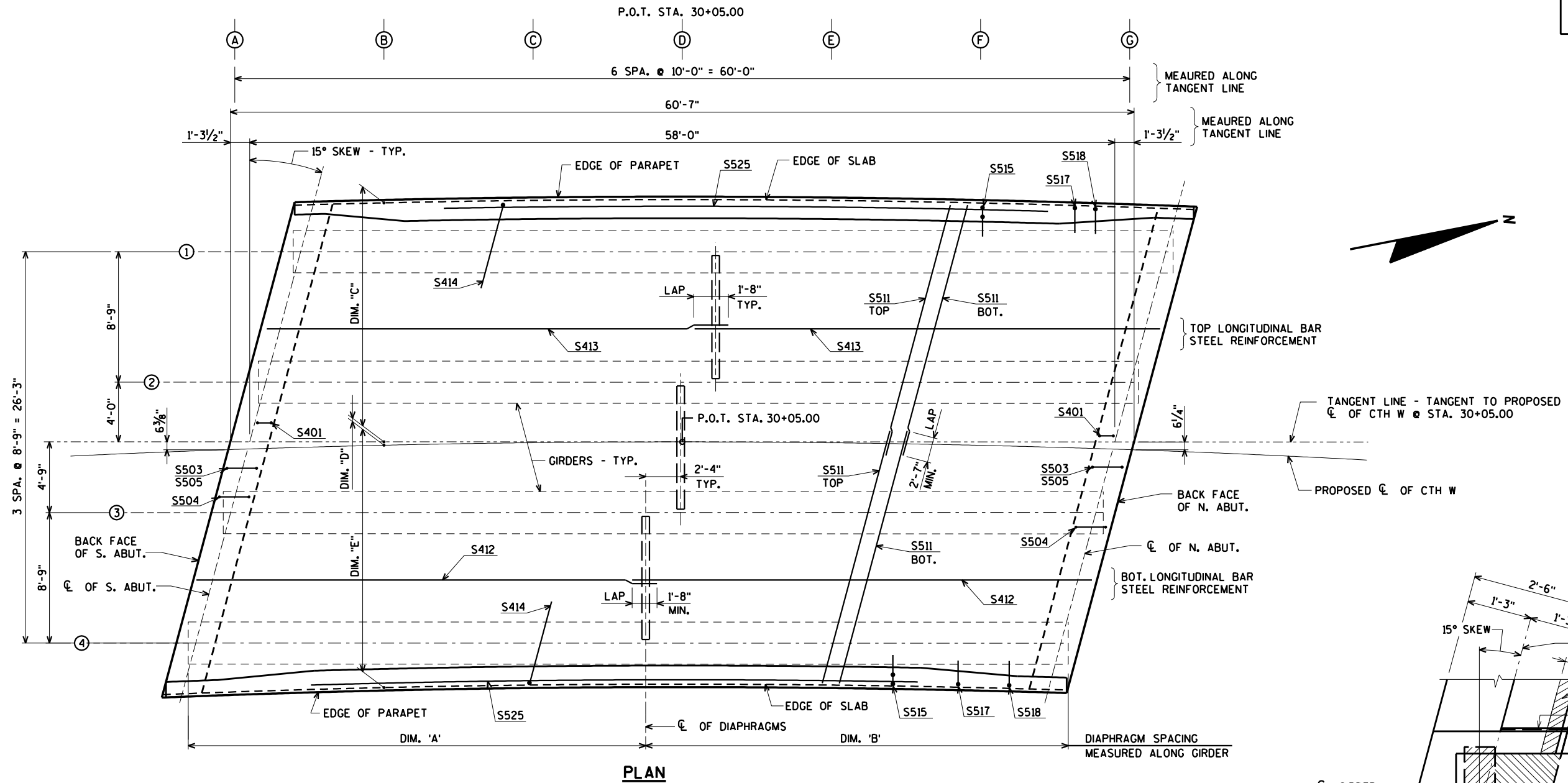
ORIGINAL PLANS PREPARED BY
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY		CLP	PLANS CK'D. CJM
SUPERSTRUCTURE		SHEET 16 OF 18	

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8929-06-70



TOP OF DECK ELEVATIONS

	CL OF BRG. S. ABUT.	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	CL OF BRG. N. ABUT.
W. EDGE OF DECK	973.99	973.86	973.74	973.62	973.51	973.41	973.31	973.22	973.13	973.06	972.99
GIRDER 1	973.83	973.69	973.55	973.43	973.32	973.21	973.11	973.03	972.95	972.88	972.82
GIRDER 2	973.37	973.22	973.08	972.96	972.84	972.73	972.63	972.53	972.45	972.38	972.31
TANGENT LINE	973.13	973.00	972.86	972.74	972.62	972.51	972.41	972.31	972.22	972.13	972.06
CL CTH W	973.16	973.01	972.87	972.74	972.62	972.51	972.40	972.31	972.23	972.15	972.08
GIRDER 3	972.91	972.76	972.62	972.48	972.36	972.25	972.14	972.04	971.96	971.88	971.81
GIRDER 4	972.46	972.30	972.15	972.02	971.89	971.77	971.66	971.56	971.46	971.38	971.31
E. EDGE OF DECK	972.28	972.14	972.00	971.86	971.74	971.62	971.51	971.40	971.31	971.21	971.13

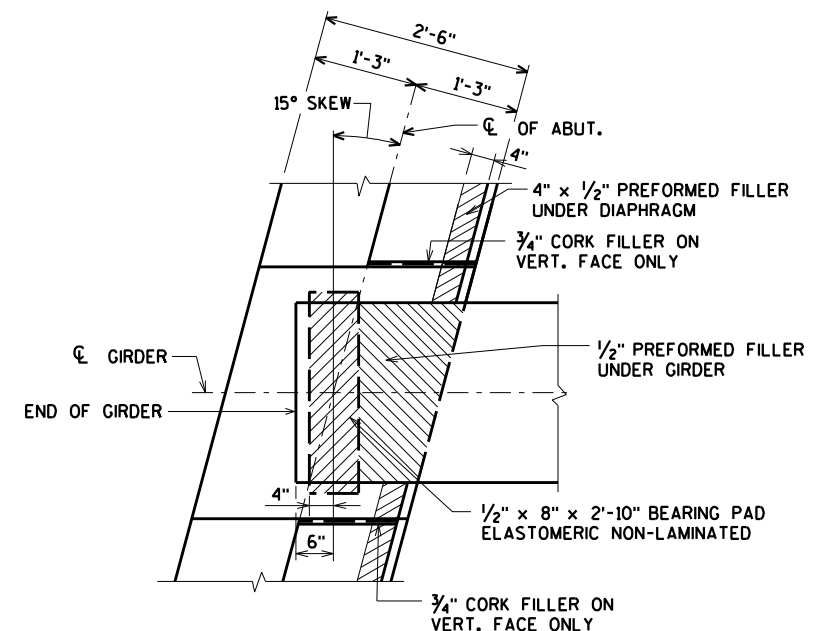
TENTH POINTS MEASURED IN RELATION TO THE TANGENT LINE.

TABLE OF DIAPHRAGM DIMENSIONS

GIRDER	DIM. 'A'	DIM. 'B'
1	28'-4"	30'-8"
2	28'-4"	30'-8"
3	28'-4"	30'-8"
4	30'-8"	28'-4"

EDGE OF DECK OFFSETS

	A	B	C	D	E	F	G
DIM. "C"	-----	16'-0 1/4"	16'-2 3/8"	16'-3"	16'-2 3/8"	16'-0 1/4"	15'-8 7/8"
DIM. "D"	6 1/8"	2 3/4"	5/8"	0"	5/8"	2 3/4"	6 1/8"
DIM. "E"	16'-3"	16'-3"	16'-3"	16'-3"	16'-3"	16'-3"	-----



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY		CLP	PLANS CK'D. CJM
SUPERSTRUCTURE PLAN			SHEET 17 OF 18

ORIGINAL PLANS PREPARED BY

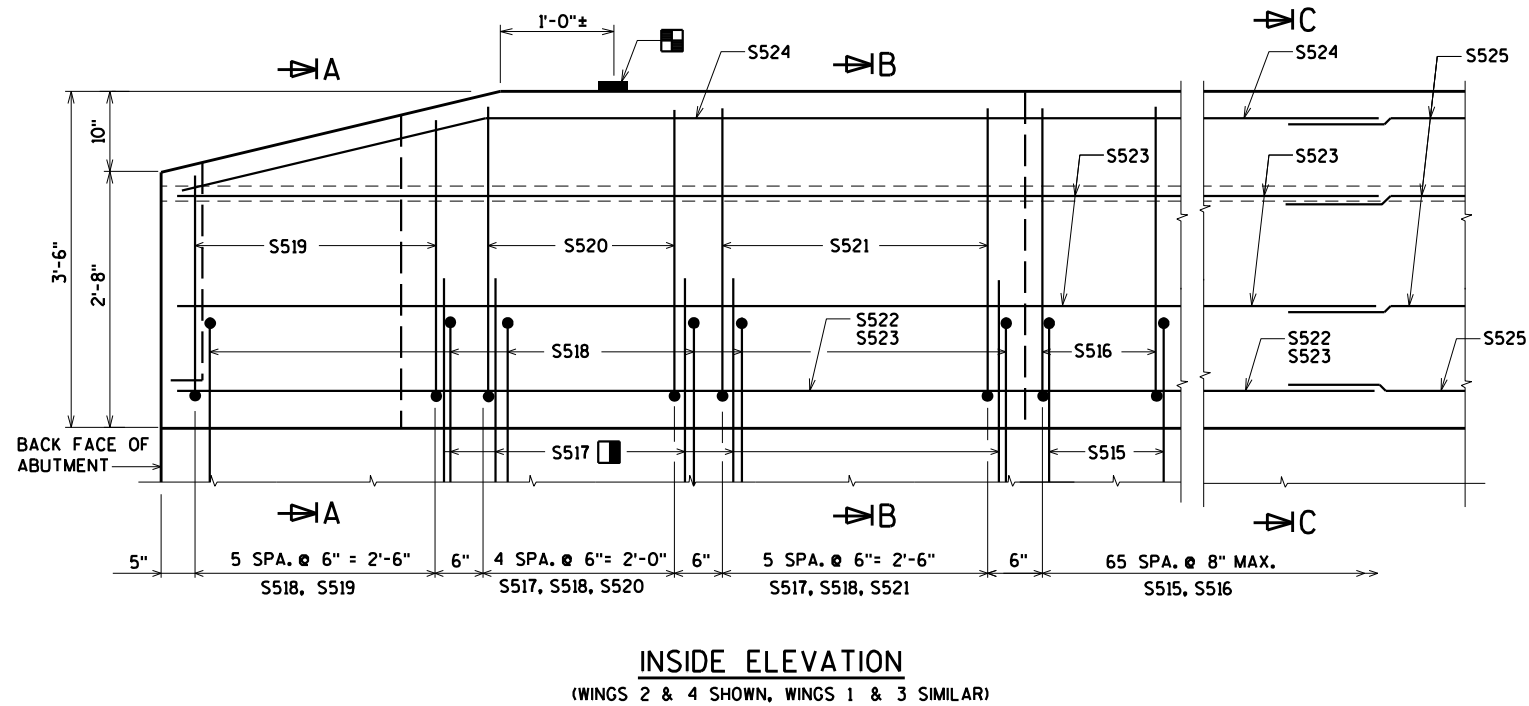
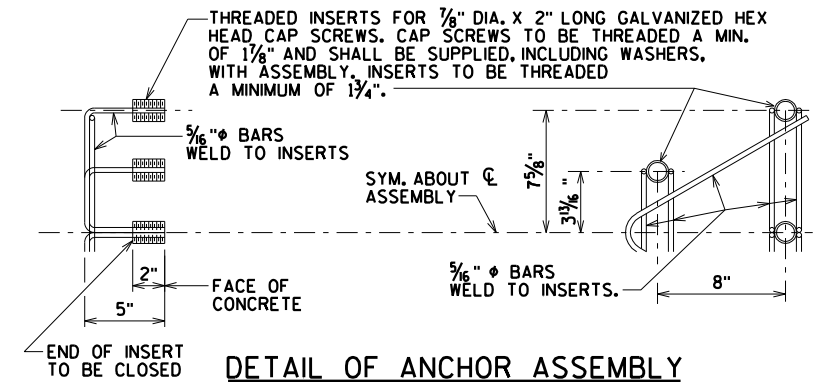
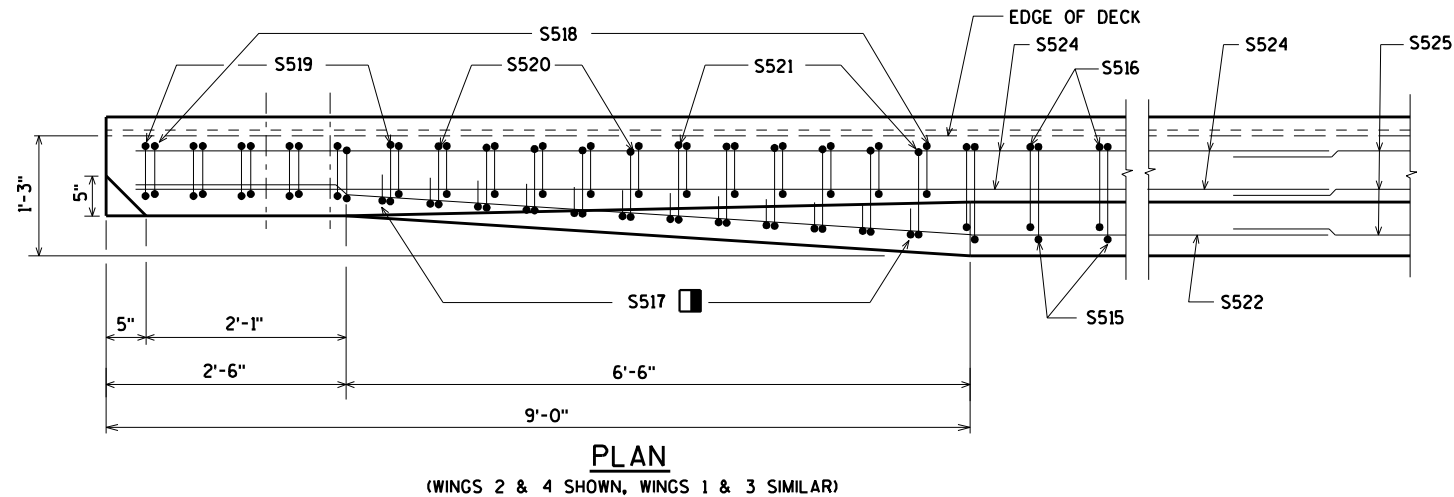
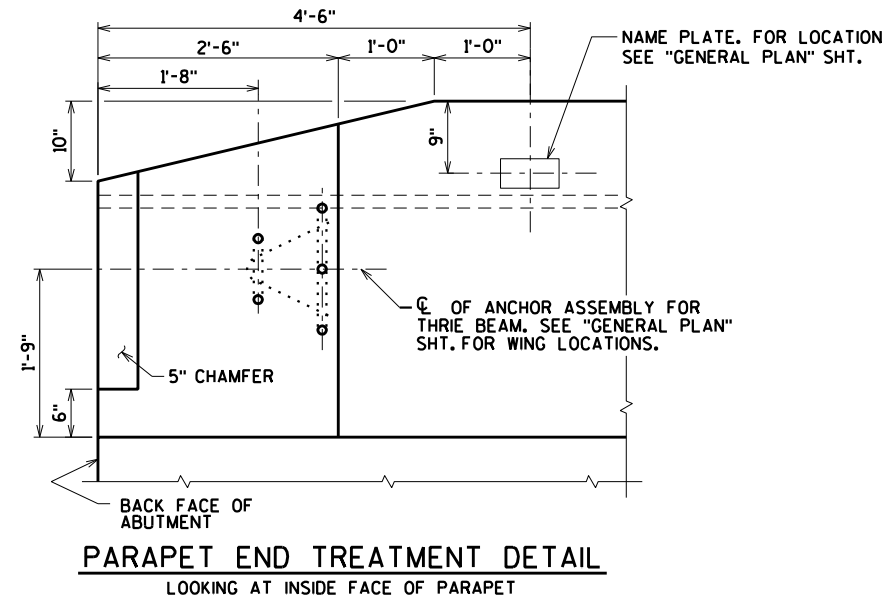
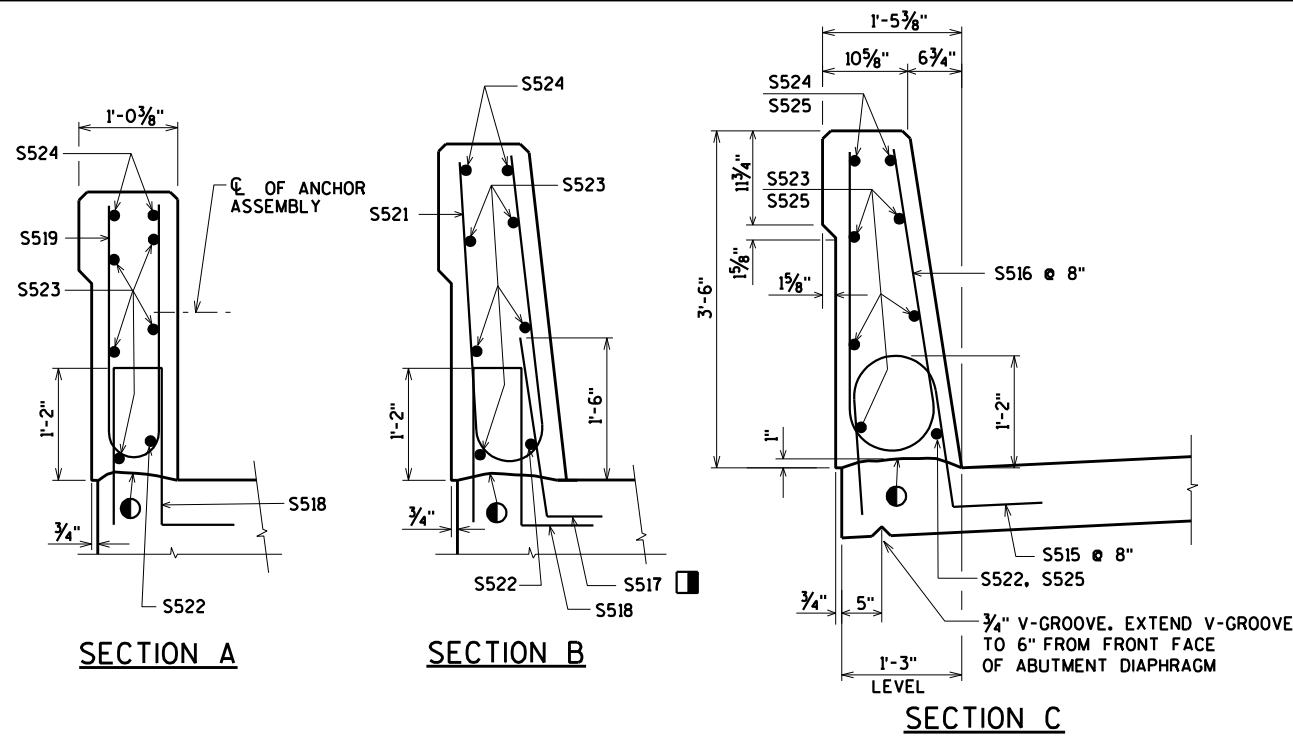
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■ BENCH MARK CAP - LOCATION AS SHOWN ON GENERAL PLAN SHEET

● CONST. JOINT - STRIKE OFF AS SHOWN.

■ S517 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE S517 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

LAP LONG. BARS A MIN. OF 2'-7".

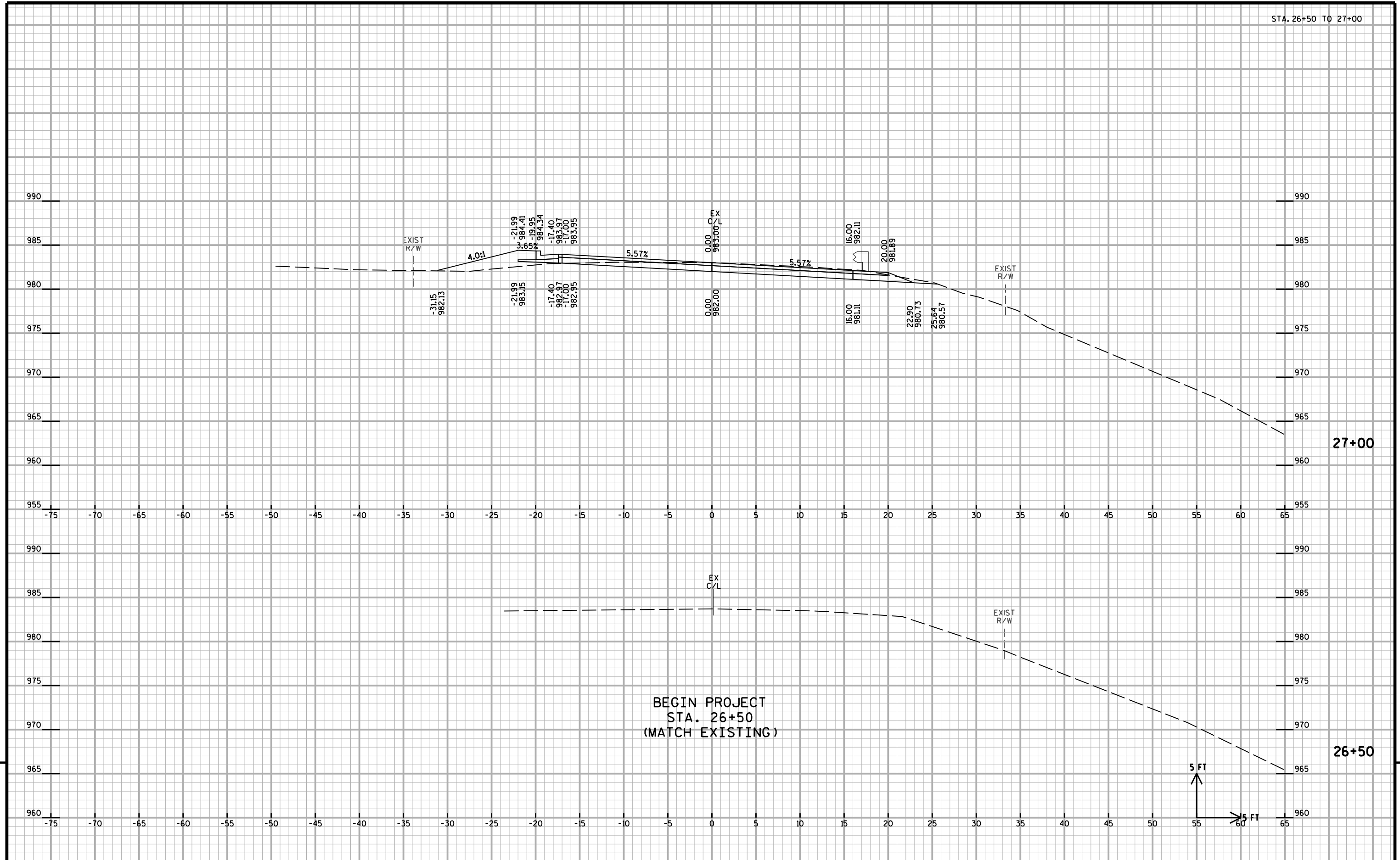
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-210			
DRAWN BY CLP		PLANS CK'D. CJM	
SINGLE SLOPE PARAPET 42SS			SHEET 18 OF 18

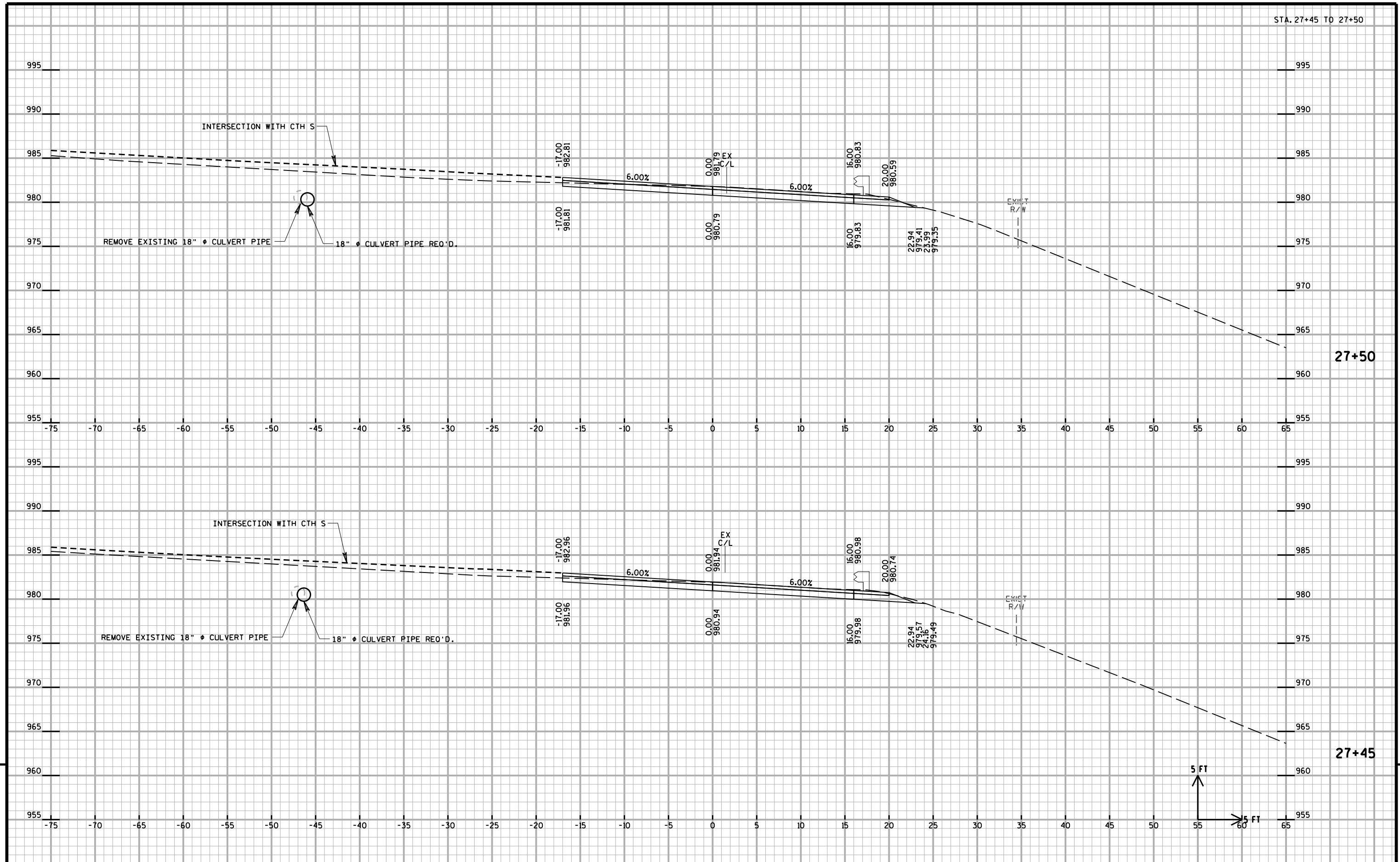
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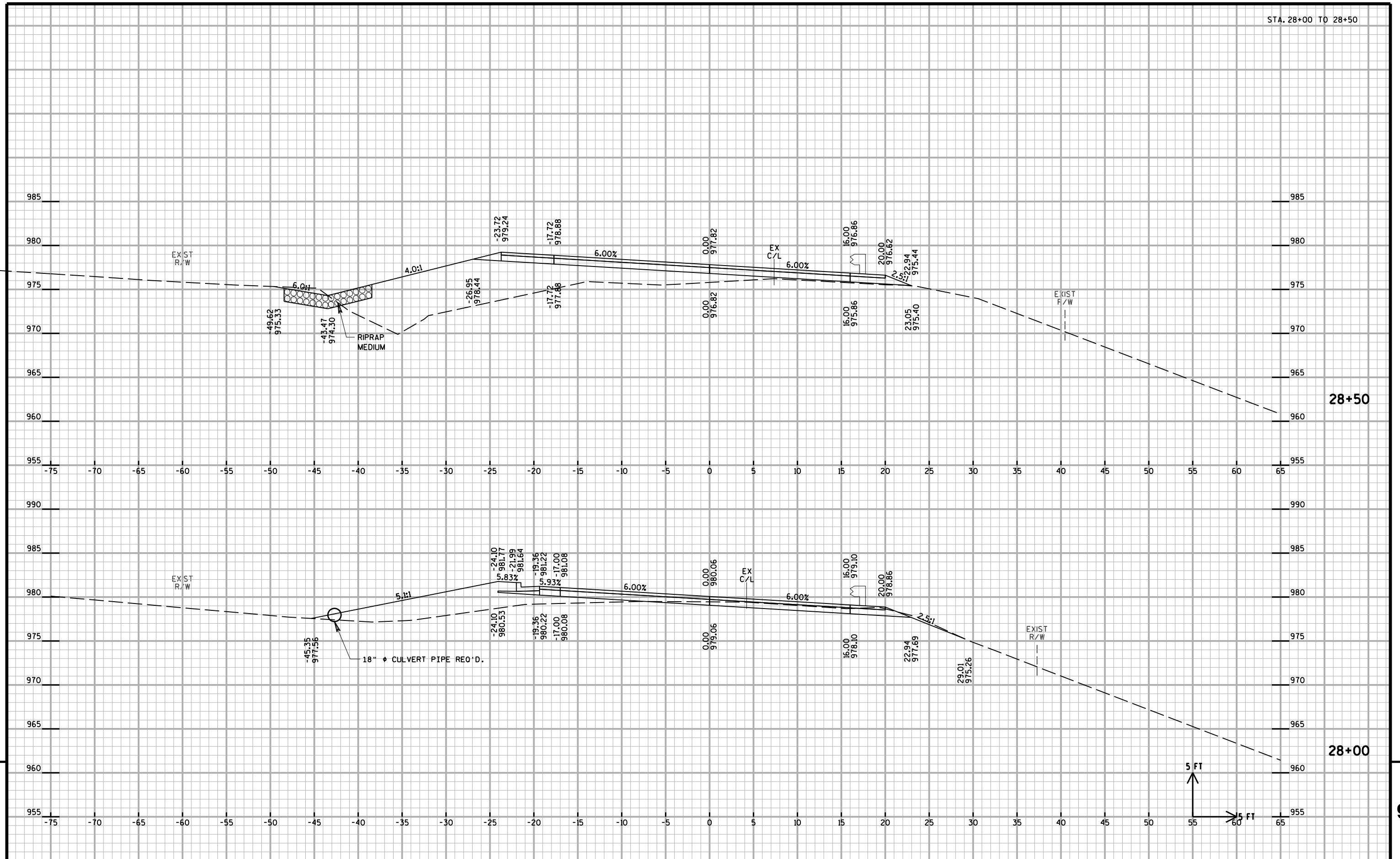
EARTHWORK SUMMARY (CATEGORY 0010)										
DIVISION	STATION	CUT SF	AREA	FILL SF	INCREMENTAL VOLUME			CUMULATIVE VOLUME		
			SALVAGED/ UNUSEABLE PAVEMENT MATERIAL SF		CUT (1) CY	SALVAGED/ UNUSEABLE PAVEMENT MATERIAL (2) CY	FILL (3) CY	CUT (1) 1.00 CY	EXPANDED FILL (4) 1.30 CY	MASS ORDNATE ±(5) CY
1 CTH W	26+50	33	0	0						
	27+00	33	0	13	61	0	12	61	16	45
	27+45	34	0	0	56	0	11	117	30	87
	27+50	34	0	0	6	0	0	123	30	93
	28+00	16	0	57	46	0	53	169	99	70
	28+50	2	0	142	17	0	184	186	338	-152
	28+54	4	0	165	0	0	23	186	368	-182
	28+79	0	0	287	2	0	209	188	640	-452
	29+00	0	0	321	0	0	236	188	946	-758
	29+03	0	0	326	0	0	36	188	993	-805
	29+50	0	0	462	0	0	686	188	1,885	-1,697
	29+74.56	0	0	462	0	0	420	188	2,431	-2,243
STRUCTURE B-17-210										
	30+35.16	0	0	407	0	0	224	0	291	-291
	30+50	0	0	407	0	0	621	0	1,099	-1,099
	31+00	0	0	264	0	0	93	0	1,219	-1,219
	31+10	0	0	237	0	0	149	0	1,413	-1,413
	31+28	0	0	209	0	0	49	0	1,477	-1,477
	31+35	0	0	166	22	0	74	22	1,573	-1,551
	31+50	80	0	99	9	0	11	31	1,587	-1,556
	31+53	88	0	105	26	0	25	57	1,620	-1,563
	31+60	110	0	85	76	0	42	133	1,674	-1,541
	31+78	118	0	42	68	0	23	201	1,704	-1,503
	32+00	50	0	15	75	0	14	276	1,723	-1,447
	32+50	31	0	0						
2 CTH S	40+17	21	0	0						
	40+25	11	0	67	5	0	10	5	13	-8
	40+50	13	0	76	11	0	66	16	99	-83
	40+75	16	0	42	14	0	54	30	169	-139
	41+00	24	0	6	19	0	22	49	198	-149
	41+25	31	0	0	25	0	3	74	202	-128
TOTALS					538	0	3,350			-3,817
205.0100 EXCAVATION COMMON =					SAY 538			208.0100 BORROW =		SAY 3,818

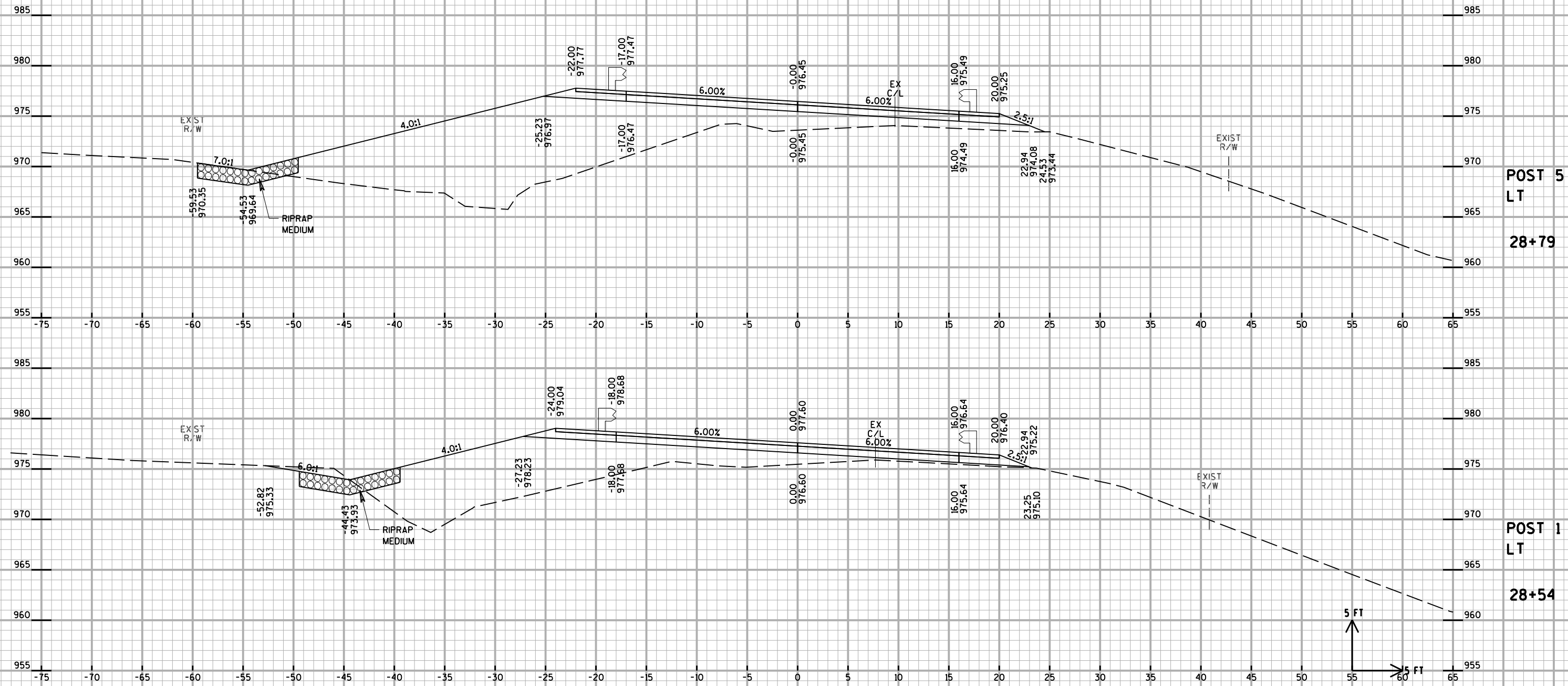
NOTES:
1) EXCAVATION COMMON IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100
2) SALVAGED/UNUSEABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
4) EXPANDED FILL FACTOR = 1.30 EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
5) THE MASS ORDNATE ± QTY CALCULATED FOR THE DIVISION.

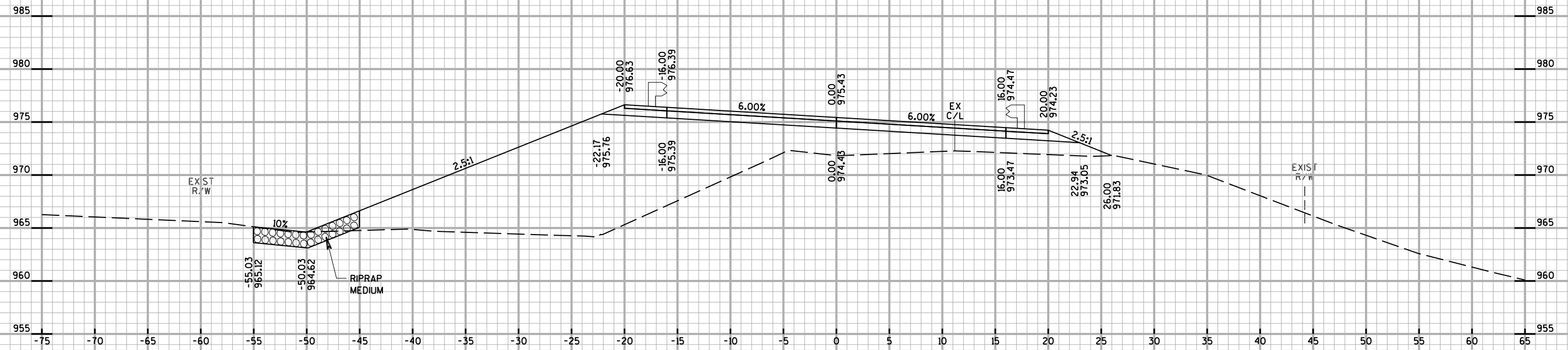
PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.



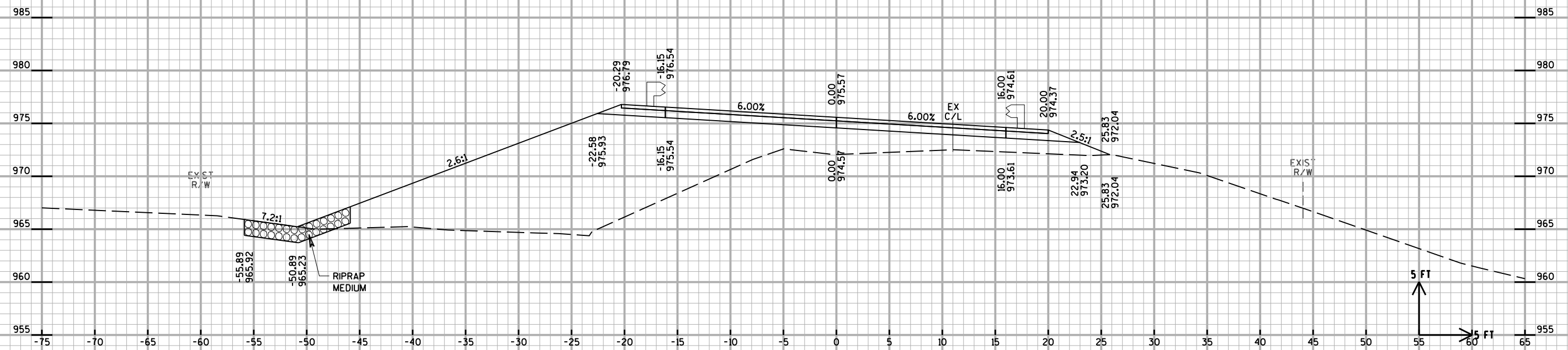








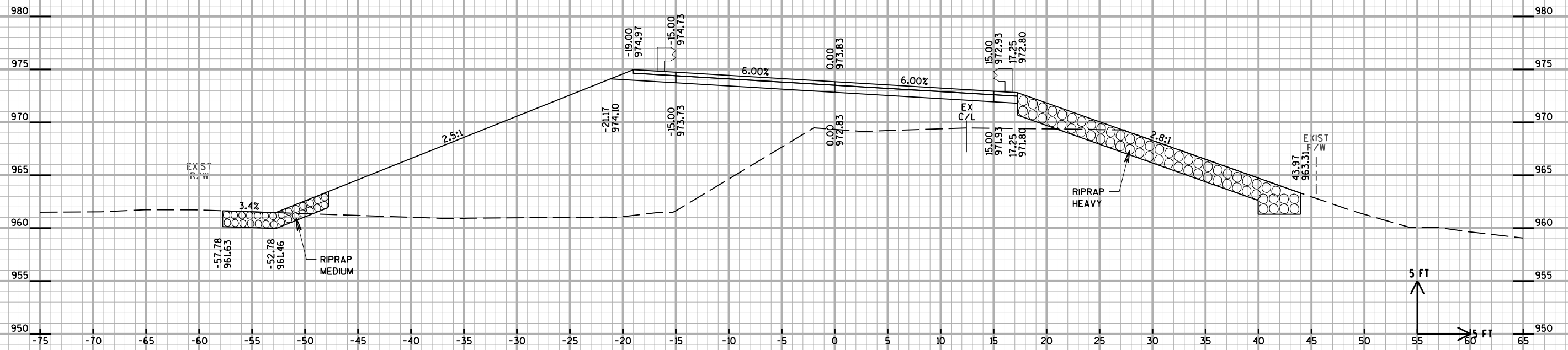
POST 9
LT
29+03



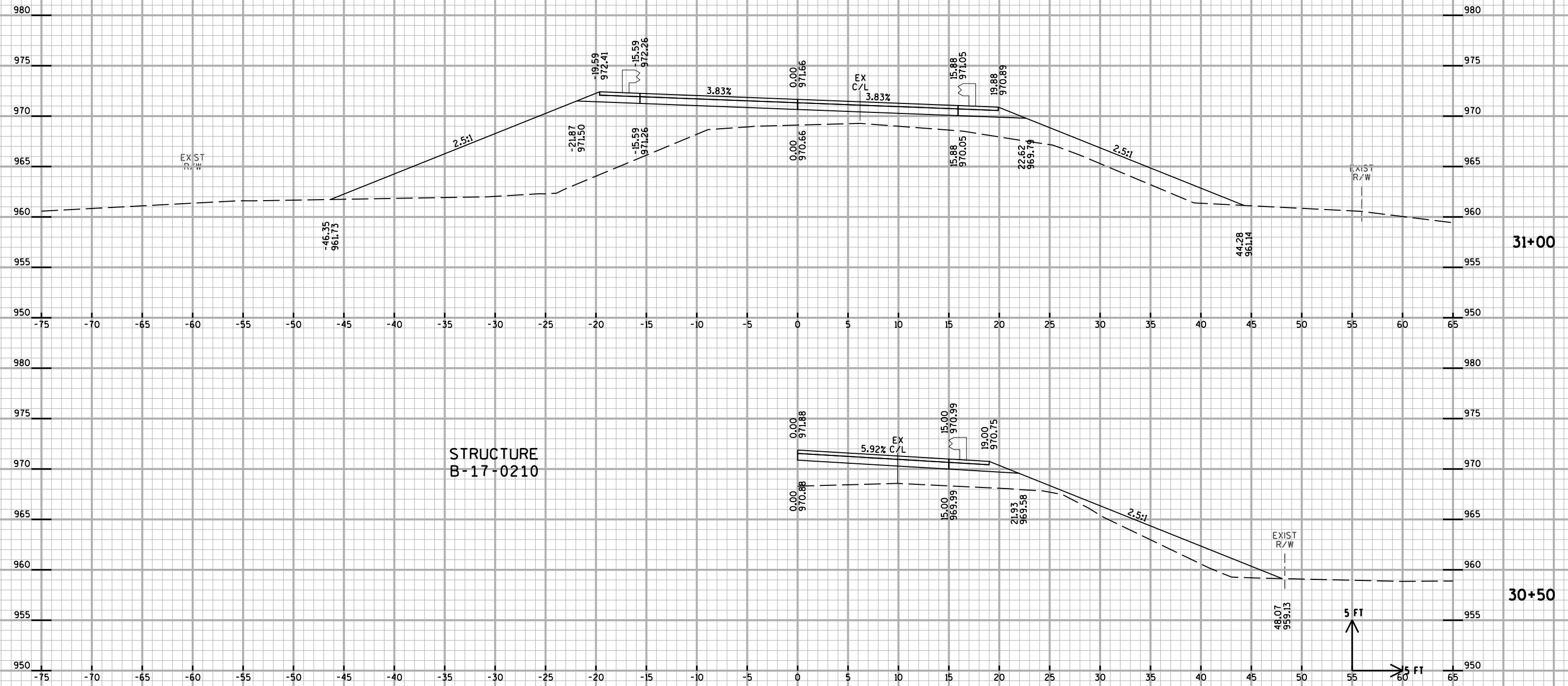
29+00

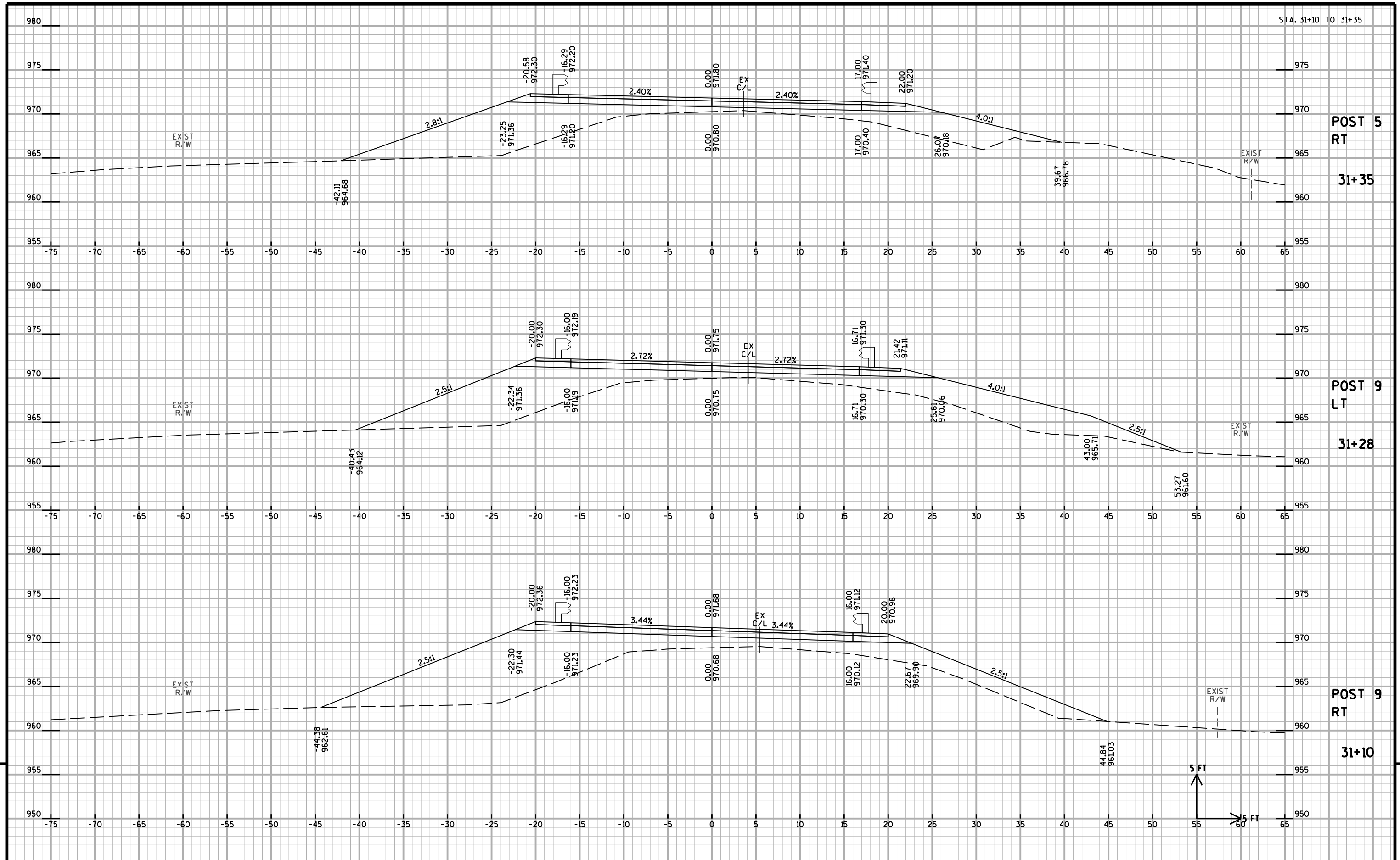
5 FT
5 FT

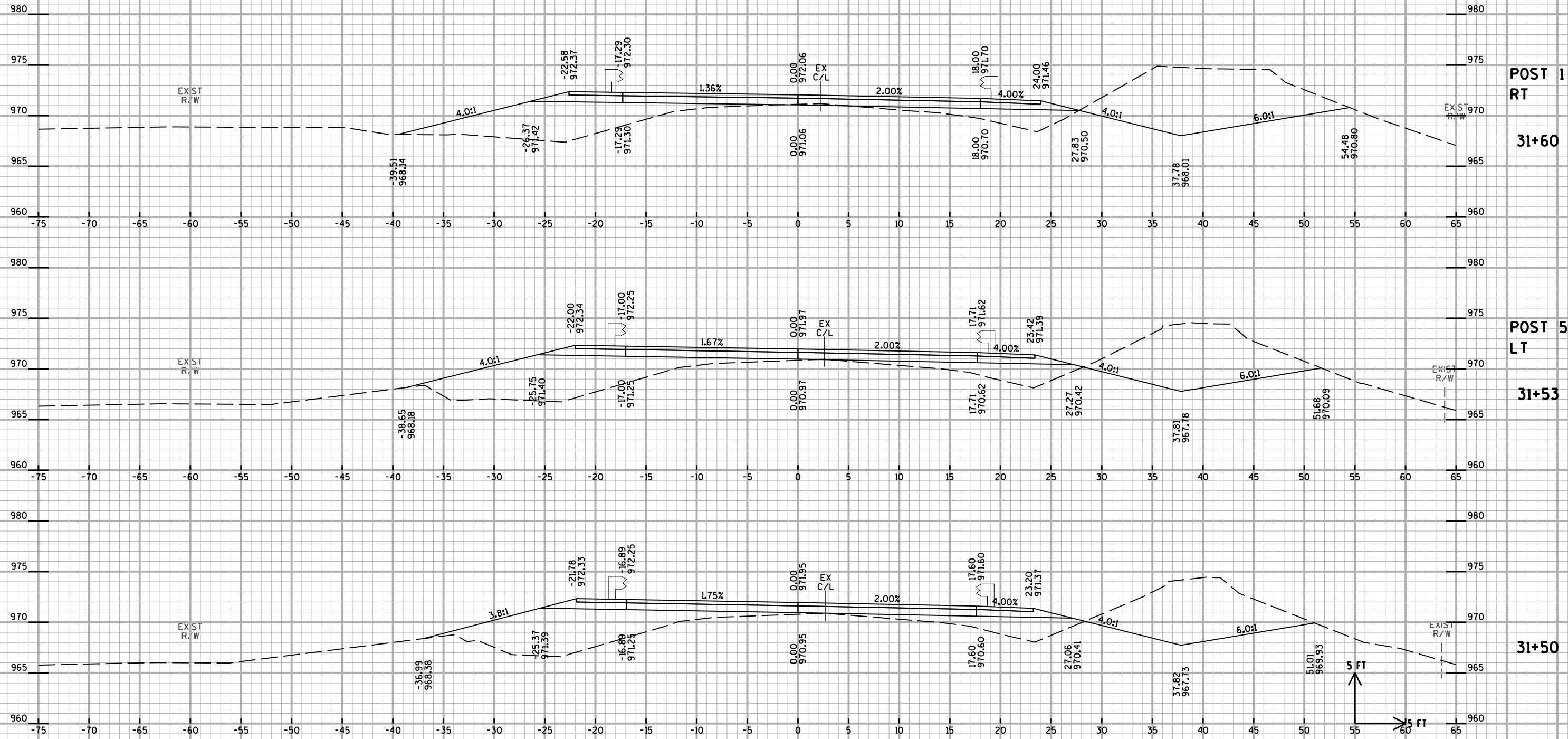
STRUCTURE
B-17-0210

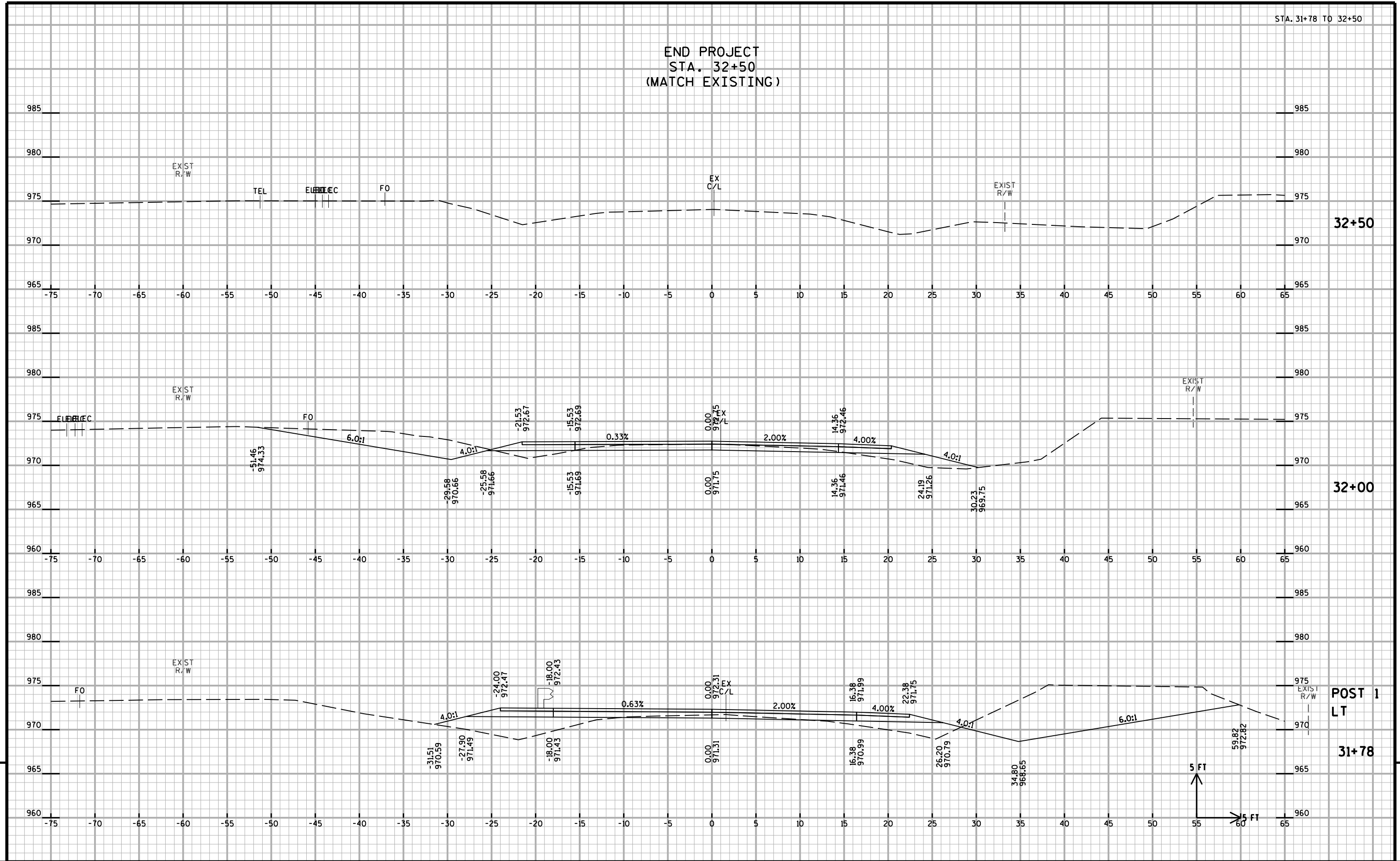


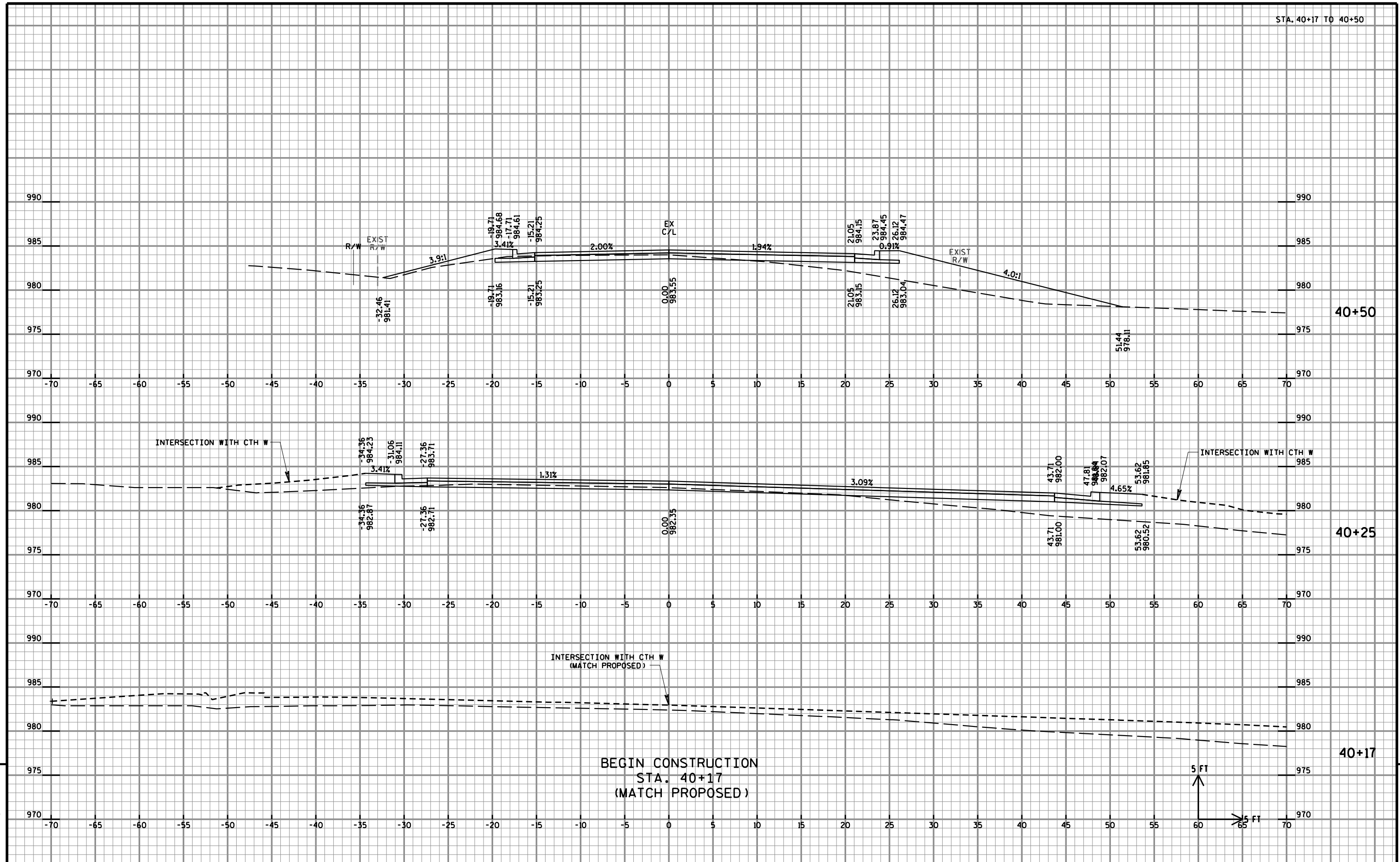
29+50



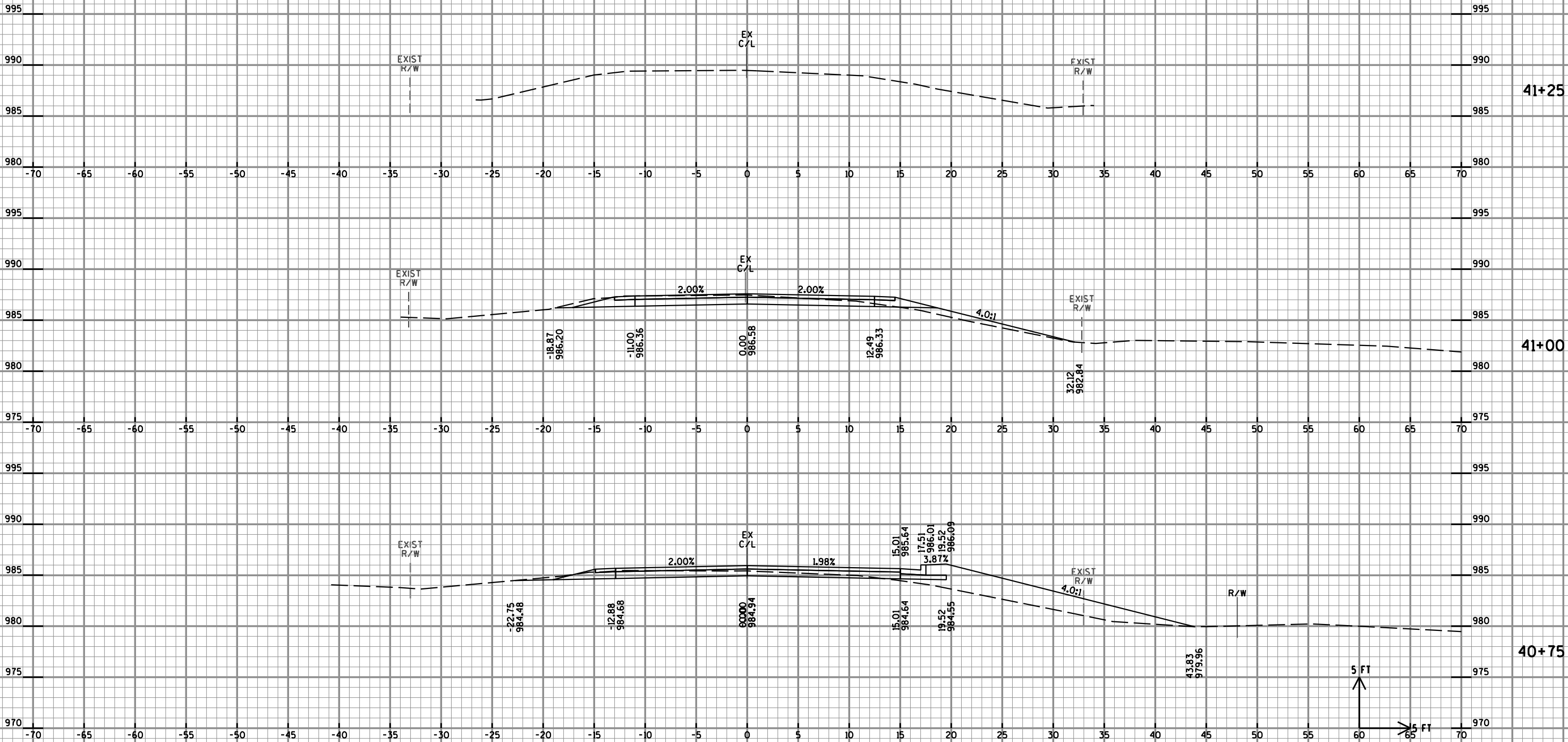








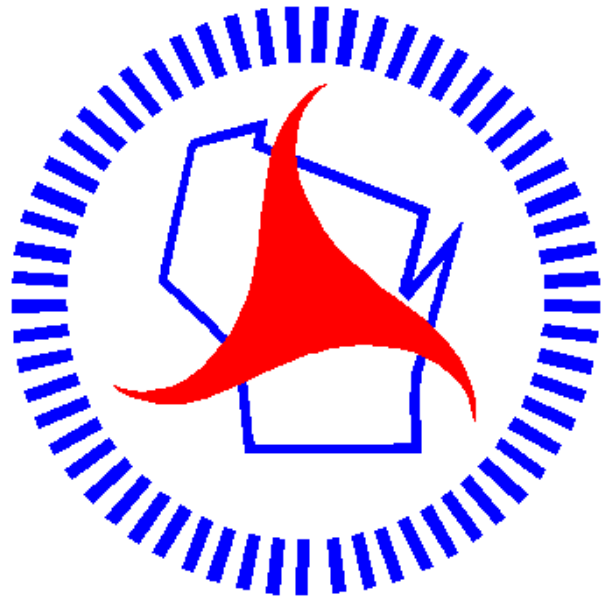
END CONSTRUCTION
STA. 41+25
(MATCH EXISTING)



9

9

Notes



Wisconsin Department of Transportation

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