

NCL

PROJECT ID: 6862-01-70
WITH: N/A

COUNTY: WAUSHARA

JULY 2016

ORDER OF SHEETS

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

TOTAL SHEETS = 106

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

EAST WAUSHARA STREET - CTH X
FOX RIVER BRIDGE B-69-0003
CTH XX
WAUSHARA COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6862-01-70	WISC 2016255	1

STATE PROJECT NUMBER
6862-01-70

END PROJECT 6862-01-70
STA 22+50.00

PROJECT ID 6862-01-70
STRUCTURE B-69-0003

BEGIN PROJECT 6862-01-70
STA 12+11.00
Y= 101,146.406
X= 471,613.157

DESIGN DESIGNATION

A.A.D.T. 2016	=	3330
A.A.D.T. 2036	=	4270
D.H.V. 2036	=	4.6%
D.D.	=	62/38
T.	=	5.7%
DESIGN SPEED	=	35 MPH
ESALS	=	554,800

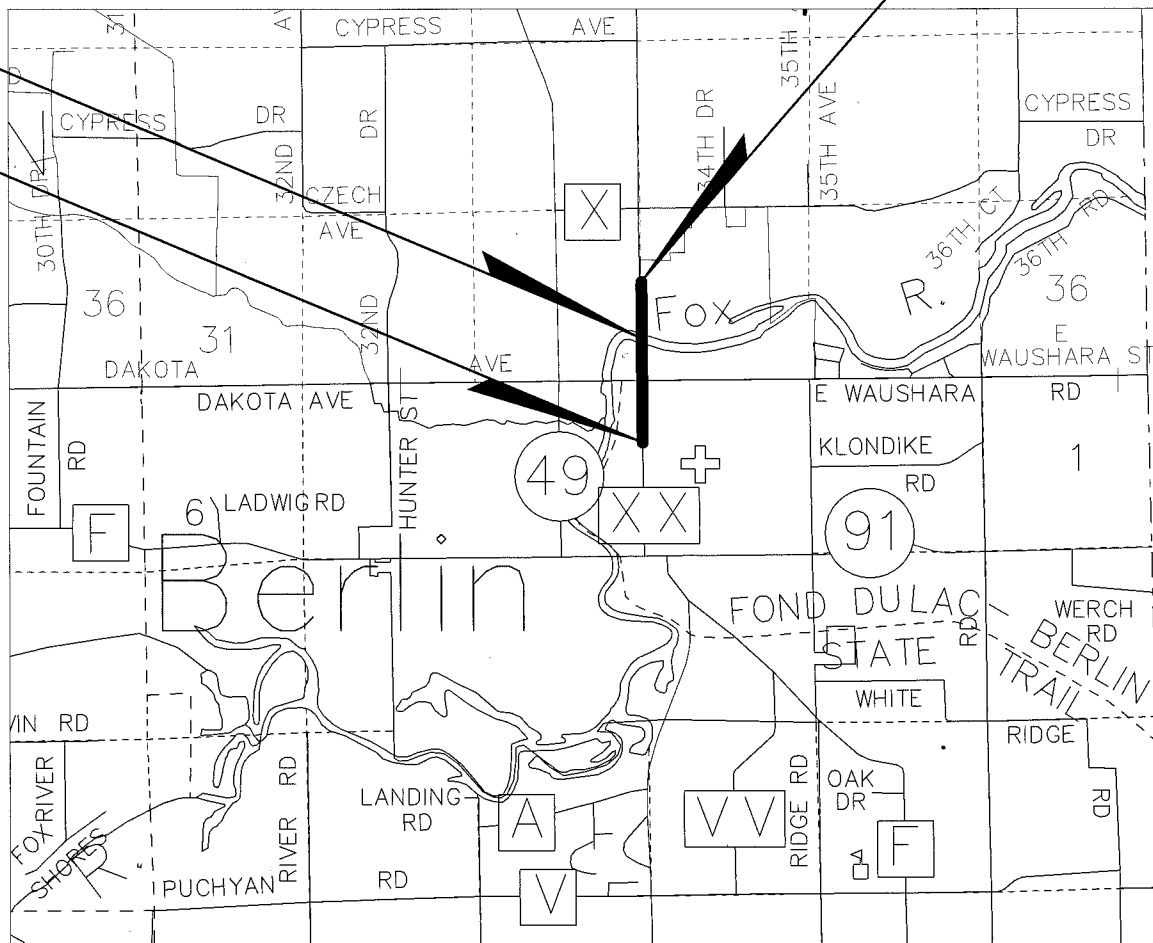
CONVENTIONAL SYMBOLS

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



LAYOUT
SCALE 0 0.5 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.197 MI.

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

ACCEPTED FOR	
COUNTY	of WAUSHARA
1/12/16 (DATE)	 (HIGHWAY COUNTY COMMISSIONER)
ORIGINAL PLANS PREPARED BY	
Mead & Hunt Mead & Hunt, Inc. 2400 Deming Way Middleton, WI 53562 608.273.6380 fax: 608.273.6391 www.meadhunt.com	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	Surveyor MEAD & HUNT, INC.
Designer	MEAD & HUNT, INC.
Management Consultant	CEDAR CORP.
APPROVED FOR THE DEPARTMENT	
DATE: 2-1-2016	 Management Consultant Signature
E	

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NAVD 1988.

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE 4-INCH SALVAGED TOPSOILED/TOPSOILED, FERTILIZED, AND SODDED/SEEDED AND MULCHED.

WETLANDS MAY EXIST IN LOCATIONS THAT ARE NOT SHOWN ON THE PLANS. STAGING AND OTHER WORK ACTIVITIES CANNOT EXTEND BEYOND THE SLOPE INTERCEPTS IN ORDER TO MINIMIZE WETLAND IMPACTS.

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

ASPHALTIC PAVEMENT REMOVAL IS INCLUDED IN BID ITEM "COMMON EXCAVATION."

BEARINGS ARE GRID BEARINGS.

STANDARD ABBREVIATIONS

ADT	AVERAGE DAILY TRAFFIC	NO	NUMBER
ASPH	ASPHALTIC	NOR	NORMAL
BM	BENCH MARK	PI	POINT OF INTERSECTION
CL	CENTERLINE	PL	PROPERTY LINE
CWT	HUNDREDWEIGHT	RHF	RIGHT-HAND FORWARD
CY	CUBIC YARD	RT	RIGHT
DHV	DESIGN HOURLY VOLUME	R/W	RIGHT-OF-WAY
DWY	DRIVEWAY	SF	SQUARE FOOT
EL	ELEVATION	SHLDR	SHOULDER
EXC	EXCAVATION	STA	STATION
FT	FOOT	SY	SQUARE YARD
FTG	FOOTING	T	TRUCKS (PERCENT OF)
LB	POUND	TYP	TYPICAL
LF	LINEAR FOOT	VAR	VARIABLE
LHF	LEFT-HAND FORWARD	VC	VERTICAL CURVE
LS	LUMP SUM	VPC	VERTICAL POINT OF CURVE
LT	LEFT	VPI	VERTICAL POINT OF INTERSECTION
MAX	MAXIMUM	VPT	VERTICAL POINT OF TANGENCY

COUNTY

WAUSHARA COUNTY
1001 EAST MAIN STREET
WAUTOMA, WI 54982
ATTN: BRAIN FREIMARK, COUNTY COMMISSIONER
TELEPHONE: 920-787-2237
E-MAIL: BRAIN.FREIMARK@CO.WAUSHARA.WI.US

CONSULTANT CONTACT

MEAD & HUNT, INC.
2440 DEMING WAY
MIDDLETON, WI 53562
ATTN: MR. GARY RUCHTI, P.E.
TELEPHONE: 608-273-6380
E-MAIL: GARY.RUCHTI@MEADHUNT.COM

DNR LIAISON

DEPARTMENT OF NATURAL RESOURCES
NORTHEAST REGION
427 EAST TOWER DRIVE, SUITE 100
WAUTOMA, WI 54982
ATTN: BOBBI JO FISCHER
TELEPHONE: 920- 7874686 EXT 3007
E-MAIL: bobbi.fischer@wisconsin.gov

UTILITY CONTACTS

*

CENTURYLINK

TELEPHONE UTILITY
ATTN: MR. ROSS HARTWIG
144 N. PEARL ST.
BERLIN, WI 54923
TELEPHONE: 920-361-8425
E-MAIL: ross.hartwig@centurylink.com

*

ALLIANT

GAS & ELECTRIC UTILITY
ATTN: MR. MARK VILLARS
880 N. WISCONSIN ST.
BERLIN, WI 54923
TELEPHONE: 920-361-5652
E-MAIL: markvillars@alliantenergy.com

*

CHARTER COMMUNICATIONS

TELEPHONE UTILITY
ATTN: MR. TONY KLATT
N3760 CTH DJ
JUNEAU, WI 53039
TELEPHONE: 920-263-0062
E-MAIL: Tony.Klatt@charter.com

CITY OF BERLIN

WATER & SEWER
ATTN: MR. BRIAN MALNORY
P.O. BOX 272
108 N. CAPRON ST.
BERLIN, WI 54923
TELEPHONE: 920-361-5404 MOBILE 920 229-6411
E-MAIL: bmalnory@cityofberlin.net

CITY OF BERLIN

PUBLIC WORKS SUPERINTENDENT
ATTN: MR. SCOTT ZABEL
108 N. CAPRON ST.
P.O. BOX 272
BERLIN, WI 54923 TELEPHONE:920-361-5454
E-MAIL: szabel@cityofberlin.net

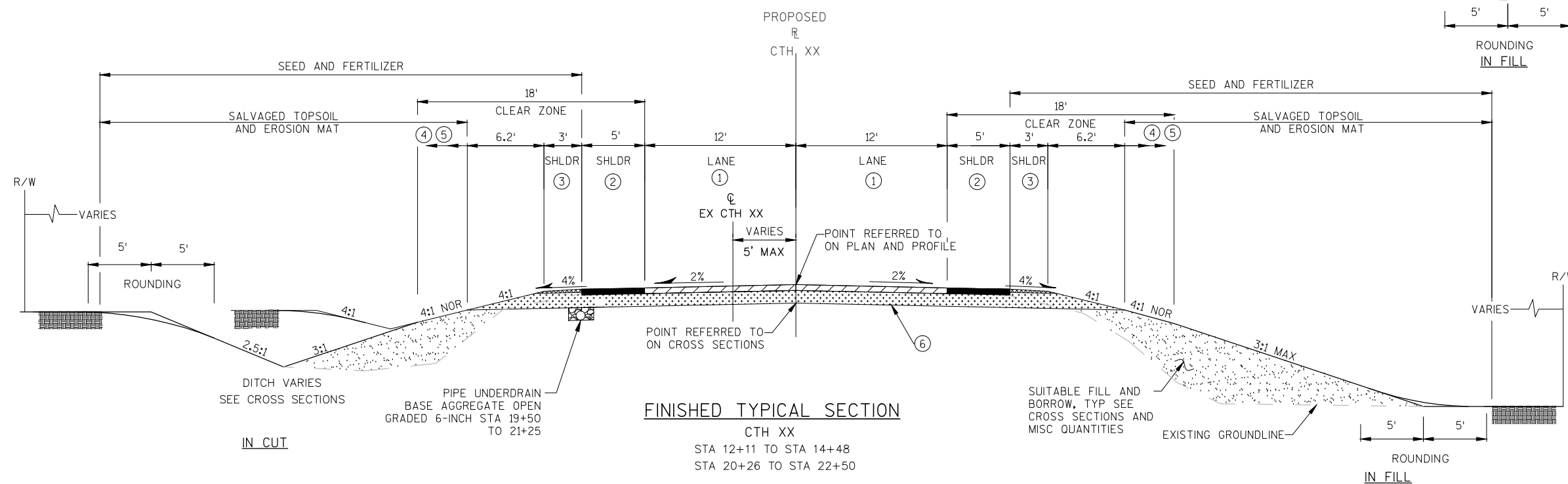
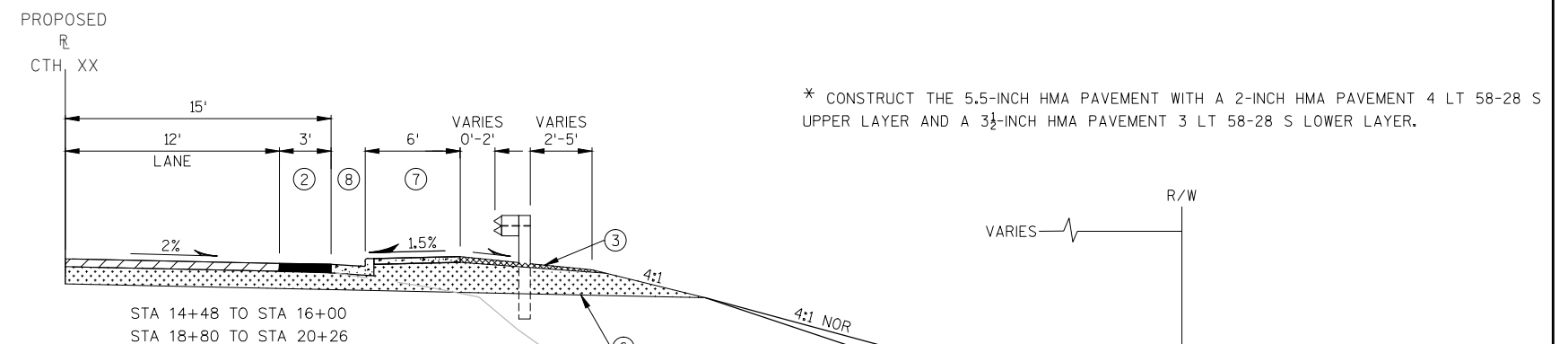
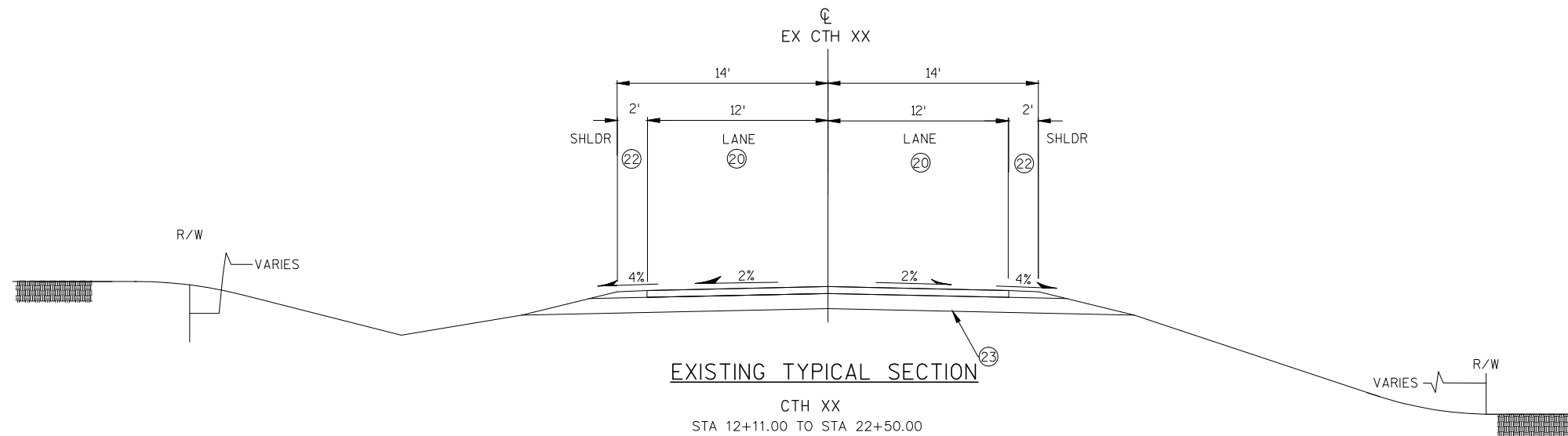
*

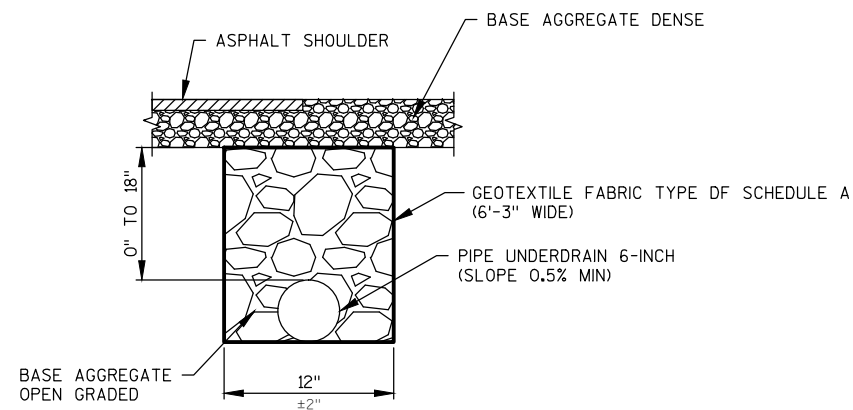
DENOTES DIGGERS HOTLINE MEMBER



KEY

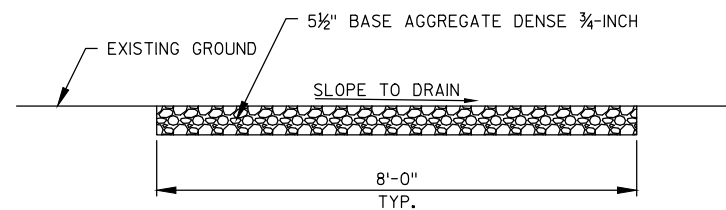
- ① 5.5-INCH HMA PAVEMENT *
- ② 5.5-INCH HMA PAVEMENT *
- ③ 5.5-INCH BASE AGGREGATE DENSE 3/4-INCH
- ④ SALVAGED TOPSOIL
- ⑤ SEEDING MIXTURE NO 40, SEEDING TEMPORARY AND FERTILIZER TYPE B
- ⑥ 13-INCH BASE AGGREGATE DENSE 1 1/4-INCH
- ⑦ CONCRETE SIDEWALK 4-INCH
- ⑧ CONCRETE CURB AND GUTTER 30-INCH TYPE D
- ⑩ 5-INCH EXISTING ASPHALT PAVED SURFACE
- ⑫ 5-INCH EXISTING AGGREGATE SHOULDER
- ⑬ 7-INCH EXISTING AGGREGATE BASE MIXED WITH SAND



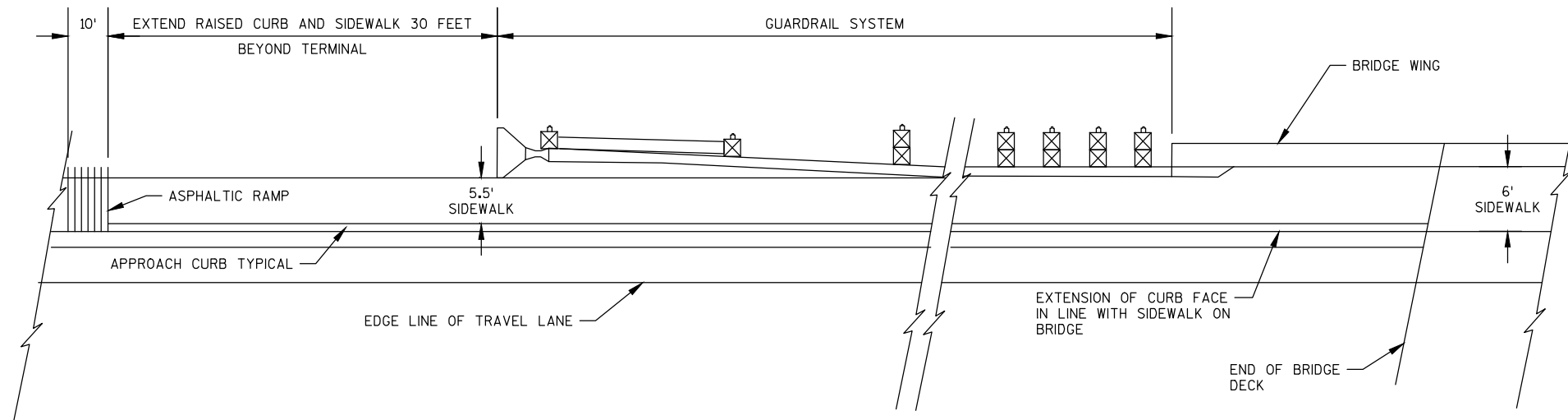


PIPE UNDERDRAIN TRENCH

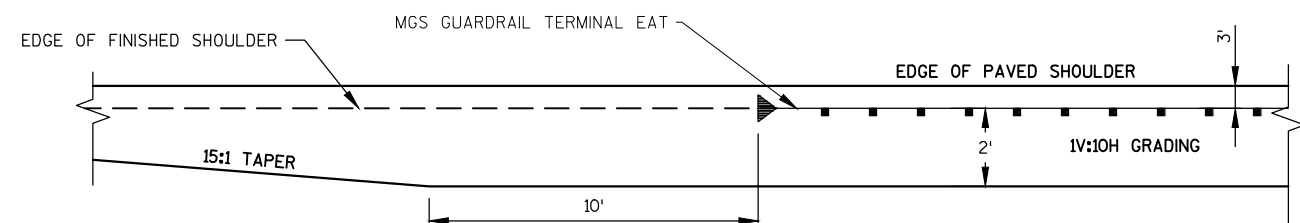
(STA 19+50 LT - STA 21+25 LT)



RELOCATED DRIVEWAY DETAIL

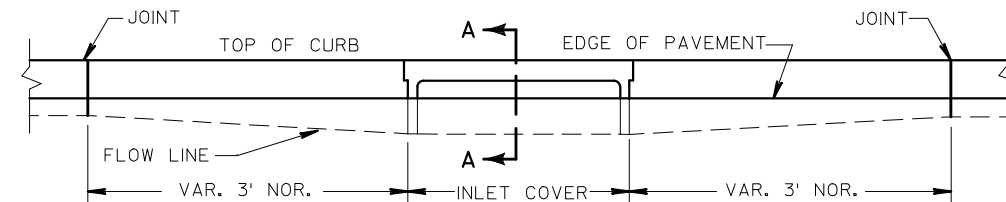


TYPICAL BARRIER LOCATION ON OUTSIDE EDGE OF SIDEWALK

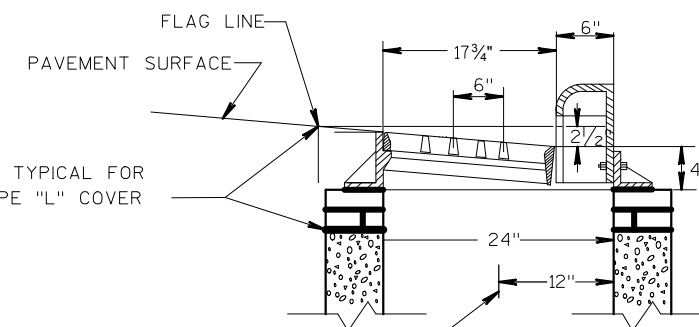
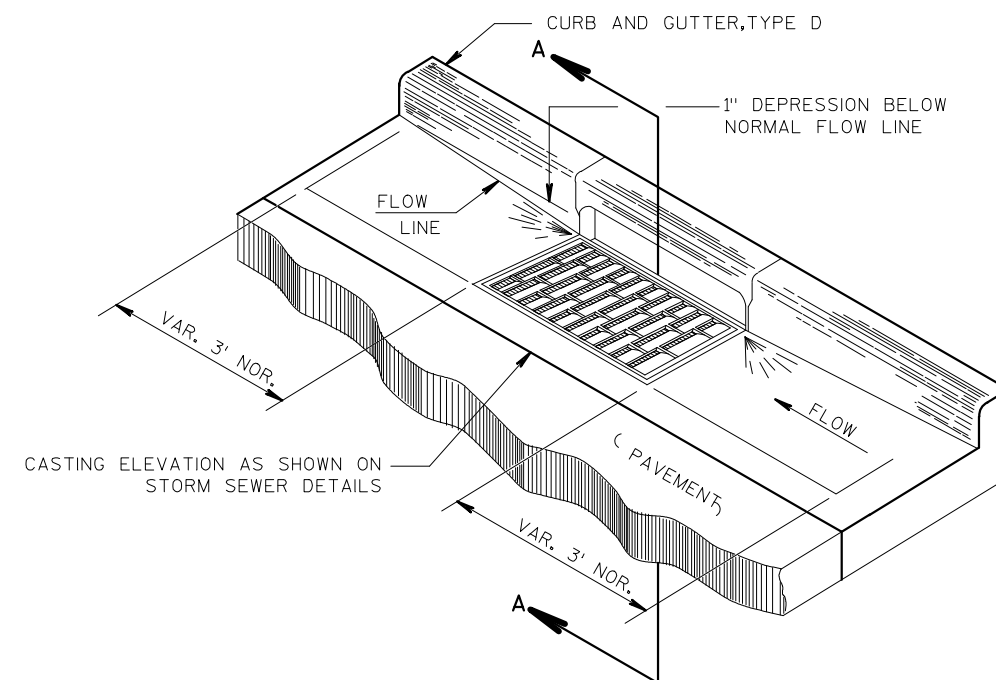


ALTERNATIVE GRADING FOR NON-FLARED GUARDRAIL END TREATMENT

(STA 19+91, LT)



ELEVATION



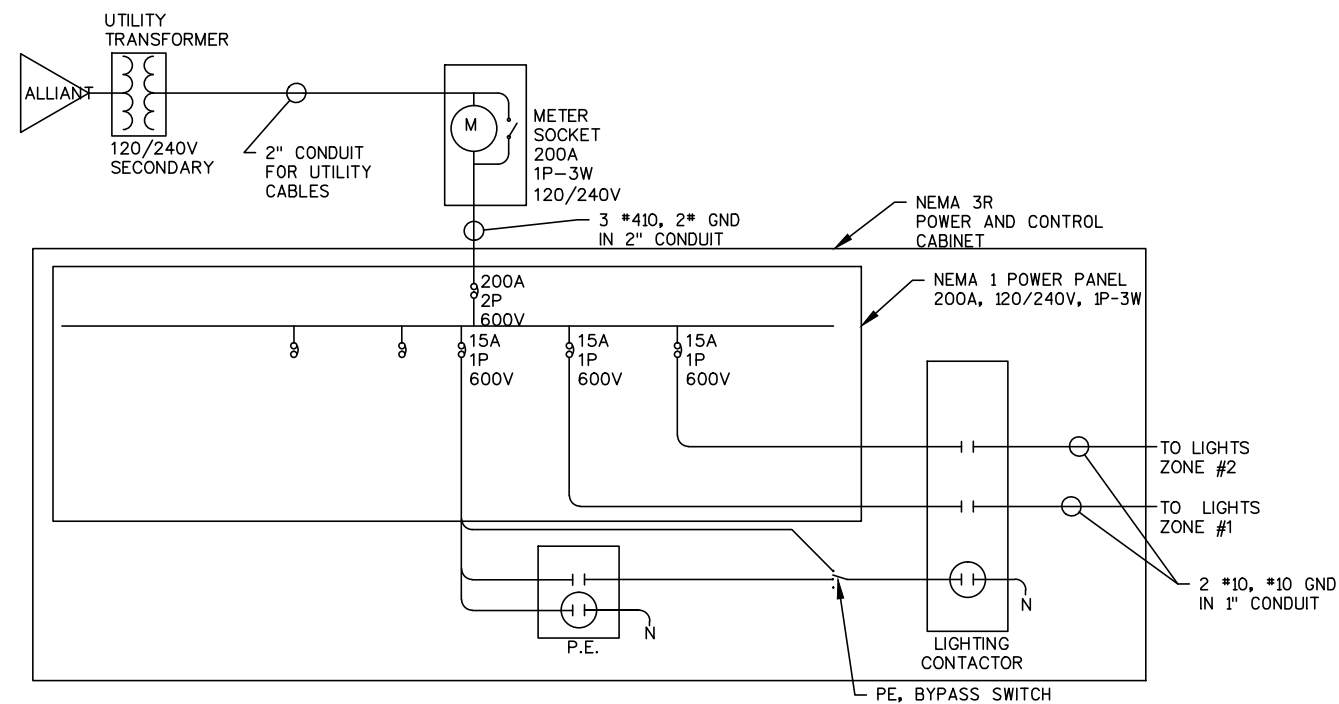
LOCATION OF CENTER OF STRUCTURE AS SHOWN ON DRAINAGE PLANS AND TABLES

SECTION A-A

DETAIL OF CURB AND GUTTER AT INLETS

(INLETS 2X3FT SHOWN)

2



NOTES:

1. ALL CONTROL AND POWER CABLING SHALL BE COLOR CODED #10 AWG UNLESS STATED OTHERWISE.
2. ALL POWER AND CONTROL CABLING SHALL BE NEATLY TRAINED, LABELED AND SUPPORTED.
3. RELAY CONTROL COILS IN CONTROL CABINET SHALL BE 120V.
4. THE LIGHTING CONTROL CABINET SHALL BE COMPLETELY WIRED UP TO THE FIELD WIRING IN THE CONTRACTORS SHOP AND TESTED PRIOR TO INSTALLATION ONSITE.
5. THE CONTRACTOR SHALL COMPLY WITH THE ALLIANT INSTALLATION REQUIREMENTS FOR ELECTRICAL SERVICE.
6. CONTRACTOR SHALL COORDINATE WITH ALLIANT FOR METER PEDESTAL LOCATION.
7. CONTRACTOR TO PROVIDE 4" GRAVEL BASE BELOW CONCRETE.
8. CABINET DOOR TO OPEN AWAY FROM ROADWAY.
9. CABINET SHALL NOT OVER LAP THE CONCRETE CONTROL BASE. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR CONCRETE BASE SIZE AND FIELD MEASUREMENT.
10. SEE STRUCTURE PLAN B-69-3 FOR NAVIGATION LIGHT DETAILS
11. CONTROL CABINET FOR NEW ELECTRIC SERVICE BREAKER DISCONNECT BOX SHALL BE TYPE 3060 SDD 9.D 2-3. PAYMENT INCIDENTAL TO BID ITEM ELECTRICAL SERVICE BREAKER DISCONNECT BOX.
12. PROVIDE ADJUSTABLE (DAWN TO DUSK) PHOTO EYE TO CONTROL THE LIGHTING CONTACTOR. AS SHOWN IN THE CONTROL DIAGRAM.
13. ZONE 1 CONSISTS OF LIGHTING LOCATIONS (EAST SIDE)
ZONE 2 CONSISTS OF LIGHTING LOCATIONS (WEST SIDE)

LEGEND

INLET PROTECTION TYPE C

EROSION MAT URBAN CLASS I, TYPE B

SILT FENCE

TEMPORARY DITCH CHECK

WETLANDS

TURBIDITY BARRIER

EDGE OF WATER

COFFERDAM

STONE DITCH CHECK

SOUTH CAUSEWAY (OPTIONAL)

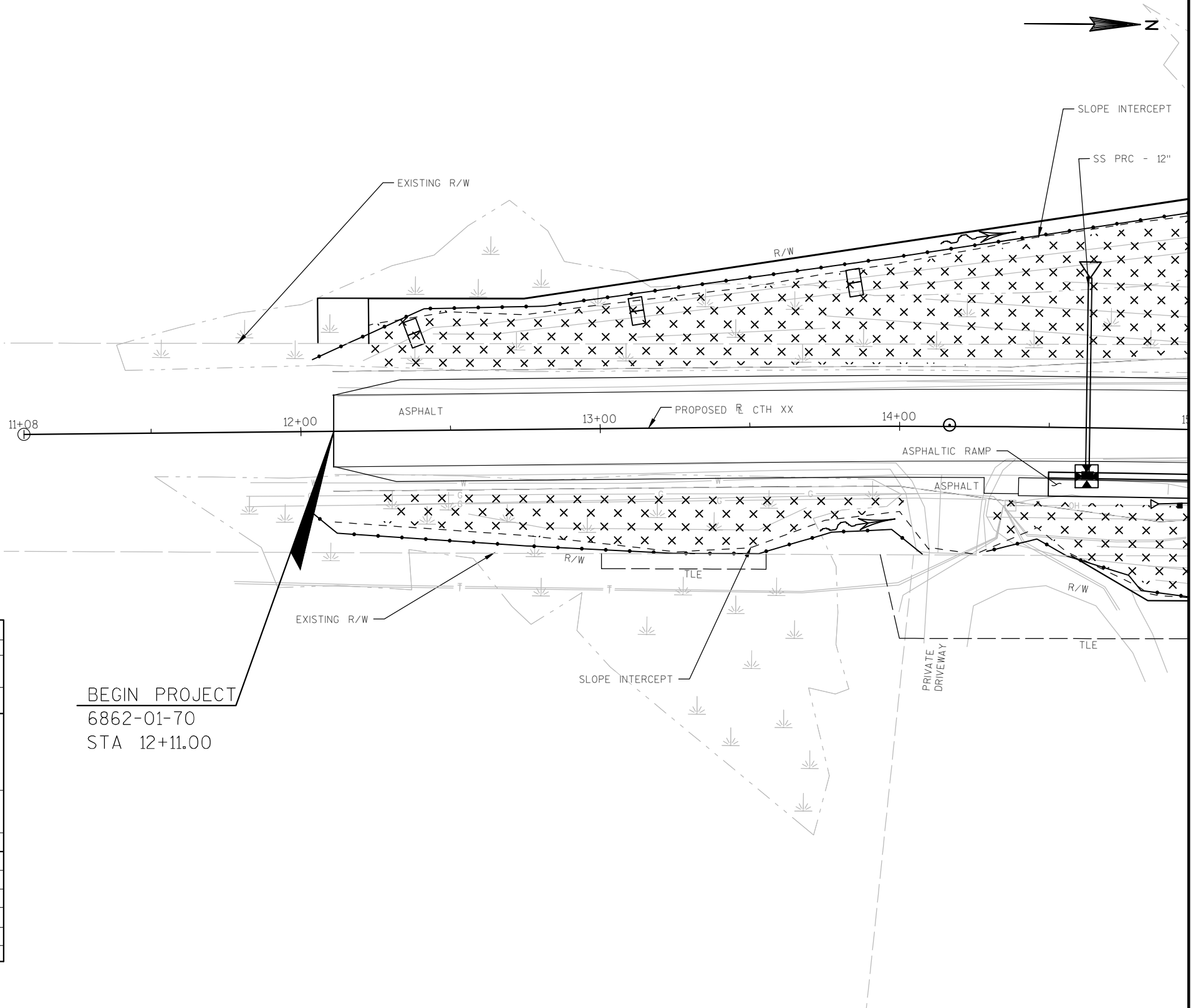
TEMPORARY SHEET PILE
(REQUIRED AT ENDS IF CAUSEWAY IS USED)

12" DIAMETER TEMPORARY CULVERT PIPE
(REQUIRED IF CAUSEWAY IS USED)

RUNOFF COEFFICIENT TABLE

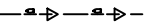
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33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

TOTAL PROJECT AREA =1.71 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES =0.90 ACRES



BEGIN PROJECT
6862-01-70
STA 12+11.00

LEGEND

-  INLET PROTECTION TYPE C
-  EROSION MAT URBAN CLASS I, TYPE B
-  SILT FENCE
-  TEMPORARY DITCH CHECK
-  WETLANDS
-  TURBIDITY BARRIER
-  EDGE OF WATER
-  COFFERDAM
-  STONE DITCH CHECK
-  SOUTH CAUSEWAY (OPTIONAL)
-  TEMPORARY SHEET PILE
(REQUIRED AT ENDS IF CAUSEWAY IS USED)
-  12" DIAMETER TEMPORARY CULVERT PIPE
(REQUIRED IF CAUSEWAY IS USED)

NOTES:

DRIVING SURFACE OF CAUSEWAY SHALL CONSIST OF SCREENED MATERIAL.

CAUSEWAY FROM SOUTH BANK TO BE CONSTRUCTED WITH CLEAN RIPRAP OVER GEOTEXTILE FABRIC TYPE 'HR'. PLACED OVER EXISTING GROUND PRIOR TO RIPRAP PLACEMENT.

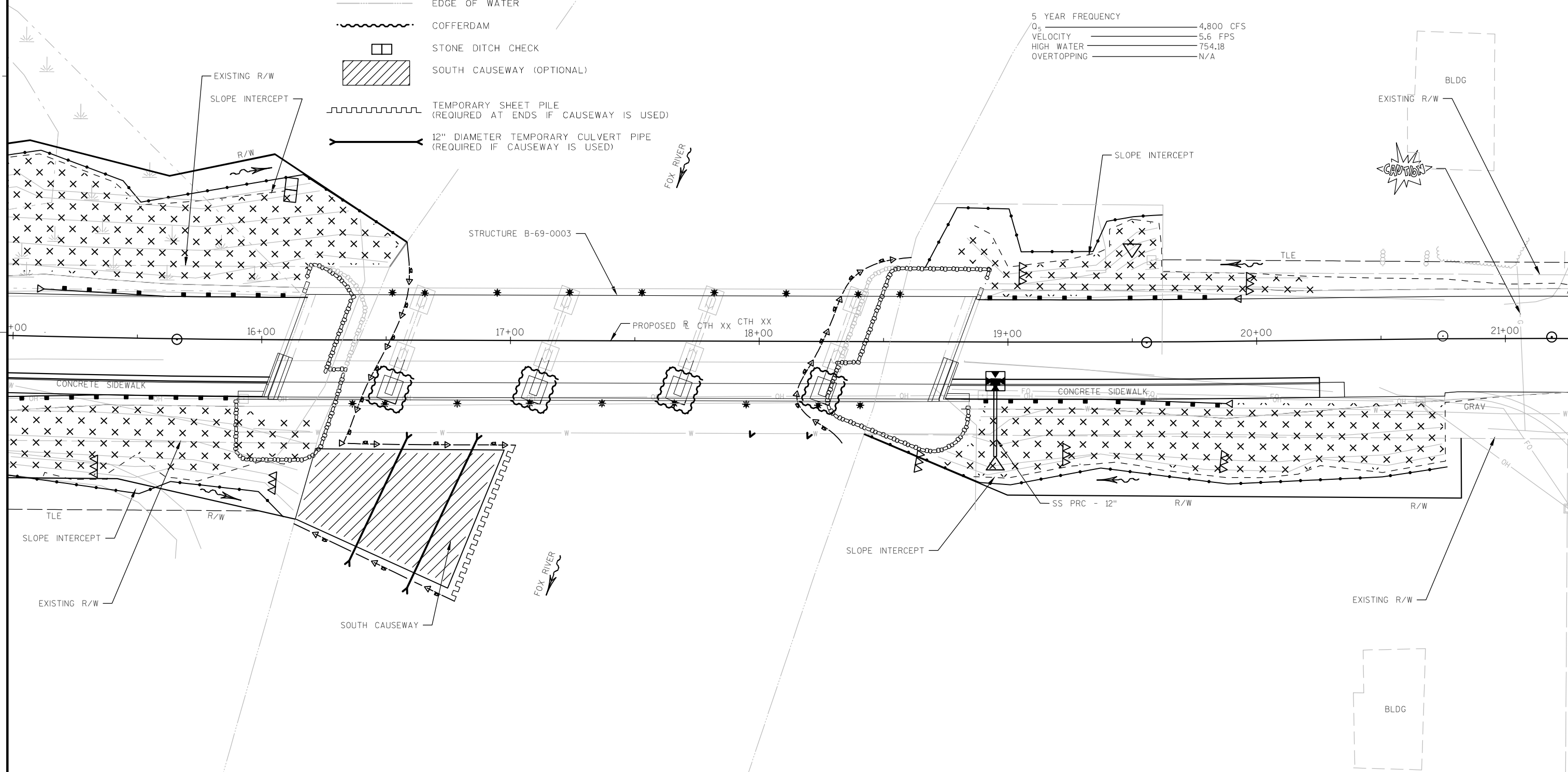
A CAUSEWAY FROM THE NORTH BANK WILL NOT BE PERMITTED.

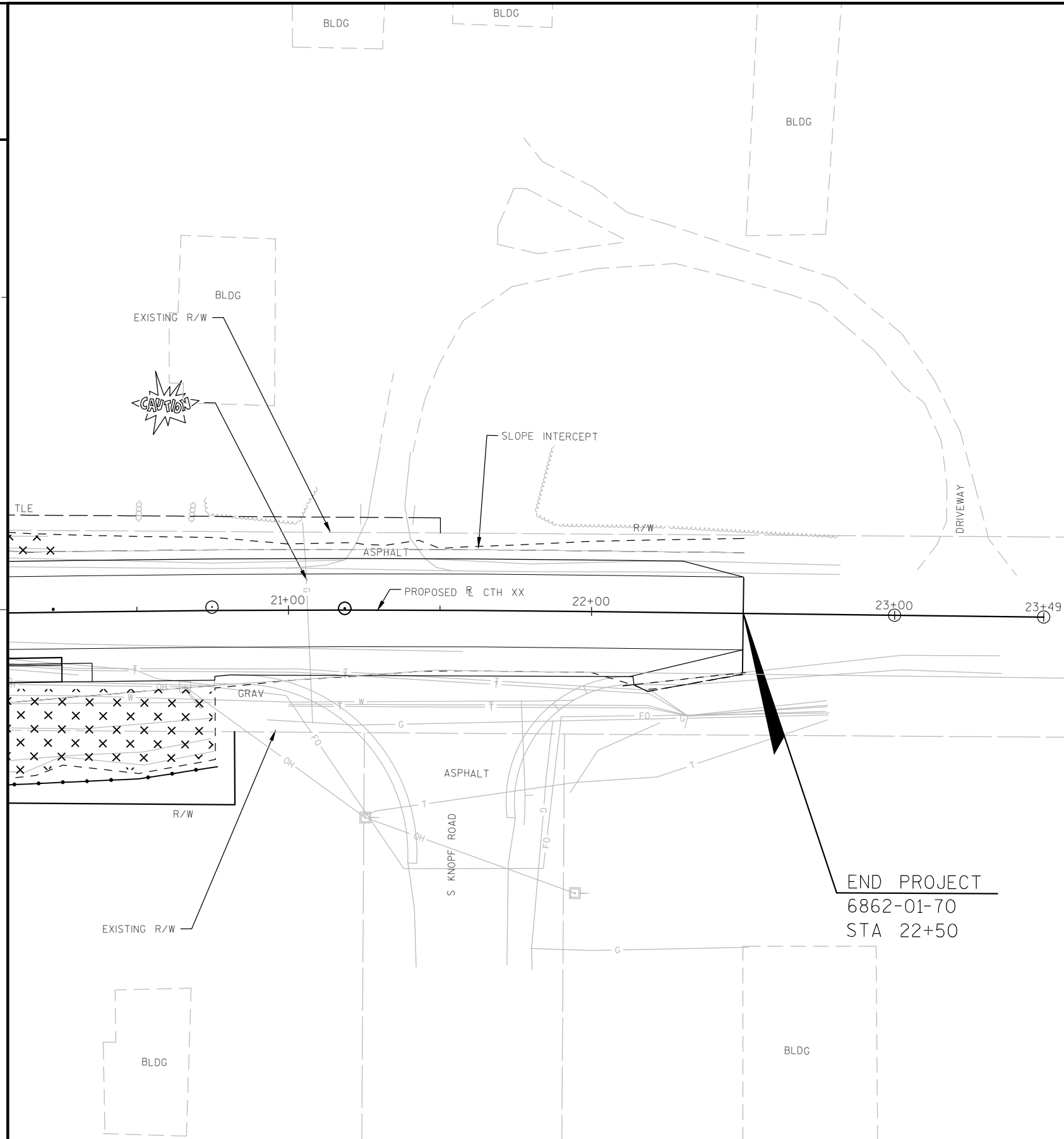
DO NOT BLOCK THE ENDS OF THE TEMPORARY CULVERT PIPES WITH TURBIDITY BARRIER.

CAUSEWAY HYDRAULIC DATA:

2 YEAR FREQUENCY
 Q_2 3,670 CFS
VELOCITY 4.9 FPS
HIGH WATER 752.99

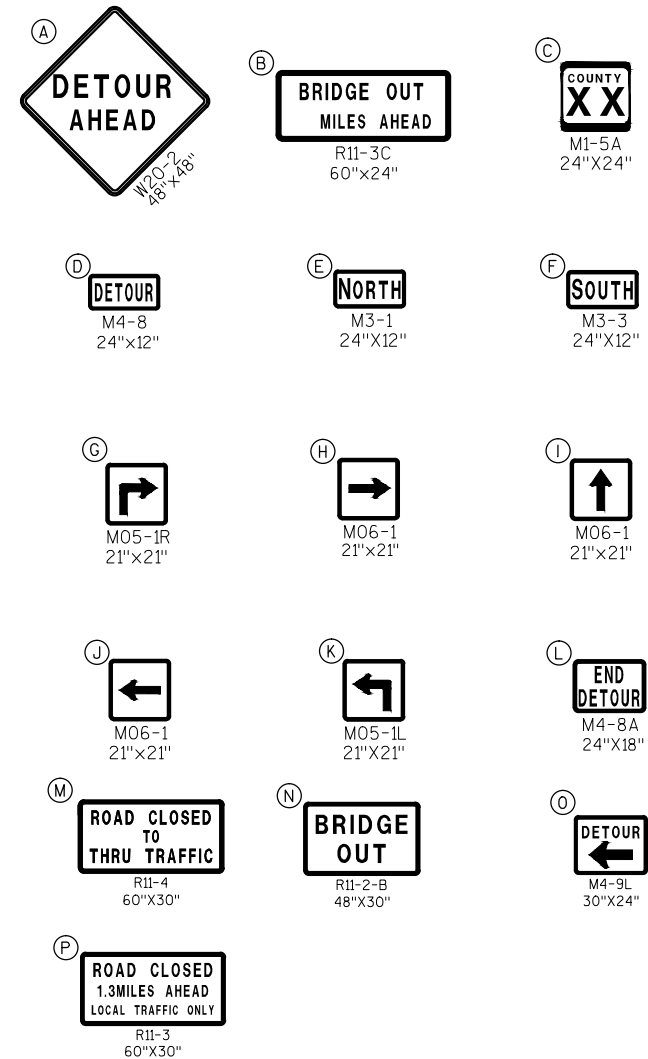
5 YEAR FREQUENCY
 Q_5 4,800 CFS
VELOCITY 5.6 FPS
HIGH WATER 754.18
OVERTOPPING N/A





LEGEND	
	INLET PROTECTION TYPE C
	EROSION MAT URBAN CLASS I, TYPE B
	SILT FENCE
	TEMPORARY DITCH CHECK
	WETLANDS
	TURBIDITY BARRIER
	EDGE OF WATER
	COFFERDAM
	STONE DITCH CHECK
	SOUTH CAUSEWAY (OPTIONAL)
	TEMPORARY SHEET PILE (REQUIRED AT ENDS IF CAUSEWAY IS USED)
	12" DIAMETER TEMPORARY CULVERT PIPE (REQUIRED IF CAUSEWAY IS USED)

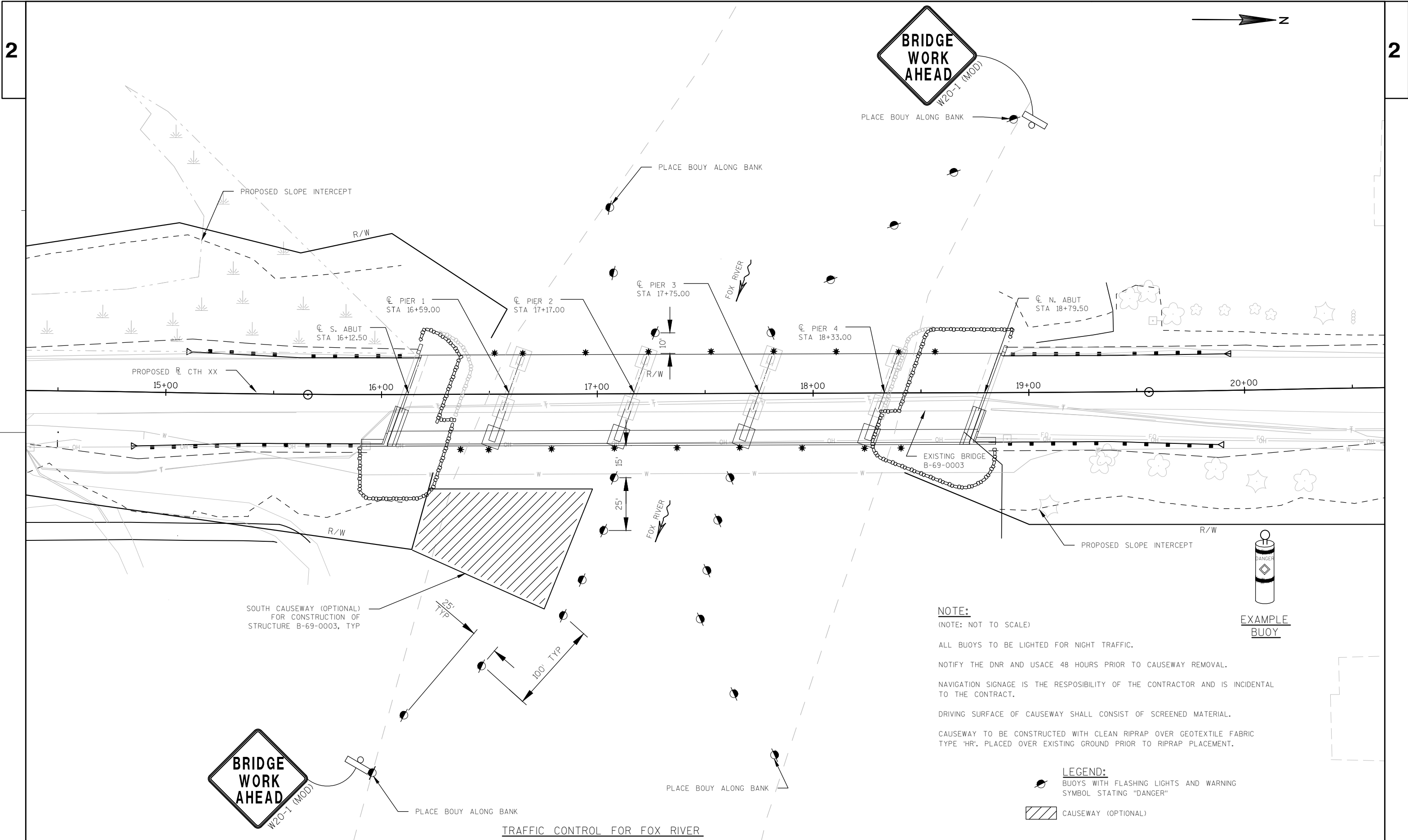




● ● ● ● DETOUR ROUTE
 SIGN ON WOOD POST

SEE STANDARD DETAIL DRAWINGS FOR SIGN PLACEMENT

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



3

DATE 09MAY16		E S T I M A T E O F Q U A N T I T I E S			
LINE					6862-01-70
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0120	Clearing	ID	170.000	170.000
0020	201.0220	Grubbing	ID	170.000	170.000
0030	203.0600.S	Removing Old Structure Over Waterway	LS	1.000	1.000
		With Minimal Debris (station) 01. 17+46			
0040	205.0100	Excavation Common	CY	1,450.000	1,450.000
0050	206.1000	Excavation for Structures Bridges	LS	1.000	1.000
		(structure) 01. B-69-0003			
0060	206.5000	Cofferdams (structure) 01. B-69-0003	LS	1.000	1.000
0070	208.0100	Borrow	CY	950.000	950.000
0080	210.0100	Backfill Structure	CY	210.000	210.000
0090	213.0100	Finishing Roadway (project) 01.	EACH	1.000	1.000
		6862-01-70			
0100	305.0110	Base Aggregate Dense 3/4-Inch	TON	160.000	160.000
0110	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	3,150.000	3,150.000
0120	310.0110	Base Aggregate Open-Graded	TON	25.000	25.000
0130	415.0080	Concrete Pavement 8-Inch	SY	35.000	35.000
0140	415.0410	Concrete Pavement Approach Slab	SY	103.000	103.000
0150	455.0605	Tack Coat	GAL	200.000	200.000
0160	460.2000	Incentive Density HMA Pavement	DOL	570.000	570.000
0170	460.5223	HMA Pavement 3 LT 58-28 S	TON	566.000	566.000
0180	460.5224	HMA Pavement 4 LT 58-28 S	TON	324.000	324.000
0190	465.0120	Asphaltic Surface Driveways and Field	TON	20.000	20.000
		Entrances			
0200	502.0100	Concrete Masonry Bridges	CY	544.000	544.000
0210	502.1100	Concrete Masonry Seal	CY	68.000	68.000
0220	502.3100	Expansion Device (structure) 01.	LS	1.000	1.000
		B-69-0003			
0230	502.3200	Protective Surface Treatment	SY	1,331.000	1,331.000
0240	502.3210	Pigmented Surface Sealer	SY	118.000	118.000
0250	502.5005	Masonry Anchors Type L No. 5 Bars	EACH	196.000	196.000
0260	502.5010	Masonry Anchors Type L No. 6 Bars	EACH	36.000	36.000
0270	502.5025	Masonry Anchors Type L No. 9 Bars	EACH	32.000	32.000
0280	502.5030	Masonry Anchors Type L No. 10 Bars	EACH	17.000	17.000
0290	505.0400	Bar Steel Reinforcement HS Structures	LB	5,370.000	5,370.000
0300	505.0600	Bar Steel Reinforcement HS Coated	LB	93,130.000	93,130.000
		Structures			
0310	506.0605	Structural Steel HS	LB	263,360.000	263,360.000
0320	506.3015	Welded Stud Shear Connectors 7/8x6-Inch	EACH	6,048.000	6,048.000
0330	506.5000	Bearing Assemblies Fixed (structure) 01.	EACH	8.000	8.000
		B-69-0003			
0340	506.6000	Bearing Assemblies Expansion	EACH	24.000	24.000
		(structure) 01. B-69-0003			
0350	509.1500	Concrete Surface Repair	SF	28.000	28.000
0360	513.4061	Railing Tubular Type M (structure) 01.	LF	272.000	272.000
		B-69-0003			
0370	513.7011	Railing Steel Type C2 (structure) 01.	LF	294.000	294.000
		B-69-0003			
0380	516.0500	Rubberized Membrane Waterproofing	SY	22.000	22.000
0390	517.0600	Painting Epoxy System (structure) 01.	LS	1.000	1.000
		B-69-0003			
0400	522.1012	Apron Endwalls for Culvert Pipe	EACH	2.000	2.000
		Reinforced Concrete 12-Inch			
0410	550.0020	Pre-Boring Rock or Consolidated	LF	96.000	96.000
		Materials			
0420	550.0500	Pile Points	EACH	35.000	35.000
0430	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,342.000	1,342.000

3

3

DATE 09MAY16		E S T I M A T E O F Q U A N T I T I E S			
LINE					6862-01-70
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0440	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	40.000	40.000
0450	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	260.000	260.000
0460	602.0405	Concrete Sidewalk 4-Inch	SF	1,540.000	1,540.000
0470	606.0300	Riprap Heavy	CY	415.000	415.000
0480	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	96.000	96.000
0490	611.0624	Inlet Covers Type H	EACH	2.000	2.000
0500	611.3230	Inlets 2x3-FT	EACH	2.000	2.000
0510	612.0106	Pipe Underdrain 6-Inch	LF	175.000	175.000
0520	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	18.000	18.000
0530	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	168.000	168.000
0540	612.0806	Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	EACH	1.000	1.000
0550	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	2.000	2.000
0560	614.0920	Salvaged Rail	LF	513.000	513.000
0570	614.0925	Salvaged Guardrail End Treatments	EACH	4.000	4.000
0580	614.2300	MGS Guardrail 3	LF	50.000	50.000
0590	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0600	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0610	619.1000	Mobilization	EACH	1.000	1.000
0620	624.0100	Water	MGAL	30.000	30.000
0630	625.0500	Salvaged Topsoil	SY	4,400.000	4,400.000
0640	628.1504	Silt Fence	LF	1,550.000	1,550.000
0650	628.1520	Silt Fence Maintenance	LF	1,550.000	1,550.000
0660	628.1905	Mobilizations Erosion Control	EACH	8.000	8.000
0670	628.1910	Mobilizations Emergency Erosion Control	EACH	8.000	8.000
0680	628.2008	Erosion Mat Urban Class I Type B	SY	4,400.000	4,400.000
0690	628.6005	Turbidity Barriers	SY	160.000	160.000
0700	628.7015	Inlet Protection Type C	EACH	2.000	2.000
0710	628.7504	Temporary Ditch Checks	LF	105.000	105.000
0720	628.7515.S	Stone or Rock Ditch Checks	CY	43.000	43.000
0730	629.0210	Fertilizer Type B	CWT	3.000	3.000
0740	630.0140	Seeding Mixture No. 40	LB	80.000	80.000
0750	630.0300	Seeding Borrow Pit	LB	20.000	20.000
0760	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	2.000	2.000
0770	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	2.000	2.000
0780	637.2230	Signs Type II Reflective F	SF	6.000	6.000
0790	638.2102	Moving Signs Type II	EACH	2.000	2.000
0800	638.2602	Removing Signs Type II	EACH	1.000	1.000
0810	638.3000	Removing Small Sign Supports	EACH	1.000	1.000
0820	642.5001	Field Office Type B	EACH	1.000	1.000
0830	643.0100	Traffic Control (project) 01. 6862-01-70	EACH	1.000	1.000
0840	643.0420	Traffic Control Barricades Type III	DAY	1,710.000	1,710.000
0850	643.0705	Traffic Control Warning Lights Type A	DAY	3,420.000	3,420.000
0860	643.0900	Traffic Control Signs	DAY	342.000	342.000
0870	643.2000	Traffic Control Detour (project) 01. 6862-01-70	EACH	1.000	1.000
0880	643.3000	Traffic Control Detour Signs	DAY	23,598.000	23,598.000
0890	645.0111	Geotextile Type DF Schedule A	SY	120.000	120.000
0900	645.0120	Geotextile Type HR	SY	780.000	780.000
0910	645.0140	Geotextile Type SAS	SY	124.000	124.000
0920	646.0106	Pavement Marking Epoxy 4-Inch	LF	4,160.000	4,160.000
0930	650.4000	Construction Staking Storm Sewer	EACH	4.000	4.000

3

3

DATE 09MAY16		E S T I M A T E O F Q U A N T I T I E S			
LINE					6862-01-70
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0940	650.4500	Construction Staking Subgrade	LF	765.000	765.000
0950	650.5000	Construction Staking Base	LF	765.000	765.000
0960	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	300.000	300.000
0970	650.8500	Construction Staking Electrical Installations (project) 01. 6862-01-70	LS	1.000	1.000
0980	650.9910	Construction Staking Supplemental Control (project) 01. 6862-01-70	LS	1.000	1.000
0990	650.9920	Construction Staking Slope Stakes	LF	765.000	765.000
1000	652.0210	Conduit Rigid Nonmetallic Schedule 40 1-Inch	LF	193.000	193.000
1010	655.0615	Electrical Wire Lighting 10 AWG	LF	1,000.000	1,000.000
1020	656.0200	Electrical Service Meter Breaker Pedestal (location) 01. 20+80	LS	1.000	1.000
1030	656.0500	Electrical Service Breaker Disconnect Box (location) 01. 20+80	LS	1.000	1.000
1040	659.2130	Lighting Control Cabinets 120/240 30-Inch	EACH	1.000	1.000
1050	690.0150	Sawing Asphalt	LF	201.000	201.000
1060	715.0502	Incentive Strength Concrete Structures	DOL	3,264.000	3,264.000
1070	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000
1080	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,260.000	1,260.000
1090	SPV.0045	Special 01. Seismograph	DAY	7.000	7.000
1100	SPV.0045	Special 02. Crack and Damage Survey	DAY	7.000	7.000
1110	SPV.0060	Special 01. Fabricated Expansion Bearing Assemblies B-69-3	EACH	16.000	16.000
1120	SPV.0105	Special 01. Traffic Control for the Fox River	LS	1.000	1.000
1130	SPV.0105	Special 02. Navigational Lights	LS	1.000	1.000
1140	SPV.0195	Special 01. Hauling and Disposal of Contaminated Sediment	TON	315.000	315.000

3

3

CLEARING & GRUBBING

		201.0120	201.0220
		CLEARING (ID)	GRUBBING (ID)
STATION	LOCATION		
16+25	60' RT	33	33
16+30	53' RT	15	15
19+09	53' RT	24	24
19+29	33' RT	20	20
19+37	32' RT	18	18
19+60	35' RT	18	18
19+86	36' RT	16	16
20+05	43' RT	14	14
20+27	43' RT	12	12
TOTAL		170	170

EARTHWORK SUMMARY

			205.0100			208.0100
			EXCAVATION COMMON			BORROW
			(1)	(2)	(3)	(4)
			CUT FROM	EBS	REDUCED	EXPANDED
			EW DATA	(CY)	EBS IN	FILL FROM
			(CY)		FILL	EW DATA
					0.8	(CY)
					FILLS (30%)	(CY)
STATION -	STATION	LOCATION				
12+11 -	16+00	LT/RT	635			2,175
19+00 -	22+50	LT/RT	815			225
TOTAL			1,450			2,400
						2,400
						-950
						950

- (1) COMMON FROM COMPUTER EARTHWORK DATA, INCLUDES PAVEMENT REMOVAL(CONTAINS SALVAGED/UNUSABLE PAVEMENT MATERIAL)
- (2) UNDISTRIBUTED EBS
EBS IS ESTIMATED AS AN UNDISTRIBUTED QUANTITY
EBS QUANTITIES ARE PARTIALLY USED IN EARTHWORK BALANCE
- (2A) SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (3) REDUCED EBS IN FILL - EXCAVATED EBS MATERIAL IS USABLE IN FILLS OUTSIDE THE 1:1 SLOPE. EBS IN FILL REDUCTION FACTOR = 0.8
- (3A) IT IS ESTIMATED THAT 30% OF THE EBS MATERIAL CAN BE USED IN FILLS. THE BALANCE IS CONSIDERED WASTE
- (4) EXPANDED FILL FROM COMPUTER EARTHWORK DATA
- (5) EXPANDED FILL. FACTOR = 1.3
EXPANDED FILL = EW DATA FILL - REDUCED EBS IN FILL
- (6) MASS ORDINATE IS + OR - QUANTITY FOR STAGE . PLUS IS EXCESS, MINUS IS SHORTAGE
- (7) BORROW TO BE OBTAINED FROM LOCATION OF CONTRACTOR'S CHOICE

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

				465.0120
				ASPHALTIC SURFAFACE DRIVEWAYS AND FIELD ENTRANCES (TON)
STATION -	STATION	LOCATION		
14+09 -	14+28	RT		15
21+22 -	21+39	LT		5
TOTAL				20

BASE AGGREGATE

			305.0110	305.0120	310.0110
			BASE AGGREGATE DENSE 3/4-INCH (TON)	BASE AGGREGATE DENSE 1 1/4-INCH (TON)	BASE AGGREGATE OPEN GRADED (TON)
STATION -	STATION	LOCATION			
12+11 -	14+48	LT/RT	27	965	
14+48 -	16+09	LT/RT	63	790	
18+83 -	20+75	LT/RT	58	910	
19+50 -	21+18	LT			25
20+75 -	22+50	LT/RT		485	
14+20 -	15+65	PRIVATE DRIVE, RT	12		
TOTAL			160	3,150	25

CONCRETE PAVEMENT

			415.0410	415.0080
			CONCRETE PAVEMENT APPROACH SLAB (SY)	CONCRETE PAVEMENT 8-INCH (SY)
STATION -	STATION	LOCATION		
15+88 -	16+08	MAINLINE	51.5	18
18+83 -	19+03	MAINLINE	51.5	17
TOTAL			103	35

ASPHALTIC PAVEMENT ITEMS

			455.0605	460.5223	460.5224
			TACK COAT (GAL)	HMA PAVEMENT 3 LT 58-28 S (TON)	HMA PAVEMENT 4 LT 58-28 S (TON)
STATION -	STATION	LOCATION			
12+11 -	14+48	MAINLINE	64	180	103
14+48 -	16+09	MAINLINE	40	115	66
18+83 -	20+75	MAINLINE	50	137	79
20+75 -	22+50	MAINLINE	46	134	76
TOTAL			200	566	324

STRUCTURES AND INLETS

					522.1012	611.0624	611.3230	650.4000
					APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH (EACH)	INLET COVERS TYPE H (EACH)	INLET 2X3-FT (EACH)	CONSTRUCTION STAKING STORM SEWER (EACH)
STRUCTURE NO	STATION	OFFSET	RIM ELEVATION	INVERT ELEVATION				
S1	14+63	16.5' RT	762.46	755.40		1	1	1
E1	14+63	50' LT		753.75	1			1
S2	18+95	16.5' RT	772.18	767.12		1	1	1
E2	18+95	46' RT		766.40	1			1
TOTAL					2	2	2	4

CURB & GUTTER

			601.0409	601.0411
			CONCRETE CURB & GUTTER 30-INCH TYPE A (LF)	CONCRETE CURB & GUTTER 30-INCH TYPE D (LF)
STATION -	STATION	LOCATION		
14+50 -	15+88	RT		138
15+88 -	16+02	RT	14	
18+77 -	19+03	RT	26	
19+03 -	20+25	RT		122
TOTALS			40	260

STORM SEWER PIPE

					608.0312
					STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH (LF)
PIPE	FROM	TO	UP STREAM INVERT ELEVATION	DOWN STREAM INVERT ELEVATION	
P1	S1	E1	755.40	753.75	66
P2	S2	E2	767.15	766.40	30
TOTAL					96

SIDEWALK ITEMS

				602.0405
				CONCRETE SIDEWALK 4-INCH (SF)
STATION -	STATION	LOCATION		
14+50 -	16+02	RT		830
18+77 -	20+25	RT		710
TOTALS				1540

PIPE UNDERDRAIN

			612.0106	612.0206	612.0806	645.0111
			PIPE UNDERDRAIN 6-INCH (LF)	PIPE UNDERDRAIN UNPERFORATED 6-INCH (LF)	APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH (EACH)	GEOTEXTILE FABRIC TYPE DF SCHEDULE A (SY)
STATION -	STATION	LOCATION				
19+50 -	21+25	LT	175	18	1	120
TOTAL			175	18	1	120

SALVAGED RAIL

			614.0920	614.0925
			SALVAGED RAIL (LF)	SALVAGED GUARDRAIL END TREATMENTS (LF)
STATION -	STATION	LOCATION		
14+02 -	16+18	LT	216	1
14+68 -	16+09	RT	141	1
18+82 -	19+59	RT	77	1
18+91 -	19+70	LT	79	1
TOTAL			513	4

MSG GUARDRAIL 3				
614.2300				
MSG GUARDRAIL 3 (LF)				
STATION	LOCATION	-	STATION	LOCATION
15+40	23.0' RT	-	15+53	23.0' RT
15+65	17.0' LT	-	15+78	17.0' LT
19+22	23.0' RT	-	19+34	23.0' RT
19+26	17.0' LT	-	19+38	17.0' LT
TOTAL				50

MSG THRIE BEAM TRANSITION				
614.2500				
MSG THRIE BEAM TRANSITION (LF)				
STATION	LOCATION	-	STATION	LOCATION
15+53	23.0' RT	-	15+93	23.0' RT
15+78	17.0' LT	-	16+18	17.0' LT
18+82	23.0' RT	-	19+22	23.0' RT
18+86	17.0' LT	-	19+26	17.0' LT
TOTAL				157.6

MSG GUARDRAIL TERMINAL EAT				
614.2610				
MSG GUARDRAIL TERMINAL EAT (EACH)				
STATION	LOCATION	-	STATION	LOCATION
14+87	25.0' RT	-	15+40	23.0' RT
15+12	19.0' LT	-	15+65	17.0' LT
19+34	23.0' RT	-	19+87	25.0' RT
19+38	17.0' LT	-	19+91	17.0' LT
TOTAL				4

WATER		
624.0100		
WATER (MGAL)		
STATION	-	STATION
12+11	-	16+09
18+83	-	22+50
TOTALS		30

EROSION CONTROL												
625.0500 628.1504 628.1520 628.2008 628.7015 628.7504 628.1905 628.1910 629.0210 630.0140 630.0300												
EROSION MAT URBAN CLASS I TYPE B (SY) INLET PROTECTION TYPE C (EACH) TEMPORARY DITCH CHECKS (LF) MOBILIZATIONS EROSION CONTROL (EACH) MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH) FERTILIZER TYPE B (CWT) SEEDING MIXTURE NO. 40 (LB) SEEDING BORROW PIT (LB)												
STATION	-	STATION	LOCATION	SALVAGED TOPSOIL (SY)	SILT FENCE (LF)	SILT FENCE MAINTENANCE (LF)	EROSION MAT URBAN CLASS I TYPE B (SY)	INLET PROTECTION TYPE C (EACH)	TEMPORARY DITCH CHECKS (LF)	MOBILIZATIONS EROSION CONTROL (EACH)	MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)	FERTILIZER TYPE B (CWT)
12+04	-	16+58	LT	1,670	475	475	1,670					1.1
12+04	-	14+09	RT	410	210	210	410					0.3
14+28	-	16+23	RT	585	190	190	585	1	30			0.4
18+43	-	20+75	RT	655	240	240	655	1	45			0.4
18+86	-	20+25	LT	200	130	130	200		30			0.1
UNDISTRIBUTED				880	305	305	880			8	8	0.7
TOTAL				4,400	1,550	1,550	4,400	2	105	8	8	3.0
												80
												20

SIGNING					
638.2102 638.2602 638.3000 634.0616					
MOVING SIGNS TYPE II (EACH) REMOVING SIGNS TYPE II (EACH) REMOVING SMALL SIGN SUPPORTS (EACH) POSTS WOOD 4X6-INCH X 16 FT (EACH) REMARKS					
STATION	LOCATION	MOVING SIGNS TYPE II (EACH)	REMOVING SIGNS TYPE II (EACH)	REMOVING SMALL SIGN SUPPORTS (EACH)	POSTS WOOD 4X6-INCH X 16 FT (EACH)
13+70	LT	1			1
15+87	LT	1			1
	LT		1	1	
TOTALS		2	1	1	2

TURBIDITY BARRIERS	
628.6005	
TURBIDITY BARRIERS (SY)	
LOCATION	
FOX RIVER	160
TOTALS	160

CONSTRUCTION STAKING ITEMS					
650.4500 650.5000 650.5500 650.9920					
CONSTRUCTION STAKING SUBGRADE (LF) CONSTRUCTION STAKING BASE (LF) CONSTRUCTION STAKING CURB GUTTER AND (LF) CONSTRUCTION STAKING SLOPE STAKES (LF)					
STATION	-	STATION	LOCATION	CONSTRUCTION STAKING SUBGRADE (LF)	CONSTRUCTION STAKING BASE (LF)
12+11	-	16+08	RT/LT	398	398
14+50	-	16+03	RT		
18+77	-	20+25	RT		
18+83	-	22+50	LT/RT	367	367
TOTAL				765	765

TRAFFIC CONTROL ITEMS				
643.0420 643.0705 643.0900 643.3000				
TRAFFIC CONTROL WARNING LIGHTS TYPE A (DAY) TRAFFIC CONTROL SIGNS (DAY) TRAFFIC CONTROL DETOUR SIGNS (DAY)				
LOCATION	DURATION	TRAFFIC CONTROL BARRICADES TYPE III (DAY)	TRAFFIC CONTROL WARNING LIGHTS TYPE A (DAY)	TRAFFIC CONTROL SIGNS (DAY)
12+11	171	855	1,710	171
22+50	171	855	1,710	171
DETOUR	171	1,368	2,736	23,598
TOTAL		1,710	3,420	342

PAVEMENT MARKINGS				
646.0106				
PAVEMENT MARKING EPOXY 4-INCH (WHITE) (LF) PAVEMENT MARKING EPOXY 4-INCH (YELLOW) (LF)				
STATION	-	STATION	LOCATION	
12+11	-	22+50	RT	2,080
TOTAL				2,080
				4,160

CONSTRUCTION STAKING ITEMS		
650.8500 650.9910		
CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS 6862-01-70 (LS) CONSTRUCTION STAKING SUPPLEMENTAL CONTROL 6862-01-70 (LS)		
LOCATION		
CTH XX	1	1
TOTAL	1	1

STONE DITCH CHECKS			
628.7515.S 645.0140			
STONE DITCH CHECKS (CY) GEOTEXTILE FABRIC TYPE SAS (SY)			
STATION	LOCATION		
12+39	LT	11	32
13+13	LT	11	32
13+86	LT	10	28
16+11	LT	11	32
TOTALS		43	124

SAW CUTS			
690.0150			
SAWING ASPHALT (LF)			
STATION	-	STATION	LOCATION
12+11			LT/RT
20+75	-	22+14	RT
22+50			LT/RT
TOTALS			201

ELECTRICAL ITEMS			
652.0210 655.0615			
CONDUIT RIGID NONMETALLIC SCHEDULE 40 1-INCH (LF) ELECTRICAL WIRE LIGHTING 10 AWG (LF)			
STATION	-	STATION	LOCATION
18+86	-	20+79	LT
TOTALS			193
			1000

ELECTRICAL SERVICE METER BREAKER PEDESTAL		
656.0200		
ELECTRICAL SERVICE METER BREAKER PEDESTAL STATION 20+80 (LS)		
STATION	LOCATION	
20+80	RT	1
TOTALS		1

ELECTRICAL SERVICE BREAKER DISCONNECT BOX		
656.0500		
ELECTRICAL SERVICE BREAKER DISCONNECT BOX STATION 20+80 (LS)		
STATION	LOCATION	
20+80	RT	1
TOTALS		1

LIGHTING CONTROL CABINETS		
659.2130		
LIGHTING CONTROL CABINETS 120/240 30-INCH (LS)		
STATION	LOCATION	
20+80	RT	1
TOTALS		1



NOTES:

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

FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE WAUSHARA COUNTY
HIGHWAY DEPARTMENT.

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

R/W PROJECT NUMBER 6862-01-00	SHEET NUMBER	TOTAL SHEETS
FEDERAL PROJECT NUMBER	4.1	2
PLAT OF RIGHT-OF-WAY REQUIRED FOR CTH XX CITY OF BERLIN FOX RIVER BRIDGE		
CTH XX	WAUSHARA COUNTY	
CONSTRUCTION PROJECT NUMBER 6862-01-70		

4

                 	SECTION CORNER NOTATION FOR COMBUSTABLE FLUIDS NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES ELECTRIC POLE TELEPHONE POLE PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.) ACCESS CONTROLLED BY ACQUISITION NO ACCESS (BY STATUTORY AUTHORITY) ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL) BRIDGE	       	R/W MONUMENT NON-MONUMENTED R/W POINT FOUND IRON PIN VALVE (GAS, WATER, ETC.) SIGN OFF-PREMISE SIGN COMPENSABLE NON-COMPENSABLE PARCEL NUMBER UTILITY NUMBER	                 
--	---	---	--	--

ACCESS RIGHTS	AR	POINT OF COMPOUND CURVE	PCC
ACRES	AC	POINT OF INTERSECTION	PI
AHEAD	AH	PROPERTY LINE	PL
ALUMINUM	ALUM	RECORDED AS	(100')
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLACK	BLK	RIGHT	RT
CENTERLINE	C/L	RIGHT OF WAY	R/W
CERTIFIED SURVEY MAP	CSM	SECTION	SEC
CONCRETE	CONC	SEPTIC VENT	SEPV
COUNTY	CO	SQUARE FEET	SF
COUNTY TRUNK HIGHWAY	CTH	STATE TRUNK HIGHWAY	STH
DISTANCE	DIST	STATION	STA
CORNER	COR	SUBDIVISION	SUBD
DOCUMENT NUMBER	DOC	TANGENT	TAN
EASEMENT	EASE	TELEPHONE PEDESTAL	TP
EXISTING	EX	TEMPORARY LIMITED	TLE
GAS VALVE	GV	EASEMENT	
GRID NORTH	GN	TRANSPORTATION PROJECT	TPP
HIGHWAY EASEMENT	HE	PLAT	
IDENTIFICATION	ID	UNITED STATES HIGHWAY	USH
LAND CONTRACT	LC	VOLUME	V
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS	<u>CURVE DATA</u>	
NUMBER	NO	LONG CHORD	LC
OUTLOT	OL	LONG CHORD BEARING	LCB
PAGE	P	RADIUS	R
POINT OF TANGENCY	PT	DEGREE OF CURVE	D
PERMANENT LIMITED	PLE	CENTRAL ANGLE OR DELTA	Δ
EASEMENT		LENGTH OF CURVE	L
		TANGENT	T
POINT OF BEGINNING	POB	DIRECTION AHEAD	DA
POINT OF CURVATURE	PC	DIRECTION BACK	DB

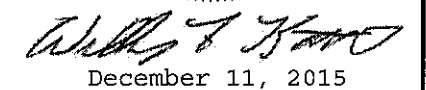
WATER	— W
GAS	— G
TELEPHONE	— T
OVERHEAD	— OH
TRANSMISSION LINES	
ELECTRIC	— E
CABLE TELEVISION	— TV
FIBER OPTIC	— FO
SANITARY SEWER	— SAN
STORM SEWER	— SS

Y= 101,146.691
X= 471,613.242
699.00' NORTH AND 7.94' WEST OF THE
SOUTHEAST CORNER OF SECTION 33,
T. 23 N., R. 13 E.



Y= 102,185.601
X= 471,603.367
1737.91' NORTH AND 17.81' WEST OF THE
SOUTHEAST CORNER OF SECTION 33,
T. 23 N., R. 13 E.

Mead & Hunt, Inc.
6501 Watts Road
Madison, WI 53719
608.273.6380
fax: 608.273.6391
www.meadhunt.com



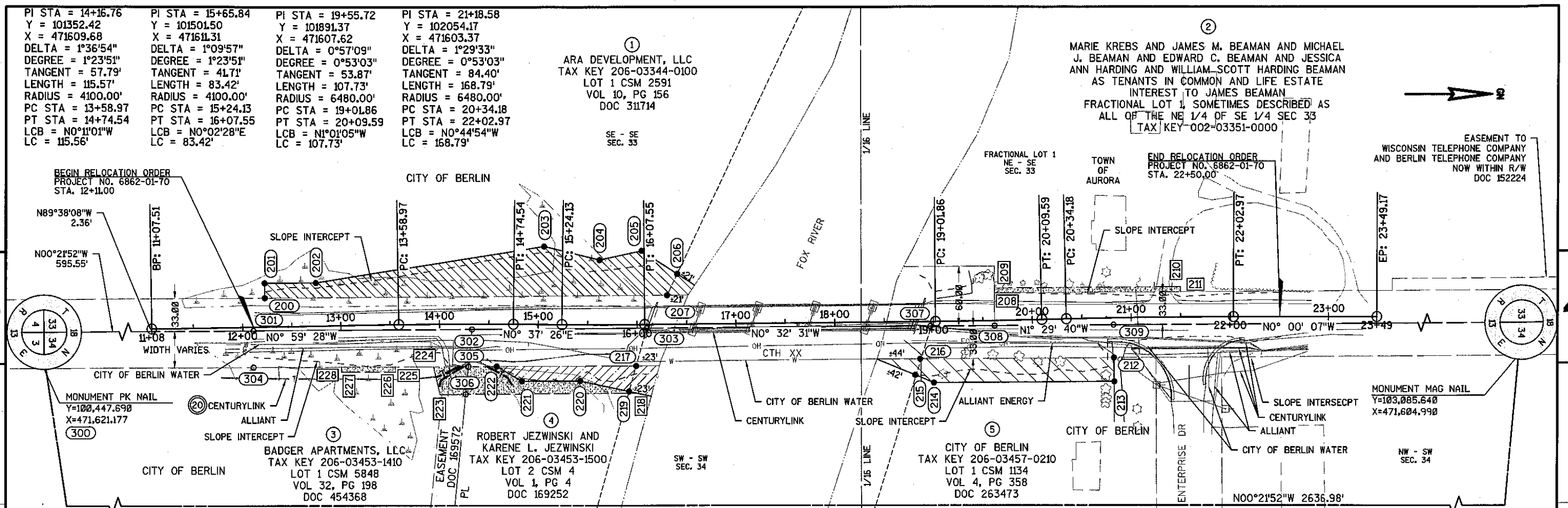
STATE OF WISCONSIN
WAUSHARA COUNTY

APPROVED FOR WAUSHARA COUNTY

DATE: 1/21/16  (Signature)

REVISION DATE
DEC 11, 2015

LAYOUT
SCALE 0 0.5 MI.
TOTAL NET LENGTH OF CENTERLINE = 0.197 MI.



POINT STATION OFFSET AND COORDINATE TABLE				
POINT	STATION	OFFSET	Y	X
200	12+23.00	-29.22	101158.193	471583.817
201	12+23.00	-44.22	101157.954	471568.818
202	12+75.00	-43.64	101209.935	471568.499
203	15+05.00	-78.57	101441.541	471532.077
204	15+62.00	-65.36	101497.787	471545.732
205	16+05.00	-74.47	101540.019	471536.473
206	16+40.84	-50.78	101576.023	471559.817
207	16+30.47	-29.38	101565.853	471581.315
208	19+62.35	-28.00	101897.441	471579.280
209	19+62.35	-33.00	101897.410	471574.281
210	21+50.00	-30.46	102085.357	471573.127
211	21+50.00	-25.46	102085.388	471578.127
212	20+82.00	40.05	102018.345	471644.540
213	20+82.00	64.06	102018.789	471668.549
214	19+00.00	61.52	101836.215	471669.659
215	18+81.00	53.56	101817.179	471661.880
216	18+86.20	37.47	101822.200	471645.743
217	15+98.85	41.45	101534.816	471652.435
218	15+99.23	68.86	101535.403	471679.841

POINT STATION OFFSET AND COORDINATE TABLE				
POINT	STATION	OFFSET	Y	X
219	15+91.69	67.17	101527.729	471678.201
220	15+43.00	56.62	101478.296	471667.630
221	14+84.00	57.42	101419.029	471667.835
222	14+58.00	42.76	101393.368	471652.923
223	14+00.00	70.89	101336.175	471681.064
224	13+93.47	45.70	101329.541	471655.927
225	13+55.00	42.53	101291.394	471653.276
226	13+55.00	47.53	101291.480	471658.276
227	13+00.00	46.77	101236.475	471658.466
228	13+00.00	41.77	101236.390	471653.466
300	-	-	100447.690	471621.177
301	12+10.96	3.65	101146.714	471616.888
302	14+32.78	5.46	101368.443	471615.527
303	16+09.57	3.55	101545.266	471614.442
304	12+10.45	40.53	101146.841	471653.775
305	14+29.14	42.95	101364.817	471653.022
306	14+26.39	70.83	101362.120	471680.905
307	18+96.80	4.50	101832.487	471612.680
308	19+61.91	5.00	101897.644	471612.280
309	20+82.00	7.04	102017.735	471611.543

R/W COURSE TABLE			ADDITIONAL POINTS COURSE TABLE			ADDITIONAL POINTS COURSE TABLE		
FROM - TO	BEARING	DISTANCE	FROM - TO	BEARING	DISTANCE	FROM - TO	BEARING	DISTANCE
200-201	S89°05'08"W	15.00'	300-301	N00°21'06"W	699.04'	306-223	S00°21'06"E	25.95'
201-202	N00°21'06"W	51.98'	301-200	N70°51'27"W	35.02'	218-306	S00°21'06"E	173.28'
202-203	N08°56'13"W	234.45'	301-302	N00°21'06"W	221.73'	300-307	N00°21'06"W	1384.82'
203-204	N13°38'45"E	57.88'	302-305	S84°28'35"E	37.67'	TLE COURSE TABLE		
204-205	N12°21'59"W	43.24'	305-304	S00°11'53"E	217.98'	FROM - TO	BEARING	DISTANCE
205-206	N32°57'30"E	42.91'	304-301	S89°48'07"W	36.89'	208-209	S89°38'54"W	5.00'
206-207	S64°40'59"E	23.78'	300-302	N00°21'06"W	920.77'	209-210	N00°21'06"W	187.95'
207-200	S00°21'06"E	407.67'	302-303	N00°21'06"W	176.83'	210-211	N89°38'54"E	5.00'
212-213	N88°56'29"E	24.00'	304-228	N00°11'53"W	89.55'	211-208	S00°21'06"E	187.95'
213-214	S00°20'53"E	182.58'	303-217	S74°37'16"E	39.40'	218-223	S00°21'06"E	199.23'
214-215	S22°13'41"W	20.56'	222-305	S00°11'53"E	28.55'	220-218	N12°04'16"E	58.40'
215-216	N72°43'02"W	16.90'	300-308	N00°21'06"W	1449.98'	223-224	S76°38'03"W	28.70'
216-212	N00°21'06"W	196.15'	308-208	S89°38'54"W	33.00'	224-225	S00°11'53"E	38.15'
217-219	S74°37'16"E	26.72'	300-309	N00°21'06"W	1570.08'	224-222	N00°11'53"W	63.82'
219-220	S12°04'12"W	50.55'	309-212	N88°56'29"E	33.00'	225-226	N89°01'19"E	5.00'
220-221	S00°11'53"E	59.27'	304-228	N00°11'53"W	89.55'	226-227	S00°11'53"E	55.00'
221-222	S30°09'37"W	29.68'	228-305	N00°11'53"W	128.43'	227-228	S89°01'19"W	5.00'
222-217	N00°11'53"W	141.45'	305-306	S84°28'35"E	28.01'	228-225	N00°11'53"W	55.00'

SCHEDULE OF UTILITIES & INTERESTS REQUIRED		
UTILITY NUMBER	OWNER(S)	INTEREST REQUIRED
20	CENTURYLINK	RELEASE OF RIGHTS

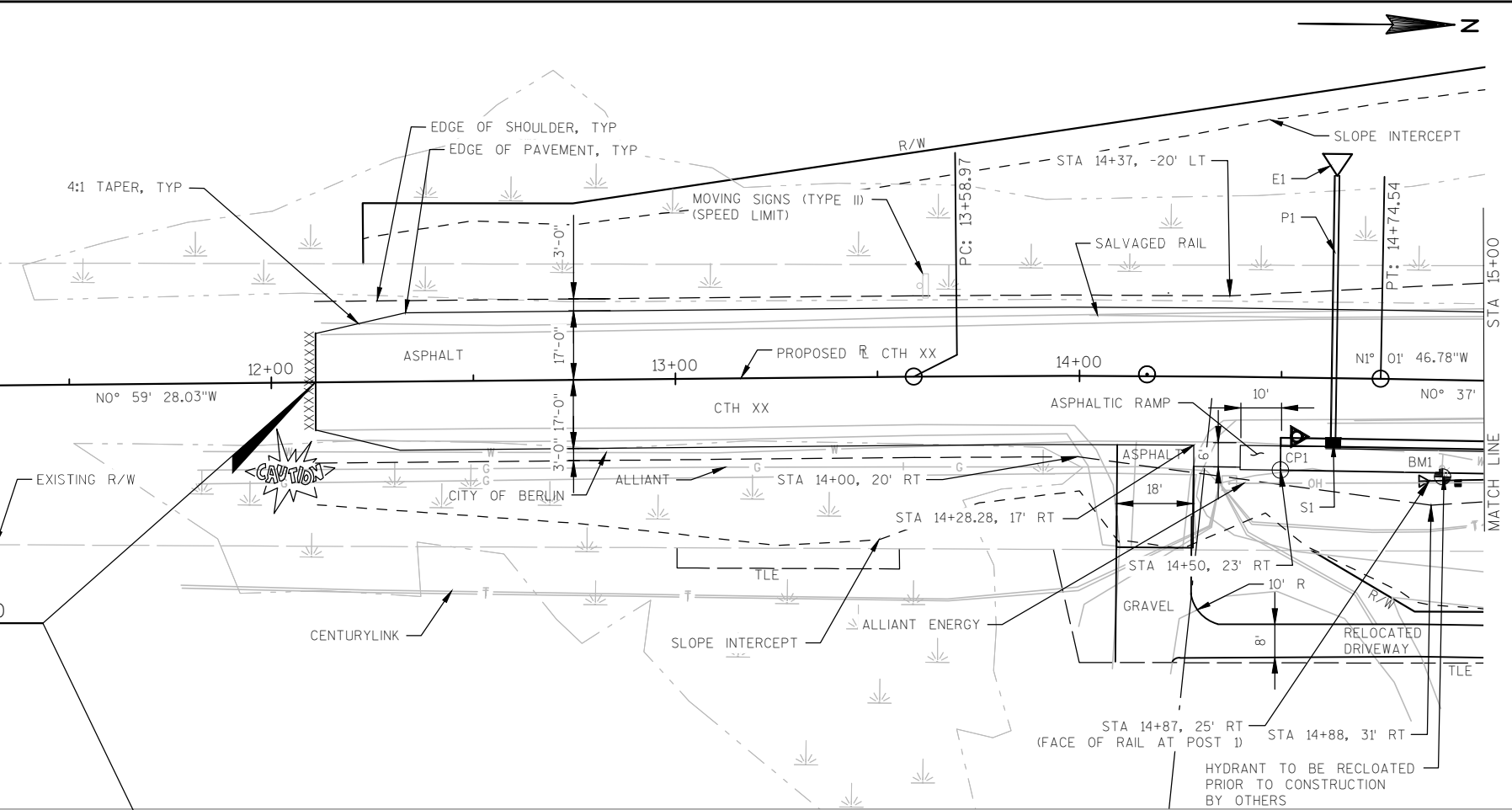
SCHEDULE OF LANDS & INTERESTS REQUIRED						
OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO WAUSHARA COUNTY.						
PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	EX	R/W ACRES REQUIRED	NEW	TLE
1	ARA DEVELOPMENT, LLC	FEE	0.32	--	0.32	--
2	MARIE KREBS AND JAMES M. BEAMAN AND MICHAEL J. BEAMAN AND EDWARD C. BEAMAN AND JESSICA ANN HARDING AND WILLIAM SCOTT HARDING BEAMAN AS TENANTS IN COMMON AND LIFE ESTATE INTEREST TO JAMES BEAMAN	TLE	--	--	--	0.02
3	BADGER APARTMENTS, LLC	FEE/TLE	--	0.19	0.19	0.03
4	ROBERT JEZWINSKI AND KARENE L. JEZWINSKI	FEE/TLE	0.06	0.17	0.23	0.06
5	CITY OF BERLIN	FEE	0.12	--	0.12	--

CONTROL POINTS					
ID	STA OFFSET		X	Y	DESCRIPTION
CP1	14+53.99,	14.64' RT	471,624.7800	101,389.5710	#6 REBAR
CP2	19+42.60,	18.68' RT	471,626.2950	101,878.5360	#6 REBAR

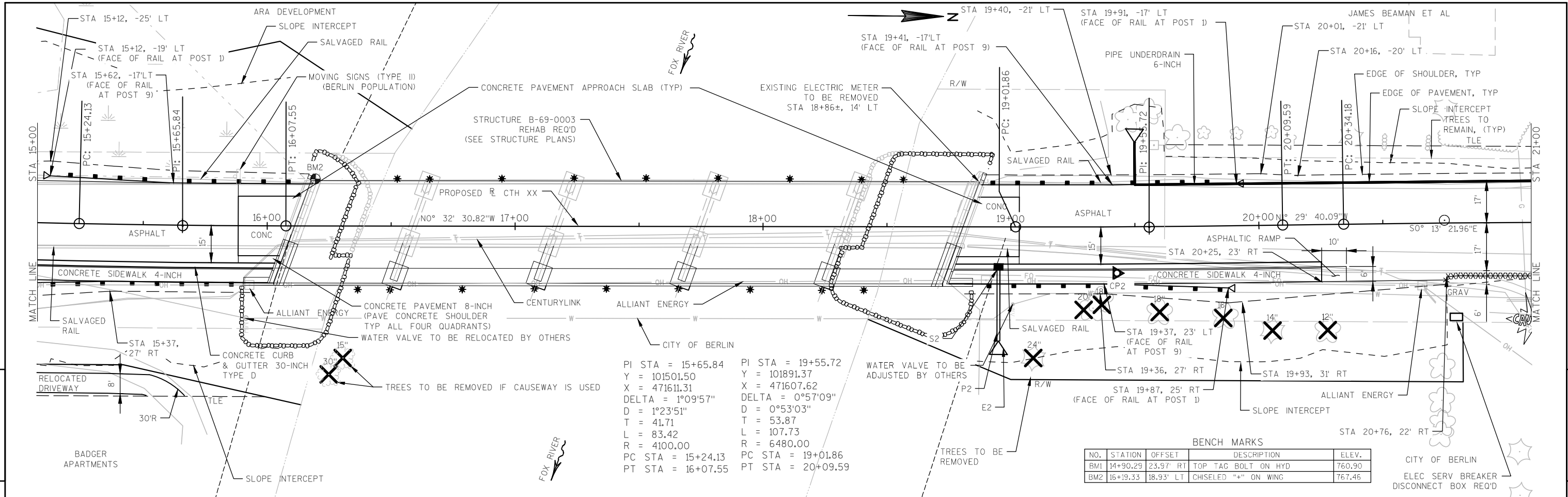
BENCH MARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
BM1	14+90.29	23.97' RT	TOP TAG BOLT ON HYD	760.90
BM2	16+19.33	18.93' LT	CHISELED "+" ON WING	767.46

PI STA = 14+16.76
Y = 101352.42
X = 471609.68
DELTA = 1°36'54"
D = 1°23'51"
T = 57.79
L = 115.57
R = 4100.00
PC STA = 13+58.97
PT STA = 14+74.54

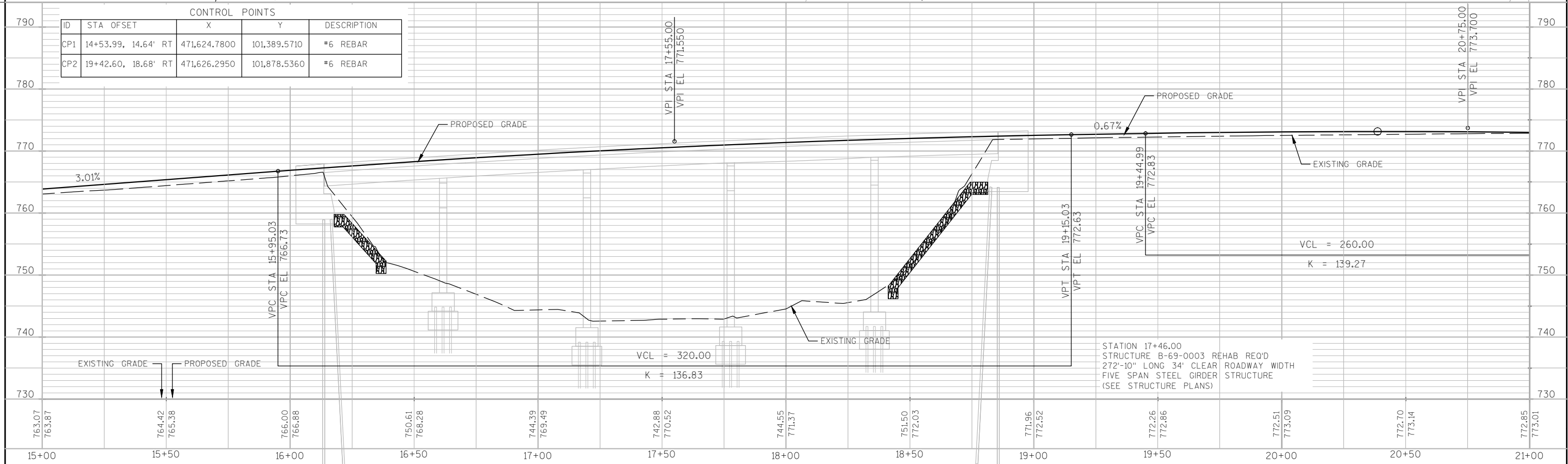
BEGIN PROJECT 6862-01-70
STA 12+11.00
Y= 101,146.4060
X= 471,613.1570
MATCH EXISTING
SAWCUT REQD



5

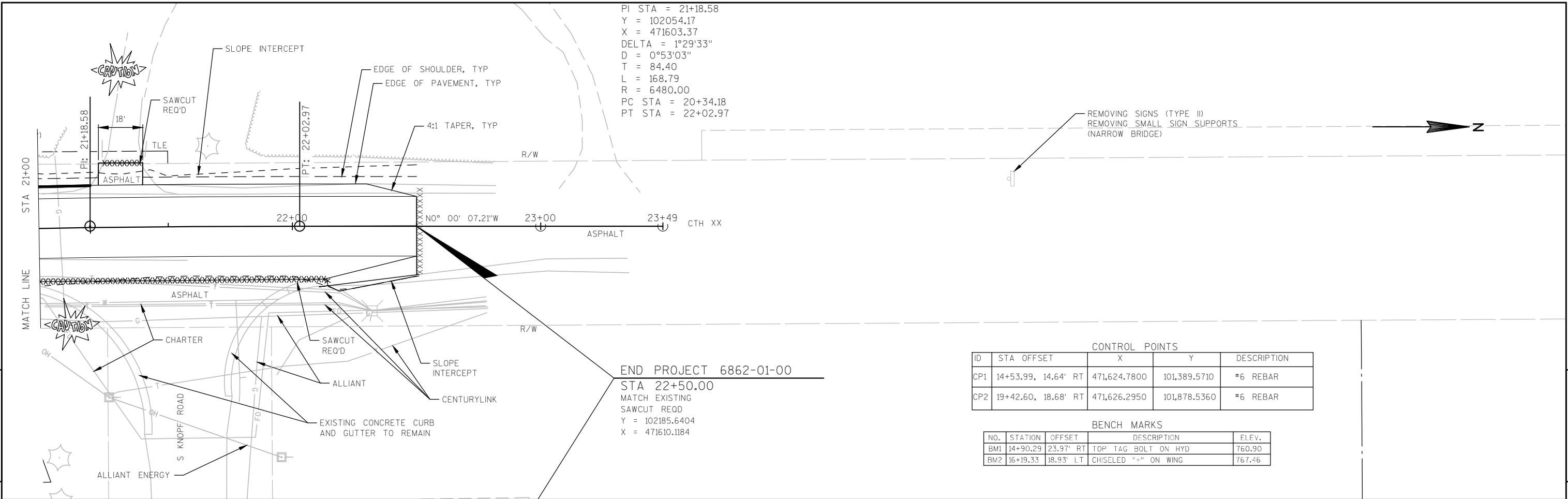


5



PROJECT NO: 6862-01-70	HWY: CTH XX	COUNTY: WAUSHARA	PLAN & PROFILE: CTH XX	SHEET 19
------------------------	-------------	------------------	------------------------	----------

5



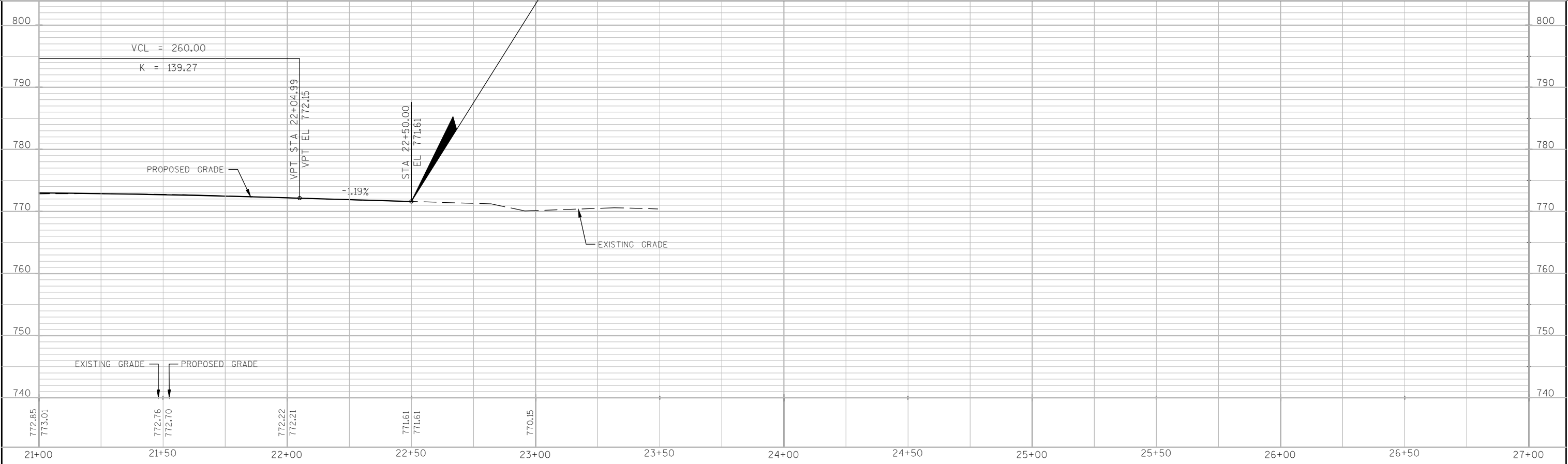
5

CONTROL POINTS

ID	STA	OFFSET	X	Y	DESCRIPTION
CP1	14+53.99,	14.64' RT	471,624.7800	101,389.5710	*6 REBAR
CP2	19+42.60,	18.68' RT	471,626.2950	101,878.5360	*6 REBAR

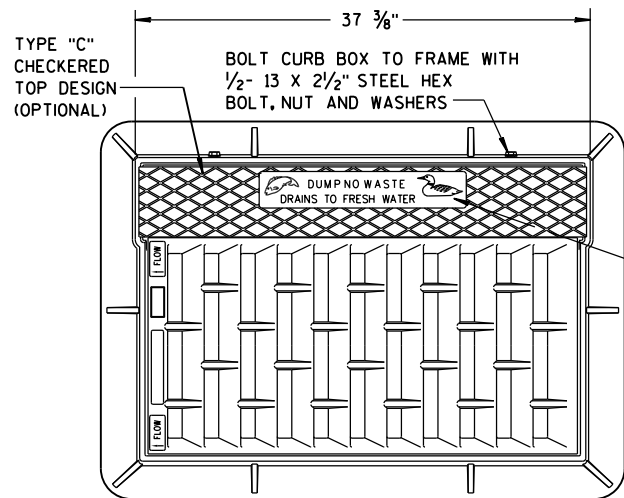
BENCH MARKS

NO.	STATION	OFFSET	DESCRIPTION	ELEV.
BM1	14+90.29	23.97' RT	TOP TAG BOLT ON HYD	760.90
BM2	16+19.33,	18.93' LT	CHISELED "+" ON WING	767.46



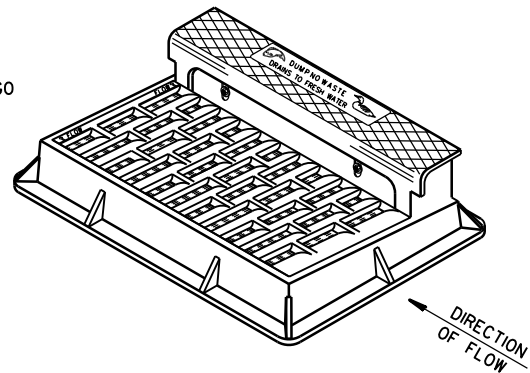
Standard Detail Drawing List

08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-18	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F05-01	CLASS "B" BEDDING FOR CULVERT PIPE OR STORM SEWER
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D04-02	LIGHTING CONTROL CABINET 120/240 VOLT
12A03-10	NAME PLATE (STRUCTURES)
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13B02-08B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-16A	PAVEMENT MARKING (MAINLINE)

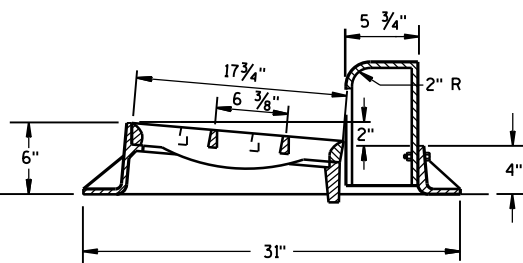
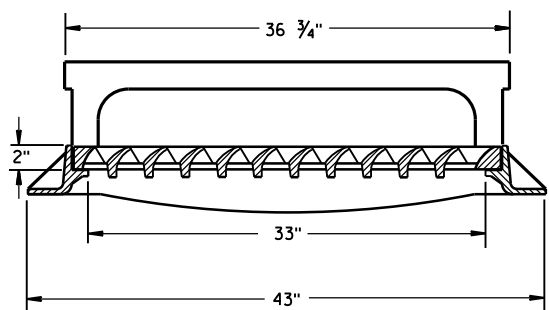
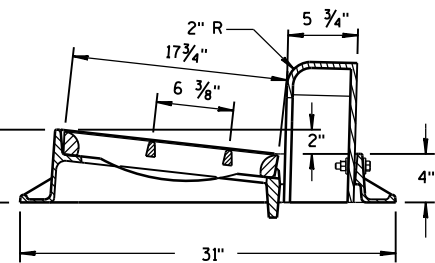
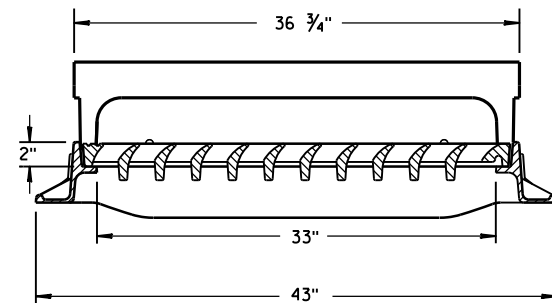
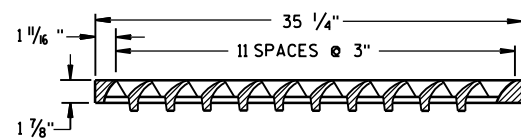


SEE LOGO
DETAIL

NOTE:
GRATE IS REVERSIBLE.

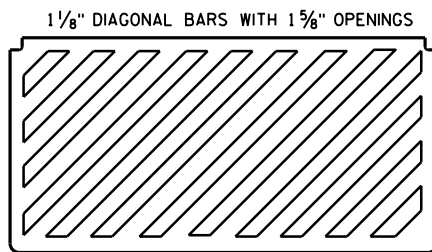


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"



TYPE "H"

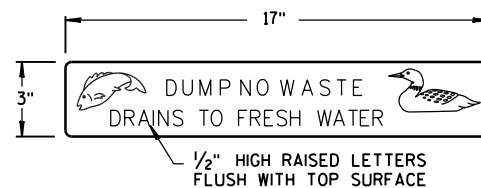
NOTE: EITHER CASTING IS ACCEPTABLE



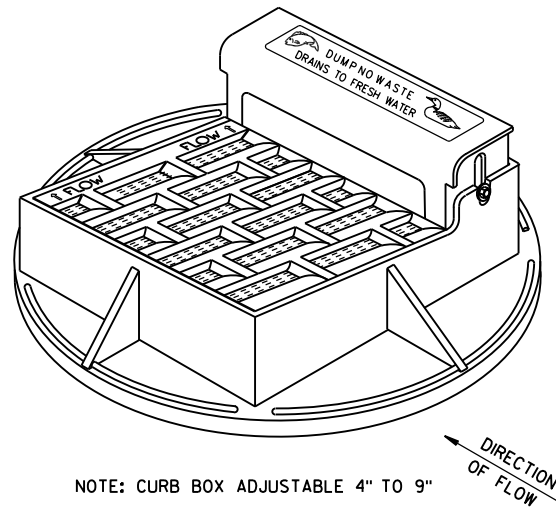
**SPECIAL GRATE FOR
TYPE "H" COVER**

(MEASURES 35 1/4" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

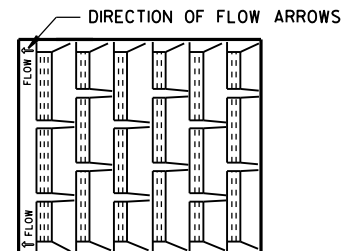


LOGO DETAIL

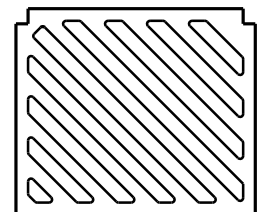


NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS REVERSIBLE.

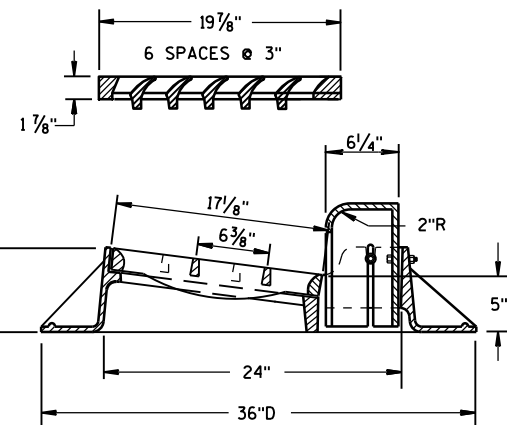
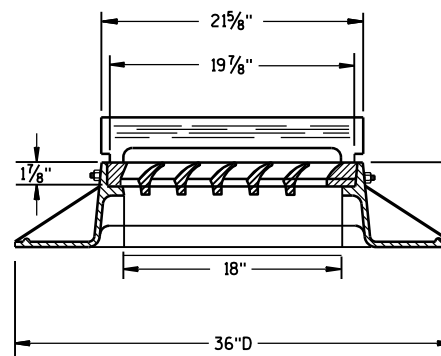


1" DIAGONAL BARS
WITH 1 1/2" OPENINGS

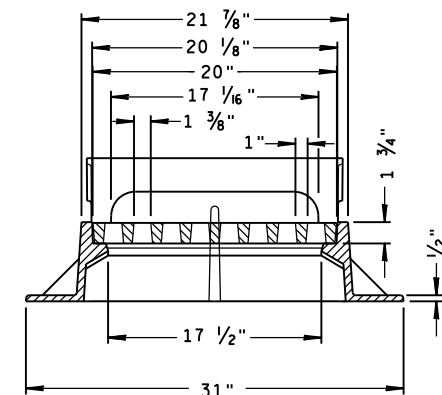
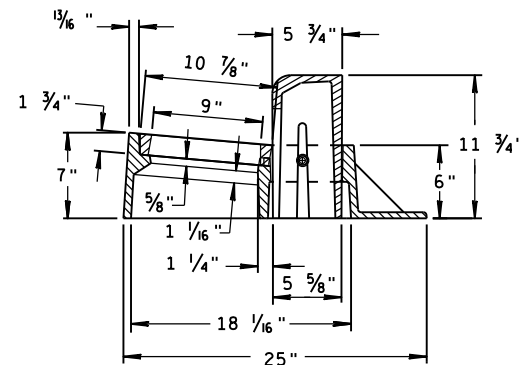


**SPECIAL GRATE FOR
TYPE "A" COVER**

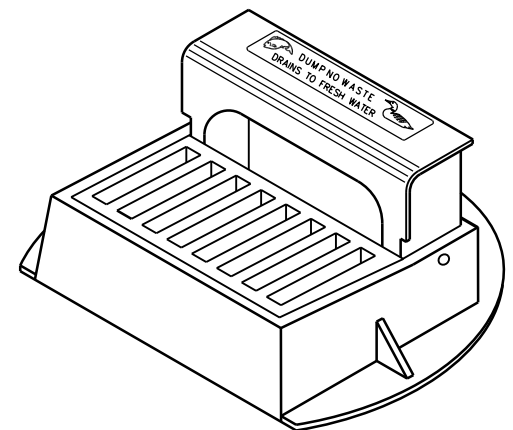
(MEASURES 19 3/4" X 17" X 1 1/8")
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



TYPE "A"



TYPE "Z"



**INLET COVERS
TYPE A, H, A-S, H-S & Z**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED

11-27-13

DATE

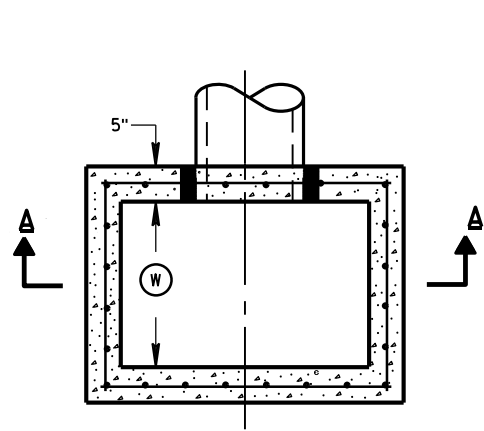
FHWA

/S/ Jerry H. Zogg

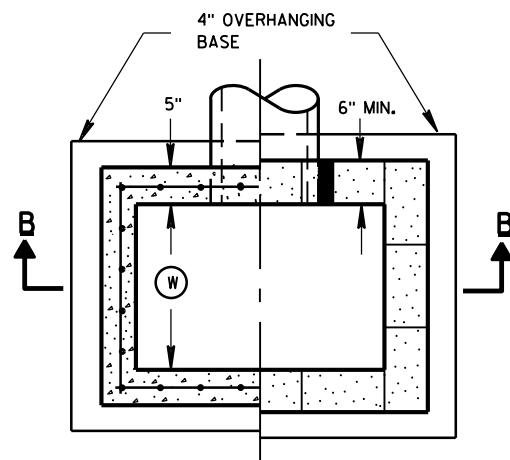
ROADWAY STANDARDS

ENGINEER

ENT

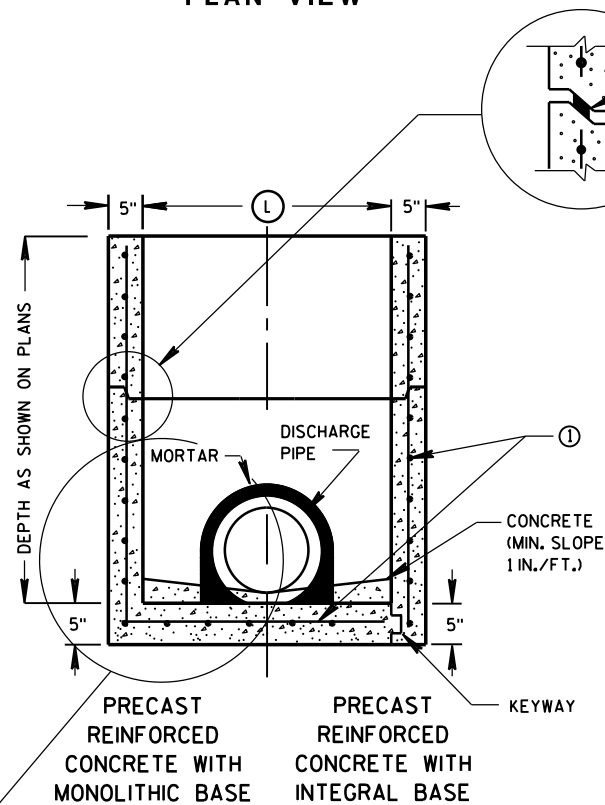


PLAN VIEW

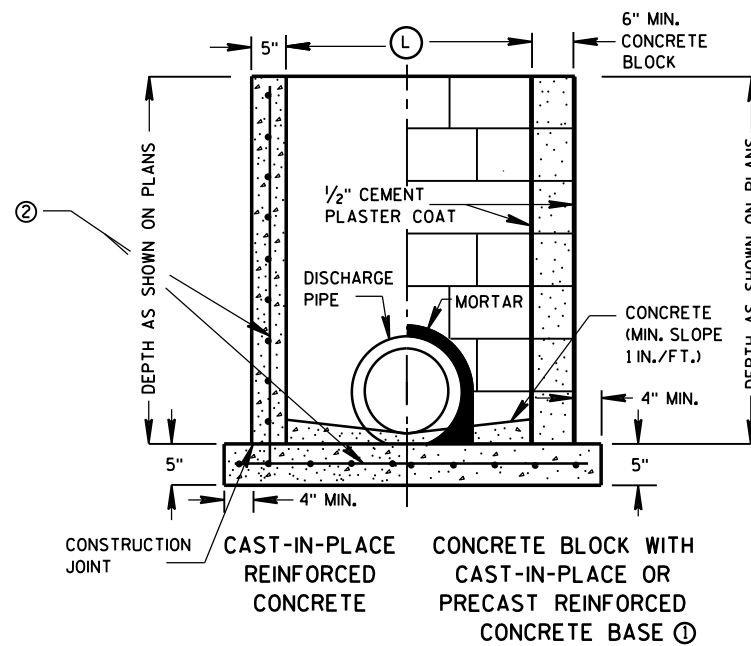


PLAN VIEW

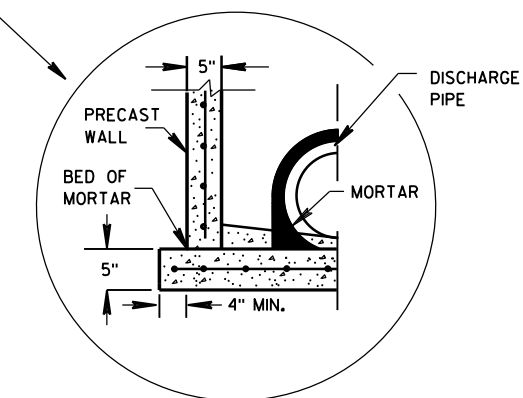
RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

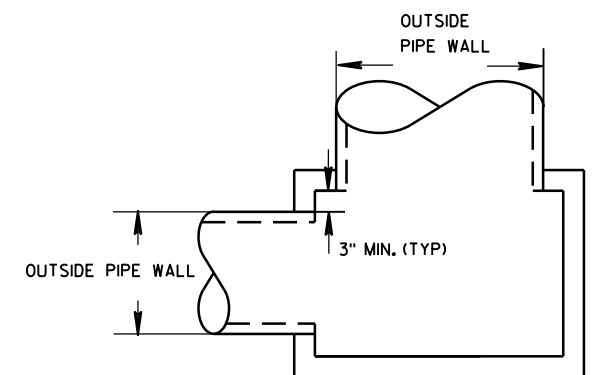
- FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE	WIDTH (1) (FT)	LENGTH (2) (FT)	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24

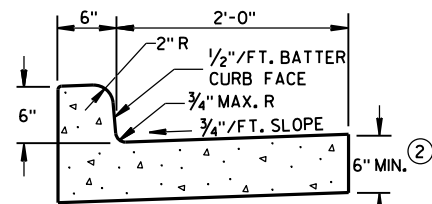


DETAIL "A"

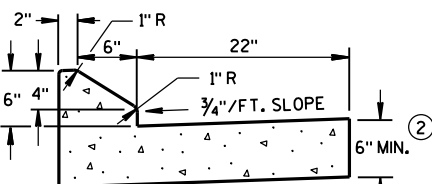
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

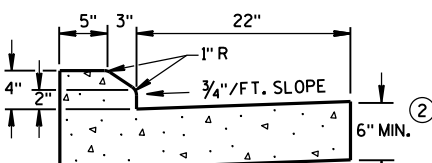
APPROVED
6/5/2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DE
FHWA ENGINEER 23



TYPES A & D ①

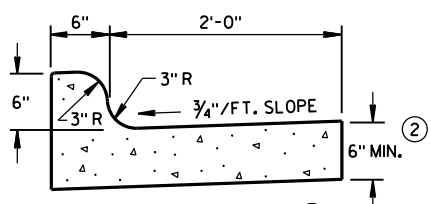


6" SLOPED CURB TYPES G & J ①



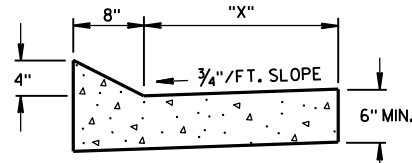
4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"



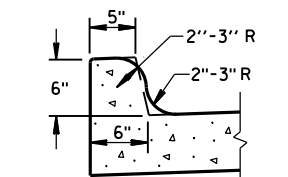
TYPES K & L ①

CONCRETE CURB & GUTTER 30"

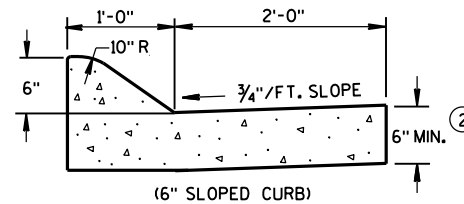


TYPES TBT & TBT ①
CONCRETE CURB & GUTTER

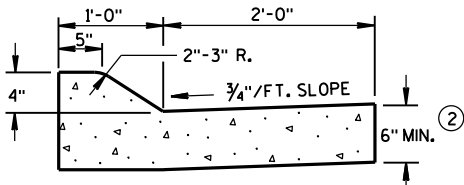
TBT & TBT	"X"
30"	22"
36"	28"



OPTIONAL CURB SHAPE
FOR TYPES K & L ①

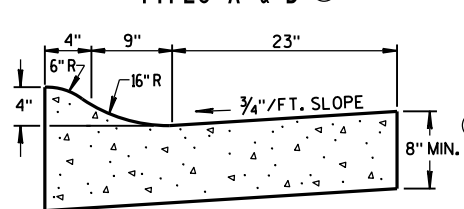


(6" SLOPED CURB)



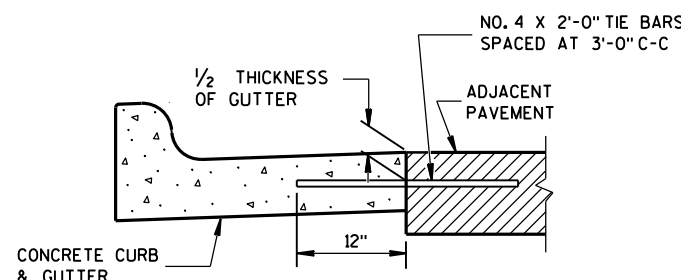
(4" SLOPED CURB)

TYPES A & D ①

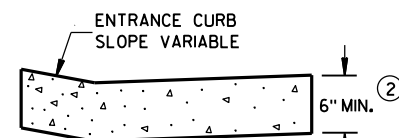


4" SLOPED CURB TYPES R & T ① ④

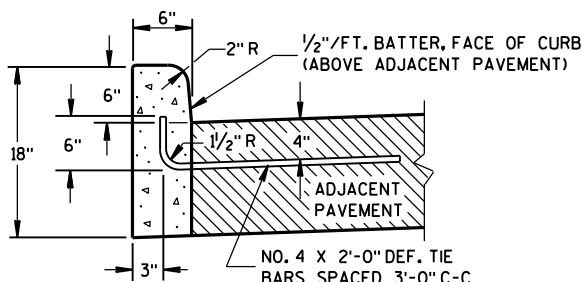
CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION ①

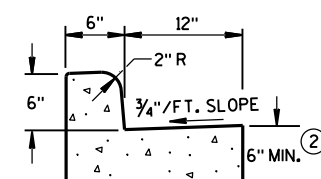


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

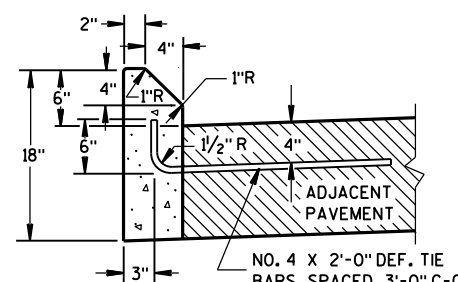


TYPES A & D ①

CONCRETE CURB



TYPES A & D
CONCRETE CURB & GUTTER 18"



TYPES G & J ①

GENERAL NOTES

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

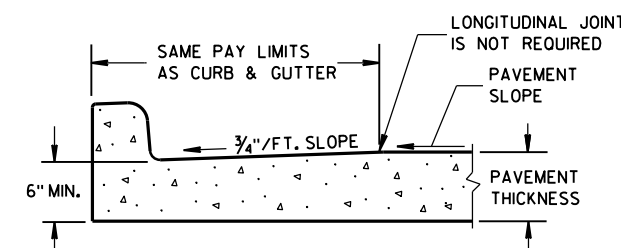
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

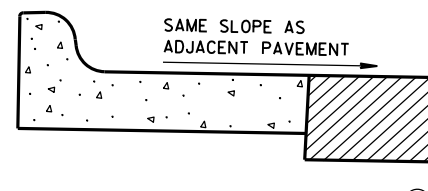
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

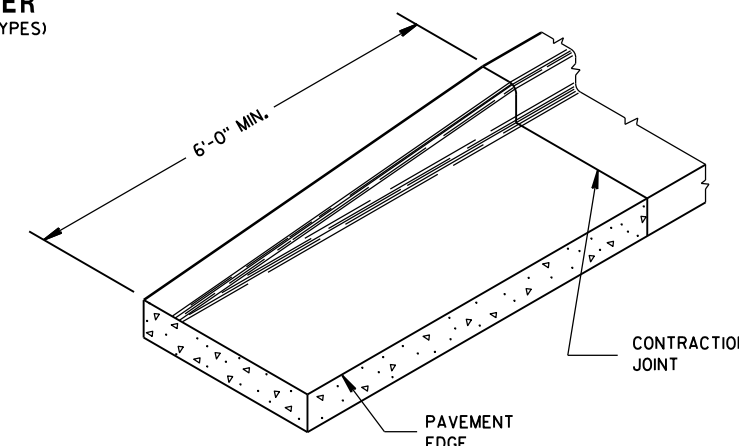
- TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBT.
- THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



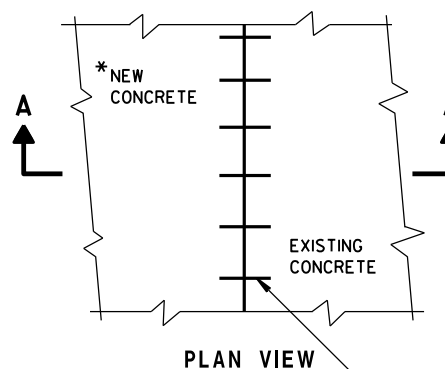
PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



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



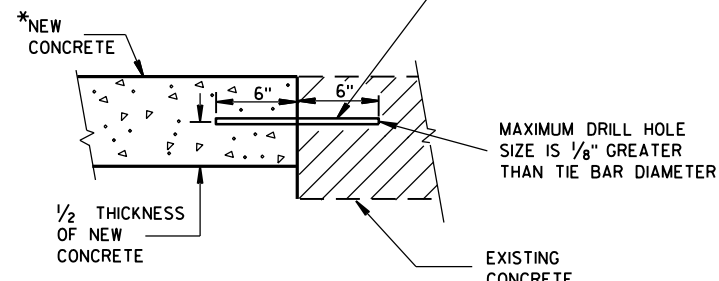
END SECTION CURB & GUTTER



PLAN VIEW

*NEW CURB & GUTTER,
SURFACE DRAINS,
CONCRETE PAVEMENT
OR OTHER NEW CONCRETE.

NO. 6 TIE BARS SPACED 2'-6" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT.

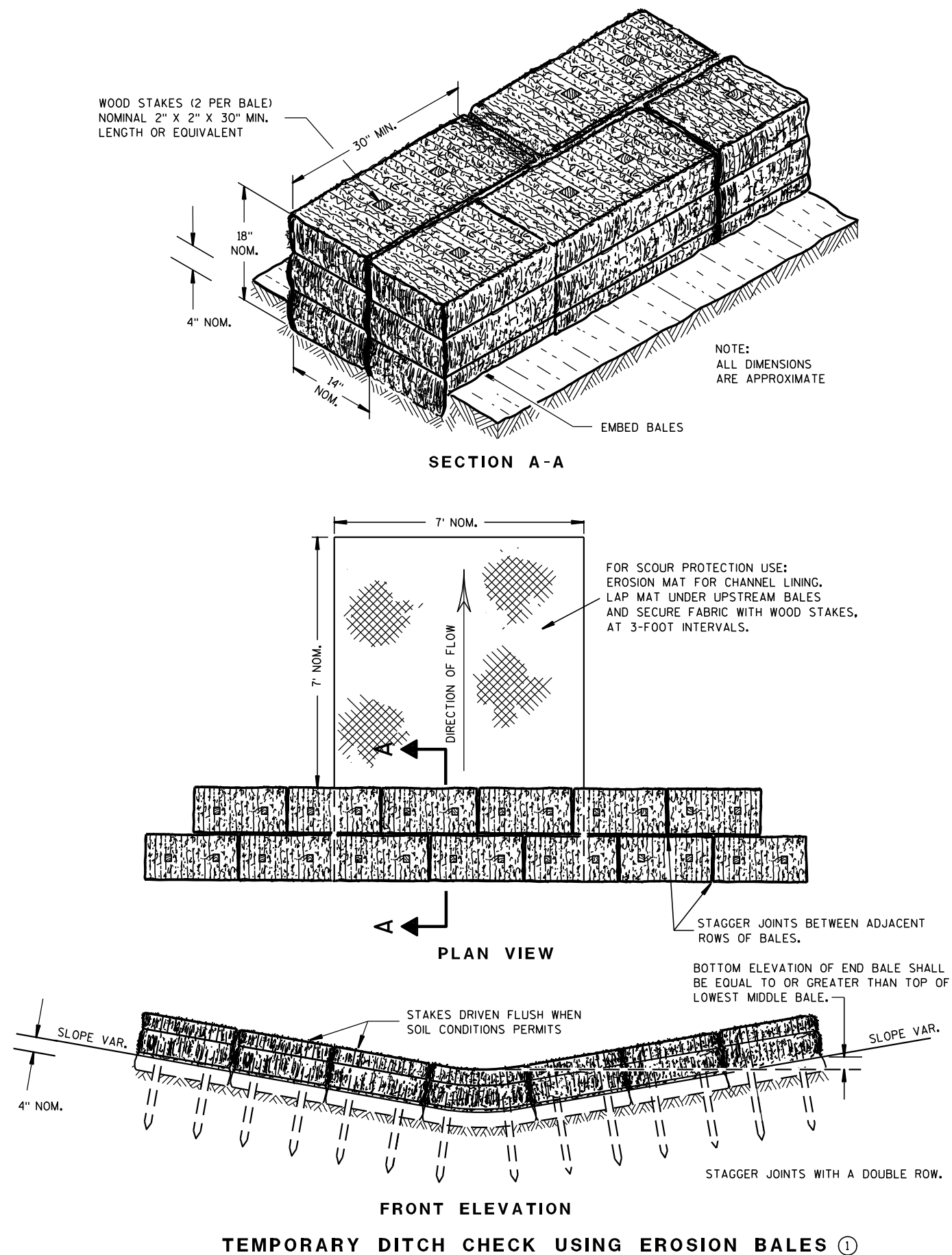


SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

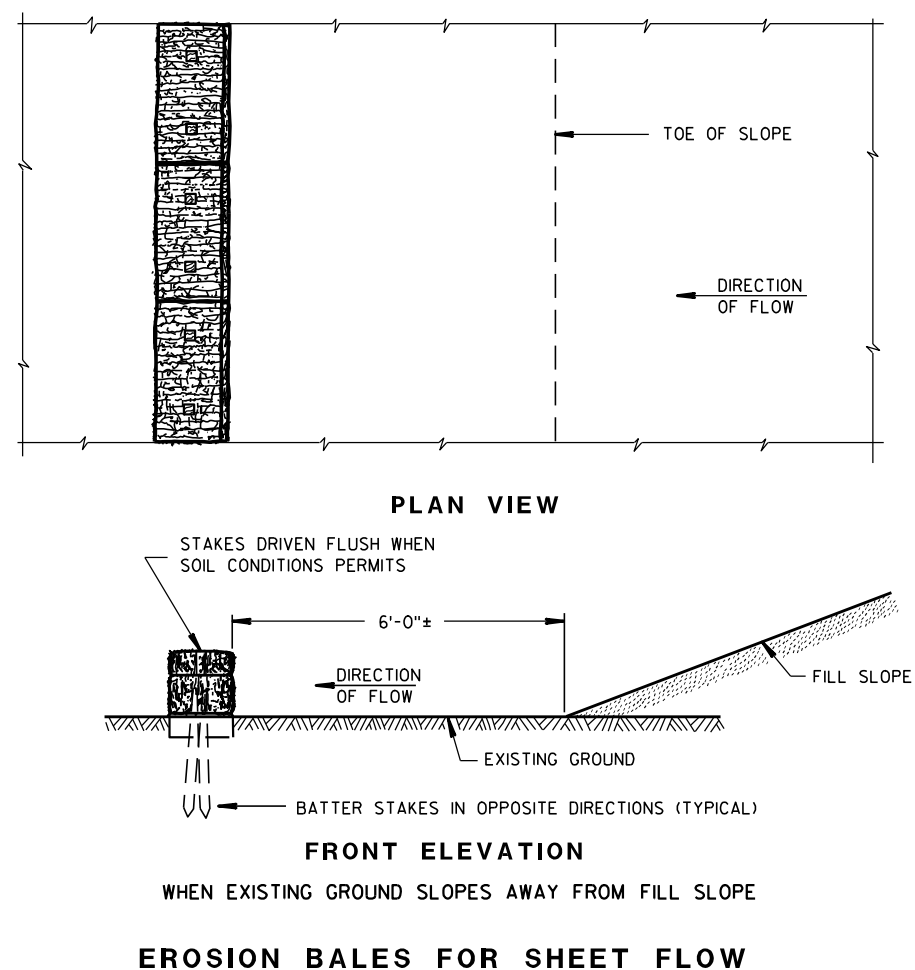
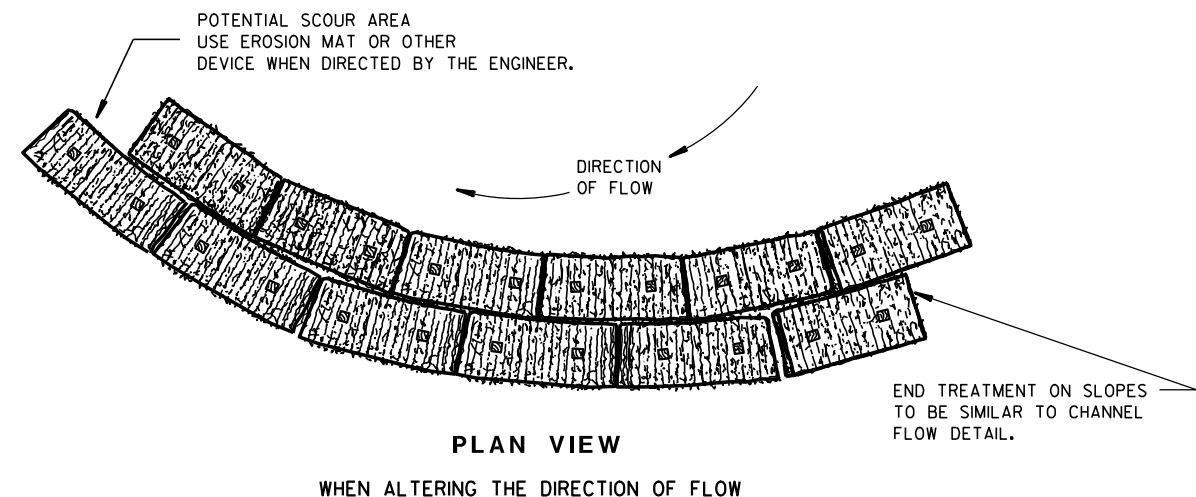
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER
FHWA



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.

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



TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

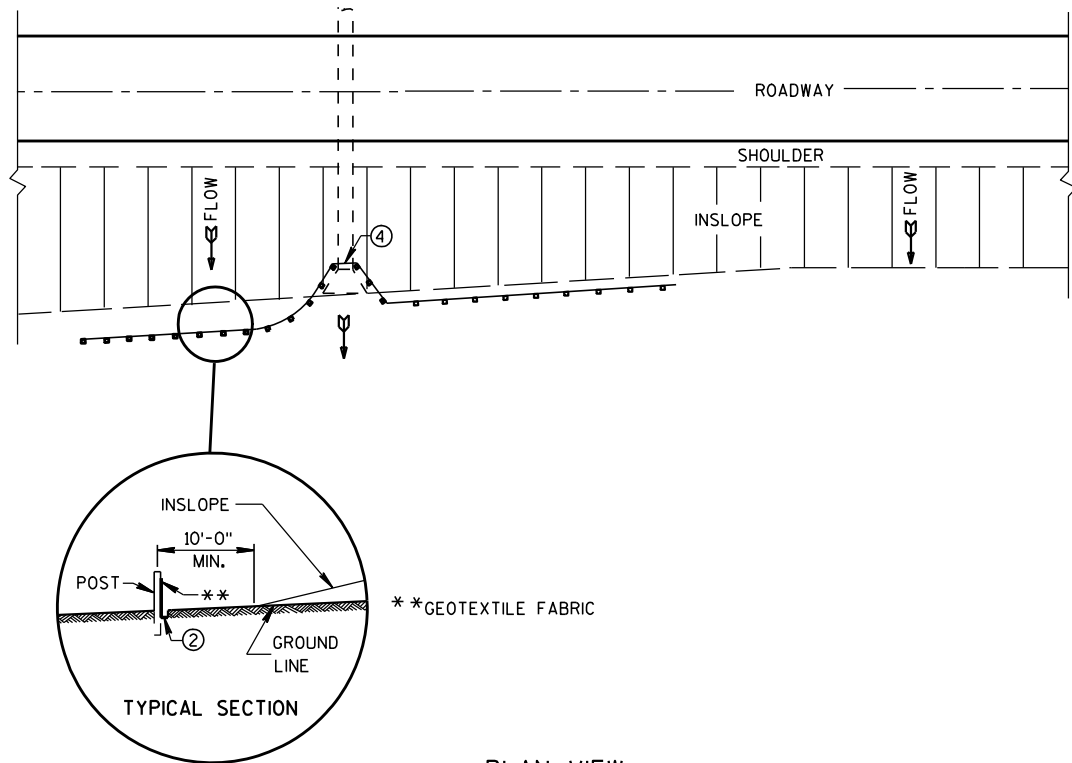
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

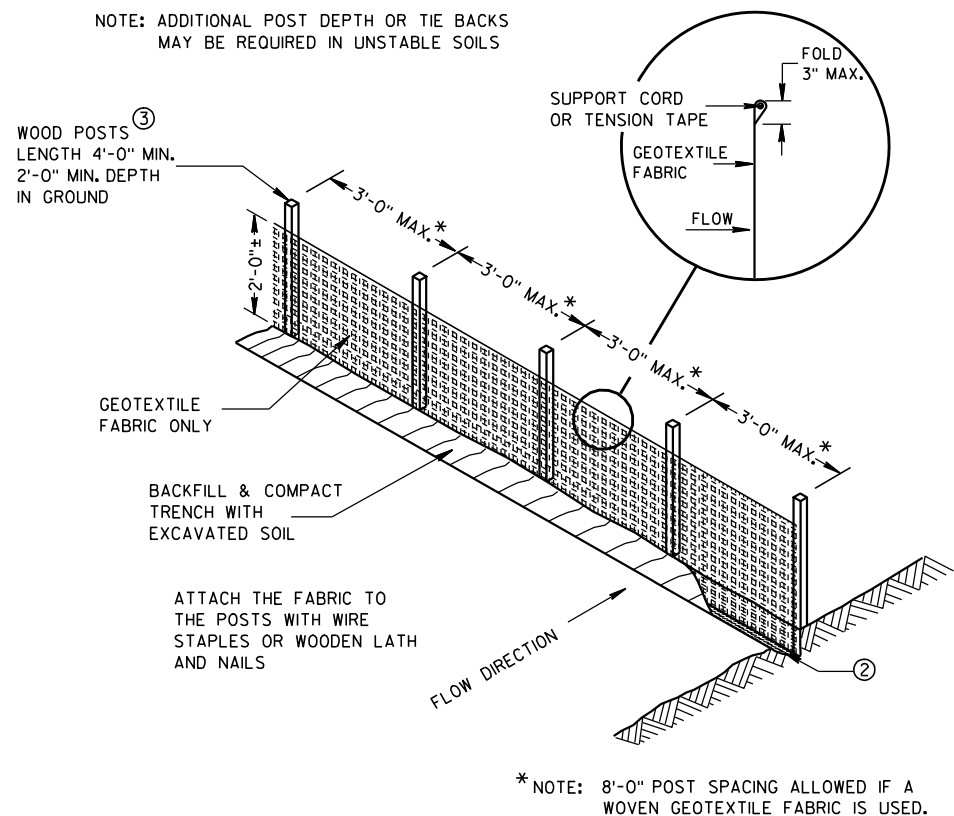
6/04/02
DATE

/S/ Beth Conn-----
CHIEF ROADWAY DEVELOP 25 ENGINEER

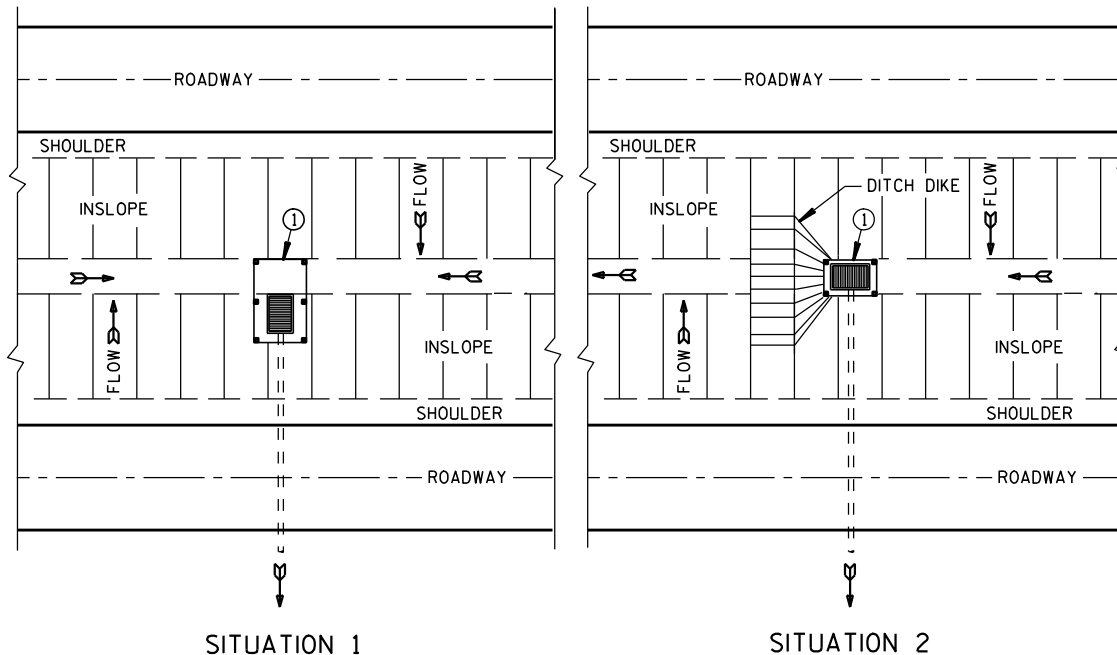
FHWA



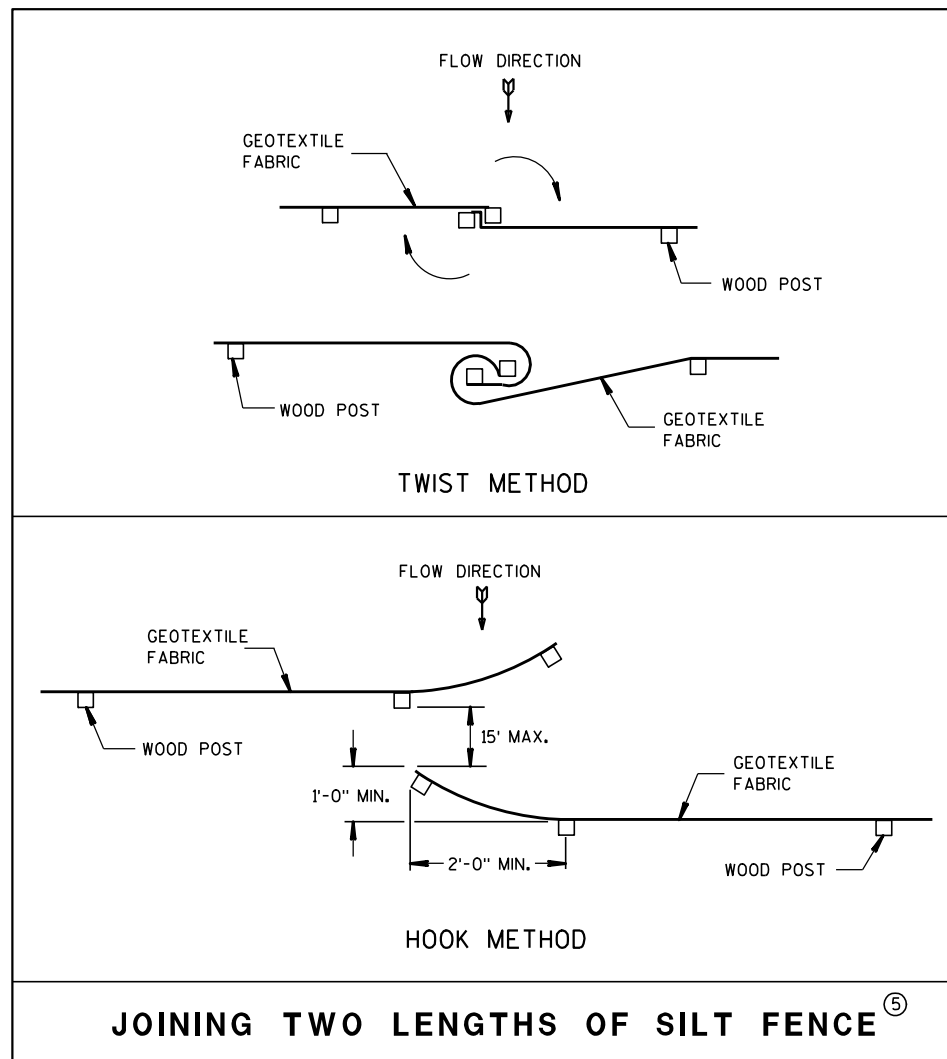
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

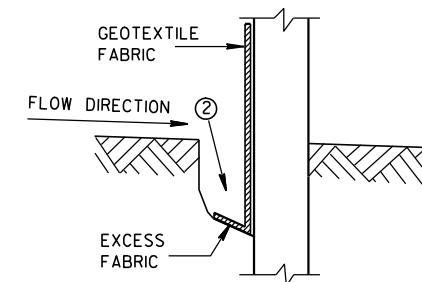


JOINING TWO LENGTHS OF SILT FENCE ⑤

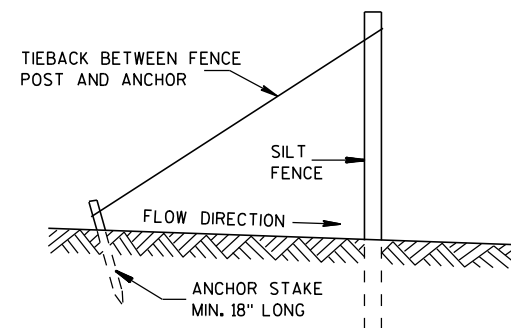
GENERAL NOTES

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

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

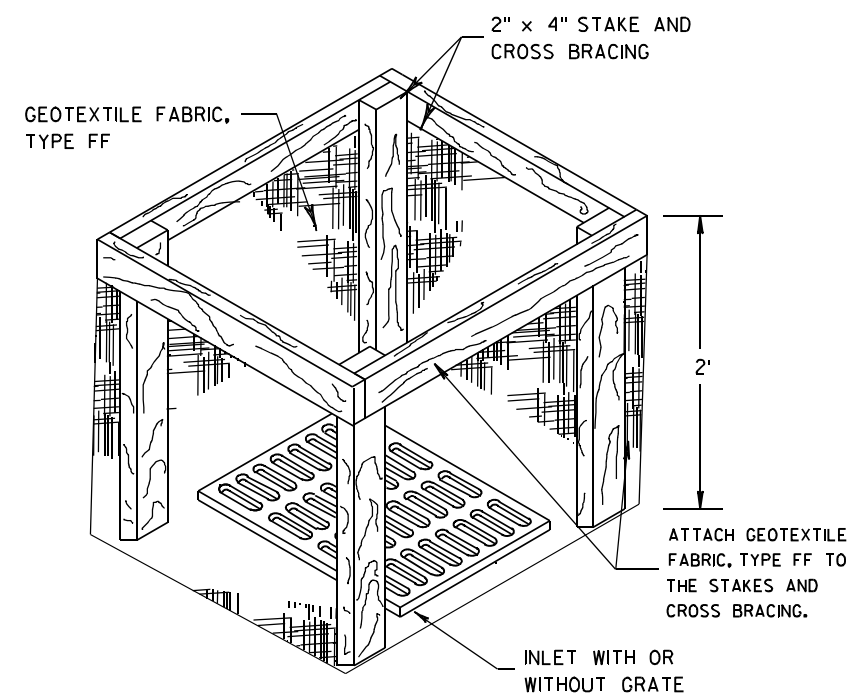


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

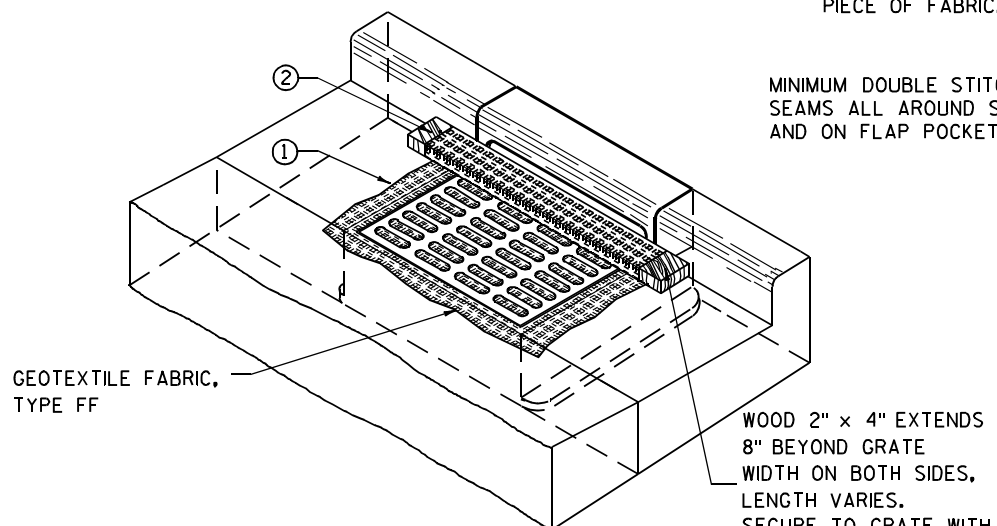
SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Conn CHIEF ROADWAY DEVELOPER 26 ENGINEER
FHWA	



GENERAL NOTES

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

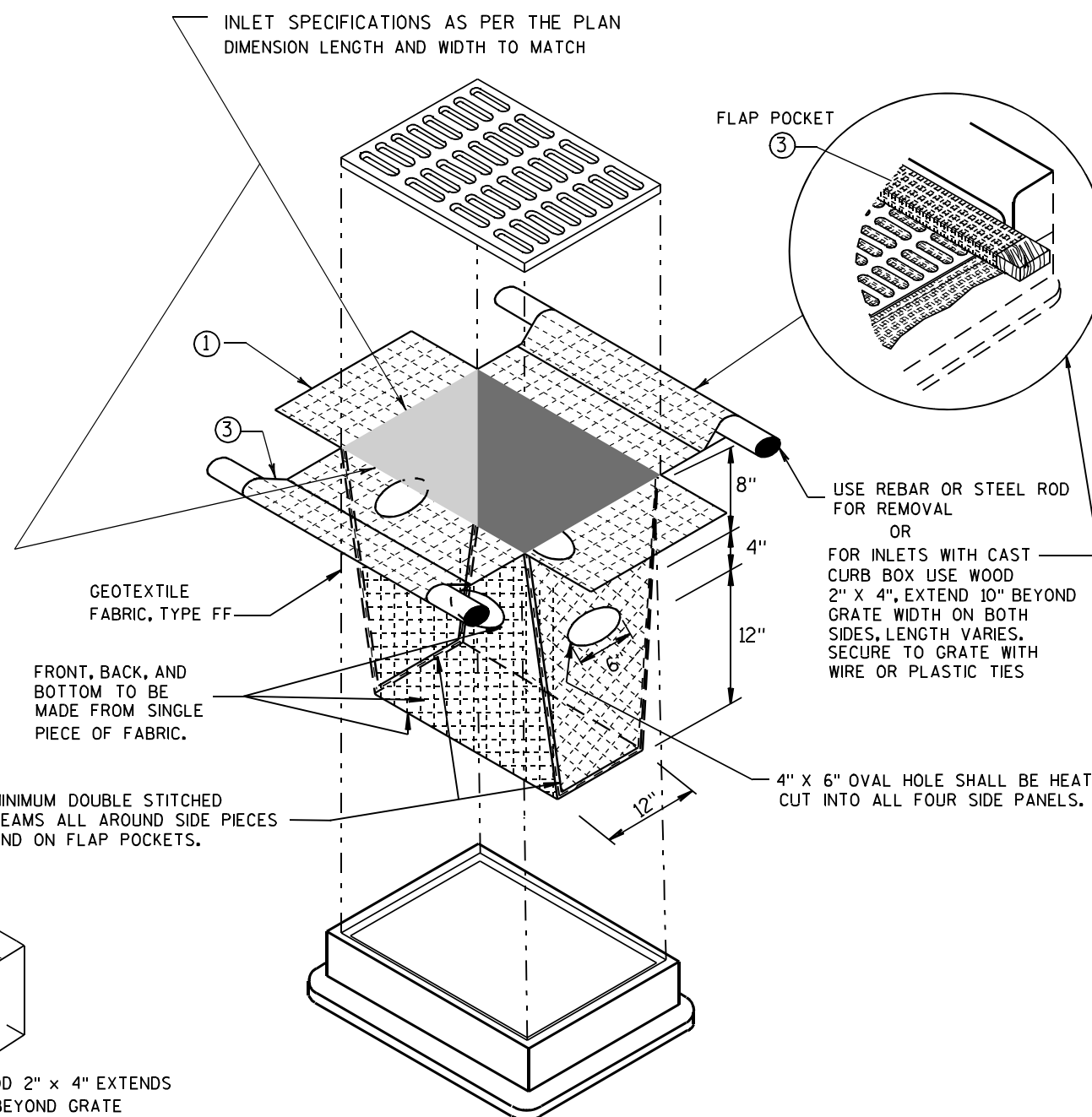
- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



INLET PROTECTION, TYPE C (WITH CURB BOX)

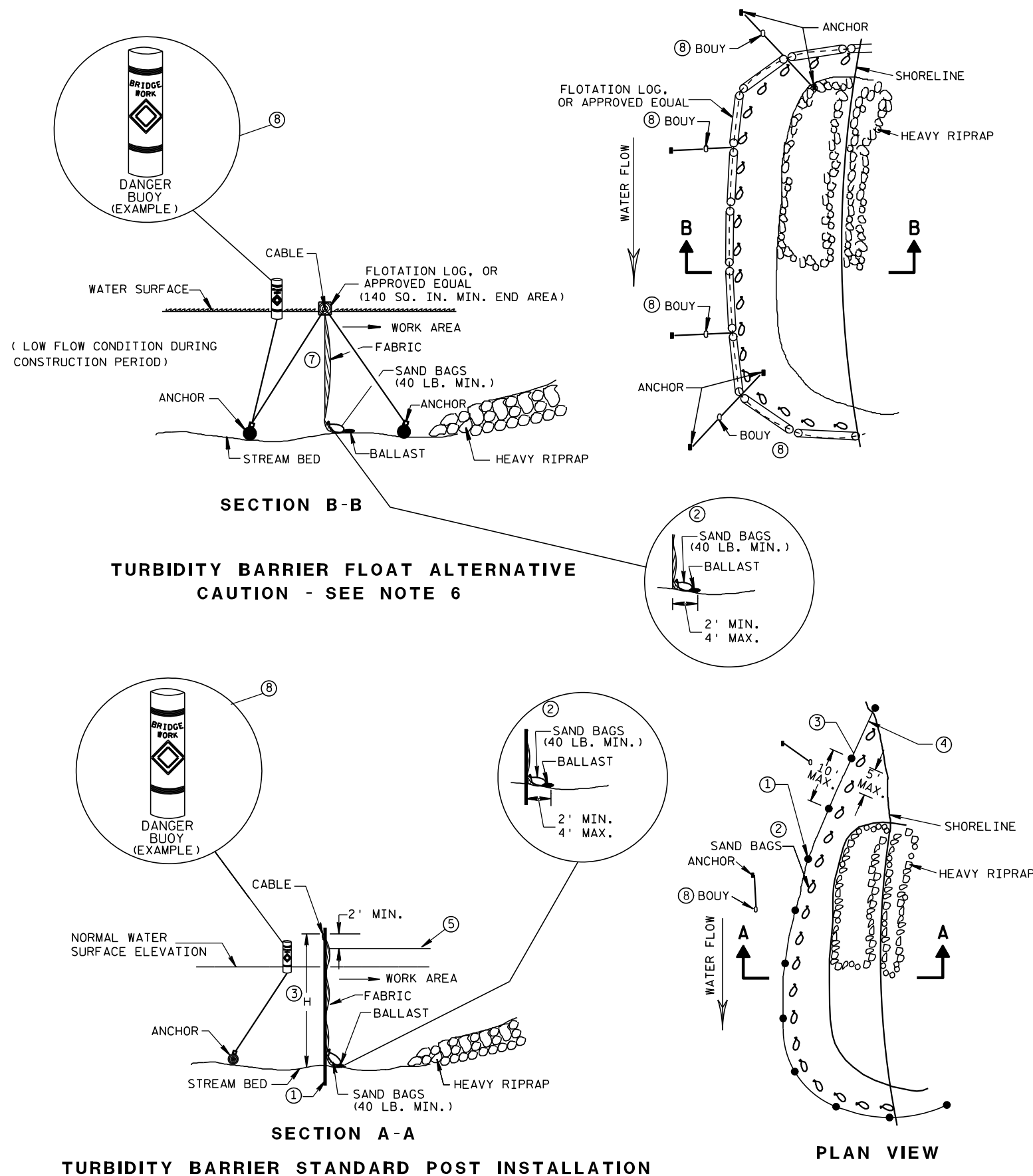
INSTALLATION NOTES

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



(CAN BE INSTALLED IN ANY INLET TYPE WITH
OR WITHOUT A CURB BOX AS PER NOTE (2))

APPROVED
10/16/02 /S/ Beth Connolly
DATE 27
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER

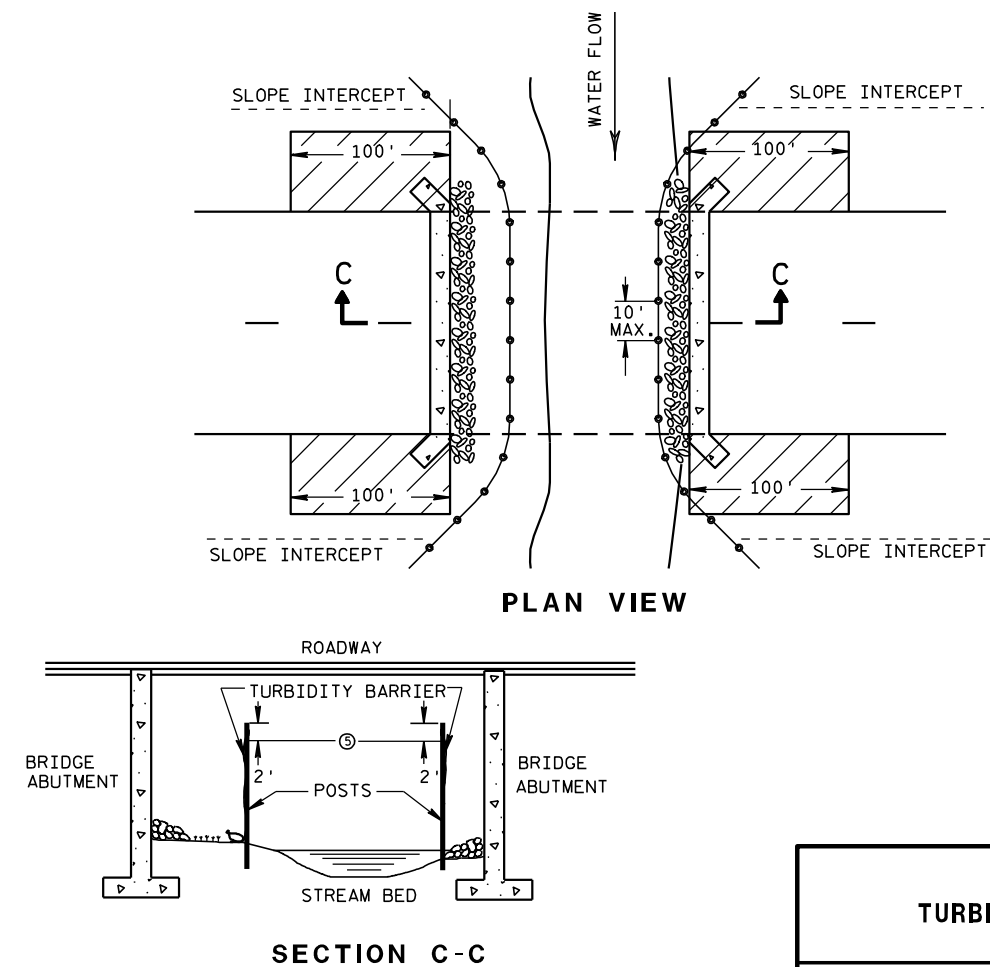


GENERAL NOTES

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

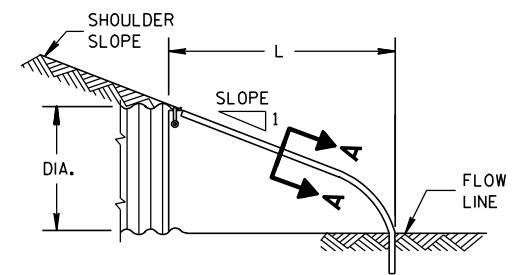
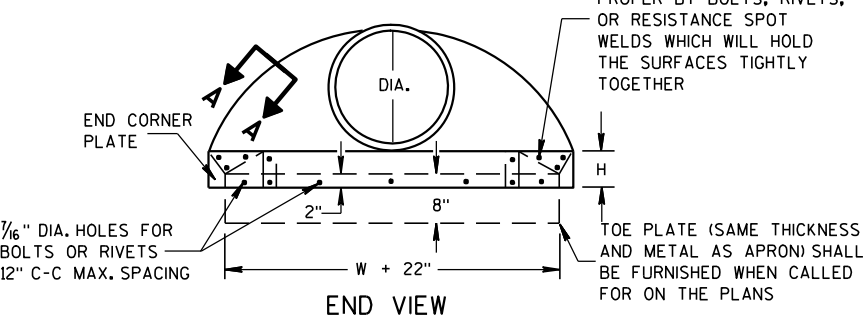
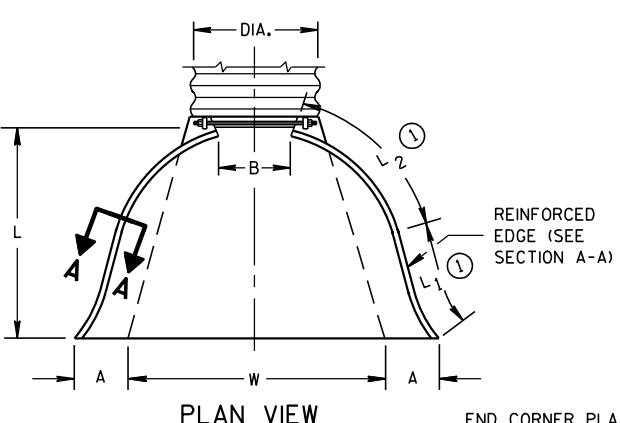
FWHA

/S/ Beth Conn
CHIEF ROADWAY DEVELOPER

28 INEER

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

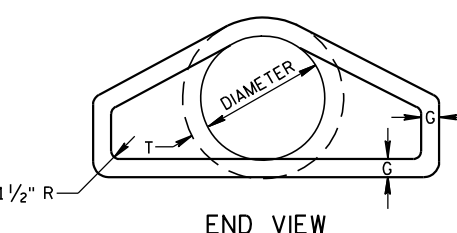
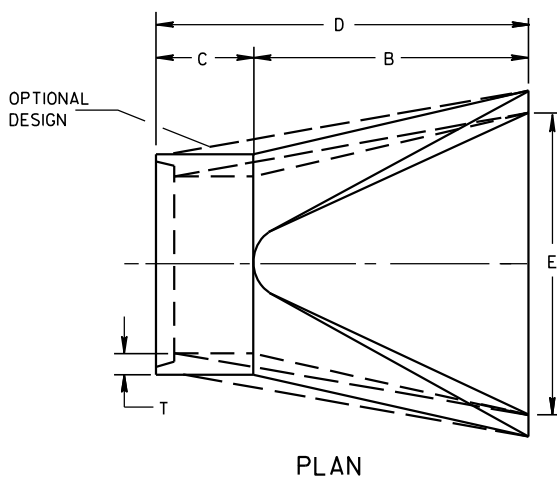
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



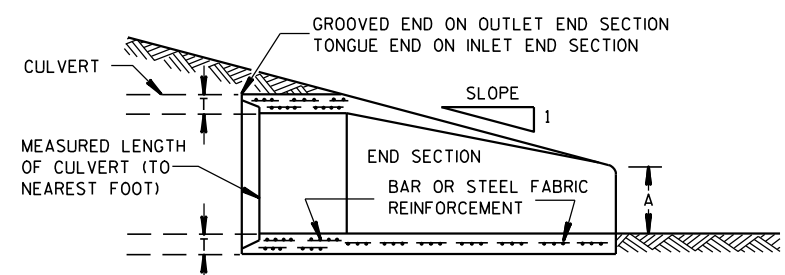
SIDE ELEVATION
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ¹ / ₈	72 ¹ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	3 to 1
27	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	3 to 1
30	3 ¹ / ₂	12	54	19 ³ / ₄	73 ¹ / ₂	60	3 ¹ / ₂	3 to 1
36	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	3 to 1
42	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 ¹ / ₂	27	65	^{**} / ₃₃ - ^{**} / ₃₅	^{**} / ₉₈ - ^{**} / ₁₀₀	90	5 ¹ / ₂	2 ¹ / ₅ to 1
60	6	^{**} / ₃₀ - ^{**} / ₃₅	60	39	99	96	5	2 to 1
66	6 ¹ / ₂	^{**} / ₂₄ - ^{**} / ₃₀	^{**} / ₇₂ - ^{**} / ₇₈	^{**} / ₂₁ - ^{**} / ₂₇	99	102	5 ¹ / ₂	2 to 1
72	7	^{**} / ₂₄ - ^{**} / ₃₆	78	21	99	108	6	2 to 1
78	7 ¹ / ₂	^{**} / ₂₄ - ^{**} / ₃₆	78	21	99	114	6 ¹ / ₂	2 to 1
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1

* MINIMUM
** MAXIMUM

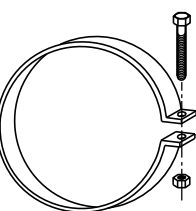


END VIEW

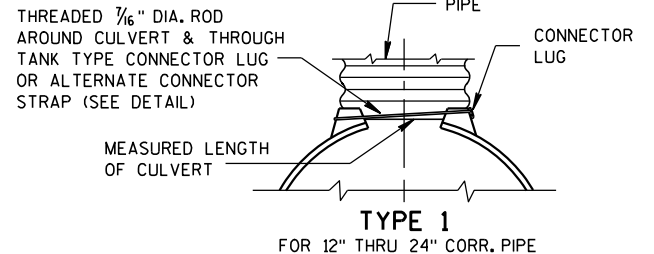


LONGITUDINAL SECTION
CONCRETE ENDWALLS

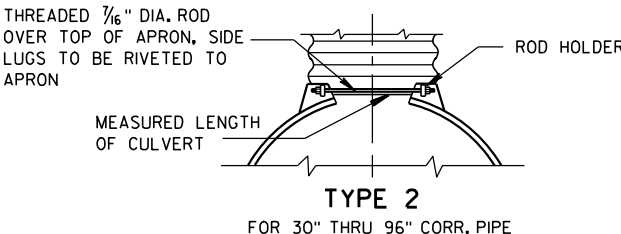
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



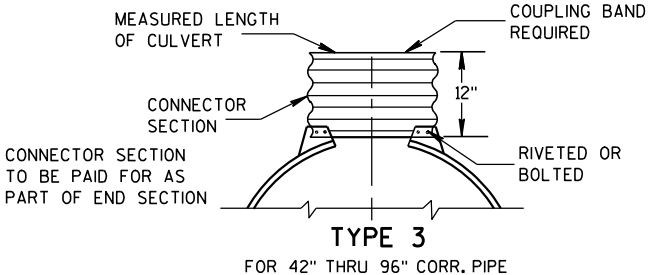
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



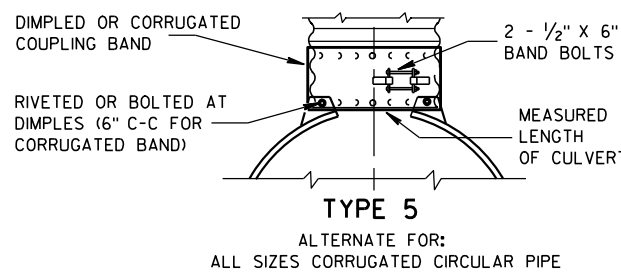
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



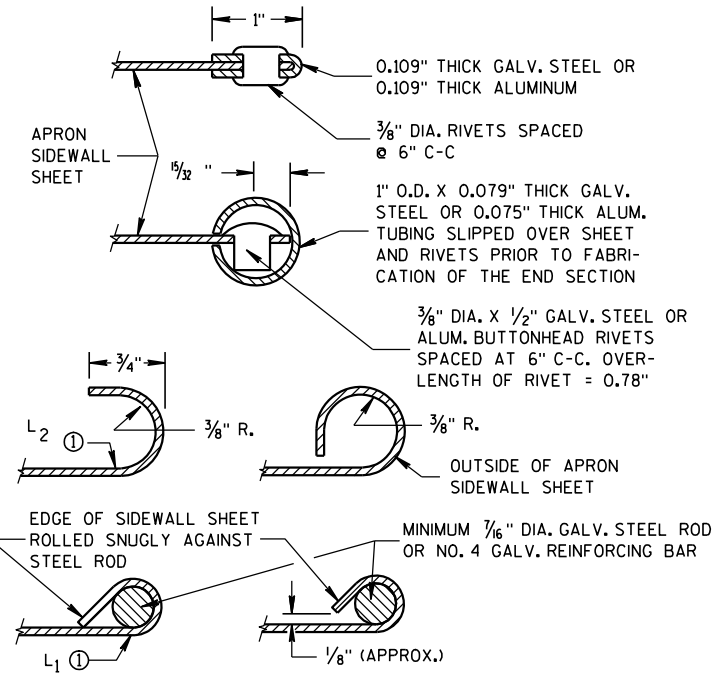
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

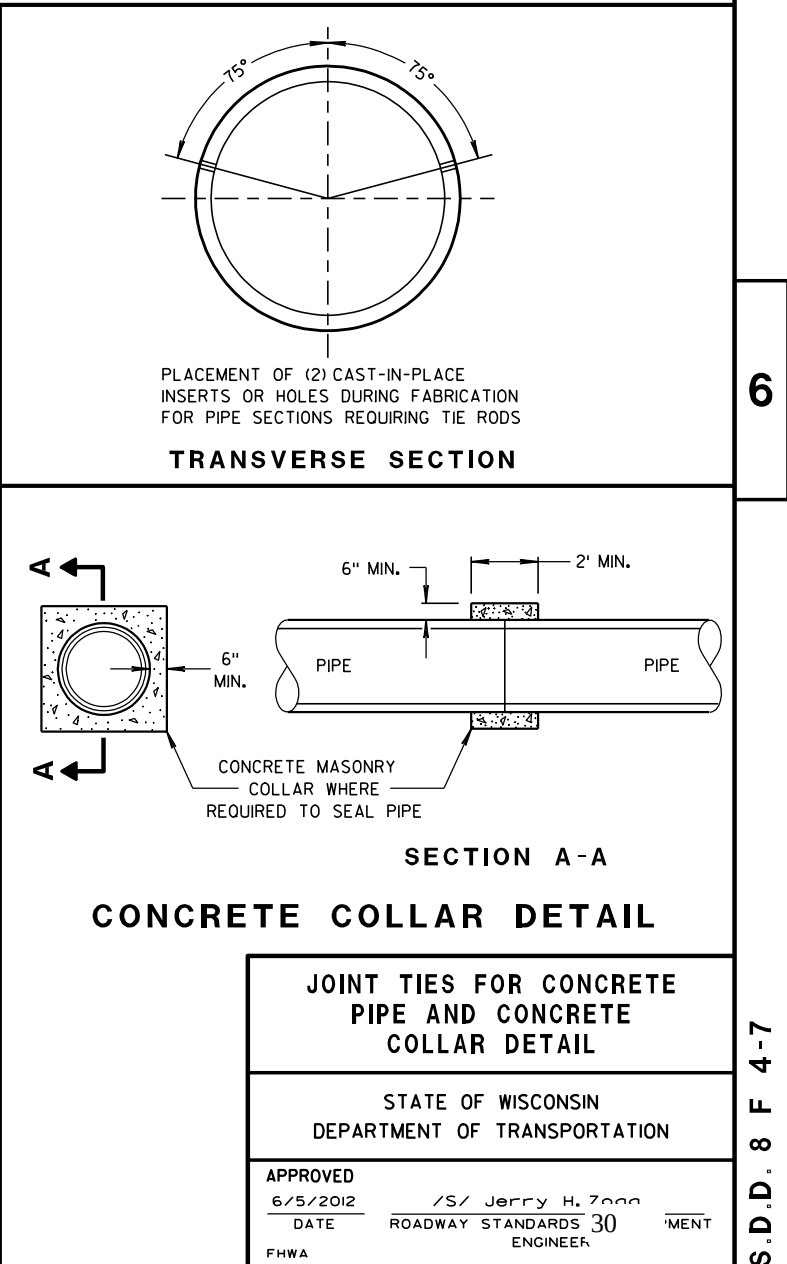
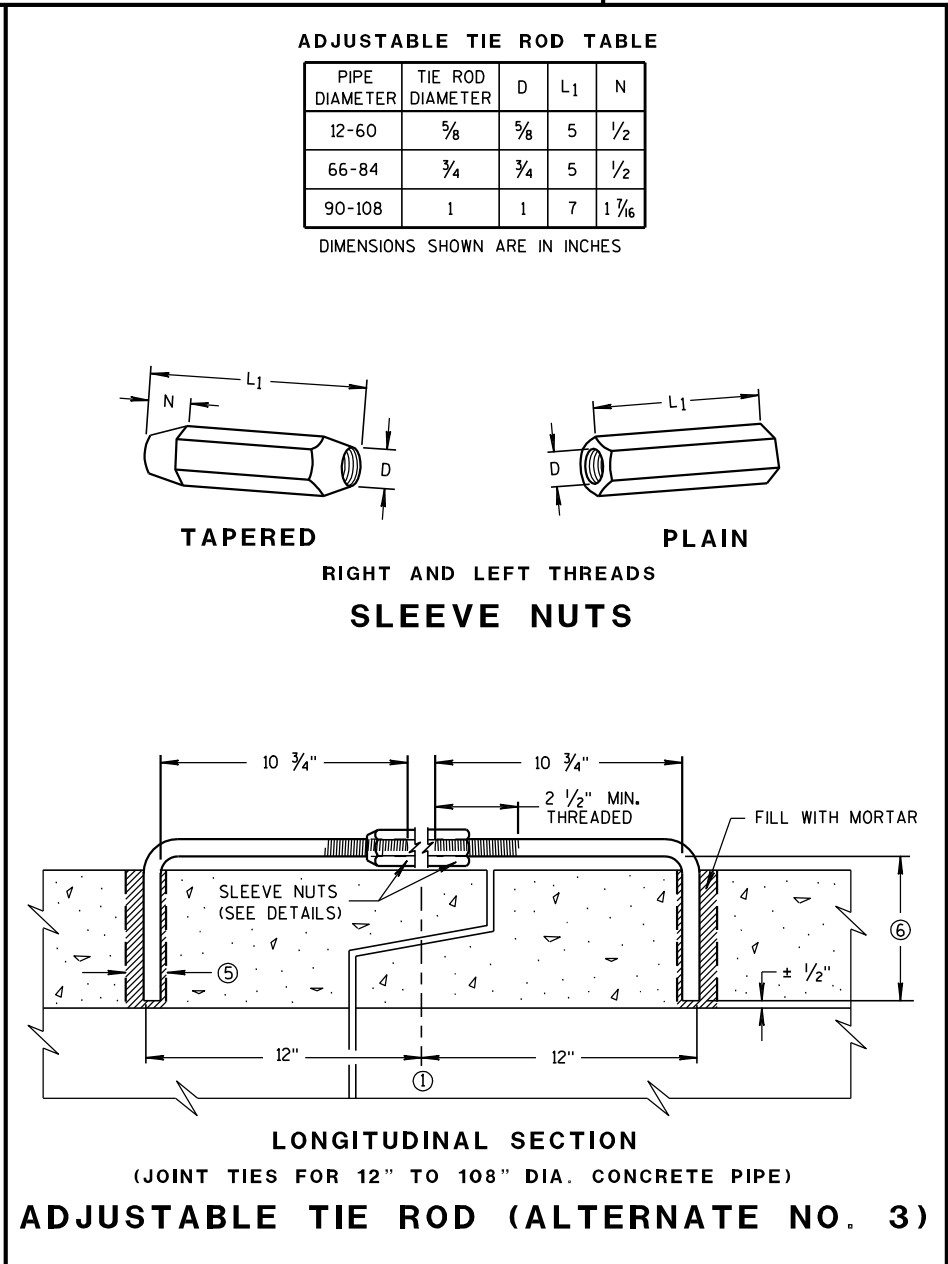
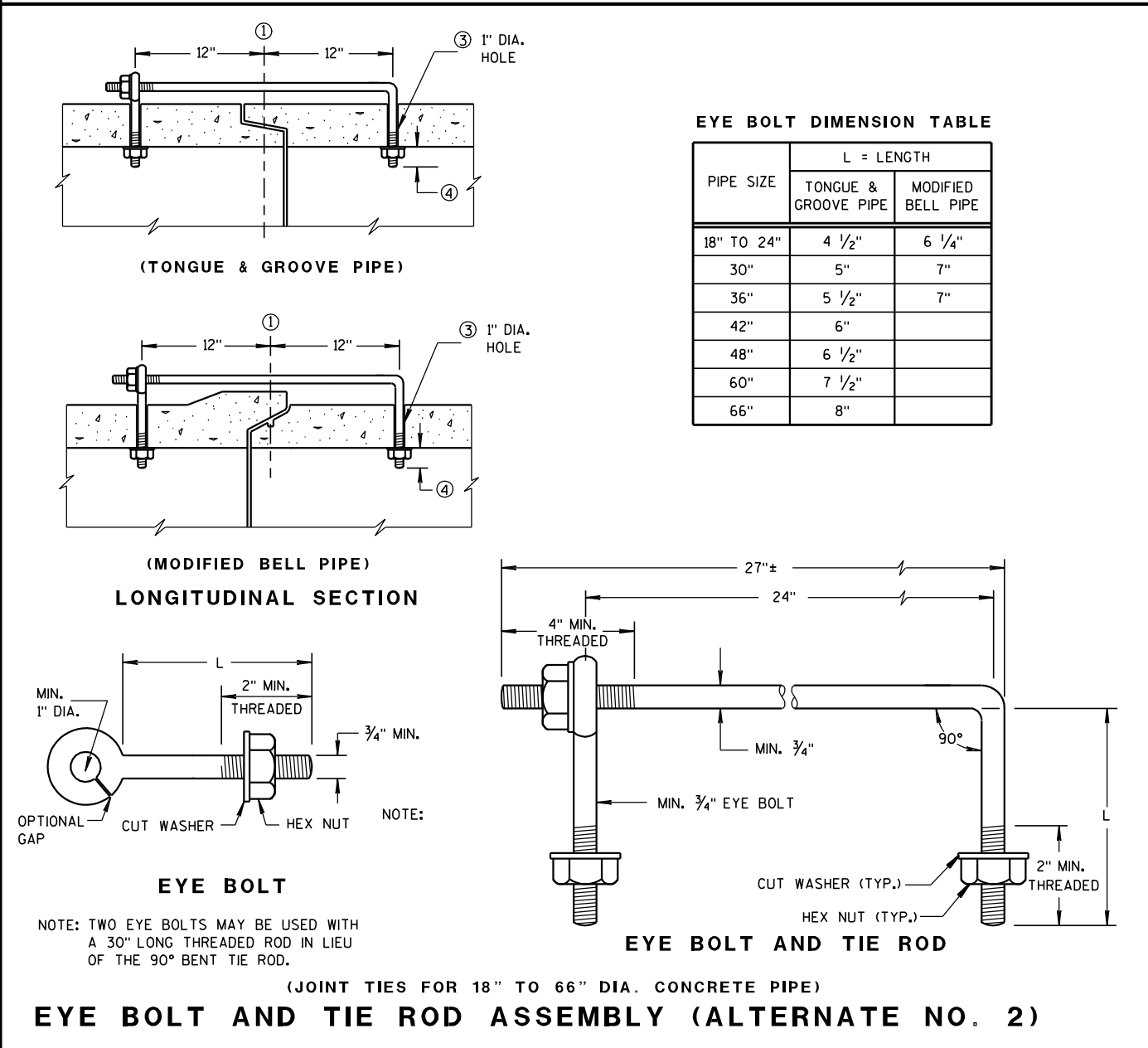
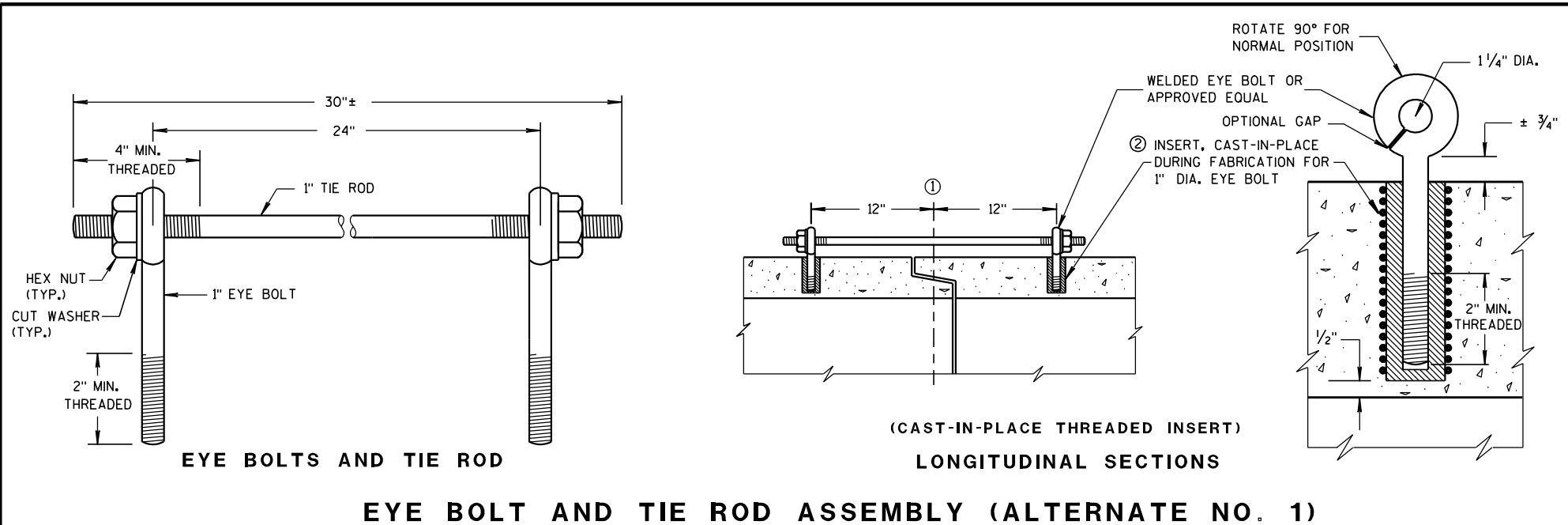
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

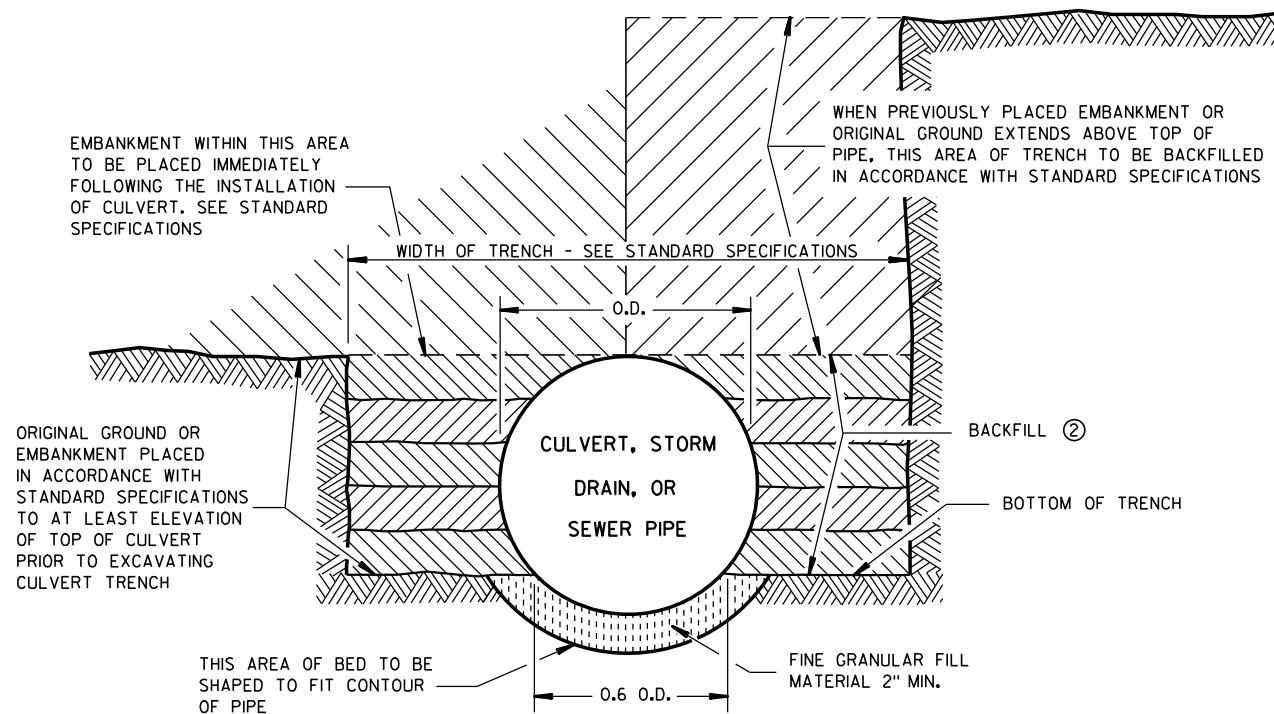
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

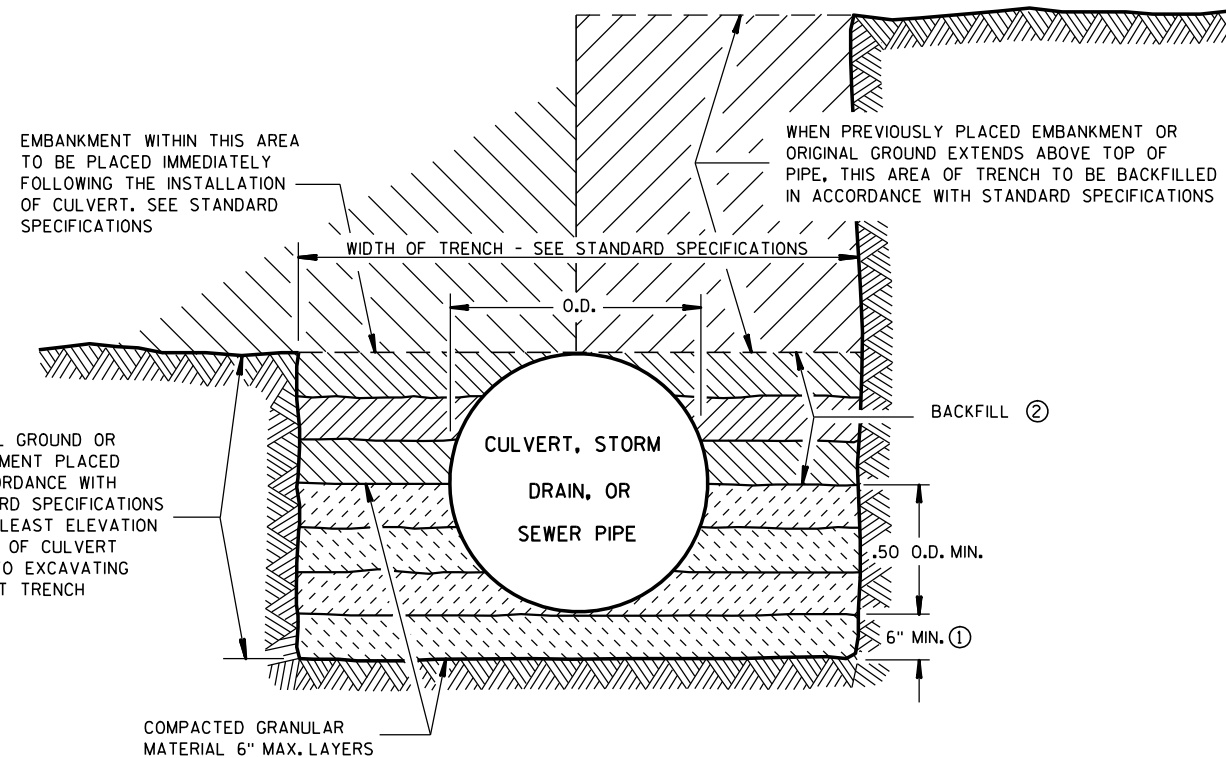
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOP
NEER
FHWA





SHAPED SUBGRADE WITH GRANULAR FOUNDATION



GRANULAR FOUNDATION

GENERAL NOTES

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

THE SHAPED SUBGRADE WITH GRANULAR FOUNDATION IS AN EQUAL ALTERNATE TO THE GRANULAR FOUNDATION EXCEPT WHERE ROCK IS ENCOUNTERED.

- ① WHERE ROCK, HARD PAN OR FRAGMENTED MATERIAL IS ENCOUNTERED, THE TRENCH SHALL BE EXCAVATED BELOW THE BOTTOM OF THE PIPE AN AMOUNT EQUAL TO $\frac{1}{2}$ INCH PER FOOT OF PROPOSED EMBANKMENT ABOVE THE TOP OF THE PIPE, BUT NOT LESS THAN 6 INCHES.
- ② TRENCH SHALL BE BACKFILLED AS REQUIRED BY STANDARD SPECIFICATIONS; SECTION 520 FOR PIPE CULVERTS AND SECTION 607 FOR STORM SEWERS.

CLASS "B" BEDDING

CLASS "B" BEDDING FOR
CULVERT PIPE OR STORM SEWER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

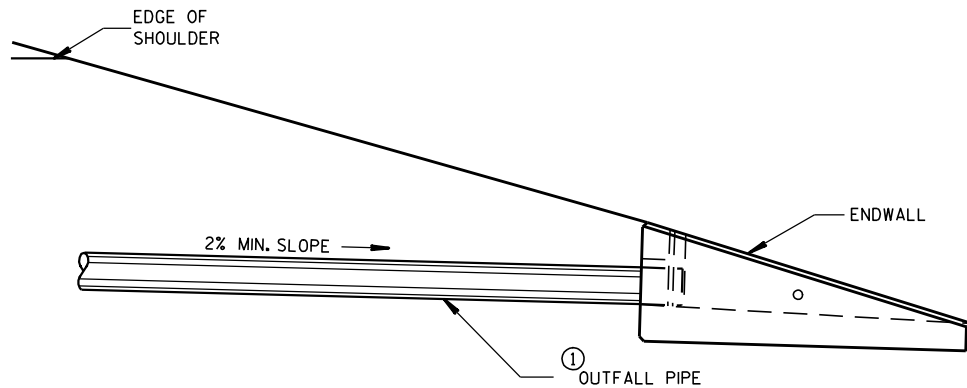
4/7/83
DATE/S/ D.L. Str...
STATE DESIGN ENGINE 31

HWYS

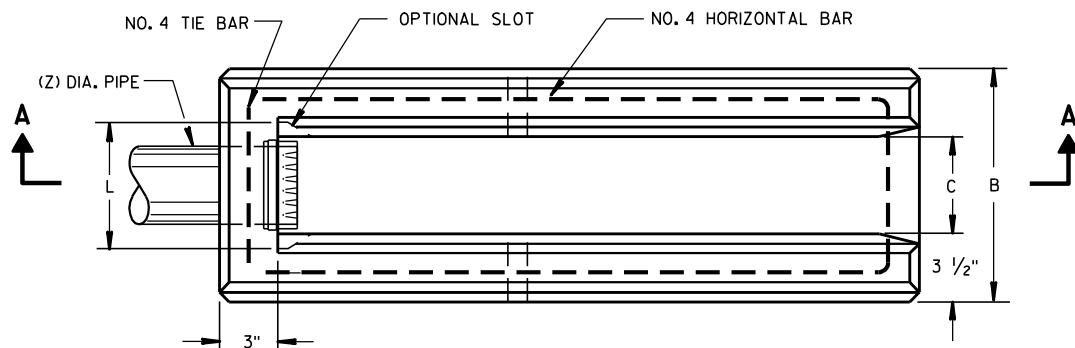
FHWA

DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

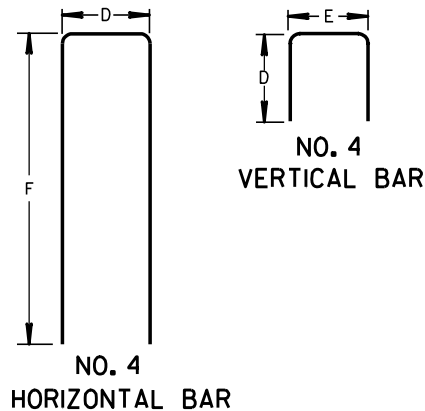
** APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



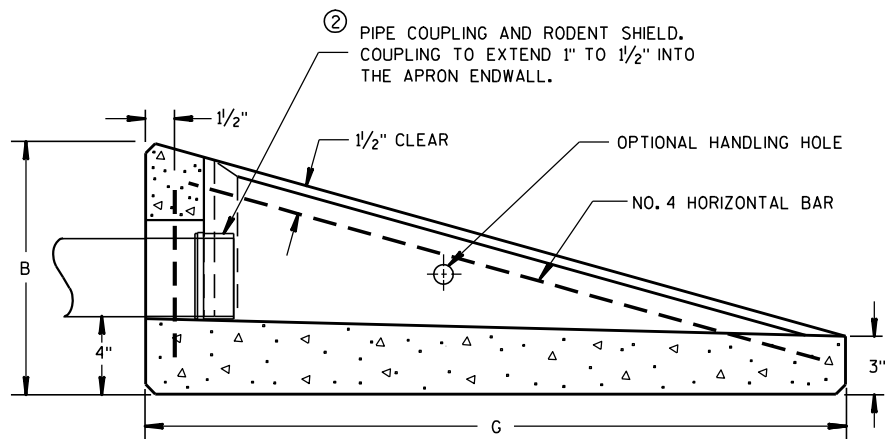
INSTALLATION DETAIL



PLAN VIEW

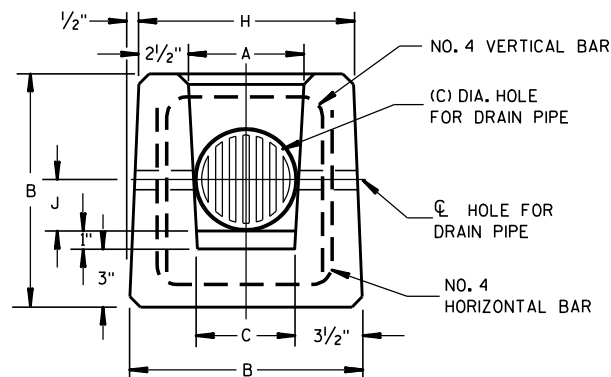


BAR STEEL REINFORCEMENT DETAILS



SECTION A-A

CONCRETE APRON ENDWALL FOR UNDERDRAIN



END VIEW

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.

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

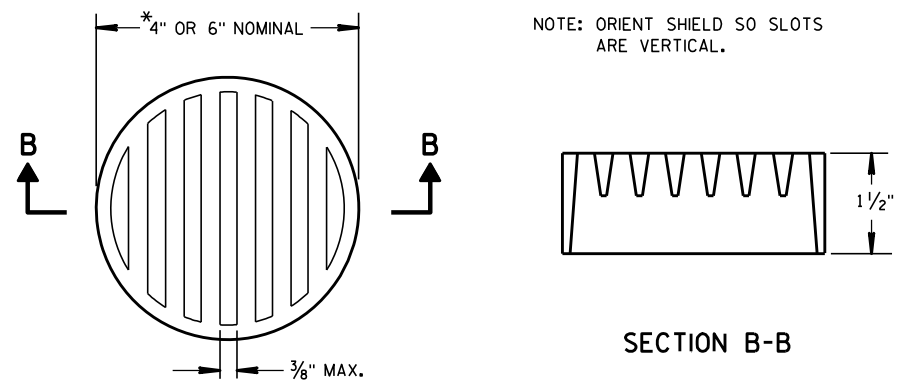
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

- ① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE, ALL JOINTS SHALL BE SOLVENT WELDED.

THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

- ② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



② RODENT SHIELD

*NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

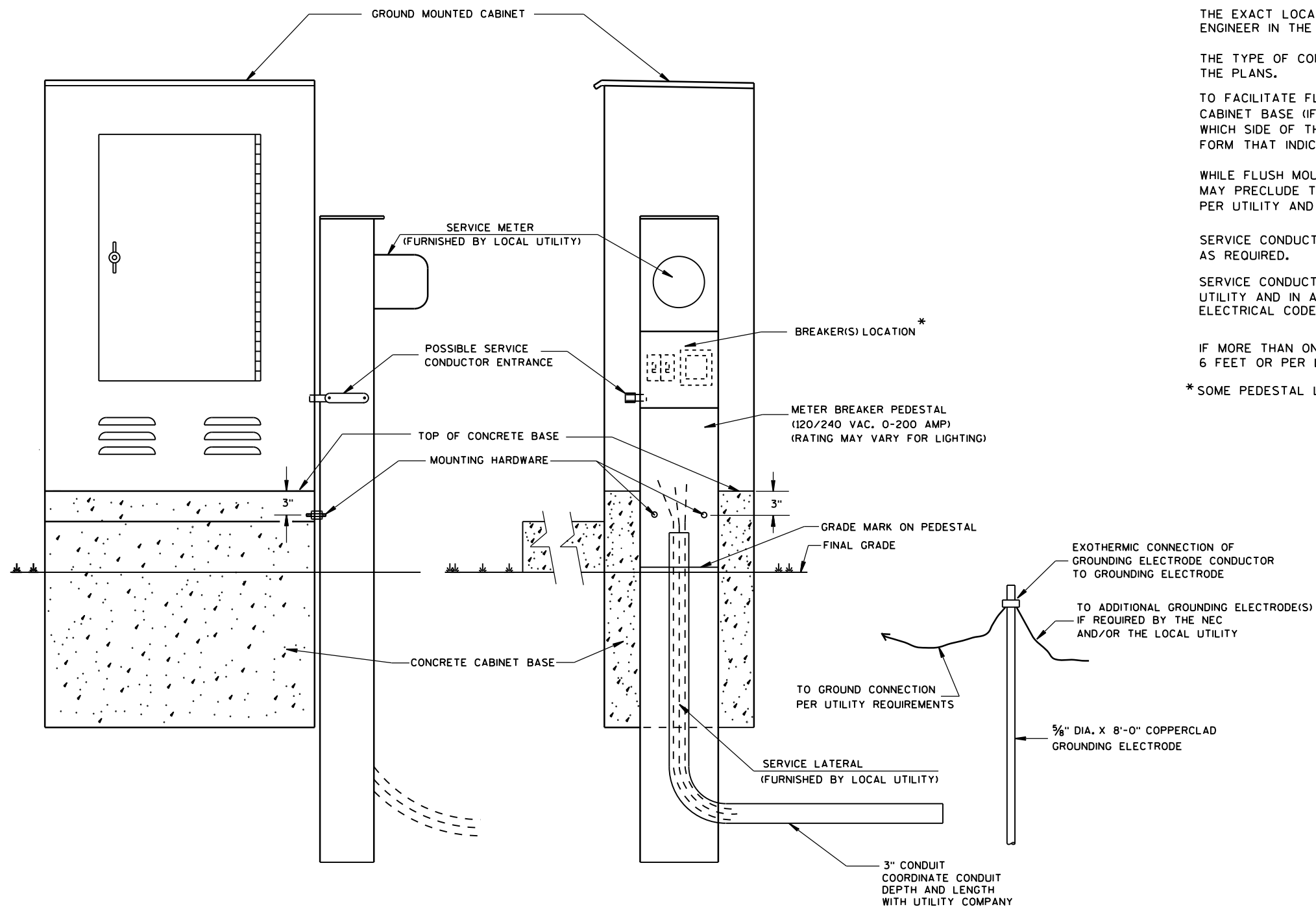
3/10/98

DATE

FHWA

/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOPER

INEER



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE (IF FLUSH MOUNTING POSSIBLE, CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRICAL SERVICE LATERAL WILL APPROACH, THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION
(METER BREAKER PEDESTAL)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014

DATE

FHWA

/S/ Ahmet Demirbilek

STATE ELECTRICAL 33

FRONT INTERIOR
ELEVATION

SIDE VIEW

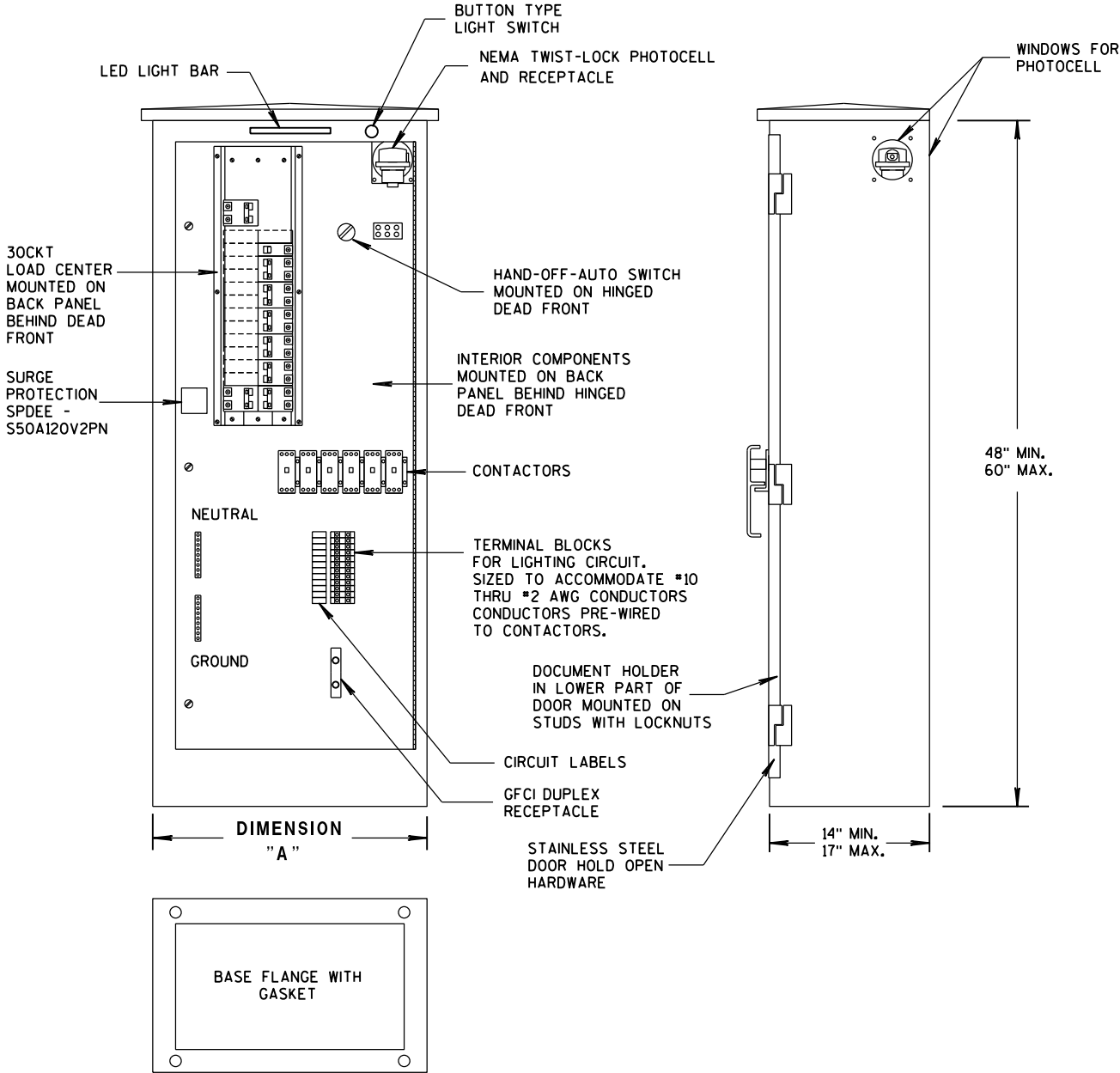
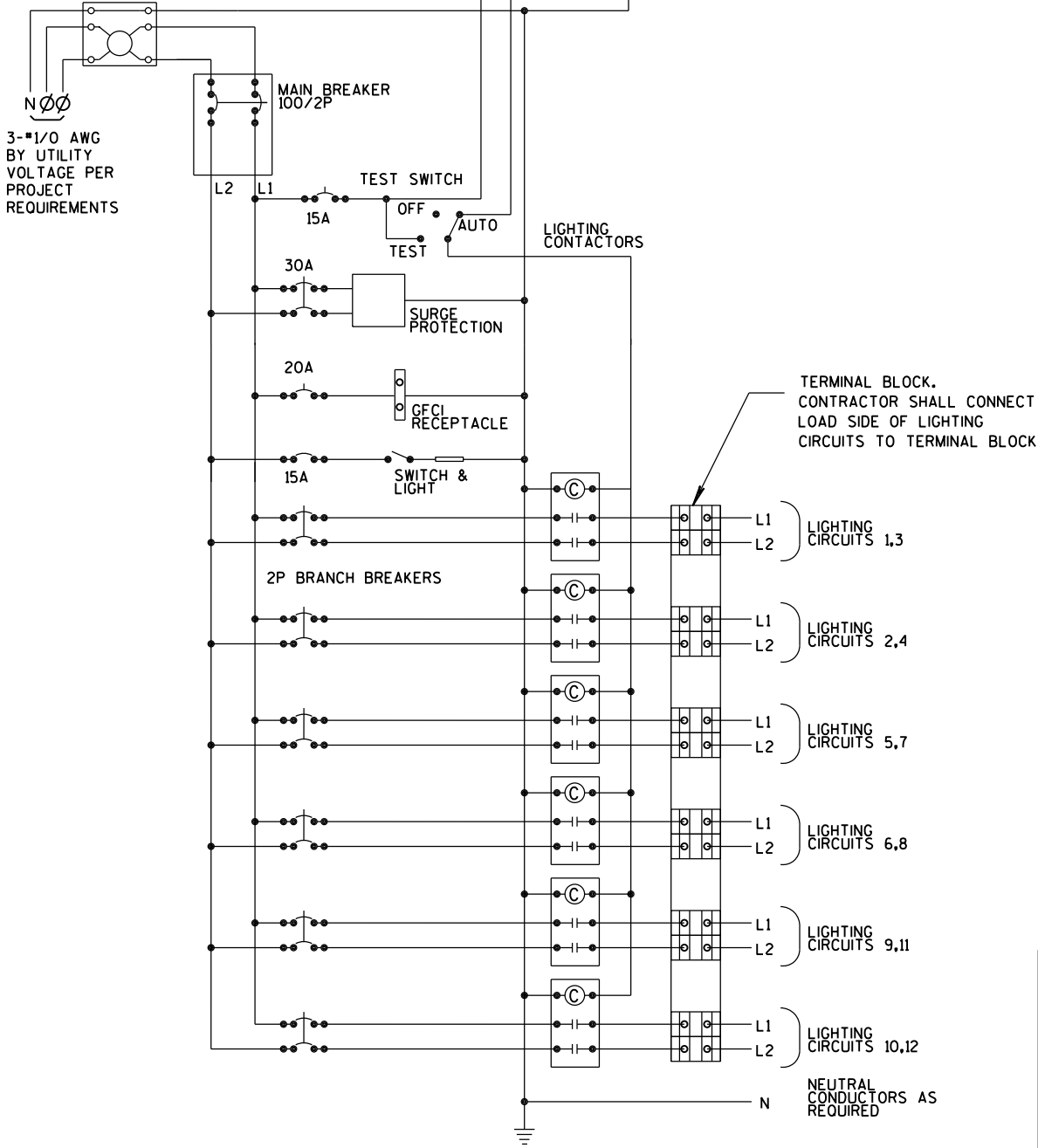


TABLE OF DIMENSIONS (INCHES)

CONCRETE BASE TYPE	CABINET WIDTH	DIMENSION "A"
L24	24"	24"
L30	30"	30"

LIGHTING CONTROL CABINET

UTILITY METER PEDESTAL PROVIDED BY CONTRACTOR UNDER SEPARATE BID ITEM. MAY, OR MAY NOT BE ATTACHED TO OUTSIDE OF CONTROL CABINET PER PROJECT REQUIREMENTS



CONTROL CABINET SCHEMATIC

GENERAL NOTES

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

ALL INTERNAL ELECTRICAL COMPONENTS WILL BE PRE-WIRED BY THE CABINET FABRICATOR.

ALL CONDUIT ENTRIES SHALL BE SEALED WITH AN APPROPRIATE DUCT SEALING COMPOUND.

ORIENT PHOTOCELL AWAY FROM AMBIENT LIGHT SOURCES AND ONCOMING TRAFFIC HEADLIGHTS.

THE CONTRACTOR SHALL TOUCH UP ANY DAMAGE TO THE ANODIZED FINISH CAUSED BY THE INSTALLATION PROCESS. COLOR MATCH PAINT SHALL BE USED.

A COMPLETE LIGHTING OR ELECTRICAL PLAN SHALL BE SECURELY PLACED IN THE DOCUMENT HOLDER ATTACHED TO THE DOOR.

LIGHTING CONTROL CABINET
120/240 VOLT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE Sept. 2014 /S/ Thomas Gorring
STATE LIGHTING ENGINEER 34 NYS.
FHWA



S.D.D. 12 A 3-10

6

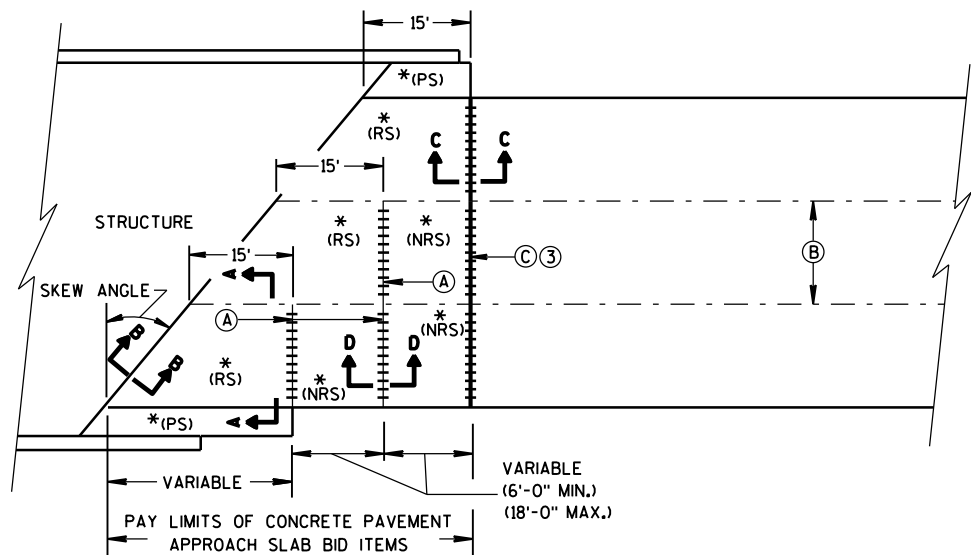
SECTION A-A



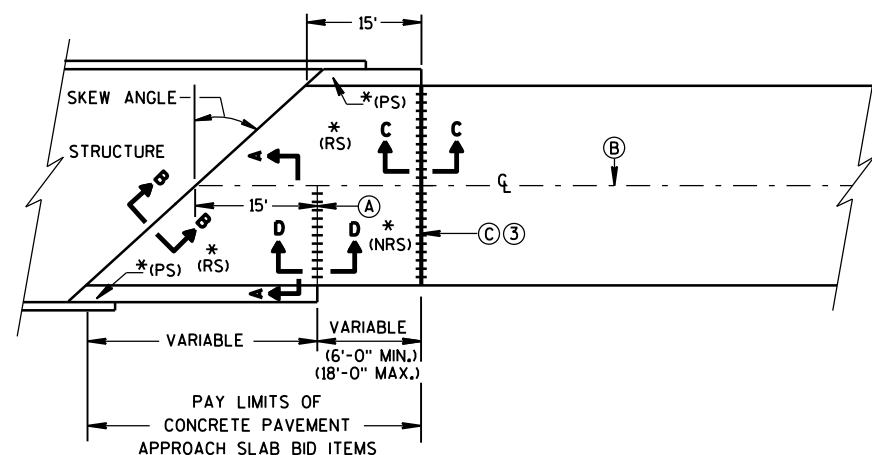
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>3/26/10</u> DATE	<u>/S/ Scot Beck</u> CHIEF STRUCTURAL DEVELOPER

S.D.D. 12 A 3-10

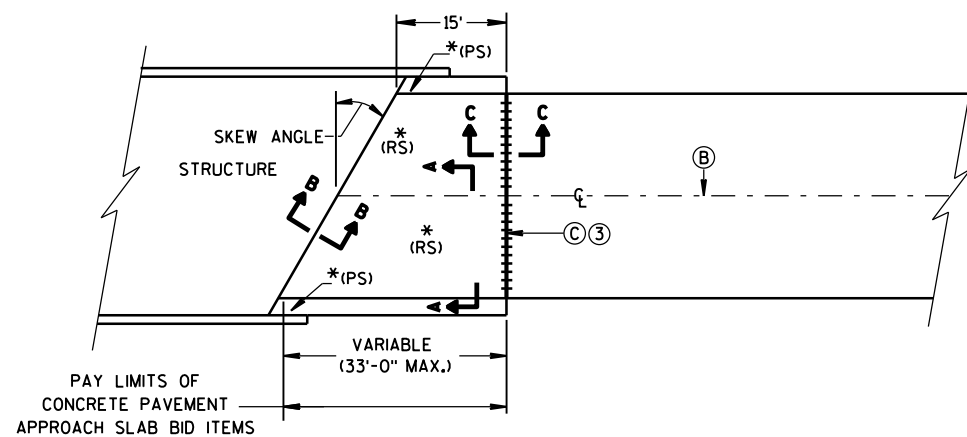
6



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



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

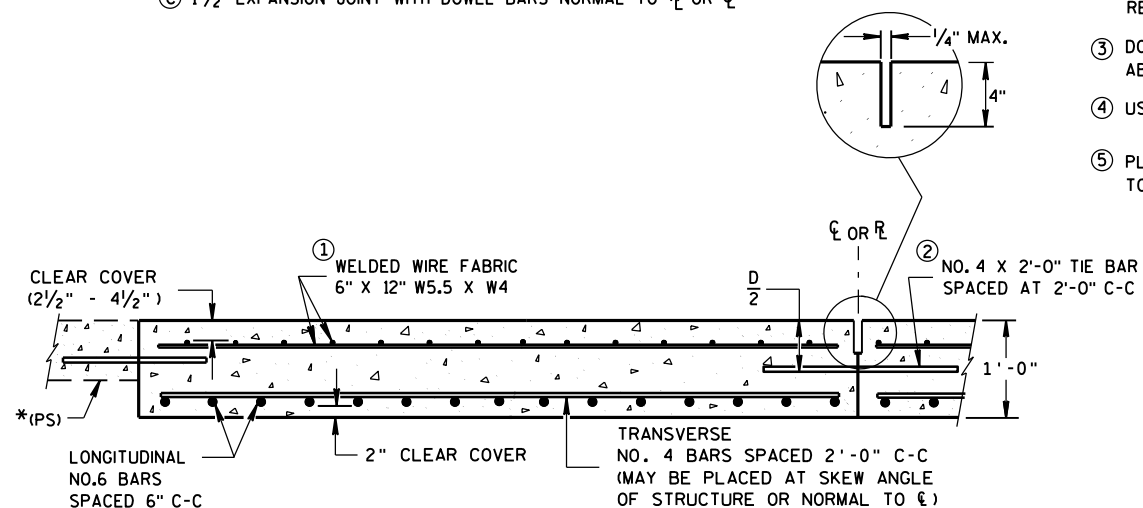


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

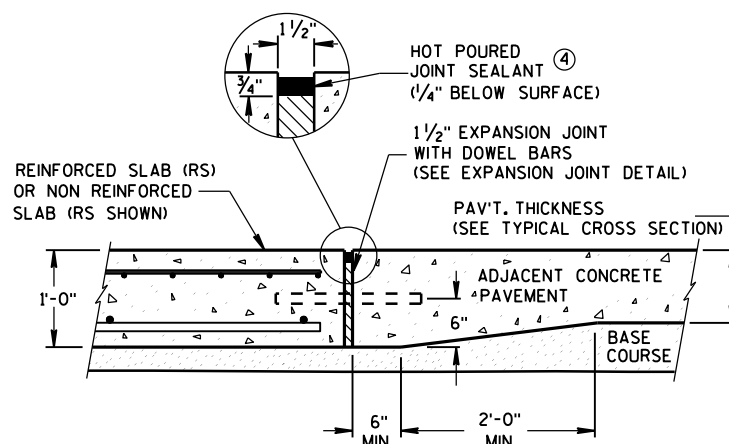
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

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

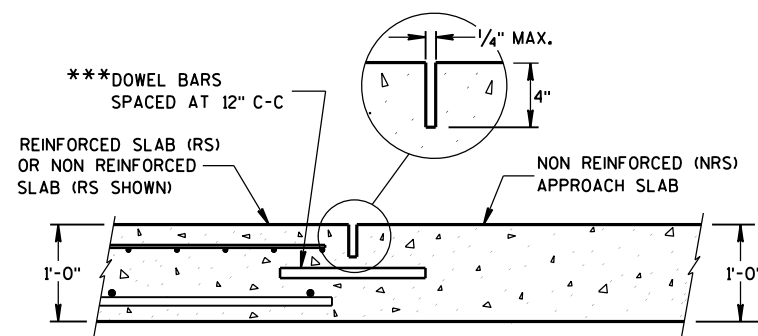
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



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



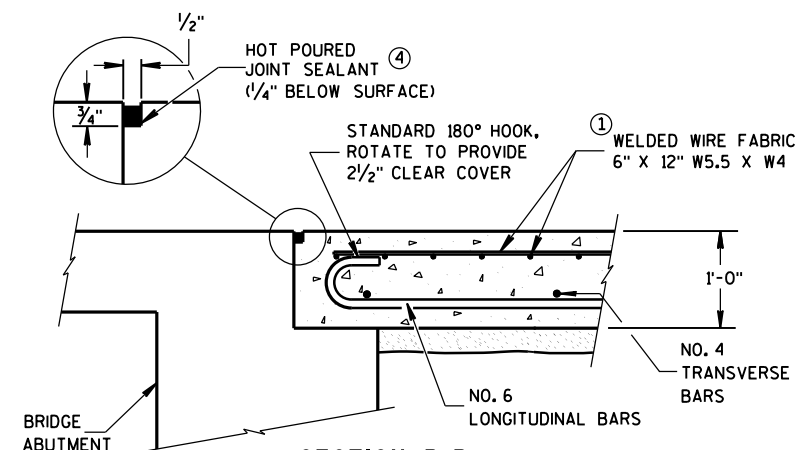
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

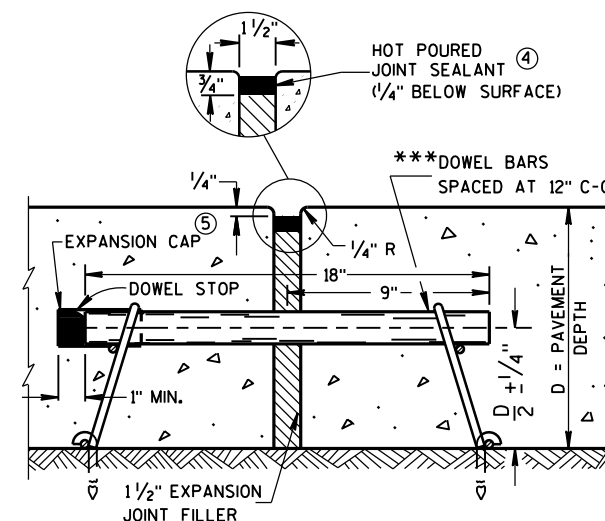
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

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



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

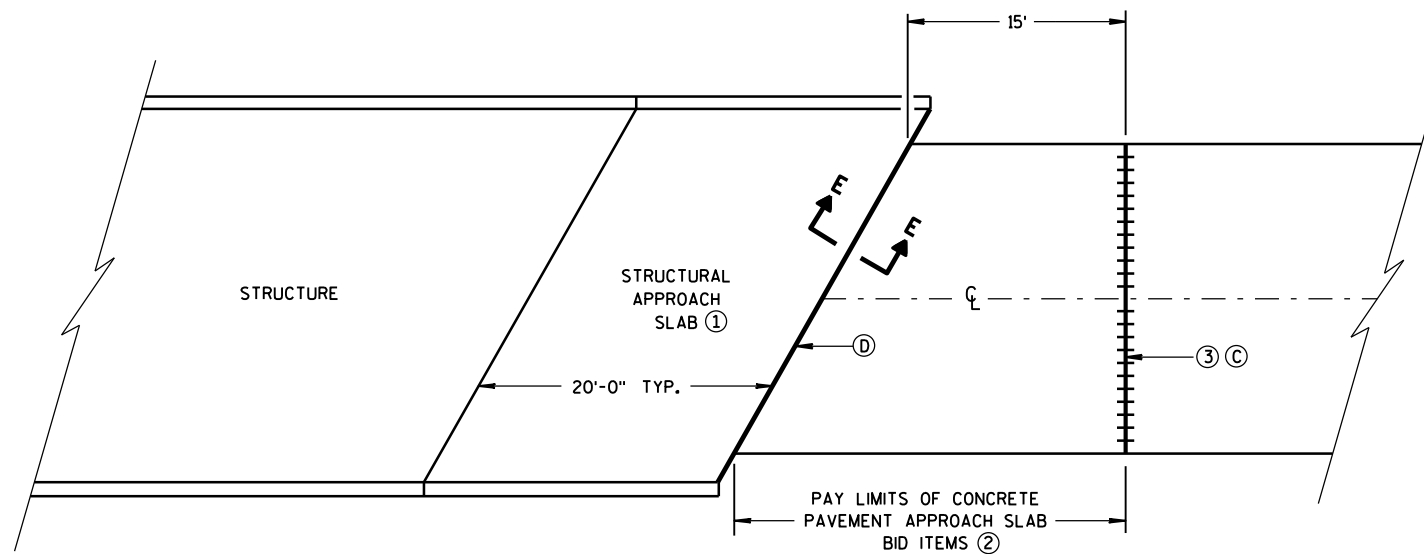


EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE
PAVEMENT SUPER 36
FHWA

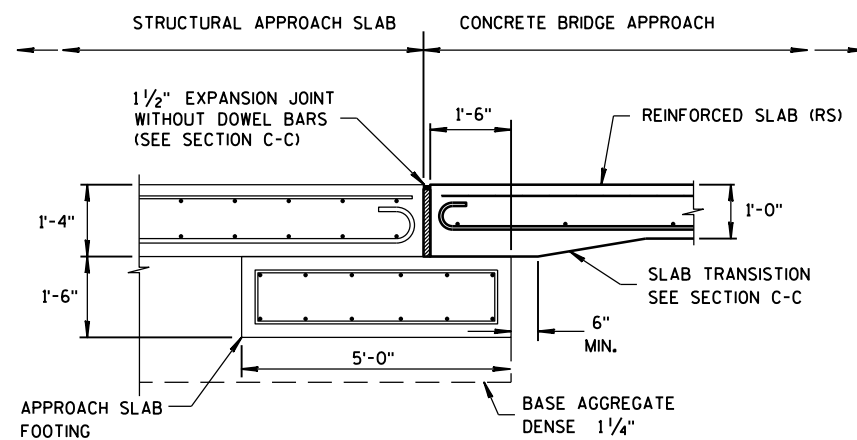
**BRIDGE APPROACHES****GENERAL NOTES**

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE PAVEMENT APPROACH SLAB.

- ① SEE BRIDGE PLAN.
- ② CONFORM TO SHEET 13 B 2(A) FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

③ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO R_L OR C_L

④ 1½" EXPANSION JOINT (NO DOWELS)

**SECTION E-E****FOOTING DETAIL**

STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

**STRUCTURAL APPROACH SLAB
AND CONCRETE PAVEMENT
APPROACH SLAB**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED

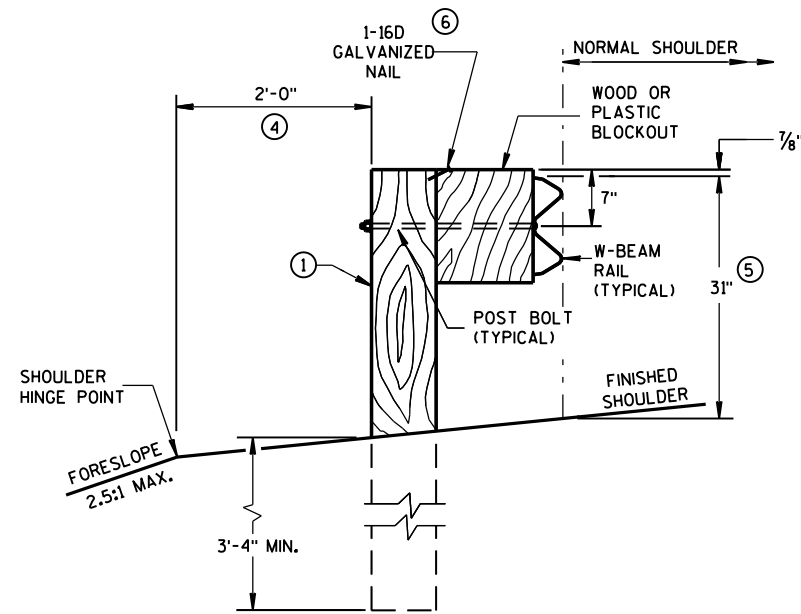
June, 2015
DATE

FHWA

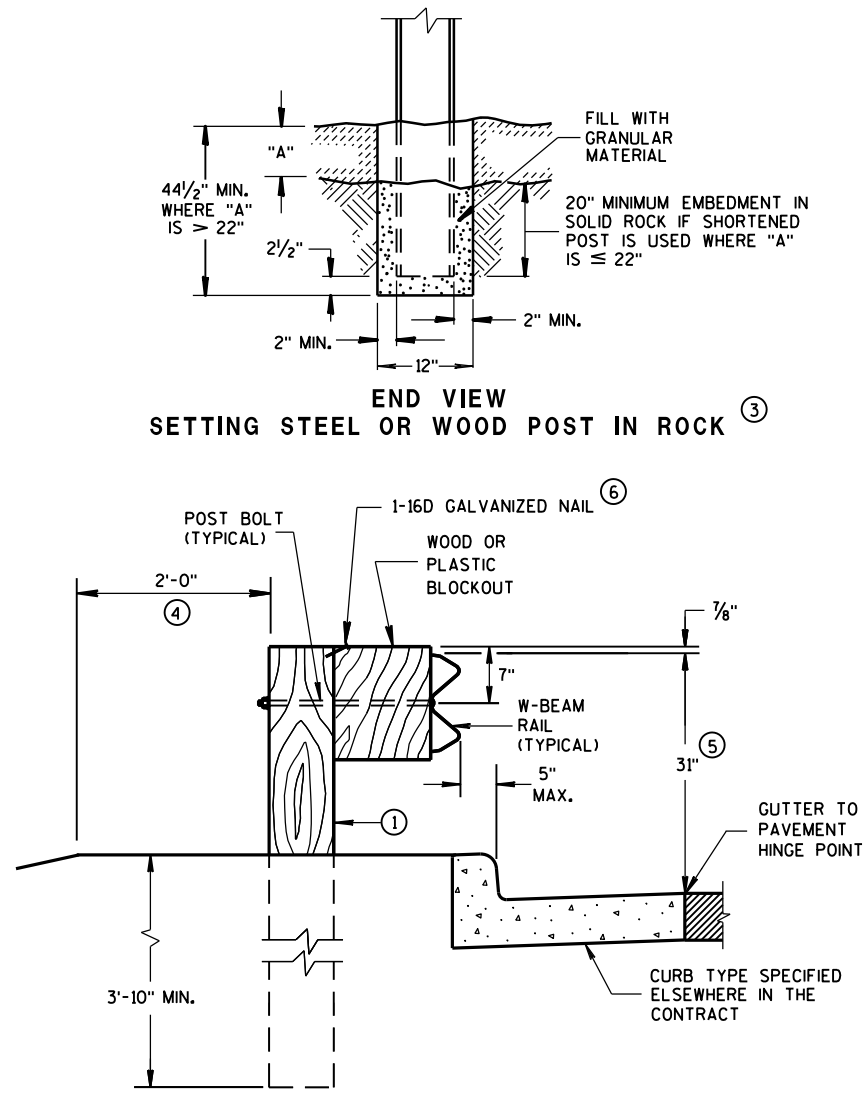
/S/ Peter Kemp, P.E.
PAVEMENT SUPERVISOR

GENERAL NOTES

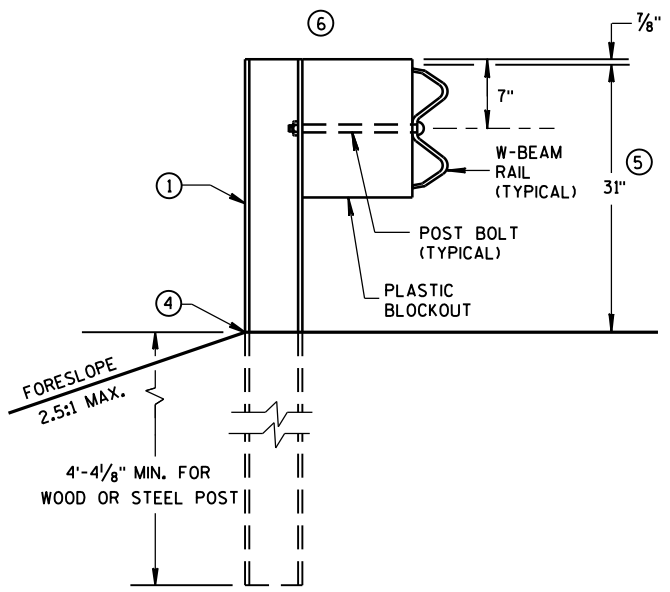
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. 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.



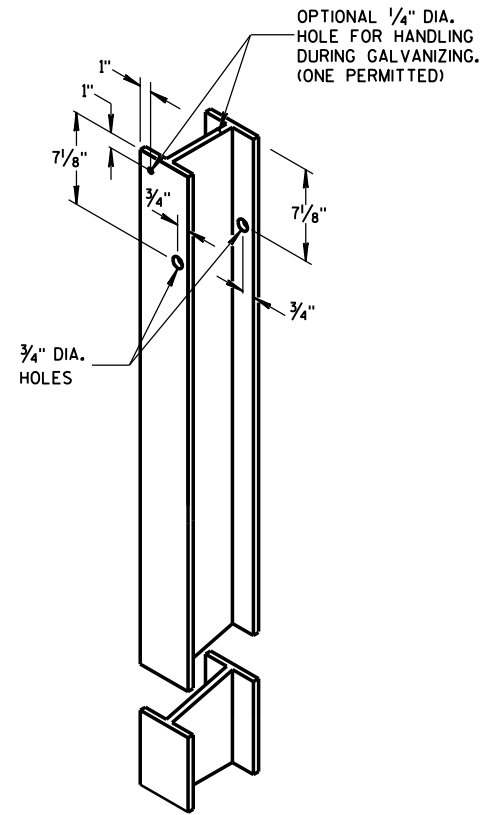
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



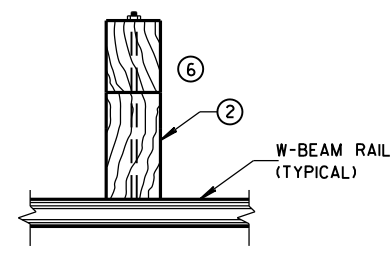
END VIEW
LOCATED ALONG A CURBED ROADWAY



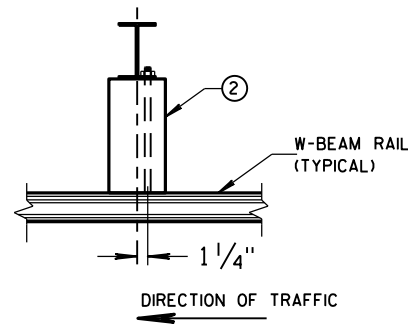
END VIEW
MGS LONGER POST AT HALFPST SPACING W BEAM (K)



STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



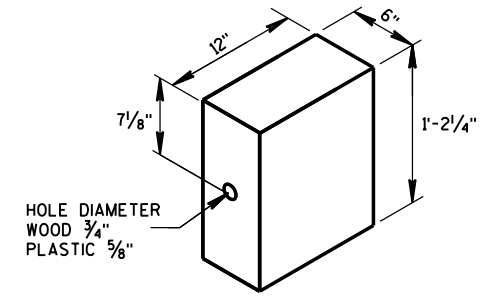
PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



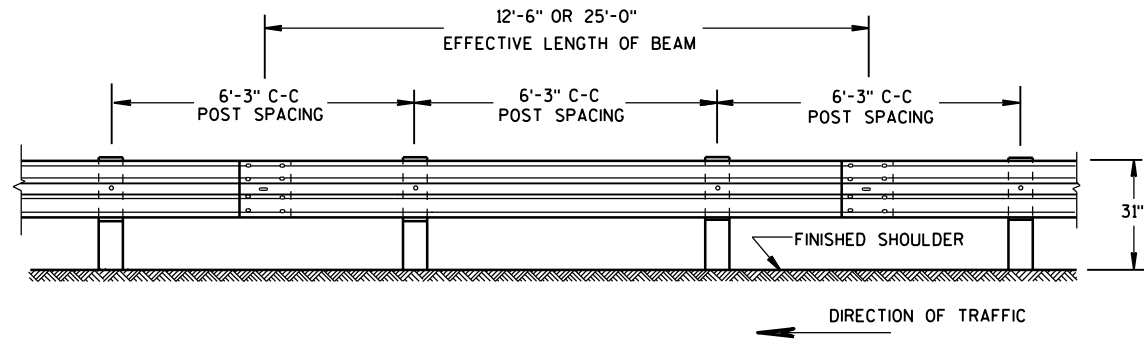
PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM



WOOD POST
(6" X 8") NOMINAL ①

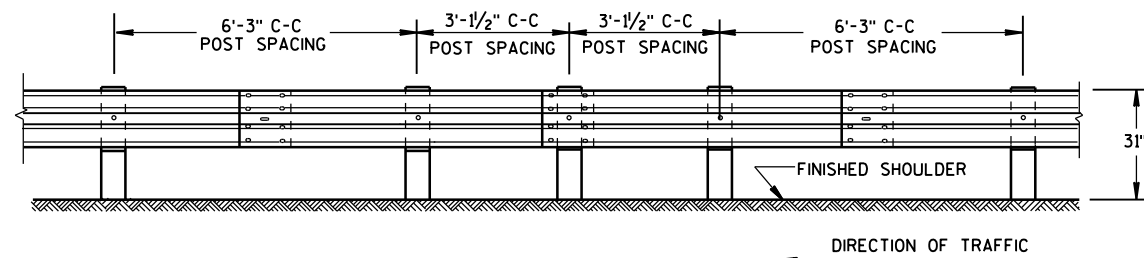


WOOD OR
PLASTIC BLOCKOUT ②



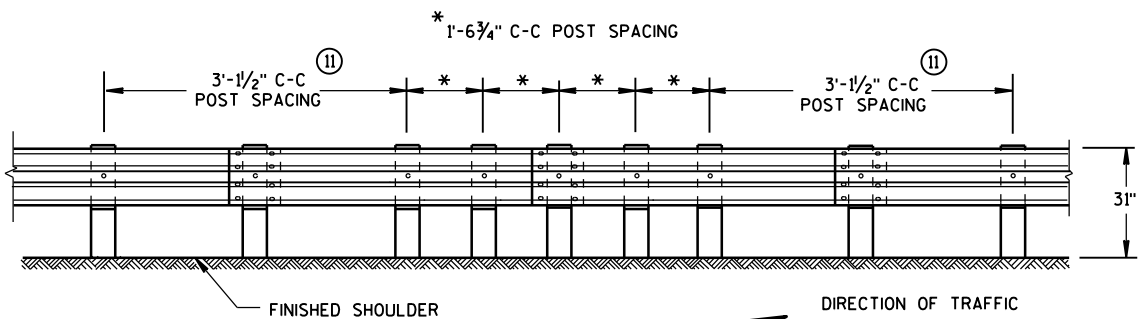
FRONT VIEW

POST SPACING STANDARD INSTALLATION



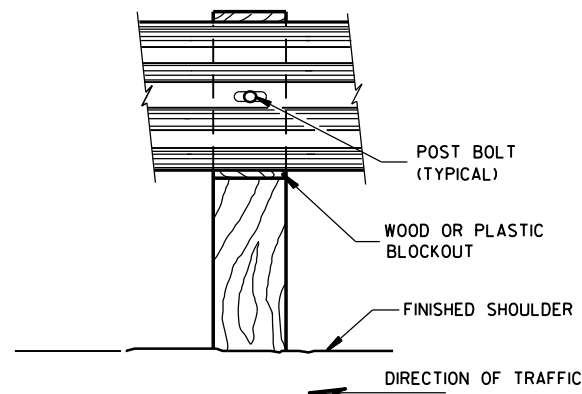
FRONT VIEW

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

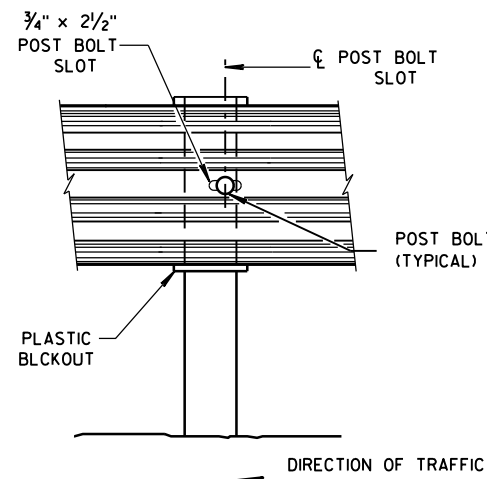


FRONT VIEW

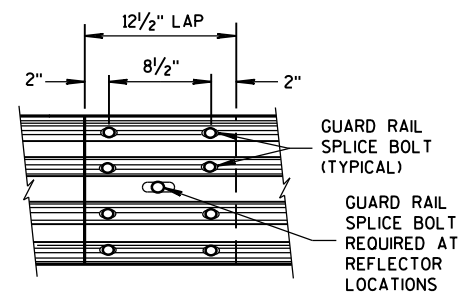
QUARTER POST SPACING (QS)



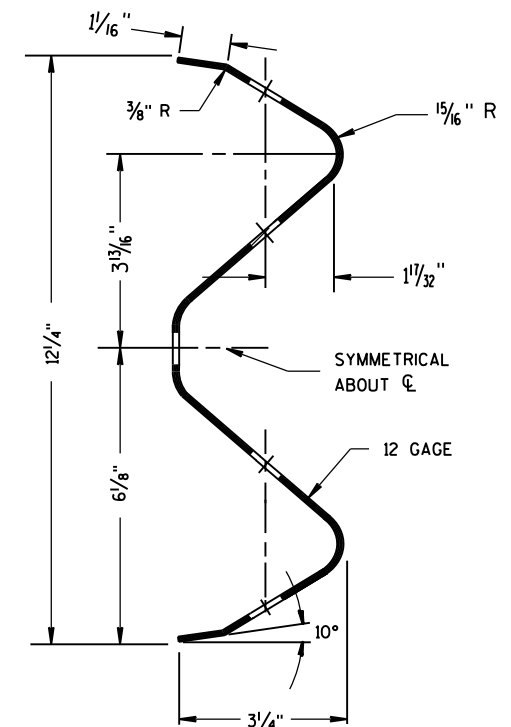
FRONT VIEW AT WOOD POST



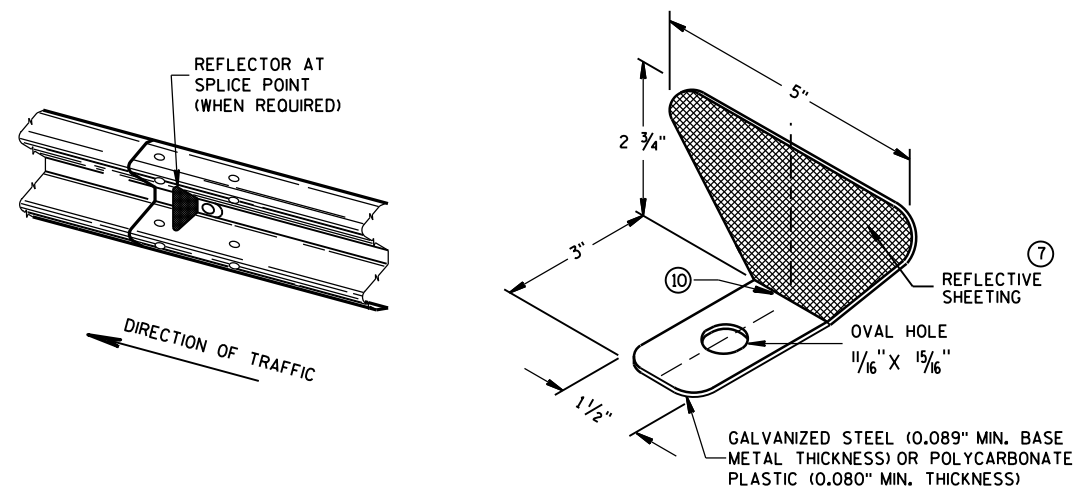
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

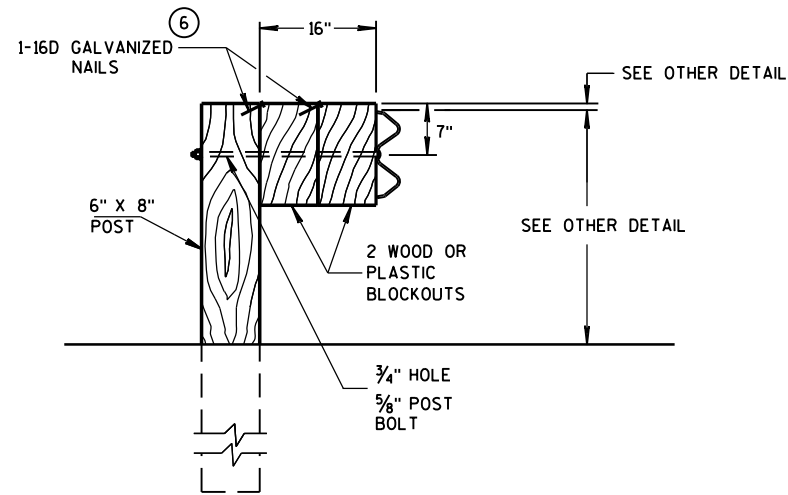
GENERAL NOTES

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

REFLECTOR SPACING ^⑧				
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ^⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ^⑩	3
	> 200'	100' C-C	2	

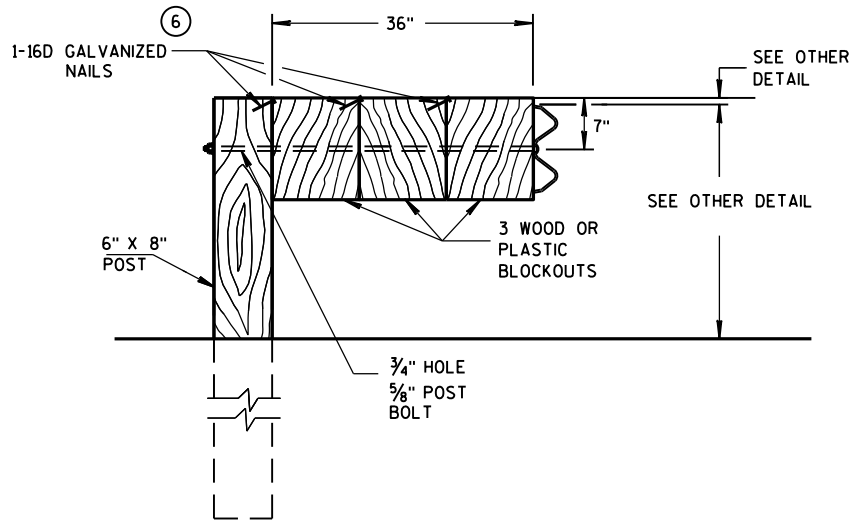
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION³⁹



DETAIL FOR 16" BLOCKOUT DEPTH

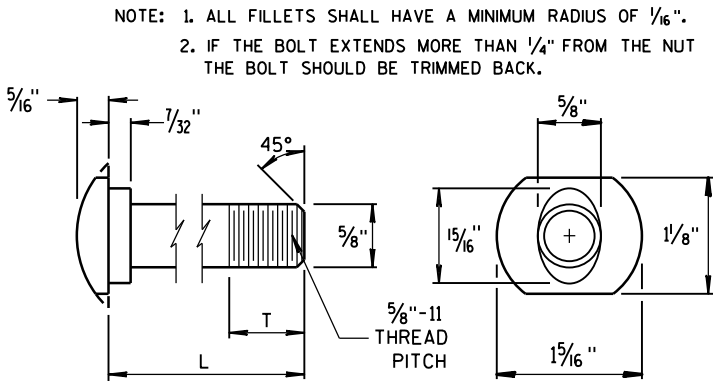
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

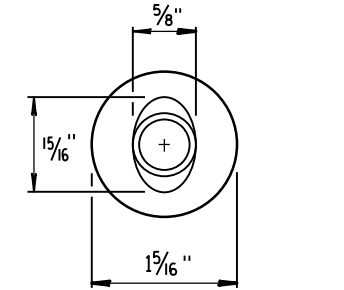
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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

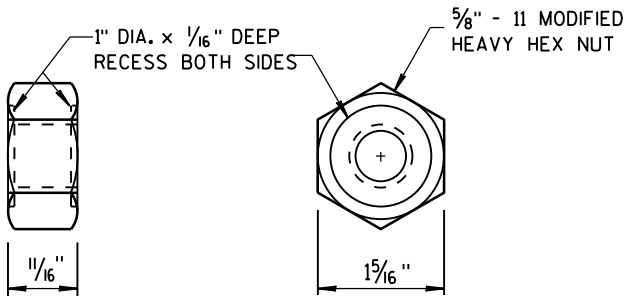


POST BOLT TABLE

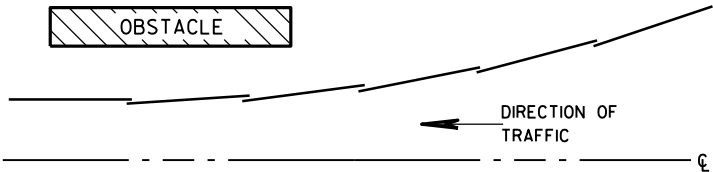
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



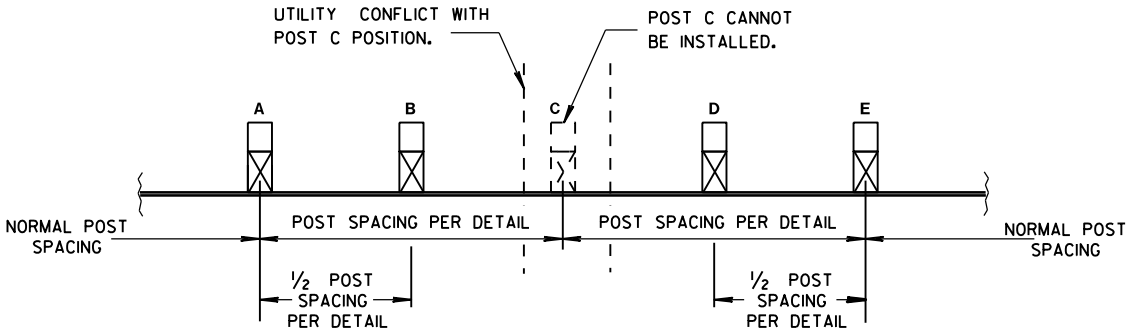
ALTERNATE BOLT HEAD



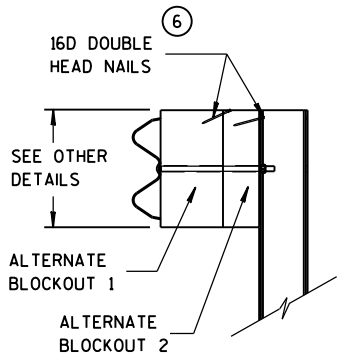
POST BOLT AND RECESS NUT



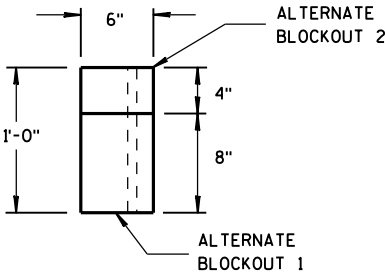
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS (40) ENT
FHWA ENGINEER

GENERAL NOTES

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

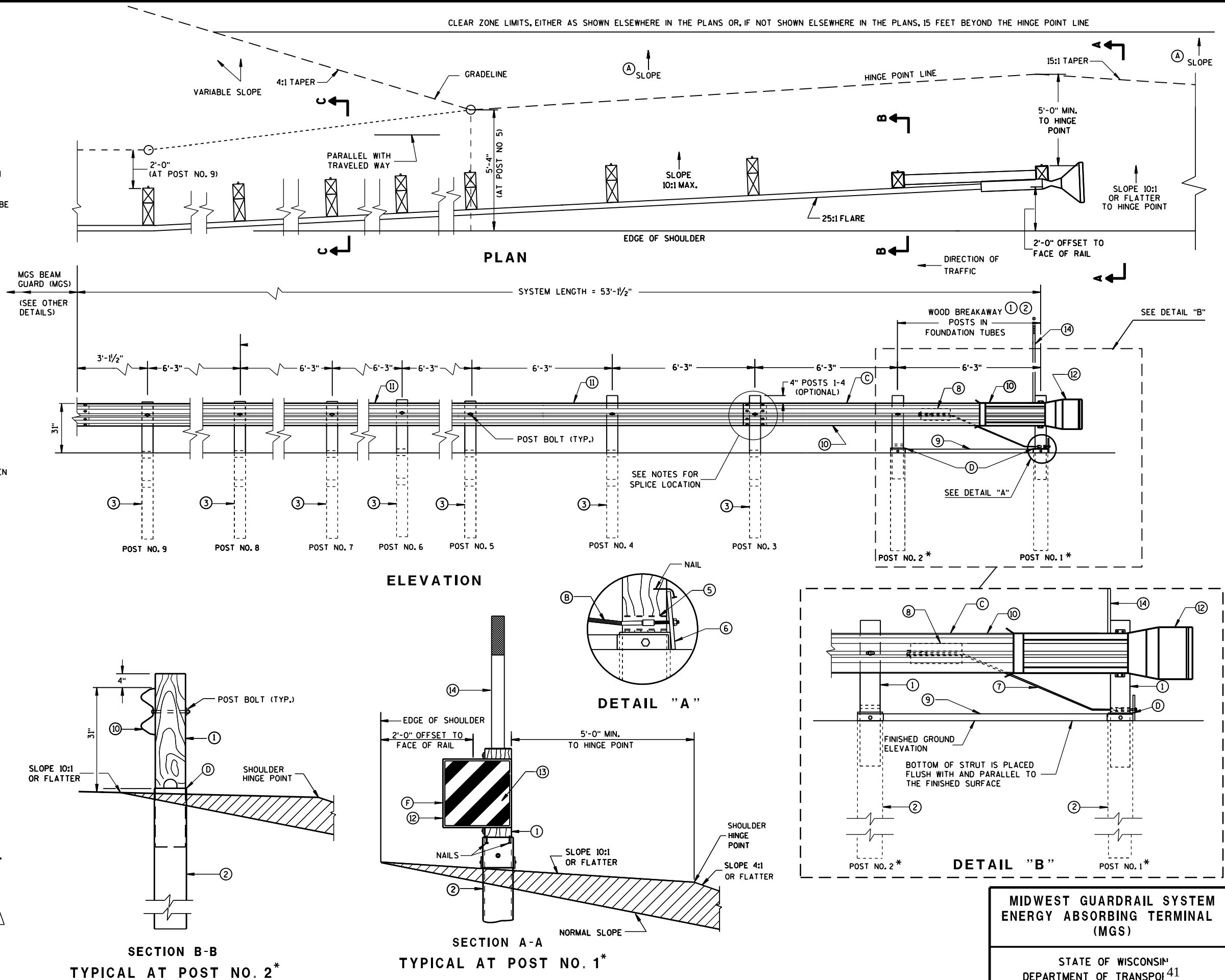
SEE SDD 14B42 FOR MORE INFORMATION.

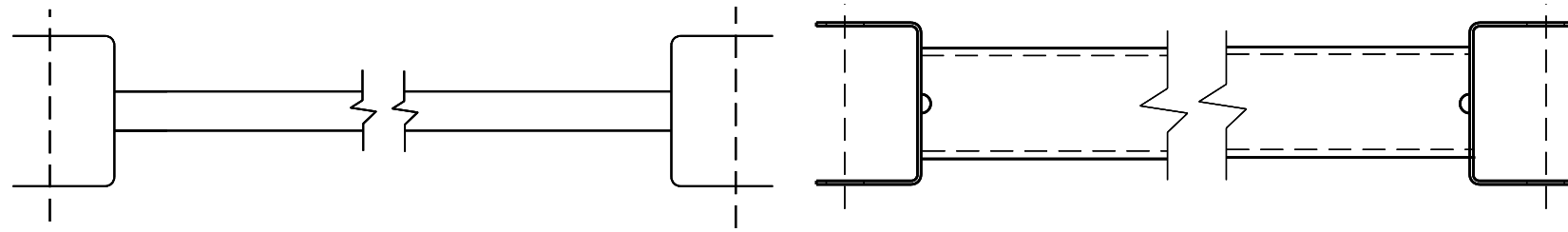
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

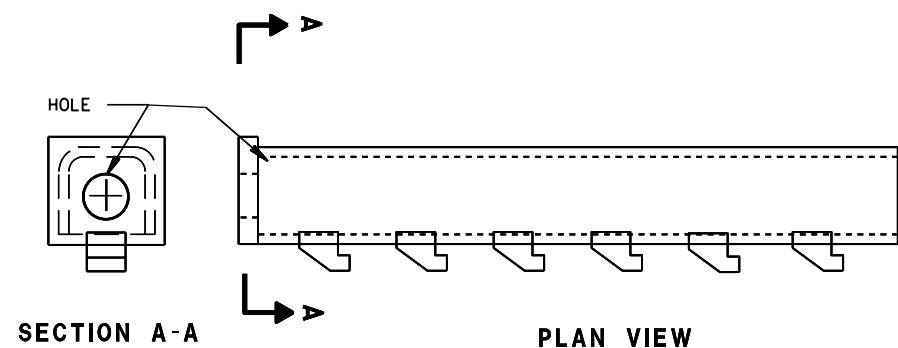
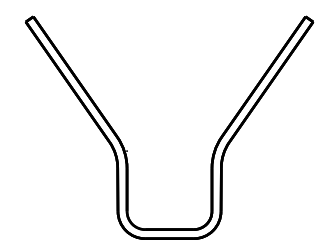
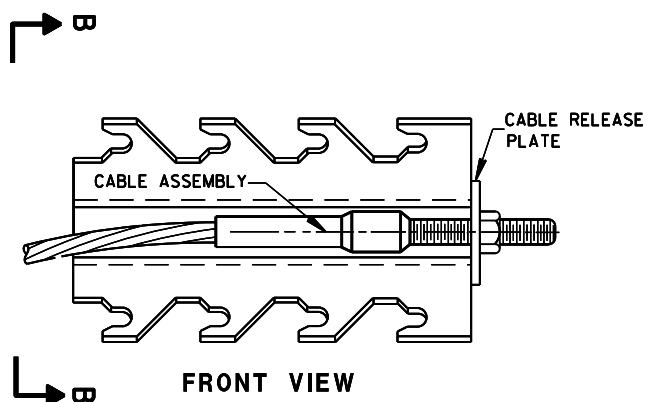
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

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





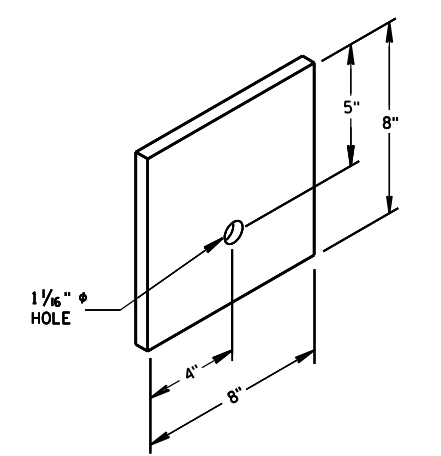
9 H
GENERIC GROUND STRUT



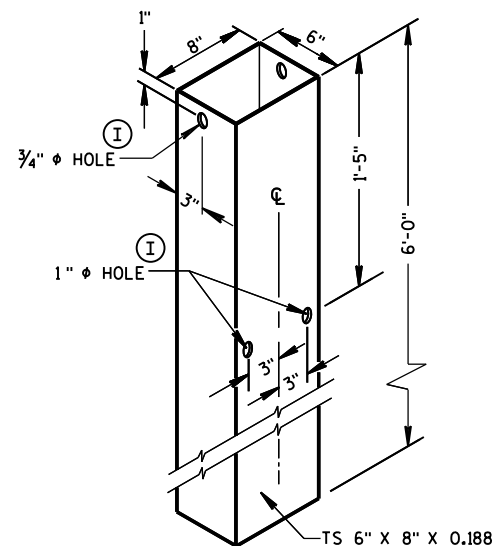
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

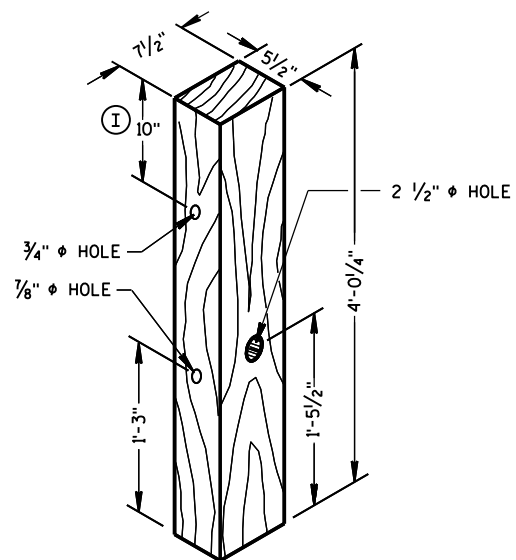
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND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



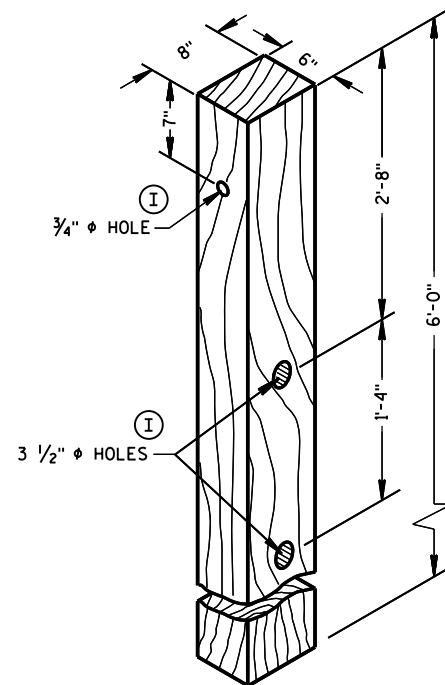
⑥
BEARING PLATE



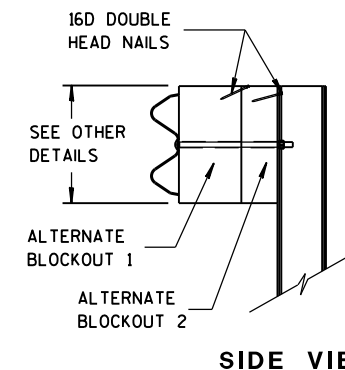
FOUNDATION TUBE ②



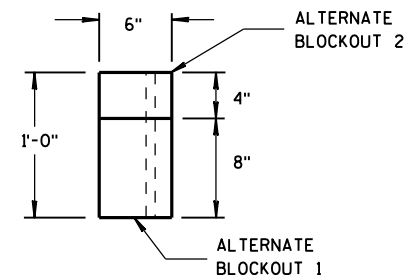
POSTS NUMBER 1 AND 2
WOOD BREAKAWAY POST ①



POSTS NUMBER 3-9
WOOD CRT POST ③

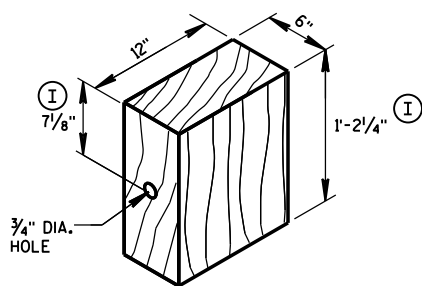


SIDE VIEW



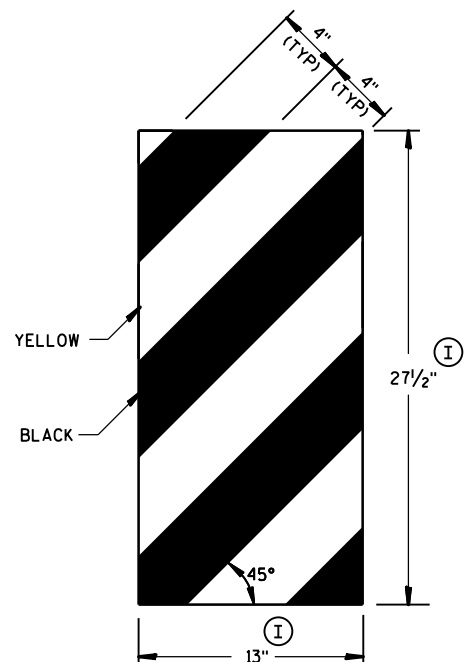
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

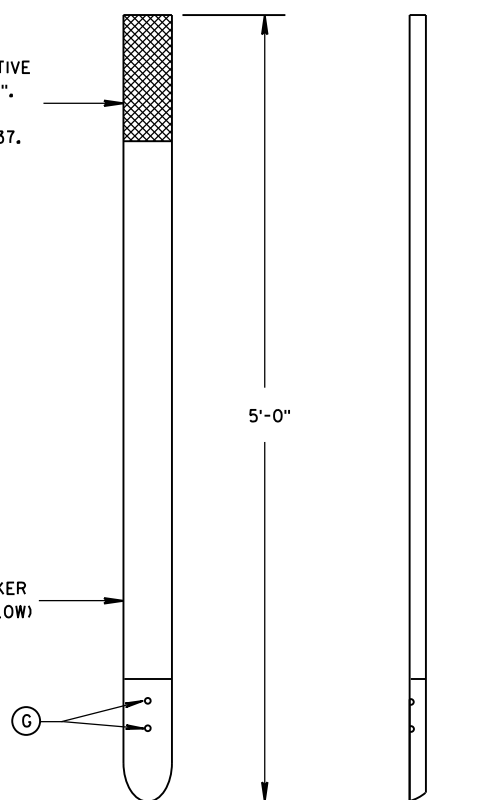
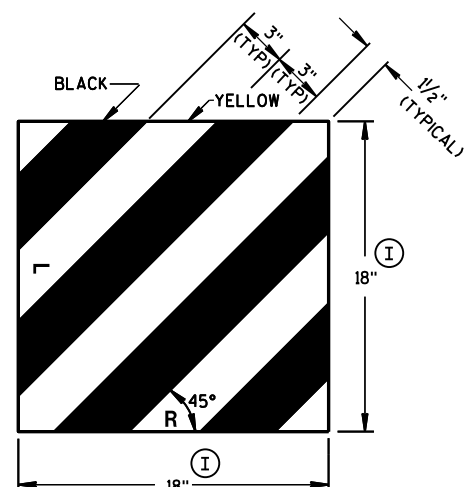


WOOD BLOCKOUT ④
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

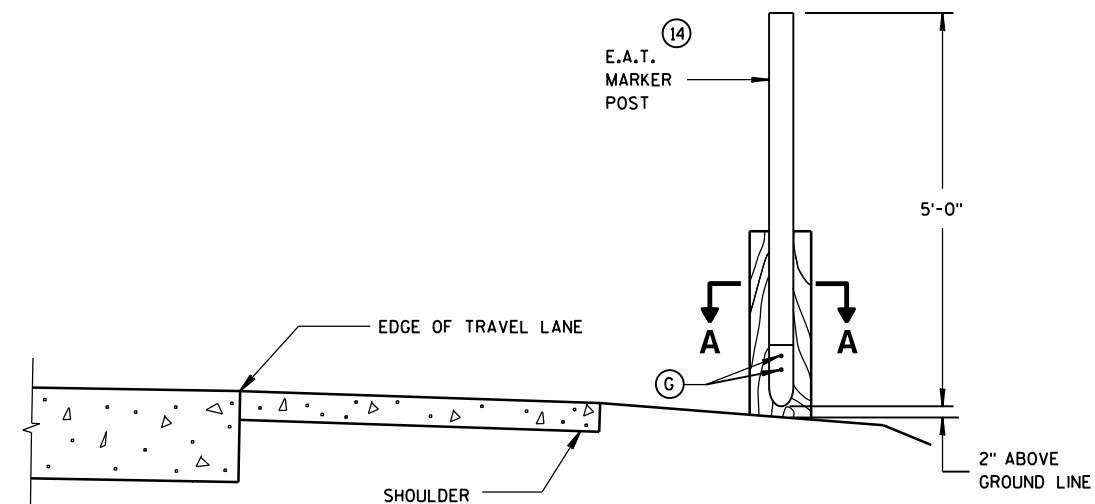
TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.



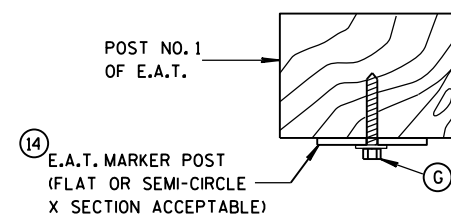
GENERIC REFLECTIVE SHEETING ⑬ ①



FRONT VIEW
SIDE VIEW
E.A.T. MARKER POST ⑭



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

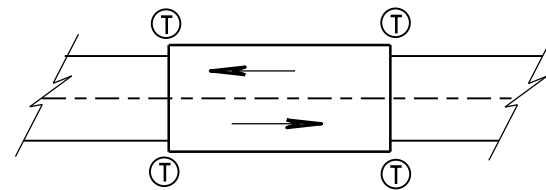


SECTION A-A

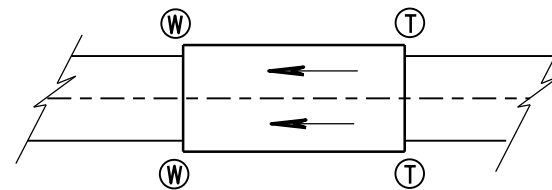
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 43 ENT
FHWA ENGINEER



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

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

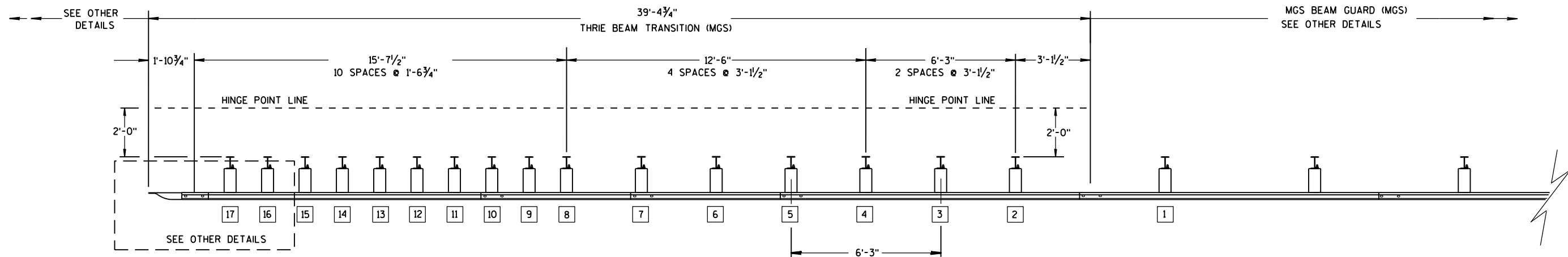
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

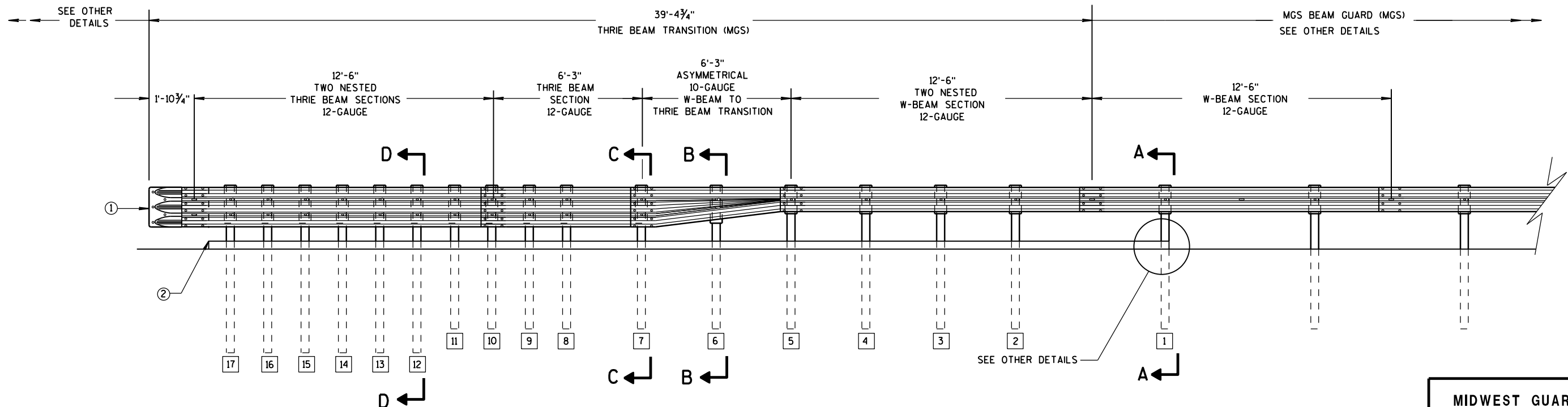
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

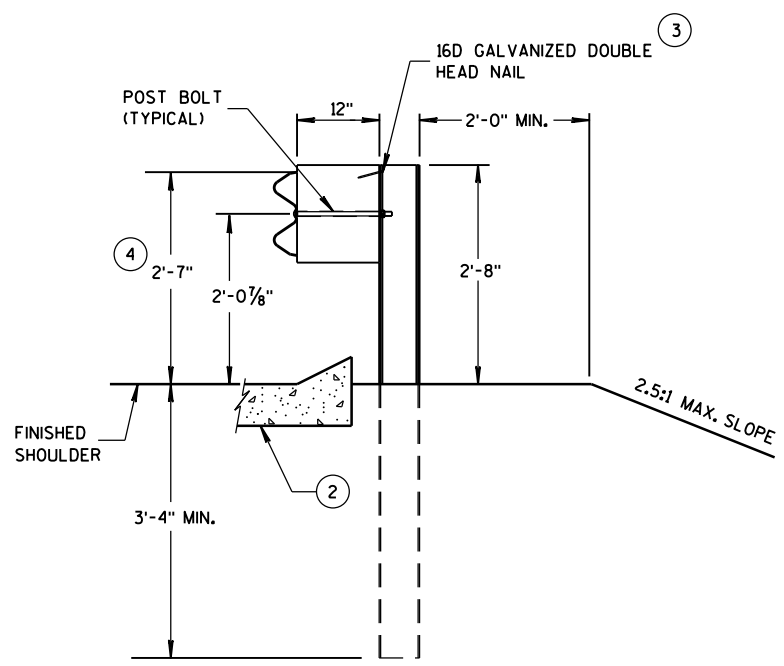
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

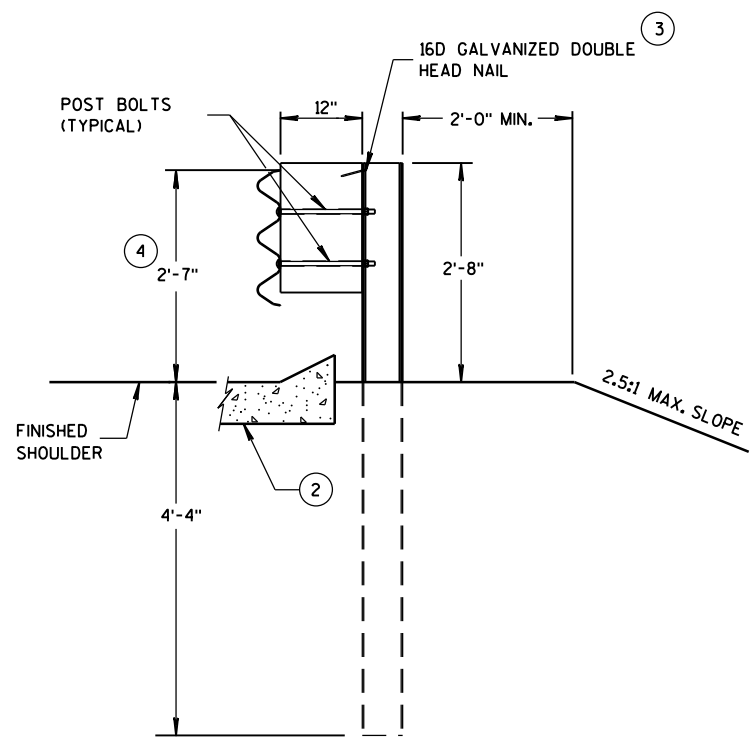
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

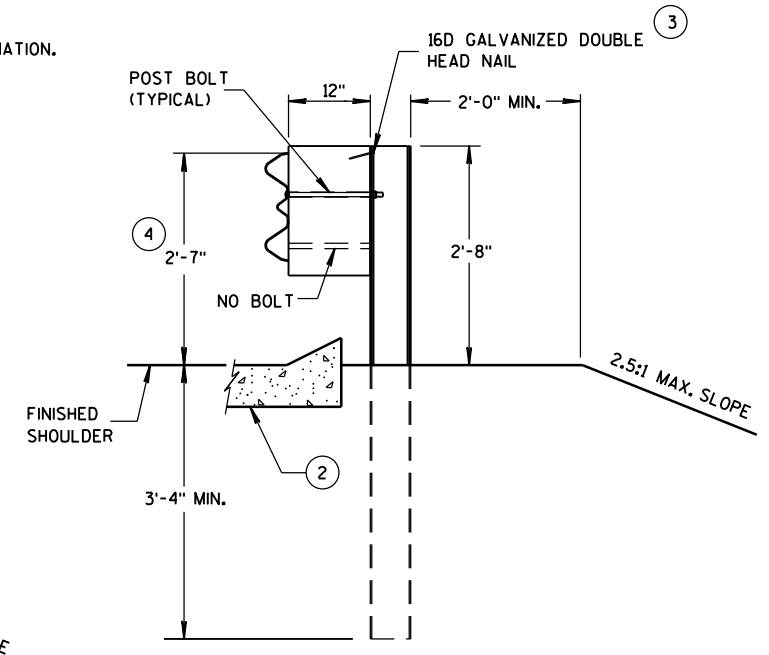
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



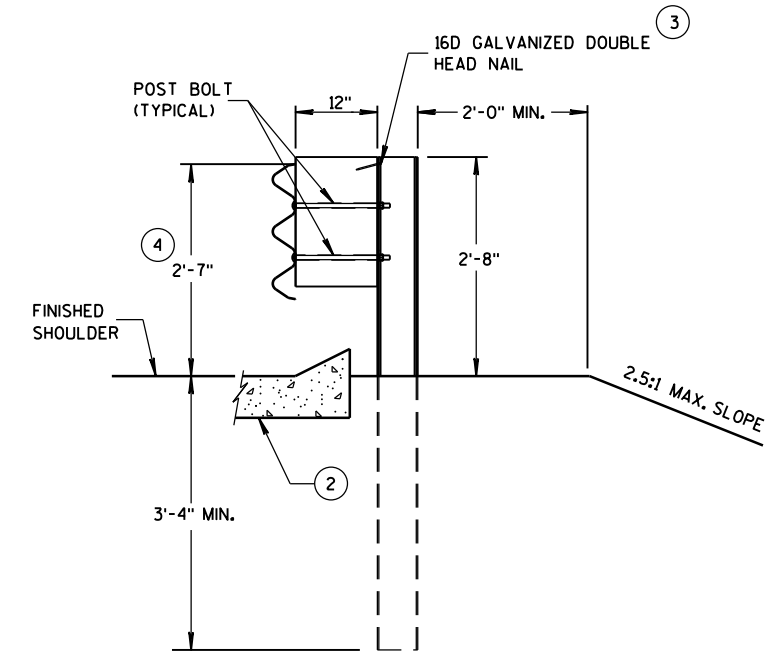
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

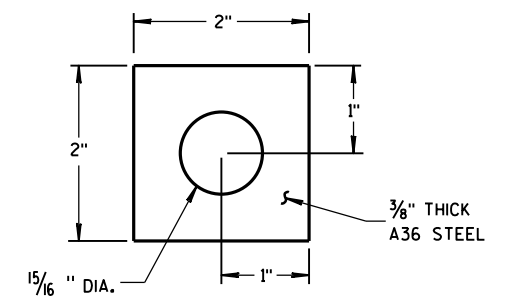
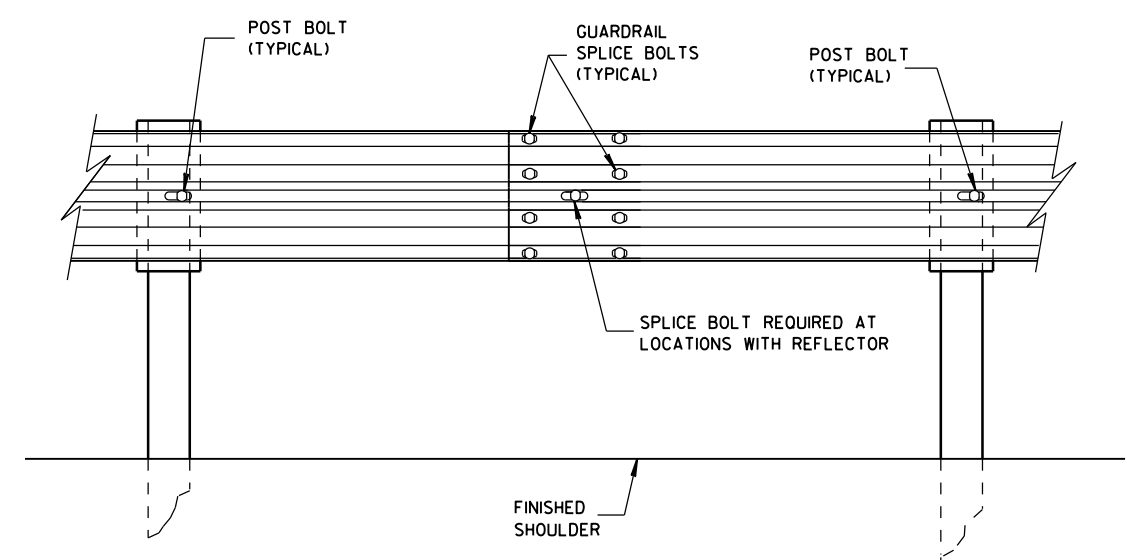
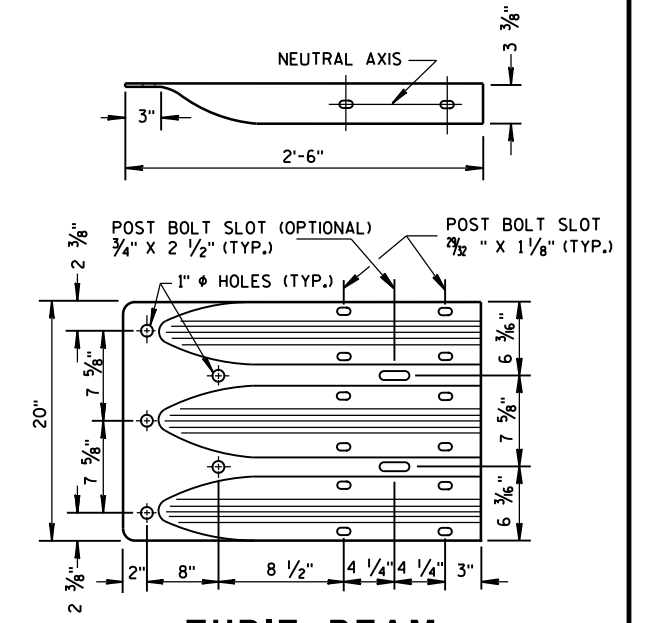


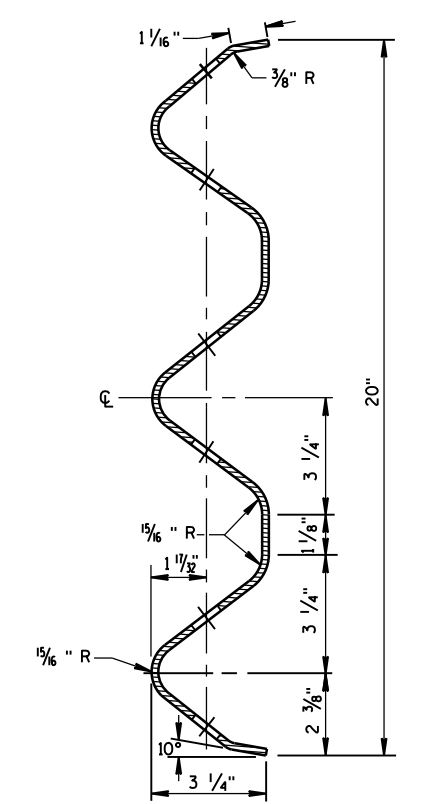
PLATE WASHER DETAIL



SPlice DETAIL



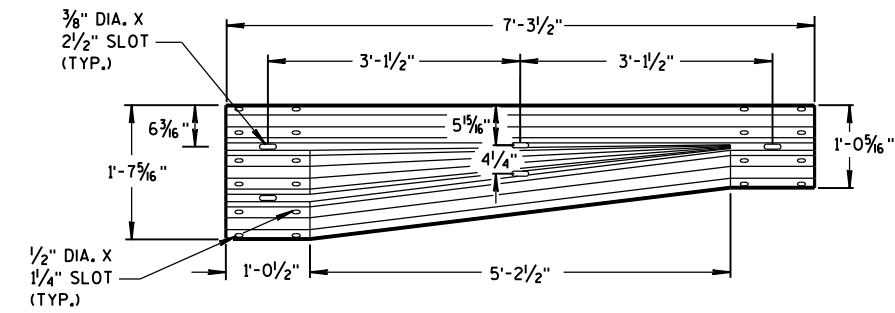
THRIE BEAM
TERMINAL CONNECTOR



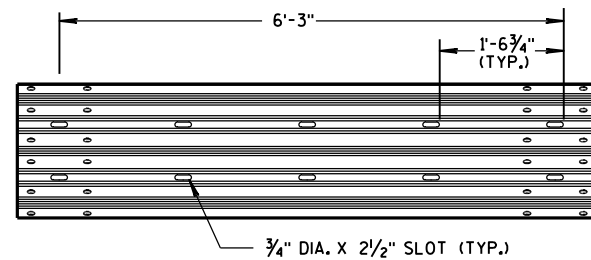
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

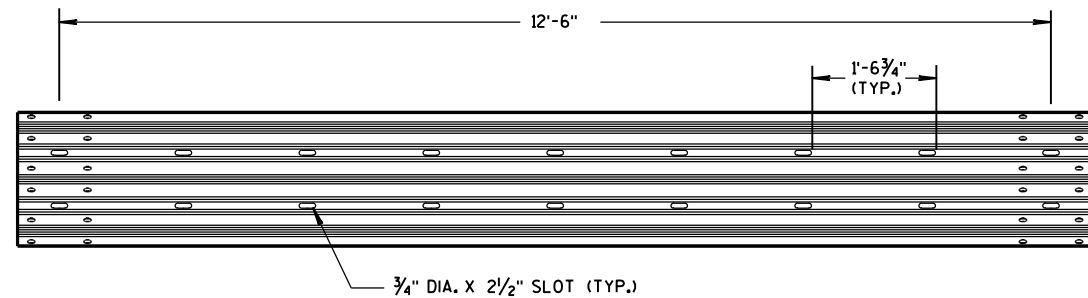
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



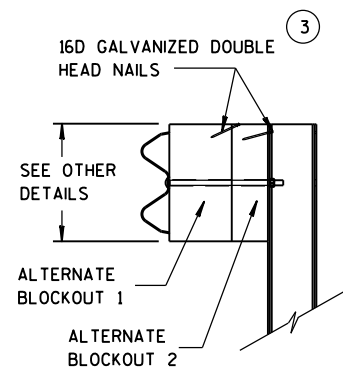
W-BEAM TO THRIE BEAM TRANSITION SECTION



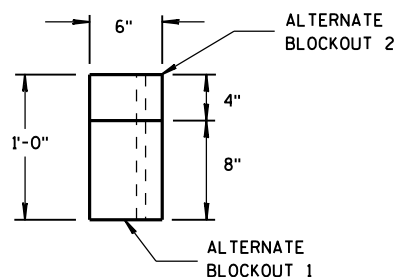
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

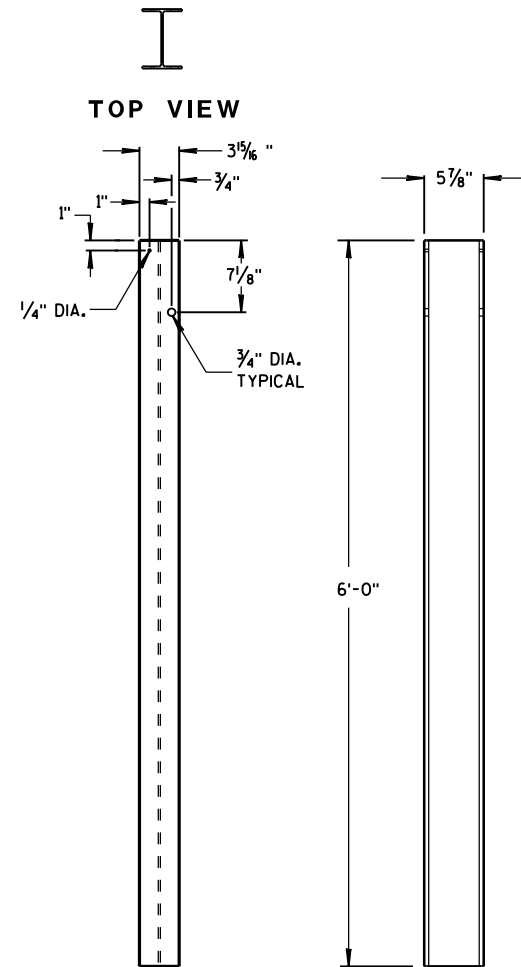


SIDE VIEW



TOP VIEW

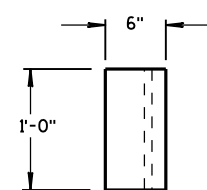
ALTERNATE WOOD BLOCKOUT DETAIL



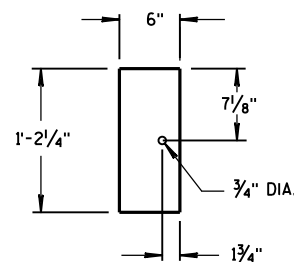
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

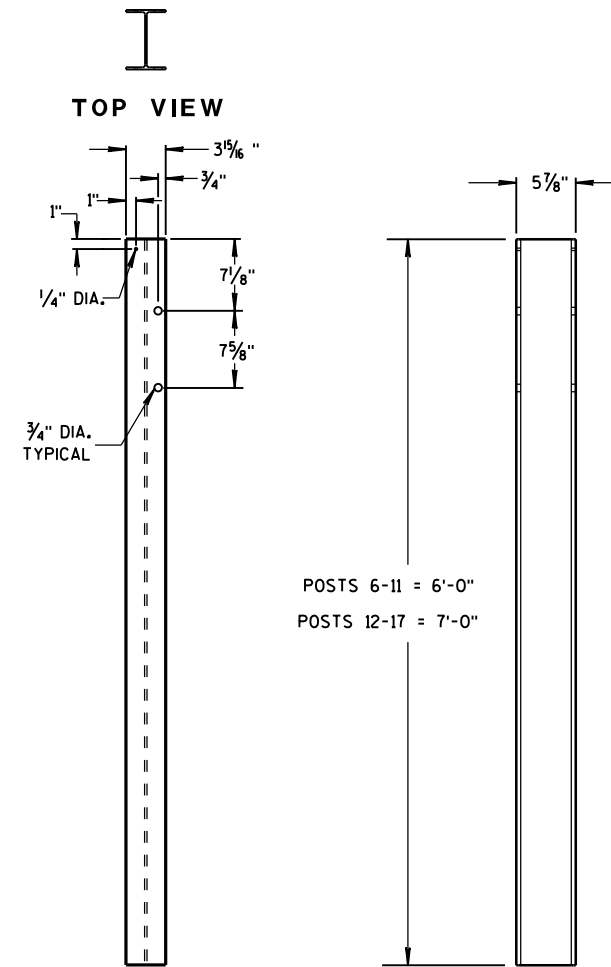


TOP VIEW



FRONT VIEW

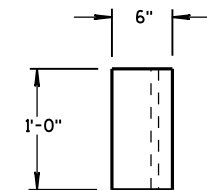
BLOCKOUT
POSTS 1-5



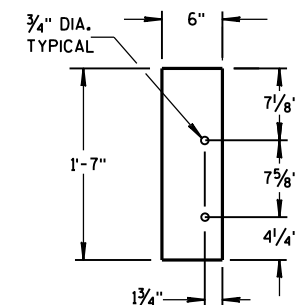
FRONT VIEW

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.

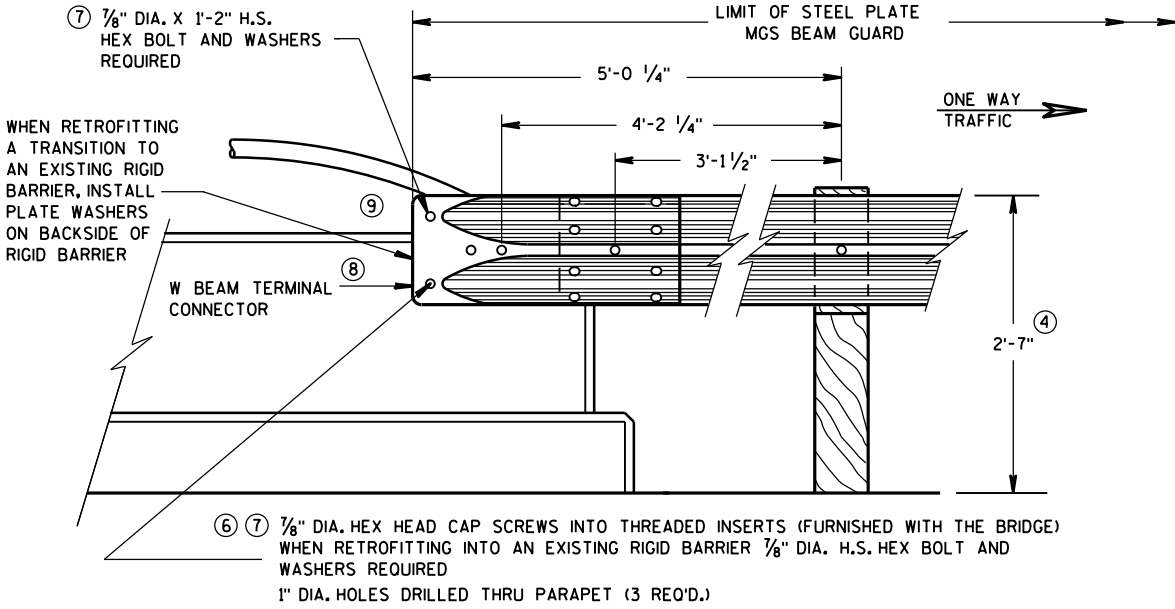
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

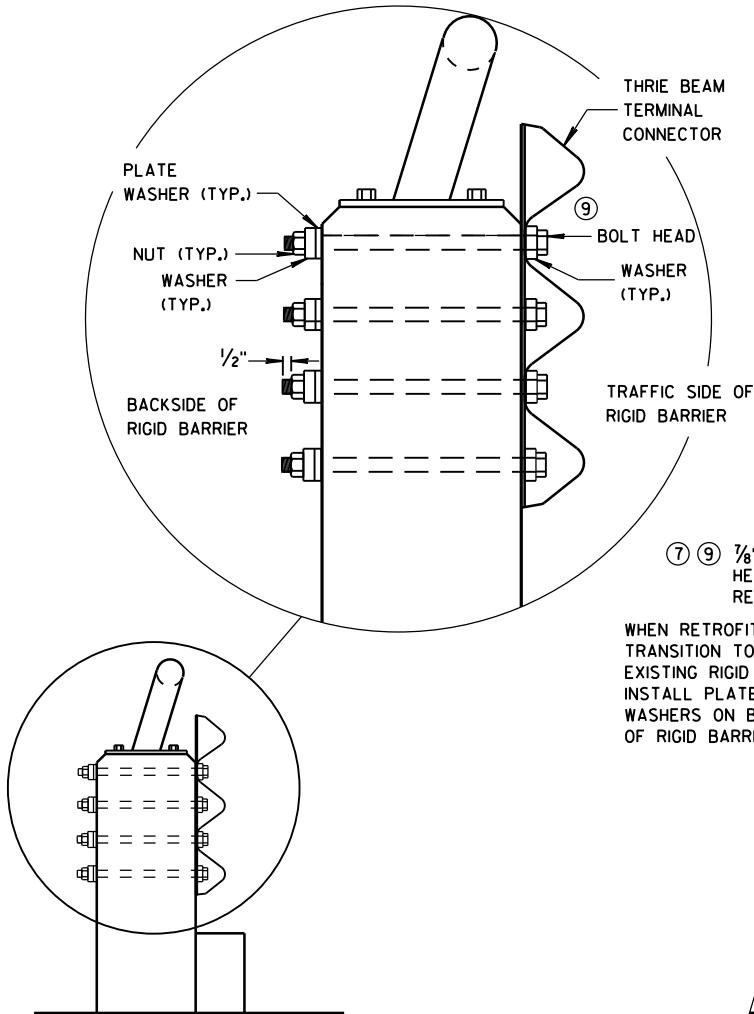
GENERAL NOTES

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

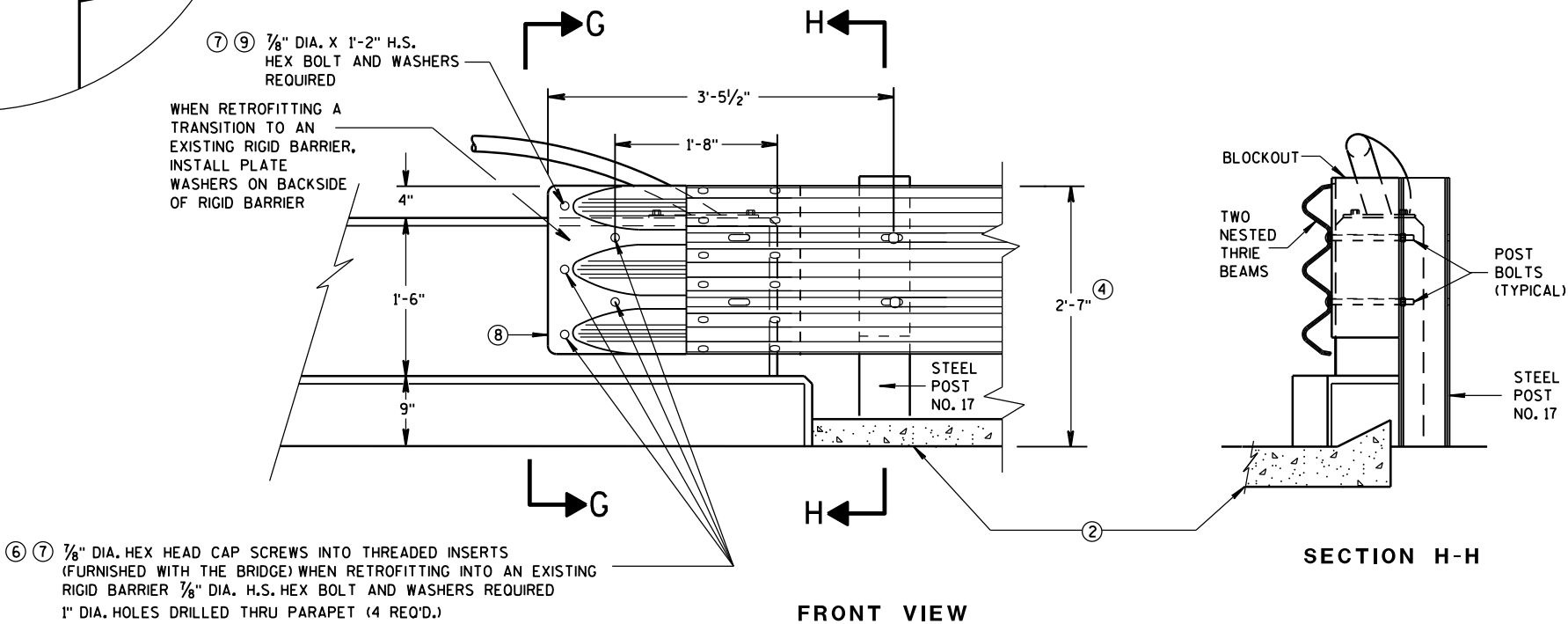
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH 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 $\frac{5}{8}"$ THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 $\frac{1}{2}"$.
- ⑨ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.



FRONT VIEW
W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

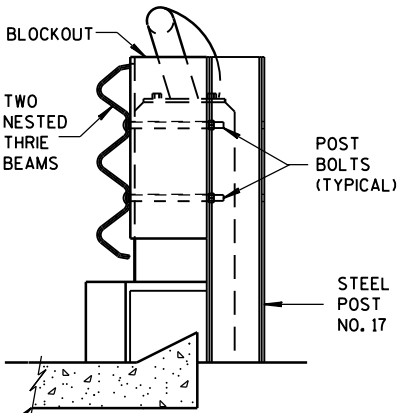


SECTION G-G



FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



SECTION H-H

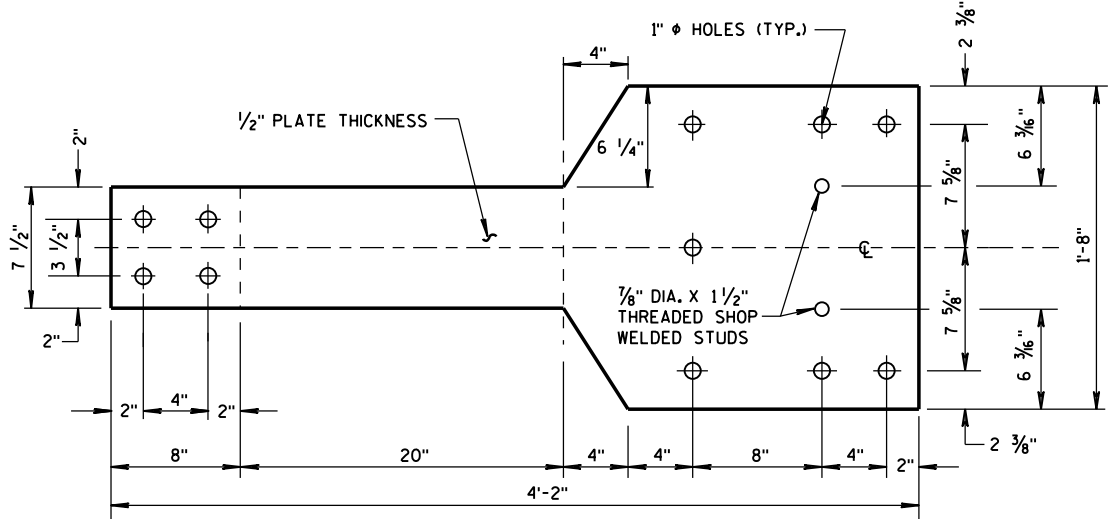
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

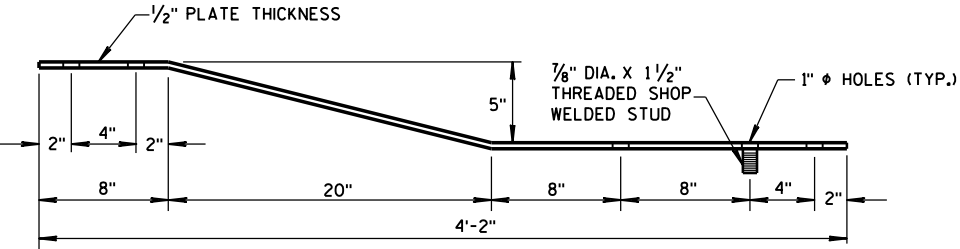
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 47 NT
FHWA ENGINEER

GENERAL NOTES

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

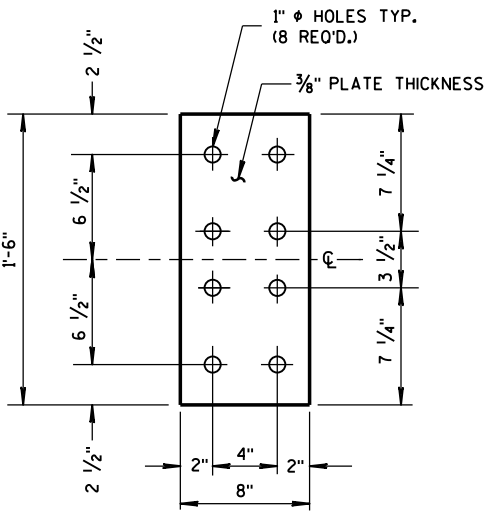


FRONT VIEW



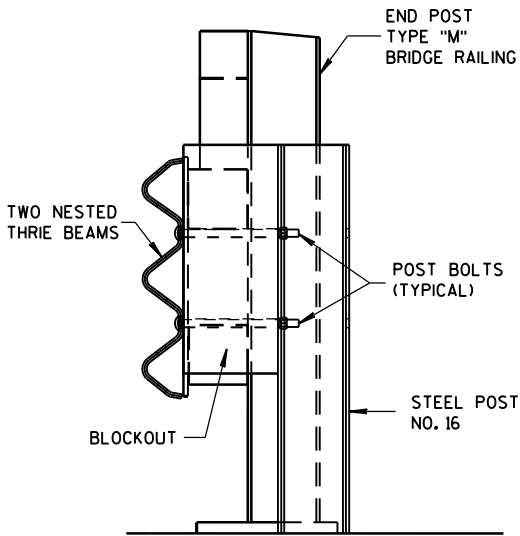
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

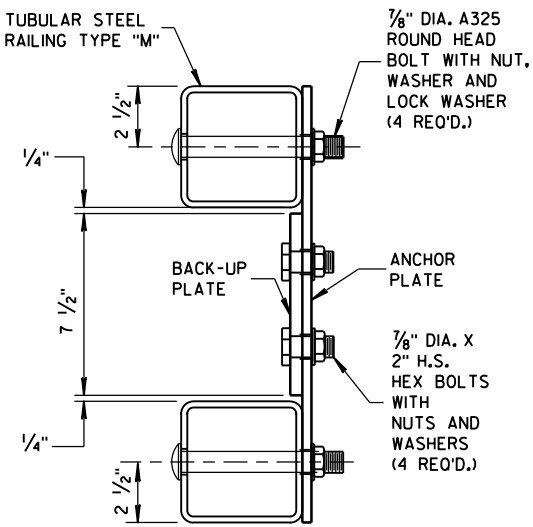


FRONT VIEW

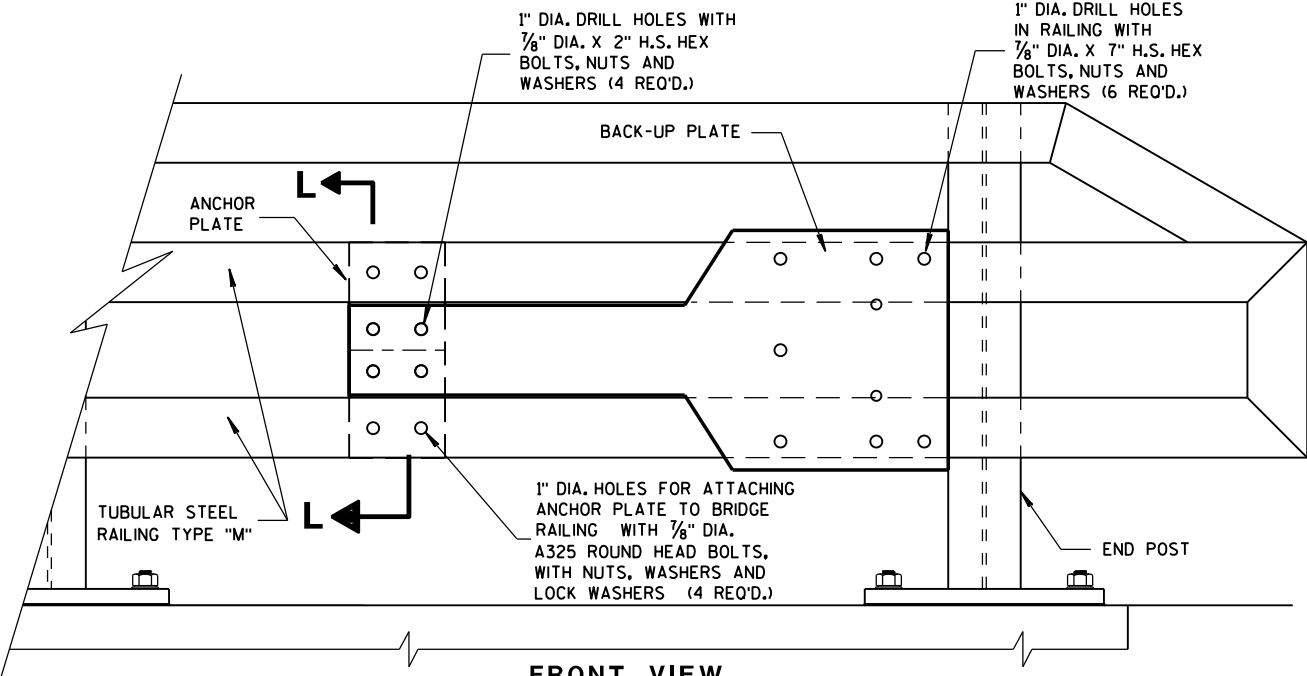
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

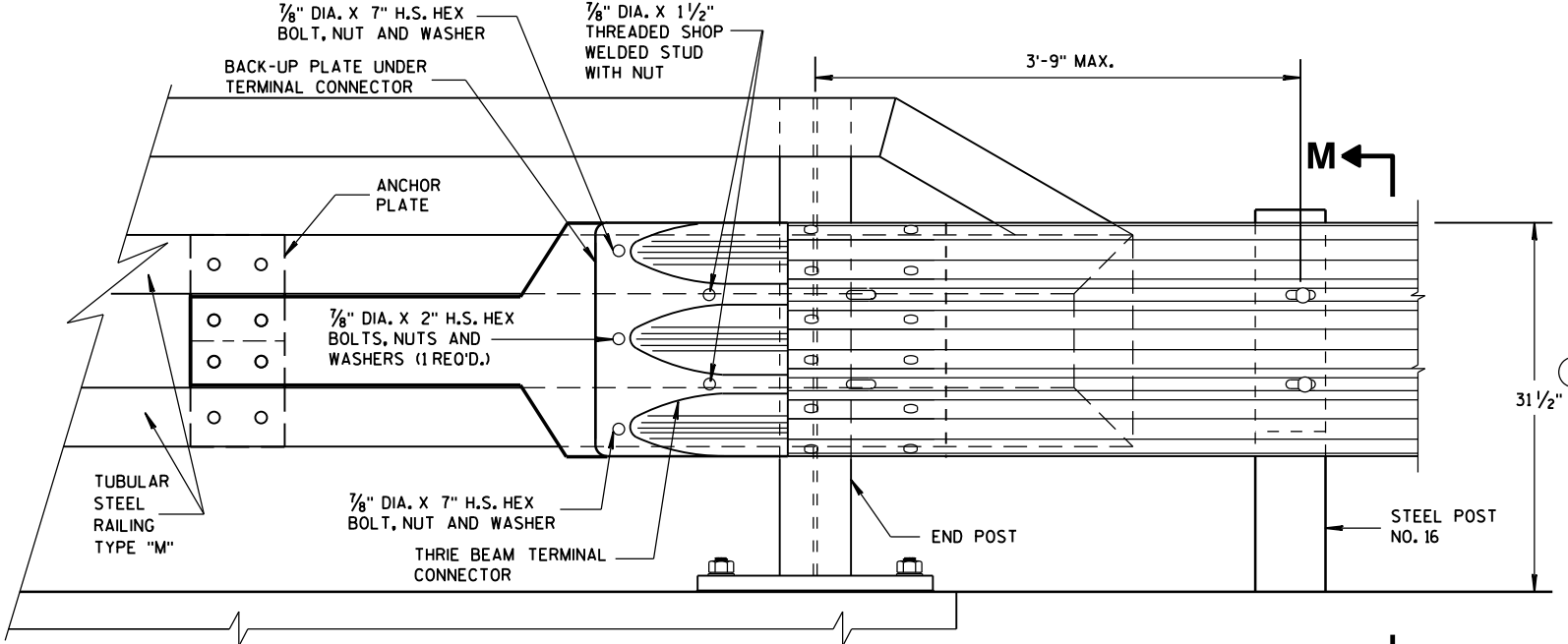


SECTION L-L

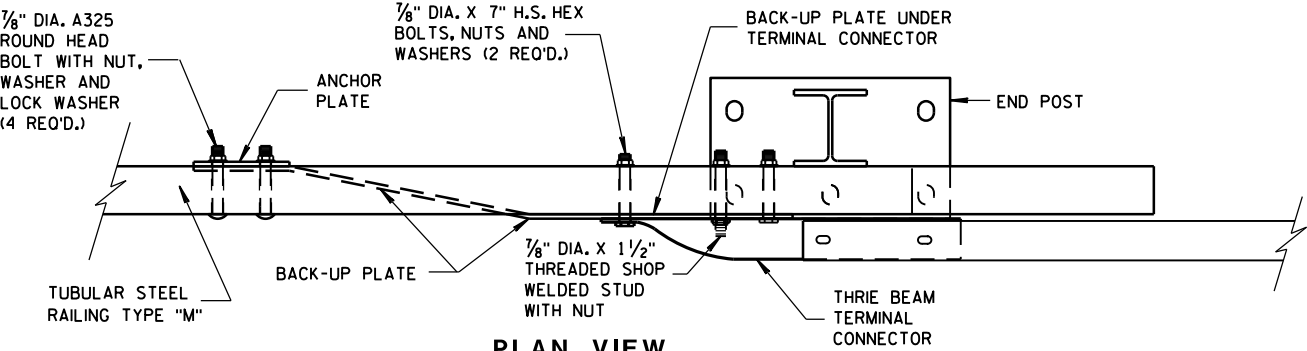


FRONT VIEW

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



FRONT VIEW



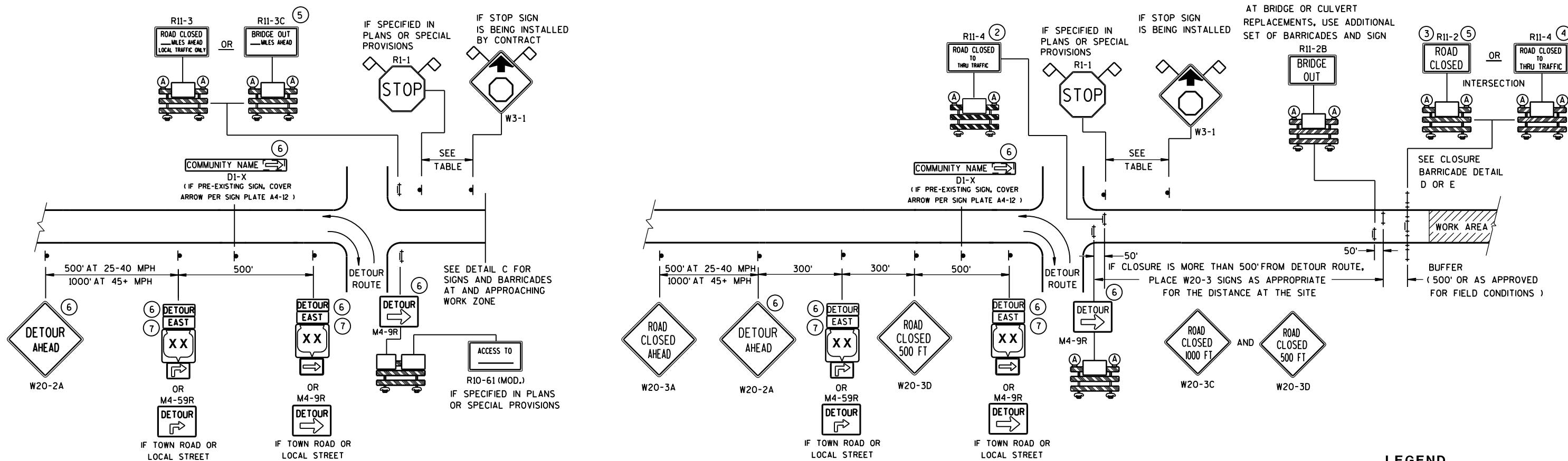
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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

LEGEND

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

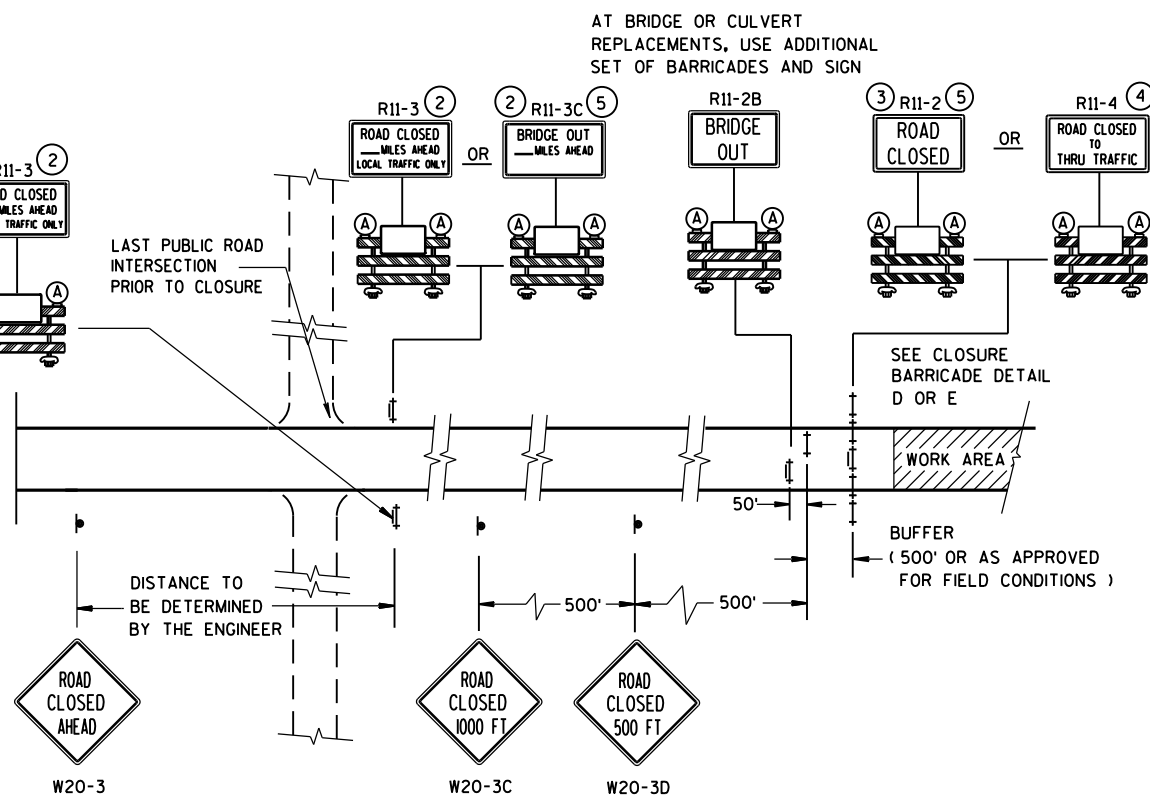
WORK AREA

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

M05-1 OR M06-1

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

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



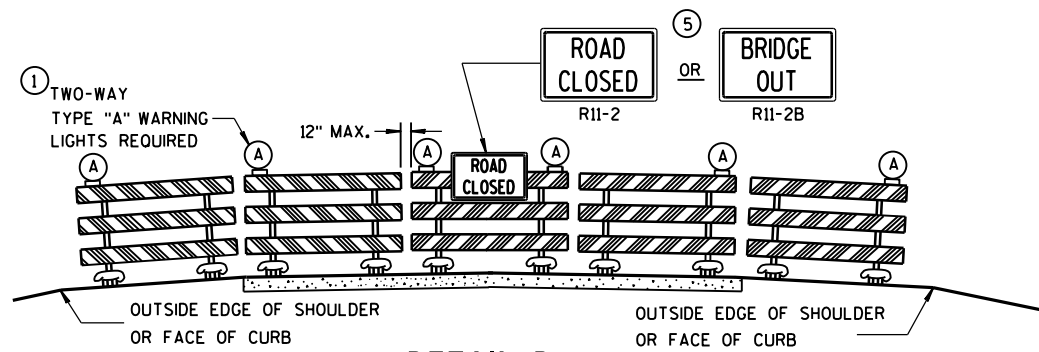
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

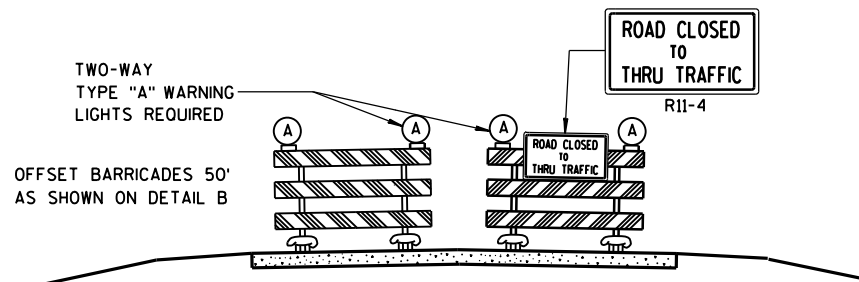
**BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK 2049 FIC
FHWA SAFETY ENGINEER



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

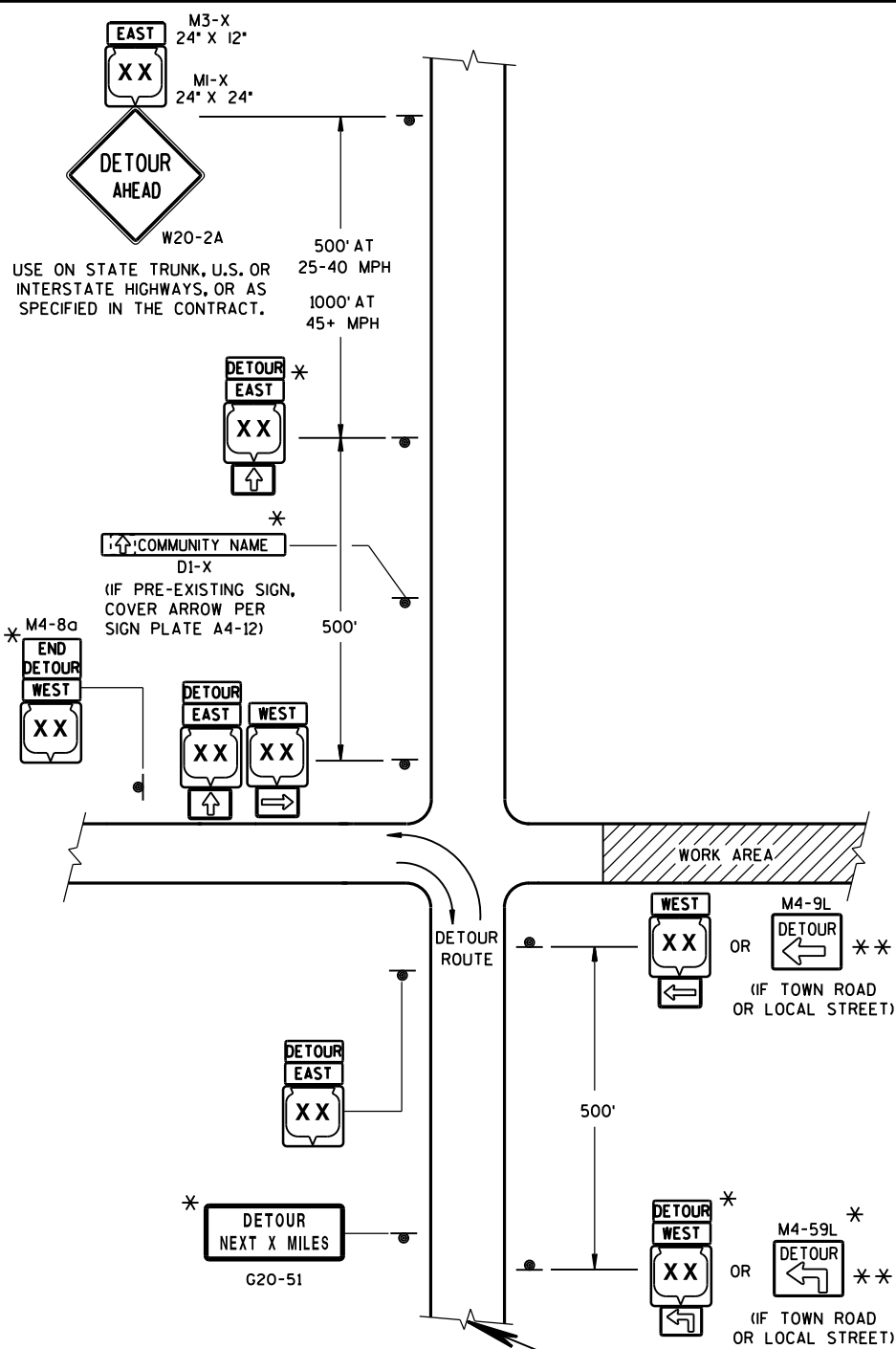
"WO AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

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

- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
Sept. 2015 DATE	/S/ Peter Amokobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER	50	FIC
FHWA			



LEGEND

SIGN ON PERMANENT SUPPORT

WORK AREA

M4-8
M3-X

OR OR
MI-4 MI-5A MI-6

OR OR
M05-1 M06-1 M06-1

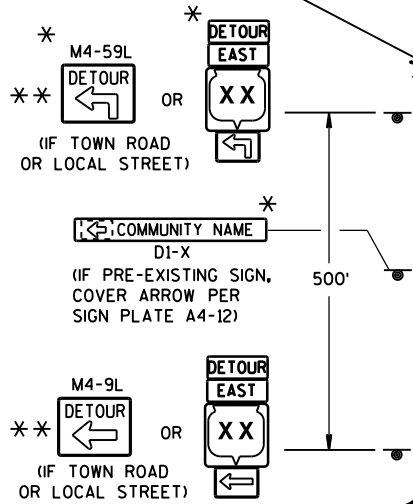
SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD 15C2-SHEET "a"

THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT

DETAIL F
DETOUR SIGNING

USE ON STATE TRUNK, U.S. OR
INTERSTATE HIGHWAYS, OR AS
SPECIFIED IN THE CONTRACT.



GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS, MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

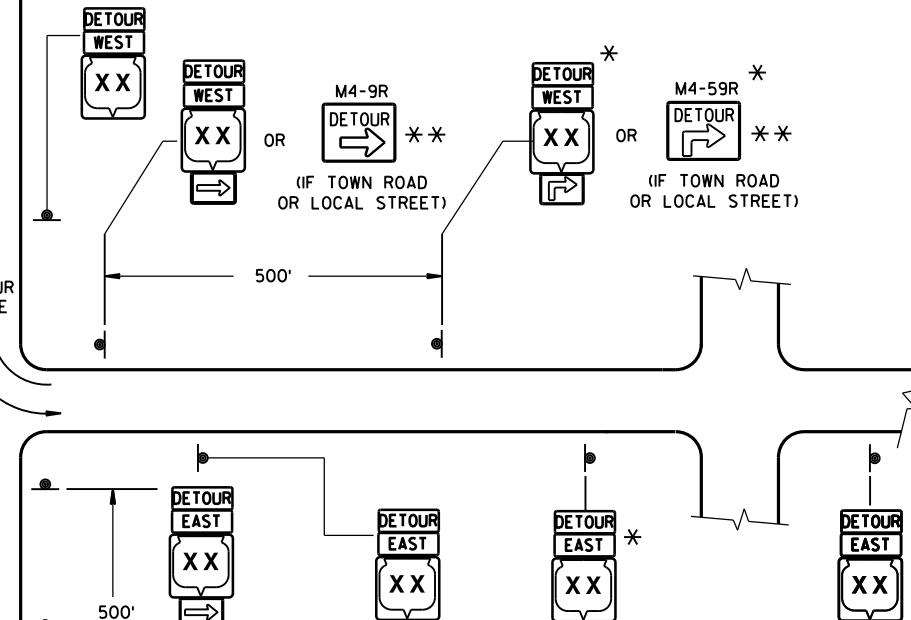
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- MI-4, MI-5A, AND MI-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

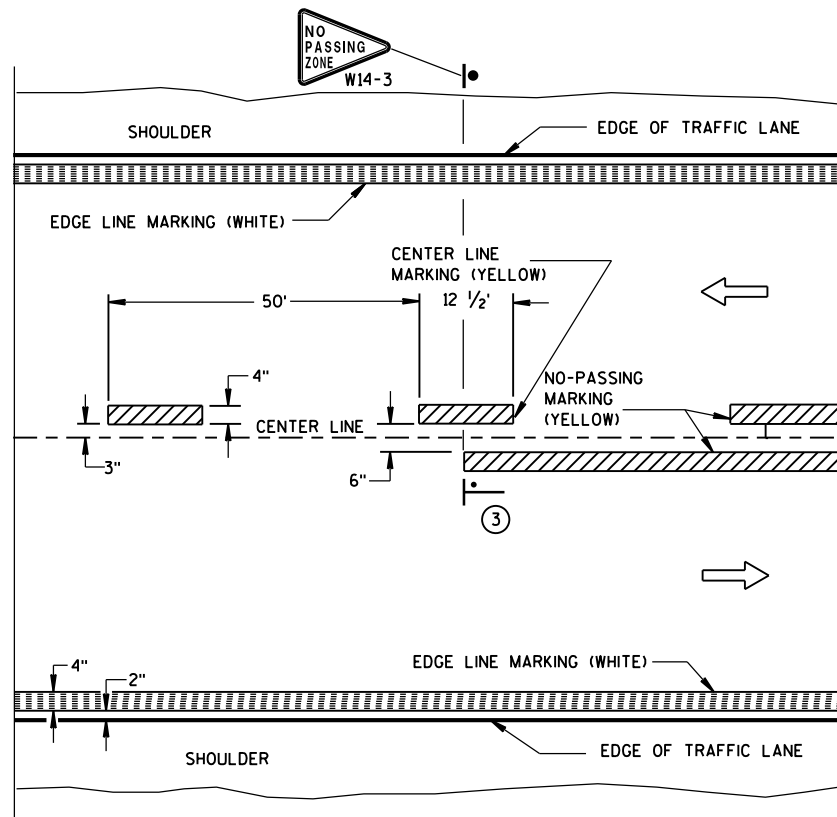


PLACE SIGNS BEYOND INTERSECTIONS WITH
STATE OR COUNTY TRUNK HIGHWAYS OR
AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF
URBAN AREA.)

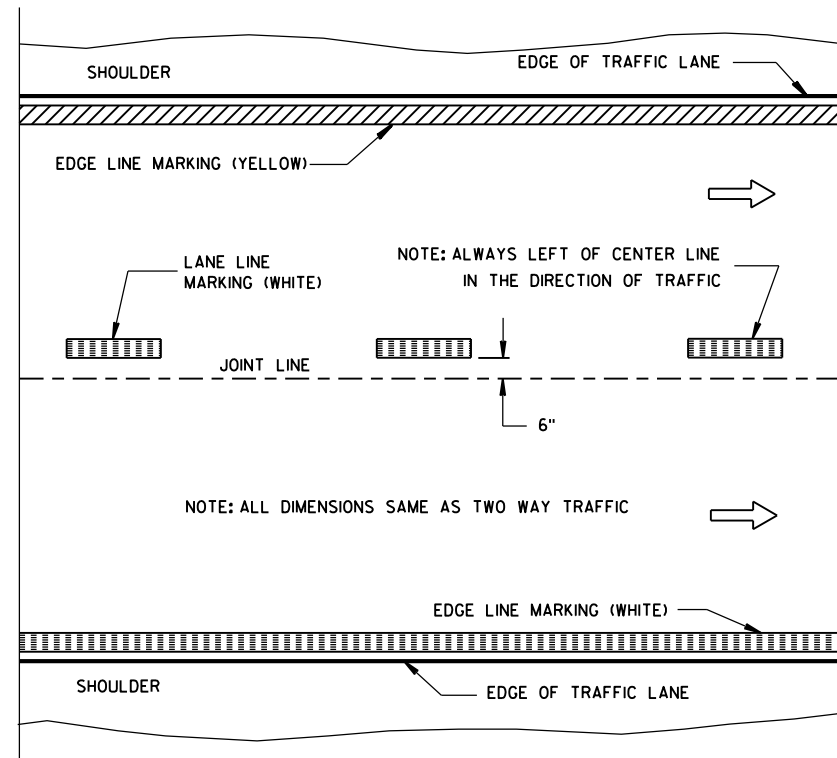
DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

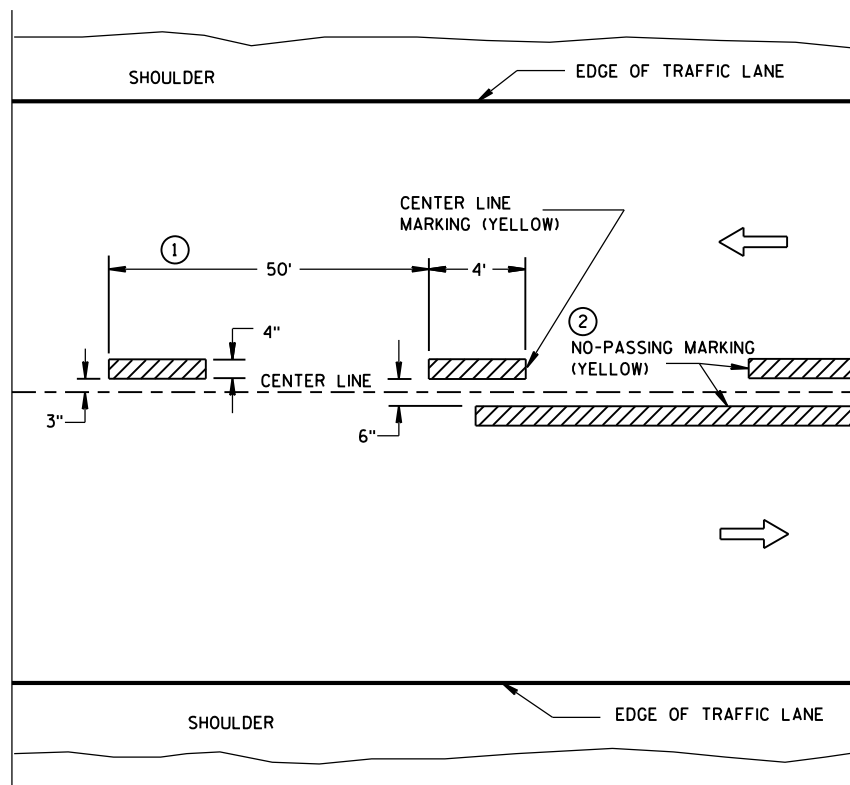


TWO WAY TRAFFIC

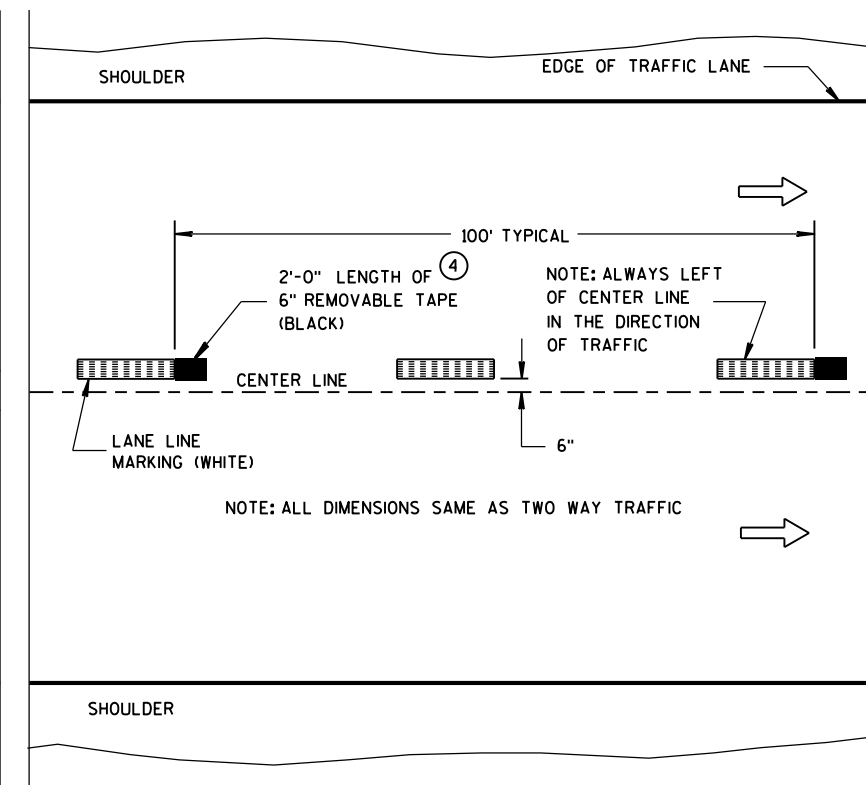


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

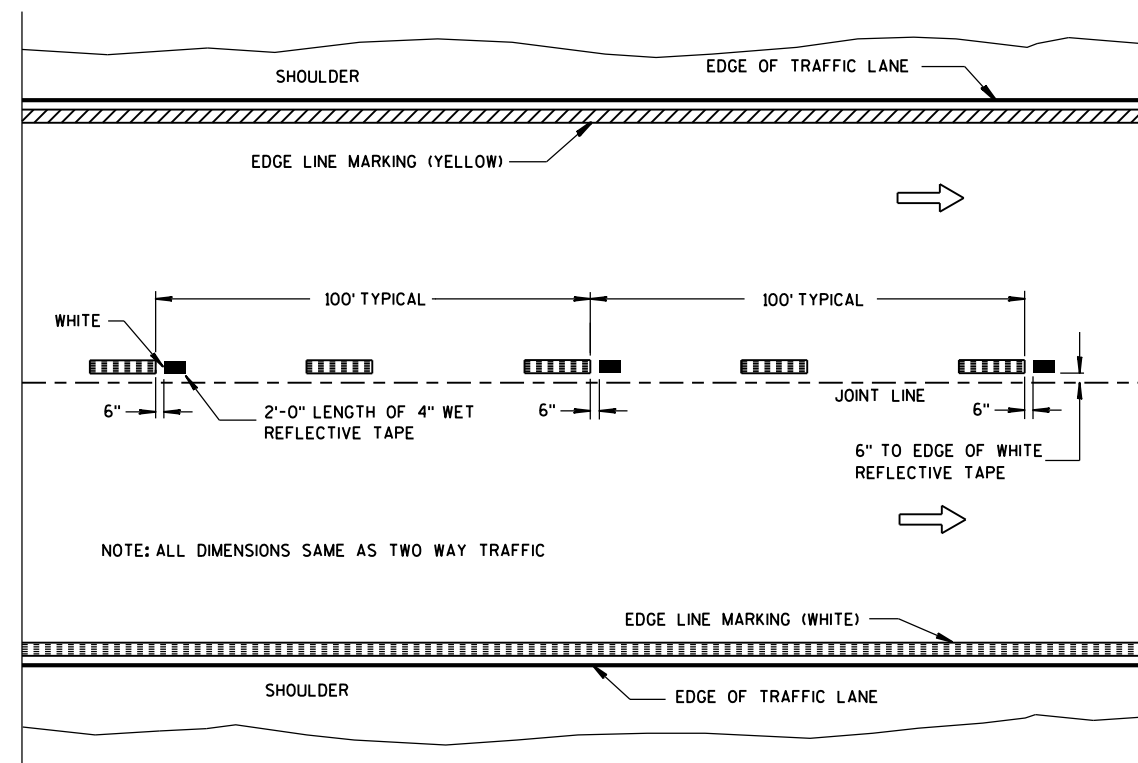
GENERAL NOTES

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

- ① HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- ② NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
- ③ NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- ④ CONCRETE ONLY.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

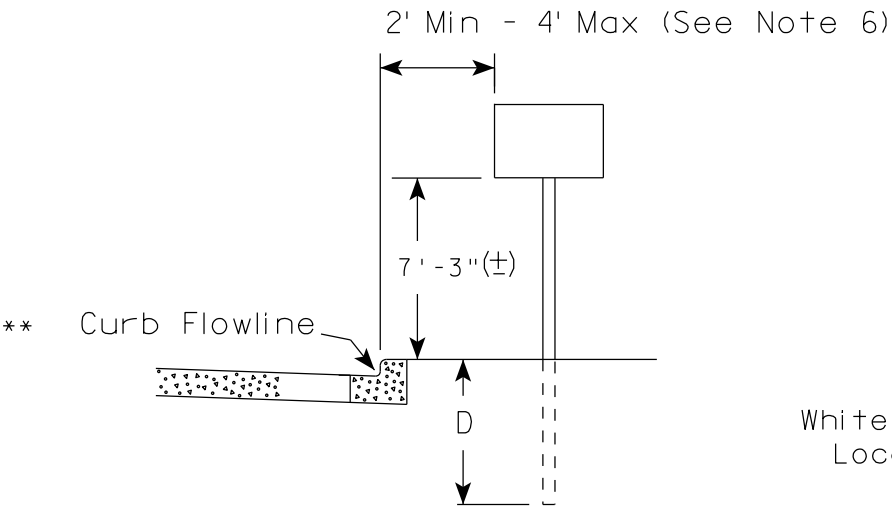
APPROVED

5-13-2013
DATE

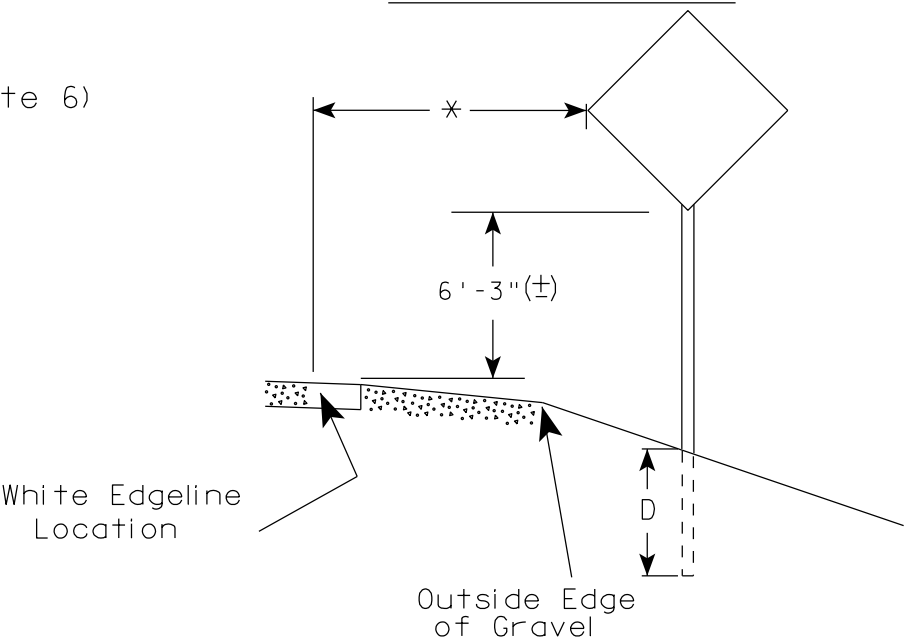
FHWA

/S/ Travis Feltes
STATE TRAFFIC E 52

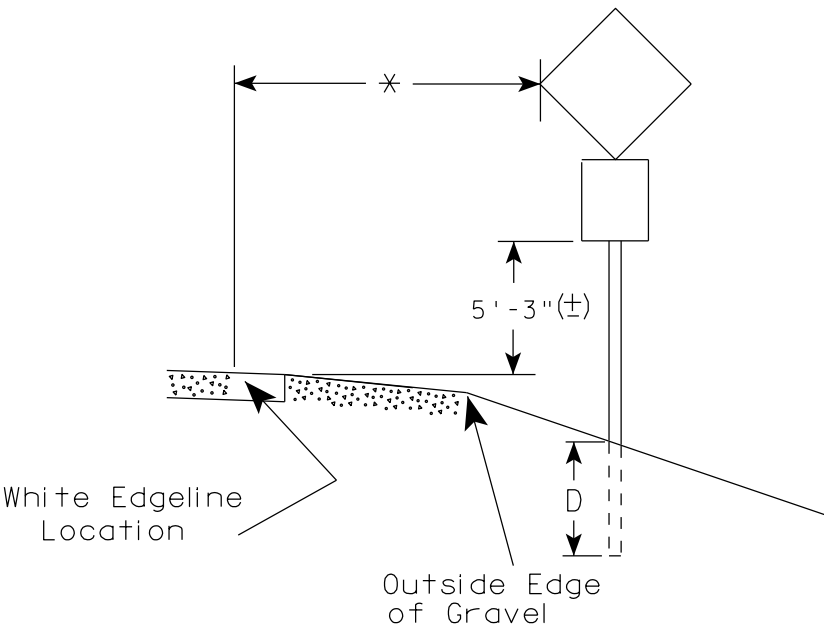
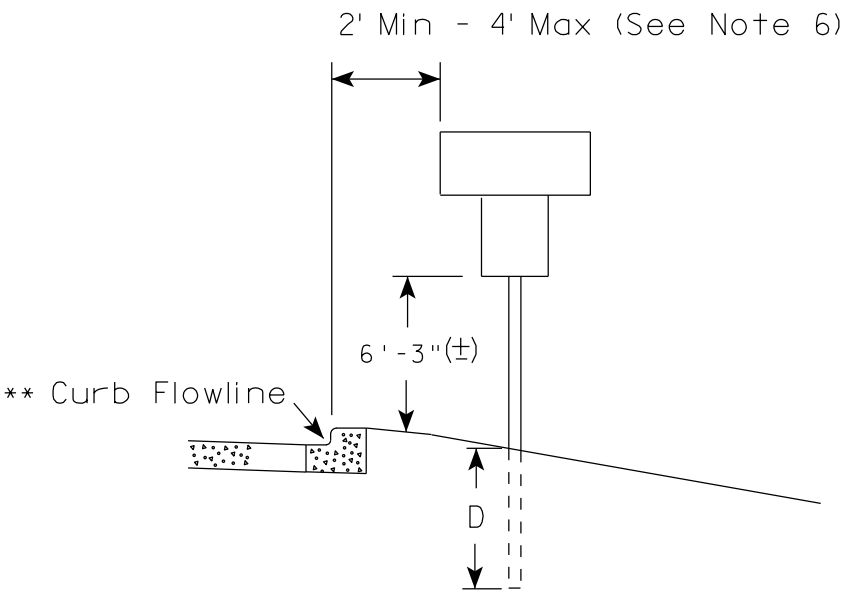
URBAN AREA



RURAL AREA (See Note 2)



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



POST EMBEDMENT DEPTH

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

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

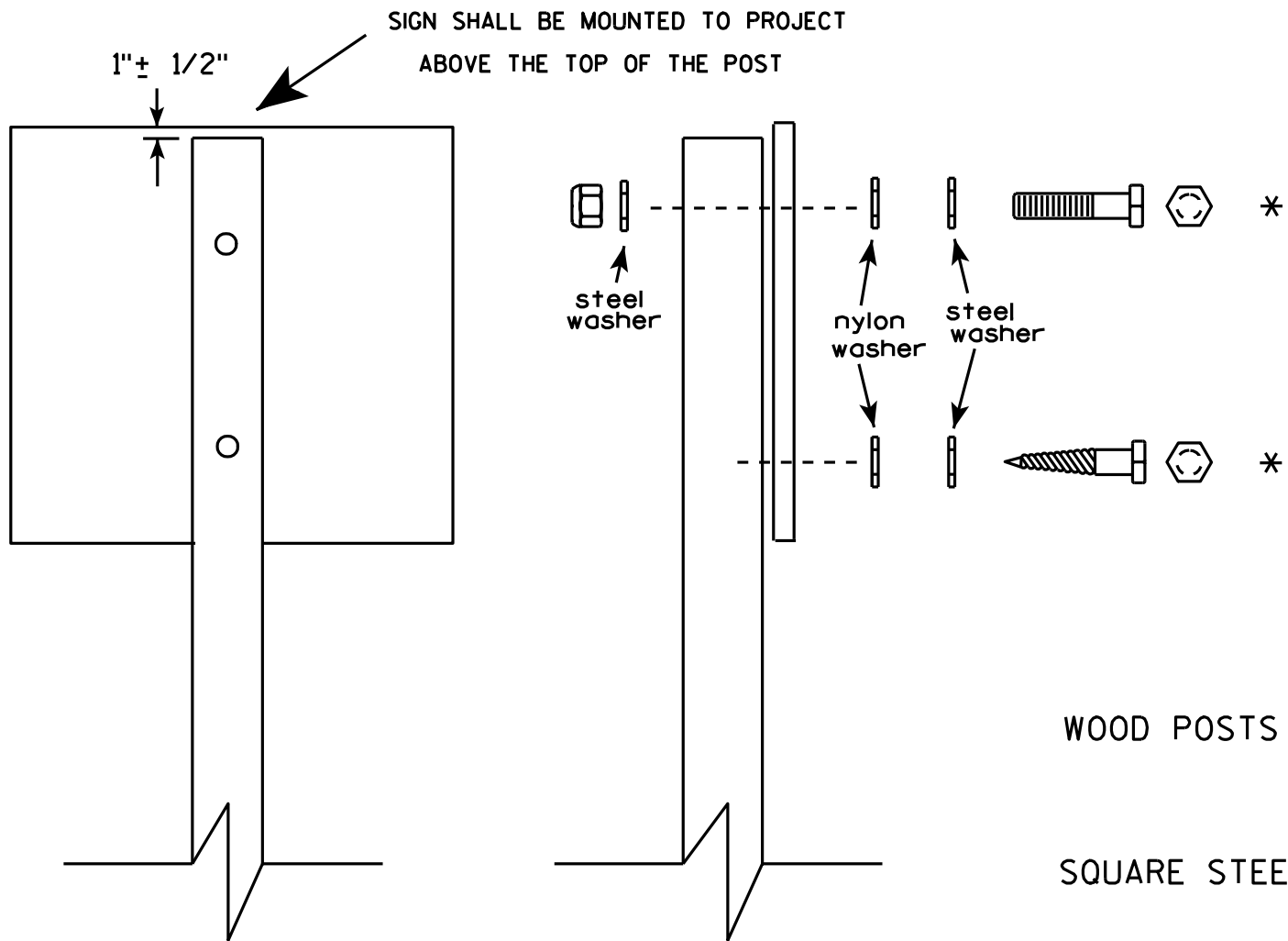
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

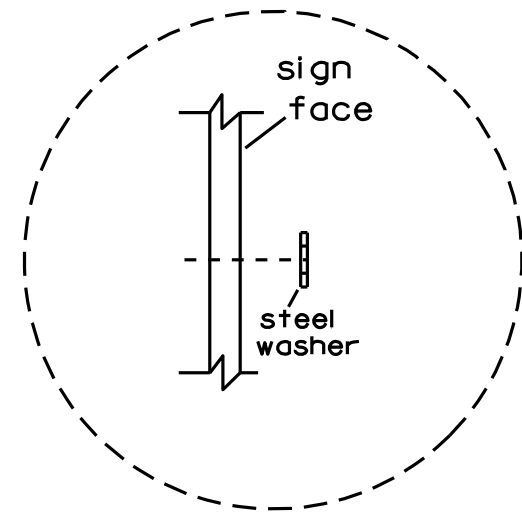


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

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

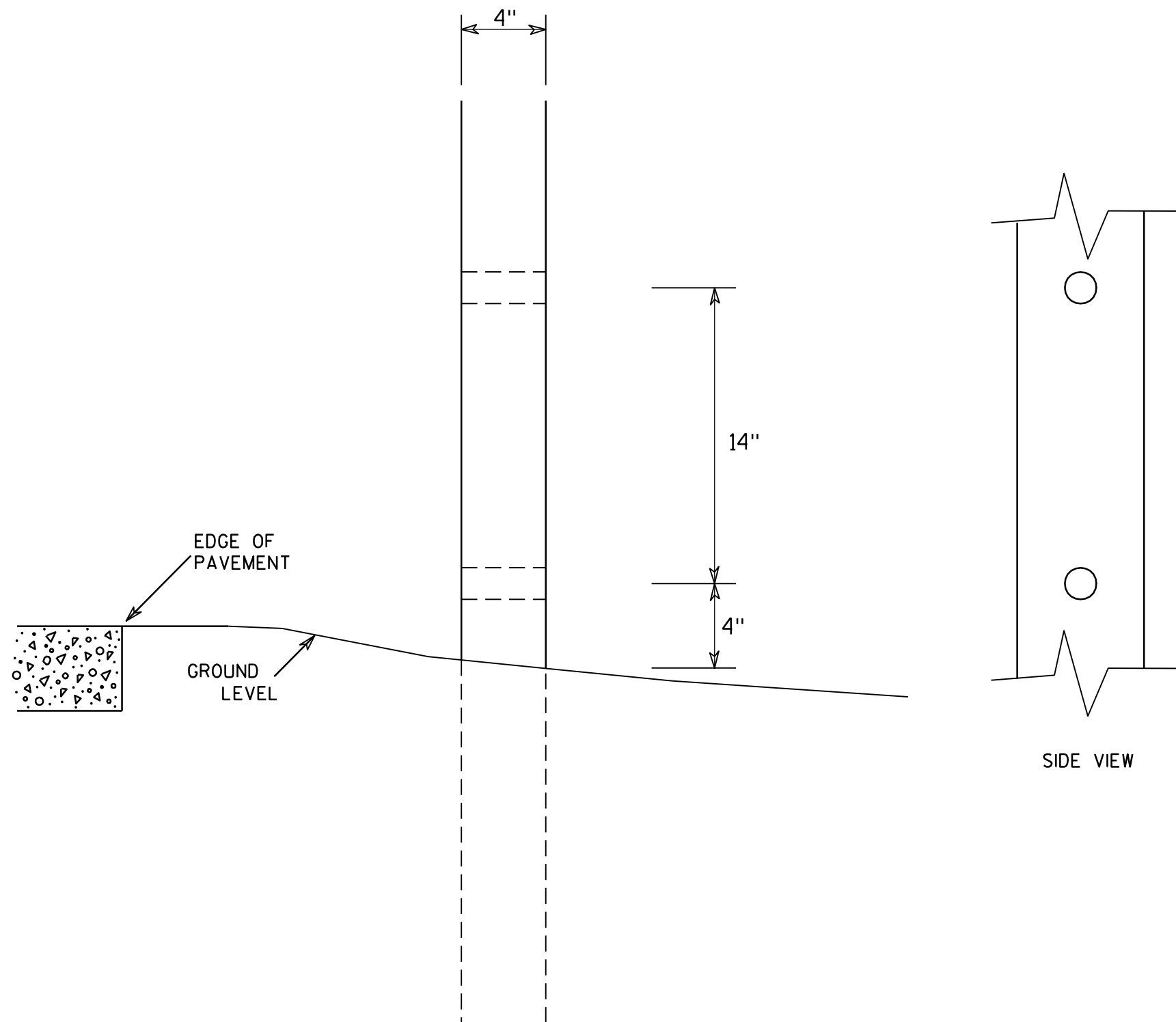


Washer Placement when Sign Has Other Than Type H or Type F Face

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

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

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

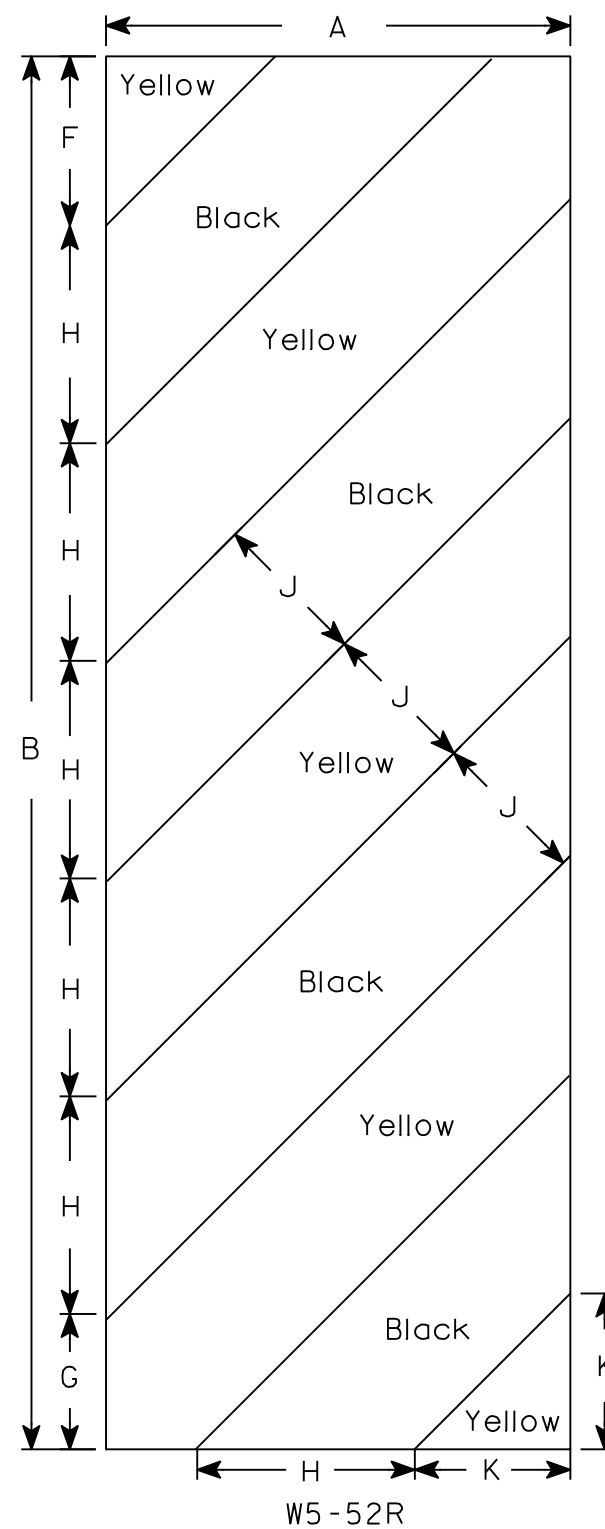
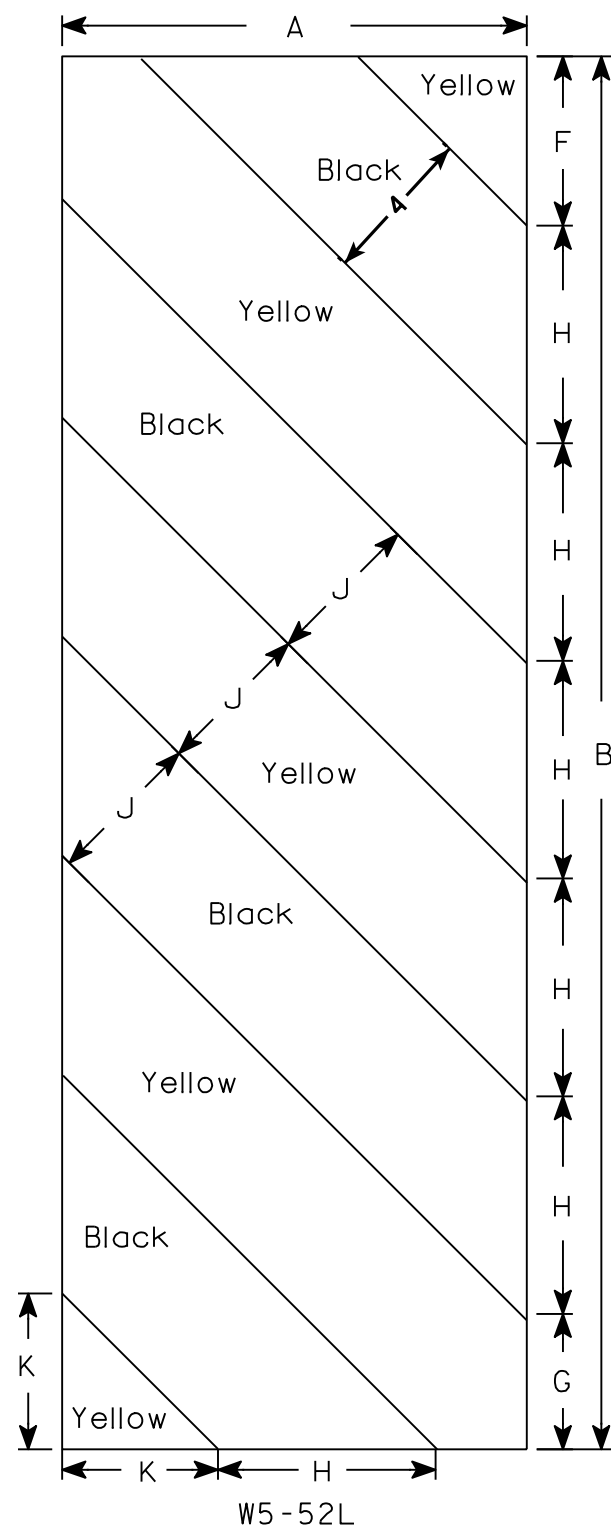
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 55

E



NOTES

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

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 56

E



DESIGN LOADING _____	HL-93
INVENTORY RATING FACTOR _____	1.09
OPERATING RATING FACTOR _____	1.42
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) —	250 KIPS

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY, SLAB	f'c = 4000 psi
ALL OTHER	f'c = 3500 psi
HIGH STRENGTH BAR STEEL REINFORCEMENT	fy = 60,000 psi
HIGH STRENGTH STRUCTURAL STEEL (A.S.T.M. A709 GRADE 50)	fy = 50,000 psi
HIGH STRENGTH STRUCTURAL CARBON STEEL (A.S.T.M. A709 GRADE 36)	fy = 36,000 psi

FOUNDATIONS

WIDENED ABUTMENTS SUPPORTED ON HP 10X42 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 60* TONS PER PILE AS REQUIRED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 50' LONG AT THE SOUTH ABUTMENT AND 35' LONG AT THE NORTH ABUTMENT. PILE POINTS REQUIRED.

WIDENED PIERS SUPPORTED ON HP 10X42 STEEL PILING WITH A
REQUIRED DRIVING RESISTANCE OF 140* TONS PER PILE AS REQUIRED
BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 25' LONG
AT PIER 1, 9' LONG AT PIER 2, 25' LONG AT PIER 3 AND 9' LONG
AT PIER 4. PILE POINTS REQUIRED. PREBORING IS REQUIRED AT PIER
2 TO AN ELEVATION OF 730.00' AND AT PIER 4 TO AN ELEVATION
OF 732.50'.

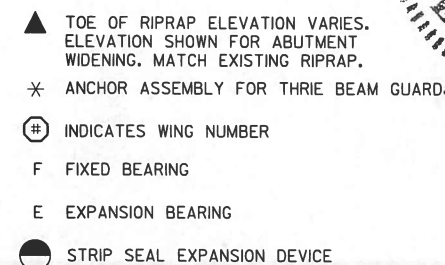
* THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC DATA:

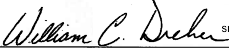
ADT (2016) = 3300
ADT (2036) = 4270
DESIGN SPEED = 35 MPH

LIST OF DRAWINGS:

SEE SHEET 2 FOR COMPLETE LIST OF DRAWINGS

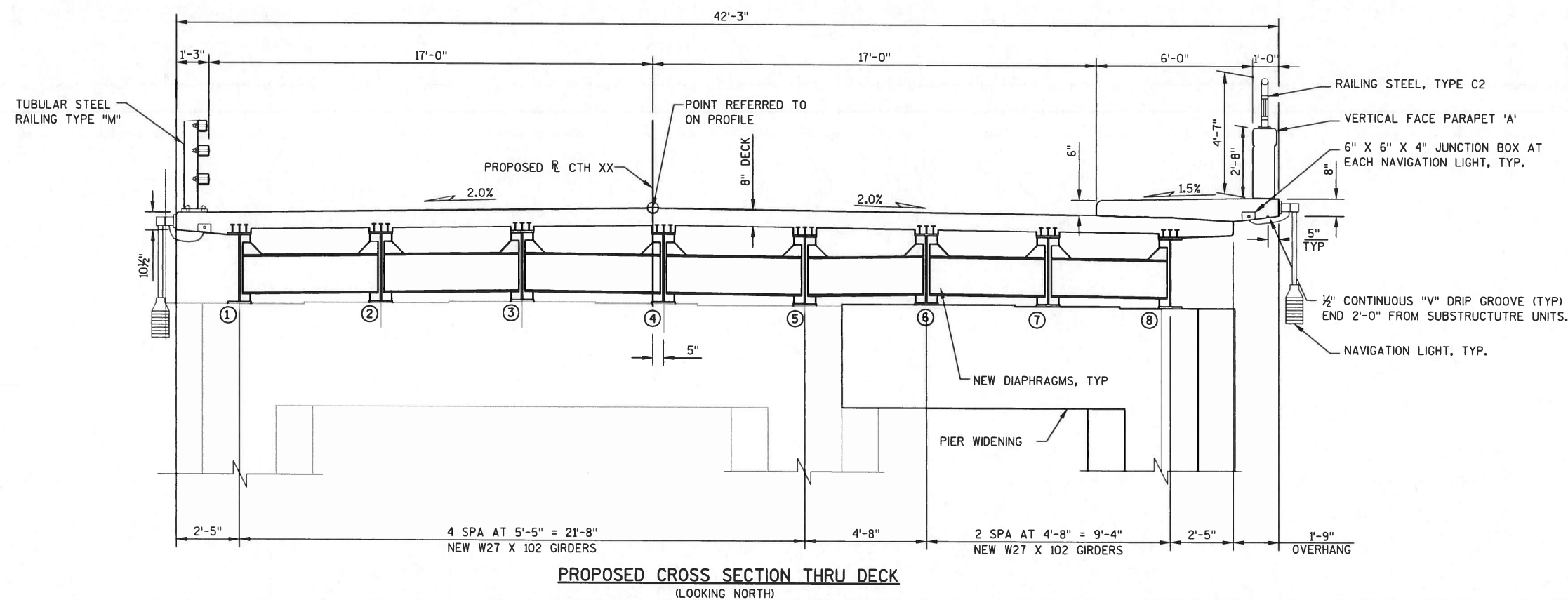
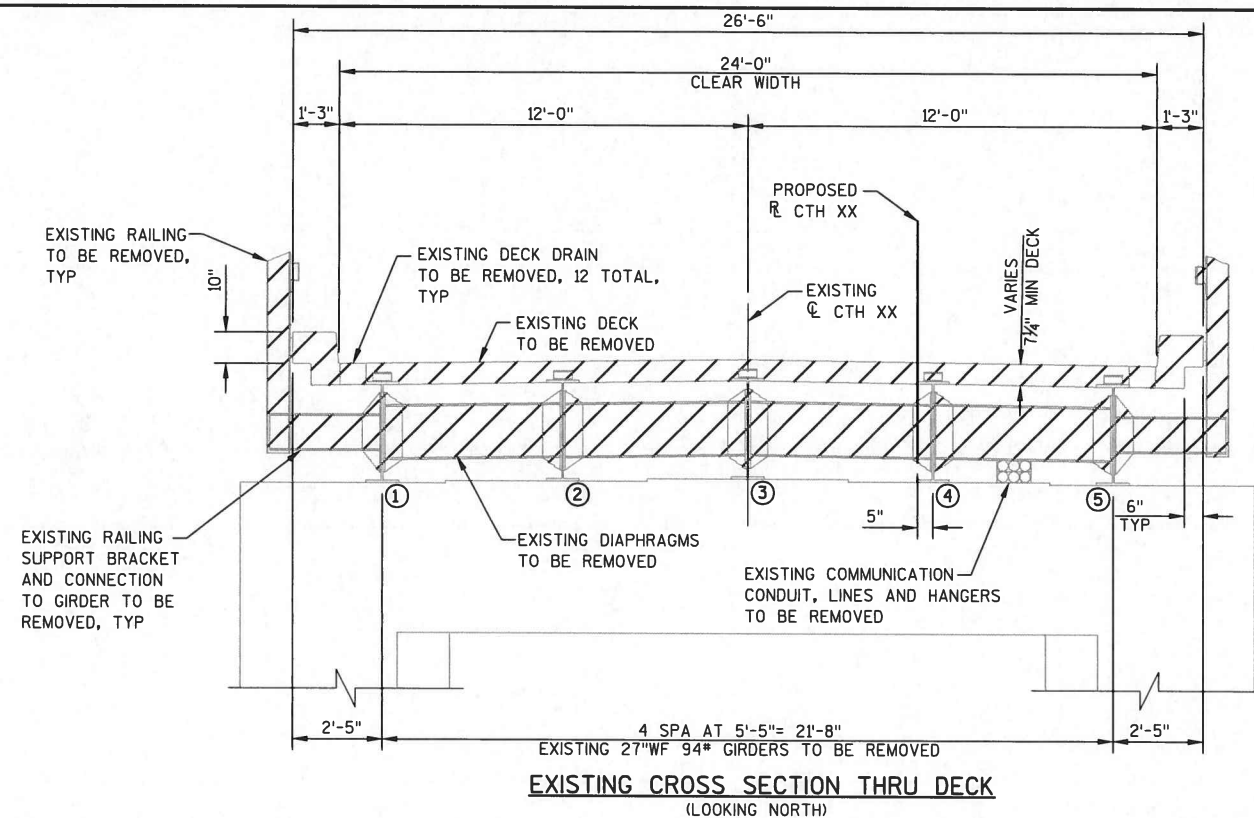


BRIDGE OFFICE CONTACT
WILLIAM DREHER, P.E.
TELEPHONE: (608) 266-8489
CONSULTANT CONTACT
GARY RUCHTI, P.E.
TELEPHONE: (608) 273-6380

NO.	DATE	REVISION		BY
		Mead & Hunt, Inc. 2440 Deming Way Middleton, WI 53562 608.273.6380 www.meadhunt.com		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION				
ACCEPTED	 William C. Dreher ^{SDR}		03/16/16	
CHIEF STRUCTURES DESIGN ENGINEER DATE				
STRUCTURE B-69-3				
CTH XX OVER FOX RIVER				
COUNTY	WAUSHARA	TOWN/CITY/VILLAGE	AURORA	
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS				
DESIGNED BY	MKG	DESIGN CK'D.	MJB	DRAWN BY JAK / MJB
			PLANS CK'D.	GAR
GENERAL PLAN			SHEET 1 OF 40 57	

LIST OF DRAWINGS:

- 1 GENERAL PLAN
- 2 TYPICAL SECTIONS AND LIST OF DRAWINGS
- 3 QUANTITIES AND GENERAL NOTES
- 4 TYPICAL DETAILS
- 5 SUBSURFACE EXPLORATION
- 6 SOUTH ABUTMENT REMOVAL LIMITS
- 7 SOUTH ABUTMENT
- 8 SOUTH ABUTMENT WING DETAILS
- 9 SOUTH ABUTMENT DETAILS
- 10 NORTH ABUTMENT REMOVAL LIMITS
- 11 NORTH ABUTMENT
- 12 NORTH ABUTMENT WING DETAILS
- 13 NORTH ABUTMENT DETAILS
- 14 PIER 1
- 15 PIER 2
- 16 PIER 3
- 17 PIER 4
- 18 PIER DETAILS 1
- 19 PIER DETAILS 2
- 20 GIRDER FRAMING PLAN
- 21 GIRDER DETAILS
- 22 SPLICE DETAILS AND POURING DIAGRAM
- 23 STEEL GIRDER DETAILS
- 24 FIXED BEARING DETAILS - PIER 2
- 25 EXPANSION BEARING DETAILS - PIERS 1, 3 & 4
- 26 EXPANSION BEARING DETAILS - ABUTMENTS
- 27 SUPERSTRUCTURE PLAN -1
- 28 SUPERSTRUCTURE PLAN - 2
- 29 SUPERSTRUCTURE DETAILS
- 30 BLOCKING DIAGRAM & TOP OF STEEL
- 31 DEFLECTION TABLES
- 32 DECK ELEVATION TABLES
- 33 SUPERSTRUCTURE DETAILS
- 34 STRIP SEAL EXPANSION JOINT DETAILS
- 35 STRIP SEAL COVER PLATES
- 36 TUBULAR STEEL RAILING TYPE 'M'
- 37 VERTICAL FACE PARAPET TYPE 'A'
- 38 COMBINATION RAILING TYPE C2
- 39 NAVIGATIONAL LIGHTING DETAILS
- 40 SLOPE PROTECTION DETAILS

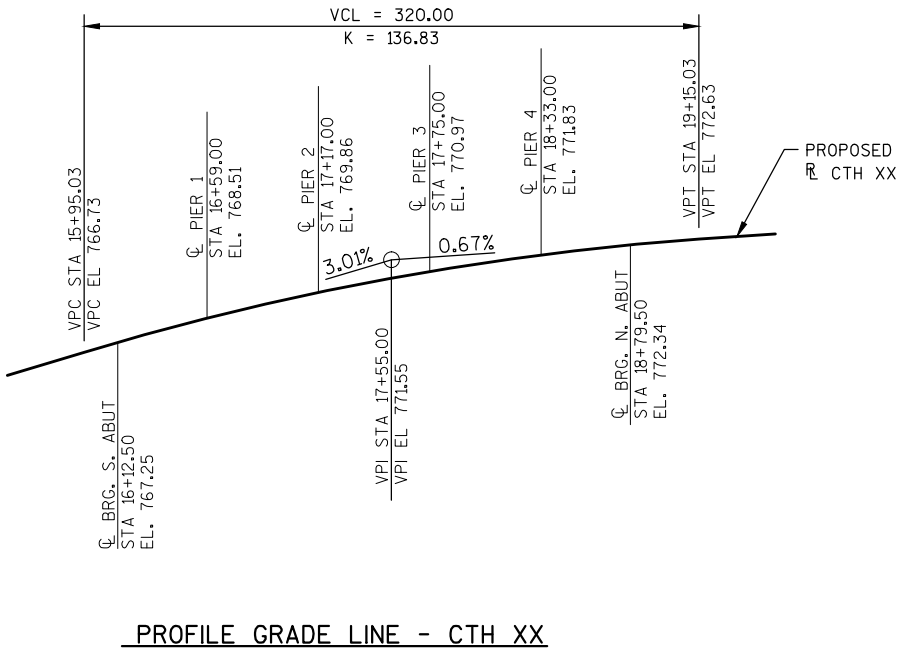


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MJB	PLANS CK'D. GAR
TYPICAL SECTIONS AND LIST OF DRAWINGS			SHEET 58

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	S ABUT	PIER 1	PIER 2	PIER 3	PIER 4	N ABUT	SUPER	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 17+46	LS	---	---	---	---	---	---	---	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-69-3	LS	---	---	---	---	---	---	---	1
206.5000	COFFERDAMS B-69-3	LS	---	---	---	---	---	---	---	1
210.0100	BACKFILL STRUCTURE	CY	110	---	---	---	---	100	---	210
502.0100	CONCRETE MASONRY BRIDGES	CY	40	25	28	29	28	41	353	544
502.1100	CONCRETE MASONRY SEAL	CY	---	17	17	17	17	---	---	68
502.3100	EXPANSION DEVICE B-69-3	LS	---	---	---	---	---	---	---	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	10	---	---	---	---	11	1310	1331
502.3210	PIGMENTED SURFACE SEALER	SY	5	---	---	---	---	5	108	118
502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EA	60	18	18	18	18	64	---	196
502.5010	MASONRY ANCHORS TYPE L NO. 6 BARS	EA	18	---	---	---	---	18	---	36
502.5025	MASONRY ANCHORS TYPE L NO. 9 BARS	EA	---	8	8	8	8	---	---	32
502.5030	MASONRY ANCHORS TYPE L NO. 10 BARS	EA	9	---	---	---	---	8	---	17
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1440	610	610	610	610	1490	---	5370
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2620	3620	4360	4460	4310	2610	71150	93130
506.0605	STRUCTURAL STEEL HS	LB	---	---	---	---	---	---	263360	263360
506.3015	WELDED STUD SHEAR CONNECTORS 7/8x6-INCH	EA	---	---	---	---	---	---	6048	6048
506.5000	BEARING ASSEMBLIES FIXED B-69-3	EA	---	---	---	---	---	---	8	8
506.6000	BEARING ASSEMBLIES EXPANSION B-69-3	EA	---	---	---	---	---	---	24	24
509.1500	CONCRETE SURFACE REPAIR	SF	---	---	---	---	---	28	---	28
513.4061	RAILING TUBULAR TYPE M B-69-3	LF	---	---	---	---	---	---	272	272
513.7011	RAILING STEEL TYPE C2 B-69-3	LF	12	---	---	---	---	12	270	294
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	---	---	---	---	11	---	22
517.0600	PAINTING EPOXY SYSTEM B-69-3	LS	---	---	---	---	---	---	---	1
550.0200	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	---	---	48	---	48	---	---	96
550.0500	PILE POINTS	EA	9	9	---	9	---	8	---	35
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	450	225	81	225	81	280	---	1342
606.0300	RIPRAP HEAVY	CY	160	---	---	---	---	255	---	415
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	87	---	---	---	---	81	---	168
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EA	1	---	---	---	---	1	---	2
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	320	---	---	---	---	460	---	780
SPV.0060.01	FABRICATED EXPANSION BEARING ASSEMBLIES B-69-3	EA	---	---	---	---	---	---	16	16
SPV.0105.02	NAVIGATIONAL LIGHTS	LS	---	---	---	---	---	---	---	1
★ SPV.0195.01	HAULING AND DISPOSAL OF CONTAMINATED SEDIMENT	TON	---	80	75	85	75	---	---	315
	NON BID ITEMS									
	FILLER	SIZE							1/2" & 3/4"	

BENCH MARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
1	14+90.29	23.97' RT	TOP TAG BOLT OF HYD	760.90
2	16+19.33	18.93' LT	CHISELED "+" ON WING	767.46

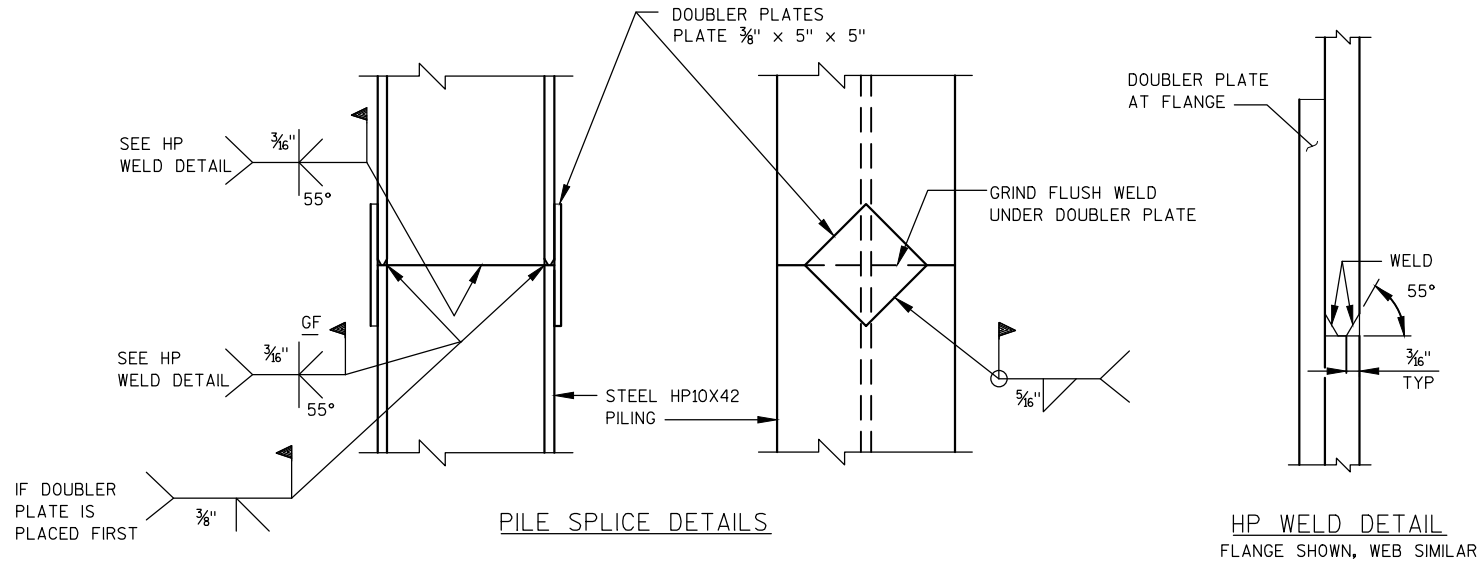


GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE NOTED.
- THE SLOPE OF FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC, TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1, ABUTMENT DETAILS AND SLOPE PROTECTION DETAILS.
- AT THE BACKFACE OF ABUTMENT ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.
- THE EXISTING STRUCTURE IS A 272.83' LONG BY 24.0' CLEAR ROADWAY WIDTH, FIVE SPAN STEEL GIRDER STRUCTURE (B-69-3).
- THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION OF STRUCTURE.
- PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND SIDES OF THE DECK AS SHOWN ON SHEET 4.
- ALL STATIONS AND ELEVATIONS ARE IN FEET.
- THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
- ALL FIELD CONNECTIONS SHALL BE MADE WITH ¾" DIAMETER FRICTION TYPE HIGH-TENSILE STRENGTH BOLTS UNLESS SHOWN OR NOTED OTHERWISE.
- DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.
- VARIATIONS TO THE NEW GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.
- REMOVAL OF DECK, STEEL SUPERSTRUCTURE ELEMENTS, BEARINGS, PARTIAL REMOVAL OF ABUTMENTS AND PIERS AND ALL ASSOCIATED DEMOLITION SHALL BE PAID FOR AS "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STA 17+46)" AND PERFORMED TO THE LIMITS SHOWN IN THE PLANS.
- THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND STANDARD DETAILS DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR "1952".

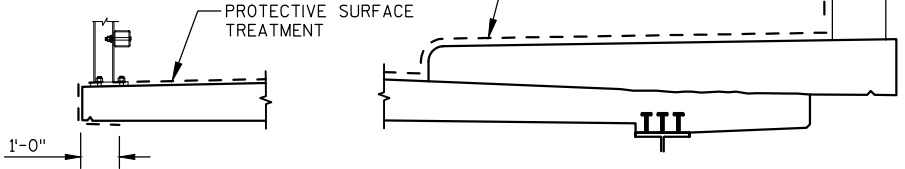
- ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1988 (NAVD88).
- THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE DECK ELEVATION TABLES SHEET.
- ALL CONCRETE REMOVAL NOT COVERED SHALL BE DEFINED BY A 1" DEEP SAW CUT.
- UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETER INTO NEW WORK, UNLESS SPECIFIED ELSE WHERE.
- CONCRETE SURFACE REPAIR REQUIRED AT NORTH ABUTMENT, SEE ABUTMENT DETAILS SHEET 10.
- EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM PRICE BID AS "EXPANSION DEVICE B-69-3".
- ★ HAULING AND DISPOSAL OF SOIL REMOVED FROM THE FOX RIVER SHALL BE PAID FOR UNDER THE BID ITEM "EXCAVATION, HAULING, AND DISPOSAL OF CONTAMINATED SEDIMENT".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
		DRAWN BY TAV	PLANS CK'D. GAR
QUANTITIES AND GENERAL NOTES		SHE 59	OF 40

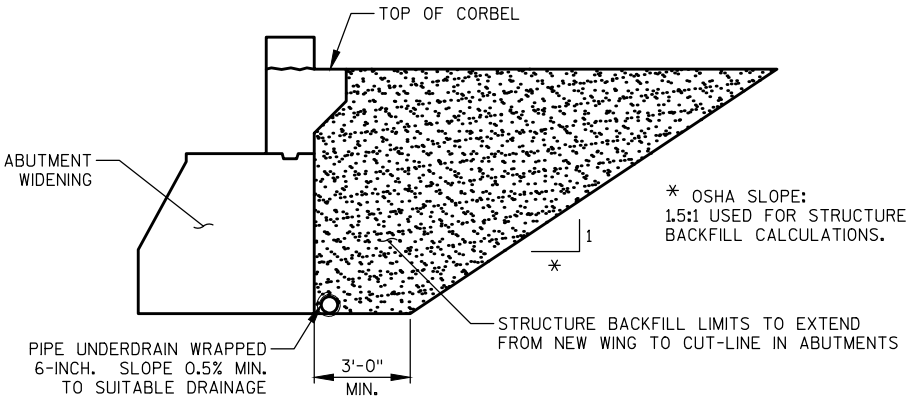


PROTECTIVE SURFACE TREATMENT
REQUIRED ON THE TOP SURFACE
OF THE PAVING BLOCK AT BOTH
ABUTMENTS.

PROTECTIVE SURFACE TREATMENT
REQUIRED ON FRONT FACE OF
WINGS 2 & 3, AND ON BACKWALL
FOR 1' FROM EDGE OF DECK AT
WEST EDGE.

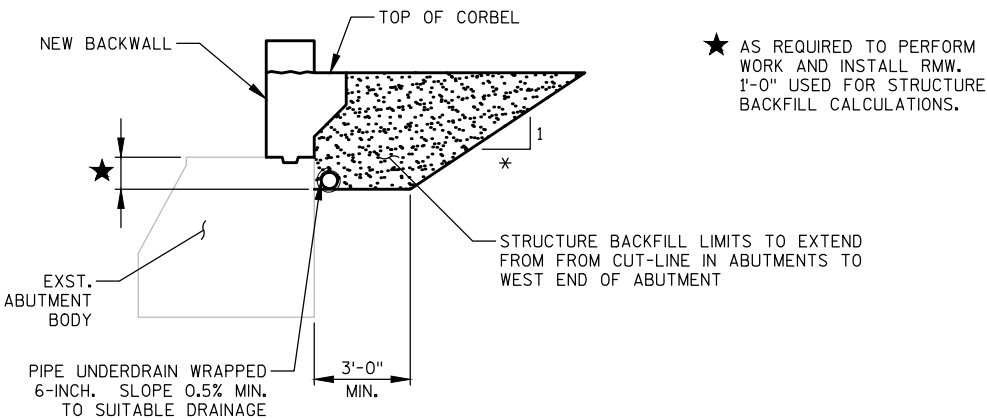


PROTECTIVE SURFACE TREATMENT DETAIL



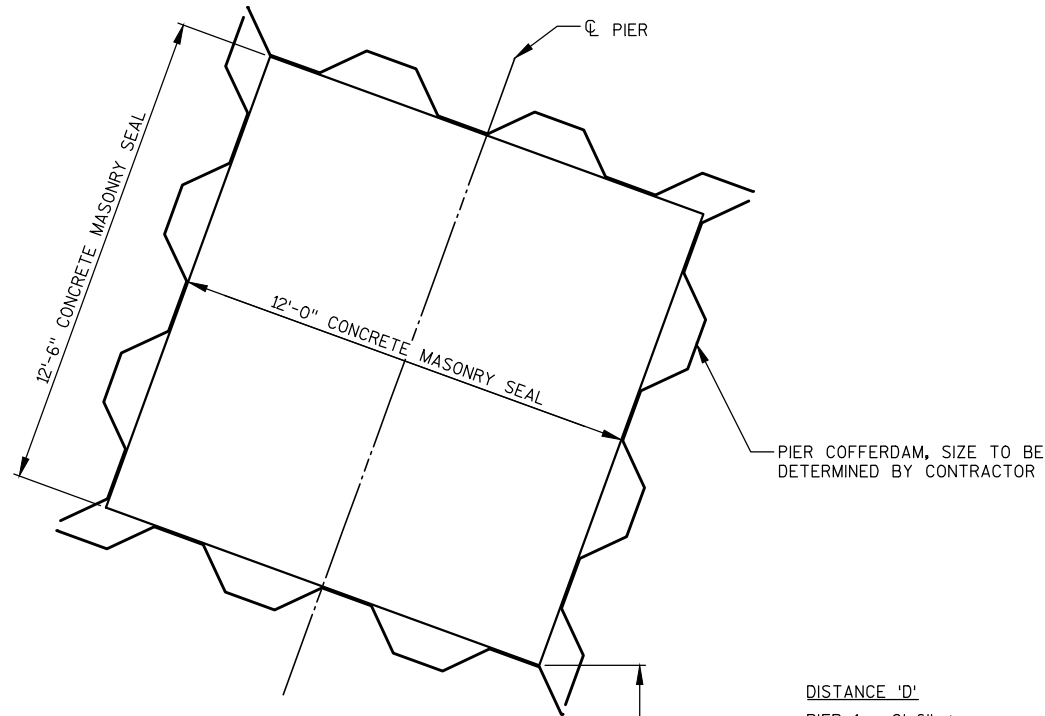
STRUCTURE BACKFILL DETAIL AT ABUTMENT WIDENING

(TYPICAL AT BOTH ABUTMENTS)



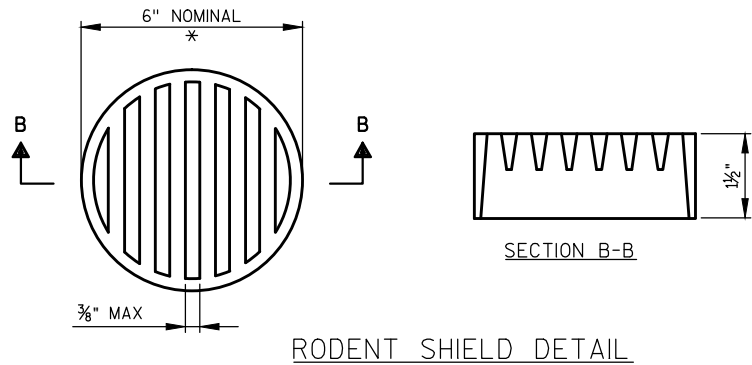
STRUCTURE BACKFILL DETAIL AT BACKWALL REPLACEMENT

(TYPICAL AT BOTH ABUTMENTS)



WATER MAIN CLEARANCE DETAIL

DISTANCE TO WATER MAIN MAY VARY AND IS
PROVIDED FOR INFORMATION ONLY.

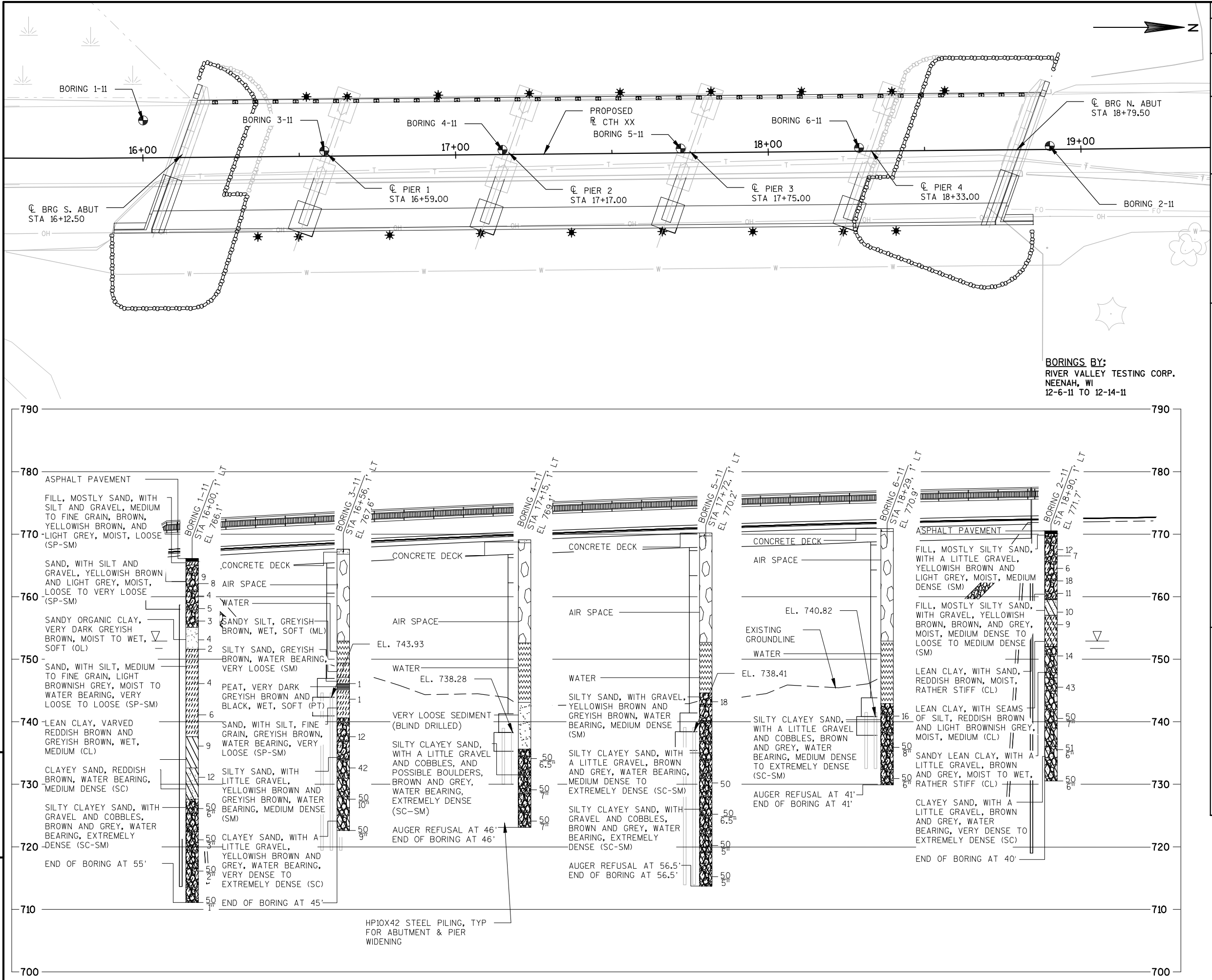


* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE
COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
	DRAWN BY	MJB	PLANS CK'D. GAR
TYPICAL DETAILS		SHE: 60	OF 40



STATE PROJECT NUMBER

6862-01-70

ABBREVIATIONS

F—Fine
Ws—Weathered

M—Medium
So—Sound

C—Coarse

MATERIAL SYMBOLS

Asphalt
Concrete
Gravel

Silt
Peat
Clay

Sand
Air
Water

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

Elev.
Boring No.
Sta.

Unconfined
STRENGTH → 7.7
Blows Per Ft.
USING 140# WT.
FALLING 30"

Wash Sample

Shelby Tube —S.T.

Ground Water

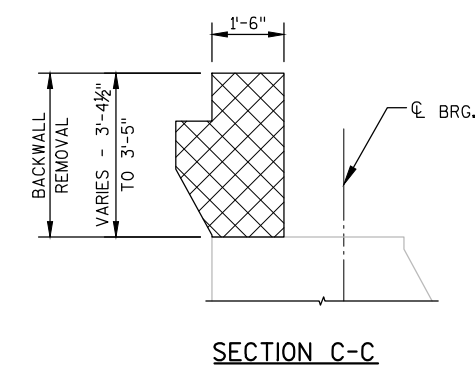
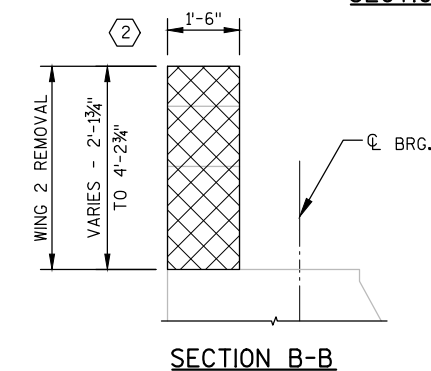
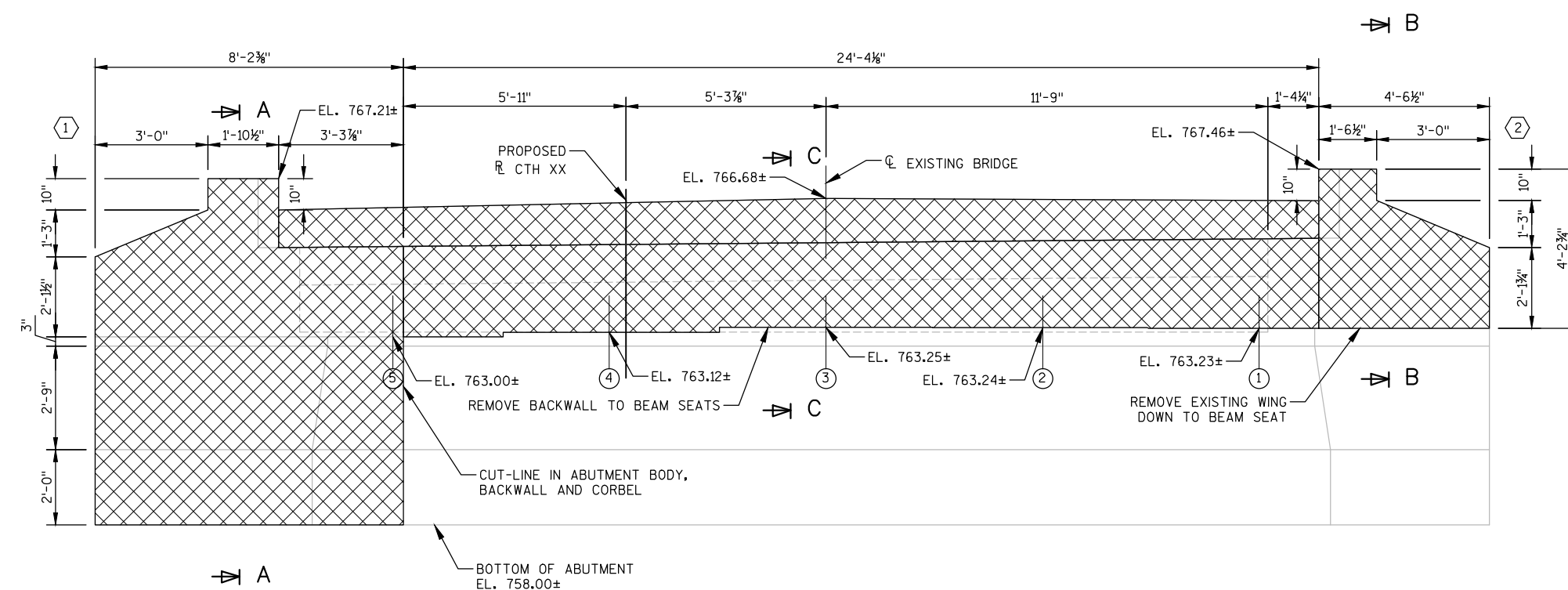
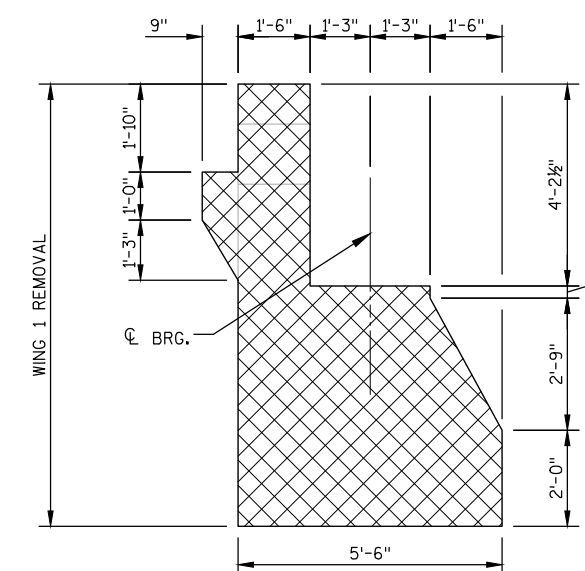
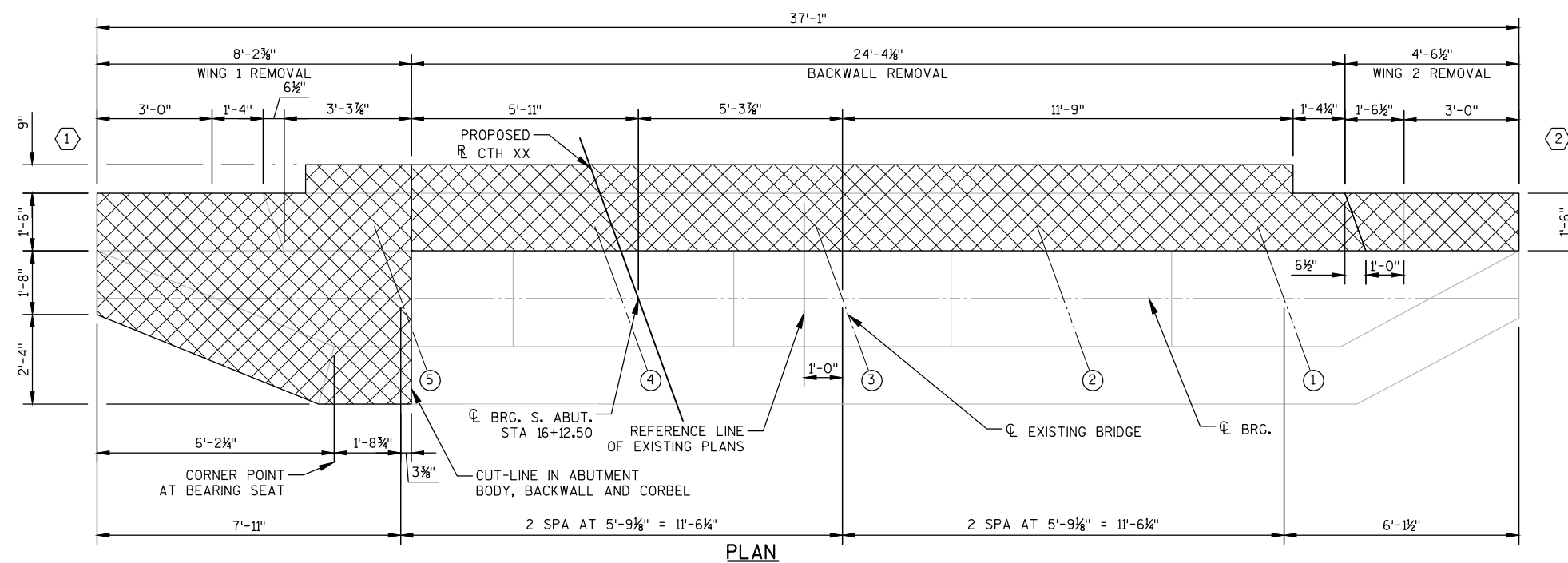
No Ground Water
OBSERVED ABOVE
THIS ELEVATION

Sandy Gravel
F.
Boulders or
COBBLES
Sand
Silty Clay
So
Limestone

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.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		TAV	PLANS CK'D. GAR
SUBSURFACE EXPLORATION		SHE 61 40	



NOTES

SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK, UNLESS NOTED OTHERWISE.

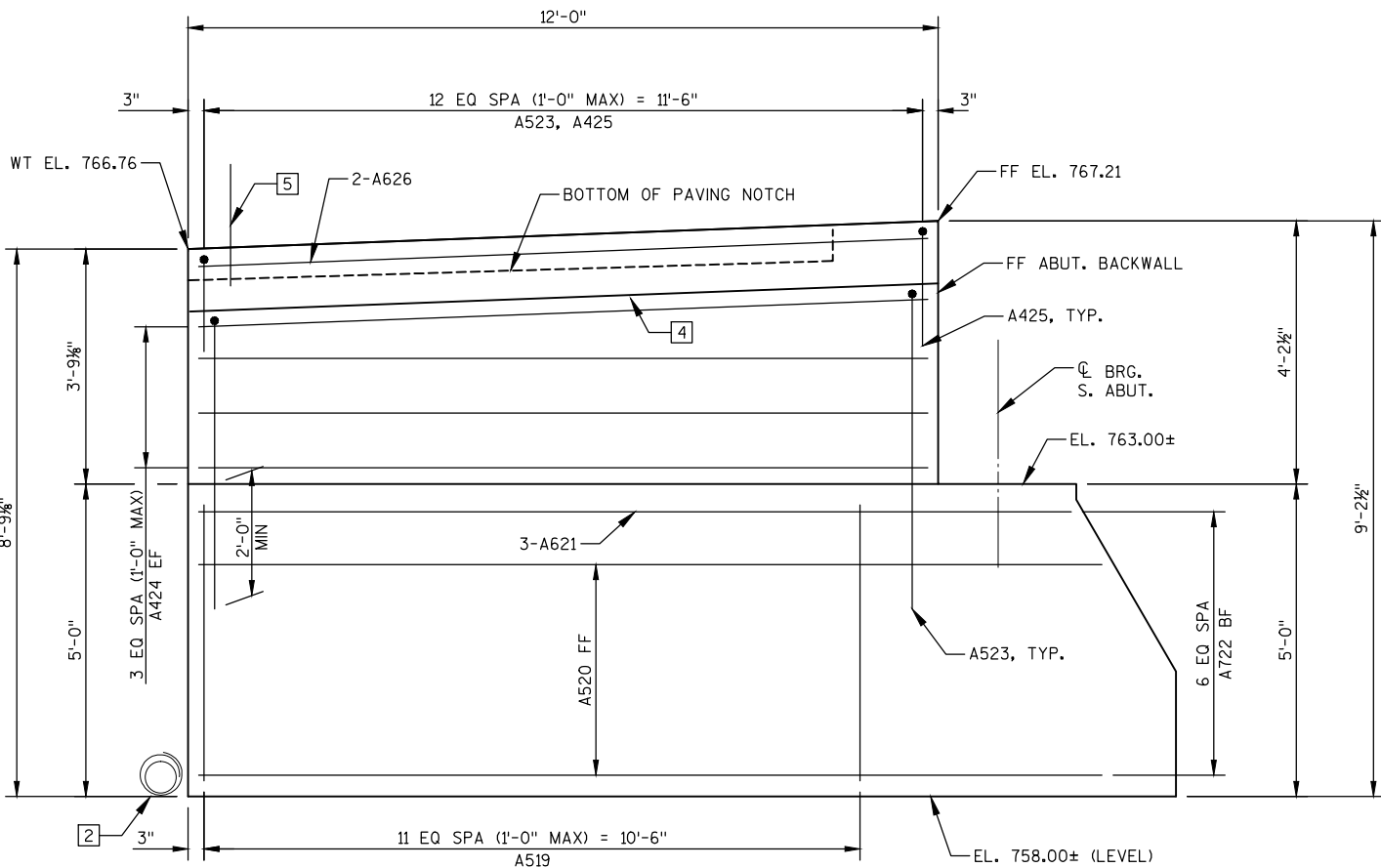
ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MIN. ALL AREAS OF NEW TO EXIST. CONTACT.

INDICATES REMOVAL LIMITS

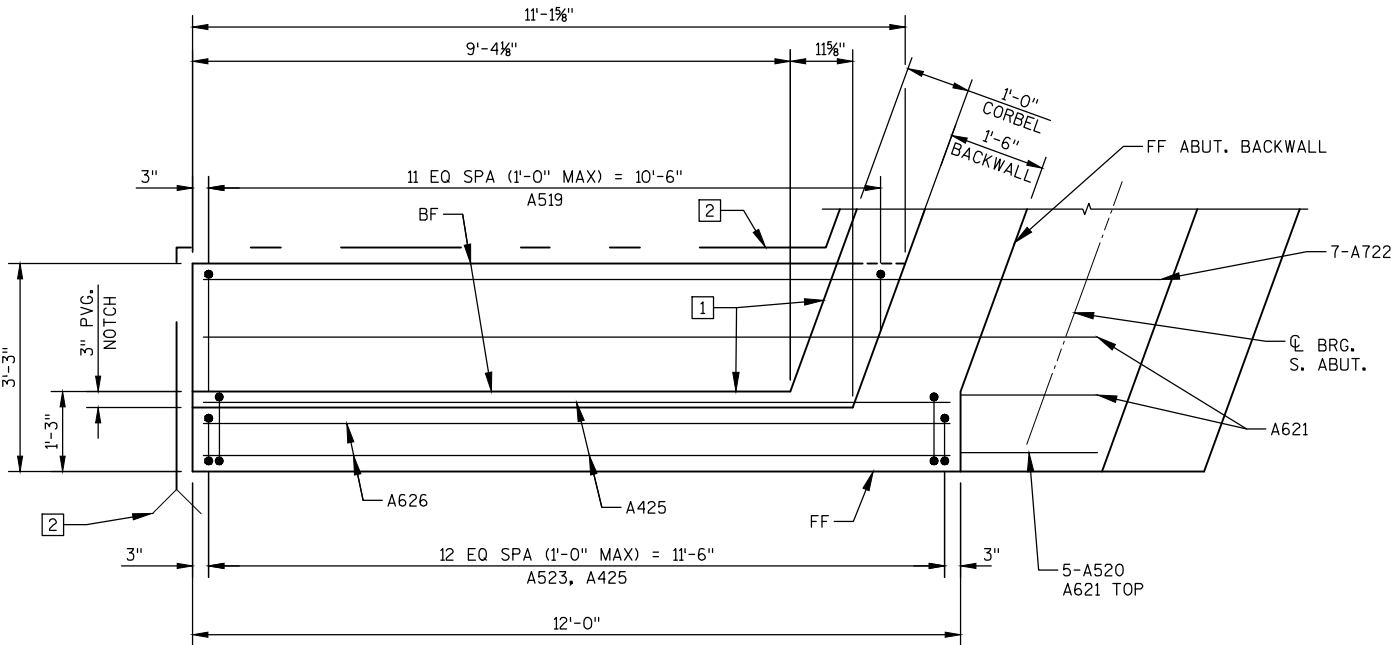
INDICATES GIRDER NUMBER

INDICATES WING NUMBER

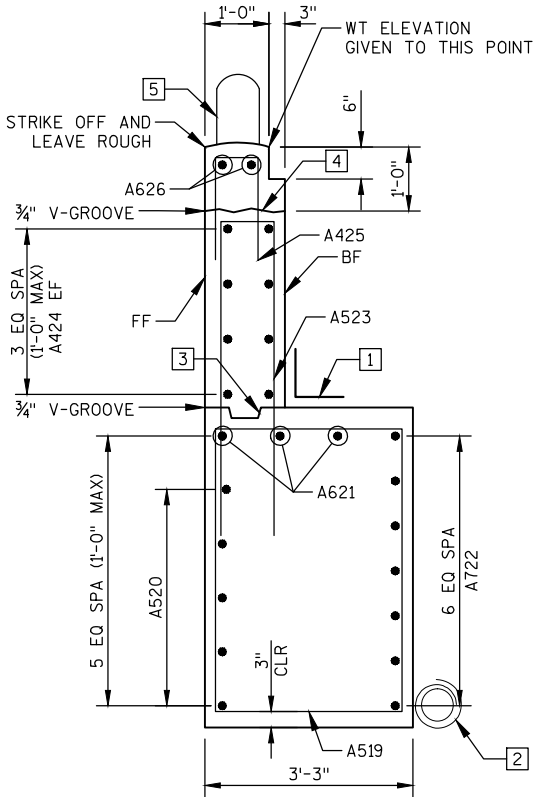
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MJB	PLANS CK'D. GAR
SOUTH ABUTMENT REMOVAL LIMITS			SHE 62 OF 40



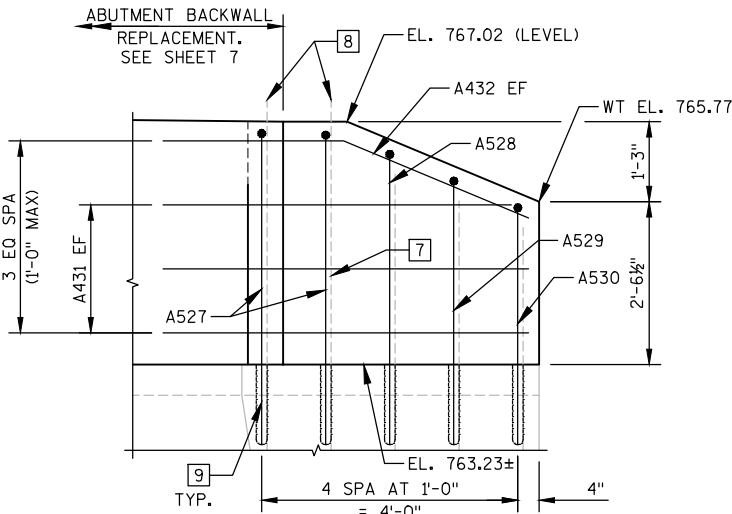
WING 1 ELEVATION



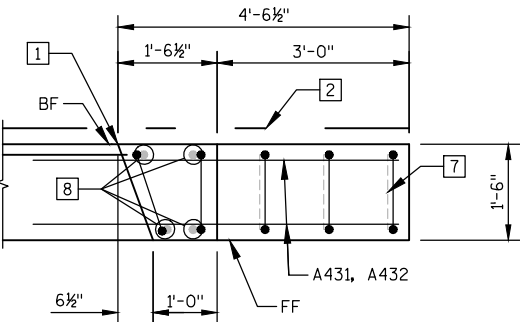
WING 1 PLAN



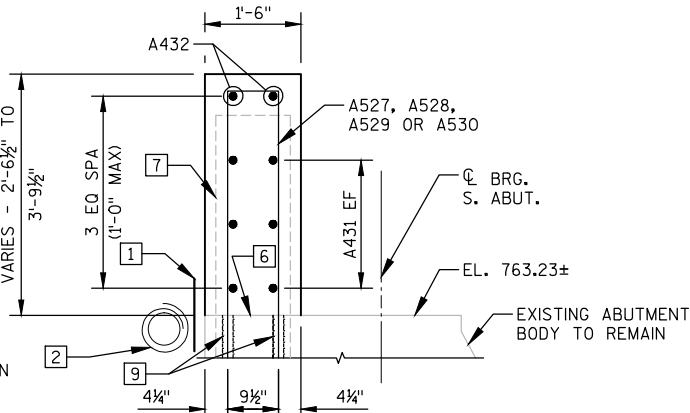
WING 1 SECTION



WING 2 ELEVATION



WING 2 PLAN



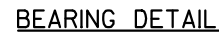
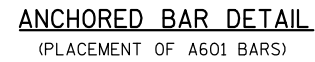
WING 2 SECTION

NOTES:

- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE.
- PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN. SEE SHEET 4 FOR RODENT SHIELD DETAILS.
- OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYED WITH MEMBRANE ON BACKFACE.
- CONSTRUCTION JOINT: POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.
- PARAPET REINFORCEMENT. SEE SHEET XX FOR DETAILS.
- ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MIN. ALL AREAS OF NEW TO EXIST. CONCRETE CONTACT.
- SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- TRIM EXIST. REINF. TO 2" CLEAR & EXTEND REMAINING INTO NEW WORK.
- MASONRY ANCHORS TYPE L NO. 5 BARS. EMBED 1'-0" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. REQUIRED WITH A527, A528, A529 & A530.

FF = FRONT FACE
BF = BACK FACE

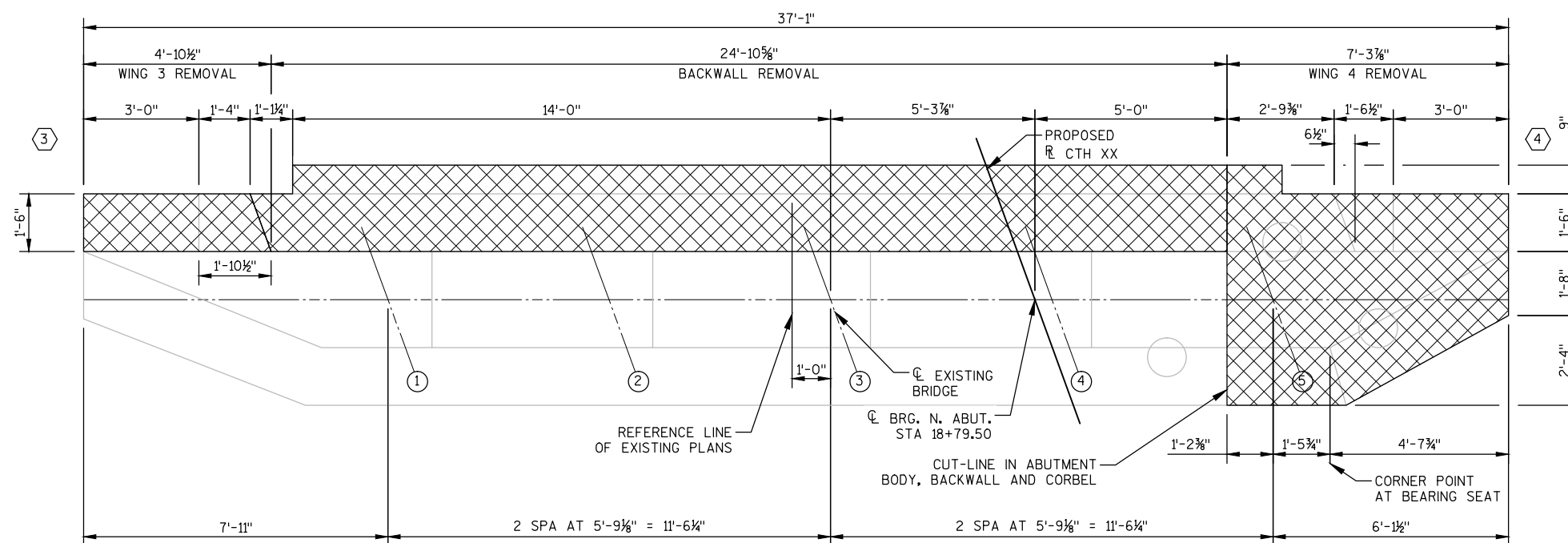
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
		DRAWN BY	MJB
		PLANS CK'D.	GAR
SOUTH ABUTMENT WING DETAILS		SHE 64 OF 40	



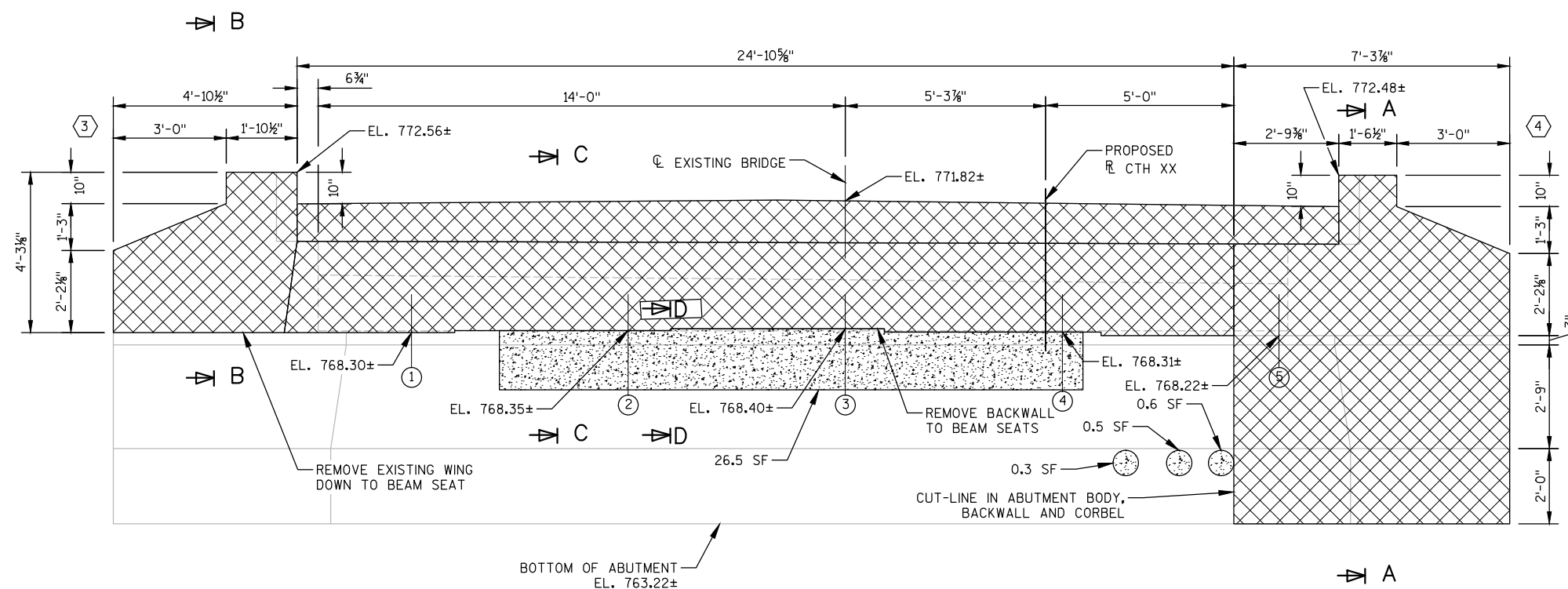
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.

- 1 ROUGHEN SURFACE OF CONCRETE $\frac{3}{4}$ " DEEP MIN. ALL AREAS OF NEW TO EXIST. CONCRETE CONTACT.
- 2 MASONRY ANCHORS TYPE L NO. 6 BARS. EMBED 1'-3" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.
- 3 AT EXISTING BEAM SEATS EMBED ANCHORS INTO CONCRETE USING MASONRY ANCHORS TYPE L NO. 10 BARS. EMBED 1'-1" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.





PLAN

ELEVATION

NOTES

SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW
WORK, UNLESS NOTED OTHERWISE.

ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MIN. ALL AREAS OF
NEW TO EXIST. CONTACT.

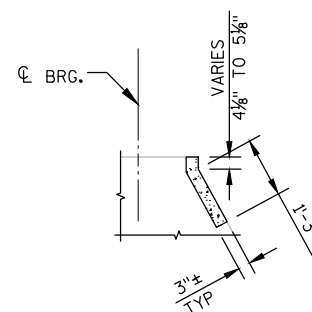


 INDICATES REMOVAL LIMITS

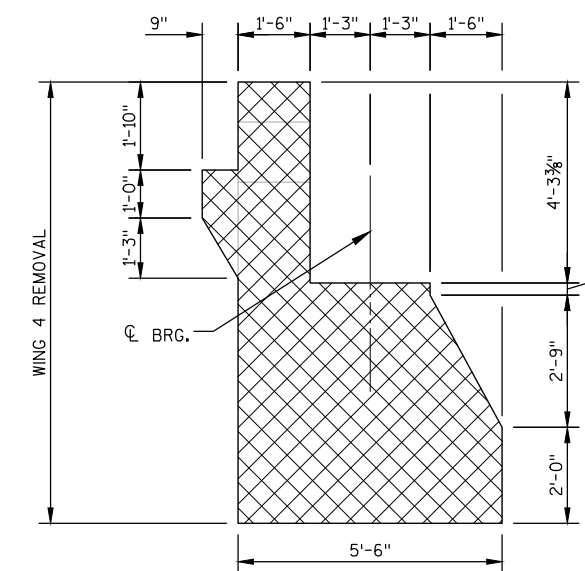
INDICATES APPROXIMATE LIMITS OF CONCRETE SURFACE REPAIR.

(#) INDICATES GIRDER NUMBER

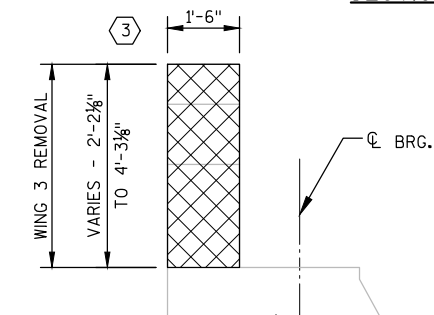
INDICATES WING NUMBER



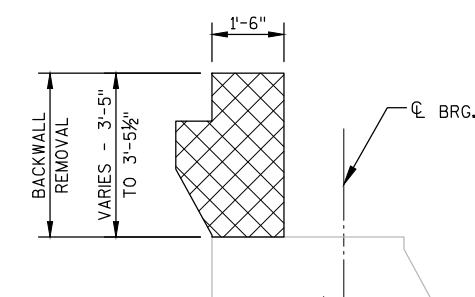
SECTION D-D



SECTION A-A

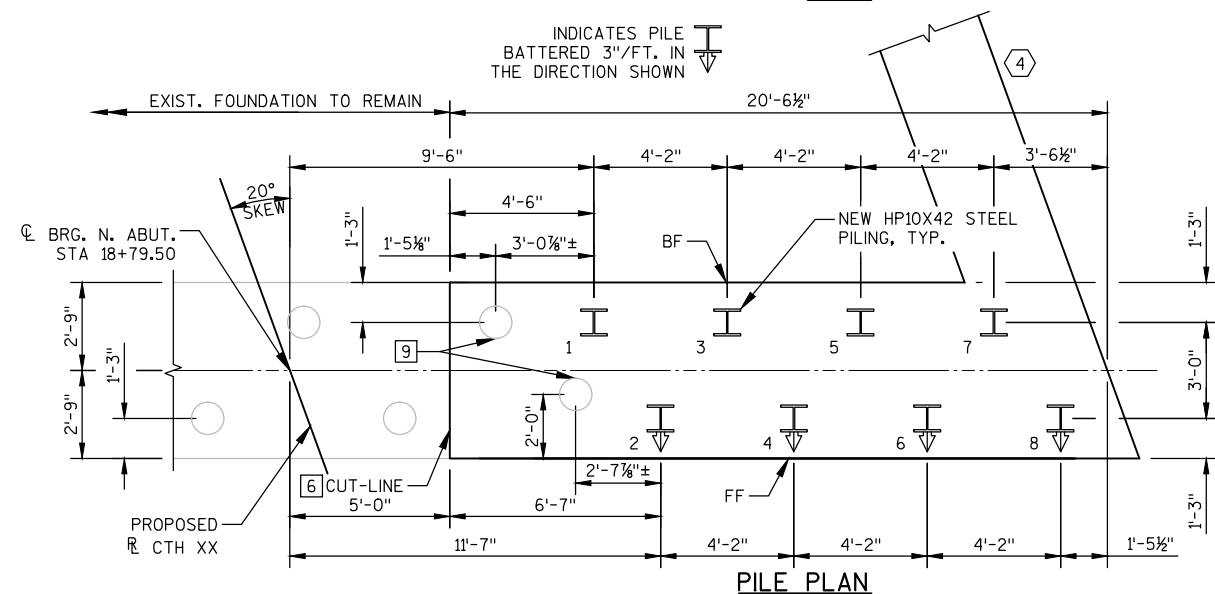
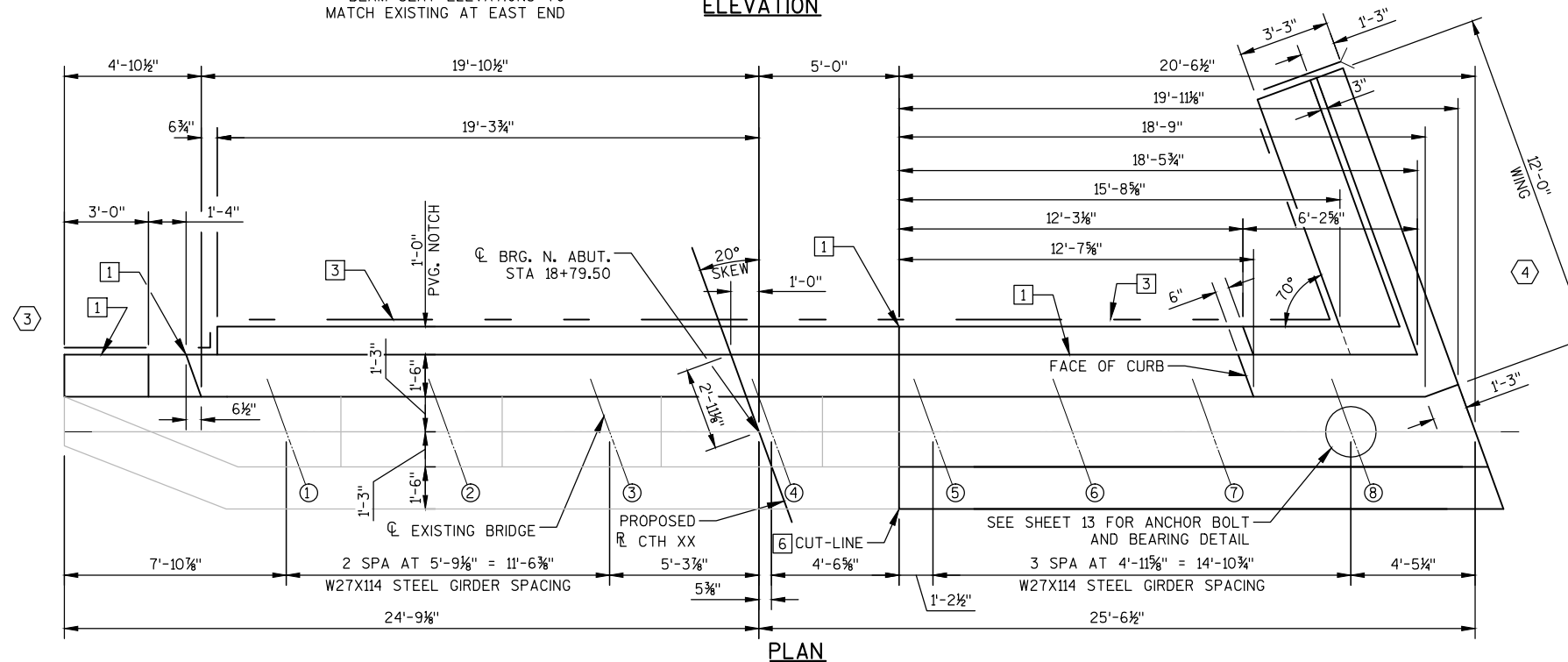
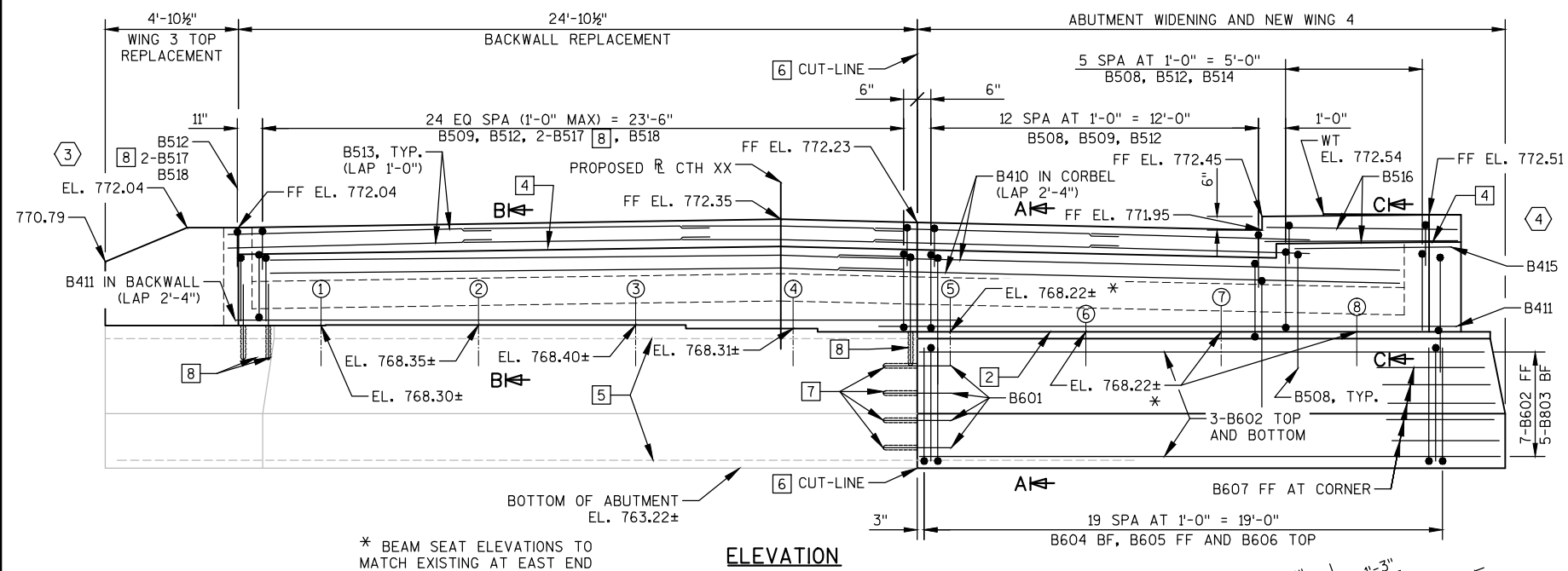


SECTION B-B



SECTION C-C

NO.	DATE	REVISION					BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION							
STRUCTURE B-69-3							
			DRAWN BY	MJB	PLANS CK'D.	GAL	
NORTH ABUTMENT REMOVAL LIMITS					SHE 66		= 40'



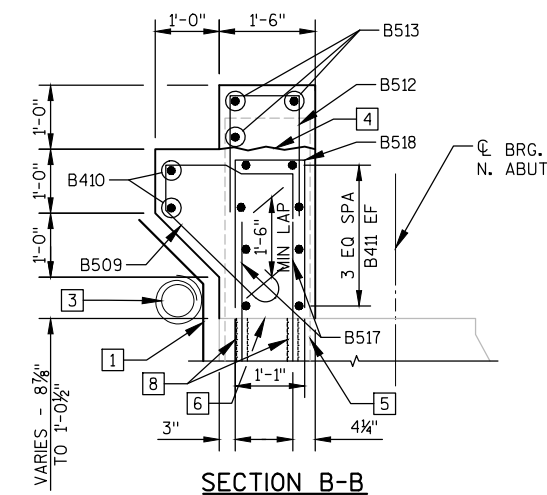
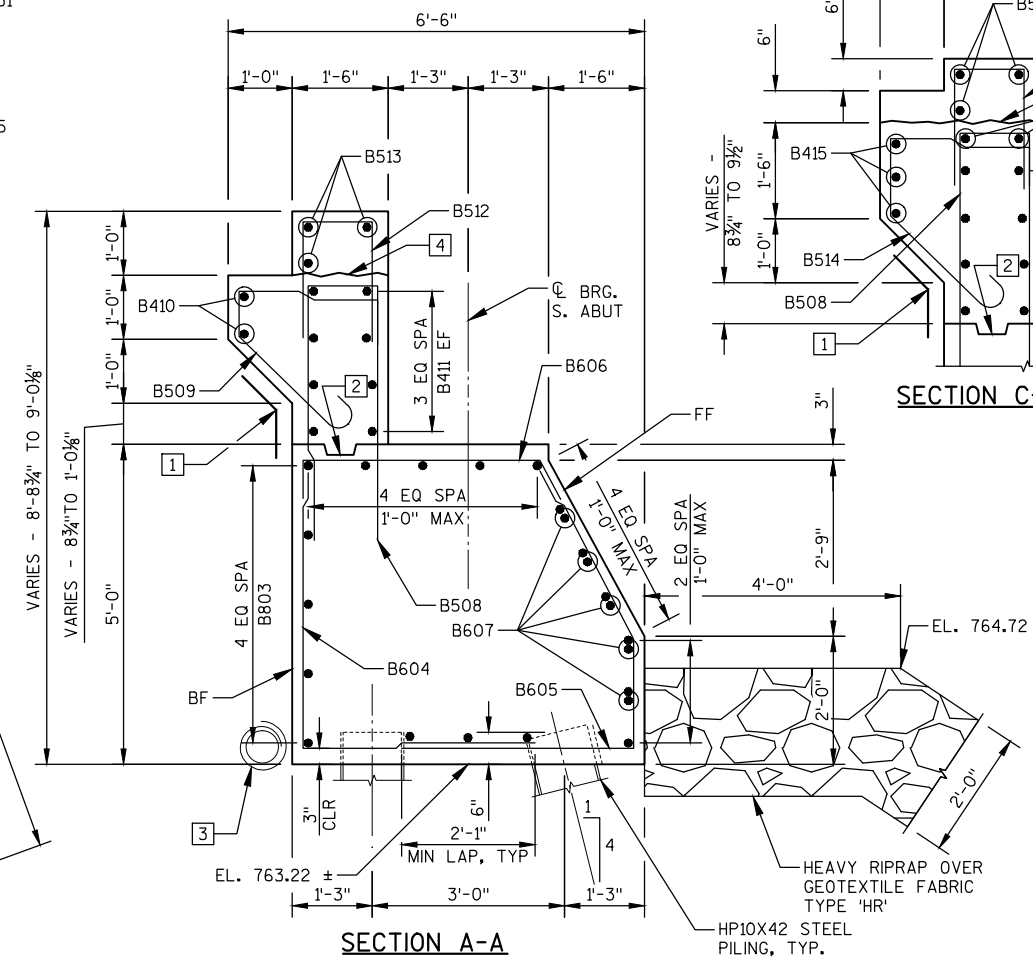
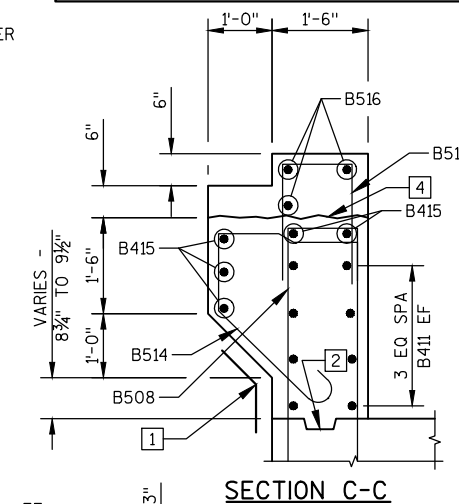
FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

INDICATES WING NUMBER

(#) INDICATES GIRDER NUMBER

STATE PROJECT NUMBER

6862-01-70



NOTES:

WIDENED NORTH ABUTMENT TO BE SUPPORTED ON HP 10X42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 60 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED AT 35' LONG.

FOR PILE SPLICE DETAIL SEE SHEET 4.

[1] 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE.

2 KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6".

3 PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN. SEE SHEET 4 FOR RODENT SHIELD DETAILS.

4 CONSTRUCTION JOINT: POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE.
STRIKE OFF AND LEAVE ROUGH.

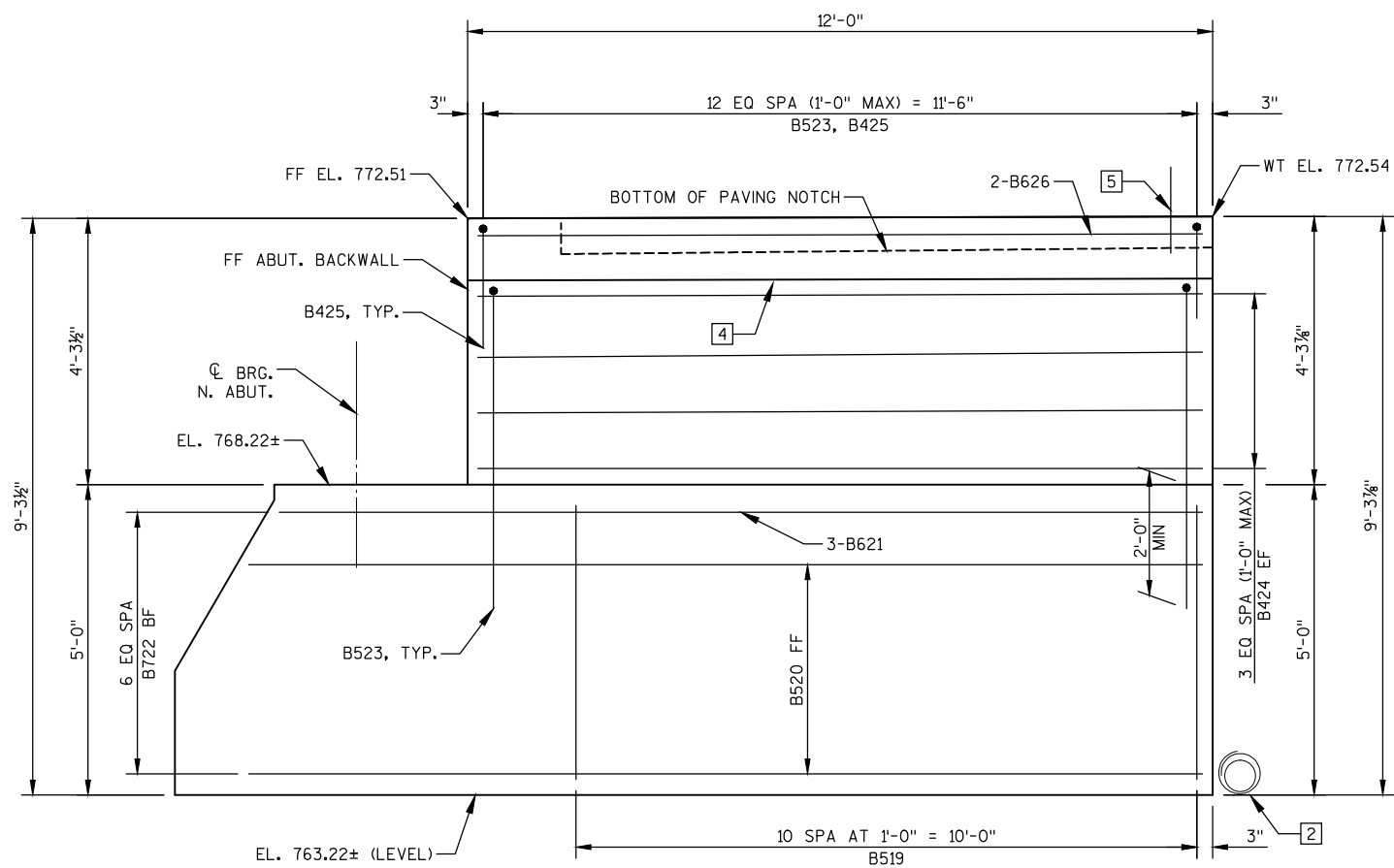
5] SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

6 ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MIN. ALL AREAS OF NEW TO EXIST. CONCRETE CONTACT.

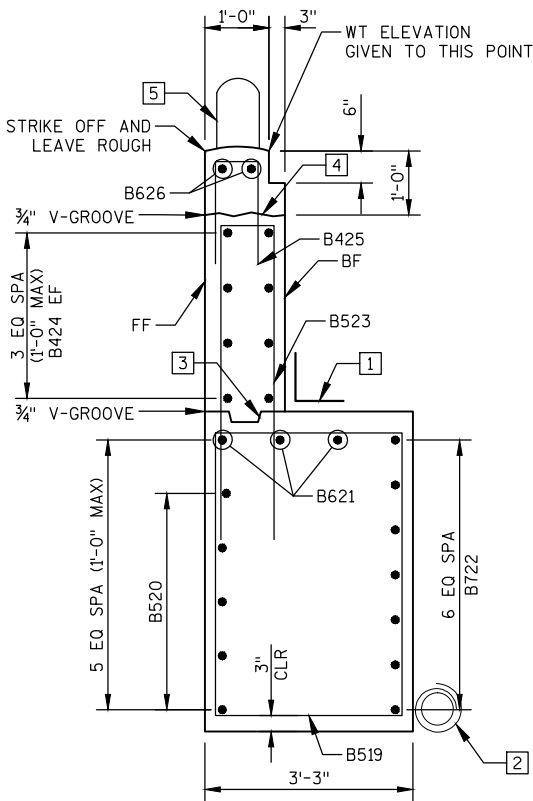
7 MASONRY ANCHORS TYPE L NO. 6 BARS. EMBED 1'-3" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. SEE SHEET 13 FOR PLACEMENT.

[8] MASONRY ANCHORS TYPE L NO. 5 BARS. EMBED 1'-0" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. REQUIRED WITH B517 BAR.

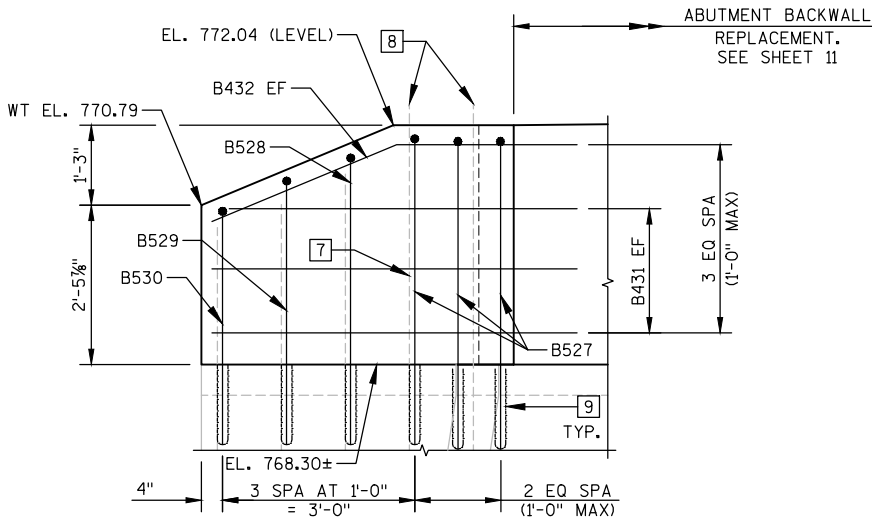
[9] SALVAGE EXIST. TIMBER PILES & EXTEND INTO NEW WORK.



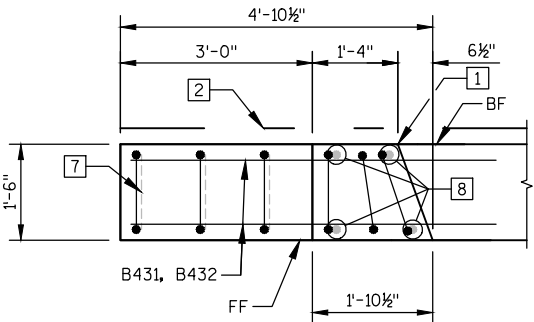
WING 4 ELEVATION



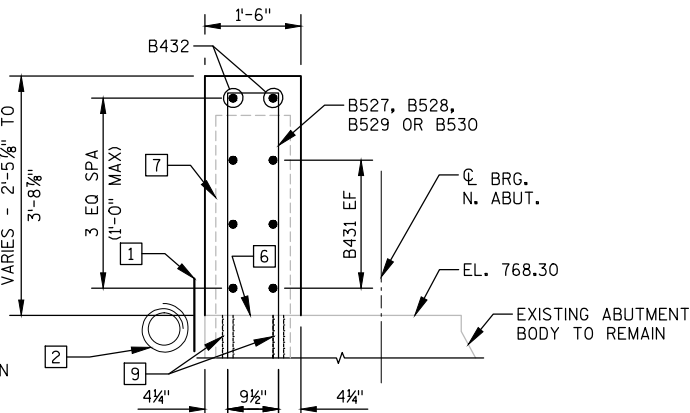
WING 4 SECTION



WING 3 ELEVATION



WING 3 PLAN



WING 3 SECTION

NOTES:

- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE.
- PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN. SEE SHEET 4 FOR RODENT SHIELD DETAILS.
- OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYED WITH MEMBRANE ON BACKFACE.
- CONSTRUCTION JOINT: POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.
- PARAPET REINFORCEMENT. SEE SHEET 37 FOR DETAILS.
- ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MIN. ALL AREAS OF NEW TO EXIST. CONCRETE CONTACT.
- SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- TRIM EXIST. REINF. TO 2" CLEAR & EXTEND REMAINING INTO NEW WORK.
- MASONRY ANCHORS TYPE L NO. 5 BARS. EMBED 1'-0" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. REQUIRED WITH B527, B528, B529 & B530.

FF = FRONT FACE
BF = BACK FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MJB	PLANS CK'D. MJB
NORTH ABUTMENT WING DETAILS		SHE 68 OF 40	

BILL OF BARS
NORTH ABUTMENT

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION	
	COATED	UNCOATED					
	FT - IN						
B601		18	3 - 0			ABUTMENT BODY - DOWELS	HORIZ
B602		13	19 - 8			ABUTMENT BODY - FF, TOP, BTM	HORIZ
B803		5	19 - 3			ABUTMENT BODY - BF	HORIZ
B604		20	7 - 11	X		ABUTMENT BODY - STIRRUP BF	VERT
B605		20	8 - 4	X		ABUTMENT BODY - STIRRUP FF	VERT
B606		20	7 - 8	X		ABUTMENT BODY - STIRRUP TOP	VERT
B607		5	5 - 8	X		ABUTMENT BODY - CORNER BARS	HORIZ
B508	19		10 - 1	X		WIDENING BACKWALL - STIRRUP	VERT
B509	38		6 - 3	X		CORBEL - STIRRUP	VERT
B410	4		19 - 9			CORBEL - LONGITUDINAL	HORIZ
B411	16		23 - 2			BACKWALL - LONGITUDINAL	HORIZ
B512	45		4 - 11	X		PAVING BLOCK - TIES	VERT
B513	15		8 - 0			PAVING BLOCK - WIDENING & REPLACEMENT	HORIZ
B514	6		6 - 9	X		CORBEL - STIRRUP AT SIDEWALK	VERT
B415	5		5 - 6			CORBEL & BACKWALL - LONGITUDINAL AT SIDEWALK	HORIZ
B516	3		6 - 10			PAVING BLOCK - AT SIDEWALK	HORIZ
B517	52		3 - 0			REPLACEMENT BACKWALL - DOWELS	VERT
B518	26		5 - 11	X		REPLACEMENT BACKWALL - STIRRUPS	VERT
B519	11		15 - 4	X		WING 4 - STIRRUP IN BODY	VERT
B520	5		14 - 7			WING 4 - FF IN BODY	HORIZ
B621	3		14 - 0			WING 4 - TOP IN BODY	HORIZ
B722	7		13 - 8			WING 4 - BF IN BODY	HORIZ
B523	13		11 - 0	X		WING 4 - STIRRUP IN TOP	VERT
B424	8		11 - 8			WING 4 - LONGITUDINAL IN TOP	HORIZ
B425	13		4 - 6	X		WING 4 - PAVING BLOCK TIE	VERT
B626	2		11 - 8			WING 4 - LONGITUDINAL IN PAVING BLOCK	HORIZ
B527	3		9 - 9	X		WING 3 - STIRRUP	VERT
B528	1		9 - 1	X		WING 3 - STIRRUP	VERT
B529	1		8 - 3	X		WING 3 - STIRRUP	VERT
B530	1		7 - 5	X		WING 3 - STIRRUP	VERT
B431	6		6 - 1			WING 3 - LONGITUDINAL	HORIZ
B432	2		6 - 6	X		WING 3 - LONGITUDINAL AT TOP	HORIZ

FF - FRONT FACE
BF - BACK FACE
EF - EACH FACE
WT - WING TIP

BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.

NOTES:

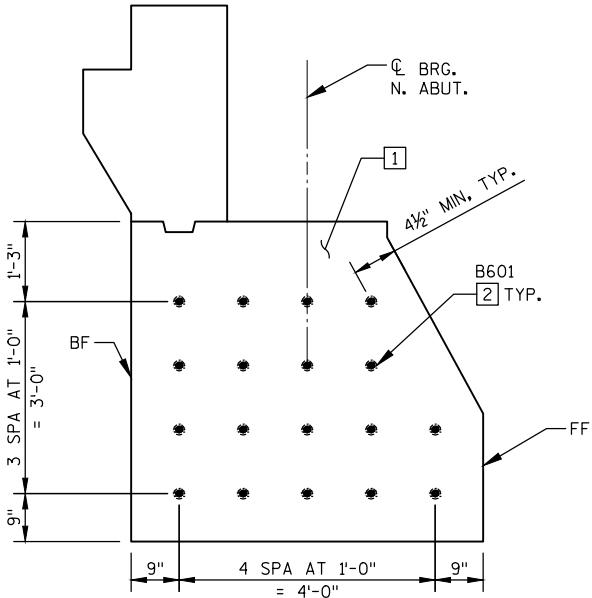
- 1

ROUGHEN SURFACE OF CONCRETE ¼" DEEP MIN. ALL AREAS OF NEW TO EXIST. CONCRETE CONTACT.
- 2

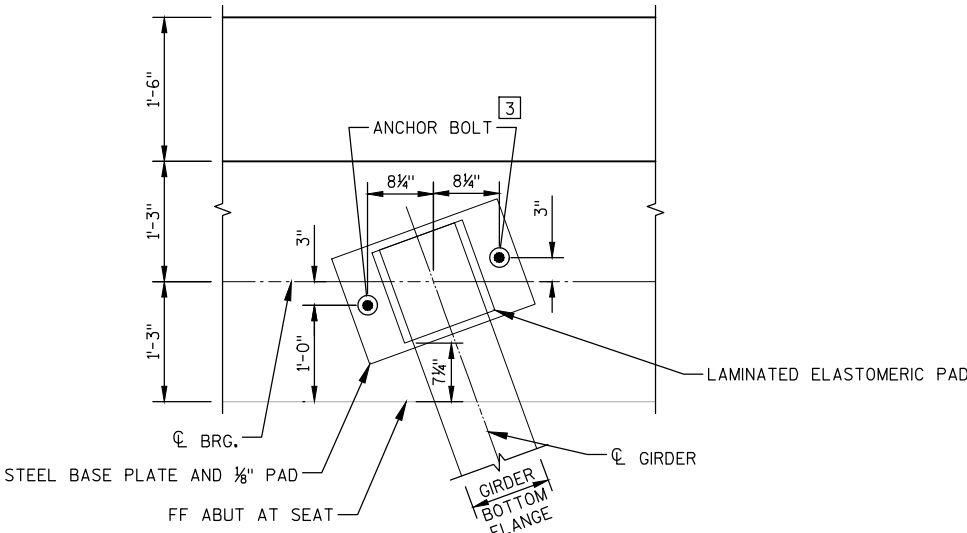
MASONRY ANCHORS TYPE L NO. 6 BARS. EMBED 1'-3" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.
- 3

AT EXISTING BEAM SEATS EMBED ANCHORS INTO CONCRETE USING MASONRY ANCHORS TYPE L NO. 10 BARS. EMBED 1'-1" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

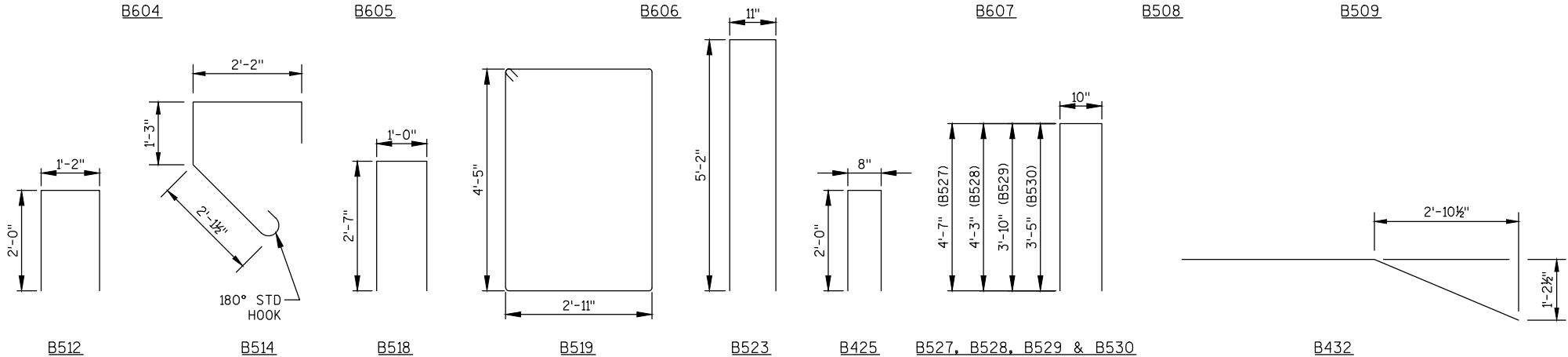
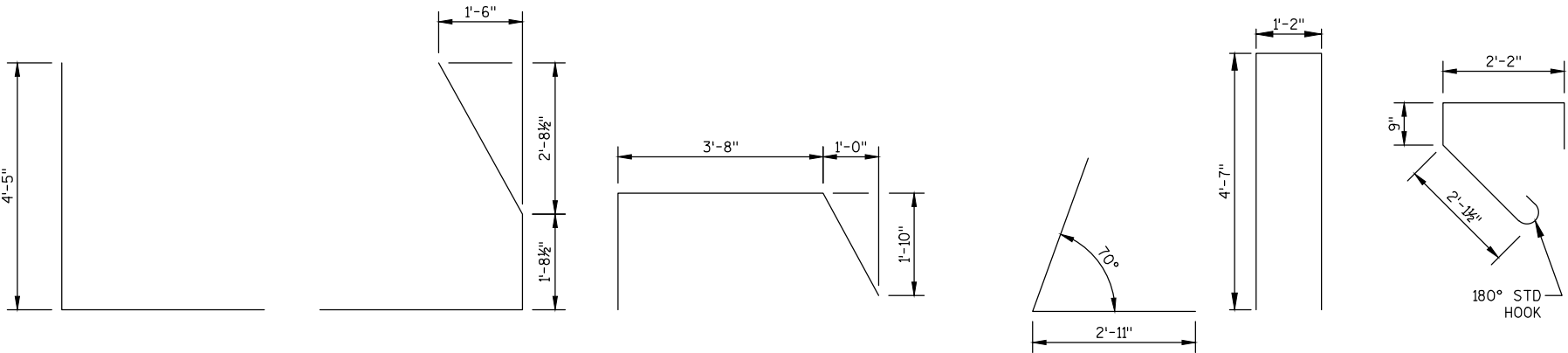
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
		DRAWN BY MJB	PLANS CK'D. GAR
NORTH ABUTMENT DETAILS		SHE 69	40

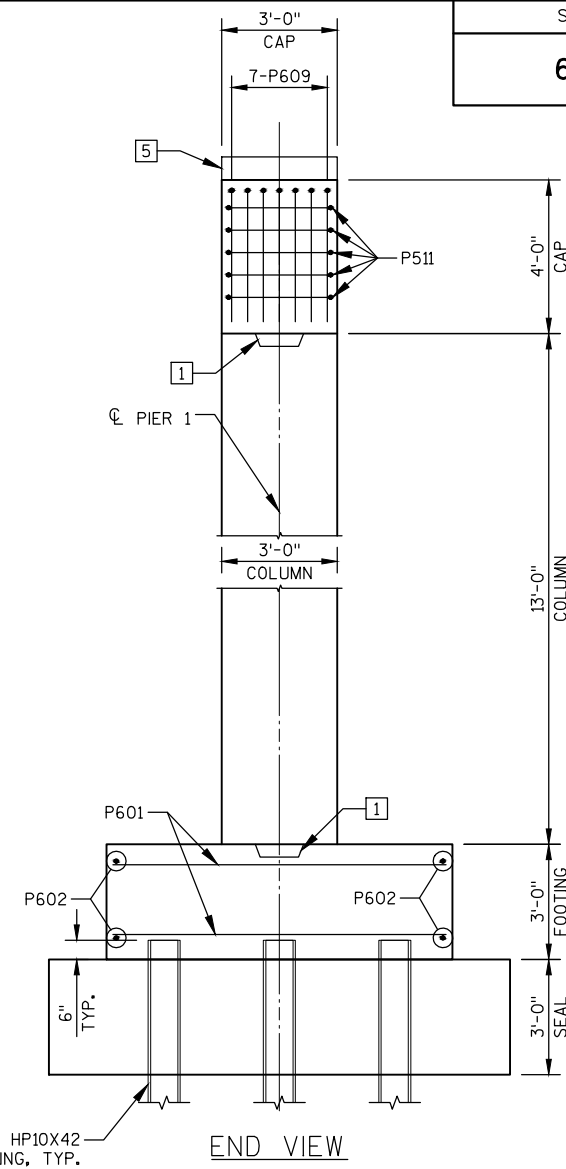
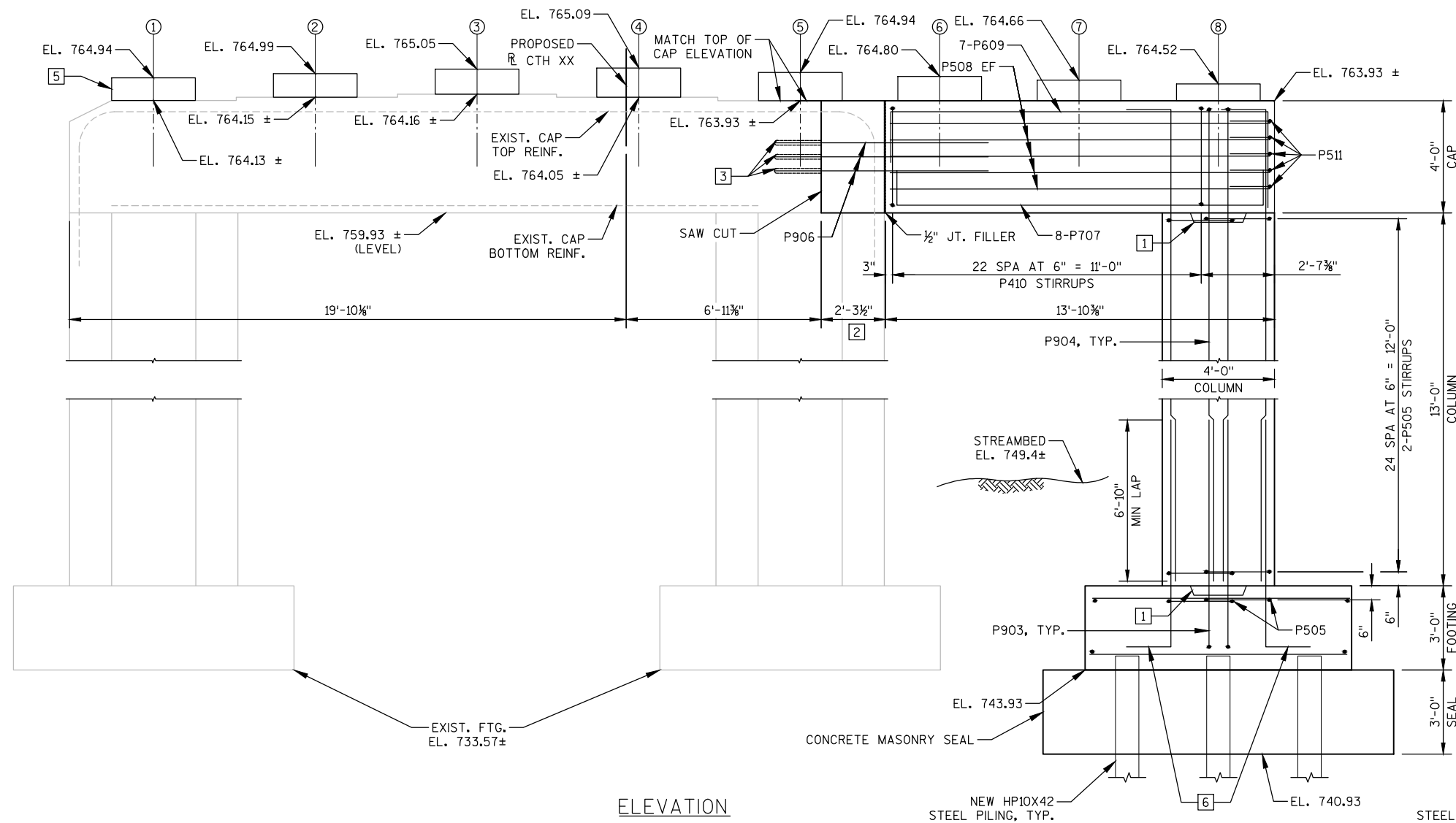


ANCHORED BAR DETAIL
(PLACEMENT OF B601 BARS)



BEARING DETAIL





NOTES:

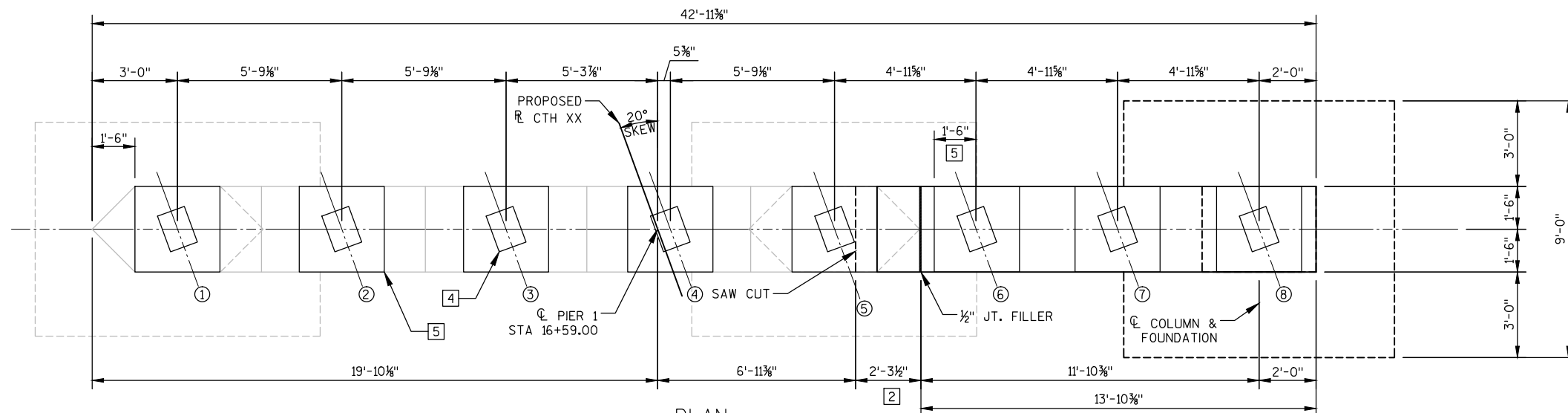
WIDENED PIER 1 FOOTING TO BE SUPPORTED ON HP 10X42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED AT 25' LONG.

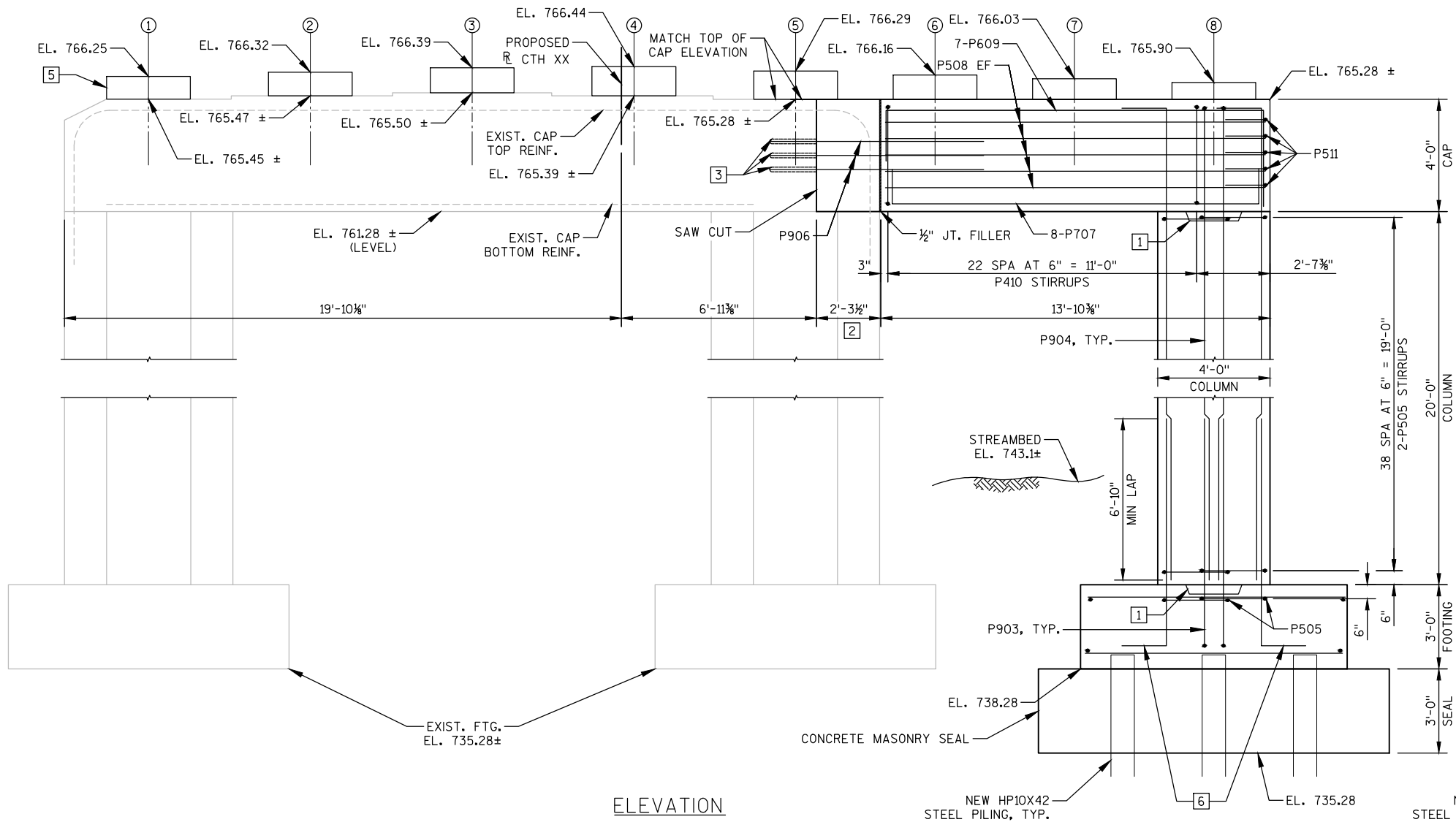
- 1 1'-3" X 2'-0" X 4" DEEP CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY.
- 2 CAP END REBUILD. TO BE COMPLETED PRIOR TO NEW PIER CAP. SEE DETAIL ON SHEET 19. LENGTH INCLUDES 1/2" JOINT FILLER.
- 3 MASONRY ANCHORS TYPE L NO. 9 BARS. EMBED 1'-10" IN EXIST. PIER CAP CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. REQUIRED WITH P906 BARS.
- 4 LAMINATED ELASTOMERIC BEARING PAD WITH STEEL TOP PLATE. SEE SHEET 25 FOR DETAILS.
- 5 CONCRETE BEARING BLOCK (TYP. GIRDERS 1 THRU 8). SEE SHEET 19 FOR DETAILS.
- 6 PLACE FOOTING DOWELS ON TOP OF BOTTOM MAT OF FOOTING STEEL.

EF = EACH FACE

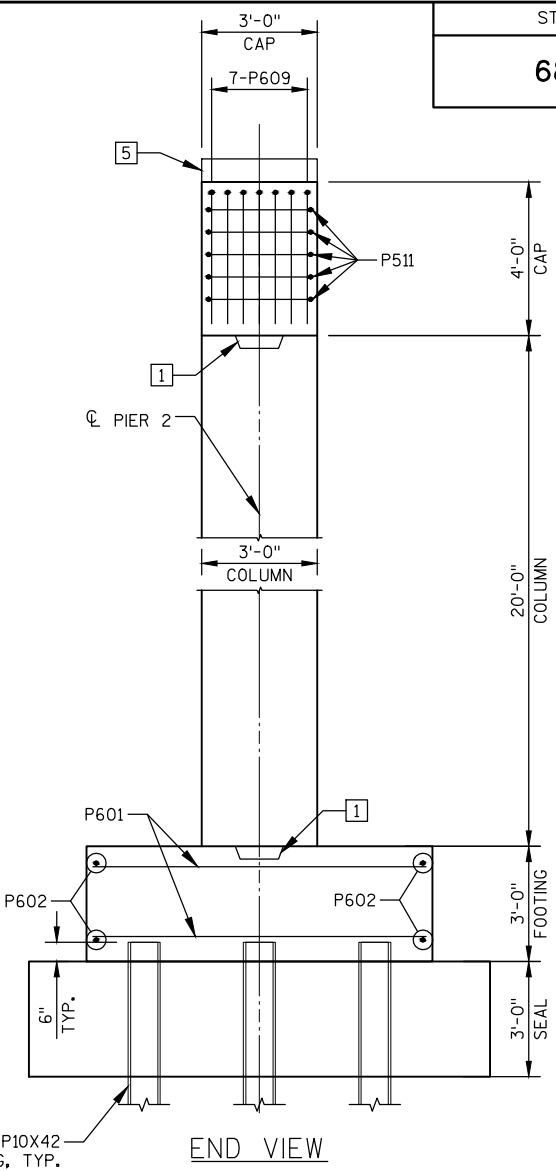
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY MJB		PLANS CK'D. GAR	
PIER 1		SHEET 70 OF 40	

PLAN





ELEVATION
(LOOKING NORTH)



END VIEW
(LOOKING WEST)

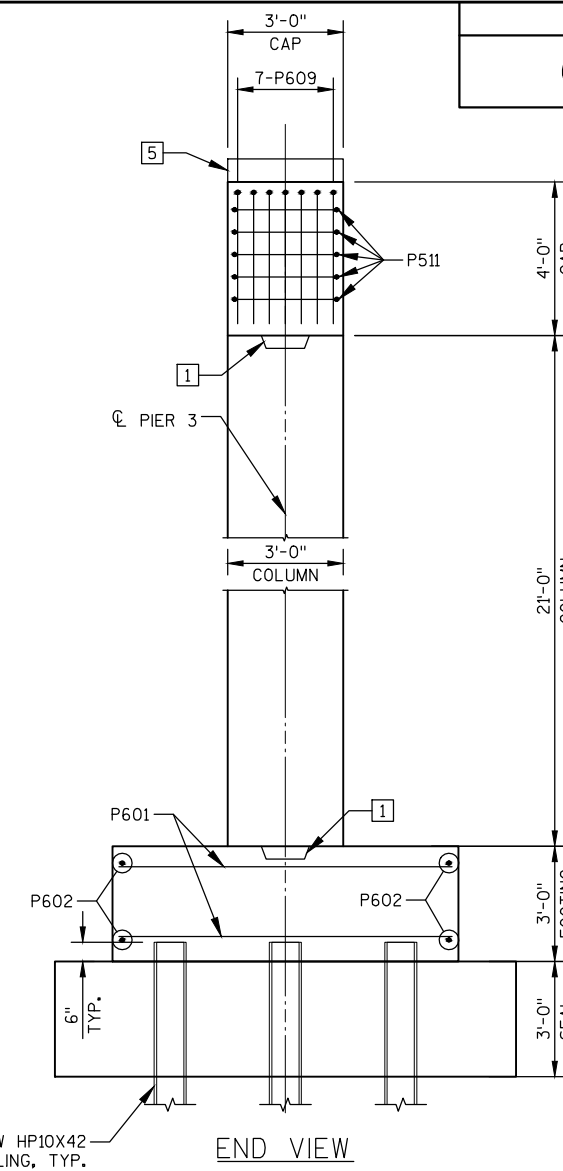
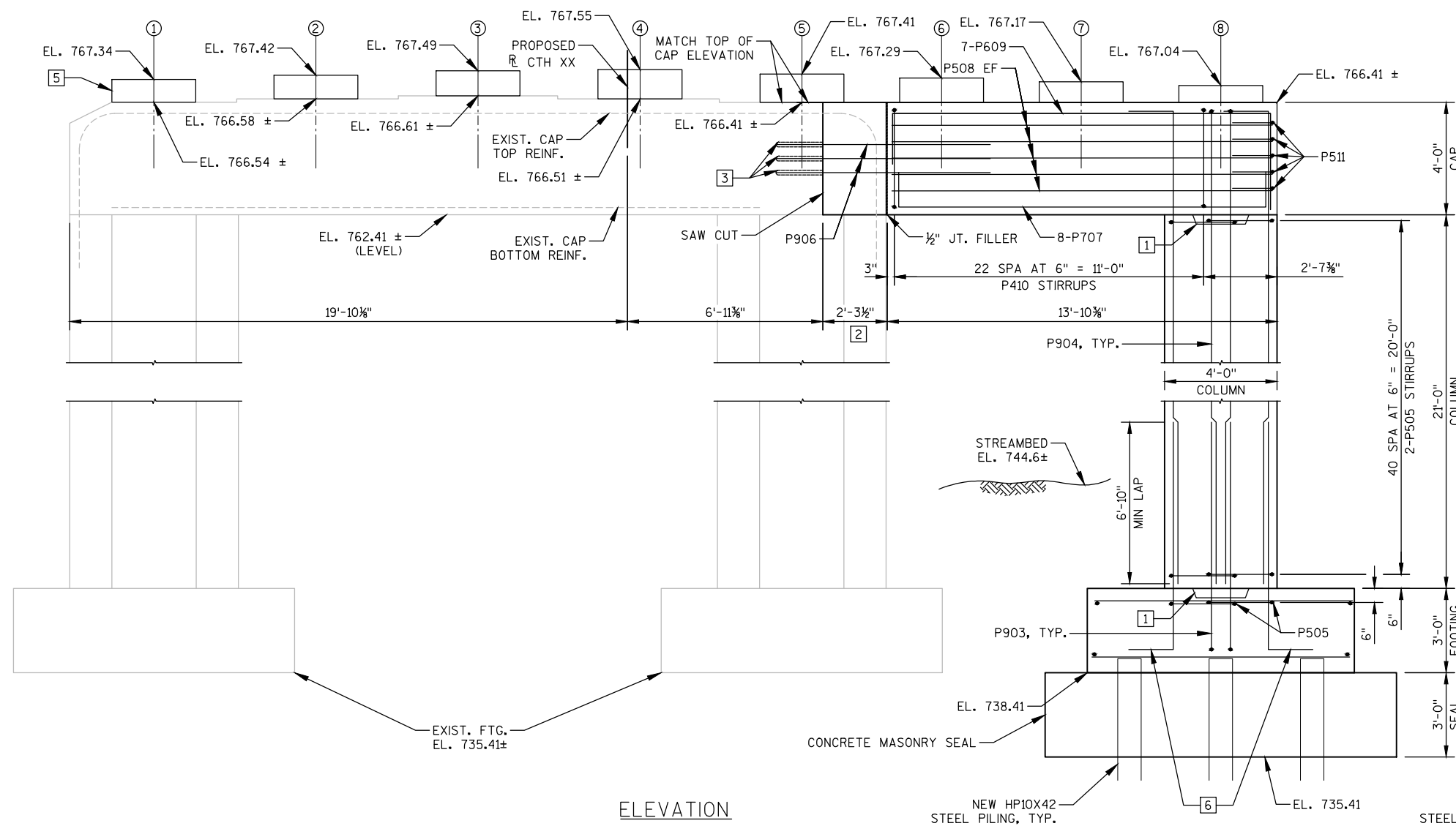
NOTES:

WIDENED PIER 2 FOOTING TO BE SUPPORTED ON HP 10X42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED AT 9' LONG.

- 1'-3" X 2'-0" X 4" DEEP CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY.
- CAP END REBUILD. TO BE COMPLETED PRIOR TO NEW PIER CAP. SEE DETAIL ON SHEET 19. LENGTH INCLUDES 1/2" JOINT FILLER.
- MASONRY ANCHORS TYPE L NO. 9 BARS. EMBED 1'-10" IN EXIST. PIER CAP CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. REQUIRED WITH P906 BARS.
- FIXED BEARING TYPE 'A'. SEE SHEET 24 FOR DETAILS.
- CONCRETE BEARING BLOCK (TYP. GIRDERS 1 THRU 8). SEE SHEET 19 FOR DETAILS.
- PLACE FOOTING DOWELS ON TOP OF BOTTOM MAT OF FOOTING STEEL.

EF = EACH FACE

NO.	DATE	REVISION		BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION				
STRUCTURE B-69-3				
		DRAWN BY	MJB	PLANS CK'D. GAR
PIER 2			SHE 71 OF 40	

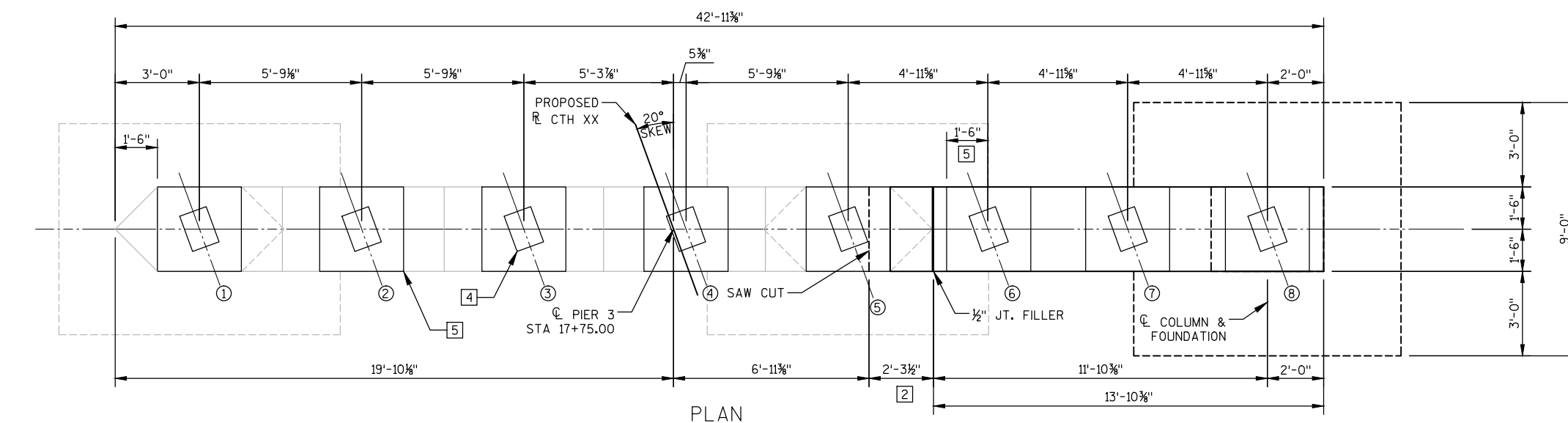
**NOTES:**

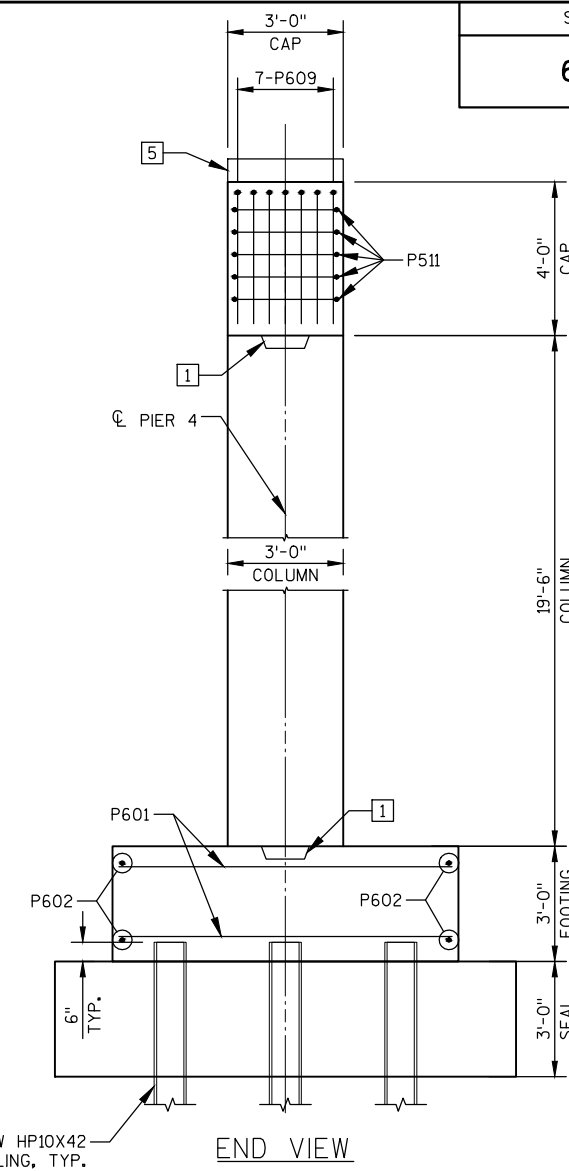
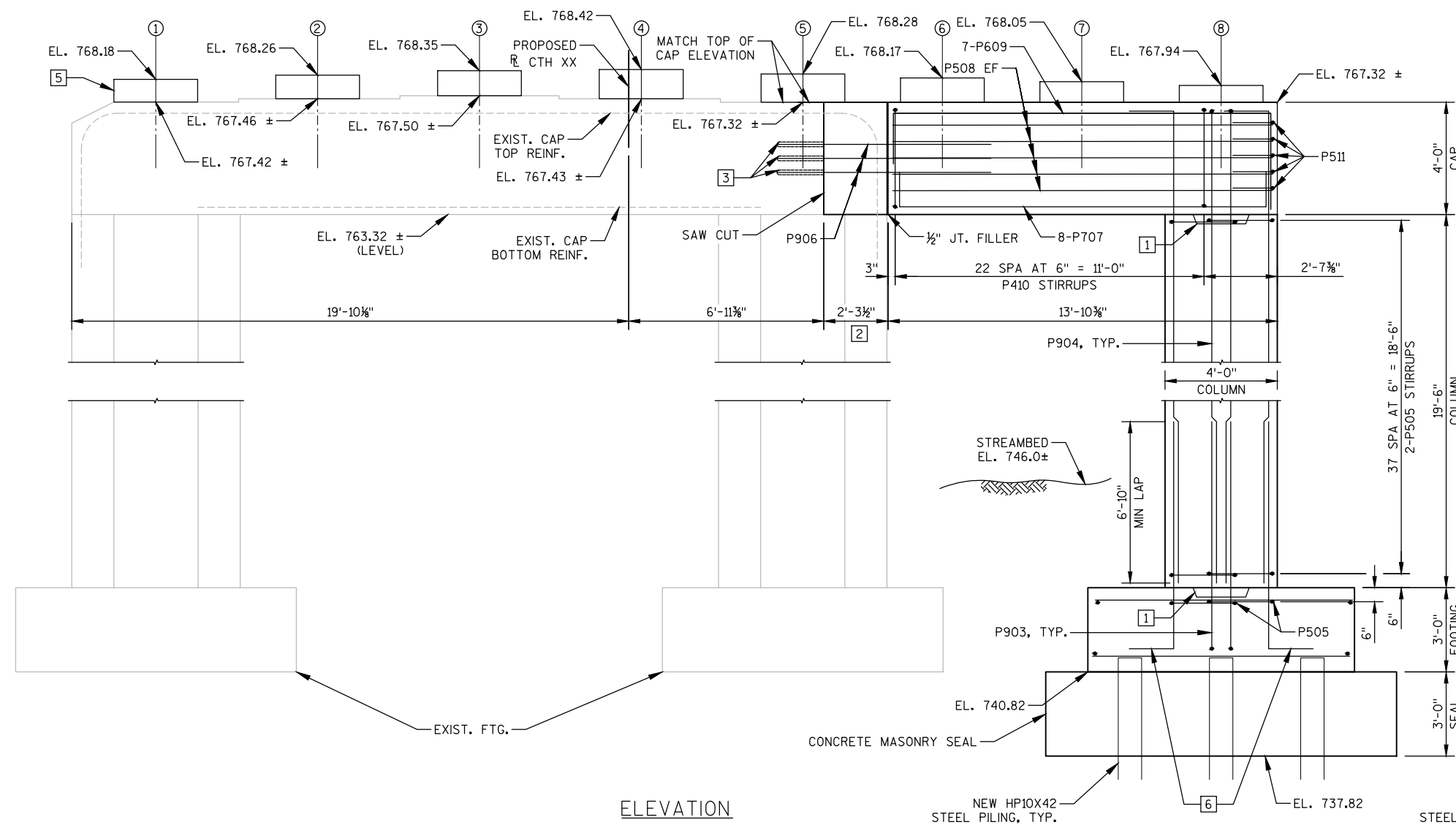
WIDENED PIER 3 FOOTING TO BE SUPPORTED ON HP 10X42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED AT 25' LONG.

- 1 1'-3" X 2'-0" X 4" DEEP CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY.
- 2 CAP END REBUILD. TO BE COMPLETED PRIOR TO NEW PIER CAP. SEE DETAIL ON SHEET 19. LENGTH INCLUDES 1/2" JOINT FILLER.
- 3 MASONRY ANCHORS TYPE L NO. 9 BARS. EMBED 1'-10" IN EXIST. PIER CAP CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. REQUIRED WITH P906 BARS.
- 4 LAMINATED ELASTOMERIC BEARING PAD WITH STEEL TOP PLATE. SEE SHEET 25 FOR DETAILS.
- 5 CONCRETE BEARING BLOCK (TYP. GIRDERS 1 THRU 8). SEE SHEET 19 FOR DETAILS.
- 6 PLACE FOOTING DOWELS ON TOP OF BOTTOM MAT OF FOOTING STEEL.

EF = EACH FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY MJB		PLANS CK'D. GAR	
PIER 3		SHEET 72	OF 40



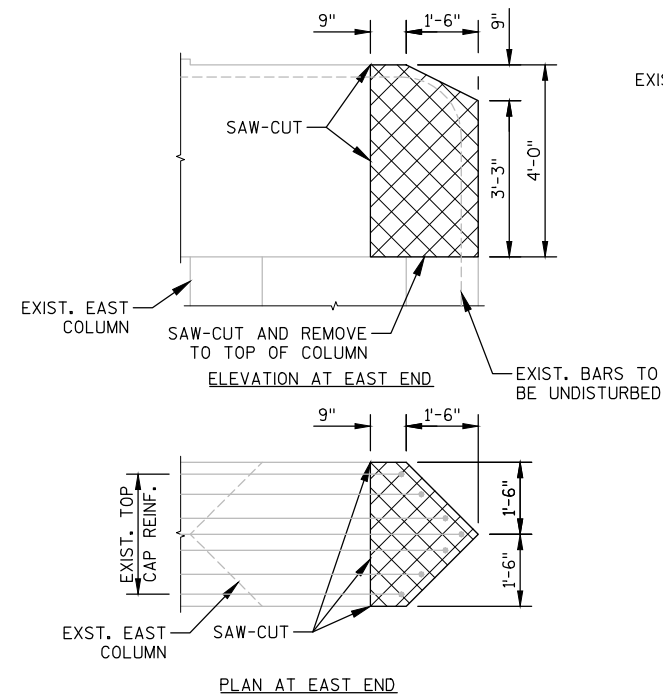
**NOTES:**

WIDENED PIER 4 FOOTING TO BE SUPPORTED ON HP 10X42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION, ESTIMATED AT 9' LONG.

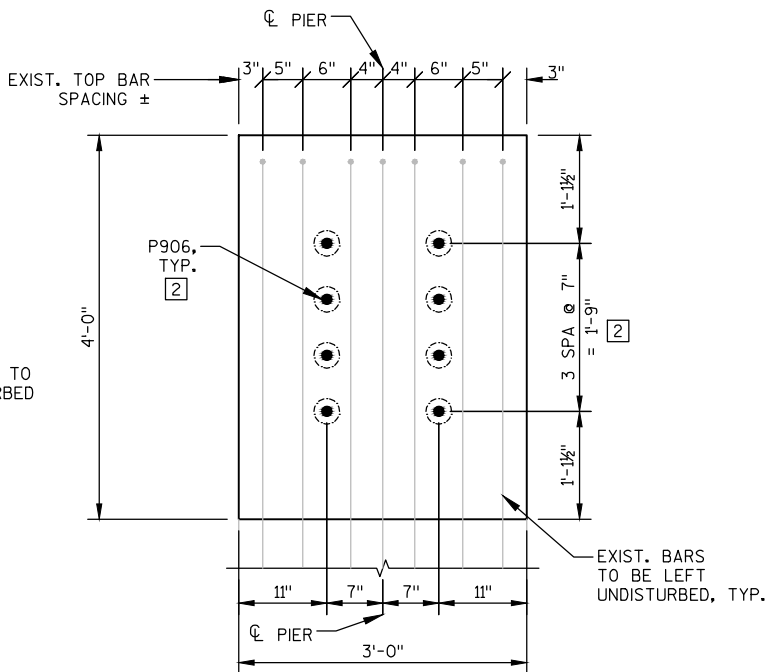
1. 1'-3" X 2'-0" X 4" DEEP CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY.
2. CAP END REBUILD. TO BE COMPLETED PRIOR TO NEW PIER CAP. SEE DETAIL ON SHEET 19. LENGTH INCLUDES 1/2" JOINT FILLER.
3. MASONRY ANCHORS TYPE L NO. 9 BARS. EMBED 1'-10" IN EXIST. PIER CAP CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE. REQUIRED WITH P906 BARS.
4. LAMINATED ELASTOMERIC BEARING PAD WITH STEEL TOP PLATE. SEE SHEET 25 FOR DETAILS.
5. CONCRETE BEARING BLOCK (TYP. GIRDERS 1 THRU 8). SEE SHEET 19 FOR DETAILS.
6. PLACE FOOTING DOWELS ON TOP OF BOTTOM MAT OF FOOTING STEEL.

EF = EACH FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY MJB		PLANS CK'D. GAR	
PIER 4		SHE 73 OF 40	



REMOVAL DETAILS

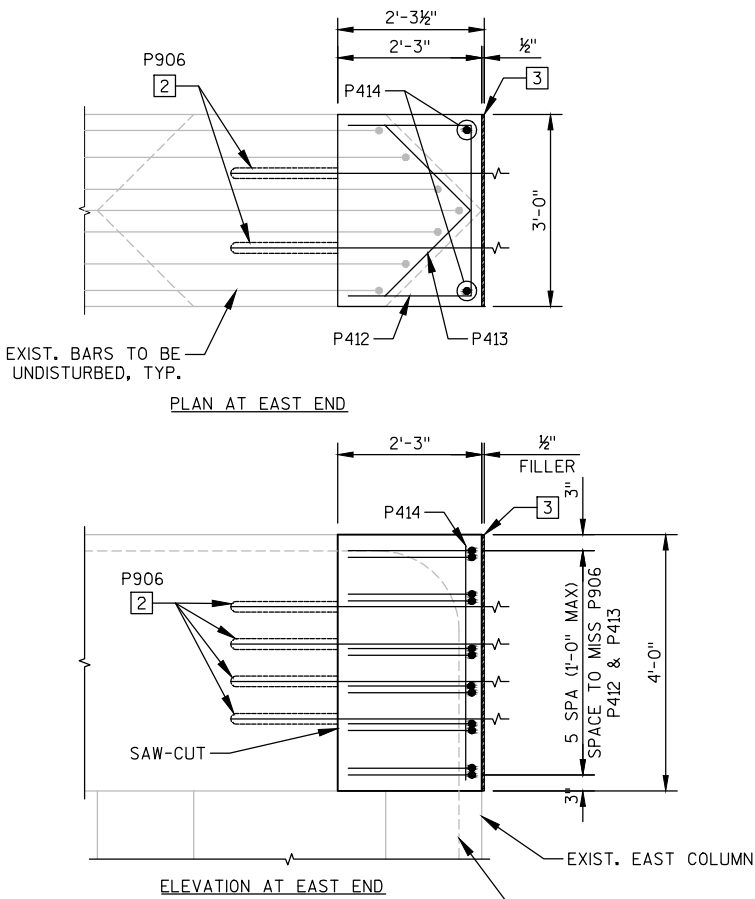


DOWEL ANCHOR PLACEMENT

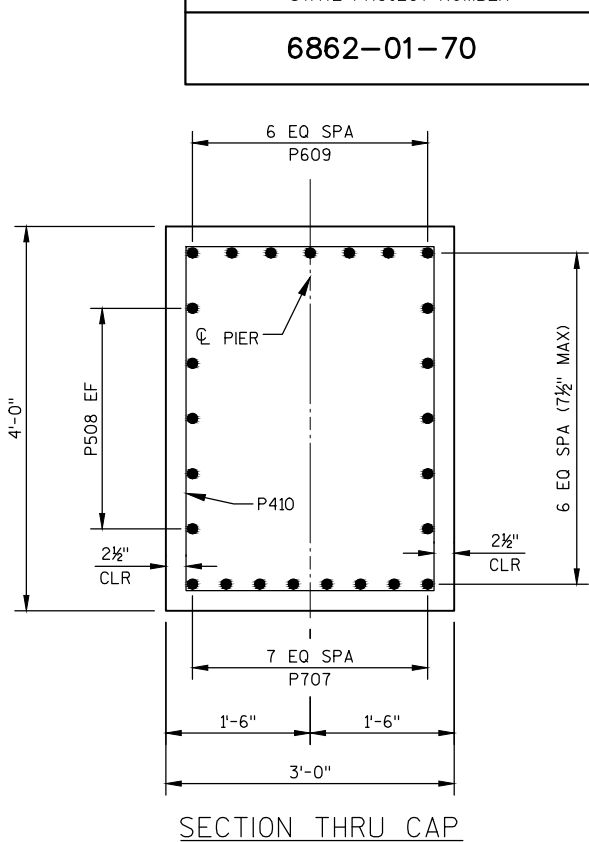
NOTES:

- FOR PILE SPLICE DETAIL SEE SHEET 4.
- SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK, UNLESS NOTED OTHERWISE.
- ROUGHEN SURFACE OF CONCRETE 1/4" MIN. ALL AREAS OF NEW TO EXIST. CONTACT.
- [1] 1'-3" X 2'-0" X 4" DEEP CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY.
- [2] MASONRY ANCHORS TYPE L NO. 9 BARS. EMBED 1'-10" IN EXISTING CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.
- [3] 1/2" FILLER - ENTIRE CAP CROSS-SECTIONAL AREA. SEAL ALL EXPOSED SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).

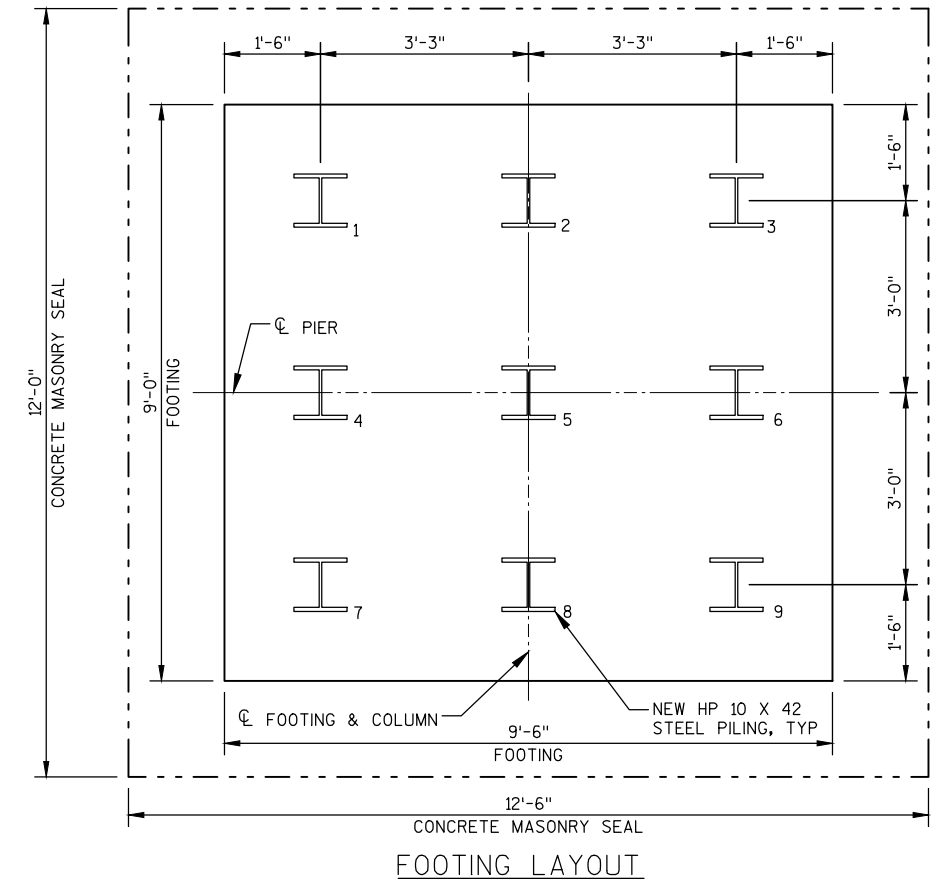
EF = EACH FACE



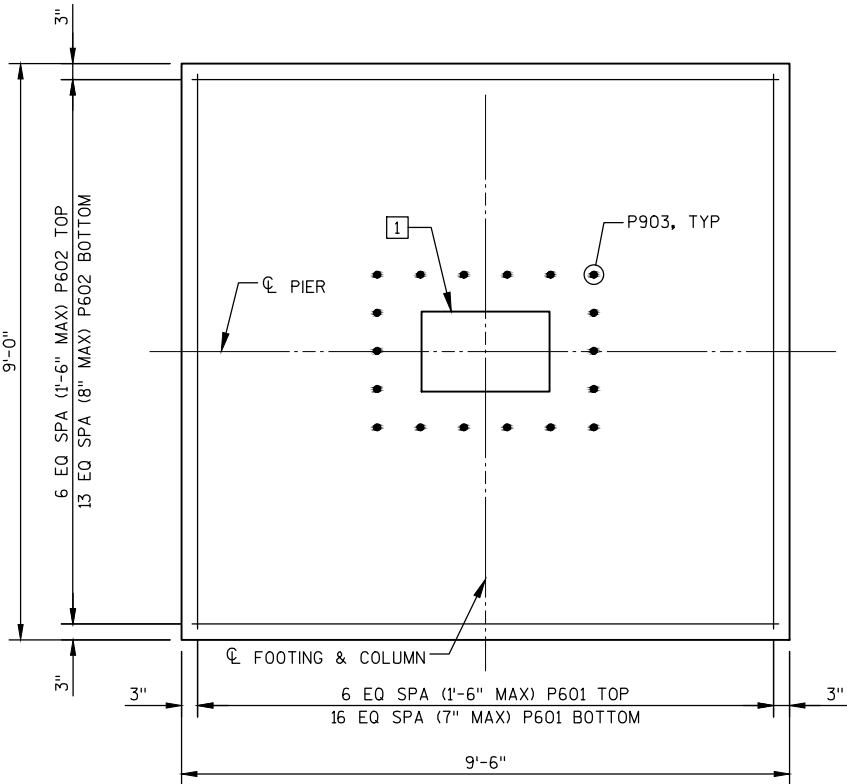
CAP END REBUILD



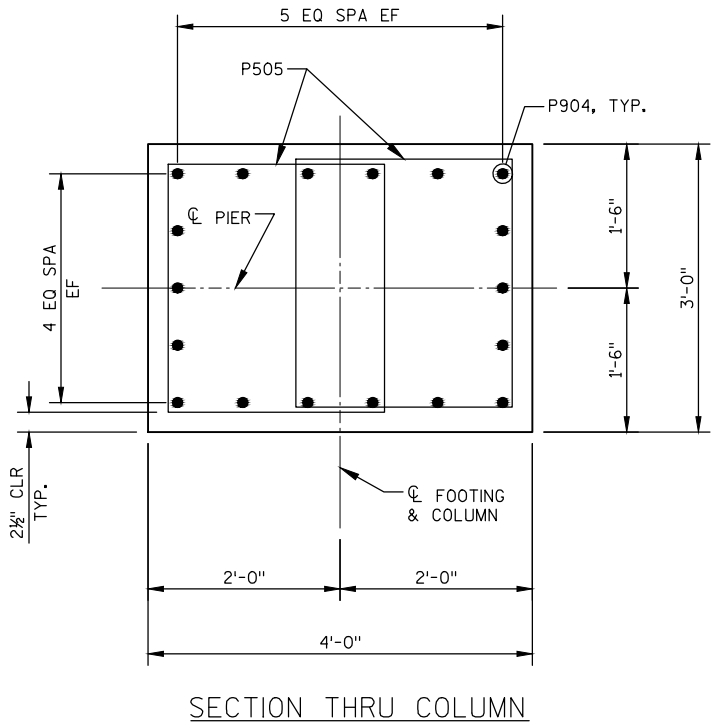
SECTION THRU CAP



FOOTING LAYOUT



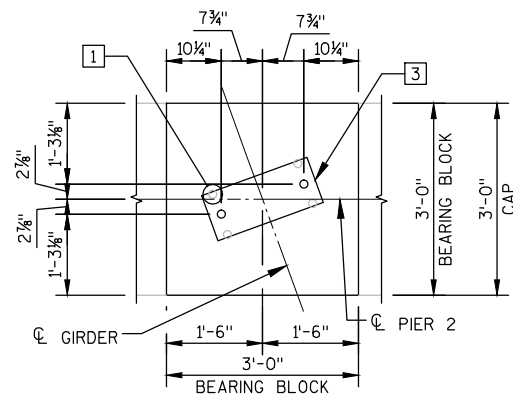
FOOTING REINFORCEMENT



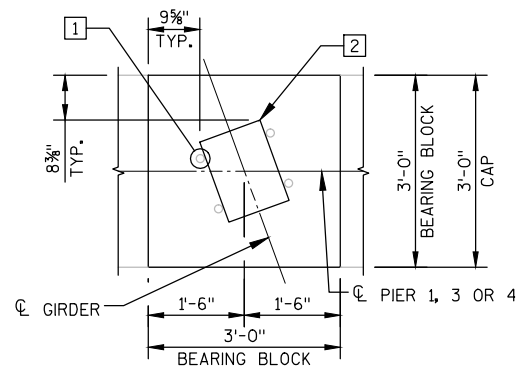
SECTION THRU COLUMN

STATE PROJECT NUMBER			
6862-01-70			
6 EQ SPA P609			
Pier			
P410			
6 EQ SPA (7 1/2" MAX)			
2 1/2" CLR			
7 EQ SPA P707			
1'-6" 1'-6"			
3'-0"			
SECTION THRU CAP			
5 EQ SPA EF			
P505			
P904, TYP.			
Pier			
FOOTING & COLUMN			
4 EQ SPA EF			
2'-0" 2'-0"			
4'-0"			
3'-0"			
1'-6"			
1'-6"			
SECTION THRU COLUMN			
PIER DETAILS 1			
SHE 74 OF 40			

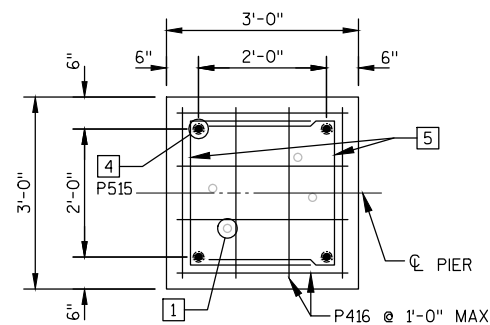
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MJB	PLANS CK'D. GAR
PIER DETAILS 1		SHE 74 OF 40	



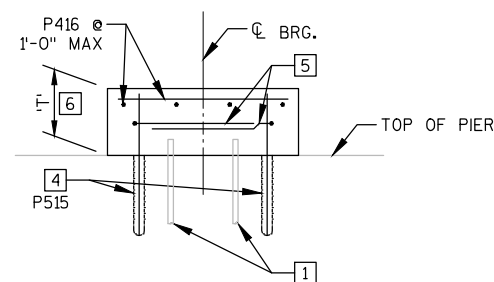
FIXED BEARING DETAIL



EXPANSION BEARING DETAIL

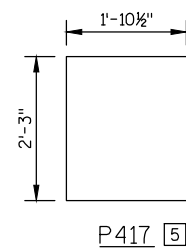


BEARING BLOCK - PLAN

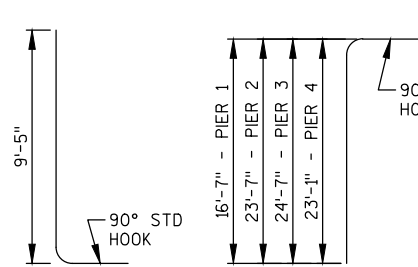


BEARING BLOCK - PLAN

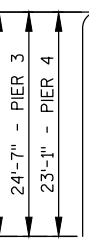
BEARING BLOCK HEIGHT 'T', (INCHES) 6				
	PIER 1	PIER 2	PIER 3	PIER 4
BEAM 1	9.625	9.625	9.625	9.125
BEAM 2	10.125	10.25	10.125	9.625
BEAM 3	10.75	10.625	10.625	10.125
BEAM 4	12.5	12.625	12.5	11.75
BEAM 5	12.125	12.125	12	11.5
BEAM 6	10.375	10.5	10.5	10.125
BEAM 7	8.75	9	9.125	8.75
BEAM 8	7.125	7.375	7.625	7.375



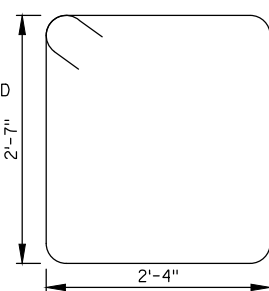
P417 5



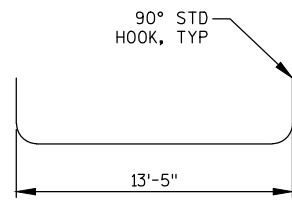
P903



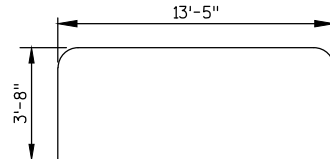
P904 ▲



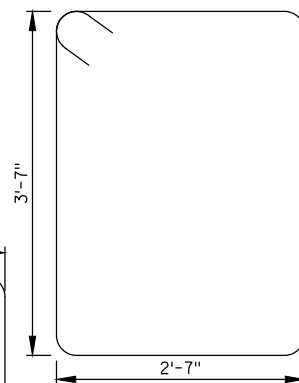
P505



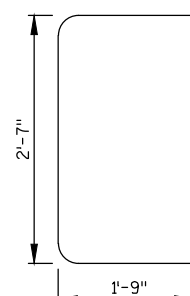
P707



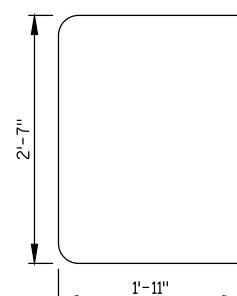
P609



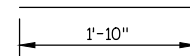
P410



P511



P412



P413

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
		DRAWN BY	PLANS CK'D.
		MJB	GAR
PIER DETAILS 2		SHEI 75	
		: 40	

BILL OF BARS
PIER 1

COATED= 3620 LBS.
UNCOATED= 610 LBS.

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION	
	COATED	UNCOATED					
			FT				
P601		24	8 - 8			FOOTING	HORIZ
P602		21	9 - 2			FOOTING	HORIZ
P903	18		10 - 9	X		FOOTING TO COLUMN DOWELS	VERT
P904	18		17 - 11	X		COLUMN	VERT
P505	52		10 - 6	X		COLUMN - LATERAL TIES	HORIZ
P906	8		8 - 9			CAP DOWELS	HORIZ
P707	8		15 - 5	X		CAP BOTTOM	HORIZ
P508	10		13 - 6			CAP SIDES	HORIZ
P609	7		20 - 5	X		CAP TOP	HORIZ
P410	23		12 - 10	X		CAP STIRRUPS	VERT
P511	5		5 - 10	X		CAP AT ENDS	HORIZ
P412	6		6 - 3	X		CAP END REBUILD	HORIZ
P413	6		3 - 7	X		CAP END REBUILD	HORIZ
P414	2		3 - 8			CAP END REBUILD	VERT
P515	32		1 - 5			BEARING BLOCK TIES	VERT
P416	64		2 - 8			BEARING BLOCK	HORIZ
P417	4		5 - 10	X		BEARING BLOCK U-BARS	HORIZ

BILL OF BARS
PIER 3

COATED= 4460 LBS.
UNCOATED= 610 LBS.

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION	
	COATED	UNCOATED					
			FT - IN				
P601		24	8 - 8			FOOTING	HORIZ
P602		21	9 - 2			FOOTING	HORIZ
P903	18		10 - 9	X		FOOTING TO COLUMN DOWELS	VERT
P904	18		25 - 11	X		COLUMN	VERT
P505	84		10 - 6	X		COLUMN - LATERAL TIES	HORIZ
P906	8		8 - 9			CAP DOWELS	HORIZ
P707	8		15 - 5	X		CAP BOTTOM	HORIZ
P508	10		13 - 6			CAP SIDES	HORIZ
P609	7		20 - 5	X		CAP TOP	HORIZ
P410	23		12 - 10	X		CAP STIRRUPS	VERT
P511	5		5 - 10	X		CAP AT ENDS	HORIZ
P412	6		6 - 3	X		CAP END REBUILD	HORIZ
P413	6		3 - 7	X		CAP END REBUILD	HORIZ
P414	2		3 - 8			CAP END REBUILD	VERT
P515	32		1 - 5			BEARING BLOCK TIES	VERT
P416	64		2 - 8			BEARING BLOCK	HORIZ
P417	4		5 - 10	X		BEARING BLOCK U-BARS	HORIZ

BILL OF BARS	COATED= 4360 LBS.
PIER 2	UNCOATED= 610 LBS.

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION	
	COATED	UNCOATED					
			FT				
P601		24	8 - 8			FOOTING	HORIZ
P602		21	9 - 2			FOOTING	HORIZ
P903	18		10 - 9	X		FOOTING TO COLUMN DOWELS	VERT
P904	18		24 - 11	X		COLUMN	VERT
P505	80		10 - 6	X		COLUMN - LATERAL TIES	HORIZ
P906	8		8 - 9			CAP DOWELS	HORIZ
P707	8		15 - 5	X		CAP BOTTOM	HORIZ
P508	10		13 - 6			CAP SIDES	HORIZ
P609	7		20 - 5	X		CAP TOP	HORIZ
P410	23		12 - 10	X		CAP STIRRUPS	VERT
P511	5		5 - 10	X		CAP AT ENDS	HORIZ
P412	6		6 - 3	X		CAP END REBUILD	HORIZ
P413	6		3 - 7	X		CAP END REBUILD	HORIZ
P414	2		3 - 8			CAP END REBUILD	VERT
P515	32		1 - 5			BEARING BLOCK TIES	VERT
P416	64		2 - 8			BEARING BLOCK	HORIZ
P417	4		5 - 10	X		BEARING BLOCK U-BARS	HORIZ

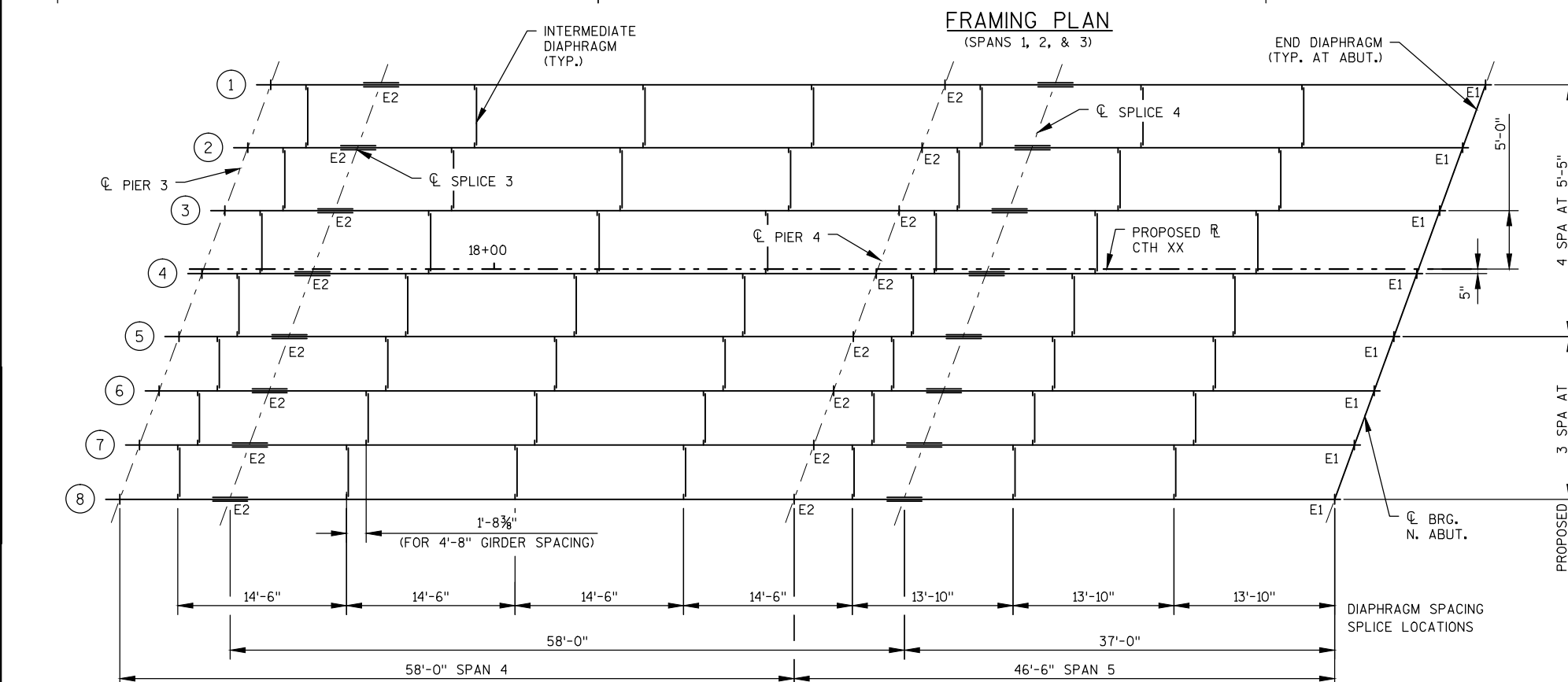
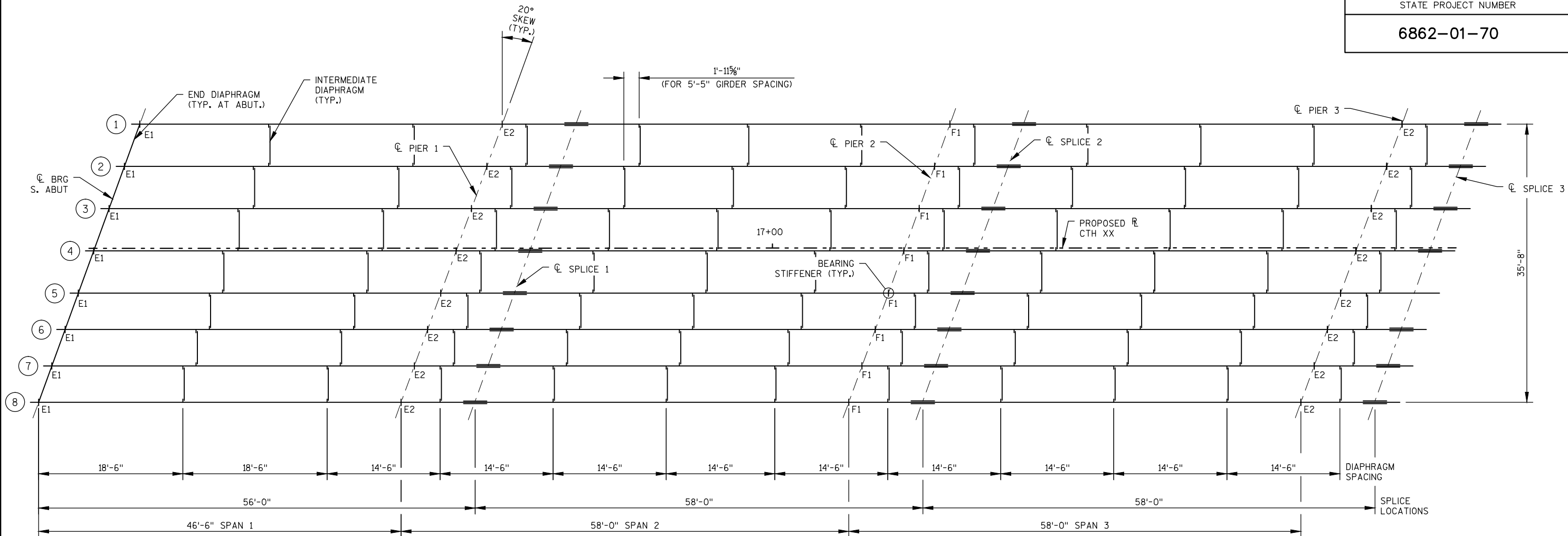
BILL OF BARS	COATED= 4290 LBS.
PIER 4	UNCOATED= 610 LBS.

MARK	NUMBER		LENGTH	BENT	BAR SERIES	LOCATION	
	COATED	UNCOATED					
			FT	IN			
P601		24	8 - 8			FOOTING	HORIZ
P602		21	9 - 2			FOOTING	HORIZ
P903	18		10 - 9	X		FOOTING TO COLUMN DOWELS	VERT
P904	18		24 - 5	X		COLUMN	VERT
P505	78		10 - 6	X		COLUMN - LATERAL TIES	HORIZ
P906	8		8 - 9			CAP DOWELS	HORIZ
P707	8		15 - 5	X		CAP BOTTOM	HORIZ
P508	10		13 - 6			CAP SIDES	HORIZ
P609	7		20 - 5	X		CAP TOP	HORIZ
P410	23		12 - 10	X		CAP STIRRUPS	VERT
P511	5		5 - 10	X		CAP AT ENDS	HORIZ
P412	6		6 - 3	X		CAP END REBUILD	HORIZ
P413	6		3 - 7	X		CAP END REBUILD	HORIZ
P414	2		3 - 8			CAP END REBUILD	VERT
P515	32		1 - 5			BEARING BLOCK TIES	VERT
P416	64		2 - 8			BEARING BLOCK	HORIZ
P417						NOT USED	

BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

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

BUNDLE P904 BARS AND TAG WITH PIER LOCATION.



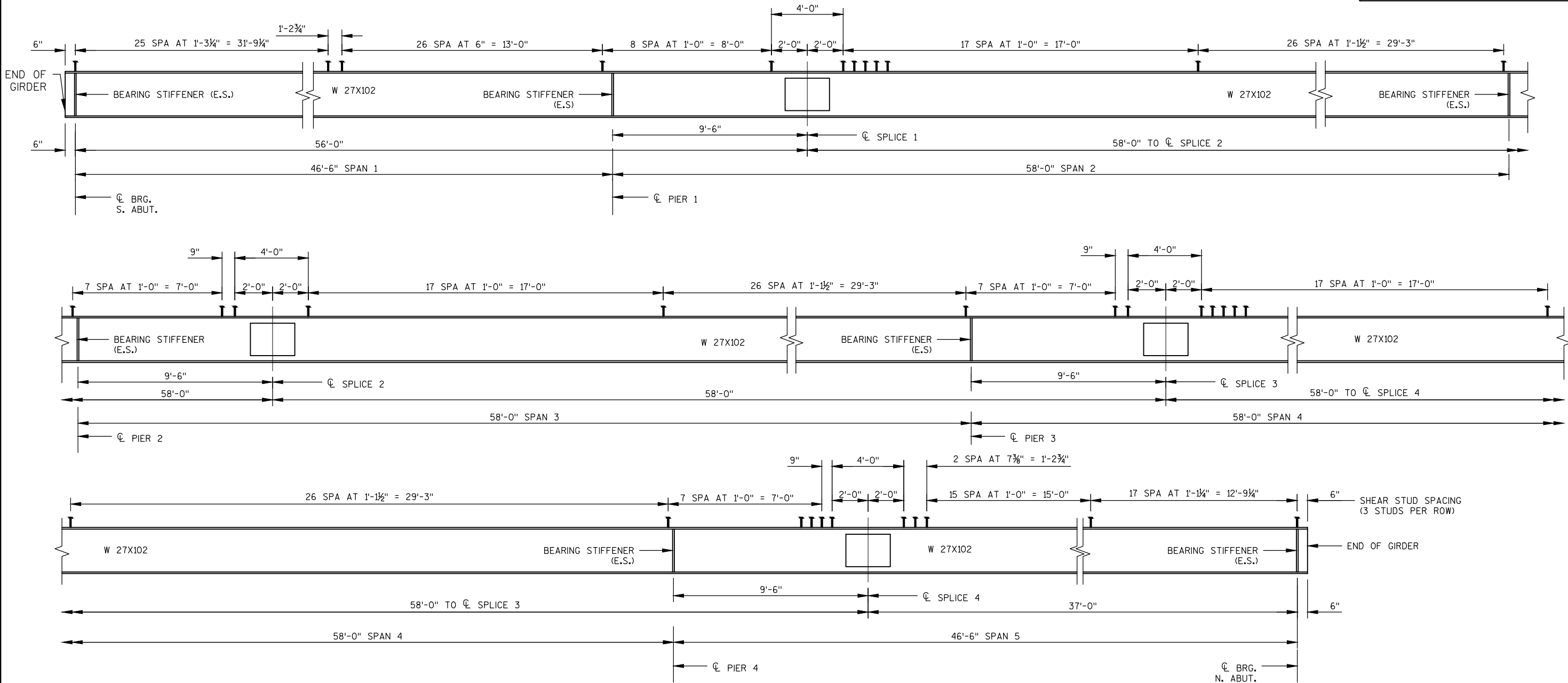
LEGEND

- F1 DENOTES FIXED BEARING AT PIER, SEE SHEET 24.
- E1 DENOTES EXPANSION BEARING AT ABUTMENT, SEE SHEET 26.
- E2 DENOTES EXPANSION BEARING AT PIER, SEE SHEET 25.

NOTES:

- ALL GIRDERS ARE STRAIGHT AND PARALLEL TO THE REFERENCE LINE.
- FOR GIRDER DETAILS SEE SHEET 21.
- FOR SPLICE DETAILS, SEE SHEET 22.
- FOR DIAPHRAGM & BEARING DETAILS, SEE SHEET 23.
- ALL NEW STRUCTURAL STEEL SHALL BE PAINTED.
- THE FINAL COAT OF PAINT ON ALL STRUCTURAL STEEL SHALL MATCH FEDERAL COLOR NO. 26293 (LIGHT GRAY) IN ACCORDANCE WITH FEDERAL STANDARD NO. 595B.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
		DRAWN BY	JAK
		PLANS CK'D.	GAR
GIRDER FRAMING PLAN		SHEET 76 OF 40	



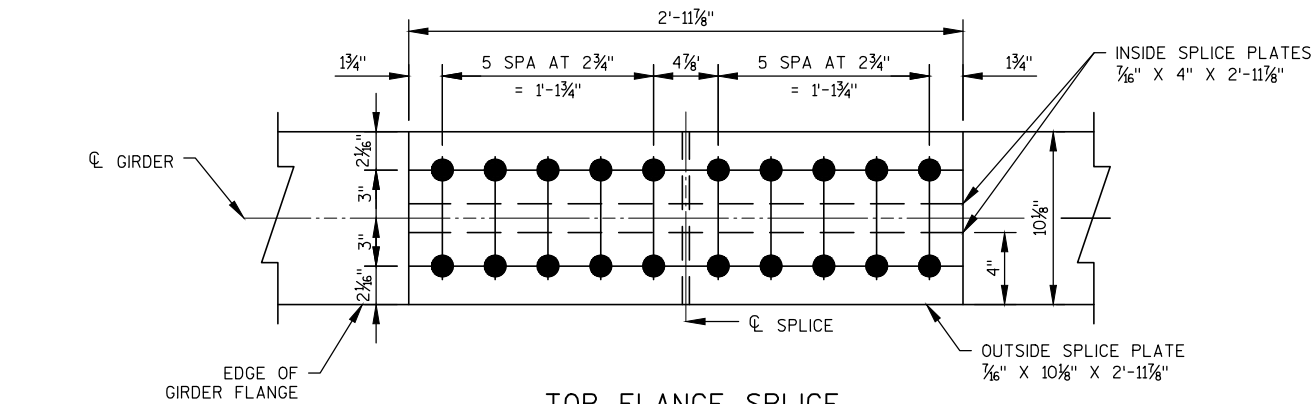
GIRDER ELEVATION

(INTERMEDIATE DIAPHRAGMS NOT SHOWN)

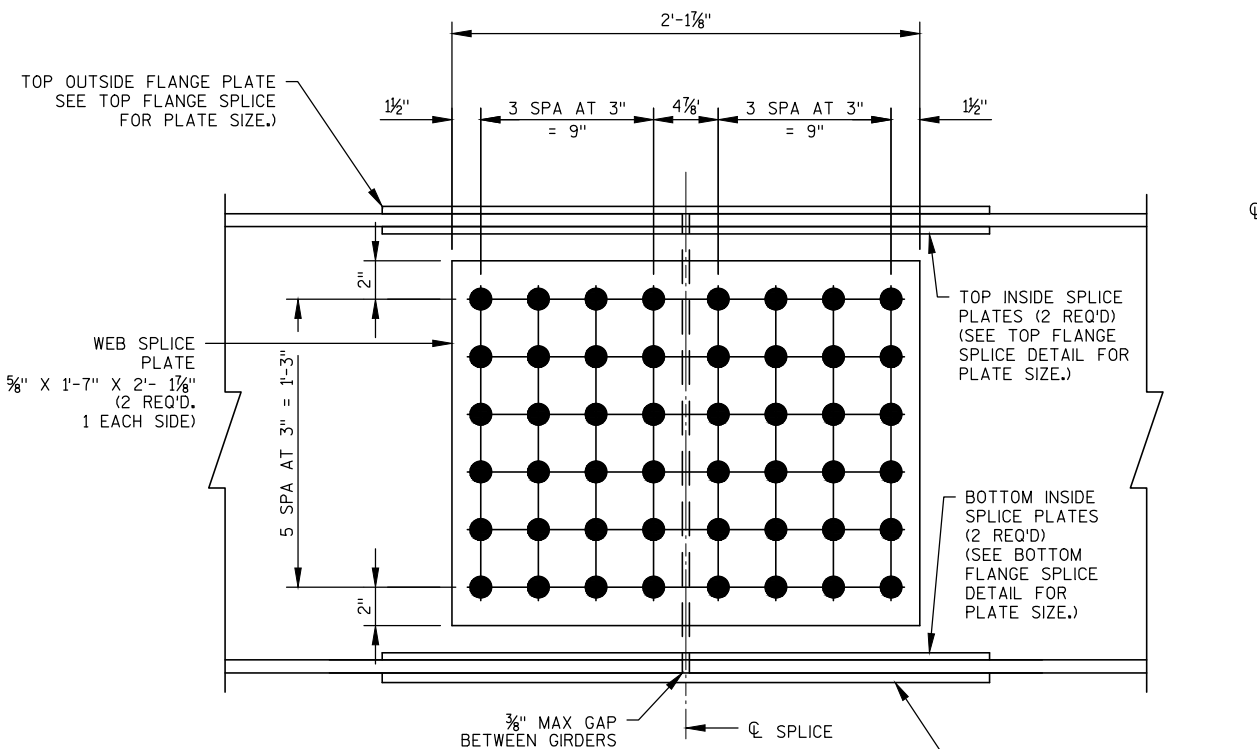
NOTES:

- ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A709, GRADE 50.
- THE FINAL COAT OF PAINT ON ALL STRUCTURAL STEEL SHALL MATCH FEDERAL COLOR NO. 26293 (LIGHT GRAY).
- FOR SPLICE DETAILS, SEE SHEET 22.
- FOR SHEAR CONNECTOR DETAILS, SEE SHEET 23.
- FOR DIAPHRAGM AND BEARING STIFFENER DETAILS, SEE SHEET 23.
- E.S. DENOTES EACH SIDE

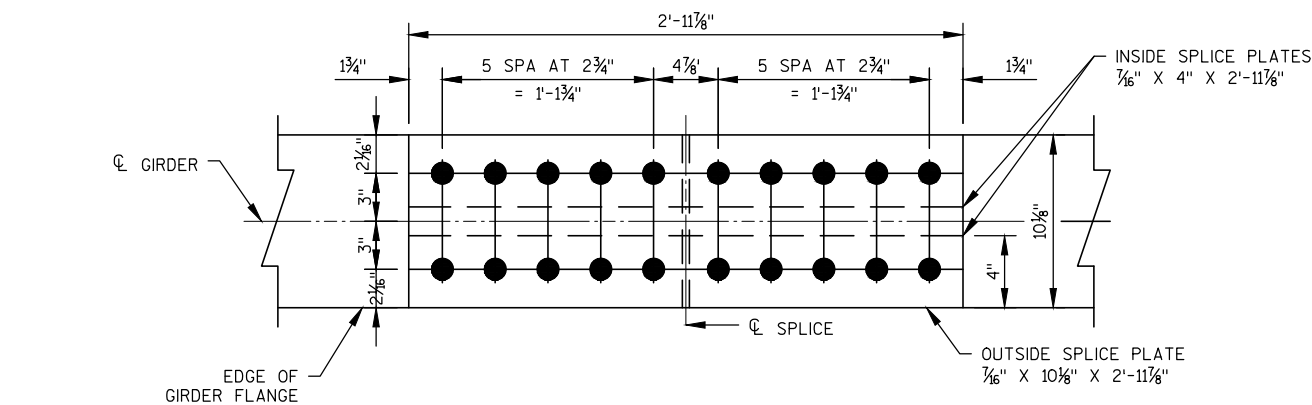
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
		DRAWN BY JAK	PLANS CK'D. GAR
GIRDER DETAILS		SHEET 77	OF 40



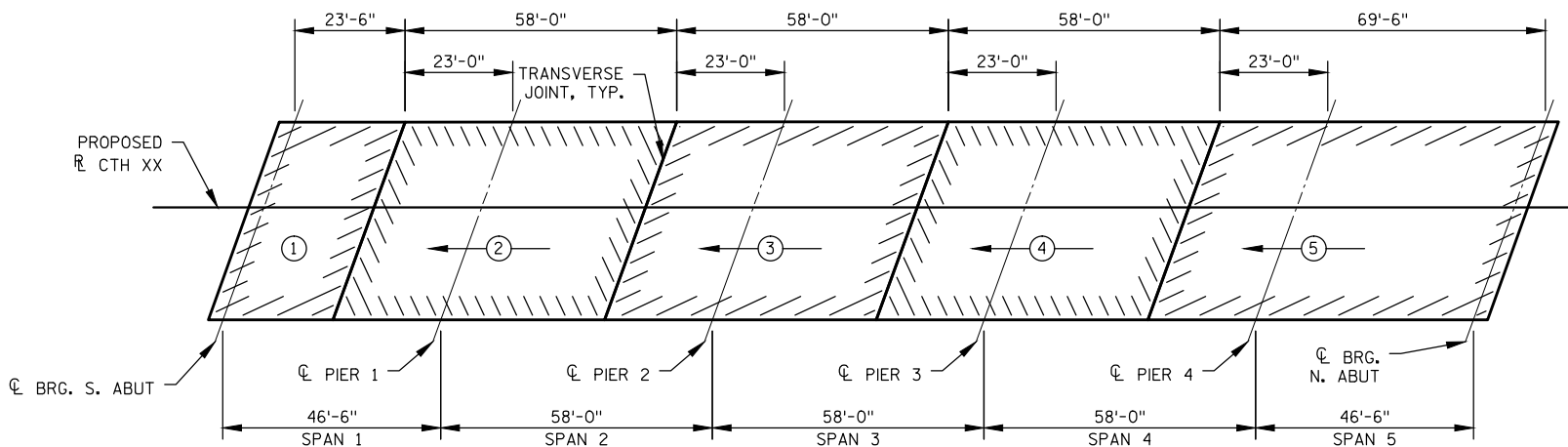
TOP FLANGE SPLICE



WEB SPLICE



BOTTOM FLANGE SPLICE



SLAB POURING DIAGRAM

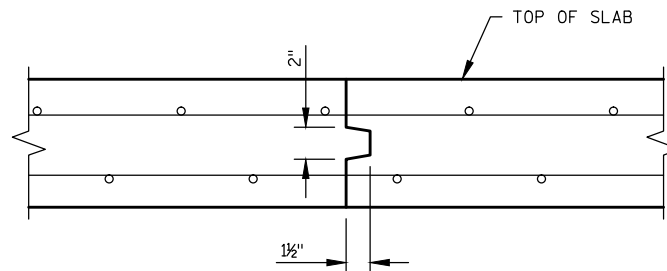
INDICATES POUR NUMBER AND DIRECTION OF POUR

NOTES FOR POURING DIAGRAM:

THE RATE OF PLACING CONCRETE SHALL EQUAL OR EXCEED 1/2 SPAN LENGTH PER HOUR BUT NEED NOT EXCEED 100 CU. YDS. PER HOURS.

TWO OR MORE ALTERNATE POURS MAY BE PLACED ON THE SAME DAY.

THE CONTRACTOR MAY SUBMIT AN ALTERNATE POURING SEQUENCE SUBJECT TO THE APPROVAL OF THE STRUCTURES DESIGN SECTION.



SECTION THRU TRANSVERSE JOINT

NOTES FOR SPLICE CONNECTION:

PLACE FIELD SPLICE NUTS UP ON ALL FLANGES OF ALL GIRDERS AND IN ON WEBS OF EXTERIOR GIRDERS.

ALL STRUCTURAL STEEL PLATES SHALL CONFORM TO ASTM A709, GRADE 50.

ALL BOLTED CONNECTIONS FOR FIELD SPLICES SHALL BE FRICTION TYPE MADE WITH 3/8" HIGH STRENGTH A325 BOLTS.

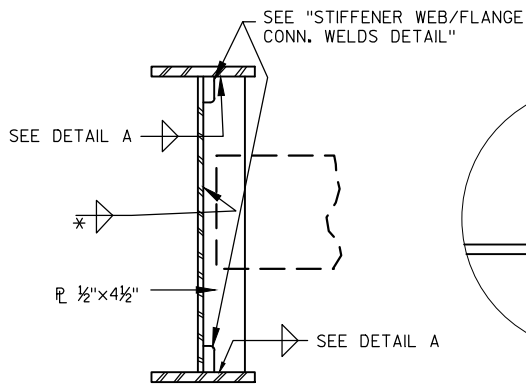
ALL BOLT HOLES SHALL BE 1 5/8" DIAMETER STANDARD HOLES.

CONTRACT SURFACES OF BOLTED PARTS SHALL MEET THE REQUIREMENTS OF AASHTO CLASS B WITH SLIP COEFFICIENT OF 0.50.

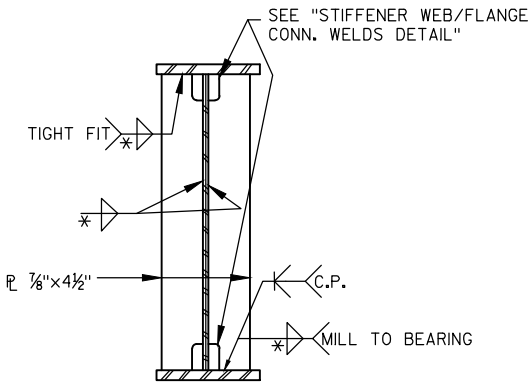
PRIOR TO STEEL BLAST, ALL FLAME CUT EDGES OF PLATES OR GIRDERS THAT ARE TO BE PAINTED SHALL BE GROUND OR PLANED TO REMOVE THE HARDENED SURFACE CAUSED BY THE FLAME, AND CORNERS CHAMFERED 1/8" MINIMUM.

DETAILS SHOWN FOR SPLICE CONNECTIONS 1 THRU 4.

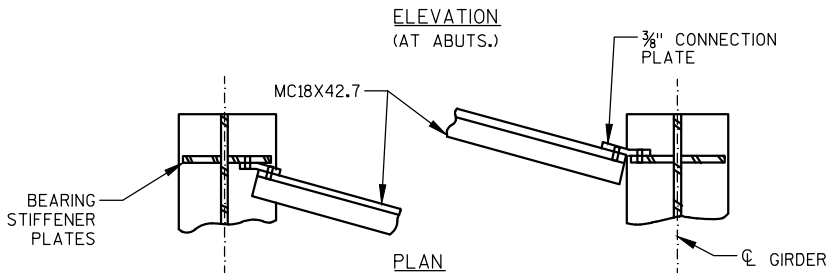
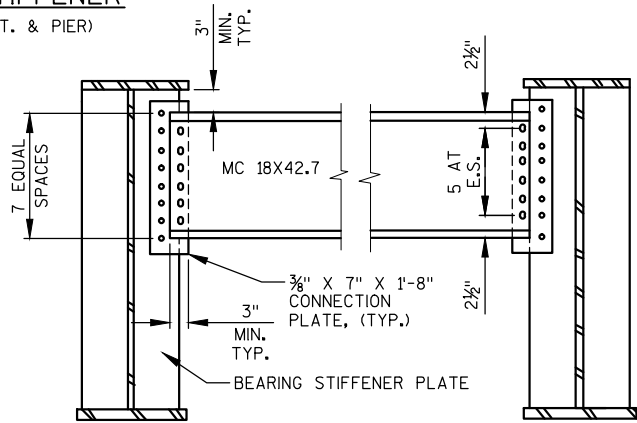
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY JAK		PLANS CK'D. GAR	
SPLICE DETAILS AND POURING DIAGRAM		SHE 78 OF 40	



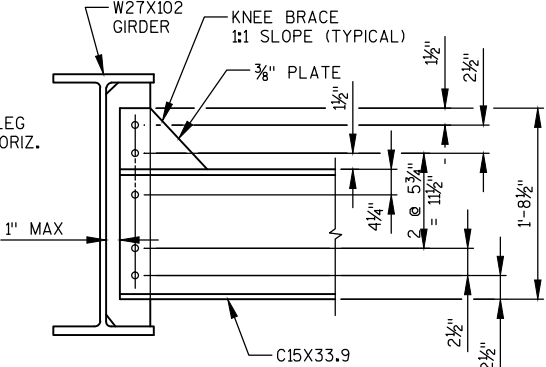
CONNECTION STIFFENER



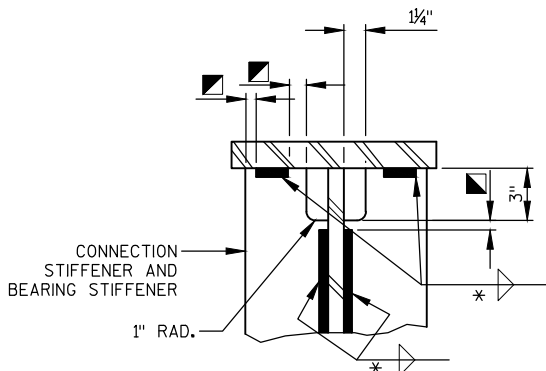
BEARING STIFFENER
(TYP. AT ABUT. & PIER)



END DIAPHRAGM CONNECTIONS

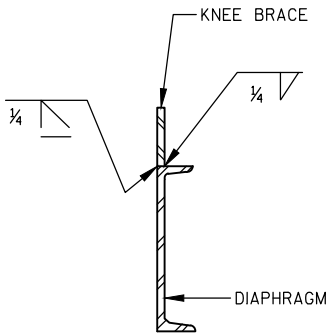


INTERMEDIATE DIAPHRAGM
(IN SPANS)



STIFFENER WEB/FLANGE CONN. WELDS DETAIL

1/8" MIN., 1/4" MAX. TYP.



SECTION THRU DIAPHRAGM

NOTES

ALL STRUCTURAL STEEL TO CONFORM TO ASTM A709, GRADE 50.

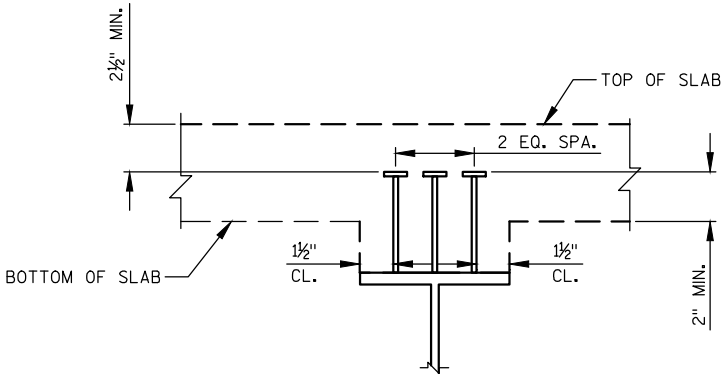
DIAPHRAGMS SHALL BE HORIZONTAL EXCEPT WHEN THE DIFFERENCE IN ADJACENT GIRDER ELEVATIONS IS OF A MAGNITUDE THAT NECESSITATES SLOPING THE DIAPHRAGMS

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

ALL BOLTED CONNECTIONS SHALL BE FRICTION TYPE USING 3/4" ϕ HIGH STRENGTH ASTM A325 BOLTS.

PRIOR TO STEEL BLAST, ALL FLAME CUT EDGES OF PLATES THAT ARE TO BE PAINTED SHALL BE GROUND OR PLANED TO REMOVE THE HARDENED SURFACE CAUSED BY THE FLAME, AND CORNERS CHAMFERED 1/8" MINIMUM.

ALL CONNECTION STIFFENER PLATES TO BE PERPENDICULAR TO WEB AND VERTICAL.



SHEAR CONNECTION DETAIL
(TYP. ALL GIRDERS)

USE THREE FIELD WELDED 7/8" DIA. X 5" LONG STUDS EQUALLY SPACED WITH A MIN. OF 1 1/2" CL. FROM THE FLANGE EDGE. STUDS SHALL NOT BE PLACED OVER FIELD SPLICE PLATES.

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

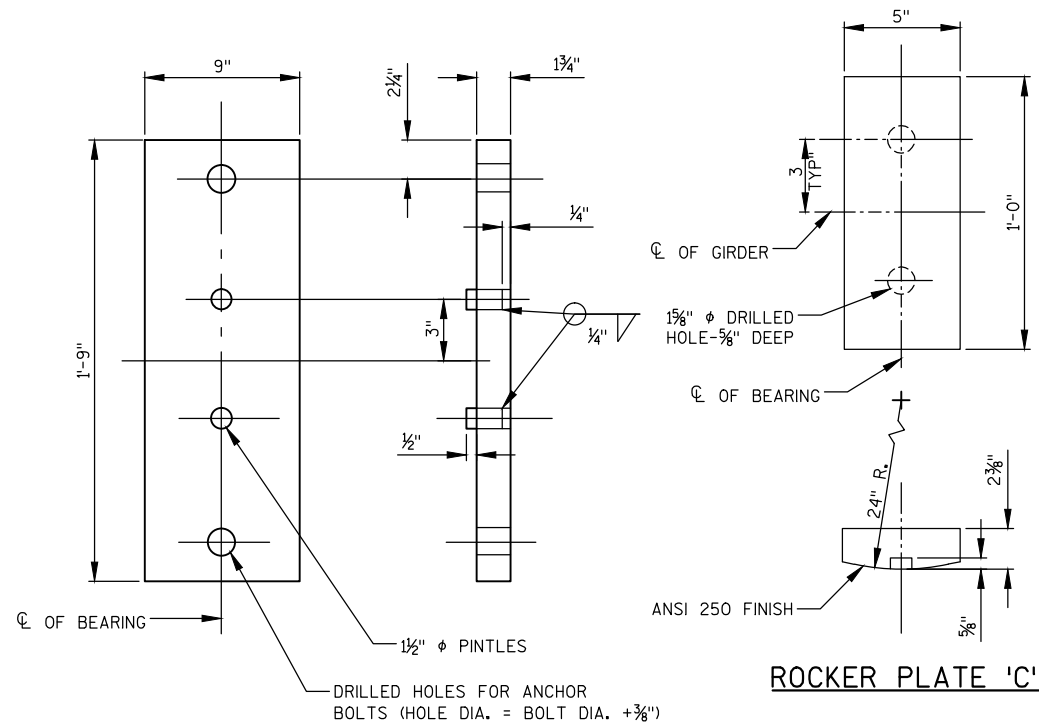
* TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED.	$\pm$ MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	Δ 5/16"
OVER 1 1/2"	Δ 3/8"

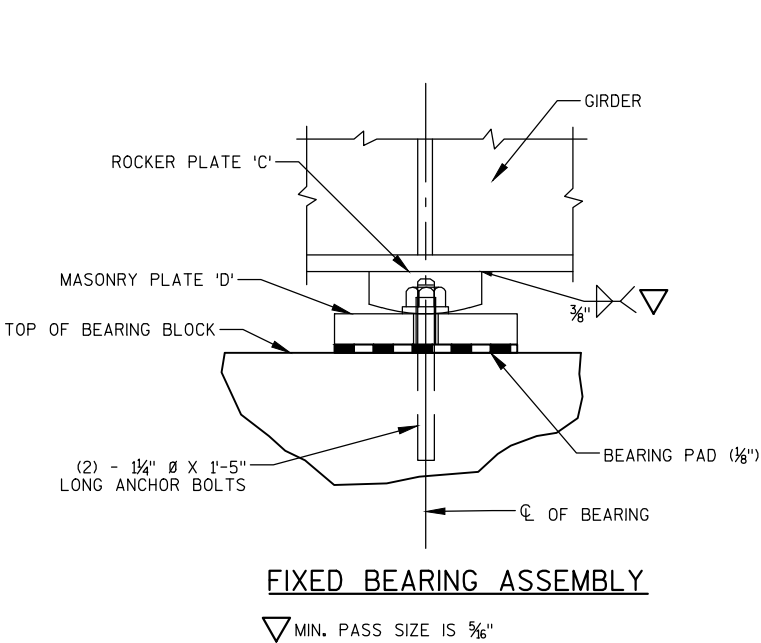
$\pm$ EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.

Δ MIN. PASS SIZE IS 5/16"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		JAK	PLANS CK'D. GAR
STEEL GIRDER DETAILS		SHE 79	40



MASONRY PLATE 'D'



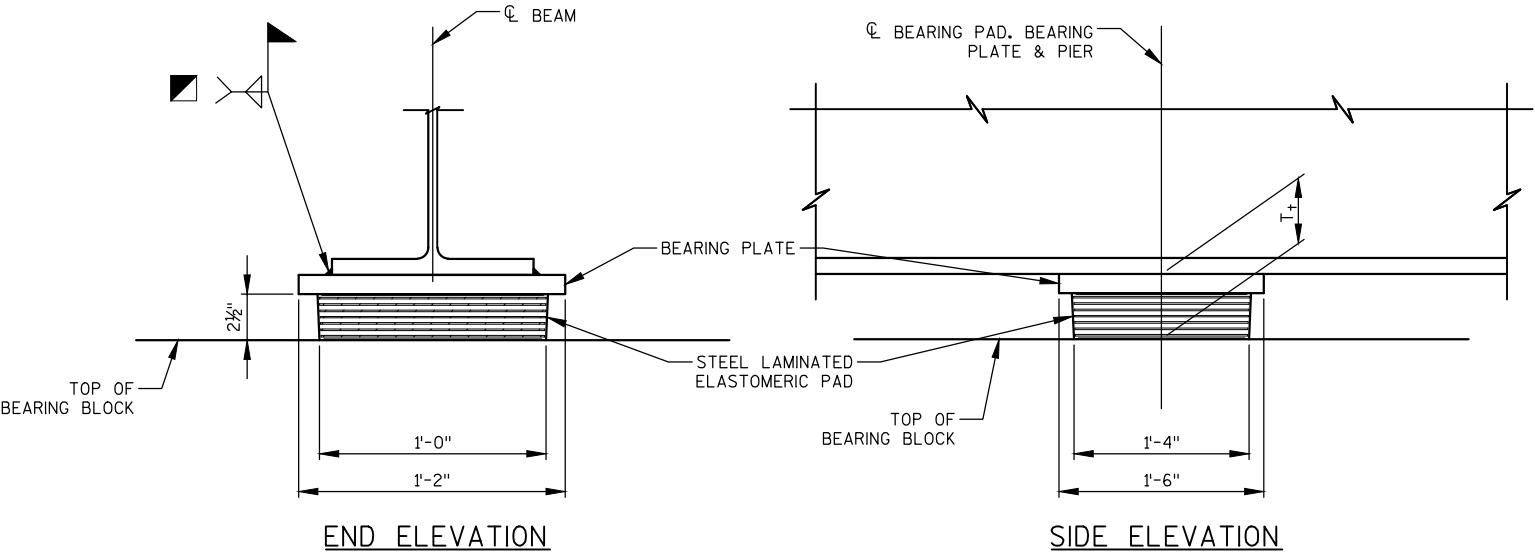
FIXED BEARING ASSEMBLY

▽ MIN. PASS SIZE IS 5/16"

BEARING NOTES

- ALL BEARING ARE SYMMETRICAL ABOUT CL GIRDER AND CL OF BEARING.
- ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WRAP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.
- ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.
- ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.
- ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. PROJECT ANCHOR BOLTS, MASONRY PLATE "D" THICKNESS + 2 1/4", ABOVE TOP OF CONCRETE BEARING BLOCK.
- ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES, BUT EXCLUDING PINTLES, ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 50W.
- STEEL PINTLES SHALL CONFORM TO ASTM A449 OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.
- ALL MATERIAL IN THE TYPE "A" BEARINGS, INCLUDING SHIM PLATES AND BEARING PADS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING ASSEMBLIES FIXED B-69-3", EACH.
- CHAMFER TOP OF PINTLES 1/8". DRILL HOLES FOR ALL PINTLES IN MASONRY PLATE "D" FOR A DRIVING FIT.
- PROVIDE 1/8" THICK BEARING PAD THE SAME SIZE AS MASONRY PLATE "D" FOR EACH BEARING.
- CHAMFER ANCHOR BOLTS PRIOR TO THREADING.
- ANCHOR BOLTS, NUTS, AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 36, OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.
- ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS C.
- ROCKER PLATE "C" SHALL BE SHOP PAINTED WITH A WELDABLE PRIMER.
- MASONRY PLATE "D" SHALL BE GALVANIZED.
- DRILLED HOLES FOR ANCHOR BOLTS IN MASONRY PLATE "D" SHALL HAVE A DIAMETER 3/8" LARGER THAN ANCHOR BOLT.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MJB	PLANS CK'D. GAR
FIXED BEARING DETAILS - PIER 2		SHE 80	40



EXPANSION BEARING AT PIERS 1, 3, & 4

BEARING NOTES

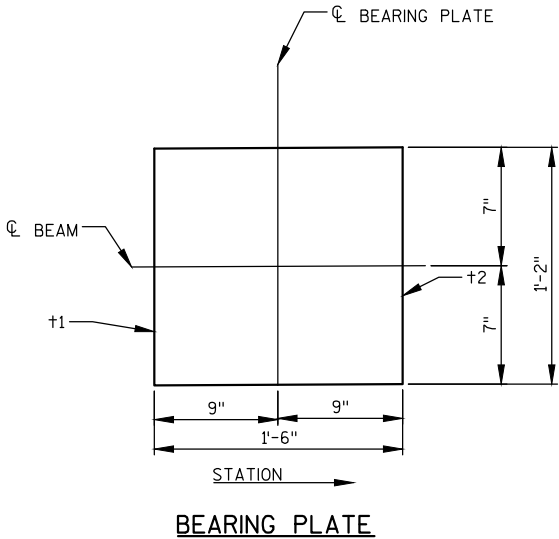
ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WRAP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

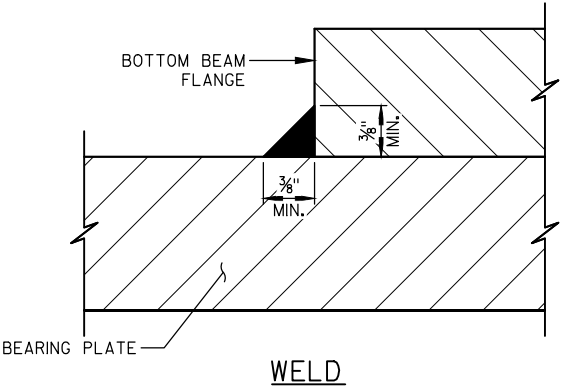
BEARING PLATE MATERIAL IN SHALL CONFORM TO ASTM A709 GRADE 50W. NO. 6 BLAST. VULCANIZE PLATE TO ELASTOMERIC PAD.

ALL MATERIAL USED FOR THE BEARINGS SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING ASSEMBLIES EXPANSION B-69-3", EACH.

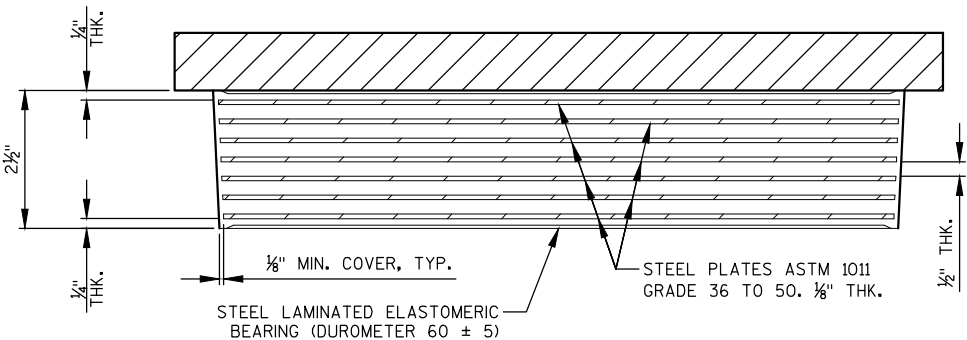
BEARING PLATE SHALL BE SHOP PAINTED WITH A WELDABLE PRIMER.



BEARING LOCATION	STEEL BEARING PLATE		
	+1	+2	T+
PIER 1			
BEAMS 1 TO 8	1.500 "	1.875 "	4.1875 "
PIER 3			
BEAMS 1 TO 8	1.500 "	1.8125 "	4.1563 "
PIER 4			
BEAMS 1 TO 8	1.500 "	1.750 "	4.1250 "

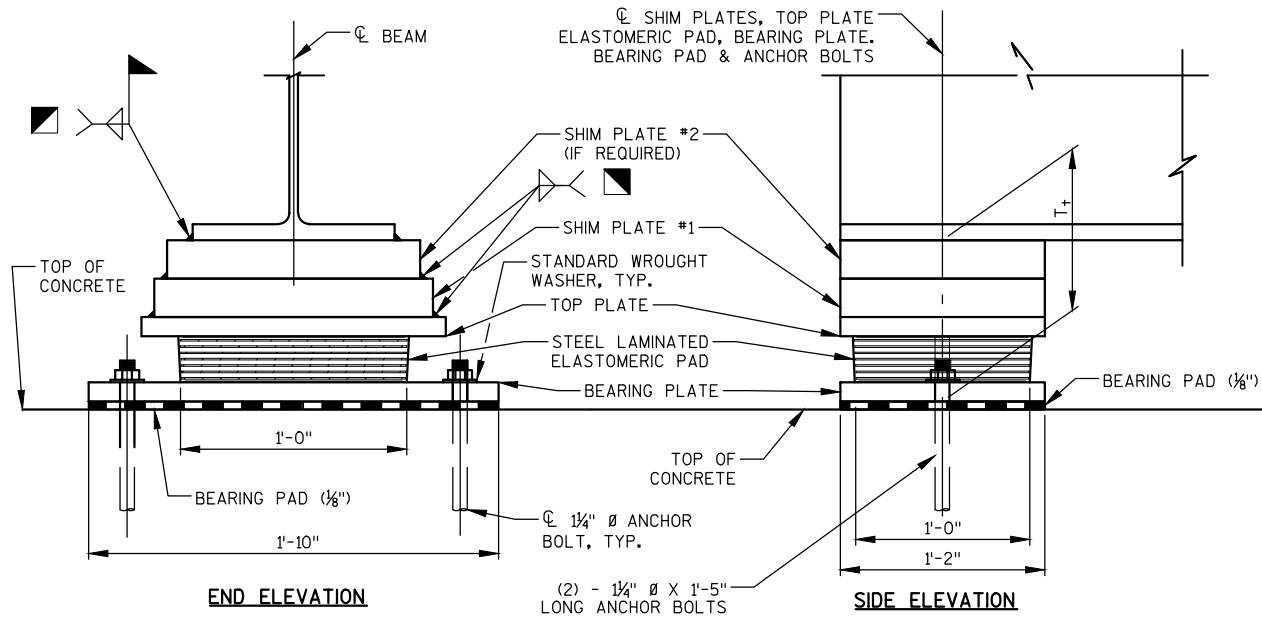


CAUTION SHALL BE EXERCISED WHEN A FIELD WELD OR SHOP WELD WILL BE MADE WHILE ELASTOMERIC BEARING PAD IS IN CONTACT WITH METAL. IN NO CASE SHALL THE ELASTOMER OR ELASTOMER BOND BE EXPOSED TO INSTANTANEOUS TEMPERATURES GREATER THAN 400° F. ANY DAMAGE TO ELASTOMERIC BEARING DUE TO WELDING WILL BE CAUSE FOR REJECTION. TEMPERATURE SHALL BE CONTROLLED BY USE OF HEAT CRAYONS FURNISHED BY THE CONTRACTOR.

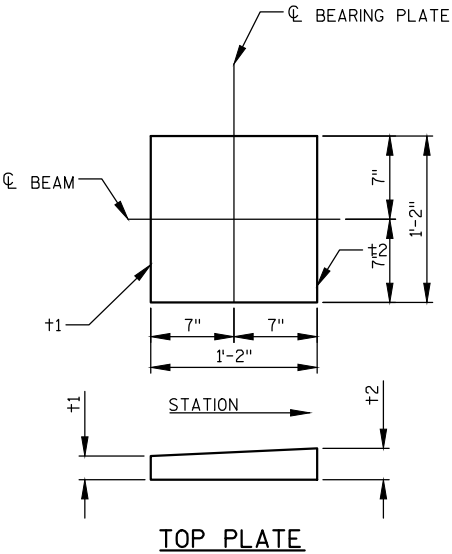
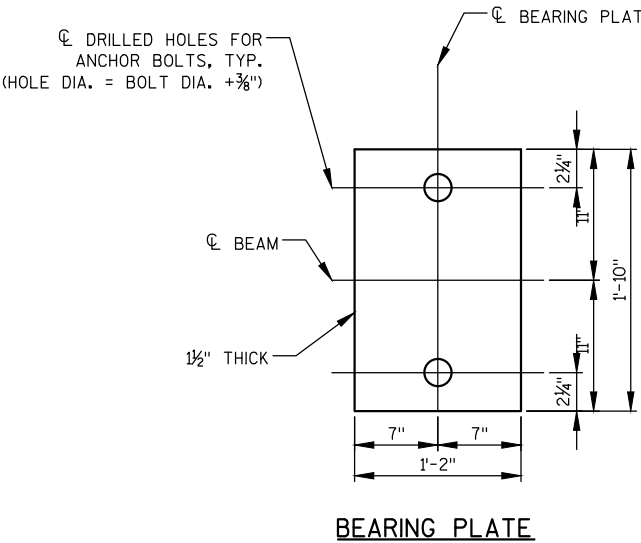


SECTION THRU ELASTOMERIC BEARING PAD

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MJB	PLANS CK'D. GAR
EXPANSION BEARING DETAILS - PIERS 1, 3 & 4		SHE 81	40



EXPANSION BEARING AT ABUTMENTS



BEARING NOTES

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WRAP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. PROJECT ANCHOR BOLTS, 2 1/4" ABOVE TOP OF BEARING PLATE.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES, BUT EXCLUDING ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 50W.

ALL MATERIAL USED FOR THE BEARINGS, INCLUDING SHIM PLATES, BEARING PADS AND ANCHOR BOLTS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "FABRICATED EXPANSION BEARING ASSEMBLIES B-69-3", EACH.

CHAMFER ANCHOR BOLTS PRIOR TO THREADING.

ANCHOR BOLTS, NUTS, AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 36, OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

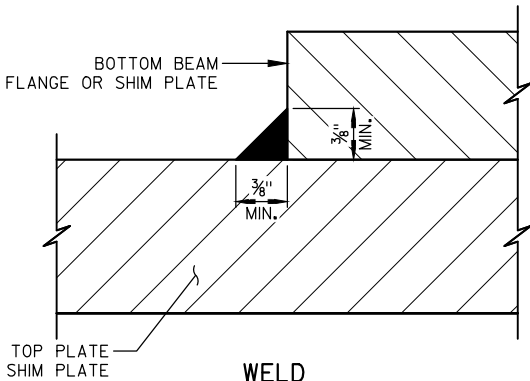
ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS C.

WHERE BEARINGS ARE PLACED ON EXISTING ABUTMENT SEATS THE ANCHOR BOLTS SHALL BE EMBEDDED INTO THE CONCRETE USING MASONRY ANCHORS TYPE L NO. 10 AS SHOWN ON THE ABUTMENT DETAIL SHEETS.

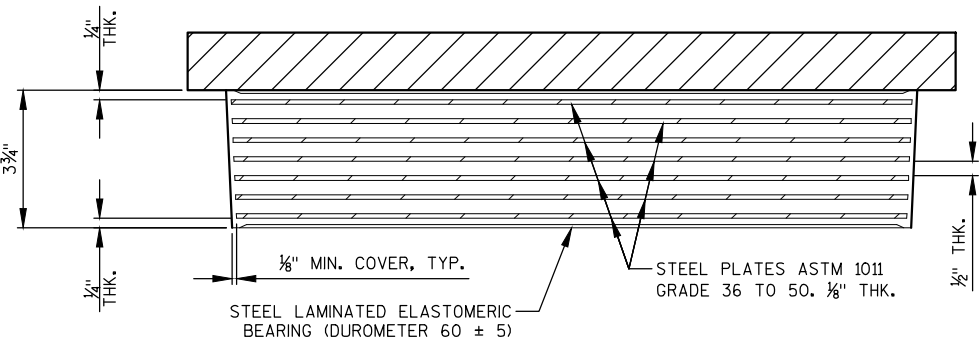
BEARING PLATE AND SHIM PLATES SHALL BE SHOP PAINTED WITH A WELDABLE PRIMER.

STEEL LAMINATED ELASTOMERIC PAD TO BE VULCANIZED TO BOTH THE TOP PLATE AND BEARING PLATE AS DETAILED IN THE SPECIFICATIONS.

	STEEL TOP PLATE		NO. OF SHIM PLATES	SHIM PLATE #1			SHIM PLATE #2				
BEARING LOCATION	+1	+2		Ws	Ls	+3	Ws	Ls	+4	T+	
SOUTH ABUTMENT											
BEAM 1	1.500 "	1.875 "	1	12.000 "	11.000 "	2.625 "	-	-	-	9.6875 "	
BEAM 2			1		11.000 "	3.125 "	-	-	-	10.1875 "	
BEAM 3			2		12.000 "	2.000 "	12.000 "	11.000 "	1.625 "	10.6875 "	
BEAM 4			2		12.000 "	3.000 "		11.000 "	2.625 "	12.6875 "	
BEAM 5			2		12.000 "	3.000 "		11.000 "	2.000 "	12.0625 "	
BEAM 6			2		12.000 "	2.000 "		11.000 "	1.375 "	10.4375 "	
BEAM 7			1		11.000 "	1.625 "		-	-	-	8.6875 "
BEAM 8			0		-	-	-	-	-	-	7.0625 "
NORTH ABUTMENT											
BEAM 1	1.500 "	1.625 "	1	12.000 "	11.000 "	1.500 "	-	-	-	8.4375 "	
BEAM 2			1		11.000 "	2.125 "	-	-	-	9.0625 "	
BEAM 3			1		11.000 "	2.625 "	-	-	-	9.5625 "	
BEAM 4			2		12.000 "	3.000 "	12.000 "	11.000 "	1.500 "	11.4375 "	
BEAM 5			2		12.000 "	2.125 "		11.000 "	2.000 "	11.0625 "	
BEAM 6			1		11.000 "	2.750 "		-	-	-	9.6875 "
BEAM 7			1		11.000 "	1.500 "		-	-	-	8.4375 "
BEAM 8			0		-	-		-	-	-	6.9375 "



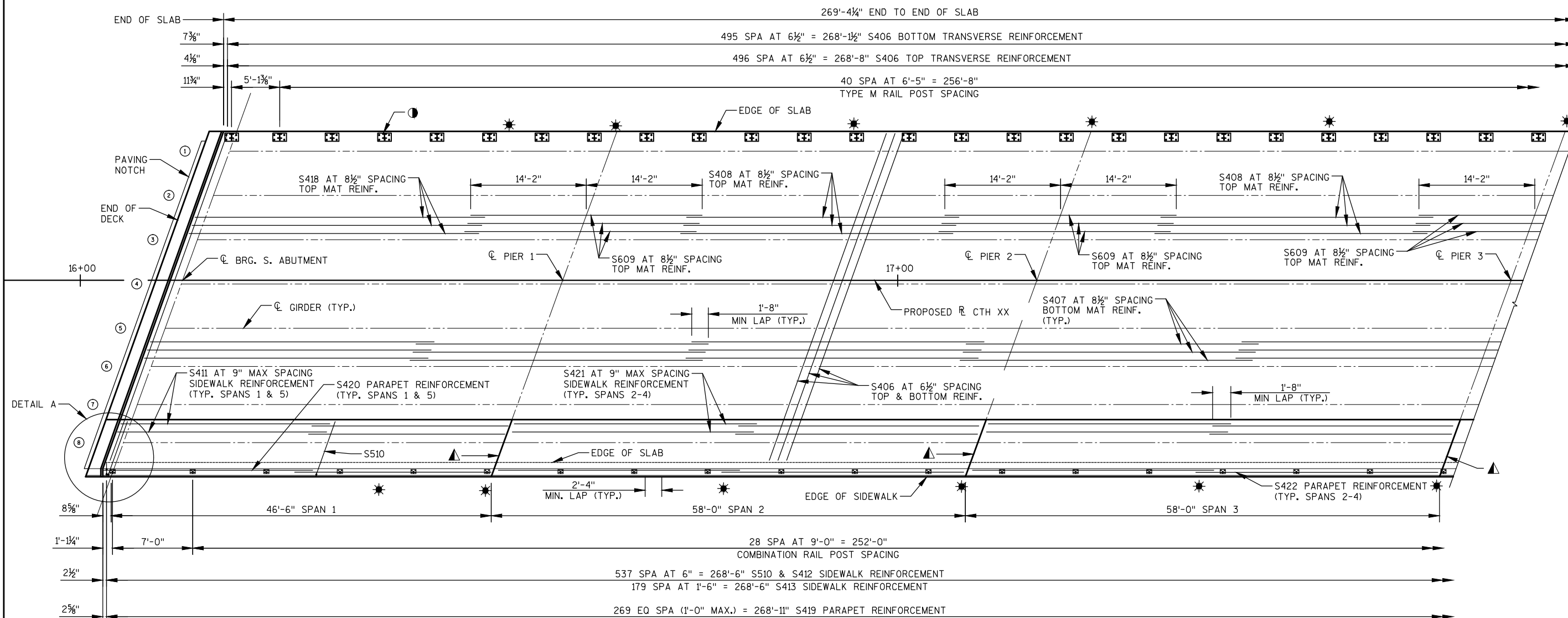
WELD



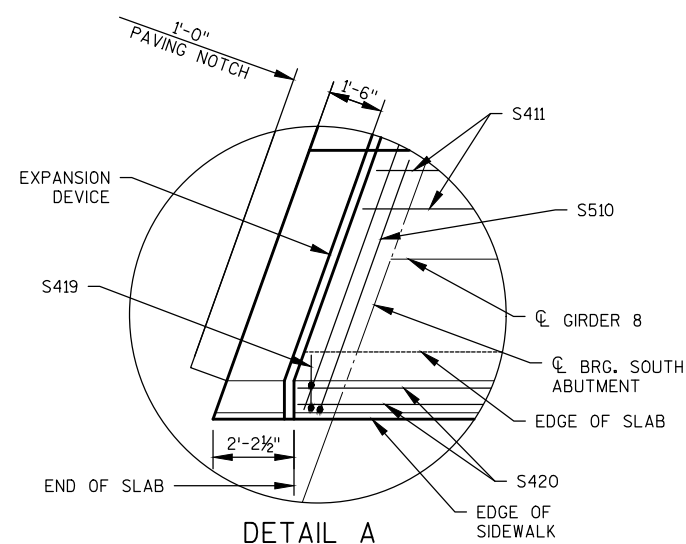
SECTION THRU ELASTOMERIC BEARING PAD

CAUTION SHALL BE EXERCISED WHEN A FIELD WELD OR SHOP WELD WILL BE MADE WHILE ELASTOMERIC BEARING PAD IS IN CONTACT WITH METAL. IN NO CASE SHALL THE ELASTOMER OR ELASTOMER BOND BE EXPOSED TO INSTANTANEOUS TEMPERATURES GREATER THAN 400° F. ANY DAMAGE TO ELASTOMERIC BEARING DUE TO WELDING WILL BE CAUSE FOR REJECTION. TEMPERATURE SHALL BE CONTROLLED BY USE OF HEAT CRAYONS FURNISHED BY THE CONTRACTOR.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MJB	PLANS CK'D. GAR
EXPANSION BEARING DETAILS - ABUTMENTS		SHE 82	40



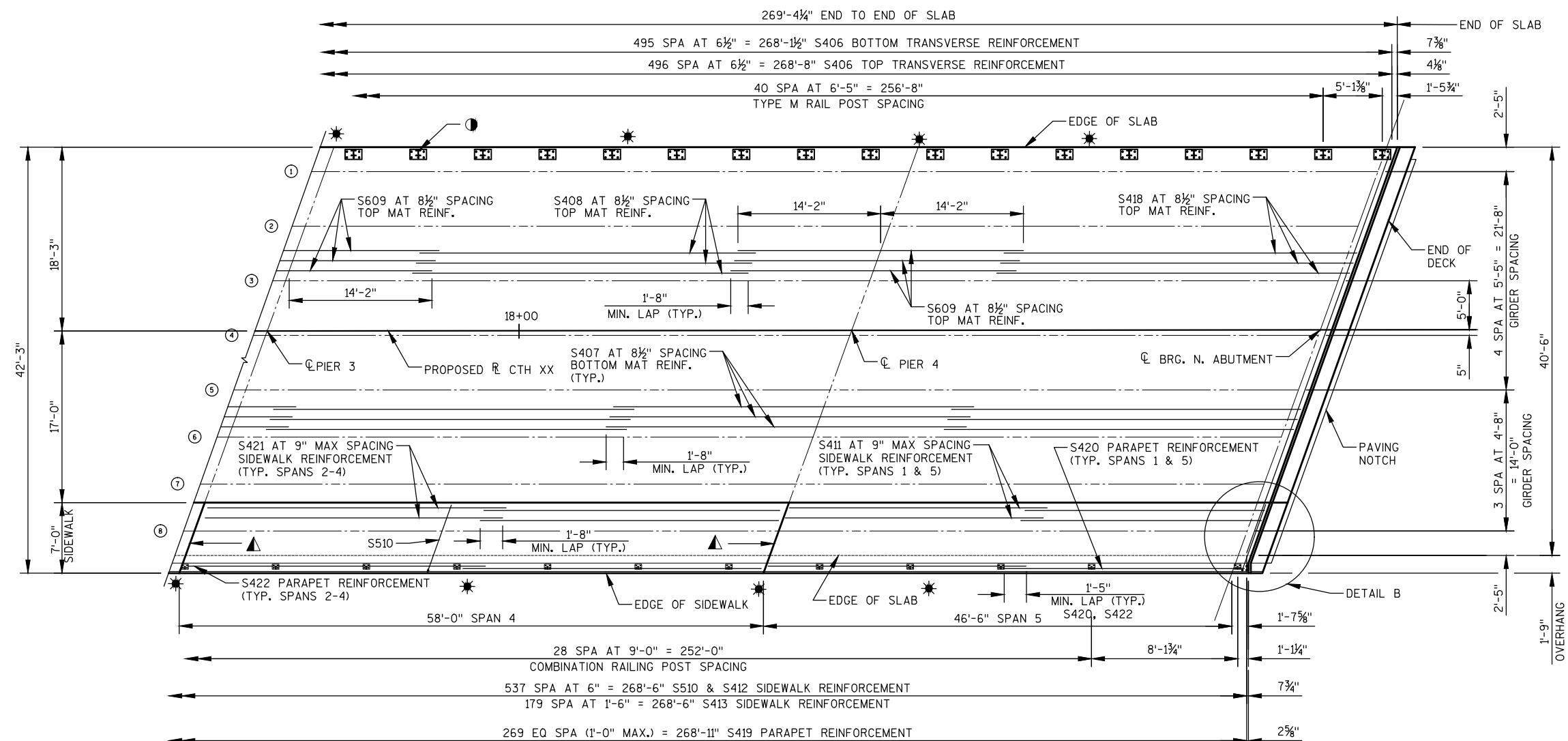
PART REINFORCEMENT PLAN



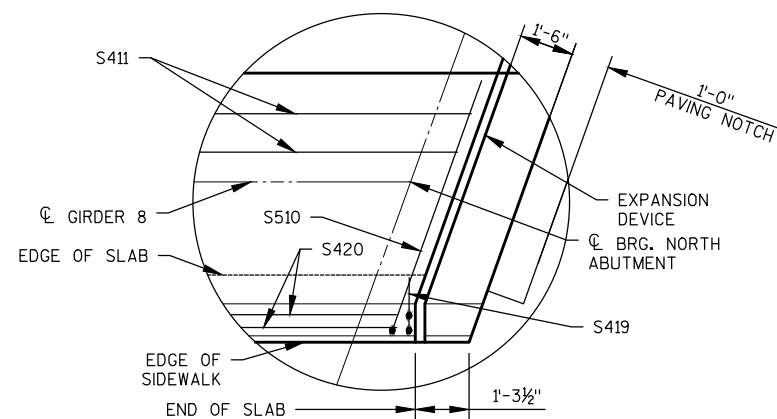
LEGEND

- ☼ SEE SHEET 39 FOR NAVIGATION LIGHT DETAILS.
- DENOTES GIRDER NUMBER
- ▲ DEFLECTION JOINT IN PARAPET AND SIDEWALK. DO NOT RUN BAR STEEL THROUGH JOINT. FOR DETAILS SEE SHEET 33.
- ◐ SEE SHEET 37 FOR RAILING REINFORCEMENT DETAILS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MKG	PLANS CK'D. GAR
SUPERSTRUCTURE PLAN -1		SHE 83 OF 40	



PART REINFORCEMENT PLAN

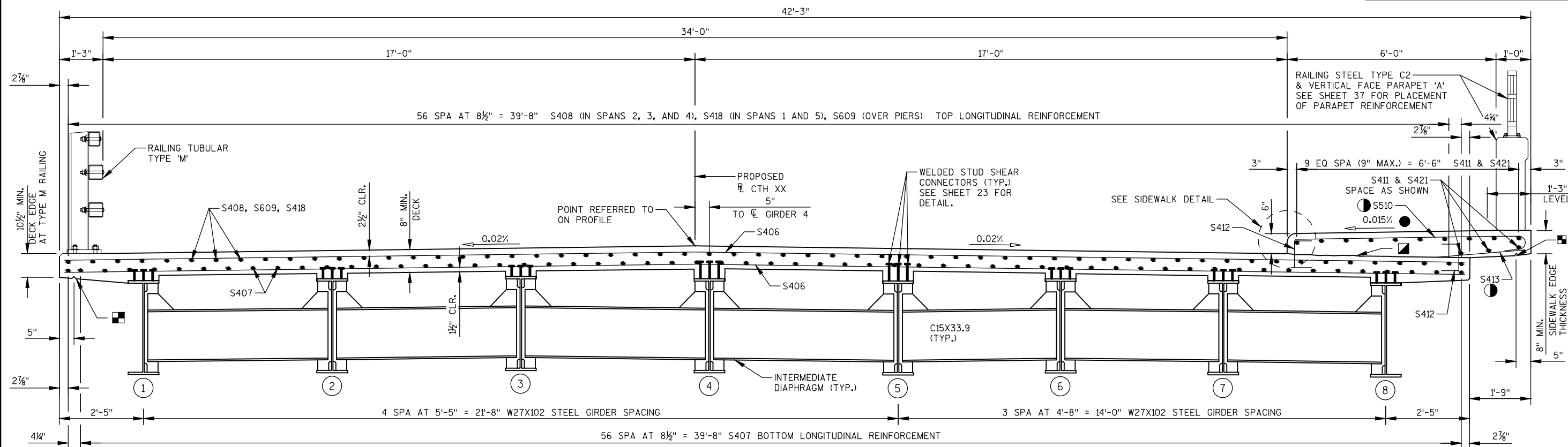


DETAIL B

LEGEND

- ★ SEE SHEET 39 FOR NAVIGATION LIGHT DETAILS.
- ⊙ DENOTES GIRDER NUMBER
- ▲ DEFLECTION JOINT IN PARAPET AND SIDEWALK. DO NOT RUN BAR STEELTHROUGH JOINT. FOR DETAILS SEE SHEET 33.
- SEE SHEET 37 FOR RAILING REINFORCEMENT DETAILS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MKG	PLANS CK'D. GAR
SUPERSTRUCTURE PLAN - 2		SHEET 84 OF 40	



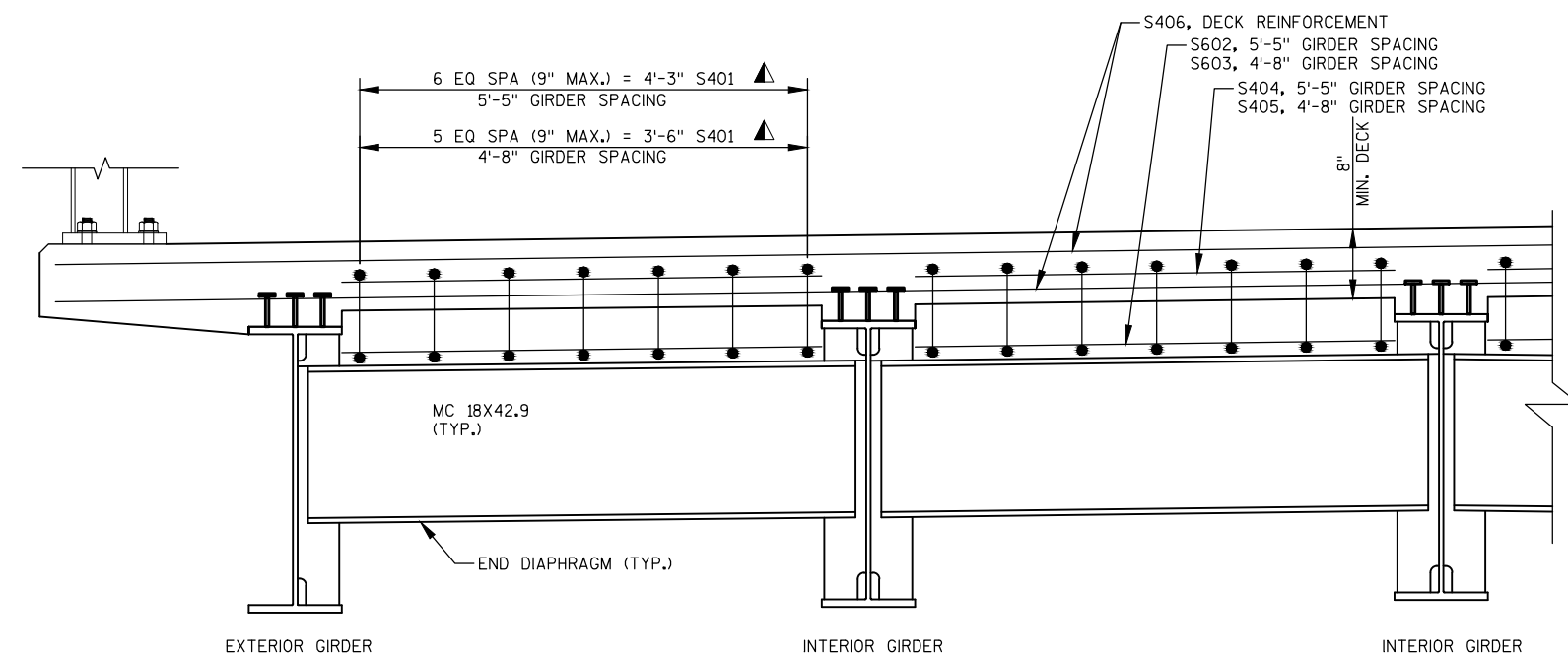
PROPOSED CROSS SECTION THRU DECK

(LOOKING NORTH)

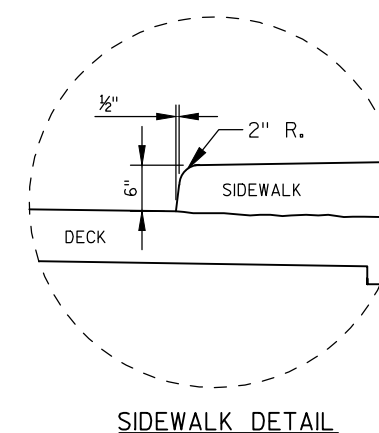
NAVIGATION LIGHTING NOT SHOWN
SEE SHEET 39 FOR DETAILS

LEGEND

- 3/4" 'V' GROOVE. TERMINATE 2'-0" FROM FRONT FACE OF ABUTMENTS.
- ± 0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ▣ CONSTRUCTION JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE CROSS SLOPE.
- ◐ MINIMUM CLEARANCE SAME FOR DECK AND SIDEWALK.
- ▲ S401 BARS PLACED PARALLEL TO ϕ GIRDERS.

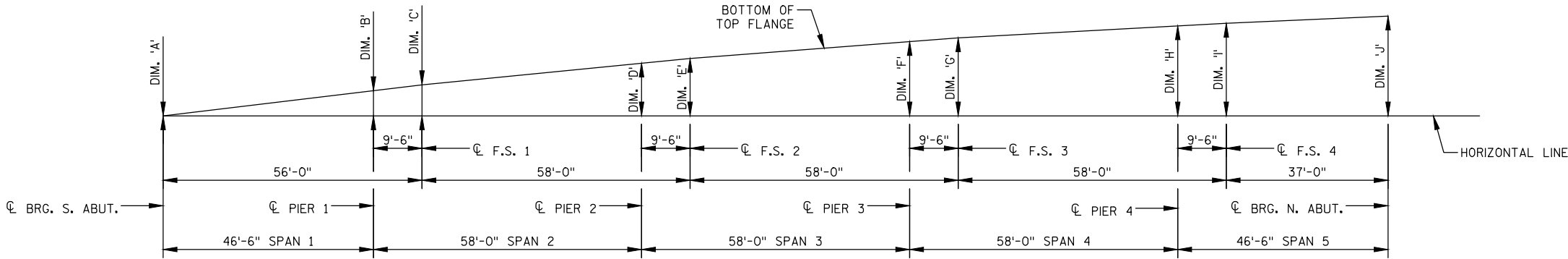
PART TRANSVERSE SECTION THRU DECK
AT END DIAPHRAGM

(LONGITUDINAL DECK REINFORCEMENT NOT SHOWN)



SIDEWALK DETAIL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MKG	PLANS CK'D. GAR
SUPERSTRUCTURE DETAILS		SHE 85	40



BLOCKING DIAGRAM

GIRDER BLOCKING DIMENSIONS

	DIM. 'A'	DIM. 'B'	DIM. 'C'	DIM. 'D'	DIM. 'E'	DIM. 'F'	DIM. 'G'	DIM. 'H'	DIM. 'I'	DIM. 'J'
GIRDER 1	0"	1¼"	1½"	2⅞"	2¾"	3⅝"	3⅜"	4½"	4⅝"	5"
GIRDER 2	0"	1¼"	1½"	2⅞"	2⅜"	3⅜"	3⅜"	4½"	4⅝"	5"
GIRDER 3	0"	1¼"	1½"	2⅞"	2⅜"	3⅜"	3⅜"	4⅝"	4⅜"	5⅛"
GIRDER 4	0"	1¼"	1½"	2⅞"	2⅜"	3¾"	3⅜"	4⅝"	4¾"	5⅛"
GIRDER 5	0"	1¼"	1½"	2⅞"	2⅞"	3¾"	3⅜"	4⅝"	4¾"	5⅞"
GIRDER 6	0"	1¼"	1⅞"	2⅞"	2⅞"	3¾"	3⅜"	4⅝"	4⅜"	5⅞"
GIRDER 7	0"	1⅝"	1⅞"	2⅞"	2⅞"	3⅜"	4"	4⅜"	4⅜"	5⅞"
GIRDER 8	0"	1⅝"	1⅞"	2⅞"	2⅞"	3⅜"	4"	4⅜"	4⅞"	5¾"

TOP OF STEEL ELEVATIONS

GIRDER	C/L BRG. S. ABUT.	C/L PIER 1	C/L F.S. 1	C/L PIER 2	C/L F.S. 2	C/L PIER 3	C/L F.S. 3	C/L PIER 4	C/L F.S. 4	C/L BRG. N. ABUT.
1	766.31	767.55	767.81	768.88	769.09	769.96	770.13	770.80	770.93	771.29
2	766.36	767.61	767.87	768.95	769.16	770.04	770.21	770.88	771.02	771.38
3	766.41	767.67	767.93	769.02	769.23	770.11	770.29	770.97	771.11	771.47
4	766.45	767.71	767.97	769.07	769.29	770.17	770.35	771.04	771.18	771.54
5	766.28	767.55	767.81	768.92	769.14	770.03	770.21	770.90	771.04	771.42
6	766.14	767.42	767.68	768.79	769.01	769.91	770.09	770.79	770.93	771.31
7	766.00	767.28	767.54	768.66	768.88	769.79	769.97	770.67	770.81	771.20
8	765.86	767.14	767.41	768.53	768.75	769.66	769.84	770.56	770.70	771.09

NOTE:

THESE ELEVATIONS ARE TO TOP OF STEEL (SPlice AND COVER PLATE THICKNESS, IF APPLICABLE, ARE ACCOUNTED FOR) AND THEY ARE FOR THE MATERIAL AS ERECTED. THE ELEVATION OF THE TOP STEEL AT FIELD SPLICE (F.S.) POINTS SHALL BE CHECKED, AND CORRECTED, IF POSSIBLE, AFTER ERECTION AND BEFORE PERMANENTLY BOLTING THE DIAPHRAGMS IN PLACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MJB	PLANS CK'D. GAR
BLOCKING DIAGRAM & TOP OF STEEL			SHE 86 OF 40

DEFLECTIONS - SPANS 1 & 2

STATE PROJECT NUMBER

6862-01-70

		SPAN 1											SPAN 2										
GIRDER		CL BRG. S. ABUT.	1.1 PT	1.2 PT	1.3 PT	1.4 PT	1.5 PT	1.6 PT	1.7 PT	1.8 PT	1.9 PT	CL OF PIER 1	2.1 PT	2.2 PT	2.3 PT	2.4 PT	2.5 PT	2.6 PT	2.7 PT	2.8 PT	2.9 PT	CL OF PIER 2	
1	TOTAL	0.0	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.2	0.1	0.1	0.0	
	CONC. ONLY	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.0	
2	TOTAL	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.3	0.4	0.4	0.4	0.3	0.1	0.0	0.0	
	CONC. ONLY	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0	
3	TOTAL	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.3	0.4	0.4	0.4	0.3	0.1	0.0	0.0	
	CONC. ONLY	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0	
4	TOTAL	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.3	0.4	0.4	0.4	0.3	0.1	0.0	0.0	
	CONC. ONLY	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0	
5	TOTAL	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.3	0.3	0.1	0.0	0.0	
	CONC. ONLY	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.2	0.2	0.1	0.0	0.0	
6	TOTAL	0.0	0.1	0.1	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.3	0.3	0.1	0.0	0.0	
	CONC. ONLY	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	
7	TOTAL	0.0	0.1	0.1	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.3	0.3	0.1	0.0	0.0	
	CONC. ONLY	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	
8	TOTAL	0.0	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.4	0.2	0.1	0.0	0.0	
	CONC. ONLY	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.0	0.0	

DEFLECTIONS - SPANS 3 & 4

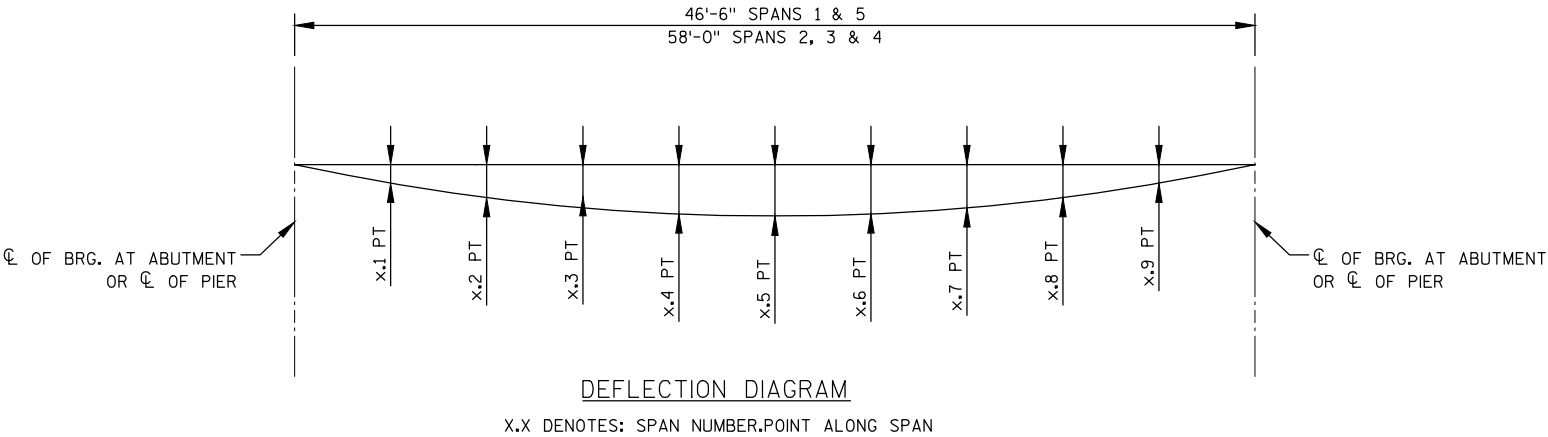
		SPAN 3										SPAN 4										
GIRDER		CL OF PIER 2	3.1 PT	3.2 PT	3.3 PT	3.4 PT	3.5 PT	3.6 PT	3.7 PT	3.8 PT	3.9 PT	CL OF PIER 3	4.1 PT	4.2 PT	4.3 PT	4.4 PT	4.5 PT	4.6 PT	4.7 PT	4.8 PT	4.9 PT	CL OF PIER 4
1	TOTAL	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.2	0.1	0.1	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.2	0.1	0.1	0.0
	CONC. ONLY	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.0
2	TOTAL	0.0	0.0	0.1	0.2	0.3	0.4	0.4	0.3	0.1	0.0	0.0	0.0	0.1	0.3	0.4	0.4	0.4	0.3	0.1	0.0	0.0
	CONC. ONLY	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0
3	TOTAL	0.0	0.0	0.1	0.2	0.3	0.4	0.4	0.3	0.1	0.0	0.0	0.0	0.1	0.3	0.4	0.4	0.4	0.3	0.1	0.0	0.0
	CONC. ONLY	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0
4	TOTAL	0.0	0.0	0.1	0.2	0.3	0.4	0.4	0.3	0.1	0.0	0.0	0.0	0.1	0.3	0.4	0.4	0.4	0.3	0.1	0.0	0.0
	CONC. ONLY	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0
5	TOTAL	0.0	0.0	0.1	0.2	0.3	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.3	0.3	0.4	0.3	0.3	0.1	0.0	0.0
	CONC. ONLY	0.0	0.0	0.1	0.2	0.2	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.2	0.2	0.1	0.0	0.0
6	TOTAL	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.3	0.3	0.1	0.0	0.0
	CONC. ONLY	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0
7	TOTAL	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.3	0.3	0.1	0.0	0.0
	CONC. ONLY	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0
8	TOTAL	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.4	0.2	0.1	0.0	0.0
	CONC. ONLY	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.0	0.0

DEFLECTIONS - SPAN 5

		SPAN 5										CL BRG. N. ABUT.
GIRDER		CL OF PIER 4	5.1 PT	5.2 PT	5.3 PT	5.4 PT	5.5 PT	5.6 PT	5.7 PT	5.8 PT	5.9 PT	
1	TOTAL	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0
	CONC. ONLY	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0
2	TOTAL	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0
	CONC. ONLY	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0
3	TOTAL	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0
	CONC. ONLY	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0
4	TOTAL	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0
	CONC. ONLY	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0
5	TOTAL	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0
	CONC. ONLY	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0
6	TOTAL	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.1	0.1	0.0
	CONC. ONLY	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.0
7	TOTAL	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.1	0.1	0.0
	CONC. ONLY	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.0
8	TOTAL	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0
	CONC. ONLY	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0

NOTE:

DEFLECTIONS ARE THEORETICAL AND MAY VARY IN THE FIELD. ALL DEFLECTIONS GIVEN IN INCHES.
TOTAL DEFLECTION = CONCRETE ONLY DEFLECTION PLUS STEEL DEAD LOAD DEFLECTION
CONCRETE ONLY DEFLECTION = CONCRETE DECK DEFLECTION PLUS COMPOSITE DEAD LOAD DEFLECTION



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
	DRAWN BY	MJB	PLANS CK'D. GAR
DEFLECTION TABLES		SHE 87	40

TOP OF DECK ELEVATIONS - SPANS 1 THRU 5

LOCATION	S. ABUT.	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	PIER 1
DECK EDGE LT	767.07	767.20	767.33	767.46	767.59	767.71	767.83	767.95	768.07	768.19	768.31
GIRDER 1	767.09	767.22	767.35	767.48	767.61	767.73	767.86	767.98	768.10	768.22	768.34
GIRDER 2	767.15	767.28	767.41	767.54	767.66	767.79	767.91	768.04	768.16	768.28	768.40
GIRDER 3	767.20	767.33	767.46	767.59	767.72	767.85	767.97	768.09	768.22	768.34	768.45
R/L CTH XX	767.25	767.38	767.51	767.64	767.77	767.90	768.02	768.15	768.27	768.39	768.51
GIRDER 4	767.23	767.37	767.50	767.63	767.76	767.88	768.01	768.13	768.26	768.38	768.50
GIRDER 5	767.07	767.20	767.33	767.46	767.59	767.72	767.85	767.97	768.10	768.22	768.34
GIRDER 6	766.92	767.06	767.19	767.32	767.45	767.58	767.71	767.83	767.96	768.08	768.20
GIRDER 7	766.78	766.92	767.05	767.18	767.31	767.44	767.57	767.70	767.82	767.94	768.06
RIGHT CURB LINE	766.73	766.86	766.99	767.13	767.26	767.39	767.51	767.64	767.76	767.89	768.01
GIRDER 8	766.64	766.77	766.91	767.04	767.17	767.30	767.43	767.56	767.68	767.80	767.93
DECK EDGE RT - SW	767.25	767.39	767.52	767.65	767.79	767.92	768.04	768.17	768.30	768.42	768.54
DECK EDGE RT-DECK	766.56	766.70	766.83	766.97	767.10	767.23	767.36	767.48	767.61	767.73	767.85

LOCATION	PIER 1	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	PIER 2
DECK EDGE LT	768.31	768.45	768.60	768.73	768.87	769.00	769.13	769.26	769.39	769.51	769.64
GIRDER 1	768.34	768.48	768.62	768.76	768.90	769.03	769.16	769.29	769.42	769.54	769.67
GIRDER 2	768.40	768.54	768.68	768.82	768.96	769.09	769.23	769.36	769.49	769.61	769.73
GIRDER 3	768.45	768.60	768.74	768.88	769.02	769.16	769.29	769.42	769.55	769.68	769.80
R/L CTH XX	768.51	768.65	768.80	768.94	769.08	769.22	769.35	769.48	769.61	769.74	769.86
GIRDER 4	768.50	768.64	768.79	768.93	769.07	769.20	769.34	769.47	769.60	769.73	769.85
GIRDER 5	768.34	768.48	768.63	768.77	768.91	769.05	769.18	769.32	769.45	769.57	769.70
GIRDER 6	768.20	768.35	768.49	768.64	768.78	768.92	769.05	769.18	769.32	769.44	769.57
GIRDER 7	768.06	768.21	768.36	768.50	768.64	768.78	768.92	769.05	769.18	769.31	769.44
RIGHT CURB LINE	768.01	768.16	768.30	768.45	768.59	768.73	768.87	769.00	769.13	769.26	769.39
GIRDER 8	767.93	768.07	768.22	768.37	768.51	768.65	768.79	768.92	769.05	769.18	769.31
DECK EDGE RT - SW	768.54	768.69	768.84	768.98	769.13	769.27	769.40	769.54	769.67	769.80	769.93
DECK EDGE RT-DECK	767.85	768.00	768.15	768.30	768.44	768.58	768.72	768.85	768.98	769.11	769.24

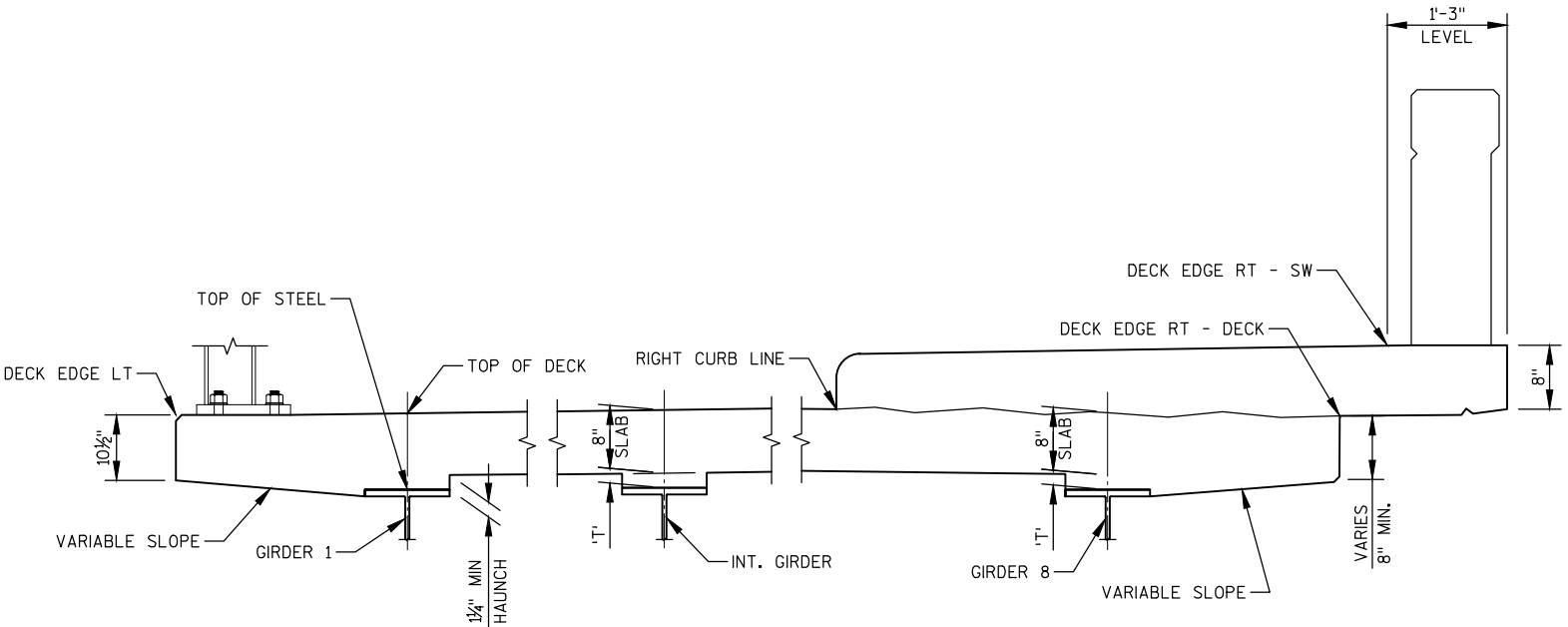
LOCATION	PIER 2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	PIER 3
DECK EDGE LT	769.64	769.75	769.87	769.99	770.10	770.21	770.31	770.42	770.52	770.62	770.72
GIRDER 1	769.67	769.79	769.90	770.02	770.13	770.24	770.35	770.45	770.55	770.65	770.75
GIRDER 2	769.73	769.85	769.97	770.09	770.20	770.31	770.42	770.52	770.63	770.73	770.82
GIRDER 3	769.80	769.92	770.04	770.16	770.27	770.38	770.49	770.60	770.70	770.80	770.90
R/L CTH XX	769.86	769.98	770.10	770.22	770.33	770.45	770.56	770.66	770.77	770.87	770.97
GIRDER 4	769.85	769.97	770.09	770.21	770.32	770.43	770.54	770.65	770.76	770.86	770.96
GIRDER 5	769.70	769.82	769.94	770.06	770.18	770.29	770.40	770.51	770.61	770.72	770.82
GIRDER 6	769.57	769.69	769.81	769.93	770.05	770.16	770.27	770.38	770.49	770.59	770.69
GIRDER 7	769.44	769.56	769.69	769.80	769.92	770.04	770.15	770.26	770.36	770.47	770.57
RIGHT CURB LINE	769.39	769.51	769.64	769.75	769.87	769.99	770.10	770.21	770.32	770.42	770.52
GIRDER 8	769.31	769.43	769.56	769.68	769.79	769.91	770.02	770.13	770.24	770.35	770.45
DECK EDGE RT - SW	769.93	770.05	770.18	770.30	770.42	770.53	770.64	770.76	770.86	770.97	771.07
DECK EDGE RT-DECK	769.24	769.37	769.49	769.61	769.73	769.84	769.96	770.07	770.18	770.28	770.38

LOCATION	PIER 3	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	PIER 4
DECK EDGE LT	770.72	770.81	770.90	770.99	771.08	771.16	771.24	771.32	771.40	771.48	771.55
GIRDER 1	770.75	770.84	770.94	771.03	771.11	771.20	771.28	771.36	771.44	771.51	771.59
GIRDER 2	770.82	770.92	771.01	771.10	771.19	771.28	771.36	771.44	771.52	771.60	771.67
GIRDER 3	770.90	771.00	771.09	771.18	771.27	771.36	771.44	771.52	771.60	771.68	771.75
R/L CTH XX	770.97	771.07	771.16	771.25	771.34	771.43	771.52	771.60	771.68	771.76	771.83
GIRDER 4	770.96	771.06	771.15	771.24	771.33	771.42	771.50	771.59	771.67	771.75	771.82
GIRDER 5	770.82	770.91	771.01	771.10	771.19	771.28	771.37	771.45	771.53	771.61	771.69
GIRDER 6	770.69	770.79	770.89	770.98	771.07	771.16	771.25	771.33	771.42	771.49	771.57
GIRDER 7	770.57	770.67	770.77	770.86	770.95	771.04	771.13	771.22	771.30	771.38	771.46
RIGHT CURB LINE	770.52	770.62	770.72	770.81	770.91	771.00	771.08	771.17	771.25	771.33	771.41
GIRDER 8	770.45	770.55	770.65	770.74	770.83	770.92	771.01	771.10	771.18	771.26	771.34
DECK EDGE RT - SW	771.07	771.17	771.27	771.37	771.46	771.55	771.64	771.73	771.81	771.89	771.97
DECK EDGE RT-DECK	770.38	770.48	770.58	770.68	770.77	770.86	770.95	771.04	771.12	771.20	771.28

LOCATION	PIER 4	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	N. ABUT.
DECK EDGE LT	771.55	771.60	771.66	771.71	771.76	771.81	771.86	771.91	771.95	772.00	772.04
GIRDER 1	771.59	771.64	771.70	771.75	771.80	771.85	771.90	771.95	771.99	772.04	772.08
GIRDER 2	771.67	771.73	771.78	771.84	771.89	771.94	771.99	772.04	772.08	772.13	772.17
GIRDER 3	771.75	771.81	771.87	771.92	771.98	772.03	772.08	772.13	772.17	772.22	772.26
R/L CTH XX	771.83	771.89	771.95	772.00	772.06	772.11	772.16	772.21	772.25	772.30	772.34
GIRDER 4	771.82	771.88	771.94	771.99	772.05	772.10	772.15	772.20	772.24	772.29	772.33
GIRDER 5	771.69	771.75	771.80	771.86	771.91	771.97	772.02	772.07	772.12	772.16	772.21
GIRDER 6	771.57	771.63	771.69	771.75	771.80	771.85	771.91	771.96	772.01	772.05	772.10
GIRDER 7	771.46	771.52	771.58	771.63	771.69	771.74	771.79	771.85	771.89	771.94	771.99
RIGHT CURB LINE	771.41	771.47	771.53	771.59	771.64	771.70	771.75	771.80	771.85	771.90	771.94
GIRDER 8	771.34	771.40	771.46	771.52	771.57	771.63	771.68	771.73	771.78	771.83	771.88
DECK EDGE RT - SW	771.97	772.03	772.09	772.15	772.20	772.26	772.31	772.36	772.41	772.46	772.51
DECK EDGE RT-DECK	771.28	771.34	771.40	771.46	771.52	771.57	771.62	771.68	771.73	771.77	771.82

STATE PROJECT NUMBER

6862-01-70



CONCRETE HAUNCH DETAIL

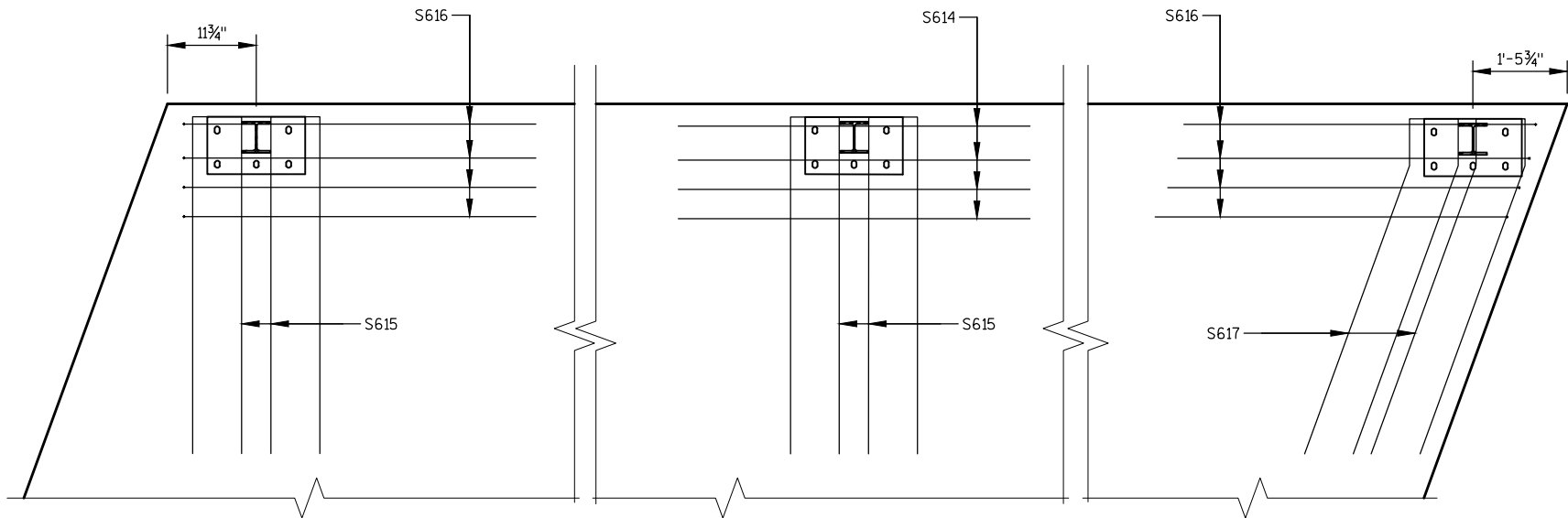
'T' = HAUNCH HEIGHT AT CENTER OF GIRDER.

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

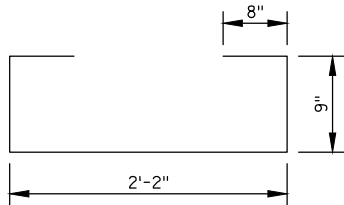
TOP OF DECK ELEVATION AT FINAL GRADE
- TOP OF STEEL ELEVATION AFTER STEEL ERECTION
+ CONC. ONLY DEFLECTION: DOWNWARD DEFLECTION IS ADDED, UPWARD DEFLECTION IS SUBTRACTED
- SLAB THICKNESS

= HAUNCH THICKNESS 'T' AT CENTERLINE OF GIRDER

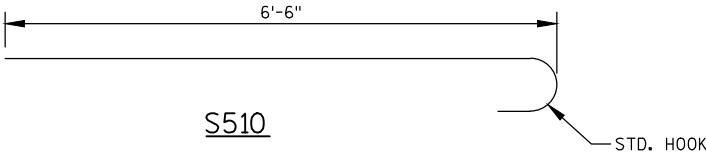
AVERAGE 'T' USED FOR ESTIMATING CONCRETE QUANTITIES IS 15 1/8".



RAILING DECK REINFORCEMENT DETAIL

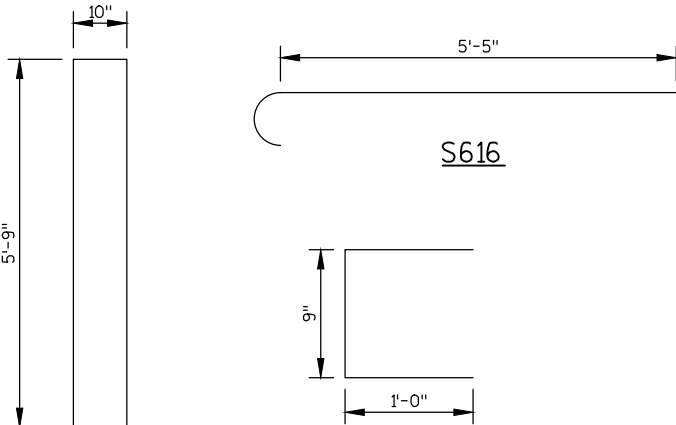


S401



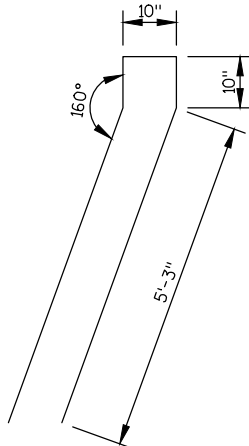
S510

STD. HOOK

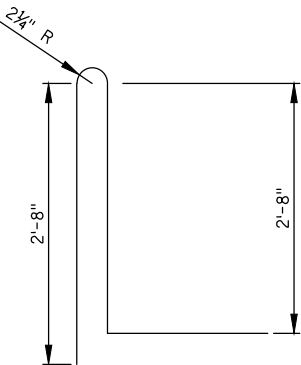


S615

S412



S617

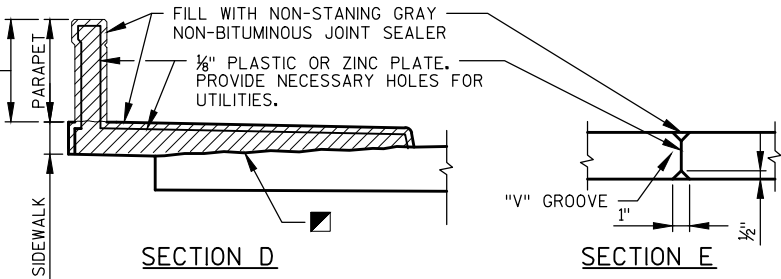


S419

NOTE:
WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF 1/8" ZINC OR PLASTIC PLATE CUT AS SHOWN THE DEFLECTION JOINT DETAIL BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.

☒ HORIZONTAL CONSTRUCTION JOINT, STRIKE OFF AS SHOWN AND LEAVE ROUGH.

DETAILS OF DEFLECTION JOINTS IN PARAPET - SIMILAR TO THAT SHOWN IN THIS AREA



SECTION D

SECTION E

DEFLECTION JOINT DETAIL
SHOWING DEFLECTION JOINT IN PARAPET AND SIDEWALK AT PIER LOCATIONS

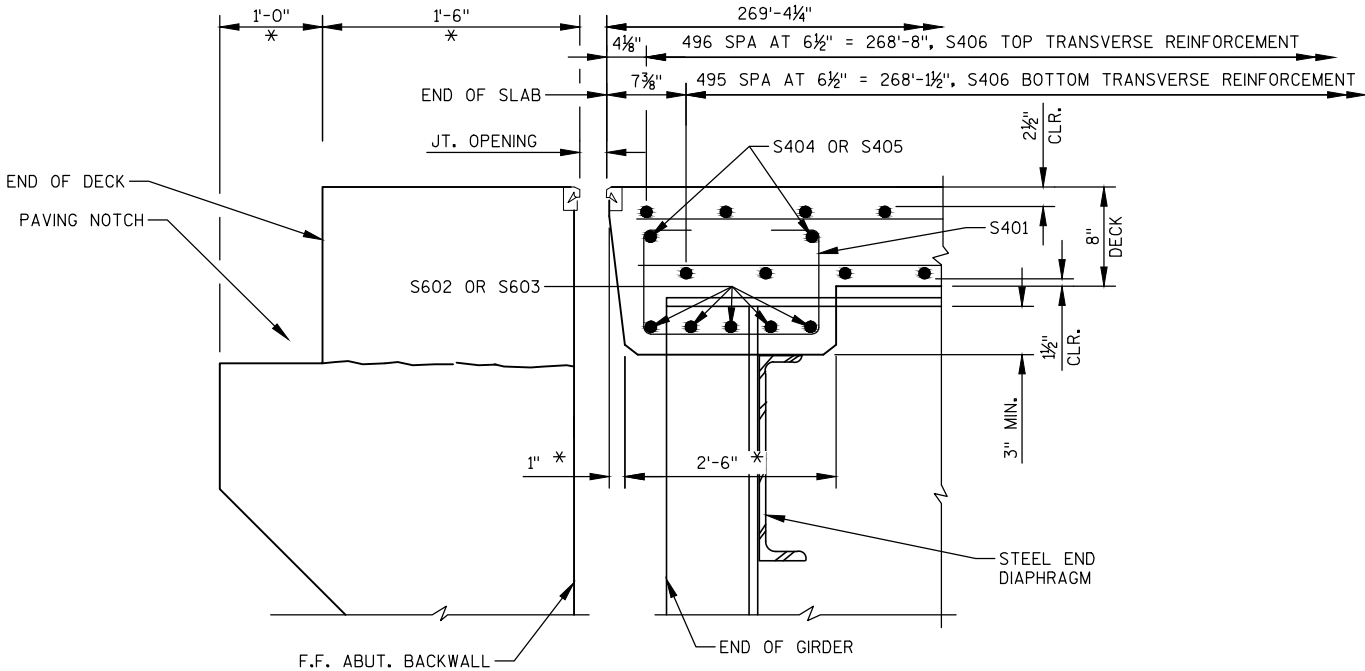
BILL OF BARS
SUPERSTRUCTURE

MARK	NUMBER		LENGTH FT - IN	BENT	BAR SERIES	LOCATION
	COATED	UNCOATED				
S401	92		4 - 8	X		ABUTMENT DIAPHRAGM STIRRUPS
S602	40		5 - 5			ABUTMENT DIAPHRAGM
S603	30		4 - 8			ABUTMENT DIAPHRAGM
S404	16		5 - 5			ABUTMENT DIAPHRAGM
S405	12		4 - 8			ABUTMENT DIAPHRAGM
S406	993		42 - 9			SUPERSTRUCTURE TOP & BOTTOM TRANS
S407	464		35 - 2			SUPERSTRUCTURE BOTTOM MAT LONGIT
S408	174		33 - 4			SUPERSTRUCTURE TOP MAT, SPANS 2-4 LONGIT
S609	232		28 - 4			SUPERSTRUCTURE TOP MAT (OVER PIERS) LONGIT
S510	538		7 - 1	X		SUPERSTRUCTURE SIDEWALK TRANS
S411	52		24 - 9			SUPERSTRUCTURE SIDEWALK, SPANS 1&5 LONGIT
S412	1076		2 - 7	X		SUPERSTRUCTURE SIDEWALK TRANS
S413	180		2 - 9			SUPERSTRUCTURE SIDEWALK TRANS
S614	164		6 - 0			RAILING ANCHORS LONGIT
S615	84		12 - 0	X		RAILING ANCHORS TRANS
S616	8		6 - 0	X		RAILING ANCHORS AT CORNERS LONGIT
S617	2		12 - 0	X		RAILING ANCHORS AT CORNERS TRANS
S418	116		35 - 6			SUPERSTRUCTURE TOP MAT, SPANS 1-5 LONGIT
S419	270		9 - 5	X		PARAPET TIES TRANS
S420	24		24 - 9			PARAPET, SPANS 1 & 5 LONGIT
S421	78		29 - 8			SUPERSTRUCTURE SIDEWALK, SPANS 2-4 LONGIT
S422	36		29 - 8			PARAPET, SPANS 2-4 LONGIT

FF - FRONT FACE
BF - BACK FACE
EF - EACH FACE

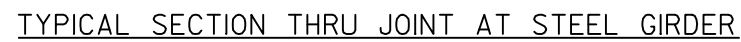
BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

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



PART LONGITUDINAL SECTION
* DIMENSION TAKEN NORMAL TO C ABUTMENT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MKG	PLANS CK'D. GAR
SUPERSTRUCTURE DETAILS		SHE 89	40



NORMAL TO $\mathbb{C}$ SUBSTRUCTURE



- ① NEOPRENE STRIP SEAL (4-INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING AT $1\frac{3}{4}$ ". JOINT OPENINGS GIVEN NORMAL TO JOINT. ■
- ② STUDS $\frac{5}{8}$ " DIA. X $6\frac{3}{8}$ " LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- ②A $\frac{1}{2}$ " THICK ANCHOR PLATE WITH $\frac{5}{8}$ " DIA. ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
- ③ $\frac{3}{4}$ " DIA. THREADED ROD WITH 2 NUTS AND PLATE WASHERS, FOR STEEL GIRDERS, WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE, GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
- $\frac{3}{4}$ " DIA. THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
- ④ FABRICATE SUPPORT FROM 3" X $\frac{1}{2}$ " BAR AS SHOWN OR EQUIVALENT. ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE $\frac{1}{2}$ " DIA. HOLE FOR NO. 3 AND 1" DIA. HOLE FOR NO. 4.

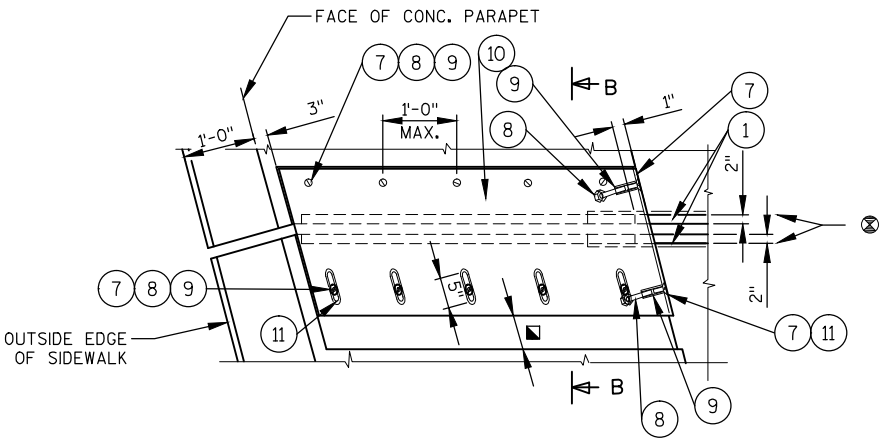
ONE FIELD SPlice PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPlicing PERMITTED IN NEOPRENE STRIP SEAL.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

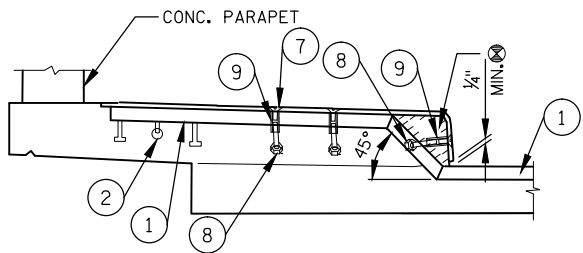
ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C AND D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-69-0003"

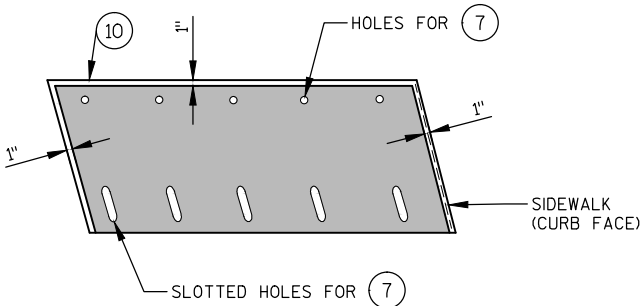
NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION					
STRUCTURE B-69-3					
		DRAWN BY	JAK	PLANS CK'D.	GAR
STRIP SEAL EXPANSION JOINT DETAILS				SHEI 90 40	



PLAN AT SIDEWALK

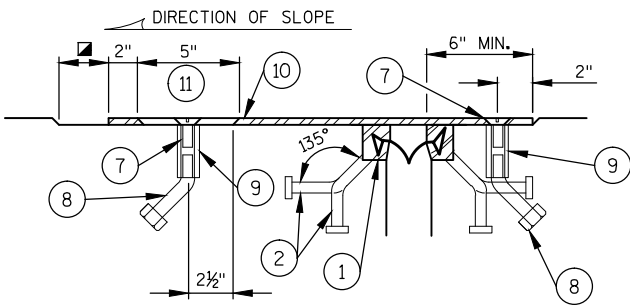


SECTION AT SIDEWALK



PLAN OF SIDEWALK COVER PLATE
WITH SLIP-RESISTANT SURFACE

PLACE SLIP-RESISTANT SURFACE ON TOP WALKING
SURFACE IN SHADED AREA ONLY (NOT ON CURB FACE).



SECTION B-B

APPROVED SLIP-RESISTANT APPLIED SURFACES FOR STEEL PLATES		
PRODUCT	MANUFACTURER	CONTACT AT
SLIPNOT GRADE 2, STEEL	W. S. MOLNAR COMPANY	1-800-SLIPNOT
ALGRIP, STEEL	ROSS TECHNOLOGY CORP.	1-800-345-8170

LEGEND

SEE SHEET 34 FOR ITEMS 1 THROUGH 5.

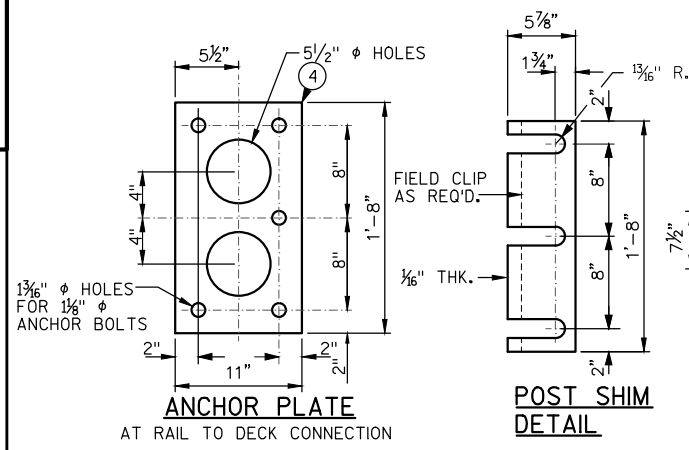
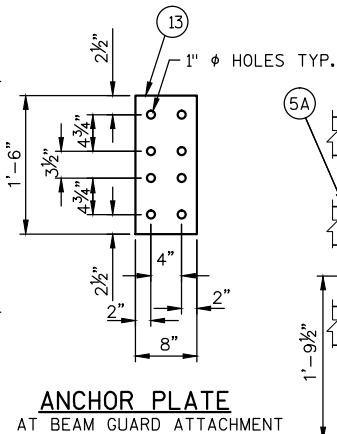
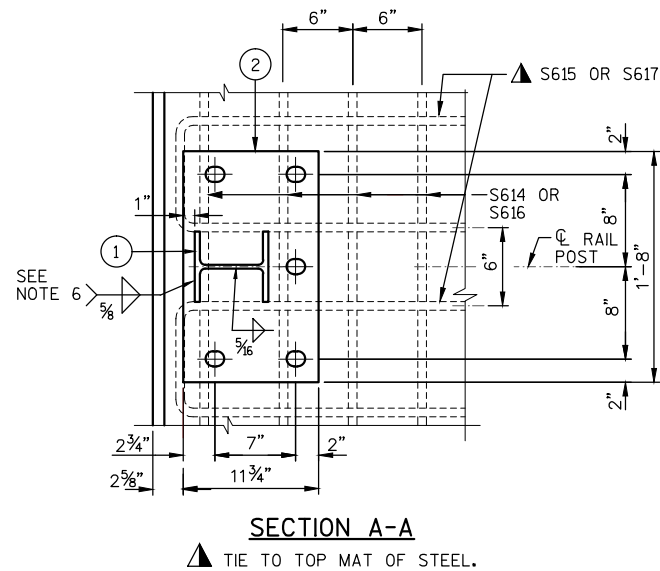
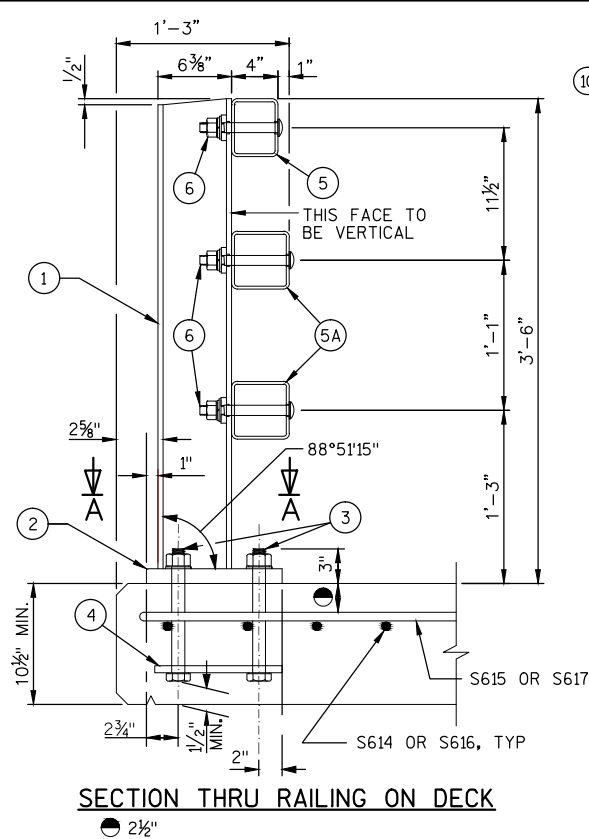
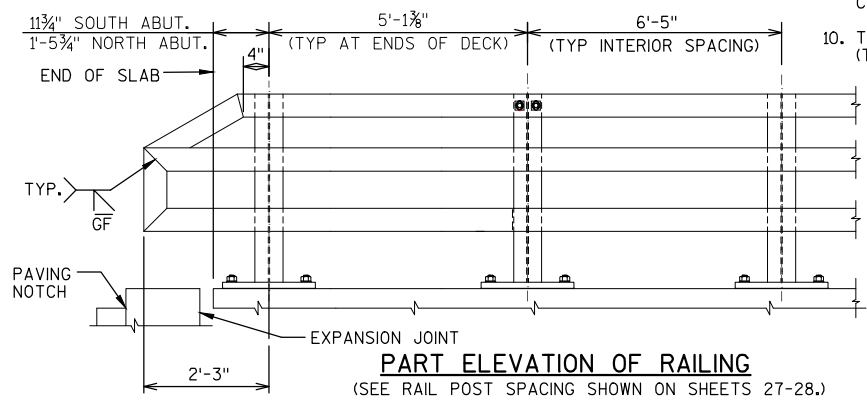
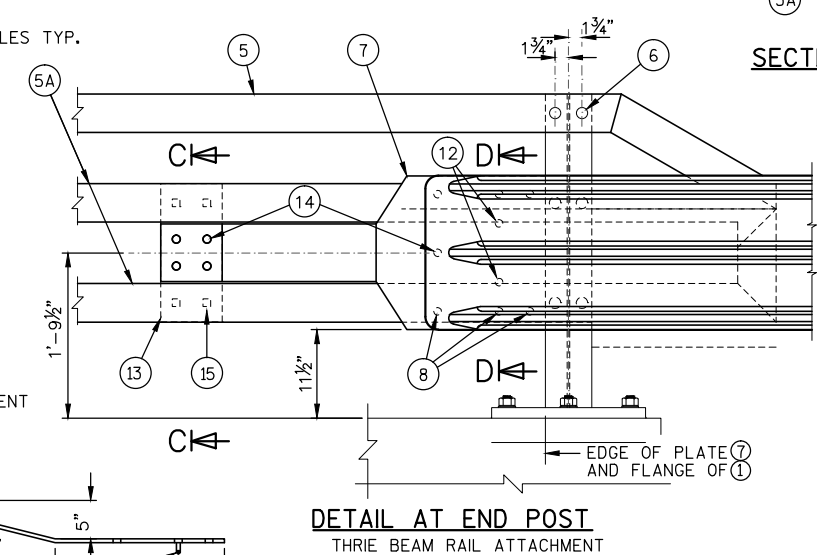
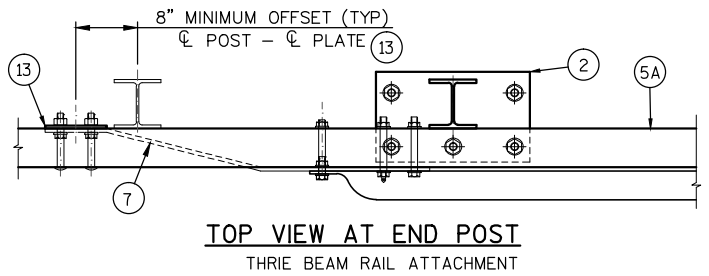
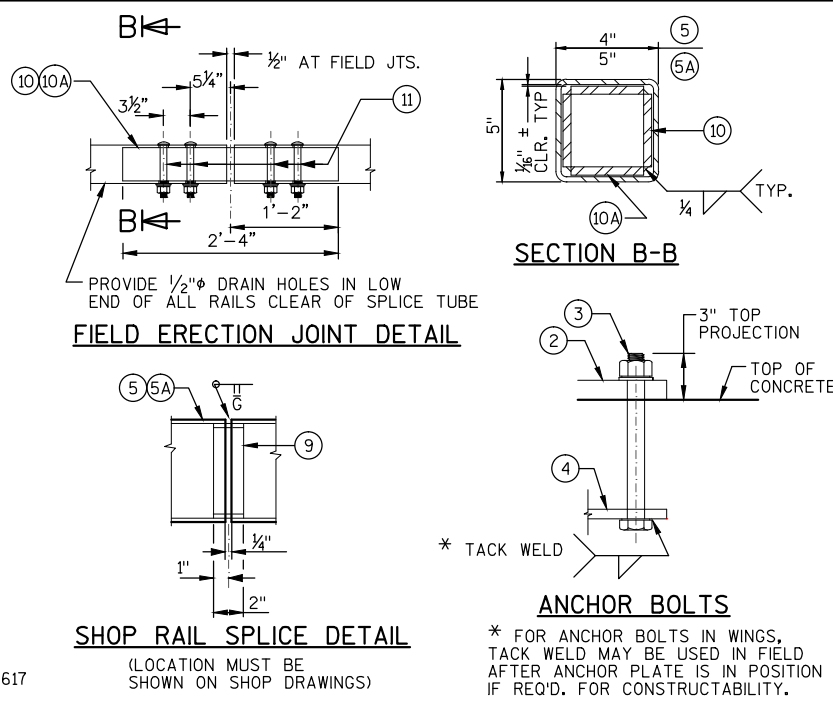
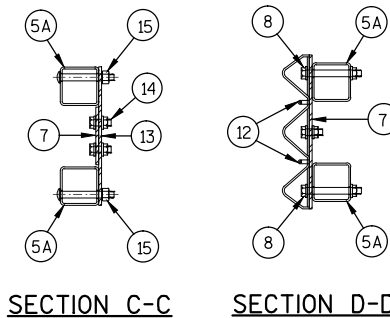
- 7 3/4" DIA. X 1 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/8" BELOW PLATE SURFACE.
- 8 3/4" DIA. X 4" GALVANIZED HEX HEAD BOLT, BEND 45°.
- 9 3/4" DIA. X 2 1/4" GALVANIZED THREADED COUPLING.
- 10 SIDEWALK COVER PLATE 3/8" X 2'-0" X LIMITS SHOWN. BEND DOWN FACE OF SIDEWALK WITH HOLES FOR NO. 7. GALVANIZE PLATE AFTER SLIP-RESISTANT SURFACE IS APPLIED.
- 11 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.
- ⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING
- ▣ JOINT OPENING DIM. ALONG SKEW PLUS 1/2"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY JAK		PLANS CK'D. GAR	
STRIP SEAL COVER PLATES		SHE: 91	40

- ① W/6 X 25 WITH 1 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1 1/4" X 1 3/4" X 1'-8" WITH 1 5/16" X 1 5/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③ ASTM A449 - 1 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN WINGS AND 10 3/4" LONG IN DECK. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
- ④ 5/8" X 11" X 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/8" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- ⑤ TS 5 X 4 X 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑤A TS 5 X 5 X 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑥ 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 1 5/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- ⑦ 1/2" THK. BACK-UP PLATE WITH 2 - 3/8" X 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- ⑨ SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- ⑩ 3/8" X 3 5/8" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- ⑩A 3/8" X 2 5/8" X 2'-4" PLATE USED IN NO. 5, 3/8" X 3 5/8" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪ 7/8" ϕ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/8" X 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1 5/8" X 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.
- ⑫ 7/8" DIA. X 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- ⑬ 3/8" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- ⑭ 7/8" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- ⑮ 1" ϕ HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-69-0003" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL $\frac{1}{8}$ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
10. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
		DRAWN BY JAK	PLANS CK'D. GAR
TUBULAR STEEL RAILING TYPE 'M'		SHEI 92 40	

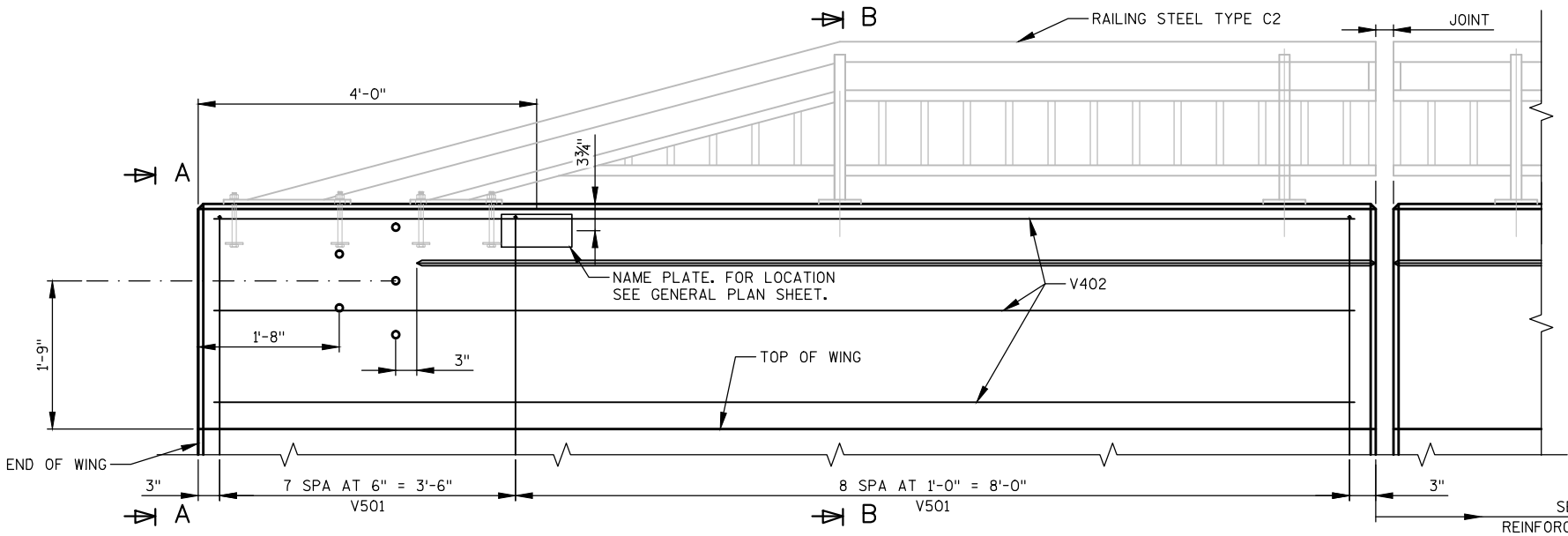


SOUTH ABUTMENT COATED = 210 LBS.
SOUTH ABUTMENT UNCOATED= 0 LBS.
NORTH ABUTMENT COATED= 210 LBS.
NORTH ABUTMENT UNCOATED= 0 LBS.

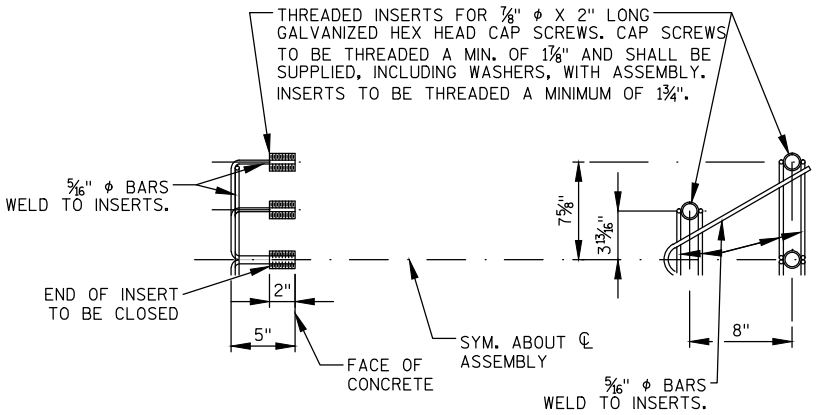
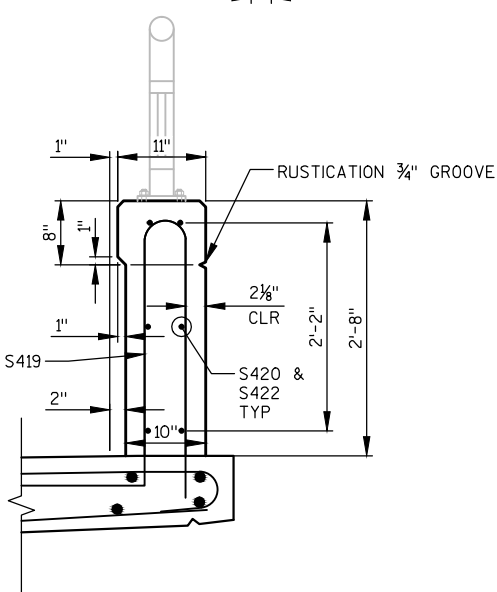
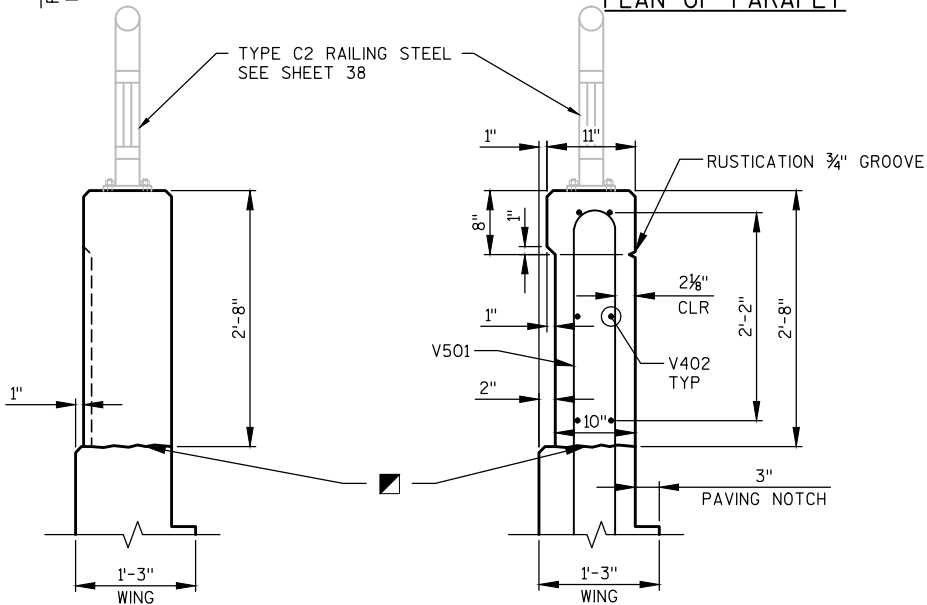
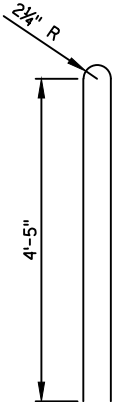
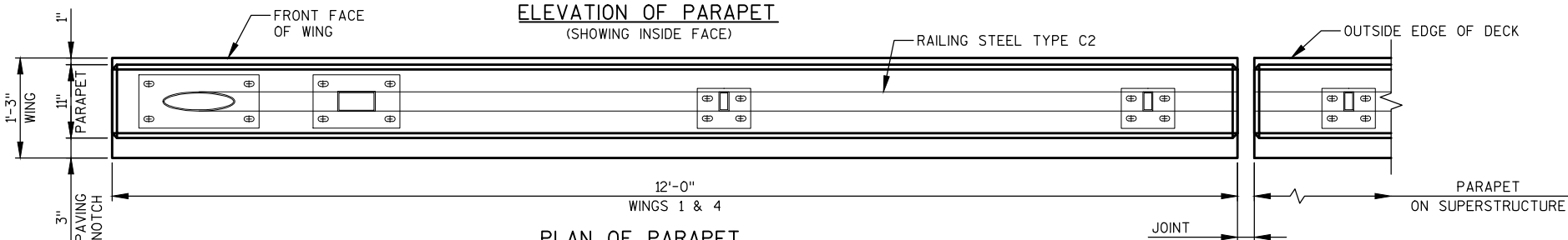
BILL OF BARS
VERTICAL FACE PARAPET A

MARK	COATED	NO. REQ'D.		LENGTH FT - IN	BENT	BAR SERIES	LOCATION
		SOUTH ABUTMENT	NORTH ABUTMENT				
V501	X	16	16	9 - 5	X		PARAPET TIE VERT
V402	X	6	6	11 - 8			PARAPET - LONTITUDINAL ALL WINGS HORIZ

BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
INCLUDED IN ABUTMENT QUANTITIES FOR BAR STEEL REINFORCEMENT AND CONCRETE MASONRY



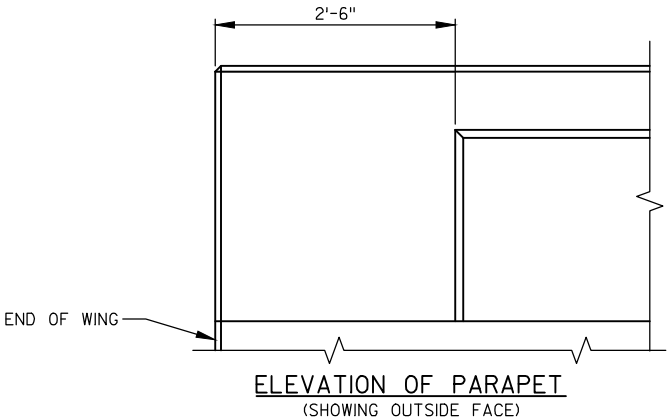
SEE SHEETS 27-28 FOR
REINFORCEMENT IN PARAPET ON DECK



DETAIL OF ANCHOR ASSEMBLY

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

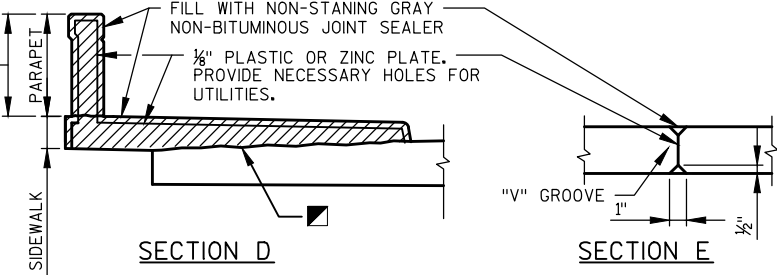
ASSEMBLY BID ITEM SHALL BE "ANCHOR ASSEMBLIES FOR
STEEL PLATE BEAM GUARD", EACH.



NOTE:
WHEN PARAPETS ARE POURED
CONTINUOUSLY FROM END TO END,
THEY SHALL BE SEPARATED AT
THE DEFLECTION JOINTS BY A
PIECE OF 1/2" ZINC OR PLASTIC
PLATE CUT AS SHOWN THE
DEFLECTION JOINT DETAIL BY
SHADED AREA. IF CONSTRUCTION
JOINTS IN PARAPETS ARE USED AT
THE DEFLECTION JOINTS, ONE SIDE
OF JOINT SHALL BE COATED WITH
AN APPROVED LIQUID BOND
BREAKER AND PLATE SEPARATORS
MAY BE OMITTED.

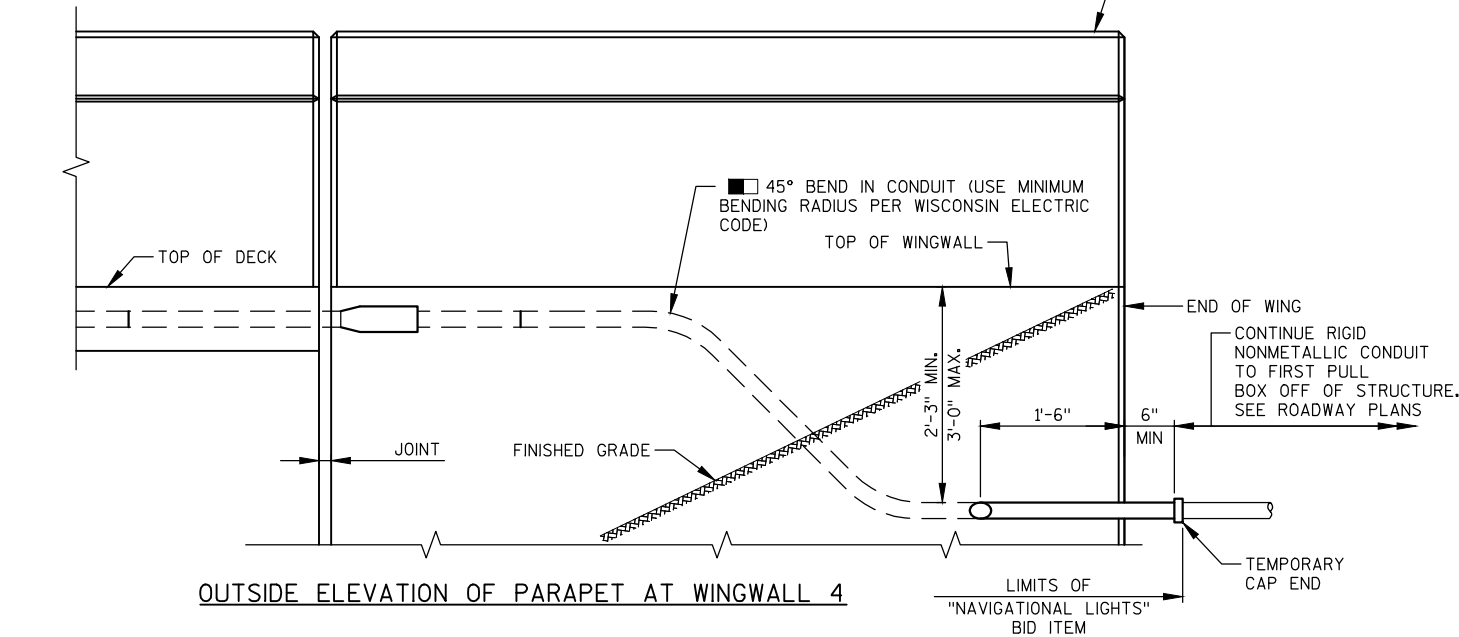
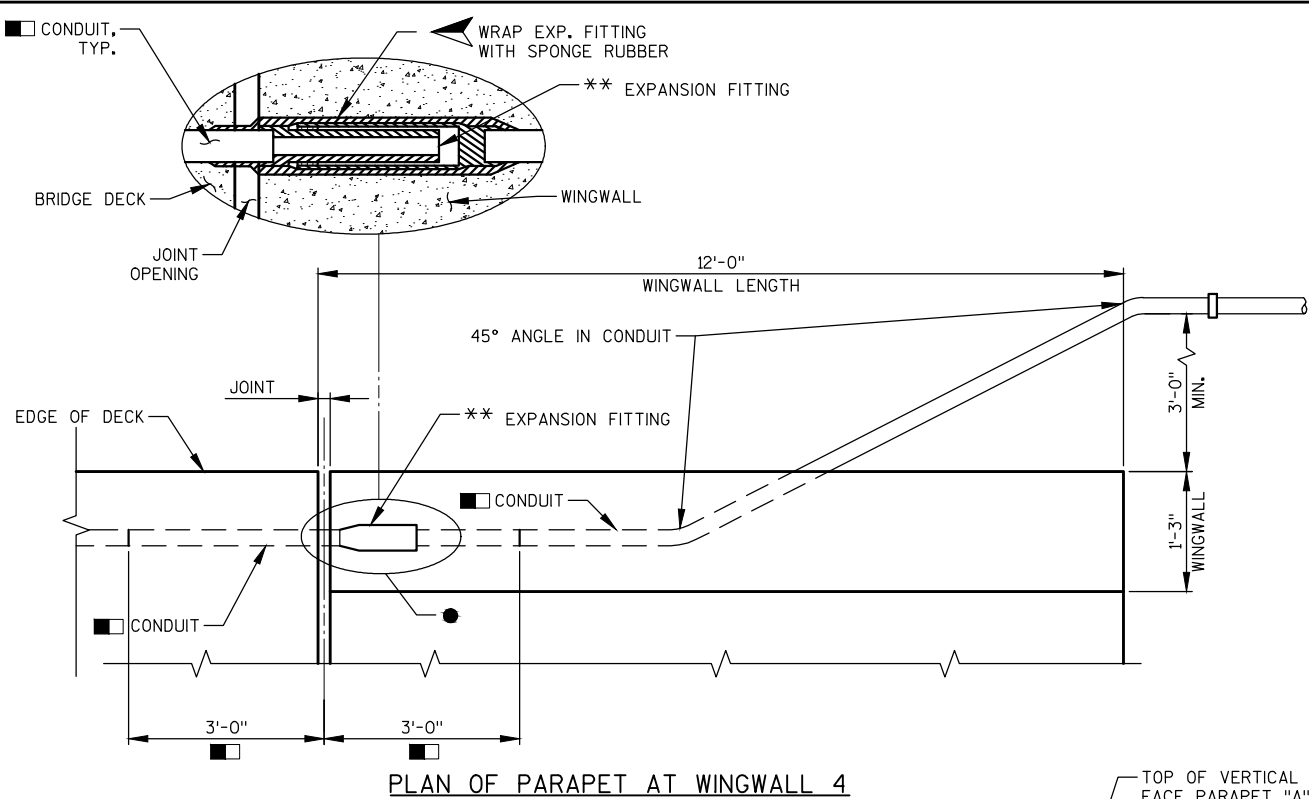
■ HORIZONTAL CONSTRUCTION JOINT,
STRIKE OFF AS SHOWN AND LEAVE
ROUGH.

DETAILS OF DEFLECTION JOINTS
IN PARAPET - SIMILAR TO
THAT SHOWN IN THIS AREA



DEFLECTION JOINT DETAIL
SHOWING DEFLECTION JOINT IN PARAPET
AND SIDEWALK AT PIER LOCATIONS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY JAK		PLANS CK'D. GAR	
VERTICAL FACE PARAPET TYPE 'A'		SHE 93 OF 40	



NOTES

BID ITEM SHALL BE "NAVIGATIONAL LIGHTS", WHICH SHALL INCLUDE ALL ITEMS SHOWN.

WHEN CONNECTING NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS U.L. OR NRTL LISTED FOR ELECTRICAL USE SHALL BE USED.

APPROVED MANUFACTURERS - JUNCTION BOXES:
SEE APPROVED MATERIAL LIST.

APPROVED MANUFACTURER OR EQUIVALENT - EXPANSION FITTING:
O-Z/GEDNEY TYPE AX-200 - 1 1/2" TOTAL (± 3/4") LONGITUDINAL AND LATERAL CONDUIT MOVEMENT.

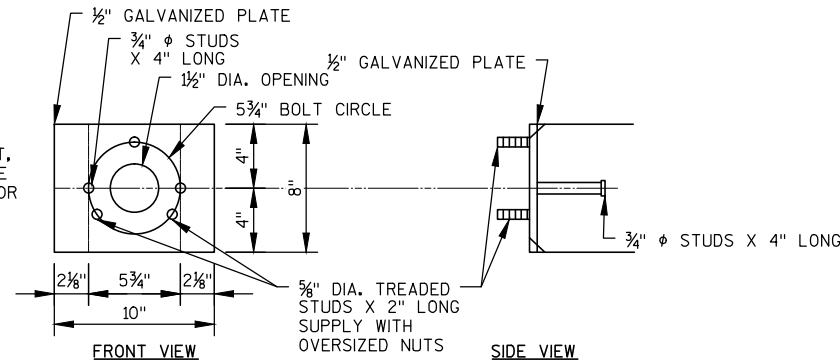
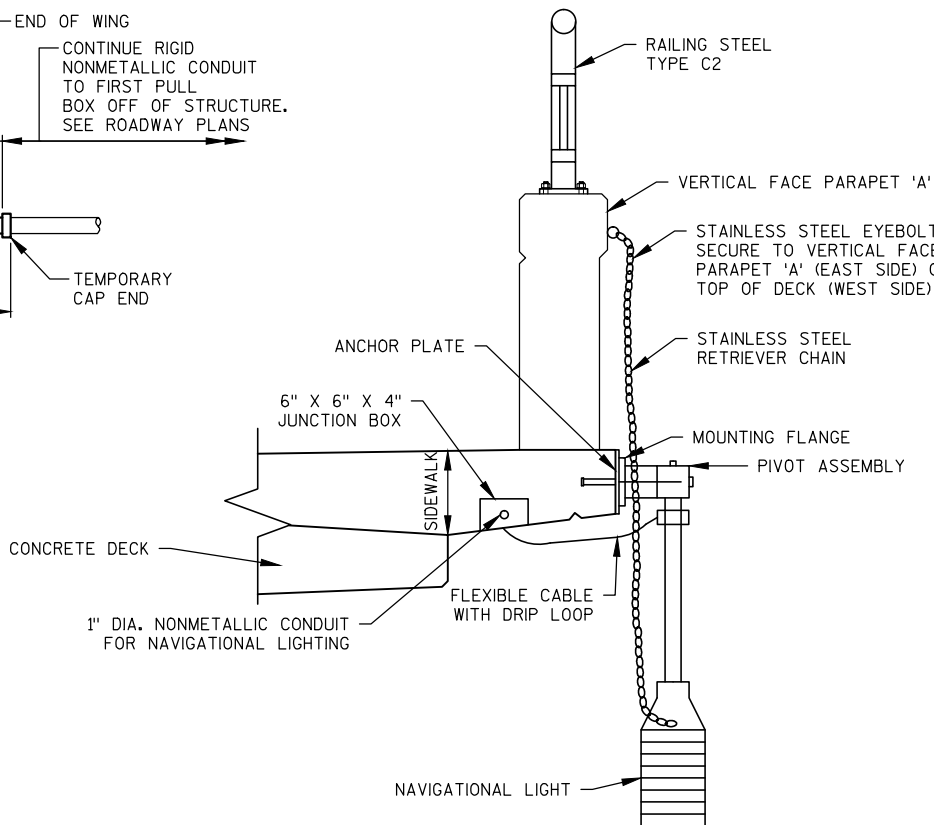
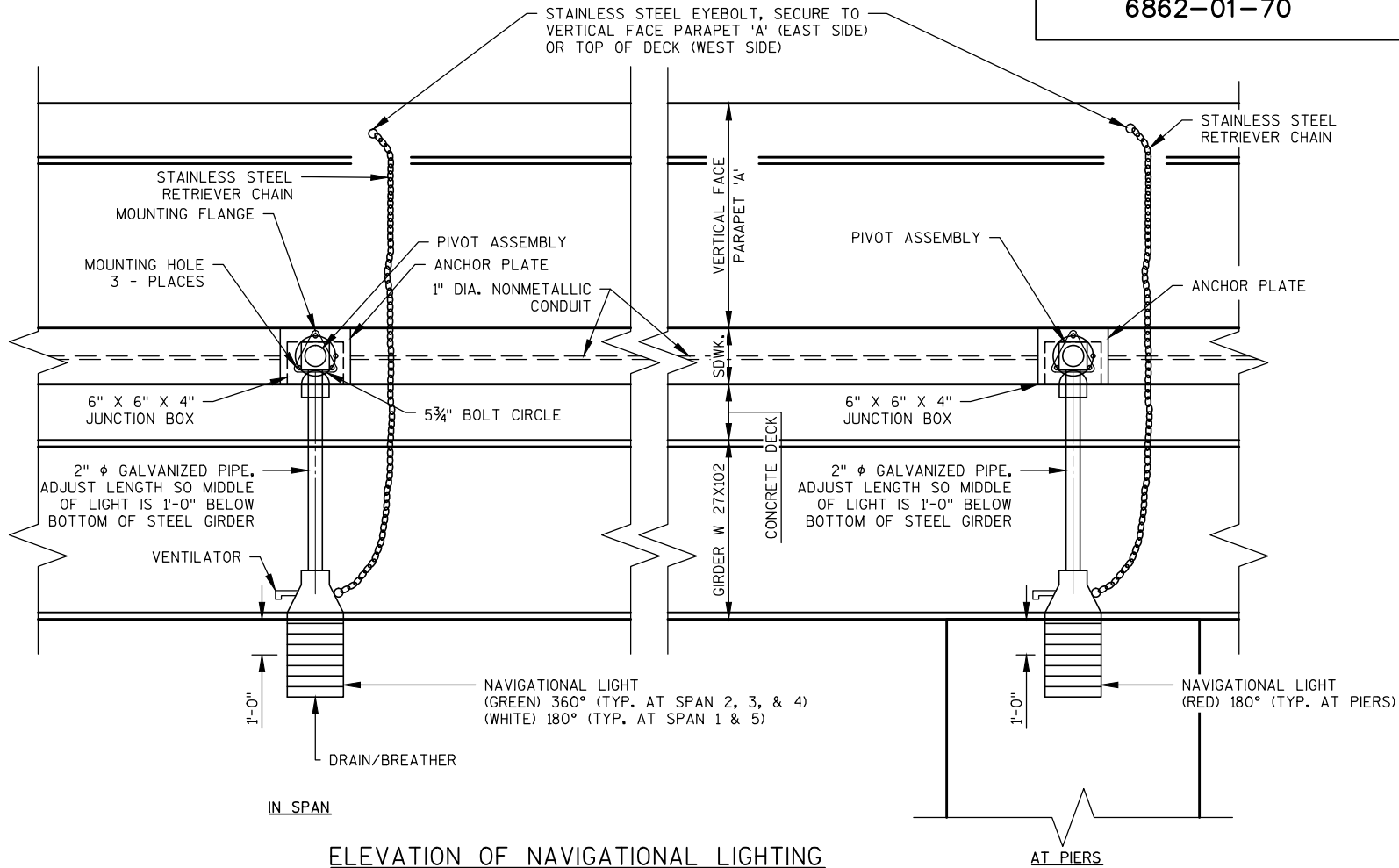
**EXPANSION FITTING REQUIREMENTS

- USE AN APPROVED EXPANSION FITTING AT EACH SEMI EXPANSION OR EXPANSION JOINT.
- RUN CONDUIT STRAIGHT THROUGH (WITHOUT A FITTING) AT EACH FIXED JOINT.

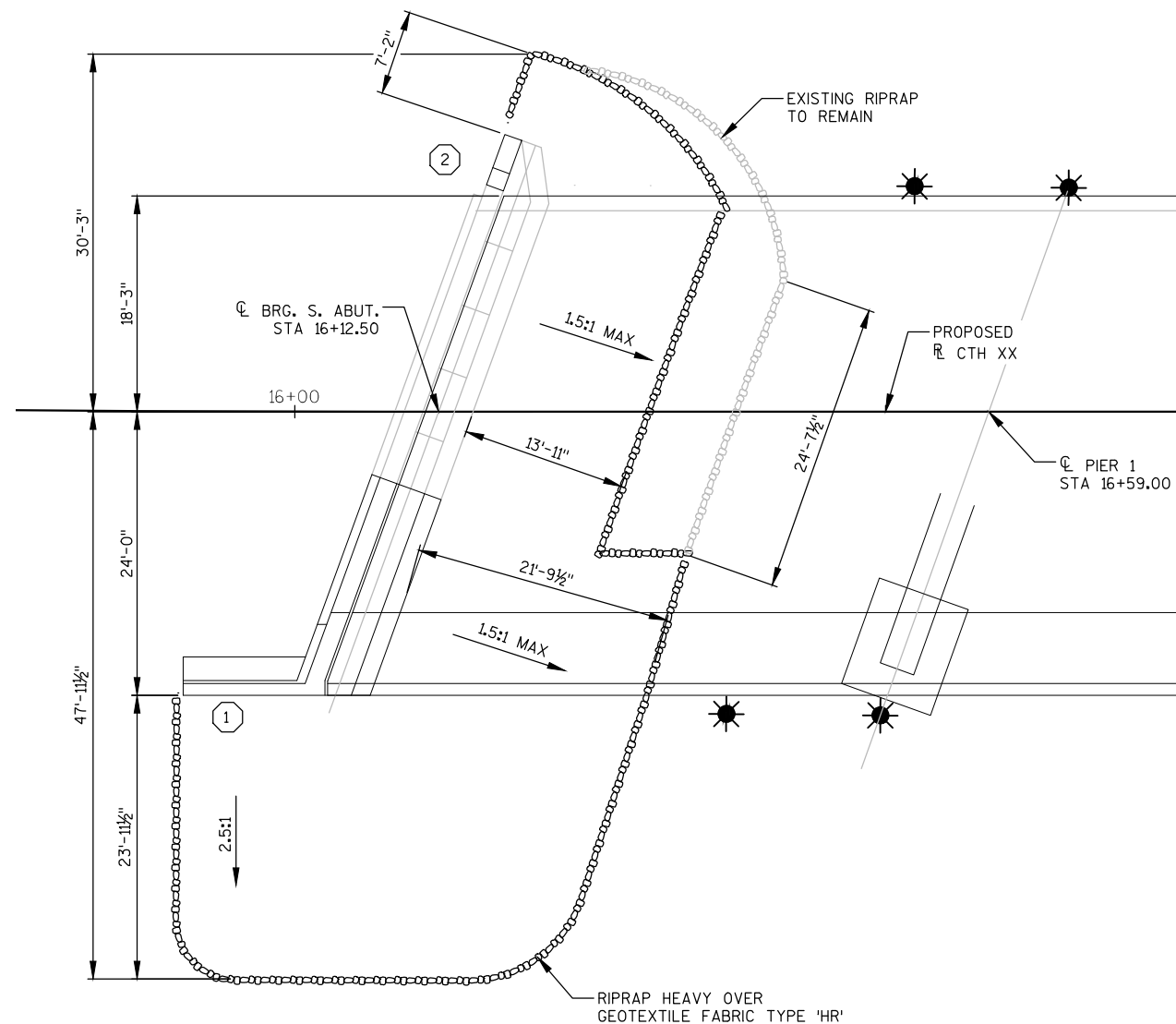
■ USE 1" DIA. RIGID NONMETALLIC CONDUIT EXCEPT AT EXPANSION FITTING. AT EXPANSION FITTING USE RIGID METALLIC CONDUIT 3'-0" INTO DECK AND WING SIDES OF THE JOINT OPENING.

- POSITION MOVABLE END OF CONDUIT INSIDE EXPANSION FITTING, SUCH THAT IT WILL HAVE THE SAME ALLOWANCE FOR MOVEMENT (EXPANSION/CONTRACTION) AS THE EXPANSION DEVICE SET IN PLACE IN THE DECK. TAKE CARE TO INSTALL EXPANSION FITTING AND CONDUIT EXACTLY PARALLEL TO THE BRIDGE MOVEMENT.

◀ SPONGE RUBBER WRAP TO BE AASHTO M153, TYPE 1 OR EQUIVALENT - 1/4" MINIMUM THICKNESS. SPONGE RUBBER WRAP INCIDENTAL TO "NAVIGATIONAL LIGHTS".

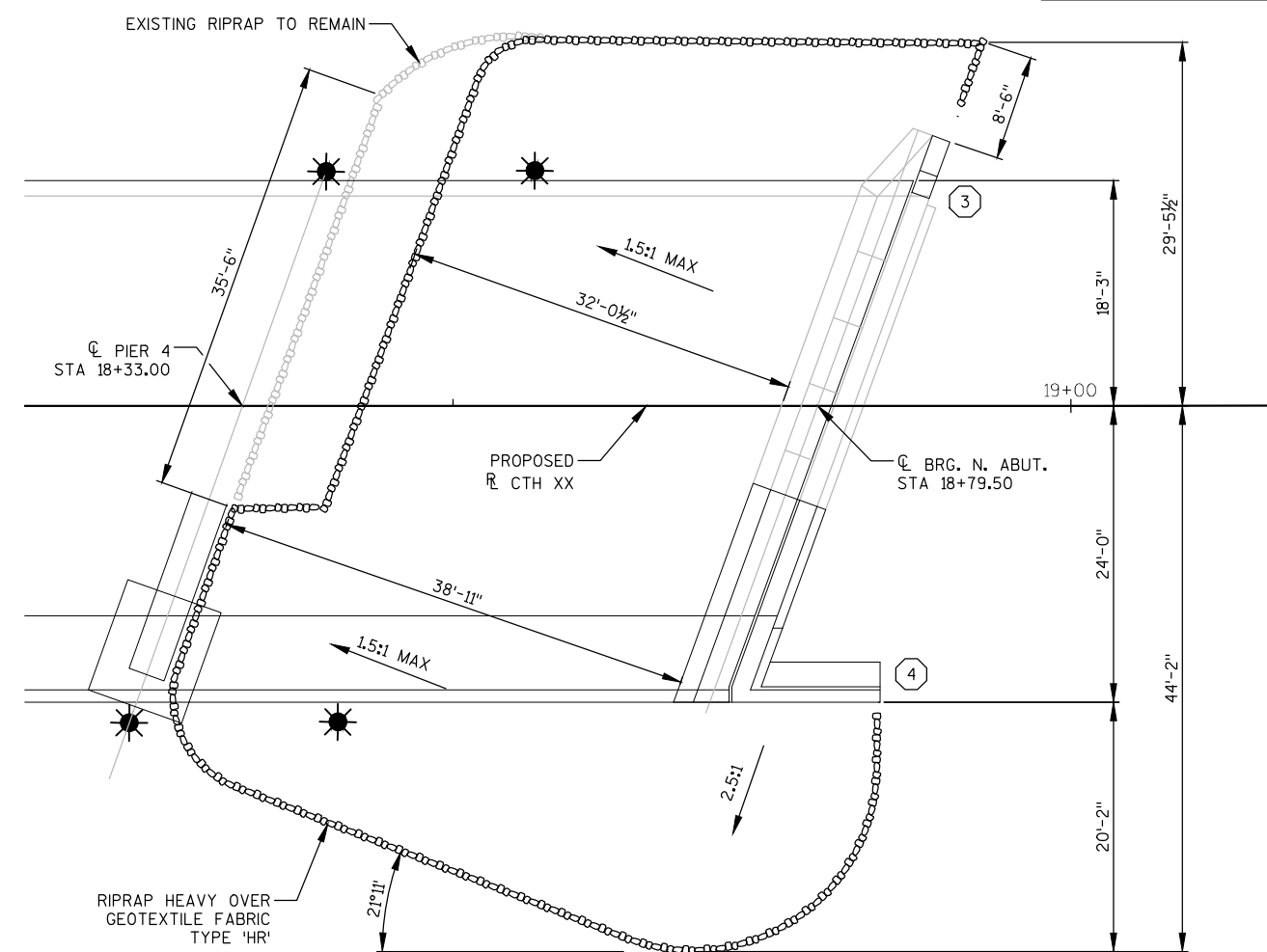


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		JAK	PLANS CK'D. GAR
NAVIGATIONAL LIGHTING DETAILS		SHE 95	40

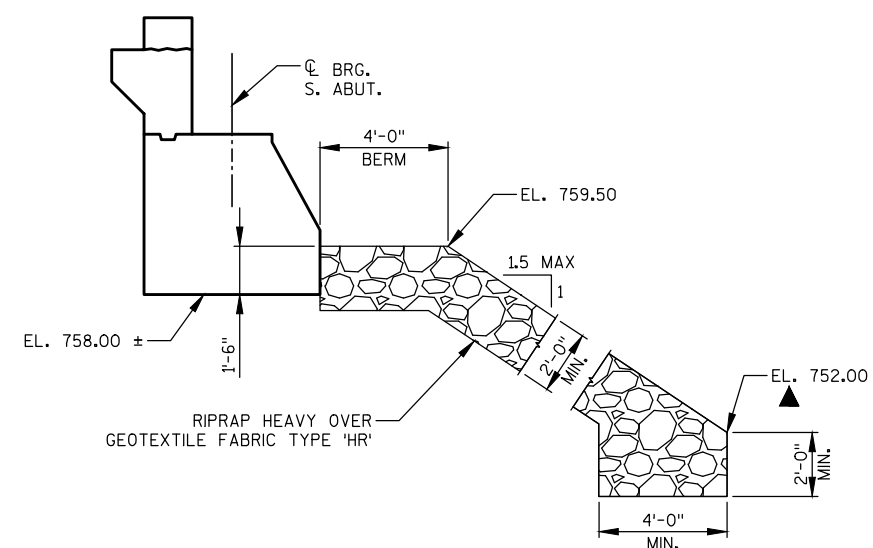


SOUTH ABUTMENT

PLAN

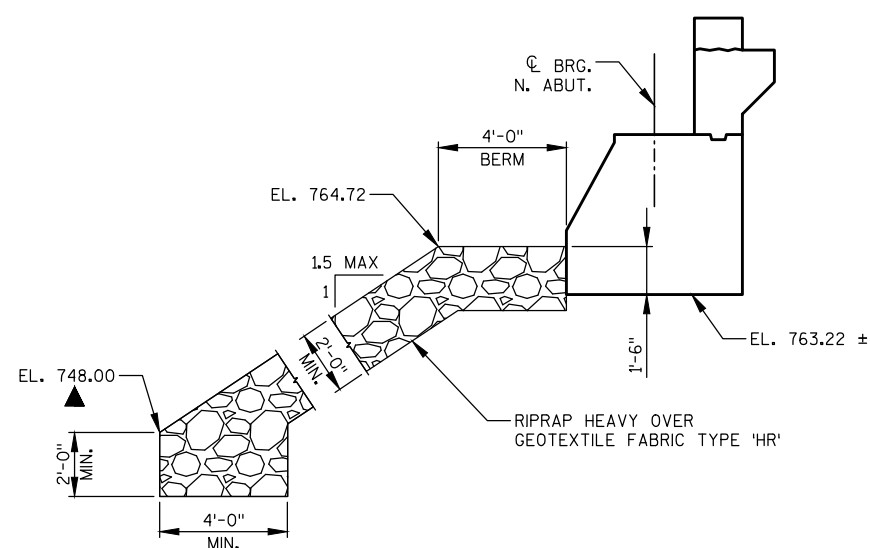


NORTH ABUTMENT



SOUTH ABUTMENT

ELEVATION



NORTH ABUTMENT

NOTES:

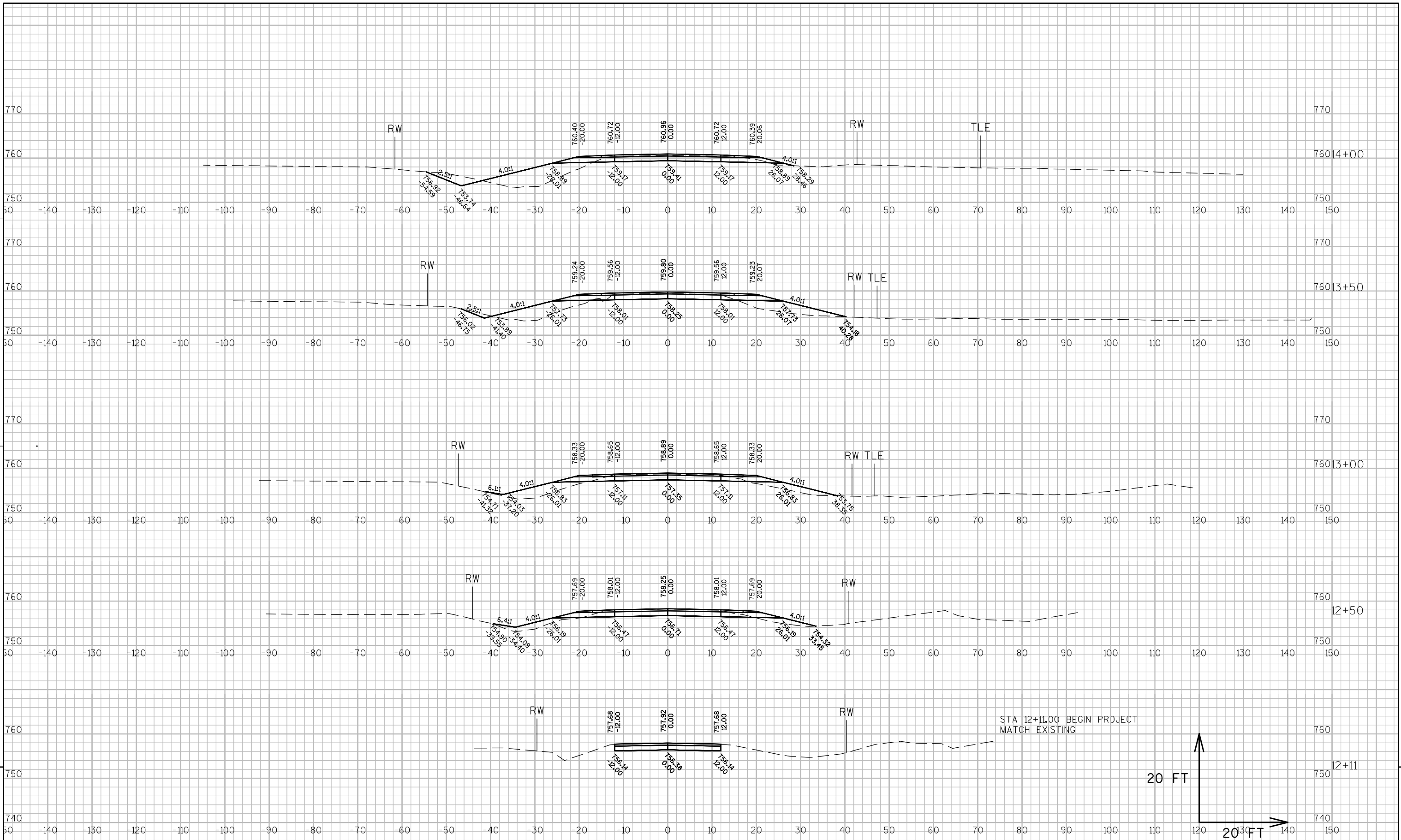
BERM DIMENSION IS GIVEN PERPENDICULAR TO ABUTMENT.

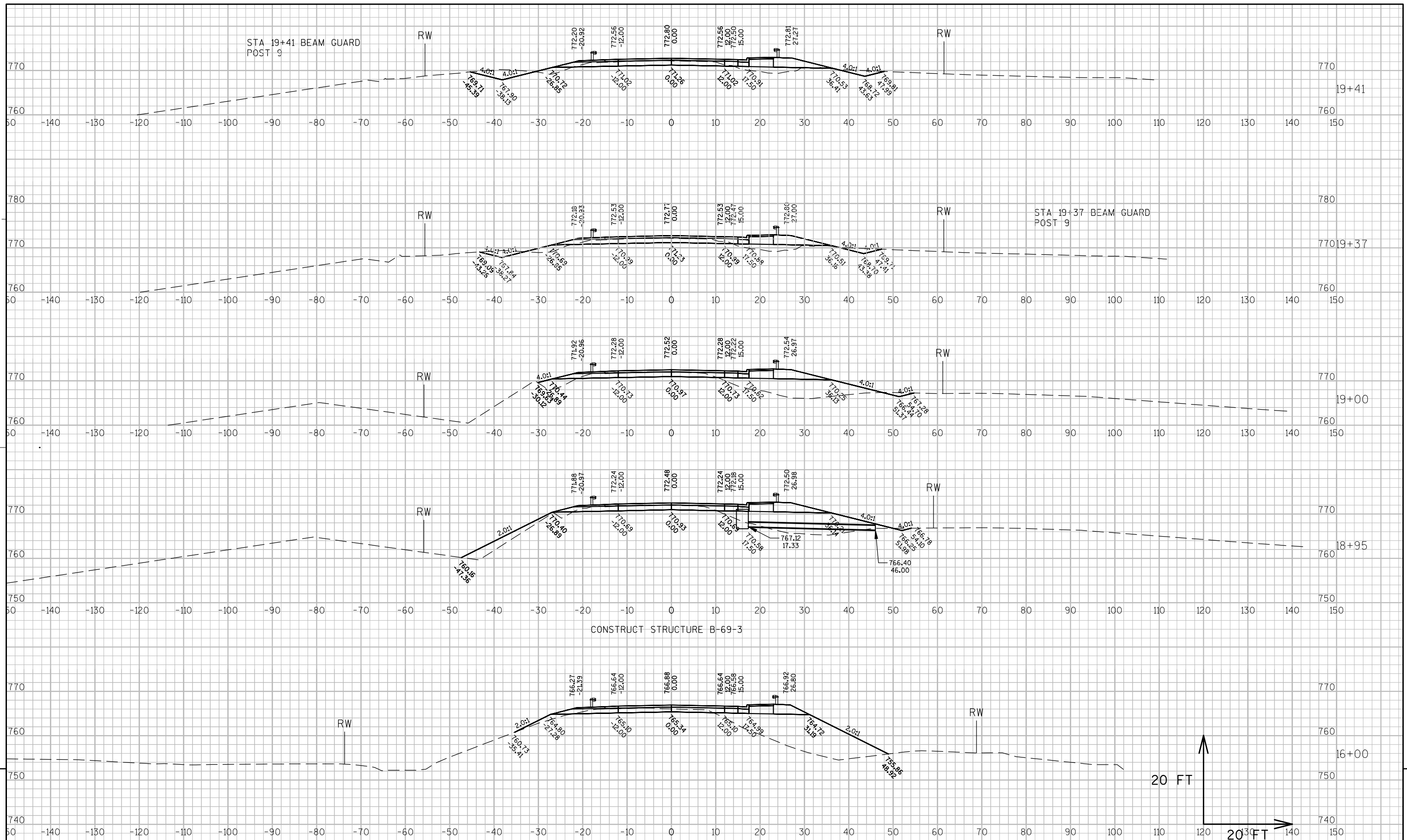
▲ TOE OF RIPRAP ELEVATIONS GIVEN FOR ABUTMENT WIDENING.
MATCH ELEVATIONS AT EXISTING RIPRAP TO REMAIN.

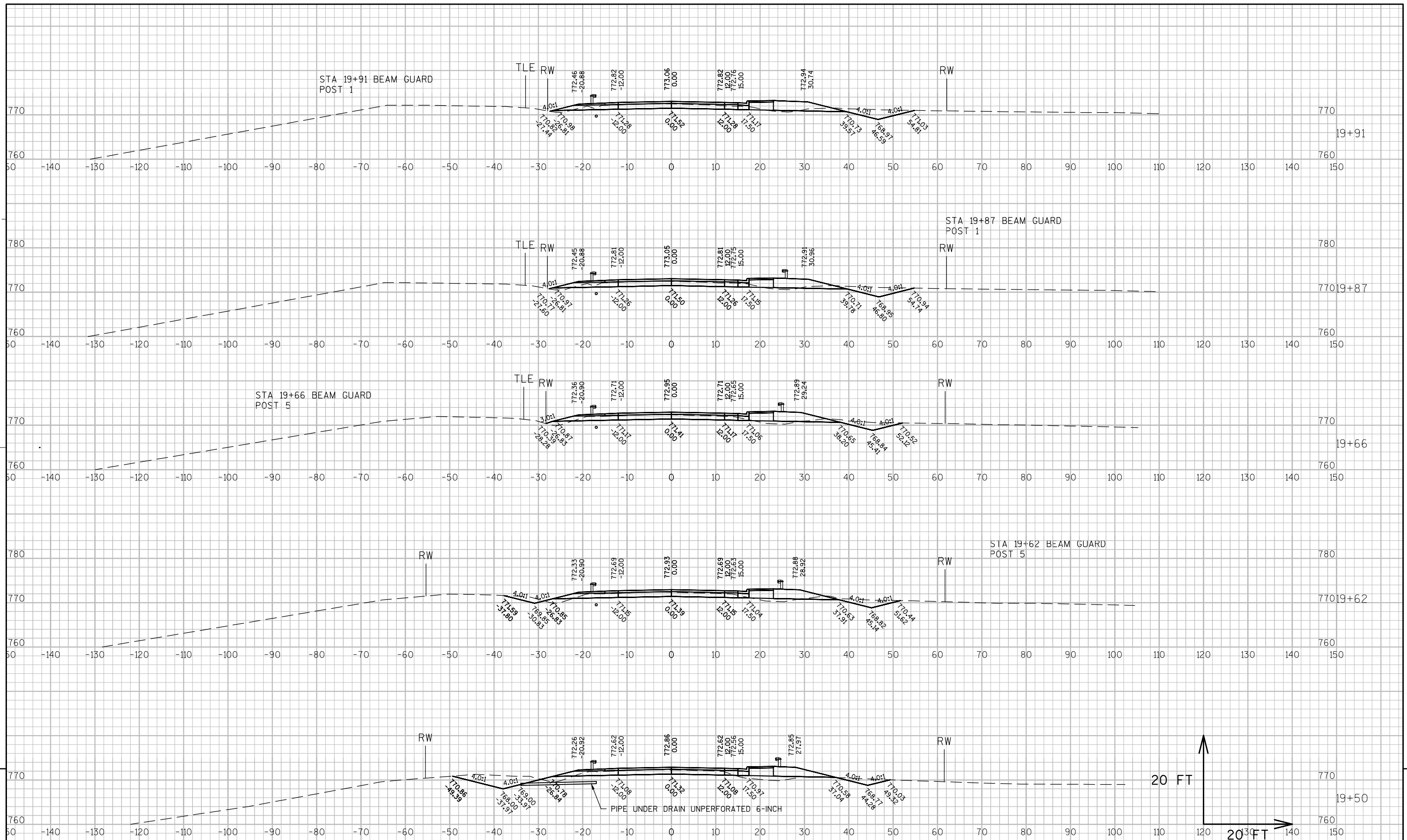
INDICATES WING NUMBER

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-69-3			
DRAWN BY		MJB	PLANS CK'D. GAR
SLOPE PROTECTION DETAILS		SHE: 96	40

EARTHWORK - CTH XX					EXPANSION FACTOR = 1.3		
STATION	END AREA		INCREMENTAL VOLUME		CUMMULATIVE VOLUME		MASS ORDNATE
	CUT (SF)	FILL (SF)	CUT (CY)	EXP FILL (CY)	CUT (CY)	EXP FILL (CY)	
12+11	37	0	0	0	0	0	0
12+50	47	27	61	25	61	25	35
13+00	41	51	81	93	142	119	23
13+50	36	81	71	158	213	277	-64
14+00	58	67	87	177	300	454	-154
14+18	65	77	41	62	341	517	-176
14+50	61	105	75	140	416	657	-241
14+63	64	141	30	77	446	734	-288
14+87	65	223	57	210	503	944	-441
15+00	58	246	30	147	533	1091	-558
15+12	36	238	21	140	554	1231	-677
15+14	34	238	3	23	556	1254	-697
15+37	26	240	26	264	582	1518	-936
15+50	20	220	11	144	593	1662	-1069
15+62	21	220	9	127	602	1789	-1187
16+00	24	200	31	384	633	2174	-1540
18+95	33	154	0	0	633	2174	-1540
19+00	34	111	6	32	640	2205	-1566
19+37	45	26	54	121	694	2327	-1633
19+41	55	22	7	5	701	2331	-1630
19+50	74	16	22	8	722	2339	-1617
19+62	57	18	29	10	752	2349	-1597
19+66	53	17	8	3	760	2352	-1593
19+87	59	12	44	15	803	2367	-1564
19+91	60	11	9	2	812	2370	-1558
20+00	63	9	21	4	833	2374	-1542
20+04	65	9	9	2	842	2376	-1534
20+50	91	3	133	13	975	2389	-1414
21+00	59	0	139	3	1113	2392	-1279
21+32	63	0	72	0	1186	2392	-1206
21+50	64	0	42	0	1228	2392	-1164
22+00	58	1	113	1	1341	2394	-1053
22+50	55	3	105	5	1446	2399	-953







PROJECT NO: 6862-01-70

HWY: CTH XX

COUNTY: WAUSHARA

CROSS SECTIONS: MAINLINE

SHEET 102

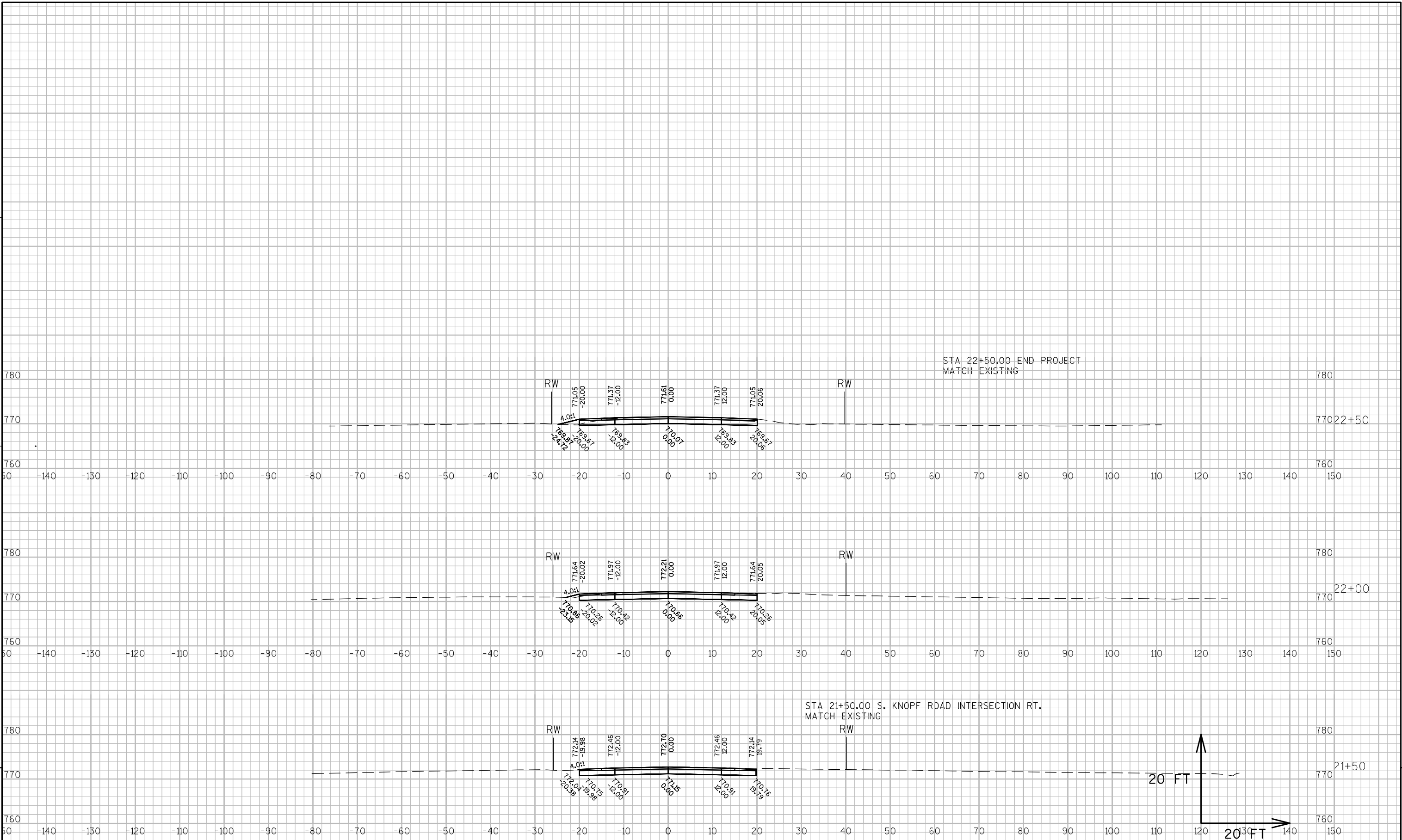
FILE NAME : X:\23122-00\11001\TECH\CADD\68621000\DESIGN\CORRIDORS\CTH-XX-XS.DWG

PLOT DATE : 11/6/2015 3:03 PM

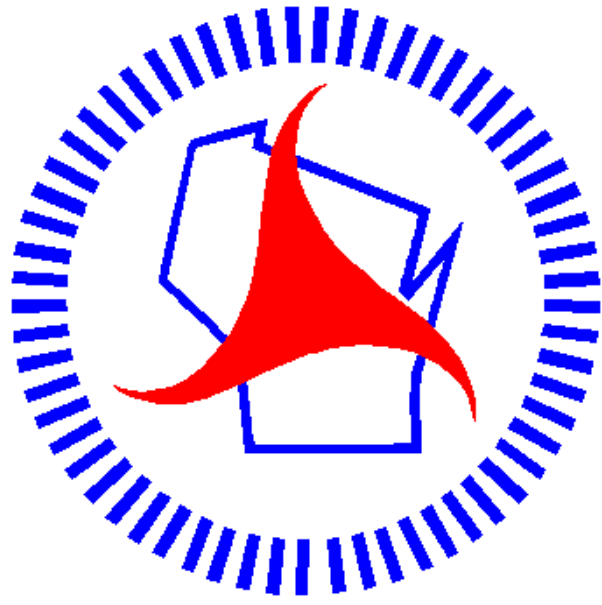
PLOT BY : TIMOTHY VELTE

PLOT NAME : PLOT SCALE : 1:20-XREF

WISDOT/CADD SHEET 49



Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

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