

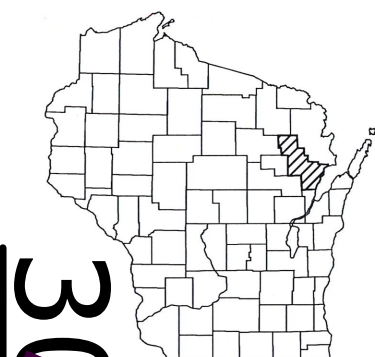
GRE MAY 2019
ORDER OF SHEETS

PROJECT ID: 9190-26-73
WITH: N/A

COUNTY: OCONTO

- | | |
|---------------|------------------------------|
| Section No. 1 | Title |
| Section No. 2 | Typical Sections and Details |
| 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

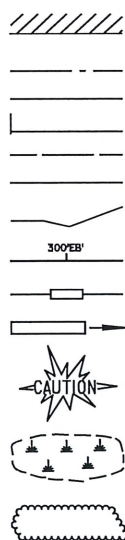


DESIGN DESIGNATION

A.A.D.T. (2021) = 2,500
A.D.T. (2041) = 3,400
D.H.V. = 400
D.D. = 60/40
T. = 10.2
DESIGN SPEED = 55 MPH
ESALS = 1,600,000

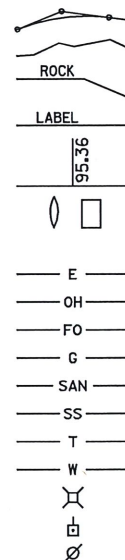
CONVENTIONAL SYMBOLS

- PLAN
- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS
- 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
- OVERHEAD UTILITY
- FIBER OPTIC
- GAS
- SANITARY SEWER
- STORM SEWER
- TELEPHONE
- WATER
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

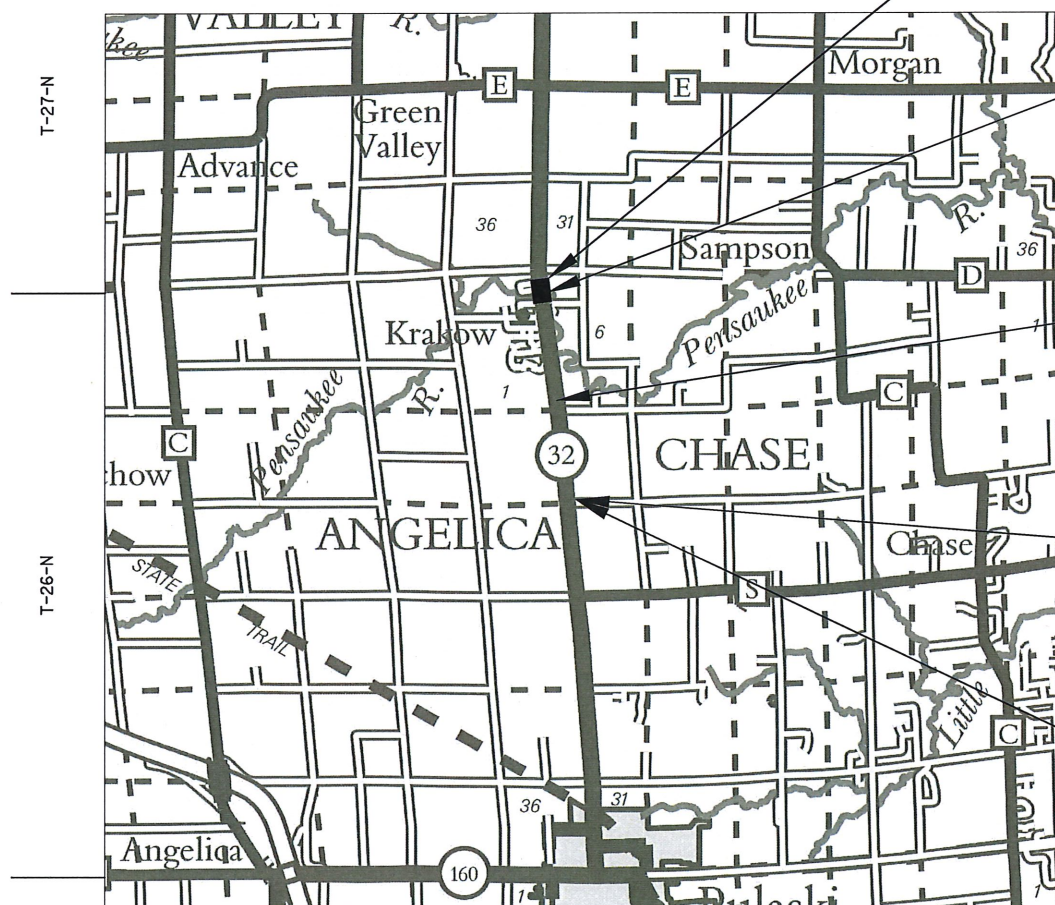
PLAN OF PROPOSED IMPROVEMENT

PULASKI - STH 22

PENSAUKEE RIVER BRIDGE

STH 32
OCONTO

STATE PROJECT NUMBER
9190-26-73



R-18-E
(SHAWANO COUNTY)

R-19-E
(OCONTO COUNTY)

LAYOUT

SCALE 0 2 MILES

TOTAL NET LENGTH OF CENTERLINE = 0.081

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

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO VERTICAL DATUM NAVD 88 (2012).

STATE PROJECT

9190-26-73

FEDERAL PROJECT

PROJECT

WISC 2019299

CONTRACT

1

END PROJECT
STA. 323+00

STRUCTURE B-58-130
STRUCTURE R-58-11

STRUCTURE C-58-019

STRUCTURE C-58-018

BEGIN PROJECT
STA. 189+51
N=120642.9813
E=512056.2503

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor WISDOT NE REGION

Designer Q. CREAPEAU

Project Manager P. ZOELLNER

Regional Examiner J. SPIELMACHER

Regional Supervisor D. SEGERSTROM

APPROVED FOR THE DEPARTMENT

DATE: 3/13/19 Paul Zoellner (Signature)

E

GENERAL NOTES

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

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND ALL UTILITIES IN THE VICINITY OF THE PROJECT TO LOCATE THEIR FACILITIES AT LEAST THREE WORKING DAYS PRIOR TO BEGINNING WORK.

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

THE EXACT LOCATIONS AND DIMENSIONS OF ALL EROSION CONTROL ITEMS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALL DRIVEWAYS AND FIELD ENTRANCES SHALL BE REPLACED IN KIND.

DNR LIAISON

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
2984 SHAWANO AVENUE
GREEN BAY, WI 54313-6727
ATTN: JIM DOPERALSKI
PHONE: (920) 412-0165
E-MAIL: JAMES.DOPERALSK@WISCONSIN.GOV

NE REGION SURVEY CONTACT

CORMAC MCINNIS
DEPARTMENT OF TRANSPORTATION
NORTHEAST REGION
944 VANDERPERREN WAY
GREEN BAY, WI 54304
PHONE: (920) 492-5638
E-MAIL: CORMAC.MCINNIS@DOT.WI.GOV

UTILITIES

CENTURYLINK
COMMUNICATION LINE
MATT GUNDERSON (FIELD CONTACT)
212 CHURCH AVE
CASCO, WI 54205
(920)837-2344
MATT.GUNDERSON@CENTURYLINK.COM

KRAKOW SANITARY DISTRICT
SEWER
DALE WAGNER (FIELD CONTACT)
A.A. BOX 171
KRAKOW, WI 54137
(920)899-3381, (920) 671-9308
KRAKOWSANITARY@YAHOO.COM

NORTHEAST TELEPHONE COMPANY LLC
COMMUNICATION LINE
CHRIS HINES (PRIMARY CONTACT)
5475 GLENDALE AVE
GREEN BAY, WI 54313
(920)865-3166, (920) 373-4603
CHRIS.HINES@NSIGHT.COM

OCONTO ELECTRIC COOPERATIVE
ELECTRICITY
JACK PARDY (PRIMARY CONTACT)
7479 REA RD
OCONTO FALLS, WI 54154
(920)846-2816
JPARDY@OCONTOELECTRIC.COM

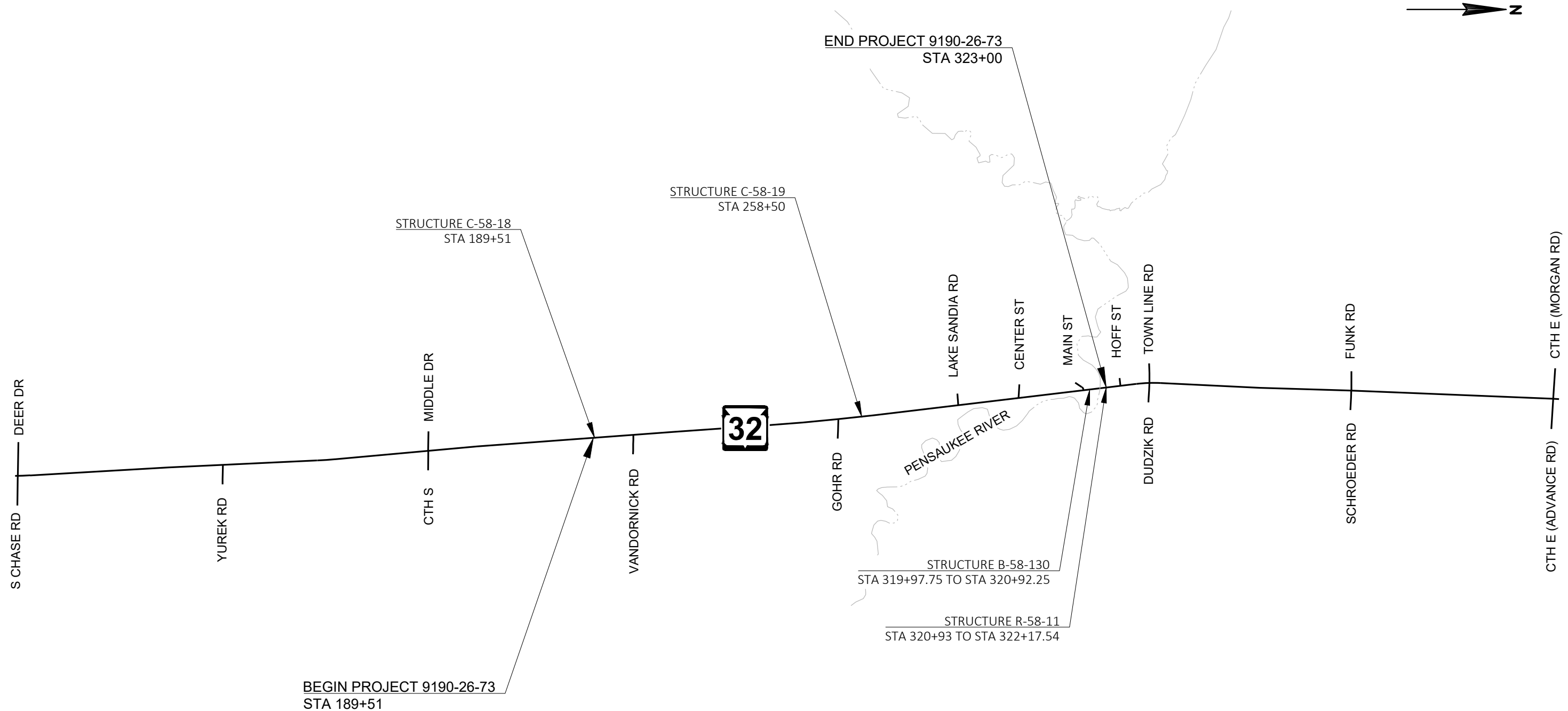
PACKERLAND BROADBAND
COMMUNICATION LINE
ANDREW HEIGL (FIELD CONTACT)
105 KENT ST
P.O. BOX 190
IRON MOUNTAIN, MI 49801
(906)221-7536
ANDY.HEIGL@PACKERLANDBROADBAND.COM

WE ENERGIES
ELECTRICITY
KEN VAN OSS (FIELD CONTACT)
800 S LYNNDAL E DR
APPLETON, WI 54912
(920)380-3318
KENNETH.VAN-OSS@WE-ENERGIES.COM

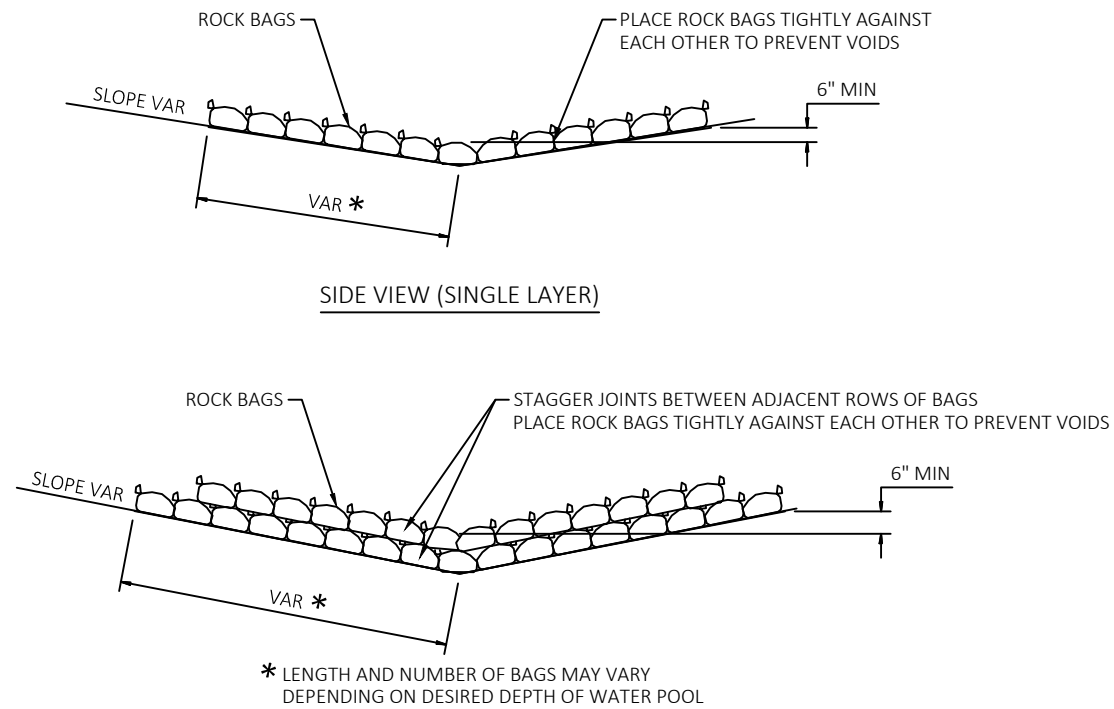
WE ENERGIES
GAS/PETROLEUM
CODY JACOBSON (1078 CONTACT)
800 S LYNNDAL E DR
APPLETON, WI 54912
(920)380-3565, (920) 428-1141
CODY.JACOBSON@WE-ENERGIES.COM



Dial 811 or (800)242-8511
www.DiggersHotline.com



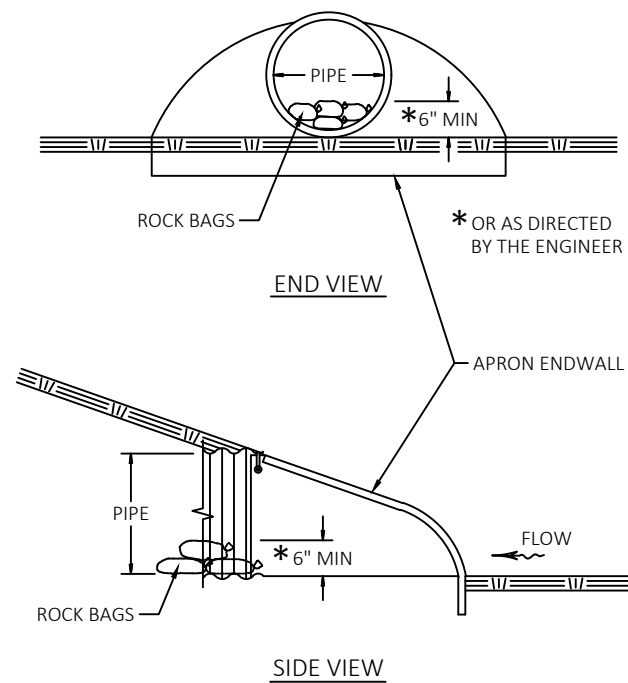
PROJECT NO: 9190-26-73	HWY: STH 32	COUNTY: OCONTO	PROJECT OVERVIEW	SHEET	E
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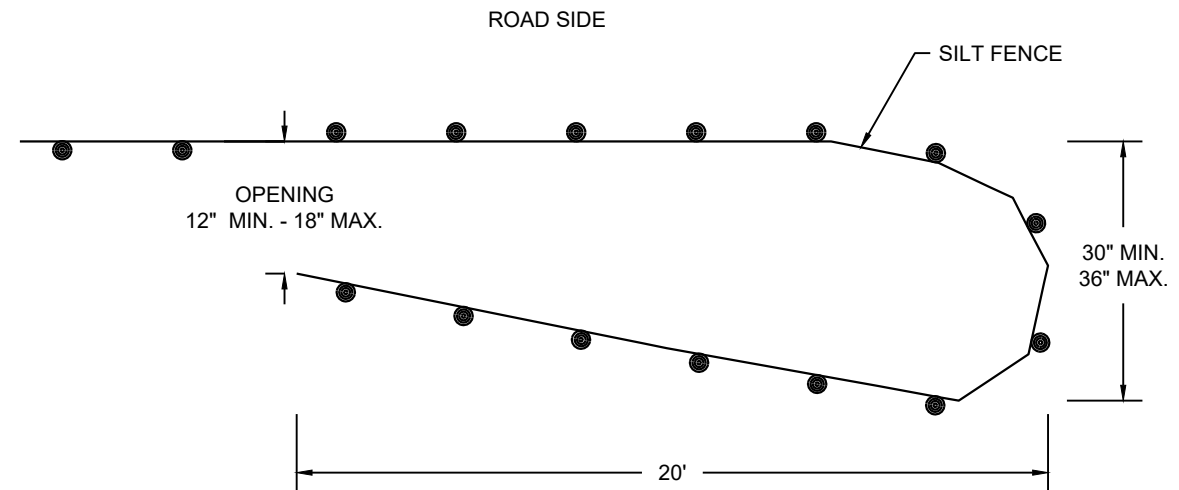
SIDE VIEW (MULTIPLE LAYER)

ROCK BAGS DITCH CHECK

PAID AS ROCK BAGS

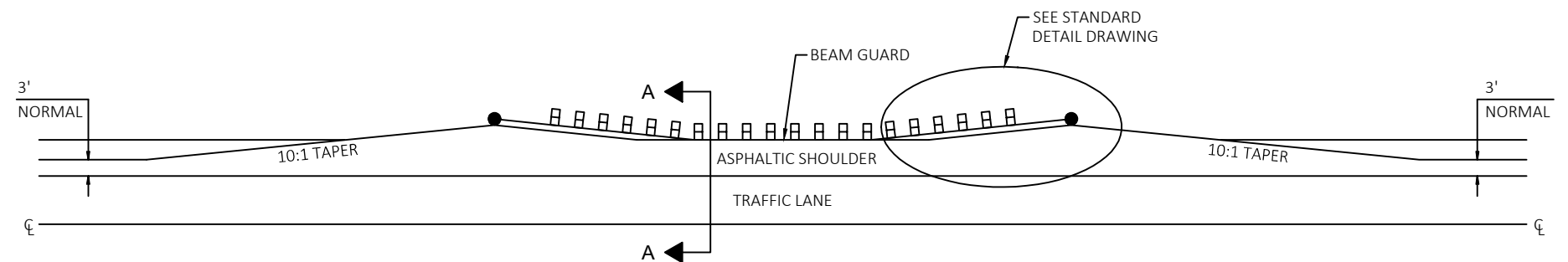
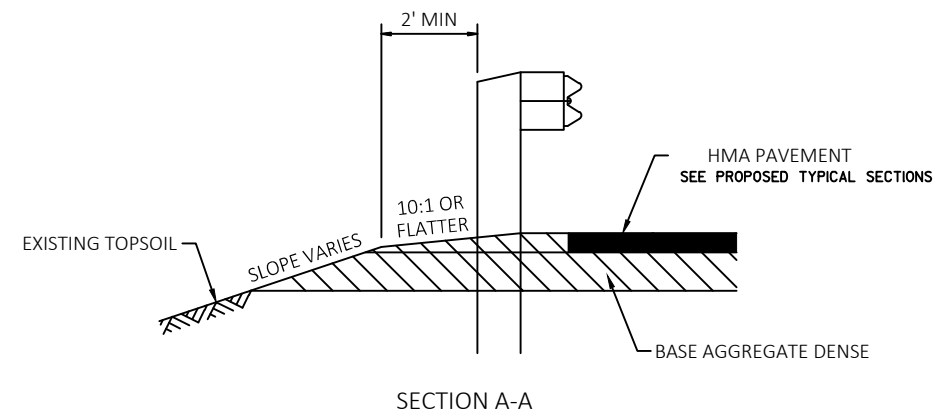


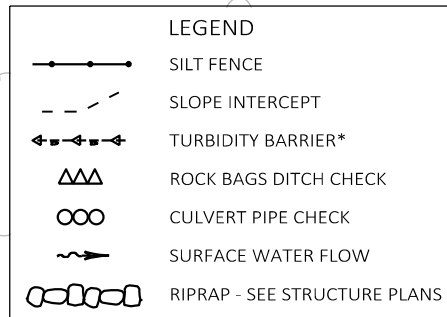
CULVERT PIPE CHECKS



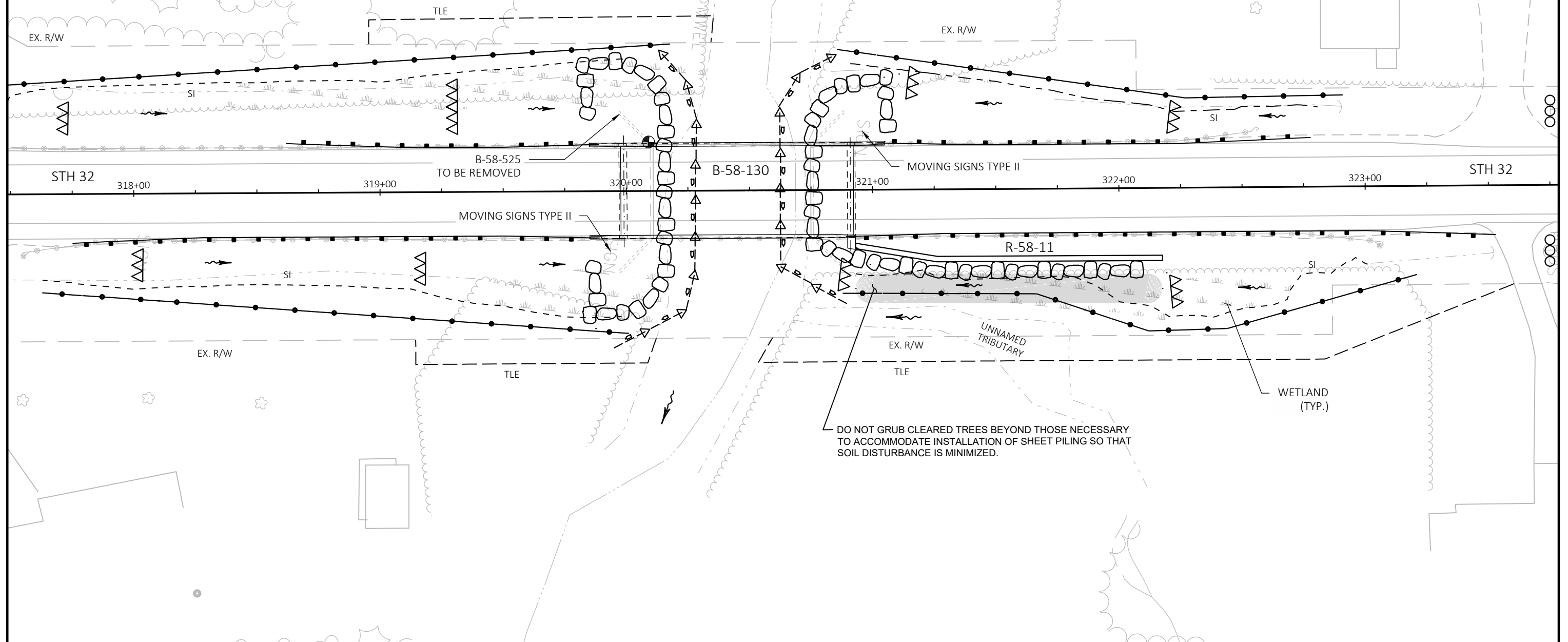
NOTE:
TURTLE TURNAROUNDS ARE INSTALLED TO REDIRECT TURTLES AWAY FROM THE CONSTRUCTION ZONE.
POSITION SILT FENCE POSTS PRIOR TO THE TURNAROUND PER SDD 8E9 SILT FENCE.
POSITION TURNAROUND AREA POSTS ON THE OUTSIDE OF THE TURNAROUND.

TURTLE TURNAROUND





* NOTE:
SEE SDD 8E11 TURBIDITY BARRIER FOR MINIMUM BARRIER HEIGHT.
SEE STRUCTURE B-58-130 GENERAL PLAN FOR HYDRAULIC DATA.



PROJECT NO: 9190-26-73

HWY: STH 32

COUNTY: OCONTO

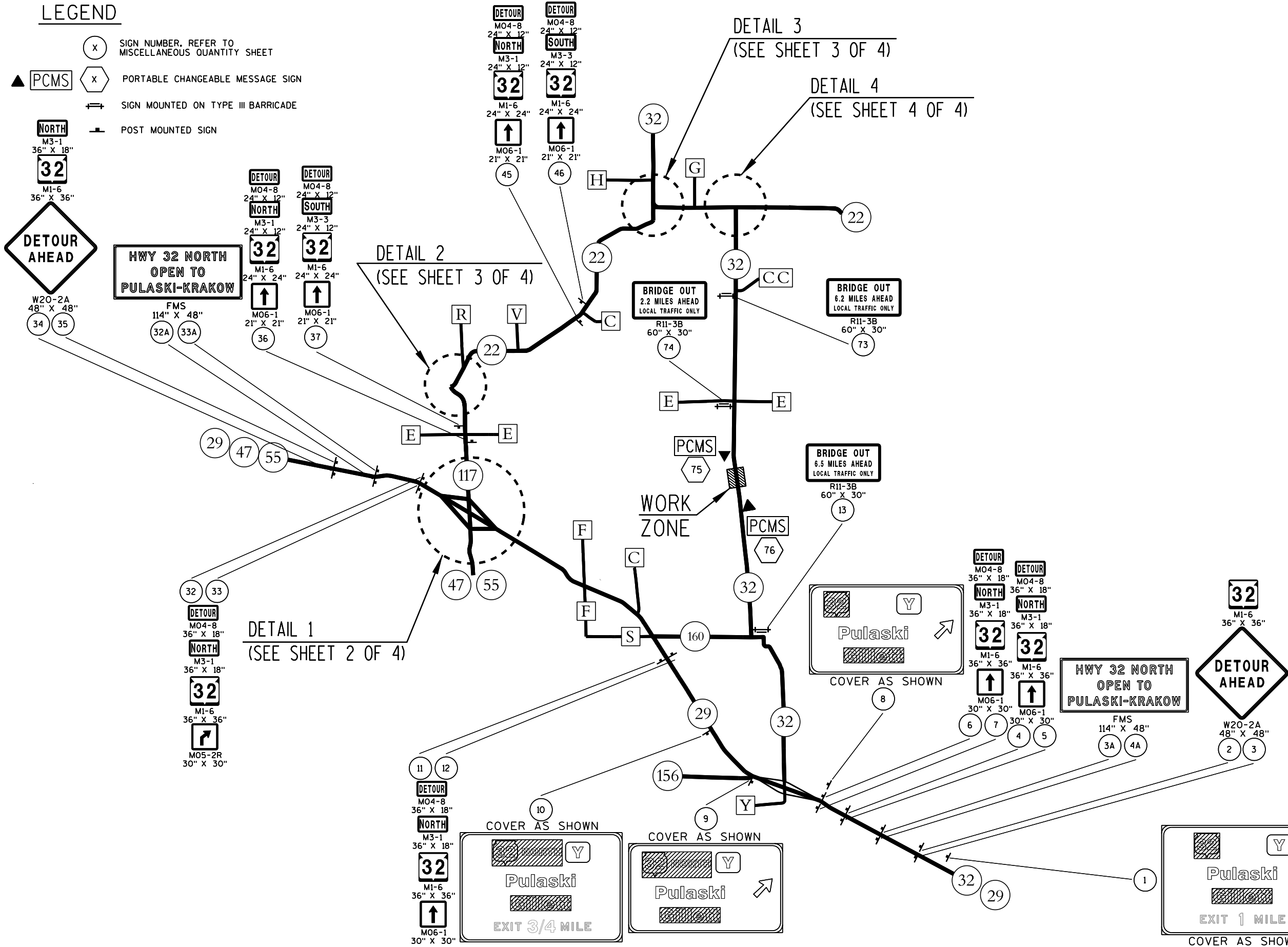
EROSION CONTROL AND SIGN PLAN

SHEET

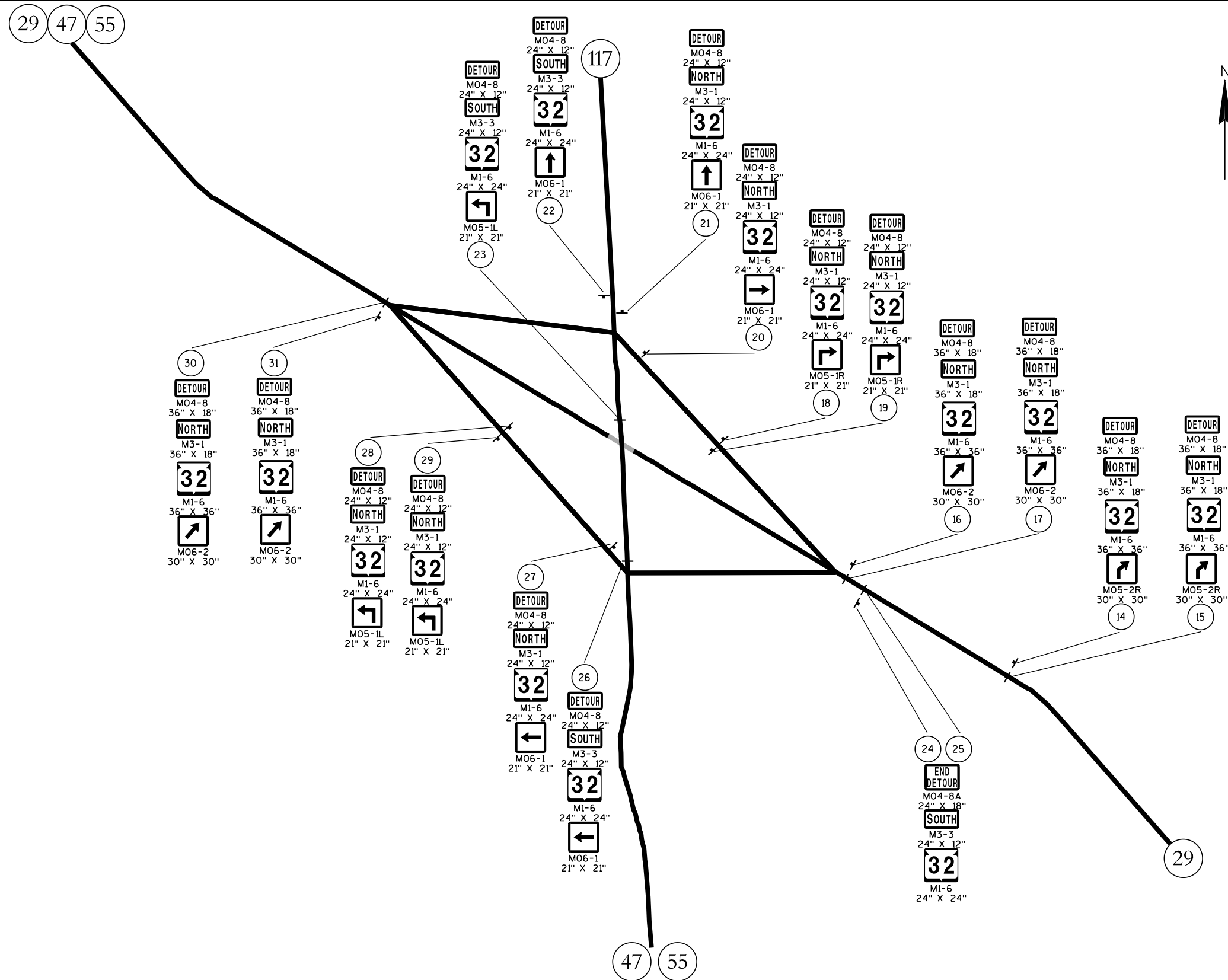
E

LEGEND

- (X) SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET
- ▲ PCMS
- (X) PORTABLE CHANGEABLE MESSAGE SIGN
- ⇄ SIGN MOUNTED ON TYPE III BARRICADE
- POST MOUNTED SIGN



SHEET 1 OF 4
PLAN SHEET PRODUCED
BY WisDOT-NE REGION

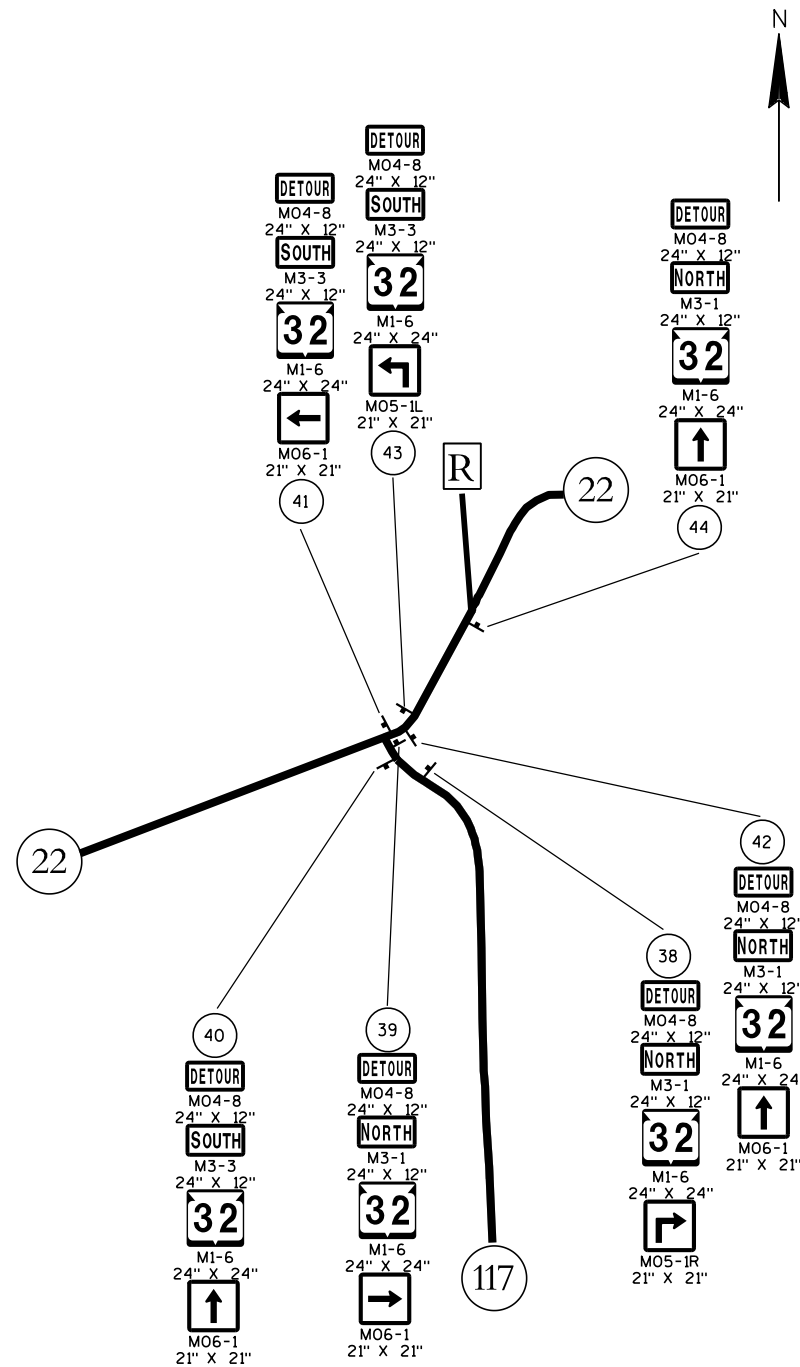


LEGEND

-  SIGN NUMBER. REFER TO MISCELLANEOUS QUANTITY SHEET
-   PORTABLE CHANGEABLE MESSAGE SIGN
-  SIGN MOUNTED ON TYPE III BARRICADE
-  POST MOUNTED SIGN

SHEET 2 OF 4

PLAN SHEET PRODUCED
BY WISDOT-NE REGION



LEGEND

- (X) SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET
- ▲ PCMS (X) PORTABLE CHANGEABLE MESSAGE SIGN
- ⇄ SIGN MOUNTED ON TYPE III BARRICADE
- POST MOUNTED SIGN

DETAIL 2

PROJECT NO: 9190-26-73

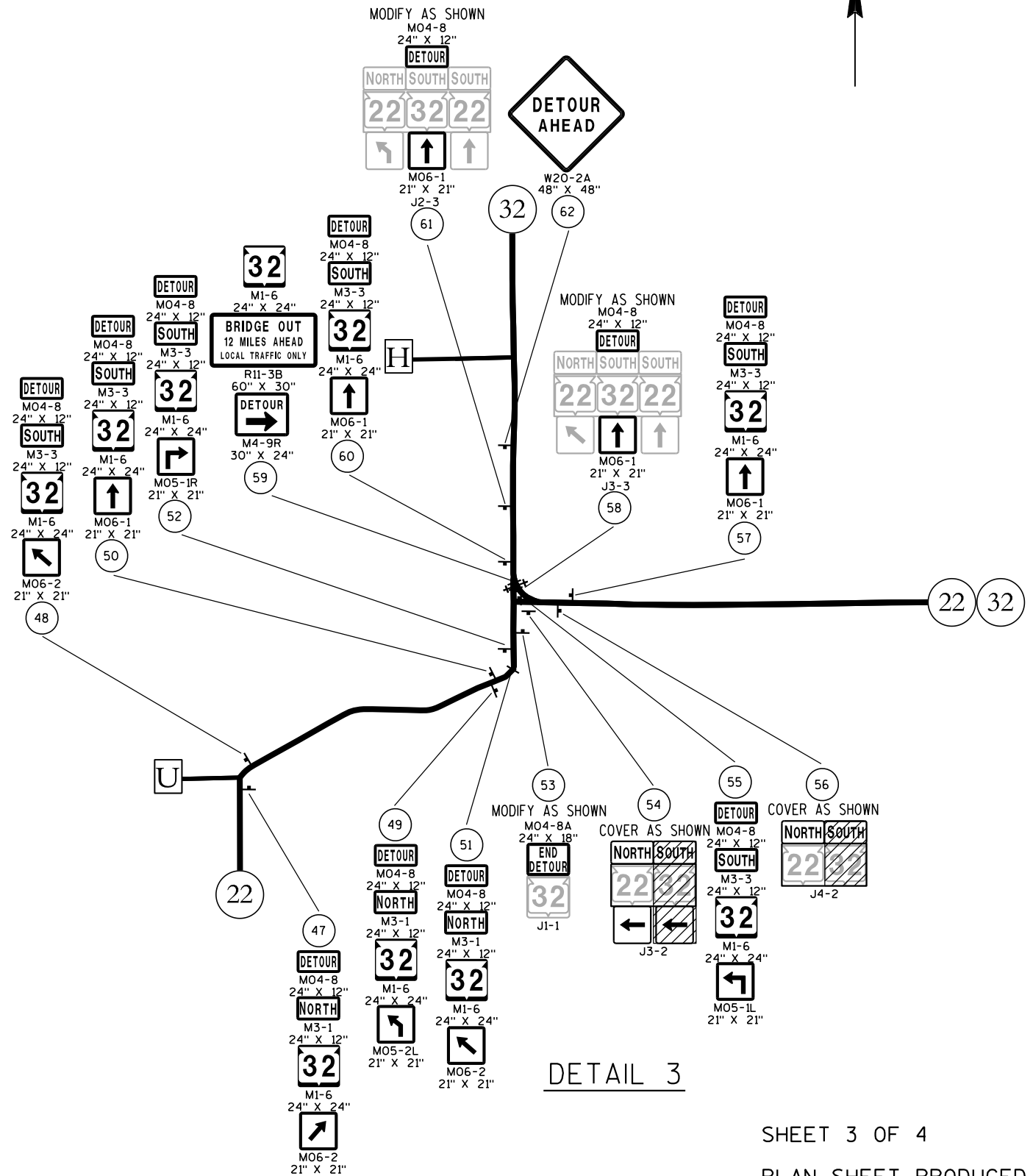
HWY: STH 32

COUNTY: OCONTO

DETOUR SIGNING DETAIL

SHEET

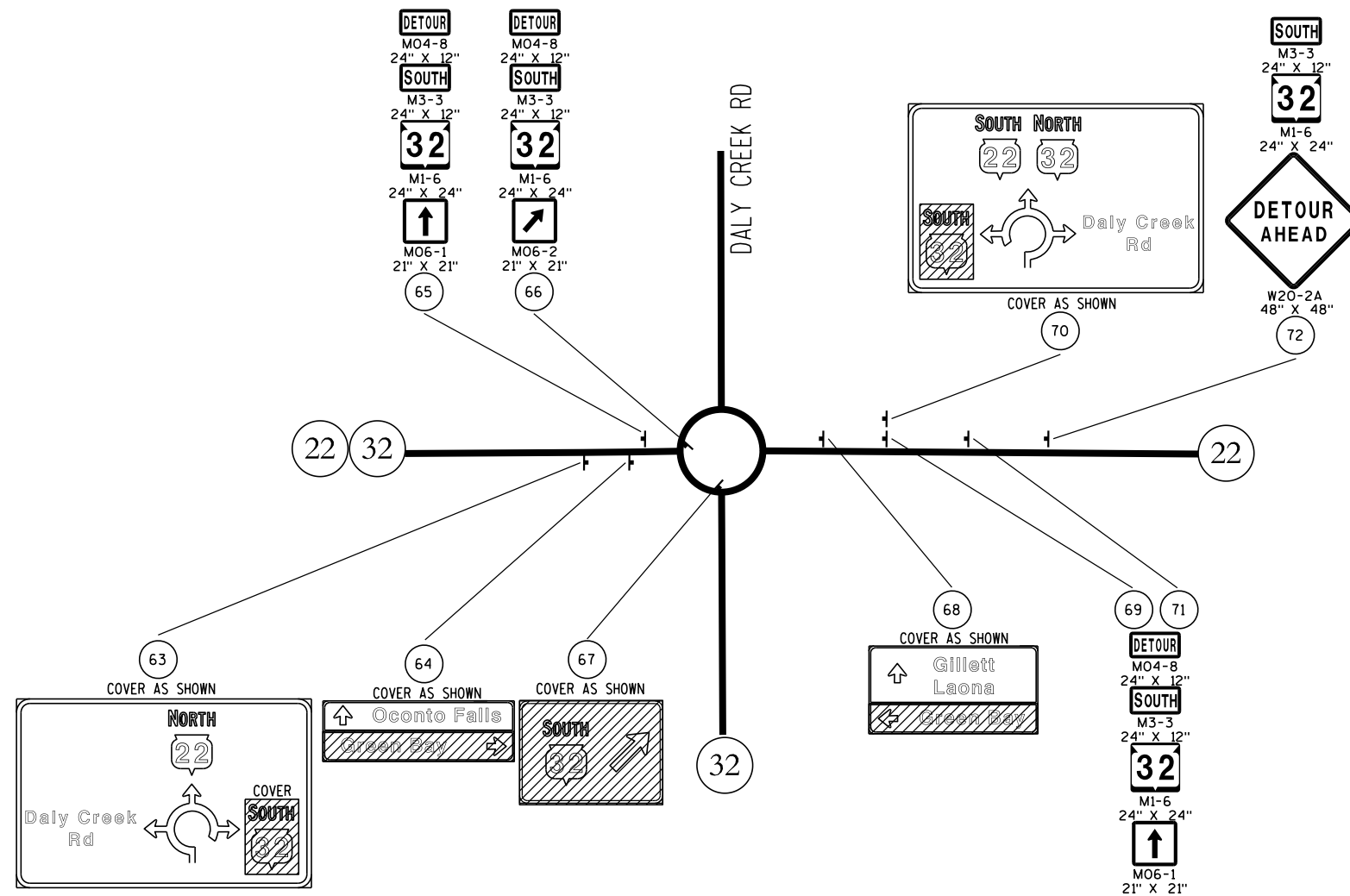
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DETAIL 3

SHEET 3 OF 4

PLAN SHEET PRODUCED
BY WISDOT-NE REGION



DETAIL 4

LEGEND

-  SIGN NUMBER. REFER TO MISCELLANEOUS QUANTITY SHEET
-   PORTABLE CHANGEABLE MESSAGE SIGN
-  SIGN MOUNTED ON TYPE III BARRICADE
-  POST MOUNTED SIGN

SHEET 4 OF 4

PLAN SHEET PRODUCED
BY WISDOT-NE REGION

Estimate Of Quantities

9190-26-73

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	7.000	7.000
0004	201.0205	Grubbing	STA	7.000	7.000
0006	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0008	203.0200	Removing Old Structure (station) 01. STA 271+60	LS	1.000	1.000
0010	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. STA 320+43	LS	1.000	1.000
0012	204.0165	Removing Guardrail	LF	967.000	967.000
0014	205.0100	Excavation Common	CY	741.000	741.000
0016	206.1000	Excavation for Structures Bridges (structure) 01. B-58-130	LS	1.000	1.000
0018	206.2000	Excavation for Structures Culverts (structure) 01. C-58-19	LS	1.000	1.000
0020	206.3000	Excavation for Structures Retaining Walls (structure) 01. R-58-11	LS	1.000	1.000
0022	206.5000	Cofferdams (structure) 01. C-58-19	LS	1.000	1.000
0024	208.0100	Borrow	CY	750.000	750.000
0026	210.1500	Backfill Structure Type A	TON	456.000	456.000
0028	210.2500	Backfill Structure Type B	TON	30.000	30.000
0030	213.0100	Finishing Roadway (project) 01. 9190-26-73	EACH	1.000	1.000
0032	305.0110	Base Aggregate Dense 3/4-Inch	TON	208.000	208.000
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	923.000	923.000
0036	455.0605	Tack Coat	GAL	71.000	71.000
0038	460.2000	Incentive Density HMA Pavement	DOL	440.000	440.000
0040	460.5243	HMA Pavement 3 LT 58-34 S	TON	545.000	545.000
0042	460.5244	HMA Pavement 4 LT 58-34 S	TON	138.000	138.000
0044	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	2.000	2.000
0046	502.0100	Concrete Masonry Bridges	CY	249.000	249.000
0048	502.3200	Protective Surface Treatment	SY	390.000	390.000
0050	502.3210	Pigmented Surface Sealer	SY	112.000	112.000
0052	503.0137	Prestressed Girder Type I 36W-Inch	LF	558.000	558.000
0054	504.0100	Concrete Masonry Culverts	CY	7.000	7.000
0056	504.0500	Concrete Masonry Retaining Walls	CY	11.000	11.000
0058	505.0400	Bar Steel Reinforcement HS Structures	LB	4,510.000	4,510.000
0060	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	31,100.000	31,100.000
0062	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	12.000	12.000
0064	506.4000	Steel Diaphragms (structure) 01. B-58-130	EACH	10.000	10.000
0066	509.1500	Concrete Surface Repair	SF	30.000	30.000
0068	511.1200	Temporary Shoring (structure) 01. C-58-19	SF	110.000	110.000
0070	512.0500	Piling Steel Sheet Permanent Delivered	SF	1,940.000	1,940.000
0072	512.0600	Piling Steel Sheet Permanent Driven	SF	1,940.000	1,940.000
0074	516.0500	Rubberized Membrane Waterproofing	SY	27.000	27.000

Estimate Of Quantities

9190-26-73

Line	Item	Item Description	Unit	Total	Qty
0076	521.1018	Apron Endwalls for Culvert Pipe Steel 18-Inch	EACH	2.000	2.000
0078	521.3118	Culvert Pipe Corrugated Steel 18-Inch	LF	20.000	20.000
0080	550.0500	Pile Points	EACH	19.000	19.000
0082	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	810.000	810.000
0084	606.0100	Riprap Light	CY	40.000	40.000
0086	606.0300	Riprap Heavy	CY	295.000	295.000
0088	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	155.000	155.000
0090	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0092	614.2300	MGS Guardrail 3	LF	626.000	626.000
0094	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0096	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0098	618.0100	Maintenance And Repair of Haul Roads (project) 01. 9190-26-73	EACH	1.000	1.000
0100	619.1000	Mobilization	EACH	1.000	1.000
0102	624.0100	Water	MGAL	11.000	11.000
0104	625.0500	Salvaged Topsoil	SY	2,600.000	2,600.000
0106	628.1504	Silt Fence	LF	1,230.000	1,230.000
0108	628.1520	Silt Fence Maintenance	LF	1,230.000	1,230.000
0110	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0112	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0114	628.2023	Erosion Mat Class II Type B	SY	2,600.000	2,600.000
0116	628.6005	Turbidity Barriers	SY	300.000	300.000
0118	628.7555	Culvert Pipe Checks	EACH	4.000	4.000
0120	628.7570	Rock Bags	EACH	106.000	106.000
0122	629.0210	Fertilizer Type B	CWT	1.600	1.600
0124	630.0130	Seeding Mixture No. 30	LB	70.000	70.000
0126	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	2.000	2.000
0128	638.2102	Moving Signs Type II	EACH	3.000	3.000
0130	638.3000	Removing Small Sign Supports	EACH	2.000	2.000
0132	642.5001	Field Office Type B	EACH	1.000	1.000
0134	643.0300	Traffic Control Drums	DAY	180.000	180.000
0136	643.0420	Traffic Control Barricades Type III	DAY	6,930.000	6,930.000
0138	643.0705	Traffic Control Warning Lights Type A	DAY	13,140.000	13,140.000
0140	643.0900	Traffic Control Signs	DAY	21,020.000	21,020.000
0142	643.0910	Traffic Control Covering Signs Type I	EACH	4.000	4.000
0144	643.0920	Traffic Control Covering Signs Type II	EACH	6.000	6.000
0146	643.1000	Traffic Control Signs Fixed Message	SF	152.000	152.000
0148	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0150	645.0111	Geotextile Type DF Schedule A	SY	76.000	76.000
0152	645.0120	Geotextile Type HR	SY	568.000	568.000

Estimate Of Quantities

9190-26-73

Line	Item	Item Description	Unit	Total	Qty
0154	646.1020	Marking Line Epoxy 4-Inch	LF	1,269.000	1,269.000
0156	648.0100	Locating No-Passing Zones	MI	0.080	0.080
0158	650.4500	Construction Staking Subgrade	LF	464.000	464.000
0160	650.5000	Construction Staking Base	LF	464.000	464.000
0162	650.6500	Construction Staking Structure Layout (structure) 01. B-58-130	LS	1.000	1.000
0164	650.6500	Construction Staking Structure Layout (structure) 02. R-58-11	LS	1.000	1.000
0166	650.9910	Construction Staking Supplemental Control (project) 01. 9190-26-73	LS	1.000	1.000
0168	650.9920	Construction Staking Slope Stakes	LF	464.000	464.000
0170	690.0150	Sawing Asphalt	LF	83.000	83.000
0172	715.0502	Incentive Strength Concrete Structures	DOL	1,602.000	1,602.000
0174	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0176	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

CLEARING & GRUBBING					
		201.0120 CLEARING	201.0220 GRUBBING*		
STATION TO STATION	LOCATION	STA	STA	REMARKS	
317+00 - 324+00	STH 32 - LT & RT	7	7	INCLUDES TLE AREAS AS NEEDED	
TOTAL		7	7	*SEE EROSION CONTROL PLAN NOTE	

REMOVING SMALL CULVERTS			
203.0100			
STATION	LOCATION	EACH	REMARKS
323+52	STH 32 - RT	1	PE
TOTAL		1	

REMOVING GUARDRAIL			
204.0165			
STATION TO STATION	LOCATION	LF	
317+16 - 320+11	STH 32 - LT	295	
317+53 - 320+11	STH 32 - RT	258	
320+75 - 322+57	STH 32 - LT	182	
320+75 - 323+07	STH 32 - RT	232	
TOTAL		967	

EARTHWORK SUMMARY									
Division	From/To Station	Location	205.0100 Common Excavation	Salvaged/Unusable Pavement Material (1)	Available Material (2)	Unexpanded Fill	Expanded Fill Factor (3)	Mass Ordinate +/- (4)	208.0100 Borrow
			Cut				Factor 1.15		
Division 1	317+42 / 323+00	STH 32	741	228	513	1,296	1,491	-978	750
Division 1 Subtotal			741	228	513	1,296	1,491	-978	750
Grand Total			741	228	513	1,296	1,491	-978	750
Total Common Exc			741						

Notes:

(1) Salvaged/Unsuable Pavement Material is included in Cut.

(2) Available Material = Cut - Salvaged/Unusuable Pavement Material

(3) Expanded Fill Factor = 1.15

(4) The Mass Ordinate + or - Qty calculated for the Division.

Plus quantity indicates an excess of material within the Division.

Minus indicates a shortage of material within the Division.

ALL ITEMS CATEGORY 0010
UNLESS OTHERWISE NOTED

BASE AGGREGATE SUMMARY						
		305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL		
STATION TO STATION	LOCATION					
317+42 - 317+71	STH 32 - SHLDR LT	5	15	0		
317+71 - 319+97.75	STH 32 - LT & RT	107	535	6		
320+92.25 - 322+00	STH 32 - LT & RT	46	241	3		
322+00 - 322+81	STH 32 - SHLDR LT & RT	45	107	2		
322+81 - 323+00	STH 32 - SHLDR RT	5	11	0		
323+50 - 323+77	PE STH 32 - RT	0	14	0		
TOTAL		208	923	11		

HMA SUMMARY

		<u>460.5243</u>		<u>460.5244</u>		<u>455.0605</u>	
		HMA PAVEMENT		HMA PAVEMENT		TACK COAT	
		3 LT 58-34 S		4 LT 58-34 S			
STATION TO STATION		LOCATION	TON	TON	GAL	REMARKS	
317+42 - 317+71		STH 32 - RT	5	1	1	BEAMGUARD APPROACH ONLY	
317+71 - 319+98		STH 32 - LT & RT	332	84	43	S SIDE OF STRUCTURE FULL WIDTH	
320+92 - 322+00		STH 32 - LT & RT	162	41	21	N SIDE OF STRUCTURE FULL WIDTH	
322+00 323+00		STH 32 - LT	24	6	3	BEAMGUARD APPROACH ONLY	
322+00 - 323+00		STH 32 - RT	23	6	3	BEAMGUARD APPROACH ONLY	
TOTAL			545	138	71		

CULVERT PIPE SUMMARY

		521.3118		521.1018	
		CULVERT PIPE CORRUGATED		APRON ENDWALLS FOR	
		STEEL 18-INCH		CULVERT PIPE STEEL 18-INCH	
		0.064" MIN. THICKNESS			
STATION	LOCATION	LF	EACH	REMARKS	
323+52	STH 32 - RT	20	2	PE - MATCH EXISTING INVERTS	
TOTAL		20	2		

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

			<u>465.0120</u>			
STATION TO STATION		LOCATION	TON	REMARKS		
323+50	- 323+77	STH 32 - RT	2	MATCH EXIST. WIDTH & HMA DEPTH		
TOTAL			2			

BEAM GUARD SUMMARY

		614.2300		614.2500		614.2610	
		MGS GUARDRAIL 3		MGS THRIE BEAM		MGS GUARDRAIL	
				TRANSITION		TERMINAL EAT	
STATION TO STATION	LOCATION	LF	LF	EACH			
318+62 - 319+89	STH 32 - LT	88	40	1			
317+75 - 319+89	STH 32 - RT	175	40	1			
321+01 - 322+78	STH 32 - LT	138	40	1			
320+89 - 323+53	STH 32 - RT	225	40	1			
TOTAL		626	160	4			

EROSION CONTROL & LANDSCAPING SUMMARY

		625.0500		628.1504		628.1520		628.2023		628.6005		628.7555		628.7570		629.0210		630.0130	
		SALVAGED		SILT FENCE		SILT FENCE		EROSION MAT		TURBIDITY		CULVERT		ROCK BAGS		FERTILIZER		SEEDING	
		TOPSOIL		DELIVERED		MAINTENANCE		CLASS II TYPE B		BARRIERS		PIPE CHECKS				TYPE B		MIX NO. 20	
STATION TO STATION	LOCATION	SY	LF	LF	SY	SY	SY	SY	SY	EACH	EACH	EACH	CWT	LB					
317+40 - 320+30	STH 32 - LT	710	270	270	710	55					25		0.4	19					
317+60 - 320+30	STH 32 - RT	520	240	240	520	70					20		0.3	14					
320+60 - 323+00	STH 32 - LT	345	240	240	345	60	2				20		0.2	9					
320+60 - 323+30	STH 32 - RT	470	210	210	470	55	2				20		0.3	13					
	C-58-19	44	30	30	44								0.03	1					
-	UNDISTRIBUTED	511	240	240	511	60					21		0.3	14					
TOTALS		2600	1230	1230	2600	300	4				106		1.6	70					

EROSION CONTROL MOBILIZATIONS

		628.1905		628.1910	
		MOBILIZATIONS		MOBILIZATIONS	
		EROSION CONTROL		EMERGENCY EROSION CONTROL	
LOCATION	EACH	EACH		EACH	
PROJECT	5	3			
TOTAL		5		3	

ALL ITEMS CATEGORY 0010
UNLESS OTHERWISE NOTED

SIGNS					
STATION	EXISTING LOCATION	634.0616	638.2102	638.3000	REMARKS
		POSTS WOOD 4X6-INCH X 16-FT EACH	MOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
319+93	STH 32 - RT	1	1	1	"PENSAUKEE RIVER" FIELD VERIFY NEW LOCATION STA 319+75 RT
320+96	STH 32 - LT	1	2	1	"PENSAUKEE RIVER"/"NO PASSING ZONE" COORDINATE LOCATION (STH 32 LT) WITH ITEM 648.0100
TOTAL		2	3	2	

TRAFFIC CONTROL DEVICE SUMMARY											
STATION	LOCATION	APPROX. SERVICE PERIOD DAYS	<u>643.0300</u>		<u>643.0420</u>		<u>643.0705</u>		<u>643.0900</u>		REMARKS
			DRUMS		BARRICADES		WARNING		SIGNS*		
			NO. IN SERVICE	DAY	TYPE III*	DAY	LIGHTS TYPE A*	DAY	NO. IN SERVICE	DAY	
189+51	STH 32	5	15	75					3	15	C-58-18 WORK AREA
258+50	STH 32	7	15	105					5	35	C-58-19 WORK AREA
301+40	STH 32	90							1	90	W20-3A SIGN
306+40	STH 32	90							1	90	W20-3C SIGN
311+40	STH 32	90							1	90	W20-3D SIGN
316+40	STH 32	90			1	90	2	180	1	90	R11-2B SIGN
316+90	STH 32	90			1	90	2	180			---
317+40	STH 32	90			5	450	6	540	1	90	R11-2B SIGN
322+30	STH 32	90							1	90	W20-3A SIGN
321+80	STH 32	90							1	90	W20-3C SIGN
321+30	STH 32	90							1	90	W20-3D SIGN
316+30	STH 32	90			1	90	2	180	1	90	R11-2B SIGN
311+30	STH 32	90			1	90	2	180			---
306+30	STH 32	90			5	450	6	540	1	90	R11-2B SIGN
	CENTER ST	90			4	360	8	720			TOWN OF ANGELICA**
	MAIN ST	90			4	360	8	720			"
	ANGELICA ST	90			4	360	8	720			"
	GREEN VALLEY RD	90			4	360	8	720			"
	TOWNLINE RD	90			4	360	8	720			"
	VAN DORNICK RD	90			4	360	8	720			TOWN OF CHASE**
	DUDZIK RD	90			4	360	8	720			"
	SHAWANO LINE RD	90			4	360	8	720			TOWN OF GREEN VALLEY**
	CHURCH RD	90			4	360	8	720			"
	FUNK RD	90			4	360	8	720			"
	GREEN VALLEY RD	90			4	360	8	720			"
	CCC RD	90			4	360	8	720			TOWN OF CHASE**
	DUDZIK RD	90			4	360	8	720			"
	MORGAN MARSH RD	90			4	360	8	720			"
	MORGAN RIVER RD	90			4	360	8	720			"
TOTAL			180		6,660		12,600		950		
* SEE TRAFFIC CONTOL DETOUR SIGN SUMMARY FOR ADDITIONAL QUANTITIES											
**SEE SPECIAL PROVISIONS FOR COORDINATION OF SIGN LOCATIONS											

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TRAFFIC CONTROL DETOUR SIGN SUMMARY															
SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 90 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 FIXED MESSAGE SIGN SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS	
1	STH 29/32, COVER ADVANCED WB GROUND MOUNT SIGN AS SHOWN										1	1		COVER SIGN AS SHOWN	
2	STH 29/32, PLACE 3/4 MILE PRIOR TO RAMP DIVERGE ON RIGHT SIDE	M 1-6	36"x36"	1	90	90									
	"	W 20-2A	48"x48"	1	90	90									
3	STH 29/32, PLACE 3/4 MILE PRIOR TO RAMP DIVERGE ON MEDIAN SIDE	M 1-6	36"x36"	1	90	90									
	"	W 20-2A	48"x48"	1	90	90									
3A	STH 29/32, PLACE 1/2 MILE PRIOR TO RAMP DIVERGE ON RIGHT SIDE	FMS	114"x48"	1					38					SEE SIGN DETAIL SHEET	
4	STH 29/32, PLACE 1/4 MILE PRIOR TO RAMP DIVERGE ON RIGHT SIDE	MO 4-8	36"x18"	1	90	90									
	"	M 3-1	36"x18"	1	90	90									
	"	M 1-6	36"x36"	1	90	90								32	
	"	MO 6-1	30"x30"	1	90	90								AHEAD	
4A	STH 29/32, PLACE 1/2 MILE PRIOR TO RAMP DIVERGE ON RIGHT SIDE	FMS	114"x48"	1					38					SEE SIGN DETAIL SHEET	
5	STH 29/32, PLACE 1/4 MILE PRIOR TO RAMP DIVERGE ON MEDIAN SIDE	MO 4-8	36"x18"	1	90	90									
	"	M 3-1	36"x18"	1	90	90									
	"	M 1-6	36"x36"	1	90	90								32	
	"	MO 6-1	30"x30"	1	90	90								AHEAD	
6	STH 29/32, PLACE ADJACENT TO EXISTING TYPE I SIGN	MO 4-8	36"x18"	1	90	90									
	"	M 3-1	36"x18"	1	90	90									
	"	M 1-6	36"x36"	1	90	90								32	
	"	MO 6-1	30"x30"	1	90	90								AHEAD	
7	STH 29/32, PLACE IN MEDIAN ACROSS FROM SIGN #6	MO 4-8	36"x18"	1	90	90									
	"	M 3-1	36"x18"	1	90	90									
	"	M 1-6	36"x36"	1	90	90								32	
	"	MO 6-1	30"x30"	1	90	90								AHEAD	
8	STH 29/32, COVER AT-GORE WB GROUND MOUNT SIGN AS SHOWN										1	1		COVER SIGN AS SHOWN	
9	STH 29, COVER AT-GORE EB GROUND MOUNT AS SHOWN										1	1		COVER SIGN AS SHOWN	
10	STH 29, COVER ADVANCED EB GROUND MOUNT SIGN AS SHOWN										1	1		COVER SIGN AS SHOWN	
11	STH 29, PLACE ADJACENT TO EXISTING TYPE I SIGN @ STH 160 GORE - MEDIAN	MO 4-8	36"x18"	1	90	90									
	"	M 3-1	36"x18"	1	90	90									
	"	M 1-6	36"x36"	1	90	90								32	
	"	MO 6-1	30"x30"	1	90	90								AHEAD	
12	STH 29, PLACE ADJACENT TO EXISTING TYPE I SIGN @ STH 160 GORE	MO 4-8	36"x18"	1	90	90									
	"	M 3-1	36"x18"	1	90	90									
	"	M 1-6	36"x36"	1	90	90								32	
	"	MO 6-1	30"x30"	1	90	90								AHEAD	
13	STH 32, PLACE IN TERRACE, JUST N. OF STH 160 INTERSECTION	R 11-3B	60"x30"	1	90	90	90	180						6.5 MILES AHEAD	
14	STH 29, PLACE 1000' PRIOR TO RAMP DIVERGE ON RIGHT SIDE	MO 4-8	36"x18"	1	90	90									
	"	M 3-1	36"x18"	1	90	90									
	"	M 1-6	36"x36"	1	90	90								32	
	"	MO 5-2R	30"x30"	1	90	90									
15	STH 29, PLACE 1000' PRIOR TO RAMP DIVERGE ON MEDIAN SIDE	MO 4-8	36"x18"	1	90	90									
	"	M 3-1	36"x18"	1	90	90									
	"	M 1-6	36"x36"	1	90	90								32	
	"	MO 5-2R	30"x30"	1	90	90									
PAGE SUBTOTALS				39		3,330	90	180	76	0		4	0		
PLAN SHEET PRODUCED															
BY WisDOT - NE REGION															
PROJECT NUMBER:9190-26-73			HWY:STH 32		COUNTY:OCONTO			MISCELLANEOUS QUANTITIES					SHEET		E

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TRAFFIC CONTROL DETOUR SIGN SUMMARY														
SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 90 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 FIXED MESSAGE SIGN SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
16	STH 29, PLACE ADJACENT TO EXISTING TYPE I SIGN @ STH 117 GORE	MO 4-8	36"x18"	1	90	90								
	"	M 3-1	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								32
	"	MO 6-2	30"x30"	1	90	90								TILT RIGHT
17	STH 29, PLACE ACROSS FROM SIGN #16 - MEDIAN SIDE	MO 4-8	36"x18"	1	90	90								
	"	M 3-1	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								32
	"	MO 6-2	30"x30"	1	90	90								TILT RIGHT
18	STH 29 OFF-RAMP TO STH 117, PLACE 600' PRIOR TO RAMP INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 5-1R	21"x21"	1	90	90								
19	STH 29 OFF-RAMP TO STH 117, PLACE ACROSS FROM SIGN #18	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 5-1R	21"x21"	1	90	90								
20	STH 29 OFF-RAMP TO STH 117, PLACE RIGHT OF EXISTING J3-2 SIGN	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								RIGHT
21	STH 117, PLACE 200' N. OF STH 29 OFF-RAMP INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
22	STH 117, PLACE 300' N. OF STH 29 RAMP INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
23	STH 117, PLACE ON BACK OF EXISTING LEFT TURN LANE SIGN	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 5-1L	21"x21"	1	90	90								
24	STH 117 ON-RAMP TO STH 29, PLACE 400' DOWN RAMP	MO 4-8A	24"x18"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
25	STH 117 ON-RAMP TO STH 29, PLACE ACROSS FROM SIGN #24	MO 4-8A	24"x18"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
26	STH 117, MOUNT ON BACK OF EXISTING KEEP RIGHT SIGN @ STH 29 EB RAMP INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								LEFT
27	STH 29 OFF-RAMP TO STH 117, PLACE 200' W. OF RAMP INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								LEFT
PAGE SUBTOTALS				46		4,140	0	0	0	0		0	0	
PLAN SHEET PRODUCED														
BY WisDOT - NE REGION														
PROJECT NUMBER:9190-26-73			HWY:STH 32		COUNTY:OCONTO			MISCELLANEOUS QUANTITIES					SHEET	
													E	

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TRAFFIC CONTROL DETOUR SIGN SUMMARY														
SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 90 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 FIXED MESSAGE SIGN SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
28	STH 29 OFF-RAMP TO STH 117, PLACE 500' PRIOR TO RAMP INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 5-1L	21"x21"	1	90	90								
29	STH 29 OFF-RAMP TO STH 117, PLACE ACROSS FROM SIGN #28	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 5-1L	21"x21"	1	90	90								
30	STH 29, AT STH 117 EXIT RAMP, PLACE ACROSS FROM SIGN #31	MO 4-8	36"x18"	1	90	90								
	"	M 3-1	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								32
	"	MO 6-2	30"x30"	1	90	90								TILT RIGHT
31	STH 29, AT STH 117 EXIT RAMP, PLACE ADJACENT TO TYPE I GROUND MOUNT SIGN	MO 4-8	36"x18"	1	90	90								
	"	M 3-1	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								32
	"	MO 6-2	30"x30"	1	90	90								TILT RIGHT
32	STH 29, PLACE 1/4 MILE PRIOR TO STH 117 EXIT - MEDIAN	MO 4-8	36"x18"	1	90	90								
	"	M 3-1	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								32
	"	MO 5-2R	30"x30"	1	90	90								
32A	STH 29, PLACE 1/2 MILE PRIOR TO STH 117 EXIT - MEDIAN	FMS	114"x48"	1					38					SEE SIGN DETAIL SHEET
33	STH 29, PLACE 1/4 MILE PRIOR TO STH 117 EXIT - RIGHT SHOULDER	MO 4-8	36"x18"	1	90	90								
	"	M 3-1	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								32
	"	MO 5-2R	30"x30"	1	90	90								
33A	STH 29, PLACE 1/2 MILE PRIOR TO STH 117 EXIT - RIGHT SHOULDER	FMS	114"x48"	1					38					SEE SIGN DETAIL SHEET
34	STH 29, PLACE 3/4 MILE PRIOR TO STH 117 EXIT - RIGHT SHOULDER	M 3-1	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								32
	"	W 20-2A	48"x48"	1	90	90								
35	STH 29, PLACE 3/4 MILE PRIOR TO STH 117 EXIT - MEDIAN	M 3-1	36"x18"	1	90	90								
	"	M 1-6	36"x36"	1	90	90								32
	"	W 20-2A	48"x48"	1	90	90								
36	STH 117, PLACE 400' PRIOR TO CTH E INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
37	STH 117, PLACE 400' PRIOR TO CTH E INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
38	STH 117, PLACE RIGHT OF EXISTING J2-2 SIGN	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 5-1R	21"x21"	1	90	90								
PAGE SUBTOTALS				44		3,780	0	0	76	0		0	0	

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 90 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 FIXED MESSAGE SIGN SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
39	STH 117, PLACE 175' PRIOR TO STH 22 INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								RIGHT
40	STH 117, PLACE RIGHT OF EXISTING J4-1 SIGN	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
41	STH 22, PLACE 200' PRIOR TO STH 117 INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								LEFT
42	STH 22, PLACE 150' E. OF STH 117 INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
43	STH 22, PLACE RIGHT OF EXISTING J2-2 SIGN	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 5-1L	21"x21"	1	90	90								
44	STH 22, PLACE 175' S. OF CTH R	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
45	STH 22, PLACE 300' S. OF CTH C	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
46	STH 22, PLACE 300' N. OF CTH C	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
47	STH 22, PLACE 400' S. OF CTH U	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-2	21"x21"	1	90	90								TILT RIGHT
48	STH 22, PLACE 600' N. OF CTH U	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-2	21"x21"	1	90	90								TILT LEFT
49	STH 22, PLACE 350' S. OF GARDEN ST	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 5-2L	21"x21"	1	90	90								

PAGE SUBTOTALS

44

3,960

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PLAN SHEET PRODUCED
BY WisDOT - NE REGION

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 90 DAYS	643.0900 SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A DAYS	643.1000 FIXED MESSAGE SIGN SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
50	STH 22, PLACE 150' S. OF GARDEN ST	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
51	STH 22, MOUNT ABOVE EXISTING J13-2 ON LIGHT POLE AT CTH BB	MO 4-8	24"x12"	1	90	90								
	"	M 3-1	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-2	21"x21"	1	90	90								TILT LEFT
52	STH 22, PLACE 500' N. OF CTH BB/E MAIN ST INTERSECTION	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 5-1R	21"x21"	1	90	90								
53	STH 22, MODIFY EXISTING J1-1 SIGN AS SHOWN	MO 4-8A	24"x18"	1	90	90								
54	STH 22/STH 32, COVER EXISTING J3-2 SIGN AS SHOWN										1		1	COVER "S 32 LT"
55	STH 22, PLACE RIGHT OF EXISTING J2-2 SIGN AS SHOWN	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 5-1L	21"x21"	1	90	90								
56	STH 22/32, COVER EXISTING J4-2 SIGN AS SHOWN													COVER "SOUTH 32"
57	STH 22/32, PLACE LEFT OF EXISTING J3-1 SIGN (N-32-TILT RIGHT)	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
58	STH 22/32, MODIFY EXISTING J3-3 SIGN AS SHOWN	MO 4-8	24"x12"	1	90	90								
	"	MO 6-1	21"x21"	1	90	90								AHEAD
59	STH 22/32, PLACE IN GORE BETWEEN STH 32/STH 22 SPLIT	M 1-6	24"x24"	1	90	90								
	"	R 11-3B	60"x30"	1	90	90								12 MILES AHEAD
	"	M 4-9R	30"x24"	1	90	90								
60	STH 32, PLACE 650' PRIOR TO STH 32/STH 22 SPLIT	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
61	STH 32, MODIFY EXISTING J2-3 SIGN AS SHOWN	MO 4-8	24"x12"	1	90	90								
	"	MO 6-1	21"x21"	1	90	90								
62	STH 32, PLACE 1000' N. OF STH 32/STH 22 SPLIT	W 20-2A	48"x48"	1	90	90								
63	STH 22/STH 32, COVER EXISTING D1-62 AS SHOWN										1		1	COVER "SOUTH 32"
64	STH 22/STH 32, COVER EXISTING D1-2 AS SHOWN										1		1	COVER "GREEN BAY"
65	STH 22/STH 32, PLACE TO RIGHT OF EXISTING J4-2 SIGN	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
66	STH 22/STH 32, PLACE ABOVE EXISTING D1-1 SPLITTER ISLAND SIGN	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-2	21"x21"	1	90	90								TILT RIGHT

PAGE SUBTOTALS

41

3,690

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3

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

PROJECT NUMBER:9190-26-73

HWY:STH 32

COUNTY:OCONTO

MISCELLANEOUS QUANTITIES

SHEET

E

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 90 DAYS	643.0900 SIGNS* DAYS	643.0420 BARRICADES TYPE III* DAYS	643.0705 WARNING LIGHTS TYPE A* DAYS	643.1000 FIXED MESSAGE SIGN SF	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE DAYS	NO OF CYCLES	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
67	STH 32, COVER EXISTING D1-1 SPLITTER ISLAND SIGN										1		1	COVER ENTIRE SIGN
68	STH 22, E. OF STH 32, COVER EXISTING D1-2 SIGN										1		1	COVER "GREEN BAY"
69	STH 22, E. OF STH 32, PLACE ADJACENT TO EXISTING D1-62 SIGN	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
70	STH 22, E. OF STH 32, COVER EXISTING D1-62 SIGN AS SHOWN										1		1	COVER "SOUTH 32"
71	STH 22, PLACE 1200' E. OF STH 32	MO 4-8	24"x12"	1	90	90								
	"	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	MO 6-1	21"x21"	1	90	90								AHEAD
72	STH 22, PLACE 1600' E. OF STH 32	M 3-3	24"x12"	1	90	90								
	"	M 1-6	24"x24"	1	90	90								32
	"	W 20-2A	48"x48"	1	90	90								
73	STH 32, PLACE JUST S. OF CTH CC INTERSECTION	R 11-3B	60"x30"	1	90	90	90	180						6.2 MILES AHEAD
74	STH 32, PLACE JUST S. OF CTH E INTERSECTION	R 11-3B	60"x30"	1	90	90	90	180						2.2 MILES AHEAD
75	STH 32, PLACE JUST N. OF STRUCTURE, FIELD DETERMINED	PCMS		1	7					7				
76	STH 32, PLACE JUST S. OF STRUCTURE, FIELD DETERMINED	PCMS		1	7					7				
PAGE SUBTOTALS				15		1,170	180	360	0	14		0	3	
DETOUR TOTALS				229		20,070	270	540	152	14		4	6	

*SEE TRAFFIC CONTROL DEVICE SUMMARY FOR ADDITIONAL QUANTITIES

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

MARKING LINE EPOXY 4-INCH					
646.1020					
		WHITE	YELLOW	DASHED YELLOW	
				12.5-FT LINE	
				37.5-FT SKIP	
STATION TO	STATION	LOCATION	LF	LF	LF
317+71	- 322+00	EDGE LINE - LT	429		
317+71	- 322+00	EDGE LINE - LT	429		
317+71	- 322+00	CENTERLINE			107
317+71	- 320+75	CENTERLINE		304	
SUBTOTALS			858	304	107
TOTAL			1269		

LOCATING NO-PASSING ZONES	
648.0100	
LOCATION	MI
PROJECT	0.08
TOTAL	

CONSTRUCTION STAKING								
			650.4500	650.5000	650.6500	650.9910	650.9920	
			CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	
			STAKING	STAKING	STAKING	STAKING	STAKING	
			SUBGRADE	BASE	STRUCTURE LAYOUT	SUPPLEMENTAL CNTRL	SLOPE STAKES	
					(STRUCTURE)	(PROJECT)		
STATION TO	STATION	LOCATION	LF	LF	LS	LS	LF	REMARKS
317+42	- 319+98	STH 32	256	256			256	
319+98	- 320+92	B-58-130			1			CATEGORY 0040
320+93	- 322+17	R-58-11			1			CATEGORY 0015
320+92	- 323+00	STH 32	208	208			208	
TOTALS			464	464	2	1	464	

SAWING ASPHALT				
690.0150				
STATION TO	STATION	LOCATION	LF	REMARKS
317+71	- 317+71	STH 32	36	
322+00	- 322+00	STH 32	36	
323+60	- 323+71	STH 32 - RT	11	PE
TOTAL			83	

ALL ITEMS CATEGORY 0010
UNLESS OTHERWISE NOTED

CONVENTIONAL ABBREVIATIONS AND SYMBOLS

ACCESS POINT	AP	SECTION CORNER	+
ACCESS RIGHTS	AR	(MATERIAL AS NOTED)	
CHORD BEARING	CH BRG	SET R/W MONUMENT W/CAP	o
CHORD DISTANCE	CH DIS	4" 4" OUTSIDE DIA. 1/2"	
DEED	(D)	IRON PIPE 1.13 LBS./FT.	
DOCUMENT	DOC	FOUND TYPE 2 MON.	•
EAST BOUND	EB	FOUND 3/4" REBAR	•
GAS VALVE	GV	SET P.K., NAIL	Δ
INLET	IL		
LENGTH OF CURVE	LC		
MANHOLE	MH		
MONUMENT	MON		
NORTH BOUND	NB		
PAGE	PG		
PERMANENT	PERM		
PERMANENT LIMITED EASEMENT	PLE		
PRIVATE DRIVEWAY	PD		
PROPERTY LINE	PL		
RADIUS	RAD		
REFERENCE LINE	REF		
REMAINING	REM		
RIGHT OF WAY	R/W		
SECTION LINE	SEC		
FOUND IRON PIPE	IP		
STATION	STA		
TEMPORARY LIMITED EASEMENT	TLE		
TIE POINT	TIE		
VOLUME	VOL		
ADJOINING LANDS			
WITH SAME OWNER			
PARALLEL TO LINE			
BUILDING TO BE RAZED			
FEE ACQUISITION			
BEGIN POINT	BP		
END POINT	EP		

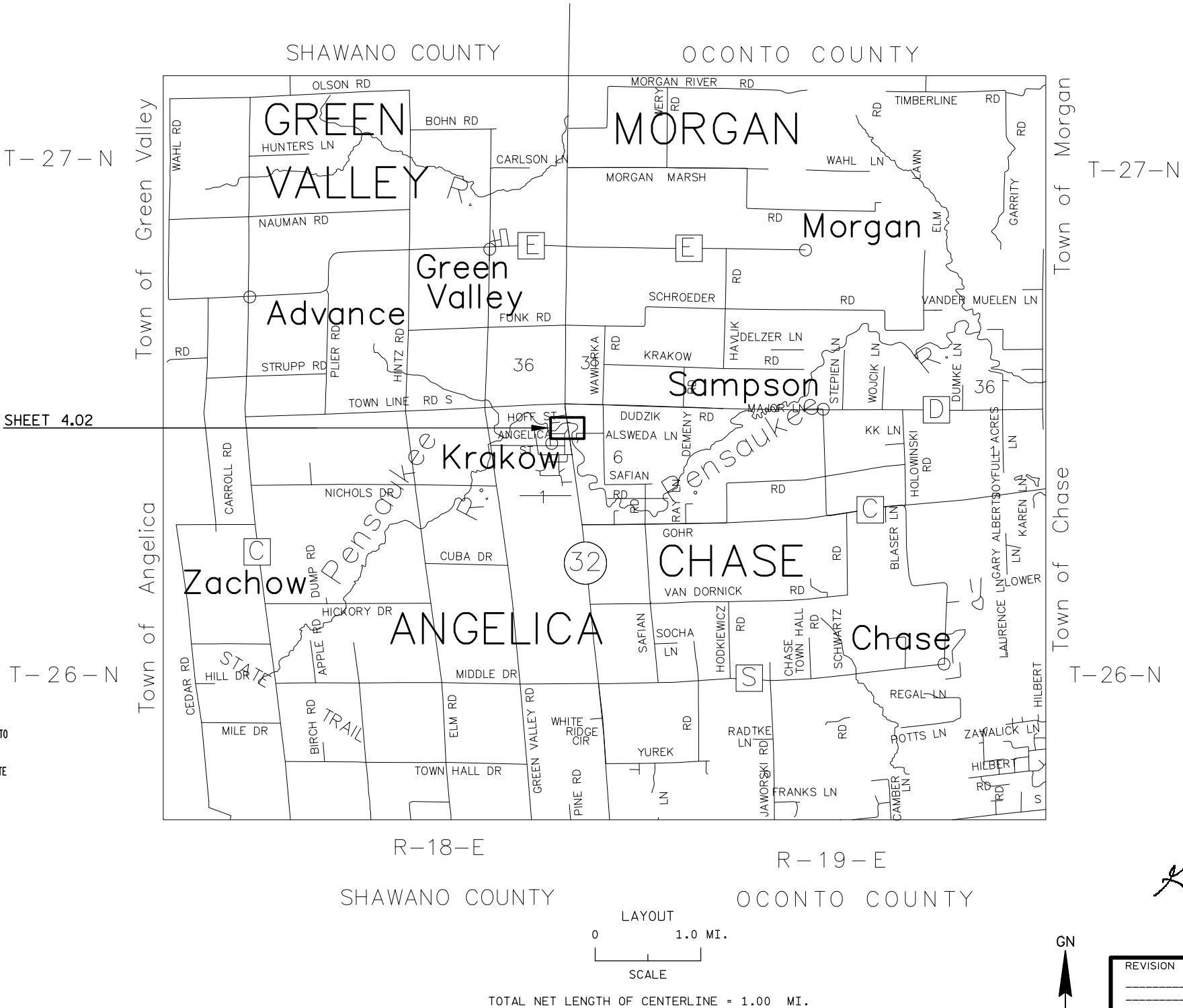
CONVENTIONAL UTILITY SYMBOLS

WATER	W	NON-COMPENSABLE	•
GAS	G	COMPENSABLE	•
TELEPHONE	T		
OVERHEAD	OH		
TRANSMISSION LINES			
ELECTRIC	E		
CABLE TELEVISION	TV		
FIBER OPTIC	FO		
SANITARY SEWER	SAN		
STORM SEWER	SS		
POWER POLE	BP		
TELEPHONE POLE	TP		
TELEPHONE PEDESTAL	TPD		
ELECTRIC TOWER	ET		

NOTES:

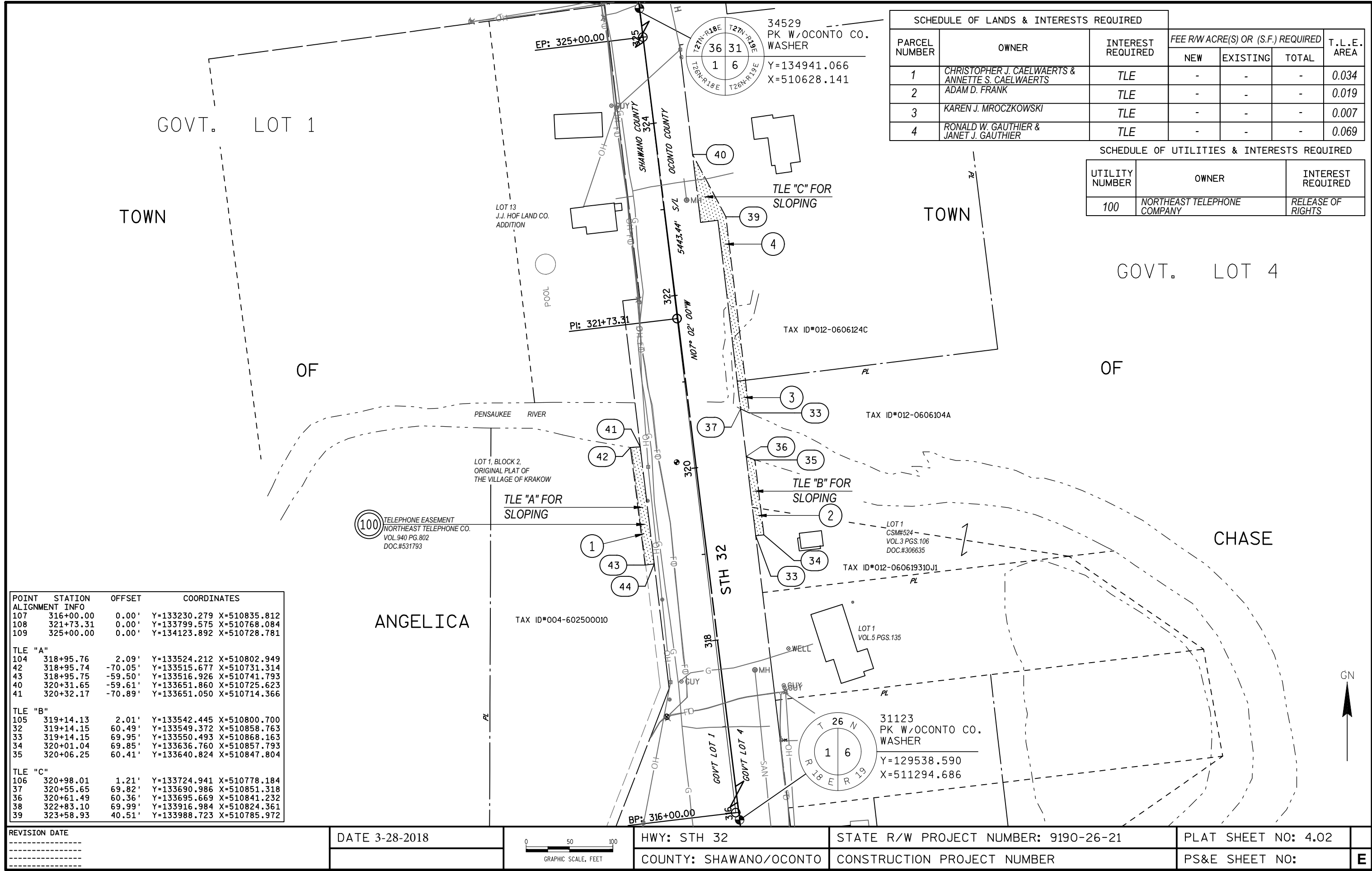
- RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS AND ARE REFERENCED TO THE US PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.
- RIGHT OF WAY MONUMENTS ARE TYPE 2 MONUMENTS (TYPICALLY 1" X 24" IRON PIPE) AND WILL BE PLACED PRIOR TO COMPLETION OF PROJECT.
- AREAS SHOWN IN THE TOTAL ACRES COLUMN OF THE SCHEDULE OF LANDS & INTEREST TABLE MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.
- COORDINATES AS SHOWN ARE NOT INTENDED TO BE USED FOR RETRACEMENT PURPOSES AND MUST BE VERIFIED WITH THE COUNTY SURVEY DEPARTMENT.
- POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATES REFERENCE SYSTEM COORDINATES (WISCRS), OCONTO COUNTY, NAD 83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.
- PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL 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.
- EXISTING RIGHT OF WAY WAS ACQUIRED FROM PROJECT(S): 3844, CSMs AND PLAT OF SURVEYS
- EXISTING ACCESS CONTROL WAS ACQUIRED UNDER PROJECT(S)/DOC#:
- RIGHT OF WAY REFERENCE LINE MAY NOT BE THE SAME AS THE CONSTRUCTION REFERENCE LINE.
- OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO DEPARTMENT OF TRANSPORTATION.

R/W PROJECT NUMBER	SHEET	TOTAL
9190-26-21	NUMBER	SHEETS
FEDERAL PROJECT NUMBER	4.01	4
PLAT OF RIGHT OF WAY REQUIRED FOR		
PULASKI - STH 22		
CHASE ROAD - CTH "E"		
STH 32	SHAWANO/OCONTO COUNTY	



Gregory T. Belanger

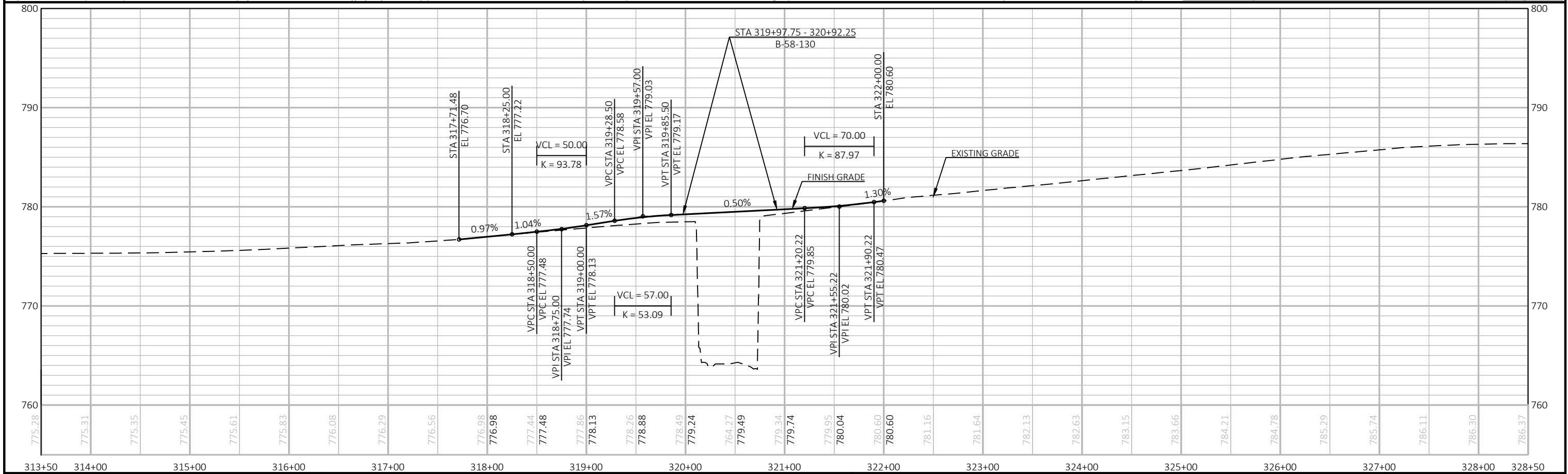
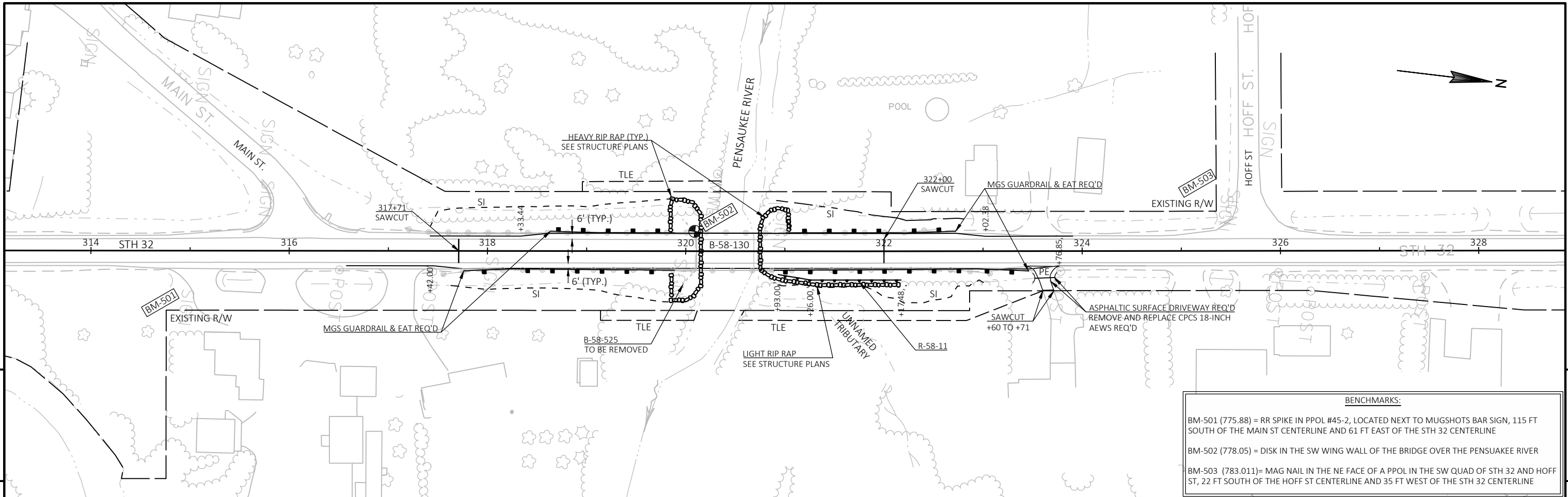
REVISION DATE	STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED:	Curt Van Erum
DATE: 3-28-2018	CURT VAN EREM



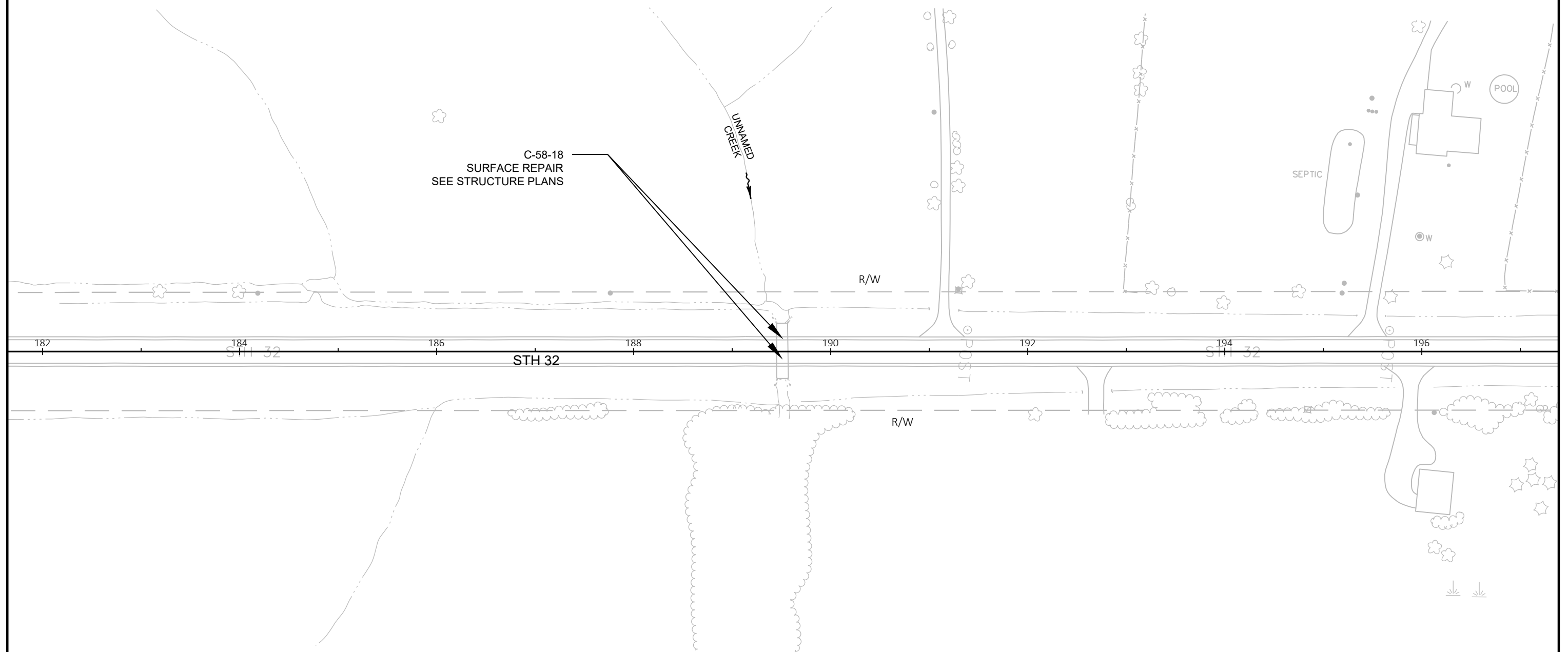
SCHEDULE OF LANDS & INTERESTS REQUIRED					
PARCEL NUMBER	OWNER	INTEREST REQUIRED	FEE R/W ACRE(S) OR (S.F.) REQUIRED		
			NEW	EXISTING	TOTAL
1	CHRISTOPHER J. CAELWAERTS & ANNETTE S. CAELWAERTS	TLE	-	-	-
2	ADAM D. FRANK	TLE	-	-	-
3	KAREN J. MROCKOWSKI	TLE	-	-	-
4	RONALD W. GAUTHIER & JANET J. GAUTHIER	TLE	-	-	-

SCHEDULE OF UTILITIES & INTERESTS REQUIRED		
UTILITY NUMBER	OWNER	INTEREST REQUIRED
100	NORTHEAST TELEPHONE COMPANY	RELEASE OF RIGHTS

POINT	STATION	OFFSET	COORDINATES	
ALIGNMENT INFO				
107	316+00.00	0.00'	Y=133230.279	X=510835.812
108	321+73.31	0.00'	Y=133799.575	X=510768.084
109	325+00.00	0.00'	Y=134123.892	X=510728.781
TLE "A"				
104	318+95.76	2.09'	Y=133524.212	X=510802.949
42	318+95.74	-70.05'	Y=133515.677	X=510731.314
43	318+95.75	-59.50'	Y=133516.926	X=510741.793
40	320+31.65	-59.61'	Y=133651.860	X=510725.623
41	320+32.17	-70.89'	Y=133651.050	X=510714.366
TLE "B"				
105	319+14.13	2.01'	Y=133542.445	X=510800.700
32	319+14.15	60.49'	Y=133549.372	X=510858.763
33	319+14.15	69.95'	Y=133550.493	X=510868.163
34	320+01.04	69.85'	Y=133636.760	X=510857.793
35	320+06.25	60.41'	Y=133640.824	X=510847.804
TLE "C"				
106	320+98.01	1.21'	Y=133724.941	X=510778.184
37	320+55.65	69.82'	Y=133690.986	X=510851.318
36	320+61.49	60.36'	Y=133695.669	X=510841.232
38	322+83.10	69.99'	Y=133916.984	X=510824.361
39	323+58.93	40.51'	Y=133988.723	X=510785.972



PROJECT NO:	9190-26-73	HWY:	STH 32	COUNTY:	OCONTO	PLAN AND PROFILE:	STH 32	SHEET	E
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PROJECT NO: 9190-26-73

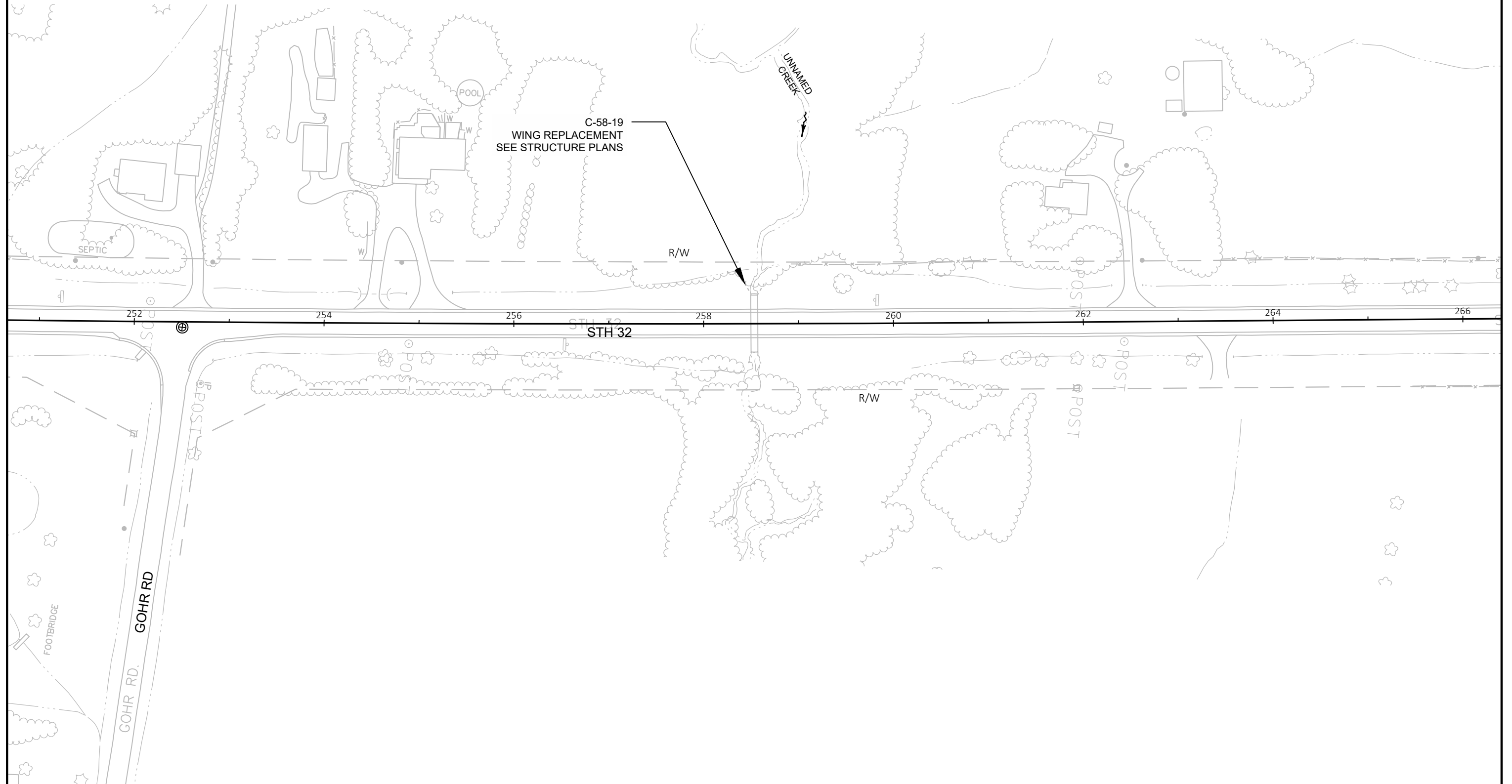
HWY: STH 32

COUNTY: OCONTO

PLAN: C-58-18

SHEET

E



PROJECT NO: 9190-26-73

HWY: STH 32

COUNTY: OCONTO

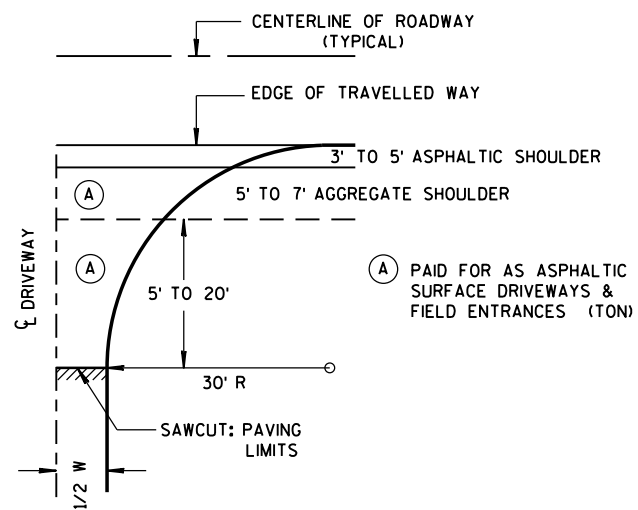
PLAN: C-58-19

SHEET

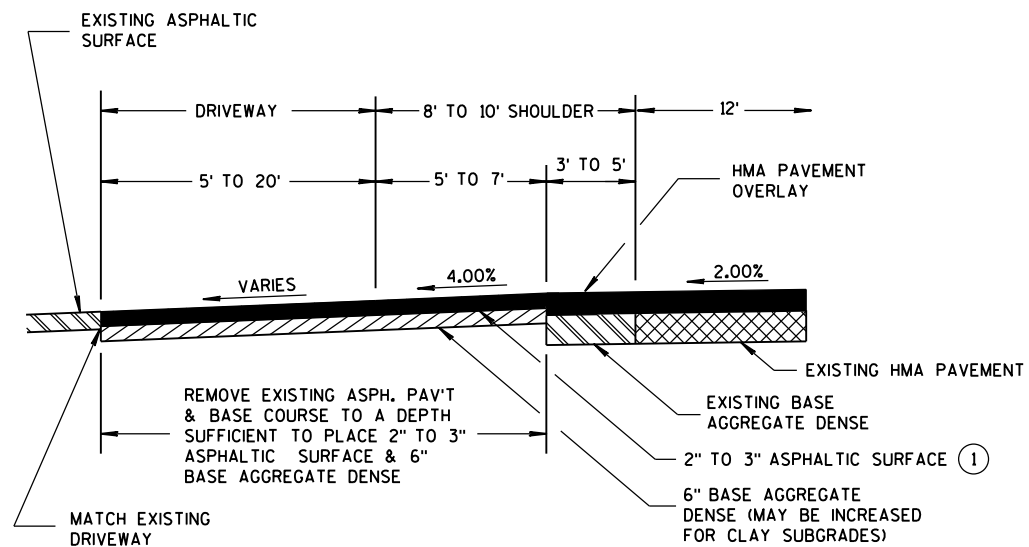
E

Standard Detail Drawing List

08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-07C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

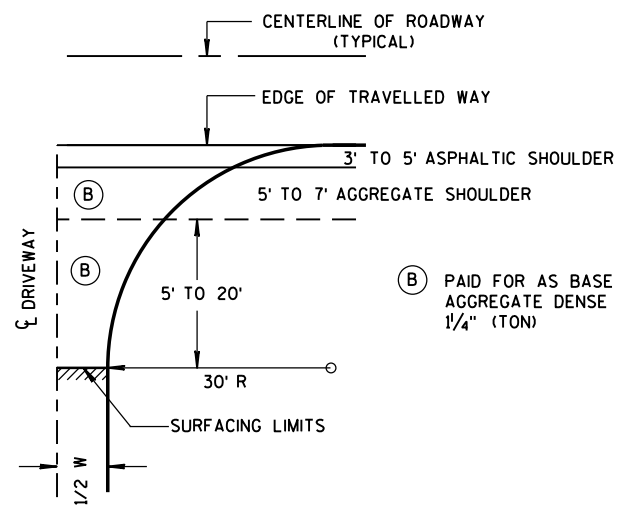


PLAN VIEW
HALF SECTION

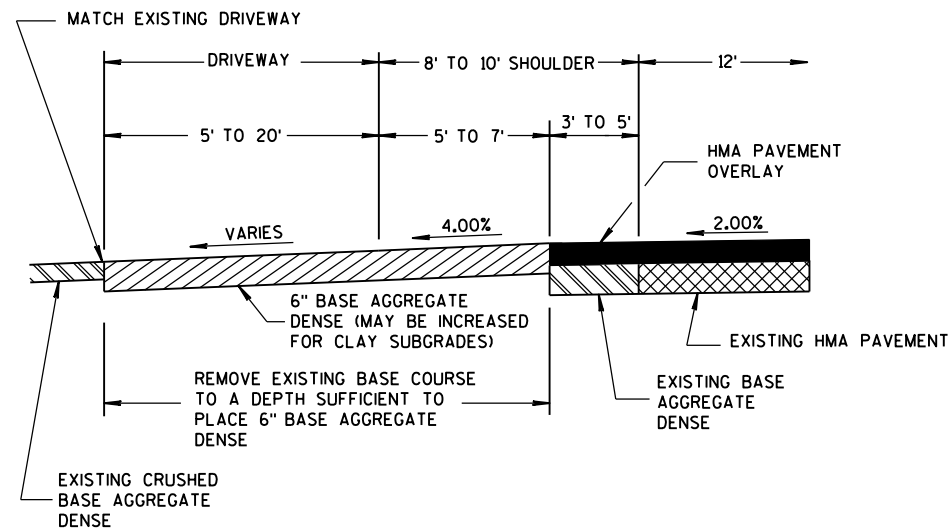


PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS

W MIN. = 16'
W MAX. = 24'



PLAN VIEW
HALF SECTION



PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

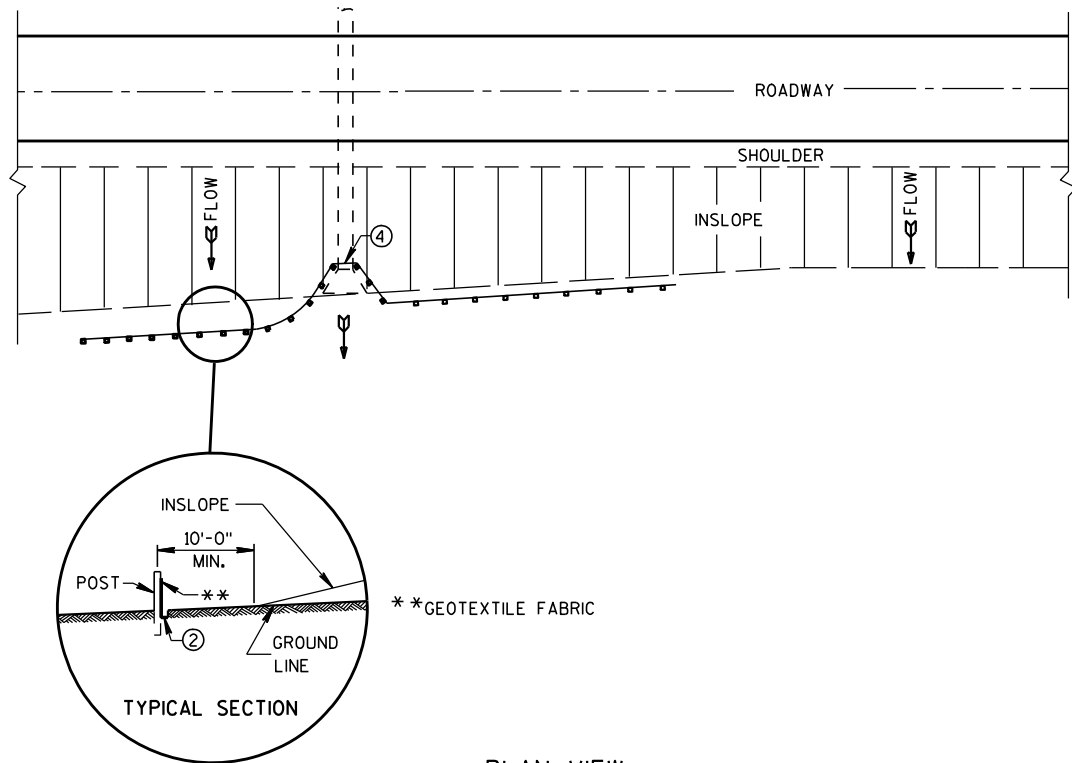
GENERAL NOTES

- ① DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.

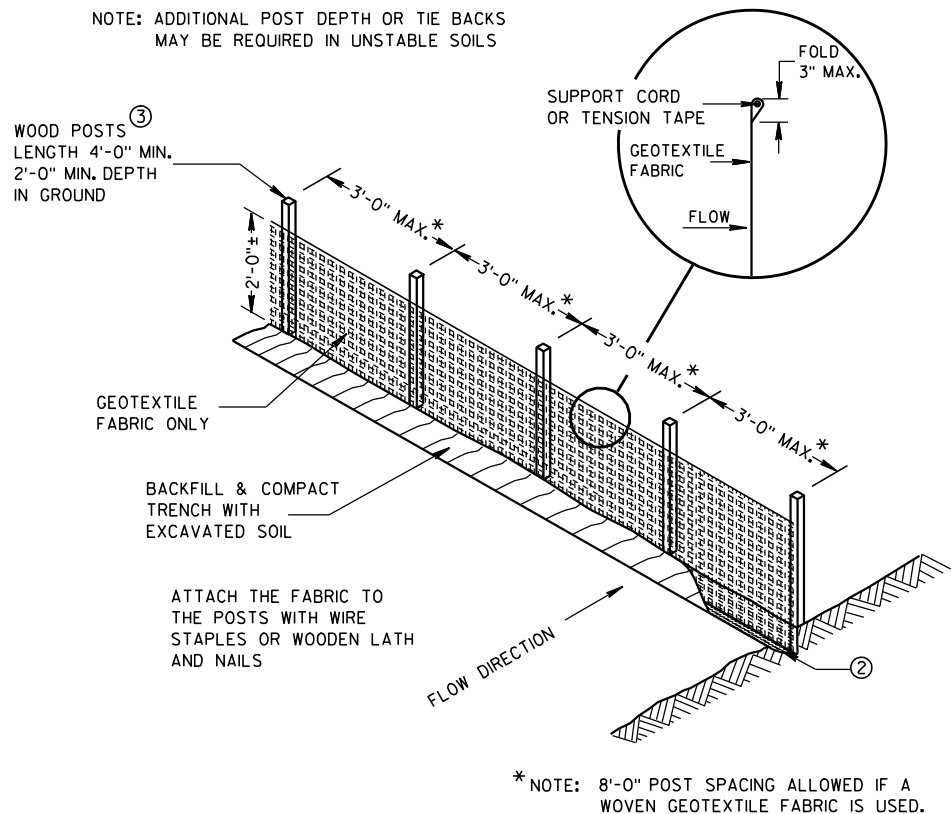
DRIVEWAYS WITHOUT
CURB & GUTTER
RESURFACING PROJECTS RURAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

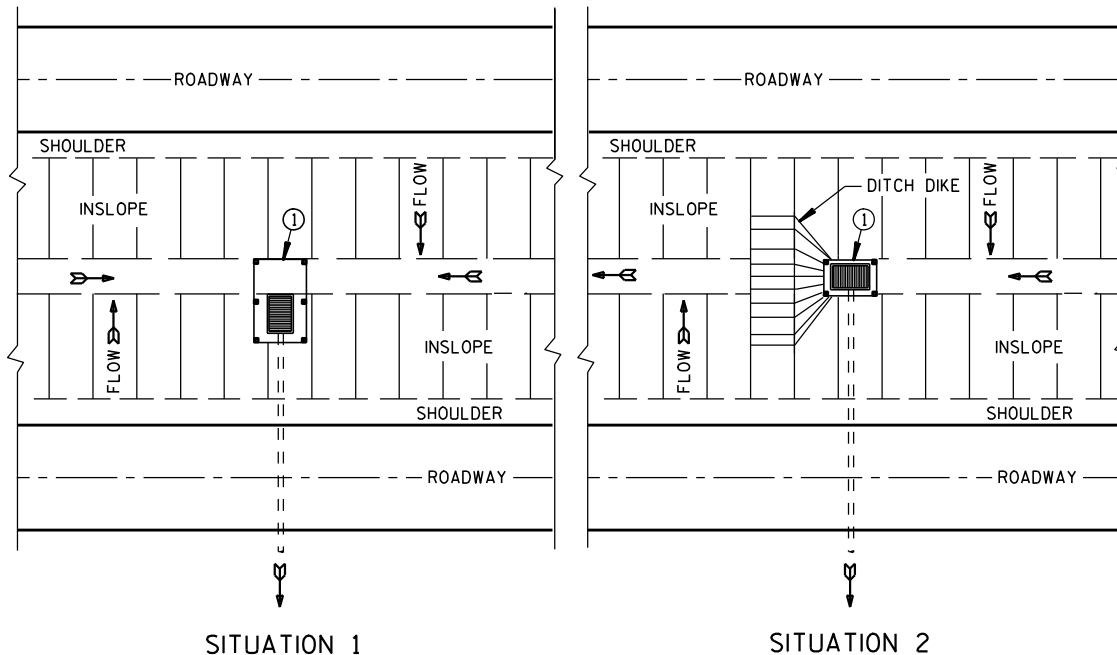
APPROVED
December, 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



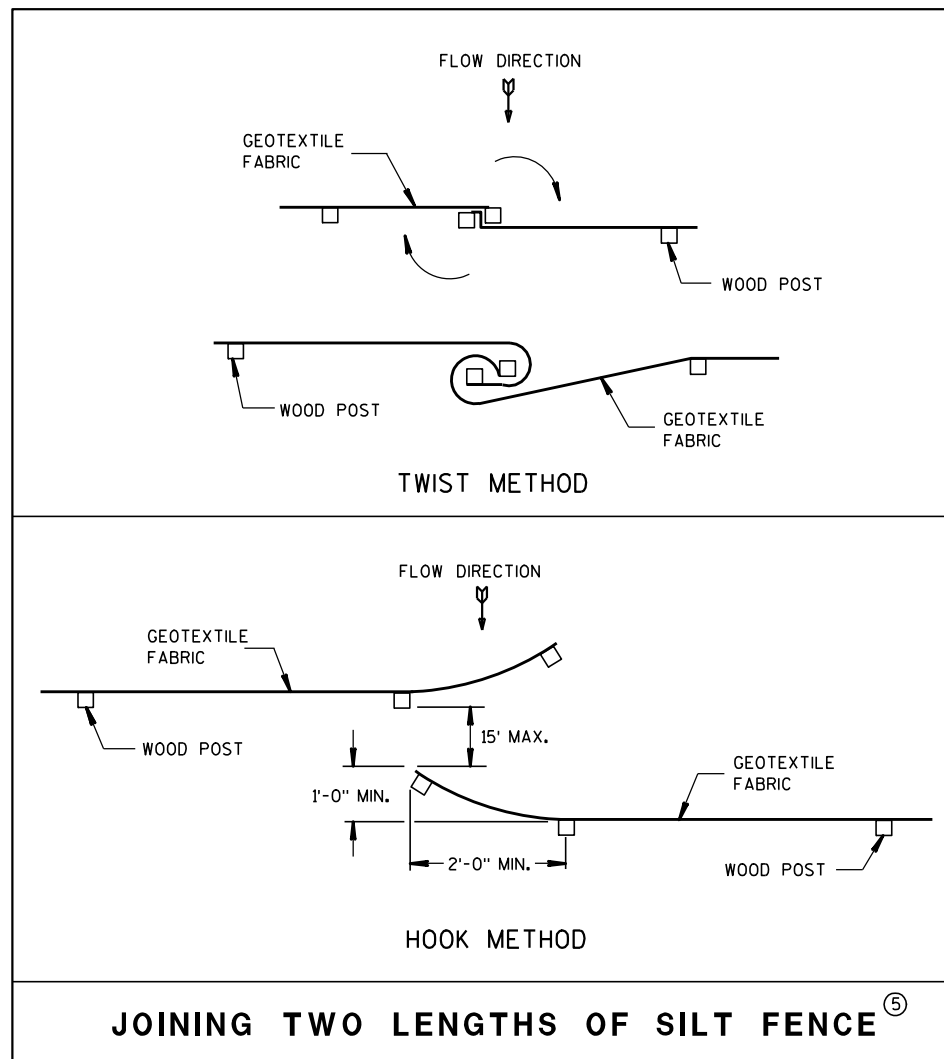
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

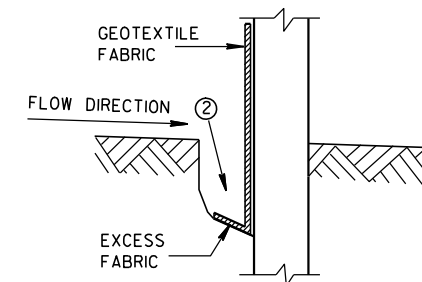


JOINING TWO LENGTHS OF SILT FENCE (5)

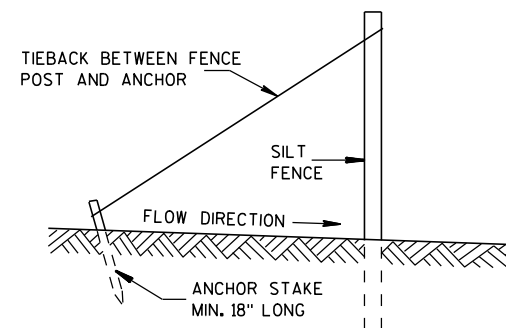
GENERAL NOTES

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

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

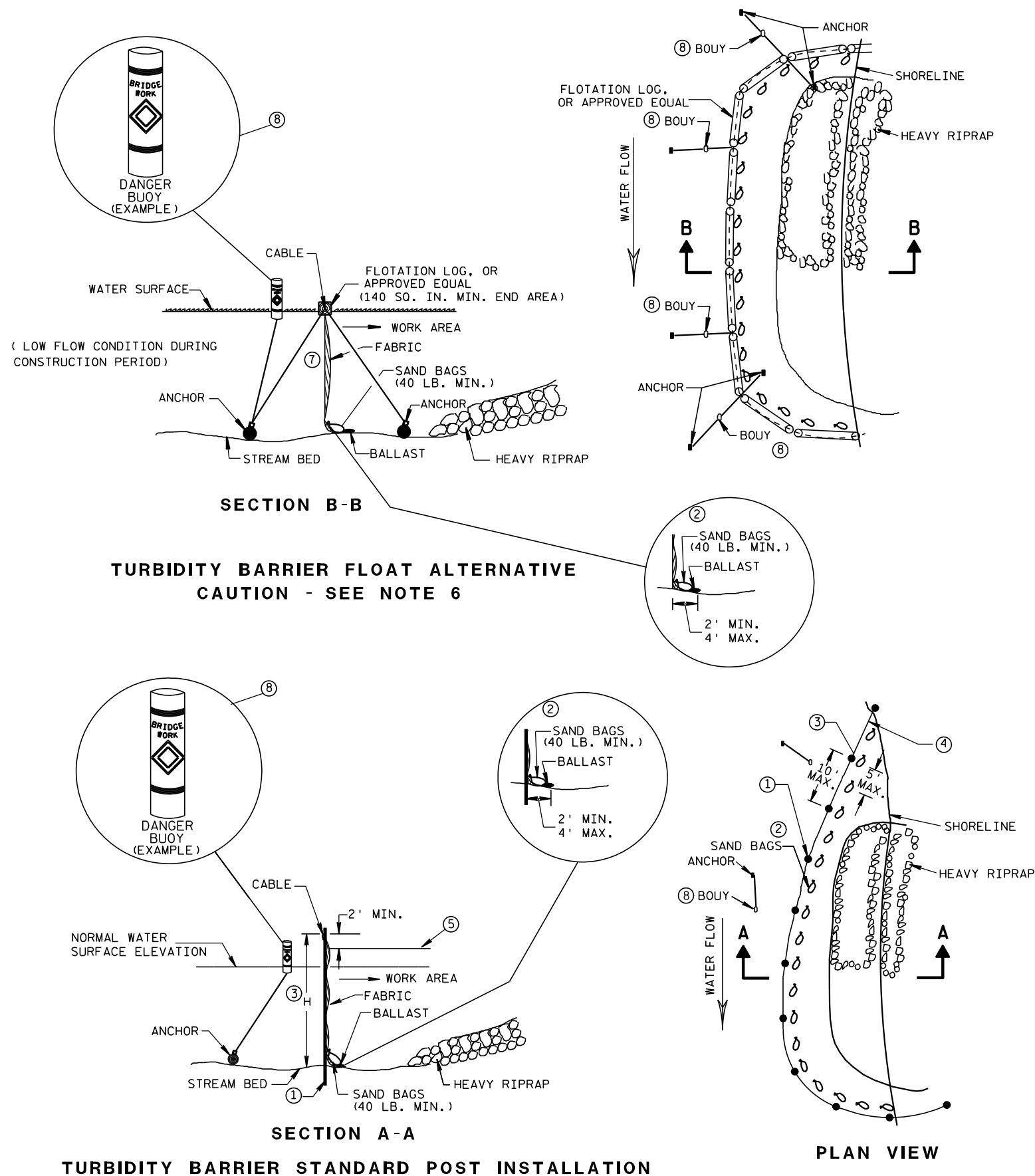


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

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

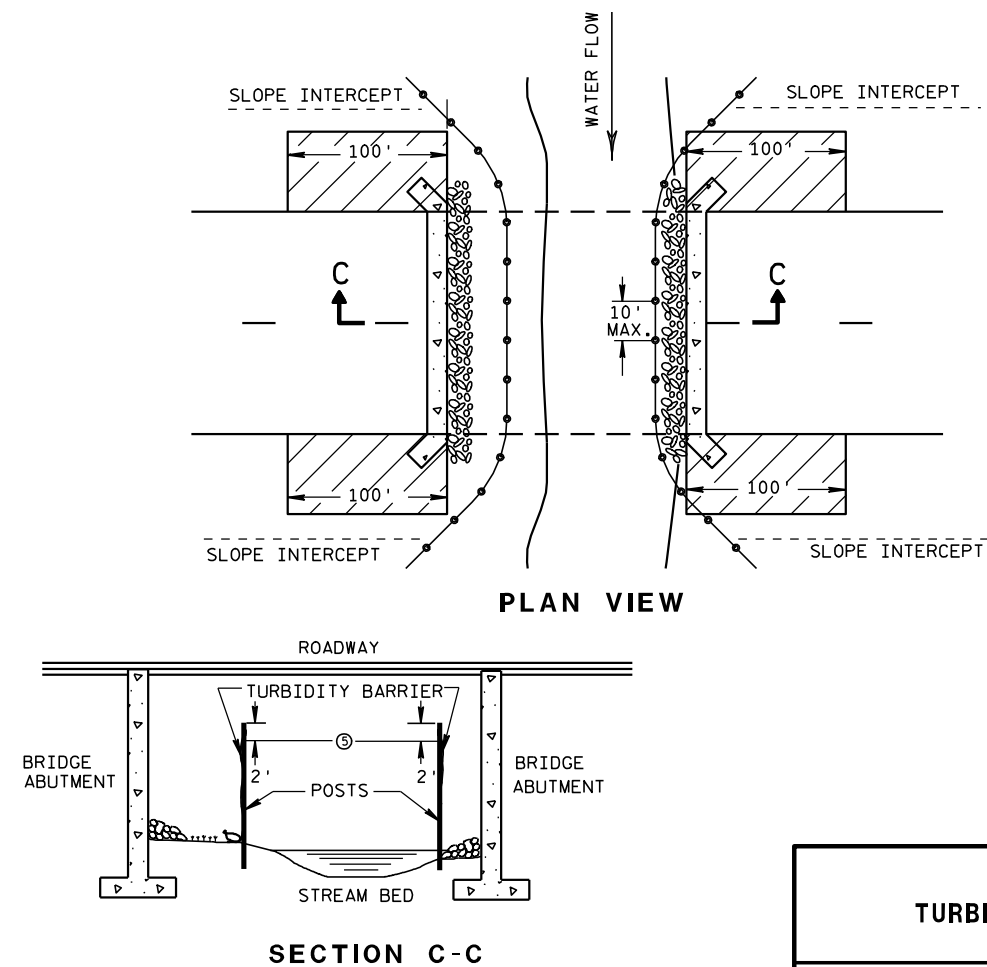


GENERAL NOTES

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

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

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



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

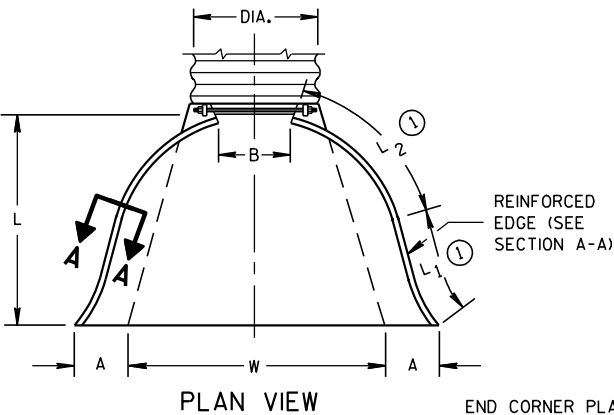
6/04/02
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

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

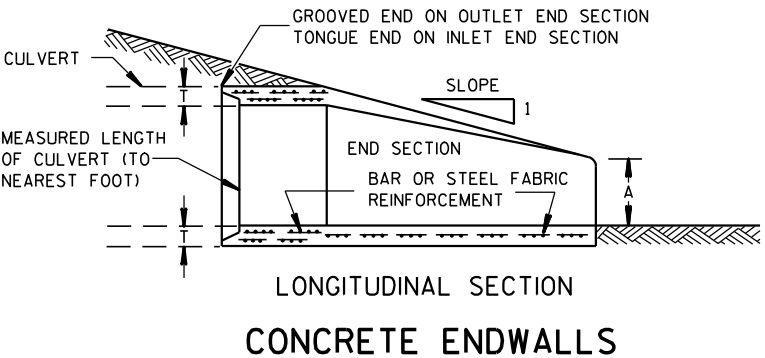
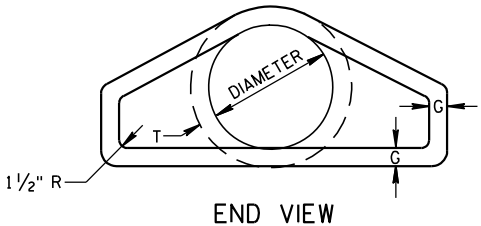
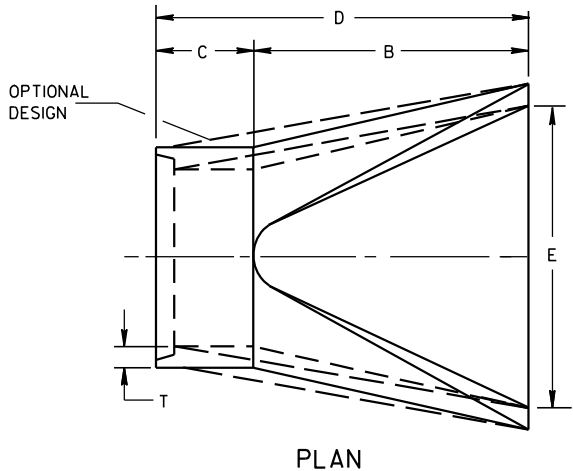
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



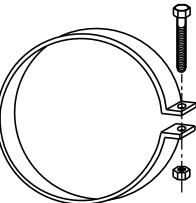
SIDE ELEVATION
METAL ENDWALLS

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

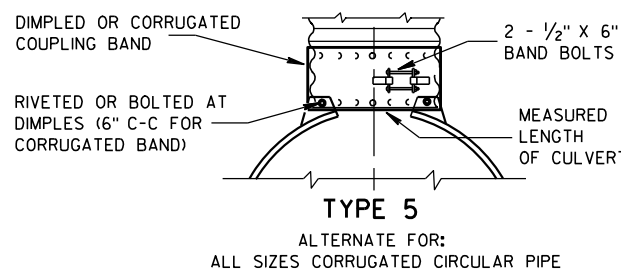
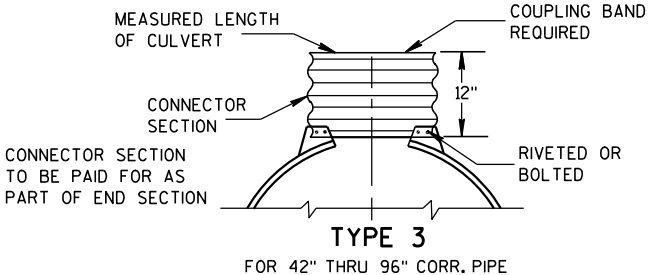
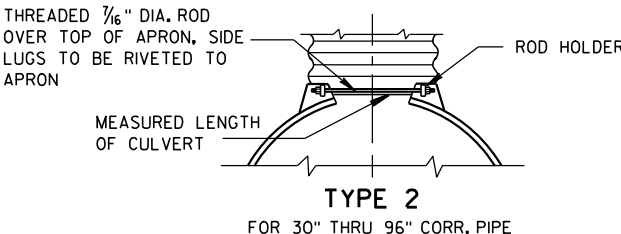
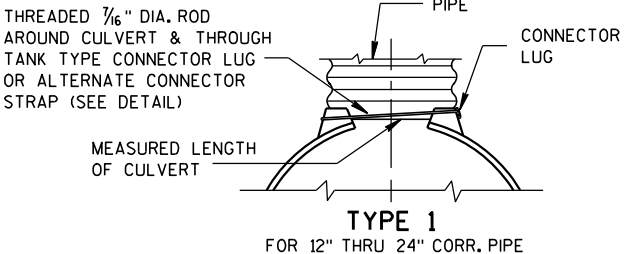
* MINIMUM
** MAXIMUM



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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



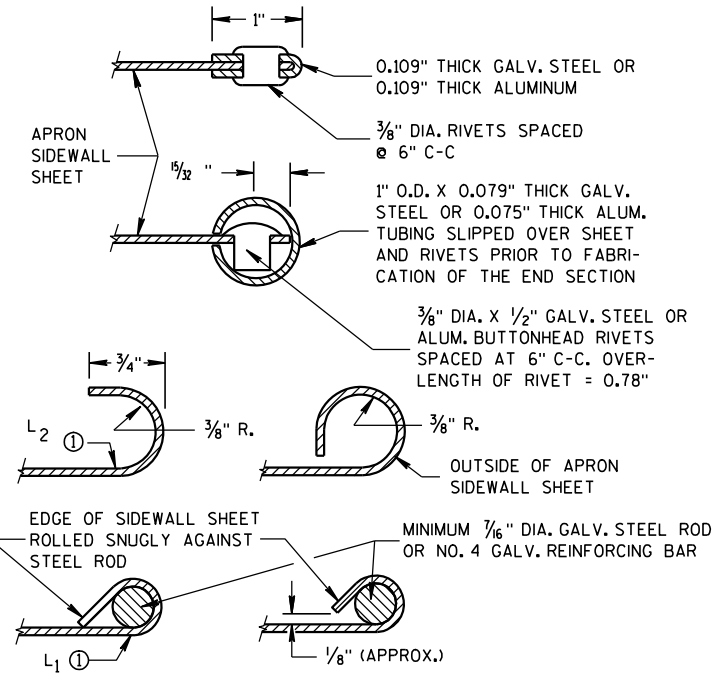
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



GENERAL NOTES

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

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

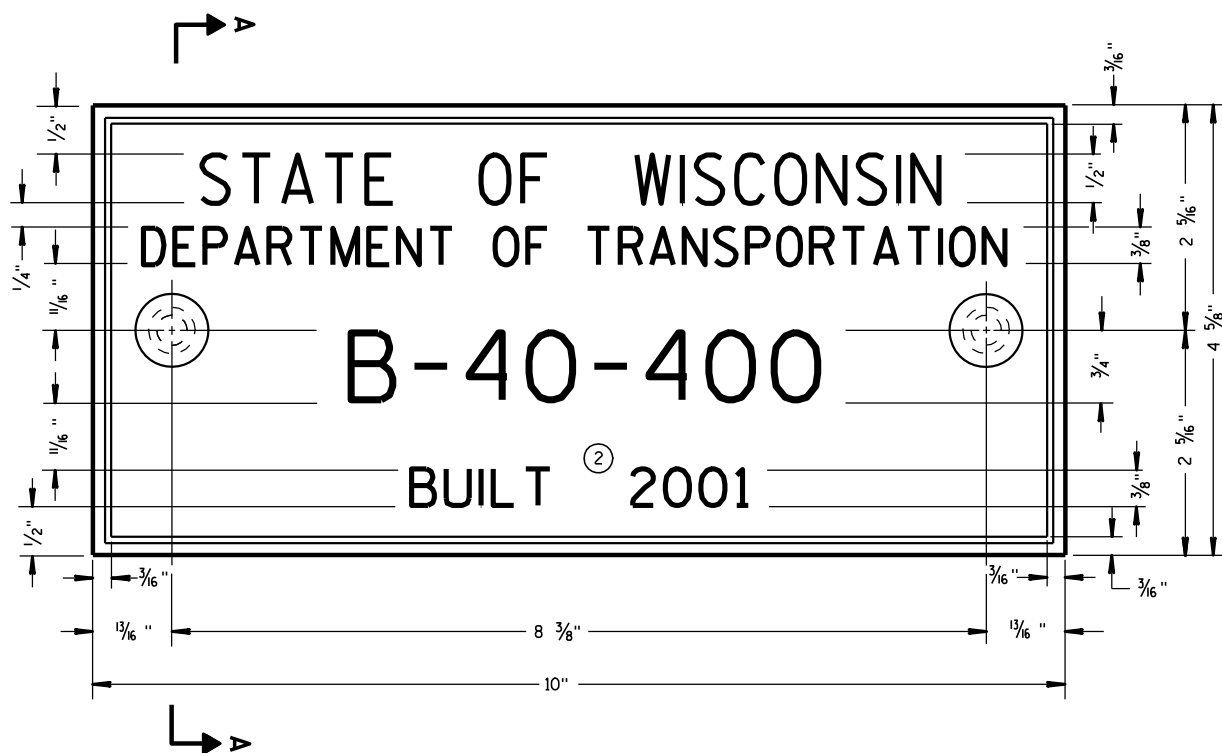
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

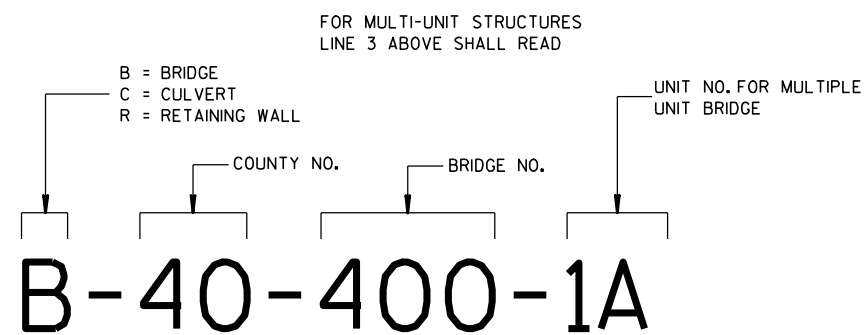
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

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



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



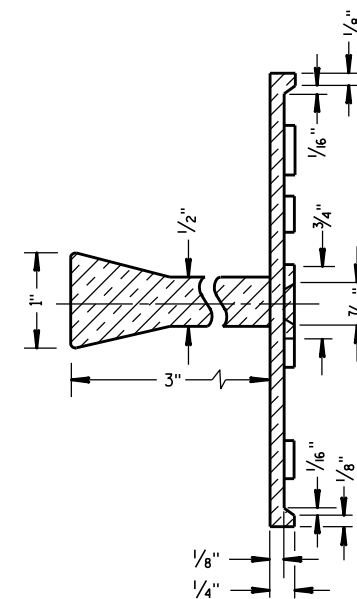
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

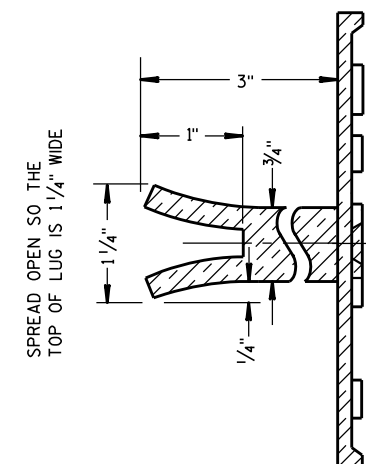
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

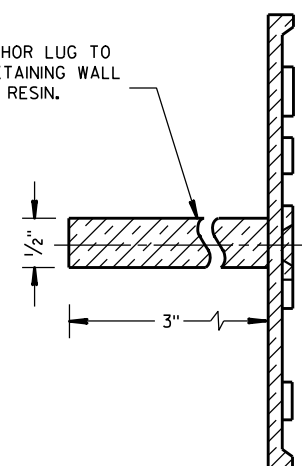


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

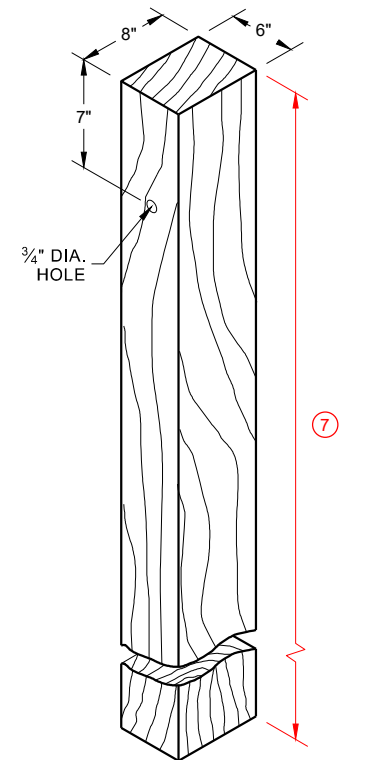
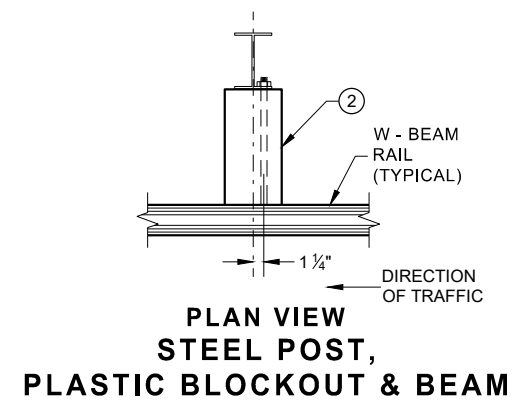
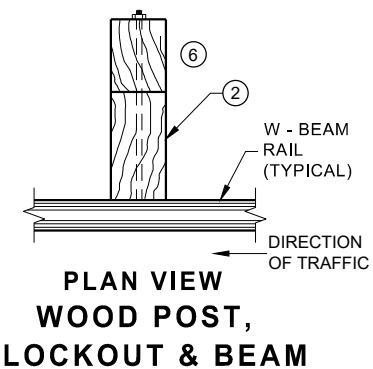
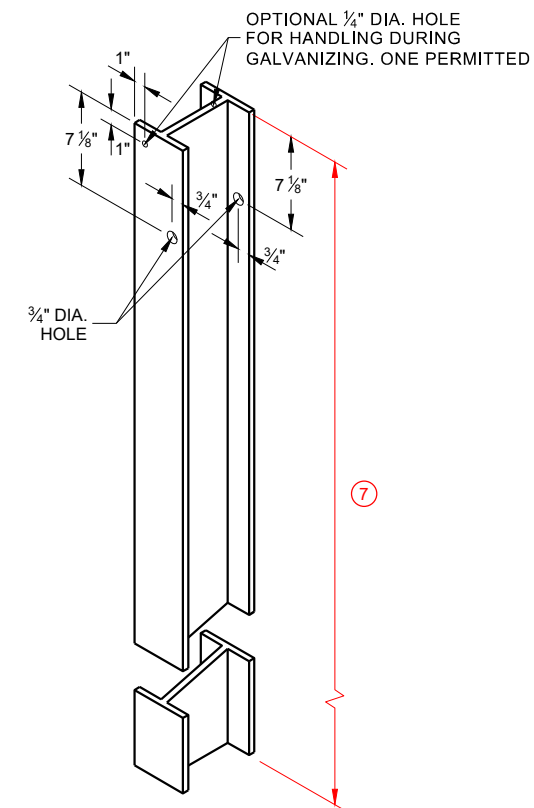
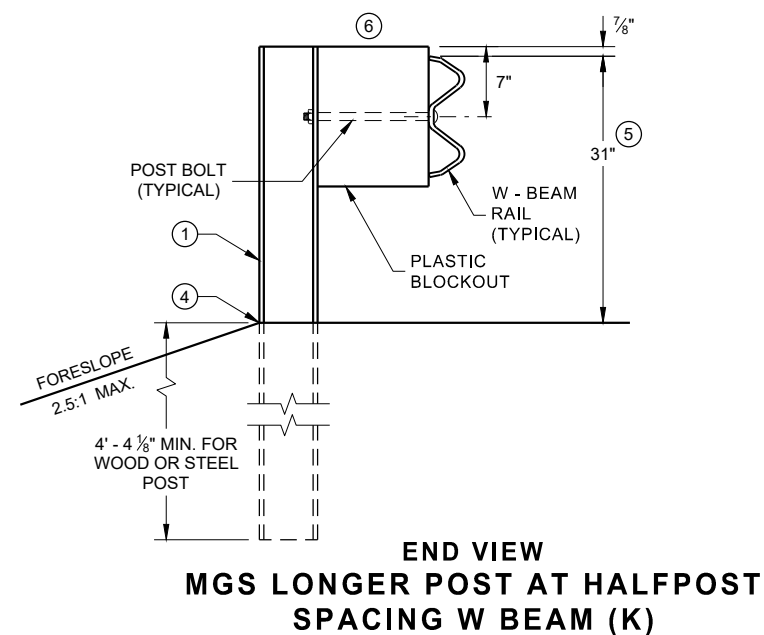
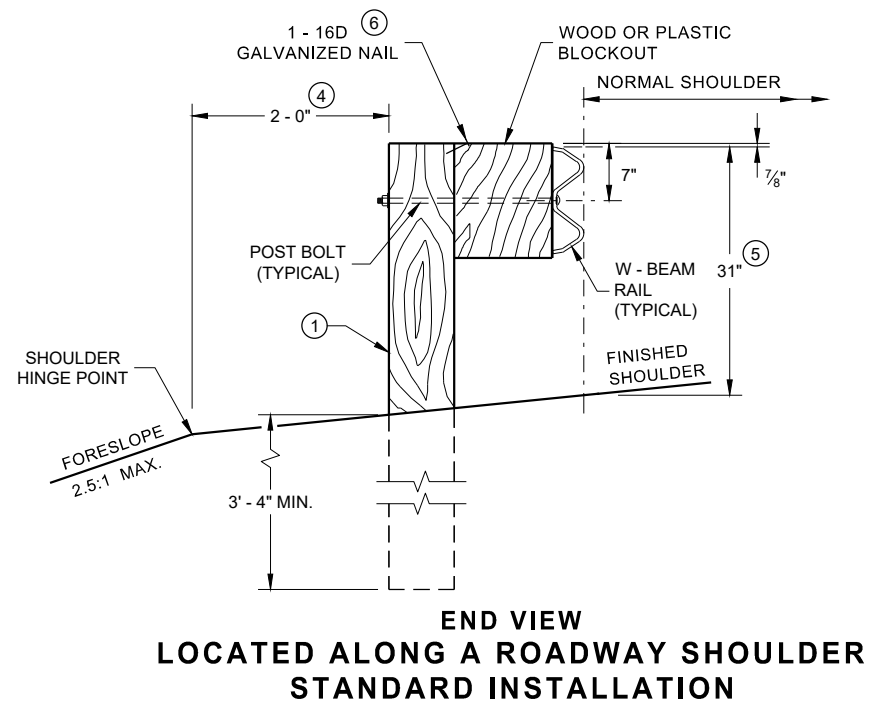
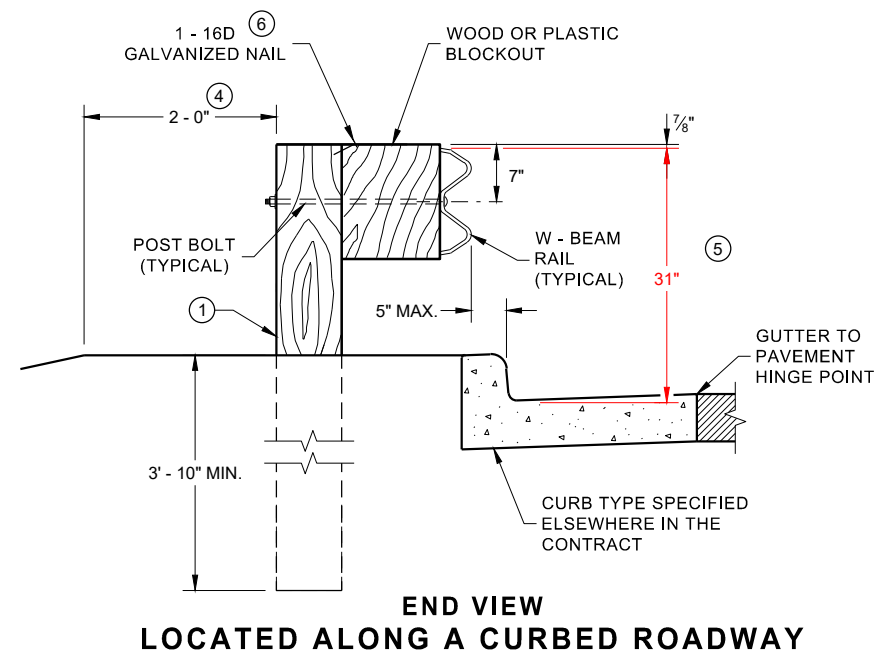
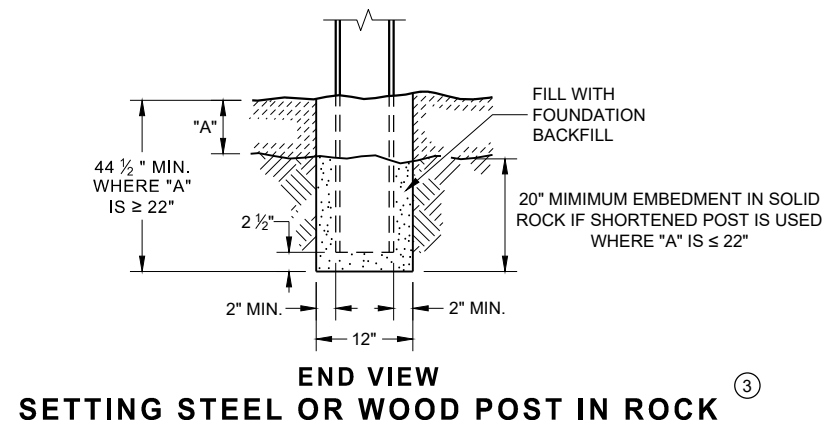
APPROVED

3/26/10
DATE

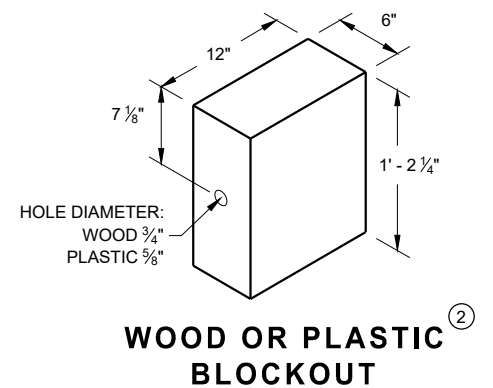
FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER

- 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 TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

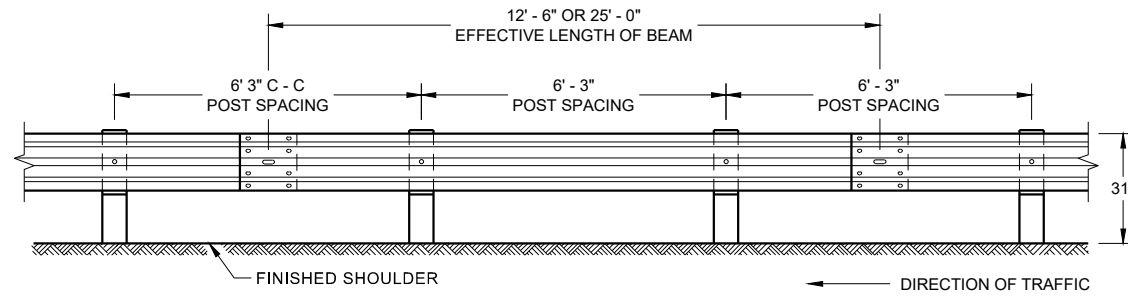


WOOD POST (6" X 8") NOMINAL ⁽¹⁾

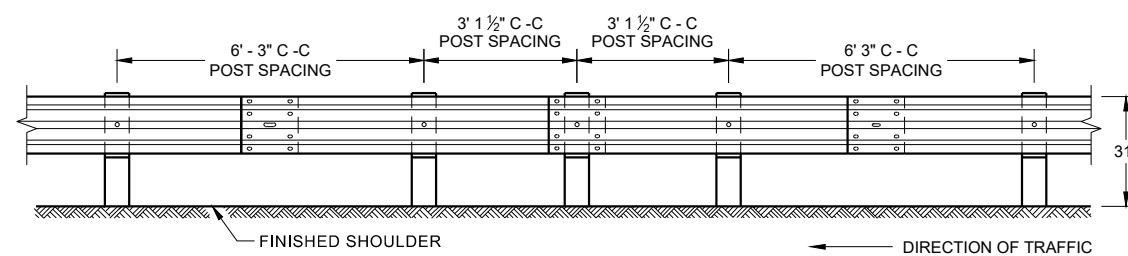


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

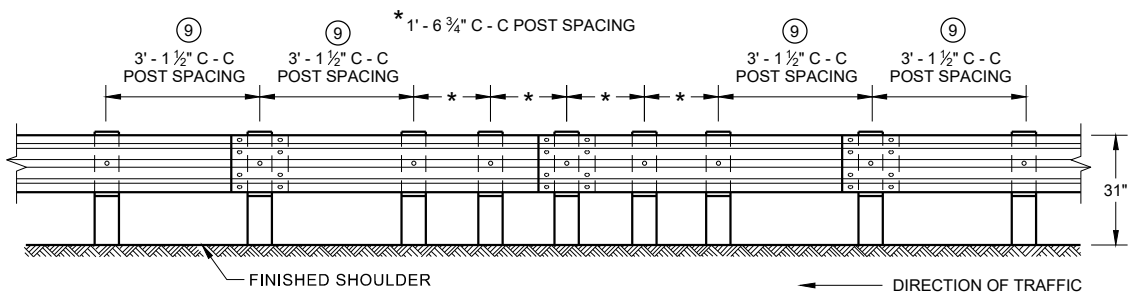
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



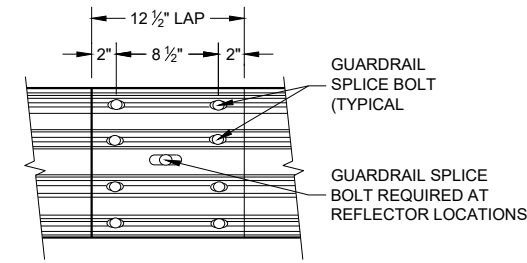
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



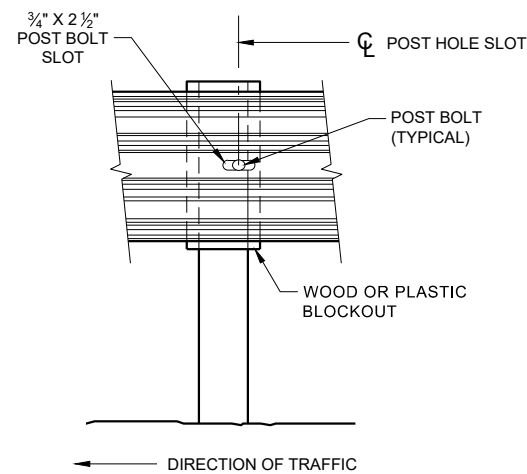
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



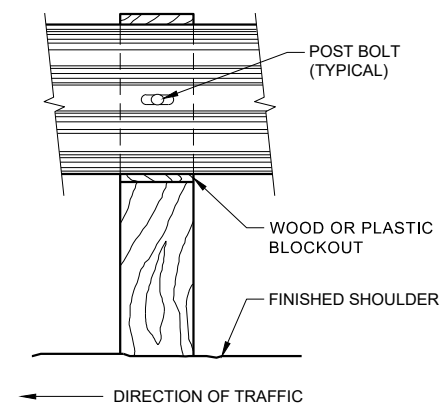
**FRONT VIEW
QUARTER POST SPACING (QS)**



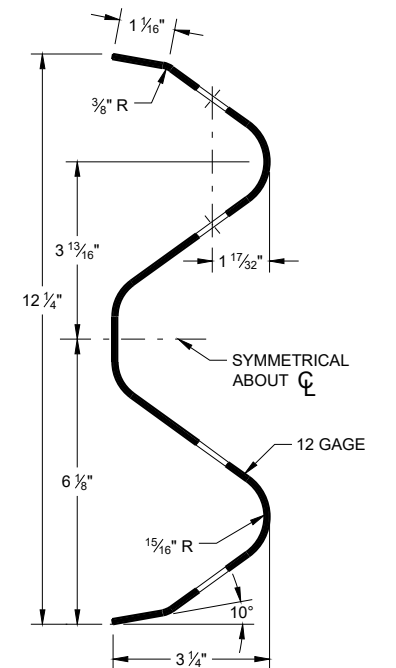
**FRONT VIEW
MID-SPAN BEAM SPLICE**



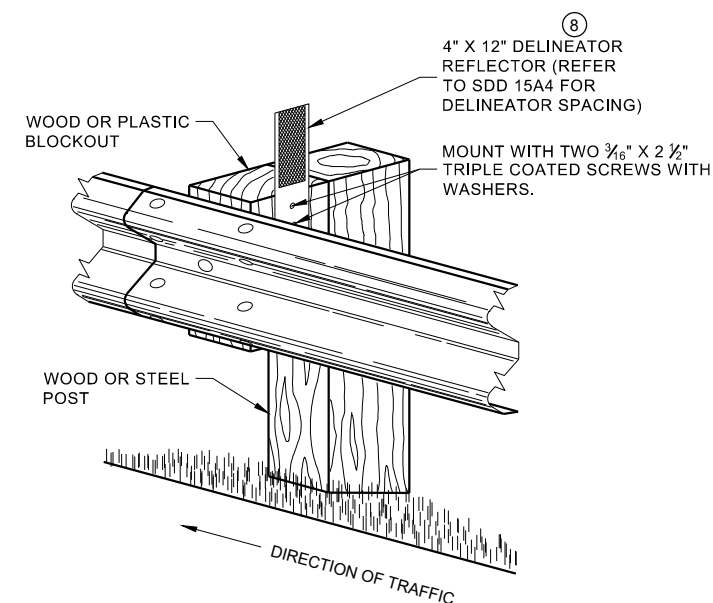
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



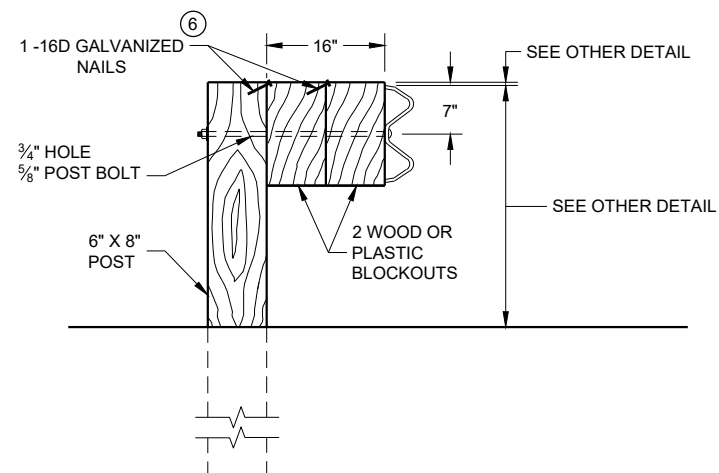
SECTION THRU W-BEAM RAIL



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

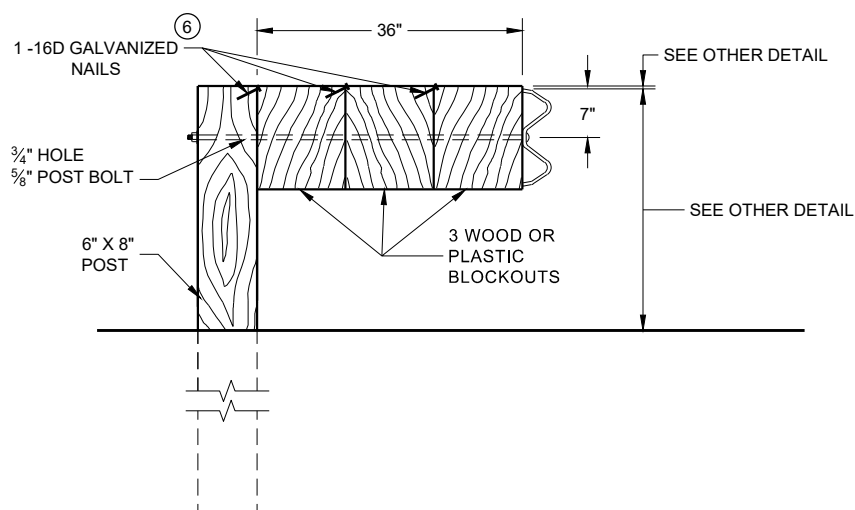
GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/4" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



DETAIL FOR 16" BLOCKOUT DEPTH

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



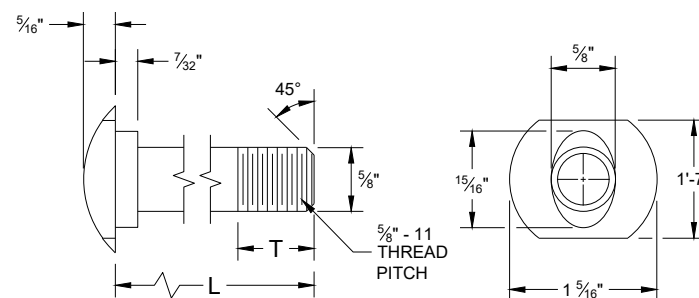
DETAIL FOR 36" BLOCKOUT DEPTH

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

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

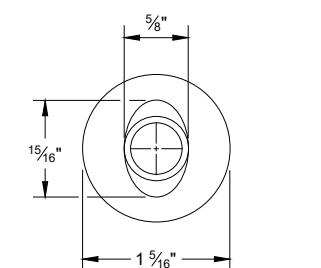
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF $\frac{3}{16}$ ".
2. IF THE BOLT EXTENDS MORE THAN $\frac{1}{4}$ " FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

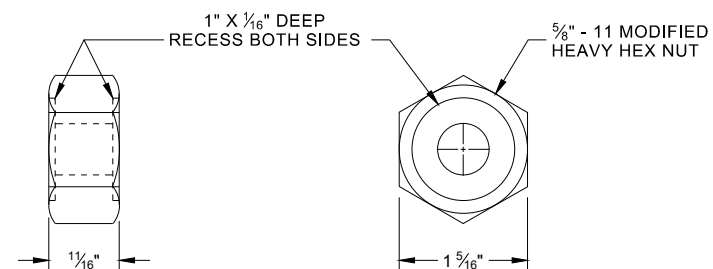


POST BOLT TABLE

L	T (MIN.)
1 ¼"	1 ⅝"
2"	1 ¾"
10"	4"
14"	4 ⅙"
18"	4"
21"	4 ⅙"
25"	4"

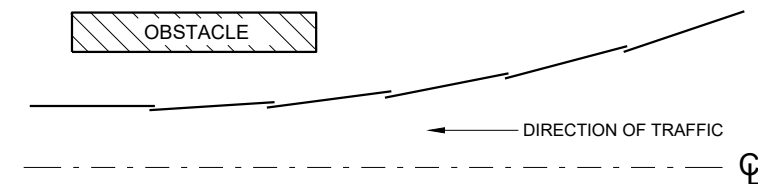


ALTERNATE BOLT HEAD

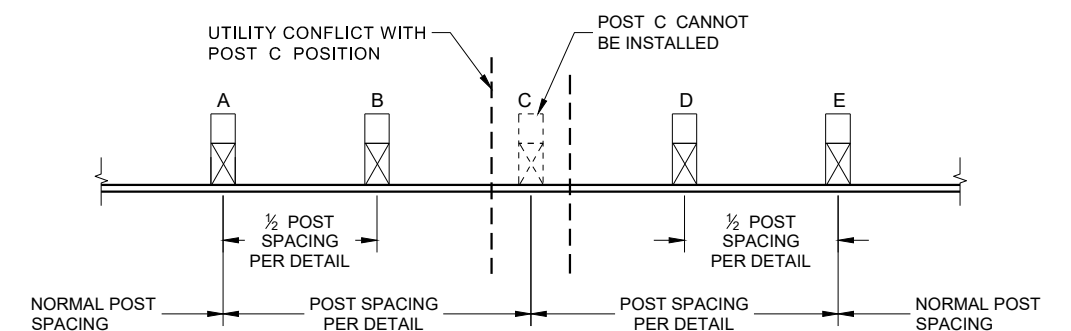


POST BOLT, SPLICE BOLT AND RECESS NUT

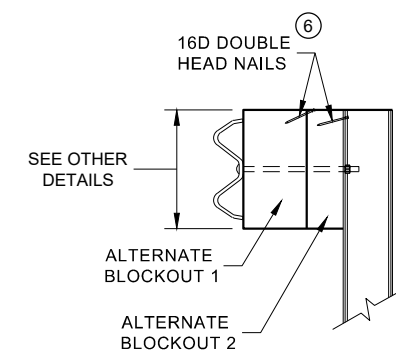
- ⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



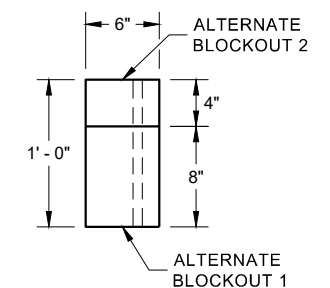
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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 MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
 - (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
 - (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.
- DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

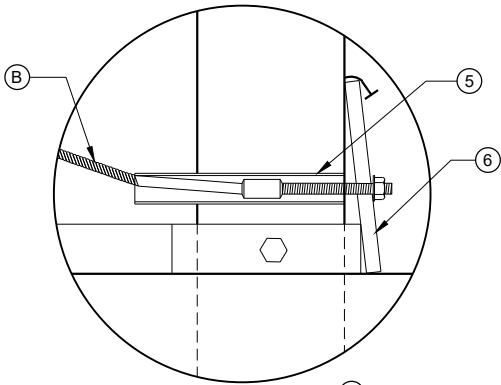
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

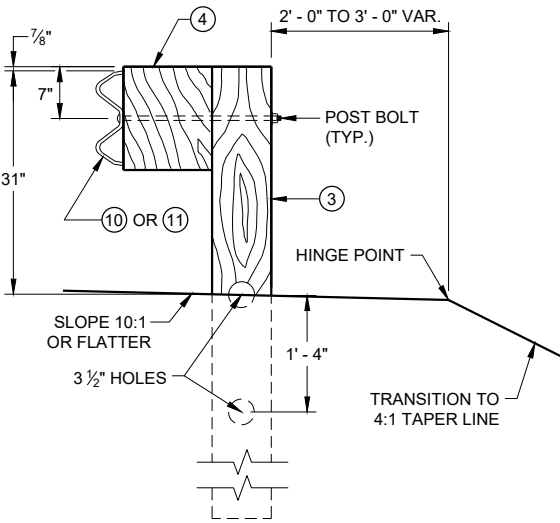
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

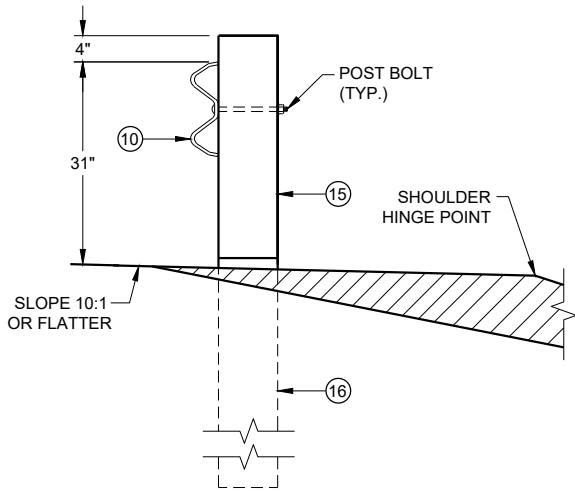
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



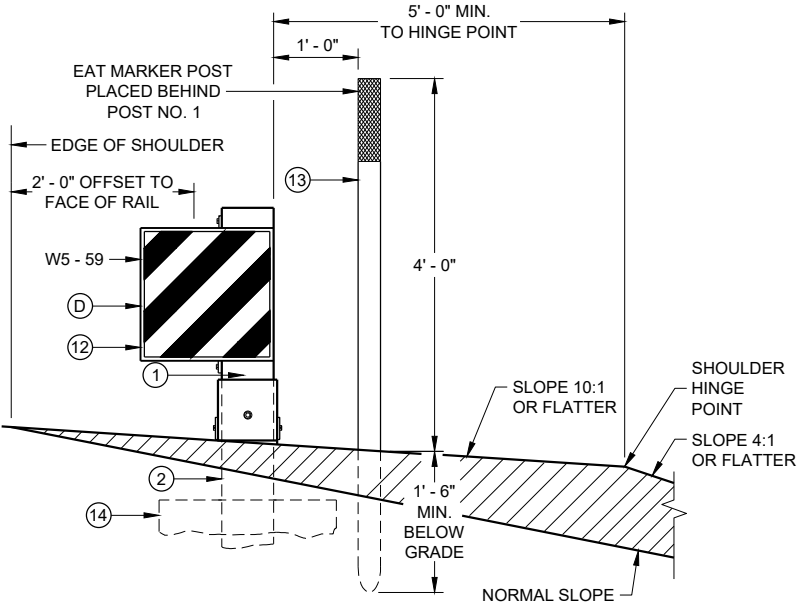
DETAIL "A"



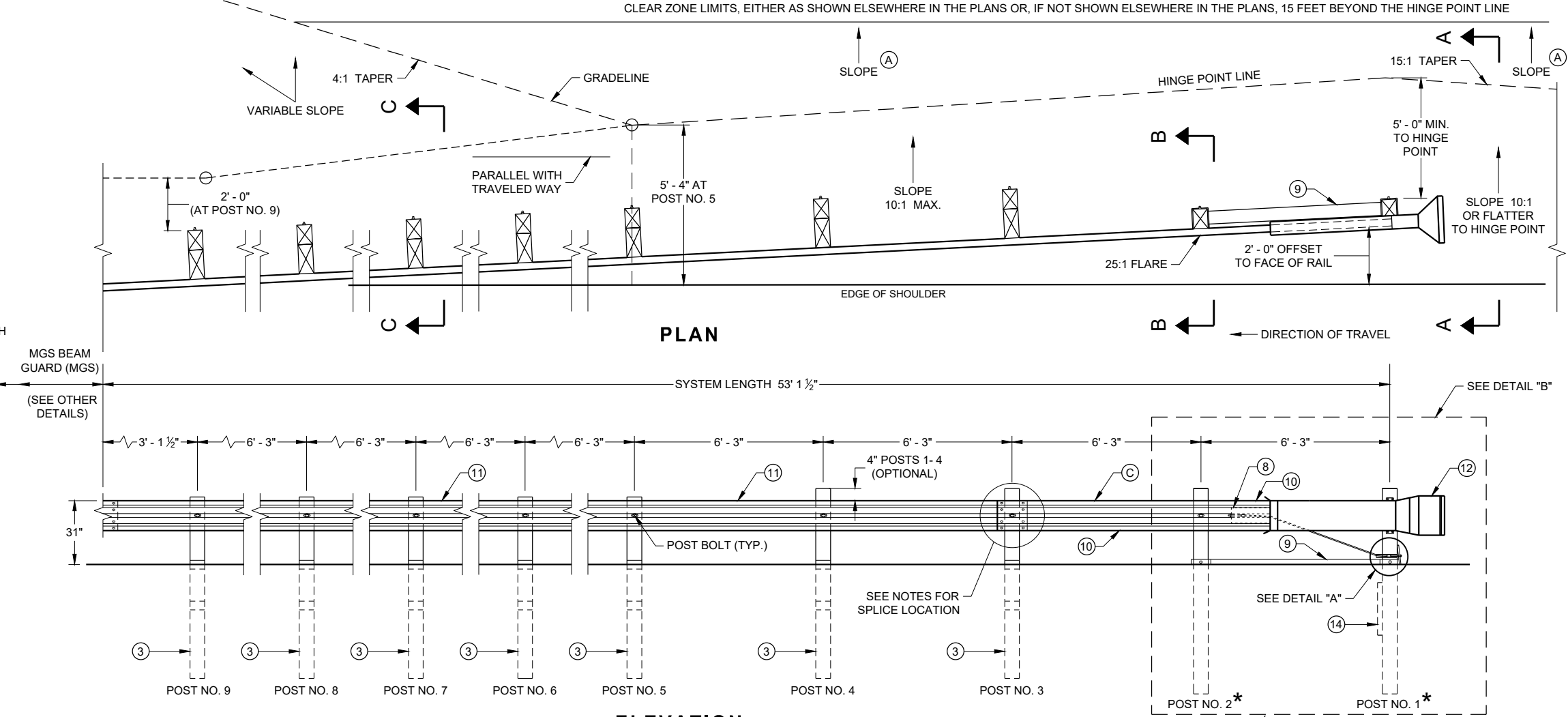
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*

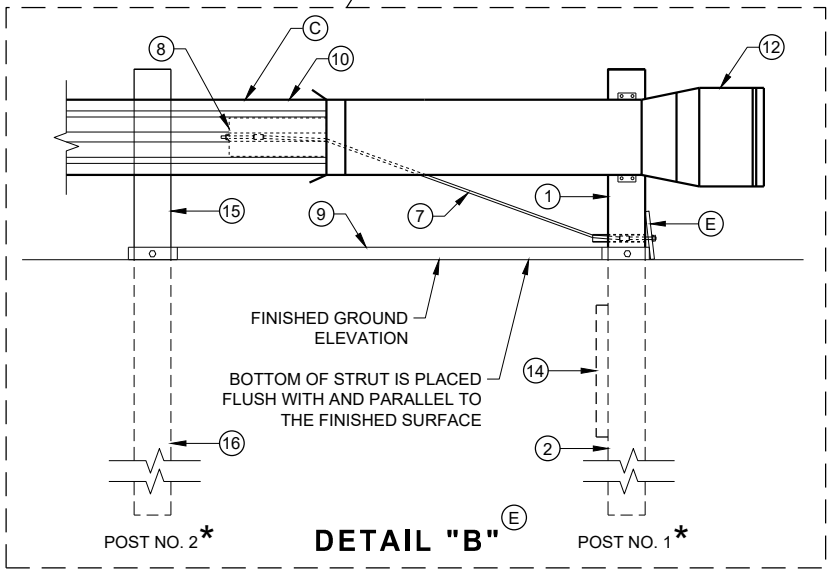


SECTION A - A
TYPICAL AT POST NO. 1*



PLAN

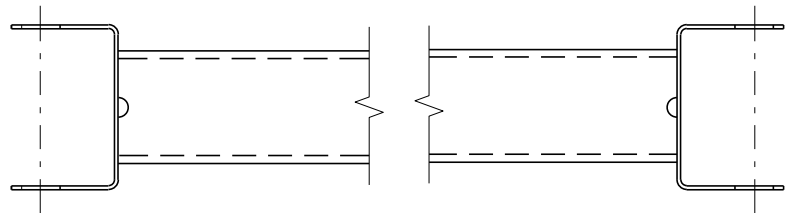
ELEVATION



DETAIL "B"

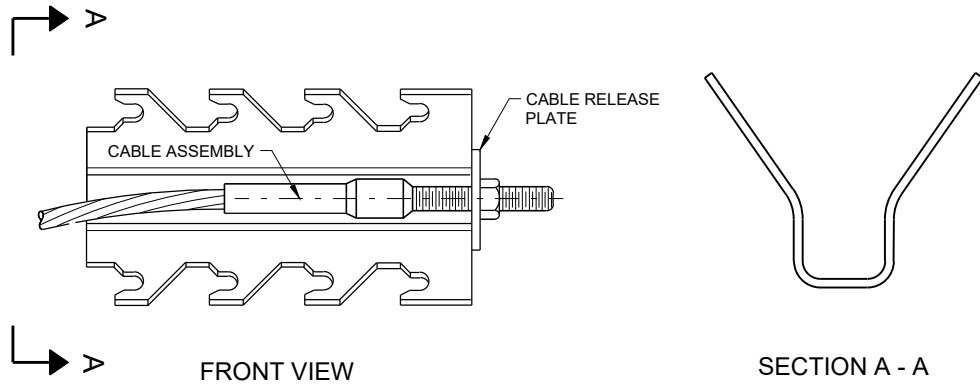
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

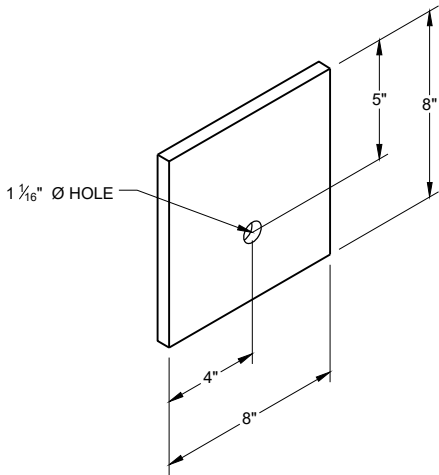


GENERIC GROUND STRUT^⑨ [Ⓔ]

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



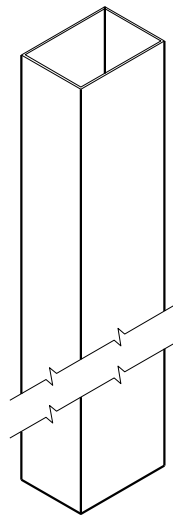
GENERIC ANCHOR CABLE BOX^⑨ [Ⓔ]



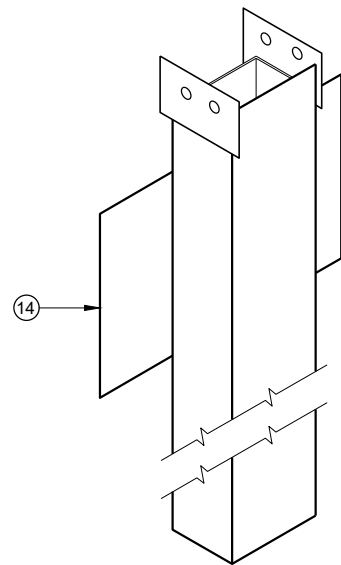
BEARING PLATE^⑥ [Ⓔ]

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

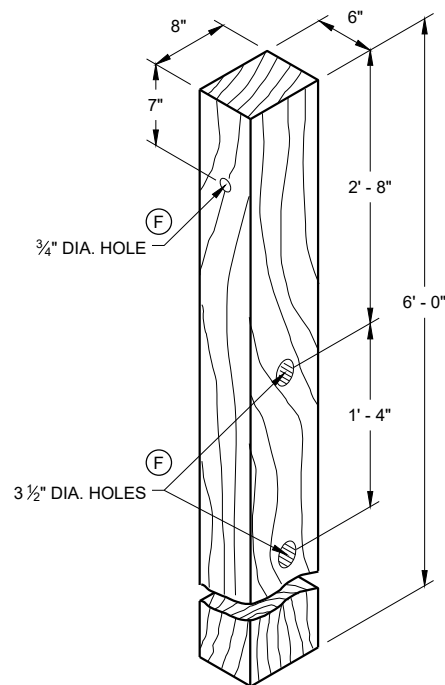
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



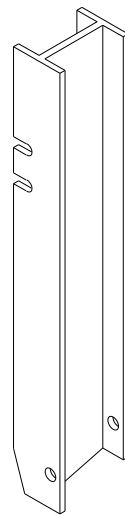
UPPER POST NO. 1 ⁽¹⁾ (E)



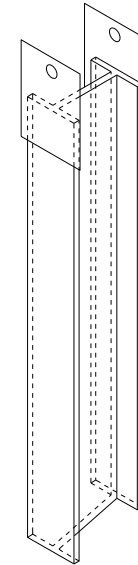
LOWER POST NO. 1 ⁽²⁾ (E)



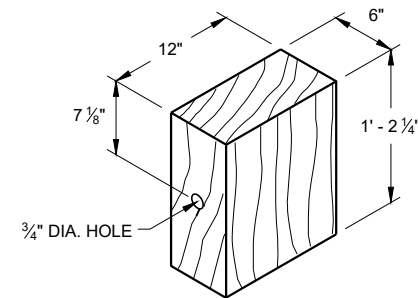
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



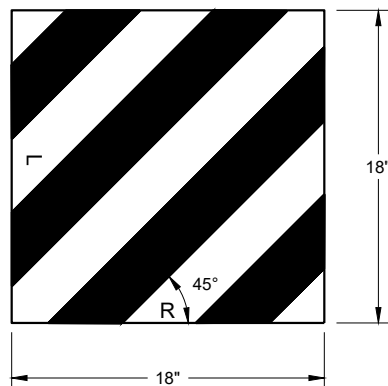
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



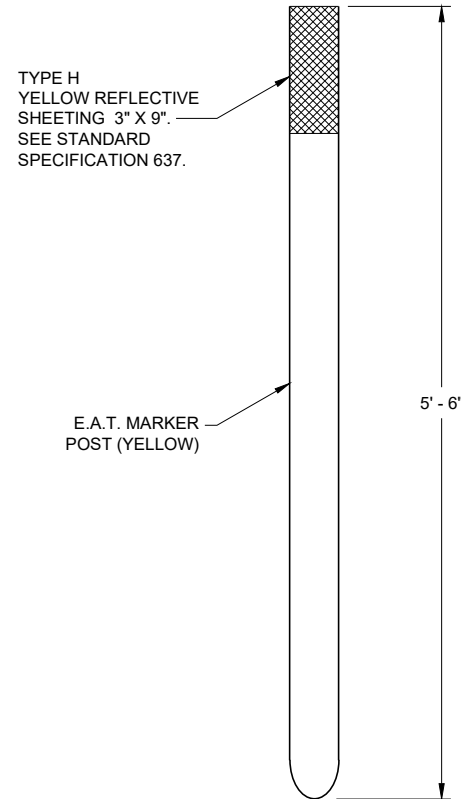
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



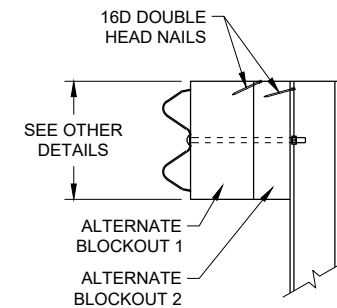
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



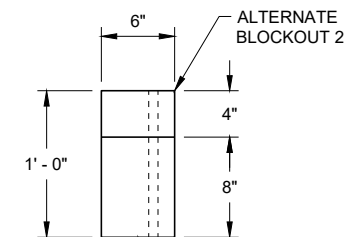
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



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



SIDE VIEW



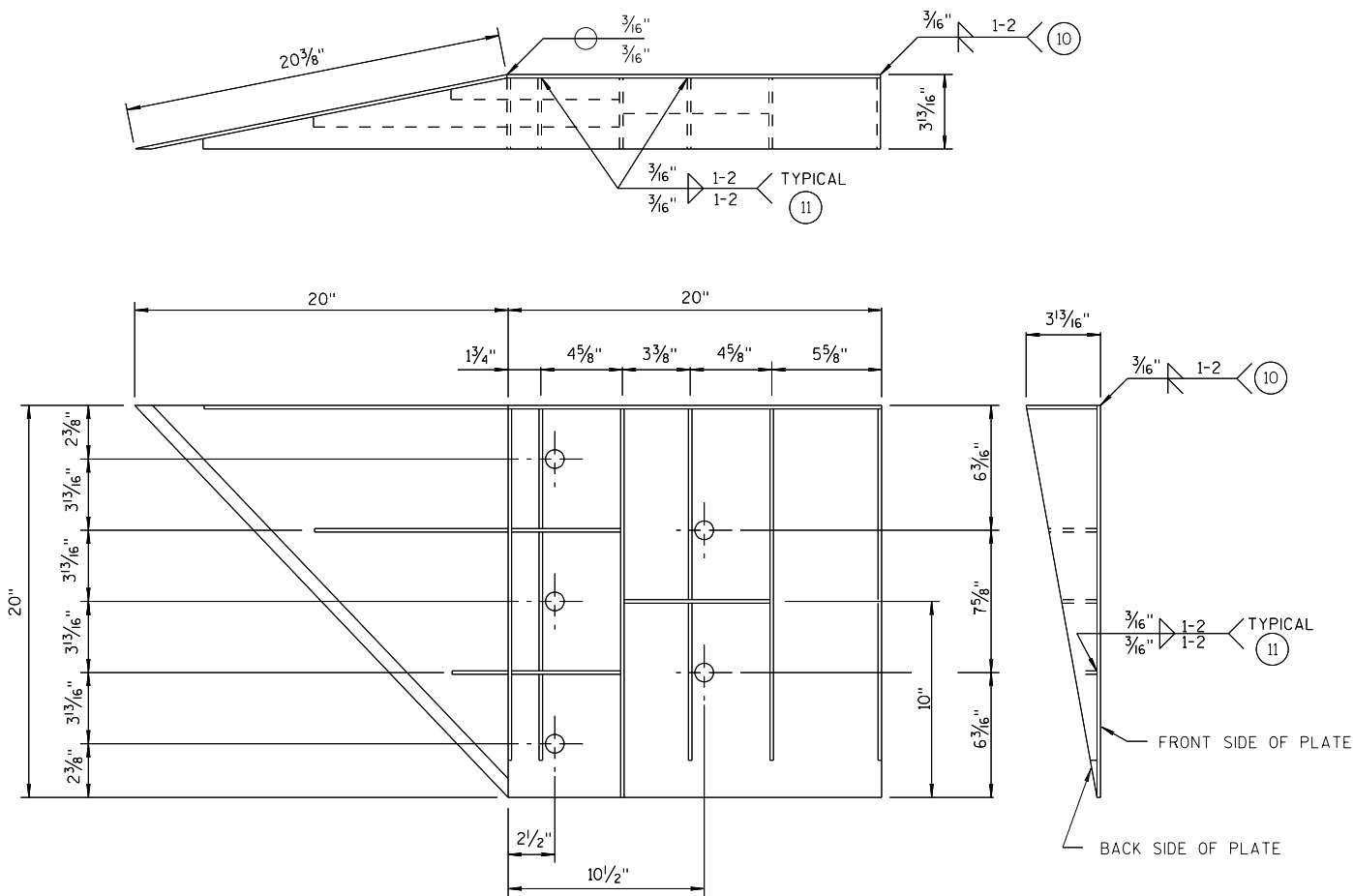
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

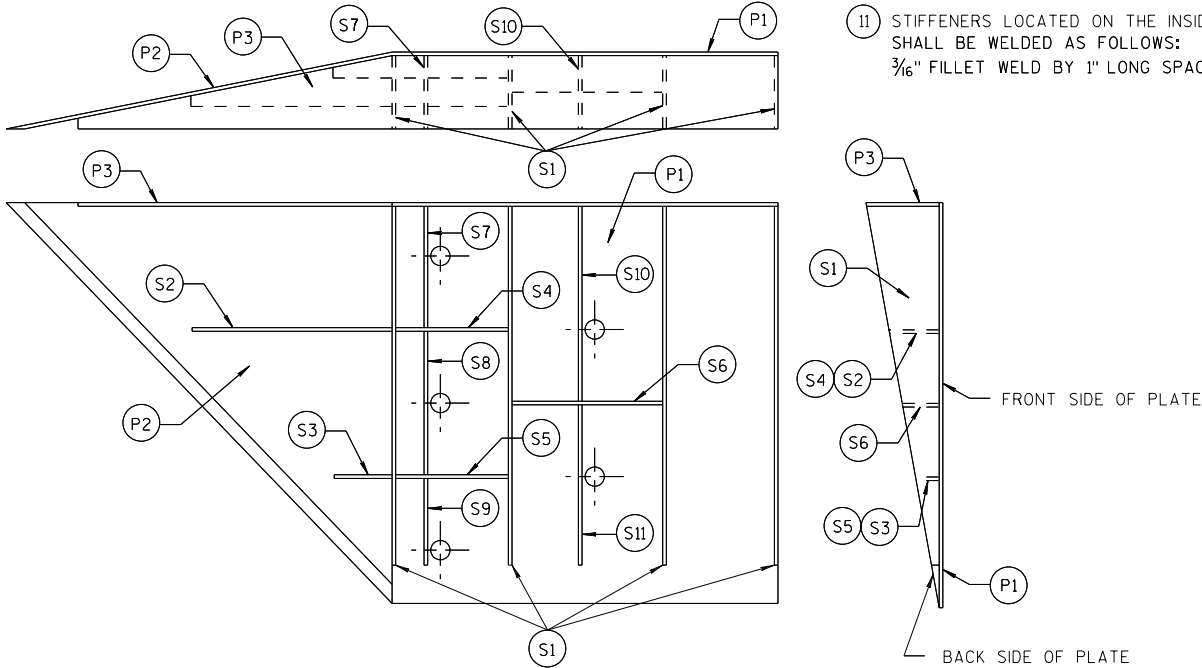


WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 3/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 3/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 3/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 3/16"	1/4"

PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)



GENERAL NOTES

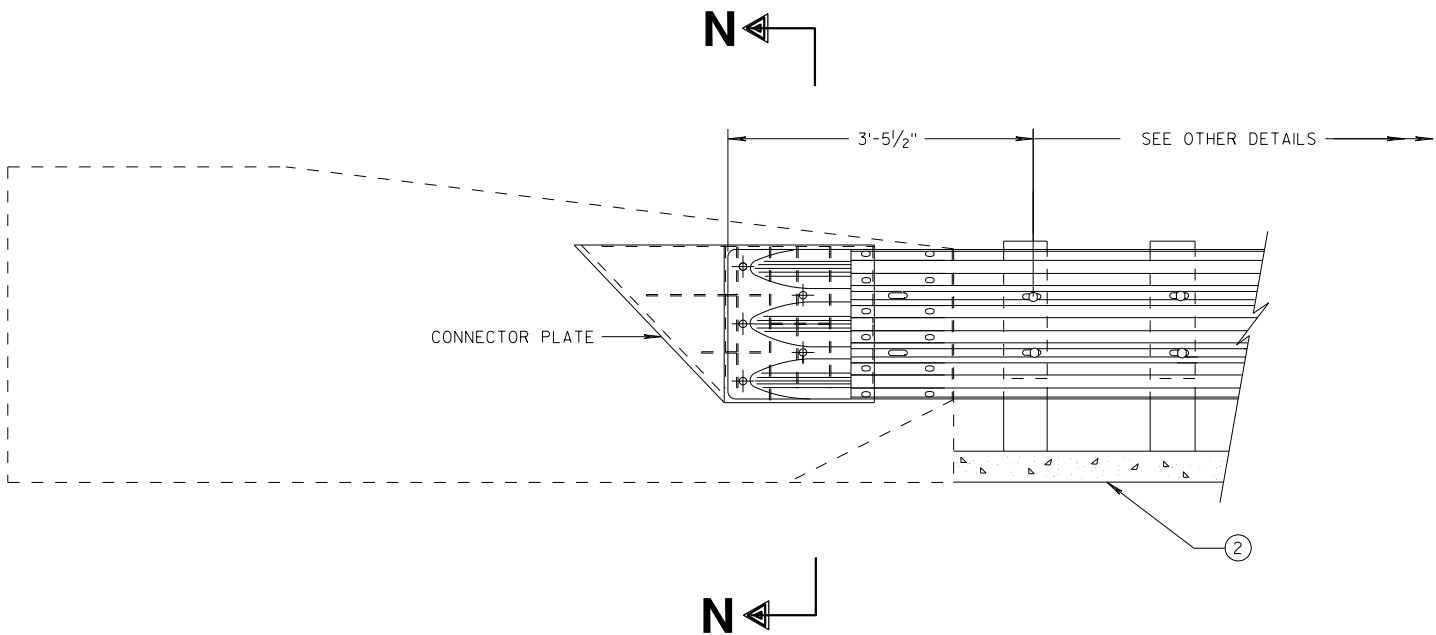
- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

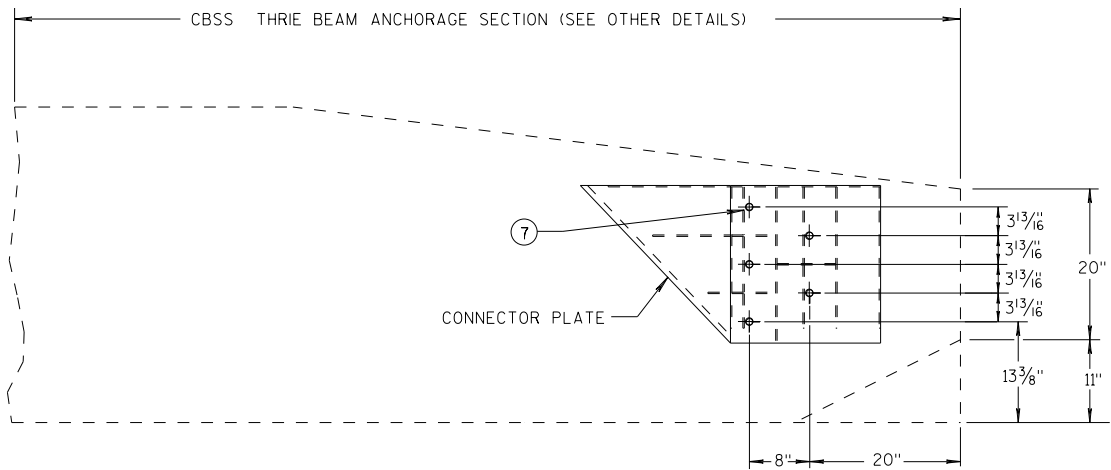
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



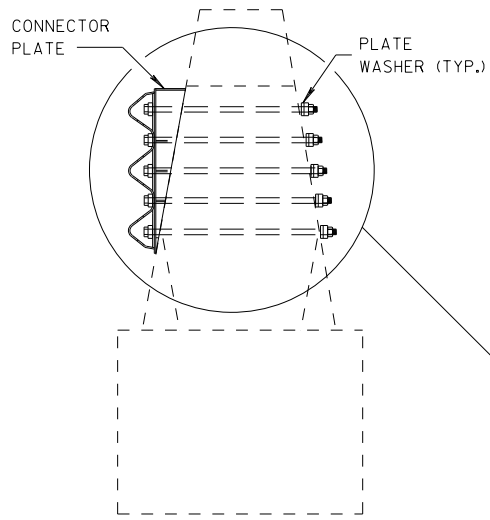
THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



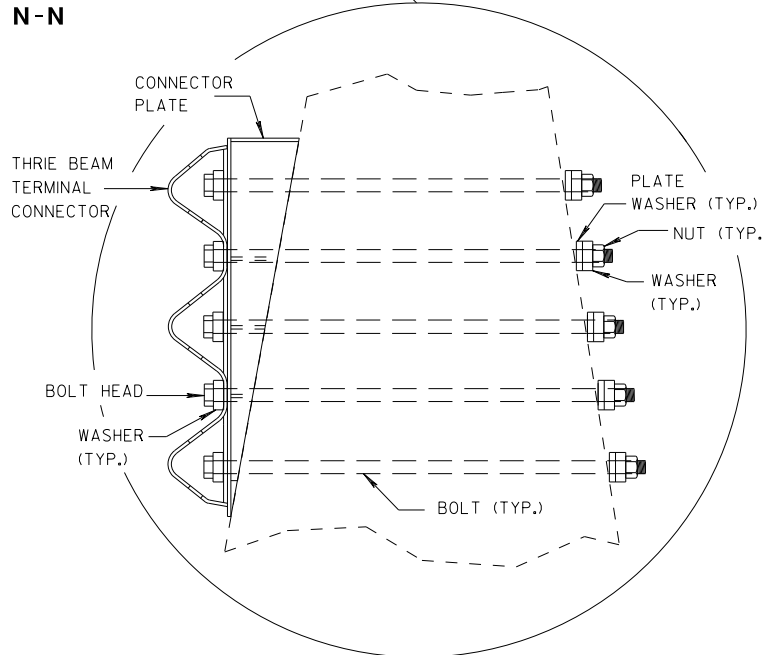
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

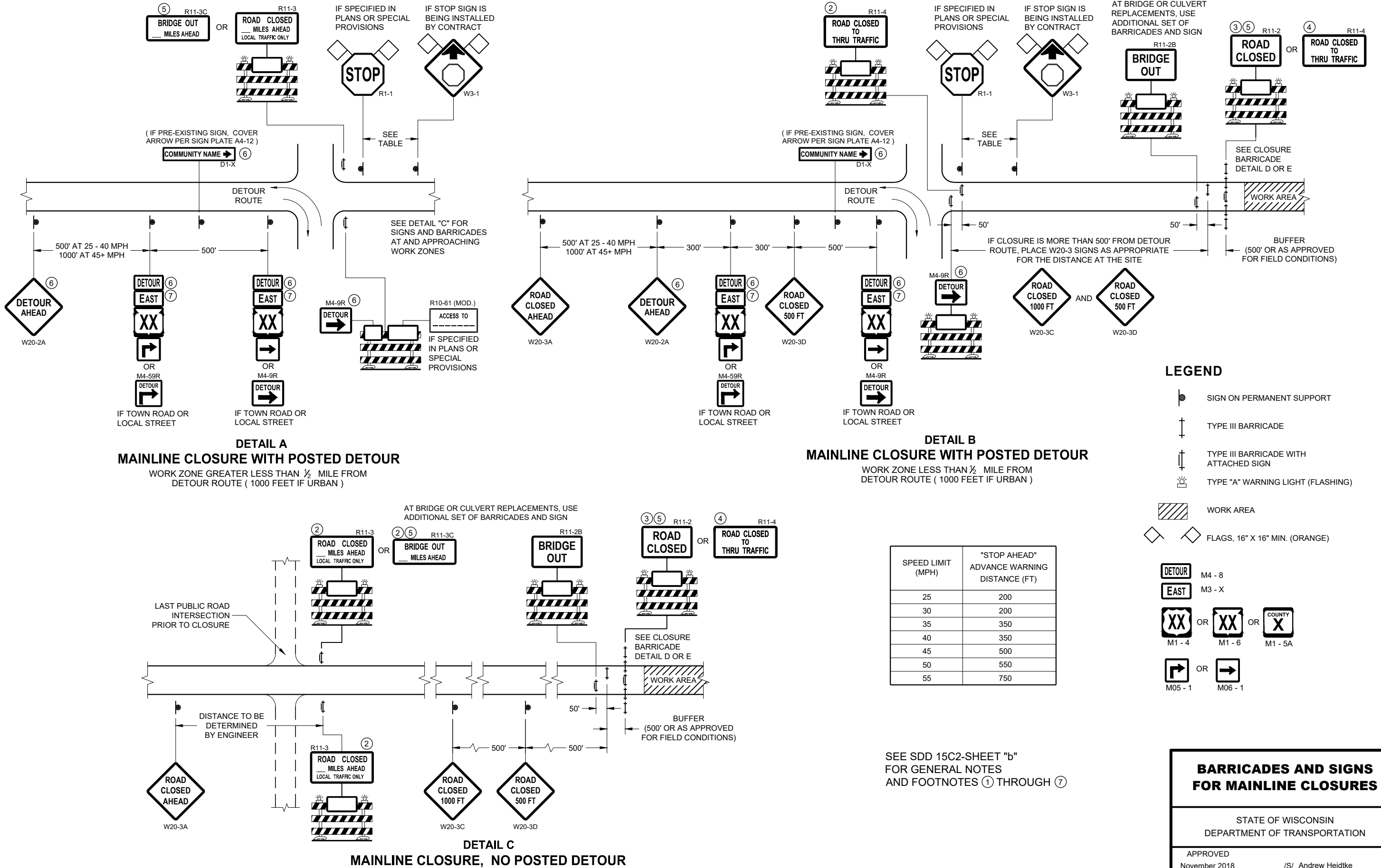
- CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- (7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE 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 CONNECTION PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

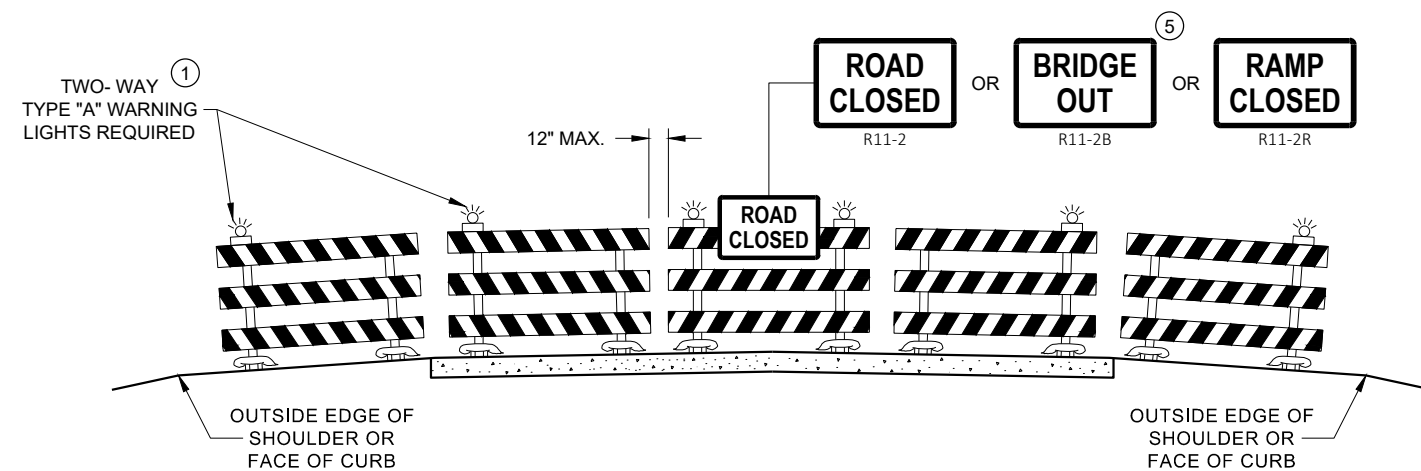


**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

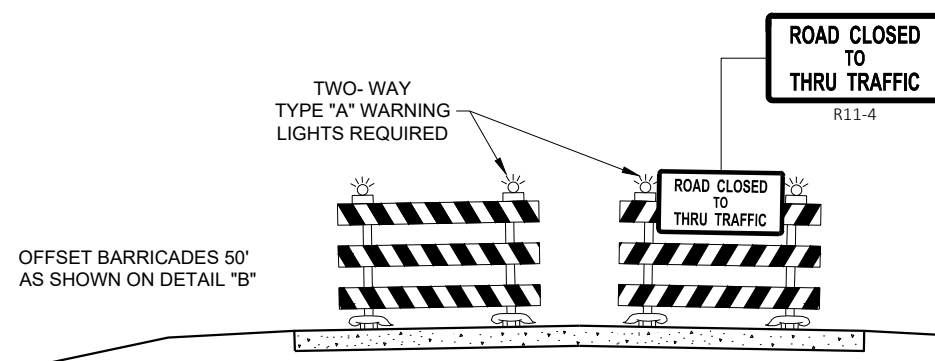
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11 - 2 SHALL BE 48" X 30"

R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"

M4 - 9 SHALL BE 30" X 24"

M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)

M4 - 8 SHALL BE 24" X 12" (36" X 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)

MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)

D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

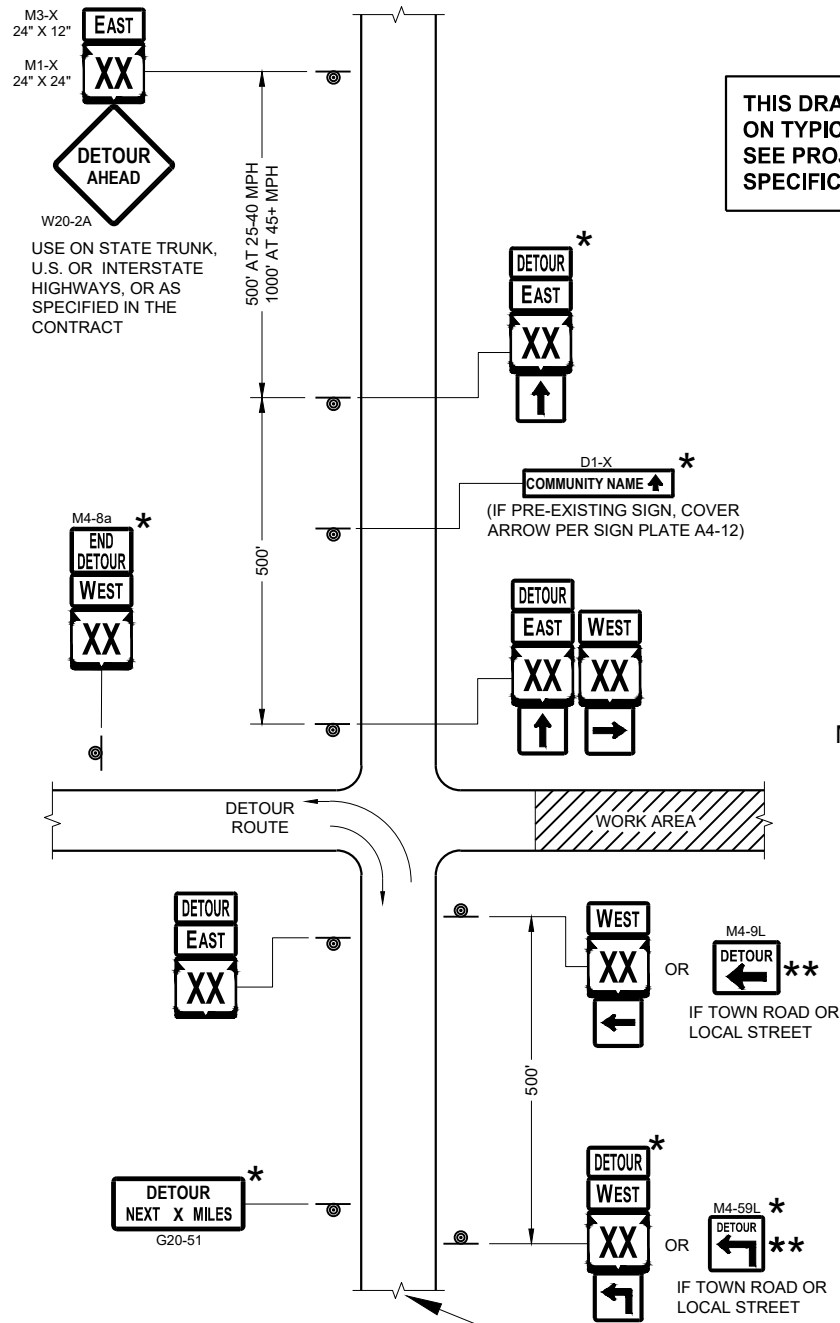
R1 - 1 SHALL BE 36" X 36"

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

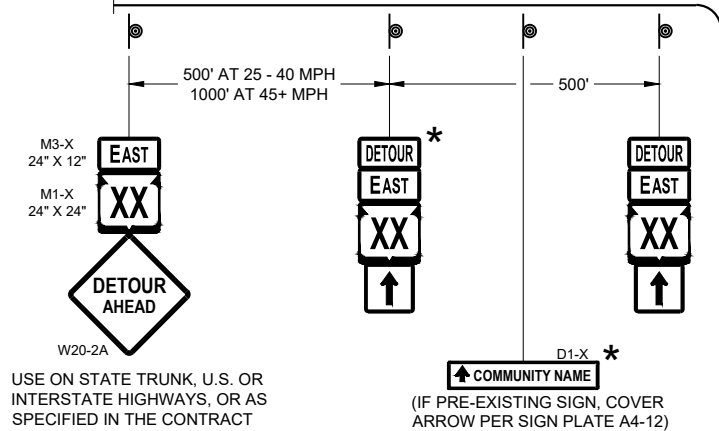
APPROVED
November 2018 _____
DATE /S/ Andrew Heidtke
WORK ZONE ENGINEER



SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

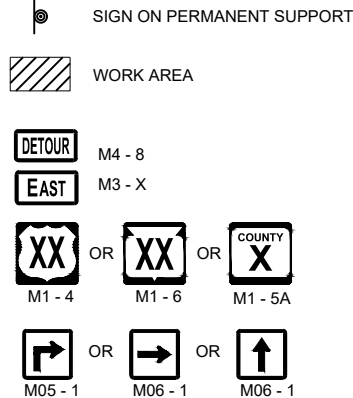
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND



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.

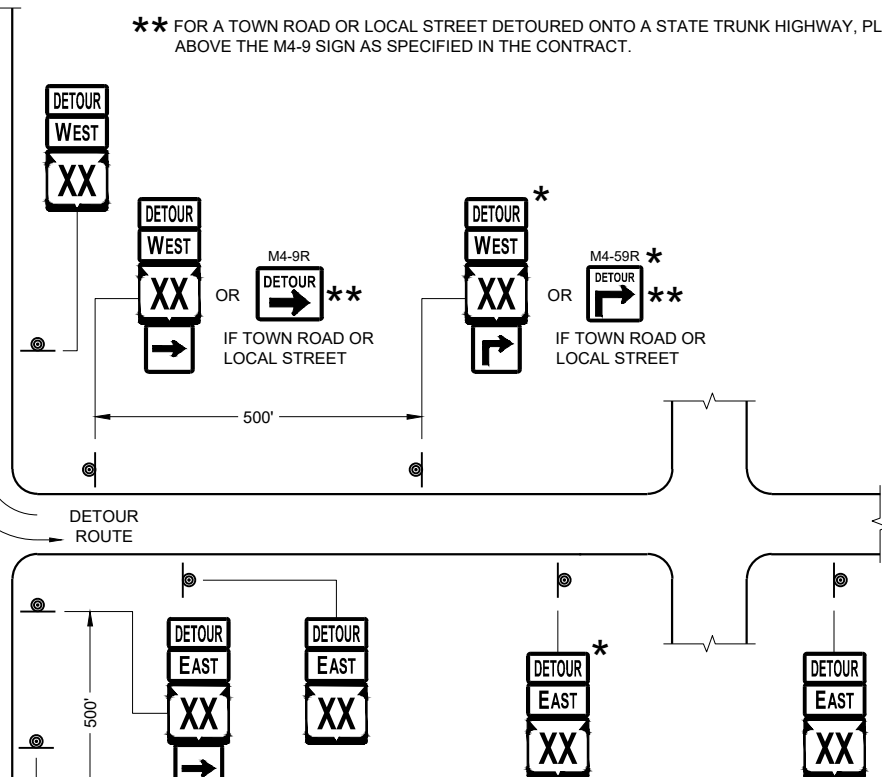
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (30" X 30" 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 AND M4-59 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.

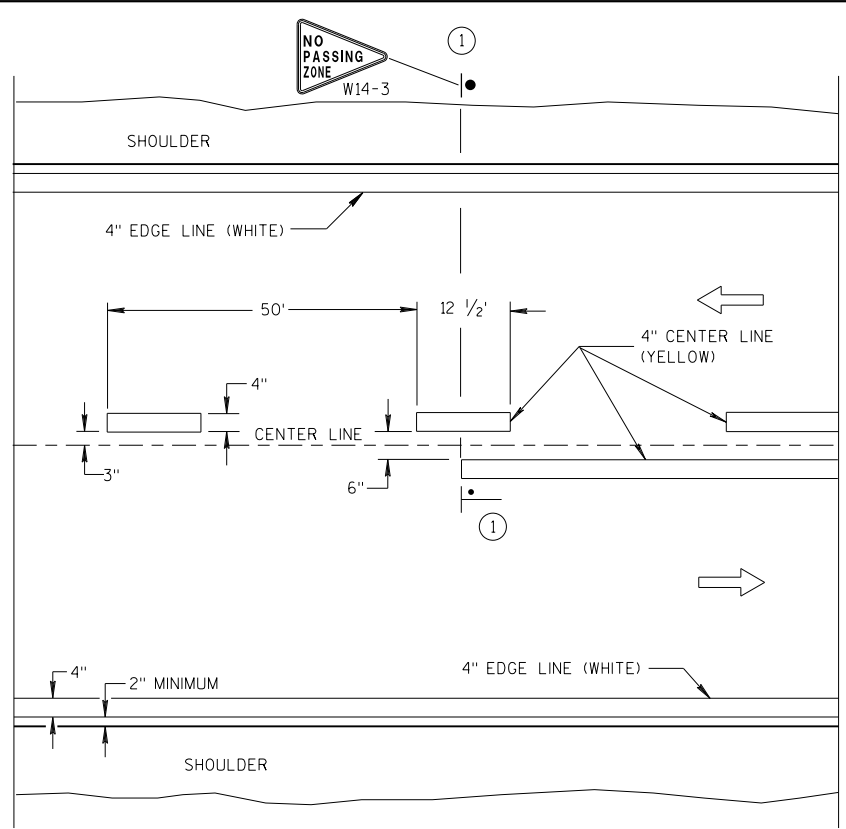


PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

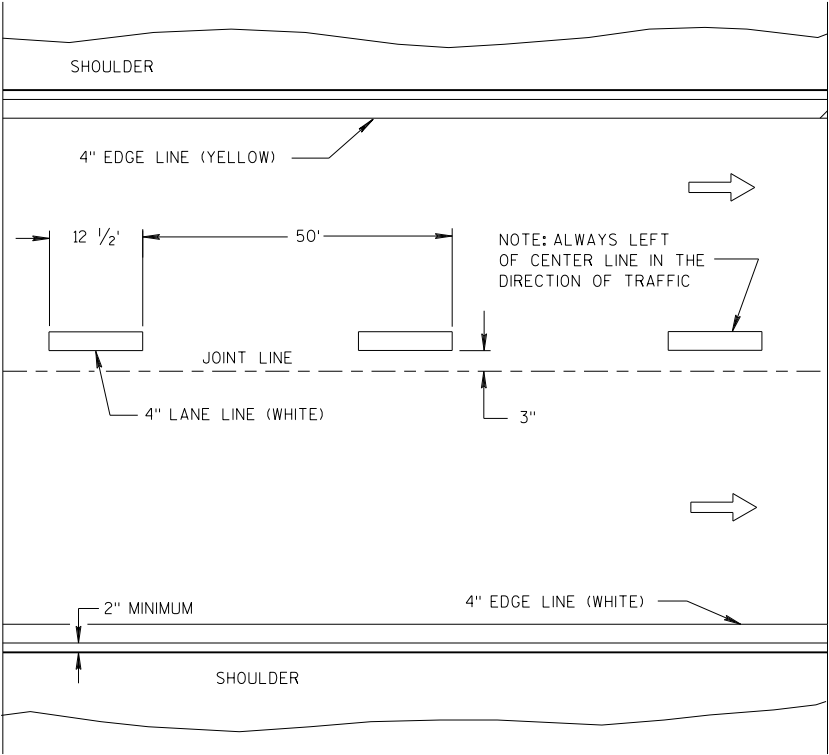
DETOUR SIGNING
FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

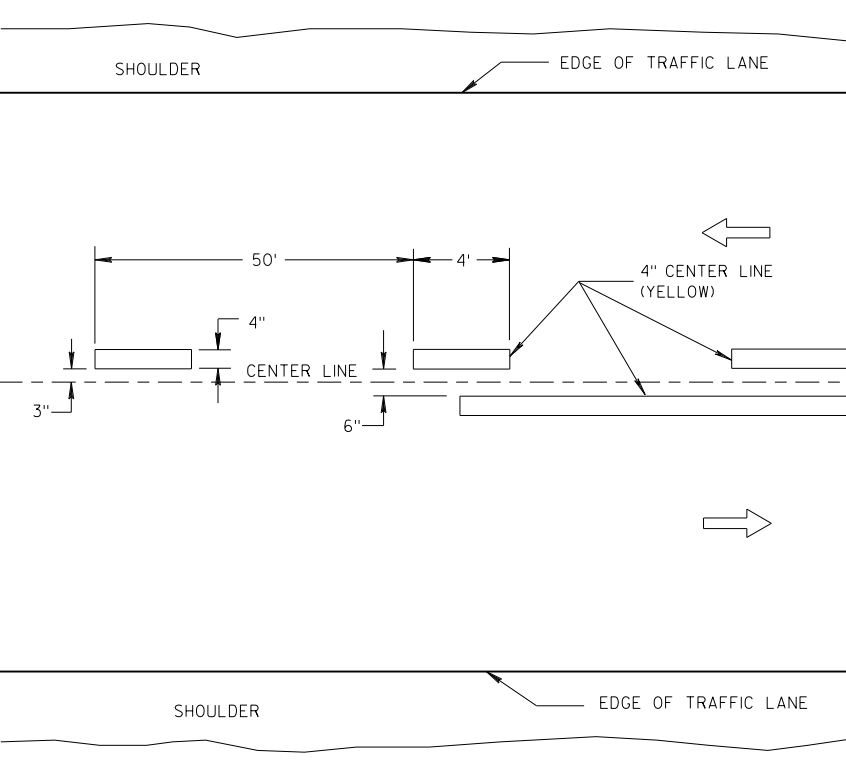


TWO WAY TRAFFIC

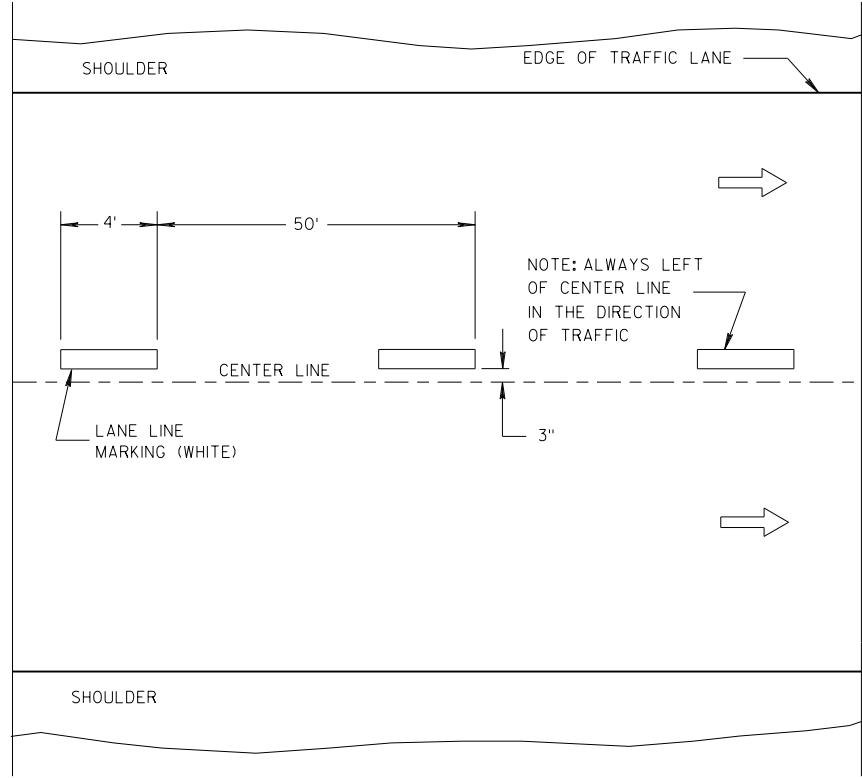


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

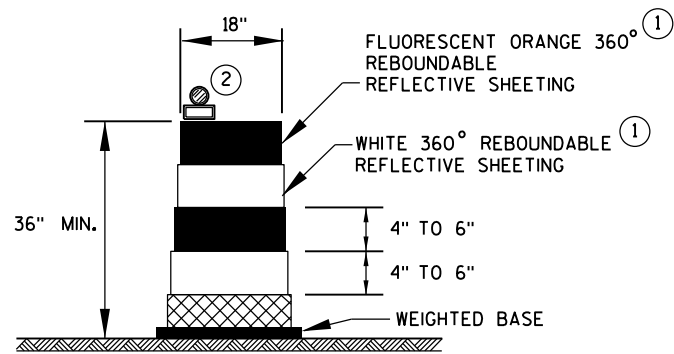
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

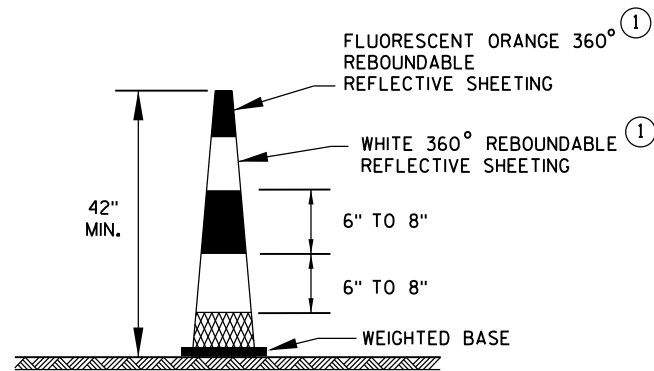
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



DRUM

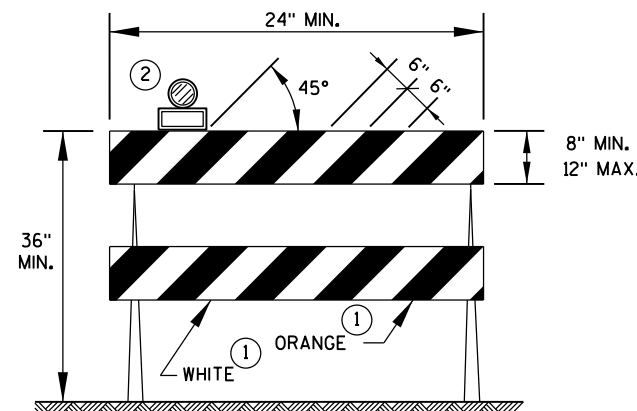


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

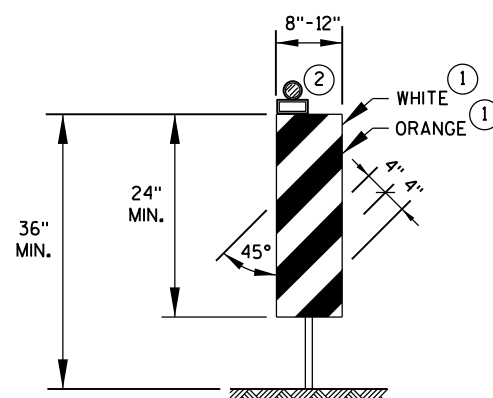
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



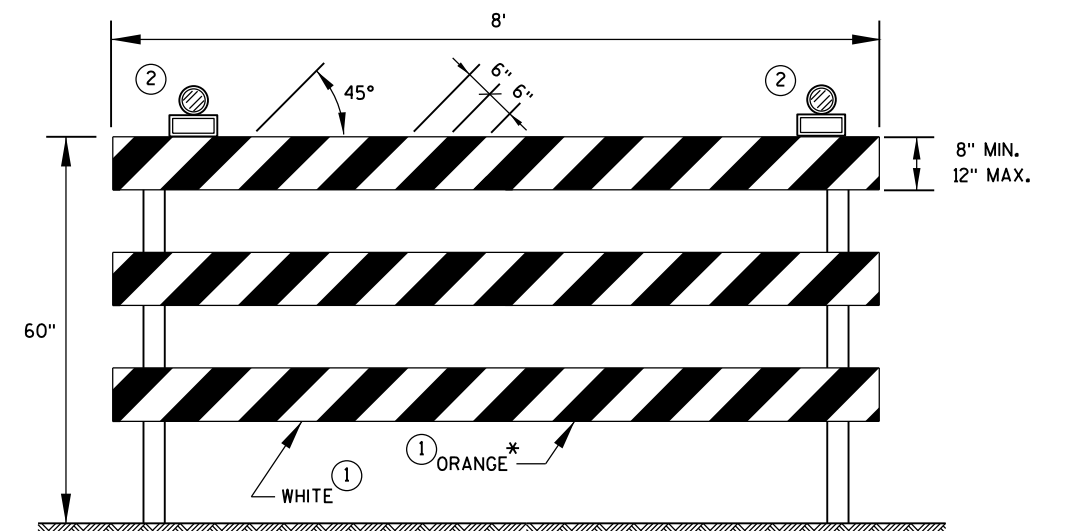
TYPE 2 BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.
ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE 3 BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

FHWA

/S/ Andrew Heidtke
WORK ZONE ENGINEER

GENERAL NOTES

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

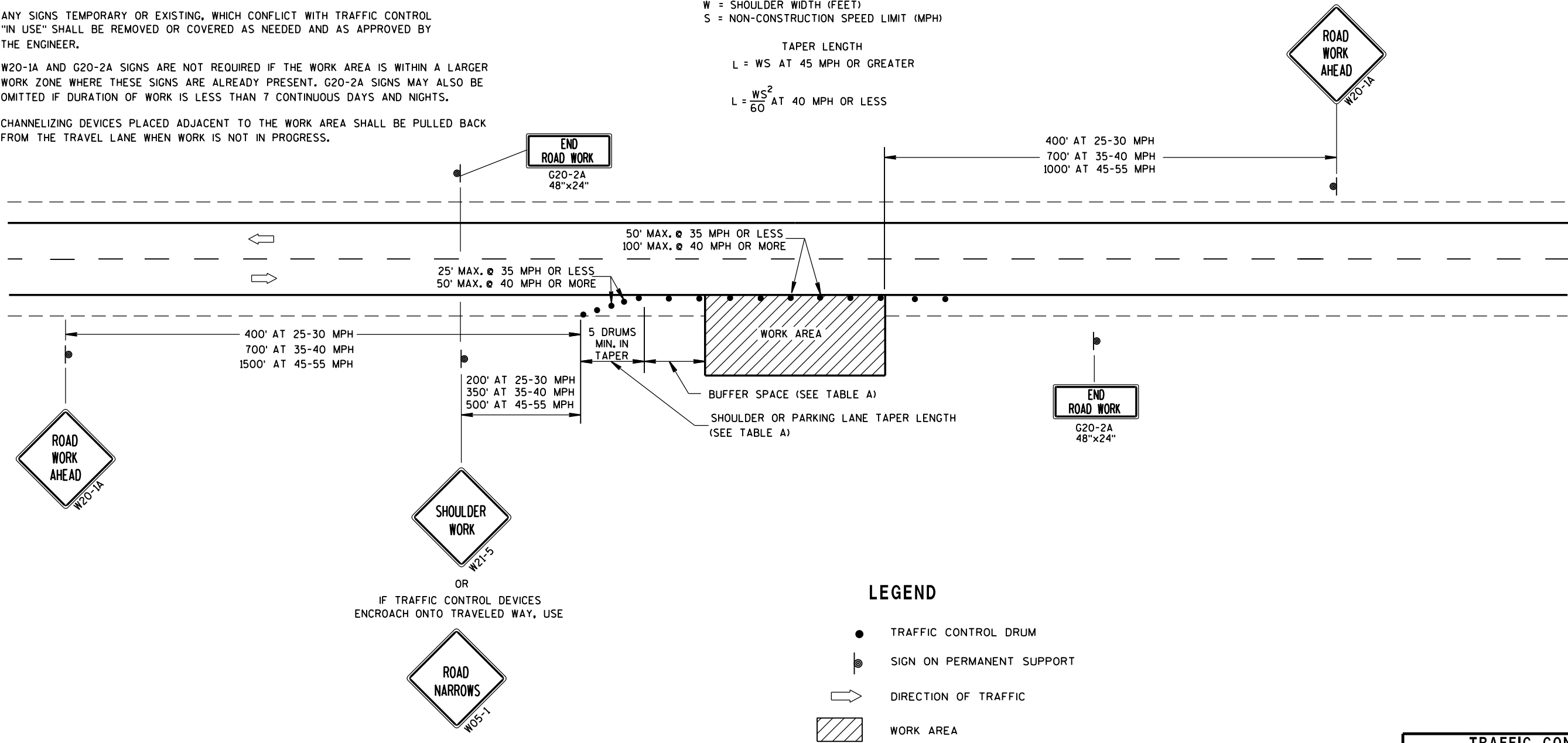
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH
L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

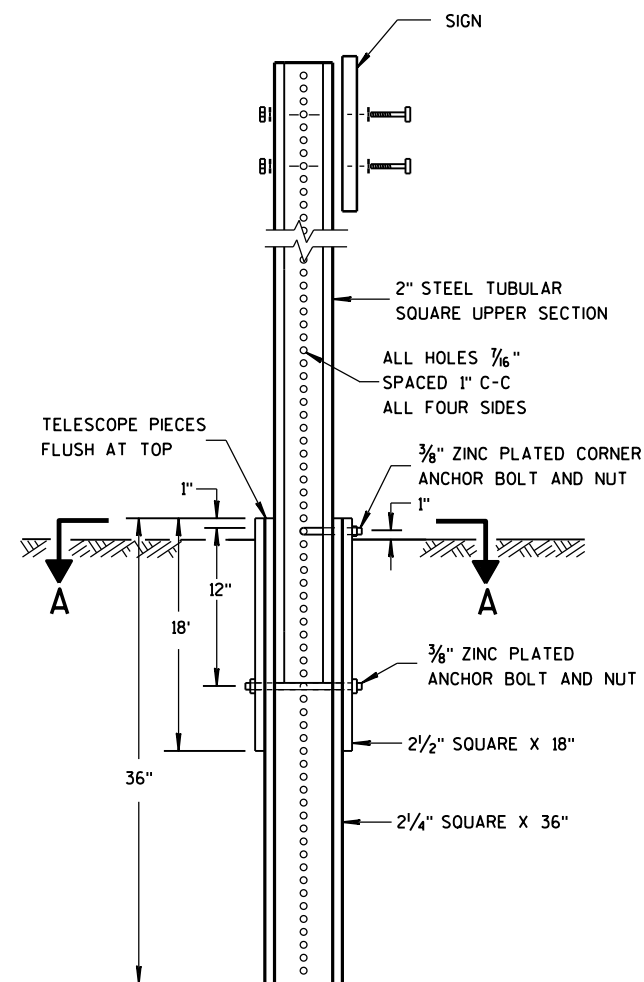
SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED July 14, 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

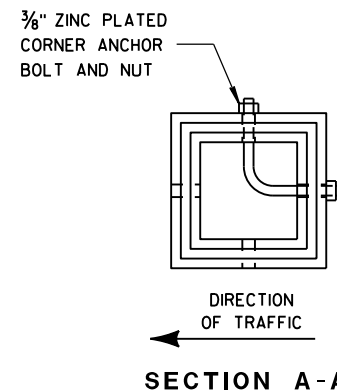


DETAIL OF TUBULAR
STEEL SIGN POST

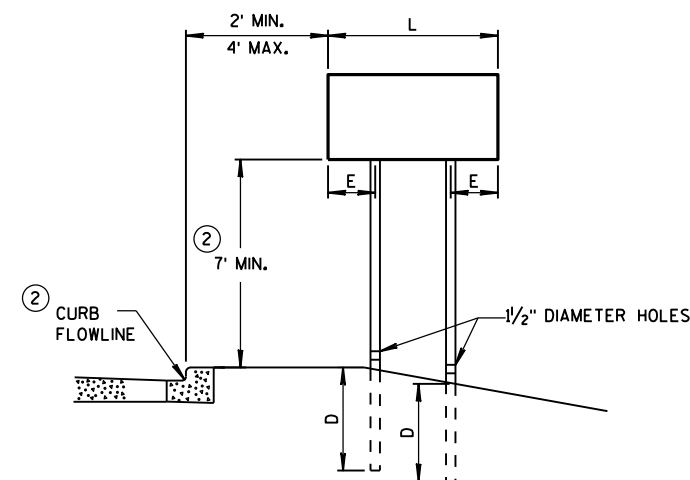
TUBULAR STEEL POSTS

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

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED
ON TUBULAR STEEL POSTS.



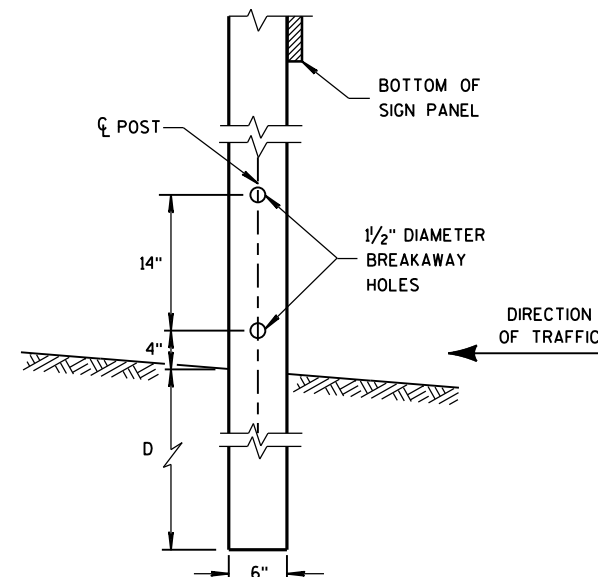
SECTION A-A



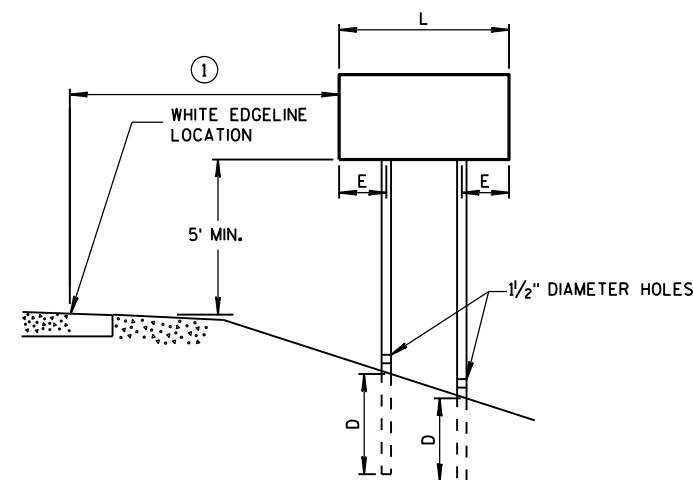
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

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



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

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

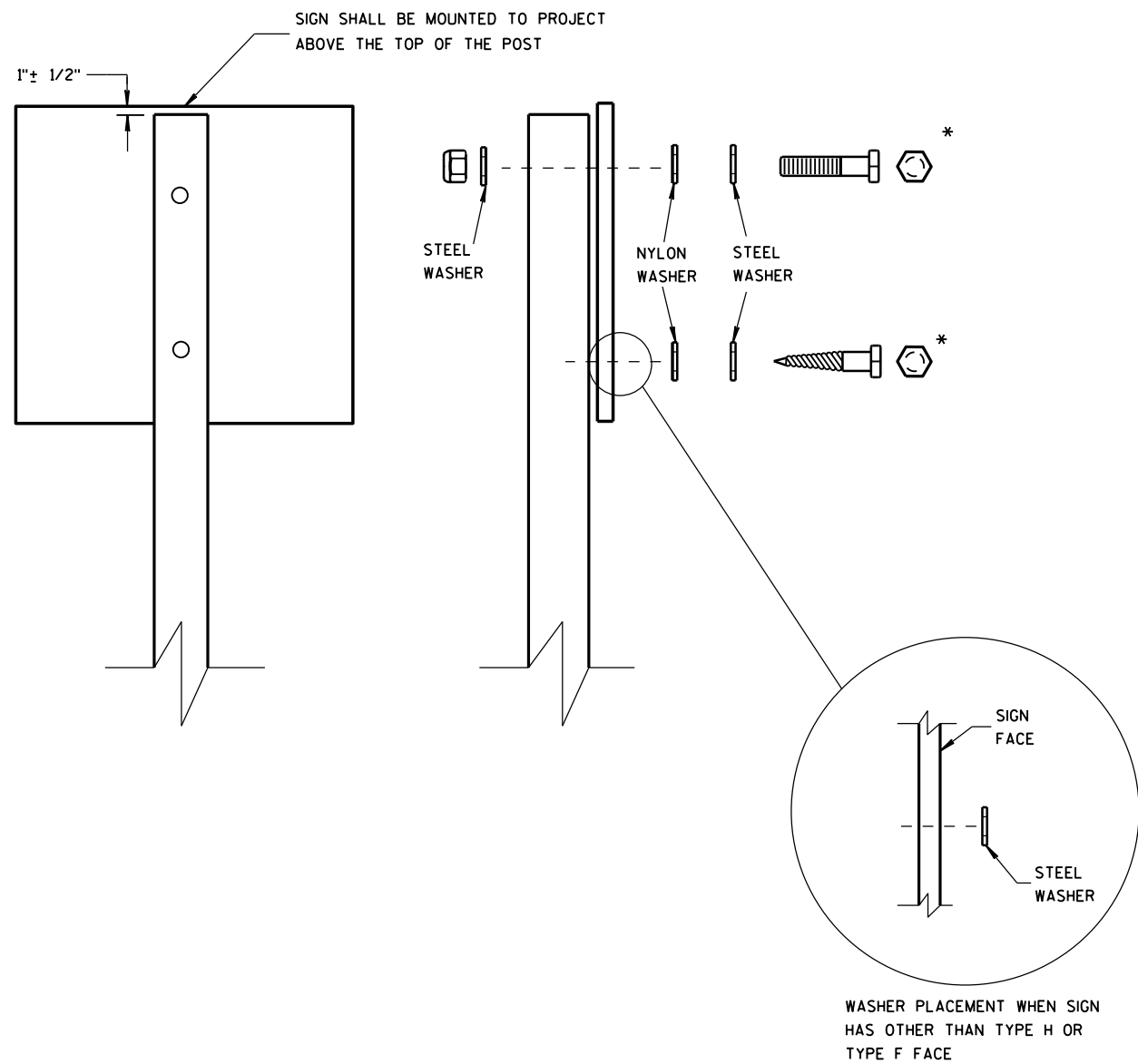
SEE NOTE ③

GENERAL NOTES

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

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

- WOOD 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

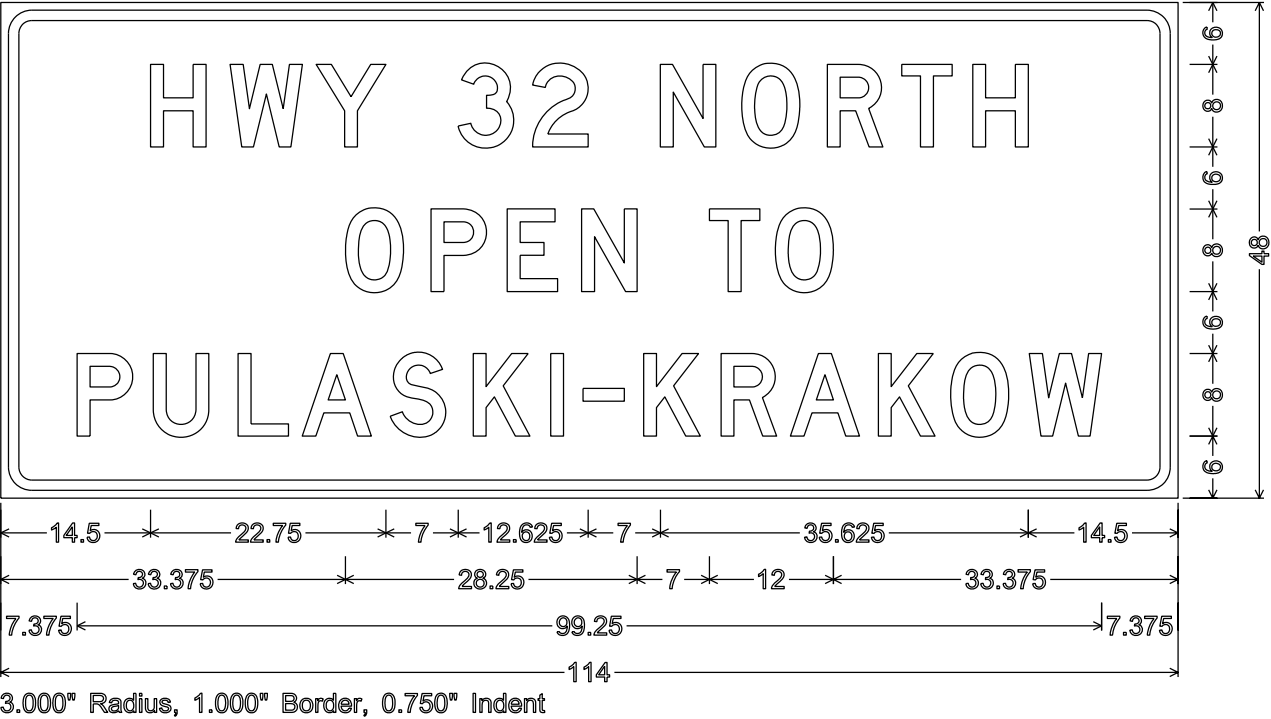
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

- 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

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

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

7

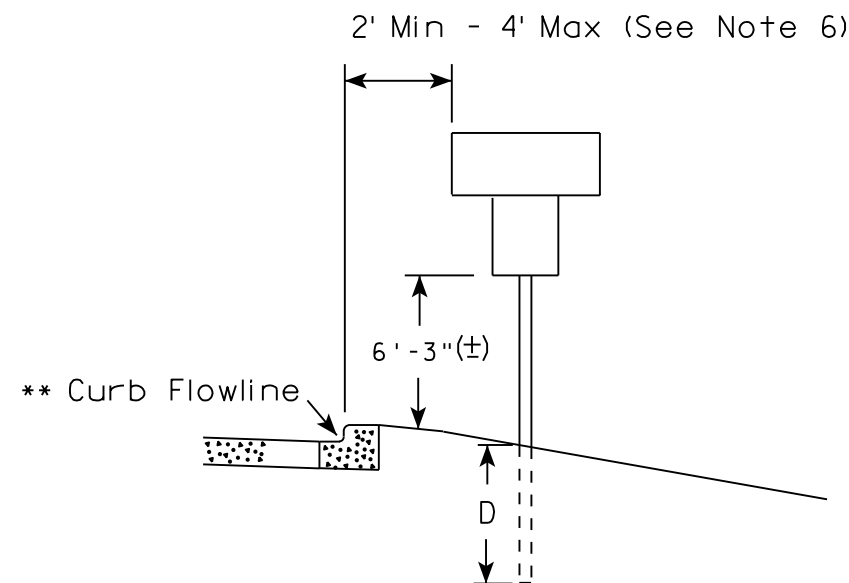
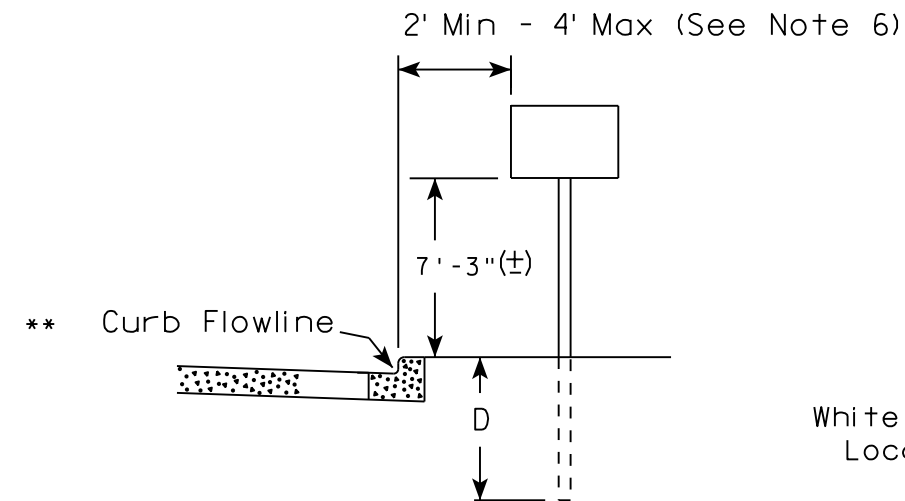


NOTES

- 1. Fixed Message Type II Signs - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - D

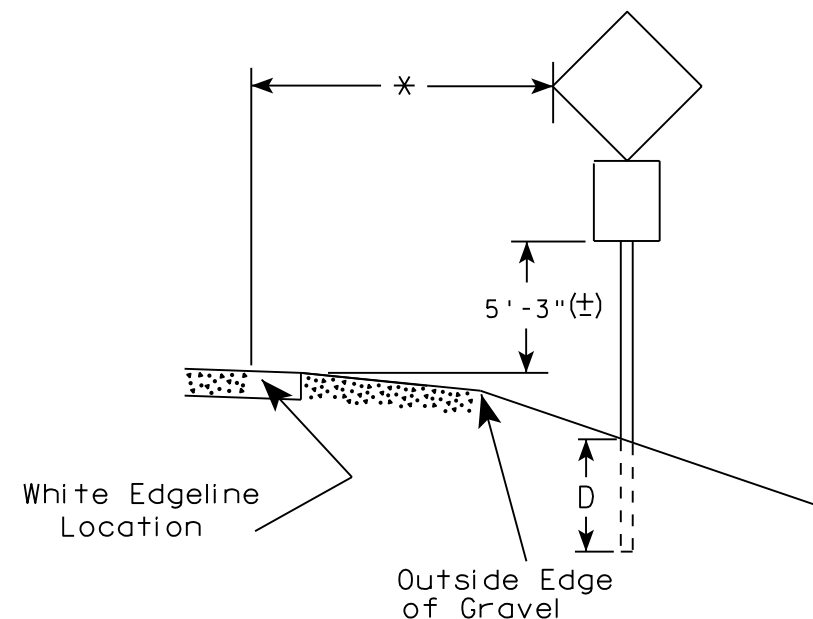
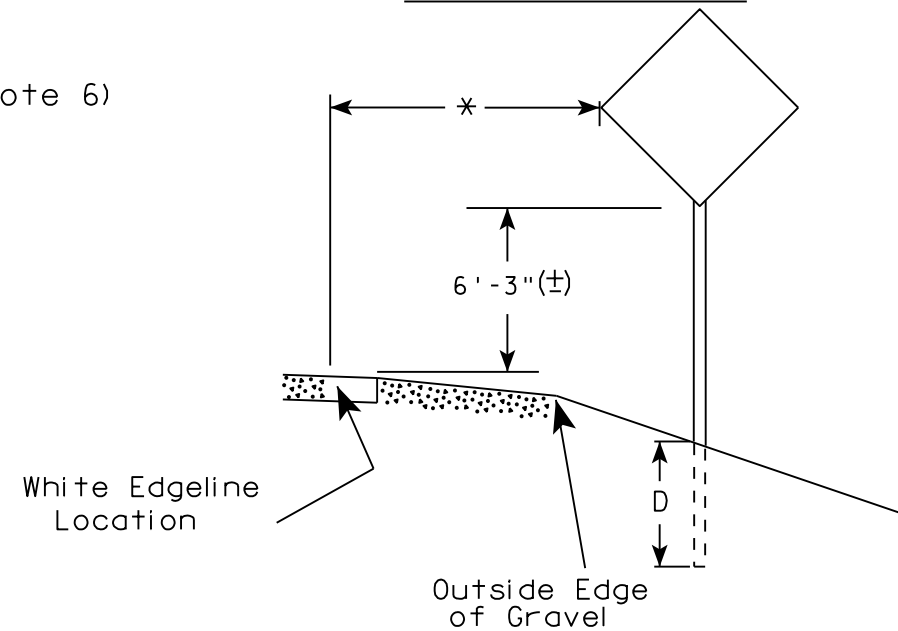
7

URBAN AREA



✱✱ 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.

RURAL AREA (See Note 2)



* 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.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

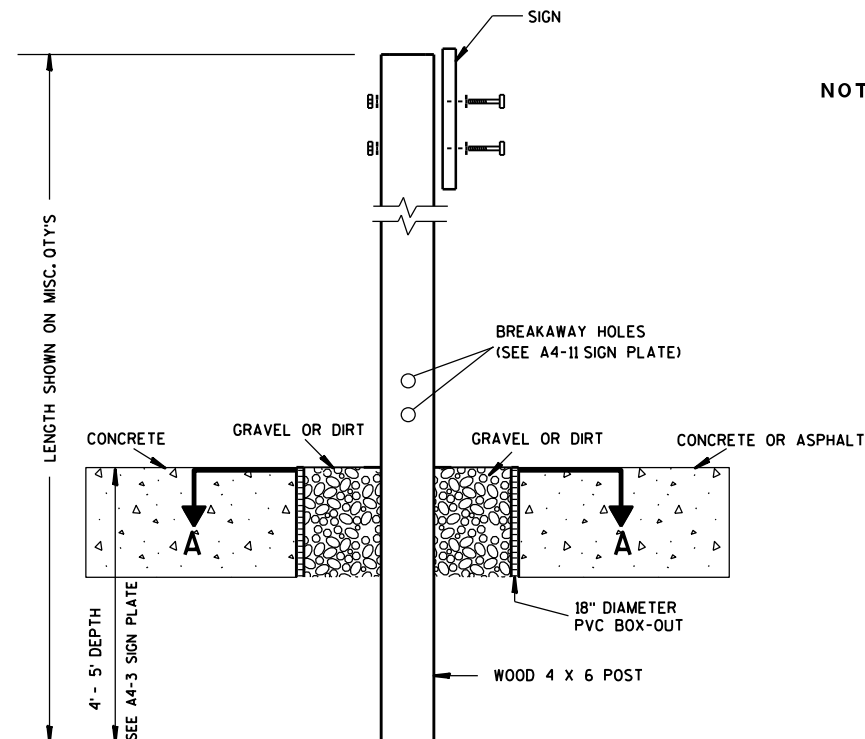
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

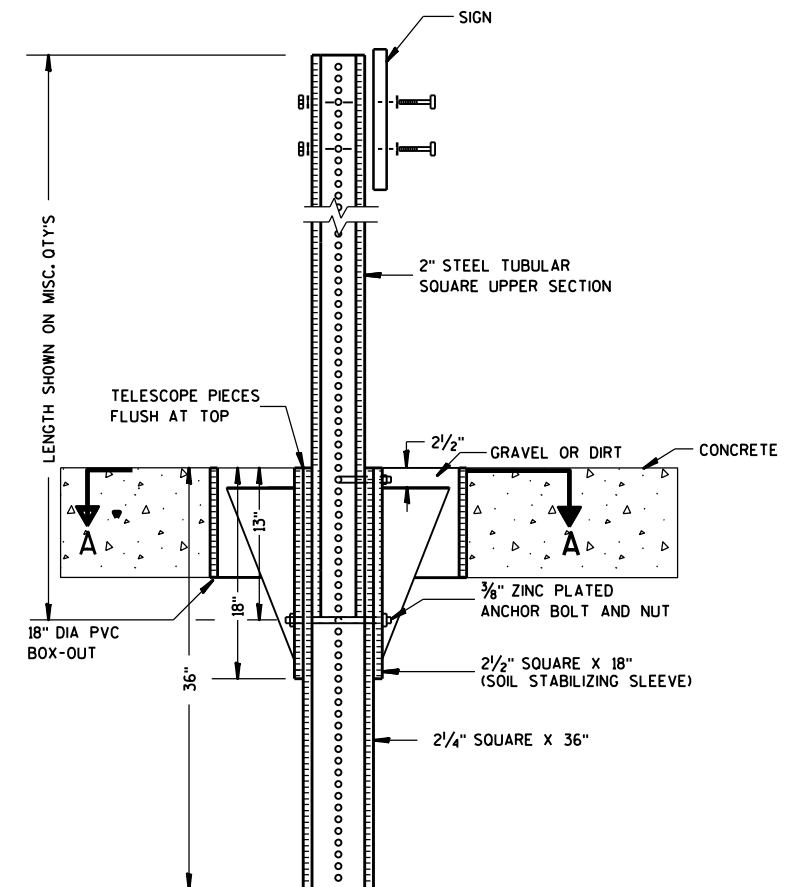
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

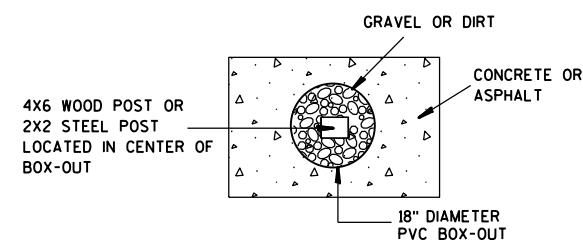
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES: 1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

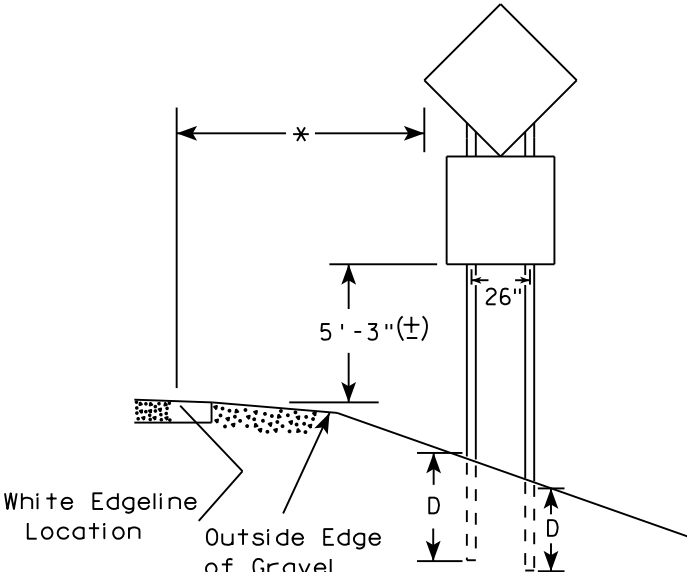
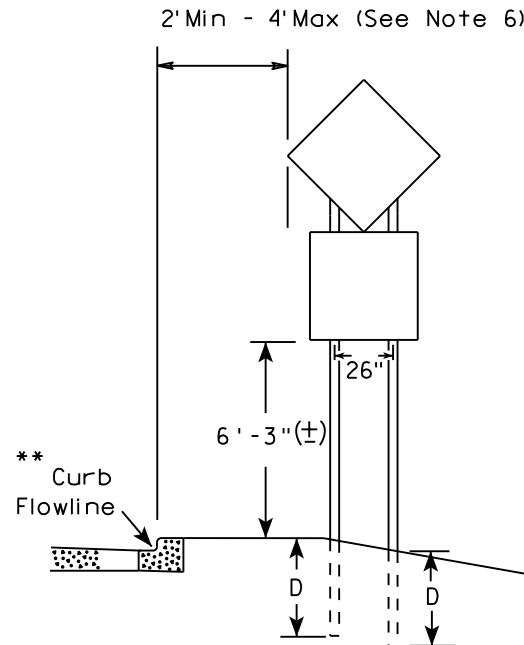
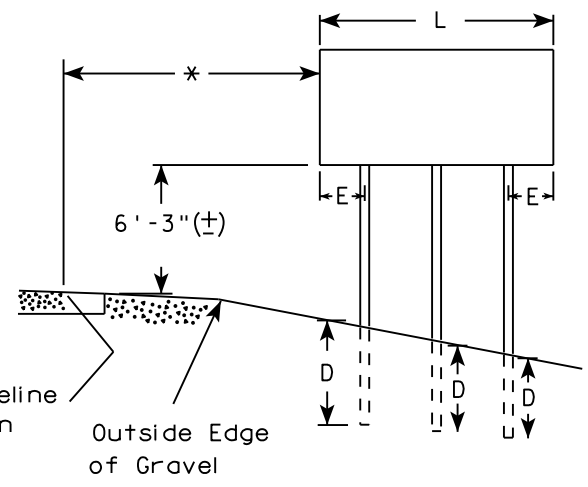
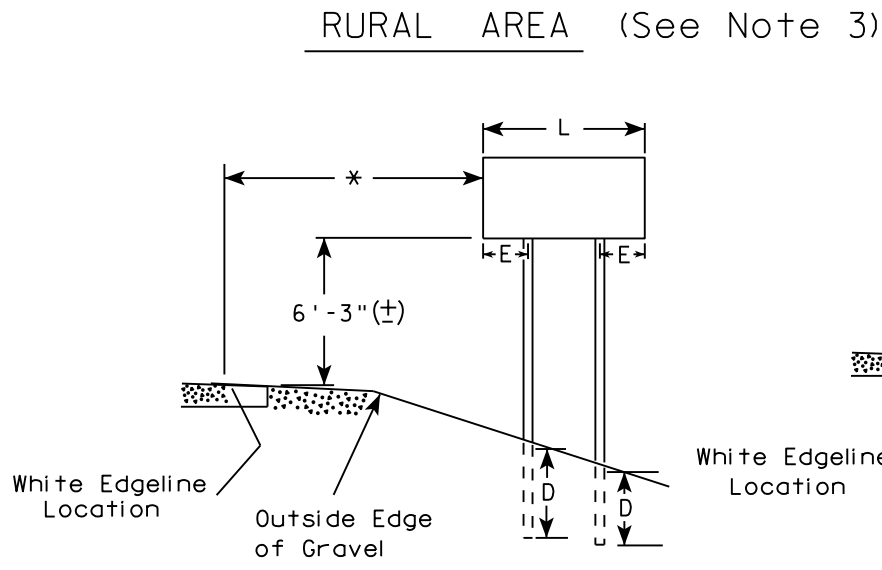
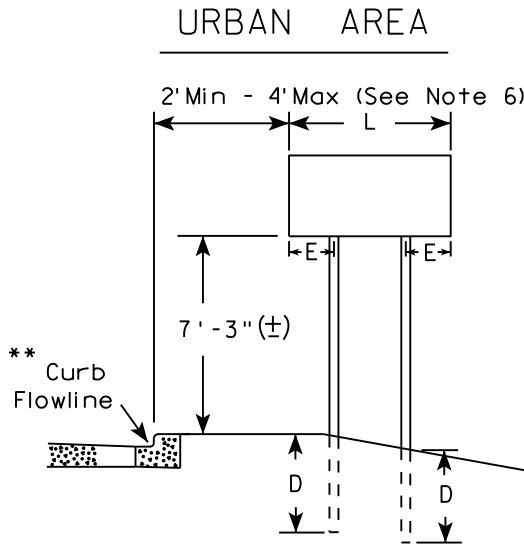
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

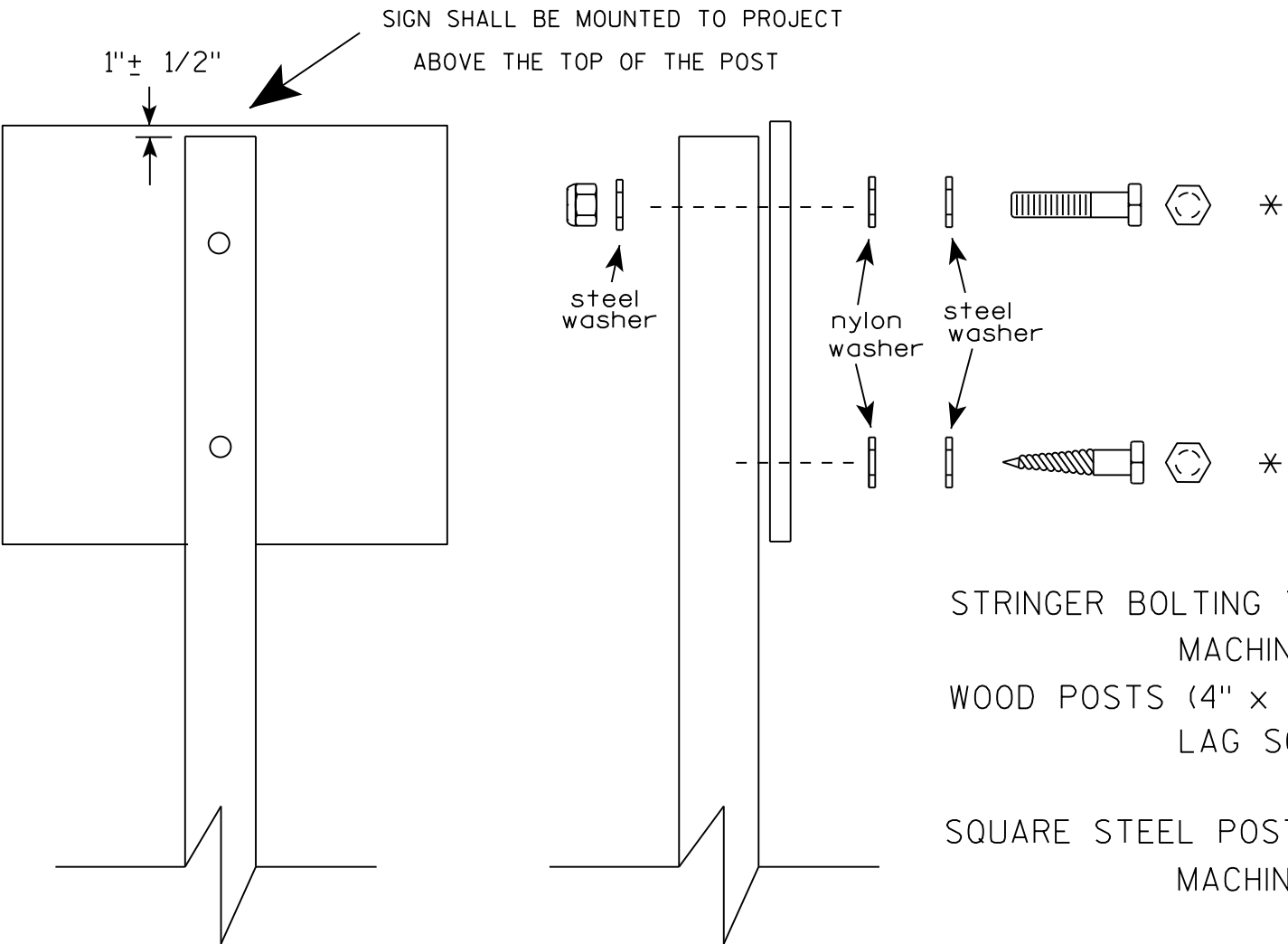
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 8/21/17	PLATE NO. A4-4.15

- GENERAL NOTES
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. J-Assemblies are considered to be one sign for mounting height.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. 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), 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" (±).

- * 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.
- ** 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.
- *** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



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

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

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

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

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

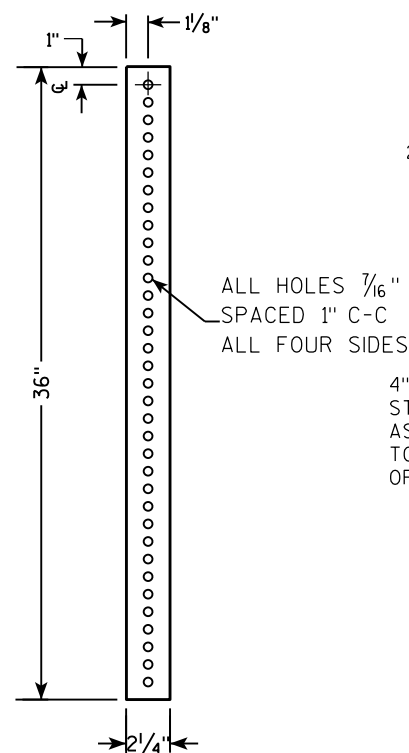
ATTACHMENT OF SIGNS
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

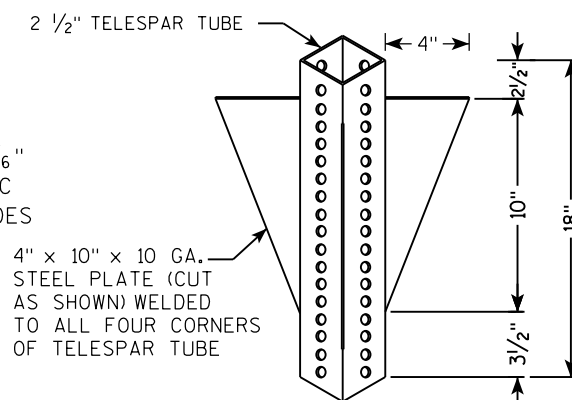
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



TELESCOPE PIECES FLUSH AT TOP

18" DIA SCHEDULE 40 PVC BOX-OUT

36"

18"

13"

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

3/16" ZINC PLATED ANCHOR BOLT AND NUT

3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

2 1/4" SQUARE X 36"

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES

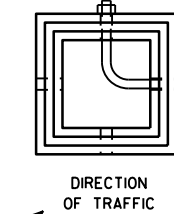
SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

SIGN

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

- Dimensions:**
 - Overall height: LENGTH SHOWN ON MISC. QTYS
 - Top section: 2" STEEL TUBULAR SQUARE UPPER SECTION
 - Telescope pieces: 36" (flush at top)
 - Anchor bolt and nut: 1"
 - Anchor bolt and nut: 3/8" ZINC PLATED ANCHOR BOLT AND NUT
 - Anchor bolt and nut: 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 - Anchor bolt and nut: 2 1/4" SQUARE X 36"
- Components:**
 - SIGN
 - SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 - ALL HOLES 7/16" SPACED 1" C-C
 - ALL FOUR SIDES
 - 3/8" ZINC PLATED CORNER

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



SECTION A-A

Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

PROJECT NO:

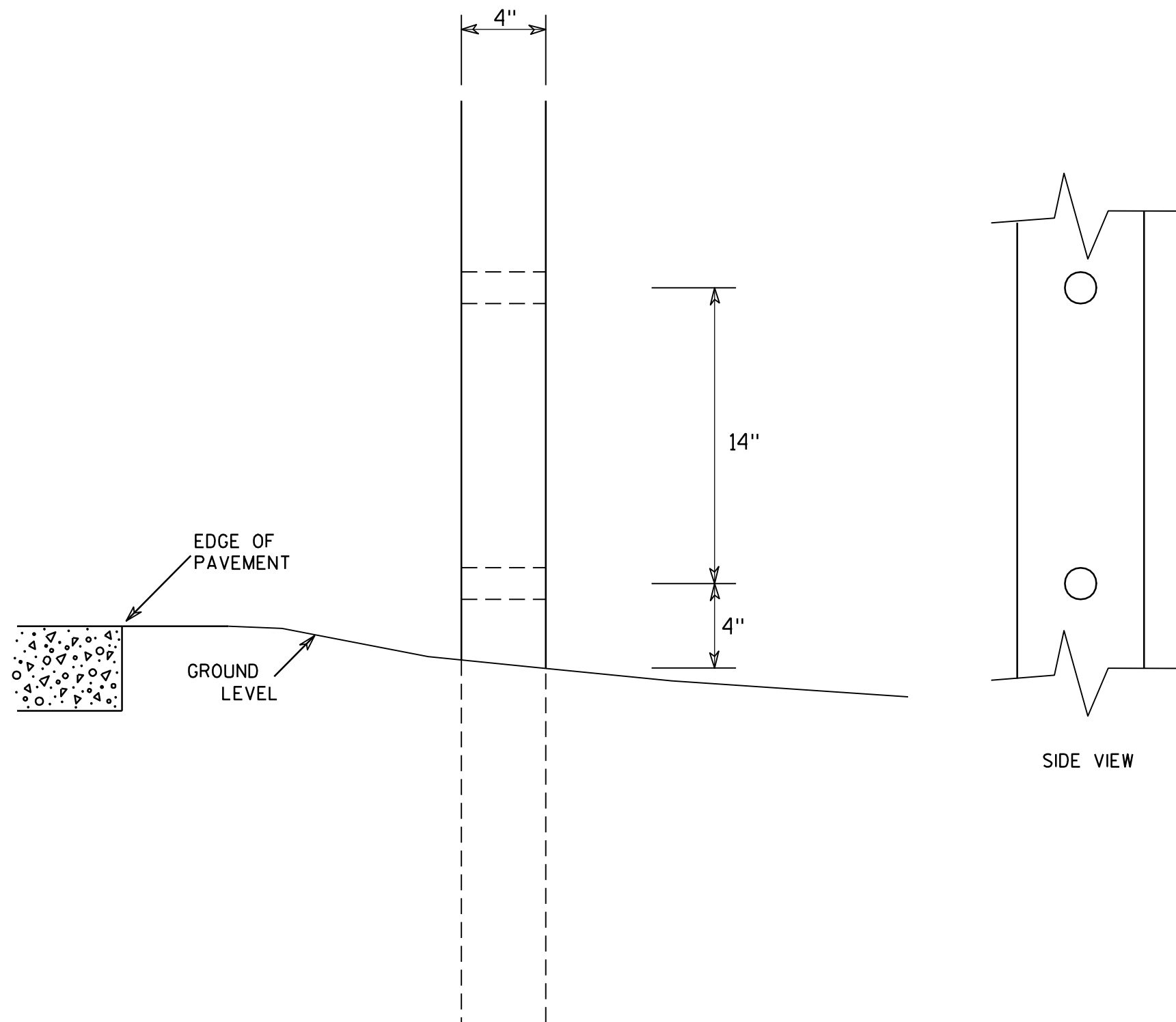
HWY:

COUNTY:

SHEET NO:

E

7

GENERAL NOTES

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

7

**4 X 6 WOOD POST
MODIFICATIONS**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

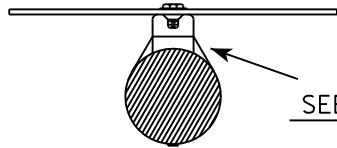
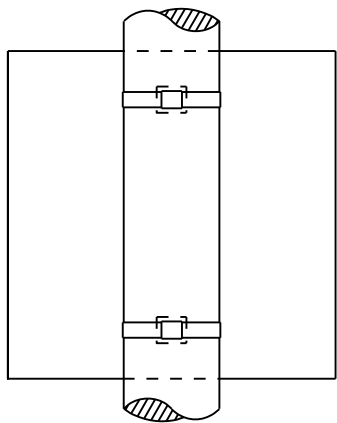
COUNTY:

SHEET NO:

E

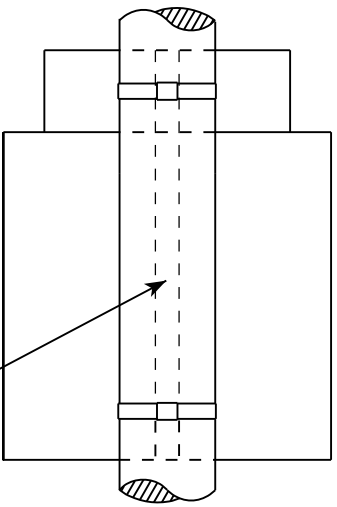
BANDING

SINGLE SIGN

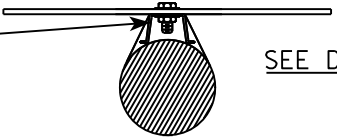


SEE DETAIL A

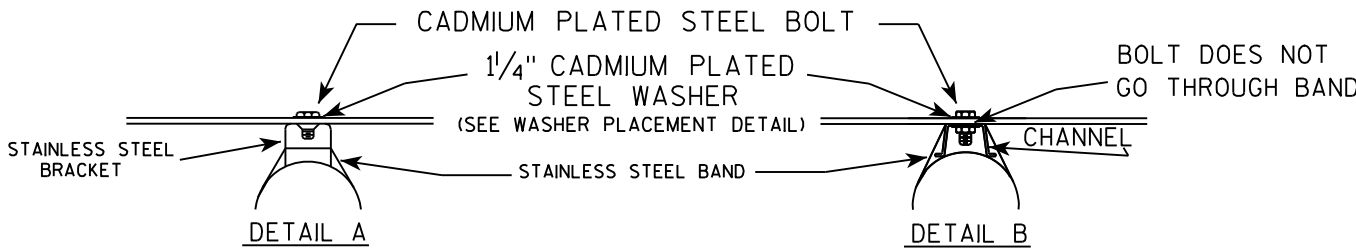
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



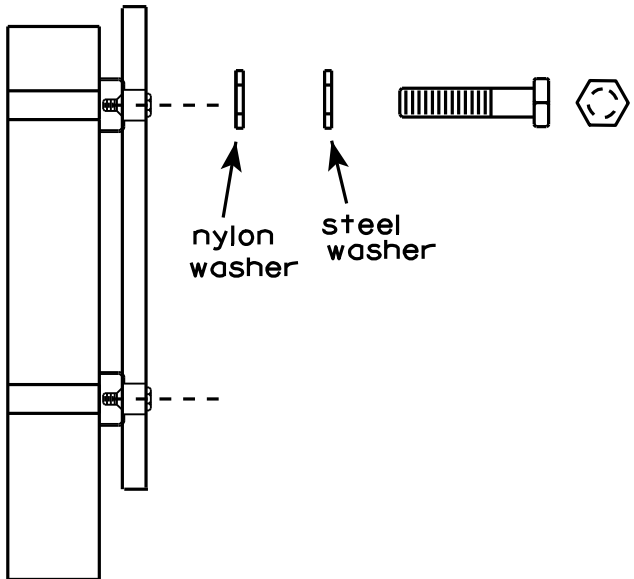
SEE DETAIL B



GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.

WASHER PLACEMENT



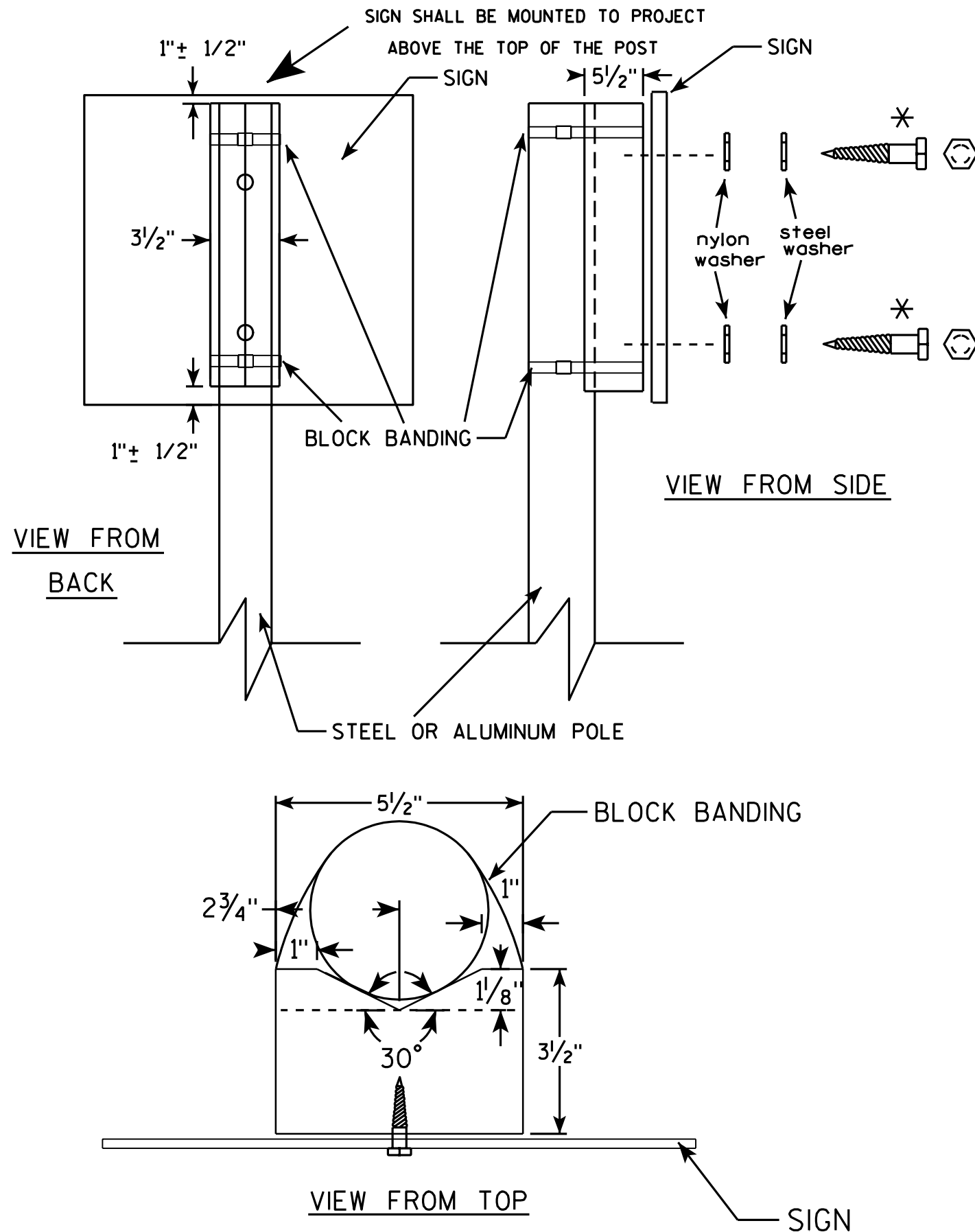
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3



GENERAL NOTES

1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
 - b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
 - c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

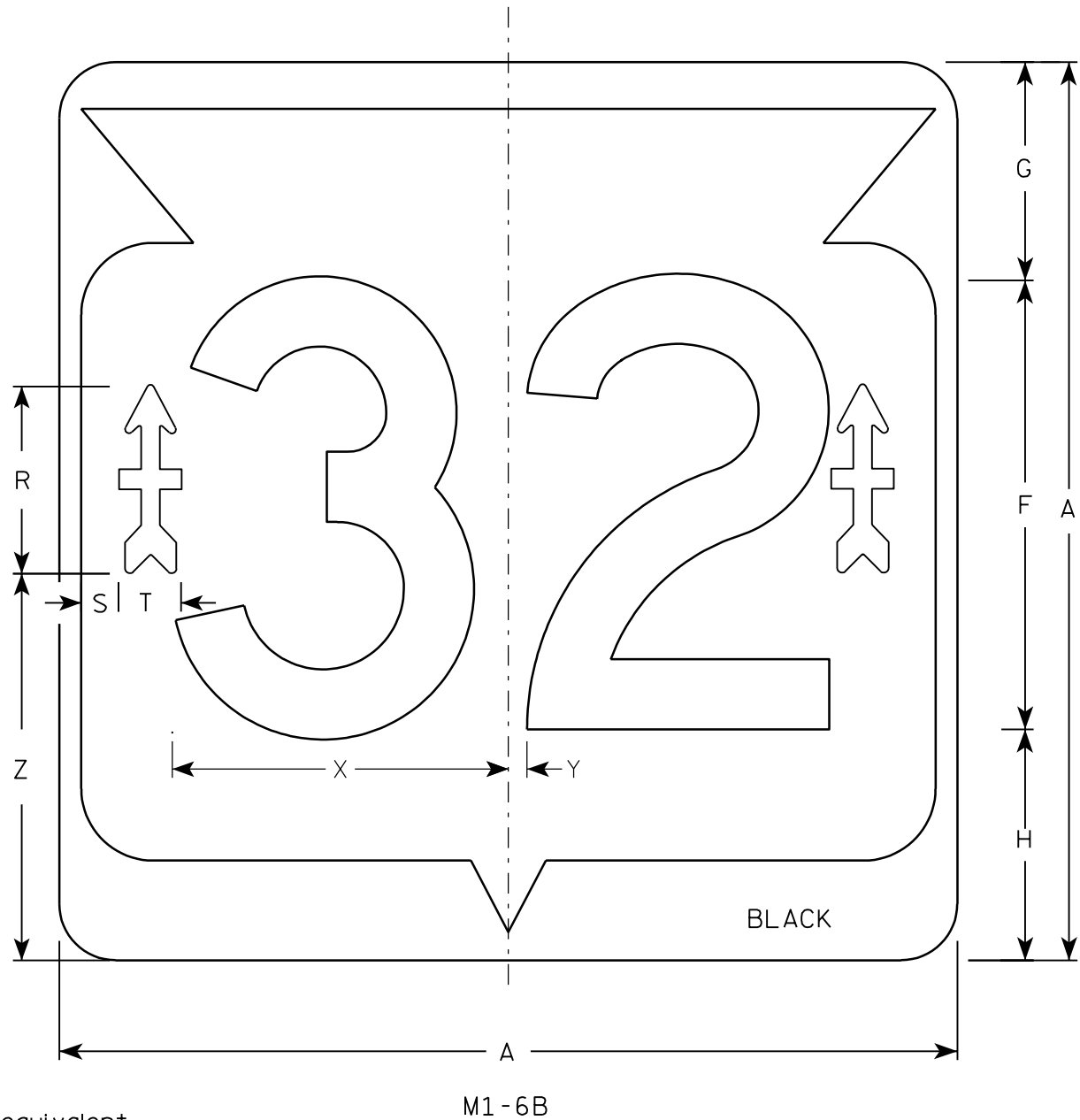
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO:

E



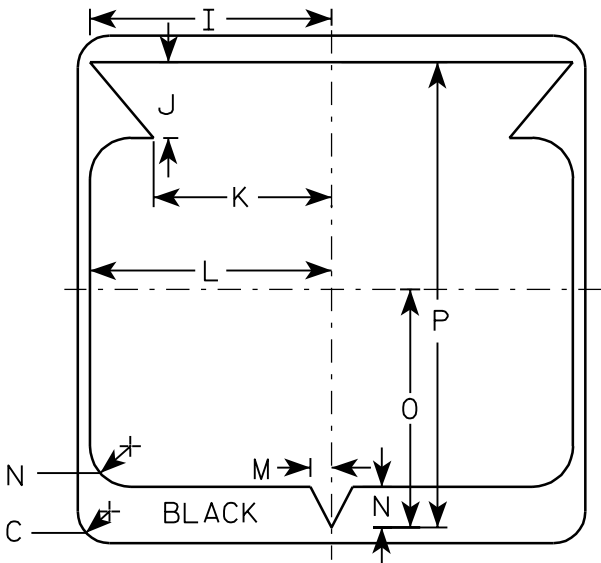
Metric equivalent
for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

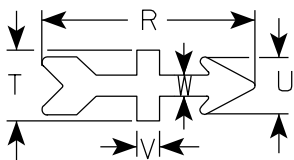
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8		5 1/8	3/4	1 7/8	1 1/2	5/8	5/8	9	1/2	10 1/2	4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33		7 1/2	1 1/2	2 1/2	2	7/8	3/4	13 1/2	3/4	15 1/2	9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33		7 1/2	1 1/2	2 1/2	2	7/8	3/4	13 1/2	3/4	15 1/2	9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33		7 1/2	1 1/2	2 1/2	2	7/8	3/4	13 1/2	3/4	15 1/2	9.0	.81

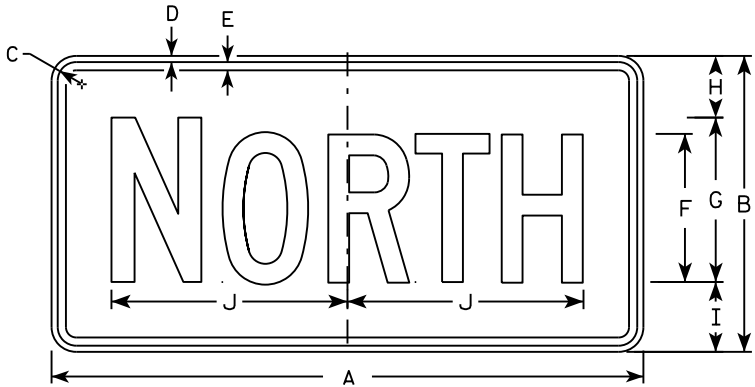
NOTES

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



32nd DIVISION ARROW
ACTUAL SIZE

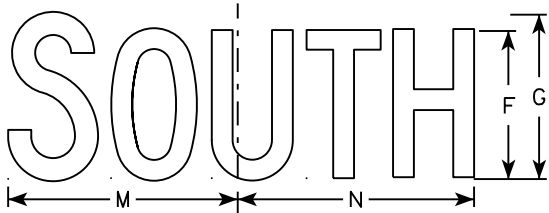




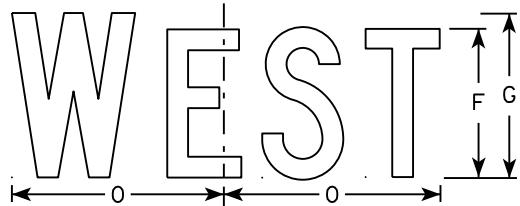
M3-1
MM3-1
MP3-1



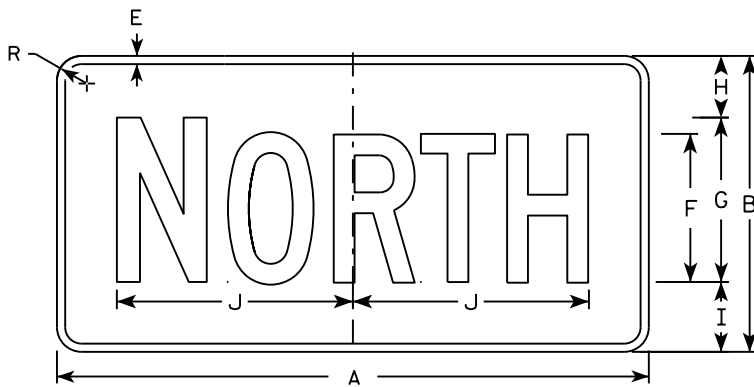
M3-2
MM3-2
MP3-2



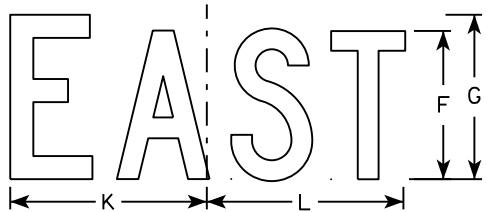
M3-3
MM3-3
MP3-3



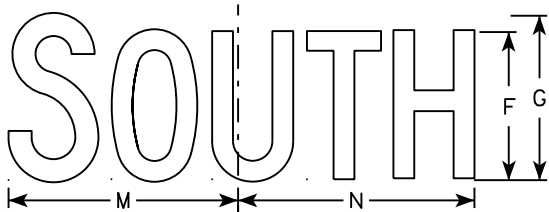
M3-4
MM3-4
MP3-4



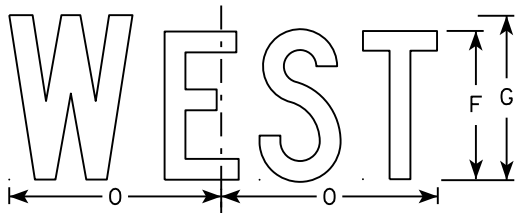
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thru M3-4
SERIES

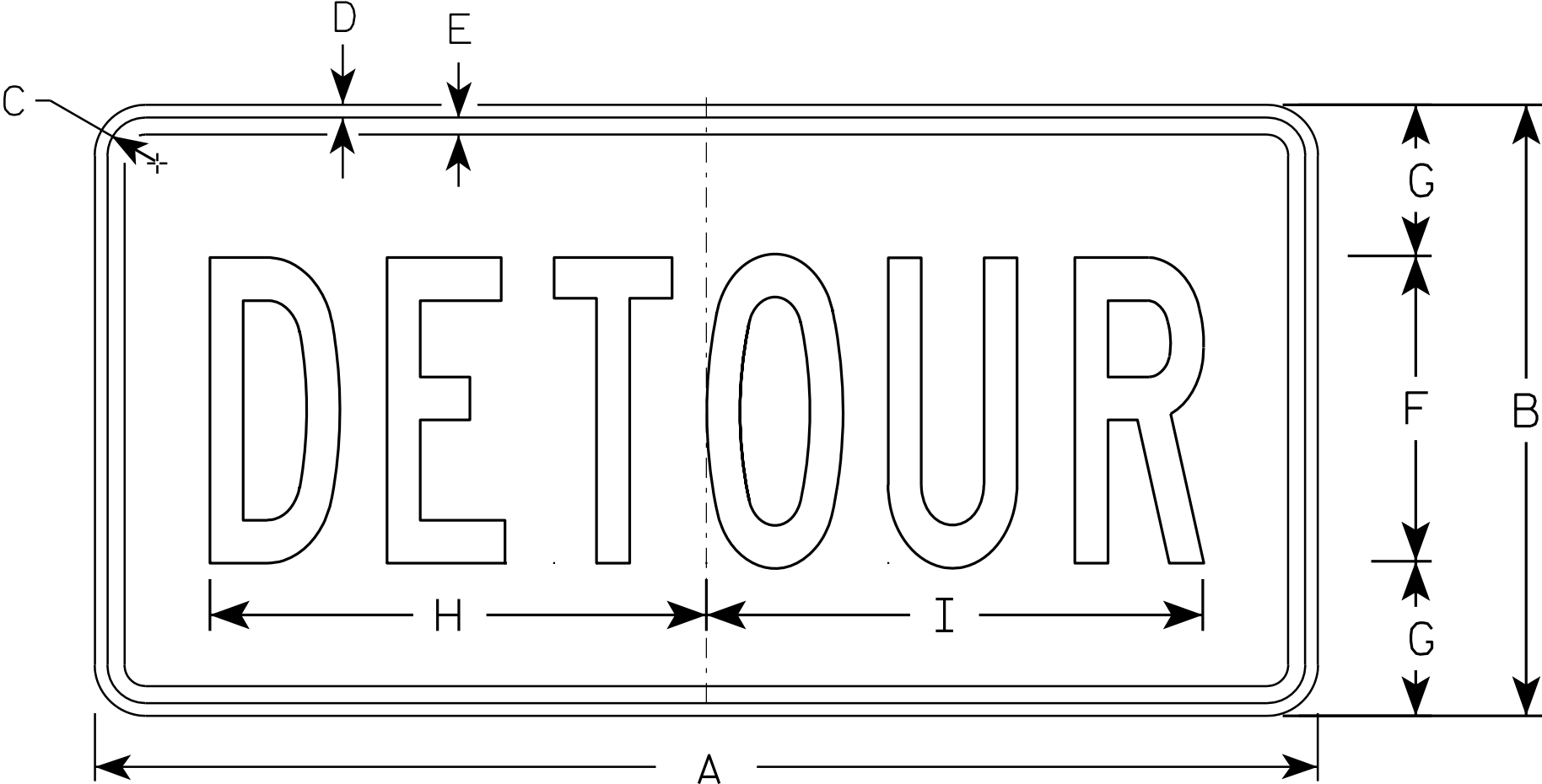
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M3-1.14

NOTES

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



M4 - 8

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

STANDARD SIGN
M4 - 8

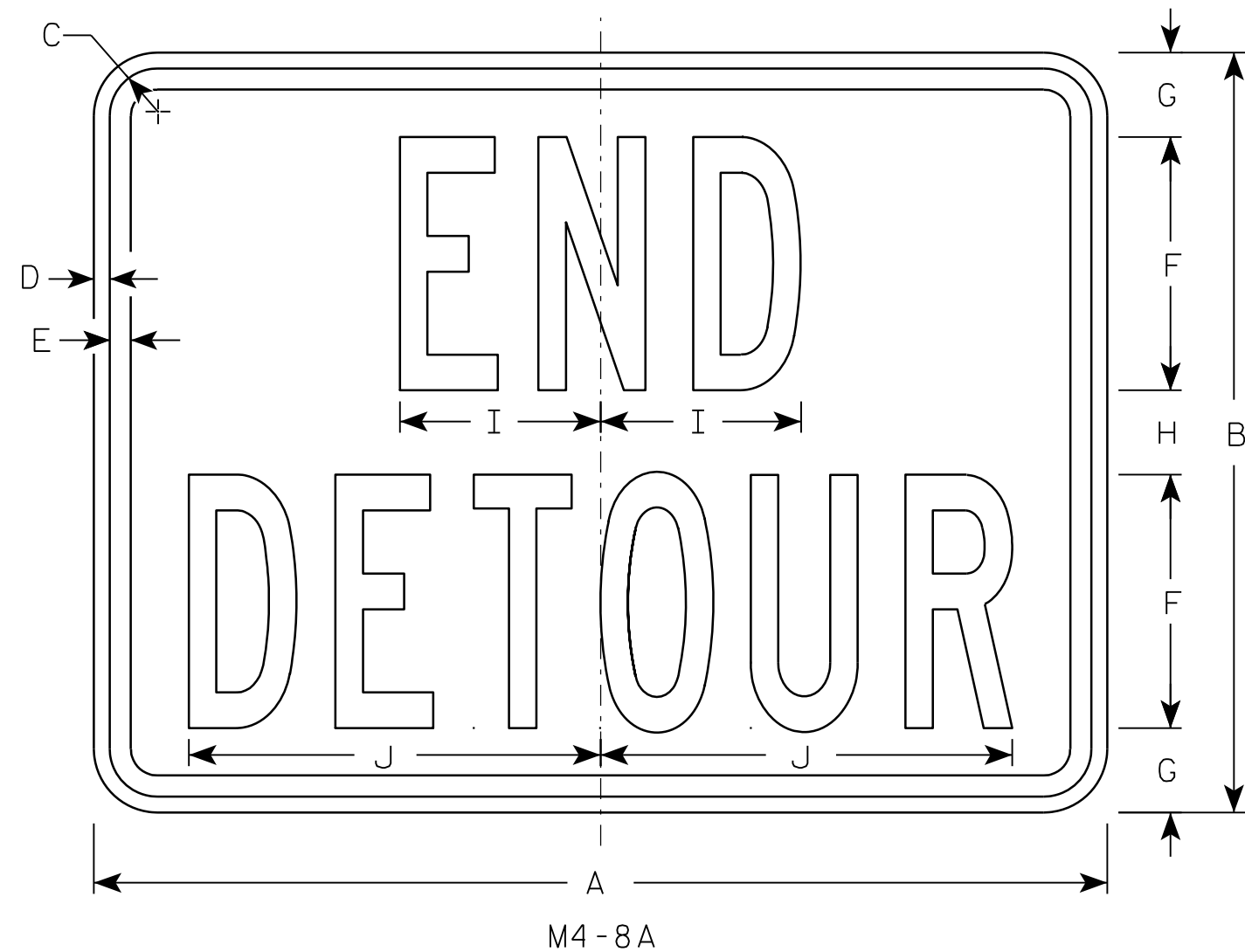
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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7



NOTES

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

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

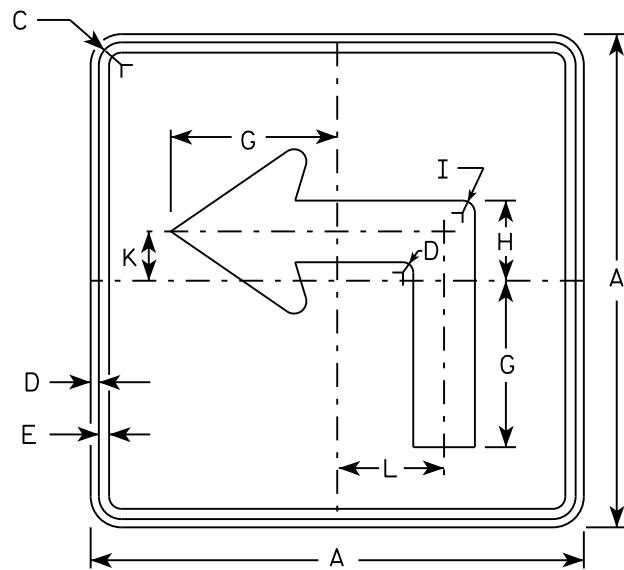
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M4-8A

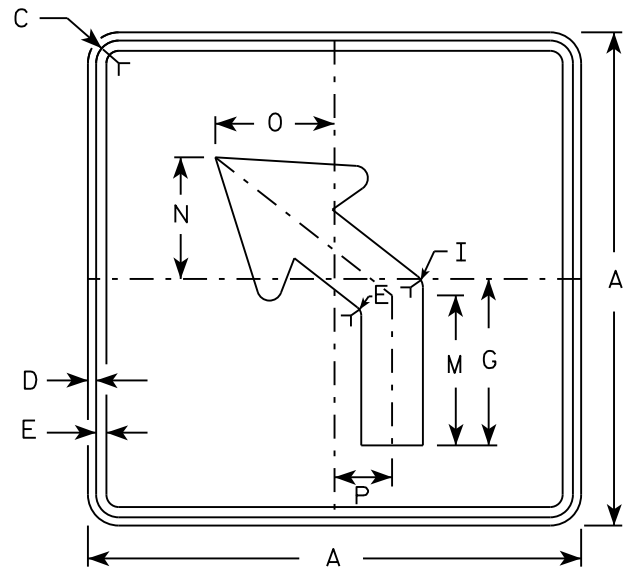
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

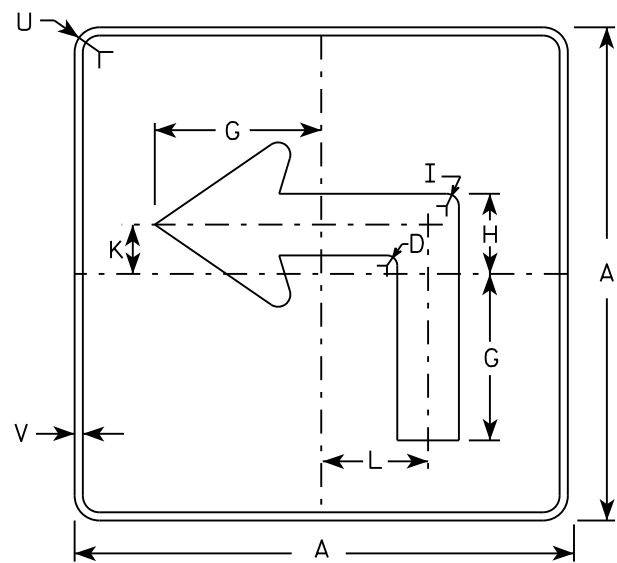
DATE 3/9/11 PLATE NO. M4-8A.2



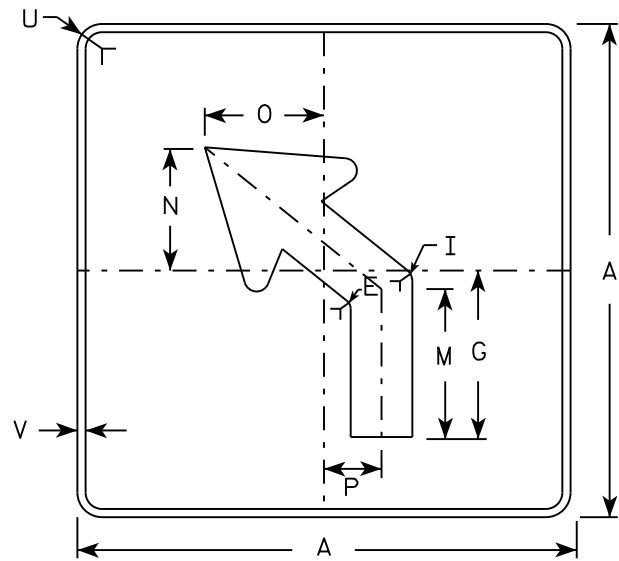
M5-1L
MM5-1L
M05-1L
MP5-1L



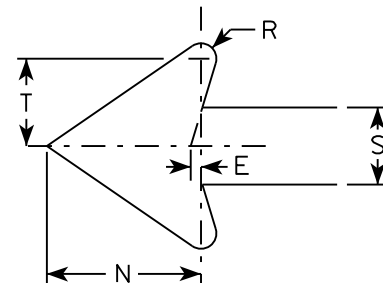
M5-2L
MM5-2L
M05-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | |
|-----------------|---|
| M5-1 and M5-2 | Background - White |
| | Message - Black |
| MB5-1 and MB5-2 | Background - Blue |
| | Message - White |
| MK5-1 and MK5-2 | Background - Green |
| | Message - White |
| MM5-1 and MM5-2 | Background - White |
| | Message - Green |
| MN5-1 and MN5-2 | Background - Brown |
| | Message - White |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
| | Message - Black |
| MP5-1 and MP5-2 | Background - White - Type H Reflective |
| | Message - Blue |
| MR5-1 and MR5-2 | Background - Brown |
| | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

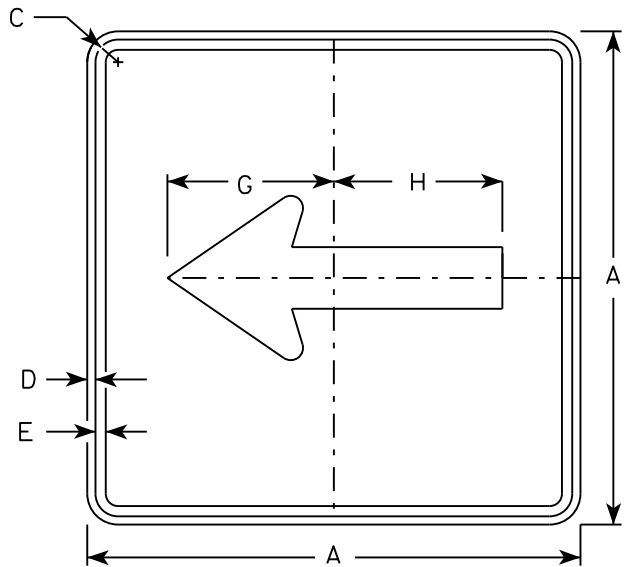
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M5-1 & M5-2

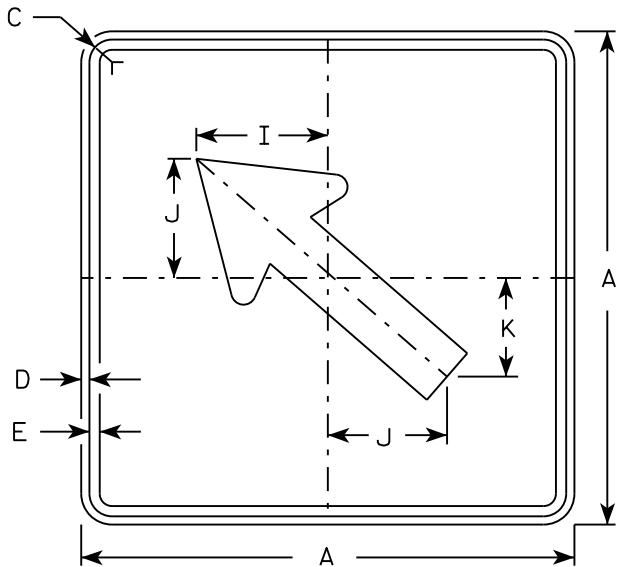
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

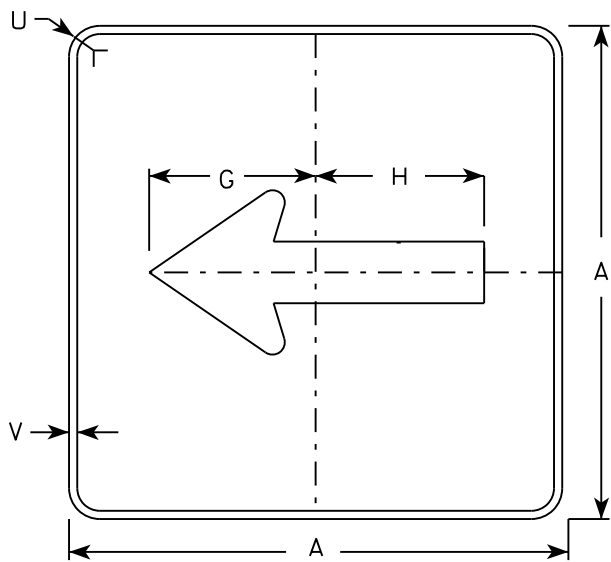
DATE 10/15/15 PLATE NO. M5-1.13



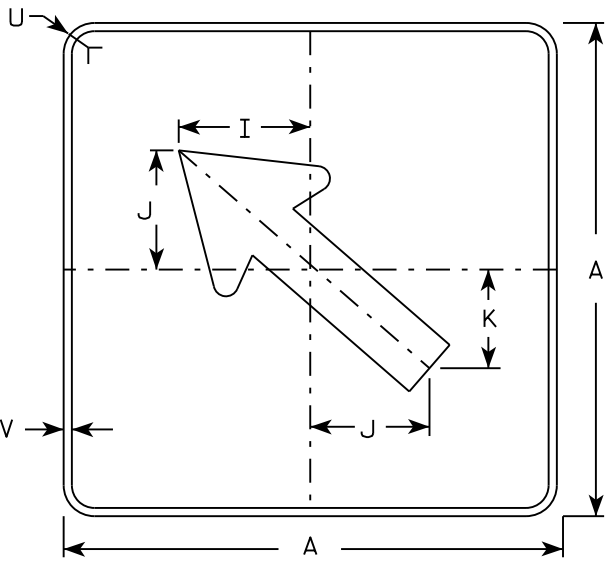
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



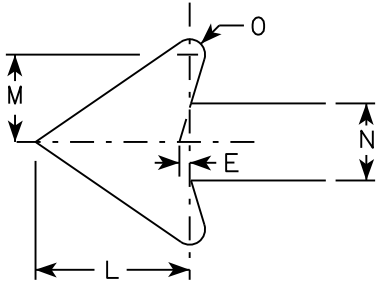
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



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



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



NOTES

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

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

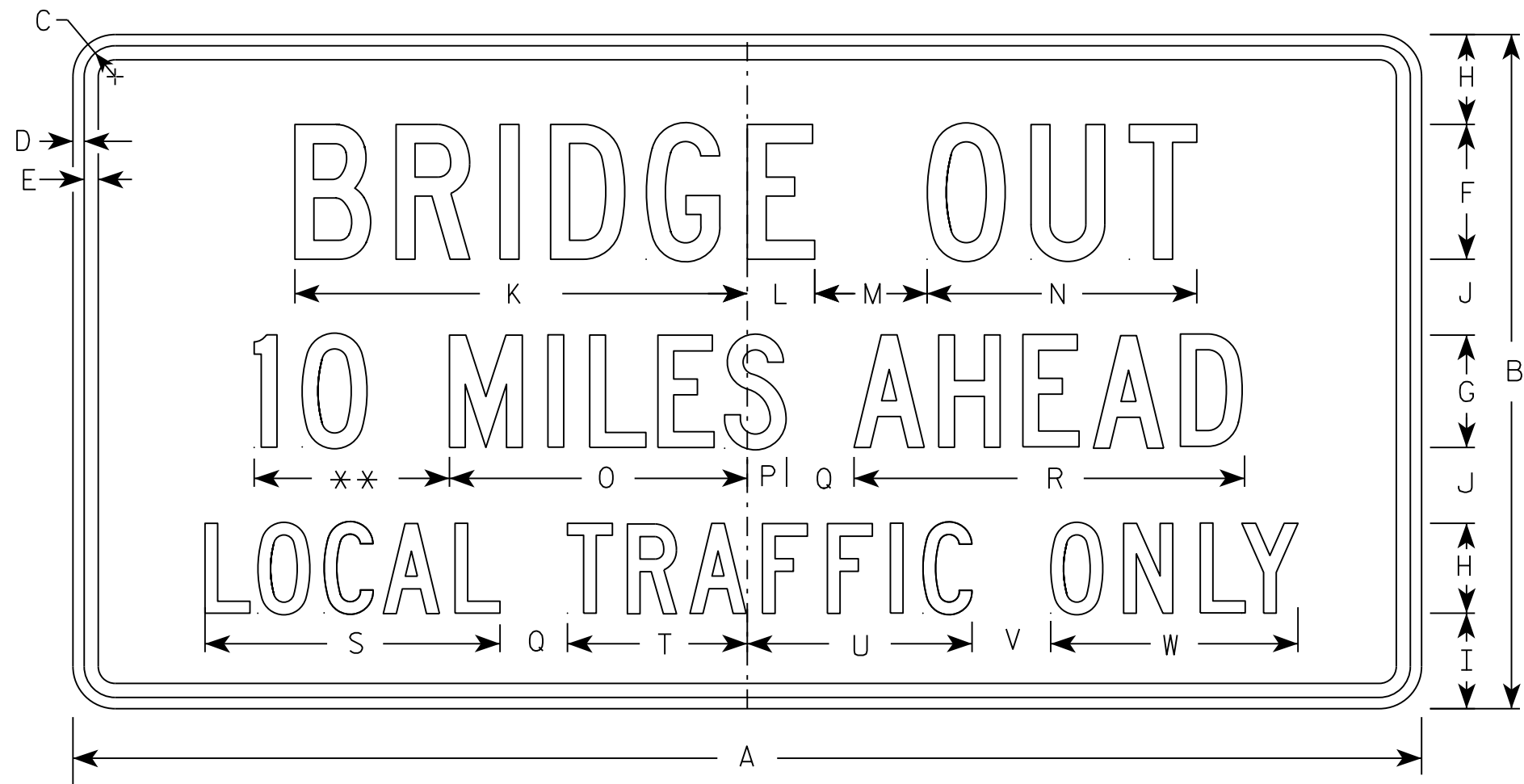
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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

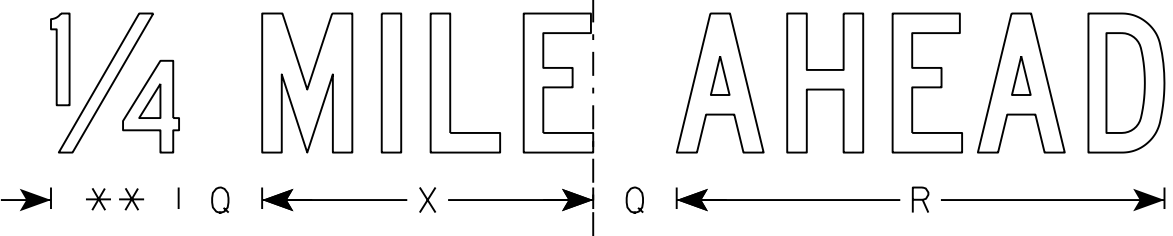
NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



** See Note 5

R11-3B



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 3⁄8	1⁄2	5⁄8	4	3	2 1⁄2	2	2	13 1⁄4	2 1⁄4	3	8	8	1 1⁄2	2	10 3⁄4	8 3⁄8	4 3⁄4	6 1⁄2	2	6 3⁄4	7 1⁄8			4.5
2S	60	30	1 3⁄8	1⁄2	5⁄8	6	5	4	4 1⁄4	3 3⁄8	20 1⁄8	3	5	12	13 1⁄4	1 3⁄4	3	17 3⁄8	13 1⁄8	8	10	3 1⁄2	11	11 7⁄8			12.5
2M	60	30	1 3⁄8	1⁄2	5⁄8	6	5	4	4 1⁄4	3 3⁄8	20 1⁄8	3	5	12	13 1⁄4	1 3⁄4	3	17 3⁄8	13 1⁄8	8	10	3 1⁄2	11	11 7⁄8			12.5
3																											
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

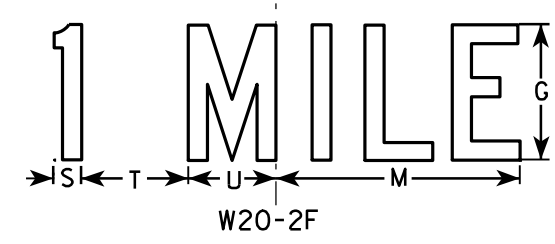
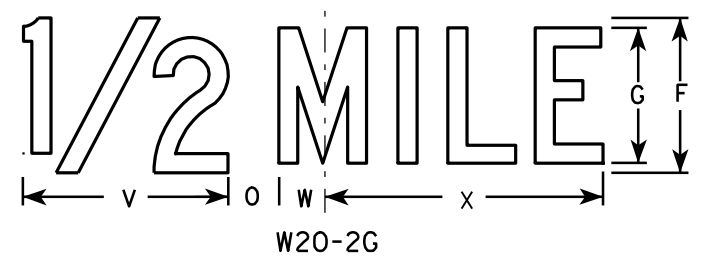
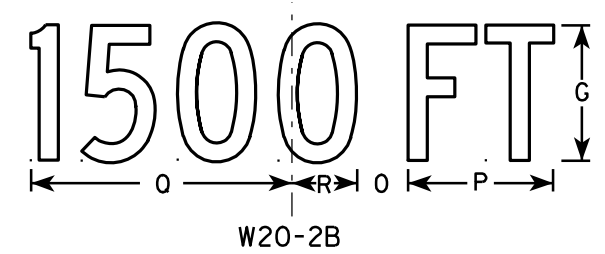
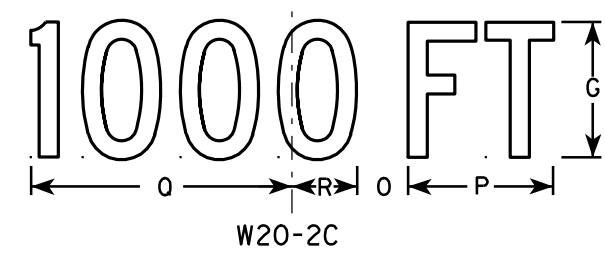
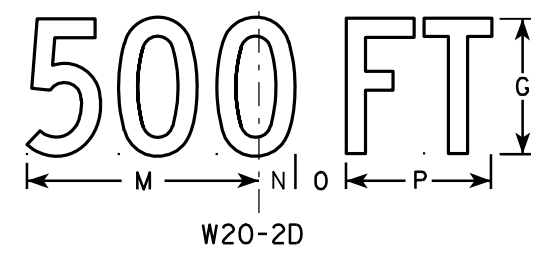
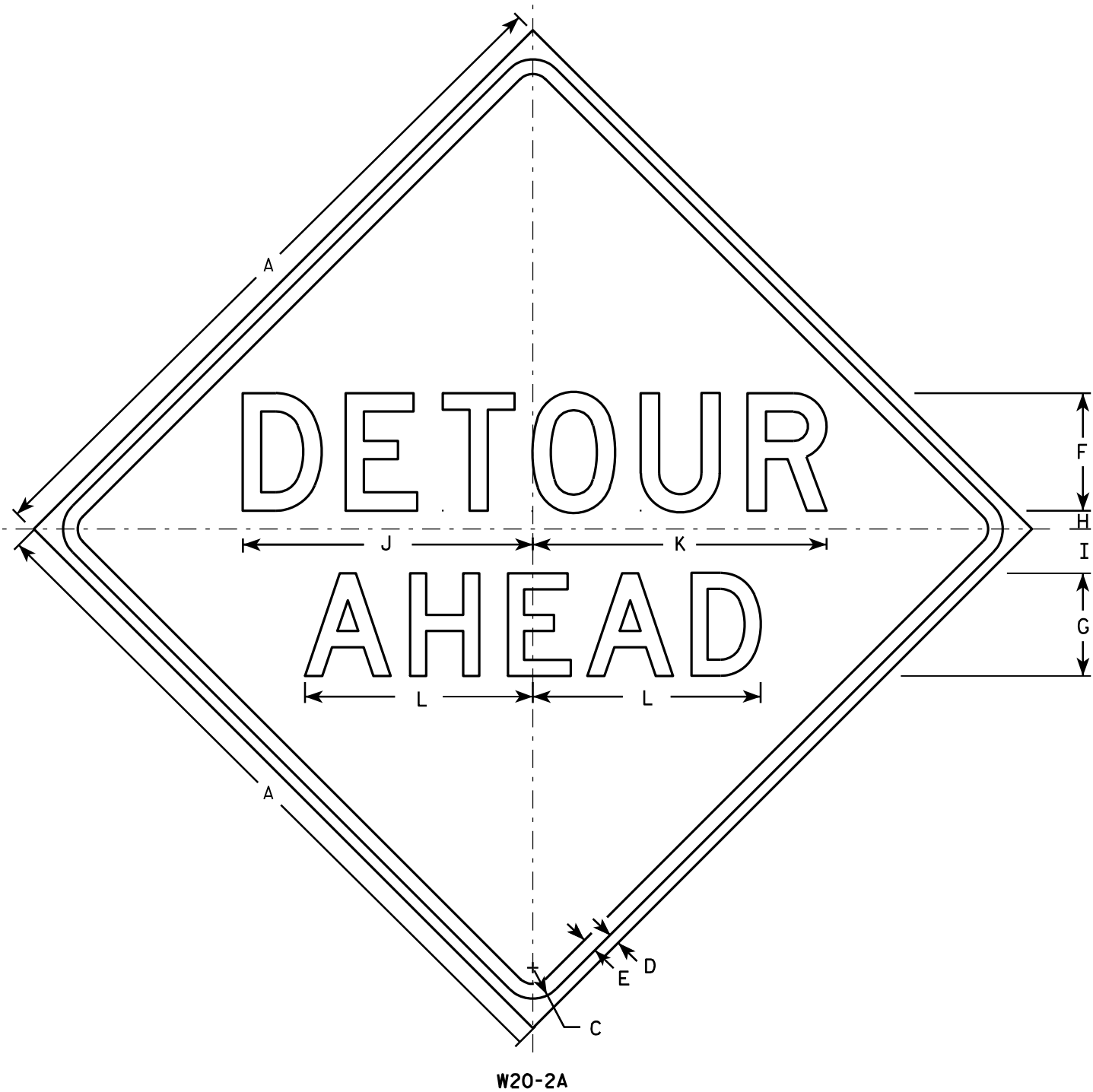
E

STANDARD SIGN
R11-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
For State Traffic Engineer

DATE 3/21/17 PLATE NO. R11-3B.3



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch* for State Traffic Engineer
DATE 3/18/11 PLATE NO. W20-2.6

PROJECT NO:

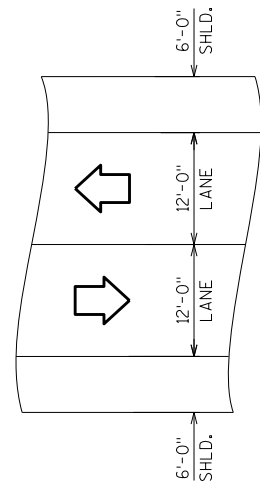
HWY:

COUNTY:

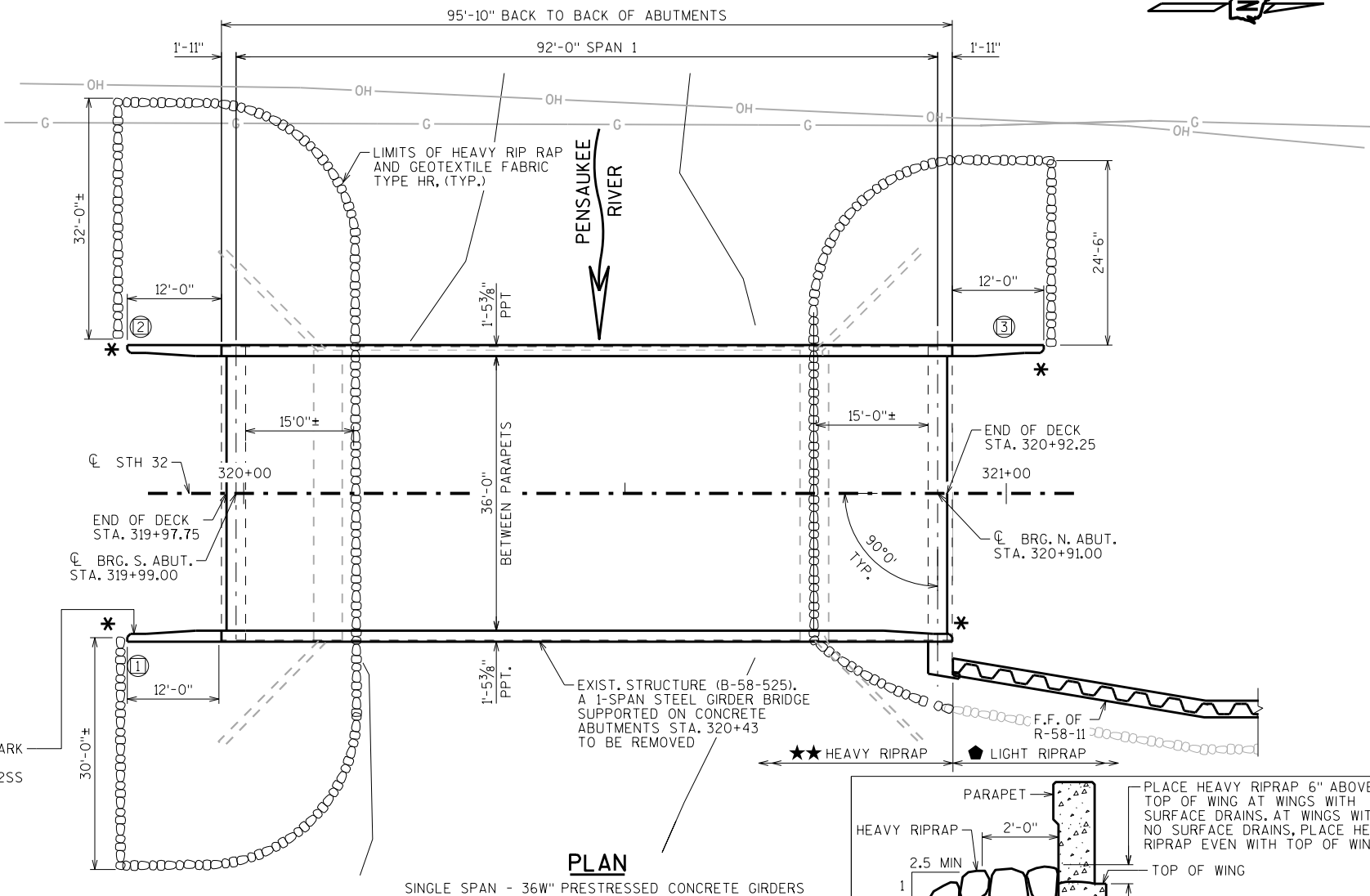
SHEET NO:

E

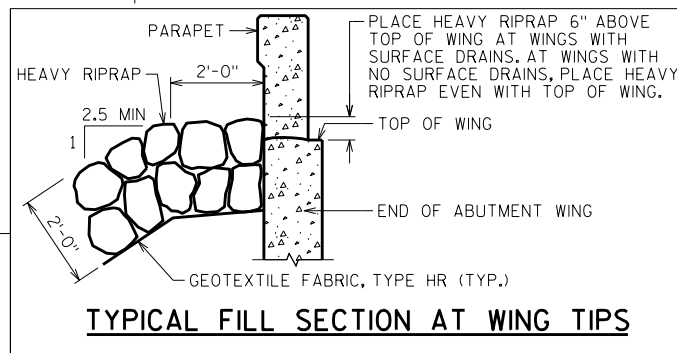
- * PROVIDE FOR THREE BEAM GUARD RAIL ATTACHMENT. AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".
- ⊖ INDICATES WING NUMBER
- ★★ HEAVY RIPRAP PAID FOR UNDER STRUCTURE B-58-130 PLANS.
- ◆ LIGHT RIPRAP PAID FOR UNDER STRUCTURE R-58-11 PLANS. (AT NORTHEAST CORNER ONLY)



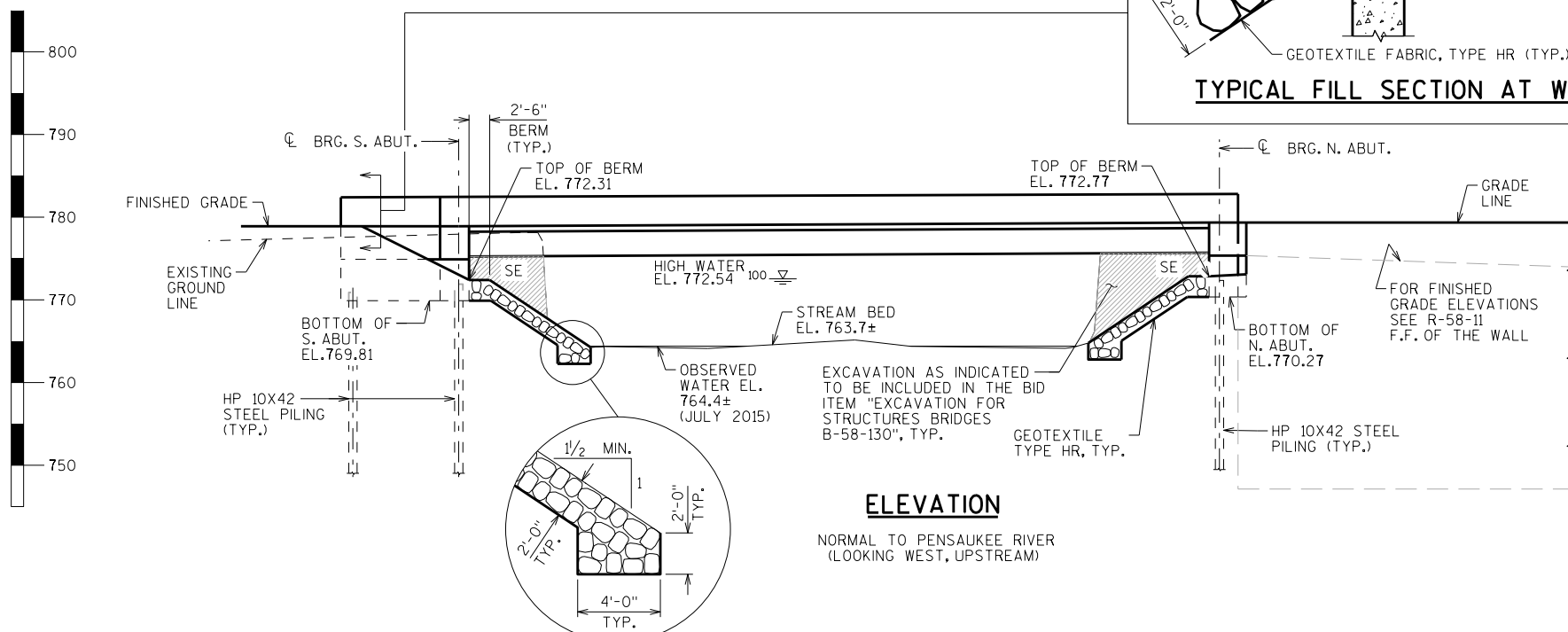
NAME PLATE AND BENCH MARK CAP (WHEN SUPPLIED) FOR LOCATION SEE "PARAPET 42SS ENDING ON WINGS 1, 2, & 3" SHEET.



PLAN
SINGLE SPAN - 36W" PRESTRESSED CONCRETE GIRDERS



TYPICAL FILL SECTION AT WING TIPS



ELEVATION

NORMAL TO PENSAAKEE RIVER
(LOOKING WEST, UPSTREAM)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.10
OPERATING RATING FACTOR: RF = 1.43
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

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

MATERIAL PROPERTIES:

CONCRETE MASONRY: _____ f'c = 4,000 P.S.I.
SUPERSTRUCTURE _____ f'c = 3,500 P.S.I.
ALL OTHER _____

BAR STEEL REINFORCEMENT: _____ f_y = 60,000 P.S.I.
GRADE 60 _____

36W" PRESTRESSED GIRDERS: _____ f'c = 8,000 P.S.I.
CONCRETE MASONRY _____
STRANDS: 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. SOUTH ABUTMENT ESTIMATED 45 LONG - PILE POINTS REQUIRED NORTH ABUTMENT ESTIMATED 40 LONG - PILE POINTS REQUIRED

** 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.

HYDRAULIC DATA

100 YEAR FREQUENCY

Q₁₀₀ = 2,200 C.F.S.
VEL. = 4.0 F.P.S.
HW₁₀₀ = EL. 772.54
WATERWAY AREA = 547 SQ. FT.
DRAINAGE AREA = 46.3 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

Q₂ = 615 C.F.S.
VEL₂ = 2.1 F.P.S.
HW₂ = EL. 769.59

TRAFFIC VOLUME

STH 32

ADT = 3,400 (2041)
R.D.S. = 55 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. 36W" PRESTRESSED GIRDER DETAILS 1
9. 36W" PRESTRESSED GIRDER DETAILS 2
10. STEEL DIAPHRAGM 36W"
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE DETAILS
13. PARAPET 42SS ENDING ON WINGS 1,2&3
14. PARAPET 42SS ENDING ON DECK (AT NE CORNER)

STRUCTURE DESIGN CONTACTS:
JOEL MAAS (608) 267-0273
AARON BONK (608) 261-0261

NO.	DATE	REVISION	BY
BUREAU OF STRUCTURES			
ACCEPTED <i>William C. Dehner</i> 10/31/18 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-58-130			
STH 32 OVER PENSAAKEE RIVER			
COUNTY	SHAWANO	TOWN	ANGELICA
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	JDM	DESIGNED CK'D.	EMK
DRAWN BY	DDS	PLANS CK'D.	JDM
GENERAL PLAN			SHEET 1 OF 14

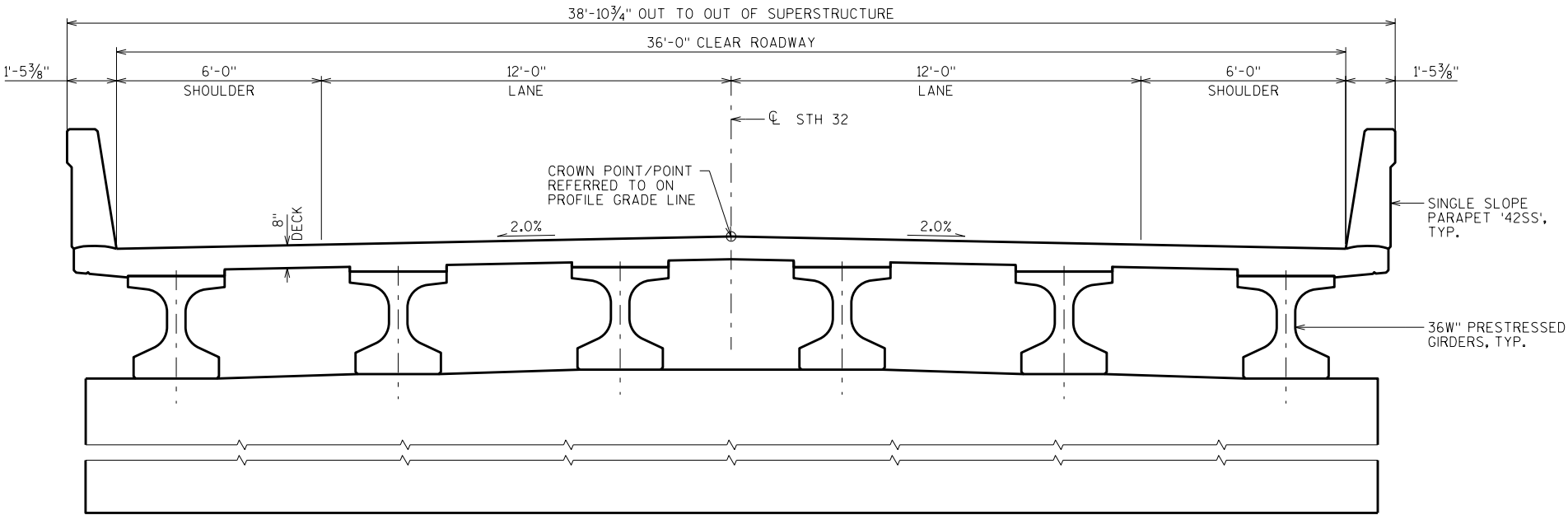
I.D. 9190-26-00A

DATE: JULY 2018

SCALE = 10.00

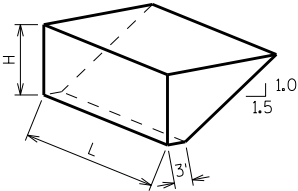
GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
- THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
- BEVEL EXPOSED EDGES OF CONCRETE $\frac{3}{4}$ " UNLESS OTHERWISE NOTED.
- THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-58-130" SHALL BE THE EXISTING GROUNDLINE.
- AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.
- EXCAVATION BELOW THE ABUTMENT AND USE OF ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.
- THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK SURFACES AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT DIAPHRAGMS.
- PIGMENTED PROTECTIVE SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS.
- THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.
- ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.
- OUTLET OF "PIPE UNDERDRAIN WRAPPED 6-INCH" (THE NORTH ABUTMENT TO BE PLACED UNDERNEATH) THE ABUTMENT BODY ONLY. MINIMUM ELEVATION OF EL. 769.59 AT NORTHEAST CORNER AND SLOPE AT 0.5% TO SUITABLE DRAINAGE.
- CONTRACTOR MUST COORDINATE THE CONSTRUCTION OF BRIDGE B-58-130 WITH R-58-11.



CROSS SECTION THRU ROADWAY

LOOKING NORTH

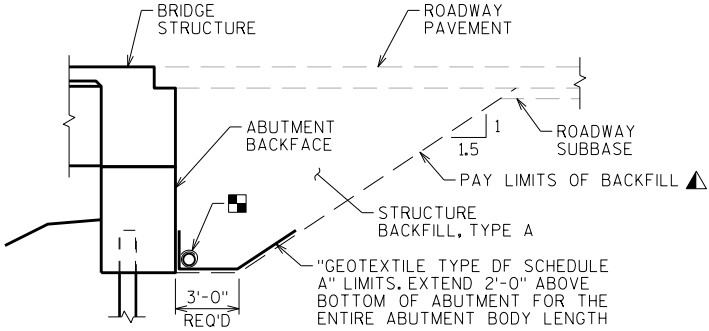


ABUTMENT BACKFILL DIAGRAM
FOR WINGS PARALLEL TO ROADWAY

- L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
 $V_{CF} = (L)(3.0')(H) + (L)(0.5')(1.5H)(H)$
 $V_{CY} = V_{CF} (EF) / 27$
 $V_{TON} = V_{CY} (2.0)$

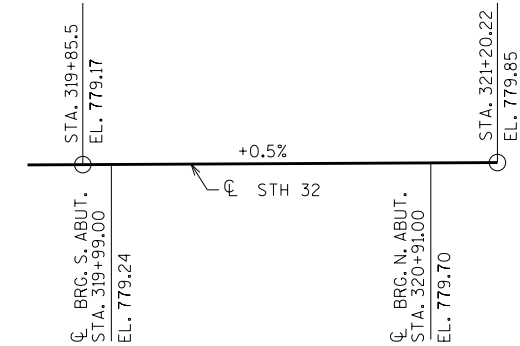
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	NORTH ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 320+43	LS	—	—	—	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-58-130	LS	—	—	—	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	—	215	241	456
502.0100	CONCRETE MASONRY BRIDGES	CY	162	46	41	249
502.3200	PROTECTIVE SURFACE TREATMENT	SY	390	—	—	390
502.3210	PIGMENTED SURFACE SEALER	SY	94	12	6	112
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	558	—	—	558
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	—	2,170	2,340	4,510
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	25,600	2,640	1,360	29,600
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	12	—	—	12
506.4000	STEEL DIAPHRAGMS B-58-130	EACH	10	—	—	10
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	13	9	22
550.0500	PILE POINTS	EACH	—	10	9	19
550.1100	PIILING STEEL HP 10-INCH X 42 LB	LF	—	450	360	810
606.0300	RIPRAP HEAVY	CY	—	190	105	295
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	—	75	80	155
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	—	—	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	—	35	41	76
645.0120	GEOTEXTILE TYPE HR	SY	—	285	170	455
NON-BID ITEMS						
	FILLER	SIZE	—	—	—	1
			—	—	—	1/2", 3/4", 1/2"



TYPICAL SECTION
THRU ABUTMENT

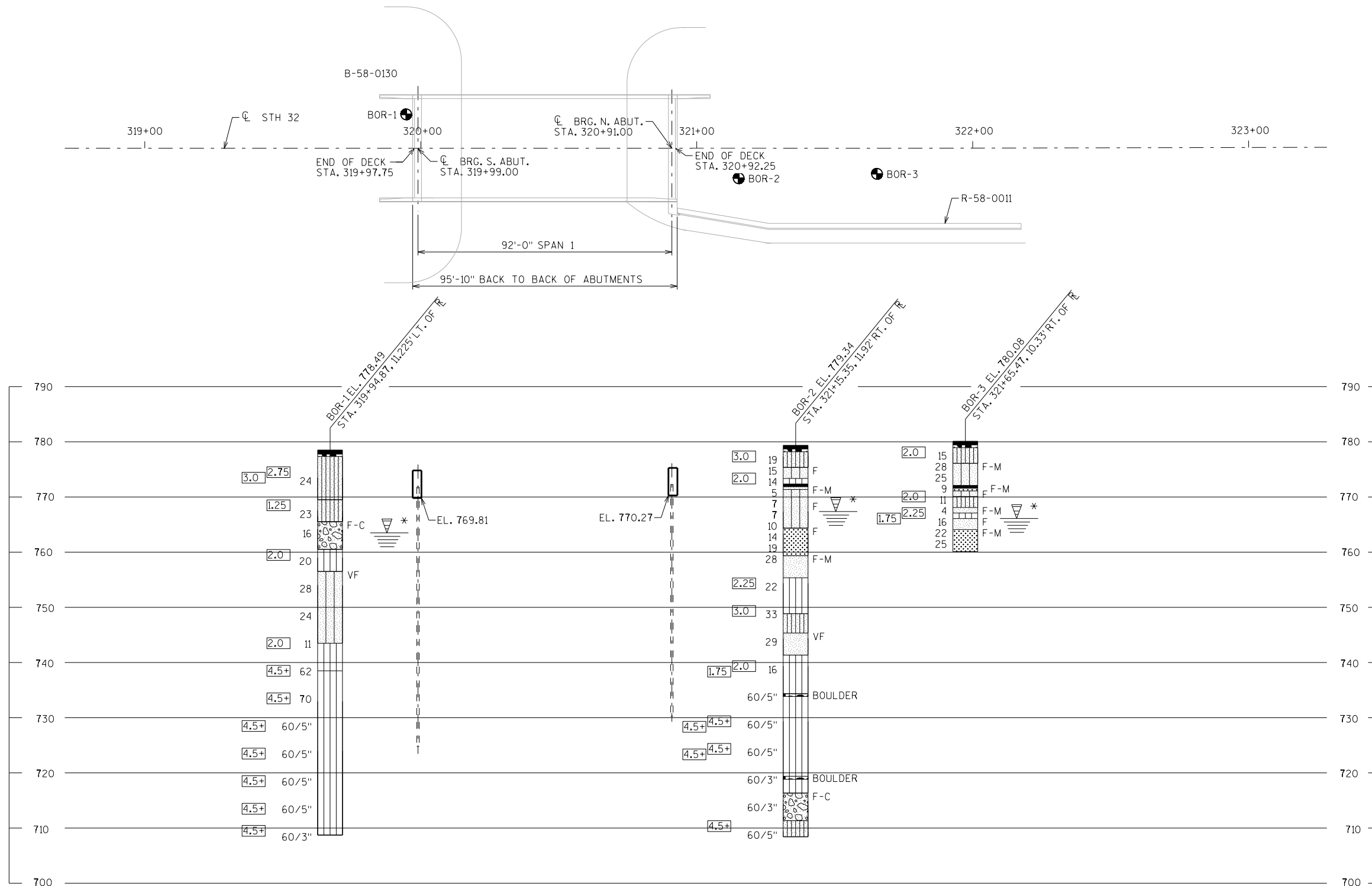
- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED (6 INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



PROFILE GRADE LINE - STH 32

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-58-130			
DRAWN BY		DDS	PLANS CK'D. JDM
CROSS SECTION & QUANTITIES			SHEET 2

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	3/12/2018	133621	510778
2	3/07/2018	133743	510787
3	3/07/2018	133793	510779
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) SHAWANO COUNTY			



STATE PROJECT NUMBER		
9190-26-73		
MATERIAL SYMBOLS		
ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META

LEGEND OF BORING

BORING # / EL. STA. / OFFSET

ST (1) 0.25 (2) 17

F-C COBBLE OR BOULDER

WEATHERED LIMESTONE

CORE RUN #1 - 24'-29' REC=80%, ROD=72%

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

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

GROUND WATER ELEVATION

▽ AT TIME OF DRILLING

▽ END OF DRILLING

▽ AFTER DRILLING

ABBREVIATIONS

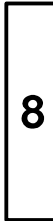
F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-58-130			
DRAWN BY TLP/DDS		PLANS CKD. JDM	
SUBSURFACE EXPLORATION		SHEET 3	

* THE GROUND WATER ELEVATION WAS DETERMINED FROM WHERE THE SOIL SAMPLE WAS DESCRIBED AS WET.



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

9190-26-73

4' EQ. SPA.

HEAVY RIPRAP 1.5:1 MAX SLOPE

2'-6"

TOP OF BERM EL. 772.31

2'-6"

GEOTEXTILE FABRIC, TYPE HR

3"

4" X 1/2" FILLER X ABUTMENT LENGTH

3/4" BEVEL

F.F. ABUT.

A604

1'-3"

1'-11"

CL BRG. & PILES

A19

A408 BETWEEN BEAM SEATS

A507

B.F. ABUT.

A501

A705, A606

7' EQ. SPA.

A403

A402

2'-0"

A604

A06

1'-3"

1'-11"

3'-2"

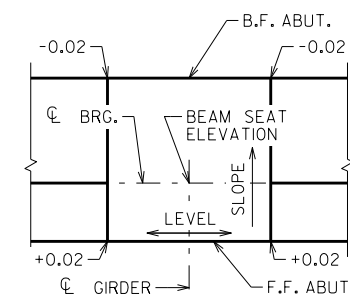
A15

3" CL.

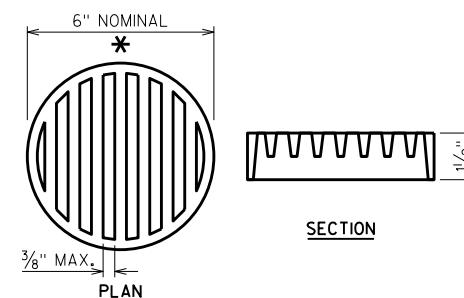
GEOTEXTILE TYPE DF, SCHEDULE A

SECTION THRU BODY

SECTION THRU BODY



SLOPED BEAM SEAT DETAIL

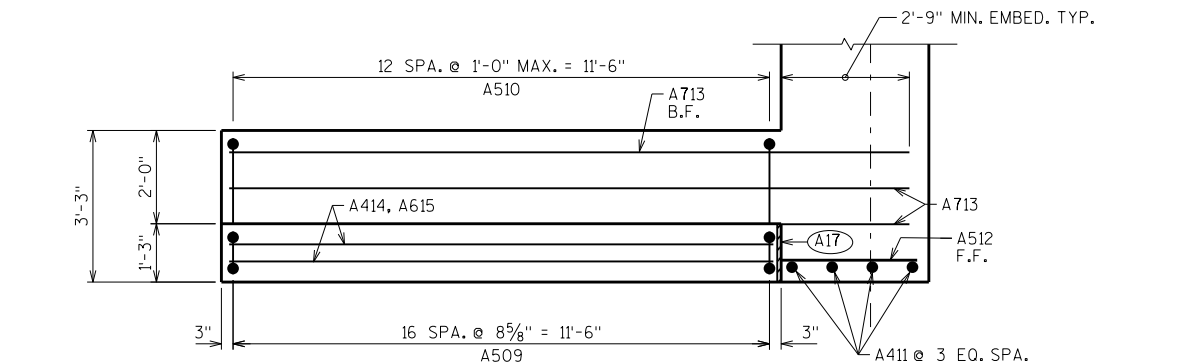


RODENT SHIELD DETAIL

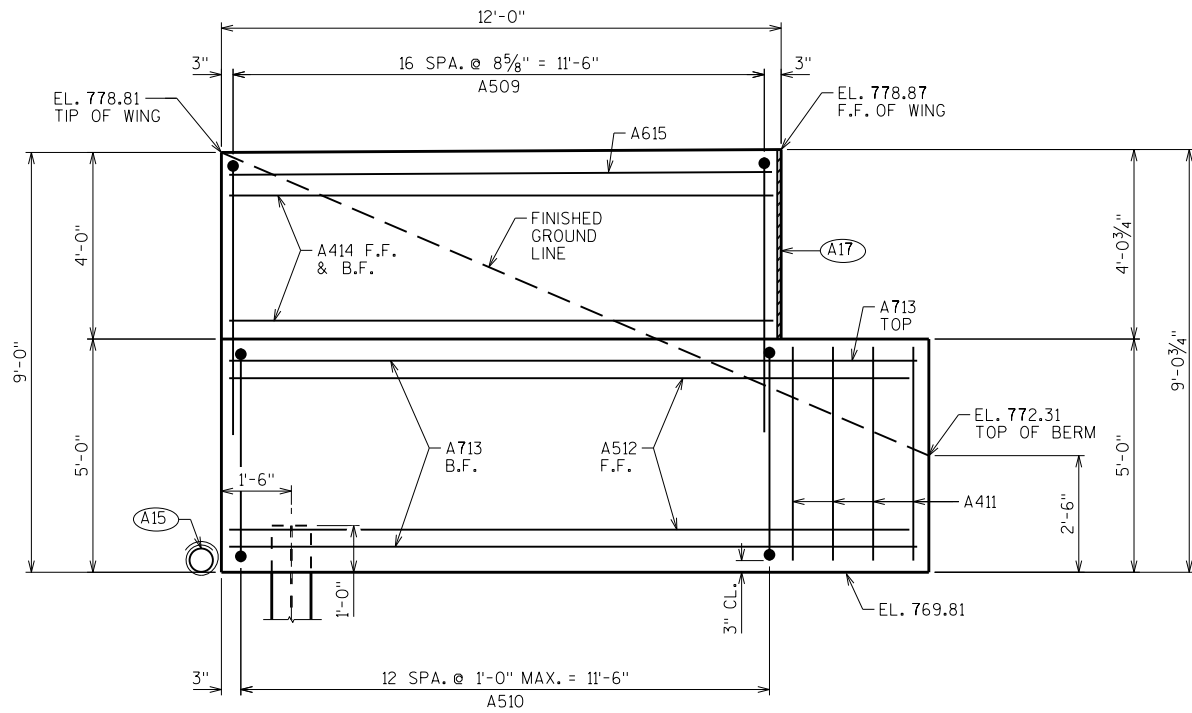
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH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

- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 45'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE POINTS REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

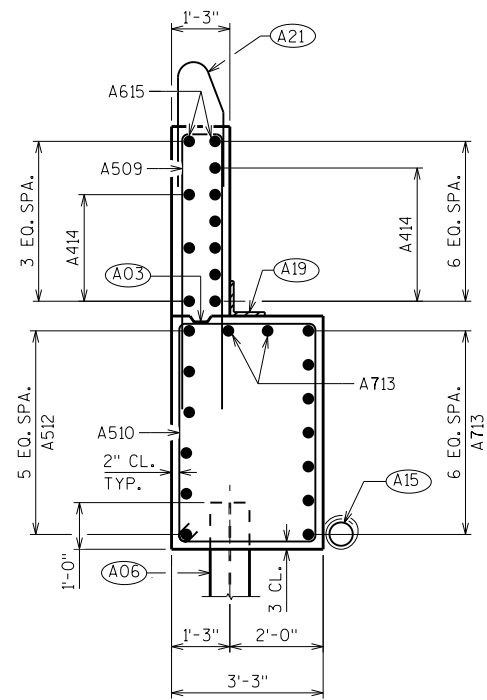
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-58-130			
		DRAWN BY	PLANS C'K'D. JDM
SOUTH ABUTMENT		SHEET 4	



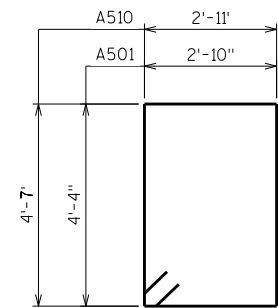
PLAN - WING 1 SHOWN
WING 2 SIMILAR



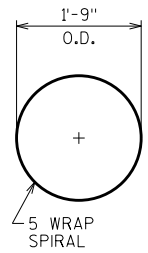
ELEVATION - WING 1 SHOWN
WING 2 SIMILAR



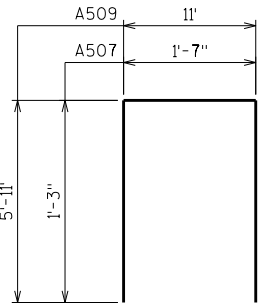
SECTION THRU WING - TYP.



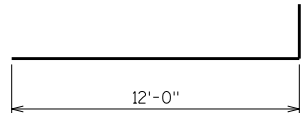
A501, A510



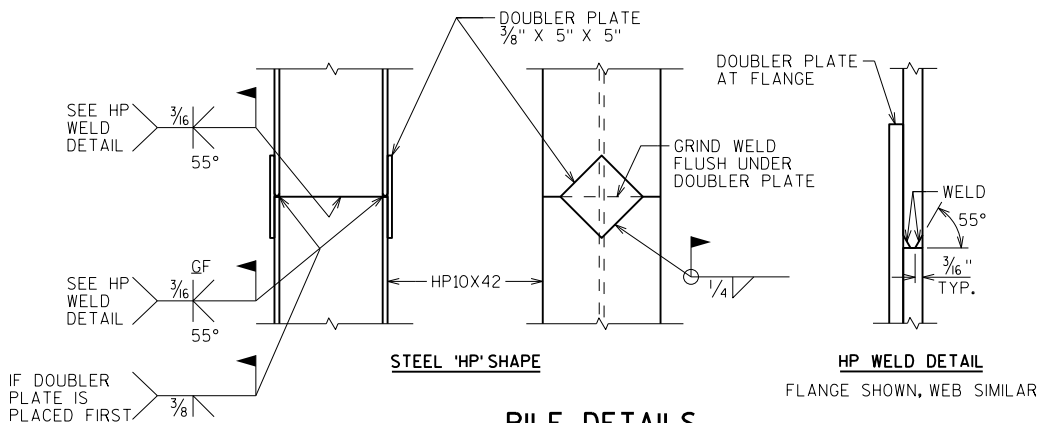
A402



A507, A509



A705



PILE DETAILS

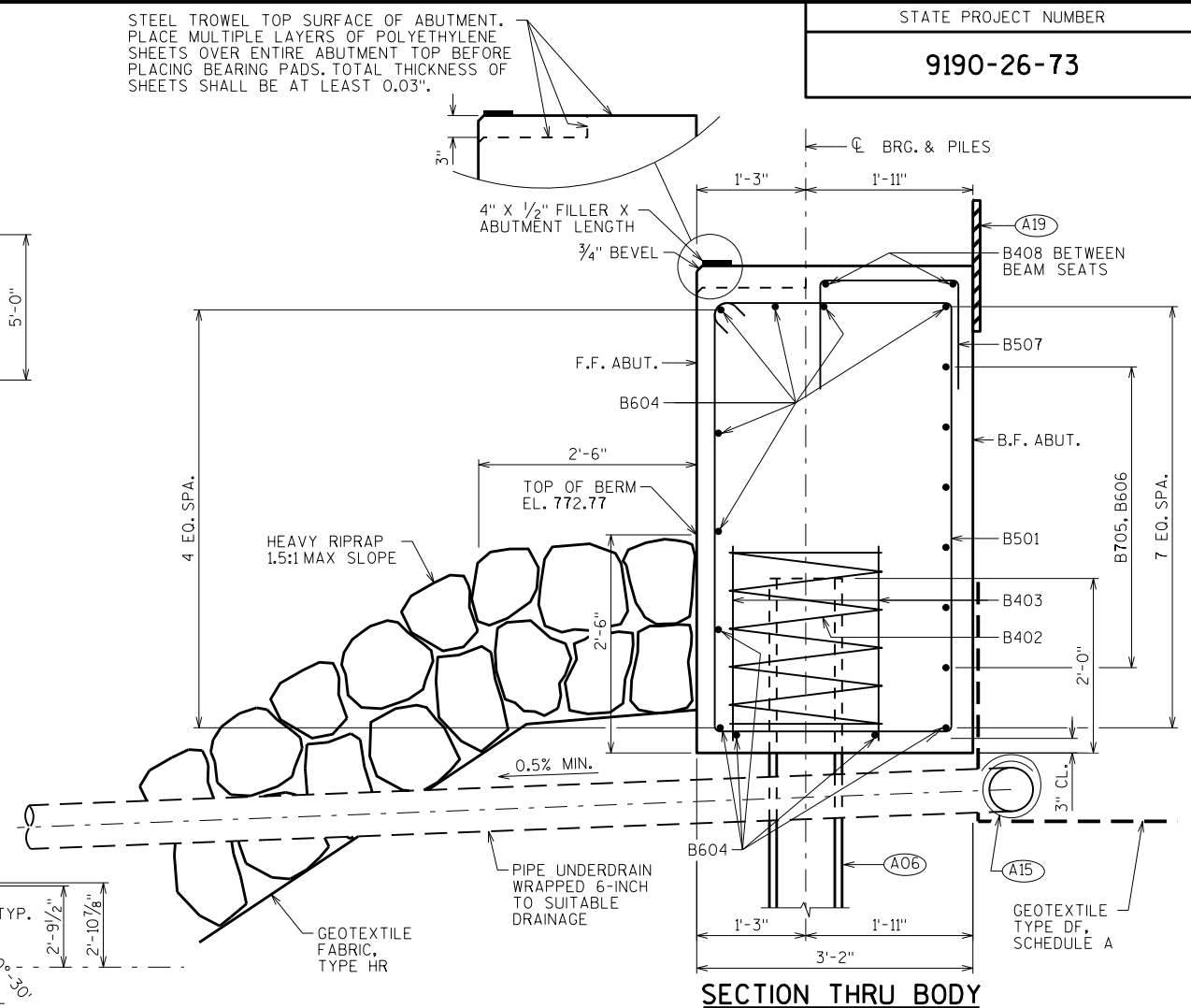
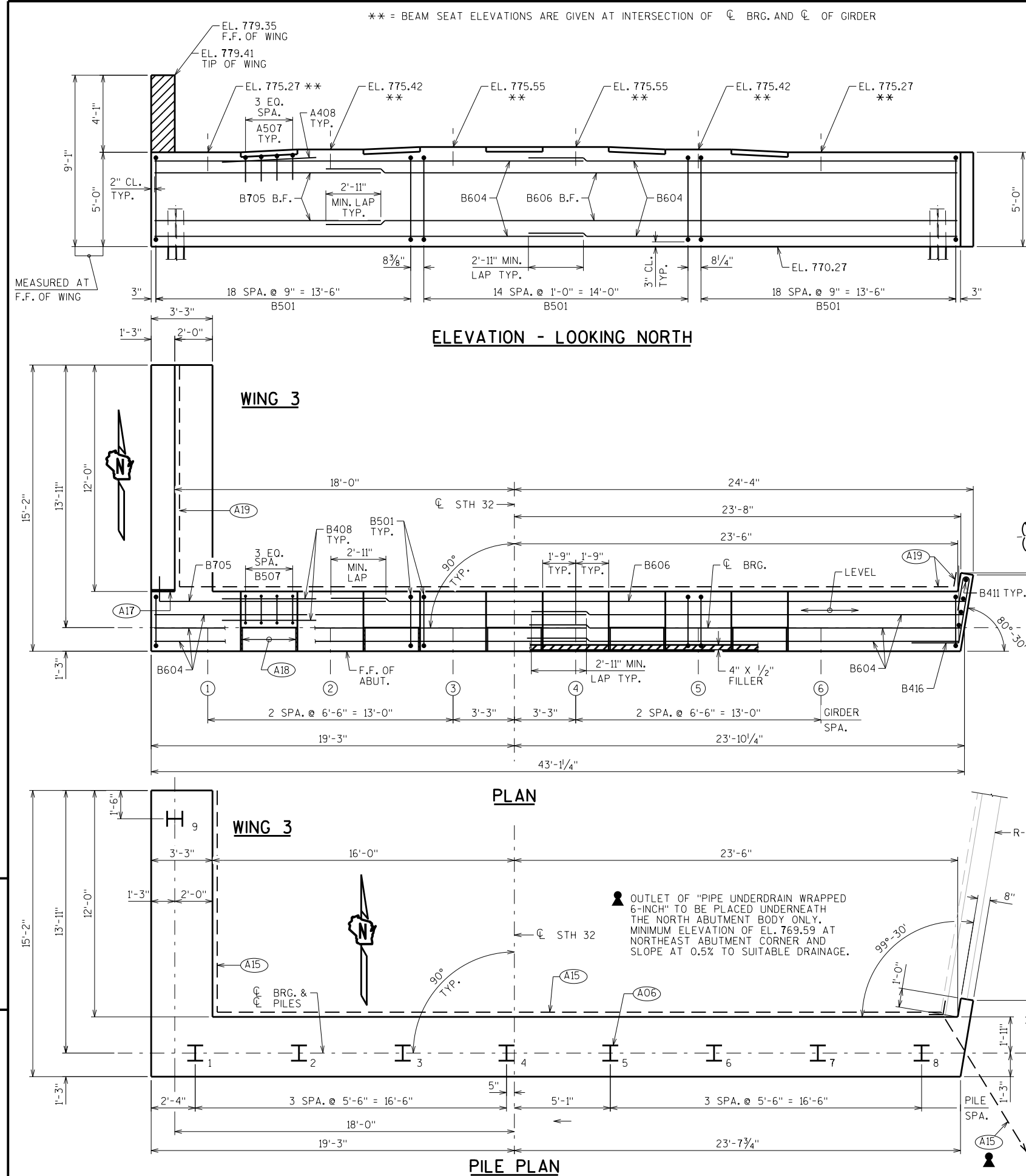
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		48	15'-0"	X		BODY - STIRRUP
A402		8	28'-0"	X		PILE - VERT. - 1 PER BODY PILE
A403		16	2'-3"			PILE - VERT. - 2 PER BODY PILE
A604		11	38'-2"			BODY - HORIZ.
A705		12	13'-0"	X		BODY - HORIZ. B.F.
A606		6	20'-0"			BODY - HORIZ. - B.F.
A507		20	3'-10"	X		BODY - VERT. - BTWN. BEAM SEATS
A408		10	5'-0"			BODY - HORIZ. - BTWN. BEAM SEATS
A509	X	34	12'-6"	X		WINGS 1&2 - VERT.
A510	X	26	15'-8"	X		WINGS 1&2 - STIRRUP
A411	X	8	4'-7"			BODY - VERT. - F.F. - END OF ABUT. BODY
A512	X	12	14'-9"			WINGS 1&2 - HORIZ. - F.F.
A713	X	18	14'-7"			WINGS 1&2 - HORIZ. - B.F. & TOP
A414	X	18	11'-8"			WINGS 1&2 - HORIZ.
A615	X	4	11'-8"			WINGS 1&2 - HORIZ. TOP

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 45'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. PILE POINTS REQUIRED.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A21) FOR PPT. BARS & DIMENSIONS SEE "PARAPET 42SS ENDING ON WINGS 1,2&3" SHEET.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-58-130			
DRAWN BY		DDS	PLANS CK'D. JDM
SOUTH ABUTMENT DETAILS		SHEET 5	



* 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.

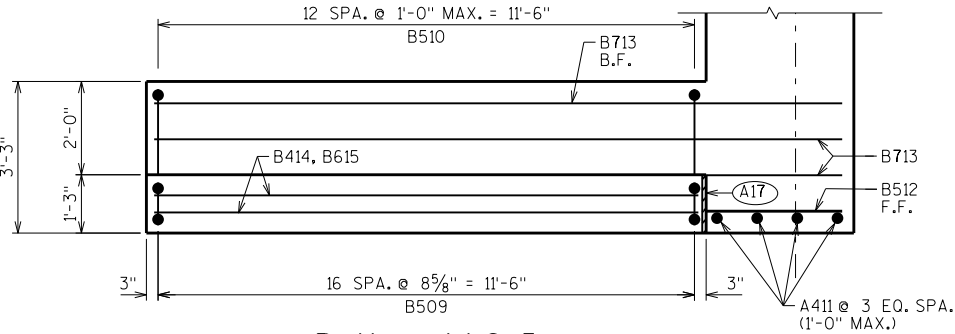
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-58-130			
		DRAWN BY	DDS PLANS CK'D. JDM
NORTH ABUTMENT		SHEET 6	

SCALE = 3.00

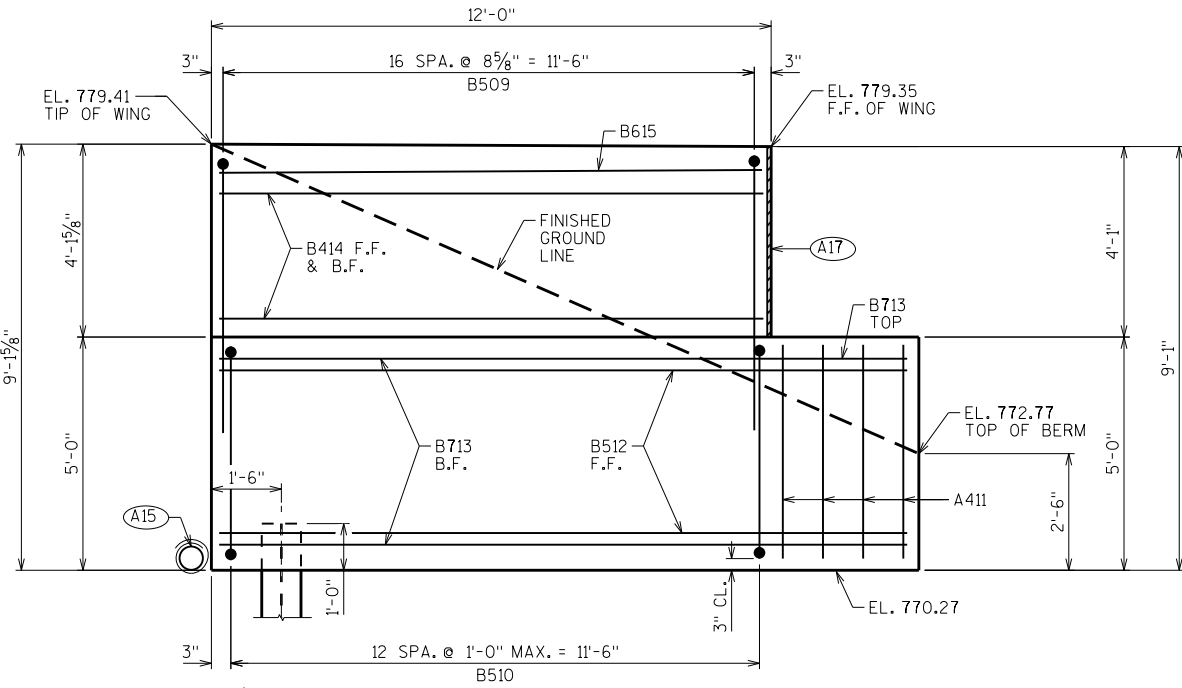
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

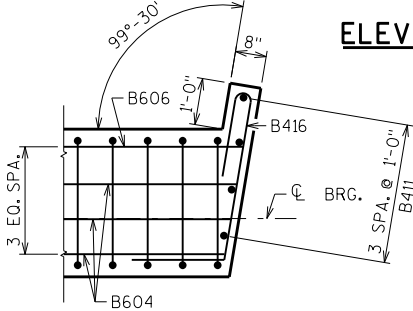
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		53	15'-0"	X		BODY - STIRRUP
B402		8	28'-0"	X		PILE - VERT. - 1 PER BODY PILE
B403		16	2'-3"			PILE - VERT. - 2 PER BODY PILE
B604		22	22'-11"			BODY - HORIZ.
B705		6	13'-0"	X		BODY - HORIZ. B.F.
B606		6	34'-2"			BODY - HORIZ. - B.F.
B507		20	3'-10"	X		BODY - VERT - BTWN. BEAM SEATS
B408		10	5'-0"			BODY - HORIZ. - BTWN. BEAM SEATS
B509	X	17	12'-8"	X		WINGS 3 - VERT.
B510	X	13	15'-8"	X		WINGS 3 - STIRRUP
B411	X	4	4'-7"			BODY - VERT. - F.F. - END OF ABUT. BODY
B512	X	6	14'-9"			WINGS 3 - HORIZ. - F.F.
B713	X	9	14'-9"			WINGS 3 - HORIZ. - B.F. & TOP
B414	X	9	11'-8"			WINGS 3 - HORIZ.
B615	X	2	11'-8"			WINGS 3 - HORIZ. TOP
B416	X	5	8'-5"	X		NE CORNER - HORIZ.



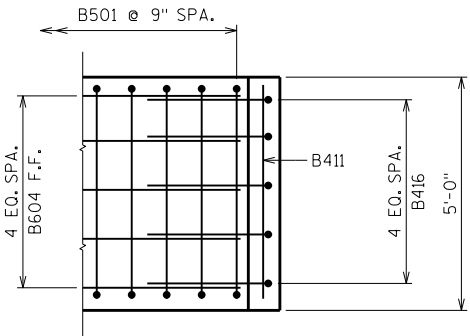
PLAN - WING 3



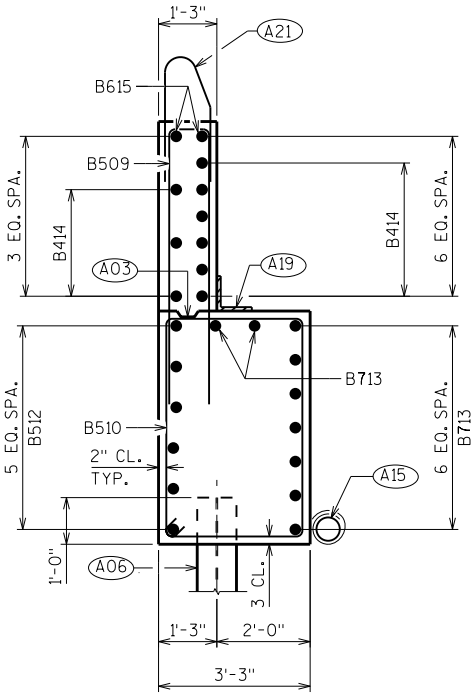
ELEVATION - WING 3



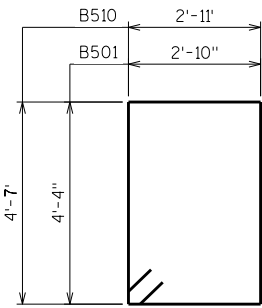
PLAN - NE CORNER



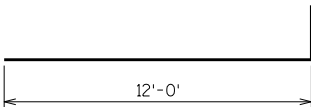
ELEVATION - NE CORNER



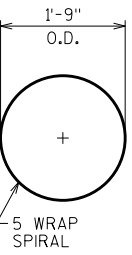
SECTION THRU WING 3



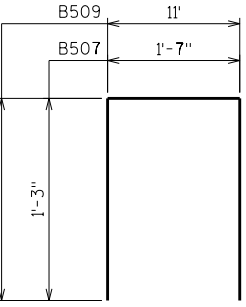
B501, B510



B705



B402



B507, B509

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6, (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

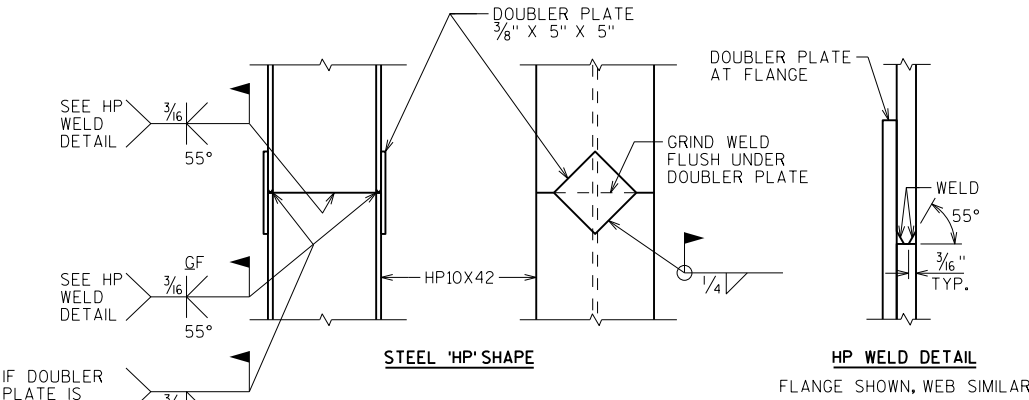
(A06) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING, ESTIMATED 40'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE, PILE POINTS REQUIRED.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

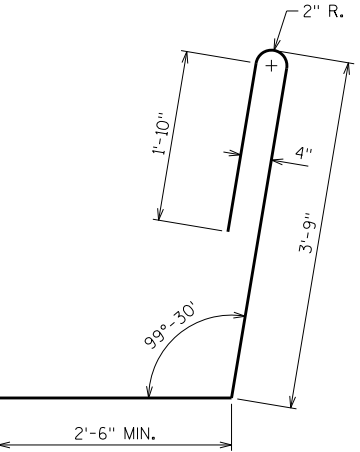
(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER, (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A21) FOR PPT. BARS & DIMENSIONS SEE "PARAPET 42SS ENDING ON WINGS 1, 2, & 3" SHEET.



PILE DETAILS



B416

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-58-130			
DRAWN BY		DDS	PLANS CK'D. JDM
NORTH ABUTMENT DETAILS		SHEET 7	

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECT. 503.3.3 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

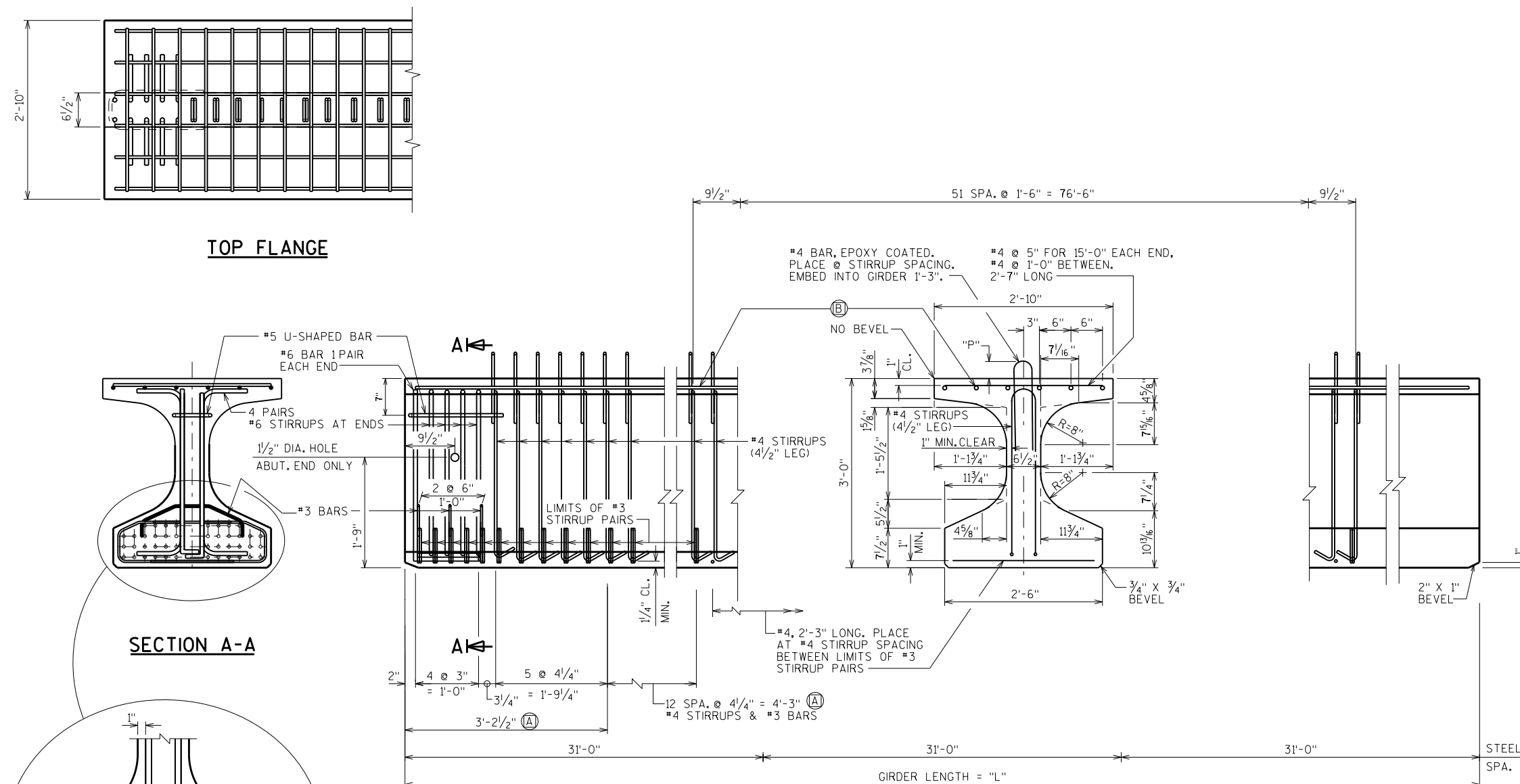
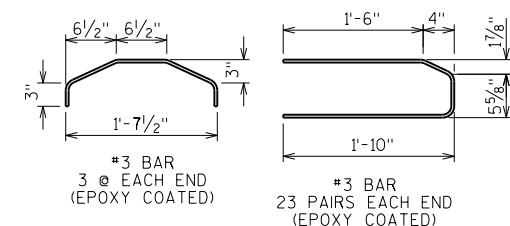
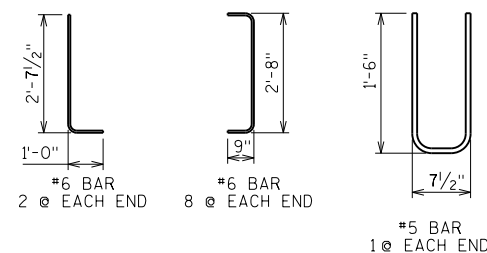
STRANDS SHALL BE FLUSH WITH END OF GIRDER, FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE
LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF
270,000 PSI.

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

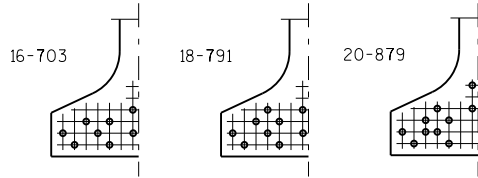


(A) DETAIL TYP. AT EACH END

(B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"

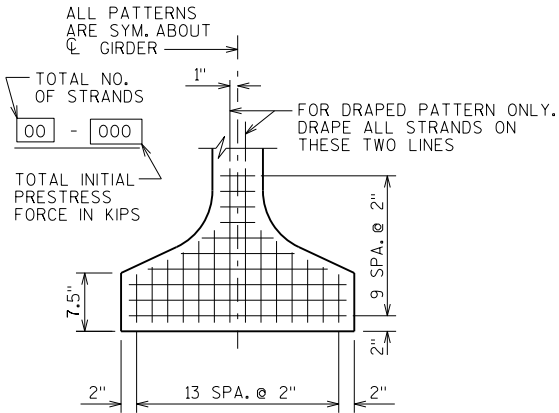
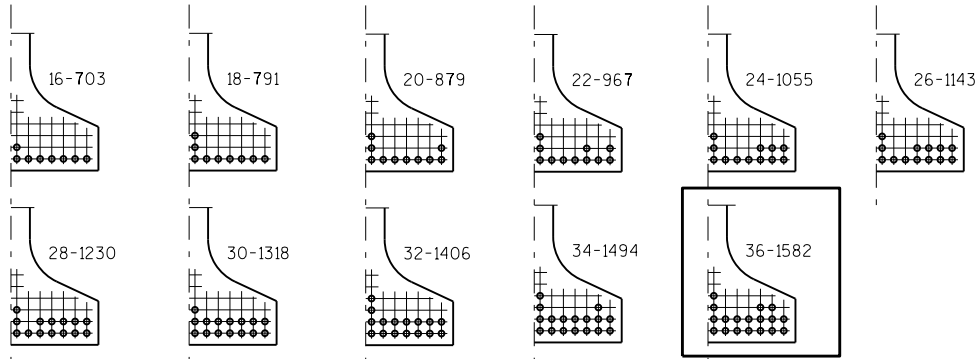
* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

[illegible][illegible]

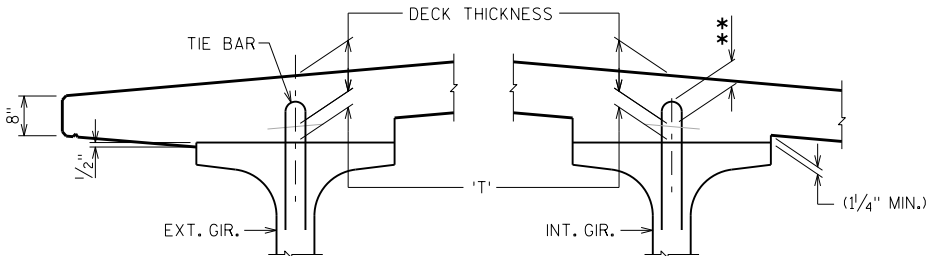


**STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY
TO AVOID DRAPING OF STRANDS**

0.6"φ STRANDS



TYP. STRAND PATTERN



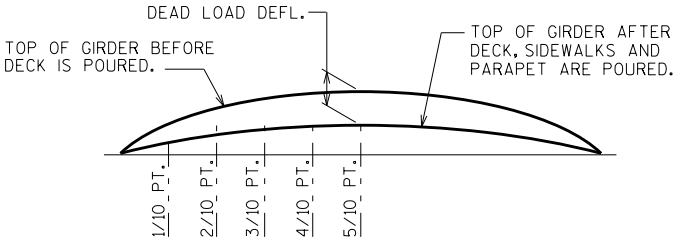
DECK HAUNCH DETAIL

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

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

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

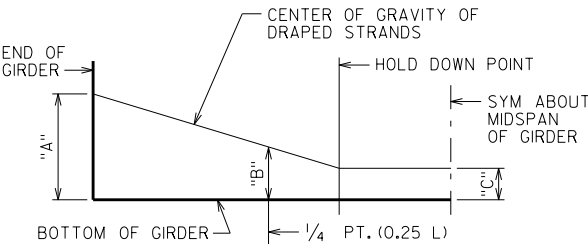
NOTE: AN AVERAGE HAUNCH ('T') OF 3 1/4" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM

ARRANGEMENT AT C.G. SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6"φ STRANDS



DRAPED STRAND PROFILE

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

SPAN	CAMBER (IN.) *
1	4.21

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-58-130			
DRAWN BY		DDS	PLANS CK'D. JDM
36W" PRESTRESSED GIRDER DETAILS 2		SHEET 9	

NOTES

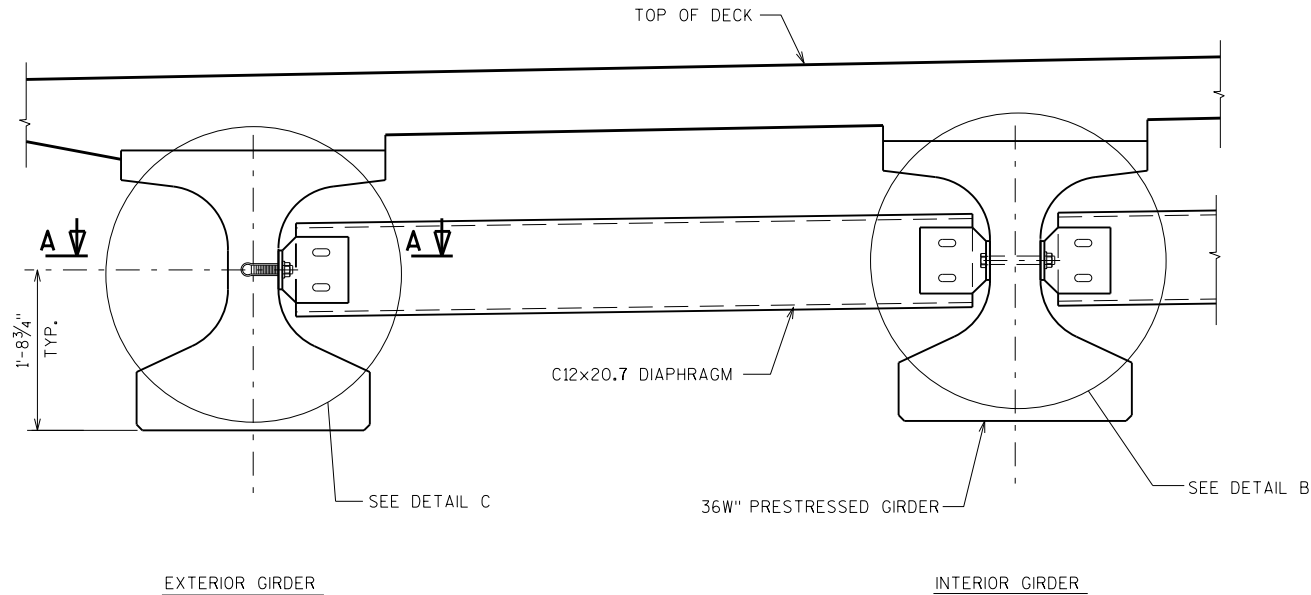
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-58-130", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

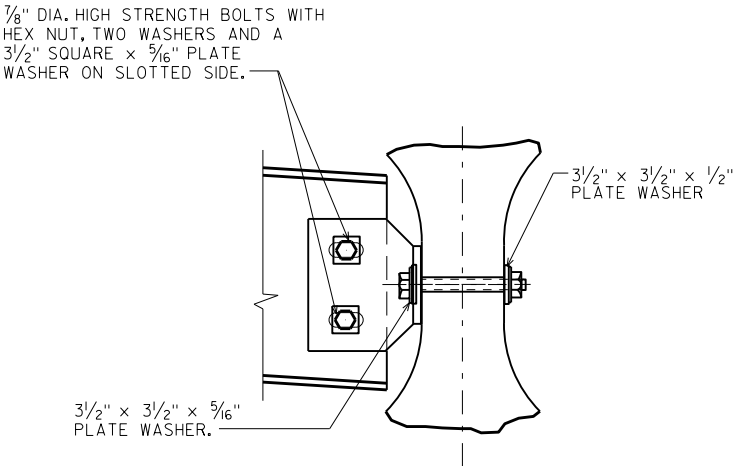
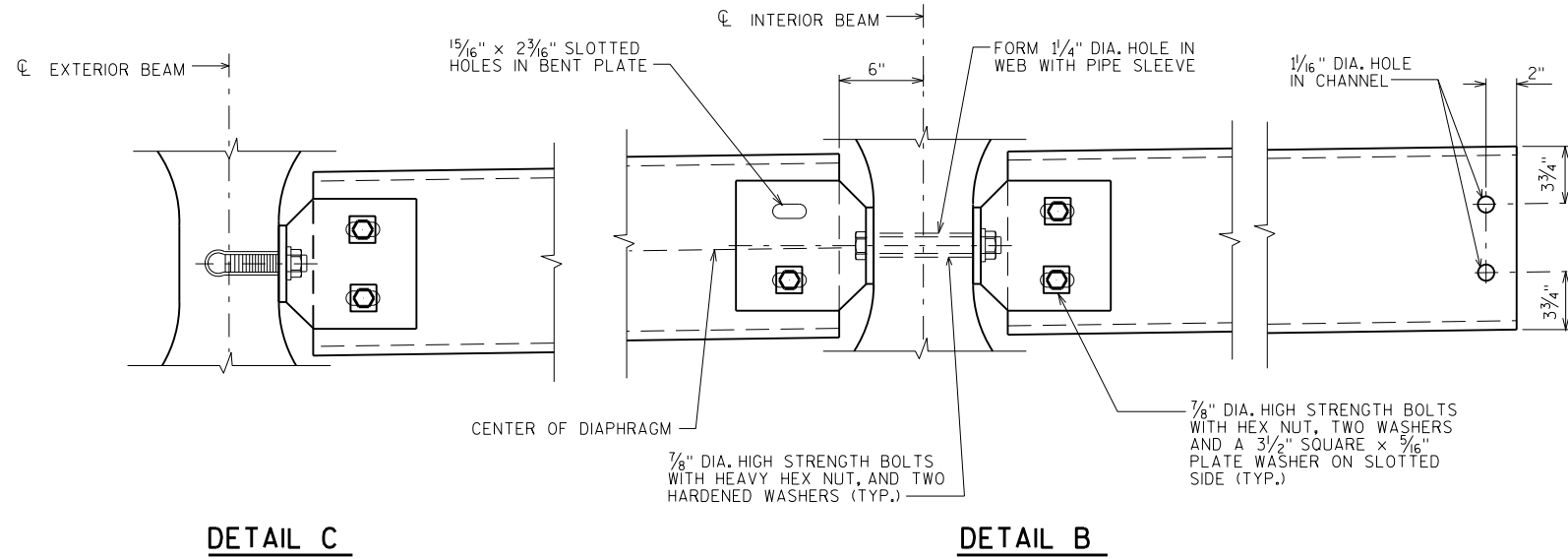
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

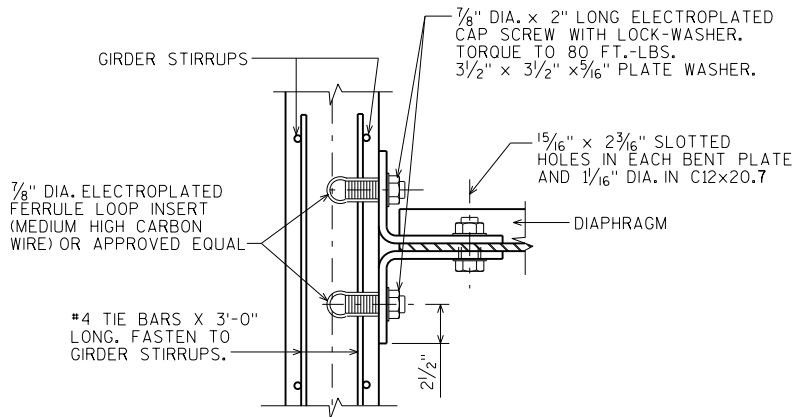
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.



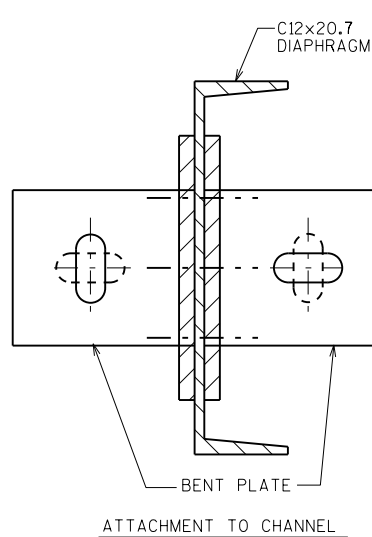
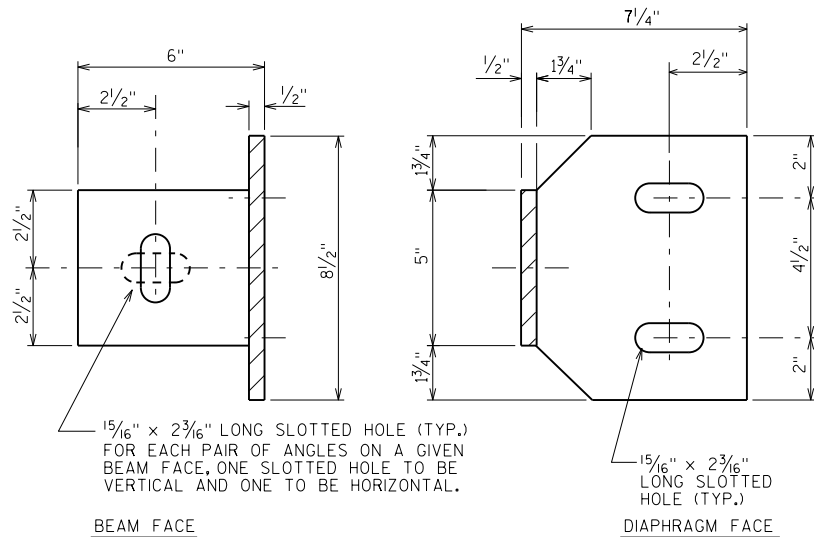
PART TRANSVERSE SECTION AT DIAPHRAGM



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



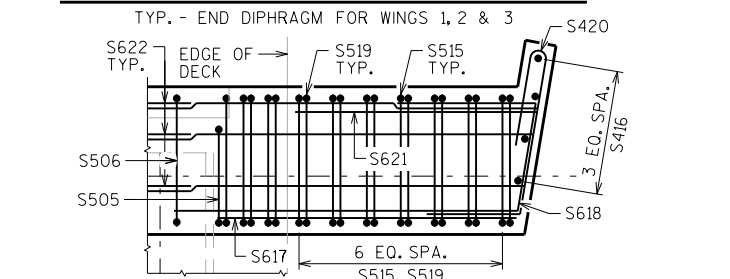
SECTION A-A
(FOR EXTERIOR ATTACHMENT)



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-58-130			
DRAWN BY		DDS	PLANS CK'D. JDM
STEEL DIAPHRAGM 36W"			SHEET 10

SECTION S-S

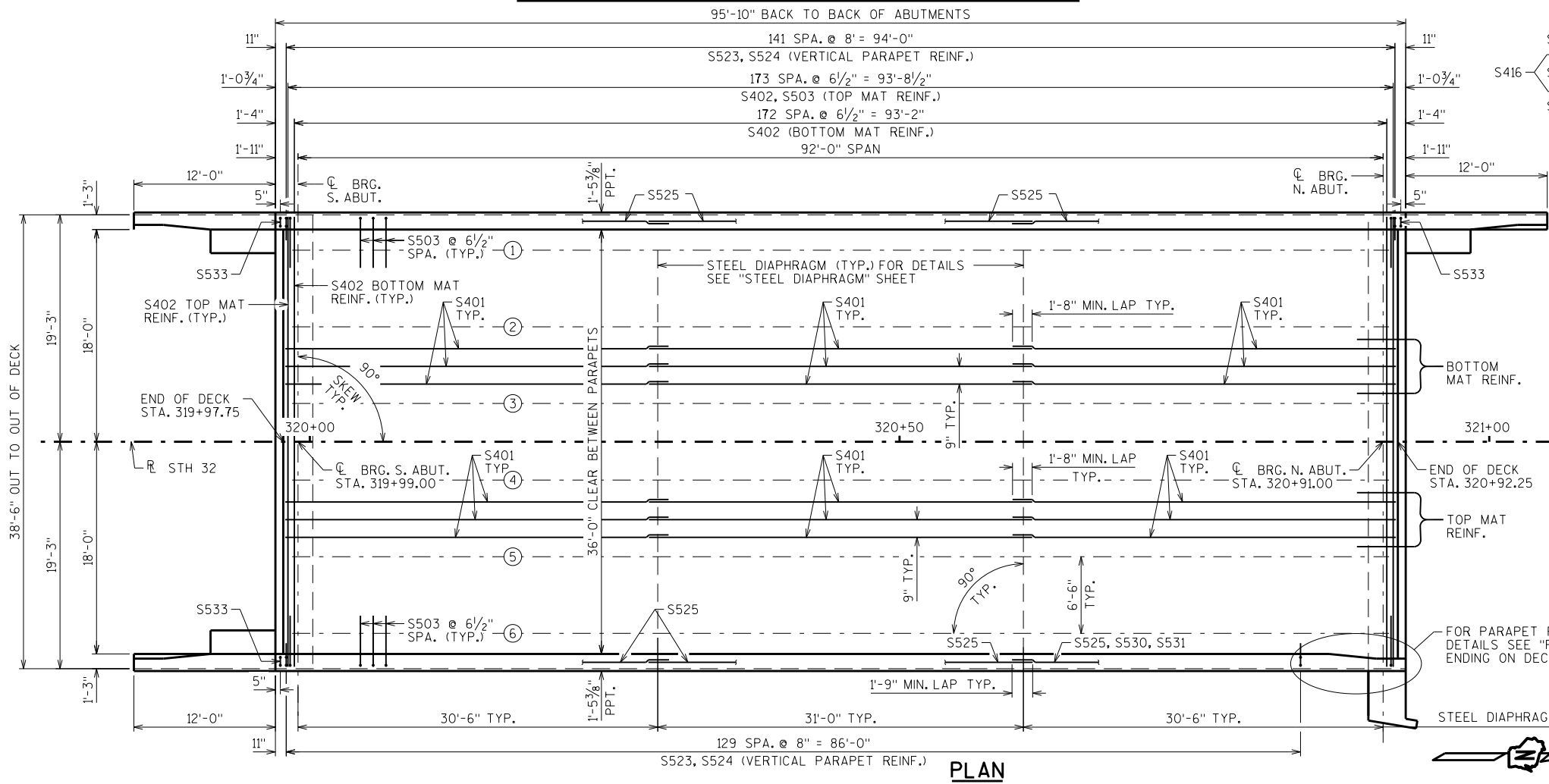
PLAN VIEW - ABUTMENT DIAPHRAGM



PLAN VIEW - ABUTMENT DIAPHRAGM NE CORNER

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-58-130			
DRAWN BY		DDS	PLANS CK'D. JDM
SUPERSTRUCTURE		SHEET 11	

CROSS SECTION THRU ROADWAY - LOOKING NORTH



PLAN

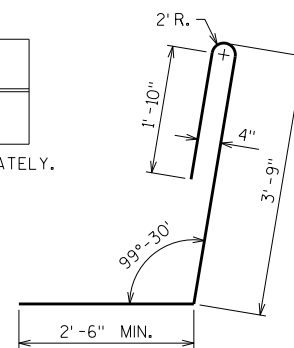


NOTE: THE FIRST OR FIRST TWO DIGITS OF THE
BAR MARK SIGNIFIES THE BAR SIZE

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

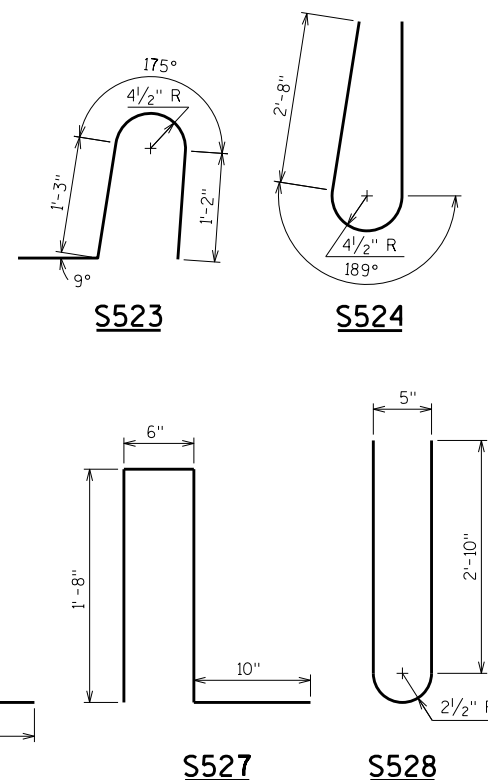
MARK	NO. REQD.	LENGTH
S532	1 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY

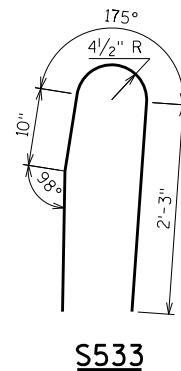
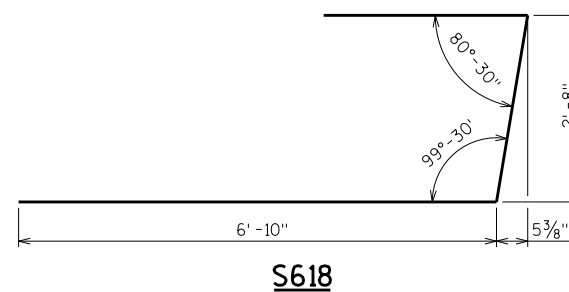
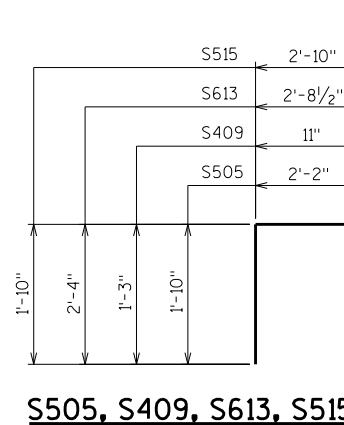
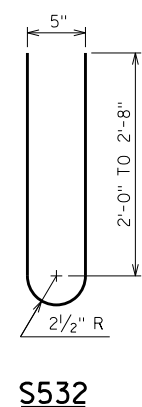
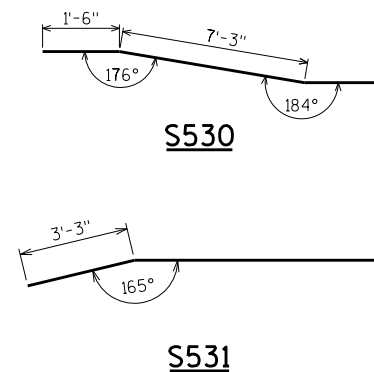
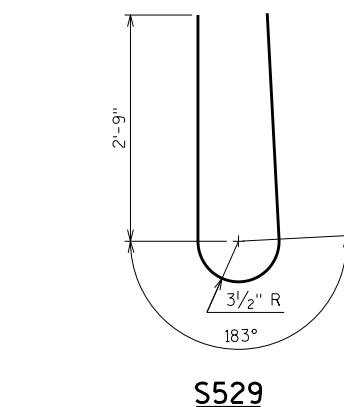
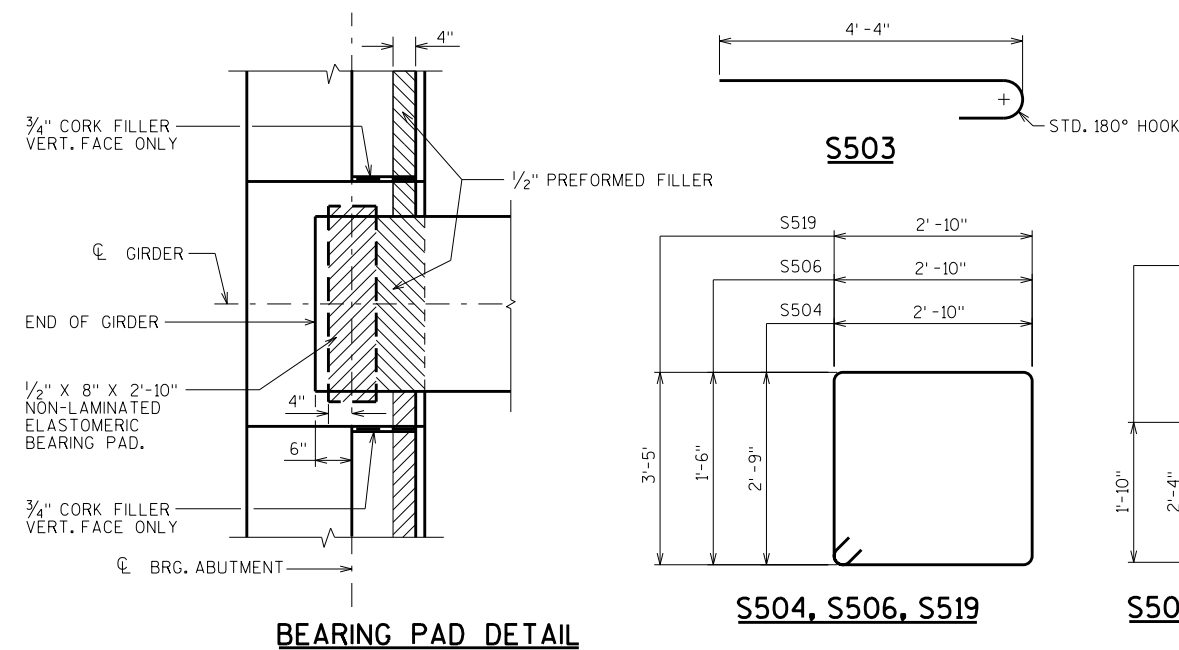


S420

NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION					
STRUCTURE B-58-130					
		DRAWN BY	DDS	PLANS CK'D.	JDM
SUPERSTRUCTURE DETAILS				SHEET 12	



	℄ S	BRG. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	℄ N.	BRG. ABUT.
LEFT EDGE OF DECK	778.88	778.92	778.97	779.02	779.06	779.11	779.15	779.20	779.25	779.29	779.34		
LEFT GUTTERLINE	778.88	778.92	778.97	779.02	779.06	779.11	779.15	779.20	779.25	779.29	779.34		
GIRDER 1	778.91	778.96	779.00	779.05	779.10	779.14	779.19	779.23	779.28	779.33	779.37		
GIRDER 2	779.04	779.09	779.13	779.18	779.23	779.27	779.32	779.36	779.41	779.46	779.50		
GIRDER 3	779.17	779.22	779.26	779.31	779.36	779.40	779.45	779.49	779.54	779.59	779.63		
℄ STH 32	779.24	779.28	779.33	779.38	779.42	779.47	779.51	779.56	779.61	779.65	779.70		
GIRDER 4	779.17	779.22	779.26	779.31	779.36	779.40	779.45	779.49	779.54	779.59	779.63		
GIRDER 5	779.04	779.09	779.13	779.18	779.23	779.27	779.32	779.36	779.41	779.46	779.50		
GIRDER 6	778.91	778.96	779.00	779.05	779.10	779.14	779.19	779.23	779.28	779.33	779.37		
RIGHT GUTTERLINE	778.88	778.92	778.97	779.02	779.06	779.11	779.15	779.20	779.25	779.29	779.34		
RIGHT EDGE OF DECK	778.88	778.92	778.97	779.02	779.06	779.11	779.15	779.20	779.25	779.29	779.34		



BILL OF BARS

FOR ABUTMENT PARAPETS

BAR MARK	COAT	S. ABUT.	N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	10	5	5-10	X		PARAPET VERT.
R502	X	10	5	6-8	X		PARAPET VERT.
R503	X	24	12	3-0	X		PARAPET VERT.
R504	X	34	17	5-7	X		PARAPET VERT.
R505	X	10	5	6-5	X		PARAPET VERT.
R506	X	12	6	6-6	X		PARAPET VERT.
R507	X	2	1	11-7	X		PARAPET HORIZ.
R508	X	10	5	11-7			PARAPET HORIZ.
R509	X	12	6	5-5	X	▲	PARAPET VERT.
R510	X	4	2	11-7	X		PARAPET HORIZ.

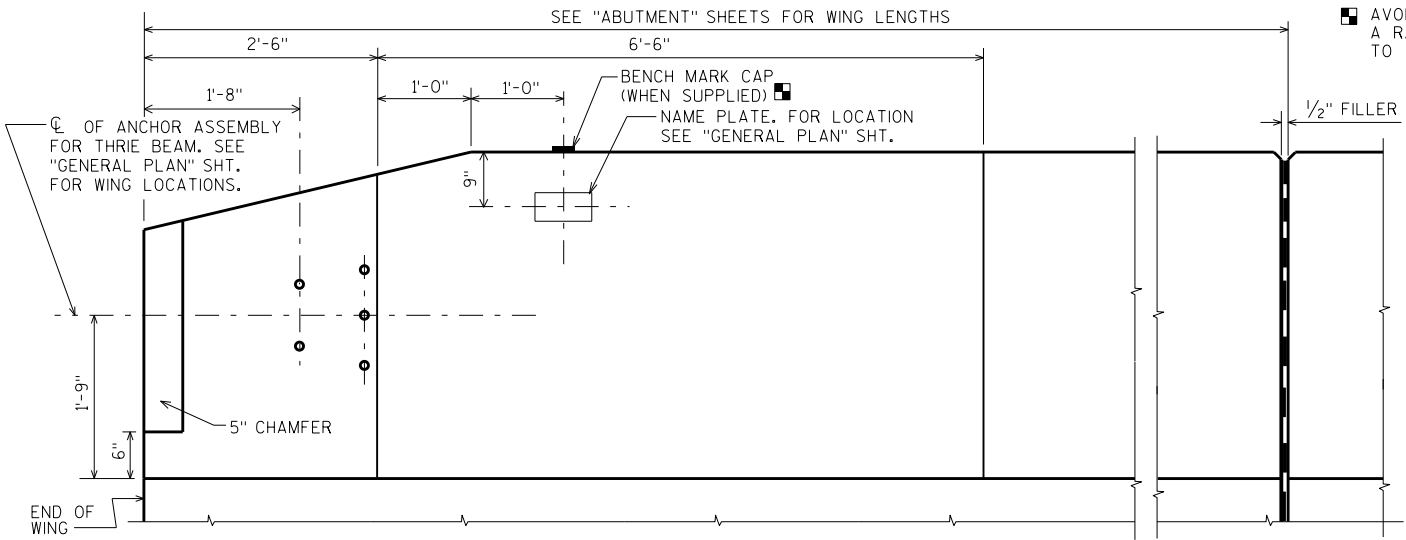
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

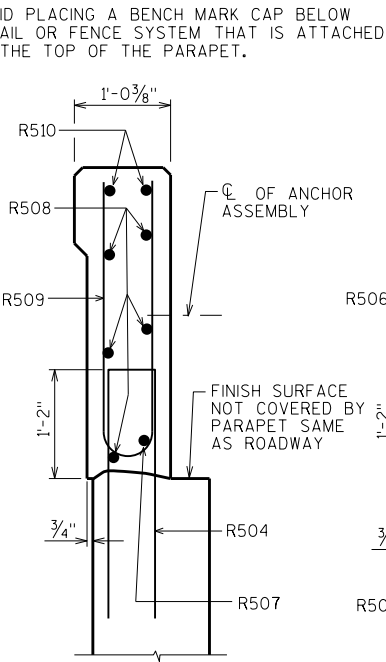
MARK	NO. REOD.	LENGTH
R509	3 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.

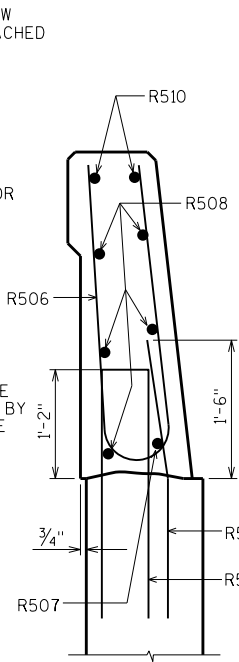
INSIDE ELEVATION



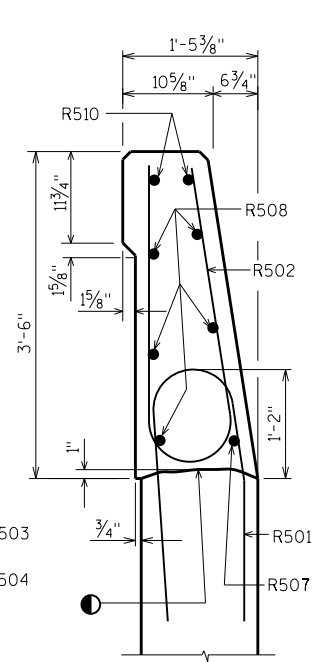
SECTION A



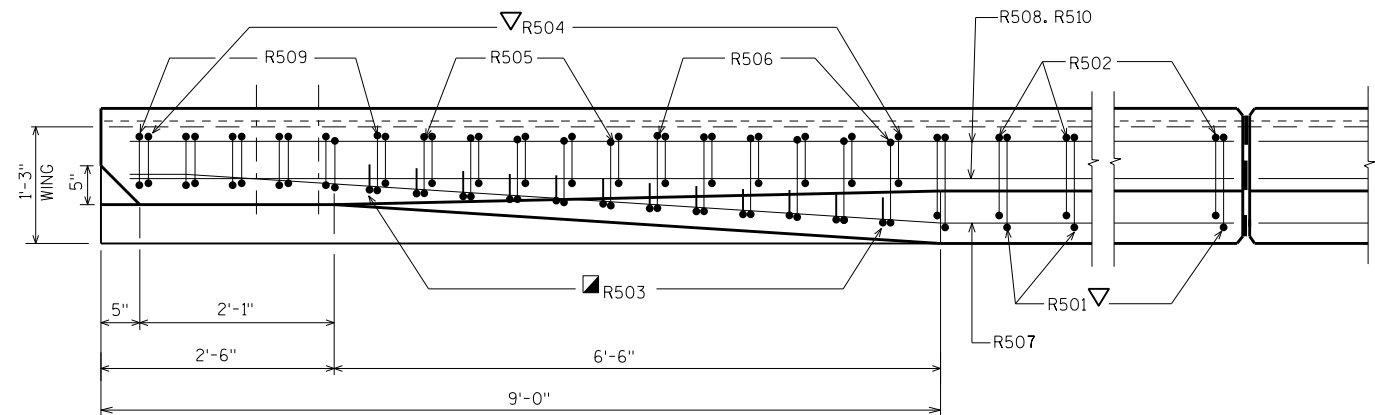
SECTION B



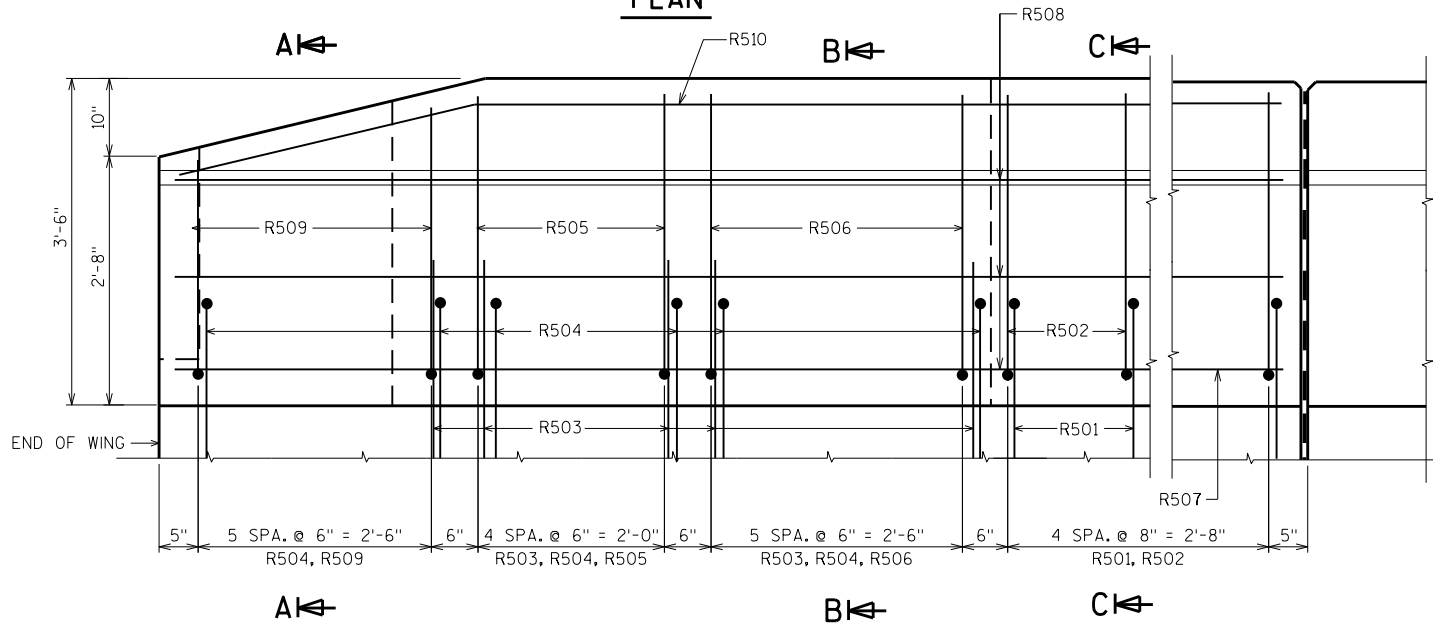
SECTION C



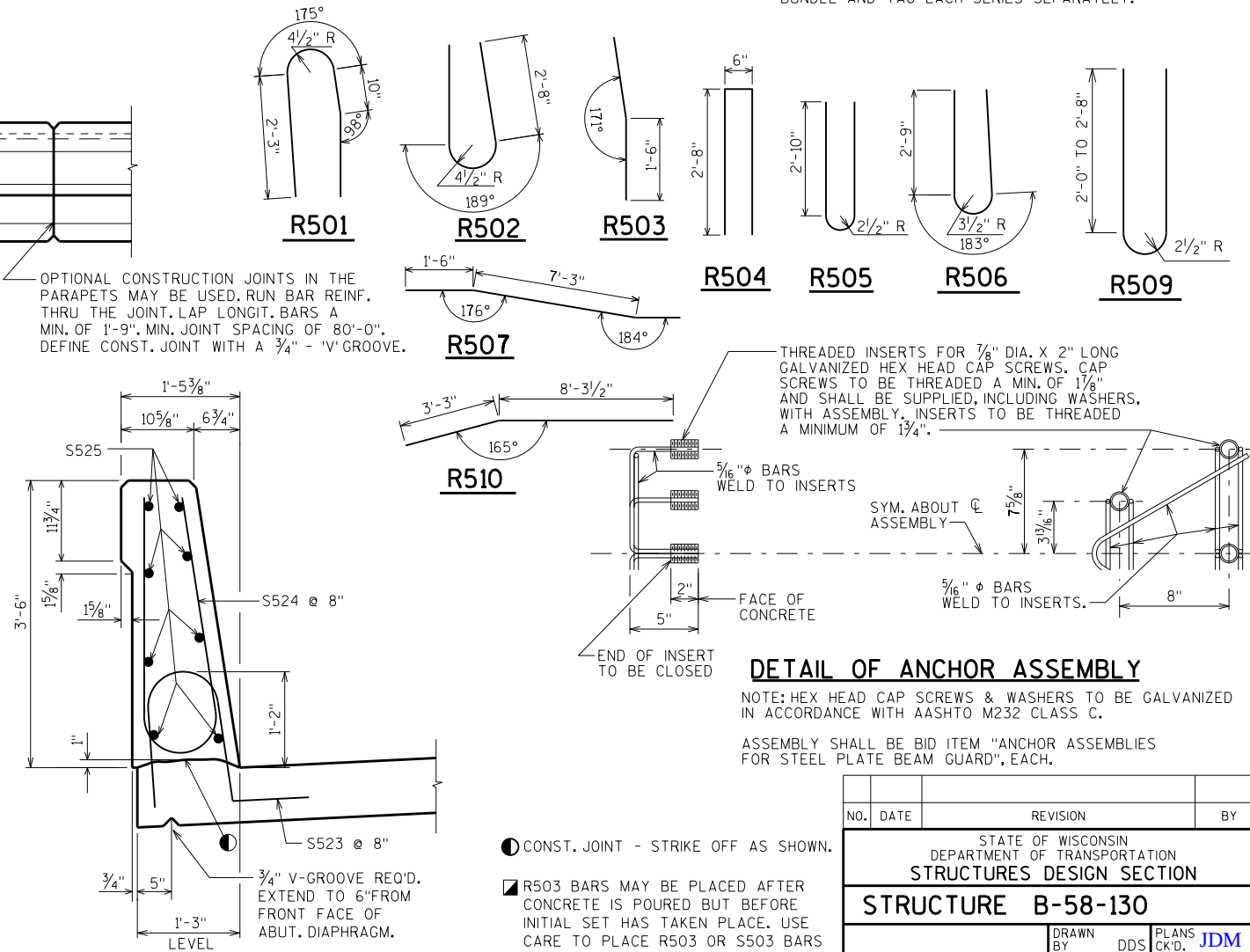
PLAN



OUTSIDE ELEVATION



SECTION THRU WEST PARAPET ON BRIDGE



DETAIL OF ANCHOR ASSEMBLY

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

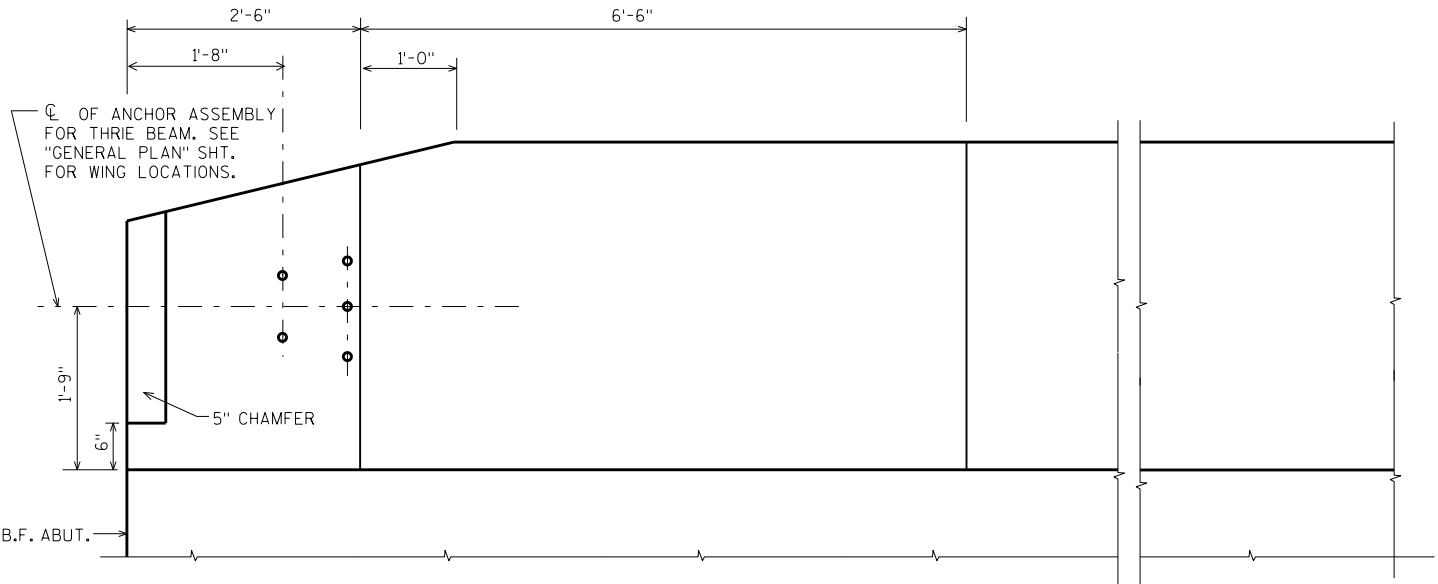
ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

● CONST. JOINT - STRIKE OFF AS SHOWN.

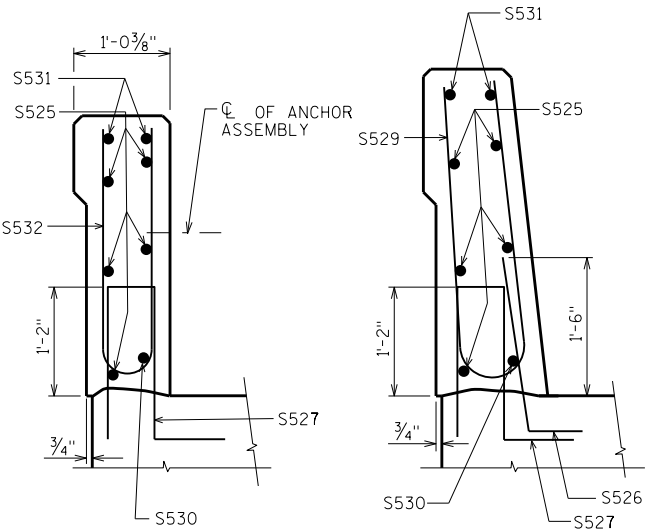
■ R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 OR S503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-58-130			
DRAWN BY		DDS	PLANS CK'D. JDM
PARAPET 42SS ENDING ON WINGS 1,2&3		SHEET 13	

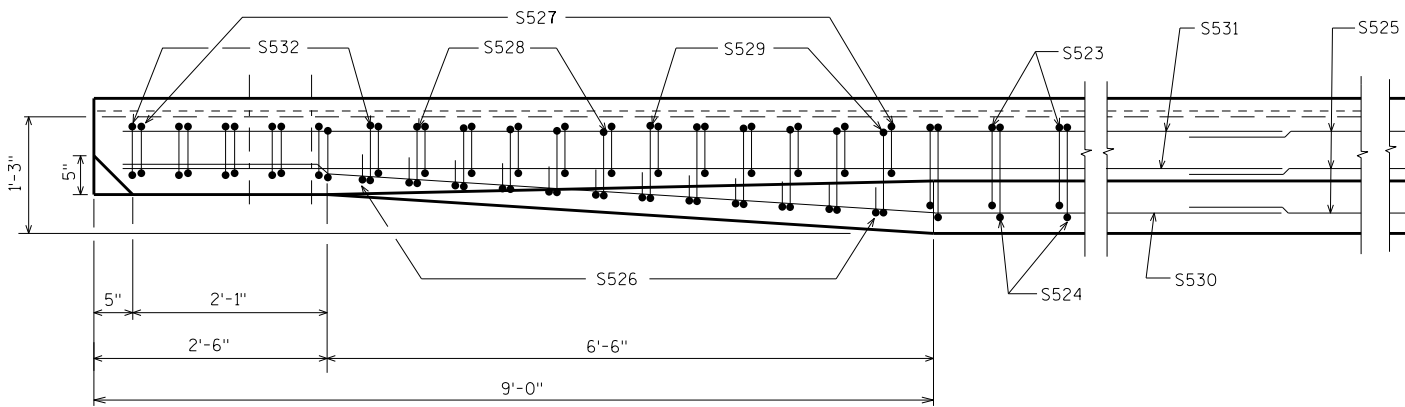


INSIDE ELEVATION



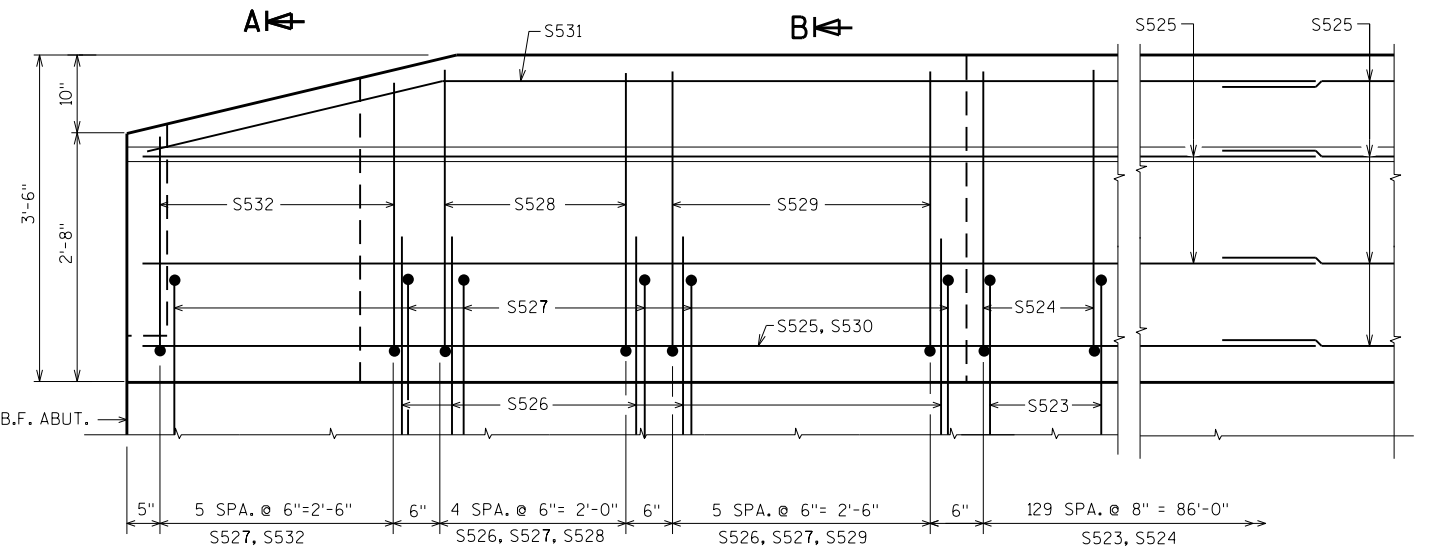
SECTION A

SECTION B

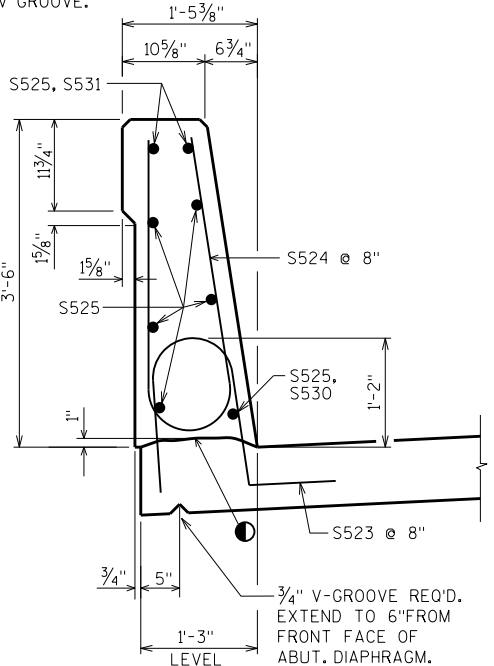


PLAN

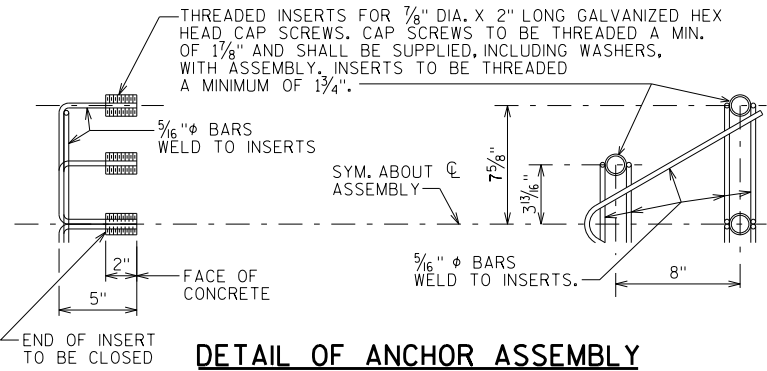
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" - 'V' GROOVE.



OUTSIDE ELEVATION



SECTION C



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C. ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-58-130			
DRAWN BY		DDS	PLANS CK'D. JDM
PARAPET 42SS ENDING ON DECK (AT NE CORNER)			SHEET 14

● CONST. JOINT - STRIKE OFF AS SHOWN.

INDICATES WING NUMBER

STATE PROJECT NUMBER

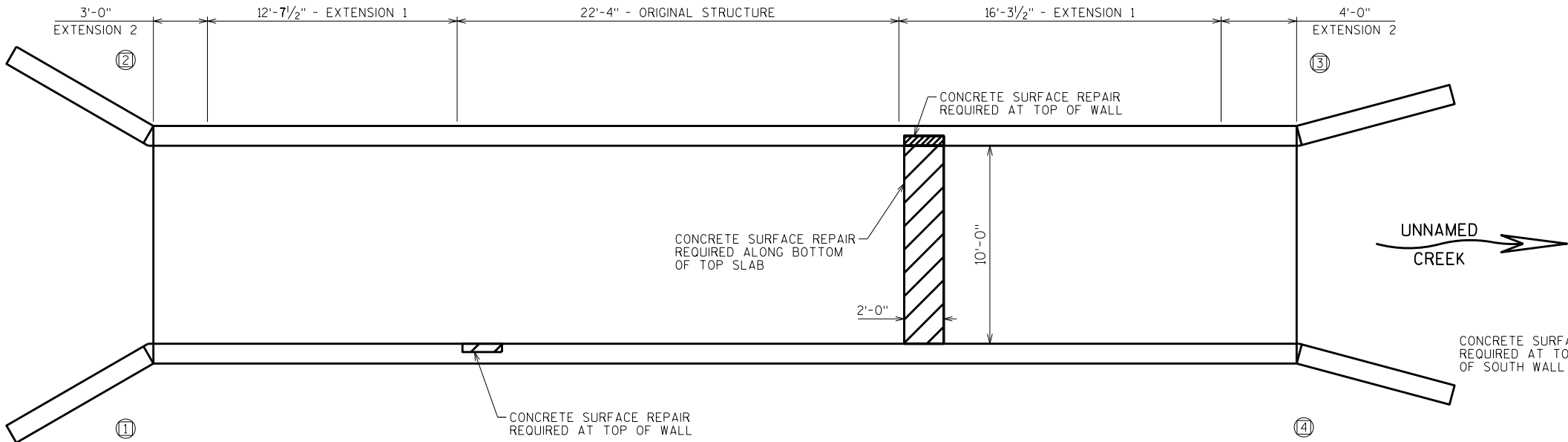
9190-26-73

TOTAL ESTIMATED QUANTITIES

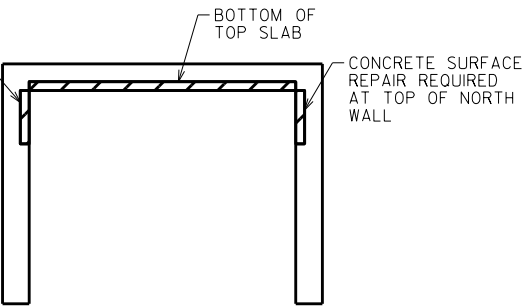
509.1500 CONCRETE SURFACE REPAIR 30 SF

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL
AND EXTENSION STRUCTURAL PLANS.
WORK TO BE DONE IN DRY CONDITIONS.



PLAN



CROSS SECTION
(LOOKING UPSTREAM)

LIST OF DRAWINGS

1. SURFACE REPAIR

STRUCTURE DESIGN CONTACTS:

JOEL MAAS (608) 267-0273
AARON BONK (608) 261-0261

NO.	DATE	REVISION	BY
 BUREAU OF STRUCTURES			
ACCEPTED <i>William C. Diehl</i> 10/31/18 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE C-58-18			
STH-32 OVER UNNAMED CREEK			
COUNTY	SHAWANO	TOWN	ANGELICA
DESIGN SPEC.			
DESIGNED BY	JDM	DESIGNED CK'D.	SAD
DRAWN BY	JDM	PLANS CK'D.	SAD
SURFACE REPAIR			SHEET 1 OF 1

I.D. 9190-26-00B

DATE: JUNE 2017

SCALE = 3/50

INDICATES WING NUMBER

STATE PROJECT NUMBER

9190-26-73

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

BILL OF BARS

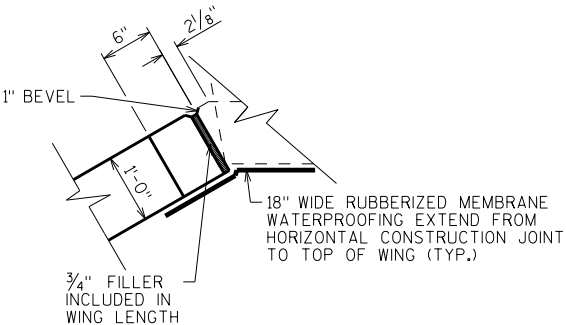
BAR MARK	COAT	NO. REQ'D.	LENGTH	BAR SERIES	LOCATION
A501	X	2	13'-2"		WING HORIZ. BOTH FACES TOP
A402	X	8	6'-6"	▲	WING HORIZ. BOTH FACES
A403	X	14	3'-7"	▲	WING VERT. FRONT FACE
A604	X	15	4'-4"	▲	WING VERT. BACK FACE
A505	X	21	6'-4"		WING FOOTING
A406	X	14	12'-5"		WING FOOTING
A407	X	14	5'-8"		WING FOOTING

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

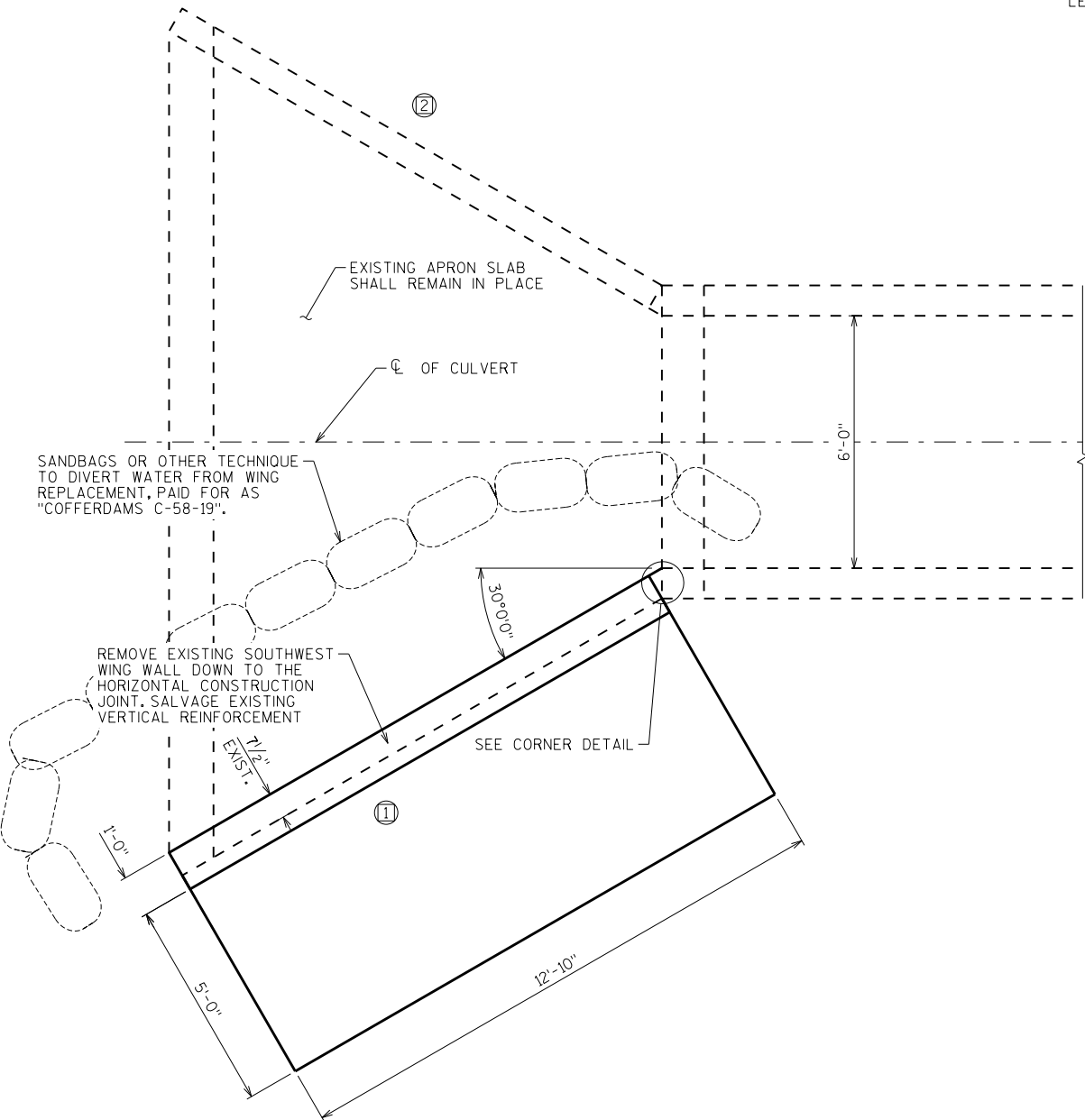
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTHS FOR EACH SERIES
A402	2 SERIES OF 3	2'-6" TO 10'-6"
A403	1 SERIES OF 10	1'-3" TO 5'-10"
A604	1 SERIES OF 15	2'-1" TO 6'-8"

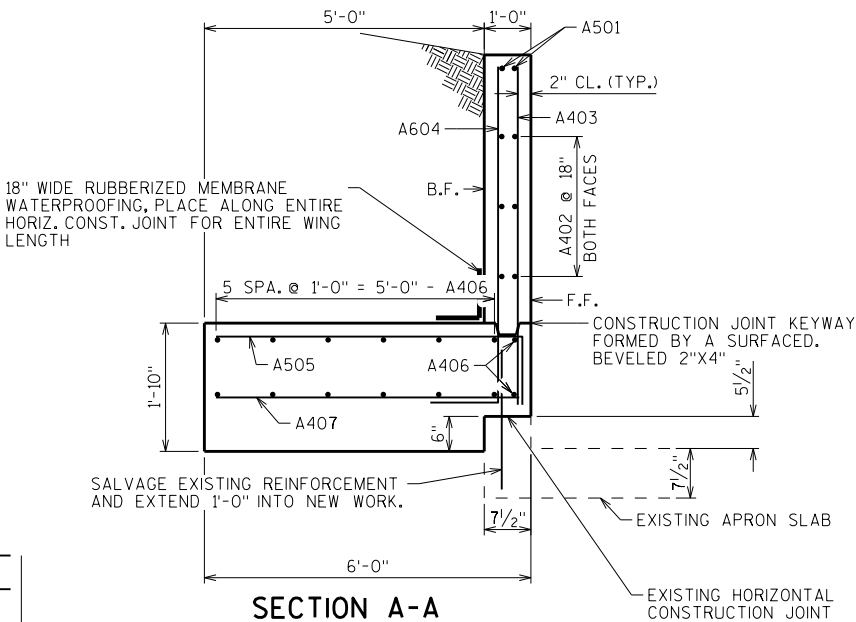
BUNDLE AND TAG EACH SERIES SEPARATELY



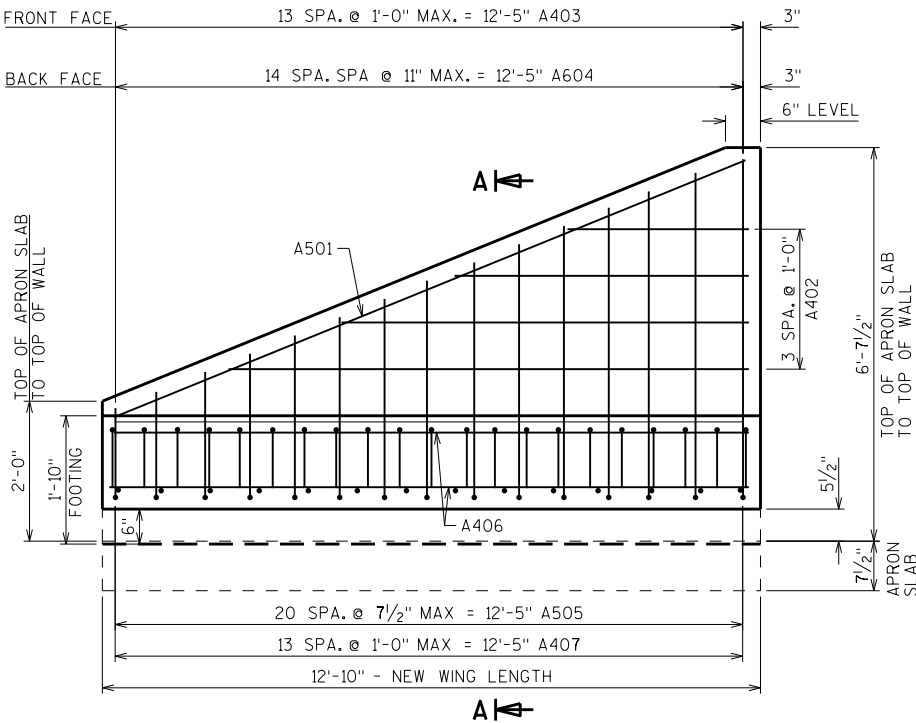
CORNER DETAIL



PLAN OF WING REPLACEMENT



SECTION A-A



SECTION THRU WING

TOTAL ESTIMATED QUANTITIES

BID ITEMS				
203.0200	REMOVING OLD STRUCTURE STA.271+60	1	LS	
206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-58-19	1	LS	
206.5000	COFFERDAMS C-58-19	1	LS	
210.2500	BACKFILL STRUCTURE TYPE B	30	TON	
504.0100	CONCRETE MASONRY CULVERTS	7	CY	
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	500	LB	
511.1200	TEMPORARY SHORING C-58-19	110	SF	
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	3	SY	
NON-BID ITEMS				
	FILLER	3/4"	SIZE	

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE WING WITHIN THE LENGTH OF THE WING WALL.
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-58-19" SHALL BE THE EXISTING GROUND LINE.

DESIGN DATA

MATERIAL PROPERTIES:
CONCRETE MASONRY, GRADE A-FA $f'_c = 3,500$ P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT $f_y = 60,000$ P.S.I.

STRUCTURE DESIGN CONTACTS:

JOEL MAAS (608) 267-0273
AARON BONK (608) 261-0261

NO.	DATE	REVISION	BY
 BUREAU OF STRUCTURES			
ACCEPTED <i>William C. Diehl</i> 10/31/18 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE C-58-19			
STH 32 OVER DRAINAGE WAY			
COUNTY	COUNTY	TOWN	ANGELICA
DESIGN SPEC.			
DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
JDM	SAD	JDM	SAD
WING REPLACEMENT			SHEET 1 OF 1

I.D. 9190-26-00C

DATE: JUNE 2017

SCALE = 2:00

DESIGN DATA

LIVE LOAD:
LIVE LOAD SURCHARGE (ROADWAY) 100 PSF

MATERIAL PROPERTIES:
CONCRETE MASONRY RETAINING WALL f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 fy = 60,000 P.S.I.
STEEL SHEET PILING (ASTM A328) fy = 39,000 P.S.I.
MIN. REQ'D SECTION MODULUS = 19.0 IN³ / FT.

TRAFFIC VOLUME

STH 32
ADT = 3,400 (2041)
R.D.S. = 55 M.P.H.

GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
- BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.
- ALL WALL STATIONING AND OFFSETS ARE GIVEN TO THE FRONT FACE OF R-58-11.
- THE PLAN QUANTITY FOR THE BID ITEM "PILING STEEL SHEET PERMANENT DELIVERED" AND "PILING STEEL SHEET PERMANENT DRIVEN" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF CUTOFF (ESTIMATED AS 10" BELOW TOP OF WALL / COPING ELEVATION TO THE SHEET PILE TIP ELEVATION.
- COORDINATE THE CONSTRUCTION OF WALL R-58-11 WITH BRIDGE B-58-130.
- SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF JOINT FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP & HOLD 1/8" BELOW THE SURFACE.)
- * BAR STEEL REINFORCEMENT HS COATED STRUCTURES QUANTITY IS FOR INFORMATIONAL PURPOSES ONLY. ACTUAL QUANTITIES WILL DEPEND ON NUMBER AND SPACING OF COPING EXPANSION AND CONTRACTION JOINTS.
- THE EXISTING GROUND LINE SHALL BE USED AT THE UPPER LIMITS OF EXCAVATION

☆ STEEL SHEET PILING NEED NOT BE PAINTED PER STANDARD SPEC 512.3.3

STRUCTURE DESIGN CONTACTS:
JOEL MAAS (608) 267-0273
AARON BONK (608) 261-0261

LIST OF DRAWINGS

- 1.GENERAL PLAN
2.WALL DETAILS
3.SUBSURFACE EXPLORATION

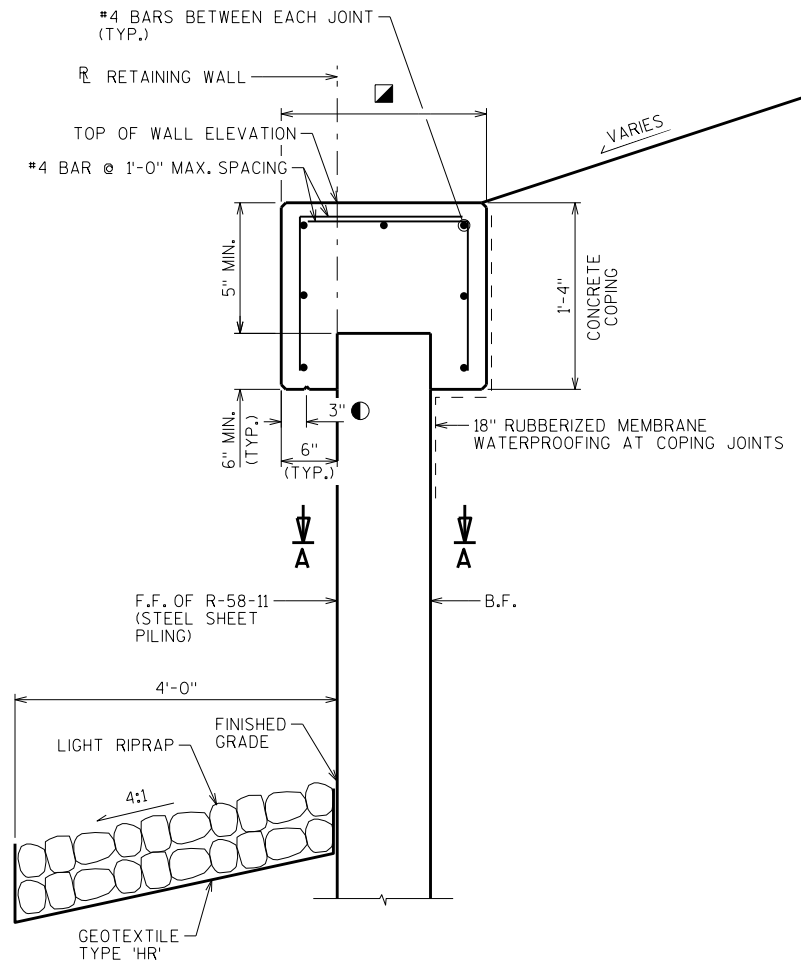
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
206.3000	EXCAVATION FOR STRUCTURES RETAINING WALL R-58-11	LS	1
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	11
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,000
512.0500	PILING STEEL SHEET PERMANENT DELIVERED	SF	1,940
512.0600	PILING STEEL SHEET PERMANENT DRIVEN	SF	1,940
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	2
606.0100	RIPRAP LIGHT	CY	40
645.0120	GEOTEXTILE TYPE HR	SY	113
NON-BID ITEMS			
	FILLER	SIZE	¾", 1"

GEOMETRY TABLE

LOCATION	WALL STATION	R/L STATION	OFFSET (FRONT FACE) FROM R/L STATION	TOP OF WALL	FINISHED GRADE @ F.F. OF WALL	EXISTING GRADE @ F.F. OF WALL
START WALL	100+00	320+93.00	23.48 RT.	779.34	773.03	776.98
BEGIN	100+25	321+17.66	27.66 RT.	777.91	773.50	774.81
WALL KINK	100+33.46	321+26.00	29.00 RT.	777.78	773.82	774.24
	100+50	321+42.54	29.00 RT.	777.47	774.16	774.19
	100+75	321+67.54	29.00 RT.	777.68	775.16	775.14
	101+00	321+92.54	29.00 RT.	777.97	776.41	775.22
END WALL	101+25	322+17.54	29.00 RT.	778.12	778.12	778.12

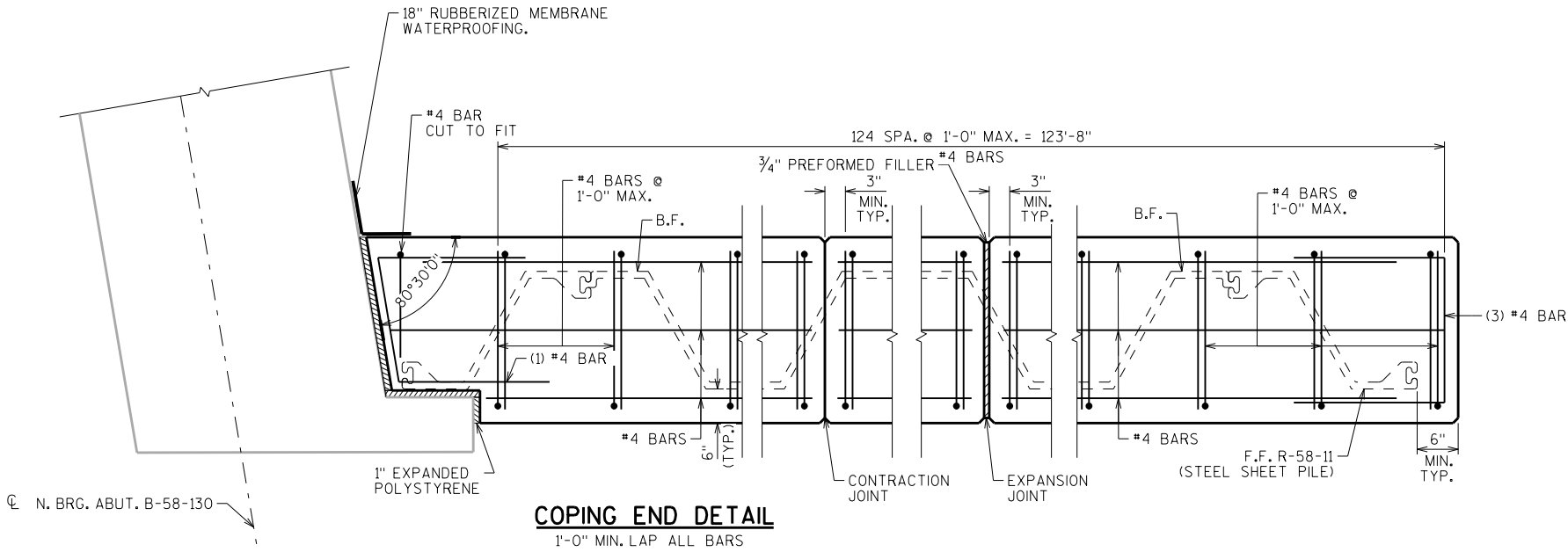
NO.	DATE	REVISION	BY
 WISCONSIN DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURES ACCEPTED <i>William C. Decker</i> 11/15/18 CHIEF STRUCTURES DESIGN ENGINEER DATE STRUCTURE R-58-11 ALONG STH 32 COUNTY SHAWANO TOWN/VILLAGE ANGELICA DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS DESIGNED BY JDM DESIGNED CK'D. EMK DRAWN BY JDM PLANS CK'D. EMK GENERAL PLAN SHEET 1 OF 3			



TYPICAL SECTION

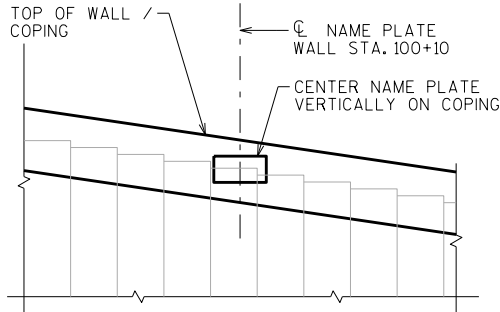
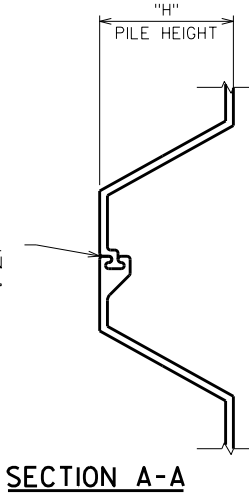
LOOKING SOUTH

- 3/4" CONTINUOUS DRIP EDGE, TERMINATE 6" FROM END OF WALLS
- DIMENSION TO BE DETERMINED BY CONTRACTOR ("H" DIMENSION OF PILE + 1'-0")

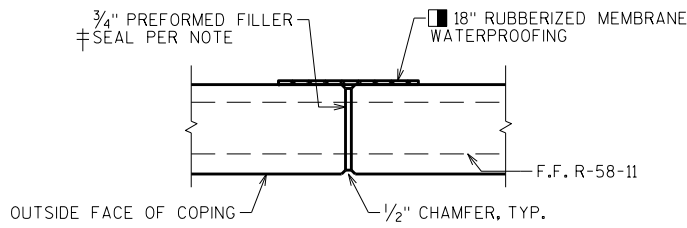


COPING END DETAIL
1'-0" MIN. LAP ALL BARS

SHEAR CONNECTION BETWEEN PILING STEEL SHEET PERMANET PANELS (TYP.), CONNECTION TO DEVELOP SHEETING SHEAR CAPACITY.



NAME PLATE DETAIL

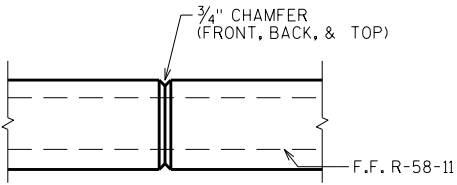


COPING EXPANSION JOINT

DO NOT RUN BAR STEEL THRU JOINT.
MAX. SPACING OF JOINT = 50'

† SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLE 1/8" BELOW SURFACE OF CONC.)

■ MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 12" BELOW TOP OF SHEET PILES.



COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT.
MAX. SPACING OF JOINT = 12'

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE R-58-11			
DRAWN BY JDM		PLANS CK'D. EMK	
WALL DETAILS		SHEET 2	

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	3/12/2018	133621	510778
2	3/07/2018	133743	510787
3	3/07/2018	133793	510779
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) SHAWANO COUNTY			



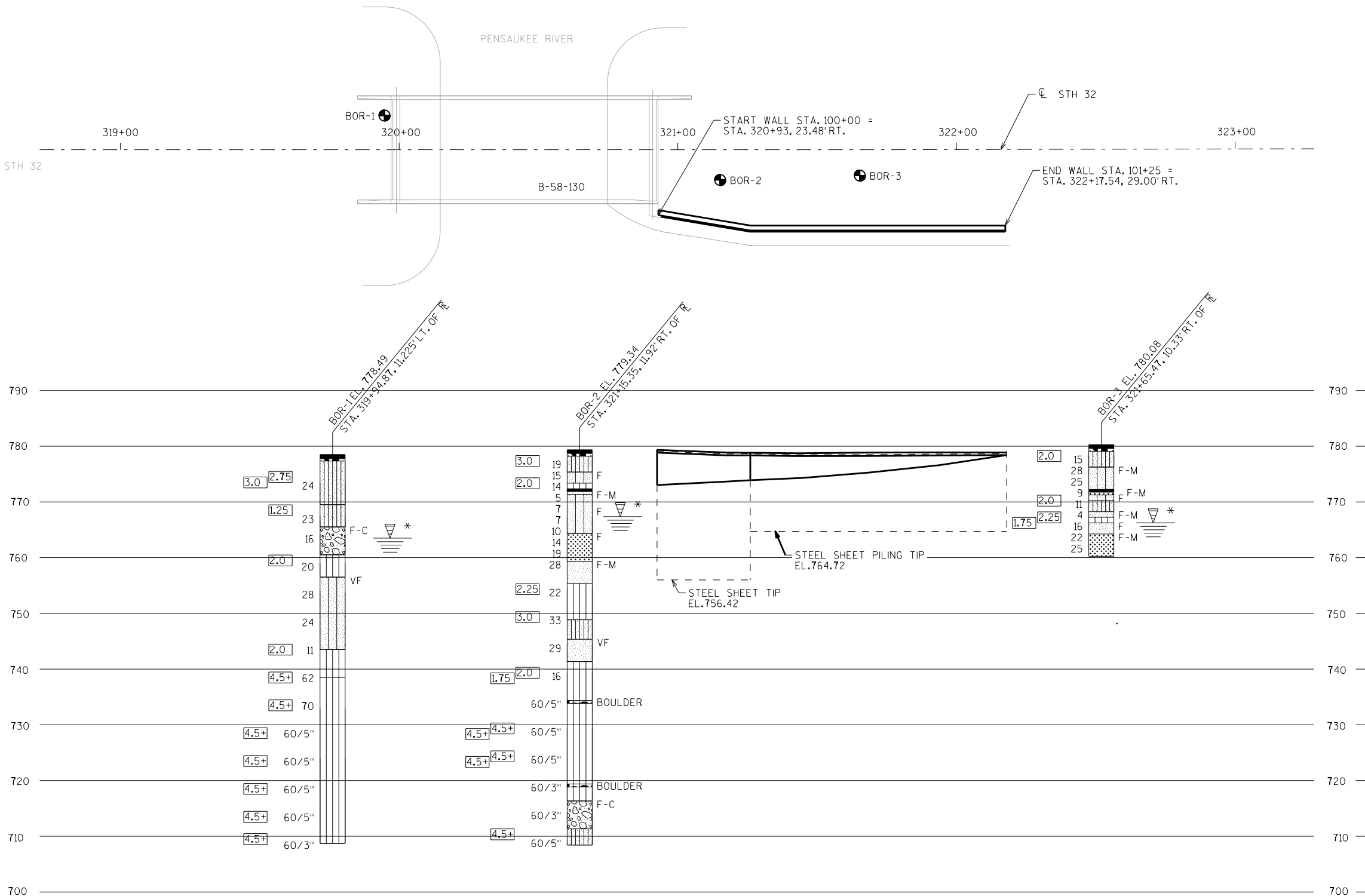
STATE PROJECT NUMBER		
9190-26-73		
MATERIAL SYMBOLS		
ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META

LEGEND OF BORING	
BORING #/EL./STA./OFF-SET	
ST	
(1) 0.25	(2) 17
F-C	COBBLE OR BOULDER
	WEATHERED LIMESTONE
	CORE RUN #1 - 24'-29'
	REC=80%, ROD=72%
(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)	
(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.	
GROUND WATER ELEVATION	
AT TIME OF DRILLING	
END OF DRILLING	
AFTER DRILLING	
ABBREVIATIONS	
F-FINE	M-MEDIUM
C-COARSE	ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE R-58-11			
DRAWN BY TLP,JDM		PLANS CK'D. EMK	
SUBSURFACE EXPLORATION		SHEET 3	

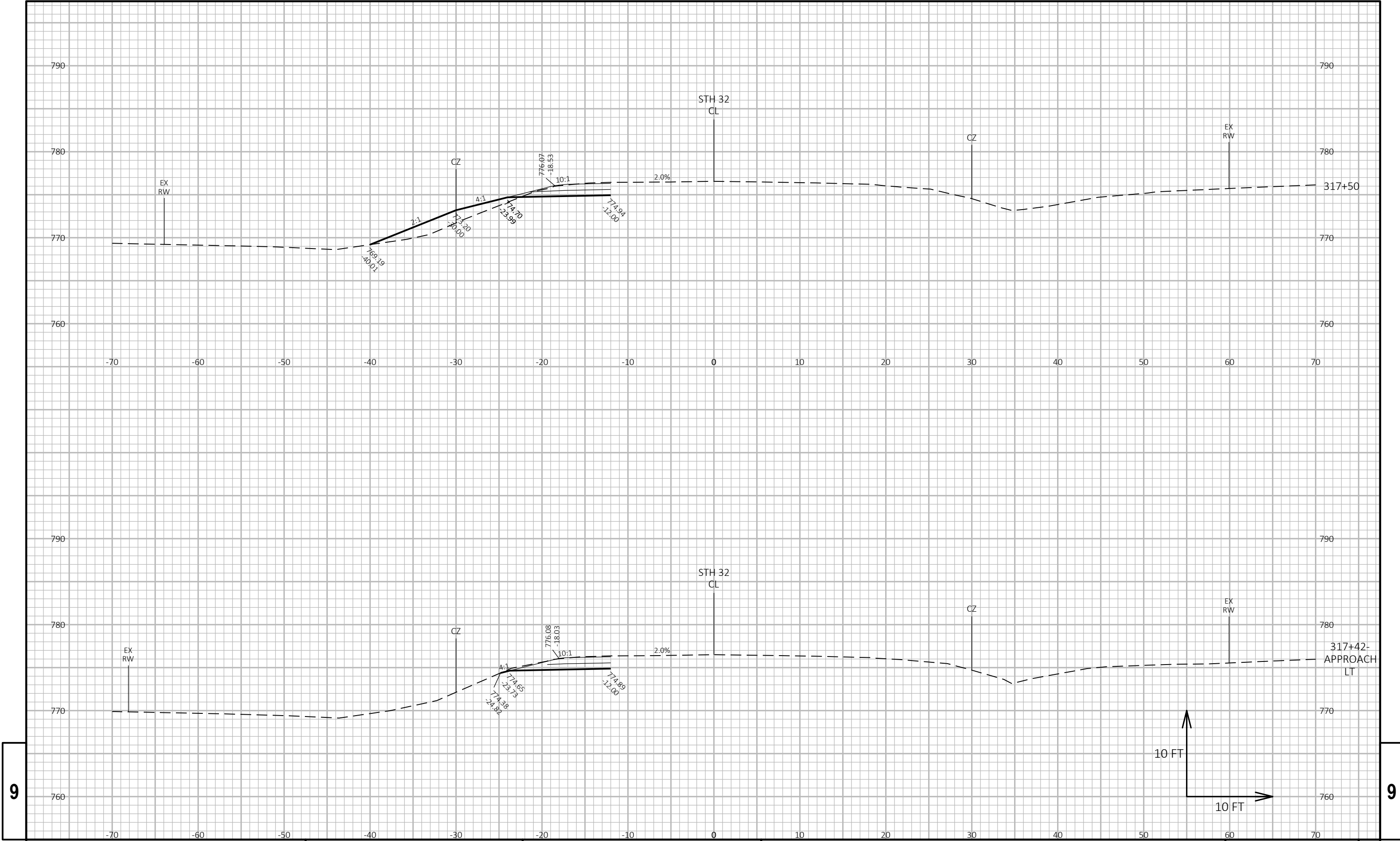


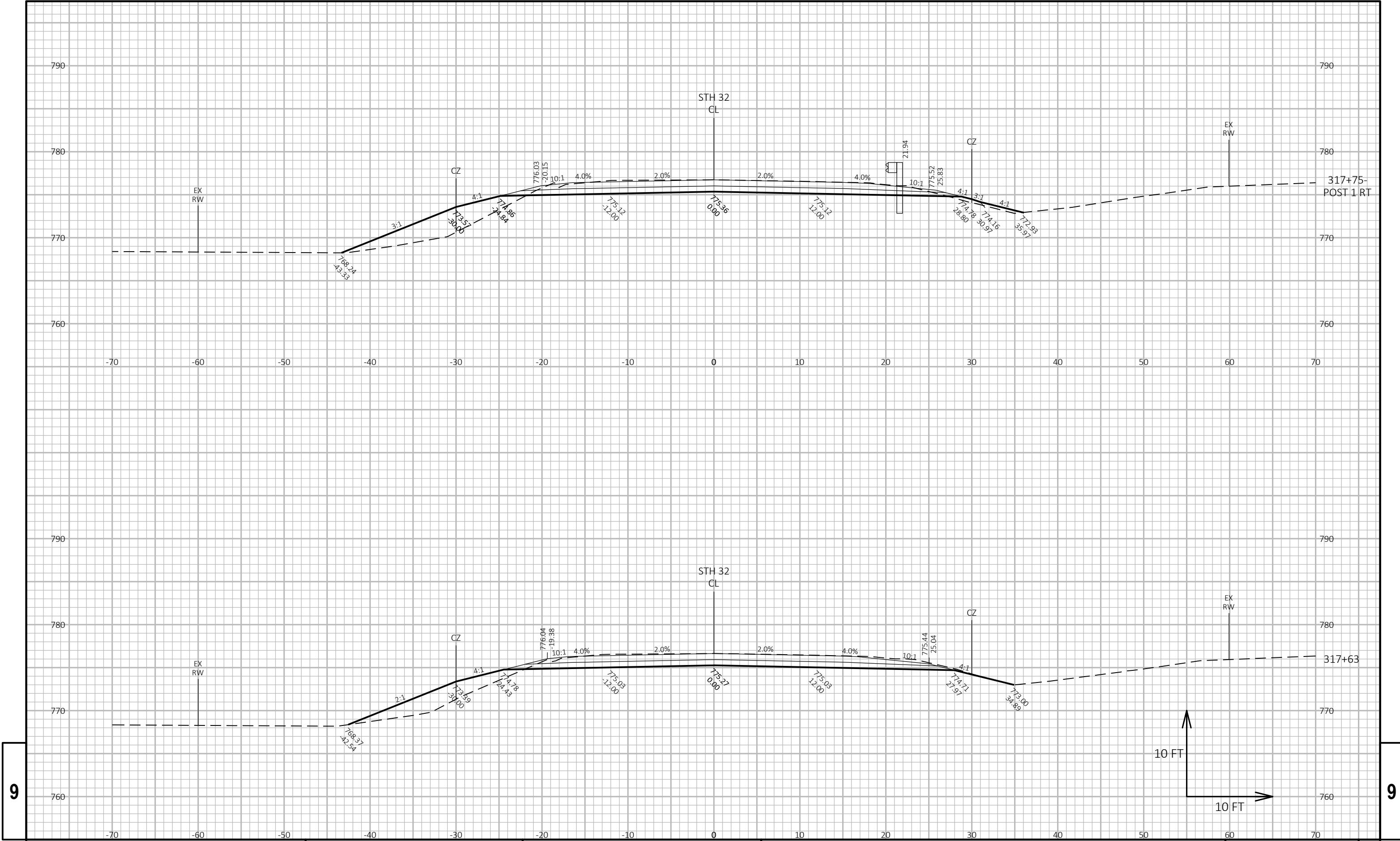
* THE GROUND WATER ELEVATION WAS DETERMINED FROM WHERE THE SOIL SAMPLE WAS DESCRIBED AS WET.

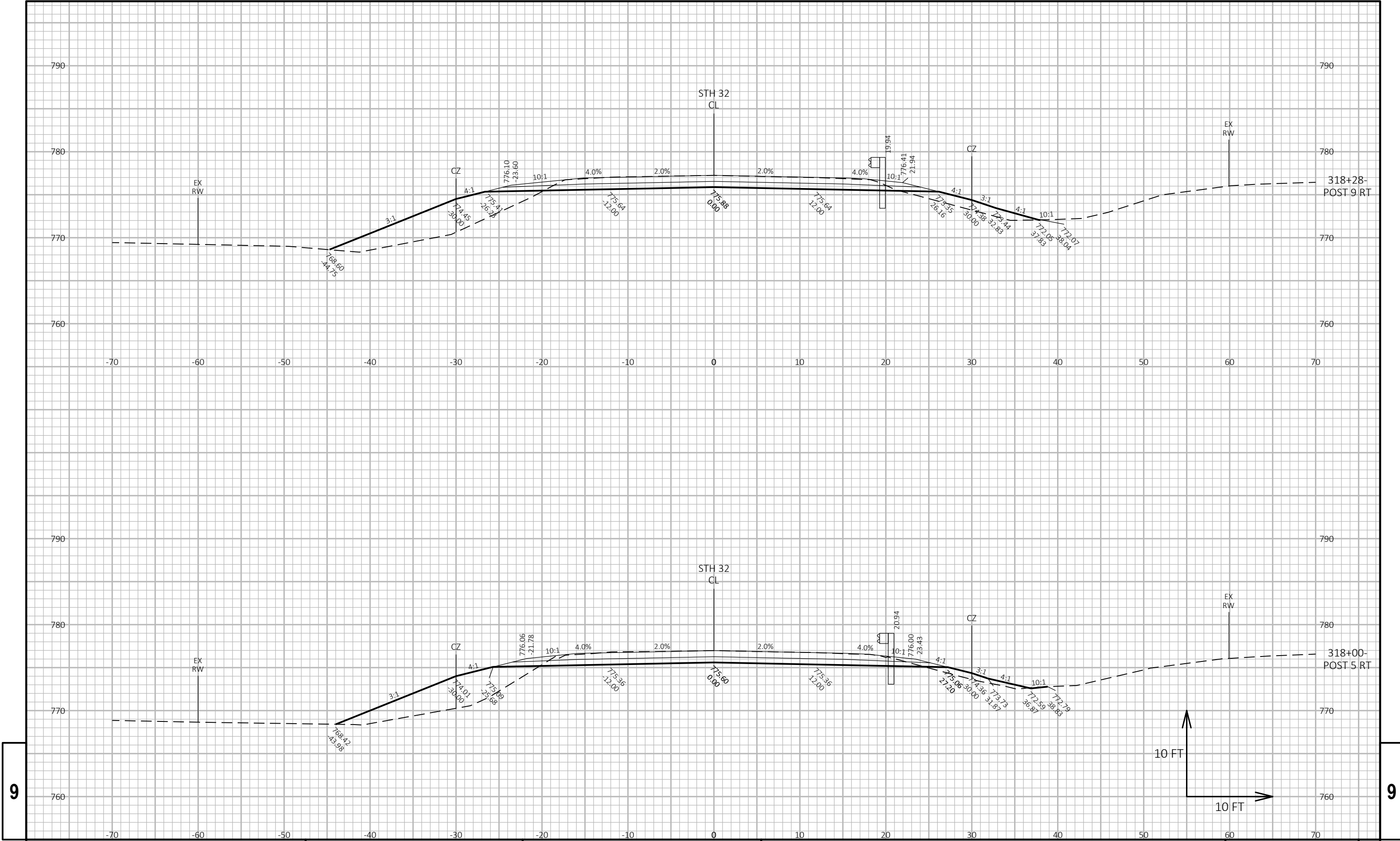
EARTHWORK DETAIL SUMMARY

STATION	DISTANCE (Feet)	<u>205.0100</u>	<u>208.0100</u>	Cumulative Volume(s)		
		COMMON EXCAVATION	BORROW	Cut Factor 1.00	Expanded Fill Factor 1.15	Mass Ordinate (Note 2)
		Cut CY	Fill (Note 1) CY			
317+25	25	0	0	0	0	0
317+42	17	4	0	4	0	4
317+50	8	3	2	8	3	5
317+63	13	18	11	26	15	10
317+76	13	30	16	56	34	21
318+01	25	54	47	109	88	21
318+26	25	49	60	159	157	2
318+50	24	45	67	204	234	-30
318+63	13	25	43	229	284	-55
318+75	12	21	40	250	329	-80
318+88	13	23	46	273	383	-110
319+00	12	19	39	291	428	-137
319+25	25	36	90	327	531	-204
319+50	25	29	104	356	651	-295
319+75	25	25	126	382	796	-415
319+87	12	11	68	393	874	-481
319+98	11	11	71	404	955	-552
320+97	22	21	27	430	1,031	-602
321+00	3	7	9	437	1,042	-605
321+04	4	7	9	444	1,053	-608
321+16	12	23	33	467	1,091	-624
321+25	9	15	26	482	1,120	-639
321+50	25	44	75	526	1,207	-681
321+75	25	48	62	574	1,278	-704
322+00	25	50	55	624	1,341	-717
322+17	17	25	42	649	1,389	-740
322+22	5	4	11	654	1,402	-748
322+47	25	25	50	679	1,459	-780
322+72	25	29	26	708	1,489	-781
322+81	9	11	1	719	1,490	-771
322+96	15	14	0	732	1,491	-758
323+00	4	2	0	735	1,491	-756
323+21	21	6	0	741	1,491	-750
323+46	25	0	0	741	1,491	-750
TOTAL		741	1,296			-750

Note 1: Does not include unusable pavement volume.
Note 2: Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.



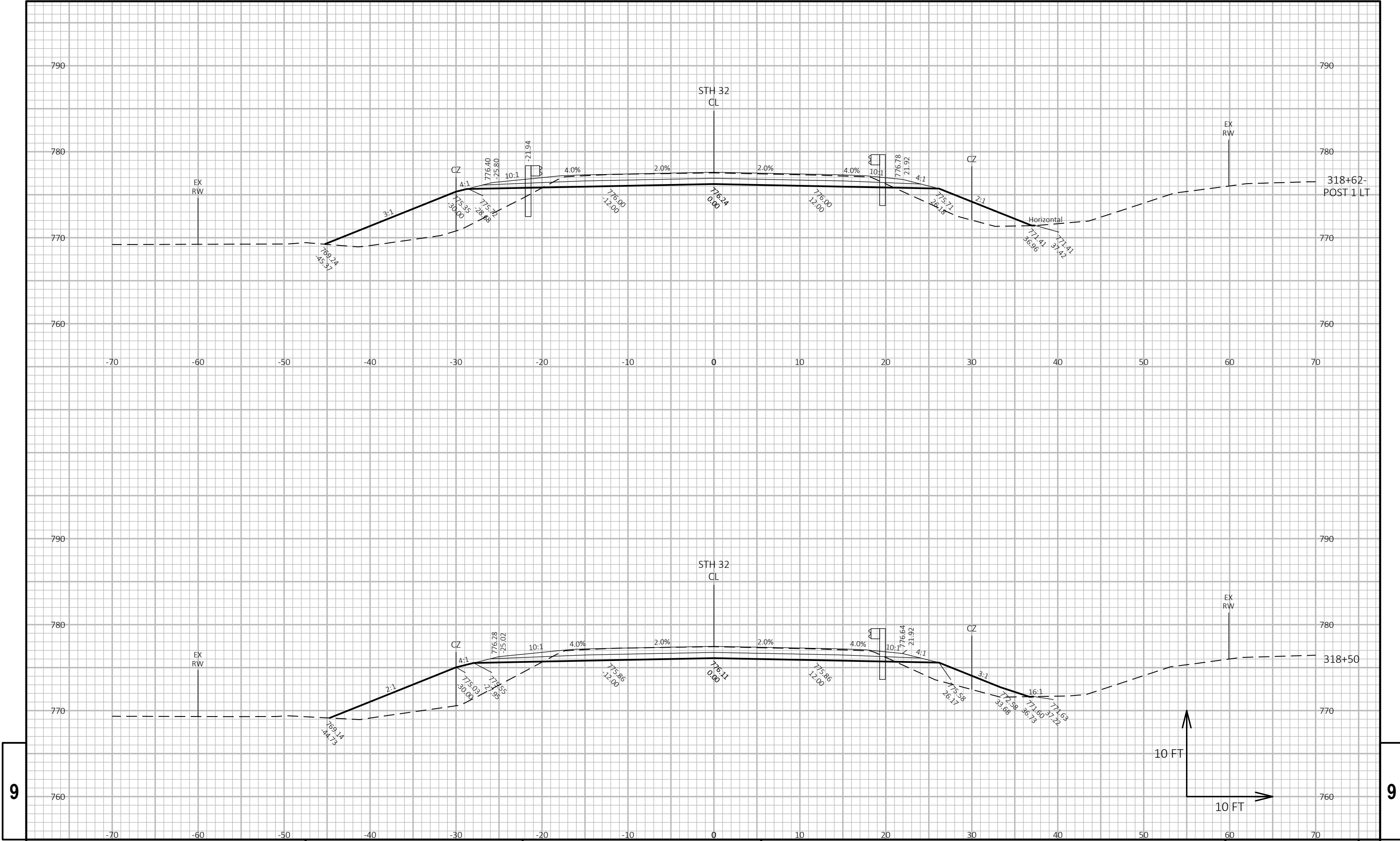




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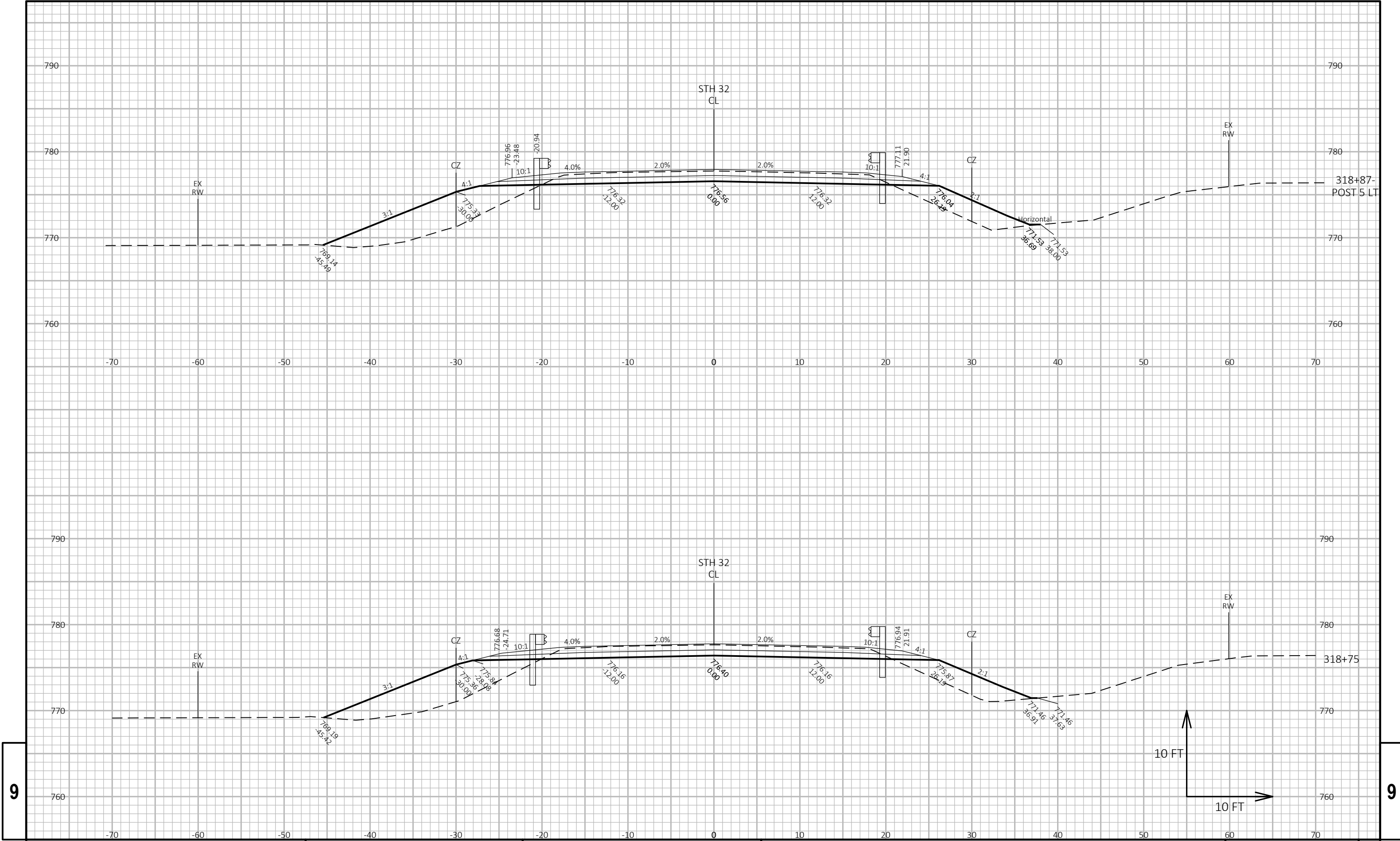
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PROJECT NO: 9190-26-73	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: BEAMGUARD	SHEET E
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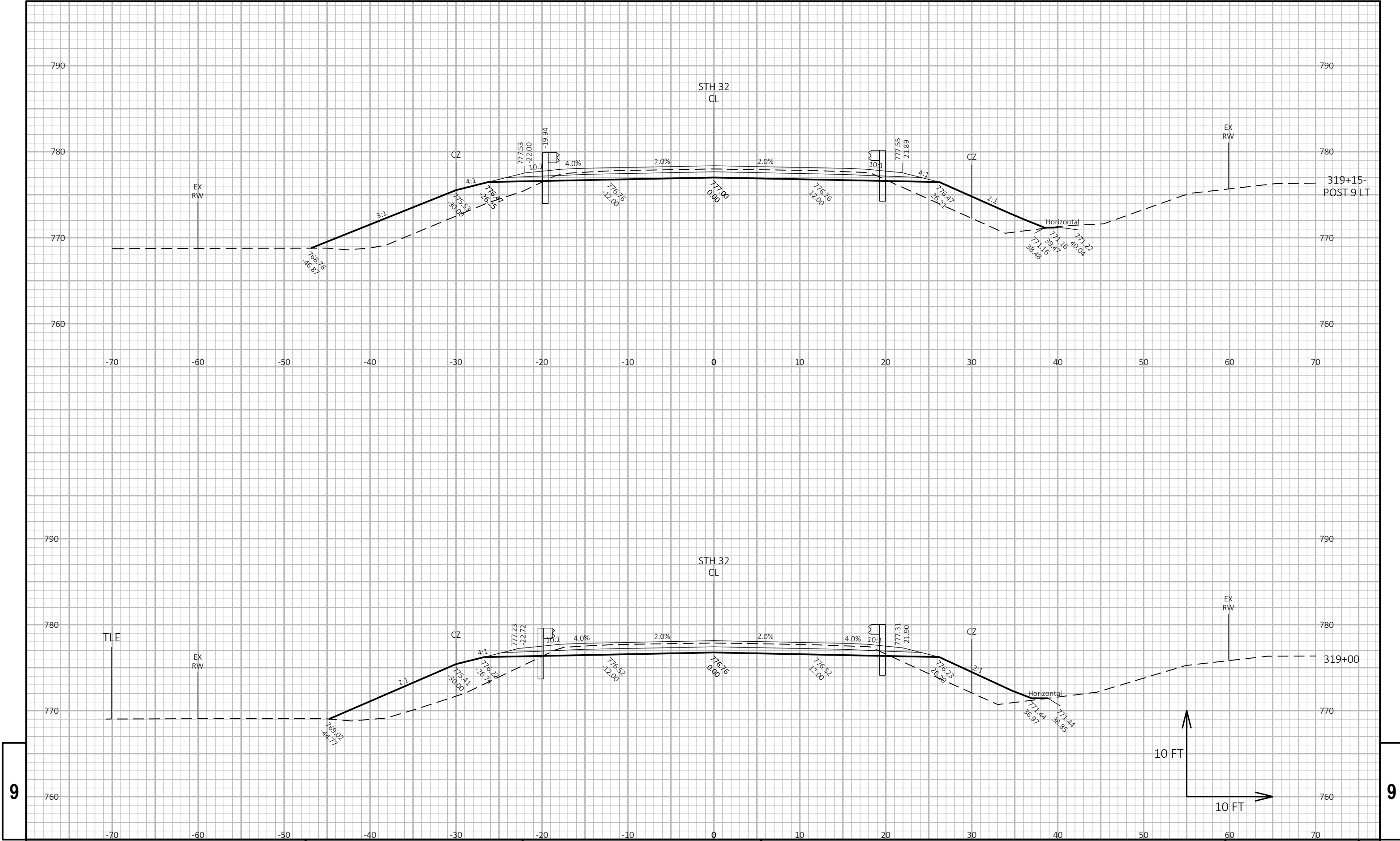
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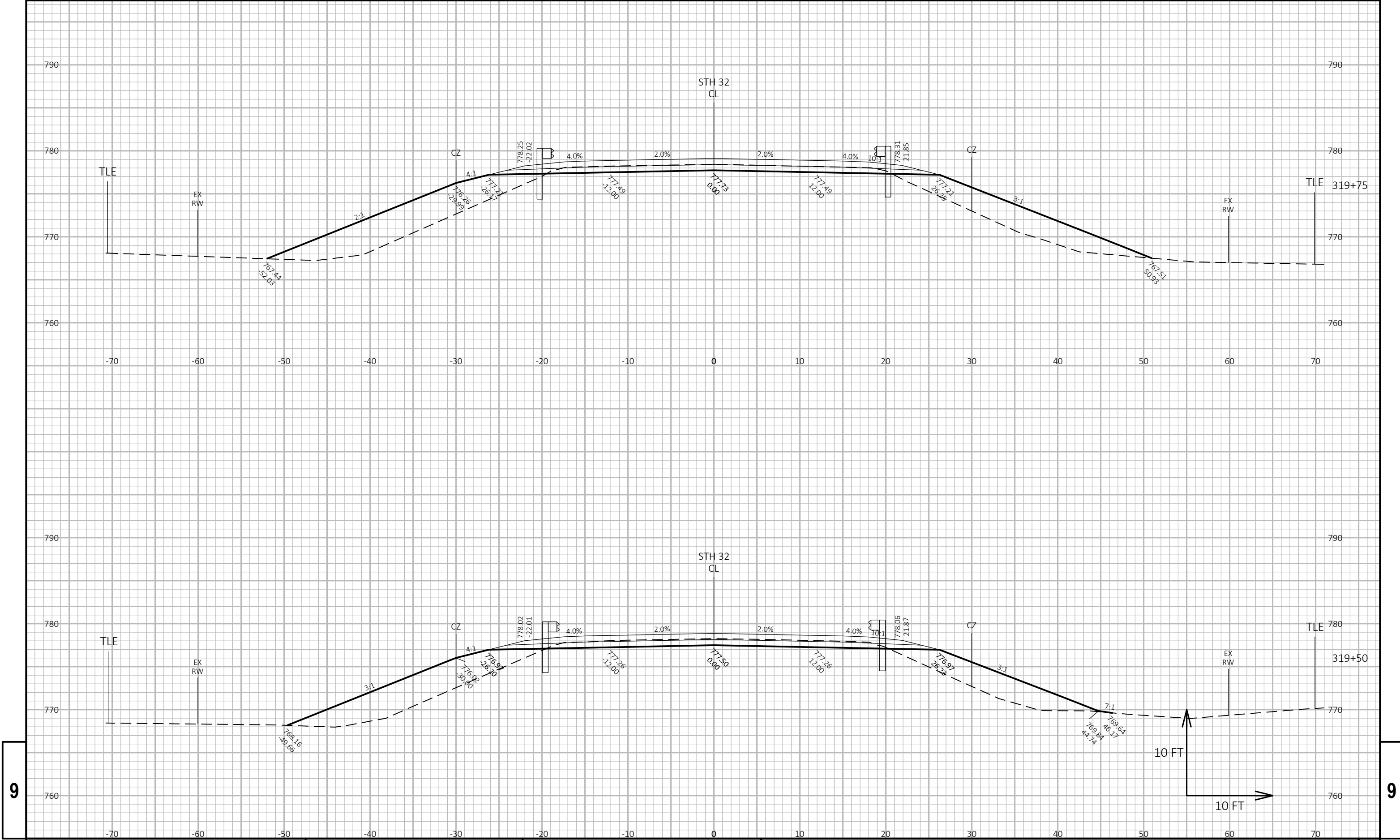
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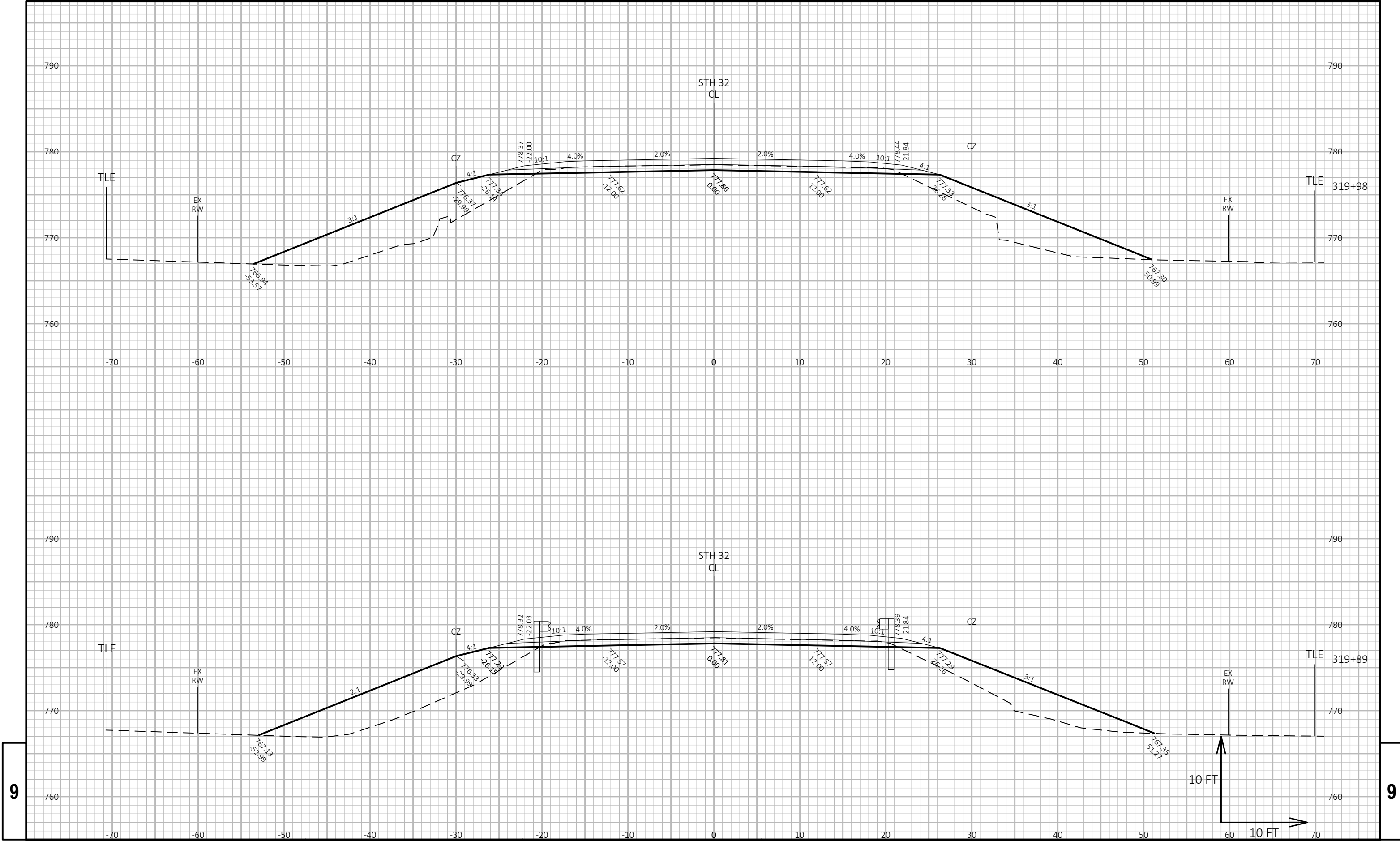


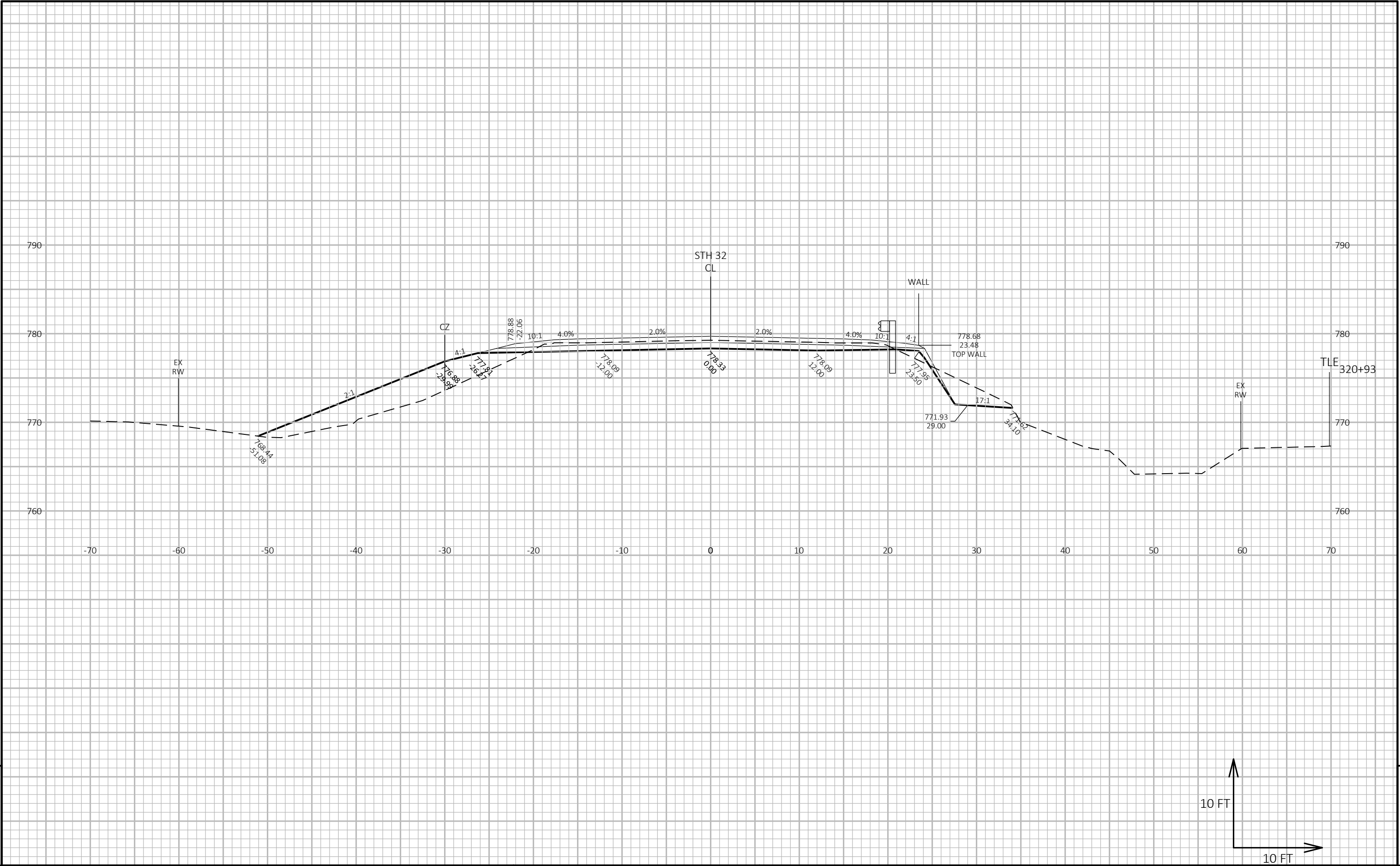
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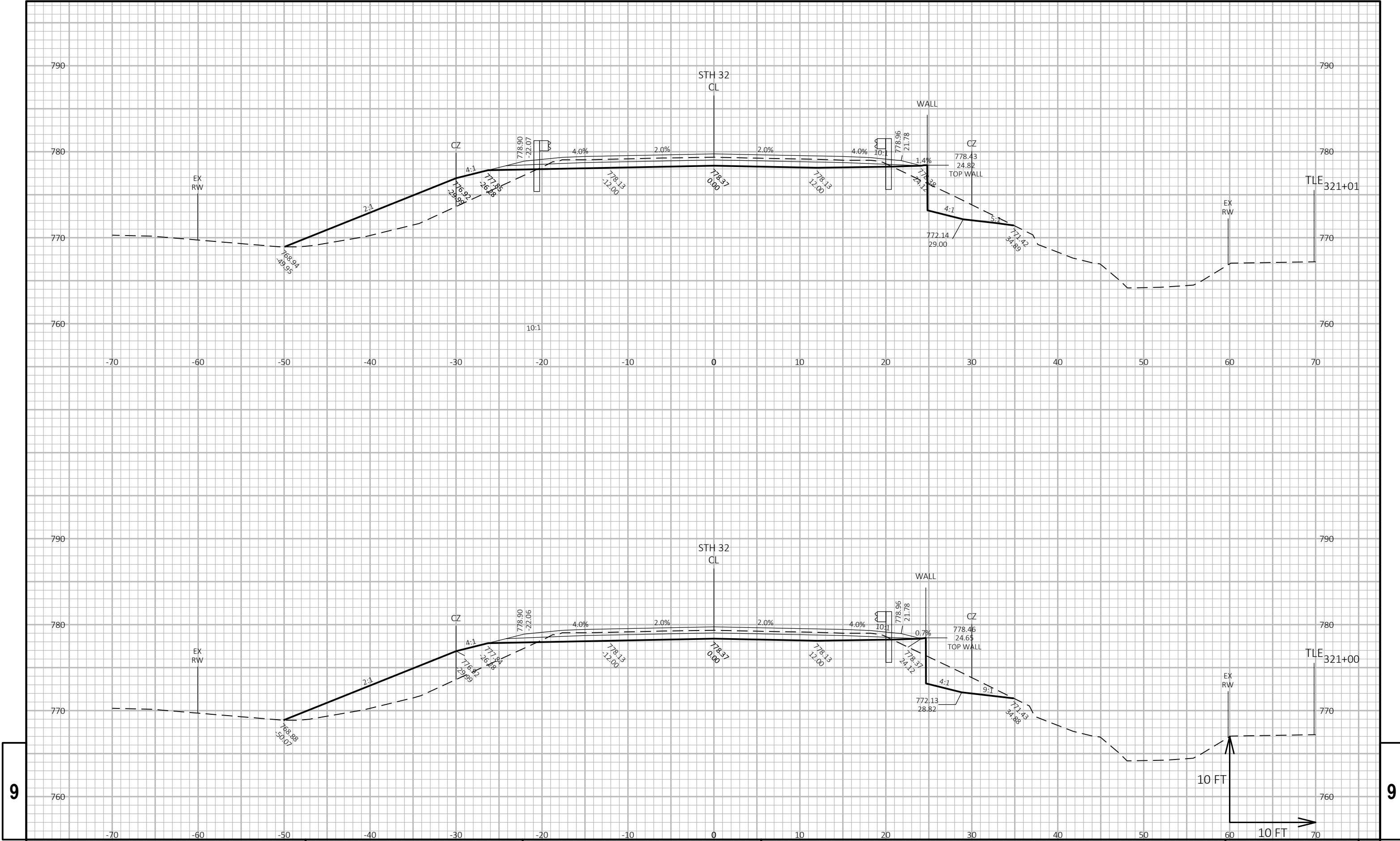
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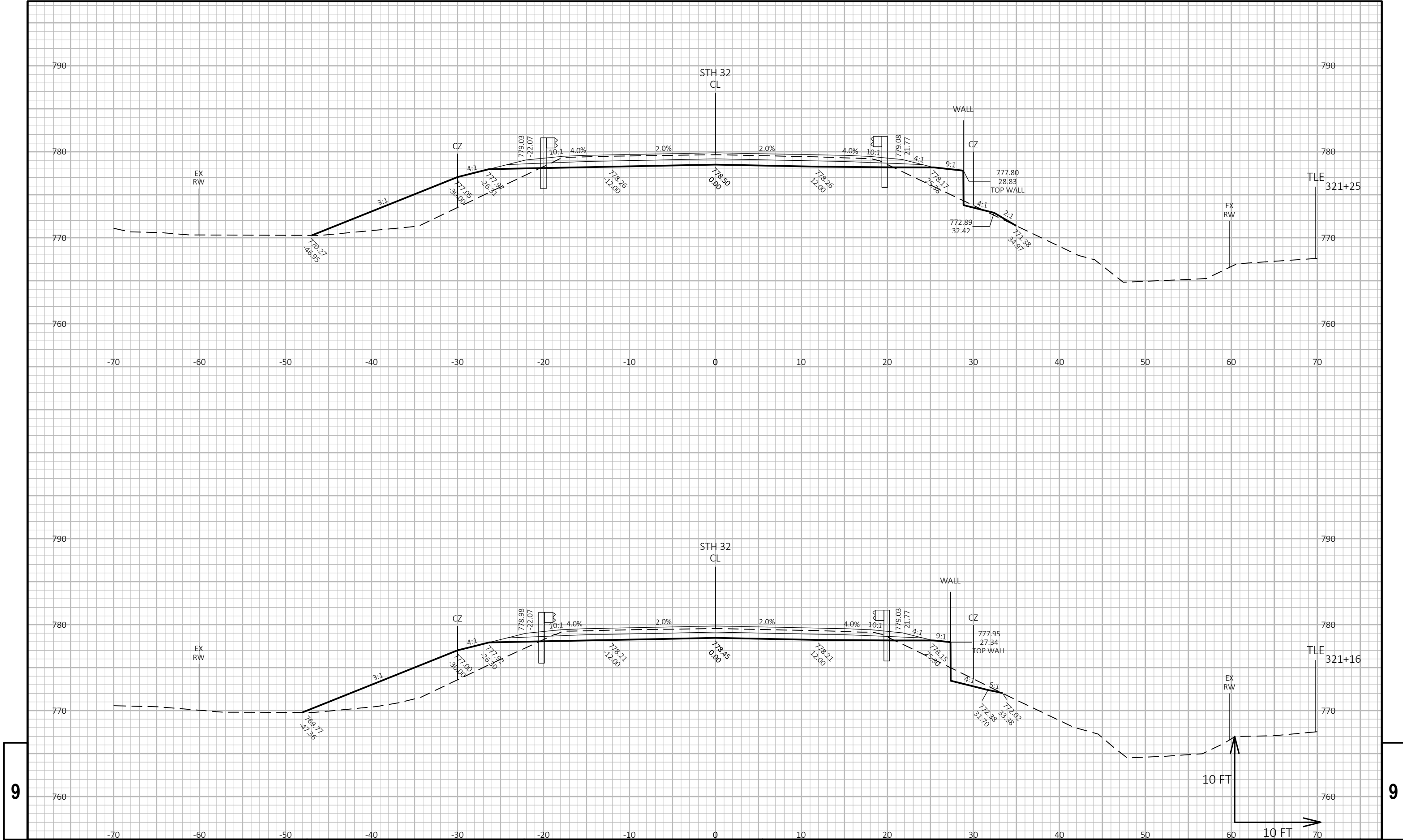






PROJECT NO: 9190-26-73	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: BEAMGUARD - RETAINING WALL	SHEET	E
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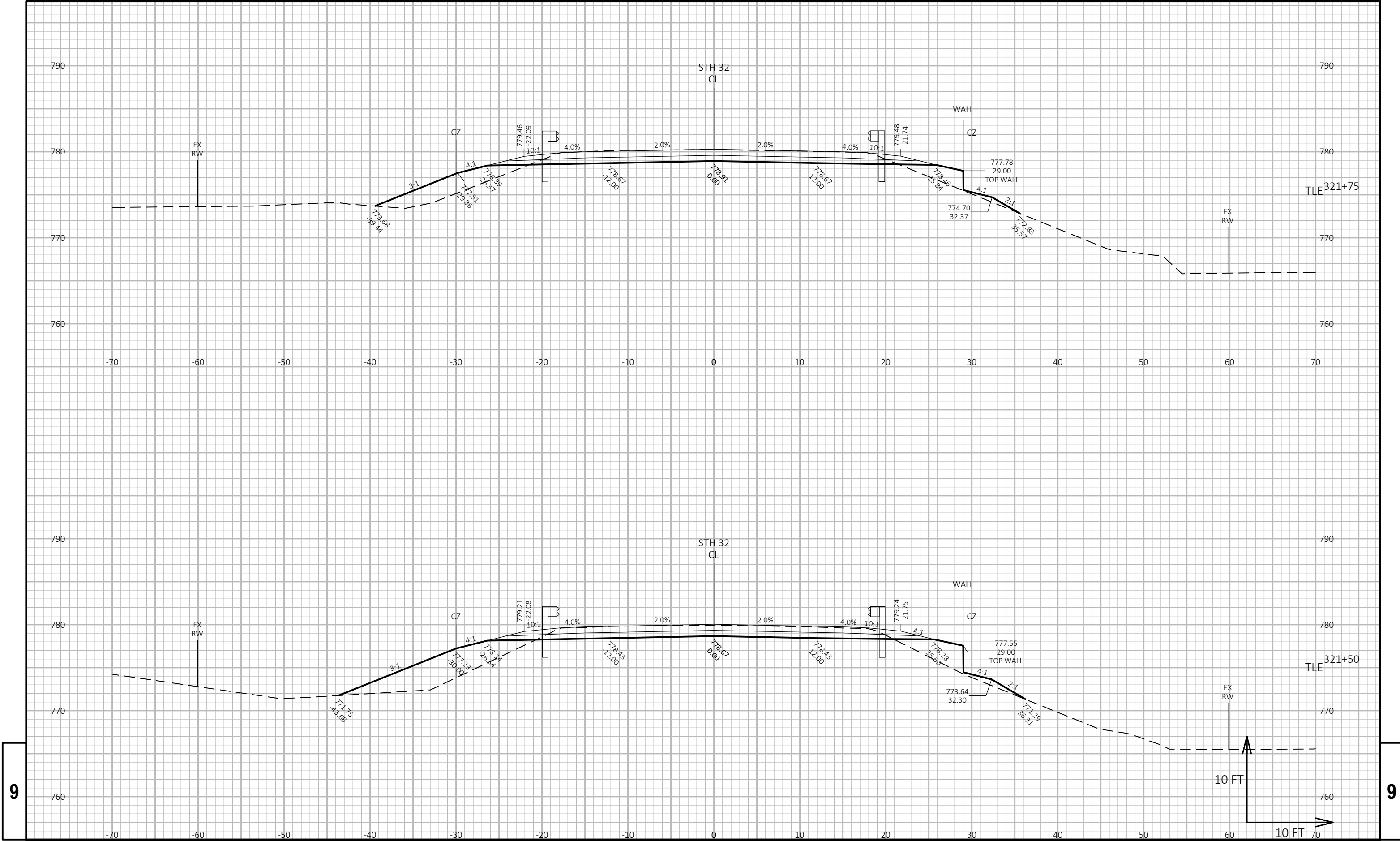


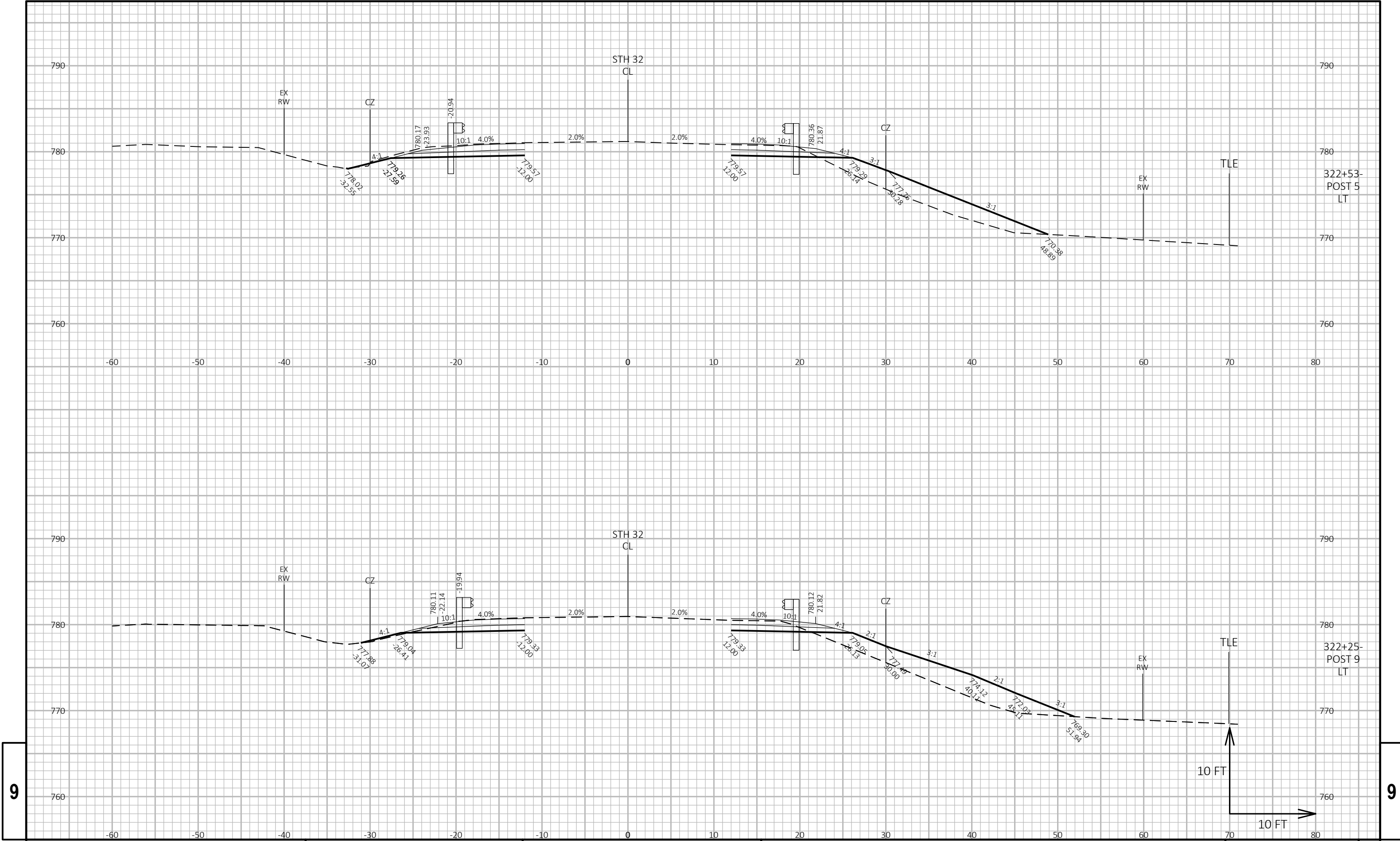


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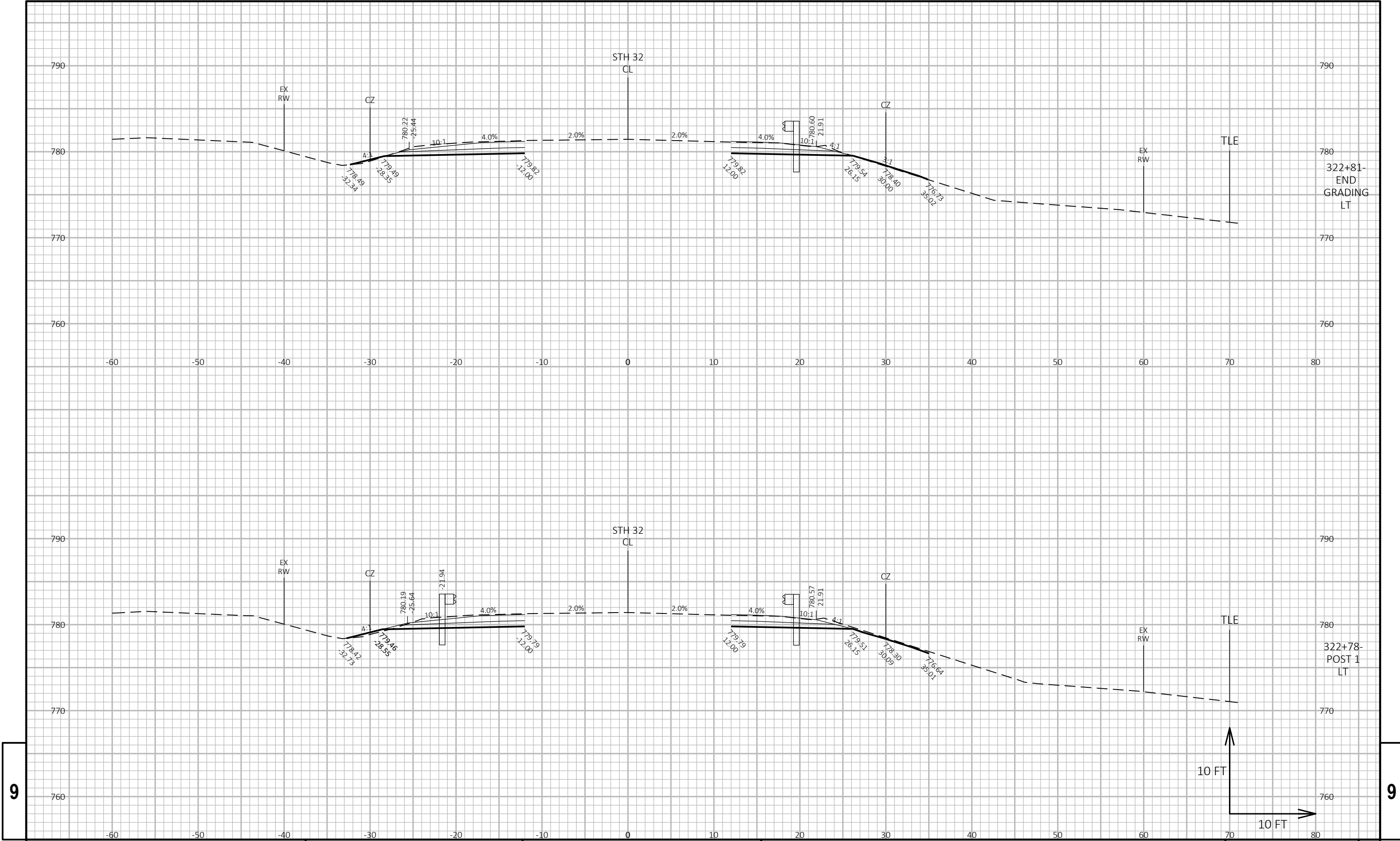
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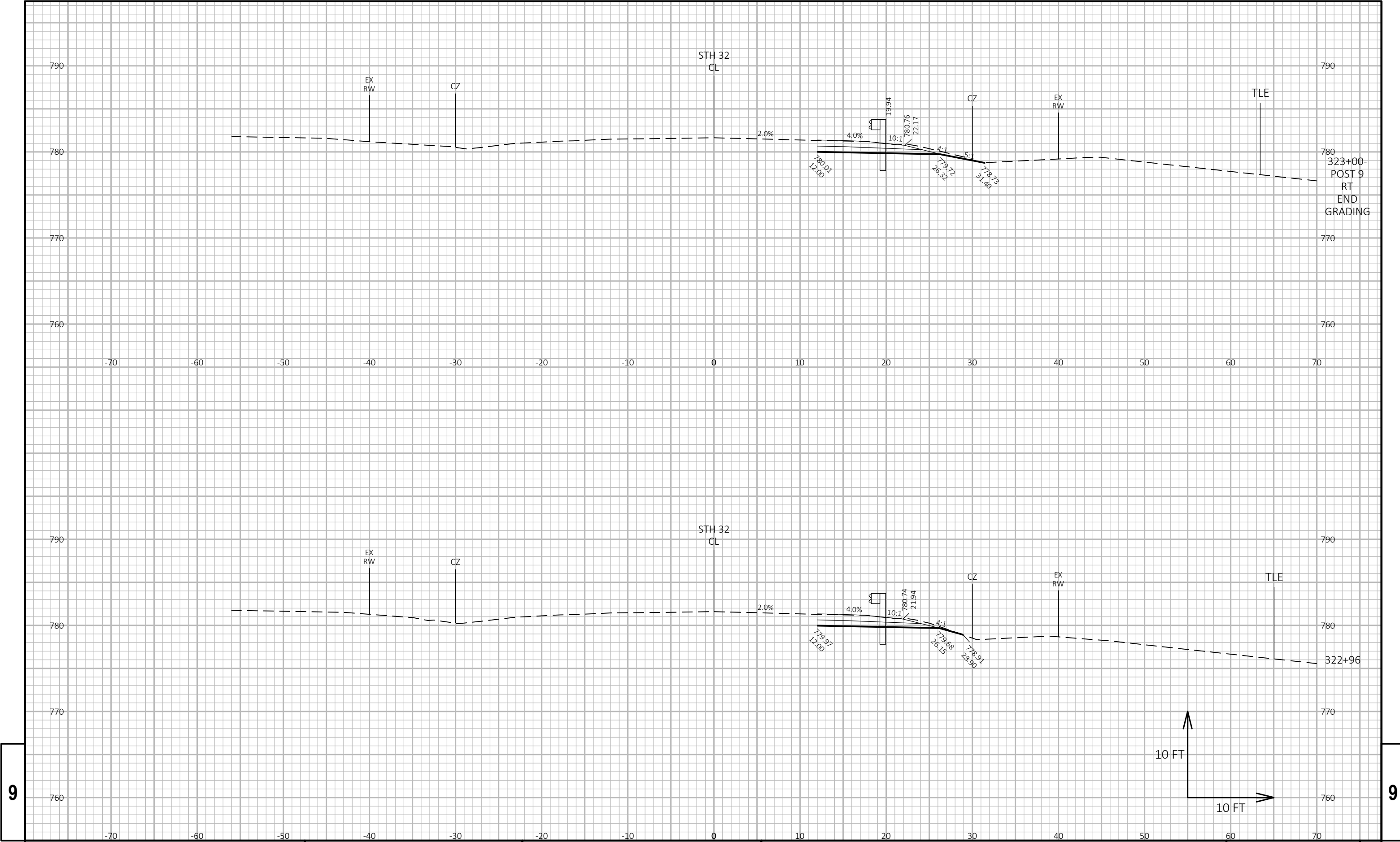




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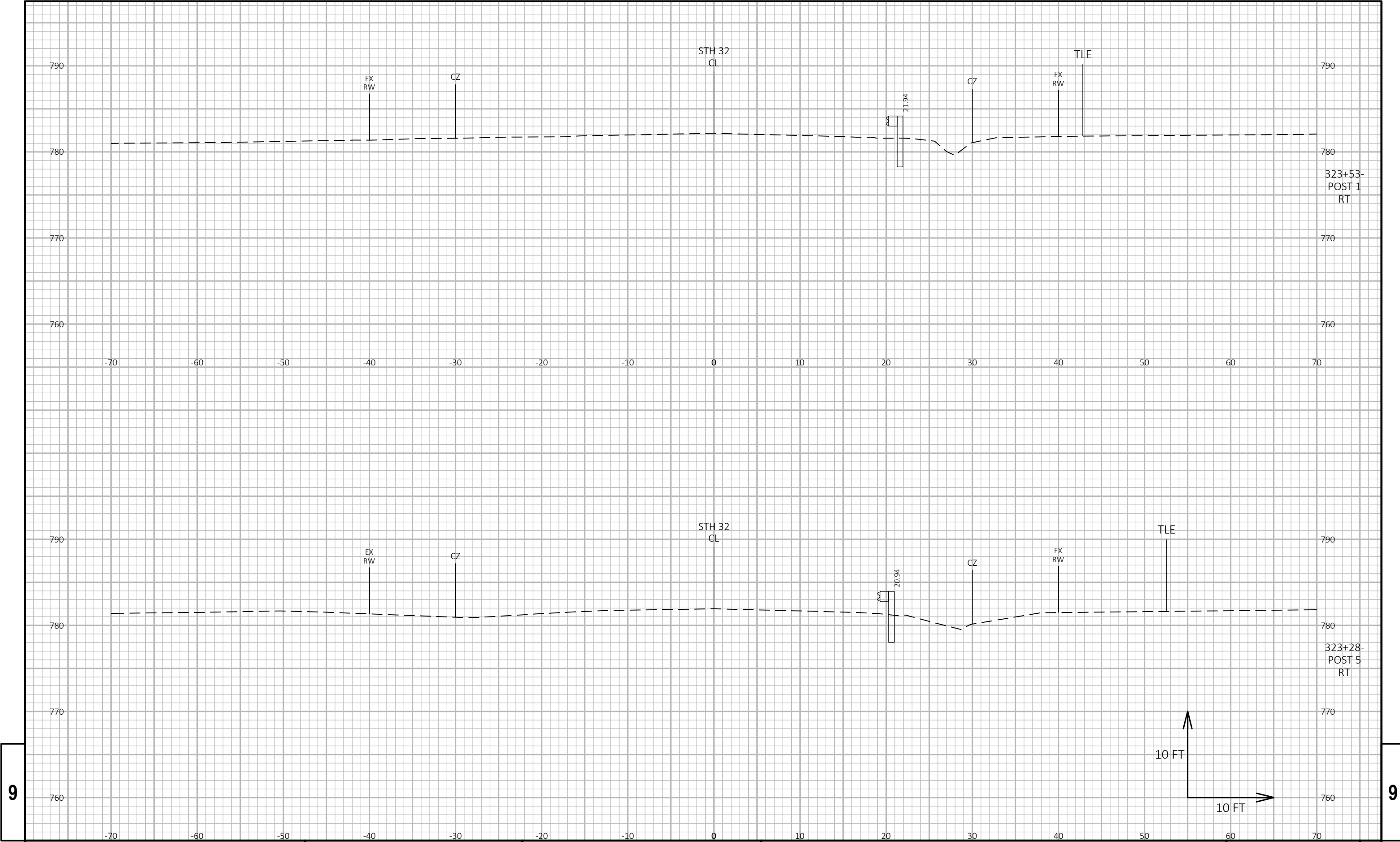




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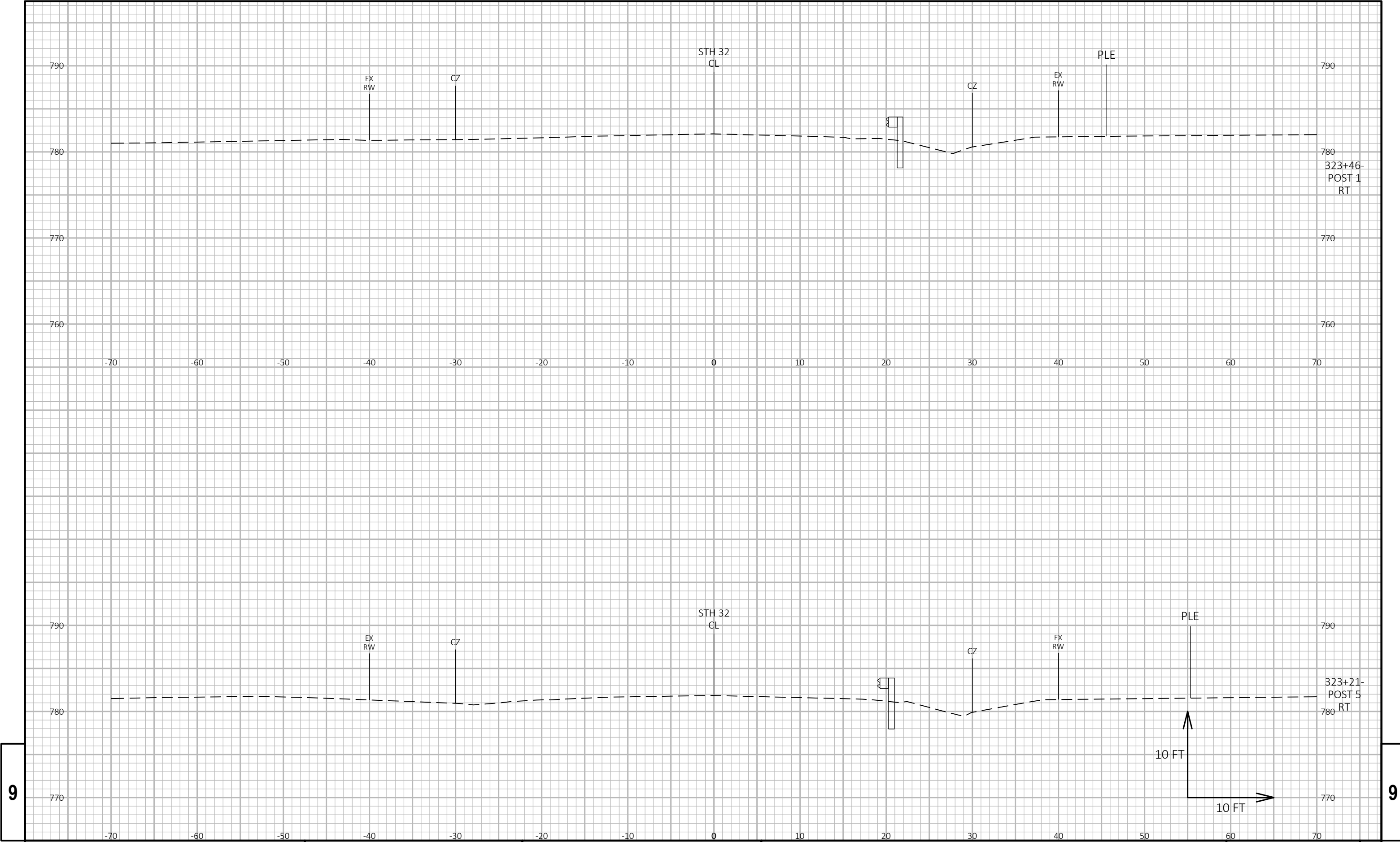
PROJECT NO: 9190-26-73	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: BEAMGUARD - RETAINING WALL	SHEET E
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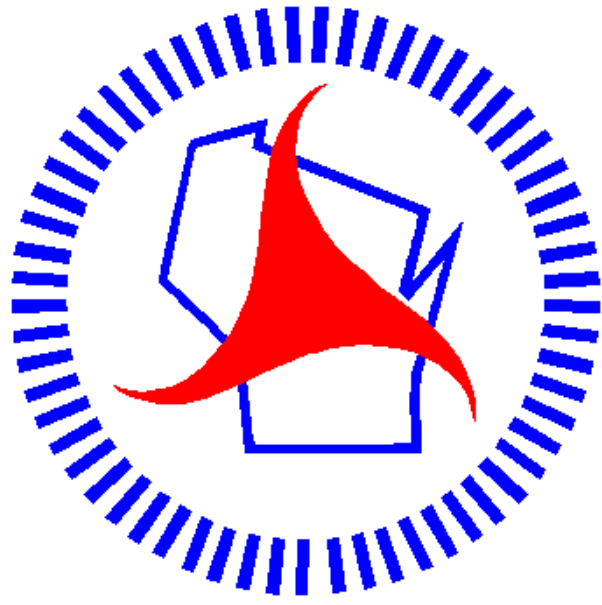
PROJECT NO: 9190-26-73	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: BEAMGUARD - RETAINING WALL	SHEET	E
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PROJECT NO: 9190-26-73	HWY: STH 32	COUNTY: OCONTO	CROSS SECTIONS: BEAMGUARD - RETAINING WALL	SHEET	E
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Wisconsin Department of Transportation

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