

RHI  
PROJECT ID:  
WITH: N/A

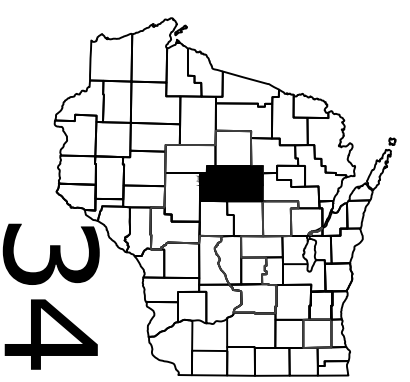
6669-00-70

COUNTY:  
MARATHON

FEBRUARY 2025  
ORDER OF SHEETS

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 = 74



# STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

## STH 29 - TAYLOR COUNTY LINE

BR. BIG EAU PLEINE RIVER BRIDGE, B-37-474

CTH F  
MARATHON COUNTY

STATE PROJECT NUMBER
6669-00-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6669-00-70	WISC 2025328	1

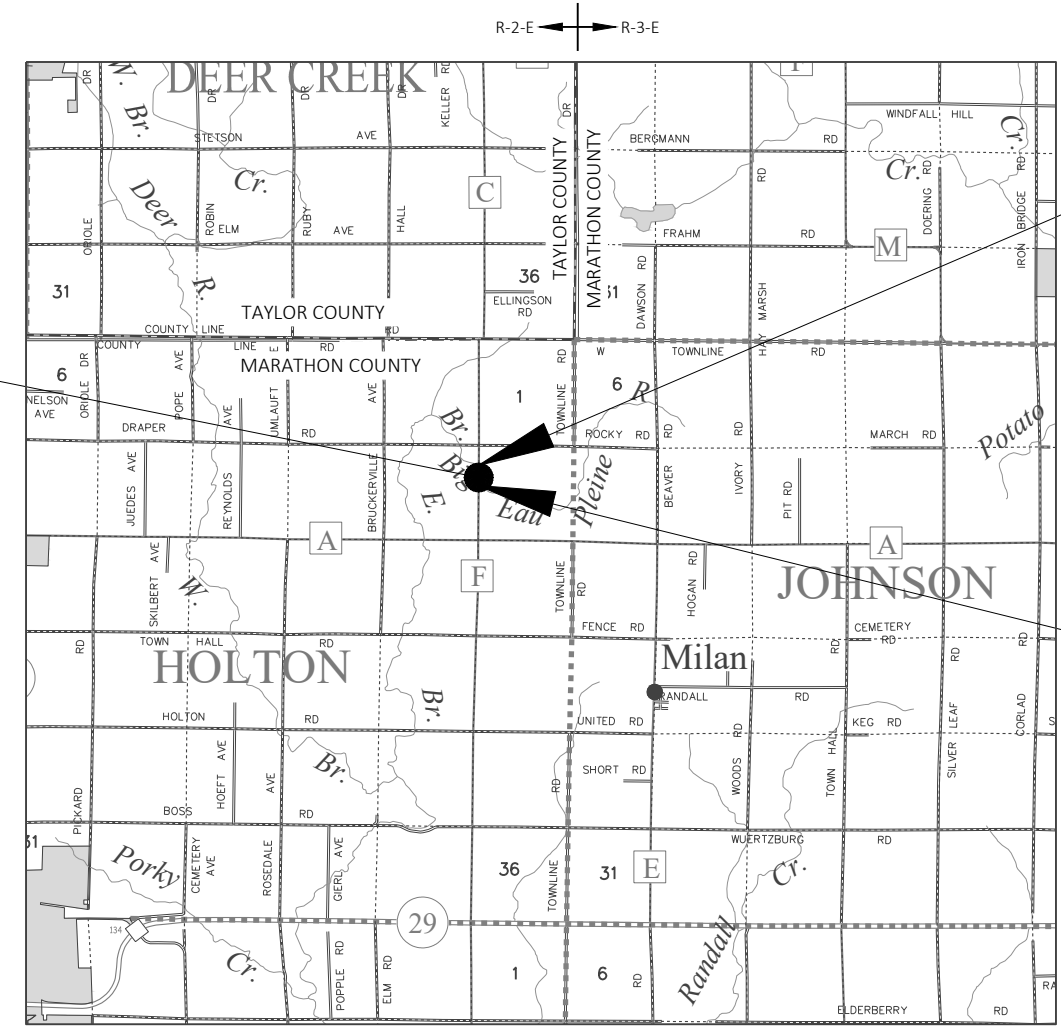
DESIGN DESIGNATION

A.A.D.T. (2025)	=	750
A.A.D.T. (2045)	=	800
D.H.V.	=	N/A
D.D.	=	50/50
T.	=	11.0%
DESIGN SPEED	=	55 MPH
ESALS	=	170,000

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
MARSH AREA	STORM SEWER
WOODED OR SHRUB AREA	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE

STRUCTURE B-37-474



END PROJECT  
STA 34+53.00

BEGIN PROJECT  
STA 31+66.00  
Y = 221422.279  
X = 129237.091

LAYOUT  
SCALE 0 2 MI  
TOTAL NET LENGTH OF CENTERLINE = 0.054 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), MARATHON COUNTY, NAD83 ( 2011 ), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 ( 2012 ). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18

ACCEPTED FOR  
MARATHON COUNTY  
Date 10/29/24 *James M. Griesbach*  
(Signature and Title of Official)

ORIGINAL PLANS PREPARED BY  
**CORRE**  
ENGINEERING  
MADISON | EAU CLAIRE | WAUKESHA | APPLETON | TOMAH | WAUSAU

**WISCONSIN**  
ERIC T. PRICE  
E-39027  
MADISON WI  
PROFESSIONAL ENGINEER  
October 28, 2024

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY  
Surveyor CORRE, INC  
Designer CORRE, INC  
Project Manager Michael Grage, PE  
Regional Examiner N/A  
Regional Supervisor Dan Erva, PE

APPROVED FOR THE DEPARTMENT  
DATE: 10/29/2024 *[Signature]*  
(Signature)

GENERAL NOTES:

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES BY CALLING DIGGER'S HOTLINE AND CONTACTING UTILITIES DIRECTLY AS NEEDED.

CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AND BUSINESSES AT ALL TIMES.

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

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.

TACK COAT CALCULATIONS ARE BASED ON AN APPLICATION RATE OF 0.05 GAL/SY.

CONTRACTOR SHALL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY AREAS THAT WERE PREVIOUSLY GRASSED THAT ARE DISTURBED BY CONTRACTOR'S OPERATIONS OUTSIDE OF THE CONSTRUCTION LIMITS.

STANDARD ABBREVIATIONS

Table with 2 columns: Abbreviation and Full Name. Includes terms like ABUTMENT, ASPHALTIC, CULVERT PIPE, etc.

RUNOFF COEFFICIENT TABLE

Table with columns for Land Use, Hydrologic Soil Group (A, B, C, D), and Slope Range (Percent). Includes rows for Row Crops, Median Strip-Turf, Side Slope-Turf, and Pavement types.

TOTAL PROJECT AREA = 1.141 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.312 ACRES

UTILITY CONTACTS

COMMUNICATION

TDS TELECOM
202 OGDEN STREET
MEDFORD, WI 54451-0240

RODNEY LINDEMANN
PHONE: (715) 743-5933
RODNEY.LINDEMANN@TDSTELECOM.COM

ELECTRICITY

TAYLOR ELECTRIC COOPERATIVE
N1831 STH 113
MEDFORD, WI 54451

WADE MATYKA
PHONE: (717) 678-2411
WADE@TAYLORELECTRIC.COM



WISDOT CONTACT

NORTH CENTRAL REGION - RHINELANDER OFFICE
510 HANSON LAKE ROAD
RHINELANDER, WI 54501

MICHAEL GRAGE, P.E.
PHONE: (715) 365-5705
MICHAEL.GRAGE@DOT.WI.GOV

DESIGN CONTACT

CORRE, INC.
1802 WARDEN STREET
EAU CLAIRE, WI 54703

ERIC PRICE, P.E.
PHONE: (608) 826-6146
E-MAIL: EPRICE@CORREINC.COM

DNR CONTACT

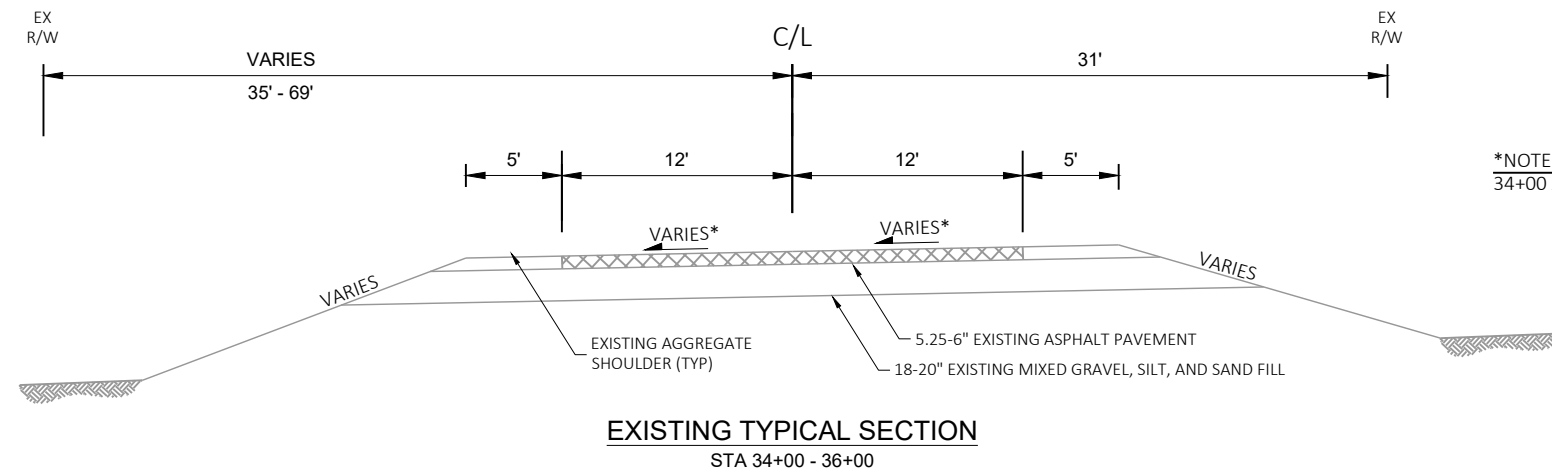
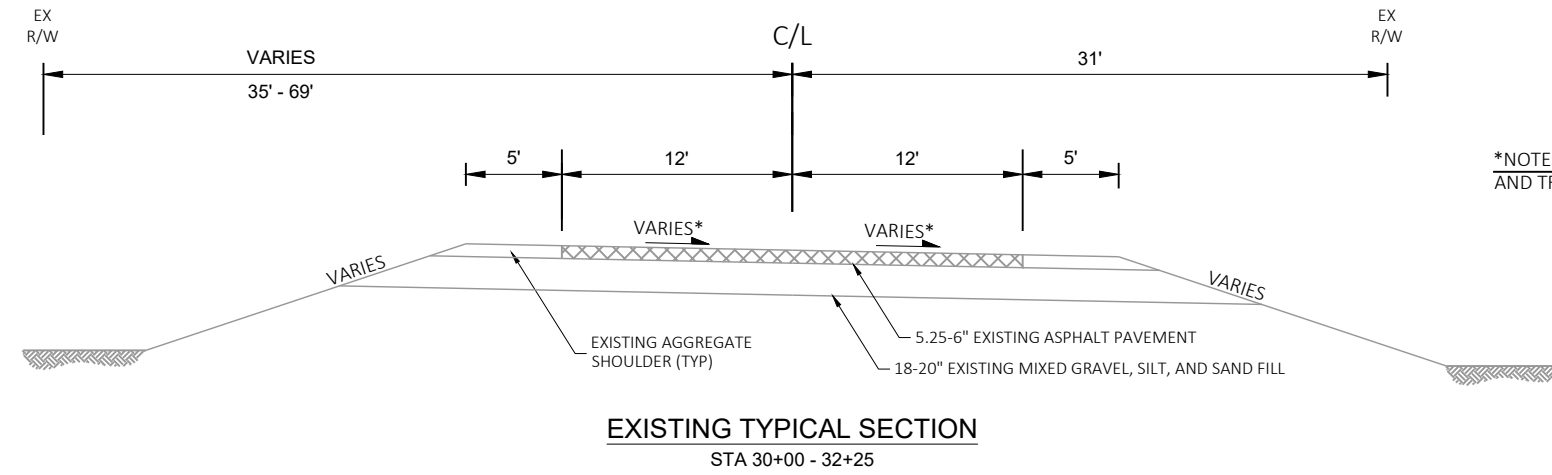
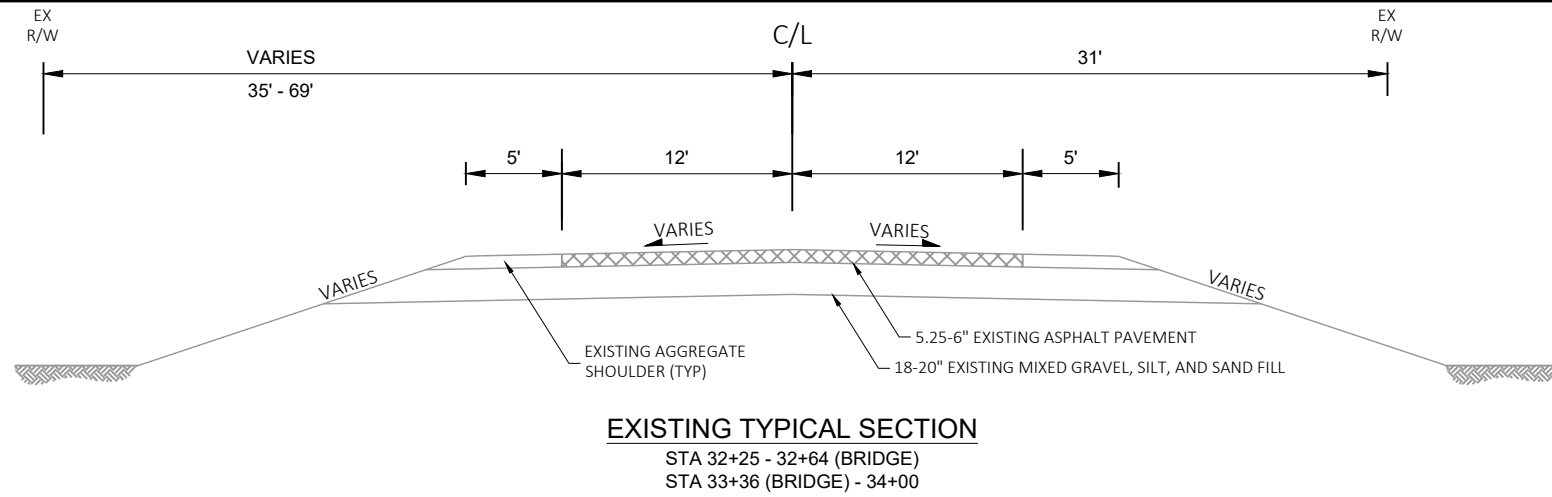
DNR GREEN BAY SERVICE CENTER
2984 SHAWANO AVENUE
GREEN BAY, WI 54313

JAY SCHIEFELBEIN
PHONE: (920) 360-3784
JEREMIAH.SCHIEFELBEIN@WISCONSIN.GOV

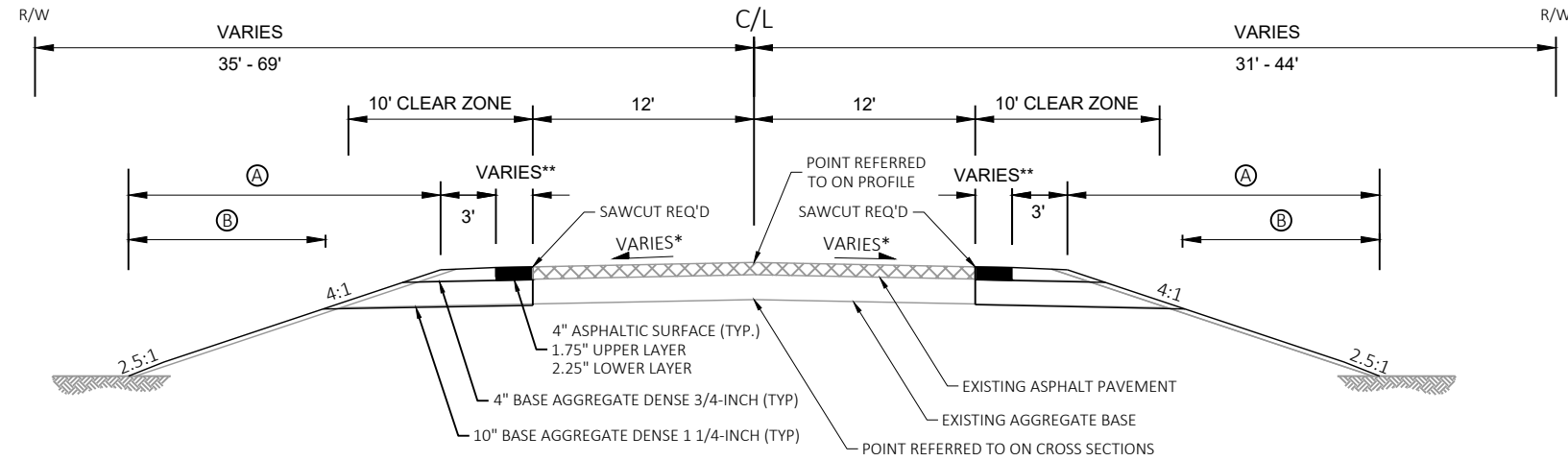
COUNTY CONTACT

HIGHWAY COMMISSIONER
1430 WEST STREET
WAUSAU, WI 54401

JAMES GRIESBACH
PHONE: (715) 261-1800
E-MAIL: JAMES.GRIESBACH@CO.MARATHON.WI.US



\*\*NOTE: WIDEN EDGE OF PAVEMENT OUT TO GUARDRAIL FACE AT GUARDRAIL END TERMINAL LOCATIONS.



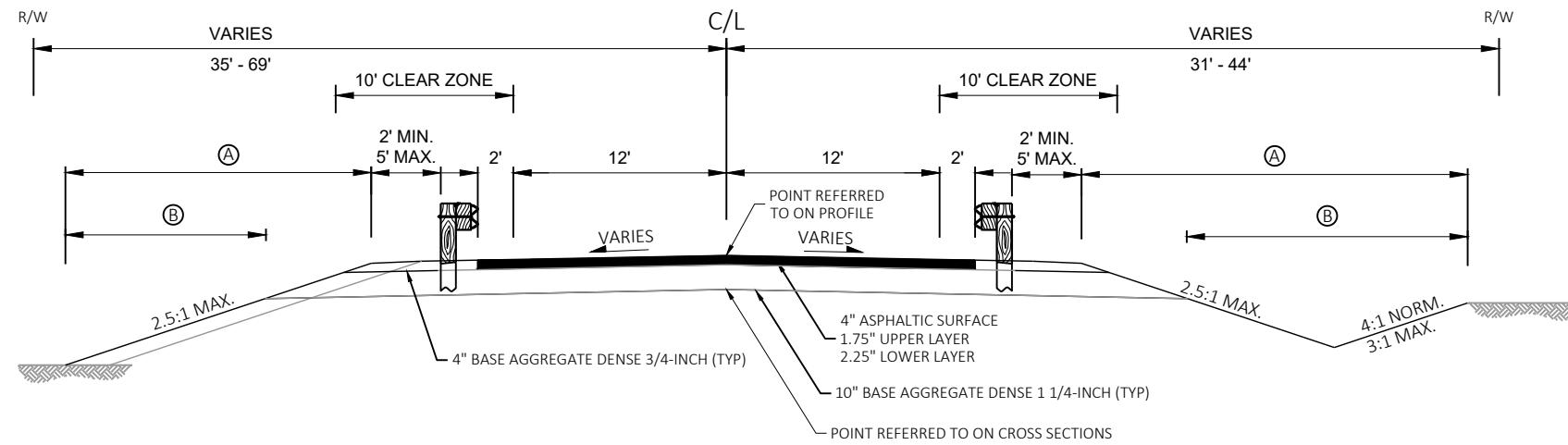
\*NOTE: MATCH EXISTING SLOPE IN SUPERELEVATED AND NORMAL CROWN AREAS.

**FINISHED TYPICAL SECTION - WIDENING**

STA 30+00 - 31+66  
STA 34+53 - 36+00

**LEGEND**

- (A) FERTILIZER TYPE A, SEEDING MIXTURE NO. 20 & SEEDING TEMPORARY
- (B) SALVAGED TOPSOIL & EROSION MAT URBAN CLASS I TYPE B



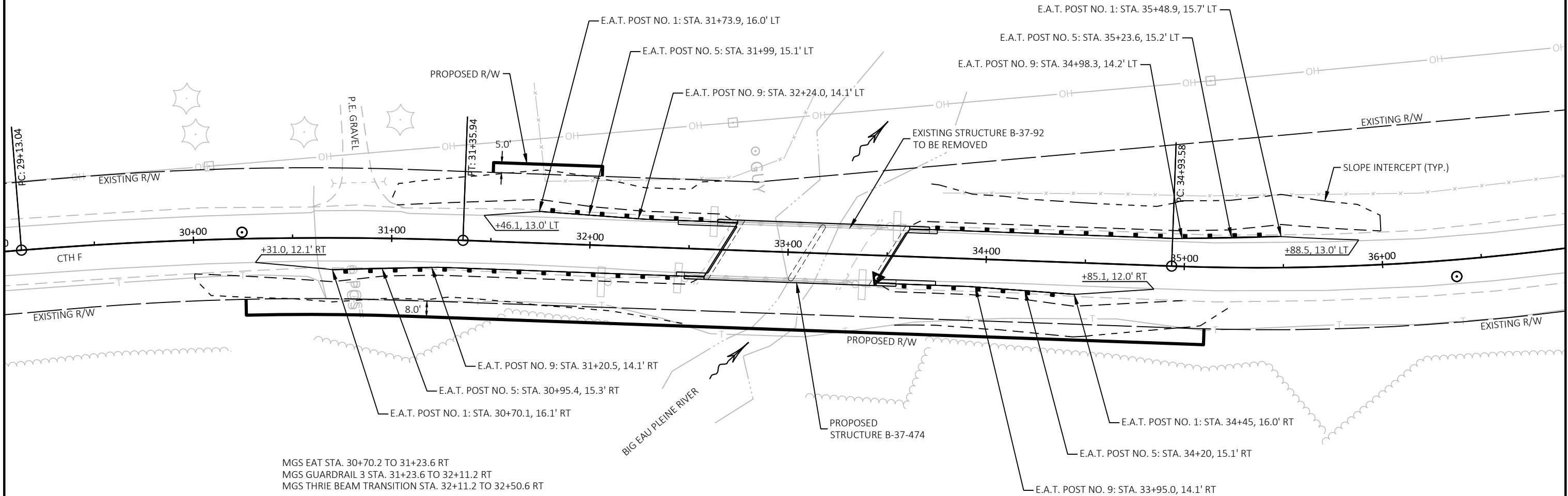
**FINISHED TYPICAL SECTION - RECONSTRUCT**

STA 31+66 - 32+66 (BRIDGE)  
STA 33+53 (BRIDGE) - 34+53



MGS EAT STA. 31+73.9 TO 32+27.1 LT  
MGS THRIE BEAM TRANSITION STA. 32+27.1 TO 32+66.5 LT

MGS THRIE BEAM TRANSITION STA. 33+68.4 TO 34+07.8 LT  
MGS GUARDRAIL 3 STA. 34+07.8 TO 34+95.3 LT  
MGS EAT STA. 34+95.3 TO 35+48.9 LT

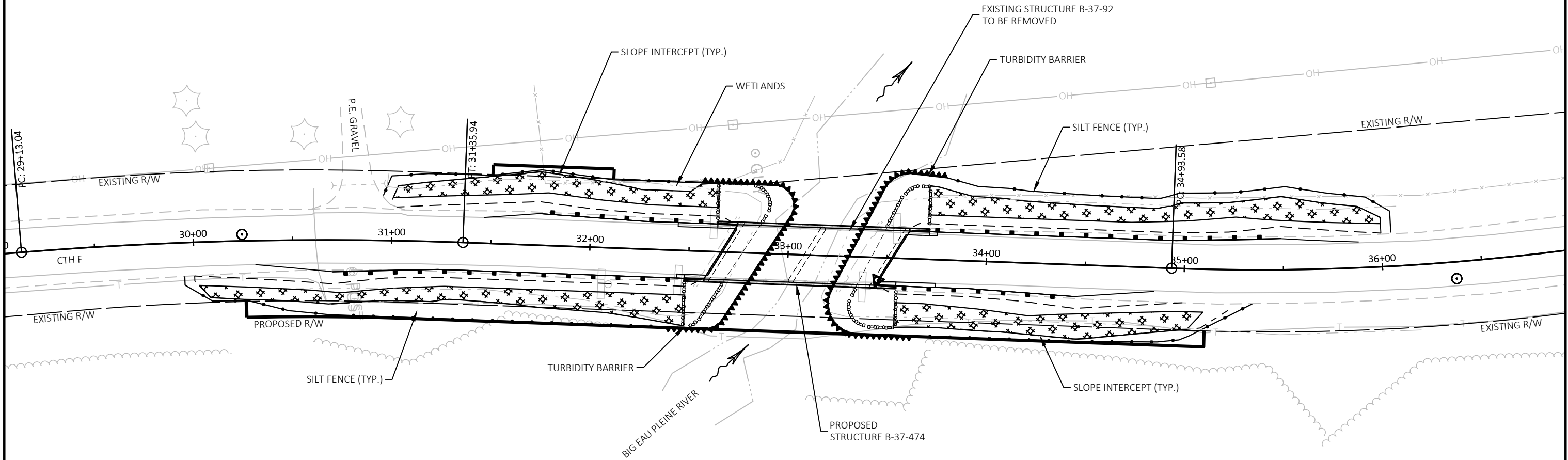


MGS EAT STA. 30+70.2 TO 31+23.6 RT  
MGS GUARDRAIL 3 STA. 31+23.6 TO 32+11.2 RT  
MGS THRIE BEAM TRANSITION STA. 32+11.2 TO 32+50.6 RT

MGS THRIE BEAM TRANSITION STA. 33+52.5 TO 33+91.9 RT  
MGS EAT STA. 33+91.9 TO 34+45.0 RT

NOTE: BEAM GUARD TO BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARD DETAIL DRAWINGS:

- SDD 14B42 "MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL"
- SDD 14B44 "MIDWEST GUARDRAIL SYSTEM (MGS) ENERGY ABSORBING TERMINAL"
- SDD 14B45 "MIDWEST GUARDRAIL SYSTEM (MGS) THRIE BEAM TRANSITION"



LEGEND	
	EROSION MAT, URBAN, CLASS I TYPE B
	SILT FENCE
	RIPRAP
	SLOPE INTERCEPT
	TURBIDITY BARRIER
	SURFACE WATER FLOW

PROJECT NO: 6669-00-70	HWY: CTH F	COUNTY: MARATHON	EROSION CONTROL	SHEET	<b>E</b>
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Estimate Of Quantities

6669-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-37-92	EACH	1.000	1.000
0004	204.0170	Removing Fence	LF	80.000	80.000
0006	205.0100	Excavation Common	CY	458.000	458.000
0008	206.1001	Excavation for Structures Bridges (structure) 01. B-37-474	EACH	1.000	1.000
0010	208.0100	Borrow	CY	245.000	245.000
0012	210.1500	Backfill Structure Type A	TON	250.000	250.000
0014	213.0100	Finishing Roadway (project) 01. 6669-00-70	EACH	1.000	1.000
0016	305.0110	Base Aggregate Dense 3/4-Inch	TON	130.000	130.000
0018	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	790.000	790.000
0020	415.0060	Concrete Pavement 6-Inch	SY	20.000	20.000
0022	415.0410	Concrete Pavement Approach Slab	SY	120.000	120.000
0024	455.0605	Tack Coat	GAL	40.000	40.000
0026	465.0105	Asphaltic Surface	TON	150.000	150.000
0028	502.0100	Concrete Masonry Bridges	CY	285.000	285.000
0030	502.3200	Protective Surface Treatment	SY	271.000	271.000
0032	502.3210	Pigmented Surface Sealer	SY	105.000	105.000
0034	502.9000.S	Underwater Substructure Inspection (structure) 01. B-37-474	EACH	1.000	1.000
0036	505.0400	Bar Steel Reinforcement HS Structures	LB	5,960.000	5,960.000
0038	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	47,560.000	47,560.000
0040	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0042	550.0020	Pre-Boring Rock or Consolidated Materials	LF	149.000	149.000
0044	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	385.000	385.000
0046	606.0300	Riprap Heavy	CY	210.000	210.000
0048	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	200.000	200.000
0050	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0052	614.2300	MGS Guardrail 3	LF	175.000	175.000
0054	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0056	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0058	618.0100	Maintenance and Repair of Haul Roads (project) 01. 6669-00-70	EACH	1.000	1.000
0060	619.1000	Mobilization	EACH	1.000	1.000
0062	624.0100	Water	MGAL	4.000	4.000
0064	625.0100	Topsoil	SY	1,290.000	1,290.000
0066	628.1504	Silt Fence	LF	1,650.000	1,650.000
0068	628.1520	Silt Fence Maintenance	LF	1,650.000	1,650.000
0070	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0072	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0074	628.2008	Erosion Mat Urban Class I Type B	SY	1,290.000	1,290.000
0076	628.6005	Turbidity Barriers	SY	267.000	267.000
0078	629.0205	Fertilizer Type A	CWT	2.000	2.000
0080	630.0120	Seeding Mixture No. 20	LB	65.000	65.000
0082	630.0200	Seeding Temporary	LB	40.000	40.000
0084	633.5100	Markers ROW	EACH	10.000	10.000
0086	638.2602	Removing Signs Type II	EACH	4.000	4.000
0088	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0090	642.5001	Field Office Type B	EACH	1.000	1.000
0092	643.0420	Traffic Control Barricades Type III	DAY	1,530.000	1,530.000
0094	643.0705	Traffic Control Warning Lights Type A	DAY	3,060.000	3,060.000
0096	643.0900	Traffic Control Signs	DAY	1,190.000	1,190.000
0098	643.5000	Traffic Control	EACH	1.000	1.000

Estimate Of Quantities

6669-00-70

Line	Item	Item Description	Unit	Total	Qty
0100	645.0111	Geotextile Type DF Schedule A	SY	68.000	68.000
0102	645.0120	Geotextile Type HR	SY	350.000	350.000
0104	646.1020	Marking Line Epoxy 4-Inch	LF	2,100.000	2,100.000
0106	650.4500	Construction Staking Subgrade	LF	525.000	525.000
0108	650.5000	Construction Staking Base	LF	525.000	525.000
0110	650.6501	Construction Staking Structure Layout (structure) 01. B-37-474	EACH	1.000	1.000
0112	650.9911	Construction Staking Supplemental Control (project) 01. 6669-00-70	EACH	1.000	1.000
0114	650.9920	Construction Staking Slope Stakes	LF	525.000	525.000
0116	690.0150	Sawing Asphalt	LF	380.000	380.000
0118	715.0502	Incentive Strength Concrete Structures	DOL	1,710.000	1,710.000
0120	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0122	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0124	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000



3

3

REMOVALS

CATEGORY	STATION	TO	STATION	LOCATION	204.0170 REMOVING FENCE LF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	690.0150 SAWING ASPHALT LF
0010	30+00	-	32+64	SOUTH APPROACH	50	2	2	185
0010	33+36	-	36+00	NORTH APPROACH	30	2	2	195
TOTAL 0010					80	4	4	380

EARTHWORK

DIVISION	FROM / TO STATION	LOCATION	205.0100 COMMON EXCAVATION (CY)	SALVAGED/UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL	UNEXPANDED FILL	EXPANDED FILL (CY)	MASS ORDINATE +/-	WASTE	208.0100 BORROW (CY)	COMMENT
			CUT				FACTOR 1.25				
SOUTH APPROACH	30+00 / 33+57	CTH F	240	43	197	267	334	-137	0	137	
NORTH APPROACH	33+73 / 36+00	CTH F	218	57	161	215	269	-108	0	108	
TOTAL COMMON EXC			458	100	358	482	603	-245	0	245	

BASE AGGREGATE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4- INCH TON	624.0100 WATER MGAL
0010	30+00	-	32+64	SOUTH APPROACH	70	410	2
0010	33+36	-	36+00	NORTH APPROACH	60	380	2
TOTAL 0010					130	790	4

ASPHALT ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
0010	30+00	-	32+64	SOUTH APPROACH	20	80
0010	33+36	-	36+00	NORTH APPROACH	20	70
TOTAL 0010					40	150

CONCRETE

CATEGORY	STATION	TO	STATION	LOCATION	415.0060 CONCRETE PAVEMENT 6- INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY
0010	32+44	-	32+66	SOUTH APPROACH	10	60
0010	33+53	-	33+75	NORTH APPROACH	10	60
TOTAL 0010					20	120

GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
0010	30+70	-	32+50	RT	87.5	40	1
0010	31+73	-	32+67	LT	-	40	1
0010	33+52	-	34+45	RT	-	40	1
0010	33+68	-	35+49	LT	87.5	40	1
TOTAL 0010					175	160	4

PROJECT NO: 6669-00-70

HWY: CTH F

COUNTY: MARATHON

MISCELLANEOUS QUANTITIES

SHEET

E

3

3

EROSION CONTROL & LANDSCAPING

CATEGORY	LOCATION	625.0100 TOPSOIL SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0205 FERTILIZER TYPE A CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB
0010	ENTIRE PROJECT	1,030	1,300	1,300	2	1	1,030	1	50	30
0010	UNDISTRIBUTED	260	350	350	-	-	260	1	15	10
TOTAL 0010		1,290	1,650	1,650	2	1	1,290	2	65	40

MARKERS ROW

TURBIDITY BARRIER

LOCATION	628.6005 TURBIDITY BARRIERS SY
SOUTH ABUTMENT	133
NORTH ABUTMENT	133
TOTAL 0010	267

CATEGORY	STATION	LOCATION	633.5100 MARKERS ROW EACH
0010	30+26	RT	2
0010	31+36	RT	1
0010	31+50	LT	2
0010	32+11	LT	2
0010	34+94	RT	1
0010	35+11	RT	2
TOTAL 0010			10

TRAFFIC CONTROL

CATEGORY	LOCATION	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.5000 TRAFFIC CONTROL EACH
0010	ENTIRE PROJECT	1,530	3,060	1,190	1
TOTAL 0010		1,530	3,060	1,190	1

PAVEMENT MARKING

CATEGORY	STATION TO	STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH LF	REMARKS
0010	30+00 -	32+62	SOUTH APPROACH	1,050	WHITE EDGELINES &
0010	33+38 -	36+00	NORTH APPROACH	1,050	DOUBLE YELLOW CENTERLINE
TOTAL 0010				2,100	

CONSTRUCTION STAKING

CATEGORY	STATION TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6501.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. B-37-474) EACH	650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (6669-00-70) EACH	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
0010	30+00 -	36+00	ENTIRE PROJECT	525	525	1	1	525
TOTAL 0010				525	525	1	1	525

PROJECT NO: 6669-00-70

HWY: CTH F

COUNTY: MARATHON

MISCELLANEOUS QUANTITIES

SHEET

E

CONVENTIONAL SYMBOLS	
SECTION LINE	---
QUARTER LINE	---
SIXTEENTH LINE	---
NEW REFERENCE LINE	---
NEW R/W LINE	---
EXISTING R/W OR HE LINE	---
PROPERTY LINE	---
LOT, TIE & OTHER MINOR LINES	---
SLOPE INTERCEPT	---
CORPORATE LIMITS	---
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)	---
NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)	---
TEMPORARY LIMITED EASEMENT AREA	---
EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)	---
TRANSMISSION STRUCTURES	---
BUILDING TO BE REMOVED	---
BRIDGE	---
CULVERT	---

CONVENTIONAL UTILITY SYMBOLS	
WATER	---
GAS	---
TELEPHONE	---
OVERHEAD TRANSMISSION LINES	---
ELECTRIC	---
CABLE TELEVISION	---
FIBER OPTIC	---
SANITARY SEWER	---
STORM SEWER	---
ELECTRIC TOWER	---

CONVENTIONAL ABBREVIATIONS	
ACCESS RIGHTS	AR
ACRES	AC
AHEAD	AH
ALUMINUM	ALUM
AND OTHERS	ET AL
BACK	BK
BLOCK	BLK
CENTERLINE	C/L
CERTIFIED SURVEY MAP	CSM
CONCRETE	CONC
COUNTY	CO
COUNTY TRUNK HIGHWAY	CTH
DISTANCE	DIST
CORNER	COR
DOCUMENT NUMBER	DOC
EASEMENT	EASE
EXISTING	EX
GAS VALVE	GV
GRID NORTH	GN
HIGHWAY EASEMENT	HE
IDENTIFICATION	ID
LAND CONTRACT	LC
LEFT	LT
MONUMENT	MON
NATIONAL GEODETIC SURVEY	NGS
NUMBER	NO
OUTLOT	OL
PAGE	P
POINT OF TANGENCY	PT
PERMANENT LIMITED EASEMENT	PLE
POINT OF BEGINNING	POB
POINT OF CURVATURE	PC
POINT OF COMPOUND CURVE	PCC
POINT OF INTERSECTION	PI
PROPERTY LINE	PL
RECORDED AS (100')	R/I
REEL / IMAGE	R/I
REFERENCE LINE	R/L
REMAINING	REM
RESTRICTIVE DEVELOPMENT EASEMENT	RDE
RIGHT	RT
RIGHT OF WAY	R/W
SECTION	SEC
SEPTIC VENT	SEPV
SQUARE FEET	SF
STATE TRUNK HIGHWAY	STH
STATION	STA
TELEPHONE PEDESTAL	TP
TEMPORARY LIMITED EASEMENT	TLE
TRANSPORTATION PROJECT PLAT	TPP
UNITED STATES HIGHWAY	USH
VOLUME	V

**CURVE DATA ABBREVIATIONS**

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ / DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

**NOTES:**

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

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, CENTERLINE OF EXISTING PAVEMENTS AND/OR EXISTING OCCUPATIONAL LINES.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

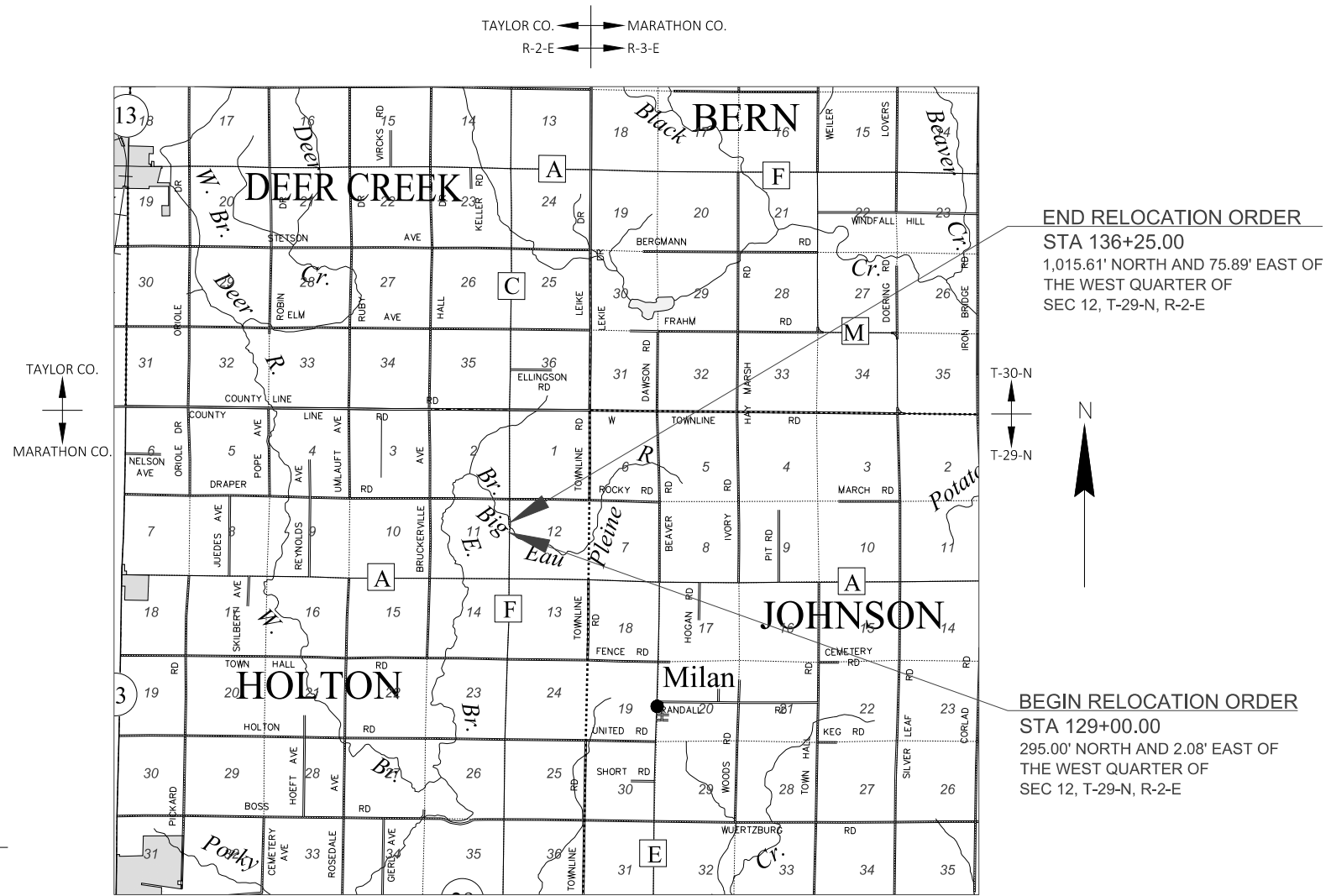
RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

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

INFORMATION FOR THE BASIS OF EXISTING HIGHWAY RIGHT-OF-WAY POINTS OF REFERENCE AND ACCESS CONTROL ARE LISTED ON THE DETAIL PAGES.

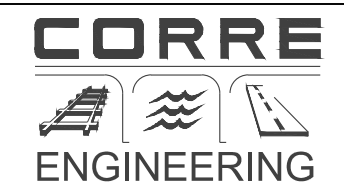
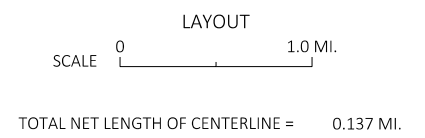
THIS PLAT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. DEEDS MUST BE CHECKED TO DETERMINE PROPERTY BOUNDARIES AND ACCESS RIGHTS.

R/W PROJECT NUMBER 6669-00-00	SHEET NUMBER 4.01	TOTAL SHEETS 2
FEDERAL PROJECT NUMBER N/A	PLAT OF RIGHT OF WAY REQUIRED FOR <b>STH 29 - TAYLOR COUNTY LINE</b> <b>BR. BIG EAU PLEINE RIVER BRIDGE B-37-0092</b>	
CTH F	MARATHON COUNTY	
CONSTRUCTION PROJECT NUMBER 6669-00-70		

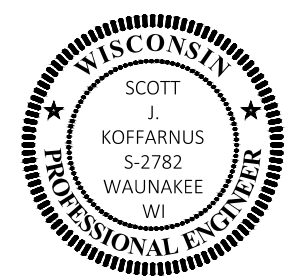


**END RELOCATION ORDER**  
STA 136+25.00  
1,015.61' NORTH AND 75.89' EAST OF  
THE WEST QUARTER OF  
SEC 12, T-29-N, R-2-E

**BEGIN RELOCATION ORDER**  
STA 129+00.00  
295.00' NORTH AND 2.08' EAST OF  
THE WEST QUARTER OF  
SEC 12, T-29-N, R-2-E



MADISON | EAU CLAIRE | WAUKESHA | APPLETON | TOMAH | WAUSAU



I, SCOTT J. KOFFARNUS, PROFESSIONAL LAND SURVEYOR, S-2782, HEREBY CERTIFY THAT I HAVE SURVEYED THE LAND DESCRIBED HEREON AND THAT THE MAP HEREON IS A CORRECT REPRESENTATION OF THAT SURVEY TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE: 4/11/2024  
*Scott J. Koffarnus*  
(Signature)

REVISION DATE	COUNTY OF MARATHON
APPROVED FOR THE COUNTY	DATE: 06/19/2024 <i>James M. Giesbach</i> (Signature)

PI STA = 130+19.82 Y = 221278.202 X = 129216.170  
 DELTA = 7°09'04" RT D = 4°00'00" T = 89.51' L = 178.78' R = 1432.39' PC STA = 129+30.32 Y = 221188.698 X = 129215.539 PT STA = 131+09.10 Y = 221366.931 X = 129227.938 DB = N00°24'13"E DA = N07°33'18"E  
 PI STA = 136+54.55 Y = 221907.647 X = 129299.652  
 DELTA = 15°13'01" LT D = 5°00'00" T = 153.07' L = 304.34' R = 1145.92' PC STA = 135+01.48 Y = 221755.905 X = 129279.527 PT STA = 138+05.82 Y = 222059.352 X = 129279.243 DB = N07°33'18"E DA = N07°39'44"W  
 PRW100 - PRW101 L = 82.16' LCH = 82.15' CB = N05° 52' 23"E R = 1399.39' Δ = 003° 21' 50"  
 PRW102 - PRW103 L = 8.77' LCH = 8.77' CB = N07° 20' 31"E R = 1178.92' Δ = 000° 25' 34"  
 PRW104 - PRW105 L = 8.83' LCH = 8.83' CB = S07° 20' 31"W R = 1186.92' Δ = 000° 25' 34"  
 PRW106 - PRW107 L = 81.69' LCH = 81.68' CB = S05° 52' 23"W R = 1391.39' Δ = 003° 21' 50"

POINT TABLE		
POINT NO.	Y	X
100	221280.876	129252.246
101	221362.593	129260.651
102	221751.567	129312.240
103	221760.263	129313.361
104	221759.270	129321.299
105	221750.515	129320.171
106	221361.541	129268.582
107	221280.291	129260.224
108	221410.827	129200.471

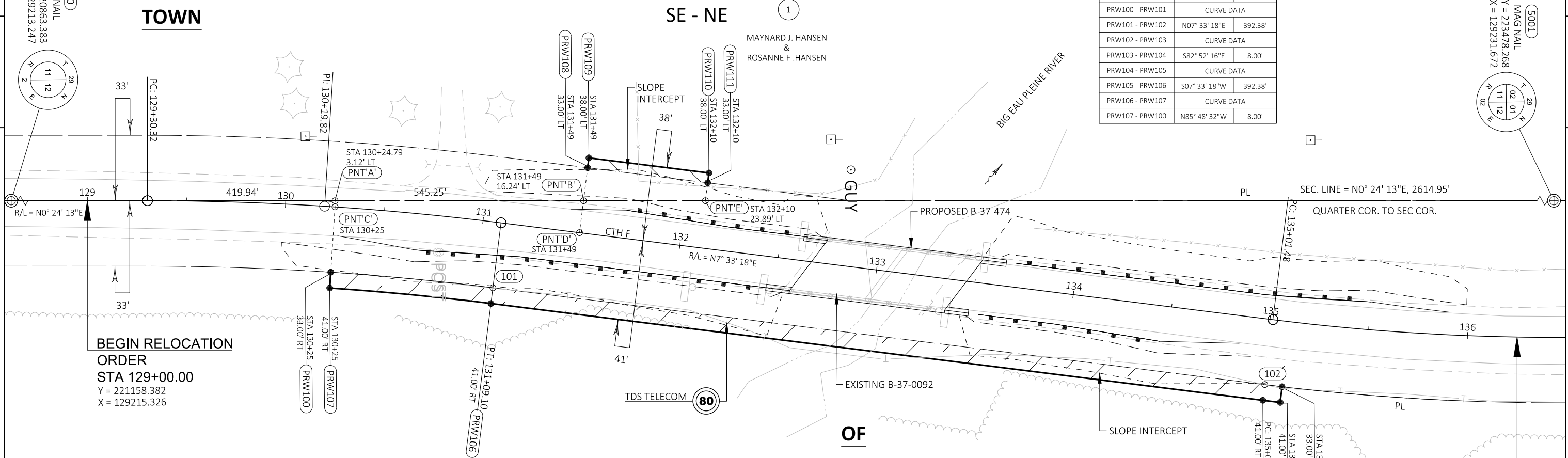
POINT TABLE		
POINT NO.	Y	X
109	221411.484	129195.514
110	221471.954	129203.534
111	221471.297	129208.491
PNT'A'	221283.310	129216.206
PNT'B'	221408.622	129217.089
PNT'C'	221283.288	129219.334
PNT'D'	221406.488	129233.184
PNT'E'	221470.099	129217.522

COURSE TABLE		
PNT - PNT	BEARING	DISTANCE
5000 - PNT'B'	N00° 24' 13"E	545.25'
PNT'B' - PRW108	N82° 26' 42"W	16.76'
PRW108 - PRW109	N82° 26' 42"W	5.00'
PRW109 - PRW110	N07° 33' 18"E	61.00'
PRW110 - PRW111	S82° 26' 42"E	5.00'
PRW111 - PRW108	S07° 33' 18"W	61.00'
PRW111 - PNT'E'	S82° 26' 42"E	9.11'
PNT'E' - PNT'B'	S00° 24' 13"W	61.48'
PNT'B' - PNT'D'	S82° 26' 42"E	16.24'
5000 - PNT'A'	N00° 24' 13"E	419.94'
PNT'A' - PNT'C'	S89° 35' 47"E	3.13'
PNT'C' - PRW100	S85° 48' 32"E	33.00'
PRW100 - PRW101	CURVE DATA	
PRW101 - PRW102	N07° 33' 18"E	392.38'
PRW102 - PRW103	CURVE DATA	
PRW103 - PRW104	S82° 52' 16"E	8.00'
PRW104 - PRW105	CURVE DATA	
PRW105 - PRW106	S07° 33' 18"W	392.38'
PRW106 - PRW107	CURVE DATA	
PRW107 - PRW100	N85° 48' 32"W	8.00'



5000  
 MAG NAIL  
 Y = 220863.383  
 X = 129213.247

5001  
 MAG NAIL  
 Y = 223478.268  
 X = 129231.672



**BEGIN RELOCATION ORDER**  
 STA 129+00.00  
 Y = 221158.382  
 X = 129215.326

**END RELOCATION ORDER**  
 STA 136+25.00  
 Y = 221878.993  
 X = 129289.142

SCHEDULE OF LANDS & INTERESTS REQUIRED						
OWNERS NAMES ARE SHOWN FOR REFERENCE ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE COUNTY.						
PARCEL NUMBER	SHEET NUMBER	OWNER	INTEREST REQ'D	R/W SF REQUIRED		
				NEW (SF)	EXISTING (SF)	TOTAL (SF)
1	4.02	MAYNARD J. HANSEN & ROSANNE F. HANSEN	FEE	305	789	1,094
2	4.02	LYNN SCHREIBER, CONNIE SCHMITT & BRUCE ERICKSON	FEE	3,864	---	3,864

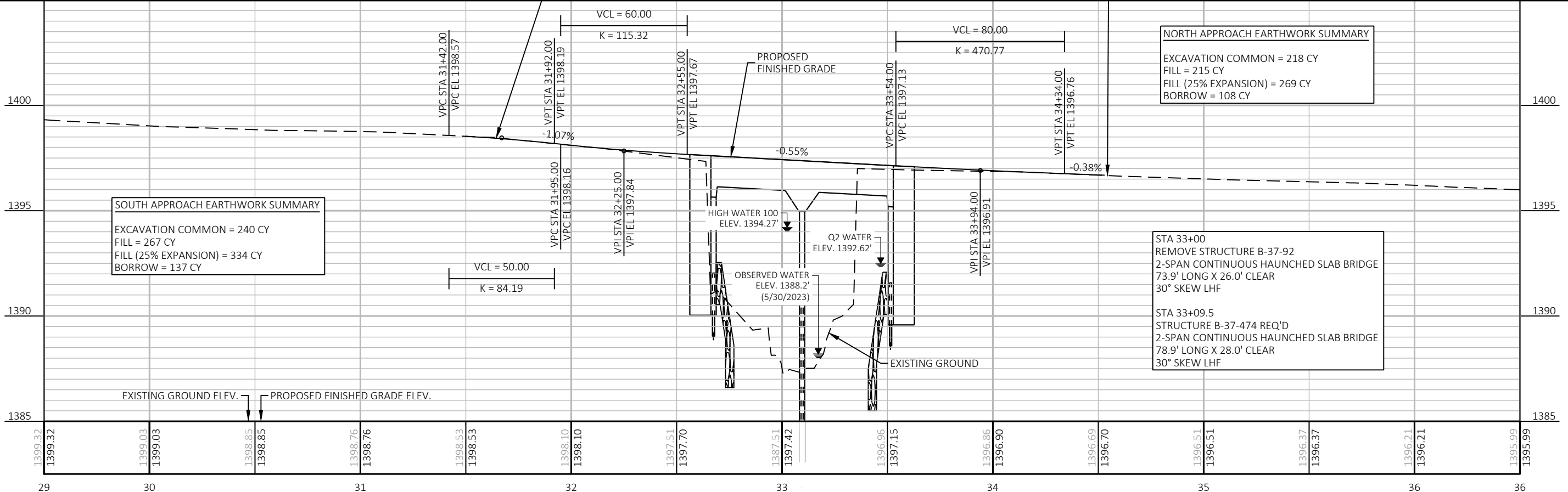
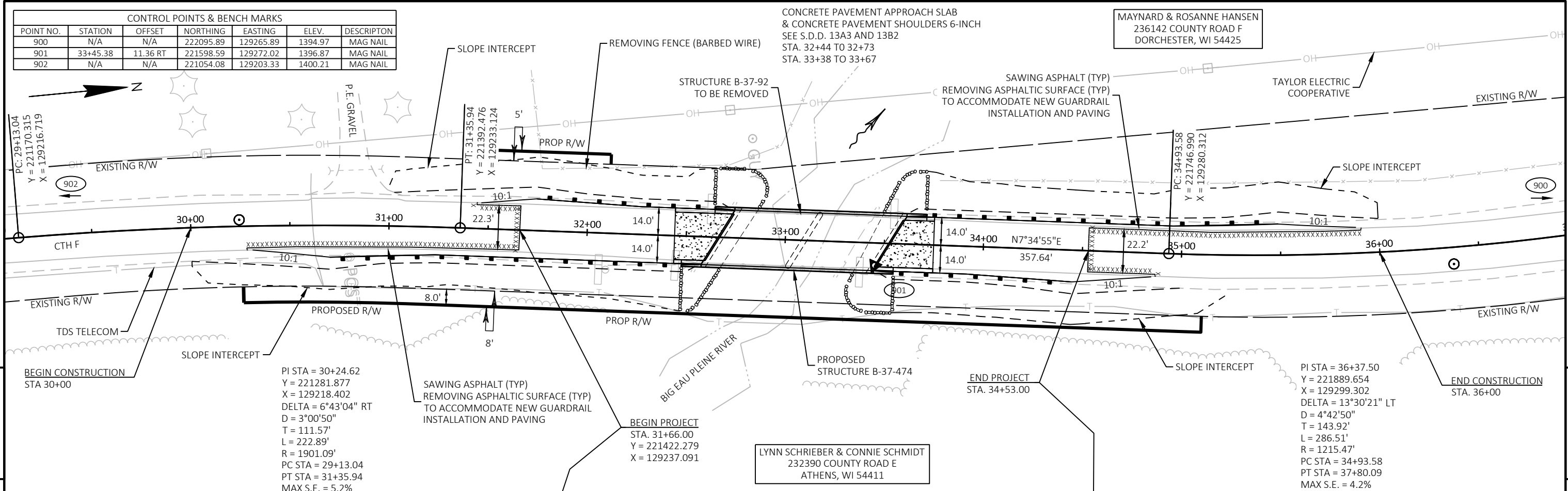
UTILITY INTERESTS REQUIRED			
UTILITY NUMBER	SHEET NUMBER	OWNER	INTEREST REQUIRED
80	4.02	TDS TELECOM	RELEASE OF RIGHTS

EXISTING UTILITY EASEMENTS TO BE RELEASED  
 TDS TELECOM  
 NO EASEMENT OF RECORD

**NOTES:**  
 POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), MARATHON COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.  
 ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.  
 EXISTING CTH F RIGHT-OF-WAY ESTABLISHED FROM DEEDS.

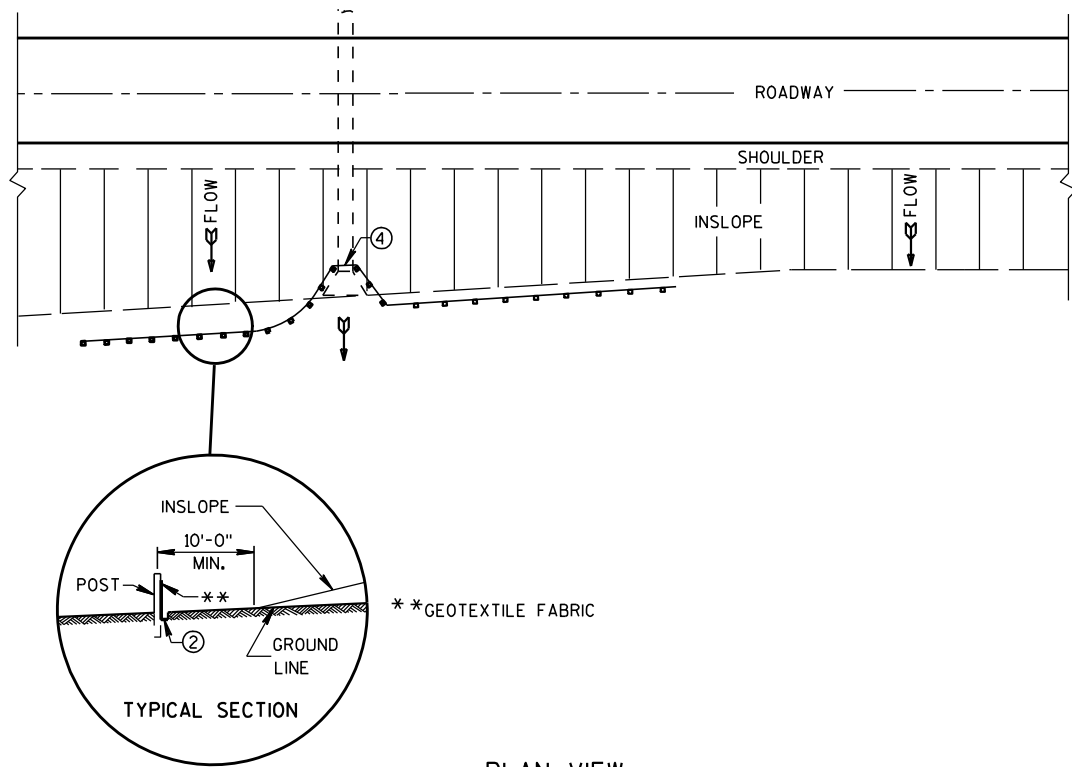
REVISION DATE	DATE <u>04/11/2024</u>	SCALE, FEET 	HWY: CTH F	STATE R/W PROJECT NUMBER: 6669-00-00	PLAT SHEET 4.02
	GRID FACTOR		COUNTY: MARATHON	CONSTRUCTION PROJECT NUMBER: 6669-00-70	PS&E SHEET

CONTROL POINTS & BENCH MARKS						
POINT NO.	STATION	OFFSET	NORTHING	EASTING	ELEV.	DESCRIPTION
900	N/A	N/A	222095.89	129265.89	1394.97	MAG NAIL
901	33+45.38	11.36 RT	221598.59	129272.02	1396.87	MAG NAIL
902	N/A	N/A	221054.08	129203.33	1400.21	MAG NAIL

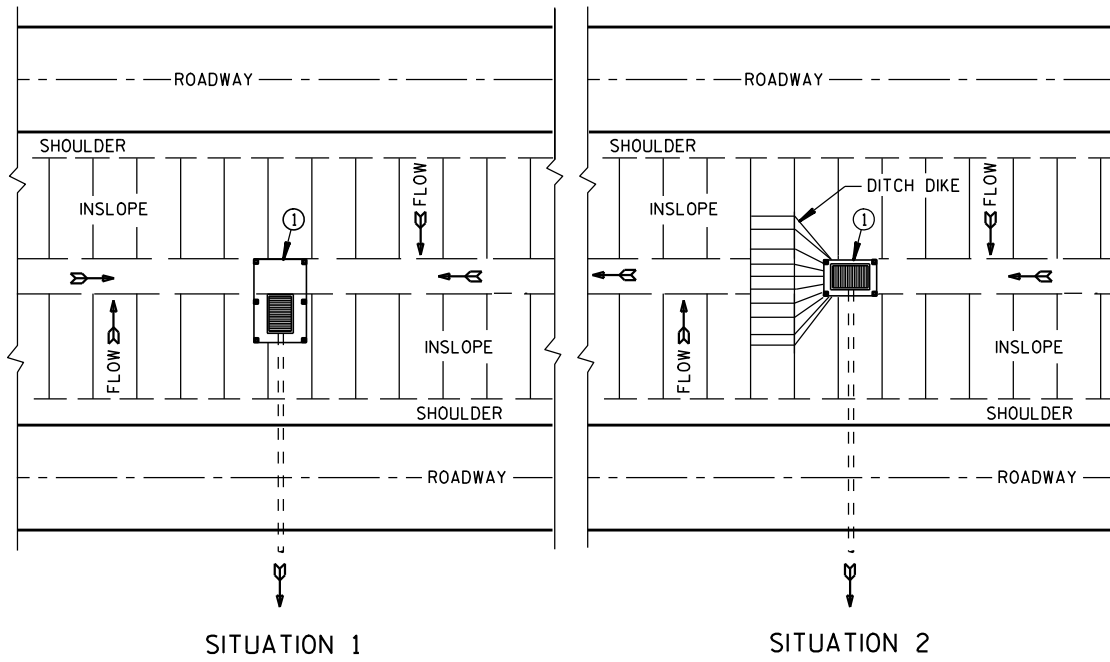


## Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13A03-07	CONCRETE PAVEMENT SHOULDERS
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C19-03	HMA LONGITUDINAL JOINTS
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS



PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE

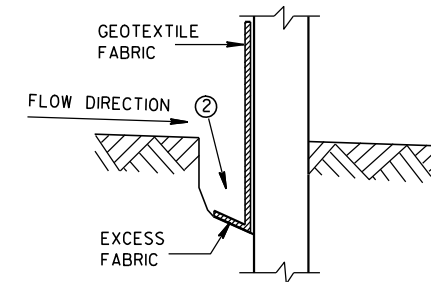


SITUATION 1 SITUATION 2  
PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

**GENERAL NOTES**

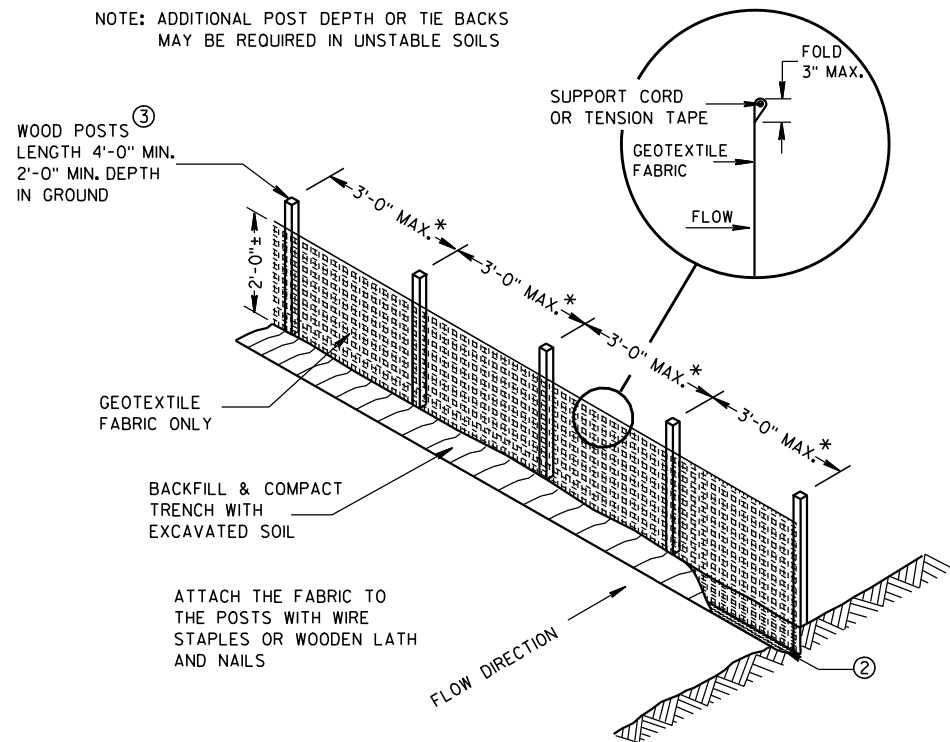
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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.



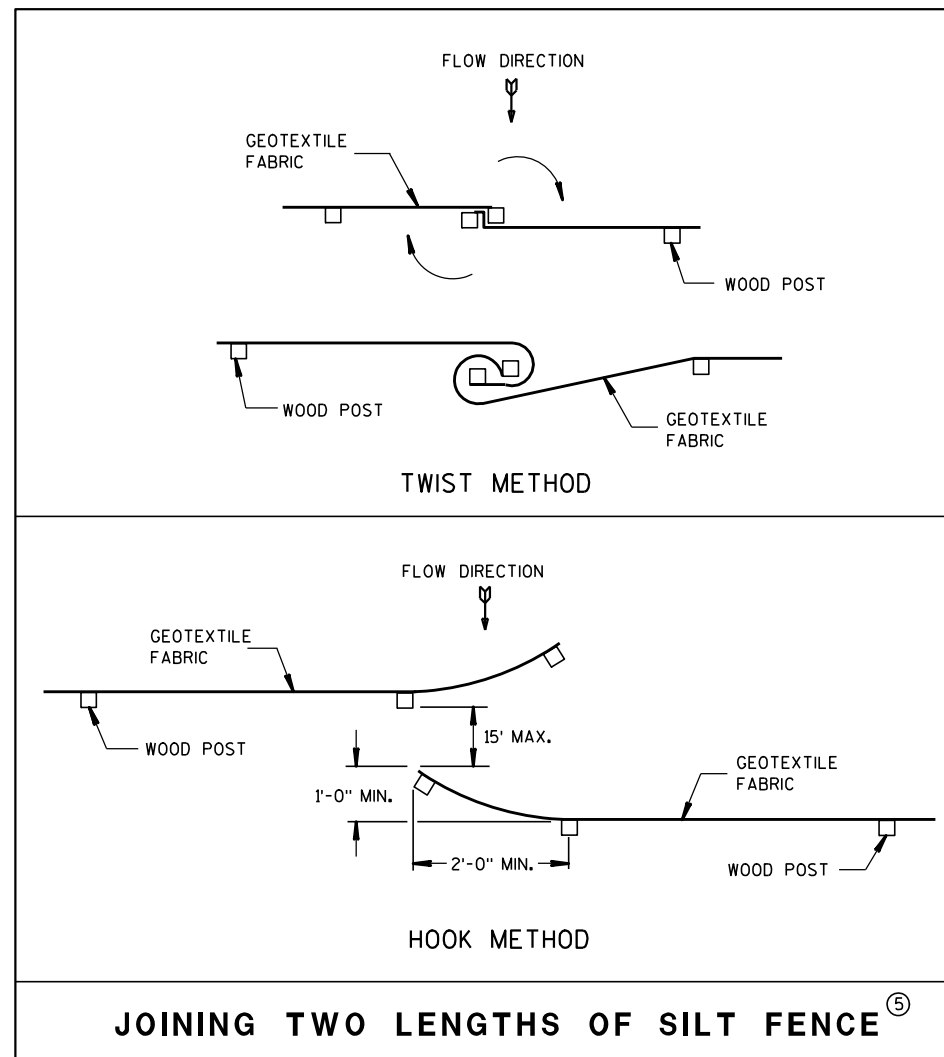
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

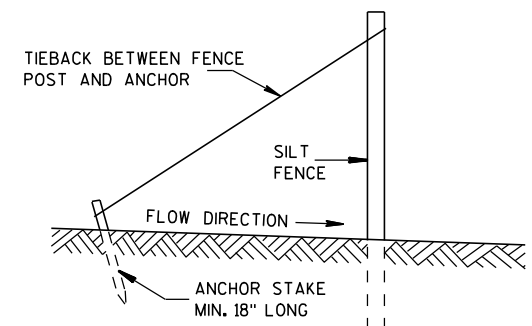


SILT FENCE

\* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

**SILT FENCE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

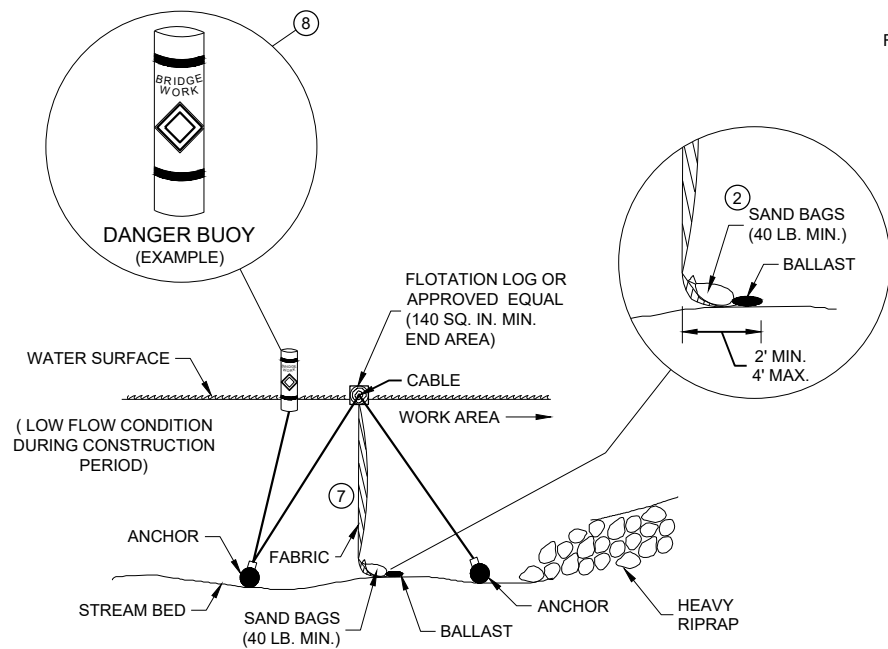
APPROVED

4-29-05

DATE

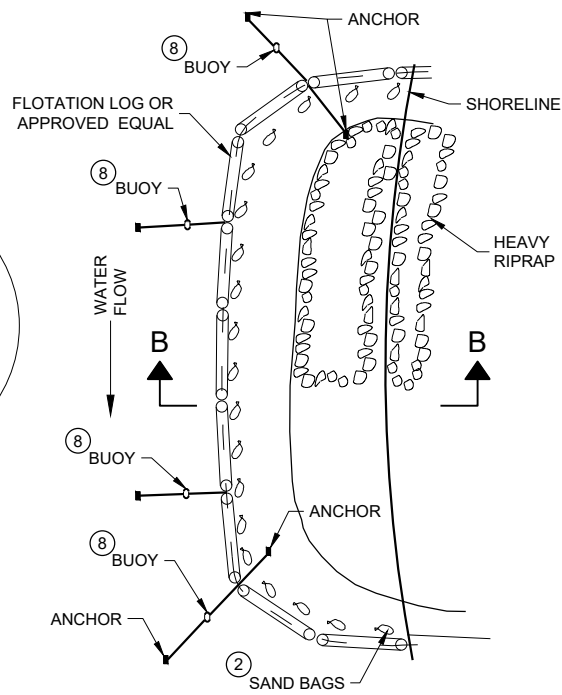
FHWA

/S/ Beth Canestra  
CHIEF ROADWAY DEVELOPMENT ENGINEER

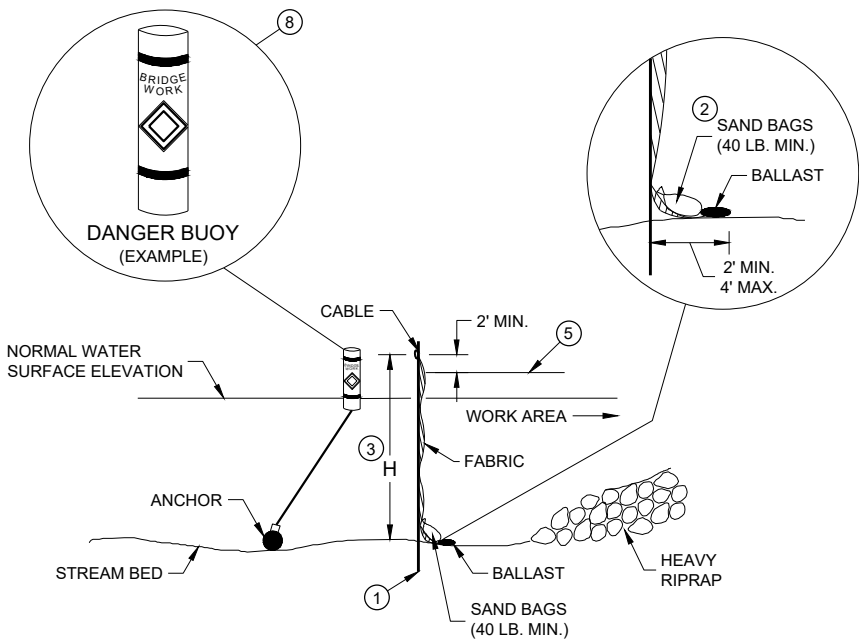


**SECTION B - B**

**TURBIDITY BARRIER - FLOAT ALTERNATIVE  
CAUTION - SEE NOTE 6**

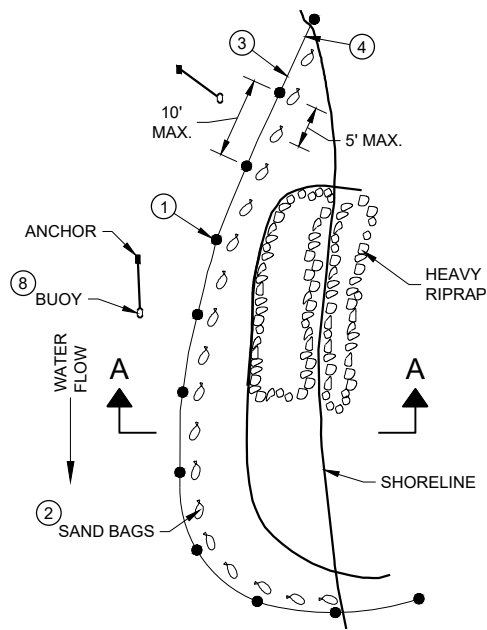


**PLAN VIEW**



**SECTION A - A**

**TURBIDITY BARRIER - STANDARD POST INSTALLATION**



**PLAN VIEW**

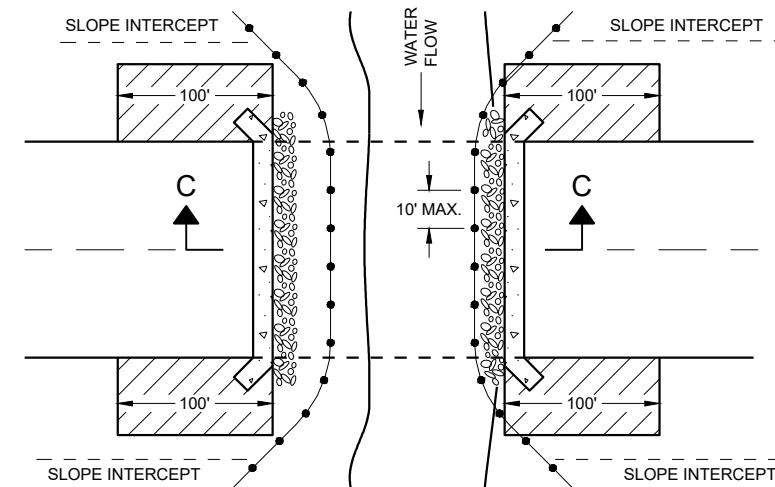
**TURBIDITY BARRIER PLACEMENT DETAILS**

**GENERAL NOTES**

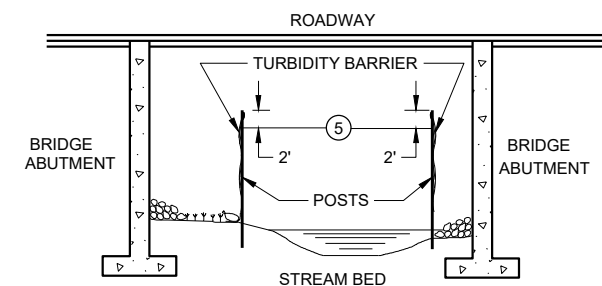
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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 SAND BAGS 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 FEET, 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 Q2 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 BEDROCK 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.



**PLAN VIEW**



**SECTION C - C**

**TURBIDITY BARRIER DETAIL SHOWING  
TYPICAL PLACEMENT AT STRUCTURES**

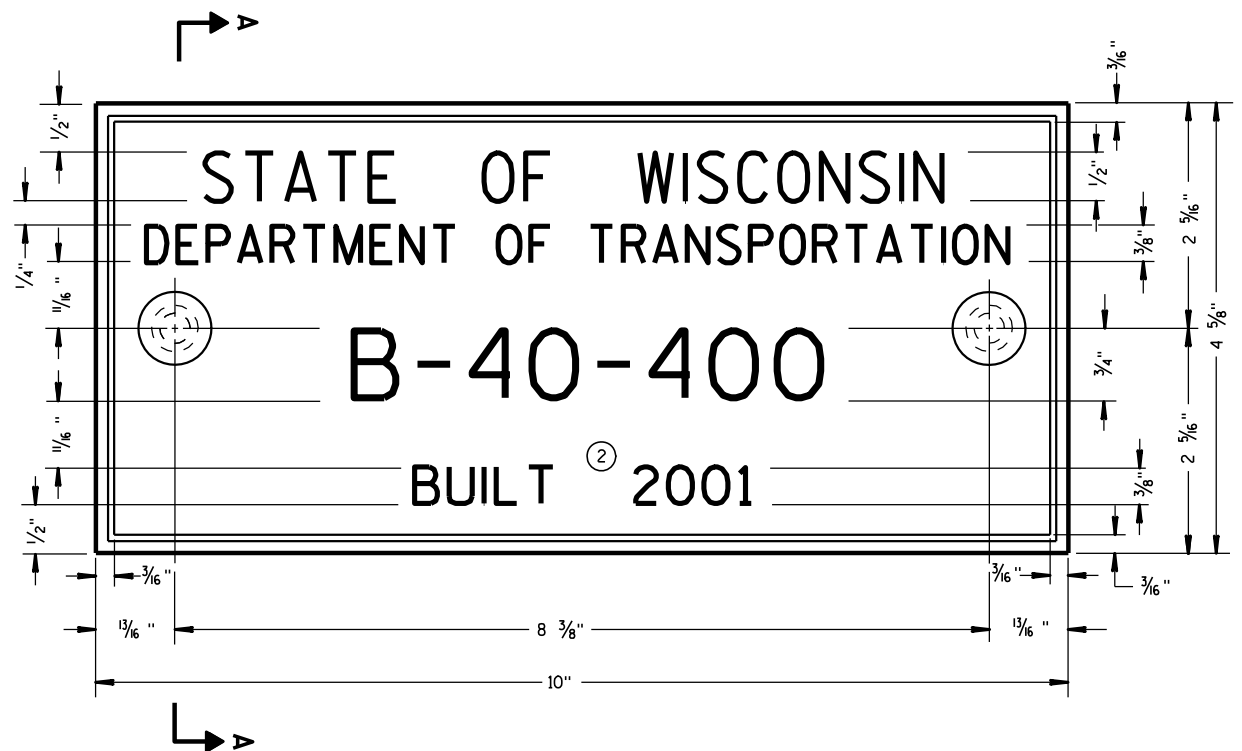
**TURBIDITY BARRIER**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
6/4/02 DATE /S/ Beth Cannestra  
DATE CHIEF ROADWAY DEVELOPMENT  
ENGINEER

FHWA





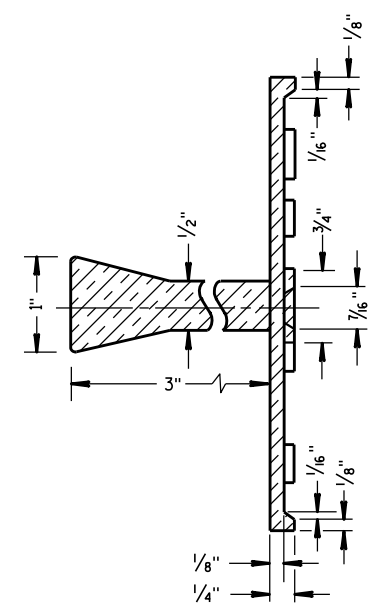
**TYPICAL NAME PLATE**  
(BRIDGES, CULVERTS, AND RETAINING WALLS)

**GENERAL NOTES**

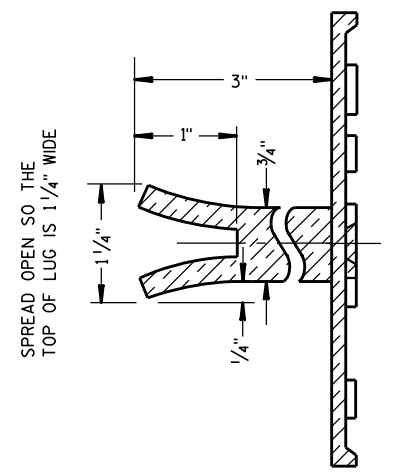
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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**

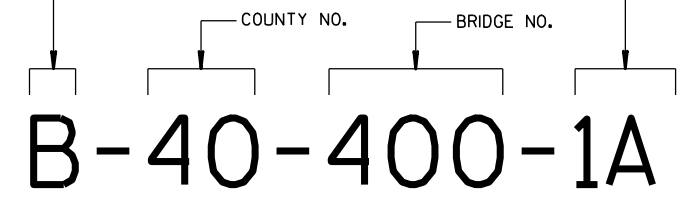
6

6

FOR MULTI-UNIT STRUCTURES  
LINE 3 ABOVE SHALL READ

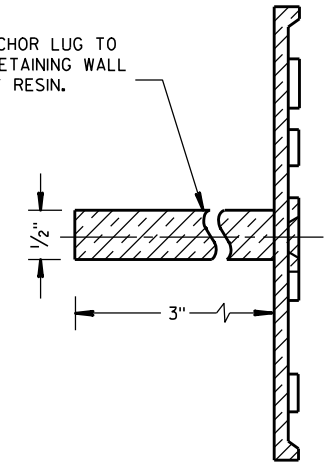
B = BRIDGE  
C = CULVERT  
R = RETAINING WALL

UNIT NO. FOR MULTIPLE  
UNIT BRIDGE



**NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES**

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



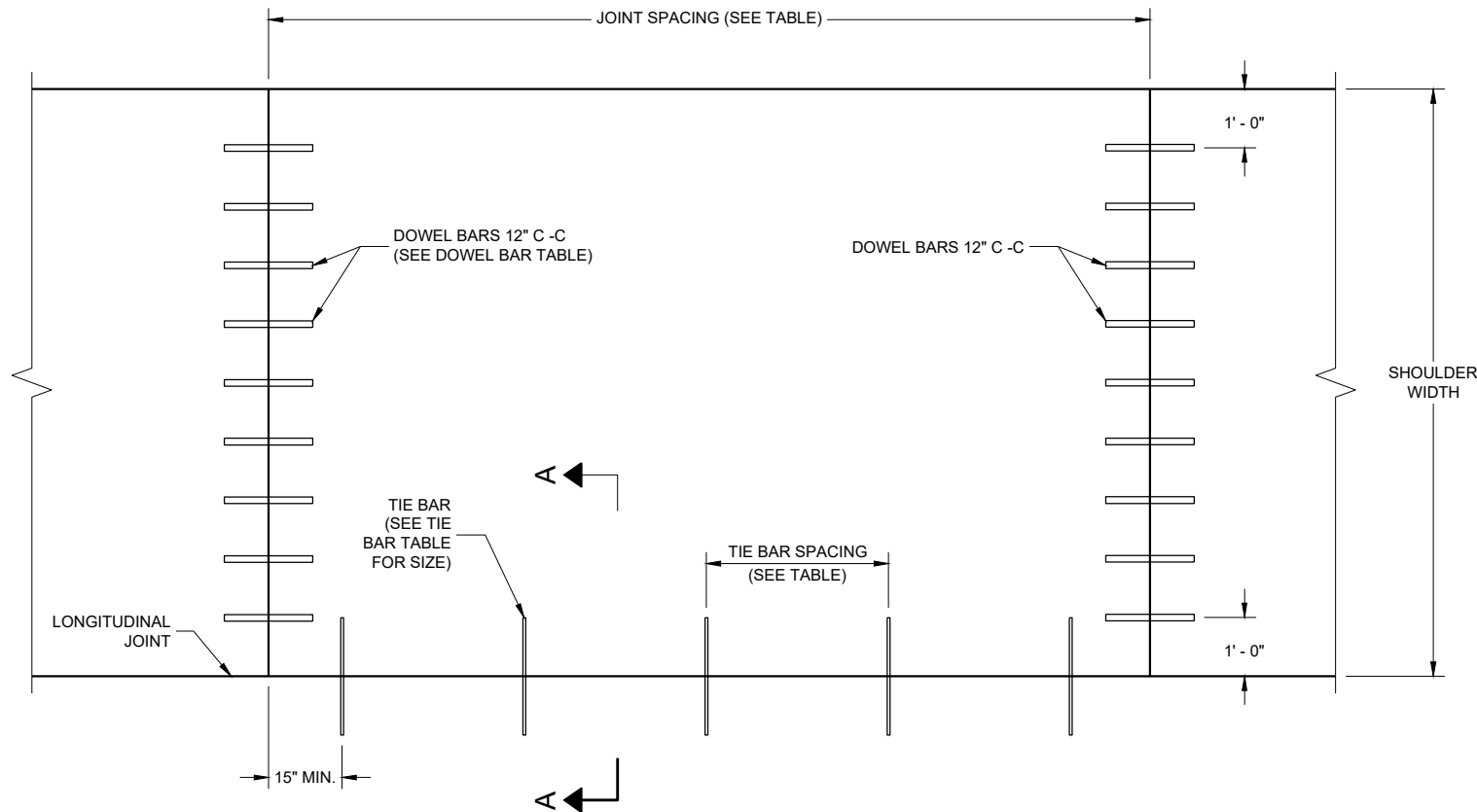
**ALTERNATE LUG**  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

<b>NAME PLATE (STRUCTURES)</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	

**PLAN VIEW  
CONCRETE PAVEMENT SHOULDER**



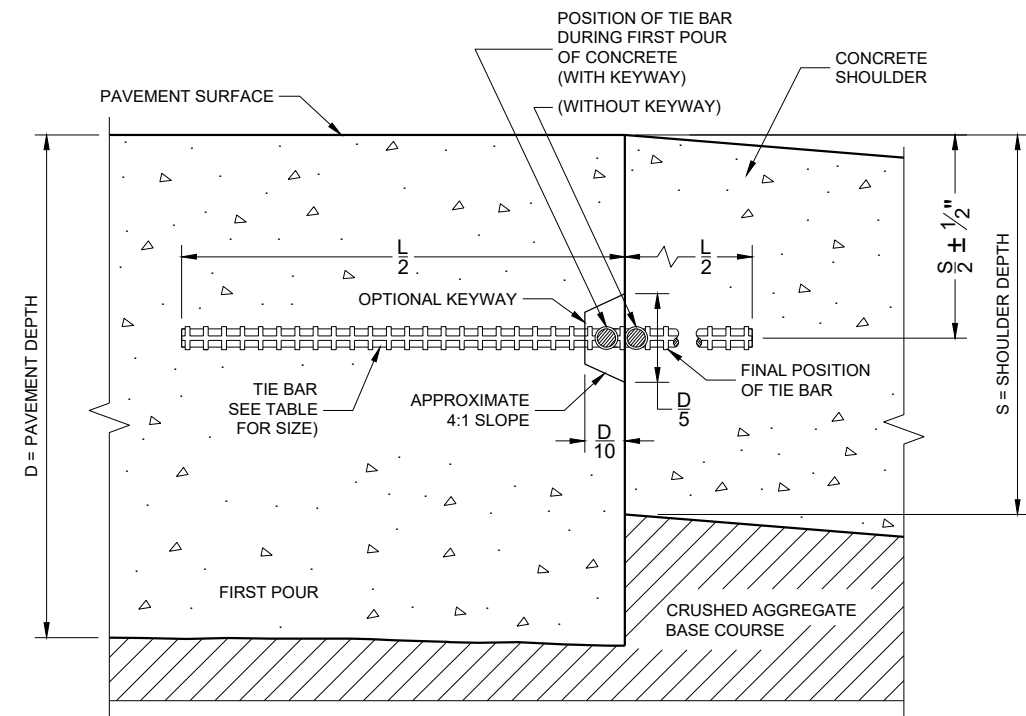
**GENERAL NOTES**

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

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

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

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



**SECTION A - A  
LONGITUDINAL CONSTRUCTION JOINT**

**PAVEMENT DEPTH, DOWEL BAR SIZE  
AND JOINT SPACING TABLE**

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

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

**TIE BAR TABLE**

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

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

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

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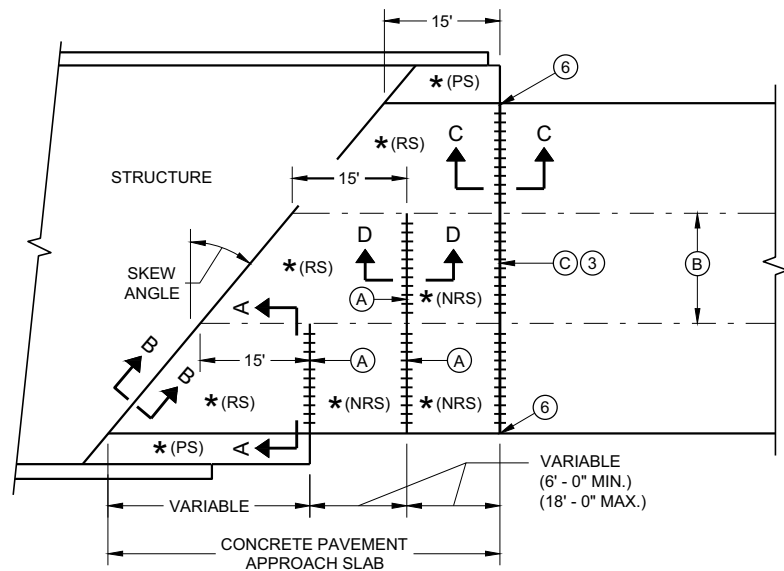
SDD 13A03 - 07

**CONCRETE PAVEMENT  
SHOULDERS**

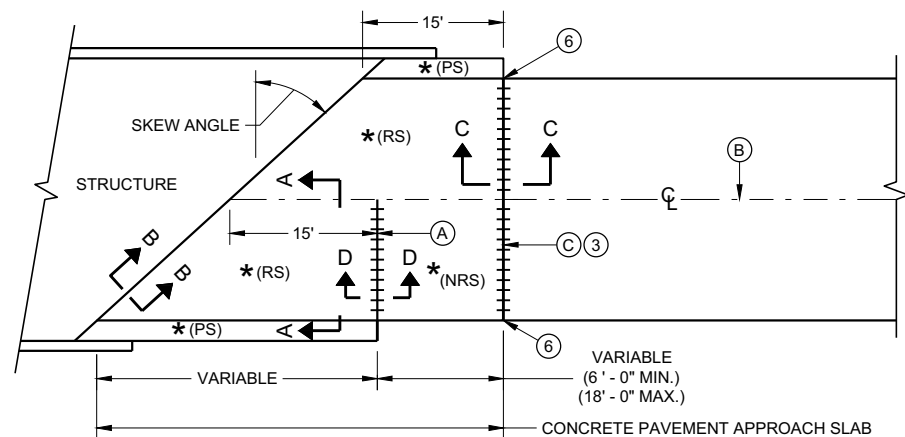
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2022 /S/ Peter Kemp  
DATE PAVEMENT SUPERVISOR

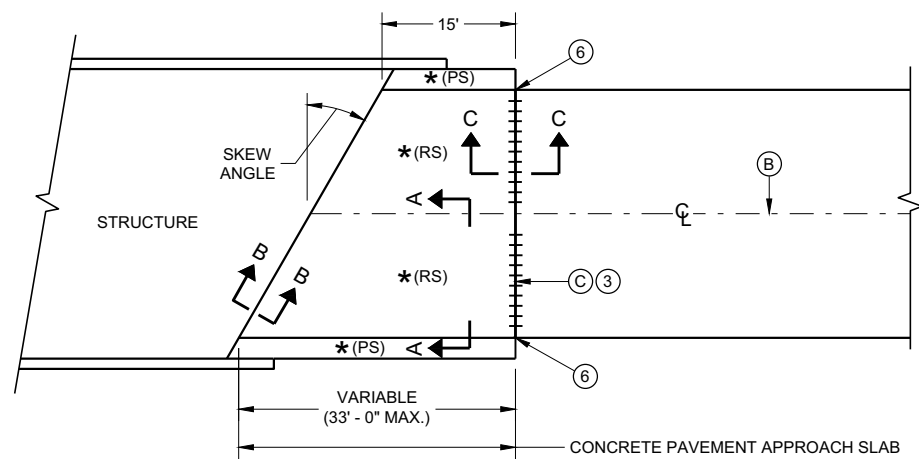
FHWA



**SKewed Approach  
(Pavement more than two lanes)**

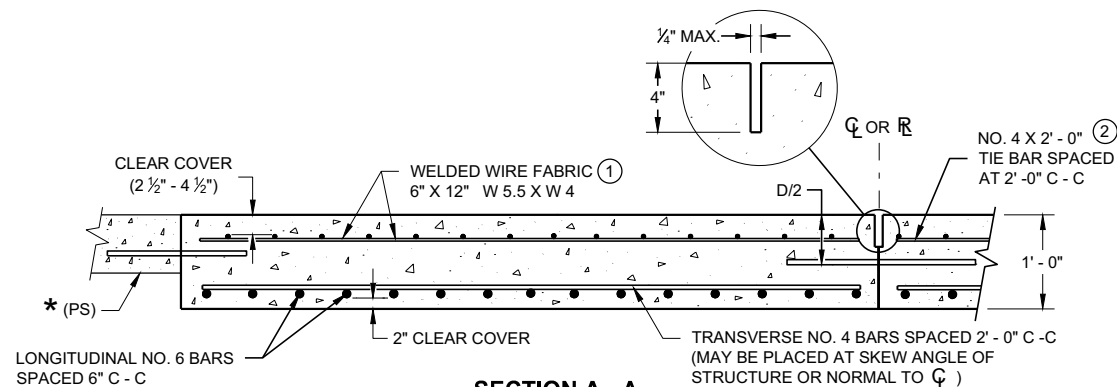


**SKews > 20°  
(Pavement width ≤ 30')**

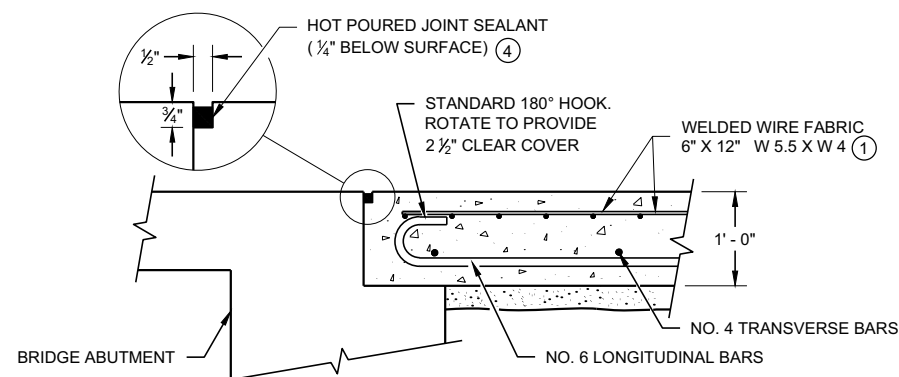


**SKews ≤ 20°  
(Pavement width ≤ 30')**  
**Approach Slab and Adjacent Pavement**

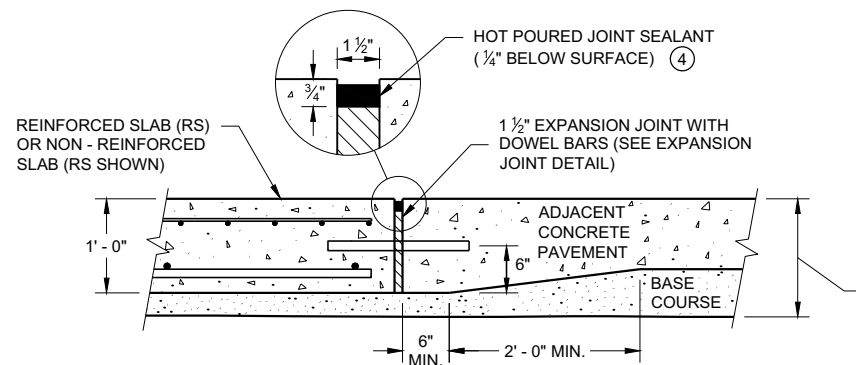
- \* (RS) = REINFORCED CONCRETE SLAB
- \* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- \* (NRS) = NON - REINFORCED CONCRETE SLAB
- \*\*\* STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A  
REINFORCEMENT POSITIONING DETAIL**



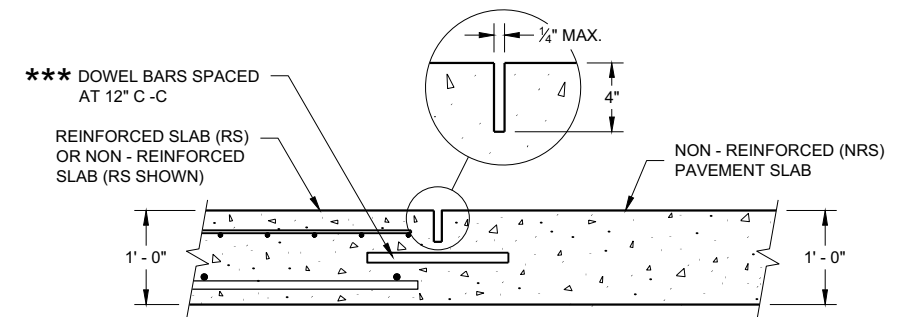
**SECTION B - B  
BEND DETAIL  
BOTTOM REINFORCEMENT**



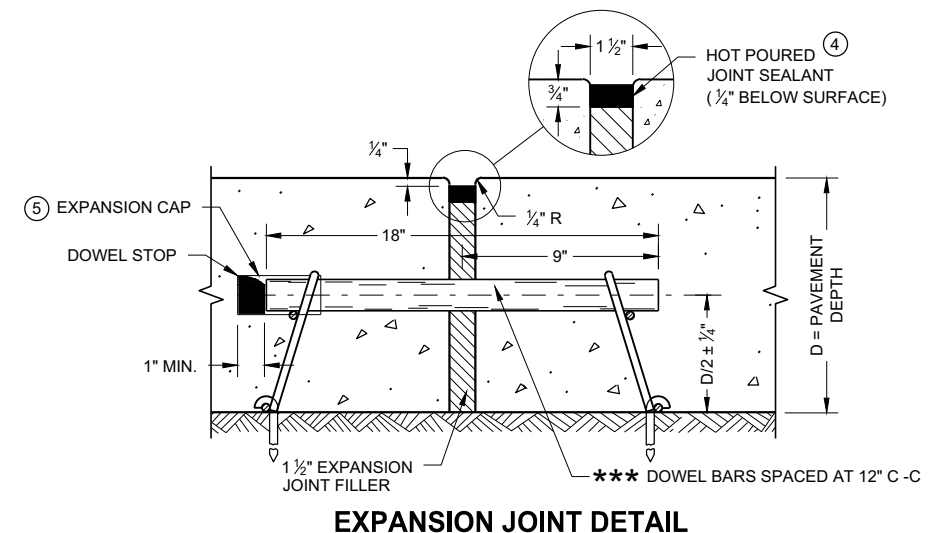
**SECTION C - C  
TRANSITION DETAIL  
Approach Slab to Adjacent Pavement**

**GENERAL NOTES**

- THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.
- TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.
- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
  - ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
  - ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
  - ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
  - ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
  - ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
  - (A) STANDARD CONTRACTION JOINT NORMAL TO  $\mathcal{C}$  OR  $\mathcal{R}$ .
  - (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
  - (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO  $\mathcal{C}$  OR  $\mathcal{R}$ .



**SECTION D - D  
CONTRACTION JOINT**



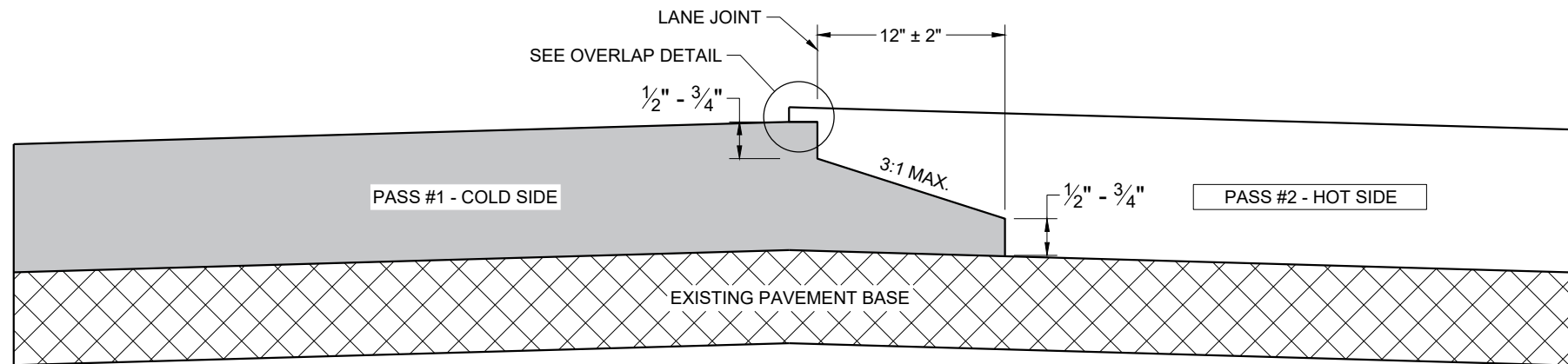
**EXPANSION JOINT DETAIL**

**CONCRETE PAVEMENT  
APPROACH SLAB**

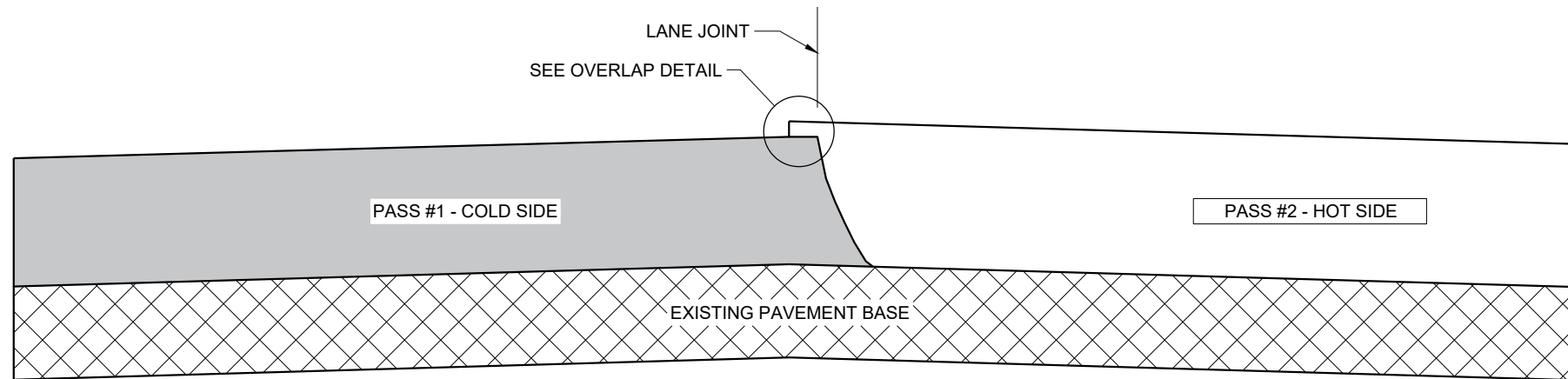
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2018 /S/ Peter Kemp, P.E.  
DATE PAVEMENT SUPERVISOR

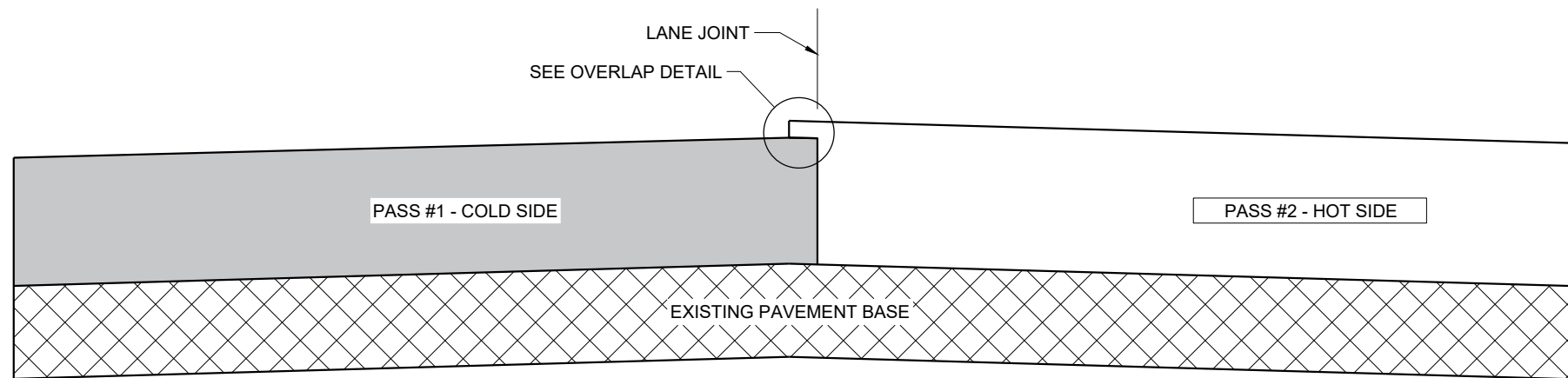
FHWA



**TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT (MILLED)**

**GENERAL NOTES**

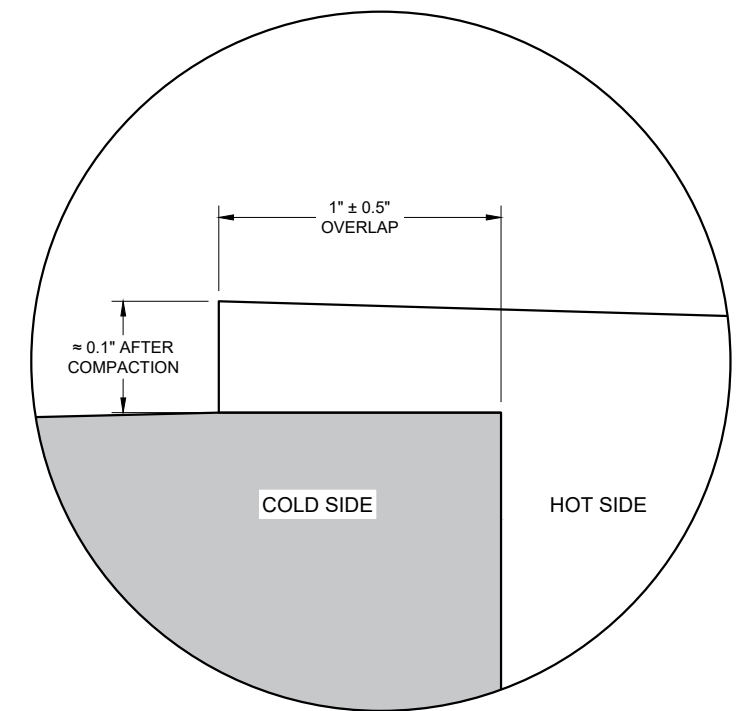
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY  $1" \pm 0.5"$  AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY  $0.1"$  AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO  $2"$  FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



**OVERLAP DETAIL (TYPICAL)**

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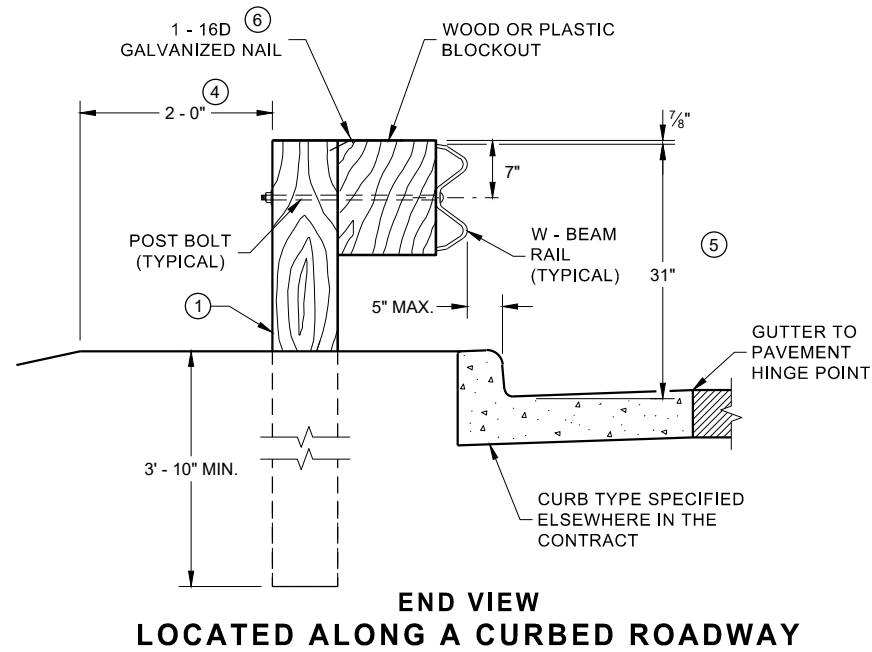
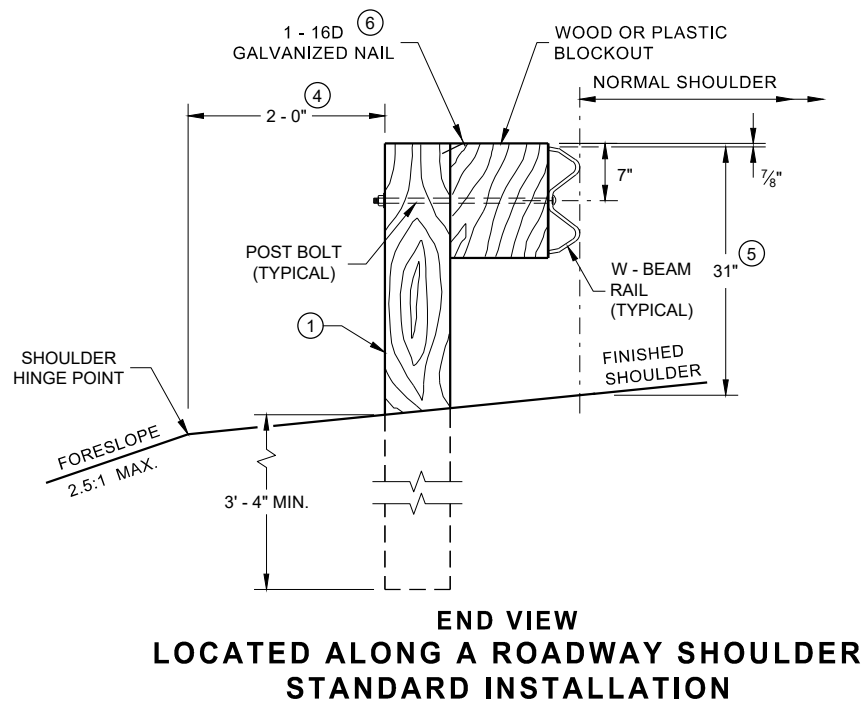
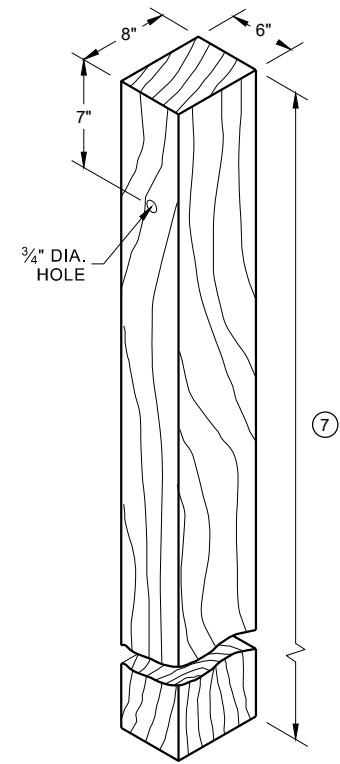
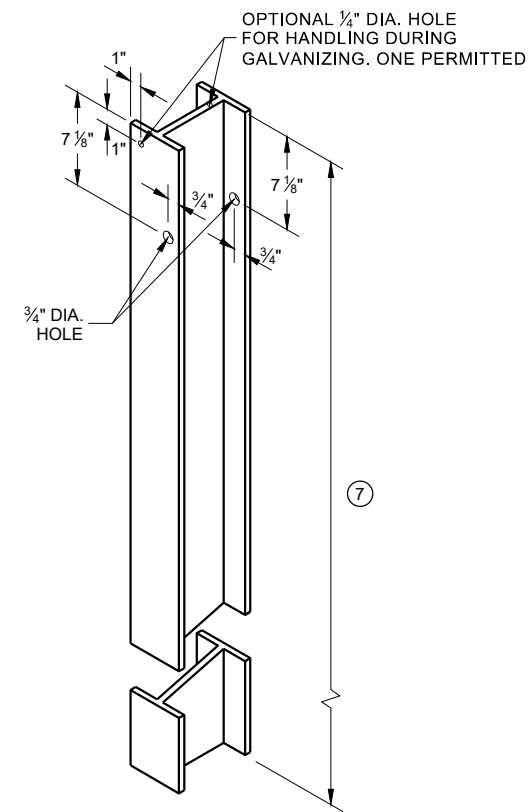
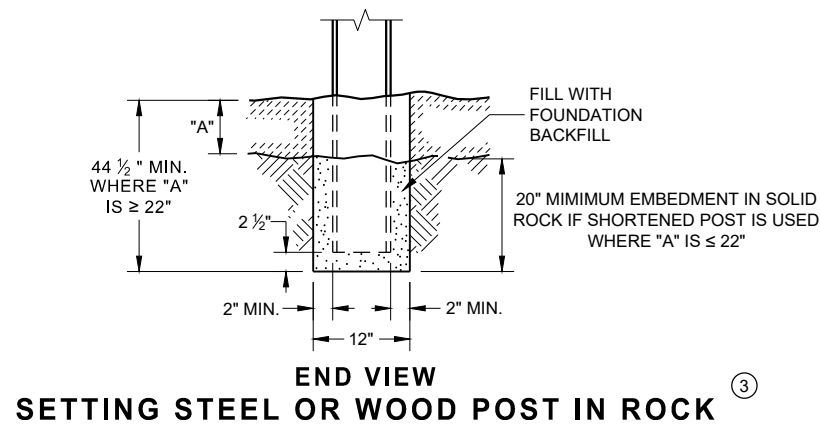
SDD 13C19 - 03

**HMA LONGITUDINAL JOINTS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

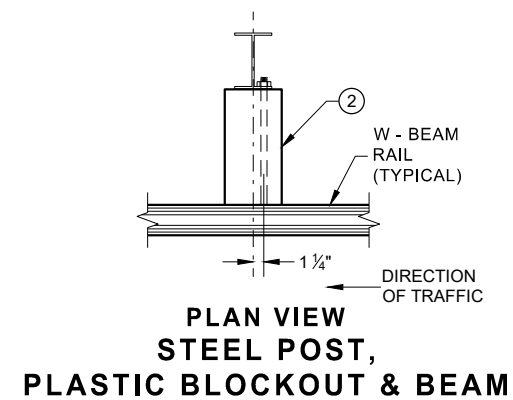
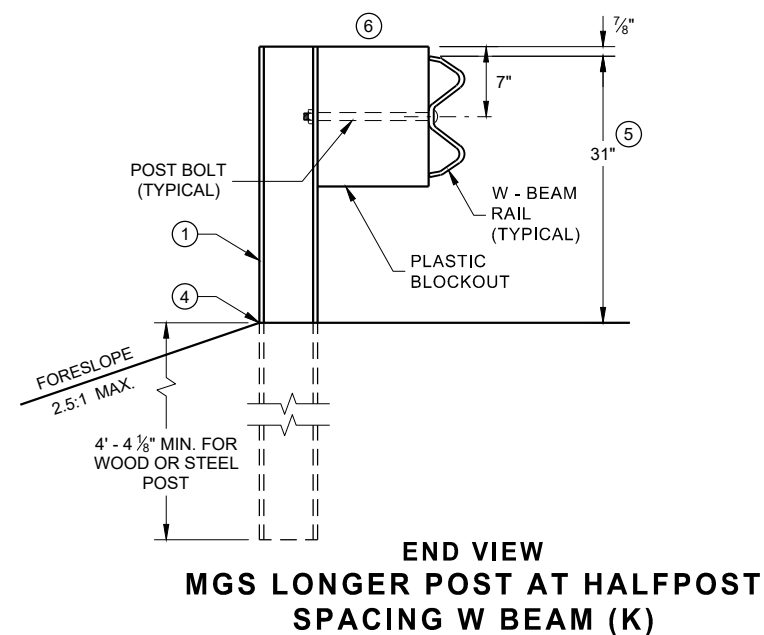
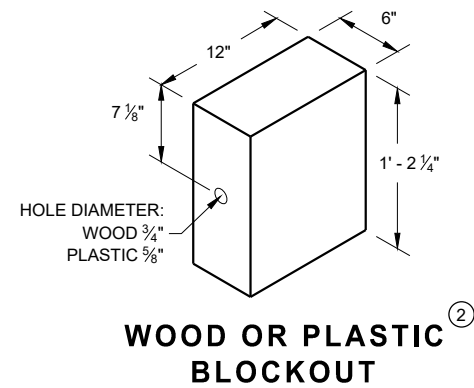
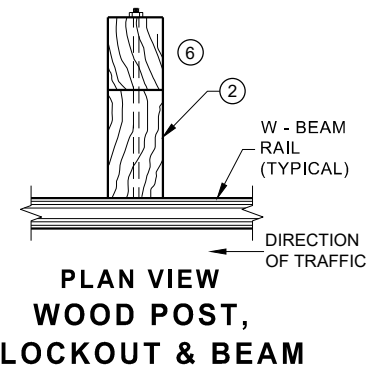
APPROVED  
November 2020 DATE /S/ Steven Hefel  
HMA PAVEMENT ENGINEER  
FHWA

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



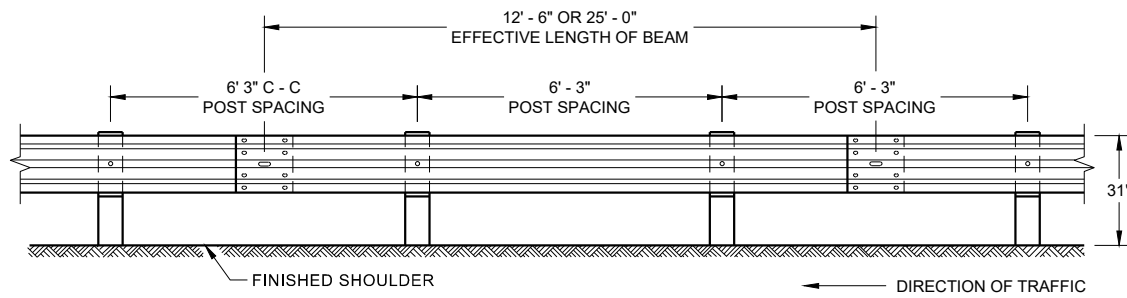
**STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9)**

**WOOD POST (6" X 8") NOMINAL**

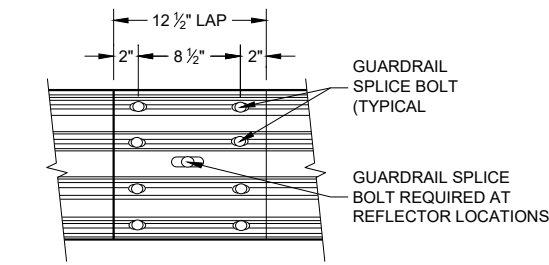


**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



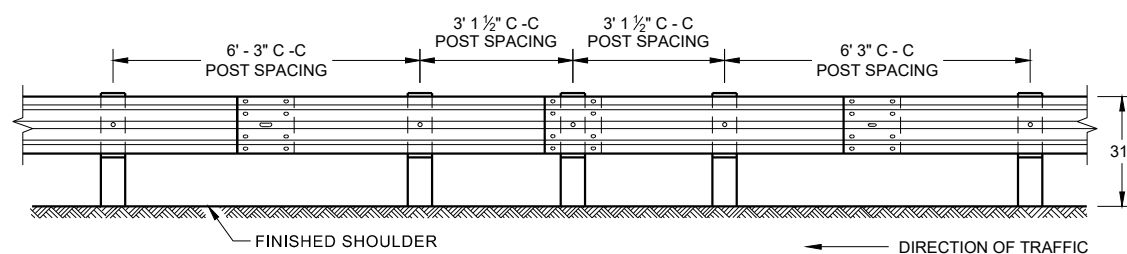
**FRONT VIEW  
POST SPACING STANDARD INSTALLATION**



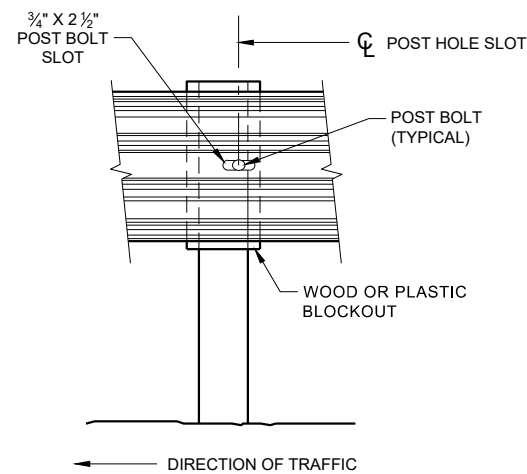
**FRONT VIEW  
MID-SPAN BEAM SPLICE**

**GENERAL NOTES**

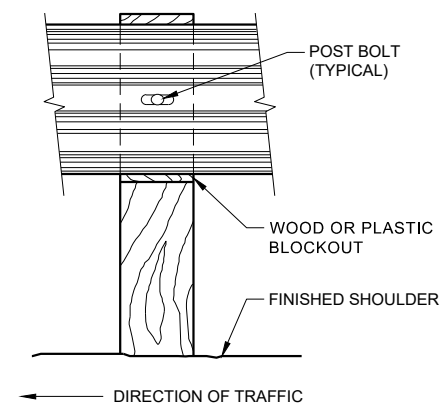
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
  - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER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



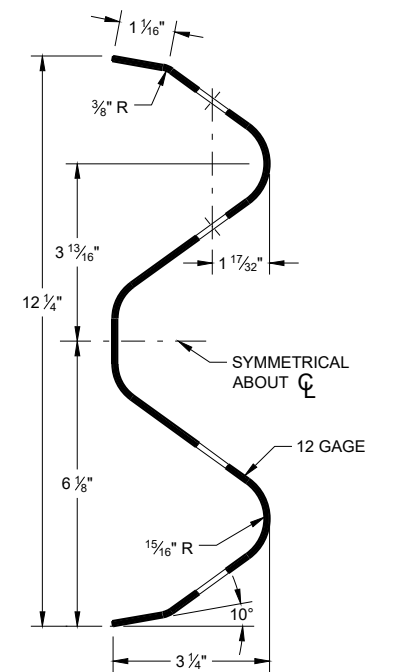
**FRONT VIEW  
HALF POST SPACING (HS) AND  
HALF POST SPACING WITH LONGER POSTS (K)**



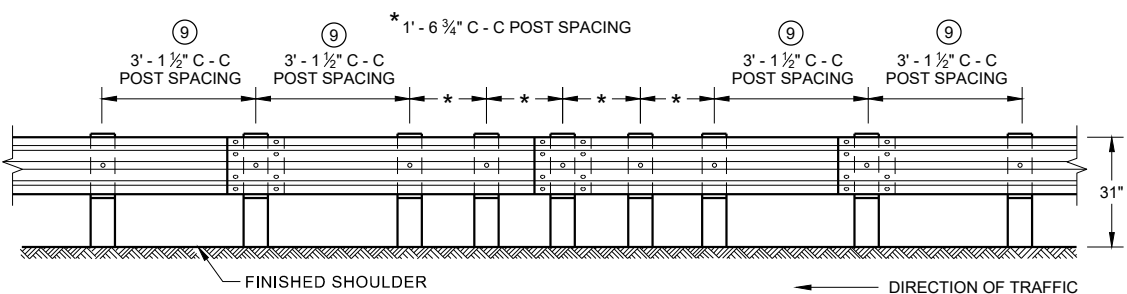
**FRONT VIEW AT STEEL POST**



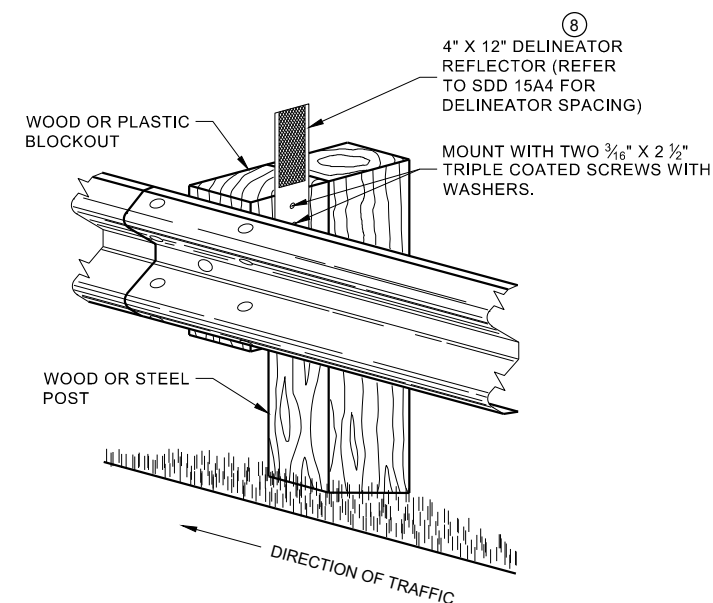
**FRONT VIEW AT WOOD POST**



**SECTION THRU W-BEAM RAIL**



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



**ONE SIDED REFLECTOR DETAIL  
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

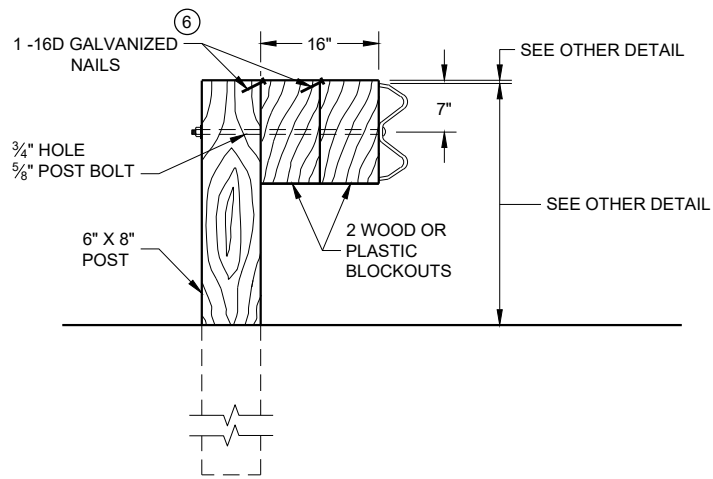
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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SDD 14B42 - 07b

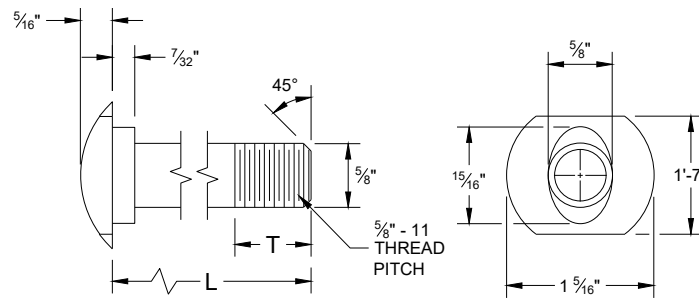
SDD 14B42 - 07b



**DETAIL FOR 16" BLOCKOUT DEPTH**

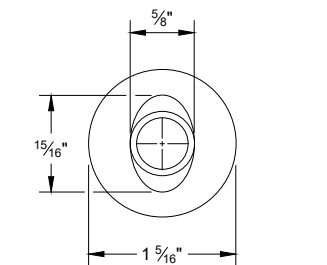
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

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

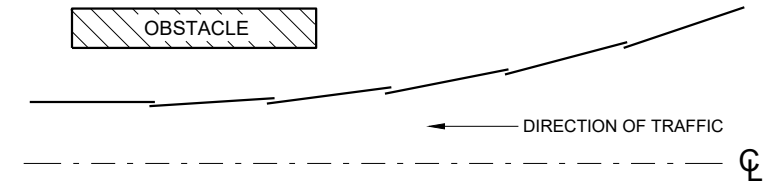


**POST BOLT TABLE**

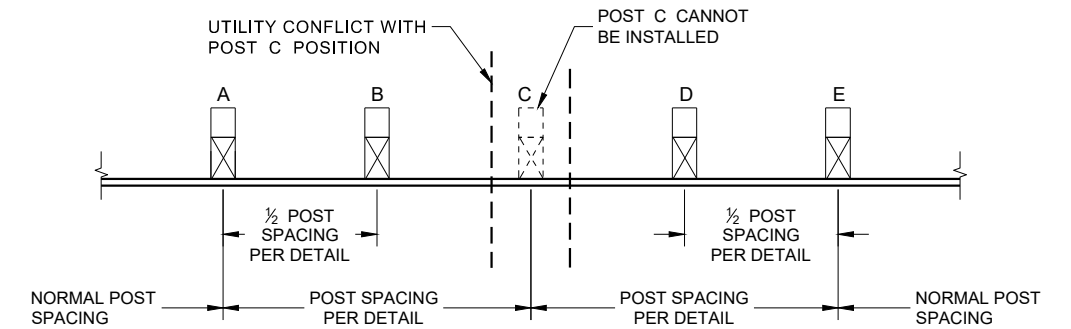
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



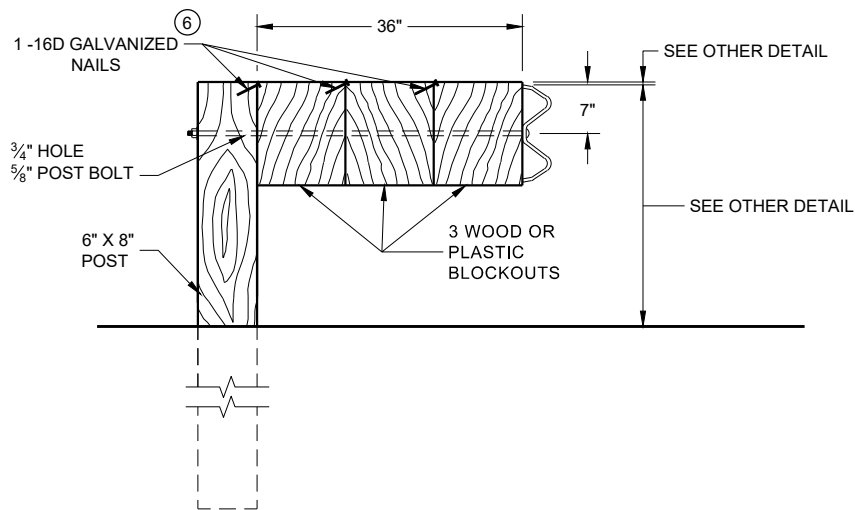
**ALTERNATE BOLT HEAD**



**PLAN VIEW  
BEAM LAPPING DETAIL**

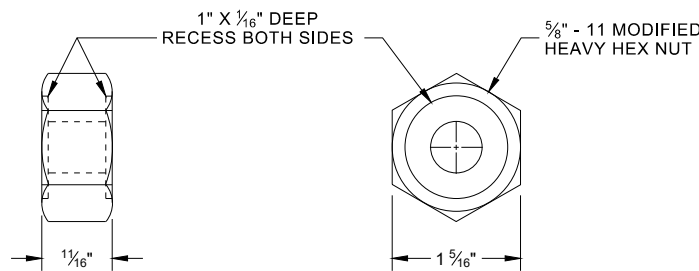


**POST DRIVING FOR CONTINUOUS  
UNDERGROUND OBSTRUCTION**

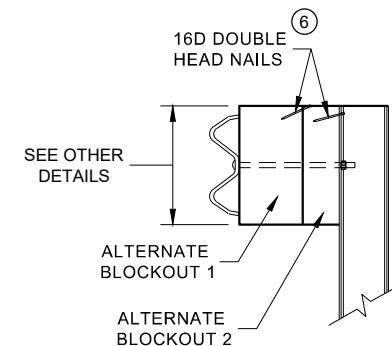


**DETAIL FOR 36" BLOCKOUT DEPTH**

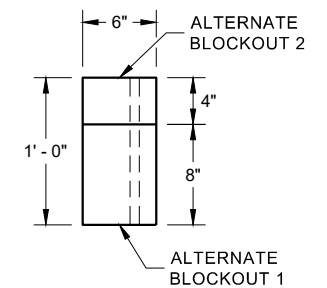
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.  
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE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



**POST BOLT, SPLICE BOLT  
AND RECESS NUT**



**SIDE VIEW**



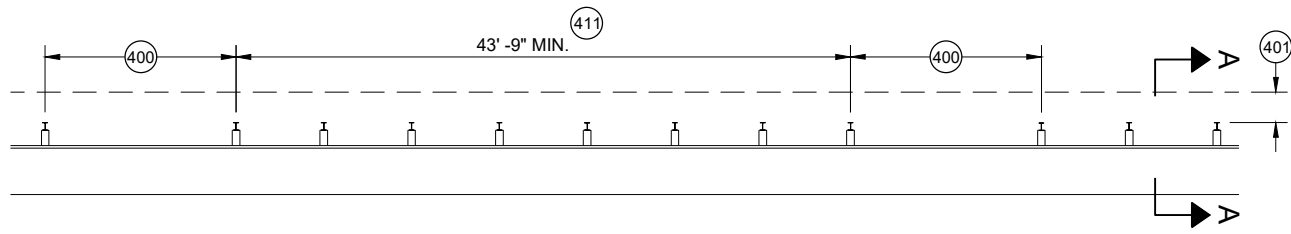
**PLAN VIEW**

**ALTERNATE WOOD  
BLOCKOUT DETAIL**

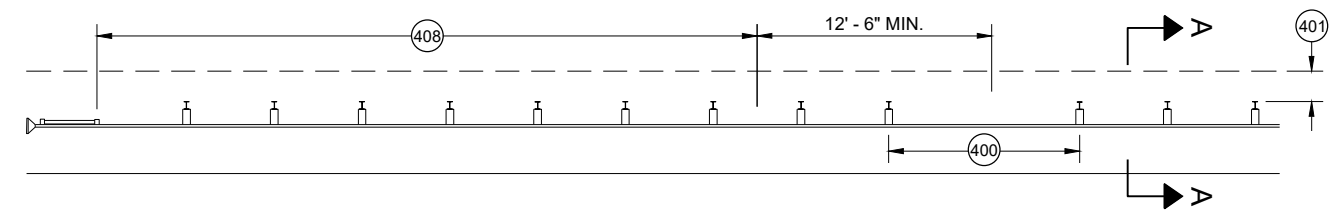
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

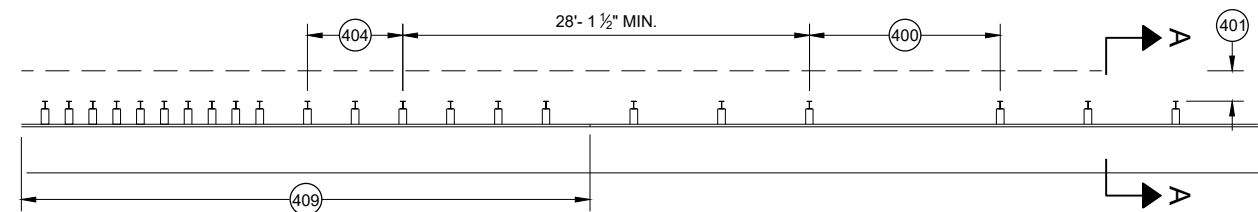
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



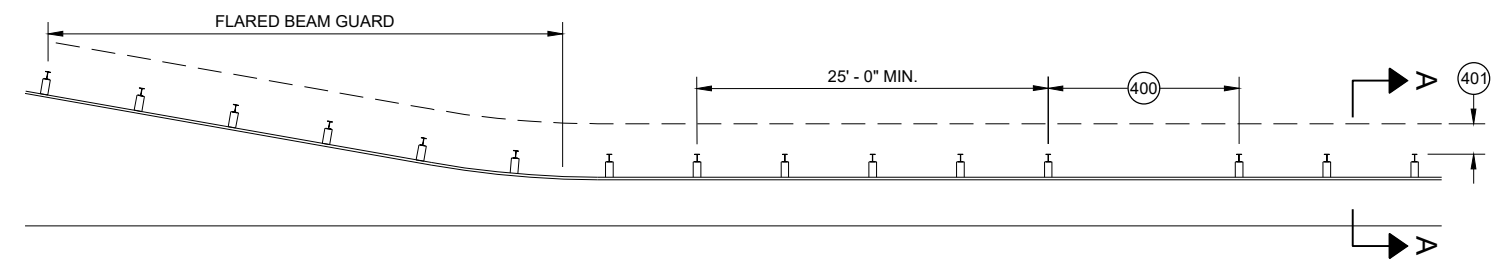
**MISSING POST IN MGS GUARDRAIL**



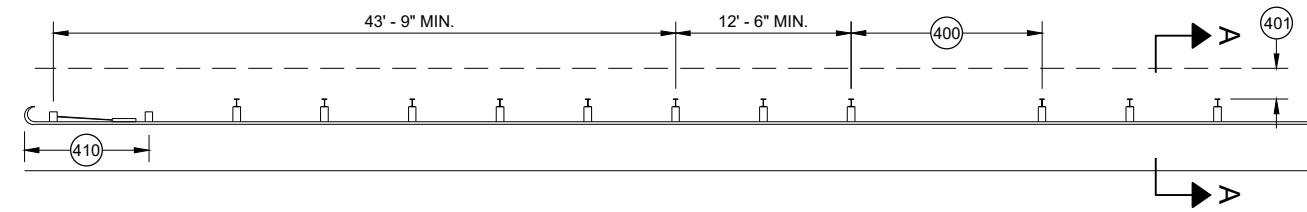
**MISSING POST IN MGS GUARDRAIL NEAR EAT**



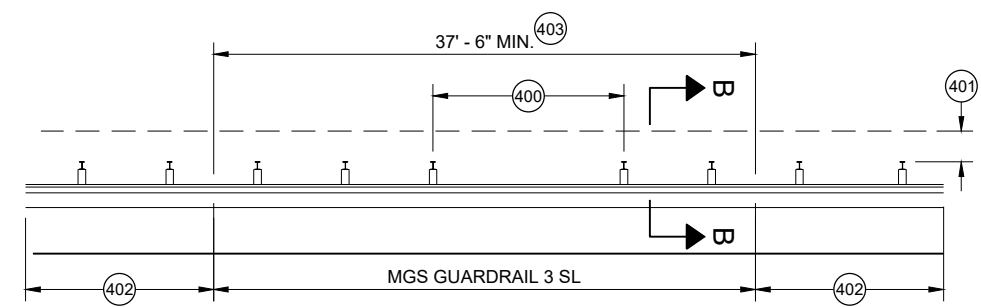
**MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION**



**MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD**

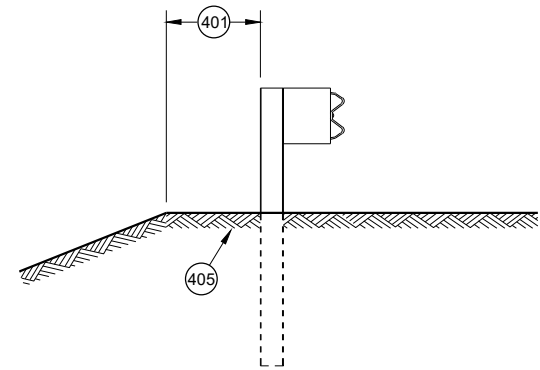


**MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL**

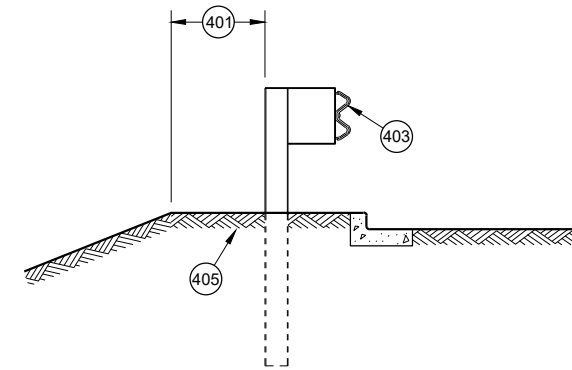


**MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)**

- (400) MAX SPAN 12' - 6"
- (401) 2' MIN.
- (402) MGS GUARDRAIL 3
- (403) NESTING BEAM GUARD
- (404) ASYMMETRIC TRANSITION
- (405) SOIL WELL DRAINED AND COMPACTED
- (406) SEE OTHER DRAWINGS IN THIS SDD
- (407) SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- (408) SEE SDD 14B44
- (409) SEE SDD 14B45
- (410) SEE SDD 14B47
- (411) MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



**SECTION A - A**



**SECTION B - B**

<b>MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
<small>FHWA</small>	



**GENERAL NOTES**

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE 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.

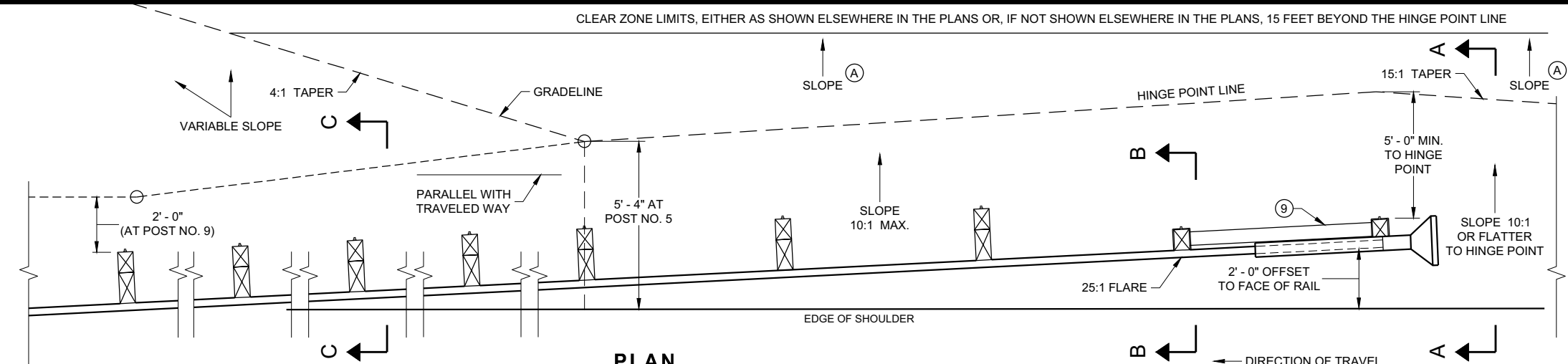
SEE SDD 14B42 FOR MORE INFORMATION.

\* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

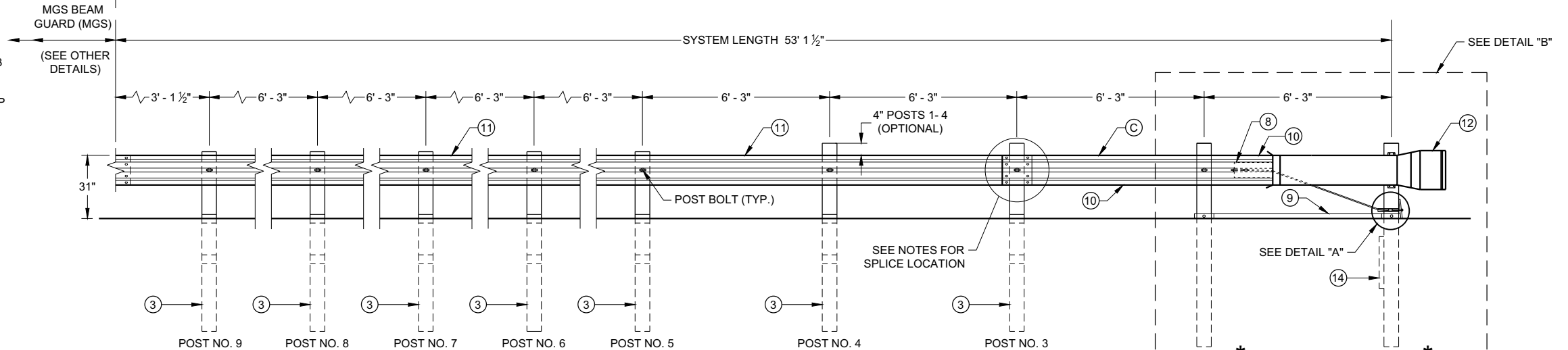
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

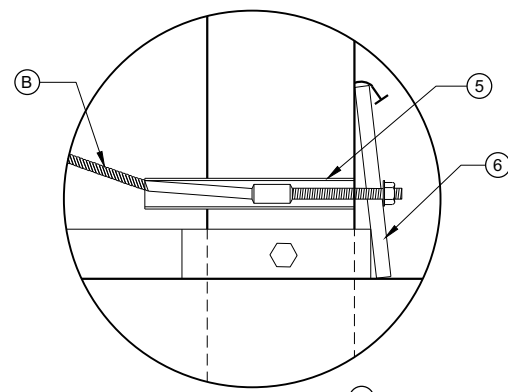
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



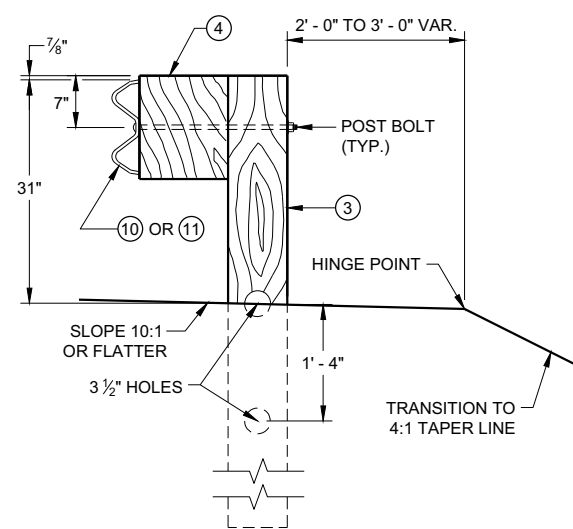
**PLAN**



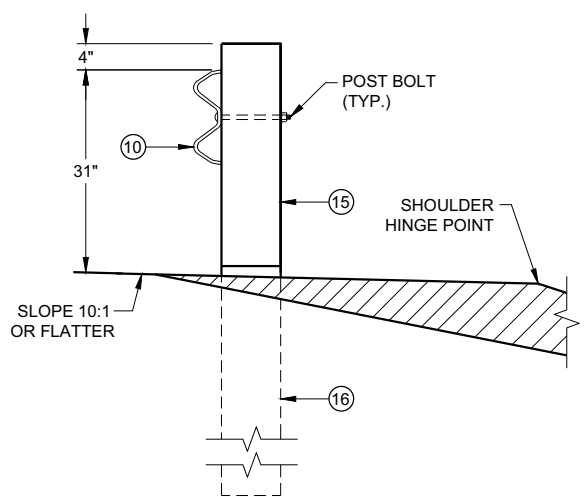
**ELEVATION**



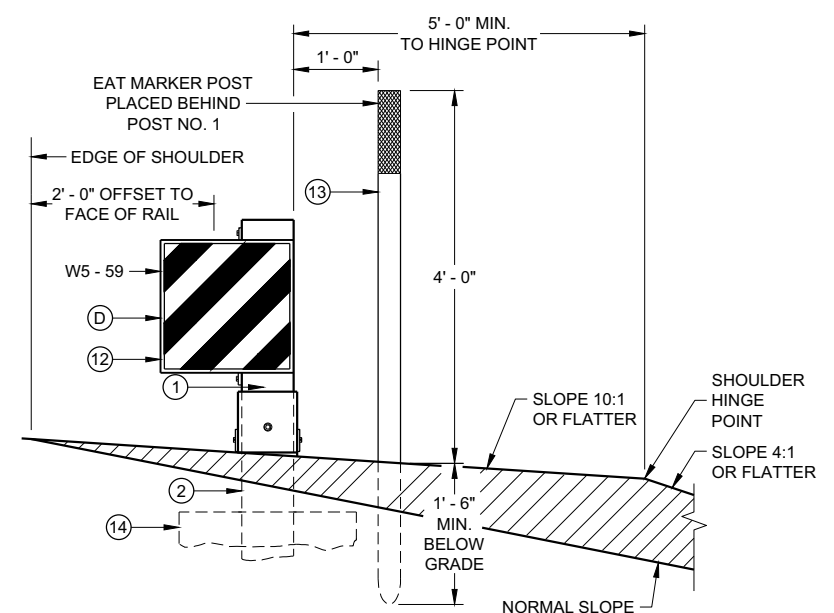
**DETAIL "A"**



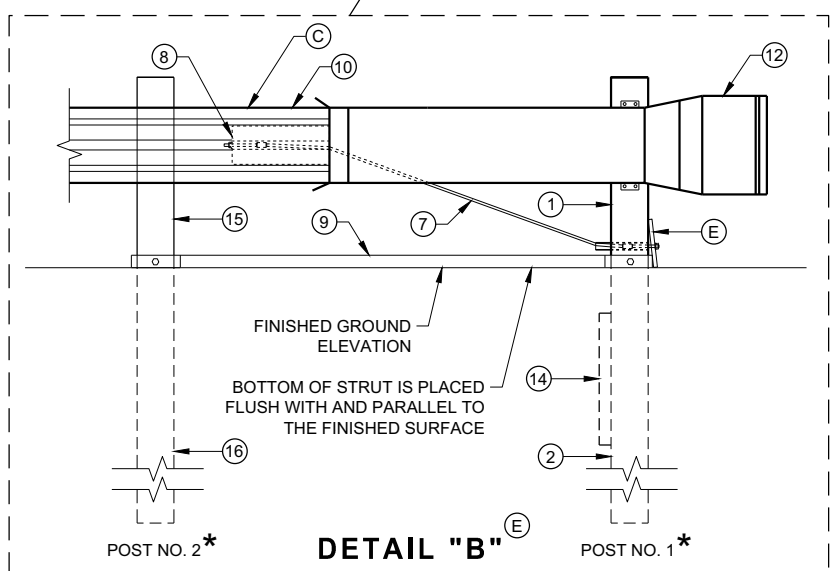
**SECTION C - C  
TYPICAL AT POST NOS. 3 - 9**



**SECTION B - B  
TYPICAL AT POST NO. 2\***



**SECTION A - A  
TYPICAL AT POST NO. 1\***



**DETAIL "B"**

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

6

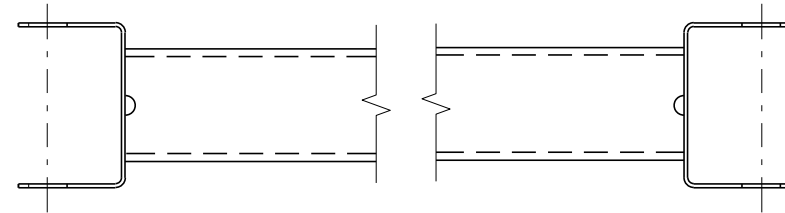
6

SDD 14B44 - 04a

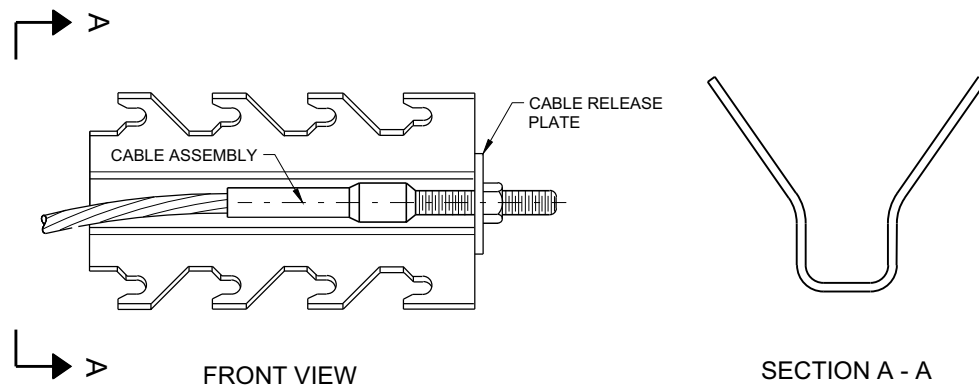
SDD 14B44 - 04a

**BILL OF MATERIALS**

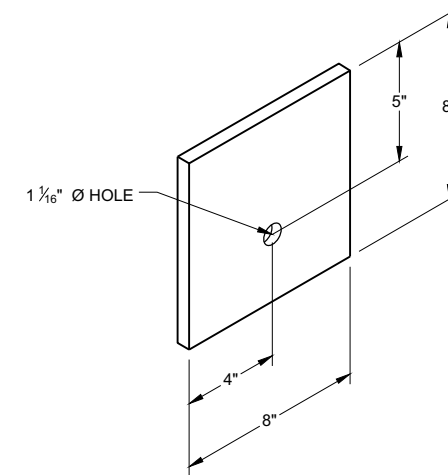
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL 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



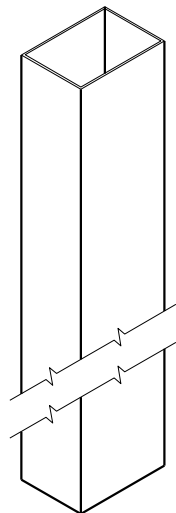
**GENERIC GROUND STRUT** ⑨ ⑤



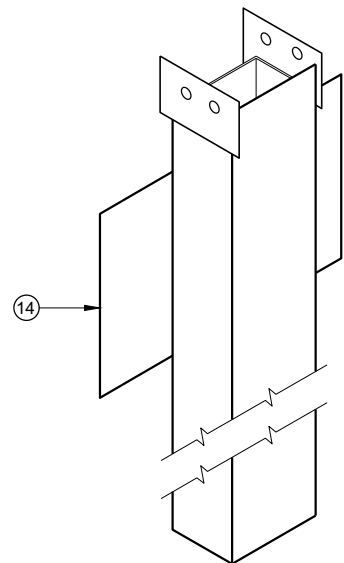
**GENERIC ANCHOR CABLE BOX** ⑨ ⑤



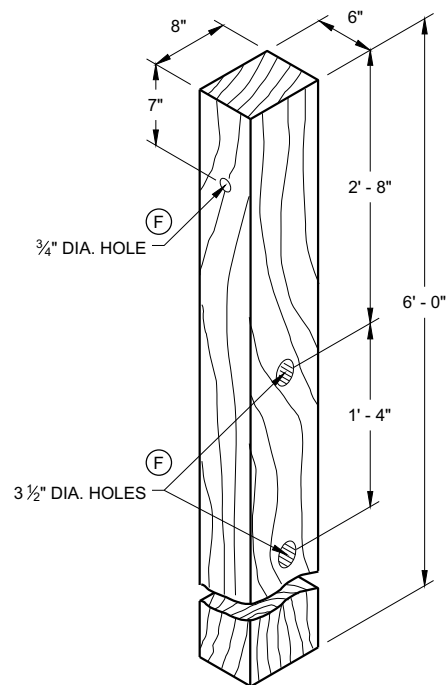
**BEARING PLATE** ⑥ ⑤



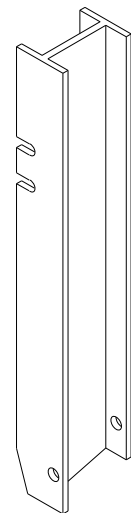
UPPER POST NO. 1 <sup>(1)</sup> (E)



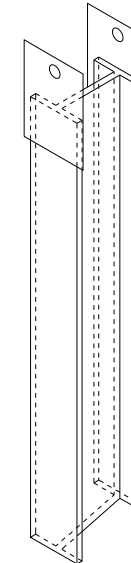
LOWER POST NO. 1 <sup>(2)</sup> (E)



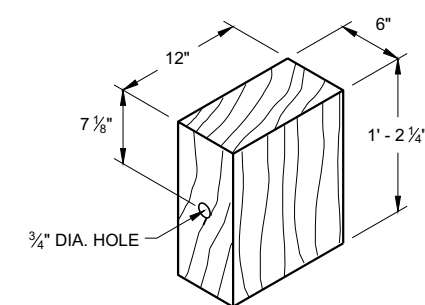
WOOD CRT POST <sup>(3)</sup> (E)  
POSTS NUMBER 3-9



UPPER POST NO. 2 <sup>(15)</sup> (E)

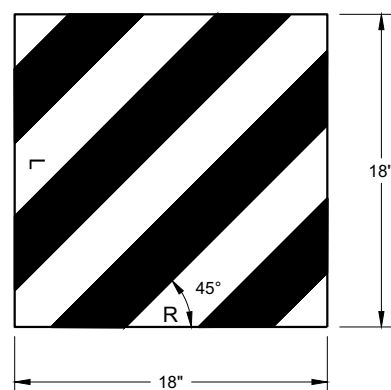


LOWER POST NO. 2 <sup>(16)</sup> (E)

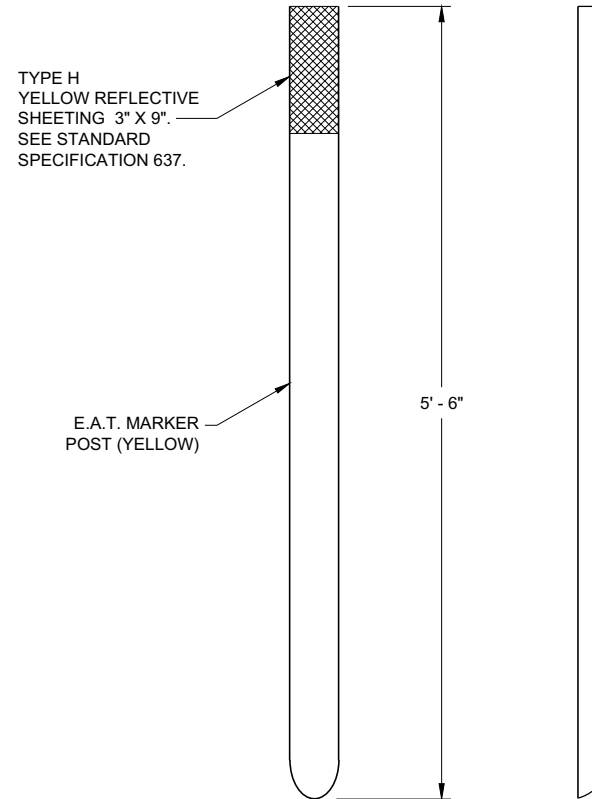


WOOD BLOCKOUT <sup>(4)</sup>  
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

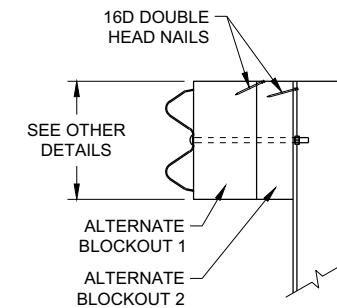
6



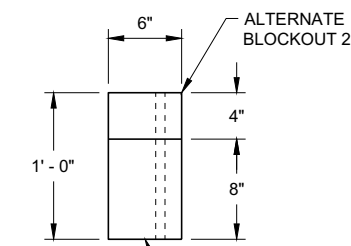
W5 - 59  
REFLECTIVE SHEETING DETAIL <sup>(E)</sup>



FRONT VIEW SIDE VIEW  
E.A.T. MARKER POST <sup>(13)</sup>



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

6

SDD 14B44 - 04c

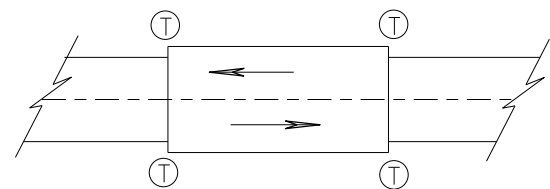
SDD 14B44 - 04c

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

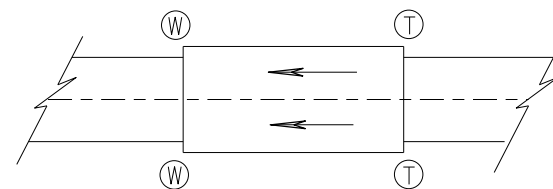
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

**GENERAL NOTES**

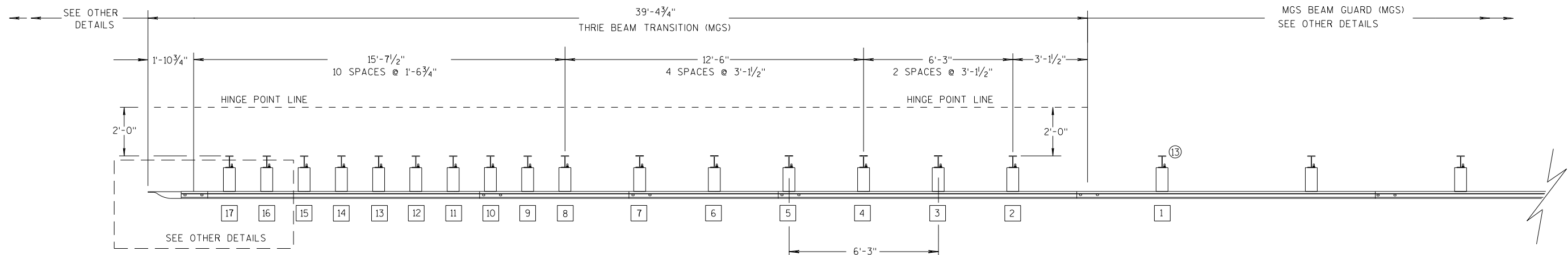
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

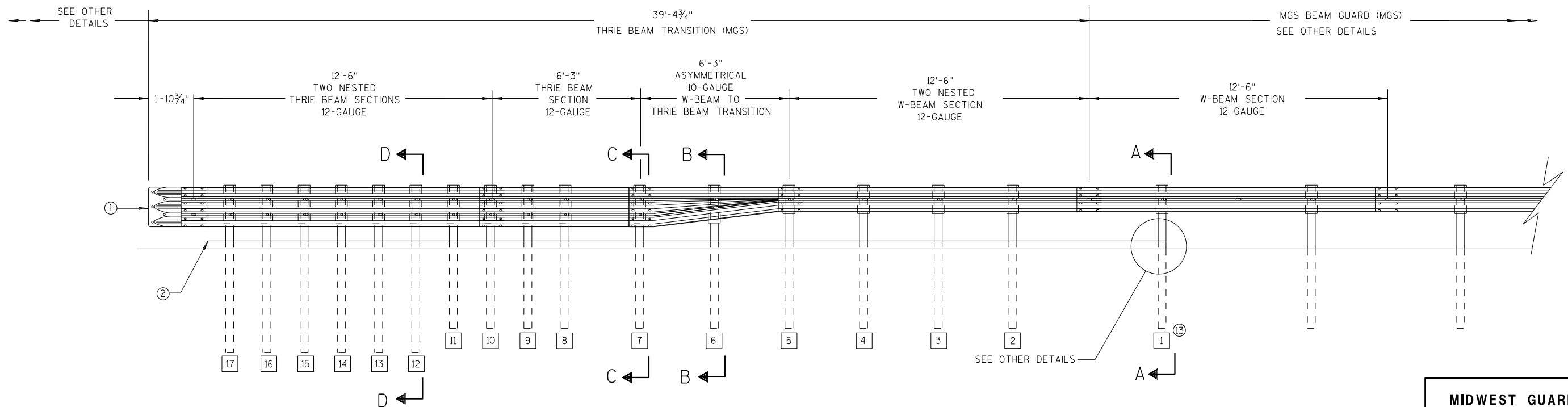
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



**PLAN VIEW**



**ELEVATION VIEW**

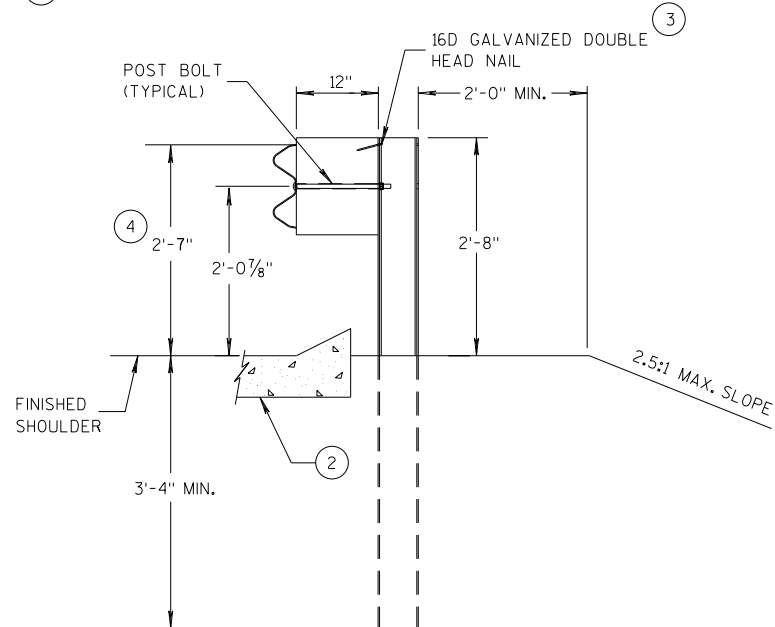
**MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION**

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

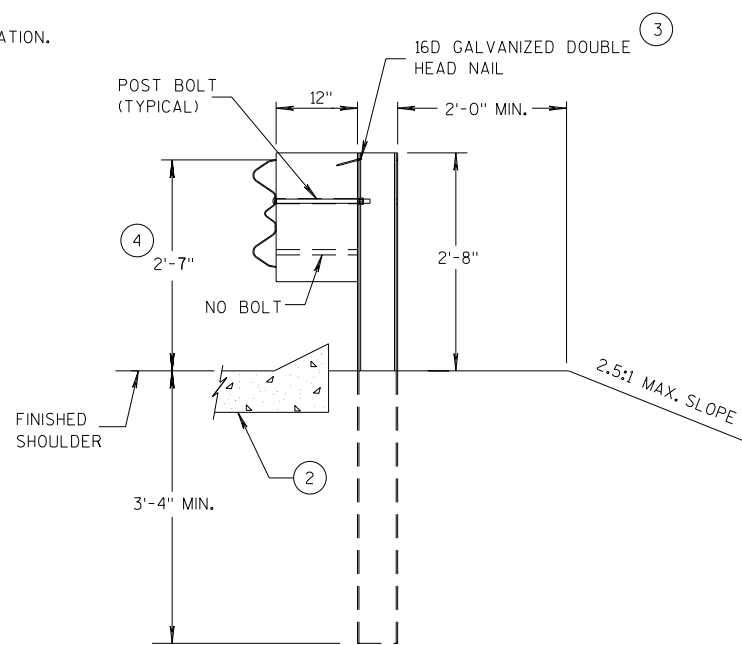
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

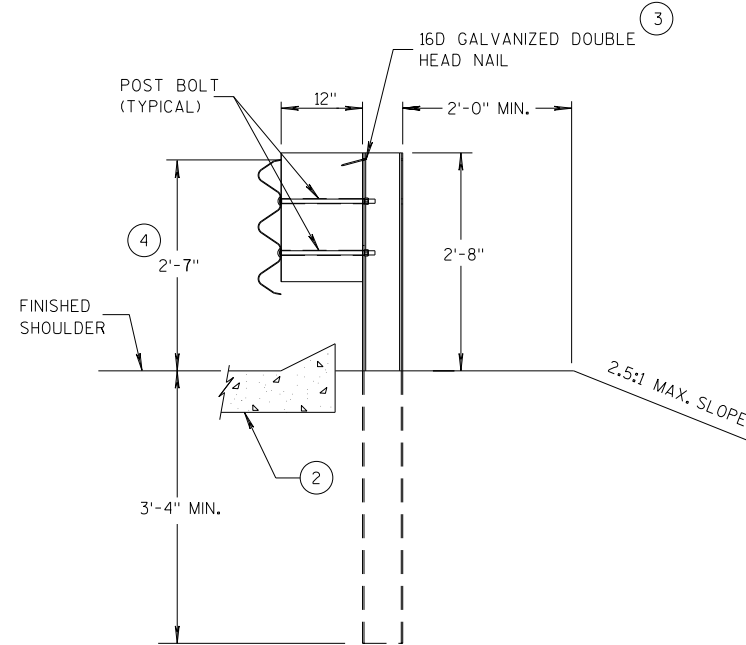
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



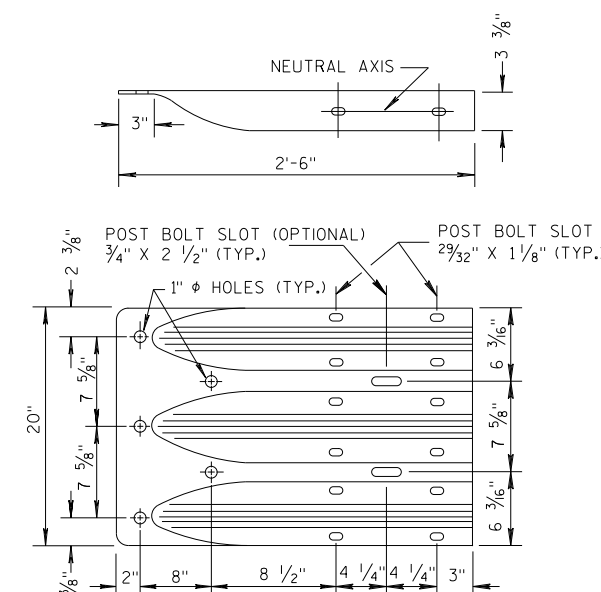
**SECTION A-A  
POSTS 1-5**



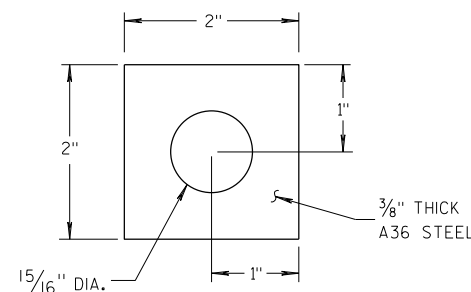
**SECTION B-B  
POST 6**



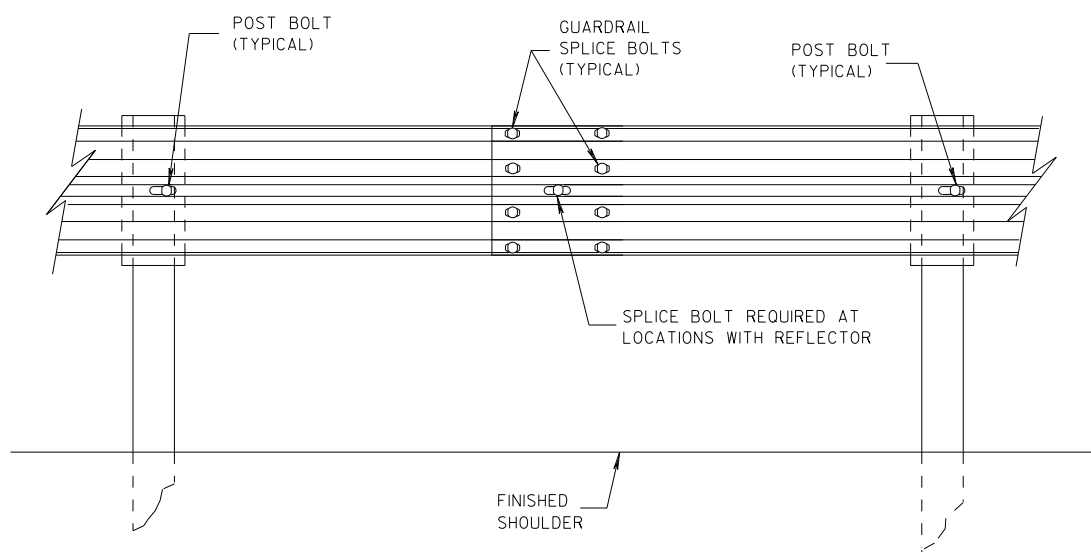
**SECTION C-C  
POSTS 7-11**



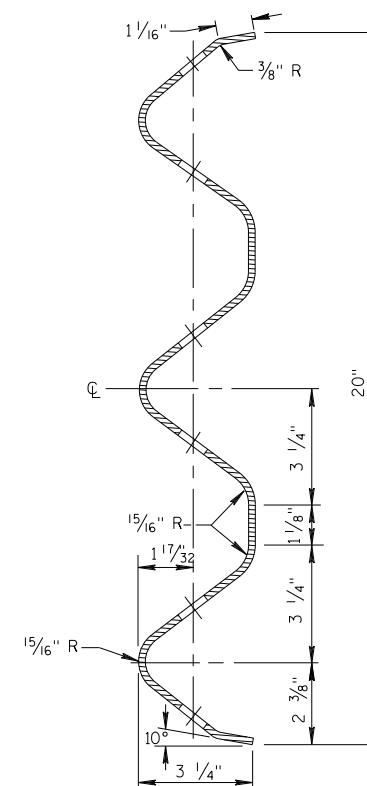
**THRIE BEAM  
TERMINAL CONNECTOR**



**PLATE WASHER DETAIL**



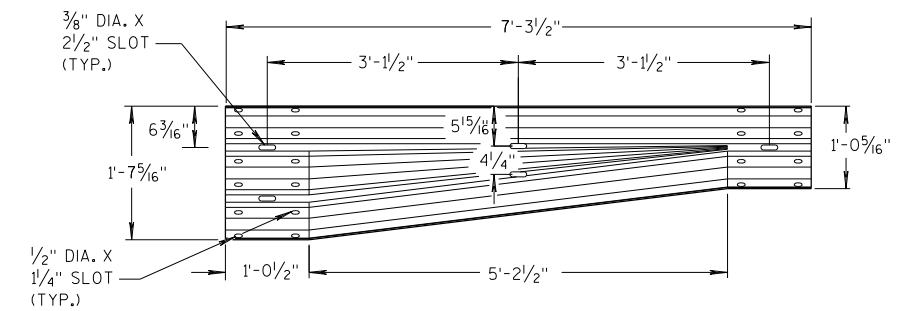
**SPLICE DETAIL**



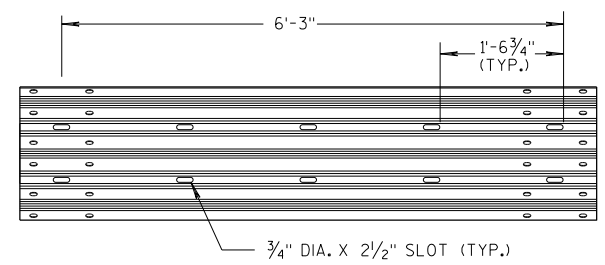
**SECTION THRU THRIE  
BEAM RAIL ELEMENT**

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

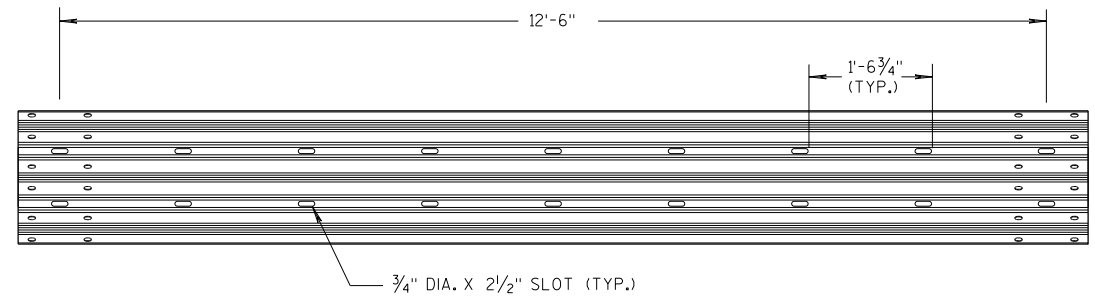
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



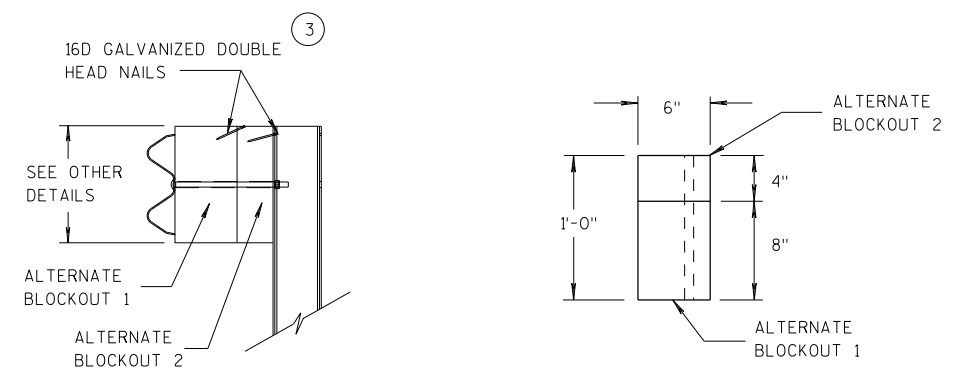
**W-BEAM TO THRIE BEAM TRANSITION SECTION**



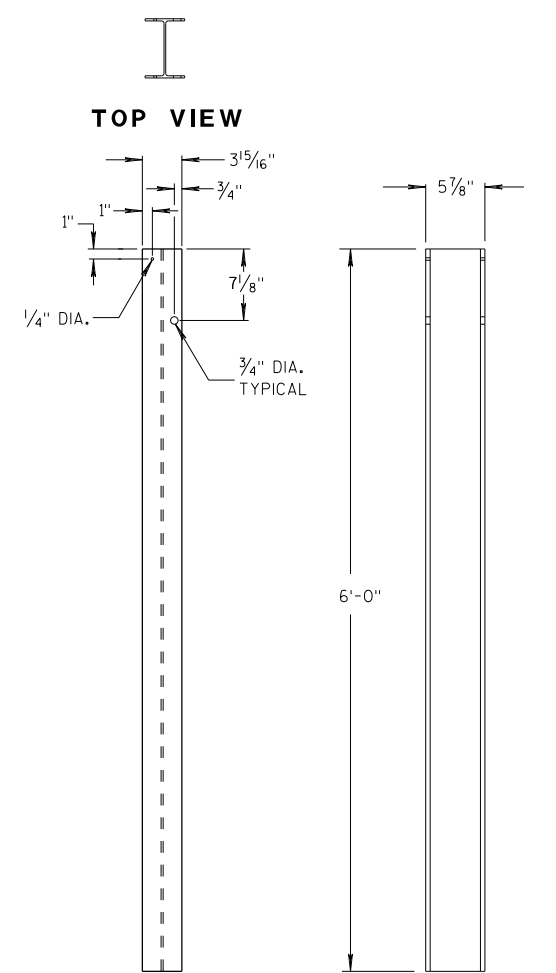
**6'-3\"/>**



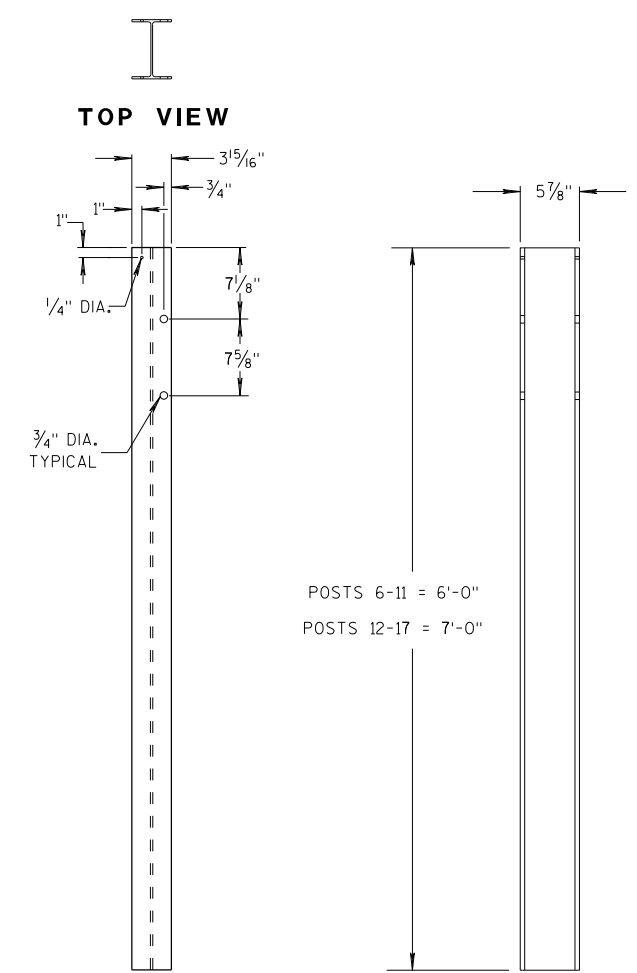
**12'-6\"/>**



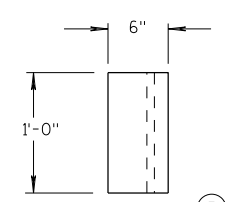
**ALTERNATE WOOD BLOCKOUT DETAIL**



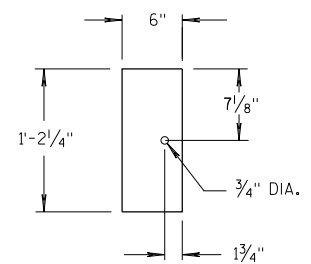
**STEEL POSTS 1-5**



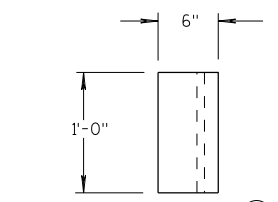
**STEEL POSTS 6-17**



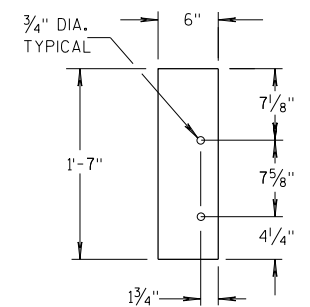
**TOP VIEW**



**FRONT VIEW  
BLOCKOUT  
POSTS 1-5**



**TOP VIEW**



**FRONT VIEW  
BLOCKOUT  
POSTS 6-17**

**GENERAL NOTES**

- STEEL POSTS ARE W6X9 OR W6X8.5.
- BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.
- (3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- (5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.
- (13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

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

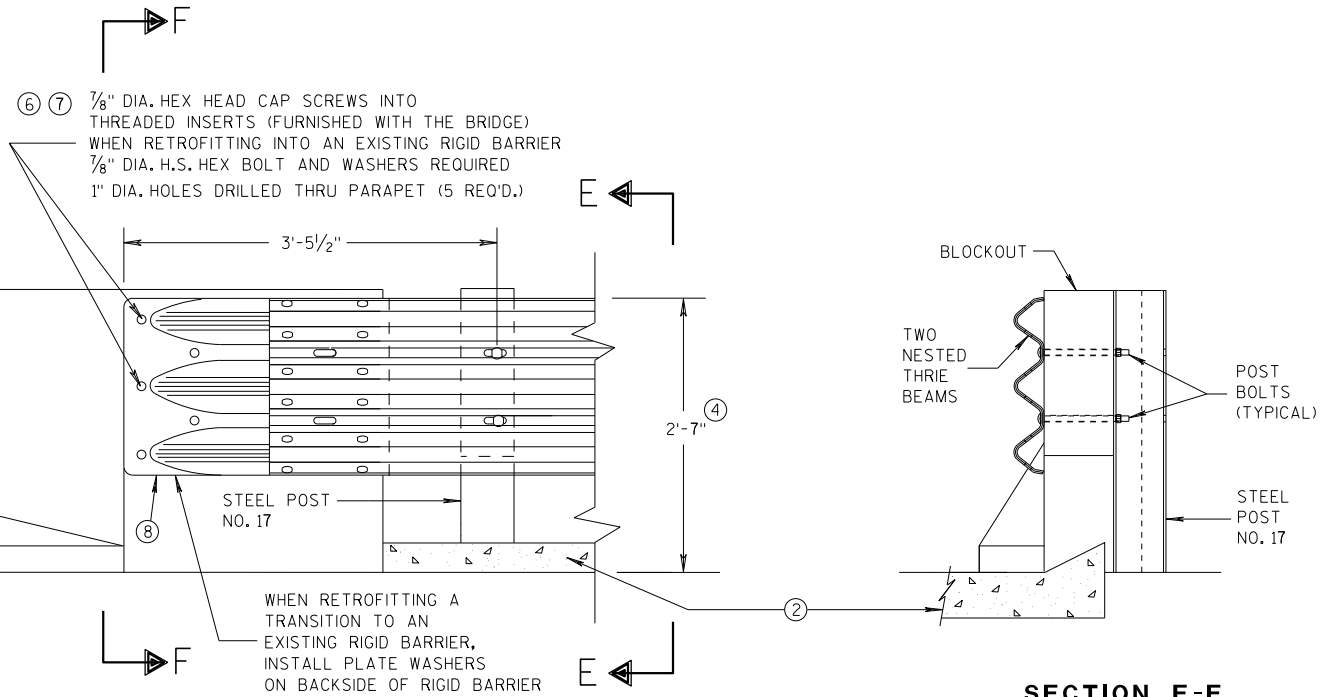
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

6

6

S.D.D. 14 B 45-5c

S.D.D. 14 B 45-5c



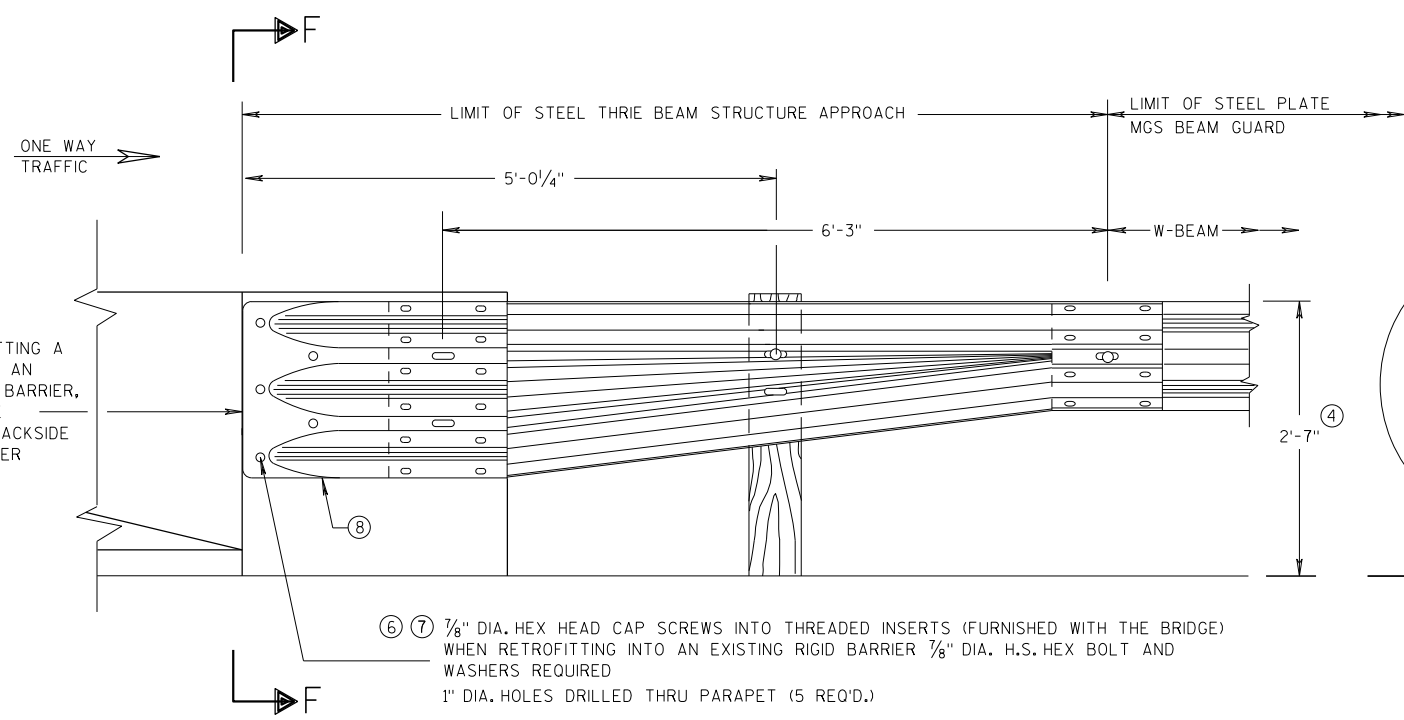
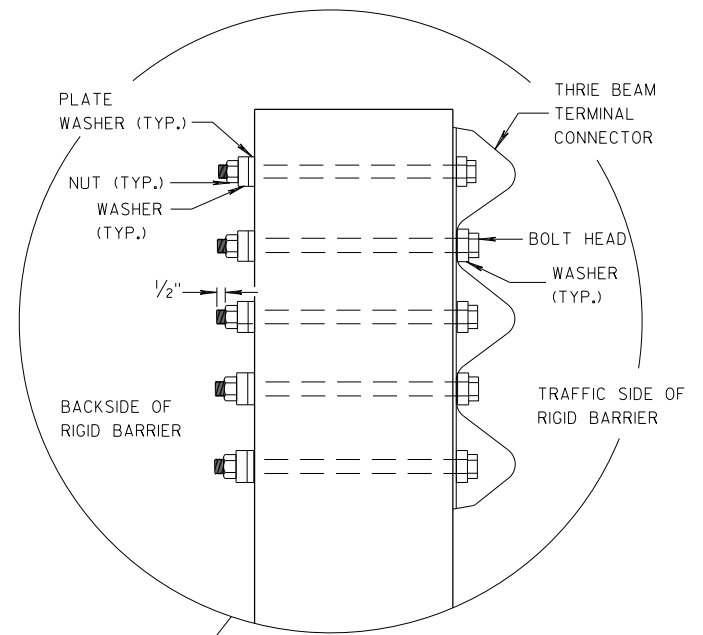
FRONT VIEW

**THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS**

SECTION E-E

**GENERAL NOTES**

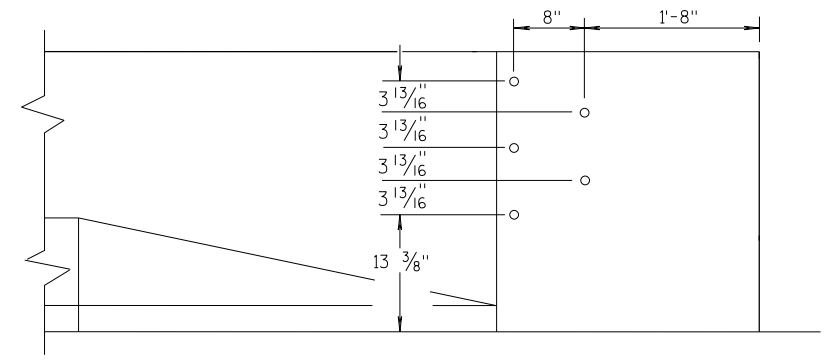
- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
  - (4) TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .
  - (6) DRILLING BOLT HOLES THROUGH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



FRONT VIEW

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

SECTION F-F



DRILL HOLE LOCATION

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE 07/2018  
DATE /S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
UNIT SUPERVISOR  
FHWA

6

6

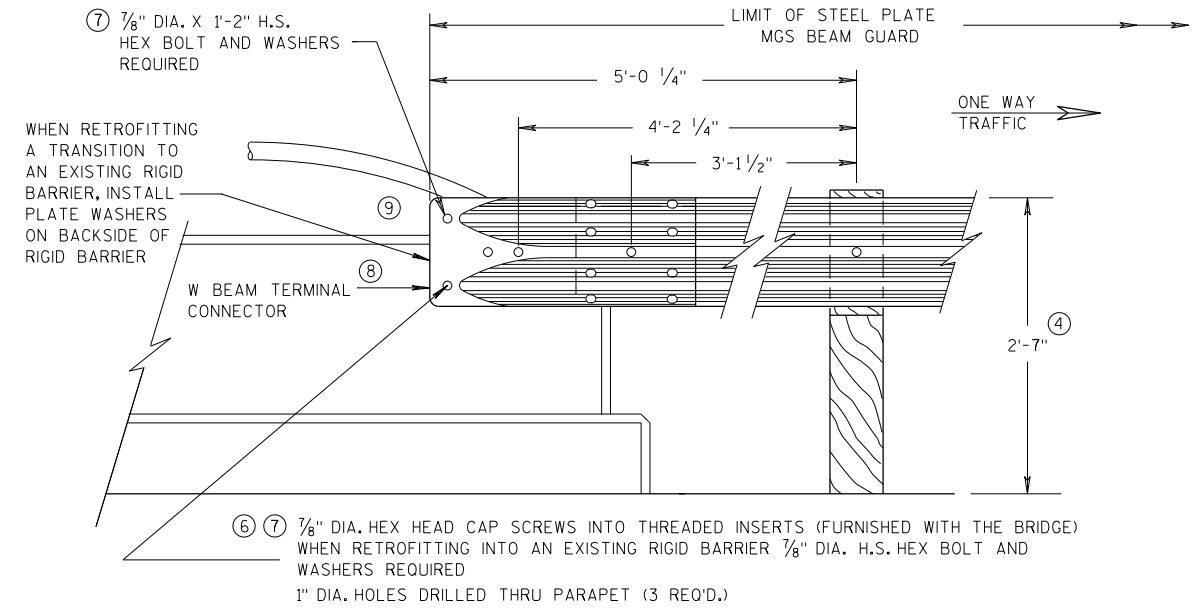
S.D.D. 14 B 45-5d

S.D.D. 14 B 45-5d

## GENERAL NOTES

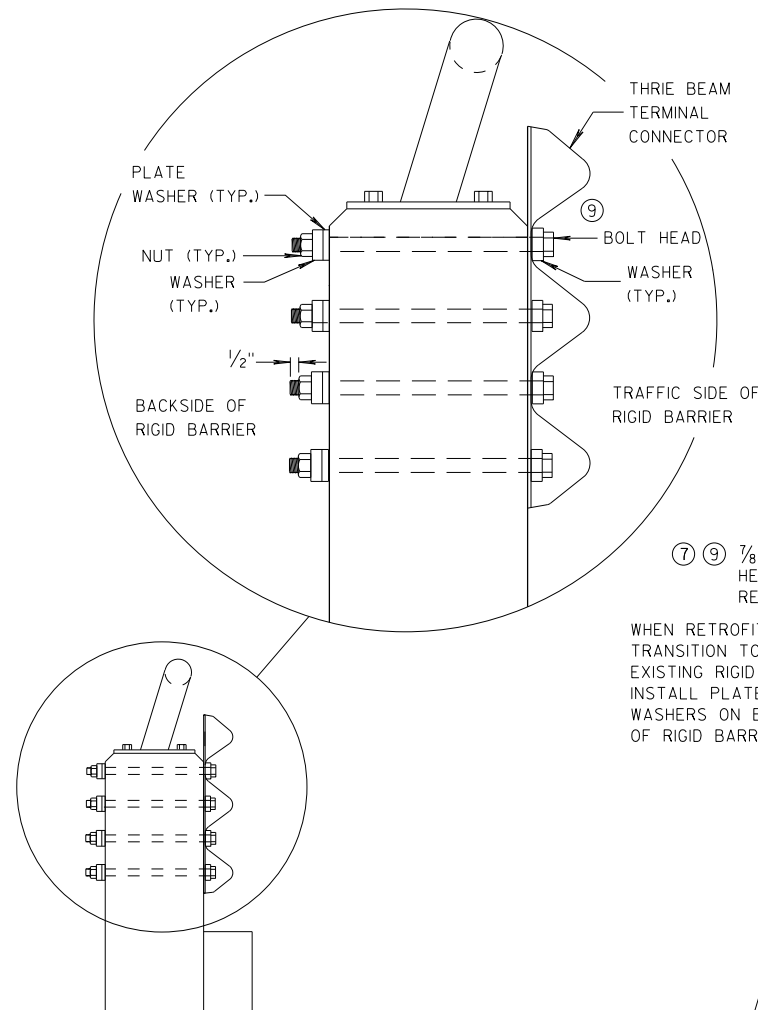
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ⑨ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

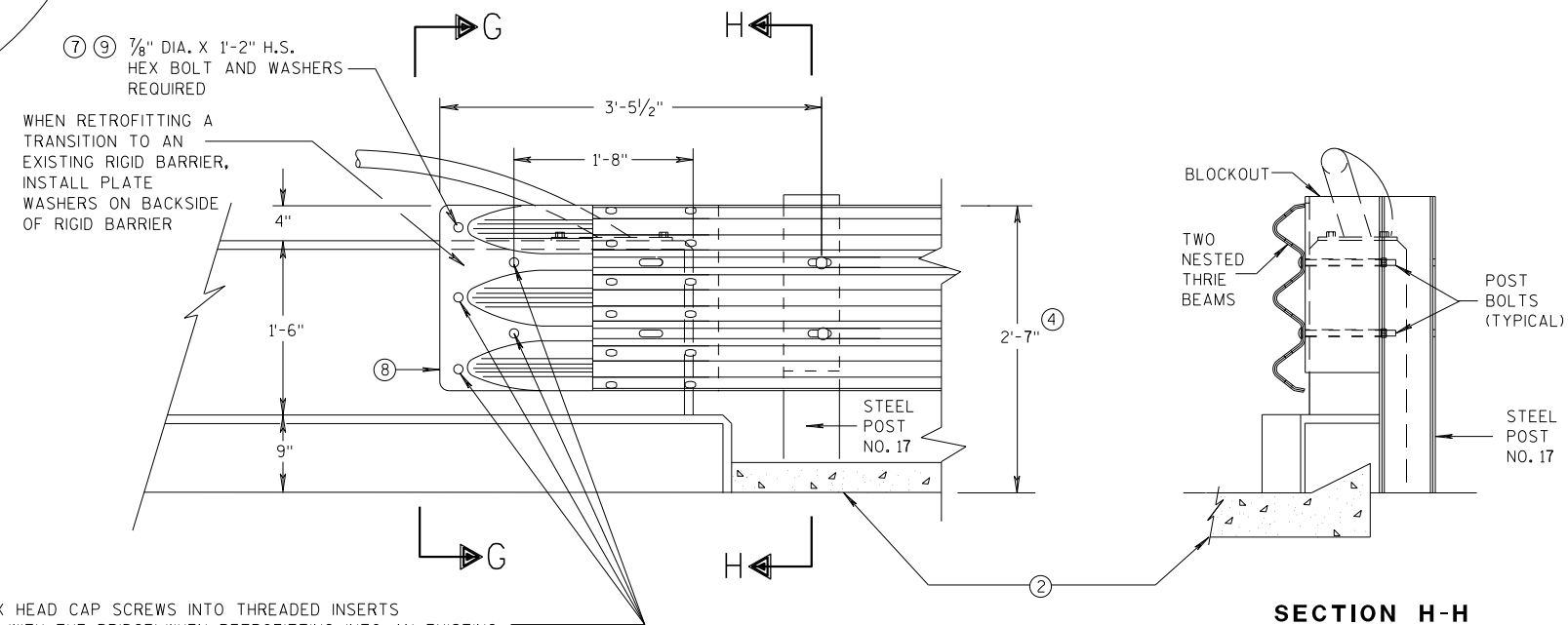


### FRONT VIEW

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



### SECTION G-G



### FRONT VIEW

## THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

- ⑥ ⑦ 7/8" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER 7/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED 1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

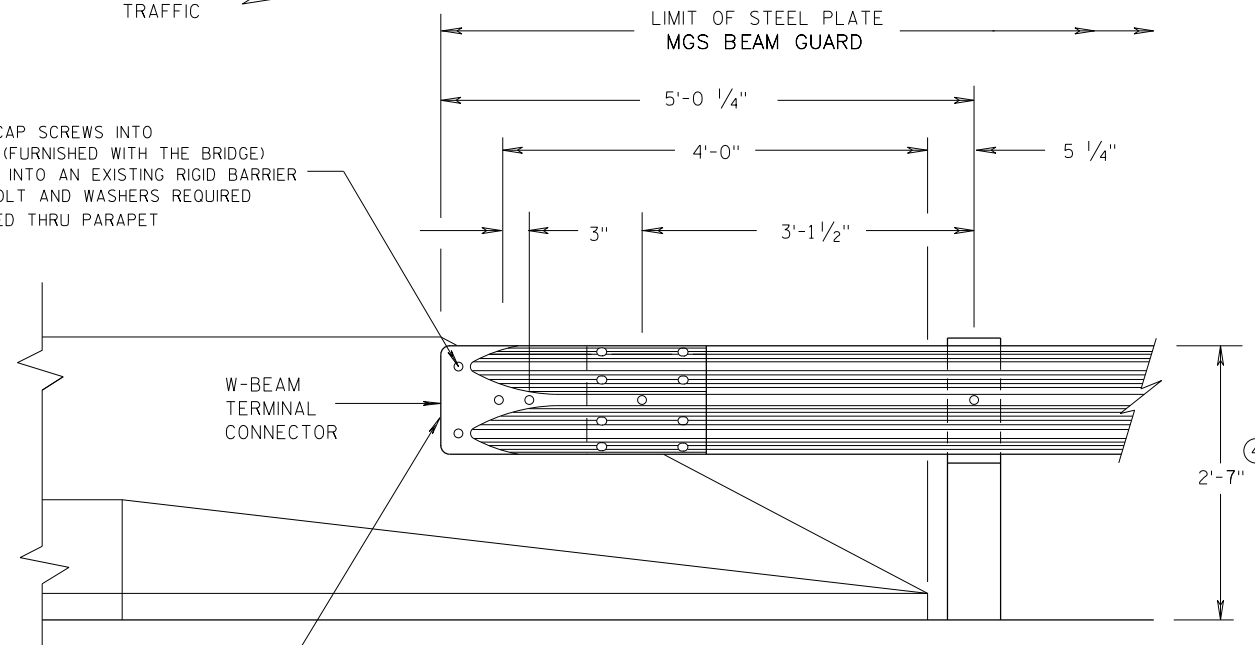
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
07/2018 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR



ONE WAY  
TRAFFIC

⑥ ⑦ 7/8" DIA. HEX HEAD CAP SCREWS INTO  
THREADED INSERTS (FURNISHED WITH THE BRIDGE)  
WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER  
7/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED  
1" DIA. HOLES DRILLED THRU PARAPET  
(4 REQ'D.)



W-BEAM  
TERMINAL  
CONNECTOR

WHEN RETROFITTING A TRANSITION  
TO AN EXISTING RIGID BARRIER,  
INSTALL PLATE WASHERS ON  
BACKSIDE OF RIGID BARRIER.

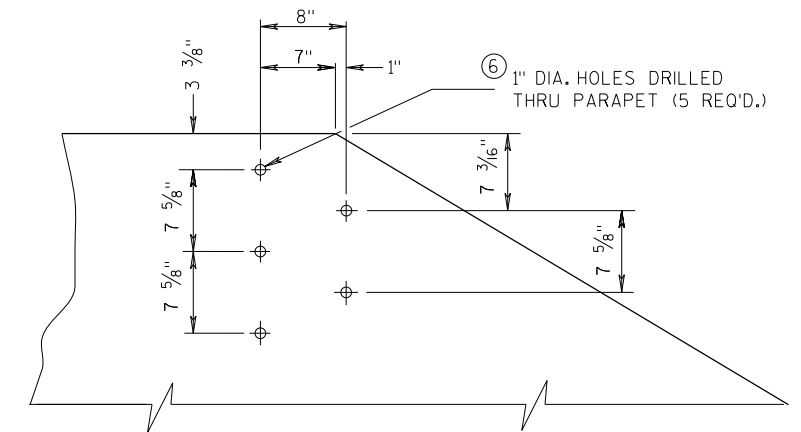
FRONT VIEW

**W BEAM CONNECTION TO  
PARAPETS WITH SLOPED ENDS**

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

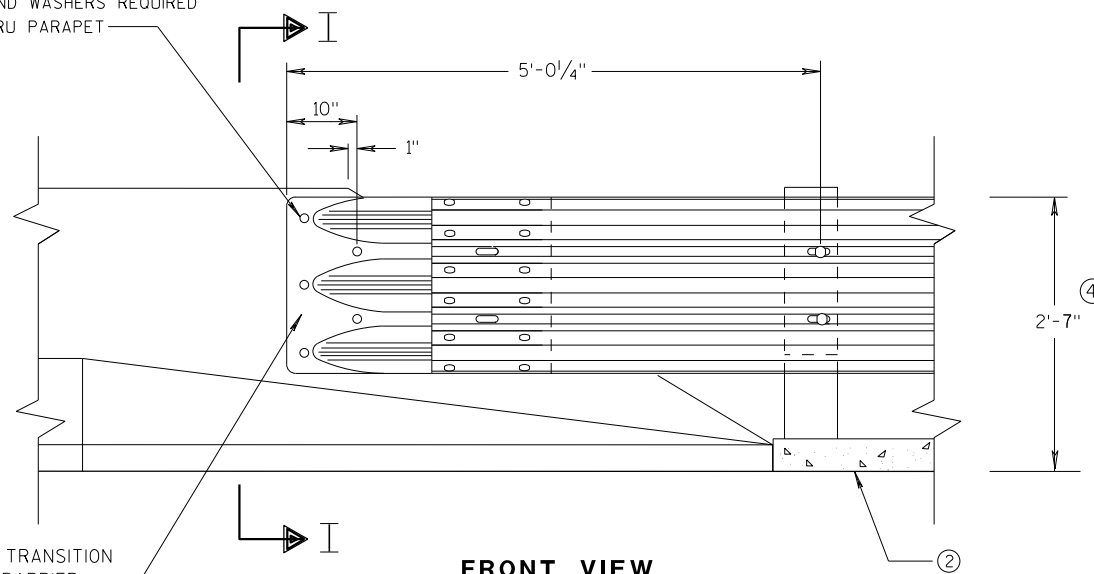
**GENERAL NOTES**

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



**DRILL HOLE LOCATION AND PATTERN  
FOR THRIE BEAM CONNECTION**

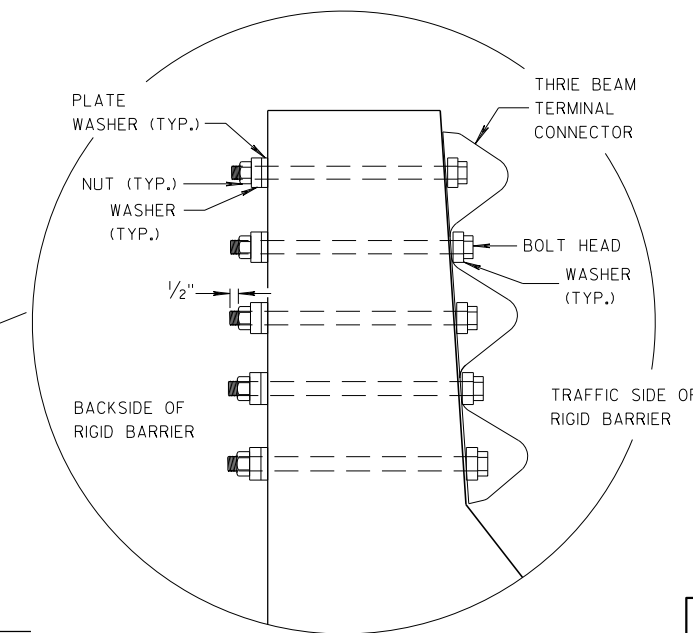
⑥ ⑦ 7/8" DIA. HEX HEAD CAP SCREWS INTO  
THREADED INSERTS (FURNISHED WITH THE BRIDGE)  
WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER  
7/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED  
1" DIA. HOLES DRILLED THRU PARAPET  
(5 REQ'D.)



FRONT VIEW

**THRIE BEAM CONNECTION TO BRIDGE  
PARAPETS WITH SLOPED ENDS**

SECTION I-I

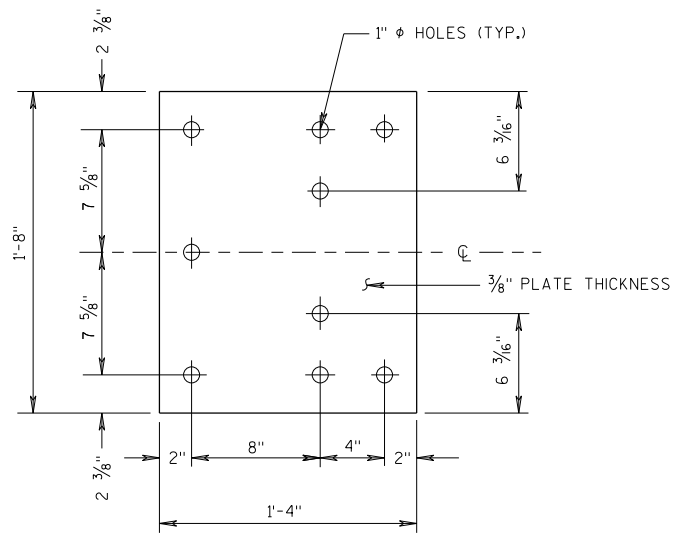


WHEN RETROFITTING A TRANSITION  
TO AN EXISTING RIGID BARRIER,  
INSTALL PLATE WASHERS ON  
BACKSIDE OF RIGID BARRIER.

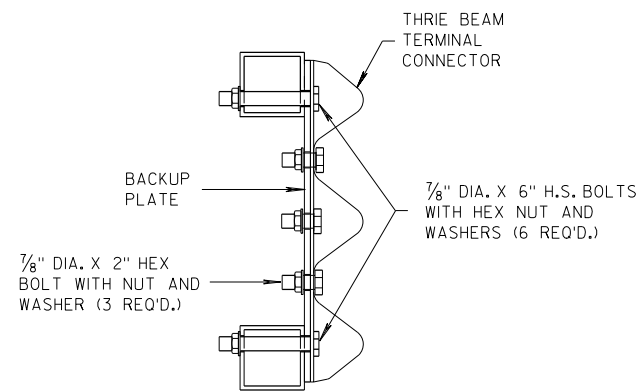
**MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

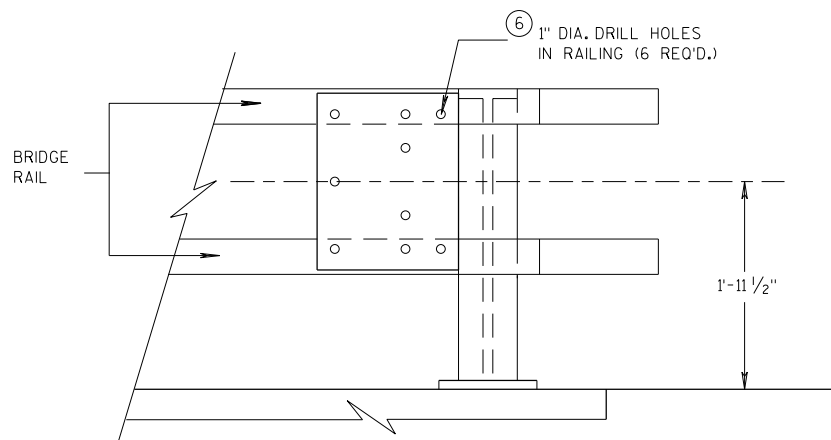
APPROVED  
DATE 07/2018 /S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
UNIT SUPERVISOR  
FHWA



**BACK-UP PLATE DETAIL**



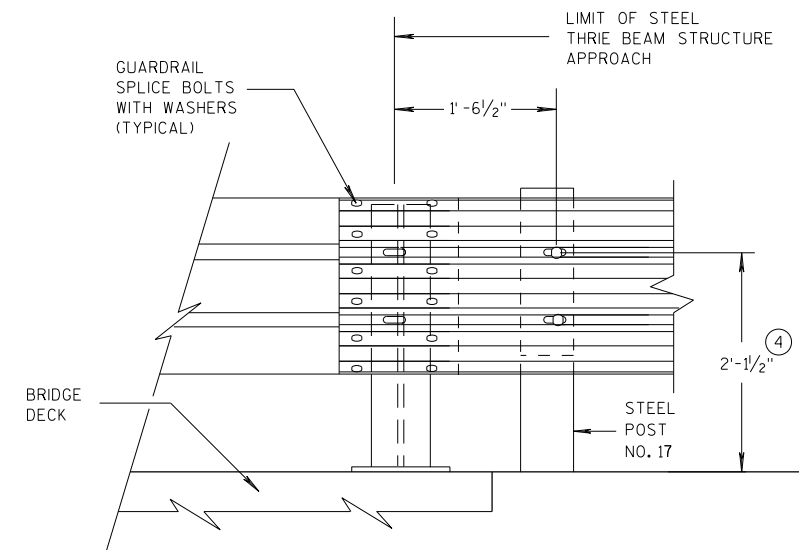
**SECTION J-J**



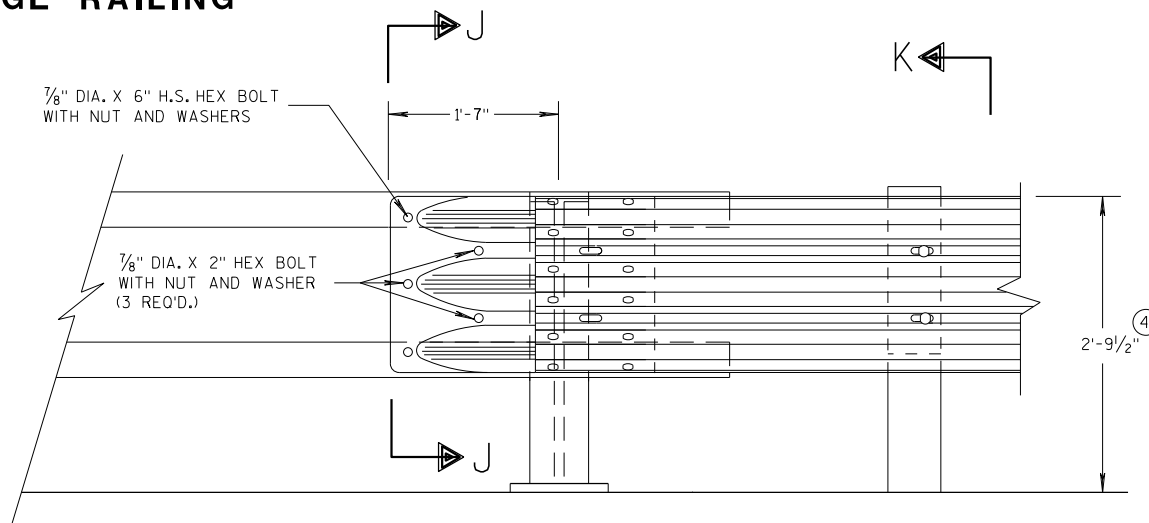
**BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING**

**GENERAL NOTES**

- ④ TOLERANCE FOR TOP OF BEAM IS  $\pm 1'$ .
- ⑥ DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

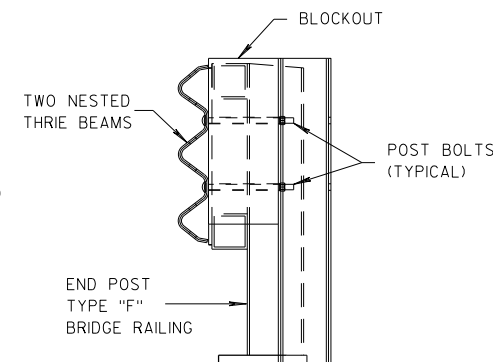


**FRONT VIEW  
THRIE BEAM CONNECTION TO  
STEEL RAILING TYPE "W"**



**FRONT VIEW**

**THRIE BEAM CONNECTION TO  
TUBULAR RAILING TYPE "F"**



**SECTION K-K**

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

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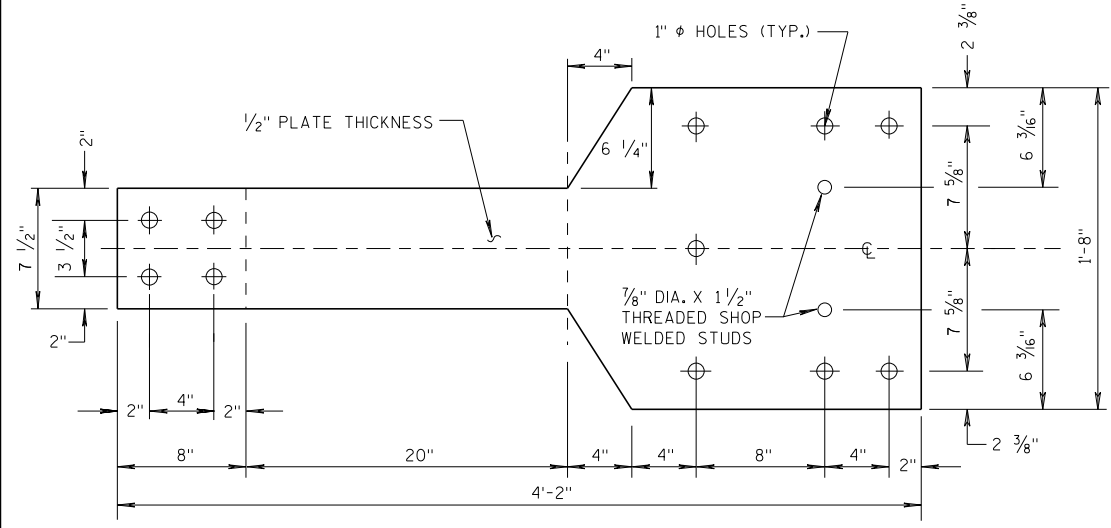
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S.D.D. 14 B 45-59

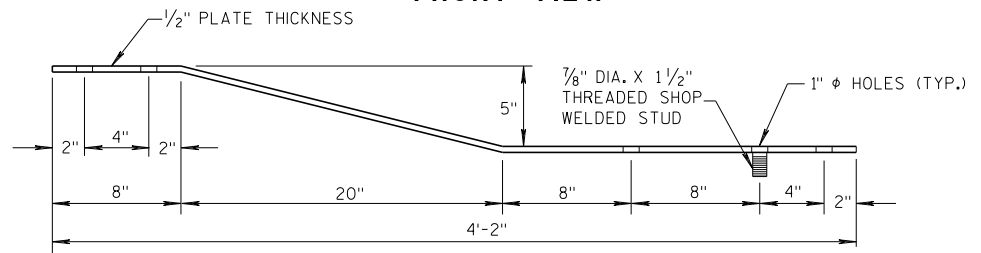
S.D.D. 14 B 45-59

**GENERAL NOTES**

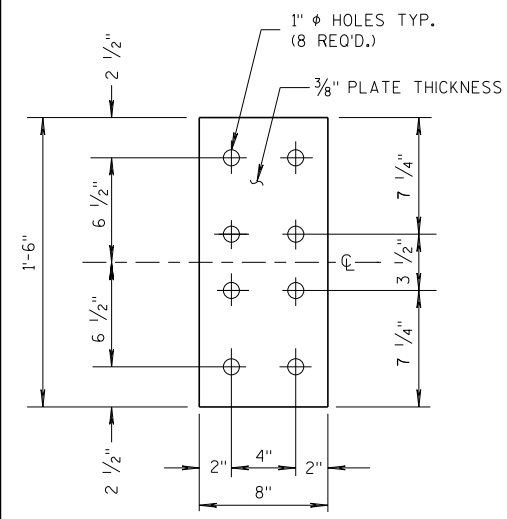
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



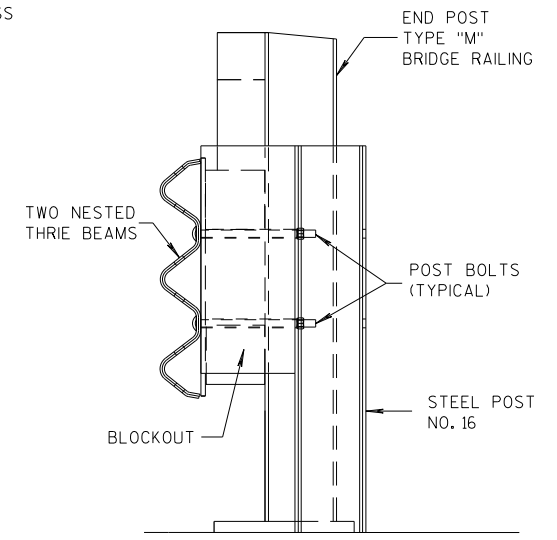
**FRONT VIEW**



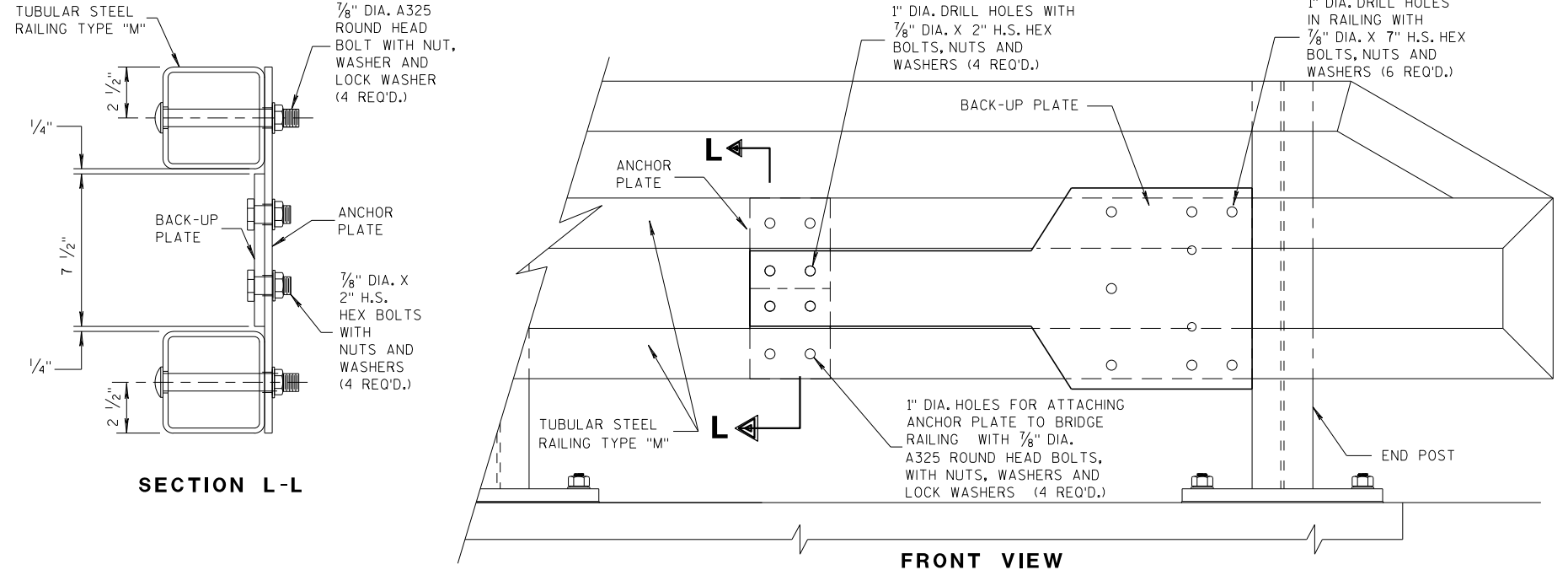
**PLAN VIEW  
BACK-UP PLATE DETAIL, TYPE "M"**



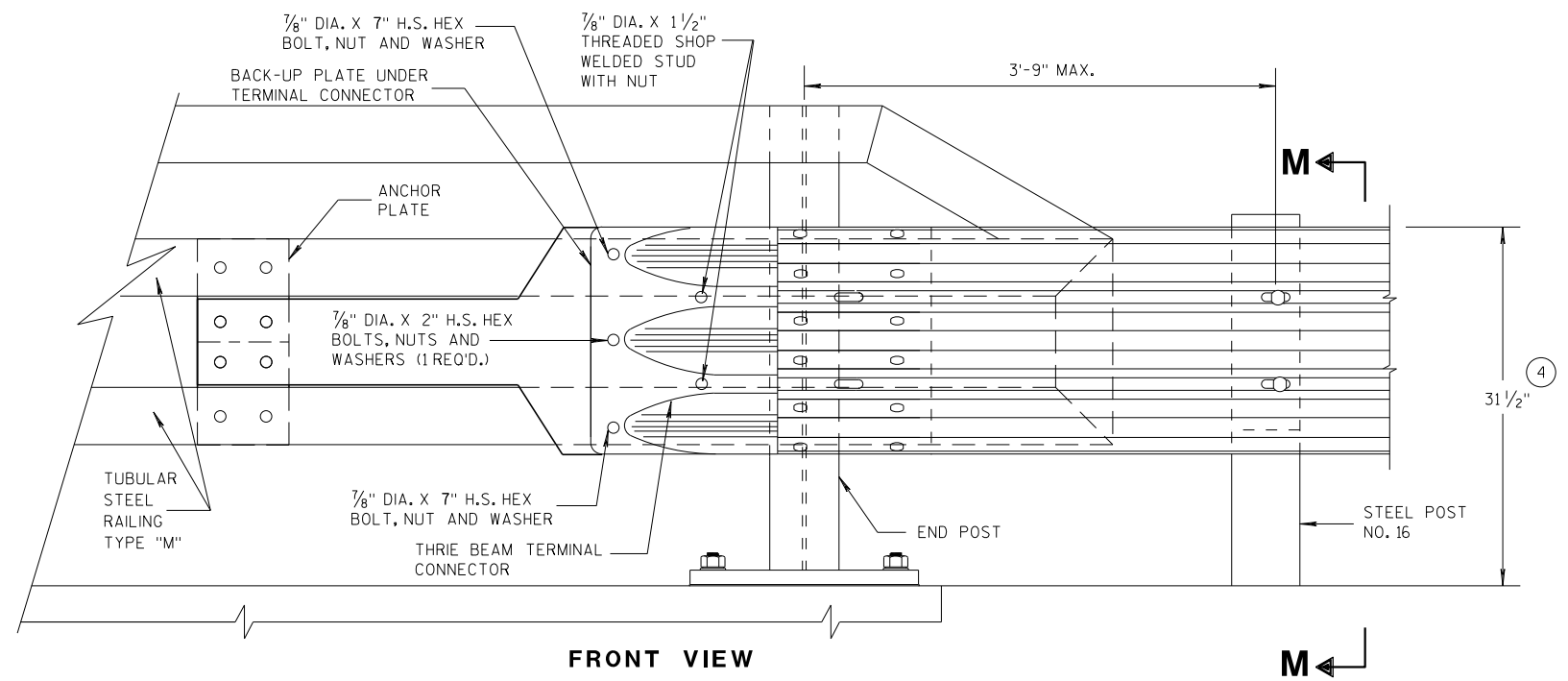
**FRONT VIEW  
ANCHOR PLATE DETAIL, TYPE "M"**



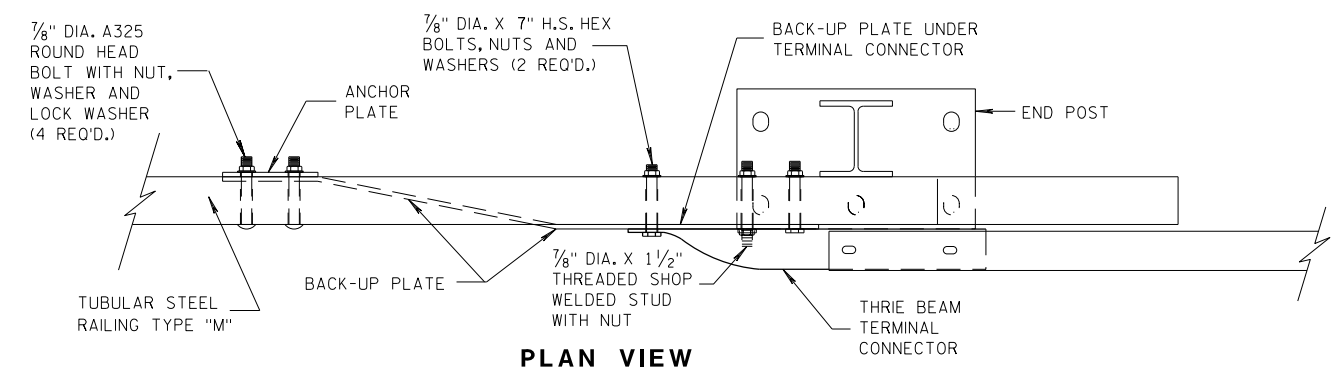
**SECTION M-M**



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



**FRONT VIEW**



**PLAN VIEW**

**THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"**

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

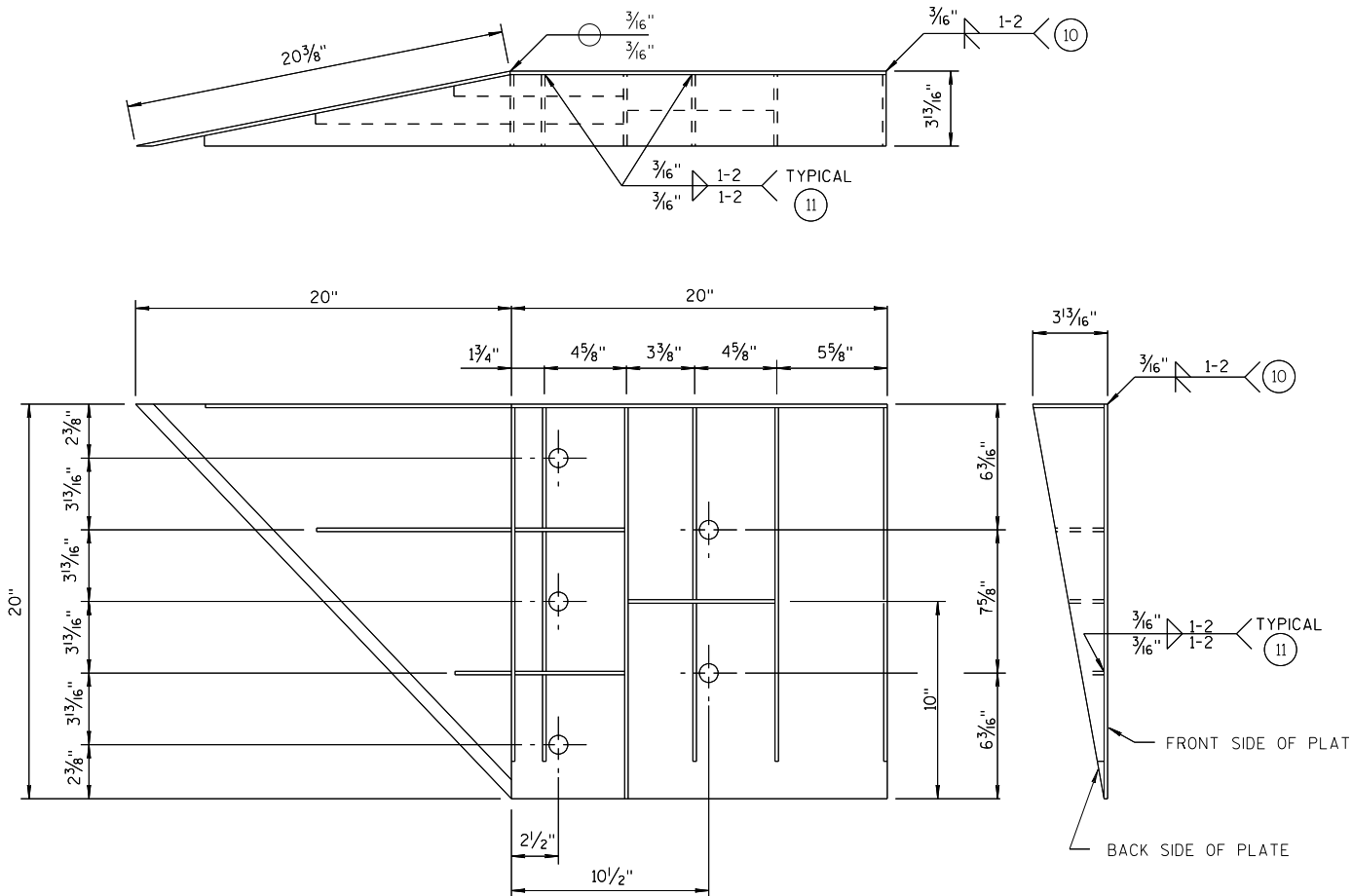
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE 07/2018 /S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
UNIT SUPERVISOR  
FHWA

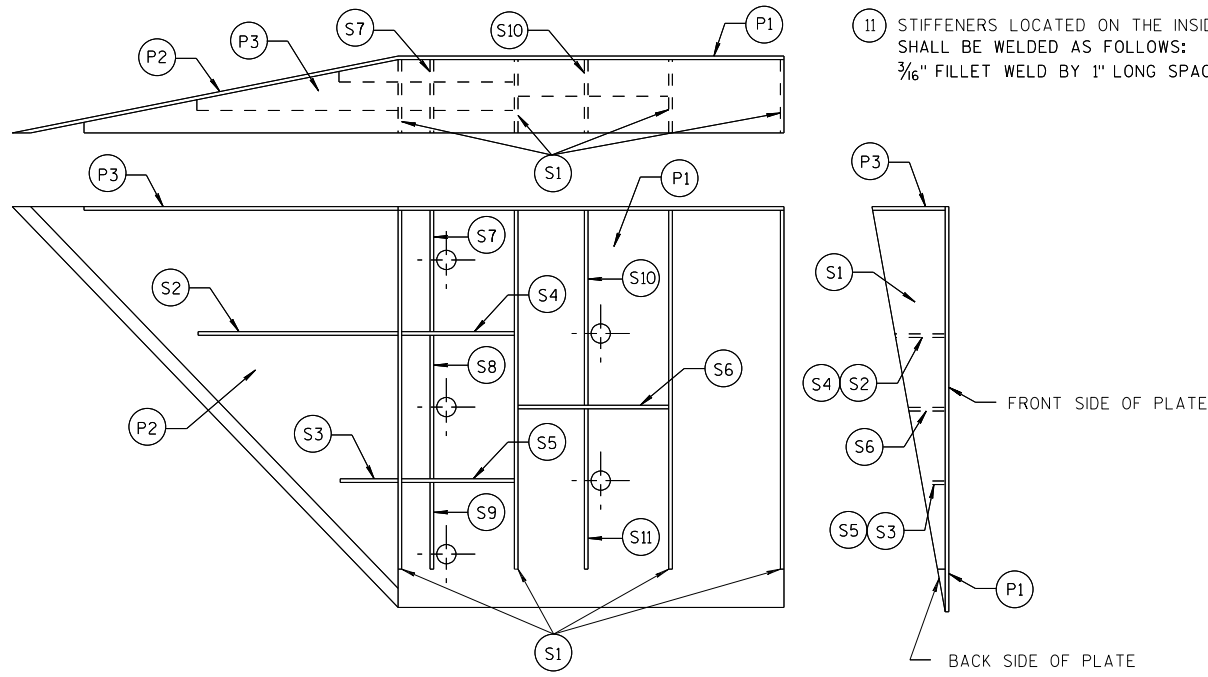
**GENERAL NOTES**

- 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.

- (10) 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.
- (11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:  
3/16" FILLET WELD BY 1" LONG SPACED AT 2".



**WELDING INSTRUCTION**  
(VIEWED FROM BACK SIDE OF PLATE)



**PLATE AND STIFFENER IDENTIFICATION**  
(VIEWED FROM BACK SIDE OF 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 3/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 3/16"	1/4"

**SINGLE SLOPE CONNECTION PLATE**

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

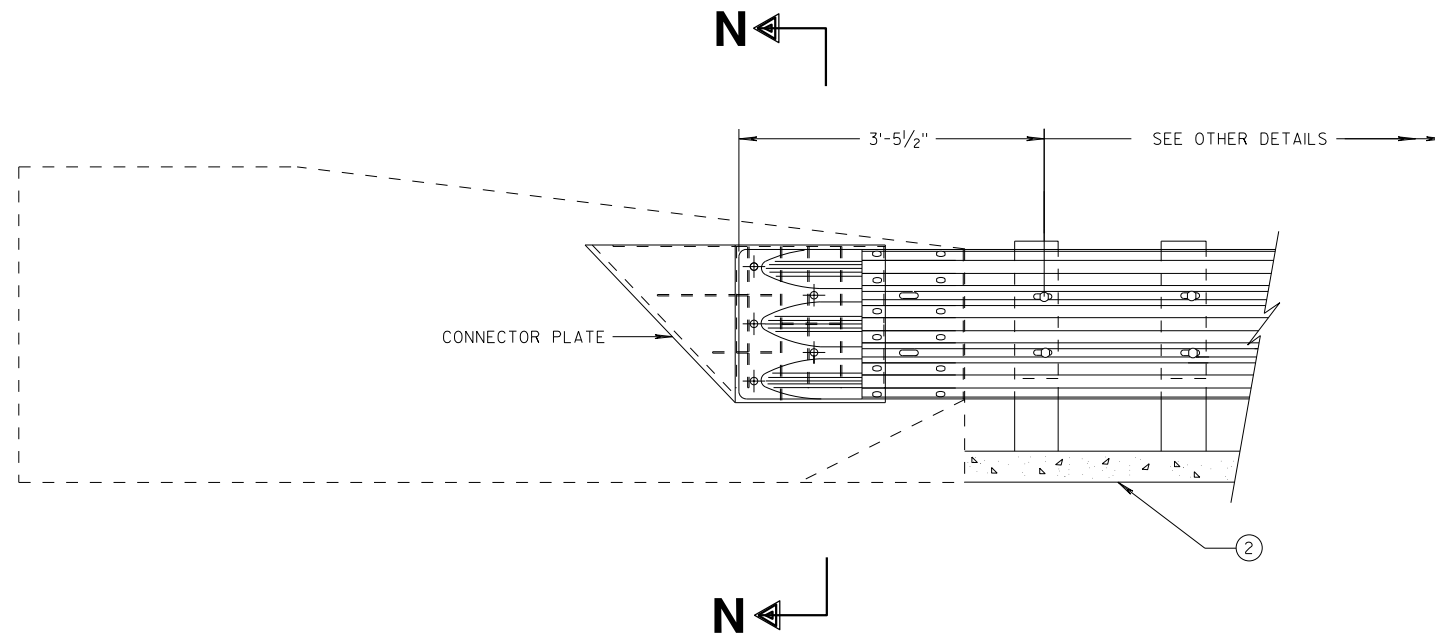
APPROVED: \_\_\_\_\_ /S/ Rodney Taylor  
DATE: 7/2018 ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR

**GENERAL NOTES**

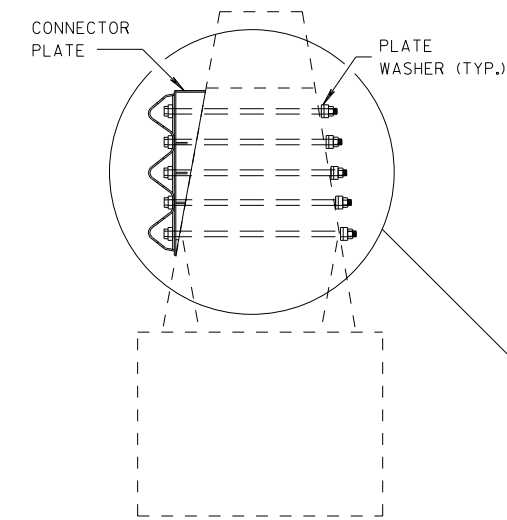
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

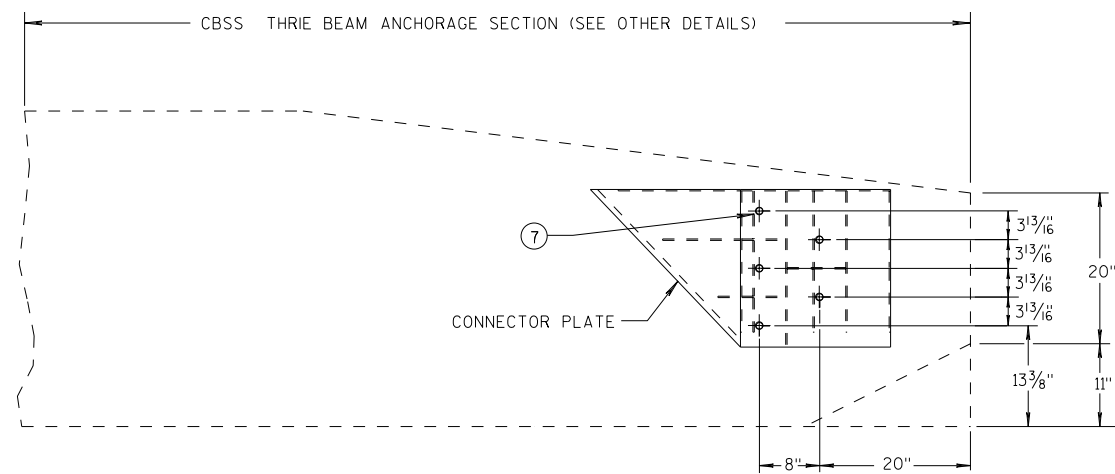
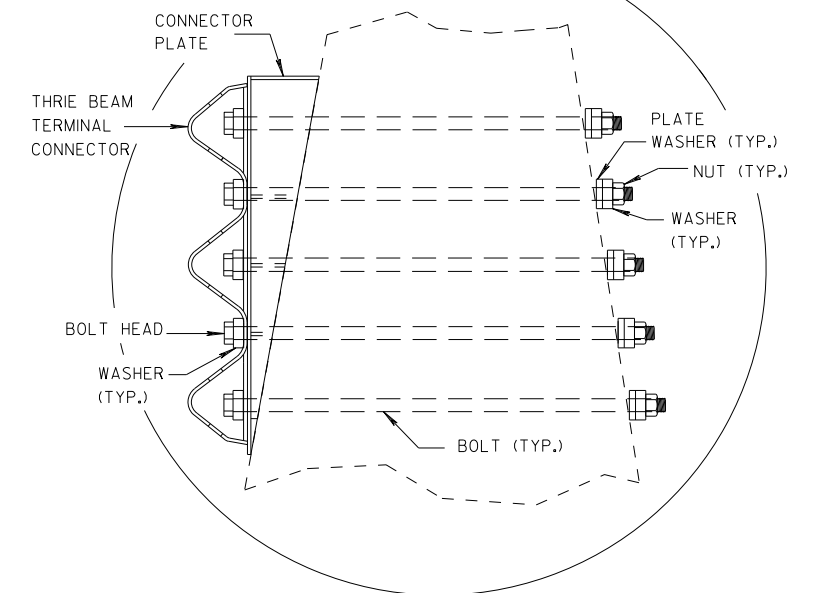
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTION PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



**THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER**



**SECTION N-N**

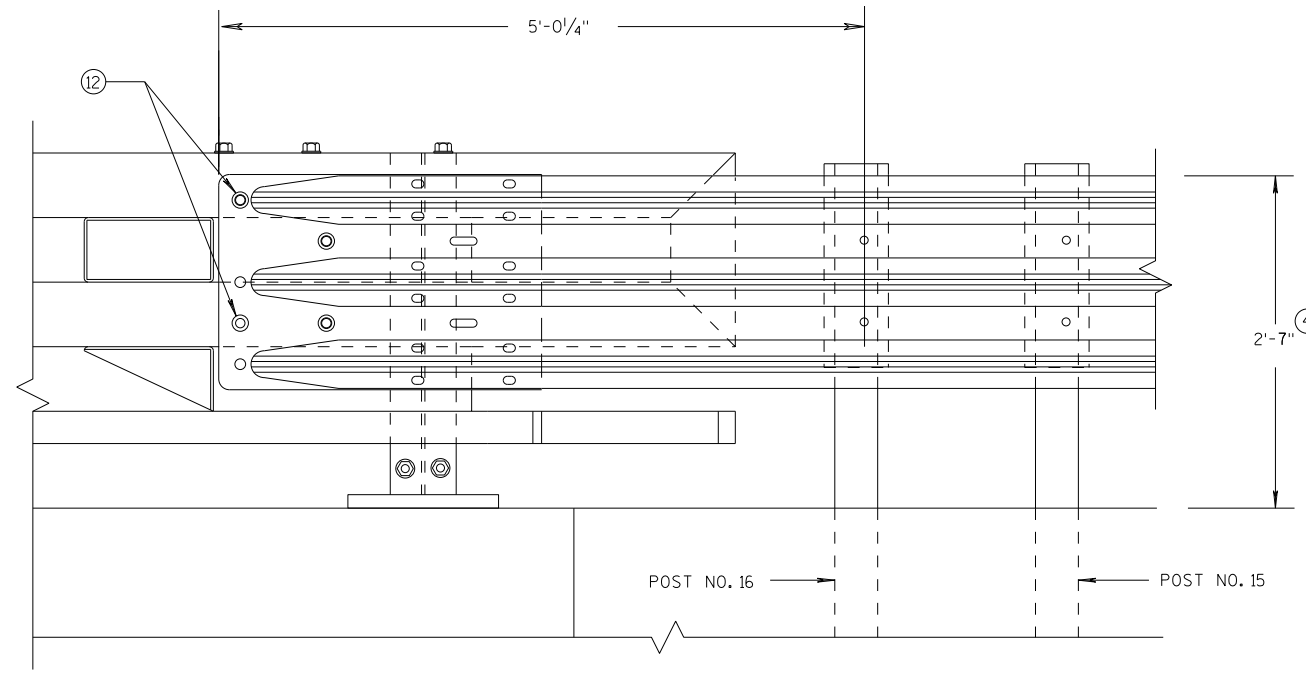


**SINGLE SLOPE CONNECTION PLATE PLACEMENT**

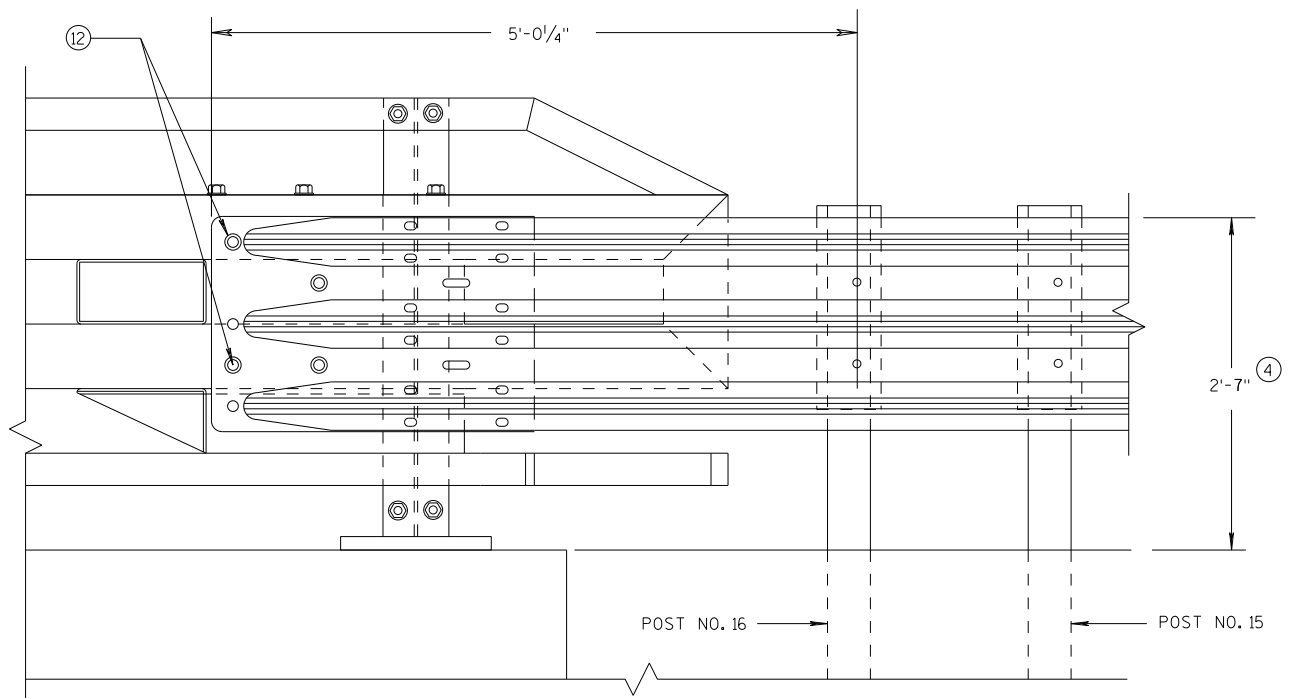
**MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



**ELEVATION OF DETAIL AT NY3 END POST**  
**THRIE BEAM RAIL ATTACHMENT**



**ELEVATION OF DETAIL AT NY4 END POST**  
**THRIE BEAM RAIL ATTACHMENT**

**GENERAL NOTES**

- (4) TOLERANCE FOR TOP OF BEAM IS ± 1".
- (12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND 1/2-INCH BEYOND NUT.

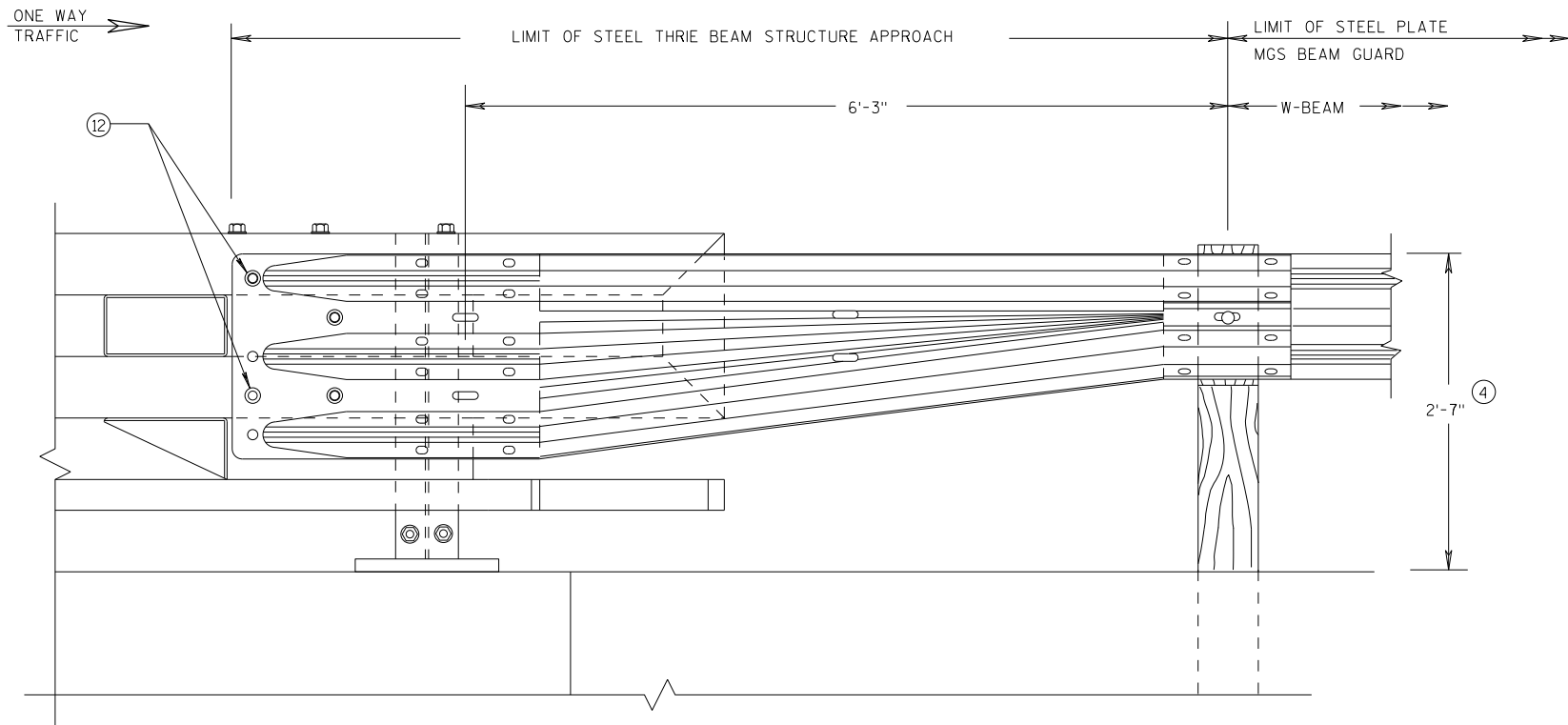
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S.D.D. 14 B 45-5k

S.D.D. 14 B 45-5k

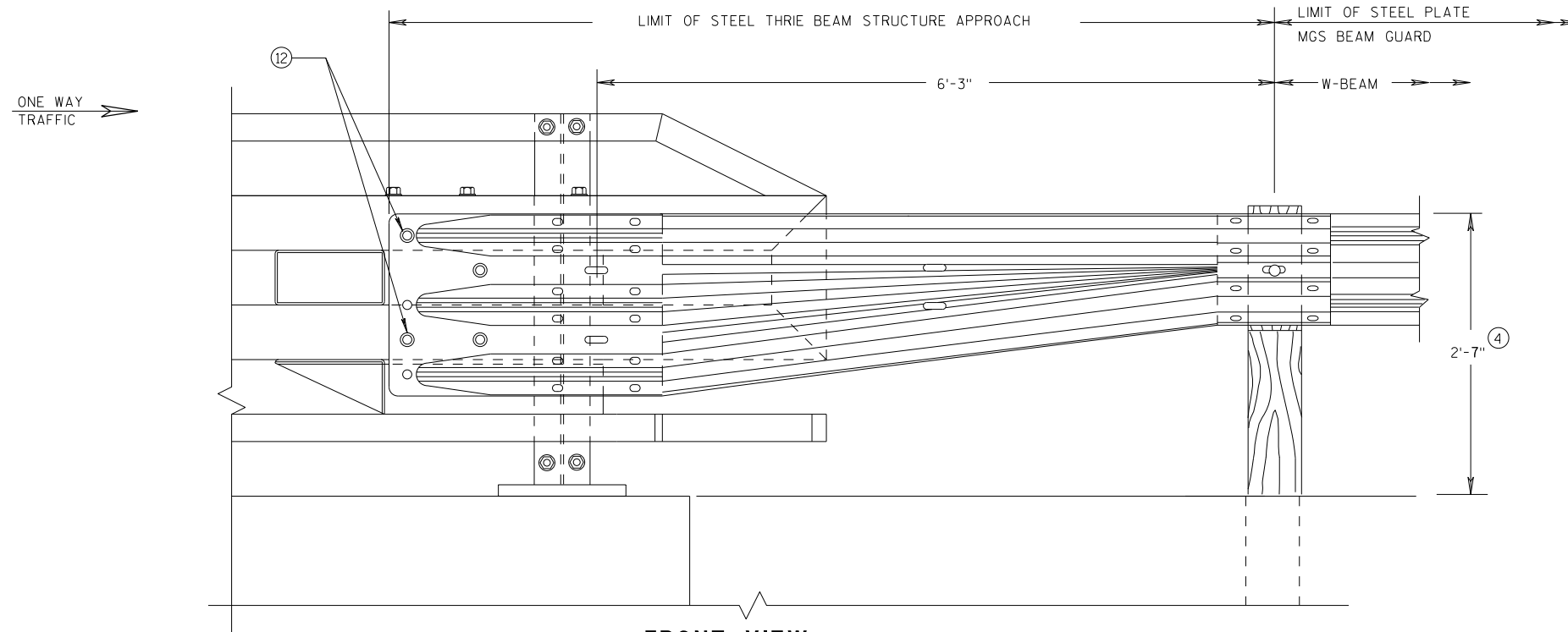
<b>MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



**FRONT VIEW**  
**W BEAM TRANSITION AND**  
**CONNECTION TO BRIDGE RAILING TYPE "NY3"**  
 (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

**GENERAL NOTES**

- ④ TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .
- ⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND  $\frac{1}{2}$ -INCH BEYOND NUT.

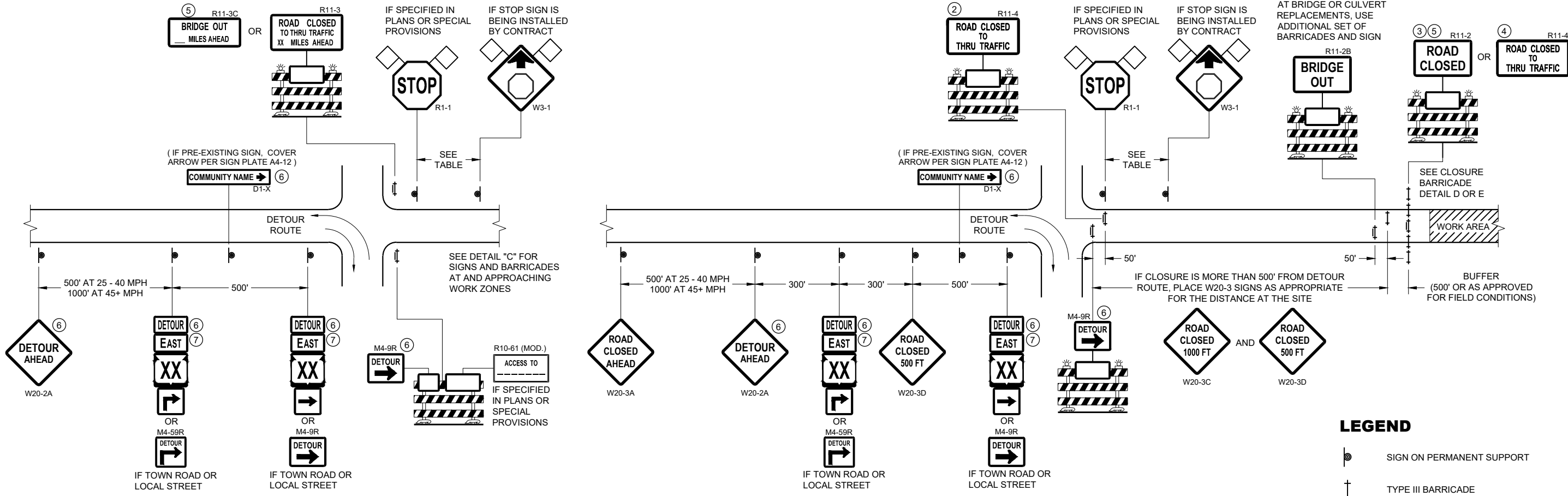


**FRONT VIEW**  
**W BEAM TRANSITION AND**  
**CONNECTION TO BRIDGE RAILING TYPE "NY4"**  
 (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

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

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

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



**DETAIL A  
MAINLINE CLOSURE WITH POSTED DETOUR**

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

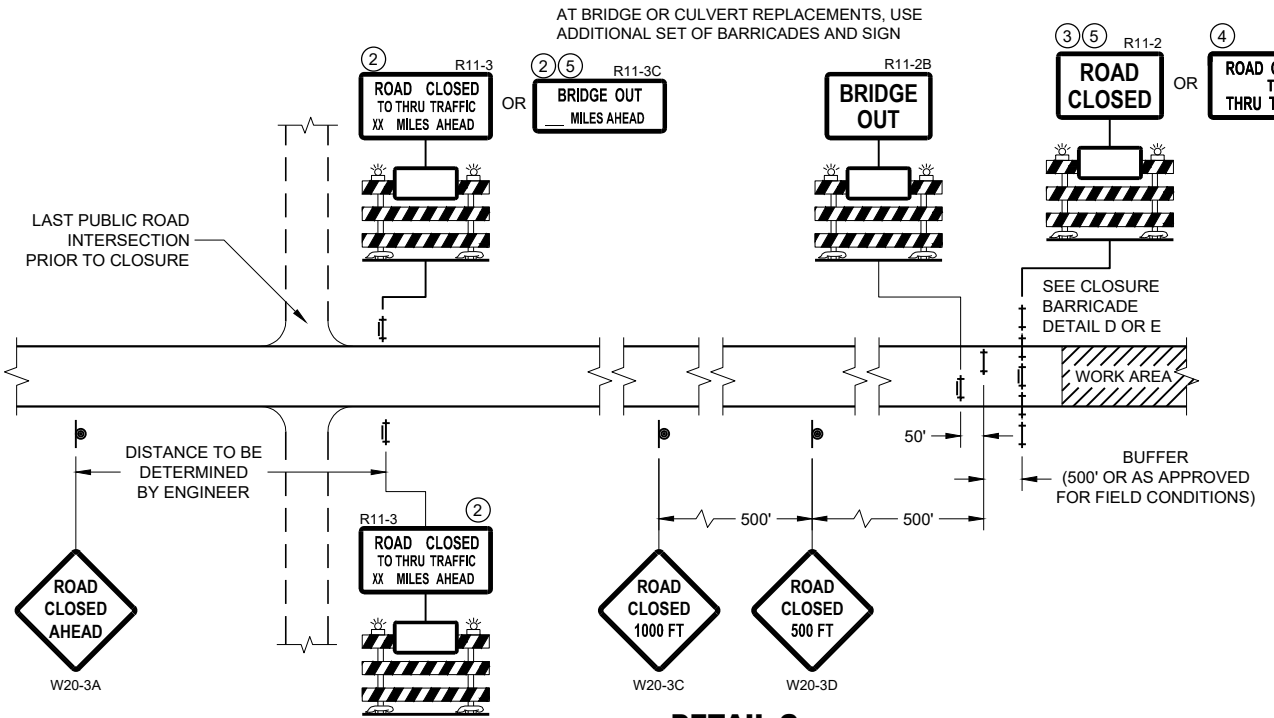
**DETAIL B  
MAINLINE CLOSURE WITH POSTED DETOUR**

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

- LEGEND**
- SIGN ON PERMANENT SUPPORT
  - TYPE III BARRICADE
  - TYPE III BARRICADE WITH ATTACHED SIGN
  - TYPE "A" WARNING LIGHT (FLASHING)
  - WORK AREA
  - FLAGS, 16" X 16" MIN. (ORANGE)

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

- M4 - 8
- M3 - X
- OR OR M1 - 4 M1 - 6 M1 - 5A
- OR M05 - 1 M06 - 1



**DETAIL C  
MAINLINE CLOSURE, NO POSTED DETOUR**

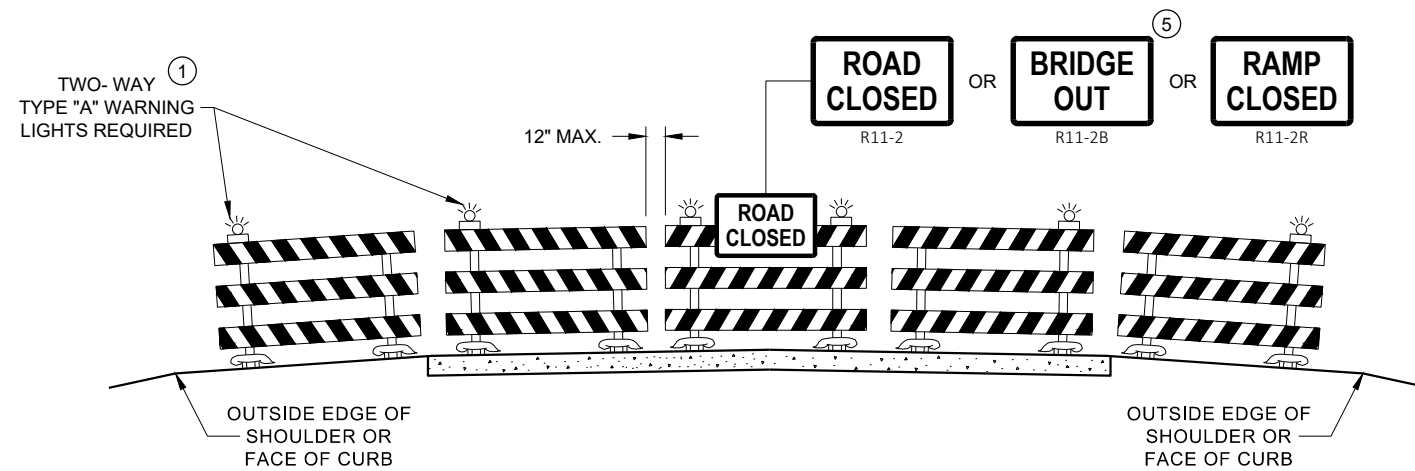
SEE SDD 15C2-SHEET "b"  
FOR GENERAL NOTES  
AND FOOTNOTES ① THROUGH ⑦

**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

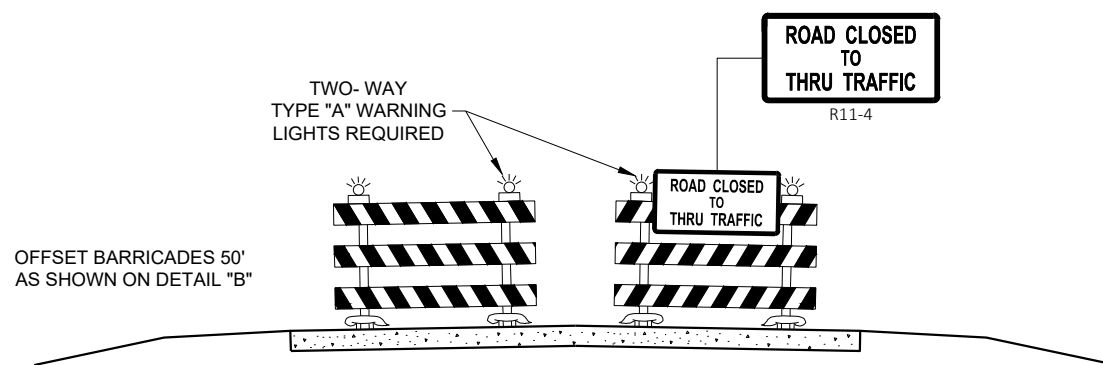
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Andrew Heidtke  
DATE DATE WORK ZONE ENGINEER  
FHWA





**DETAIL D  
ROAD CLOSURE BARRICADE DETAIL  
APPROACH VIEW**



**DETAIL E  
LANE CLOSURE BARRICADE DETAIL  
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

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

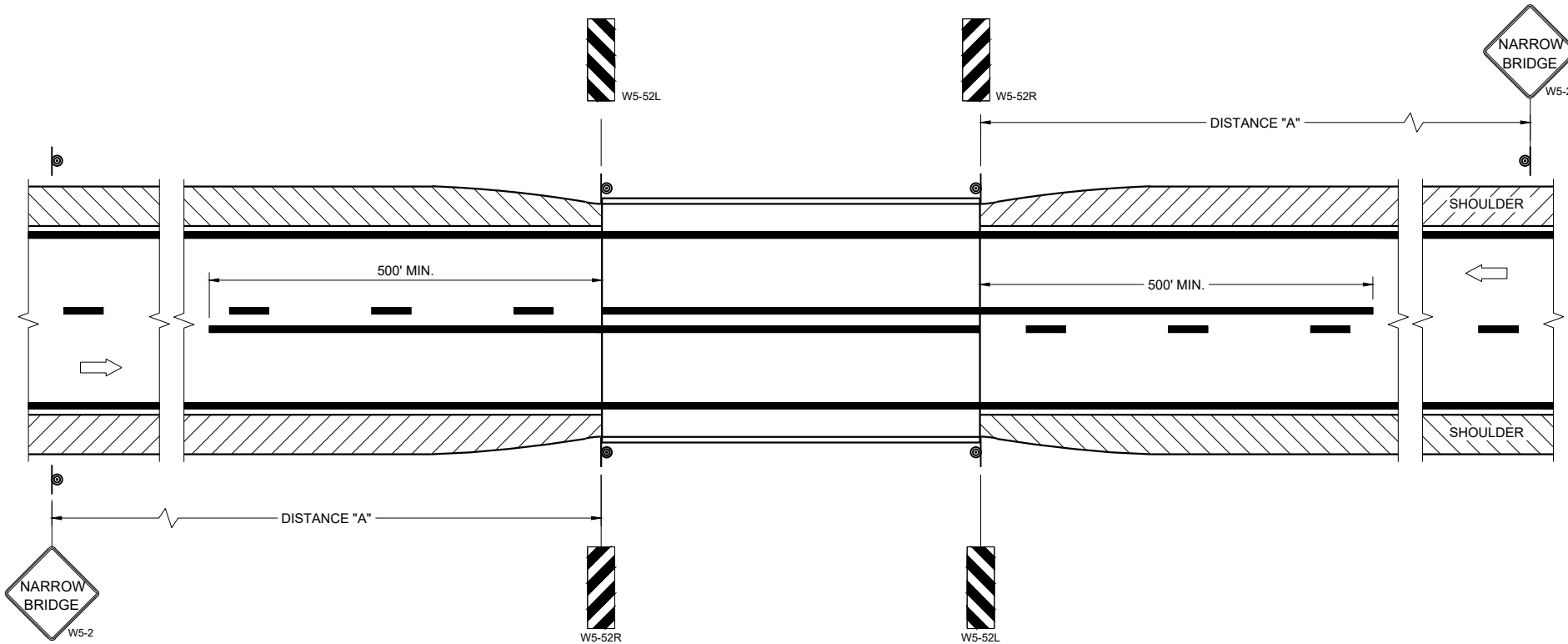
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

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

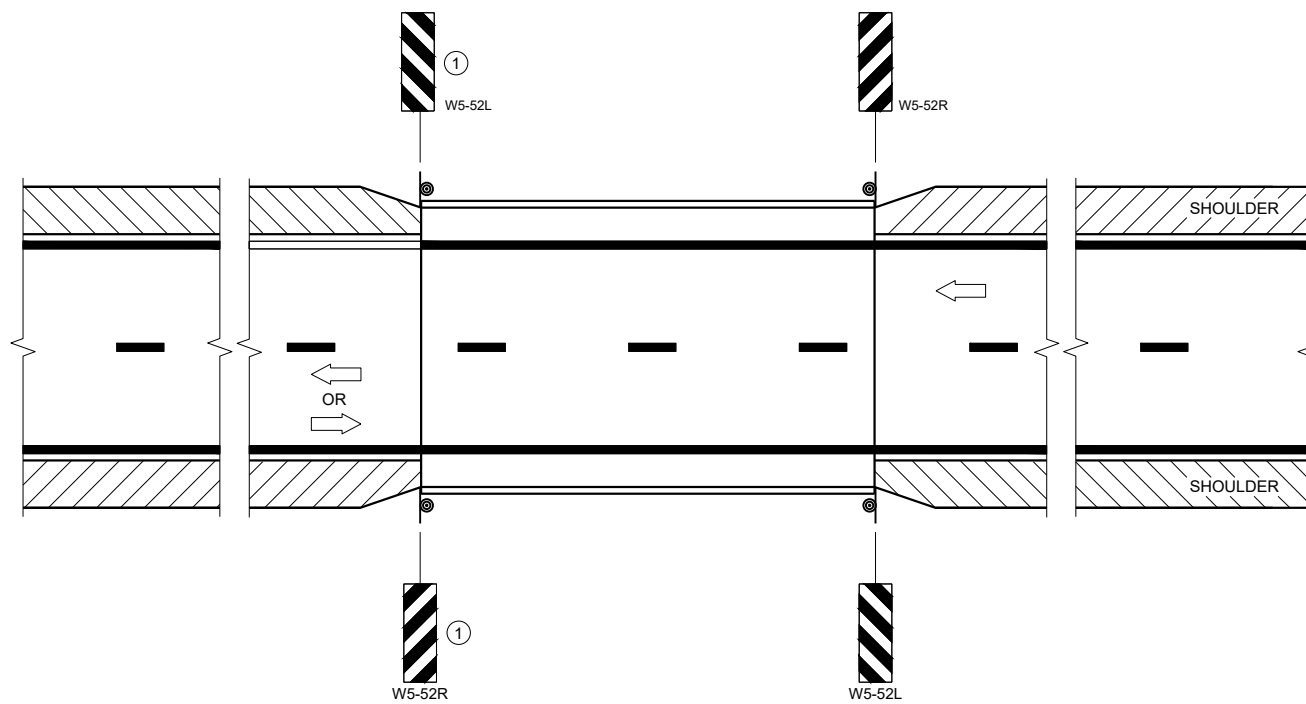
**BARRICADES AND SIGNS  
FOR  
VARIOUS CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER



**SITUATION 1**  
 WARRANTING CRITERIA:  
 BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



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

**GENERAL NOTES**

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

**LEGEND**

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

**DISTANCE TABLE**

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

6

6

SDD 15C06-12

SDD 15C06-12

**SIGNING AND MARKING FOR TWO LANE BRIDGES**

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED  
 May 2023 /S/ Jeannie Silver  
 DATE Statewide Pavement Marking Engineer




FHWA

**GENERAL NOTES**

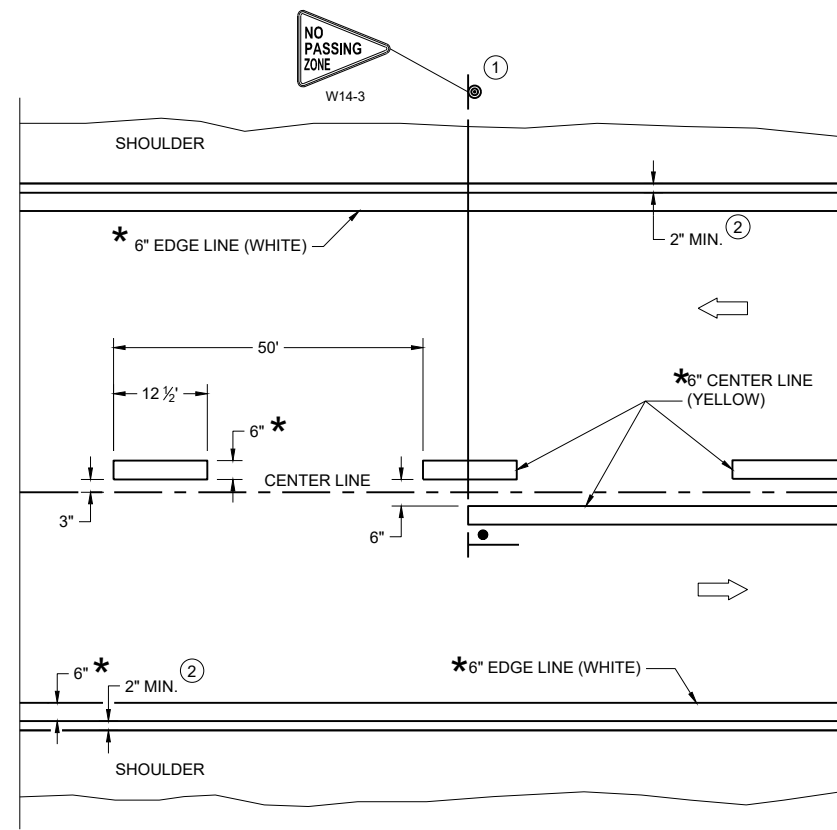
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

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

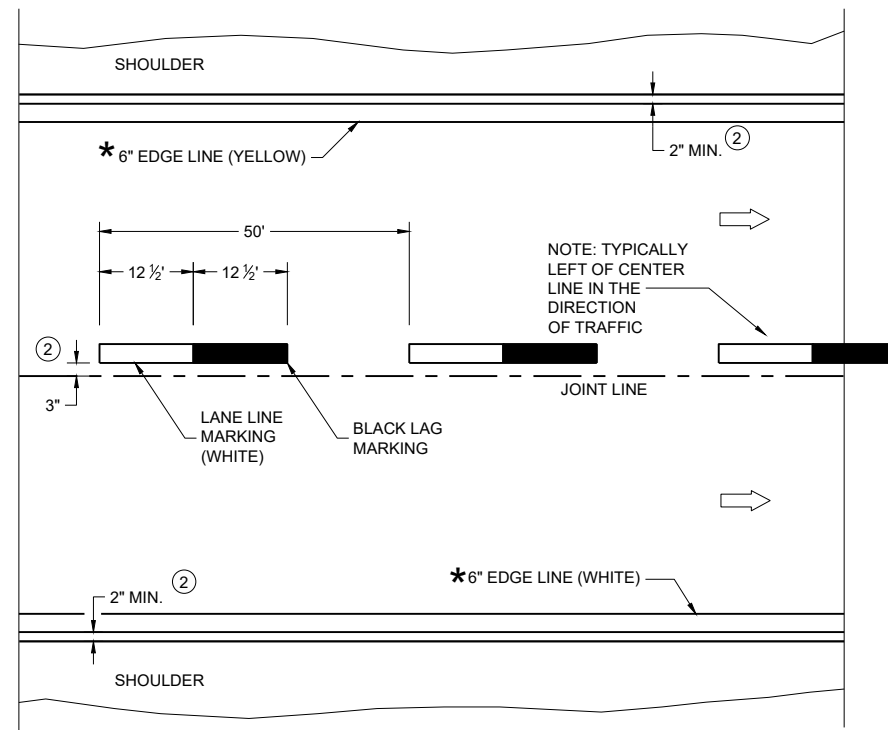
**LEGEND**

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

\*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

**PERMANENT PAVEMENT MARKING**

6

6

SDD 15C08-23a

SDD 15C08-23a

**PERMANENT LONGITUDINAL PAVEMENT MARKINGS**

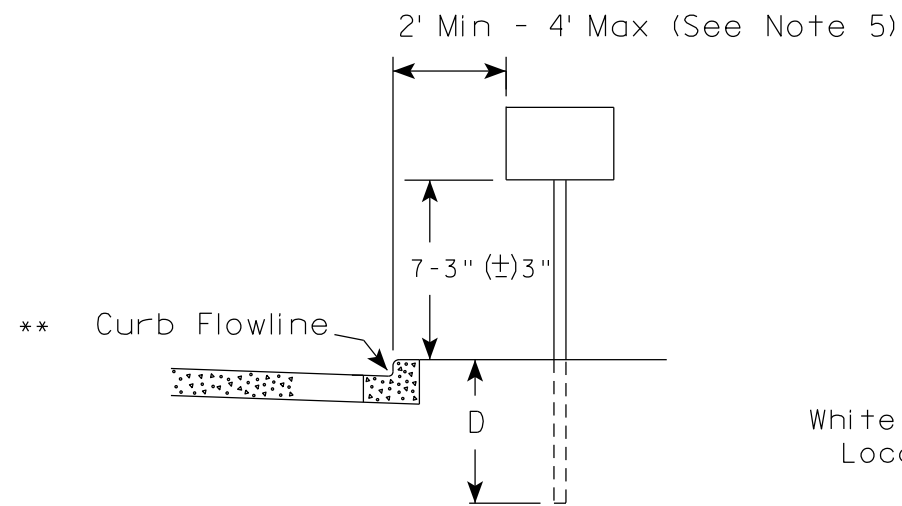
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Jeannie Silver  
DATE Statewide Pavement Marking Engineer

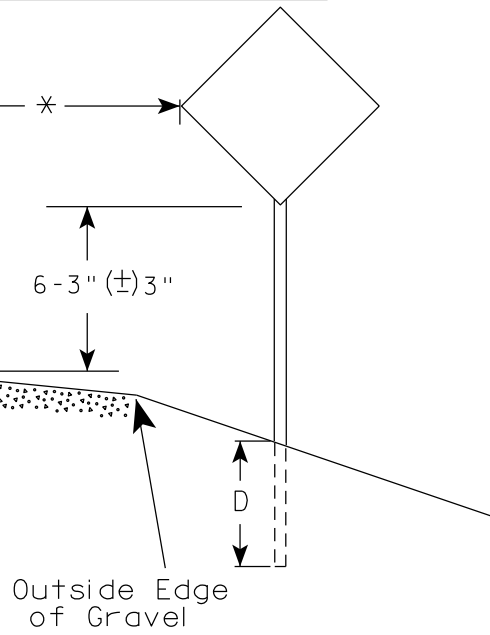
FHWA

URBAN AREA

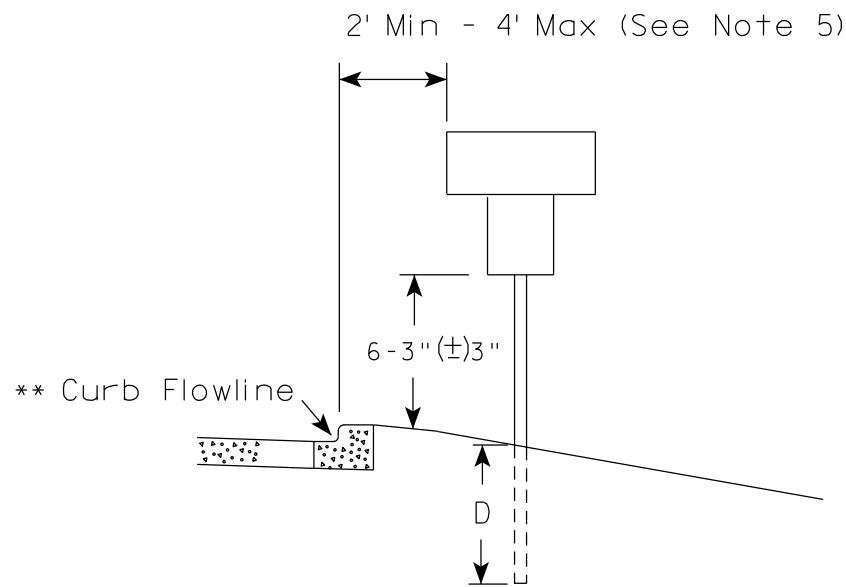
RURAL AREA (See Note 2)



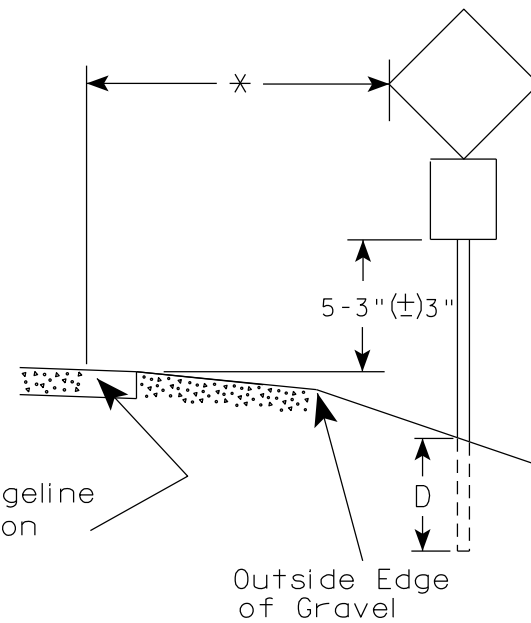
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

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 or behind barrier wall, see A4-10 sign plate.  
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 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" (±) 3".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

POST EMBEDMENT DEPTH

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

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

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Raub*  
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-3.23



**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**

<b>SIGN POST BOX-OUTS A4-3B</b>	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
APPROVED <i>Matthew R. Rauch</i> <small>for State Traffic Engineer</small>	
<small>DATE 1/27/14</small>	<small>PLATE NO. A4-3B.1</small>

GENERAL NOTES

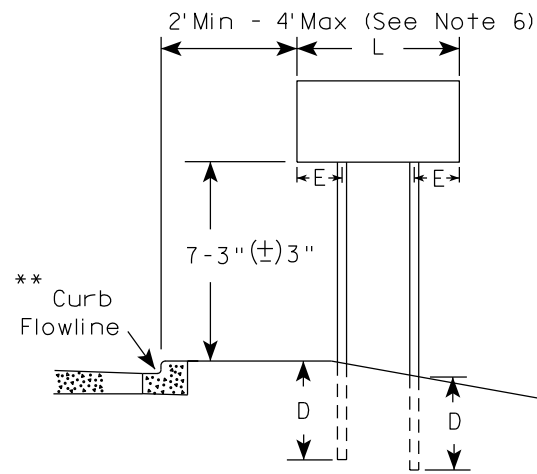
- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- J-Assemblies are considered to be one sign for mounting height.
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 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" (±) 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.

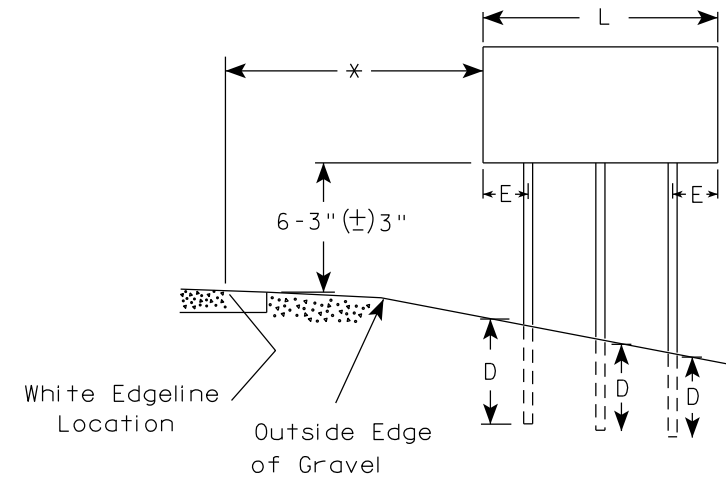
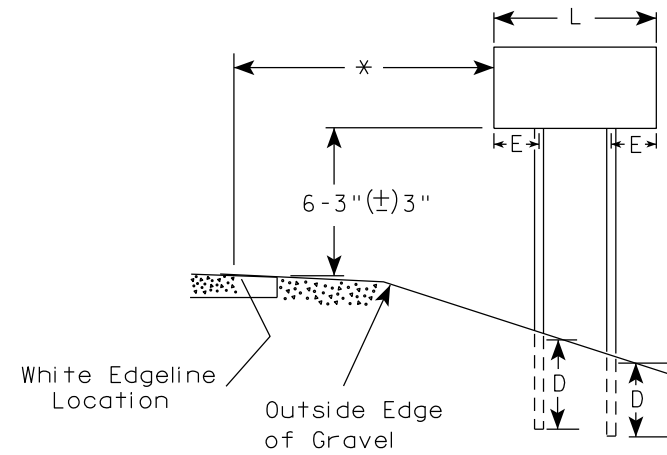
\*\* The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of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

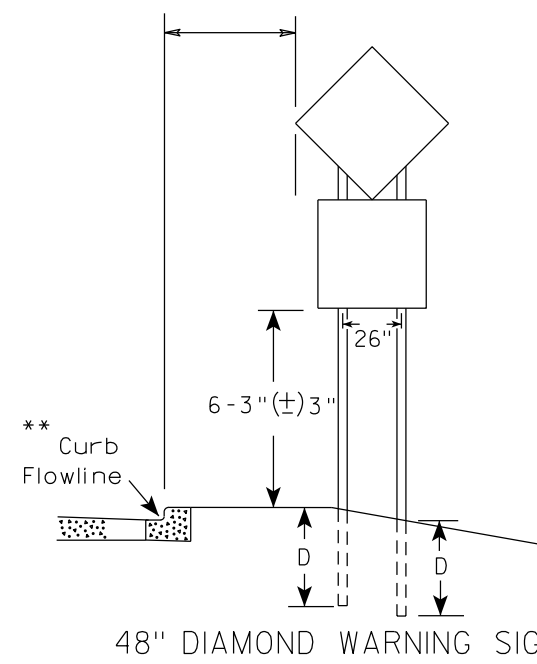
URBAN AREA



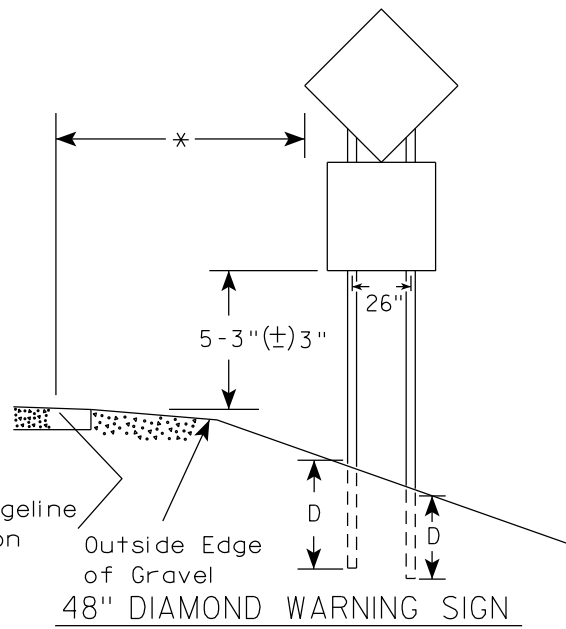
RURAL AREA (See Note 3)



URBAN AREA



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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 *Matthew R. Rauch*  
For State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16

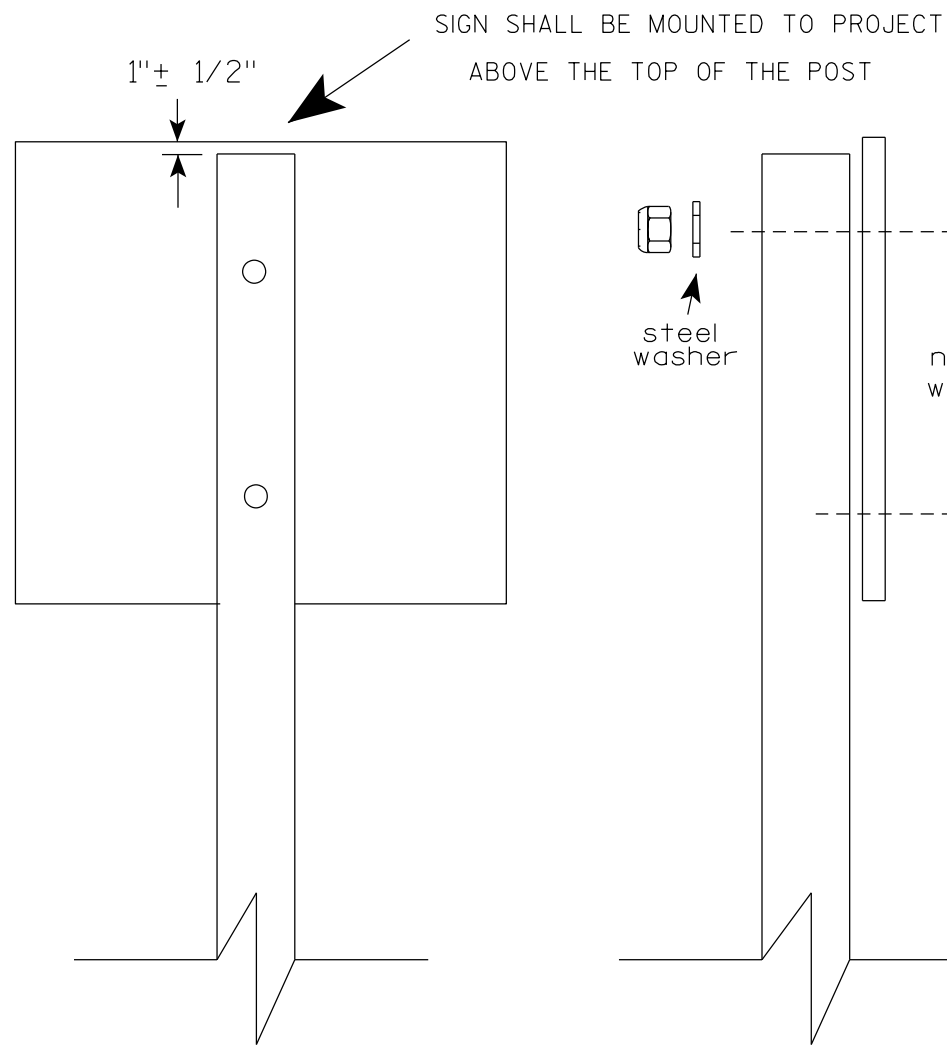
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

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

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 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

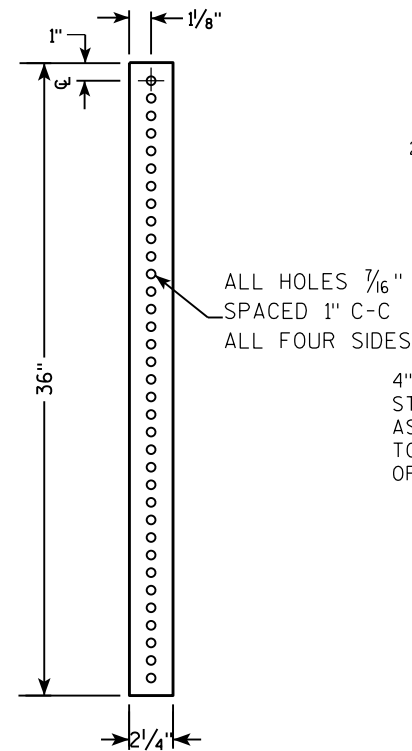
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
For State Traffic Engineer

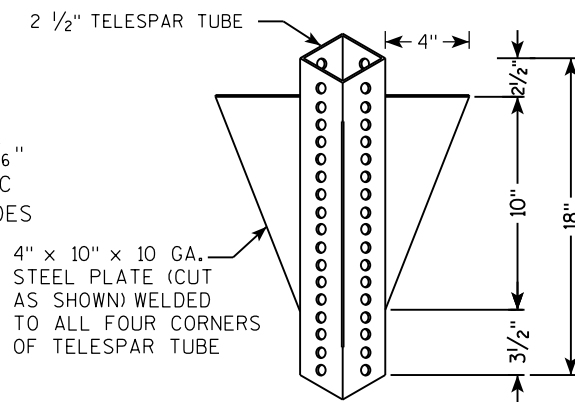
DATE 4/1/2020 PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM**

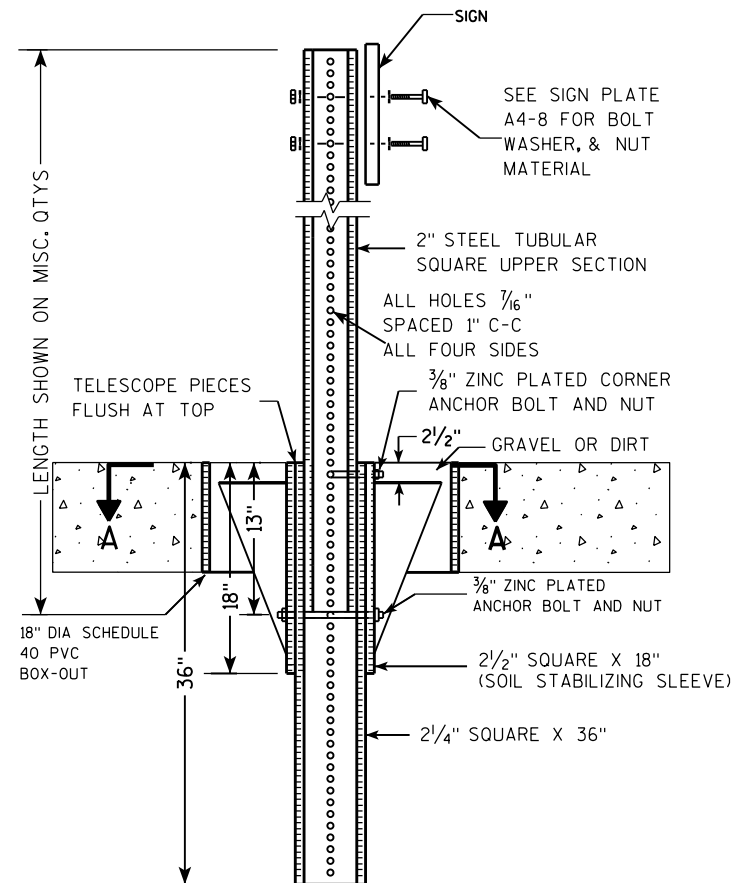
2 1/4" SQUARE  
12 GAUGE  
PERFORATED  
GALVANIZED FINISH



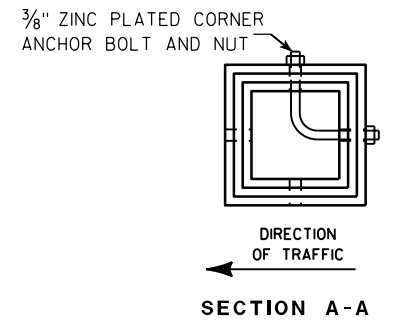
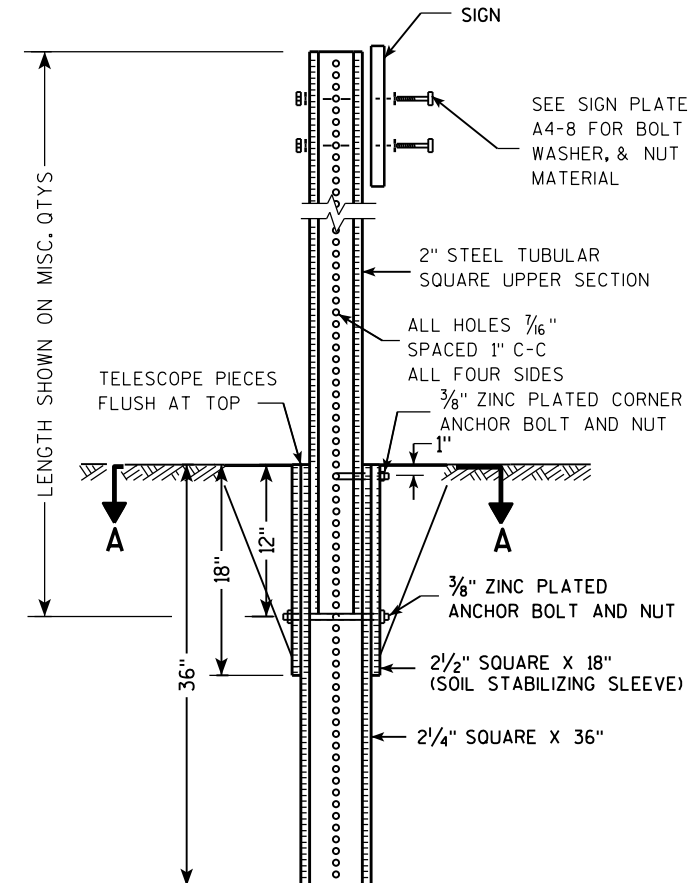
2 1/2" SQUARE  
12 GAUGE  
OMNI-DIRECTIONAL  
PERFORATED  
SOIL STABILIZING SLEEVE  
GALVANIZED FINISH



**DETAIL OF TUBULAR STEEL SIGN POST  
(IN POURED CONCRETE OR ASPHALT)**



**DETAIL OF TUBULAR STEEL SIGN POST  
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)**



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).

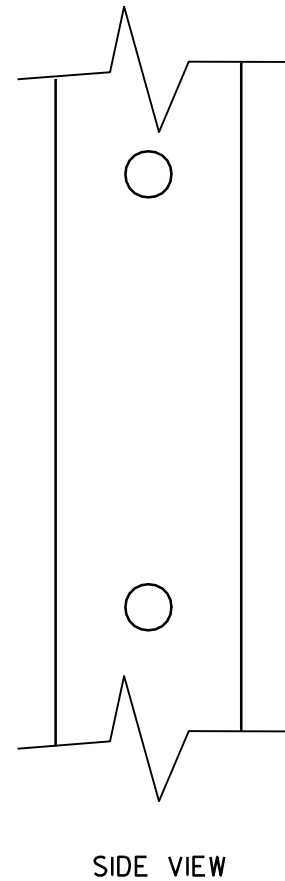
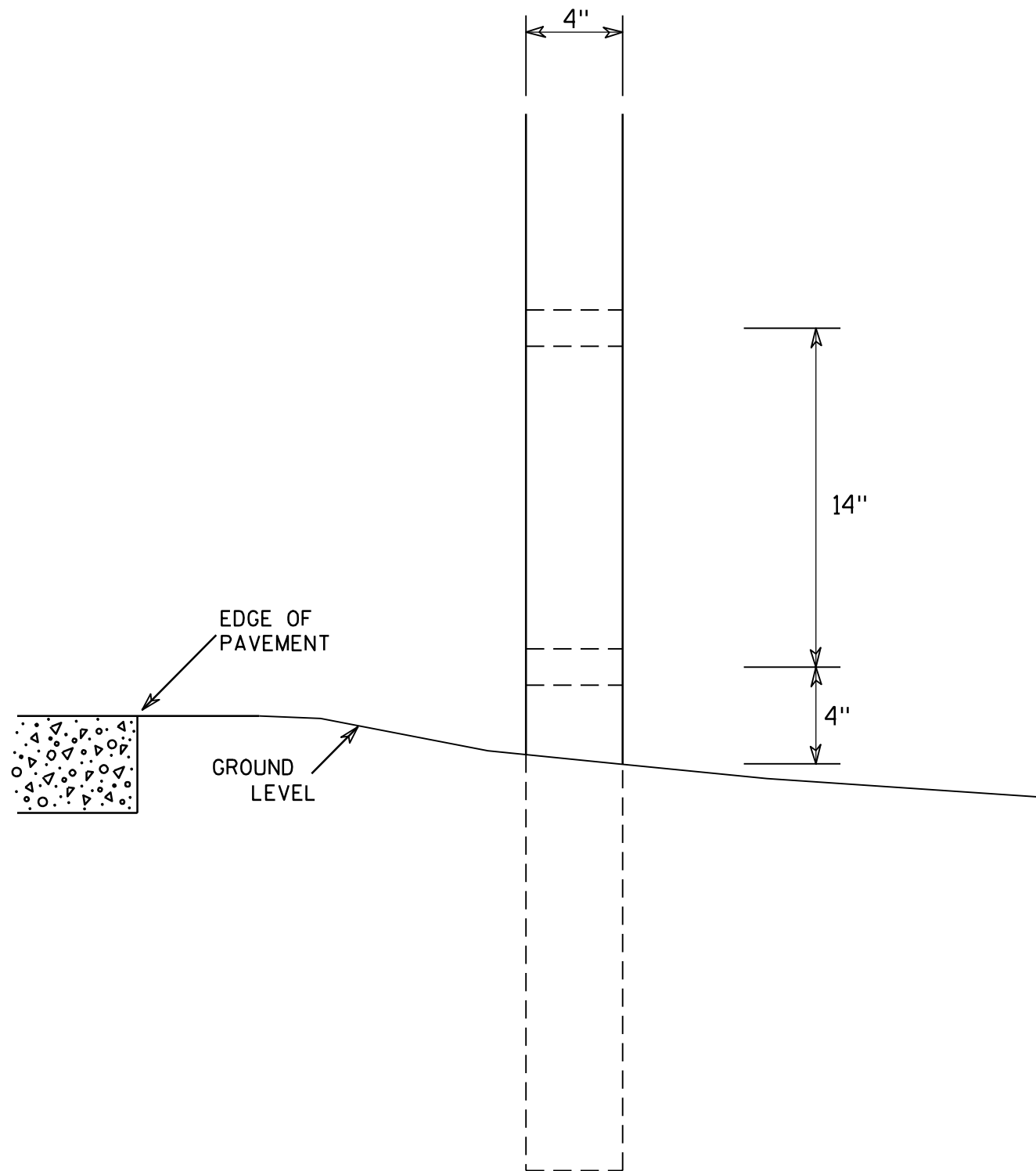
**TUBULAR STEEL  
SIGN POST  
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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





GENERAL NOTES

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

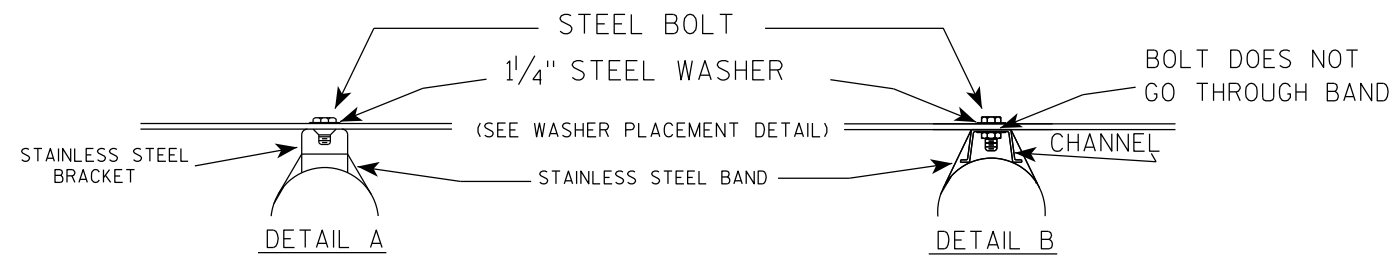
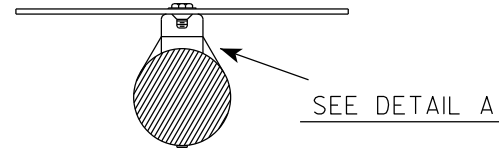
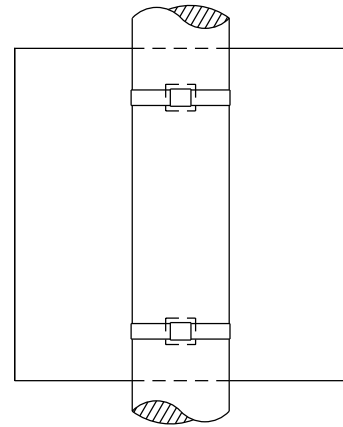
7

7

<b>4 X 6 WOOD POST MODIFICATIONS</b>	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

# BANDING

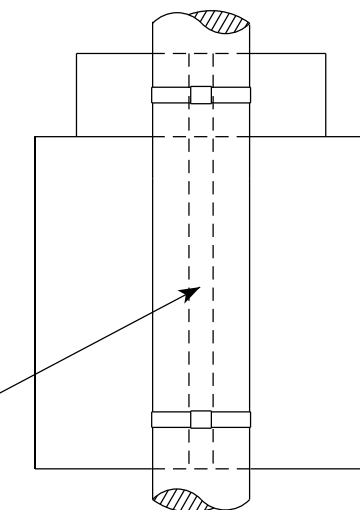
SINGLE SIGN



## 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 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
  - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
  - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

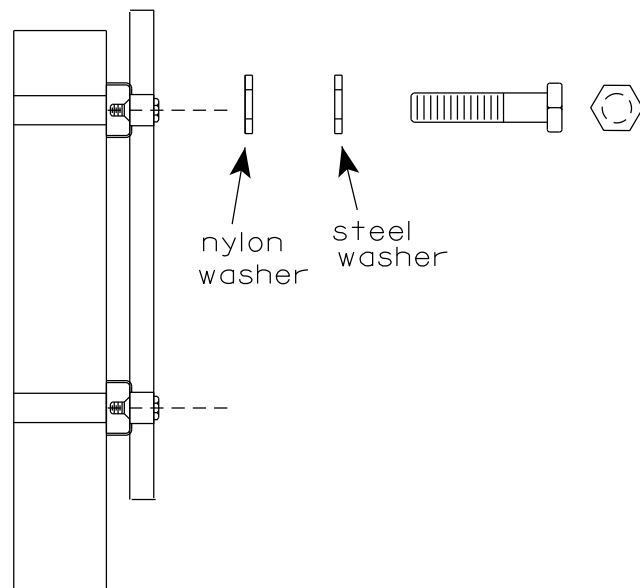
"J" ASSEMBLY



CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET

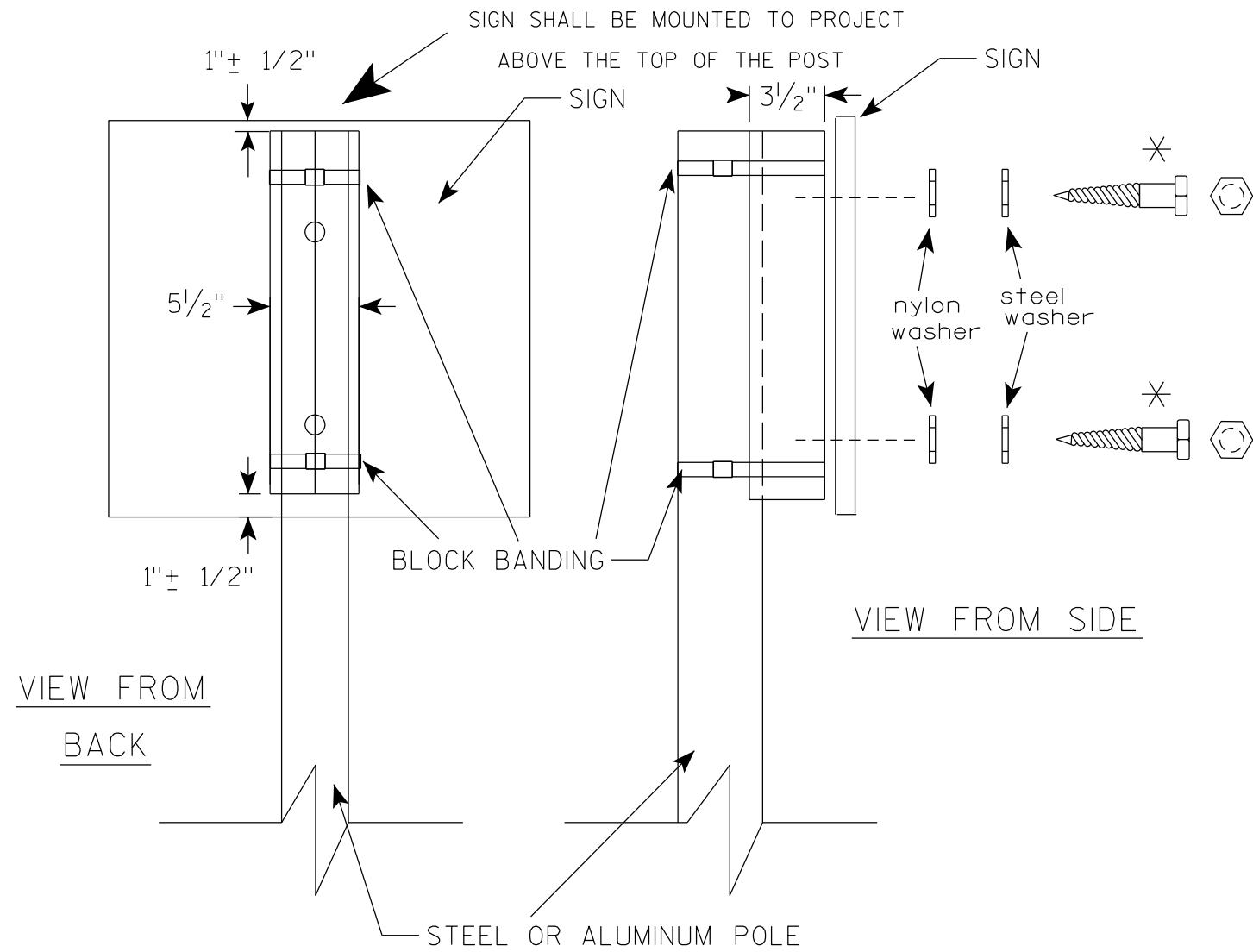


WASHER PLACEMENT



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

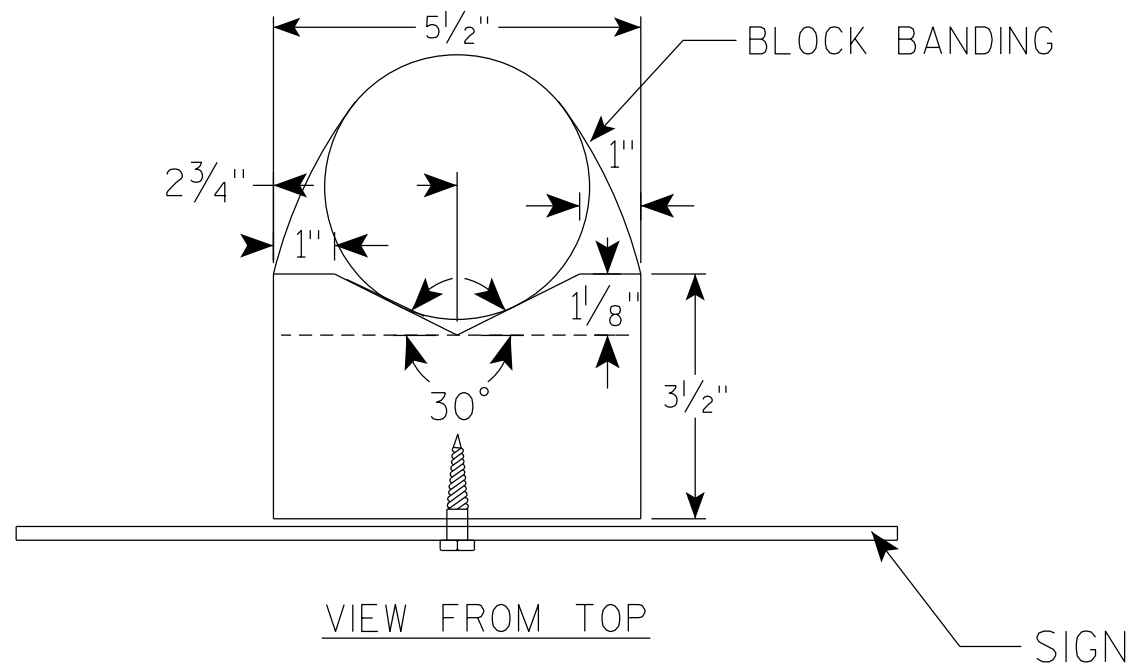
STANDARD SIGN SIGN BANDING DETAILS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 6/10/19	PLATE NO. A5-9.4



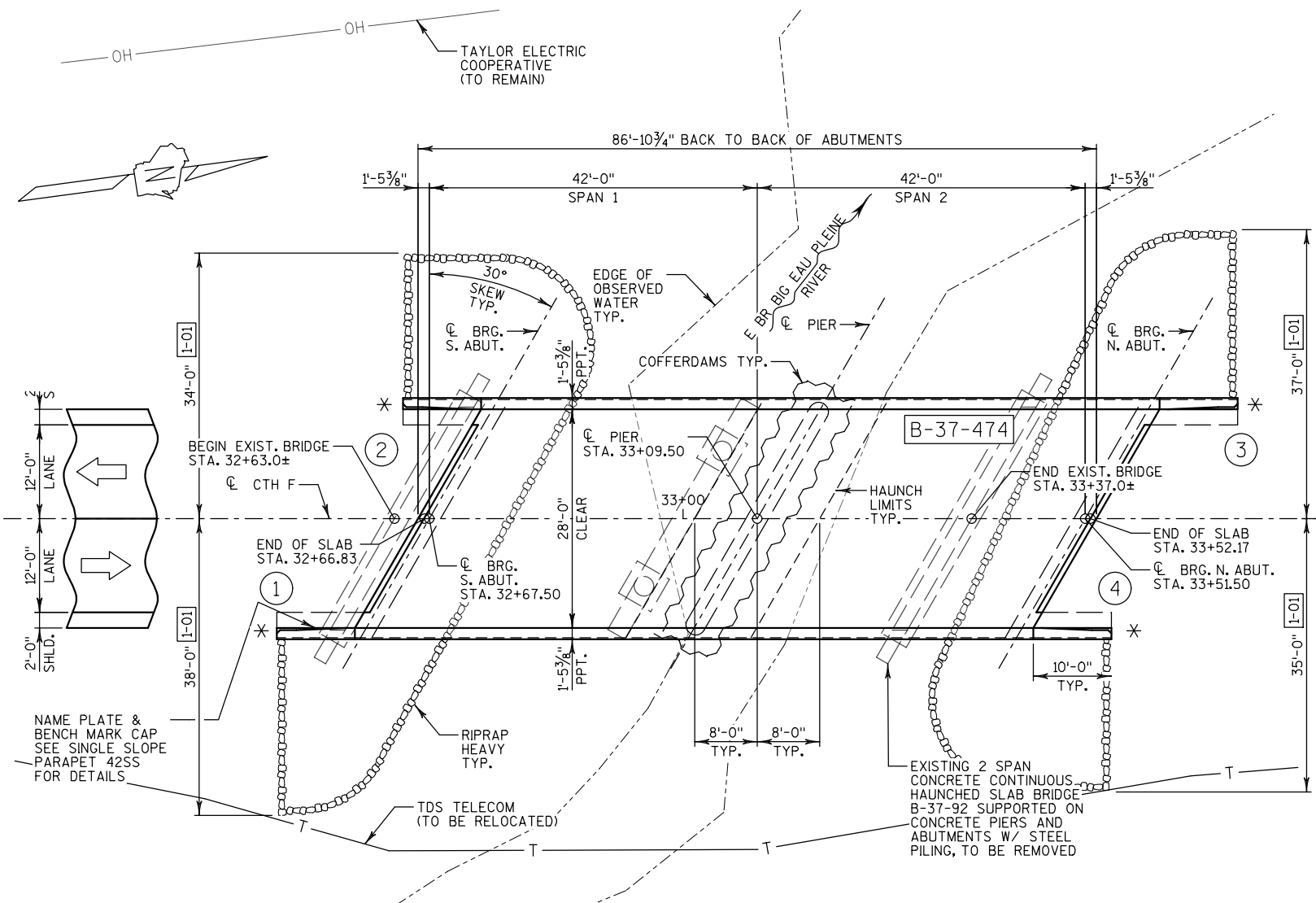
GENERAL NOTES

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, 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
  - b. 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 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"

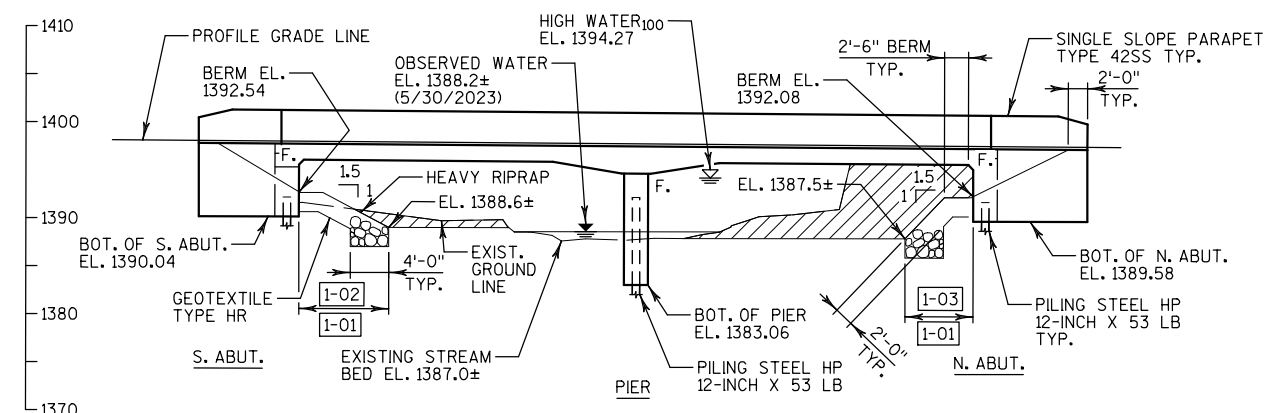


BLOCK BANDING DETAIL ( V-BLOCK OPTION )	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> for State Traffic Engineer
DATE 4/19/2022	PLATE NO. A5-10.3



**PLAN**

(TWO SPAN CONCRETE CONTINUOUS HAUNCH SLAB BRIDGE)



**ELEVATION**

(LOOKING WEST)  
(NORMAL TO E BR BIG EAU PLEINE RIVER)

**BENCH MARK TABLE**

NO.	STATION	DESCRIPTION	ELEVATION
901	33+45.38, 11.4' RT	MAG NAIL	1396.87

**TRAFFIC DATA**

ADT (2025) = 750  
ADT (2045) = 800  
DESIGN SPEED = 55 MPH

**MATERIAL PROPERTIES**

CONCRETE MASONRY:  
SUPERSTRUCTURE  $f'_c = 4,000$  PSI  
ALL OTHER  $f'_c = 3,500$  PSI  
  
HIGH STRENGTH BAR STEEL REINFORCEMENT:  
GRADE 60  $f_y = 60,000$  PSI

**DESIGN DATA**

LIVE LOAD:  
DESIGN LOADING HL-93  
INVENTORY RATING FACTOR 1.11  
OPERATING RATING FACTOR 1.44  
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) 250 KIPS  
  
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

**LEGEND**

- (X) INDICATES WING NUMBER.
- \* MGS THRIE BEAM ATTACHMENT.
- [Hatched Area] AREA TO EXCAVATE INCLUDED IN "EXCAVATION FOR STRUCTURES BRIDGES B-37-474".
- [1-01] LIMITS OF RIPRAP HEAVY AND GEOTEXTILE TYPE HR.
- [1-02] VARIES 7.5' TO 8.5' (7.5' @ WING 1, 8.5' @ WING 2).
- [1-03] VARIES 6.5' TO 9.5' (9.5' @ WING 3, 6.5' @ WING 4)

**LIST OF DRAWINGS**

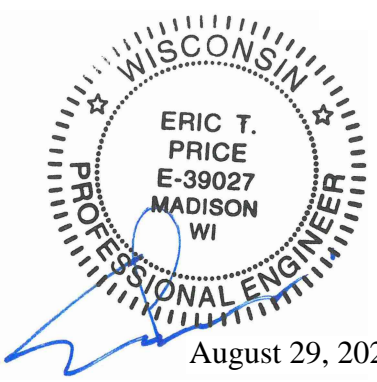
1. GENERAL PLAN
2. CROSS SECTION & NOTES
3. MISCELLANEOUS DETAILS
4. SUBSURFACE EXPLORATION
5. SOUTH ABUTMENT
6. SOUTH ABUTMENT DETAILS-1
7. SOUTH ABUTMENT DETAILS-2
8. NORTH ABUTMENT
9. NORTH ABUTMENT DETAILS-1
10. NORTH ABUTMENT DETAILS-2
11. PIER
12. SUPERSTRUCTURE DETAILS-1
13. SUPERSTRUCTURE DETAILS-2
14. SUPERSTRUCTURE DETAILS-3
15. SUPERSTRUCTURE DETAILS-4
16. SINGLE SLOPE PARAPET 42SS

**HYDRAULIC DATA**

100 YEAR FREQUENCY  
 $Q_{100} = 1,200$  C.F.S.  
 $VEL_{100} = 3.9$  F.P.S.  
 $HW_{100} = EL. 1394.27$   
 WATERWAY AREA = 310.6 SQ. FT.  
 DRAINAGE AREA = 8.7 SQ. MI.  
 OVERTOPPING FREQUENCY = N/A  
 SCOUR CRITICAL CODE = 5  
  
 2 YEAR FREQUENCY  
 $Q_2 = 315$  C.F.S.  
 $VEL_2 = 1.4$  F.P.S.  
 $HW_2 = EL. 1392.62$

**FOUNDATION DATA**

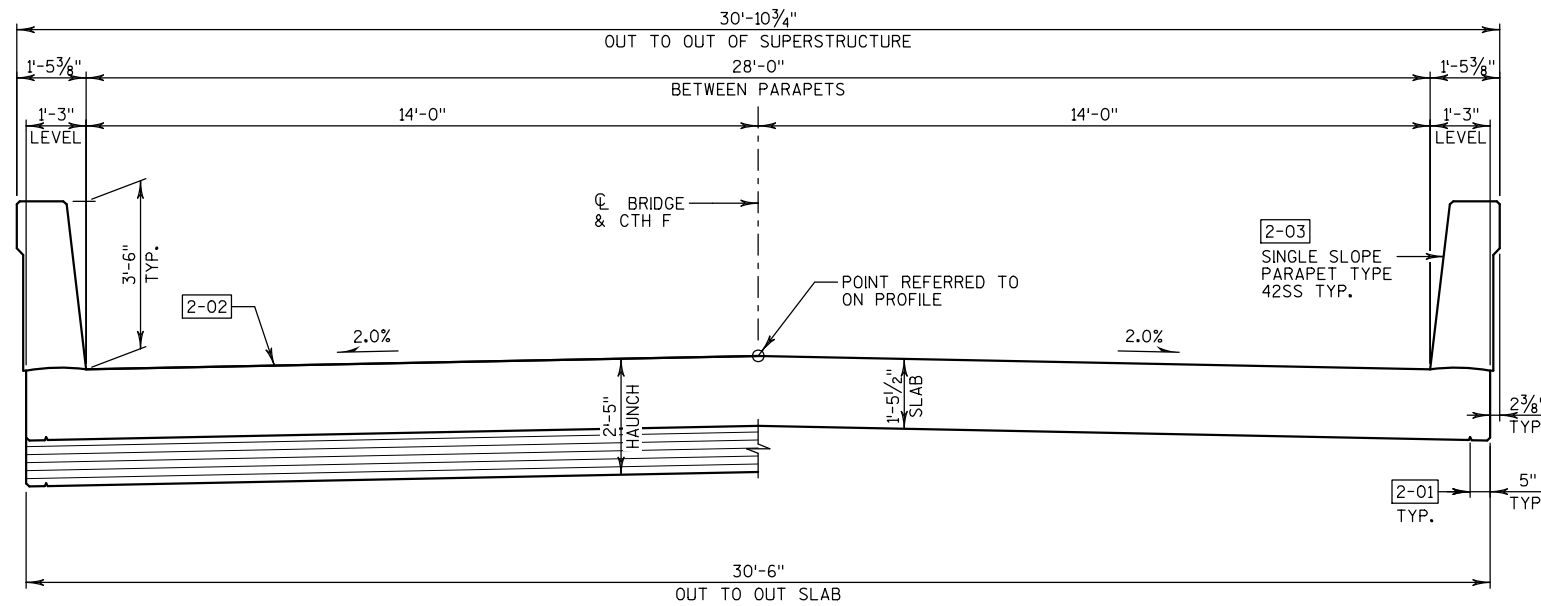
ABUTMENTS TO BE SUPPORTED ON HP 12-INCHx53 LB STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220\*\* TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.  
 ESTIMATED 15' LONG AT THE SOUTH ABUTMENT.  
 ESTIMATED 20' LONG AT THE NORTH ABUTMENT.  
  
 \*\* THE FACTORED AXIAL RESISTANCE 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.  
  
 PIER TO BE SUPPORTED ON HP 12-INCHx53 LB STEEL PILING. PIER PILES TO BE SEATED IN PRE-BORED HOLES CORED A MINIMUM OF 3 FEET INTO SOUND ROCK (PRE-BORED TO EL. 1361.8). PILE DRIVING NOT REQUIRED. CASING REQUIRED.  
 ESTIMATED 30' LONG AT THE PIER.  
  
 THE FACTORED AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR DESIGN IS 200 TONS MULTIPLIED BY A RESISTANCE FACTOR OF 0.5.



August 29, 2024

BUREAU OF STRUCTURES CONTACT:  
AARON BONK, P.E. (608) 261-0261  
  
CONSULTANT CONTACT:  
ERIC PRICE, P.E. (608) 826-6146

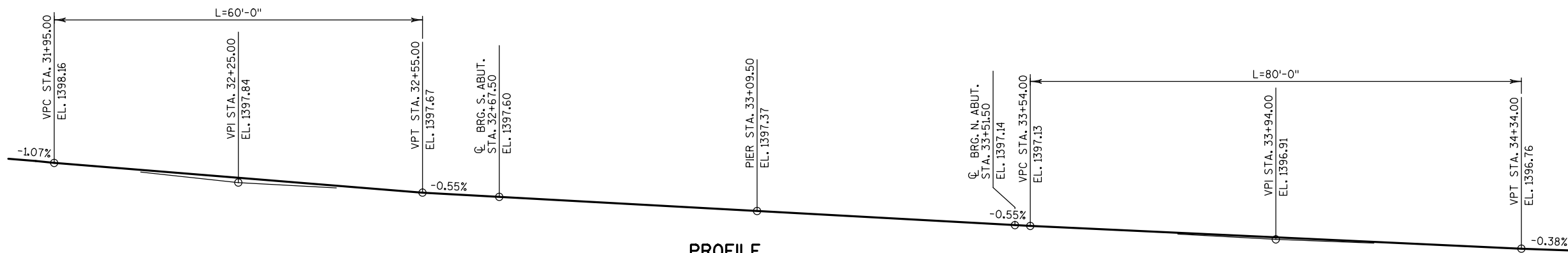
NO.	DATE	REVISION	BY
 STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED:  SDR 11/11/24 CHIEF STRUCTURES DESIGN ENGINEER DATE <b>STRUCTURE B-37-474</b> CTH F OVER E BR BIG EAU PLEINE RIVER COUNTY MARATHON TOWN/VILLAGE HOLTON DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS DESIGNED BY SMS CK'D. ETP DRAWN BY TKB PLANS CK'D. ETP <b>GENERAL PLAN</b>			
			SHEET 1 OF 16



**PROPOSED CROSS SECTION THRU ROADWAY**  
(LOOKING NORTH)

**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 3/4" UNLESS OTHERWISE NOTED.
- THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-37-474" 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 TYPE A.
- EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.
- THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE TOP OF SLAB AS SHOWN.
- 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.
- SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
- THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIER.
- AT ABUTMENTS AND PIER, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.



**PROFILE**  
CTH F

**TOTAL ESTIMATED QUANTITIES**

BID ITEM NUMBER	BID ITEM	UNIT	SOUTH ABUTMENT	PIER	NORTH ABUTMENT	SUPER.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-37-92	EACH	-	-	-	-	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-37-474	EACH	-	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	125	-	125	-	250
502.0100	CONCRETE MASONRY BRIDGES	CY	34.0	35.1	34.0	181.7	285
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	-	271	271
502.3210	PIGMENTED SURFACE SEALER	SY	10	-	10	85	105
502.9000.S	UNDERWATER SUBSTRUCTURE INSPECTION B-37-474	EACH	-	1	-	-	1
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,170	1,620	2,170	-	5,960
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,940	70	1,940	43,610	47,560
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	-	10	-	20
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	-	149	-	-	149
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	75	210	100	-	385
606.0300	RIPRAP HEAVY	CY	105	-	105	-	210
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100	-	100	-	200
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	-	2	-	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	34	-	34	-	68
645.0120	GEOTEXTILE TYPE HR	SY	175	-	175	-	350
NON-BID ITEMS							
	FILLER	SIZE	-	-	-	-	1/2" & 3/4"

ALL ITEMS ARE CATEGORY 0020

**ABBREVIATIONS:**

- ABUT. - ABUTMENT
- BTWN. - BETWEEN
- B.F. - BACK FACE
- BOT. - BOTTOM
- BRG. - BEARING
- CL. - CLEAR
- CONST. - CONSTRUCTION
- DIA. - DIAMETER
- E.F. - EACH FACE
- EXIST. - EXISTING
- F.F. - FRONT FACE
- HORIZ. - HORIZONTAL
- JT. - JOINT
- LONG. - LONGITUDINAL
- PPT. - PARAPET
- PROJ. - PROJECTION
- S.E. - SEMI-EXPANSION
- SPA. - SPACED
- STD. - STANDARD
- SYMM. - SYMMETRICAL
- T&B - TOP AND BOTTOM
- TRANS. - TRANSVERSE
- TYP. - TYPICAL
- VERT. - VERTICAL
- U.N.O. - UNLESS NOTED OTHERWISE

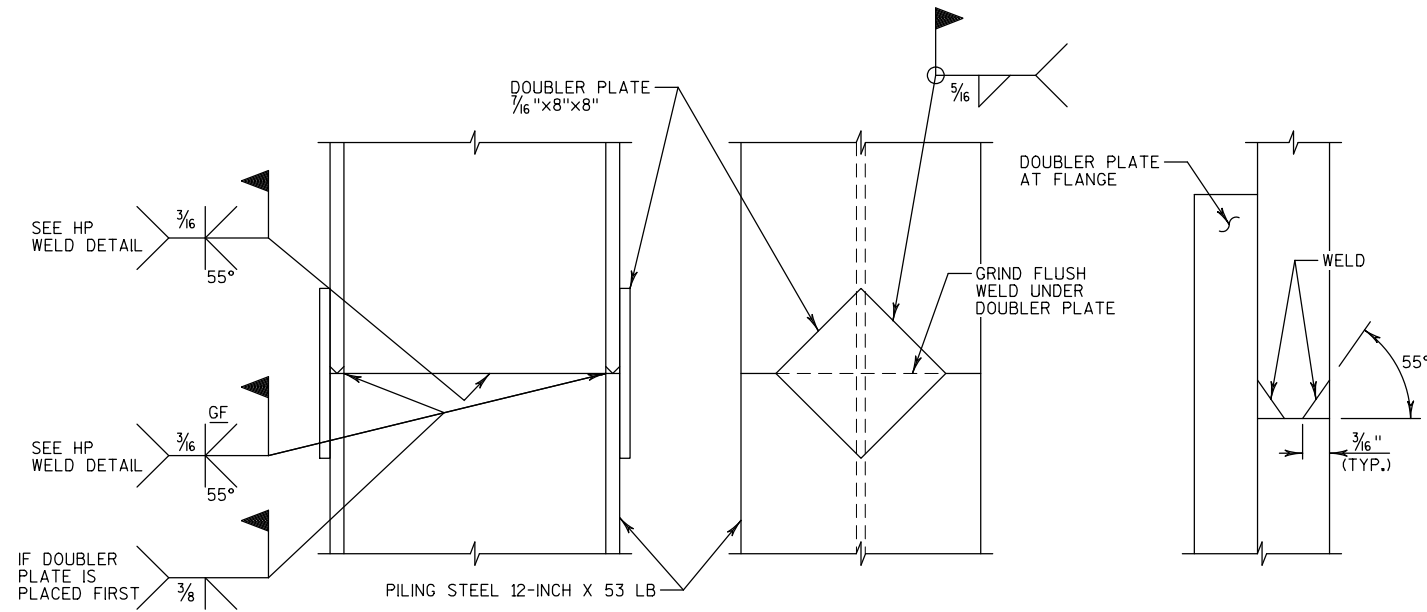
**LEGEND**

- 2-01 3/4" V-GROOVE, TERMINATE 6" FROM FRONT FACE OF ABUTMENTS.
- 2-02 COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE WISDOT STANDARD SPECIFICATIONS.
- 2-03 COAT FRONT FACE AND TOP OF PARAPETS WITH "PIGMENTED SURFACE SEALER".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-37-474</b>			
DRAWN BY TKB		PLANS CK'D. ETP	
<b>CROSS SECTION &amp; NOTES</b>			SHEET 2 OF 16

**LEGEND**

- 3-01 BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION OF STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- 3-02 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN.
- 3-03 EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. "GEOTEXTILE TYPE DF SCHEDULE A" SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF EXCAVATION LIMITS.

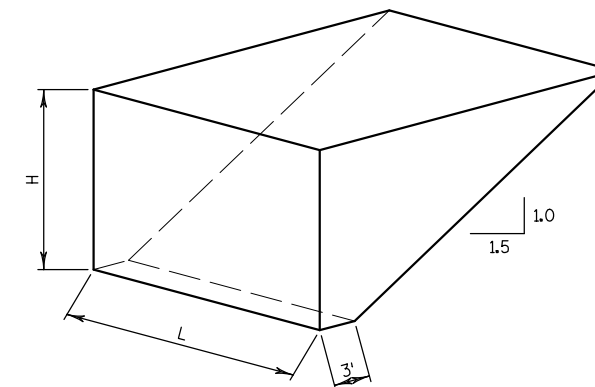


**STEEL 'HP' PILING**

**'HP' WELD DETAILS**

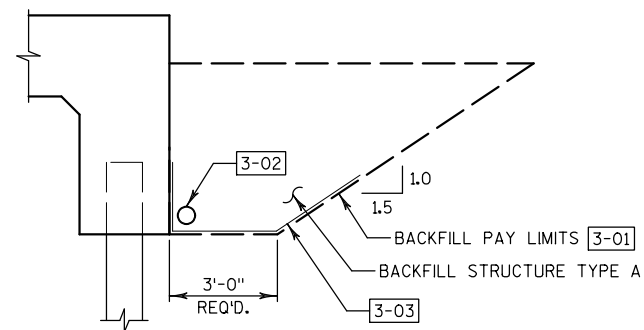
**PILE SPLICE DETAILS**

FLANGE SHOWN, WEB SIMILAR



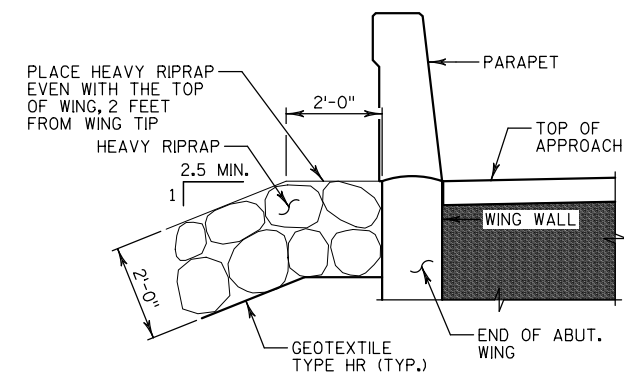
**ABUTMENT BACKFILL PAY LIMIT DIAGRAM**

- 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)
- $V_{cf} = (L)(3.0)(H) + (L)(0.5)(1.5H)(H)$
- $V_{cy} = V_{cf} (EF) / 27$
- $V_{ton} = V_{cy} (2.0)$



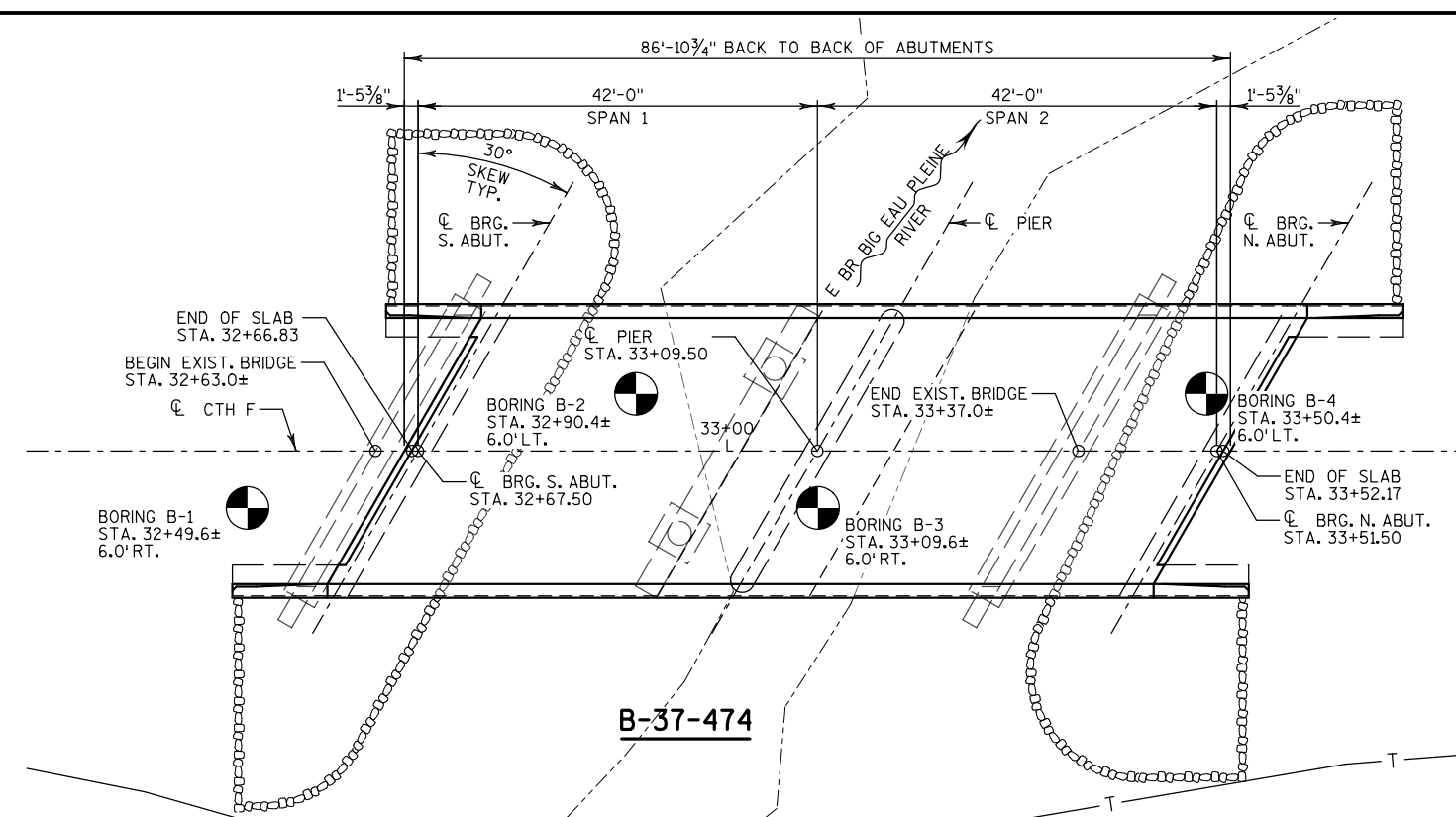
**STRUCTURE BACKFILL LIMITS**

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



**TYPICAL FILL SECTION AT WING TIPS**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-37-474</b>			
DRAWN BY TKB		PLANS CK'D. ETP	
<b>MISCELLANEOUS DETAILS</b>			SHEET 3 OF 16



GEOTECHNICAL REPORT & SOIL BORINGS PERFORMED BY:  
 AMERICAN ENGINEERING TESTING, INC.  
 4203 SCHOFIELD AVENUE, SUITE 1  
 SCHOFIELD, WI 54476  
 (715)-359-3534

BORING B-1 PERFORMED ON 8/2/23  
 BORING B-2 PERFORMED ON 8/7/23  
 BORING B-3 PERFORMED ON 8/2/23  
 BORING B-4 PERFORMED ON 8/7/23

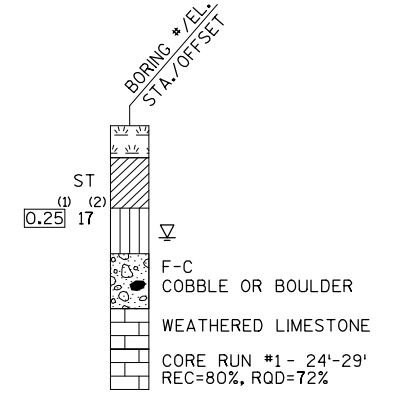
STATE PROJECT NUMBER

**6669-00-70**

MATERIAL SYMBOLS

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

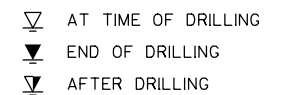
LEGEND OF BORING



(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

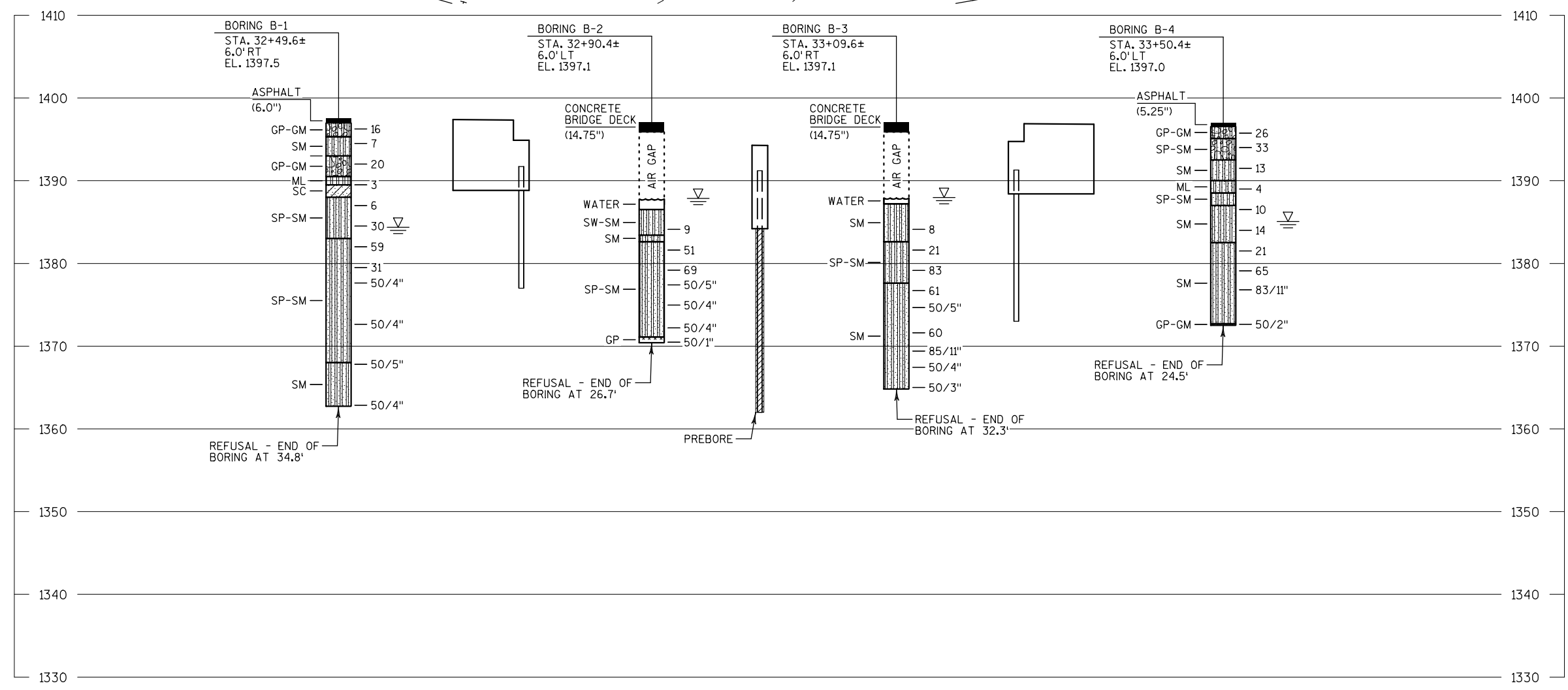


ABBREVIATIONS

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.



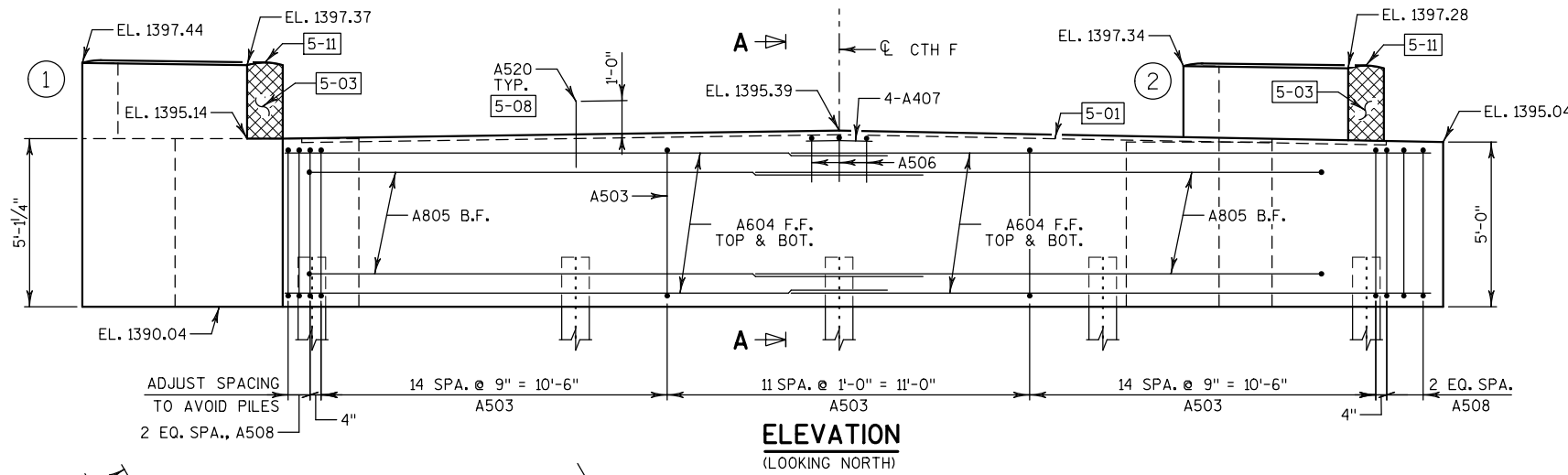
8

8

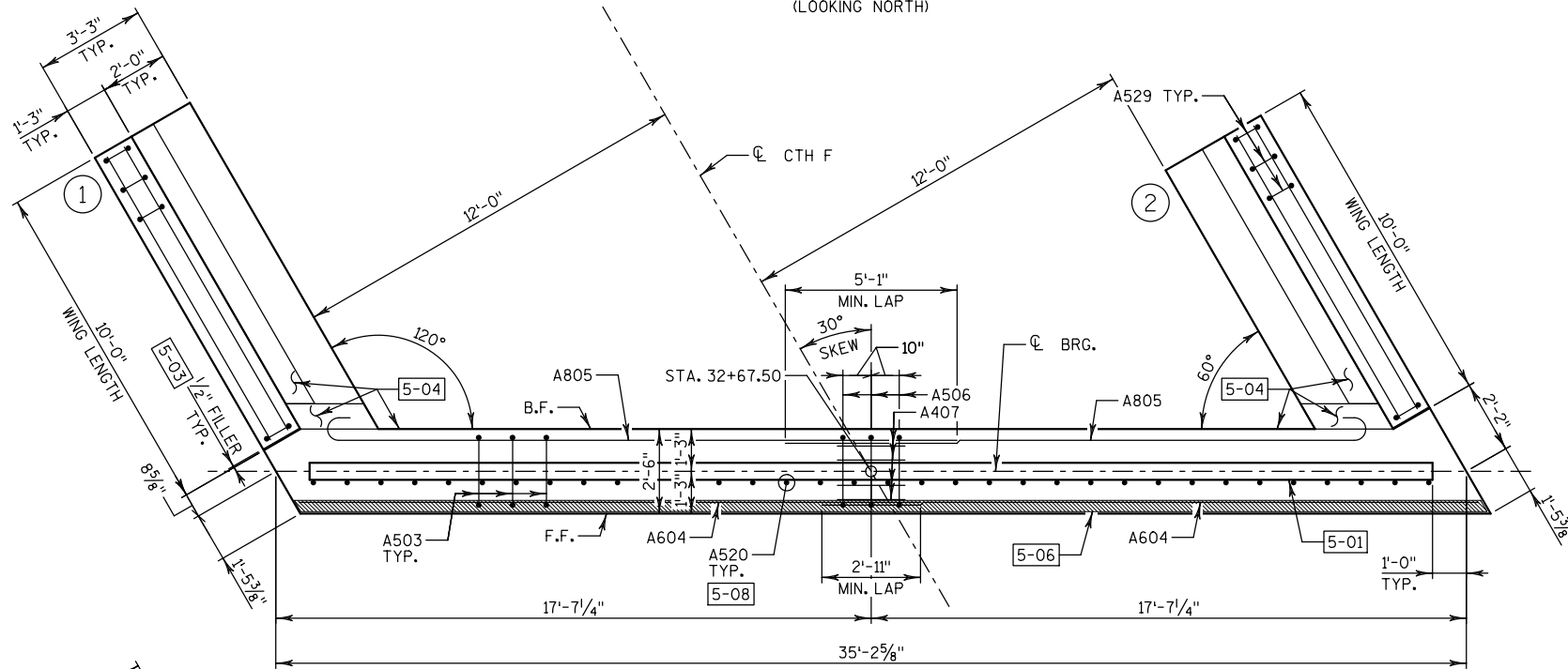
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-37-474</b>			
DRAWN BY TKB		PLANS CK'D. ETP	
<b>SUBSURFACE EXPLORATION</b>			SHEET 4 OF 16

**LEGEND**

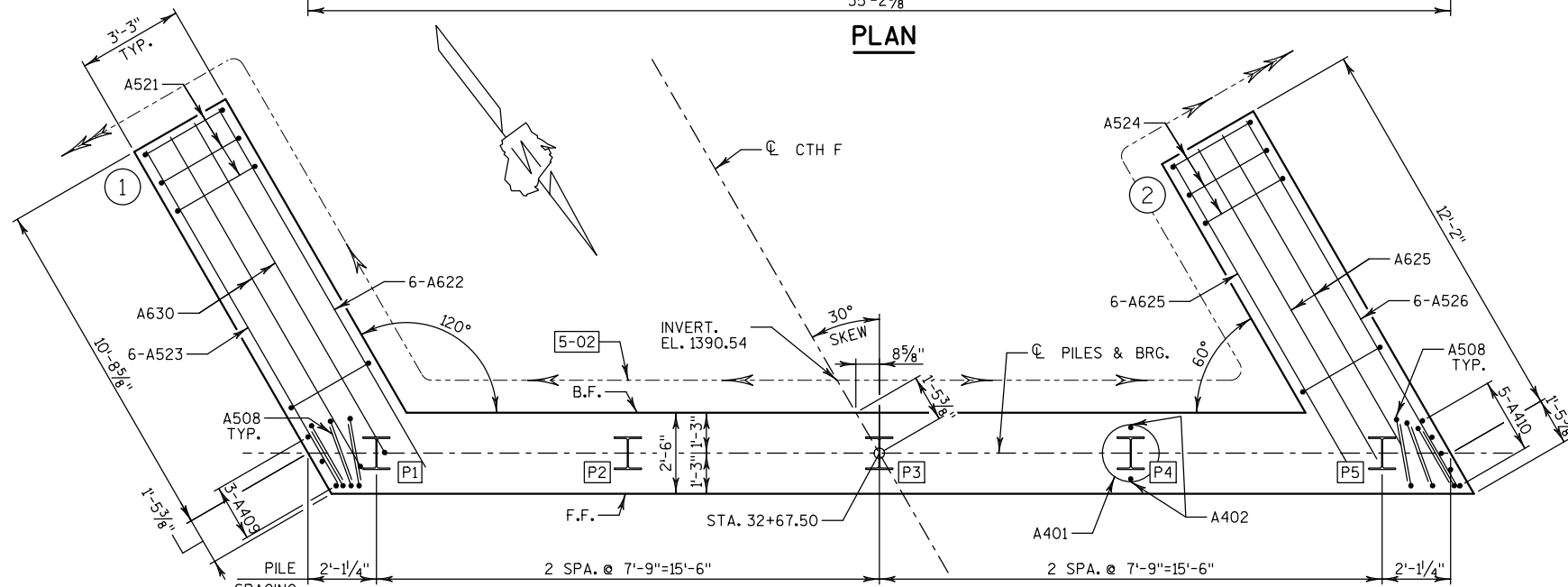
- (X) INDICATES WING NUMBER.
- (PX) INDICATES PILE NUMBER.
- 5-01 KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"x6".
- 5-02 PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".
- 5-03 1/2" FILLER (INCLUDED IN WING LENGTH). SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
- 5-04 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- 5-05 PULL UP TO 2" CLEAR.
- 5-06 3/4"x4" PREFORMED JOINT FILLER TO EXTEND BETWEEN EDGES OF SLAB.
- 5-07 HEAVY RIPRAP. SEE SHEET 1 FOR ADDITIONAL DETAILS.
- 5-08 A520 BARS SPACED AT 1'-0" ON CENTER MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.
- 5-09 OPTIONAL CONSTRUCTION JOINT: KEYWAY FORMED BY BEVELED 2x6 (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED, INCIDENTAL TO "CONCRETE MASONRY").
- 5-10 SEE SINGLE SLOPE PARAPET 42SS SHEET FOR PARAPET REINFORCEMENT.
- 5-11 CONSTRUCTION JOINT, STRIKE OFF AS SHOWN.



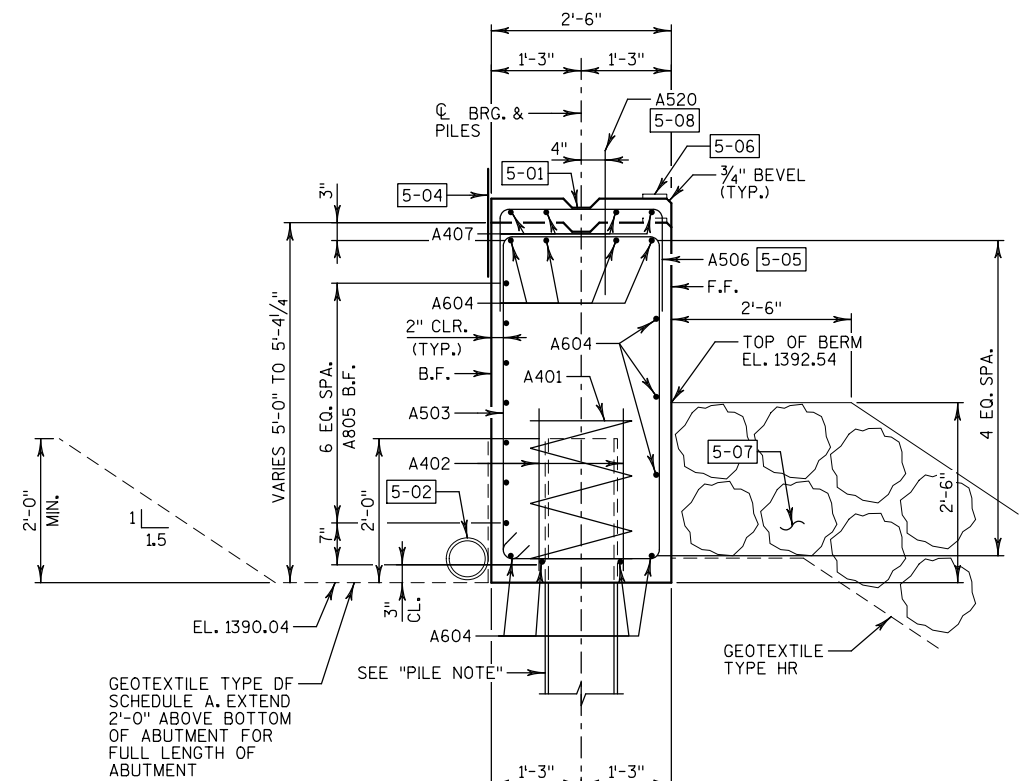
**ELEVATION**  
(LOOKING NORTH)



**PLAN**



**PILE PLAN**



**SECTION A-A**

**PILE NOTES**

ABUTMENT TO BE SUPPORTED ON HP 12-INCH X 53 LB STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220\* TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 15' LONG AT THE SOUTH ABUTMENT.

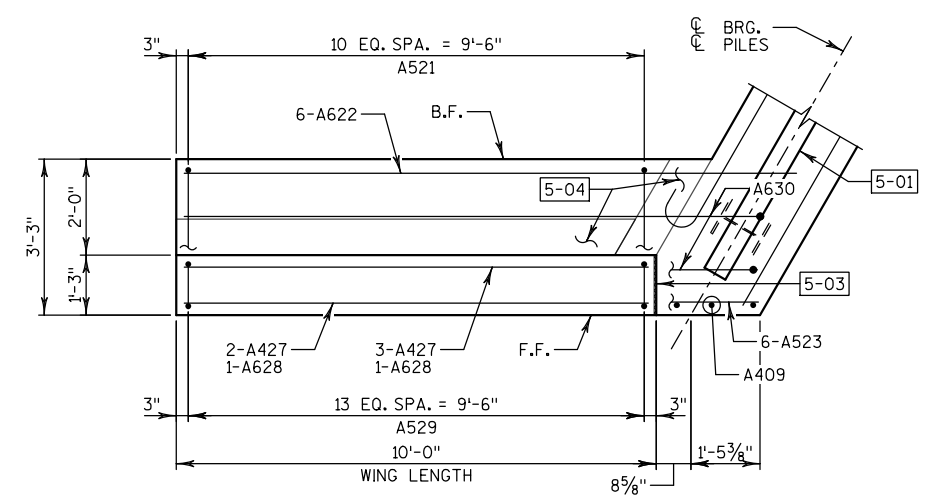
\* THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-37-474</b>			
DRAWN BY TKB		PLANS CK'D. ETP	
<b>SOUTH ABUTMENT</b>			SHEET 5 OF 16

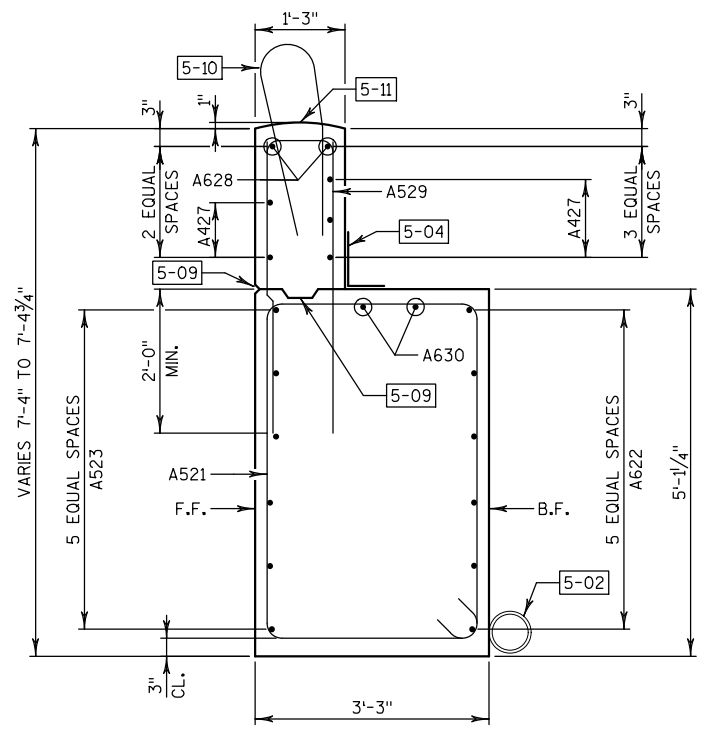


**LEGEND**

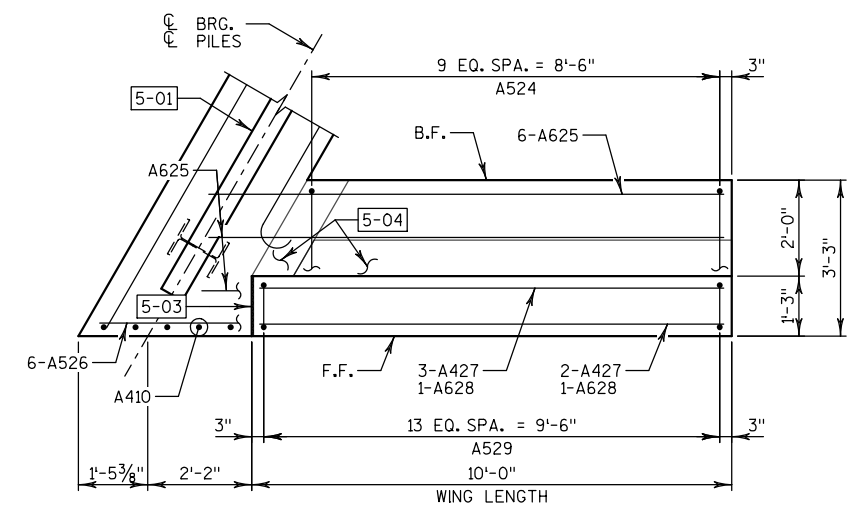
5-XX SEE SHEET 5 FOR CALLOUTS.



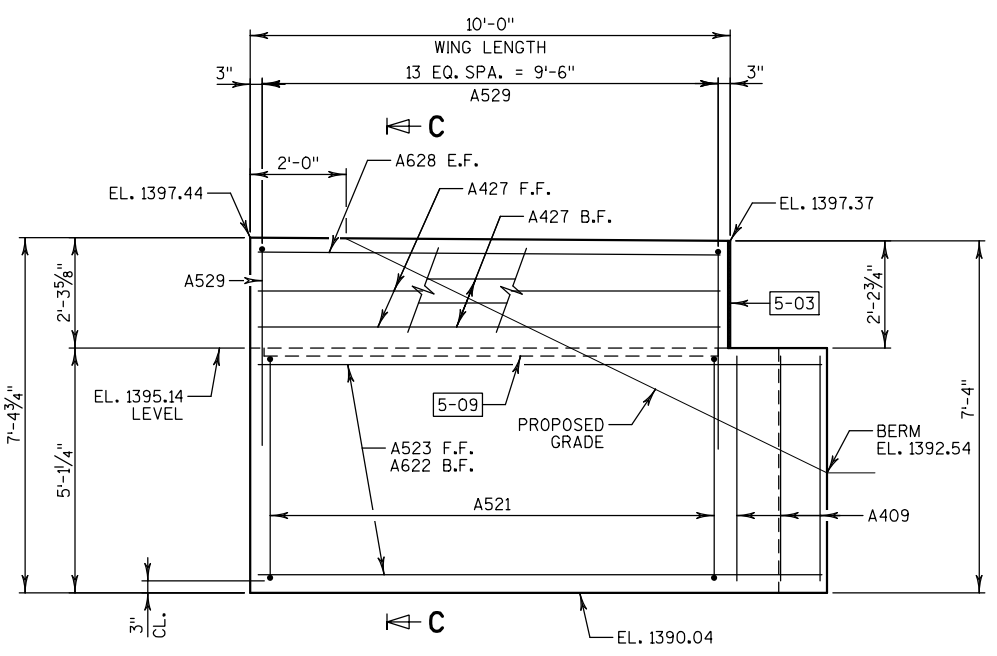
**PLAN - WING 1**



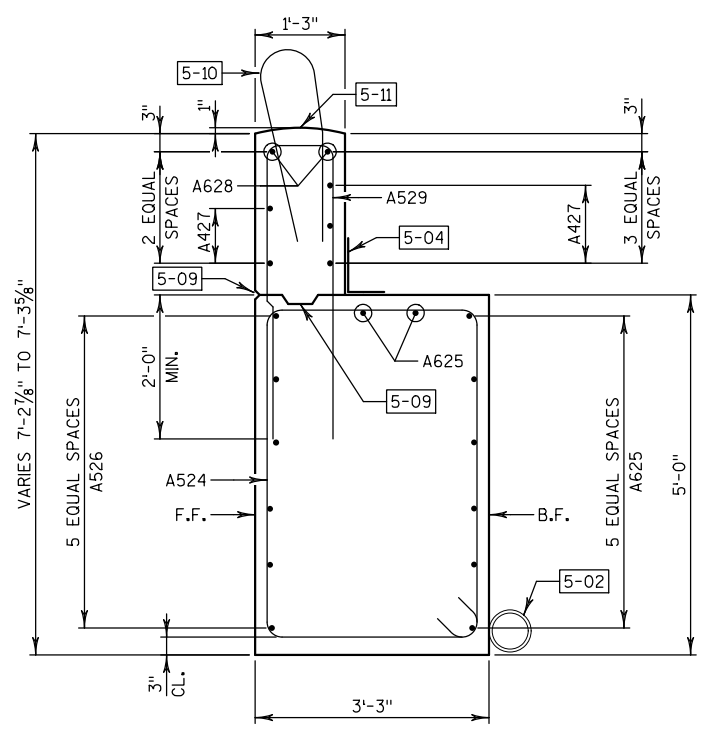
**SECTION C-C**



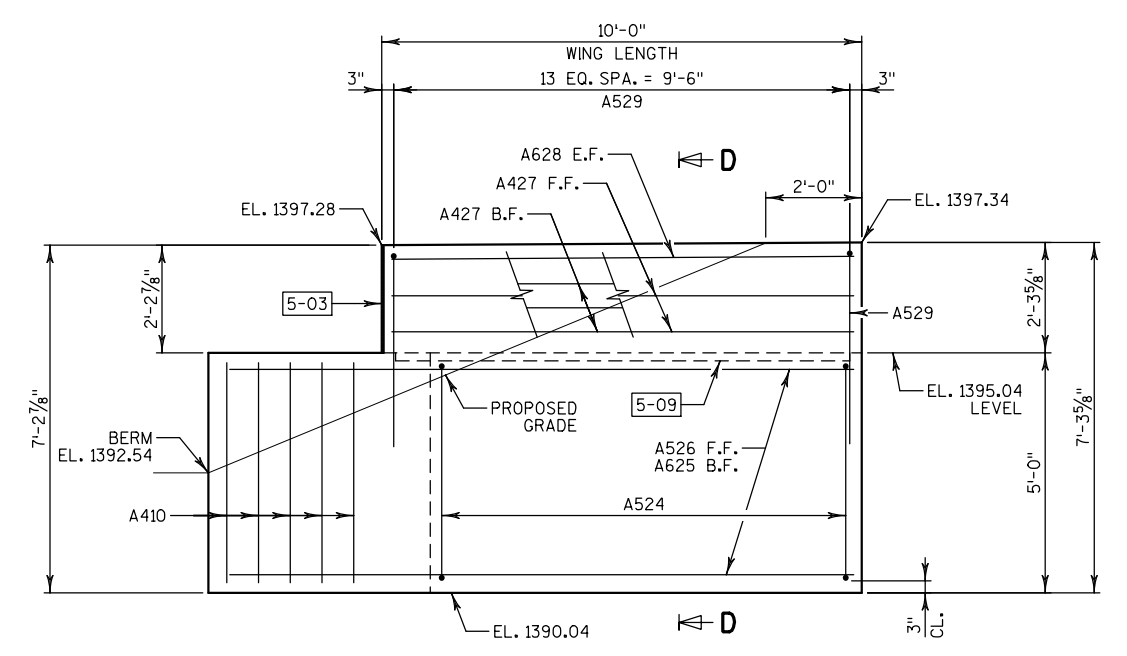
**PLAN - WING 2**



**ELEVATION - WING 1**



**SECTION D-D**



**ELEVATION - WING 2**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-37-474</b>			
DRAWN BY TKB		PLANS CK'D. ETP	
<b>SOUTH ABUTMENT DETAILS-1</b>			SHEET 6 OF 16

**BILL OF BARS - SOUTH ABUTMENT**

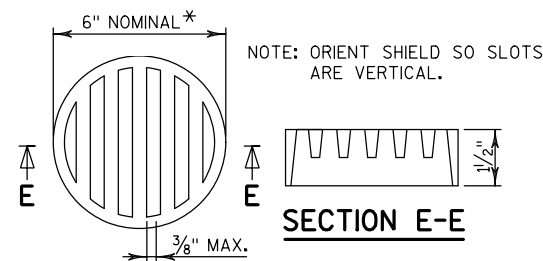
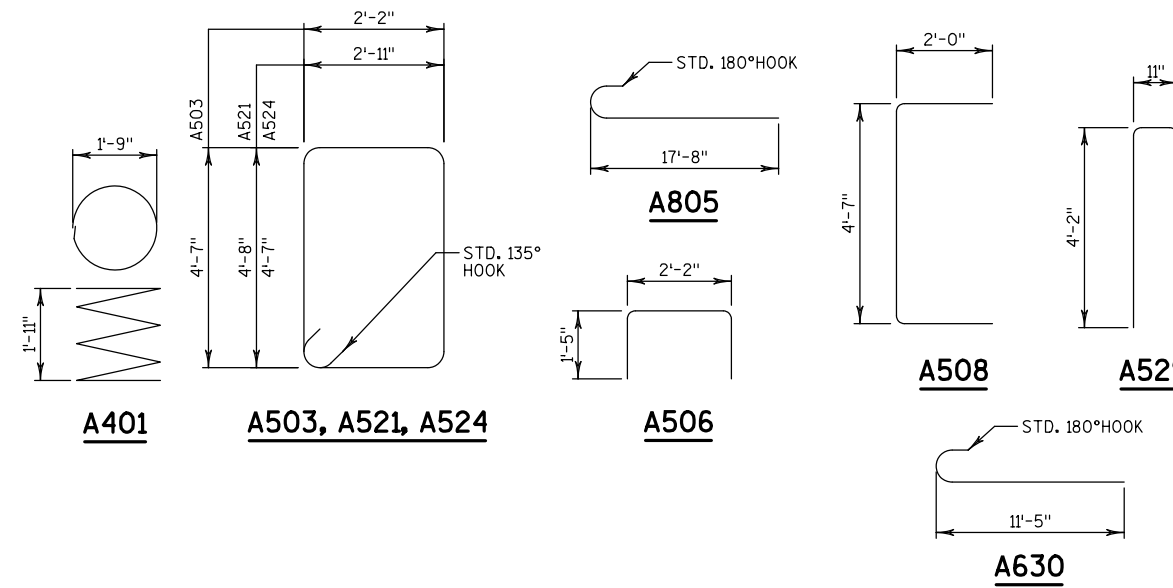
DIMENSIONS IN BENDING DETAILS ARE OUT-TO-OUT OF BAR.

BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
<b>NON-COATED BARS</b>					<b>TOTAL WEIGHT = 2,170 LBS</b>
A401	5	28'-0"	X		BODY - AT PILES - 1 PER PILE VERT.
A402	10	2'-3"			BODY - AT PILES - 2 PER PILE VERT.
A503	40	14'-2"	X		BODY - STIRRUPS VERT.
A604	22	18'-11"			BODY - TOP, F.F. & BOT HORIZ.
A805	14	18'-7"	X		BODY - B.F. HORIZ.
A506	3	4'-9"	X		BODY - TOP VERT.
A407	4	2'-0"			BODY - TOP HORIZ.
A508	12	8'-4"	X		BODY - ENDS VERT.
A409	3	4'-8"			BODY - END NEAR WING 1 VERT.
A410	5	4'-7"			BODY - END NEAR WING 2 VERT.
<b>COATED BARS</b>					<b>TOTAL WEIGHT = 1,240 LBS</b>
A520	34	2'-0"			BODY - DOWELS VERT.
A521	11	15'-10"	X		WING 1 FTG. - STIRRUPS VERT.
A622	6	13'-1"			WING 1 FTG. - B.F. HORIZ.
A523	6	11'-11"			WING 1 FTG. - F.F. HORIZ.
A524	10	15'-8"	X		WING 2 FTG. - STIRRUPS VERT.
A625	8	10'-11"			WING 2 FTG. - B.F. & TOP HORIZ.
A526	6	13'-1"			WING 2 FTG. - F.F. HORIZ.
A427	10	9'-8"			WINGS - B.F. & F.F. HORIZ.
A628	4	9'-8"			WINGS - TOP HORIZ.
A529	28	8'-11"	X		WINGS - STIRRUPS VERT.
A630	2	12'-1"	X		WING 1 FTG. - TOP HORIZ.

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

**LEGEND**

[5-XX] SEE SHEET 5 FOR CALLOUTS.



\* DIMENSION IS APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

**RODENT SHIELD DETAIL**

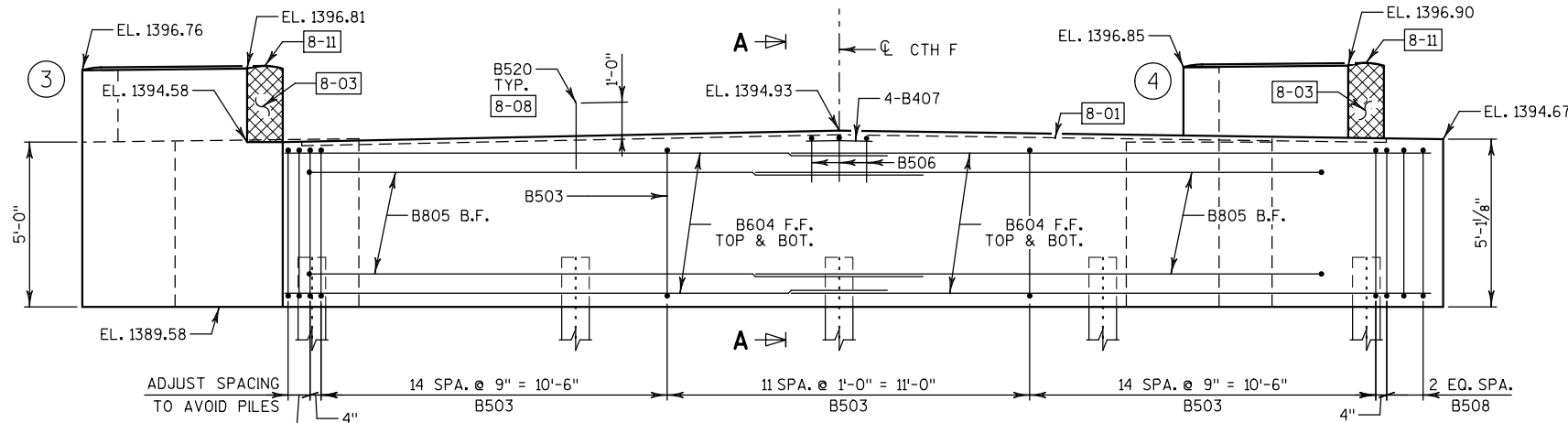
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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 OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO.10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

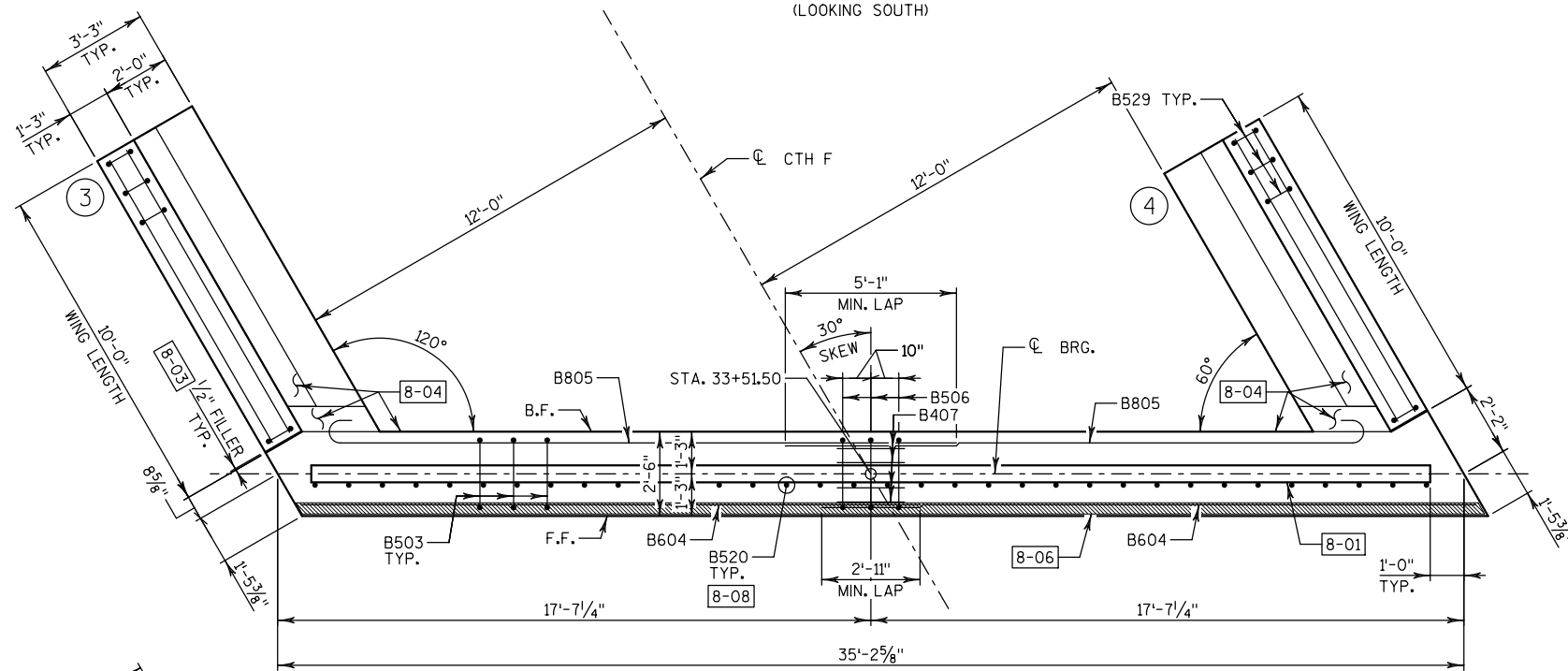
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-37-474</b>			
DRAWN BY TKB		PLANS CK'D. ETP	
<b>SOUTH ABUTMENT DETAILS-2</b>			SHEET 7 OF 16

**LEGEND**

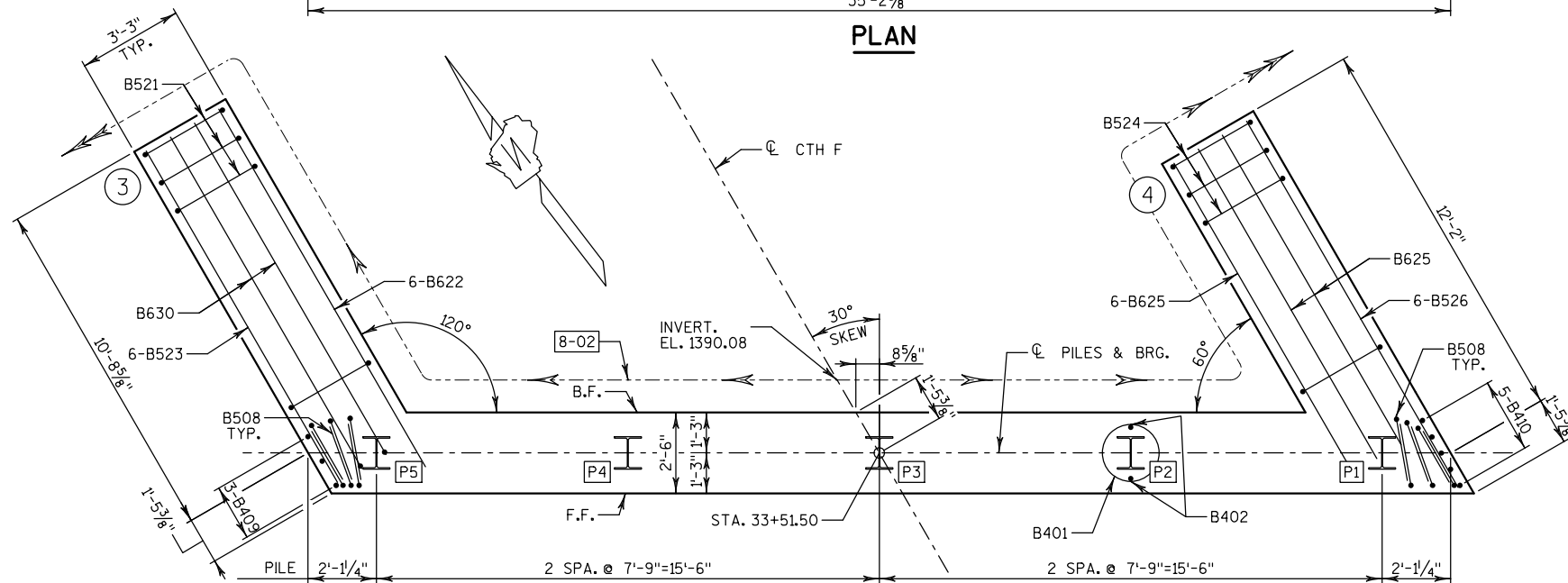
- (X) INDICATES WING NUMBER.
- [PX] INDICATES PILE NUMBER.
- [8-01] KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"x6".
- [8-02] PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".
- [8-03] 1/2" FILLER (INCLUDED IN WING LENGTH). SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
- [8-04] 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- [8-05] PULL UP TO 2" CLEAR.
- [8-06] 3/4"x4" PREFORMED JOINT FILLER TO EXTEND BETWEEN EDGES OF SLAB.
- [8-07] HEAVY RIPRAP. SEE SHEET 1 FOR ADDITIONAL DETAILS.
- [8-08] B520 BARS SPACED AT 1'-0" ON CENTER MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.
- [8-09] OPTIONAL CONSTRUCTION JOINT: KEYWAY FORMED BY BEVELED 2x6 (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED, INCIDENTAL TO "CONCRETE MASONRY").
- [8-10] SEE SINGLE SLOPE PARAPET 42SS SHEET FOR PARAPET REINFORCEMENT.
- [8-11] CONSTRUCTION JOINT. STRIKE OFF AS SHOWN.



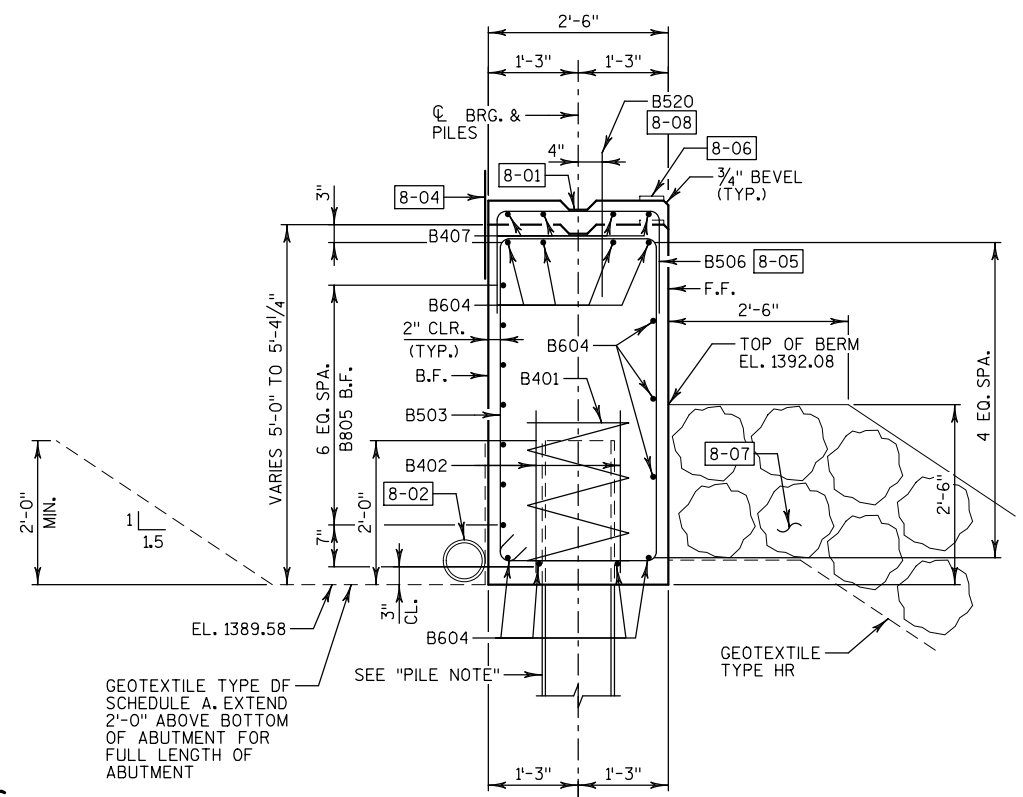
**ELEVATION**  
(LOOKING SOUTH)



**PLAN**



**PILE PLAN**



**SECTION A-A**

**PILE NOTES**

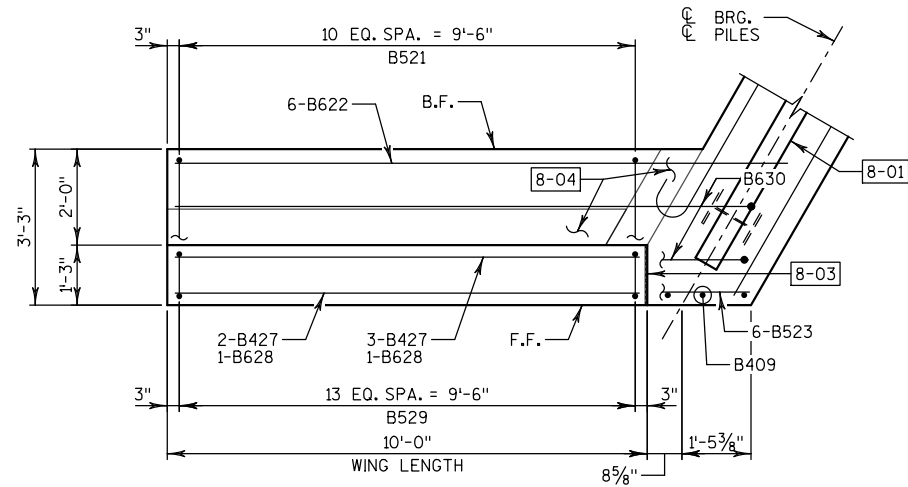
ABUTMENT TO BE SUPPORTED ON HP 12-INCH X 53 LB STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220\* TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 20' LONG AT THE NORTH ABUTMENT.

\* 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.

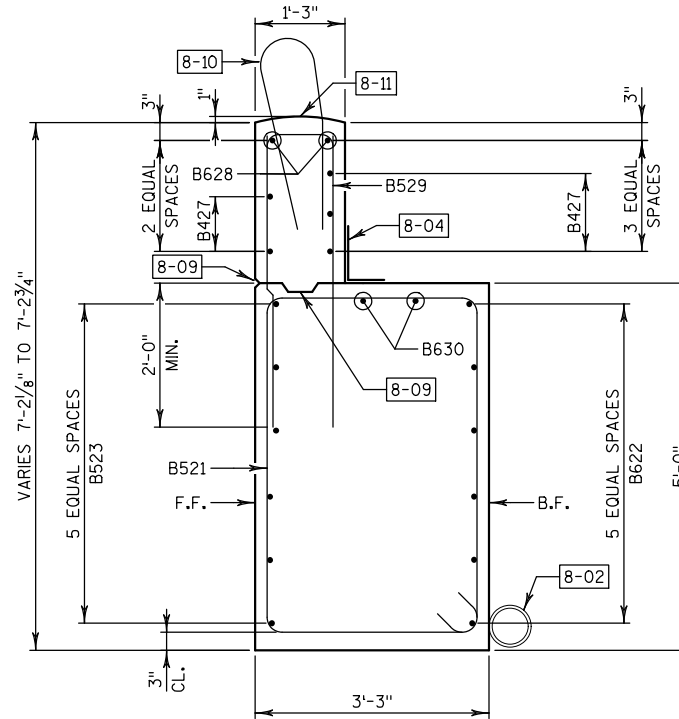
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-37-474</b>			
		DRAWN BY TKB	PLANS CK'D. ETP
<b>NORTH ABUTMENT</b>			SHEET 8 OF 16

**LEGEND**

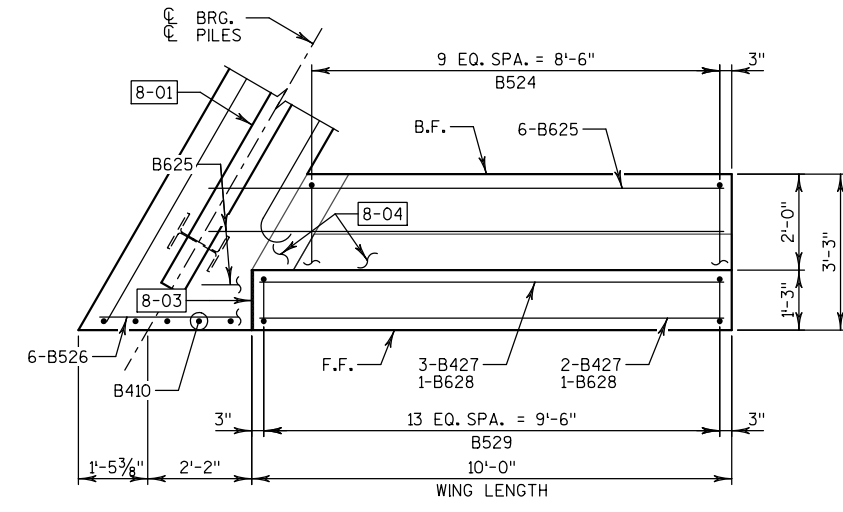
8-XX SEE SHEET 8 FOR CALLOUTS.



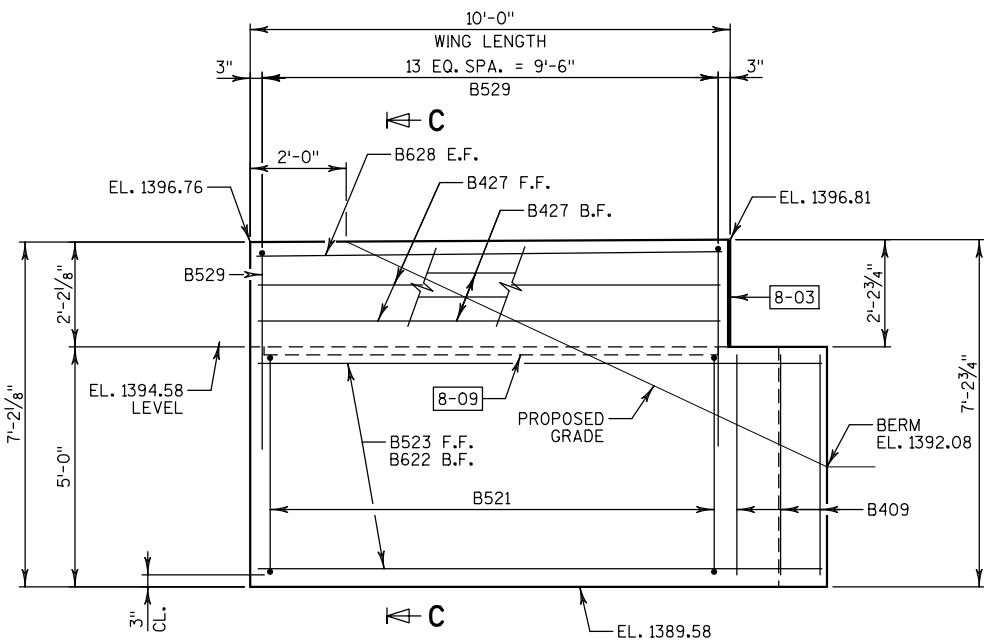
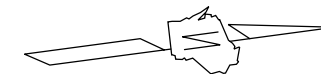
**PLAN - WING 3**



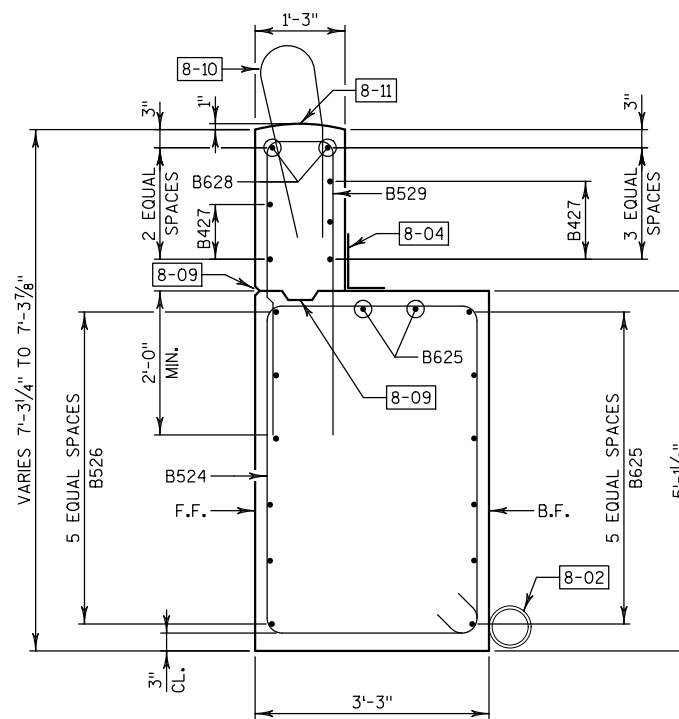
**SECTION C-C**



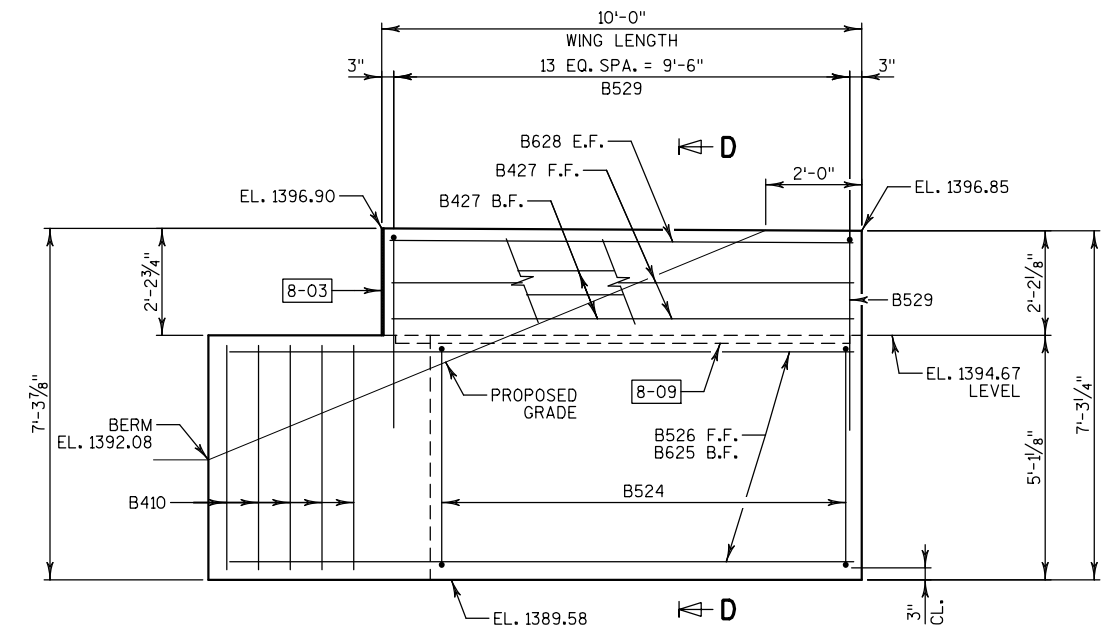
**PLAN - WING 4**



**ELEVATION - WING 3**



**SECTION D-D**



**ELEVATION - WING 4**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-37-474</b>			
DRAWN BY TKB		PLANS CK'D. ETP	
<b>NORTH ABUTMENT DETAILS-1</b>			SHEET 9 OF 16

**BILL OF BARS - NORTH ABUTMENT**

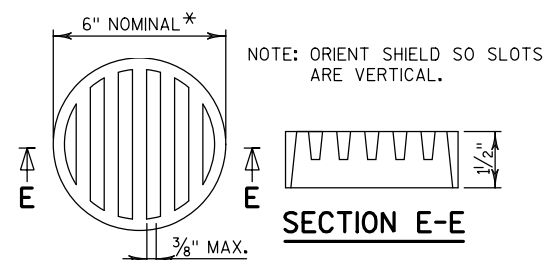
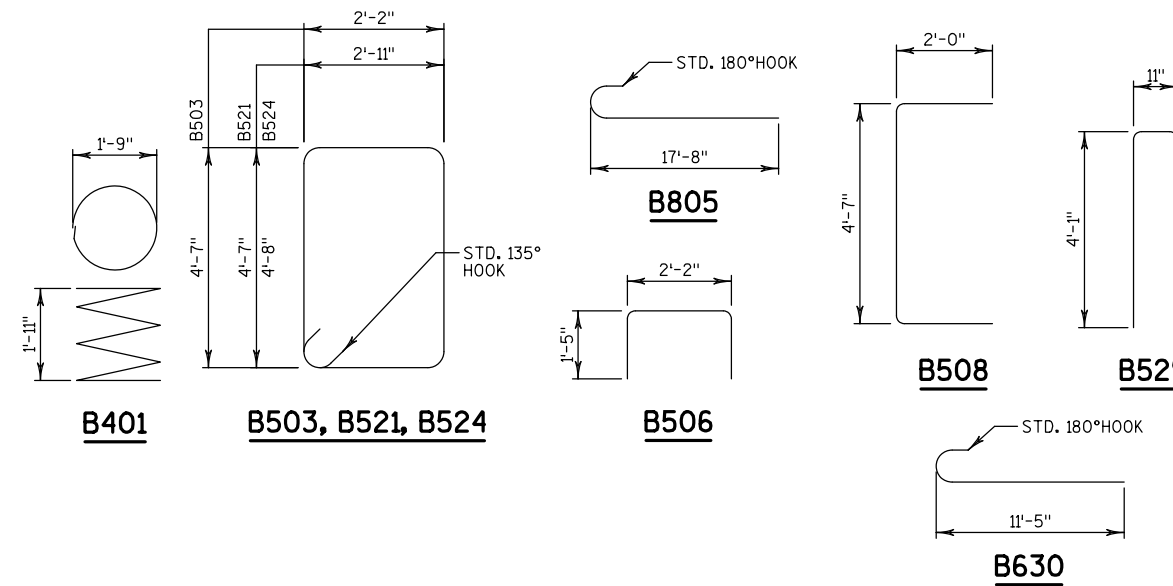
DIMENSIONS IN BENDING DETAILS ARE OUT-TO-OUT OF BAR.

BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
<b>NON-COATED BARS</b>					<b>TOTAL WEIGHT = 2,170 LBS</b>
B401	5	28'-0"	X		BODY - AT PILES - 1 PER PILE VERT.
B402	10	2'-3"			BODY - AT PILES - 2 PER PILE VERT.
B503	40	14'-2"	X		BODY - STIRRUPS VERT.
B604	22	18'-11"			BODY - TOP, F.F. & BOT HORIZ.
B805	14	18'-7"	X		BODY - B.F. HORIZ.
B506	3	4'-9"	X		BODY - TOP VERT.
B407	4	2'-0"			BODY - TOP HORIZ.
B508	12	8'-4"	X		BODY - ENDS VERT.
B409	3	4'-7"			BODY - END NEAR WING 3 VERT.
B410	5	4'-8"			BODY - END NEAR WING 4 VERT.
<b>COATED BARS</b>					<b>TOTAL WEIGHT = 1,240 LBS</b>
B520	34	2'-0"			BODY - DOWELS VERT.
B521	11	15'-8"	X		WING 3 FTG. - STIRRUPS VERT.
B622	6	13'-1"			WING 3 FTG. - B.F. HORIZ.
B523	6	11'-11"			WING 3 FTG. - F.F. HORIZ.
B524	10	15'-10"	X		WING 4 FTG. - STIRRUPS VERT.
B625	8	10'-11"			WING 4 FTG. - B.F. & TOP HORIZ.
B526	6	13'-1"			WING 4 FTG. - F.F. HORIZ.
B427	10	9'-8"			WINGS - B.F. & F.F. HORIZ.
B628	4	9'-8"			WINGS - TOP HORIZ.
B529	28	8'-9"	X		WINGS - STIRRUPS VERT.
B630	2	12'-1"	X		WING 3 FTG. - TOP HORIZ.

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

**LEGEND**

[8-XX] SEE SHEET 8 FOR CALLOUTS.



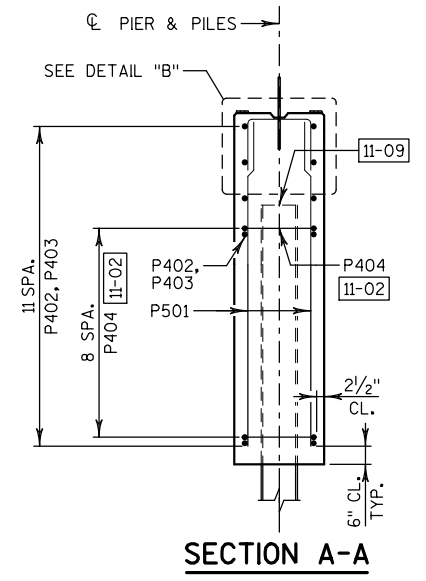
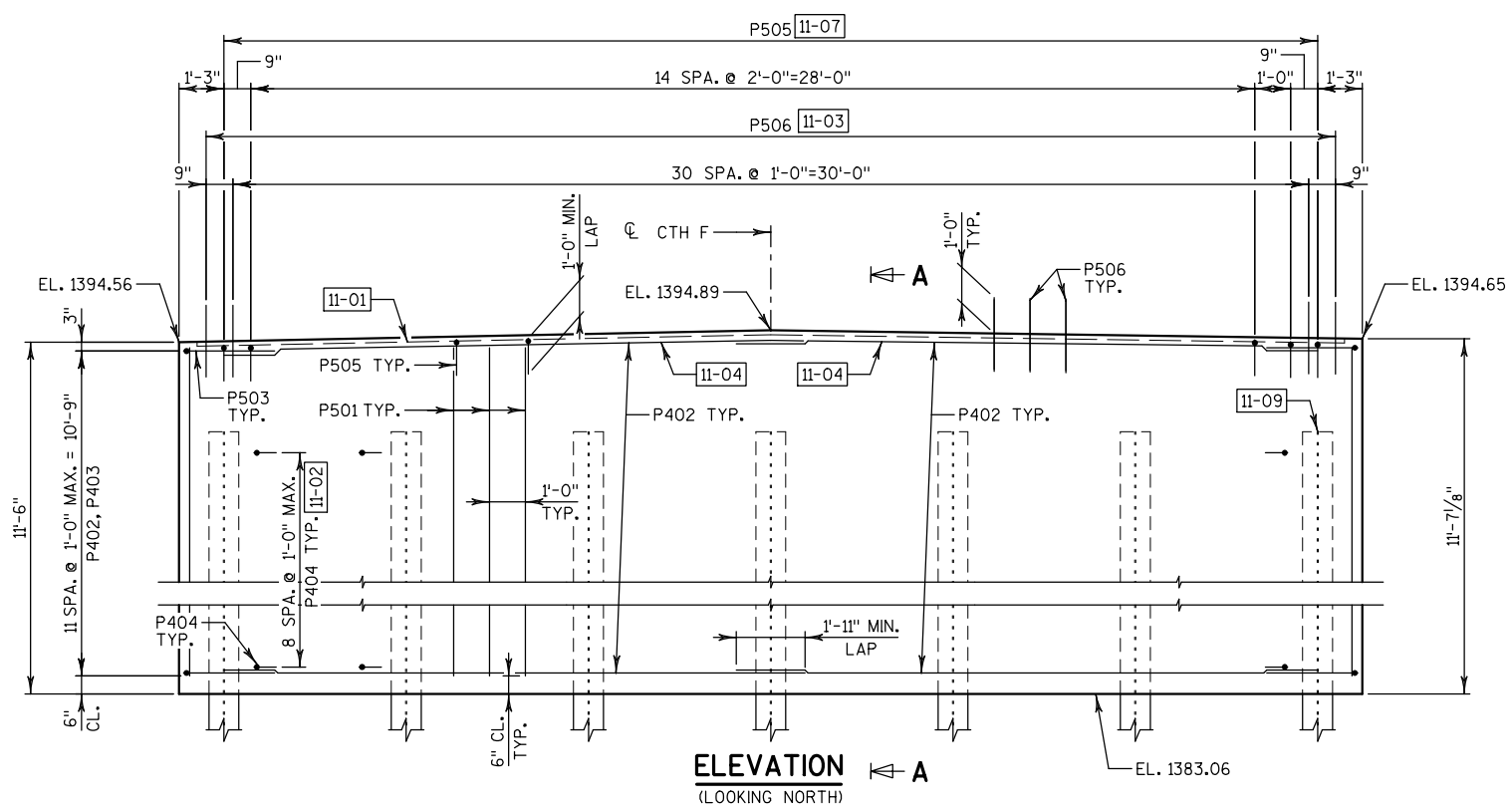
\* DIMENSION IS APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

**RODENT SHIELD DETAIL**

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 OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

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STRUCTURE B-37-474			
DRAWN BY TKB		PLANS CK'D. ETP	
NORTH ABUTMENT DETAILS-2			SHEET 10 OF 16

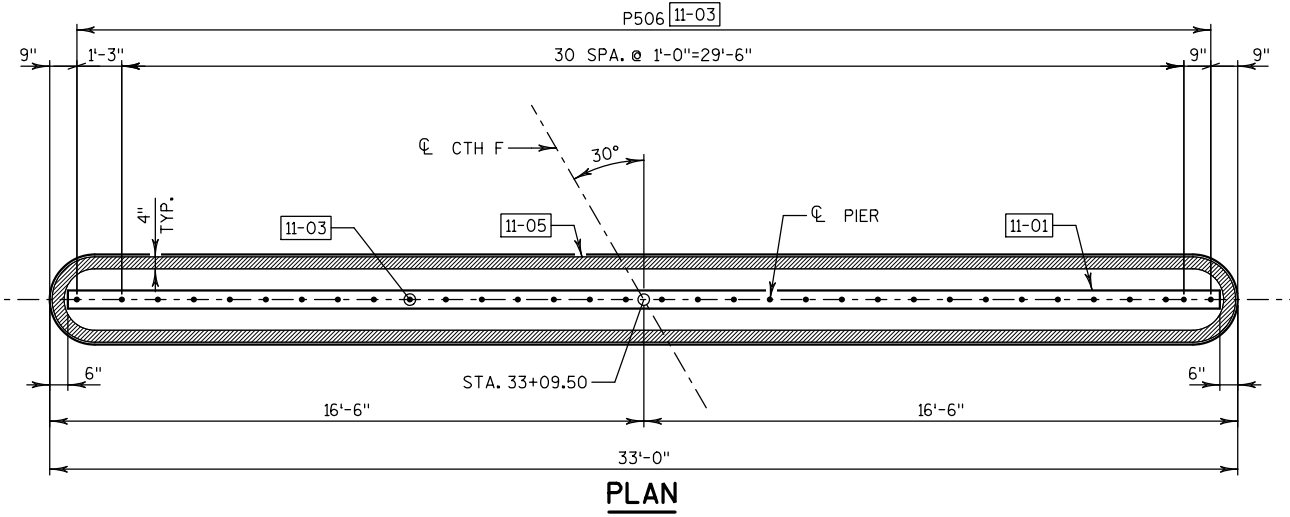
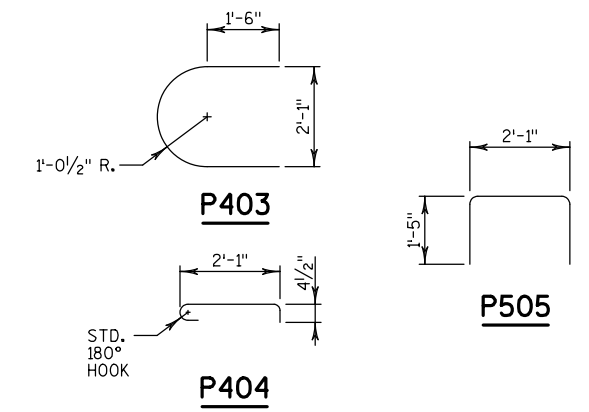


**BILL OF BARS - PIER**

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

BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS					TOTAL WEIGHT = 1,620 LBS
P501	70	10'-10"			E.F. VERT.
P402	48	16'-3"			E.F. HORIZ.
P403	24	6'-4"	X		ENDS HORIZ.
P404	63	2'-11"	X		TIE BAR HORIZ.
P505	18	4'-8"	X		TOP TIE VERT.
COATED BARS					TOTAL WEIGHT = 70 LBS
P506	33	2'-0"			DOWEL BAR VERT.

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



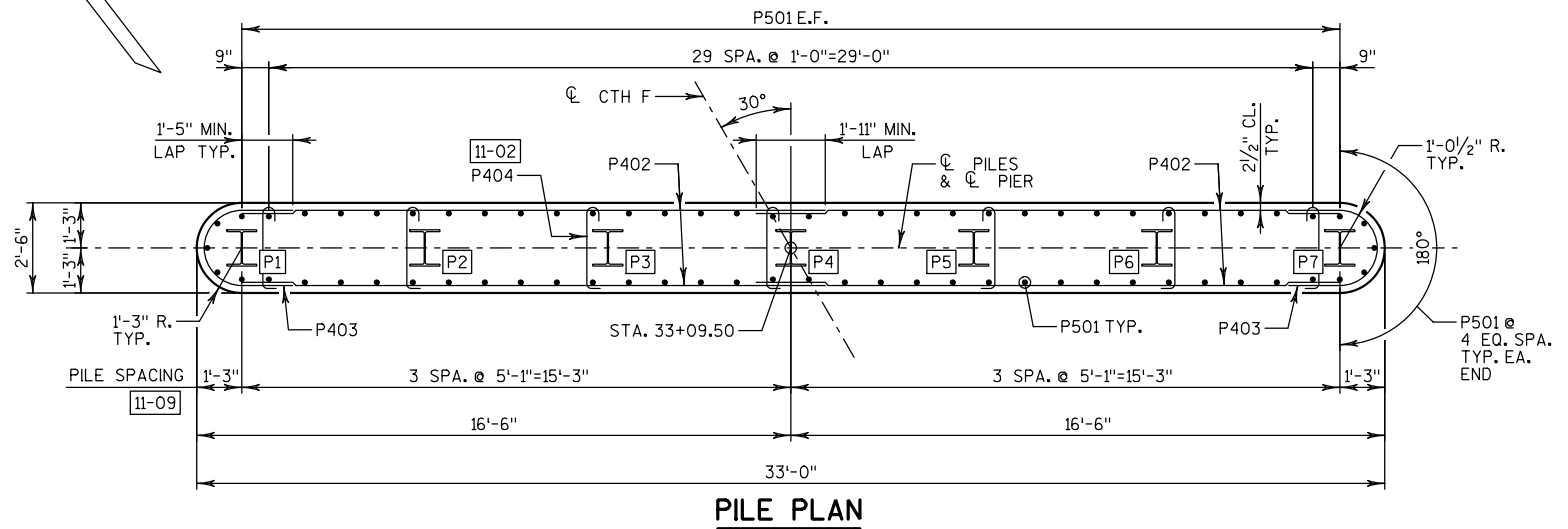
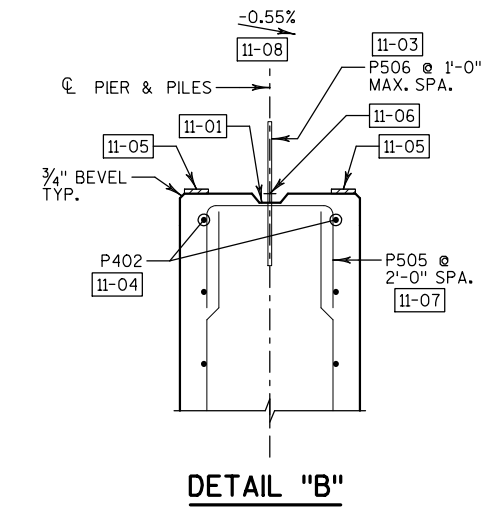
**PILE NOTES**

PIER TO BE SUPPORTED ON HP 12-INCHx53 LB STEEL PILING. PIER PILES TO BE SEATED IN PRE-BORED HOLES CORED A MINIMUM OF 3 FEET INTO SOUND ROCK (PRE-BORED TO EL. 1361.8). PILE DRIVING NOT REQUIRED. CASING REQUIRED. ESTIMATED 30' LONG AT THE PIER.

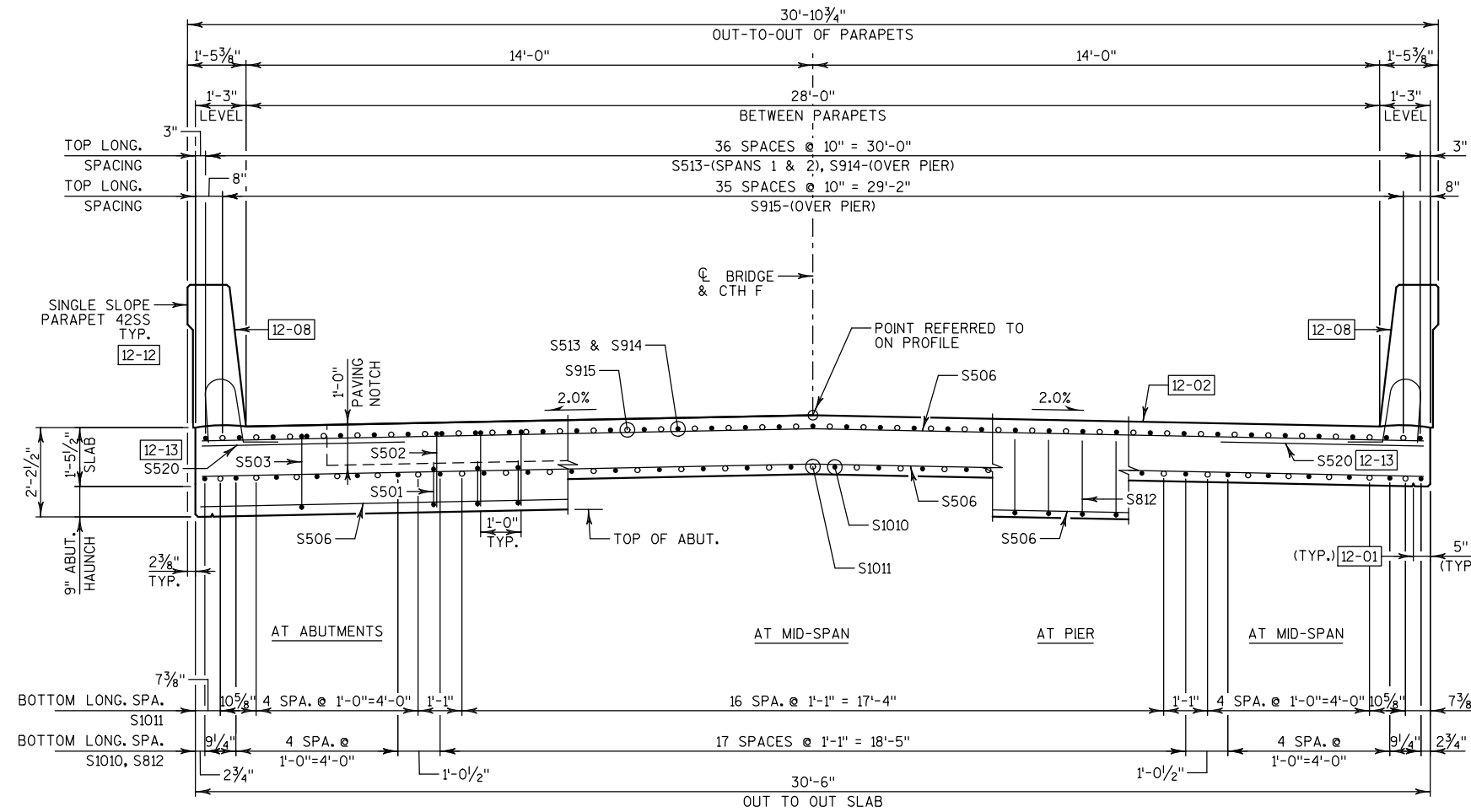
THE FACTORED AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR DESIGN IS 200 TONS MULTIPLIED BY A RESISTANCE FACTOR OF 0.5.

**LEGEND**

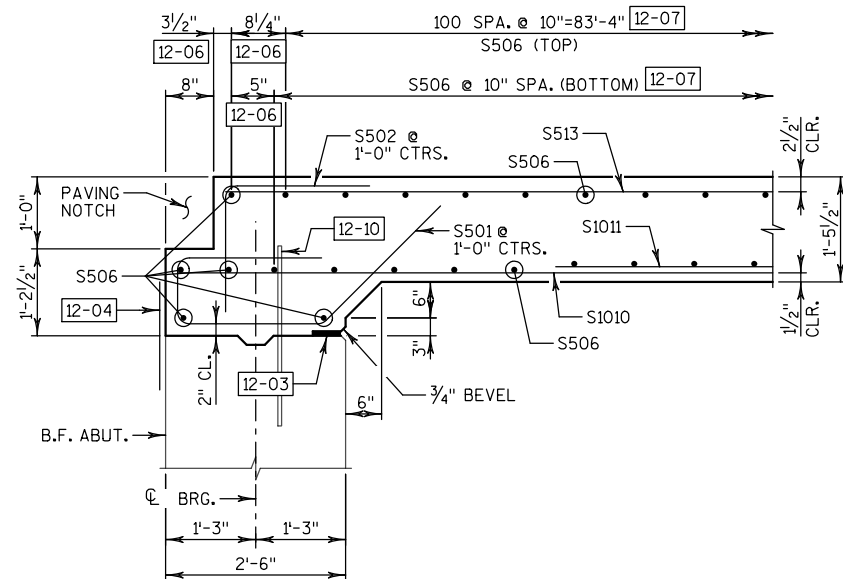
- [PX] INDICATES PILE NUMBER.
- [11-01] KEYED CONSTRUCTION JOINT-FORMED BY BEVELED 2x6.
- [11-02] P404 BARS PLACED ADJACENT TO EACH PILE ONLY. TIE TO THE NEAREST P501 BAR. VERTICAL SPACING TO MATCH TYPICAL P402, P403 SPACING. ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.
- [11-03] P506 BARS @ 1'-0" MAX. CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONCRETE).
- [11-04] FIELD BEND TO FOLLOW TOP OF PIER SLOPE.
- [11-05] 4"x3/4" PREFORMED JOINT FILLER TYP.
- [11-06] ELEVATION SHOWN IS TAKEN AT THE CL OF PIER.
- [11-07] PULL UP TO 2" CLEAR.
- [11-08] SLOPE TOP OF PIER AS SHOWN.
- [11-09] TYPICAL TOP OF PILE EL. 1391.8. SEE "PILE NOTES".



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PIER			SHEET 11 OF 16

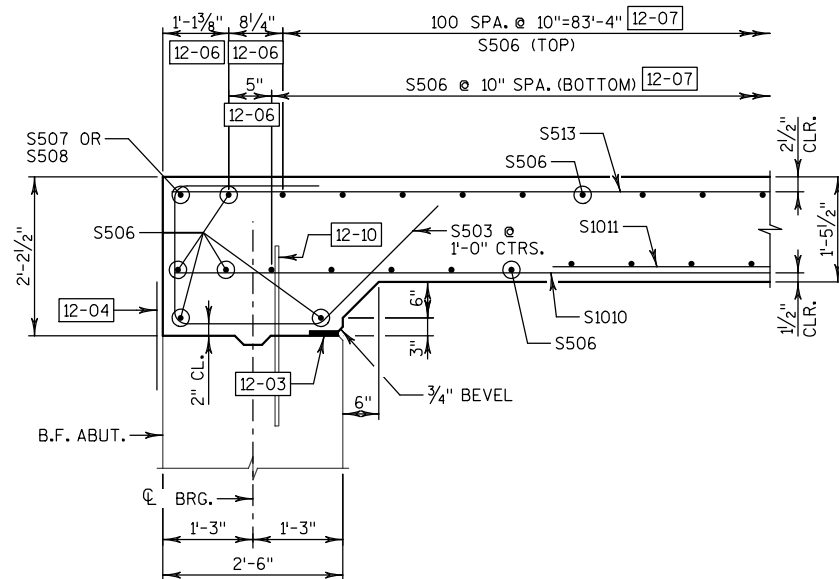


**CROSS SECTION THRU SLAB**  
(LOOKING NORTH)



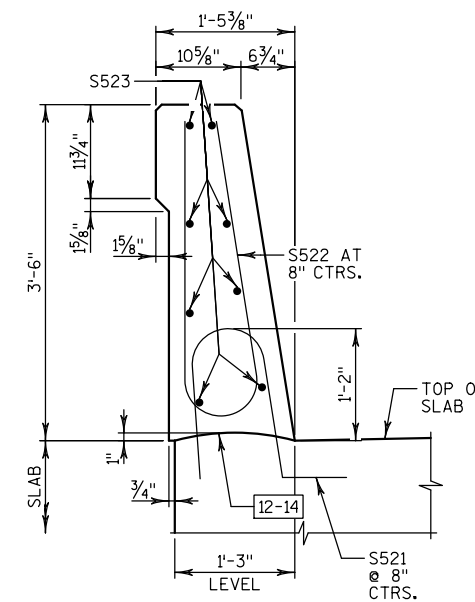
**PARTIAL LONGITUDINAL SECTION AT ABUTMENTS**

(SHOWN AT PAVING NOTCH)  
DIMENSIONS ARE PERPENDICULAR TO  $\bar{C}$  ABUTMENT U.N.O.  
BARS PLACED PARALLEL TO  $\bar{R}$  CTH F U.N.O.



**PARTIAL LONGITUDINAL SECTION AT ABUTMENTS**

(SHOWN OUTSIDE PAVING NOTCH LIMITS)  
DIMENSIONS ARE PERPENDICULAR TO  $\bar{C}$  ABUTMENT U.N.O.  
BARS PLACED PARALLEL TO  $\bar{R}$  CTH F U.N.O.



**SECTION THRU PARAPET ON SLAB**

**NOTES**

THE TOP TRANSVERSE BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY.

THE BOTTOM LONGITUDINAL BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

TRANSVERSE BARS SHALL BE PLACED PARALLEL TO SUBSTRUCTURE UNITS.

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

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE  $\bar{C}$  OF ABUTMENTS, THE  $\bar{C}$  PIERS AND AT 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG THE GUTTER LINES AND  $\bar{R}$  CTH F/CROWN POINT. RECORD THE ELEVATIONS IN THE "SURVEY TOP OF SLAB ELEVATIONS" TABLE ON "SUPERSTRUCTURE DETAILS-4" SHEET FOR THE "AS BUILT" PLANS.

PARAPETS SHALL BE POURED AFTER FORMWORK IS RELEASED.

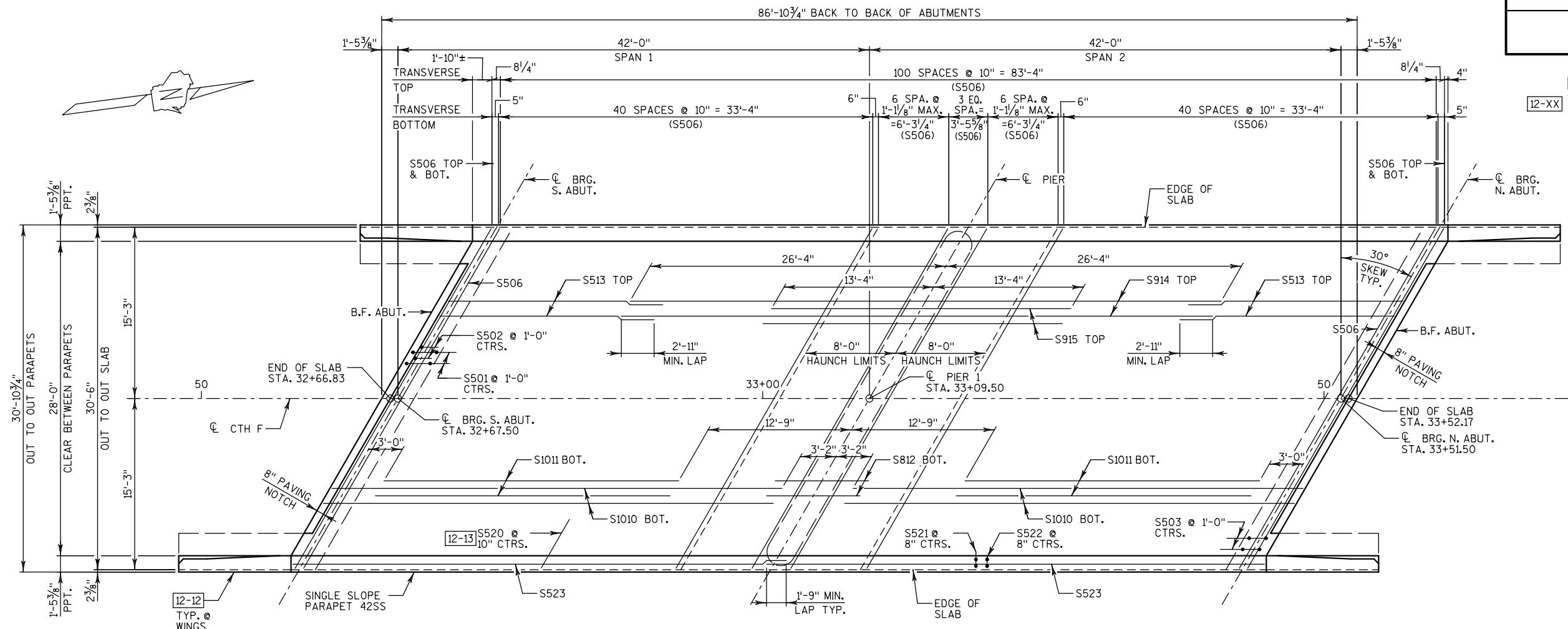
**LEGEND**

- 12-01 3/4" CONTINUOUS DRIP "V" GROOVE. END 6" FROM FRONT FACE OF ABUTMENTS.
- 12-02 COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATION.
- 12-03 3/4"x4" PREFORMED JOINT FILLER TO EXTEND BETWEEN EDGES OF SLAB OR AROUND ENTIRE OUTSIDE EDGE OF TOP OF PIER.
- 12-04 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- 12-05 DIMENSION IS TAKEN PERPENDICULAR TO  $\bar{C}$  SUBSTRUCTURES.
- 12-06 DIMENSION IS TAKEN PARALLEL TO  $\bar{R}$  CTH F.
- 12-07 BARS PLACED PARALLEL TO SKEW AND SPACED ALONG  $\bar{R}$  CTH F.
- 12-08 PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE ROADWAY FACE AND TOP OF PARAPETS.
- 12-09 FIELD BEND S506 BARS AT B.F. OF ABUTMENT TO MAINTAIN 2" CLEAR FROM WING.
- 12-10 SEE ABUTMENT SHEETS FOR DOWEL INFO.
- 12-11 SEE PIER SHEETS FOR DOWEL INFO.
- 12-12 SEE "SINGLE SLOPE PARAPET 42SS" SHEET FOR DETAILS.
- 12-13 S520 TOP TRANSVERSE SLAB BARS SPACED BETWEEN ALL S506 TOP TRANSVERSE SLAB REINFORCEMENT ALONG EDGE OF SLAB AT EACH EDGE.
- 12-14 CONSTRUCTION JOINT. STRIKE OFF AS SHOWN.

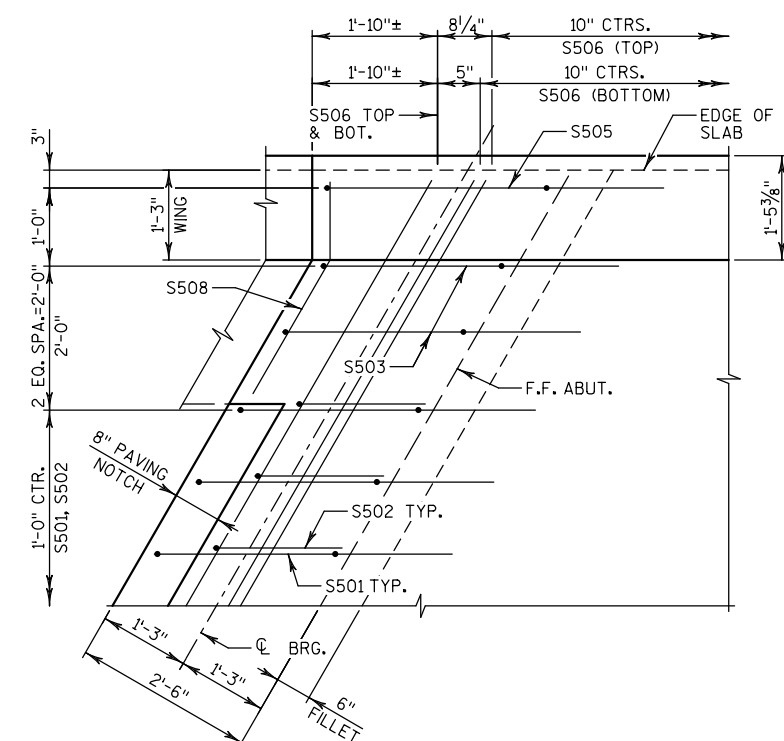
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-37-474</b>			
DRAWN BY TKB		PLANS CK'D. ETP	
<b>SUPERSTRUCTURE DETAILS-1</b>			SHEET 12 OF 16

**LEGEND**

12-XX SEE "SUPERSTRUCTURE DETAILS-1" SHEET FOR CALLOUTS AND NOTES.

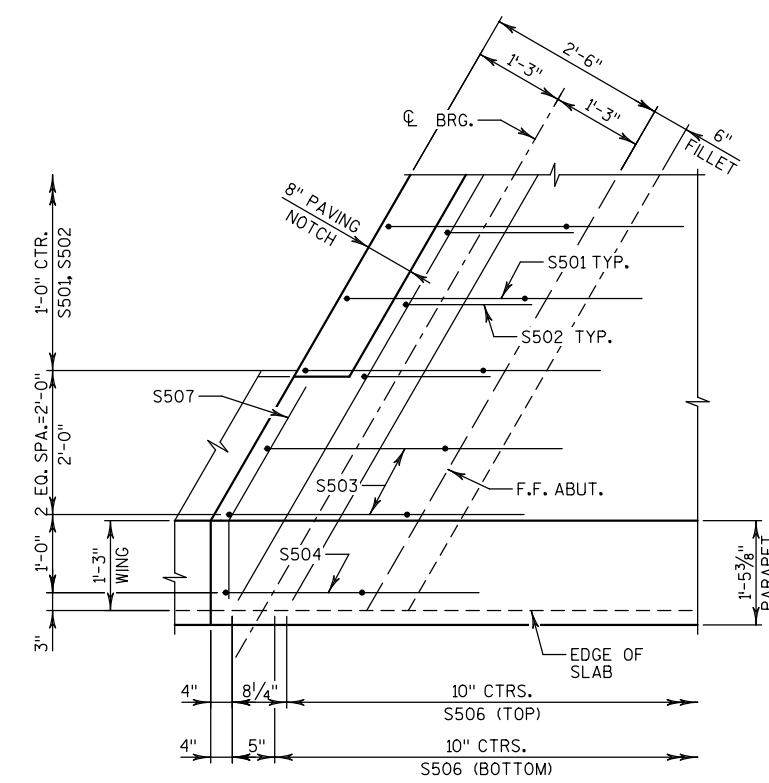


**PLAN**



**CORNER DETAIL AT WINGS 2 & 4**

SLAB LONGITUDINAL AND ADDITIONAL TRANSVERSE REINFORCEMENT NOT SHOWN FOR CLARITY



**CORNER DETAIL AT WINGS 1 & 3**

SLAB LONGITUDINAL AND ADDITIONAL TRANSVERSE REINFORCEMENT NOT SHOWN FOR CLARITY

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-474			
DRAWN BY TKB		PLANS CK'D. ETP	
SUPERSTRUCTURE DETAILS-2			SHEET 13 OF 16



**LEGEND**

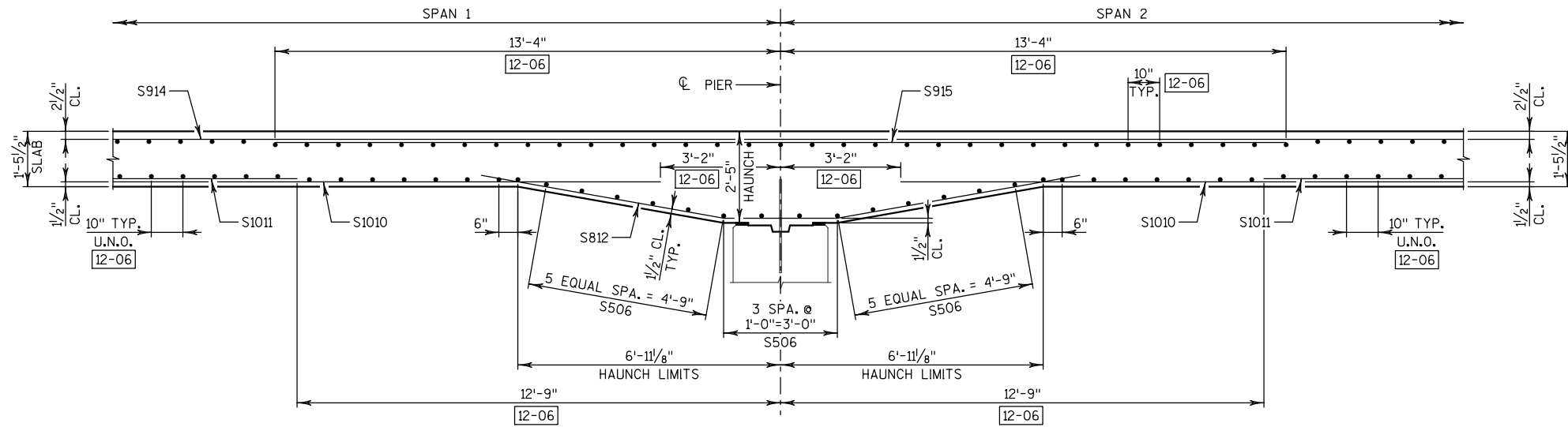
[12-XX] SEE "SUPERSTRUCTURE DETAILS-1" SHEET FOR CALLOUTS AND NOTES.

**BILL OF BARS - SUPERSTRUCTURE**

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

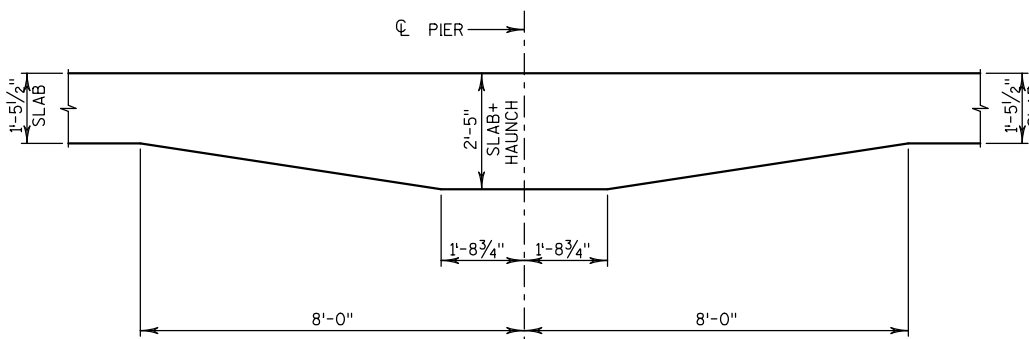
BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
COATED BARS					
					TOTAL WEIGHT = 43,610 LBS
S501	50	7'-2"	X		SLAB AT ABUTMENT VERT.
S502	50	3'-3"	X		SLAB AT ABUTMENT VERT.
S503	8	7'-5"	X		SLAB AT ABUTMENT ENDS VERT.
S504	2	6'-9"	X		SLAB AT ABUTMENT ENDS NEAR W1 AND W3 VERT.
S505	2	8'-2"	X		SLAB AT ABUTMENT ENDS NEAR W2 AND W4 VERT.
S506	209	34'-10"			SLAB TOP & BTM. TRANSVERSE BARS TRANS.
S507	2	3'-2"	X		SLAB AT ABUTMENT ENDS NEAR W1 AND W3 TRANS.
S508	2	3'-2"	X		SLAB AT ABUTMENT ENDS NEAR W2 AND W4 TRANS.
S1010	60	40'-2"			SLAB - BTM. LONGIT.
S1011	58	26'-3"			SLAB - BTM. LONGIT.
S812	30	18'-1"	X		SLAB - BTM. HAUNCH LONGIT.
S513	74	19'-11"			SLAB - TOP LONGIT.
S914	37	52'-8"			SLAB - TOP, OVER PIER LONGIT.
S915	36	26'-8"			SLAB - TOP, OVER PIER LONGIT.
S520	204	5'-0"			SLAB - TOP AT EDGES TRANS.
S521	262	4'-5"	X		PARAPET VERT.
S522	262	6'-8"	X		PARAPET VERT.
S523	32	44'-2"			PARAPET HORIZ.

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



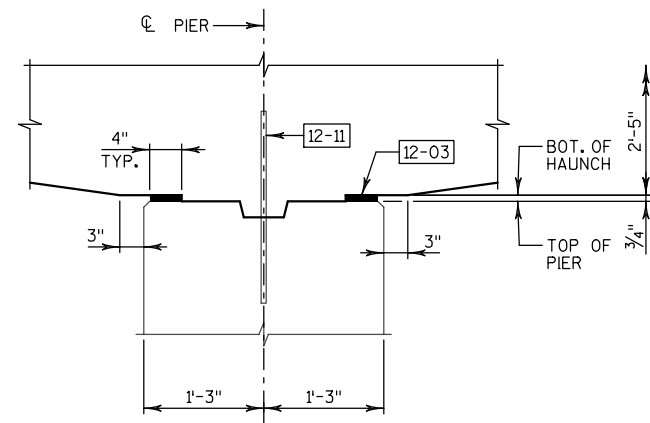
**PARTIAL LONGITUDINAL SECTION AT PIER**

(DIMENSIONS ARE PERPENDICULAR TO PIER U.N.O.)



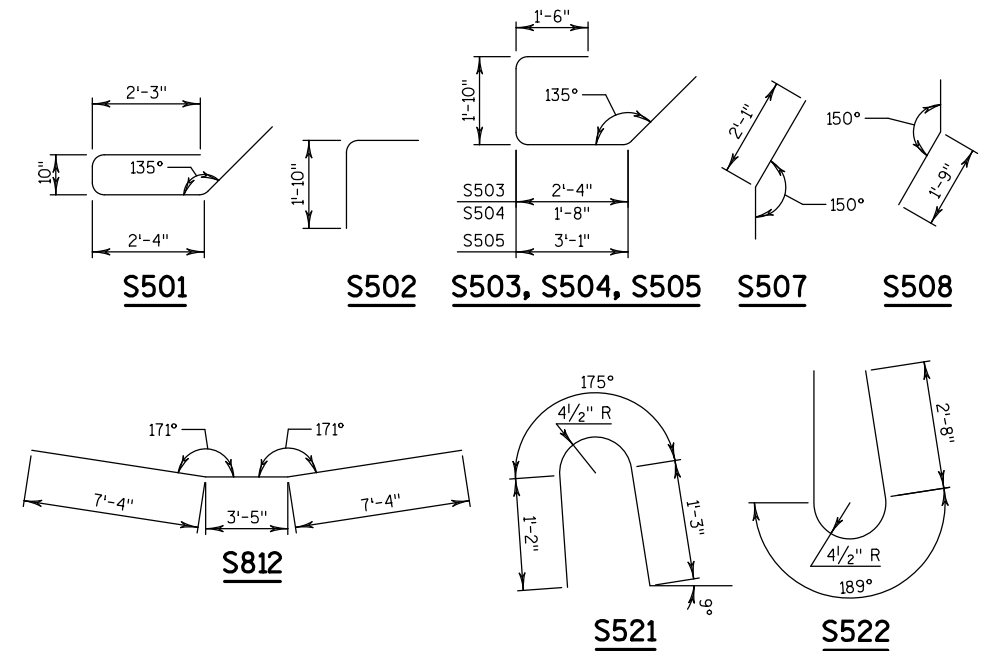
**EDGE OF SLAB AT HAUNCH**

(DIMENSIONS ARE PARALELL TO R.C.T.H F)  
(REINFORCEMENT NOT SHOWN FOR CLARITY)



**PIER BEARING SEAT DETAIL**

(DIMENSIONS TAKEN PERPENDICULAR TO PIER)  
(TYPICAL ALL PIERS)

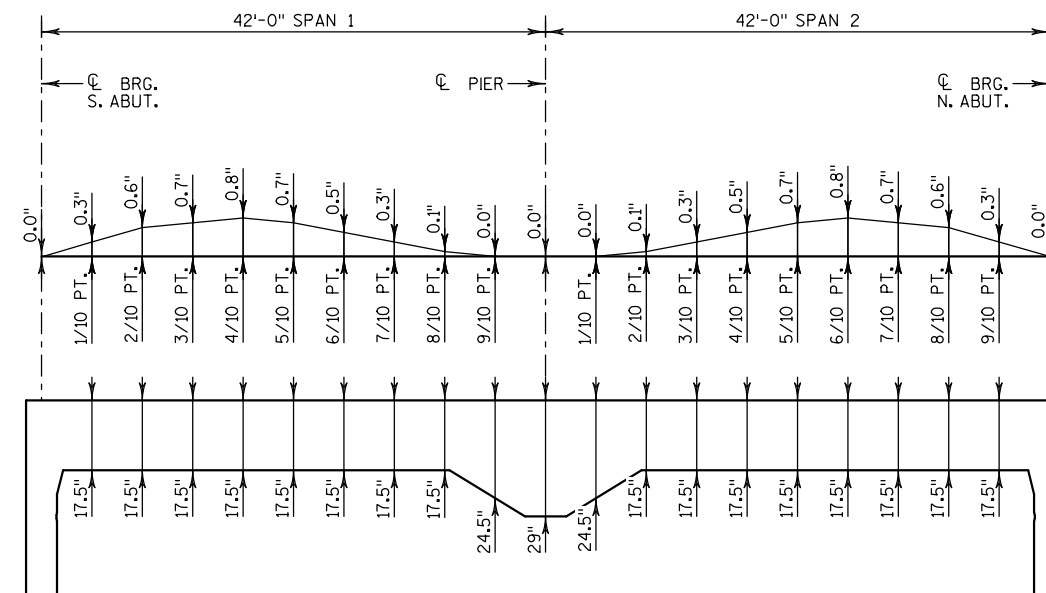


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-474			
DRAWN BY TKB		PLANS CK'D. ETP	
SUPERSTRUCTURE DETAILS-3			SHEET 14 OF 16

**TOP OF SLAB ELEVATIONS**

LOCATION	S. ABUT.	1.1 PT	1.2 PT	1.3 PT	1.4 PT	1.5 PT	1.6 PT	1.7 PT	1.8 PT	1.9 PT	PIER	2.1 PT	2.2 PT	2.3 PT	2.4 PT	2.5 PT	2.6 PT	2.7 PT	2.8 PT	2.9 PT	N. ABUT.
WEST GUTTER	1397.28	1397.25	1397.23	1397.21	1397.18	1397.16	1397.14	1397.12	1397.09	1397.07	1397.05	1397.02	1397.00	1396.98	1396.95	1396.93	1396.91	1396.88	1396.86	1396.84	1396.82
CROWN	1397.60	1397.58	1397.56	1397.53	1397.51	1397.49	1397.46	1397.44	1397.42	1397.39	1397.37	1397.35	1397.32	1397.30	1397.28	1397.25	1397.23	1397.21	1397.19	1397.16	1397.14
EAST GUTTER	1397.37	1397.34	1397.32	1397.30	1397.27	1397.25	1397.23	1397.20	1397.18	1397.16	1397.13	1397.11	1397.09	1397.07	1397.04	1397.02	1397.00	1396.97	1396.95	1396.93	1396.90

NOTE: EDGE-OF-SLAB ELEVATIONS ACCOUNT FOR 1'-3" LEVEL AREA BENEATH PARAPET

**CAMBER AND SLAB THICKNESS DIAGRAM**

CAMBER IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS.  
CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR CENTERLINE FOLLOW THIS PROCEDURE:

TOP OF SLAB ELEVATION AT FINAL GRADE  
MINUS (-) SLAB THICKNESS  
PLUS (+) CAMBER  
PLUS (+) FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)  
EQUALS= TOP OF SLAB FALSEWORK ELEVATION.

**SURVEY TOP OF SLAB ELEVATIONS**

LOCATION	S. ABUT.	5/10 PT	PIER	5/10 PT	N. ABUT.
WEST GUTTER					
CROWN					
EAST GUTTER					

**CAMBER NOTES:**

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE  $\mathcal{C}$  OF ABUTMENTS, THE  $\mathcal{C}$  OF PIERS AND AT 5/10 POINTS, TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN POINT. RECORD THE ELEVATIONS IN THE "SURVEY TOP OF SLAB ELEVATIONS" TABLE FOR THE "AS BUILT" PLANS.

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

NO.	DATE	REVISION	BY
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STRUCTURE B-37-474			
DRAWN BY TKB		PLANS CK'D. ETP	
SUPERSTRUCTURE DETAILS-4			SHEET 15 OF 16

**BILL OF BARS - PARAPETS**

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

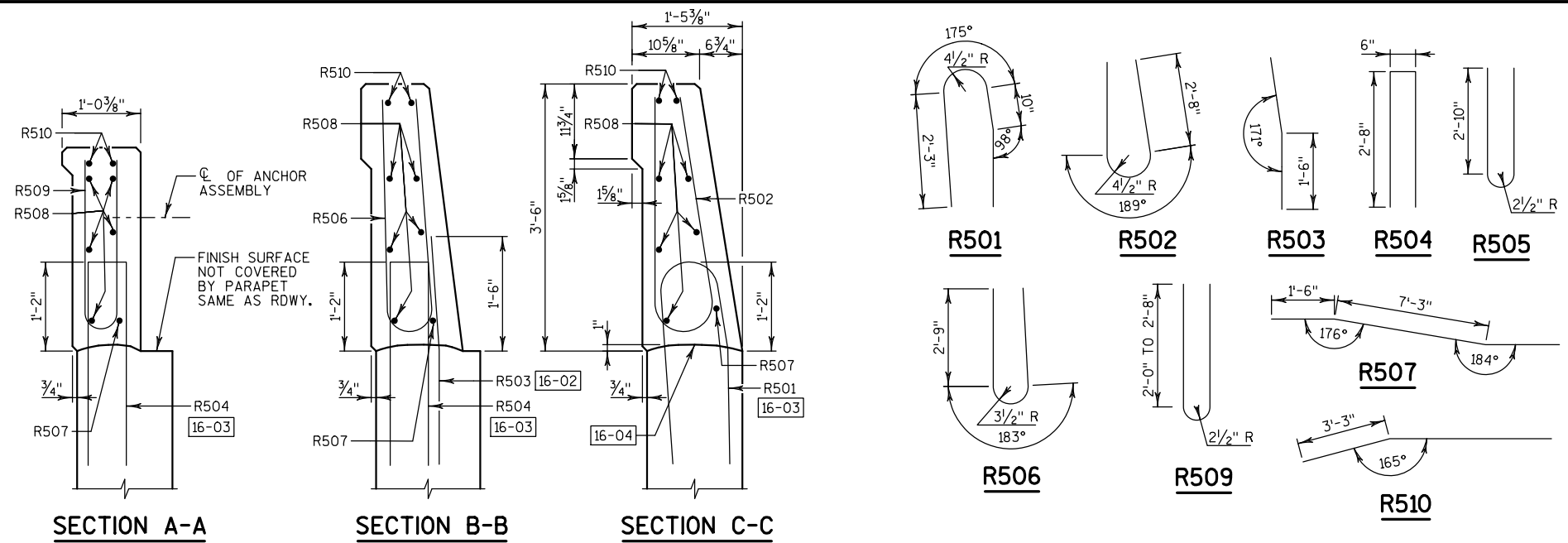
BAR MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
COATED BARS						TOTAL WEIGHT = 1,400 LBS
R501	8	5'-10"	X		PARAPET - WINGS	VERT.
R502	8	6'-8"	X		PARAPET - WINGS	VERT.
R503	48	3'-0"	X		PARAPET - WINGS	VERT.
R504	68	5'-7"	X		PARAPET - WINGS	VERT.
R505	20	6'-5"	X		PARAPET - WINGS	VERT.
R506	24	6'-6"	X		PARAPET - WINGS	VERT.
R507	4	9'-7"	X		PARAPET - WINGS	HORIZ
R508	20	9'-7"			PARAPET - WINGS	HORIZ
R509	24	5'-5"	X	X	PARAPET - WINGS	VERT.
R510	8	9'-7"	X		PARAPET - WINGS	HORIZ

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

**BAR SERIES TABLE**

BAR MARK	NO. REQ'D	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"

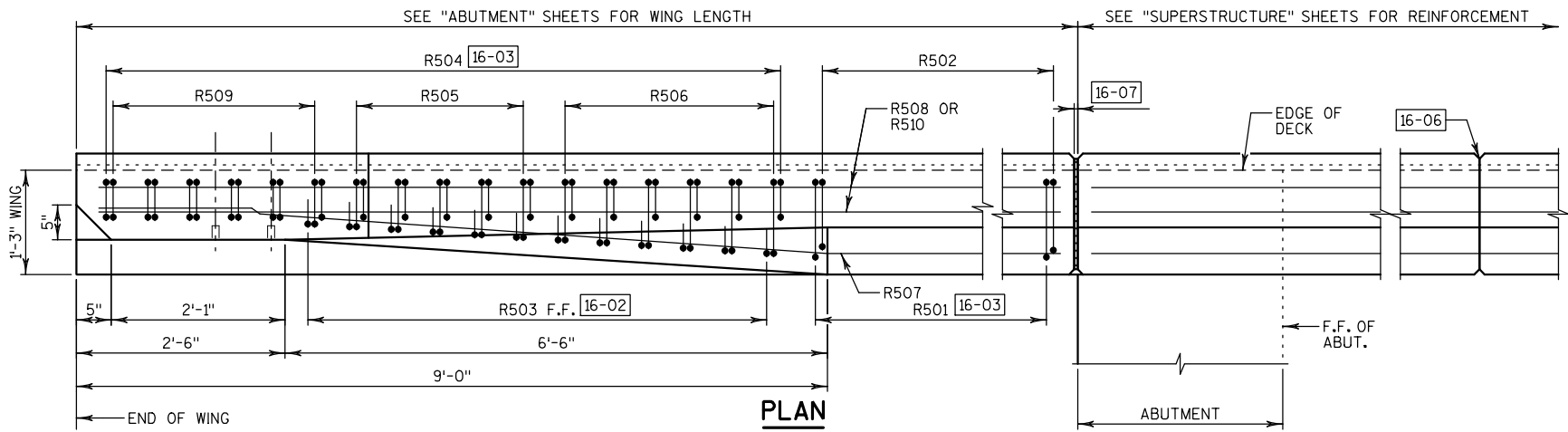
BUNDLE AND TAG EACH SERIES SEPARATELY.



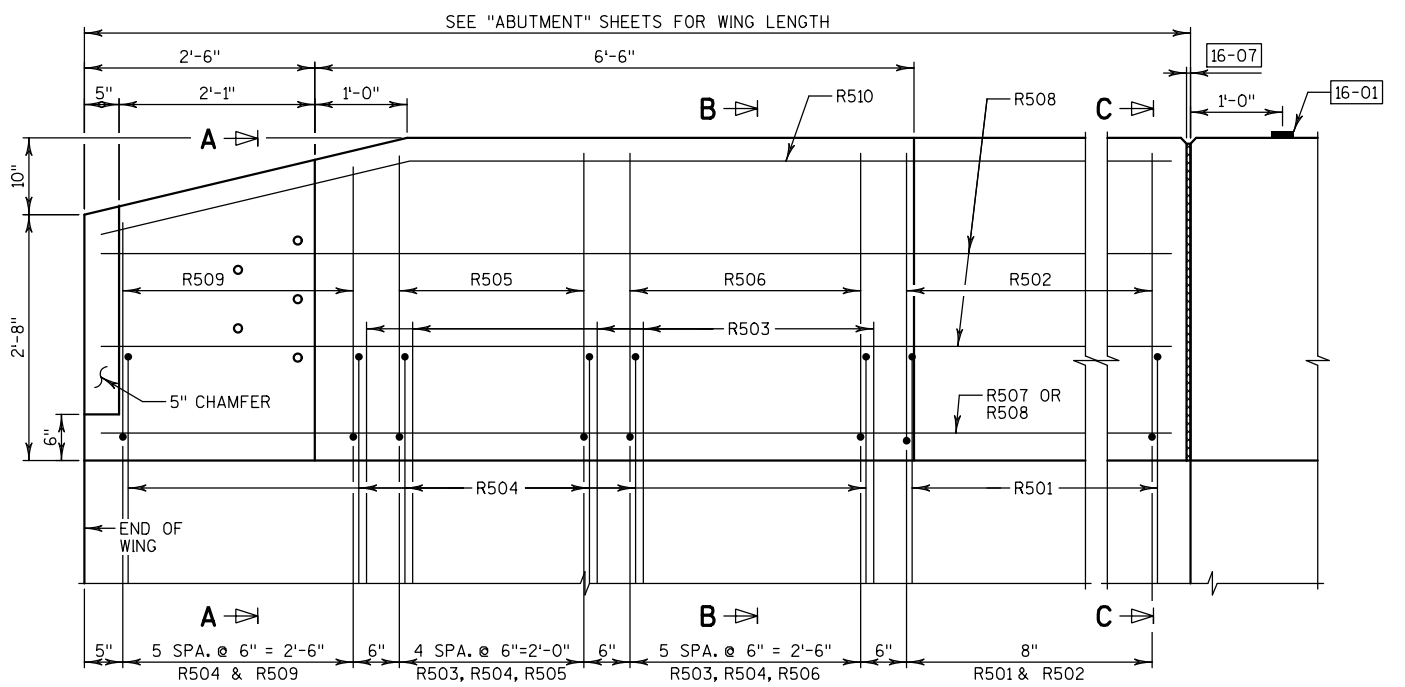
SECTION A-A

SECTION B-B

SECTION C-C

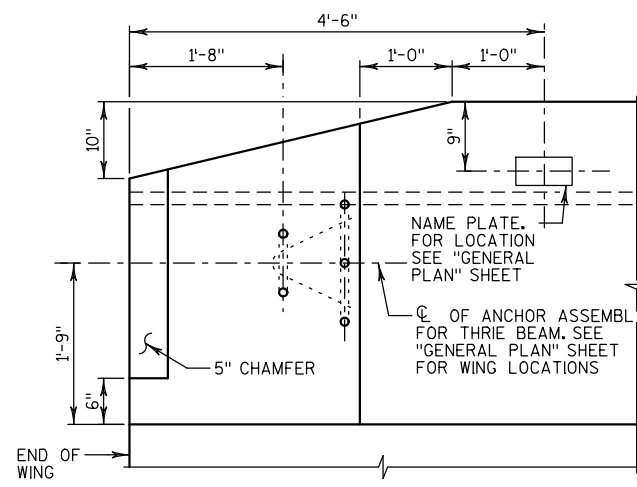


PLAN



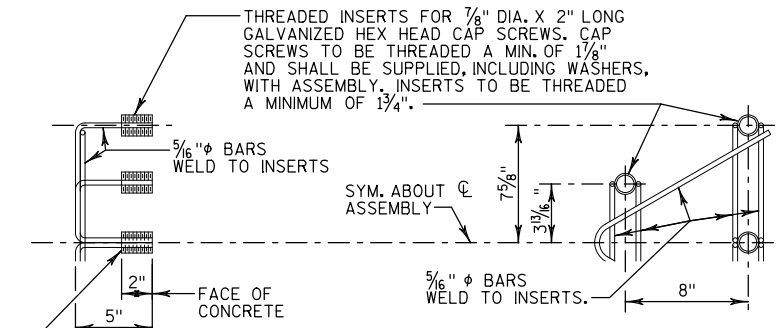
INSIDE ELEVATION

(WING 2 SHOWN, OTHERS SIMILAR)



PARAPET END TREATMENT DETAIL

LOOKING AT INSIDE FACE OF PARAPET



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH ASTM F2329.

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

**NOTES**

- 16-01 BENCH MARK CAP (WHEN SUPPLIED).
- 16-02 R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.
- 16-03 R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.
- 16-04 CONSTRUCTION JOINT. STRIKE OFF AS SHOWN.
- 16-05 LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.
- 16-06 OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINFORCEMENT THRU THE JOINT. LAP LONGITUDINAL BARS A MINIMUM OF 1'-9". MINIMUM JOINT SPACING OF 80'-0". DEFINE CONSTRUCTION JOINT WITH A 3/4"-V GROOVE.
- 16-07 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-37-474			
DRAWN BY TKB		PLANS CK'D. EP	
SINGLE SLOPE PARAPET 42SS			SHEET 16 OF 16

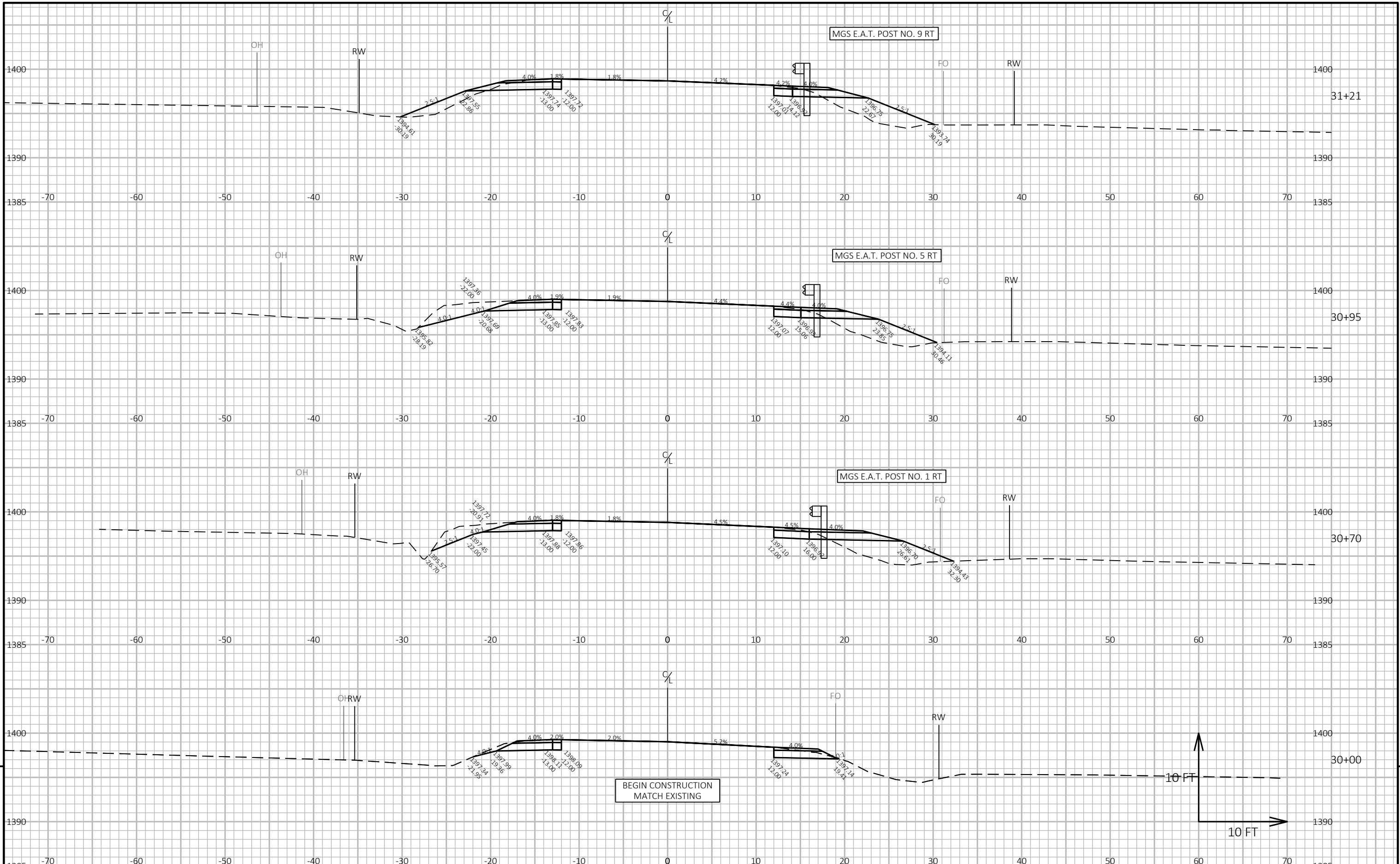
Division 1 - CTH F

STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)			
			CUT	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	SALVAGED/UNUSABLE PAVEMENT MATERIAL	EXPANDED FILL 1.25	MASS ORDINATE
30+00.00	3000.00	0.00	12.84	0.01	0	0	0	0	0	0	0
30+68.20	3068.20	68.20	14.84	21.12	35	5	27	35	5	34	-4
30+93.20	3093.20	25.00	16.31	17.99	14	5	18	49	11	56	-18
31+18.20	3118.20	25.00	12.20	25.73	13	5	20	62	16	81	-35
31+72.00	3172.00	53.80	39.33	45.50	51	5	71	113	21	170	-78
31+97.00	3197.00	25.00	40.22	33.78	37	5	37	150	27	216	-93
32+22.00	3222.00	25.00	41.83	26.17	38	5	28	188	32	251	-95
32+46.00	3246.00	24.00	36.78	25.46	35	5	23	223	37	280	-94
32+62.00	3262.00	16.00	19.99	119.16	17	5	43	240	43	334	-137
STRUCTURE B-37-474											
33+57.00	3357.00	95.00	34.84	35.55	0	0	0	240	43	334	-137
33+73.00	3373.00	16.00	36.82	28.32	21	7	19	261	50	358	-147
33+89.00	3389.00	16.00	38.07	30.66	22	7	17	283	57	379	-153
34+14.00	3414.00	25.00	39.52	36.33	36	7	31	319	64	418	-163
34+39.00	3439.00	25.00	39.17	39.05	36	7	35	355	71	461	-177
34+92.80	3492.80	53.80	11.98	18.36	51	7	57	406	78	533	-205
35+17.80	3517.80	25.00	12.35	15.91	11	7	16	417	85	553	-221
35+42.80	3542.80	25.00	13.41	20.08	12	7	17	429	92	574	-237
36+00.00	3600.00	57.20	13.84	1.21	29	7	23	458	100	603	-245

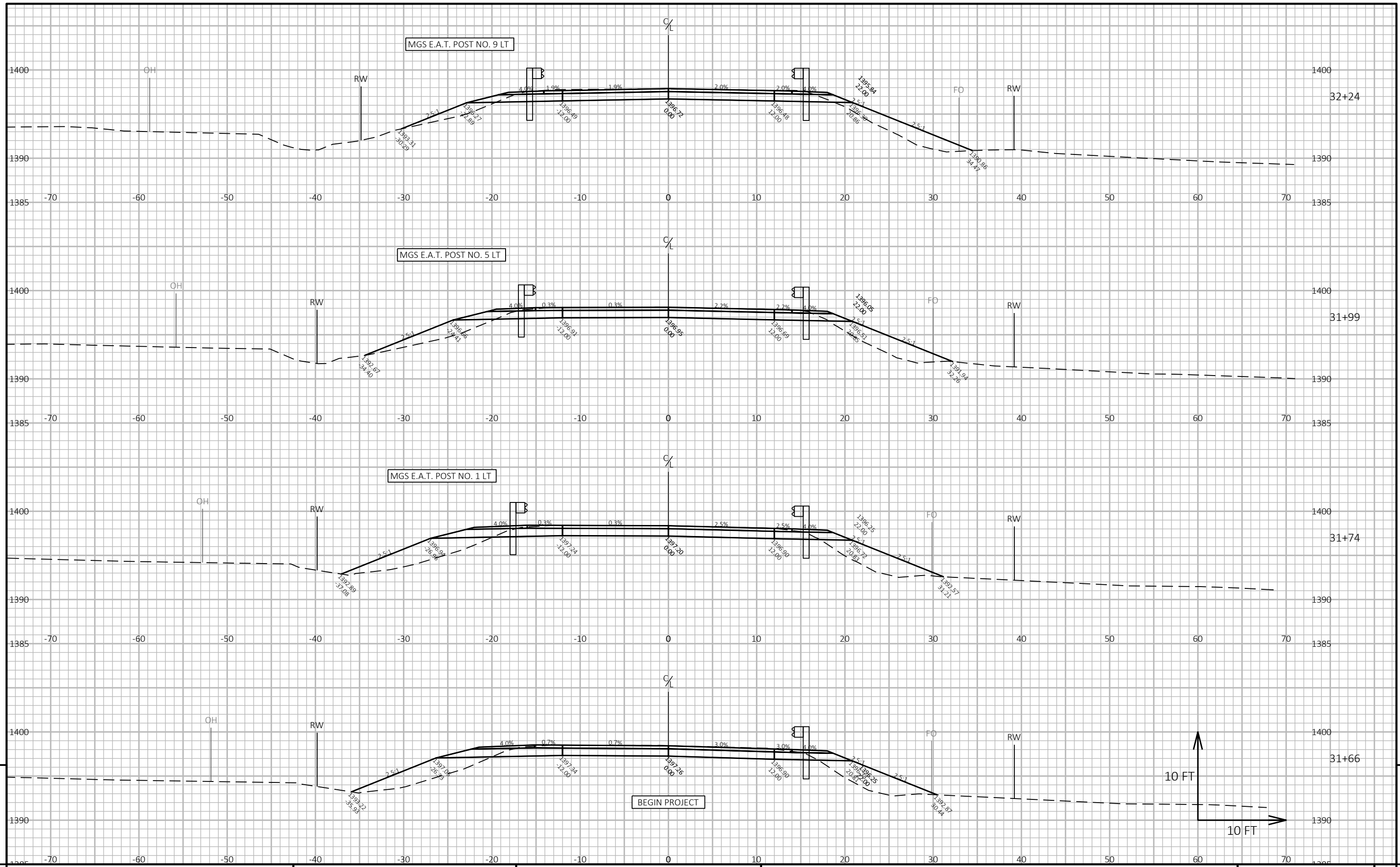
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDINATE	(CUT - SALVAGED PAVT) - (FILL * FILL FACTOR)

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PROJECT NO: 6669-00-70    HWY: CTH F    COUNTY: MARATHON    CROSS SECTIONS: CTH F    SHEET: E



PROJECT NO: 6669-00-70

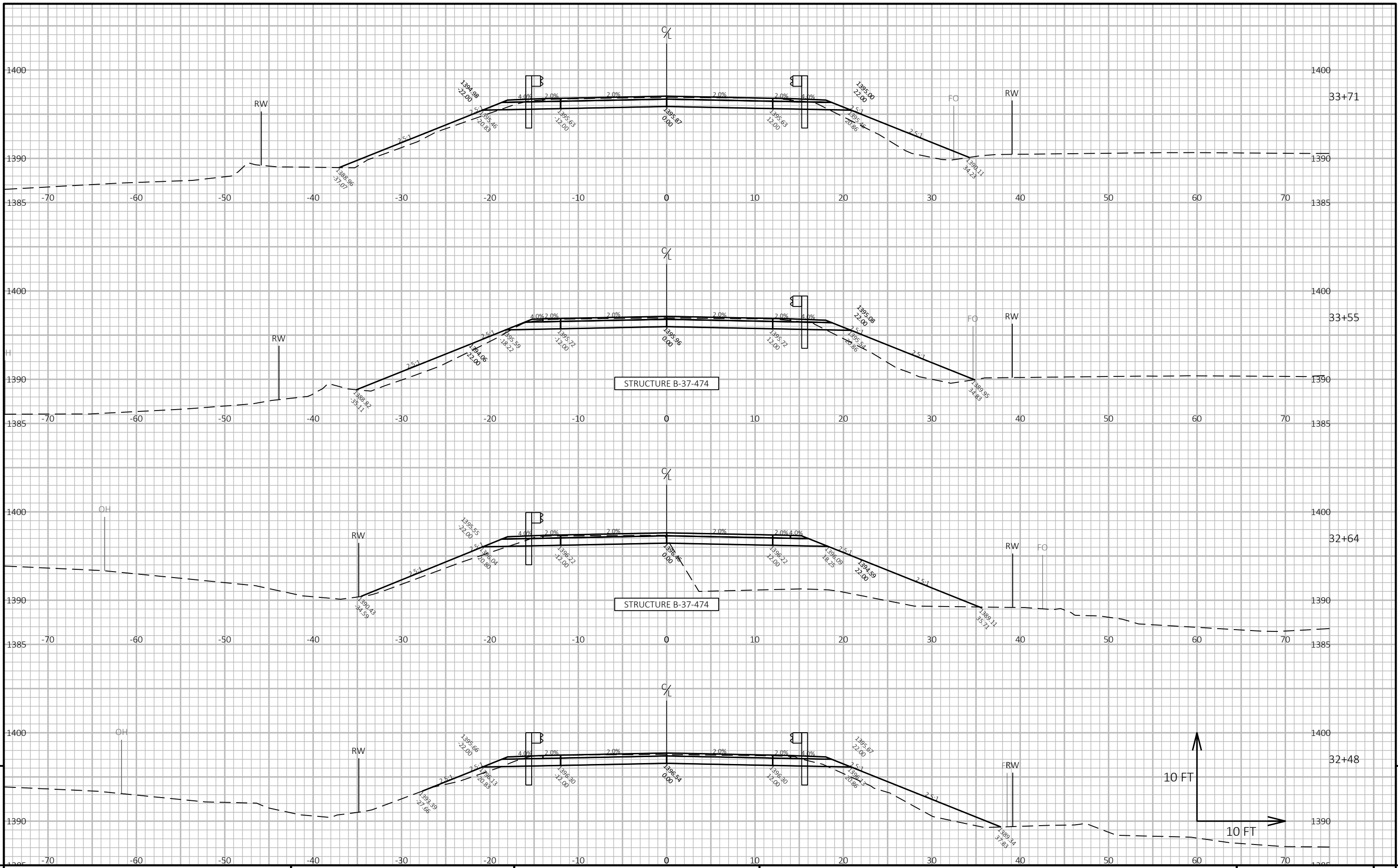
HWY: CTH F

COUNTY: MARATHON

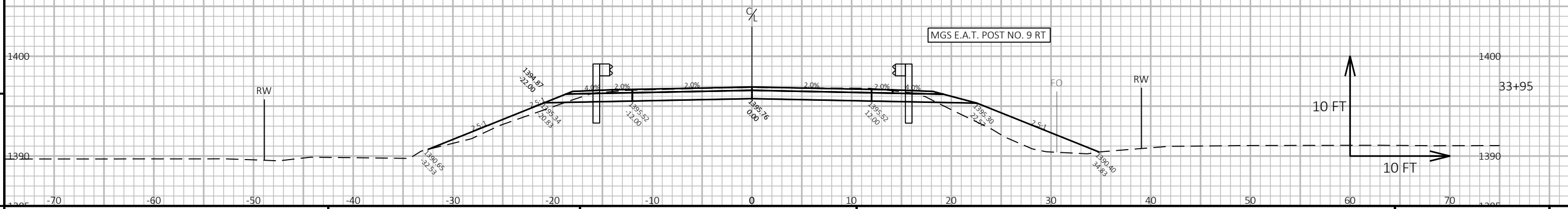
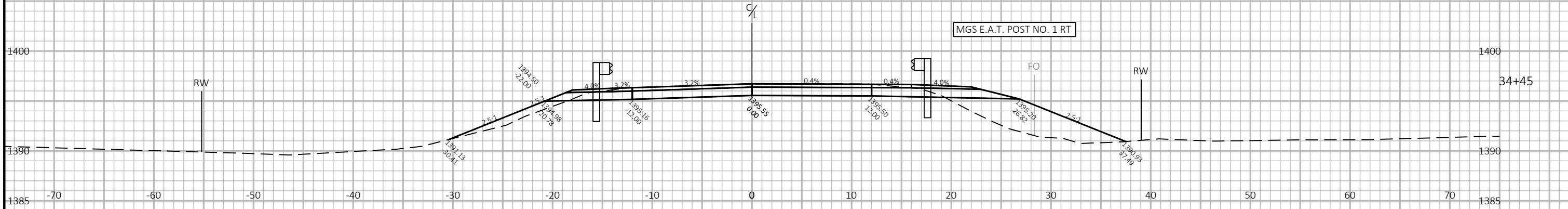
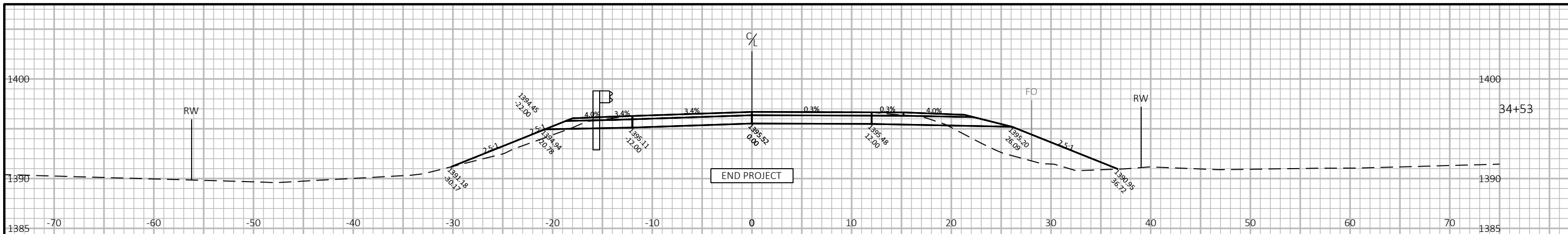
CROSS SECTIONS: CTH F

SHEET

**E**

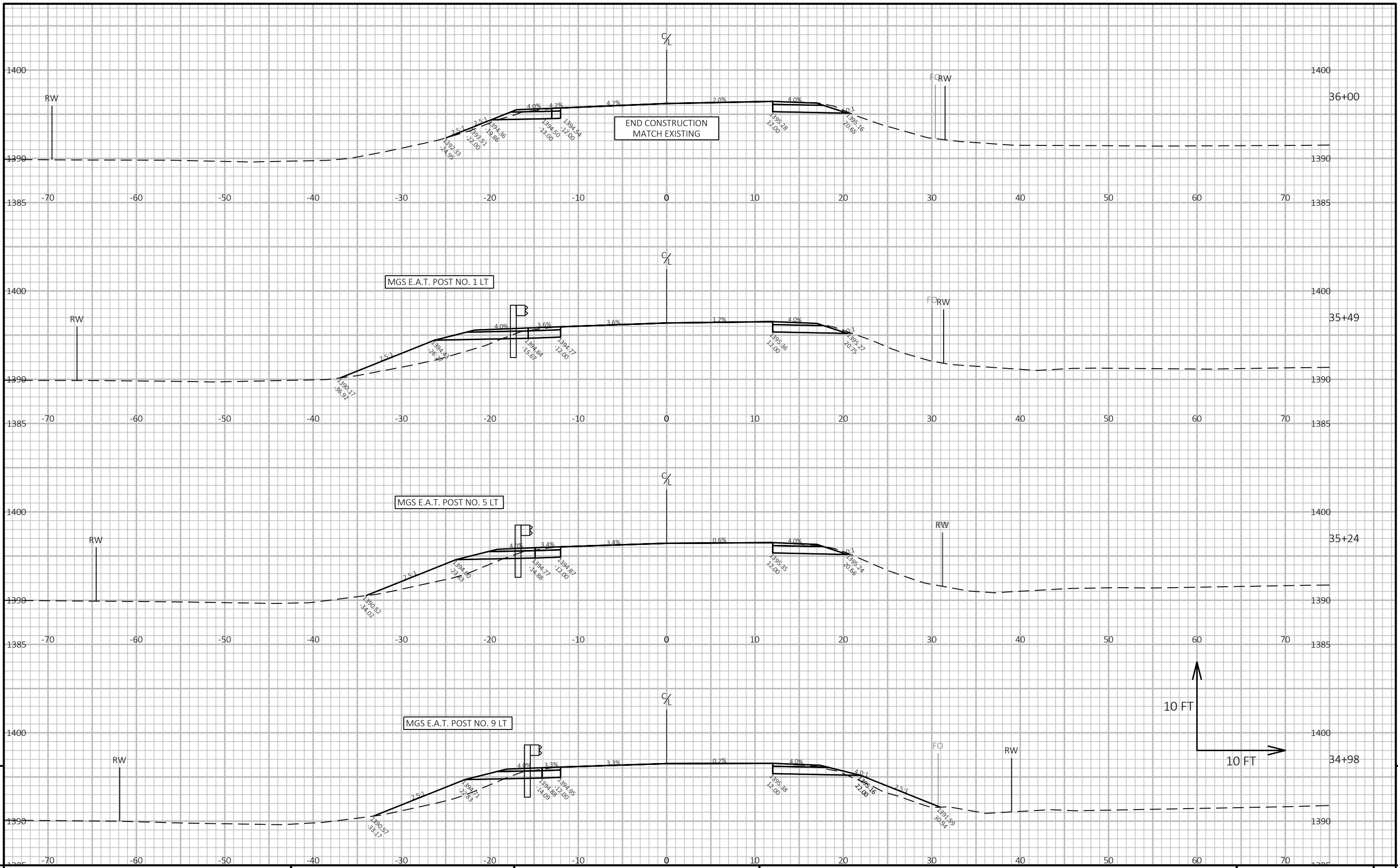


PROJECT NO: 6669-00-70      HWY: CTH F      COUNTY: MARATHON      CROSS SECTIONS: CTH F      SHEET      E



PROJECT NO: 6669-00-70      HWY: CTH F      COUNTY: MARATHON      CROSS SECTIONS: CTH F      SHEET      E





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PROJECT NO: 6669-00-70

HWY: CTH F

COUNTY: MARATHON

CROSS SECTIONS: CTH F

SHEET

E

FILE NAME : C:\OD\CORRE, INC\PROJECTS - WI-NC REGION\6669-00-00\_CTH F\_MARATHON CO\500\_CADD\501\_C3D\_2022\66690000\SHETS\090201-XS.DWG  
LAYOUT NAME - 05

PLOT DATE : 10/4/2024 7:07 AM

PLOT BY : MATT KOSKI

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDs SHEET 49



## ***Wisconsin Department of Transportation***

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