RHI

MARCH 2023

PROJECT ID: 9526-00-70
WITH: 9526-00-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9526-00-70	WISC 2023295	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T STETTIN, STETTIN DRIVE

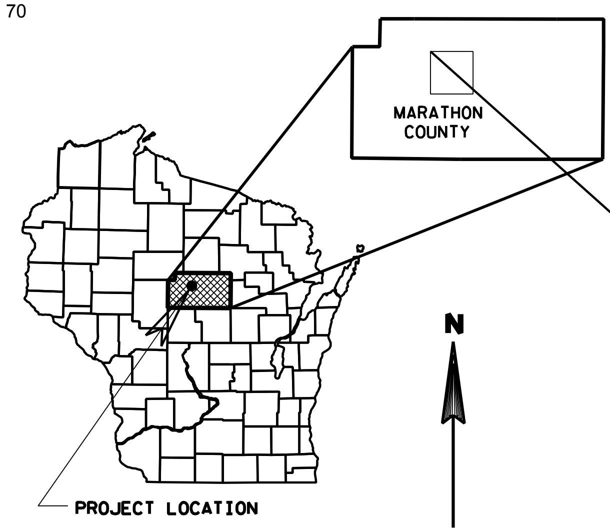
ARTUS CREEK BRIDGE B-37-0469

LOC STR
MARATHON COUNTY

STATE PROJECT NUMBER
9526-00-70

TOTAL SHEETS = 70

32



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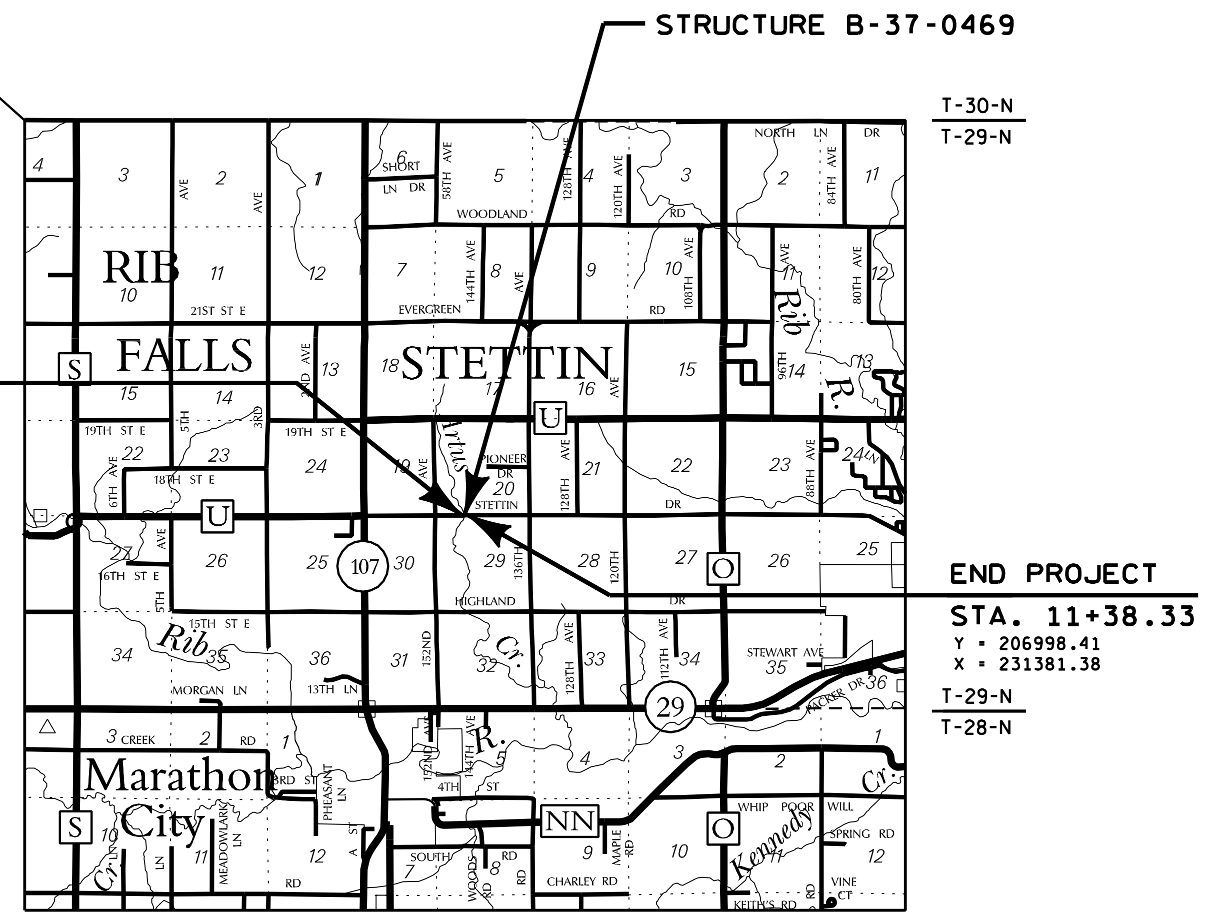


BEGIN PROJECT
STA. 8+61.67
Y = 206998.37
X = 231104.72

END PROJECT
STA. 11+38.33
Y = 206998.41
X = 231381.38

LAYOUT
SCALE 0 — 1 MI.

DESIGN DESIGNATION

A.A.D.T. (2023)	=	310
A.A.D.T. (2043)	=	420
D.H.V.	=	30
D.	=	50/50
T.	=	5%
DESIGN SPEED	=	50 MPH
ESALS	=	36,500

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- HIGH VOLTAGE (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- OVERHEAD ELECTRIC — OH —
- ELECTRIC — E —
- FIBER OPTIC — FO —
- GAS — G —
- SANITARY SEWER — SAN —
- STORM SEWER — SS —
- TELEPHONE — T —
- WATER — W —
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

TOTAL NET LENGTH OF CENTERLINE = 0.052 MI.

SURVEY PREFORMED IN 2020
COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MARATHON COUNTY.

ACCEPTED FOR
County of MARATHON
10/13/2022 — James M. Griesbach
Date — Highway Commissioner

ORIGINAL PLANS PREPARED BY

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

WISCONSIN PROFESSIONAL ENGINEER
KAREN L. WALDERA
E-39158
TAYLOR
WI

Karen L. Waldera
DATE 10/17/2022

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

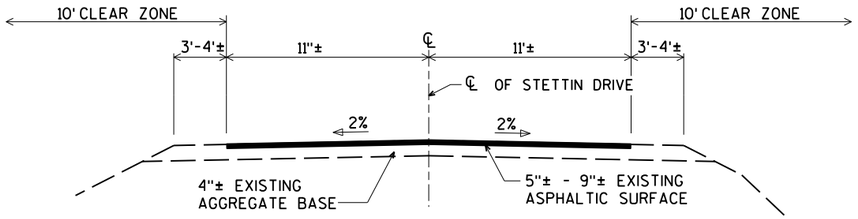
PREPARED BY

Surveyor	AYRES ASSOCIATES INC
Designer	AYRES ASSOCIATES INC
Project Manager	MICHAEL GRAGE, PE
Regional Examiner	N/A
Regional Supervisor	DANIEL ERVA, PE

APPROVED FOR THE DEPARTMENT
DATE: 10/31/2022 (Signature)

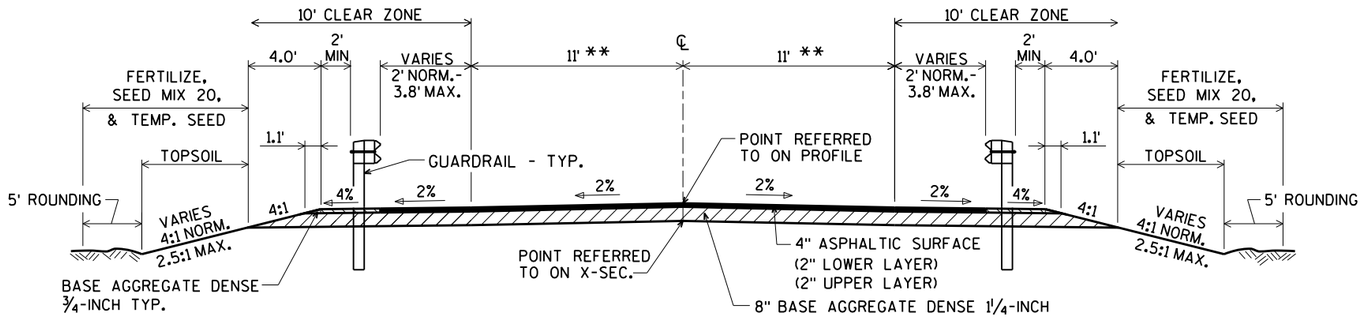
E

COUNTY: MARATHON



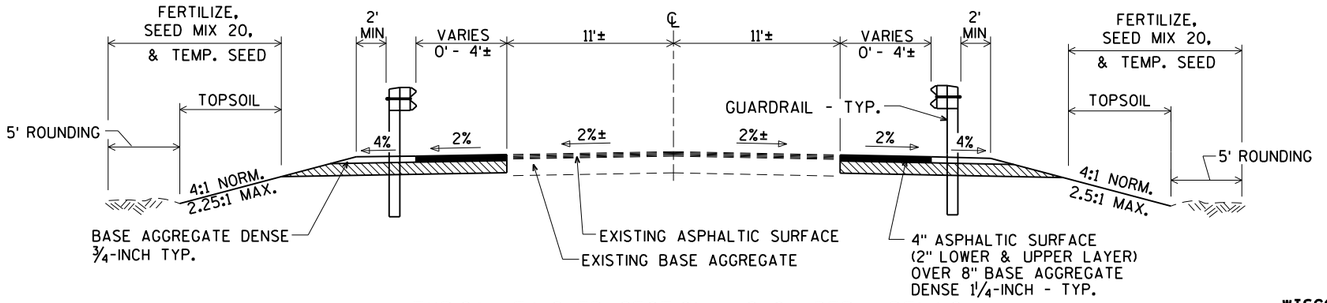
TYPICAL EXISTING SECTION

** THE ASPHALT SHALL BE PLACED 30 FEET WIDE AT THE ENDS OF THE BRIDGE WINGWALLS AND FOLLOW THE FACE OF GUARDRAIL, AND TAPER TO MATCH EXISTING AT THE ENDS OF THE PROJECT.



TYPICAL FINISHED SECTION

STA 8+61.67 - STA 9+61.67
STA 10+38.33 - STA 11+38.33



TYPICAL FINISHED SECTION - SHOULDER WIDENING

STA 7+64.04 - STA 8+61.67, RT.
STA 7+65.26 - STA 8+61.67, LT.
STA 11+38.33 - STA 12+34.58, RT.
STA 11+38.33 - STA 12+36.00, LT.

GENERAL NOTES

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

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

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

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

WHEN THE QUANTITY OF THE ITEM OF BASE AGGREGATE DENSE IS MEASURED FOR PAYMENT BY THE TON, 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.

ASPHALTIC REMOVAL IS INCLUDED IN THE ITEM EXCAVATION COMMON.

TOPSOIL SHALL BE PLACED ON THE SLOPES, TO THE POINT OF INTERCEPT WITH THE ORIGINAL GROUND SHOWN ON THE CROSS SECTIONS.

THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD 88).

ASPHALT SURFACE SHALL USE ½" (12.5 mm) NOMINAL AGGREGATE SIZE.

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCE IS ALLOWED OUTSIDE THE SLOPE INTERCEPTS.

UTILITIES

WISCONSIN PUBLIC SERVICE CORPORATION - (WPS)
P.O. BOX 1166
WAUSAU, WI 54402
ATTN: CLAYTON VIRCKS
715-848-7317
715-573-7806 (CELL)
chvircks@wisconsinpublicservice.com

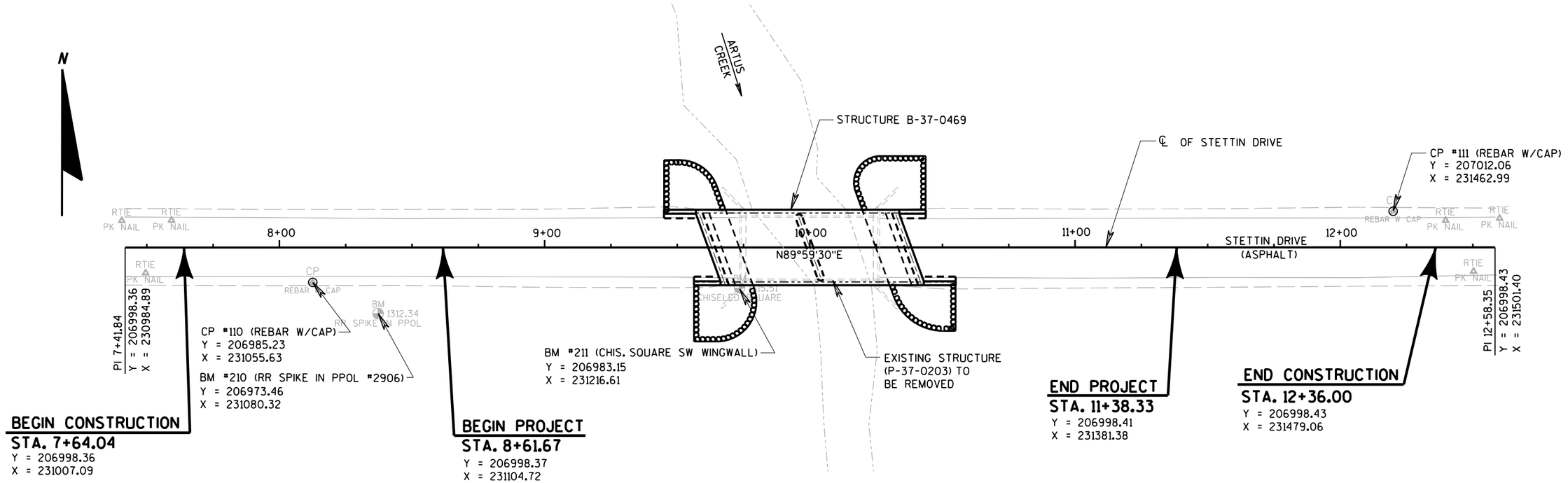
DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:
CASEY JONES
473 GRIFFITH AVENUE
WISCONSIN RAPIDS, WI 54494
715-213-6571
casey.jones@Wisconsin.gov

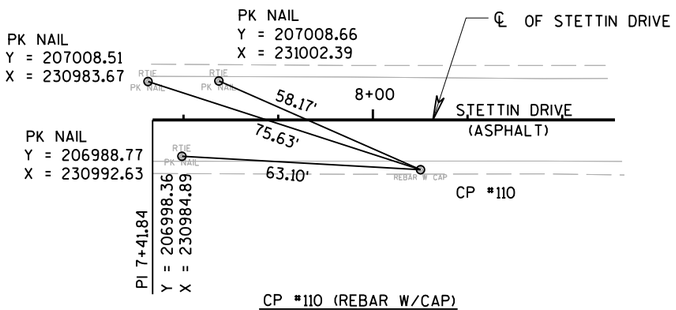
COUNTY CONTACT
MARATHON COUNTY, HIGHWAY COMMISSIONER
1430 WEST STREET
WAUSAU, WI 54401
ATTN: JAMES GRIESBACH
715-261-1800
james.griesbach@co.marathon.wi.us

DESIGNER
AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: KAREN WALDERA, PE
715-834-3161
walderak@ayresassociates.com

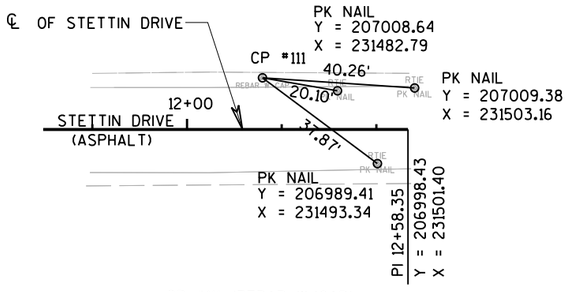
PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	TYPICAL SECTIONS	SHEET 2	E



ALIGNMENT CONTROLS



CP #110 (REBAR W/CAP)
Y = 206985.23
X = 231055.63

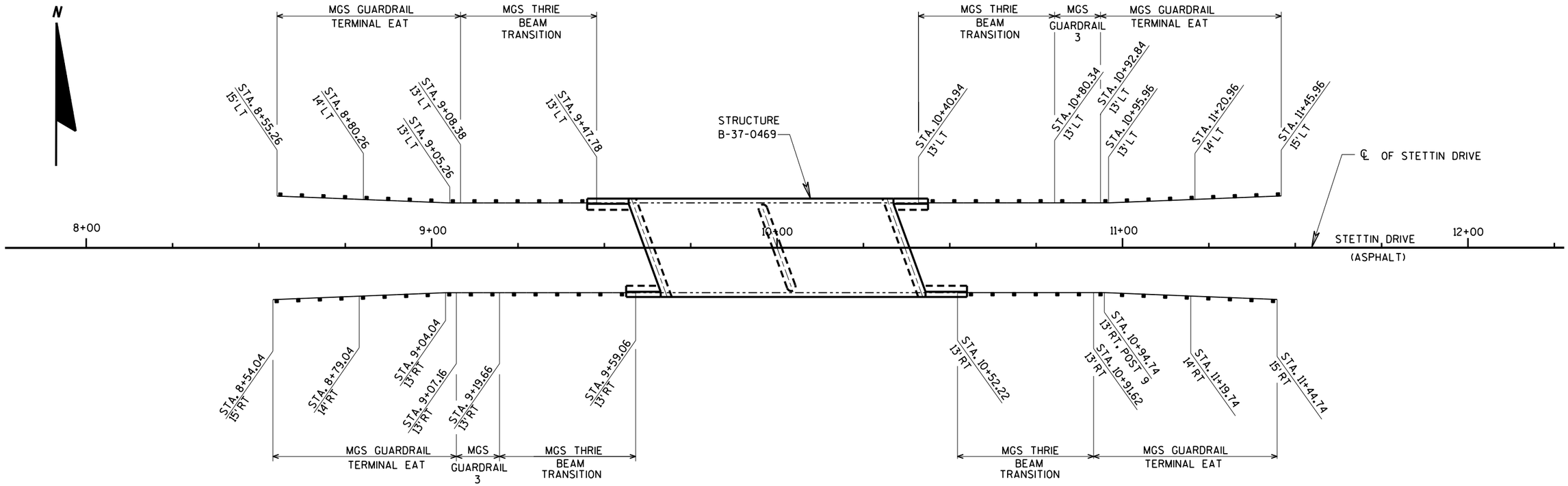


CP #111 (REBAR W/CAP)
Y = 207012.06
X = 231462.99

ALIGNMENT TIES

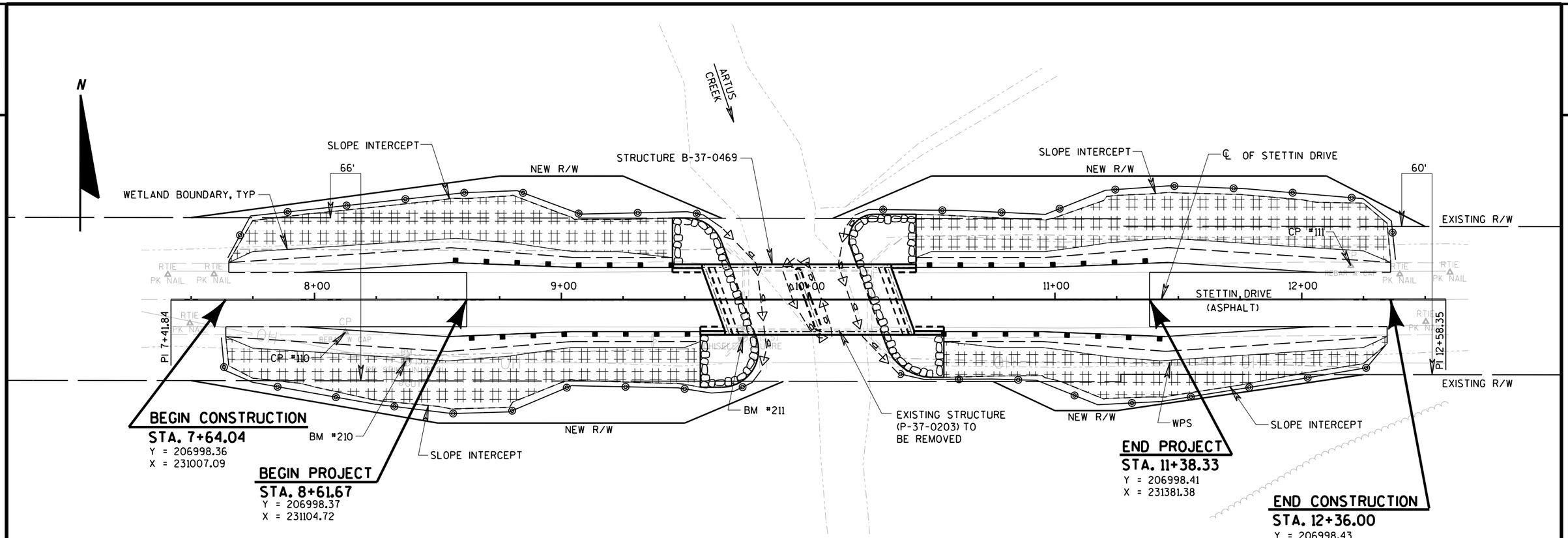
PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	ALIGNMENT CONTROLS	SHEET 3	E

2



GUARDRAIL LAYOUT

PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CONSTRUCTION DETAILS	SHEET 4 E



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

TOTAL PROJECT AREA = 0.960 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.622 ACRES

NOTE:
CONVENTIONIAL TURBIDITY BARRIER INSTALLATION TO BE USED ALONG THE ABUTMENTS AND PIER.

HIGH WATER$_2$ EL. 1309.56

LEGEND

EROSION MAT CLASS I TYPE B URBAN
SILT FENCE
TURBIDITY BARRIER
RIPRAP HEAVY

PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	EROSION CONTROL	SCALE, FEET 0 20 40	SHEET 5	E

9526-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	5.000	5.000
0004	203.0250	Removing Structure Over Waterway Remove Debris (structure) 01. P-37-0203	EACH	1.000	1.000
0008	205.0100	Excavation Common	CY	233.000	233.000
0010	206.1001	Excavation for Structures Bridges (structure) 01. B-37-0469	EACH	1.000	1.000
0014	208.0100	Borrow	CY	980.000	980.000
0016	210.1500	Backfill Structure Type A	TON	240.000	240.000
0018	213.0100	Finishing Roadway (project) 01. 9526-00-70	EACH	1.000	1.000
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	90.000	90.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	530.000	530.000
0030	450.4000	HMA Cold Weather Paving	TON	40.000	40.000
0032	455.0605	Tack Coat	GAL	46.000	46.000
0034	465.0105	Asphaltic Surface	TON	150.000	150.000
0036	502.0100	Concrete Masonry Bridges	CY	225.000	225.000
0038	502.3200	Protective Surface Treatment	SY	290.000	290.000
0040	505.0400	Bar Steel Reinforcement HS Structures	LB	4,980.000	4,980.000
0042	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	30,630.000	30,630.000
0044	513.4061	Railing Tubular Type M	LF	203.000	203.000
0046	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0048	550.0500	Pile Points	EACH	16.000	16.000
0050	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	380.000	380.000
0052	606.0300	Riprap Heavy	CY	220.000	220.000
0054	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	140.000	140.000
0056	614.2300	MGS Guardrail 3	LF	25.000	25.000
0058	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0060	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0062	618.0100	Maintenance And Repair of Haul Roads (project) 01. 9526-00-70	EACH	1.000	1.000
0066	619.1000	Mobilization	EACH	0.500	0.500
0068	624.0100	Water	MGAL	6.000	6.000
0070	625.0100	Topsoil	SY	1,605.000	1,605.000
0072	628.1504	Silt Fence	LF	1,125.000	1,125.000
0074	628.1520	Silt Fence Maintenance	LF	2,810.000	2,810.000
0076	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0078	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0080	628.2008	Erosion Mat Urban Class I Type B	SY	1,650.000	1,650.000
0082	628.6005	Turbidity Barriers	SY	315.000	315.000
0084	629.0210	Fertilizer Type B	CWT	1.500	1.500
0086	630.0120	Seeding Mixture No. 20	LB	65.000	65.000
0088	630.0200	Seeding Temporary	LB	65.000	65.000
0090	630.0300	Seeding Borrow Pit	LB	16.000	16.000
0092	630.0500	Seed Water	MGAL	60.000	60.000
0094	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0096	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0098	638.2602	Removing Signs Type II	EACH	6.000	6.000
0100	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0102	642.5001	Field Office Type B	EACH	0.500	0.500
0104	643.0420	Traffic Control Barricades Type III	DAY	2,520.000	2,520.000
0106	643.0705	Traffic Control Warning Lights Type A	DAY	3,920.000	3,920.000
0108	643.0900	Traffic Control Signs	DAY	1,960.000	1,960.000
0110	643.5000	Traffic Control	EACH	0.500	0.500

9526-00-70

Line	Item	Item Description	Unit	Total	Qty
0112	645.0111	Geotextile Type DF Schedule A	SY	100.000	100.000
0114	645.0120	Geotextile Type HR	SY	390.000	390.000
0116	646.1020	Marking Line Epoxy 4-Inch	LF	553.000	553.000
0118	650.4500	Construction Staking Subgrade	LF	397.000	397.000
0120	650.5000	Construction Staking Base	LF	397.000	397.000
0122	650.6501	Construction Staking Structure Layout (structure) 01. B-37-0469	EACH	1.000	1.000
0128	650.9911	Construction Staking Supplemental Control (project) 01. 9526-00-70	EACH	1.000	1.000
0132	650.9920	Construction Staking Slope Stakes	LF	397.000	397.000
0134	690.0150	Sawing Asphalt	LF	430.000	430.000
0136	715.0502	Incentive Strength Concrete Structures	DOL	1,350.000	1,350.000
0140	999.2005.S	Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000
0144	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	600.000	600.000
0146	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	300.000	300.000

3

CLEARING AND GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0205 GRUBBING STA	REMARKS
0010	7+64.04	-	12+36	LT & RT	5	
				TOTAL 0010	5	

NOTE: CLEARING TO BE DONE PRIOR TO CONSTRUCTION BY OTHERS

FINISHING ROADWAY

CATEGORY	LOCATION	213.0100.01 FINISHING ROADWAY (PROJECT) (01. 9526-00-70) EACH	REMARKS
0010	STETTIN DRIVE	1	
	TOTAL 0010	1	

ASPHALTIC PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON	450.4000 HMA COLD WEATHER PAVING TON	REMARKS
0010	7+64.04	-	9+61.67	MAINLINE	23	75	20	
0010	10+38.33	-	12+36.00	MAINLINE	23	75	20	
				TOTAL 0010	46	150	40	

STETTIN DRIVE BRIDGE EARTHWORK SUMMARY

From/To Station	Location	Common Excavation (1) (Item 205.0100) Cut	Unexpanded Fill	Expanded Fill (2) Factor 1.30	Mass Ordinate +/- (3)	Waste	Borrow (Item 208.0100)	Comment:
7+64.04 - 9+61.67	MAINLINE	118	498	647	-529	0	529	
10+38.33 - 12+36	MAINLINE	115	435	566	-451	0	451	
	CATEGORY 0010 TOTALS	233					980	

1) Common Excavation is the Cut. Item number 205.0100.

2) Expanded Fill. Factor = 1.30; Expanded Fill = Unexpanded Fill * Fill Factor

3) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material on the project.

4) All quantities shown in CY.

BASE AGGREGATE DENSE

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	REMARKS
0010	7+64.04	-	9+61.67	MAINLINE	45	265	3	West Approach
0010	10+38.33	-	12+36.00	MAINLINE	45	265	3	East Approach
				TOTAL 0010	90	530	6	

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	REMARKS
0010	8+52.26	-	9+47.78	LT	--	40	1	
0010	8+54.04	-	9+59.06	RT	12.5	40	1	
0010	10+40.94	-	11+45.96	LT	12.5	40	1	
0010	10+52.22	-	11+44.74	RT	--	40	1	
				TOTAL 0010	25	160	4	

3

MAINTENANCE AND REPAIR OF HAUL ROADS

CATEGORY	LOCATION	618.0100.01 MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) (01. 9526-00-70) EACH	REMARKS
0030	STETTIN DRIVE	1	
	TOTAL 0030	1	

MOBILIZATIONS EROSION CONTROL

CATEGORY	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	REMARKS
0010	PROJECT 9526-00-70	4	4	
	TOTAL 0010	4	4	

3

EROSION CONTROL AND FINISHING ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0100 TOPSOIL SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2008 EROSION MAT URBANCLASS I TYPE B SY	628.6005 TURBIDITY BARRIERS SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0300 SEEDING BORROW PIT LB	630.0500 SEED WATER MGAL	REMARKS
0010	7+65.26	-	10+00	LT	380	215	537	315	115	0.3	12	12	7	12	
0010	7+64.04	-	10+00	RT	435	240	600	360		0.3	14	14	-	13	
0010	10+00	-	12+36.00	LT	465	240	600	390	135	0.3	15	15	6	13	
0010	10+00	-	12+34.58	RT	325	205	513	255		0.3	11	11	-	10	
	UNDISTRIBUTED				-	225	563	330	65	0.3	13	13	3	12	
				TOTAL 0010	1,605	1,125	2,810	1,650	315	1.5	65	65	16	60	

PERMANENT SIGNING

CATEGORY	STATION	LOCATION	634.0614 POSTS WOOD 4X6-INCH X 14-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
0010	9+38	RT	-	-	1	1	R12-1: 10 TON WEIGHT LIMIT
0010	9+73	LT	-	-	1	1	W5-52L: BRIDGE HASH MARKS
0010	9+73	RT	-	-	1	1	W5-52R: BRIDGE HASH MARKS
0010	9+44	LT	1	3	-	-	W5-52L: BRIDGE HASH MARKS
0010	9+55	RT	1	3	-	-	W5-52R: BRIDGE HASH MARKS
0010	10+45	LT	1	3	-	-	W5-52R: BRIDGE HASH MARKS
0010	10+56	RT	1	3	-	-	W5-52L: BRIDGE HASH MARKS
0010	10+27	LT	-	-	1	1	W5-52R: BRIDGE HASH MARKS
0010	10+27	RT	-	-	1	1	W5-52L: BRIDGE HASH MARKS
0010	10+62	LT	-	-	1	1	R12-1: 10 TON WEIGHT LIMIT
		TOTAL 0010	4	12	6	6	

TRAFFIC CONTROL

CATEGORY	LOCATION	DURATION DAY	NO.	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	NO.	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	NO.	643.0900 TRAFFIC CONTROL SIGNS DAY	643.5000 TRAFFIC CONTROL EACH
0010	PER SDD 15C2	140	18	2,520	28	3,920	14	1,960	-
0010	STETTIN DRIVE	-	-	-	-	-	-	-	0.5
		TOTAL 0010		2,520		3,920		1,960	0.5

TRAFFIC CONTROL PLACEMENT SUBJECT TO ENGINEER APPROVAL

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-37-0469) EACH	650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 9526-00-70) EACH	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	REMARKS
0010	7+64.04	-	12+36.00	MAINLINE	397	397	-	-	397	
0010				PROJECT ID: 9526-00-70			-	1	-	
				TOTAL 0010	397	397	0	1	397	
0020	9+61.67	-	10+38.33	B-37-0469	-	-	1	-	-	
				TOTAL 0020	0	0	1	0	0	
				PROJECT TOTAL	397	397	1	1	397	

MARKING LINE

CATEGORY	STATION	TO	STATION	LOCATION	646.102 4-INCH MARKING LINE EPOXY YELLOW LF	646.102 4-INCH MARKING LINE EPOXY WHITE LF	REMARKS
0010	8+61.67	-	11+38.33	C/L	553	-	DOUBLE YELLOW CENTERLINE
SUBTOTALS					553	0	
				TOTAL 0010	553		

SAWING

CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT LF	REMARKS
0010	7+64.04 - 8+61.67	RT	98	
0010	7+65.26 - 8+61.67	LT	95	
0010	8+61.67	MAINLINE	22	
0010	11+38.33	MAINLINE	22	
0010	11+38.33 - 12+34.58	RT	95	
0010	11+38.33 - 12+36.00	LT	98	
		TOTAL 0010	430	

MAINTAINING BIRD DETERRENT SYSTEM

CATEGORY	LOCATION	999.2005.S MAINTAINING BIRD DETERRENT SYSTEM (STATION) (01. 10+00) EACH	REMARKS
0010	STETTIN DRIVE	1	
	TOTAL 0010	1	

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W LINE
PROPERTY LINE
LOT, TIE, AND OTHER MINOR LINES
SLOPE INTERCEPT
CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)
FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)
TEMP. LIMITED EASEMENT AREA
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING
BUILDING (TO BE REMOVED)
BRIDGE

PARCEL NUMBER
PRW POINT NUMBER
SECTION CORNER
NOTATION FOR COMBUSTABLE FLUIDS
NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES
UTILITY NUMBER
TLE POINT NUMBER
R/W MONUMENT
NON-MONUMENTED R/W POINT
FOUND IRON PIN
VALVE (GAS, WATER, ETC.)
SIGN
OFF-PREMISE SIGN
ACCESS CONTROLLED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)
NO ACCESS (NEW HIGHWAY)
NATIONAL GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT
PARALLEL OFFSETS

CONVENTIONAL ABBREVIATIONS

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

CONVENTIONAL UTILITY SYMBOLS

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

	NON-COMPENSABLE	COMPENSABLE
POWER POLE		
TELEPHONE POLE		
TELEPHONE PEDESTAL		

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

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NO.	OWNER(S)	INTEREST REQUIRED	R/W (ACRES) NEW	EXISTING	TOTAL
1	THEIS REVOCABLE TRUST, VENDOR MICHAEL W. BUTTKE AND MATTHEW H. BUTTKE, VENDEE	FEE	0.130	0.000	0.130
2	THEIS REVOCABLE TRUST	FEE	0.101	0.781	0.882

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

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
9526-00-00		
CONSTRUCTION PROJECT NUMBER 9526-00-70	4.01	1

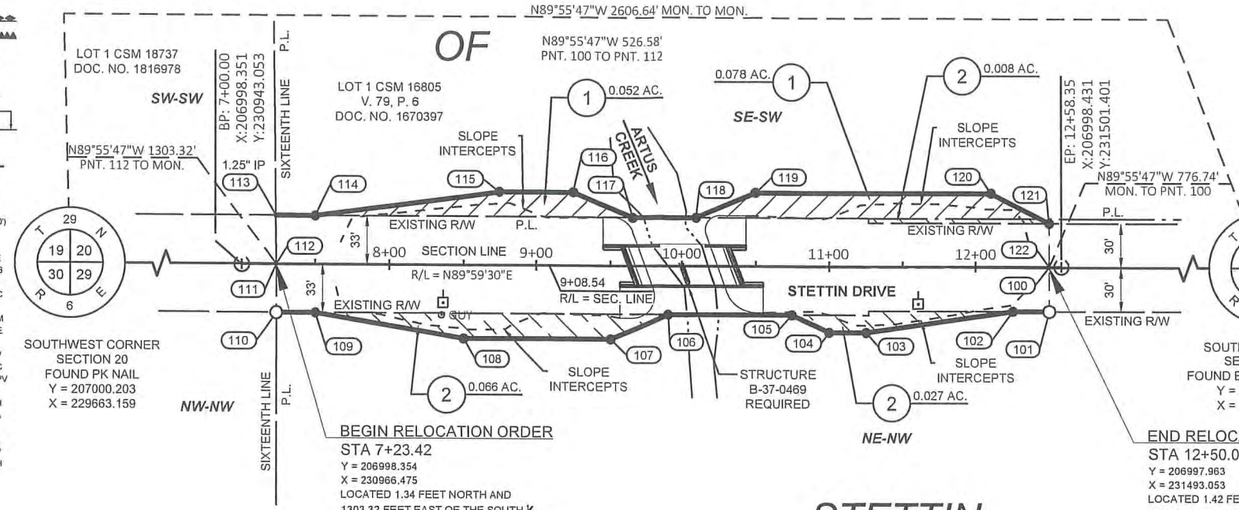
PLAT OF RIGHT OF WAY REQUIRED FOR

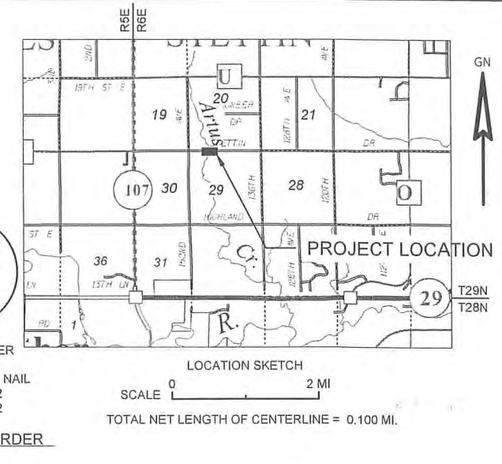
T STETTIN, STETTIN DRIVE

ARTUS CREEK BRIDGE B-37-0469

LOC STR	MARATHON COUNTY

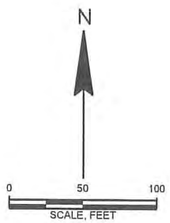
TOWN OF STETTIN





TOTAL NET LENGTH OF CENTERLINE = 0.100 MI.

50 FRONTIER COMMUNICATIONS
V. 275, P. 1009, DOC. NO. 734656 - PARCEL 1



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.

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

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 (¾"x24" CAPPED IRON REBAR WEIGHING 1.50 LBS.LIN. FT.) AND ARE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER.

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.

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

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

EXISTING ROAD RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINT OF REFERENCE:

EXISTING RIGHT OF WAY OF STETTIN DRIVE WAS DETERMINED FROM FROM TOWN ROAD RECORDS OF TOWN OF STETTIN FOR THE EAST 900 FEET OF THE SE-SW 20-59-6 WITH A WIDTH OF 60 FEET, CSM 16805, AND IS PRESUMED TO BE 66 FEET CENTERED ON THE EXISTING SECTION LINE PER STATE STATUE 82.31(2).

R/W COURSE TABLE

COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE
100-101	S00°00'20"E	30.00'	112-113	N00°32'21"W	33.00'
101-102	N89°55'47"W	25.00'	113-114	S89°55'47"E	26.88'
102-103	S81°42'13"W	101.06'	114-115	N82°20'41"E	126.12'
103-104	S89°59'30"W	25.00'	115-116	N89°59'30"E	50.00'
104-105	N64°47'34"W	27.63'	116-117	S66°53'21"E	43.49'
105-106	N89°55'47"W	85.00'	117-118	S89°55'47"E	45.00'
106-107	S67°06'06"W	43.42'	118-119	N66°47'54"E	43.52'
107-108	S89°59'30"W	100.00'	119-120	N89°59'30"E	160.00'
108-109	N80°14'22"W	101.47'	120-121	S62°54'38"E	44.93'
109-110	N89°55'47"W	26.59'	121-122	S00°00'20"E	29.53'
110-111	N00°00'44"E	32.75'	122-100	S00°00'20"E	0.47'
111-112	N00°00'44"E	0.25'			

R/W STATION & OFFSET TABLE

POINT	STATION	OFFSET	POINT	STATION	OFFSET
100	12+50.00	0.47' RT	112	7+23.42	0.25' LT
101	12+50.00	30.47' RT	113	7+23.12	33.25' LT
102	12+25.00	30.43' RT	114	7+50.00	33.22' LT
103	11+25.00	45.00' RT	115	8+75.00	50.00' LT
104	11+00.00	45.00' RT	116	9+25.00	50.00' LT
105	10+75.00	33.23' RT	117	9+65.00	32.92' LT
106	9+90.00	33.11' RT	118	10+10.00	32.86' LT
107	9+50.00	50.00' RT	119	10+50.00	50.00' LT
108	8+50.00	50.00' RT	120	12+10.00	50.00' LT
109	7+50.00	32.78'RT	121	12+50.00	29.53' LT
110	7+23.41	32.75' RT	122	12+50.00	0.00'
111	7+23.42	0.00'			

REVISION DATE

APPROVED FOR MARATHON COUNTY

07/07/2022 DATE — James M. Griesbach HIGHWAY COMMISSIONER

PLAT PREPARED BY AYRES

THE SURVEY IS PREPARED AT THE REQUEST OF MARATHON COUNTY.

THE FIELD SURVEY WAS PERFORMED IN DECEMBER 2020.

THIS SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

07/07/2022
CHRISTOPHER R. BADTKE, P.L.S. S-3150 DATE

FILE NAME : I:\74\EC\421269.00 MARATHON CO - TOWN OF STETTIN BR AT ARTUS CREEK\CADD\C3D\RW\95260000_0401.DWG

PLOT DATE : 7/7/2022 8:42 AM

PLOT BY : BADTKE, CHRISTOPHER

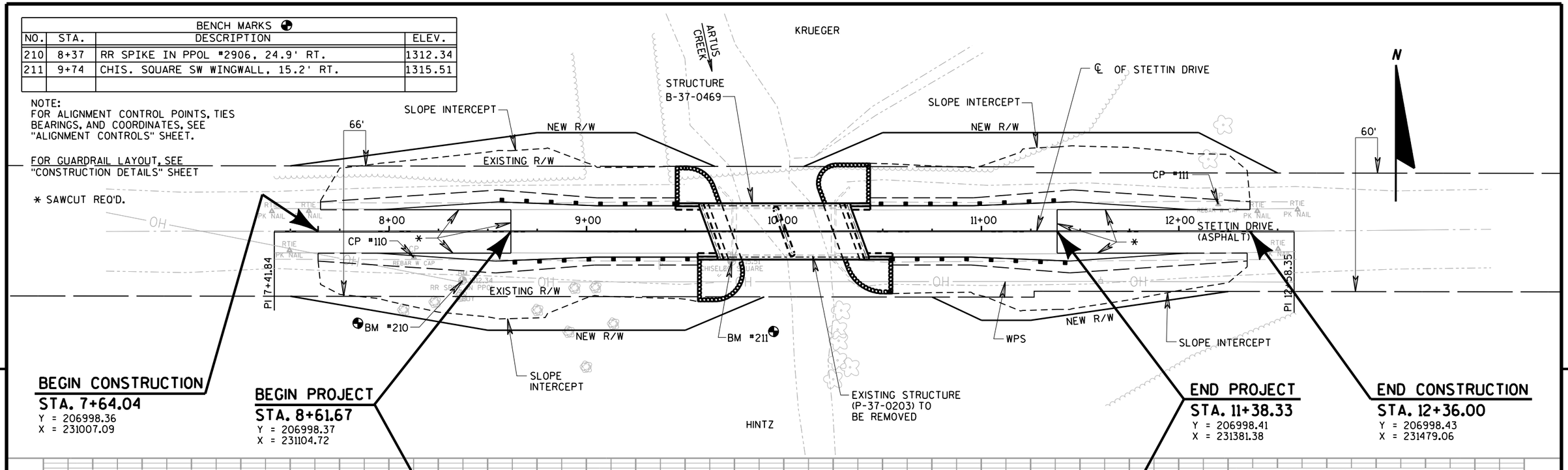
PLOT NAME :

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
210	8+37	RR SPIKE IN PPOL #2906, 24.9' RT.	1312.34
211	9+74	CHIS. SQUARE SW WINGWALL, 15.2' RT.	1315.51

NOTE:
FOR ALIGNMENT CONTROL POINTS, TIES BEARINGS, AND COORDINATES, SEE "ALIGNMENT CONTROLS" SHEET.

FOR GUARDRAIL LAYOUT, SEE "CONSTRUCTION DETAILS" SHEET

* SAWCUT REQ'D.



BEGIN CONSTRUCTION
STA. 7+64.04
Y = 206998.36
X = 231007.09

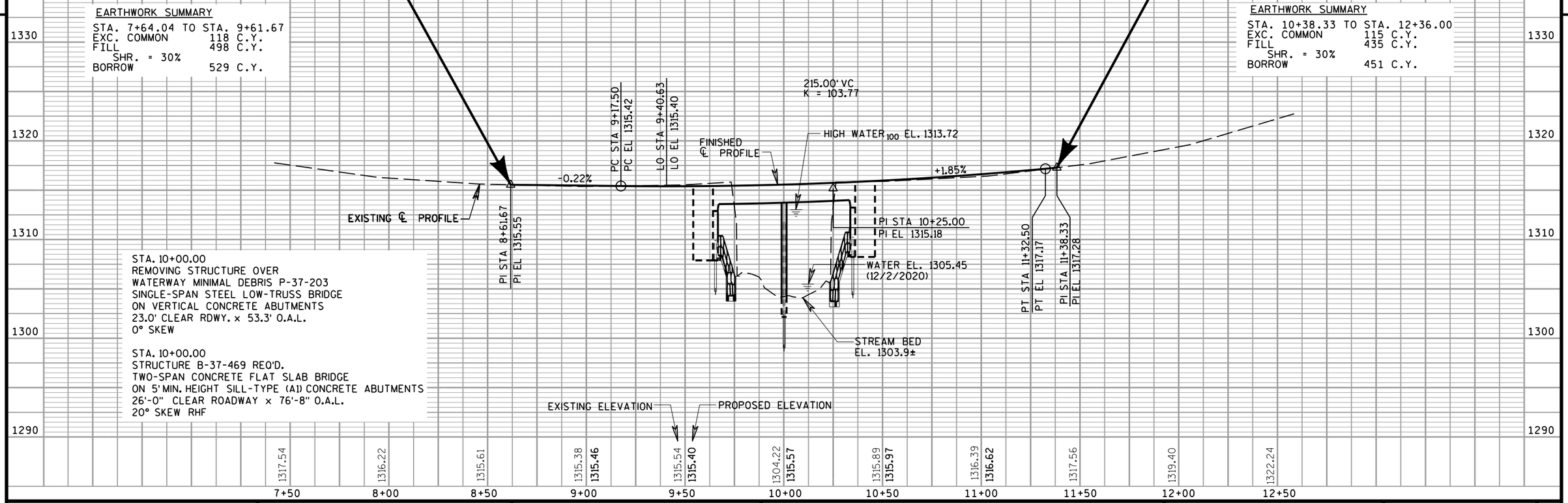
BEGIN PROJECT
STA. 8+61.67
Y = 206998.37
X = 231104.72

END PROJECT
STA. 11+38.33
Y = 206998.41
X = 231381.38

END CONSTRUCTION
STA. 12+36.00
Y = 206998.43
X = 231479.06

EARTHWORK SUMMARY
STA. 7+64.04 TO STA. 9+61.67
EXC. COMMON 118 C.Y.
FILL 498 C.Y.
SHR. = 30%
BORROW 529 C.Y.

EARTHWORK SUMMARY
STA. 10+38.33 TO STA. 12+36.00
EXC. COMMON 115 C.Y.
FILL 435 C.Y.
SHR. = 30%
BORROW 451 C.Y.



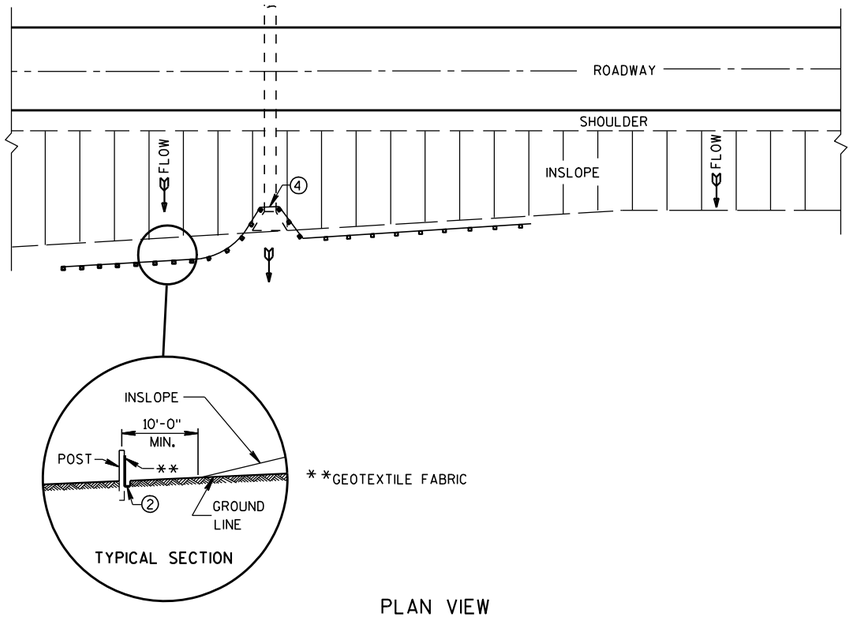
STA. 10+00.00
REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-37-203
SINGLE-SPAN STEEL LOW-TRUSS BRIDGE
ON VERTICAL CONCRETE ABUTMENTS
23.0' CLEAR RDWY. x 53.3' O.A.L.
0° SKEW

STA. 10+00.00
STRUCTURE B-37-469 REQ'D.
TWO-SPAN CONCRETE FLAT SLAB BRIDGE
ON 5' MIN. HEIGHT SILL-TYPE (A1) CONCRETE ABUTMENTS
26'-0" CLEAR ROADWAY x 76'-8" O.A.L.
20° SKEW RHF

PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	PLAN AND PROFILE	SCALE, FEET 0 25 50	SHEET 12	E

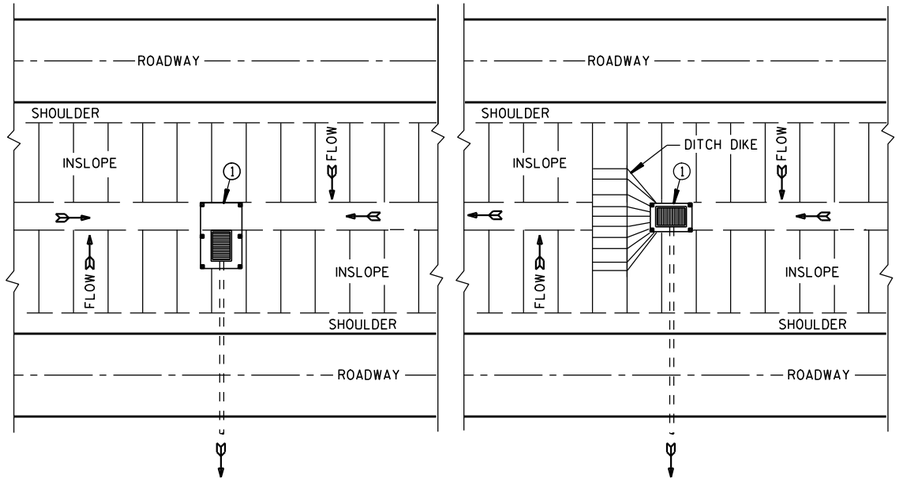
Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
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)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-10	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-22A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



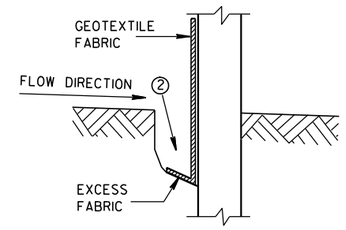
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

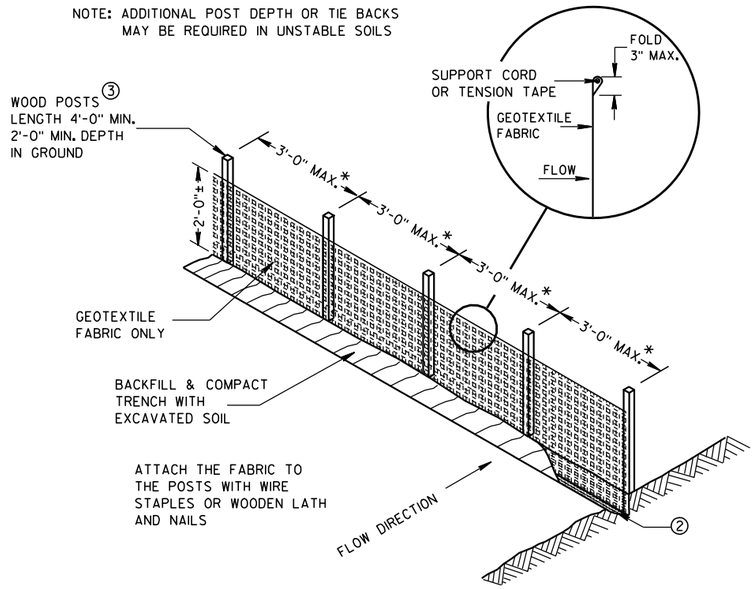
GENERAL NOTES

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

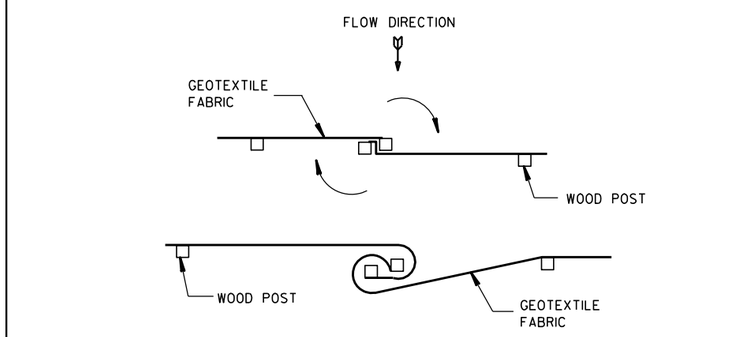
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



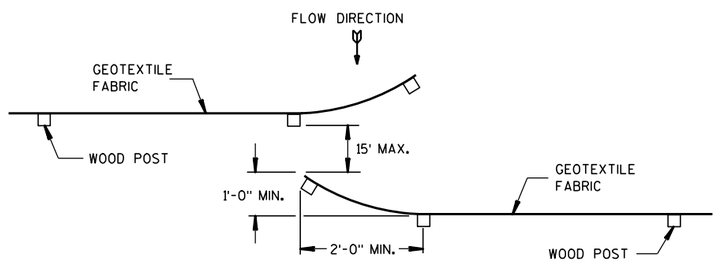
TRENCH DETAIL



SILT FENCE

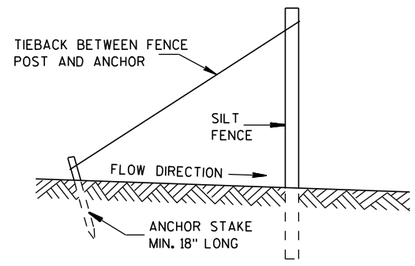


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

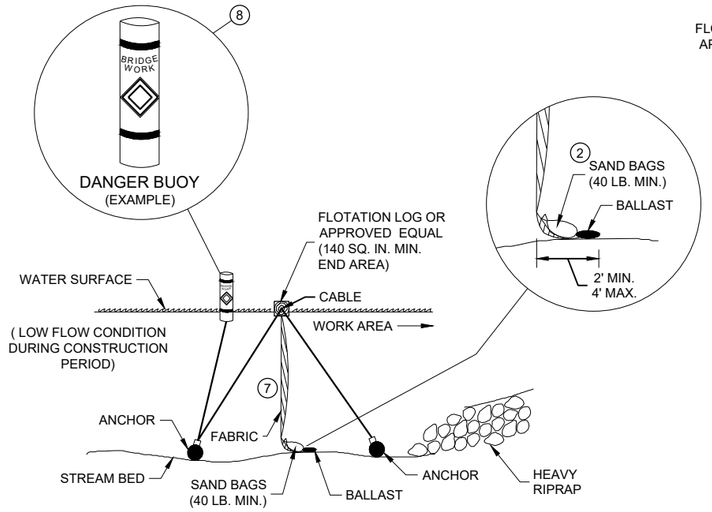
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

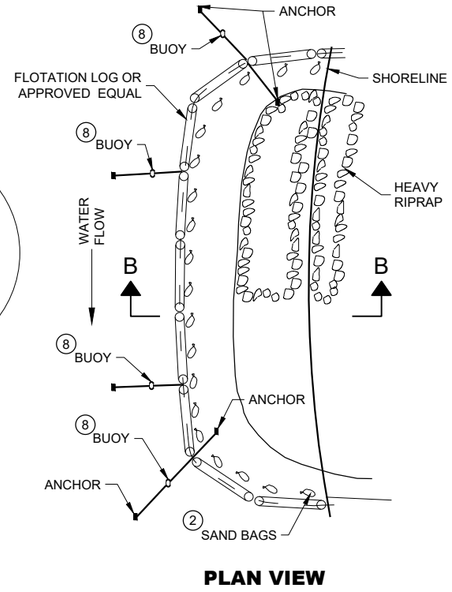
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

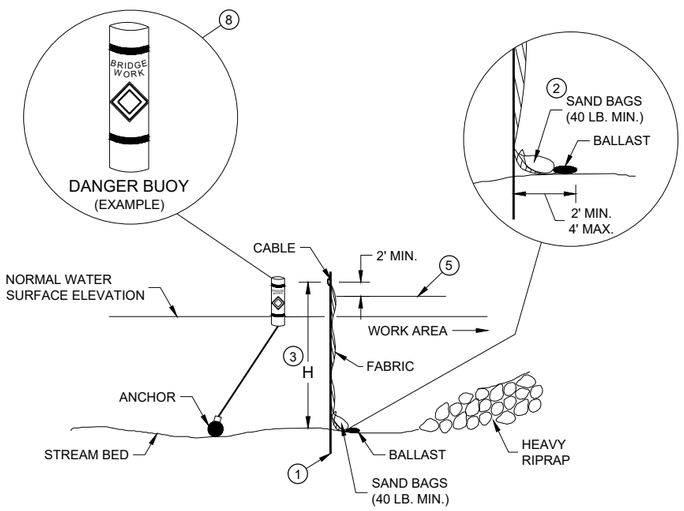


SECTION B - B

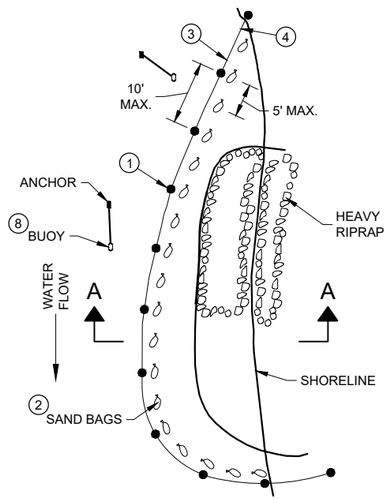


PLAN VIEW

TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A - A



PLAN VIEW

TURBIDITY BARRIER - STANDARD POST INSTALLATION

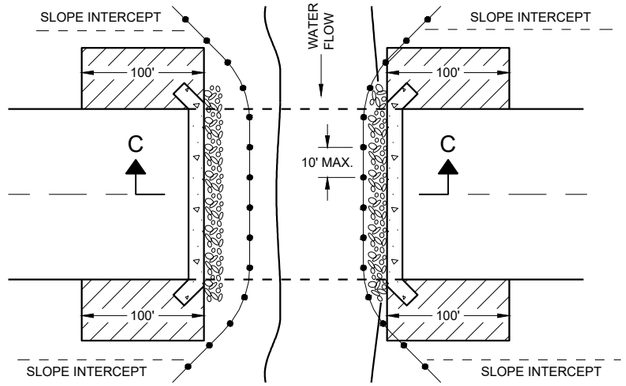
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

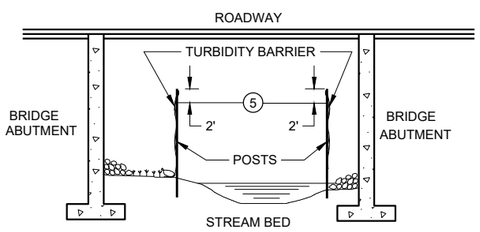
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

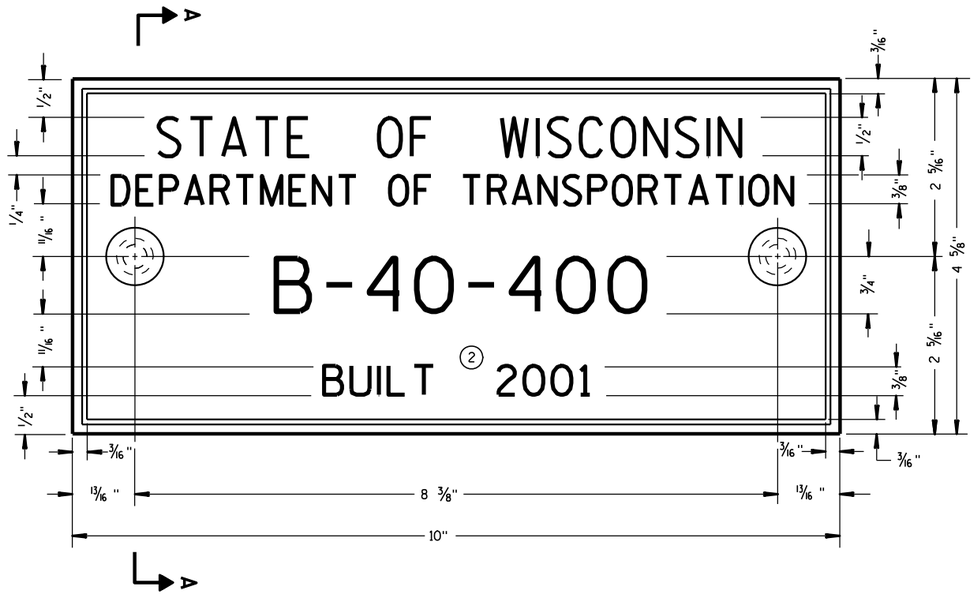
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6
SDD 08E11 - 02



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

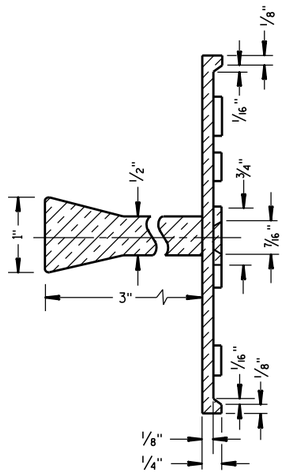
GENERAL NOTES

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

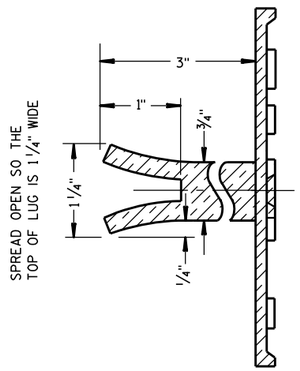
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

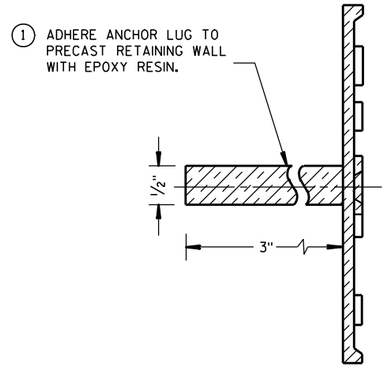
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

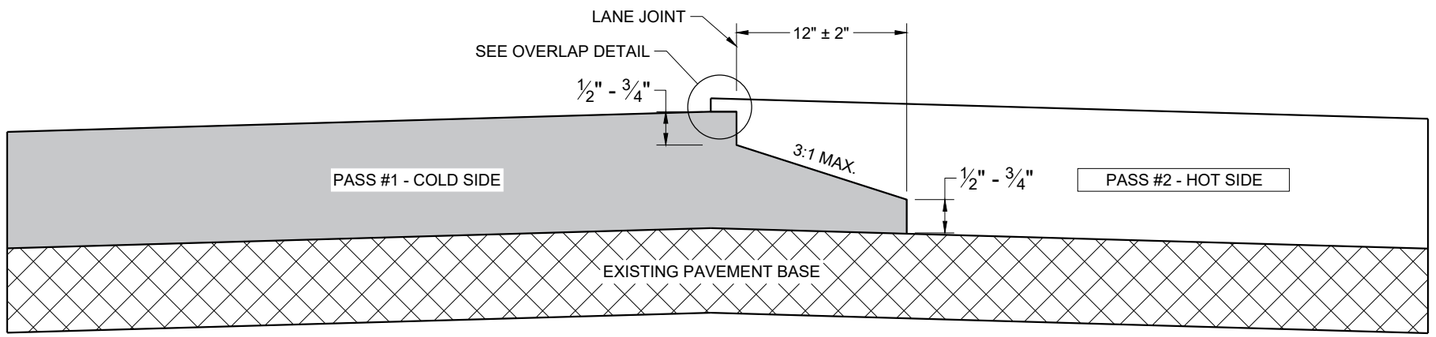
3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOPMENT ENGINEER

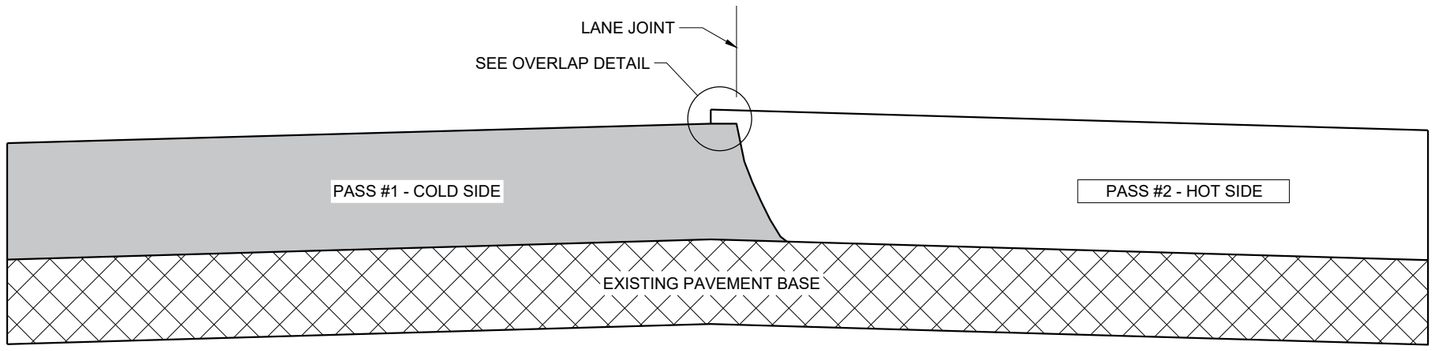
FHWA

6

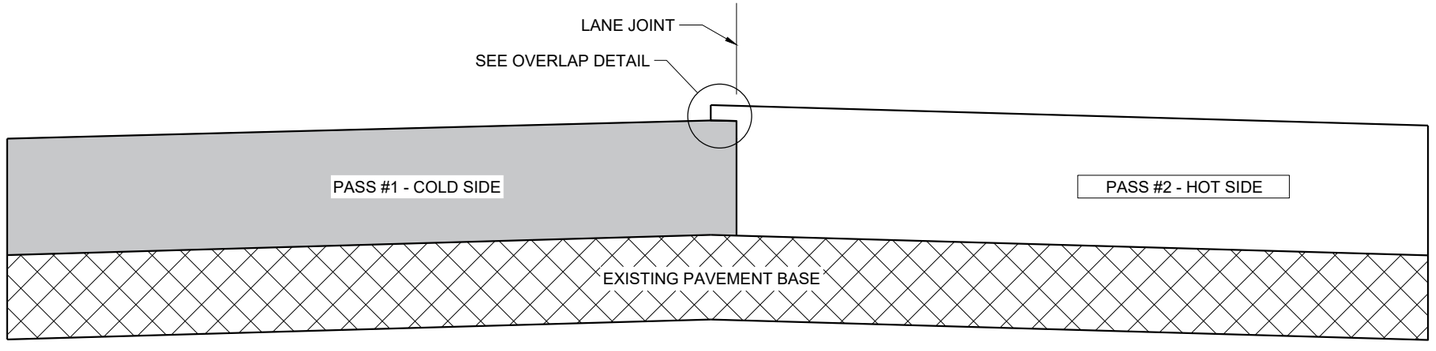
S.D.D. 12 A 3-10



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

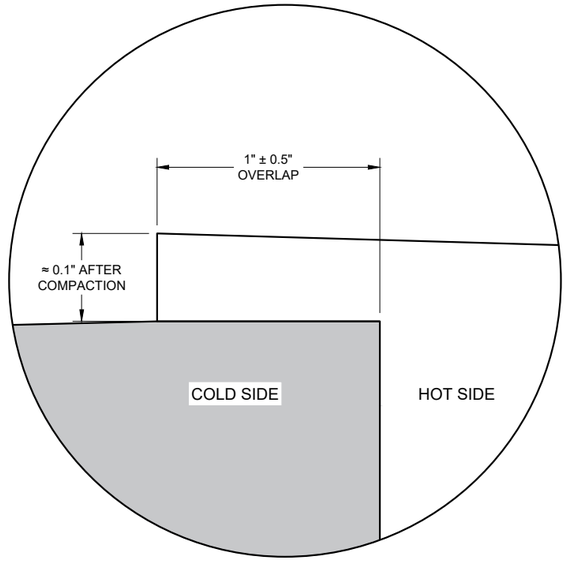
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY 1" ± 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)

6

6

SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

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.

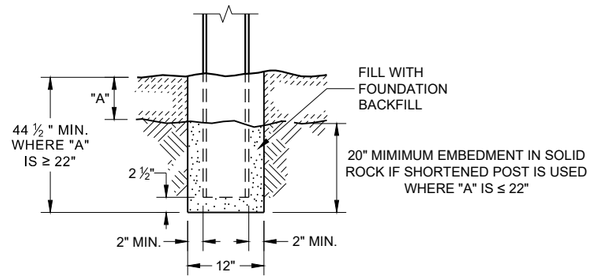
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

(4) WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

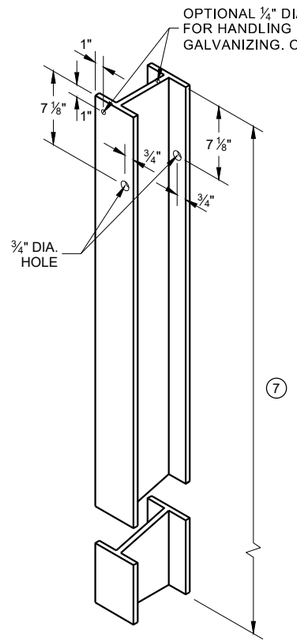
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

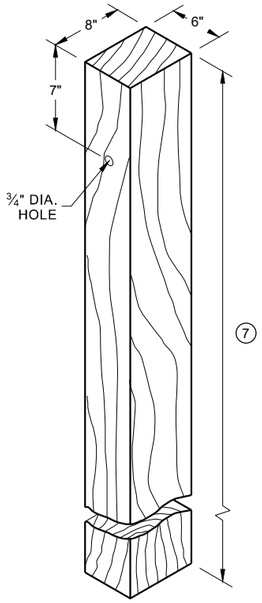
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



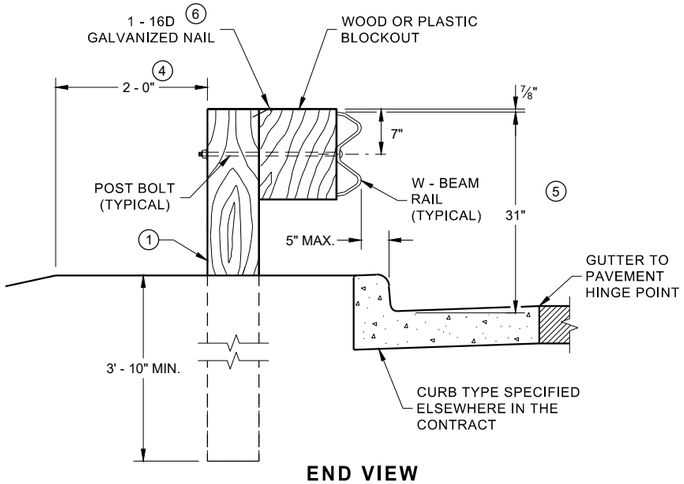
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



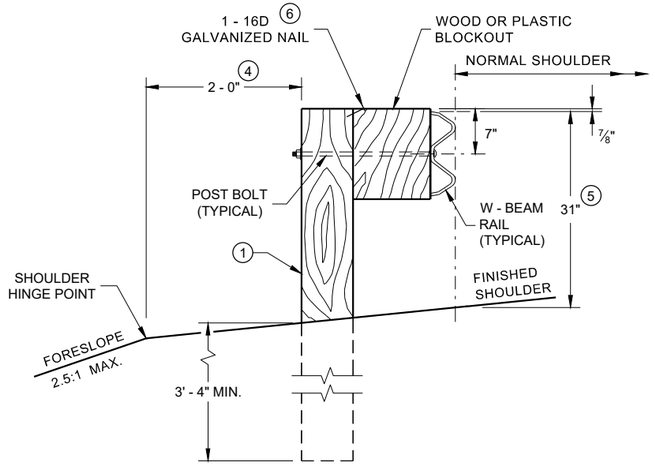
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



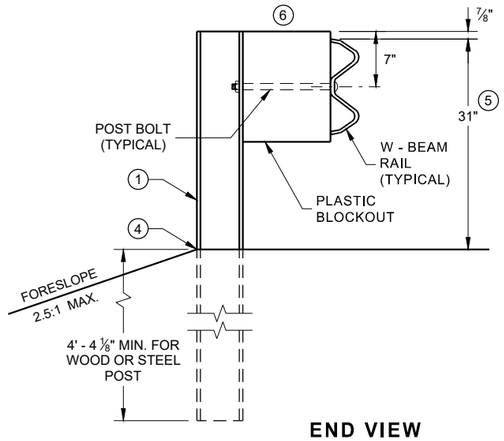
WOOD POST (6" X 8") NOMINAL (1)



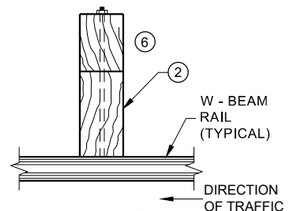
END VIEW
LOCATED ALONG A CURBED ROADWAY



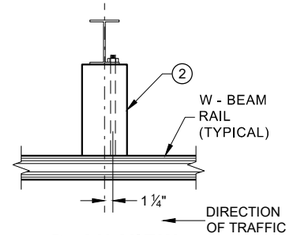
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



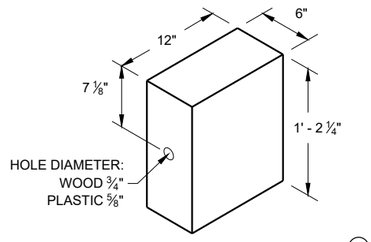
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

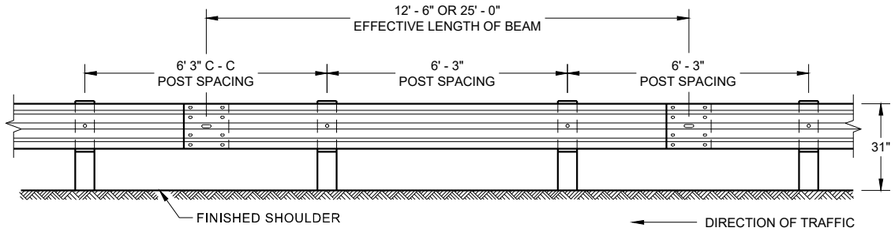
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

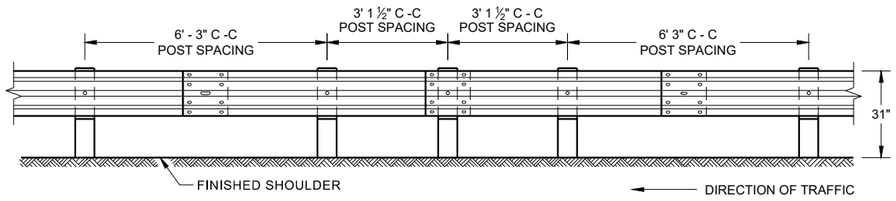
6

SDD 14B42 - 07a

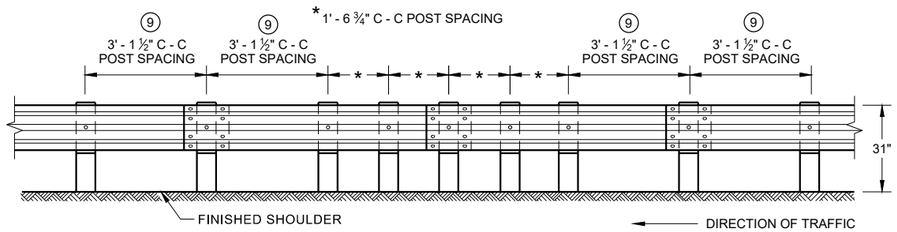
SDD 14B42 - 07a



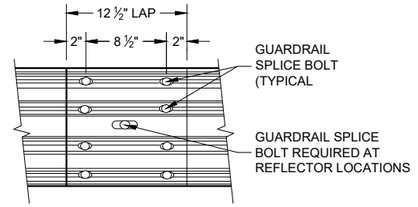
FRONT VIEW
POST SPACING STANDARD INSTALLATION



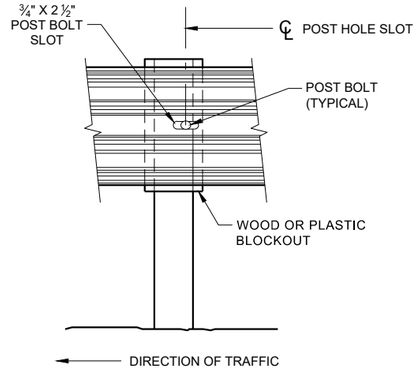
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



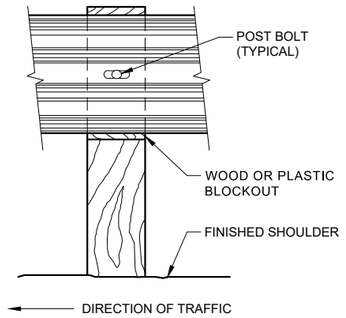
FRONT VIEW
QUARTER POST SPACING (QS)



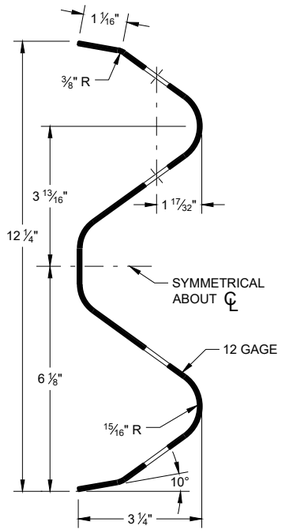
FRONT VIEW
MID-SPAN BEAM SPLICE



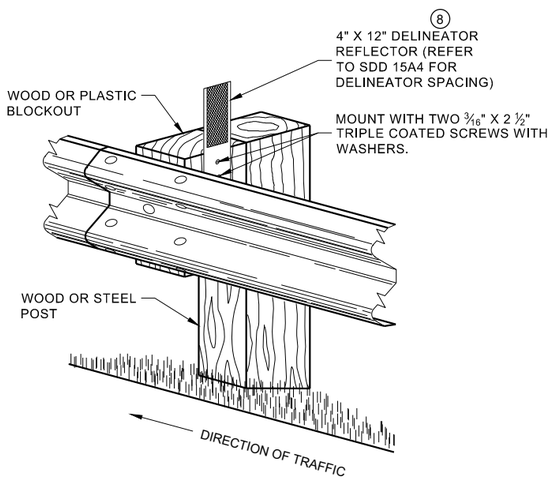
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

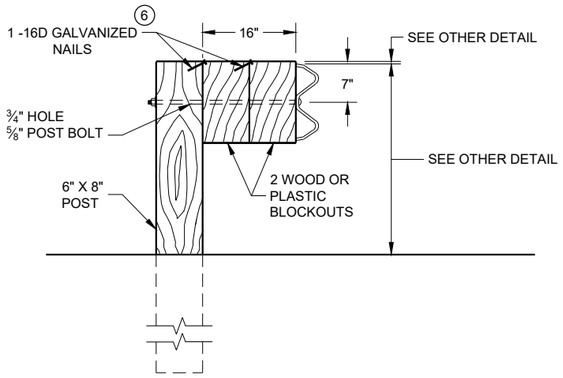
GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

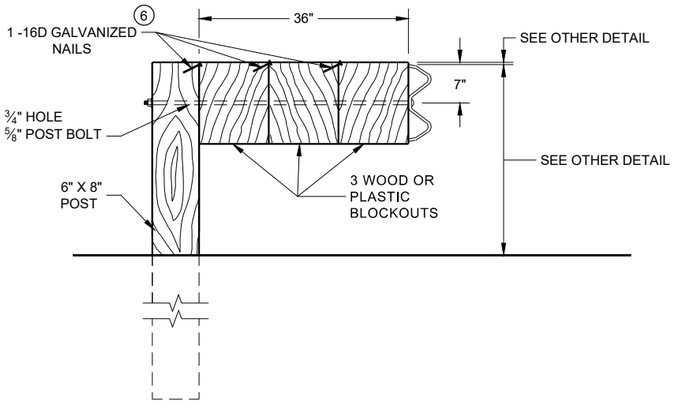
POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



DETAIL FOR 16" BLOCKOUT DEPTH

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



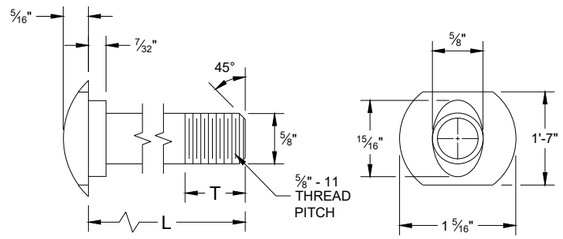
DETAIL FOR 36" BLOCKOUT DEPTH

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

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

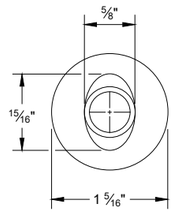
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

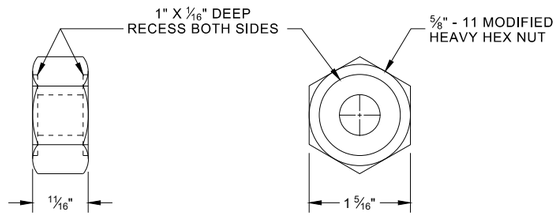


POST BOLT TABLE

L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"

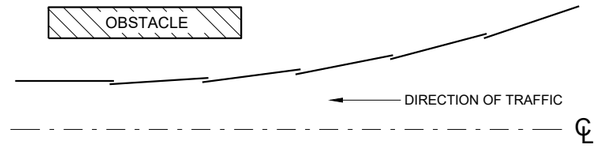


ALTERNATE BOLT HEAD

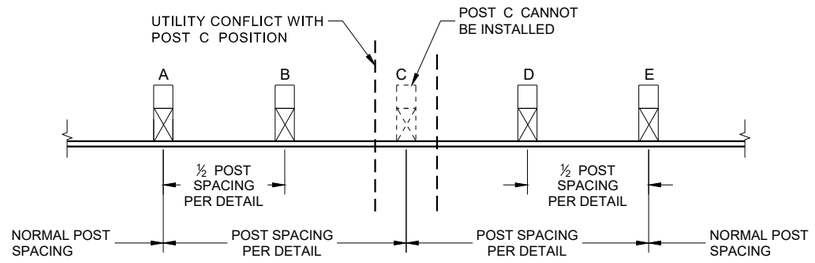


POST BOLT, SPLICE BOLT AND RECESS NUT

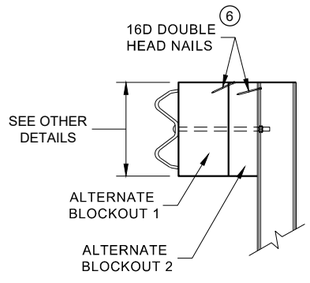
(6) WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



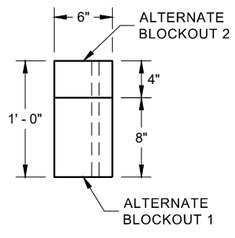
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

6

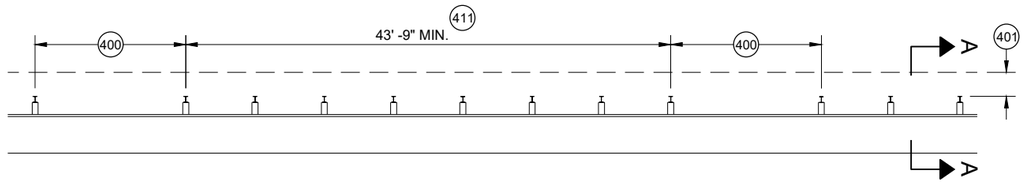
SDD 14B42 - 07c

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

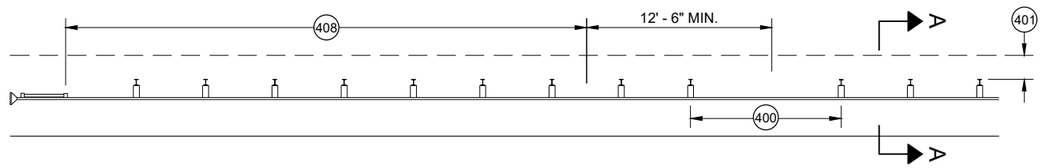
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

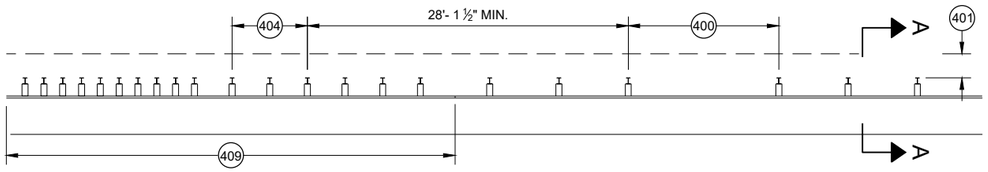
SDD 14B42 - 07c



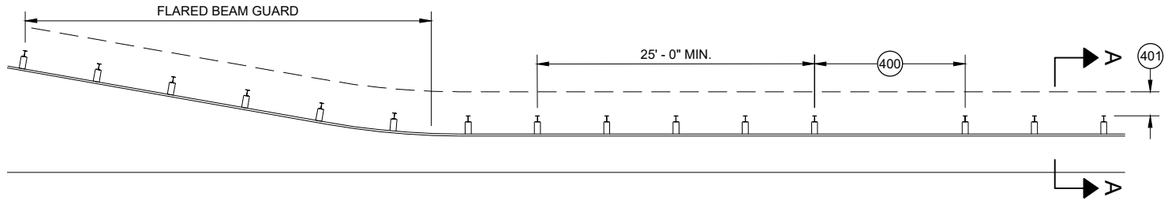
MISSING POST IN MGS GUARDRAIL



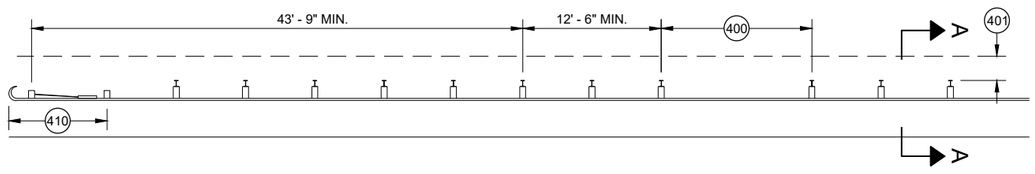
MISSING POST IN MGS GUARDRAIL NEAR EAT



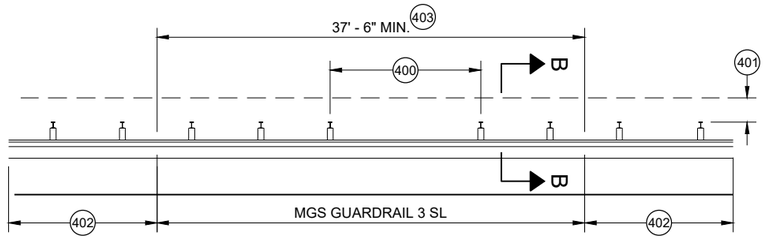
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

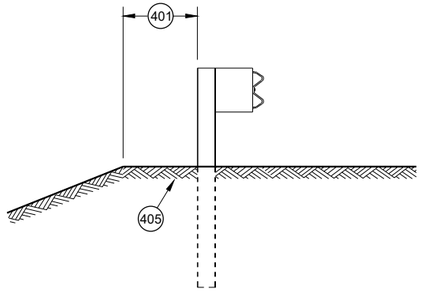


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

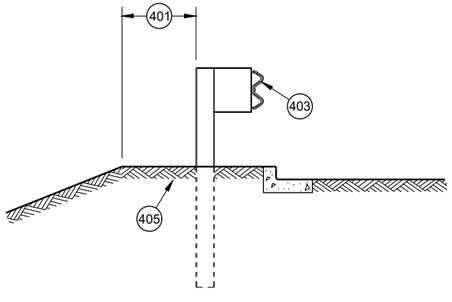


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

(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 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR
FHWA

6

SDD 14B42 - 07d

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED

(C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

(D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.

(E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

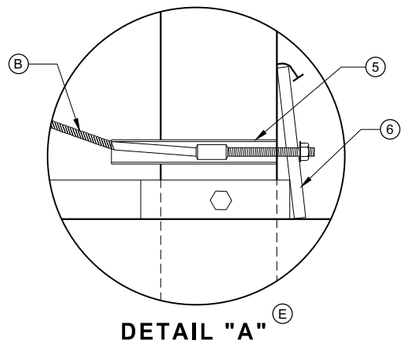
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

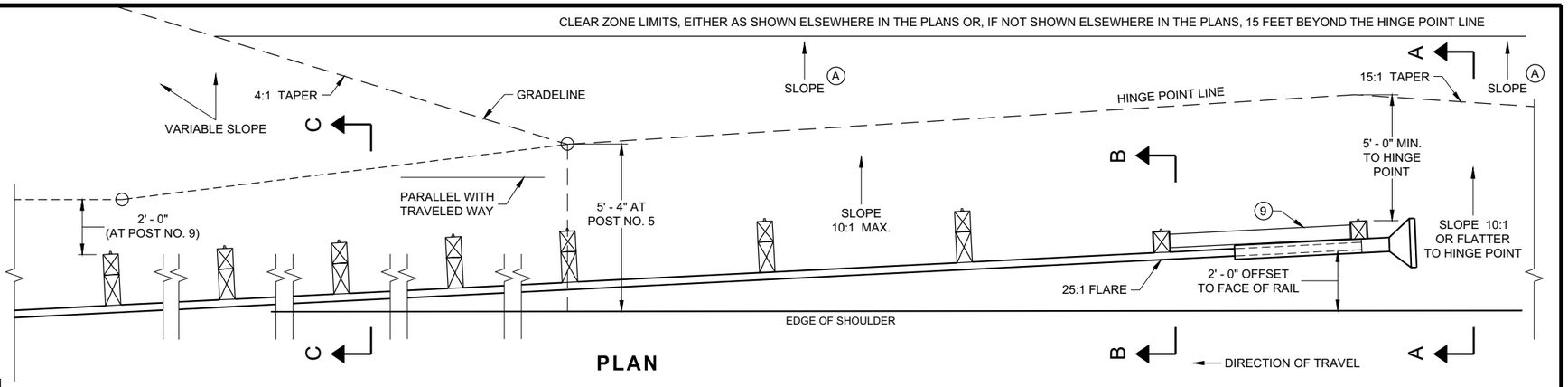
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

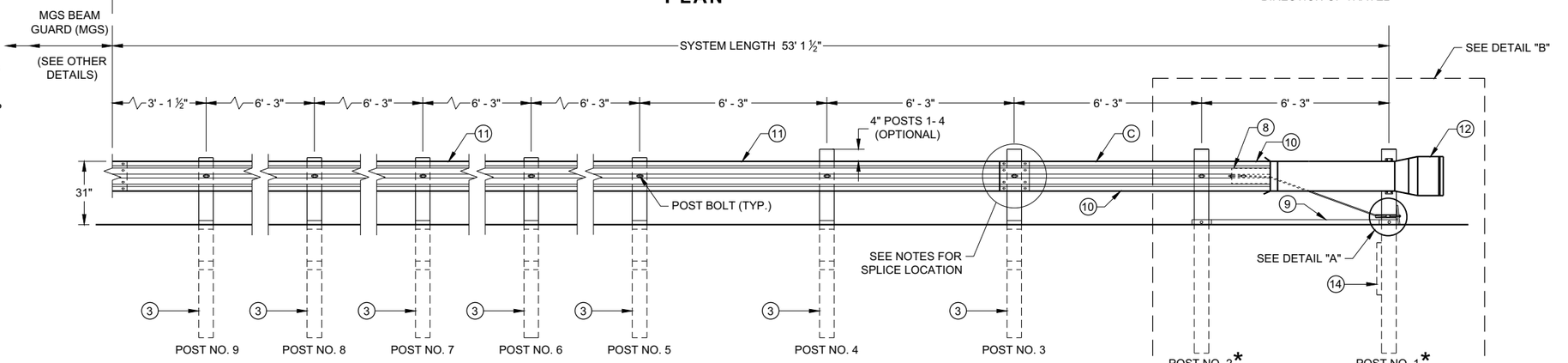
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

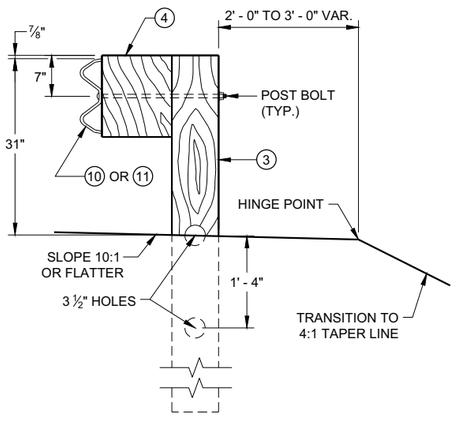
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



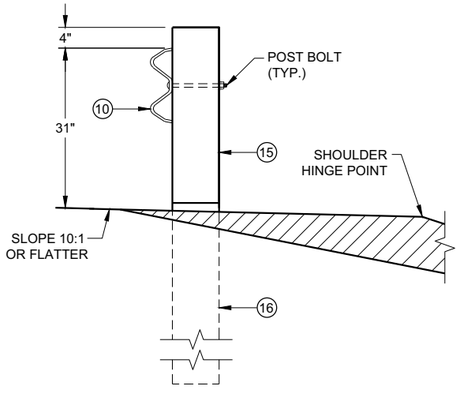
DETAIL "A" (E)



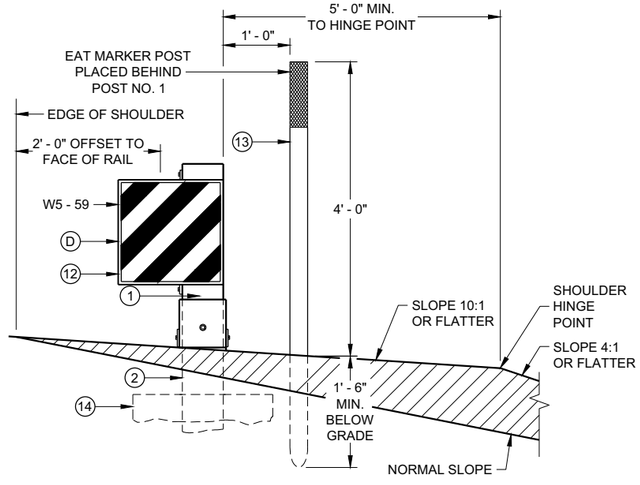




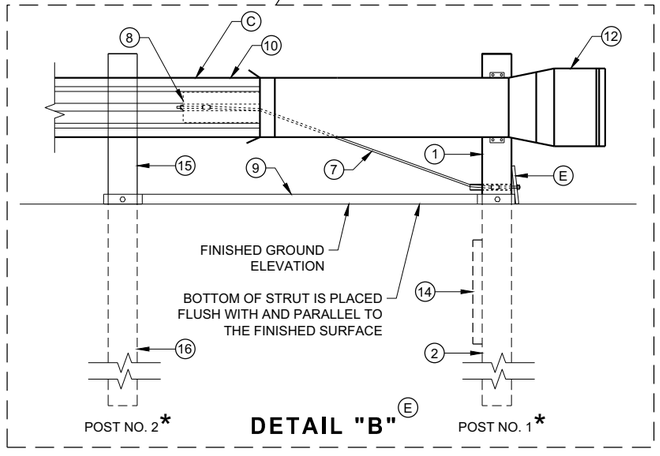
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



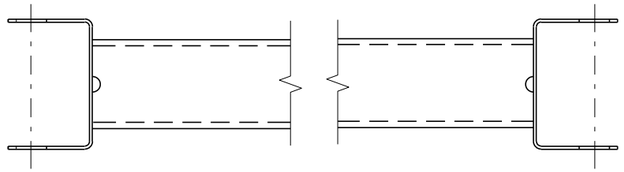
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

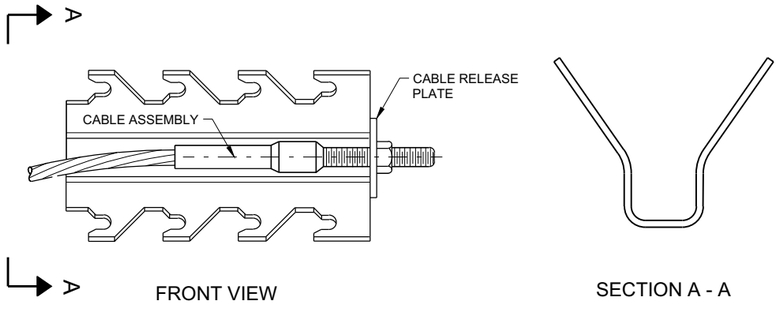
SDD 14B44 - 04a



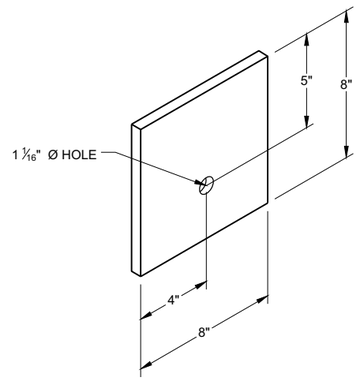
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑧ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

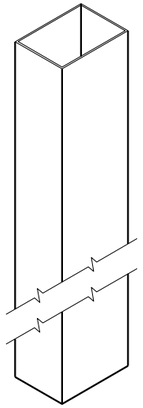
6

SDD 14B44 - 04b

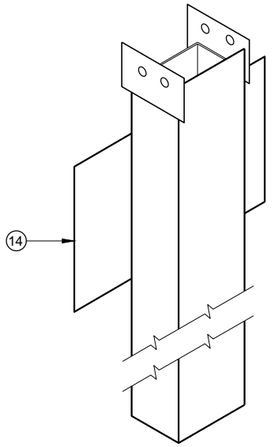
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

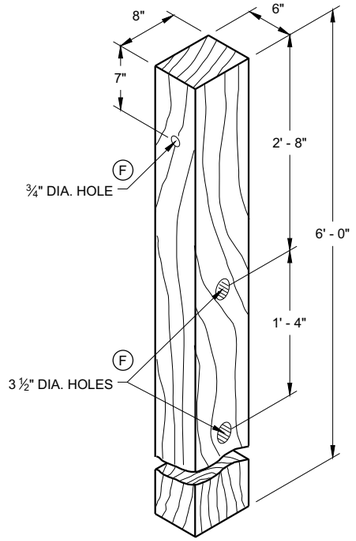
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



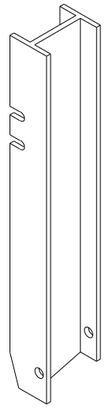
UPPER POST NO. 1 (1) (E)



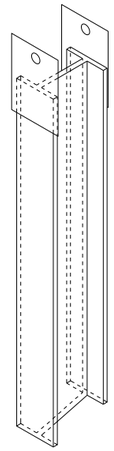
LOWER POST NO. 1 (2) (E)



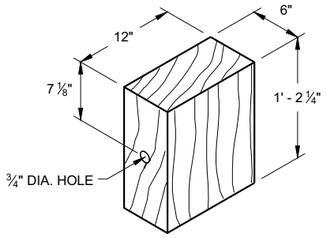
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



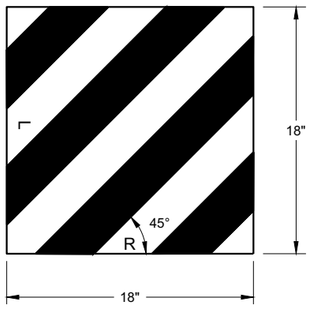
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

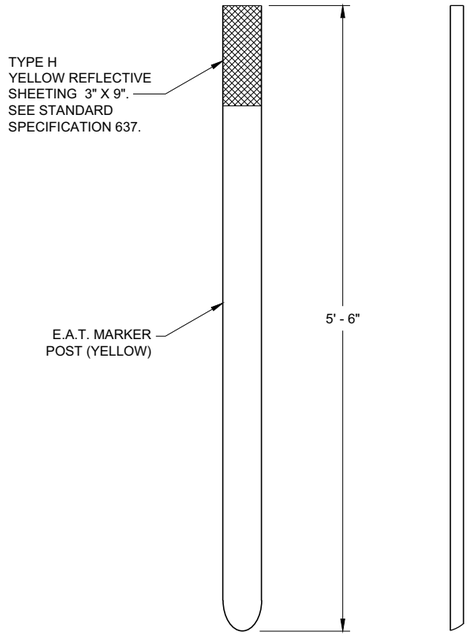


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



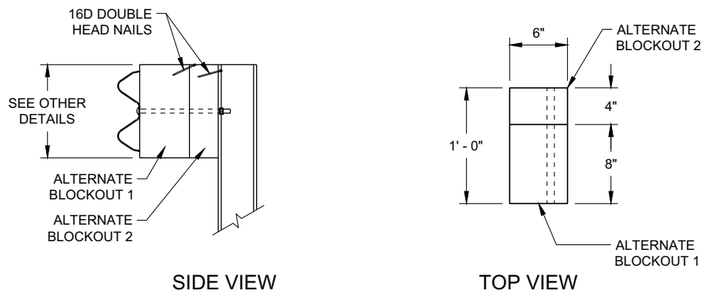
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

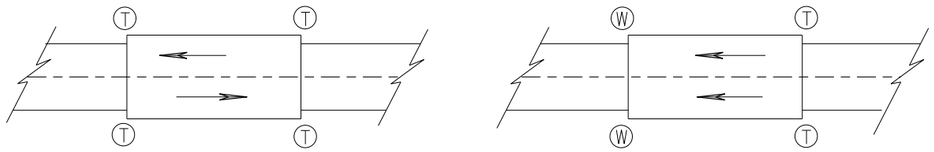
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B44 - 04c



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 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

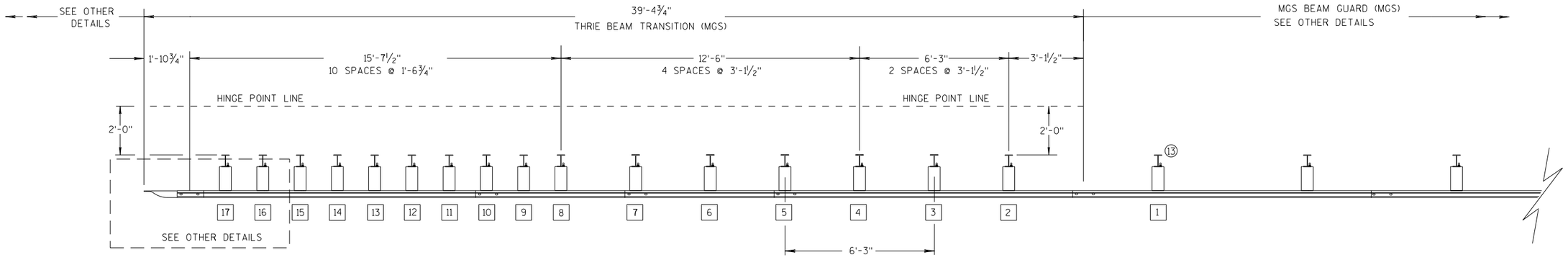
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

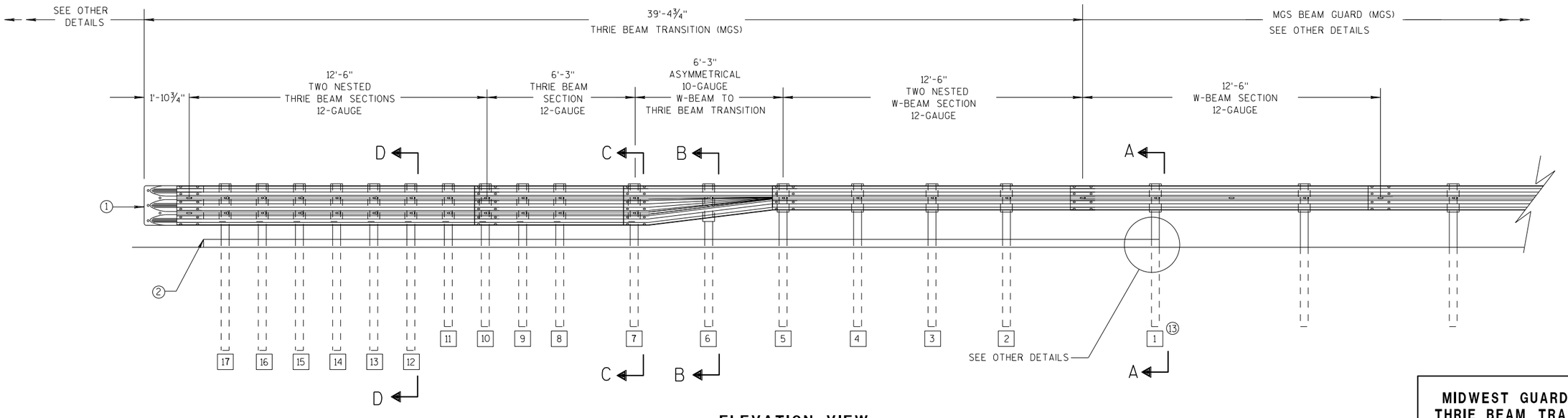
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(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 TRANSPOR 25

6

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

6

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

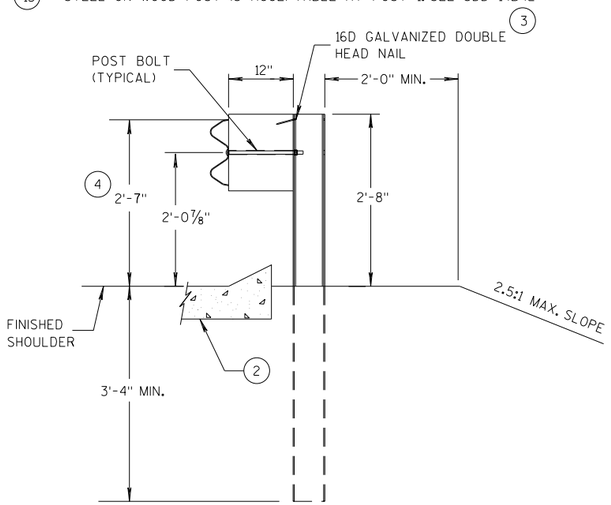
GENERAL NOTES

(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.

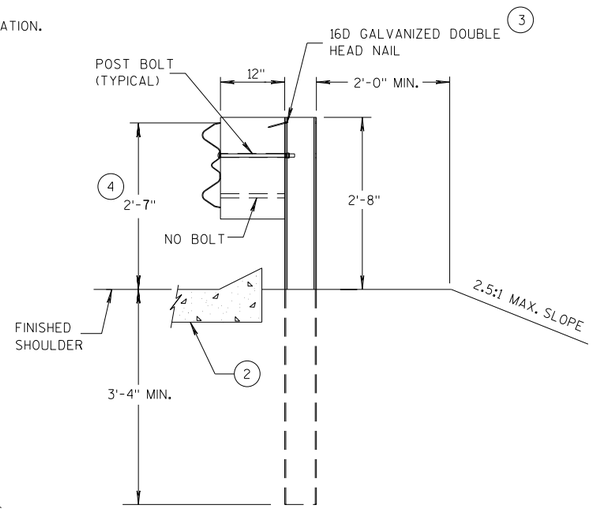
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



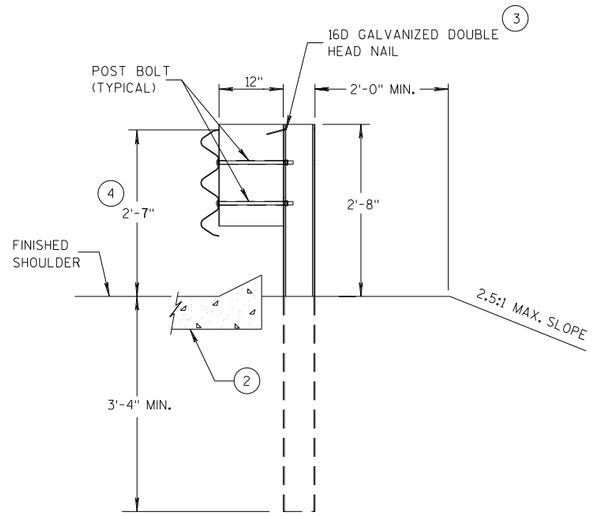
SECTION A-A (13)

POSTS 1-5



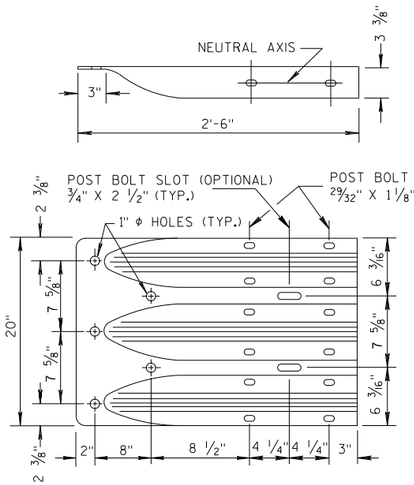
SECTION B-B

POST 6

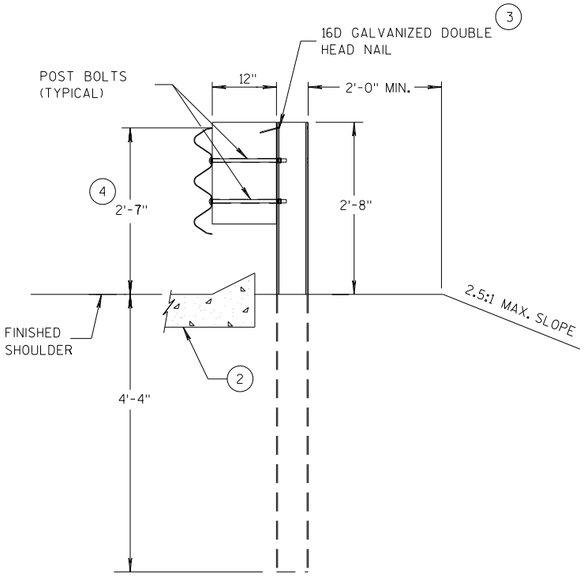


SECTION C-C

POSTS 7-11

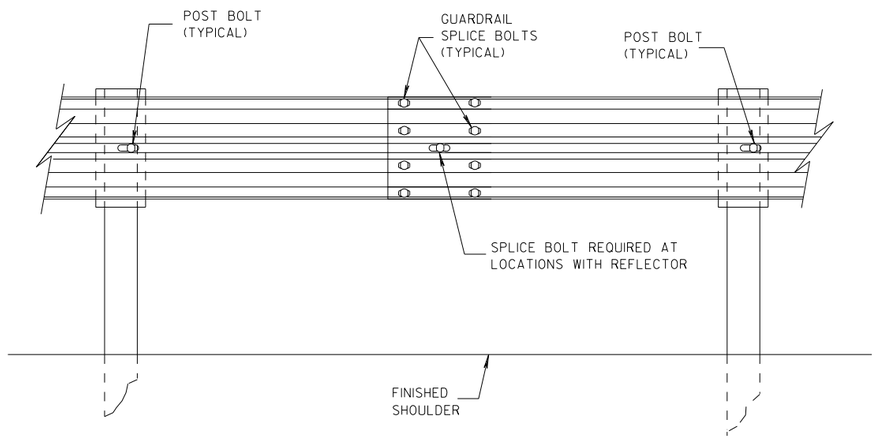


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

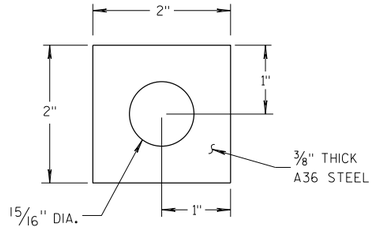
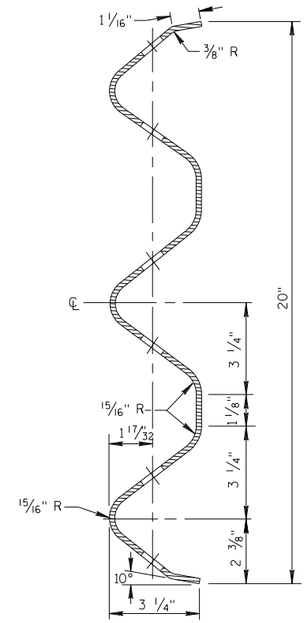


PLATE WASHER DETAIL



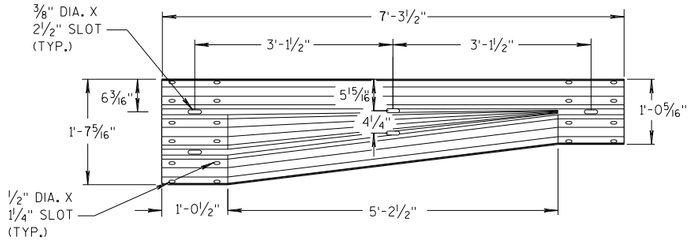
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

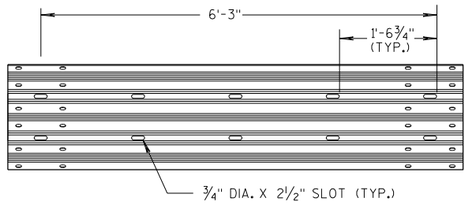
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

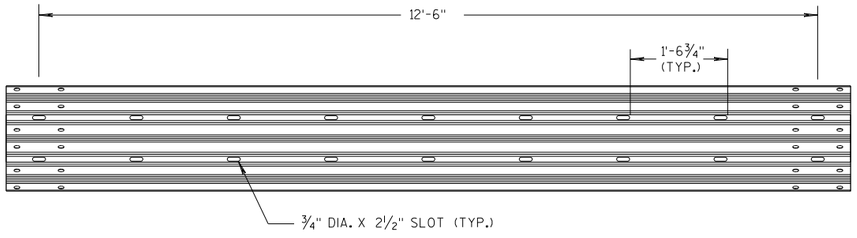
S.D.D. 14 B 45-5b



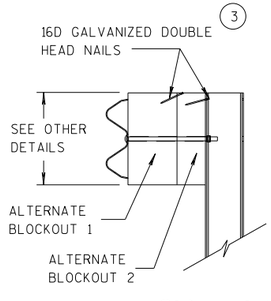
W-BEAM TO THRIE BEAM TRANSITION SECTION



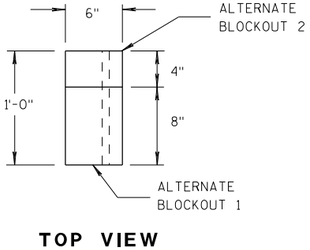
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

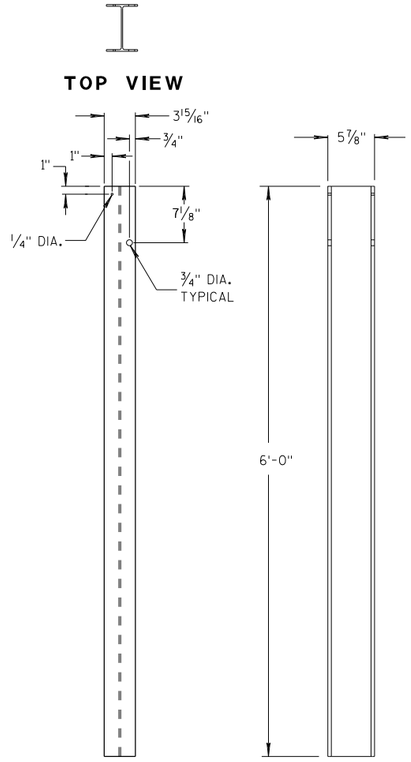


SIDE VIEW



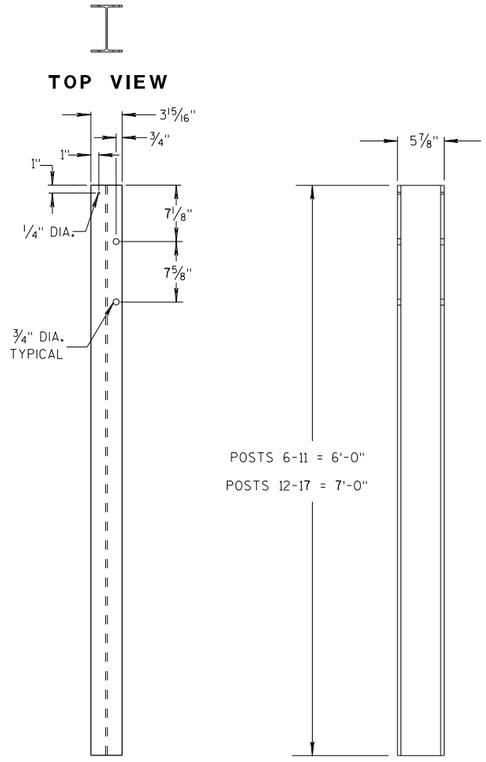
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



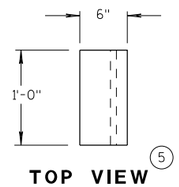
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

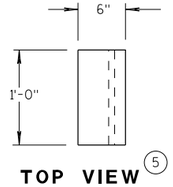


FRONT VIEW SIDE VIEW

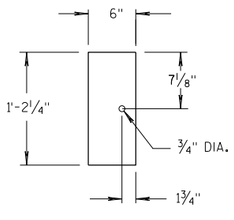
STEEL POSTS 6-17



TOP VIEW (5)

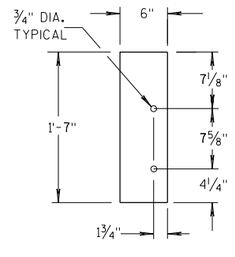


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

(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 TRANSPOR 27

6

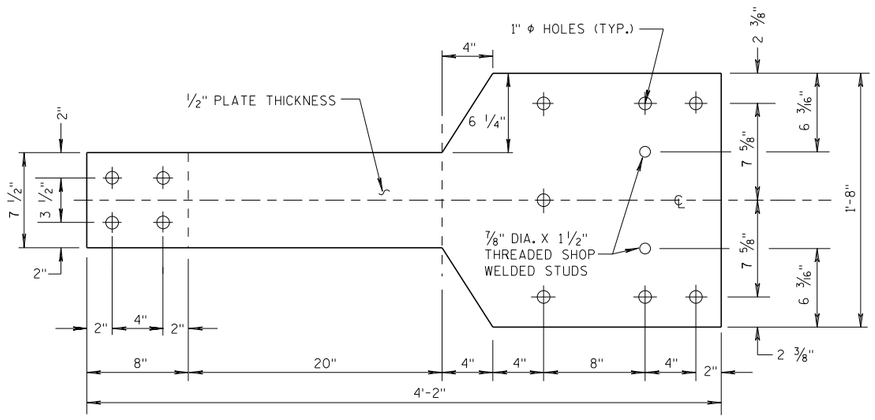
S.D.D. 14 B 45-5c

6

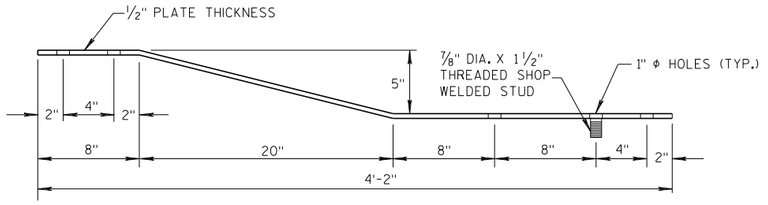
S.D.D. 14 B 45-5c

GENERAL NOTES

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

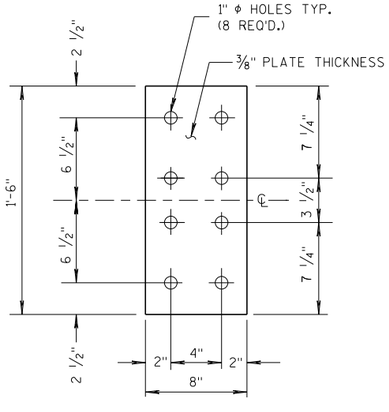


FRONT VIEW



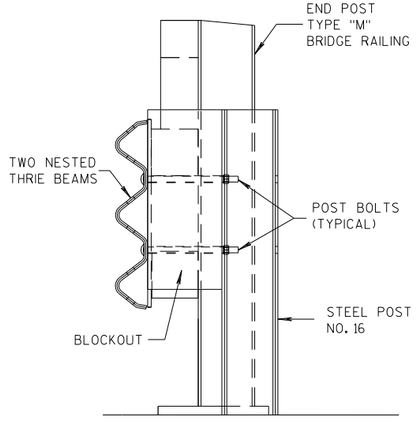
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

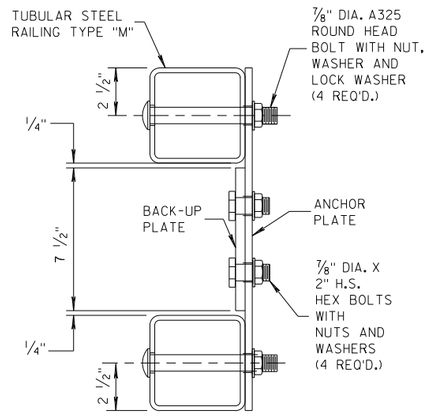


FRONT VIEW

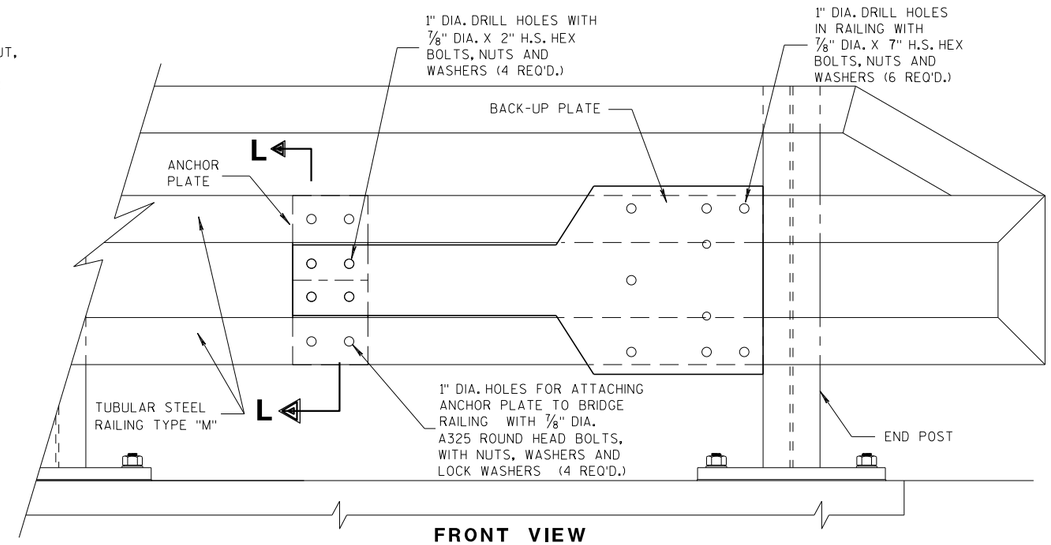
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

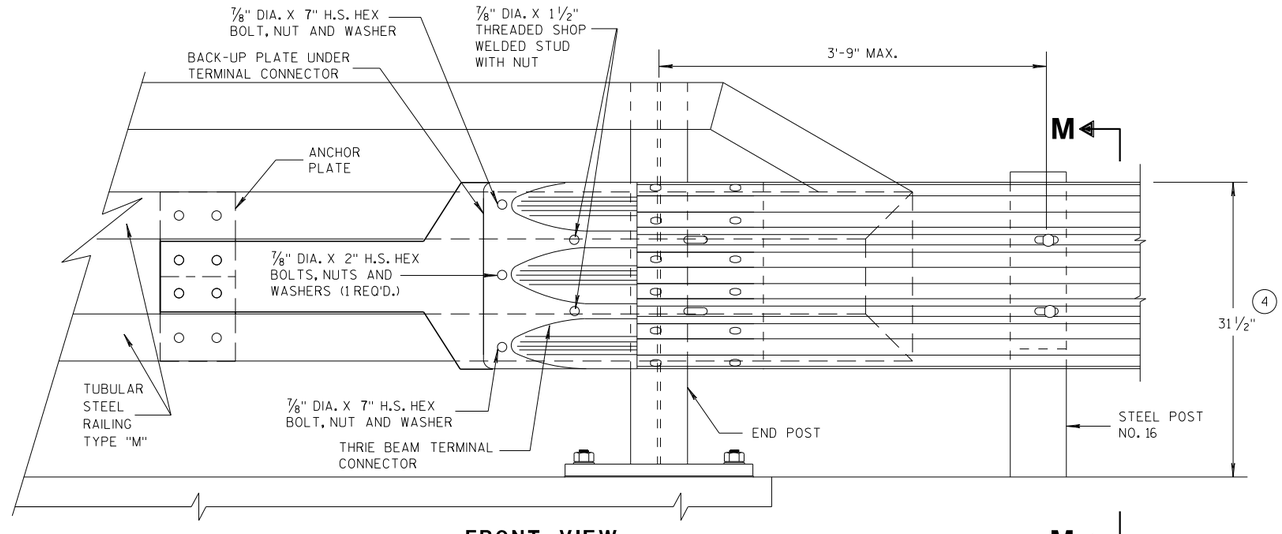


SECTION L-L

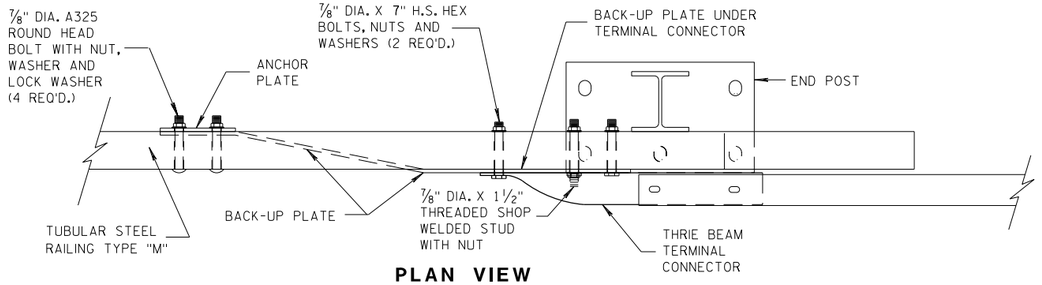


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

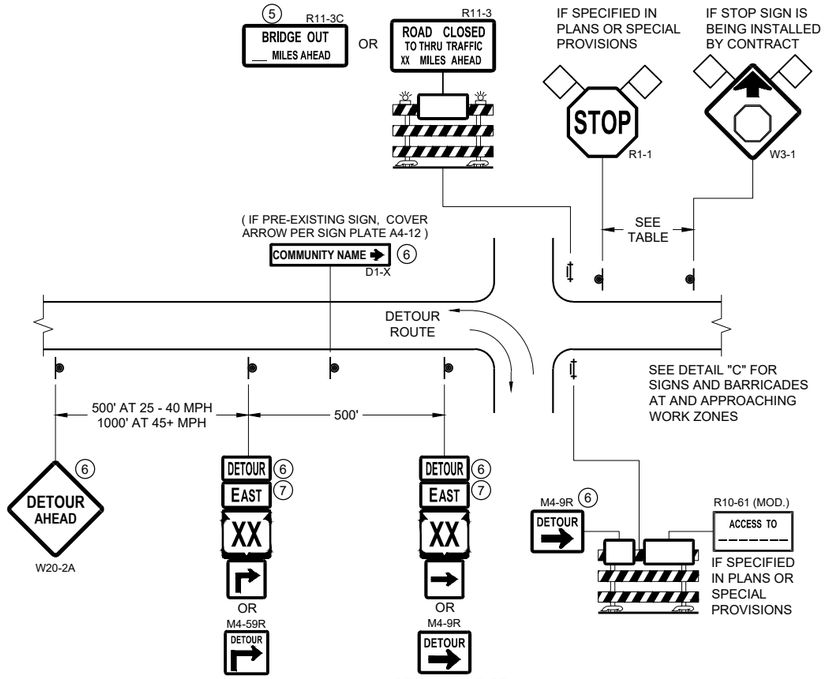
APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVISOR
FHWA

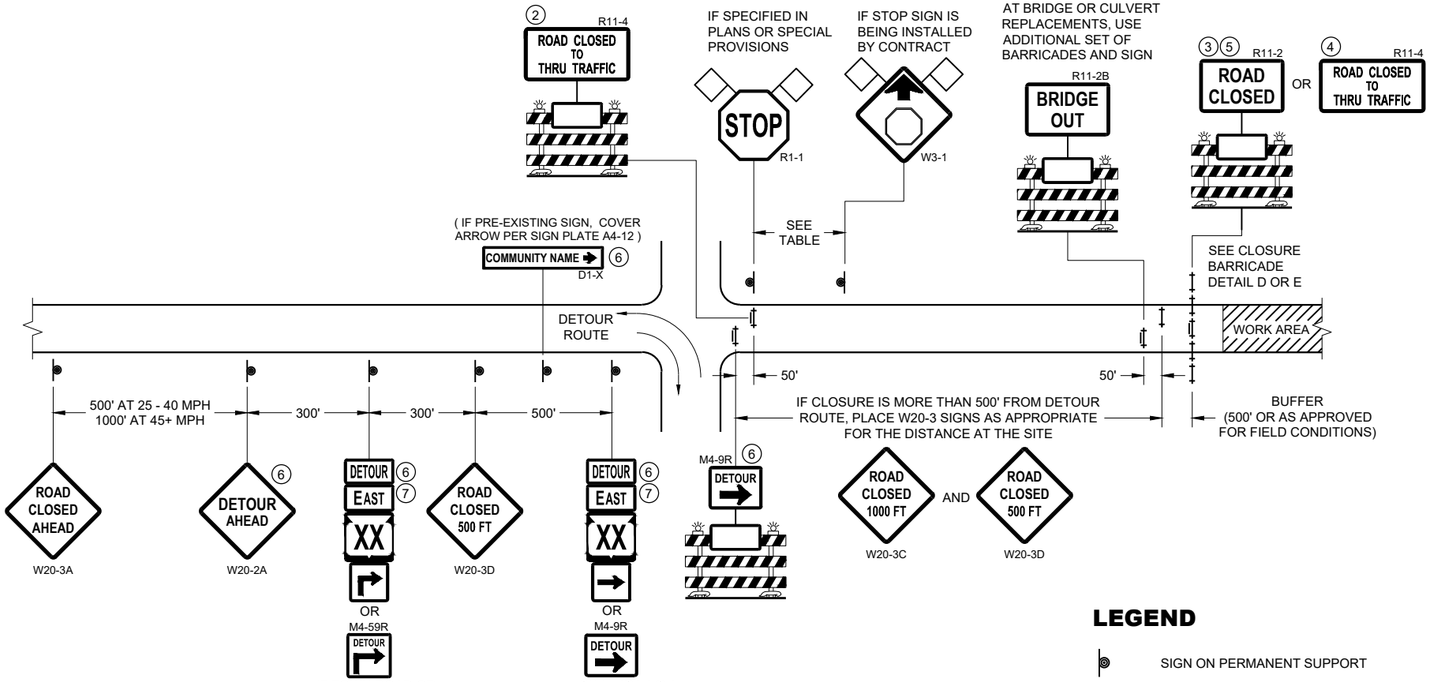
6

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

6

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





DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

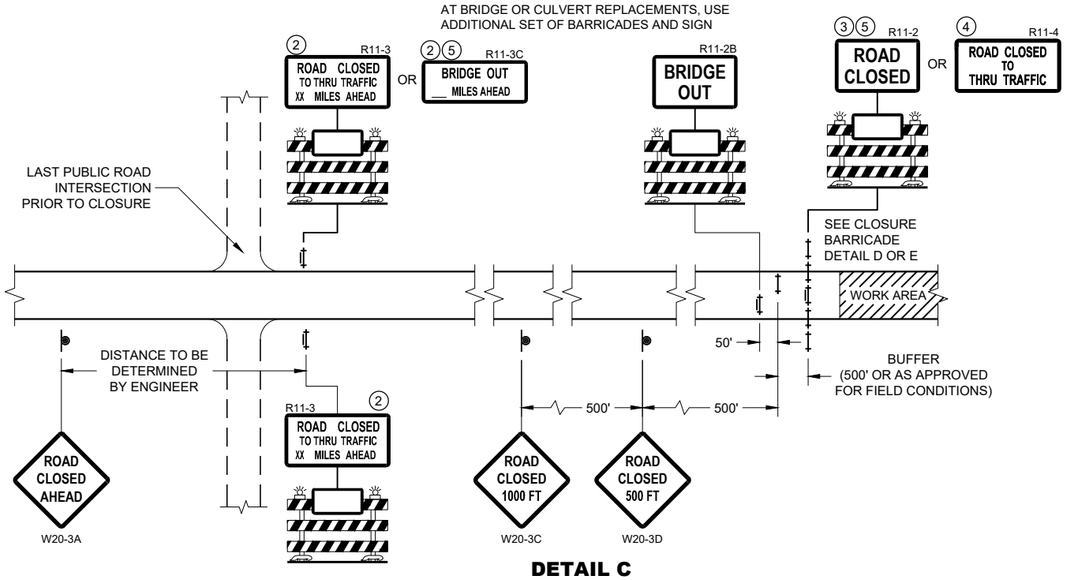
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ 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)

DETOUR M4 - 8
EAST M3 - X
XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
M05 - 1 OR M06 - 1



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

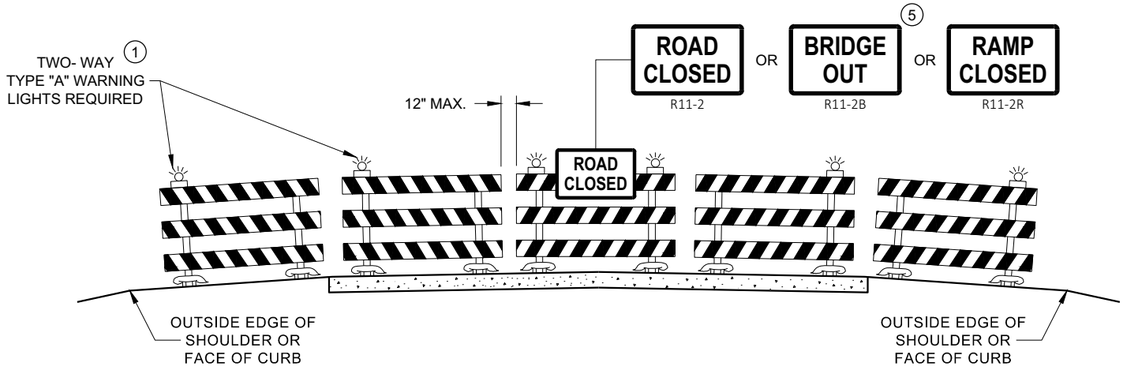
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

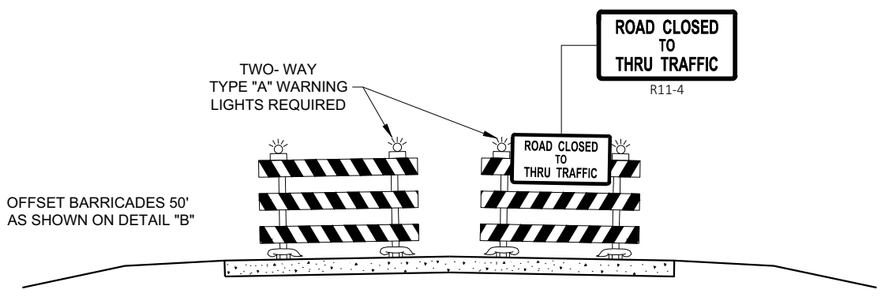
FHWA

SDD 15C02 - 08a

6
SDD 15C02 - 08a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING.

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

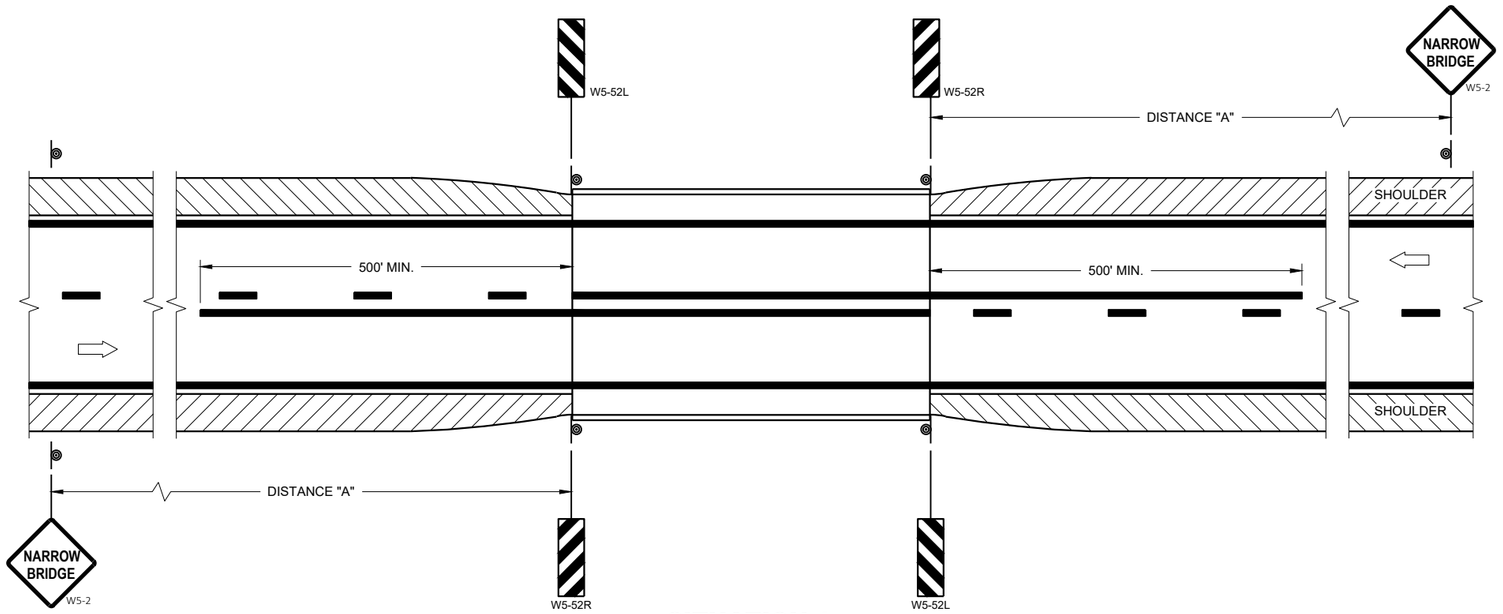
BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER
FHWA

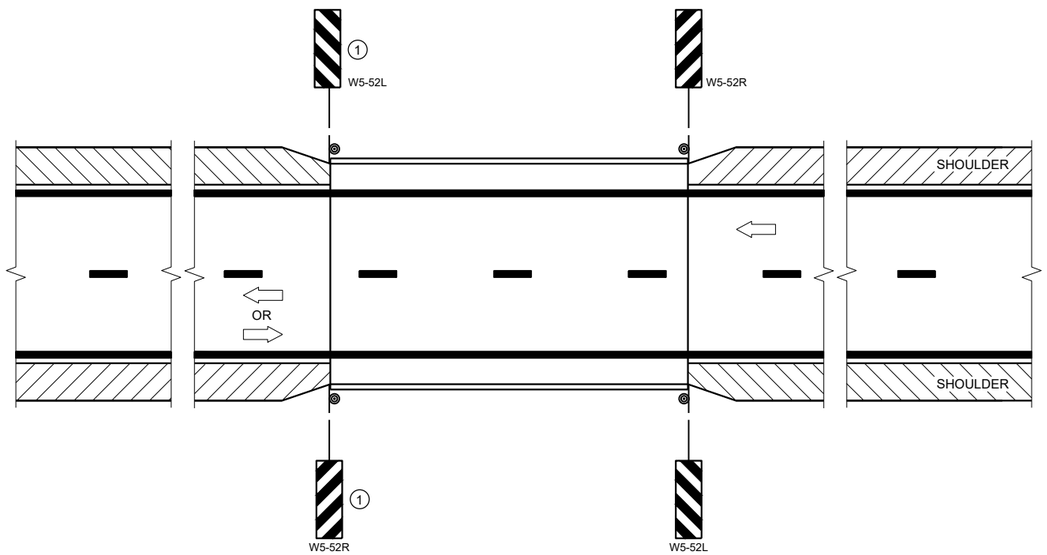
6

SDD 15C02 - 08b



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'

SIGNING AND MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE

/S/ Jeannie Silver
STATE SIGNING AND MAF ENGINEER

FHWA

6

SDD 15C06 - 10

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

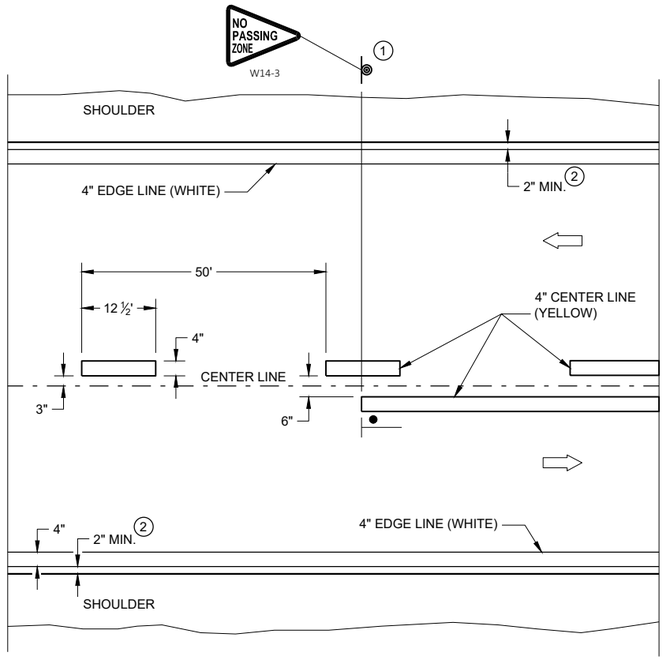
(2) MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

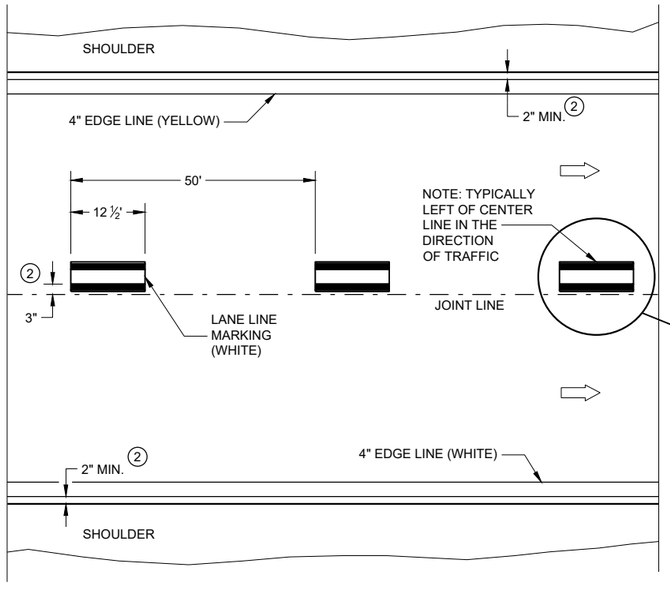
"T" MARKING

SIGN ON PERMANENT SUPPORT

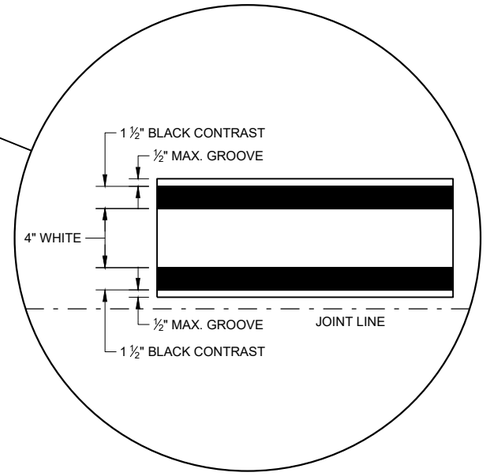
DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC



PERMANENT PAVEMENT MARKING

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE

/S/ Jeannie Silver
STATEWIDE SIGNING AND M
ENGINEER

FHWA

6

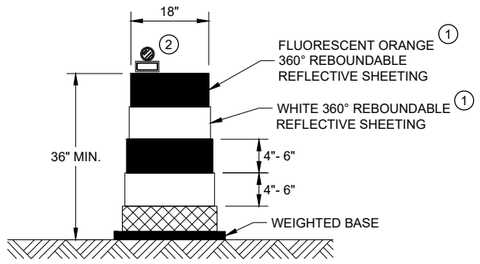
SDD 15C08 - 22a

6

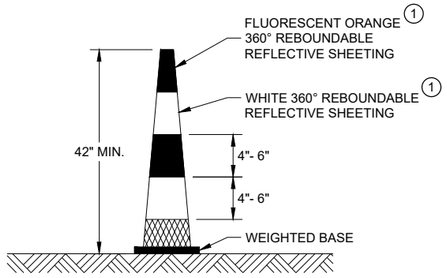
SDD 15C08 - 22a

GENERAL NOTES

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

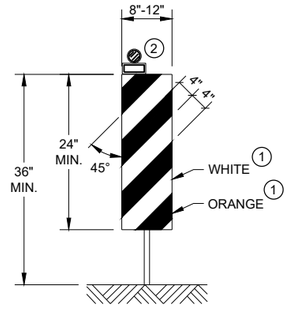


DRUM



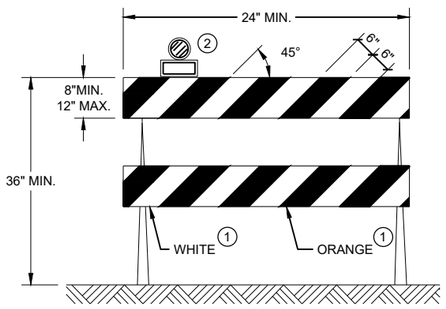
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



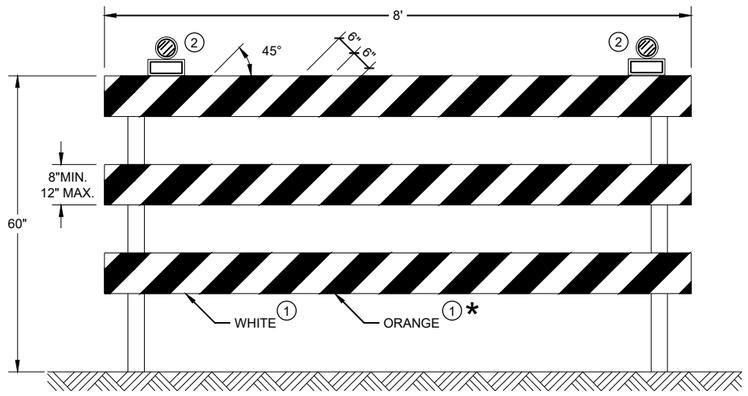
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

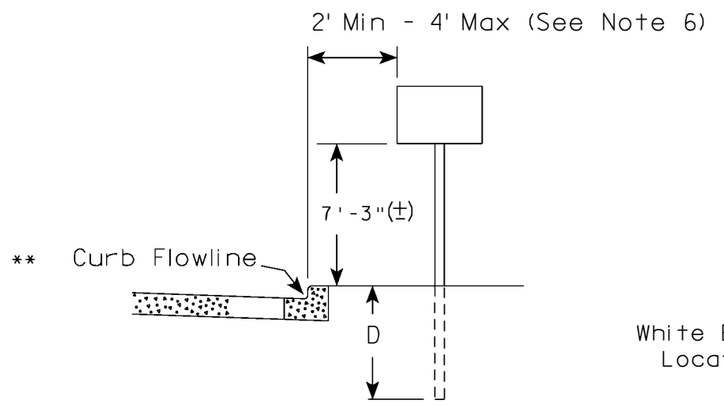
6

SDD 15C11 - 09b

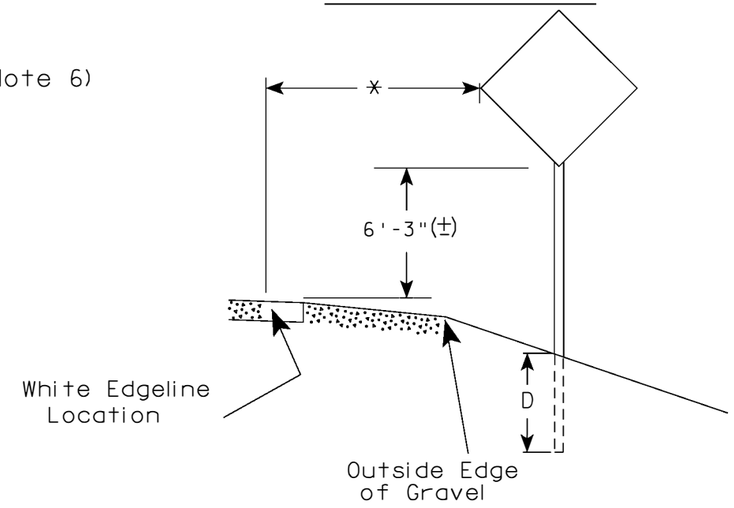
6

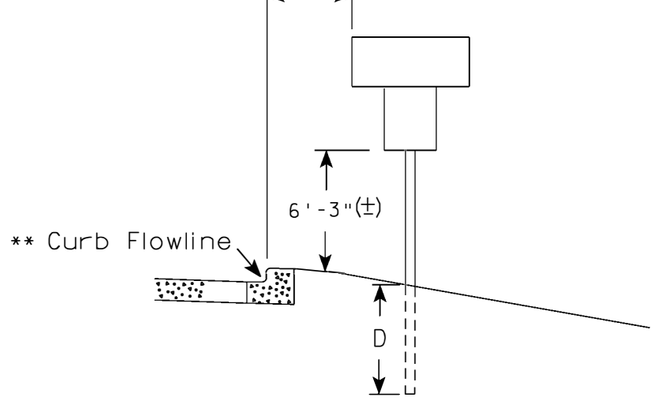
SDD 15C11 - 09b

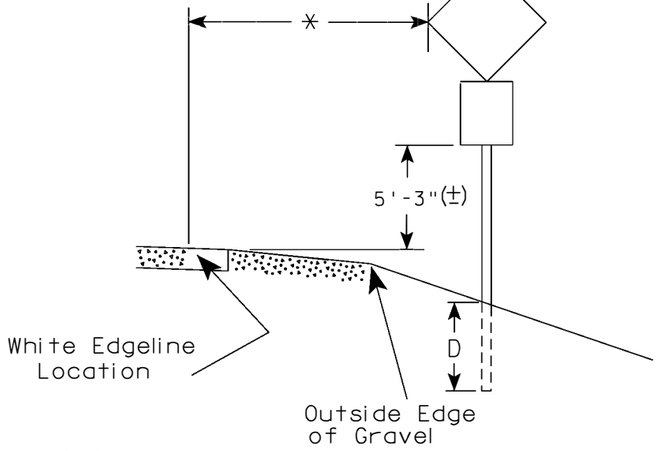
URBAN AREA



RURAL AREA (See Note 2)







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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

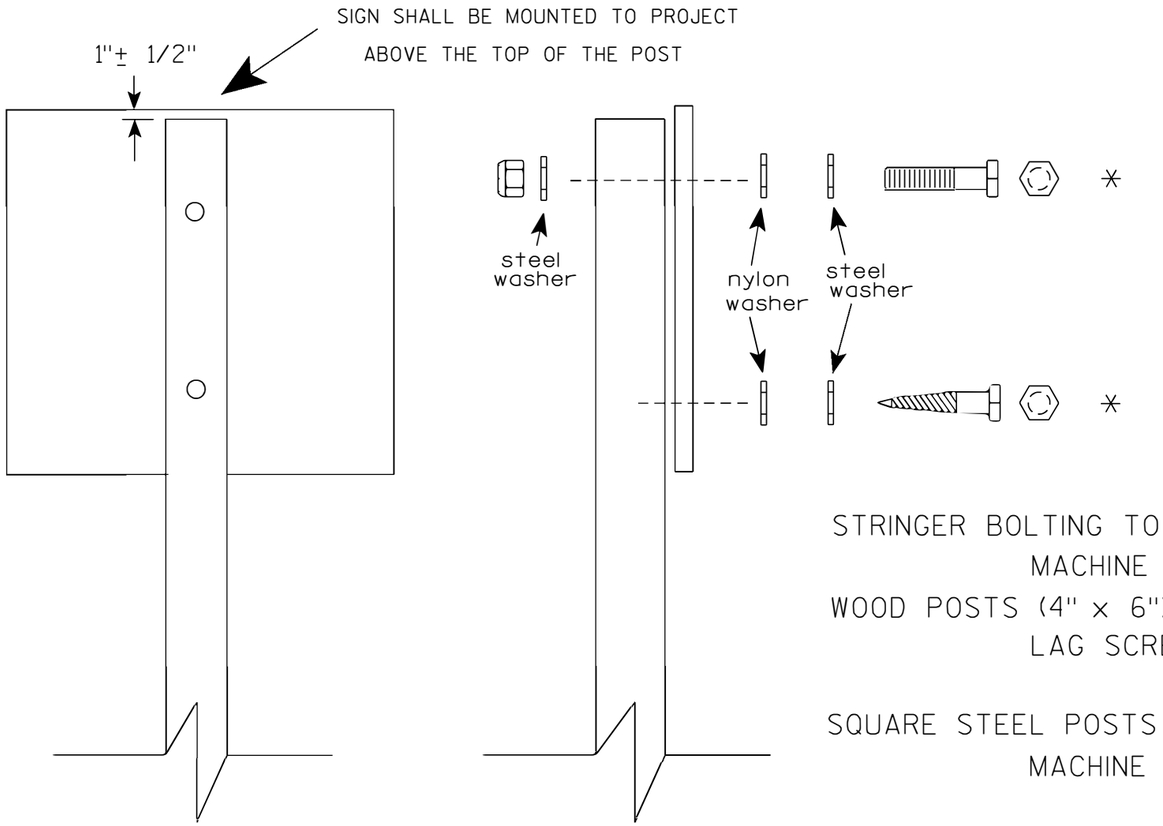
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON		SHEET NO: 34	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

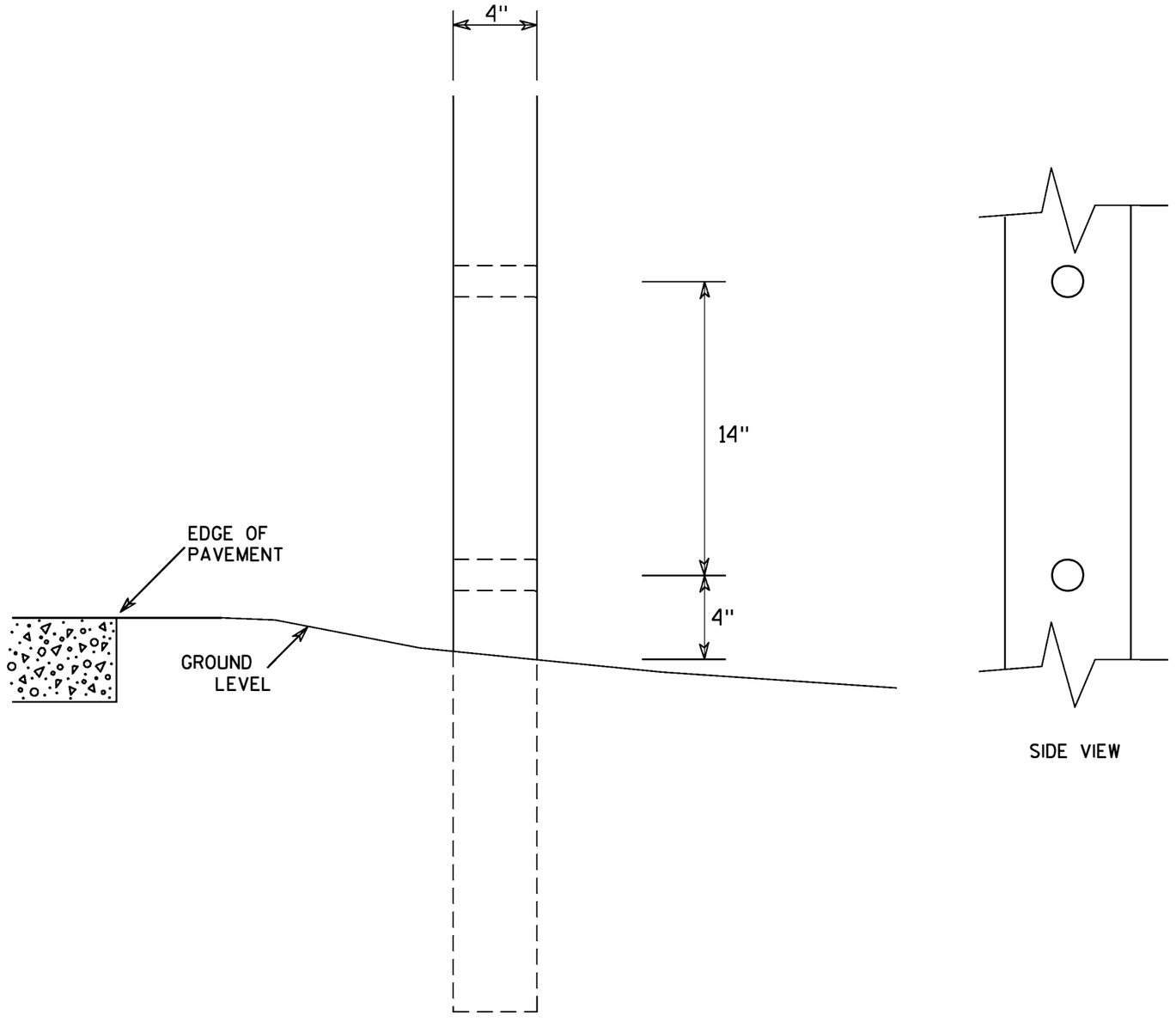
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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



SIDE VIEW

GENERAL NOTES

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

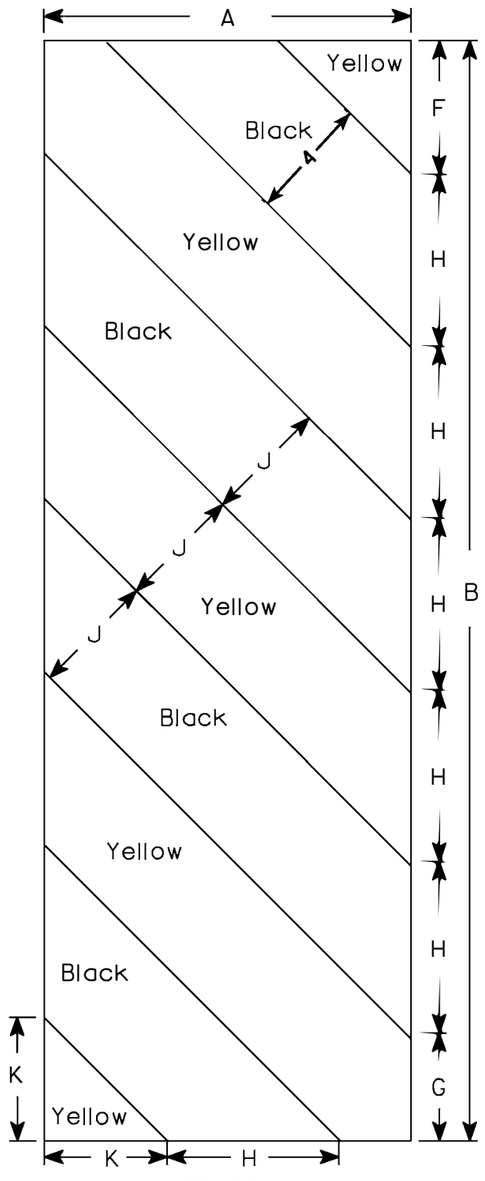
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

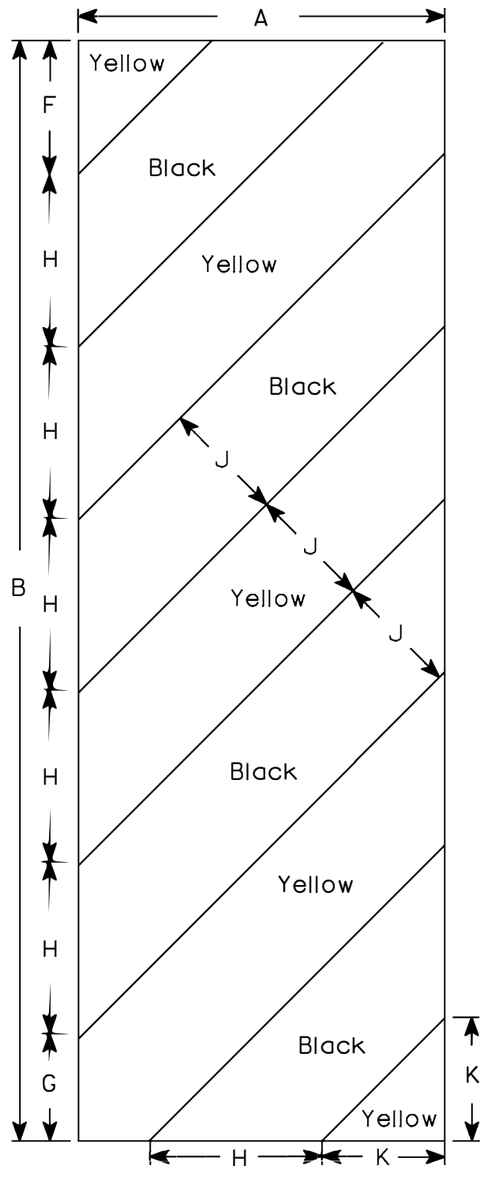
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON		SHEET NO: 36	E



W5-52L



W5-52R

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

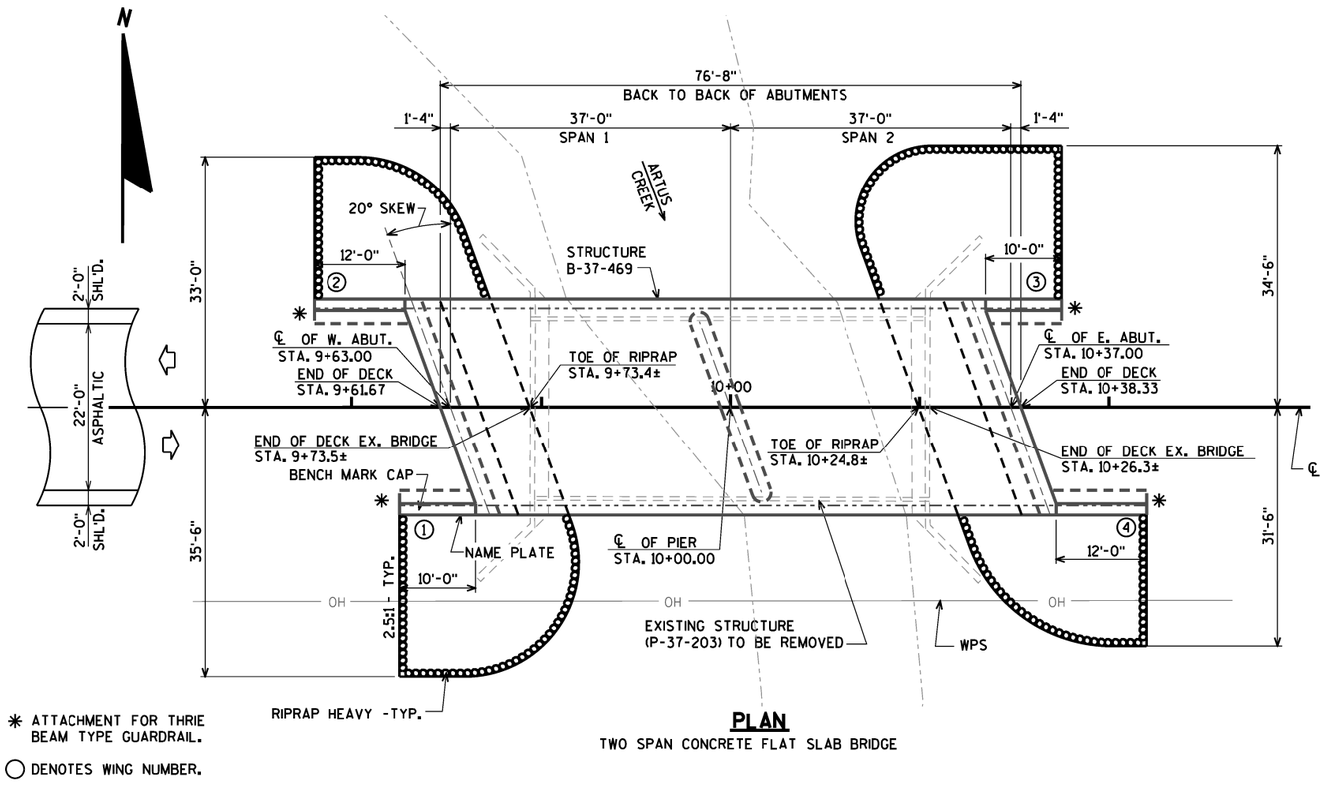
WISCONSIN DEPT OF TRANSPORTATION

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

PROJECT NO: 9526-00-70 | HWY: STETTIN DRIVE | COUNTY: MARATHON | SHEET NO: 37 | E

STATE PROJECT NUMBER

9526-00-70

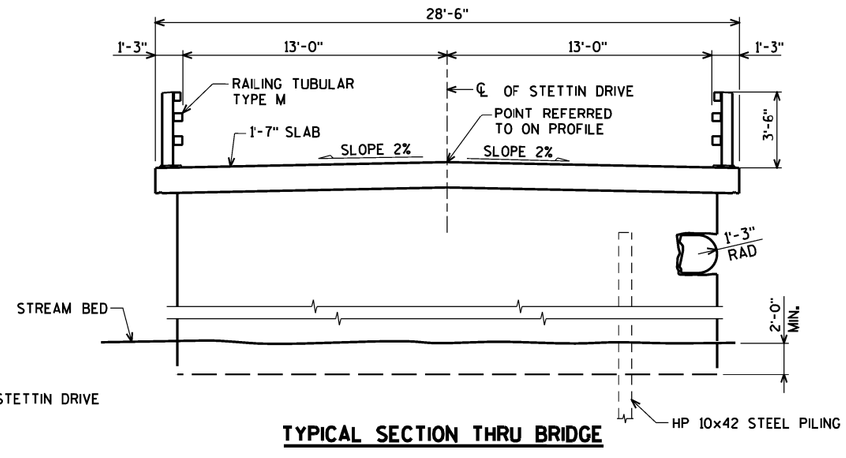


✱ ATTACHMENT FOR THRIE BEAM TYPE GUARDRAIL.

◯ DENOTES WING NUMBER.

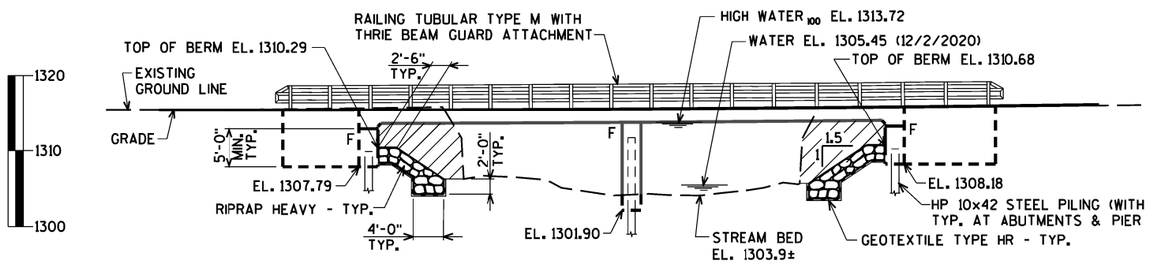
PLAN

TWO SPAN CONCRETE FLAT SLAB BRIDGE



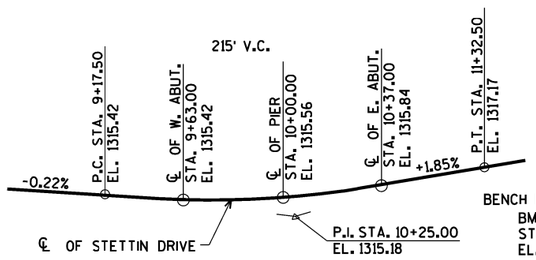
TYPICAL SECTION THRU BRIDGE

LIST OF DRAWINGS



ELEVATION

(NORMAL TO ℄ OF CREEK)



PROFILE GRADE LINE

(STETTIN DRIVE)

BENCH MARK:
BM #211, CHIS. BOX SW WINGWALL
STA. 9+74, 15.2' RT.
EL. 1315.51

COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-37-469".

REMOVE EXISTING SUBSTRUCTURE AS NEEDED. COST CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE" ITEM. TYPICAL AT ALL SUBSTRUCTURES.

FOR DESIGN DATA SEE SHEET 2

WISCONSIN
ARLEN E. BEAUDETTE
E-36829
EAU CLAIRE
PROFESSIONAL ENGINEER

11/07/2022

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

CONSULTANT CONTACT:
ARLEN BEAUDETTE
(715)-834-3161

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 11/09/22
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-37-469

STETTIN DRIVE OVER ARTUS CREEK

COUNTY	TOWN/~~CITY/VILLAGE~~
MARATHON	STETTIN

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	ZSS	DESIGN CK'D.	JCK	DRAWN BY	CLP	PLANS CK'D.	AEB

GENERAL PLAN

SHEET 1 OF 15
38

I.D.

DATE:

DATE:
DATE:
DATE:
CHECKED BY:
BACK CHECKED BY:
CORRECTED BY:

11/1/2022
PENTABLE:BReau_shd_util.tbl

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I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Structure\Final\421269 gp.dgn

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	PIER	E. ABUT.	SUPER.	TOTAL
203.0250	REMOVING STRUCTURE OVER WATERWAY REMOVE DEBRIS P-37-203	EACH	-----	-----	-----	-----	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-37-469	EACH	-----	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	120	-----	120	-----	240
502.0100	CONCRETE MASONRY BRIDGES	CY	30.3	31.1	30.9	132.8	225
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	-----	290	290
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,790	1,400	1,790	-----	4,980
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,500	60	1,500	27,570	30,630
513.4061	RAILING TUBULAR TYPE M	LF	-----	-----	-----	203	203
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	-----	9	-----	18
550.0500	PILE POINTS	EACH	5	6	5	-----	16
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	100	180	100	-----	380
606.0300	RIPRAP HEAVY	CY	105	-----	115	-----	220
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	70	-----	70	-----	140
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	50	-----	50	-----	100
645.0120	GEOTEXTILE TYPE HR	SY	190	-----	200	-----	390
	NON-BID ITEMS						
	FILLER	SIZE	-----	-----	-----	-----	½" & ¾"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

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

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATIVE METHOD IS APPROVED BY THE ENGINEER.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-37-469" SHALL BE THE EXISTING GROUNDLINE.

THE EXISTING STRUCTURE, P-37-203 TO BE REMOVED, IS A SINGLE SPAN STEEL LOW TRUSS BRIDGE ON CONCRETE ABUTMENTS, 53.3 FEET LONG WITH A 23.0 FOOT CLEAR ROADWAY WIDTH.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS NOTED OTHERWISE.

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 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.

EXISTING SUBSTRUCTURE LOCATIONS ARE BASED ON SURVEY. EXTENT OF BELOW GRADE SUBSTRUCTURES ARE NOT KNOWN. REMOVE EXISTING SUBSTRUCTURES AS NEEDED TO BUILD NEW SUBSTRUCTURES. COST OF SUBSTRUCTURE REMOVAL IS CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE" BID ITEM.

AT ABUTMENTS, CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.23
OPERATING RATING FACTOR: 1.60
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

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

MATERIAL PROPERTIES:

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

HYDRAULIC DATA:

100 YEAR FREQUENCY	2 YEAR FREQUENCY
Q_{100} = 2,800 c.f.s.	Q_2 = 500 c.f.s.
VEL.= 7.30 f.p.s.	VEL.= 3.33 f.p.s.
HW_{100} = EL. 1313.72	HW_2 = EL. 1309.56

WATERWAY AREA = 384 sq. ft.
DRAINAGE AREA = 4.1 sq. mi.
SCOUR CRITICAL CODE = 5
DATUM = NAVD88 (2012)

FOUNDATION DATA:

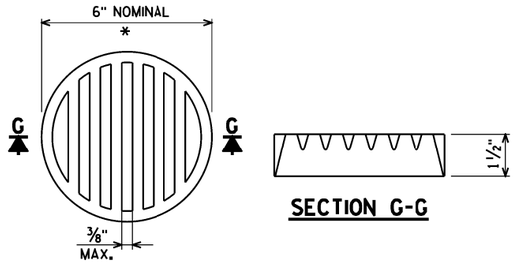
ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS ‡ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 20'-0".

PIER TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ‡ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 30'-0".

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

TRAFFIC DATA:

A.A.D.T. = 310 (2023)
A.A.D.T. = 420 (2043)
R.D.S. = 50 M.P.H.



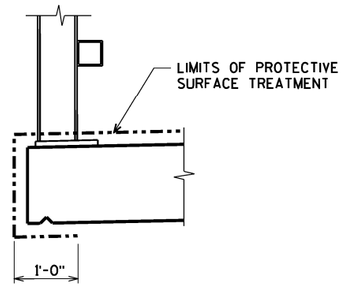
SECTION G-G

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

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

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

RODENT SHIELD DETAIL



PROTECTIVE SURFACE TREATMENT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY CLP | PLANS CK'D. JCK

QUANTITIES AND NOTES

SHEET 2 OF 15
39

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

11/1/2022
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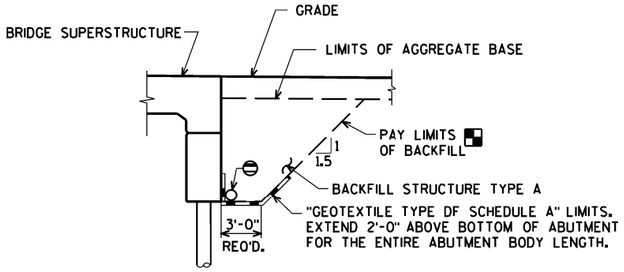
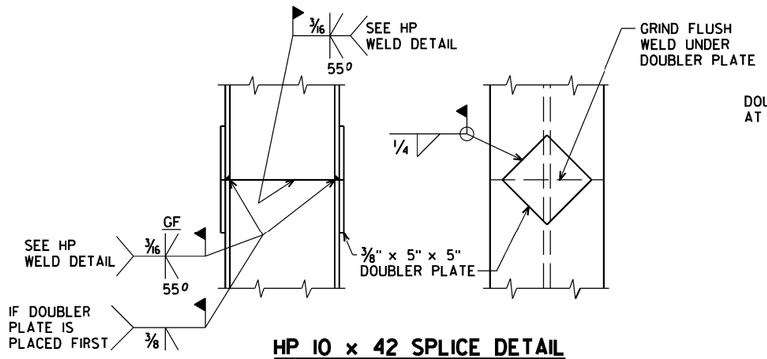


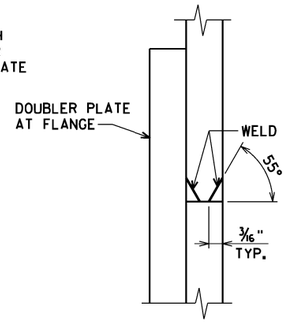
BACKFILL STRUCTURE LIMITS

BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2.



HP 10 x 42 SPLICE DETAIL



HP WELD DETAIL

FLANGE SHOWN. WEB SIMILAR

8/8/2022
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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY CLP | PLANS CK'D. JCK

STRUCTURE DETAILS

SHEET 3 OF 15
40

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

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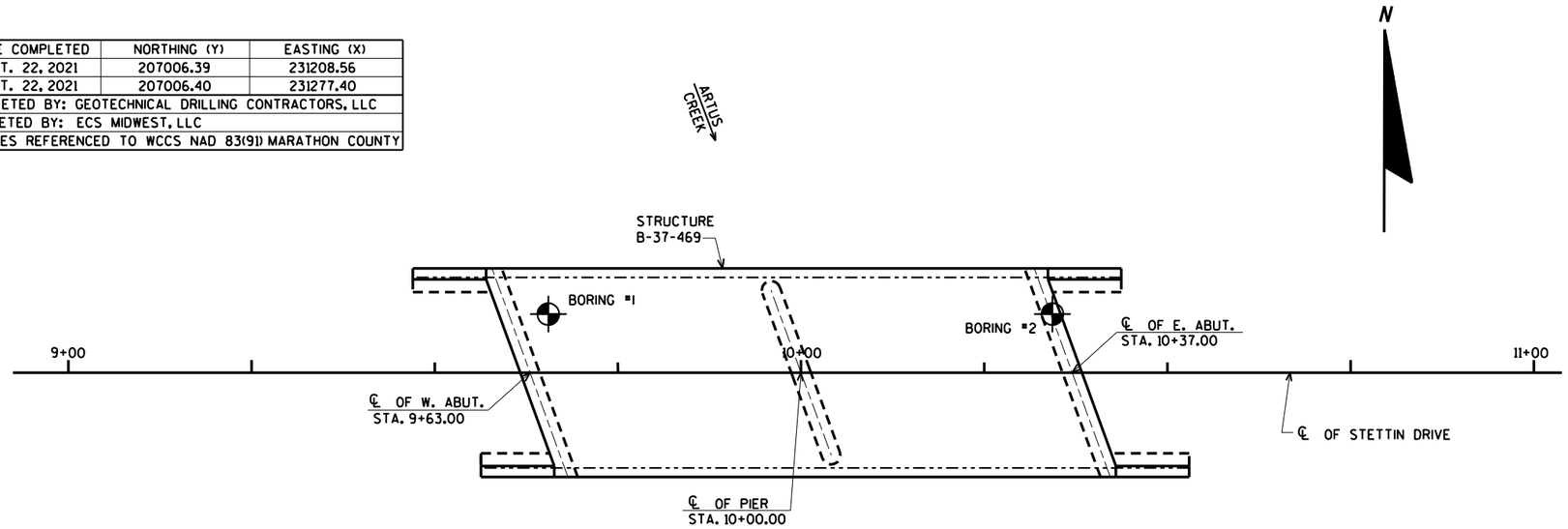
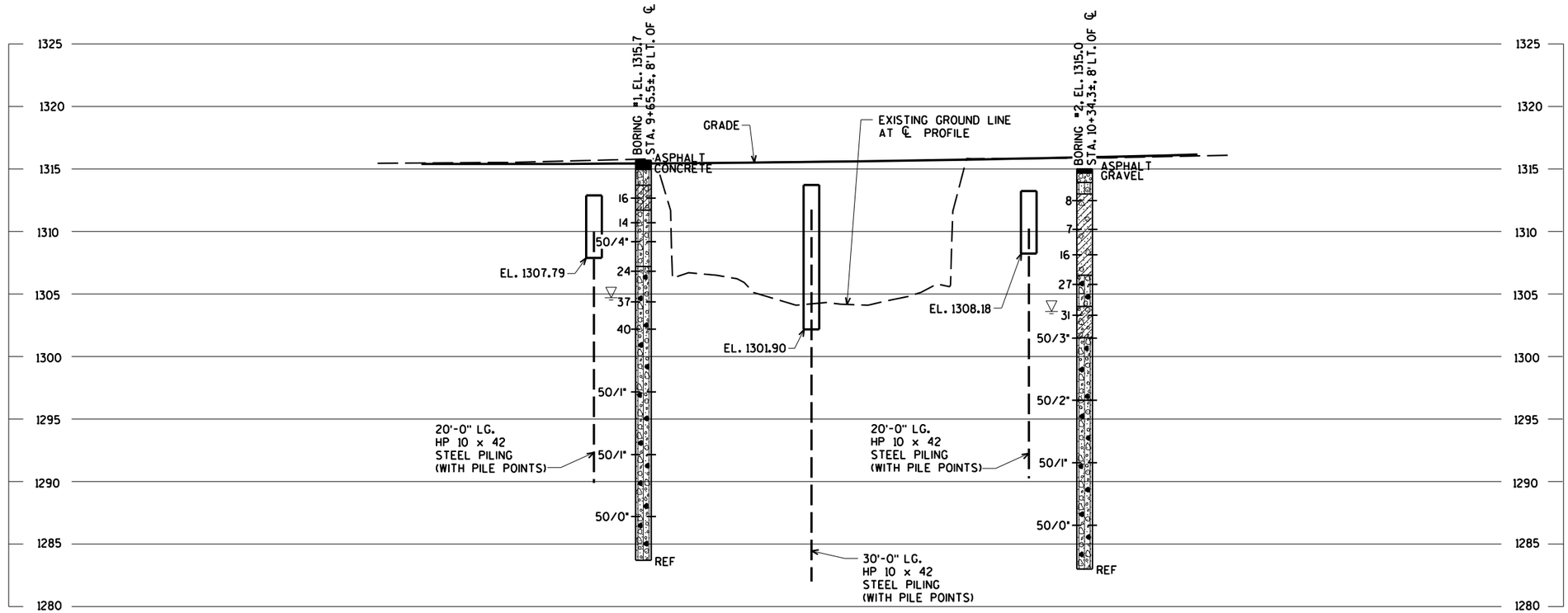
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	SEPT. 22, 2021	207006.39	231208.56
2	SEPT. 22, 2021	207006.40	231277.40
BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC			
REPORT COMPLETED BY: ECS MIDWEST, LLC			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MARATHON COUNTY			





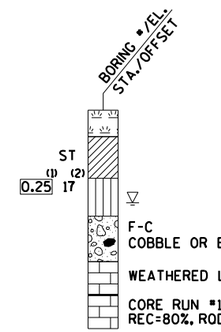
STATE PROJECT NUMBER

9526-00-70

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

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY CLP | PLANS CK'D. JCK

SUBSURFACE EXPLORATION

SHEET 4 OF 15
41

8

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4/28/2022
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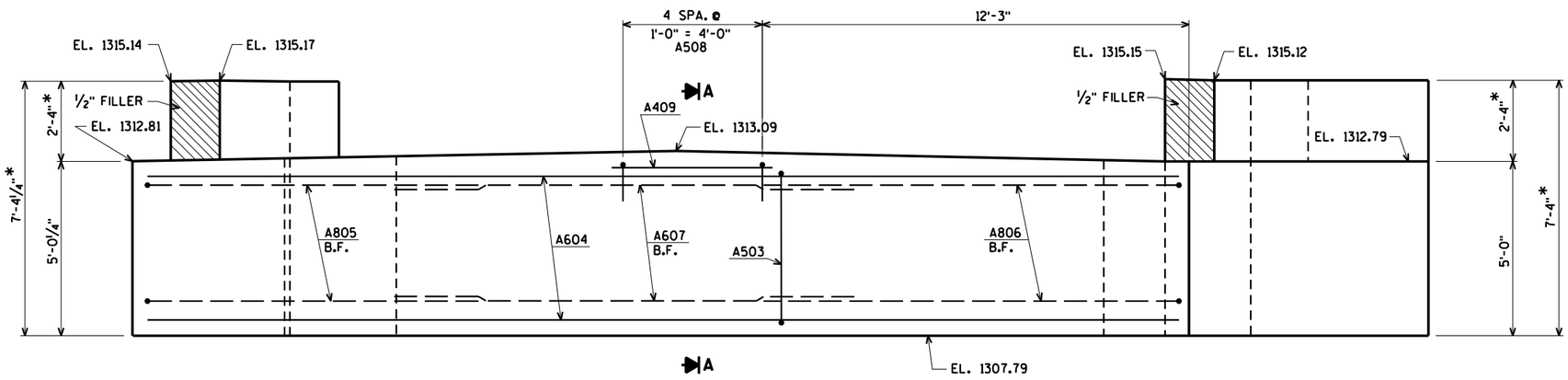
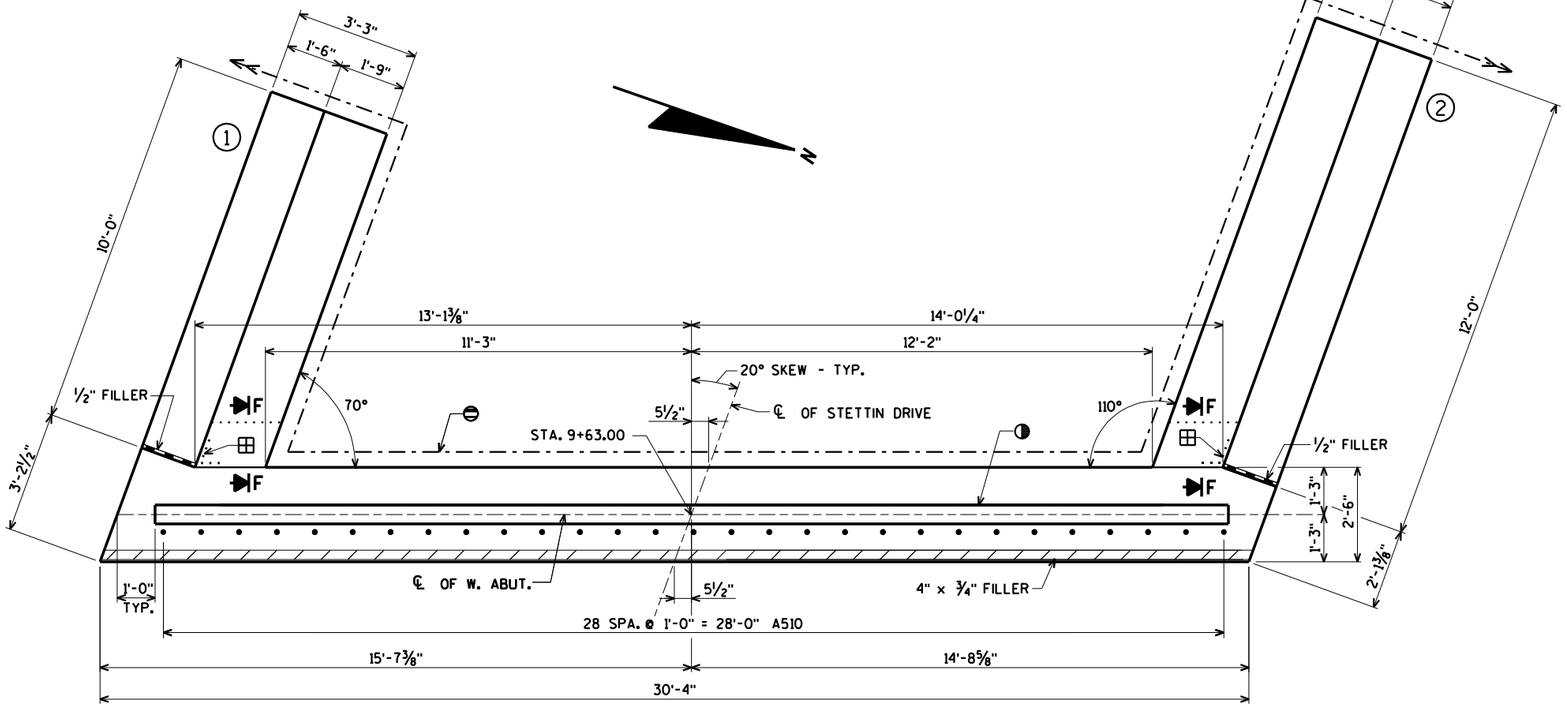
STATE PROJECT NUMBER
9526-00-70

NOTE:
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

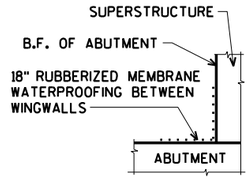
* MEASURED AT FRONT FACE OF WINGWALL.



ELEVATION
(LOOKING WEST)



PLAN



SECTION F

FOR SECTION A SEE SHEET 6.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

⊞ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WINGWALL.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY	CLP	PLANS CK'D.	JCK

WEST ABUTMENT

SHEET 5 OF 15
42

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

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4/28/2022
PENTABLE:BReau_shd_util.tbl

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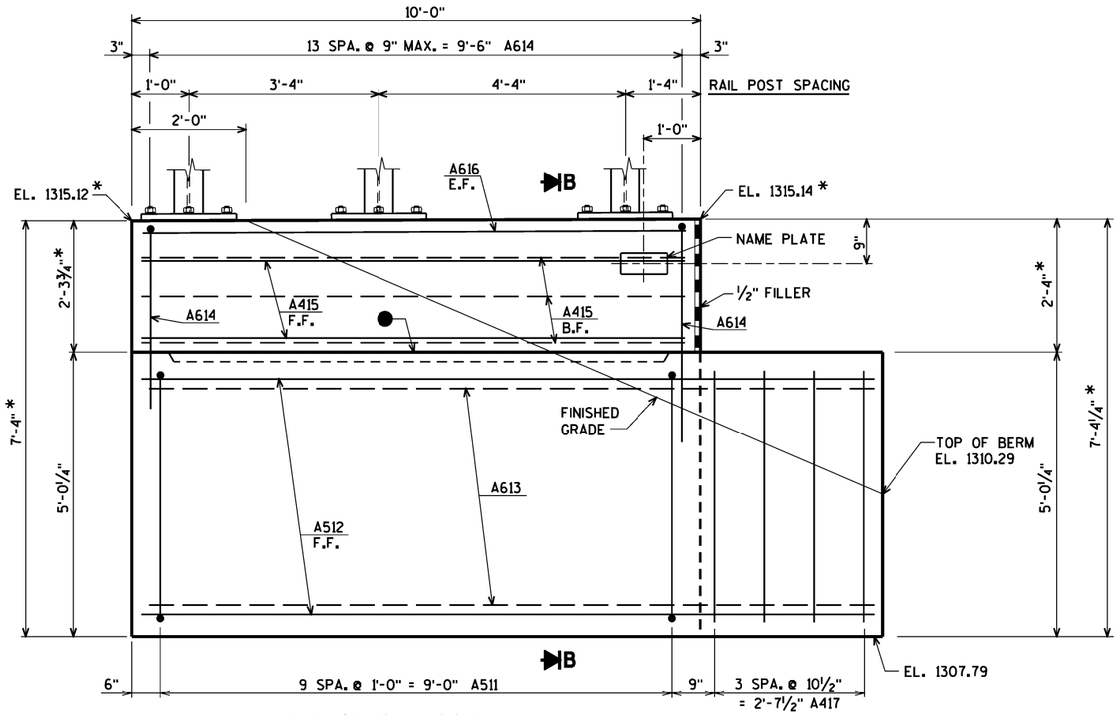
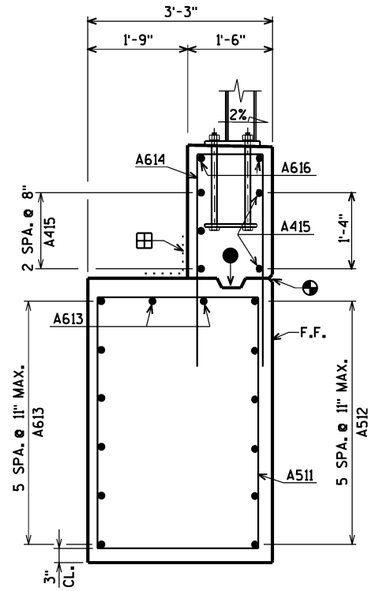
STATE PROJECT NUMBER

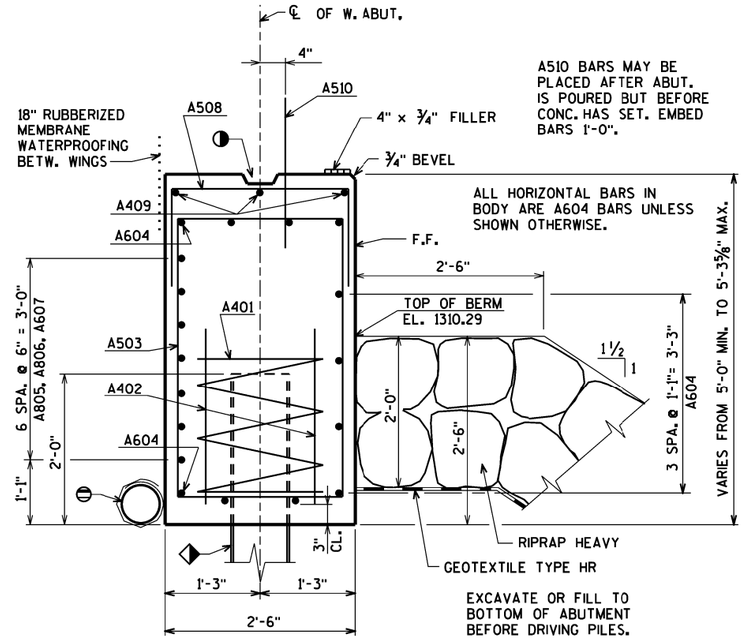
9526-00-70



ELEVATION - WING 1



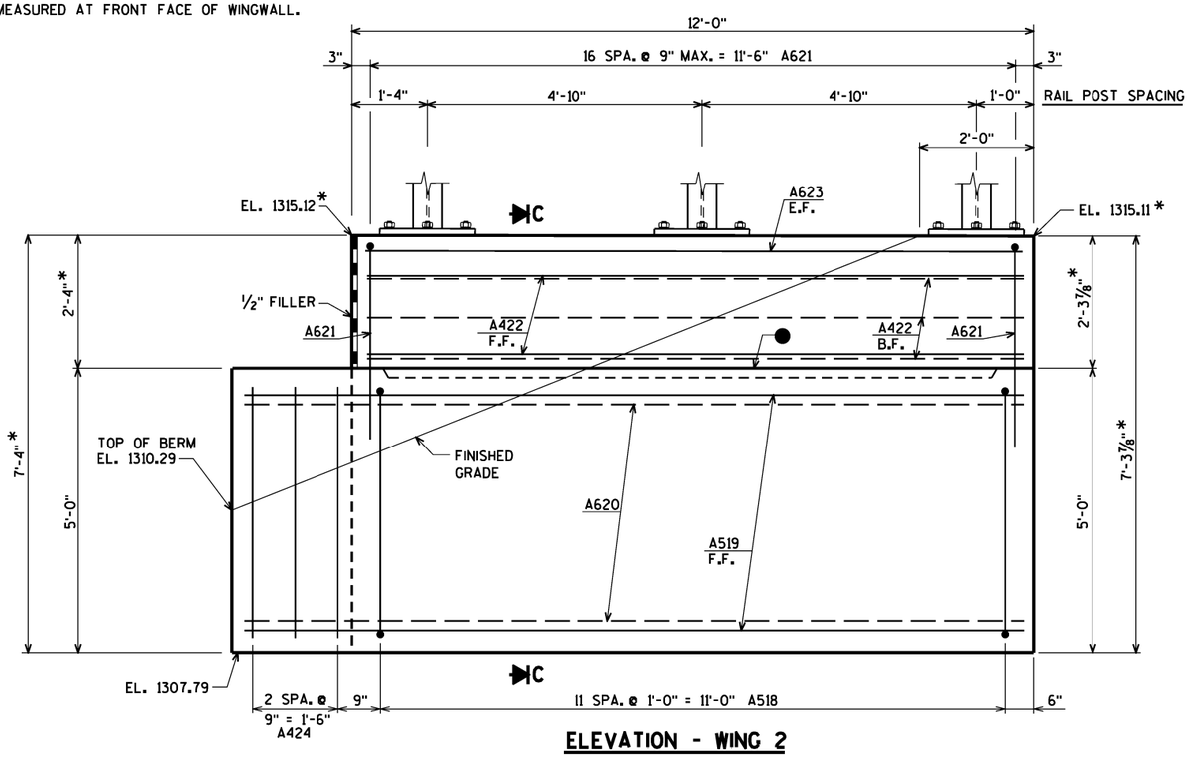
SECTION B



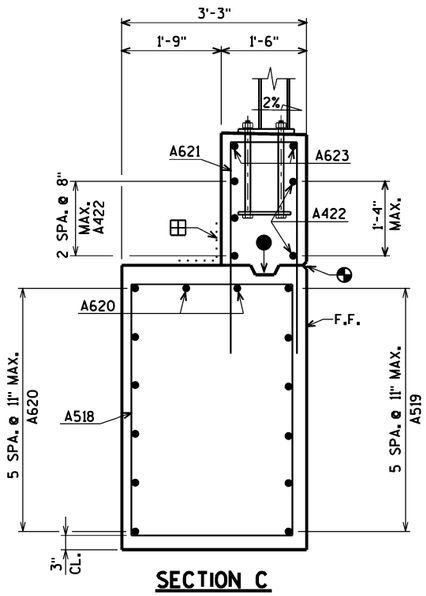
SECTION A

◆ ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE. ESTIMATED LENGTH 20'-0". PILES ARE REQUIRED TO PENETRATE A MINIMUM OF 20'-0" THROUGH THE ORIGINAL GROUND.

* MEASURED AT FRONT FACE OF WINGWALL.



ELEVATION - WING 2



SECTION C

FOR LOCATION OF SECTION A SEE SHEET 5.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

◒ ¾" "V" GROOVE ON FRONT FACE OF WINGWALL. ONLY REQUIRED IF OPTIONAL CONSTRUCTION JOINT IS USED.

● OPT. CONST. JOINT FORMED BY A BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HOIRZONTAL AND VERTICAL JOINTS ON BACKFACE.

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY	CLP	PLANS CK'D.	JCK

WEST ABUTMENT WING DETAILS

SHEET 6 OF 15
43

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

11/1/2022
PENTABLE:tBReau_shd_utl1.tbl

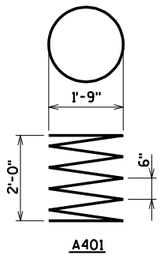
8

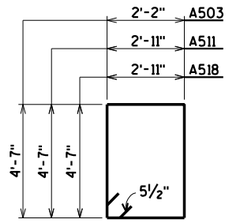
8

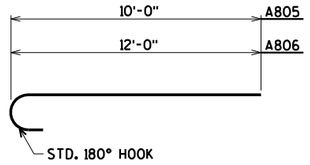
I:±42±42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive±Structures±CADD±Structure±Final±421269 wa.dgn

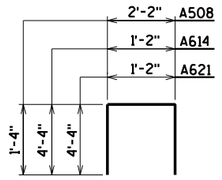
STATE PROJECT NUMBER

9526-00-70





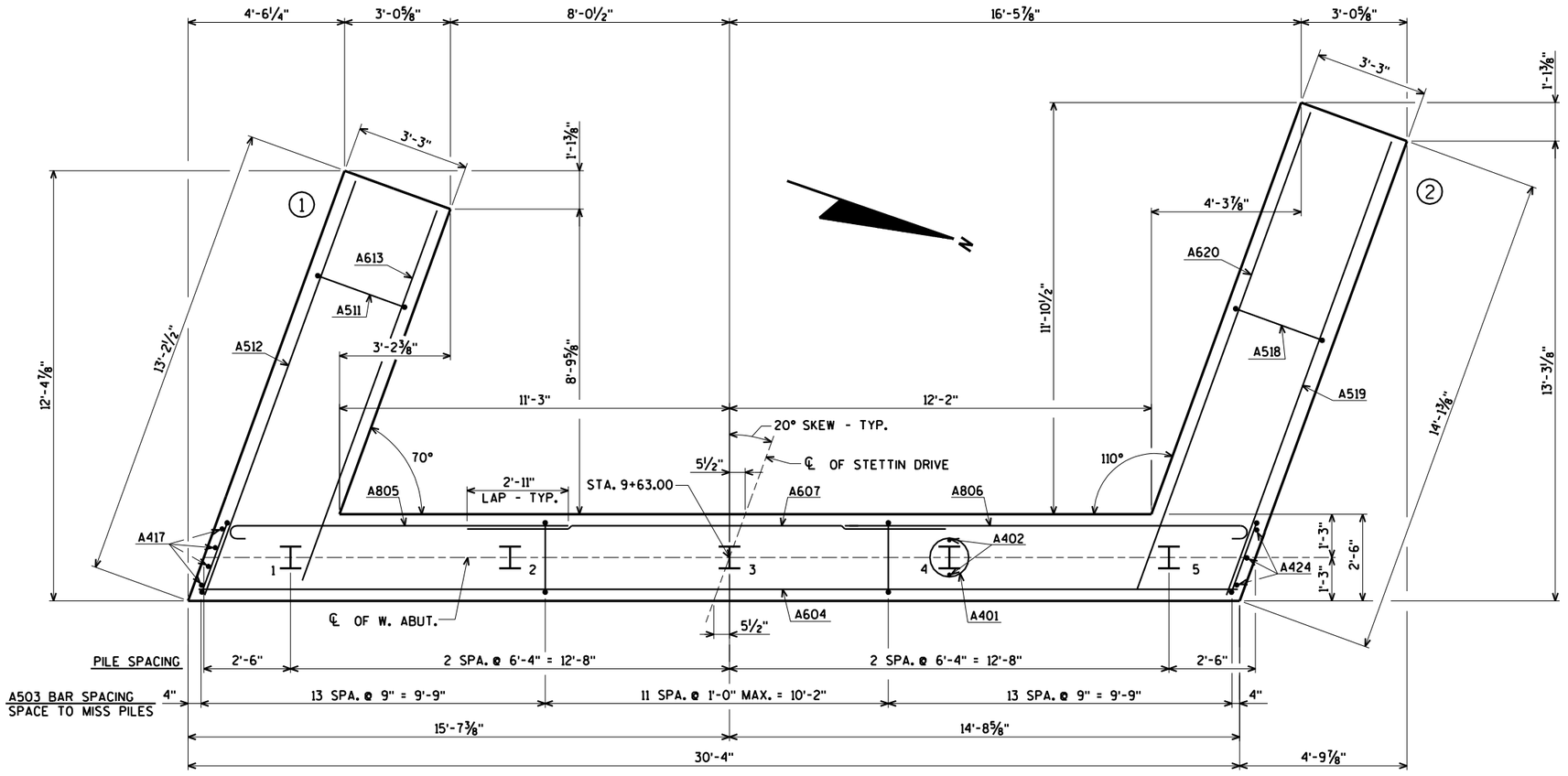




BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	1.500" COATED 1.790" UNCOATED LOCATION
A401		5	28-0	X		BODY @ PILES
A402		10	2-3			BODY @ PILES
A503		38	14-2	X		BODY VERT.
A604		11	29-11			BODY HORIZ.
A805		7	10-11	X		BODY HORIZ. @ WING 1 B.F.
A806		7	12-11	X		BODY HORIZ. @ WING 2 B.F.
A607		7	13-10			BODY HORIZ. BETW. WINGS B.F.
A508		5	4-7	X		BODY VERT. TOP
A409		3	5-0			BODY HORIZ. TOP
A510	X	29	2-0			BODY DOWELS
A511	X	10	15-8	X		WING 1 VERT.
A512	X	6	12-8			WING 1 HORIZ. F.F.
A613	X	8	11-4			WING 1 HORIZ. B.F. & TOP
A614	X	14	9-6	X		WING 1 VERT.
A415	X	5	9-7			WING 1 HORIZ. E.F.
A616	X	2	9-7			WING 1 HORIZ. E.F.
A417	X	4	4-7			BODY VERT. END @ WING 1
A518	X	12	15-8	X		WING 2 VERT.
A519	X	6	13-10			WING 2 HORIZ. F.F.
A620	X	8	14-7			WING 2 HORIZ. B.F. & TOP
A621	X	17	9-6	X		WING 2 VERT.
A422	X	5	11-7			WING 2 HORIZ. E.F.
A623	X	2	11-7			WING 2 HORIZ. E.F.
A424	X	3	4-7			BODY VERT. END @ WING 2

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



PILE LAYOUT

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY CLP | PLANS CK'D. JCK

WEST ABUTMENT DETAILS & BILL OF BARS

SHEET 7 OF 15
44

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

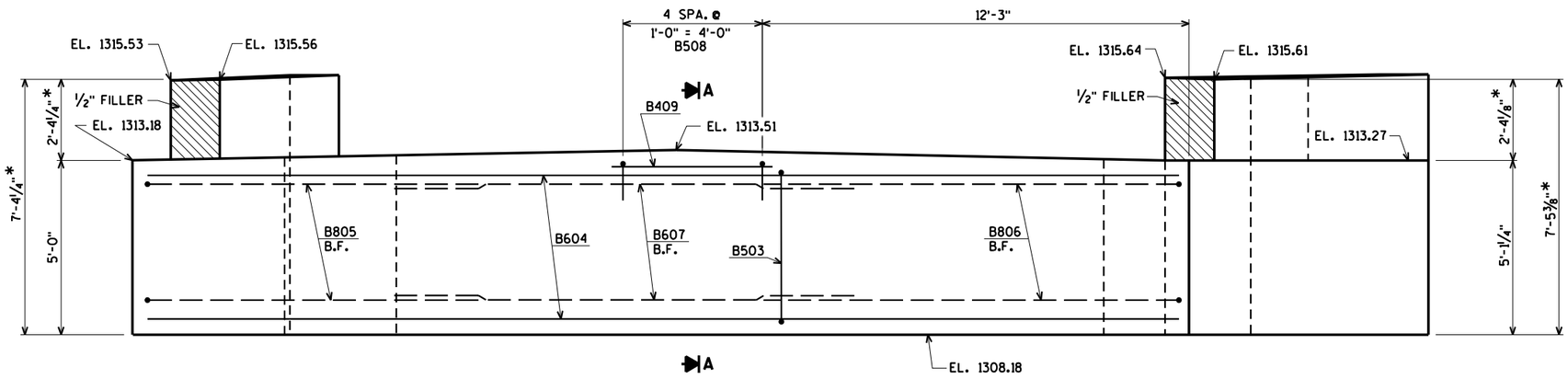
4/28/2022
PENTABLE:BReau_shd_util.tbl

I:±42±42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive±Structures±CADD±Structure±Final±421269 wa.dgn

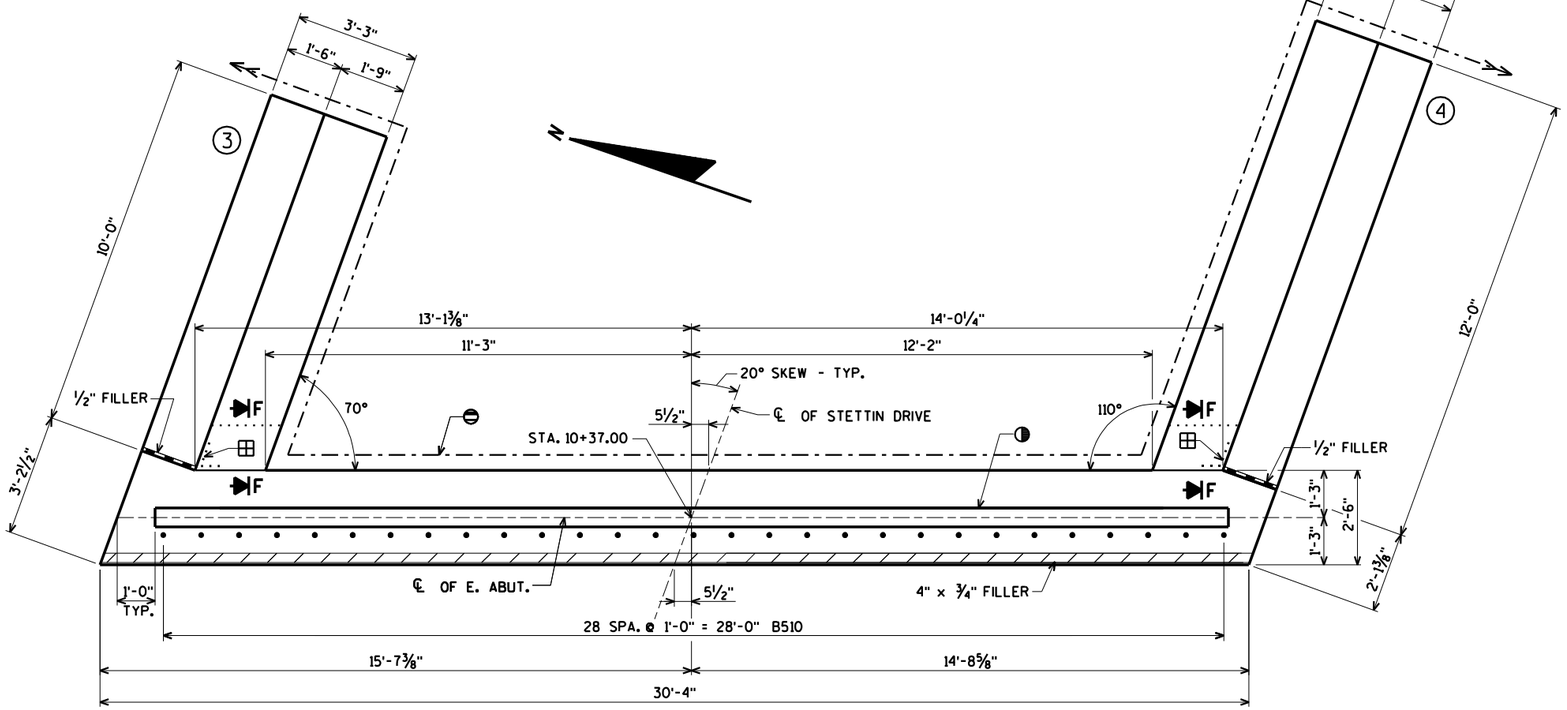
STATE PROJECT NUMBER
9526-00-70

NOTE:
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

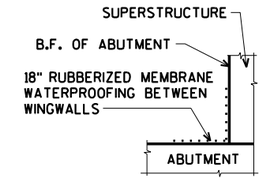
* MEASURED AT FRONT FACE OF WINGWALL.



ELEVATION
(LOOKING EAST)



PLAN



SECTION F

FOR SECTION A SEE SHEET 9.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

⊞ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WINGWALL.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY CLP | PLANS CK'D. JCK

EAST ABUTMENT

SHEET 8 OF 15
45

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

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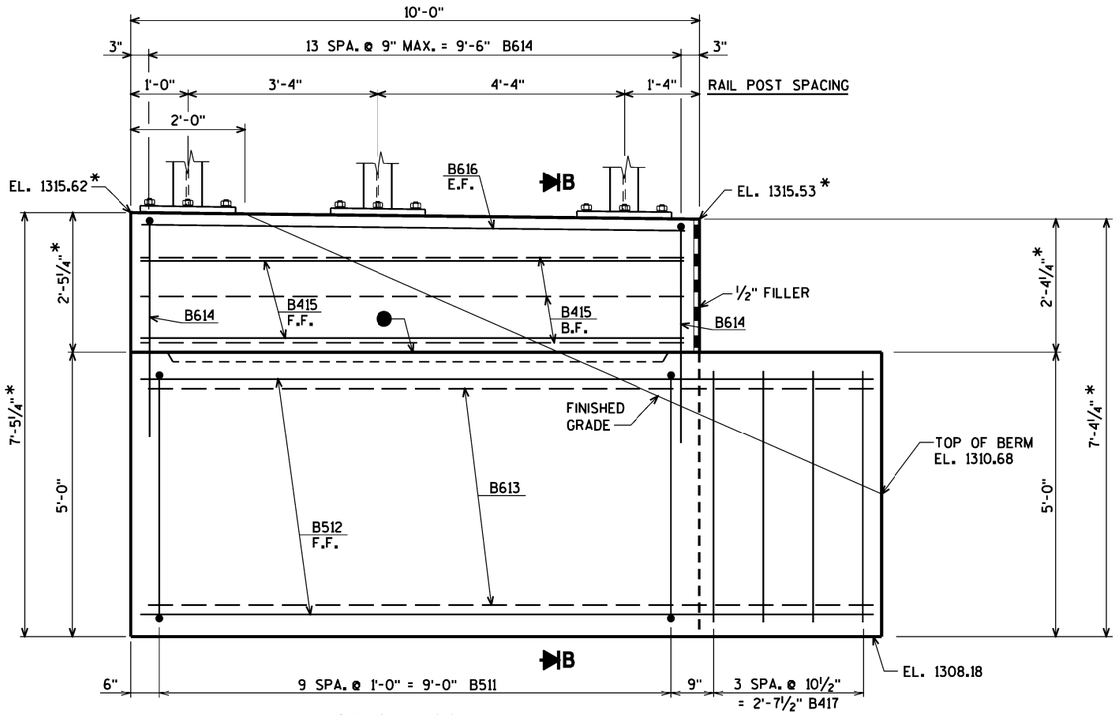
5/6/2022
PENTABLE:BReau_shd_util.tbl

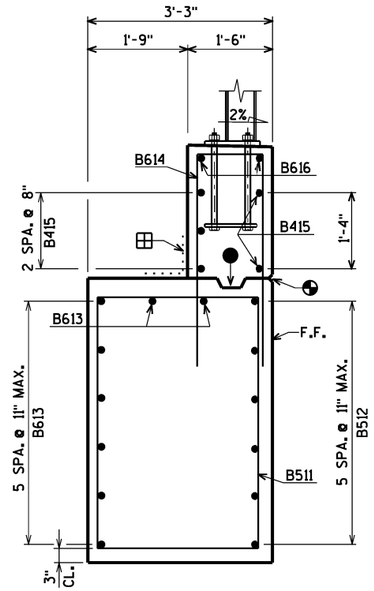
I:±42±42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive±Structures±CADD±Structure±Final±421269 ea.dgn

STATE PROJECT NUMBER

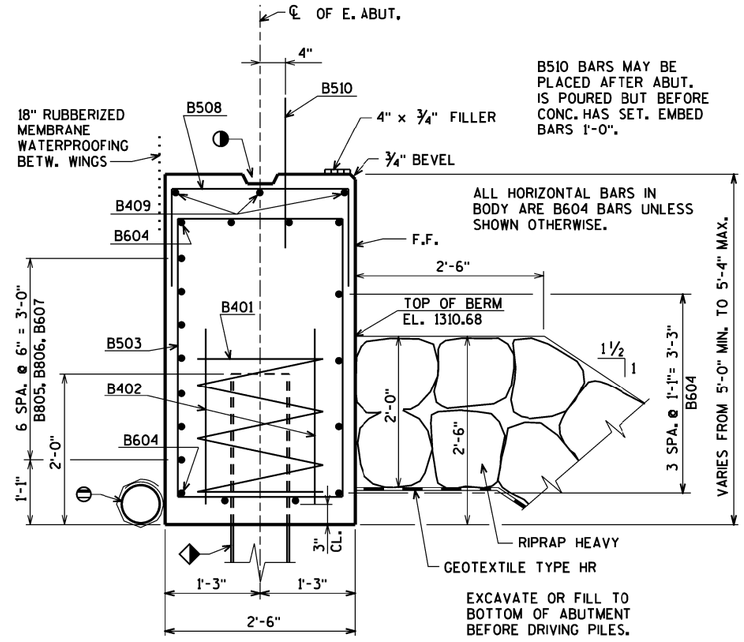
9526-00-70



ELEVATION - WING 3



SECTION B



SECTION A

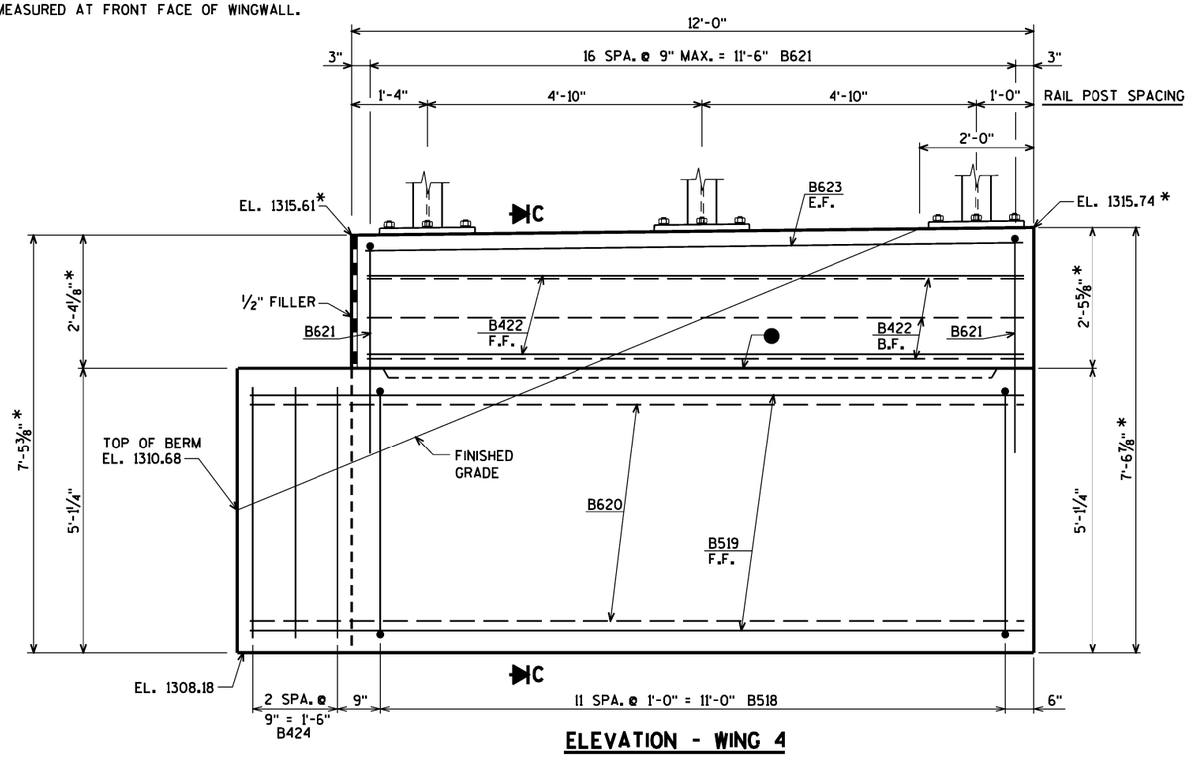
B510 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. EMBED BARS 1'-0".

ALL HORIZONTAL BARS IN BODY ARE B604 BARS UNLESS SHOWN OTHERWISE.

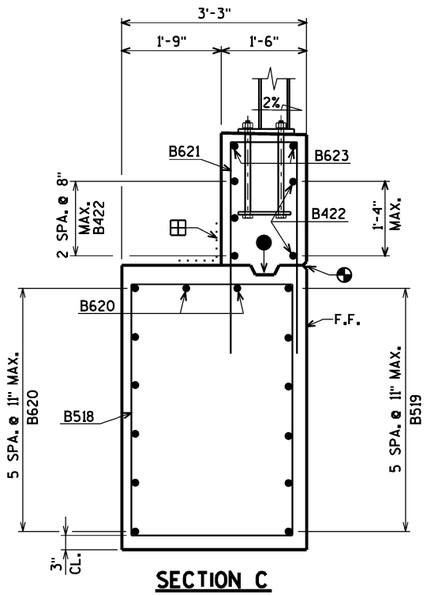
EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.

◆ ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE. ESTIMATED LENGTH 20'-0". PILES ARE REQUIRED TO PENETRATE A MINIMUM OF 20'-0" THROUGH THE ORIGINAL GROUND.

* MEASURED AT FRONT FACE OF WINGWALL.



ELEVATION - WING 4



SECTION C

FOR LOCATION OF SECTION A SEE SHEET 8.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

◔ ¾" "V" GROOVE ON FRONT FACE OF WINGWALL. ONLY REQUIRED IF OPTIONAL CONSTRUCTION JOINT IS USED.

● OPT. CONST. JOINT FORMED BY A BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HOIRZONTAL AND VERTICAL JOINTS ON BACKFACE.

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY CLP | PLANS CK'D. JCK

EAST ABUTMENT WING DETAILS

SHEET 9 OF 15
46

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

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11/1/2022
PENTABLE:BReau_shd_utl1.tbl

I:±42±42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive±Structures±CADD±Structure±Final±421269 ea.dgn

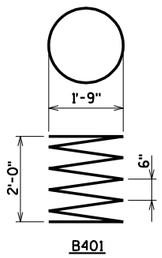
STATE PROJECT NUMBER

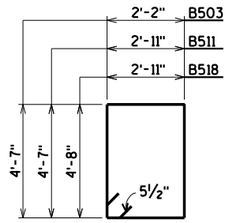
9526-00-70

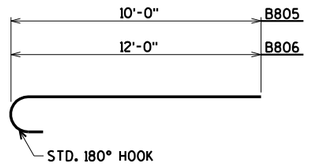
BILL OF BARS

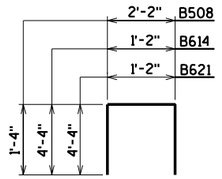
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	1.500" COATED 1.790" UNCOATED LOCATION
B401		5	28-0	X		BODY @ PILES
B402		10	2-3			BODY @ PILES
B503		38	14-2	X		BODY VERT.
B604		11	29-11			BODY HORIZ.
B805		7	10-11	X		BODY HORIZ. @ WING 3 B.F.
B806		7	12-11	X		BODY HORIZ. @ WING 4 B.F.
B607		7	13-10			BODY HORIZ. BETW. WINGS B.F.
B508		5	4-7	X		BODY VERT. TOP
B409		3	5-0			BODY HORIZ. TOP
B510	X	29	2-0			BODY DOWELS
B511	X	10	15-8	X		WING 3 VERT.
B512	X	6	12-8			WING 3 HORIZ. F.F.
B613	X	8	11-4			WING 3 HORIZ. B.F. & TOP
B614	X	14	9-6	X		WING 3 VERT.
B415	X	5	9-7			WING 3 HORIZ. E.F.
B616	X	2	9-7			WING 3 HORIZ. E.F.
B417	X	4	4-7			BODY VERT. END @ WING 3
B518	X	12	15-10	X		WING 4 VERT.
B519	X	6	13-10			WING 4 HORIZ. F.F.
B620	X	8	14-7			WING 4 HORIZ. B.F. & TOP
B621	X	17	9-6	X		WING 4 VERT.
B422	X	5	11-7			WING 4 HORIZ. E.F.
B623	X	2	11-7			WING 4 HORIZ. E.F.
B424	X	3	4-8			BODY VERT. END @ WING 4

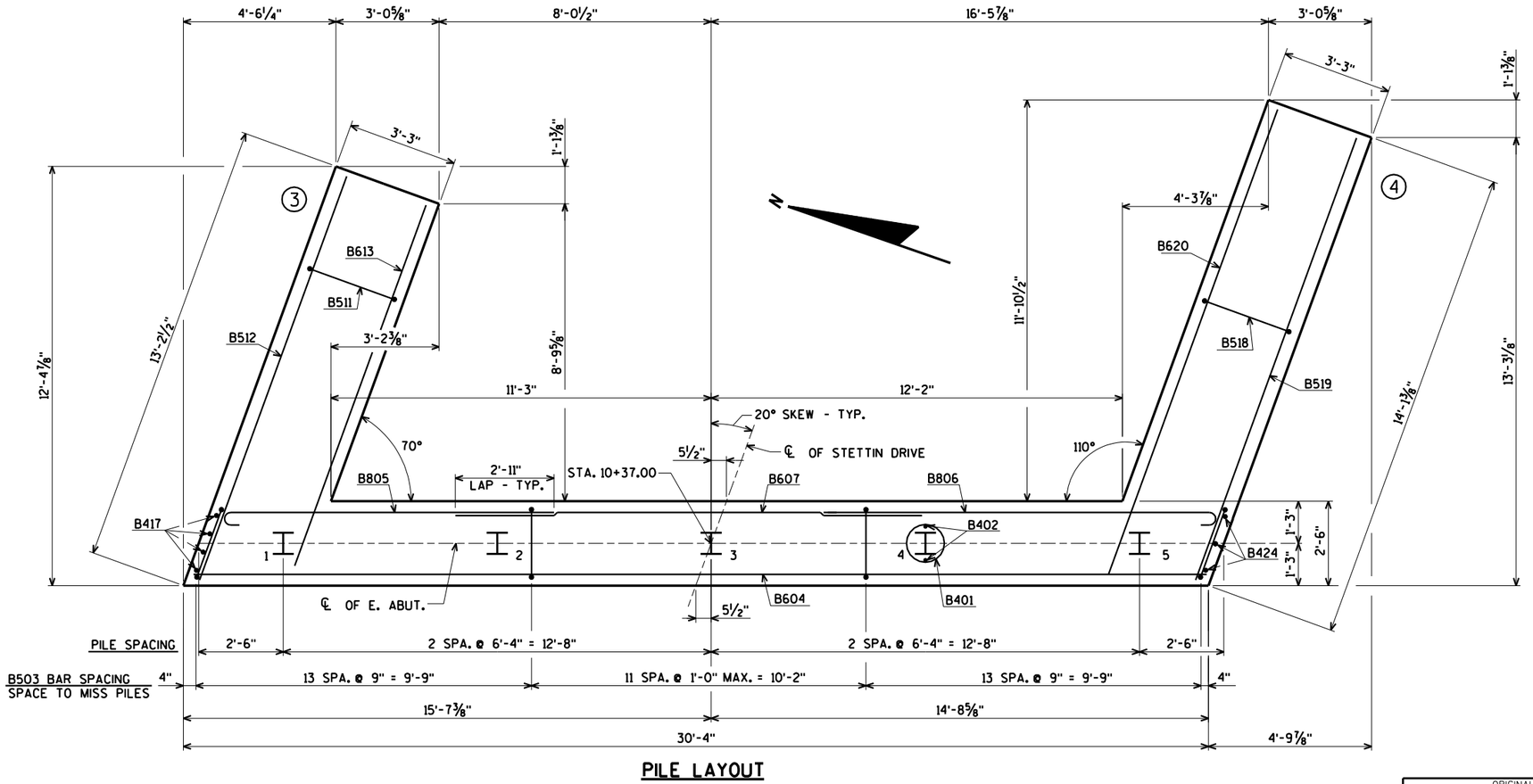
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.











PILE LAYOUT

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY CLP | PLANS CK'D. JCK

EAST ABUTMENT DETAILS & BILL OF BARS

SHEET 10 OF 15
47

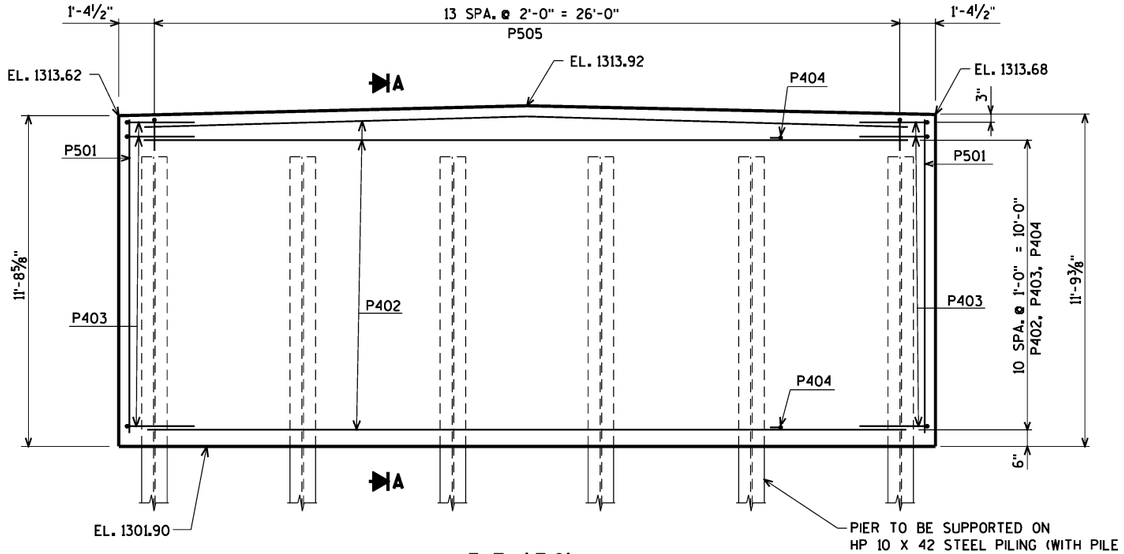
ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

4/28/2022
PENTABLE:BReau_shd_util.tbl

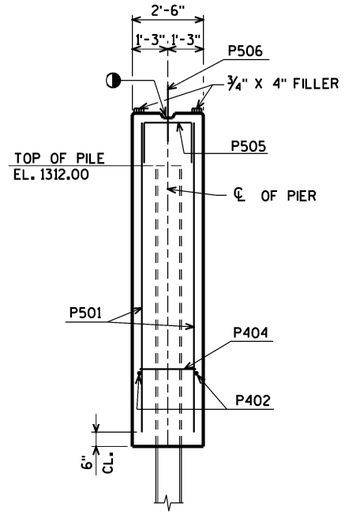
I:±42±42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive±Structures±CADD±Structure±Final±421269 ea.dgn

STATE PROJECT NUMBER

9526-00-70



ELEVATION
(LOOKING EAST)



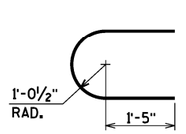
SECTION A

P506 BARS MAY BE PLACED AFTER PIER IS POURED BUT BEFORE CONC. HAS SET. EMBED BARS 1'-0".

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	60# COATED 1,400# UNCOATED LOCATION
P501		60	11-0				COLUMN VERT.
P402		24	26-3				COLUMN HORIZ.
P403		24	6-1	X			COLUMN HORIZ.
P404		66	2-10	X			COLUMN TIES
P505		14	4-7	X			COLUMN TOP
P506	X	27	2-0				COLUMN DOWELS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



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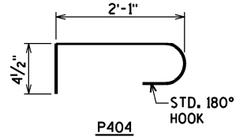

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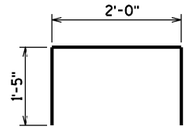

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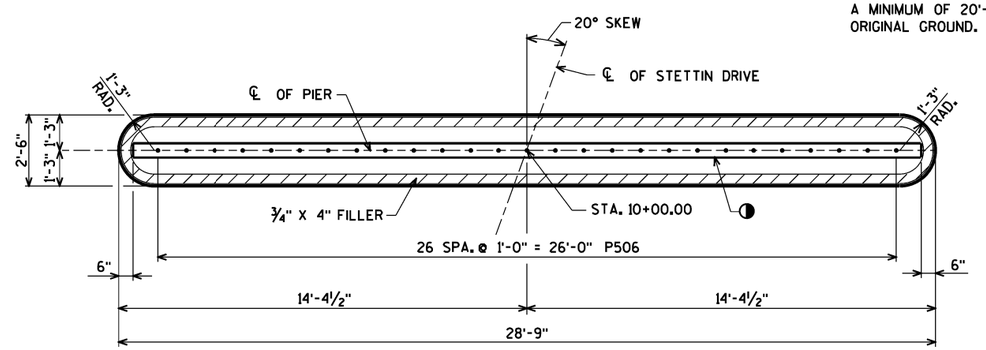
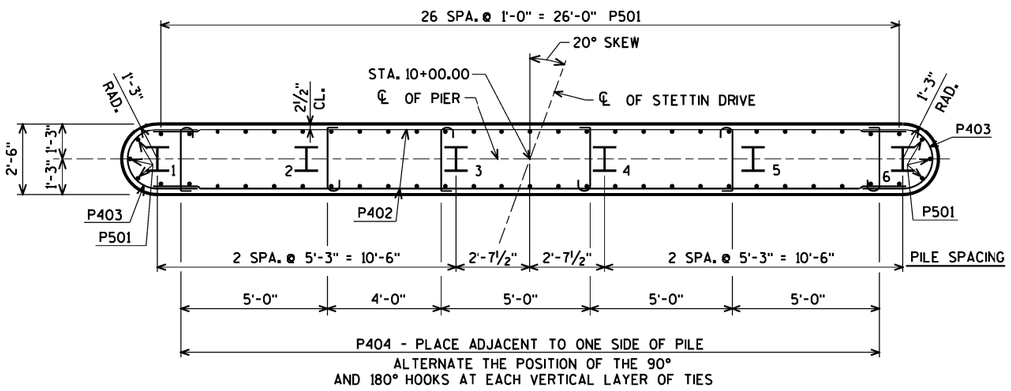


PLAN



PILE LAYOUT

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

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY CLP | PLANS CK'D. JCK

PIER

SHEET 11 OF 15
48

ORIGINAL PLANS PREPARED BY
AYRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
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11/1/2022
PENTABLE:BReau_shd_utl1.tbl

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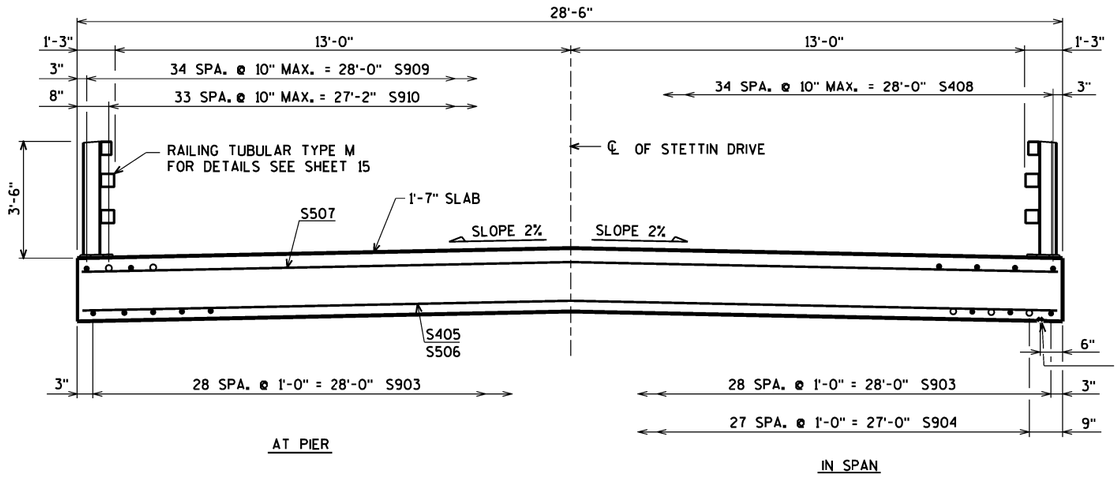
STATE PROJECT NUMBER

9526-00-70



TYPICAL SECTION THRU BRIDGE

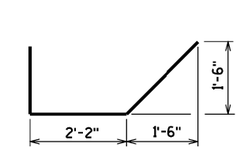
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

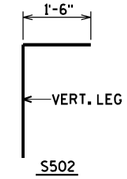
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

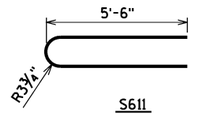
BILL OF BARS

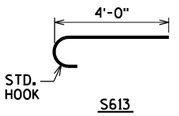
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	27,570# COATED LOCATION
S501	X	58	5-9	X		SLAB @ ABUT.
S502	X	58	3-4	X		SLAB @ ABUT.
S903	X	58	41-4			SLAB LONG. BOT.
S904	X	56	24-8			SLAB LONG. BOT.
S405	X	32	29-11			SLAB TRANS. BOT.
S506	X	54	29-11			SLAB TRANS. BOT.
S507	X	77	29-11			SLAB TRANS. TOP
S408	X	70	17-2			SLAB LONG. TOP
S909	X	35	46-10			SLAB LONG. TOP @ PIER
S910	X	34	10-4			SLAB LONG. TOP @ PIER
S611	X	52	12-0	X		SLAB @ RAIL POSTS
S612	X	88	6-0			SLAB @ INT. RAIL POSTS
S613	X	16	6-0	X		SLAB @ END RAIL POSTS

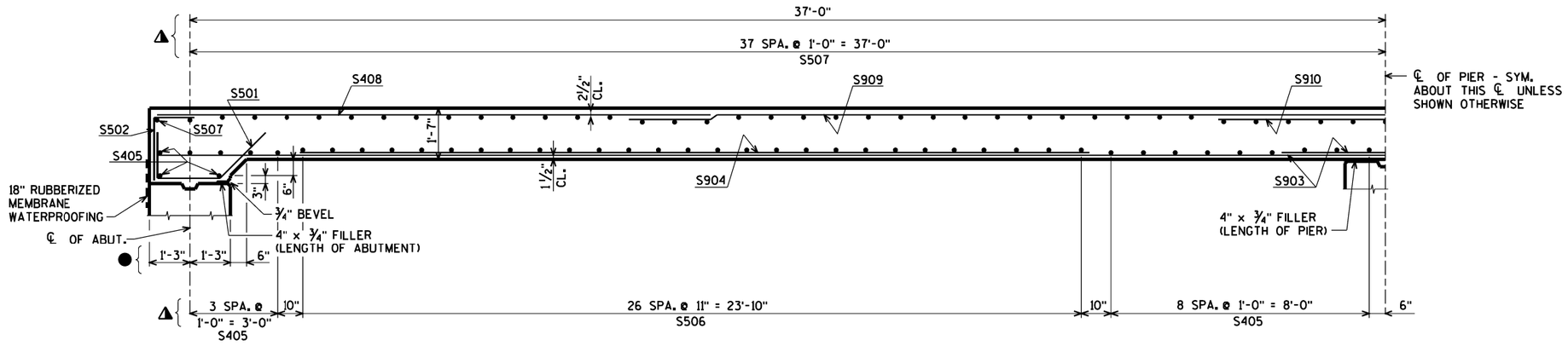
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.











PART LONGITUDINAL SECTION

● DIMENSIONS MEASURED NORMAL TO ℄ OF SUBSTRUCTURE.

⚠ DIMENSIONS MEASURED ALONG ℄ OF STETTIN DRIVE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY CLP | PLANS CK'D. JCK

SUPERSTRUCTURE

SHEET 12 OF 15
49

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

8/8/2022
PENTABLE:8Reau_shd_utl.tbl

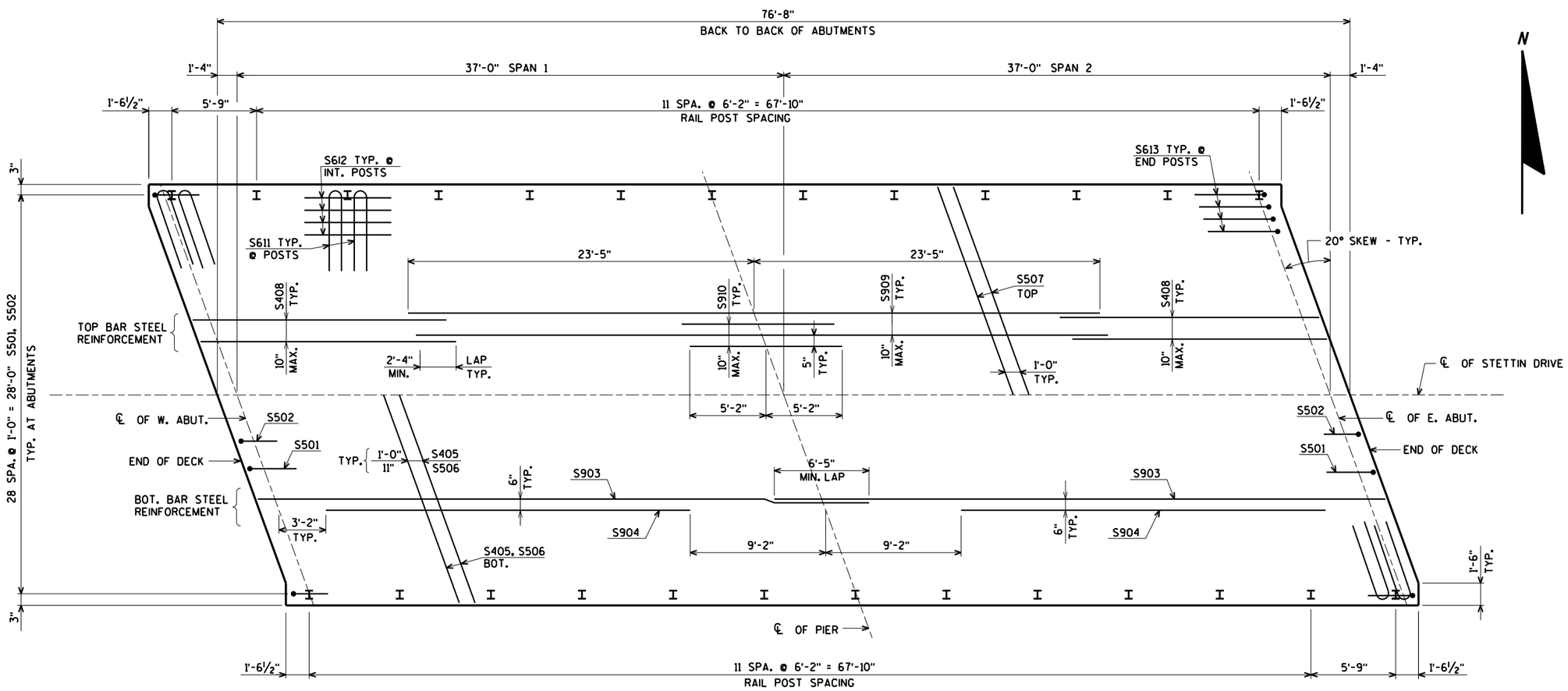
I:±42±42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive±Structures±CADD±Structure±Final±421269 sup.dgn

8

8

STATE PROJECT NUMBER

9526-00-70



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PLAN

4/28/2022
PENTABLE:BReau_shd_utl1.tbl

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8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

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SUPERSTRUCTURE PLAN

SHEET 13 OF 15
50

ORIGINAL PLANS PREPARED BY

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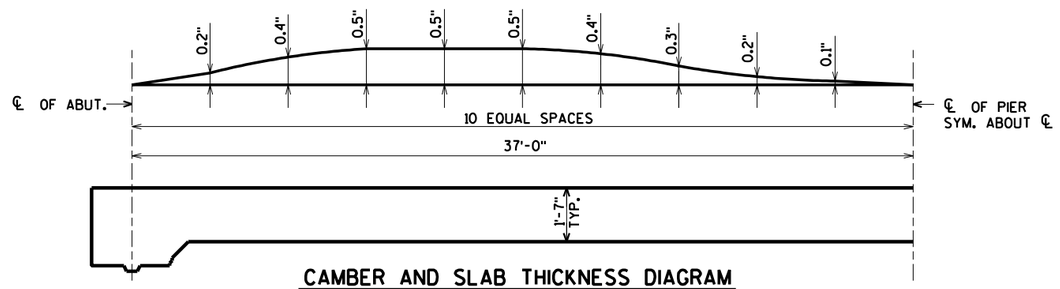
STATE PROJECT NUMBER
9526-00-70

TOP OF DECK ELEVATIONS

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

LOCATION	℄ OF W. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ OF PIER	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ OF E. ABUT.
N. EDGE OF SLAB	1315.12	1315.13	1315.14	1315.15	1315.16	1315.17	1315.18	1315.20	1315.21	1315.23	1315.25	1315.27	1315.29	1315.31	1315.34	1315.36	1315.39	1315.42	1315.45	1315.48	1315.51
℄ OF STRUCTURE	1315.42	1315.43	1315.44	1315.45	1315.46	1315.47	1315.49	1315.51	1315.52	1315.54	1315.56	1315.59	1315.61	1315.63	1315.66	1315.69	1315.72	1315.74	1315.78	1315.81	1315.84
S. EDGE OF SLAB	1315.15	1315.16	1315.17	1315.18	1315.20	1315.21	1315.23	1315.25	1315.27	1315.29	1315.31	1315.33	1315.36	1315.39	1315.41	1315.44	1315.47	1315.50	1315.54	1315.57	1315.61



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTION.

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE, 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 FLASEWORK ELEVATION

SURVEY TOP OF SLAB ELEVATIONS

LOCATION	℄ OF W. ABUT.	5/10 PT. SPAN 1	℄ OF PIER	5/10 PT. SPAN 2	℄ OF E. ABUT.
NORTH EDGE OF SLAB					
℄ OF STRUCTURE					
SOUTH EDGE OF SLAB					

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE ℄ OF ABUTMENTS, THE ℄ OF PIER AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR ℄.
RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY CLP | PLANS CK'D. JCK

SUPERSTRUCTURE DETAILS

SHEET 14 OF 15
51

ORIGINAL PLANS PREPARED BY
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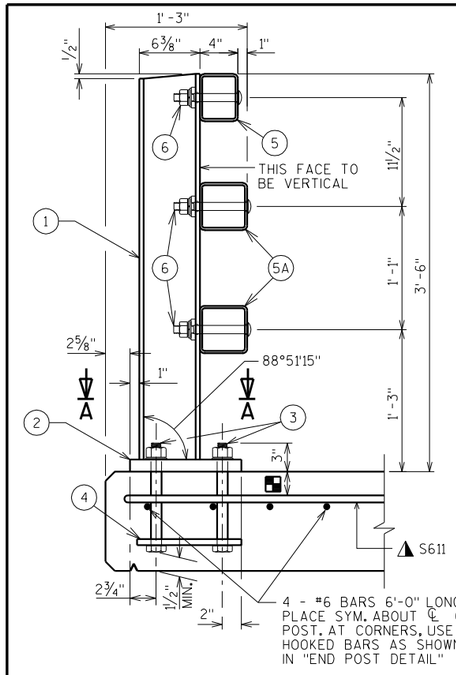
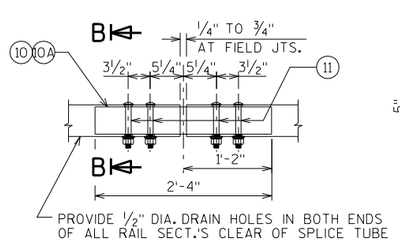
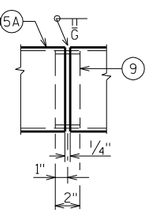


SECTION THRU RAILING ON SLAB



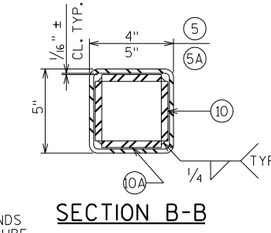
FIELD ERECTION JOINT DETAIL



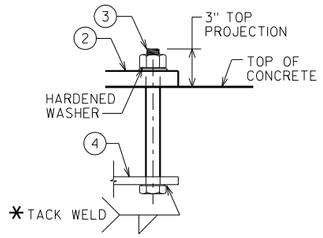
SHOP RAIL SPLICE DETAIL

LOCATION MUST BE SHOWN ON SHOP DRAWINGS

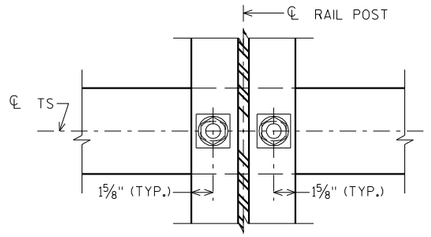
■ PLACE BELOW TOP MAT SLAB REINFORCEMENT



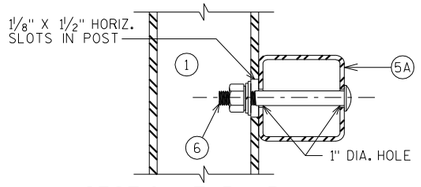
SECTION B-B



ANCHOR BOLTS



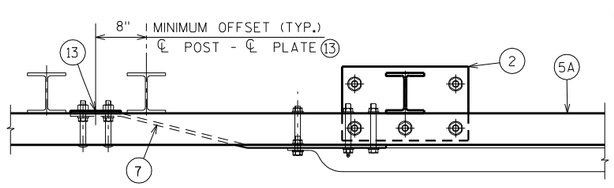
SECTION THRU POST WEB



SECTION THRU RAIL

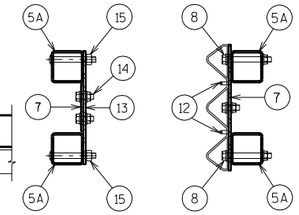
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

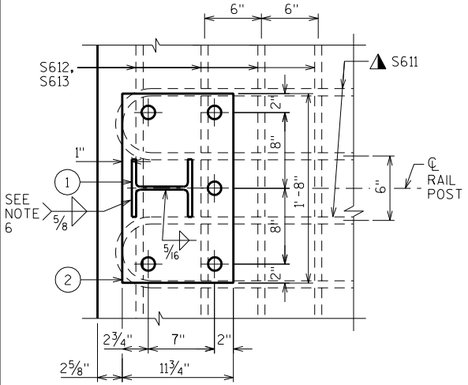


TOP VIEW AT END POST

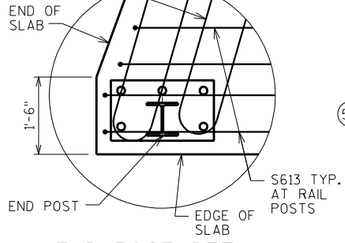
THRIE BEAM RAIL ATTACHMENT



SECTION C-C SECTION D-D

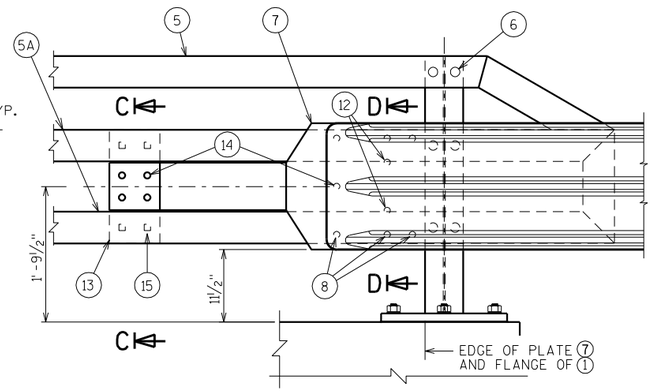


SECTION A-A



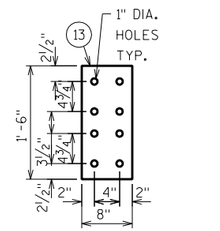
END POST DETAIL

REINFORCEMENT AT CORNERS



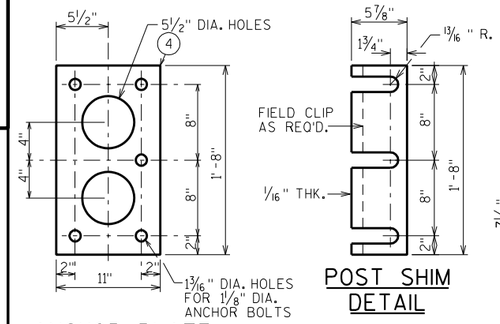
DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



ANCHOR PLATE

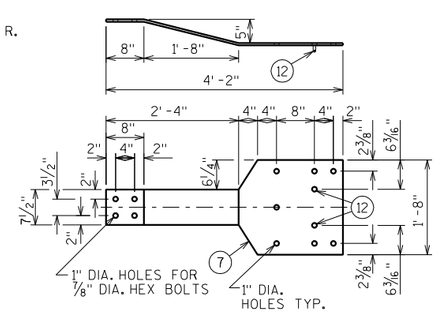
AT BEAM GUARD ATTACHMENT



ANCHOR PLATE

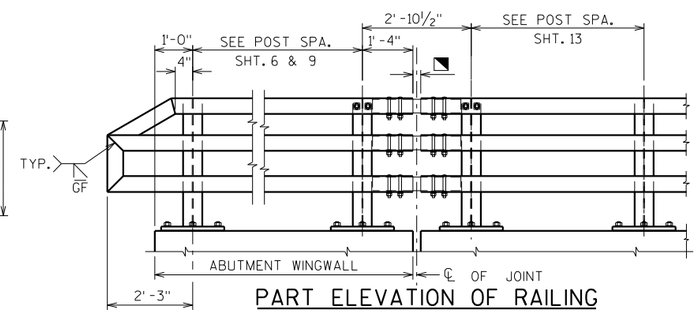
AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

▲ TIE TO TOP MAT OF STEEL.

* ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.

◥ ¼" TO ¾" OPENING AT A1 ABUTMENTS.

LEGEND

1. W6 x 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1¼" x 11¾" x 1'-8" WITH 1 7/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
3. ASTM A449 - 1⅛" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. ~~USE 10¾" LONG AT ALL OTHER LOCATIONS.~~ (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
4. ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1¾6" DIA. HOLES FOR ANCHOR BOLTS NO. 3
5. TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
5A. TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
6. ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1⅝" X 1⅝" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
7. ½" THK. BACK-UP PLATE WITH 2 - ⅞" X 1½" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
8. 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
9. SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".
10. ⅜" X 3⅝" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
10A. ⅜" X 2⅝" X 2'-4" PLATE USED IN NO. 5, ⅜" X 3⅝" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
11. ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS ~~AND 15/16" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS~~ IN PLATE NO. 10A.
12. ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
13. ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
14. ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
15. 1" DIA. HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅛ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. ~~RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.~~
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.

STATE PROJECT NUMBER

9526-00-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-469

DRAWN BY CLP | PLANS CK'D. JCK

TUBULAR STEEL RAILING TYPE 'M'

SHEET 15 OF 15

52

ORIGINAL PLANS PREPARED BY
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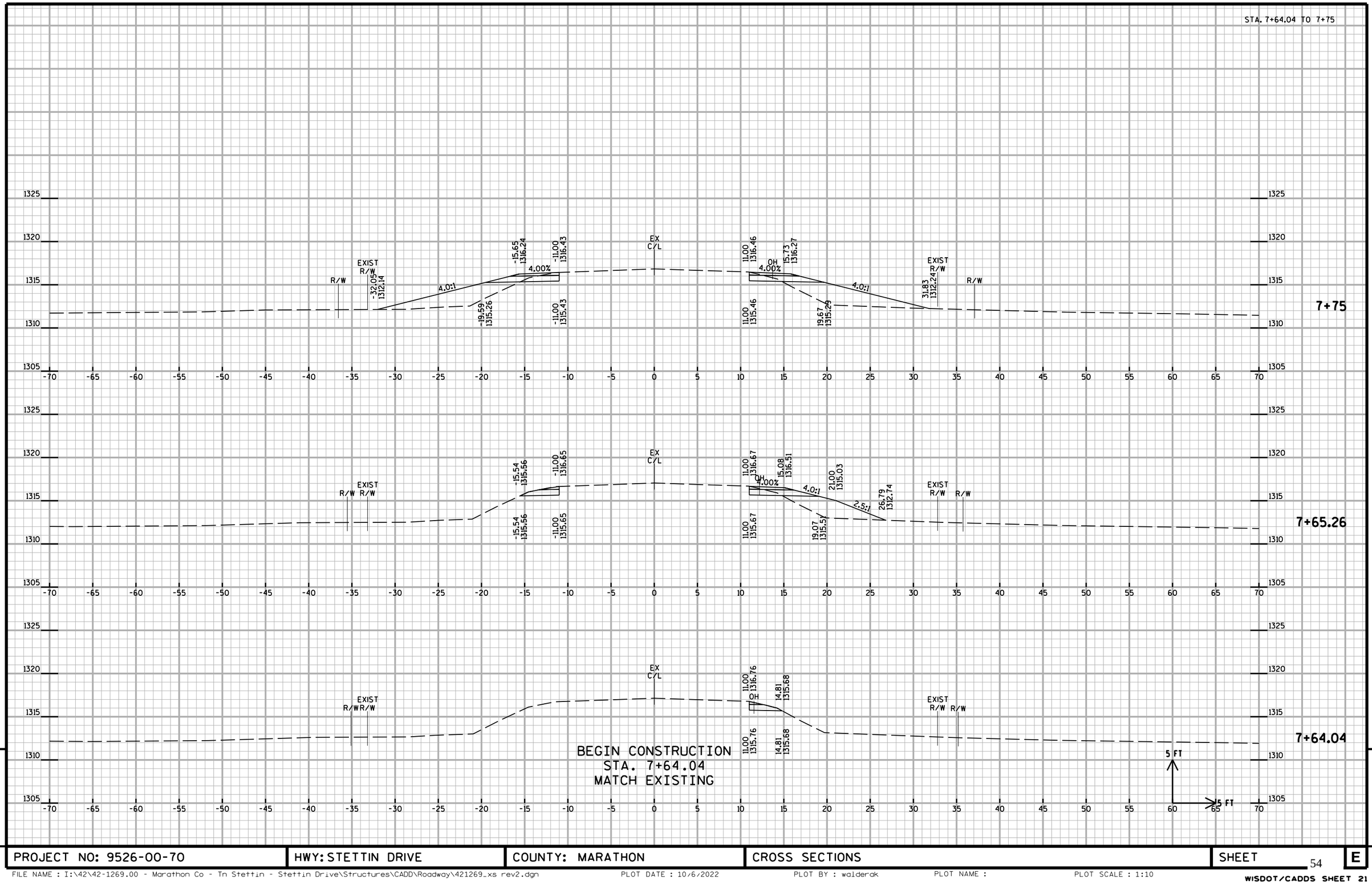
8

8

COMPUTER EARTHWORK

Station	Distance	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut	Expanded Fill	
						1.00	1.30	
				Note 1	Note 2	Note 1		Note 3
7+64.04	--	2.2	0.0					
7+65.26	1	5.1	15.0	0	0	0	0	0
7+75	10	5.1	41.4	2	10	2	14	-12
8+00	25	4.9	60.4	5	47	7	75	-68
8+25	25	5.0	85.0	5	67	11	162	-151
8+50	25	5.1	102.9	5	87	16	276	-260
8+54.04	4	5.1	108.0	1	16	17	296	-280
8+55.26	1	5.1	110.0	0	5	17	303	-286
8+61.67	6	5.1	110.3	1	26	18	336	-318
8+61.67	0	27.4	110.3	0	0	18	336	-318
8+75	13	24.9	116.2	13	56	31	409	-378
8+79.04	4	24.7	116.2	4	17	35	432	-397
8+80.26	1	24.5	110.8	1	5	36	438	-403
9+00	20	23.9	67.9	18	65	53	523	-470
9+04.04	4	24.5	58.7	4	9	57	536	-479
9+05.26	1	25.1	54.9	1	3	58	539	-481
9+25	20	28.0	54.2	19	40	78	591	-513
9+45.03	20	30.2	32.1	22	32	99	632	-533
9+50	5	30.4	28.8	6	6	105	640	-535
9+56.31	6	30.4	6.5	7	4	112	645	-533
9+61.67	5	30.4	6.5	6	1	118	647	-529
BRIDGE	--	0.0	0.0	--	--	--	--	--
10+38.33	--	24.7	10.7	--	--	--	--	--
10+43.69	5	24.7	10.7	5	2	123	650	-527
10+50	6	24.1	33.2	6	5	128	656	-528
10+54.97	5	24.1	32.6	4	6	133	664	-531
10+75	20	24.0	42.2	18	28	151	700	-550
10+94.74	20	22.2	39.5	17	30	168	739	-572
10+95.96	1	21.8	42.2	1	2	169	742	-573
11+00	4	21.2	50.1	3	7	172	751	-579
11+19.74	20	23.4	90.1	16	51	188	817	-629
11+20.96	1	23.9	95.5	1	4	189	823	-633
11+25	4	24.5	96.6	4	14	193	841	-648
11+38.33	13	28.9	94.1	13	47	206	903	-696
11+38.33	0	7.1	94.1	0	0	206	903	-696
11+44.74	6	7.2	96.0	2	23	208	932	-724
11+45.96	1	7.2	95.9	0	4	208	938	-729
11+50	4	7.3	93.4	1	14	209	956	-747
11+75	25	7.4	76.9	7	79	216	1058	-842
12+00	25	7.6	52.9	7	60	223	1137	-914
12+25	25	7.5	44.7	7	45	230	1195	-965
12+34.58	10	7.6	24.0	3	12	232	1211	-979
12+36.00	1	3.2	0.0	0	1	233	1212	-980
				233	933			

STA. 7+64.04 TO 7+75



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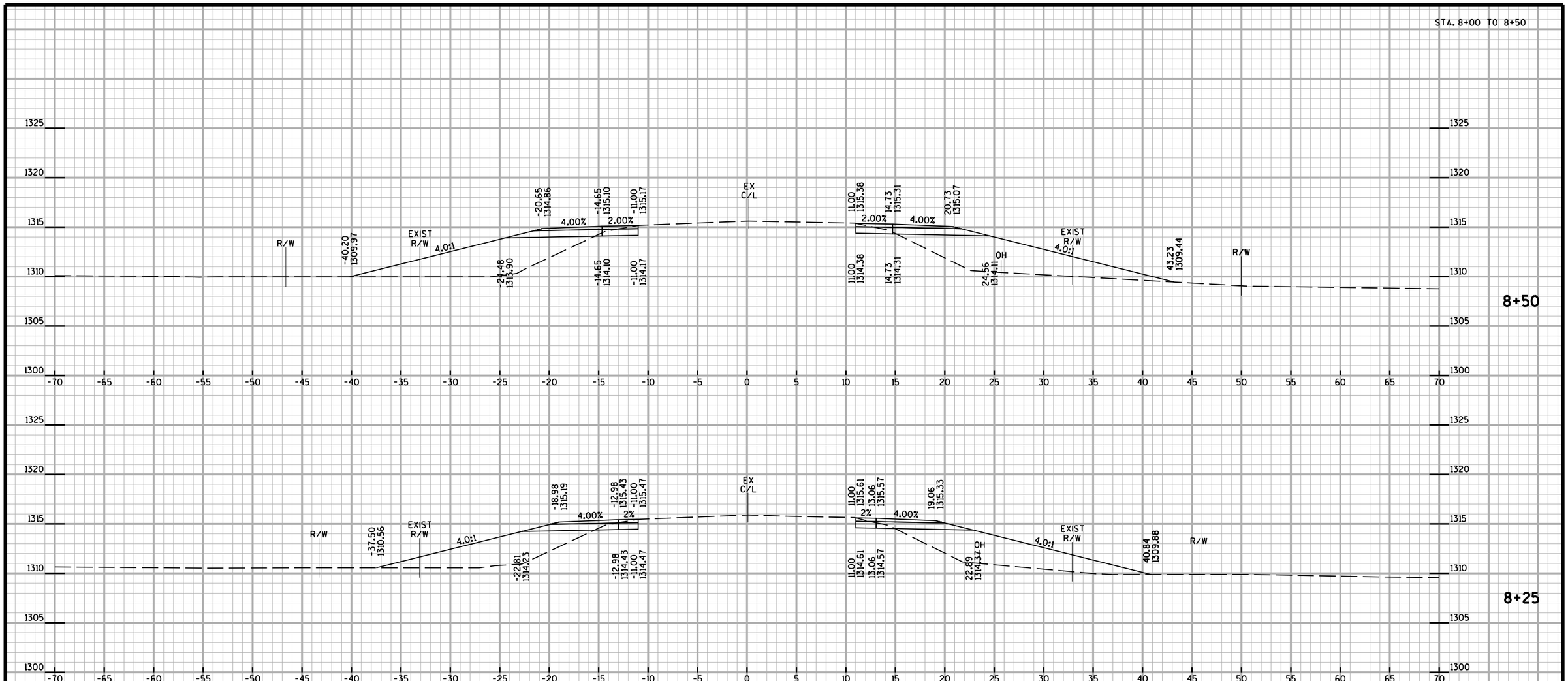
9

PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 8+00 TO 8+50



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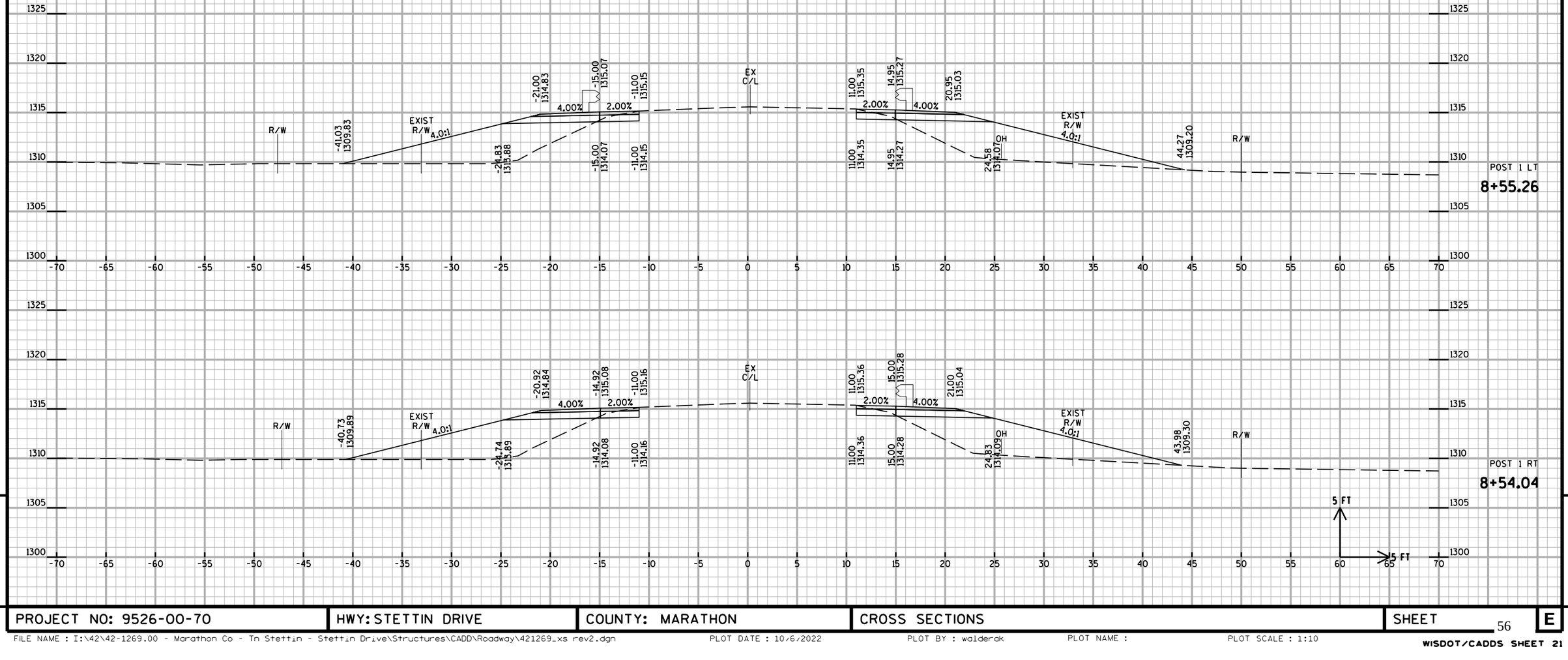
9

PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET 55	E

STA. 8+54.04 TO 8+55.26



9

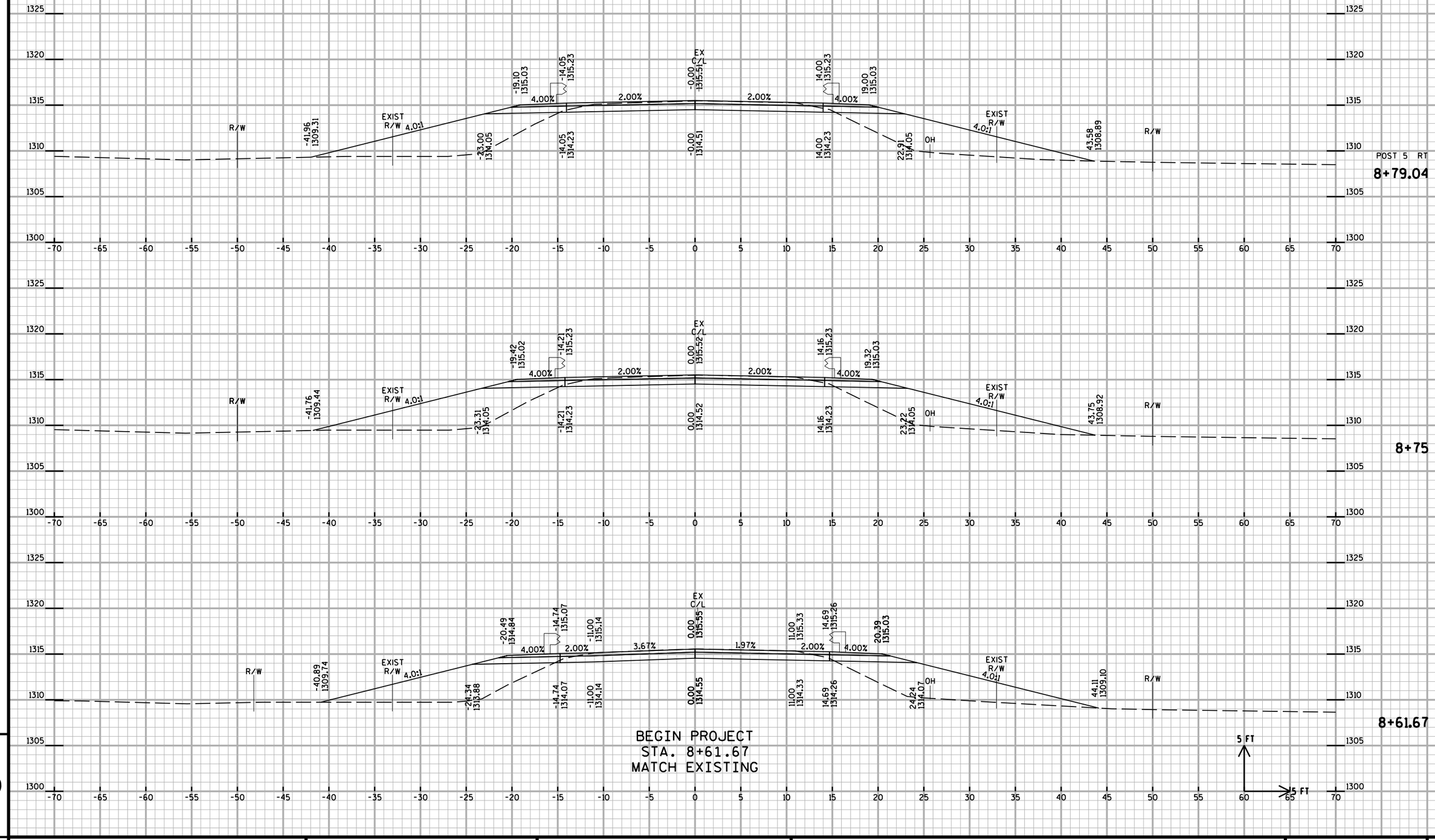
9

PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 8+61.67 TO 8+79.04

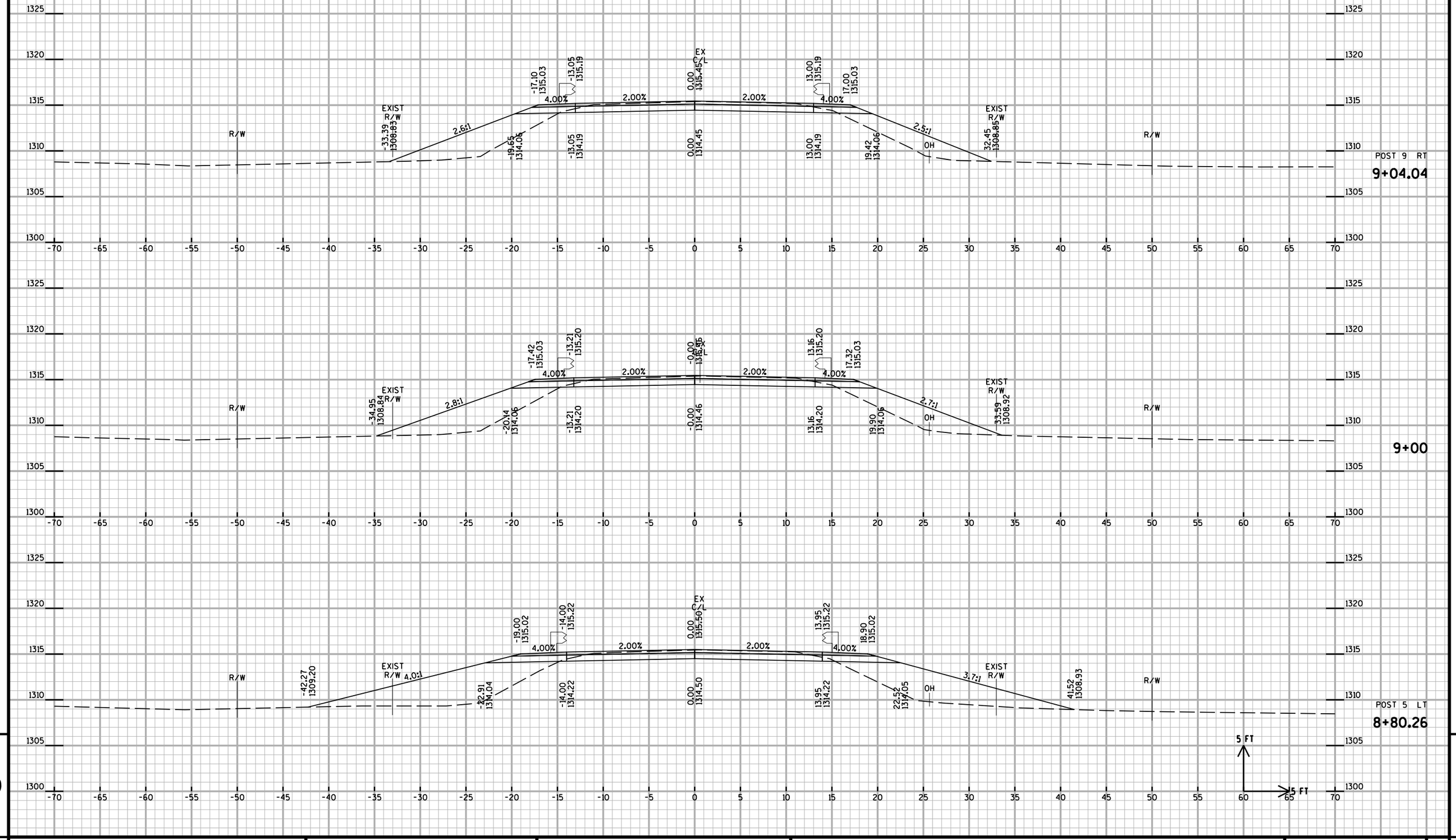


PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 8+80.26 TO 9+04.04



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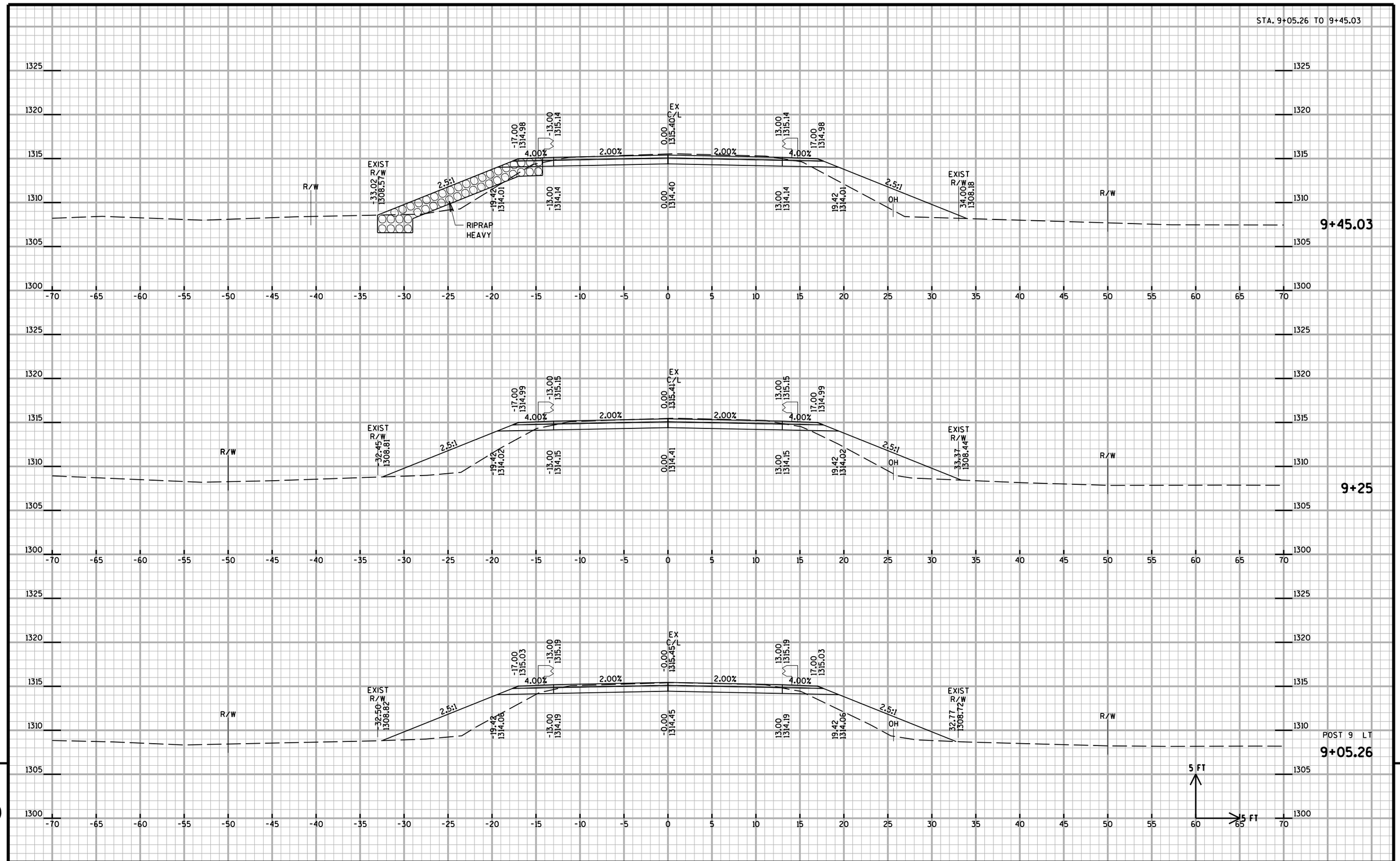
PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 9+05.26 TO 9+45.03



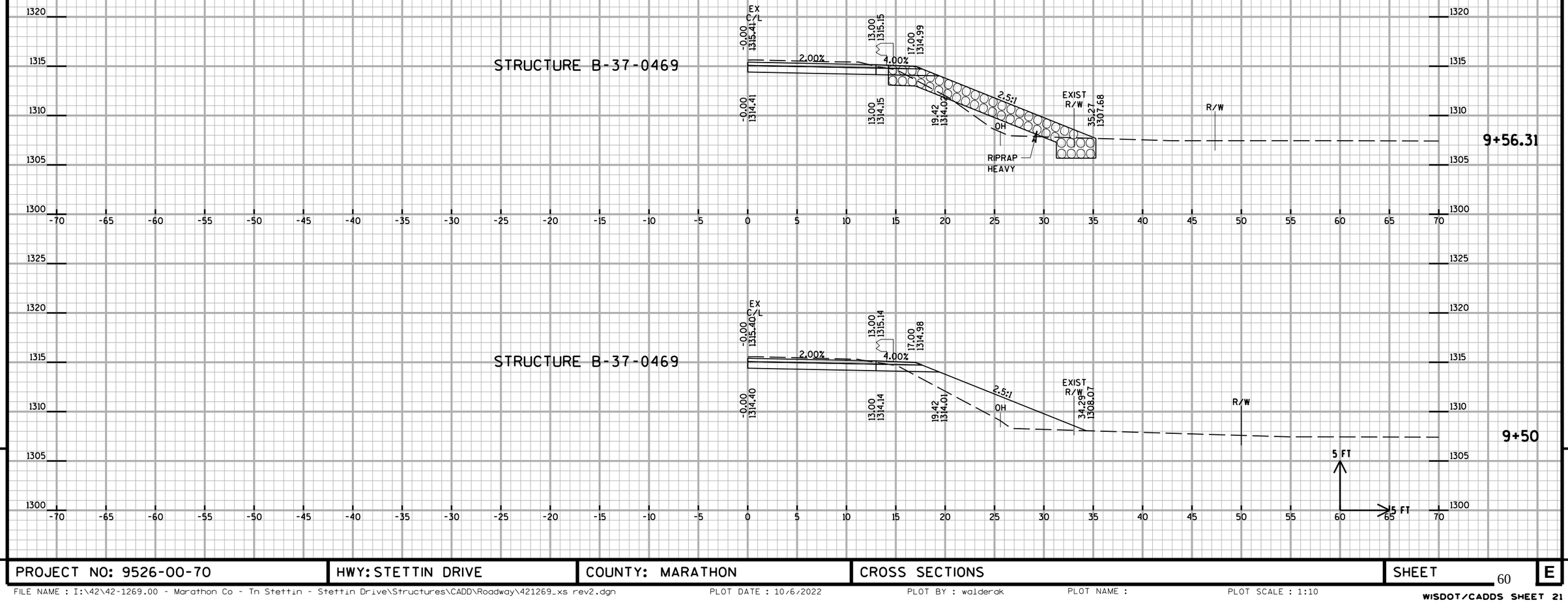
PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 9+50 TO 9+56.31

STRUCTURE B-37-0469



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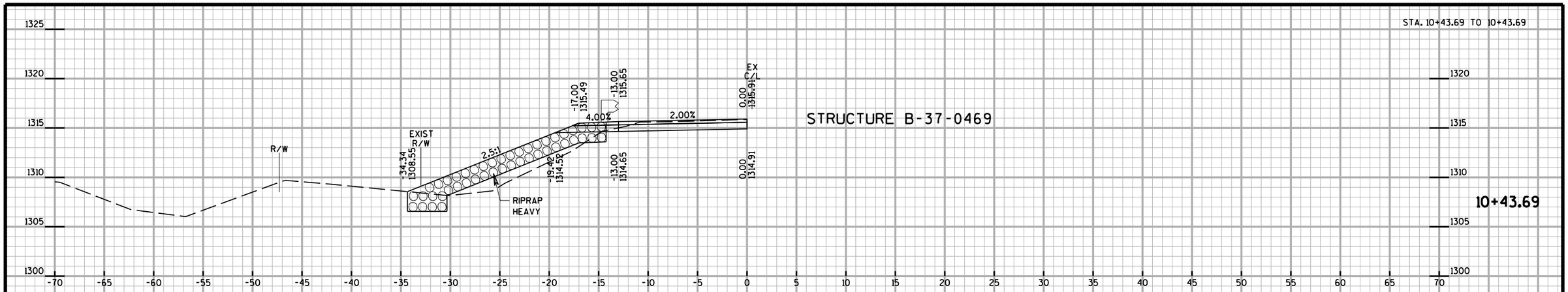
PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 10+43.69 TO 10+43.69



STRUCTURE B-37-0469

5 FT
5 FT

9

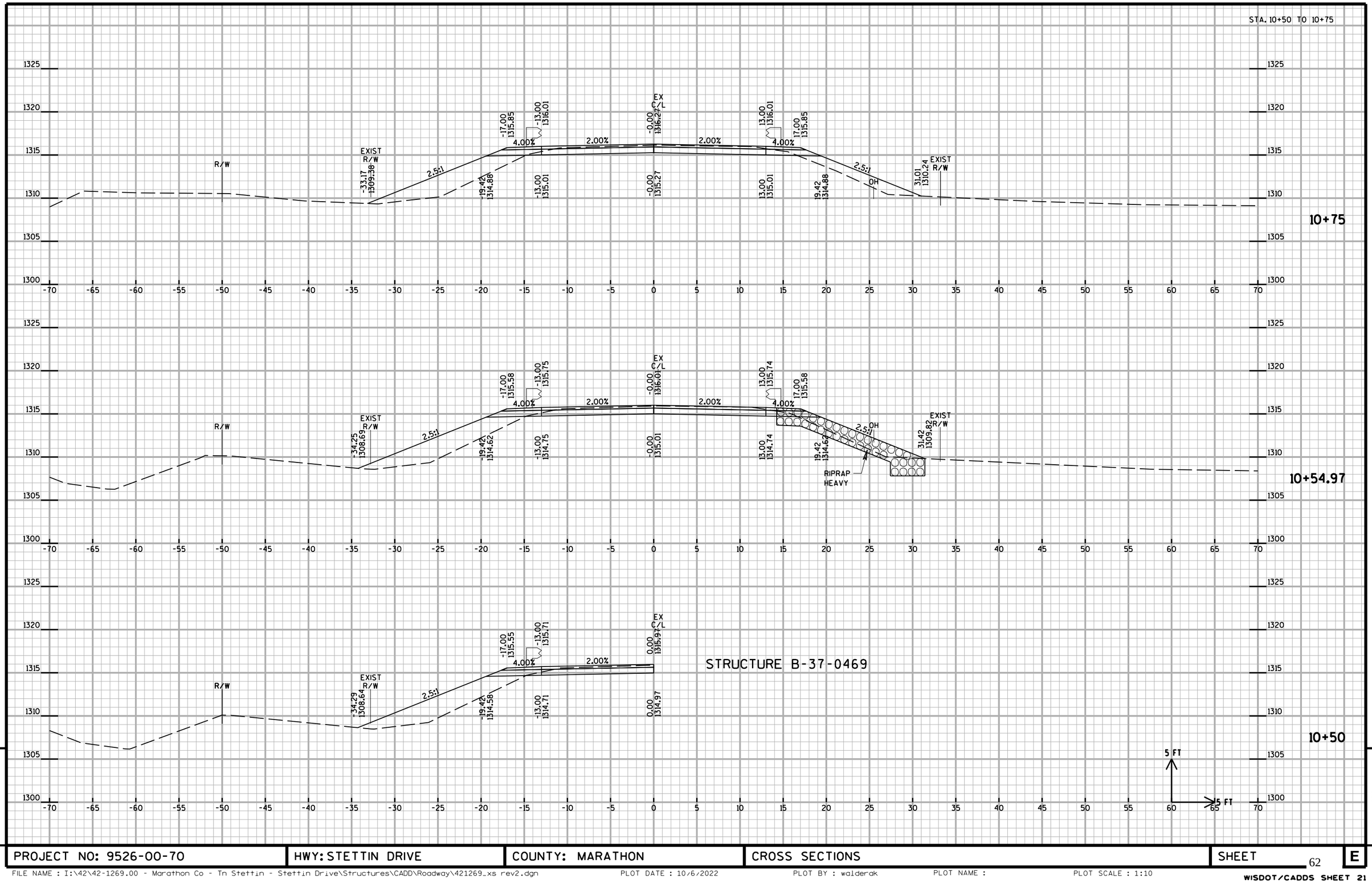
9

PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 10+50 TO 10+75



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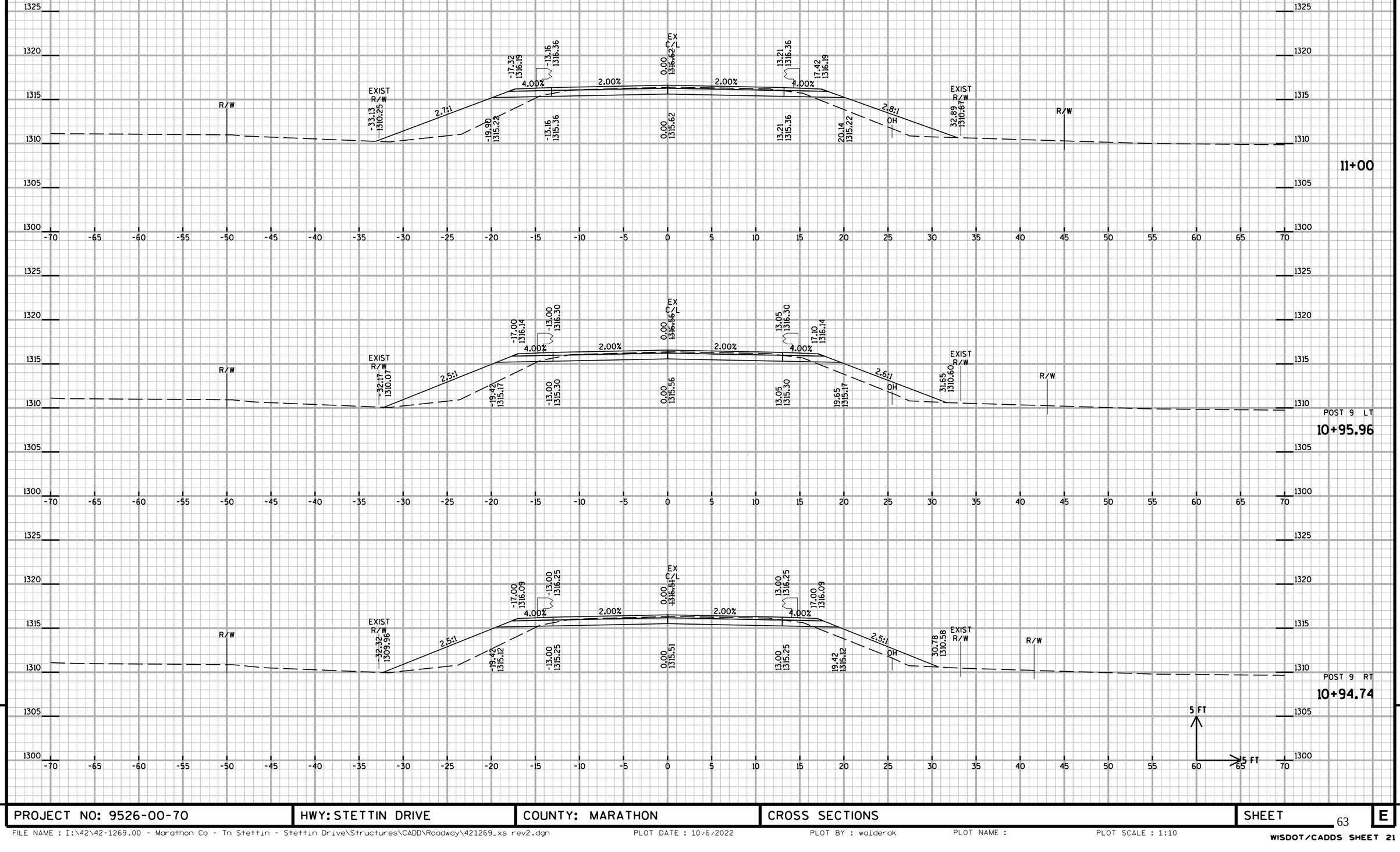
PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 10+94.74 TO 11+00



11+00

POST 9 LT

10+95.96

POST 9 RT

10+94.74

9

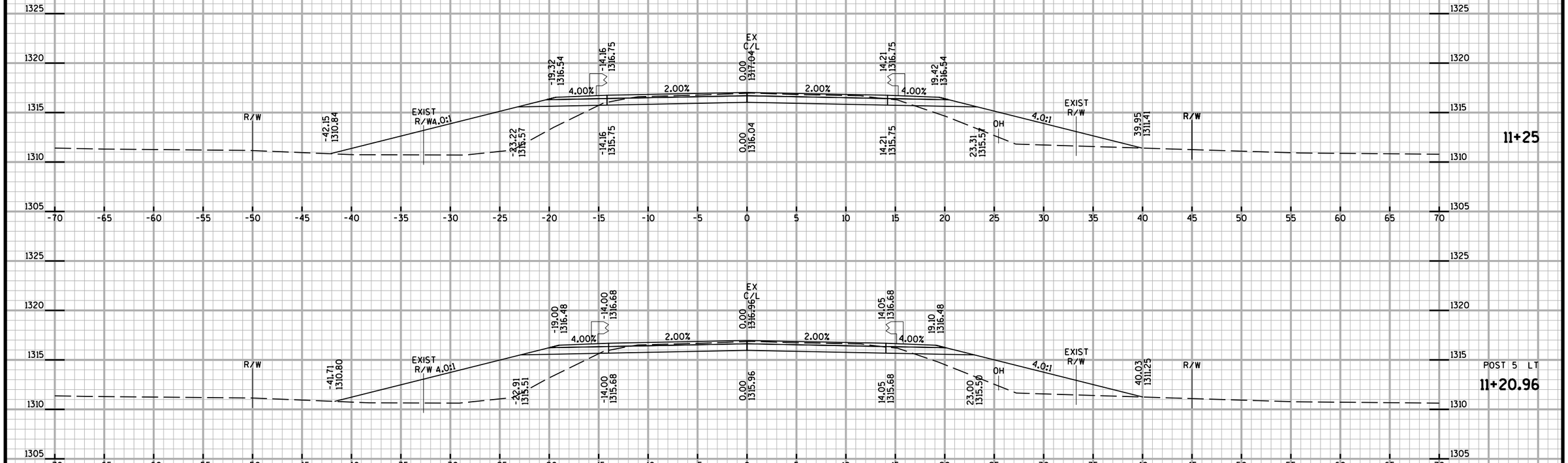
9

PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

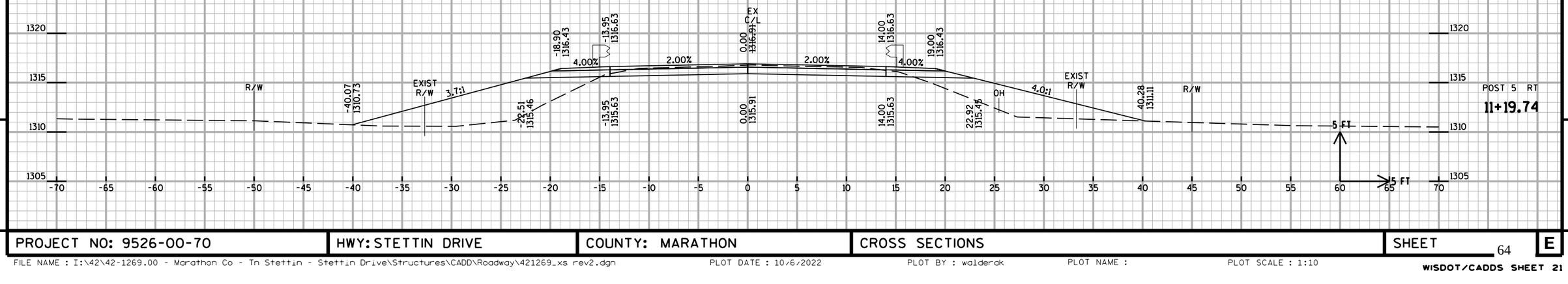
STA. 11+19.74 TO 11+25



11+25

POST 5 LT

11+20.96



POST 5 RT

11+19.74

9

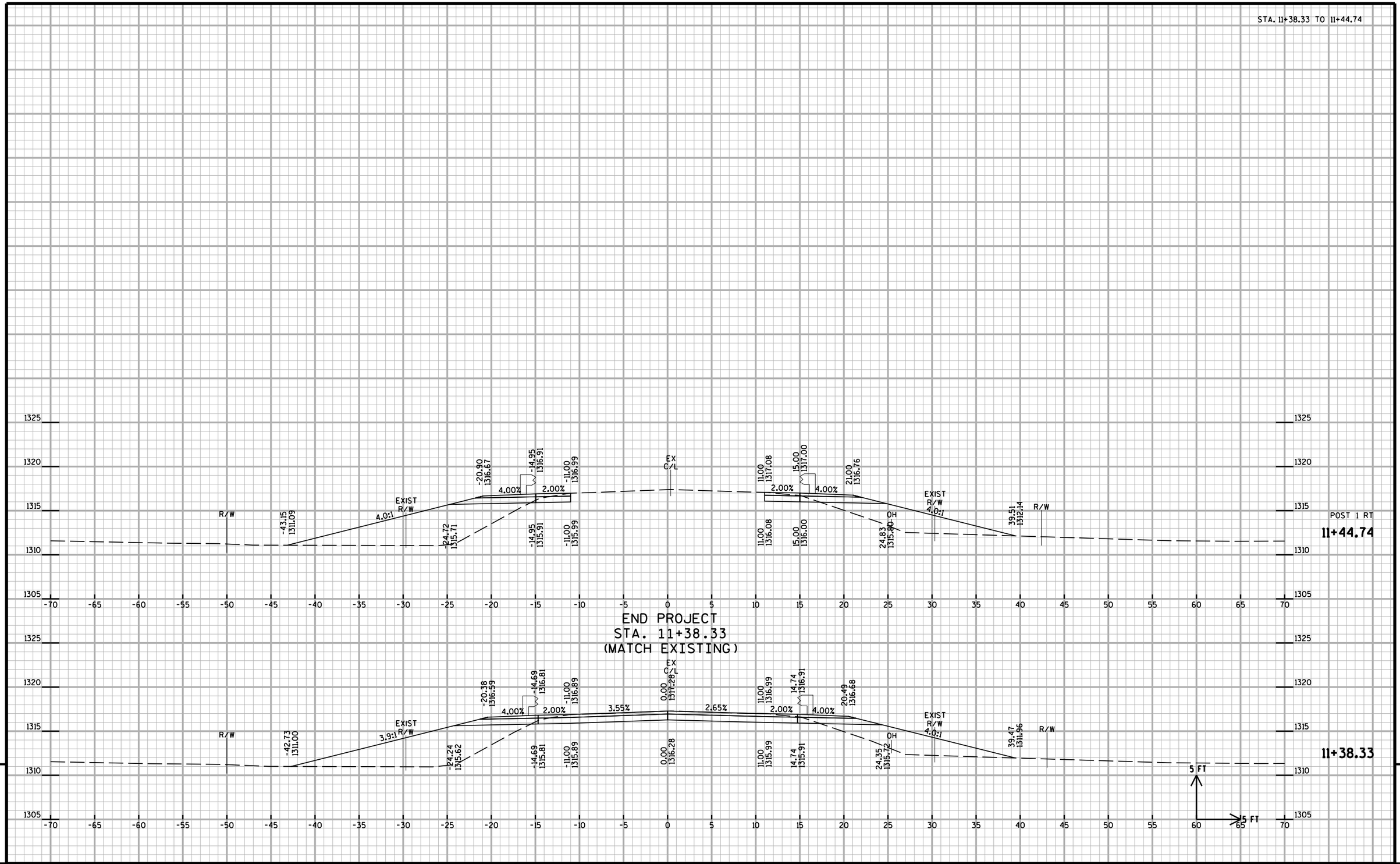
9

PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 11+38.33 TO 11+44.74



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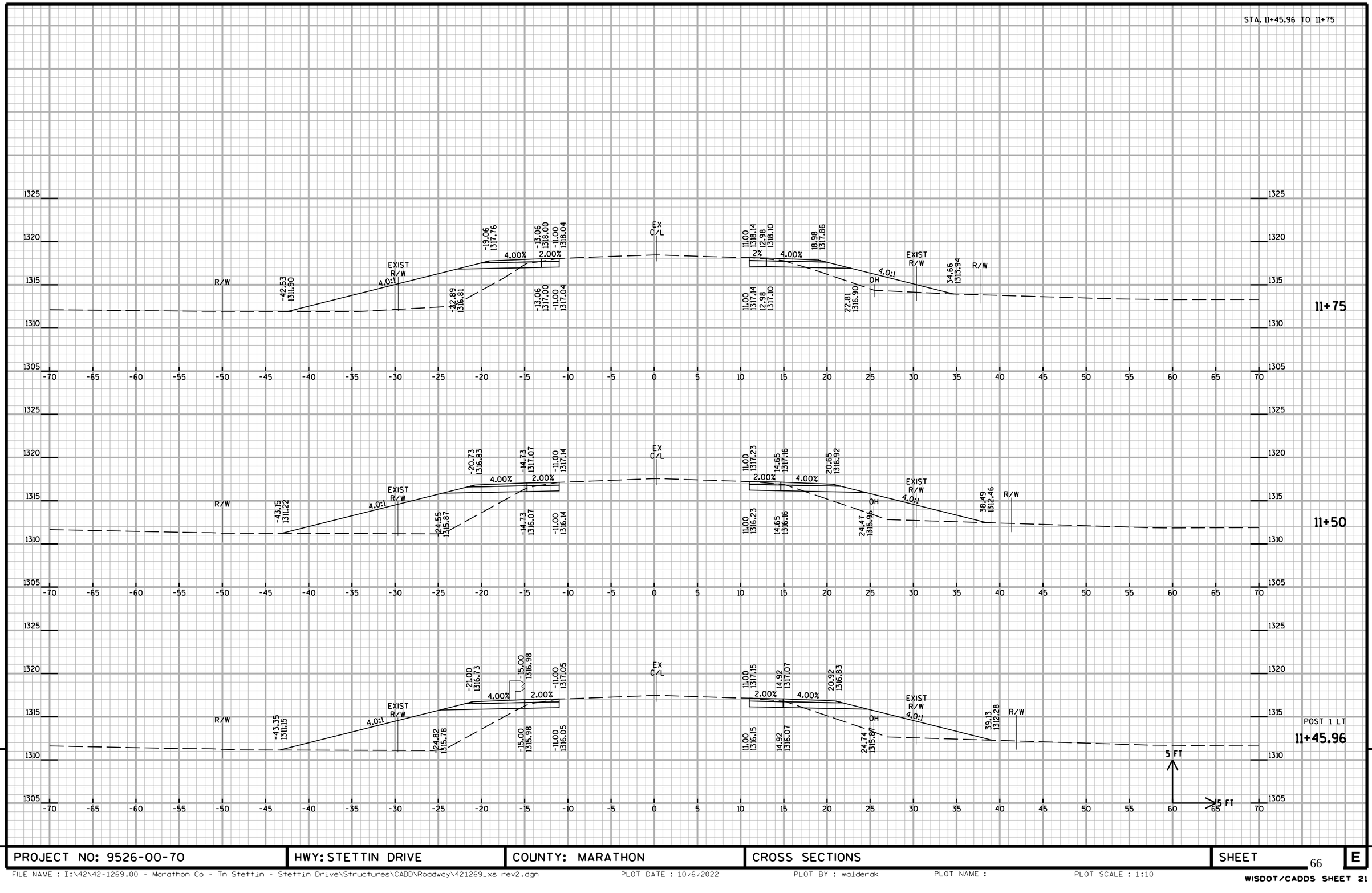
PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 11+45.96 TO 11+75



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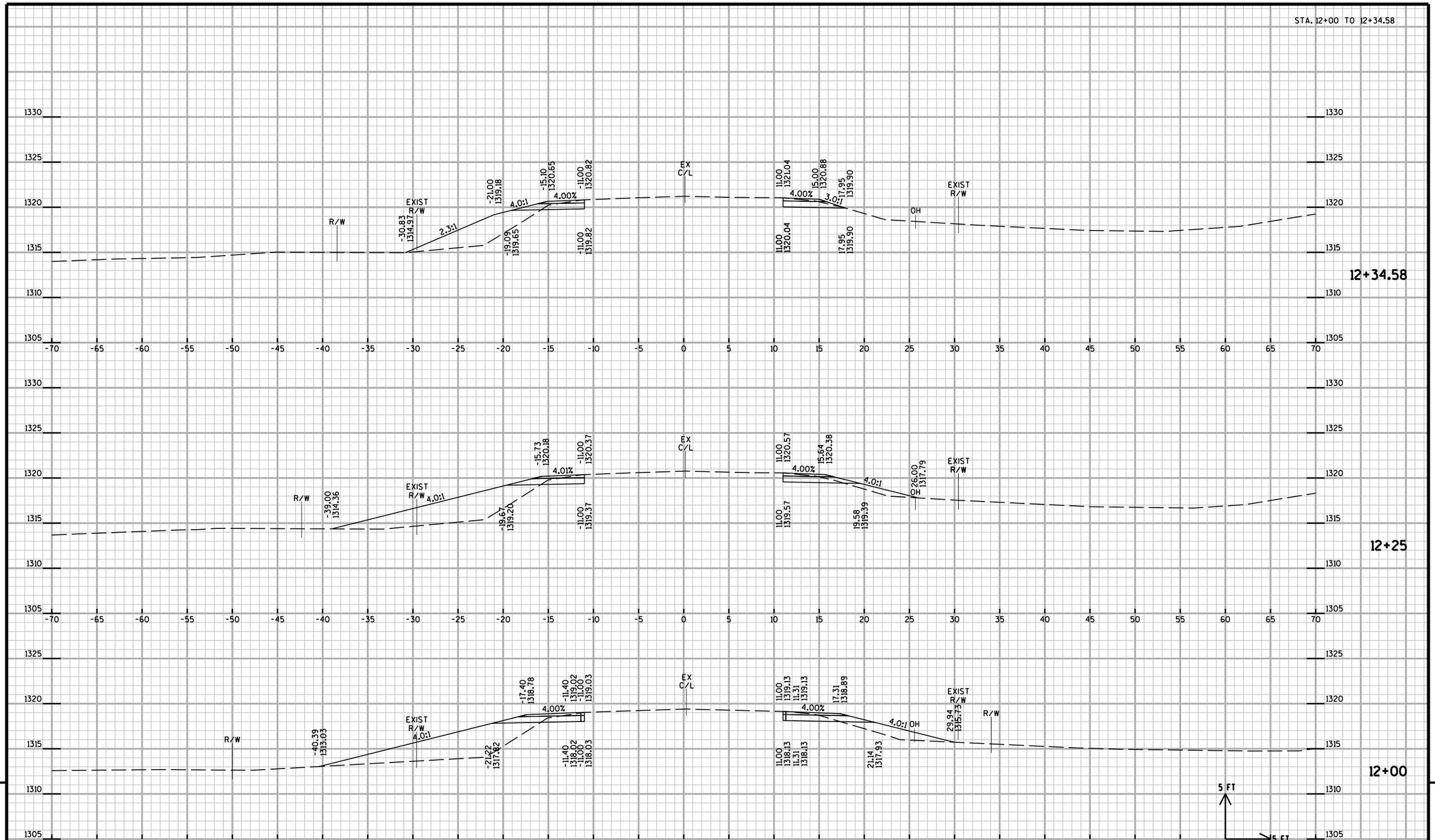
PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 12+00 TO 12+34.58



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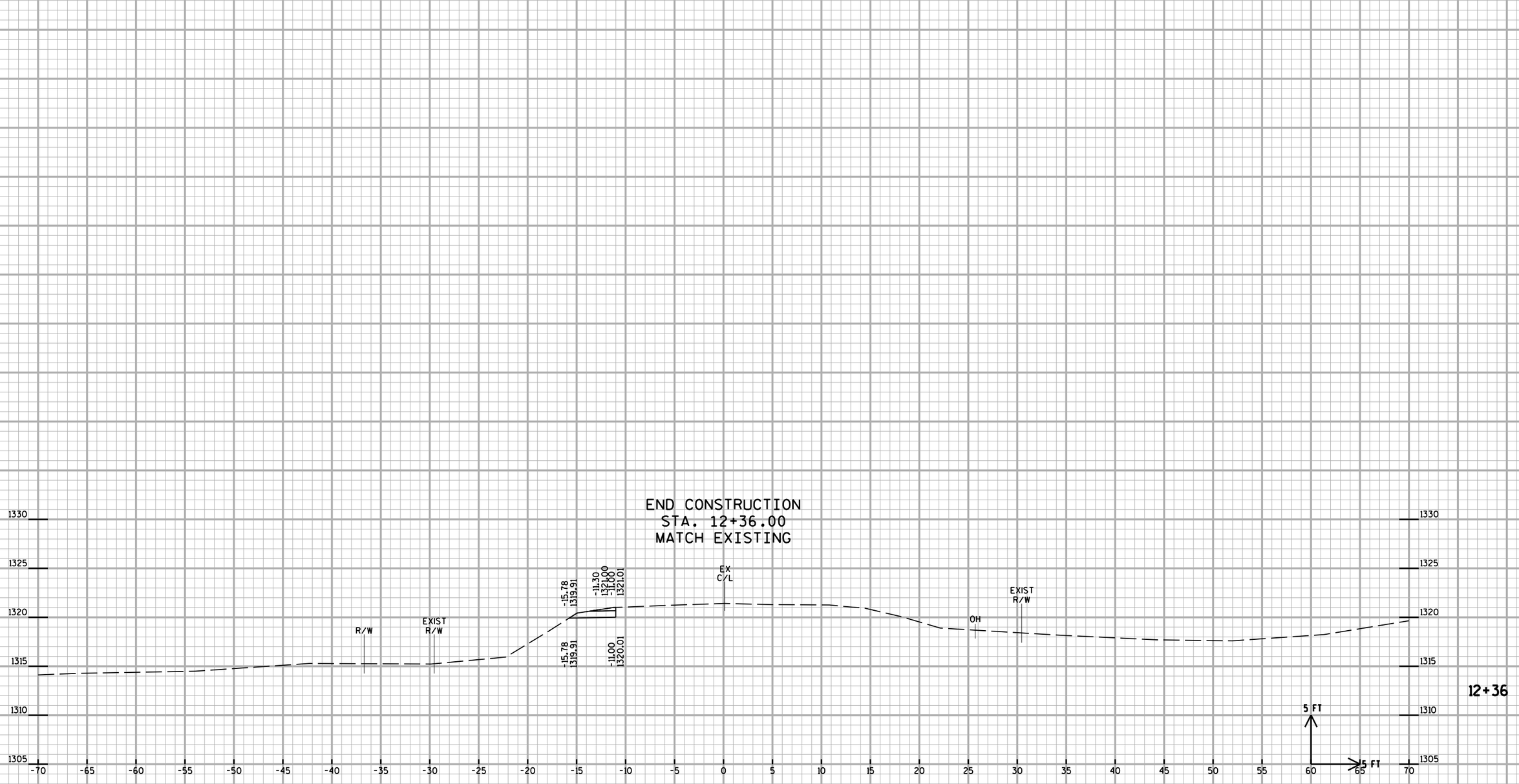
PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET 67	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 12+36 TO 12+36

END CONSTRUCTION
STA. 12+36.00
MATCH EXISTING



12+36

9

9

PROJECT NO: 9526-00-70	HWY: STETTIN DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1269.00 - Marathon Co - Tn Stettin - Stettin Drive\Structures\CADD\Roadway\421269_xs rev2.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

RHI MARCH 2023

PROJECT ID: 9526-00-71
WITH: 9526-00-70

COUNTY: MARATHON

ORDER OF SHEETS

TOTAL SHEETS = 70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9526-00-71	WISC 2023296	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

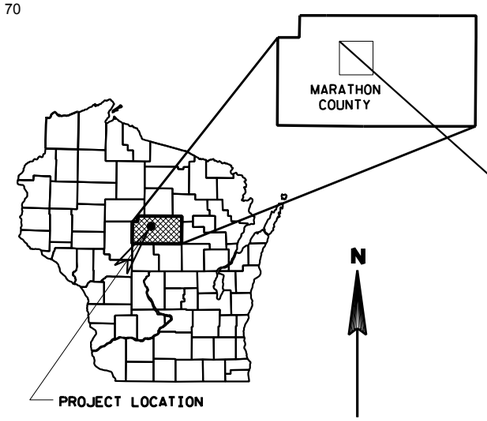
PLAN OF PROPOSED IMPROVEMENT

T STETTIN, HIGHLAND DRIVE

ARTUS CREEK BRIDGE B-37-0470

LOC STR
MARATHON COUNTY

STATE PROJECT NUMBER
9526-00-71



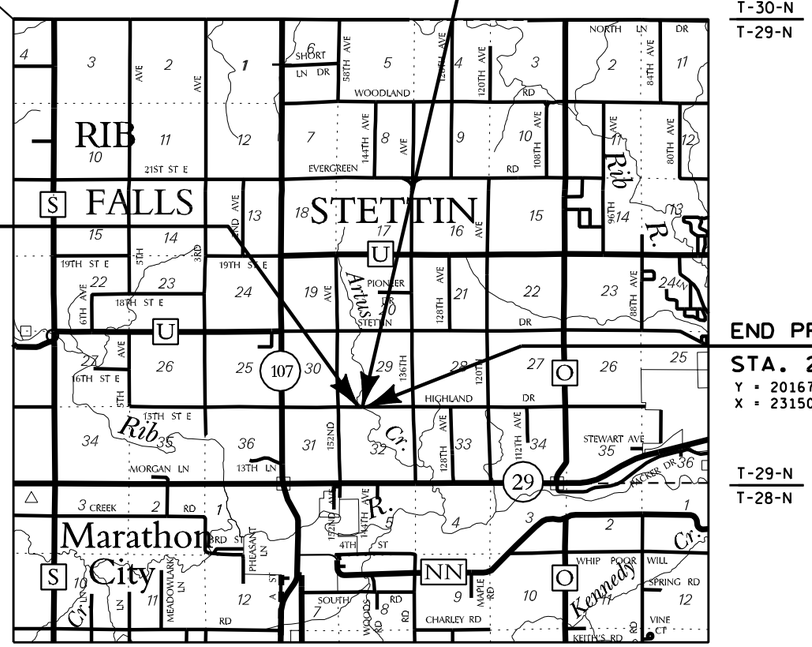
32

DESIGN DESIGNATION

A.A.D.T. (2023)	=	110
A.A.D.T. (2043)	=	150
D.H.V.	=	10
D.	=	50/50
T.	=	5%
DESIGN SPEED	=	45 MPH
ESALS	=	36,500

BEGIN PROJECT
STA. 18+66.56
Y = 201683.32
X = 231229.08

STRUCTURE B-37-0470



END PROJECT
STA. 21+45.44
Y = 201677.61
X = 231507.91

T-29-N
T-28-N

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.053 MI.

SURVEY PREFORMED IN 2020
COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MARATHON COUNTY.

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- HIGH VOLTAGE (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- OVERHEAD ELECTRIC (OH)
- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

ACCEPTED FOR
County of MARATHON
10/13/2022 (Date) James M. Griesbach (Highway Commissioner)

ORIGINAL PLANS PREPARED BY

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

WISCONSIN
KAREN L. WALDERA
E-39158
TAYLOR
WI
PROFESSIONAL ENGINEER

DATE 10/17/2022

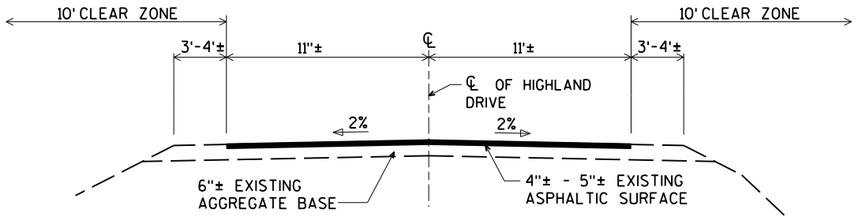
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AYRES ASSOCIATES INC
Designer	AYRES ASSOCIATES INC
Project Manager	MICHAEL GRACE, PE
Regional Examiner	N/A
Regional Supervisor	DANIEL ERVA, PE

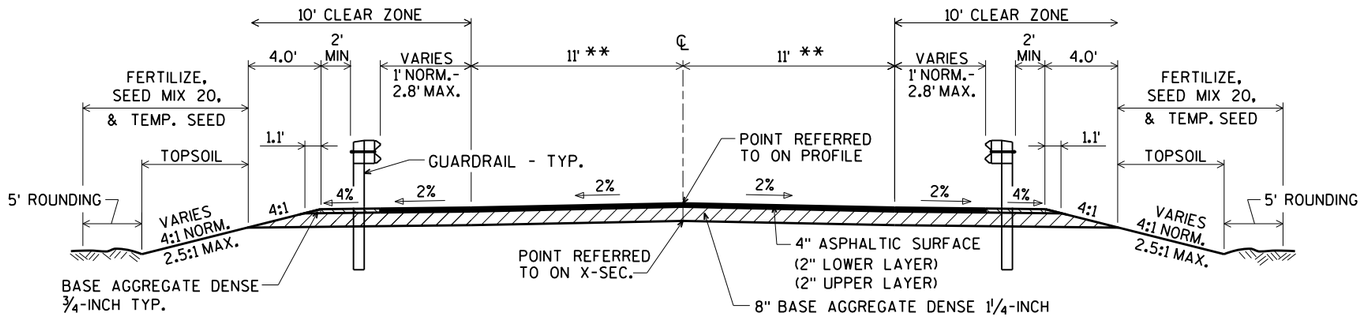
APPROVED FOR THE DEPARTMENT
DATE: 10/31/2022 (Signature)

E



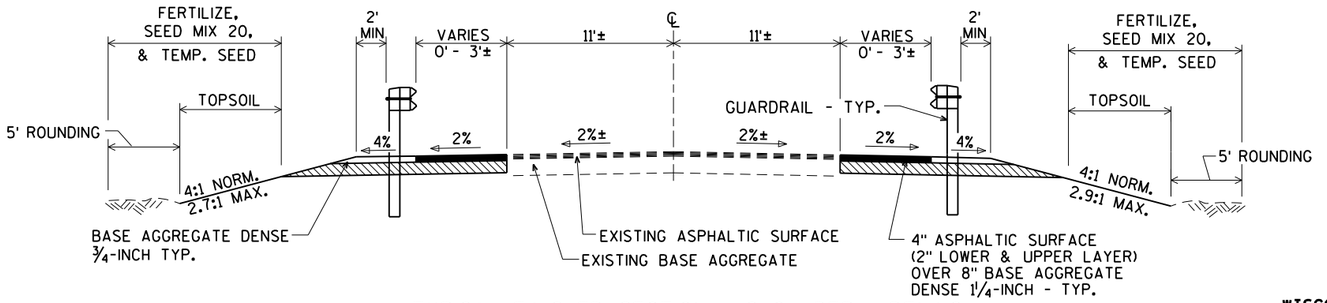
TYPICAL EXISTING SECTION

** THE ASPHALT SHALL BE PLACED 24 FEET WIDE AT THE ENDS OF THE APPROACH SLAB AND FOLLOW THE FACE OF GUARDRAIL, AND TAPER TO MATCH EXISTING AT THE ENDS OF THE PROJECT.



TYPICAL FINISHED SECTION

STA 18+66.56 - STA 19+66.56
STA 20+45.44 - STA 21+45.44



TYPICAL FINISHED SECTION - SHOULDER WIDENING

STA 17+83.00 - STA 18+66.56, LT.
STA 17+86.07 - STA 18+66.56, RT.
STA 21+45.44 - STA 22+25.68, LT.
STA 21+45.44 - STA 22+29.00, RT.

GENERAL NOTES

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

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

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

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

WHEN THE QUANTITY OF THE ITEM OF BASE AGGREGATE DENSE IS MEASURED FOR PAYMENT BY THE TON, 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.

ASPHALTIC REMOVAL IS INCLUDED IN THE ITEM EXCAVATION COMMON.

TOPSOIL SHALL BE PLACED ON THE SLOPES, TO THE POINT OF INTERCEPT WITH THE ORIGINAL GROUND SHOWN ON THE CROSS SECTIONS.

THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD 88).

ASPHALT SURFACE SHALL USE ½" (12.5 mm) NOMINAL AGGREGATE SIZE.

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCE IS ALLOWED OUTSIDE THE SLOPE INTERCEPTS.

UTILITIES

CHARTER
853 MCINTOSH STREET
WAUSAU, WI 54403
ATTN: SCOTT GOHDES
715-803-2989
715-519-0065 (cell)
Scott.Gohdes@charter.com

FRONTIER COMMUNICATIONS
1851 N 14TH AVENUE
WAUSAU, WI 54401
ATTN: CALVIN KLADE
715-847-1525
715-573-2110 (cell)
calvin.klade@ftr.com

WISCONSIN PUBLIC SERVICE CORPORATION - (WPS)
P.O. BOX 1166
WAUSAU, WI 54402
ATTN: CLAYTON VIRCKS
715-848-7317
715-573-7806 (cell)
chvircks@wisconsinpublicservice.com

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

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:

CASEY JONES
473 GRIFFITH AVENUE
WISCONSIN RAPIDS, WI 54494
715-213-6571
casey.jones@Wisconsin.gov

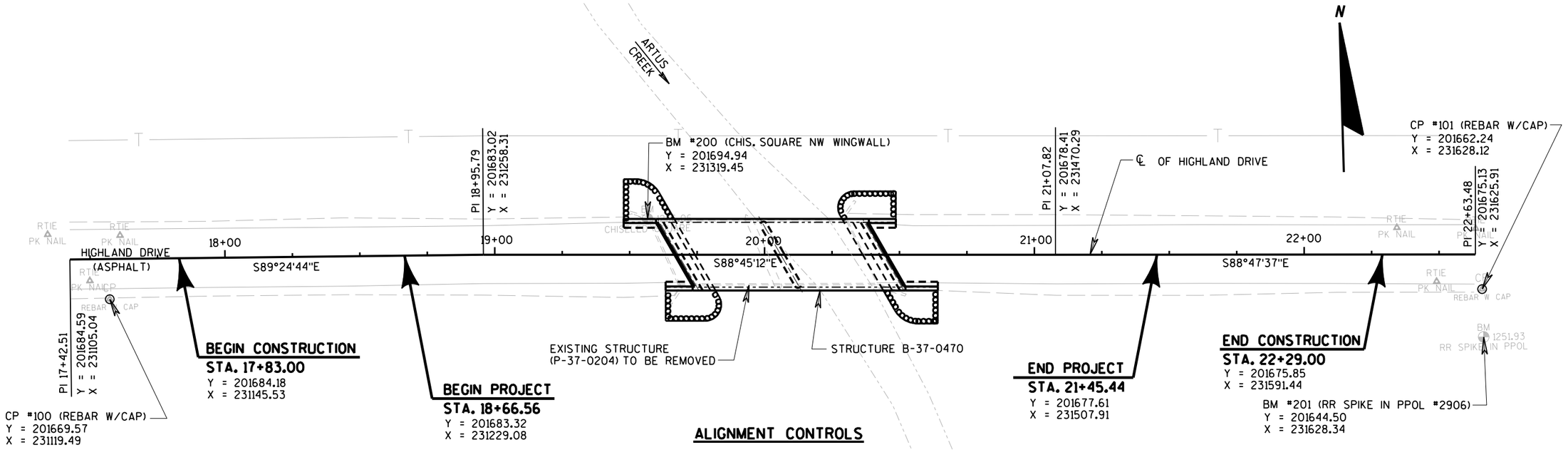
COUNTY CONTACT

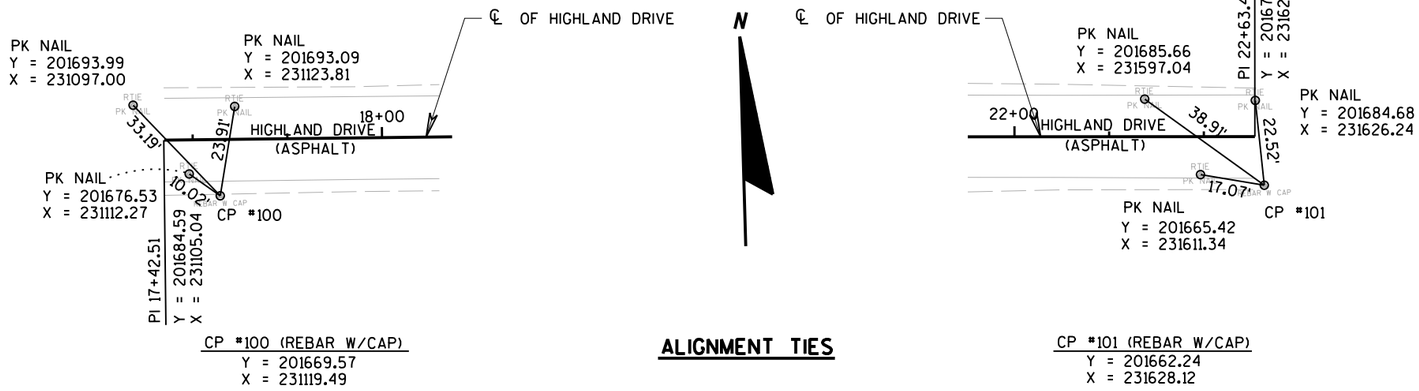
MARATHON COUNTY, HIGHWAY COMMISSIONER
1430 WEST STREET
WAUSAU, WI 54401
ATTN: JAMES GRIESBACH
715-261-1800
james.griesbach@co.marathon.wi.us

DESIGNER

AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: KAREN WALDERA, PE
715-834-3161
walderak@ayresassociates.com

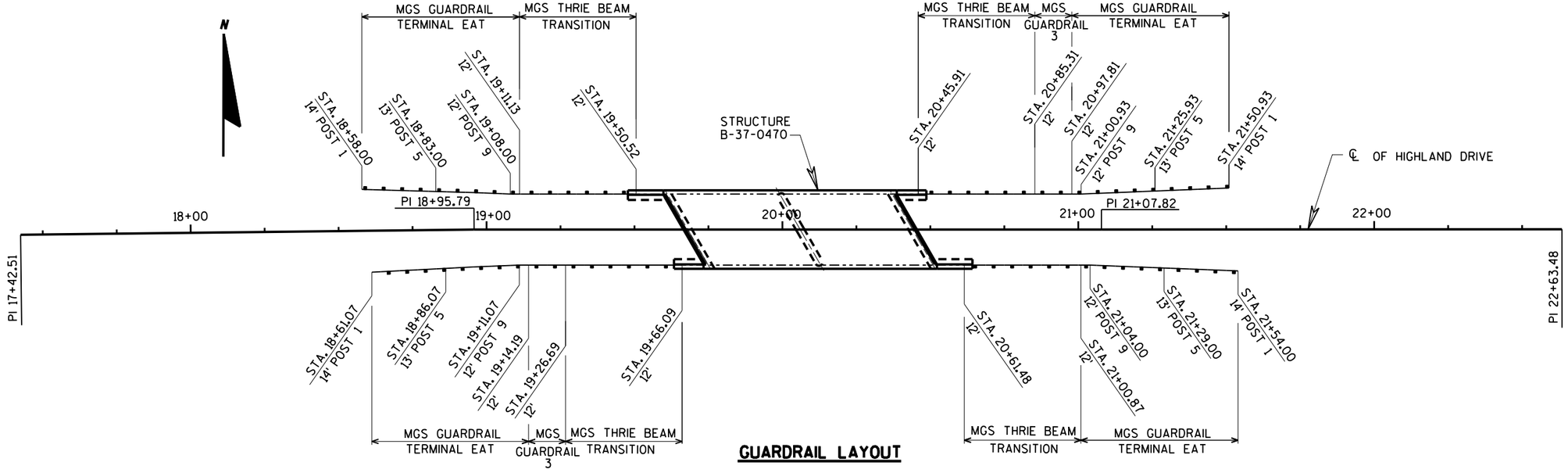
PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	TYPICAL SECTIONS	SHEET 2	E



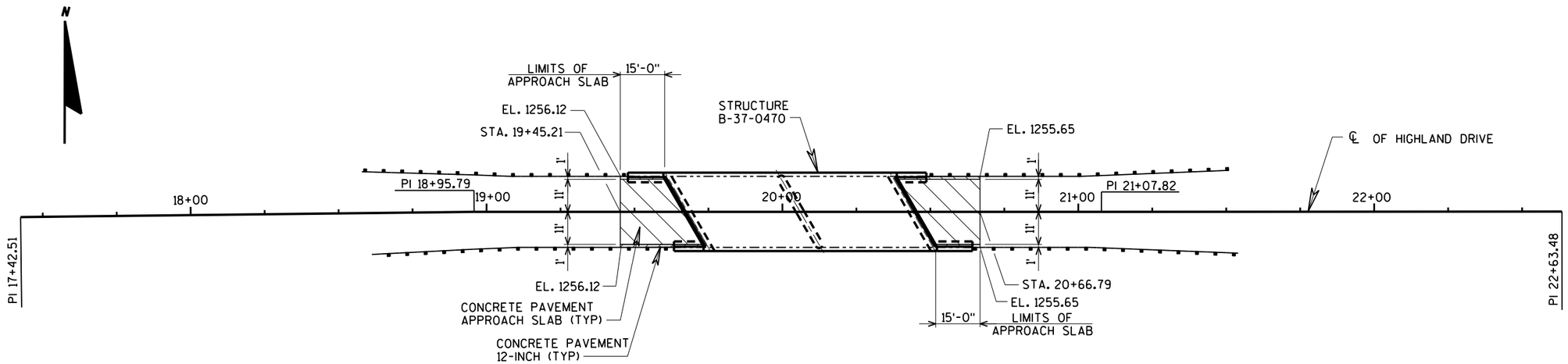


PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	ALIGNMENT CONTROLS	SHEET 3	E

2



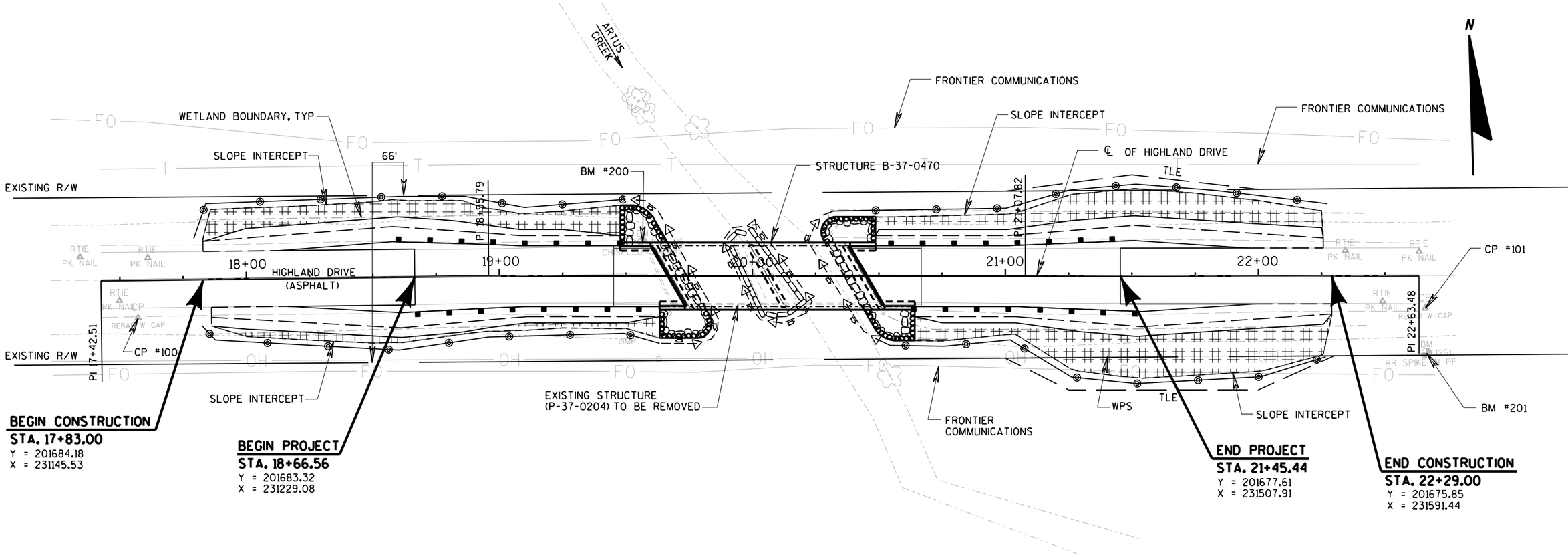
GUARDRAIL LAYOUT



APPROACH SLAB DETAIL

NOTE:
ELEVATIONS WILL BE FIELD VERIFIED BY ENGINEER.

PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	CONSTRUCTION DETAILS	SHEET 4	E



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

TOTAL PROJECT AREA = 0.709 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.440 ACRES

NOTE:

MODIFIED TURBIDITY BARRIER INSTALLATION TO BE USED AROUND THE EXISTING PIER AND PROPOSED PIER. MODIFIED TURBIDITY BARRIER INSTALLATION MUST RESULT IN A COMPLETE SEALING OFF THE WORK AREA (COMPLETELY STILL WATER INSIDE THE TURBIDITY BARRIER - NO SIGNS OF FLOW) AND SAND BAGS SHOULD BE PLACED IN A CONTINUAL FASHION, END TO END, ALONG THE BOTTOM FLAP AND THE ENDS SHOULD BE SECURED TIGHTLY AND ALSO SEALED WITH SANDBAGS.

CONVENTIONIAL TURBIDITY BARRIER INSTALLATION TO BE USED ALONG THE ABUTMENTS.

HIGH WATER$_2$ EL. 1252.62

LEGEND

- EROSION MAT CLASS I TYPE B URBAN
- SILT FENCE
- TURBIDITY BARRIER
- RIPRAP HEAVY
- SAND BAGS

PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	EROSION CONTROL	SCALE, FEET 0 20 40	SHEET 5	E

9526-00-71

Line	Item	Item Description	Unit	Total	Qty
0006	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 02. P-37-0204	EACH	1.000	1.000
0008	205.0100	Excavation Common	CY	280.000	280.000
0012	206.1001	Excavation for Structures Bridges (structure) 02. B-37-0470	EACH	1.000	1.000
0014	208.0100	Borrow	CY	56.000	56.000
0016	210.1500	Backfill Structure Type A	TON	240.000	240.000
0020	213.0100	Finishing Roadway (project) 02. 9526-00-71	EACH	1.000	1.000
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	90.000	90.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	460.000	460.000
0026	415.0120	Concrete Pavement 12-Inch	SY	10.000	10.000
0028	415.0410	Concrete Pavement Approach Slab	SY	110.000	110.000
0030	450.4000	HMA Cold Weather Paving	TON	30.000	30.000
0032	455.0605	Tack Coat	GAL	34.000	34.000
0034	465.0105	Asphaltic Surface	TON	110.000	110.000
0036	502.0100	Concrete Masonry Bridges	CY	212.000	212.000
0038	502.3200	Protective Surface Treatment	SY	280.000	280.000
0040	505.0400	Bar Steel Reinforcement HS Structures	LB	4,670.000	4,670.000
0042	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	30,460.000	30,460.000
0044	513.4061	Railing Tubular Type M	LF	207.000	207.000
0046	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0048	550.0500	Pile Points	EACH	16.000	16.000
0050	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	480.000	480.000
0052	606.0300	Riprap Heavy	CY	140.000	140.000
0054	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	140.000	140.000
0056	614.2300	MGS Guardrail 3	LF	25.000	25.000
0058	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0060	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0064	618.0100	Maintenance And Repair of Haul Roads (project) 02. 9526-00-71	EACH	1.000	1.000
0066	619.1000	Mobilization	EACH	0.500	0.500
0068	624.0100	Water	MGAL	6.000	6.000
0070	625.0100	Topsoil	SY	890.000	890.000
0072	628.1504	Silt Fence	LF	950.000	950.000
0074	628.1520	Silt Fence Maintenance	LF	2,375.000	2,375.000
0076	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0078	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0080	628.2008	Erosion Mat Urban Class I Type B	SY	780.000	780.000
0082	628.6005	Turbidity Barriers	SY	295.000	295.000
0084	629.0210	Fertilizer Type B	CWT	0.900	0.900
0086	630.0120	Seeding Mixture No. 20	LB	41.000	41.000
0088	630.0200	Seeding Temporary	LB	41.000	41.000
0090	630.0300	Seeding Borrow Pit	LB	1.000	1.000
0092	630.0500	Seed Water	MGAL	36.000	36.000
0094	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0096	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0098	638.2602	Removing Signs Type II	EACH	4.000	4.000
0100	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0102	642.5001	Field Office Type B	EACH	0.500	0.500
0104	643.0420	Traffic Control Barricades Type III	DAY	2,520.000	2,520.000
0106	643.0705	Traffic Control Warning Lights Type A	DAY	3,920.000	3,920.000
0108	643.0900	Traffic Control Signs	DAY	1,960.000	1,960.000

9526-00-71

Line	Item	Item Description	Unit	Total	Qty
0110	643.5000	Traffic Control	EACH	0.500	0.500
0112	645.0111	Geotextile Type DF Schedule A	SY	100.000	100.000
0114	645.0120	Geotextile Type HR	SY	280.000	280.000
0118	650.4500	Construction Staking Subgrade	LF	367.000	367.000
0120	650.5000	Construction Staking Base	LF	367.000	367.000
0124	650.6501	Construction Staking Structure Layout (structure) 02. B-37-0470	EACH	1.000	1.000
0126	650.7000	Construction Staking Concrete Pavement	LF	45.000	45.000
0130	650.9911	Construction Staking Supplemental Control (project) 02. 9526-00-71	EACH	1.000	1.000
0132	650.9920	Construction Staking Slope Stakes	LF	367.000	367.000
0134	690.0150	Sawing Asphalt	LF	374.000	374.000
0136	715.0502	Incentive Strength Concrete Structures	DOL	1,272.000	1,272.000
0138	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0142	999.2005.S	Maintaining Bird Deterrent System (station) 02. 20+00	EACH	1.000	1.000
0144	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	600.000	600.000
0146	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	300.000	300.000

HIGHLAND DRIVE BRIDGE EARTHWORK SUMMARY

From/To Station	Location	Common Excavation (1) (Item 205.0100) Cut	Unexpanded Fill	Expanded Fill (2) Factor 1.30	Mass Ordinate +/- (3)	Waste	Borrow (Item 208.0100)	Comment:
17+83 - 19+66.56	MAINLINE	126	62	81	45	45	0	
20+45.44 - 22+29	MAINLINE	154	196	255	-101	0	56	
CATEGORY 0010 TOTALS		280					56	

1) Common Excavation is the Cut. Item number 205.0100.

2) Expanded Fill. Factor = 1.30; Expanded Fill = Unexpanded Fill * Fill Factor

3) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material on the project.

4) All quantities shown in CY.

FINISHING ROADWAY

CATEGORY	LOCATION	213.0100.01 FINISHING ROADWAY (PROJECT) (02. 9526-00-71) EACH	REMARKS
0010	HIGHLAND DRIVE	1	
	TOTAL 0010	1	

BASE AGGREGATE DENSE

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	REMARKS
0010	17+85.00	-	19+66.56	MAINLINE	45	230	3	
0010	20+45.44	-	22+27.00	MAINLINE	45	230	3	
				TOTAL 0010	90	460	6	

ASPHALTIC PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON	450.4000 HMA COLD WEATHER PAVING TON	REMARKS
0010	18+13.00	-	19+45.21	MAINLINE	17	55	15	
0010	20+66.79	-	21+99.00	MAINLINE	17	55	15	
				TOTAL 0010	34	110	30	

CONCRETE PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	415.0120 CONCRETE PAVEMENT 12-INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	REMARKS
0010	19+45.21	-	19+67.33	MAINLINE	5	55	
0010	20+44.67	-	20+66.79	MAINLINE	5	55	
				TOTAL 0010	10	110	

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	REMARKS
0010	18+58.00	-	19+50.52	LT	0	40	1	
0010	18+61.07	-	19+66.09	RT	12.5	40	1	
0010	20+45.91	-	21+50.93	LT	12.5	40	1	
0010	20+61.48	-	21+54.00	RT	0	40	1	
				TOTAL 0010	25	160	4	

3

MAINTENANCE AND REPAIR OF HAUL ROADS

CATEGORY	LOCATION	618.0100.01 MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) (02. 9526-00-71) EACH	REMARKS
0030	HIGHLAND DRIVE	1	
	TOTAL 0030	1	

MOBILIZATIONS EROSION CONTROL

CATEGORY	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	REMARKS
0010	PROJECT 9526-00-71	4	4	
	TOTAL 0010	4	4	

3

EROSION CONTROL AND FINISHING ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0100 TOPSOIL SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2008 EROSION MAT URBANCLASS I TYPE B SY	628.6005 TURBIDITY BARRIERS SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0300 SEEDING BORROW PIT LB	630.0500 SEED WATER MGAL	REMARKS
0010	17+85	-	20+00	LT	210	185	463	150	115	0.2	8	8	-	7	
0010	17+86.07	-	20+00	RT	120	185	463	50		0.1	6	6	-	5	
0010	20+00	-	22+25.68	LT	245	205	513	175	120	0.2	9	9	1	8	
0010	20+00	-	22+27	RT	315	185	463	250		0.2	10	10	-	9	
	UNDISTRIBUTED				-	190	475	155	60	0.2	8	8	0	7	
				TOTAL 0010	890	950	2,375	780	295	0.9	41	41	1	36	

PERMANENT SIGNING

CATEGORY	STATION	LOCATION	634.0614 POSTS WOOD 4X6-INCH X 14-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
0010	19+47	LT	1	3	-	-	W5-52L: BRIDGE HASH MARKS
0010	19+56	LT	-	-	1	1	W5-52L: BRIDGE HASH MARKS
0010	19+62	RT	1	3	-	-	W5-52R: BRIDGE HASH MARKS
0010	19+67	RT	-	-	1	1	W5-52R: BRIDGE HASH MARKS
0010	20+32	LT	-	-	1	1	W5-52L: BRIDGE HASH MARKS
0010	20+44	RT	-	-	1	1	W5-52R: BRIDGE HASH MARKS
0010	20+50	LT	1	3	-	-	W5-52L: BRIDGE HASH MARKS
0010	20+65	RT	1	3	-	-	W5-52R: BRIDGE HASH MARKS
		TOTAL 0010	4	12	4	4	

3

TRAFFIC CONTROL

CATEGORY	LOCATION	DURATION DAY	NO.	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	NO.	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	NO.	643.0900 TRAFFIC CONTROL SIGNS DAY	643.5000 TRAFFIC CONTROL EACH
0010	PER SDD 15C2	140	18	2,520	28	3,920	14	1,960	--
0010	HIGHLAND DRIVE	-	-	-	-	-	-	-	0.5
		TOTAL 0010		2,520		3,920		1,960	0.5

TRAFFIC CONTROL PLACEMENT SUBJECT TO ENGINEER APPROVAL

SAWING

CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT LF	REMARKS
0010	17+83 - 18+66.56	LT	84	
0010	17+86.07 - 18+66.56	RT	81	
0010	18+66.56	MAINLINE	22	
0010	21+45.44	MAINLINE	22	
0010	21+45.44 - 22+25.68	LT	81	
0010	21+45.44- 22+29	RT	84	
		TOTAL 0010	374	

3

CONSTRUCTION STAKING

CATEGORY	STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6501.02 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (02. B-37-0470) EACH	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.9911.02 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (02. 9526-00-71) EACH	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	REMARKS
0010	17+83.00	-	22+29.00	MAINLINE	367	367	-	45	-	367	
0010				PROJECT ID: 9526-00-71			-	-	1	-	
				TOTAL 0010	367	367	0	45	1	367	
0020	19+66.56	-	20+45.44	B-37-0470	-	-	1	-	-	-	
				TOTAL 0020	0	0	1	0	0	0	
				PROJECT TOTAL	367	367	1	45	1	367	

MAINTAINING BIRD DETERRENT SYSTEM

CATEGORY	LOCATION	999.2005.S MAINTAINING BIRD DETERRENT SYSTEM (STATION) (02. 20+00) EACH	REMARKS
0010	HIGHLAND DRIVE	1	
	TOTAL 0010	1	

R/W PROJECT NUMBER: 9526-00-01	SHEET NUMBER: 1

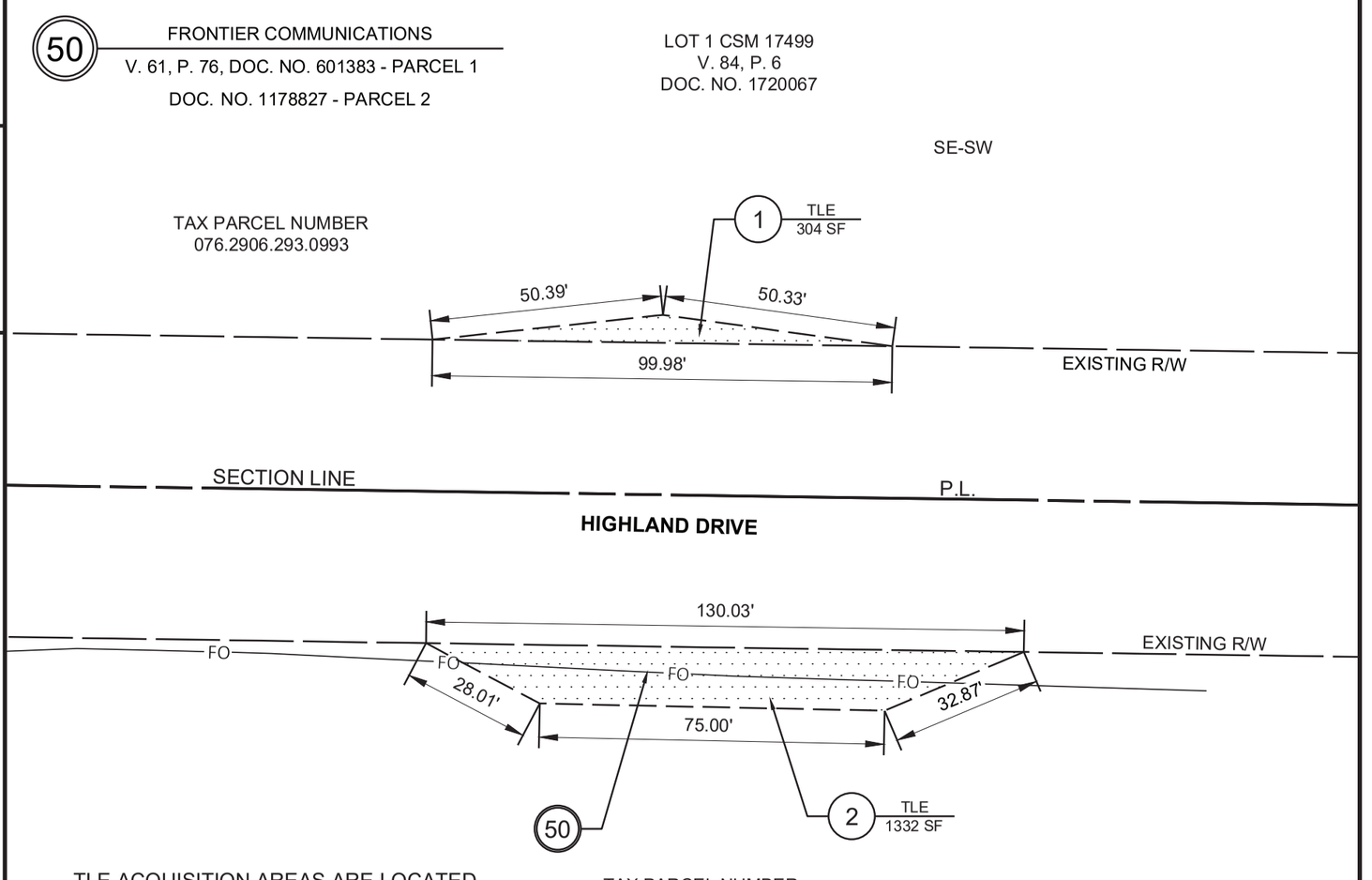
TLE ACQUISITION EXHIBIT
T STETTIN, HIGHLAND DRIVE
ARTUS CREEK BRIDGE B-37-0470

LOC STR — MARATHON COUNTY

PART OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 29 AND PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 32, T29N, R06E, TOWN OF STETTIN, MARATHON COUNTY, WISCONSIN

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

THIS TLE IS FOR THE RIGHT TO CONSTRUCT, CUT, AND/OR FILL SLOPES, INCLUDING FOR SUCH PURPOSE THE RIGHT TO OPERATE THE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES DEEM NECESSARY OR DESIRABLE.



SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE COUNTY.

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE S.F.
1	DEVIN L. CYZAN AND APRIL D. CYZAN	TLE	304
2	DAVID L. OELKE	TLE	1332

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
50	FRONTIER COMMUNICATIONS	TEMPORARY RELEASE OF RIGHTS

THIS MAP IS APPROVED FOR MARATHON COUNTY

SIGNATURE: James M. Griesbach DATE: 7/7/2022

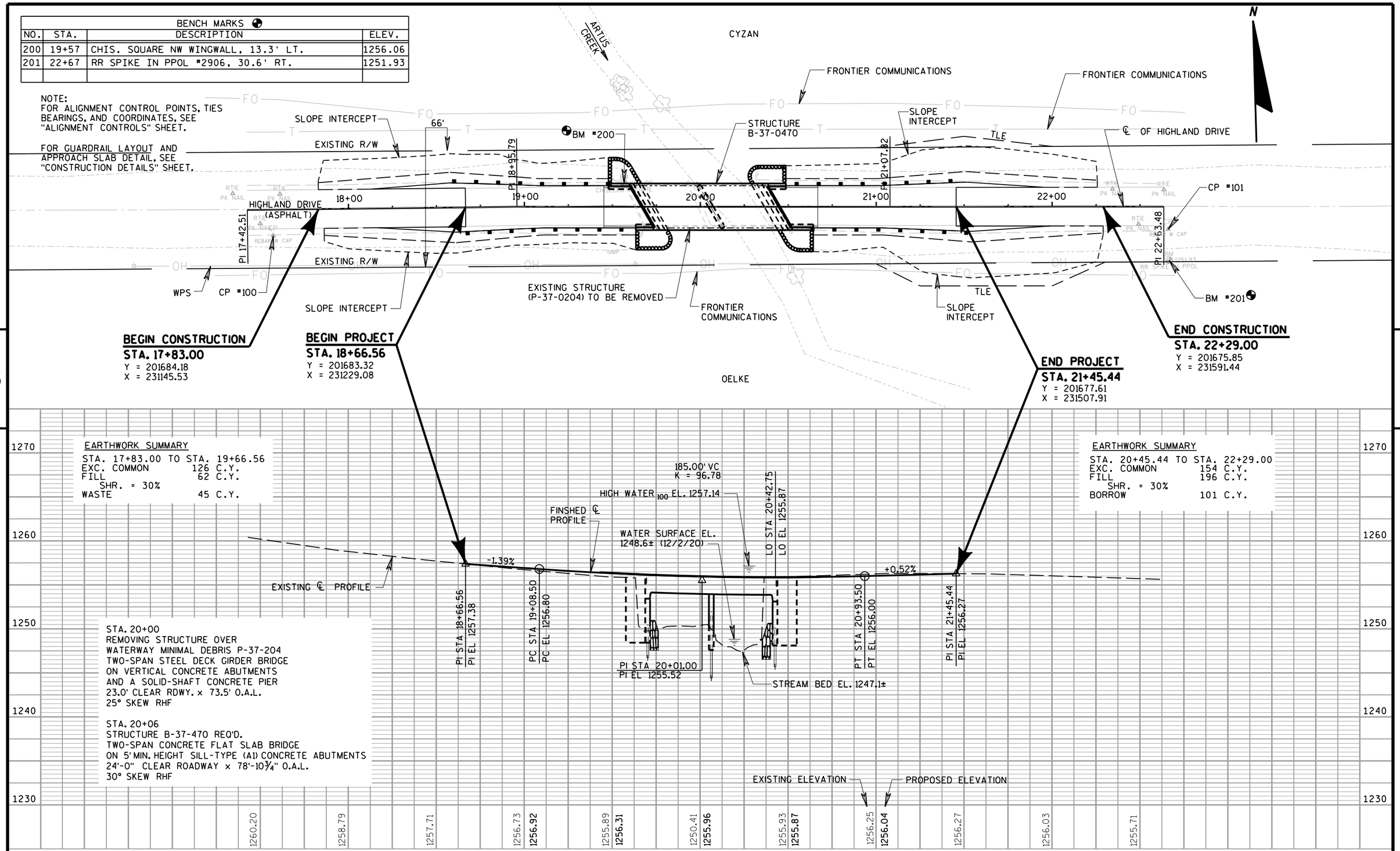
PRINT NAME: James M. Griesbach

FILE NAME : 95260001 TLE EXHIBIT.DWG PLOT DATE : 7/7/2022 8:25 AM R/W PROJECT: 9526-00-01

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
200	19+57	CHIS. SQUARE NW WINGWALL, 13.3' LT.	1256.06
201	22+67	RR SPIKE IN PPOL #2906, 30.6' RT.	1251.93

NOTE:
FOR ALIGNMENT CONTROL POINTS, TIES BEARINGS, AND COORDINATES, SEE "ALIGNMENT CONTROLS" SHEET.

FOR GUARDRAIL LAYOUT AND APPROACH SLAB DETAIL, SEE "CONSTRUCTION DETAILS" SHEET.



EARTHWORK SUMMARY
STA. 17+83.00 TO STA. 19+66.56
EXC. COMMON 126 C.Y.
FILL 62 C.Y.
SHR. = 30%
WASTE 45 C.Y.

EARTHWORK SUMMARY
STA. 20+45.44 TO STA. 22+29.00
EXC. COMMON 154 C.Y.
FILL 196 C.Y.
SHR. = 30%
BORROW 101 C.Y.

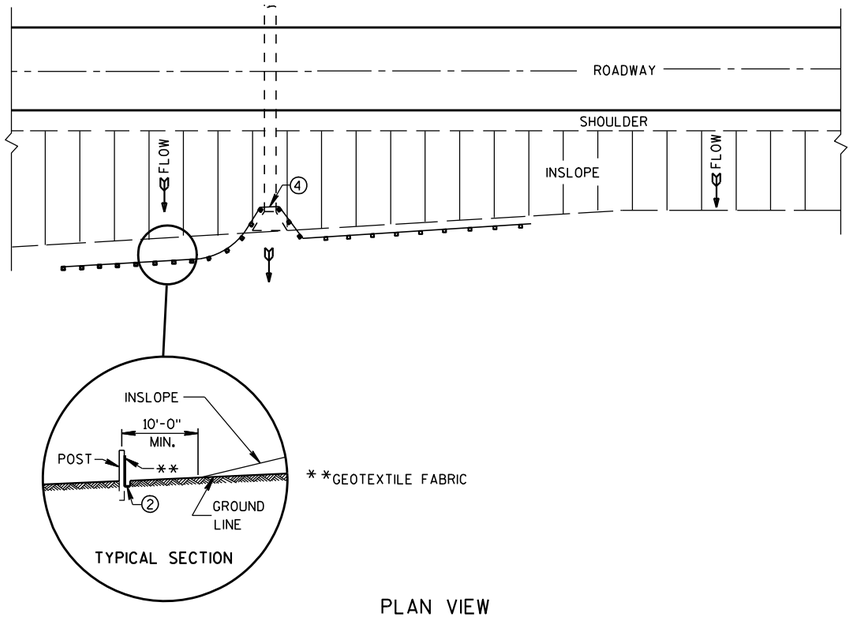
STA. 20+00
REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-37-204
TWO-SPAN STEEL DECK GIRDER BRIDGE
ON VERTICAL CONCRETE ABUTMENTS
AND A SOLID-SHAFT CONCRETE PIER
23.0' CLEAR RDWY. x 73.5' O.A.L.
25° SKEW RHF

STA. 20+06
STRUCTURE B-37-470 REQ'D.
TWO-SPAN CONCRETE FLAT SLAB BRIDGE
ON 5' MIN. HEIGHT SILL-TYPE (A1) CONCRETE ABUTMENTS
24'-0" CLEAR ROADWAY x 78'-10¾" O.A.L.
30° SKEW RHF

PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	PLAN AND PROFILE	SCALE, FEET 0 25 50	SHEET 12	E

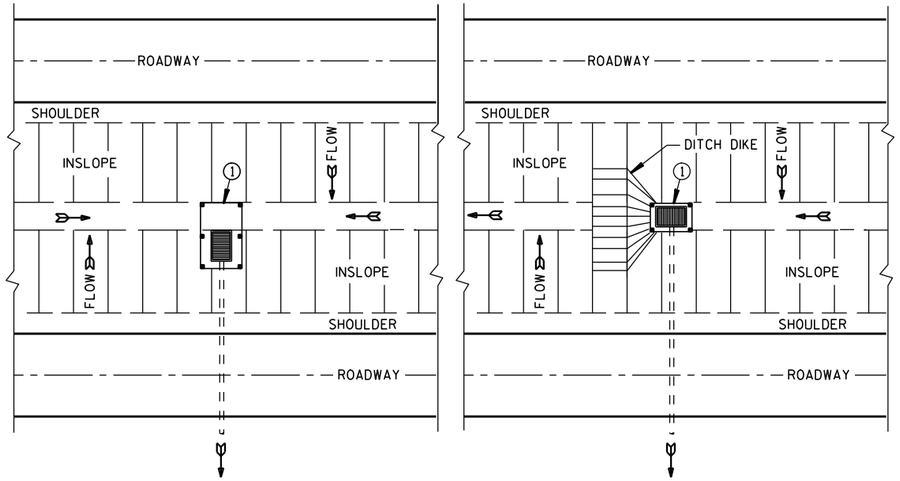
Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13A03-06	CONCRETE PAVEMENT SHOULDERS
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
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)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-10	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



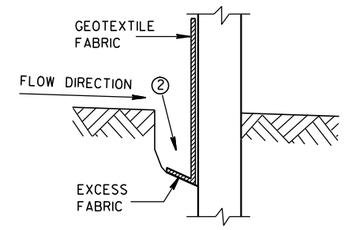
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

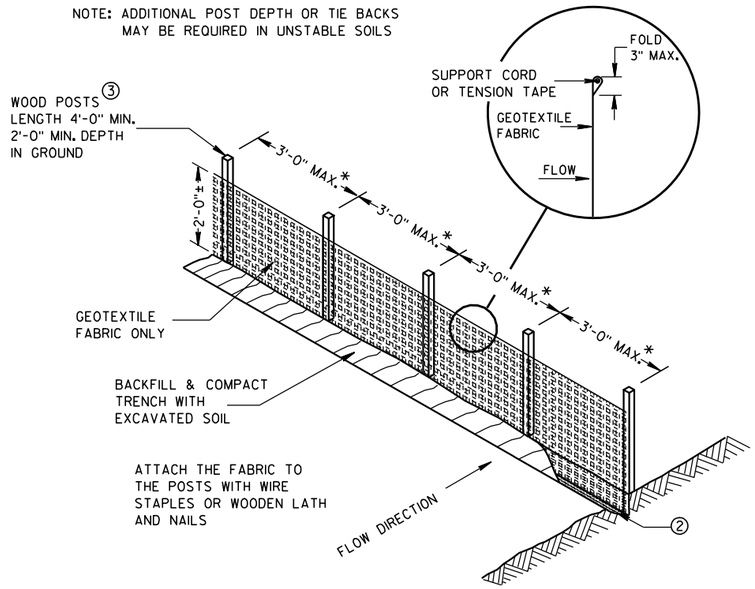
GENERAL NOTES

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

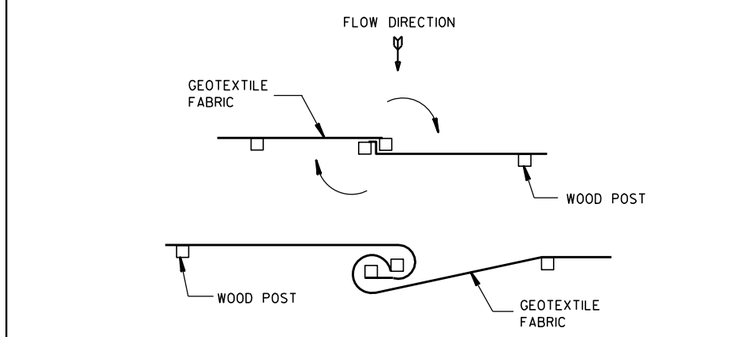
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



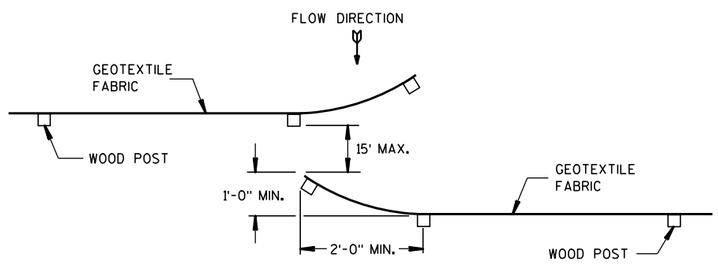
TRENCH DETAIL



SILT FENCE

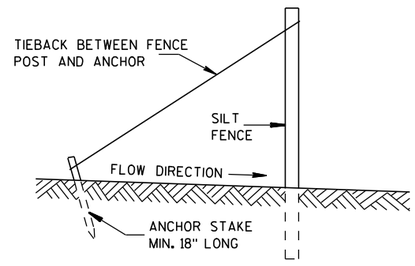


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

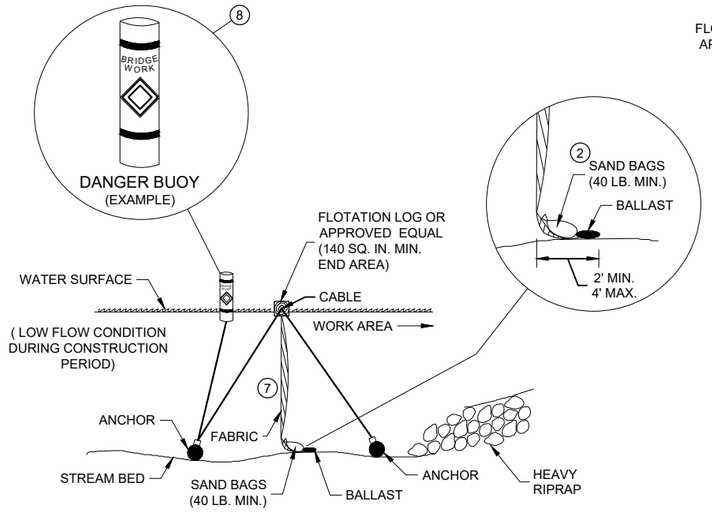
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

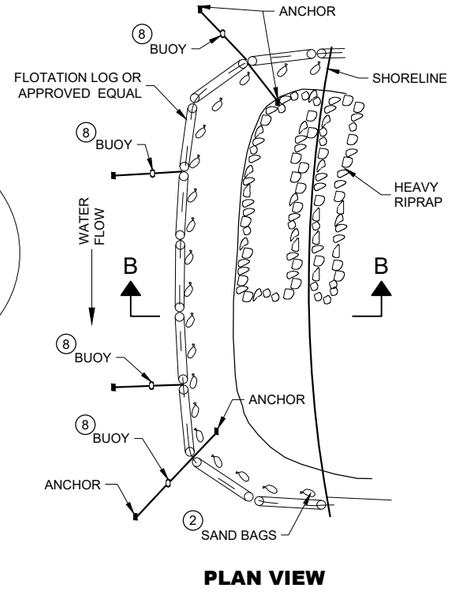
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

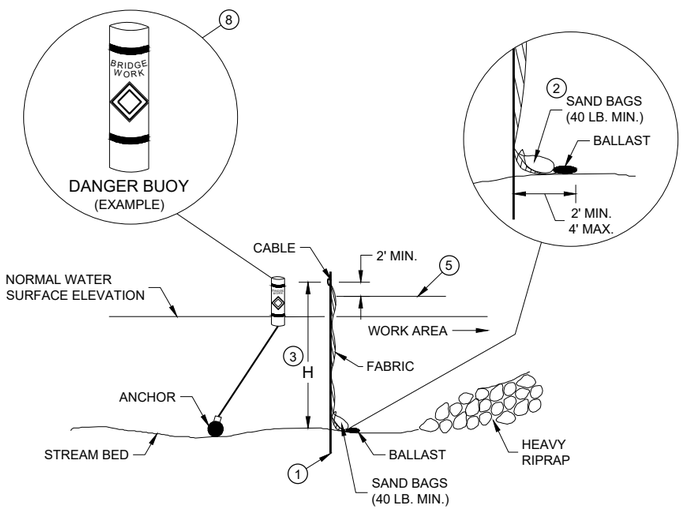


SECTION B - B

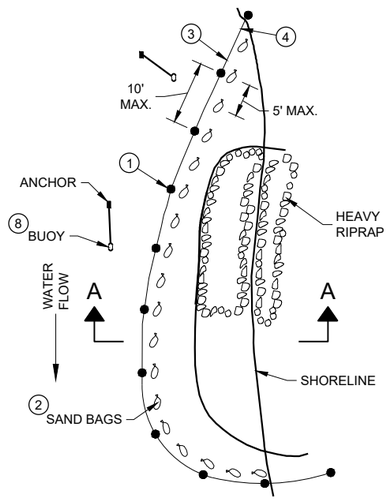


PLAN VIEW

TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A - A



PLAN VIEW

TURBIDITY BARRIER - STANDARD POST INSTALLATION

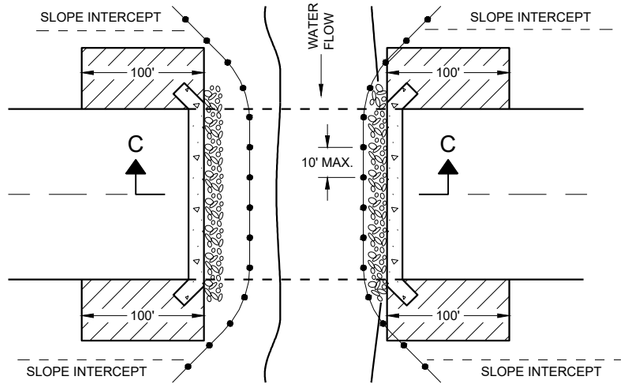
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

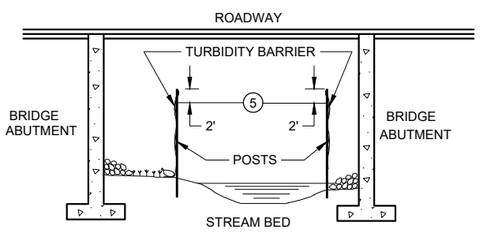
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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
CHIEF ROADWAY DEVELOI
ENGINEER

FHWA

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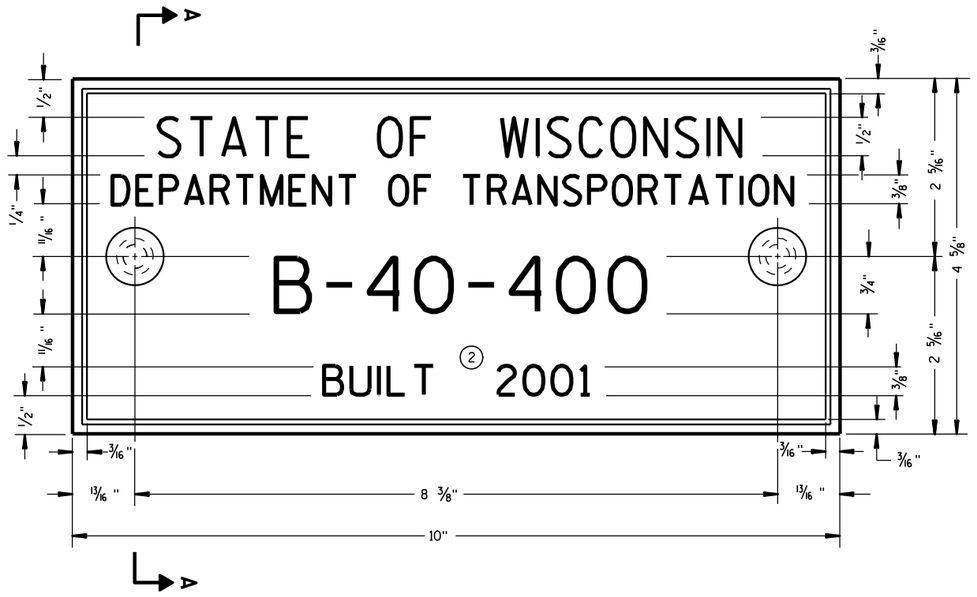
SDD 08E11 - 02



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

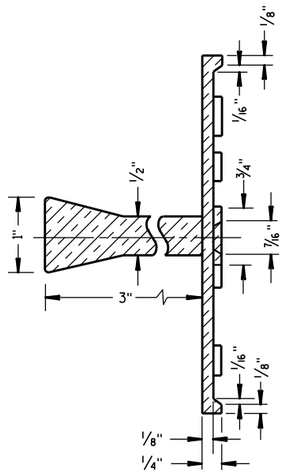
GENERAL NOTES

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

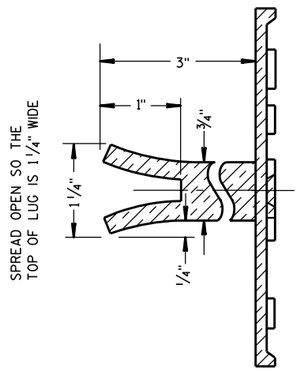
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

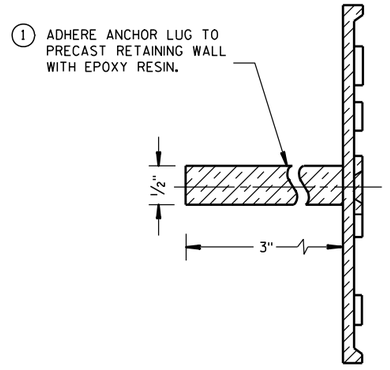
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

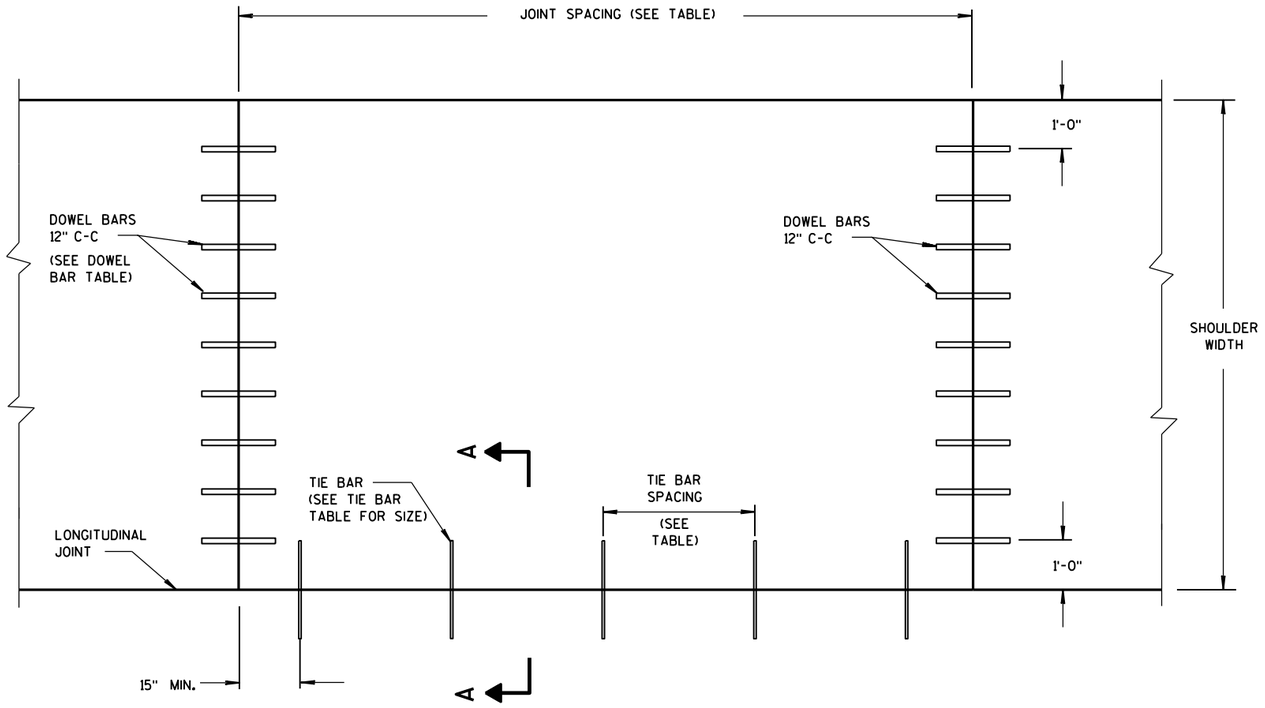
3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 12 A 3-10



PLAN VIEW

CONCRETE PAVEMENT SHOULDER

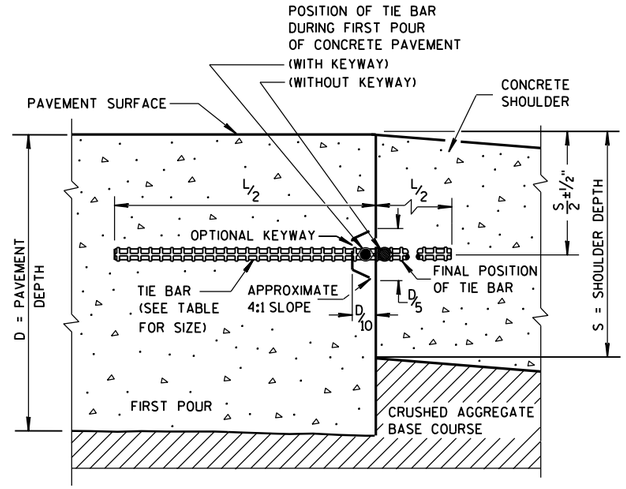
GENERAL NOTES

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

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

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

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

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER ***	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	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 FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 13 A 3-6

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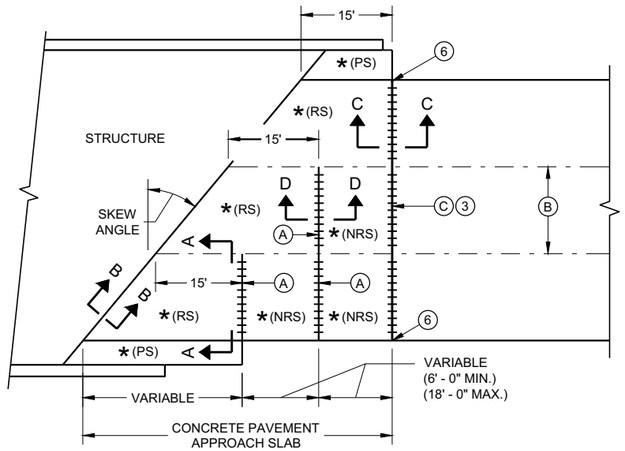
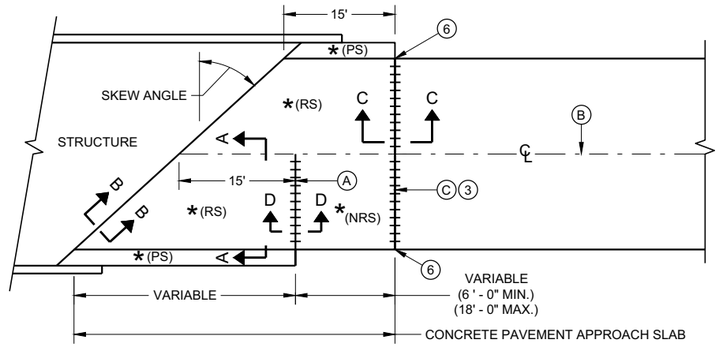
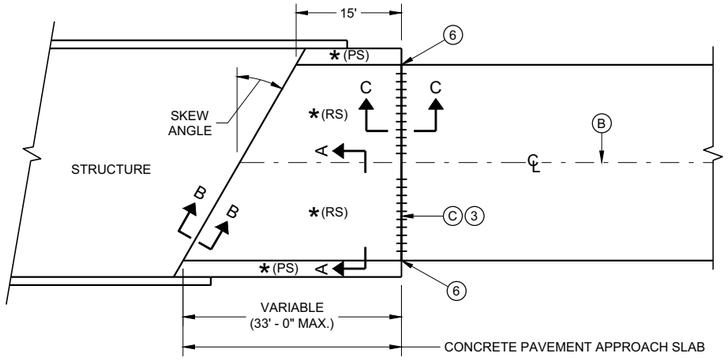
S.D.D. 13 A 3-6



SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

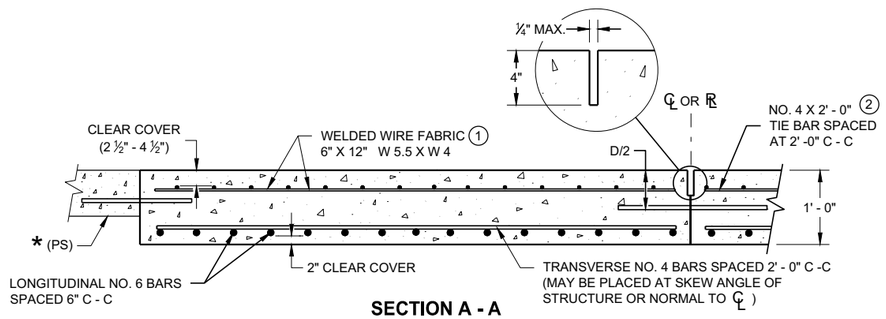
APPROACH SLAB AND ADJACENT PAVEMENT

* (RS) = REINFORCED CONCRETE SLAB

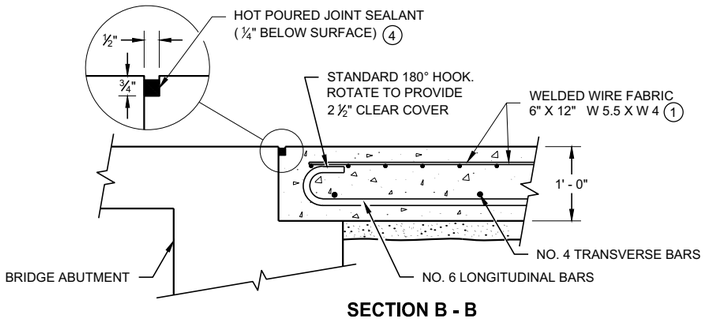
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

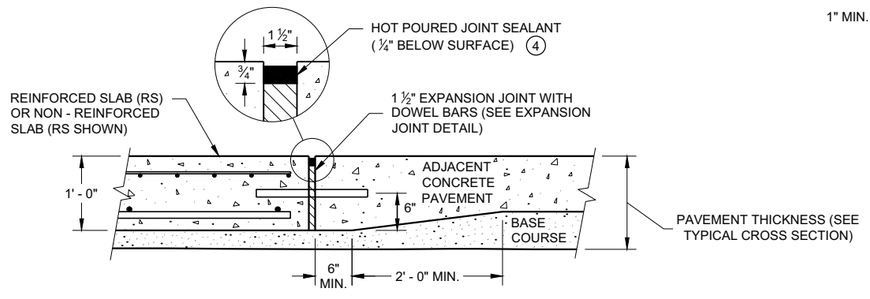
*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



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.

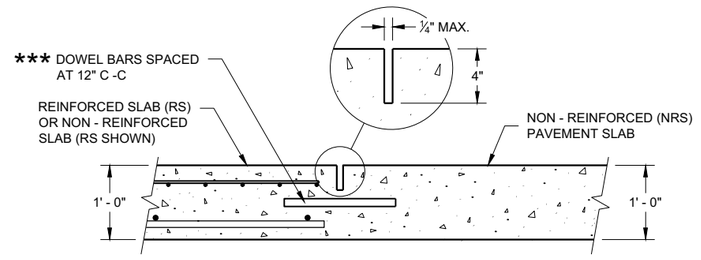
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

(6) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.

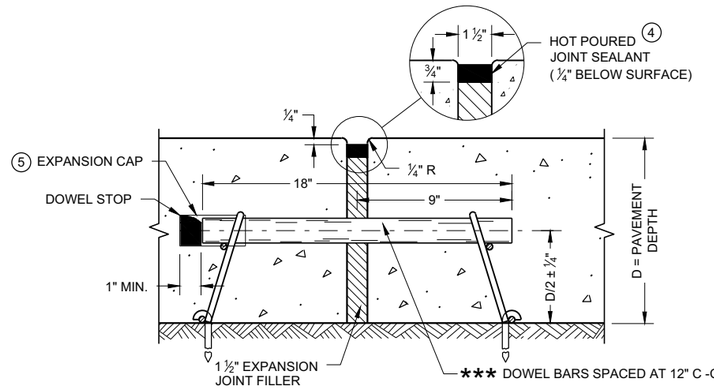
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

(C) 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℞ .



SECTION D - D
CONTRACTION JOINT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

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

FHWA

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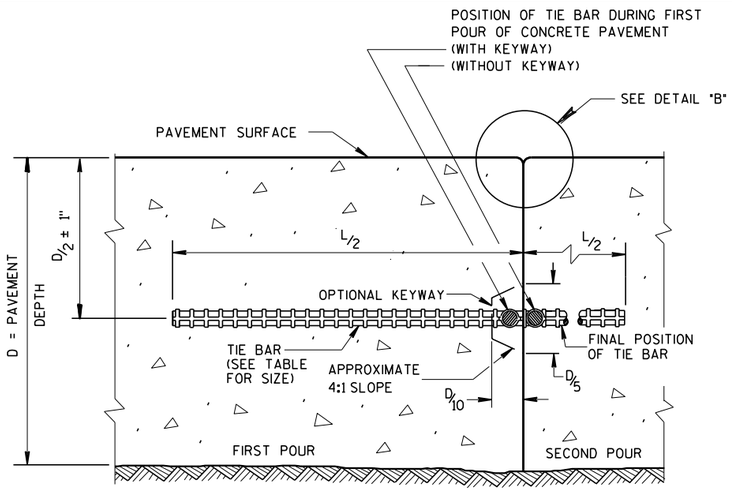
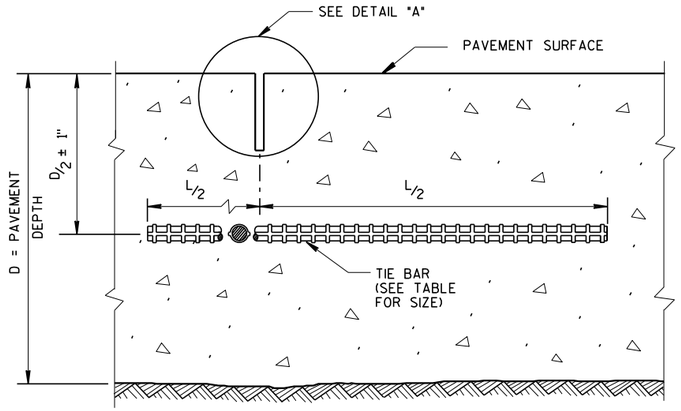
SDD 13B02 - 09a



CONSTRUCTION JOINT



SAWED JOINT

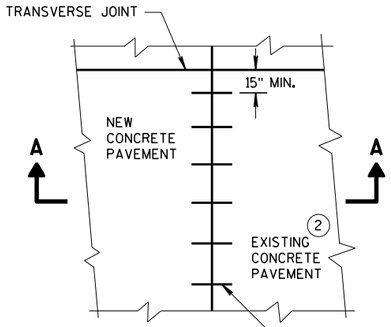
GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

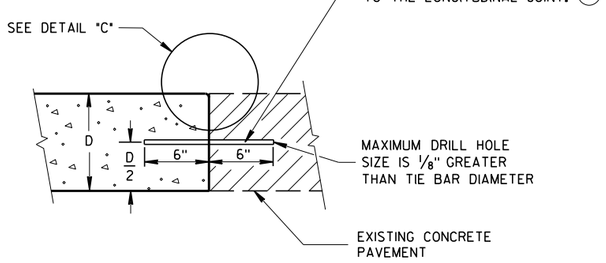
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

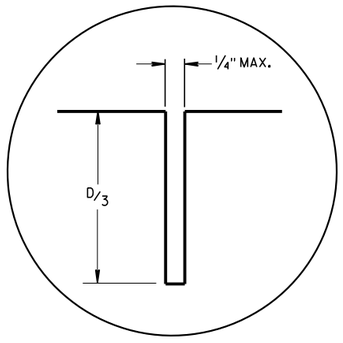


PLAN VIEW

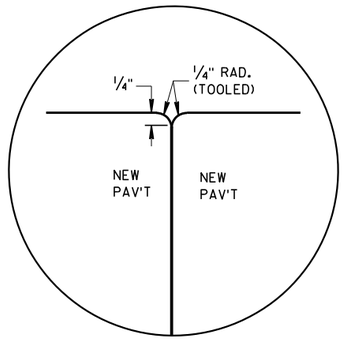


SECTION A-A

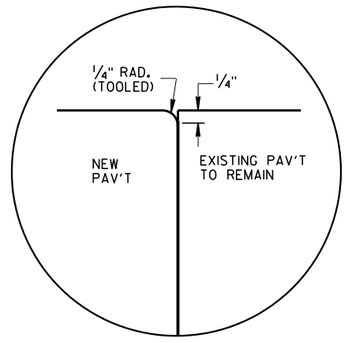
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



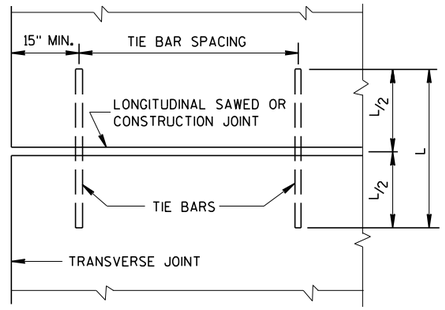
DETAIL "C"

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 BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

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



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPE
FHWA

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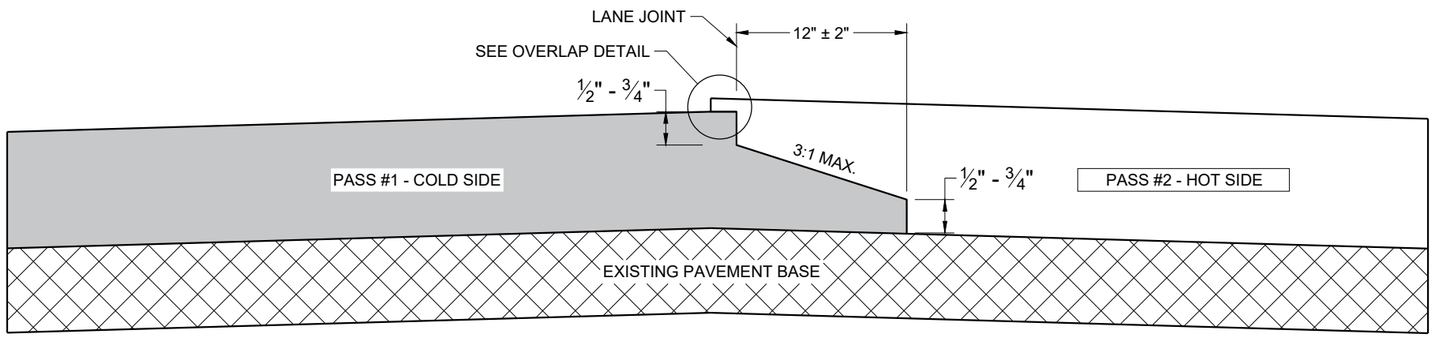
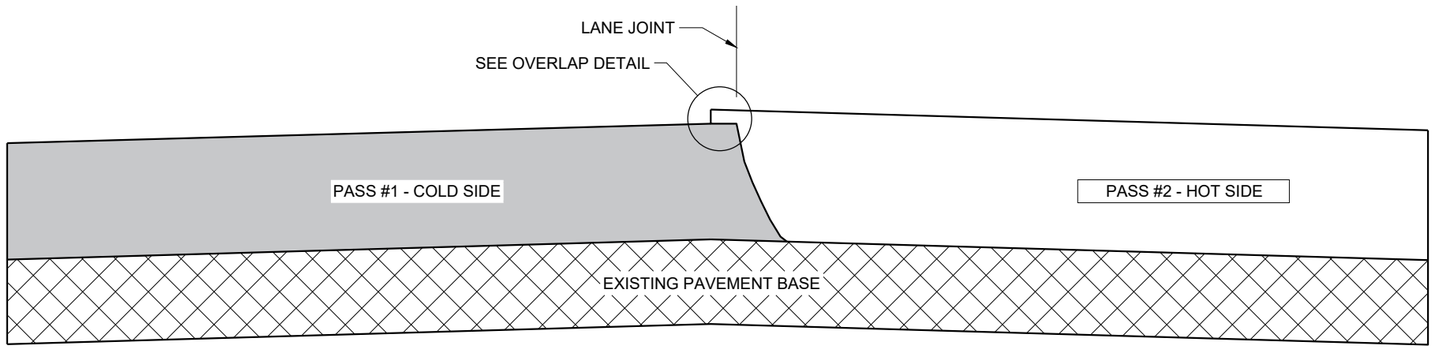
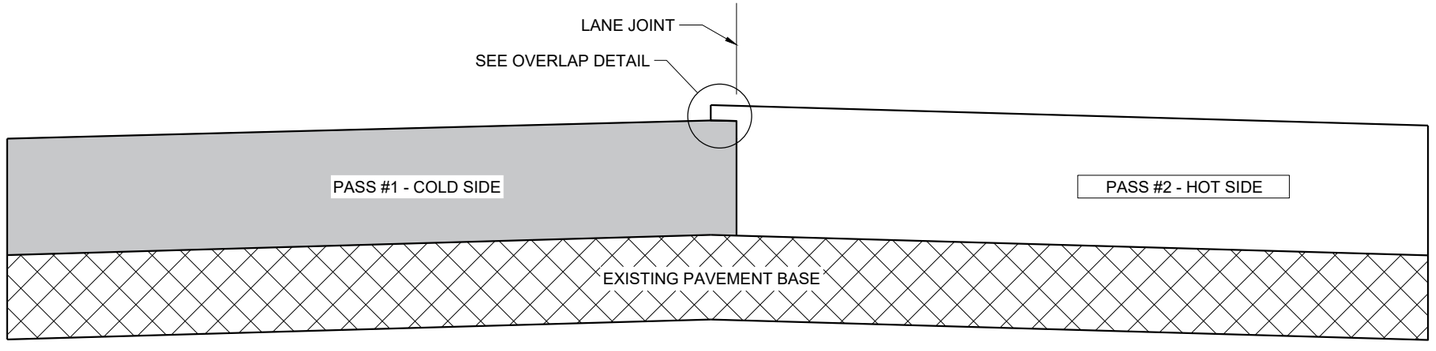
S.D.D. 13 C 1-19



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

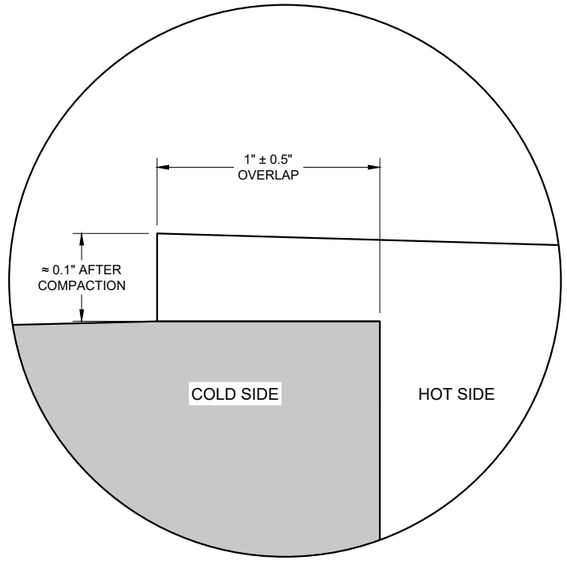
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY 1" ± 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

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

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.

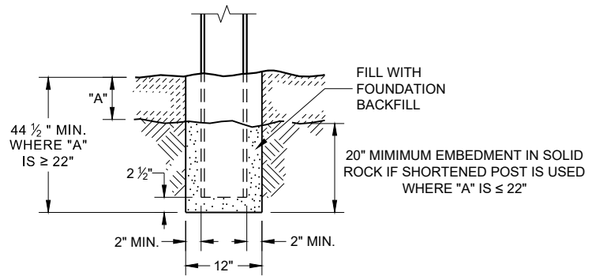
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

(4) WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

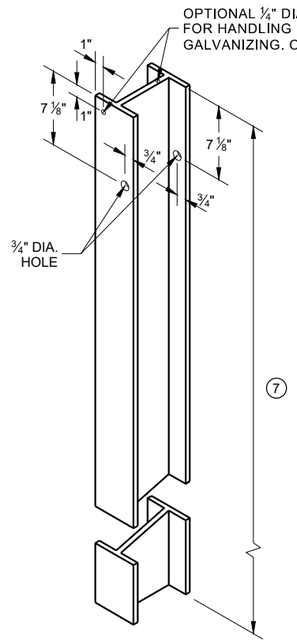
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

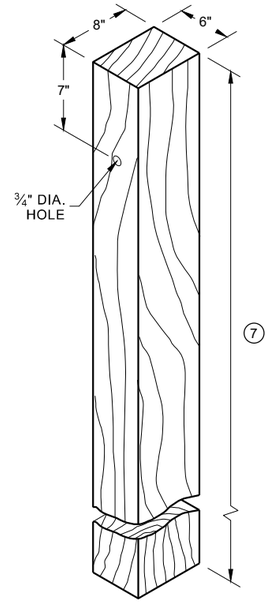
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



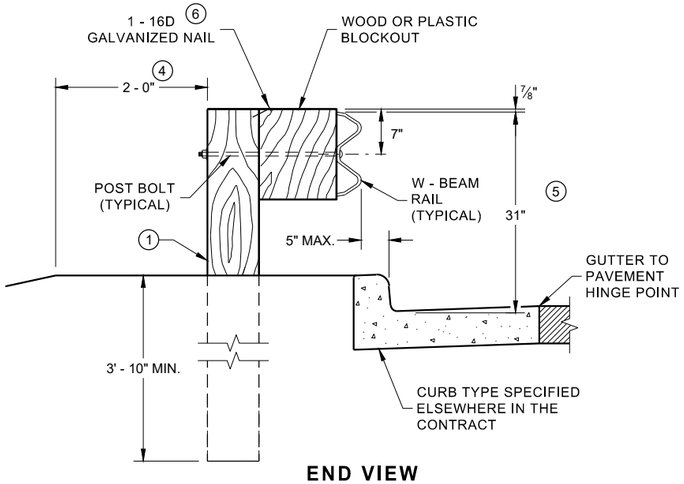
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



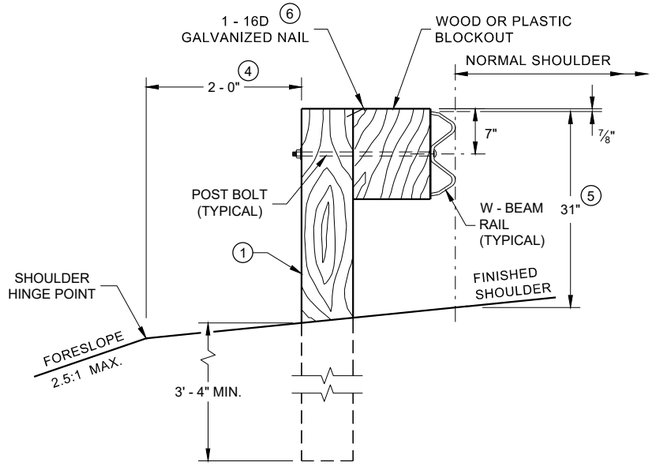
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



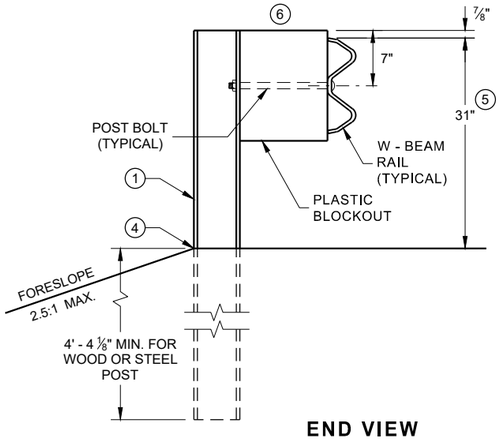
WOOD POST (6" X 8") NOMINAL (1)



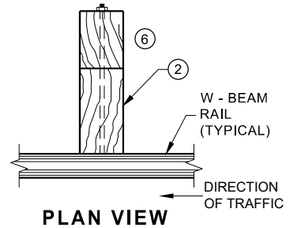
END VIEW
LOCATED ALONG A CURBED ROADWAY



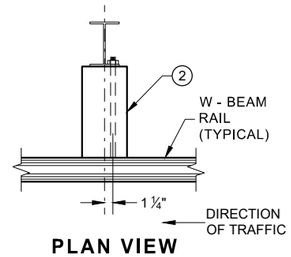
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



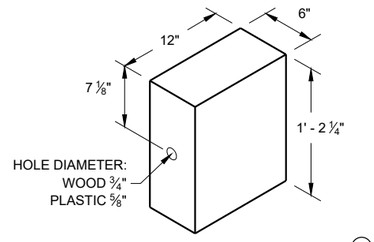
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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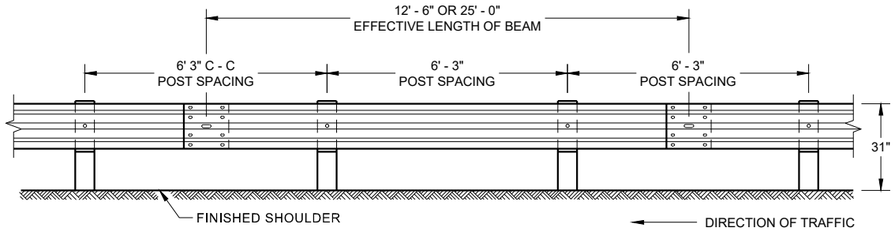
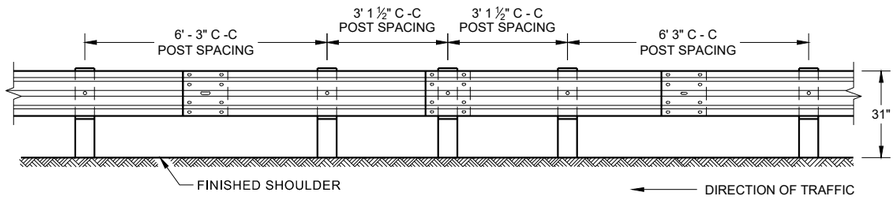
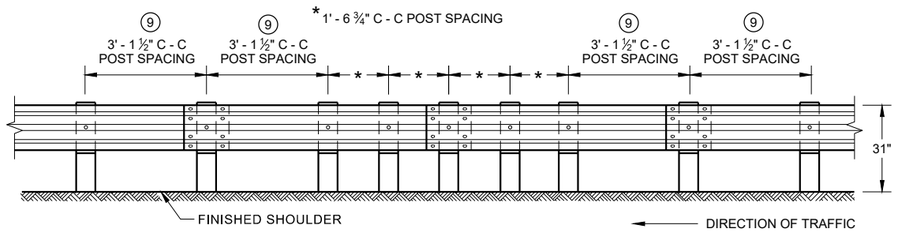


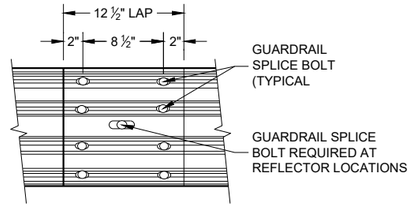
FRONT VIEW
POST SPACING STANDARD INSTALLATION



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



FRONT VIEW
QUARTER POST SPACING (QS)



FRONT VIEW
MID-SPAN BEAM SPLICE

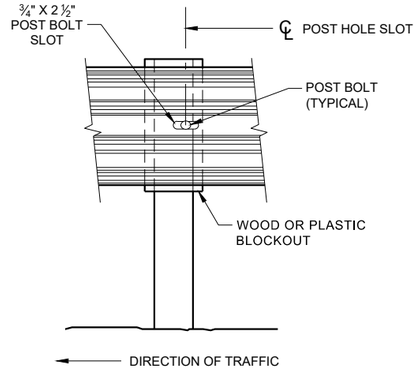
GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

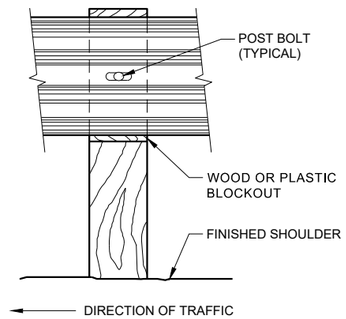
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

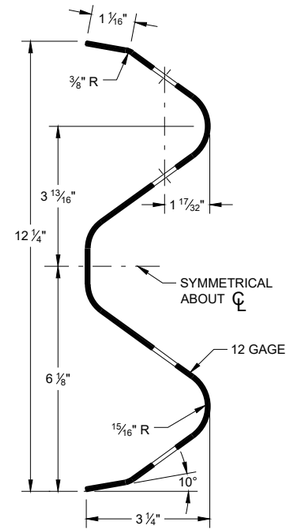
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



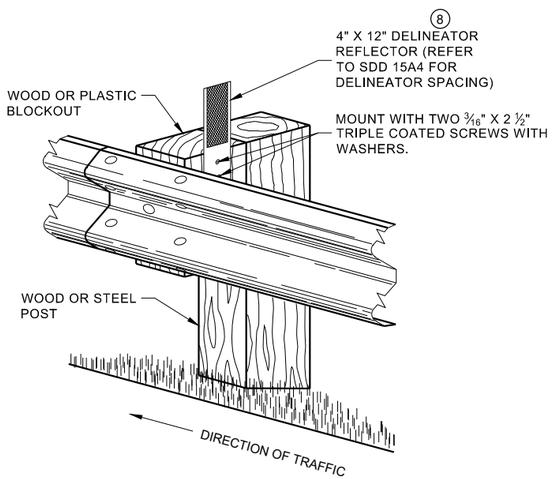
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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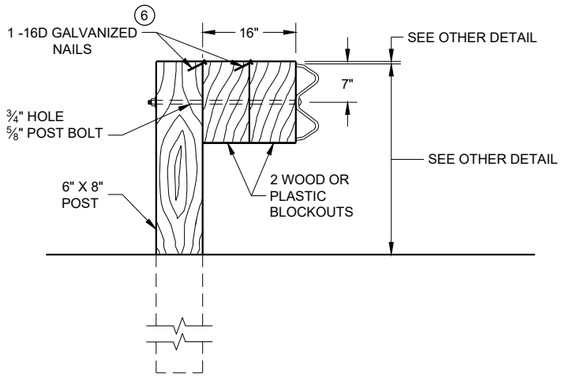
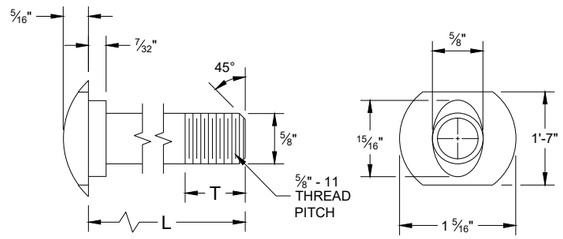


DETAIL FOR 16" BLOCKOUT DEPTH

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

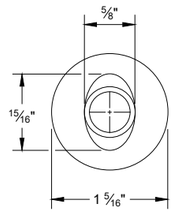
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3⁄16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

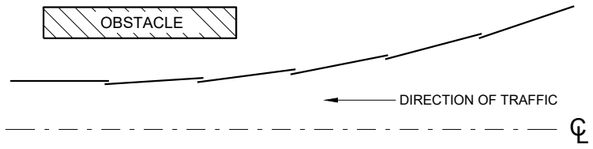


POST BOLT TABLE

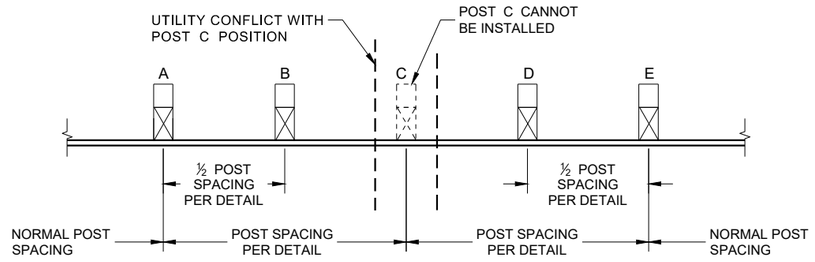
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



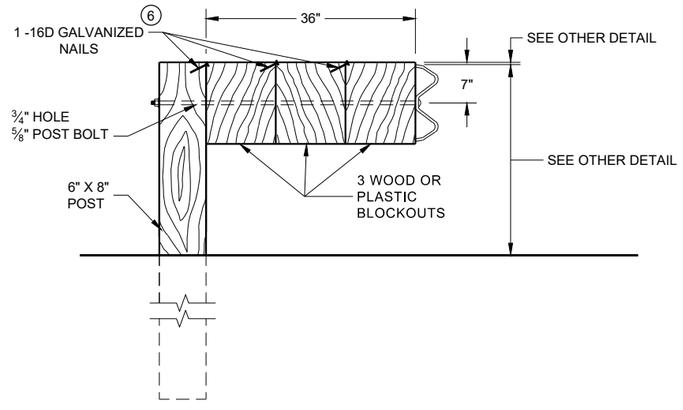
ALTERNATE BOLT HEAD



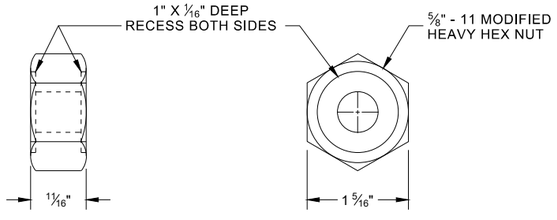
PLAN VIEW
BEAM LAPPING DETAIL



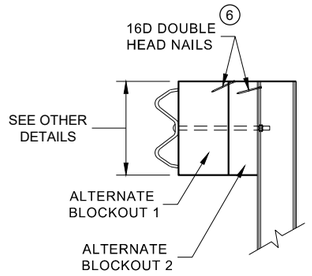
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



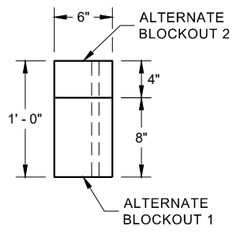
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

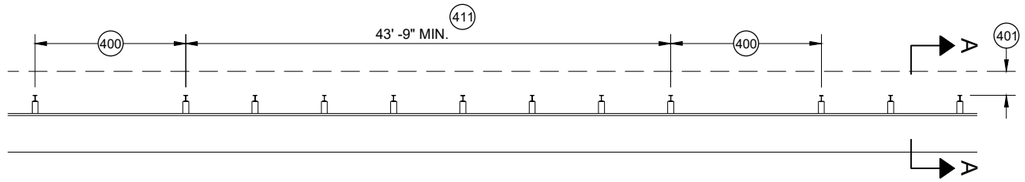
ALTERNATE WOOD BLOCKOUT DETAIL

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.

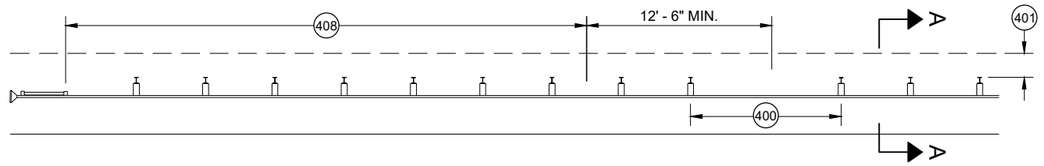
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

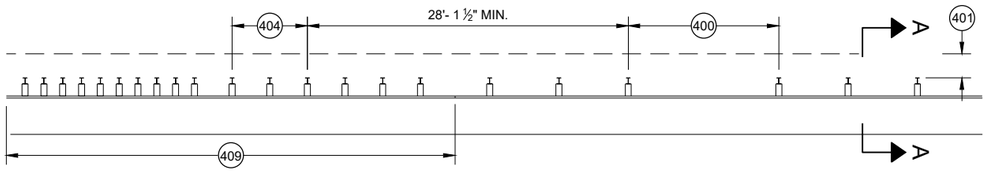
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



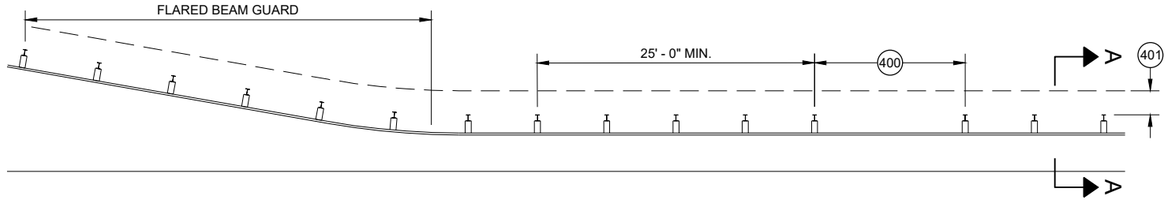
MISSING POST IN MGS GUARDRAIL



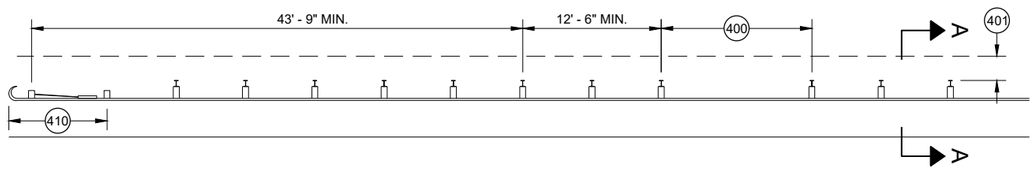
MISSING POST IN MGS GUARDRAIL NEAR EAT



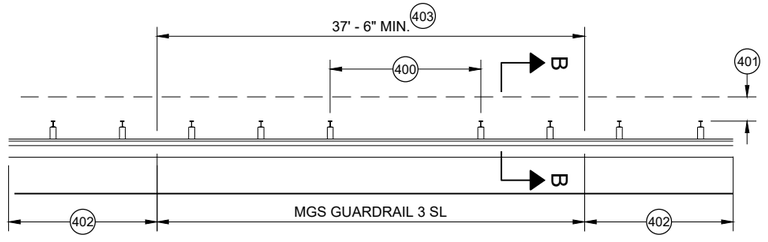
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

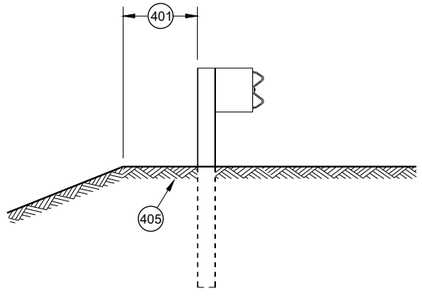


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

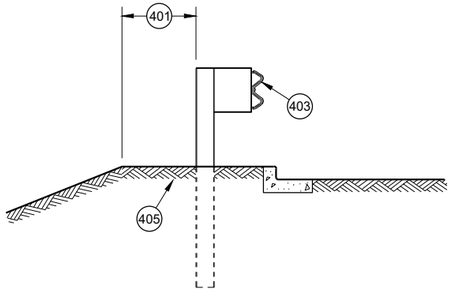


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

(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 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR
FHWA

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SDD 14B42 - 07d

SDD 14B42 - 07d

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED

(C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

(D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.

(E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

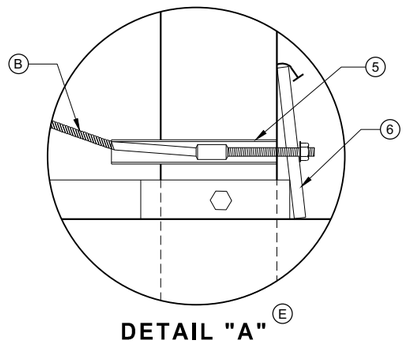
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

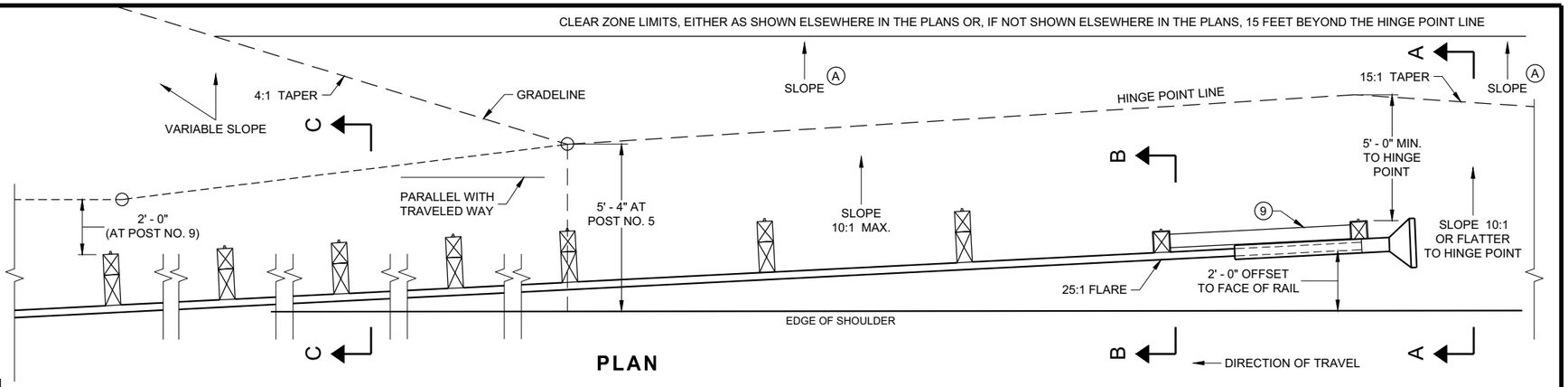
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

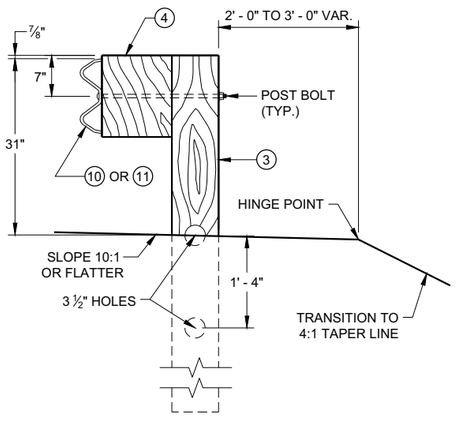
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

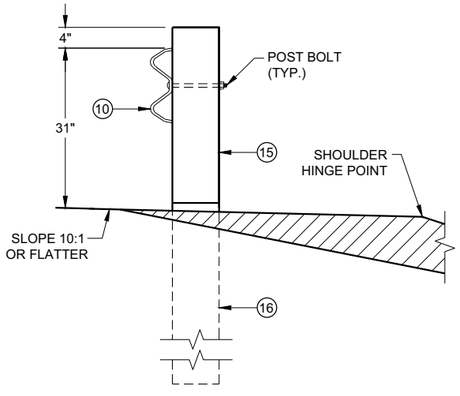


DETAIL "A" (E)

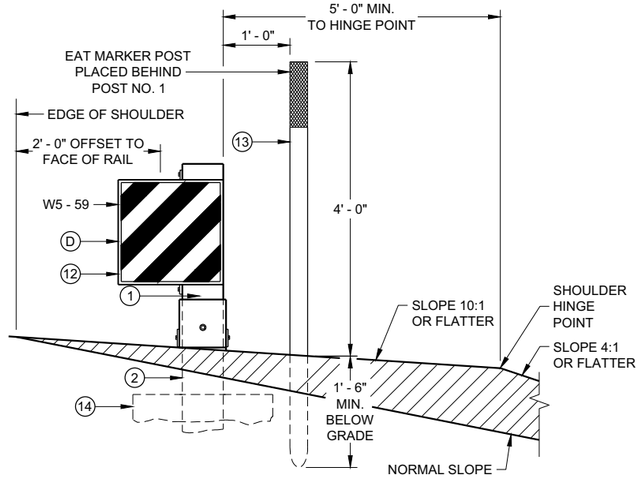




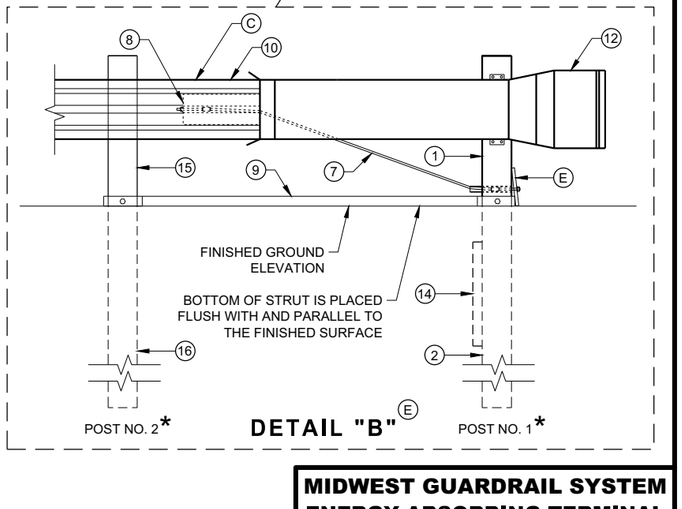
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



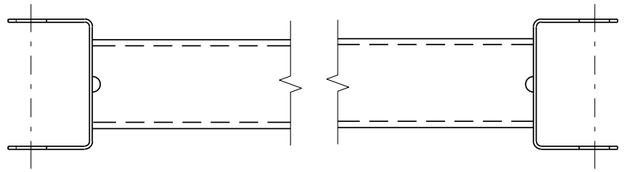
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

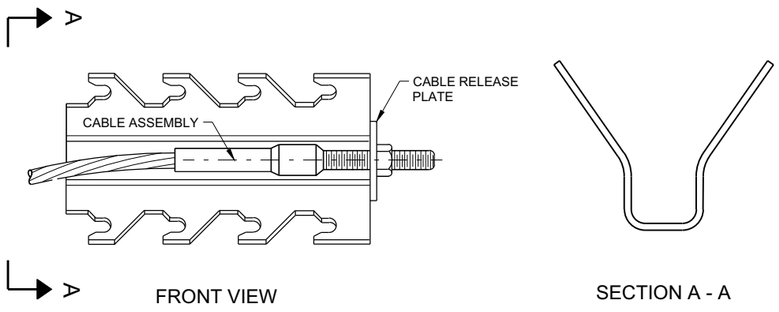
SDD 14B44 - 04a



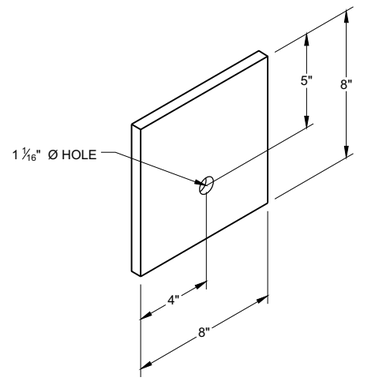
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑨ Ⓔ



BEARING PLATE ⑥ Ⓔ

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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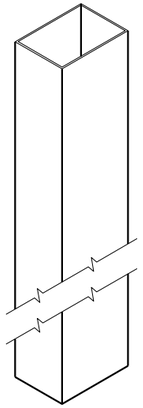
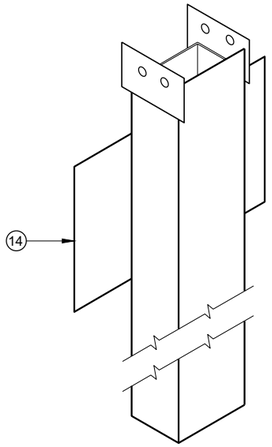
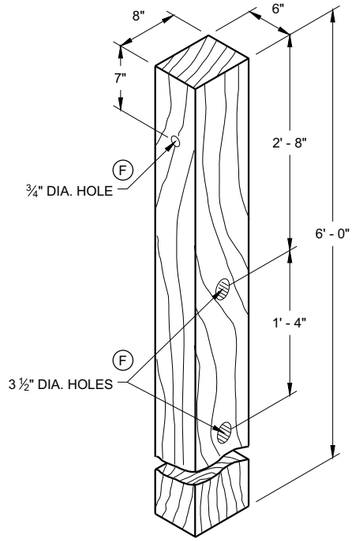
SDD 14B44 - 04b



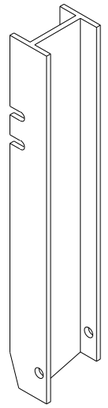
UPPER POST NO. 1 (1) (E)



LOWER POST NO. 1 (2) (E)



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



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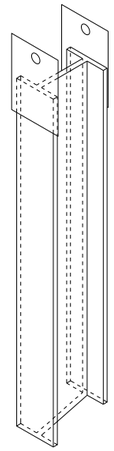
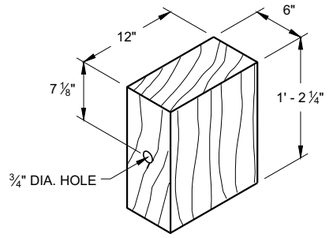
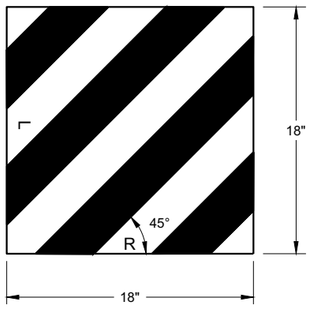


LOWER POST NO. 2 (16) (E)

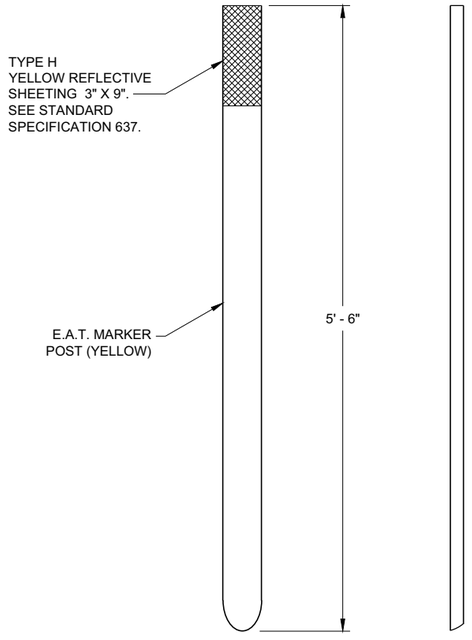


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



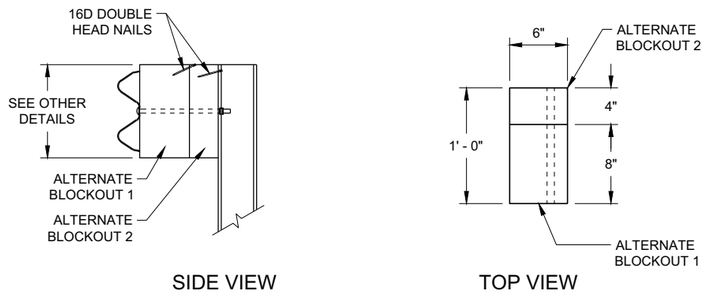
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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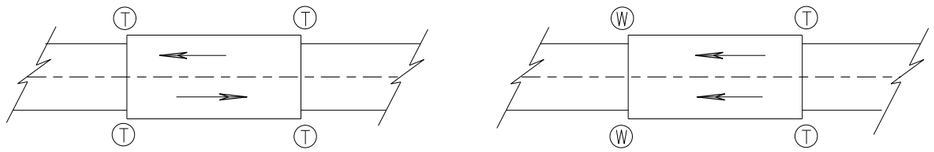
SDD 14B44 - 04c



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 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

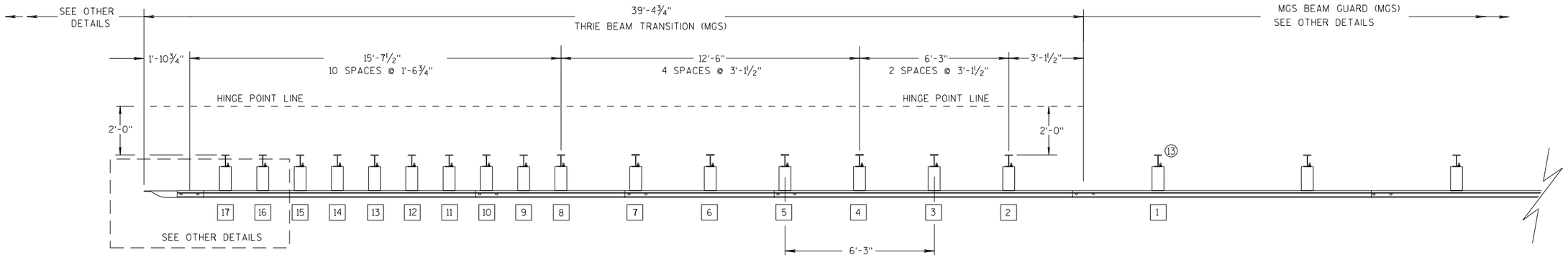
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

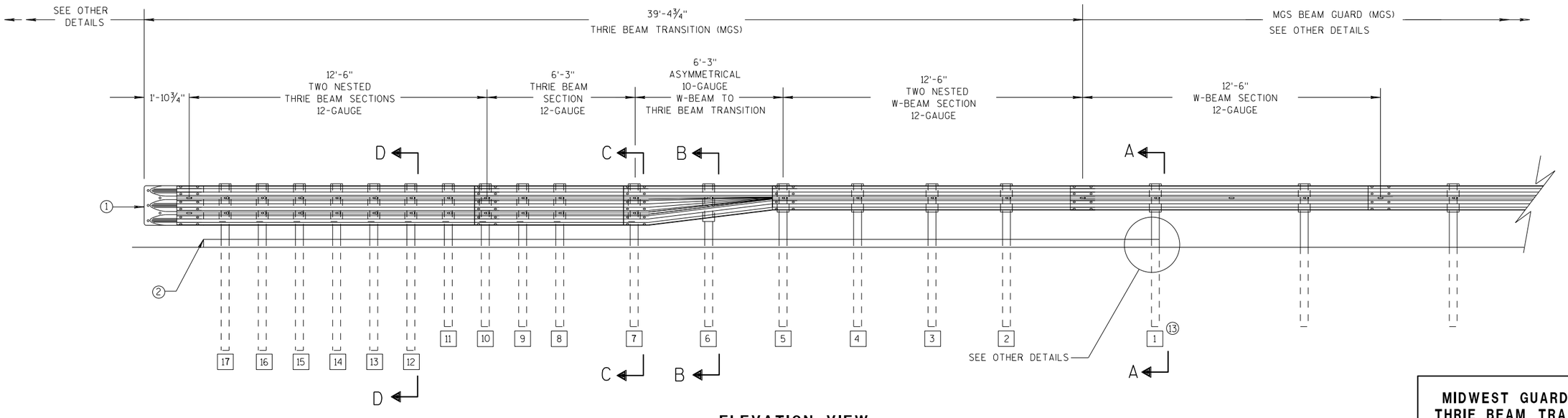
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(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 TRANSPOR

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

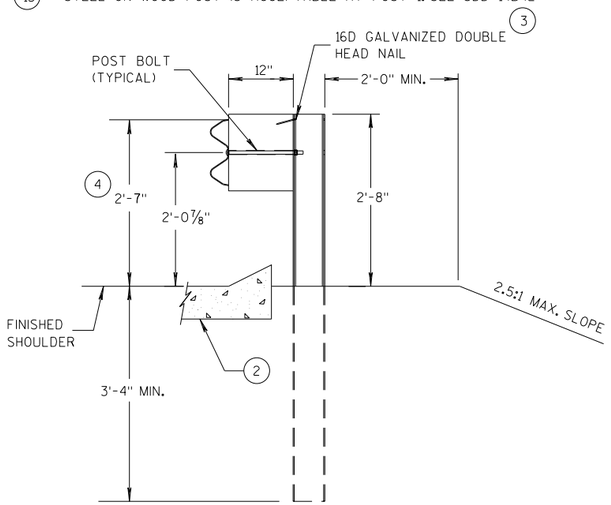
GENERAL NOTES

(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.

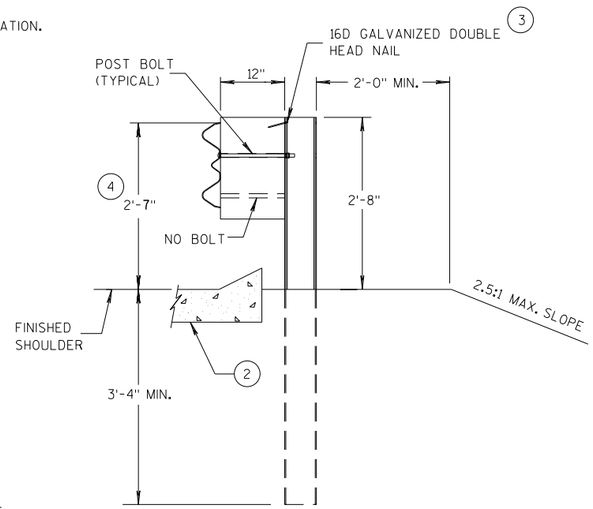
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



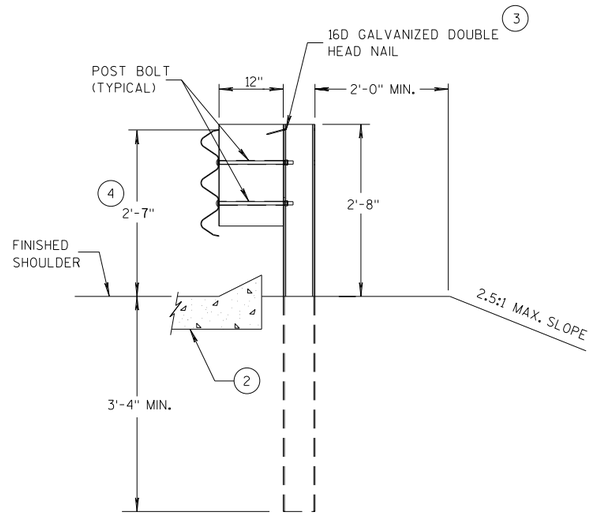
SECTION A-A (13)

POSTS 1-5



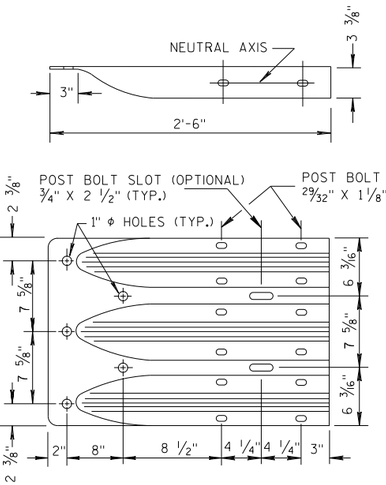
SECTION B-B

POST 6

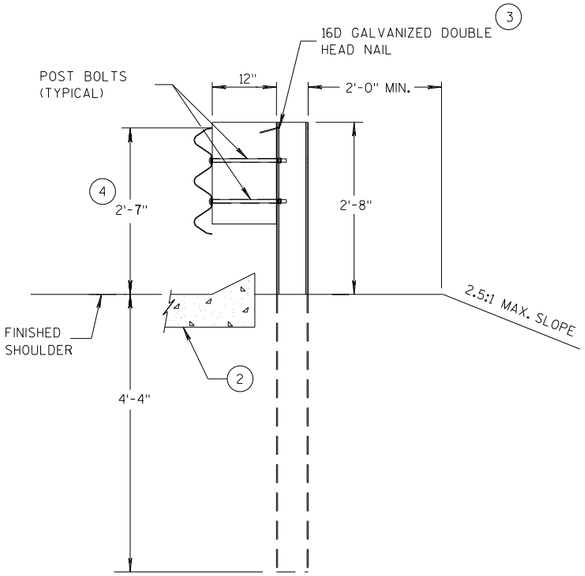


SECTION C-C

POSTS 7-11

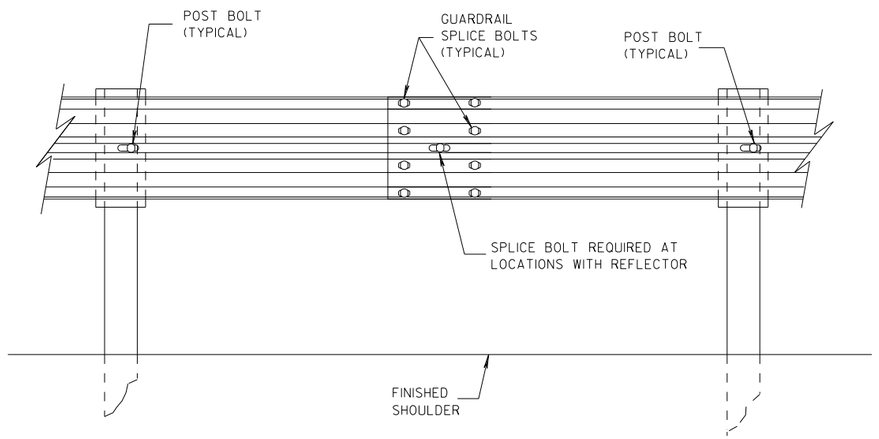


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

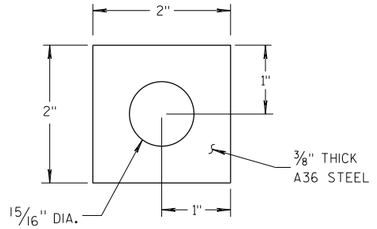
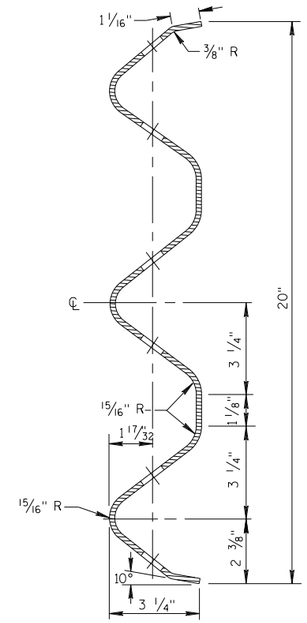


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 29

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

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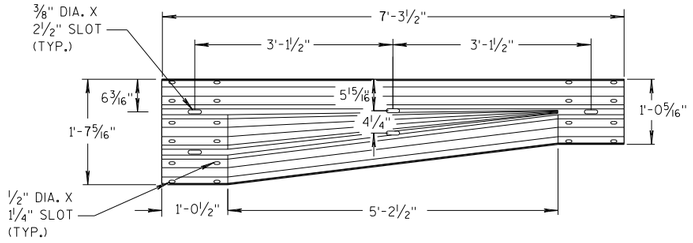
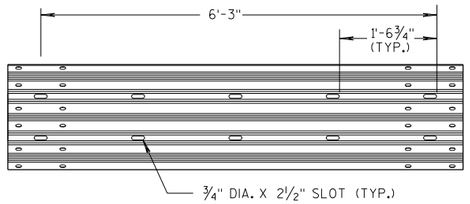
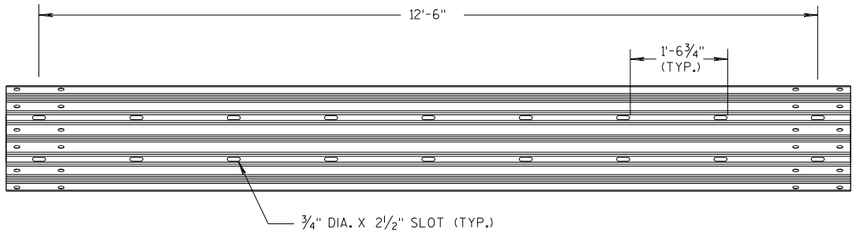
S.D.D. 14 B 45-5b



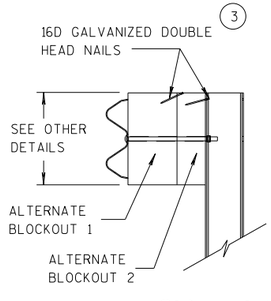
W-BEAM TO THRIE BEAM TRANSITION SECTION



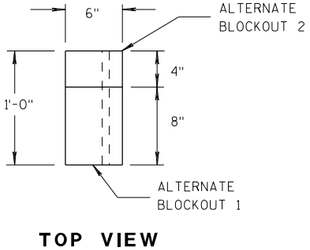
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

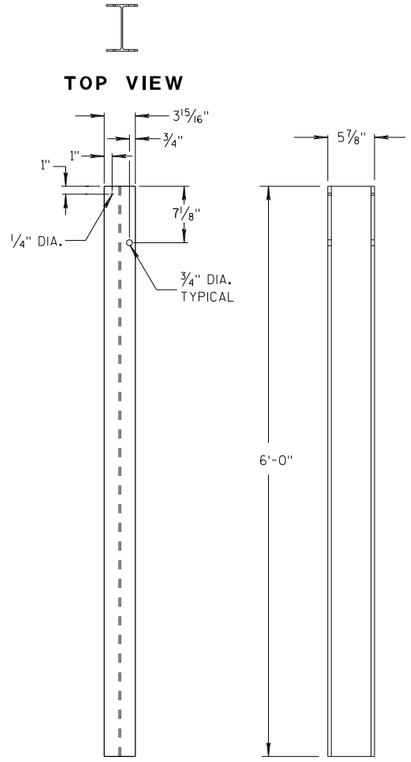


SIDE VIEW



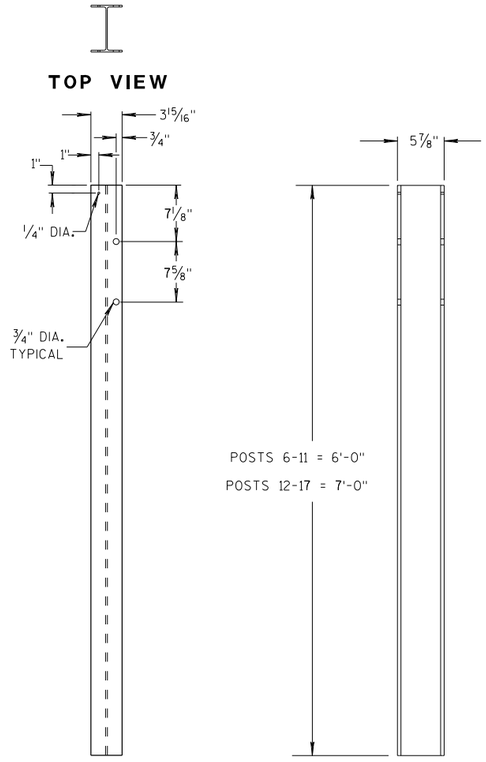
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



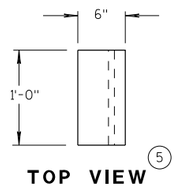
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

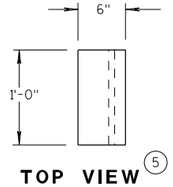


FRONT VIEW SIDE VIEW

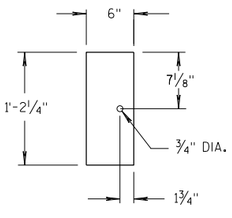
STEEL POSTS 6-17



TOP VIEW (5)

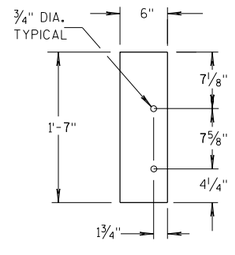


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

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

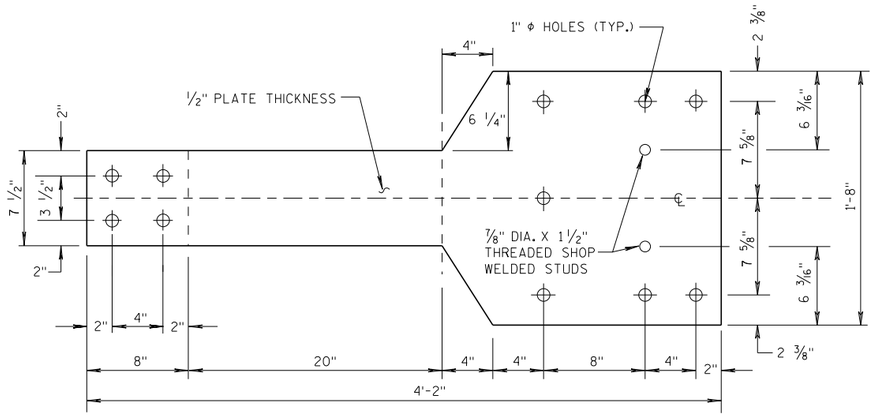
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

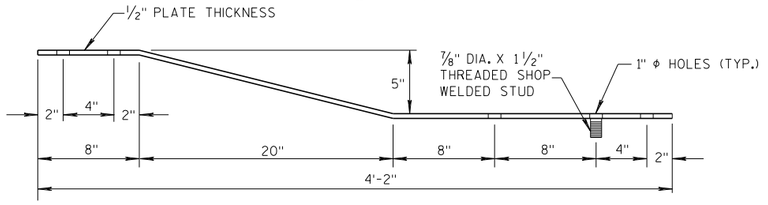
6
S.D.D. 14 B 45-5c

GENERAL NOTES

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

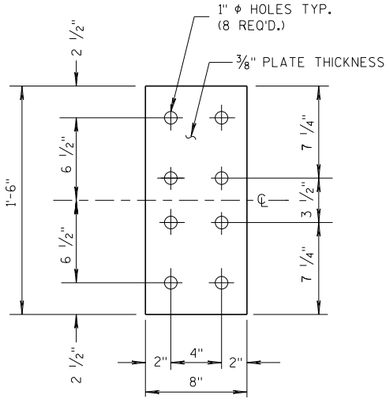


FRONT VIEW



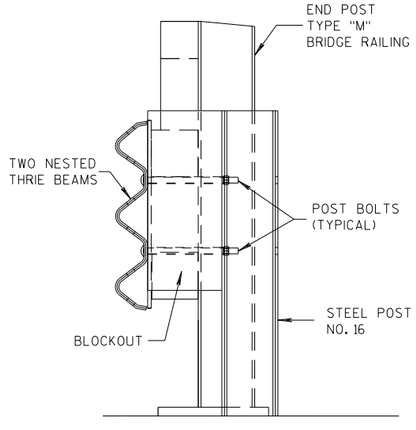
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

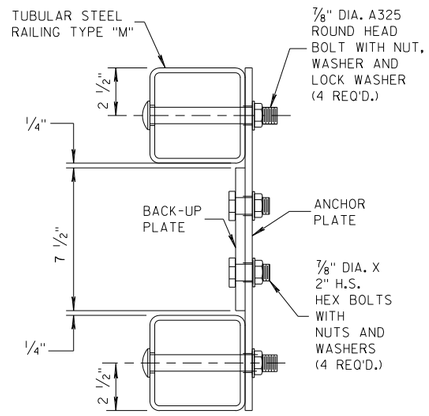


FRONT VIEW

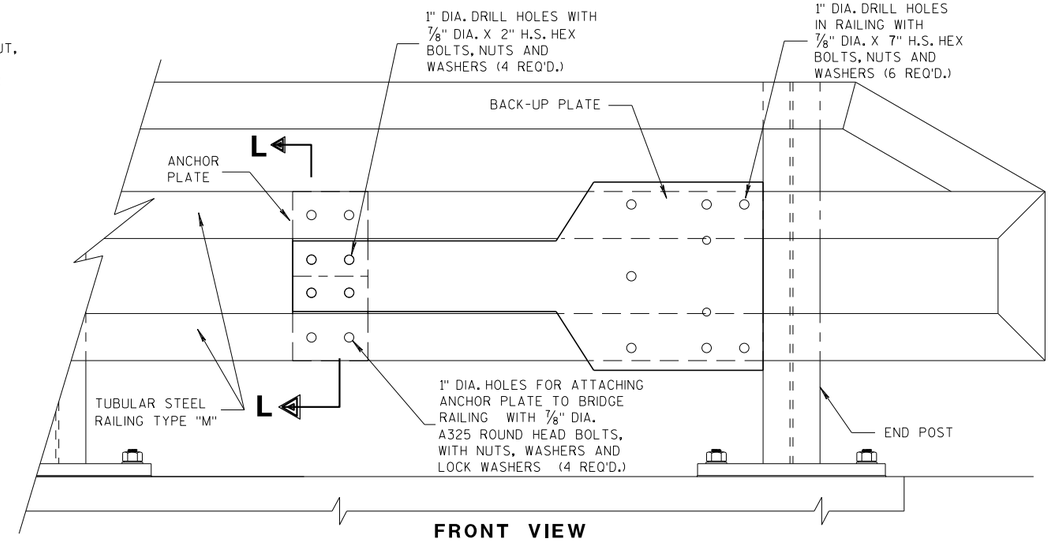
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

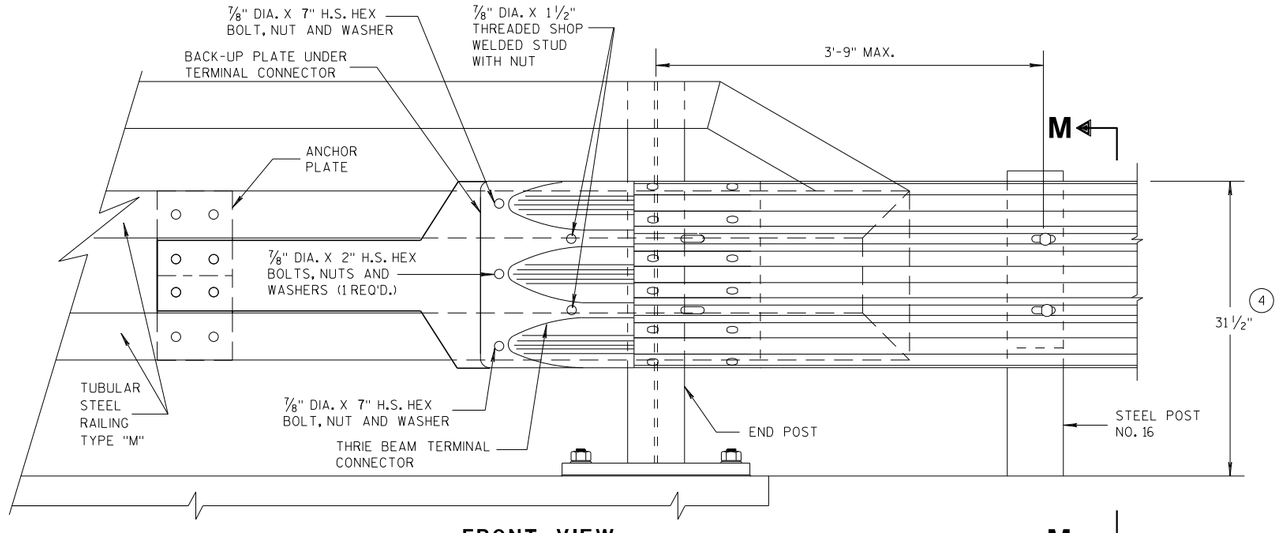


SECTION L-L

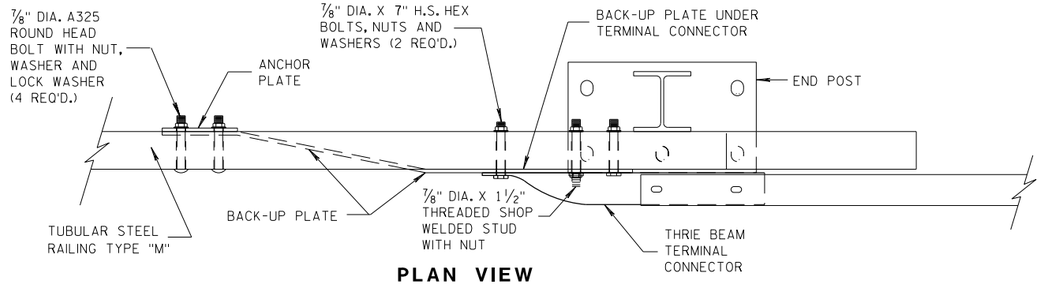


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

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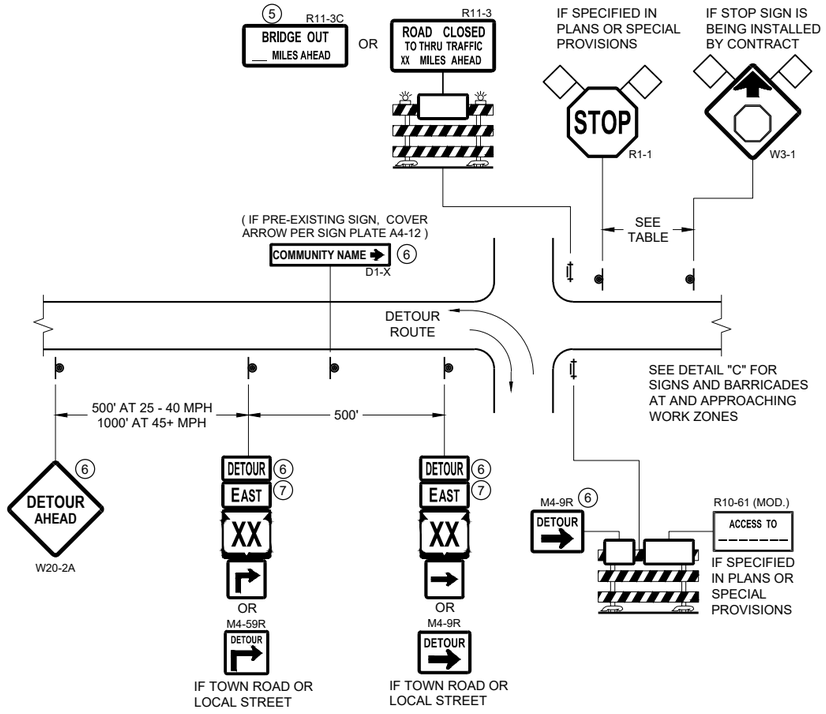
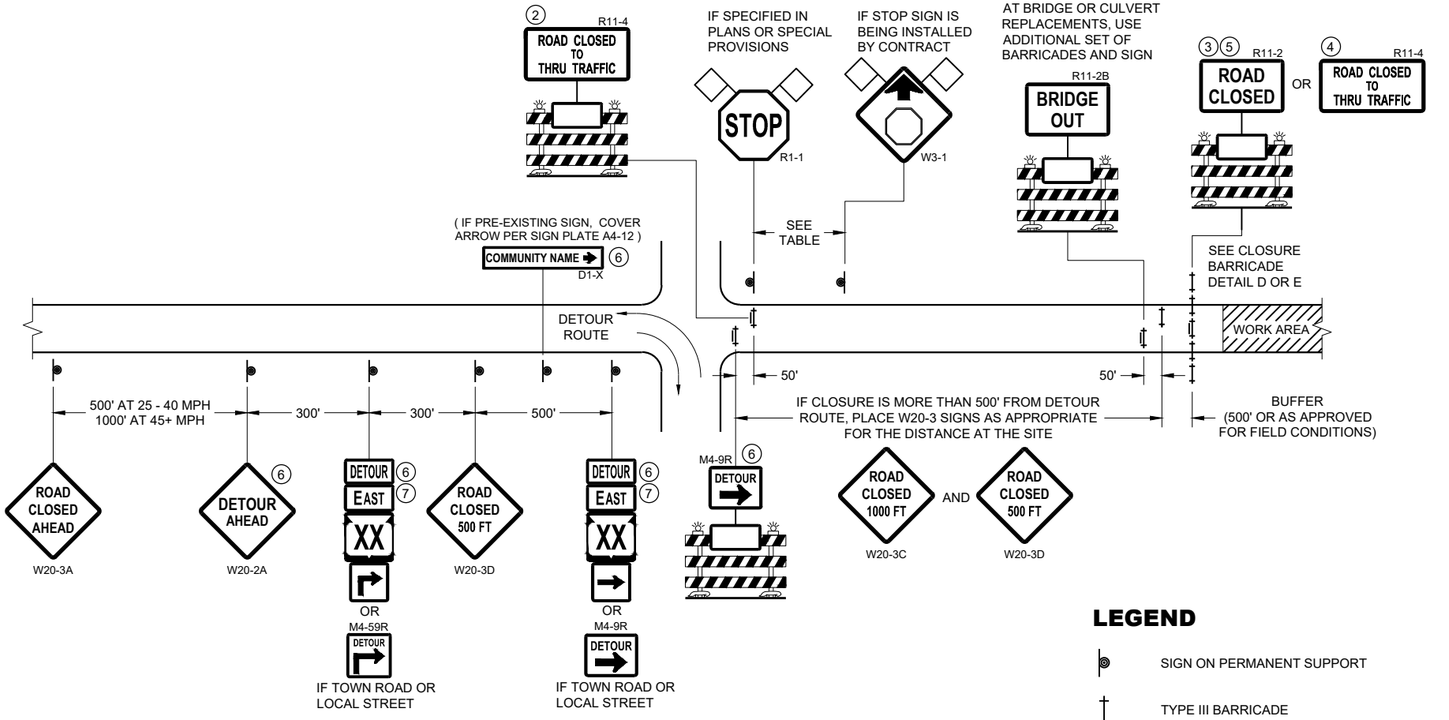
S.D.D. 14 B 45-5h



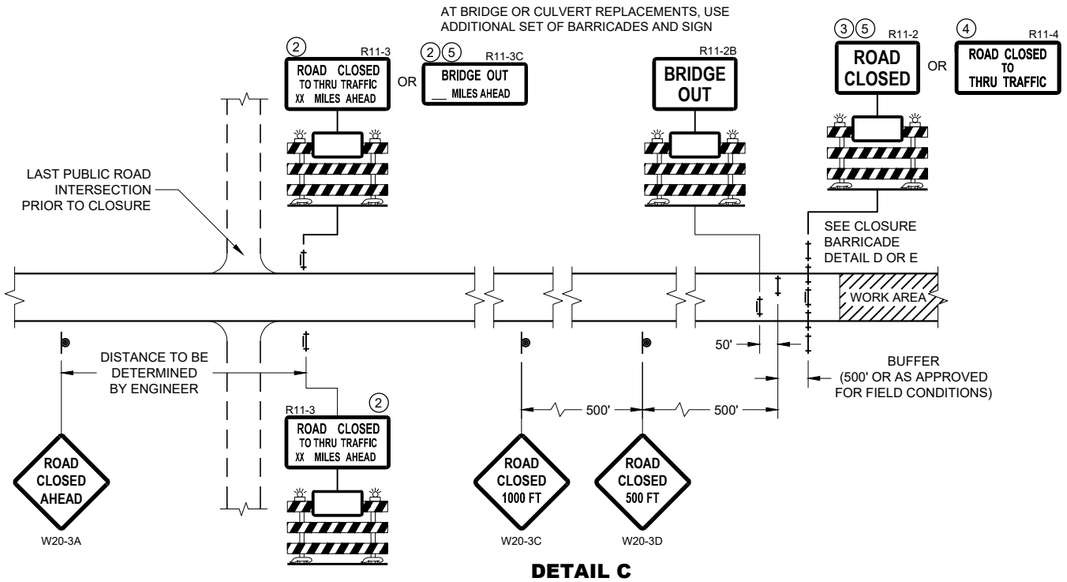
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

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)
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M06 - 1

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

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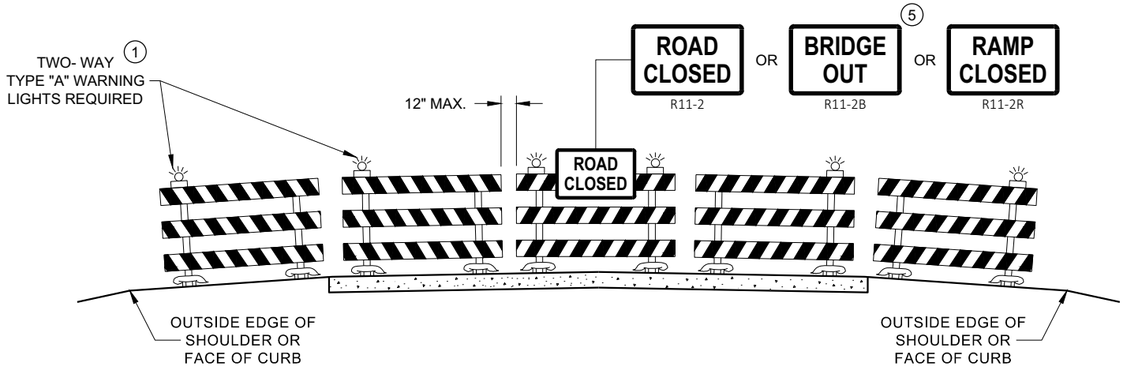
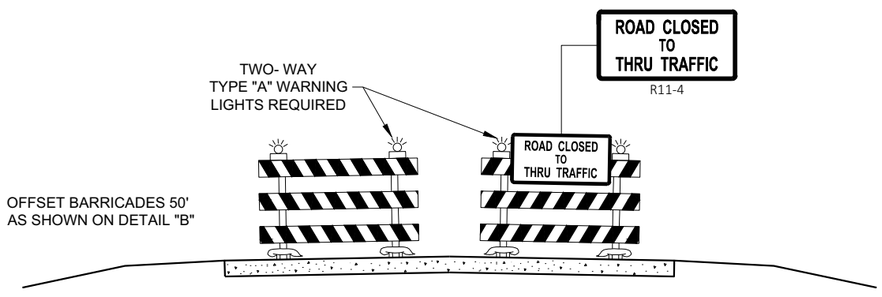
SDD 15C02 - 08a

SDD 15C02 - 08a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING.

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

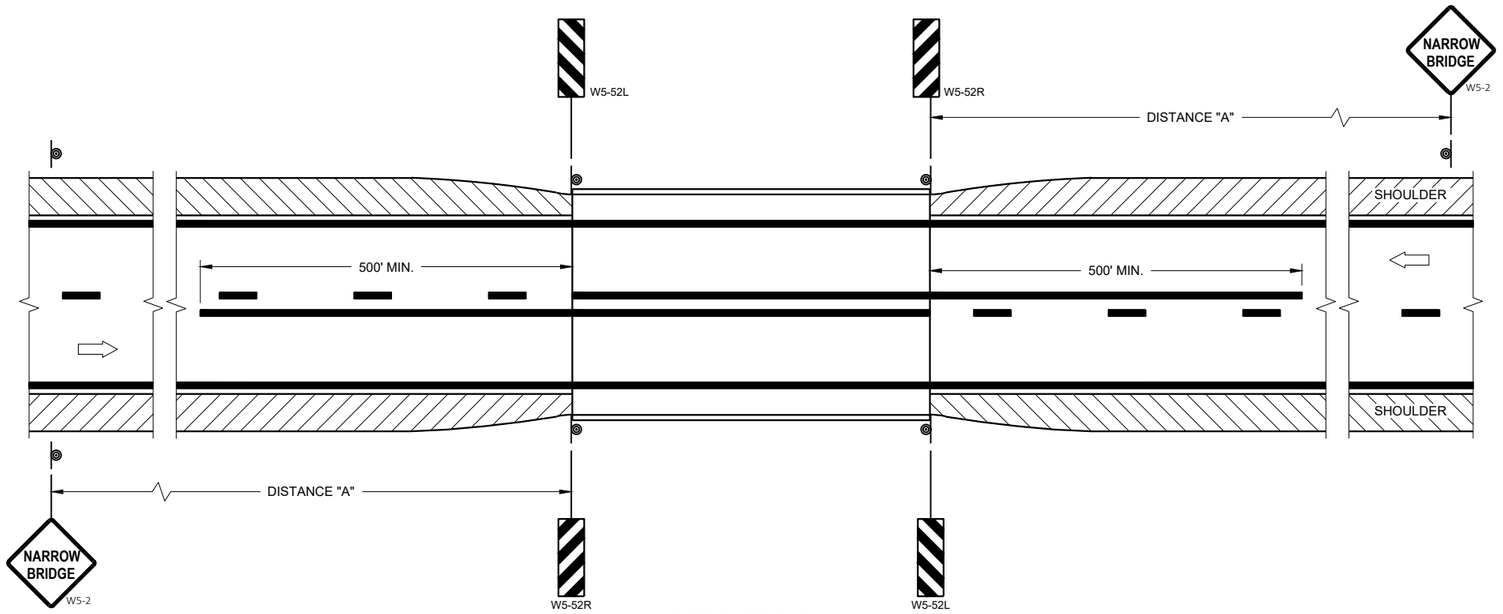
APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER
FHWA

6

SDD 15C02 - 08b

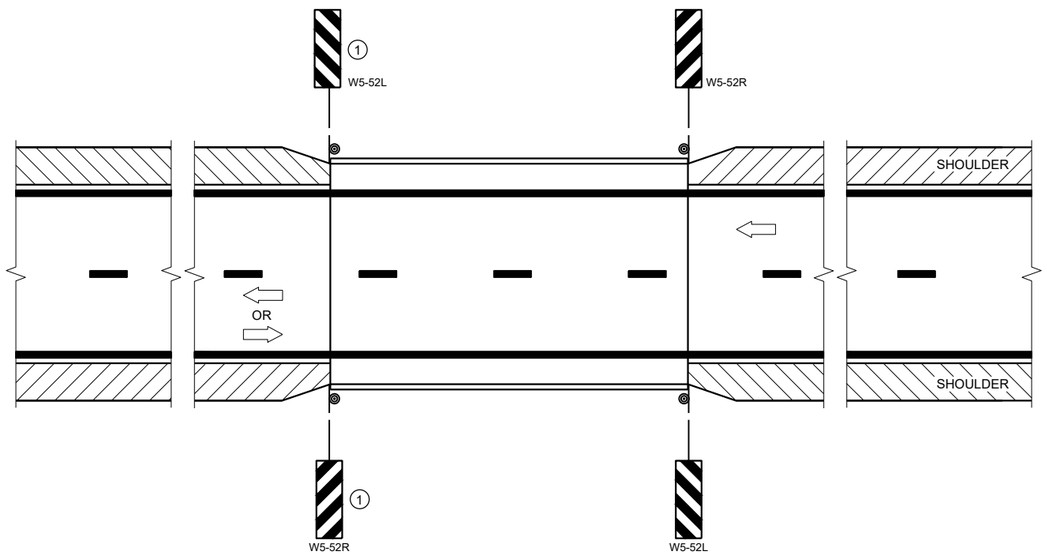
6

SDD 15C02 - 08b



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'

SIGNING AND MARKING FOR TWO LANE BRIDGES

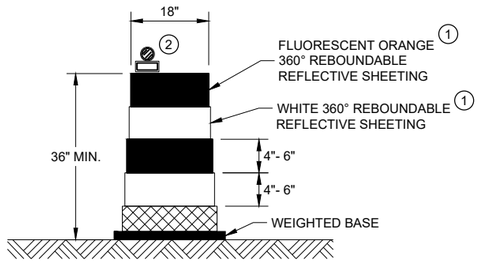
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 — DATE
/S/ Jeannie Silver — STATE SIGNING AND MARKING ENGINEER
FHWA

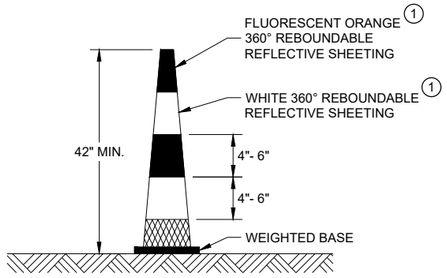
6
SDD 15C06 - 10

GENERAL NOTES

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

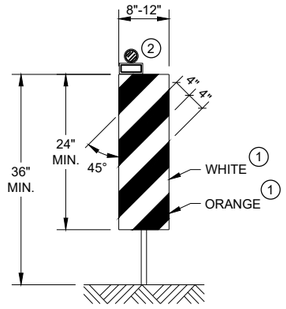


DRUM



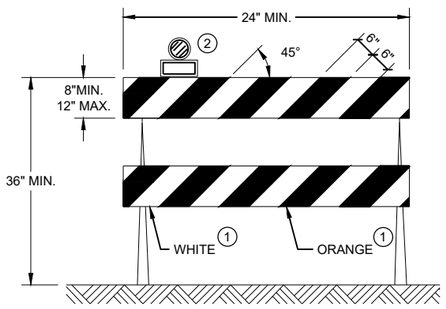
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



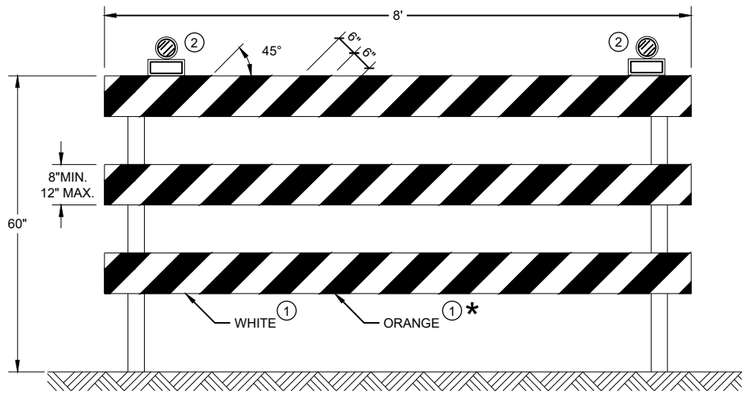
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

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SDD 15C11 - 09b

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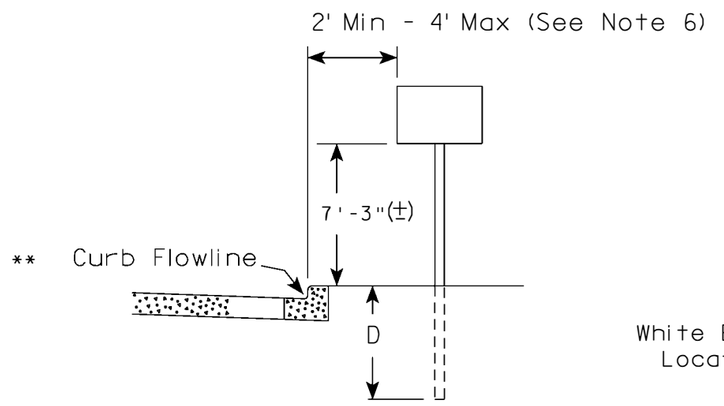
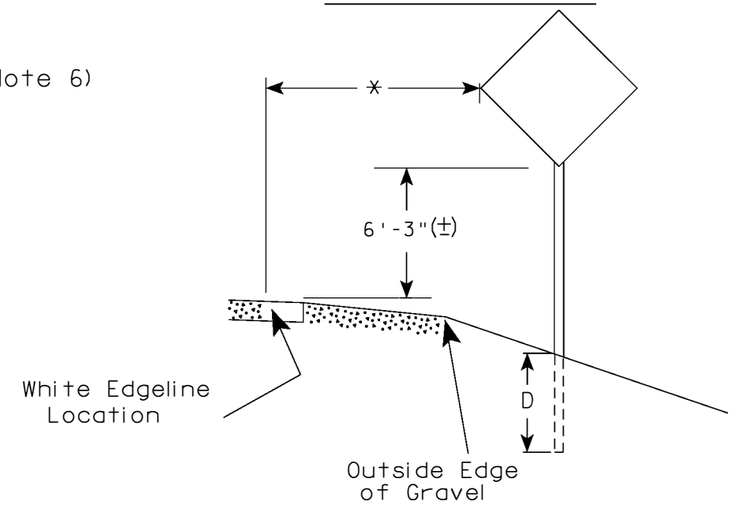
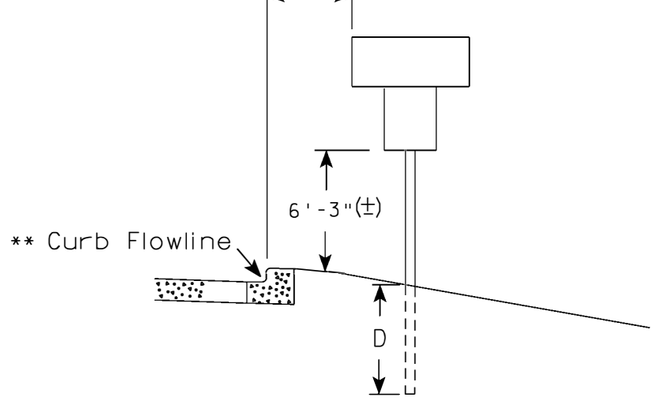
SDD 15C11 - 09b

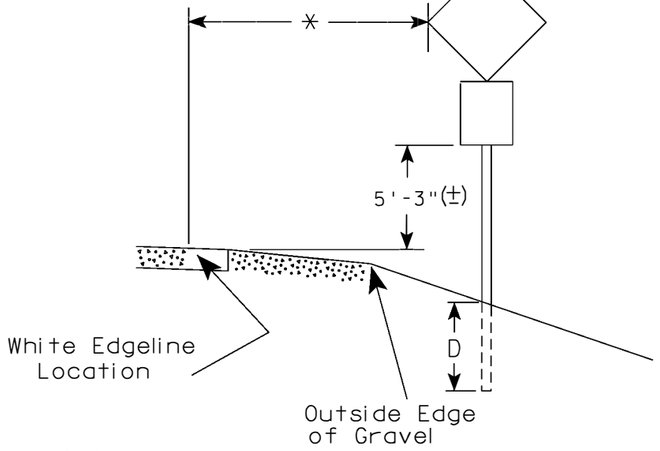
URBAN AREA



RURAL AREA (See Note 2)







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

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" (±). 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. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.

POST EMBEDMENT DEPTH

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

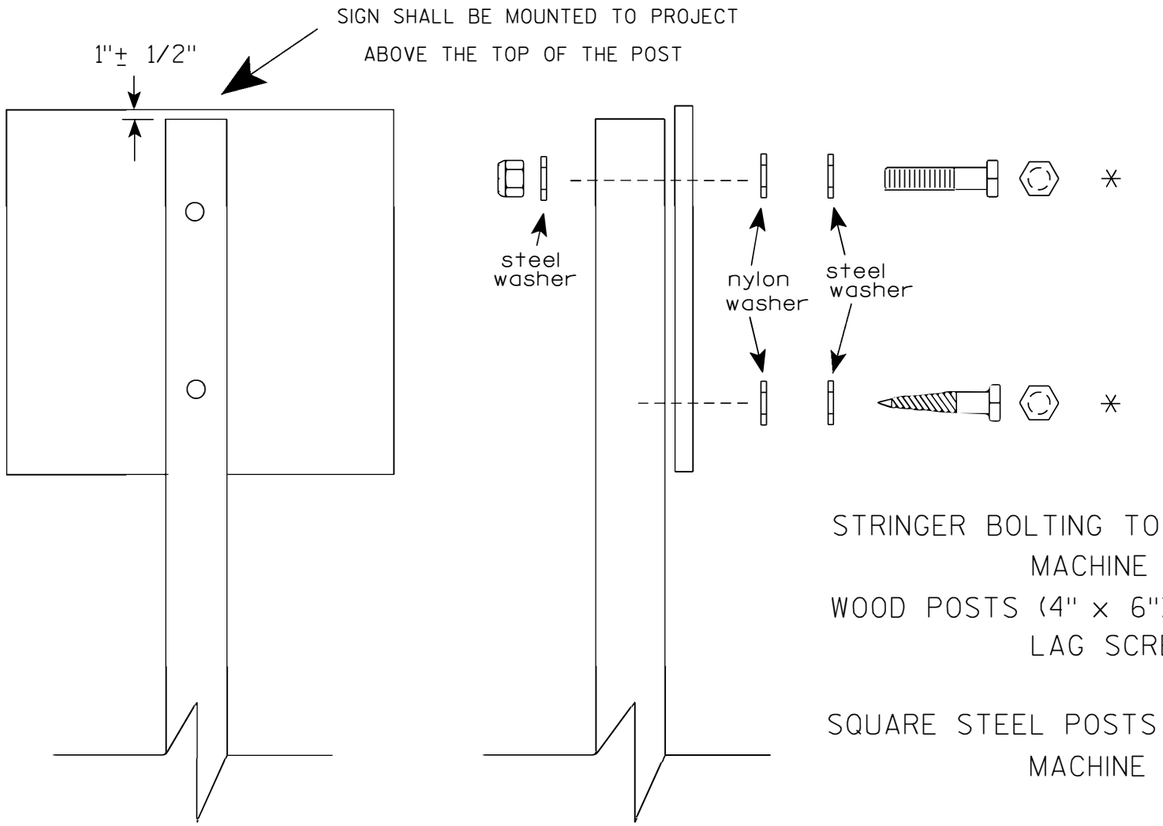
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON		SHEET NO: 36	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

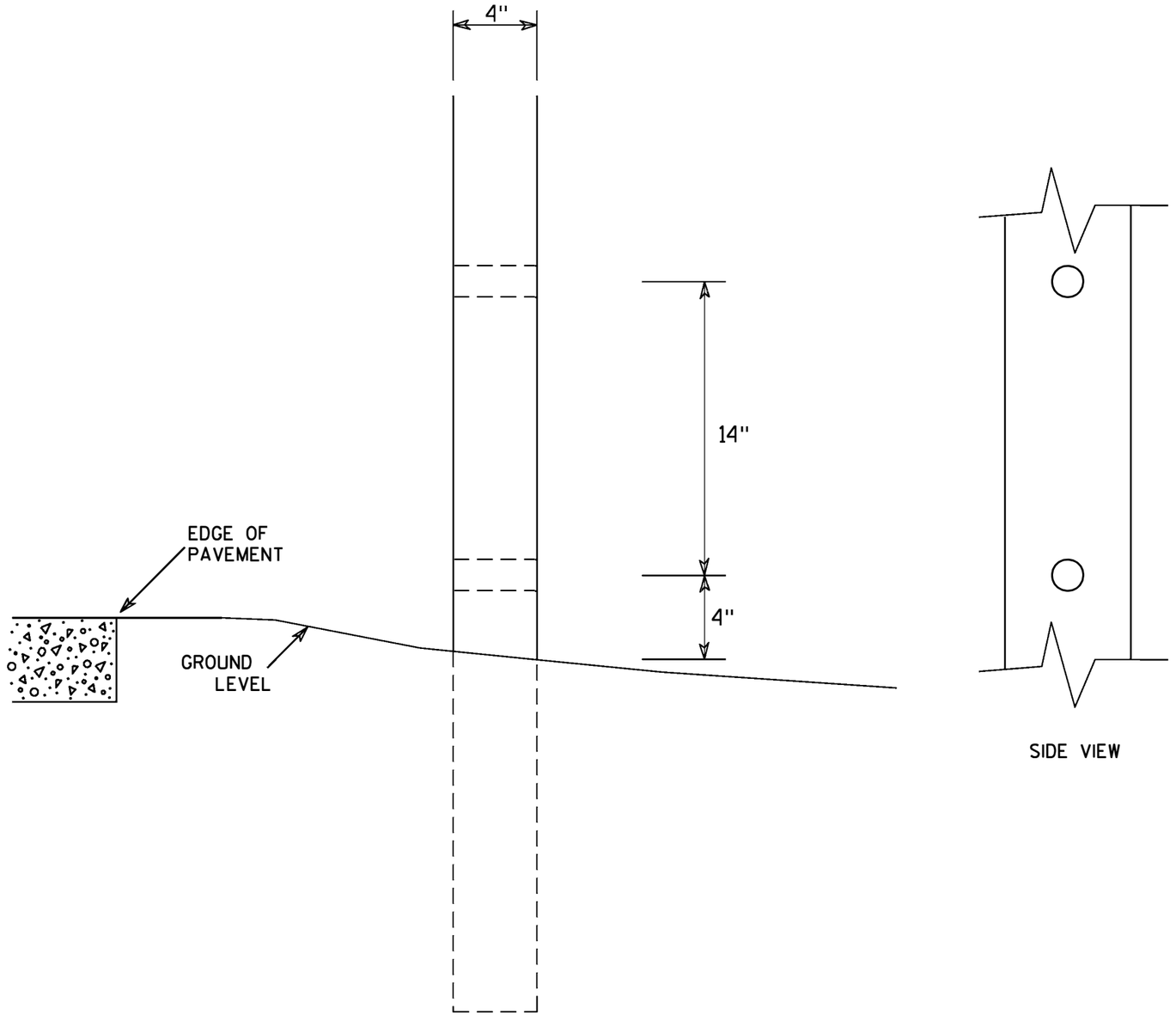
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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



SIDE VIEW

GENERAL NOTES

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

7

7

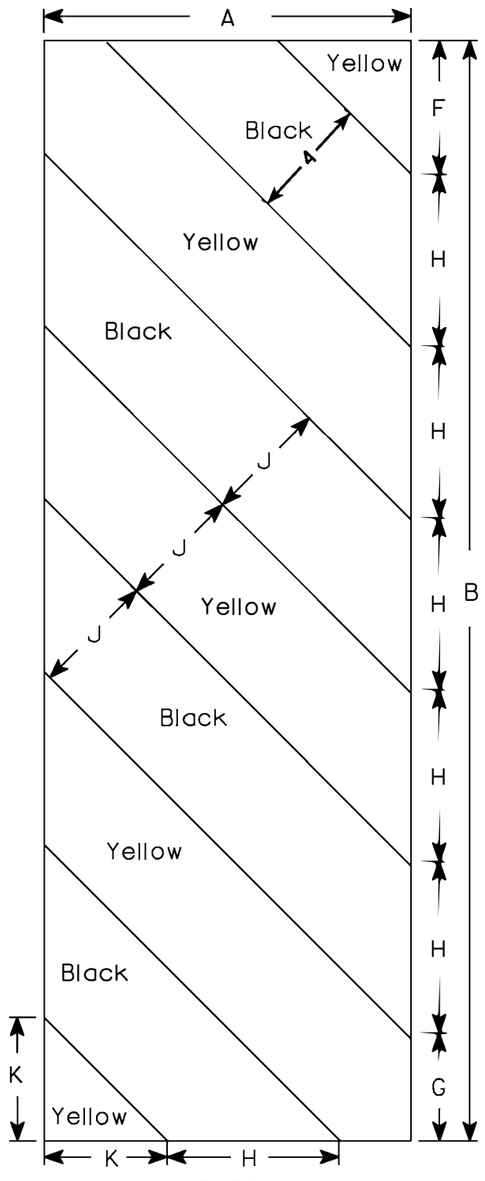
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

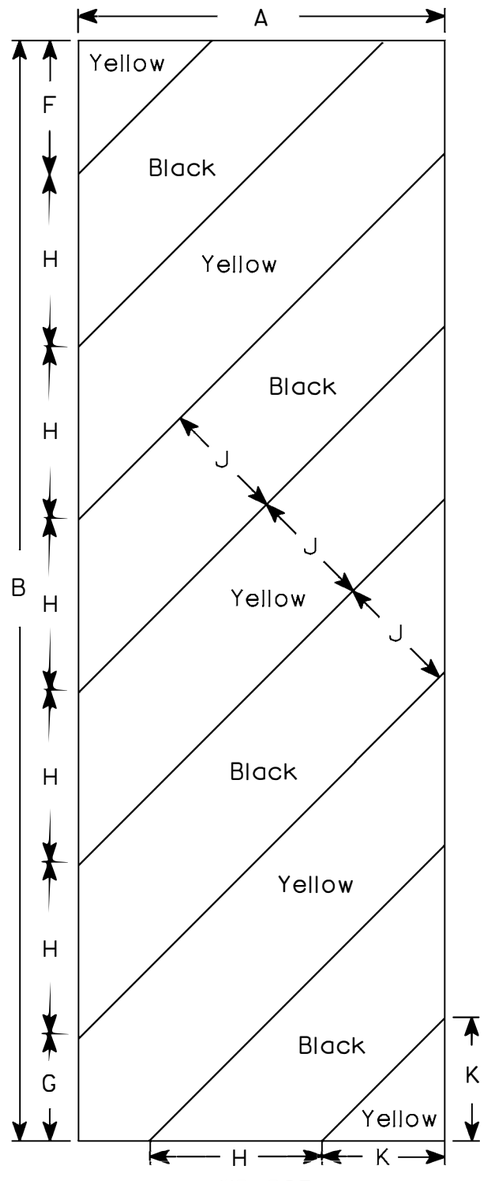
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON		SHEET NO: 38	E



W5-52L



W5-52R

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

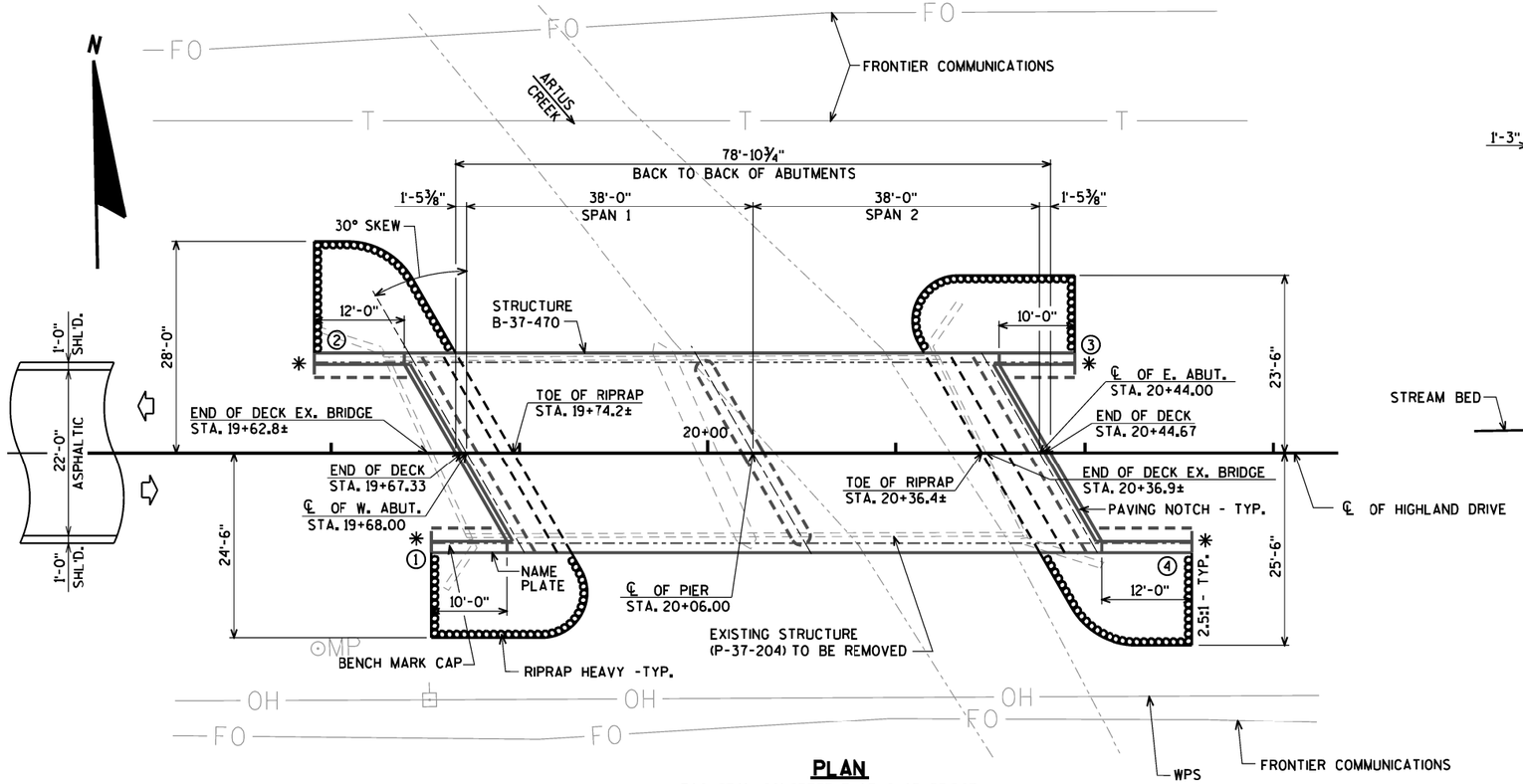
WISCONSIN DEPT OF TRANSPORTATION

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

PROJECT NO: 9526-00-71 | HWY: HIGHLAND DRIVE | COUNTY: MARATHON | SHEET NO: 39 | E

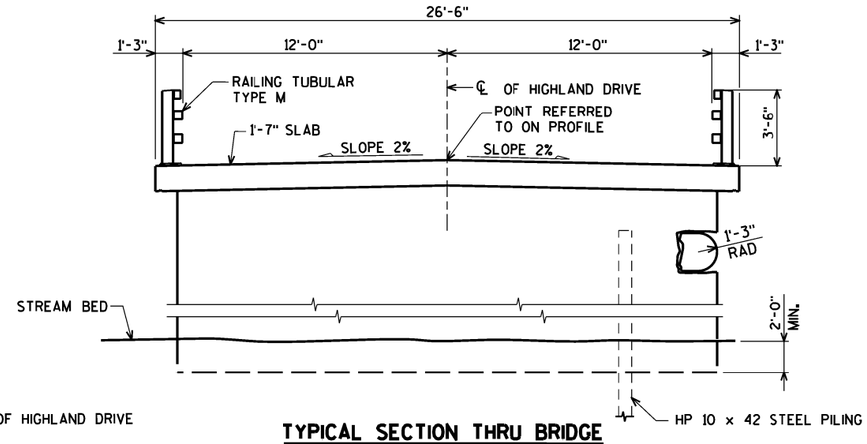
STATE PROJECT NUMBER

9526-00-71



PLAN

TWO SPAN CONCRETE FLAT SLAB BRIDGE



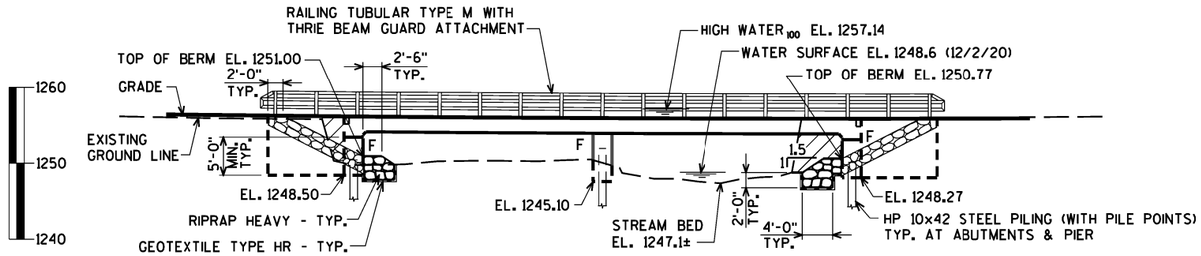
TYPICAL SECTION THRU BRIDGE

✱ ATTACHMENT FOR THRIE BEAM TYPE GUARDRAIL.

○ DENOTES WING NUMBER.

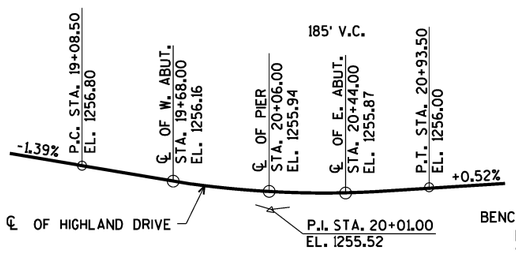
LIST OF DRAWINGS

FOR DESIGN DATA SEE SHEET 2



ELEVATION

(NORMAL TO ℄ OF CREEK)



PROFILE GRADE LINE

(HIGHLAND DRIVE)

BENCH MARK:
BM #200, CHIS. SQUARE NW WINGWALL
STA. 19+57, 13.3' LT.
EL. 1256.06

COST OF EXCAVATION OR FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-37-470".

REMOVE EXISTING SUBSTRUCTURE AS NEEDED. COST CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE" ITEM. TYPICAL AT ALL SUBSTRUCTURES.

WISCONSIN
ARLEN E. BEAUDETTE
E-36829
EAU CLAIRE
PROFESSIONAL ENGINEER

08/31/2022

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

CONSULTANT CONTACT:
ARLEN BEAUDETTE
(715)-834-3161

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ SDR 11/29/22
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-37-470

HIGHLAND DRIVE OVER ARTUS CREEK

COUNTY MARATHON | TOWN ~~CITY/VILLAGE~~ STETTIN

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ZSS	JCK	CLP	AEB

GENERAL PLAN

SHEET 1 OF 15
40

I.D. DATE:

DATE: DATE: DATE:
CHECKED BY: BACK CHECKED BY: CORRECTED BY:

8/31/2022
PENTABLE:BReau_shd_util.tbl

8 8

I:±42±42-1270.00 - Marathon Co - Tn Stettin - Highland Drive±Structures±CADD±Structure±Final±421270 gp.dgn

STATE PROJECT NUMBER

9526-00-71

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	PIER	E. ABUT.	SUPER.	TOTAL
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-37-204	EACH	-----	-----	-----	-----	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-37-470	EACH	-----	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	120	-----	120	-----	240
502.0100	CONCRETE MASONRY BRIDGES	CY	31.1	23.7	30.7	125.8	212
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	-----	280	280
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,790	1,120	1,760	-----	4,670
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,500	60	1,500	27,400	30,460
513.4061	RAILING TUBULAR TYPE M	LF	-----	-----	-----	207	207
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	-----	9	-----	18
550.0500	PILE POINTS	EACH	5	6	5	-----	16
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	150	180	150	-----	480
606.0300	RIPRAP HEAVY	CY	70	-----	70	-----	140
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	70	-----	70	-----	140
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	50	-----	50	-----	100
645.0120	GEOTEXTILE TYPE HR	SY	140	-----	140	-----	280
	NON-BID ITEMS						
	FILLER	SIZE	-----	-----	-----	-----	1/2" & 3/4"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

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

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATIVE METHOD IS APPROVED BY THE ENGINEER.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-37-470" SHALL BE THE EXISTING GROUNDLINE.

THE EXISTING STRUCTURE, P-37-204 TO BE REMOVED, IS A TWO SPAN STEEL DECK GIRDER BRIDGE ON CONCRETE ABUTMENTS, 74.0 FEET LONG WITH A 23.0 FOOT CLEAR ROADWAY WIDTH.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.

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 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.

EXISTING SUBSTRUCTURE LOCATIONS ARE BASED ON SURVEY. EXTENT OF BELOW GRADE SUBSTRUCTURES ARE NOT KNOWN. REMOVE EXISTING SUBSTRUCTURES AS NEEDED TO BUILD NEW SUBSTRUCTURES. COST OF SUBSTRUCTURE REMOVAL IS CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE" BID ITEM.

AT ABUTMENTS, CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.17
OPERATING RATING FACTOR: 1.51
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

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

MATERIAL PROPERTIES:

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

HYDRAULIC DATA:

100 YEAR FREQUENCY

Q_{100} = 4,240 c.f.s. { STRUCTURE = 2,576 c.f.s. / OVERFLOW = 1,664 c.f.s.
VEL.= 9.88 f.p.s.
HW_{100} = EL. 1257.14
WATERWAY AREA = 261 sq. ft.
DRAINAGE AREA = 5.3 sq. mi.
SCOUR CRITICAL CODE = 5
DATUM = NAVD88 (2012)

2 YEAR FREQUENCY

Q_2 = 740 c.f.s.
VEL.= 4.99 f.p.s.
HW_2 = EL. 1252.62

FREQUENCY OF OVERTOPPING

FREQUENCY = 9 YEARS
Q_9 = 1,995 c.f.s.
HW_9 = EL. 1255.71

FOUNDATION DATA:

WEST ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS ‡ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 30'-0".

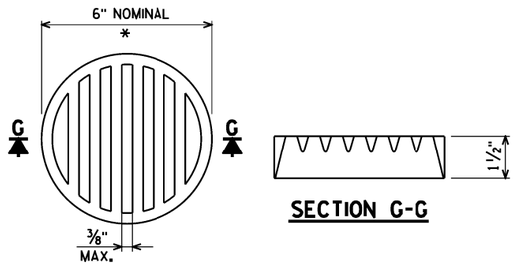
EAST ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS ‡ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 30'-0".

PIER TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ‡ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 30'-0".

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

TRAFFIC DATA:

A.A.D.T. = 110 (2023)
A.A.D.T. = 150 (2043)
R.D.S. = 45 M.P.H.



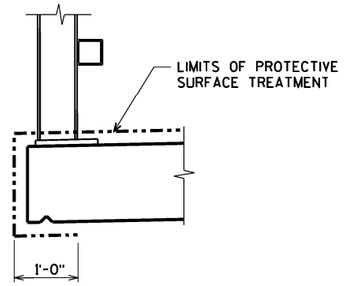
SECTION G-G

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

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

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

RODENT SHIELD DETAIL



PROTECTIVE SURFACE TREATMENT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-470

DRAWN BY CLP | PLANS CK'D. JCK

QUANTITIES AND NOTES

SHEET 2 OF 15
41

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

8/8/2022
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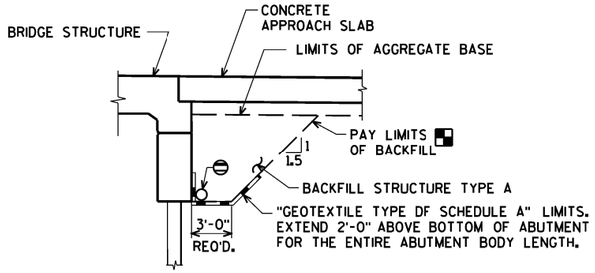
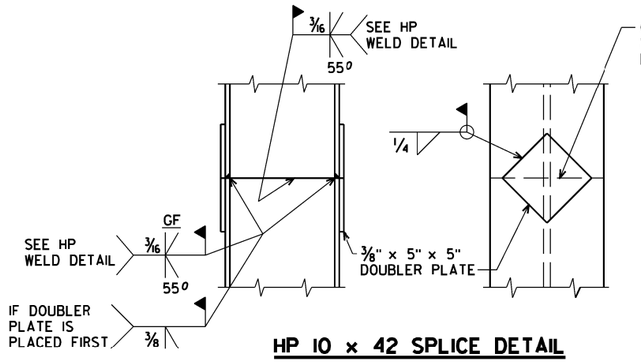
I:±42±42-1270.00 - Marathon Co - Tn Stettin - Highland Drive±Structures±CADD±Structure±Final±421270 gp.dgn



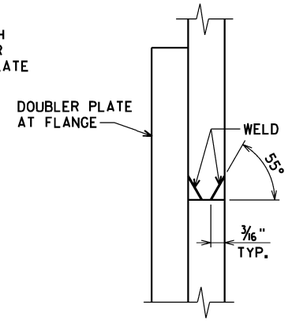
BACKFILL STRUCTURE LIMITS

BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2.



HP 10 x 42 SPLICE DETAIL



HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-470

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STRUCTURE DETAILS

SHEET 3 OF 15
42

ORIGINAL PLANS PREPARED BY
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3433 Oakwood Hills Parkway
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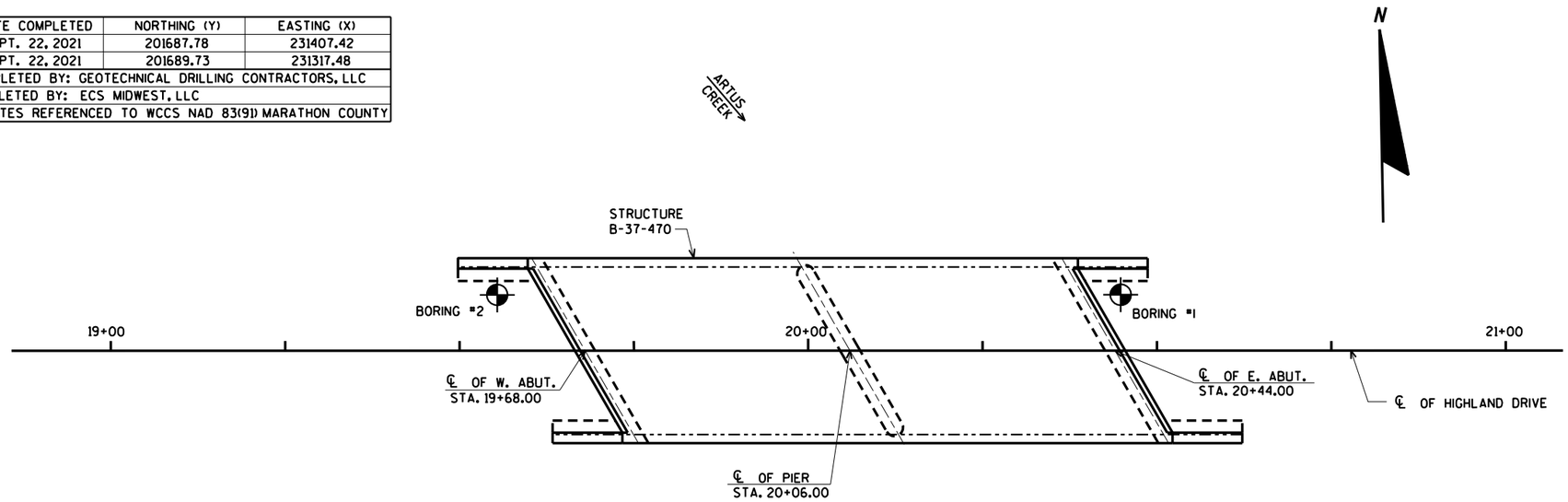
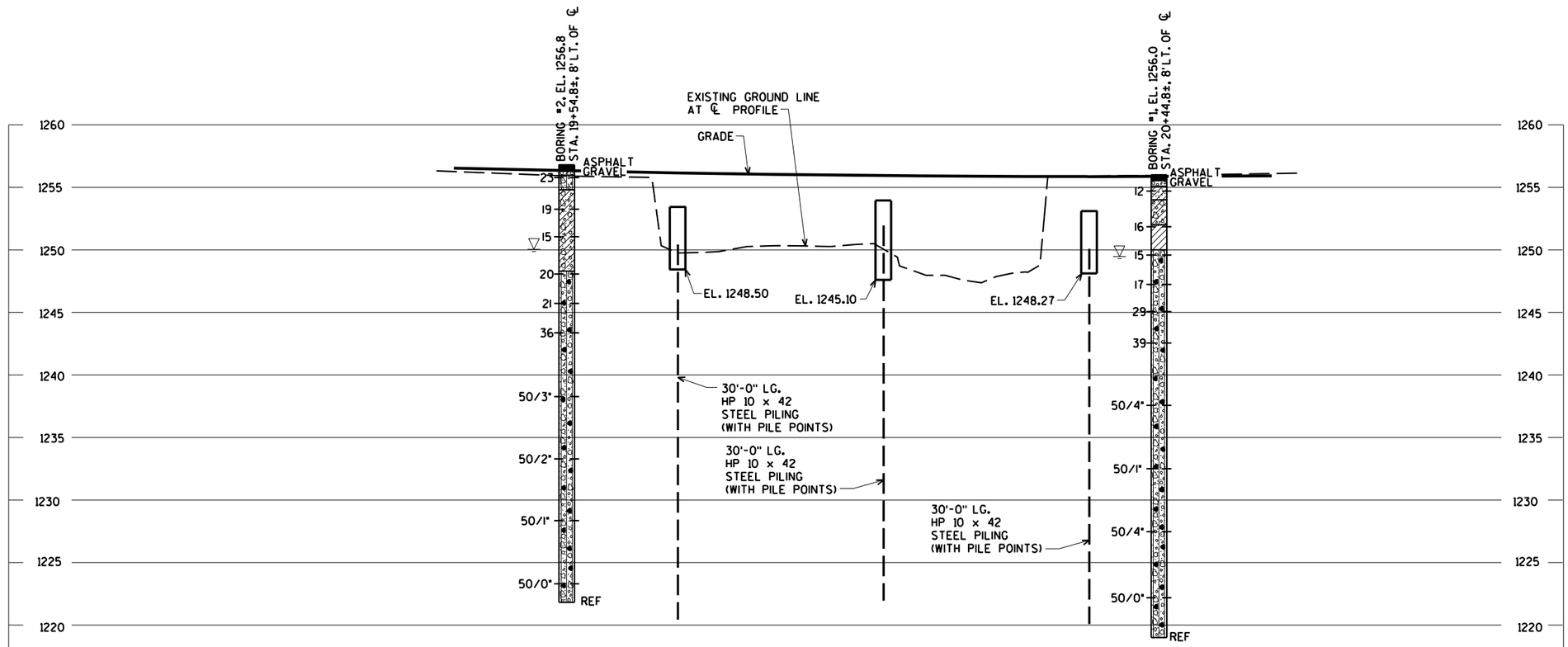
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	SEPT. 22, 2021	201687.78	231407.42
2	SEPT. 22, 2021	201689.73	231317.48
BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC			
REPORT COMPLETED BY: ECS MIDWEST, LLC			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MARATHON COUNTY			





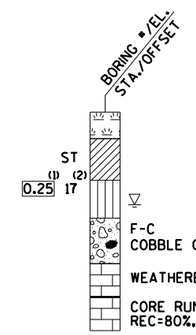
STATE PROJECT NUMBER

9526-00-71

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

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-470

DRAWN BY	CLP	PLANS CK'D.	JCK

SUBSURFACE EXPLORATION

SHEET 4 OF 15
43

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5/24/2022
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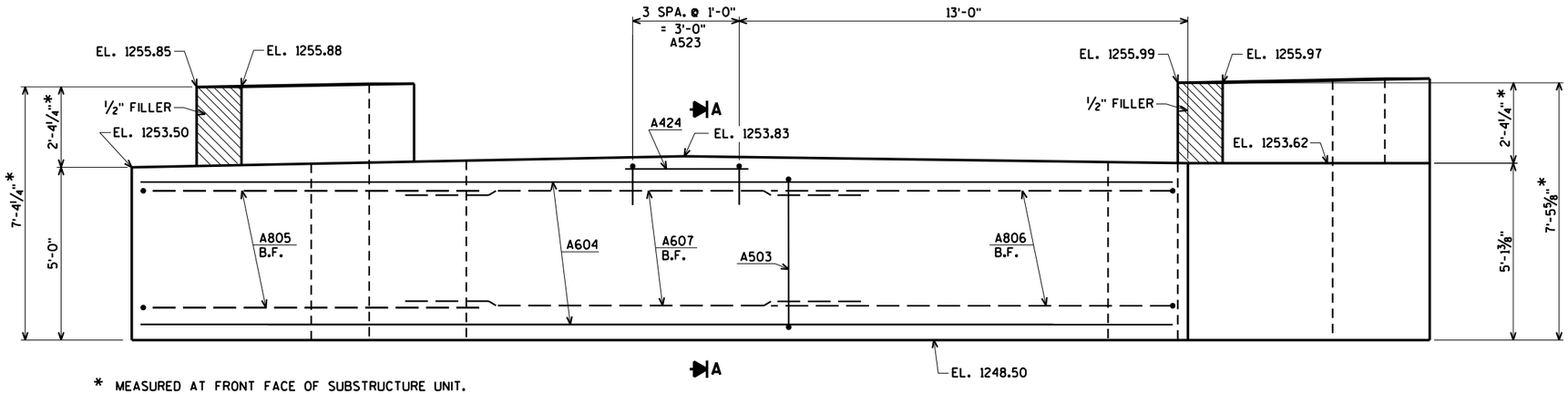
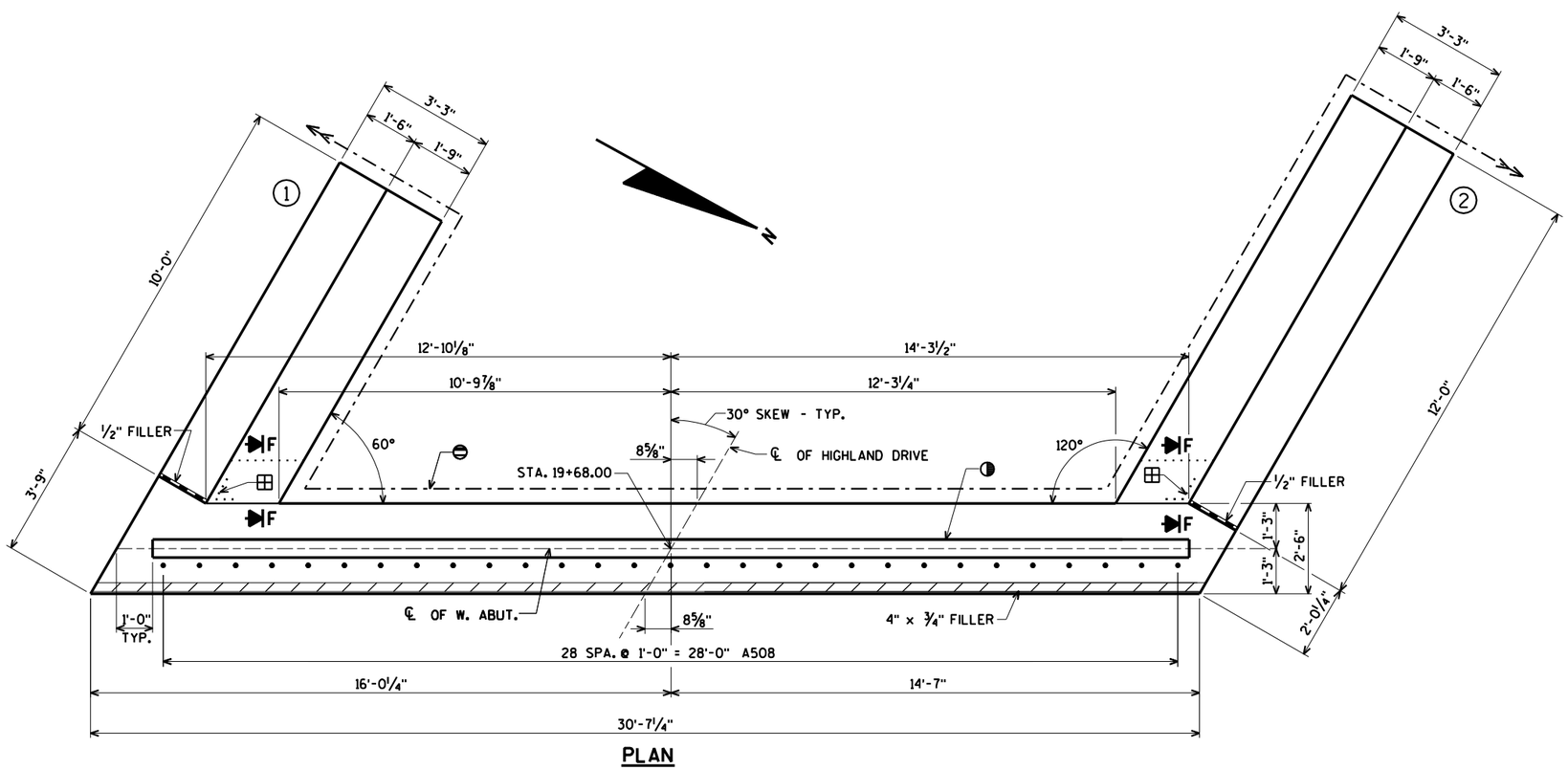
STATE PROJECT NUMBER
9526-00-71

NOTE:
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

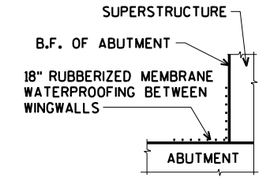


* MEASURED AT FRONT FACE OF SUBSTRUCTURE UNIT.

ELEVATION
(LOOKING WEST)



PLAN



SECTION F

FOR SECTION A SEE SHEET 6.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

⊞ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WINGWALL.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-470

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WEST ABUTMENT

SHEET 5 OF 15
44

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STATE PROJECT NUMBER

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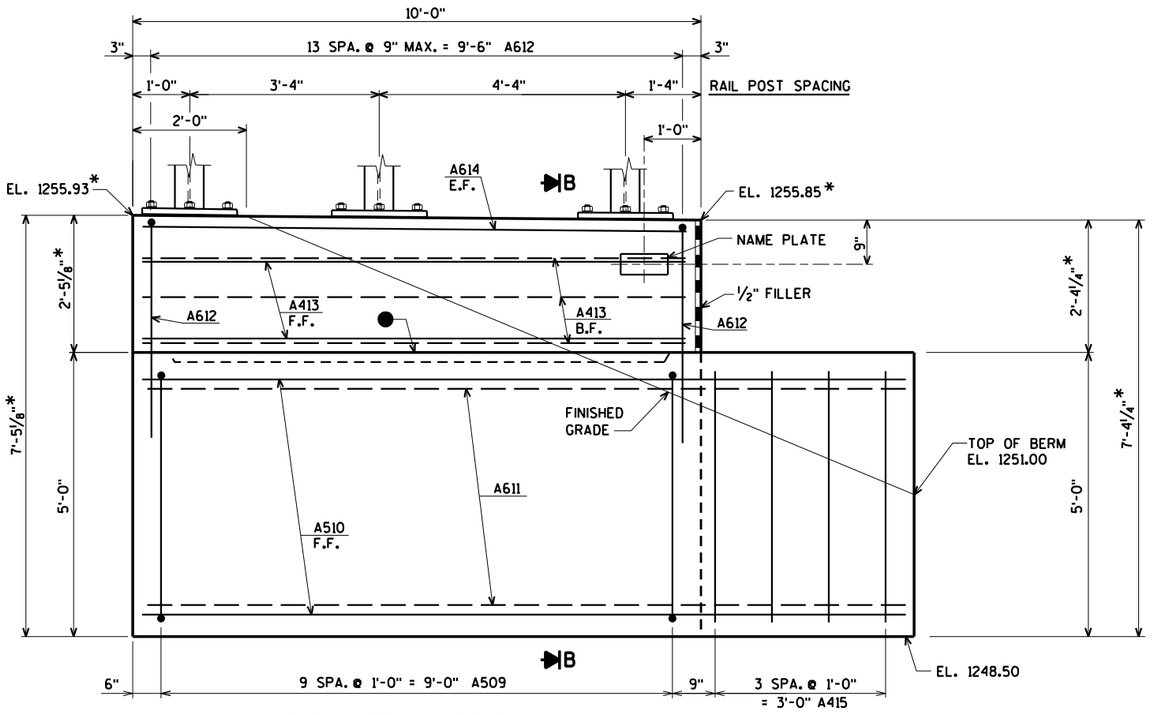
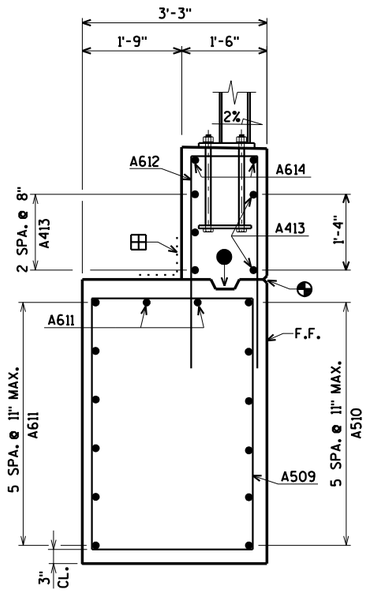
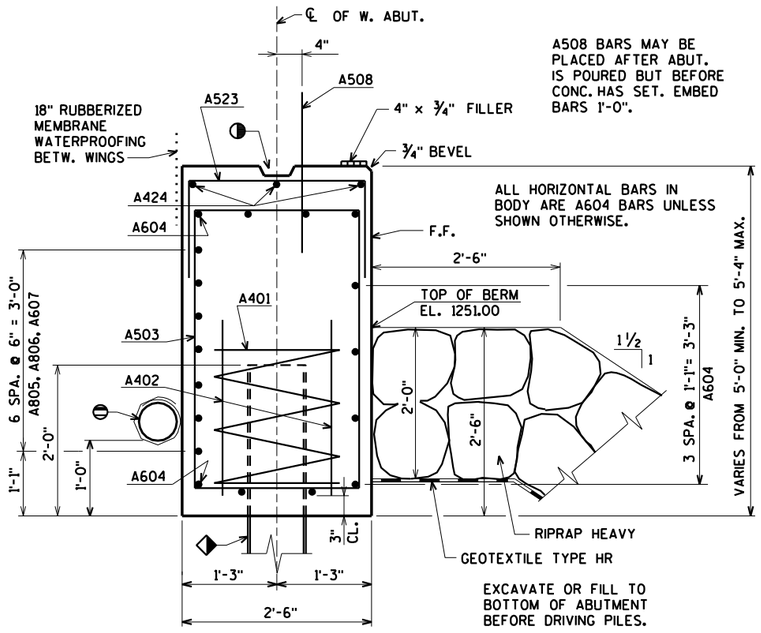


ELEVATION - WING 1



SECTION B



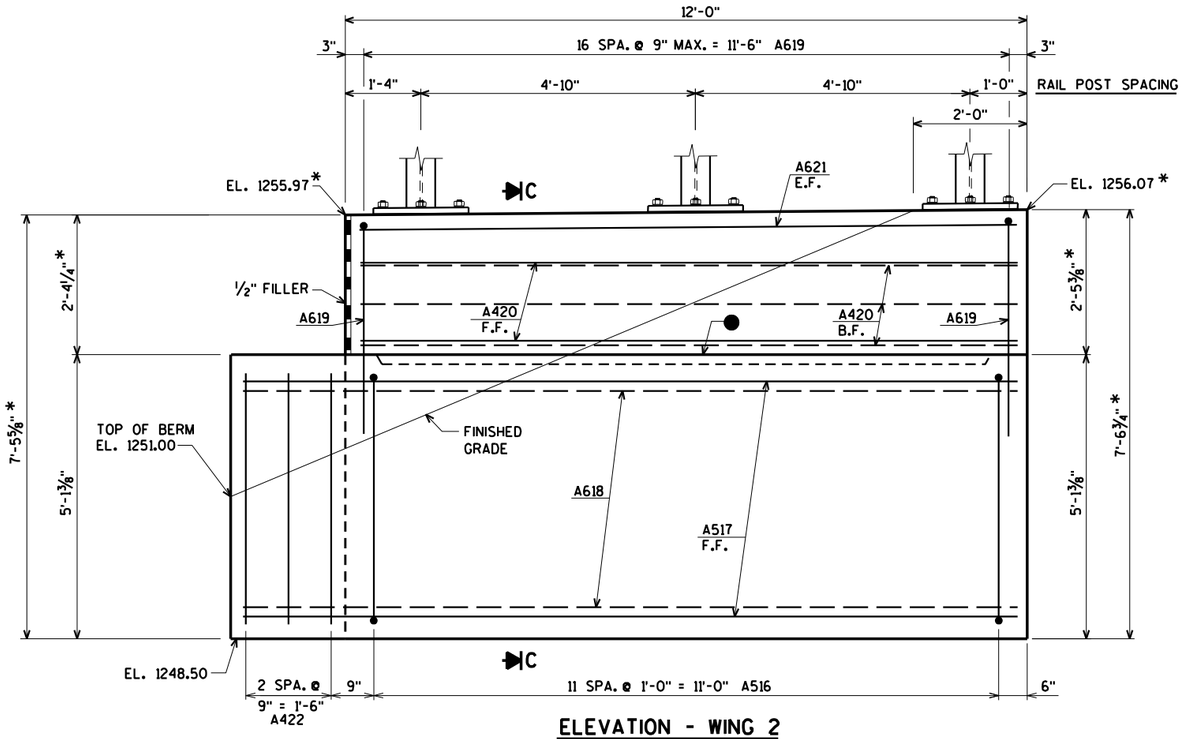
SECTION A

A508 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. EMBED BARS 1'-0".

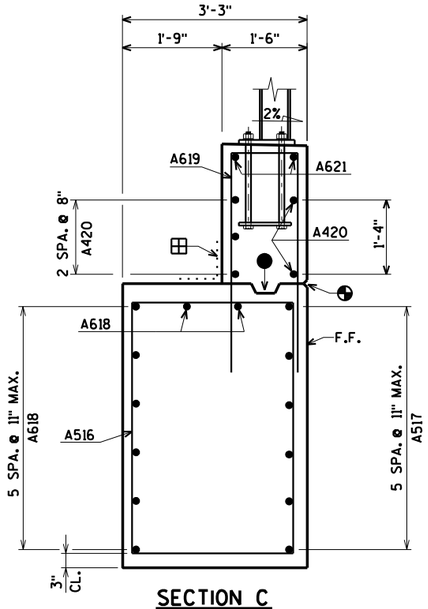
ALL HORIZONTAL BARS IN BODY ARE A604 BARS UNLESS SHOWN OTHERWISE.

◑ ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE. ESTIMATED LENGTH 30'-0".

* MEASURED AT FRONT FACE OF SUBSTRUCTURE UNIT.



ELEVATION - WING 2



SECTION C

FOR LOCATION OF SECTION A SEE SHEET 5.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

◒ ¾" "V" GROOVE ON FRONT FACE OF WINGWALL. ONLY REQUIRED IF OPTIONAL CONSTRUCTION JOINT IS USED.

● OPT. CONST. JOINT FORMED BY A BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HOIRZONTAL AND VERTICAL JOINTS ON BACKFACE.

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-470

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WEST ABUTMENT WING DETAILS

SHEET 6 OF 15
45

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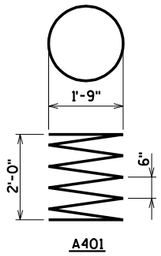
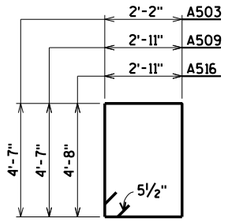
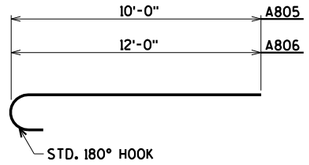
STATE PROJECT NUMBER

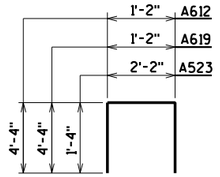
9526-00-71



A401



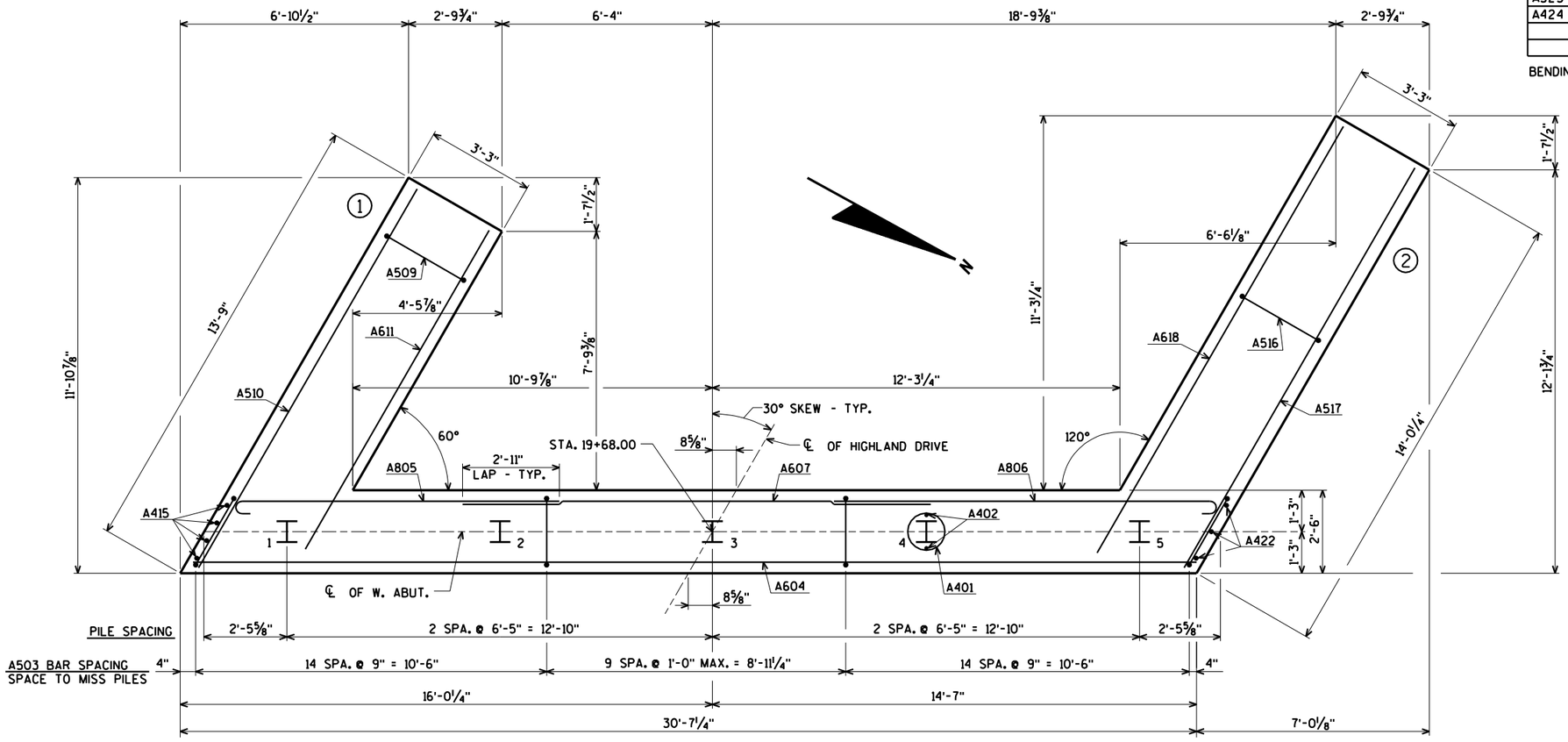




BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	1.500" COATED 1.790" UNCOATED LOCATION
A401		5	28-0	X		BODY @ PILES
A402		10	2-3			BODY @ PILES
A503		38	14-2	X		BODY VERT.
A604		11	30-1			BODY HORIZ.
A805		7	10-11	X		BODY HORIZ. @ WING 1 B.F.
A806		7	12-11	X		BODY HORIZ. @ WING 2 B.F.
A607		7	14-0			BODY HORIZ. BETW. WINGS B.F.
A508	X	29	2-0			BODY DOWELS
A509	X	10	15-8	X		WING 1 VERT.
A510	X	6	13-2			WING 1 HORIZ. F.F.
A611	X	8	11-0			WING 1 HORIZ. B.F. & TOP
A612	X	14	9-6	X		WING 1 VERT.
A413	X	5	9-7			WING 1 HORIZ. E.F.
A614	X	2	9-7			WING 1 HORIZ. E.F.
A415	X	4	4-7			BODY VERT. END @ WING 1
A516	X	12	15-10	X		WING 2 VERT.
A517	X	6	13-10			WING 2 HORIZ. F.F.
A618	X	8	14-10			WING 2 HORIZ. B.F. & TOP
A619	X	17	9-6	X		WING 2 VERT.
A420	X	5	11-7			WING 2 HORIZ. E.F.
A621	X	2	11-7			WING 2 HORIZ. E.F.
A422	X	3	4-8			BODY VERT. END @ WING 2
A523		4	4-7	X		BODY VERT.
A424		3	4-0			BODY HORIZ.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



PILE LAYOUT

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-470

DRAWN BY CLP | PLANS CK'D. JCK

WEST ABUTMENT DETAILS & BILL OF BARS

SHEET 7 OF 15
46

ORIGINAL PLANS PREPARED BY
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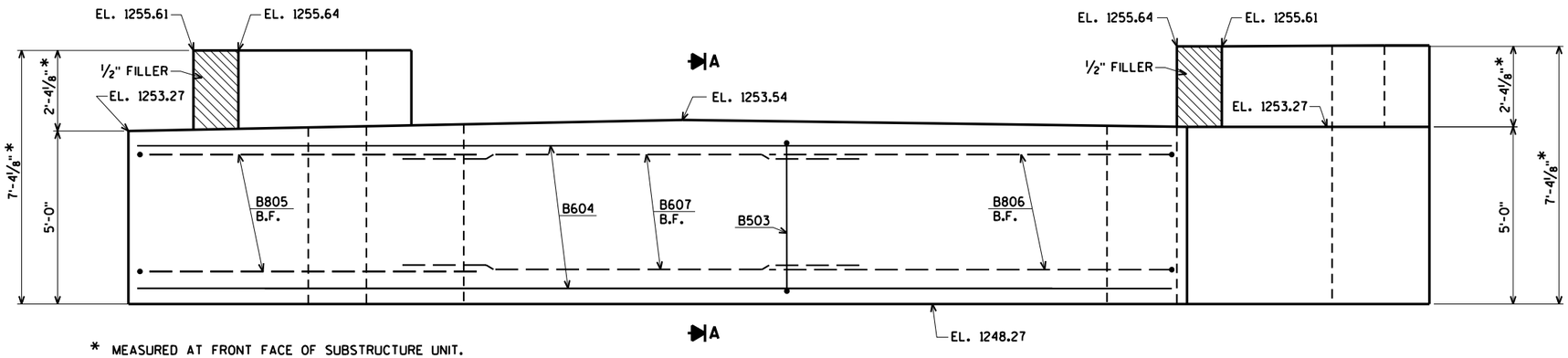
5/25/2022
PENTABLE:BReau_shd_utl1.tbl

I:±42±42-1270.00 - Marathon Co - Tn Stettin - Highland Drive±Structures±CADD±Structure±Final±421270 wa.dgn

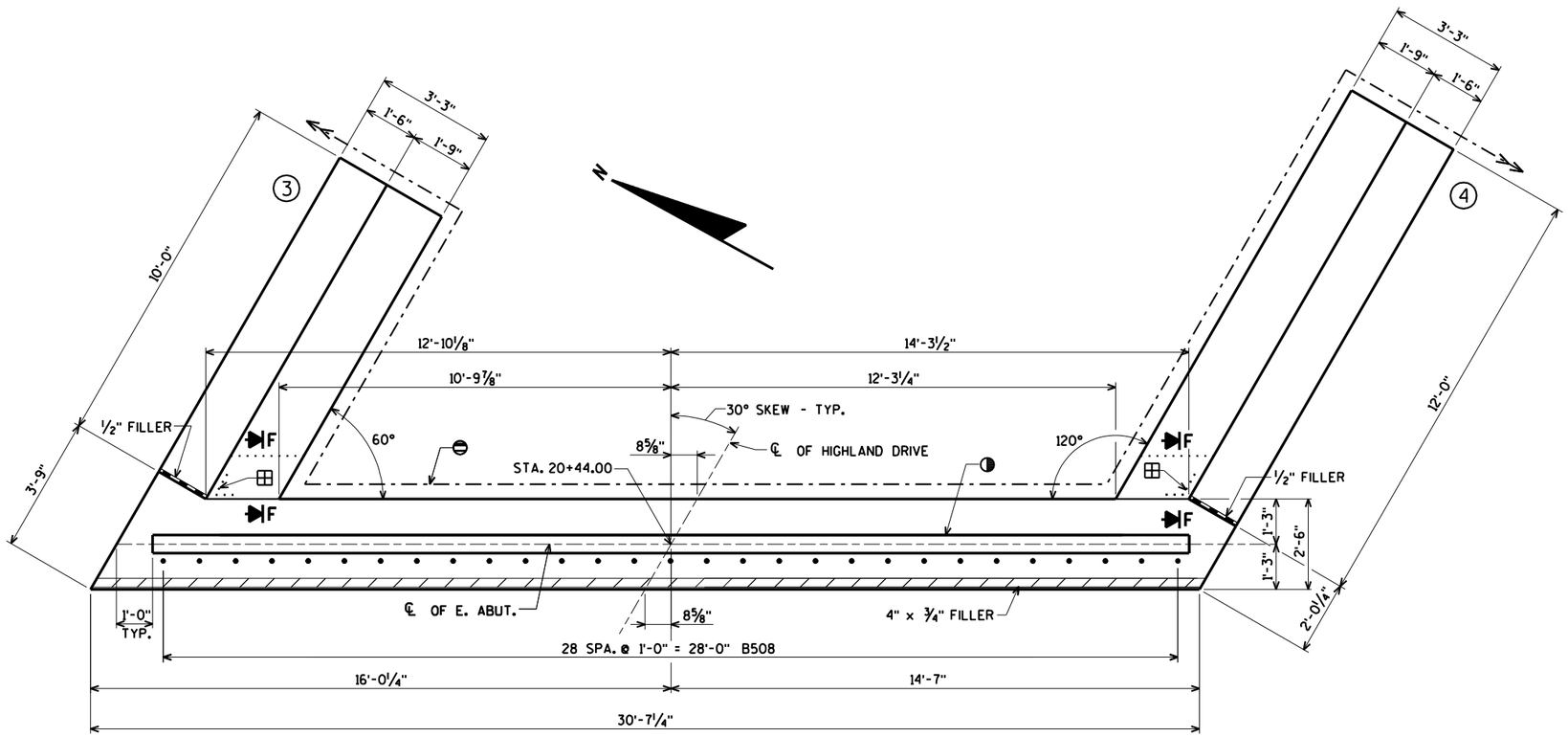
STATE PROJECT NUMBER
9526-00-71

NOTE:
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

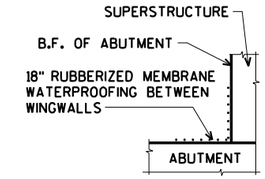


* MEASURED AT FRONT FACE OF SUBSTRUCTURE UNIT.

ELEVATION
(LOOKING EAST)



PLAN



SECTION F

FOR SECTION A SEE SHEET 9.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

⊞ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WINGWALL.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-470

DRAWN BY CLP | PLANS CK'D. JCK

EAST ABUTMENT

SHEET 8 OF 15
47

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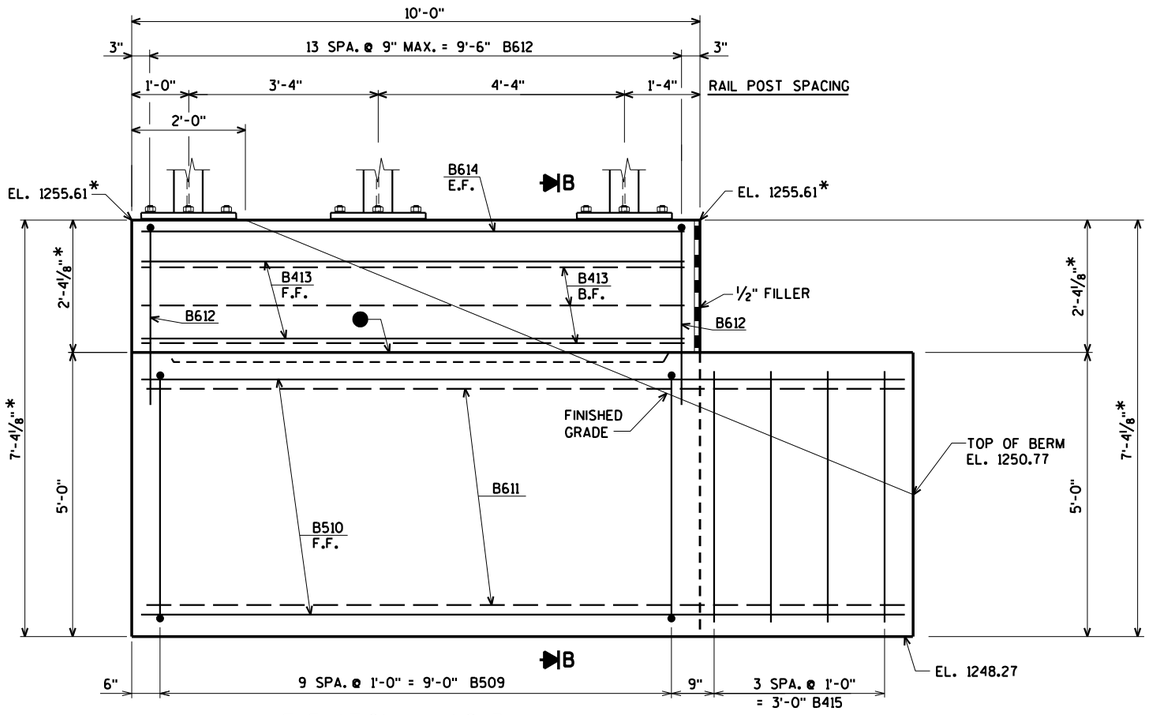
5/25/2022
PENTABLE:BReau_shd_utl1.tbl

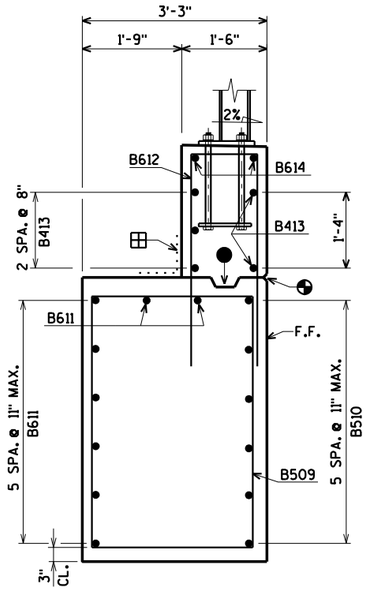
I:±42±42-1270.00 - Marathon Co - Tn Stettin - Highland Drive±Structures±CADD±Structure±Final±421270 ea.dgn

STATE PROJECT NUMBER

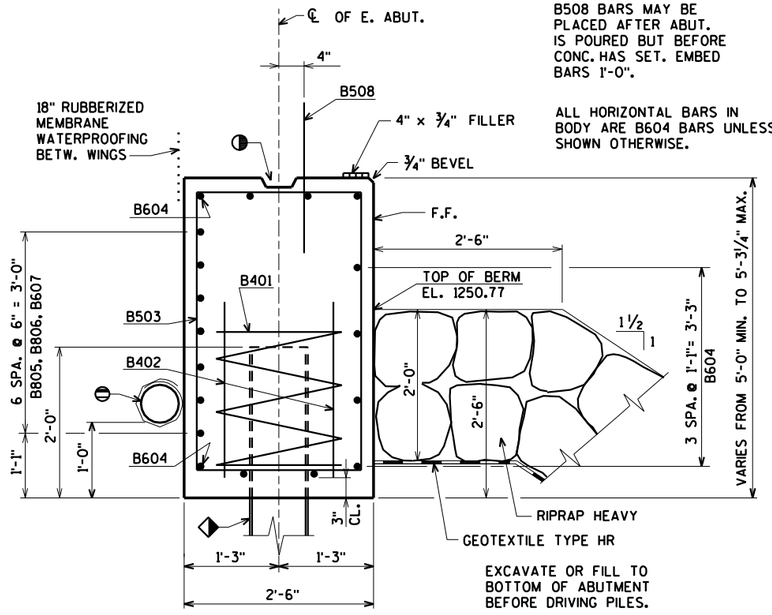
9526-00-71



ELEVATION - WING 3



SECTION B



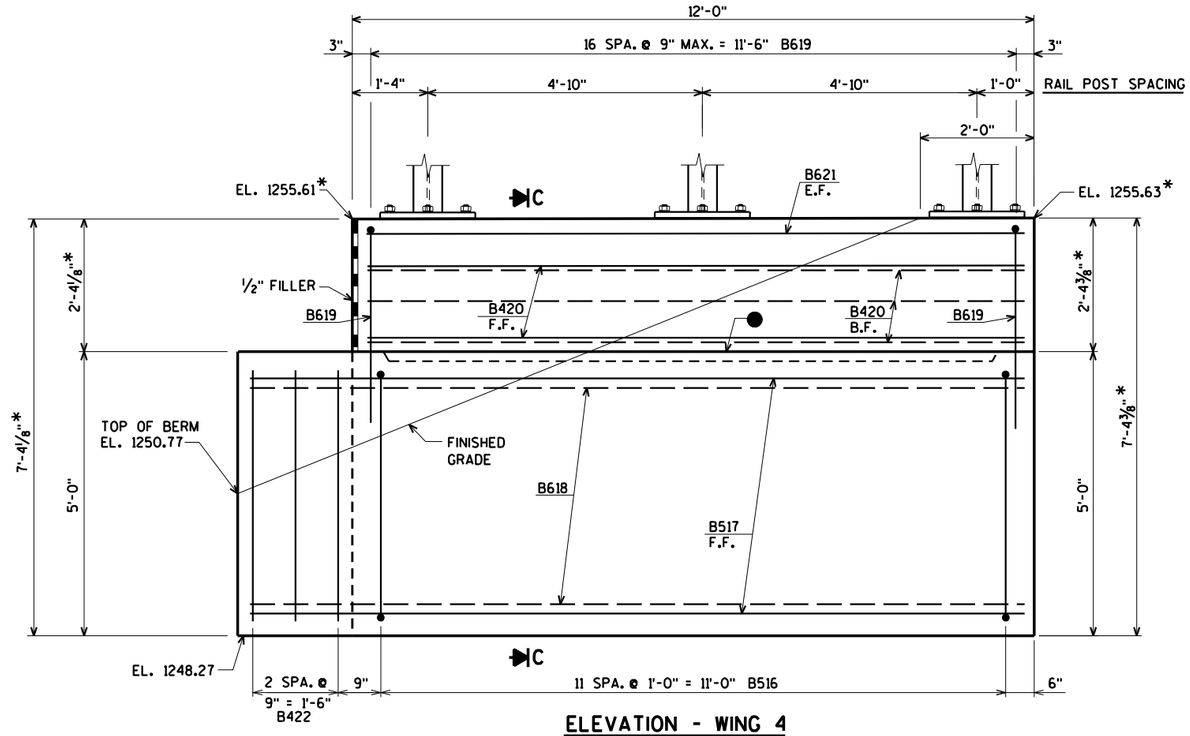
SECTION A

B508 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. EMBED BARS 1'-0".

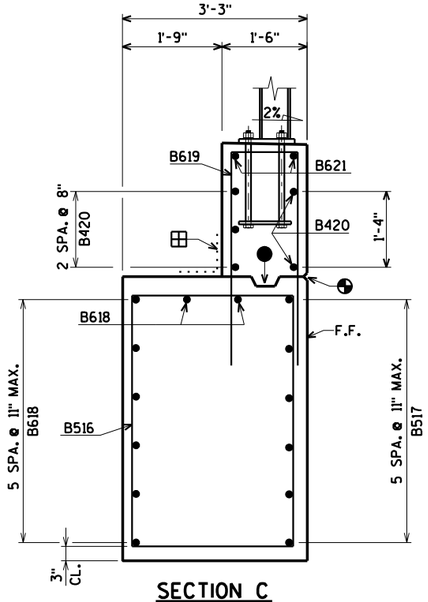
ALL HORIZONTAL BARS IN BODY ARE B604 BARS UNLESS SHOWN OTHERWISE.

◈ ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE. ESTIMATED LENGTH 30'-0".

* MEASURED AT FRONT FACE OF SUBSTRUCTURE UNIT.



ELEVATION - WING 4



SECTION C

FOR LOCATION OF SECTION A SEE SHEET 8.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

◒ ¾" "V" GROOVE ON FRONT FACE OF WINGWALL. ONLY REQUIRED IF OPTIONAL CONSTRUCTION JOINT IS USED.

● OPT. CONST. JOINT FORMED BY A BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HOIRZONTAL AND VERTICAL JOINTS ON BACKFACE.

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-470

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EAST ABUTMENT WING DETAILS

SHEET 9 OF 15
48

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5/25/2022
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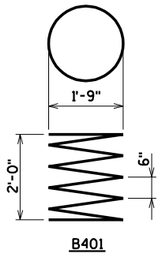
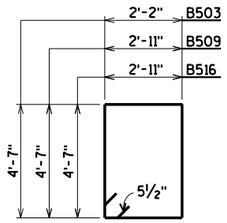
STATE PROJECT NUMBER
9526-00-71

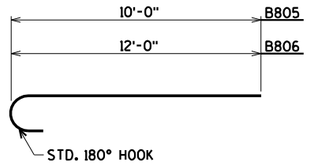
BILL OF BARS

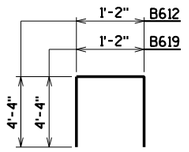
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	1.500" COATED 1.760" UNCOATED LOCATION
B401		5	28-0	X		BODY @ PILES
B402		10	2-3			BODY @ PILES
B503		38	14-2	X		BODY VERT.
B604		11	30-1			BODY HORIZ.
B805		7	10-11	X		BODY HORIZ. @ WING 3 B.F.
B806		7	12-11	X		BODY HORIZ. @ WING 4 B.F.
B607		7	14-0			BODY HORIZ. BETW. WINGS B.F.
B508	X	29	2-0			BODY DOWELS
B509	X	10	15-8	X		WING 3 VERT.
B510	X	6	13-2			WING 3 HORIZ. F.F.
B611	X	8	11-0			WING 3 HORIZ. B.F. & TOP
B612	X	14	9-6	X		WING 3 VERT.
B413	X	5	9-7			WING 3 HORIZ. E.F.
B614	X	2	9-7			WING 3 HORIZ. E.F.
B415	X	4	4-7			BODY VERT. END @ WING 3
B516	X	12	15-8	X		WING 4 VERT.
B517	X	6	13-10			WING 4 HORIZ. F.F.
B618	X	8	14-10			WING 4 HORIZ. B.F. & TOP
B619	X	17	9-6	X		WING 4 VERT.
B420	X	5	11-7			WING 4 HORIZ. E.F.
B621	X	2	11-7			WING 4 HORIZ. E.F.
B422	X	3	4-7			BODY VERT. END @ WING 4

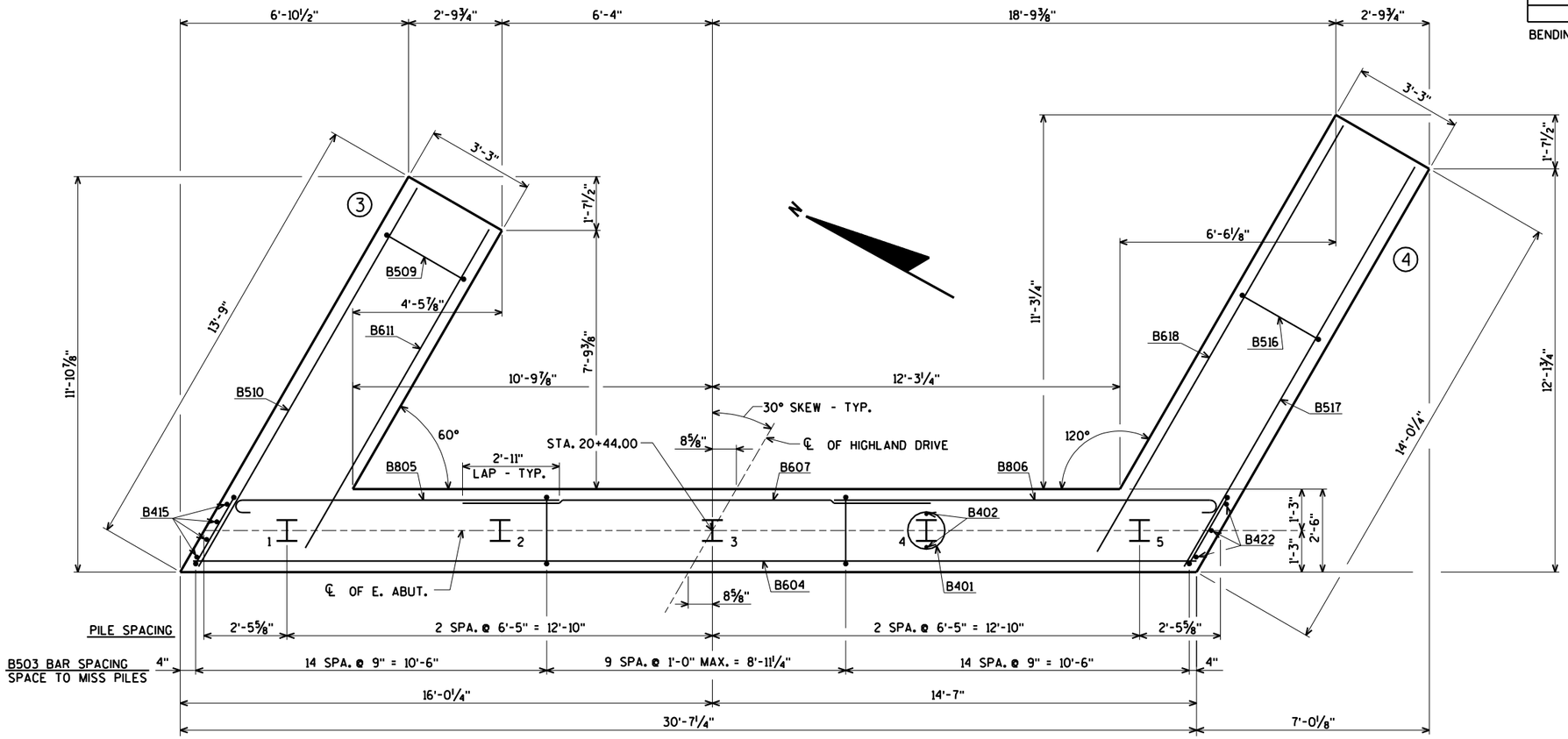
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.











PILE LAYOUT

FOR PILE SPLICE DETAIL SEE SHEET 3.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-470

DRAWN BY CLP | PLANS CK'D. JCK

EAST ABUTMENT DETAILS & BILL OF BARS

SHEET 10 OF 15
49

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STATE PROJECT NUMBER

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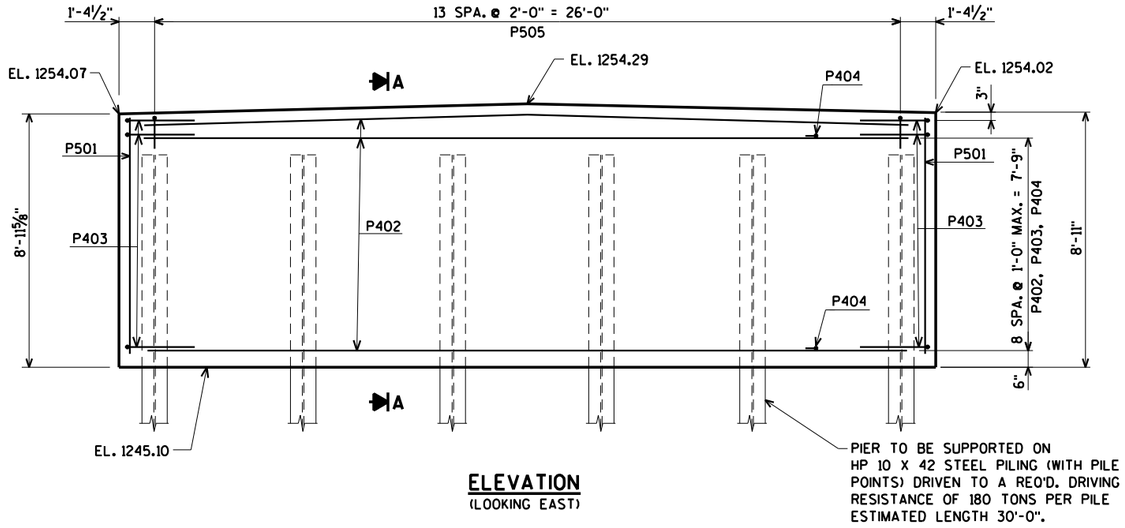
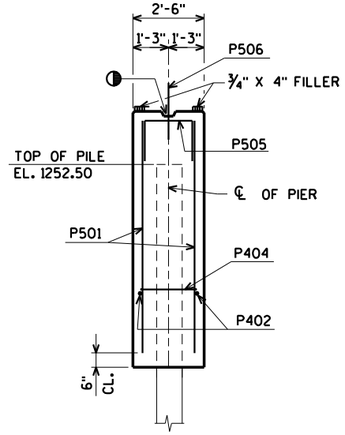


ELEVATION
(LOOKING EAST)



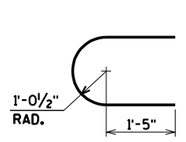
SECTION A

P506 BARS MAY BE PLACED AFTER PIER IS POURED BUT BEFORE CONC. HAS SET. EMBED BARS 1'-0".

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	60# COATED 1,120# UNCOATED LOCATION
P501		60	8-3			COLUMN VERT.
P402		20	26-3			COLUMN HORIZ.
P403		20	6-1	X		COLUMN HORIZ.
P404		54	2-10	X		COLUMN TIES
P505		14	4-7	X		COLUMN TOP
P506	X	27	2-0			COLUMN DOWELS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



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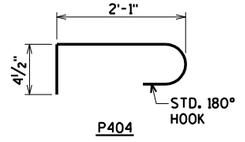

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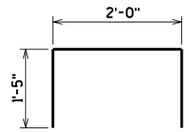

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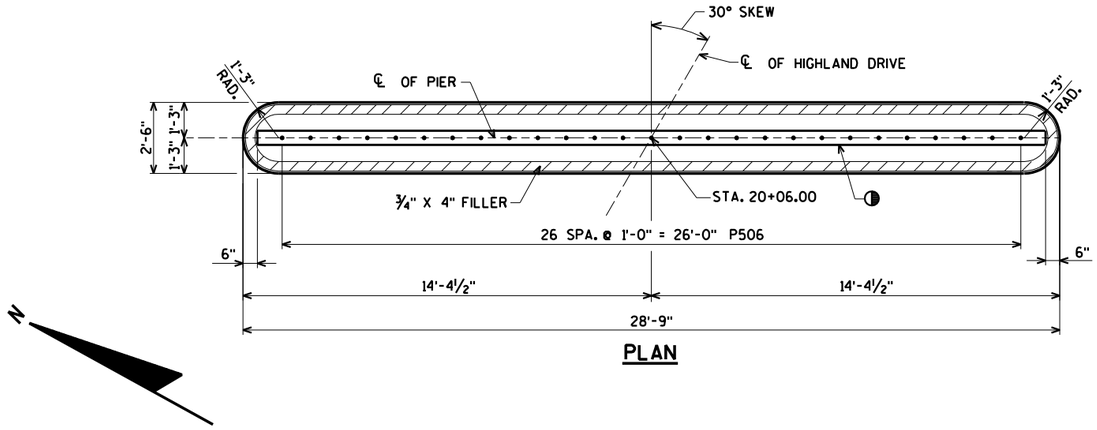
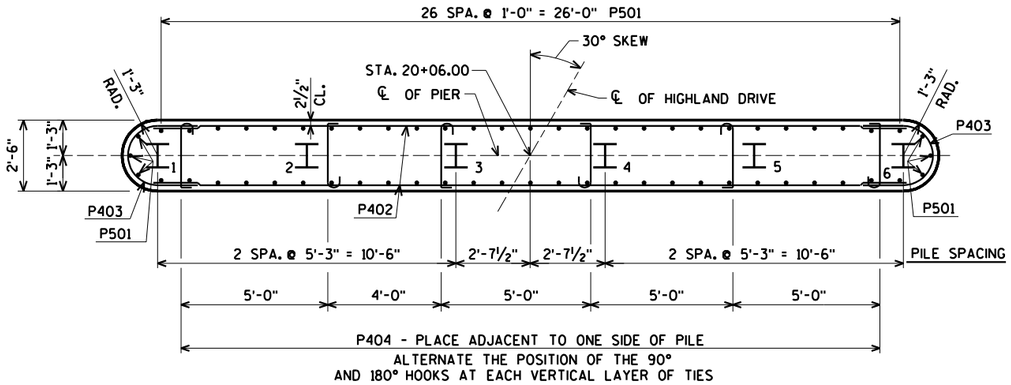


PLAN



PILE LAYOUT

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

FOR PILE SPLICE DETAIL SEE SHEET 3.

NO.	DATE	REVISION	BY

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STRUCTURE B-37-470

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PIER

SHEET 11 OF 15
50

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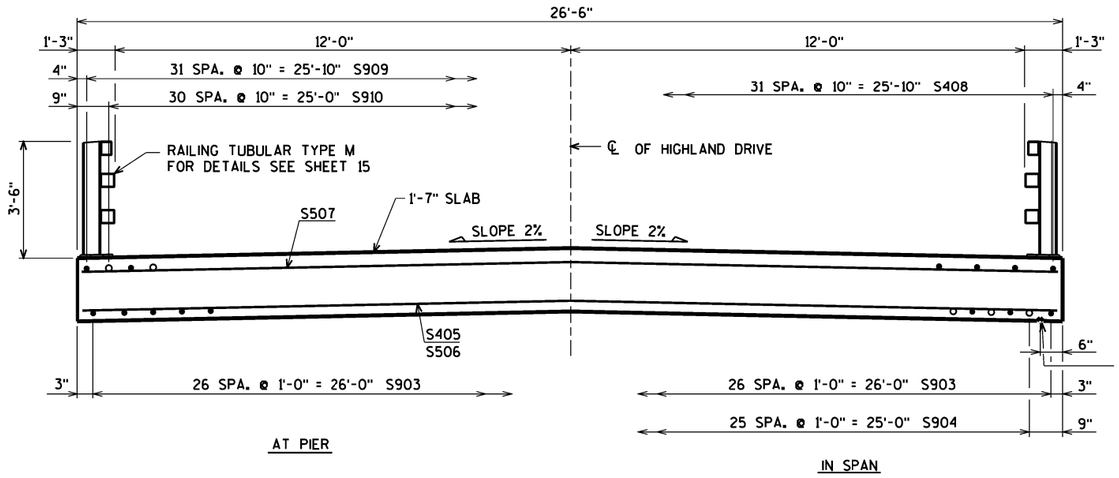


TYPICAL SECTION THRU BRIDGE

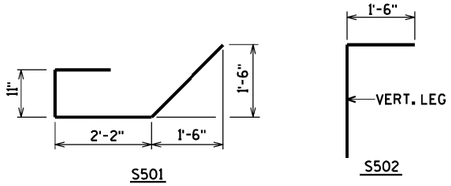
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

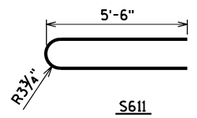
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

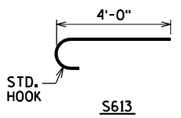
BILL OF BARS

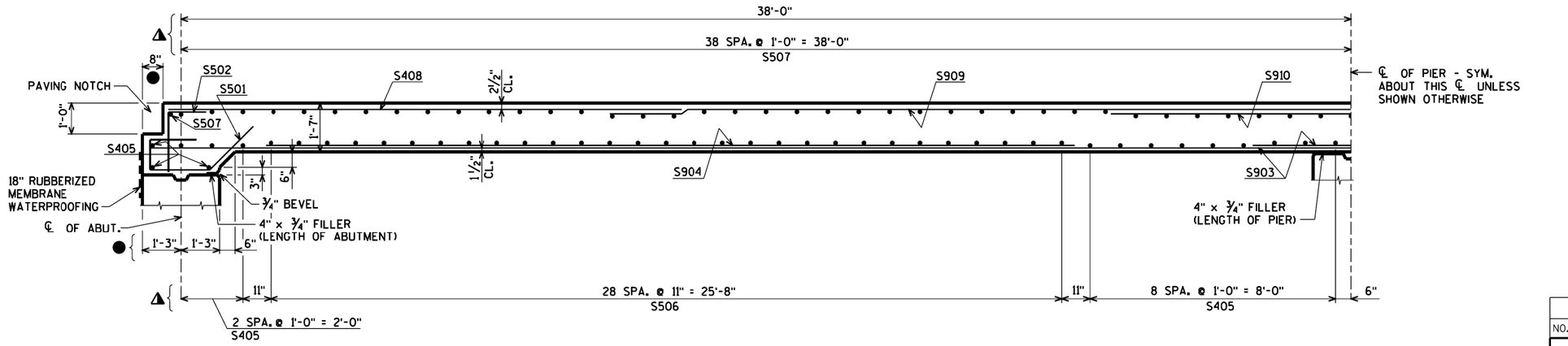
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	27,400# COATED LOCATION
S501	X	54	6-2	X		SLAB @ ABUT.
S502	X	54	3-4	X		SLAB @ ABUT.
S903	X	54	42-6			SLAB LONG. BOT.
S904	X	52	26-3			SLAB LONG. BOT.
S405	X	30	30-2			SLAB TRANS. BOT.
S506	X	58	30-2			SLAB TRANS. BOT.
S507	X	79	30-2			SLAB TRANS. TOP
S408	X	64	16-10			SLAB LONG. TOP
S909	X	32	48-2			SLAB LONG. TOP @ PIER
S910	X	31	16-2			SLAB LONG. TOP @ PIER
S611	X	52	12-0	X		SLAB @ RAIL POSTS
S612	X	88	6-0			SLAB @ INT. RAIL POSTS
S613	X	16	4-8	X		SLAB @ END RAIL POSTS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.









PART LONGITUDINAL SECTION

● DIMENSIONS MEASURED NORMAL TO ℄ OF SUBSTRUCTURE.

▲ DIMENSIONS MEASURED ALONG ℄ OF HIGHLAND DRIVE.

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STRUCTURE B-37-470

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SUPERSTRUCTURE

SHEET 12 OF 15
51

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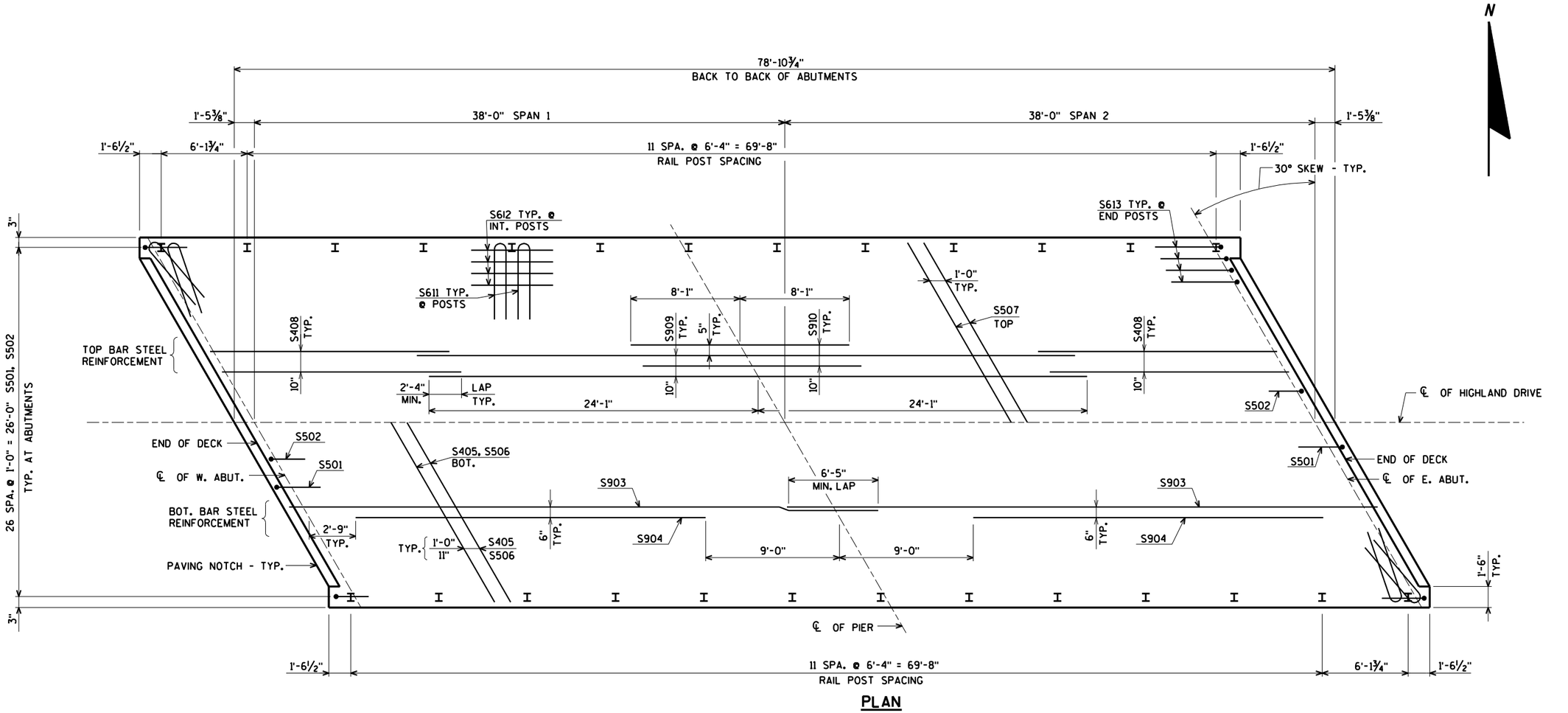

PLAN

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-470

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SUPERSTRUCTURE PLAN

SHEET 13 OF 15
52

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STATE PROJECT NUMBER

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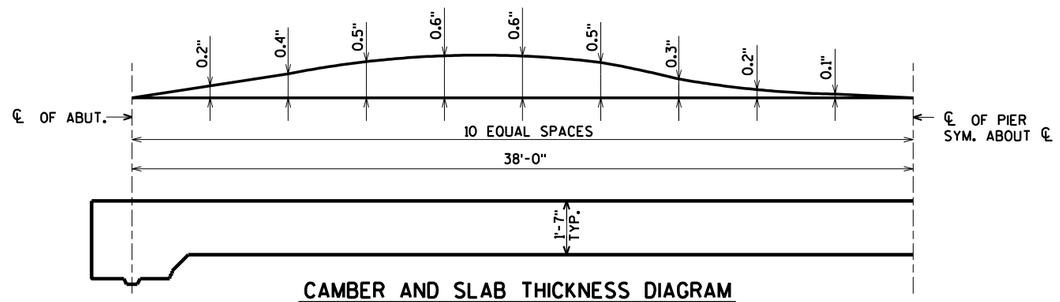
TOP OF DECK ELEVATIONS

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

LOCATION	℄ OF W. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ OF PIER	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ OF E. ABUT.
N. EDGE OF SLAB	1255.96	1255.92	1255.89	1255.87	1255.84	1255.81	1255.79	1255.77	1255.74	1255.73	1255.71	1255.69	1255.67	1255.66	1255.65	1255.64	1255.63	1255.62	1255.61	1255.61	1255.61
℄ OF STRUCTURE	1256.16	1256.13	1256.10	1256.08	1256.05	1256.03	1256.01	1255.99	1255.97	1255.95	1255.94	1255.93	1255.91	1255.90	1255.89	1255.89	1255.88	1255.87	1255.87	1255.87	1255.87
S. EDGE OF SLAB	1255.84	1255.81	1255.79	1255.77	1255.74	1255.72	1255.71	1255.69	1255.67	1255.66	1255.65	1255.64	1255.63	1255.62	1255.61	1255.61	1255.61	1255.60	1255.60	1255.61	1255.61



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTION.

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE, 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 FLASEWORK ELEVATION

SURVEY TOP OF SLAB ELEVATIONS

LOCATION	℄ OF W. ABUT.	5/10 PT. SPAN 1	℄ OF PIER	5/10 PT. SPAN 2	℄ OF E. ABUT.
NORTH EDGE OF SLAB					
℄ OF STRUCTURE					
SOUTH EDGE OF SLAB					

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE ℄ OF ABUTMENTS, THE ℄ OF PIER AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR ℄. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURE B-37-470

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SUPERSTRUCTURE DETAILS

SHEET 14 OF 15
53

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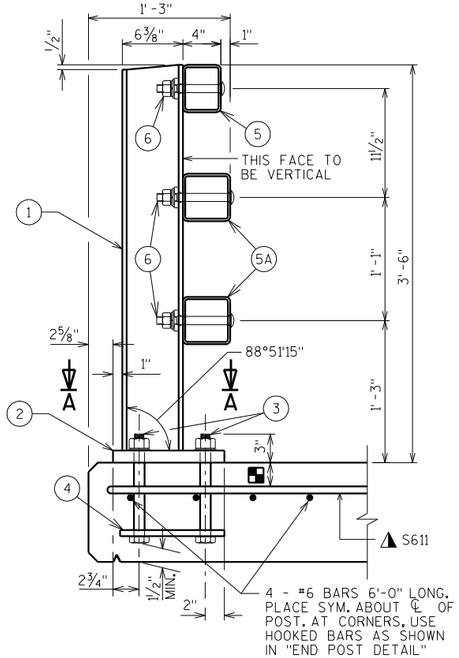
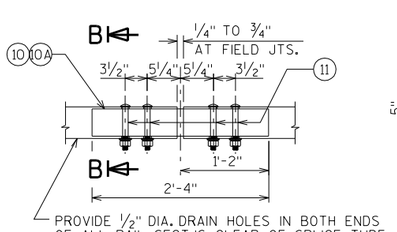
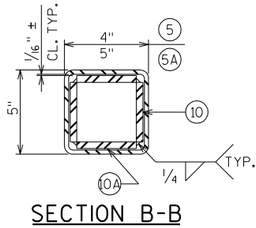


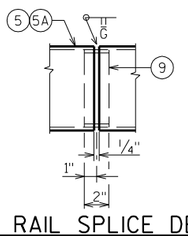
SECTION THRU RAILING ON DECK



FIELD ERECTION JOINT DETAIL



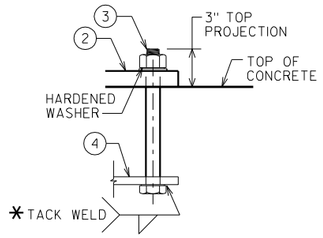
SECTION B-B



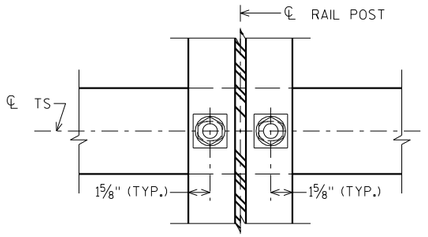
SHOP RAIL SPLICE DETAIL

LOCATION MUST BE SHOWN ON SHOP DRAWINGS

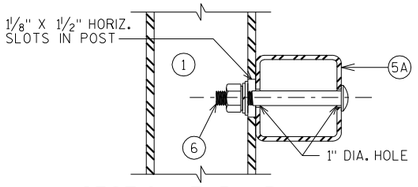
PLACE BELOW TOP MAT SLAB REINFORCEMENT



ANCHOR BOLTS



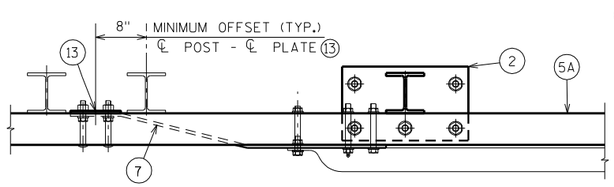
SECTION THRU POST WEB



SECTION THRU RAIL

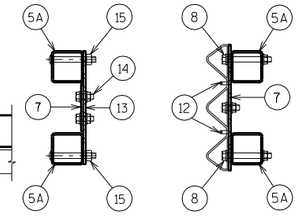
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT



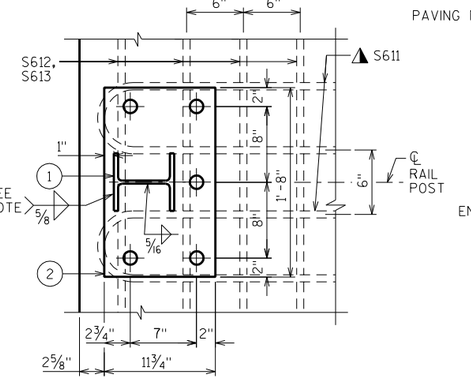
SECTION C-C SECTION D-D

LEGEND

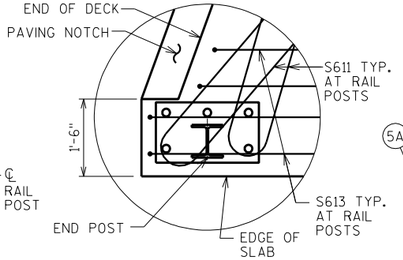
1. W6 x 25 WITH 1 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1 1/4" x 11 3/4" x 1'-8" WITH 1 7/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
3. ASTM A449 - 1 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. ~~USE 10 3/4" LONG AT ALL OTHER LOCATIONS.~~ (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
4. 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3
5. TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
5A. TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
6. 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 1 5/8" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
7. 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" X 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
8. 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
9. SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
10. 3/8" X 3 5/8" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
10A. 3/8" X 2 5/8" X 2'-4" PLATE USED IN NO. 5, 3/8" X 3 5/8" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
11. 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS ~~AND 15/16" X 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS~~ IN PLATE NO. 10A.
12. 7/8" DIA. X 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
13. 3/8" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
14. 7/8" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
15. 1" DIA. HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

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

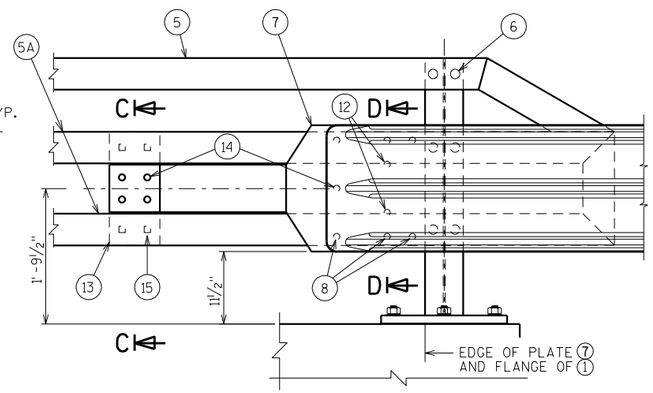


SECTION A-A



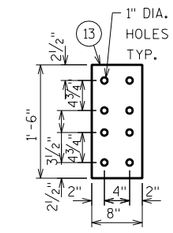
END POST DETAIL

REINFORCEMENT AT CORNERS



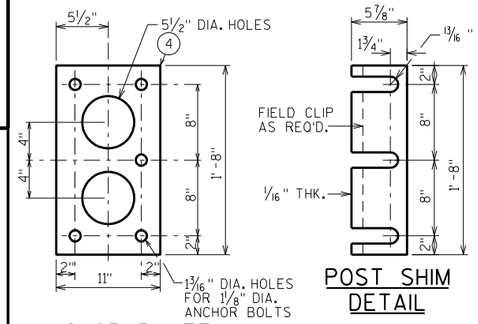
DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



ANCHOR PLATE

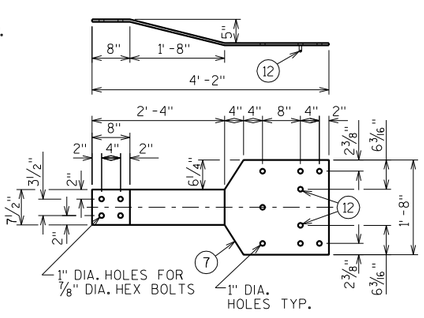
AT BEAM GUARD ATTACHMENT



ANCHOR PLATE

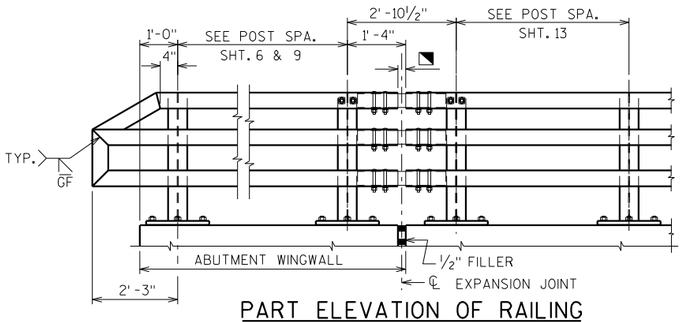
AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

TIE TO TOP MAT OF STEEL.

ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.

1/4" TO 3/4" OPENING AT A1 ABUTMENTS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-470

DRAWN BY CLP | PLANS CK'D. JCK

TUBULAR STEEL RAILING TYPE 'M'

SHEET 15 OF 15

54

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

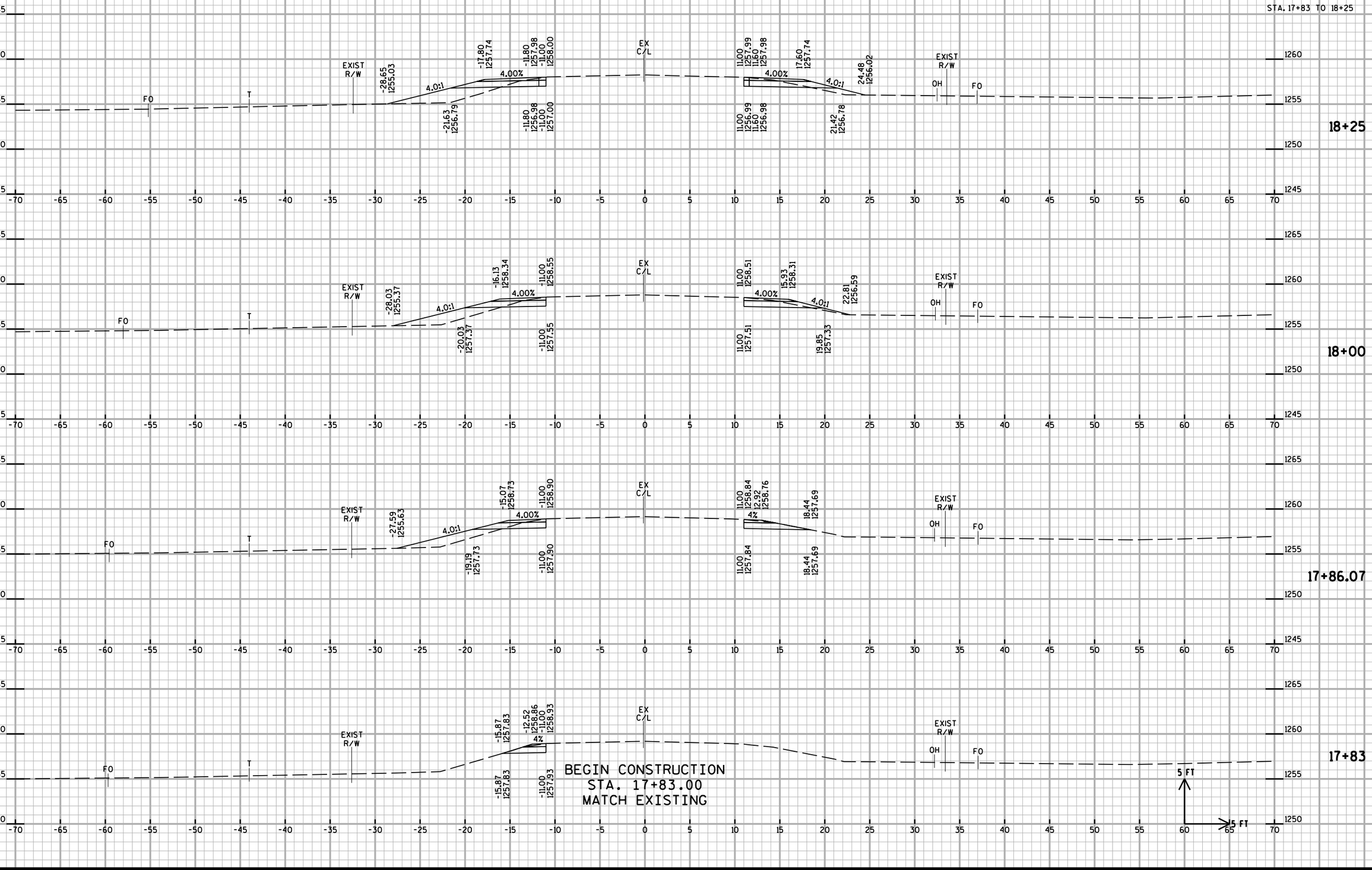
8

8

COMPUTER EARTHWORK

Station	Distance	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut	Expanded Fill	
						1.00	1.30	
				Note 1	Note 2	Note 1		Note 3
17+83	--	2.9	0.0					
17+86.07	3	7.2	7.3	1	0	1	1	0
18+00	14	7.3	9.1	4	4	4	6	-2
18+25	25	7.5	12.0	7	10	11	19	-8
18+50	25	7.6	14.6	7	12	18	35	-17
18+58	8	7.7	15.4	2	4	20	41	-20
18+61.07	3	7.7	15.2	1	2	21	43	-21
18+66.56	5	7.8	13.7	2	3	23	47	-24
18+66.56	0	29.8	13.7	--	--	--	--	--
18+75	8	27.8	13.1	9	4	32	52	-20
18+83	8	26.3	11.4	8	4	40	57	-17
18+86.07	3	26.2	11.2	3	1	43	58	-16
19+00	14	24.8	6.2	13	5	56	64	-9
19+08	8	24.3	5.7	7	2	63	67	-4
19+11.07	3	24.3	6.0	3	1	66	67	-2
19+25	14	23.2	9.7	12	4	78	73	5
19+47.77	23	35.2	2.8	25	5	103	80	23
19+50	2	35.1	0.0	3	0	106	80	26
19+63.34	13	30.5	0.0	16	0	122	80	42
19+66.56	3	30.5	0.0	4	0	126	80	45
BRIDGE	--			--	--	--	--	--
20+45.44	--	43.4	0.0	--	--	--	--	--
20+48.66	3	43.4	0.0	5	0	131	80	50
20+50	1	48.7	2.7	2	0	133	80	52
20+64.23	14	48.9	3.5	26	2	159	82	76
20+75	11	35.6	9.3	17	3	176	85	90
21+00	25	36.1	9.2	33	9	209	96	112
21+00.93	1	36.1	9.2	1	0	210	97	112
21+04	3	36.1	9.7	4	1	214	98	115
21+25	21	31.8	44.9	26	21	241	126	114
21+25.93	1	31.6	47.2	1	2	242	128	113
21+29	3	31.4	49.2	4	5	245	135	109
21+45.44	16	28.1	64.4	18	35	264	180	83
21+45.44	--	6.0	64.4	--	--	--	--	--
21+50	0	5.9	67.6	0	0	264	180	83
21+50.93	5	5.9	68.2	1	11	265	195	69
21+54	1	5.9	68.6	0	2	265	198	66
21+75	3	5.5	60.6	1	7	265	208	57
22+00	21	5.2	48.4	4	42	270	263	6
22+25	25	5.2	27.1	5	35	274	308	-34
22+25.68	25	5.2	16.4	5	20	279	334	-56
22+29	1	3.0	0.0	0	0	279	334	-56
				280	258			

STA. 17+83 TO 18+25



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9

PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

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WISDOT/CADDS SHEET 21

STA. 18+50 TO 18+61.07

9

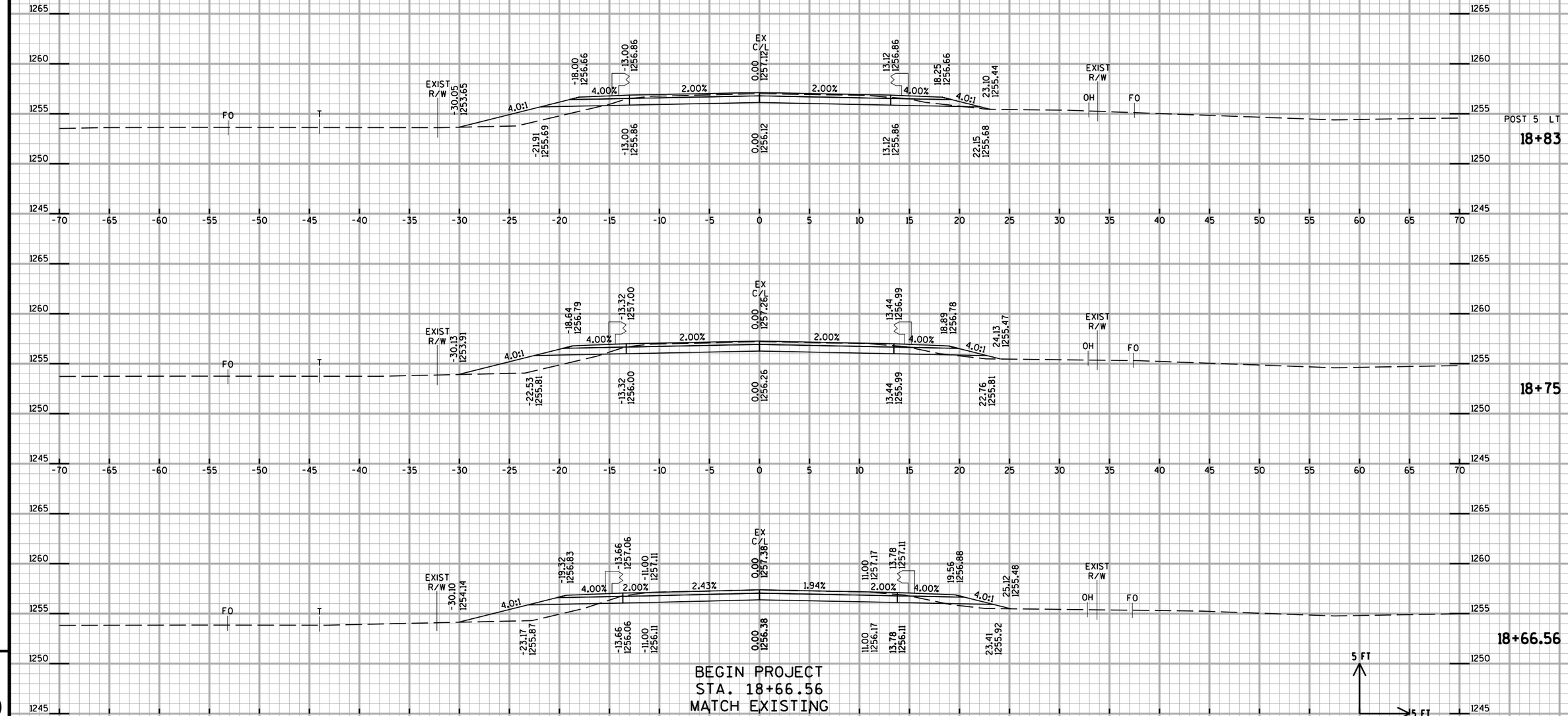
9

PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1270.00 - Marathon Co - Tn Stettin - Highland Drive\Structures\CADD\Roadway\421270_xs rev.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 18+66.56 TO 18+83



BEGIN PROJECT
STA. 18+66.56
MATCH EXISTING

9

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PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

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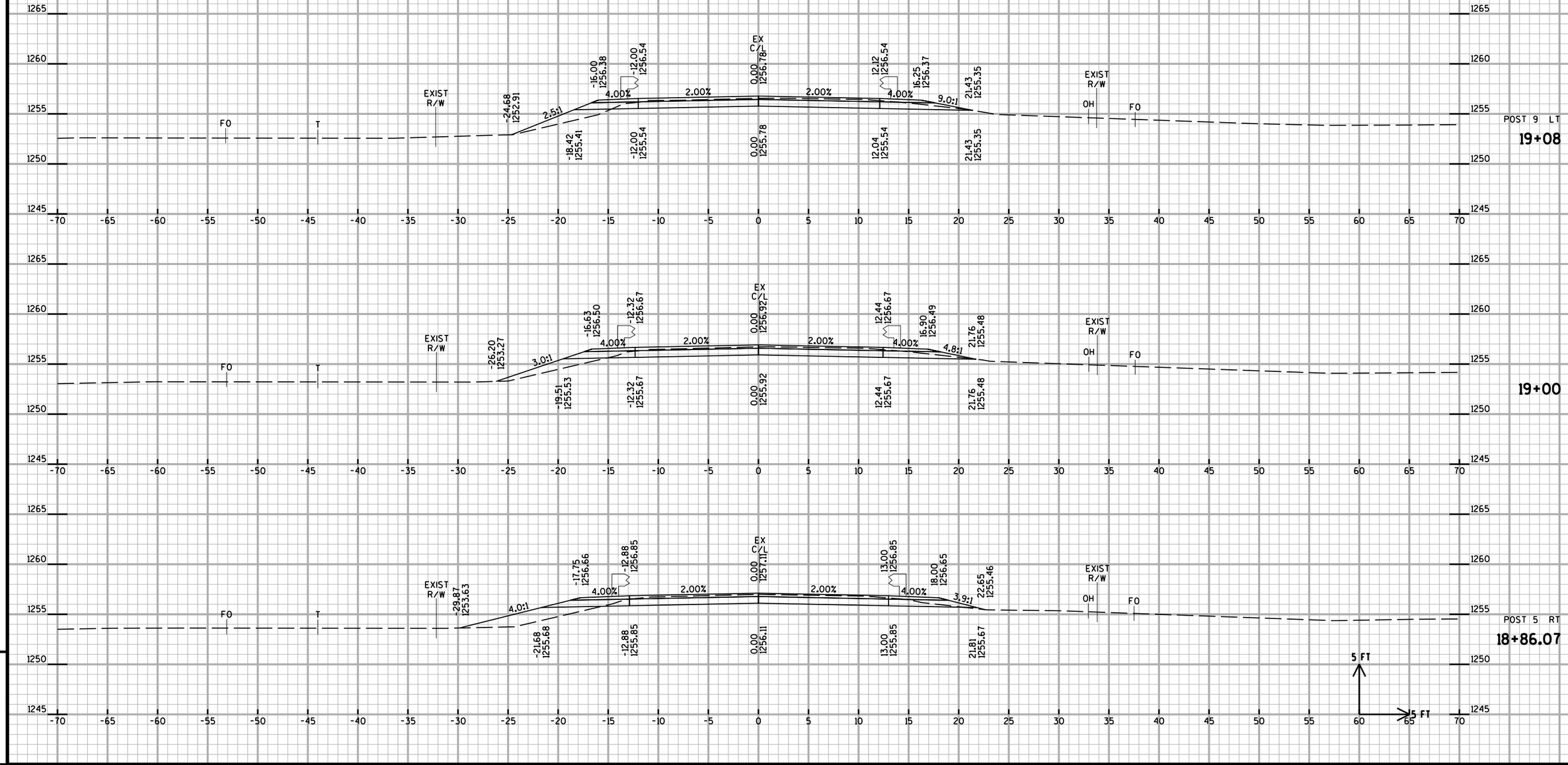
WISDOT/CADDS SHEET 21

STA. 18+86.07 19+08



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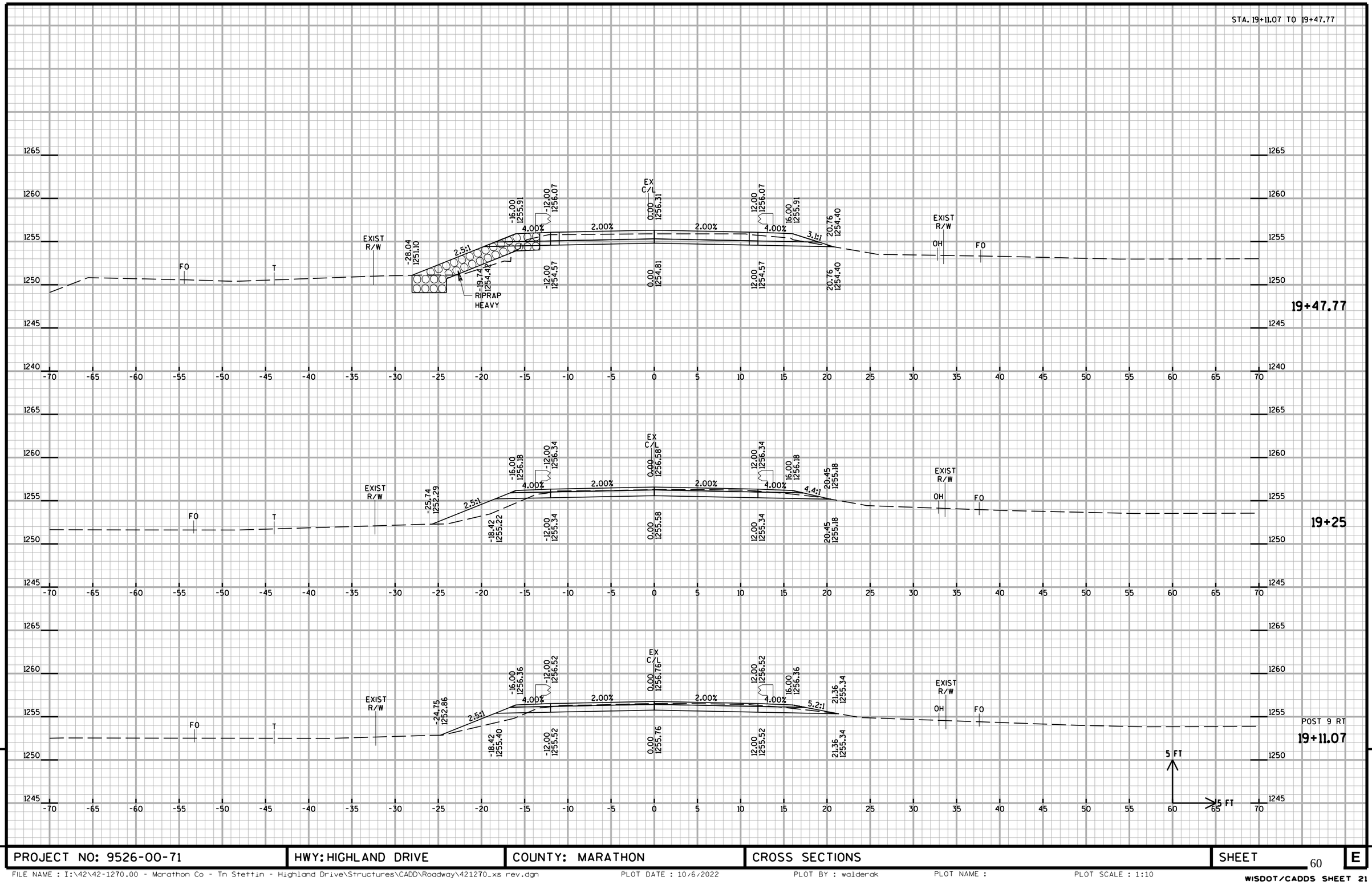
WISDOT/CADDS SHEET 21

STA. 19+11.07 TO 19+47.77



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PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

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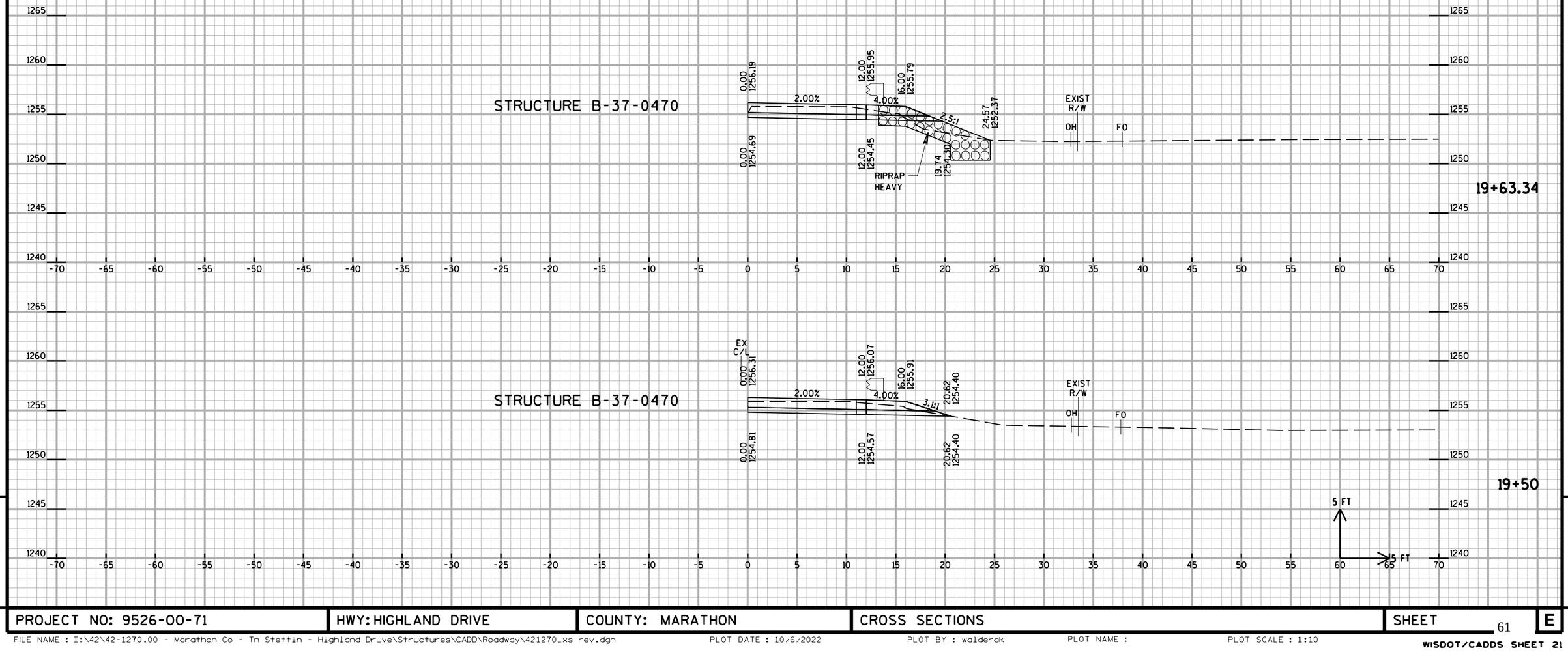
WISDOT/CADDS SHEET 21

STA. 19+50 TO 19+63.34

STRUCTURE B-37-0470



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PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

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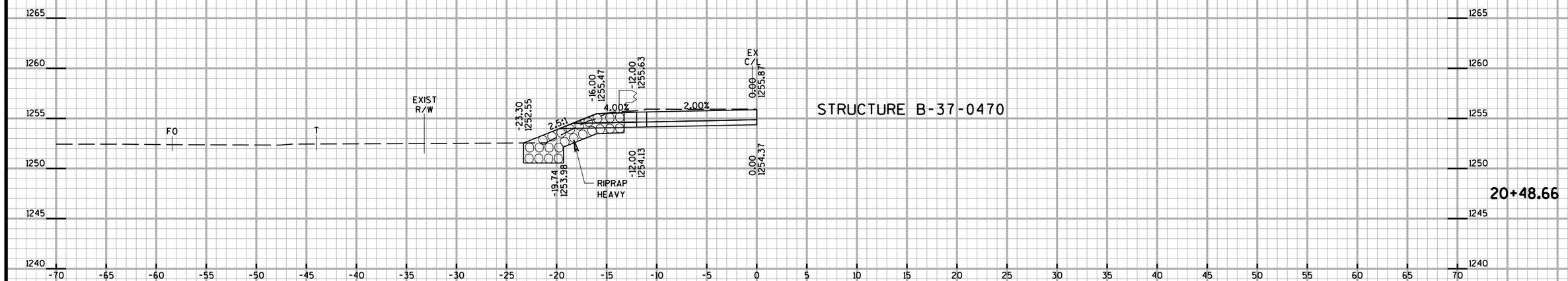
WISDOT/CADDS SHEET 21

STA. 20+48.66 TO 20+48.66



STRUCTURE B-37-0470

5 FT
5 FT

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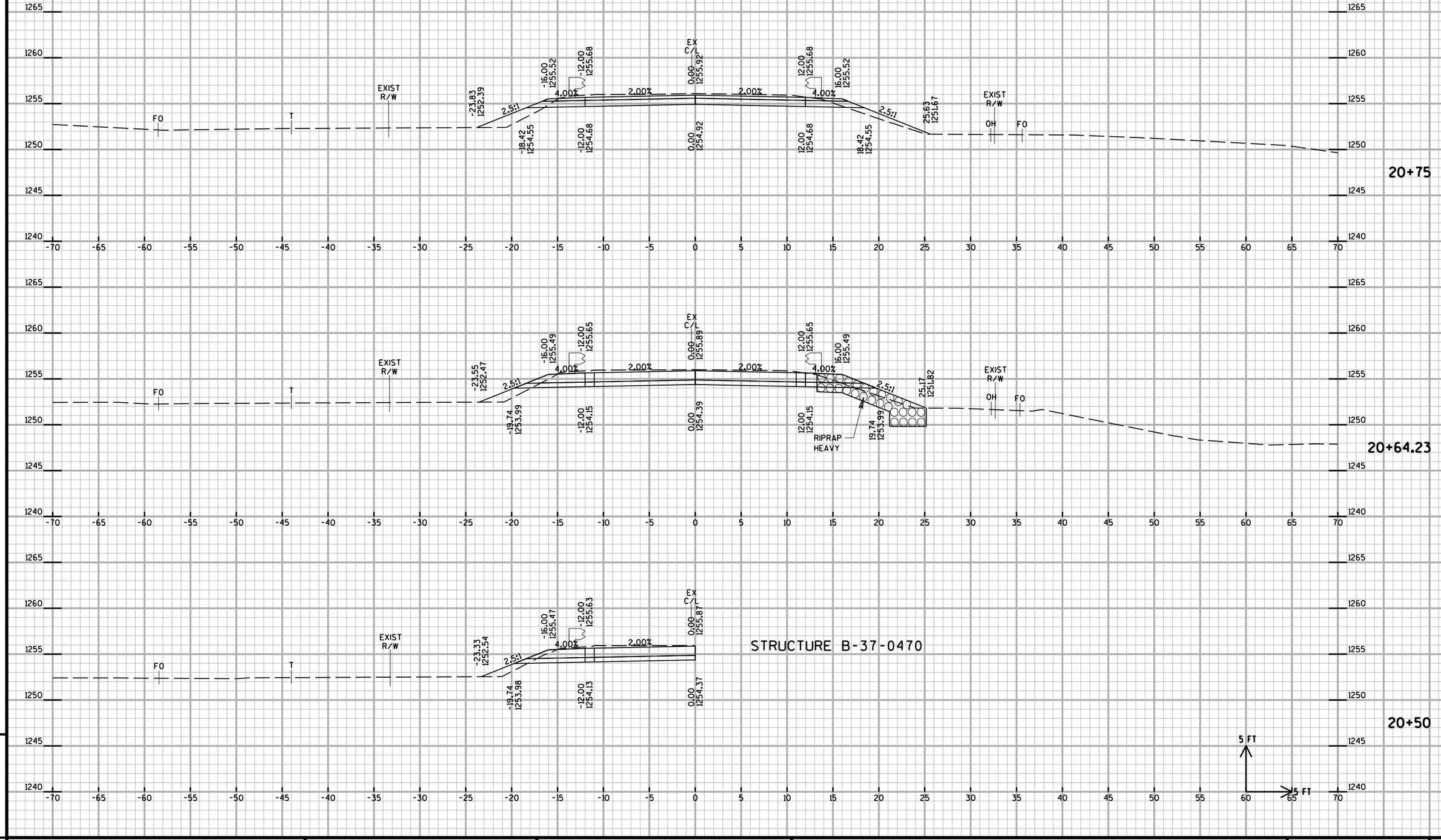
PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1270.00 - Marathon Co - Tn Stettin - Highland Drive\Structures\CADD\Roadway\421270_xs rev.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 20+50 TO 20+75



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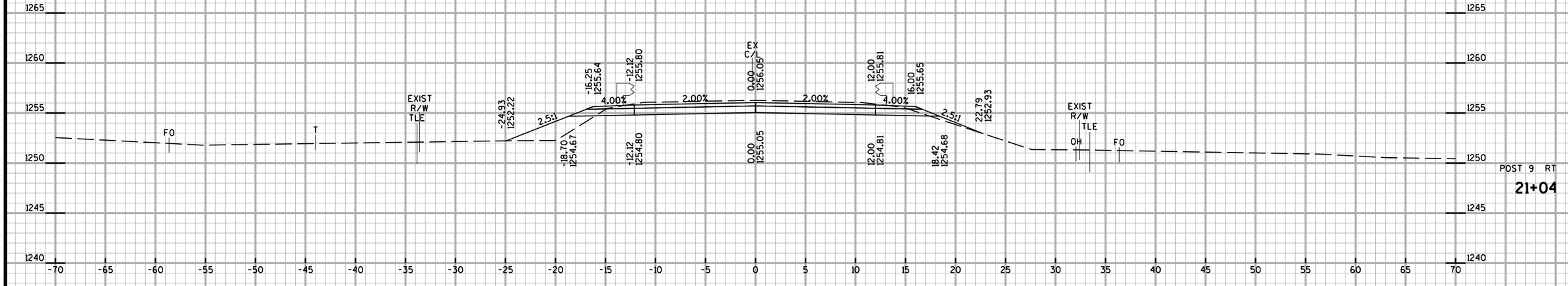
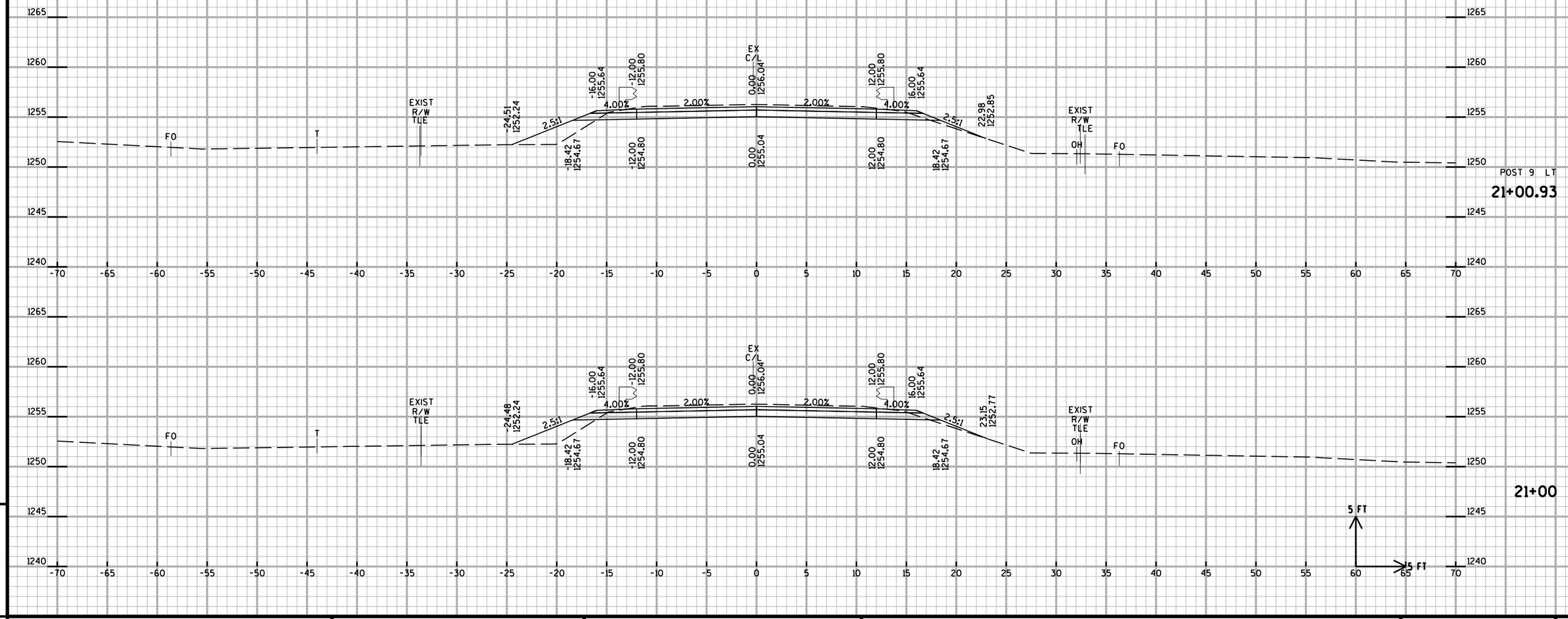
WISDOT/CADDS SHEET 21

STA. 21+00 TO 21+04



POST 9 RT

21+04



POST 9 LT

21+00.93

21+00

9

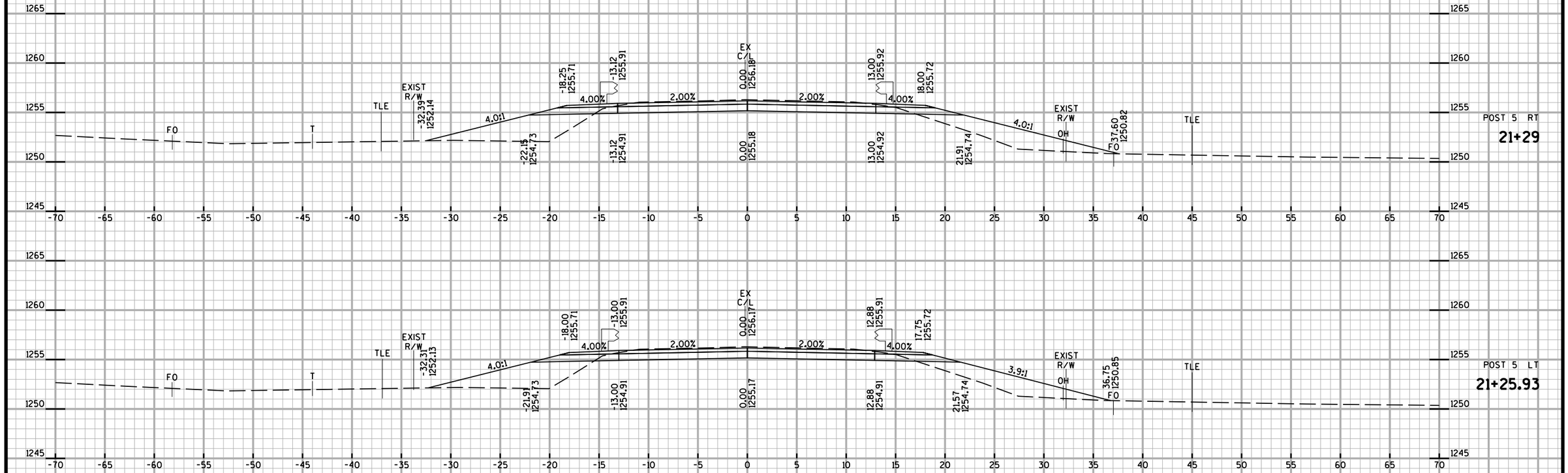
9

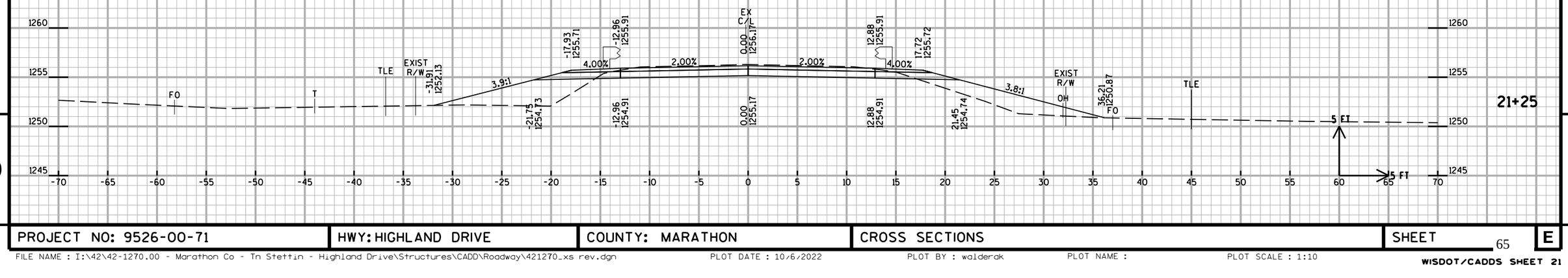
PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET E

FILE NAME : I:\42\42-1270.00 - Marathon Co - Tn Stettin - Highland Drive\Structures\CADD\Roadway\421270_xs rev.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 21+25 TO 21+29





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PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

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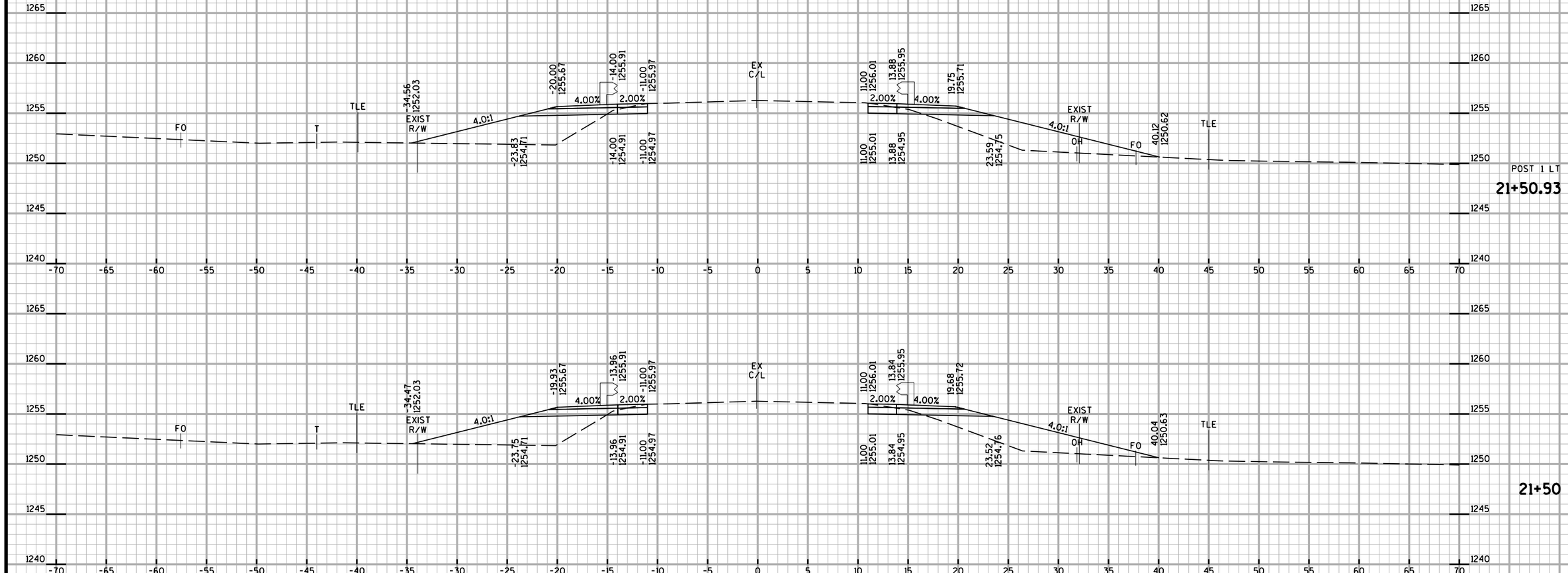
WISDOT/CADDS SHEET 21

STA. 21+45.44 TO 21+50.93

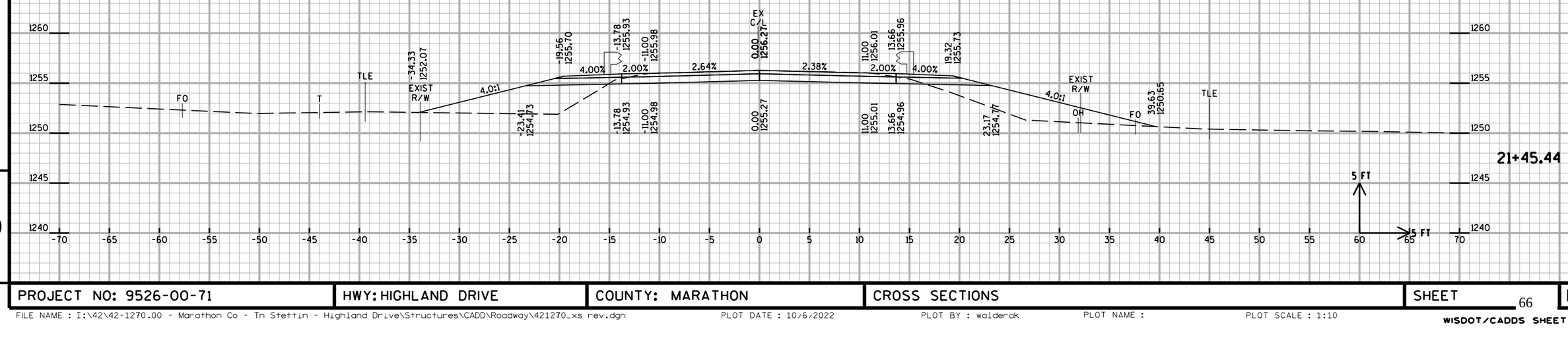


POST 1 LT

21+50.93

21+50

END PROJECT
STA. 21+45.44
(MATCH EXISTING)



21+45.44

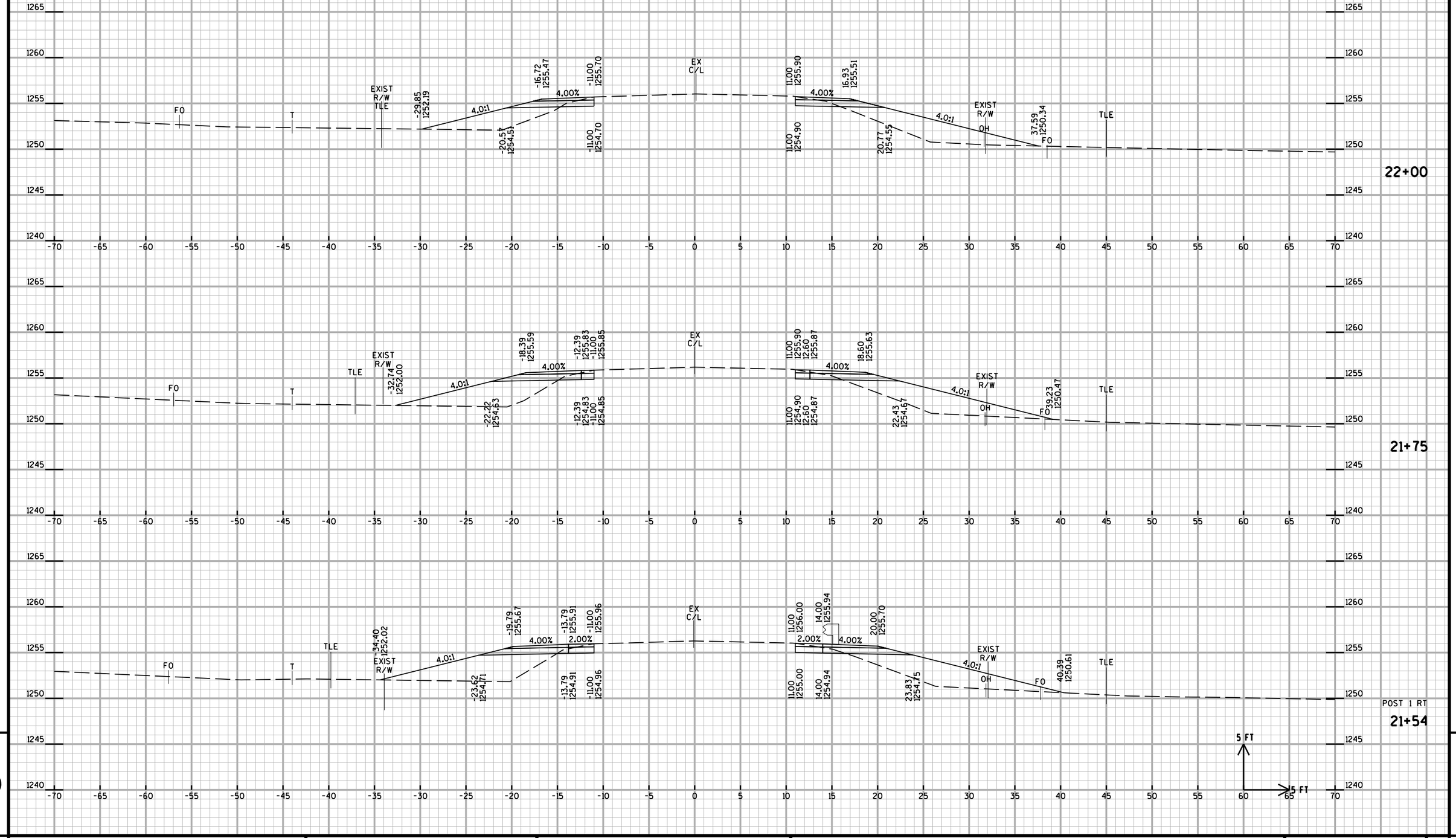
9 9

PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET E

FILE NAME : I:\42\42-1270.00 - Marathon Co - Tn Stettin - Highland Drive\Structures\CADD\Roadway\421270_xs rev.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 21+54 TO 22+00



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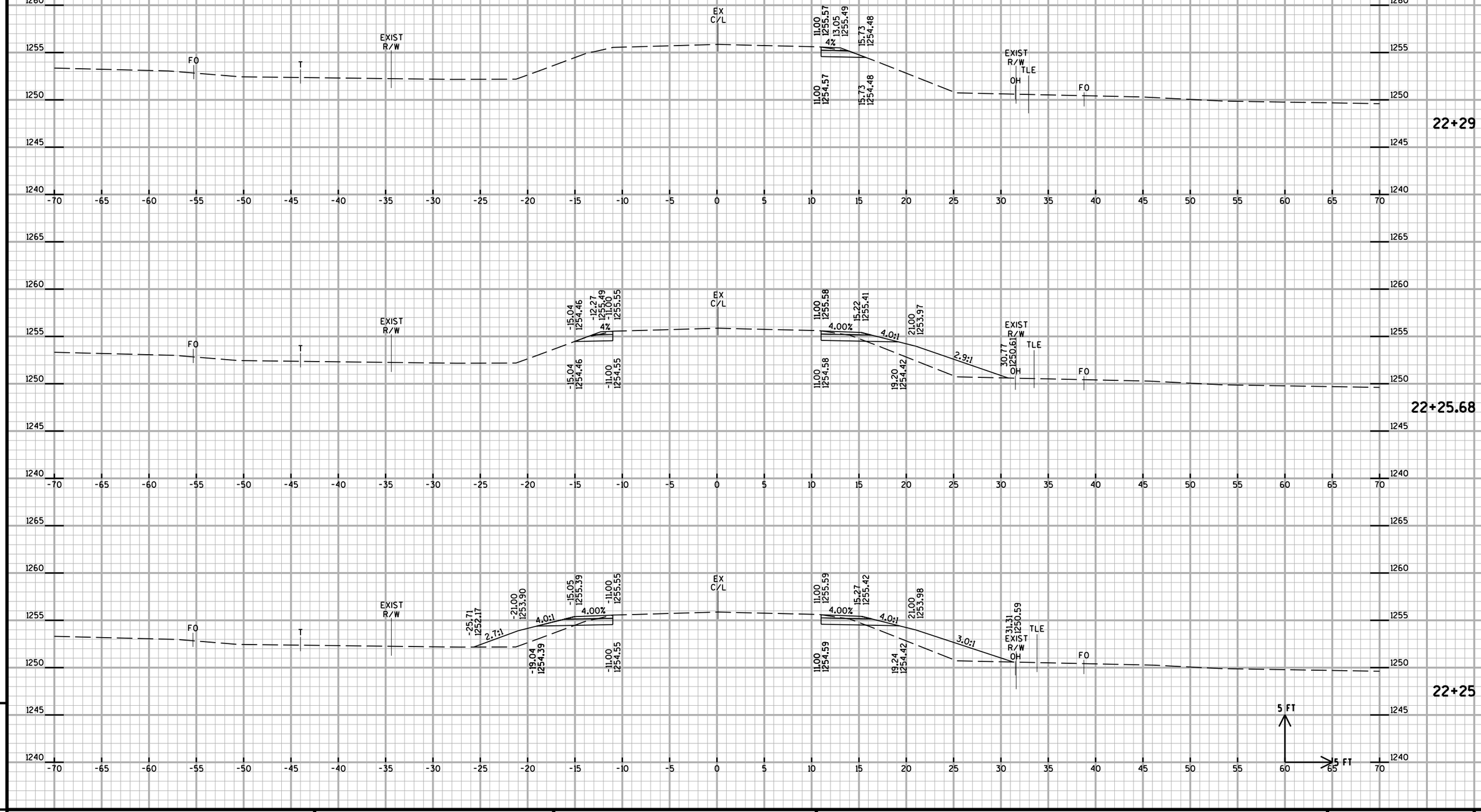
WISDOT/CADDS SHEET 21

STA. 22+25 TO 22+29

END CONSTRUCTION
STA. 22+29.00
MATCH EXISTING



PROJECT NO: 9526-00-71	HWY: HIGHLAND DRIVE	COUNTY: MARATHON	CROSS SECTIONS	SHEET	E

FILE NAME : I:\42\42-1270.00 - Marathon Co - Tn Stettin - Highland Drive\Structures\CADD\Roadway\421270_xs rev.dgn PLOT DATE : 10/6/2022 PLOT BY : walderak PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov