RHI

PROJECT ID: 9479-00-73

COUNTY: MARATHON

FEBRUARY 2022
ORDER OF SHEETS

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

TOTAL SHEETS = 70

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

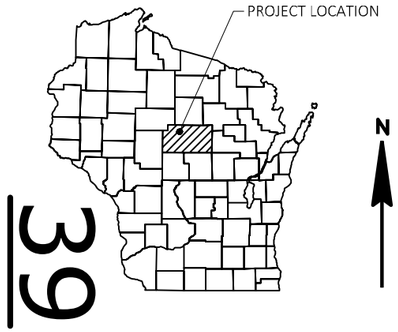
STH 107 - CTH O

LITTLE RIB RIVER BRIDGE B-37-0459

CTH A
MARATHON COUNTY

STATE PROJECT NUMBER
9479-00-73

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9479-00-73	WISC 2022185	1



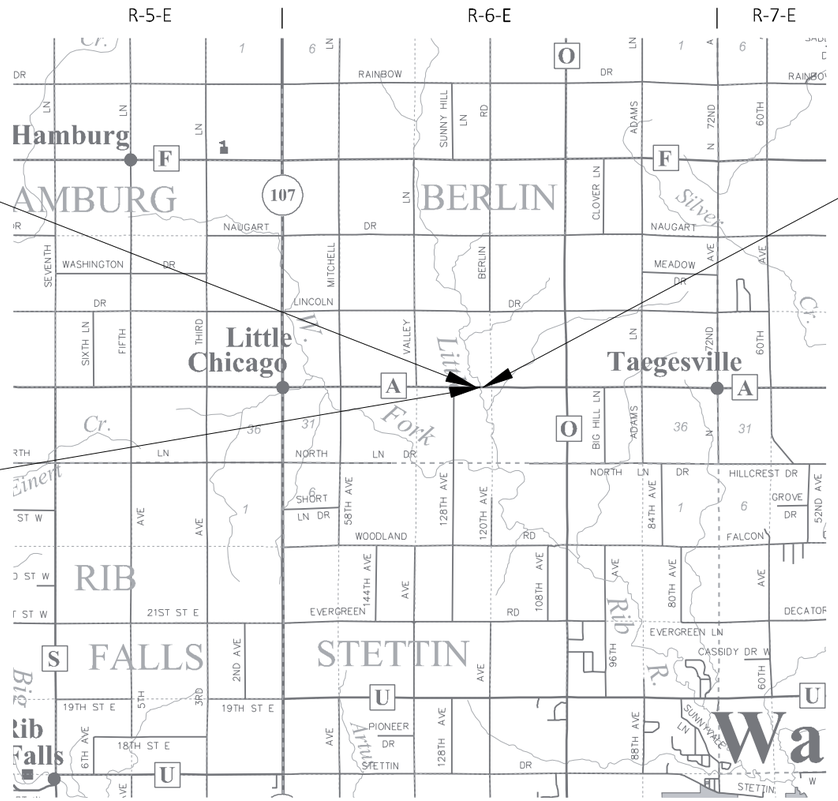
DESIGN DESIGNATION

A.A.D.T.	=	1,130 (2022)
A.A.D.T.	=	1,380 (2042)
D.H.V.	=	195
D.D.	=	60/40
T.	=	10%
DESIGN SPEED	=	25 MPH
ESALS	=	190,000

BEGIN PROJECT 9479-00-73
STA 8+95.50
Y = 233,900.26
X = 239,309.69

END PROJECT 9479-00-73
STA 11+00
Y = 233,896.22
X = 239,514.15

BRIDGE B-37-0459



LAYOUT
SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 0.039 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), MARATHON COUNTY, NAD83 (YEAR), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (YEAR). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

CONVENTIONAL SYMBOLS

PLAN		PROFILE		UTILITIES	
CORPORATE LIMITS		GRADE LINE		ELECTRIC	E
PROPERTY LINE		ORIGINAL GROUND		FIBER OPTIC	FO
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK	GAS	G
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL	SANITARY SEWER	SAN
EXISTING RIGHT OF WAY		GRADE ELEVATION	95.36	STORM SEWER	SS
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)		TELEPHONE	T
SLOPE INTERCEPT				WATER	W
REFERENCE LINE	300'EB'			UTILITY PEDESTAL	
EXISTING CULVERT				POWER POLE	
PROPOSED CULVERT (Box or Pipe)				TELEPHONE POLE	
COMBUSTIBLE FLUIDS	CAUTION				
MARSH AREA					
WOODED OR SHRUB AREA					

ACCEPTED FOR
COUNTY of MARATHON

10/21-2021 (Date) James M. Griesbach HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY

MSA
146 North Central Ave, Marshfield WI 54449
(715) 384-2133 www.msa-ps.com

WISCONSIN SEAN M. SPROMBERG E-37771-008 SCHOFIELD, WI PROFESSIONAL ENGINEER

DATE: 10/20/2021 (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	MSA PROFESSIONAL SERVICES, INC.
Designer	MSA PROFESSIONAL SERVICES, INC.
Project Manager	MICHAEL GRAGE, PE
Regional Examiner	N/A
Regional Supervisor	DAN ERVA, PE

APPROVED FOR THE DEPARTMENT
DATE: 10/26/2021 (Signature)

E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\010101-TI.DWG PLOT DATE : 10/14/2021 11:03 AM PLOT BY : COURTNEY ROOYAKKERS PLOT NAME :

STANDARD ABBREVIATIONS

AC	ACRE
AGG	AGGREGATE
<	ANGLE
ASPH	ASPHALTIC
AC	ASPHALT CEMENT
ADT	AVERAGE DAILY TRAFFIC
B & B	BALLED AND BURLAPPED
BM	BENCH MARK
CB	CATCH BASIN
` OR C/L	CENTER LINE
C-C	CENTER TO CENTER
CONC	CONCRETE
CO	COUNTY
CTH	COUNTY TRUNK HIGHWAY
CY	CUBIC YARD
CULV	CULVERT
CP	CULVERT PIPE
CPRC	CULVERT PIPE REINFORCED CONCRETE
C & G	CURB AND GUTTER
D	DEGREE OF CURVE
DHV	DESIGN HOUR VOLUME
DIA OR |	DIAMETER
DIST	DISTRICT
DWY	DRIVEWAY
E	EAST
X	EAST GRID COORDINATE
EB	EASTBOUND
ELEC	ELECTRIC
EL OR ELEV	ELEVATION
EMB	EMBANKMENT
EW	ENDWALL
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC	EXCAVATION
EBS	EXCAVATION BELOW SUBGRADE
EXIST	EXISTING
EXP	EXPANSION
F-F	FACE TO FACE
FERT	FERTILIZER
FE	FIELD ENTRANCE
F/L	FLOW LINE
FT	FOOT
GN	GRID NORTH
HR	HANDICAP RAMP
HT	HEIGHT
CWT	HUNDREDWEIGHT
HYD	HYDRANT
IN DIA	INCH DIAMETER
INL	INLET
ID	INSIDE DIAMETER
I	INTERSECTION ANGLE
IE	INVERT ELEVATION
IP	IRON PIPE OR PIN
JCT	JUNCTION
L	LENGTH OF CURVE
LF	LINEAR FOOT
LC	LONG CHORD OF CURVE
LCB	LONG CHORD BEARING
LS	LUMP SUM
MH	MANHOLE
N	NORTH
Y	NORTH GRID COORDINATE
OE	OUTLET ELEVATION
OL	OUT LOT
OD	OUTSIDE DIAMETER
OH	OVERHEAD LINES
PAVT	PAVEMENT
PLE	PERMANENT LIMITED EASEMENT
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PCC	PORTLAND CEMENT CONCRETE
LB	POUND
PE	PRIVATE ENTRANCE
R OR RAD	RADIUS
RR	RAILROAD
R	RANGE
~ OR R/L	REFERENCE LINE
REQD	REQUIRED
RT	RIGHT
R/W	RIGHT-OF-WAY
RD	ROAD
SALV	SALVAGED
SAN	SANITARY SEWER
SECT	SECTION
SHLDR	SHOULDER
SW	SIDEWALK
S	SOUTH
SB	SOUTHBOUND
SPECS	SPECIFICATIONS
SQ	SQUARE
SF OR SQ FT	SQUARE FEET
SY	SQUARE YARD
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
STD	STANDARD
SDD	STANDARD DETAIL DRAWINGS
STH	STATE TRUNK HIGHWAYS
STA	STATION
SS	STORM SEWER
T	TANGENT
TEL	TELEPHONE
TEMP	TEMPORARY
TLE	TEMPORARY LIMITED EASEMENT
T	TON
TC	TOP OF CURB
TN	TOWN
TRANS	TRANSITION
T	TRUCKS (percent of)
TYP	TYPICAL
UNCL	UNCLASSIFIED
USH	UNITED STATES HIGHWAY
VAR	VARIABLE
VERT	VERTICAL
VC	VERTICAL CURVE
VOL	VOLUME
WM	WATER MAIN
WV	WATER VALVE
W	WEST
WB	WESTBOUND
YD	YARD

SECTION 2 ORDER

GENERAL NOTES
TYPICAL SECTIONS
CONSTRUCTION DETAILS
EROSION CONTROL

UTILITIES

OVERHEAD COMMUNICATIONS:
FRONTIER COMMUNICATIONS OF WISCONSIN
315 OAK STREET
OAKFIELD, WI 53065
ATTN: RUSS RYAN
PHONE: (920) 583-3275
RUSSEL.W.RYAN@FTR.COM

OVERHEAD ELECTRIC:
WISCONSIN PUBLIC SERVICE CORP.
P.O. BOX 1166
WAUSAU, WI 54402
ATTN: CLAYTON VIRKS
PHONE: (715) 848-7317
CLAYTON.VIRKS@WISCONSINPUBLICSERVICE.COM

DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC.
146 NORTH CENTRAL AVE
MARSHFIELD, WI 54449
ATTN: SEAN SPROMBERG, PE
PHONE: (715) 304-0451
SSPROMBERG@MSA-PS.COM

COUNTY CONTACT

MARATHON COUNTY HIGHWAY DEPARTMENT
1430 WEST STREET
WAUSA, WI 54401
ATTN: JAMES GRIESBACH, COMMISSIONER
PHONE: (715) 261-1800
JAMES.GRIESBACH@CO.MARATHON.WI.US

DNR CONTACT

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
473 GRIFFITH DRIVE
WISCONSIN RAPIDS, WI 54494
ATTN: CASEY JONES
PHONE: (715) 213-6571
CASEY.JONES@WISCONSIN.GOV

WISDOT CONTACT

WISCONSIN DEPARTMENT OF TRANSPORTATION
510 N. HANSON LAKE ROAD
RHINELANDER, WI 54501
ATTN: MICHAEL GRAGE
PHONE: (715) 365-5705
MICHAEL.GRAGE@DOT.WI.GOV

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 1.42 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.36 ACRES

* - NOT A MEMBER OF DIGGERS HOTLINE

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

GENERAL NOTES

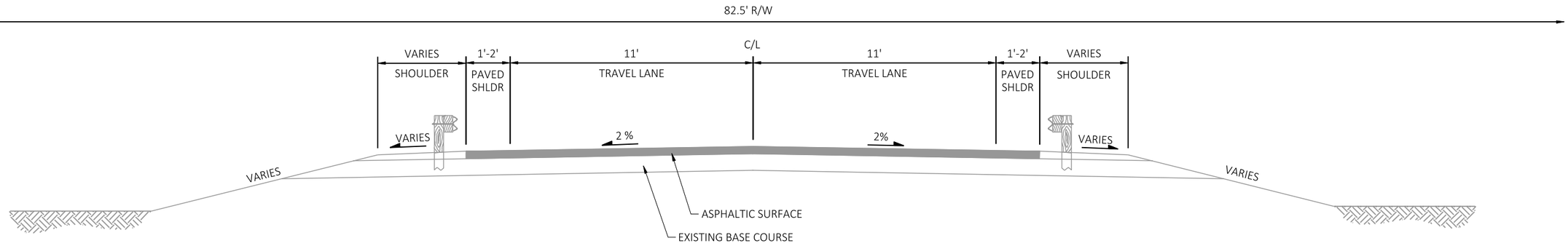
NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

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.

THE 4" ASPHALTIC SURFACE SHALL CONSIST OF A 2" UPPER LAYER WITH NO. 4 (12.5 MM) NOMINAL SIZE AGGREGATE AND A 2" LOWER LAYER WITH NO. 4 (12.5 MM) NOMINAL SIZE AGGREGATE.

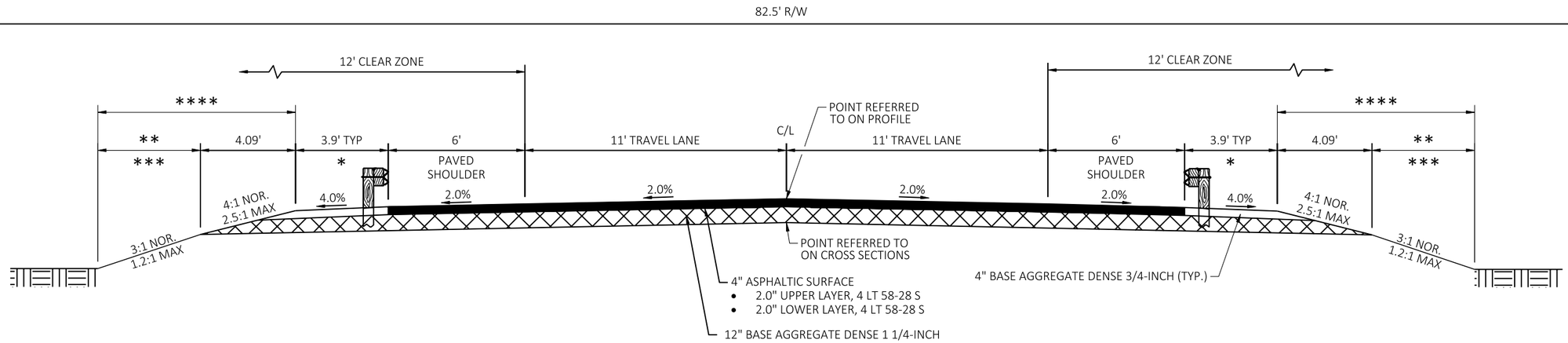
RIGHT OF WAY LOCATIONS ARE APPROXIMATE.

2



EXISTING TYPICAL SECTION

STA 8+25 - STA 11+75



PROPOSED TYPICAL SECTION

STA 8+95.50 - STA 11+00

NOTES:

* 5' WIDE SHOULDERS BEHIND POST 1 OF THE GUARDRAIL EAT

** RIPRAP HEAVY OVER GEOTEXTILE TYPE HR IN AREAS STEEPER THAN 2:1 SLOPES (SEE CROSS SECTIONS FOR LIMITS)

*** SALVAGED TOPSOIL AND EROSION MAT URBAN CLASS I, TYPE B LIMITS

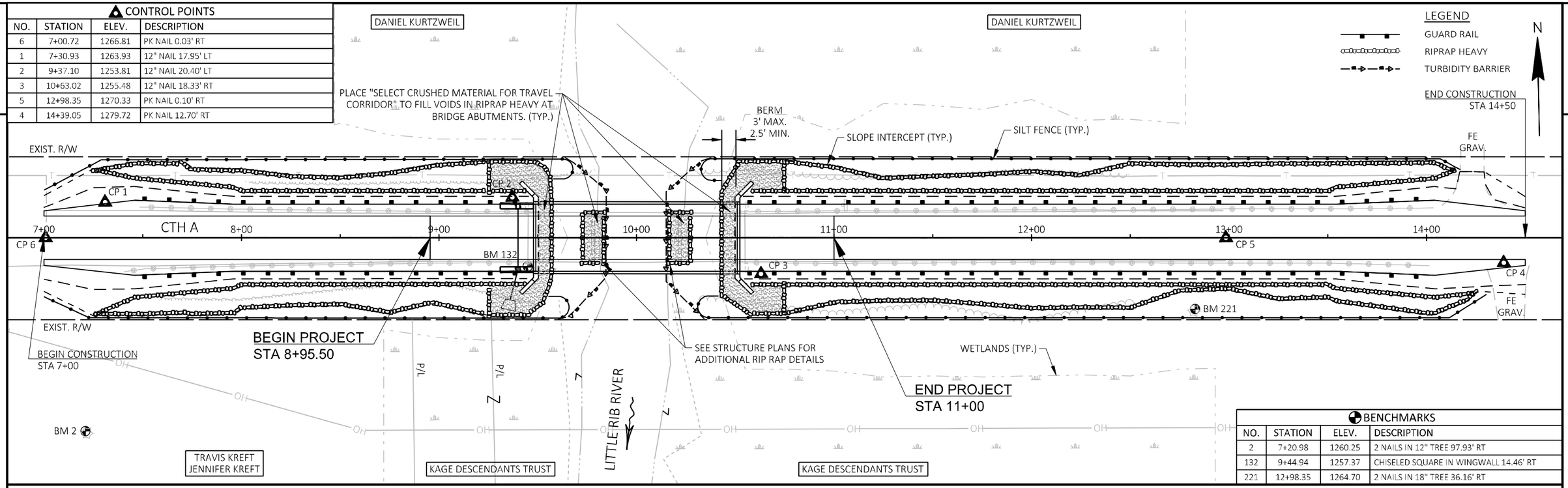
**** SEEDING MIXTURE #20, SEEDING TEMPORARY, & FERTILIZER TYPE B LIMITS

PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	TYPICAL SECTION	SHEET 3	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\020301-TS.DWG
LAYOUT NAME - 020301-ts
PLOT DATE : 12/9/2021 9:14 AM
PLOT BY : COURTNEY ROOYAKKERS
PLOT NAME :
PLOT SCALE : 1 IN:5 FT
WISDOT/CADDS SHEET 42

2

CONTROL POINTS			
NO.	STATION	ELEV.	DESCRIPTION
6	7+00.72	1266.81	PK NAIL 0.03' RT
1	7+30.93	1263.93	12" NAIL 17.95' LT
2	9+37.10	1253.81	12" NAIL 20.40' LT
3	10+63.02	1255.48	12" NAIL 18.33' RT
5	12+98.35	1270.33	PK NAIL 0.10' RT
4	14+39.05	1279.72	PK NAIL 12.70' RT



BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
2	7+20.98	1260.25	2 NAILS IN 12" TREE 97.93' RT
132	9+44.94	1257.37	CHISELED SQUARE IN WINGWALL 14.46' RT
221	12+98.35	1264.70	2 NAILS IN 18" TREE 36.16' RT

2

PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	EROSION CONTROL	SHEET 4	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022001-ec
PLOT DATE : 10/14/2021 11:46 AM PLOT BY : COURTNEY ROOYAKKERS PLOT NAME : PLOT SCALE : ##########
WISDOT/CADDS SHEET 44

9479-00-73

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	7.000	7.000
0004	201.0205	Grubbing	STA	7.000	7.000
0006	203.0211.S	Abatement of Asbestos Containing Material (structure) 01. B-37-27	EACH	1.000	1.000
0008	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-37-27	EACH	1.000	1.000
0010	204.0165	Removing Guardrail	LF	1,155.000	1,155.000
0012	205.0100	Excavation Common	CY	385.000	385.000
0014	206.1000	Excavation for Structures Bridges (structure) 01. B-37-459	LS	1.000	1.000
0016	208.0100	Borrow	CY	985.000	985.000
0018	210.1500	Backfill Structure Type A	TON	616.000	616.000
0020	213.0100	Finishing Roadway (project) 01. 9479-00-73	EACH	1.000	1.000
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	180.000	180.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,345.000	1,345.000
0026	455.0605	Tack Coat	GAL	79.000	79.000
0028	465.0105	Asphaltic Surface	TON	260.000	260.000
0030	502.0100	Concrete Masonry Bridges	CY	258.000	258.000
0032	502.3200	Protective Surface Treatment	SY	441.000	441.000
0034	502.3210	Pigmented Surface Sealer	SY	104.000	104.000
0036	503.0155	Prestressed Girder Type I 54W-Inch	LF	412.000	412.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	5,210.000	5,210.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	32,730.000	32,730.000
0042	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	8.000	8.000
0044	506.4000	Steel Diaphragms (structure) 01. B-37-459	EACH	6.000	6.000
0046	516.0500	Rubberized Membrane Waterproofing	SY	24.000	24.000
0048	520.1012	Apron Endwalls for Culvert Pipe 12-Inch	EACH	1.000	1.000
0050	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	855.000	855.000
0052	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	34.000	34.000
0054	606.0300	Riprap Heavy	CY	1,210.000	1,210.000
0056	608.3612	Storm Sewer Pipe Class III-B 12-Inch	LF	48.000	48.000
0058	611.0654	Inlet Covers Type V	EACH	2.000	2.000
0060	611.3220	Inlets 2x2-FT	EACH	2.000	2.000
0062	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	190.000	190.000
0064	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0066	614.2300	MGS Guardrail 3	LF	750.000	750.000
0068	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0070	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0072	618.0100	Maintenance And Repair of Haul Roads (project) 01. 9479-00-73	EACH	1.000	1.000
0074	619.1000	Mobilization	EACH	1.000	1.000
0076	624.0100	Water	MGAL	24.000	24.000
0078	625.0500	Salvaged Topsoil	SY	610.000	610.000
0080	628.1504	Silt Fence	LF	1,350.000	1,350.000
0082	628.1520	Silt Fence Maintenance	LF	1,350.000	1,350.000
0084	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0086	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0088	628.2008	Erosion Mat Urban Class I Type B	SY	610.000	610.000
0090	628.6005	Turbidity Barriers	SY	315.000	315.000
0092	628.7570	Rock Bags	EACH	192.000	192.000
0094	629.0210	Fertilizer Type B	CWT	0.800	0.800
0096	630.0120	Seeding Mixture No. 20	LB	24.000	24.000
0098	630.0200	Seeding Temporary	LB	24.000	24.000

9479-00-73

Line	Item	Item Description	Unit	Total	Qty
0100	630.0500	Seed Water	MGAL	8.000	8.000
0102	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0104	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0106	638.2602	Removing Signs Type II	EACH	4.000	4.000
0108	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0110	642.5001	Field Office Type B	EACH	1.000	1.000
0112	643.0420	Traffic Control Barricades Type III	DAY	1,710.000	1,710.000
0114	643.0705	Traffic Control Warning Lights Type A	DAY	2,660.000	2,660.000
0116	643.0900	Traffic Control Signs	DAY	1,330.000	1,330.000
0118	643.5000	Traffic Control	EACH	1.000	1.000
0120	645.0111	Geotextile Type DF Schedule A	SY	78.000	78.000
0122	645.0120	Geotextile Type HR	SY	2,435.000	2,435.000
0124	646.1020	Marking Line Epoxy 4-Inch	LF	1,160.000	1,160.000
0126	650.4000	Construction Staking Storm Sewer	EACH	3.000	3.000
0128	650.4500	Construction Staking Subgrade	LF	648.000	648.000
0130	650.5000	Construction Staking Base	LF	648.000	648.000
0132	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	34.000	34.000
0134	650.6500	Construction Staking Structure Layout (structure) 01. B-37-27	LS	1.000	1.000
0136	650.9910	Construction Staking Supplemental Control (project) 01. 9497-00-73	LS	1.000	1.000
0138	650.9920	Construction Staking Slope Stakes	LF	648.000	648.000
0140	690.0150	Sawing Asphalt	LF	1,150.000	1,150.000
0142	715.0502	Incentive Strength Concrete Structures	DOL	1,548.000	1,548.000
0144	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,200.000	1,200.000
0146	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	600.000	600.000
0148	SPV.0195	Special 01. Select Crushed Material for Travel Corridor	TON	571.000	571.000

3

STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
7+00	-	9+70	LT & RT	3	3
10+25	-	14+00	LT & RT	4	4
			TOTAL 0010	7	7

STATION	TO	STATION	205.0100 EXCAVATION COMMON CY	UNEXPANDED FILL CY	(1)EXPANDED FILL CY	(2)MASS ORDINATE (+/-) CY	208.0100 BORROW CY
7+00	-	9+49	150	492	615	-465	465
10+51	-	14+50	235	602	753	-520	520
		TOTAL 0010	385				985

(1) EXPANDEDN FILL FACTOR = 1.25
(2) THE MASS ORDINATE + OR - QUANTITY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

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
7+00	-	9+49	LT & RT	70	550	9
10+51	-	14+50	LT & RT	90	755	13
		FE 14+21	LT	10	20	1
		FE 14+40	RT	10	20	1
			TOTAL 0010	180	1,345	24

STATION	TO	STATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
7+00	-	9+49	33	110
10+51	-	14+50	46	150
		TOTAL 0010	79	260

STATION	TO	STATION	LOCATION	606.0300 RIPRAP HEAVY CY	645.0120 GEOTEXTILE TYPE HR SY	SPV.0195.01 SPECIAL (01. SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR) TON
7+00	-	9+25	LT	165	340	74
7+00	-	9+25	RT	195	385	104
10+75	-	14+50	LT	335	655	150
10+75	-	14+50	RT	270	565	127
			TOTAL 0010	965	1,945	455

STATION	TO	STATION	LOCATION	520.1012 APRON ENDWALLS FOR CULVERT PIPE 12-INCH EACH	608.3612 STORM SEWER PIPE CLASS III-B 12-INCH LF	601.0588 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT LF	611.0654 INLET COVERS TYPE V EACH	611.3220 INLETS 2X2-FT EACH	650.4000 CONSTRUCTION STAKING STORM SEWER EACH	650.5500 CONSTRUCTION STAKING CURB BUTTER AND CURB & GUTTER LF
9+31	-	9+48	LT & RT	--	--	34	--	--	--	34
9+36	-	9+40	RT	1	16	--	--	--	1	--
		9+40	LT & RT	--	32	--	2	2	2	--
			TOTAL 0010	1	48	34	2	2	3	34

STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF	614.2300 MGS GUARDRAIL 3 LF	*614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
7+46	-	9+49	LT	210	112.5	39.4	1
7+46	-	9+49	RT	215	112.5	39.4	1
10+51	-	14+04	LT	365	262.5	39.4	1
10+51	-	14+04	RT	365	262.5	39.4	1
			TOTAL 0010	1,155	750.0	157.6	4

*HAND DIG POSTS NEAR STORM SEWER PIPE & INLETS BETWEEN TRANSITION POST TO AVOID CONFLICTS

STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.6005 TURBIDITY BARRIERS SY
			PROJECT 9479-00-73	--	--	4	2	--
7+00	-	9+55	LT & RT	550	550	--	--	--
9+64	-	9+55	LT & RT	--	--	--	--	160
10+15	-	10+38	LT & RT	--	--	--	--	155
10+48	-	14+30	LT & RT	800	800	--	--	--
	-							
			TOTAL 0010	1,350	1,350	4	2	315

STATION	TO	STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7570 ROCK BAGS EACH	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL	REMARKS
7+00	-	9+45	LT	135	135	48	0.2	6	6	2	SILT FENCE RELIEF APPROX. 9+00, ADJUST IN FIELD BASED ON FLOWS
7+00	-	9+45	RT'	170	170	48	0.2	6	6	2	SILT FENCE RELIEF APPROX. 9+00, ADJUST IN FIELD BASED ON FLOWS
10+54	-	14+50	LT	135	135	48	0.2	6	6	2	SILT FENCE RELIEF APPROX. 11+00, ADJUST IN FIELD BASED ON FLOWS
10+54	-	14+50	RT'	170	170	48	0.2	6	6	2	SILT FENCE RELIEF APPROX. 11+00, ADJUST IN FIELD BASED ON FLOWS
			TOTAL 0010	610	610	192	0.8	24	24	8	

LOCATION	DAYS	TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS DAY
JUNCTION WITH STH 107	95	2	190	4	380	5	475
CONSTRUCTION LIMITS	95	7	665	10	950	2	190
CONSTRUCTION LIMITS	95	7	665	10	950	2	190
JUNCTION WITH CTH O	95	2	190	4	380	5	475
	TOTAL 0010		1,710		2,660		1,330

STATION	LOCATION	634.0612 POSTS WOOD 4X6-INCH X 12-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
9+40	RT	1	3	1	1	W5-52R
9+41	LT	1	3	1	1	W5-52L
10+57	LT	1	3	1	1	W5-52R
10+57	RT	1	3	1	1	W5-52L
	TOTAL 0010	4	12	4	4	

STATION	TO	STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH LF	REMARKS
7+00	-	14+50	EDGELINES	750	WHITE
8+95	-	11+00	CENTERLINE	410	DOUBLE YELLOW
			TOTAL 0010	1,160	

STATION	TO	STATION	LOCATION	690.0150 SAWING ASPHALT LF
7+00	-	8+95	LT & RT	420
10+51	-	14+50	LT & RT	730
			TOTAL 0010	1,150

STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	650.6500.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE B-37-0459) LS	650.9910.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT 9479-00-73) LS
			PROJECT 9479-00-73	--	--	--	1	1
7+00	-	9+49	LT & RT	249	249	249	--	--
10+51	-	14+50	LT & RT	399	399	399	--	--
			TOTAL 0010	648	648	648	1	1

LEGEND
GUARD RAIL
RIPRAP HEAVY
SAWING ASPHALT

N

DANIEL KURTZWEIL

DANIEL KURTZWEIL

INLETS 2x2-FT
INLET COVERS TYPE V
STA. 9+40, 16' LT
IE=1253.9'

MGS GUARDRAIL
TERMINAL EAT

MGS THRIE BEAM
TRANSITION

W5-52L
12"X36"

W5-52R
12"X36"

MGS THRIE BEAM
TRANSITION

CONCRETE CURB & GUTTER 4-INCH
SLOPED 36-INCH TYPE TBT
STA 9+31 - STA 9+47.75 (TYP.)

SLOPE INTERCEPT (TYP.)

UNDERGROUND COMMUNICATIONS
FRONTIER COMMUNICATIONS

MGS GUARDRAIL
TERMINAL EAT

POST 1
+04.15
19.0' LT

POST 9
+54.15
17.0' LT

POST 5
+79.15
18.0' LT

FE
GRAV.

EXIST. R/W

POST 1
+45.88
19.0' LT

POST 5
+70.87
18.0' LT

POST 9
+95.85
17.0' LT

STORM SEWER PIPE
CLASS III-B 12-INCH

7+00 CTH A 8+00 9+00 10+00 11+00 12+00 13+00 14+00

82.5'

MGS GUARDRAIL 3

MGS GUARDRAIL 3

STRUCTURE B-37-0459

EXISTING STRUCTURE B-37-0027
(TO BE REMOVED)

MGS THRIE BEAM
TRANSITION

REMOVING GUARDRAIL (TYP.)

WETLANDS (TYP.)

POST 9
+54.15
17.0' RT

POST 5
+79.15
18.0' RT

POST 1
+04.15
19.0' RT

MGS GUARDRAIL
TERMINAL EAT

FE
GRAV.

EXIST. R/W

POST 1
+45.88
19.0' RT

POST 5
+70.87
18.0' RT

POST 9
+95.85
17.0' RT

MGS GUARDRAIL
TERMINAL EAT

MGS THRIE BEAM
TRANSITION

HAND DIG BEAM GUARD
POSTS AROUND INLET BOX.

INLETS 2x2-FT
INLET COVERS TYPE V
STA. 9+40, 16' RT
IE=1251.4'

APRON ENDWALL FOR
CULVERT PIPE 12-INCH
STA 9+36, 32' RT
IE=1250.2

W5-52R
12"X36"

W5-52L
12"X36"

END CONSTRUCTION
STA 14+50

BEGIN CONSTRUCTION
STA 7+00

BEGIN PROJECT
STA 8+95.50
Y = 233,900.26
X = 239,309.69

LITTLE RIB RIVER

OVERHEAD ELECTRIC
WISCONSIN PUBLIC SERVICE CORP.

END PROJECT
STA 11+00
Y = 233,896.22
X = 239,514.15

TRAVIS KREFT
JENNIFER KREFT

KAGE DESCENDANTS TRUST

KAGE DESCENDANTS TRUST

5

5

VCL = 140.18
K = 27.20

VCL = 128.47
K = 26.00

STA 8+00.00
EL 1260.86

VPC STA 8+13.55
VPC EL 1260.23

VPT STA 9+53.73
VPT EL 1257.32

VPC STA 10+27.95
VPC EL 1257.69

VPT STA 11+56.42
VPT EL 1261.52

STA 11+96.08
EL 1263.67

4.65%

0.50%

5.45%

EXISTING
GROUND

PROPOSED
PROFILE

VPI STA 8+83.64
VPI EL 1256.97

VPI STA 10+92.19
VPI EL 1258.02

HIGH WATER 100
ELEV. = 1245.76

OBSERVED WATER
ELEV. = 1235.75±
(01-16-2020)

EXISTING GROUND
PROPOSED PROFILE

REMOVE EXISTING BRIDGE B-37-0027
STA 10+00
THREE SPAN HAUNCHED CONCRETE SLAB BRIDGE
24.0 FT CLEAR ROADWAY WIDTH
113.5 FT OVERALL LENGTH
NO SKEW

HW 100 EL. 1245.76
OBSERVED WATER EL. 1235.75 (1-16-2020)
STREAMBED EL. 1232.62 ±

STA 10+00 STRUCTURE B-37-459
SINGLE SPAN
PRESTRESSED CONCRETE GIRDER
104.5' OVERALL LENGTH
34' CLEAR ROADWAY WIDTH
0 DEG. SKEW

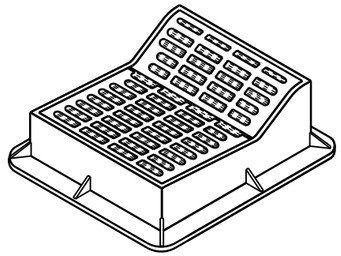
1270 1265 1260 1255 1250 1245 1240 1235

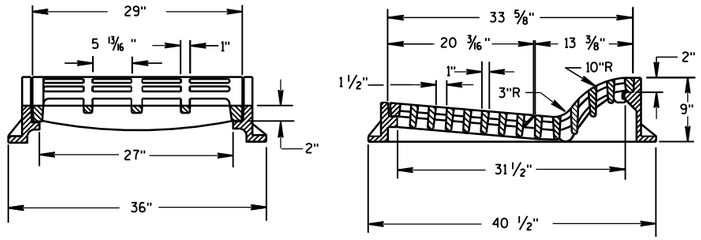
1266.86	1263.57	1260.86	1258.84	1258.77	1257.34	1257.58	1256.80	1257.30	1256.82	1257.55	1257.47	1257.90	1258.96	1259.06	1261.29	1261.17	1263.89	1266.91	1270.39	1273.96	1277.41
7+00		8+00			9+00			10+00				11+00				12+00			13+00			14+00

PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	PLAN AND PROFILE: CTH A	SHEET 10	E

Standard Detail Drawing List

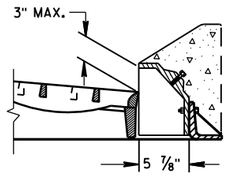
08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
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)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS





TYPE "F"

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

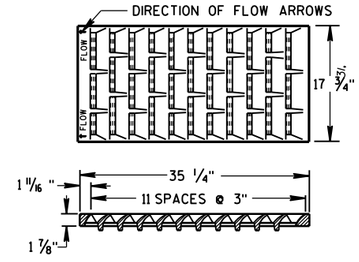
USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

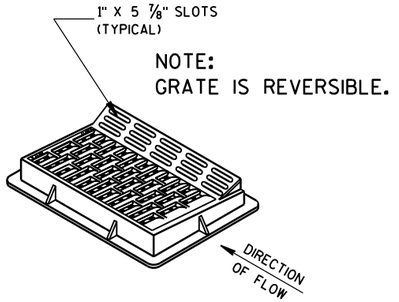
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

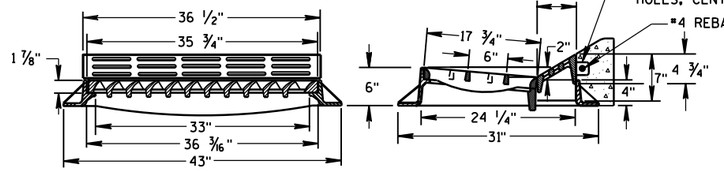
GENERAL NOTES

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.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.



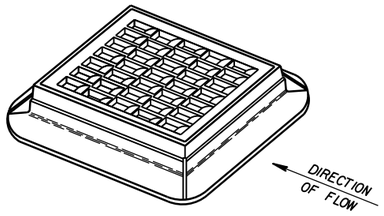


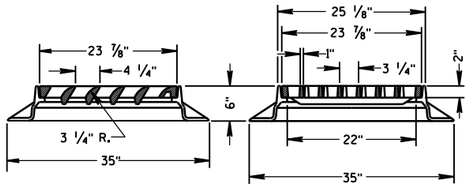


TYPE "HM"

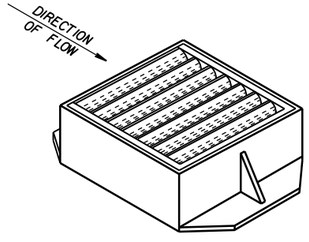
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

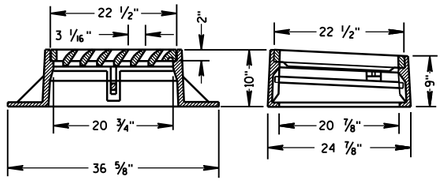
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE



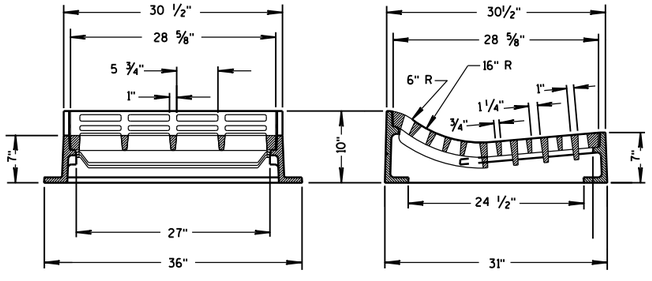


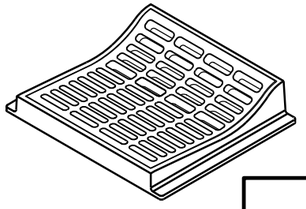
TYPE "S"





TYPE "V"





TYPE "T"

USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.

INLET COVERS
TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

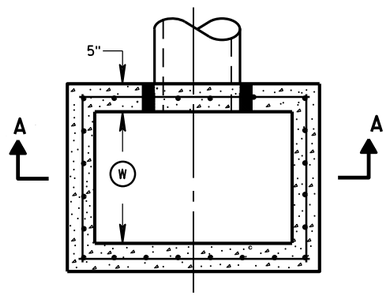
FHWA

6

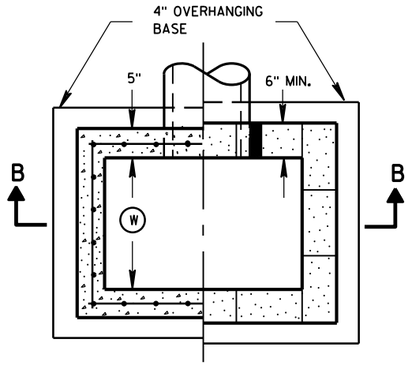
S.D.D. 8 A 5-19c

6

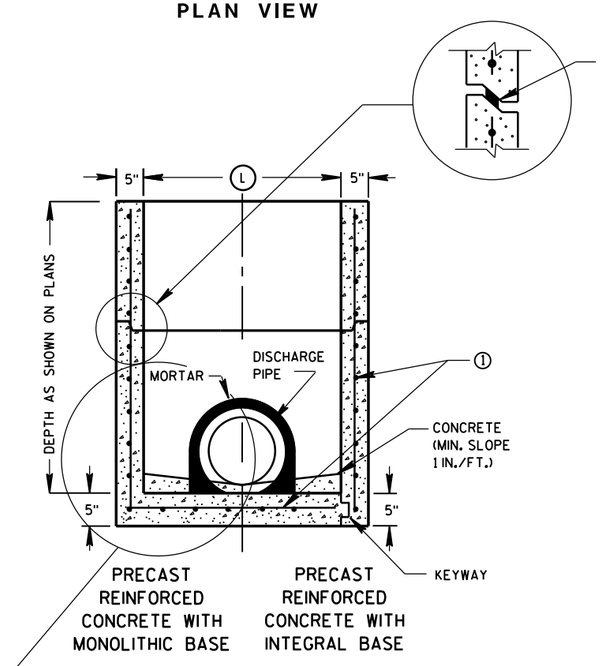
S.D.D. 8 A 5-19c



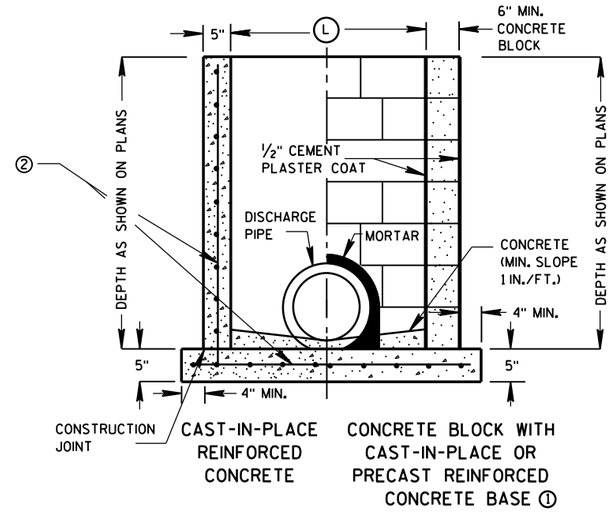
PLAN VIEW



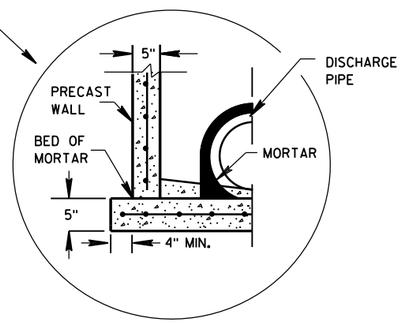
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

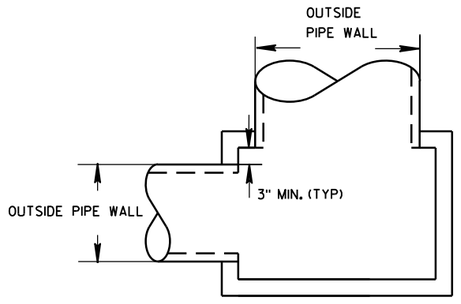
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

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

PIPE MATRIX

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



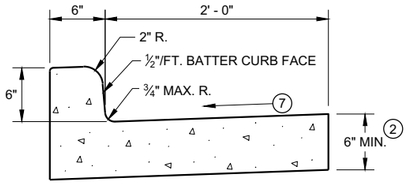
DETAIL "A"

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

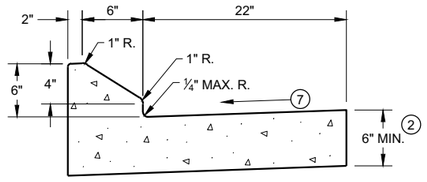
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D IT
UNIT SUPERVIS
FHWA

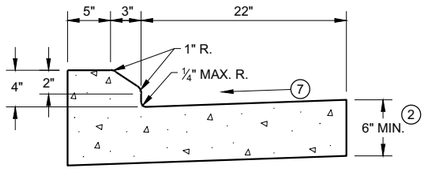
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT



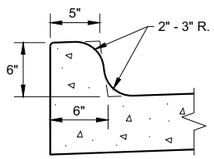
TYPES A[1] & D



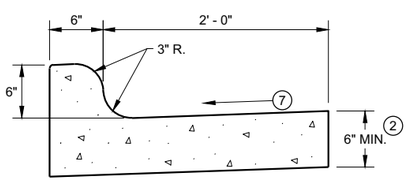
6" SLOPED CURB TYPES G[1] & J



4" SLOPED CURB TYPES G[1] & J

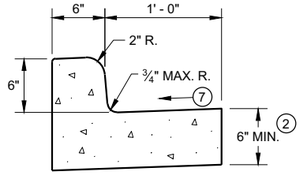


TYPES K[1] & L
(OPTIONAL CURB SHAPE)



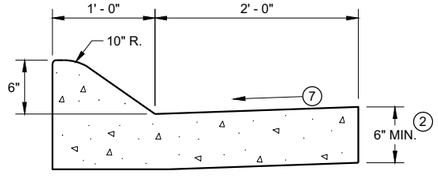
TYPES K[1] & L

CONCRETE CURB AND GUTTER 30"

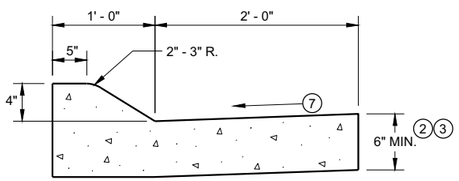


TYPES A[1] & D

CONCRETE CURB AND GUTTER 18"

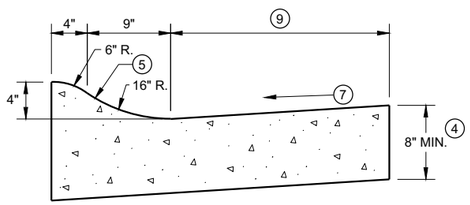


6" SLOPED CURB TYPES A[1] & D



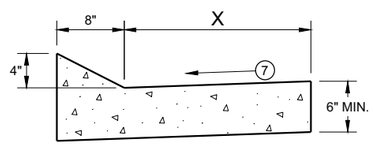
4" SLOPED CURB TYPES A[1] & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R[1] & T

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

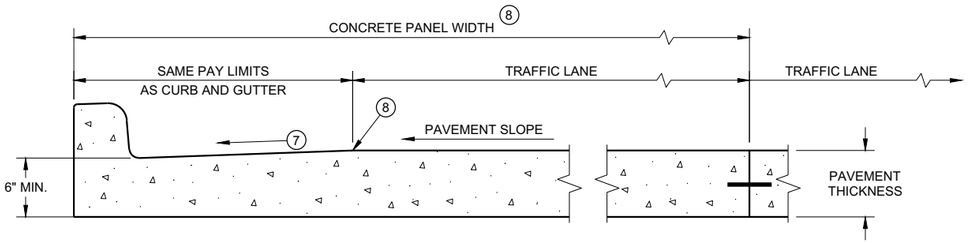


TYPES TBT & TBTT[1]

CONCRETE CURB AND GUTTER

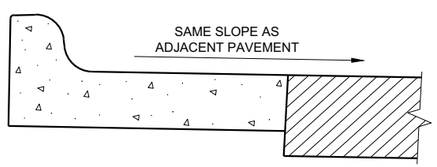
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

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

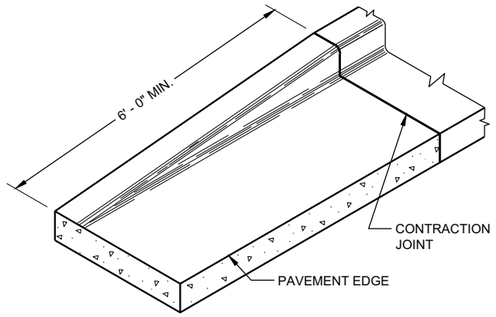
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

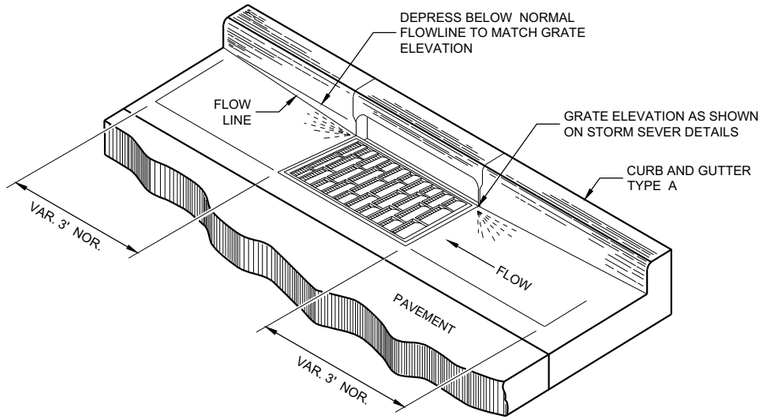
1. TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
2. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
3. USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
4. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
5. UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
6. WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
7. USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
8. INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
9. CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
   CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

SDD 08D01 - 22a
6



END SECTIONCURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS

(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

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

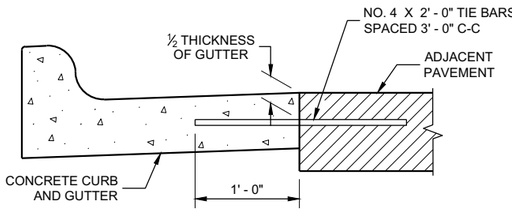
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

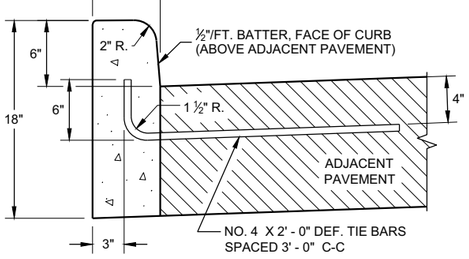
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

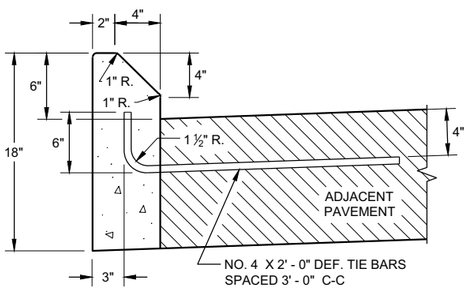
(9) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION (1)

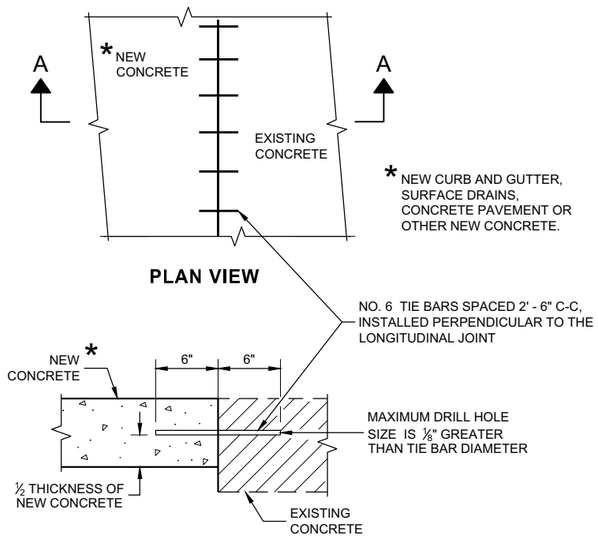


TYPES A (1) & D

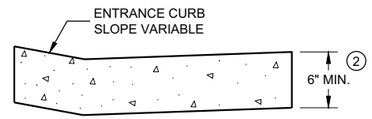


TYPES G (1) & J

CONCRETE CURB



TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

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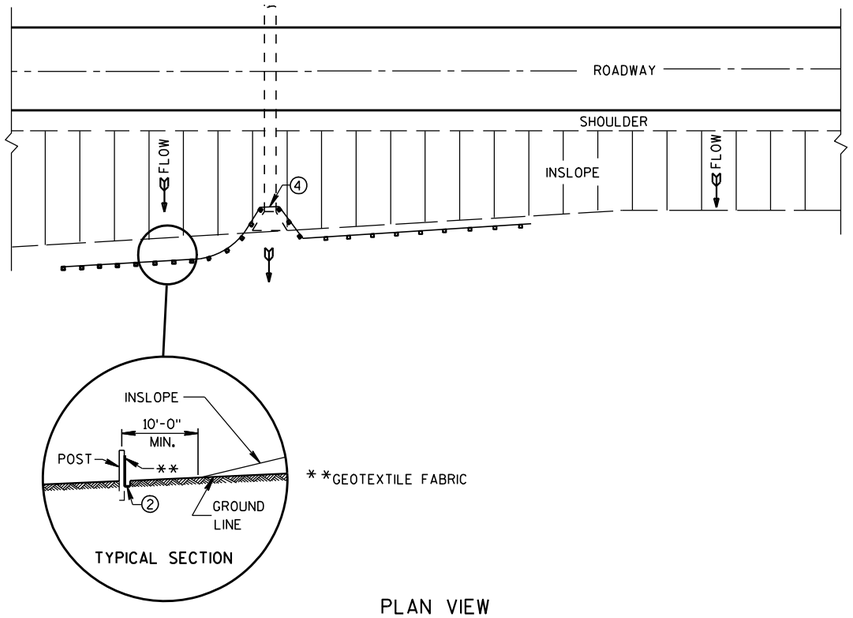
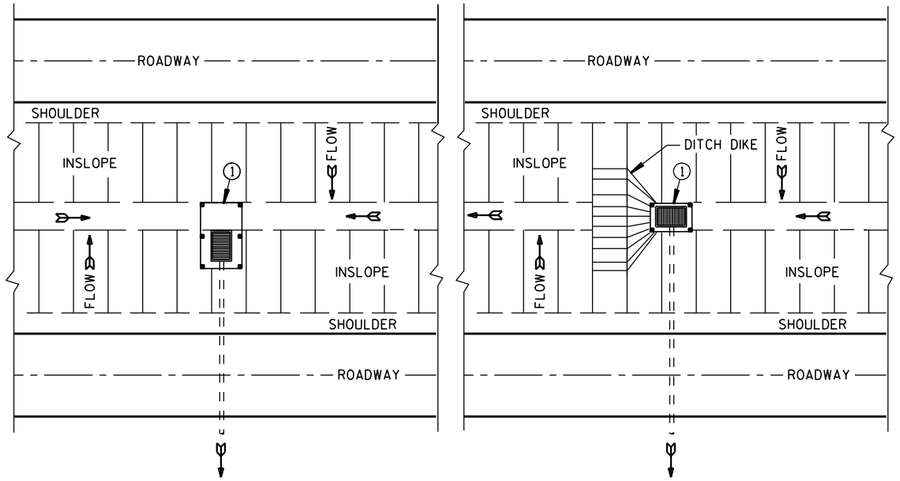
SDD08D01 - 22b

SDD08D01 - 22b



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



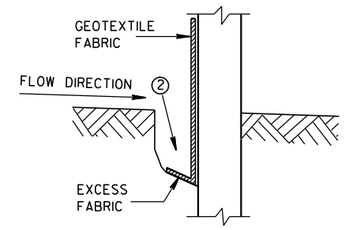
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

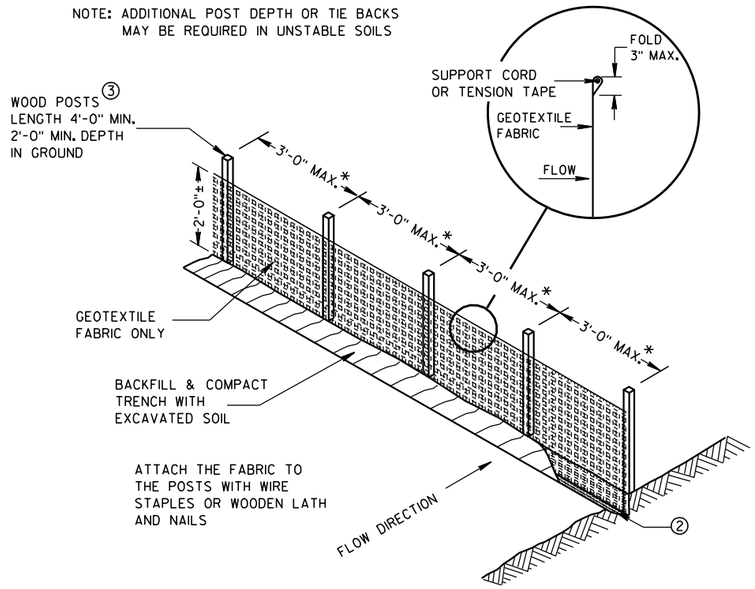
GENERAL NOTES

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

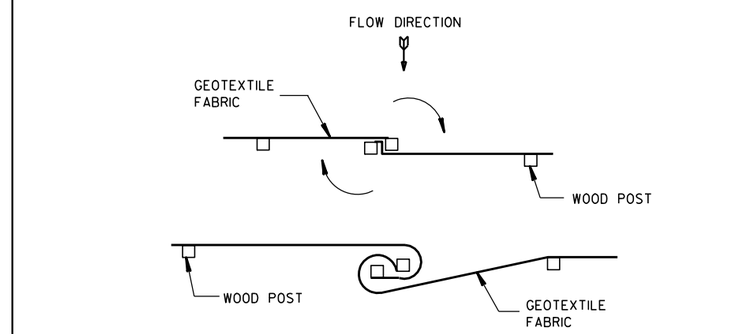
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL 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.



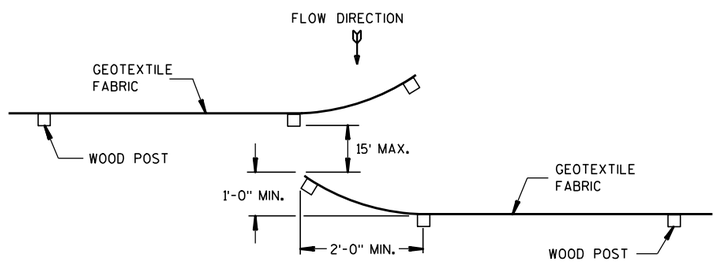
TRENCH DETAIL



SILT FENCE

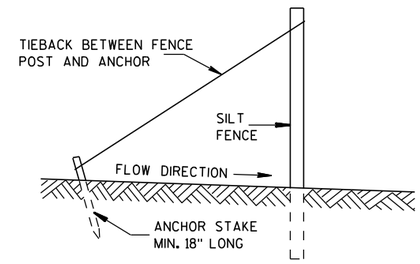


TWIST METHOD



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

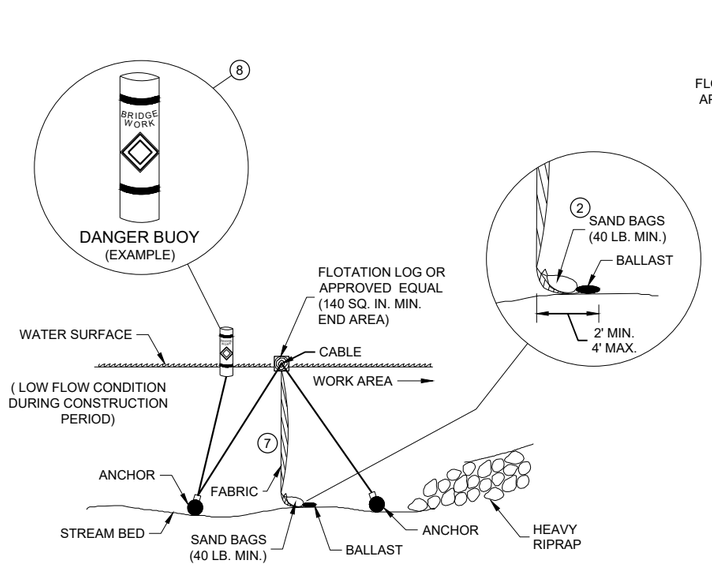
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

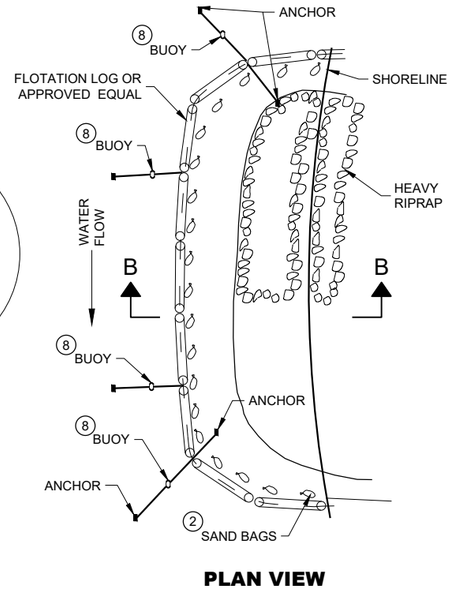
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

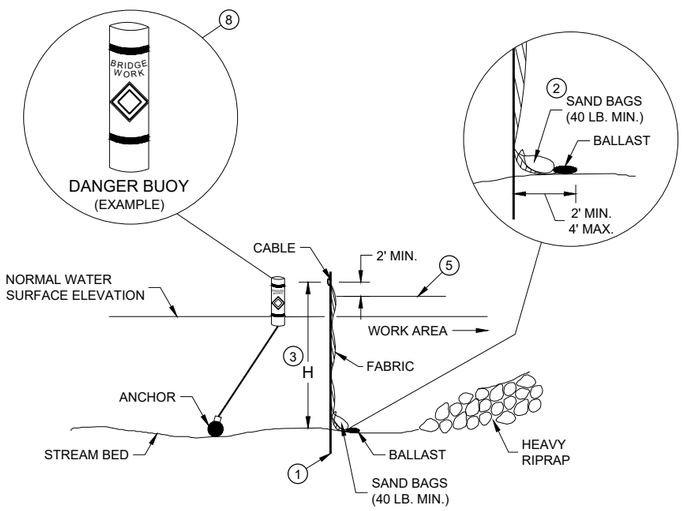


SECTION B - B

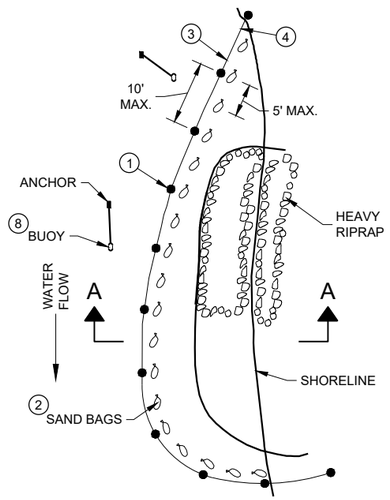


PLAN VIEW

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.

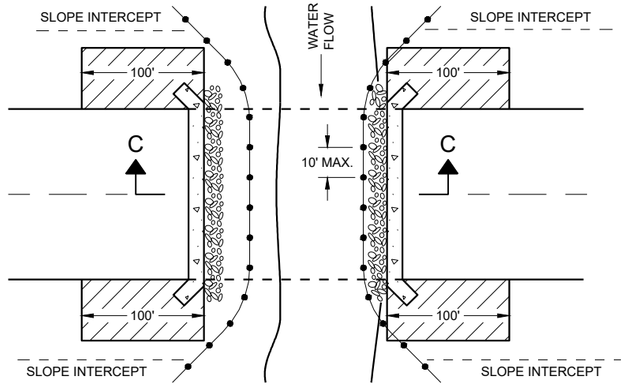
(4) IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

(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.

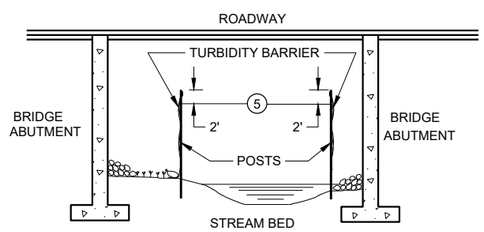
(6) FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.

(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

METAL APRON ENDWALLS

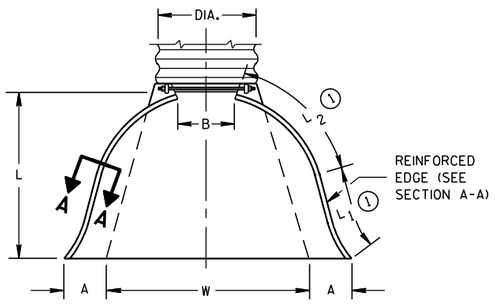
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

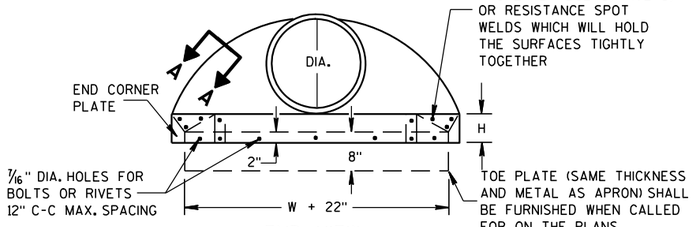
REINFORCED CONCRETE APRON ENDWALLS

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

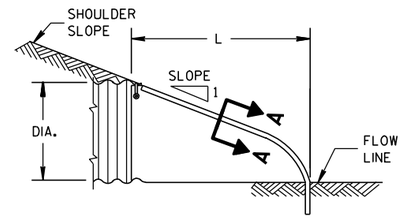
*MINIMUM
**MAXIMUM



PLAN VIEW

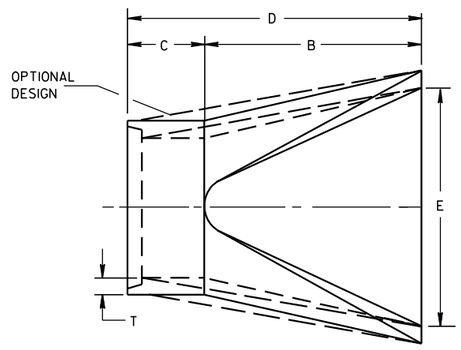


END VIEW

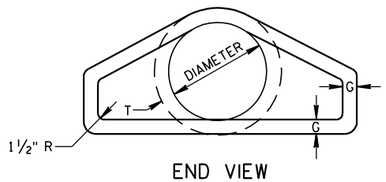


SIDE ELEVATION

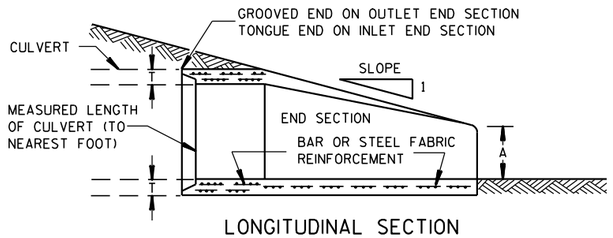
METAL ENDWALLS



PLAN

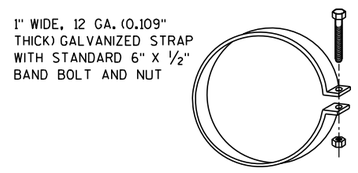


END VIEW



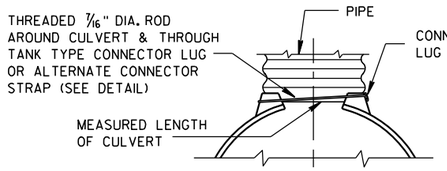
LONGITUDINAL SECTION

CONCRETE ENDWALLS

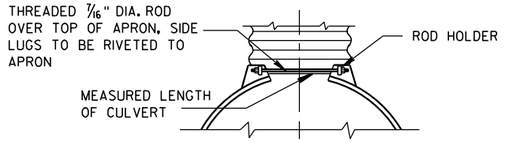


ALTERNATE FOR TYPE 1 CONNECTION

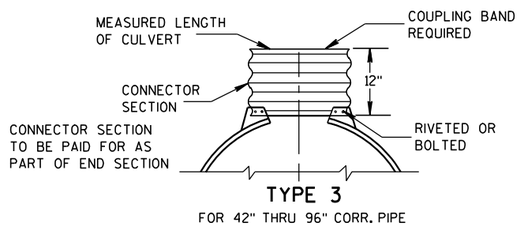
END SECTION CONNECTOR STRAP



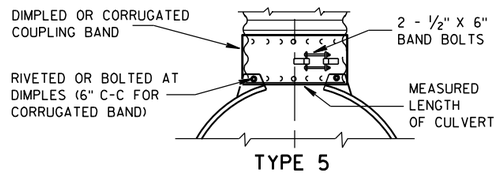
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

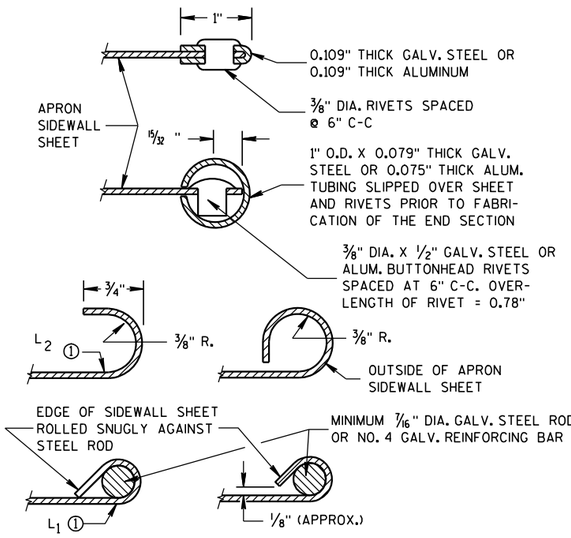
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

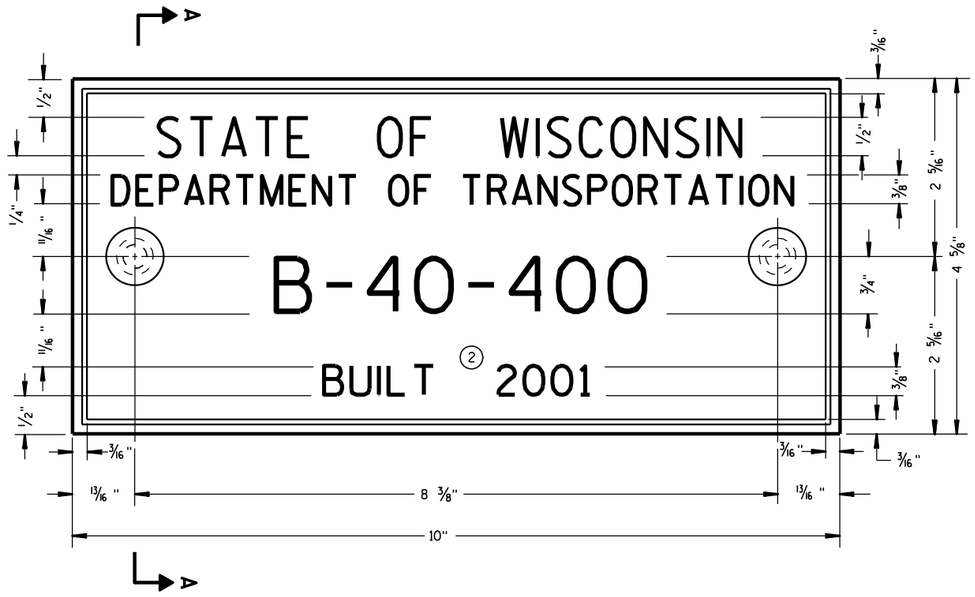
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

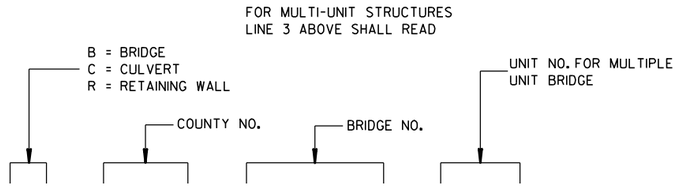
APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 8 F 1-11



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

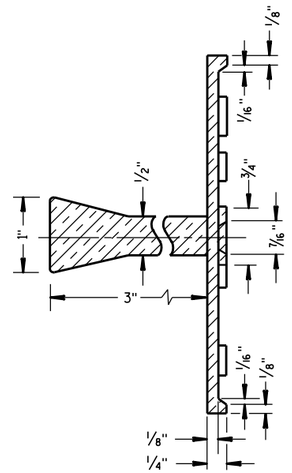
GENERAL NOTES

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

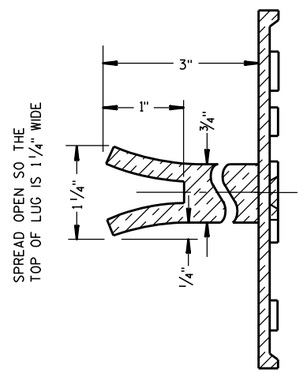
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

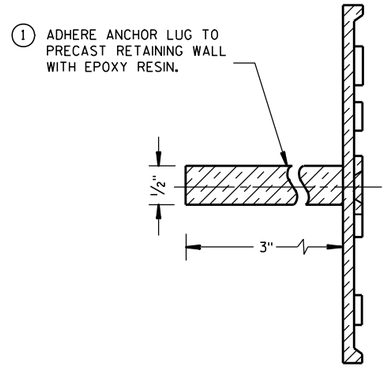
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



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 DEVELOP ENGINEER
FHWA	

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S.D.D. 12 A 3-10

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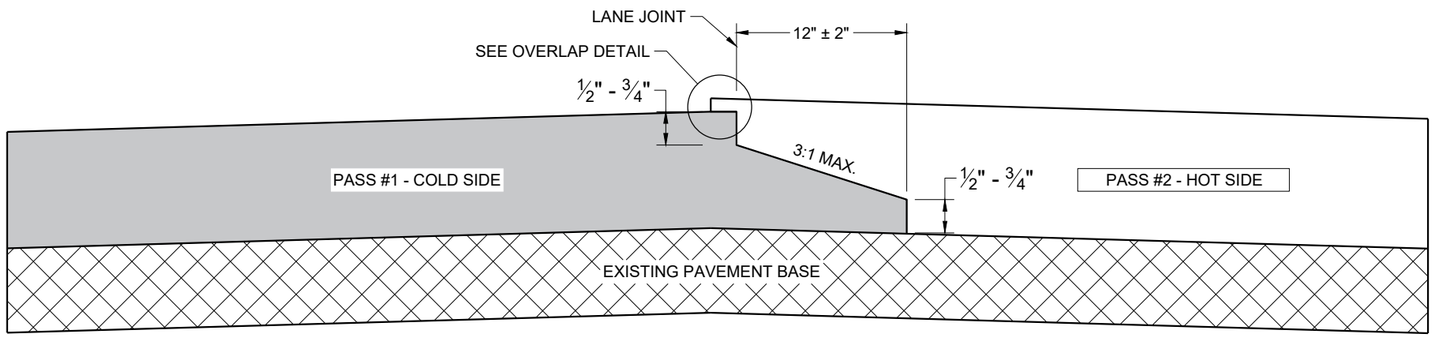
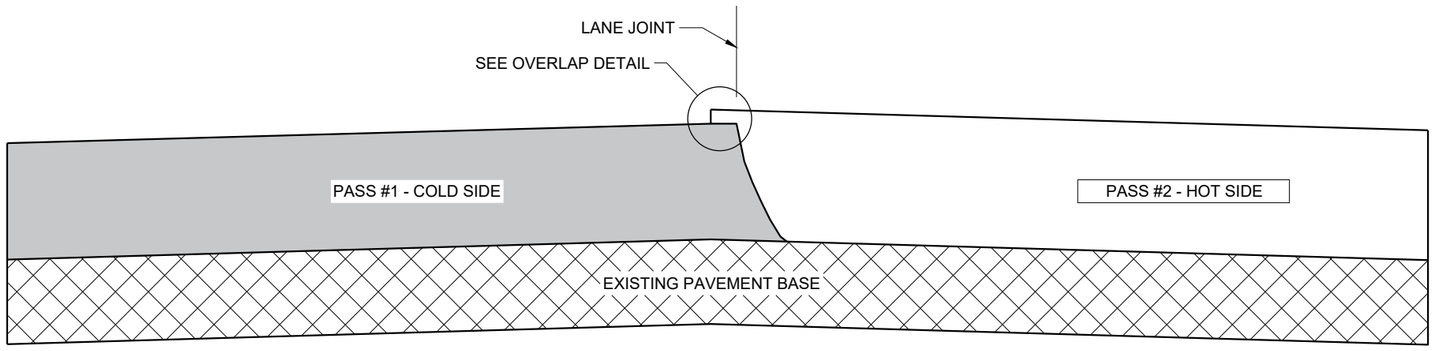
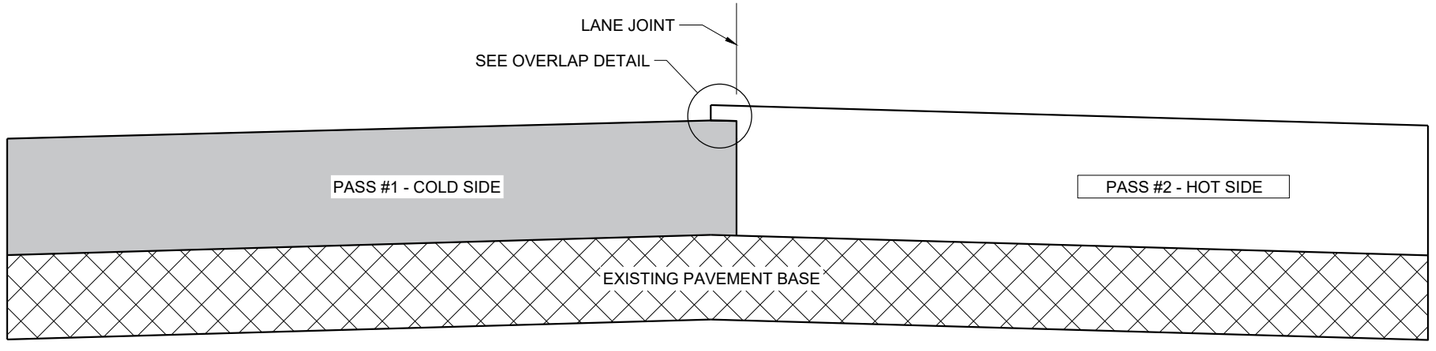
S.D.D. 12 A 3-10



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

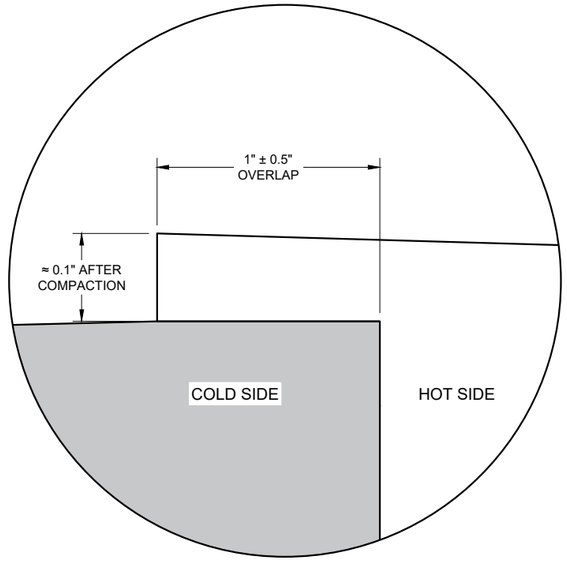
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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)

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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.

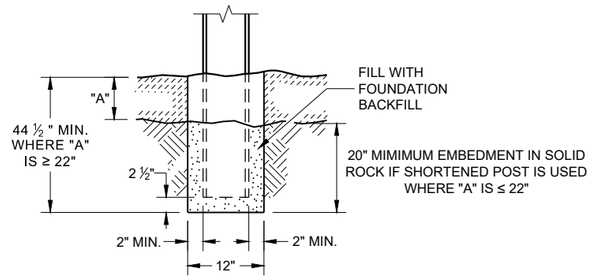
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

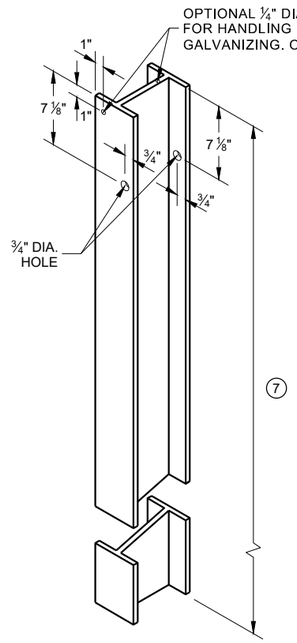
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

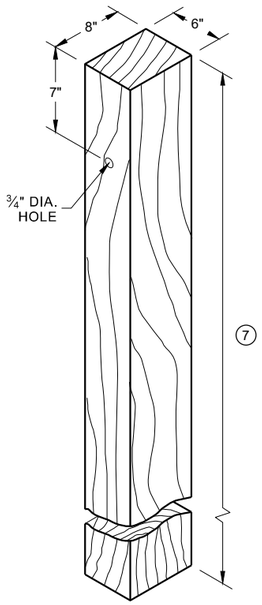
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



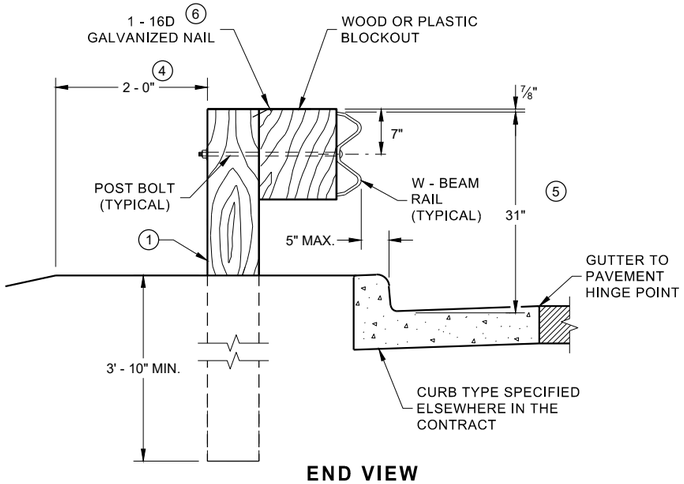
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



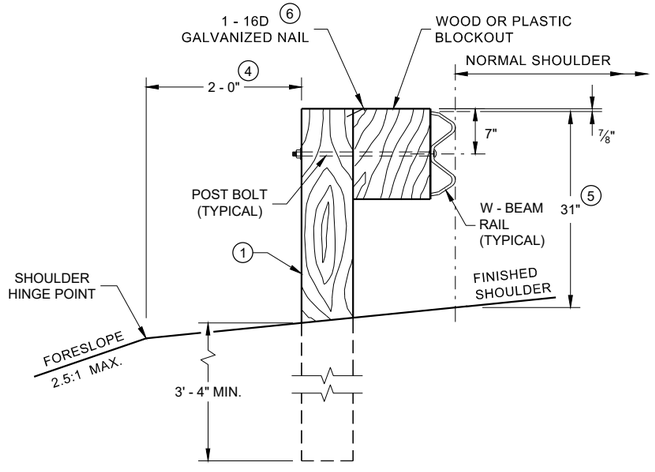
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



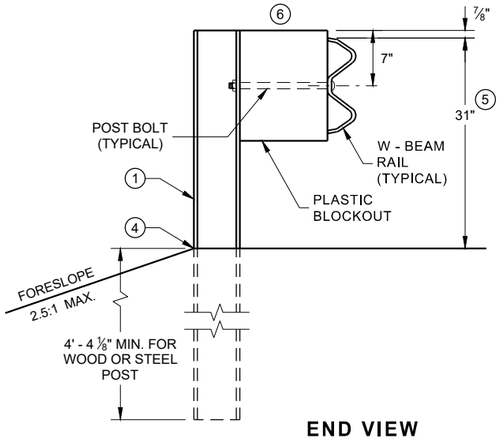
WOOD POST (6" X 8") NOMINAL (1)



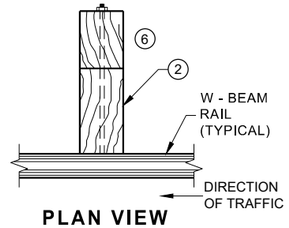
END VIEW
LOCATED ALONG A CURBED ROADWAY



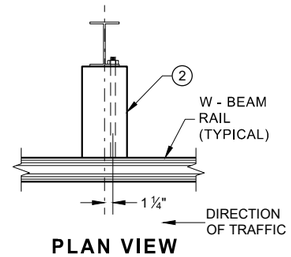
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



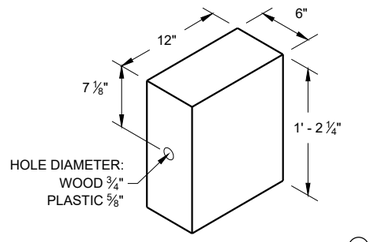
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



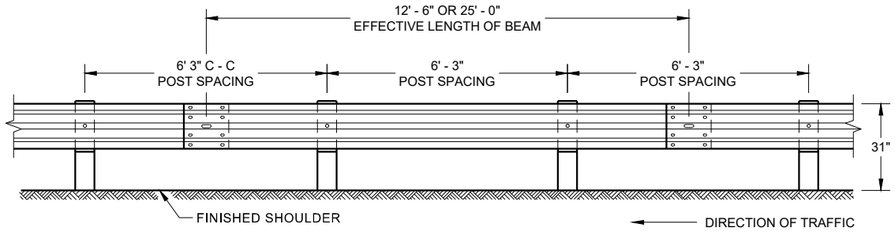
WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

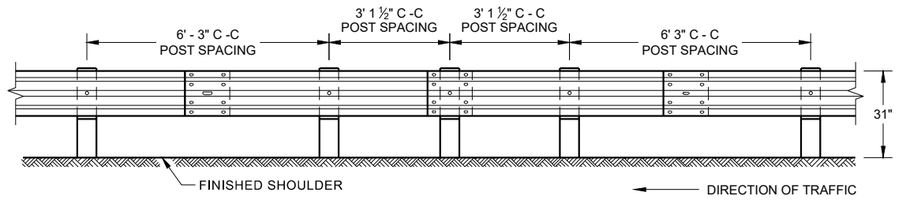
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B42 - 07a

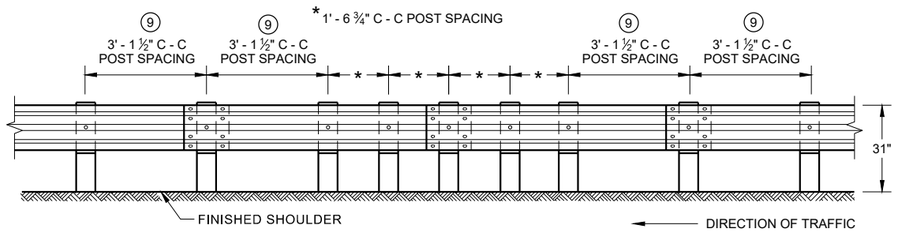
SDD 14B42 - 07a



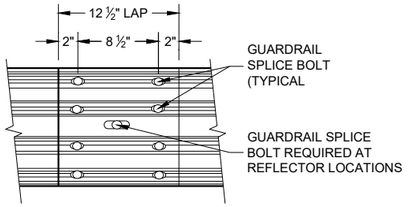
FRONT VIEW
POST SPACING STANDARD INSTALLATION



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

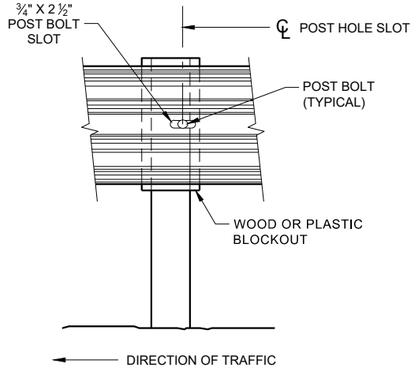
GENERAL NOTES

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

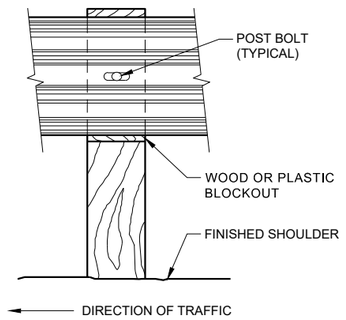
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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.

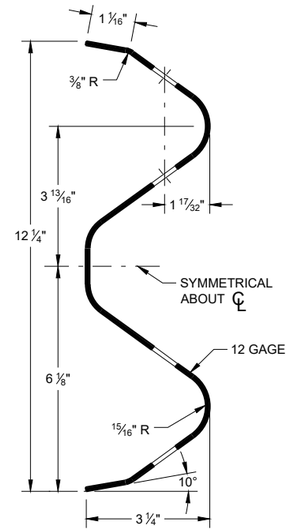
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



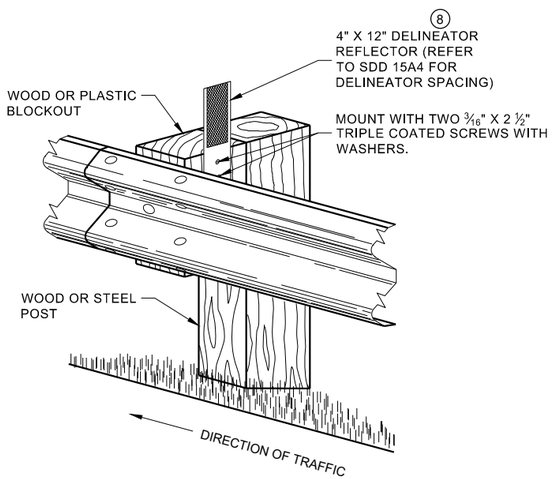
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



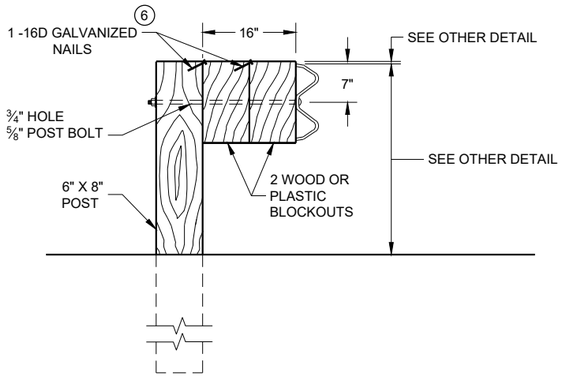
ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B42 - 07b

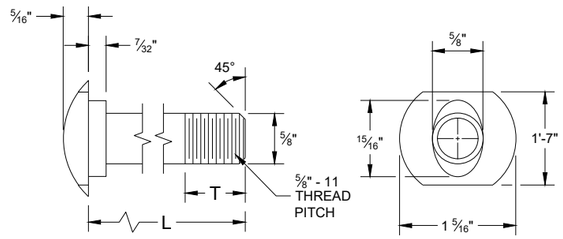


DETAIL FOR 16" BLOCKOUT DEPTH

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

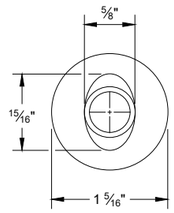
NOTE:

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

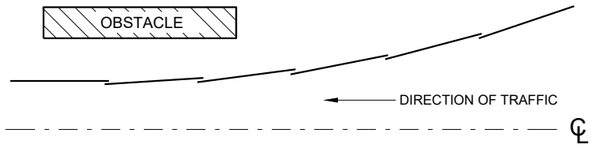


POST BOLT TABLE

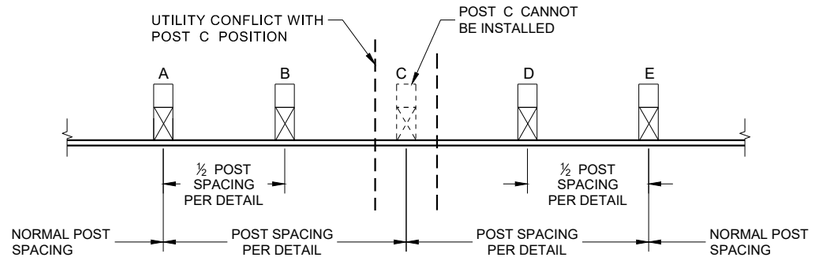
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



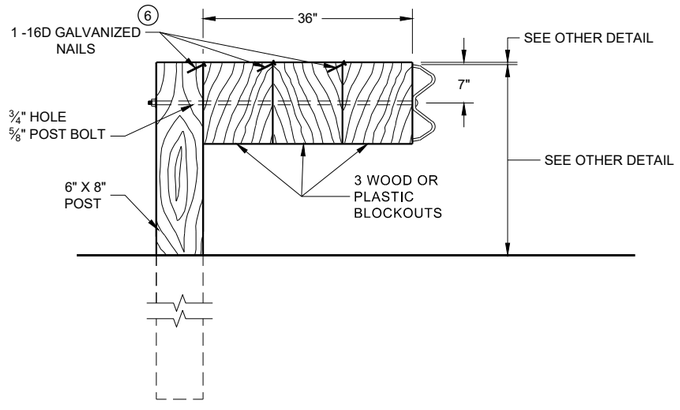
ALTERNATE BOLT HEAD



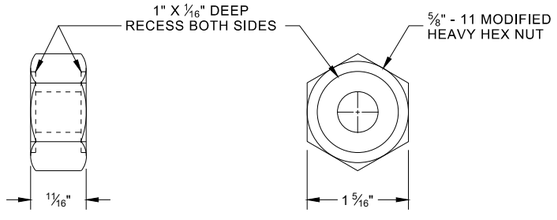
PLAN VIEW
BEAM LAPPING DETAIL



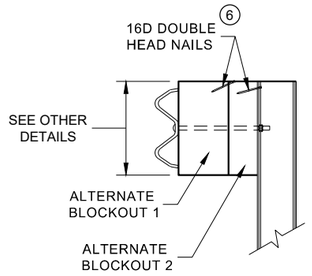
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



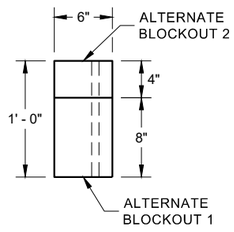
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

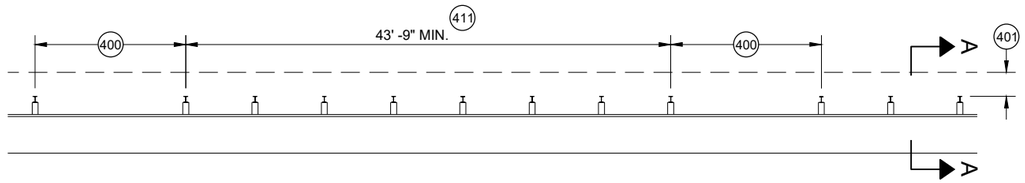
ALTERNATE WOOD BLOCKOUT DETAIL

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.

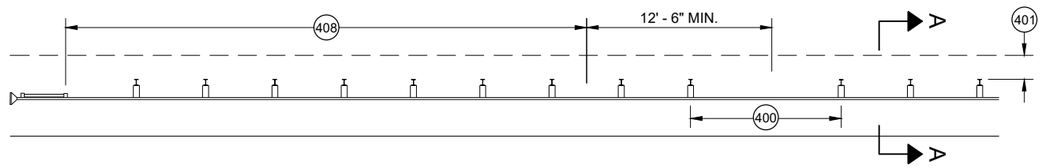
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

(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.

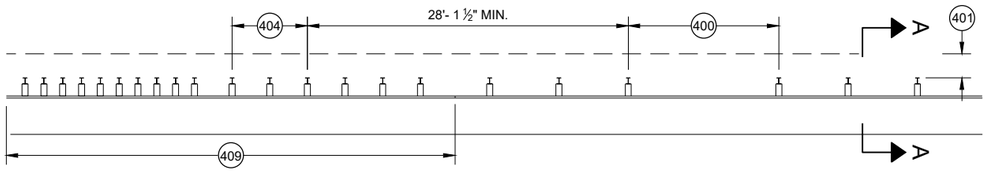
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



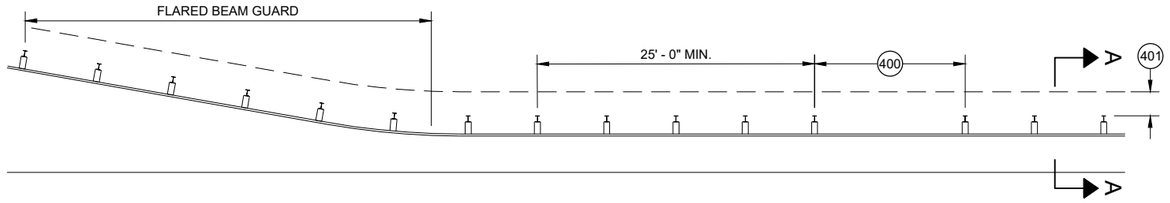
MISSING POST IN MGS GUARDRAIL



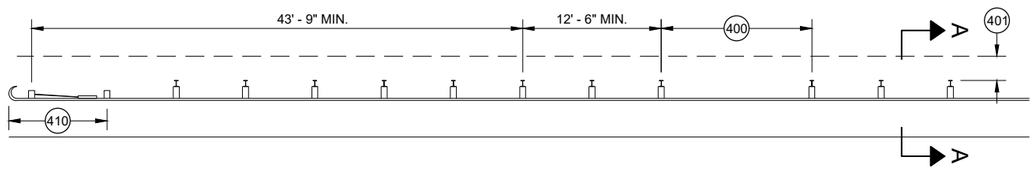
MISSING POST IN MGS GUARDRAIL NEAR EAT



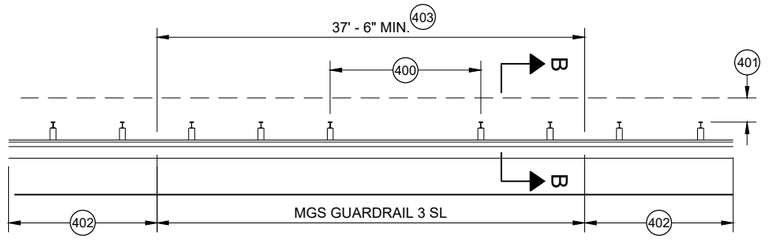
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

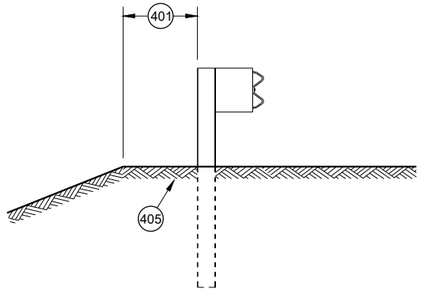


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

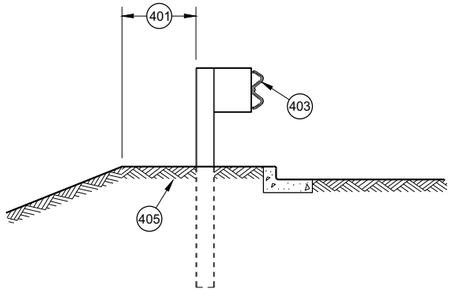


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

(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

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.

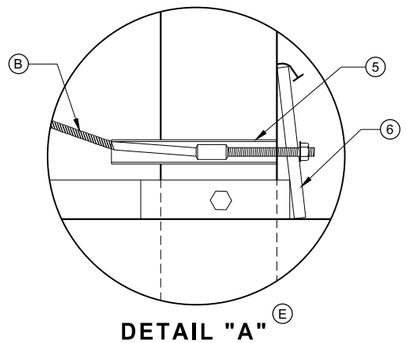
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

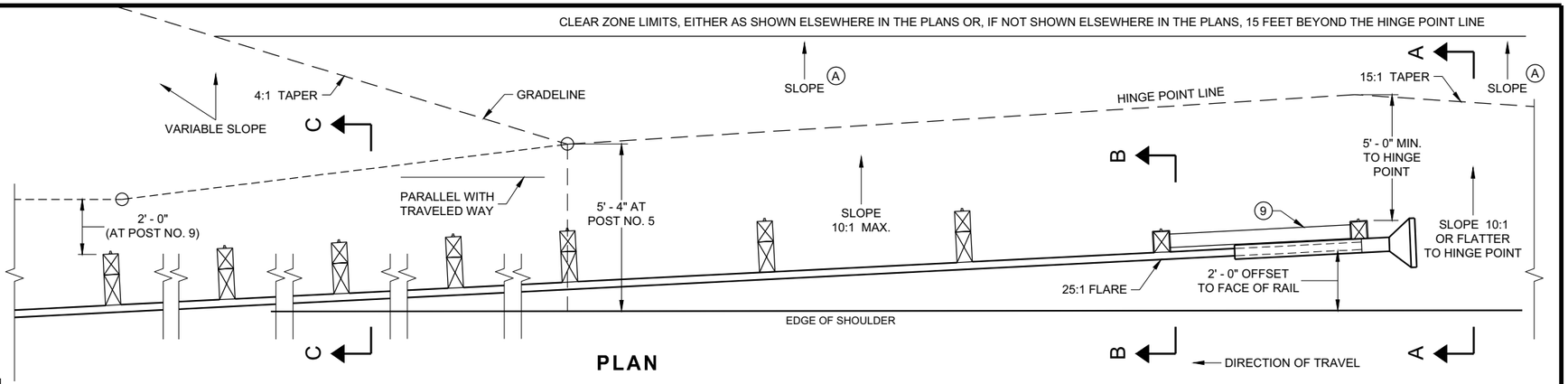
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

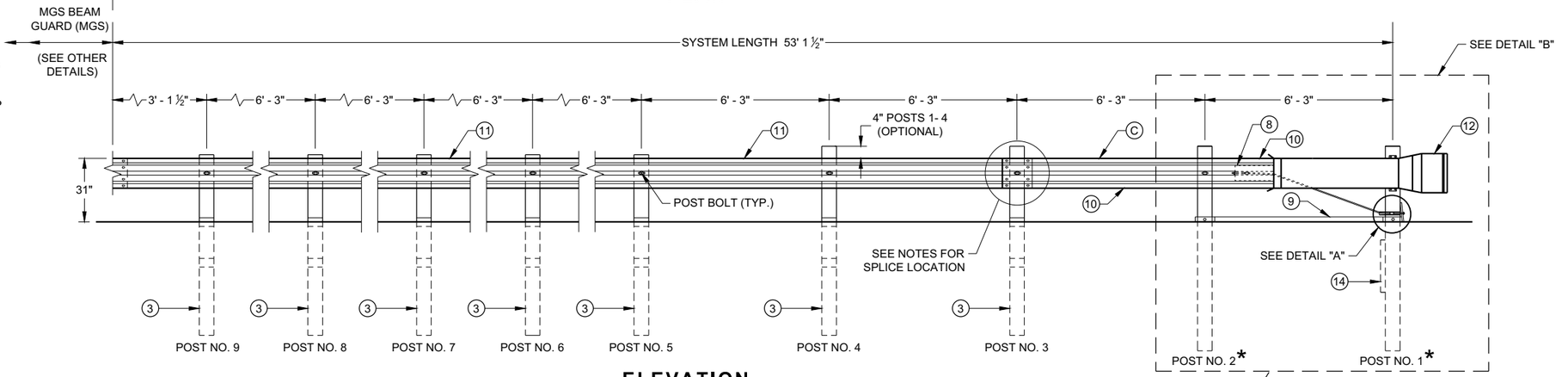
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

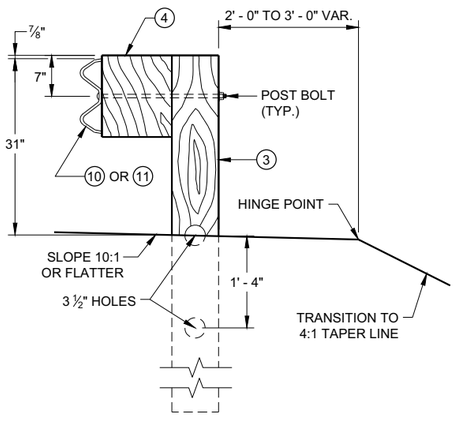
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



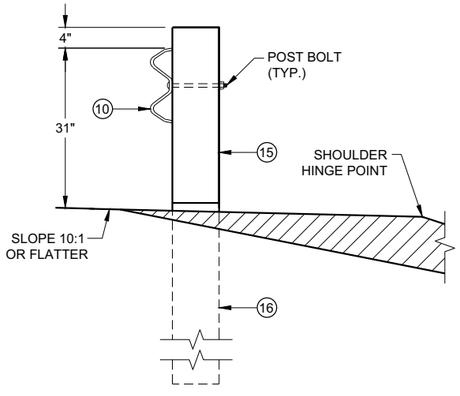
DETAIL "A" (E)



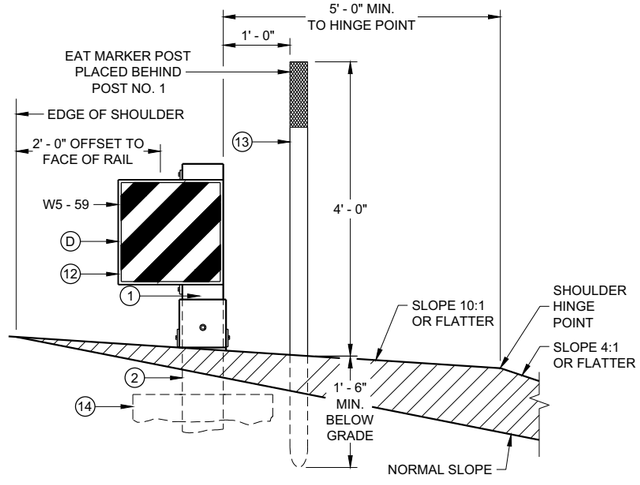




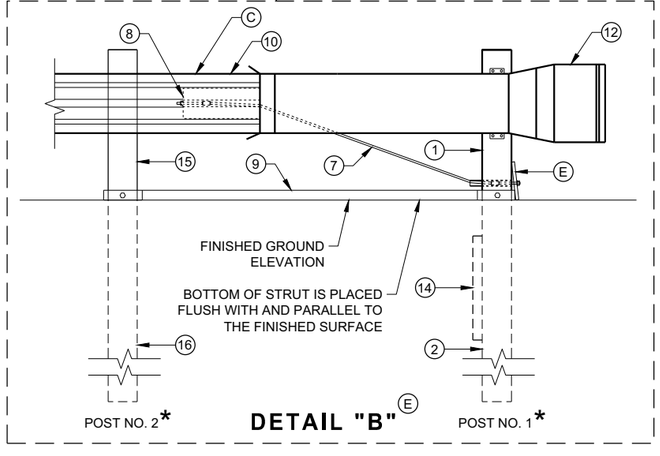
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



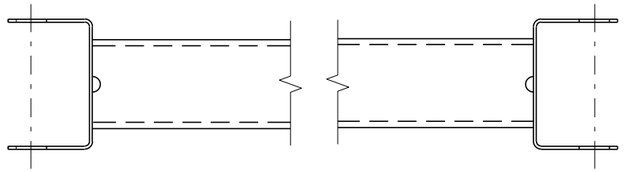
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

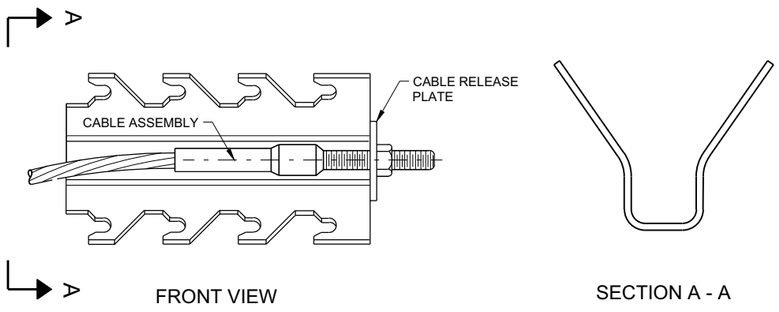
SDD 14B44 - 04a



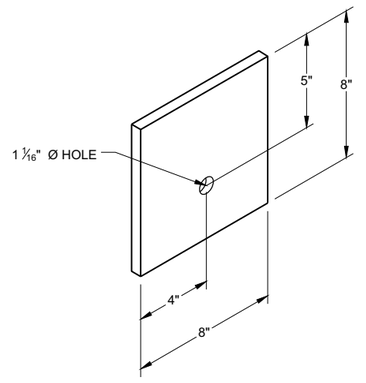
GENERIC GROUND STRUT ⑨ Ⓔ

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

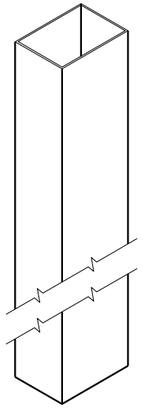
6

SDD 14B44 - 04b

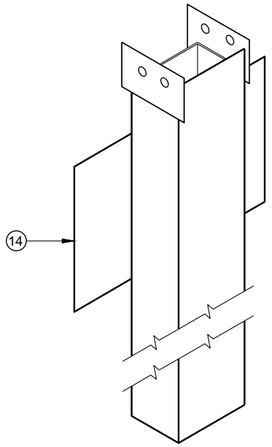
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

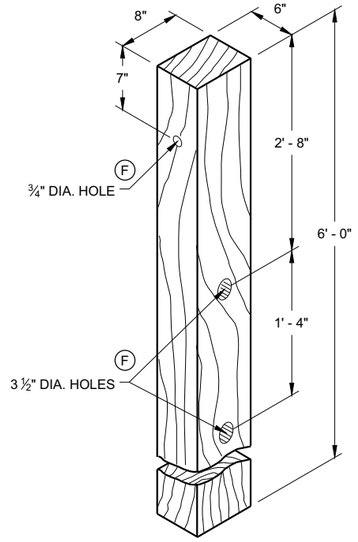
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



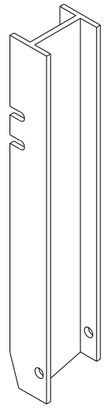
UPPER POST NO. 1 (1) (E)



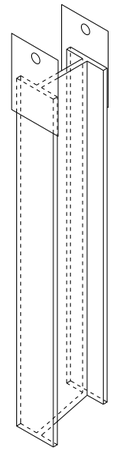
LOWER POST NO. 1 (2) (E)



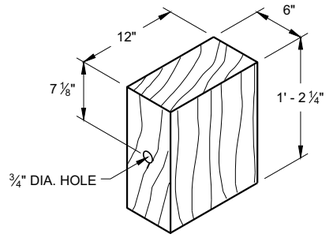
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



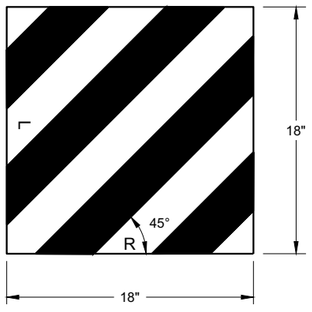
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

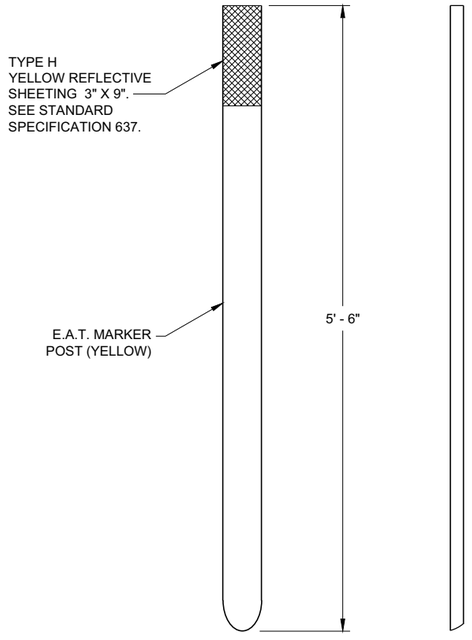


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



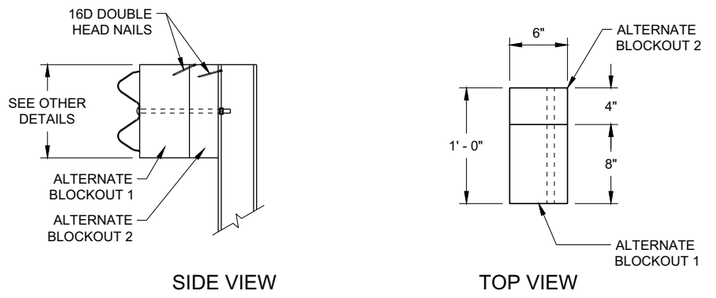
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

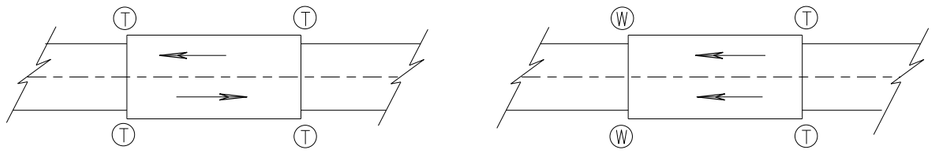
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

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.

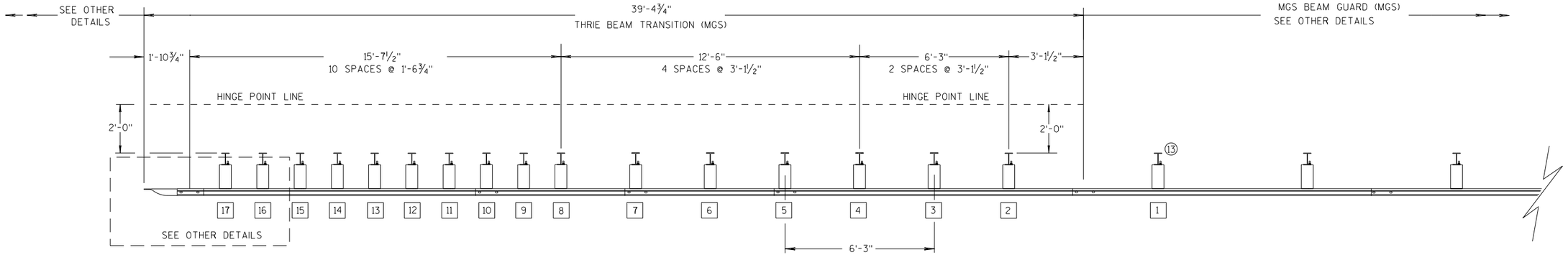
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

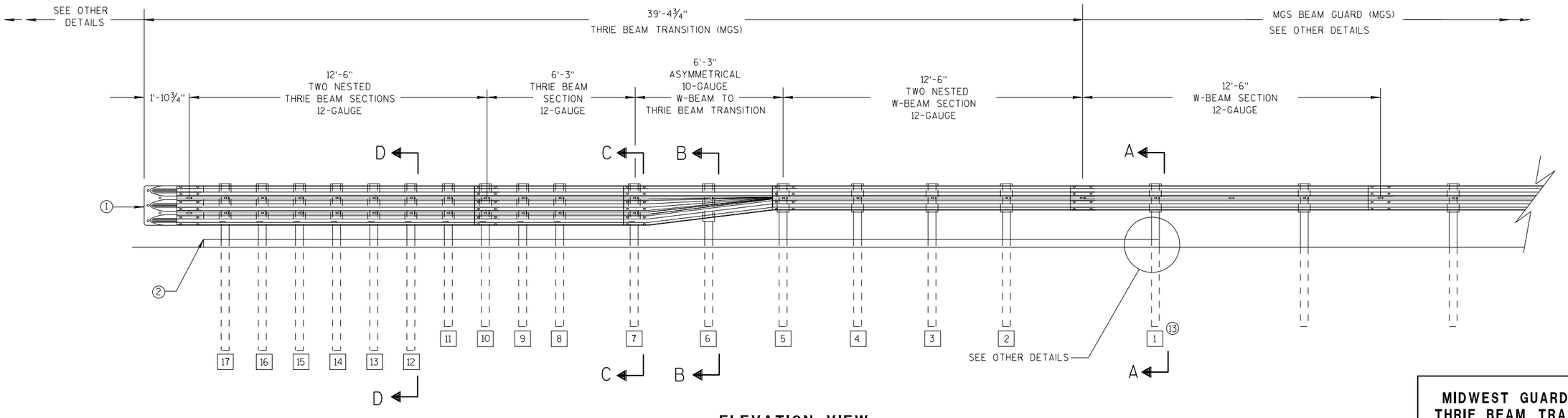
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(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

6

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

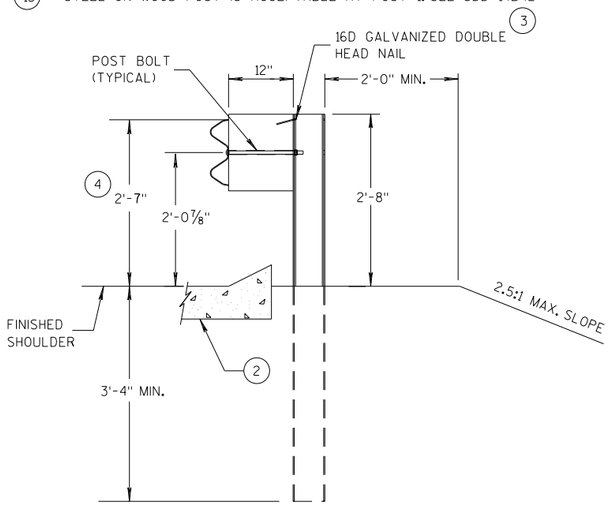
GENERAL NOTES

(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.

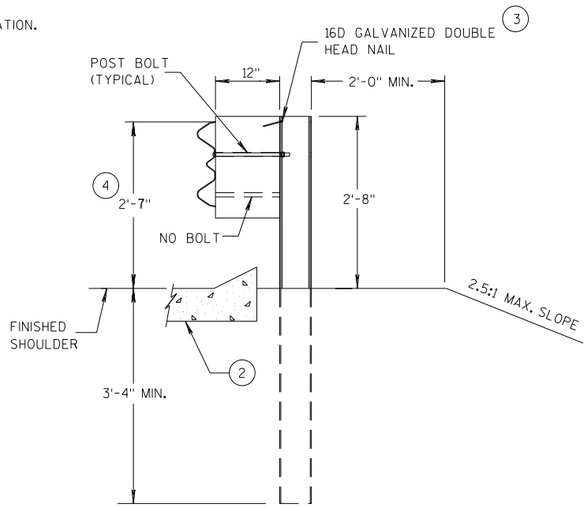
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



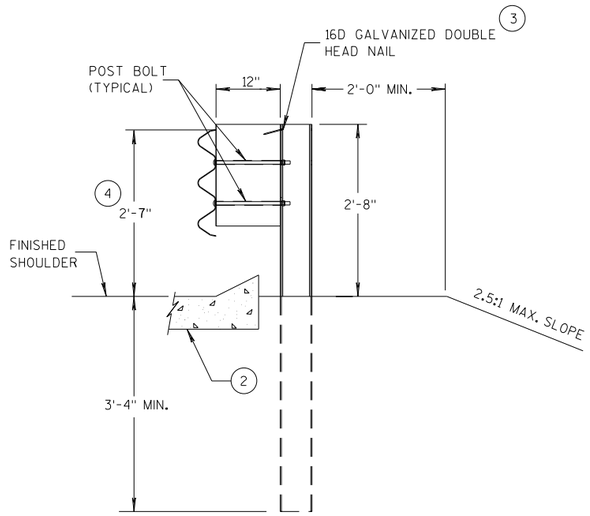
SECTION A-A (13)

POSTS 1-5



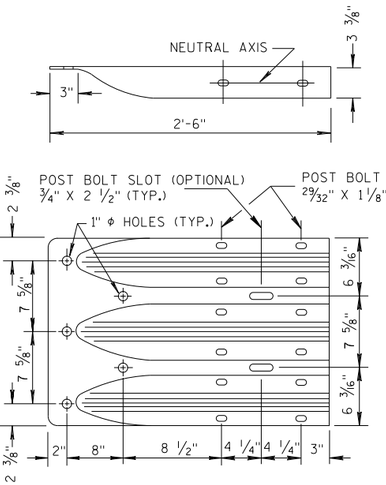
SECTION B-B

POST 6

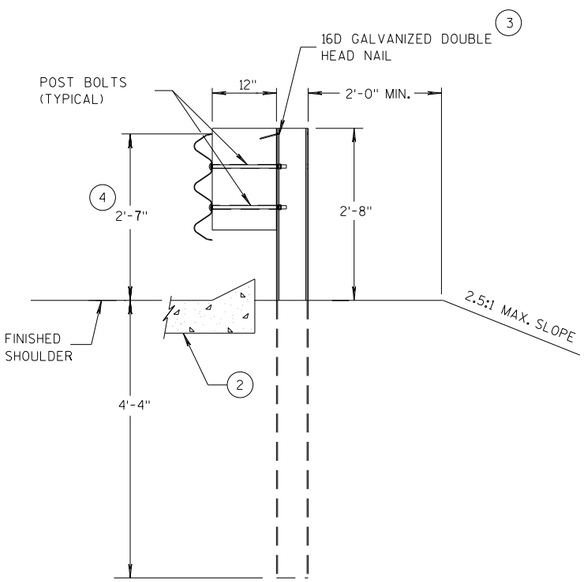


SECTION C-C

POSTS 7-11

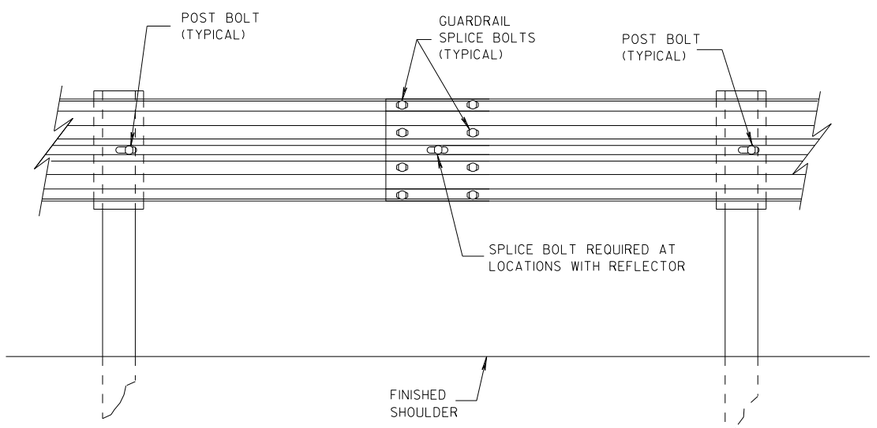


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

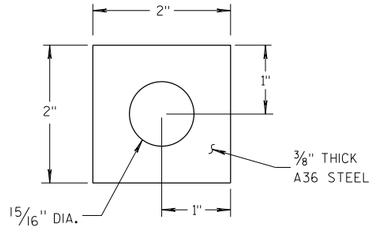
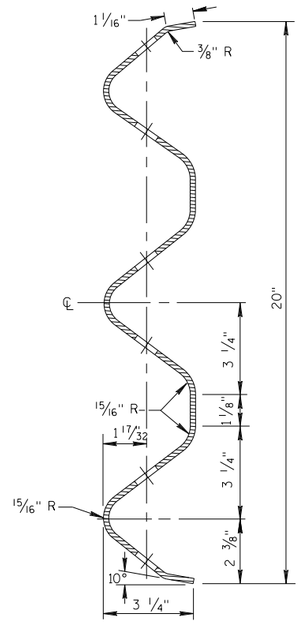


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

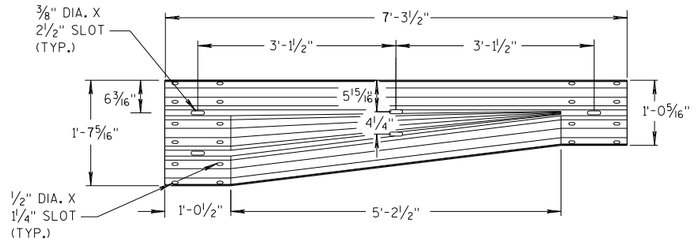
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 29

6

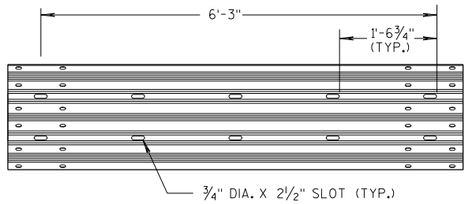
S.D.D. 14 B 45-5b

6

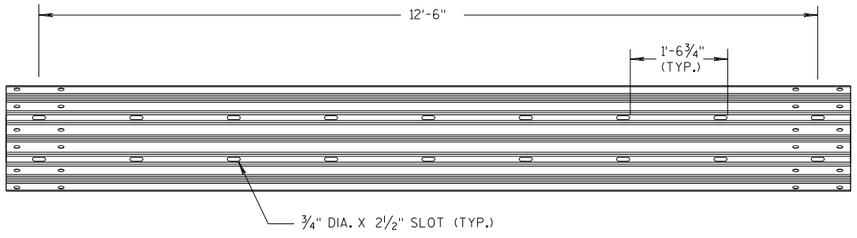
S.D.D. 14 B 45-5b



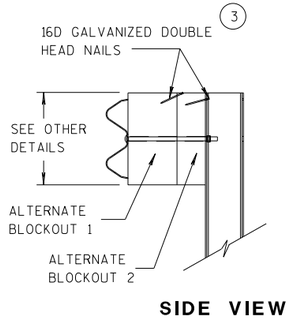
W-BEAM TO THRIE BEAM TRANSITION SECTION



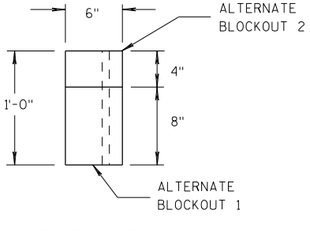
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

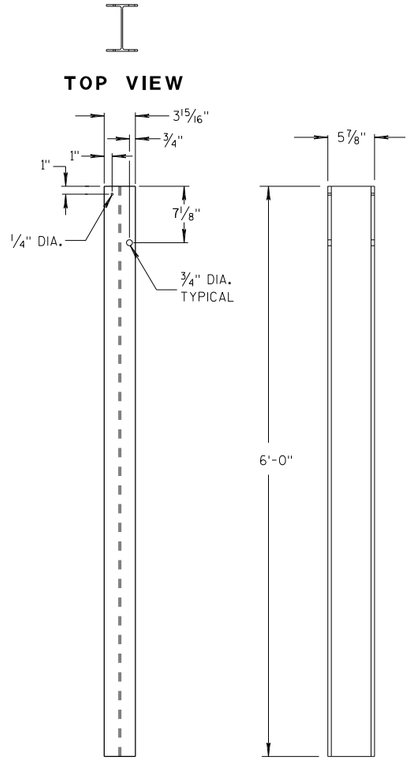


SIDE VIEW



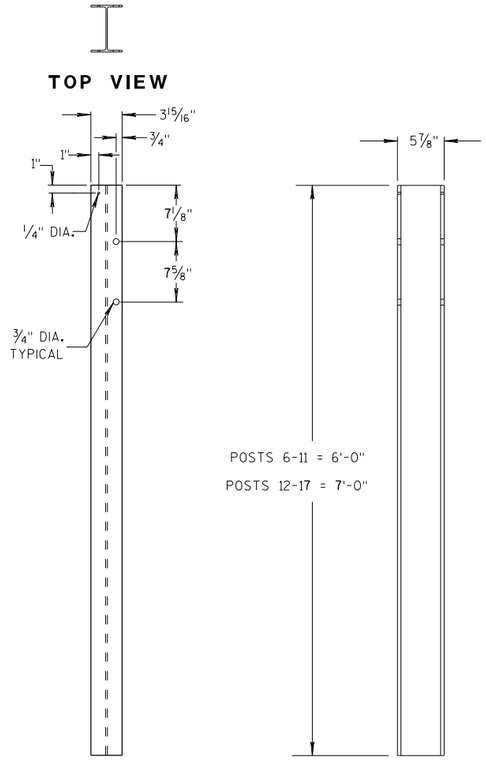
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



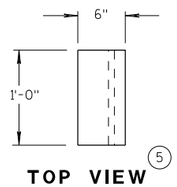
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

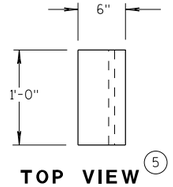


FRONT VIEW SIDE VIEW

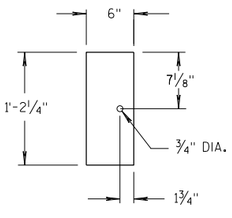
STEEL POSTS 6-17



TOP VIEW (5)

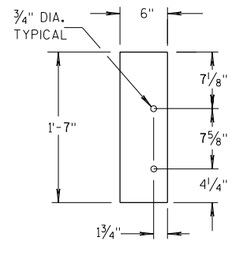


TOP VIEW (5)



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.

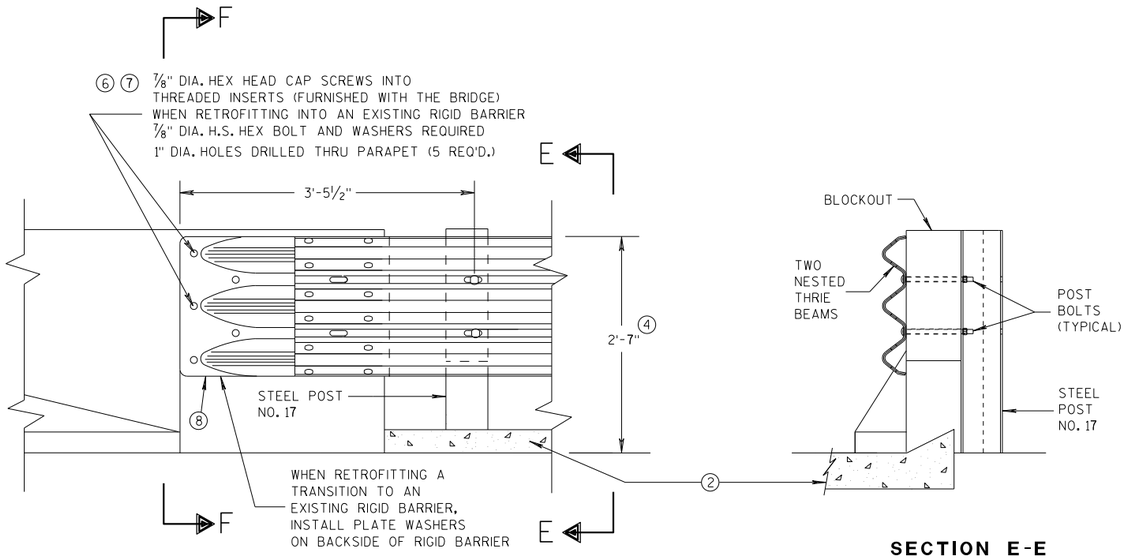
(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

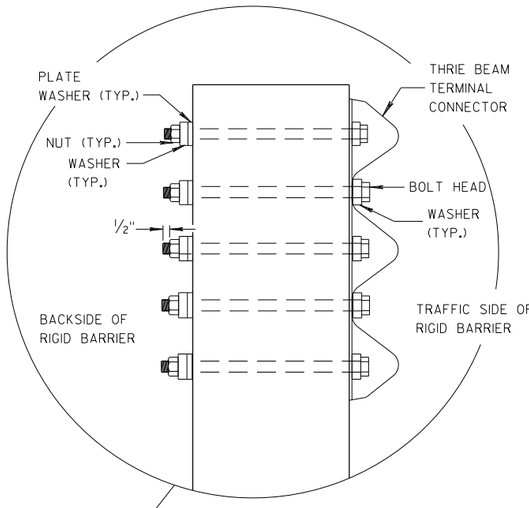
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

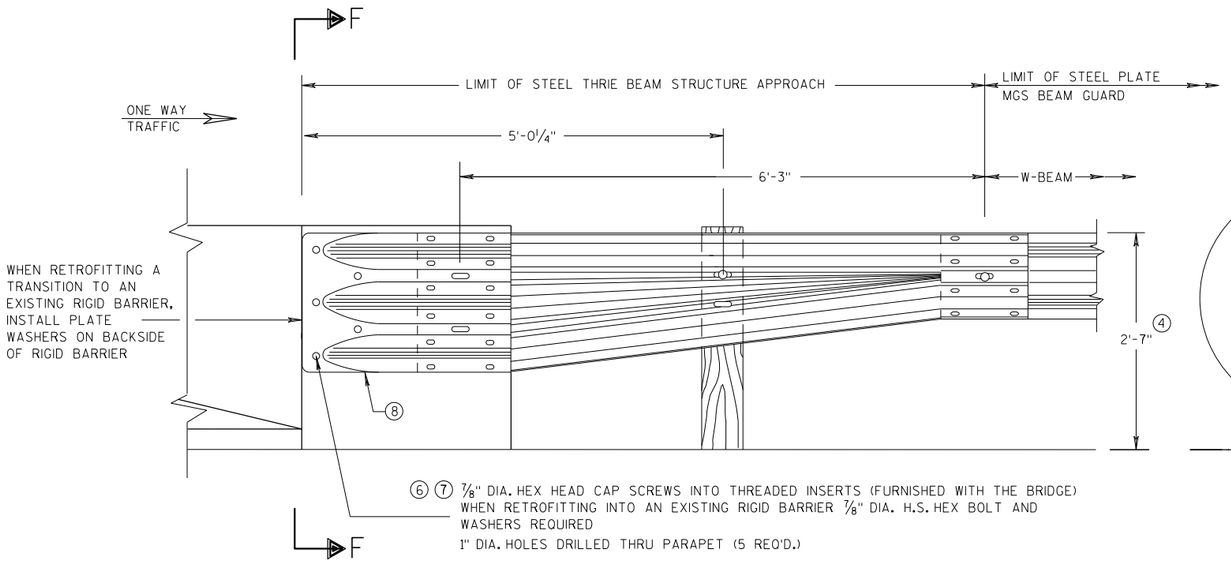
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

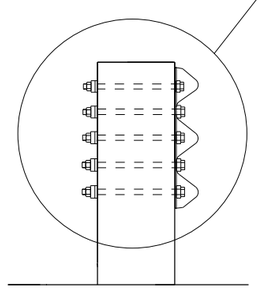
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

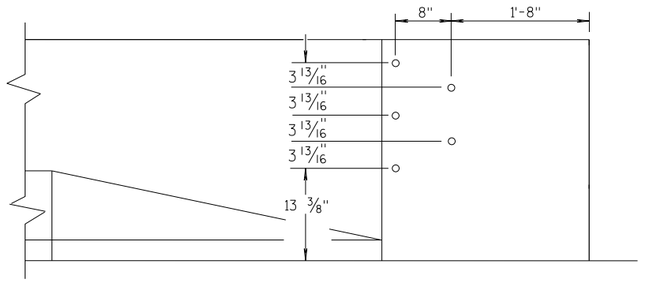




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVI
NT
FHWA

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

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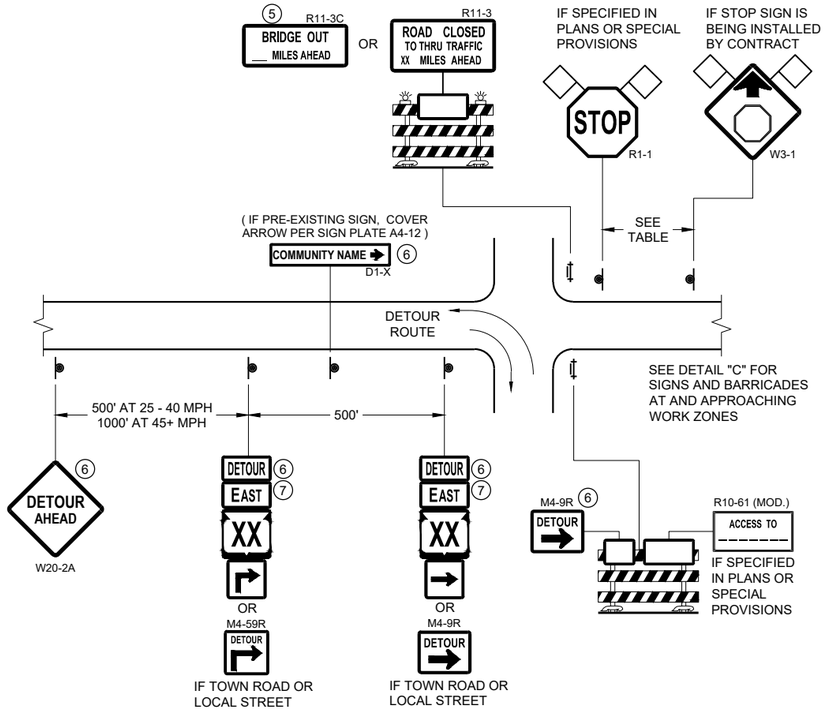
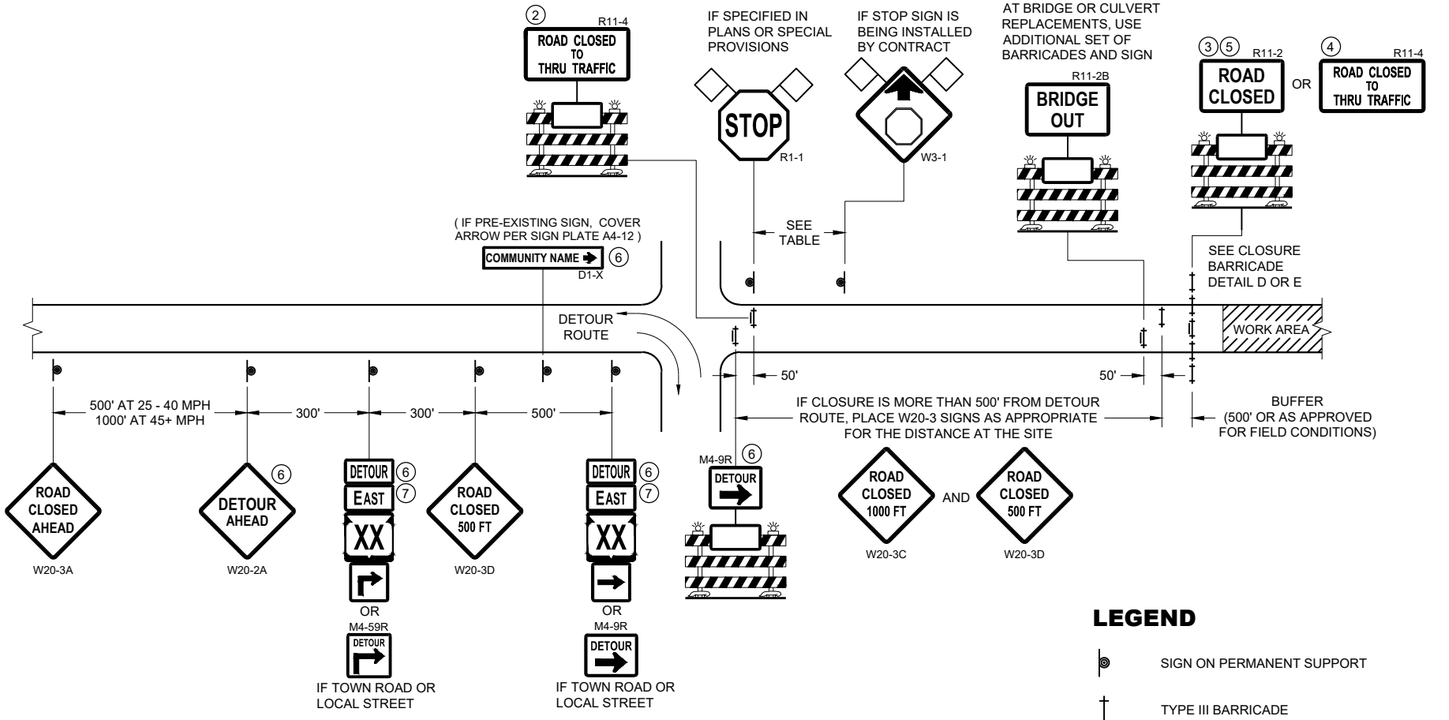
S.D.D. 14 B 45-5d



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



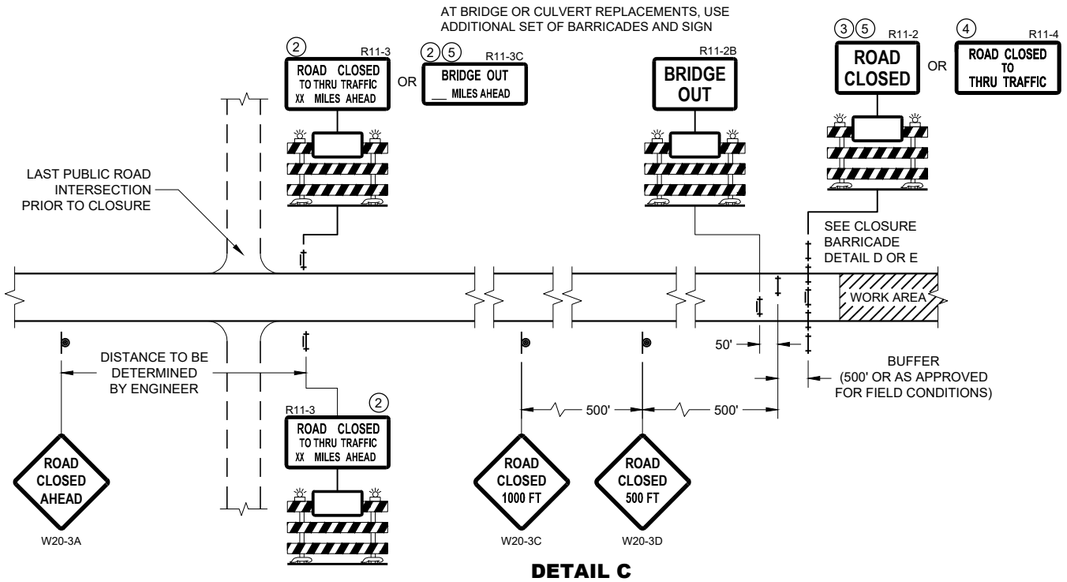
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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

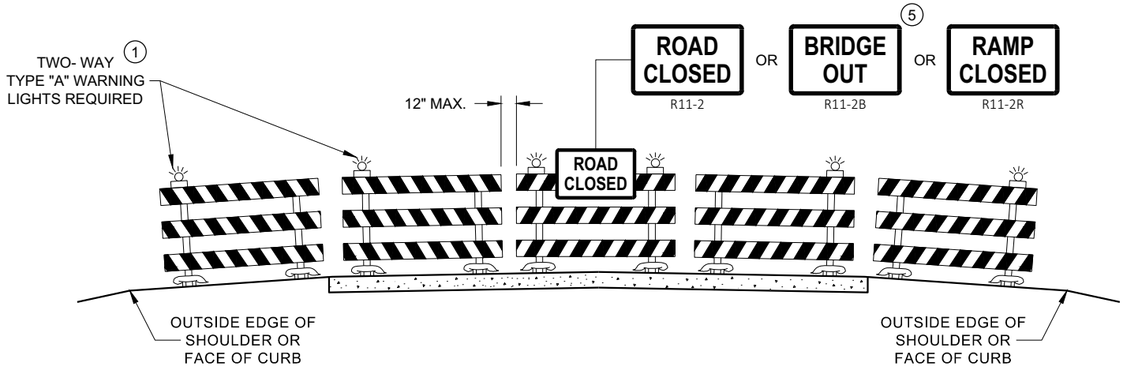
APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

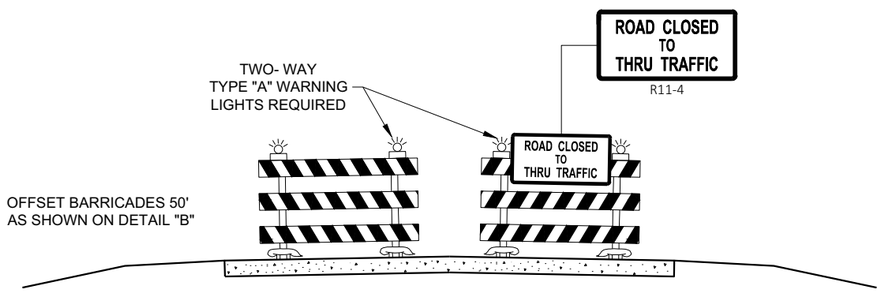
6

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

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SDD 15C02 - 08b

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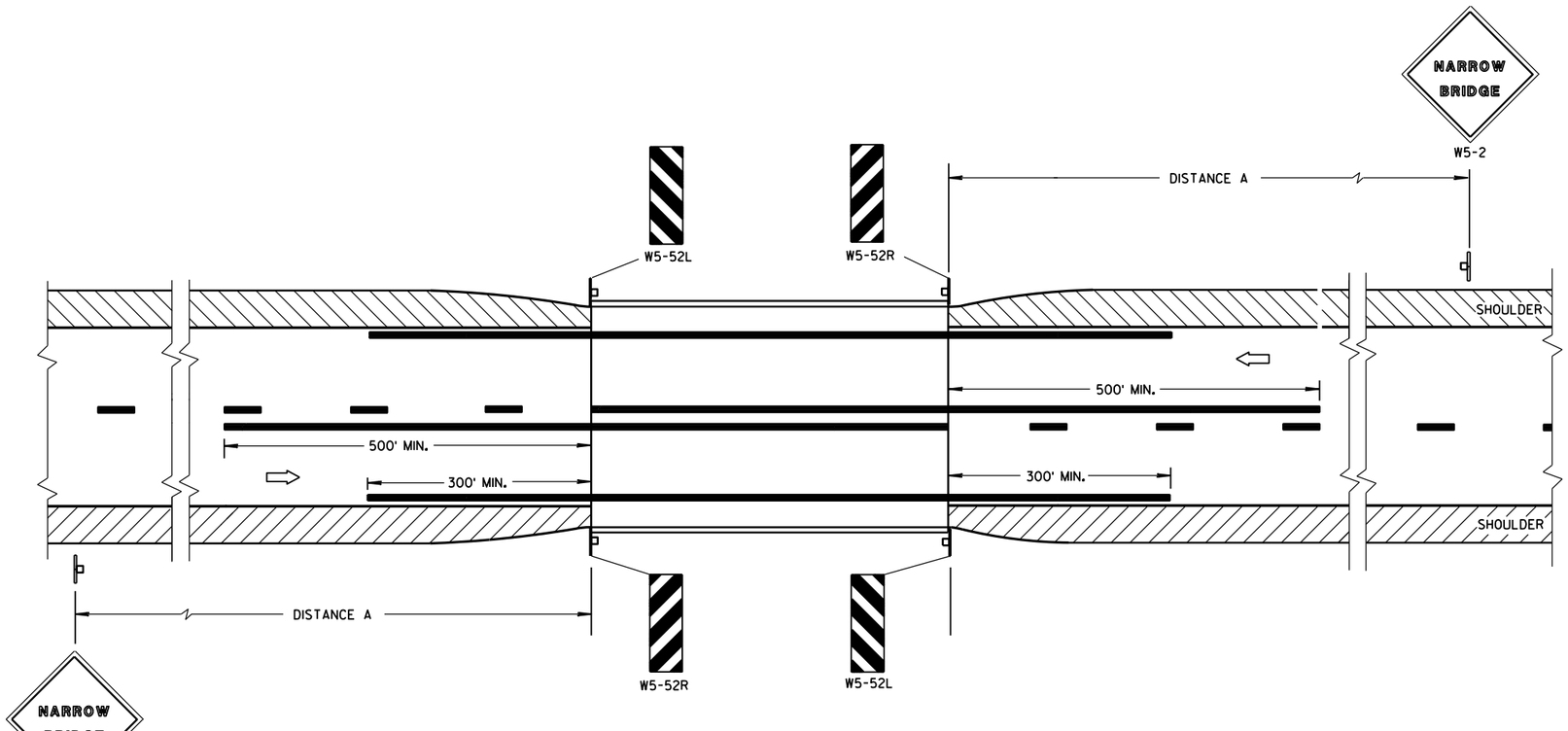
SDD 15C02 - 08b



SITUATION 1

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

DISTANCE TABLE

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

GENERAL NOTES

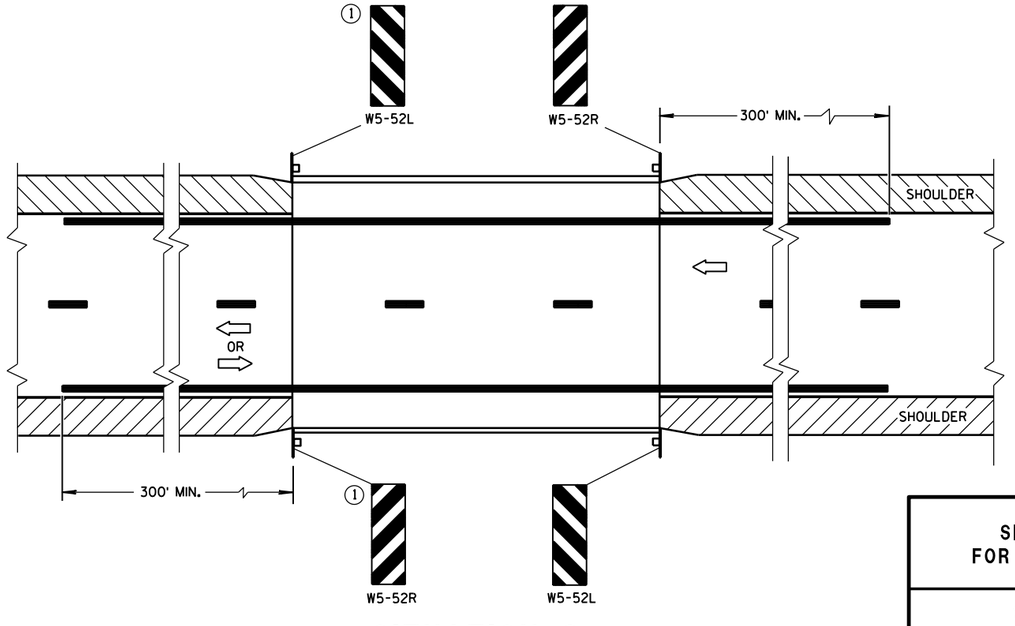
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

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

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

6

S.D.D. 15 C 6-9

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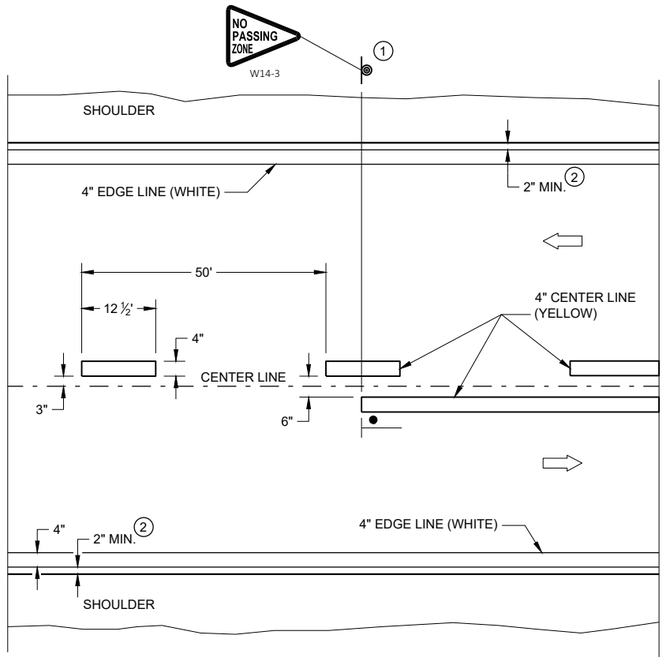
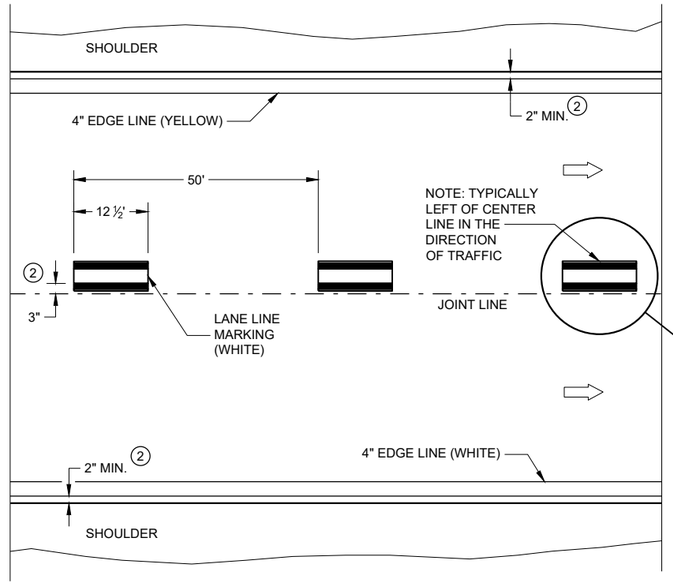
S.D.D. 15 C 6-9

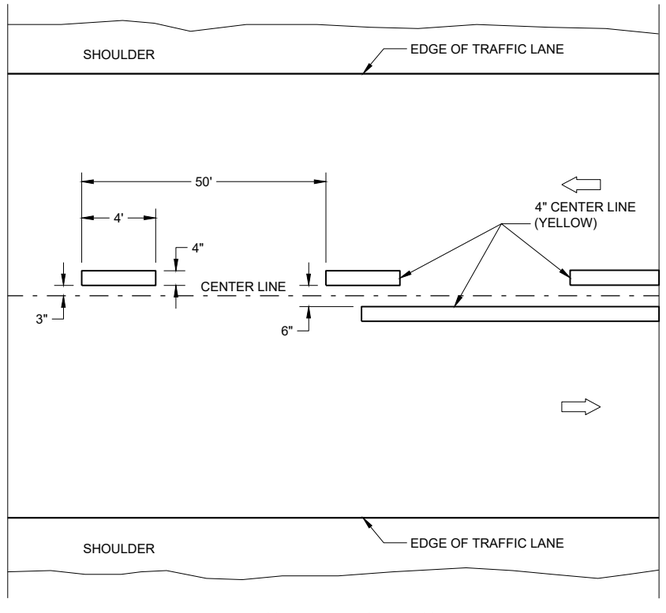


TWO WAY TRAFFIC

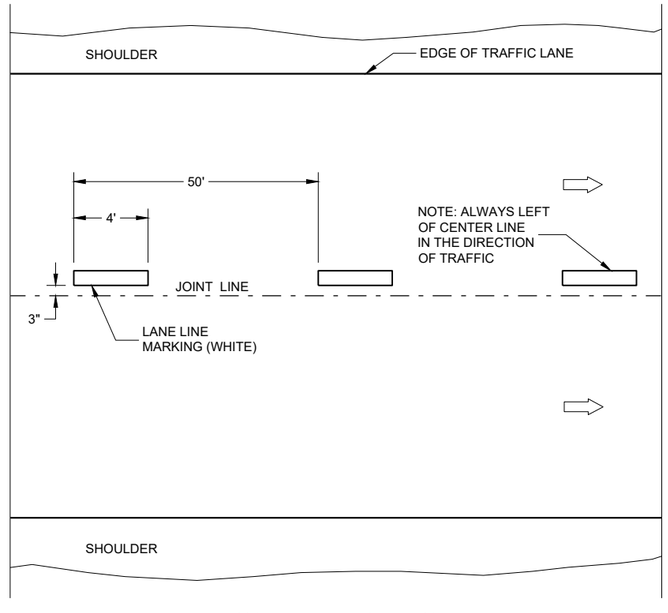


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

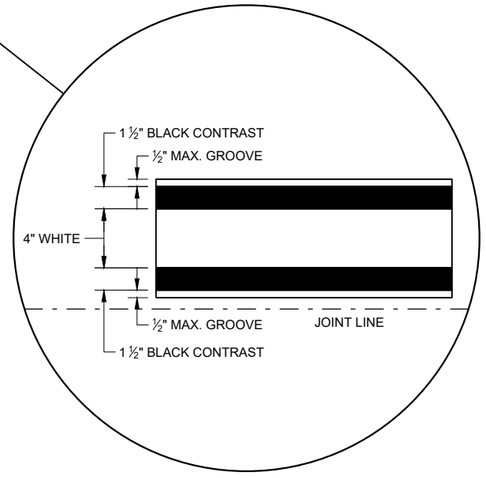
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Matthew Rauch
STATEWIDE SIGNING AND M ENGINEER

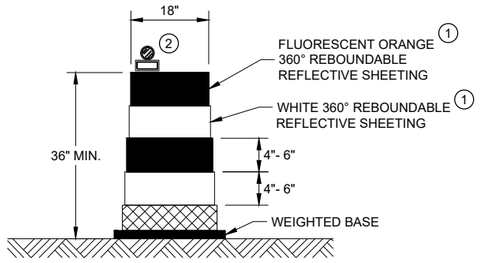
FHWA

SDD 15C08 - 20a

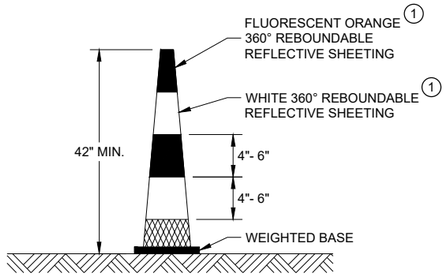
SDD 15C08 - 20a

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.

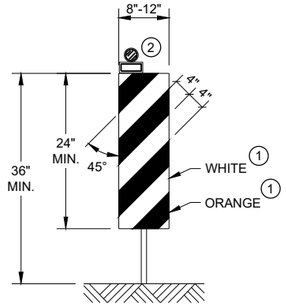


DRUM



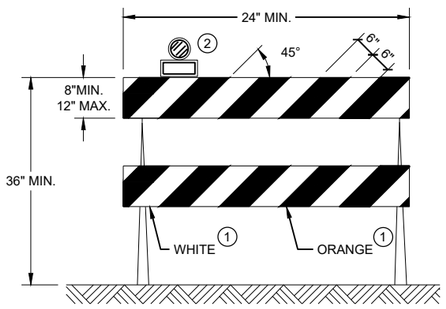
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



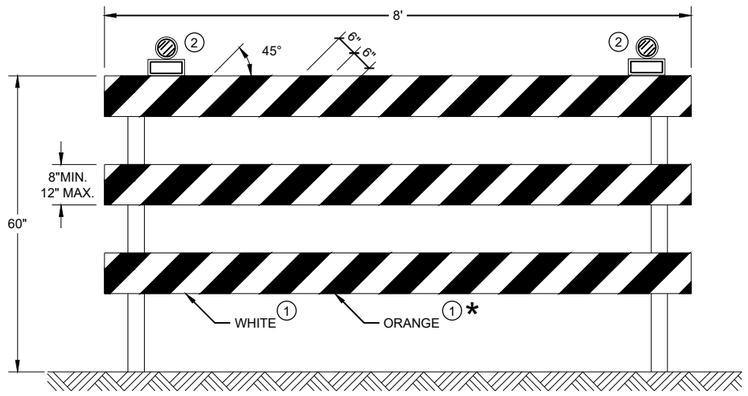
VERTICAL PANEL

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 ENGINEE

FHWA

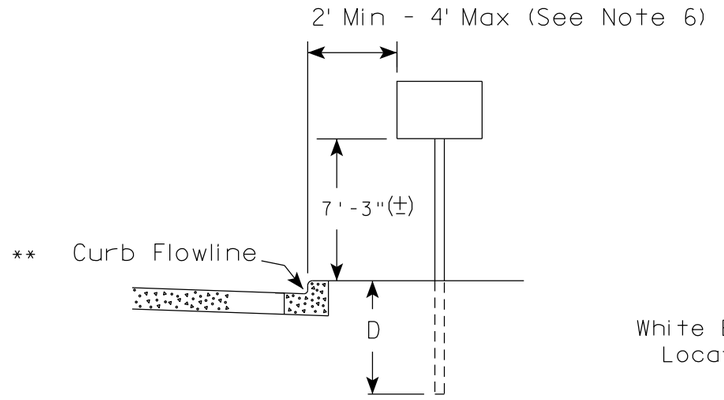
6

SDD 15C11 - 09b

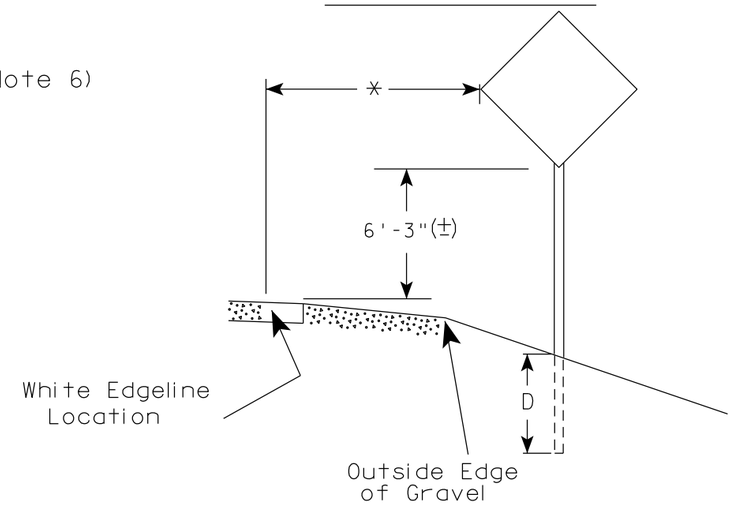
6

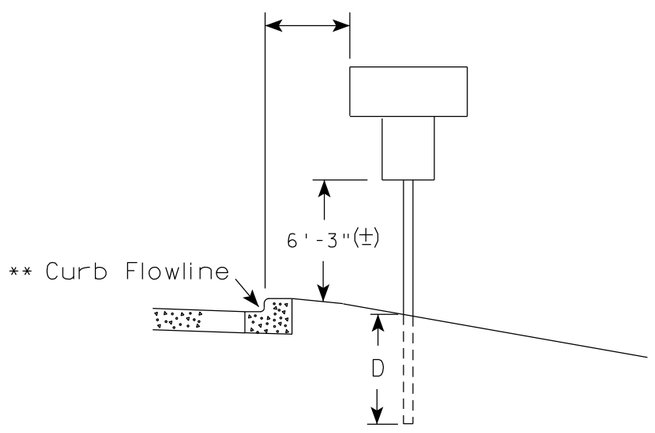
SDD 15C11 - 09b

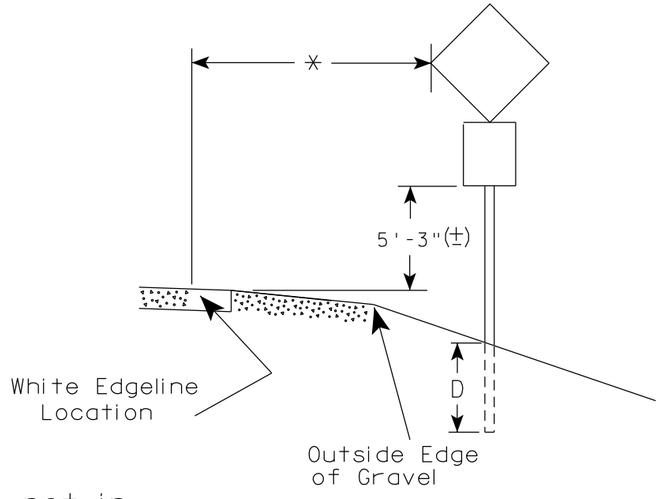
URBAN AREA



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.

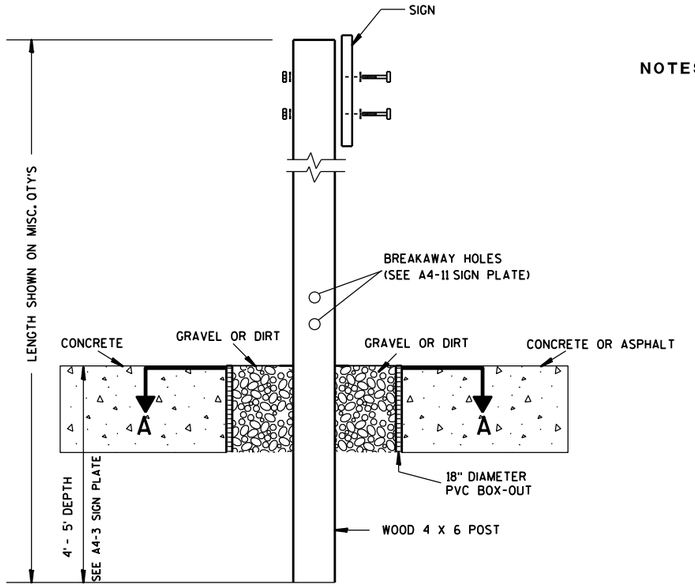
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

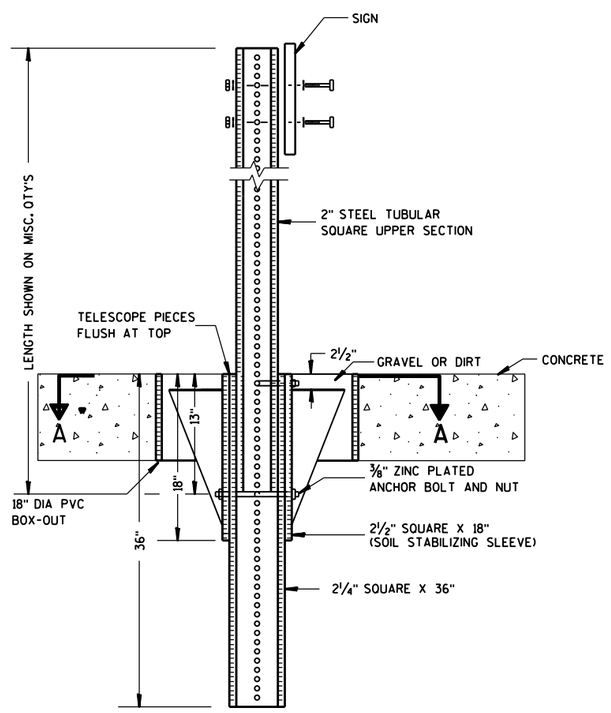
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 37	E



ELEVATION VIEW

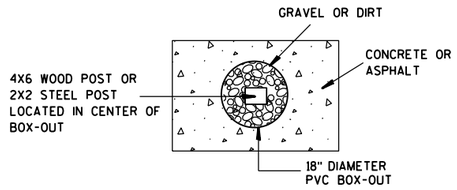
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

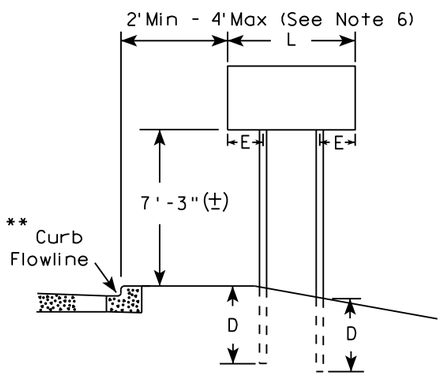
APPROVED Matthew R Rauch
for State Traffic Engineer

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

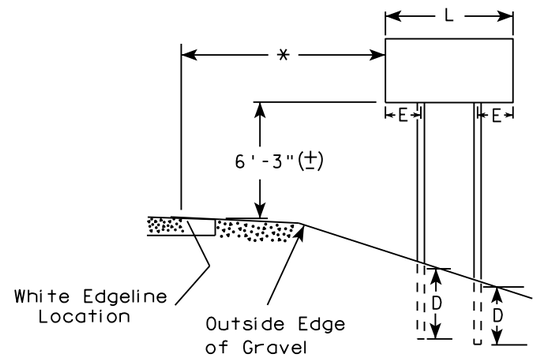
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

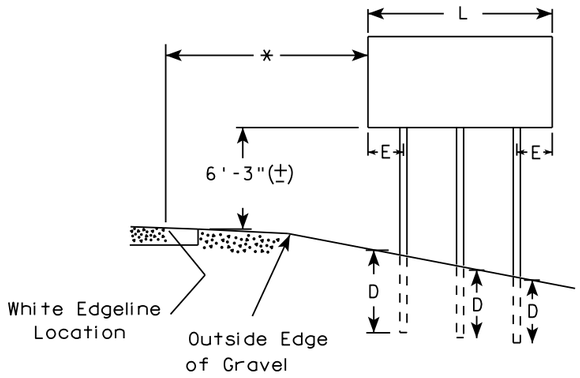
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

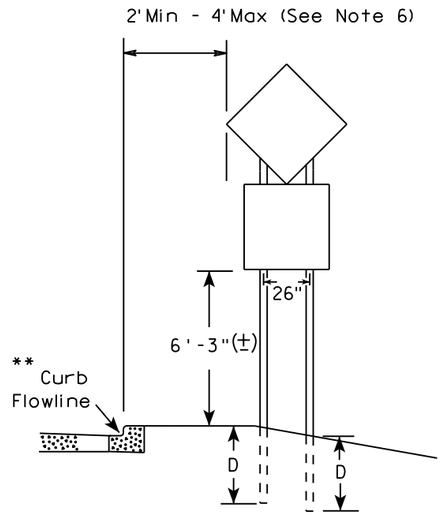
URBAN AREA



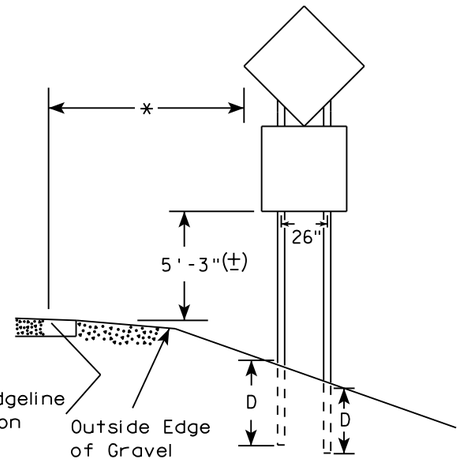
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

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

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

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

POST EMBEDMENT DEPTH

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

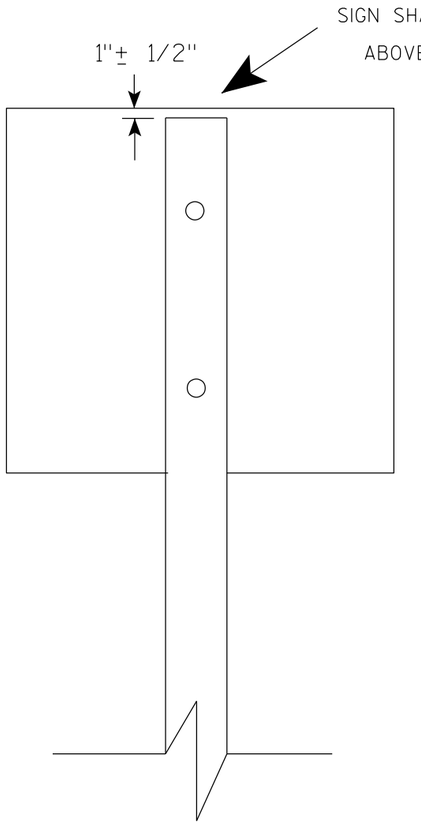
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

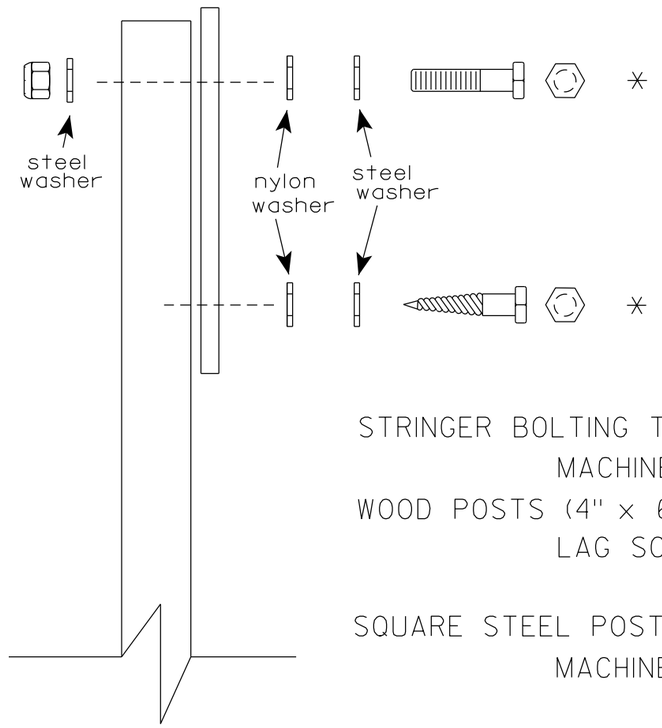
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 39	E





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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

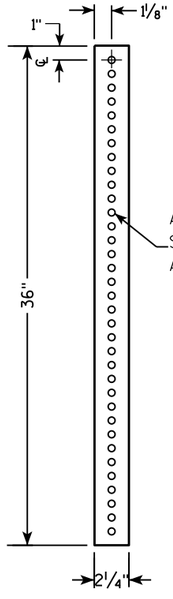
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

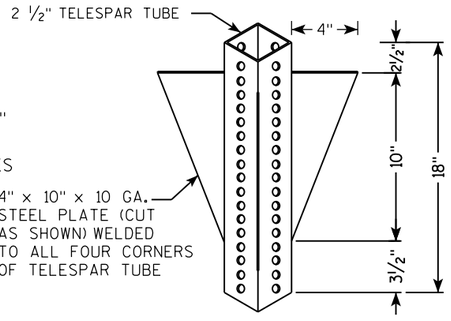
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

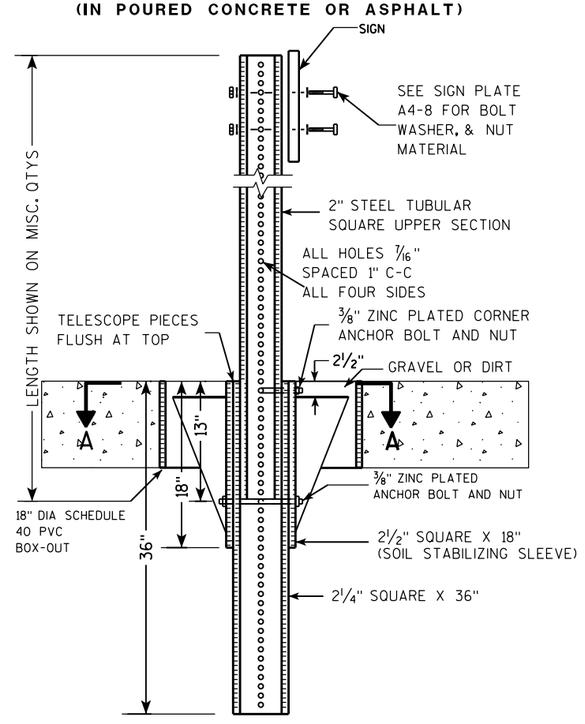
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



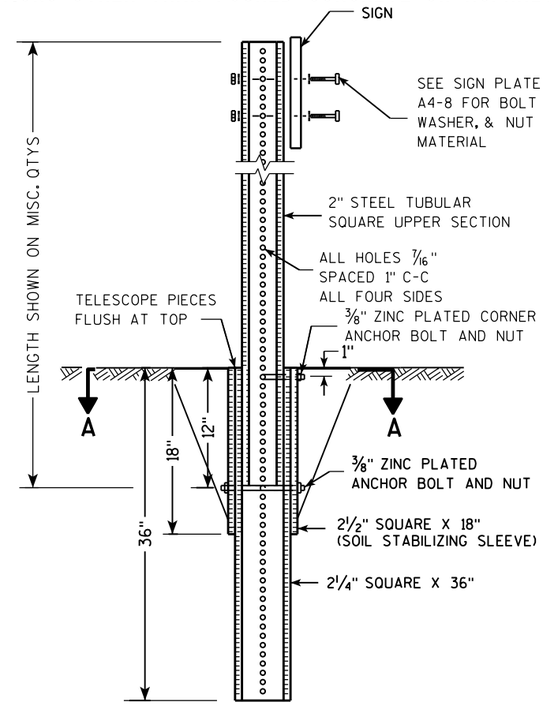
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

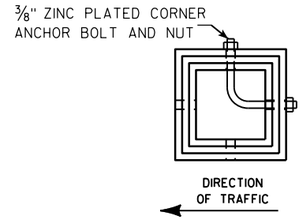


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

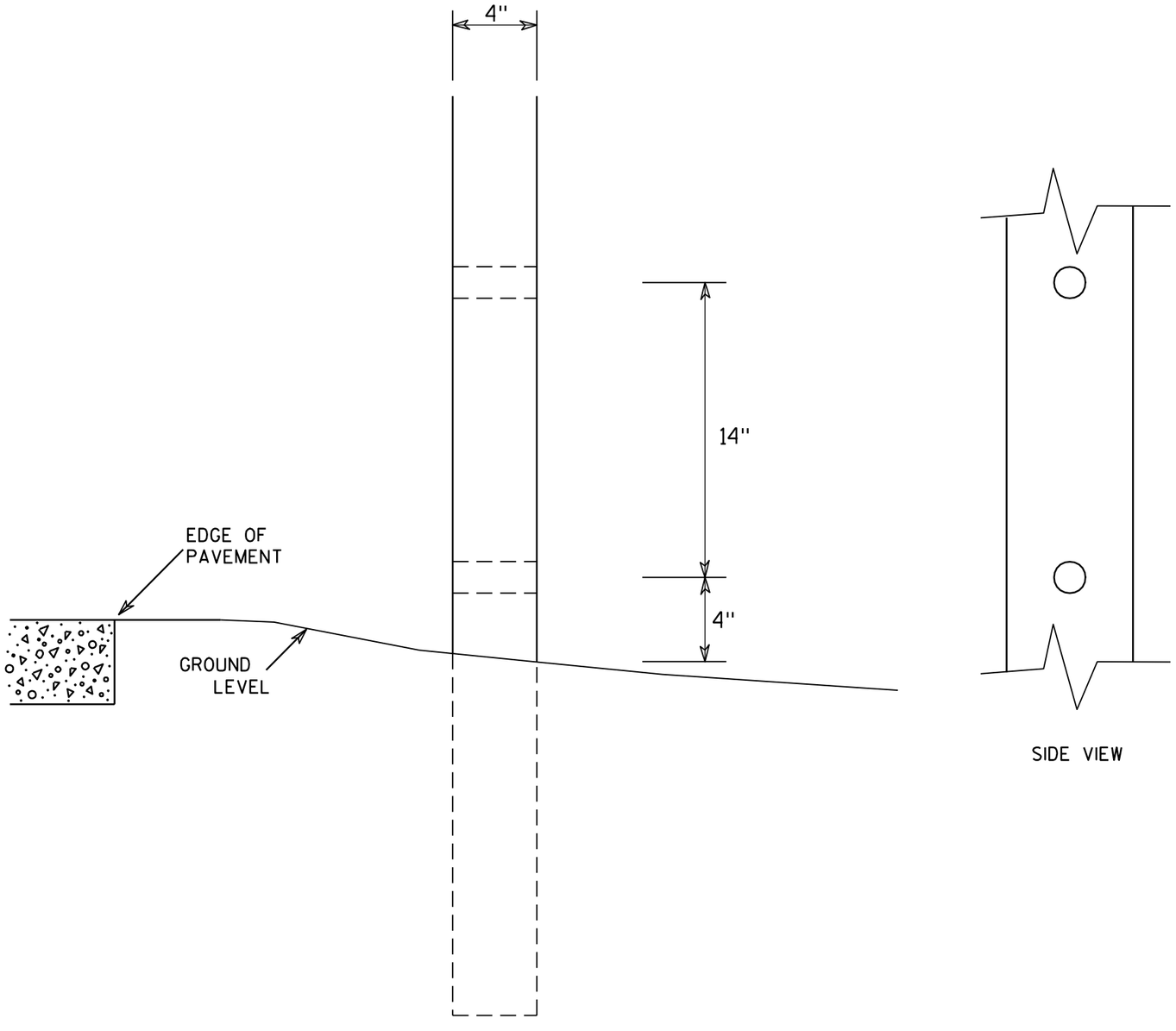
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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

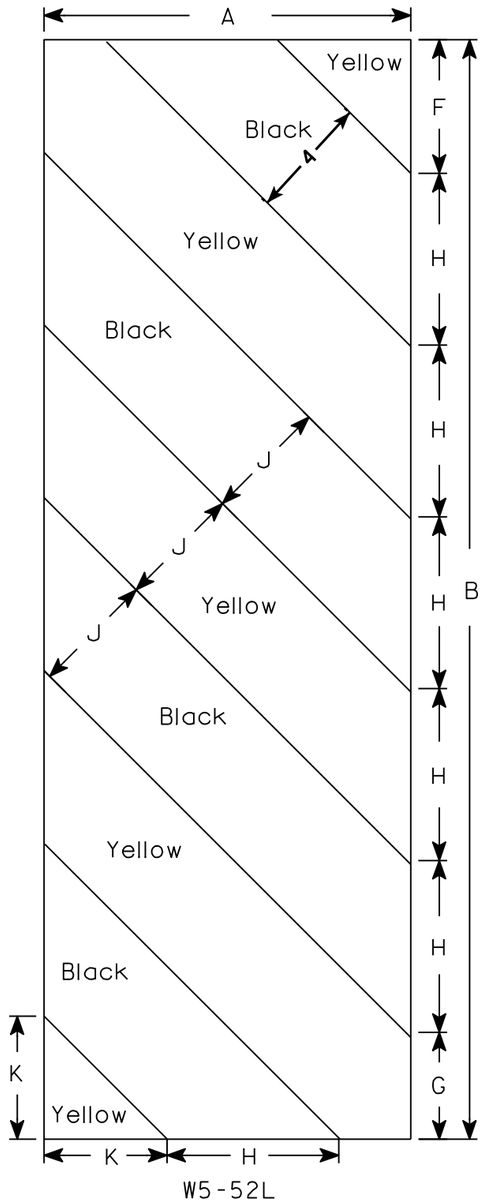
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

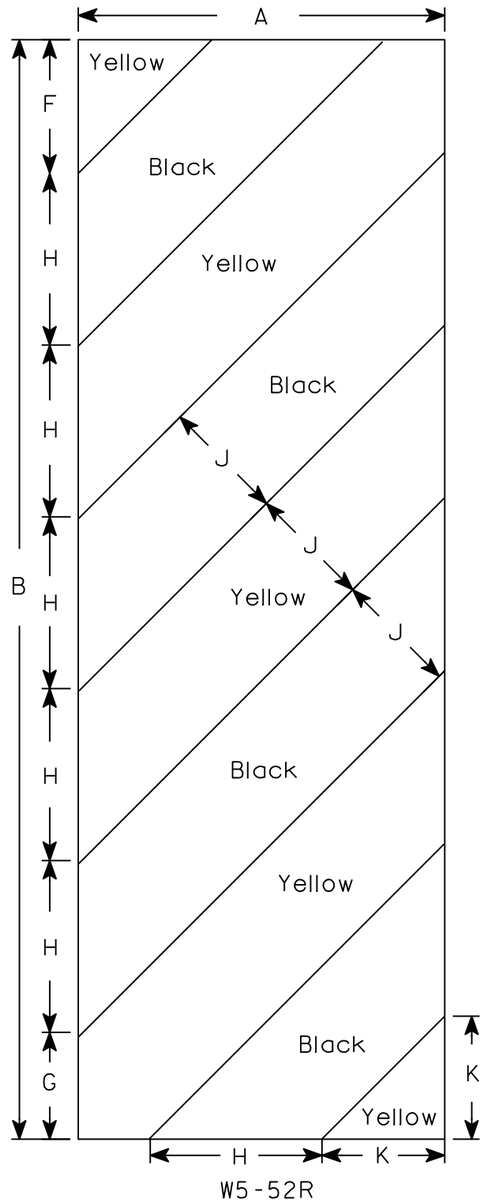
APPROVED Chester J Spang
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 42	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

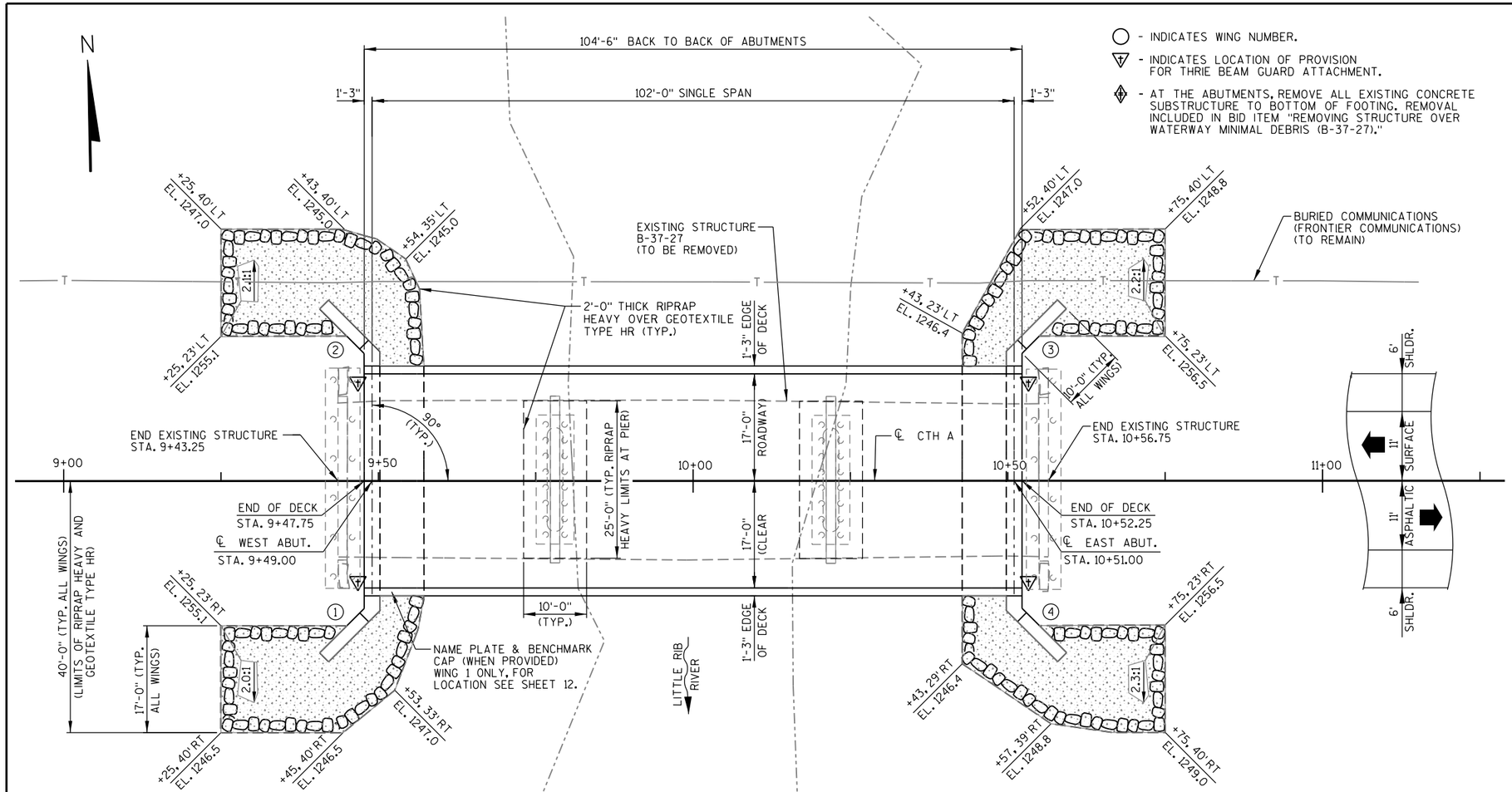
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 43	E

STATE PROJECT NUMBER

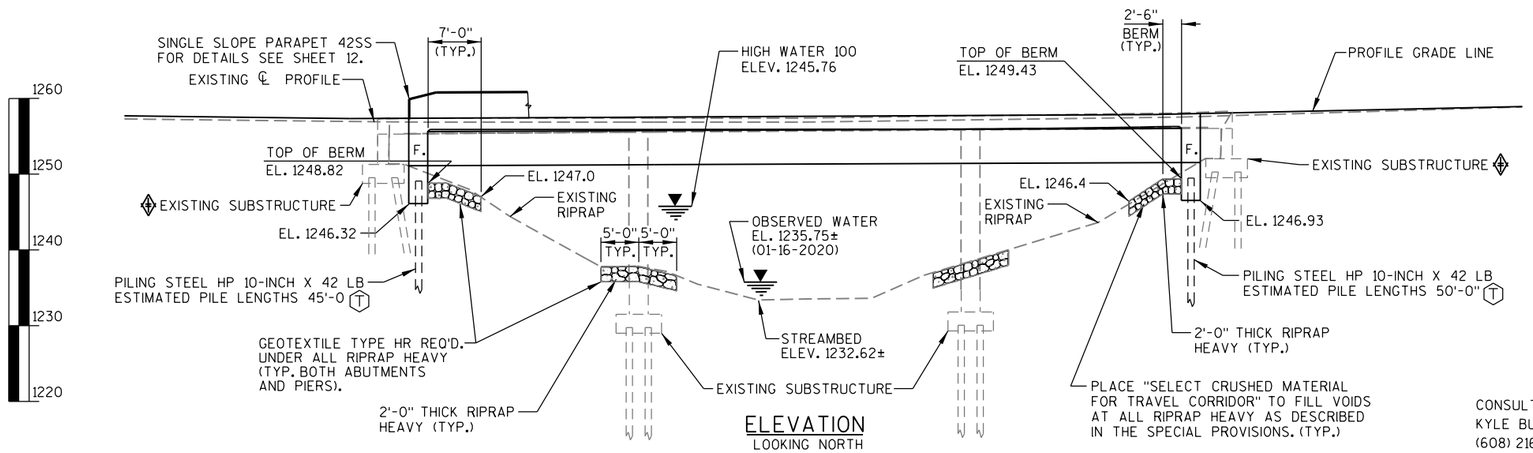
9479-00-73



PLAN

(SINGLE SPAN 54W" PRESTRESSED CONCRETE GIRDER BRIDGE)

Ⓣ — FIELD VERIFY LOCATION OF EXISTING TIMBER PILING BEFORE DRIVING PILES. ADJUST LOCATION OF NEW PILES 3-7 UP TO 8'-0" MAXIMUM PILE SPACING TO MAINTAIN 2'-0" MIN. CENTER TO CENTER SPACING FROM THE EXISTING TIMBER PILING.



ELEVATION

LOOKING NORTH

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.11
OPERATIONAL RATING FACTOR: 1.46

TRAFFIC DATA:

A.A.D.T. (2022) = 1,130
A.A.D.T. (2042) = 1,380
R.D.S. = 25 MPH

WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS.

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

MATERIAL PROPERTIES:

CONCRETE MASONRY, 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.

54W-INCH PRESTRESSED GIRDERS
CONCRETE MASONRY — $f'c$ = 8,000 P.S.I.
STRANDS - 0.60" Φ WITH AN ULTIMATE TENSILE STRENGTH OF — f_y = 270,000 P.S.I.

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 170 TONS ✳ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE LENGTHS ARE 45'-0" AT THE WEST ABUTMENT AND 50'-0" AT THE EAST ABUTMENT.

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

HYDRAULIC DATA:

100 YEAR FREQUENCY

DRAINAGE AREA	19.1 SQ. MI.
Q_{100}	4,740 C.F.S.
VELOCITY	8.26 FT./SEC.
WATERWAY AREA	574 SQ. FT.
SCOUR CRITICAL CODE	5
HIGH WATER $_{100}$ ELEVATION	1245.76
Q_2	1,060 C.F.S.
Q_2 ELEVATION	1241.03
Q_2 VELOCITY	3.55 FT./SEC.

ROADWAY OVERFLOW DESIGN FREQUENCY

OVERTOPPING FREQUENCY — > 100 YEARS

LIST OF DRAWINGS

WISCONSIN
KYLE H. BUSCH
E-46187
MADISON
WI
PROFESSIONAL ENGINEER

8/30/2021

NO.	DATE	REVISION	BY

MSA
ENGINEERING | ARCHITECTURE | SURVEYING
FUNDING | PLANNING | ENVIRONMENTAL
1702 PANKRATZ STREET, MADISON WI 53704
(608) 242-7779 www.msa-ps.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 11/22/21
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-37-459

CTH A OVER LITTLE RIB RIVER

COUNTY	TOWN ~~CITY/VILLAGE~~
MARATHON	BERLIN

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JZ	KHB	RLR	KHB

GENERAL PLAN

SHEET 1 OF 13
44

CONSULTANT DESIGN CONTACT:
KYLE BUSCH
(608) 216-2063

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

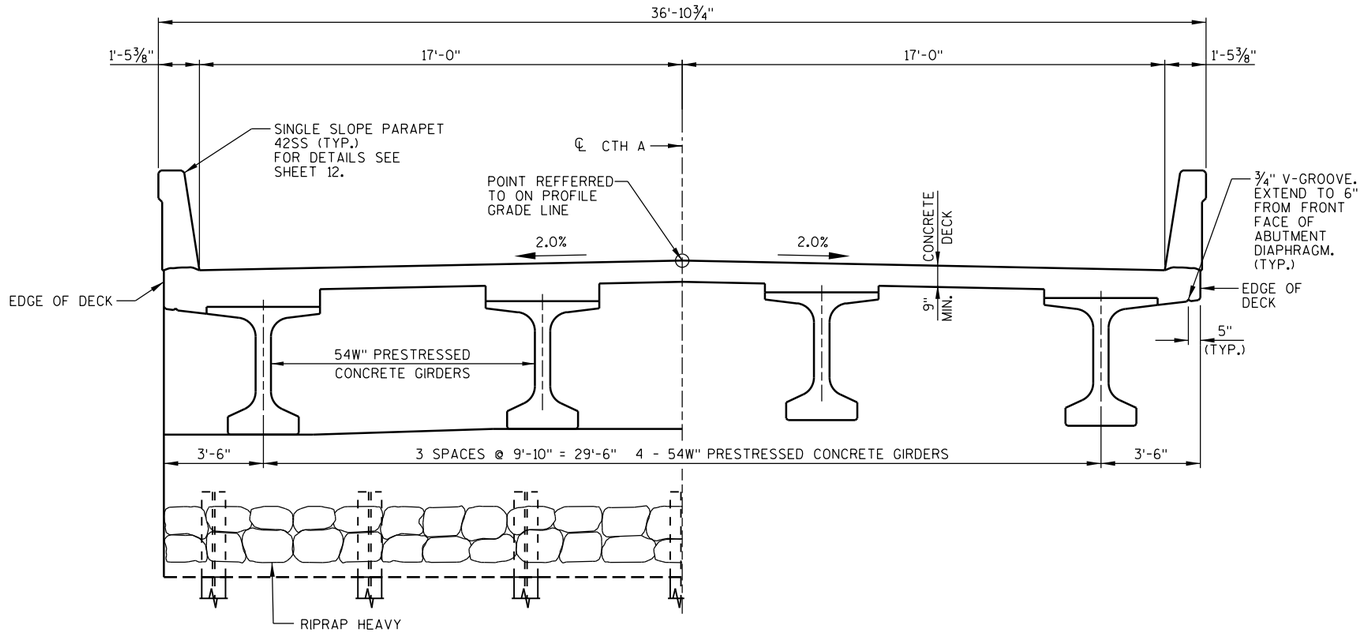
FILE= 142055_01.DGN
DATE= 8/30/2021

8

8

STATE PROJECT NUMBER

9479-00-73



AT ABUTMENTS IN SPAN

CROSS SECTION THRU BRIDGE

(LOOKING EAST)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE FIRST DIGIT OF A THREE DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE LIMITS SHOWN ON SHEET 1 AND ON THE ABUTMENT SHEETS, OR AS DIRECTED BY THE ENGINEER. AFTER THE PLACEMENT OF RIPRAP HEAVY, PLACE SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR TO FILL VOIDS ON ALL RIPRAP SURFACES.

DO NOT PLACE FILL ABOVE 3'-0" FROM THE BOTTOM OF ABUTMENT UNTIL THE SUPERSTRUCTURE IS IN PLACE.

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES" FOR THE ABUTMENTS.

THIS STRUCTURE WILL REPLACE THE EXISTING STRUCTURE, B-37-27, A 113.5 FT. LONG, THREE SPAN HAUNCHED CONCRETE SLAB BRIDGE SET ON CONCRETE ABUTMENTS WITH TIMBER PILING AND CONCRETE PIERS WITH TIMBER PILING, WITH A 24.0 FT. CLEAR ROAD WIDTH.

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

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.

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.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP OF DECK, TO THE TOP AND EXTERIOR EXPOSED FACES OF WINGS, AND TO THE END 1'-0" OF THE FRONT FACE OF ABUTMENTS.

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE INSIDE FACES, THE TOP FACES, AND THE ENDS OF THE PARAPETS.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO USGS NAVD 88 (2012 ADJUSTED). BENCHMARK REFERENCES AT THE PROJECT SITE WERE SET BY THE CONSULTANT USING GPS TECHNOLOGY.

THE HAUNCH CONCRETE QUANTITIY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE GIRDER SHEET, SHEET 9.

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	WEST ABUT.	EAST ABUT.	SUPER	TOTAL
203.0260.01	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-37-27	EACH	-	-	-	1
206.1000.01	EXCAVATION FOR STRUCTURES BRIDGES B-37-459	LS	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	308	308	-	616
502.0100	CONCRETE MASONRY BRIDGES	CY	35.7	36.5	185.6	258
502.3200	PROTECTIVE SURFACE TREATMENT	SY	23	23	395	441
502.3210	PIGMENTED SURFACE SEALER	SY	-	-	104	104
503.0155	PRESTRESSED GIRDER TYPE I 54W-INCH	LF	-	-	412	412
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,605	2,605	-	5,210
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,825	1,840	29,065	32,730
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	-	-	8	8
506.4000.01	STEEL DIAPHRAGMS B-37-459	EACH	-	-	6	6
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	12	12	-	24
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	405	450	-	855
606.0300	RIPRAP HEAVY	CY	122	123	-	245
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	95	95	-	190
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-	-	4	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	39	39	-	78
645.0120	GEOTEXTILE TYPE HR	SY	245	245	-	490
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	58	58	-	116
	NON-BID ITEMS					
	PREFORMED FILLER	SIZE				½" & ¾"

ABUTMENT BACKFILL DIAGRAM

L = OUT-TO-OUT OF ABUTMENT BODY
H = AVERAGE ABUTMENT FILL HEIGHT
W1 = WING 1 LENGTH
W2 = WING 2 LENGTH

$V_{CF} = (L)(3.0')(H)+(L)(0.5)(1.5H)(H)+(0.5)(H)(W1+W2)(3.0')$

$V_{TON} = V_{CF}(2.0)/27$

STRUCTURE BACKFILL DETAIL

AT ABUTMENT BACK FACE

PROFILE GRADE LINE - CTH A

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-459

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CROSS SECTION, QUANTITIES & NOTES

SHEET 7 OF 13
45

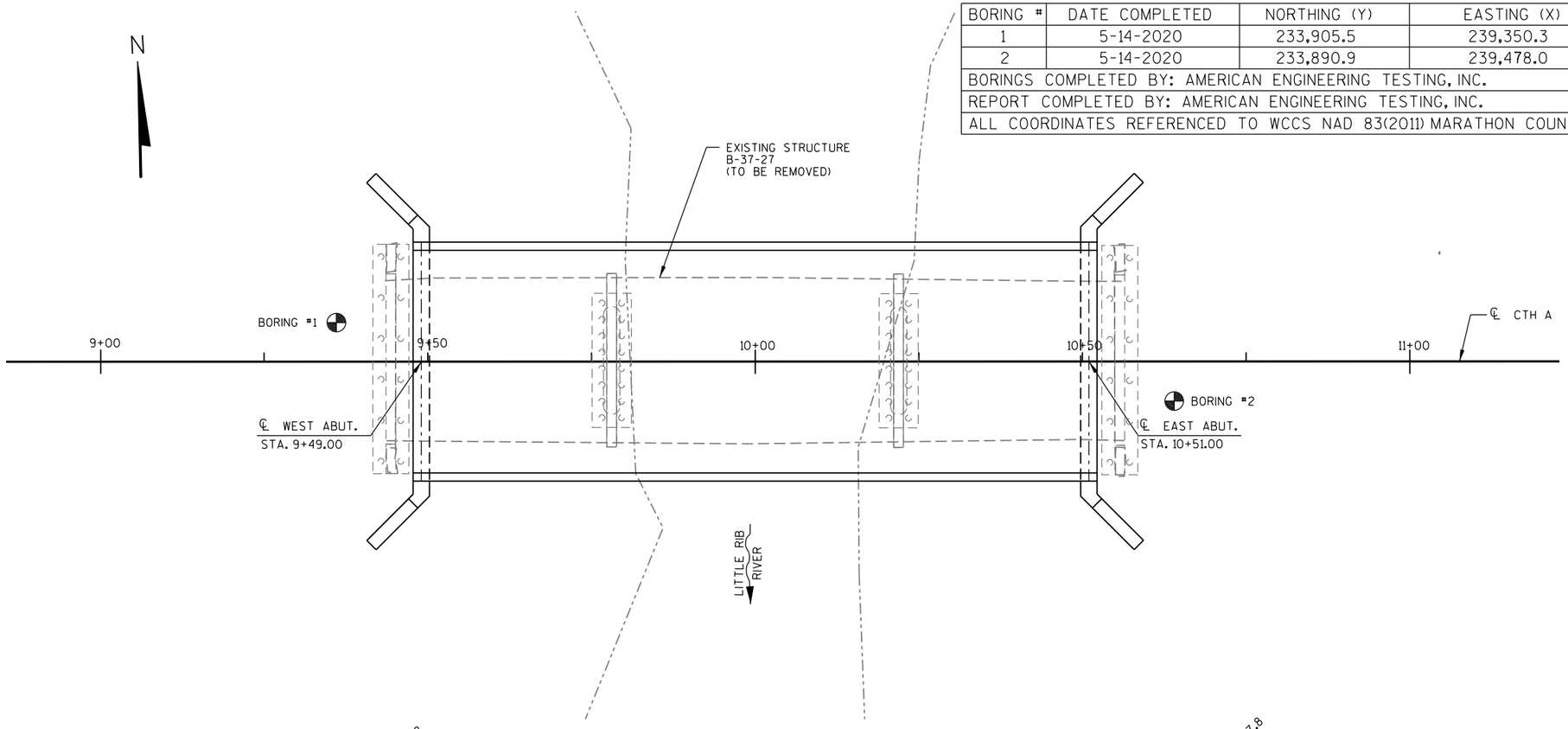
8

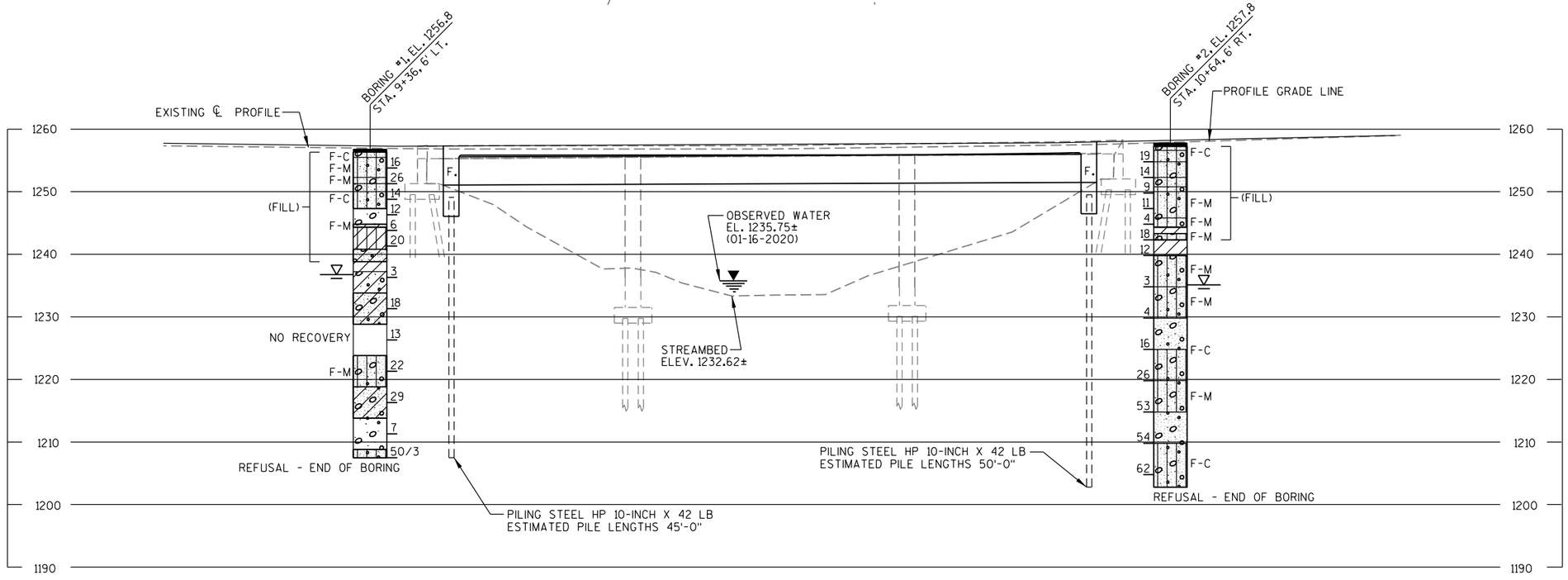
8

FILE= 1452055_02.DGN
DATE= 8/30/2021

1452055_02.dgn 8/30/2021 3:12:59 PM rrabska

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	5-14-2020	233,905.5	239,350.3
2	5-14-2020	233,890.9	239,478.0
BORINGS COMPLETED BY: AMERICAN ENGINEERING TESTING, INC.			
REPORT COMPLETED BY: AMERICAN ENGINEERING TESTING, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2011) MARATHON COUNTY			





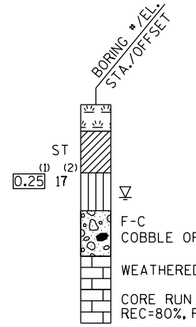
STATE PROJECT NUMBER

9479-00-73

MATERIAL SYMBOLS

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

LEGEND OF BORING



(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-37-459

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SUBSURFACE EXPLORATION

SHEET 3 OF 13

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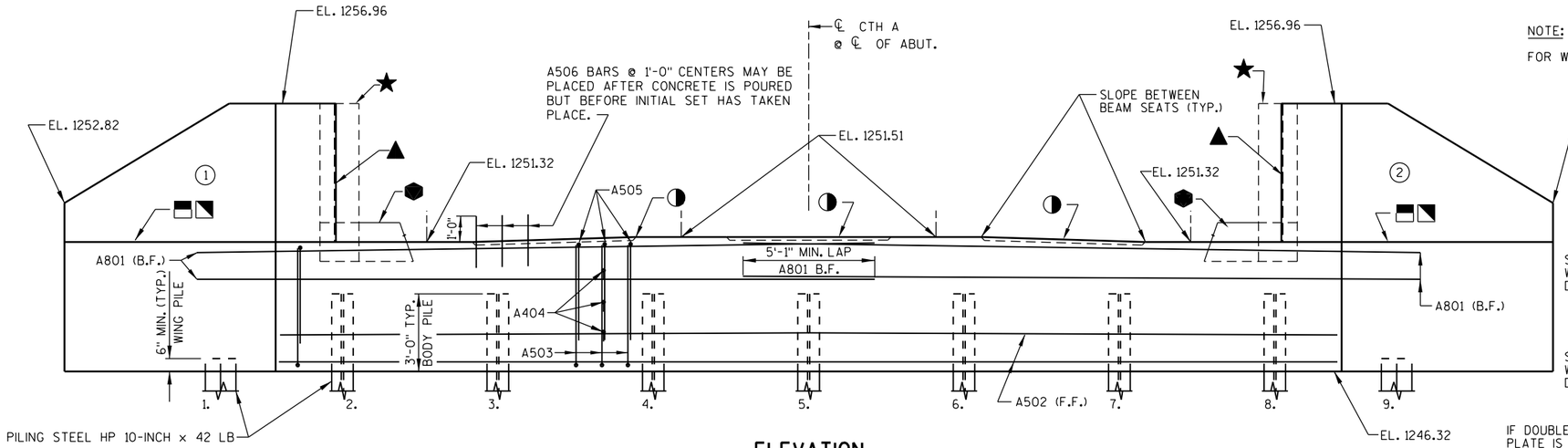
FILE= 1452055_03.DGN

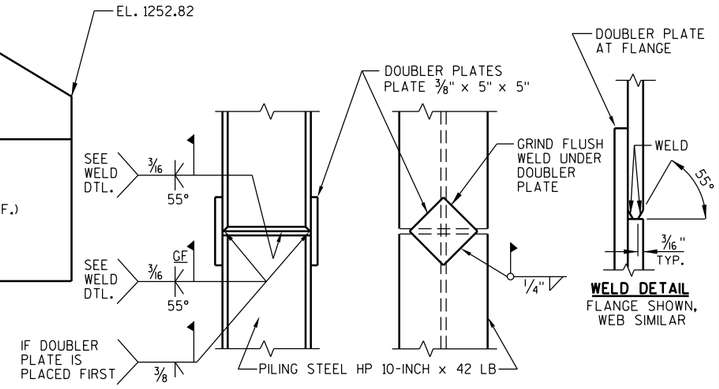
STATE PROJECT NUMBER
9479-00-73



ELEVATION
(WEST ABUTMENT LOOKING WEST)

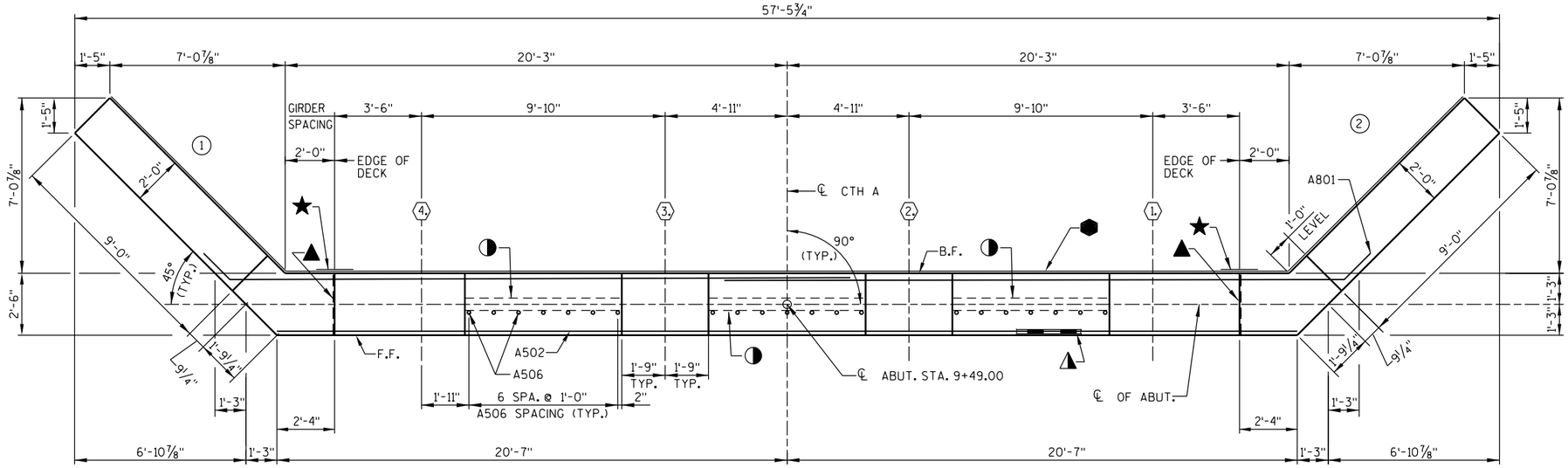
NOTE:

FOR WING DETAILS, SEE SHEET 5.

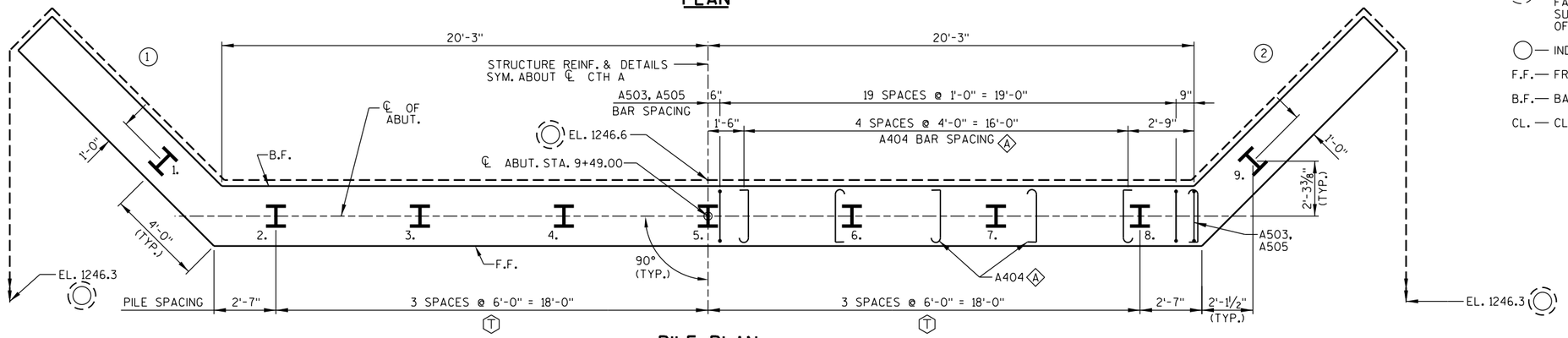


WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

PILE SPLICE DETAILS



PLAN



PILE PLAN

LEGEND

- ◑ — KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
- Ⓐ — ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.
- Ⓣ — FIELD VERIFY LOCATION OF EXISTING TIMBER PILING BEFORE DRIVING PILES. ADJUST LOCATION OF NEW PILES 3-7 UP TO 8'-0" MAXIMUM PILE SPACING TO MAINTAIN 2'-0" MIN. CENTER TO CENTER SPACING FROM THE EXISTING TIMBER PILING.
- ▲ — ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE).
- ◭ — 4"x ½" FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.
- ★ — VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
- ⬢ — HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WING TIPS.
- ◪ — KEYED CONSTRUCTION JOINT ON WING FORMED BY BEVELED 2 X 6. POUR CONCRETE ABOVE JOINT AFTER DECK IS IN PLACE AND PLACE ⬢ ON B.F. OF WING.
- ◥ — ¾" "V" GROOVE ON FRONT FACE OF WING WALL.
- ◯ — PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE. SEE DETAIL ON SHEET 6.

◯ — INDICATES WING NUMBER ⬡ — INDICATES GIRDER NUMBER

F.F. — FRONT FACE

B.F. — BACK FACE

CL. — CLEAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-459

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WEST ABUTMENT

SHEET 4 OF 13
47

8

8

FILE= 1452055_04.DGN
DATE= 8/26/2021

STATE PROJECT NUMBER
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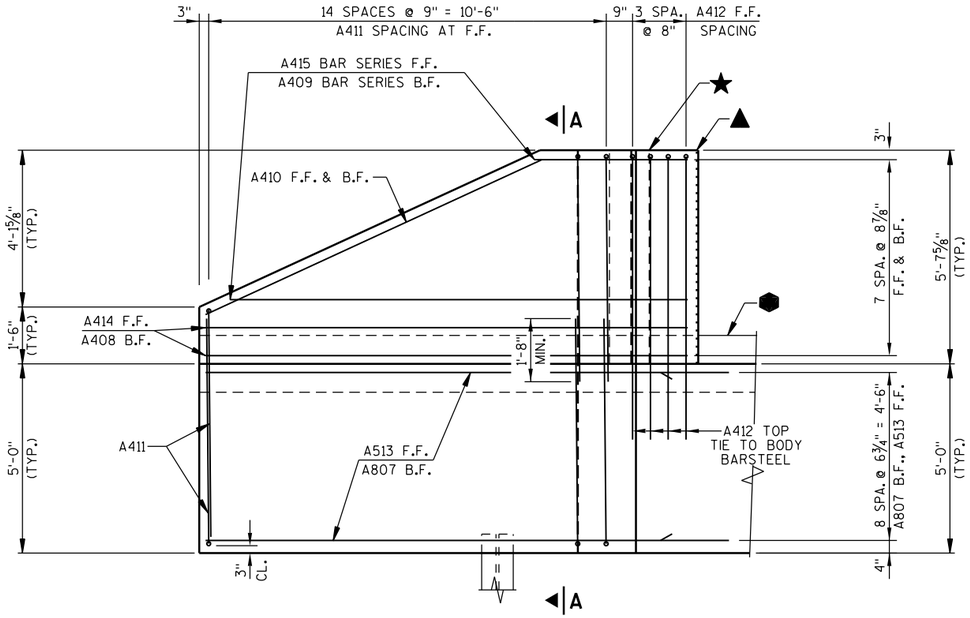
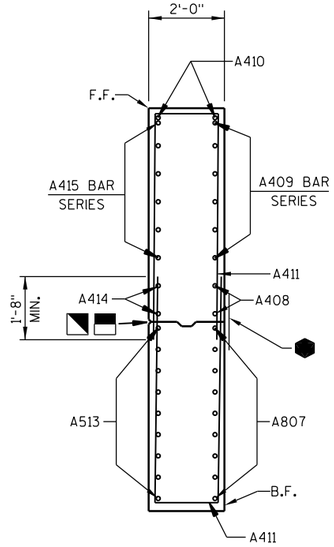


ELEVATION
(LOOKING AT F.F. OF WINGS)

NOTE:
WING 1 SHOWN,
WING 2 SIMILAR.



SECTION A-A THRU WING

BILL OF BARS (WEST ABUTMENT)

UNCOATED 2,605 LBS.
COATED 1,825 LBS.

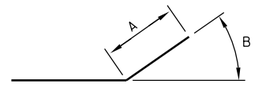
MARK	NUMBER REQUIRED COATED	NUMBER REQUIRED UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION
A801	-	18	26'-5"	X		ABUTMENT BODY - B.F. - HORIZ.
A502	-	9	41'-0"			ABUTMENT BODY - F.F. - HORIZ.
A503	-	84	6'-0"	X		ABUTMENT BODY - F.F. & B.F. - VERT.
A404	-	36	3'-0"	X		ABUTMENT BODY - TIES - HORIZ.
A505	-	42	8'-1"	X		ABUTMENT BODY - TOP - VERT.
A506	21	-	2'-0"			ABUTMENT BODY - TOP DOWELS - VERT.
A807	18	-	14'-3"	X		WINGS - B.F. - HORIZ.
A408	4	-	11'-8"	X		WINGS - B.F. - HORIZ.
A409	12	-	7'-1"	X	Ⓢ	WINGS - B.F. - HORIZ.
A410	4	-	12'-2"	X		WINGS - F.F. & B.F. - TOP - HORIZ.
A411	60	-	13'-6"	X		WINGS - F.F. & B.F. - VERT.
A412	8	-	17'-0"	X		WINGS - F.F. & B.F. - VERT.
A513	18	-	12'-8"	X		WINGS - F.F. - HORIZ.
A414	4	-	13'-3"	X		WINGS - F.F. - HORIZ.
A415	12	-	8'-7"	X	Ⓢ	WINGS - F.F. - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

Ⓢ - LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS. BENT BARS USED IN BAR SERIES TABLE SHALL BE BENT AFTER CUTTING.

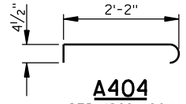
BAR MARK	NO. REQ'D.	LENGTH
A409	2 SERIES OF 6	3'-1" TO 11'-1"
A415	2 SERIES OF 6	4'-7" TO 12'-7"

BAR SERIES TABLE

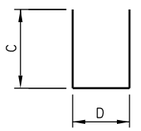


MARK	A	B
A801 A807 A513	1'-6"	45°
A408 A409	1'-10"	45°
A410	2'-5"	25°
A414 A415	2'-0"	45°

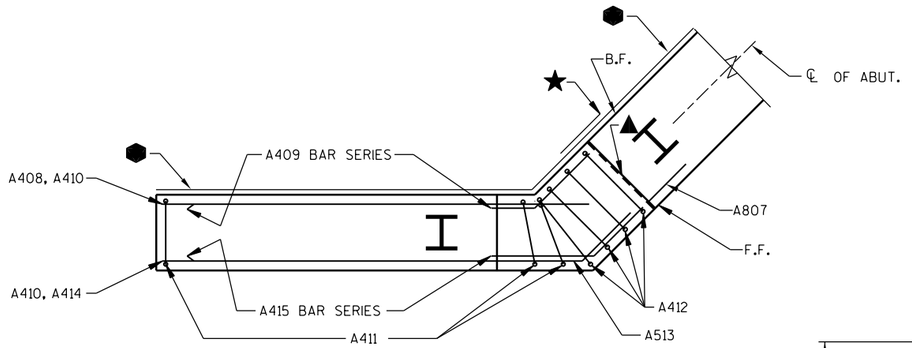
A503



A404
STD. 180° HOOK

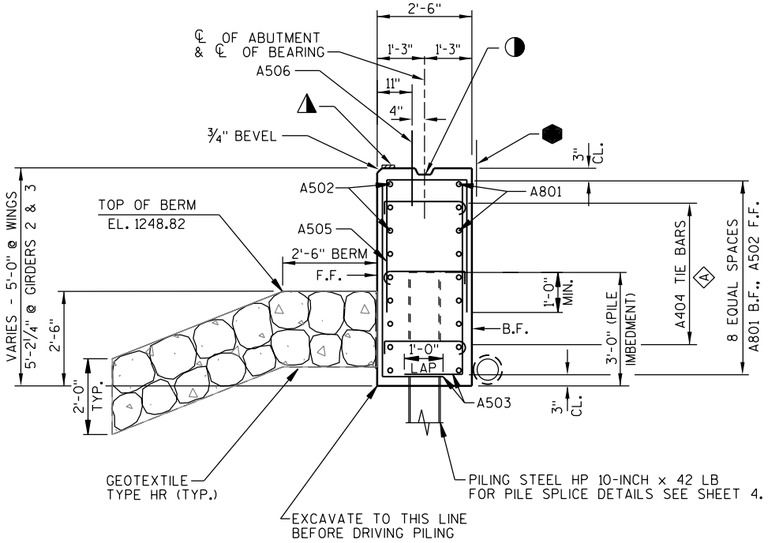


MARK	C	D
A505	3'-1"	2'-2"
A411	6'-0"	1'-8"
A412	7'-6"	2'-2"



PLAN

SEE LEGEND ON SHEET 4 FOR DESCRIPTION OF



TYPICAL SECTION THRU ABUTMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-459

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WEST ABUTMENT DETAILS

SHEET 5 OF 13
48

FILE= 1452055_05.DGN
DATE= 8/30/2021

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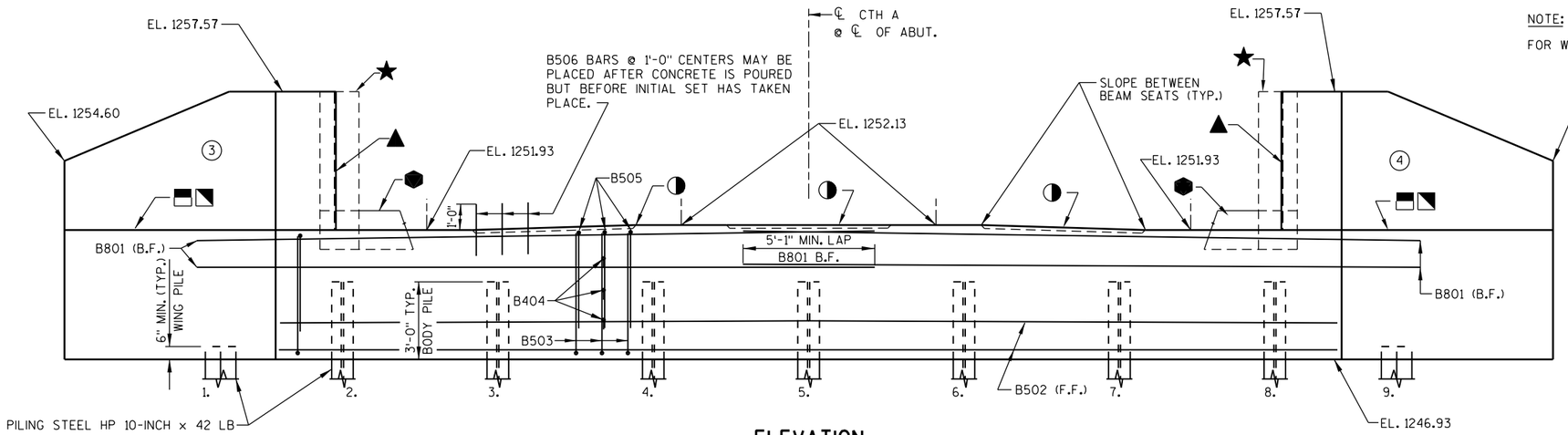
STATE PROJECT NUMBER
9479-00-73

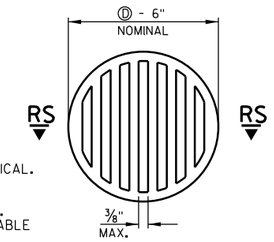


ELEVATION

(EAST ABUTMENT LOOKING EAST)

NOTE:

FOR WING DETAILS, SEE SHEET 7.



RODENT SHIELD NOTES:

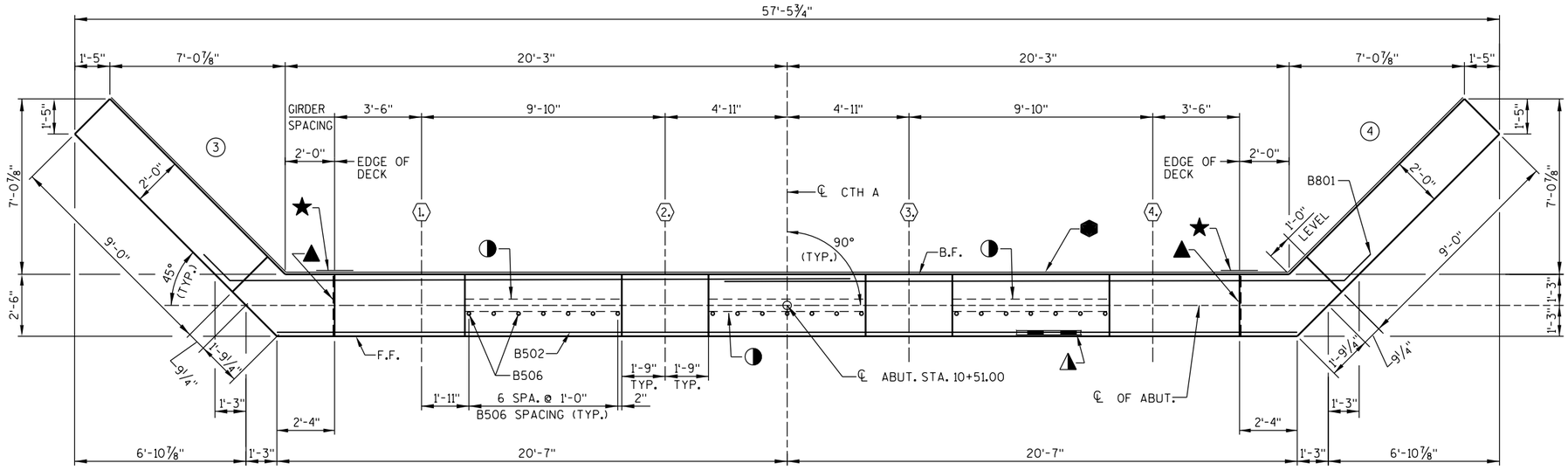
ORIENT SHIELD SO SLOTS ARE VERTICAL.

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. THE RODENT SHIELD, PIPE COUPLING AND SCREWS, SHALL BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

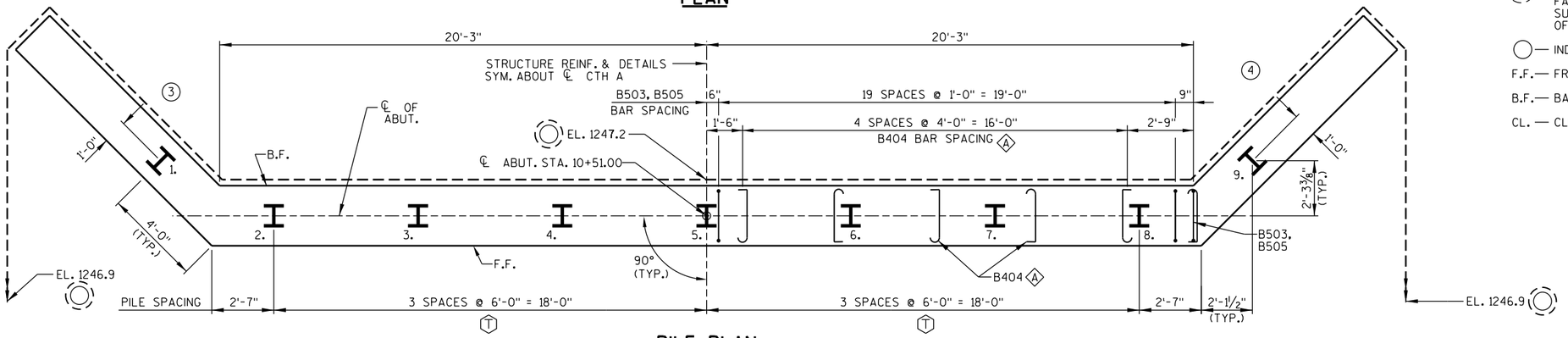
SECTION RS-RS

RODENT SHIELD

Ⓓ - DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.



PLAN



PILE PLAN

LEGEND

- ◑ — KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
- Ⓐ — ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.
- Ⓣ — FIELD VERIFY LOCATION OF EXISTING TIMBER PILING BEFORE DRIVING PILES. ADJUST LOCATION OF NEW PILES 3-7 UP TO 8'-0" MAXIMUM PILE SPACING TO MAINTAIN 2'-0" MIN. CENTER TO CENTER SPACING FROM THE EXISTING TIMBER PILING.
- ▲ — ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE).
- ◭ — 4"x ½" FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.
- ★ — VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
- ⬢ — HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WING TIPS.
- ◪ — KEYED CONSTRUCTION JOINT ON WING FORMED BY BEVELED 2 X 6. POUR CONCRETE ABOVE JOINT AFTER DECK IS IN PLACE AND PLACE ⬢ ON B.F. OF WING.
- ◥ — ¾" "V" GROOVE ON FRONT FACE OF WING WALL.
- ◯ — PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE. SEE DETAIL ABOVE.
- ◯ — INDICATES WING NUMBER ⬡ — INDICATES GIRDER NUMBER
- F.F. — FRONT FACE
- B.F. — BACK FACE
- CL. — CLEAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-459

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EAST ABUTMENT

SHEET 6 OF 13
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DATE= 8/26/2021

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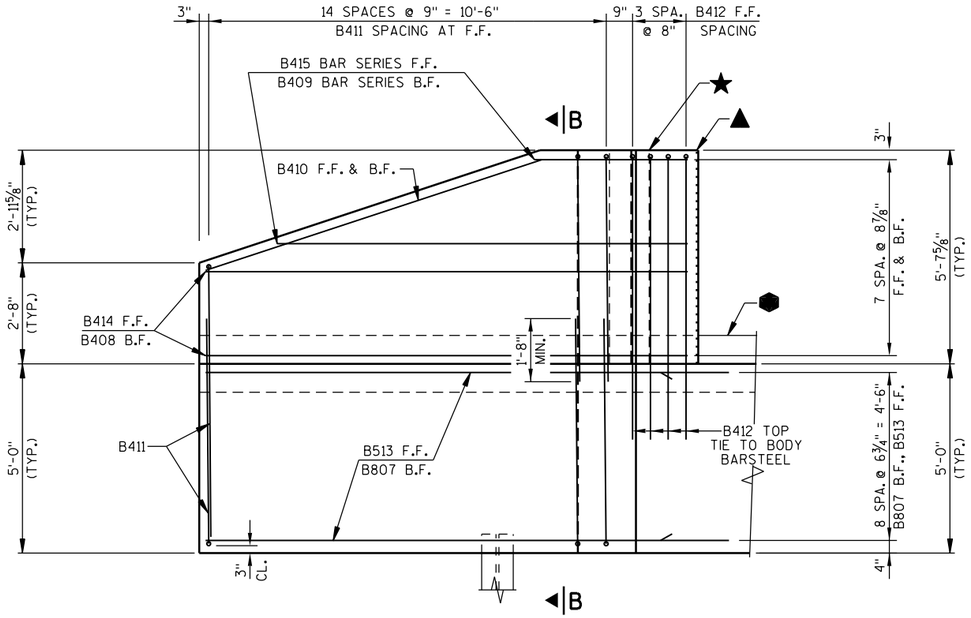
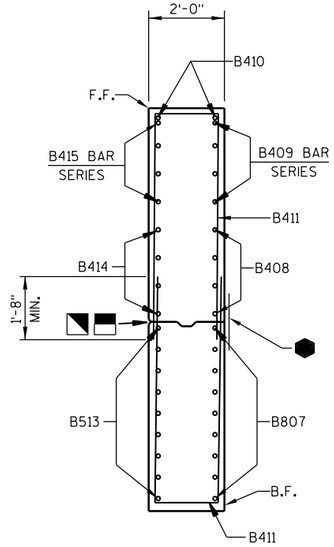
STATE PROJECT NUMBER
9479-00-73



ELEVATION

(LOOKING AT F.F. OF WINGS)

NOTE:
WING 3 SHOWN,
WING 4 SIMILAR.



SECTION B-B THRU WING

BILL OF BARS (EAST ABUTMENT)

UNCOATED 2,605 LBS.
COATED 1,840 LBS.

MARK	NUMBER REQUIRED COATED	NUMBER REQUIRED UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION
B801	-	18	26'-5"	X		ABUTMENT BODY - B.F. - HORIZ.
B502	-	9	41'-0"			ABUTMENT BODY - F.F. - HORIZ.
B503	-	84	6'-0"	X		ABUTMENT BODY - F.F. & B.F. - VERT.
B404	-	36	3'-0"	X		ABUTMENT BODY - TIES - HORIZ.
B505	-	42	8'-1"	X		ABUTMENT BODY - TOP - VERT.
B506	21	-	2'-0"			ABUTMENT BODY - TOP DOWELS - VERT.
B807	18	-	14'-3"	X		WINGS - B.F. - HORIZ.
B408	8	-	11'-8"	X		WINGS - B.F. - HORIZ.
B409	8	-	6'-6"	X	Ⓢ	WINGS - B.F. - HORIZ.
B410	4	-	11'-8"	X		WINGS - F.F. & B.F. - TOP - HORIZ.
B411	60	-	13'-6"	X		WINGS - F.F. & B.F. - VERT.
B412	8	-	17'-0"	X		WINGS - F.F. & B.F. - VERT.
B513	18	-	12'-8"	X		WINGS - F.F. - HORIZ.
B414	8	-	13'-3"	X		WINGS - F.F. - HORIZ.
B415	8	-	8'-0"	X	Ⓢ	WINGS - F.F. - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

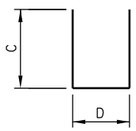
Ⓢ - LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS. BENT BARS USED IN BAR SERIES TABLE SHALL BE BENT AFTER CUTTING.

BAR MARK	NO. REQ'D.	LENGTH
B409	2 SERIES OF 4	3'-1" TO 9'-10"
B415	2 SERIES OF 4	4'-7" TO 11'-4"

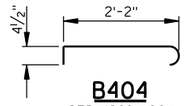
BAR SERIES TABLE

MARK	A	B
B801 B807 B513	1'-6"	45°
B408 B409	1'-10"	45°
B410	2'-5"	18°
B414 B415	2'-0"	45°

B503

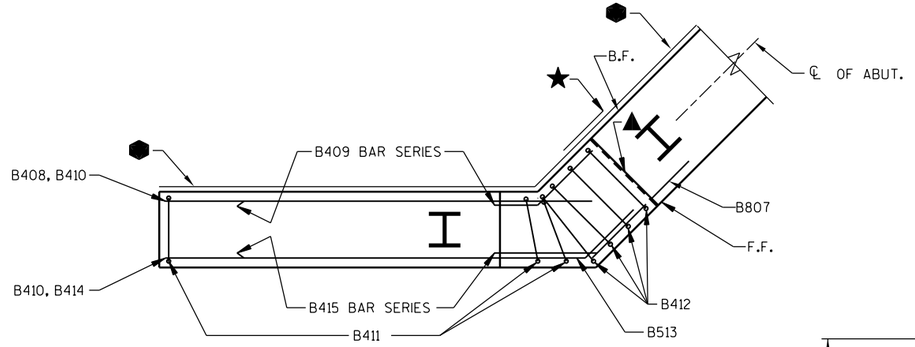


MARK	C	D
B505	3'-1"	2'-2"
B411	6'-0"	1'-8"
B412	7'-6"	2'-2"



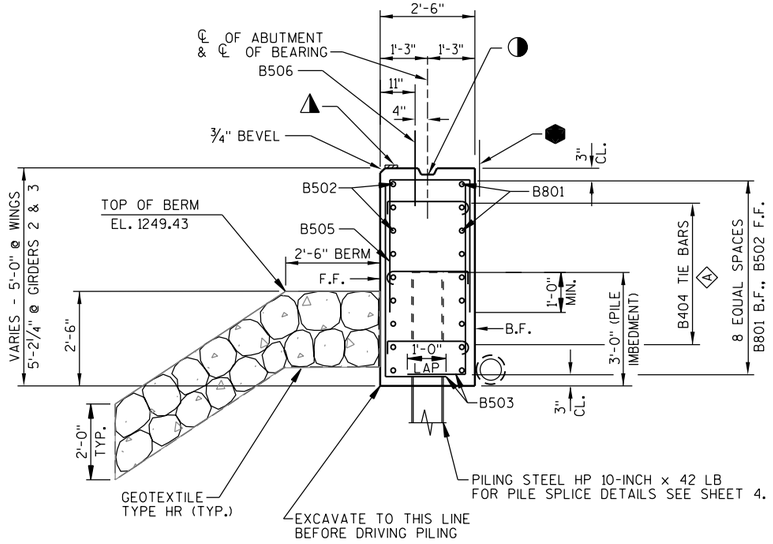
B404

STD. 180° HOOK



PLAN

SEE LEGEND ON SHEET 6 FOR DESCRIPTION OF



TYPICAL SECTION THRU ABUTMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-459

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EAST ABUTMENT DETAILS

SHEET 7 OF 13
50

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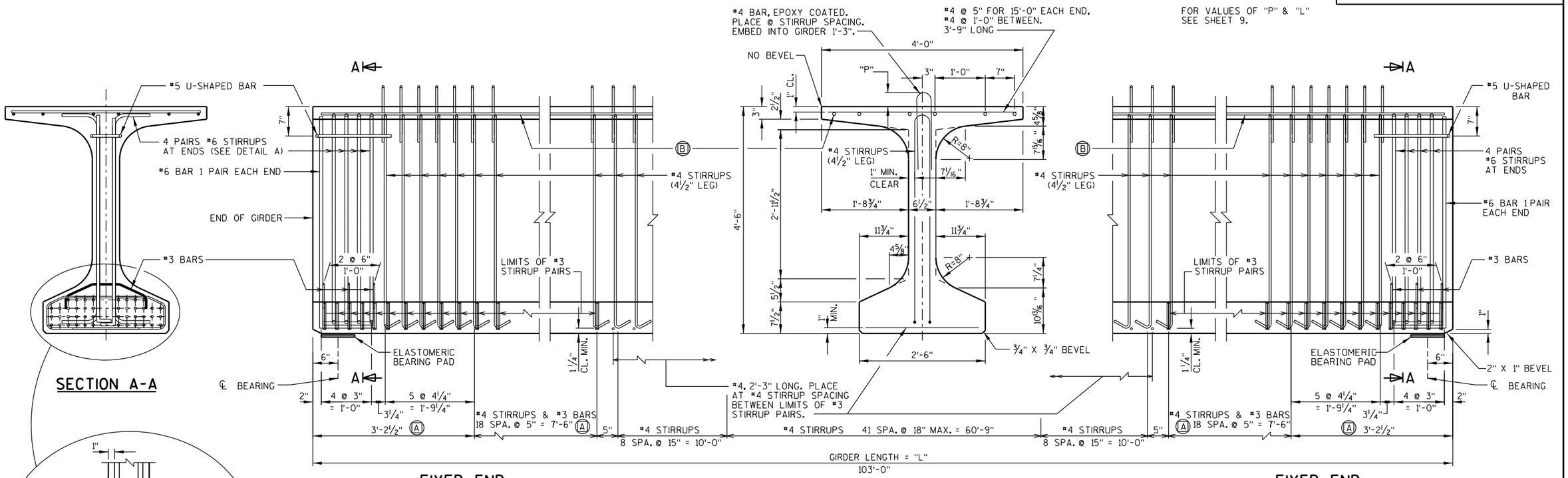
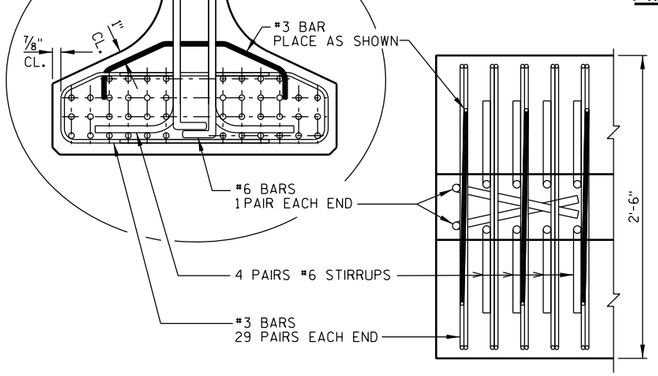


SECTION A-A

FIXED END

FIXED END

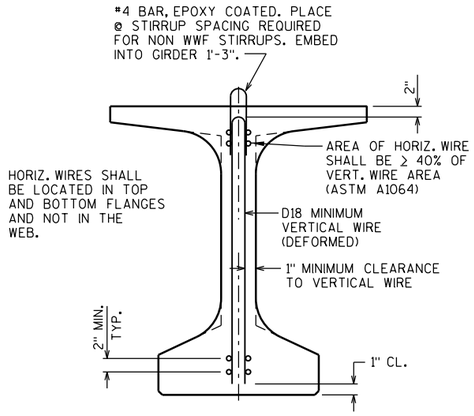


DETAIL A
BOTTOM FLANGE

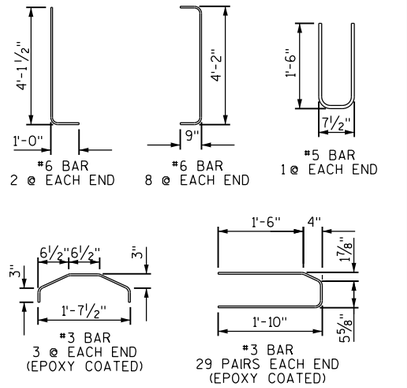
SIDE VIEW & TYP. SECTION IN SPAN

(A) DETAIL TYP. AT EACH END

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



SECTION THRU GIRDER
SHOWING WELDED WIRE FABRIC (WWF) STIRRUPS
ASTM A1064 (FY = 70 KSI)



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STRUCTURE B-37-459

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54W" PRESTRESSED GIRDER

SHEET 8 OF 13
51

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FILE= 1452055_08.DGN
DATE= 8/18/2021

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STATE PROJECT NUMBER
9479-00-73

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 15" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 15" OF THE TOP FLANGE.

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

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

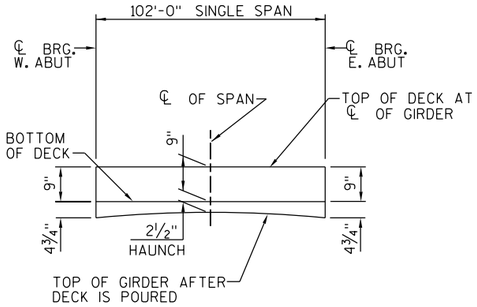
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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

AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON ACCEPTANCE OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

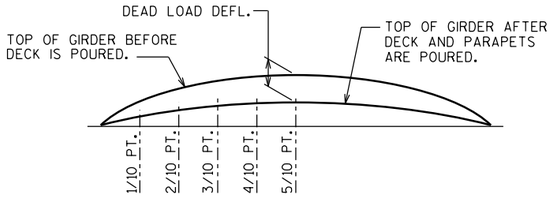
PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET 13.



HAUNCH HEIGHTS FOR GIRDER STIRRUP PROJECTION

NOTE: HAUNCH HEIGHTS ARE BASED ON THE TIME DEPENDENT VARIABLE "PRESTRESSED CAMBER" ASSUMING NORMAL CONSTRUCTION SCHEDULING.



DEAD LOAD DEFLECTION DIAGRAM

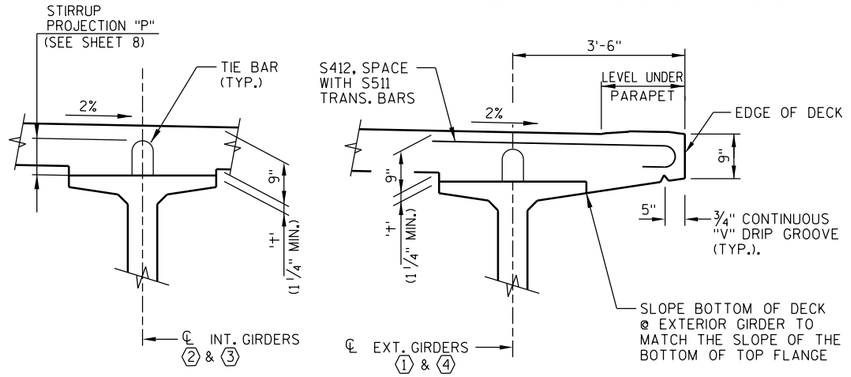
TO DETERMINE 't', ELEV. OF TOP OF GIRDERS AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF THE SPAN SHALL BE TAKEN. TO DETERMINE THE TOP OF DECK ELEVATION FOR POINT REFERRED USE TABLE ON THIS SHEET AND ADJUST FOR CROSS SLOPE OVER GIRDER. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS

= HAUNCH HEIGHT 't'

IF 1¼" MINIMUM HAUNCH HEIGHT 't' AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

NOTE: AN AVERAGE HAUNCH ("t") OF 3½" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES."

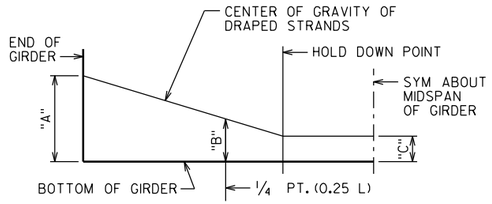


DECK HAUNCH DETAIL

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

SPAN	CAMBER (IN.) *
1	3"

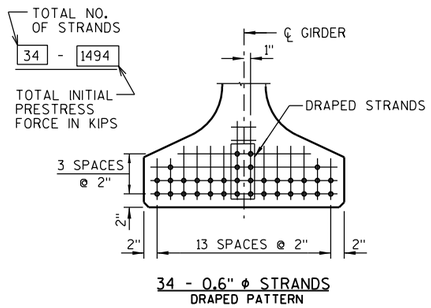
THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.
THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



DRAPED STRAND PROFILE

TOP OF DECK ELEVATIONS @ ℄ OF GIRDERS

LOCATION	SPAN POINT	SOUTH DECK EDGE	C/L GIRDER 4	C/L GIRDER 3	C/L CTH A	C/L GIRDER 2	C/L GIRDER 1	NORTH DECK EDGE
W. ABUT.	1	1256.96	1257.01	1257.20	1257.30	1257.20	1257.01	1256.96
	1.1	1257.01	1257.05	1257.25	1257.35	1257.25	1257.05	1257.01
	1.2	1257.06	1257.10	1257.30	1257.40	1257.30	1257.10	1257.06
	1.3	1257.11	1257.16	1257.35	1257.45	1257.35	1257.16	1257.11
	1.4	1257.16	1257.21	1257.40	1257.50	1257.40	1257.21	1257.16
	1.5	1257.21	1257.26	1257.45	1257.55	1257.45	1257.26	1257.21
	1.6	1257.26	1257.31	1257.51	1257.60	1257.51	1257.31	1257.26
	1.7	1257.32	1257.36	1257.56	1257.66	1257.56	1257.36	1257.32
	1.8	1257.37	1257.41	1257.61	1257.71	1257.61	1257.41	1257.37
	1.9	1257.45	1257.50	1257.69	1257.79	1257.69	1257.50	1257.45
E. ABUT.	2	1257.57	1257.62	1257.81	1257.91	1257.81	1257.62	1257.57



34 - 0.6" ϕ STRANDS
DRAPED PATTERN

SECTION THRU GIRDER AT ℄ SPAN

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

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (P.S.I.)	"P" (IN.) 1ST 1/3 OF GIRDER	MID 1/3 OF GIRDER	END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *
1	1&4	103'-0"	0.5	0.9	1.2	1.4	1.5	1.4	1.2	0.9	0.5	8000	9½"	7¼"	9½"	0.6	34	6800	49	16	18	5	-	-
1	2&3	103'-0"	0.5	1.0	1.3	1.6	1.6	1.6	1.3	1.0	0.5	8000	9½"	7¼"	9½"	0.6	34	6800	49	16	18	5	-	-

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STRUCTURE B-37-459

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54W" PRESTRESSED GIRDER & DECK FORMING DETAILS

SHEET 9 OF 13
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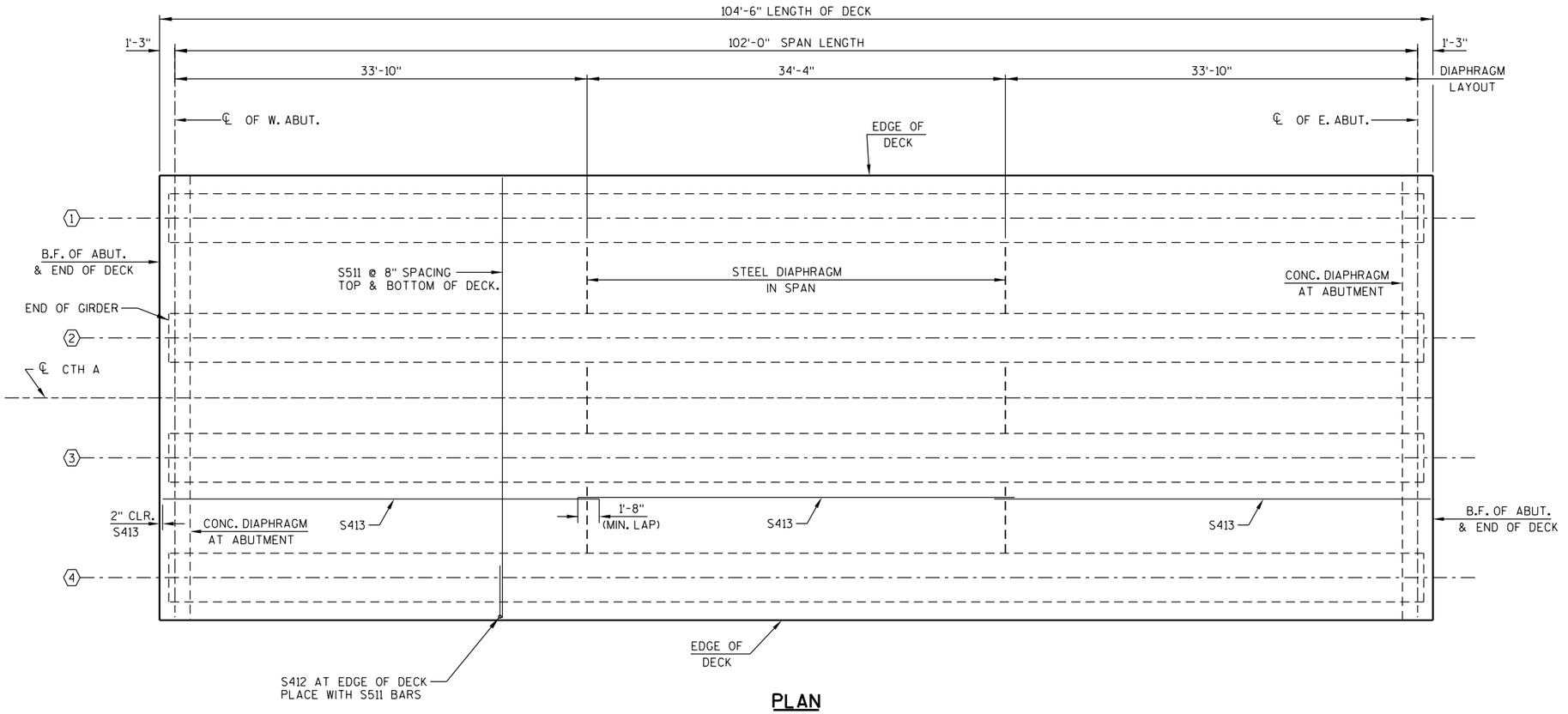
9479-00-73



PLAN

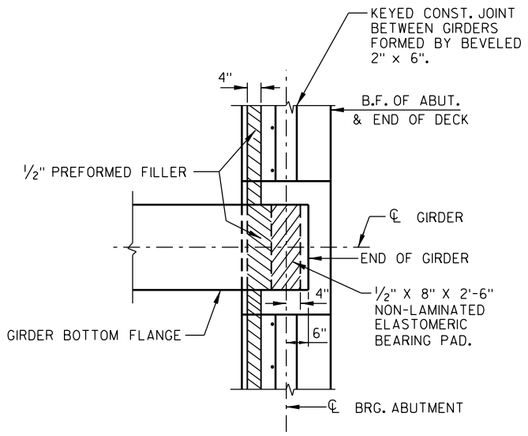
GENERAL NOTES

SEE SHEET 9 FOR DECK HAUNCH DETAIL AND HAUNCH HEIGHTS FOR GIRDER STIRRUP PROJECTION.

SEE SHEET 11 FOR CROSS SECTION AND LONGITUDINAL SECTION THRU BRIDGE SHOWING BAR SPACING.

SEE SHEET 12 FOR PARAPET DETAILS AND PARAPET BAR STEEL REINFORCEMENT.

⬡ - INDICATES GIRDER NUMBER



BEARING PAD DETAIL

NO.	DATE	REVISION	BY

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STRUCTURE B-37-459

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SUPERSTRUCTURE

SHEET 10 OF 13
53

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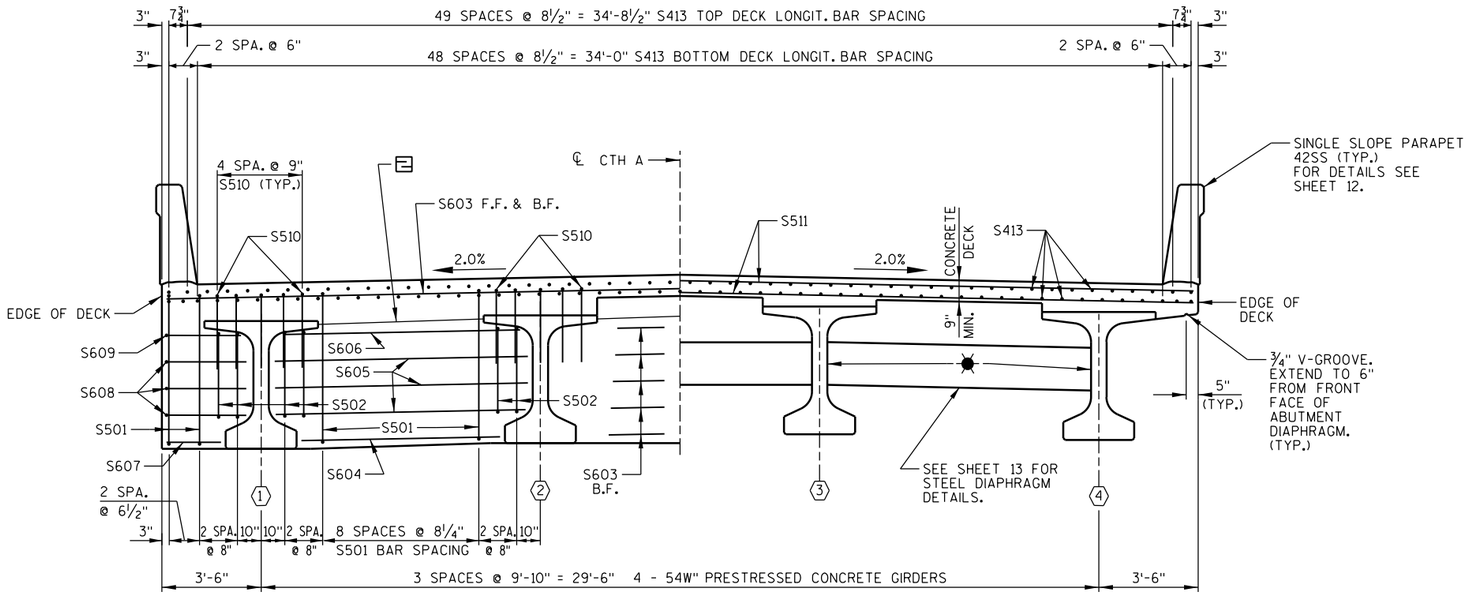


AT ABUTMENTS IN SPAN

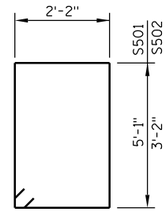
CROSS SECTION THRU BRIDGE

(LOOKING EAST)

BILL OF BARS (COATED) 23,315 LBS.

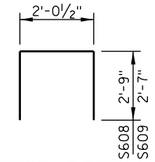
MARK	NUMBER REQ'D.	LENGTH	BENT	DESCRIPTION
S501	66	15'-2"	X	DIAPH. @ ABUT. - STIRRUP - VERT.
S502	32	11'-4"	X	DIAPH. @ ABUT. - STIRRUP - VERT.
S603	14	36'-2"		DIAPH. @ ABUT. - B.F. & TOP - HORIZ.
S604	6	7'-0"		DIAPH. @ ABUT. - F.F. BETWEEN GIRDERS - HORIZ.
S605	18	8'-10"		DIAPH. @ ABUT. - F.F. BETWEEN GIRDERS - HORIZ.
S606	6	8'-4"		DIAPH. @ ABUT. - F.F. BETWEEN GIRDERS - HORIZ.
S607	4	1'-11"		DIAPH. @ ABUT. - F.F. @ ENDS - HORIZ.
S608	12	7'-3"	X	DIAPH. @ ABUT. - F.F. @ ENDS - HORIZ.
S609	4	6'-11"	X	DIAPH. @ ABUT. - F.F. @ ENDS - HORIZ.
S510	40	5'-1"	X	DIAPH. @ ABUT. - OVER & BEHIND GIRDERS - VERT.
S511	313	36'-2"		DECK - TOP & BOTTOM - TRANS.
S412	314	4'-10"	X	DECK - TOP @ EDGES - TRANS.
S413	315	35'-10"		DECK - TOP & BOTTOM - LONGIT.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
EPOXY COAT ALL SUPERSTRUCTURE BAR REINFORCEMENT.

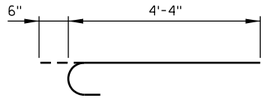


S501, S502

S510



S608, S609



S412
STD. 180° HOOK

LEGEND

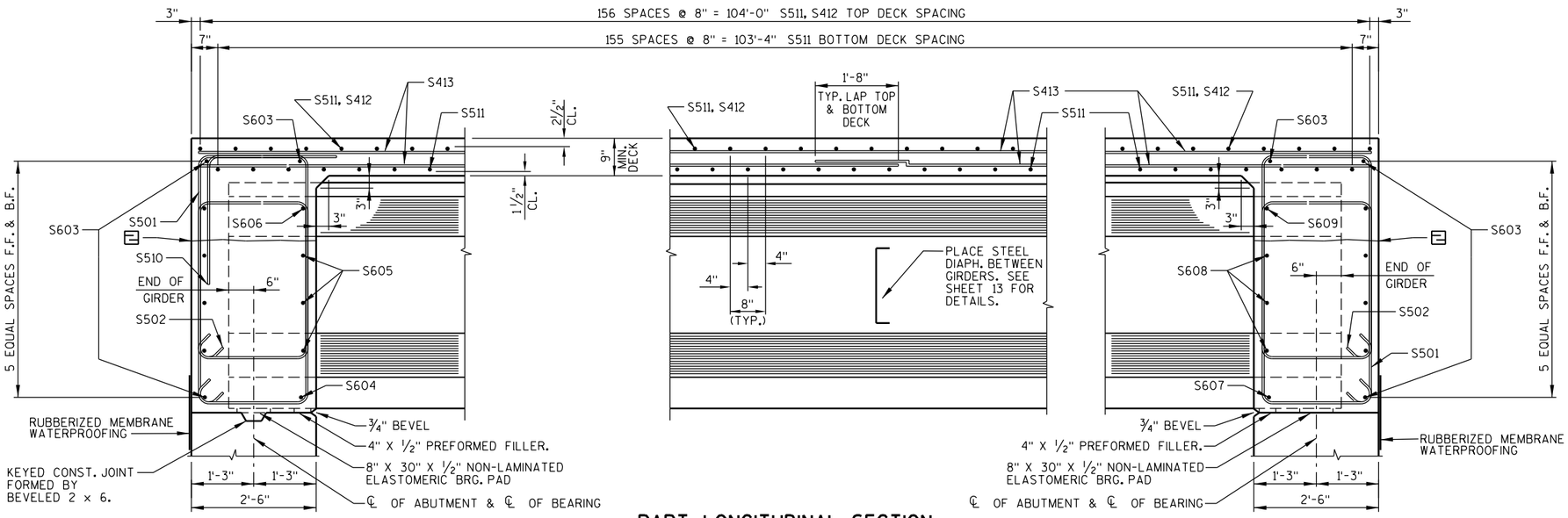
⬡ - INDICATES GIRDER NUMBER

⊟ - OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDERS. IF USED DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR AND PLACE RUBBERIZED MEMBRANE WATERPROOFING ON B.F. AT JOINT. (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES".

✷ - FOR DETAILS OF STEEL DIAPHRAGMS AND DIAPHRAGM INSERTS, SEE SHEET 13. FOR LAYOUT OF STEEL DIAPHRAGMS, SEE PLAN SHEET 10.

F.F. - FRONT FACE

B.F. - BACK FACE



TYP. INTERIOR BAY

PART LONGITUDINAL SECTION

TYP. END BAY

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STRUCTURE B-37-459

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SUPERSTRUCTURE SECTIONS & DETAILS

SHEET 11 OF 13
54

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DATE= 8/26/2021

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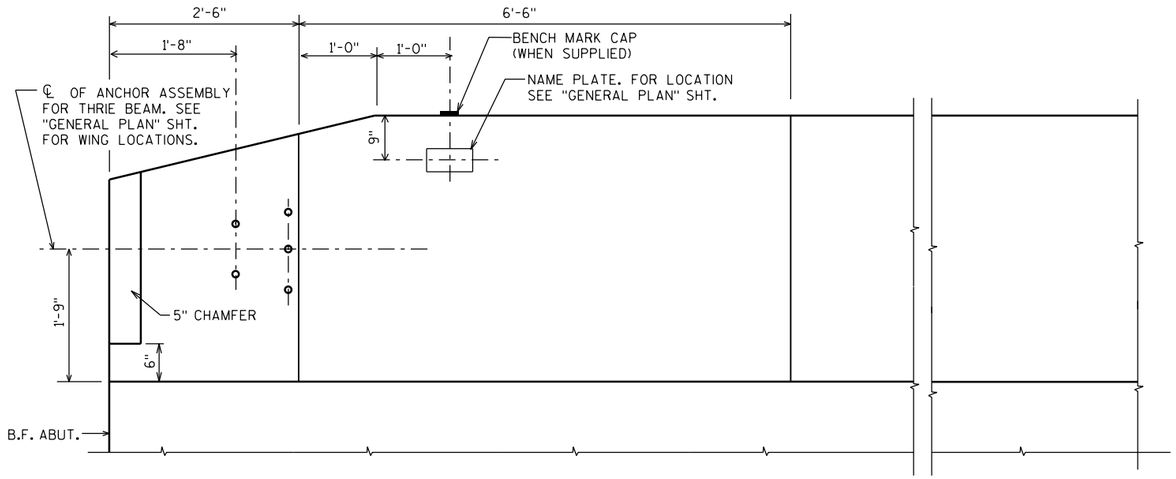
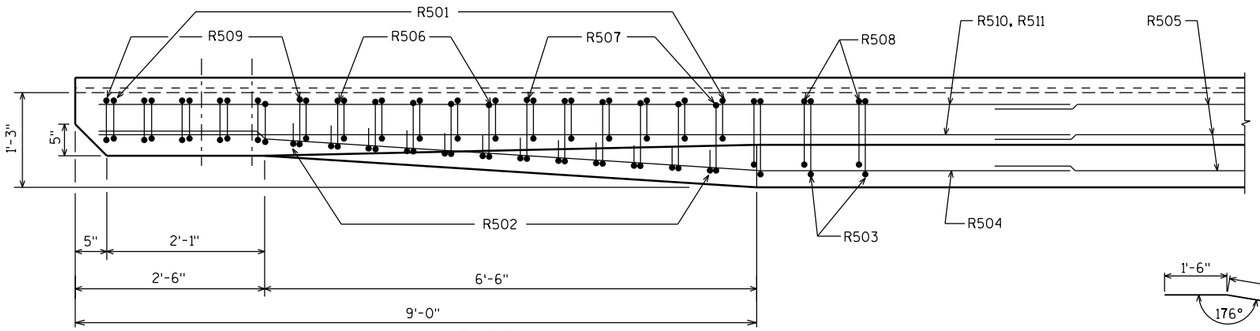
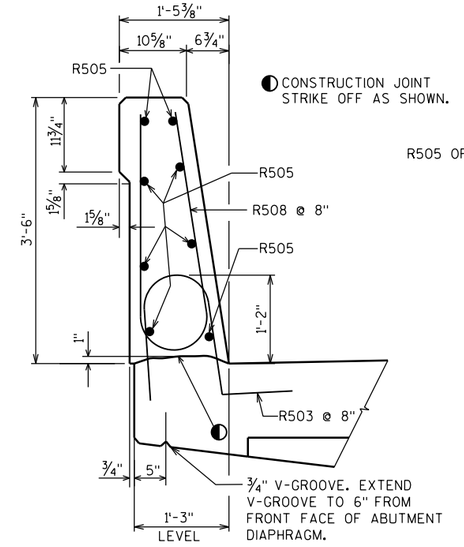
9479-00-73



INSIDE ELEVATION

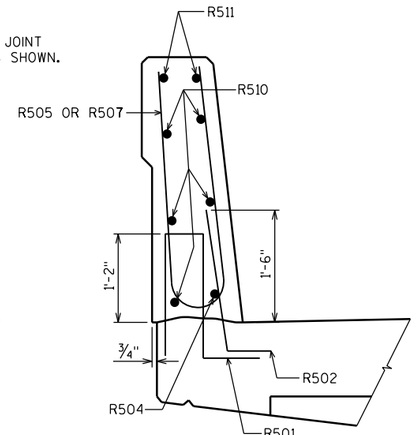


PLAN



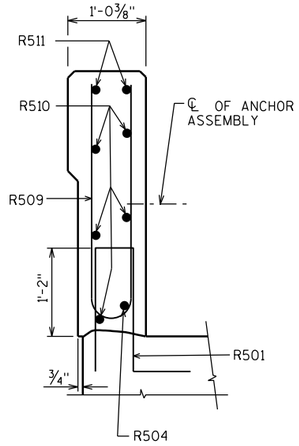
SECTION C-C

THRU PARAPET



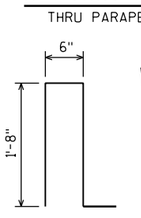
SECTION B-B

AT END OF PARAPET

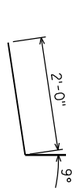


SECTION A-A

AT END OF PARAPET



R501



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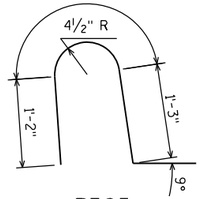
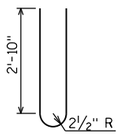
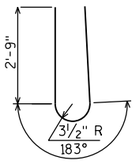


R503

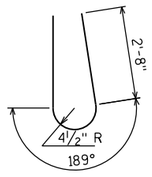
R504



R506



R507



R508

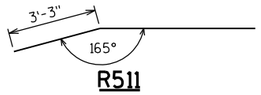
BILL OF BARS (COATED) 5,750 LBS.

MARK	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
R501	68	4'-4"	X		DECK & PARAPET END - STIRRUP - VERT.
R502	44	2'-9"	X		DECK & PARAPET END - VERT.
R503	262	4'-5"	X		DECK & PARAPET - STIRRUP - VERT.
R504	4	12'-11"	X		PARAPET END - BOTTOM - LONGIT.
R505	48	28'-6"			PARAPET - LONGIT.
R506	20	6'-5"	X		PARAPET END - STIRRUP - VERT.
R507	24	6'-6"	X		PARAPET END - STIRRUP - VERT.
R508	262	6'-8"	X		PARAPET - STIRRUP - VERT.
R509	24	5'-5"	X	Ⓢ	PARAPET END - STIRRUP - VERT.
R510	20	12'-10"			PARAPET END - LONGIT.
R511	8	12'-11"	X		PARAPET END - TOP - LONGIT.

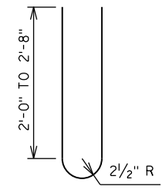
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

EPOXY COAT ALL SUPERSTRUCTURE BAR STEEL REINFORCEMENT.

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



R511

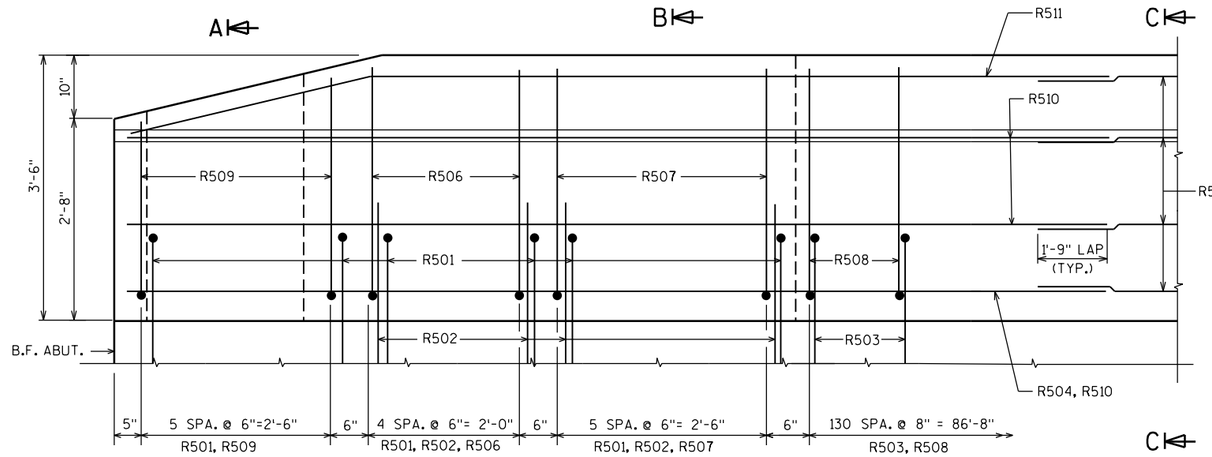


R509

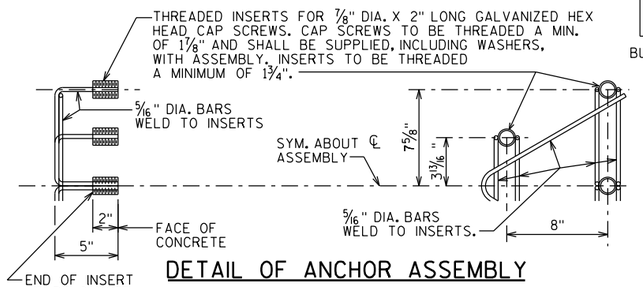
BAR SERIES TABLE

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

BUNDLE AND TAG EACH SERIES SEPARATELY.



OUTSIDE ELEVATION



DETAIL OF ANCHOR ASSEMBLY

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

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-459

DRAWN BY RLR | PLANS CK'D. KHB

SINGLE SLOPE PARAPET 42SS

SHEET 12 OF 13
55

FILE= 1452055_12.DGN
DATE= 7/29/2021

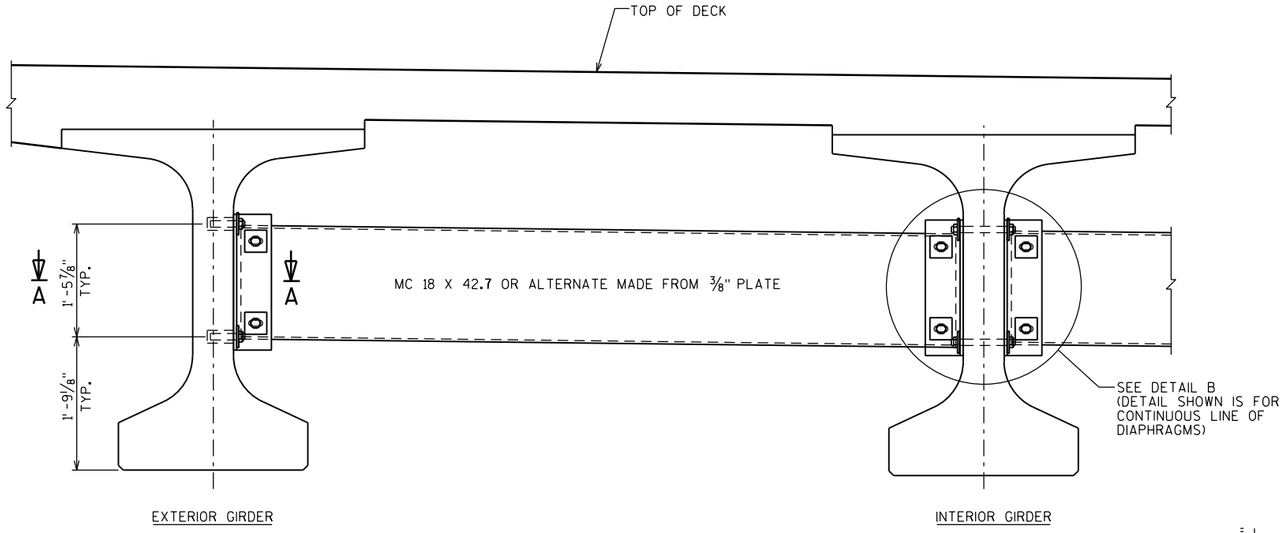
8

8

1452055_12.dgn 7/29/2021 9:40:39 AM lrabska

STATE PROJECT NUMBER

9479-00-73



PART TRANSVERSE SECTION AT DIAPHRAGM

NOTES

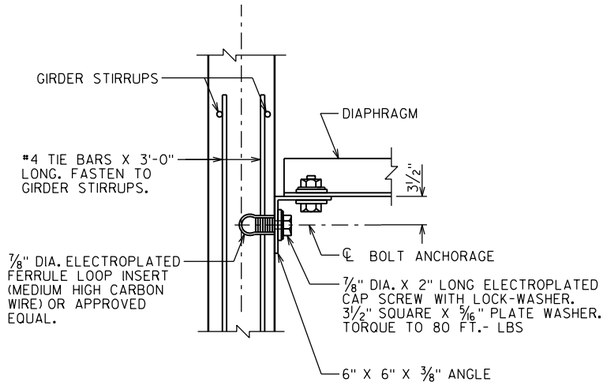
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-37-459", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

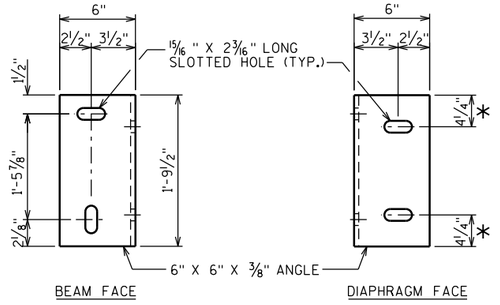
ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.



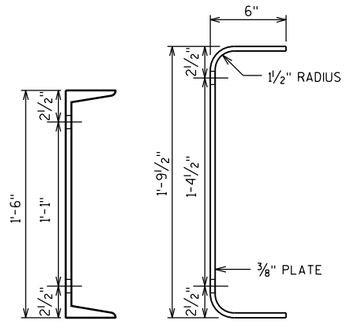
SECTION A-A

(FOR EXTERIOR ATTACHMENT)

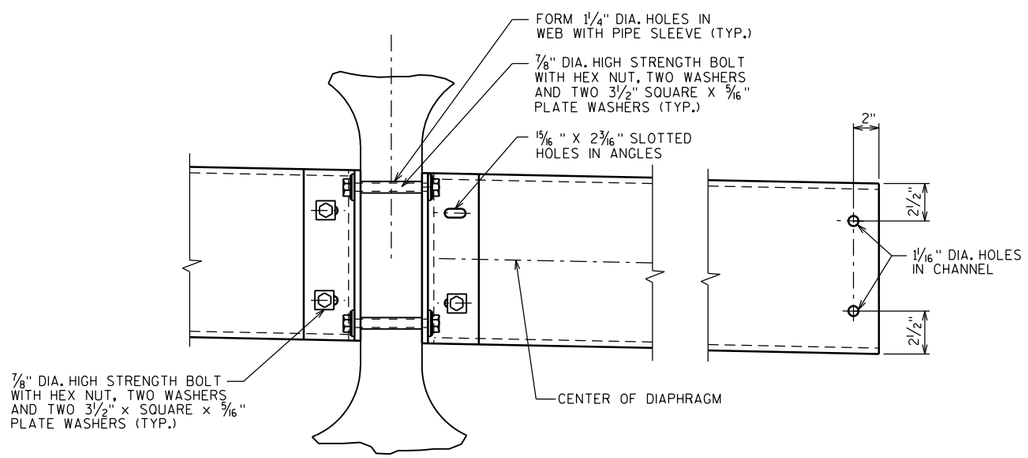


DIAPHRAGM SUPPORT

* 2½" FOR ALTERNATE PLATE DIAPHRAGM



SECTION THRU DIAPHRAGM



DETAIL B

(FOR CONTINUOUS LINE OF DIAPHRAGMS)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-459

DRAWN BY RLR | PLANS CK'D. KHB

STEEL DIAPHRAGM

SHEET 13 OF 13
56

FILE= 1452055_13.DGN
DATE= 8/17/2021

1452055_13.dgn 8/17/2021 11:59:02 AM rrabska

Station	Cut Area (Sq.ft.)	Cut Volume (Cu.yd.)	Reusable Volume (Cu.yd.)	Fill Area (Sq.ft.)	Fill Volume (Cu.yd.)	Cum. Cut Vol. (Cu.yd.)	Cum. Fill Vol. (Cu.yd.)	Cum. Net Vol. (Cu.yd.)
7+00	19.36	0	0	0.24	0	0	0	0
7+45.88	13.34	27.79	27.79	94.3	80.32	27.79	80.32	-52.53
7+70.87	12.05	11.75	11.75	84.18	82.58	39.54	162.9	-123.36
7+95.85	10.89	10.61	10.61	74.55	73.45	50.15	236.35	-186.2
8+25	11.14	11.89	11.89	54.12	69.45	62.03	305.8	-243.77
8+50	11.55	10.5	10.5	33.46	40.54	72.54	346.34	-273.8
8+75	10.34	10.13	10.13	34.6	31.51	82.67	377.85	-295.18
8+95.50	23.67	12.91	12.91	32.75	25.57	95.58	403.42	-307.84
9+25	27.18	27.78	27.78	47.53	43.86	123.36	447.28	-323.92
9+49	27.18	24.16	24.16	47.53	42.24	147.52	489.52	-342
10+51	37.22	0	0	41.55	0	0	0	-342
10+75	37.22	33.08	33.08	41.55	36.93	33.08	36.93	-345.85
11+00	35.36	33.6	33.6	27.88	32.15	66.68	69.08	-348.25
11+25	13.28	22.52	22.52	23.44	23.76	89.2	92.84	-351.89
11+50	11.17	11.32	11.32	26.44	23.09	100.52	115.93	-367.3
11+75	8.57	9.14	9.14	34.69	28.3	109.66	144.23	-401.87
12+00	7.9	7.63	7.63	39.62	34.4	117.29	178.63	-463.21
12+25	8.71	7.69	7.69	37.02	35.48	124.98	214.11	-552.34
12+50	8.97	8.18	8.18	34.74	33.22	133.16	247.33	-666.51
12+75	9.04	8.34	8.34	25.08	27.69	141.5	275.02	-800.03
13+00	10.12	8.87	8.87	24.78	23.08	150.37	298.1	-947.76
13+25	12.75	10.59	10.59	37.42	28.8	160.96	326.9	-1113.7
13+54.15	12.48	13.62	13.62	61.85	53.58	174.58	380.48	-1319.6
13+79.15	11.88	11.28	11.28	86.37	68.62	185.86	449.1	-1582.84
14+04.15	14.17	12.06	12.06	85.98	79.79	197.92	528.89	-1913.81
14+25	21.91	13.93	13.93	2.32	34.1	211.85	562.99	-2264.95
14+40	21.12	11.95	11.95	1.24	0.99	223.8	563.98	-2605.13
14+50	19.67	7.55	7.55	0.43	0.31	231.35	564.29	-2938.07
				TOTALS:		231.35	564.29	-2938.07

9

9

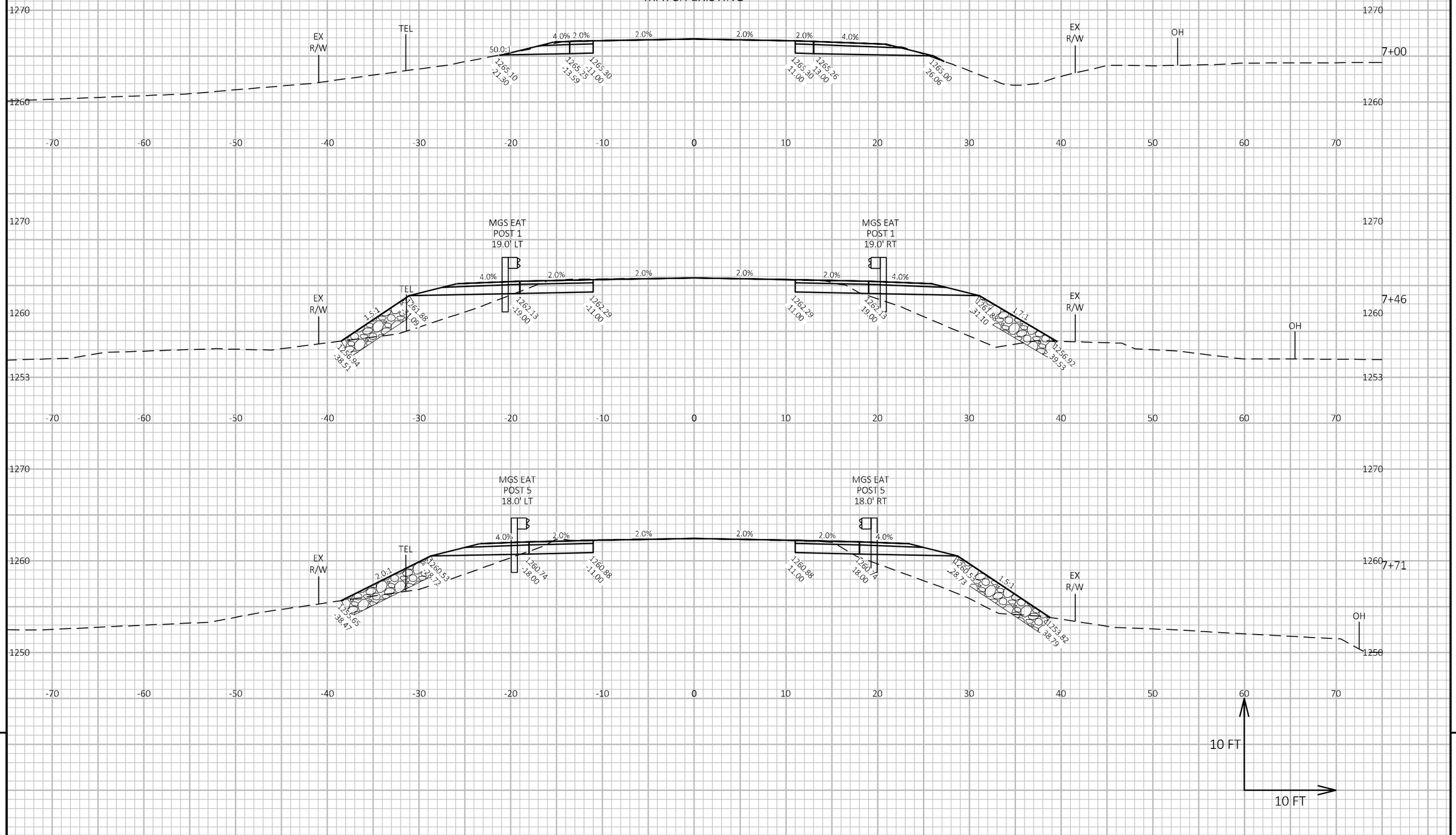
PROJECT NO: 9479-00-73 | HWY: CTH A | COUNTY: MARATHON | EARTH WORK | SHEET 57 | E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - Earth Work

PLOT DATE : 8/19/2021 12:04 PM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

BEGIN CONSTRUCTION
STA 7+00
MATCH EXISTING



9

9

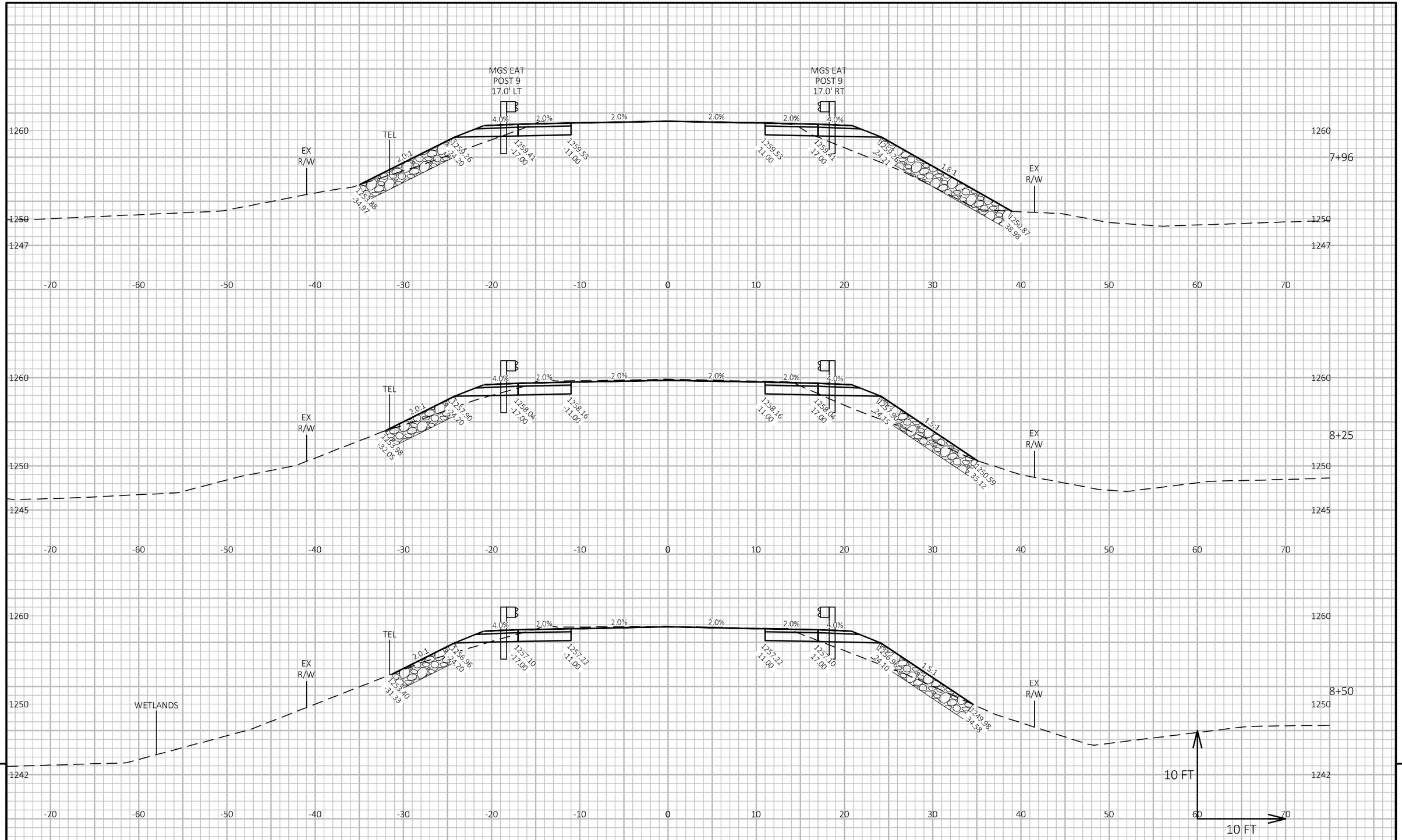
PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	CROSS SECTIONS: CTH A	SHEET 58	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090201

PLOT DATE : 8/19/2021 12:07 PM PLOT BY : SHAWN DOLENS PLOT NAME :

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

WISDOT/CADDS SHEET 49



PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	CROSS SECTIONS: CTH A	SHEET 59	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090202

PLOT DATE : 8/19/2021 8:40 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

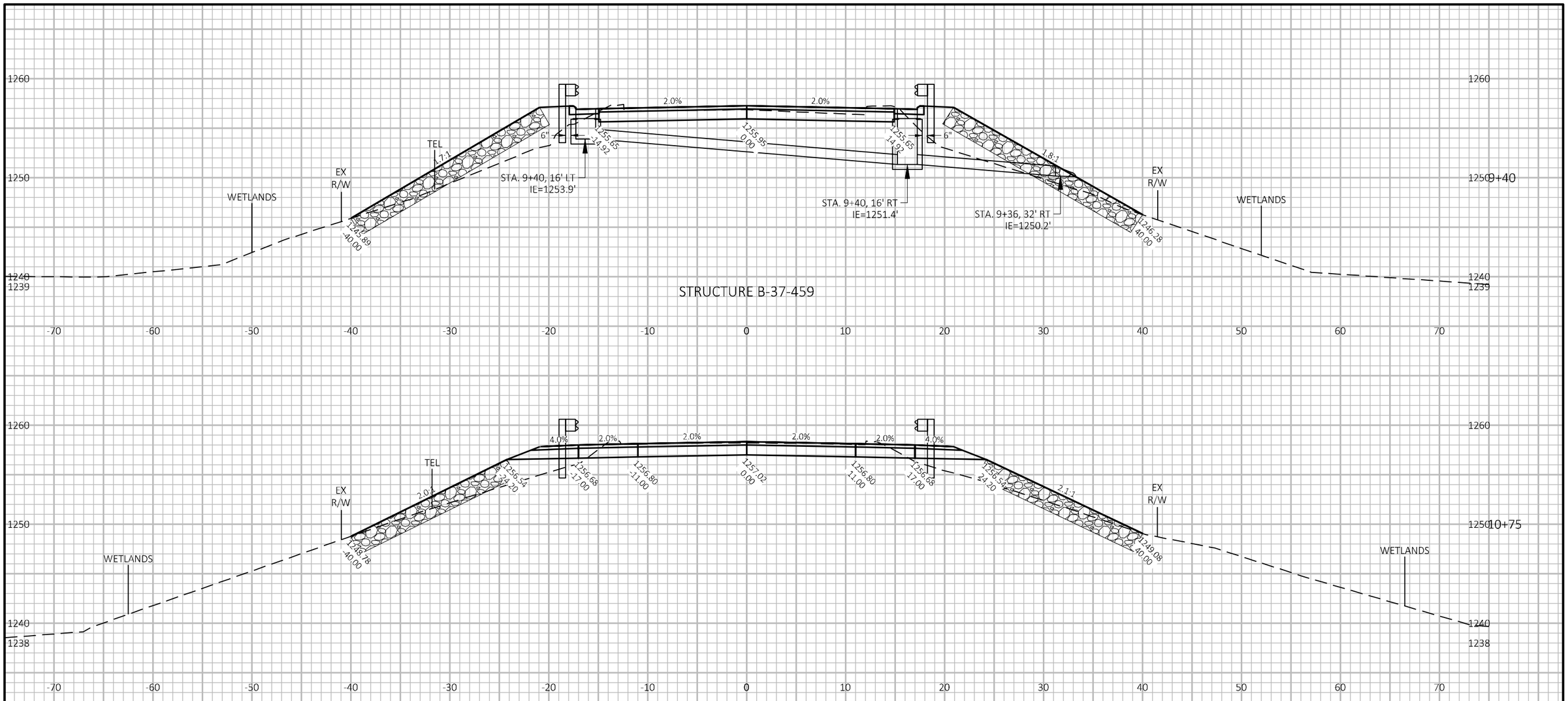
WISDOT/CADDS SHEET 49

PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	CROSS SECTIONS: CTH A	SHEET 60	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090203

PLOT DATE : 8/26/2021 10:29 AM PLOT BY : COURTNEY ROOYAKKERS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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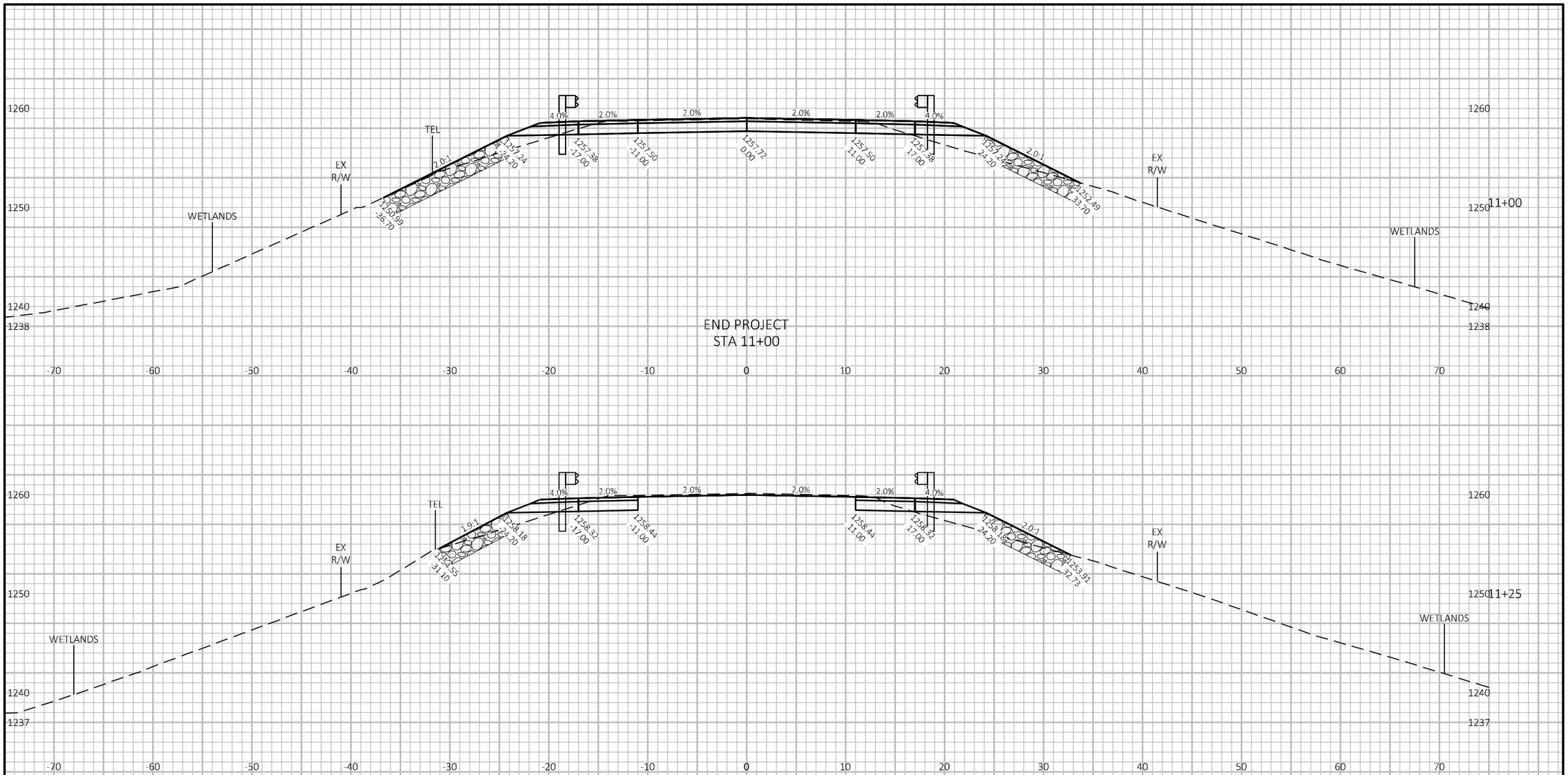
PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	CROSS SECTIONS: CTH A	SHEET 61	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090204

PLOT DATE : 10/14/2021 2:05 PM PLOT BY : COURTNEY ROOYAKKERS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



10 FT

10 FT

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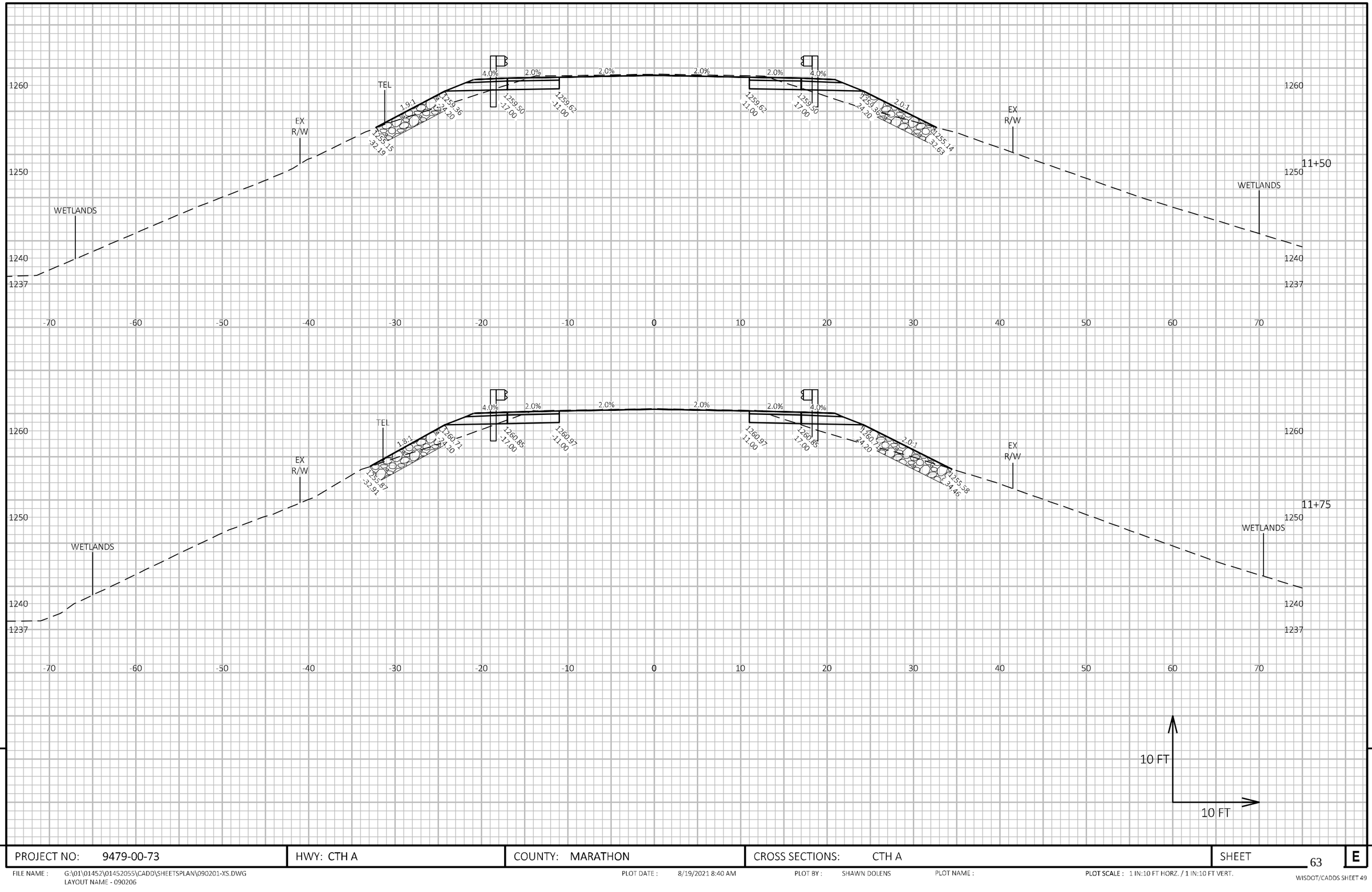
PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	CROSS SECTIONS: CTH A	SHEET 62	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090205

PLOT DATE : 8/19/2021 8:40 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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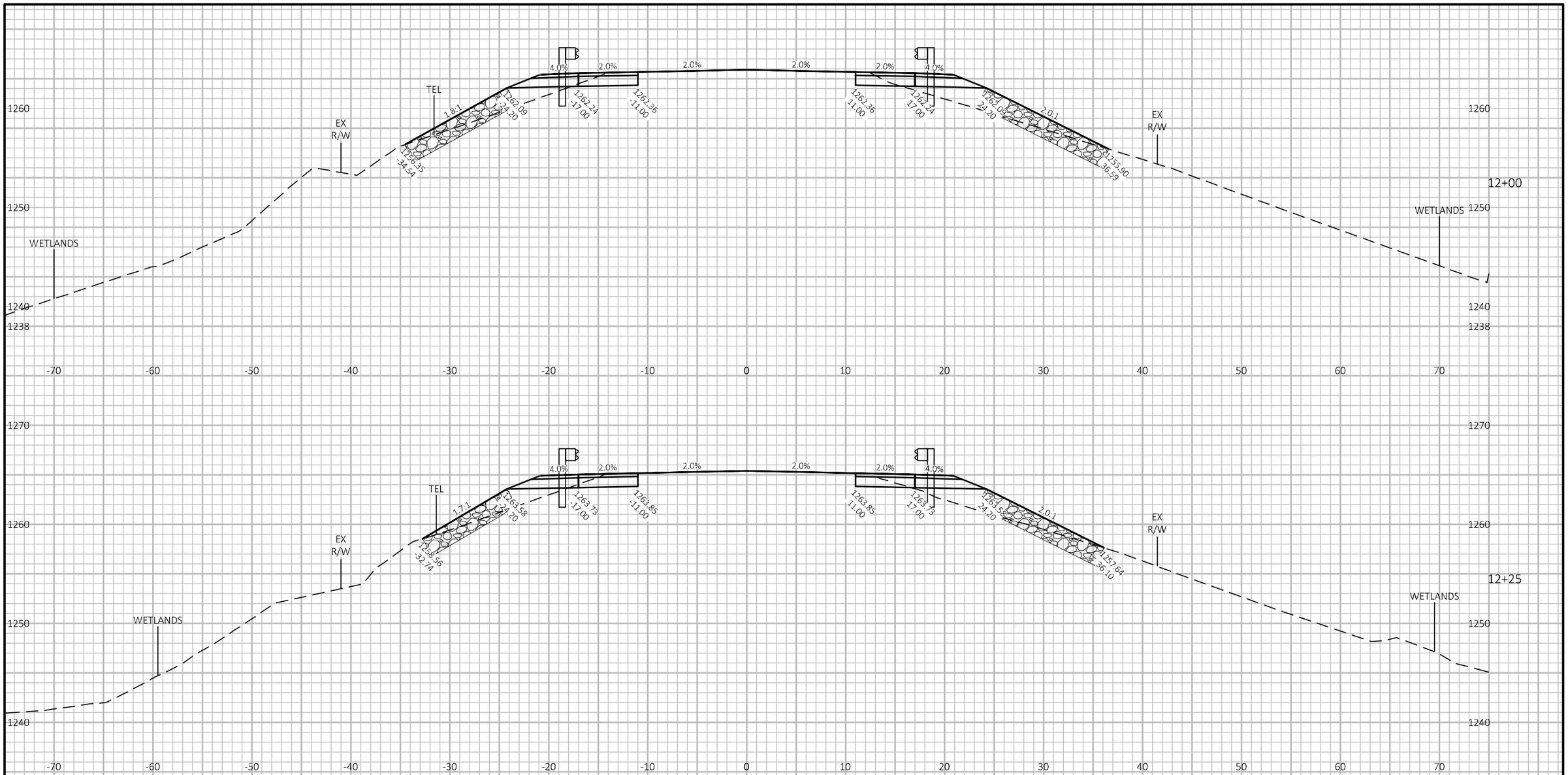
PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	CROSS SECTIONS: CTH A	SHEET 63	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090206

PLOT DATE : 8/19/2021 8:40 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

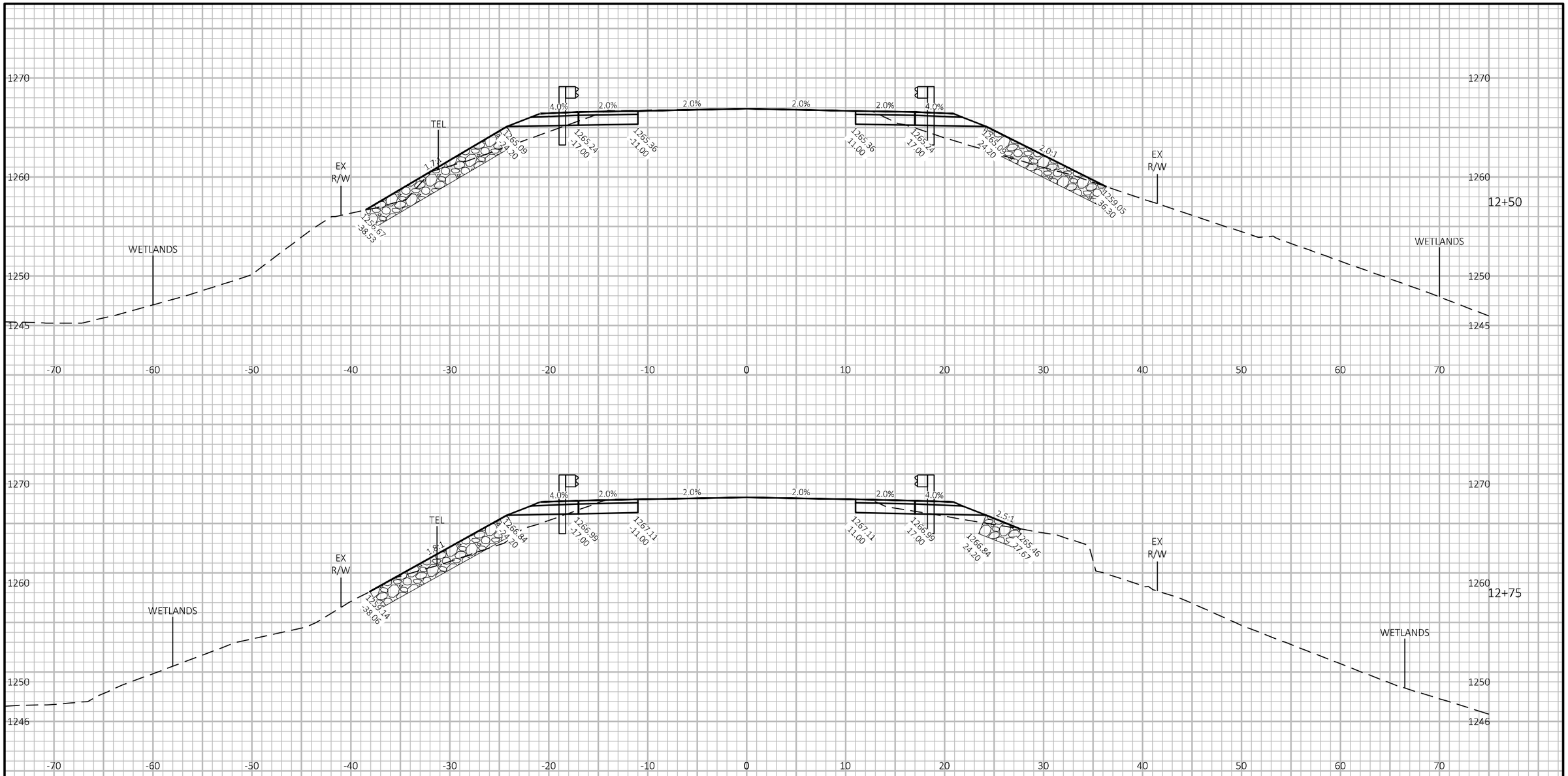


PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	CROSS SECTIONS: CTH A	SHEET 64	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090207

PLOT DATE : 8/19/2021 8:40 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

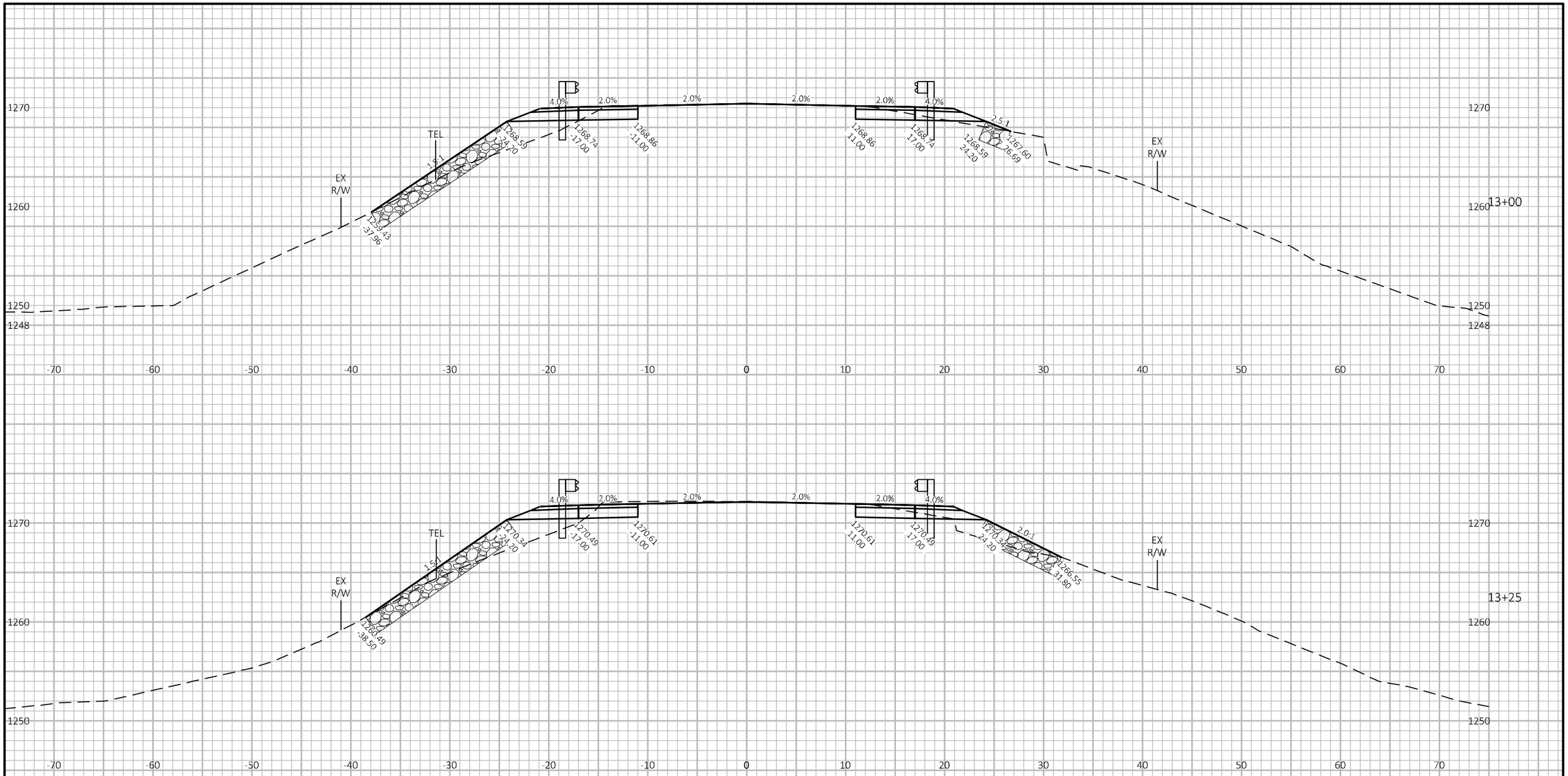


PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	CROSS SECTIONS: CTH A	SHEET 65	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090208

PLOT DATE : 8/19/2021 8:40 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

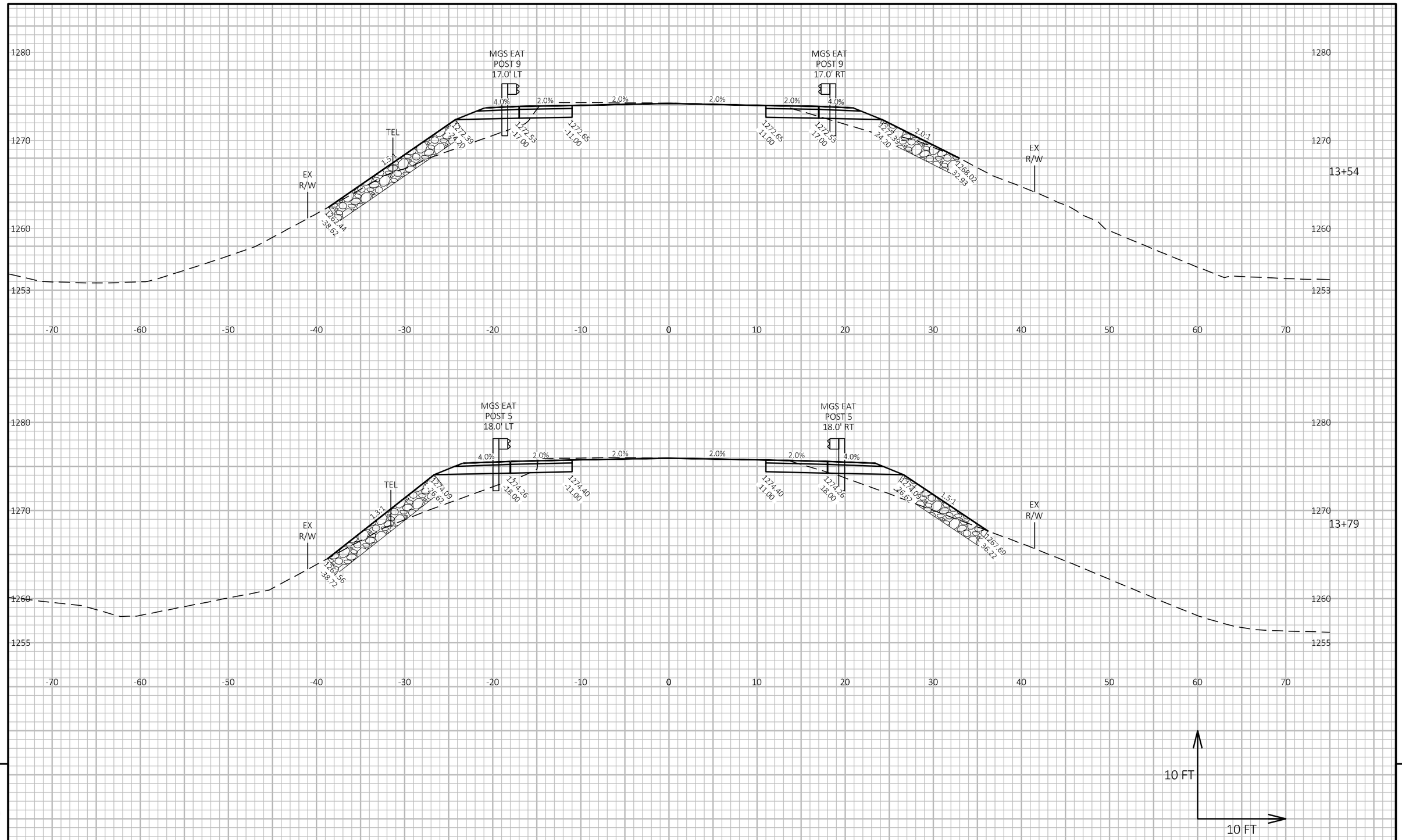


PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	CROSS SECTIONS: CTH A	SHEET 66	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090209

PLOT DATE : 8/19/2021 8:40 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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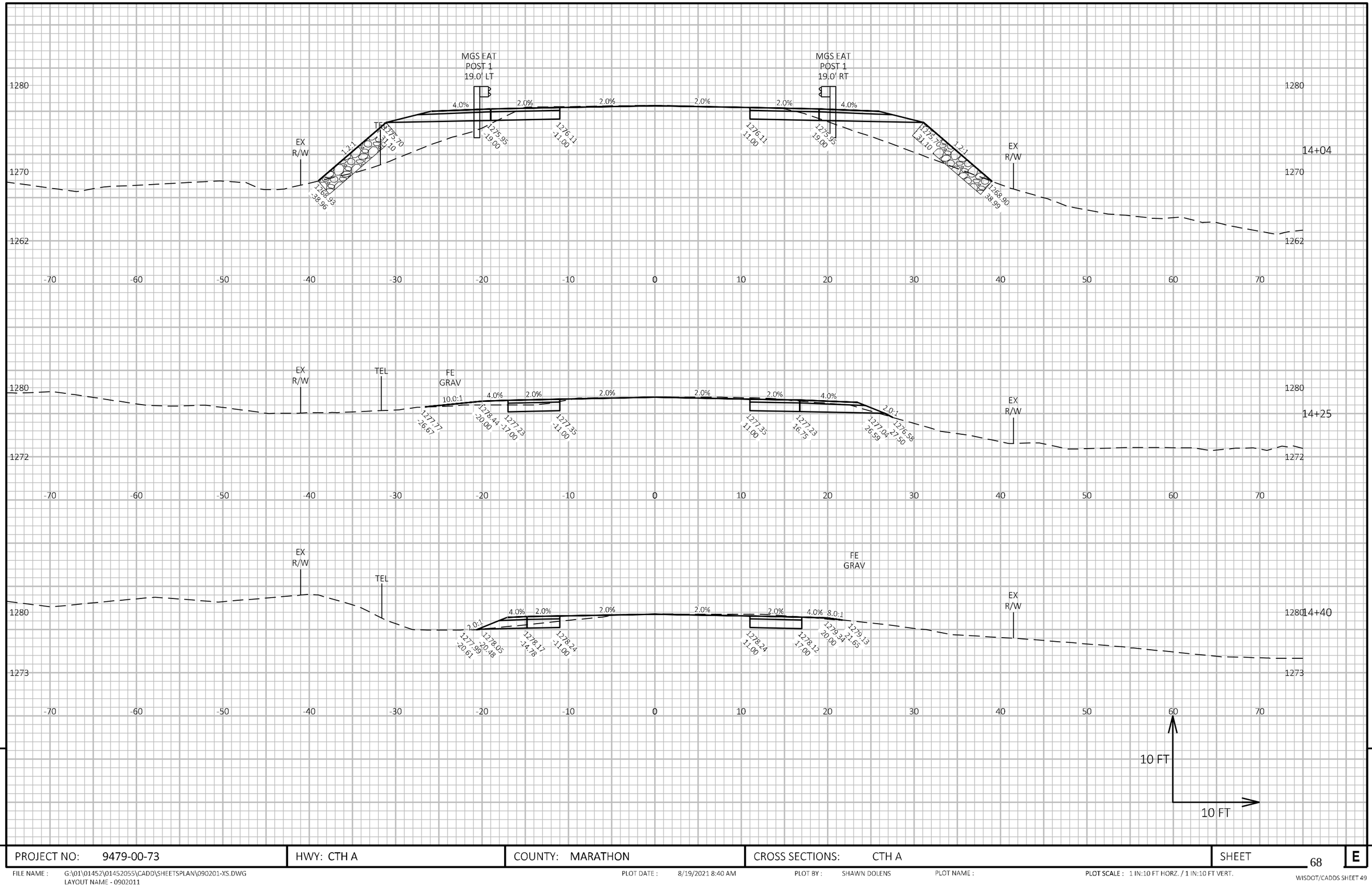
PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	CROSS SECTIONS: CTH A	SHEET 67	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 0902010

PLOT DATE : 8/19/2021 8:40 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

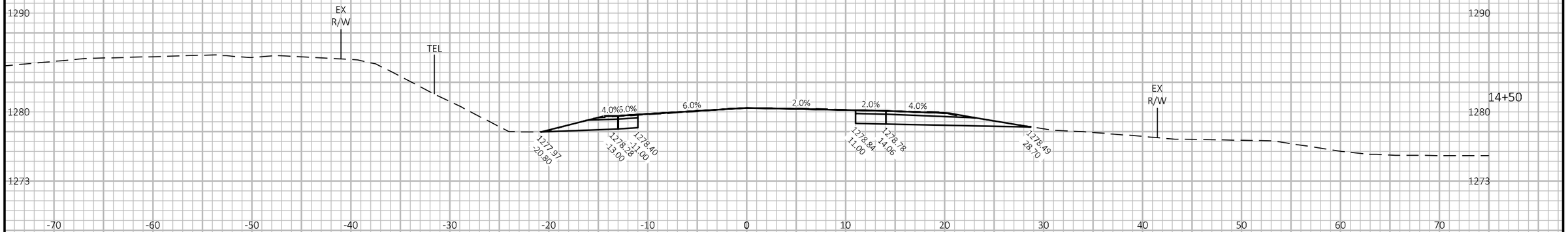


PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	CROSS SECTIONS: CTH A	SHEET 68 E

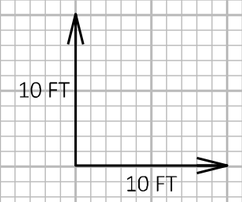
FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 0902011

PLOT DATE : 8/19/2021 8:40 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



END CONSTRUCTION
STA 14+50
MATCH EXISTING



9

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PROJECT NO: 9479-00-73	HWY: CTH A	COUNTY: MARATHON	CROSS SECTIONS: CTH A	SHEET 69	E

FILE NAME : G:\01\01452\01452055\CADD\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 0902011

PLOT DATE : 8/19/2021 8:40 AM PLOT BY : SHAWN DOLENS PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov