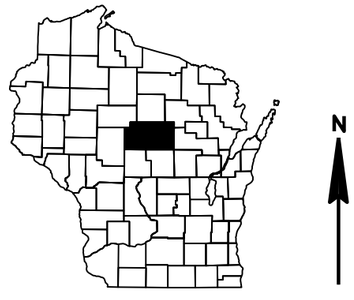
rhi Jan 09, 2024

PROJECT ID: **6664-00-70**

COUNTY: **MARATHON**

ORDER OF SHEETS

TOTAL SHEETS = 84



N

DESIGN DESIGNATION

A.A.D.T.	(2024)	=	360
A.A.D.T.	(2044)	=	390
D.H.V.		=	34
D.D.		=	62/38
T.		=	7.7%
DESIGN SPEED		=	55 MPH (STATUTORY)
ESALS		=	52,000

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE (300'EB')
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

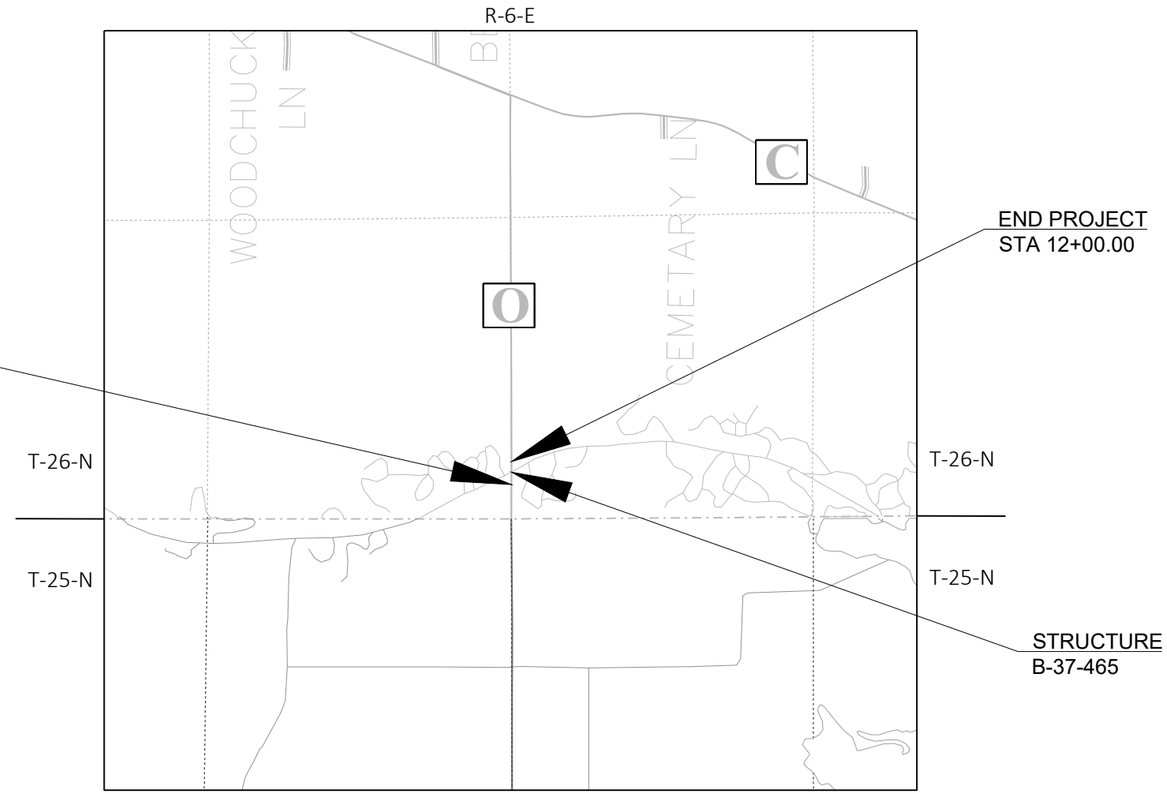
T BERGEN, CTH O

LITTLE EAU PLEINE RVR BR B-37-0465

CTH O
MARATHON COUNTY

STATE PROJECT NUMBER
6664-00-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6664-00-70		



LAYOUT

SCALE 0 0.5 MI

TOTAL NET LENGTH OF CENTERLINE = 0.076 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), {MARATHON} COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

ACCEPTED FOR

MARATHON COUNTY

Date 07/20/23 *James M. Griesbach*
(Signature and Title of Official)

ORIGINAL PLANS PREPARED BY

AECOM

WISCONSIN JESSICA L LANCELLE E-44657 MILWAUKEE WISCONSIN PROFESSIONAL ENGINEER

7/21/2023

DATE: _____ (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AECOM
Designer	AECOM
Project Manager	MICHAEL GRAGE, P.E.
Regional Examiner	N/A
Regional Supervisor	DAN ERVA, P.E.

APPROVED FOR THE DEPARTMENT

DATE: 7/21/2023 (Signature)

E

FILE NAME : C:\ONEDRIVE\AECOM\60646519 - CTH O, MARATHON COUNTY - 0_RECORDS\900_CAD_GIS\910_CAD\66640000\SHEETSPLAN\0101-TI.DWG PLOT DATE : 7/20/2023 1:53 PM PLOT BY : LANCELLE, JESSICA PLOT NAME :

2

LIST OF STANDARD ABBREVIATIONS

ABUT.	ABUTMENT
AGG.	AGGREGATE
APPROX.	APPROXIMATE
A.E.W	APRON ENDWALL
ASPH.	ASPHALTIC
A.D.T.	AVERAGE DAILY TRAFFIC
AZ.	AZIMUTH
BK.	BACK
BEG.	BEGIN
B.M.	BENCH MARK
C/L	CENTER LINE
CONC.	CONCRETE
CONST.	CONSTRUCTION
CO.	COUNTY
C.T.H.	COUNTY TRUNK HIGHWAY
X-SEC.	CROSS SECTION
CR.	CRUSHED
CFS.	CUBIC FEET/SECOND
C.Y., CU. YD.	CUBIC YARD
CULV.	CULVERT
C.P.	CULVERT PIPE
D.O.T.	DEPARTMENT OF TRANSPORTATION
D.H.V.	DESIGN HOUR VOLUME
DIA.	DIAMETER
D.	DIRECTIONAL DISTRIBUTION
DISCH. OR DIS.	DISCHARGE
EA.	EACH
ELECT.	ELECTRIC
EL. OR ELEV.	ELEVATION
EMB.	EMBANKMENT
E.B.S.	EXCAVATION BELOW SUBGRADE
EXIST.	EXISTING
FERT.	FERTILIZE
F.E.	FIELD ENTRANCE
FIN.	FINISHED
FT.	FOOT
F.L.	FLOW LINE
GA.	GAUGE
HORIZ.	HORIZONTAL
CWT.	HUNDREDWEIGHT
INL.	INLET
LT.	LEFT
L.H.F.	LEFT-HAND FORWARD
LIN.	LINEAR
LIN. FT.	LINEAR FOOT
L.S.	LUMP SUM
MAX.	MAXIMUM
MI.	MILE
MISC.	MISCELLANEOUS
N.E.	NORTH EAST
N.W.	NORTH WEST
PAV'T	PAVEMENT
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENCY
P.O.T.	POINT OF TANGENT
LB.	POUND
P.E.	PRIVATE ENTRANCE
PROJ.	PROJECT
R.	RANGE
REQ'D	REQUIRED
RT.	RIGHT
R.H.F.	RIGHT-HAND FORWARD
R/W	RIGHT OF WAY
RD.	ROAD
SHR.	SHRINKAGE
SL.	SLOPE
STD.	STANDARD
S.D.D.	STANDARD DETAIL DRAWING
S.T.H.	STATE TRUNK HIGHWAY
STA.	STATION
S.P.P.A.	STRUCTURAL PLATE PIPE ARCH
STRUCT.	STRUCTURE
SURF.	SURFACE
TEL.	TELEPHONE
TN.	TOWN
T.	TRUCKS (PERCENT OF)
UNCL.	UNCLASSIFIED
U.G.	UNDERGROUND
V.	VELOCITY
V.C.	VERTICAL CURVE

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 = 0.7684 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.6521 ACRES

GENERAL NOTES

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

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

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS. IF EBS IS REQUIRED, IT SHALL BE MEASURED AND PAID FOR AS EXCAVATION COMMON. LOCATION FOR EBS WILL BE DETERMINED BY THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE RESTORED WITH FERTILIZER, SEED AND EROSION MAT.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

WETLANDS ARE PRESENT WITHIN THE PROJECT LIMITS. DO NOT OPERATE EQUIPMENT OUTSIDE THE SLOPE INTERCEPTS. DO NOT STORE EQUIPMENT OR MATERIALS OUTSIDE THE SLOPE INTERCEPTS.

THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR AN ALUMINUM MONUMENT TO SET IN THE STRUCTURE AS DESIGNATED BY THE ENGINEER.

UTILITY CONTACTS:

TDS TELECOM
JEFFREY OLSON
202 E OGDEN STREET
MEDFORD, WI 54451
OFFICE: 715-748-6970
DIRECT: 608-845-2219
EMAIL: JEFFREY.OLSON@TDSTELECOM.COM

WDNR CONTACT:

CASEY JONES
473 GRIFFITH DRIVE
WISCONSIN RAPIDS, WI 54494
PHONE: (715) 213-6571
EMAIL: CASEY.JONES@WISCONSIN.GOV

LOCAL CONTACTS:

MARATHON COUNTY HIGHWAY DEPARTMENT
JAMES GRIESBACH
500 FOREST STREET
WAUSAU, WI 54403
OFFICE: 715-261-1800
EMAIL: JAMES.GRIESBACH@CO.MARATHON.WI.GOV

PORTAGE COUNTY HIGHWAY DEPARTMENT
NATHAN CHECK
800 PLOVER ROAD
PLOVER, WI 54467
OFFICE: 715-345-5230
EMAIL: CHECKN@CO.PORTAGE.WI.GOV

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

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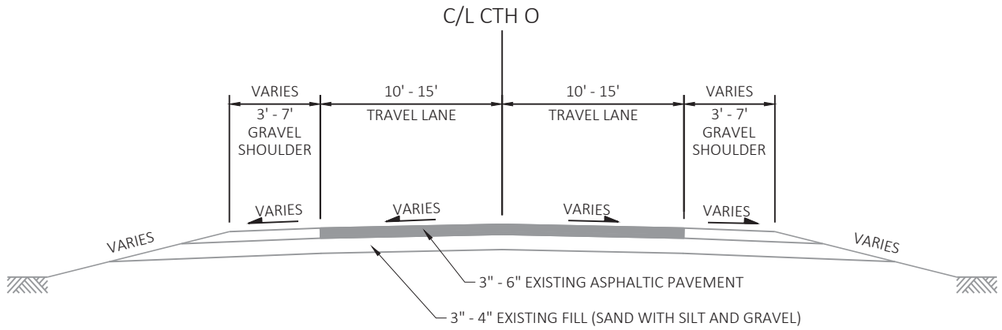
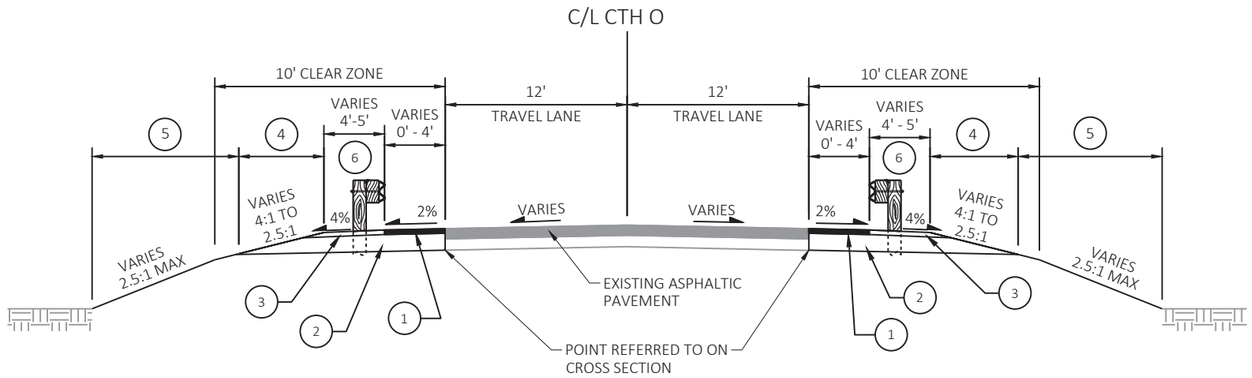


TYPICAL EXISTING SECTION

STA 8+00 TO STA 8+96.62
STA 11+03.38 TO STA 12+00

LEGEND

1. 3.5" ASPHALTIC SURFACE
   1.75" UPPER LIFT
   1.75" LOWER LIFT
2. 8" BASE AGGREGATE DENSE 1 1/4-INCH
3. 3.5" BASE AGGREGATE DENSE 3/4-INCH
4. FERTILIZE AND SEED
5. TOPSOIL, FERTILIZE, SEED & EROSION MAT
6. GUARDRAIL
   STA 7+76.01 TO STA 8+00.00 RT
   STA 7+88.18 TO STA 8+00.00 LT
   STA 12+00.00 TO STA 12+11.81 RT
   STA 12+00.00 TO STA 12+61.49 LT

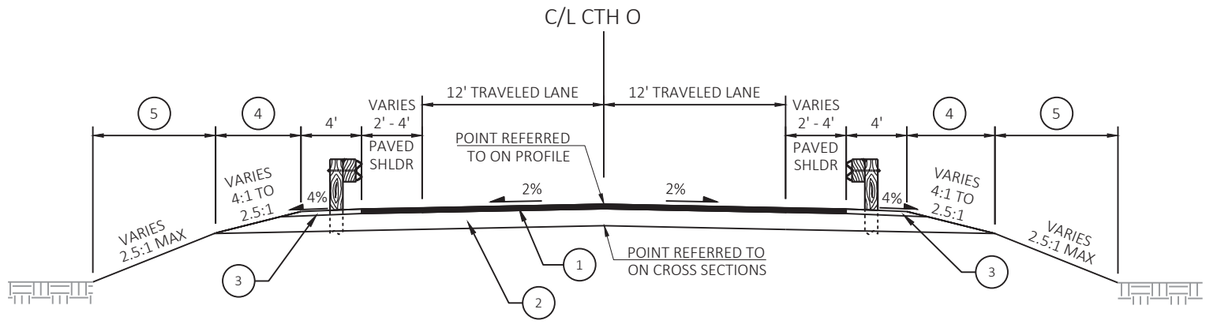


TYPICAL PROPOSED SECTION

STA 6+76.62 TO STA 8+00.00
STA 12+00.00 TO STA 13+49.79

PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	TYPICAL SECTIONS	SHEET 3	E

2

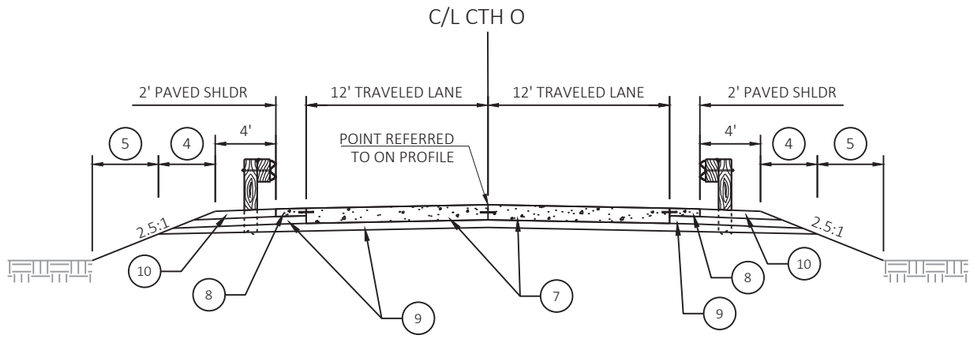


TYPICAL PROPOSED SECTION

STA 8+00 TO STA 8+76.03
STA 11+23.97 TO STA 12+00

LEGEND

1. 3.5" ASPHALTIC SURFACE
   1.75" UPPER LIFT
   1.75" LOWER LIFT
2. 8" BASE AGGREGATE DENSE 1 1/4-INCH
3. 3.5" BASE AGGREGATE DENSE 3/4-INCH
4. FERTILIZE AND SEED
5. TOPSOIL, FERTILIZE, SEED & EROSION MAT
7. CONCRETE PAVEMENT APPROACH SLAB (12")
   (SEE SDD 13B02-A)
8. CONCRETE PAVEMENT 6"
9. 6" BASE AGGREGATE DENSE 1 1/4-INCH
10. 6" BASE AGGREGATE DENSE 3/4-INCH

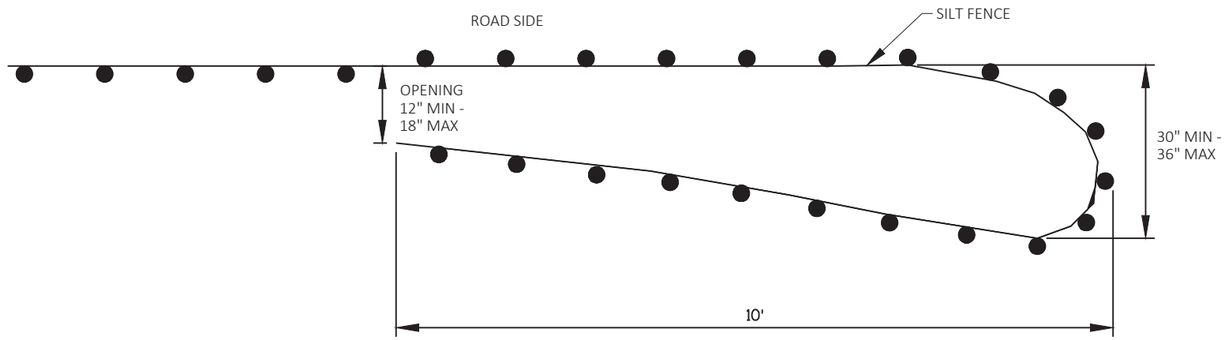


TYPICAL PROPOSED SECTION

STA 8+76.03 TO STA 8+96.62
STA 11+03.38 TO STA 11+23.97

PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	TYPICAL SECTIONS	SHEET 4	E

2



PLAN VIEW

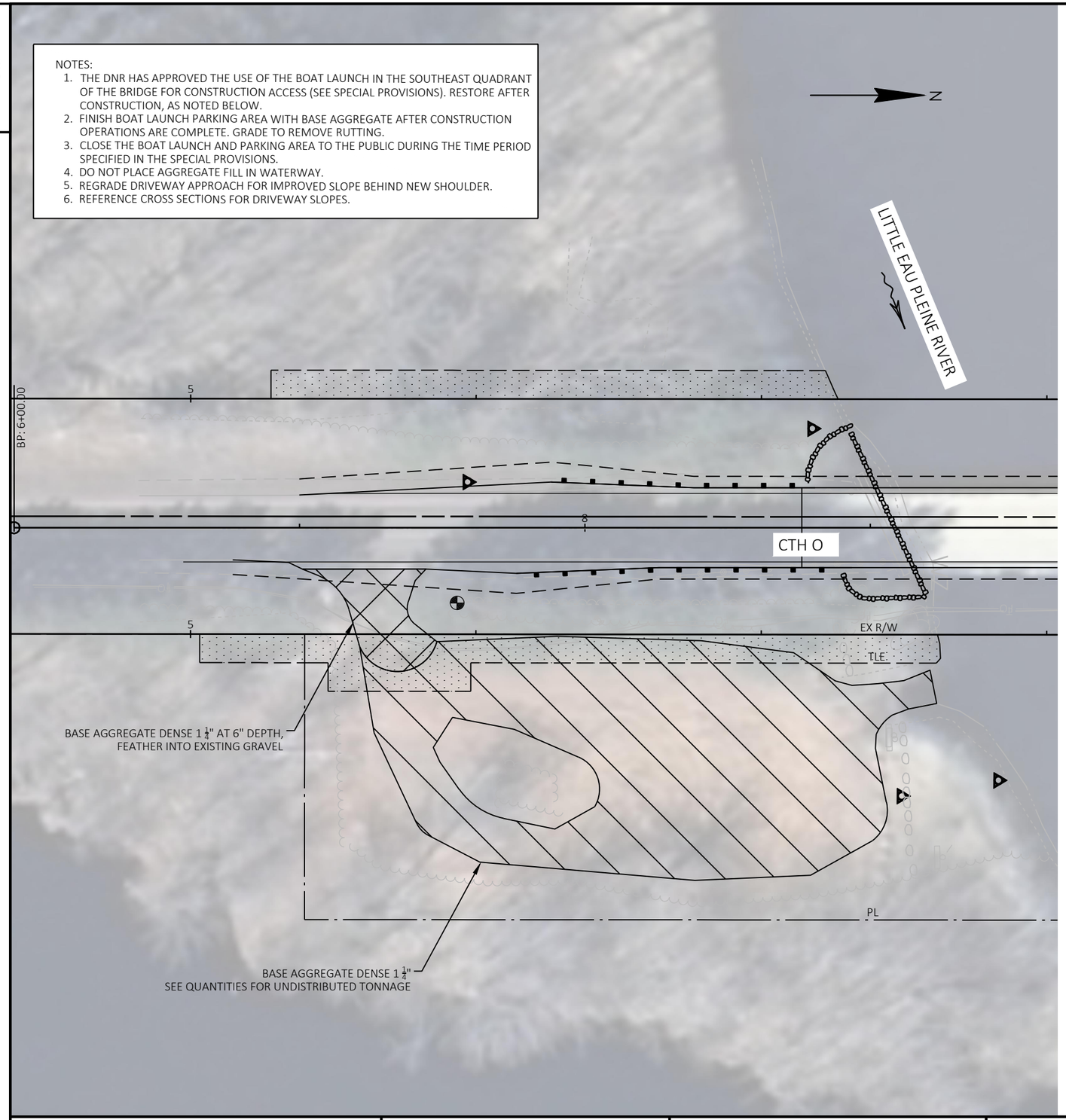
GENERAL NOTES:
SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND. AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.

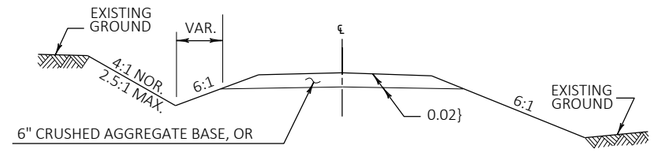
SEE PLANS FOR SILT FENCE LOCATIONS. INSTALL TURN-AROUND AT END OF SHOWN FENCING.

ROADSIDE OFFSETS DEPENDENT ON LOCATION.

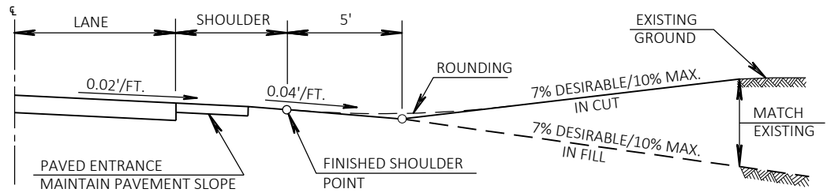
TEMPORARY SMALL ANIMAL TURN-AROUND

NOTES:
1. THE DNR HAS APPROVED THE USE OF THE BOAT LAUNCH IN THE SOUTHEAST QUADRANT OF THE BRIDGE FOR CONSTRUCTION ACCESS (SEE SPECIAL PROVISIONS). RESTORE AFTER CONSTRUCTION, AS NOTED BELOW.
2. FINISH BOAT LAUNCH PARKING AREA WITH BASE AGGREGATE AFTER CONSTRUCTION OPERATIONS ARE COMPLETE. GRADE TO REMOVE RUTTING.
3. CLOSE THE BOAT LAUNCH AND PARKING AREA TO THE PUBLIC DURING THE TIME PERIOD SPECIFIED IN THE SPECIAL PROVISIONS.
4. DO NOT PLACE AGGREGATE FILL IN WATERWAY.
5. REGRADE DRIVEWAY APPROACH FOR IMPROVED SLOPE BEHIND NEW SHOULDER.
6. REFERENCE CROSS SECTIONS FOR DRIVEWAY SLOPES.

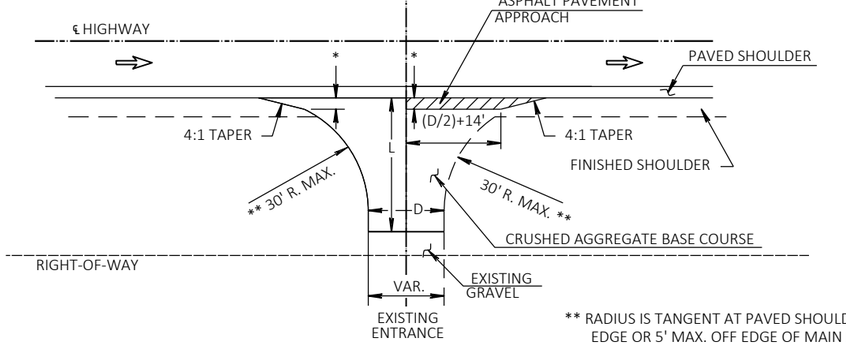




TYPICAL CROSS SECTION



PROFILE VIEW



L=VARIABLE, EXACT LENGTH TO BE DETERMINED IN THE FIELD BY THE ENGINEER. BLEND BACK ON THE ENTRANCE FAR ENOUGH TO GET A SMOOTH PROFILE.

D=DRIVEWAY WIDTH = MATCH EXISTING

** RADIUS IS TANGENT AT PAVED SHOULDER EDGE OR 5' MAX. OFF EDGE OF MAIN LINE PAVEMENT WHICH EVER IS LESS.

PLAN VIEW

PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	CONSTRUCTION ACCESS DETAILS - BOAT LAUNCH	SHEET 6	E

FILE NAME : C:\ONEDRIVE\AECOM\60646519 - CTH O, MARATHON COUNTY - 0_RECORDS\900_CAD_GIS\910_CAD\66640000\SHEETSPLAN\0210-CD-BOAT LAUNCH.DWG
LAYOUT NAME - 021001-cd-buoy
PLOT DATE : 11/14/2023 12:28 PM PLOT BY : LANCELLE, JESSICA PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2

LEGEND

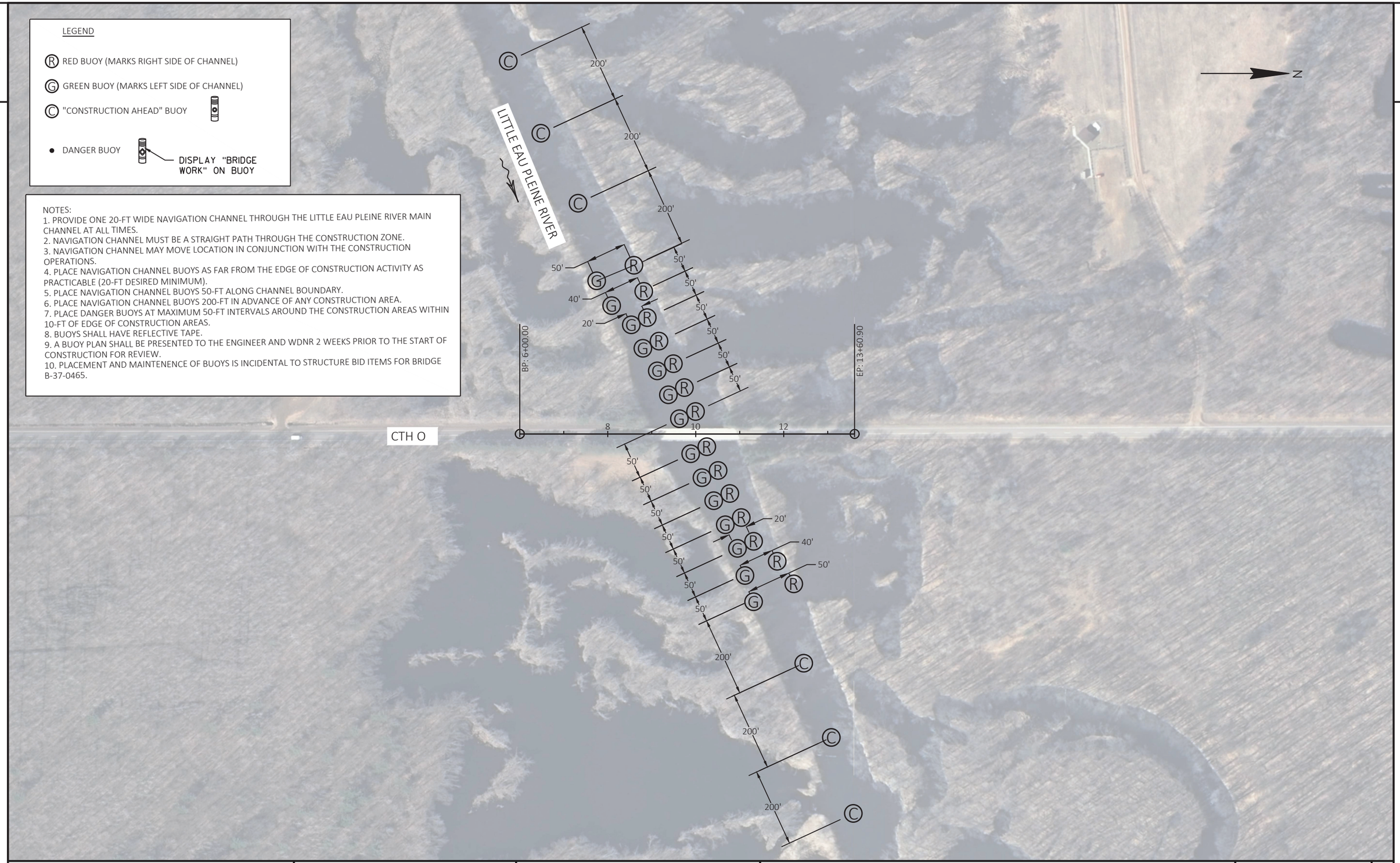
Ⓡ RED BUOY (MARKS RIGHT SIDE OF CHANNEL)

Ⓖ GREEN BUOY (MARKS LEFT SIDE OF CHANNEL)

Ⓒ "CONSTRUCTION AHEAD" BUOY

● DANGER BUOY — DISPLAY "BRIDGE WORK" ON BUOY

NOTES:
1. PROVIDE ONE 20-FT WIDE NAVIGATION CHANNEL THROUGH THE LITTLE EAU PLEINE RIVER MAIN CHANNEL AT ALL TIMES.
2. NAVIGATION CHANNEL MUST BE A STRAIGHT PATH THROUGH THE CONSTRUCTION ZONE.
3. NAVIGATION CHANNEL MAY MOVE LOCATION IN CONJUNCTION WITH THE CONSTRUCTION OPERATIONS.
4. PLACE NAVIGATION CHANNEL BUOYS AS FAR FROM THE EDGE OF CONSTRUCTION ACTIVITY AS PRACTICABLE (20-FT DESIRED MINIMUM).
5. PLACE NAVIGATION CHANNEL BUOYS 50-FT ALONG CHANNEL BOUNDARY.
6. PLACE NAVIGATION CHANNEL BUOYS 200-FT IN ADVANCE OF ANY CONSTRUCTION AREA.
7. PLACE DANGER BUOYS AT MAXIMUM 50-FT INTERVALS AROUND THE CONSTRUCTION AREAS WITHIN 10-FT OF EDGE OF CONSTRUCTION AREAS.
8. BUOYS SHALL HAVE REFLECTIVE TAPE.
9. A BUOY PLAN SHALL BE PRESENTED TO THE ENGINEER AND WDNR 2 WEEKS PRIOR TO THE START OF CONSTRUCTION FOR REVIEW.
10. PLACEMENT AND MAINTENENCE OF BUOYS IS INCIDENTAL TO STRUCTURE BID ITEMS FOR BRIDGE B-37-0465.



PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	CONSTRUCTION DETAILS - WATERWAY MARKERS	SHEET 7	E

FILE NAME : C:\ONEDRIVE\AECOM\60646519 - CTH O, MARATHON COUNTY - 0_RECORDS\900_CAD_GIS\910_CAD\66640000\SHEETSPLAN\0210-CD-BUOY.DWG
LAYOUT NAME - 021001-cd-buoy
PLOT DATE : 7/19/2023 8:41 AM PLOT BY : LANCELLE, JESSICA PLOT NAME : PLOT SCALE : 1 IN:200 FT

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N

2

LITTLE EAU PLEINE RIVER

PROPOSED TLE

WETLAND BOUNDARY

WISCONSIN CONSERVATION COMMISSION

WETLAND BOUNDARY

WISCONSIN CONSERVATION COMMISSION

PROPOSED TLE

SLOPE INTERCEPT

EXISTING R/W

BP: 6+00.00

EP: 13+60.90

BEGIN CONSTRUCTION
STA 6+76.62
MATCH EXISTING

EXISTING PIER REMOVAL

7+00

CTH O

8+00

10+00

11+00

12+00

13+00

SLOPE INTERCEPT

PROPOSED TLE

EXISTING R/W

TDS TELECOM

WETLAND BOUNDARY

PROPOSED TLE

END CONSTRUCTION
STA 13+49.79
MATCH EXISTING

BEGIN PROJECT
STA 8+00
MATCH EXISTING
SAWCUT REQUIRED
Y=102432.433
X=245760.117

END PROJECT
STA 12+00
MATCH EXISTING
SAWCUT REQUIRED

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

PL

LEGEND

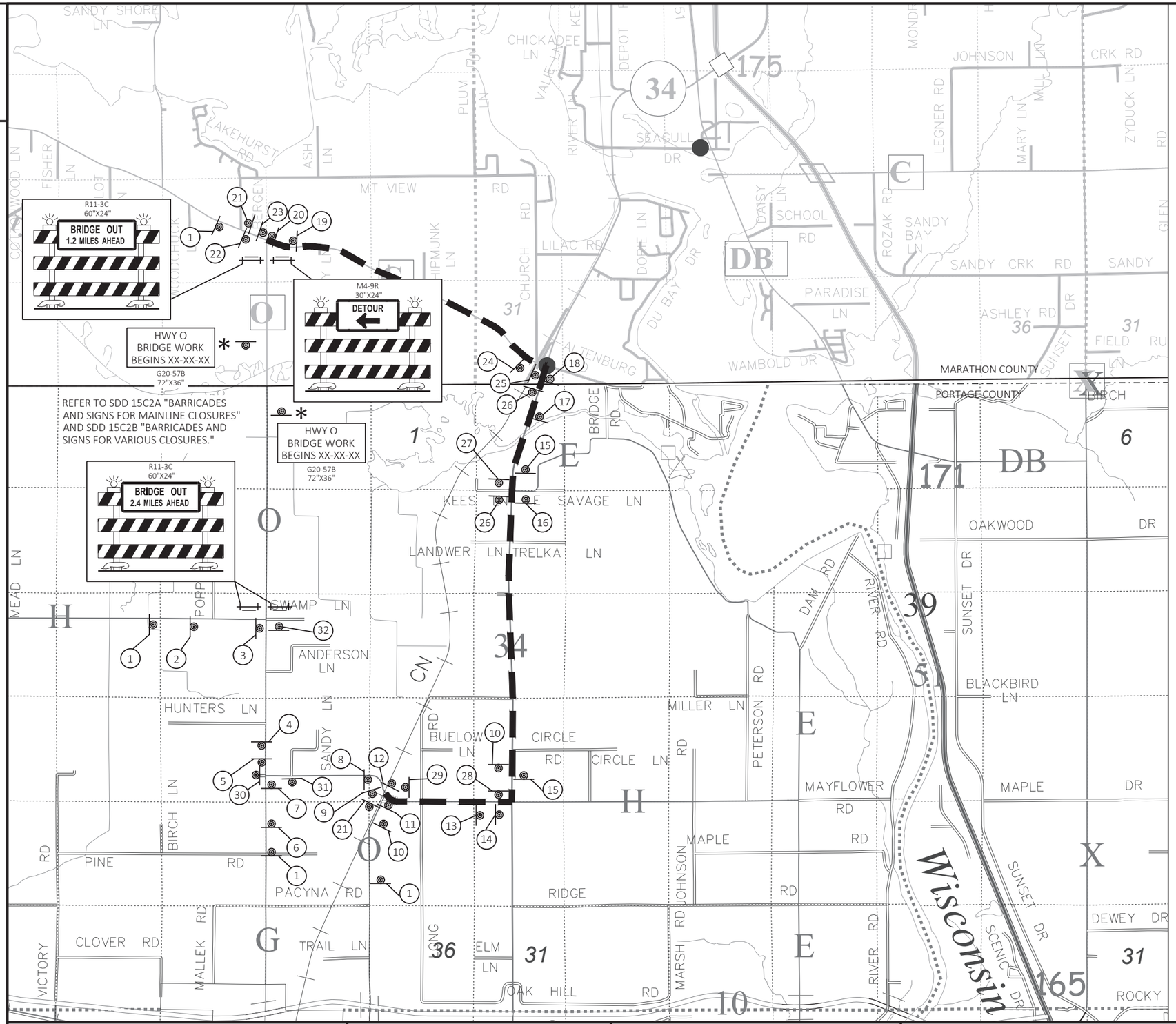
- EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- RIP RAP
- TURBIDITY BARRIER

PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	EROSION CONTROL	SHEET 8	E

FILE NAME : C:\ONEDRIVE\AECOM\60646519 - CTH O, MARATHON COUNTY - 0_RECORDS\900_CAD_GIS\910_CAD\66640000\SHEETSPLAN\0220-EC.DWG
LAYOUT NAME - 022001-ec

PLOT DATE : 7/19/2023 8:42 AM PLOT BY : LANCELLE, JESSICA PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 42



GENERAL NOTES

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

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

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

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

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

USE SIZE (2) SIGNS FOR ALL SIGNING.

* G20-57B SIGNS ARE TO BE PLACED 7 DAYS PRIOR TO CONSTRUCTION AND REMOVED WHEN CONSTRUCTION BEGINS.

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TYPE A WARNING LIGHT (FLASHING)
- DETOUR ROUTE
- (#) SIGN DETAIL # - SEE DETOUR SIGNING DETAILS

PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	DETOUR	SHEET 9	E

FILE NAME : C:\ONEDRIVE\AECOM\60646519 - CTH O, MARATHON COUNTY - 0_RECORDS\900_CAD_GIS\910_CAD\66640000\SHEETSPLAN\0270-DT.DWG
LAYOUT NAME - 027001-dt
PLOT DATE : 7/19/2023 8:42 AM PLOT BY : LANCELLE, JESSICA PLOT NAME : PLOT SCALE : ############
WISDOT/CADDS SHEET 42

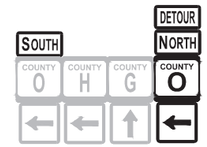
2

1


2


3


4


5


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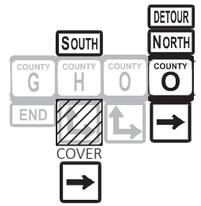

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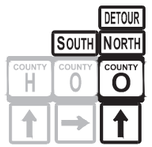

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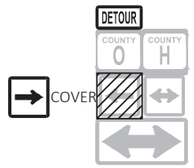
12


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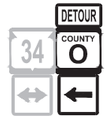

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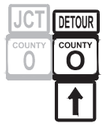

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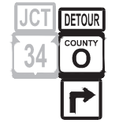

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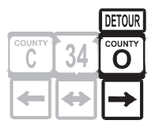

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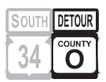

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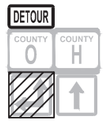

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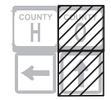

DETOUR SIGN LEGEND

M4-8
24"X12"

M3-1
24"X12"

M3-3
24"X12"

M4-8A
24"X18"


MO6-1
21"X21"


MO5-1L
21"X21"


MO5-1R
21"X21"

M1-6
24"X24"

M1-5A
24"X24"

PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	DETOUR SIGNING DETAILS	SHEET 10	E

Estimate Of Quantities

6664-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	6.000	6.000
0004	201.0205	Grubbing	STA	6.000	6.000
0006	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-37-465	EACH	1.000	1.000
0008	204.0165	Removing Guardrail	LF	363.000	363.000
0010	205.0100	Excavation Common	CY	291.000	291.000
0012	206.1001	Excavation for Structures Bridges (structure) 01. B-37-465	EACH	1.000	1.000
0014	206.5001	Cofferdams (structure) 01. B-37-465	EACH	1.000	1.000
0016	208.0100	Borrow	CY	364.000	364.000
0018	210.1500	Backfill Structure Type A	TON	240.000	240.000
0020	213.0100	Finishing Roadway (project) 01. 6664-00-70	EACH	1.000	1.000
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	115.000	115.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	747.000	747.000
0026	415.0060	Concrete Pavement 6-Inch	SY	18.000	18.000
0028	415.0410	Concrete Pavement Approach Slab	SY	110.000	110.000
0030	450.4000	HMA Cold Weather Paving	TON	125.000	125.000
0032	455.0605	Tack Coat	GAL	43.000	43.000
0034	465.0105	Asphaltic Surface	TON	125.000	125.000
0036	502.0100	Concrete Masonry Bridges	CY	633.000	633.000
0038	502.3200	Protective Surface Treatment	SY	865.000	865.000
0040	502.9000.S	Underwater Substructure Inspection (structure) 01. B-37-465	EACH	3.000	3.000
0042	505.0400	Bar Steel Reinforcement HS Structures	LB	10,510.000	10,510.000
0044	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	105,810.000	105,810.000
0046	513.4061	Railing Tubular Type M	LF	458.000	458.000
0048	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0050	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	2,305.000	2,305.000
0052	606.0300	Riprap Heavy	CY	130.000	130.000
0054	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	172.000	172.000
0056	614.2300	MGS Guardrail 3	LF	87.500	87.500
0058	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0060	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0062	618.0100	Maintenance and Repair of Haul Roads (project) 01. 6664-00-70	EACH	1.000	1.000
0064	619.1000	Mobilization	EACH	1.000	1.000
0066	624.0100	Water	MGAL	9.000	9.000
0068	625.0100	Topsoil	SY	1,720.000	1,720.000
0070	628.1504	Silt Fence	LF	1,095.000	1,095.000
0072	628.1520	Silt Fence Maintenance	LF	1,095.000	1,095.000
0074	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0076	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0078	628.2008	Erosion Mat Urban Class I Type B	SY	1,720.000	1,720.000
0080	628.6005	Turbidity Barriers	SY	444.000	444.000
0082	629.0210	Fertilizer Type B	CWT	1.300	1.300
0084	630.0130	Seeding Mixture No. 30	LB	49.000	49.000
0086	630.0500	Seed Water	MGAL	40.000	40.000
0088	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0090	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0092	638.2602	Removing Signs Type II	EACH	5.000	5.000
0094	642.5001	Field Office Type B	EACH	1.000	1.000
0096	643.0420	Traffic Control Barricades Type III	DAY	1,350.000	1,350.000
0098	643.0705	Traffic Control Warning Lights Type A	DAY	2,550.000	2,550.000
0100	643.0900	Traffic Control Signs	DAY	9,150.000	9,150.000

Estimate Of Quantities

6664-00-70

Line	Item	Item Description	Unit	Total	Qty
0102	643.0920	Traffic Control Covering Signs Type II	EACH	11.000	11.000
0104	643.1000	Traffic Control Signs Fixed Message	SF	36.000	36.000
0106	643.5000	Traffic Control	EACH	1.000	1.000
0108	645.0111	Geotextile Type DF Schedule A	SY	90.000	90.000
0110	645.0120	Geotextile Type HR	SY	220.000	220.000
0112	646.1020	Marking Line Epoxy 4-Inch	LF	1,900.000	1,900.000
0114	646.9000	Marking Removal Line 4-Inch	LF	800.000	800.000
0116	650.4500	Construction Staking Subgrade	LF	473.000	473.000
0118	650.5000	Construction Staking Base	LF	473.000	473.000
0120	650.6501	Construction Staking Structure Layout (structure) 01. B-37-465	EACH	1.000	1.000
0122	650.7000	Construction Staking Concrete Pavement	LF	52.000	52.000
0124	650.9911	Construction Staking Supplemental Control (project) 01. 6664-00-70	EACH	1.000	1.000
0126	650.9920	Construction Staking Slope Stakes	LF	473.000	473.000
0128	690.0150	Sawing Asphalt	LF	524.000	524.000
0130	715.0502	Incentive Strength Concrete Structures	DOL	3,798.000	3,798.000
0132	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0134	SPV.0195	Special 01. Select Crushed Material for Travel Corridor	TON	70.000	70.000

***ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED.

3

CLEARING & GRUBBING

STATION	-	STATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
6+77	-	9+22	3	3
10+79	-	13+50	3	3
PROJECT 6664-00-70 TOTAL			6	6

REMOVING GUARDRAIL

STATION	-	STATION	OFFSET	204.0165 REMOVING GUARDRAIL LF
8+14		9+04	LT	90
8+25		9+16	RT	91
10+83		11+75	LT	92
10+95		11+85	RT	90
PROJECT 6664-00-70 TOTAL				363

FINISHING ROADWAY

LOCATION	213.0100 FINISHING ROADWAY 6664-00-70 EACH
PROJECT	1
PROJECT 6664-00-70 TOTAL	

3

EARTHWORK

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1) (CY) CUT (2)	EBS EXCAVATION (3)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13) FACTOR 1.25	MASS ORDINATE +/- (14)	WASTE	208.0100 BORROW (CY)	COMMENT
DIVISION 1												
CTH O	6+76.63/13+49.78		291	0	0	291	524	655	-364	0	364	
DIVISION 1 SUBTOTAL			291	0	0	291	524	655	-364	0	364	
GRAND TOTAL			291	0	0	291	524	655	-364	0	364	
TOTAL COMMON EXC			291									

NOTES:

(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100

(2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

(3) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL.

(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL

(5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL

(13) EXPANDED FILL FACTOR = 1.25

(14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

***ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED.

3

BASE AGGREGATE DENSE

STATION	-	STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	624.0100 WATER MGAL
6+77	-	8+76	CTH O	46	280	3.3
8+76	-	9+02	CTH O - S APPROACH	---	24	0.3
10+98	-	11+24	CTH O - N APPROACH	---	24	0.3
11+24	-	13+50	CTH O	58	303	3.7
7+00	-	9+00	BOAT LAUNCH RUTTING - UND	---	60	0.6
7+25			BOAT LAUNCH DRIVEWAY	---	24	0.3
			UNDISTRIBUTED	11	32	0.5
PROJECT 6664-00-70 TOTAL				**115**	**747**	**9.0**

ASPHALTIC ITEMS

STATION	-	STATION	LOCATION	450.4000 HMA COLD WEATHER PAVING TON	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
6+77	-	8+76	CTH O	62	21	62
11+24	-	13+50	CTH O	63	22	63
PROJECT 6664-00-70 TOTAL				**125**	**43**	**125**

CONCRETE PAVEMENT

STATION	-	STATION	LOCATION	415.0060 CONCRETE PAVEMENT 6-INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY
8+76	-	9+02	CTH O	9	55
10+98	-	11+24	CTH O	9	55
PROJECT 6664-00-70 TOTAL				**18**	**110**

GUARDRAIL

STATION	-	STATION	OFFSET	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
7+76	-	8+94	RT	25.0	39.4	1
7+88	-	8+81	LT	---	39.4	1
11+06	-	12+61	RT	62.5	39.4	1
11+19	-	12+12	LT	---	39.4	1
PROJECT 6664-00-70 SUBTOTAL				**87.5**	**157.6**	**4**

***ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED.

LANDSCAPING

STATION	-	STATION	LOCATION	625.0100 TOPSOIL SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0500 SEED WATER MGAL
6+77	-	7+19	RT	80	80	0.1	3	2
7+00	-	8+85	LT	390	390	0.3	11	9
7+38	-	9+22	RT	260	260	0.2	7	6
10+79	-	13+50	LT	570	570	0.4	16	13
11+12	-	13+03	RT	420	420	0.3	12	10
PROJECT TOTAL				**1,720**	**1,720**	**1.3**	**49**	**40**

EROSION CONTROL

STATION	-	STATION	OFFSET	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.6005 TURBIDITY BARRIERS SY
6+60	-	7+20	RT	105	105	---
6+80	-	8+90	LT	240	240	---
7+50	-	9+20	RT	190	190	---
8+90	-	9+30	LT/RT	---	---	99
9+63			PIER 1	---	---	123
10+37			PIER 2	---	---	123
10+70	-	11+05	LT/RT	---	---	99
10+75	-	13+60	LT	315	315	---
11+05	-	13+20	RT	245	245	---
PROJECT 6664-00-70 TOTAL				**1,095**	**1,095**	**444**

EROSION CONTROL MOBILIZATION

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL EACH
PROJECT LIMITS	4	3
PROJECT 6664-00-70 TOTAL	**4**	**3**

PERMANENT SIGNING

STATION	OFFSET	SIGN CODE	SIGN MESSAGE	SIZE IN	X	IN	634.0612 POSTS WOOD 4X6-INCH 12-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNS TYPE II EACH	NOTES
		W5-2	NARROW BRIDGE		---		---	---	1	1100' NORTH OF NORTH ABUTMENT
9+00	LT/RT	W5-52 L/R	BRIDGE HASH MARKS		X		---	---	2	
10+95	LT/RT	W5-52 L/R	BRIDGE HASH MARKS		---		---	---	2	
8+92	LT	W5-52L	BRIDGE HASH MARKS	12	X	36	1	3.00	---	
9+06	RT	W5-52R	BRIDGE HASH MARKS	12	X	36	1	3.00	---	
10+94	LT	W5-52R	BRIDGE HASH MARKS	12	X	36	1	3.00	---	
11+07	RT	W5-52L	BRIDGE HASH MARKS	12	X	36	1	3.00	---	
PROJECT 6664-00-70 TOTAL							**4**	**12.00**	**5**	

***ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED.

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TRAFFIC CONTROL

LOCATION	DAYS IN SERVICE	643.0420 TRAFFIC CONTROL BARRICADES TYPE III NO.	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A NO.	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0900 TRAFFIC CONTROL SIGNS NO.	643.0900 TRAFFIC CONTROL SIGNS DAY	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II CYCLES	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF
DETOUR ROUTE	75	---	---	---	---	110	8,250	11	1	36
CTH O	75	18	1,350	34	2,550	12	900	---	---	---
PROJECT 6664-00-70 TOTAL			**1,350**		**2,550**		**9,150**	**11**		**36**

3

PAVEMENT MARKING ITEMS

STATION	-	STATION	OFFSET	TYPE	646.1020 MARKING LINE EPOXY 4-INCH YELLOW LF	646.1020 MARKING LINE EPOXY 4-INCH WHITE LF	646.9000 MARKING REMOVAL LINE 4-INCH LF
				'NO PASSING' OUTSIDE LIMITS	---	---	800
6+00	-	14+00	CTR	CENTERLINE (DASHED/SOLID)	300	---	---
6+00	-	14+00	LT	EDGELINE (SOLID)	---	800	---
6+00	-	14+00	RT	EDGELINE (SOLID)	---	800	---
PROJECT 6664-00-70 TOTAL						**1,900**	**800**

NOTE: REMOVE NO PASSING ZONE MARKINGS OUTSIDE OF PROJECT LIMITS - EXISTING IS APPROXIMATELY 1200'. SEE SDD "SIGNING AND MARKING FOR TWO LANE BRIDGES"

CONSTRUCTION STAKING

STATION	-	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.6501 CONSTRUCTION STAKING STRUCTURE LAYOUT B-37-465 EACH	650.9911 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL 6664-00-70 EACH	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
			PROJECT	---	---	---	1	1	---
6+77		9+00		223	223	---	---	---	223
8+76	-	9+02		---	---	26	---	---	---
11+00	-	13+50		250	250	---	---	---	250
10+98	-	11+24		---	---	26	---	---	---
PROJECT 6664-00-70 TOTAL				**473**	**473**	**52**	**1**	**1**	**473**

****CATEGORY 0020****

***ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE NOTED.

3

SAWING

STATION	-	STATION	OFFSET	LOCATION	690.0150 SAWING ASPHALT LF
6+77	-	8+00	RT	CTH O SHOULDER	123
7+00	-	8+00	LT	CTH O SHOULDER	100
8+00			LT/RT	CTH O MAINLINE	24
12+00			LT/RT	CTH O MAINLINE	24
12+00	-	13+50	LT	CTH O SHOULDER	150
12+00	-	13+03	RT	CTH O SHOULDER	103
PROJECT 6664-00-70 TOTAL					**524**

3

NOTES: PROJECT REFERENCE LINE AND RIGHT-OF-WAY CENTERLINE ARE NOT THE SAME LINE.
EXISTING RIGHT-OF-WAY FOR CTH O ESTABLISHED FROM GOVERNMENT LAND LINES.

CONVENTIONAL SYMBOLS

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

SECTION CORNER SYMBOL
SECTION CORNER MONUMENT
R/W MONUMENT (TO BE SET)
NON-MONUMENTED R/W POINT
FOUND IRON PIN (1-INCH UNLESS NOTED) IP
GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT
SIGN
OFF-PREMISE SIGN

	COMPENSABLE	NON-COMPENSABLE
ELECTRIC POLE		
TELEPHONE POLE		
PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)		

ACCESS RESTRICTED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)
NO ACCESS (NEW HIGHWAY)
PARCEL NUMBER 25 — UTILITY NUMBER 40
R/W BOUNDARY POINT 200 — TLE BOUNDARY POINT 300

CONVENTIONAL UTILITY SYMBOLS

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

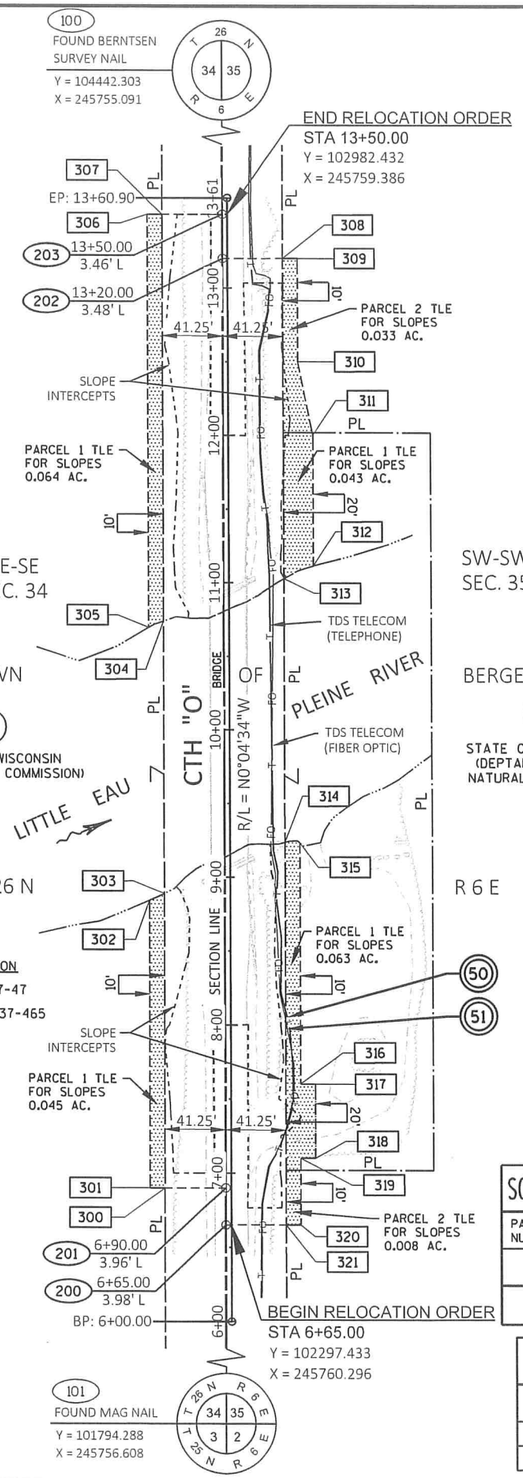
PROJECT LOCATION

CONVENTIONAL ABBREVIATIONS

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

CURVE DATA ABBREVIATIONS

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



STRUCTURE INFORMATION
EXISTING BRIDGE: B-37-47
PROPOSED BRIDGE: B-37-465

SCALE, FEET
0 50 100

TLE COURSE TABLE

COURSE	BEARING	DISTANCE
300-301	S89°55'26"W	10.00'
301-302	N00°01'58"W	194.29'
302-303	N65°41'24"E	10.97'
303-304	N00°01'58"W	185.07'
304-305	S66°42'36"W	10.88'
305-306	N00°01'58"W	280.44'
306-307	N89°55'26"E	10.00'
307-203	N89°55'26"E	41.25'
202-308	N89°55'26"E	41.25'
308-309	N89°55'26"E	10.00'
309-310	S00°01'58"E	70.00'
310-311	S11°20'40"E	50.98'
311-312	S00°01'58"E	88.63'
312-313	S66°23'18"W	21.82'
313-314	S00°01'58"E	179.13'
314-315	S87°48'53"E	10.01'
315-316	S00°01'58"E	163.14'
316-317	N89°55'26"E	10.00'
317-318	S00°01'58"E	50.00'
318-319	S89°55'26"W	10.00'
319-320	S00°01'58"E	45.00'
320-321	S89°55'26"W	10.00'
321-200	S89°55'26"W	41.25'

RW COURSE TABLE

COURSE	BEARING	DISTANCE
101-200	N00°01'58"W	503.14'
200-201	N00°01'58"W	25.00'
201-202	N00°01'58"W	630.00'
202-203	N00°01'58"W	30.00'
203-100	N00°01'58"W	1459.88'
201-300	S89°55'26"W	41.25'
307-203	N89°55'26"E	41.25'
202-308	N89°55'26"E	41.25'
321-200	S89°55'26"W	41.25'

RW COORDINATE TABLE

POINT	Y	X
200	102297.427	245756.320
201	102322.427	245756.305
202	102952.427	245755.945
203	102982.428	245755.927

TLE STATION & OFFSET TABLE

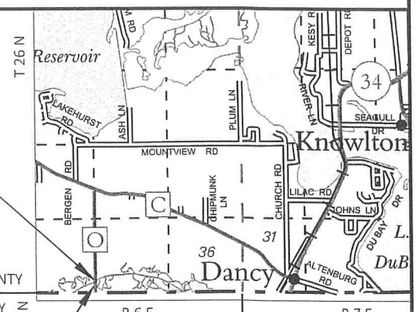
POINT	STATION	OFFSET
300	6+90.00	45.21'L
301	6+90.00	55.21'L
302	8+84.29	55.06'L
303	8+88.79	45.06'L
304	10+73.86	44.92'L
305	10+69.56	54.92'L
306	13+50.00	54.71'L
307	13+50.00	44.71'L
308	13+20.00	37.77'
309	13+20.00	47.77'
310	12+50.00	47.72'
311	12+00.00	57.68'
312	11+11.37	57.61'
313	11+02.66	37.60'
314	9+23.53	37.47'
315	9+23.14	47.47'
316	7+60.00	47.35'
317	7+60.00	57.35'
318	7+10.00	57.31'
319	7+10.00	47.31'
320	6+65.00	47.27'
321	6+65.00	37.27'

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
6664-00-00	4.01	1
FEDERAL PROJECT NUMBER		

PLAT OF RIGHT OF WAY REQUIRED FOR

T BERGEN, COUNTY ROAD O
LITTLE EAU PLEINE RIVER BRIDGE B-37-47

CTH O	MARATHON COUNTY
CONSTRUCTION PROJECT NUMBER	



END RELOCATION ORDER
STA 13+50.00
1188.14' NORTH AND 2.78' EAST OF THE SOUTHWEST CORNER OF SECTION 35, T26N, R6E.

MARATHON COUNTY
PORTAGE COUNTY

BEGIN RELOCATION ORDER
STA 6+65.00
503.15' NORTH AND 3.69' EAST OF THE SOUTHWEST CORNER OF SECTION 35, T26N, R6E.

LAYOUT
SCALE 0 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.123 MI.

NOTES:

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

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4"X24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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

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

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON, THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE VILLAGE OF PLOVER MAY DEEM DESIRABLE. ALL (TLEs) ON THIS PLAT EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

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

FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE MARATHON COUNTY HIGHWAY DEPT.

SCHEDULE OF LANDS & INTERESTS REQUIRED

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

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	RW ACRES REQUIRED NEW	EXISTING	TOTAL	TLE ACRES
1	STATE OF WISCONSIN (CONSERVATION COMMISSION)	TLE	----	----	----	0.215
2	STATE OF WISCONSIN (DEPARTMENT OF NATURAL RESOURCES)	TLE	----	----	----	0.041

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	OWNER(S)	INTEREST REQUIRED	EASEMENT VOL. PG. DOC
50	TDS TELECOM (TELEPHONE)	RELEASE OF RIGHTS	NO EASEMENT OF RECORD
51	TDS TELECOM (FIBER OPTIC)	RELEASE OF RIGHTS	NO EASEMENT OF RECORD

REVISION DATE

ORIGINAL PLAT PREPARED BY
AECOM

WISCONSIN
DONALD J. BUZA
S-2338
CUSTER, WI
LAND SURVEYOR

Donald J. Buza
DONALD J. BUZA, PLS-2338

DATE: 3/15/2022

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

MARATHON COUNTY

APPROVED FOR MARATHON COUNTY
DATE: 5-18-22 (Signature)

FILE NAME : C:\ONEDRIVE\AECOM DIRECTORY\60646519 - CTH O, MARATHON COUNTY - 0_RECORDS\900_CAD_GIS\910_CAD\66640000\SHEETSPLAN\0401-RP.DWG PLAT DATE : 3/15/2022 PLOT DATE : 3/15/2022 11:44 AM PLOT BY : BUZA, DONALD PLOT NAME :

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
1	9+11.01	ALUMINUM CAP ON REBAR	1118.41
2	7+55.20	RR SPIKE IN 16" RED PINE	1120.94
3	12+92.64	RR SPIKE IN 14" RED PINE	1121.22
4	10+90.41	CHISELED SQUARE IN NW WING WALL	1124.16

N

STA 7+88.19, 16' LT - STA 8+41.31, 14' LT
MGS GUARDRAIL TERMINAL EAT
STA 8+41.31, 14' LT - STA 8+80.71, 14' LT
MGS THRIE BEAM TRANSITION

LITTLE EAU PLEINE RIVER

WETLAND BOUNDARY

WISCONSIN CONSERVATION COMMISSION

STA 11+06.47, 14' LT - STA 11+45.86, 14' LT
MGS THRIE BEAM TRANSITION
STA 11+45.86, 14' LT - STA 12+08.36, 14' LT
MGS GUARDRAIL 3
STA 12+08.36, 14' LT - STA 12+61.49, 16' LT
MGS GUARDRAIL TERMINAL EAT

PROPOSED TLE

WETLAND BOUNDARY

CP 6
Y = 102391.296
X = 245744.160

CP 7
Y = 102512.104
X = 245725.294

EXISTING R/W

SLOPE INTERCEPT

BM 4

CP 2
Y = 102842.663
X = 245743.313

BP: 6+00.00

EP: 13+60.90

BEGIN CONSTRUCTION
STA 6+76.62
MATCH EXISTING

CONCRETE PAVEMENT APPROACH SLAB

PROPOSED STRUCTURE B-37-465
EXISTING STRUCTURE B-37-47

7+00 | CTH O | 8+00 | N0°04'34"W | 9+00 | 10+00 | 11+00 | 12+00 | 13+00

CONCRETE PAVEMENT APPROACH SLAB

BM 3

END CONSTRUCTION
STA 13+49.79
MATCH EXISTING

STA 7+76.02, 16' RT - STA 8+29.14, 14' RT
MGS GUARDRAIL TERMINAL EAT
STA 8+29.14, 14' RT - STA 8+54.14, 14' RT
MGS GUARDRAIL 3
STA 8+54.14, 14' RT - STA 8+93.53, 14' RT
MGS THRIE BEAM TRANSITION

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

BM 2

SLOPE INTERCEPT

PROPOSED TLE

CP 1/BM 1
Y = 102543.563
X = 245853.995

CP 8
Y = 102577.422
X = 245848.443

EXISTING R/W

TDS TELECOM

WETLAND BOUNDARY

PROPOSED TLE

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

STA 11+19.29, 14' RT - STA 11+58.69, 14' RT
MGS THRIE BEAM TRANSITION
STA 11+58.69, 14' RT - STA 12+11.81, 16' RT
MGS GUARDRAIL TERMINAL EAT

BEGIN PROJECT
STA 8+00
MATCH EXISTING
SAWCUT REQUIRED
Y=102432.433
X=245760.117

BOAT LAUNCH PARKING AREA, SEE CONSTRUCTION DETAIL

WISCONSIN CONSERVATION COMMISSION

WISCONSIN CONSERVATION COMMISSION

END PROJECT
STA 12+00
MATCH EXISTING
SAWCUT REQUIRED

HIGH WATER LEVEL
EL. 1126.07 (100 YEAR)

PROPOSED PROFILE

VPC STA 9+17.50
VPC EL 1124.66

VPI STA 10+00.00
VPI EL 1124.92

HP STA 10+17.27
HP EL 1124.82

VPT STA 10+82.50
VPT EL 1124.75

STA 8+00.00
EL 1124.28

STA 12+00.00
EL 1124.51

0.32%

-0.21%

EXISTING GROUND

OBSERVED WATER LEVEL
EL. 1114.90 (11/19/2020)

STA. 10+00
REMOVE STRUCTURE B-37-47
THREE SPAN STEEL DECK GIRDER BRIDGE
194'-5" OVERALL LENGTH
24'-0" CLEAR ROADWAY WIDTH
25° 30' SKEW RHF

STA. 10+00
STRUCTURE B-37-465
FOUR SPAN CONCRETE HAUNCHED SLAB BRIDGE
206'-9" OVERALL LENGTH
28'-0" CLEAR ROADWAY WIDTH
25° SKEW RHF

VCL = 165.00
K = 311.77

EXISTING ELEVATION
PROPOSED ELEVATION

1135 1130 1125 1120 1115 1110 1105 1100

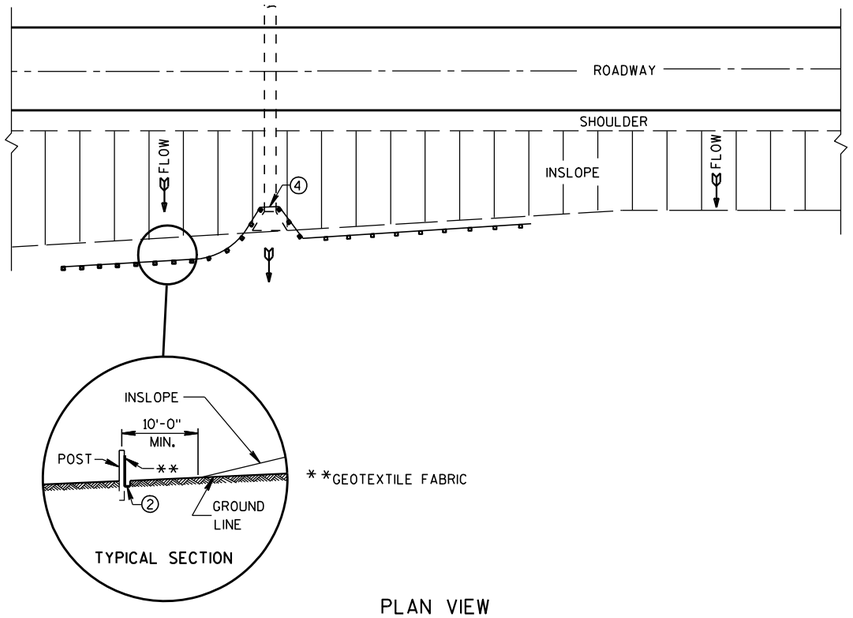
1123.84	1124.02	1124.14	1124.28	1124.32	1124.22	1109.40	1109.89	1110.08	1124.23	1124.42	1124.51	1124.39	1124.20	1124.06
			1124.28	1124.44	1124.60	1124.75	1124.82	1124.80	1124.72	1124.61	1124.51			1124.05

6 7 8 9 10 11 12 13 13

PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	PLAN AND PROFILE: CTH O	SHEET 19	E

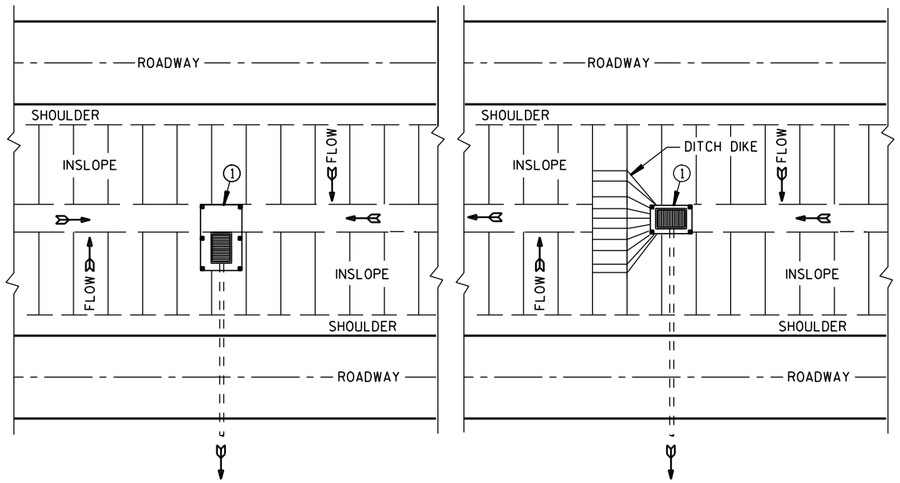
Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13A03-07	CONCRETE PAVEMENT SHOULDERS
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	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)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-10	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-22A	LONGITUDINAL MARKING (MAINLINE)
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

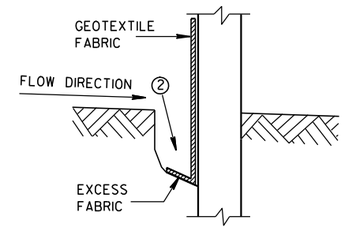
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

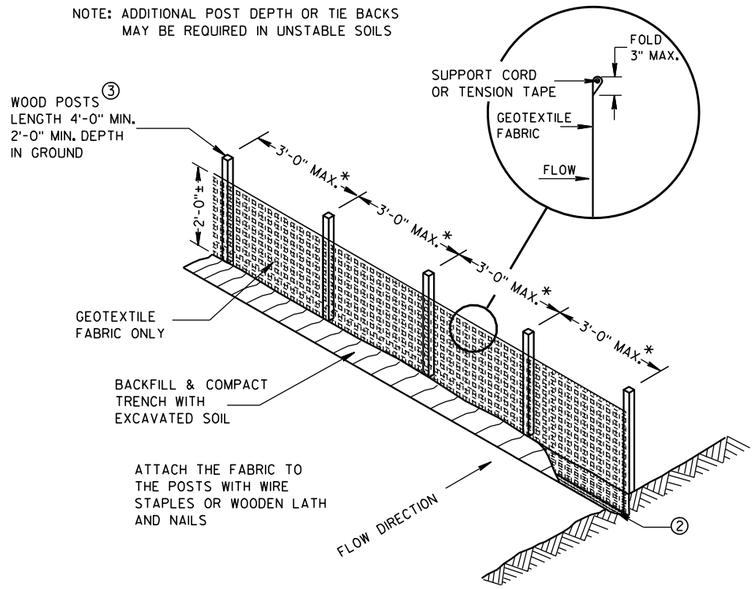
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

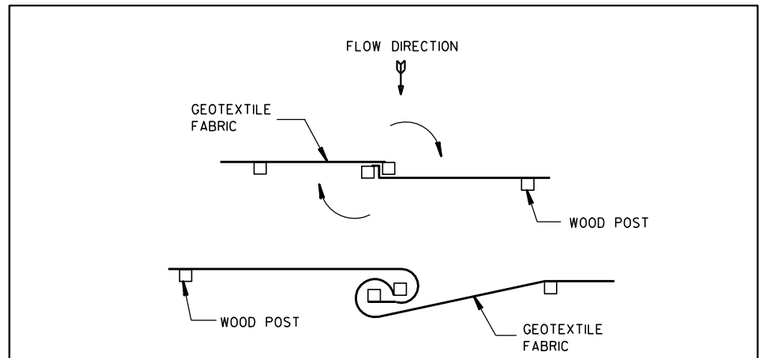
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



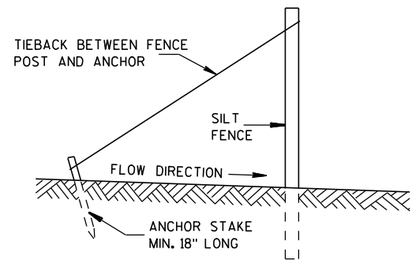
TRENCH DETAIL



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

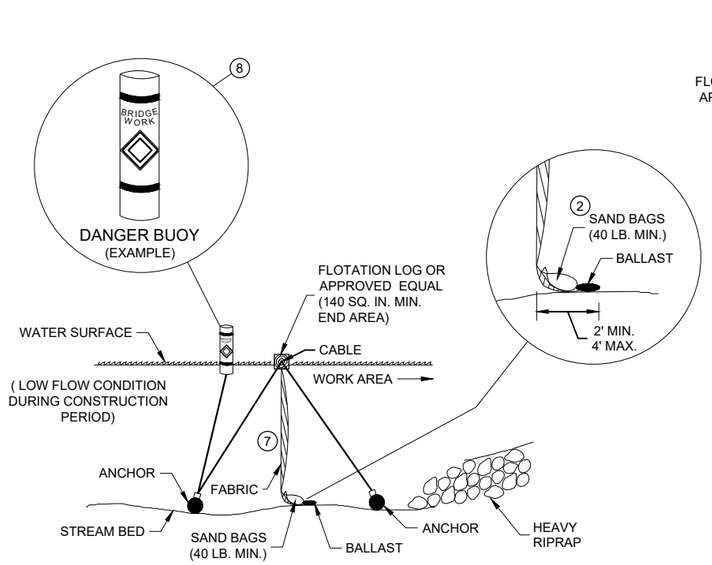
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

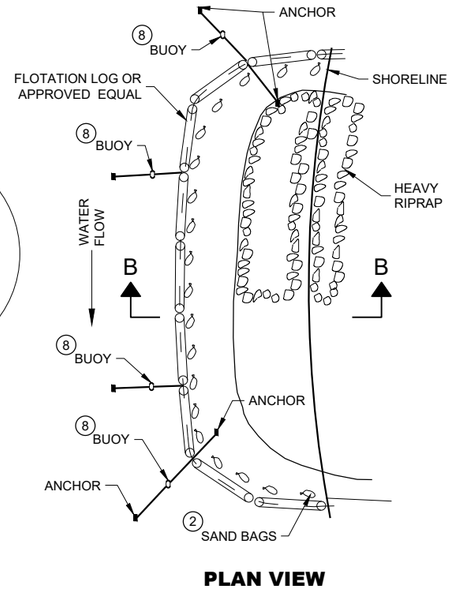
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

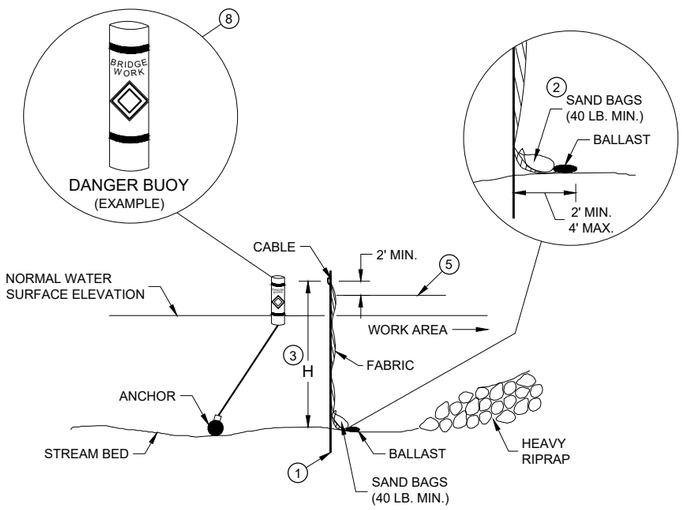


SECTION B - B

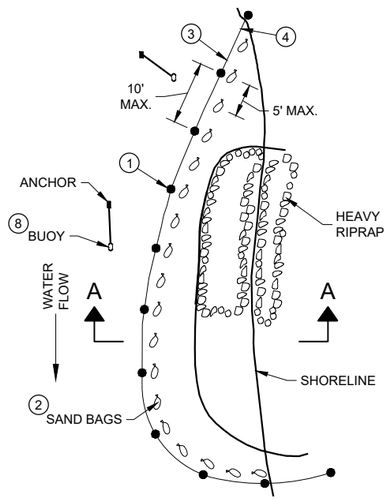


PLAN VIEW

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.

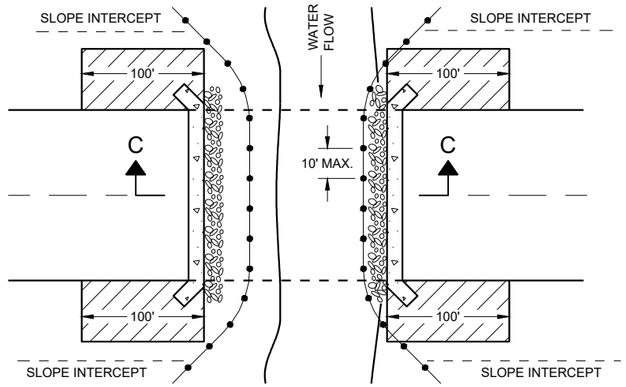
(4) IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

(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.

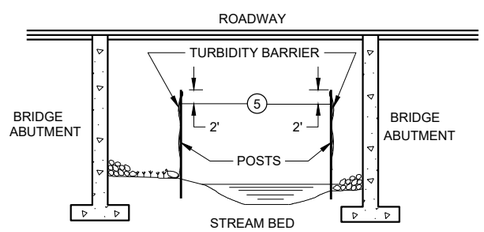
(6) FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.

(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

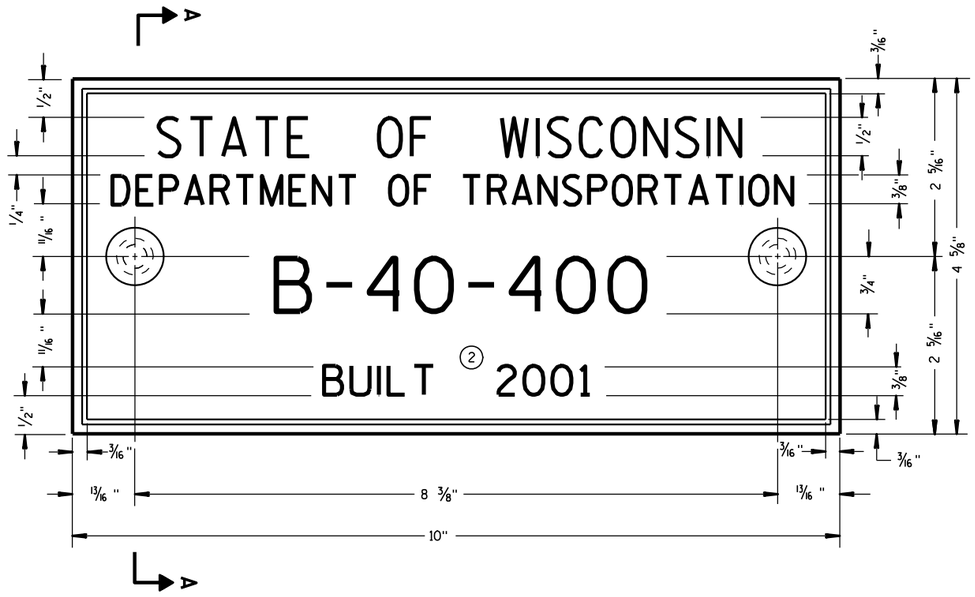
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6
SDD 08E11 - 02



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

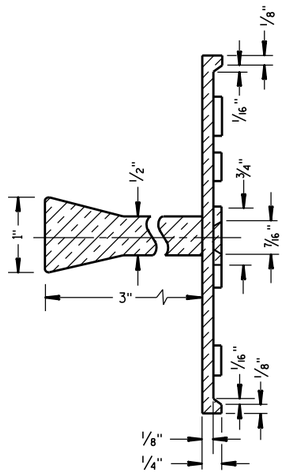
GENERAL NOTES

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

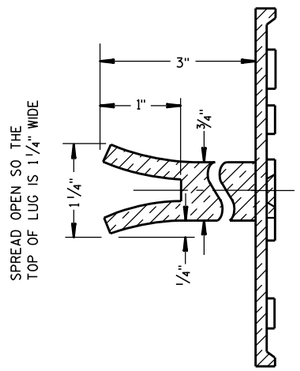
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

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



SECTION A-A



ALTERNATE LUG

FOR MULTI-UNIT STRUCTURES LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

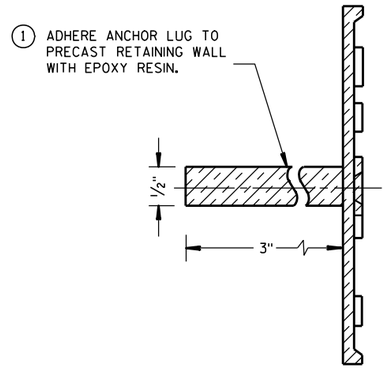
COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES



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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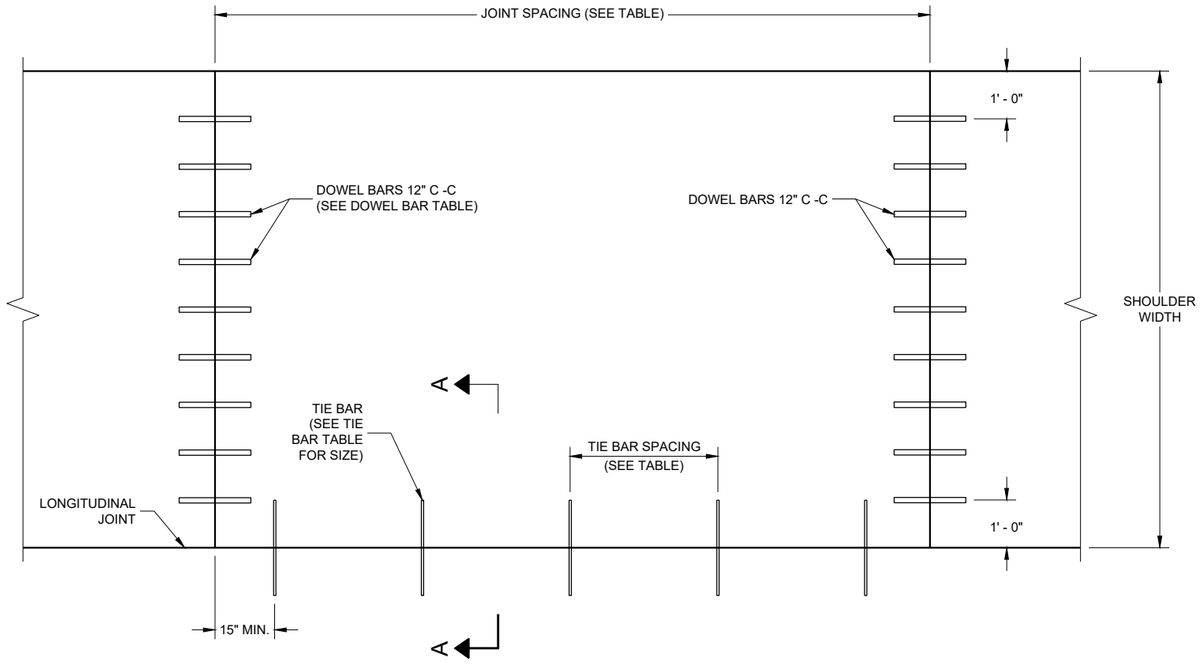
S.D.D. 12 A 3-10



PLAN VIEW

CONCRETE PAVEMENT SHOULDER

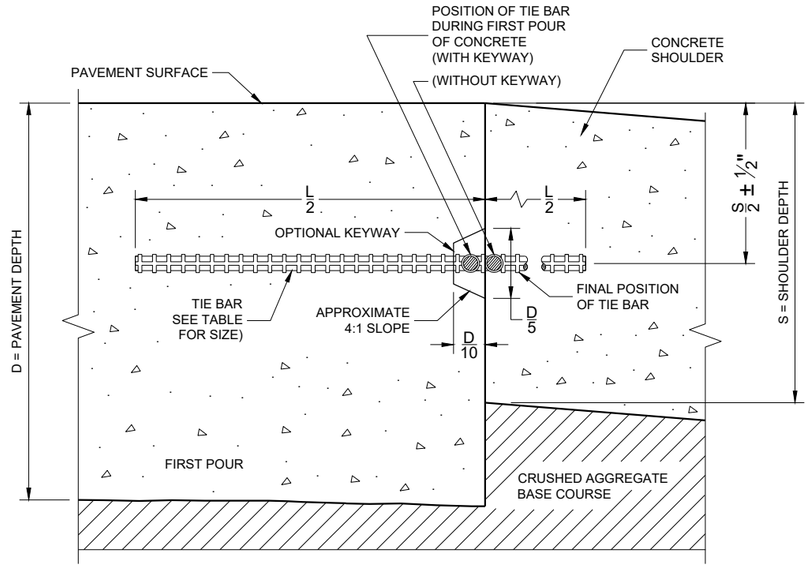
GENERAL NOTES

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

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

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

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



SECTION A - A

LONGITUDINAL CONSTRUCTION JOINT

TIE BAR TABLE

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

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

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

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER ***	CONTRACTION JOINT SPACING
6", 6 ½"	NONE	12"
7", 7 ½"	1"	14"
8" & ABOVE	1 ¼"	15"

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

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Peter Kemp
PAVEMENT SUPERVIS

FHWA

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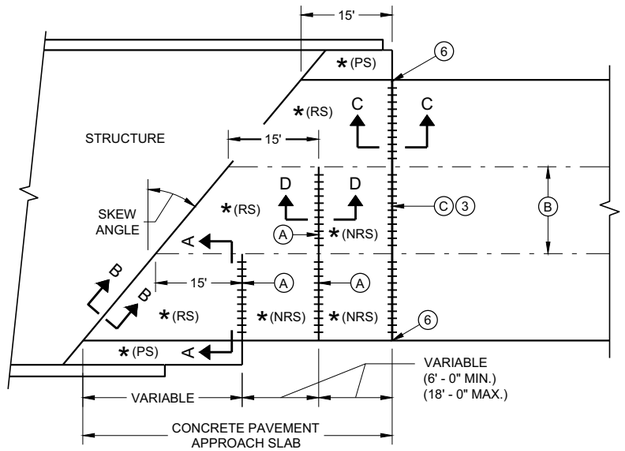
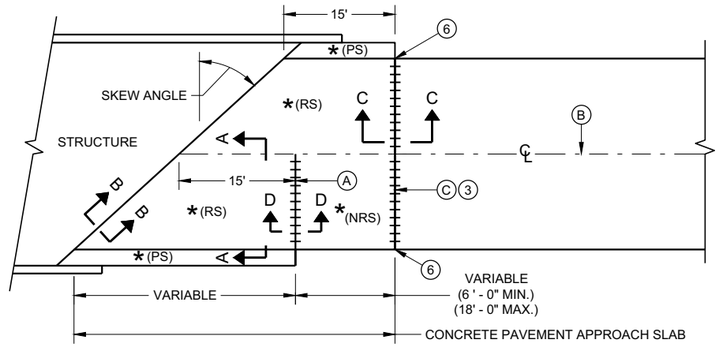
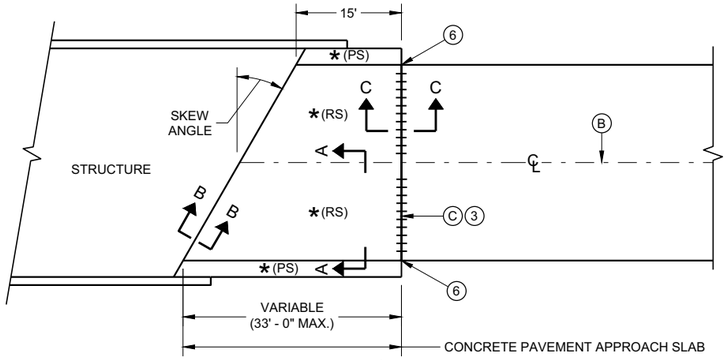
SDD 13A03 - 07



SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

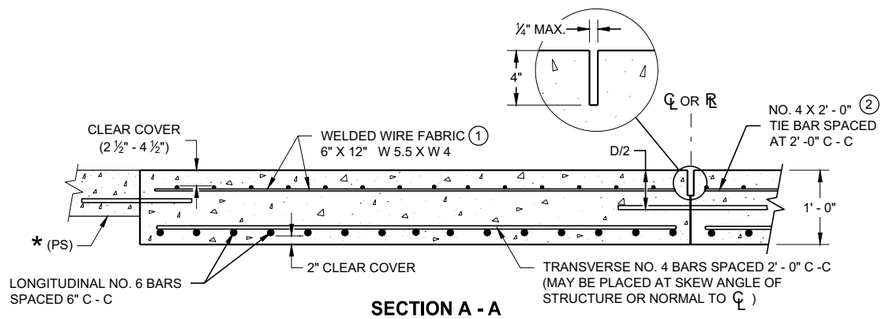
APPROACH SLAB AND ADJACENT PAVEMENT

* (RS) = REINFORCED CONCRETE SLAB

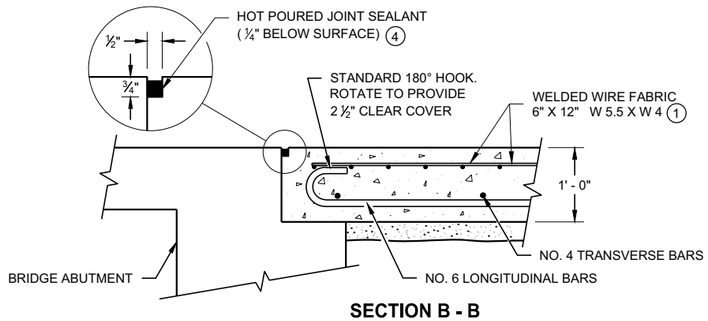
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

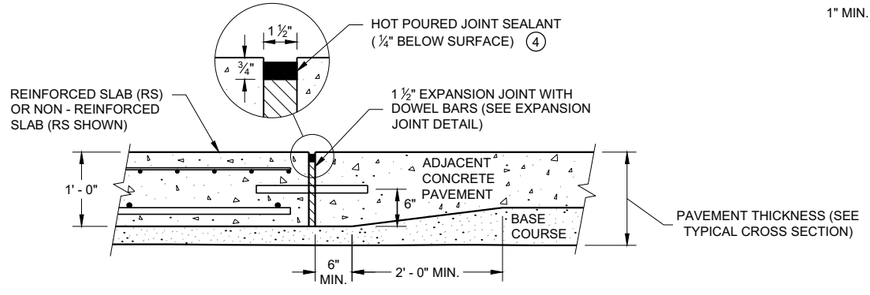
*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



SECTION A - A
REINFORCEMENT POSITIONING DETAIL



SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0 " C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

(2) THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

(3) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

(4) USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.

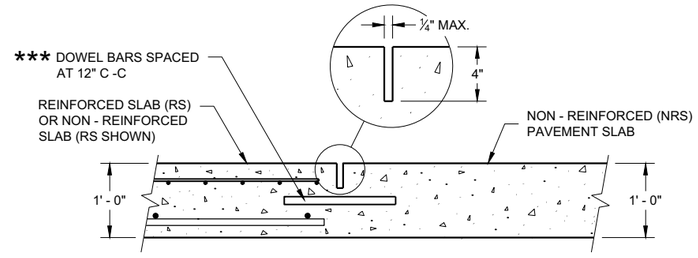
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

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

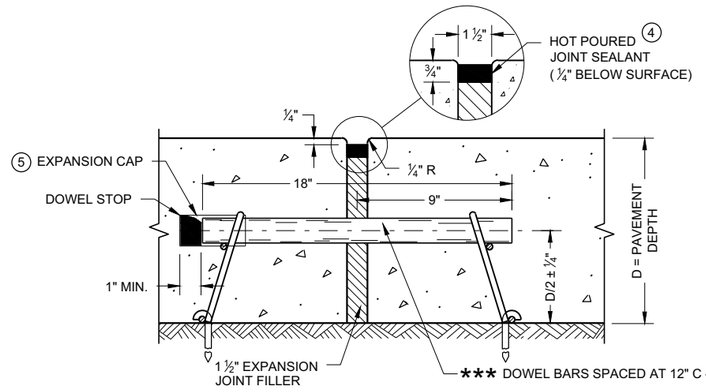
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

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



SECTION D - D
CONTRACTION JOINT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

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

FHWA

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SDD 13B02 - 09a

(1) WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

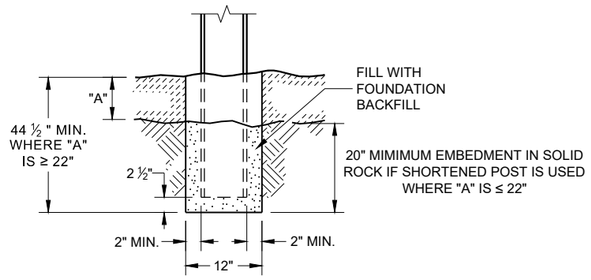
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

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

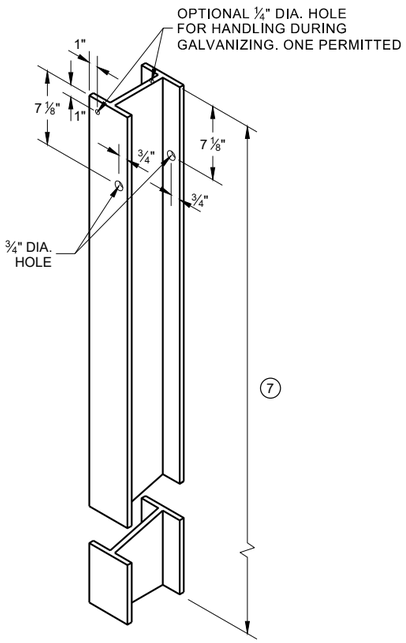
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

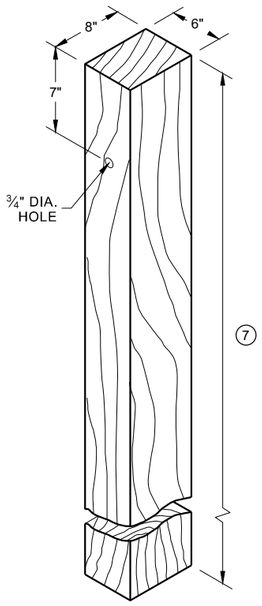
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



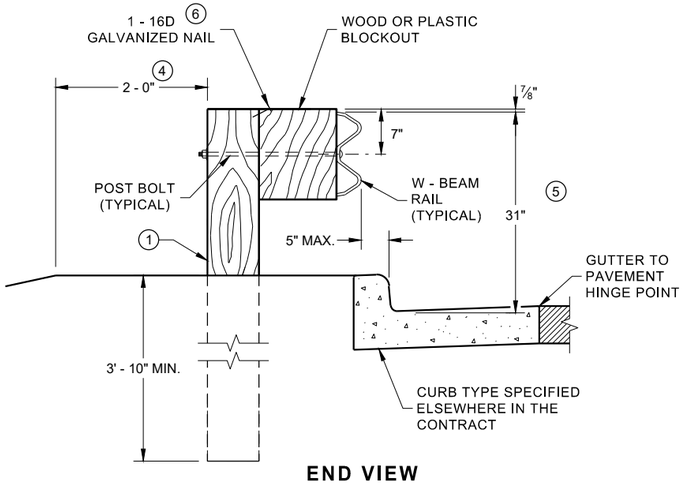
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



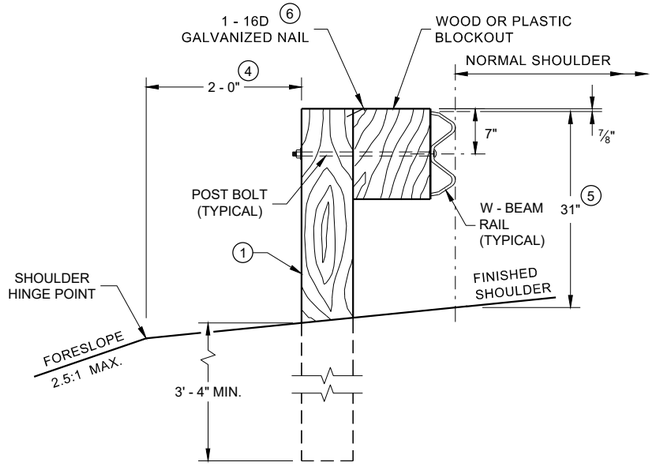
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



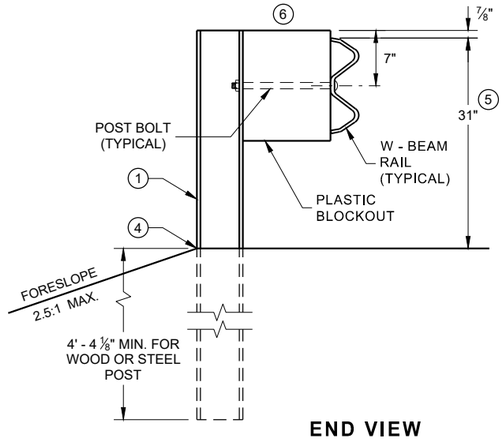
WOOD POST (6" X 8") NOMINAL (1)



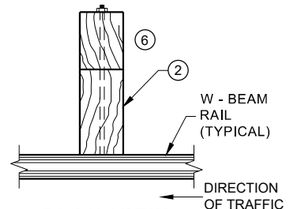
END VIEW
LOCATED ALONG A CURBED ROADWAY



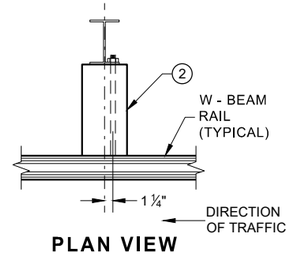
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



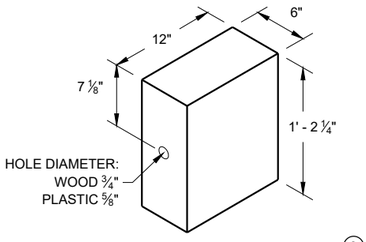
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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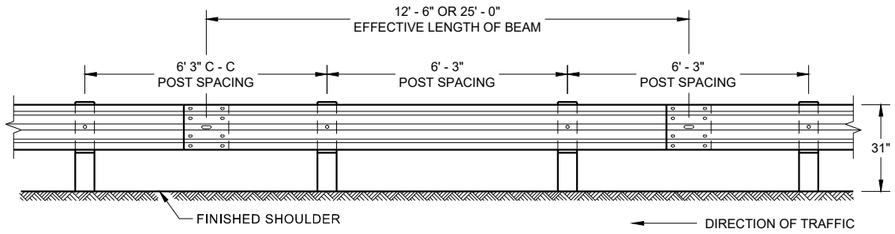
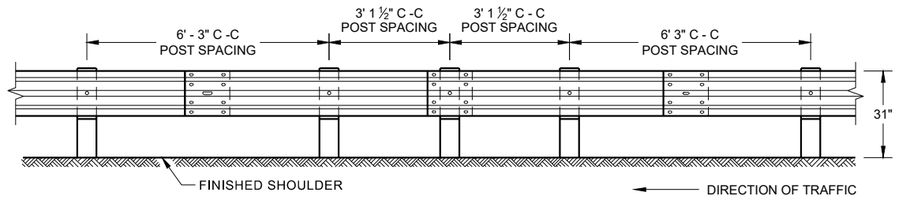
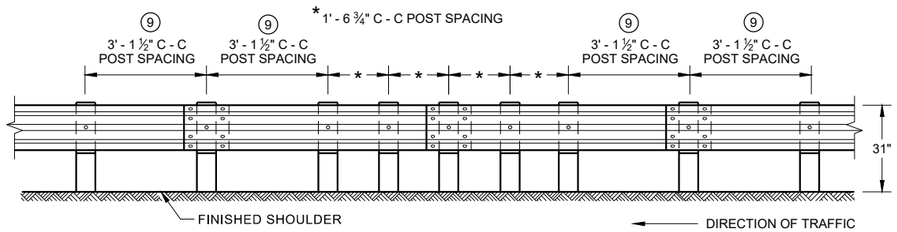
SDD 14B42 - 07a



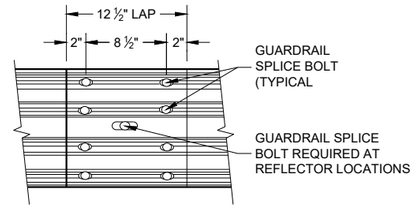
FRONT VIEW
POST SPACING STANDARD INSTALLATION



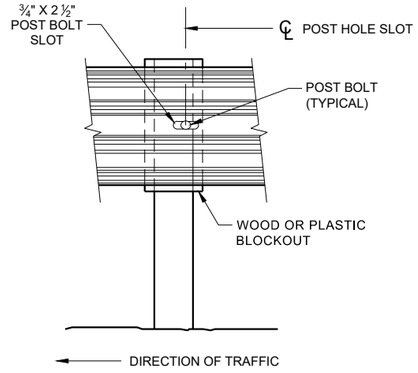
FRONT VIEW
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



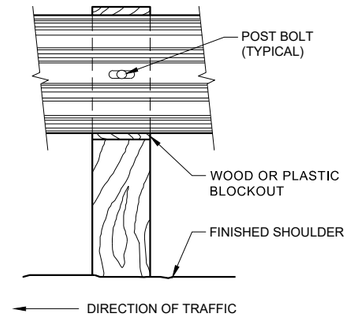
FRONT VIEW
QUARTER POST SPACING (QS)



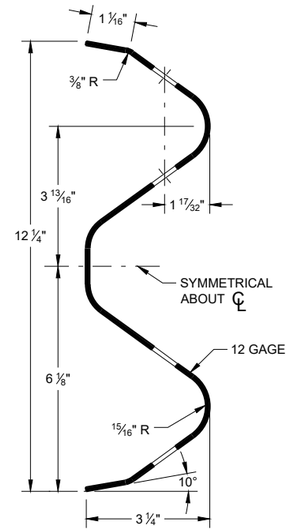
FRONT VIEW
MID-SPAN BEAM SPLICE



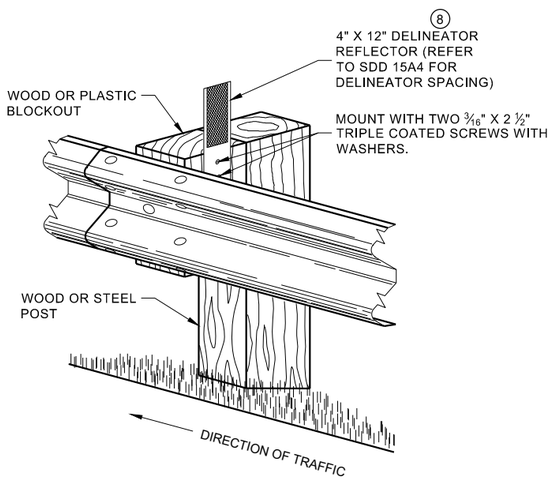
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

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

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

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

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

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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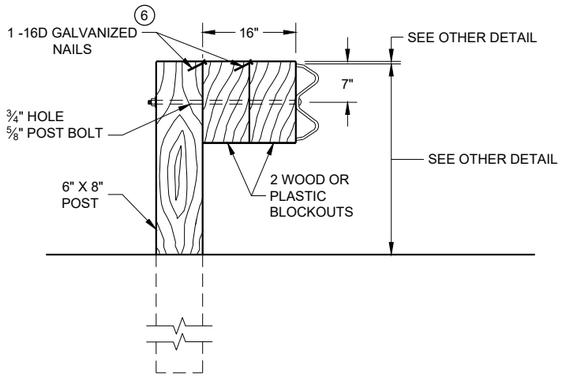
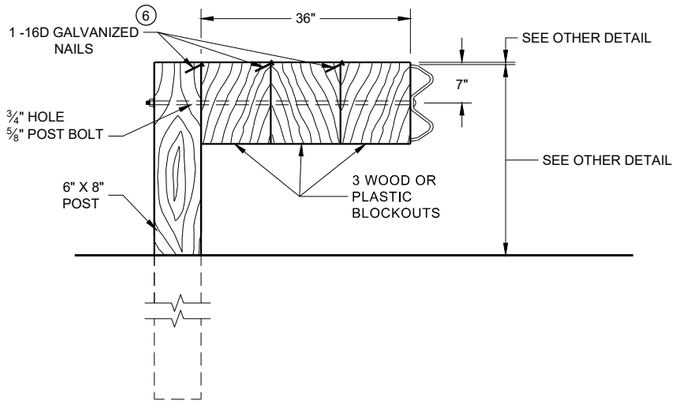
SDD 14B42 - 07b



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.



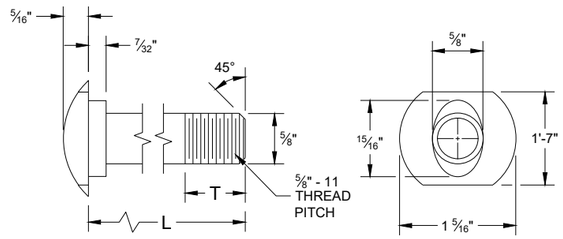
DETAIL FOR 36" BLOCKOUT DEPTH

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

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

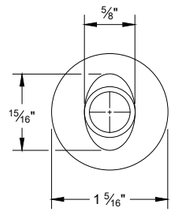
NOTE:

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

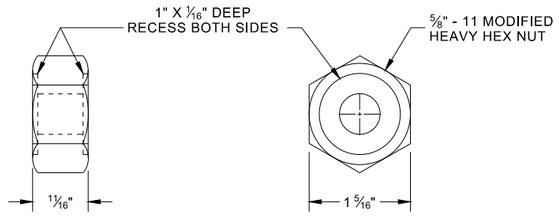


POST BOLT TABLE

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

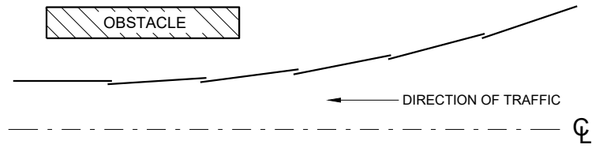


ALTERNATE BOLT HEAD

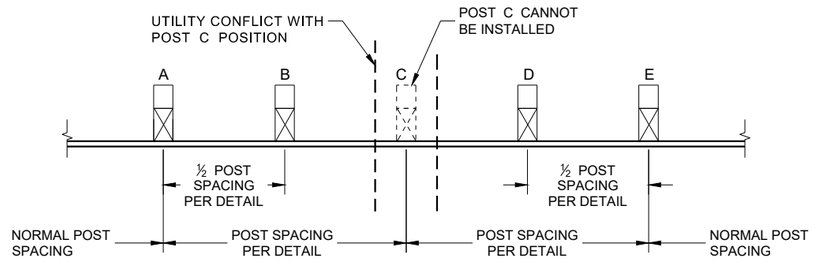


POST BOLT, SPLICE BOLT AND RECESS NUT

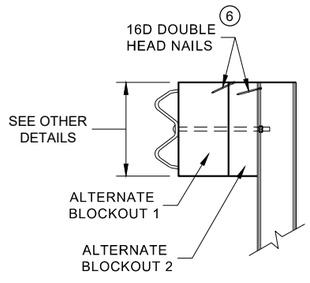
(6) WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



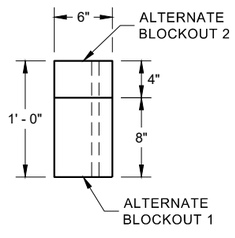
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

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SDD 14B42 - 07c

6

SDD 14B42 - 07c

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

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.

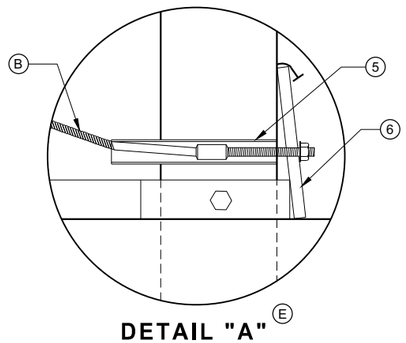
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

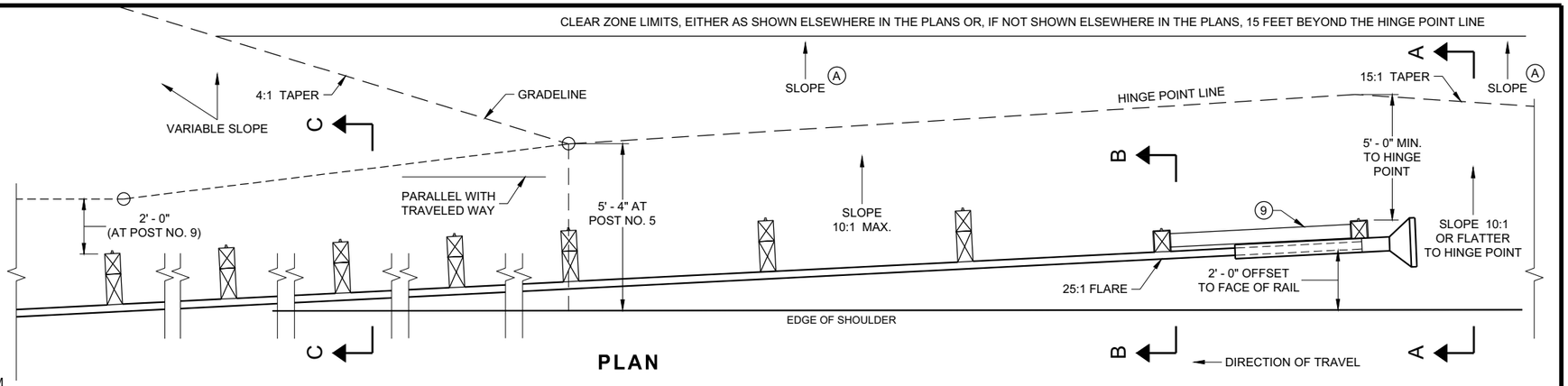
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

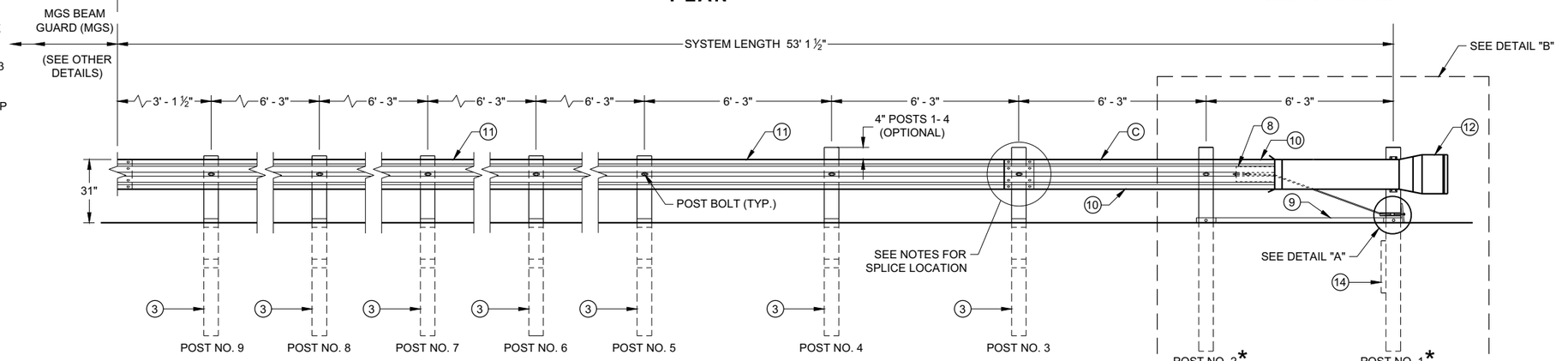
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



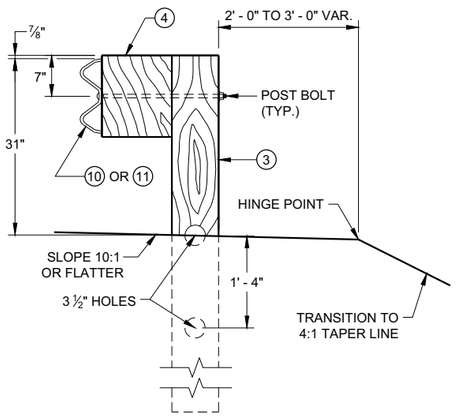
DETAIL "A" (E)



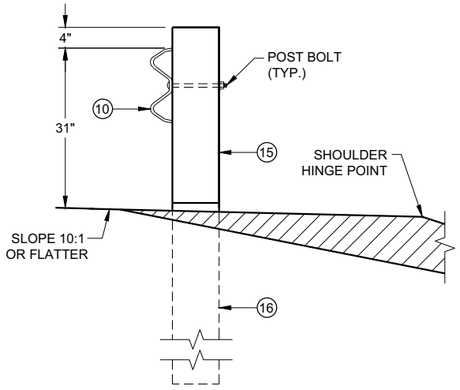
PLAN



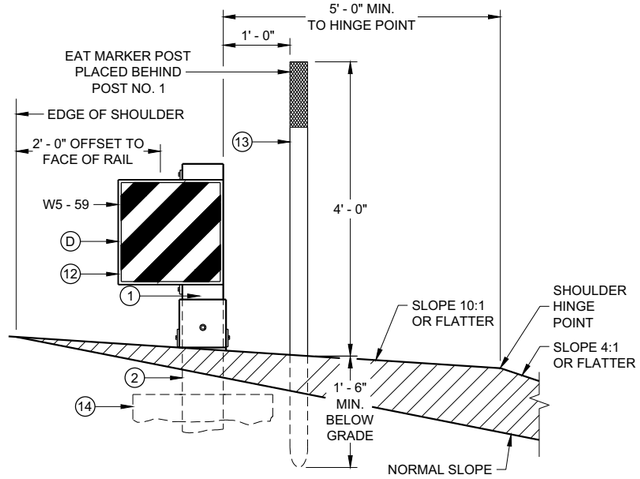
ELEVATION



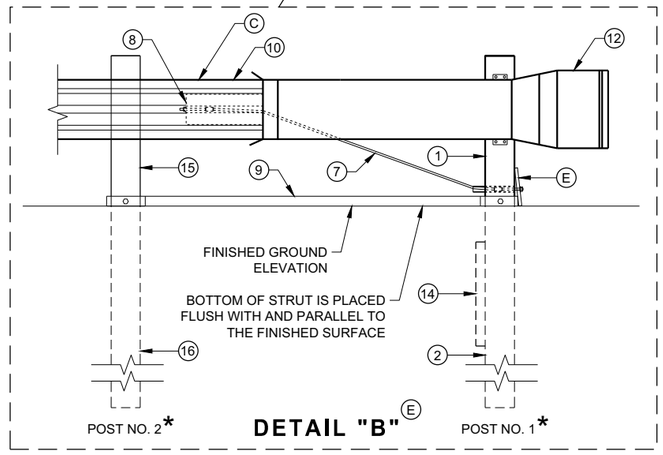
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



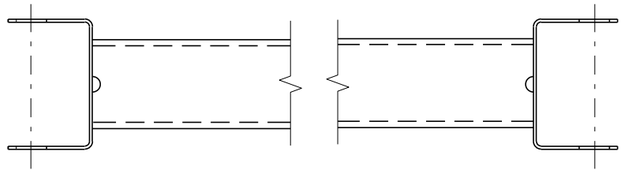
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

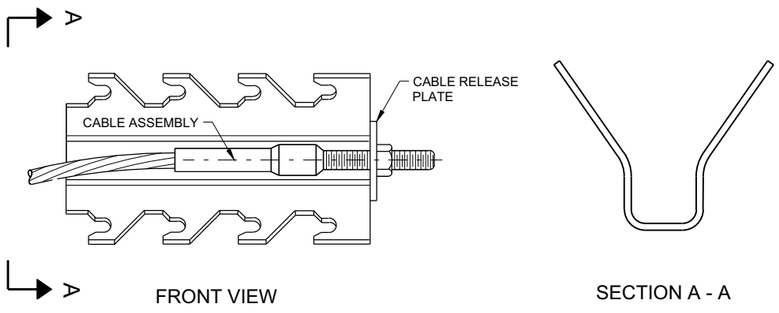
SDD 14B44 - 04a



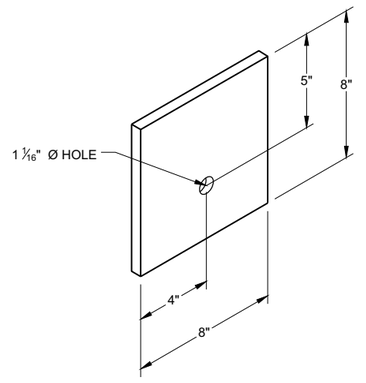
GENERIC GROUND STRUT ⑨ Ⓔ

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

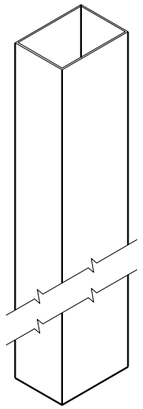
6

SDD 14B44 - 04b

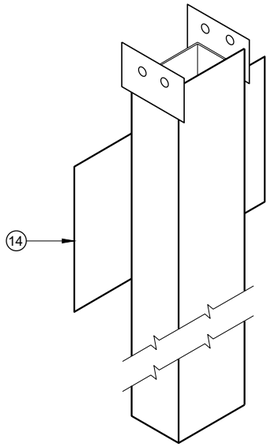
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

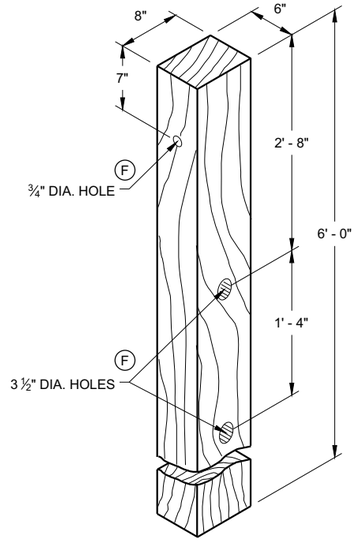
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



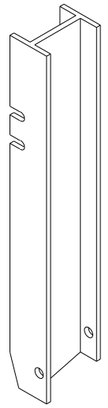
UPPER POST NO. 1 (1) (E)



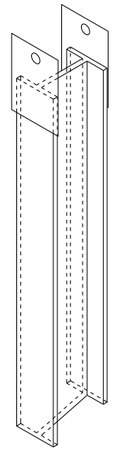
LOWER POST NO. 1 (2) (E)



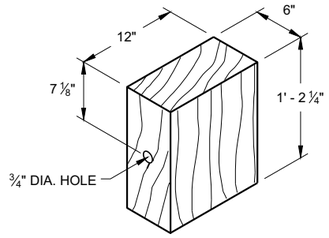
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



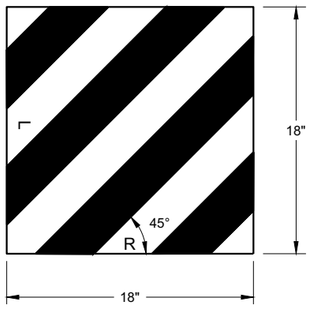
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

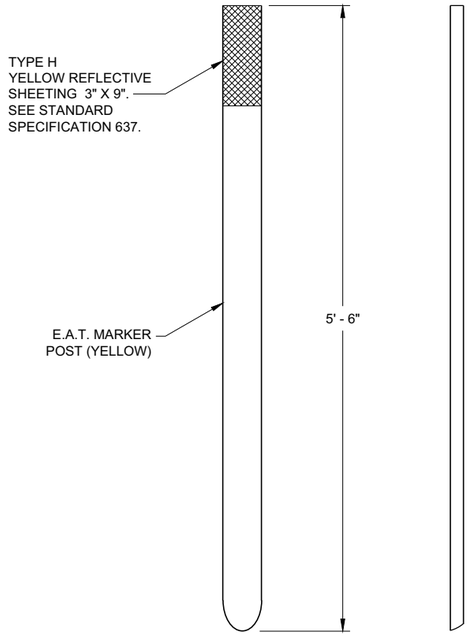


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



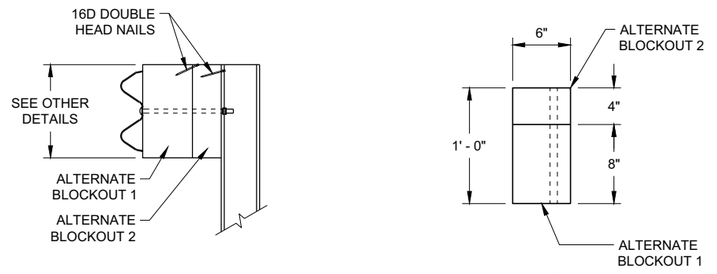
W5 - 59

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

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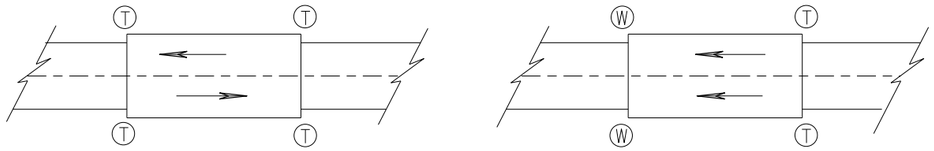
SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

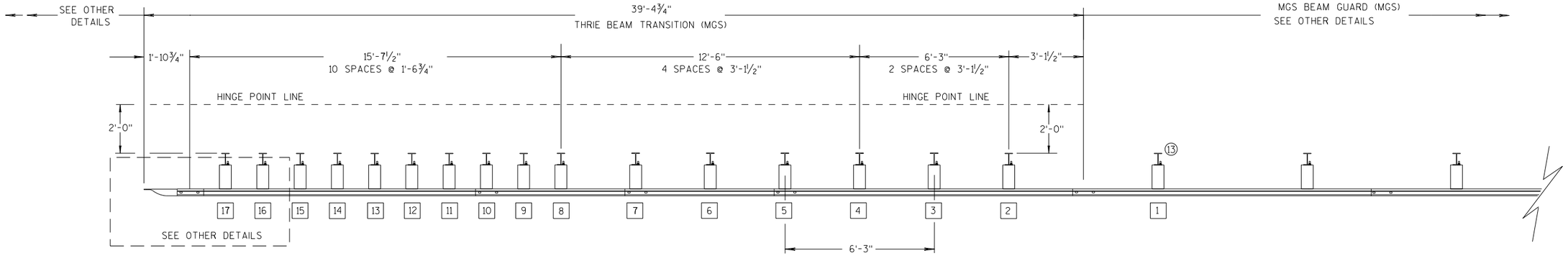
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

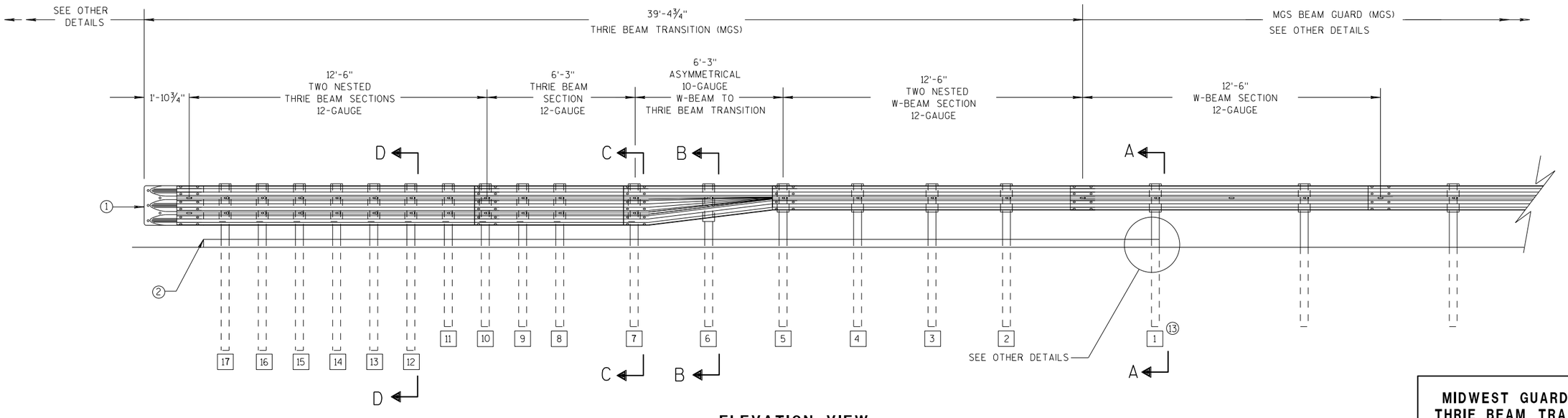
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



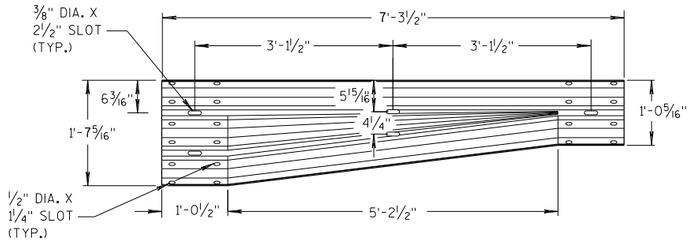
ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

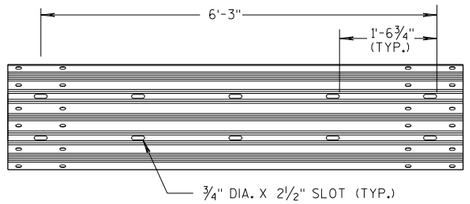
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

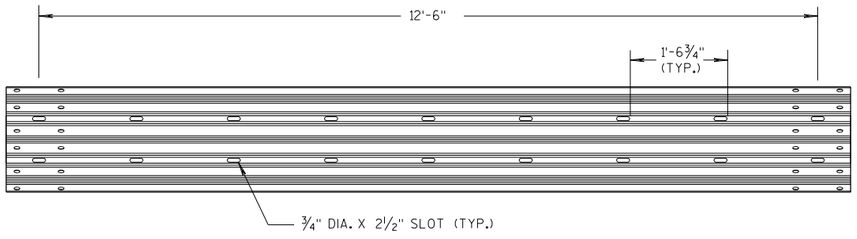
6
S.D.D. 14 B 45-5a



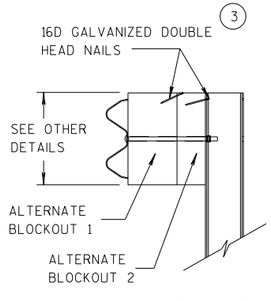
W-BEAM TO THRIE BEAM TRANSITION SECTION



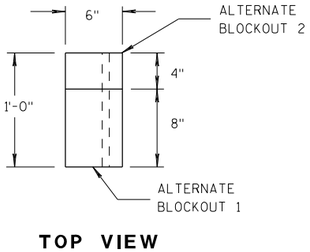
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

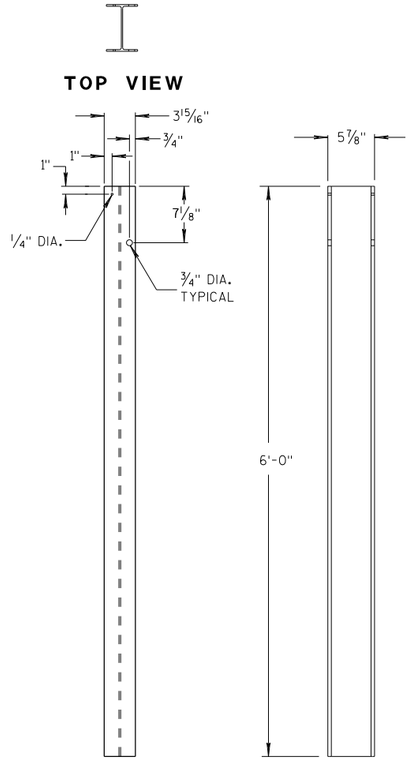


SIDE VIEW



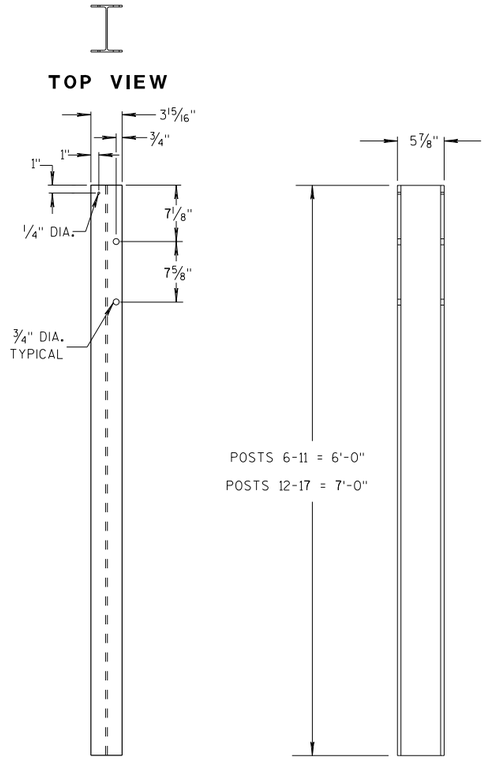
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



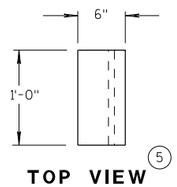
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

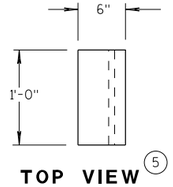


FRONT VIEW SIDE VIEW

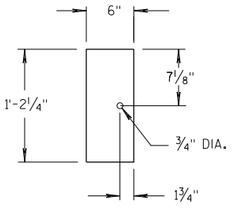
STEEL POSTS 6-17



TOP VIEW (5)

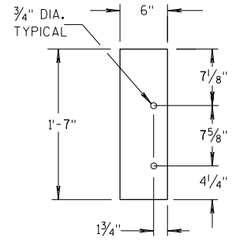


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

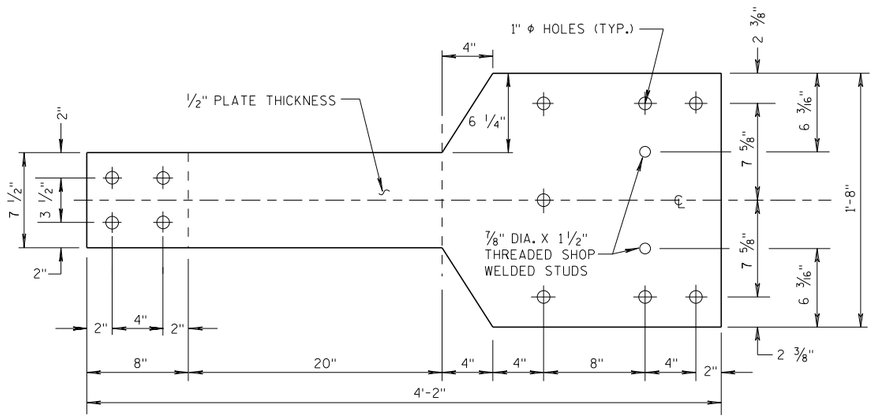
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

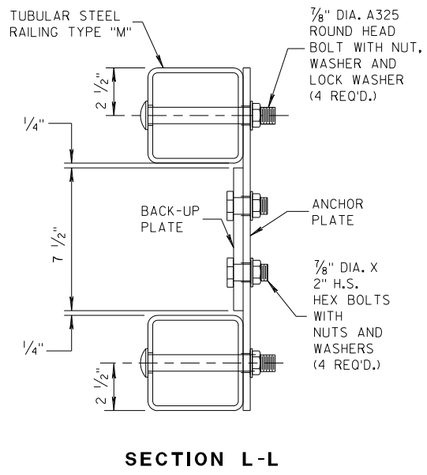
S.D.D. 14 B 45-5c

GENERAL NOTES

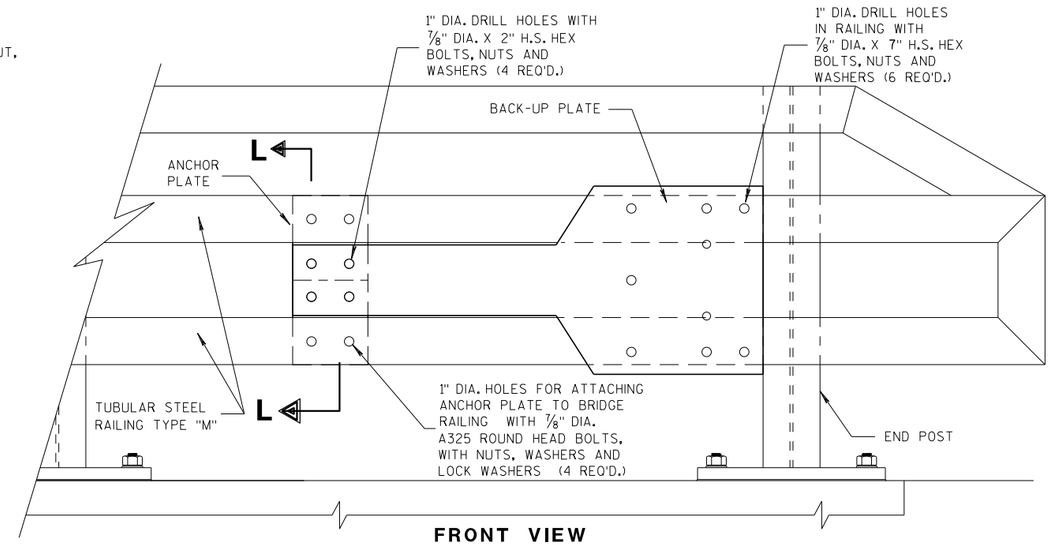
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



FRONT VIEW

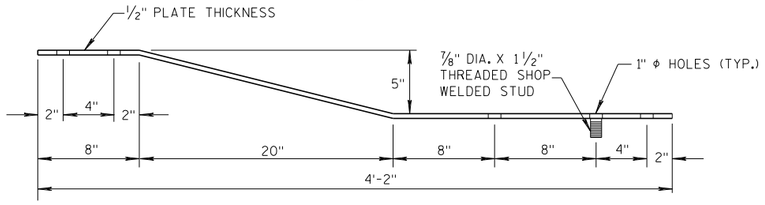


SECTION L-L



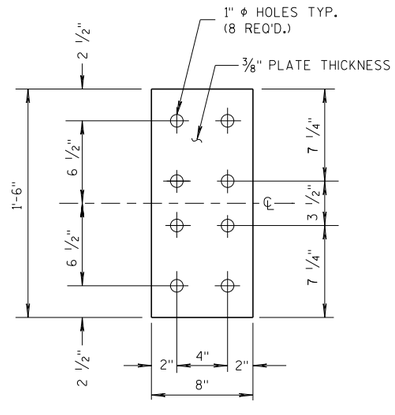
FRONT VIEW

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



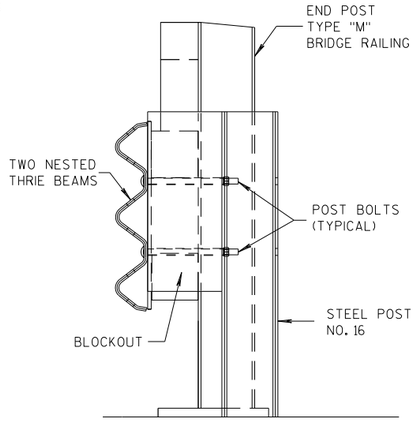
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

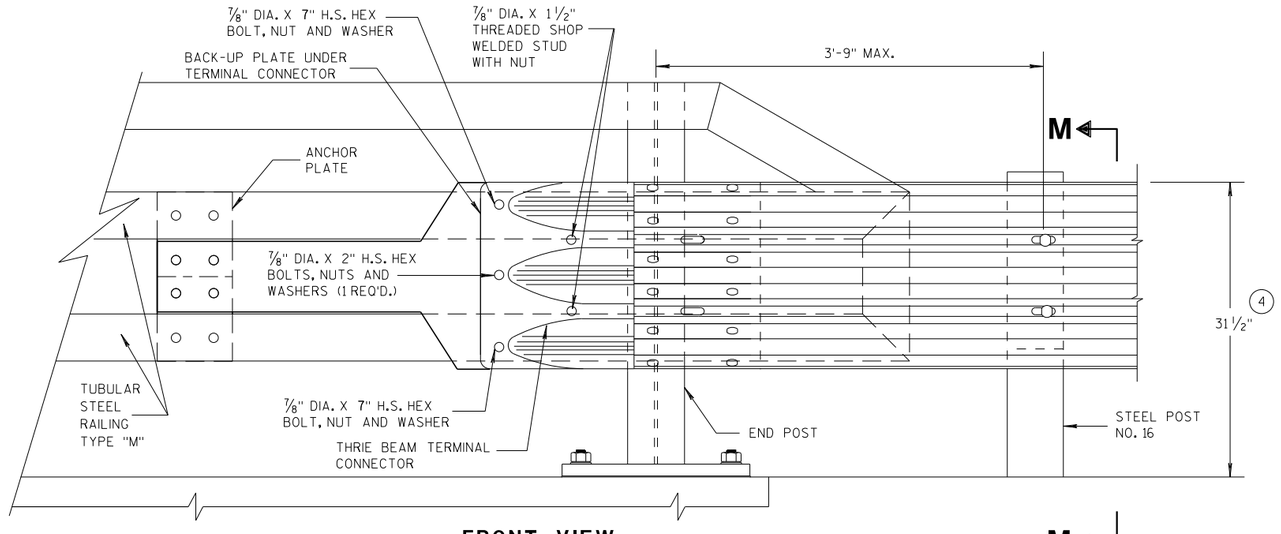


FRONT VIEW

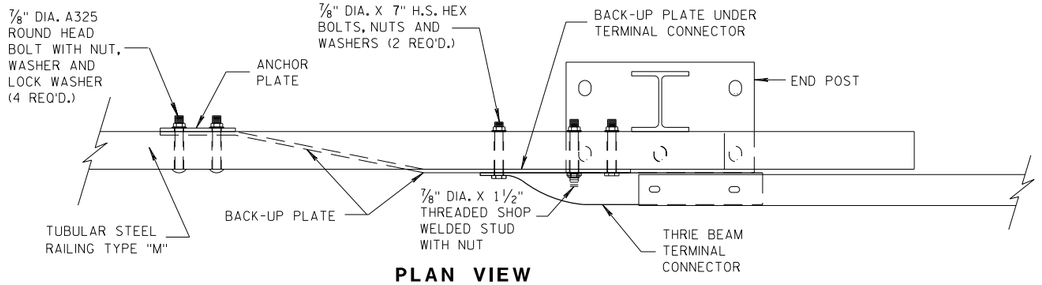
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

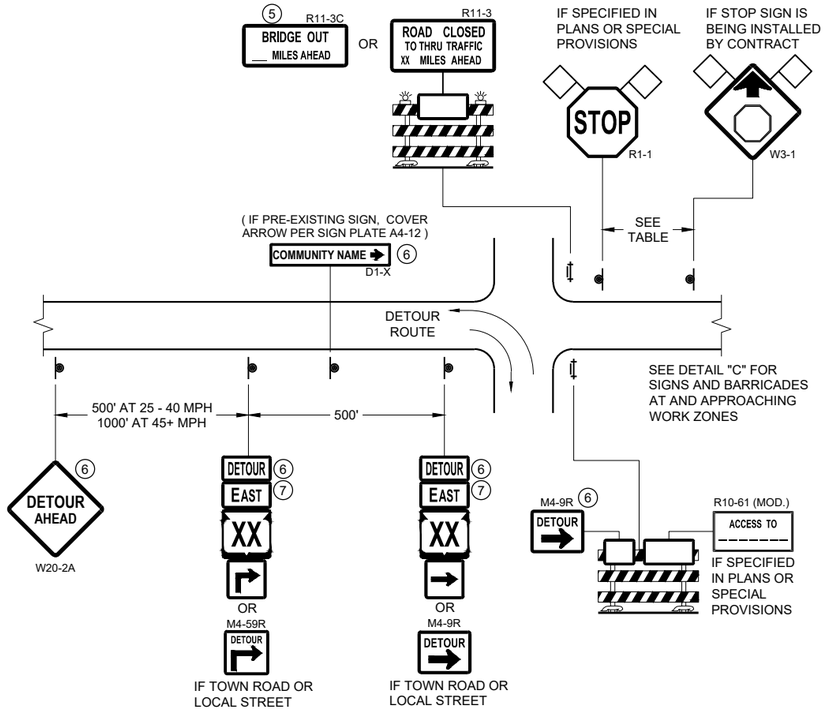
APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA

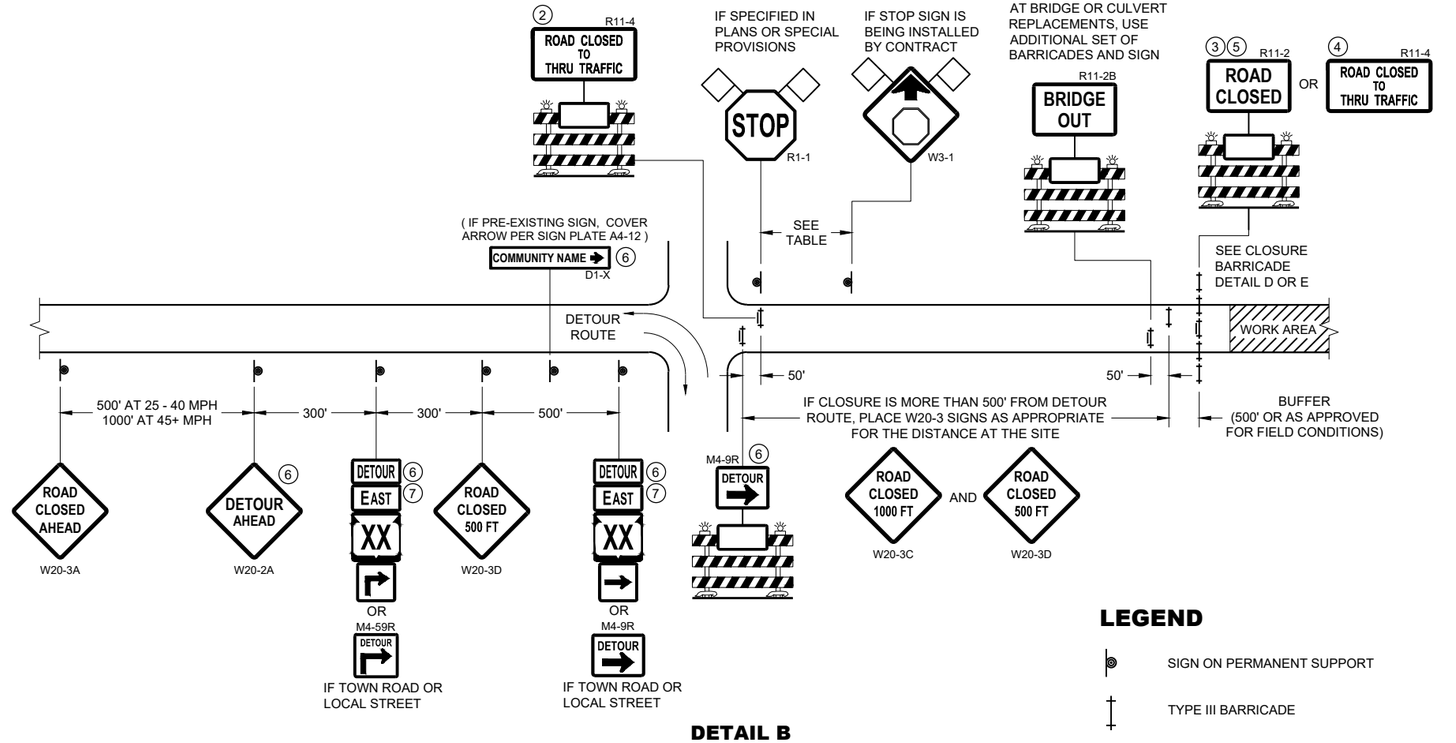
6

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

6

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



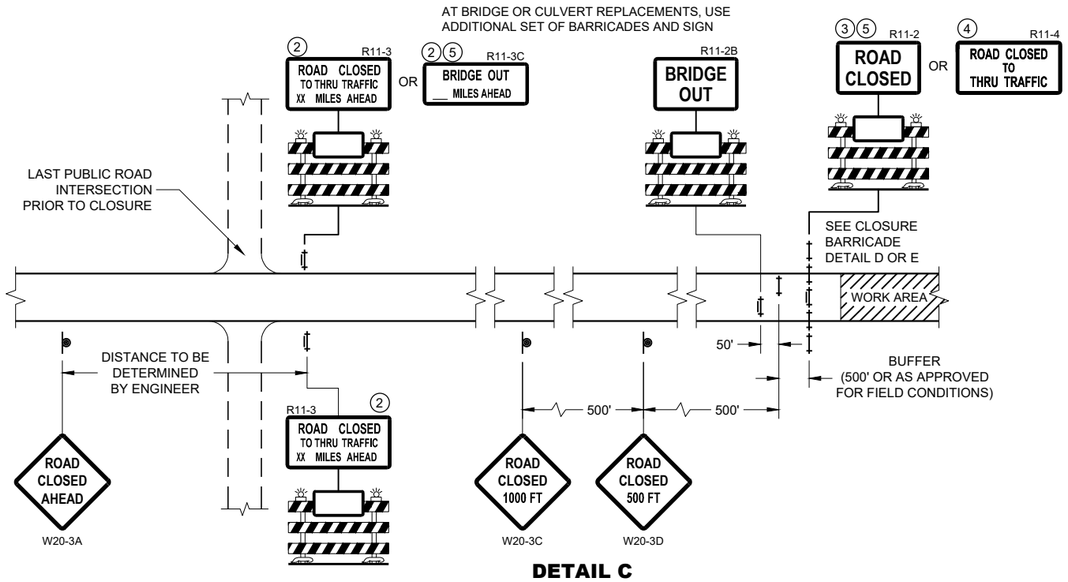


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M06 - 1

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

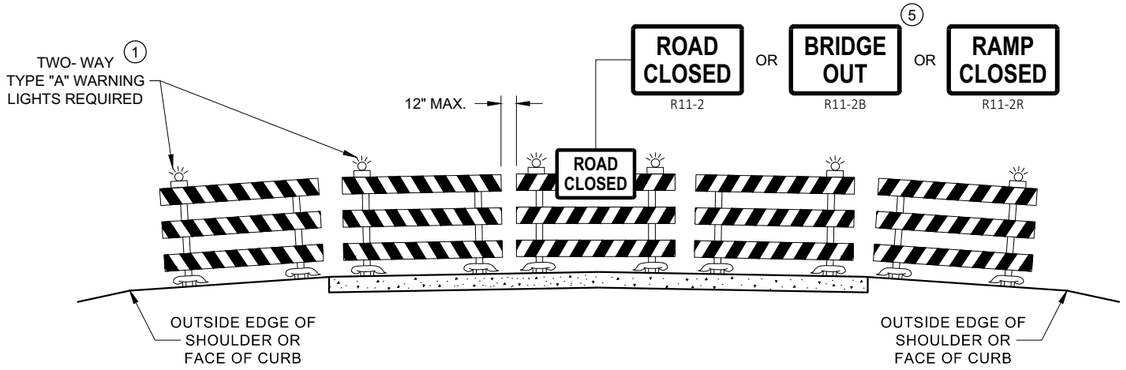
APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

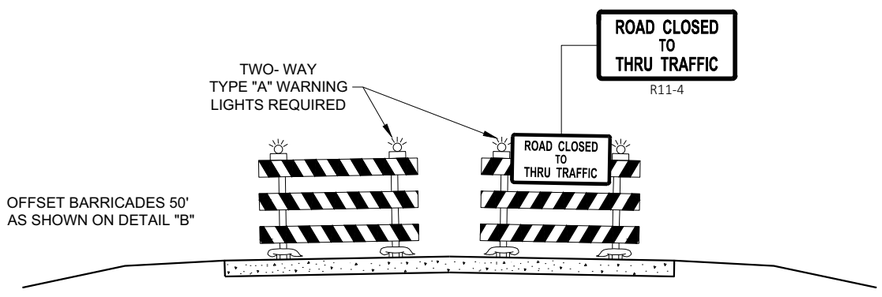
6

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 ENGINEE
FHWA

6

SDD 15C02 - 08b

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR / EAST — M4 - 8, M3 - X
- XX — M1 - 4
- XX — M1 - 6
- COUNTY X — M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

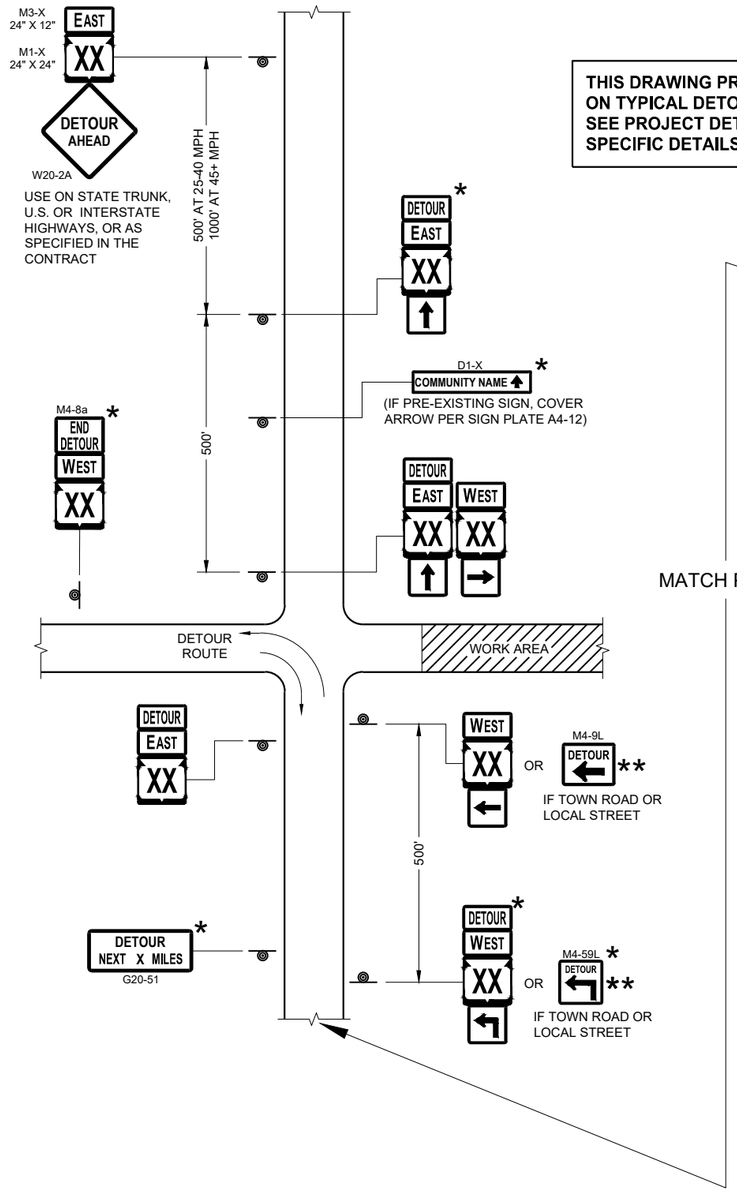
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

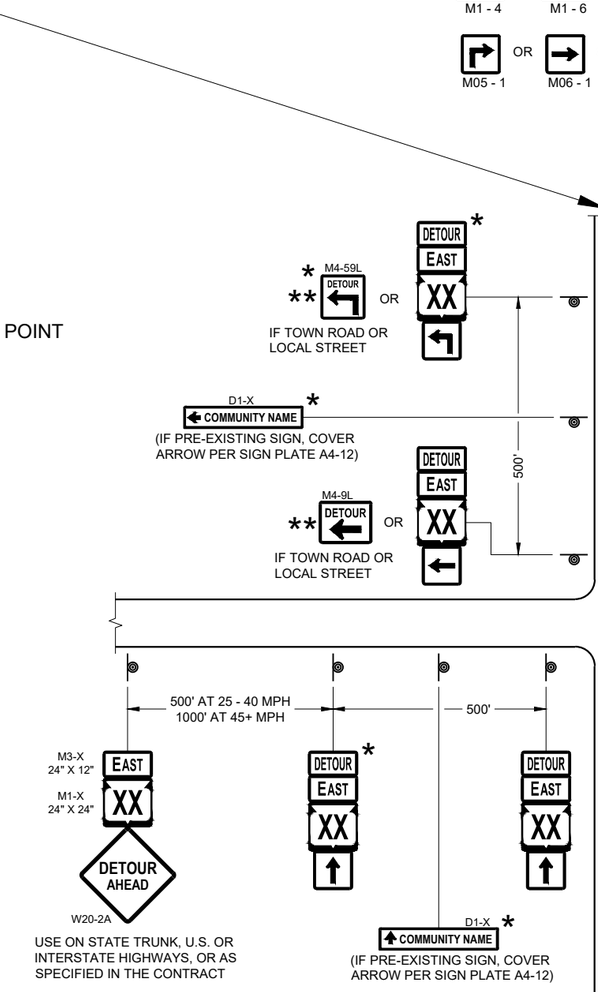
M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
M4-9 AND M4-59 SHALL BE 30" X 24"
M4-8a SHALL BE 24" X 18"
G20-51 SHALL BE 60" X 24"
W20-2A SHALL BE 48" X 48"
D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

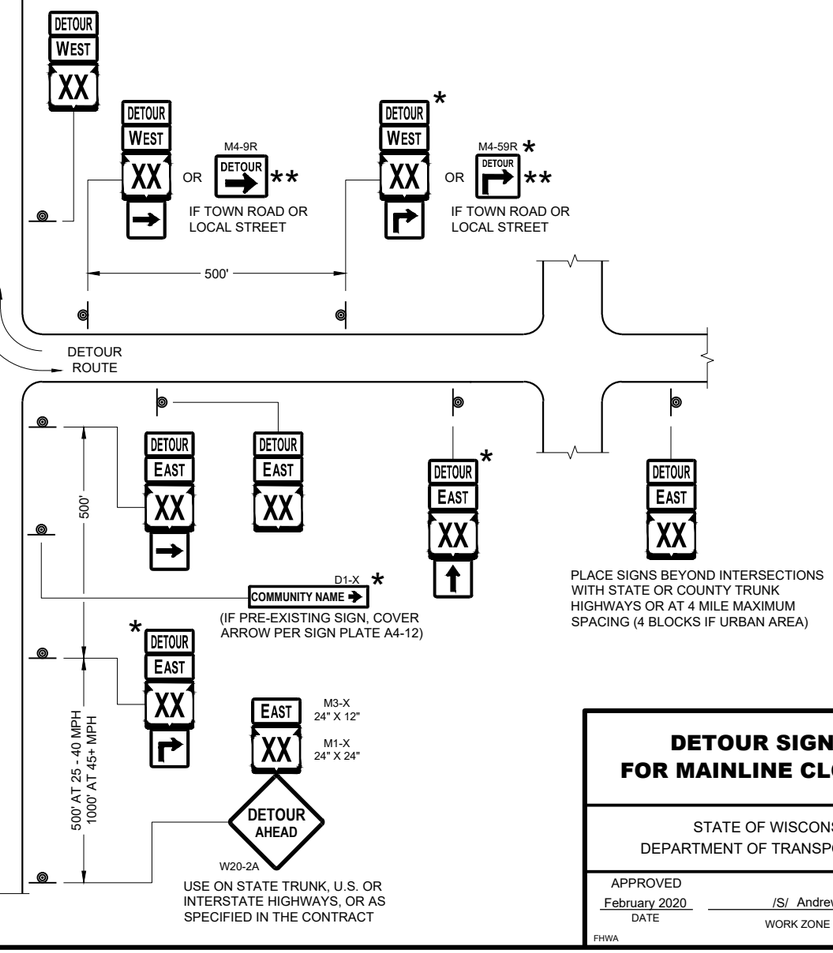
* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

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



MATCH POINT





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

DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

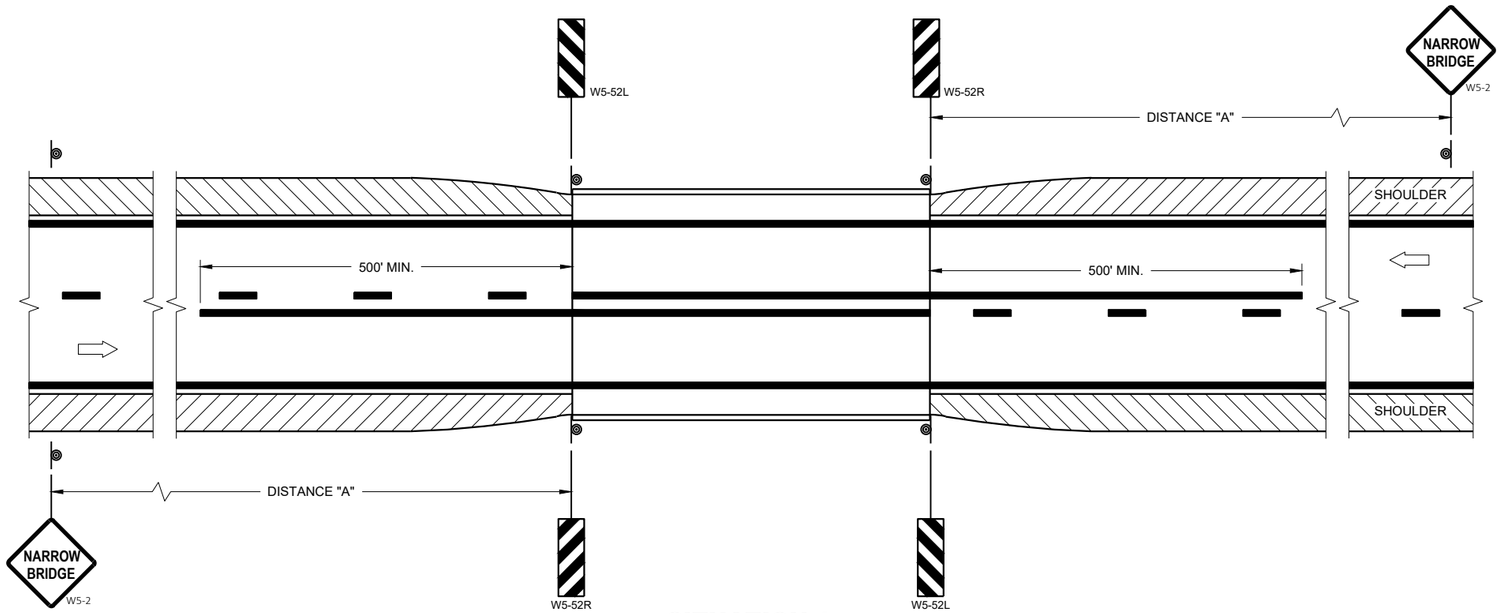
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15C02 - 08c

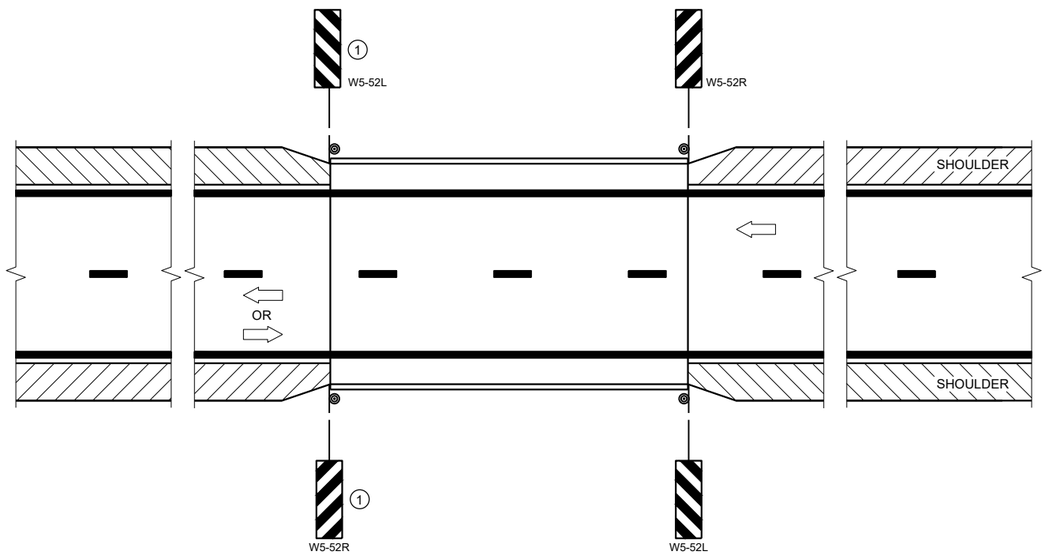
6

SDD 15C02 - 08c



SITUATION 1

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



SITUATION 2

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

GENERAL NOTES

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

(1) OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

DISTANCE TABLE

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

SIGNING AND MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE

/S/ Jeannie Silver
STATE SIGNING AND MARKING ENGINEER

FHWA

6

SDD 15C06 - 10

GENERAL NOTES

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

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

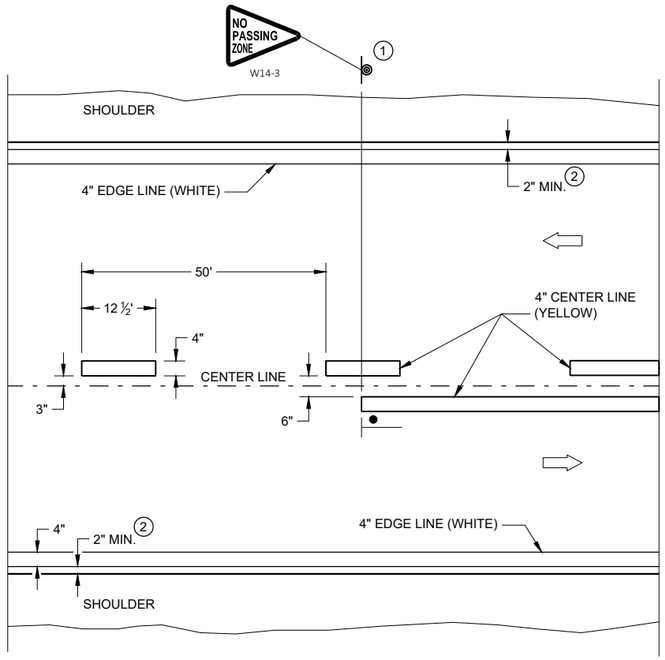
(2) MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

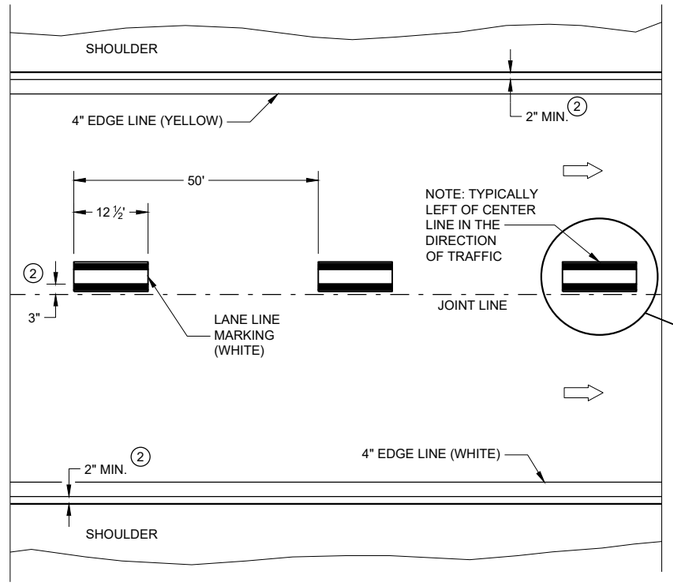
"T" MARKING

SIGN ON PERMANENT SUPPORT

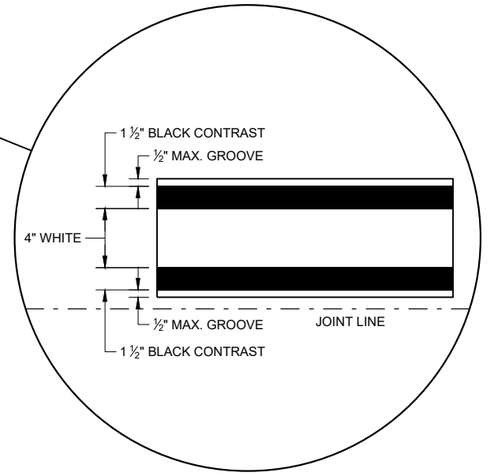
DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC



PERMANENT PAVEMENT MARKING

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 — DATE
/S/ Jeannie Silver — STATEWIDE SIGNING AND M ENGINEER

FHWA

6

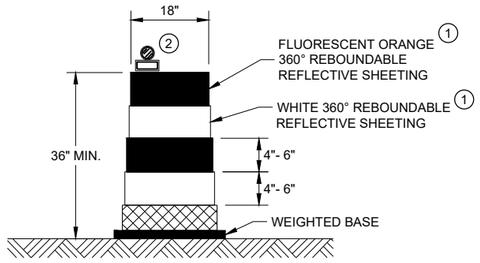
SDD 15C08 - 22a

6

SDD 15C08 - 22a

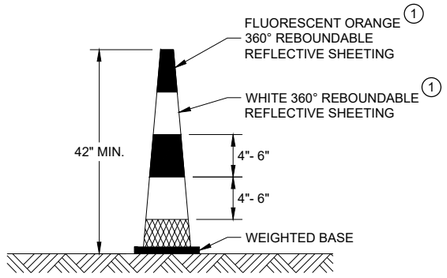
GENERAL NOTES

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



DRUM

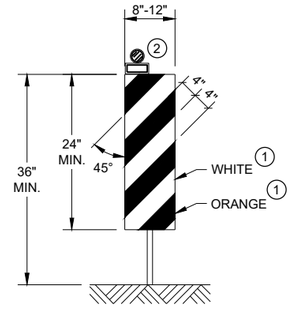
BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

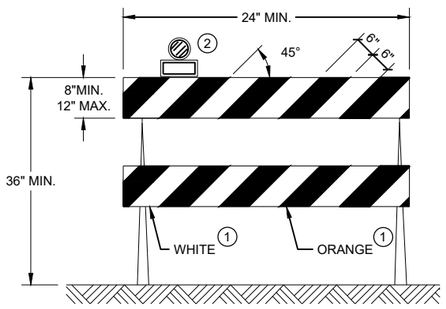
DO NOT USE IN TAPERS
½ SPACING OF DRUMS

BALLAST WIDTHS
RANGE FROM 14"-20"



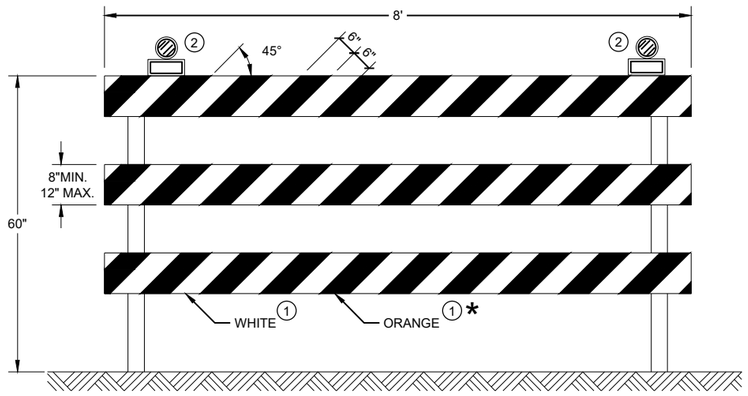
VERTICAL PANEL

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
November 2022
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

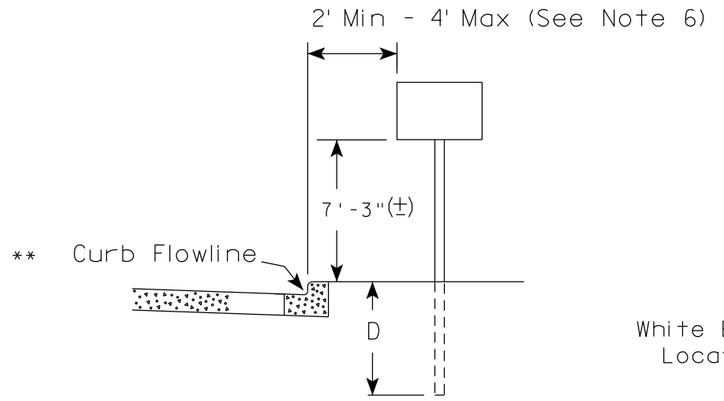
6

SDD 15C11 - 10b

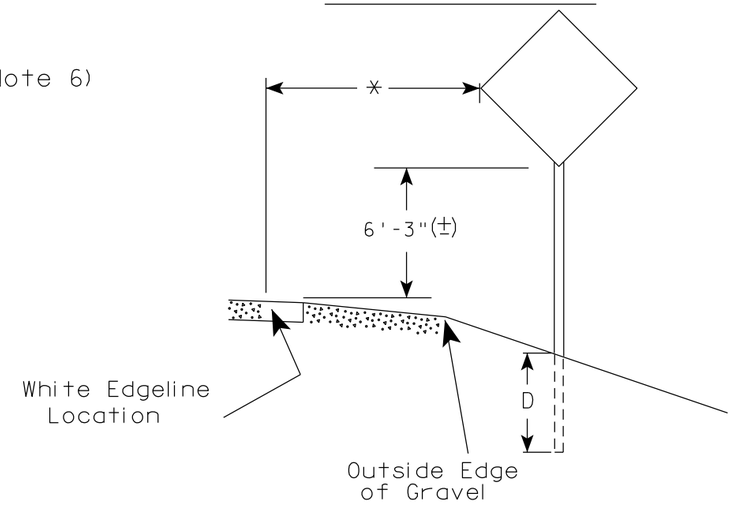
6

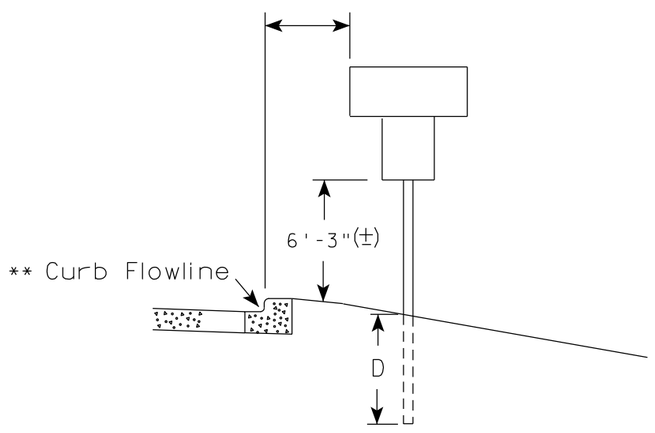
SDD 15C11 - 10b

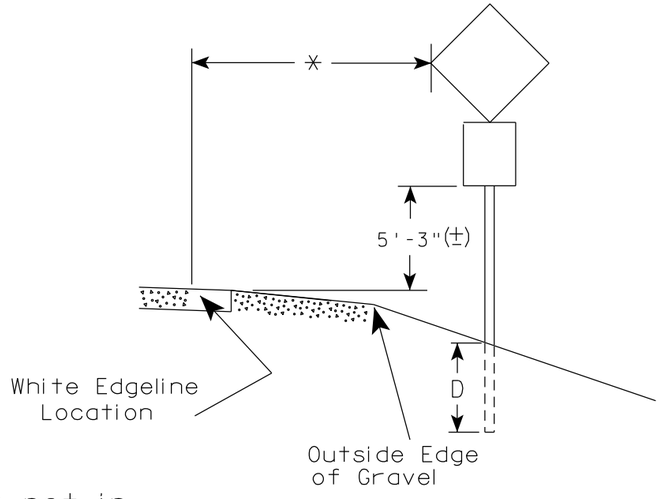
URBAN AREA



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.

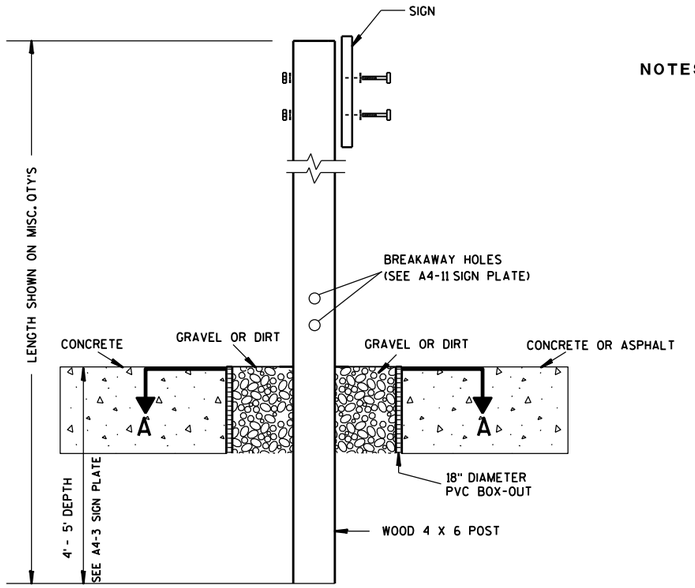
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

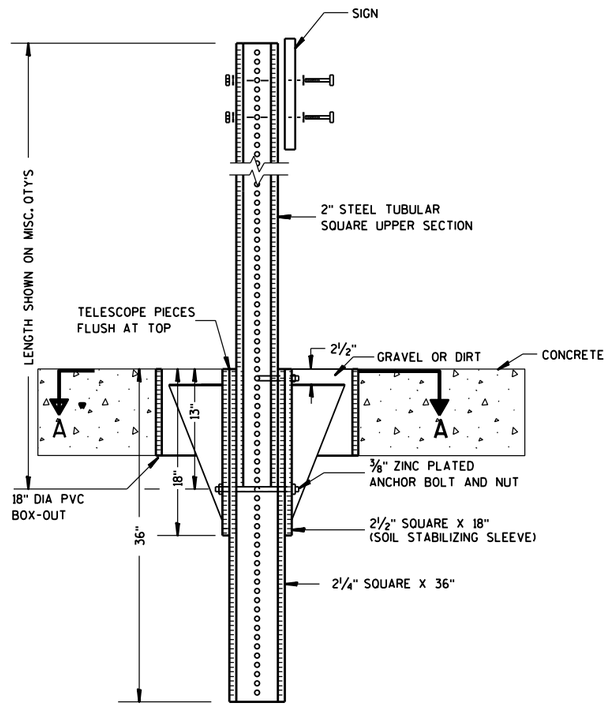
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 41	E



ELEVATION VIEW

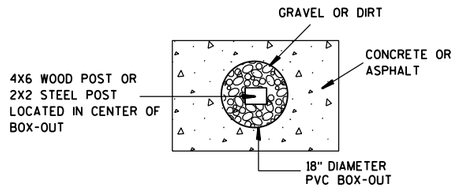
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

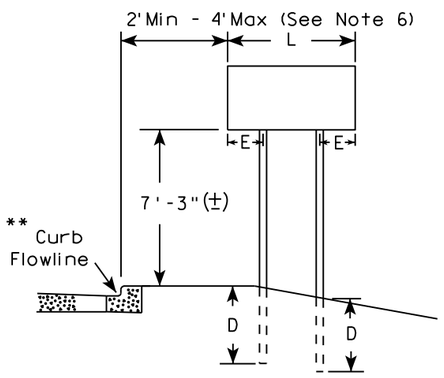
APPROVED Matthew R Rauch
for State Traffic Engineer

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

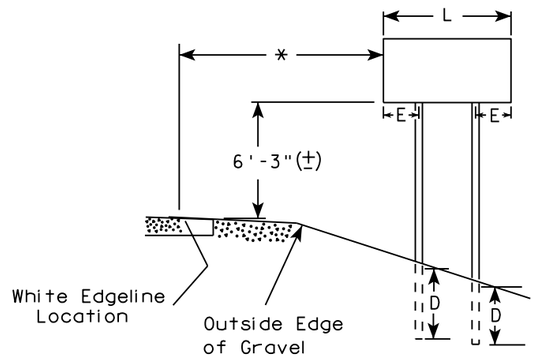
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

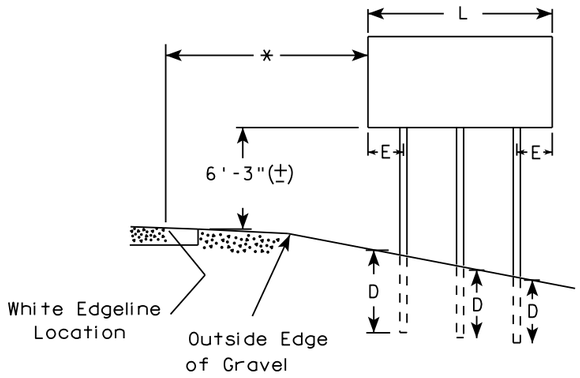
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

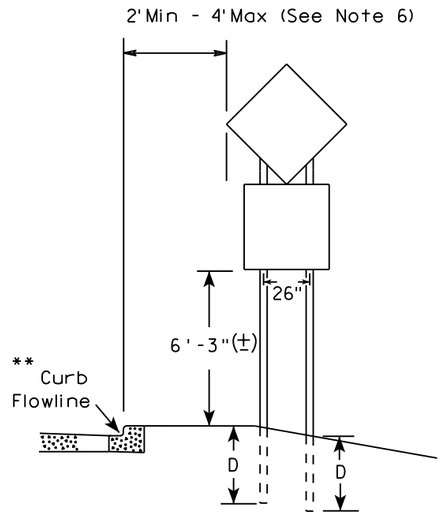
URBAN AREA



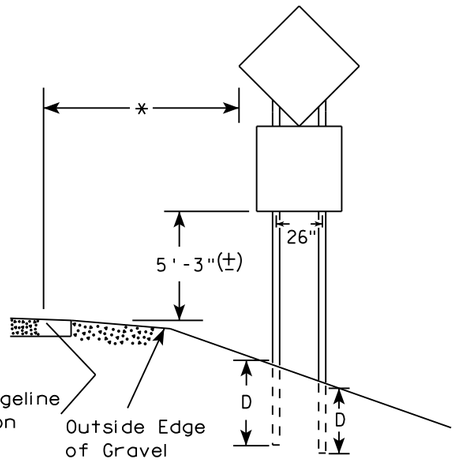
RURAL AREA (See Note 3)







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'

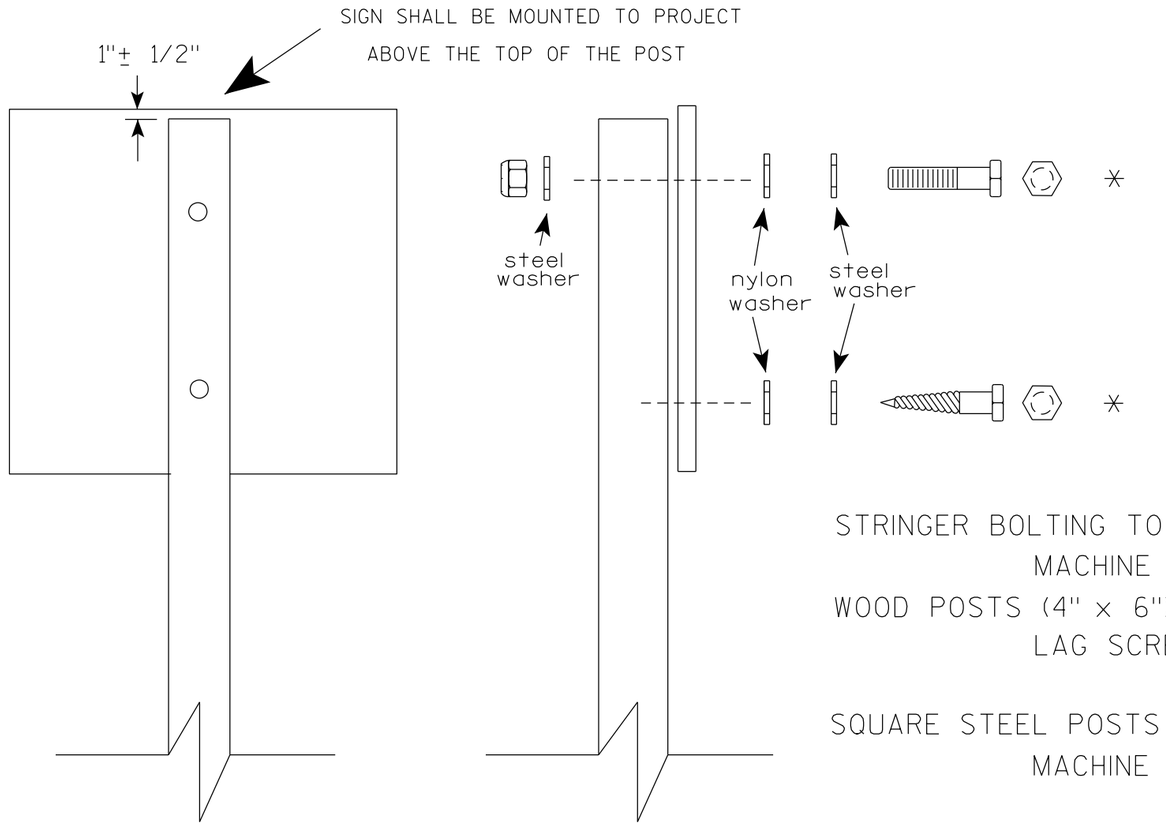
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

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: 43	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

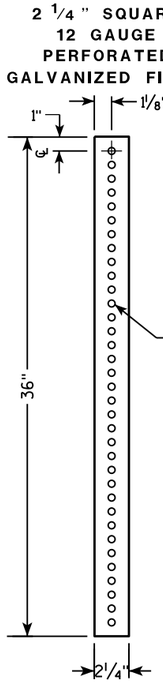
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

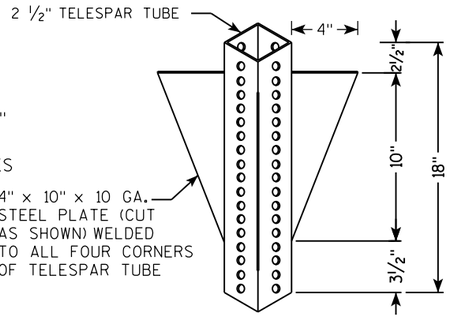
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

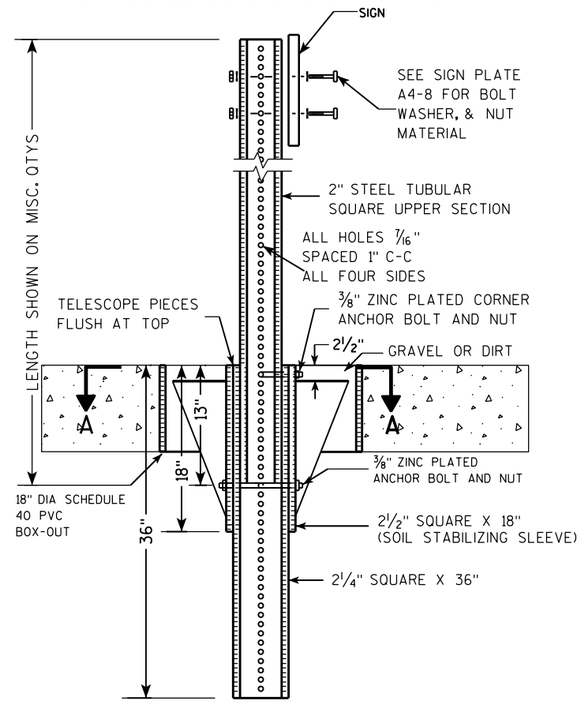
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



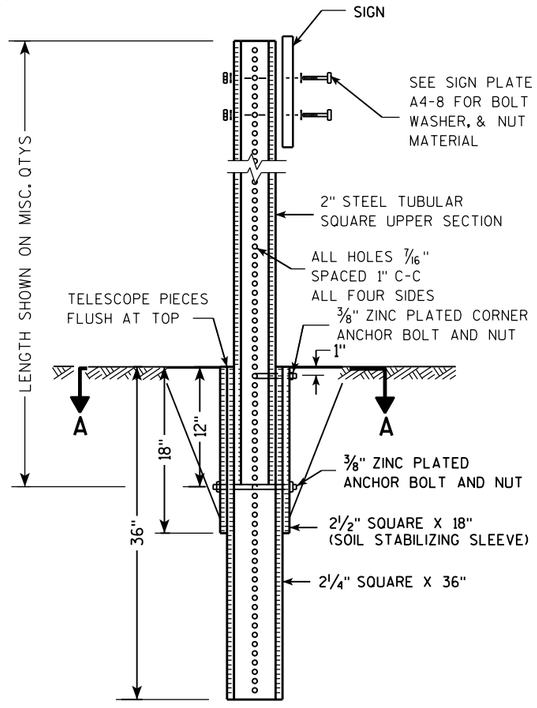
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

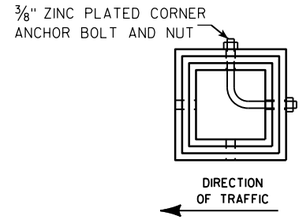


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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).

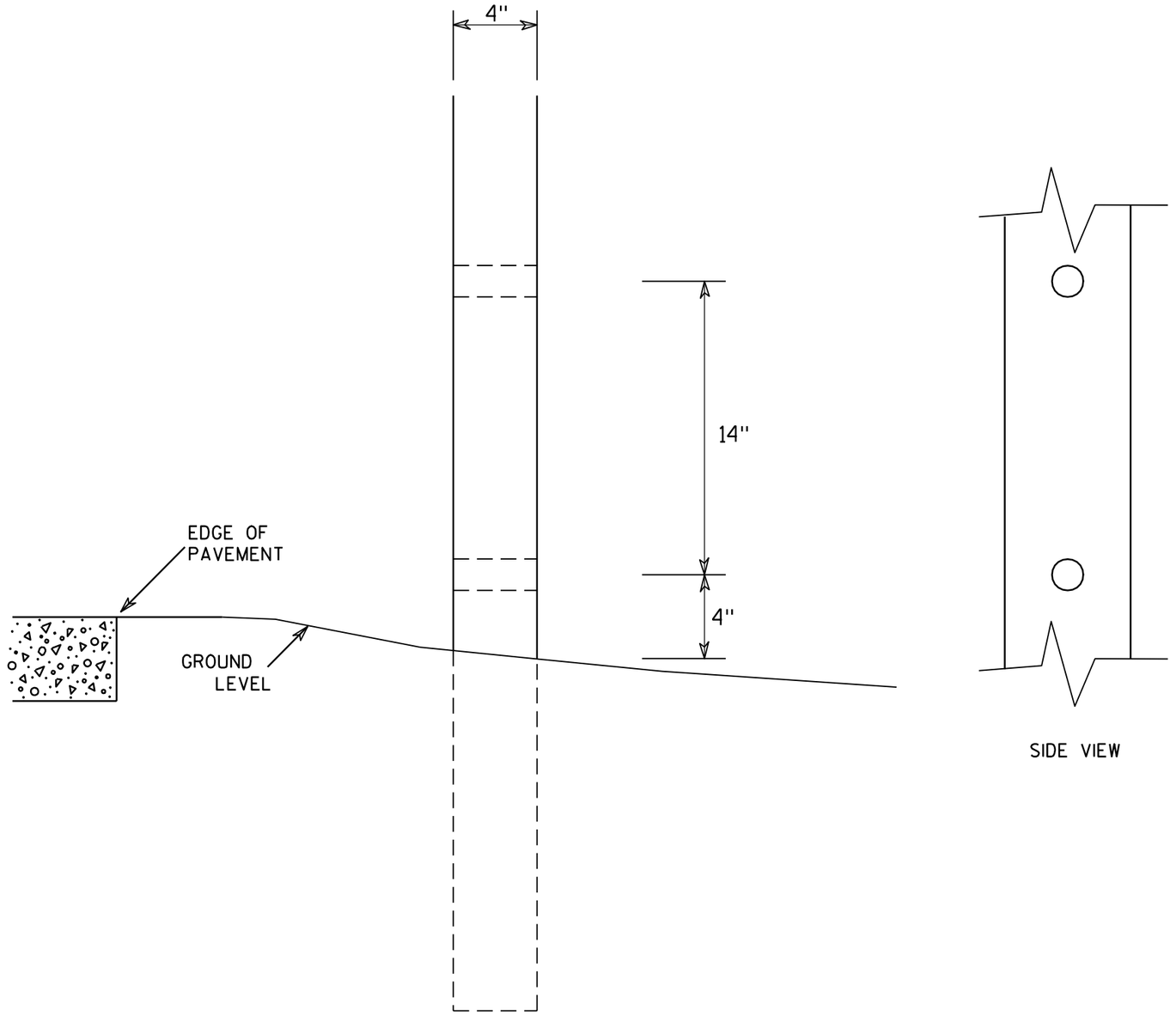
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 45 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

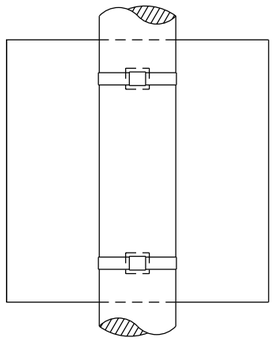
APPROVED Chester J Spang for State Traffic Engineer

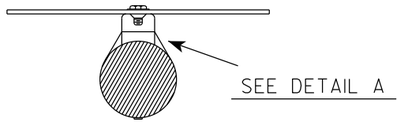
DATE 3/27/97 PLATE NO. A4-11.2

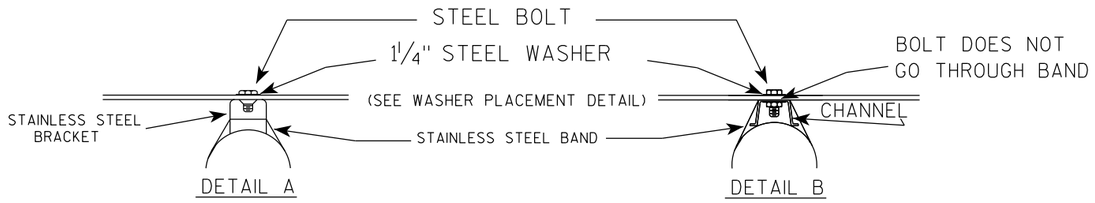
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 46	E

BANDING

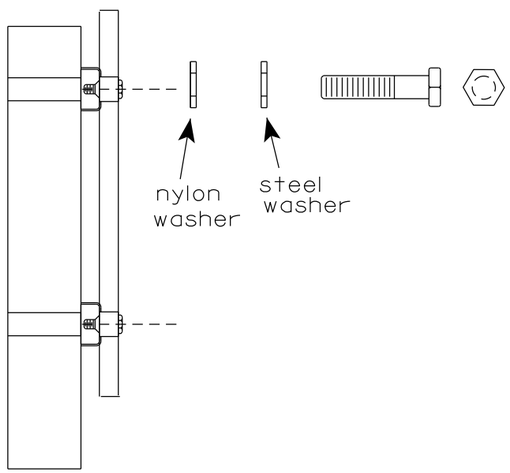
SINGLE SIGN







WASHER PLACEMENT

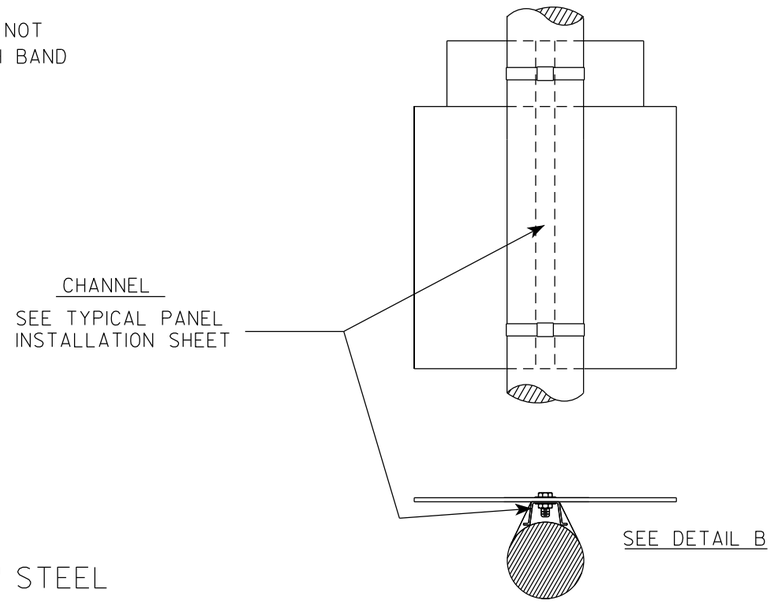


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



STANDARD SIGN
SIGN BANDING DETAILS

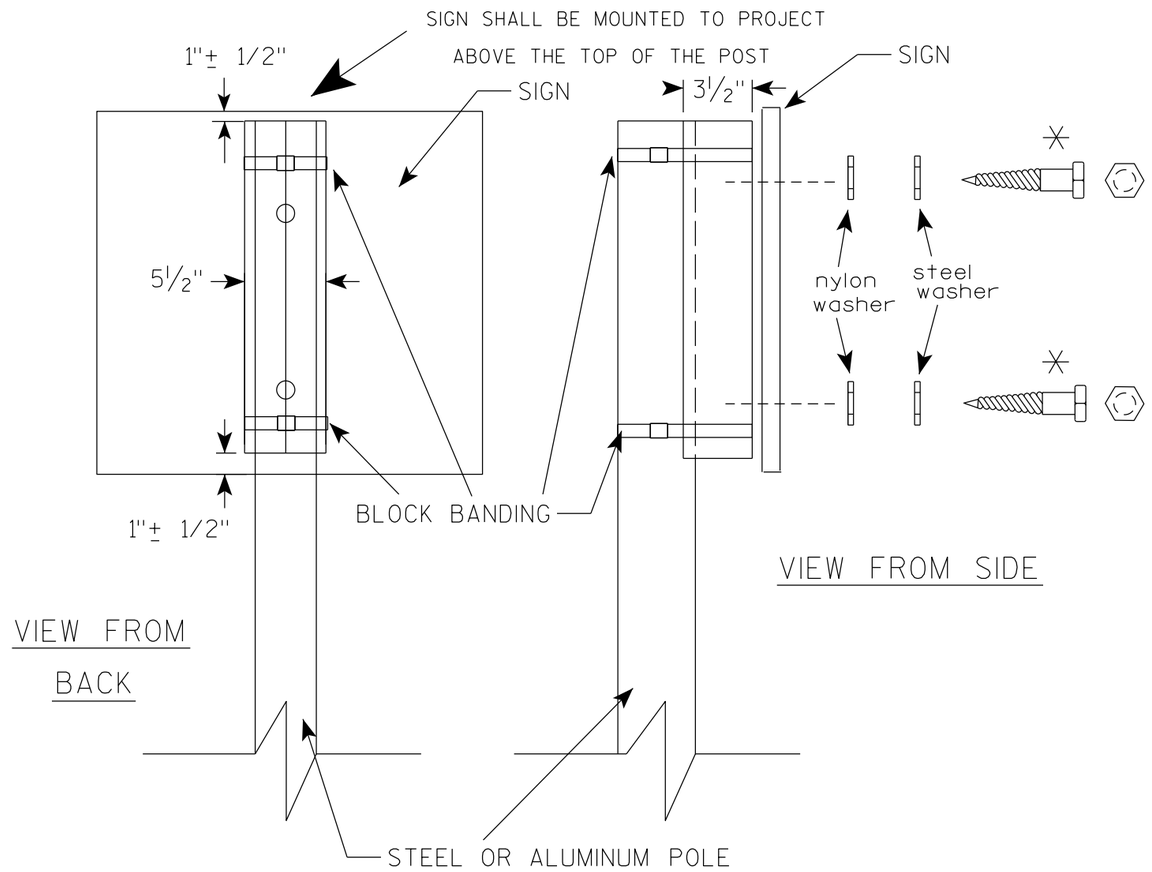
WISCONSIN DEPT OF TRANSPORTATION

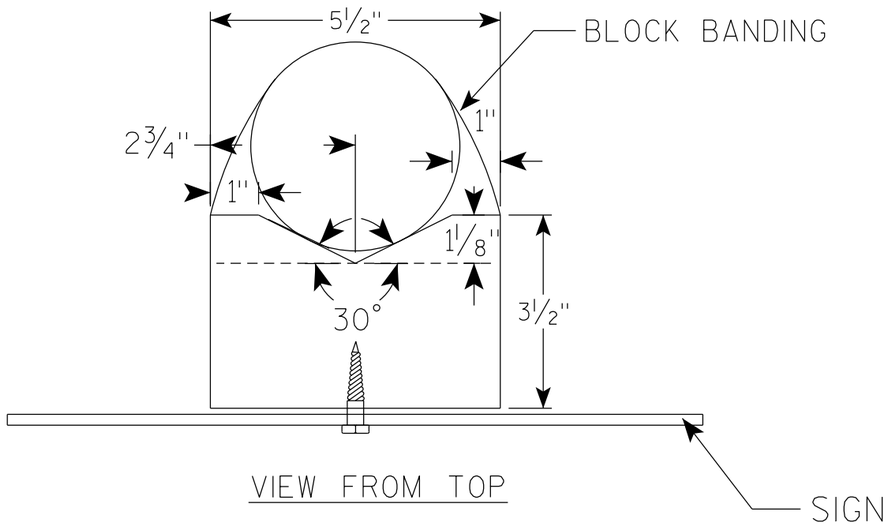
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-9.4

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 47	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$





GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

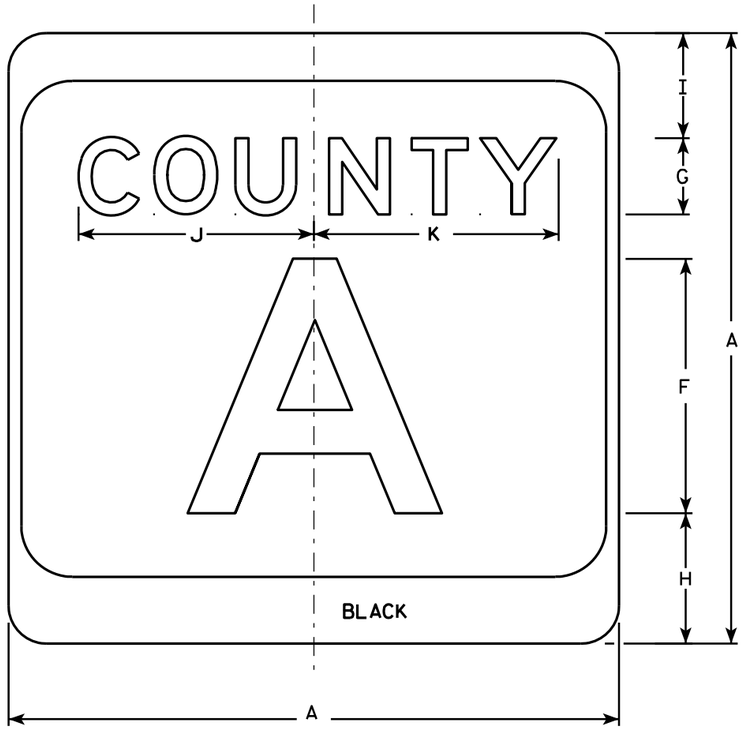
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

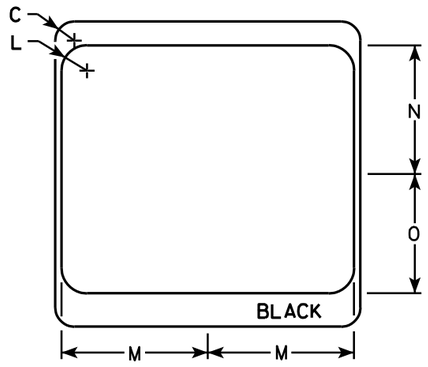
DATE 4/19/2022 PLATE NO. A5-10.3

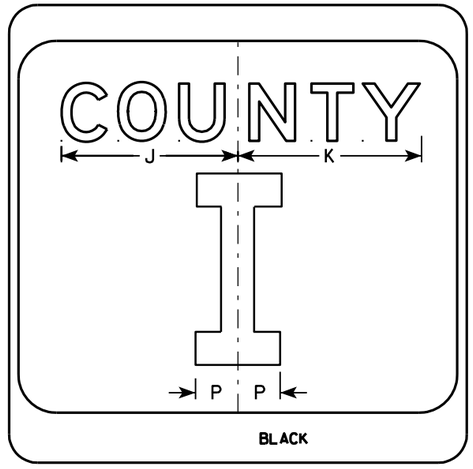
PROJECT NO:

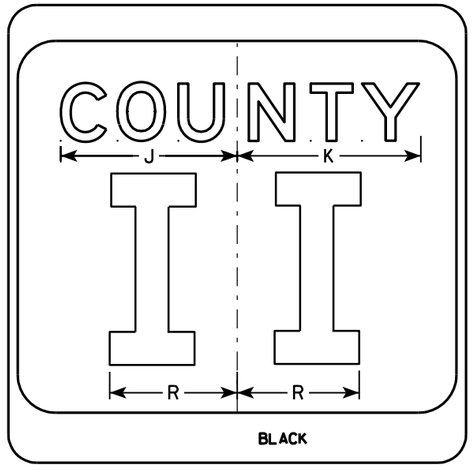
SHEET NO: 48 E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

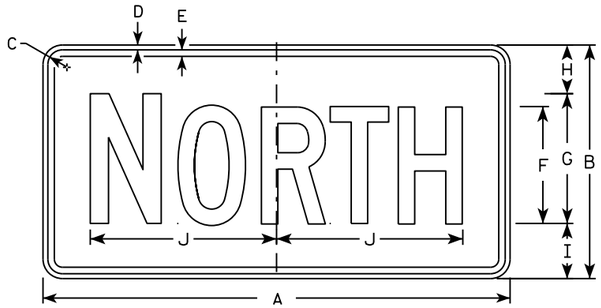
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

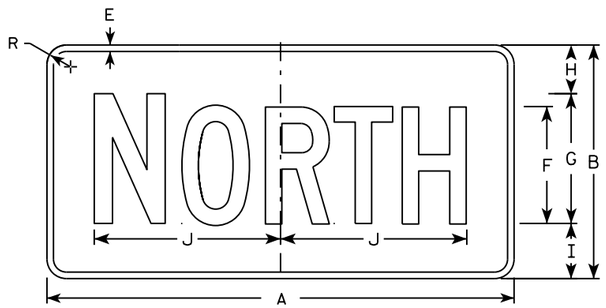
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 49 | E



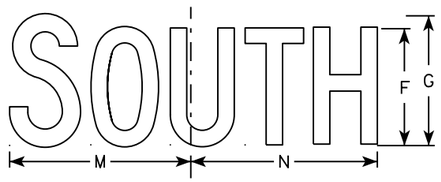
M3-1
MM3-1
MP3-1



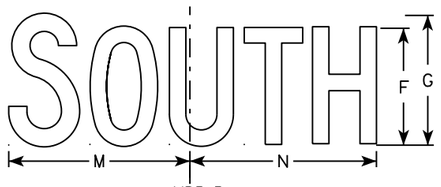
MB3-1
MK3-1
MN3-1

M3-2
MM3-2
MP3-2

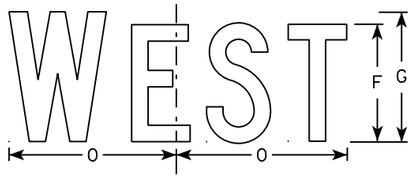
MB3-2
MK3-2
MN3-2



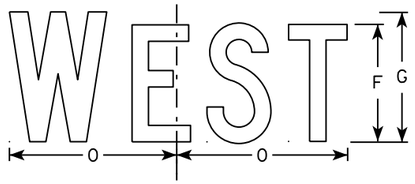
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

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

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

STANDARD SIGNS
M3-1 thur M3-4
SERIES

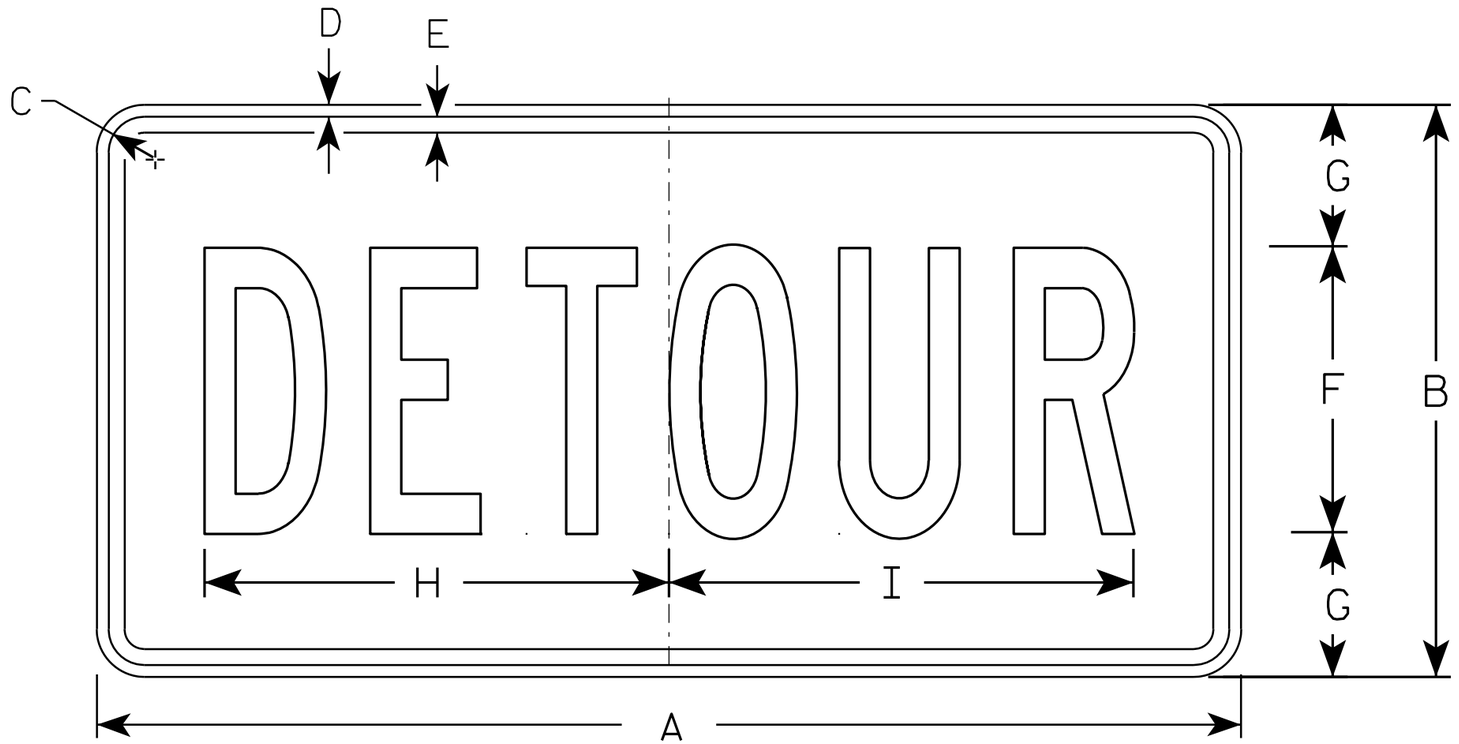
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew P Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO M3-1.14

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



M4-8

NOTES

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

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

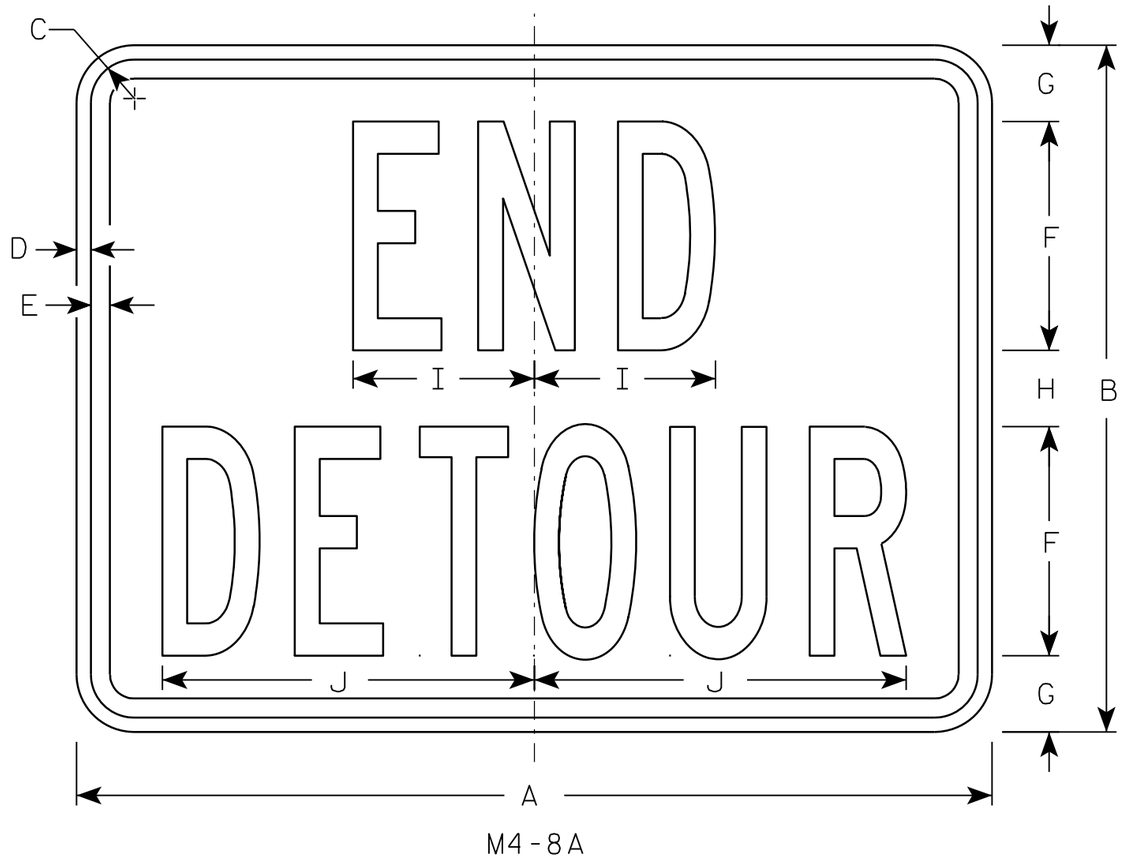
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 51	E



M4-8A

NOTES

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

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

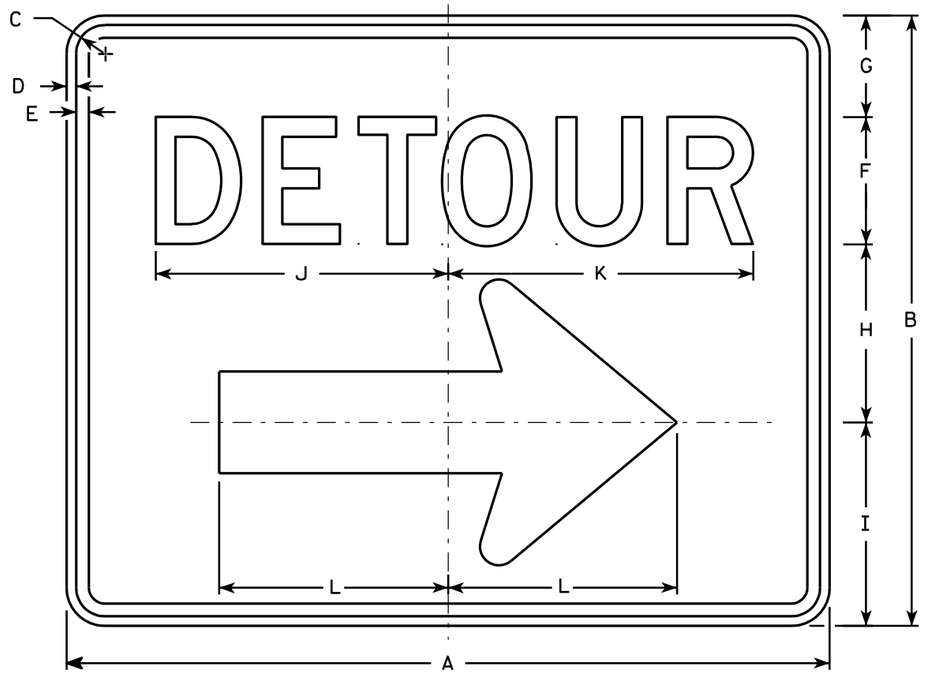
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

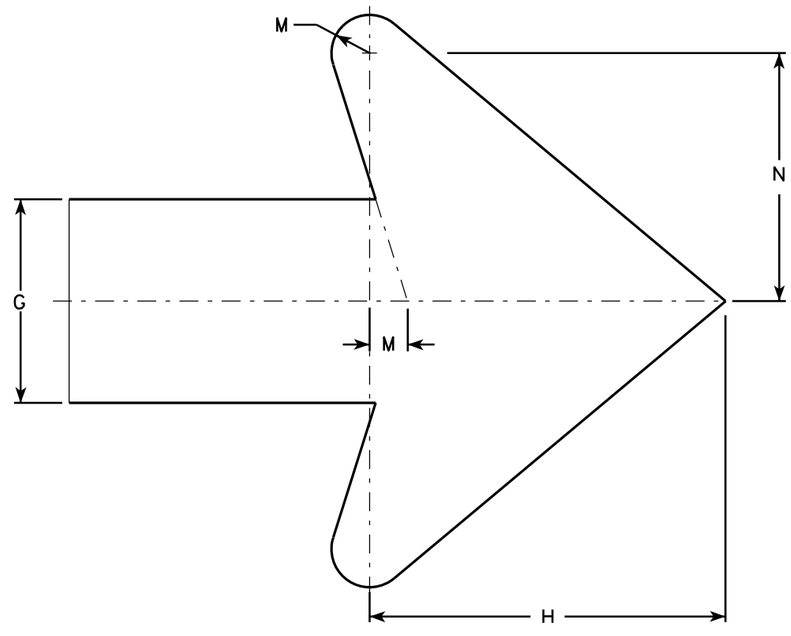
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 52	E



M4-9R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

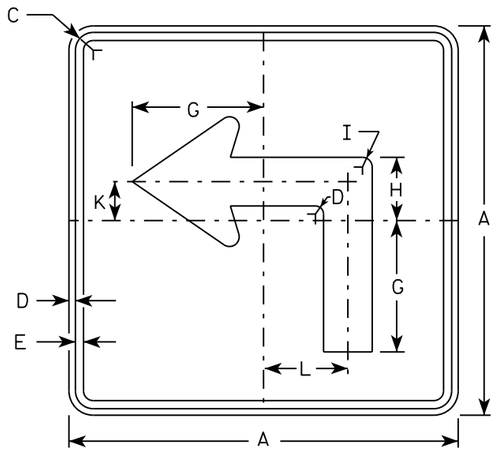
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

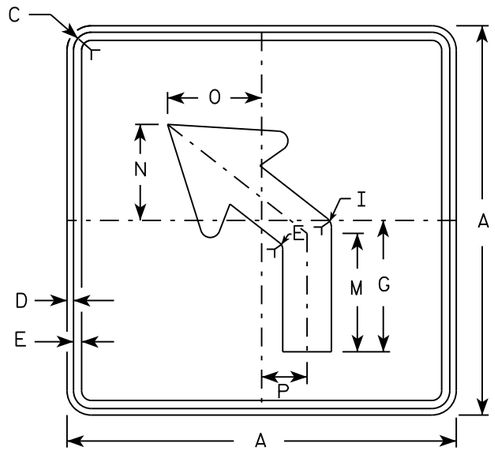
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

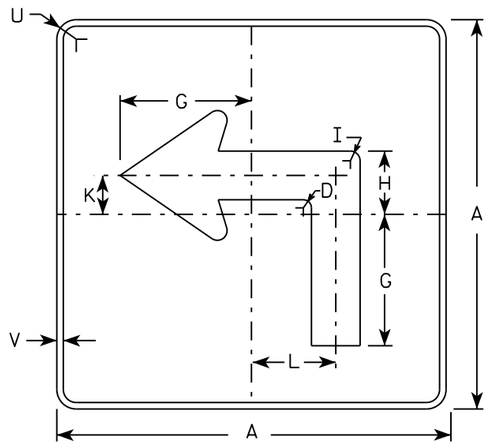
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 53	E



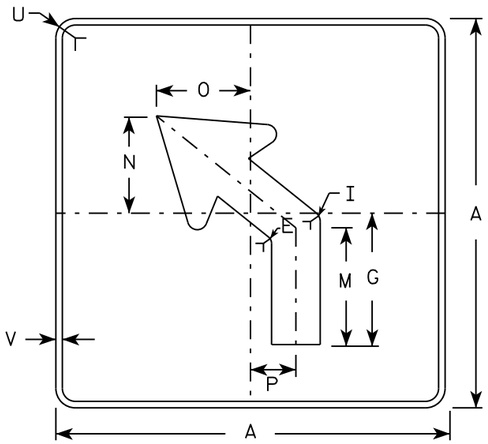
M5-1L
MM5-1L
MO5-1L
MP5-1L



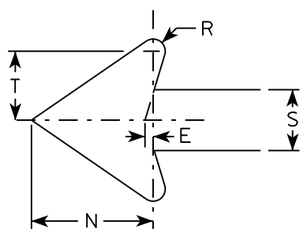
M5-2L
MM5-2L
MO5-2L
MP5-2L



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



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



NOTES

1. Signs are Type II - Type H reflective except as shown
2. Color:
   Background - See note 4
   Message - See note 4
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. M5-1 and M5-2 Background - White
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White
   MK5-1 and MK5-2 Background - Green
   Message - White
   MM5-1 and MM5-2 Background - White
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

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

STANDARD SIGN
M5-1 & M5-2

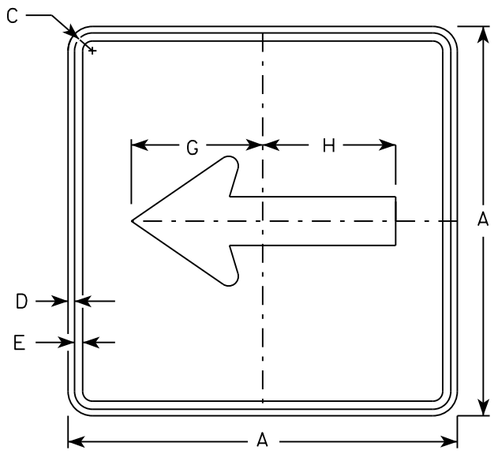
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

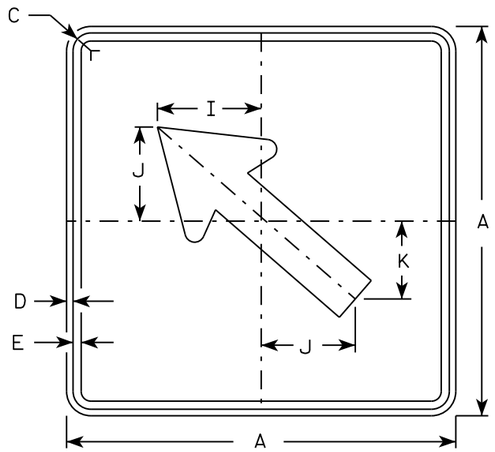
DATE 10/15/15 PLATE NO. M5-1.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



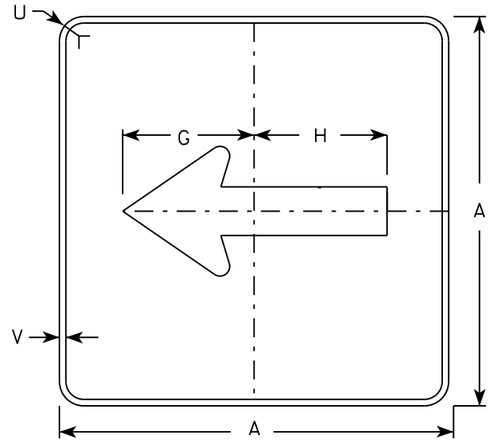
M6-1
MM6-1
MO6-1
MP6-1



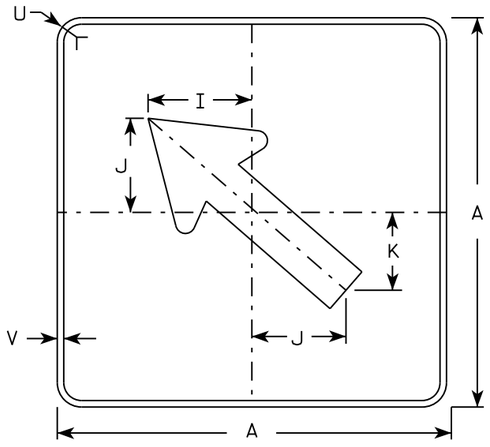
M6-2
MM6-2
MO6-2
MP6-2

NOTES

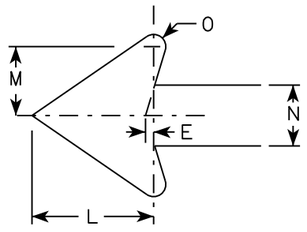
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



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



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



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

STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

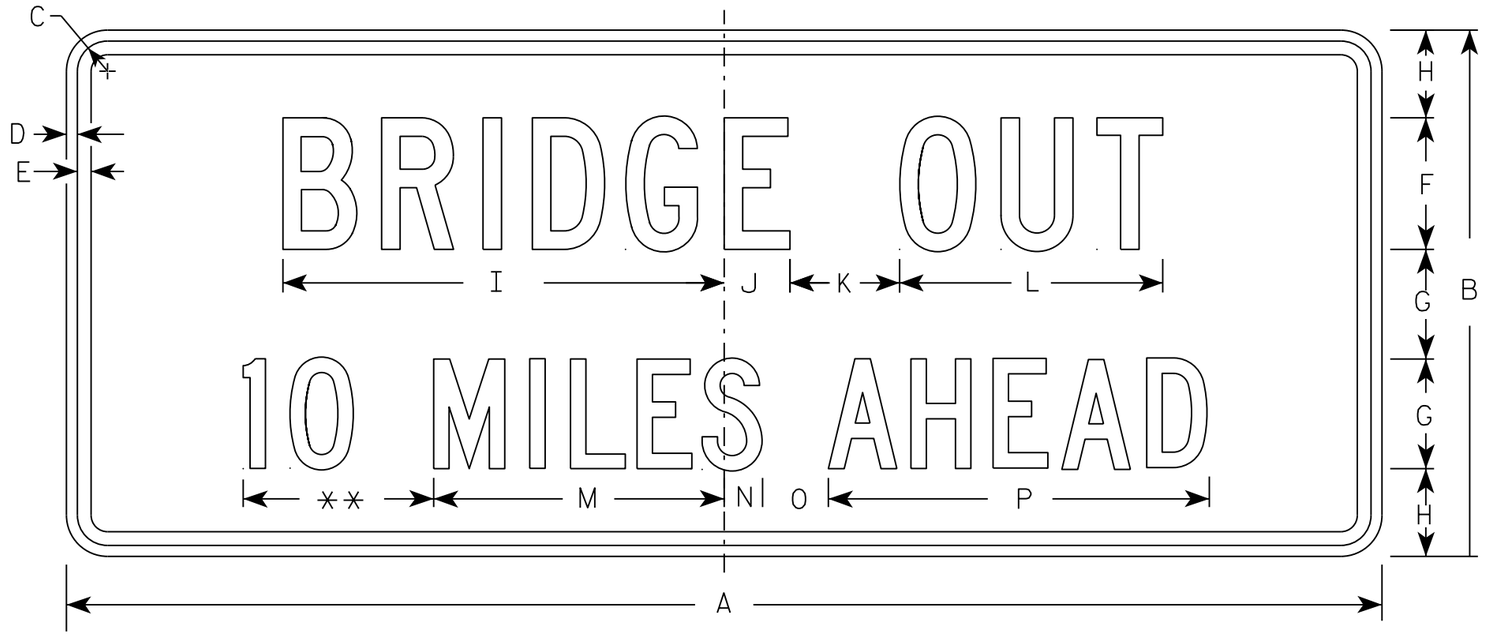
DATE 10/15/15 PLATE 55 M6-1.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 01-DEC-2015 17:57 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000

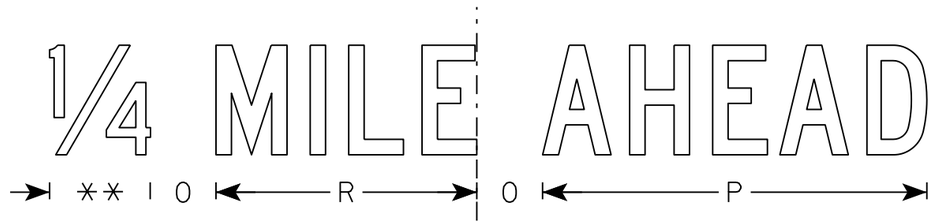
NOTES

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



R11-3C

** See Note 5



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	15	1 3/8	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4		7 1/8									3.75
2S	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
2M	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
3																											
4																											
5																											

STANDARD SIGN
R11-3C

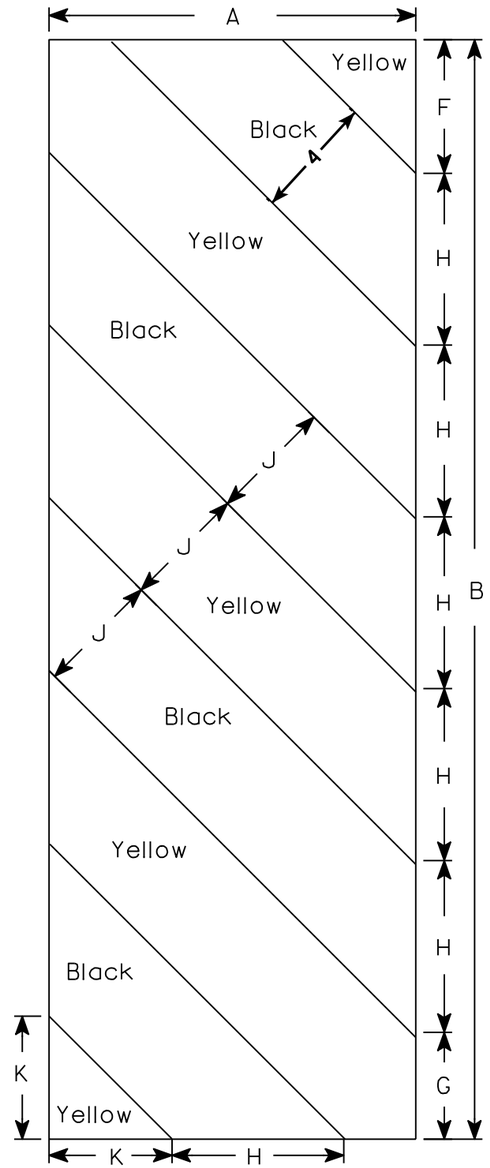
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

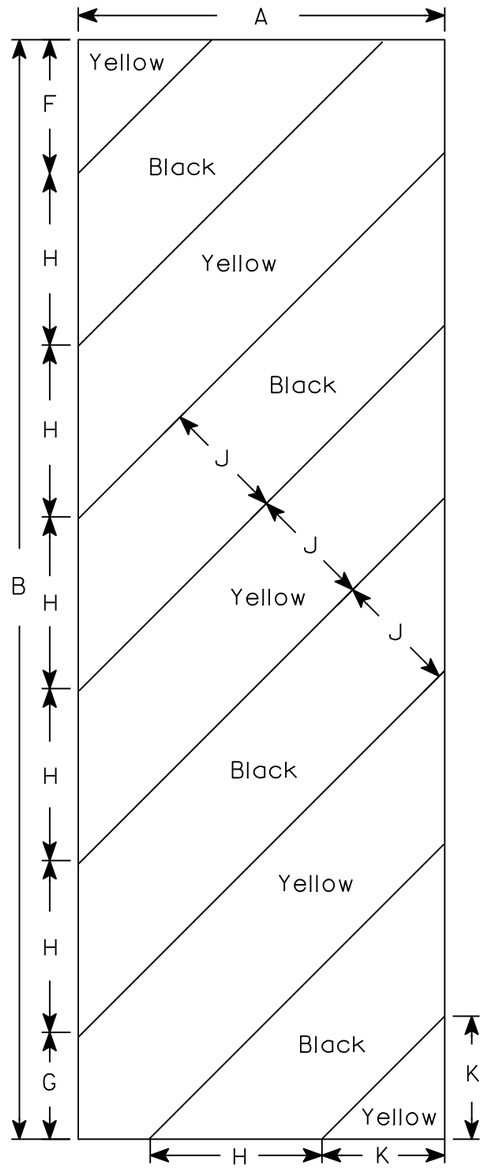
DATE 7/28/16 PLATE NO. R11-3C.3

PROJECT NO:

SHEET NO: 56 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

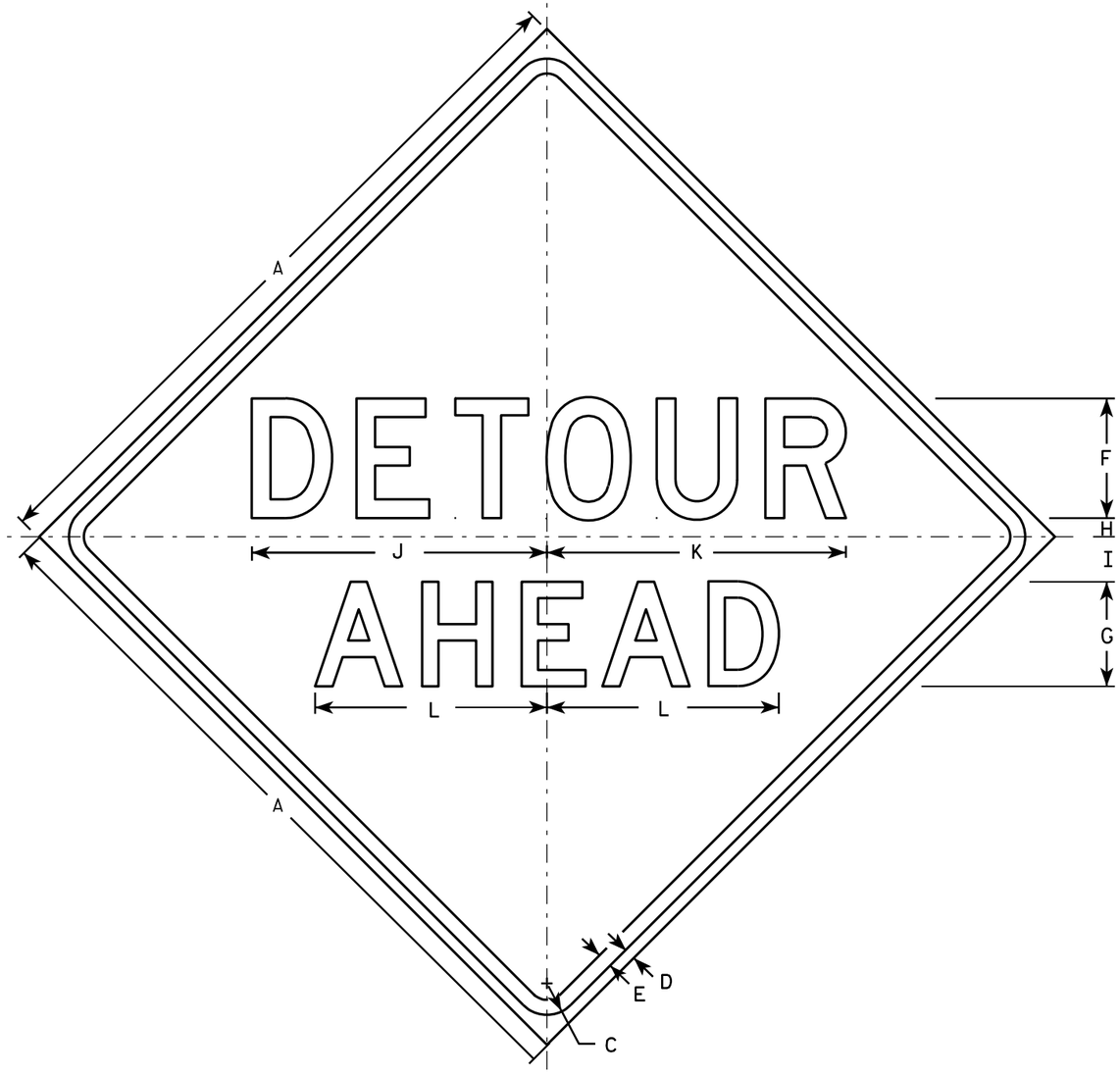
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

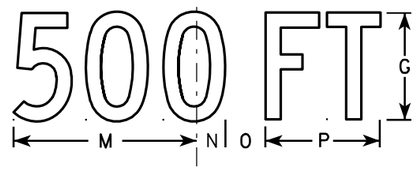
APPROVED Matthew R Rauch
for State Traffic Engineer

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

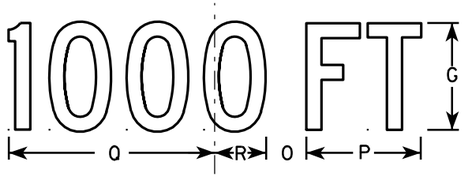
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 57 | E



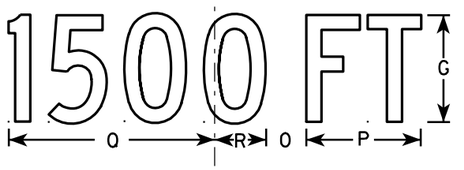
W20-2A



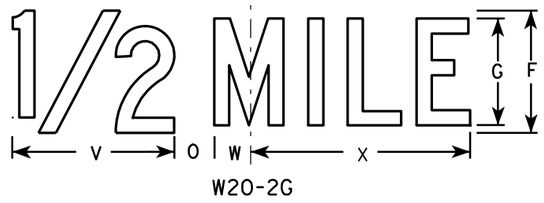
W20-2D



W20-2C



W20-2B



W20-2G

W20-2F

NOTES

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

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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 58 | E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W202.DGN PLOT DATE : 18-MAR-2011 10:00 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42

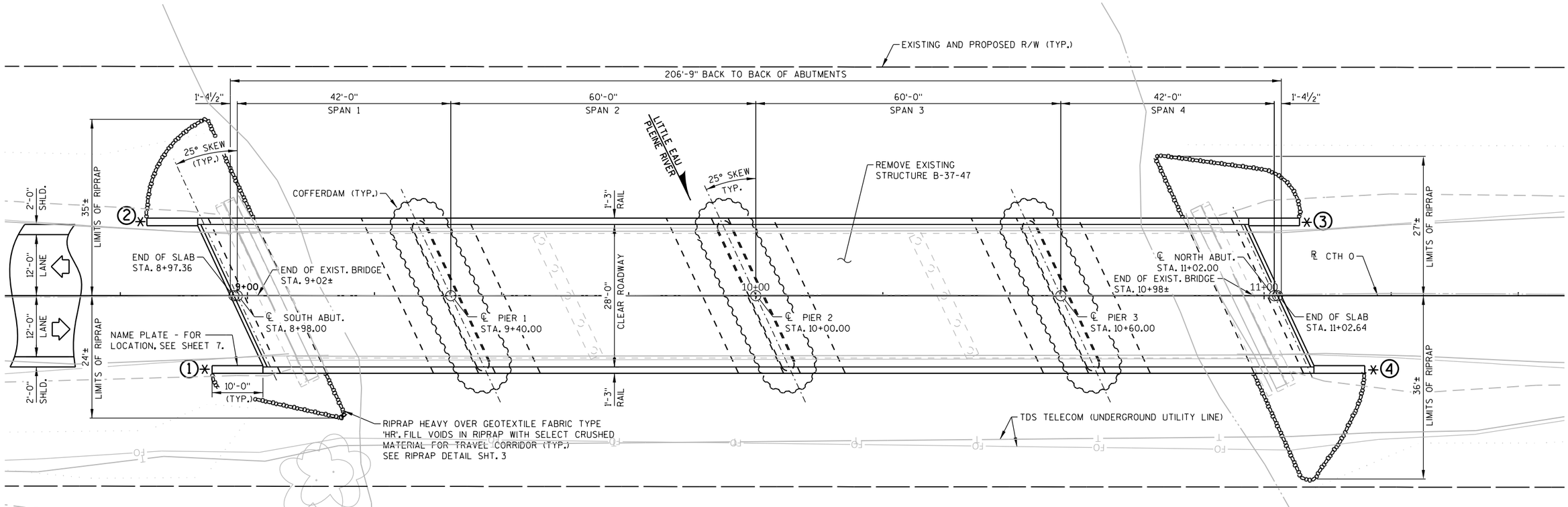
PRINTER DRIVER: C:\ProgramData\Bentley\MicroStation CONNECT Edition\Configuration\WorkSpaces\WisDOT Bridge MP Ver A\WorkSets\WisDOT Bridge\Plotdrv\ME_PDF_11 x 17.plt
PEN TABLE: C:\ProgramData\Bentley\MicroStation CONNECT Edition\Configuration\WorkSpaces\WisDOT Bridge MP Ver A\WorkSets\WisDOT Bridge\Pen Tables\AE_WisDOT_Structure.tbl
FILE NAME: C:\OneDrive\AECOM\60646519 - CTH O, Marathon County - 0_Records\400_Technical\408_Struct\02_Plans-Quant_Bartlist\01_B-37-465_genplan1.dgn
PLOT DATE: 6/22/2023 PLOT TIME: 6:14:10 PM BATCH PRINT SHEET 1 OF 17

* PROVIDE FOR THRIE BEAM GUARDRAIL ATTACHMENT.

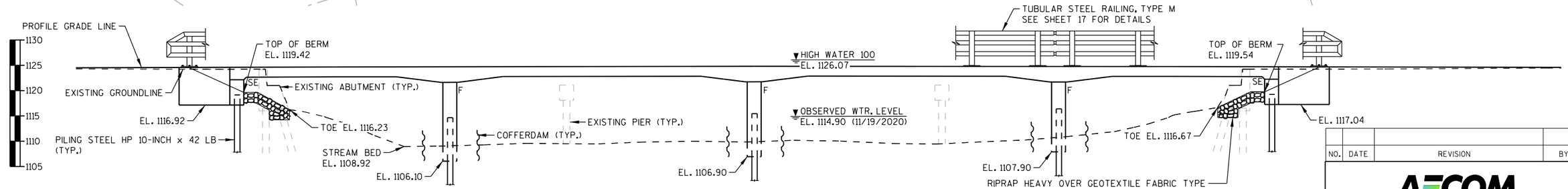
(X) INDICATES WING NUMBER

N

STATE PROJECT NUMBER
6664-00-70



PLAN
4-SPAN CONCRETE HAUNCHED SLAB



ELEVATION

LIST OF DRAWINGS

BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEVATION
4	10+90.41	CHISELED SQUARE IN NW WINGWALL	1124.16

WISCONSIN JAMES A. RHOAD-DROGALIS E-47302 MADISON WI 6/22/2023 PROFESSIONAL ENGINEER

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261

CONSULTANT:
JAMES RHOAD-DROGALIS (608) 828-8166

NO.	DATE	REVISION	BY

AECOM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 08/01/23
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-37-465

CTH O OVER LITTLE EAU PLEINE RIVER

COUNTY	TOWN ~~CITY/VILLAGE~~
MARATHON	BERGEN

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JRD	NAR	MES	JRD

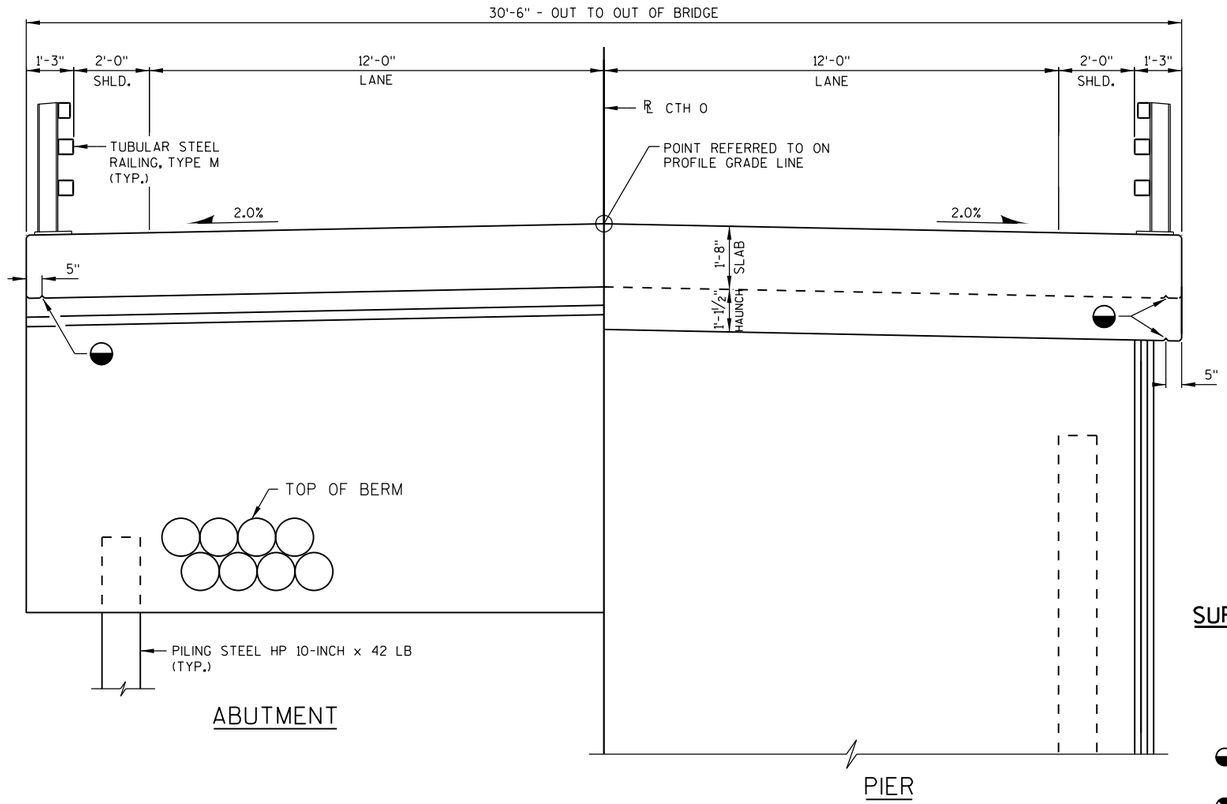
GENERAL PLAN & ELEVATION

SHEET 1 OF 17
59

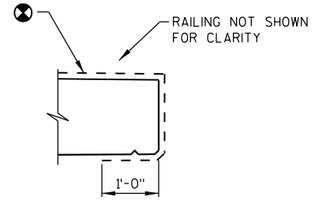
8

8

PRINTER DRIVER: C:\ProgramData\Bentley\MicroStation CONNECT Edition\Configuration\WorkSpaces\WisDOT Bridge MP Ver A\WorkSets\WisDOT Bridge\Plotdrv\AE_PDF_11 x 17.plt
PEN TABLE: C:\ProgramData\Bentley\MicroStation CONNECT Edition\Configuration\WorkSpaces\WisDOT Bridge MP Ver A\WorkSets\WisDOT Bridge\Pen Tables\AE_WisDOT_Structure.tbl
FILE NAME: C:\OneDrive\AECOM\60646519 - CTH O, Marathon County - 0_Records\400_Technical\408_Struct\02_Plans-Quant_Bar_list\02_B-37-465_genplan2.dgn
PLOT DATE: 6/22/2023 PLOT TIME: 6:14:10 PM BATCH PRINT SHEET 2 OF 17



CROSS SECTION THRU ROADWAY
(LOOKING UPSTATION)



SURFACE PROTECTION DETAIL

LEGEND

- ¾" V-GROOVE REQ'D. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUT.
- COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER STANDARD SPECIFICATIONS.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR = 1.18
OPERATIONAL RATING FACTOR = 1.53
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES:

CONCRETE MASONRY -
SLAB — f'c = 4,000 P.S.I.
ALL OTHER — f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.

FOUNDATION DATA

SOUTH ABUTMENT TO BE SUPPORTED ON PILING STEEL HP 10-INCH x 42 LB. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 70'-0" LONG.

NORTH ABUTMENT TO BE SUPPORTED ON PILING STEEL HP 10-INCH x 42 LB. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 55'-0" LONG.

PIERS 1 & 3 TO BE SUPPORTED ON PILING STEEL HP 10-INCH x 42 LB. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE LENGTHS:
PIER 1 - 65'-0" LONG
PIER 3 - 55'-0" LONG

PIER 2 TO BE SUPPORTED ON PILING STEEL HP 10-INCH x 42 LB. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 60'-0" LONG.

** 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 THE MODIFIED GATE DYNAMIC FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC VOLUME

CTH O
A.D.T. (2024) = 360
A.D.T. (2044) = 390
DESIGN SPEED = 55

HYDRAULIC DATA

100 YEAR FREQUENCY

Q100 TOTAL — 15,000 CFS
- THRU BRIDGE — 8,759 CFS
- OVER ROAD — 6,241 CFS
VELOCITY THRU BRIDGE — 4.5 FPS
HIGH WATER ELEVATION — 1126.07
WATERWAY AREA — 8831 SQ. FT.
- THRU BRIDGE — 1940 SQ. FT.
- OVER ROAD — 6891 SQ. FT.
DRAINAGE AREA — 217 SQ. MI.
SCOUR CRITICAL CODE — 5

2 YEAR FREQUENCY

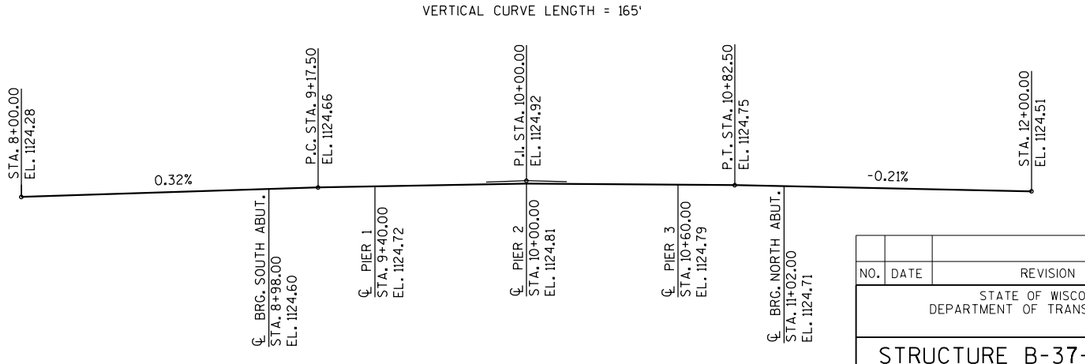
Q2 — 4710 CFS
HIGH WATER 2 ELEVATION — 1121.98
VELOCITY — 2.6 FPS

ROAD OVERTOPPING FREQUENCY

FREQUENCY — 4 YEARS
Q4 — 6,533 CFS
HW4 — 1122.80

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEM	UNIT	SOUTH ABUTMENT	PIER 1	PIER 2	PIER 3	NORTH ABUTMENT	SUPER.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-37-365	EACH	———	———	———	———	———	———	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-37-465	EACH	———	———	———	———	———	———	1
206.5001	COFFERDAMS B-37-465	EACH	———	———	———	———	———	———	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	120	———	———	———	120	———	240
502.0100	CONCRETE MASONRY BRIDGES	CY	31	46	44	41	31	440	633
502.3200	PROTECTIVE SURFACE TREATMENT	SY	15	———	———	———	15	835	865
502.9000.S	UNDERWATER SUBSTRUCTURE INSPECTION B-37-465	EACH	———	1	1	1	———	———	3
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,980	2,290	2,210	2,050	1,980	———	10,510
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,250	70	70	70	1,250	103,100	105,810
513.4061	RAILING TUBULAR TYPE M	LF	22	———	———	———	22	414	458
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	———	———	———	9	———	18
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	350	585	600	495	275	———	2,305
606.0300	RIPRAP HEAVY	CY	60	———	———	———	70	———	130
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	86	———	———	———	86	———	172
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	45	———	———	———	45	———	90
645.0120	GEOTEXTILE TYPE HR	SY	100	———	———	———	120	———	220
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	30	———	———	———	40	———	70
	NON-BID ITEMS								
	FILLER	SIZE	———	———	———	———	———	———	1/2" & 3/4"



PROFILE GRADE LINE - CTH O

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY MES | PLANS CK'D. JRD

CROSS SECTION & QUANTITIES

SHEET 2 OF 17
60

STATE PROJECT NUMBER
6664-00-70

8

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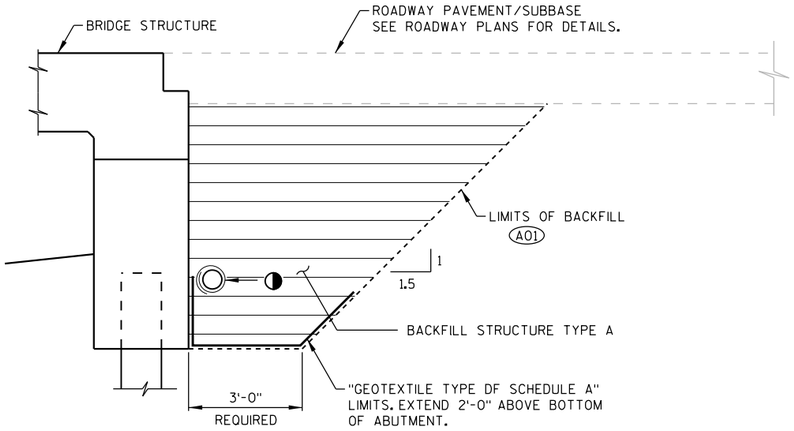
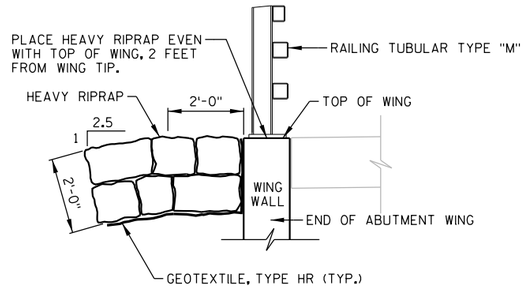


SECTION THRU ABUTMENT



TYPICAL FILL SECTION AT WING TIPS

BACKFILL STRUCTURE LIMITS

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-37-465" SHALL BE THE EXISTING GROUNDLINE.

(A01) BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE THE BOTTOM OF THE ABUTMENT.

◑ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. PLACE ABOVE GROUND WATER ELEVATION MIN. INVERT = 1117+/-

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO "EXCAVATION FOR STRUCTURES BRIDGES B-37-465".

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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 WITHIN LIMITS SHOWN ON SHEET 1.

THE FIRST DIGIT OF A THREE DIGIT BAR MARK AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

THE EXISTING STRUCTURE (B-37-47) IS A STEEL GIRDER BRIDGE, 194.4' LONG x 24.5' WIDE, TO BE REMOVED.

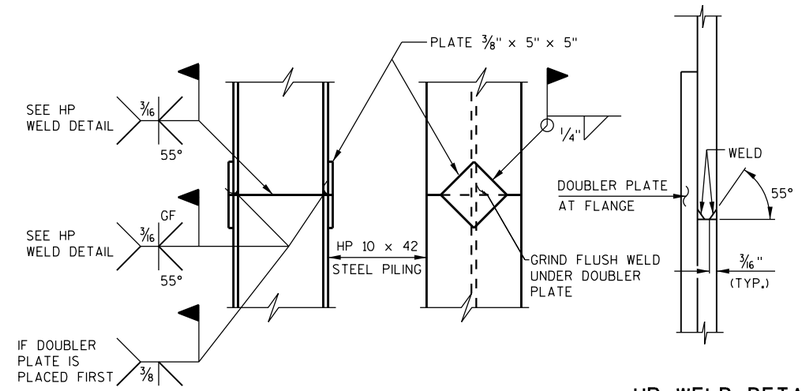
THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

ALL REQUIRED REMOVAL OF THE EXISTING SUBSTRUCTURES IS INCLUDED IN THE BID ITEM "REMOVING STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, B-37-47".

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

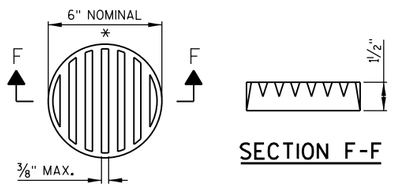
AT PIERS, COFFERDAMS REQUIRED. CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.



PILE SPLICE DETAIL

HP WELD DETAIL
(FLANGE SHOWN, WEB SIMILAR)



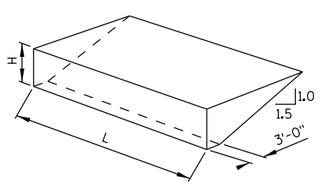
SECTION F-F

RODENT SHIELD DETAIL

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

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

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

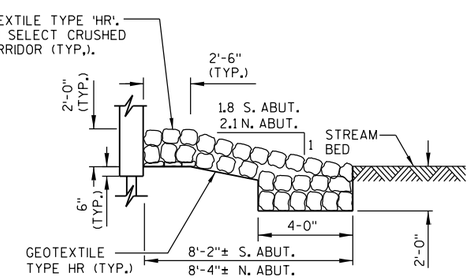


BOTH ABUTMENTS
WINGS PARALLEL TO ROADWAY

ABUTMENT BACKFILL DIAGRAM

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

RIPRAP HEAVY OVER GEOTEXTILE TYPE 'HR'. FILL VOIDS IN RIPRAP WITH SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR (TYP.).



RIPRAP DETAIL

ALL HORIZONTAL DIMENSIONS PERPENDICULAR TO SUBSTRUCTURE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY MES | PLANS CK'D. JRD

CONSTRUCTION DETAILS

SHEET 3 OF 17
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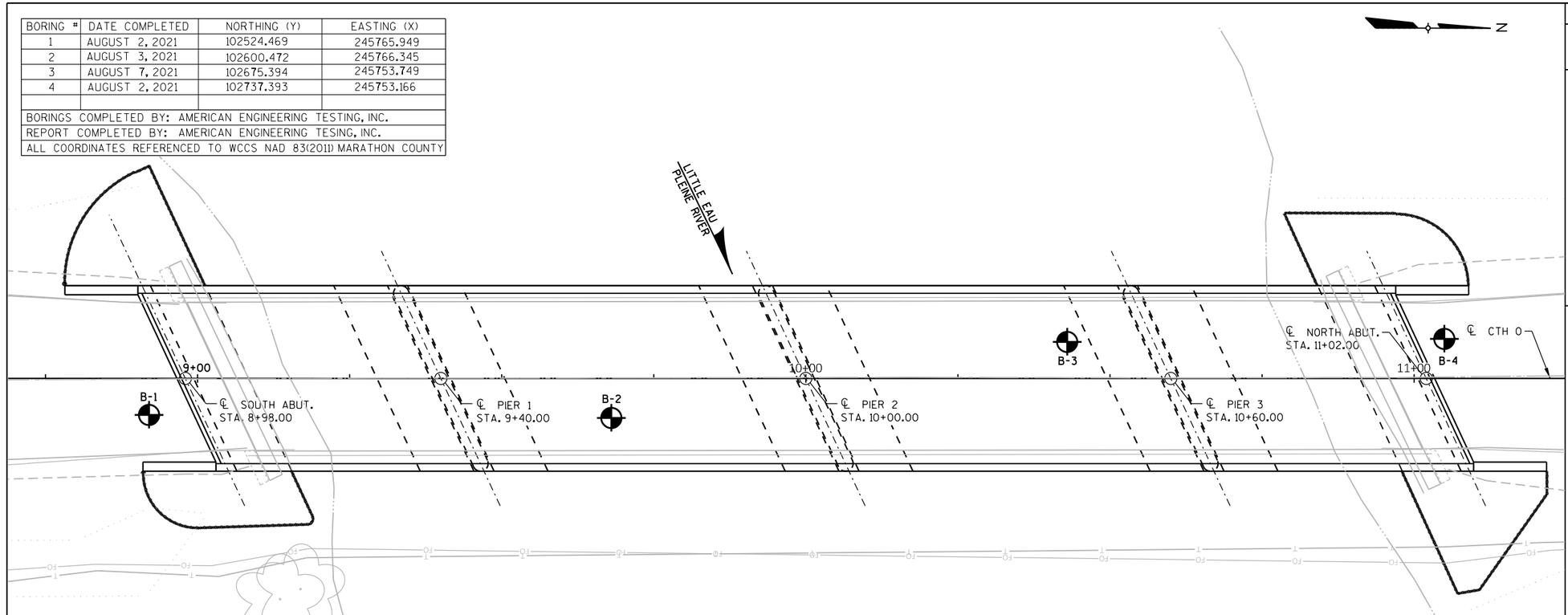
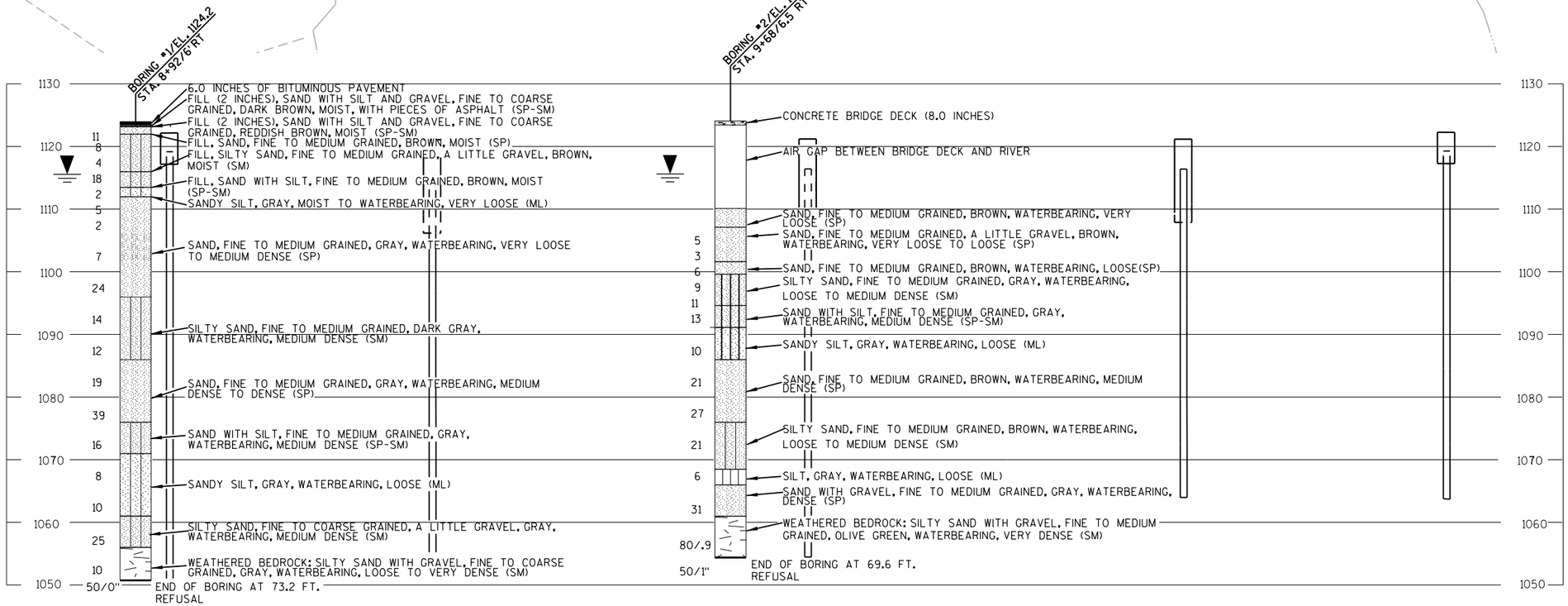
8

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	AUGUST 2, 2021	102524.469	245765.949
2	AUGUST 3, 2021	102600.472	245766.345
3	AUGUST 7, 2021	102675.394	245753.749
4	AUGUST 2, 2021	102737.393	245753.166
BORINGS COMPLETED BY: AMERICAN ENGINEERING TESTING, INC.			
REPORT COMPLETED BY: AMERICAN ENGINEERING TESING, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2011) MARATHON COUNTY			





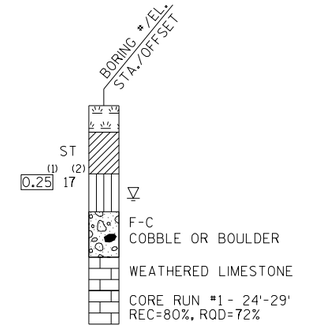
STATE PROJECT NUMBER

6664-00-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

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

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-465

DRAWN BY KRO | PLANS CK'D. JRD

SUBSURFACE EXPLORATION 1

SHEET 4 OF 16
62

SCALE =

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	AUGUST 2, 2021	102524.469	245765.949
2	AUGUST 3, 2021	102600.472	245766.345
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BORINGS COMPLETED BY: AMERICAN ENGINEERING TESTING, INC.			
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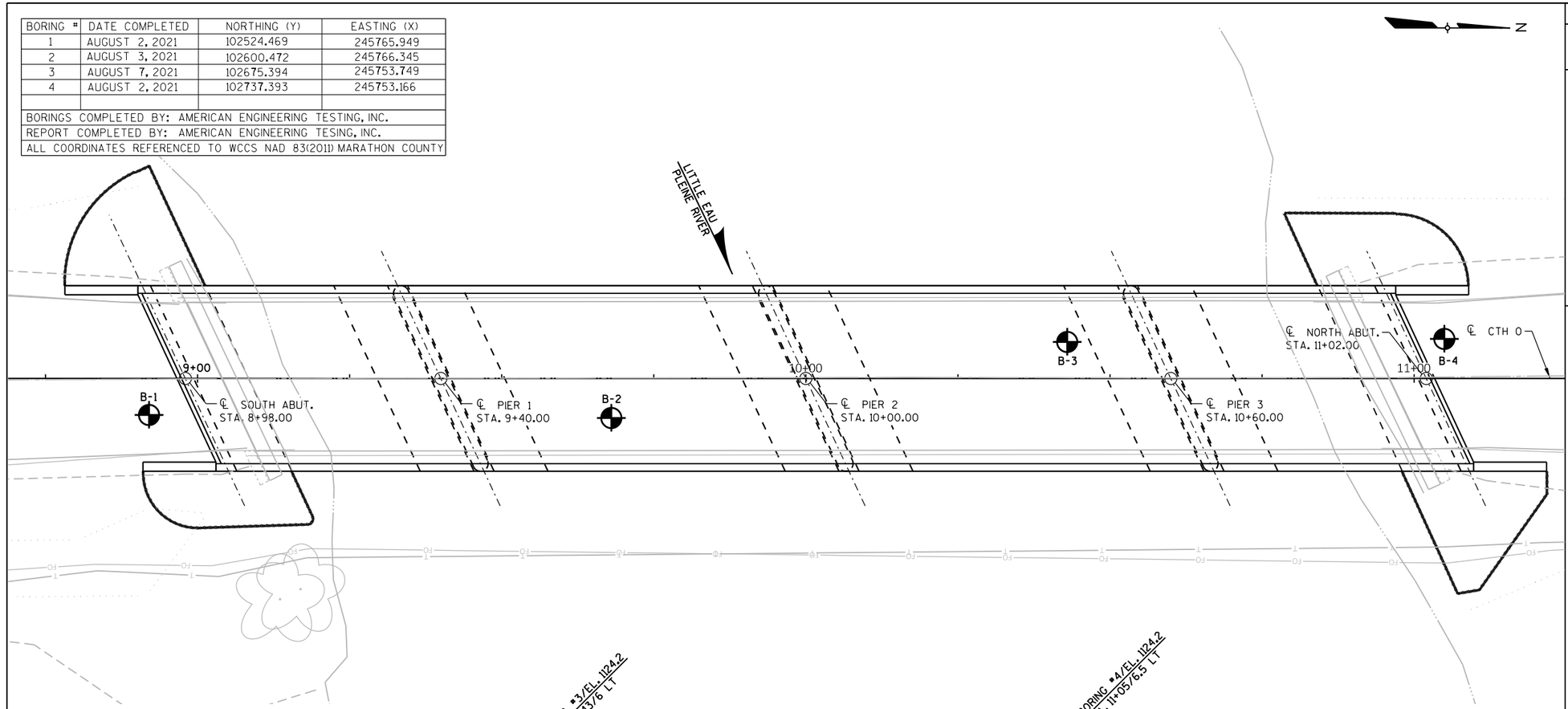

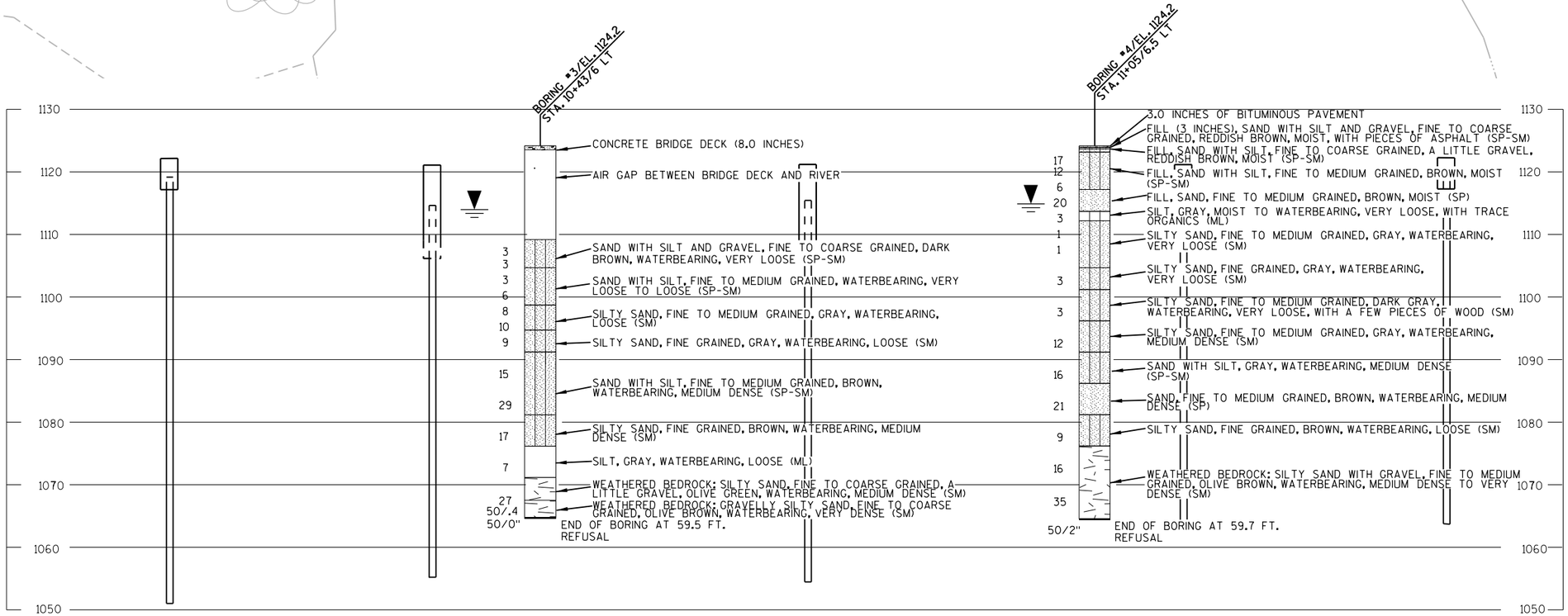

STATE PROJECT NUMBER

6664-00-70

MATERIAL SYMBOLS

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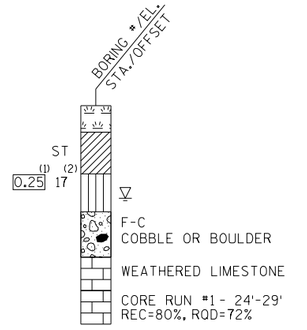
LEGEND OF BORING



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GROUND WATER ELEVATION

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-37-465

DRAWN BY KRO | PLANS CK'D. JRD

SUBSURFACE EXPLORATION 2

SHEET 5 OF 16
63

SCALE =

8

8

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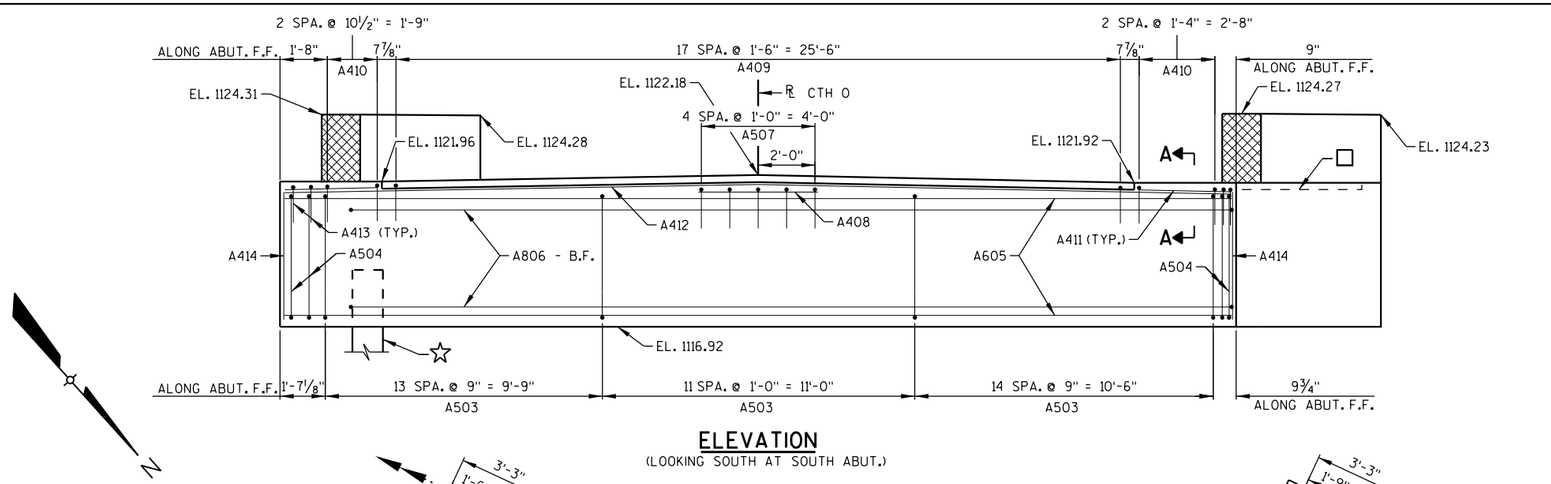
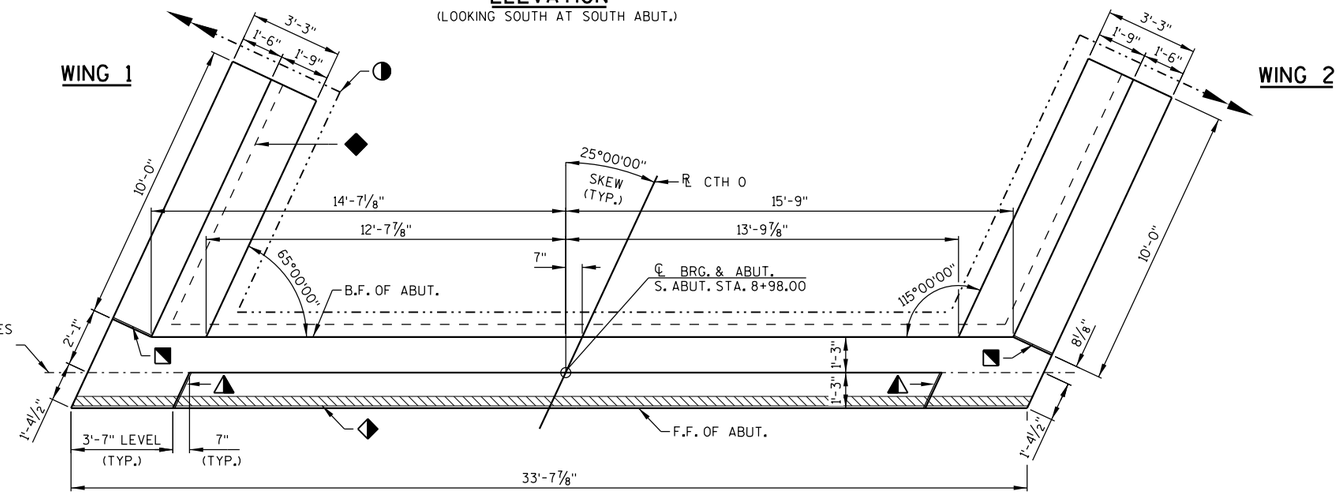
STATE PROJECT NUMBER

6664-00-70

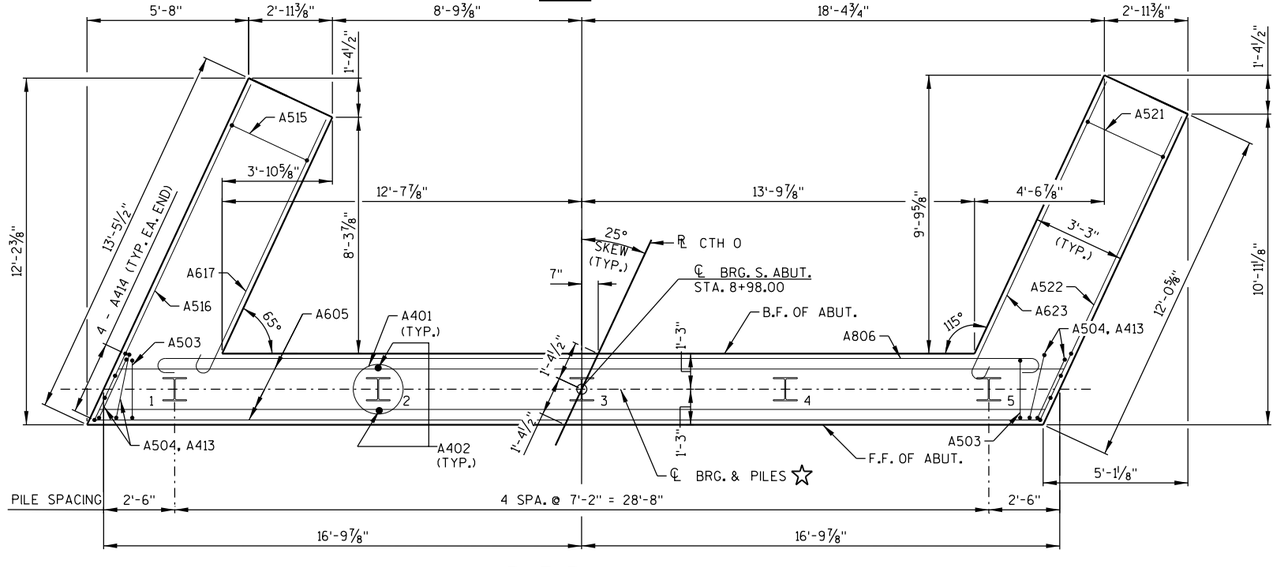


ELEVATION

(LOOKING SOUTH AT SOUTH ABUT.)



PLAN



PILE PLAN

LEGEND

☆ SUPPORT ABUTMENTS ON PILING STEEL 10-INCH X 42 LB. SEE FOUNDATION DATA ON SHEET 2 AND PILE SPLICE DETAIL ON SHEET 3.

◑ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. DRAIN BOTH ABUTMENTS TO DOWNSTREAM SIDE OF BRIDGE. ATTACH RODENT SHIELD AT ENDS OF PIPE. SEE SHEET 3.

◪ ½" FILLER TO EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.) EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

◆ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.

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

◭ ¾" CORK FILLER ON VERTICAL FACE ONLY.

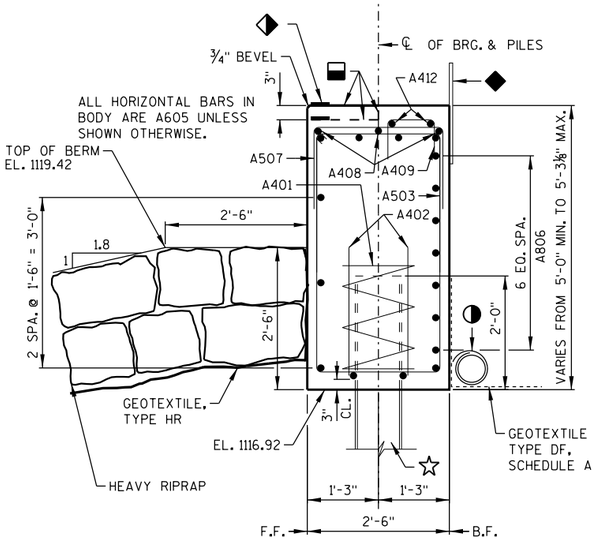
◈ 4" x ¾" PREFORMED JOINT FILLER

□ OPTIONAL CONST. JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

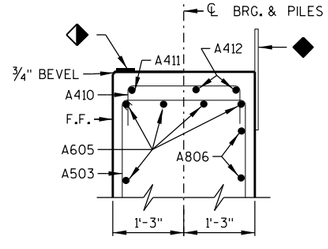
NOTES

ADJUST A503 BARS TO MISS PILING.

FOR PILE SPLICE DETAIL, SEE SHEET 3.



TYPICAL SECTION THRU BODY



SECTION A-A

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY TRA | PLANS CK'D. JRD

SOUTH ABUTMENT

SHEET 6 OF 17
64

8

PRINTER DRIVER: C:\ProgramData\Bentley\MicroStation CONNECT Edition\Configuration\WorkSpaces\WisDOT Bridge MP Ver A\WorkSets\WisDOT Bridge\Plotdrv\AE_PDF.11 x 17.plt
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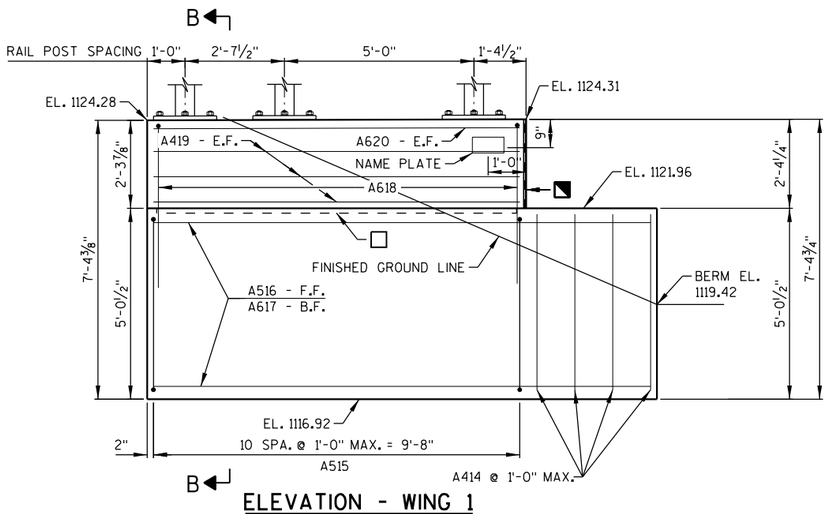
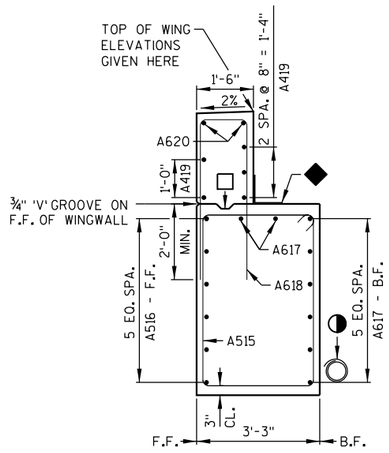
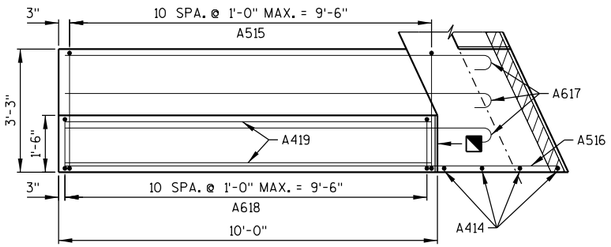
PLOT DATE: 6/22/2023 PLOT TIME: 6:14:14 PM BATCH PRINT SHEET 7 OF 17



ELEVATION - WING 1



SECTION B-B



PLAN - WING 1
(RAIL POST NOT SHOWN FOR CLARITY)

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHEET 6.

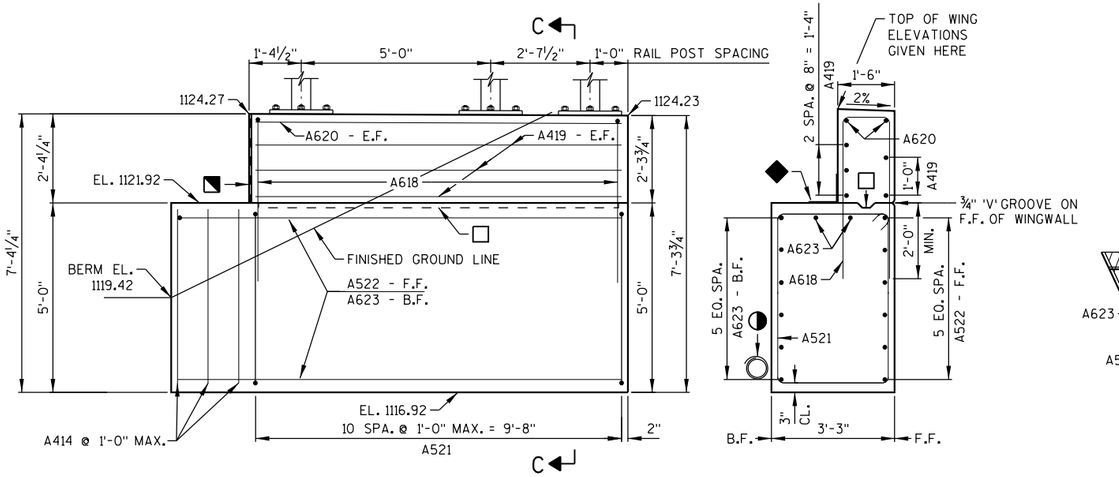
NOTES

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

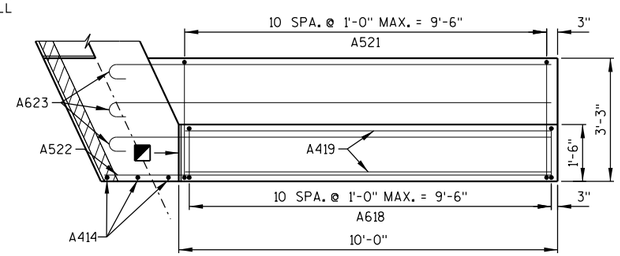
E.F. DENOTES EACH FACE.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND TO THE FRONT FACE OF THE ABUTMENT CORNER TO 1'-0" UNDER THE SLAB.



ELEVATION - WING 2

SECTION C-C

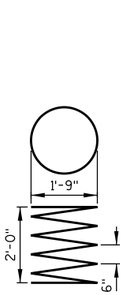


PLAN - WING 2
(RAIL POST NOT SHOWN FOR CLARITY)

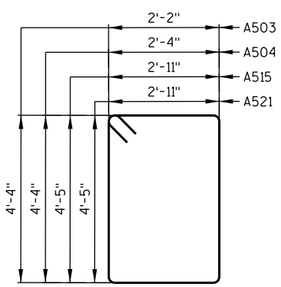
BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

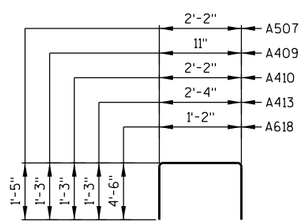
MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
NON-COATED BARS					TOTAL WEIGHT = 1,900 LBS	
A401	5	28 - 0	X		ABUT. BODY AT PILES	VERT.
A402	10	2 - 3			ABUT. BODY DOWELS AT PILES	VERT.
A503	39	13 - 8	X		ABUT. BODY STIRRUP	VERT.
A504	4	14 - 0	X		ABUT. BODY STIRRUP AT ENDS	VERT.
A605	10	33 - 4			ABUT. BODY - F.F., TOP, BOT.	HORIZ
A806	7	30 - 10	X		ABUT. BODY - B.F.	HORIZ
A507	5	4 - 9	X		ABUT. BODY TOP	VERT.
A408	3	4 - 0			ABUT. BODY TOP	HORIZ
A409	18	3 - 3	X		ABUT. BODY TOP	VERT.
A410	6	4 - 6	X		ABUT. BODY TOP.	VERT.
A411	2	3 - 3			ABUT. BODY TOP AT ENDS	HORIZ
A412	2	33 - 4			ABUT. BODY TOP	HORIZ
A413	4	4 - 8	X		ABUT. BODY AT ENDS	VERT.
A414	7	4 - 6			ABUT. BODY AT ENDS	VERT.
COATED BARS					TOTAL WEIGHT = 1,250 LBS	
A515	11	15 - 4	X		WING 1 STIRRUP	VERT.
A516	6	13 - 1			WING 1 F.F.	HORIZ.
A617	8	11 - 11	X		WING 1 B.F.	HORIZ.
A618	22	9 - 10	X		WING 1 & 2 TOP	VERT.
A419	10	9 - 8			WING 1 & 2 E.F.	HORIZ.
A620	4	9 - 8			WING 1 & 2 TOP E.F.	HORIZ.
A521	11	15 - 4	X		WING 2 STIRRUP	VERT.
A522	6	11 - 9			WING 2 F.F.	HORIZ.
A623	8	12 - 4	X		WING 2 B.F.	HORIZ.



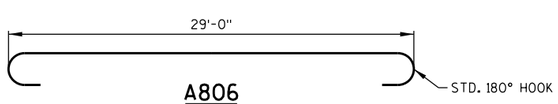
A401



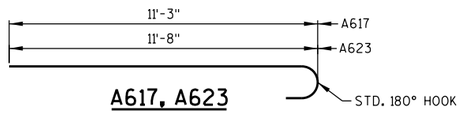
A503, A504, A515, A521



A507, A409, A410, A413, A618



A806



A617, A623

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY DCH | PLANS CK'D. JRD

SOUTH ABUTMENT WINGS 1 & 2 DETAILS

SHEET 7 OF 17
65

8

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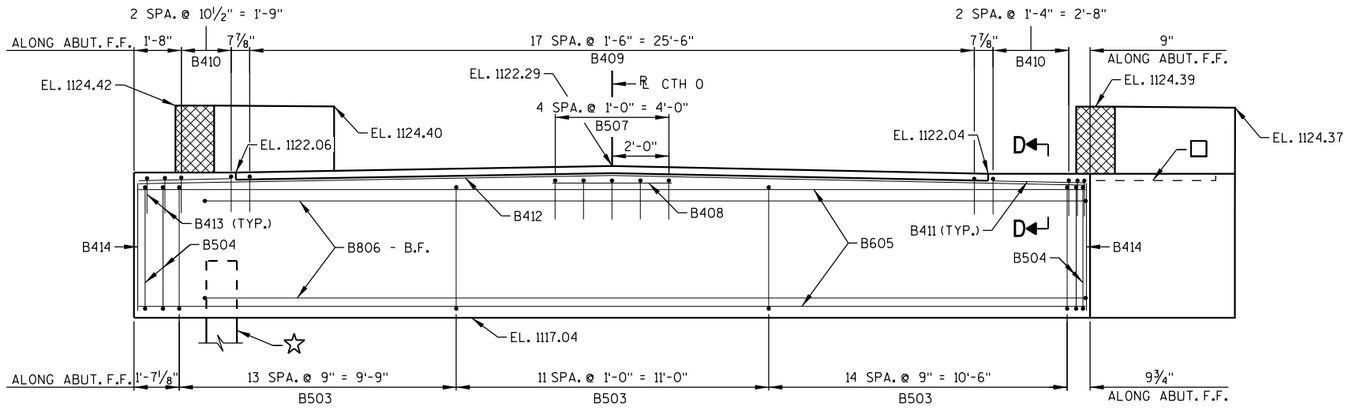
PLOT DATE: 6/22/2023 PLOT TIME: 6:14:15 PM BATCH PRINT SHEET 8 OF 17

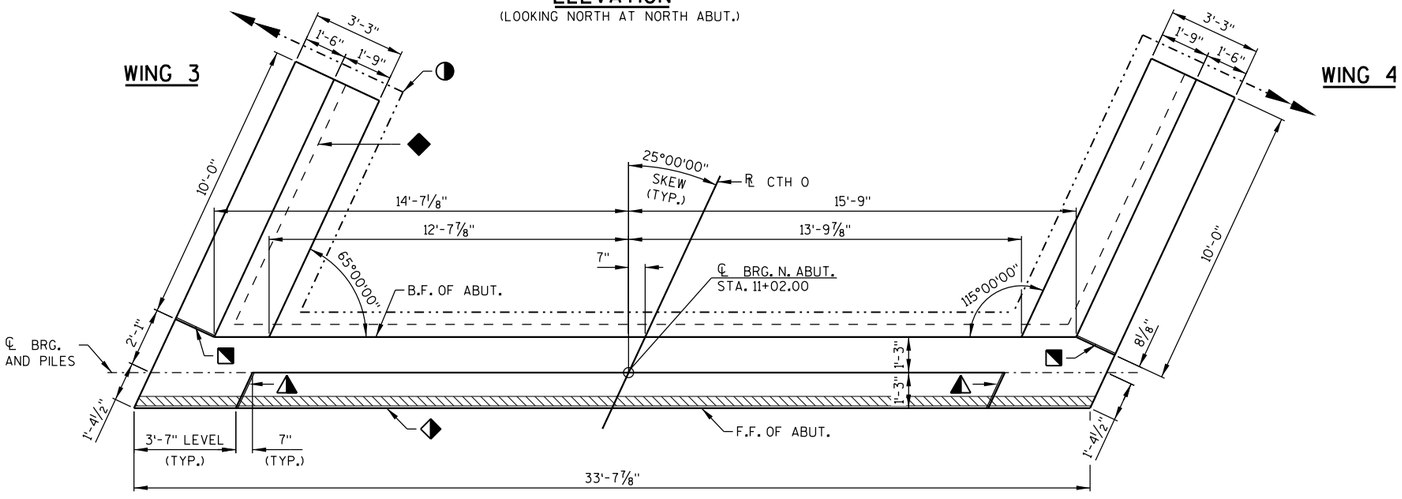
STATE PROJECT NUMBER

6664-00-70

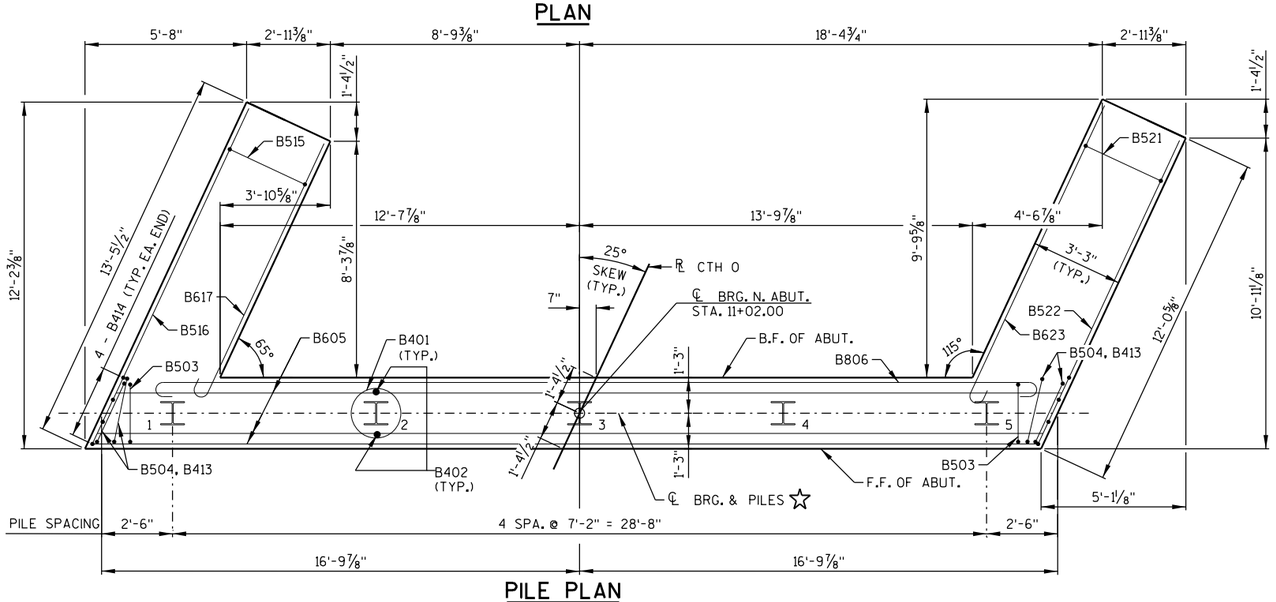


ELEVATION

(LOOKING NORTH AT NORTH ABUT.)



PLAN



PILE PLAN

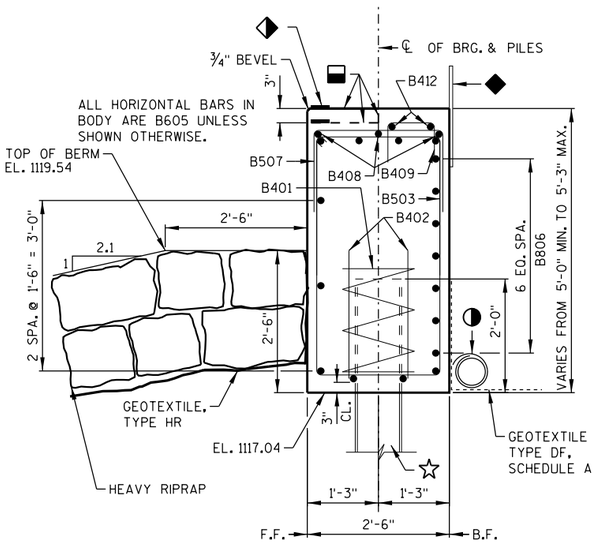
LEGEND

FOR SYMBOL DESCRIPTIONS, SEE SHEET 6.

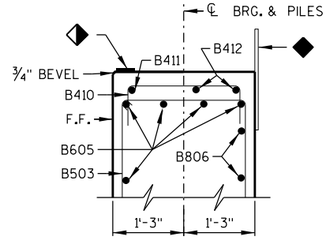
NOTES

ADJUST B503 BARS TO MISS PILING.

FOR PILE SPLICE DETAIL, SEE SHEET 3.



TYPICAL SECTION THRU BODY



SECTION D-D

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY DCH | PLANS CK'D. JRD

NORTH ABUTMENT

SHEET 8 OF 17
66

8

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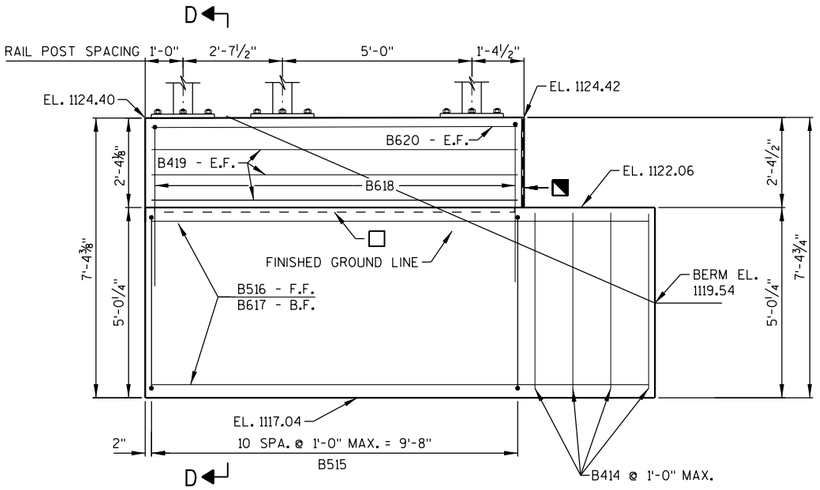
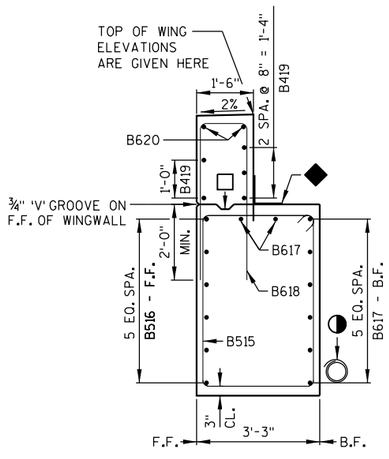
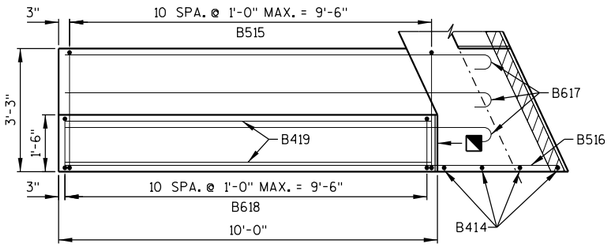
PLOT DATE: 6/22/2023 PLOT TIME: 6:14:15 PM
BATCH PRINT SHEET 9 OF 17



ELEVATION - WING 3

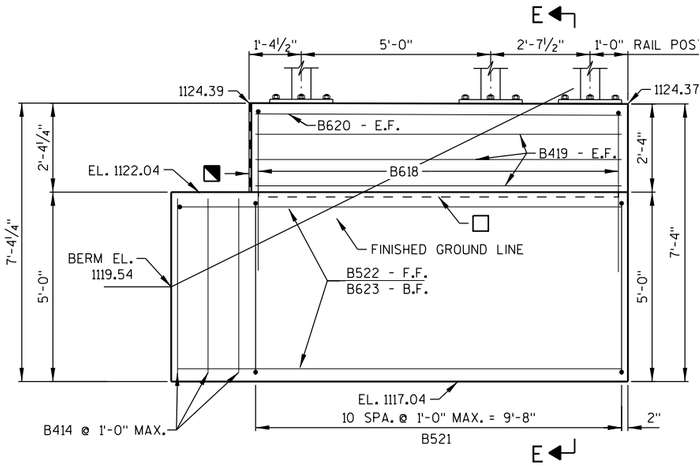


SECTION D-D

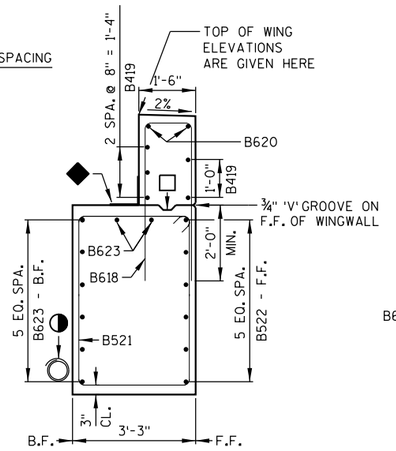


PLAN - WING 3

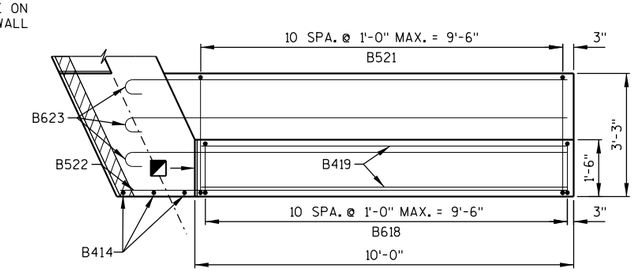
(RAIL POST NOT SHOWN FOR CLARITY)



ELEVATION - WING 4



SECTION E-E



PLAN - WING 4

(RAIL POST NOT SHOWN FOR CLARITY)

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHEET 6.

NOTES

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

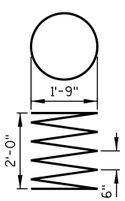
E.F. DENOTES EACH FACE.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND TO THE FRONT FACE OF THE ABUTMENT CORNER TO 1'-0" UNDER THE SLAB.

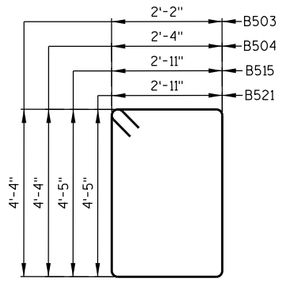
BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

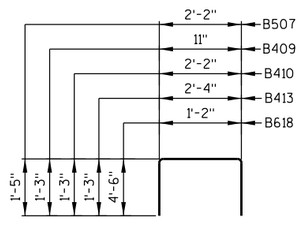
MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
NON-COATED BARS						TOTAL WEIGHT = 1,980 LBS
B401	5	28 - 0	X		ABUT. BODY AT PILES	VERT.
B402	10	2 - 3			ABUT. BODY DOWELS AT PILES	VERT.
B503	39	13 - 8	X		ABUT. BODY STIRRUP	VERT.
B504	4	14 - 0	X		ABUT. BODY STIRRUP AT ENDS	VERT.
B605	10	33 - 4			ABUT. BODY - F.F., TOP, BOT.	HORIZ
B806	7	30 - 10	X		ABUT. BODY - B.F.	HORIZ
B507	5	4 - 9	X		ABUT. BODY TOP	VERT.
B408	3	4 - 0			ABUT. BODY TOP	HORIZ
B409	18	3 - 3	X		ABUT. BODY TOP	VERT.
B410	6	4 - 6	X		ABUT. BODY TOP.	VERT.
B411	2	3 - 3			ABUT. BODY TOP AT ENDS	HORIZ
B412	2	33 - 4			ABUT. BODY TOP	HORIZ
B413	4	4 - 8	X		ABUT. BODY AT ENDS	VERT.
B414	7	4 - 6			ABUT. BODY AT ENDS	VERT.
COATED BARS						TOTAL WEIGHT = 1,250 LBS
B515	11	15 - 4	X		WING 3 STIRRUP	VERT.
B516	6	13 - 1			WING 3 F.F.	HORIZ
B617	8	11 - 11	X		WING 3 B.F.	HORIZ
B618	22	9 - 10	X		WING 3 & 4 TOP	VERT.
B419	10	9 - 8			WING 3 & 4 E.F.	HORIZ
B620	4	9 - 8			WING 3 & 4 TOP E.F.	HORIZ
B521	11	15 - 4	X		WING 4 STIRRUP	VERT.
B522	6	11 - 9			WING 4 F.F.	HORIZ
B623	8	12 - 4	X		WING 4 B.F.	HORIZ



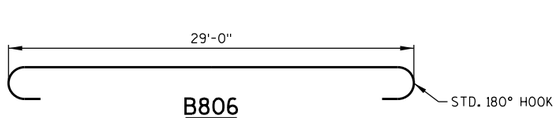
B401



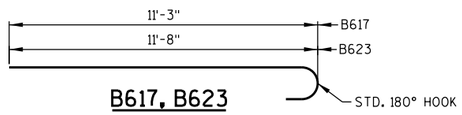
B503, B504, B515, B521



B507, B409, B410, B413, B618



B806



B617, B623

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY DCH | PLANS CK'D. JRD

NORTH ABUTMENT WINGS 3 & 4 DETAILS

SHEET 9 OF 17
67

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PRINTER DRIVER: C:\ProgramData\Bentley\MicroStation CONNECT Edition\WorkSpaces\WisDOT Bridge MP Ver A\WorkSets\WisDOT Bridge\Plotdrv\AE_PDF_11 x 17.plt
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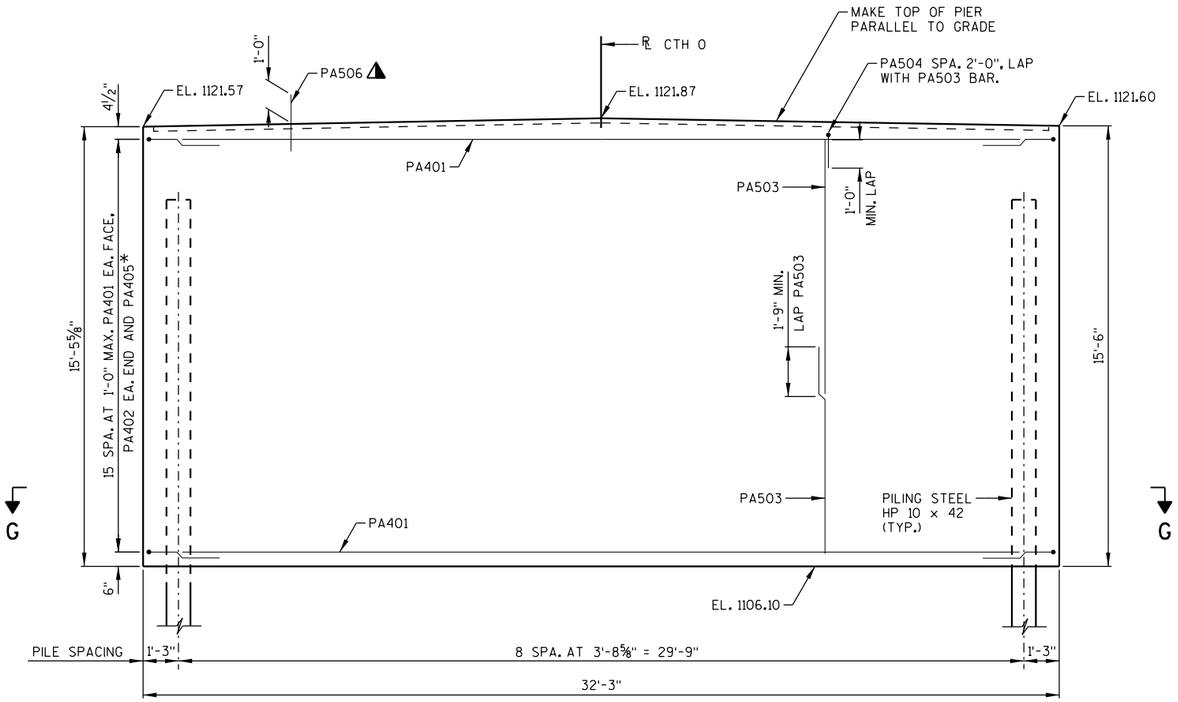
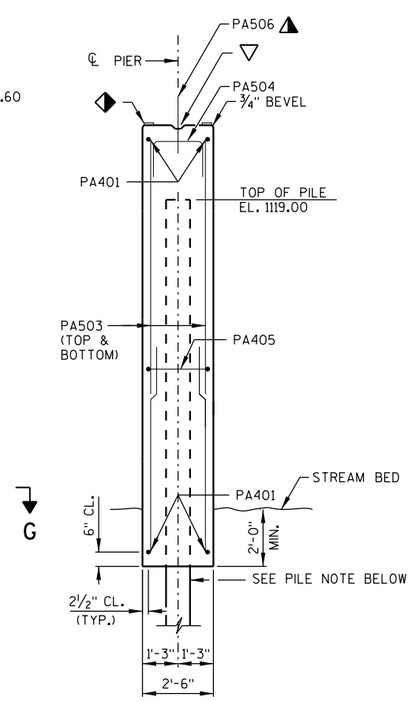
STATE PROJECT NUMBER

6664-00-70



ELEVATION
(LOOKING UPSTATION)

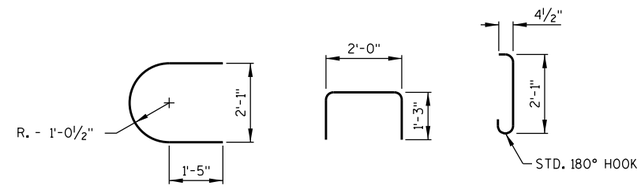


TYPICAL SECTION THRU PIER

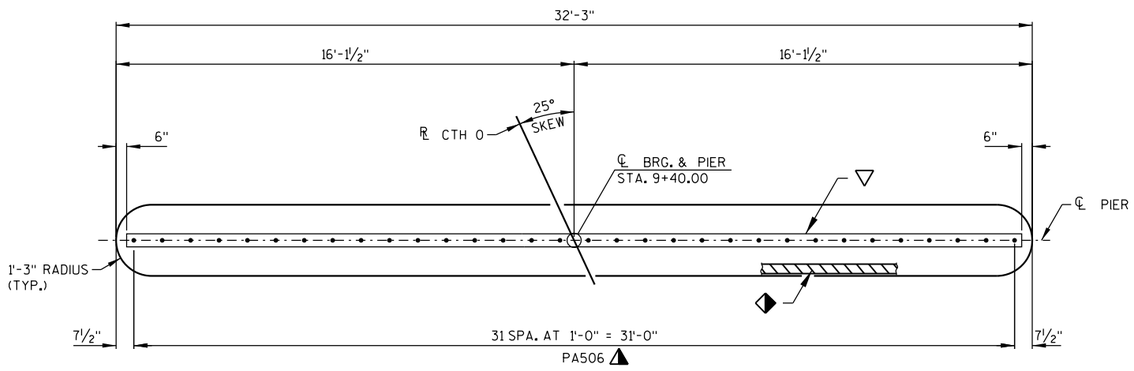
BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

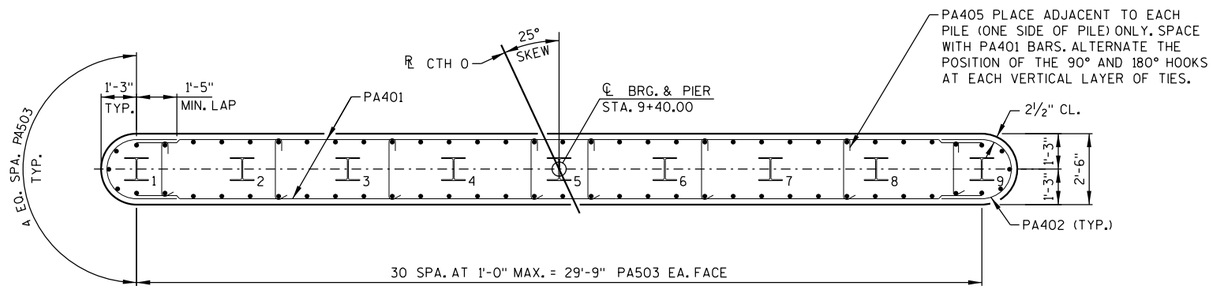
MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
NON-COATED BARS					TOTAL WEIGHT = 2,290 LBS	
PA401	32	29 - 9			PIER - SIDES	HORIZ.
PA402	32	6 - 2	X		PIER - ENDS	HORIZ.
PA503	136	8 - 3			PIER -SIDES AND ENDS	VERT.
PA504	16	4 - 3	X		PIER - TOP	VERT.
PA405	144	2 - 11	X		PIER - TIES AT EA. PILE	HORIZ.
COATED BARS					TOTAL WEIGHT = 70 LBS	
PA506	32	2 - 0			PIER - DOWEL	VERT.



PA402 PA504 PA405



PLAN



SECTION G-G

LEGEND

◆ 4"x¾" FILLER

* ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

▽ KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6"

▲ THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED, BUT BEFORE INITIAL SET HAS TAKEN PLACE.

NOTE

EXCAVATE TO EL. 1106.10 BEFORE DRIVING PILING. EXCAVATION IS INCIDENTAL TO BID ITEM "EXCAVATION FOR STRUCTURES B-37-465"

AT PIER, COFFERDAM REQUIRED. CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH STANDARD SPEC. 502.3.5.3. CONCRETE POURED UNDERWATER SHALL NOT EXCEED 10.0 FEET IN DEPTH UNLESS APPROVED OTHERWISE.

PILE NOTE

PIER TO BE SUPPORTED ON PILING STEEL HP 10-INCH x 42 LB. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 65'-0" LONG.*

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY DCH | PLANS CK'D. JRD

PIER 1

SHEET 10 OF 17
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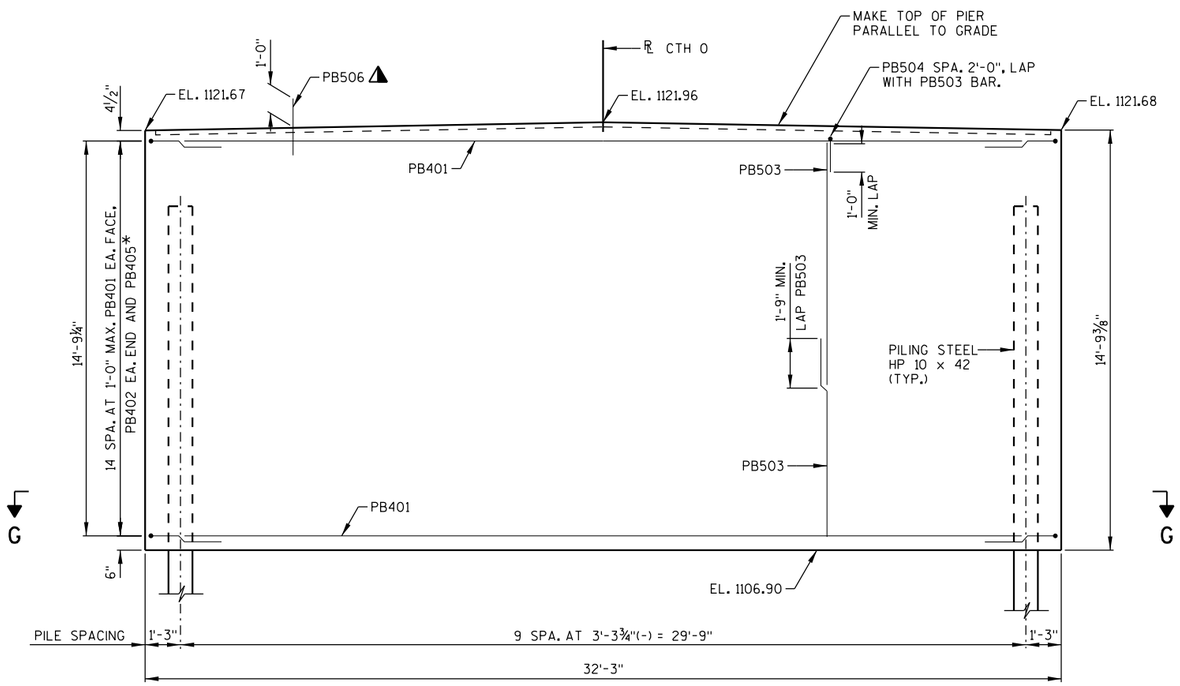
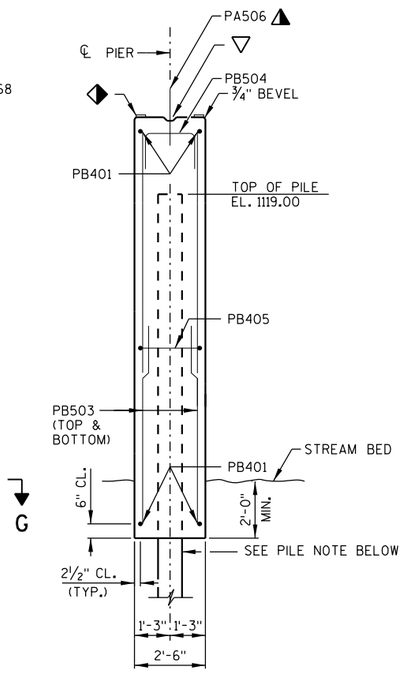
BATCH PRINT SHEET 11 OF 17



ELEVATION
(LOOKING UPSTATION)

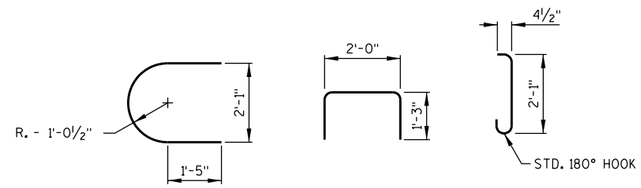


TYPICAL SECTION THRU PIER

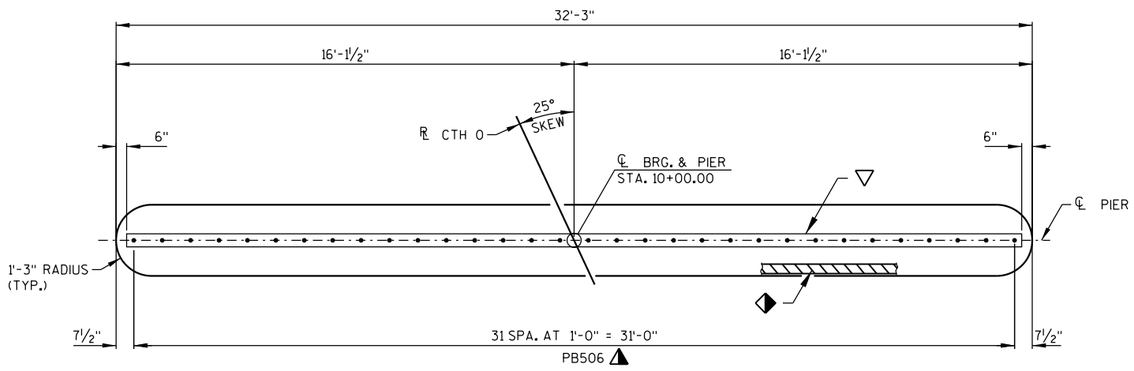
BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

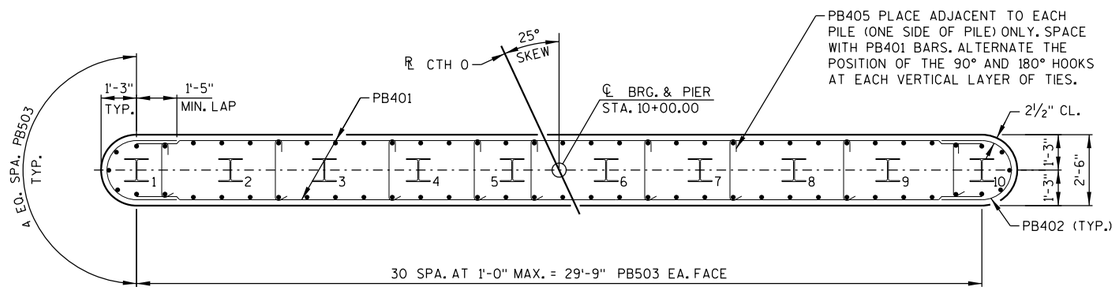
MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
NON-COATED BARS					TOTAL WEIGHT = 2,210 LBS	
PB401	30	29 - 9			PIER - SIDES	HORIZ.
PB402	30	6 - 2	X		PIER - ENDS	HORIZ.
PB503	136	7 - 11			PIER -SIDES AND ENDS	VERT.
PB504	16	4 - 3	X		PIER - TOP	VERT.
PB405	150	2 - 11	X		PIER - TIES AT EA. PILE	HORIZ.
COATED BARS					TOTAL WEIGHT = 70 LBS	
PB506	32	2 - 0			PIER - DOWEL	VERT.



PB402 PB504 PB405



PLAN



SECTION G-G

LEGEND

◆ 4"x¾" FILLER

* ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

▽ KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6"

⚠ THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED, BUT BEFORE INITIAL SET HAS TAKEN PLACE.

NOTE

EXCAVATE TO EL. 1106.90 BEFORE DRIVING PILING. EXCAVATION IS INCIDENTAL TO BID ITEM "EXCAVATION FOR STRUCTURES B-37-465"

AT PIER, COFFERDAM REQUIRED. CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH STANDARD SPEC. 502.3.5.3. CONCRETE POURED UNDERWATER SHALL NOT EXCEED 10.0 FEET IN DEPTH UNLESS APPROVED OTHERWISE.

PILE NOTE

PIER TO BE SUPPORTED ON PILING STEEL HP 10-INCH x 42 LB. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 60'-0" LONG.*

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY DCH | PLANS CK'D. JRD

PIER 2

SHEET 11 OF 17
69

8

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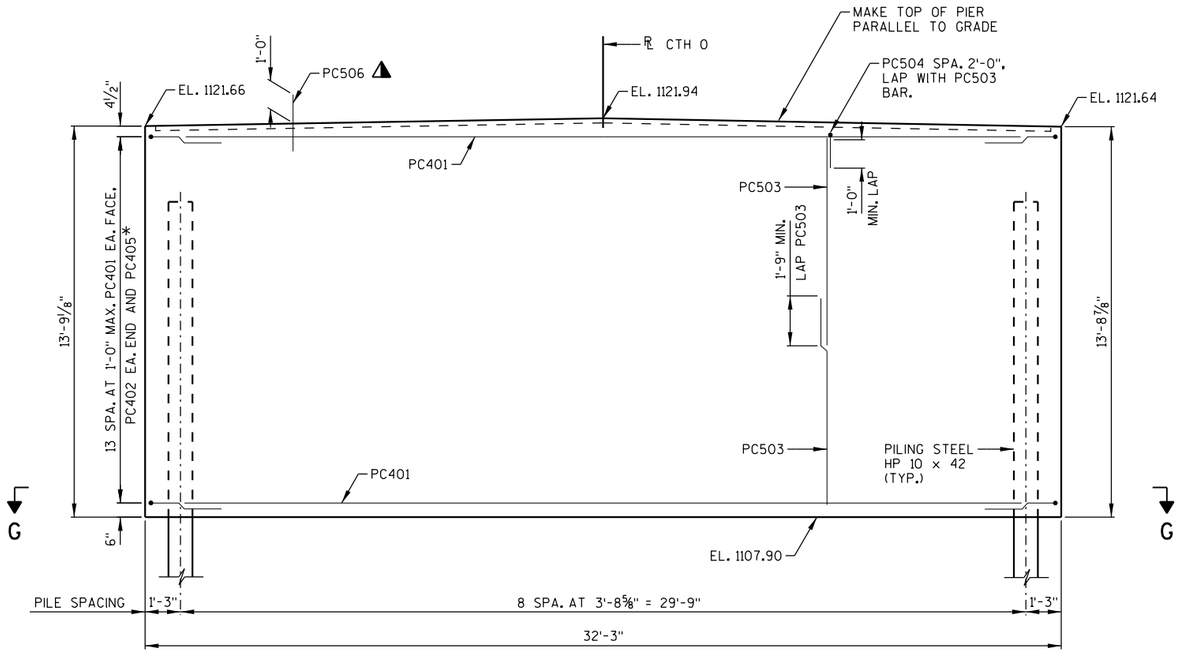
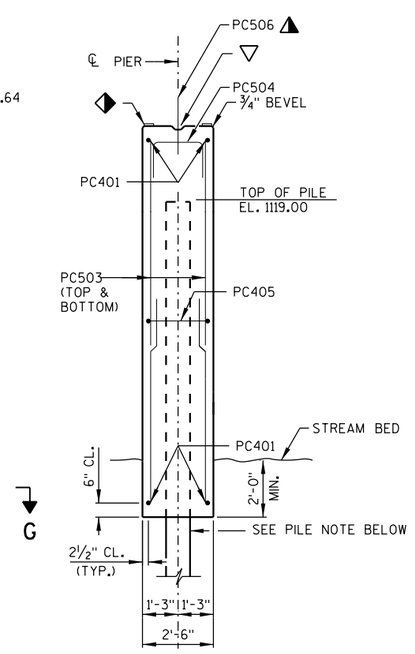


ELEVATION
(LOOKING UPSTATION)

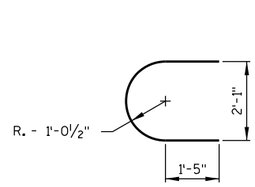


TYPICAL SECTION
THRU PIER

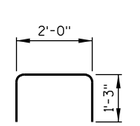
BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

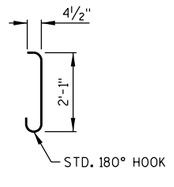
MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
NON-COATED BARS					TOTAL WEIGHT = 2,050 LBS	
PC401	28	29 - 9			PIER - SIDES	HORIZ.
PC402	28	6 - 2	X		PIER - ENDS	HORIZ.
PC503	136	7 - 5			PIER -SIDES AND ENDS	VERT.
PC504	16	4 - 3	X		PIER - TOP	VERT.
PC405	126	2 - 11	X		PIER - TIES AT EA. PILE	HORIZ.
COATED BARS					TOTAL WEIGHT = 70 LBS	
PC506	32	2 - 0			PIER - DOWEL	VERT.



PC402



PC504



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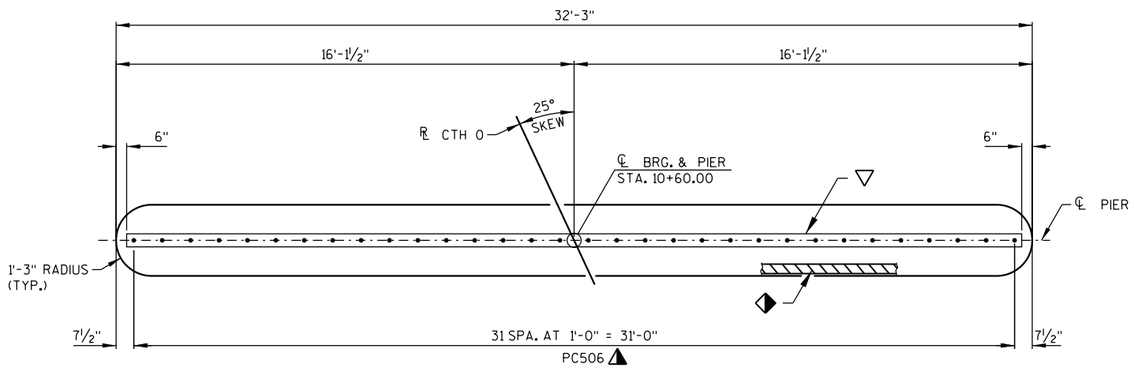
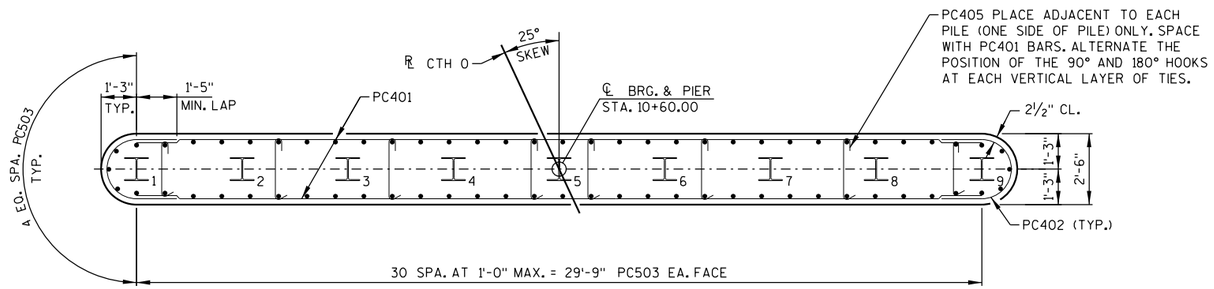


PLAN



SECTION G-G

LEGEND

◆ 4"x¾" FILLER

* ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

▽ KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2"x6"

▲ THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED, BUT BEFORE INITIAL SET HAS TAKEN PLACE.

NOTE

EXCAVATE TO EL. 1107.90 BEFORE DRIVING PILING. EXCAVATION IS INCIDENTAL TO BID ITEM "EXCAVATION FOR STRUCTURES B-37-465".

AT PIER, COFFERDAM REQUIRED. CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH STANDARD SPEC. 502.3.5.3. CONCRETE POURED UNDERWATER SHALL NOT EXCEED 10.0 FEET IN DEPTH UNLESS APPROVED OTHERWISE.

PILE NOTE

PIER TO BE SUPPORTED ON PILING STEEL HP 10-INCH x 42 LB. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 55'-0" LONG.*

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY DCH | PLANS CK'D. JRD

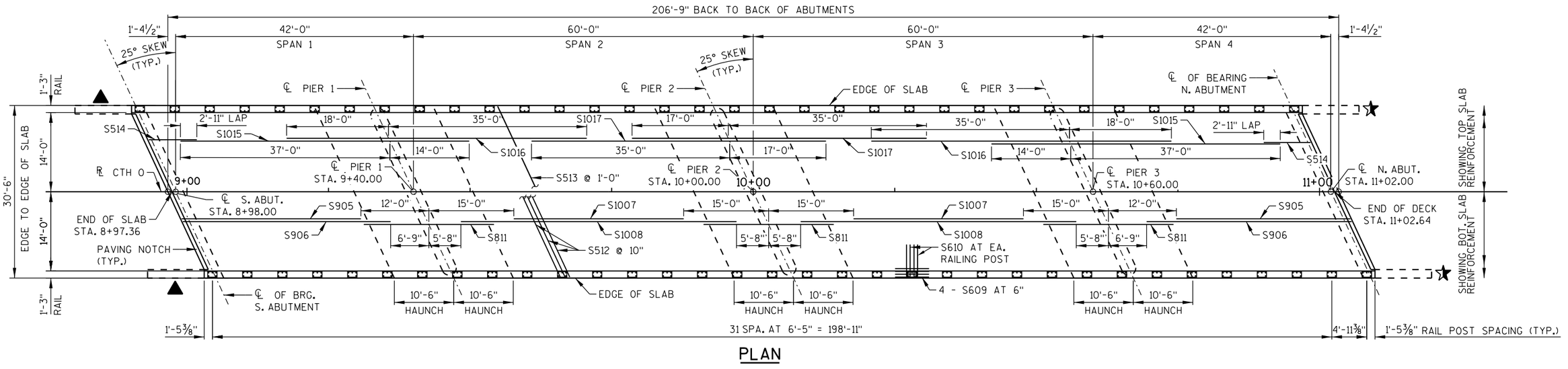
PIER 3

SHEET 12 OF 17
70

8

8

STATE PROJECT NUMBER
6664-00-70



PLAN

NOTES

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

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

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE VERTICAL AND HORIZONTAL SURFACES OF PAVING NOTCH.

LEGEND

◒ ¾" V-GROOVE REQ'D. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT.

▲ SEE SHEET 7 FOR RAIL POST SPACING ON WINGS 1 & 2.

★ SEE SHEET 9 FOR RAIL POST SPACING ON WINGS 3 & 4.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

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SUPERSTRUCTURE

SHEET 13 OF 17
71

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BATCH PRINT SHEET 13 OF 17

8

8

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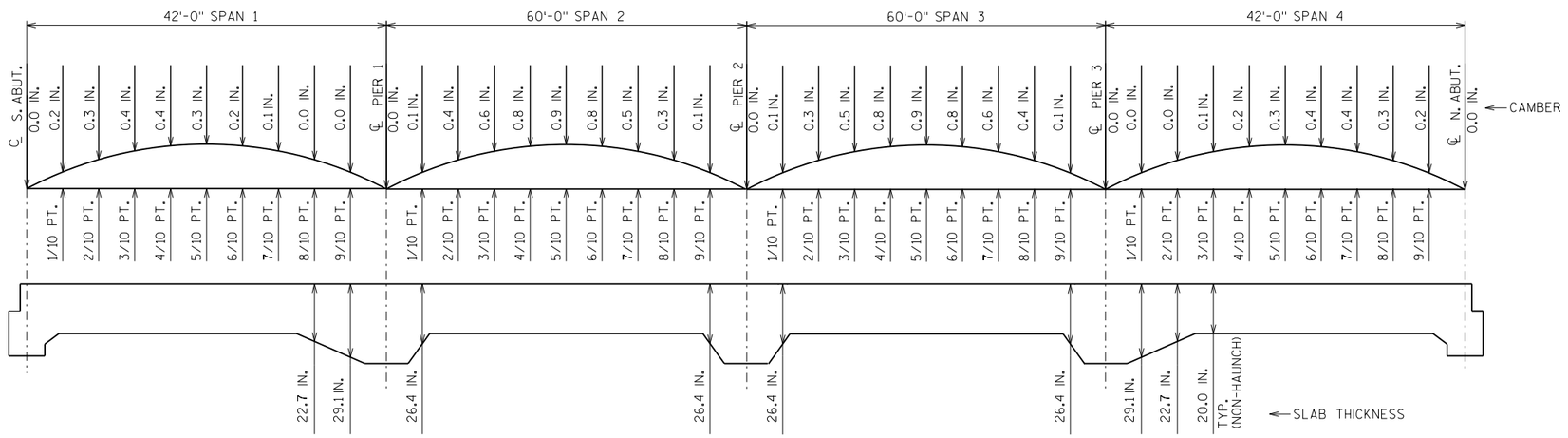

CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.
RAILING SHALL BE PLACED ON TOP OF THE SLAB AFTER FALSEWORK HAS BEEN RELEASED.

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

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

TOP OF SLAB ELEVATIONS

	CL BRG. S. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. PIER 1
WEST EDGE OF SLAB	1124.27	1124.28	1124.30	1124.31	1124.32	1124.33	1124.35	1124.36	1124.37	1124.38	1124.40
PGL	1124.60	1124.61	1124.62	1124.64	1124.65	1124.66	1124.68	1124.69	1124.70	1124.71	1124.72
EAST EDGE OF SLAB	1124.31	1124.32	1124.33	1124.35	1124.36	1124.38	1124.39	1124.40	1124.41	1124.42	1124.43

		1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. PIER 2
WEST EDGE OF SLAB		1124.41	1124.43	1124.44	1124.45	1124.46	1124.47	1124.48	1124.49	1124.49	1124.50
PGL		1124.74	1124.75	1124.76	1124.77	1124.78	1124.79	1124.80	1124.81	1124.81	1124.81
EAST EDGE OF SLAB		1124.44	1124.46	1124.47	1124.48	1124.48	1124.49	1124.50	1124.50	1124.51	1124.51

		1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. PIER 3
WEST EDGE OF SLAB		1124.50	1124.51	1124.51	1124.51	1124.51	1124.51	1124.50	1124.50	1124.50	1124.49
PGL		1124.82	1124.82	1124.82	1124.82	1124.82	1124.81	1124.81	1124.80	1124.80	1124.79
EAST EDGE OF SLAB		1124.51	1124.51	1124.51	1124.51	1124.50	1124.50	1124.49	1124.49	1124.48	1124.47

		1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. N. ABUT.
WEST EDGE OF SLAB		1124.48	1124.48	1124.47	1124.47	1124.46	1124.45	1124.44	1124.43	1124.42	1124.41
PGL		1124.78	1124.78	1124.77	1124.76	1124.75	1124.74	1124.74	1124.73	1124.72	1124.71
EAST EDGE OF SLAB		1124.46	1124.45	1124.45	1124.44	1124.43	1124.42	1124.41	1124.40	1124.39	1124.39

SURVEY TOP OF SLAB ELEVATIONS

	S. ABUTMENT	5/10 PT.	PIER 1	5/10 PT.	PIER 2	5/10 PT.	PIER 3	5/10 PT.	N. ABUTMENT
WEST EDGE OF SLAB									
CROWN OR ℄									
EAST EDGE OF SLAB									

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

NOTES

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

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY DCH | PLANS CK'D. JRD

SUPERSTRUCTURE DETAILS 1

SHEET 14 OF 17
72

8

8

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STATE PROJECT NUMBER
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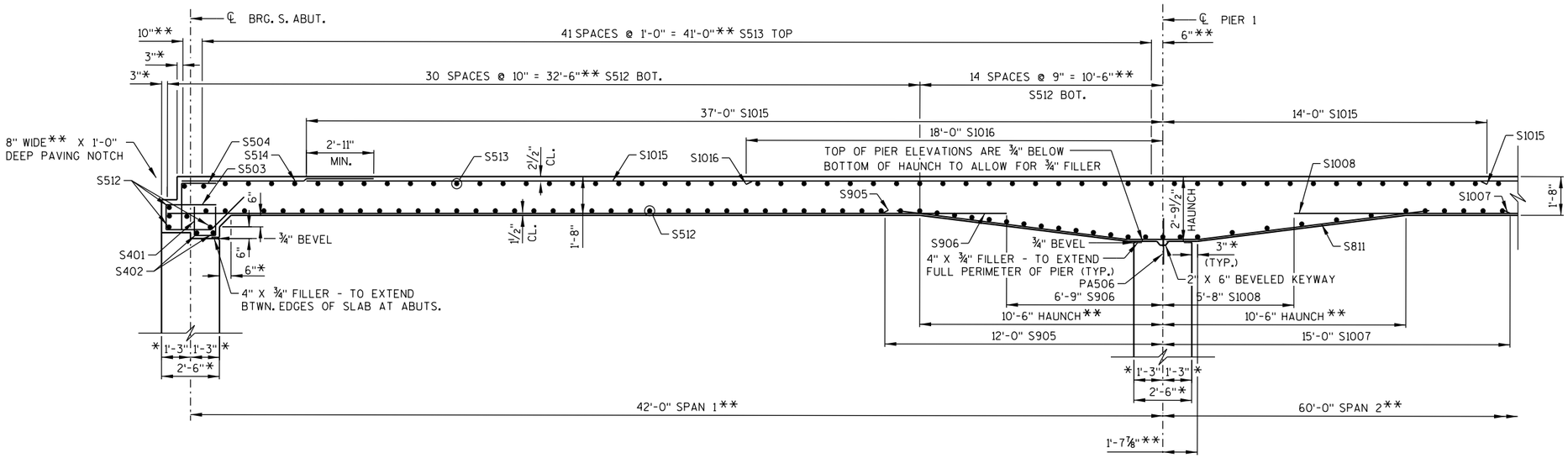
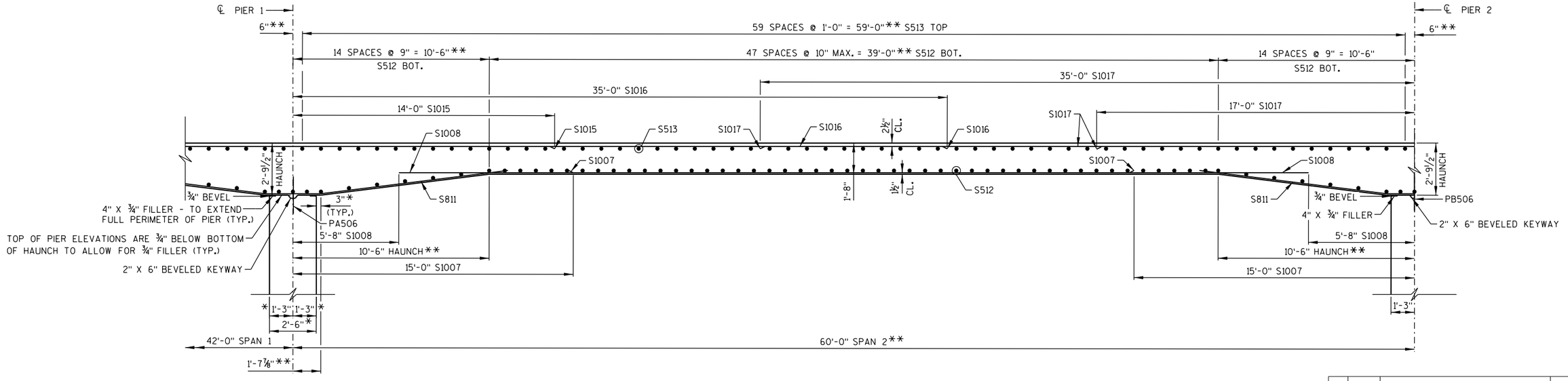


PART LONGITUDINAL SECTION - SPAN 1

(SPAN 4 SIMILAR)



PART LONGITUDINAL SECTION - SPAN 2

(SPAN 3 SIMILAR)

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHEET 6.

* DIMENSION MEASURED NORMAL TO SUBSTRUCTURE UNIT.

** DIMENSION MEASURED ALONG ℄ CTH O.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY DCH | PLANS CK'D. JRD

SUPERSTRUCTURE DETAILS 2

SHEET 15 OF 17
73

8

8

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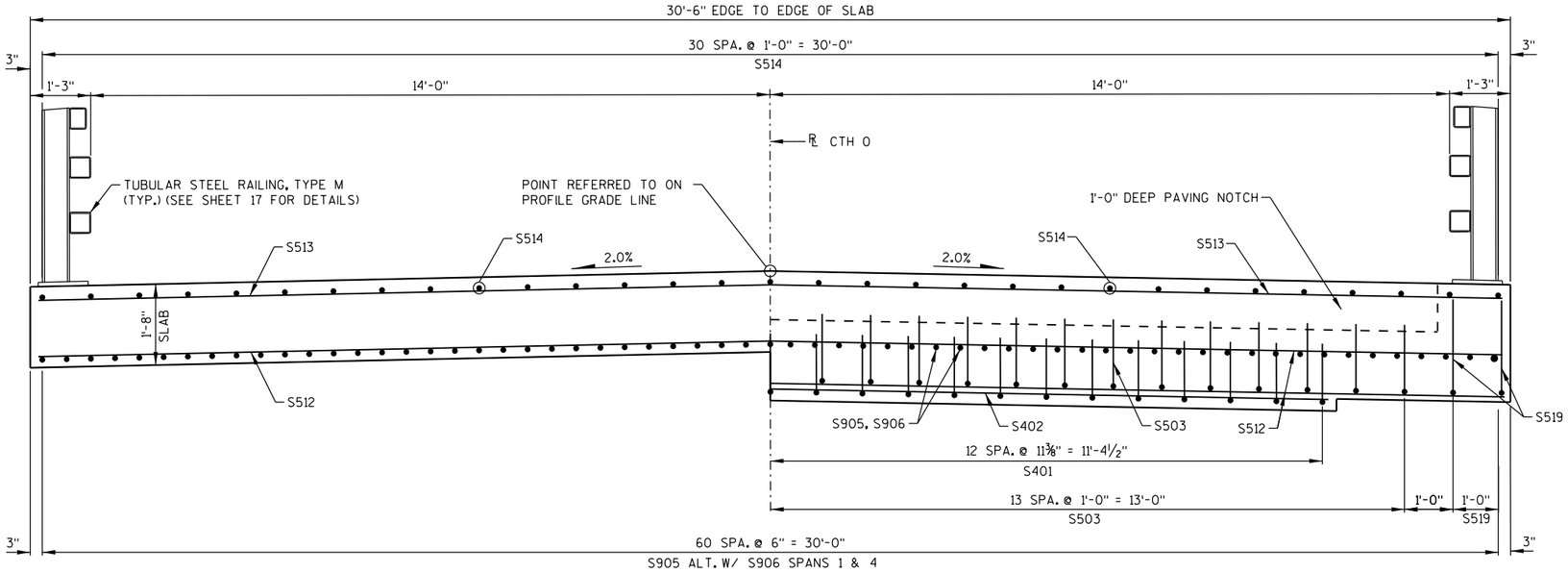


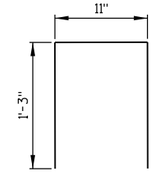
SPANS 1 & 4 AT ABUTMENT

CROSS SECTION THRU BRIDGE

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
COATED BARS						TOTAL WEIGHT = 103,100 LBS
S401	62	3 - 3	X		SLAB - AT ABUTMENT NOTCH	VERT.
S402	4	26 - 0			SLAB - AT ABUTMENT NOTCH	TRANS.
S503	54	8 - 2	X		SLAB - AT ABUTMENT NOTCH	VERT.
S504	62	3 - 5	X		SLAB - AT ABUTMENT NOTCH	VERT.
S905	62	31 - 3			SLAB BOTTOM - SPANS 1 & 4	LONGIT.
S906	60	36 - 6			SLAB BOTTOM - SPANS 1 & 4	LONGIT.
S1007	62	30 - 0			SLAB BOTTOM - SPANS 2 & 3	LONGIT.
S1008	60	48 - 8			SLAB BOTTOM - SPANS 2 & 3	LONGIT.
S609	16	4 - 8	X		SLAB CORNERS - RAIL POSTS	LONGIT.
S610	132	11 - 8	X		SLAB - RAIL POSTS	TRANS.
S811	93	23 - 0	X		SLAB BOTTOM - PIERS 1, 2, & 3 HAUNCH	LONGIT.
S512	247	33 - 4			SLAB BOTTOM	TRANS.
S513	204	33 - 4			SLAB TOP	TRANS.
S514	62	8 - 5			SLAB TOP - SPANS 1 & 4	LONGIT.
S1015	62	51 - 0			SLAB TOP - PIERS 1 & 3	LONGIT.
S1016	60	53 - 0			SLAB TOP - PIERS 1 & 3	LONGIT.
S1017	61	52 - 0			SLAB TOP - PIER 2	LONGIT.
S618	248	6 - 0			SLAB - RAIL POSTS	LONGIT.
S519	8	9 - 2	X		SLAB - CORNERS	VERT.



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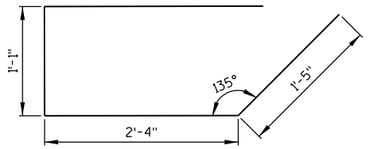

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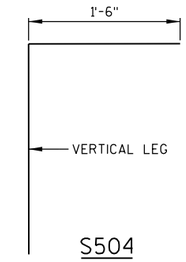

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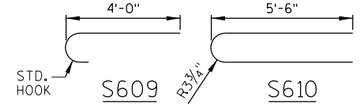
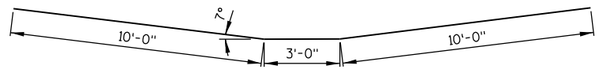
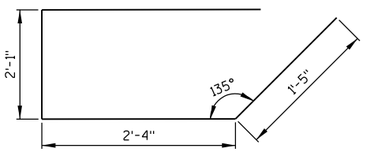


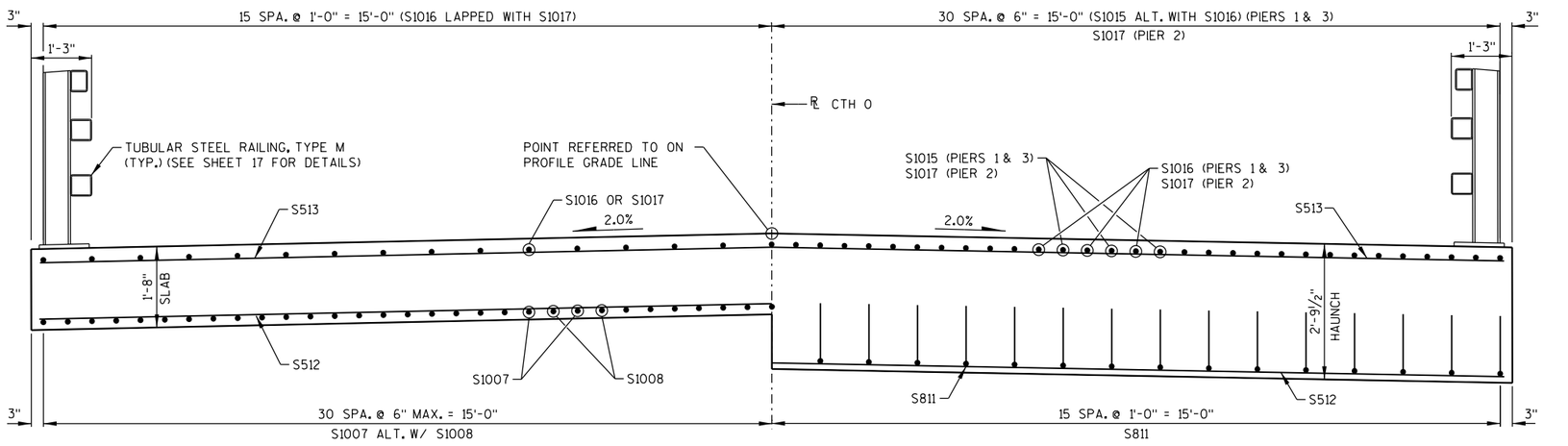
S609 S610



S811



S519



SPANS 2 & 3 AT PIER 1, 2 & 3

CROSS SECTION THRU BRIDGE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY	DCH	PLANS CK'D.	JRD

SUPERSTRUCTURE DETAILS 3

SHEET 16 OF 17
74

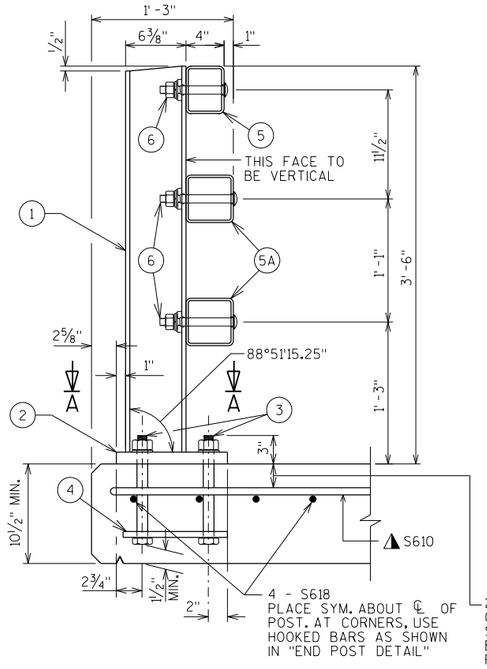
8

8

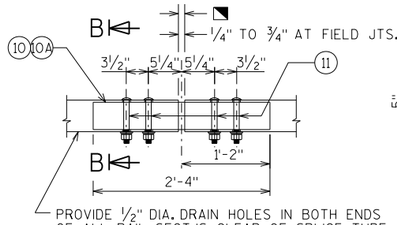
PRINTER DRIVER: C:\ProgramData\Bentley\MicroStation CONNECT Edition\Configuration\WorkSpaces\WisDOT Bridge MP Ver A\WorkSets\WisDOT Bridge\Plotdrv\AE_PDF.11 x 17.plt
PEN TABLE: C:\ProgramData\Bentley\MicroStation CONNECT Edition\Configuration\WorkSpaces\WisDOT Bridge MP Ver A\WorkSets\WisDOT Bridge\Pen Tables\AE.WisDOT_Structure.tbl
FILE NAME: C:\OneDrive\RECOM\60646519 - CTH Q, Marathon County - 0.Records\400_Technical\408_Struct\02.Plans-Quant.Barlist\17.B-37-465.ral.mdgn
PLOT DATE: 6/22/2023 PLOT TIME: 6:14:23 PM BATCH PRINT SHEET 17 OF 17

STATE PROJECT NUMBER

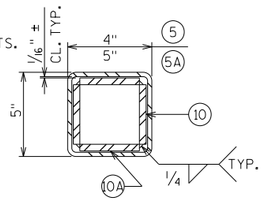
6664-00-70



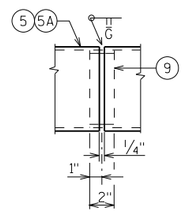
SECTION THRU RAILING ON DECK



FIELD ERECTION JOINT DETAIL

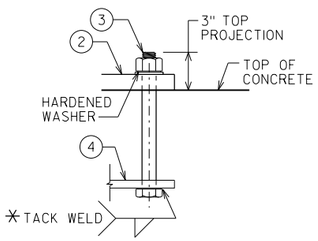


SECTION B-B

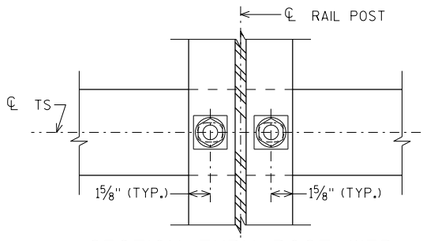


SHOP RAIL SPLICE DETAIL

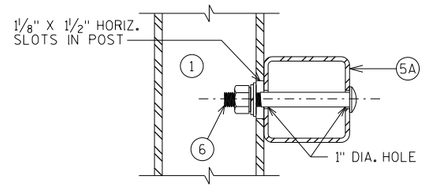
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



ANCHOR BOLTS



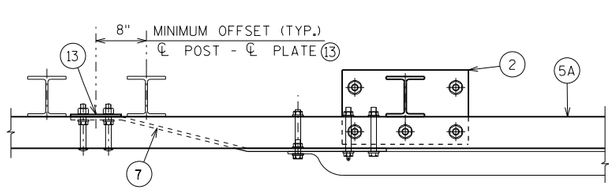
SECTION THRU POST WEB



SECTION THRU RAIL

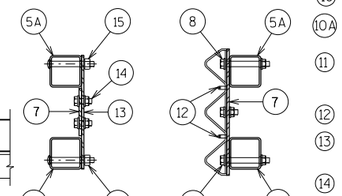
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT



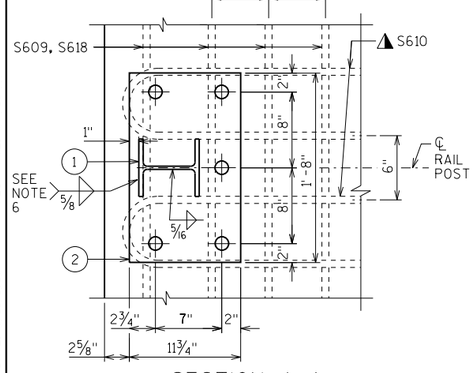
SECTION C-C SECTION D-D

LEGEND

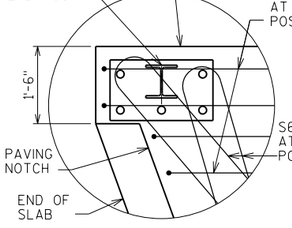
1. W6 x 25 WITH 1 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1 1/4" x 11 3/4" x 1'-8" WITH 1 7/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.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

GENERAL NOTES

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

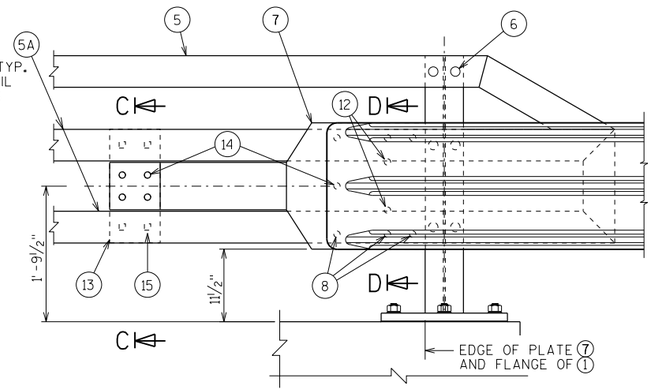


SECTION A-A



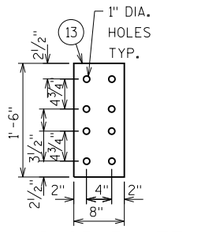
END POST DETAIL

REINFORCEMENT AT CORNERS



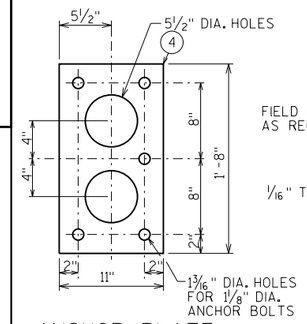
DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



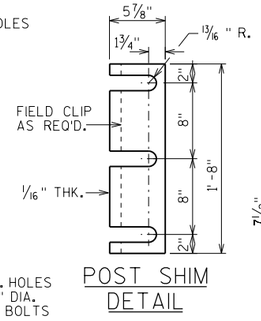
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT

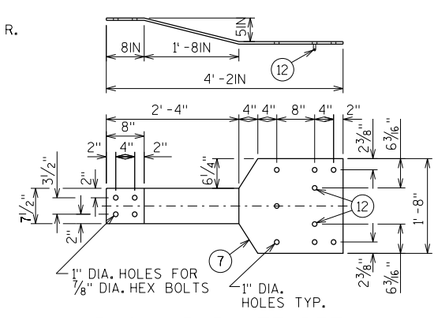


ANCHOR PLATE

AT RAIL TO DECK CONNECTION

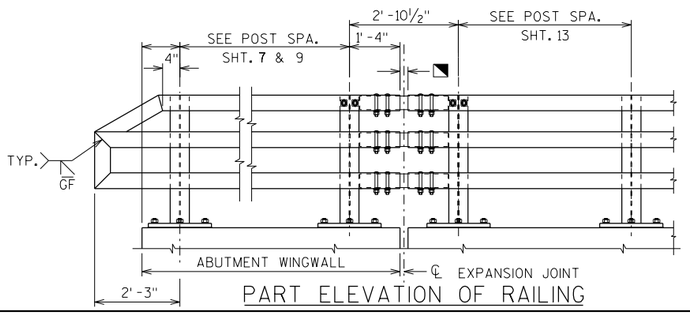


POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

▲ TIE TO TOP MAT OF STEEL.

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

◥ RDWY. OPENING OR 2 1/2" MIN. FOR STRIP SEAL EXP. JOINT & (1/4" TO 3/4") OPENING FOR A1 ABUTMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-465

DRAWN BY	DCH	PLANS CK'D.	JRD

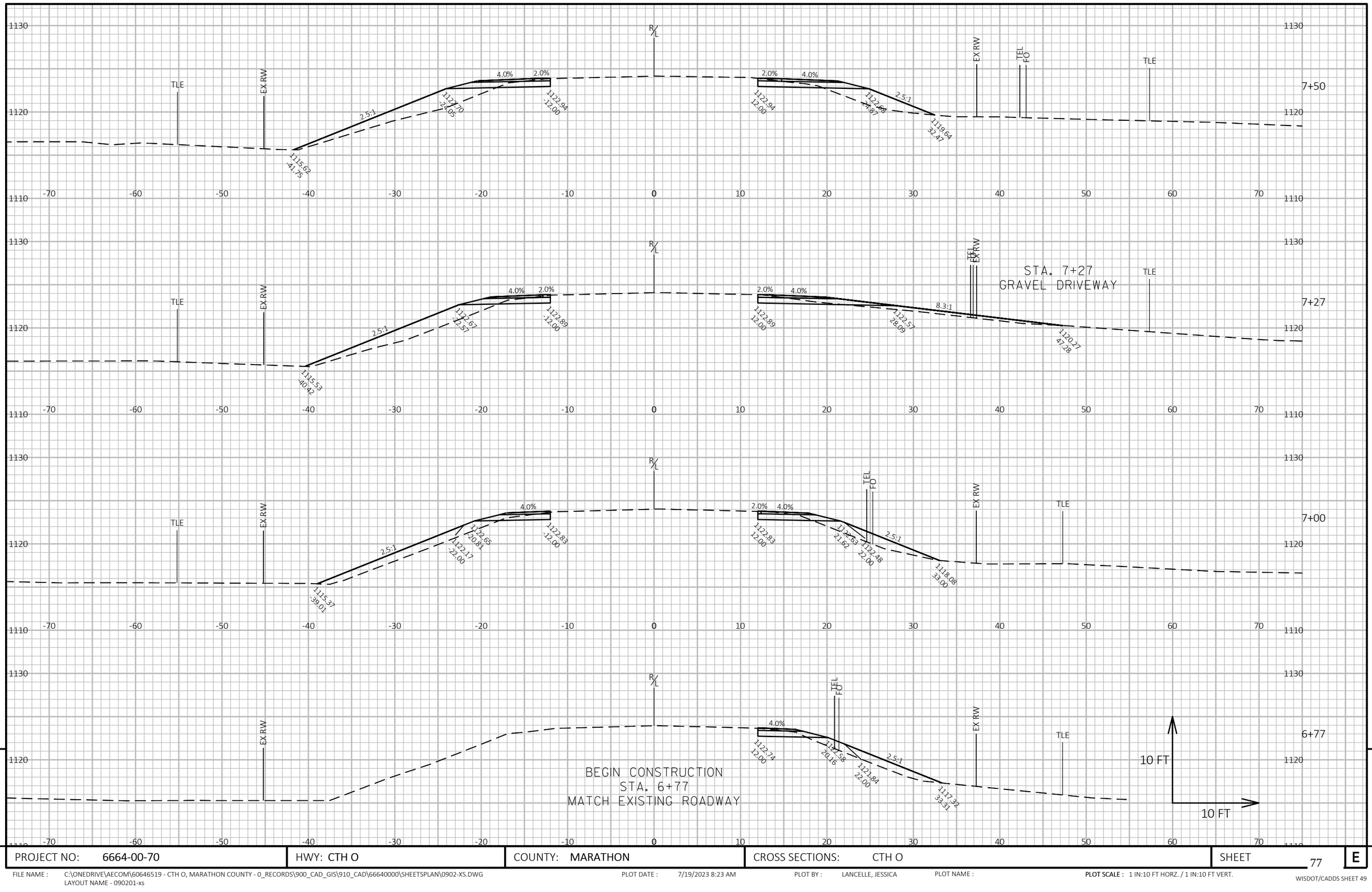
TUBULAR STEEL RAILING TYPE 'M'

SHEET 17 OF 17
75

8

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
									1.00	1.25	
						NOTE 1	NOTE 2	NOTE 3	NOTE 1		NOTE 8
6+76.63	676.63	0.00	3.56	0.00	15.75	0	0	0	0	0	0
7+00.00	700.00	23.37	7.24	0.00	33.95	5	0	22	5	28	-23
7+25.00	725.00	25.00	8.26	0.00	25.40	7	0	27	12	61	-49
7+50.00	750.00	25.00	8.12	0.00	38.85	8	0	30	20	99	-79
7+75.00	775.00	25.00	8.57	0.00	63.44	8	0	47	28	158	-130
7+76.01	776.01	1.01	8.60	0.00	64.23	0	0	2	28	160	-132
7+88.13	788.13	12.12	9.00	0.00	66.86	4	0	29	32	196	-164
8+00.00	800.00	11.87	33.32	0.00	45.96	9	0	25	41	228	-187
8+25.00	825.00	25.00	33.35	0.00	14.33	31	0	28	72	263	-191
8+29.00	829.00	4.00	32.86	0.00	12.88	5	0	2	77	265	-188
8+41.19	841.19	12.19	31.30	0.00	9.40	14	0	5	91	271	-180
8+50.00	850.00	8.81	30.34	0.00	8.36	10	0	3	101	275	-174
8+54.14	854.14	4.14	29.12	0.00	8.95	5	0	1	106	276	-170
8+75.00	875.00	20.86	22.58	0.00	12.78	20	0	8	126	286	-160
8+90.79	890.79	15.79	42.43	0.00	8.94	19	0	6	145	294	-149
9+00.00	900.00	9.21	9.62	0.00	0.37	9	0	2	154	296	-142
11+00.00	1100.00	0.00	15.39	0.00	0.00	0	0	0	154	296	-142
11+25.00	1125.00	25.00	21.18	0.00	11.76	17	0	5	171	303	-132
11+45.86	1145.86	20.86	24.86	0.00	10.23	18	0	8	189	313	-124
11+50.00	1150.00	4.14	25.50	0.00	12.38	4	0	2	193	315	-122
11+75.00	1175.00	25.00	28.73	0.00	18.91	25	0	14	218	333	-115
12+00.00	1200.00	25.00	31.74	0.00	39.83	28	0	27	246	366	-120
12+08.36	1208.36	8.36	8.85	0.00	51.47	6	0	14	252	384	-132
12+11.81	1211.81	3.45	8.86	0.00	55.63	1	0	7	253	393	-140
12+25.00	1225.00	13.19	8.93	0.00	56.63	4	0	27	257	426	-169
12+50.00	1250.00	25.00	8.94	0.00	60.31	8	0	54	265	494	-229
12+61.49	1261.49	11.49	8.83	0.00	63.39	4	0	26	269	526	-257
12+75.00	1275.00	13.51	8.44	0.00	53.50	4	0	29	273	563	-290
13+00.00	1300.00	25.00	7.93	0.00	36.82	8	0	42	281	615	-334
13+03.35	1303.35	3.35	7.89	0.00	35.03	1	0	4	282	620	-338
13+25.00	1325.00	21.65	5.03	0.00	11.89	5	0	19	287	644	-357
13+49.78	1349.78	24.78	4.76	0.00	7.00	4	0	9	291	655	-364

Note 1: Mass Ordinate = Cut - Fill



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9

PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	CROSS SECTIONS: CTH O	SHEET 77	E

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LAYOUT NAME - 090201-xs

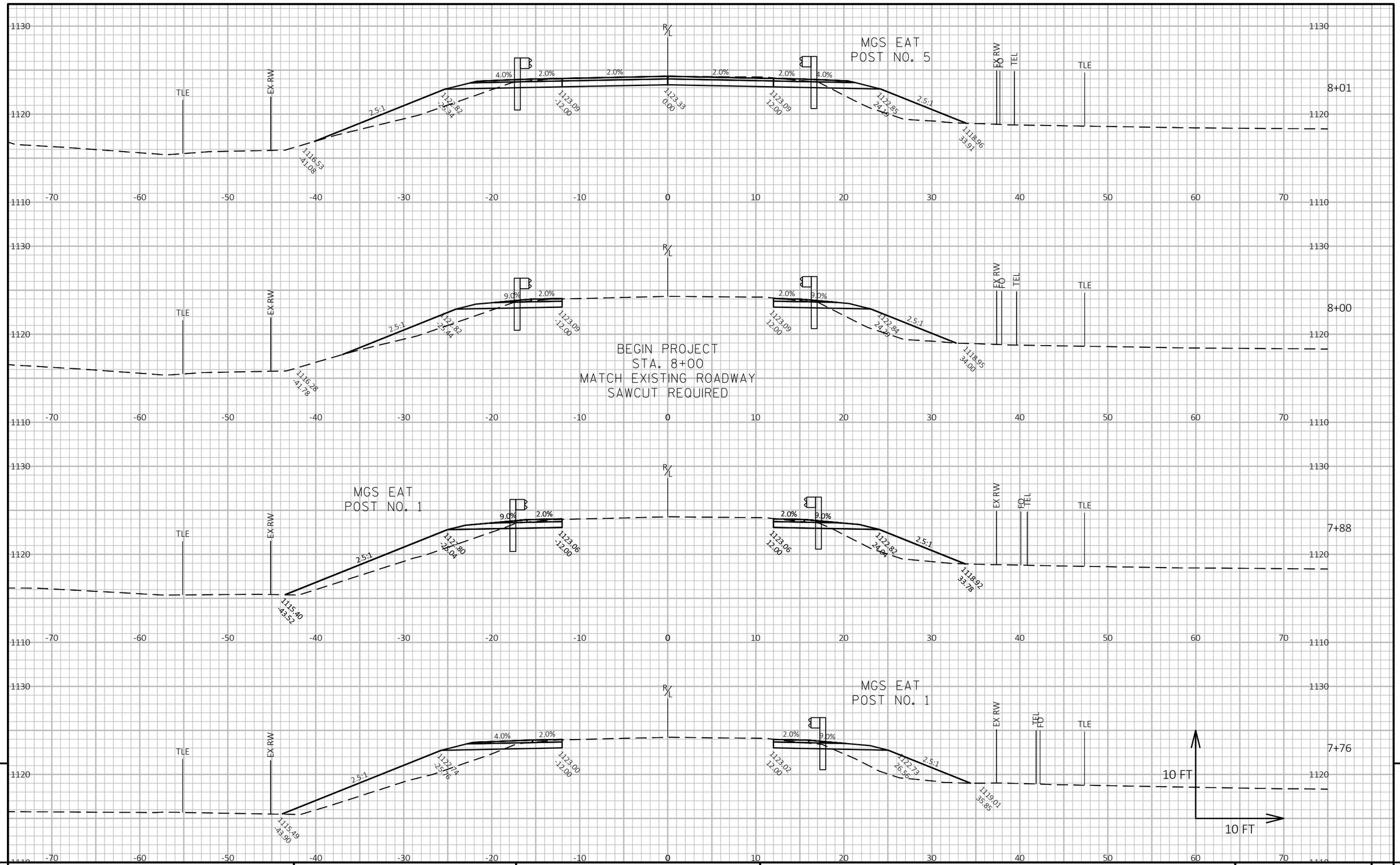
PLOT DATE : 7/19/2023 8:23 AM

PLOT BY : LANCELLE, JESSICA

PLOT NAME :

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

WISDOT/CADDS SHEET 49



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PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	CROSS SECTIONS: CTH O	SHEET 78	E

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LAYOUT NAME - 090202-xs

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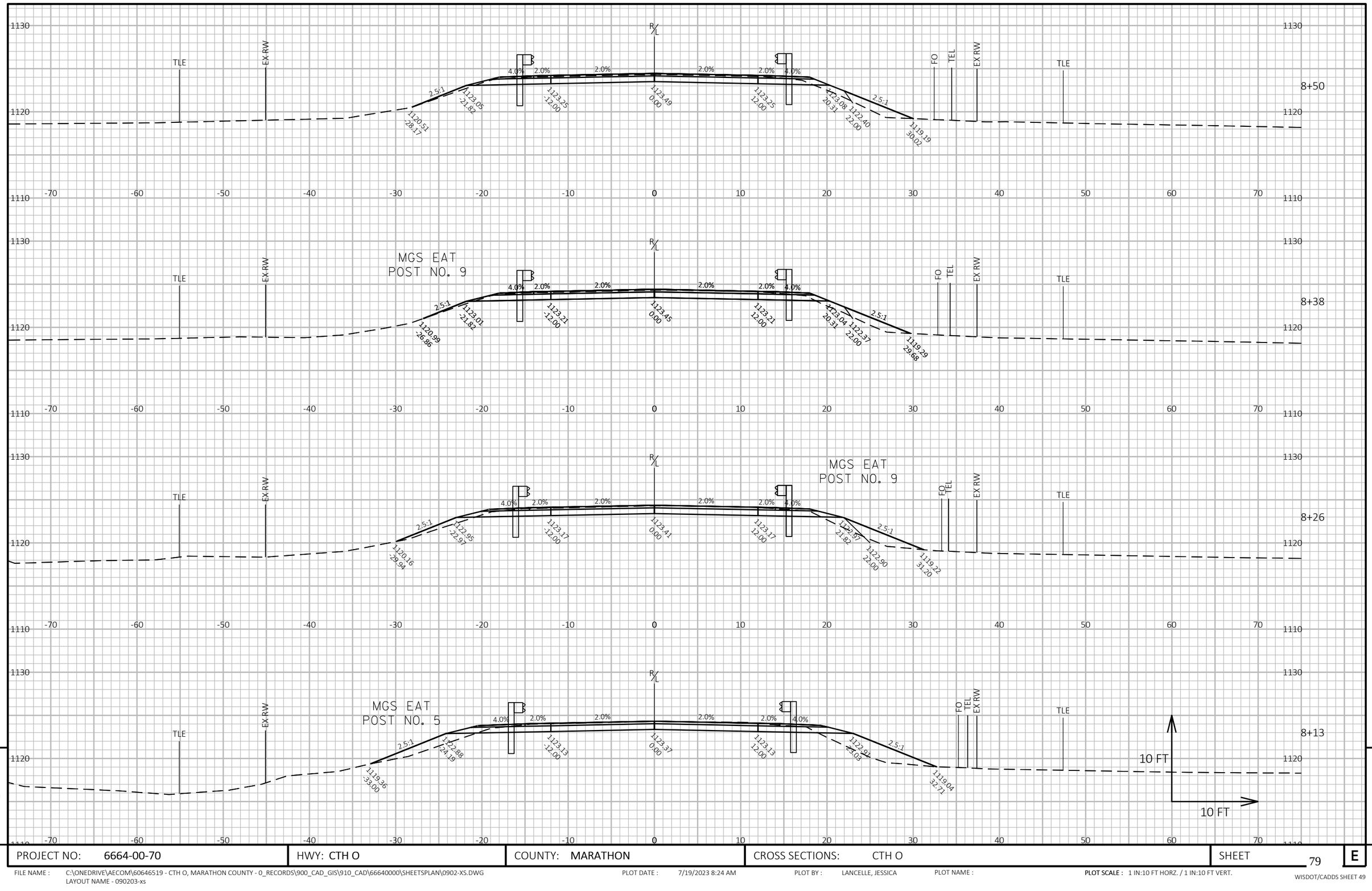
WISDOT/CADDS SHEET 49



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PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	CROSS SECTIONS: CTH O	SHEET 79	E

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LAYOUT NAME - 090203-xs

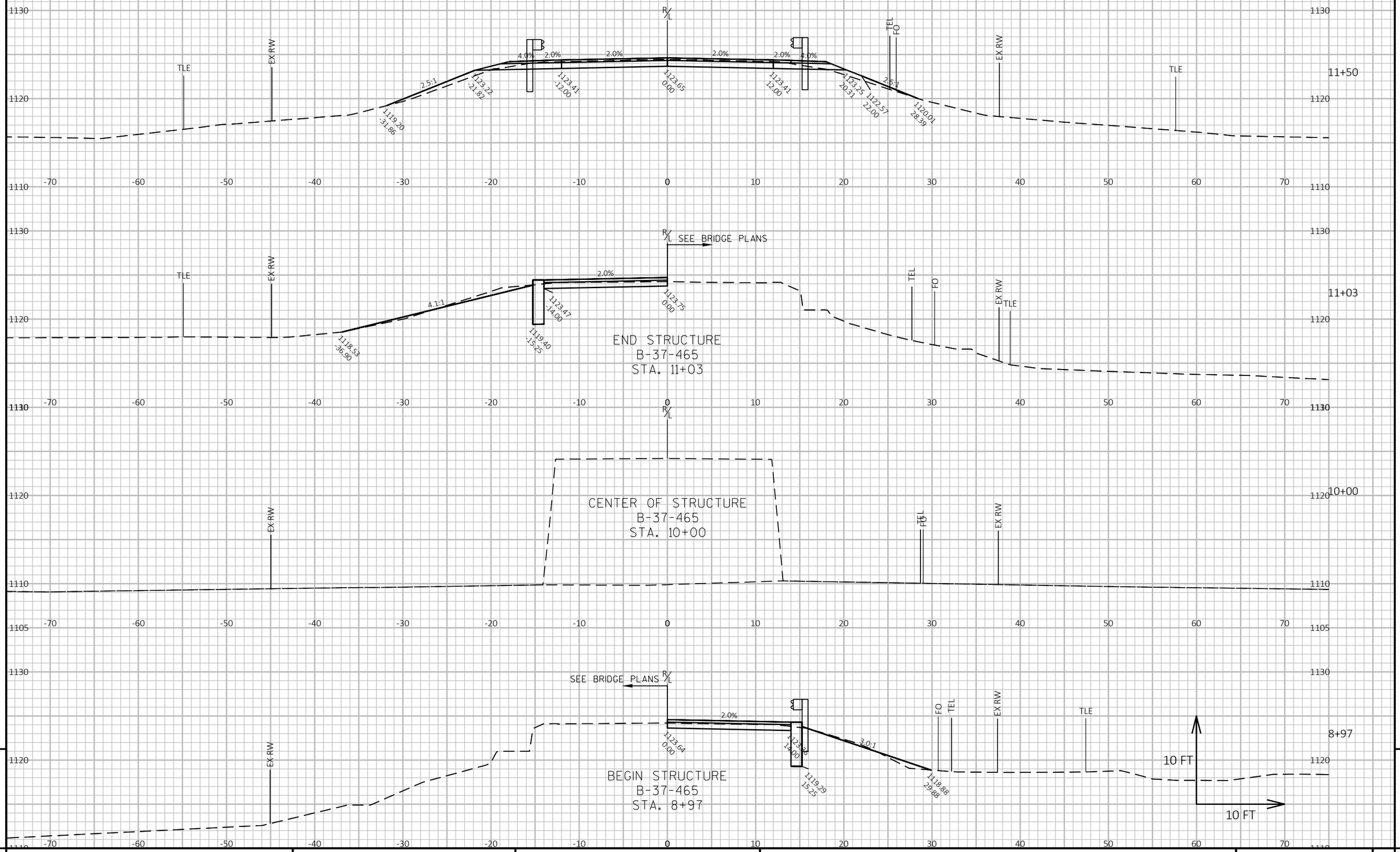
PLOT DATE : 7/19/2023 8:24 AM

PLOT BY : LANCELLE, JESSICA

PLOT NAME :

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

WISDOT/CADDS SHEET 49



PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	CROSS SECTIONS: CTH O	SHEET 80	E

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LAYOUT NAME - 090204-xs

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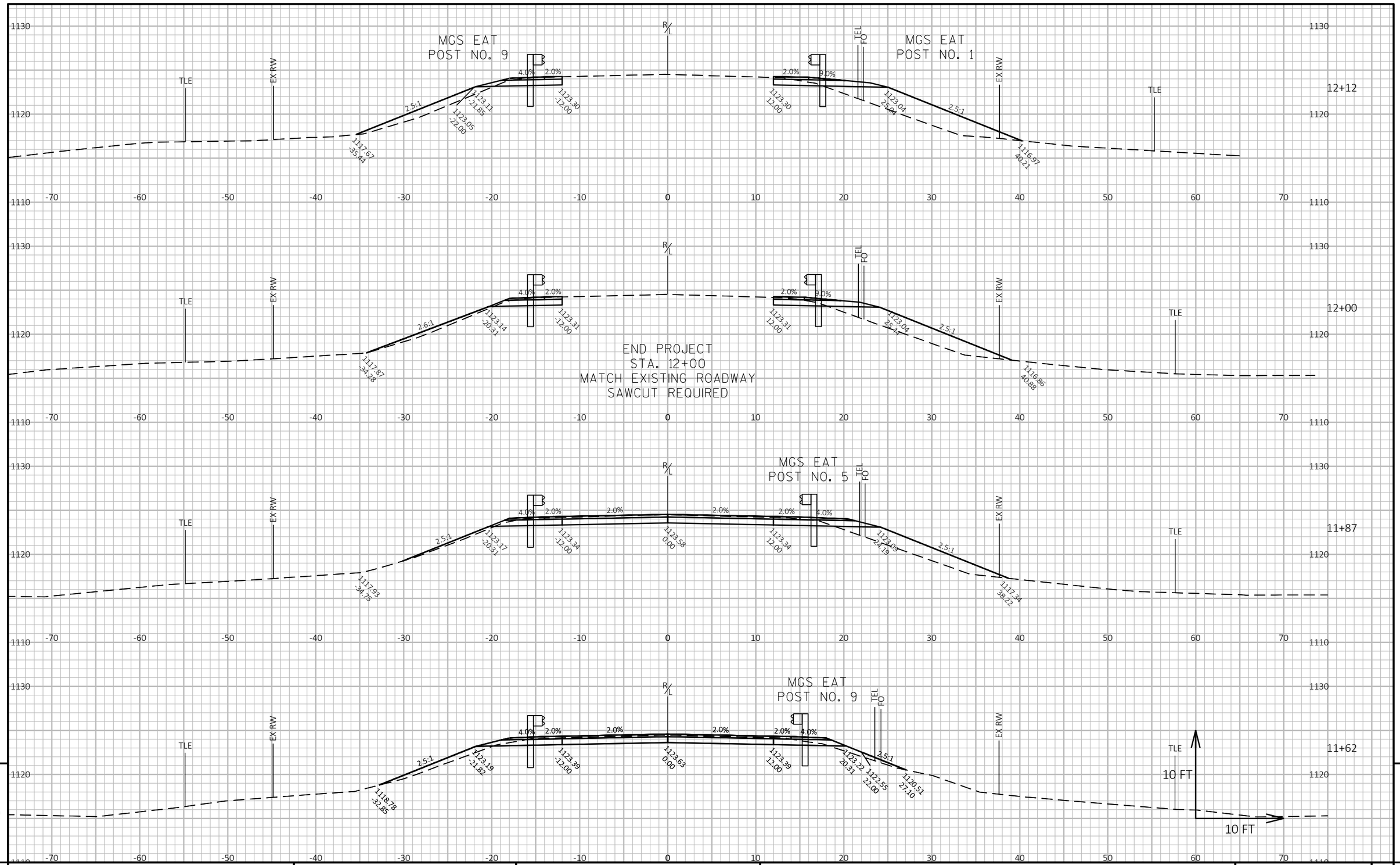
WISDOT/CADDS SHEET 49



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PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	CROSS SECTIONS: CTH O	SHEET 81	E

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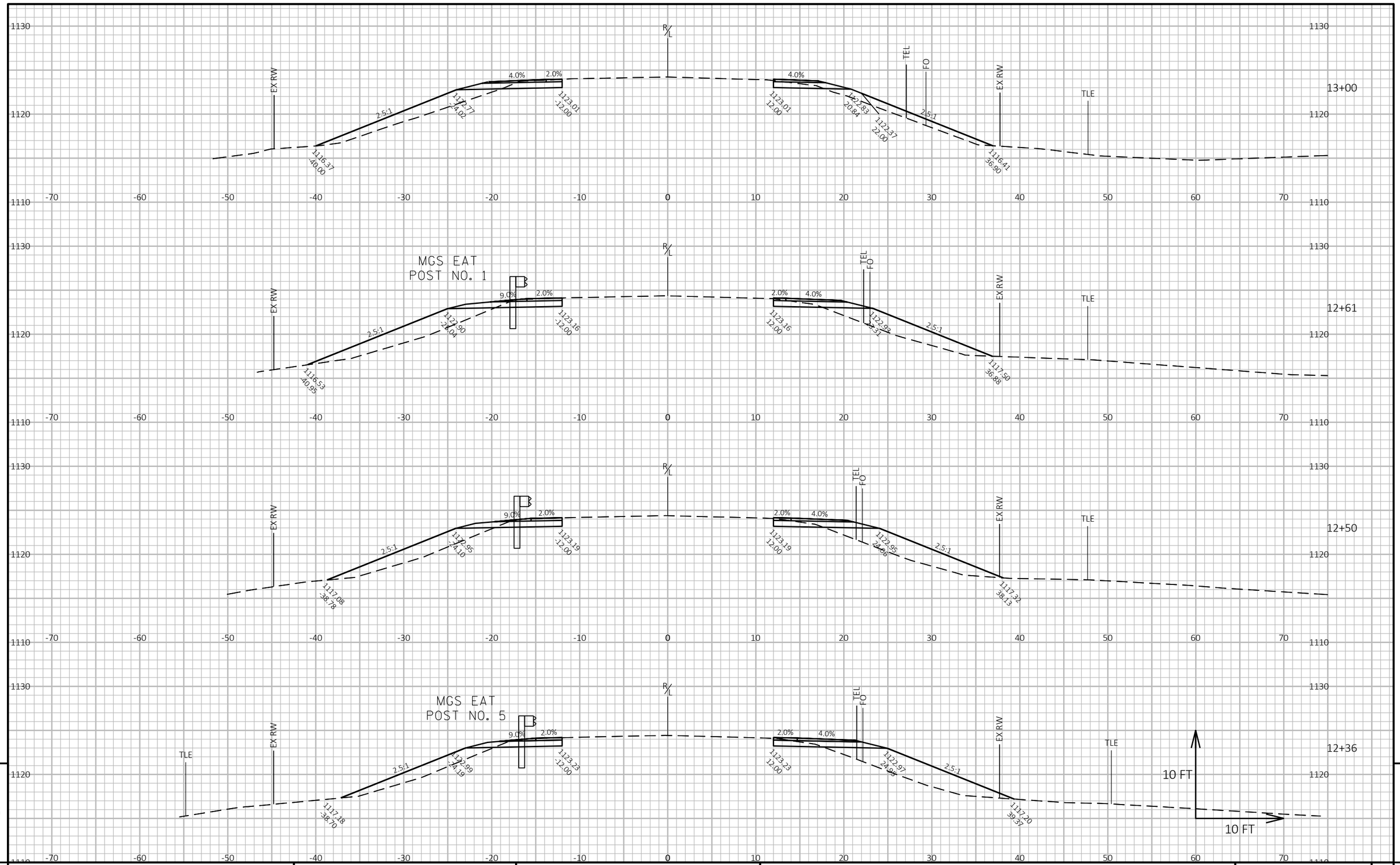
LAYOUT NAME - 090205-xs

PLOT DATE : 7/19/2023 8:24 AM PLOT BY : LANCELLE, JESSICA PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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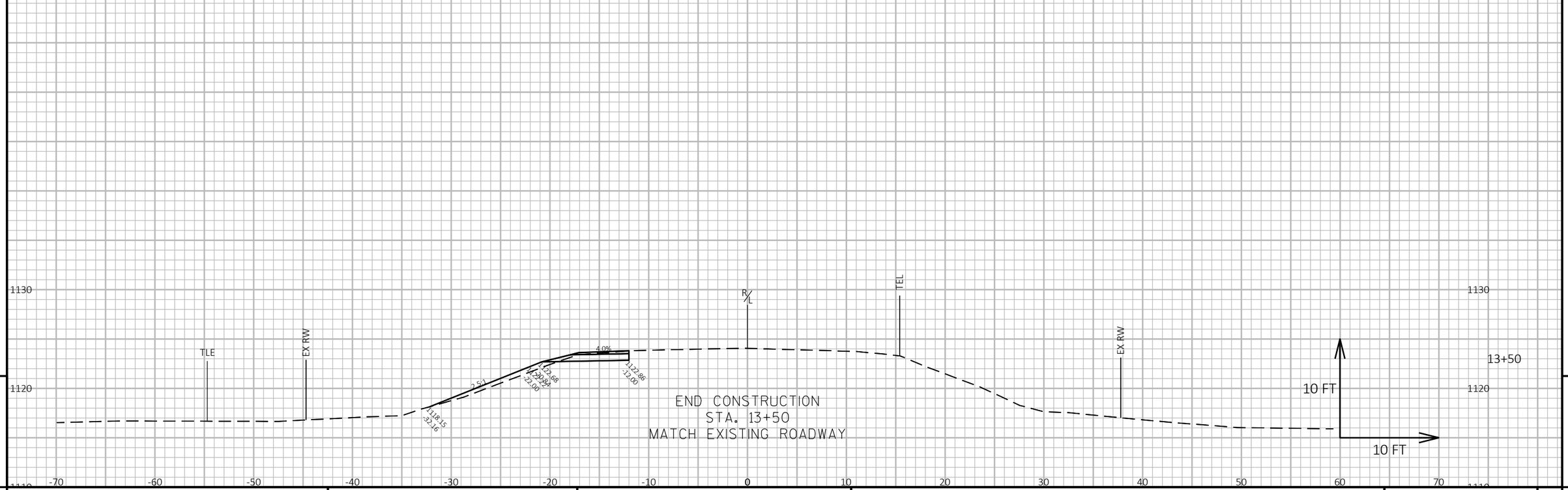
PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	CROSS SECTIONS: CTH O	SHEET 82	E

FILE NAME : C:\ONEDRIVE\AECOM\60646519 - CTH O, MARATHON COUNTY - 0_RECORDS\900_CAD_GIS\910_CAD\66640000\SHEETSPLAN\0902-XS.DWG
LAYOUT NAME - 090206-xs

PLOT DATE : 7/19/2023 8:24 AM PLOT BY : LANCELLE, JESSICA PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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9

PROJECT NO: 6664-00-70	HWY: CTH O	COUNTY: MARATHON	CROSS SECTIONS: CTH O	SHEET 83	E

FILE NAME : C:\ONEDRIVE\AECOM\60646519 - CTH O, MARATHON COUNTY - 0_RECORDS\900_CAD_GIS\910_CAD\66640000\SHEETSPLAN\0902-XS.DWG
LAYOUT NAME - 090207-xs

PLOT DATE : 7/19/2023 8:24 AM PLOT BY : LANCELLE, JESSICA PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

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Wisconsin Department of Transportation

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