GRE

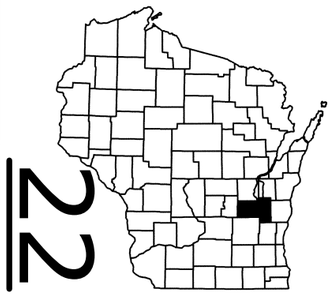
PROJECT ID: 6187-06-71

COUNTY: FOND DU LAC

MAY 2025

ORDER OF SHEETS

TOTAL SHEETS = 74



N

DESIGN DESIGNATION

A.A.D.T.	2025	=	570
A.A.D.T.	2045	=	630
D.H.V.		=	50
D.D.		=	62/38
T.		=	10.0%
DESIGN SPEED		=	60 MPH
ESALS		=	124,100 (HMA)

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

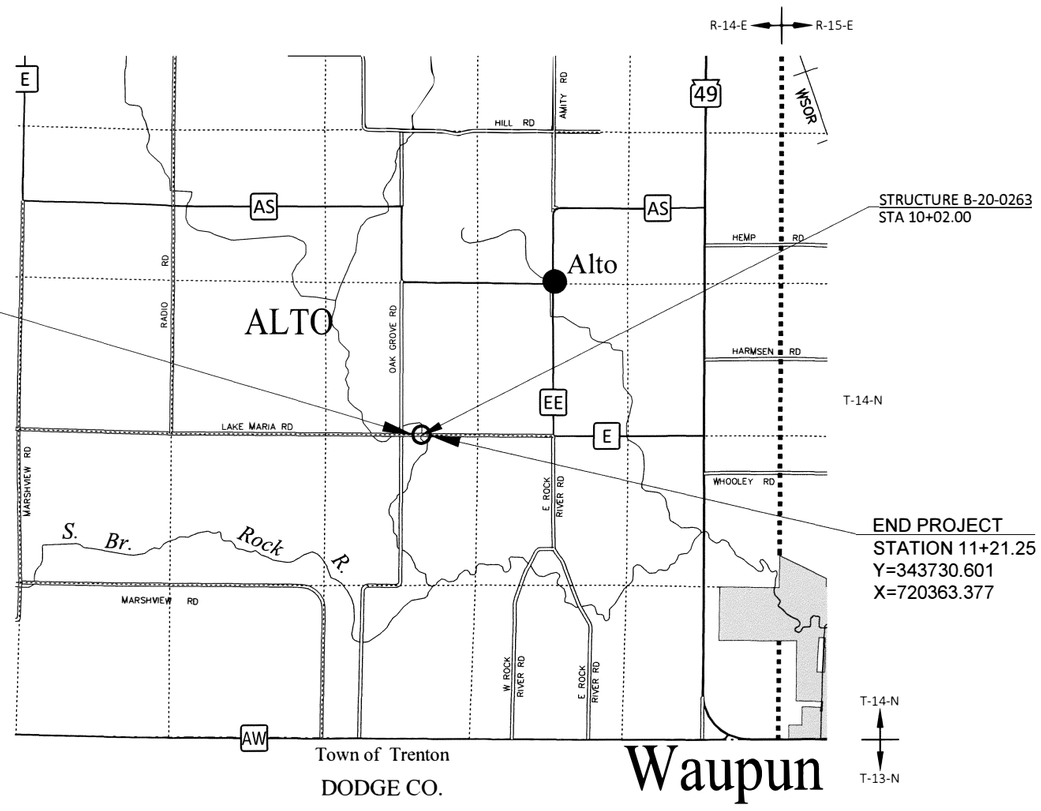
T ALTO, LAKE MARIA ROAD

SOUTH BRANCH ROCK RIVER BRIDGE

LOC STR

FOND DU LAC COUNTY

STATE PROJECT NUMBER
6187-06-71



BEGIN PROJECT
STATION 8+82.75
Y=343731.733
X=720124.880

STRUCTURE B-20-0263
STA 10+02.00

END PROJECT
STATION 11+21.25
Y=343730.601
X=720363.377

LAYOUT

SCALE 0 — 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.045

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

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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6187-06-71	WISC 2025474	1

ACCEPTED FOR

TOWN OF ALTO

Date 1/21/2025

RICHARD R. GUENTHER, JR.
TOWN CHAIRPERSON

ORIGINAL PLANS PREPARED BY

GREMMER & ASSOCIATES, INC.
CONSULTING ENGINEERS
Stevens Point • Fond du Lac
93 South Pioneer Road, Suite 300
Fond du Lac, WI 54935
(920) 924-5720

WISCONSIN
ANDREW L. KLEMP
E-33645
FOND DU LAC, WI
PROFESSIONAL ENGINEER

DATE: 1/20/2025

ANDREW L. KLEMP, PE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	GREMMER & ASSOCIATES, INC.
Designer	GREMMER & ASSOCIATES, INC.
Project Manager	KATIE SCHWARTZ
Regional Examiner	NORTHEAST REGION
Regional Supervisor	KIMBERLY SLEZAK

APPROVED FOR THE DEPARTMENT

DATE: 1/23/2025

(Signature)

E

GENERAL NOTES

ALL DISTANCES AND STATIONING SHOWN ON THIS PLAN ARE GROUND VALUES.

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.

A VERTICAL SAW CUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS, SIDEWALKS AND PAVEMENTS AT THE REMOVAL LIMITS, AND WHERE NEW ASPHALT ABUTS EXISTING PAVEMENT TO CREATE A SMOOTH CONTINUOUS VERTICAL FACE. SAWCUT SLURRY SHALL BE ACTIVELY MANAGED TO PREVENT RELEASE OF SLURRY INTO WATERWAY AND WETLANDS.

SAWCUT LOCATIONS SHOWN ON THE PLANS ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD.

SECTIONS AS SHOWN ON THE CROSS-SECTIONS INCLUDE THE THICKNESS OF TOPSOIL WHERE REQUIRED.

PLACE 4.0" ASPHALTIC SURFACE IN TWO LAYERS OF THE FOLLOWING THICKNESSES:

UPPER LAYER THICKNESS = 1.75"	NOMINAL GRADATION SIZE = 12.5 MM
LOWER LAYER THICKNESS = 2.25"	NOMINAL GRADATION SIZE = 19.0 MM

ASPHALTIC SURFACE WEIGHT CALCULATIONS ARE BASED ON 112 LBS/SY-INCH.

TACK COAT APPLICATION RATE BASED ON 0.050 GAL/SY.

DO NOT DRIVE OR STORE EQUIPMENT, OR STORE CONSTRUCTION MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS, FLOODPLAINS, OR WATERWAYS.

PRIOR TO PLACEMENT OF BEAM GUARD THE SHOULDERS SHALL BE IN PLACE, SHAPED, AND COMPACTED.

ORDER OF SECTION 2 SHEETS

ABBREVIATIONS

A.A.D.T.	ANNUAL AVERAGE DAILY TRAFFIC
A.D.T.	AVERAGE DAILY TRAFFIC
AE, AEW	APRON ENDWALL
AGG	AGGREGATE
ASPH	ASPHALT
BAD	BASE AGGREGATE DENSE
BM	BENCHMARK
CABC	CRUSHED AGGREGATE BASE COURSE
CC	CENTER OF CURVATURE
CE	COMMERCIAL ENTRANCE
C/L	CENTER LINE
CONC	CONCRETE
CMCP	CORRUGATED METAL CULVERT PIPE
CMP	CORRUGATED METAL PIPE
D	DEGREE OF CURVE
Δ	DELTA
D.H.V.	DESIGN HOURLY VOLUME
E	EXTERNAL DISTANCE FROM MIDPOINT OF CIRCULAR CURVE FROM ANGLE INTERSECTION
EL, ELEV	ELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC	EXCAVATION
FE	FIELD ENTRANCE
F/L, FL	FLOW LINE
HT	HEIGHT
INTER	INTERSECTION
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
MP	MARKER POST
NC	NORMAL CROWN
NOM	NOMINAL
NOR, NORM	NORMAL
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
P.L.	PROPERTY LINE
PLE	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
RO	RUN OFF LENGTH
SALV	SALVAGED
SDD	STANDARD DETAIL DRAWING(S)
SE	SUPERELEVATION
SEG	SEGMENT
SHLD	SHOULDER
S/L	SURVEY LINE
T.	PERCENT TRUCKS
T	TANGENT LENGTH
TEMP	TEMPORARY
TER	TERRACE
TLE	TEMPORARY LIMITED EASEMENT
TYP	TYPICAL
V	VELOCITY OR DESIGN SPEED
VAR	VARIABLE
VC	VERTICAL CURVE
VCL	VERTICAL CURVE LENGTH
VPC	VERTICAL POINT OF CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPRC	VERTICAL POINT OF REVERSE CURVATURE
VPT	VERTICAL POINT OF TANGENCY

DESIGN CONTACT

GREMMER & ASSOCIATES, INC.
93 S. PIONEER ROAD, SUITE 300
FOND DU LAC, WI 54935
ATTN: ANDREW KLEMP, PE
PHONE: (920) 924-5720
EMAIL: a.klemp@gremmerassociates.com

DNR AREA LIAISON

WISCONSIN DEPT. OF NATURAL RESOURCES
NORTHEAST REGION HQ
2984 SHAWANO AVENUE
GREEN BAY, WI 54313-6727
ATTN: MARTY DILLENBURG
PHONE: (920)-360-3784
EMAIL: Marty.Dillenburg@wisconsin.gov

WISDOT CONTACT

WISCONSIN DEPARTMENT OF TRANSPORTATION
NORTHEAST REGION
944 VANDERPERREN WAY
GREEN BAY, WI 54304
ATTN: KATIE SCHWARTZ
PHONE: (920) 492-5652
EMAIL: katiea.schwartz@dot.wi.gov

UTILITIES

ELECTRIC

ALLIANT ENERGY CORPORATION
883 WEST SCOTT STREET
FOND DU LAC, WI 54937
PHONE: (920) 322-6719
ATTN: BILL BASTIAN
EMAIL: williambastian@alliantenergy.com

COMMUNICATIONS

BRIGHTSPEED
144 N. PEARL STREET
BERLIN, WI 54923
PHONE: (608) 716-5964
ATTN: SCOTT HEINZELMAN
EMAIL: scott.heinzelman@brightspeed.com

COMMUNICATIONS

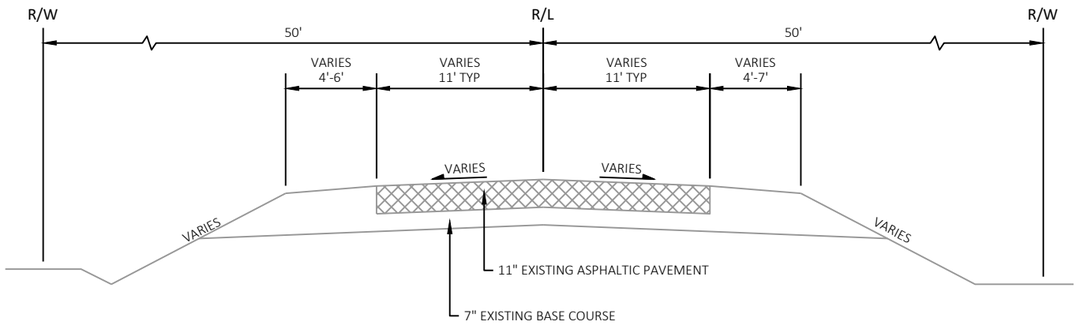
SPECTRUM
165 KNIGHTS WAY
FOND DU LAC, WI 54935
PHONE: (262) 402-9528
ATTN: DON EWALD
EMAIL: donald.ewald@charter.com

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

RUNOFF COEFFICIENT TABLE

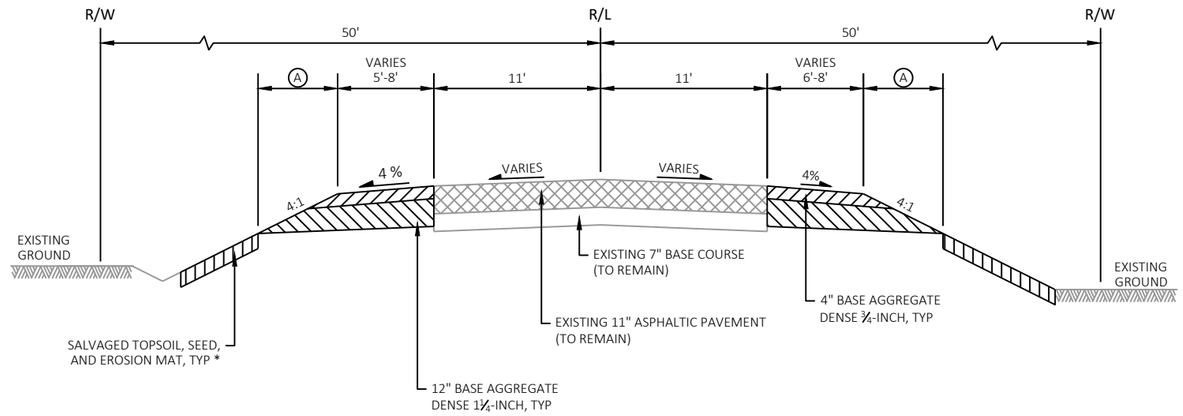
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .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			.25 .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 = 0.980 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.787 ACRES



TYPICAL EXISTING SECTION

LAKE MARIA ROAD
STA 7+49.84 - STA 9+86.04
STA 10+13.96 - STA 12+78.31



TYPICAL FINISHED SECTION

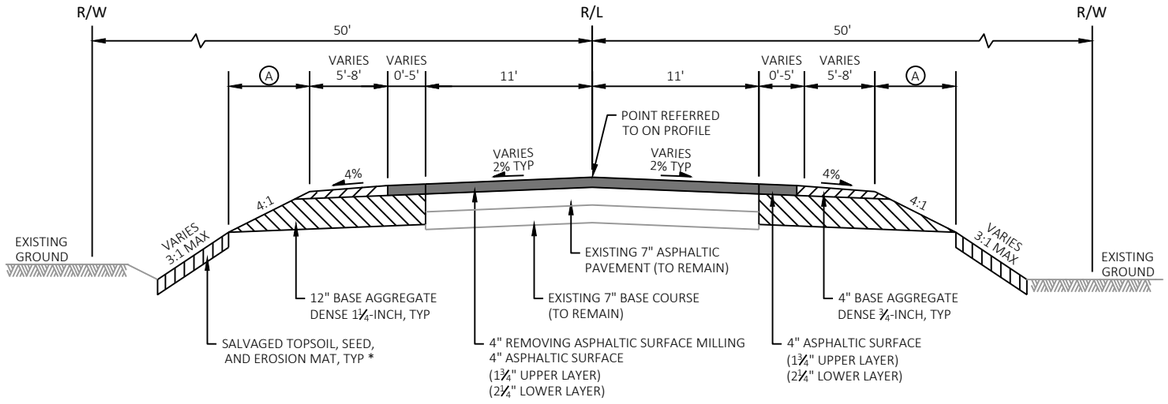
LAKE MARIA ROAD (SHOULDER GRADING)
STA 7+49.84 - STA 7+68.71, RT
STA 12+35.29 - STA 12+78.31, LT

NOTES:

(A) SEEDING

* SEE MISCELLANEOUS QUANTITIES AND EROSION CONTROL PLANS FOR LOCATIONS AND TYPES.

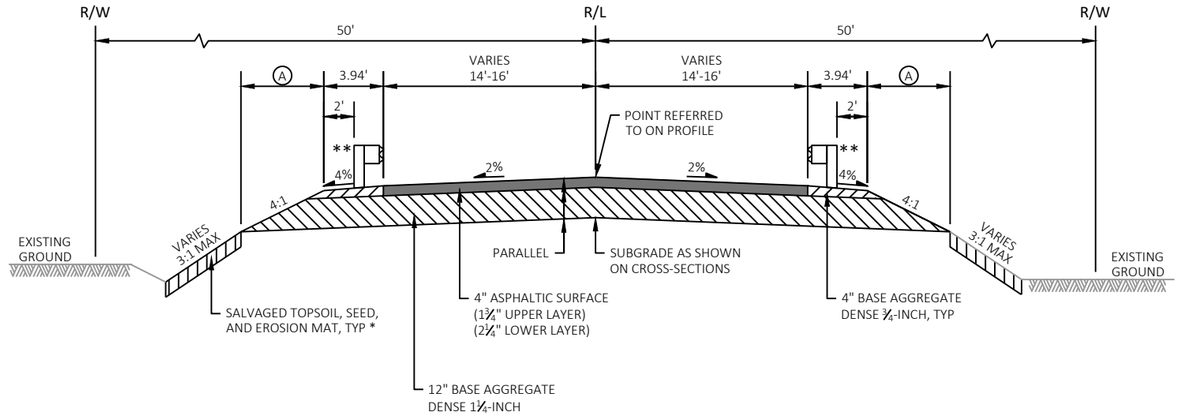
** SEE CONSTRUCTION DETAILS FOR BEAM GUARD LOCATIONS.



TYPICAL FINISHED SECTION

LAKE MARIA ROAD (PAVEMENT REPLACEMENT)
STA 7+68.71 - STA 8+82.75
STA 11+21.25 - STA 12+35.29

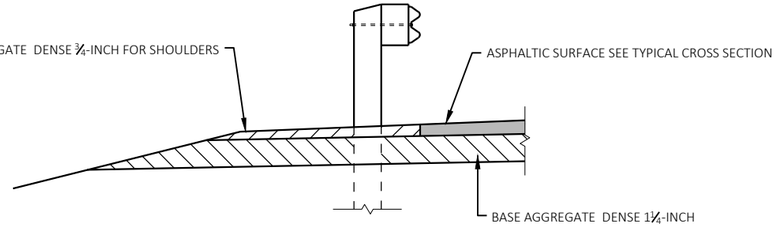
PAVEMENT SLOPE TABLE		
STATION	LT	RT
7+68.71	-2%	-3%
7+75.00	-2%	-3%
8+00.00	-2%	-2%
12+00.00	-2%	-2%
12+25.00	-1%	-2%
12+35.29	-1%	-2%

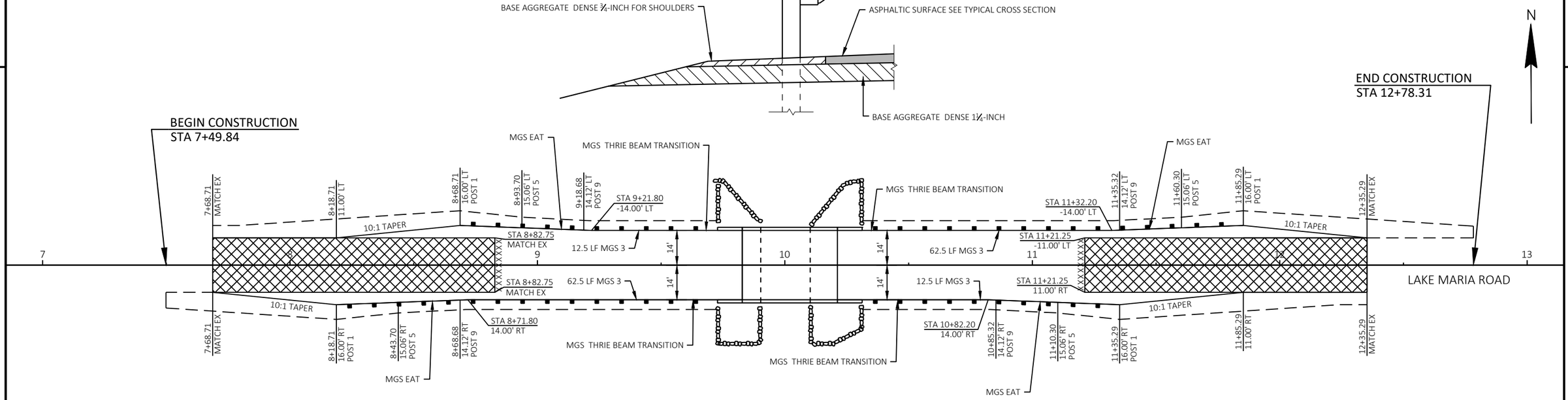


TYPICAL FINISHED SECTION

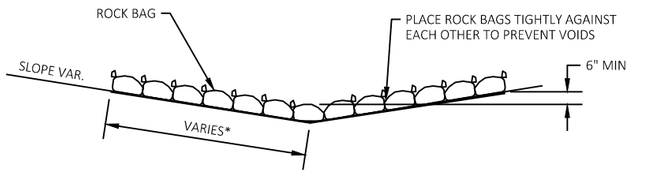
LAKE MARIA ROAD (RECONSTRUCT)
STA 8+82.75 - STA 9+82.75
STA 10+21.25 - STA 11+21.25

PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	TYPICAL SECTIONS	SHEET 3	E

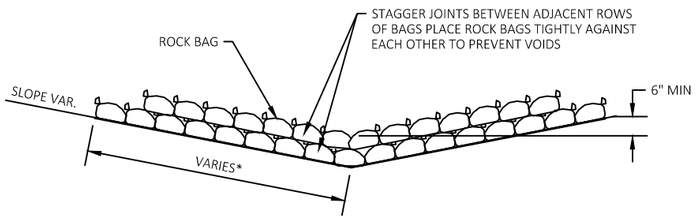




DETAIL FOR ASPHALTIC SHOULDER AT GUARDRAIL



SIDE VIEW (SINGLE LAYER)

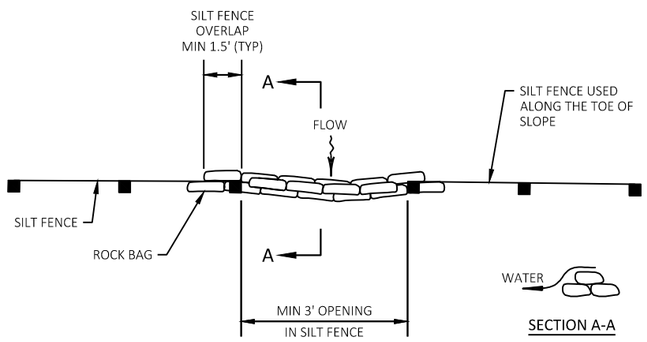


* LENGTH AND NUMBER OF BAGS MAY VARY DEPENDING ON DESIRED DEPTH OF WATER POOL

SIDE VIEW (MULTIPLE LAYER)

ROCK BAGS DITCH CHECK

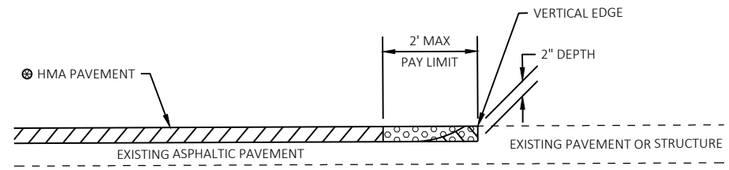
PAID AS ROCK BAGS



TOP VIEW

SECTION A-A

ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL



⊛ SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

REMOVING ASPHALTIC SURFACE, MILLING

REMOVING ASPHALTIC SURFACE, BUTT JOINTS

REMOVE ASPHALTIC SURFACE WEDGE AT BUTT JOINT TO CREATE VERTICAL EDGE

BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)

PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	CONSTRUCTION DETAILS	SHEET 4	E

FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-021001-CD.DWG
LAYOUT NAME - Sheet-01
PLOT DATE : 3/11/2025 1:31 PM PLOT BY : AARON SARAUER PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

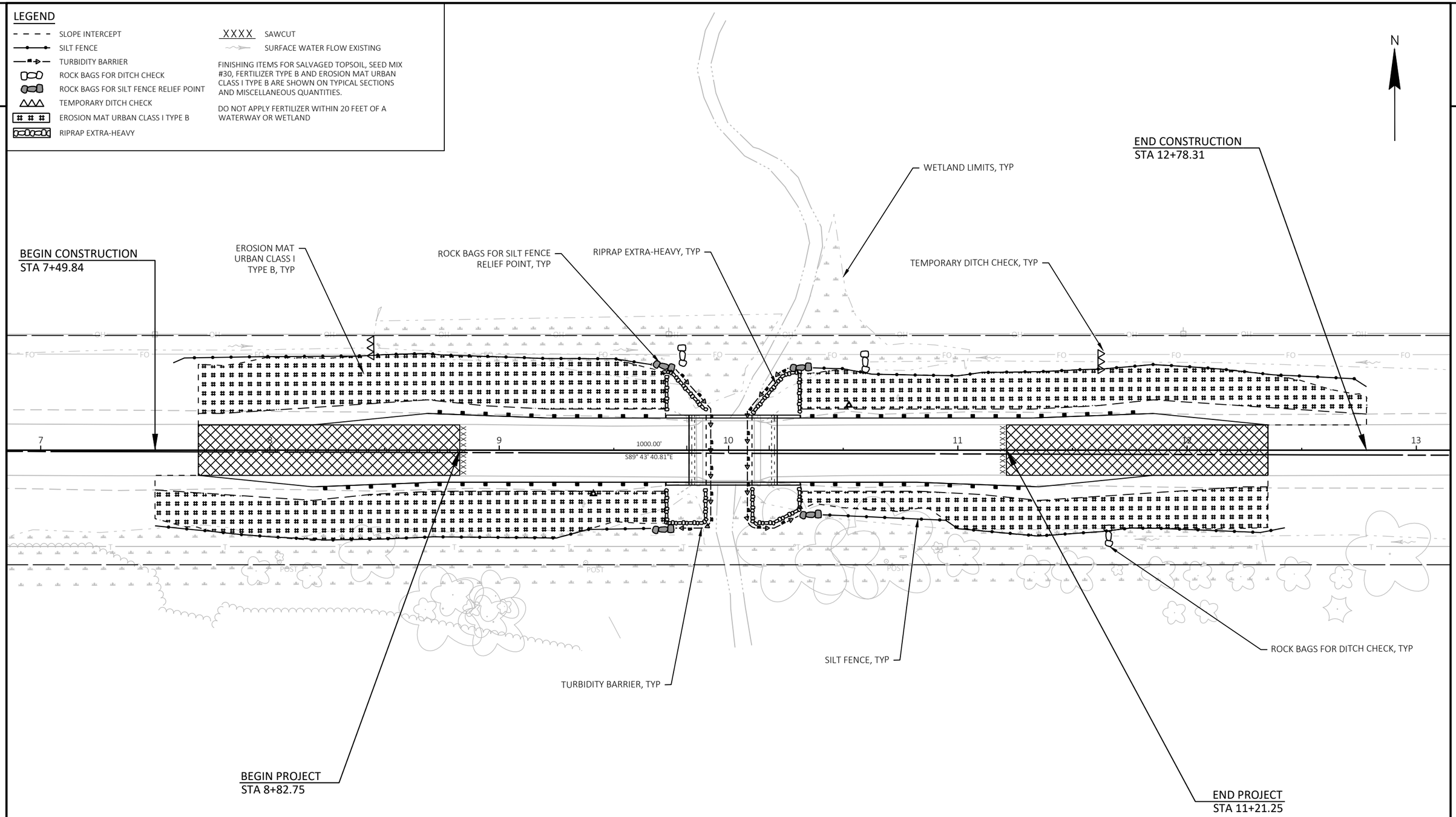
2

LEGEND

- SLOPE INTERCEPT
- SILT FENCE
- TURBIDITY BARRIER
- ROCK BAGS FOR DITCH CHECK
- ROCK BAGS FOR SILT FENCE RELIEF POINT
- TEMPORARY DITCH CHECK
- EROSION MAT URBAN CLASS I TYPE B
- RIPRAP EXTRA-HEAVY
- XXXX SAWCUT
- SURFACE WATER FLOW EXISTING

FINISHING ITEMS FOR SALVAGED TOPSOIL, SEED MIX #30, FERTILIZER TYPE B AND EROSION MAT URBAN CLASS I TYPE B ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

DO NOT APPLY FERTILIZER WITHIN 20 FEET OF A WATERWAY OR WETLAND



PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	EROSION CONTROL PLAN	SHEET 5	E

FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-022001-EC.DWG
LAYOUT NAME - Sheet-01
PLOT DATE : 3/10/2025 12:56 PM PLOT BY : KEITH LUECK PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

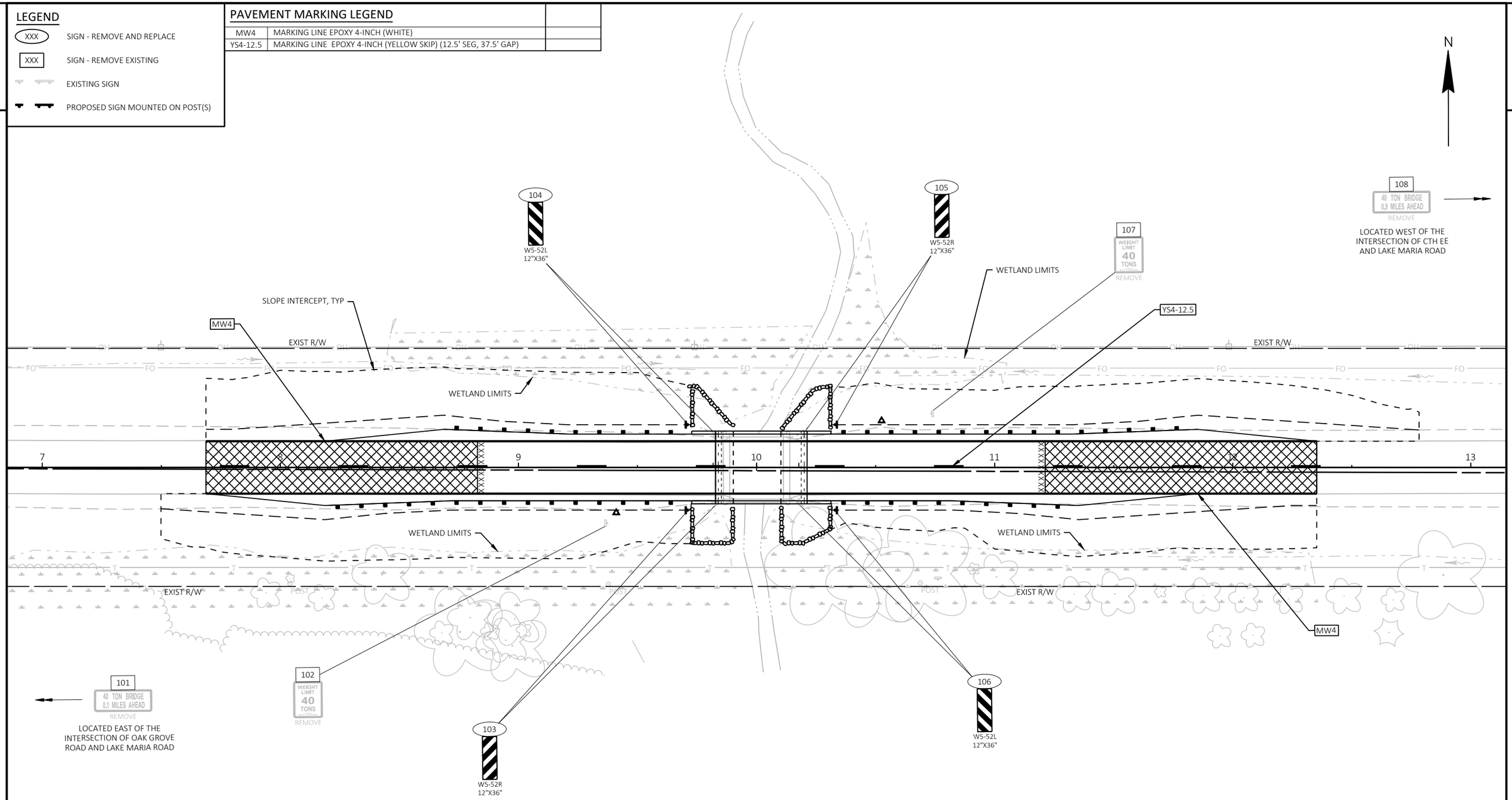
2

LEGEND

- XXX — SIGN - REMOVE AND REPLACE
- XXX — SIGN - REMOVE EXISTING
- EXISTING SIGN
- PROPOSED SIGN MOUNTED ON POST(S)

PAVEMENT MARKING LEGEND

MW4	MARKING LINE EPOXY 4-INCH (WHITE)
YS4-12.5	MARKING LINE EPOXY 4-INCH (YELLOW SKIP) (12.5' SEG, 37.5' GAP)



PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	SIGNING & PAVEMENT MARKING PLAN	SHEET 6	E

FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-023201-PS.DWG
LAYOUT NAME - Sheet-01

PLOT DATE : 3/10/2025 12:12 PM PLOT BY : KEITH LUECK PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

CONTROL POINT TABLE

POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	1" IP WITH RED CAP, S. SIDE OF LAKE MARIA RD., 45' W. OF BRIDGE, 20' S. OF ROAD CENTERLINE	343712.438	720183.066	926.380
2	1" IP WITH RED CAP, N. SIDE OF LAKE MARIA RD., 40' E. OF BRIDGE, 20' N. OF ROAD CENTERLINE	343750.523	720294.743	925.760
3	5/8" REBAR WITH YELLOW "FDL CO ACCESSORY" CAP, N/W CORNER OF LAKE MARIA RD. AND OAK GROVE RD., 50' N. AND 38' W. OF ROAD CENTERLINES	343785.808	719546.204	933.170

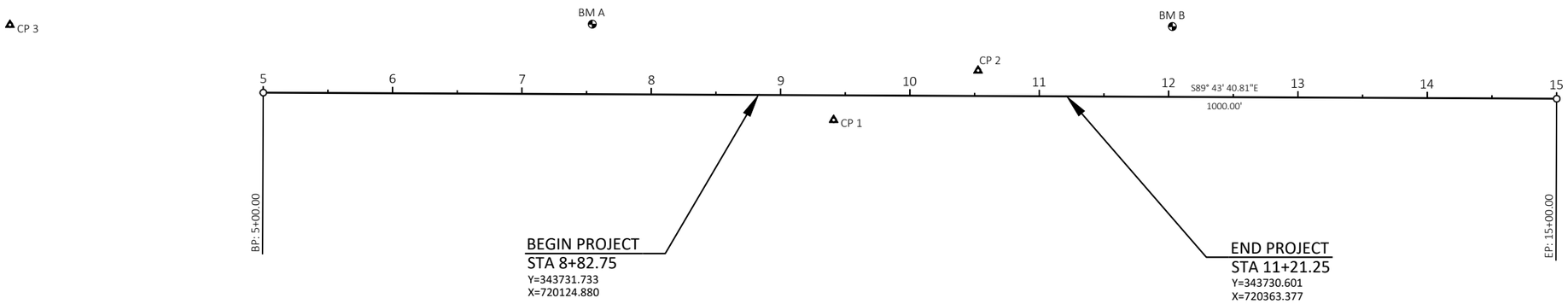
BENCH MARKS

BM	DESCRIPTION	ELEVATION
A	RAILROAD SPIKE IN NORTH FACE OF POWER POLE #14-14-22 30-0 NORTH SIDE OF LAKE MARIA RD., 200' WEST OF BRIDGE	923.12
B	RAILROAD SPIKE IN NORTH FACE OF POWER POLE #14-14-22 35-0 NORTH SIDE OF LAKE MARIA RD., 200' EAST OF BRIDGE	923.63

**VERTICAL DATUM REFERENCED TO NAVD88 (2012).

2

N



PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	ALIGNMENT DIAGRAM	SHEET 7	E

FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-027201-AD.DWG
LAYOUT NAME - Sheet-01
PLOT DATE : 1/29/2025 12:15 PM PLOT BY : KEITH LUECK PLOT NAME : PLOT SCALE : 1 IN:100 FT

Estimate Of Quantities

6187-06-71

Line	Item	Item Description	Unit	Total	Qty
0002	203.0211.S	Abatement of Asbestos Containing Material (structure) 01. B-20-43	EACH	1.000	1.000
0004	203.0250	Removing Structure Over Waterway Remove Debris (structure) 01. B-20-43	EACH	1.000	1.000
0006	204.0115	Removing Asphaltic Surface Butt Joints	SY	10.000	10.000
0008	204.0120	Removing Asphaltic Surface Milling	SY	560.000	560.000
0010	205.0100	Excavation Common	CY	763.000	763.000
0012	206.1001	Excavation for Structures Bridges (structure) 01. B-20-263	EACH	1.000	1.000
0014	210.1500	Backfill Structure Type A	TON	210.000	210.000
0016	213.0100	Finishing Roadway (project) 01. 6187-06-71	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	170.000	170.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	970.000	970.000
0022	311.0110	Breaker Run	TON	130.000	130.000
0024	450.4000	HMA Cold Weather Paving	TON	313.000	313.000
0026	455.0605	Tack Coat	GAL	70.000	70.000
0028	465.0105	Asphaltic Surface	TON	313.000	313.000
0030	502.0100	Concrete Masonry Bridges	CY	130.000	130.000
0032	502.3200	Protective Surface Treatment	SY	169.000	169.000
0034	505.0400	Bar Steel Reinforcement HS Structures	LB	3,050.000	3,050.000
0036	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	20,430.000	20,430.000
0038	513.4061	Railing Tubular Type M	LF	121.000	121.000
0040	516.0500	Rubberized Membrane Waterproofing	SY	17.000	17.000
0042	550.0020	Pre-Boring Rock or Consolidated Materials	LF	80.000	80.000
0044	550.0500	Pile Points	EACH	5.000	5.000
0046	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	225.000	225.000
0048	606.0400	Riprap Extra-Heavy	CY	138.000	138.000
0050	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	162.000	162.000
0052	614.2300	MGS Guardrail 3	LF	150.000	150.000
0054	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0056	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0058	619.1000	Mobilization	EACH	1.000	1.000
0060	624.0100	Water	MGAL	16.000	16.000
0062	625.0500	Salvaged Topsoil	SY	1,475.000	1,475.000
0064	628.1504	Silt Fence	LF	1,125.000	1,125.000
0066	628.1520	Silt Fence Maintenance	LF	1,125.000	1,125.000
0068	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0070	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0072	628.2008	Erosion Mat Urban Class I Type B	SY	1,475.000	1,475.000
0074	628.6005	Turbidity Barriers	SY	210.000	210.000
0076	628.7504	Temporary Ditch Checks	LF	30.000	30.000
0078	628.7560	Tracking Pads	EACH	2.000	2.000
0080	628.7570	Rock Bags	EACH	130.000	130.000
0082	629.0210	Fertilizer Type B	CWT	0.300	0.300
0084	630.0130	Seeding Mixture No. 30	LB	91.000	91.000
0086	630.0500	Seed Water	MGAL	46.000	46.000
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	8.000	8.000
0094	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0096	642.5001	Field Office Type B	EACH	1.000	1.000
0098	643.0420	Traffic Control Barricades Type III	DAY	938.000	938.000

Estimate Of Quantities

6187-06-71

Line	Item	Item Description	Unit	Total	Qty
0100	643.0705	Traffic Control Warning Lights Type A	DAY	1,608.000	1,608.000
0102	643.0900	Traffic Control Signs	DAY	938.000	938.000
0104	643.5000	Traffic Control	EACH	1.000	1.000
0106	645.0111	Geotextile Type DF Schedule A	SY	68.000	68.000
0108	645.0120	Geotextile Type HR	SY	272.000	272.000
0110	645.0140	Geotextile Type SAS	SY	445.000	445.000
0112	646.1020	Marking Line Epoxy 4-Inch	LF	1,060.000	1,060.000
0114	646.6464	Cold Weather Marking Epoxy 4-Inch	LF	1,060.000	1,060.000
0116	650.4500	Construction Staking Subgrade	LF	492.000	492.000
0118	650.5000	Construction Staking Base	LF	492.000	492.000
0120	650.6501	Construction Staking Structure Layout (structure) 01. B-20-263	EACH	1.000	1.000
0122	650.9911	Construction Staking Supplemental Control (project) 01. 6187-06-71	EACH	1.000	1.000
0124	650.9920	Construction Staking Slope Stakes	LF	492.000	492.000
0126	690.0150	Sawing Asphalt	LF	44.000	44.000
0128	715.0502	Incentive Strength Concrete Structures	DOL	780.000	780.000
0130	999.2005.S	Maintaining Bird Deterrent System (station) 01. STA 10+00.00	EACH	1.000	1.000
0132	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	300.000	300.000
0134	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	150.000	150.000

3

REMOVING ITEMS

STATION - STATION	LOCATION	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY
CATEGORY CODE 0010			
7+69 - 8+83	LT & RT	5	280
11+21 - 12+35	LT & RT	5	280
TOTALS		**10**	**560**

BASE AGGREGATE DENSE AND WATER ITEMS

STATION - STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
CATEGORY CODE 0010				
7+50 - 9+83	LT & RT	80	480	8
10+21 - 12+35	LT & RT	90	490	8
TOTALS		**170**	**970**	**16**

BASE AGGREGATE DENSE 3/4-INCH WEIGHT CALCULATIONS BASED ON 2.1 TONS/CY.
BASE AGGREGATE DENSE 1 1/4-INCH WEIGHT CALCULATIONS BASED ON 2.0 TONS/CY.

3

BREAKER RUN & GEOSYNTHETICS

STATION	311.0110 BREAKER RUN TON	645.0140 GEOTEXTILE TYPE SAS SY
CATEGORY CODE 0010		
UNDISTRIBUTED EBS	130	445
TOTAL	**130**	**445**

BREAKER RUN WEIGHT CALCULATIONS BASED ON 1.8 TONS/ CY.

ASPHALTIC ITEMS

STATION - STATION	LOCATION	450.4000 HMA COLD WEATHER PAVING TON	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
CATEGORY CODE 0010				
7+68 - 9+83	LT & RT	157	35	157
10+21 - 12+35	LT & RT	156	35	156
TOTALS		**313**	**70**	**313**

TACK COAT CALCULATIONS BASED ON 0.050 GAL/SY
ASPHALTIC SURFACE WEIGHT CALCULATIONS BASED ON 112 LB/SY/IN.

MGS GUARDRAIL ITEMS

STATION - STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
CATEGORY CODE 0010				
8+18 - 9+73	LT & RT	75.0	78.8	2.0
10+31 - 11+85	LT & RT	75.0	78.8	2.0
TOTALS		**150.0**	**157.6**	**4.0**

FILE NAME : 61870671-030201-mq.ppt PLOT DATE: 3/10/2025 12:38 PM PLOT BY : gaajs PLOT SCALE : 1:1

DIVISION	FROM/TO STATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	REDUCED EBS IN FILL (9)	EXPANDED EBS BACKFILL (11)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE
		CUT (2)	EBS EXCAVATION (3)			FACTOR 0.80	FACTOR 1.30		FACTOR 1.30		
CATEGORY CODE 0010											
DIVISION 1											
LAKE MARIA ROAD (WEST)	07+49.842/09+82.75	343	35	59	284	28	46	93	121	163	163
	DIVISION 1 SUBTOTAL	343	35	59	284	28	46	93	121	163	163
DIVISION 2											
LAKE MARIA ROAD (EAST)	10+21.25/12+78.312	350	35	167	183	28	46	50	65	118	118
	DIVISION 2 SUBTOTAL	350	35	167	183	28	46	50	65	118	118
GRAND TOTAL		693	70	226	467	56	91	143	186	281	281
TOTAL EXCAVATION COMMON		763									

NOTES:

(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
(2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
(3) EBS EXCAVATION TO BE BACKFILLED WITH BREAKER RUN.
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
(6) NOT USED.
(7) NOT USED.
(8) NOT USED.
(9) REDUCED EBS IN FILL - EXCAVATED EBS MATERIAL IS USUABLE IN FILLS OUTSIDE THE 1:1 SLOPE. EBS IN FILL REDUCTION FACTOR = 0.80.
(10) NOT USED.
(11) EXPANDED EBS BACKFILL - THIS IS TO BE FILLED WITH BREAKER RUN.
(12) NOT USED.
(13) EXPANDED FILL FACTOR = 1.30. EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
(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.

3

RESTORATION ITEMS

STATION - STATION	LOCATION	625.0500 SALVAGED 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
CATEGORY CODE 0010						
7+49 - 9+73	LT & RT	700	700	0.10	41	21
10+31 - 12+79	LT & RT	481	481	0.15	32	16
UNDISTRIBUTED		294	294	0.05	18	9
	TOTALS	**1,475**	**1,475**	**0.30**	**91**	**46**

NOTES: DO NOT APPLY FERTILIZER WITHIN 20 FEET OF A BODY OF WATER OR WETLAND

EROSION CONTROL ITEMS

STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.6005 TURBIDITY BARRIERS SY	628.7504 TEMPORARY DITCH CHECKS LF	628.7560 TRACKING PADS EACH	628.7570 ROCK BAGS EACH
CATEGORY CODE 0010									
PROJECT 6187-06-71		--	--	5	3	--	--	2	--
7+57 - 9+73	LT	215	215	--	--	--	12	--	30
7+50 - 9+73	RT	224	224	--	--	--	--	--	15
9+73 - 10+31	LT & RT	--	--	--	--	81	--	--	--
9+73 - 10+31	LT & RT	--	--	--	--	89	--	--	--
10+31 - 12+78	LT	249	249	--	--	--	12	--	30
UNDISTRIBUTED		225	225	--	--	40	6	--	25
	TOTALS	**1,125**	**1,125**	**5**	**3**	**210**	**30**	**2**	**130**

3

SIGNING ITEMS

SIGN NUMBER	EXISTING STATION	EXISTING LOCATION	PROPOSED STATION	PROPOSED LOCATION	ROADWAY	SIGN CODE	SIZE	634.0612 POSTS WOOD 4X6X12 EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
CATEGORY CODE 0010											
101	--	RT	--	--	LAKE MARIA-CTH EE	--	--	--	--	1	1
102	9+37	RT	9+37	RT	LAKE MARIA ROAD	--	--	--	--	1	1
103	9+84	RT	9+71	RT	LAKE MARIA ROAD	W5-52R	12X36	1	3	1	1
104	9+83	RT	9+71	LT	LAKE MARIA ROAD	W5-52L	12X36	1	3	1	1
105	10+17	RT	10+33	RT	LAKE MARIA ROAD	W5-52R	12X36	1	3	1	1
106	10+19	LT	10+33	LT	LAKE MARIA ROAD	W5-52L	12X36	1	3	1	1
107	10+73	LT	10+73	LT	LAKE MARIA ROAD	--	--	--	--	1	1
108	--	LT	--	--	LAKE MARIA-OAK GROVE	--	--	--	--	1	1
							TOTALS	**4**	**12**	**8**	**8**

TRAFFIC CONTROL ITEMS

LOCATION	NUMBER OF DAYS IN SERVICE	643.0420 TRAFFIC CONTROL BARRICADES TYPE III *NO. REQ'D*	643.0420 TRAFFIC CONTROL BARRICADES TYPE III TOTAL DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A *NO. REQ'D*	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A TOTAL DAY	643.0900 TRAFFIC CONTROL SIGNS *NO. REQ'D*	643.0900 TRAFFIC CONTROL SIGNS TOTAL DAY
CATEGORY CODE 0010							
OAK GROVE ROAD / CTH AW	67	*2*	134	*4*	268	*3*	201
SOUTH PROJECT LIMITS	67	*5*	335	*8*	536	*4*	268
NORTH PROJECT LIMITS	67	*5*	335	*8*	536	*4*	268
OAK GROVE ROAD / LAKE MARIA ROAD	67	*2*	134	*4*	268	*3*	201
	TOTALS		**938**		**1,608**		**938**

3

MARKING LINE EPOXY 4-INCH

STATION - STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH WHITE LF	646.1020 MARKING LINE EPOXY 4-INCH YELLOW LF	646.6464.S COLD WEATHER MARKING EPOXY 4-INCH WHITE LF	646.6464.S COLD WEATHER MARKING EPOXY 4-INCH YELLOW LF
CATEGORY CODE 0010					
7+68 - 12+36	LT & RT	935	125	935	125
		935	125	935	125
	TOTAL	**1,060**		**1,060**	

CONSTRUCTION STAKING ITEMS

STATION - STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.6501 STRUCTURE LAYOUT EACH	650.9911 SUPPLEMENTAL CONTROL EACH	650.9920 SLOPE STAKES LF
CATEGORY CODE 0010						
PROJECT 6187-06-71		--	--	--	1	--
7+49 - 9+83	LT & RT	234	234	--	--	234
10+21 - 12+79	LT & RT	258	258	--	--	258
CATEGORY CODE 0010 SUBTOTALS		492	492	--	1	492
CATEGORY CODE 0020						
B-20-263		--	--	1	--	--
CATEGORY CODE 0020 SUBTOTALS		--	--	1	--	--
TOTALS		**492**	**492**	**1**	**1**	**492**

SAWING ASPHALT

STATION - STATION	LOCATION	690.0150 ASPHALT LF
CATEGORY CODE 0010		
8+83	LT / RT	22
11+21	LT / RT	22
	TOTAL	**44**

MAINTAINING BIRD DETERRENT SYSTEM

STATION	999.2005.S EACH
CATEGORY CODE 0010	
10+00	1
TOTAL	**1**

REMOVING ASPHALTIC SURFACE MILLING
STA 7+69 - STA 8+83
STA 11+21 - STA 12+35

N

WIERENGA REAL ESTATE LLC

S. BR. ROCK RIVER TRIB

SLOPE INTERCEPT, TYP

EXIST R/W

WETLAND LIMITS

SPECTRUM

ALLIANT ENERGY

BRIGHTSPEED

END CONSTRUCTION
STA 12+78.31

MILLING LIMITS
STA 7+68.71
MATCH EXISTING
BUTT JOINT REQUIRED

MGS GUARDRAIL

SECTION LINE

S89° 43' 40.81"E

LAKE MARIA ROAD

MILLING LIMITS
STA 12+35.29
MATCH EXISTING
BUTT JOINT REQUIRED

POST

BEGIN CONSTRUCTION
STA 7+49.84

BEGIN PROJECT
STA 8+82.75
Y=343731.733
X=720124.880
SAWCUT REQUIRED

ALAN D MARTENS
BEVERLY A MARTENS

END PROJECT
STA 11+21.25
Y=343730.601
X=720363.377
SAWCUT REQUIRED

VPI STA 8+82.75
VPI EL 927.00

VPI STA 11+21.25
VPI EL 926.54

EXISTING R/L PROFILE

FINISHED R/L PROFILE

STATION 10+02
STRUCTURE B-20-0263, REQ'D
SINGLE SPAN CONCRETE SLAB BRIDGE
36' C-C LENGTH
38.5' OVERALL LENGTH
28' CLEAR ROADWAY WIDTH
0° SKEW

STATION 10+00
REMOVE STRUCTURE B-20-0043
SINGLE SPAN CONCRETE SLAB BRIDGE
28' APPROXIMATE OVERALL LENGTH
26' CLEAR ROADWAY WIDTH

-0.19%

LOW CHORD
EL= 924.80'

LOW CHORD
EL = 924.73'

HIGH WATER (Q100)
ELEV = 925.84'

OBSERVED WATER
11/09/23
ELEV = 918.56'

STREAMBED
ELEV = 917.89'

EXISTING PROFILE ELEVATION AT R/L

FINISHED PROFILE ELEVATION AT R/L

930 928 926 924 922 920 918 916

927.46 927.31 927.19 927.09 927.03 927.02 927.01 927.01 927.03 **926.97** 927.08 **926.92** 927.13 **926.87** 927.18 **926.83** 927.26 **926.78** 927.14 **926.73** 927.05 **926.68** 926.86 **926.63** 926.66 **926.58** 926.52 926.40 926.33 926.32 926.35 926.44 926.53 926.71

7 8 9 10 11 12 13

PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	PLAN AND PROFILE: LAKE MARIA ROAD	SHEET 14	E

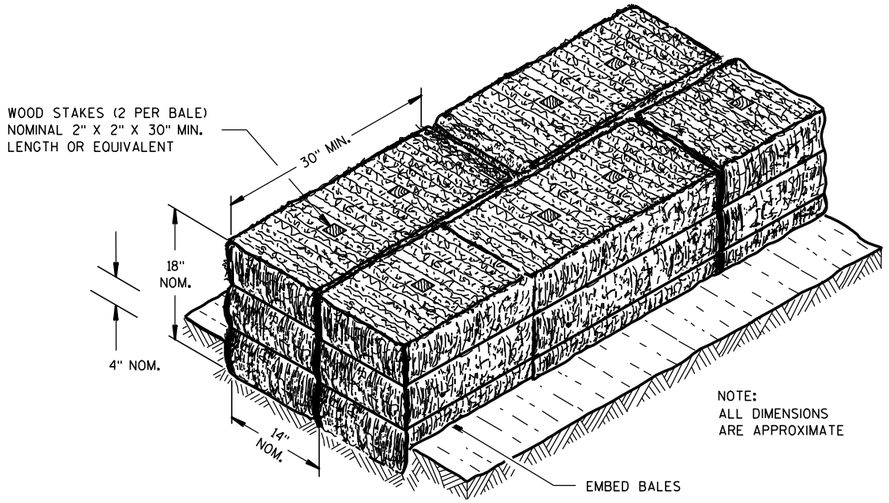
FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-050101-PP.DWG
LAYOUT NAME - Sheet-01

PLOT DATE : 3/11/2025 1:32 PM PLOT BY : AARON SARAUER PLOT NAME : PLOT SCALE : 1 IN:40 FT

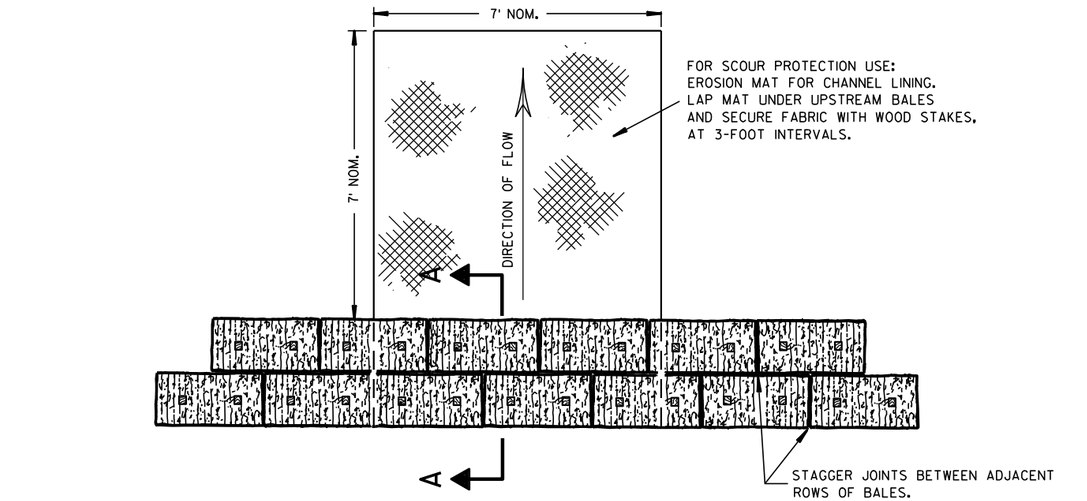
WISDOT/CADDS SHEET 44

Standard Detail Drawing List

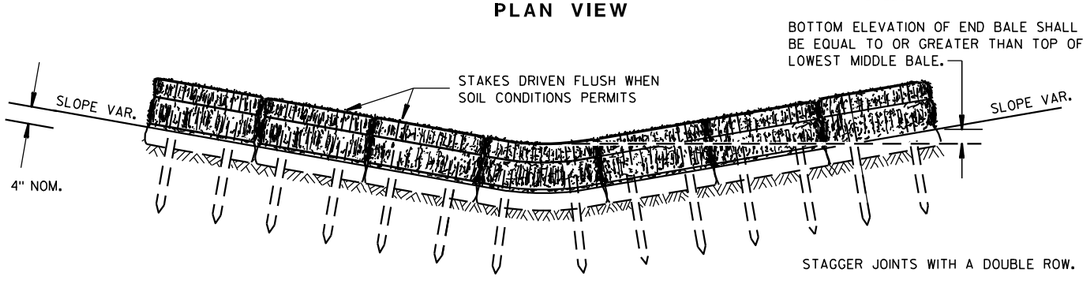
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E14-01	TRACKING PAD
12A03-10	NAME PLATE (STRUCTURES)
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-12	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS



SECTION A-A



PLAN VIEW



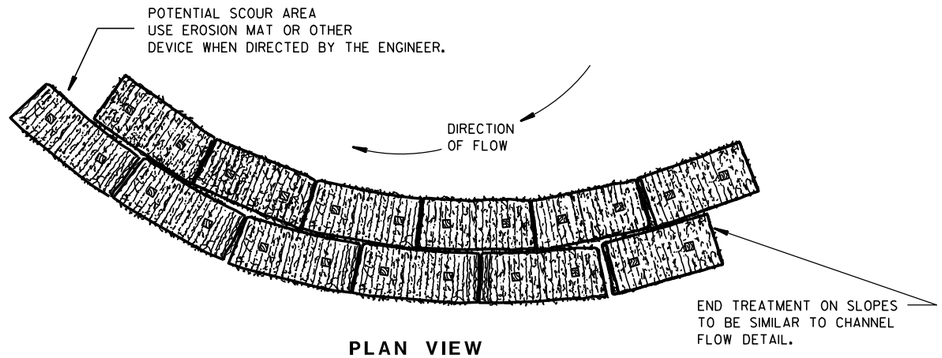
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

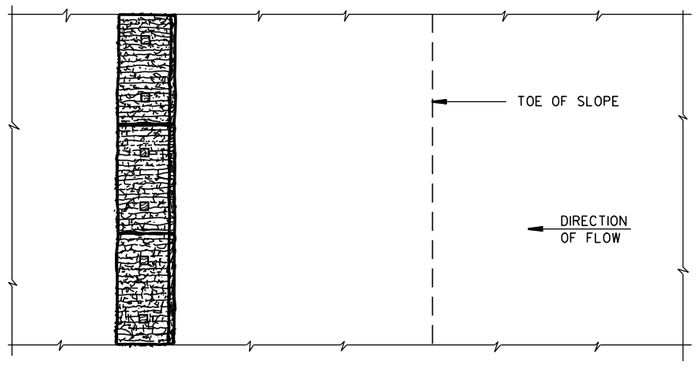
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(1) TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

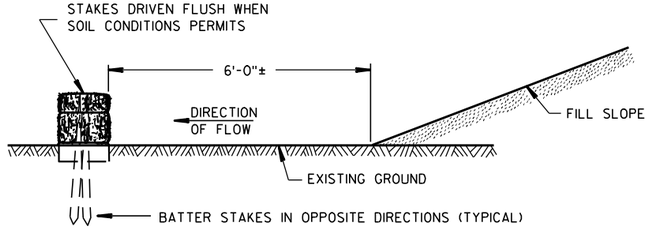


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

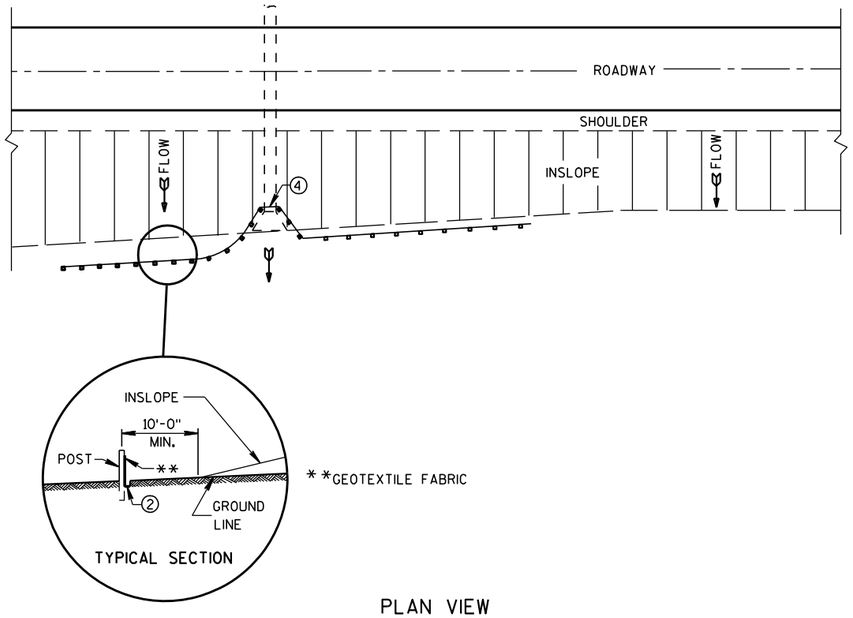
FHWA

6

S.D.D. 8 E 8-3

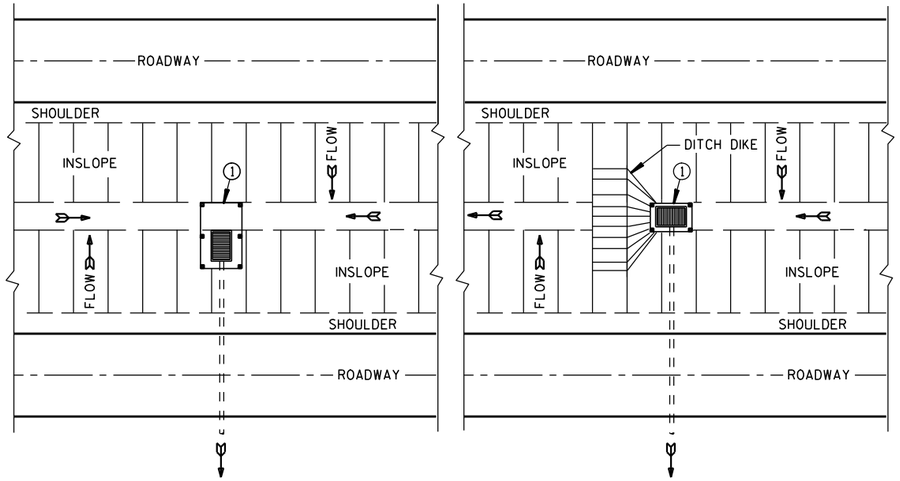
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



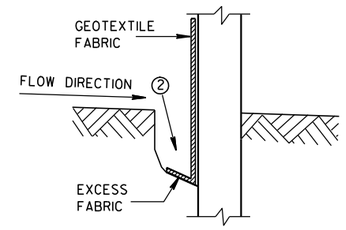
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

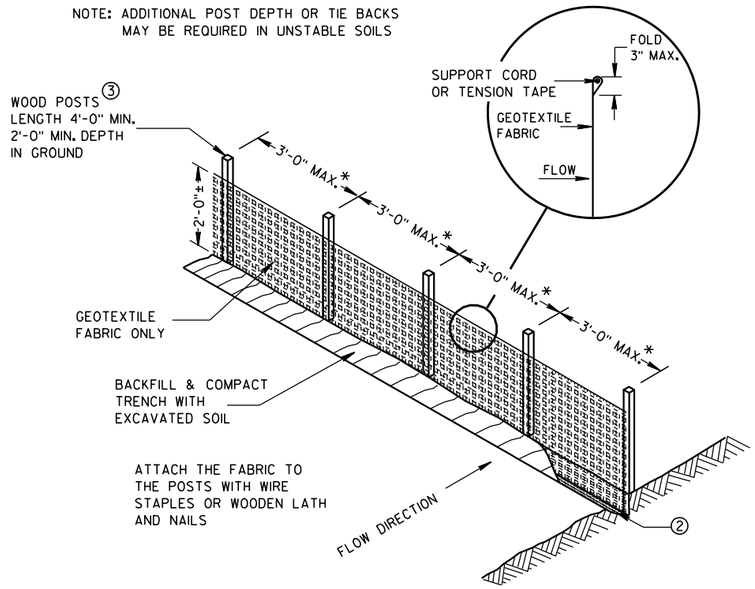
GENERAL NOTES

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

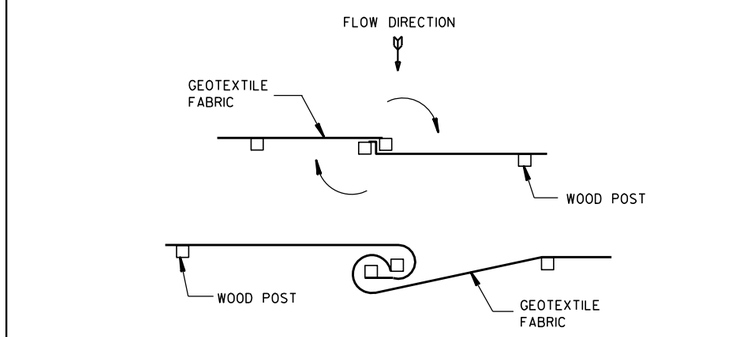
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



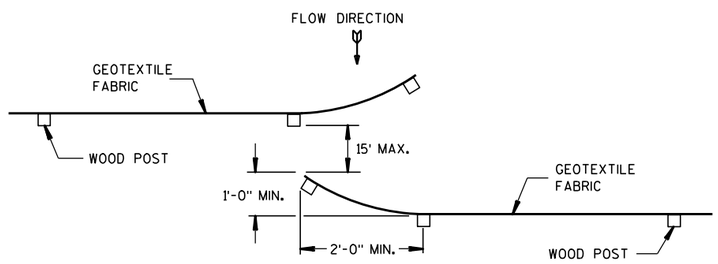
TRENCH DETAIL



SILT FENCE

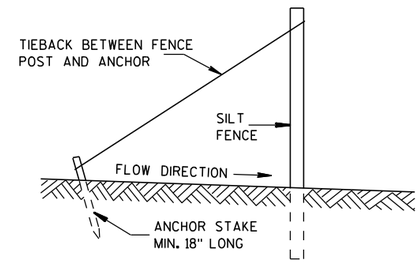


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

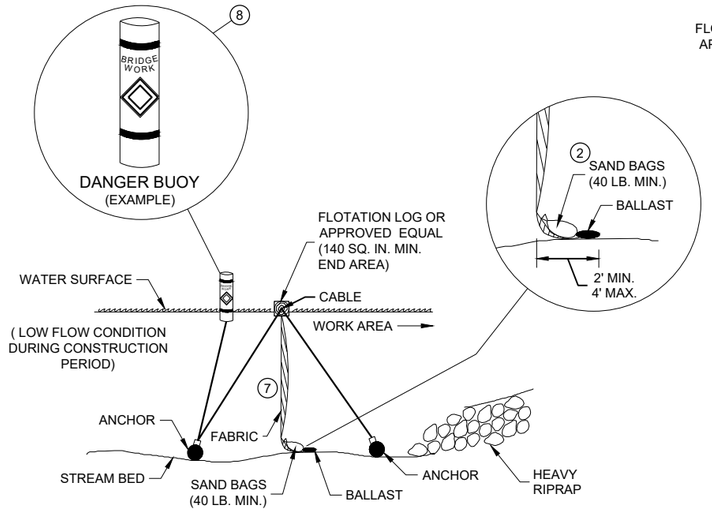
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

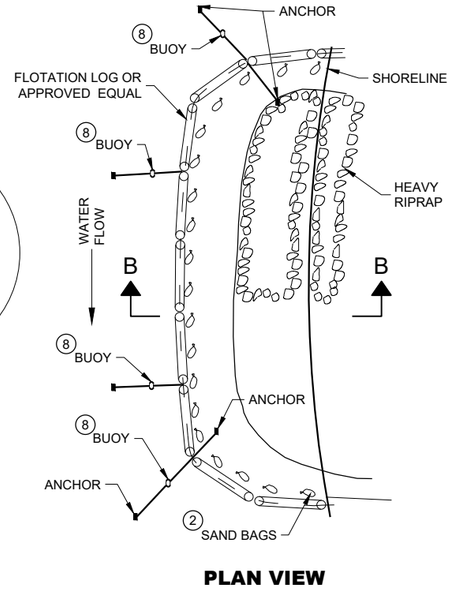
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

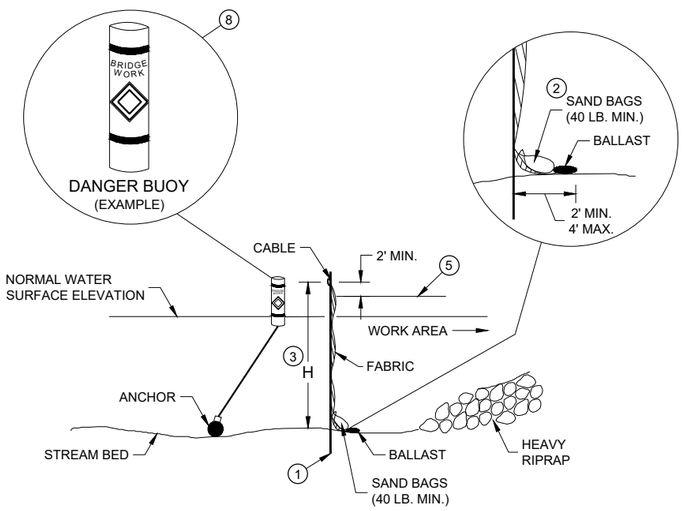


SECTION B - B

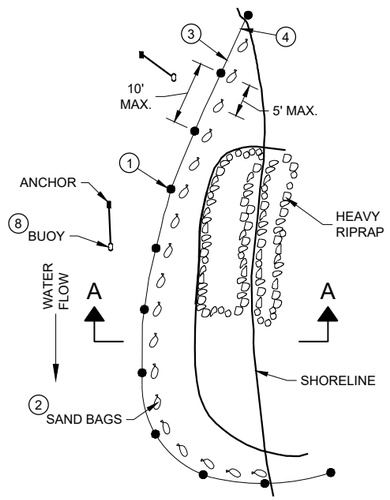


PLAN VIEW

TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A - A



PLAN VIEW

TURBIDITY BARRIER - STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

(1) DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

(2) SAND BAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

(3) WHEN BARRIER HEIGHT "H" EXCEEDS 8 FEET, POST SPACING MAY NEED TO BE DECREASED.

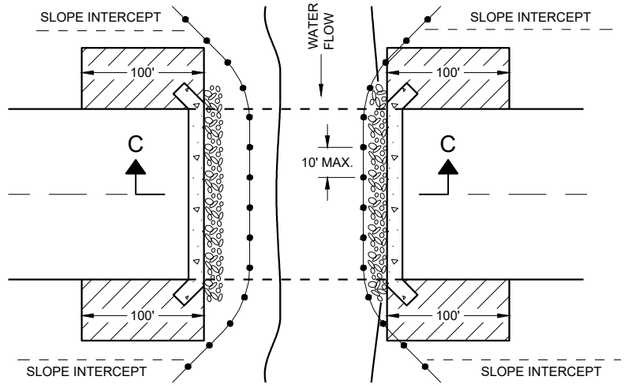
(4) IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

(5) ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.

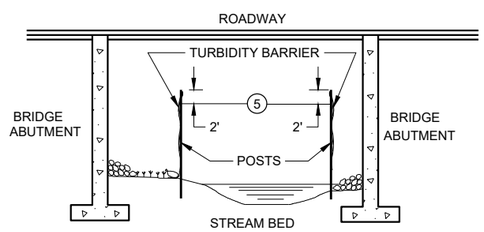
(6) FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.

(7) ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

(8) USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

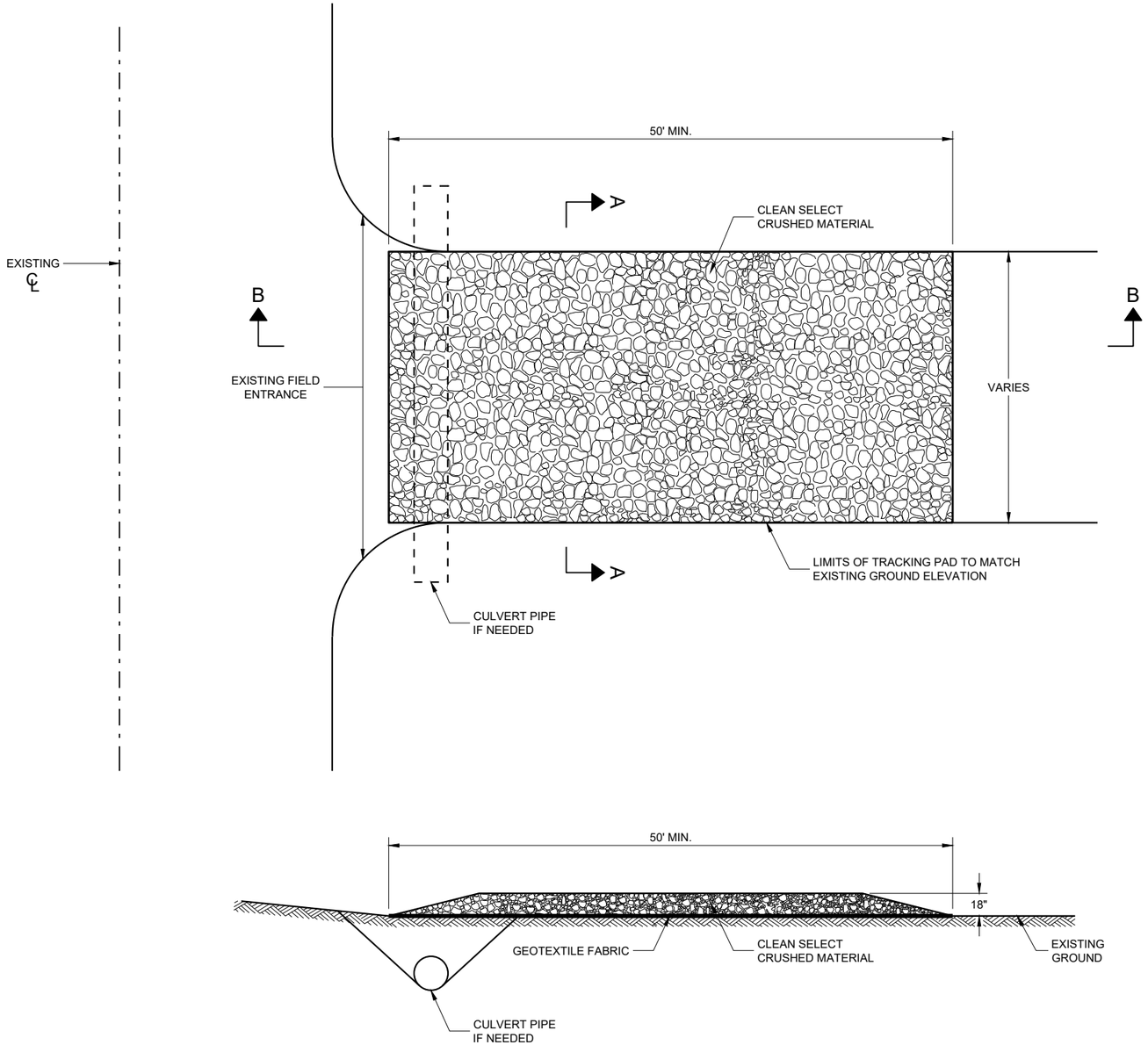
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6
SDD 08E11 - 02



SECTION B - B

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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

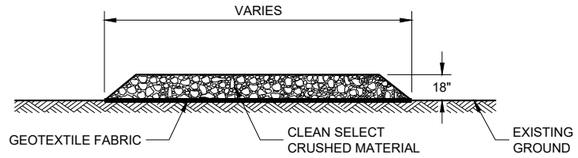
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A - A

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/24/2011 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVE ENGINEER
FHWA

6

SDD 08E14 - 01

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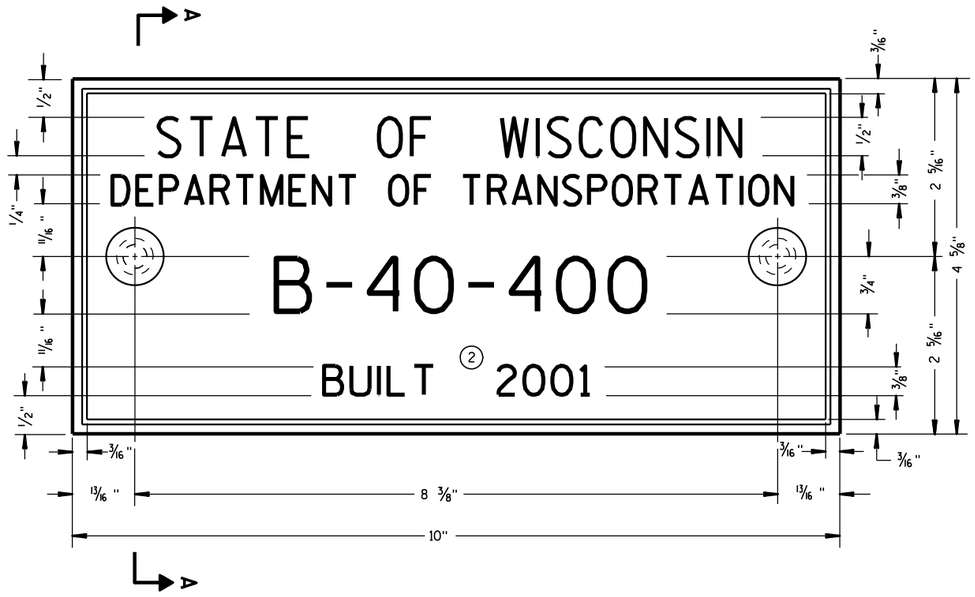
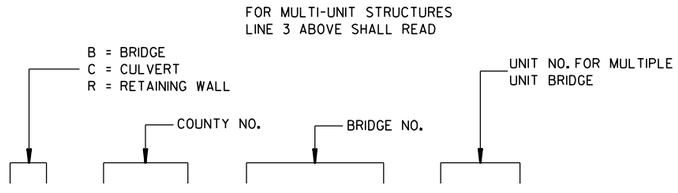
SDD 08E14 - 01



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

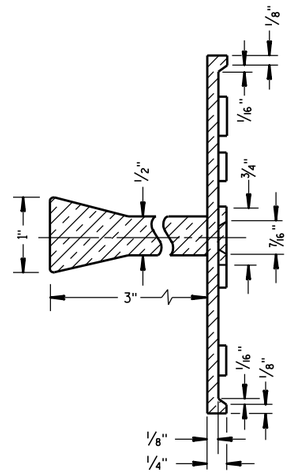
GENERAL NOTES

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

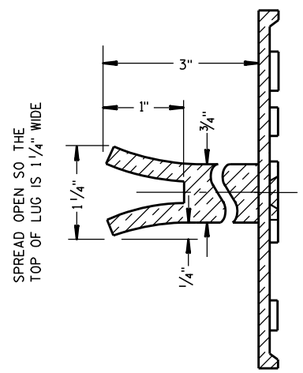
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

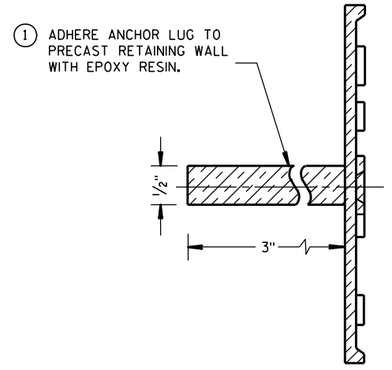
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
3/26/10 DATE	/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP 20 ENGINEER
FHWA	

6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10

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

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

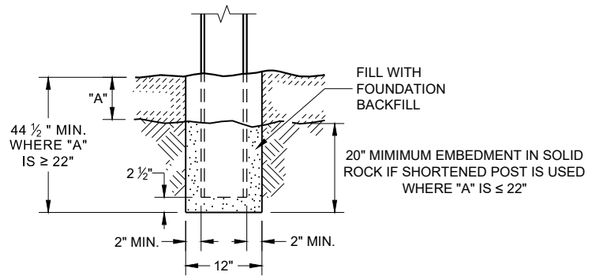
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

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

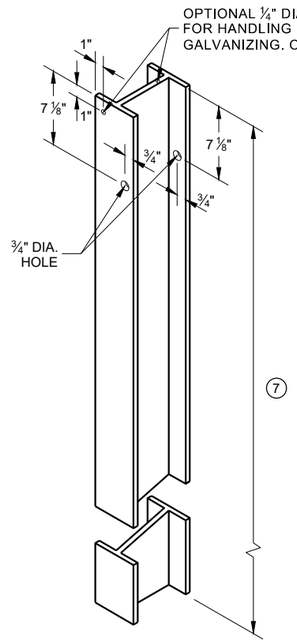
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

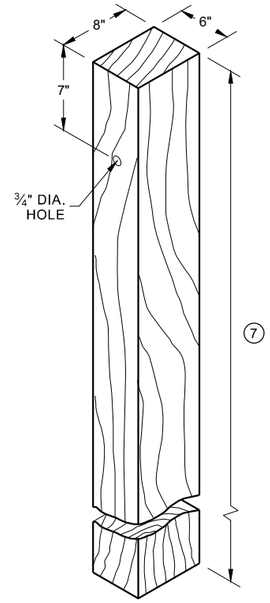
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



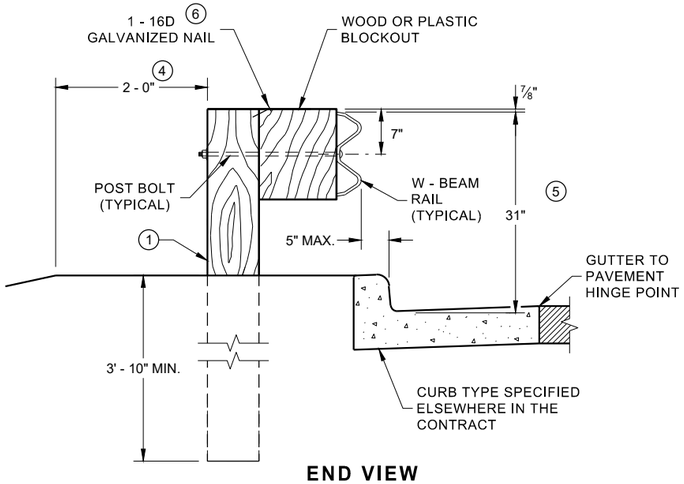
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



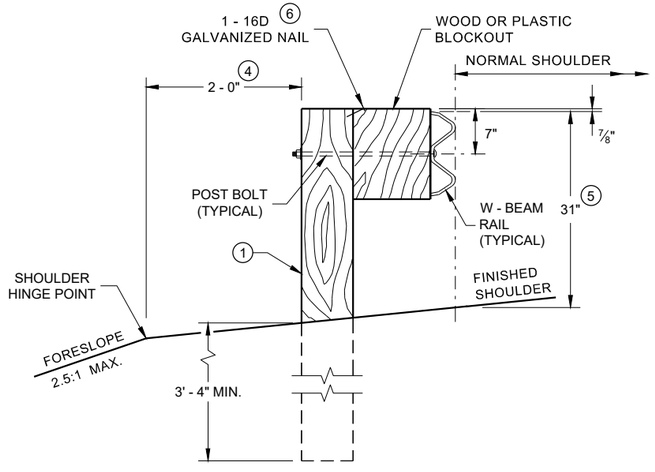
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



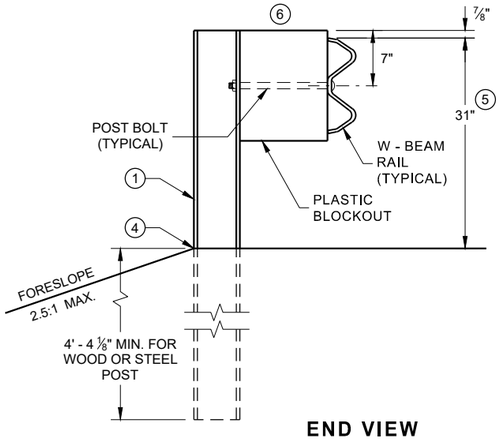
WOOD POST (6" X 8") NOMINAL (1)



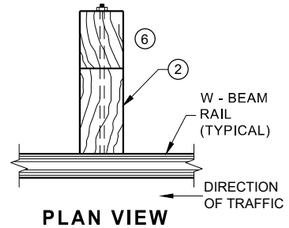
END VIEW
LOCATED ALONG A CURBED ROADWAY



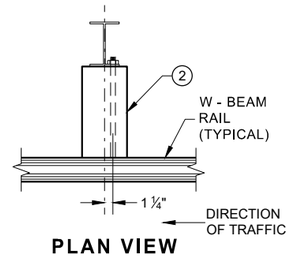
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



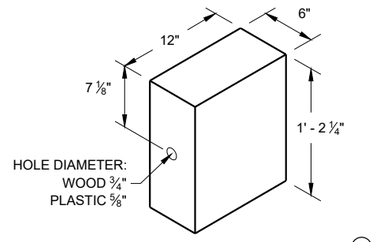
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

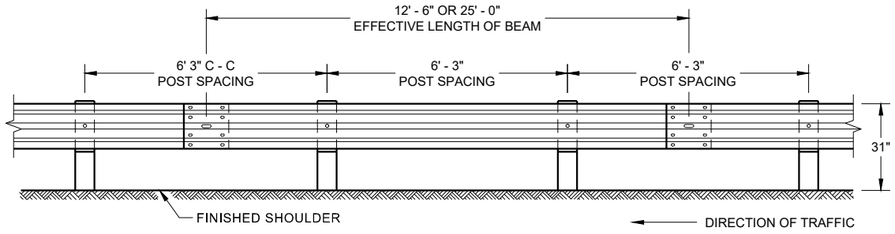
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

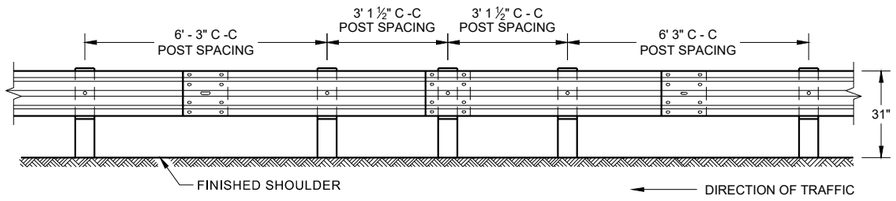
SDD 14B42 - 07a

6

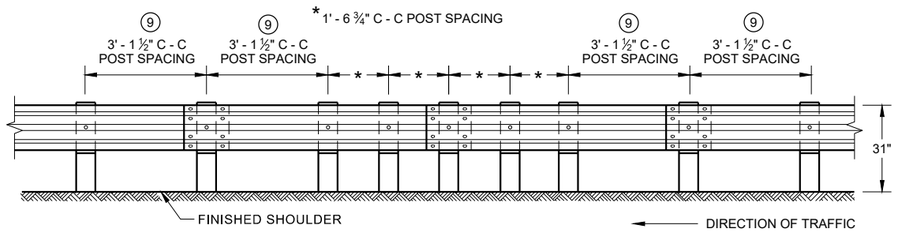
SDD 14B42 - 07a



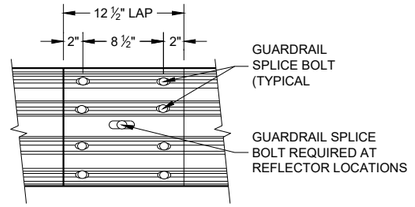
FRONT VIEW
POST SPACING STANDARD INSTALLATION



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



FRONT VIEW
QUARTER POST SPACING (QS)



FRONT VIEW
MID-SPAN BEAM SPLICE

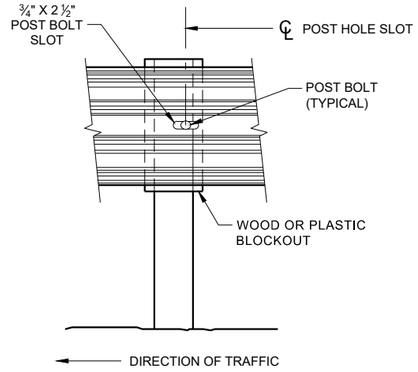
GENERAL NOTES

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

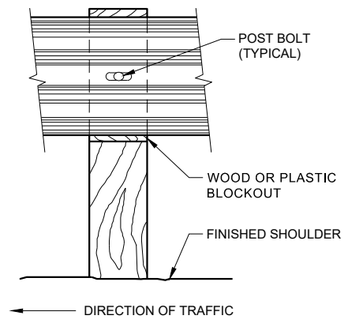
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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

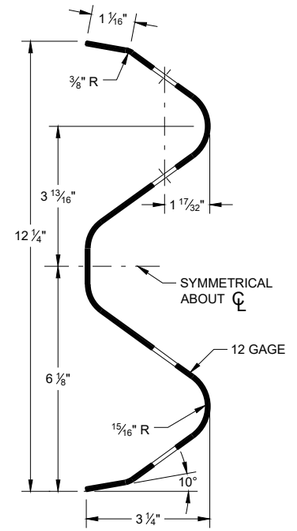
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



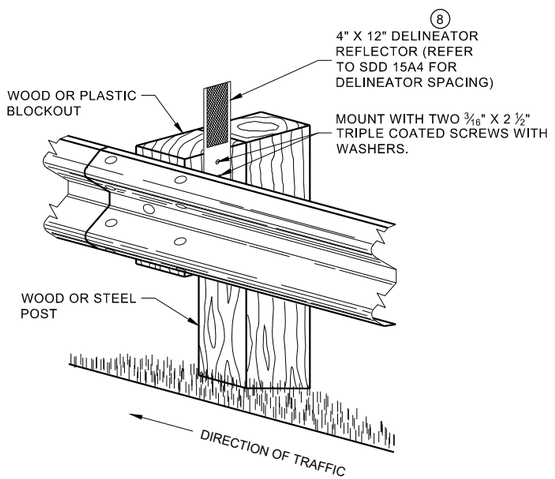
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



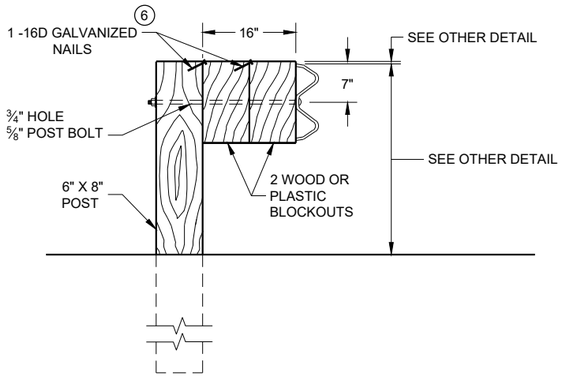
ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B42 - 07b
SDD 14B42 - 07b

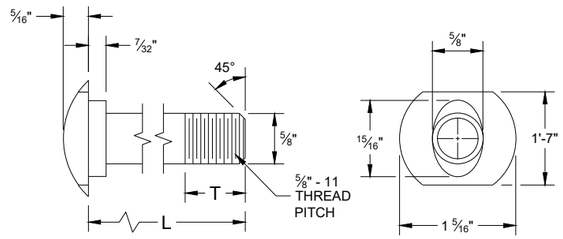


DETAIL FOR 16" BLOCKOUT DEPTH

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

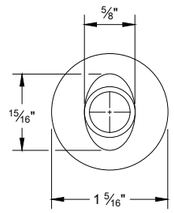
NOTE:

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

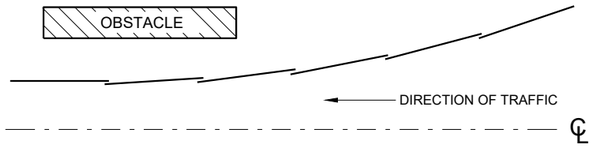


POST BOLT TABLE

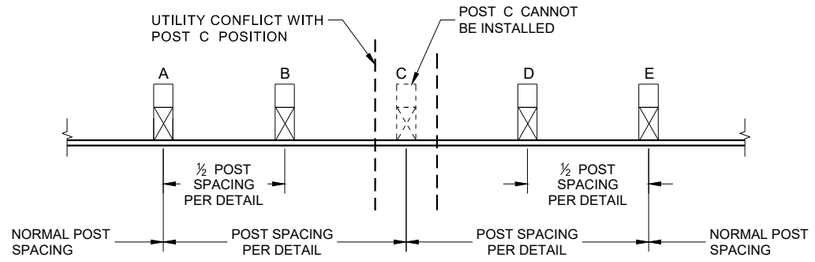
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



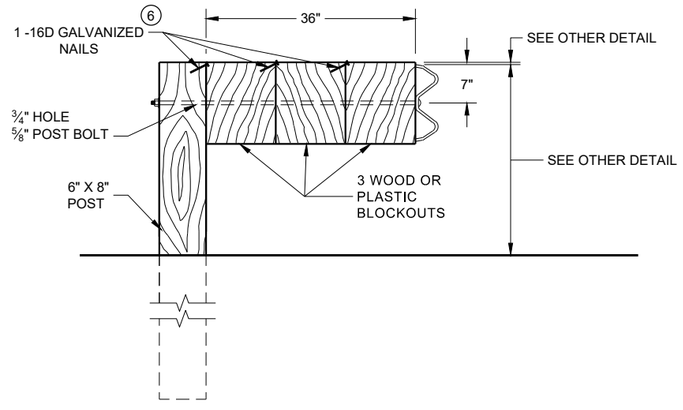
ALTERNATE BOLT HEAD



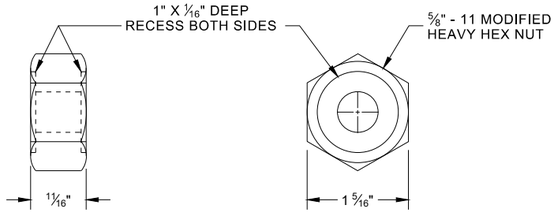
PLAN VIEW
BEAM LAPPING DETAIL



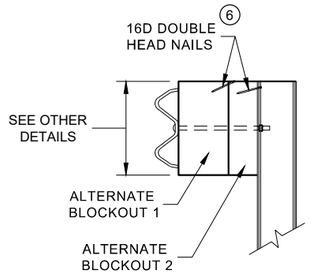
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



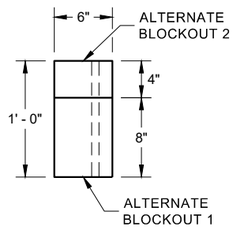
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

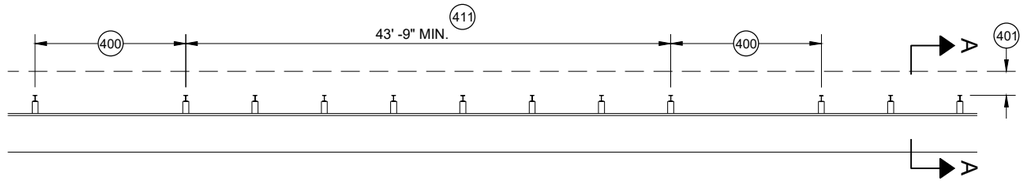
ALTERNATE WOOD BLOCKOUT DETAIL

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

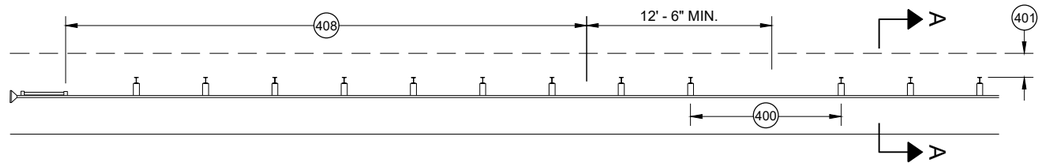
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

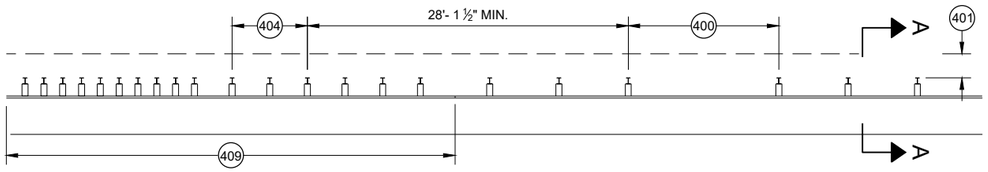
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



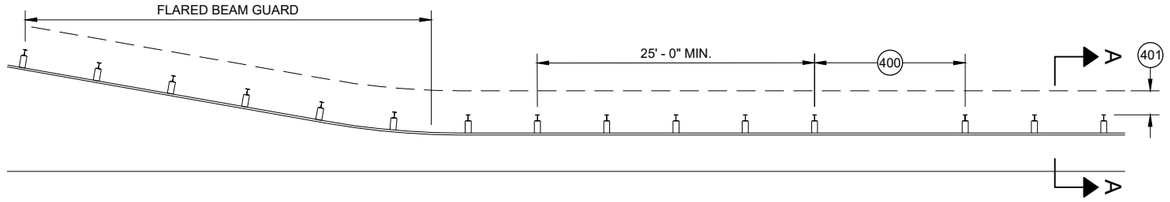
MISSING POST IN MGS GUARDRAIL



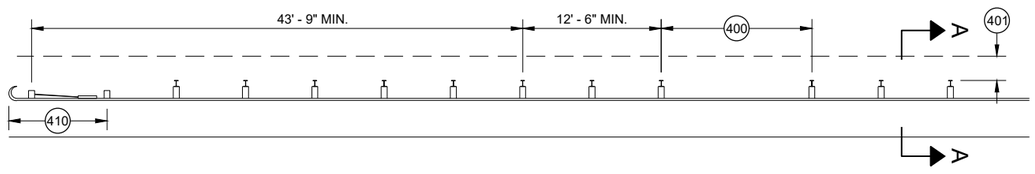
MISSING POST IN MGS GUARDRAIL NEAR EAT



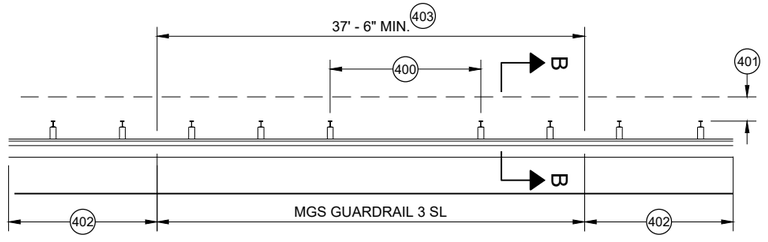
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

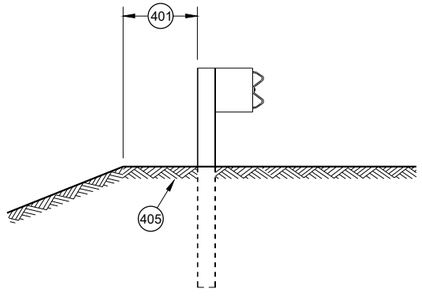


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

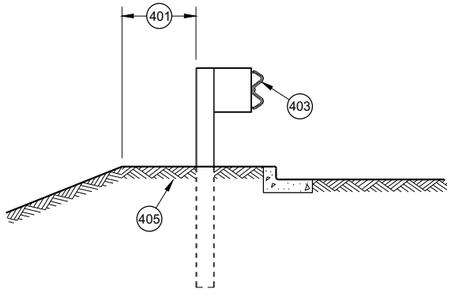


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

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



SECTION A - A 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

SDD 14B42 - 07d

SDD 14B42 - 07d

GENERAL NOTES

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

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

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

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

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

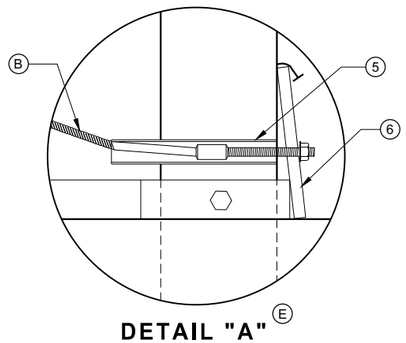
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

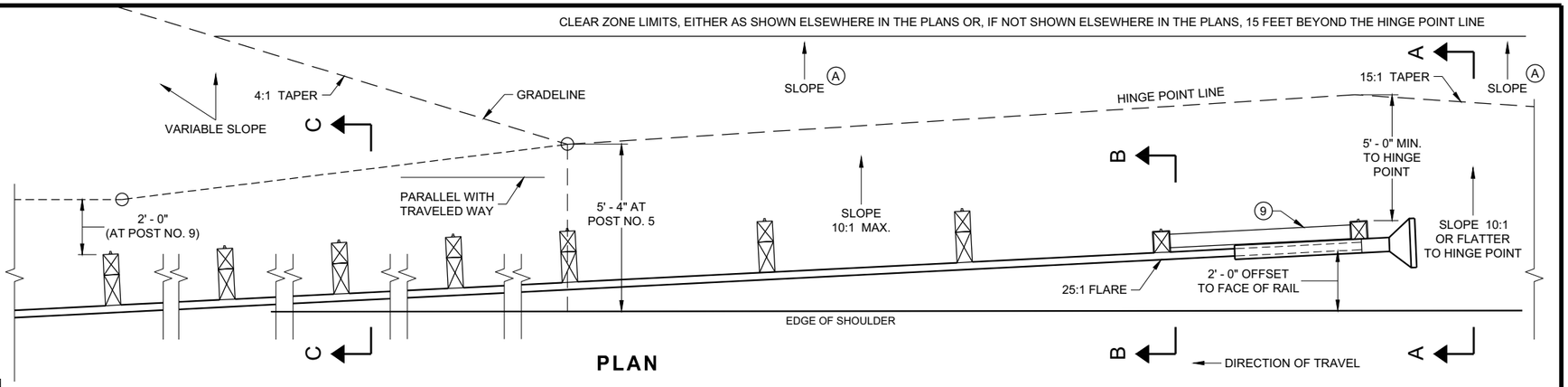
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

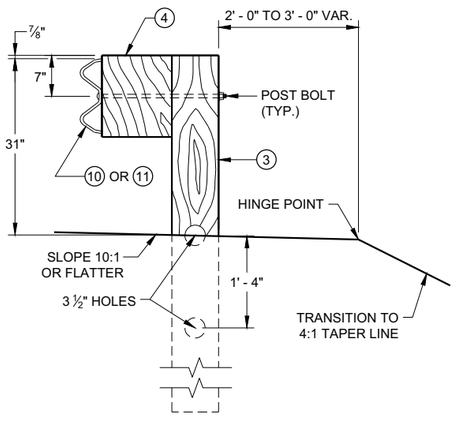
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

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

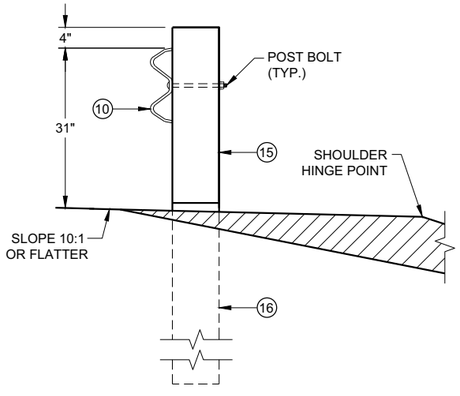


DETAIL "A" (E)

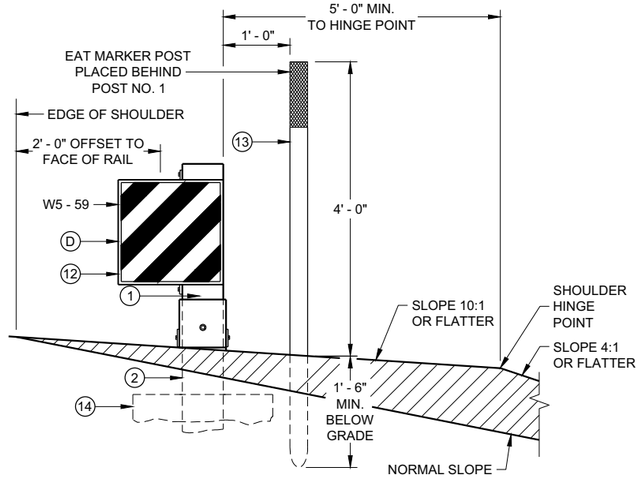




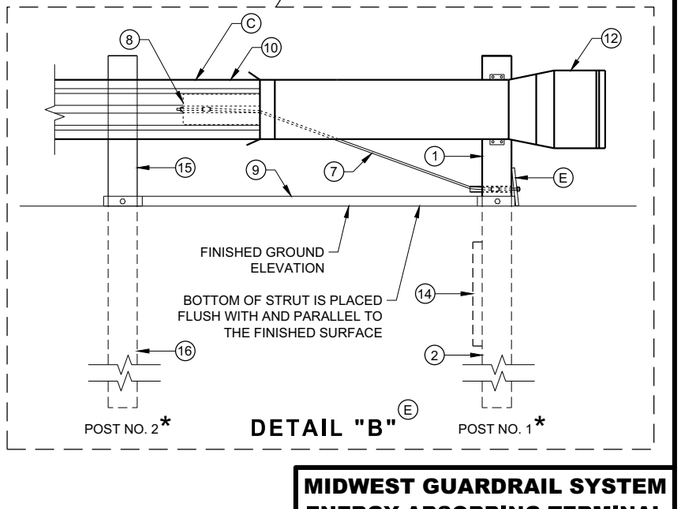
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



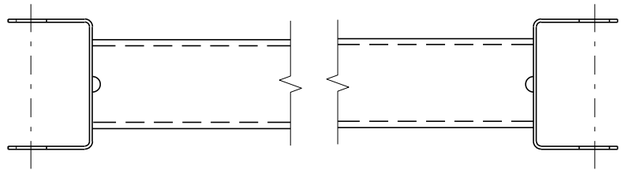
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

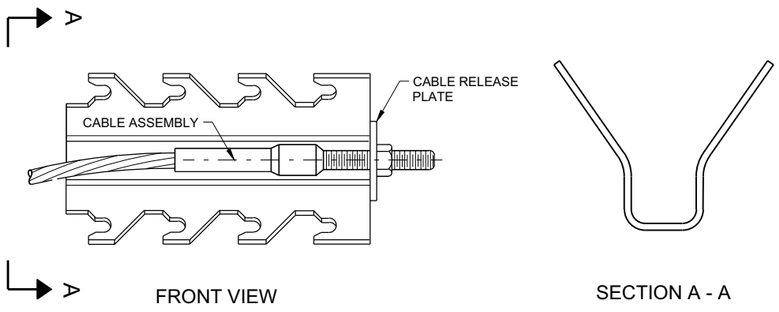
SDD 14B44 - 04a



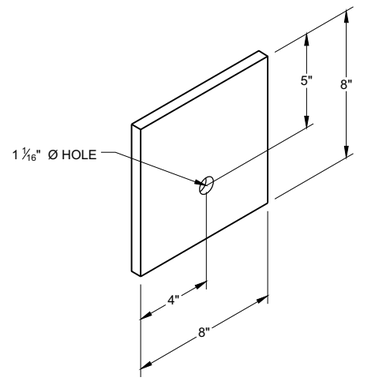
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑨ Ⓔ



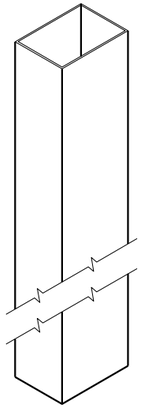
BEARING PLATE ⑥ Ⓔ

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

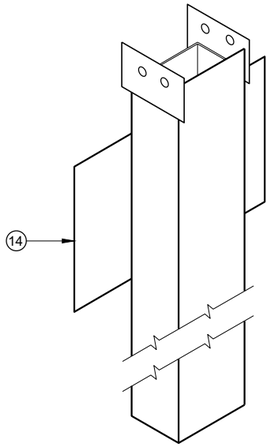
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

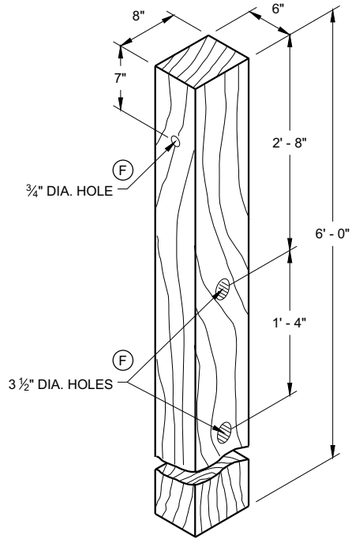
SDD 14B44 - 04b



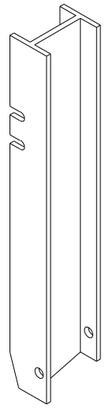
UPPER POST NO. 1 (1) (E)



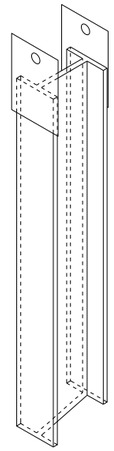
LOWER POST NO. 1 (2) (E)



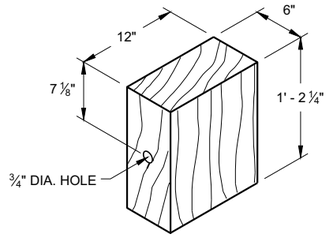
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



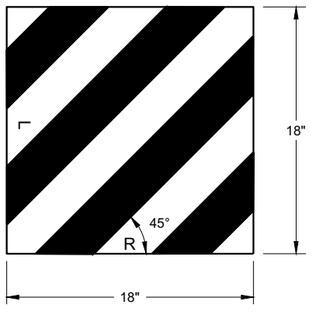
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

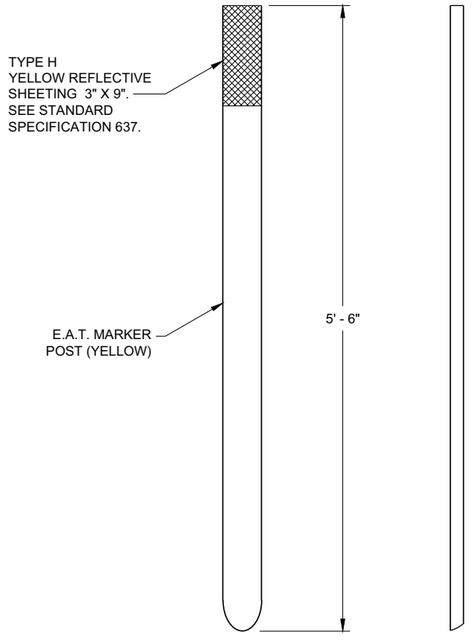


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



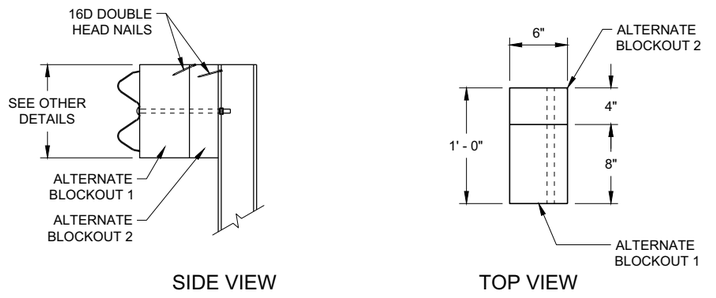
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

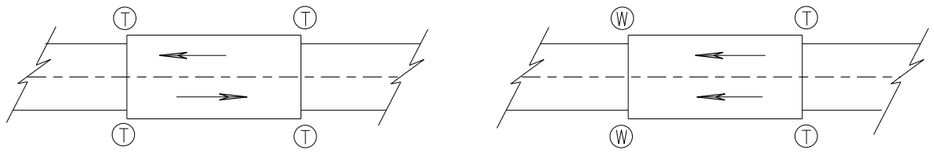
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

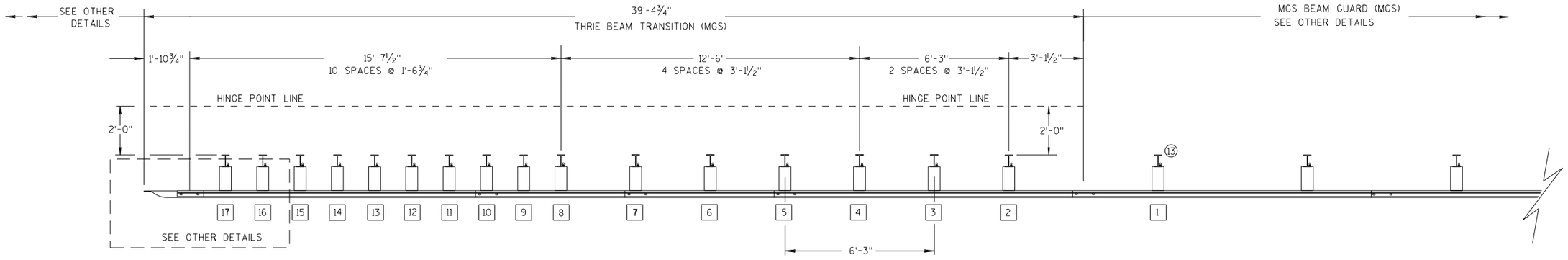
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

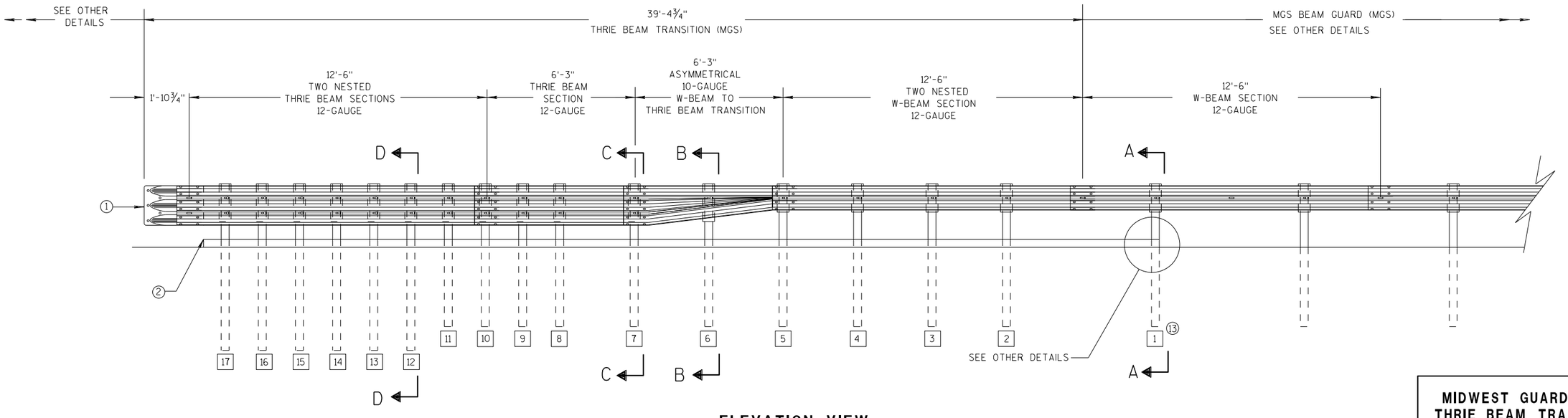
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

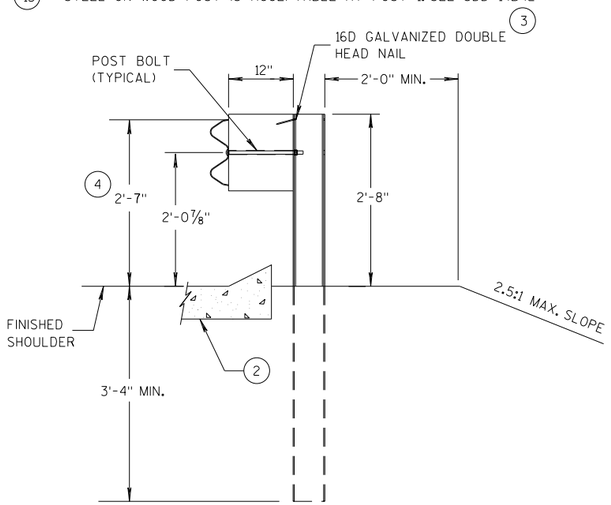
GENERAL NOTES

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

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

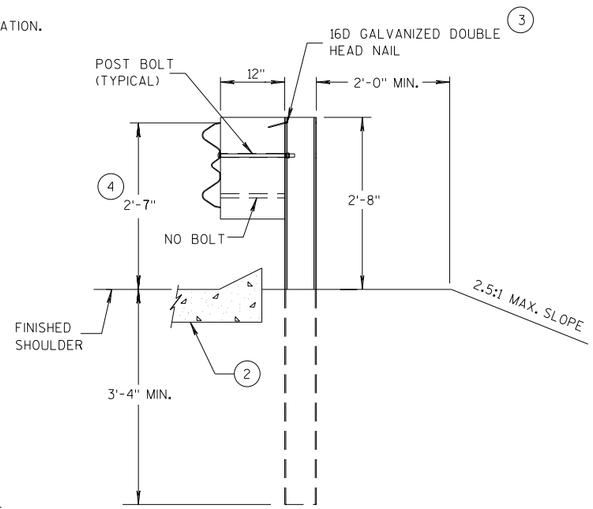
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



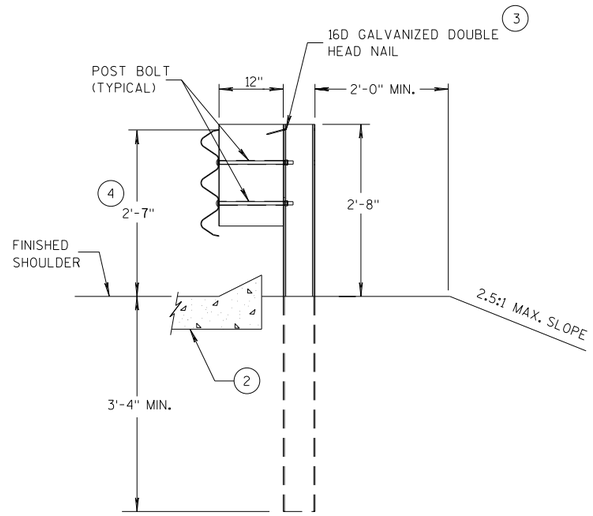
SECTION A-A (13)

POSTS 1-5



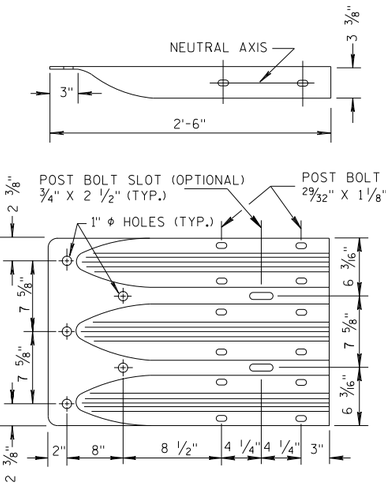
SECTION B-B

POST 6

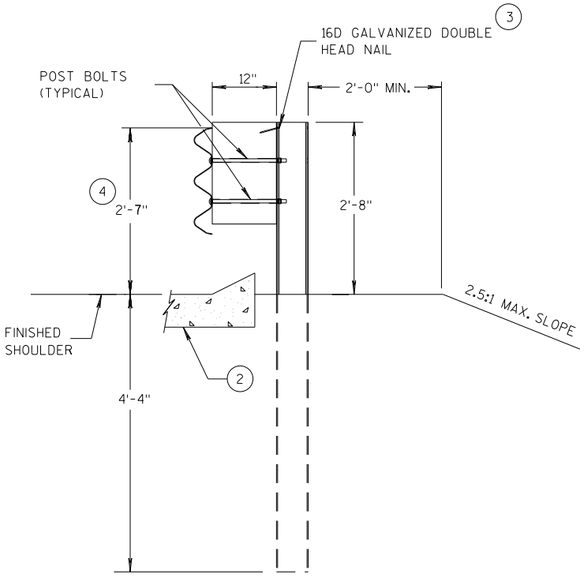


SECTION C-C

POSTS 7-11

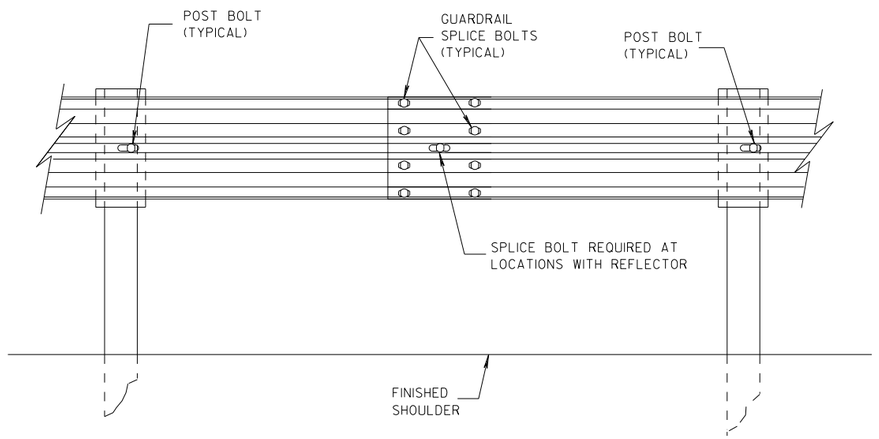


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

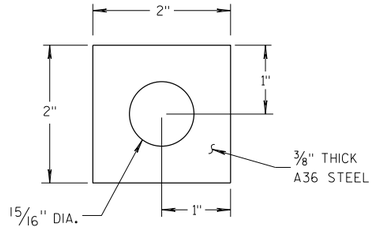
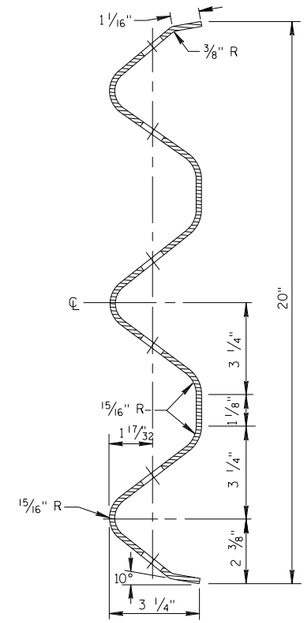


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

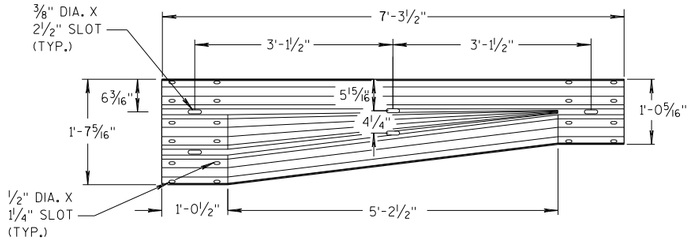
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 29

6

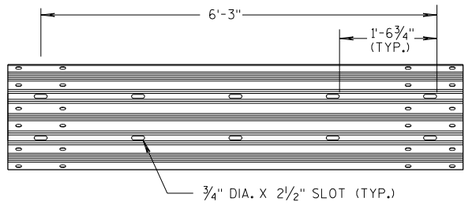
S.D.D. 14 B 45-5b

6

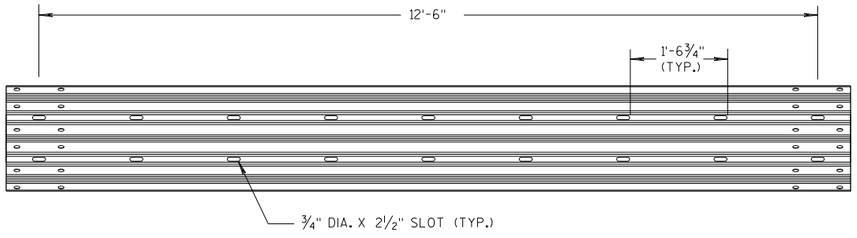
S.D.D. 14 B 45-5b



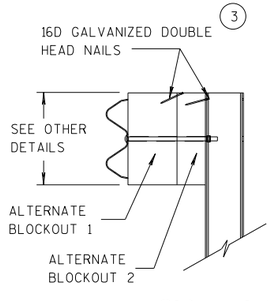
W-BEAM TO THRIE BEAM TRANSITION SECTION



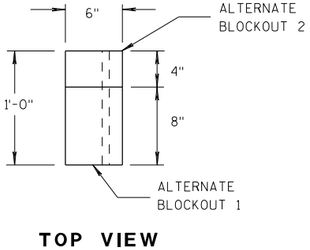
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

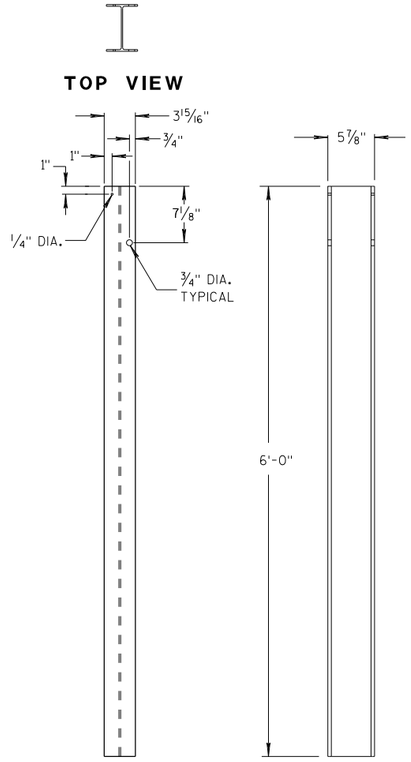


SIDE VIEW



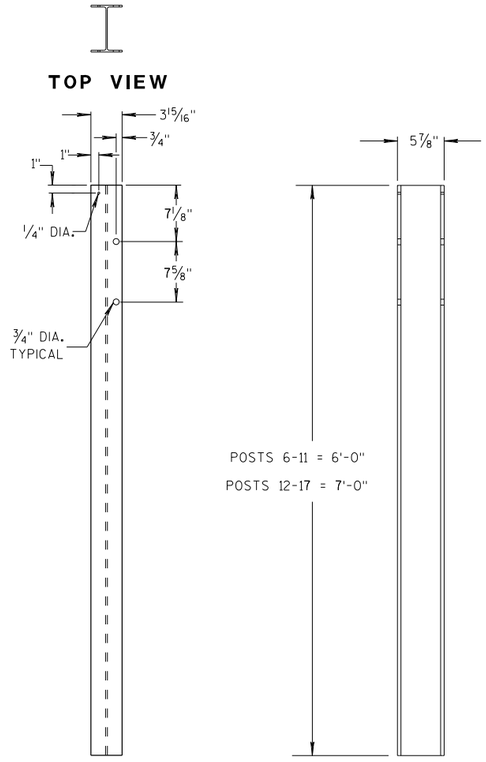
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



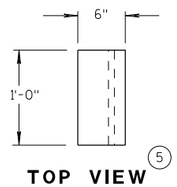
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

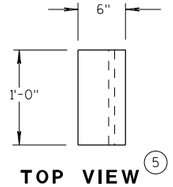


FRONT VIEW SIDE VIEW

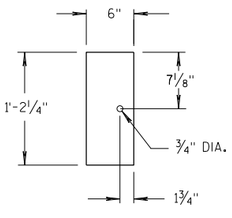
STEEL POSTS 6-17



TOP VIEW (5)

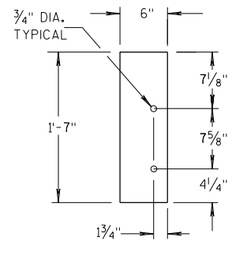


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

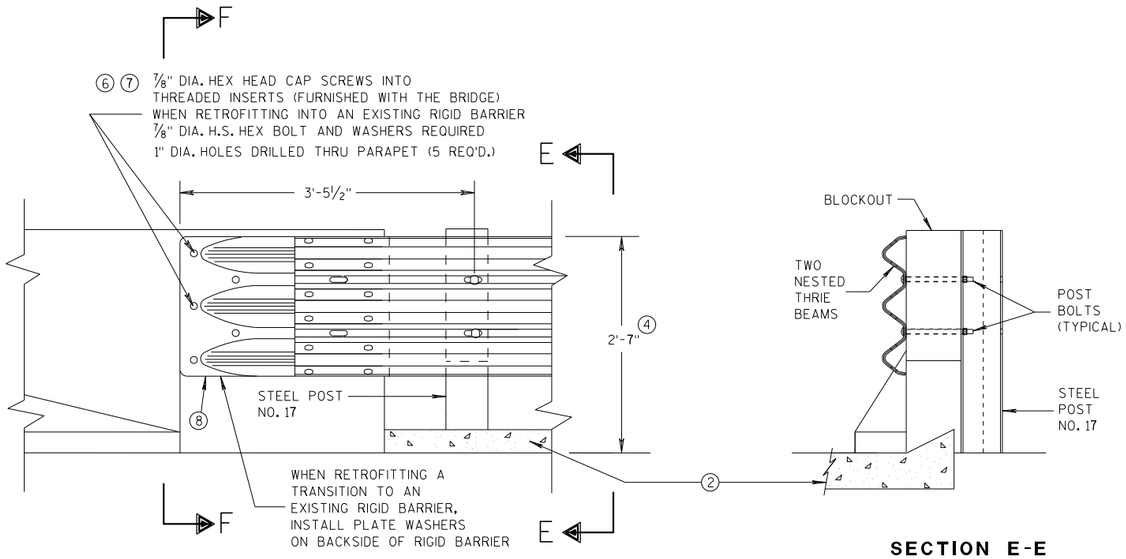
(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

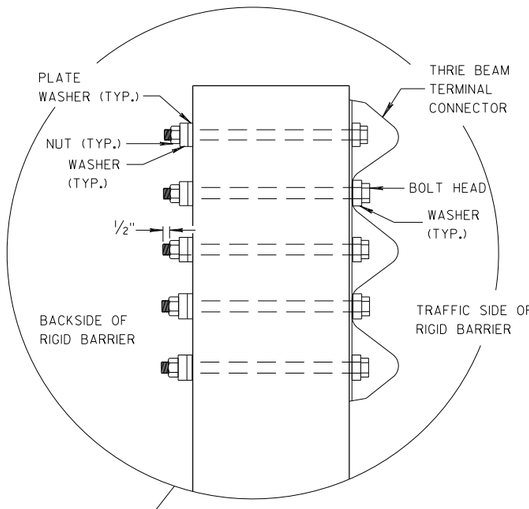
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

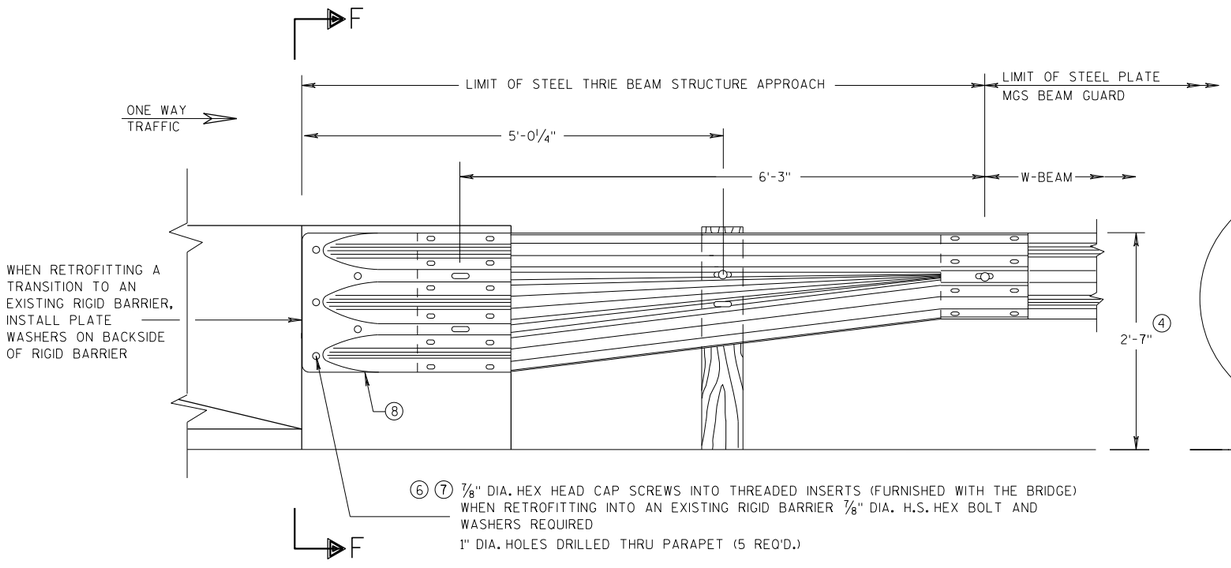
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

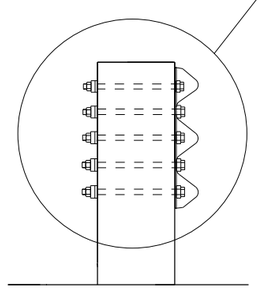
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

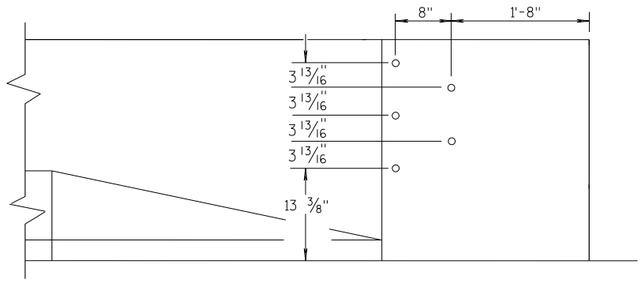




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS D[illegible] UNIT SUPERVIS[illegible]
[illegible]NT
FHWA

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

GENERAL NOTES

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

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

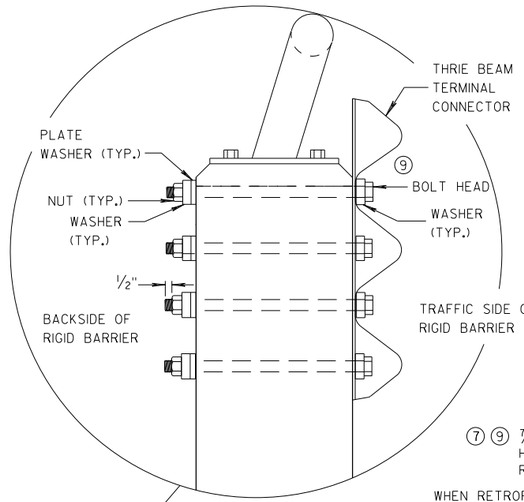
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

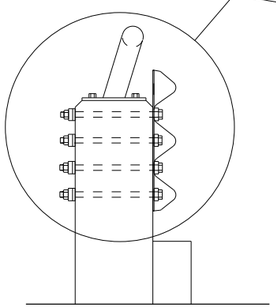
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

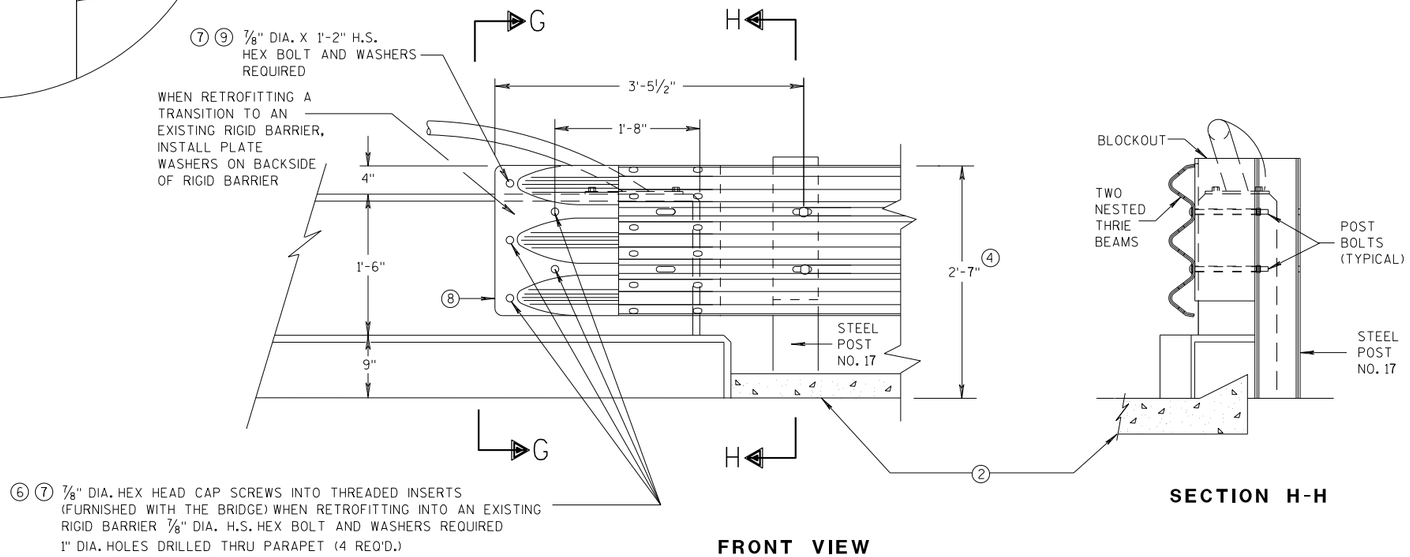
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

(9) BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.





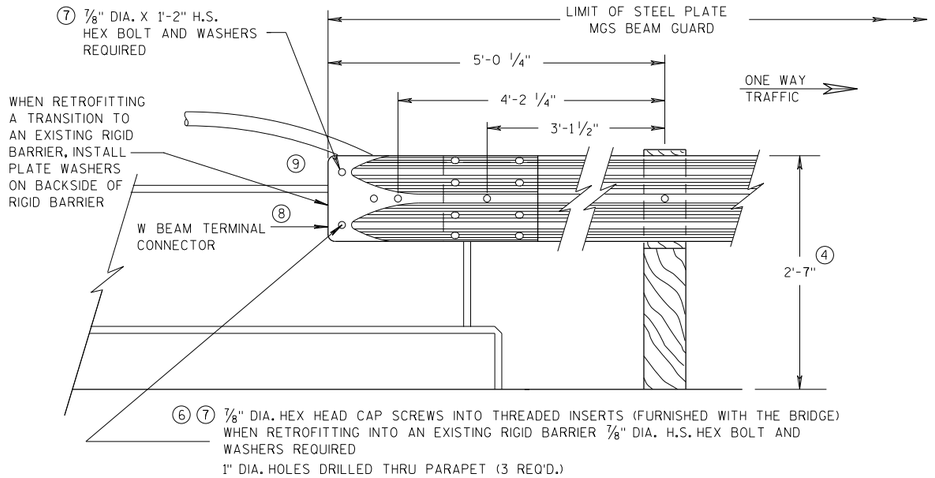
SECTION G-G



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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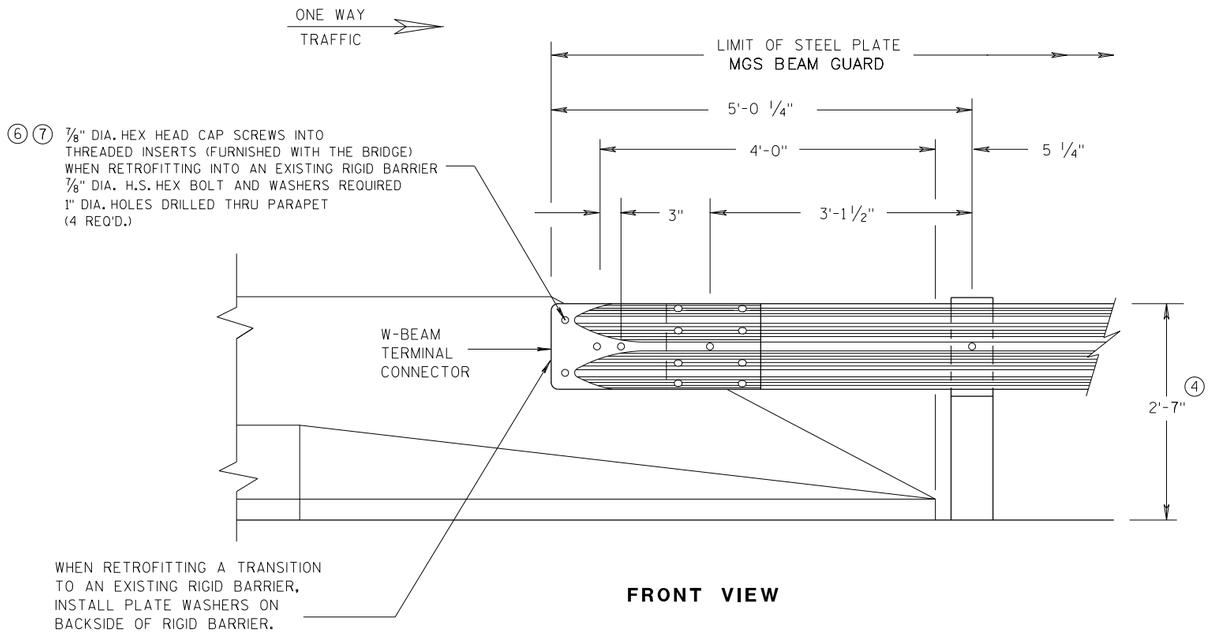


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

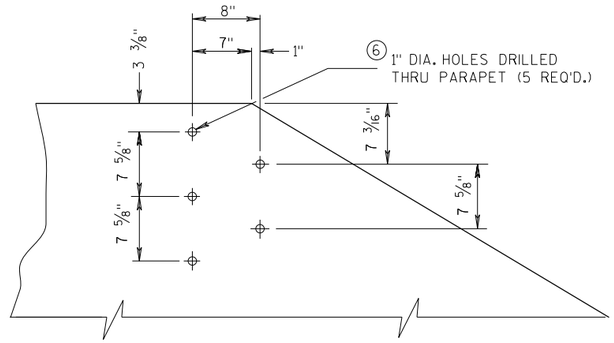
GENERAL NOTES

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

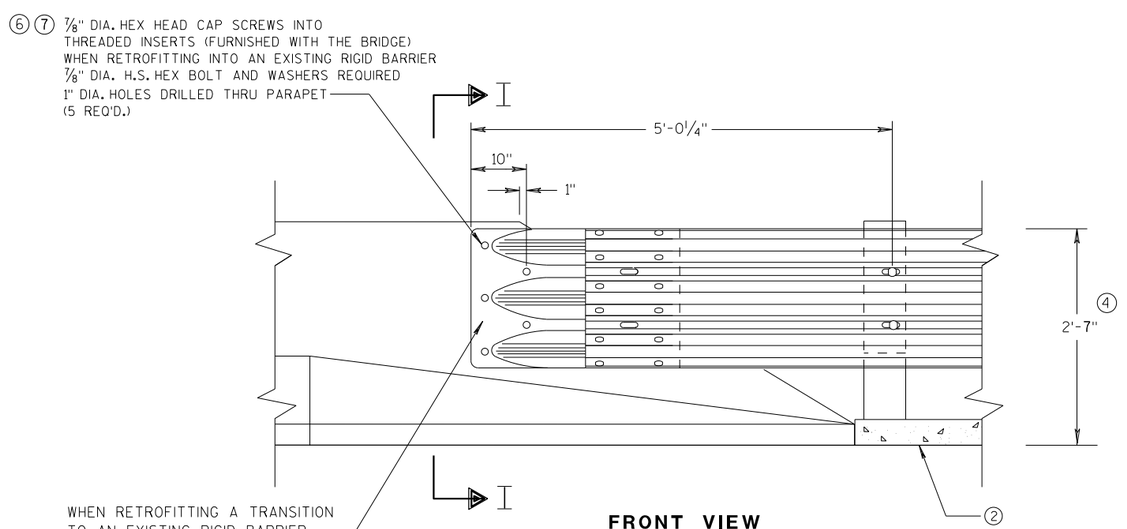
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

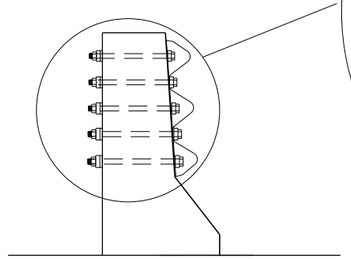
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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



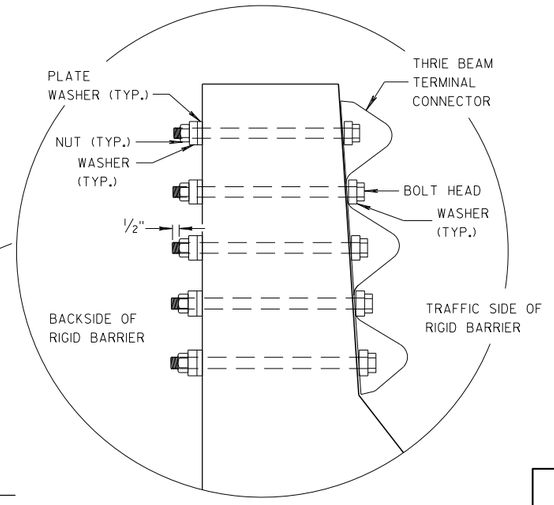
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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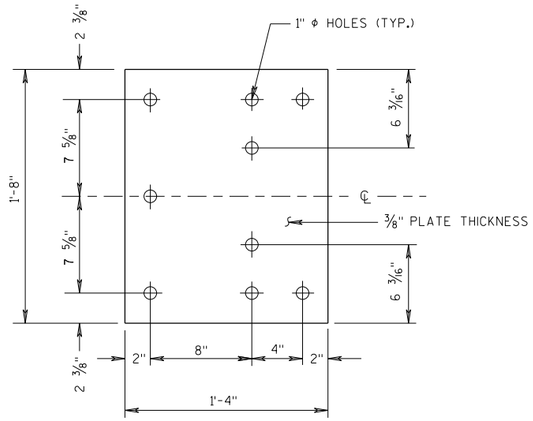
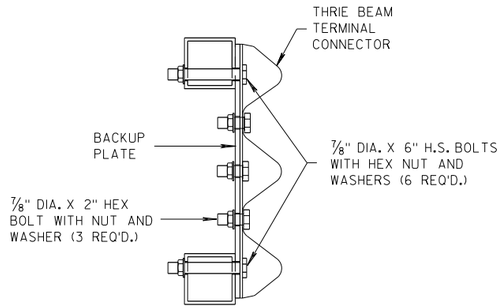
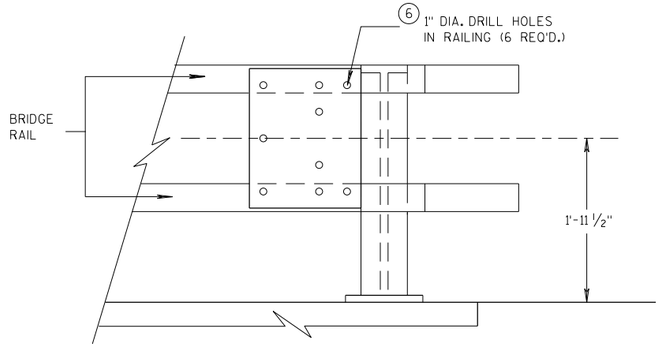


BACK-UP PLATE DETAIL



SECTION J-J

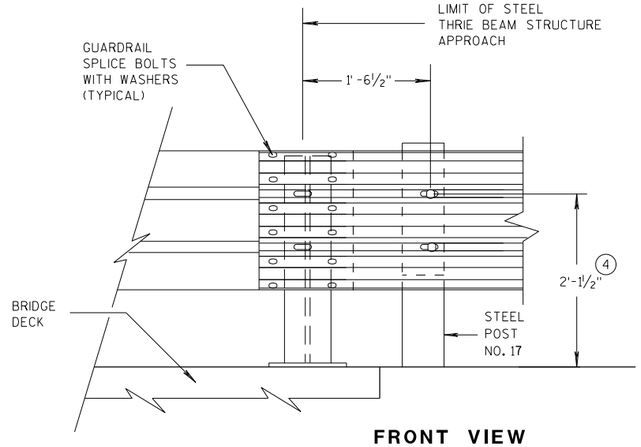


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

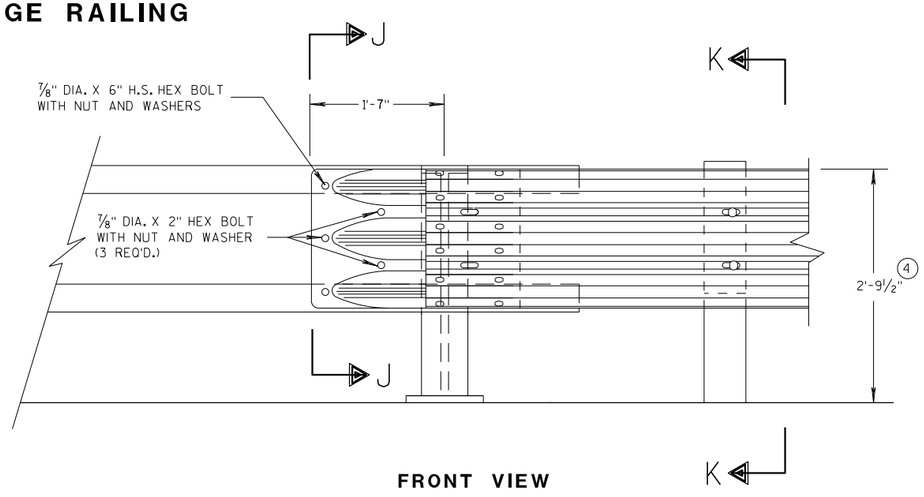
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

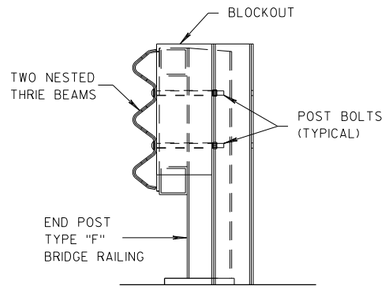


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 07/2018 — DATE — FHWA

/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

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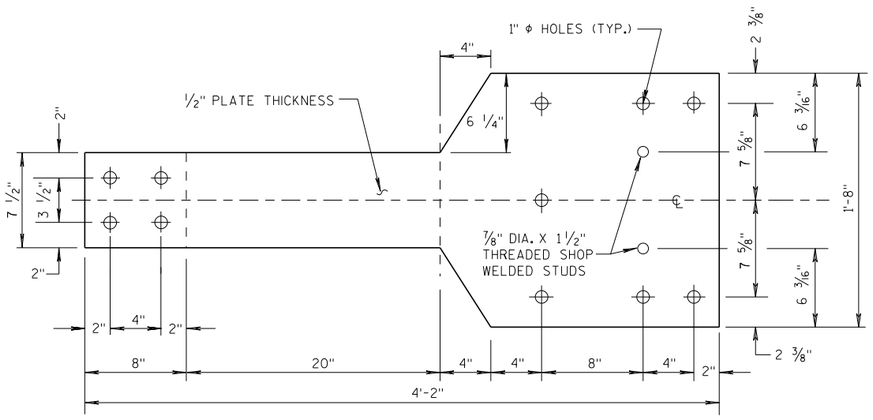
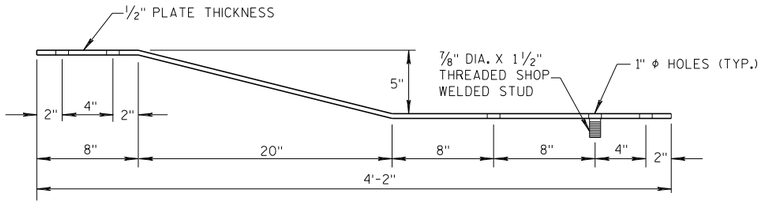
GENERAL NOTES

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

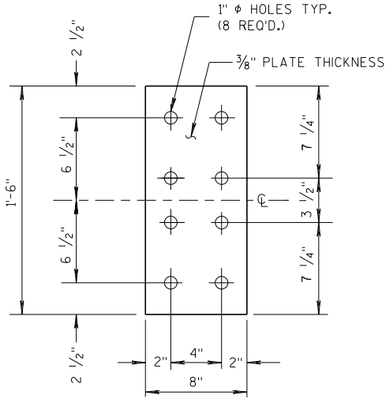


FRONT VIEW



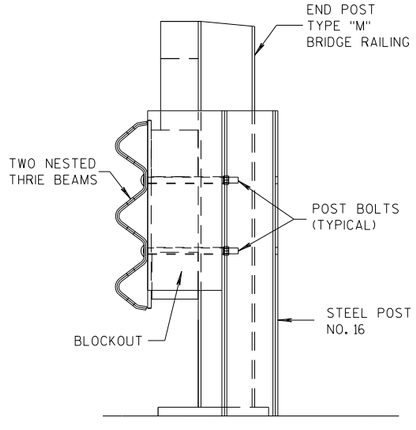
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

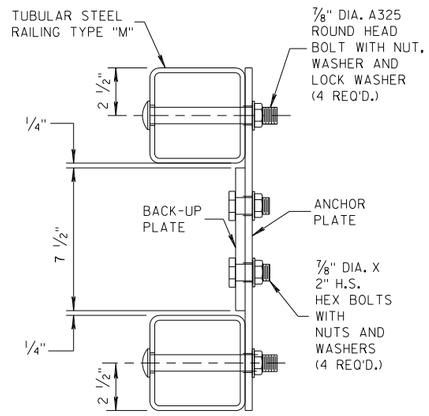


FRONT VIEW

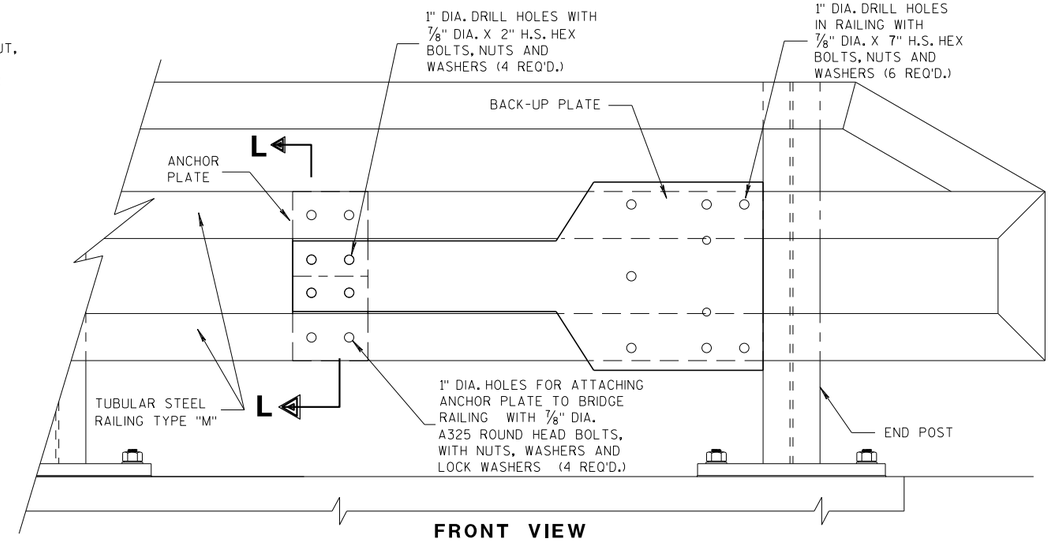
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

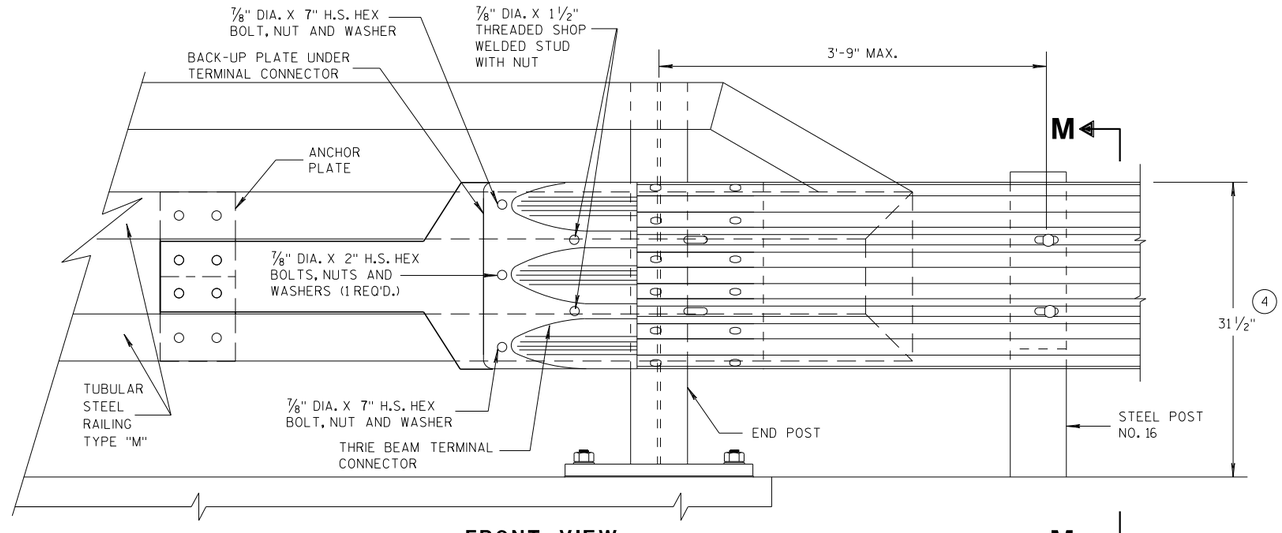


SECTION L-L

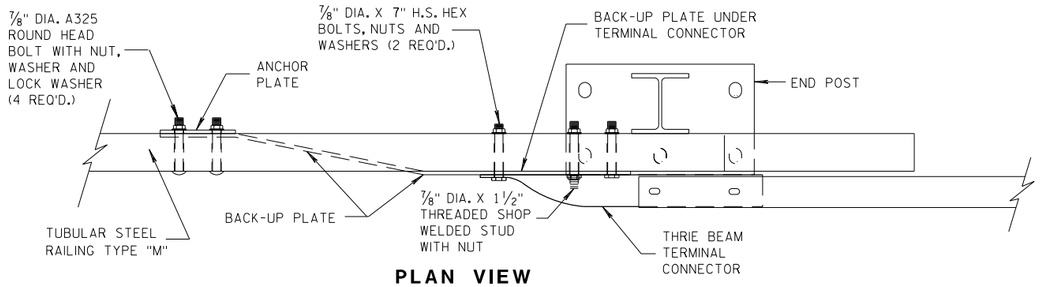


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

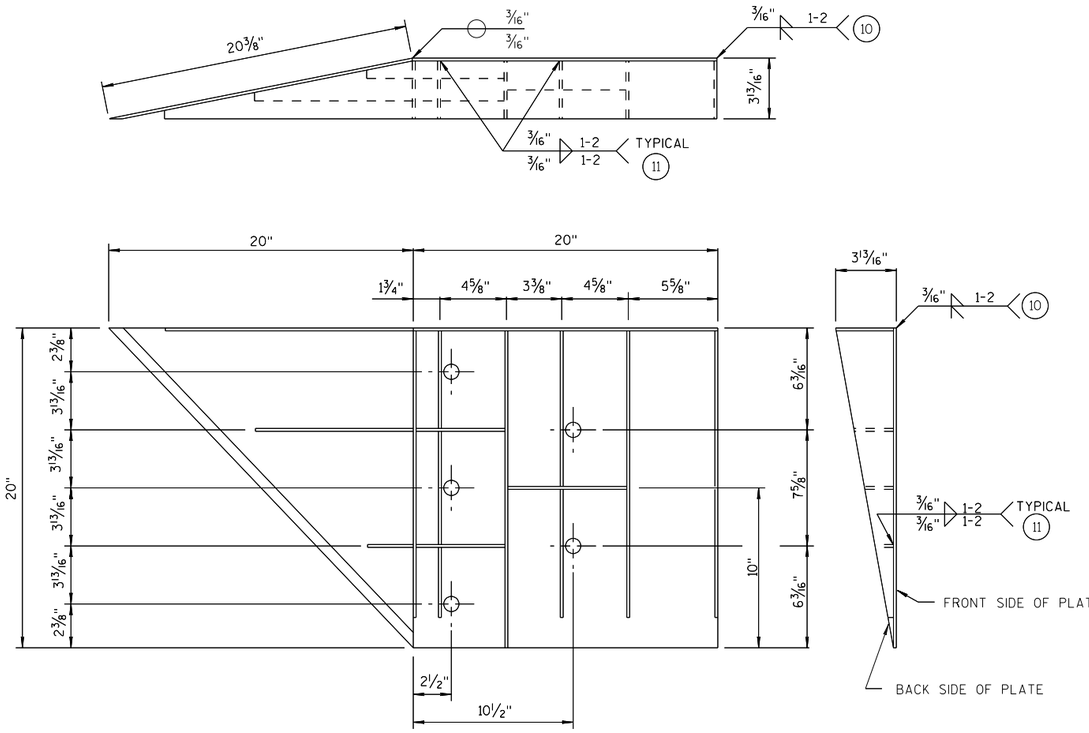
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

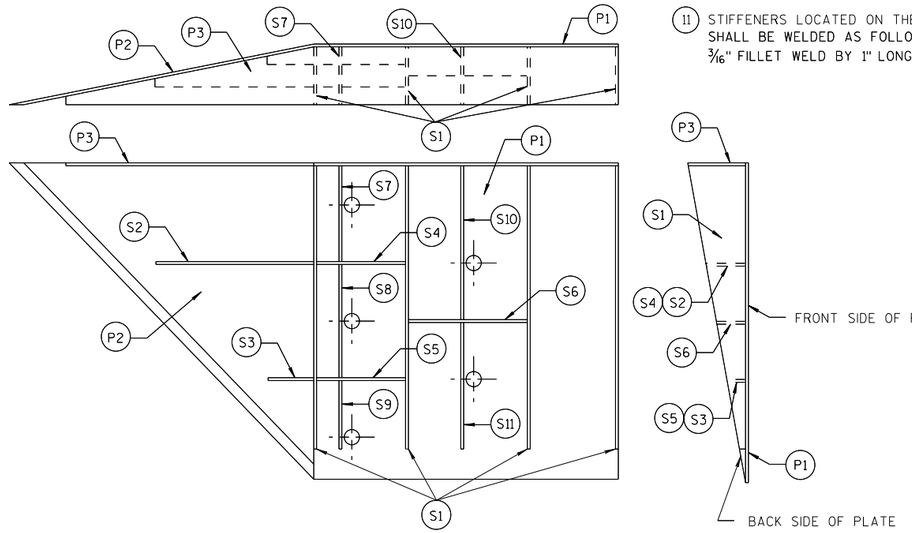


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

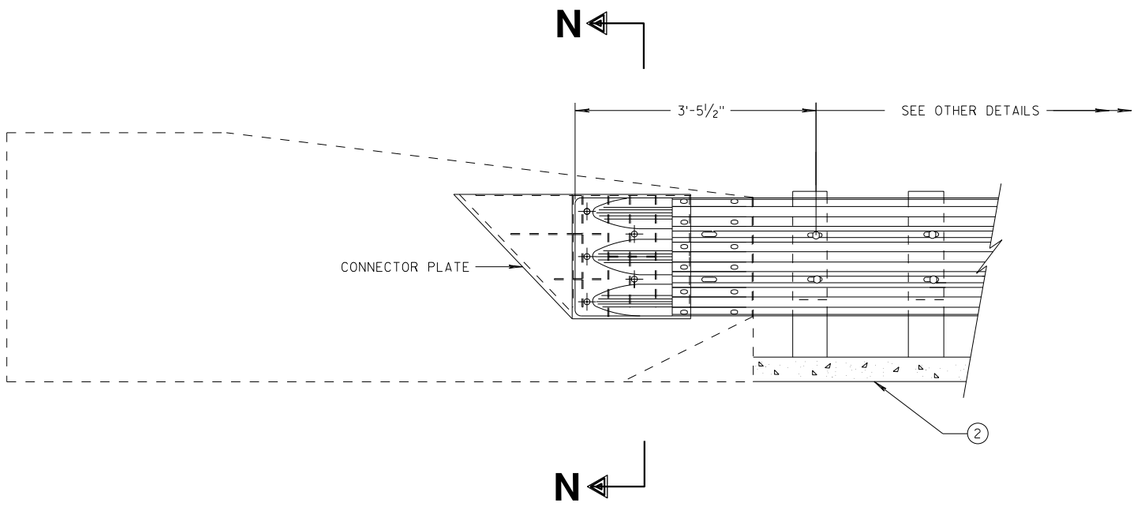
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

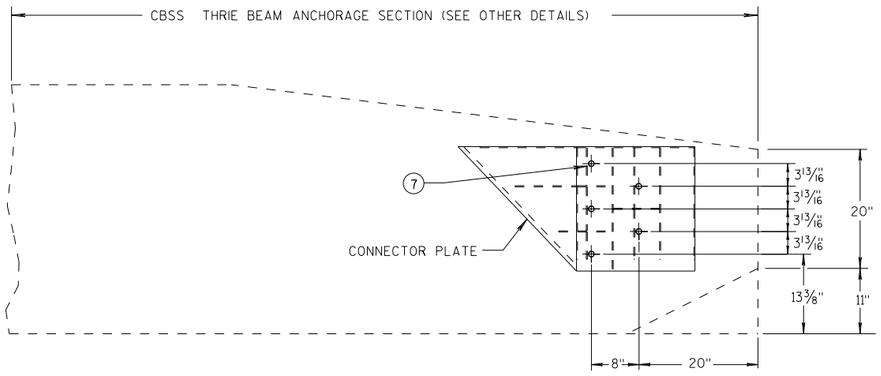
/S/ Rodney Taylor
ROADWAY STANDARDS I
UNIT SUPERVI

6

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



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



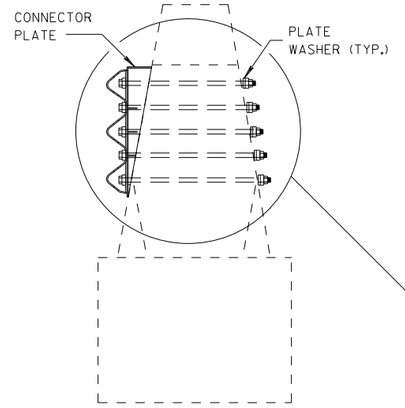
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

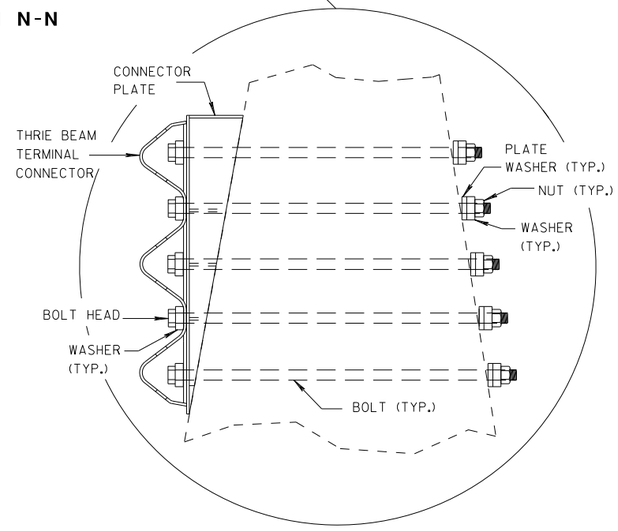
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

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



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DI UNIT SUPERVIS
NT
FHWA

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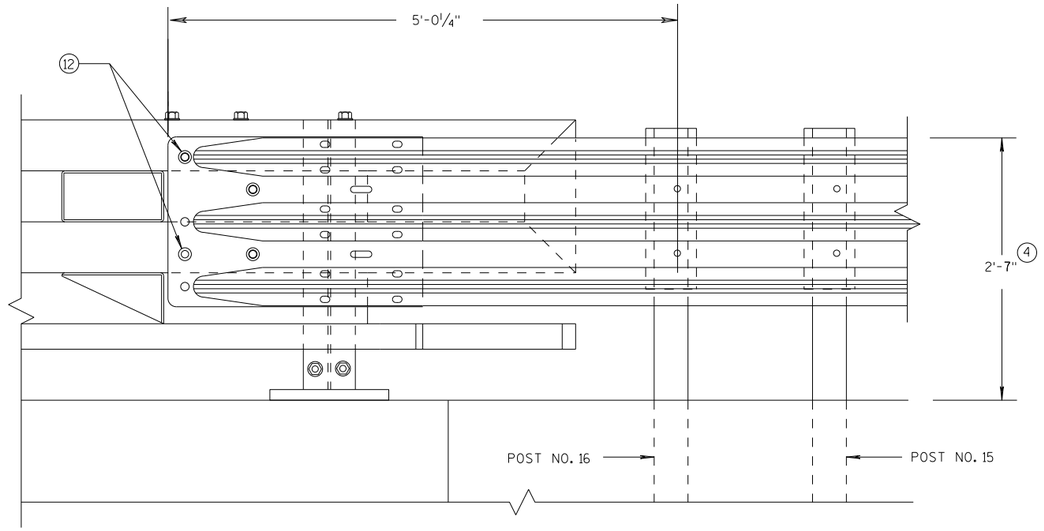
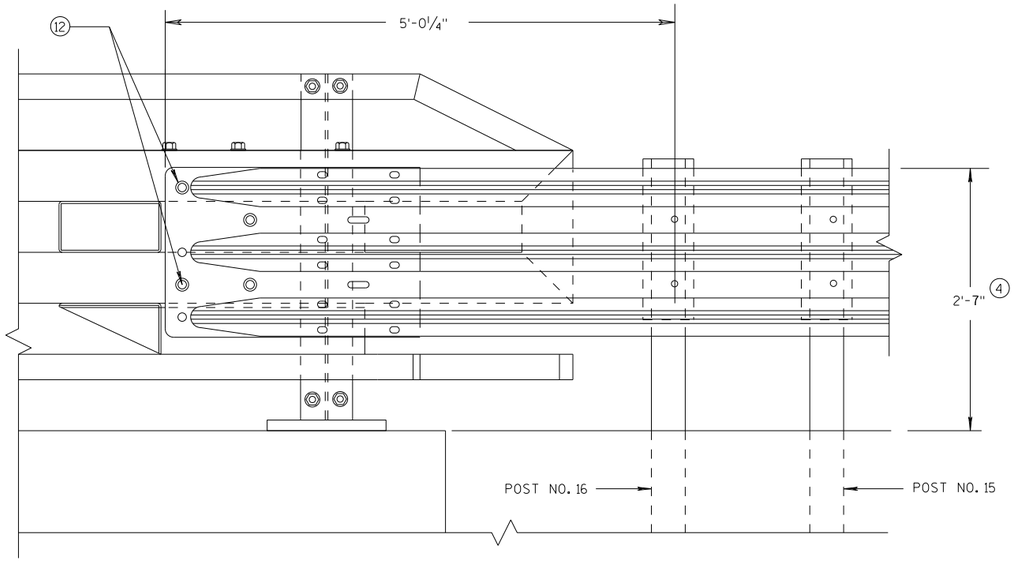
S.D.D. 14 B 45-5j



ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS D
UNIT SUPERVIS

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

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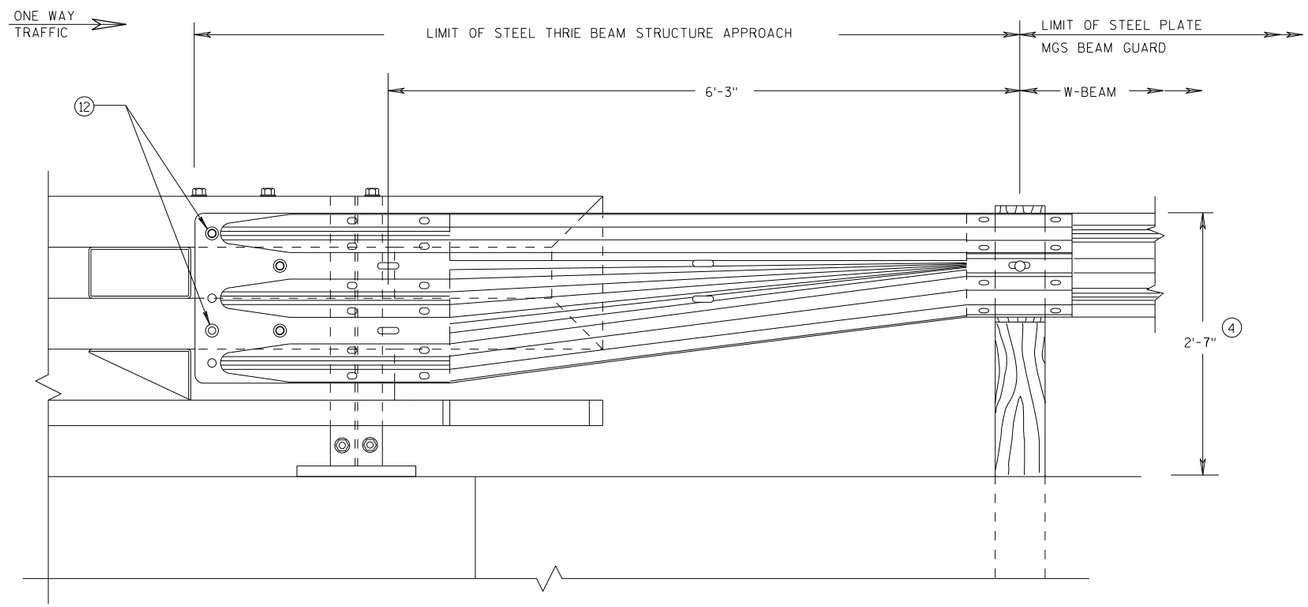


FRONT VIEW

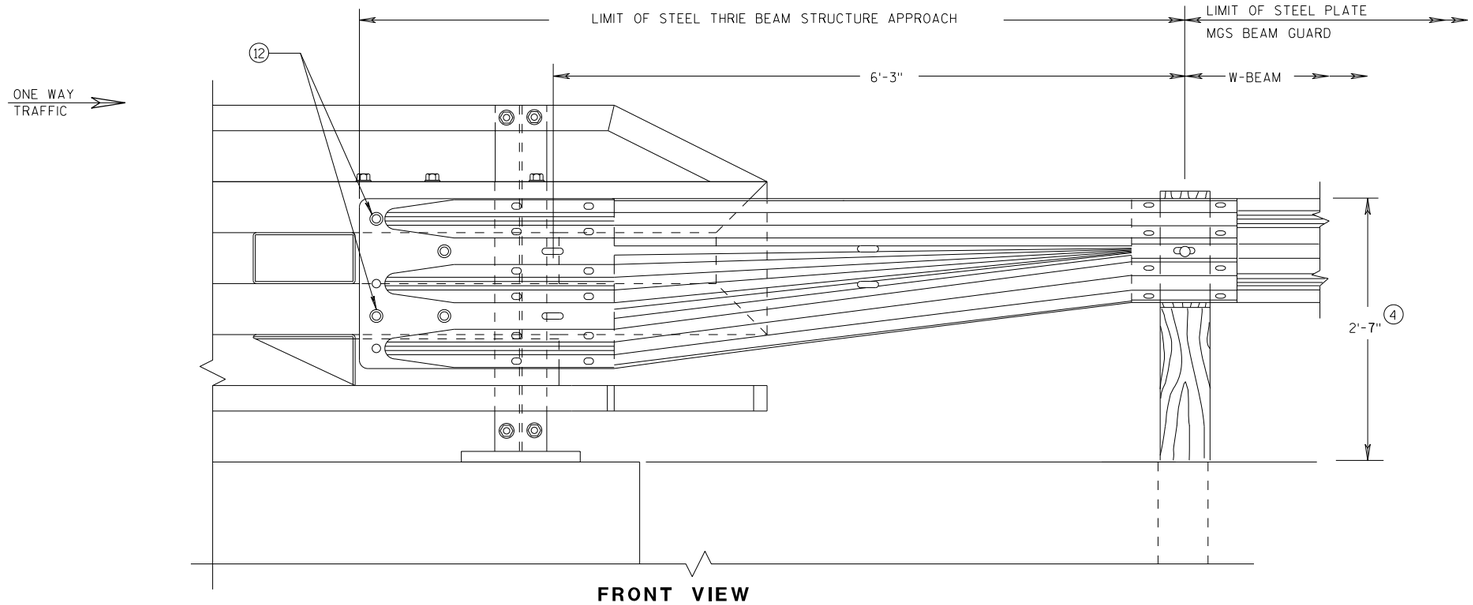
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

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

GENERAL NOTES

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

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



FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY4"

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D
UNIT SUPERVIS
FHWA

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

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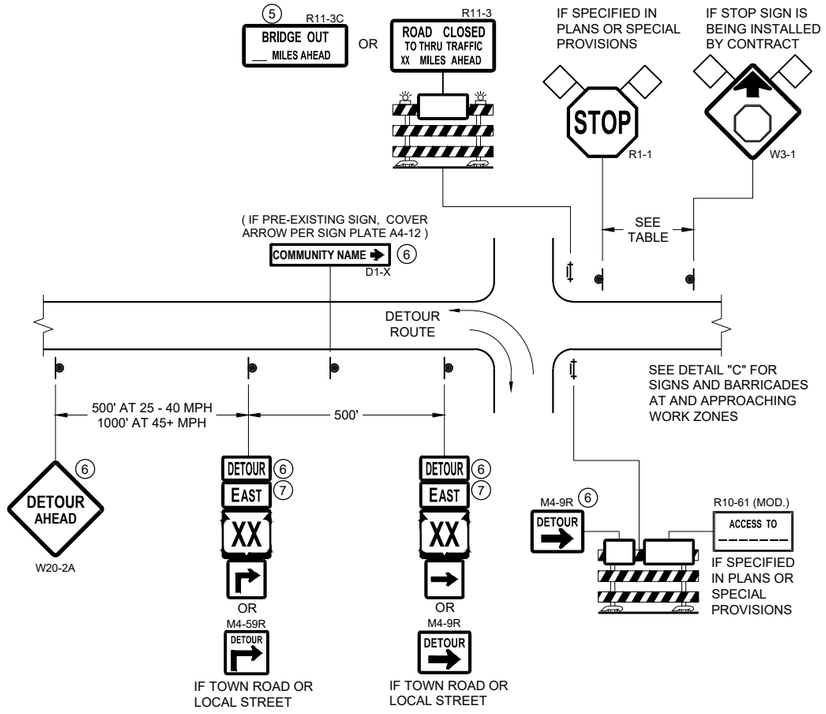
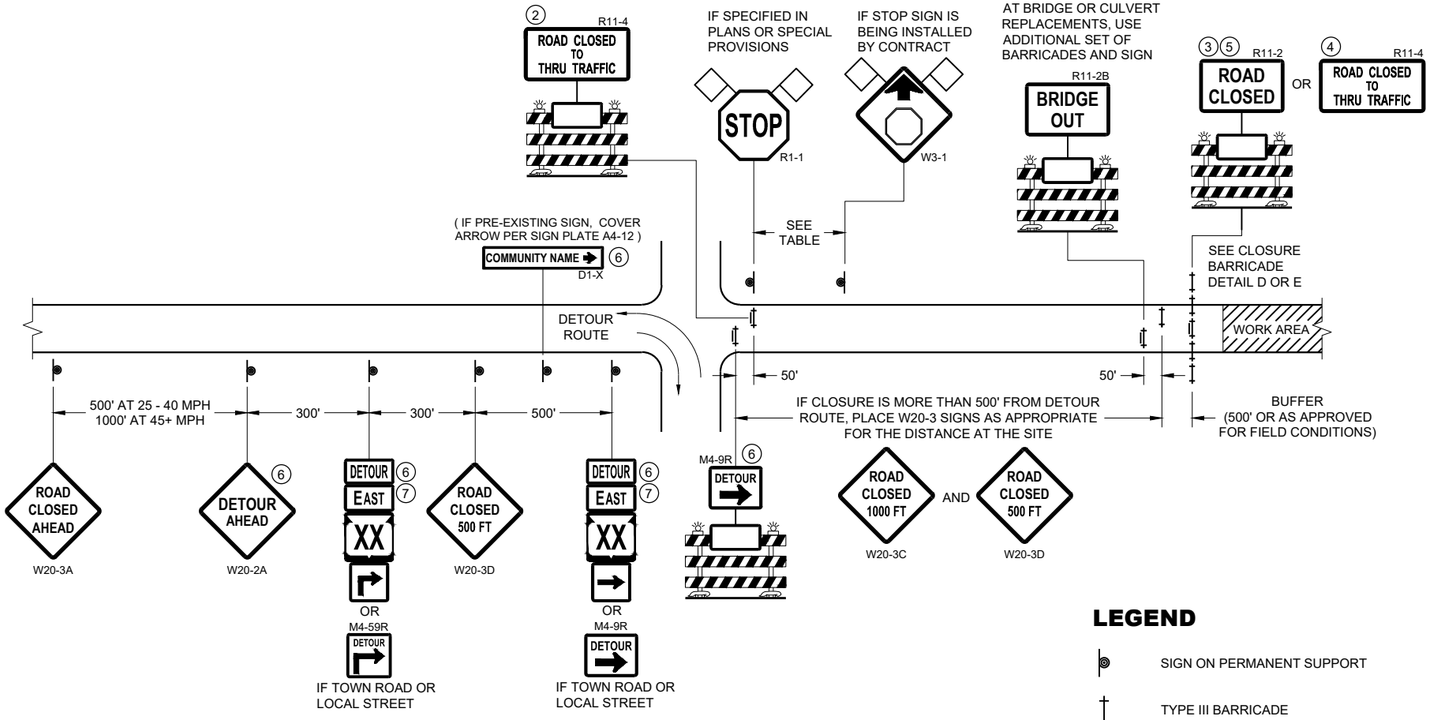
S.D.D. 14 B 45-5L



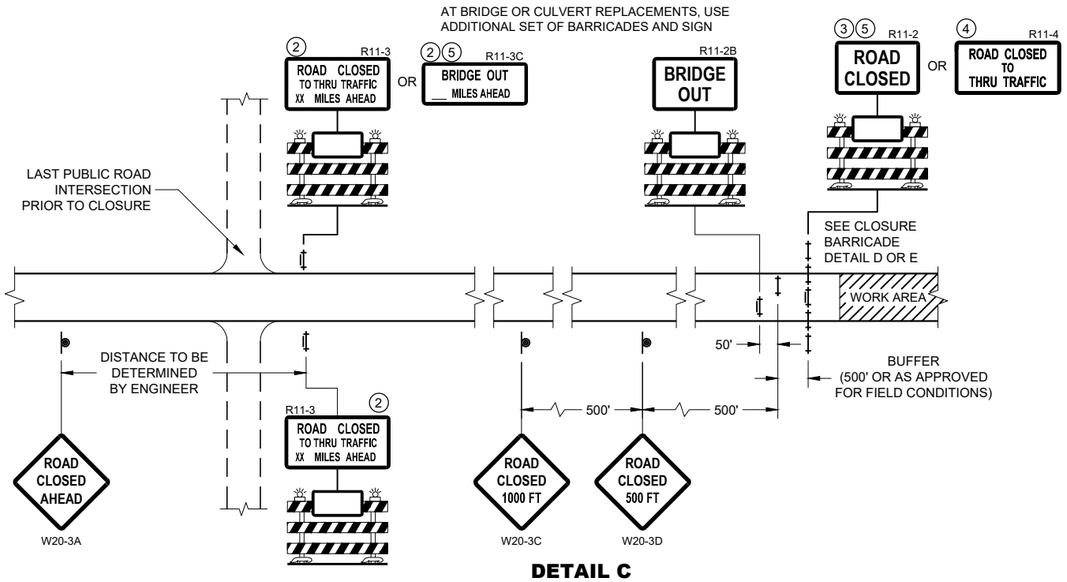
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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
May 2023
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

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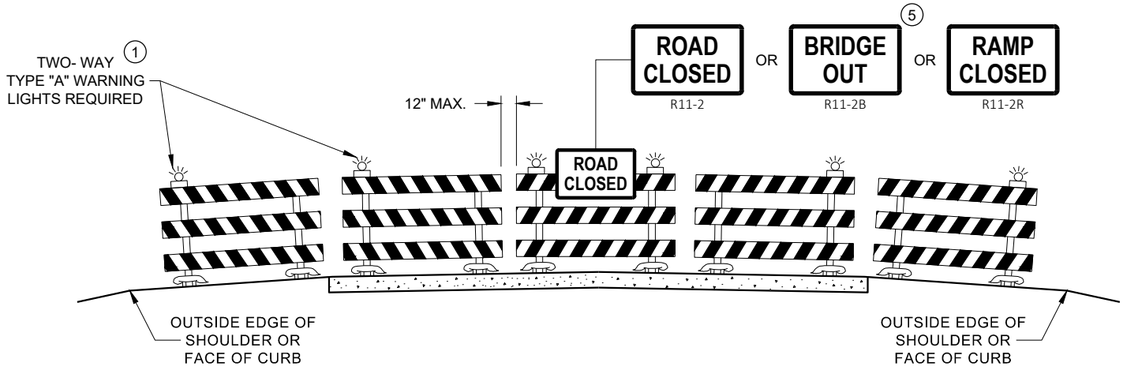
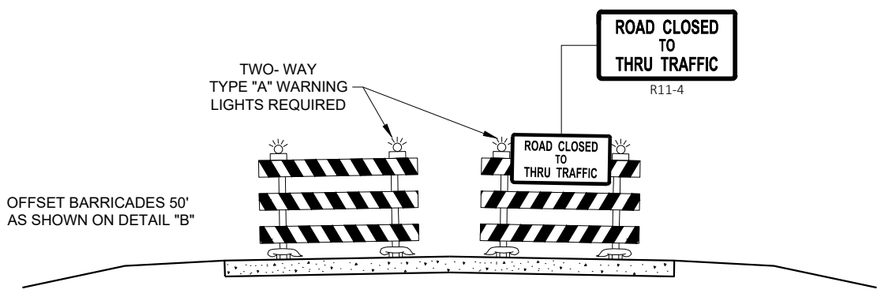
SDD 15C02 - 09a

SDD 15C02 - 09a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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SDD 15C02 - 09b

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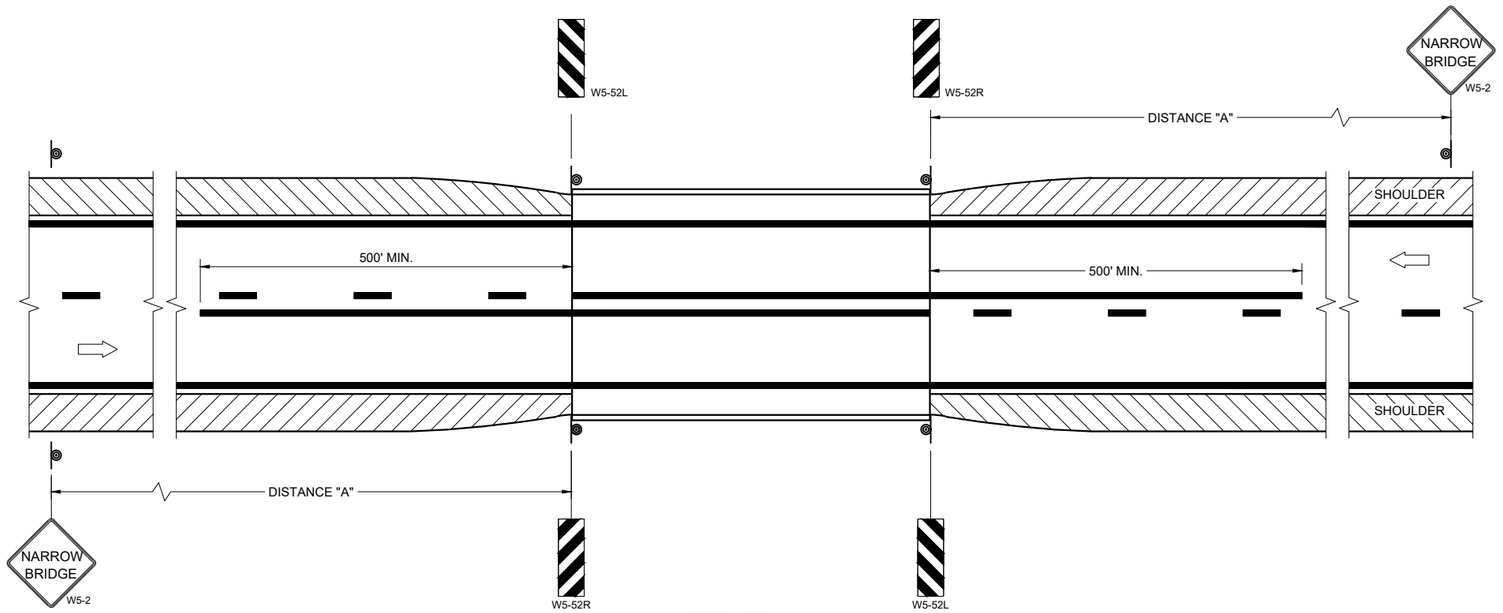
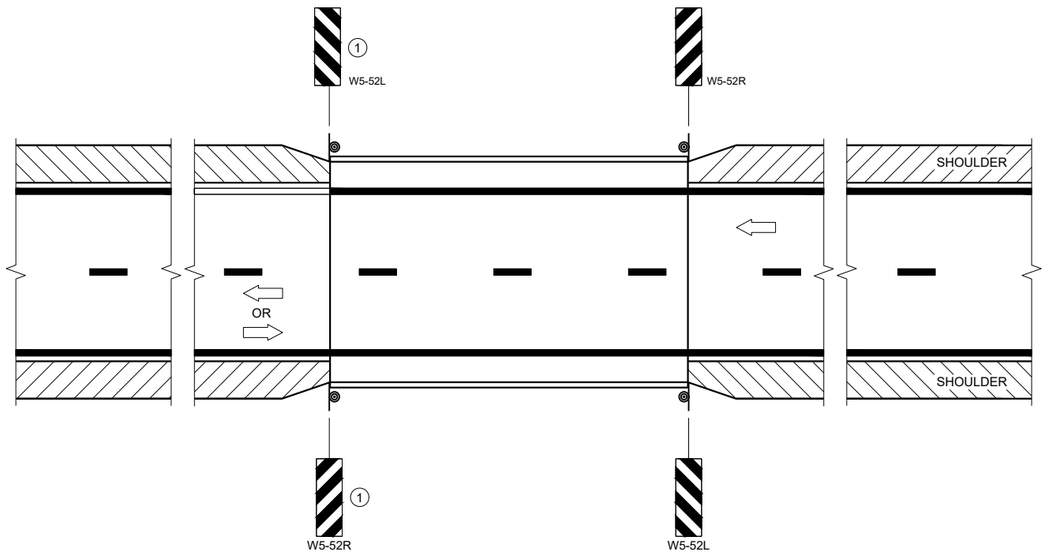
SDD 15C02 - 09b



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 2023
DATE
/S/ Jeannie Silver
Statewide Pavement Marking Engineer
FHWA

6
SDD 15C06-12

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

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

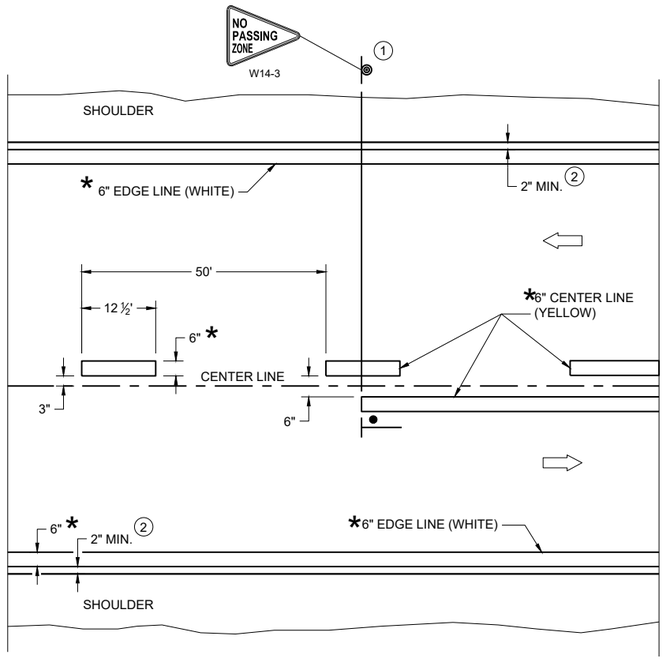
(2) MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

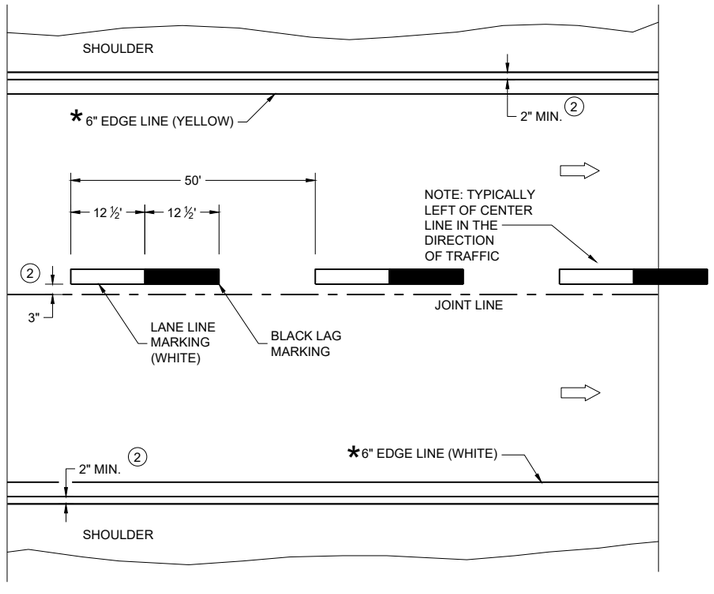
"T" MARKING

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 2023 — DATE
/S/ Jeannie Silver — Statewide Pavement Marking Engineer
FHWA

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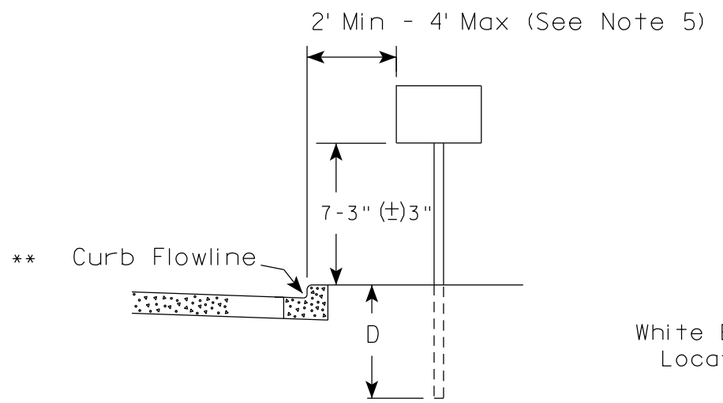
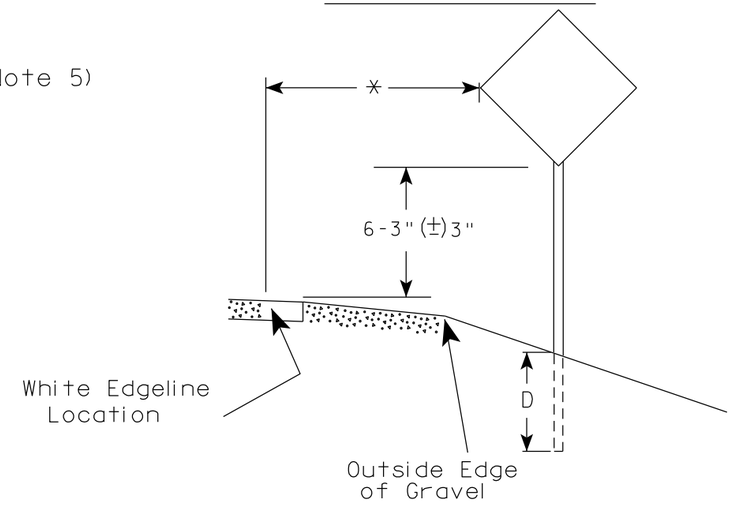
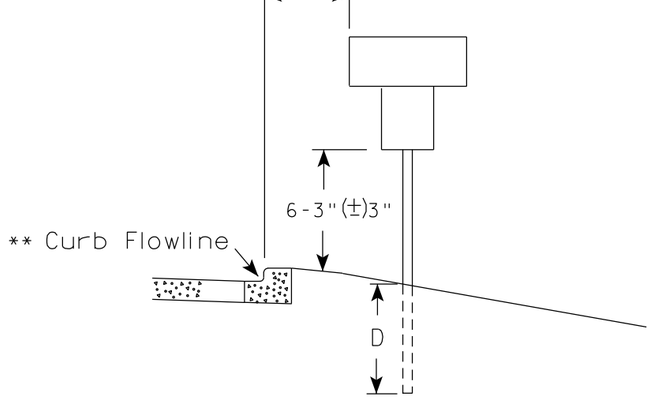
SDD 15C08-23a

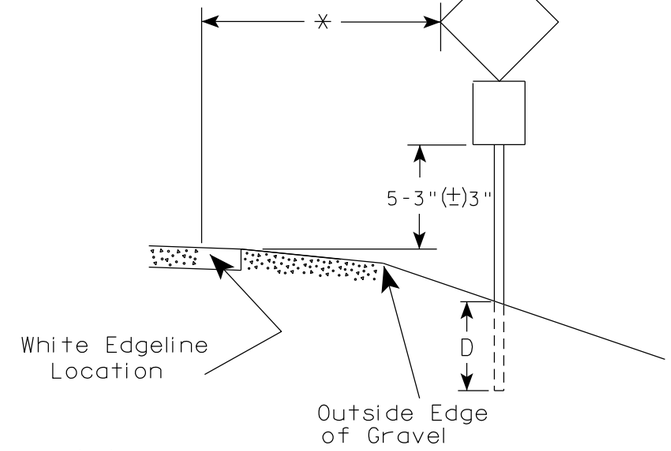
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

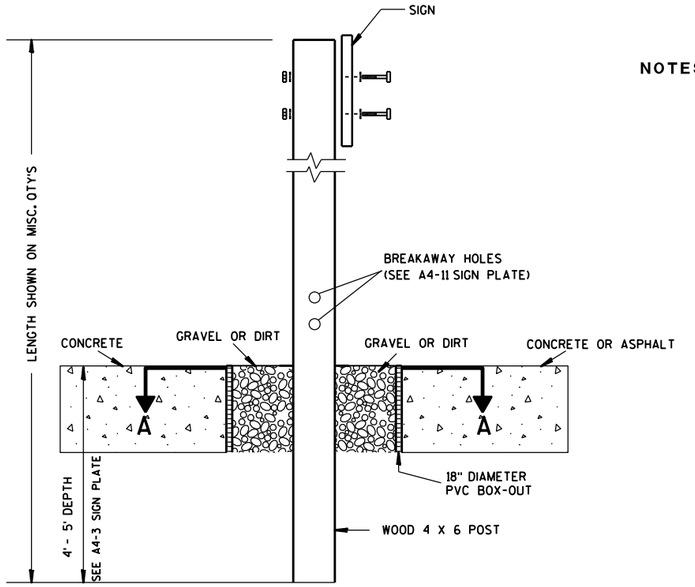
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

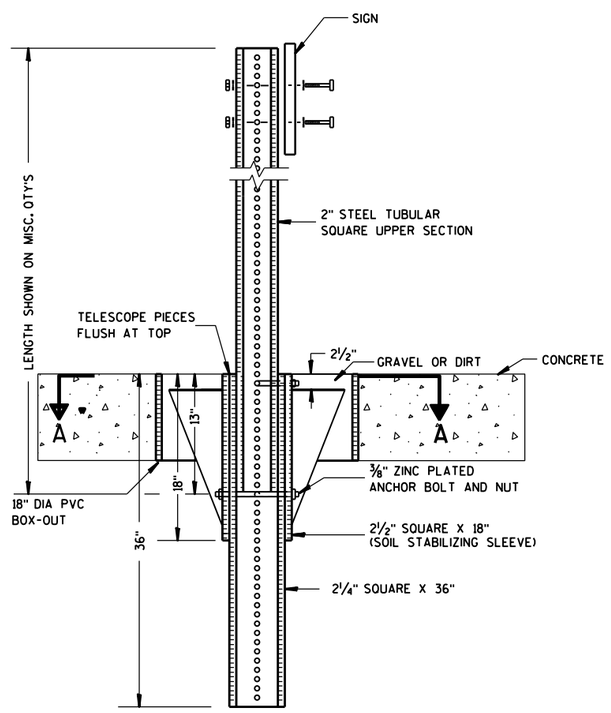
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 44	E



ELEVATION VIEW

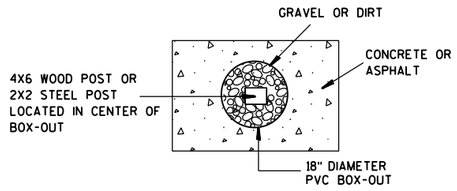
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

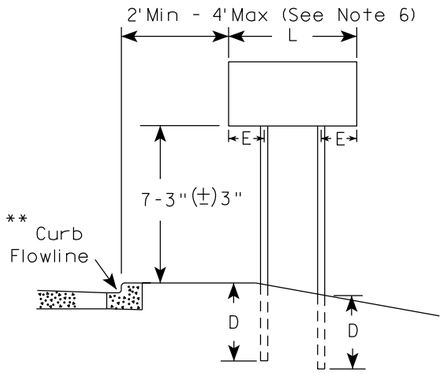
APPROVED Matthew R Rauch
for State Traffic Engineer

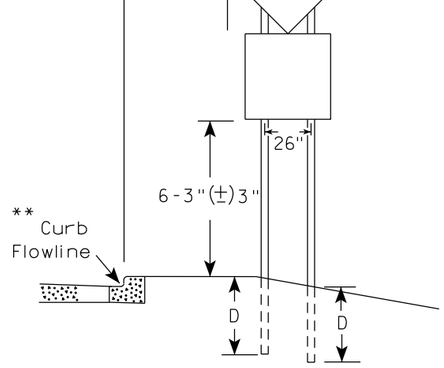
DATE 1/27/14 PLATE NO. A4-3B.1

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

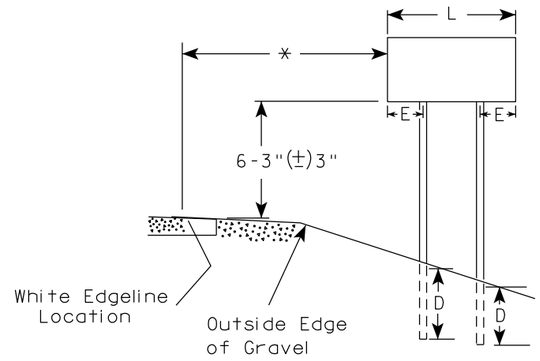
URBAN AREA

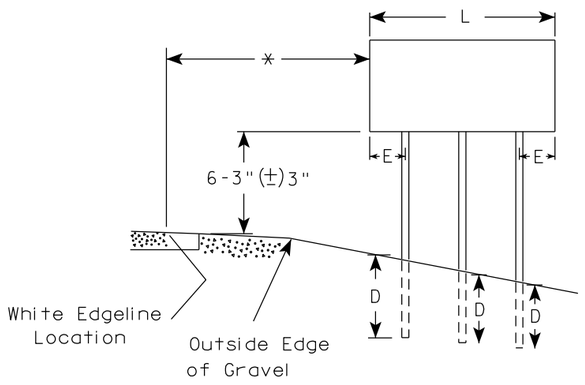


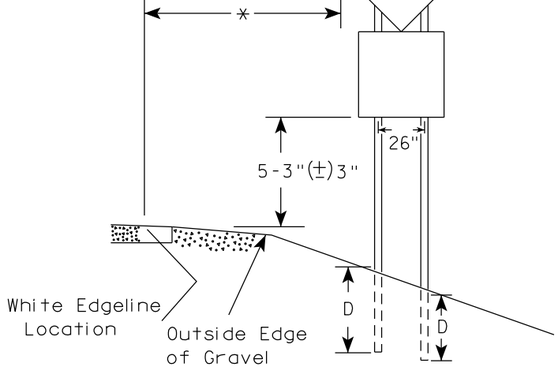


48" DIAMOND WARNING SIGN

RURAL AREA (See Note 3)







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" (±) 3" or 6'-3" (±) 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" (±) 3" or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±) 3".

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

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

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

POST EMBEDMENT DEPTH

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

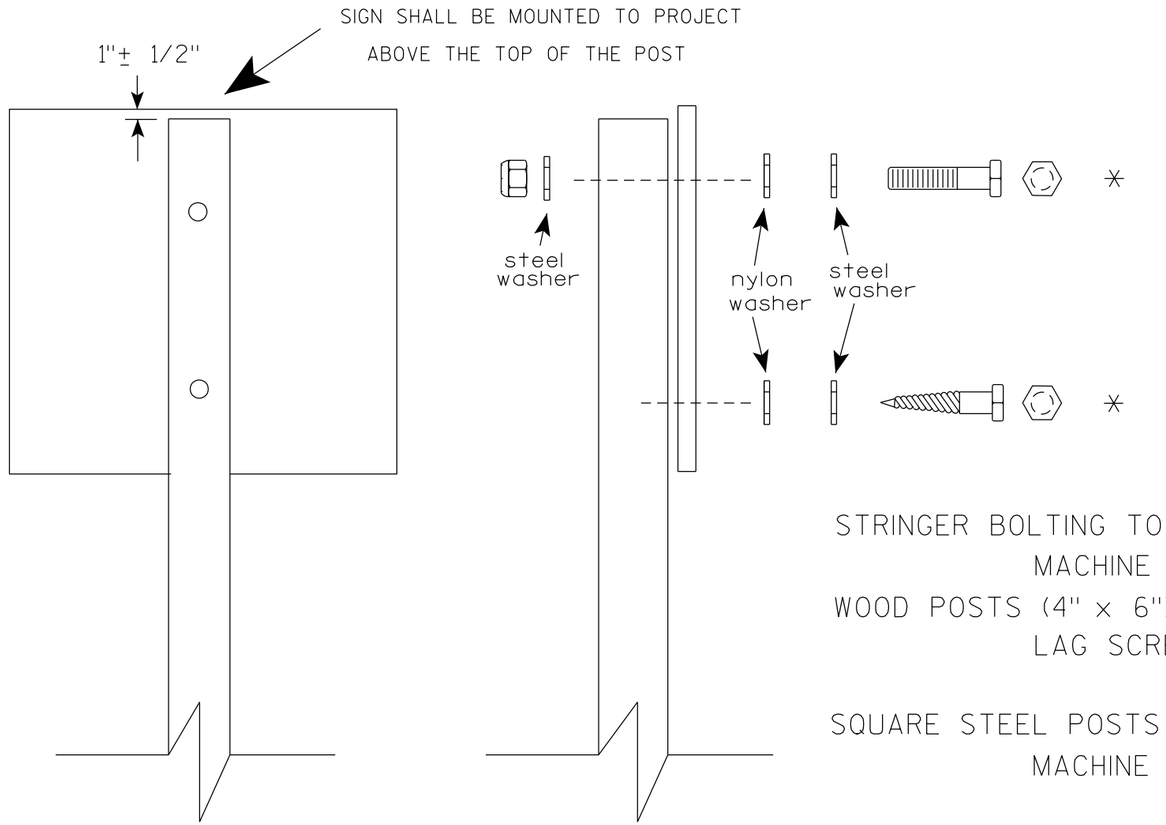
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 46	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

PROJECT NO:

SHEET NO: 47 E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 01-APRIL-2020 PLOT BY : dotc4c

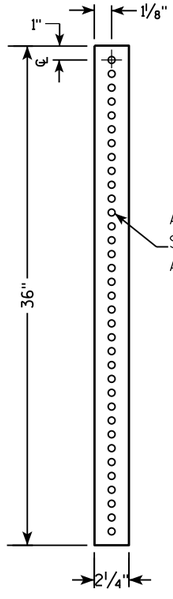
WISDOT/CADDS SHEET 42

7

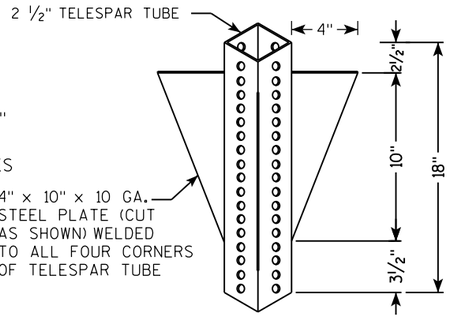
7

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

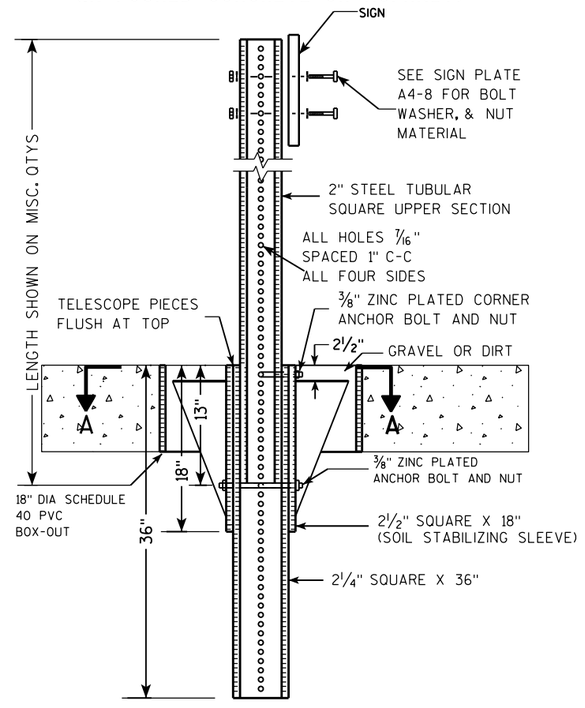
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



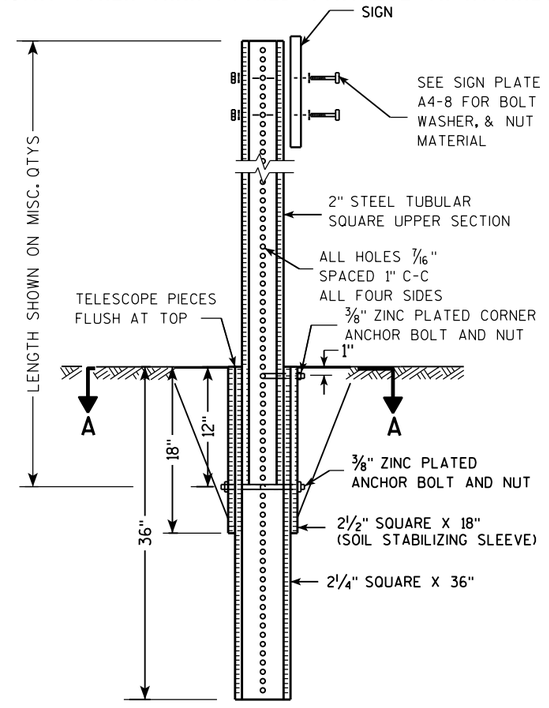
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

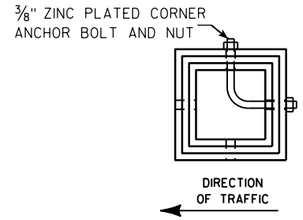


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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).

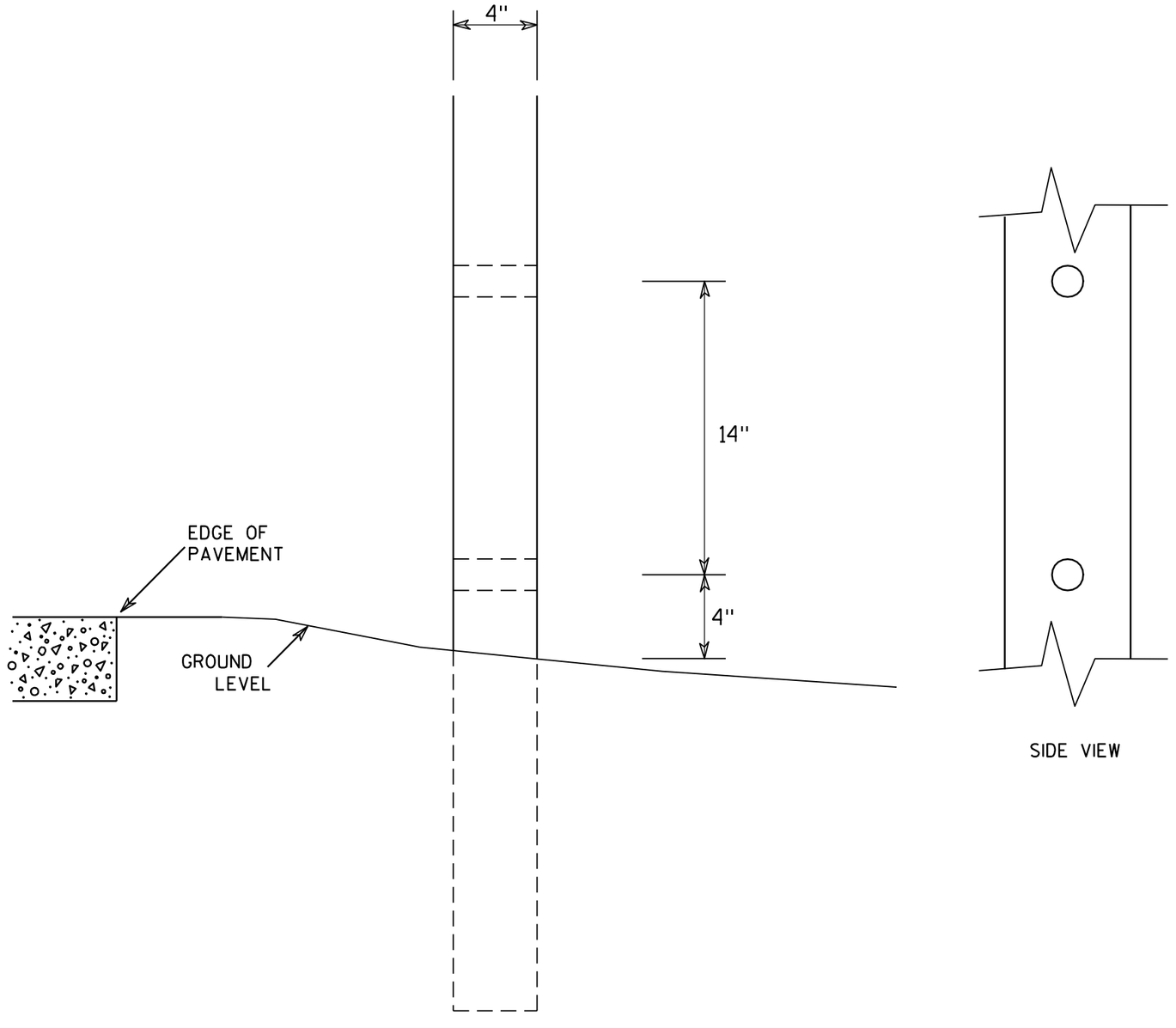
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 48 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.

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

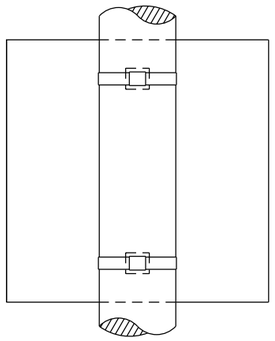
APPROVED Chester J Spang for State Traffic Engineer

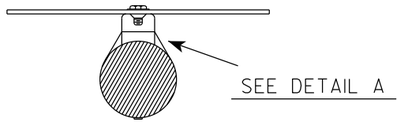
DATE 3/27/97 PLATE NO. A4-11.2

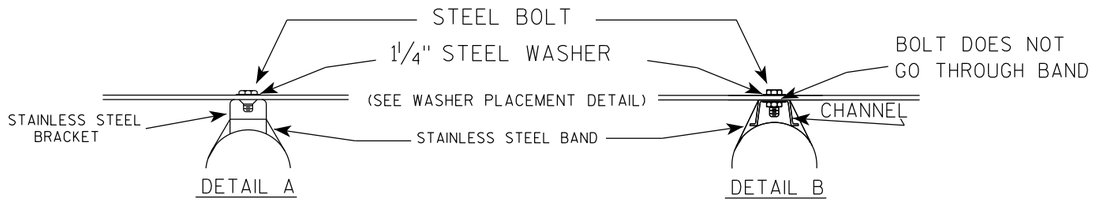
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 49	E

BANDING

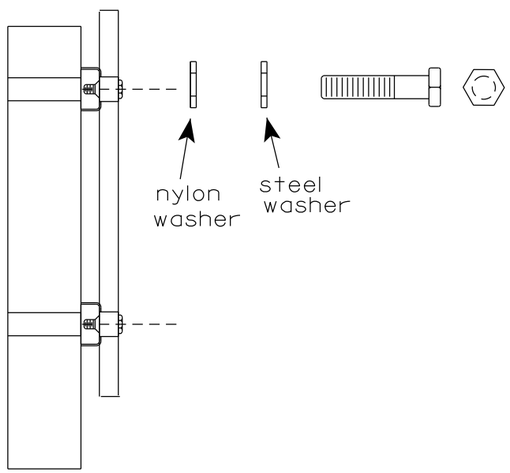
SINGLE SIGN







WASHER PLACEMENT

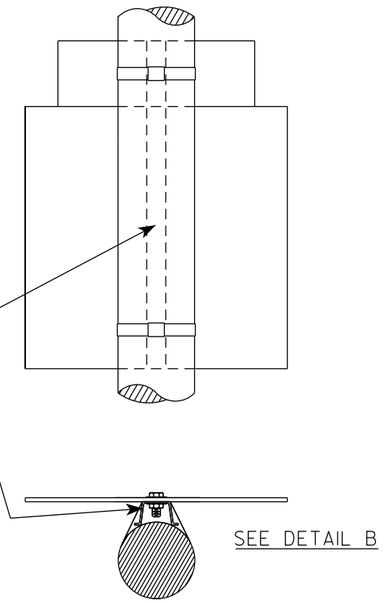


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

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

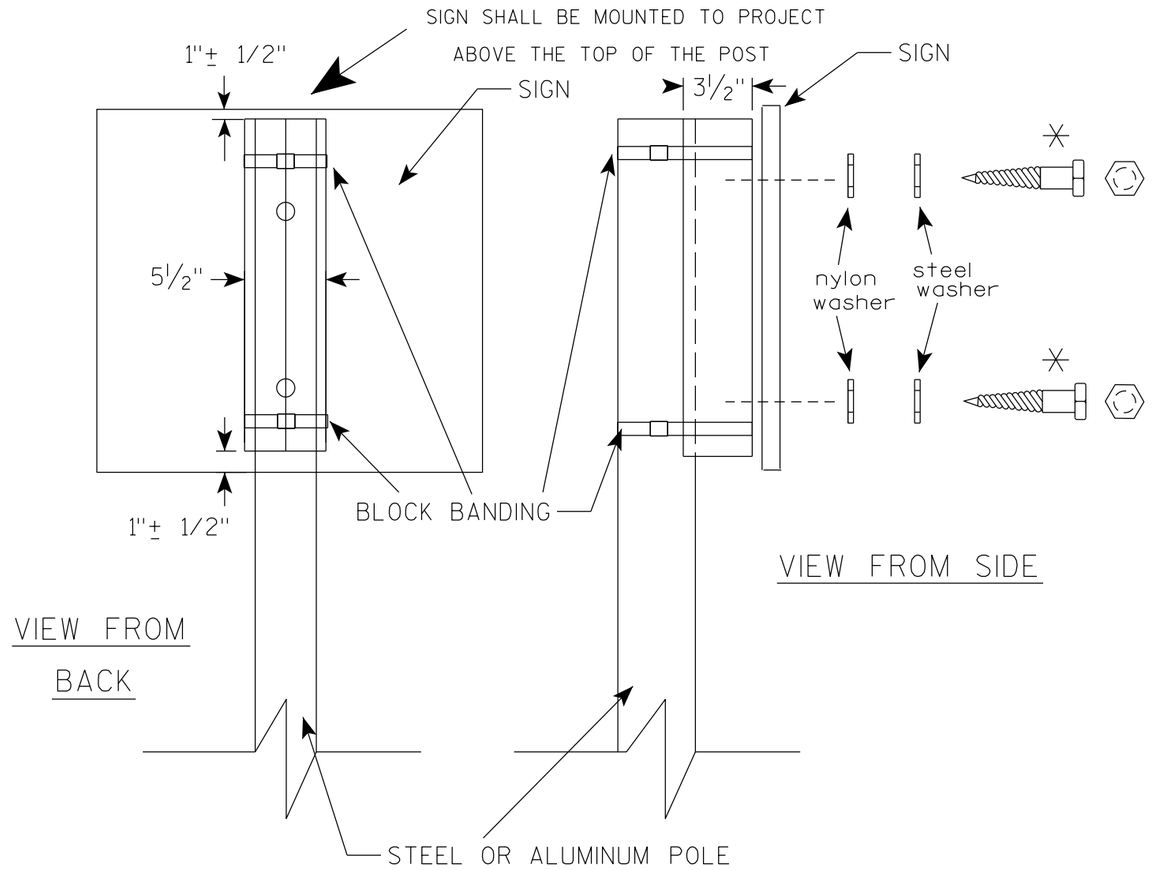
DATE 6/10/19 PLATE NO. A5-9.4

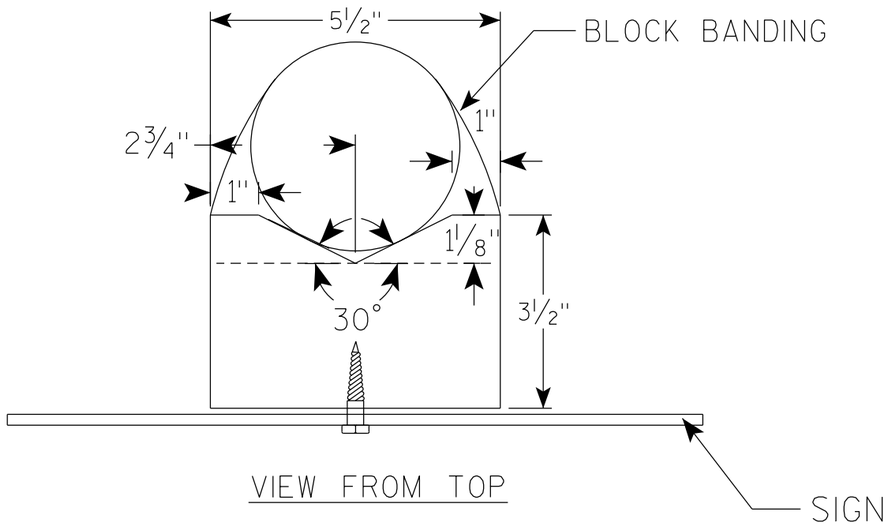
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 50	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

7

7





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)

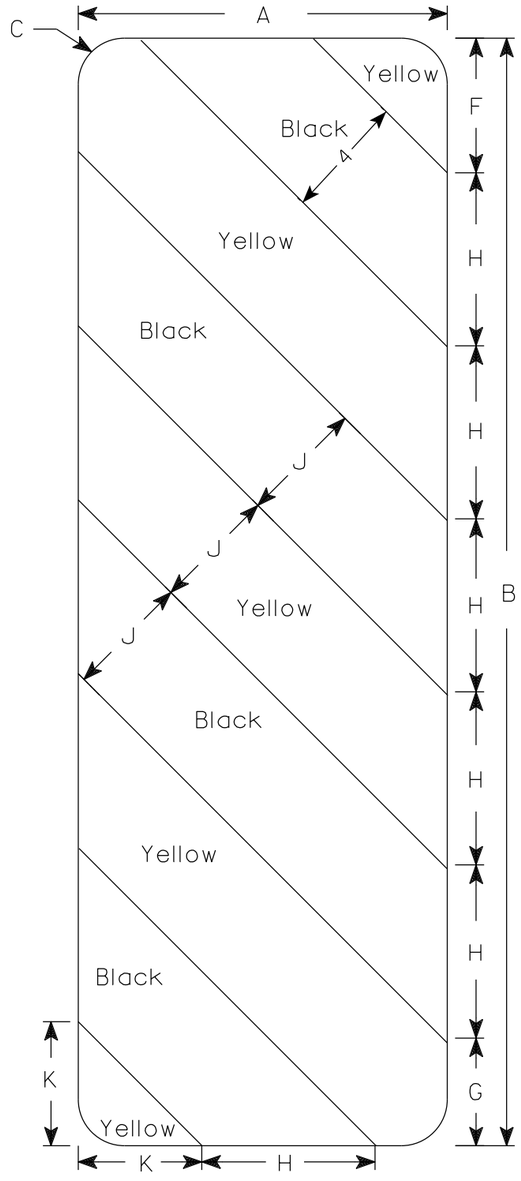
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

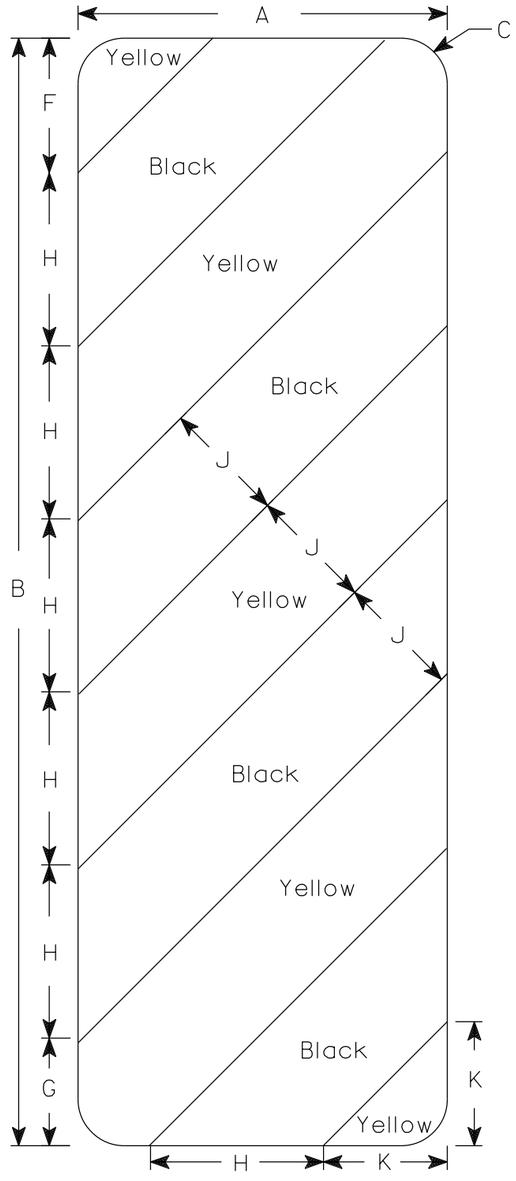
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO: 51 E



W5-52L



W5-52R

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. 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	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36	1 1/2			4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54	1 1/2			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 3/4/2024 PLATE NO. W5-52.10

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

7

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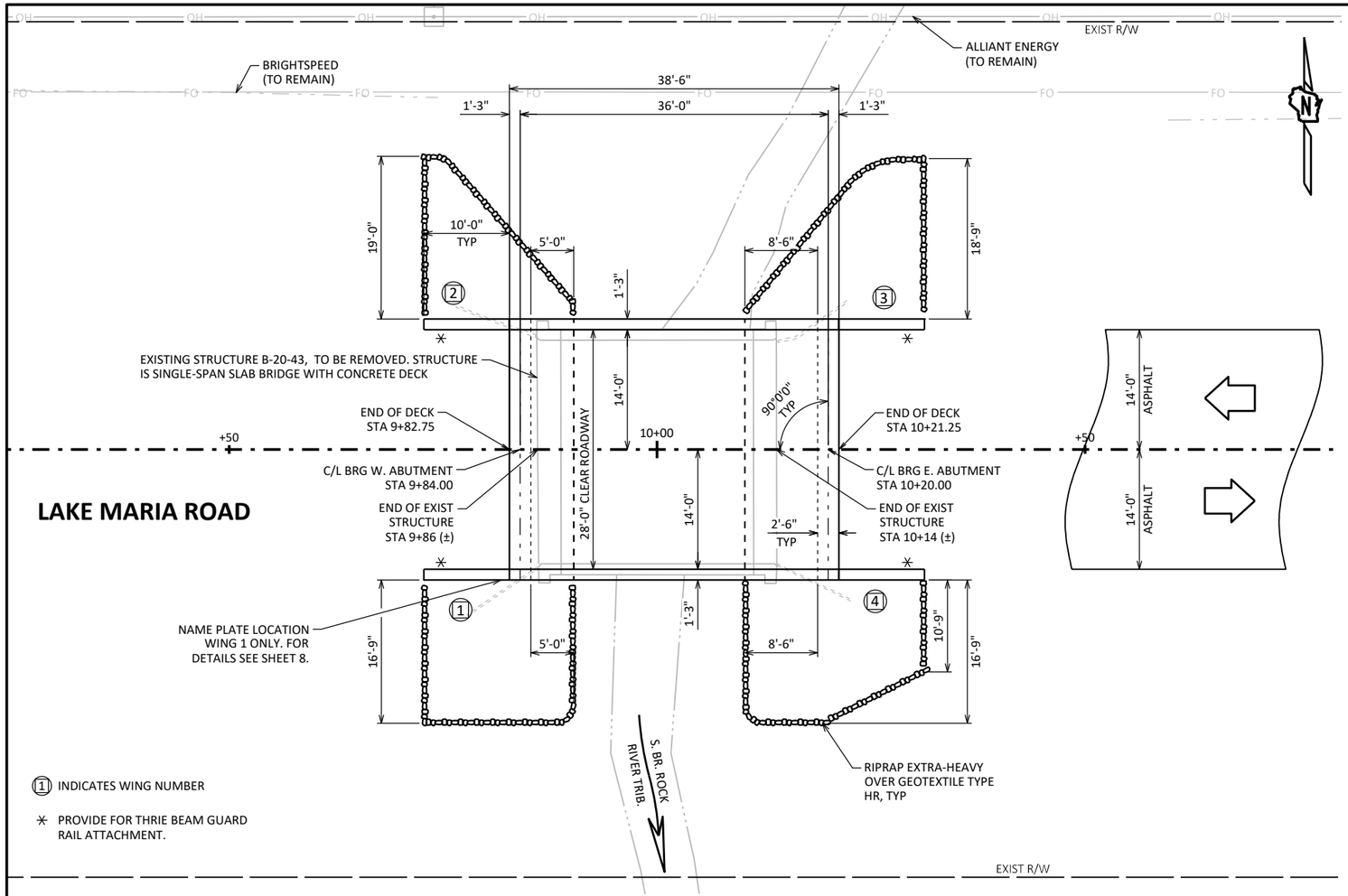


(1) INDICATES WING NUMBER

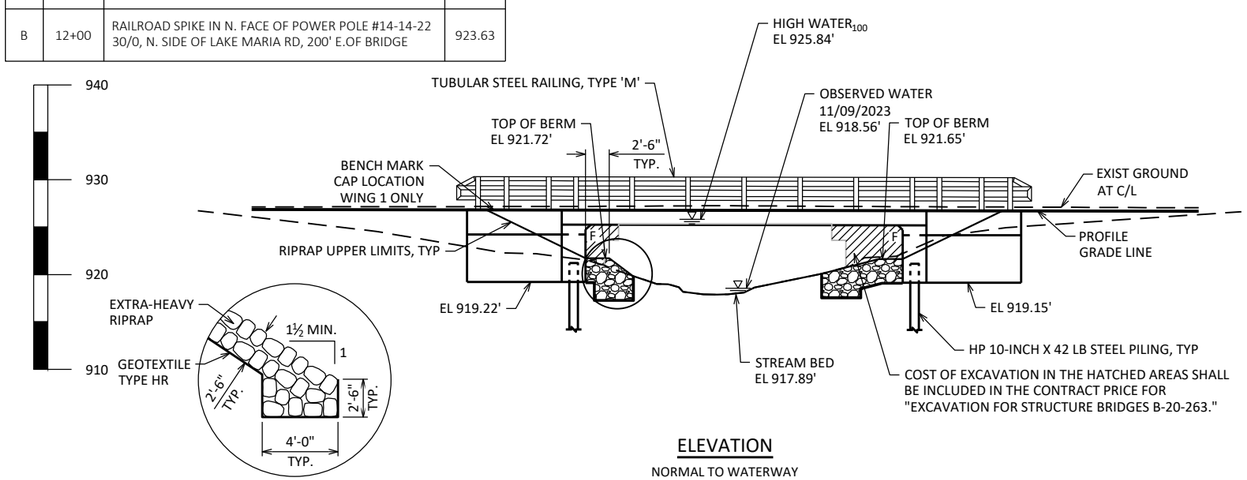
✳ PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT.

PLAN

SINGLE SPAN FLAT SLAB

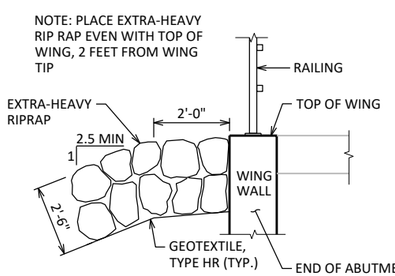
BENCH MARKS

BM	STA	DESCRIPTION	ELEV
A	7+50	RAILROAD SPIKE IN N. FACE OF POWER POLE #14-14-27 30/0, N. SIDE OF LAKE MARIA RD, 200' W. OF BRIDGE	923.12
B	12+00	RAILROAD SPIKE IN N. FACE OF POWER POLE #14-14-22 30/0, N. SIDE OF LAKE MARIA RD, 200' E.OF BRIDGE	923.63



ELEVATION

NORMAL TO WATERWAY



TYPICAL FILL SECTION AT WING TIPS

STATE PROJECT NUMBER

6187-06-71

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING: RF = 1.12
OPERATING RATING: RF = 1.45
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 (KIPS)

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

MATERIAL PROPERTIES:

CONCRETE MASONRY:
SUPERSTRUCTURE — f'_c = 4,000 PSI
ALL OTHER — f'_c = 3,500 PSI

BAR STEEL REINFORCEMENT
GRADE 60 — f_y = 60,000 PSI

FOUNDATION DATA

WEST ABUTMENT TO BE SUPPORTED ON HP 10-INCH X 42 LB STEEL PILING SEATED IN PRE-BORED HOLES CORED TO EL. 903.1. EAST ABUTMENT TO BE SUPPORTED ON HP 10-INCH X 42 LB STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.

ESTIMATED 20'-0" LONG AT WEST ABUTMENT.
ESTIMATED 25'-0" LONG AT EAST ABUTMENT.

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

LIST OF DRAWINGS:

HYDRAULIC DATA

100-YEAR FREQUENCY:

Q_{100}= 1100 C.F.S.
V_{100}= 6.8 F.P.S.
HW_{100}= 925.84 EL.
WATERWAY AREA = 162 SQ. FT.
DRAINAGE AREA = 12.6 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5

2-YEAR FREQUENCY:

Q_2= 370 C.F.S.
V_2= 3.8 F.P.S.
HW_2= 923.29 EL.

TRAFFIC DATA

ROAD:

ADT = 630 (2045)
R.D.S. = 60 MPH

WISCONSIN
RYAN T. ARNDT
E-41765
FOND DU LAC, WI
1-8-25
PROFESSIONAL ENGINEER

STRUCTURE DESIGN CONTACTS:

CONSULTANT CONTACT: ANDREW KLEMP 920-924-5720
BRIDGE OFFICE CONTACT: AARON BONK 608-261-0261

NO.	DATE	REVISION	BY

GREMMER & ASSOCIATES, INC.
CONSULTING ENGINEERS
Stevens Point • Fond du Lac

STATE OF WISCONSIN
DEPARTMENT OF
TRANSPORTATION

ACCEPTED SDR 01/29/25
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-20-263

LAKE MARIA ROAD OVER S BRANCH ROCK RIVER TRIBUTARY

COUNTY	TOWN
FOND DU LAC	ALTO

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATION

DESIGNED BY	DESIGNED CK'D	DRAWN BY	PLANS CK'D
RTA	ALK	MJK	ALK

GENERAL PLAN

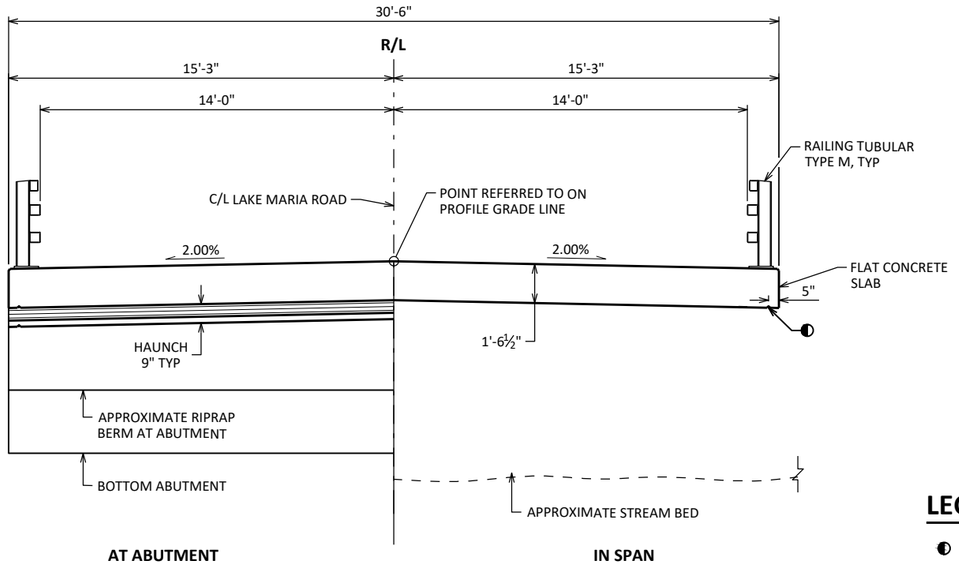
SHEET 1 OF 12
53

SCALE = 16.0

8

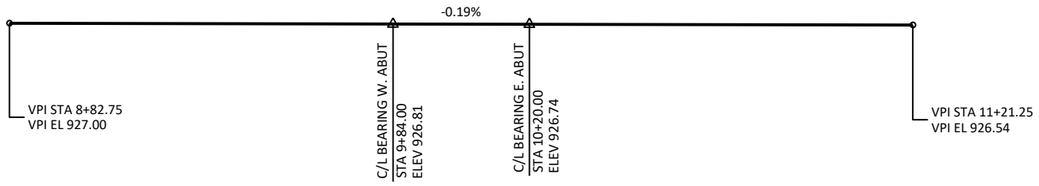
8

FILE NAME: S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-080101-BR-B-20-263.DWG
LAYOUT NAME: SHT1
PLOT DATE : ----
PLOT BY : MATTHEW KROFTA
I.D. 6187-06-00
DATE: JAN 2025



CROSS SECTION THRU BRIDGE

LOOKING EAST



PROFILE GRADE LINE

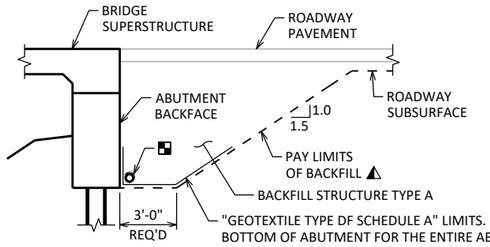
LAKE MARIA ROAD

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W ABUT	E ABUT	SUPER	TOTAL
203.0211.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-20-43	EACH	---	---	---	1
203.0250	REMOVING STRUCTURE OVER WATERWAY REMOVE DEBRIS B-20-43	EACH	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-20-263	EACH	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	105	105	---	210
502.0100	CONCRETE MASONRY BRIDGES	CY	29.1	29.1	71.6	130
502.3200	PROTECTIVE SURFACE TREATMENT	SY	9	9	151	169
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1525	1525	---	3,050
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1375	1375	17680	20,430
513.4061	RAILING TUBULAR TYPE M	LF	---	---	121	121
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	8	9	---	17
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	80	---	---	80
550.0500	PILE POINTS	EACH	0	5	---	5
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	100	125	---	225
606.0400	RIPRAP EXTRA-HEAVY	CY	60	78	---	138
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	81	81	---	162
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	34	34	---	68
645.0120	GEOTEXTILE TYPE HR	SY	125	147	---	272
	NON-BID ITEMS					
-----	JOINT FILLER	SIZE	---	---	---	1/2" & 3/4"

LEGEND

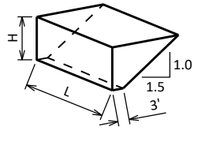
◐ ¾" V-GROOVE REQ'D. EXTEND 6" FROM F.F. OF ABUTMENT BODY.



TYPICAL SECTION THRU ABUTMENT

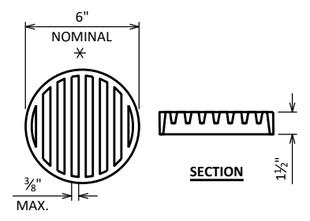
◭ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

◩ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



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_{CF}(EF)/27
V_{TON} = V_{CY}(2.0)



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.

STATE PROJECT NUMBER

6187-06-71

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-20-263" SHALL BE THE EXISTING GROUNDLINE.

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

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

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND EDGES OF THE SLAB, TO THE OUTSIDE 1'-0" OF THE UNDERSIDE OF THE SLAB, TO THE TOPS OF WINGS, TO THE EXPOSED FRONT FACES OF WINGS, AND TO THE END 1'-0" OF THE ABUTMENT BODY FRONT FACES.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH EXTRA-HEAVY RIPRAP AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

AT ABUTMENTS, HP 12X53 STEEL PILING MAY BE USED IN LIEU OF HP 10X42 STEEL PILING. PAYMENT SHALL BE BASED ON BID PRICE FOR HP 10X42 STEEL PILING.

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

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

SHAPING CHANNEL BOTTOM IS INCIDENTAL TO BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-20-263".

WEST ABUTMENT TO BE SUPPORTED ON HP 10-INCH X 42 LB STEEL PILING SEATED IN PRE-BORED HOLES CORED TO EL. 903.1. THE FACTORED AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR DESIGN IS 120 TONS MULTIPLIED BY A RESISTANCE FACTOR OF 0.5.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-263

DRAWN BY MJK | PLANS CK'D ALK

QUANTITIES AND CROSS SECTION

SHEET 2
54

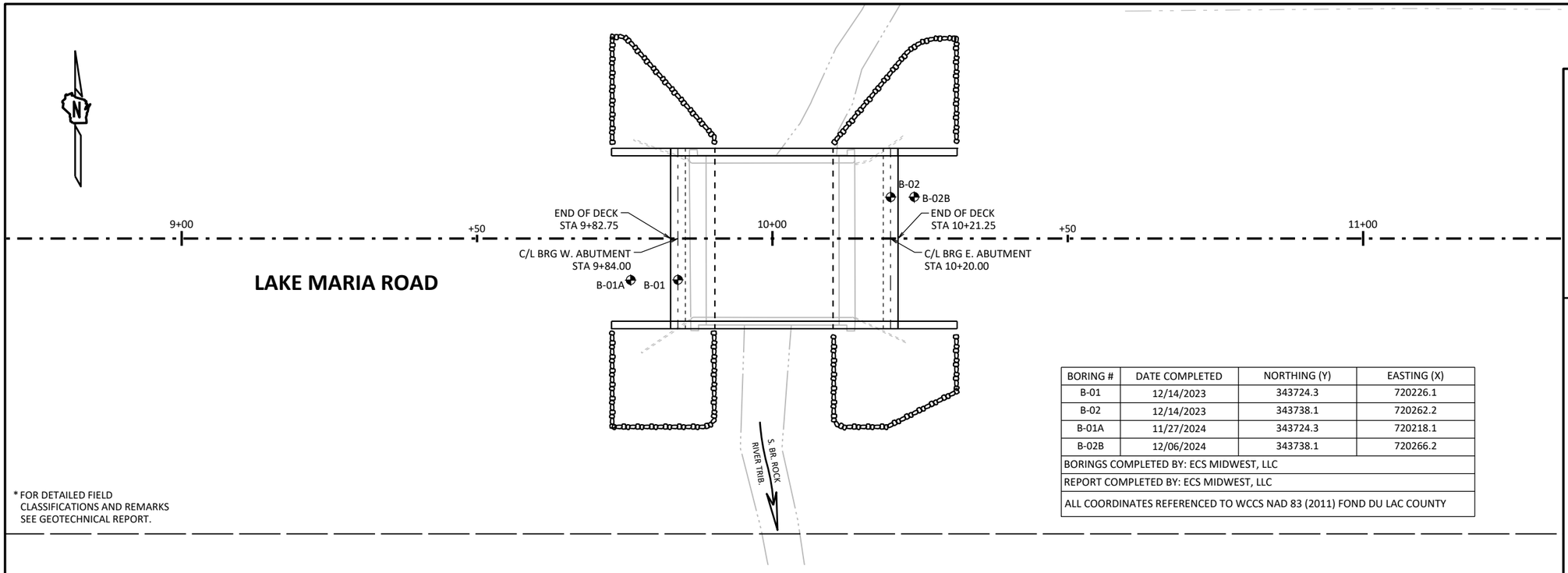
SCALE = 6.00

8

8

STATE PROJECT NUMBER

6187-06-71



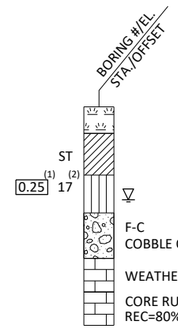
* FOR DETAILED FIELD CLASSIFICATIONS AND REMARKS SEE GEOTECHNICAL REPORT.

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-01	12/14/2023	343724.3	720226.1
B-02	12/14/2023	343738.1	720262.2
B-01A	11/27/2024	343724.3	720218.1
B-02B	12/06/2024	343738.1	720266.2
BORINGS COMPLETED BY: ECS MIDWEST, LLC			
REPORT COMPLETED BY: ECS MIDWEST, LLC			
ALL COORDINATES REFERENCED TO WCCS NAD 83 (2011) FOND DU LAC COUNTY			

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

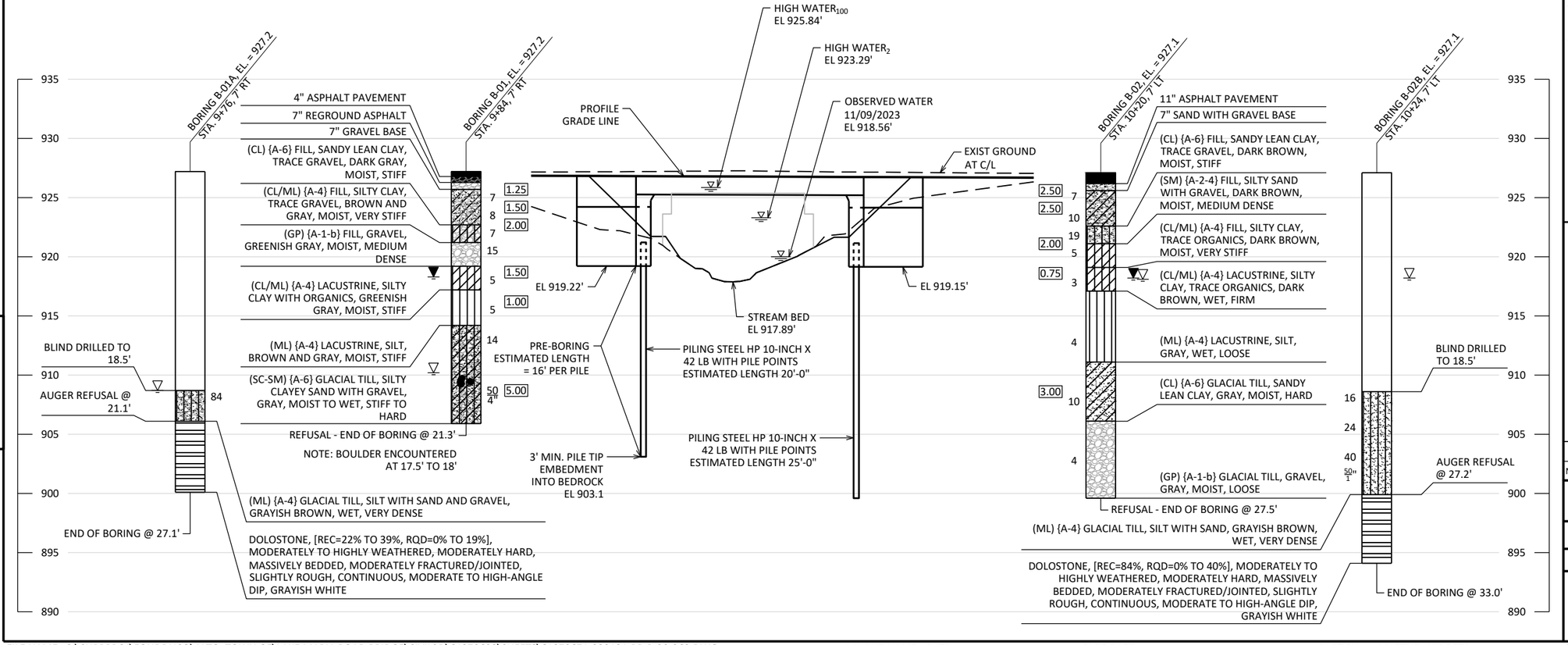
(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

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

ABBREVIATIONS

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



SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-263

DRAWN BY MJK | PLANS CK'D ALK

SUBSURFACE EXPLORATION

SHEET 3
55

SCALE = 20.0

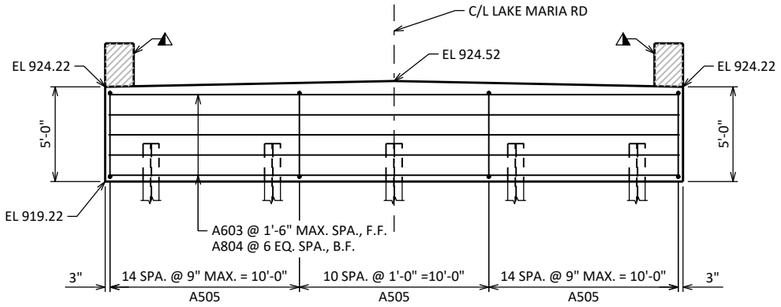
8

8

FILE NAME: S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-080101-BR-B-20-263.DWG
LAYOUT NAME: SHT3
PLOT DATE : ----
PLOT BY : MATTHEW KROFTA
I.D. 6187-06-00
DATE: JAN 2025

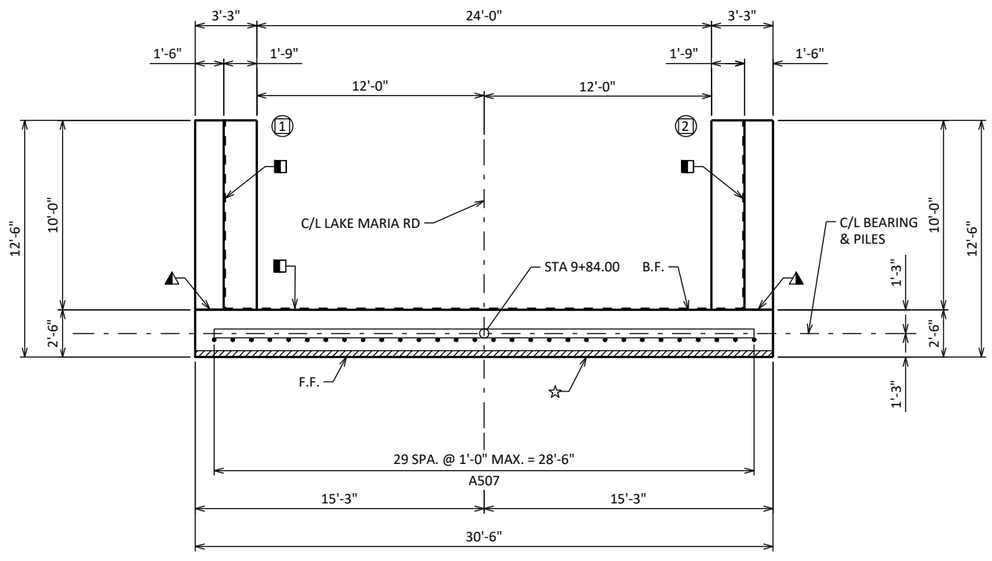
STATE PROJECT NUMBER

6187-06-71

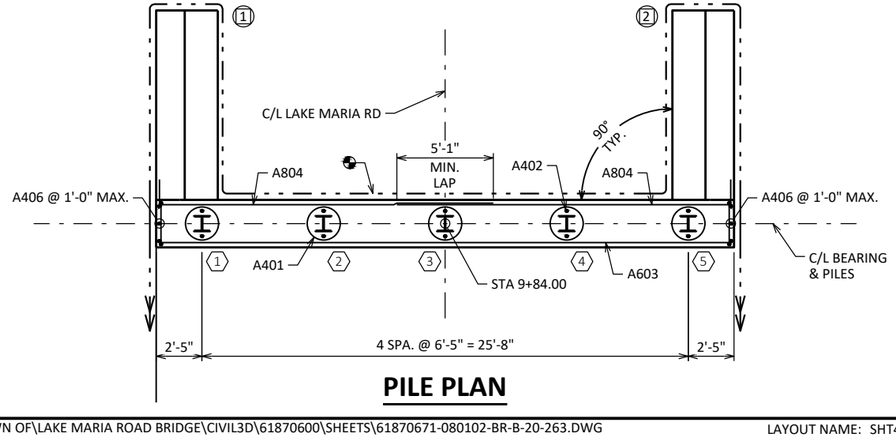


ELEVATION

(LOOKING WEST)



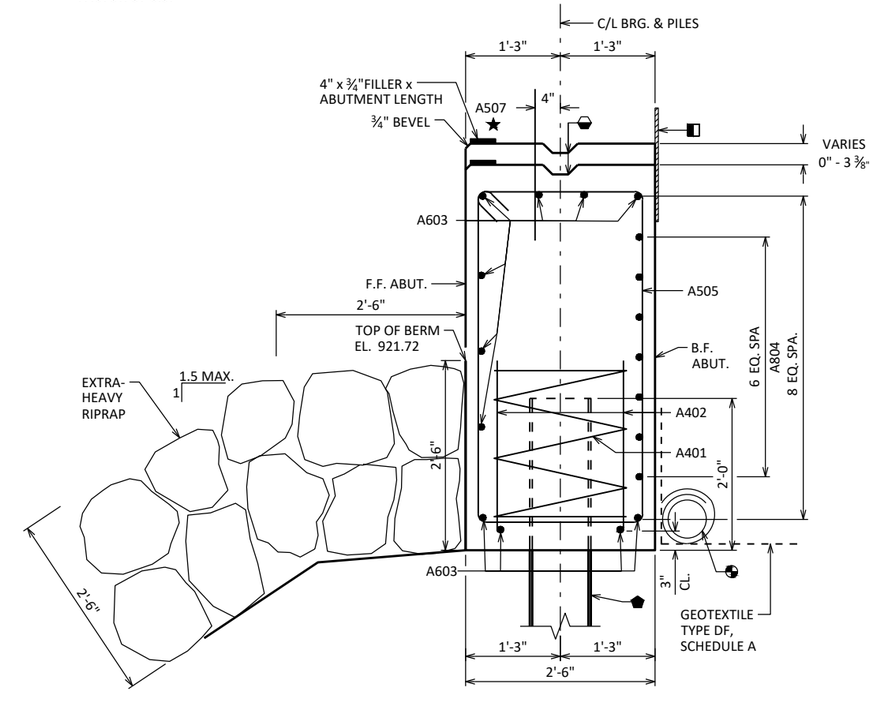
PLAN



PILE PLAN

LEGEND

- INDICATES WING NUMBER
- INDICATES PILE NUMBER
- F.F. FRONT FACE
- B.F. BACK FACE
- KEYED CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- ★ A507 BARS AT 1'-0" (2'-0" LONG). THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.
- ⬟ SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING SEATED IN PRE-BORED HOLES CORED TO EL. 903.1, ESTIMATED 20'-0" LONG. THE FACTORED AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR DESIGN IS 120 TONS MULTIPLIED BY A RESISTANCE FACTOR OF 0.5.
- 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- ◭ ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. 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.
- ☆ 4" X ¾" PREFORMED JOINT FILLER, LENGTH OF ABUTMENT.
- ⚠ ¾" CORK FILLER ON VERTICAL SEAT FACES.
- PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.



SECTION THRU BODY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-263

DRAWN BY MJK | PLANS CK'D ALK

WEST ABUTMENT

SHEET 4
56

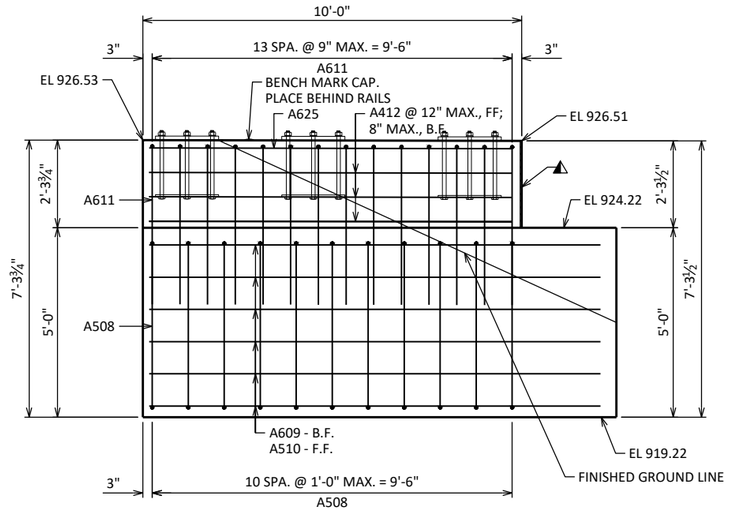
SCALE = 8.00

8

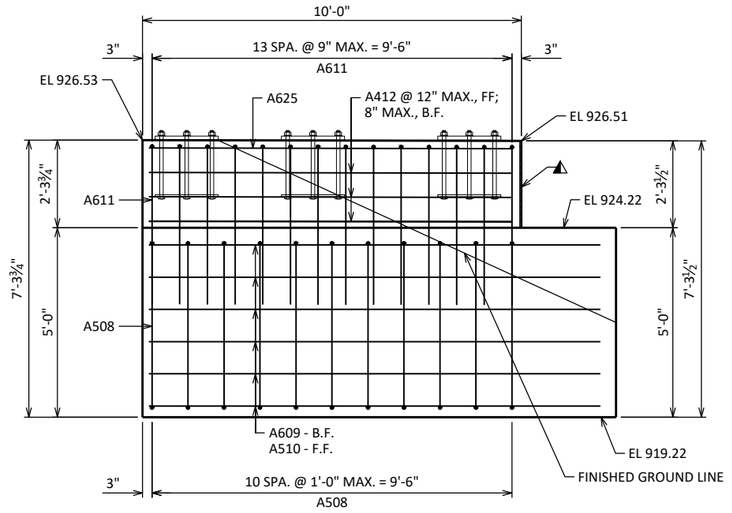
FILE NAME: S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-080102-BR-B-20-263.DWG
LAYOUT NAME: SHT4
PLOT DATE : ----
PLOT BY : MATTHEW KROFTA
I.D. 6187-06-00
DATE: JAN 2025

STATE PROJECT NUMBER

6187-06-71



WING 1 ELEVATION

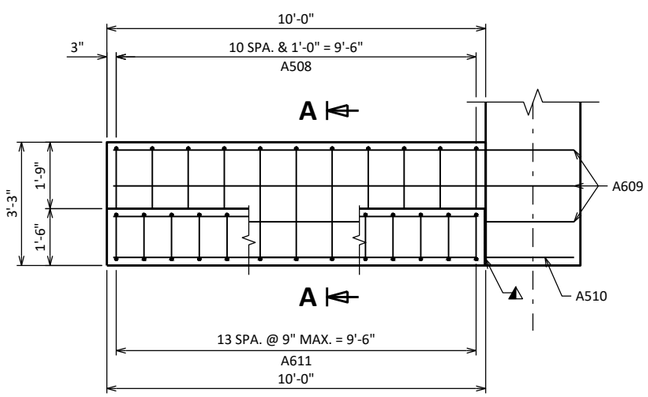


WING 2 ELEVATION

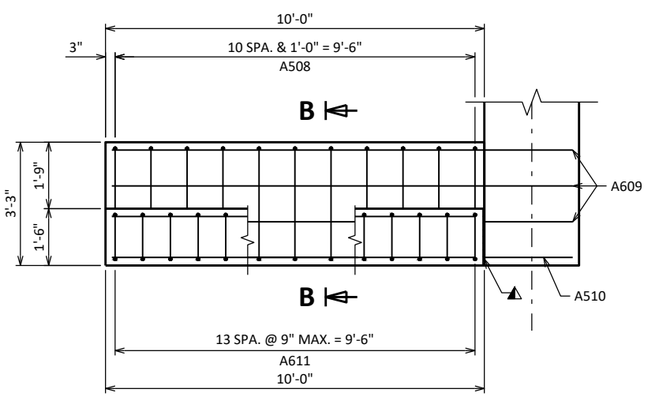
BILL OF BARS

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

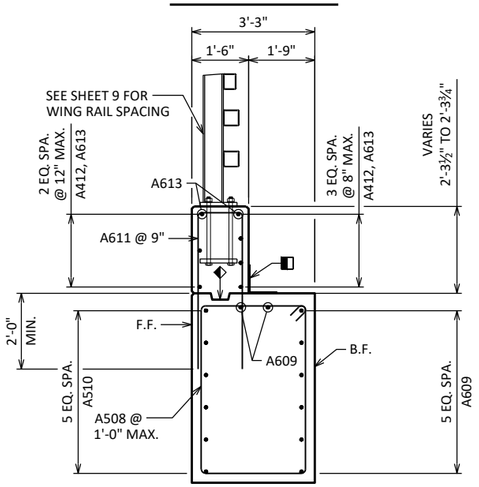
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	
A401		5	28'-0"	X		BODY - PILES
A402		10	2'-3"			BODY - PILES
A603		11	30'-2"			BODY - HORIZONTAL - F.F., TOP, BOTTOM
A804		7	18'-10"	X		BODY - HORIZONTAL - B.F.
A505		39	13'-6"	X		BODY - TIES
A406		6	4'-7"			ABUTMENT ENDS - VERTICAL
A507	X	30	2'-0"			BODY - DOWELS
A508	X	22	15'-4"	X		WING 1 AND 2 - VERTICAL - STIRRUPS
A609	X	16	12'-2"			WING 1 AND 2 - HORIZONTAL - B.F., TOP
A510	X	12	12'-2"			WING 1 AND 2 - HORIZONTAL - F.F.
A611	X	28	9'-4"	X		UPPER WING 1 AND 2 - VERTICAL
A412	X	10	9'-7"			UPPER WING 1 AND 2 - HORIZONTAL
A613	X	4	9'-7"			UPPER WING 1 AND 2 - HORIZONTAL



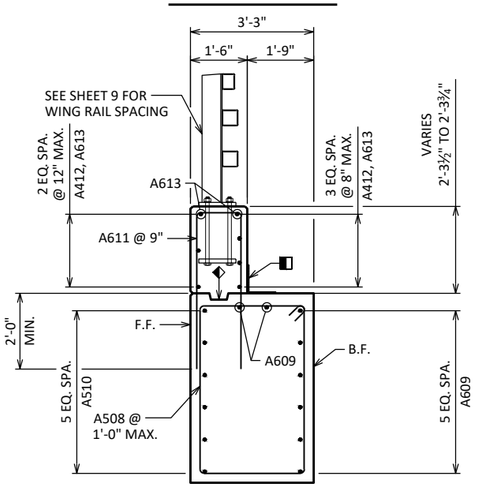
WING 1 PLAN



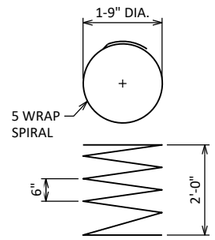
WING 2 PLAN



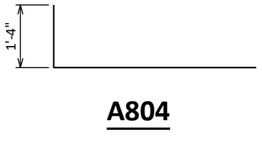
SECTION A-A



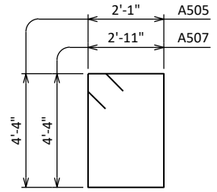
SECTION B-B



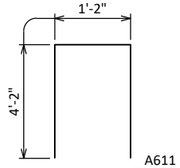
A401



A804



A505, A508



A611

LEGEND

- INDICATES WING NUMBER
- F.F. FRONT FACE
- B.F. BACK FACE
- 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. 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.
- OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & ¾" "V" GROOVE @ F.F. IF JOINT IS USED).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-263

DRAWN BY MJK | PLANS CK'D ALK

WEST ABUTMENT DETAILS

SHEET 5
57

SCALE = 4.00

8

FILE NAME: S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-080102-BR-B-20-263.DWG

LAYOUT NAME: SHT5

PLOT DATE : ----

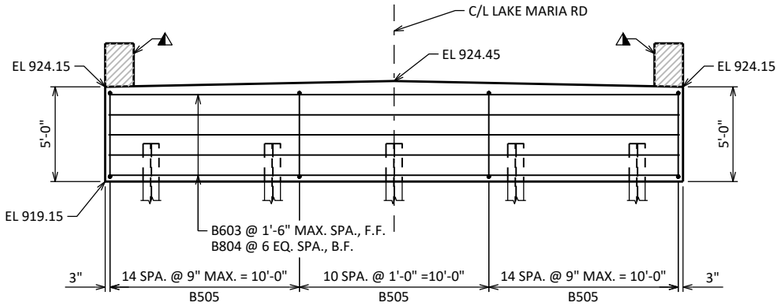
PLOT BY : MATTHEW KROFTA

I.D. 6187-06-00

DATE: JAN 2025

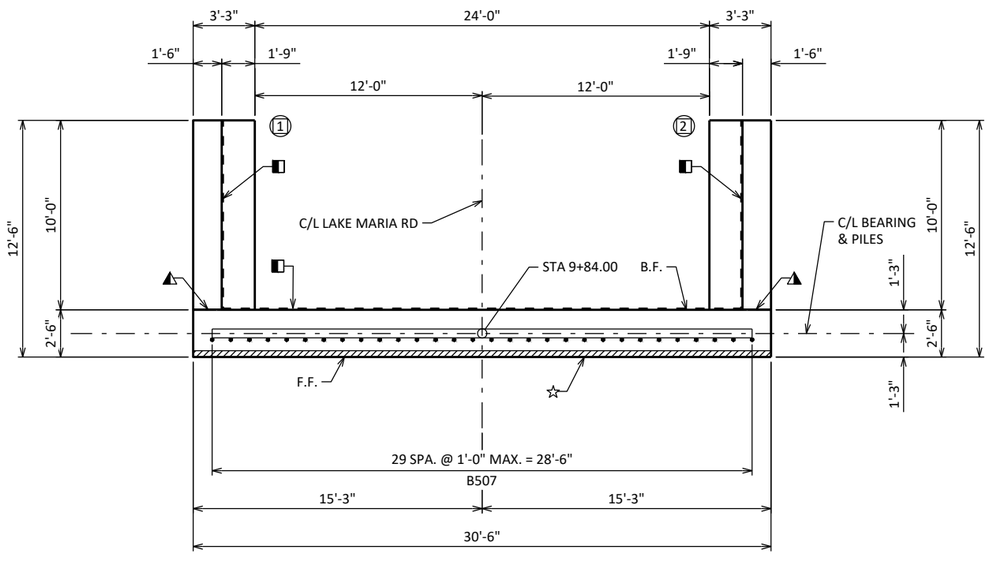
STATE PROJECT NUMBER

6187-06-71

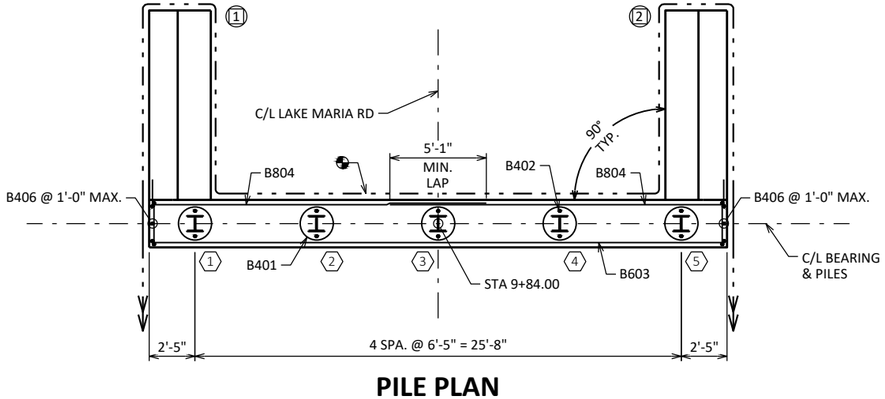


ELEVATION

(LOOKING EAST)



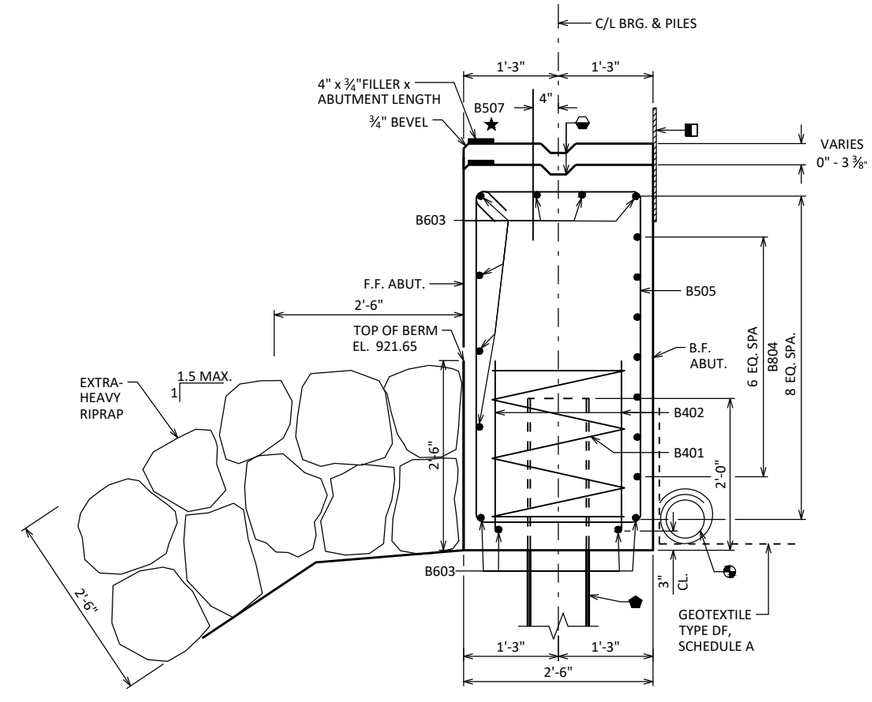
PLAN



PILE PLAN

LEGEND

- INDICATES WING NUMBER
- INDICATES PILE NUMBER
- F.F. FRONT FACE
- B.F. BACK FACE
- KEYED CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- ★ B507 BARS AT 1'-0" (2'-0" LONG). THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.
- ⬟ SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 25'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.
- 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- ◭ ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. 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.
- ☆ 4" X ¾" PREFORMED JOINT FILLER, LENGTH OF ABUTMENT.
- ⚠ ¾" CORK FILLER ON VERTICAL SEAT FACES.
- PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.



SECTION THRU BODY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-263

DRAWN BY MJK | PLANS CK'D ALK

EAST ABUTMENT

SHEET 6
58

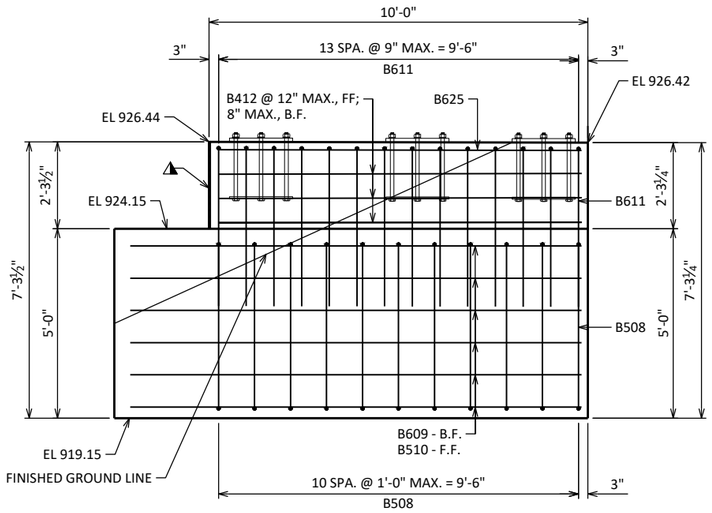
SCALE = 8.00

8

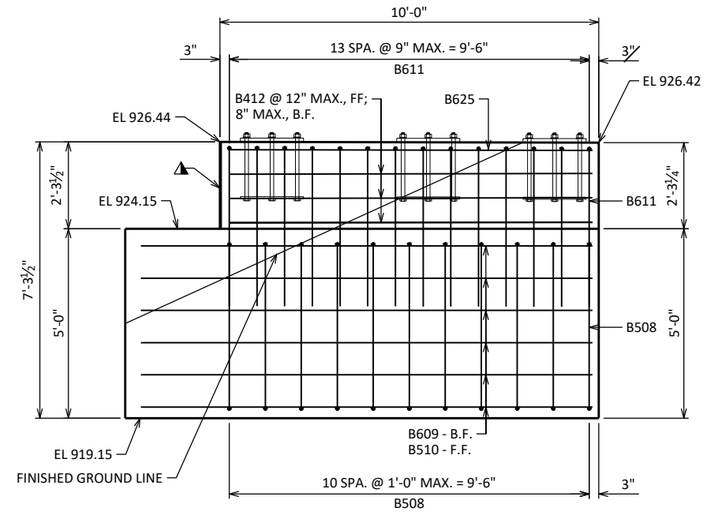
8

STATE PROJECT NUMBER

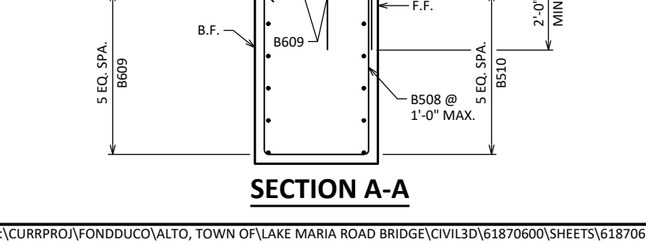
6187-06-71



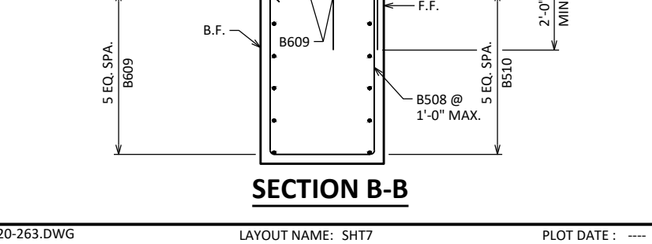
WING 3 ELEVATION



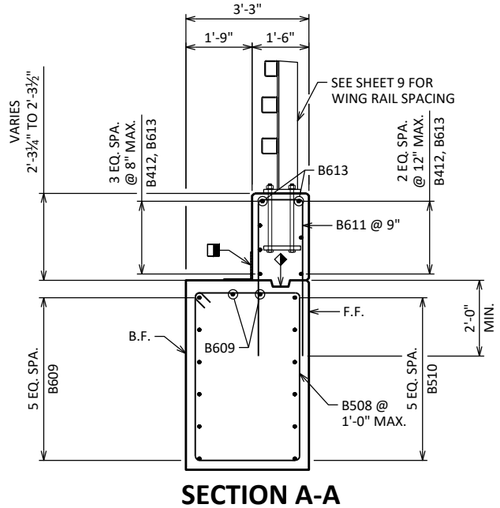
WING 4 ELEVATION



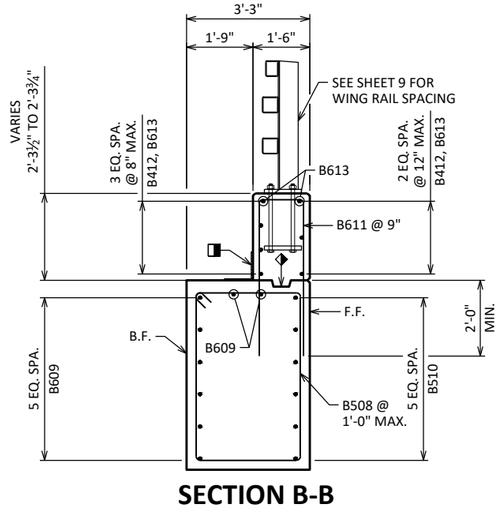
WING 3 PLAN



WING 4 PLAN



SECTION A-A

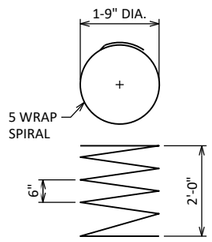


SECTION B-B

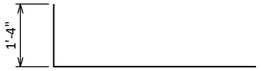
BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	
B401		5	28'-0"	X		BODY - PILES
B402		10	2'-3"			BODY - PILES
B603		11	30'-2"			BODY - HORIZONTAL - F.F., TOP, BOTTOM
B804		7	18'-10"	X		BODY - HORIZONTAL - B.F.
B505		39	13'-6"	X		BODY - TIES
B406		6	4'-7"			ABUTMENT ENDS - VERTICAL
B507	X	30	2'-0"			BODY - DOWELS
B508	X	22	15'-4"	X		WING 1 AND 2 - VERTICAL - STIRRUPS
B609	X	16	12'-2"			WING 1 AND 2 - HORIZONTAL - B.F., TOP
B510	X	12	12'-2"			WING 1 AND 2 - HORIZONTAL - F.F.
B611	X	28	9'-4"	X		UPPER WING 1 AND 2 - VERTICAL
B412	X	10	9'-7"			UPPER WING 1 AND 2 - HORIZONTAL
B613	X	4	9'-7"			UPPER WING 1 AND 2 - HORIZONTAL



B401



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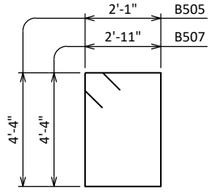
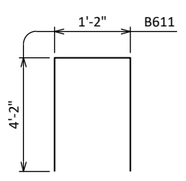


B505, B508



B611

LEGEND

- INDICATES WING NUMBER
- F.F. FRONT FACE
- B.F. BACK FACE
- 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. 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.
- OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & ¾" "V" GROOVE @ F.F. IF JOINT IS USED).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-263

DRAWN BY MJK | PLANS CK'D ALK

EAST ABUTMENT DETAILS

SHEET 7
59

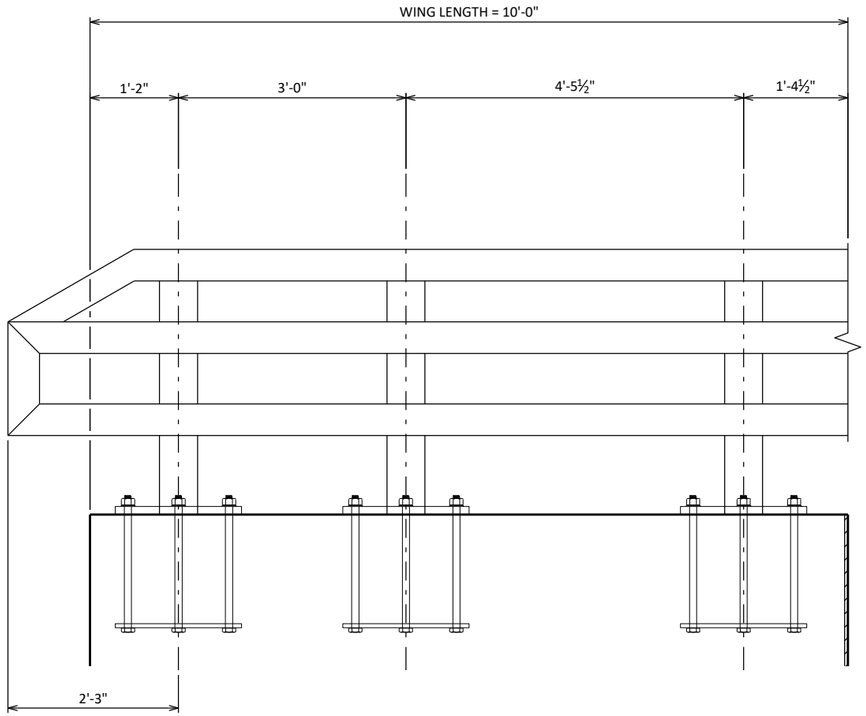
SCALE = 4.00

8

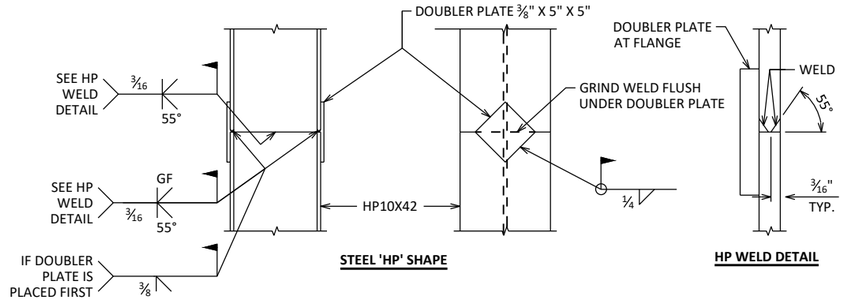
FILE NAME: S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-080102-BR-B-20-263.DWG
LAYOUT NAME: SHT7
PLOT DATE : ----
PLOT BY : MATTHEW KROFTA
I.D. 6187-06-00
DATE: JAN 2025

STATE PROJECT NUMBER

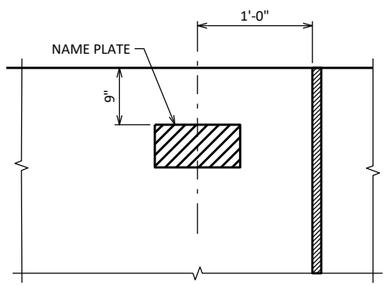
6187-06-71



RAILING ELEVATION AT WINGS, TYP.



'HP' PILE DETAILS



NAME PLATE DETAIL

WING 1 ONLY

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

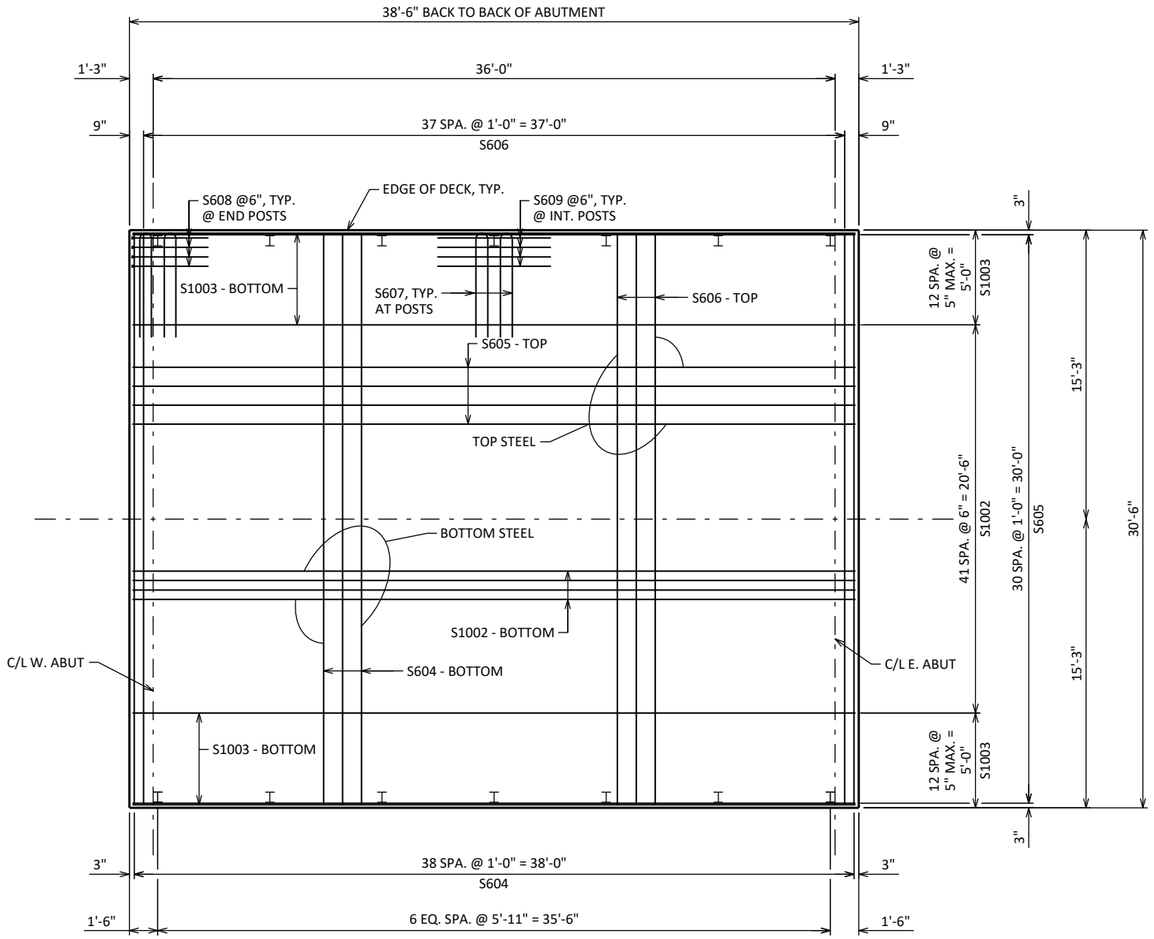
STRUCTURE B-20-263

DRAWN BY MJK | PLANS CK'D ALK

CONSTRUCTION DETAILS

SHEET 8
60

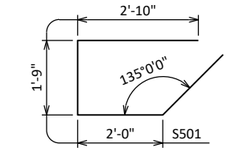
SCALE = NTS



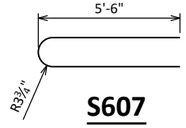
PLAN

LEGEND

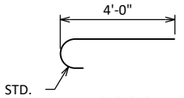
- ◧ 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- ☆ 4" X ¾" PREFORMED JOINT FILLER, LENGTH OF ABUTMENT.
- ▽ DIMENSIONS ARE MEASURED NORMAL TO C/L SUBSTRUCTURE.
- ★ A507, B507 BARS AT 1'-0" (2'-0" LONG). THESE BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.



S501



S607

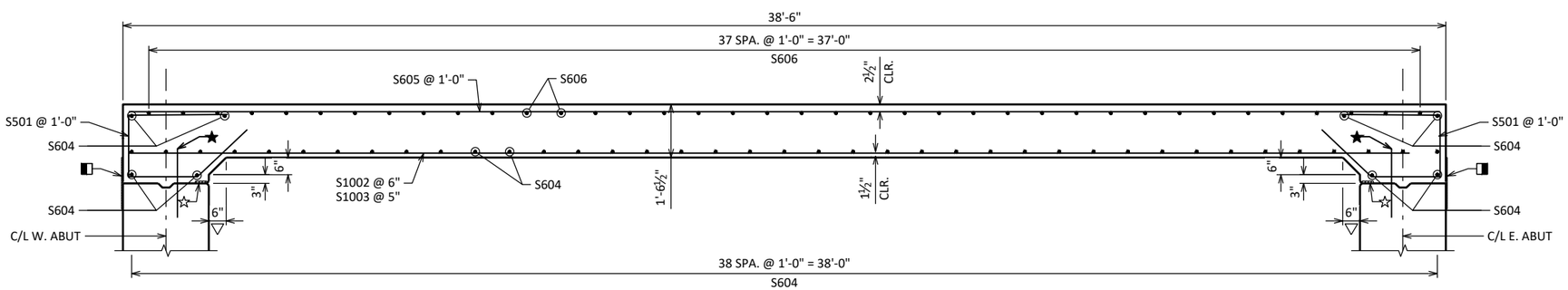


S608

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S501	X	31	8'-3"	X		END OF DECK - VERTICAL
S1002	X	40	38'-2"			SLAB - BOTTOM - LONGITUDINAL - INT.
S1003	X	26	38'-2"			SLAB - BOTTOM - LONGITUDINAL - EXT.
S604	X	47	30'-2"			SLAB - BOTTOM, DIAPHRAGM - TRANSVERSE
S605	X	31	38'-2"			SLAB - TOP - LONGITUDINAL
S606	X	38	30'-2"			SLAB - TOP - TRANSVERSE
S607	X	28	11'-4"	X		DECK - AT RAIL POSTS - TRANSVERSE - 2 PER POST
S608	X	16	4'-8"	X		DECK - AT END RAIL POSTS - LONGITUDINAL
S609	X	40	6'-0"			DECK - AT INTERMEDIATE RAIL POSTS - LONGITUDINAL



LONGITUDINAL SECTION AT R/L

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-263

DRAWN BY MJK | PLANS CK'D ALK

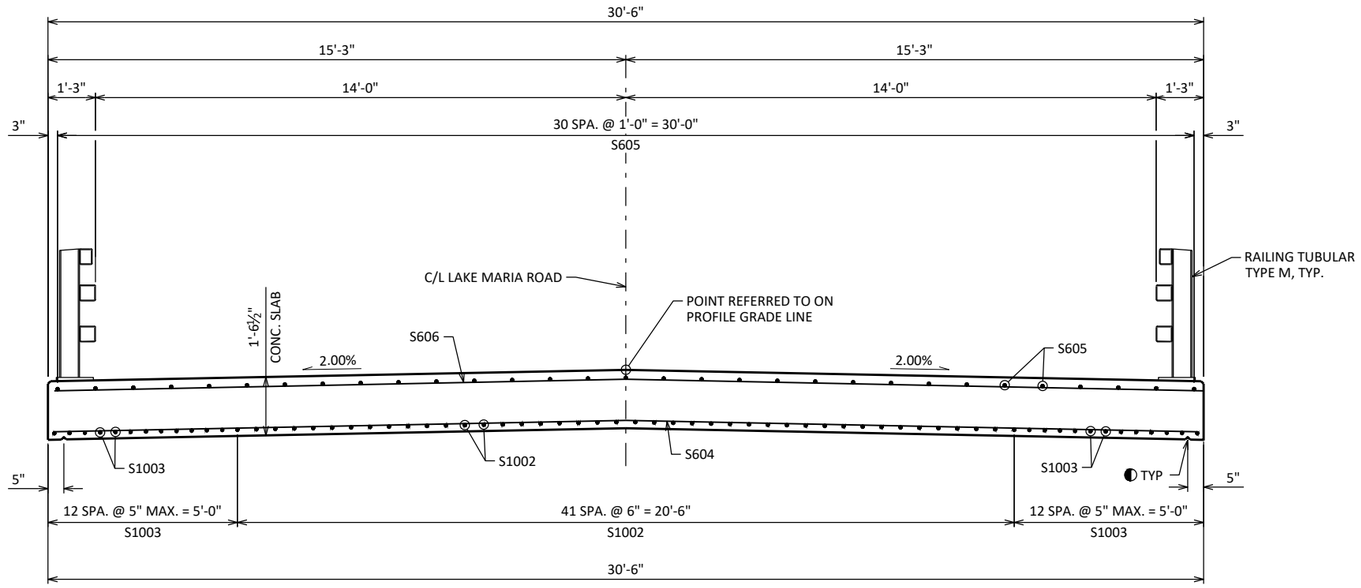
SUPERSTRUCTURE

SHEET 9
61

SCALE = #####

STATE PROJECT NUMBER

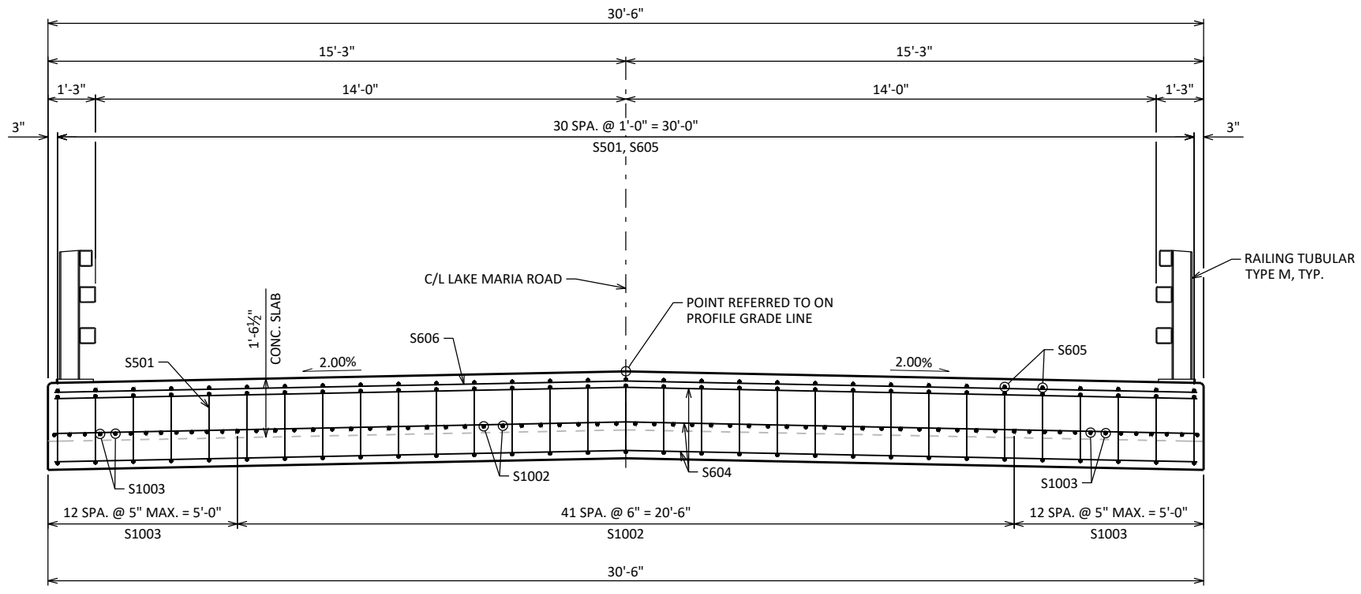
6187-06-71



CROSS SECTION THRU BRIDGE - IN SPAN

LEGEND

◐ ¾" V-GROOVE REQ'D. EXTEND 6" FROM F.F. OF ABUTMENT BODY.



CROSS SECTION THRU BRIDGE - AT ABUTMENT

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-263

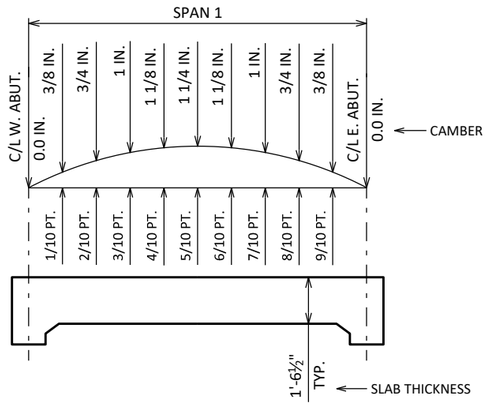
DRAWN BY MJK | PLANS CK'D ALK

SUPERSTRUCTURE DETAILS

SHEET 10
62

SCALE = #####

STATE PROJECT NUMBER
6187-06-71



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.
PARAPETS, SIDEWALKS AND MEDIANS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED, EXCEPT FOR STAGED CONSTRUCTION.

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

SPAN	LOCATION	C/L BRG. W. 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.	C/L BRG. E. ABUT.
1	N. EDGE OF DECK	926.51	926.50	926.49	926.48	926.48	926.47	926.46	926.46	926.45	926.44	926.44
	CROWN OR R/L	926.81	926.80	926.80	926.79	926.78	926.78	926.77	926.76	926.76	926.75	926.74
	S. EDGE OF DECK	926.51	926.50	926.49	926.48	926.48	926.47	926.46	926.46	926.45	926.44	926.44

SURVEY TOP OF SLAB ELEVATIONS

LOCATION	ABUTMENT	5/10 PT.	ABUTMENT
N. EDGE OF SLAB			
CROWN OR R/L			
S. EDGE OF SLAB			

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

NOTES

FILL IN THE TABLE OF "SURVEY TOP OF SLAB ELEVATIONS" FOR EACH SPAN ON AS BUILT PLANS.

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-20-263

DRAWN BY MJK | PLANS CK'D ALK

SUPERSTRUCTURE DETAILS

SHEET 11
63

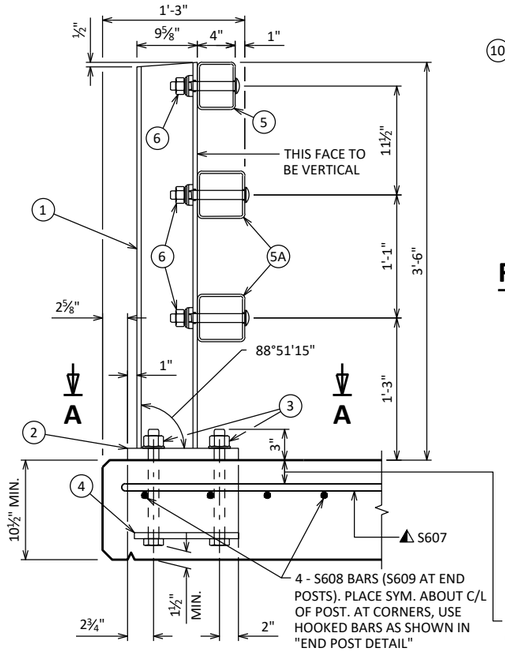
8

8

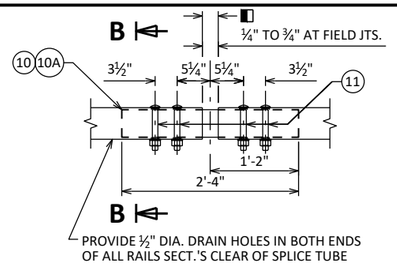
SCALE = 2.00

STATE PROJECT NUMBER

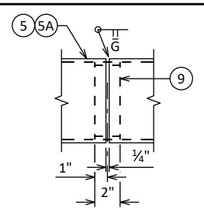
6187-06-71



SECTION THRU RAILING ON DECK

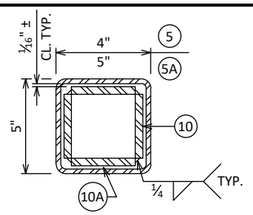


FIELD ERECTION JOINT DETAIL

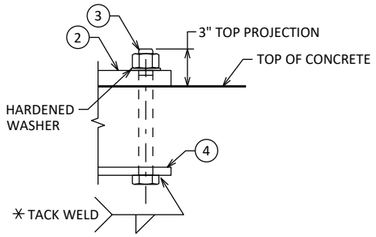


SHOP RAIL SPLICE DETAIL

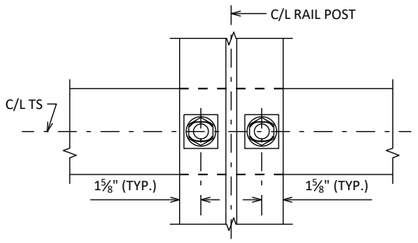
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



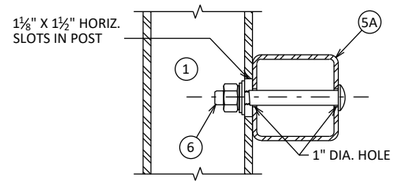
SECTION B-B



ANCHOR BOLTS



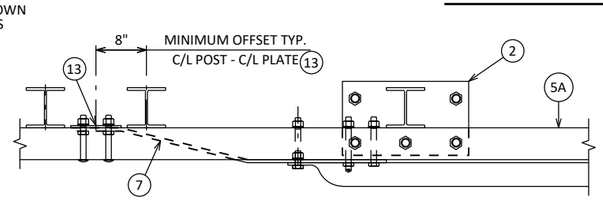
SECTION THRU POST WEB



SECTION THRU RAIL

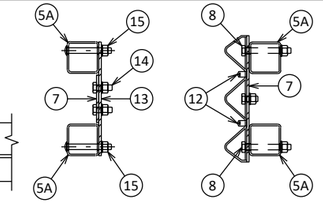
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT



SECTION C-C

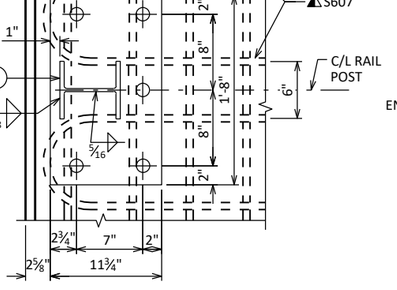
SECTION D-D

LEGEND

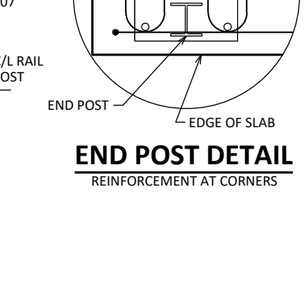
1. W6 X 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1¼" X 11¾" X 1'-8" WITH 1 7/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
3. ASTM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

GENERAL NOTES

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

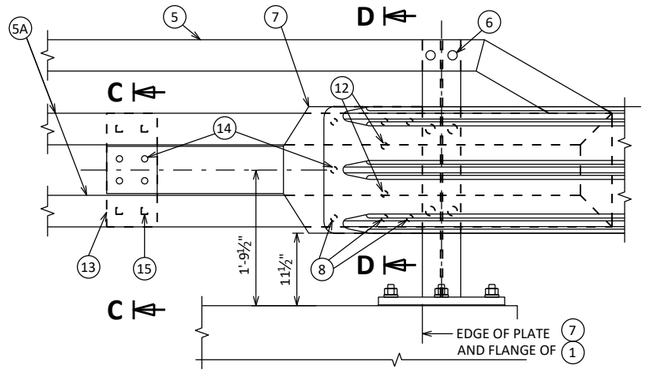


SECTION A-A



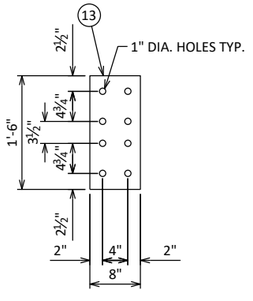
END POST DETAIL

REINFORCEMENT AT CORNERS



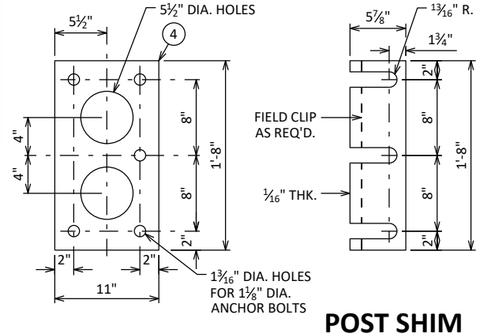
DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



ANCHOR PLATE

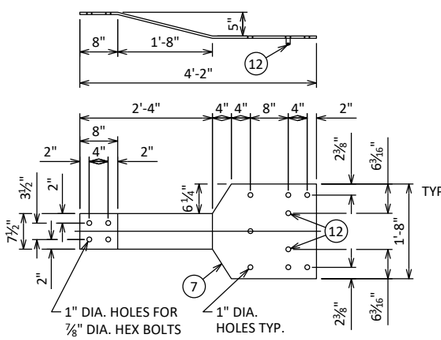
AT BEAM GUARD ATTACHMENT



ANCHOR PLATE

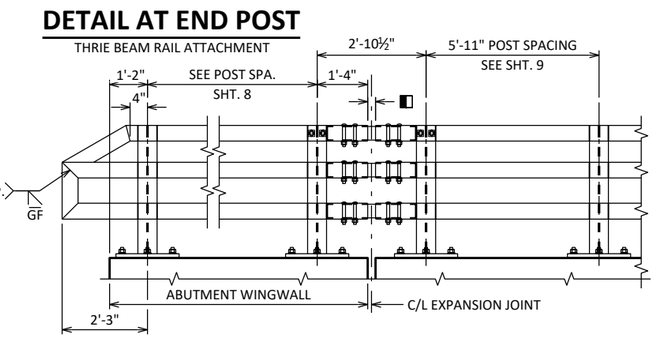
AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

▲ PLACE BELOW AND 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 2½" MIN. FOR STRIP SEAL EXP. JOINT & (¼" TO ¾") OPENING FOR A1 ABUTMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-20-263

DRAWN BY MJK | PLANS CK'D ALK

TUBULAR RAILING TYPE 'M'

SHEET 12
64

SCALE = 2.00

8

FILE NAME: S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-080102-BR-B-20-263.DWG

LAYOUT NAME: SHT12

PLOT DATE : ----

PLOT BY : MATTHEW KROFTA

I.D. 6187-06-00

DATE: JAN 2025

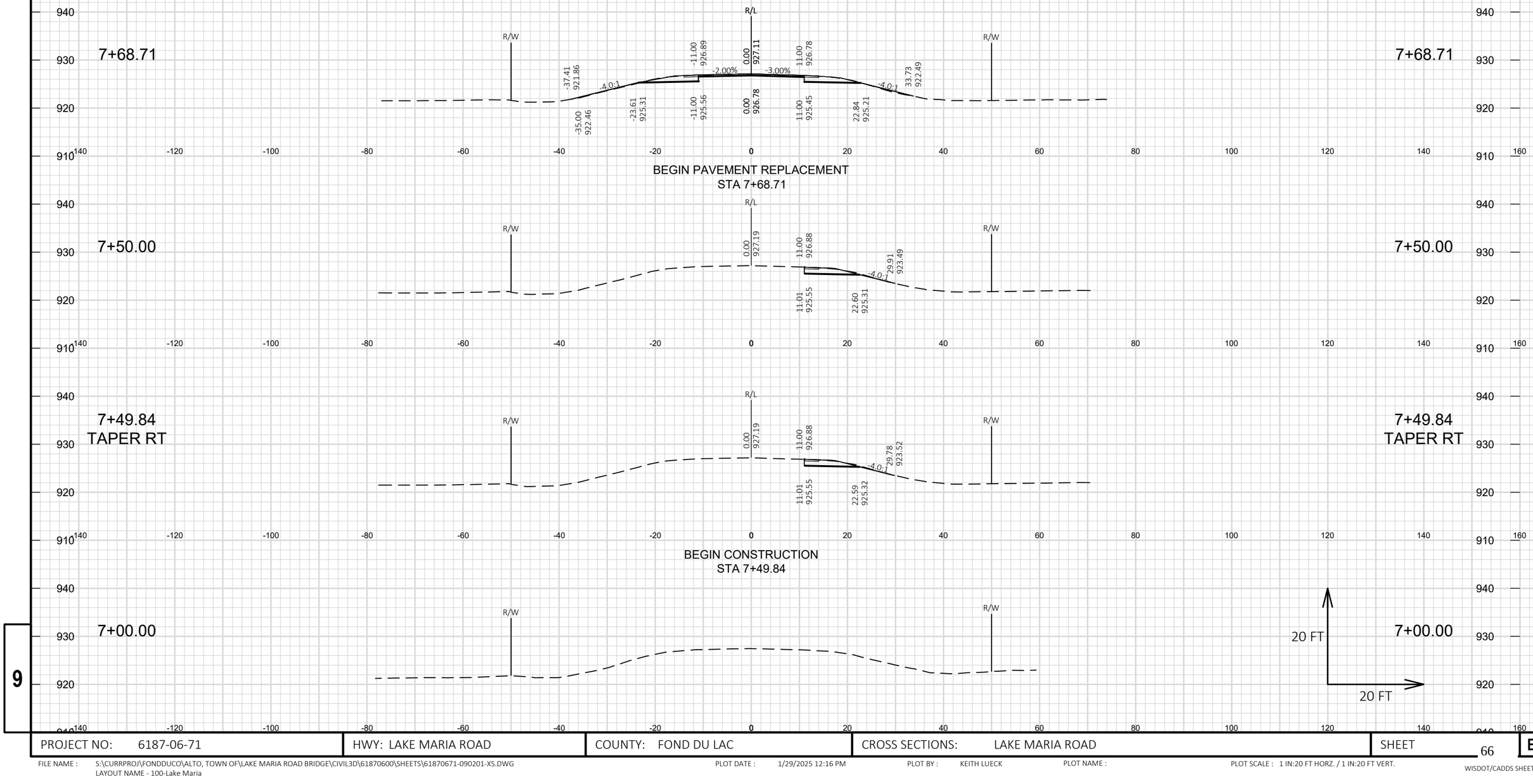
DIVISION 1 - LAKE MARIA ROAD (WEST)

STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
		CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	MASS ORDINATE
						1.00	1.30	
				NOTE 1	NOTE 2	NOTE 1		NOTE 3
07+49.842	0.00	11.74	0.04	0	0	0	0	0
07+50	0.16	11.73	0.05	0	0	0	0	0
07+68.715	18.71	29.54	2.84	14	1	14	1	13
08+00	31.29	26.82	13.90	33	10	47	14	33
08+50	50.00	26.06	12.47	49	24	96	46	51
08+82.75	32.75	48.80	14.76	45	17	141	68	73
09+00	17.25	51.05	13.10	32	9	173	79	94
09+50	50.00	59.69	12.58	103	24	276	111	166
09+82.75	32.75	50.07	0.00	67	8	343	121	222
			TOTAL	343	93			

DIVISION 2 - LAKE MARIA ROAD (EAST)

STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		
		CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	MASS ORDINATE
						1.00	1.30	
				NOTE 1	NOTE 2	NOTE 1		NOTE 3
10+21.25	0.00	50.31	0.00	0	0	0	0	0
10+50	28.75	65.78	1.22	62	1	62	1	61
11+00	50.00	51.10	3.60	108	4	170	7	164
11+21.25	21.25	47.49	9.82	39	5	209	13	196
11+50	28.75	25.79	10.28	39	11	248	27	221
12+00	50.00	27.12	9.78	49	19	297	52	245
12+35.285	35.29	26.14	3.29	35	9	332	64	268
12+50	14.71	8.30	0.60	9	1	341	65	276
12+78.312	28.31	9.13	0.02	9	0	350	65	285
			TOTAL	350	50			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
3 - MASS ORDINATE	MASS ORDINATE = CUT - (FILL * FILL FACTOR)



9

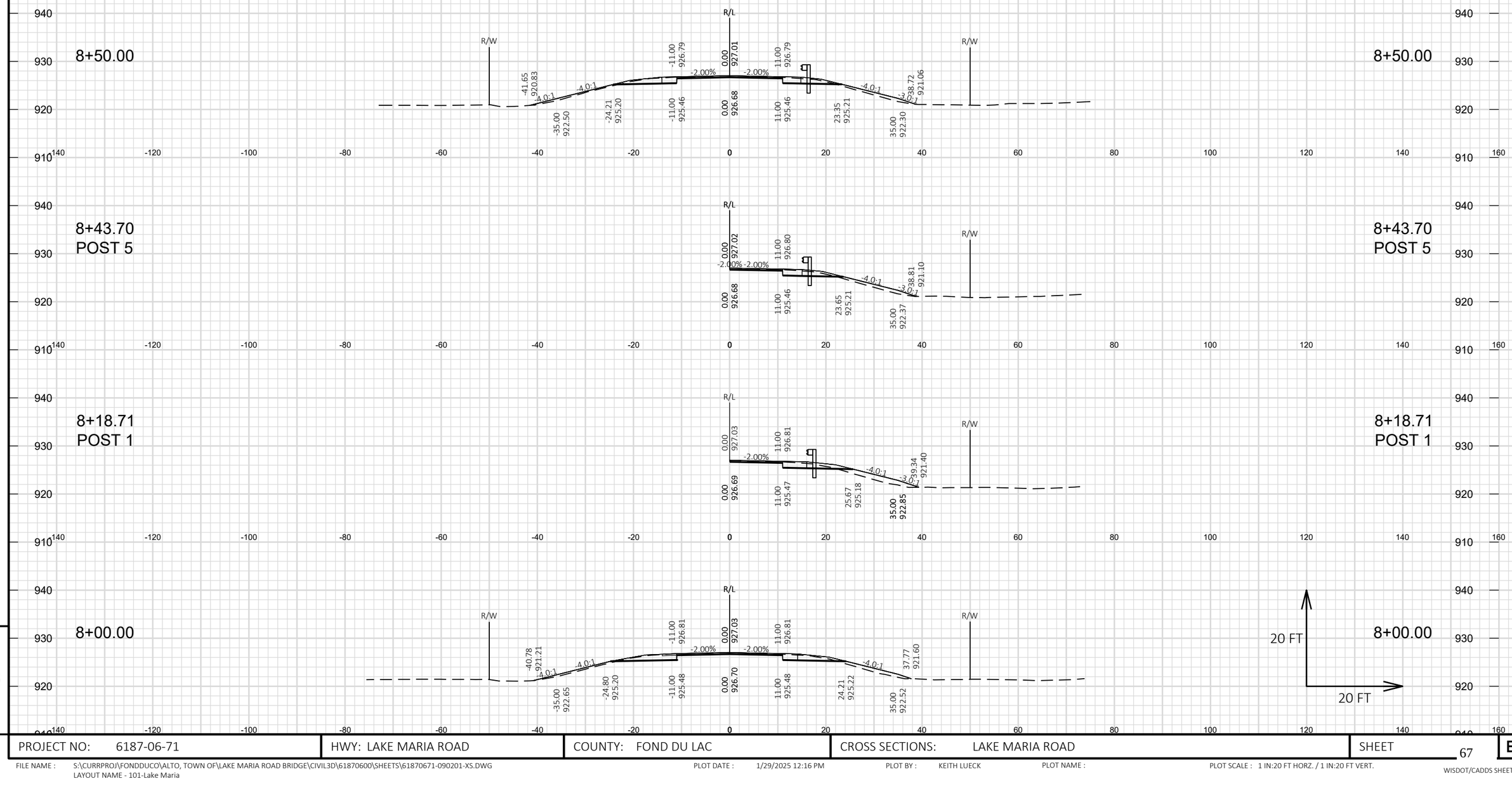
9

PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	CROSS SECTIONS: LAKE MARIA ROAD	SHEET 66	E

FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-090201-XS.DWG
LAYOUT NAME - 100-Lake Maria

PLOT DATE : 1/29/2025 12:16 PM PLOT BY : KEITH LUECK PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



9

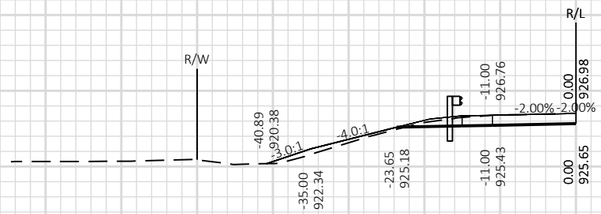
PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	CROSS SECTIONS: LAKE MARIA ROAD	SHEET 67	E

FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-090201-XS.DWG
LAYOUT NAME - 101-Lake Maria

PLOT DATE : 1/29/2025 12:16 PM PLOT BY : KEITH LUECK PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

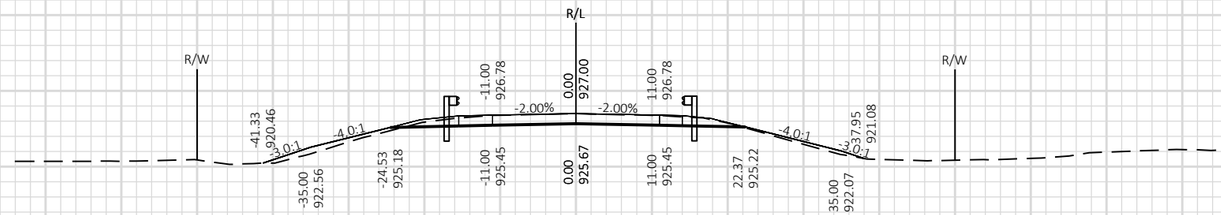
WISDOT/CADDS SHEET 49

8+93.70
POST 5



8+93.70
POST 5

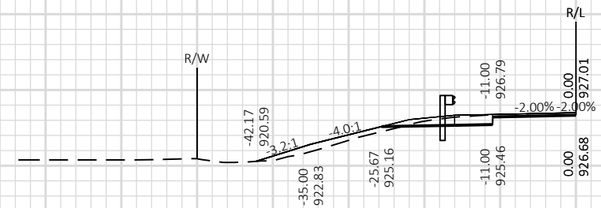
8+82.75



8+82.75

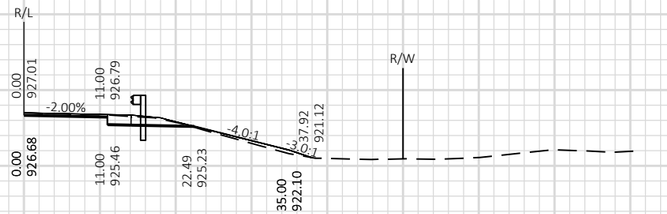
BEGIN PAVEMENT RECONSTRUCTION
STA 8+82.75

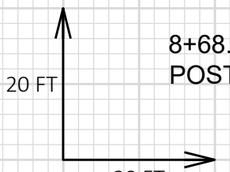
8+68.71
POST 1



8+68.71
POST 1

8+68.68
POST 9





8+68.68
POST 9

9

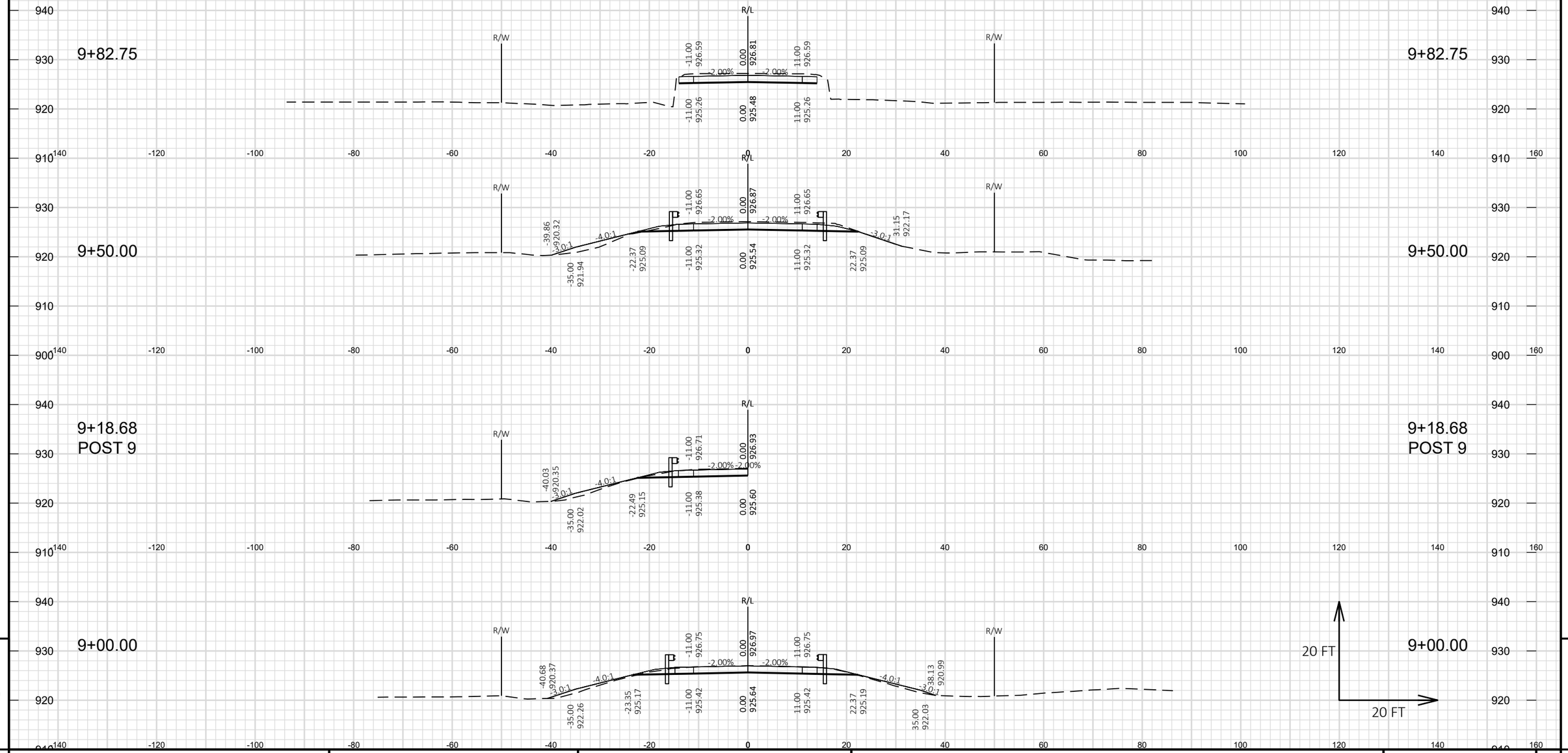
9

PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	CROSS SECTIONS: LAKE MARIA ROAD	SHEET 68	E

FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-090201-XS.DWG
LAYOUT NAME - 102-Lake Maria

PLOT DATE : 1/29/2025 12:16 PM PLOT BY : KEITH LUECK PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



9

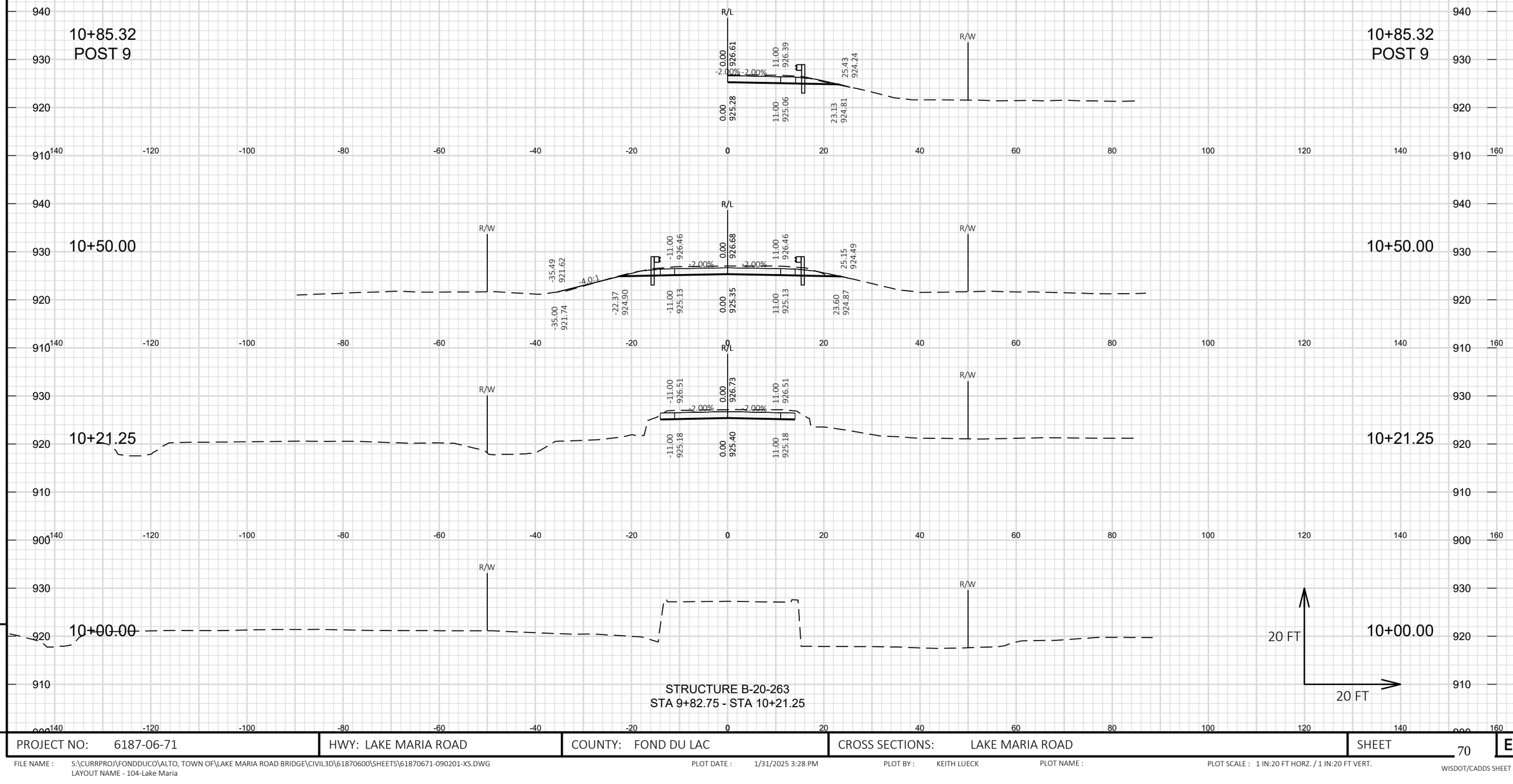
9

PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	CROSS SECTIONS: LAKE MARIA ROAD	SHEET 69	E

FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-090201-XS.DWG
LAYOUT NAME - 103-Lake Maria

PLOT DATE : 1/29/2025 12:16 PM PLOT BY : KEITH LUECK PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



9

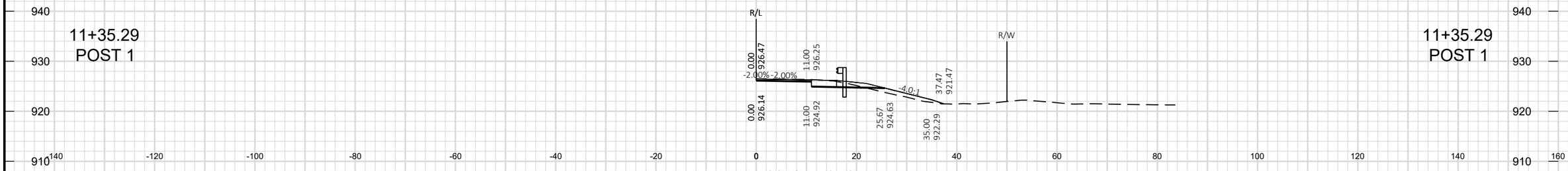
9

PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	CROSS SECTIONS: LAKE MARIA ROAD	SHEET 70	E

FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-090201-XS.DWG
LAYOUT NAME - 104-Lake Maria

PLOT DATE : 1/31/2025 3:28 PM PLOT BY : KEITH LUECK PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

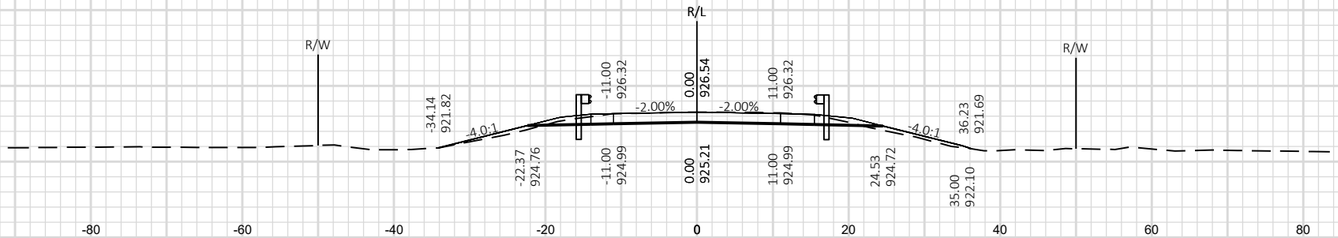
11+35.29
POST 1



11+35.29
POST 1

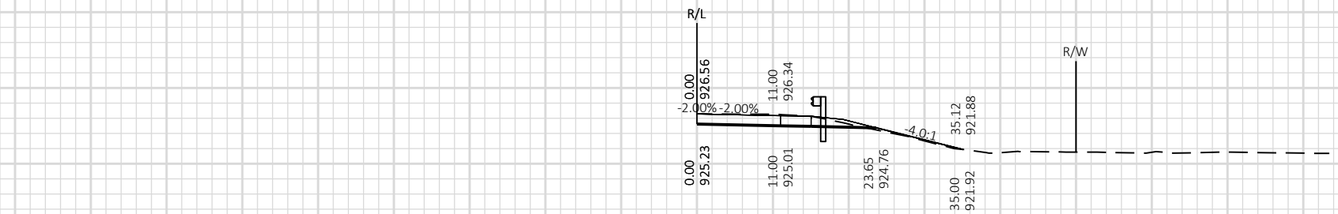
END PAVEMENT RECONSTRUCTION
STA 11+21.25

11+21.25



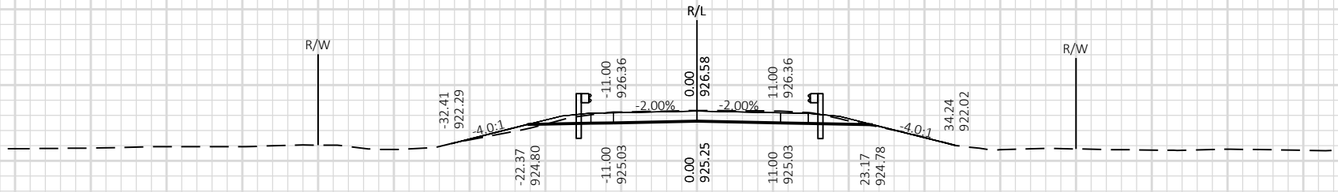
11+21.25

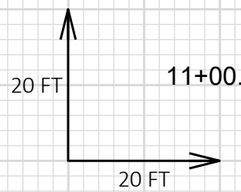
11+10.30
POST 5



11+10.30
POST 5

11+00.00





11+00.00

9

9

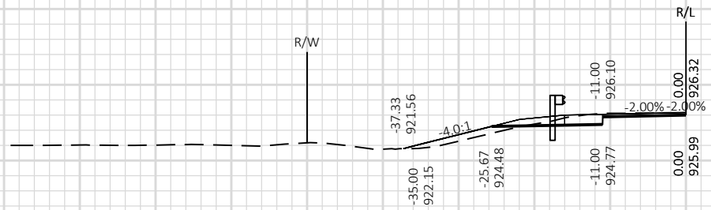
PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	CROSS SECTIONS: LAKE MARIA ROAD	SHEET 71	E

FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-090201-XS.DWG
LAYOUT NAME - 105-Lake Maria

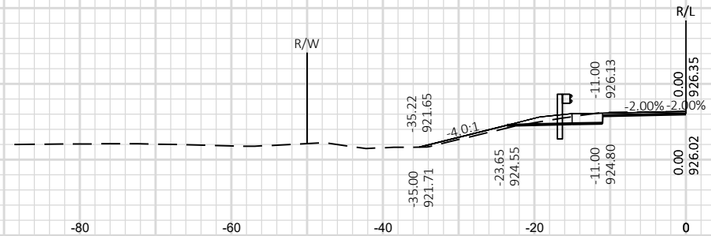
PLOT DATE : 1/29/2025 12:16 PM PLOT BY : KEITH LUECK PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

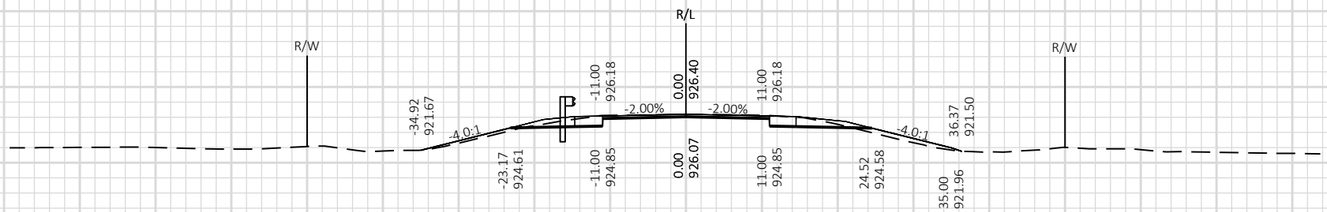
11+85.29
POST 1



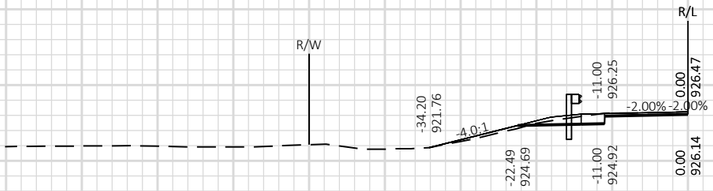
11+60.30
POST 5



11+50.00



11+35.32
POST 9



11+85.29
POST 1

11+60.30
POST 5

11+50.00

11+35.32
POST 9

20 FT

20 FT

9

9

PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	CROSS SECTIONS: LAKE MARIA ROAD	SHEET 72	E

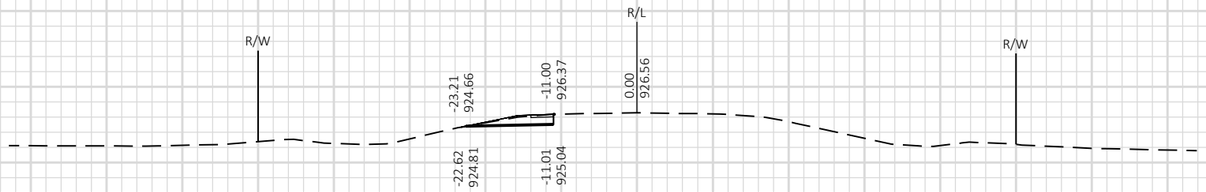
FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-090201-XS.DWG
LAYOUT NAME - 106-Lake Maria

PLOT DATE : 1/29/2025 12:17 PM PLOT BY : KEITH LUECK PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

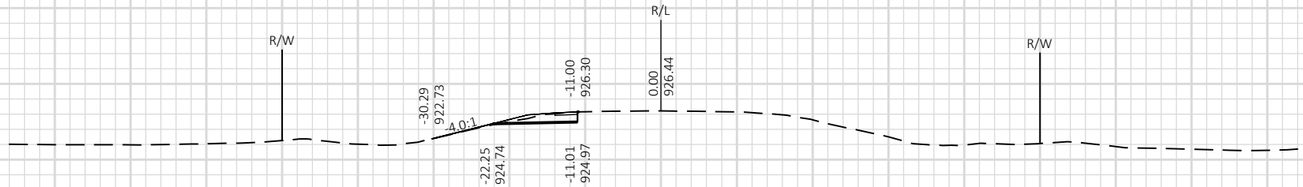
END CONSTRUCTION
STA 12+78.31

12+78.31
TAPER LT



12+78.31
TAPER LT

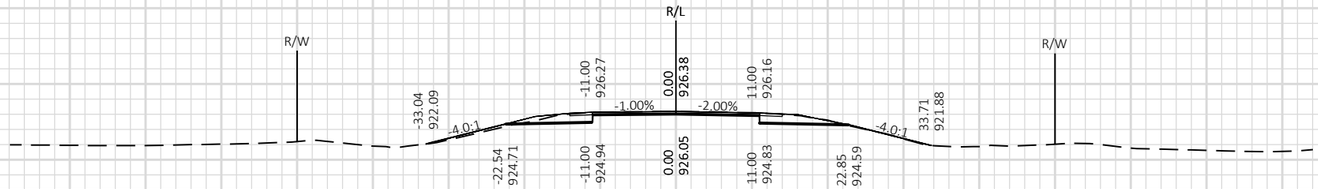
12+50.00



12+50.00

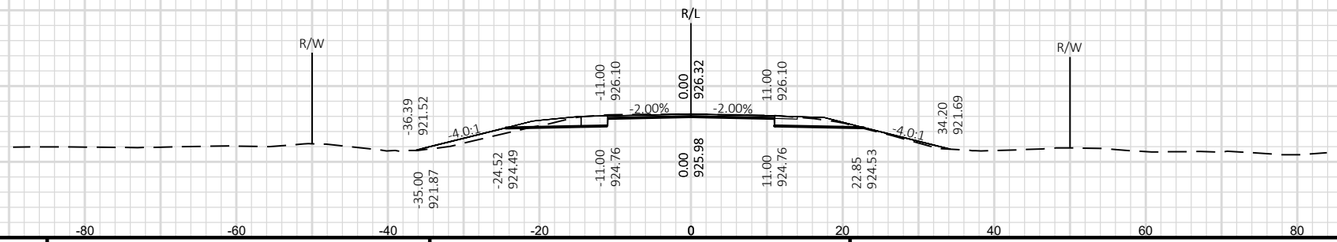
END PAVEMENT REPLACEMENT
STA 12+35.29

12+35.29



12+35.29

12+00.00



12+00.00

20 FT
20 FT

9

9

PROJECT NO: 6187-06-71	HWY: LAKE MARIA ROAD	COUNTY: FOND DU LAC	CROSS SECTIONS: LAKE MARIA ROAD	SHEET 73	E

FILE NAME : S:\CURRPROJ\FONDDUCO\ALTO, TOWN OF\LAKE MARIA ROAD BRIDGE\CIVIL3D\61870600\SHEETS\61870671-090201-XS.DWG
LAYOUT NAME - 107-Lake Maria
PLOT DATE : 1/29/2025 12:17 PM PLOT BY : KEITH LUECK PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

Wisconsin Department of Transportation

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