WKE

PROJECT ID: 3834-05-71

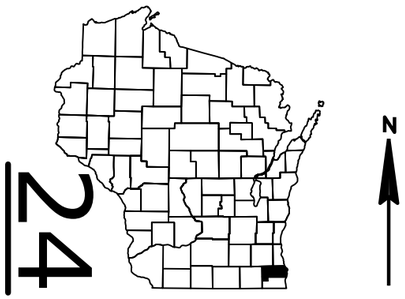
WITH: N/A

COUNTY: RACINE

JANUARY 2025

ORDER OF SHEETS

TOTAL SHEETS = 72



DESIGN DESIGNATION

A.A.D.T.	(2015)	=	411
A.A.D.T.	(2045)	=	460
D.H.V.		=	N/A
D.D.		=	N/A
T.		=	N/A
DESIGN SPEED		=	45
ESALS		=	N/A

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 BURLINGTON, MT TOM RD

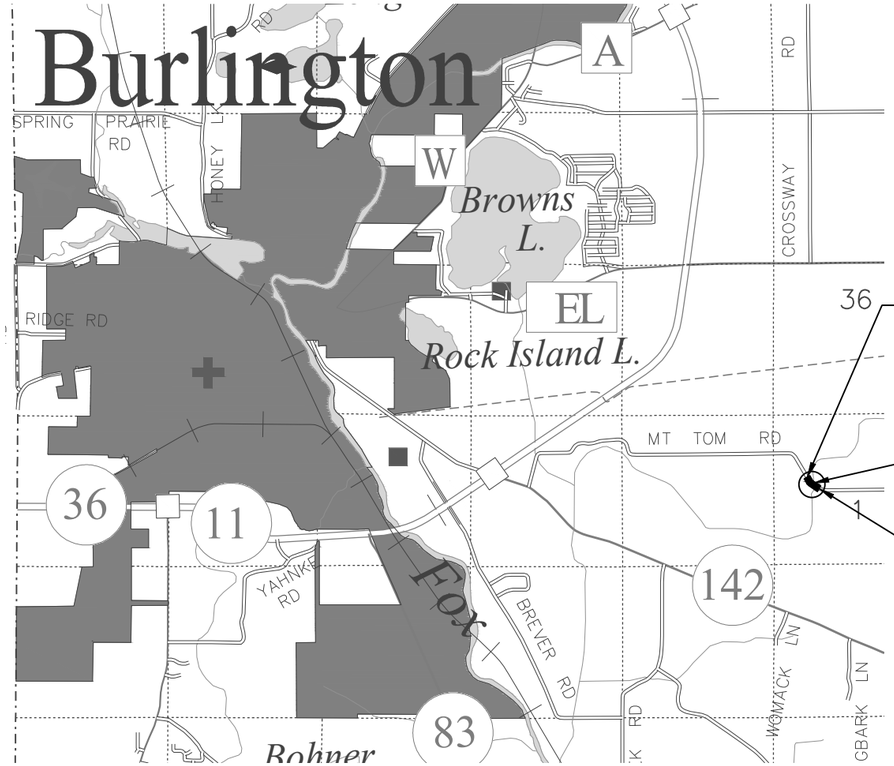
HOOSIER CREEK BRIDGE P-51-0911

LOCAL STREET
RACINE COUNTY

STATE PROJECT NUMBER
3834-05-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3834-05-71	WISC 2025160	1

R-19-E



LAYOUT

SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.102 mi

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WCCS), TOWN OF BURLINGTON, RACINE COUNTY WISCONSIN 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 ELEVATOINS ARE BASED ON GEOID 12A.

ACCEPTED FOR

TOWN OF BURLINGTON

Date 11/19/2024 Administrator (Signature and Title of Official)

ORIGINAL PLANS PREPARED BY

LYNCH & ASSOCIATES
ENGINEERING CONSULTANTS, LLC

WISCONSIN DANIEL E. MEIER E-36102 WATERFORD WI PROFESSIONAL ENGINEER

DATE: 11-14-24 (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	LYNCH & ASSOCIATES
Designer	LYNCH & ASSOCIATES
Project Manager	MICHAEL BAIRD
Regional Examiner	SE
Regional Supervisor	BRIAN BOOTHBY

APPROVED FOR THE DEPARTMENT

DATE: 11/19/2024 (Signature)

E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\010101-TI.DWG PLOT DATE : 11/14/2024 12:21 PM PLOT BY : RYAN BODENDORFER PLOT NAME :

2

UTILITIES CONTACTS

WE ENERGIES
ELECTRICITY
WE ENERGIES UTILITY COORDINATOR
500 S 116TH STREET
WEST ALLIS, WI 53214
PHONE: 414-944-5738
EMAIL: WE-UTILITY-RELOCATIONS@WE-ENERGIES.COM

TDS Telecom
COMMUNICATION LINE
JUSTIN OVIST
525 JUNCTION ROAD
MADISON, WI 53717
PHONE: 608-664-0336
EMAIL: JUSTIN.OVIST@TDSTELECOM.COM

MIDWEST FIBER NETWORKS, LLC
COMMUNICATION LINE
SHEILA BONIWELL
6070 N FLINT ROAD
GLENDALE, WI 53209
PHONE: 414-672-2729
EMAIL: RELOCATIONREQUESTS@MIDWESTFIBERNETWORKS.COM

WISCONSIN DNR LIAISON

BENTON STELZEL
SE REGION
141 NW BARSTOW ST, #180
WAUKESHA, WI 53188
PHONE: (262) 623-0194
EMAIL: BENTON.STELZEL@WISCONSIN.GOV

DESIGN PROJECT MANAGER

DAN MEIER, P.E.
LYNCH & ASSOCIATES
5482 S. WESTRIDGE DRIVE
NEW BERLIN, WI 53151
PHONE: 262-402-5044
EMAIL: DMEIER@LYNCH-ENGINEERING.COM

TOWN OF BURLINGTON

RACHEL NABER
TOWN ADMINISTRATOR
32288 BUSHNELL RD
BURLINGTON, WI 53105
PHONE: 262-763-3070
EMAIL: RACHEL.NABER@TOWNOFBURLINGTON.COM

RACINE COUNTY DRAINAGE BOARD

ALAN JASPERSON
CHAIRMAN
5232 W FIVE MILE RD
CALEDONIA, WI 53108
PHONE: 262-721-5162
EMAIL: ALAN.JASPERSON@JASPERSONREALTY.COM

GENERAL NOTES

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

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY OPERATIONS, OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 115 LBS/SY/IN.

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

RIGHT OF WAY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE.

THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE, SUBBASE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYERS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT APPROXIMATE LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND APPROVED BY THE ENGINEER. MAINTAIN EROSION CONTROL MEASURES UNTIL SUCH A TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

PAVEMENT REMOVAL WILL BE TO THE NEAREST JOINT OR A SAWED EDGE WILL BE REQUIRED AS DIRECTED BY THE ENGINEER.

PIPE AND INLET ELEVATIONS AS SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER TO FIT EXISTING FIELD CONDITIONS

PIPE ELEVATIONS, LENGTHS AND LOCATIONS AS SHOWN ON THE PLANS, MAY BE ADJUSTED TO FIT EXISTING FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

THE PROPOSED SHOULDER WIDTH SHOWN IN THE TYPICAL SECTIONS ARE MINIMUM WIDTH. PERPETUATE EXISTING SHOULDERS THAT ARE WIDER THAN WHAT IS SHOWN IN THE TYPICAL SECTIONS.

SAWCUTS, AS SHOWN ON THE PLANS, ARE SUGGESTED LOCATIONS AND MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER TO BETTER SUIT FIELD CONDITIONS.

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

CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES EXCEPT WHEN PAVING OR PIPE LAYING OPERATIONS REQUIRE THE DRIVEWAY TO BE CLOSED. ACCESS TO DRIVEWAYS SHALL BE RE-ESTABLISHED IMMEDIATELY AFTER OPERATIONS ARE COMPLETED. ACCESS SHALL BE PROVIDED DURING ALL NON-WORKING HOURS.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

PRIOR TO ORDERING DRAINAGE PIPES, THE CONTRACTOR SHALL FIELD VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN WITH THE ENGINEER.

BEARINGS SHOWN ON THE PLAN ARE TRUE BEARINGS.

BEARINGS SHOWN ON THE PLAN ARE GROUND BEARINGS TO THE NEAREST SECOND.

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

IF BALD EAGLE NESTING IS DISCOVERED WITHIN 660 FEET OF THE PROJECT SITE, HUMAN ACTIVITY SHOULD BE AVOIDED FROM JANUARY 15 TO JUNE 30.

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 STRIPTURF:	.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 SLOPETURF:			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT:	.70 - .95											
CONCRETE:	.80 - .95											
BRICK:	.70 - .80											
DRIVES, WALKS:	.75 - .85											
ROOFS:	.75 - .95											
GRAVEL ROADS, SHOULDERS:	.40 - .60											

TOTAL PROJECT AREA = 0.46 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.46 ACRES

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

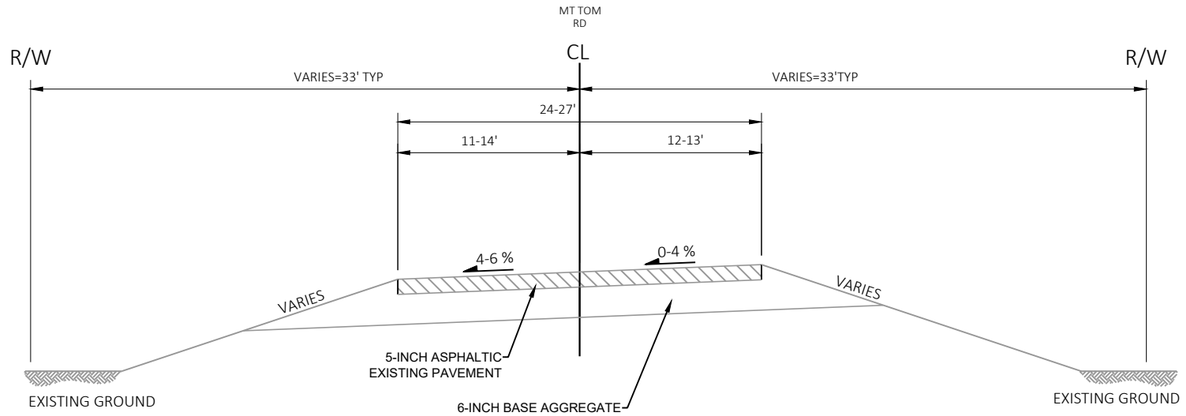
ORDER OF SECTION 2 DETAIL SHEETS

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\3834-05-01 GN.DWG
LAYOUT NAME - 01
PLOT DATE : 11/14/2024 12:22 PM PLOT BY : RYAN BODENDORFER PLOT NAME : PLOT SCALE : 1" = 1'
WISDOT/CADDS SHEET 42

STANDARD ABBREVIATIONS

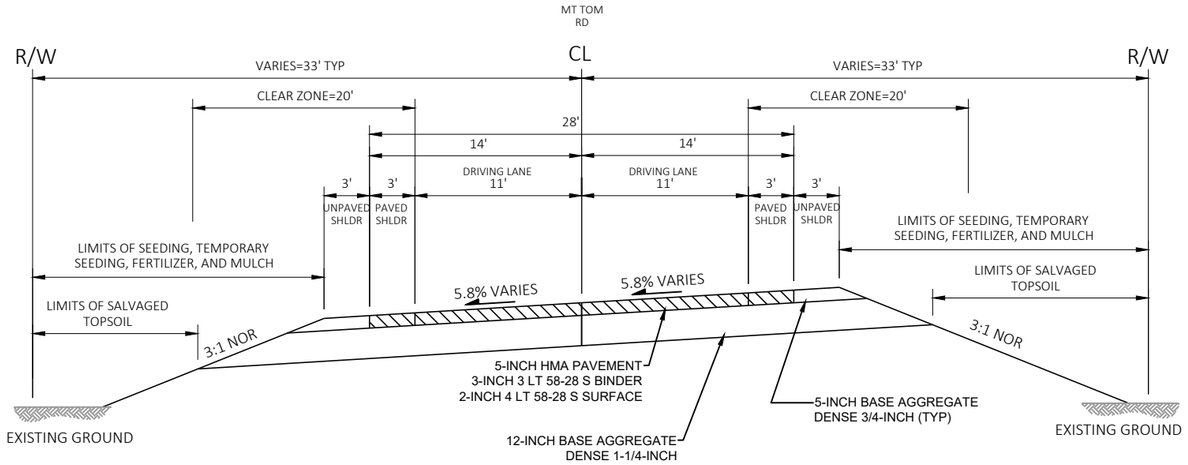
ABUT	ABUTMENT
AC	ACRE
AGG	AGGREGATE
AH	AHEAD
∠	ANGLE
AADT	ANNUAL AVERAGE DAILY TRAFFIC
AEW	APRON ENDWALL
ASPH	ASPHALTIC
BK	BACK
BC	BACK OF CURB
BAD	BASE AGGREGATE DENSE
BL OR B/L	BASE LINE
BM	BENCH MARK
CB	CATCH BASIN
CL OR C/L	CENTER LINE
Δ	CENTRAL ANGLE OR DELTA
CE	COMMERCIAL ENTRANCE
CONC	CONCRETE
CSW	CONCRETE SIDEWALK
CONST	CONSTRUCTION
CP	CONTROL POINT
CO	COUNTY
CTH	COUNTY TRUCK HIGHWAY
CY	CUBIC YARD
CP	CULVERT PIPE
CPCA	CULVERT PIPE CORRUGATED ALUMINUM
CPCPE	CULVERT PIPE CORRUGATED POLYETHYLENE
CPCPP	CULVERT PIPE CORRUGATED POLYPROPYLENE
CPCS	CULVERT PIPE CORRUGATED STEEL
CPCSAC	CULVERT PIPE CORRUGATED STEEL ALUMINUM COATED
CPCSPC	CULVERT PIPE CORRUGATED STEEL POLYMER COATED
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CPS	CULVERT PIPE SALVAGED
CPT	CULVERT PIPE TEMPORARY
C & G	CURB AND GUTTER
D	DEGREE OF CURVE
DHV	DESIGN HOUR VOLUME
DIA	DIAMETER
DD	DIRECTIONAL DISTRIBUTION
DE	DRAINAGE EASEMENT
DWY	DRIVEWAY
EA	EACH
EB	EASTBOUND
EL OR ELEV	ELEVATION
EMB	EMBANKMENT
EW	ENDWALL
EAT	ENERGY ABSORBING TERMINAL
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC	EXCAVATION
EBS	EXCAVATION BELOW SUBGRADE
EXIST	EXISTING
FERT	FERTILIZER
FE	FIELD ENTRANCE
FL OR F/L	FLOW LINE
FT	FOOT
FTMS	FREE TRAFFIC MANAGEMENT SYSTEM
HES	HIGH EARLY STRENGTH
HE	HIGHWAY EASEMENT
CWT	HUNDRED WEIGHT
IN DIA	INCH DIAMETER
INL	INLET
ID	INSIDE DIAMETER
INTERS	INTERSECTION
IH	INTERSTATE HIGHWAY
INV	INVERT
JT	JOINT
LT	LEFT
LHF	LEFT HAND FORWARD
L	LENGTH OF CURVE
LF	LINEAR FOOT
LC	LONG CHORD OF CURVE
LS	LUMP SUM
MGAL	ONE THOUSAND GALLONS
MH	MANHOLE
ML OR M/L	MATCH LINE
NOM	NOMINAL
NC	NORMAL CROWN
NB	NORTHBOUND
NO	NUMBER
OD	OUTSIDE DIAMETER
PAVT	PAVEMENT
PLE	PERMANENT LIMITED EASEMENT
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PCC	PORTLAND CEMENT CONCRETE
LB	POUND
PSI	POUNDS PER SQUARE INCH
PE	PRIVATE ENTRANCE
PROJ	PROJECT
PL	PROPERTY LINE
PRW	PROPOSED RIGHT OF WAY
R	RADIUS
RL OR R/L	REFERENCE LINE
REQD	REQUIRED
RT	RIGHT
RHF	RIGHT HAND FORWARD
R/W	RIGHT OF WAY
RD	ROAD
RDWY	ROADWAY
SHLDR	SHOULDER
SW	SIDEWALK
SB	SOUTHBOUND
SPECS	SPECIFICATIONS
SF	SQUARE FEET
SY	SQUARE YARD
SDD	STANDARD DETAIL DRAWINGS
STH	STATE TRUNK HIGHWAY
STA	STATION
SSPC	STORM SEWER PIPE COMPOSITE
SSCPE	STORM SEWER PIPE CORRUGATED POLYETHYLENE
SSCPP	STORM SEWER PIPE CORRUGATED POLYPROPYLENE
SSPNRC	STORM SEWER PIPE NON-REINFORCED CONCRETE
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
SSPRCHE	STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
SE	SUPERELEVATION
SL OR S/L	SURVEY LINE
TEMP	TEMPORARY
TI	TEMPORARY INTEREST
TLE	TEMPORARY LIMITED EASEMENT
TC	TOP OF CURB
TL OR T/L	TRANSIT LINE
T	TRUCKS (PERCENT OF)
TYP	TYPICAL
USH	UNITED STATES HIGHWAY
VAR	VARIABLE
VC	VERTICAL CURVE
VPC	VERTICAL POINT OF CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
W	WEST
WB	WESTBOUND

2



EXISTING TYPICAL SECTION

STA1+00.00 - 6+38.16

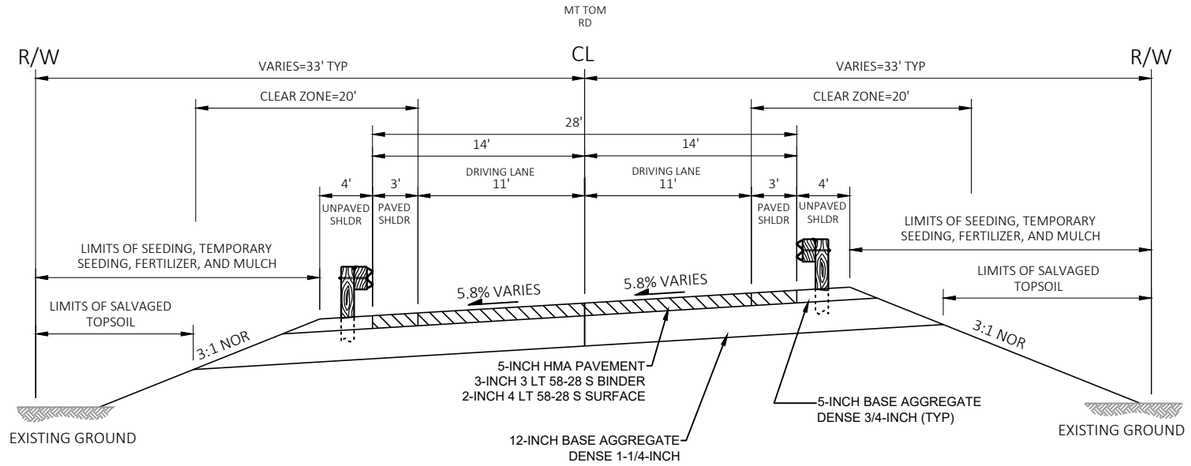


FINISHED TYPICAL SECTION

STA 1+00.00 - 2+74.32 LT
STA 5+58.82 - 6+38.16 LT
STA 1+00.00 - 2+76.48 RT
STA 5+57.21 - 6+38.16 RT

PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	TYPICAL SECTIONS	SHEET 4	E

2



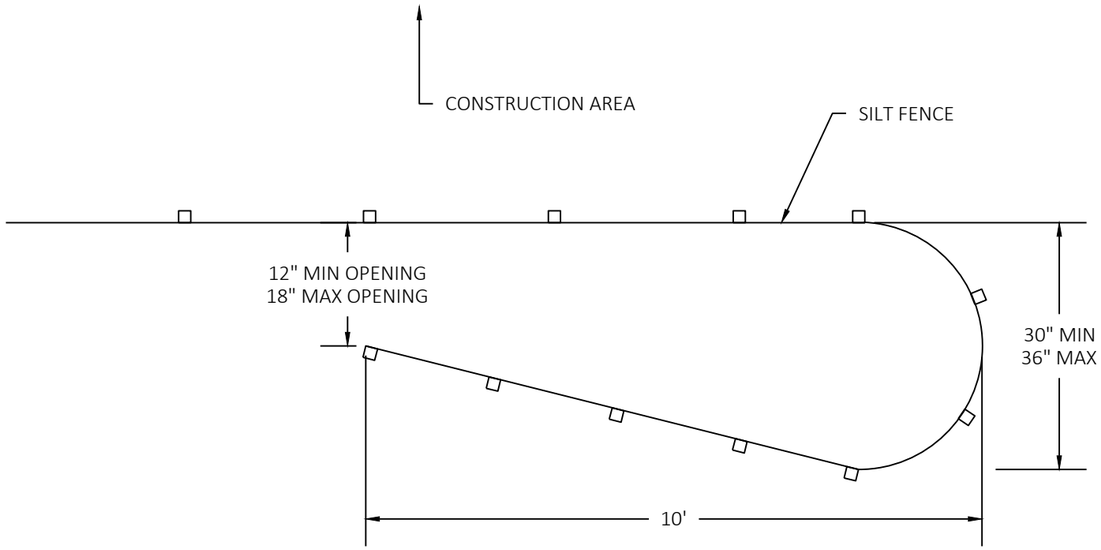
FINISHED TYPICAL SECTION

STA 2+74.32 - 3+62.17 LT
STA 4+48.67 - 5+58.82 LT
STA 2+76.48 - 3+88.94 RT
STA 4+72.46 - 5+57.21 RT

PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	TYPICAL SECTIONS	SHEET 5	E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\3834-05-01 TS.DWG
LAYOUT NAME - TYPICAL SECTION 2
PLOT DATE : 11/14/2024 12:23 PM PLOT BY : RYAN BODENDORFER PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2



AMPHIBIAN AND REPTILE EXCLUSION FENCING
TURN-AROUND DETAIL

AMPHIBIAN AND REPTILE EXCLUSION FENCING GENERAL NOTES

AMPHIBIAN AND REPTILE EXCLUSION FENCING IS STANDARD SILT FENCE THAT IS INSTALLED ACCORDING TO THIS DETAIL.

FENCING MUST BE AT LEAST 24 INCHES HIGH WITH AT LEAST 4 INCHES TRENCHED INTO THE SOIL AND AT LEAST 20 INCHES EXPOSED ABOVE GROUND. SOILS MUST BE CAREFULLY COMPACTED AGAINST BOTH SIDES OF THE FENCE FOR ITS ENTIRE LENGTH TO PREVENT ANIMALS FROM PASSING UNDER THE FENCE.

FENCING SHOULD BE INSTALLED WITH TURN-AROUNDS AT THE ENDS AND AT ANY ACCESS OPENINGS NEEDED IN THE FENCING, IN ORDER TO REDIRECT ANIMALS AWAY FROM OPENINGS.

FENCE STAKES FOR THE TURN-AROUND SHOULD BE PLACED ON THE OUTSIDE OF THE TURN-AROUND.

THE NON-CONSTRUCTION SIDE OF THE FENCE SHOULD BE KEPT CLEAR OF TALL VEGETATION THAT COULD ALLOW ANIMALS TO MANEUVER OVER THE FENCING

2

2

AMPHIBIAN AND REPTILE EXCLUSION FENCING TURN-AROUND, SEE DETAIL

PC: 0+91.61

EROSION MAT CLASS II, TYPE C

SLOPE INTERCEPT, TYP.

104
CP104 / PK

107
CP107 /PK

105
CP105 / REBAR

106
CP106 / PK

101
CP101 /PK

AMPHIBIAN AND REPTILE EXCLUSION FENCING TURN-AROUND, SEE DETAIL

AMPHIBIAN AND REPTILE EXCLUSION FENCING TURN-AROUND, SEE DETAIL

WETLANDS

HOOSIER CREEK CANAL

N

LEGEND

- EROSION MAT CLASS II, TYPE C
- SILT FENCE
- RIP RAP OR STONE DITCH CHECK
- SLOPE INTERCEPT
- TURBIDITY BARRIER
- SURFACE WATER FLOW

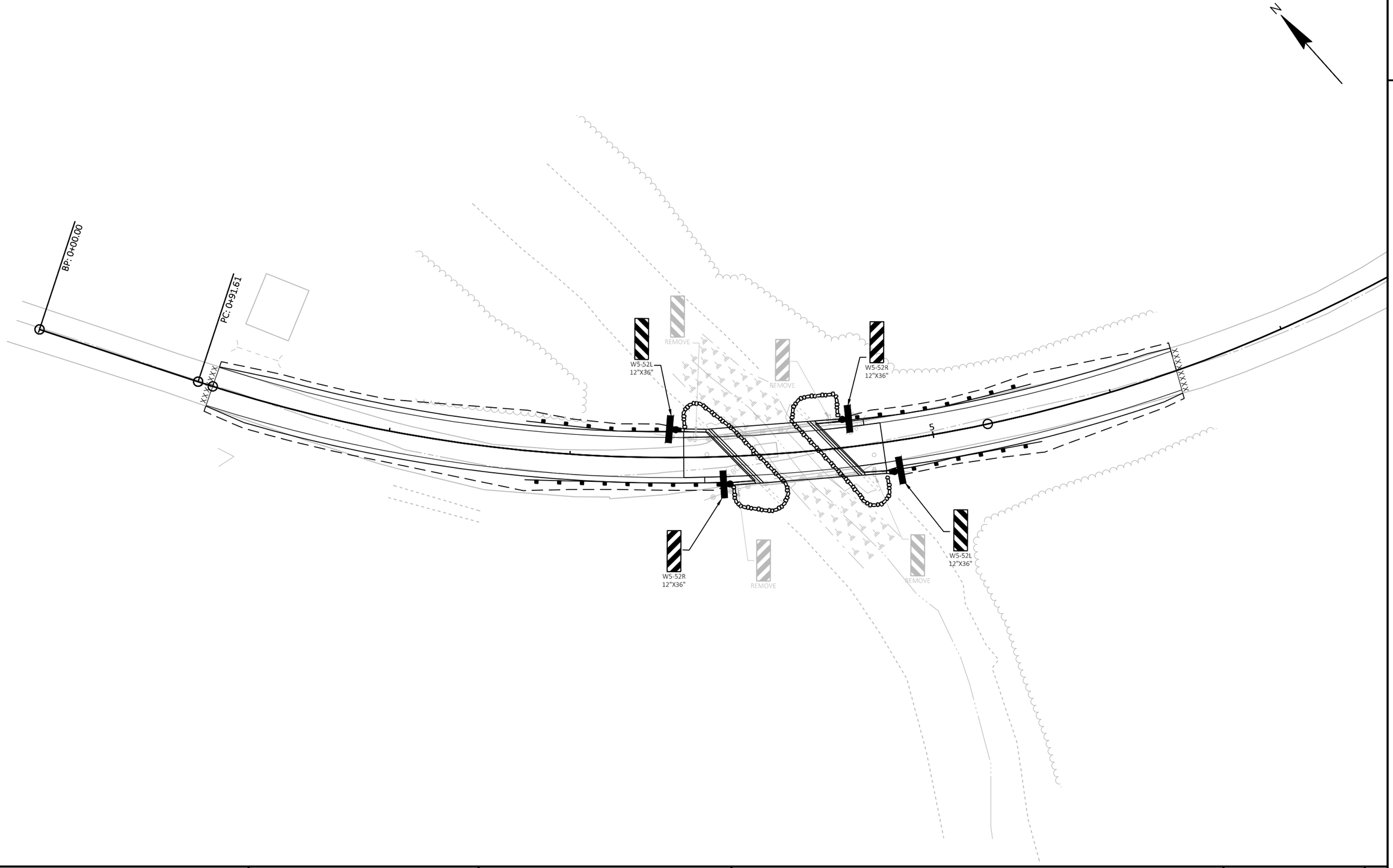
PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	EROSION CONTROL AND DRAINAGE	SHEET 7	E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\022001-EC.DWG
LAYOUT NAME - EROSION CONTROL AND DRAINAGE

PLOT DATE : 11/14/2024 12:24 PM PLOT BY : RYAN BODENDORFER PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

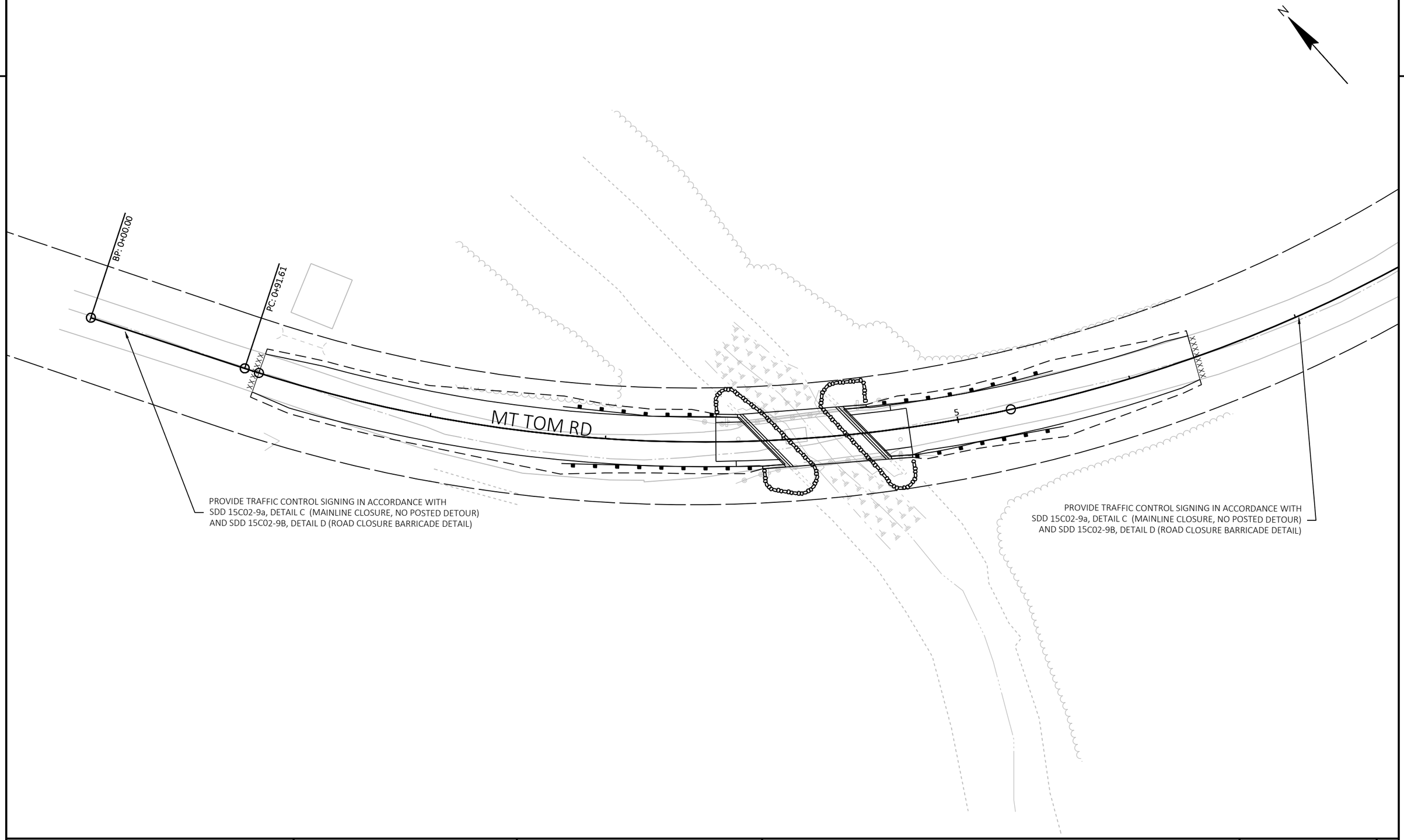


PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	SIGN AND PAVEMENT MARKING	SHEET 8	E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\023201-PS.DWG
LAYOUT NAME - SIGN AND PAVEMENT MARKING

PLOT DATE : 11/14/2024 12:25 PM PLOT BY : RYAN BODENDORFER PLOT NAME : PLOT SCALE : 1 IN:50 FT

2



PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	TRAFFIC CONTROL	SHEET 9	E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\025100-TC.DWG
LAYOUT NAME - TRAFFIC CONTROL

PLOT DATE : 11/14/2024 12:26 PM PLOT BY : RYAN BODENDORFER PLOT NAME : PLOT SCALE : 1 IN:50 FT

2

2

N

BP: 0+00.00
Y = 162923.989
X = 526823.595

BP: 0+00.00

S30°02'55"E

PC: 0+91.61

CP107
Y=162672.168
X=527006.036
ELEV=777.397

CP106
Y=162566.259
X=527158.598
ELEV=776.072

EP: 6+38.16
Y = 162491.949
X = 527274.008

1+00

2+00

3+00

4+00

5+00

6+00

7+00

104
CP104 / PK

107
CP107 /PK

CURVE 1

106
CP106 / PK

101
CP101 /PK

CP101
Y=162482.166
X=527266.777
ELEV=776.634

CP104
Y=162741.755
X=526916.082
ELEV=782.448

105
CP105 / REBAR

CP105
Y=162575.485
X=527044.749
ELEV=774.282

CURVE 1
PI STA = 5+76.56
Y = 162424.920
X = 527112.298
DELTA = 60°35'35" LT
D = 6°54'11"
T = 484.94'
L = 877.76'
R = 830.00'
PC STA = 0+91.61
Y = 162844.688
X = 526869.469
PT STA = 9+69.38
Y = 162430.350
X = 527597.212
DB = S30°02'55"E
DA = N89°21'30"E

PI: 5+76.56

PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	ALIGNMENT DETAILS	SHEET 10	E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\027201-AD.DWG
LAYOUT NAME - ALIGNMENT DETAILS

PLOT DATE : 11/14/2024 12:26 PM PLOT BY : RYAN BODENDORFER PLOT NAME : PLOT SCALE : 1 IN:50 FT

Estimate Of Quantities

3834-05-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	2.000	2.000
0004	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-51-0911	EACH	1.000	1.000
0006	204.0165	Removing Guardrail	LF	117.000	117.000
0008	205.0100	Excavation Common	CY	660.000	660.000
0010	206.1001	Excavation for Structures Bridges (structure) 01. B-51-164	EACH	1.000	1.000
0012	208.0100	Borrow	CY	100.000	100.000
0014	210.1500	Backfill Structure Type A	TON	250.000	250.000
0016	213.0100	Finishing Roadway (project) 01. 3834-05-71	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	200.000	200.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,625.000	1,625.000
0022	415.0410	Concrete Pavement Approach Slab	SY	155.000	155.000
0024	455.0605	Tack Coat	GAL	95.000	95.000
0026	460.2000	Incentive Density HMA Pavement	DOL	280.000	280.000
0028	460.5223	HMA Pavement 3 LT 58-28 S	TON	232.000	232.000
0030	460.5224	HMA Pavement 4 LT 58-28 S	TON	155.000	155.000
0032	502.0100	Concrete Masonry Bridges	CY	166.000	166.000
0034	502.3200	Protective Surface Treatment	SY	221.000	221.000
0036	503.0128	Prestressed Girder Type I 28-Inch	LF	348.000	348.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	5,380.000	5,380.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	13,742.000	13,742.000
0042	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	12.000	12.000
0044	506.4000	Steel Diaphragms (structure) 01. B-51-164	EACH	5.000	5.000
0046	513.4061	Railing Tubular Type M	LF	173.000	173.000
0048	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0050	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,015.000	1,015.000
0052	606.0300	Riprap Heavy	CY	139.000	139.000
0054	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	129.000	129.000
0056	614.2300	MGS Guardrail 3	LF	51.000	51.000
0058	614.2500	MGS Thrie Beam Transition	LF	158.000	158.000
0060	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0062	619.1000	Mobilization	EACH	1.000	1.000
0064	624.0100	Water	MGAL	100.000	100.000
0066	625.0100	Topsoil	SY	1,465.000	1,465.000
0068	627.0200	Mulching	SY	1,465.000	1,465.000
0070	628.1504	Silt Fence	LF	1,385.000	1,385.000
0072	628.1520	Silt Fence Maintenance	LF	1,385.000	1,385.000
0074	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0076	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0078	628.2027	Erosion Mat Class II Type C	SY	49.000	49.000
0080	628.6005	Turbidity Barriers	SY	49.000	49.000
0082	629.0210	Fertilizer Type B	CWT	2.000	2.000
0084	630.0120	Seeding Mixture No. 20	LB	40.000	40.000
0086	630.0200	Seeding Temporary	LB	21.000	21.000
0088	630.0500	Seed Water	MGAL	63.000	63.000
0090	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0092	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0094	638.2602	Removing Signs Type II	EACH	4.000	4.000
0096	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0098	642.5001	Field Office Type B	EACH	1.000	1.000

Estimate Of Quantities

3834-05-71

Line	Item	Item Description	Unit	Total	Qty
0100	643.0420	Traffic Control Barricades Type III	DAY	1,267.000	1,267.000
0102	643.0705	Traffic Control Warning Lights Type A	DAY	1,690.000	1,690.000
0104	643.0900	Traffic Control Signs	DAY	986.000	986.000
0106	643.5000	Traffic Control	EACH	1.000	1.000
0108	645.0111	Geotextile Type DF Schedule A	SY	123.000	123.000
0110	645.0120	Geotextile Type HR	SY	208.000	208.000
0112	650.4500	Construction Staking Subgrade	LF	479.000	479.000
0114	650.5000	Construction Staking Base	LF	479.000	479.000
0116	650.6501	Construction Staking Structure Layout (structure) 01. B-51-164	EACH	1.000	1.000
0118	650.9911	Construction Staking Supplemental Control (project) 01. 3834-05-71	EACH	1.000	1.000
0120	650.9920	Construction Staking Slope Stakes	LF	957.000	957.000
0122	690.0150	Sawing Asphalt	LF	49.000	49.000
0124	715.0502	Incentive Strength Concrete Structures	DOL	996.000	996.000
0126	999.2005.S	Maintaining Bird Deterrent System (station) 01. 4+18	EACH	1.000	1.000
0128	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	250.000	250.000
0130	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	600.000	600.000
0132	SPV.0090	Special SPV.0090.01 Flashing Stainless Steel	LF	61.000	61.000
0134	SPV.0195	Special SPV.0195.01 Select Crushed Material for Travel Corridor	TON	9.000	9.000

EARTHWORK

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1) CUT (2)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	EXPANDED FILL (13) FACTOR 1.00	MASS ORDINATE +/- (14)	WASTE	208.0100 BORROW	COMMENT
DIVISION 1										
MT TOM RD CL	1+00.31/6+37.47	MT TOM RD	660	162	498	598	-100	0	100	
DIVISION 1 SUBTOTAL			660	162	498	598	-100	0	100	
GRAND TOTAL			660	162	498	598	-100	0	100	

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.
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
(5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
(13) EXPANDED FILL FACTOR = 1.00
(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.
(15) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

GRUBBING

CATEGORY	STATION	-	STATION	201.0205 GRUBBING STA
0010	1+00	-	6+38	2
			TOTAL 0010	2

BASE AGGREGATE

CATEGORY	STATION	-	STATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON
0010	1+00	-	4+01	114	964
0010	4+37	-	6+38	86	661
			TOTAL 0010	200	1,625

GUARDRAIL REMOVAL

CATEGORY	STATION	-	STATION	204.0165 REMOVING GUARDRAIL LF
0010	3+46	-	4+03	65
0010	4+37	-	4+85	52
			TOTAL 0010	117

CONCRETE APPROACH SLAB

CATEGORY	STATION	-	STATION	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY
0010	3+62	-	3+89	78
0010	4+48	-	4+72	77
			TOTAL 0010	155

FINISHING ROADWAY

CATEGORY	PROJECT	213.0100.01 FINISHING ROADWAY (3834-05-71) EACH
0010	3834-05-71	1
	TOTAL 0010	1

HMA ITEMS

CATEGORY	STATION	-	STATION	455.0605 TACK COAT GAL	460.5223 HMA PAVEMENT 3 LT 58-28 S TON	460.5224 HMA PAVEMENT 4 LT 58-28 S TON
0010	1+00	-	4+01	58	140	90
0010	4+37	-	6+38	37	92	65
			TOTAL 0010	95	232	155

GUARDRAIL INSTALLATION

CATEGORY	STATION	-	STATION		614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
0010	2+74	-	3+89		29	79	2
0010	4+49	-	5+59		22	79	2
				TOTAL 0010	51	158	4

MOBILIZATION

CATEGORY	PROJECT		619.1000 MOBILIZATION EACH
0010	3834-05-71		1
		TOTAL 0010	1

WATER

CATEGORY	USE		624.0100 WATER MGAL
0010	BASE AGGREGATE COMPACTION		100
		TOTAL 0010	100

LANDSCAPE ITEMS

CATEGORY	STATION	-	STATION		625.0100 TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL
0010	1+00	-	4+12		796	796	1	21	11	33
0010	4+21	-	6+38		376	376	1	11	6	17
0010	UNDISTRIBUTED				293	293	-	8	4	13
				TOTAL 0010	1,465	1,465	2	40	21	63

EROSION CONTROL ITEMS

CATEGORY	STATION	-	STATION		628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2027 EROSION MAT CLASS II TYPE C SY	628.6005 TURBIDITY BARRIERS SY
0010	1+00	-	4+08		635	635	-	-	39	20
0010	4+27	-	6+38		473	473	-	-	-	19
0010	UNDISTRIBUTED				277	277	1	1	10	10
				TOTAL 0010	1,385	1,385	1	1	49	49

SIGNING ITEMS

CATEGORY	STATION	LOCATION	SIGN CODE	SIZE	DESCRIPTION	634.0612 POSTS WOOD 4X6-INCH X 12-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
0010	3+58	LT	W5-52L	12 "X 36"	BRIDGE HASH MARKS	1	3	-	-
0010	3+70	LT				-	-	1	1
0010	3+87	RT	W5-52R	12 "X 36"	BRIDGE HASH MARKS	1	3	-	-
0010	3+92	RT				-	-	1	1
0010	4+43	LT				-	-	1	1
0010	4+51	LT	W5-52L	12 "X 36"	BRIDGE HASH MARKS	1	3	-	-
0010	4+64	RT				-	-	1	1
0010	4+76	RT	W5-52R	12 "X 36"	BRIDGE HASH MARKS	1	3	-	-
					TOTAL 0010	4	12	4	4

FIELD OFFICE

CATEGORY	PROJECT	642.5001 FIELD OFFICE TYPE B EACH
0010	3834-05-71	1
	TOTAL 0010	1

TRAFFIC CONTROL ITEMS

CATEGORY	PROJECT	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.5000 TRAFFIC CONTROL EACH
0010	3834-05-71	1,152	1,536	896	-
0010	UNDISTRIBUTED	115	154	90	1
	TOTAL 0010	1,267	1,690	986	1

CONSTRUCTION STAKING

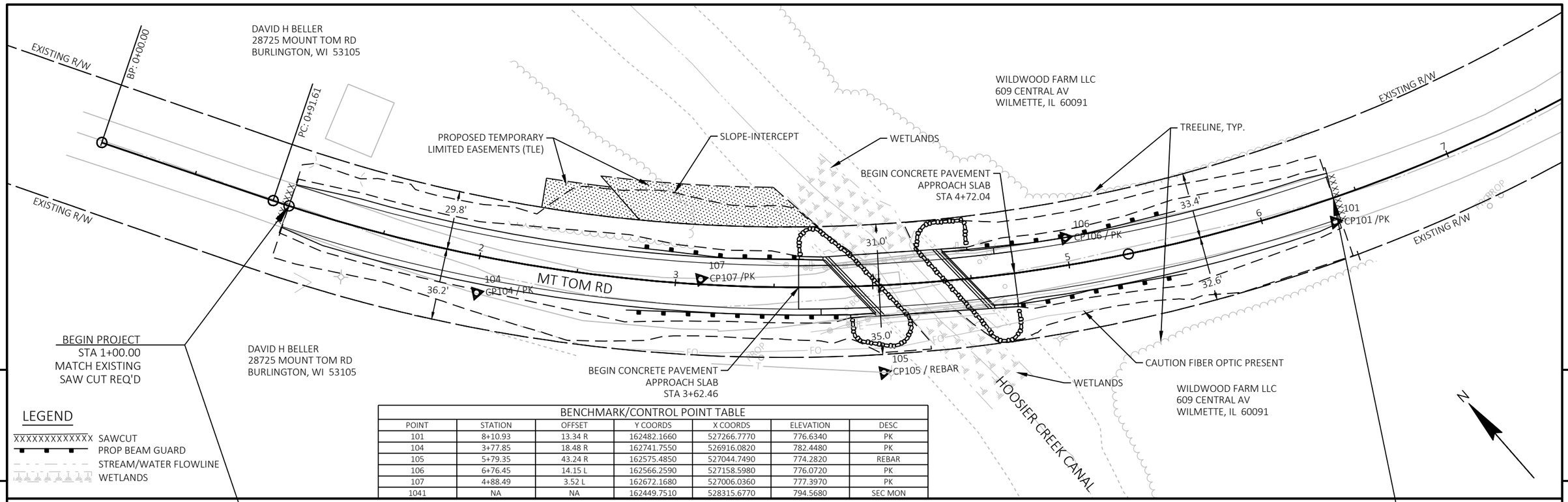
CATEGORY	STATION	-	STATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6501.01 CONSTRUCTION STAKING STRUCTURE LAYOUT (B-51-0164) EACH	650.9911.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (3834-05-72) EACH	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
0010	1+00	-	4+01	289	289	-	-	577
0010	4+37	-	6+38	190	190	-	-	380
0010	UNDISTRIBUTED			-	-	1	1	-
			TOTAL 0010	479	479	1	1	957

SAWCUT ASPHALT

CATEGORY	STATION	-	STATION	690.0150 SAWING ASPHALT LF
0010	1+00	-	4+01	23
0010	4+37	-	6+38	26
			TOTAL 0010	49

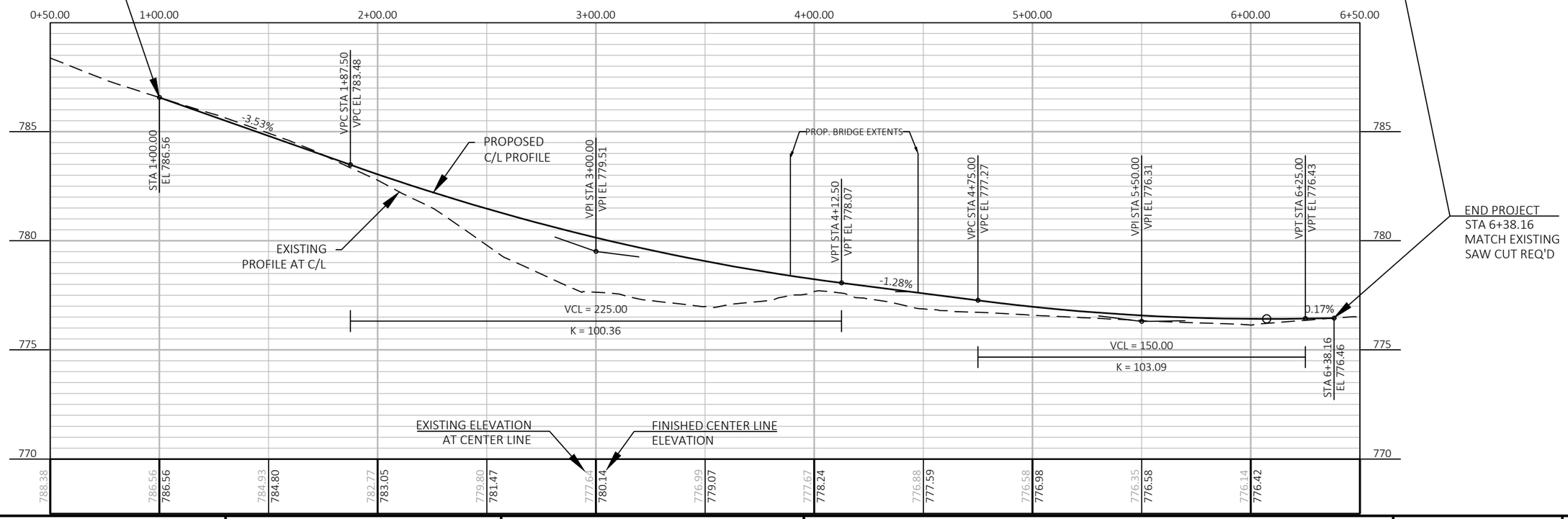
BIRD DETERRENT SYSTEM

CATEGORY	PROJECT	999.2005.S.01 MAINTAINING BIRD DETERRENT SYSTEM (4+18) (ITEM 999.2005.S.01) EACH
0010	3834-05-71	1
	TOTAL 0010	1



BENCHMARK/CONTROL POINT TABLE

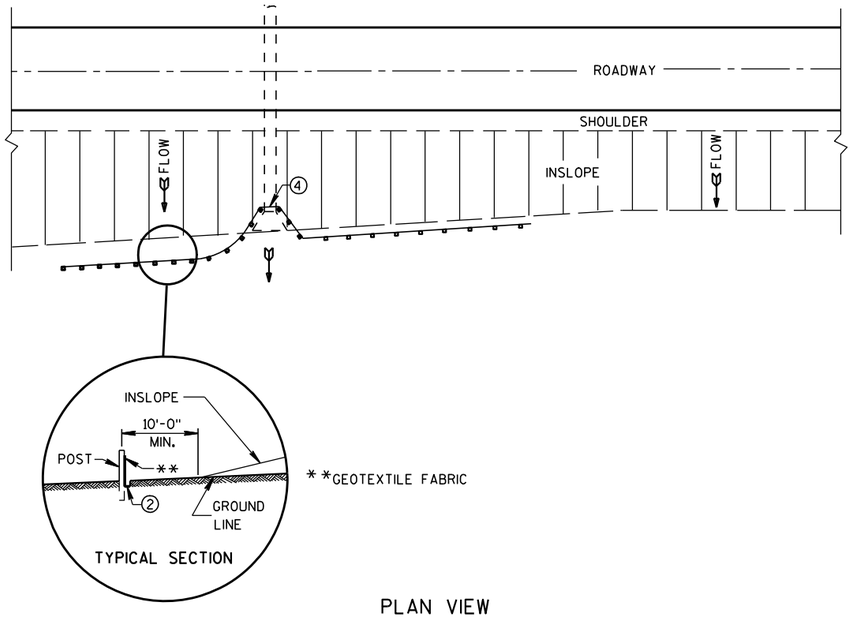
POINT	STATION	OFFSET	Y COORDS	X COORDS	ELEVATION	DESC
101	8+10.93	13.34 R	162482.1660	527266.7770	776.6340	PK
104	3+77.85	18.48 R	162741.7550	526916.0820	782.4480	PK
105	5+79.35	43.24 R	162575.4850	527044.7490	774.2820	REBAR
106	6+76.45	14.15 L	162566.2590	527158.5980	776.0720	PK
107	4+88.49	3.52 L	162672.1680	527006.0360	777.3970	PK
1041	NA	NA	162449.7510	528315.6770	794.5680	SEC MON



PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	PLAN AND PROFILE: MT TOM ROAD	SHEET 16	E

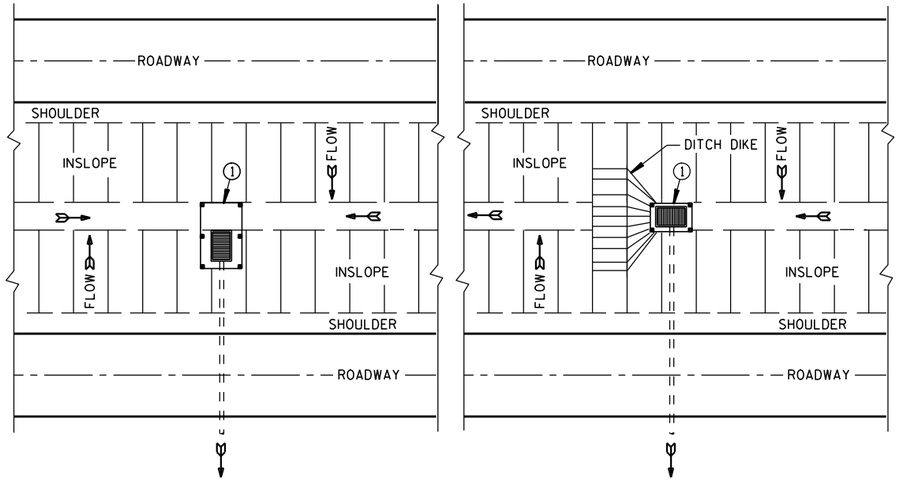
Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C19-03	HMA LONGITUDINAL JOINTS
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	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



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



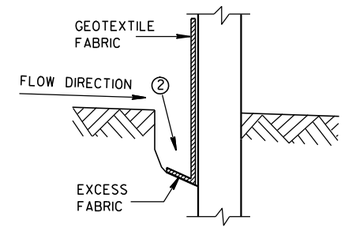
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

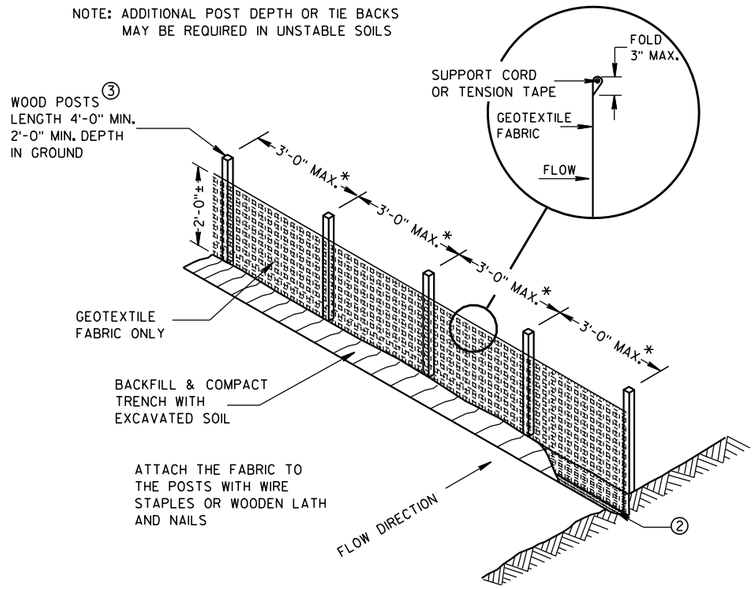
GENERAL NOTES

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.

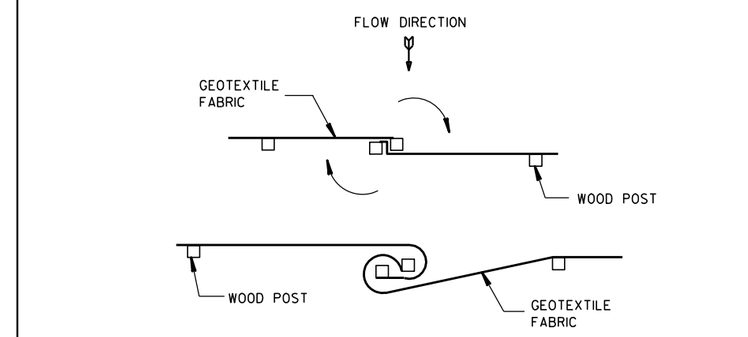


TRENCH DETAIL

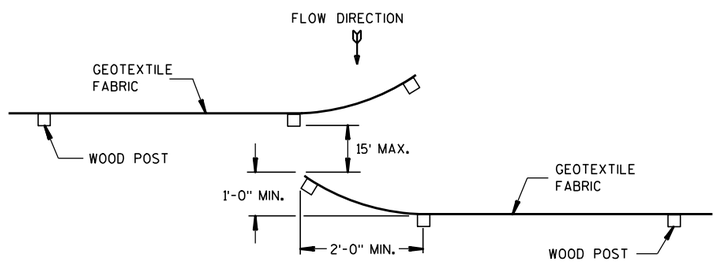


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

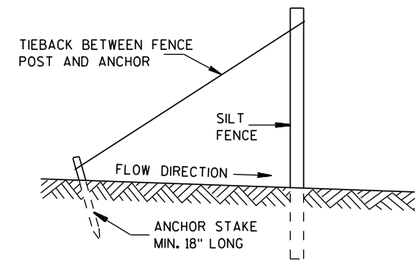


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

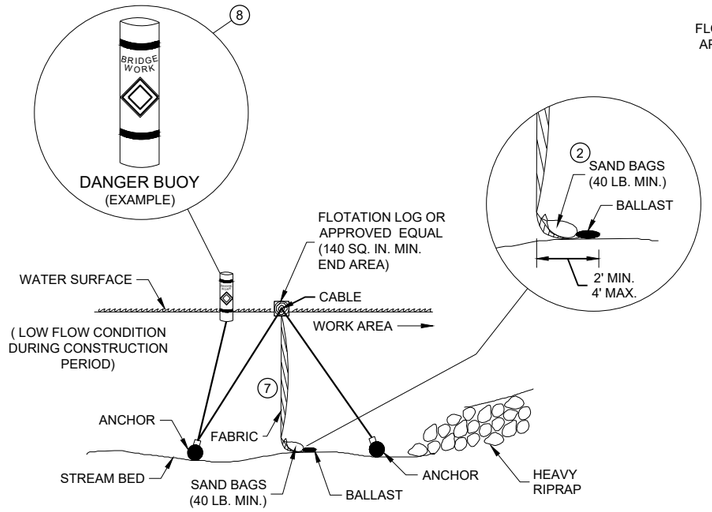
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

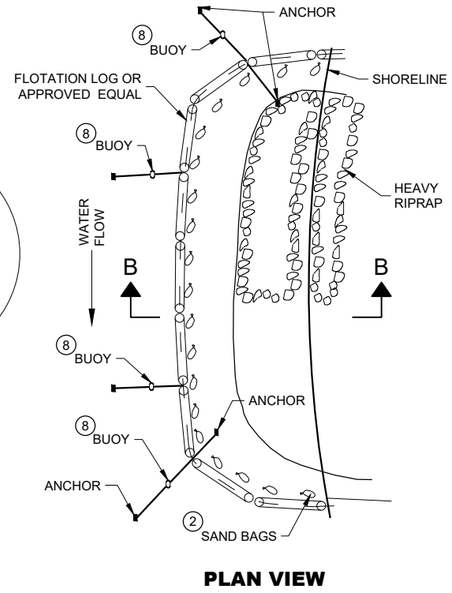
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

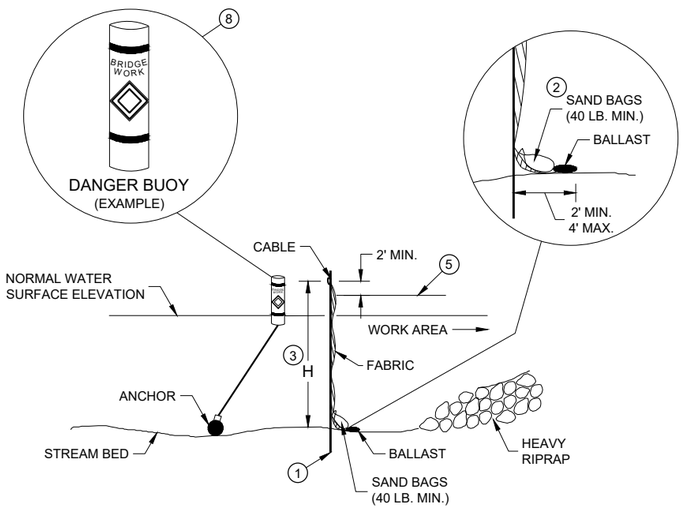


SECTION B - B

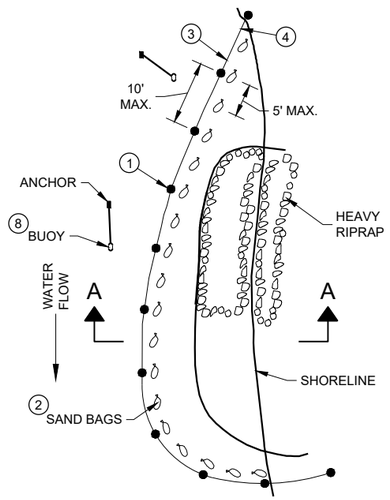


PLAN VIEW

TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A - A



PLAN VIEW

TURBIDITY BARRIER - STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

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

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

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

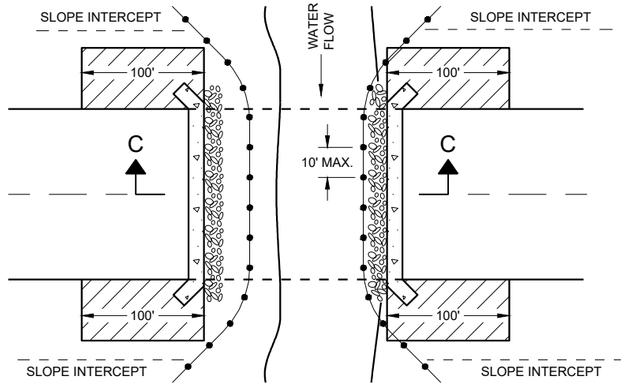
(4) IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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

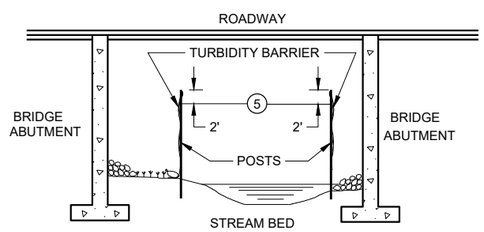
(6) FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

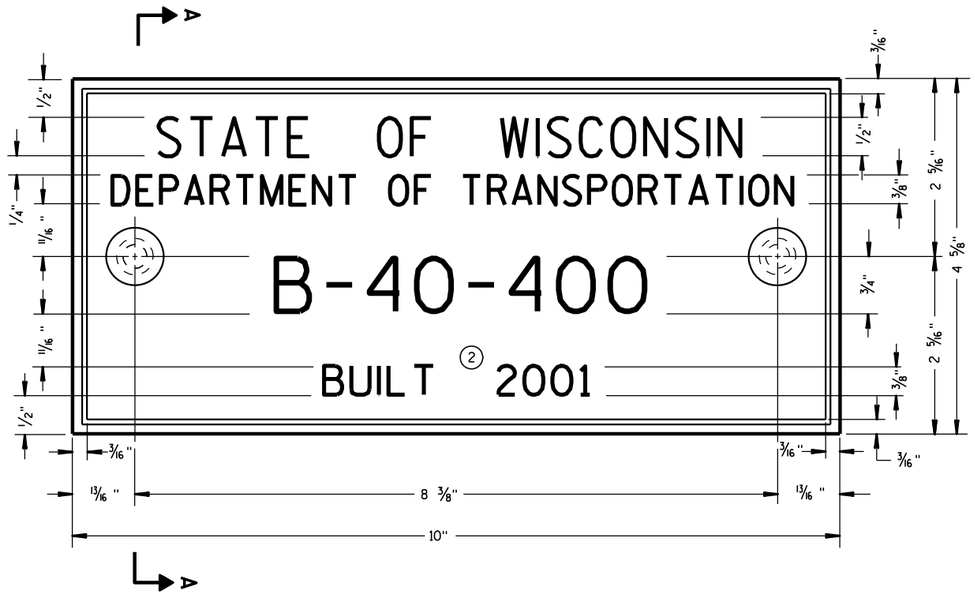
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

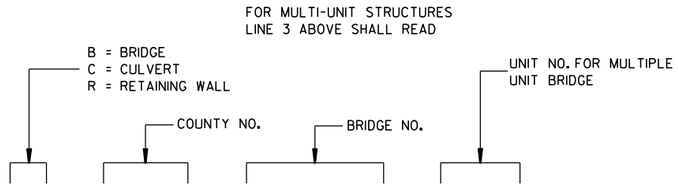
FHWA

6
SDD 08E11 - 02



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

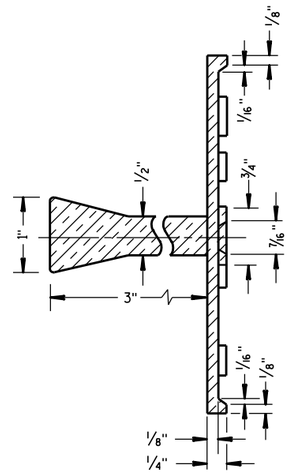
GENERAL NOTES

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.

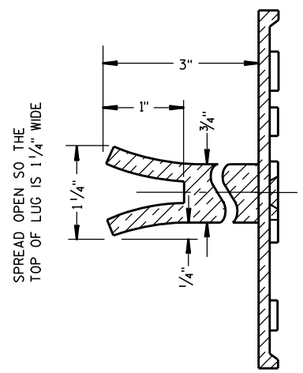
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

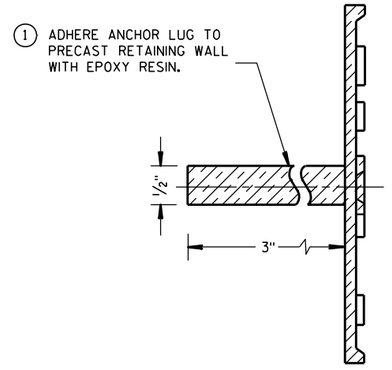
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



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	

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S.D.D. 12 A 3-10

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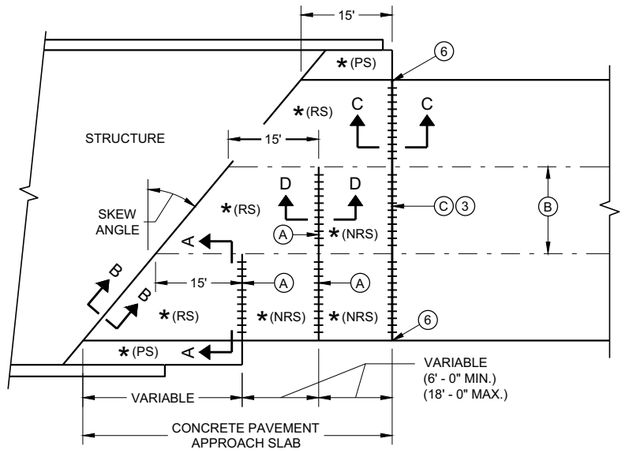
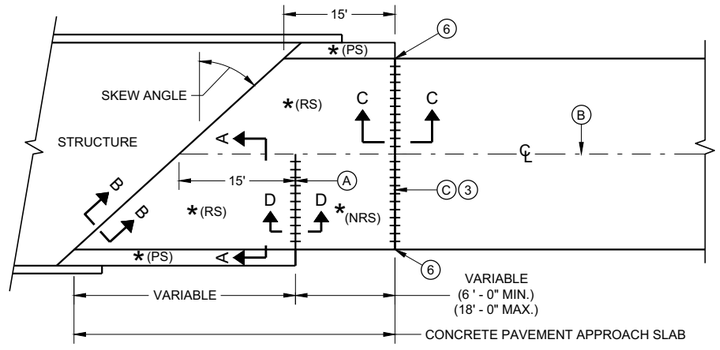
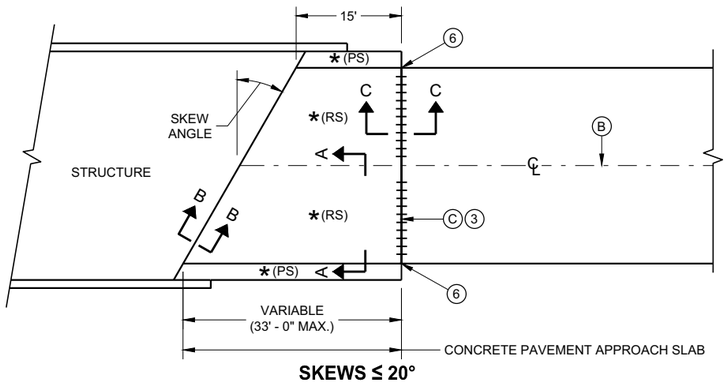
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

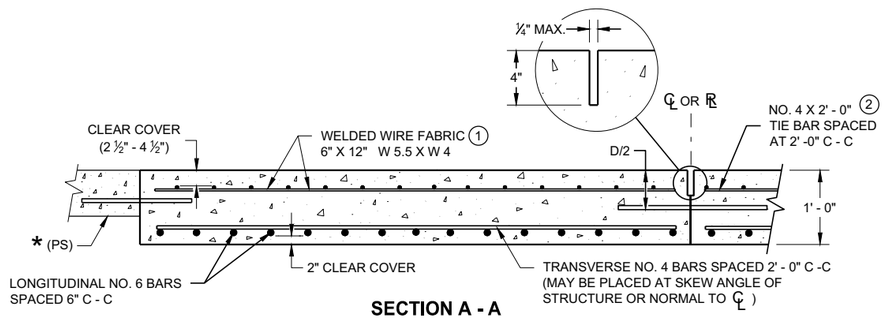
APPROACH SLAB AND ADJACENT PAVEMENT

* (RS) = REINFORCED CONCRETE SLAB

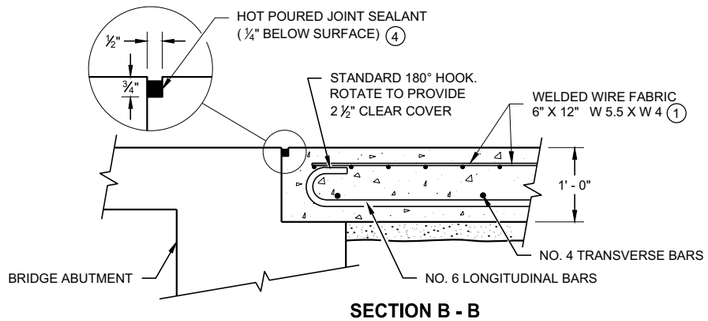
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

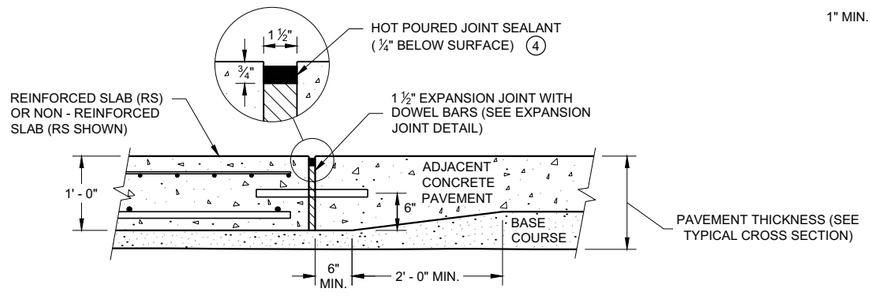
*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



SECTION A - A
REINFORCEMENT POSITIONING DETAIL



SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

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

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

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

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

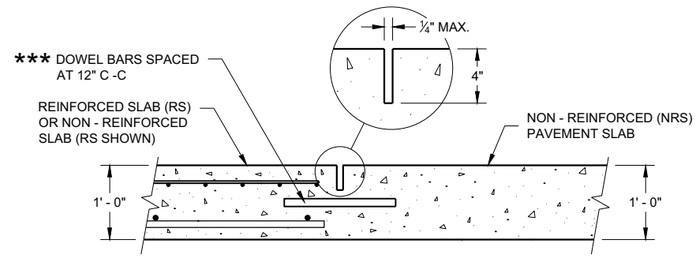
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

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

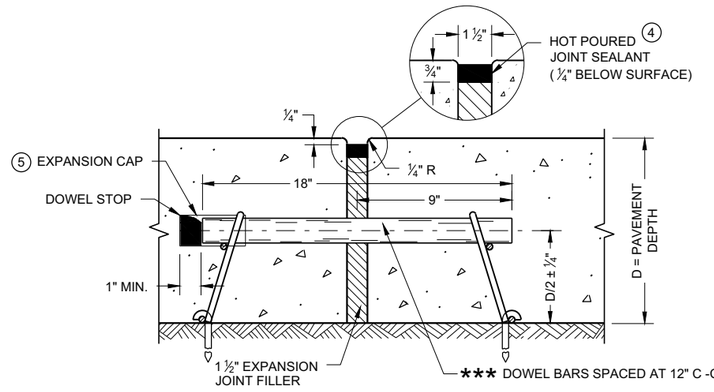
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

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



SECTION D - D
CONTRACTION JOINT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

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

FHWA

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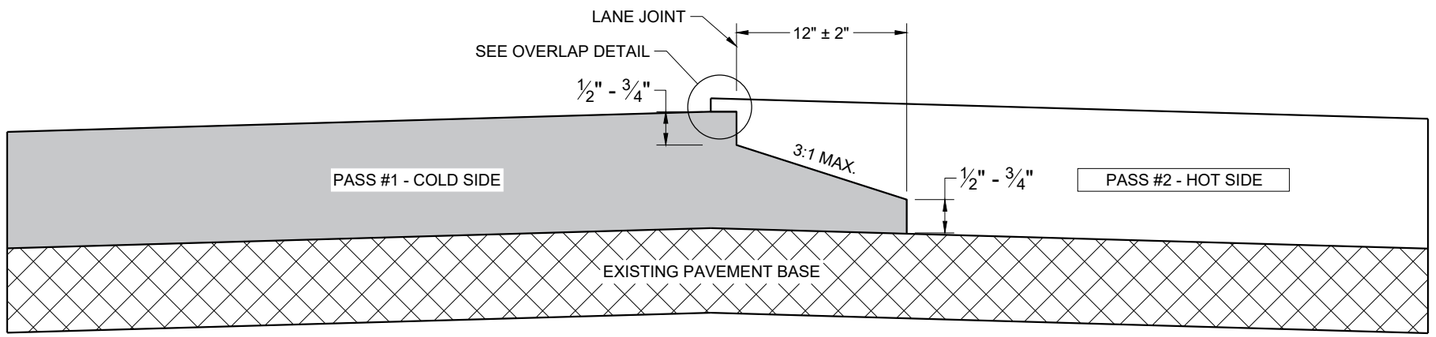
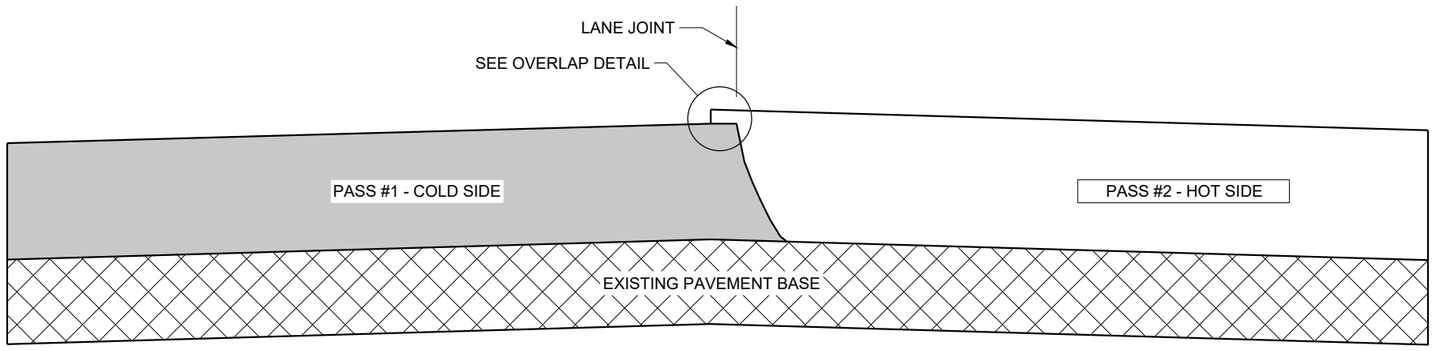
SDD 13B02 - 09a

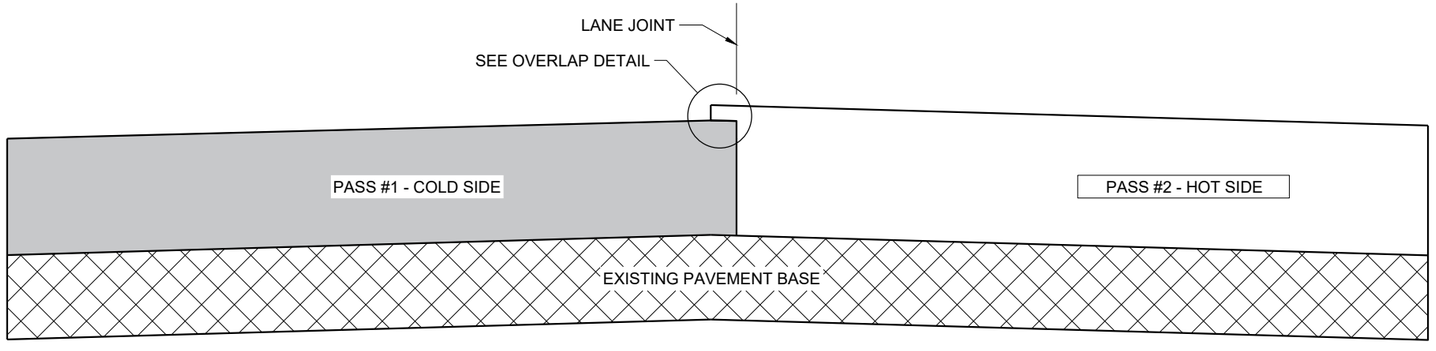
SDD 13B02 - 09a



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

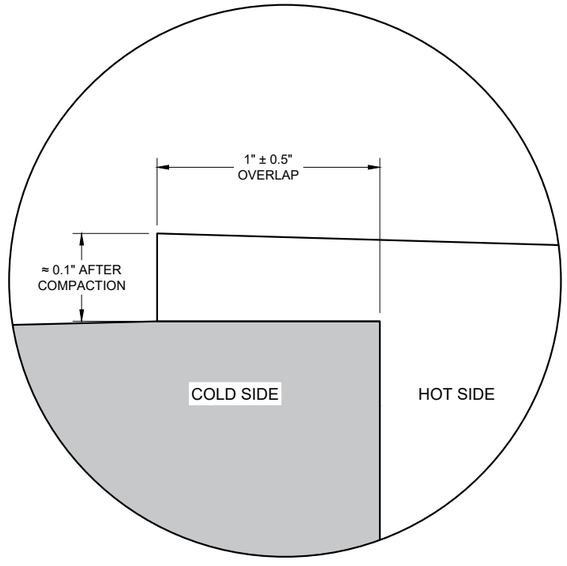
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

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SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA

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

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

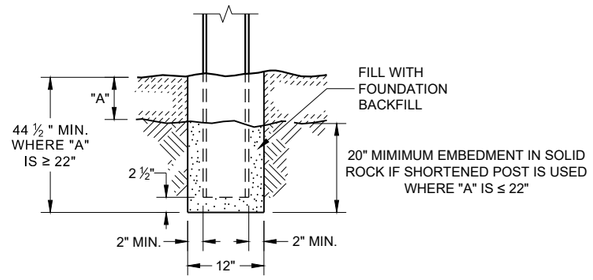
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

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

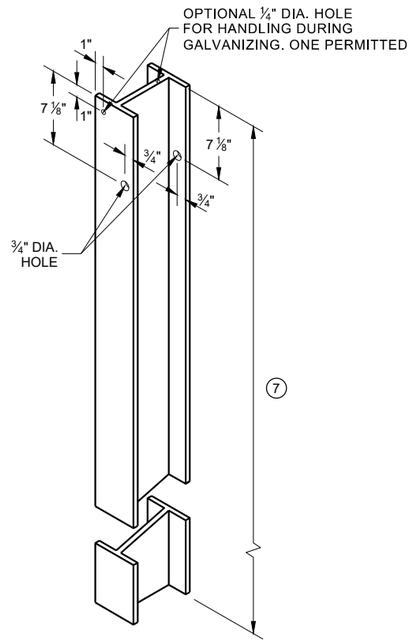
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

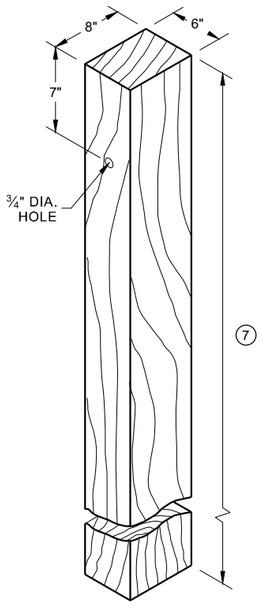
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



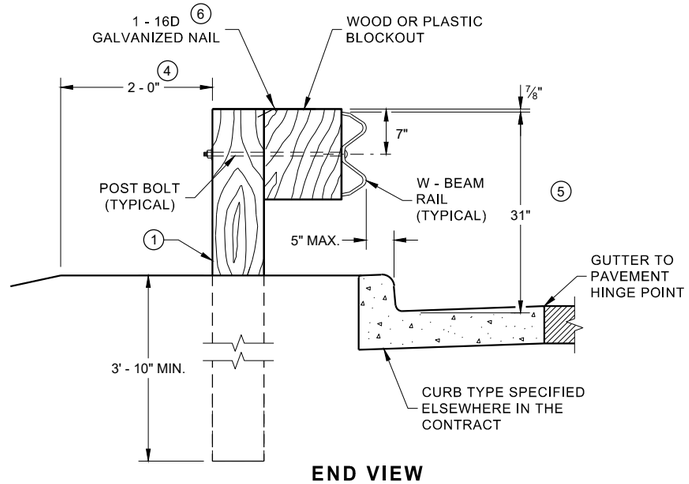
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



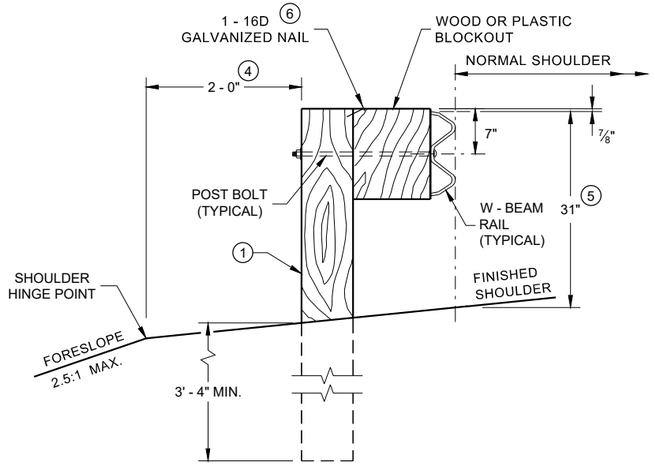
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



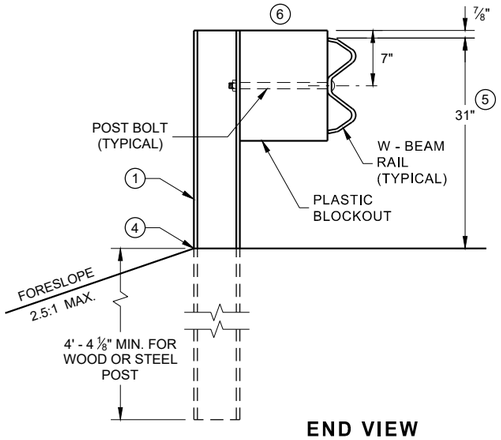
WOOD POST (6" X 8") NOMINAL (1)



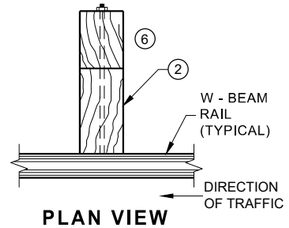
END VIEW
LOCATED ALONG A CURBED ROADWAY



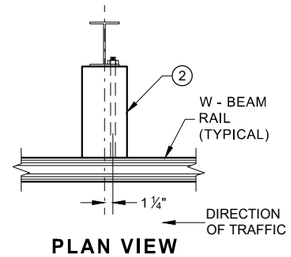
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



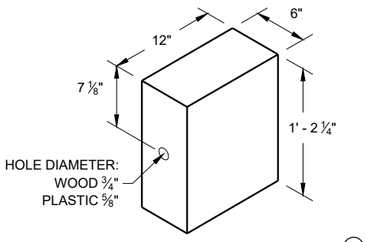
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM

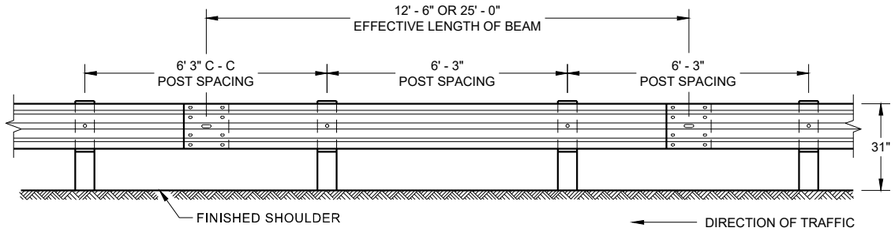


WOOD OR PLASTIC BLOCKOUT (2)

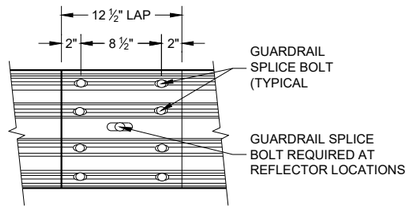
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B42 - 07a



FRONT VIEW
POST SPACING STANDARD INSTALLATION



FRONT VIEW
MID-SPAN BEAM SPLICE

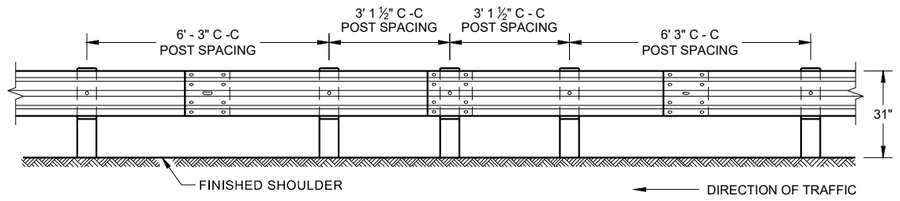
GENERAL NOTES

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

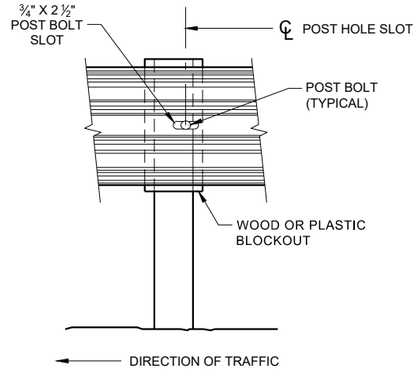
(9) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 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.

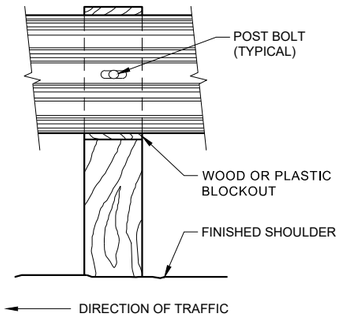
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



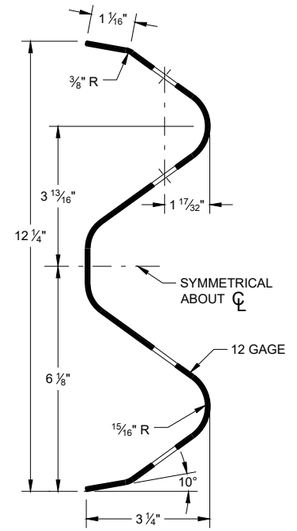
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



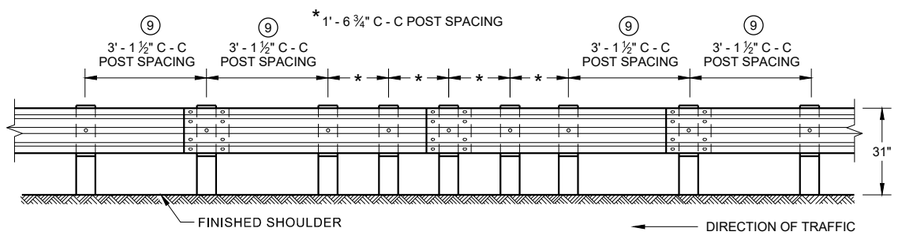
FRONT VIEW AT STEEL POST



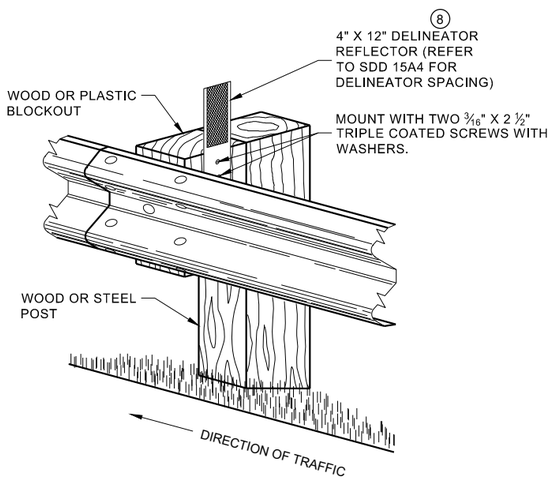
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



FRONT VIEW
QUARTER POST SPACING (QS)



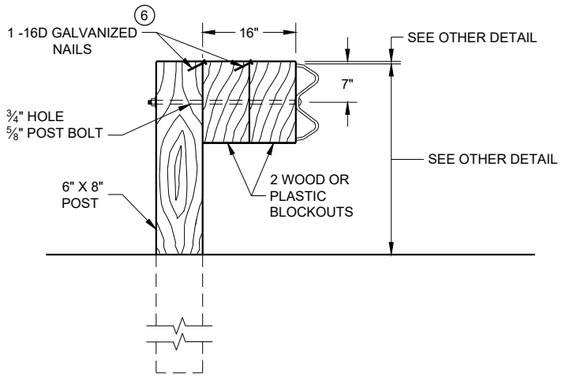
ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B42 - 07b

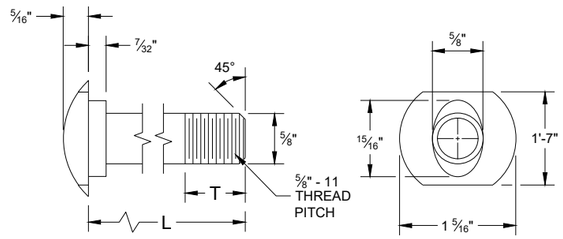


DETAIL FOR 16" BLOCKOUT DEPTH

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

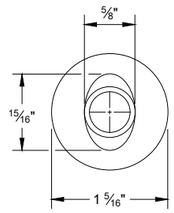
NOTE:

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

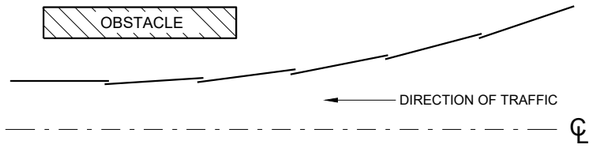


POST BOLT TABLE

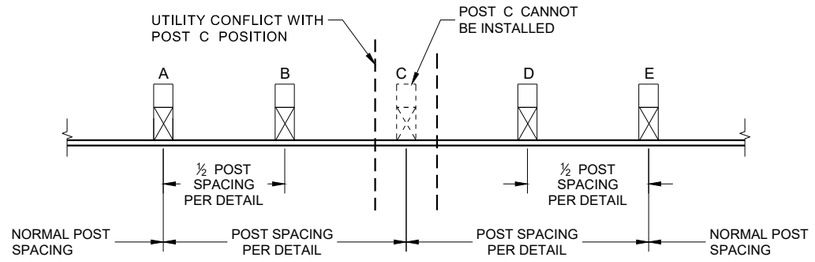
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



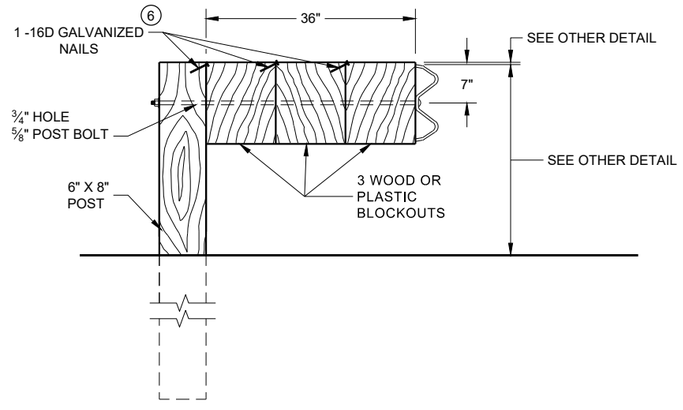
ALTERNATE BOLT HEAD



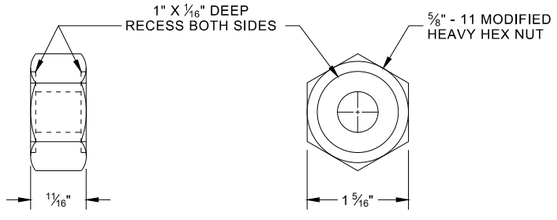
PLAN VIEW
BEAM LAPPING DETAIL



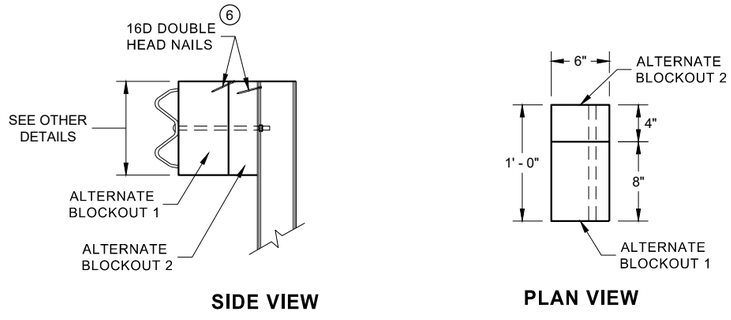
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW PLAN VIEW

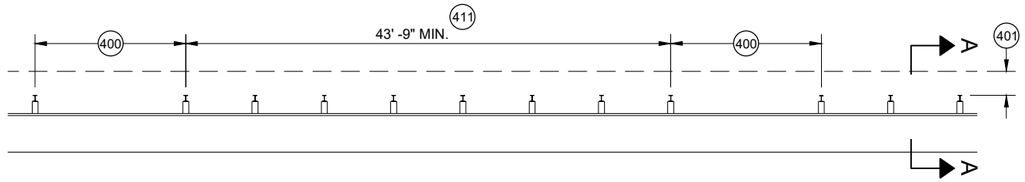
ALTERNATE WOOD BLOCKOUT DETAIL

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

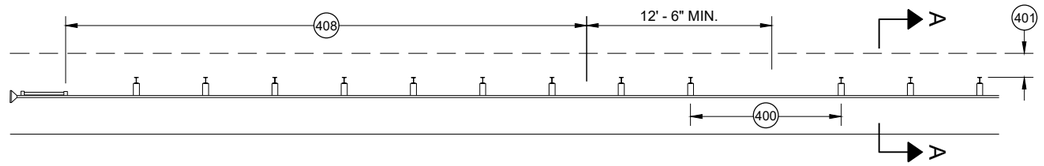
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

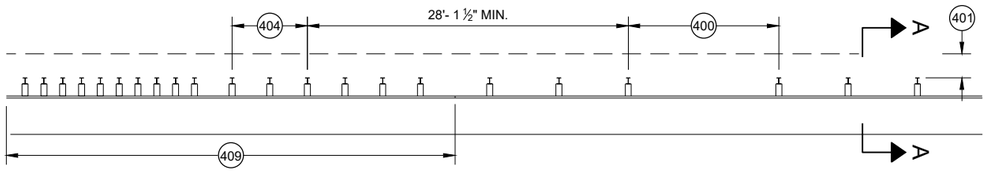
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL



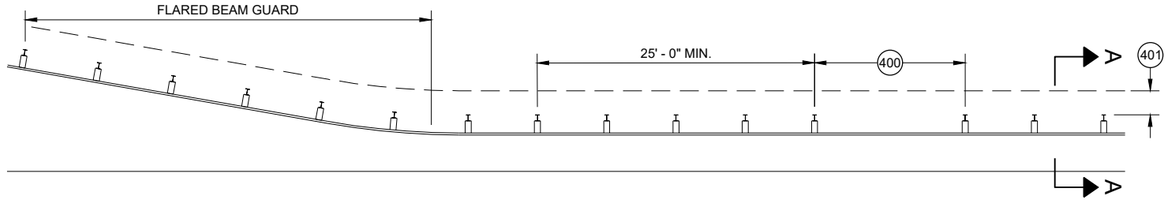
MISSING POST IN MGS GUARDRAIL



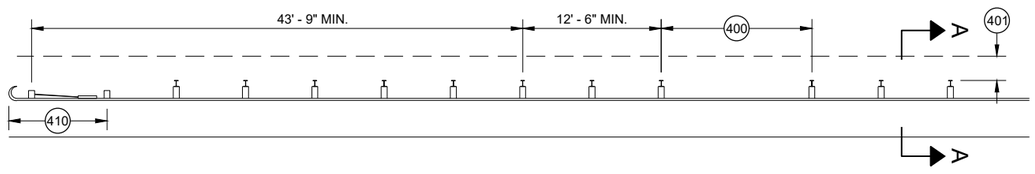
MISSING POST IN MGS GUARDRAIL NEAR EAT



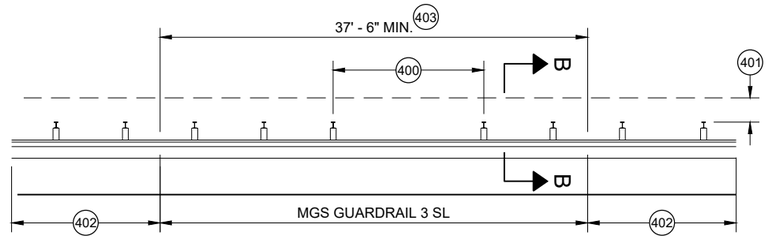
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

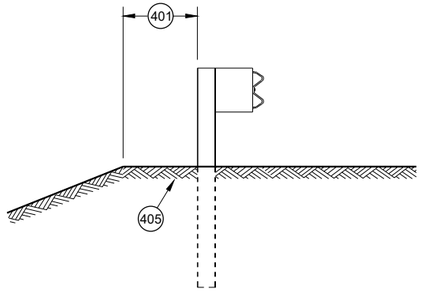


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

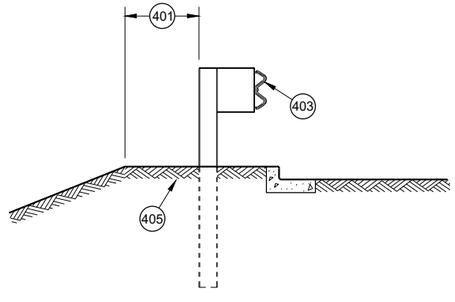


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

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



SECTION A - A 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

FHWA

6

SDD 14B42 - 07d

GENERAL NOTES

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

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

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

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

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

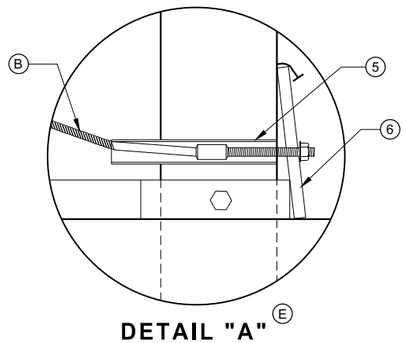
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

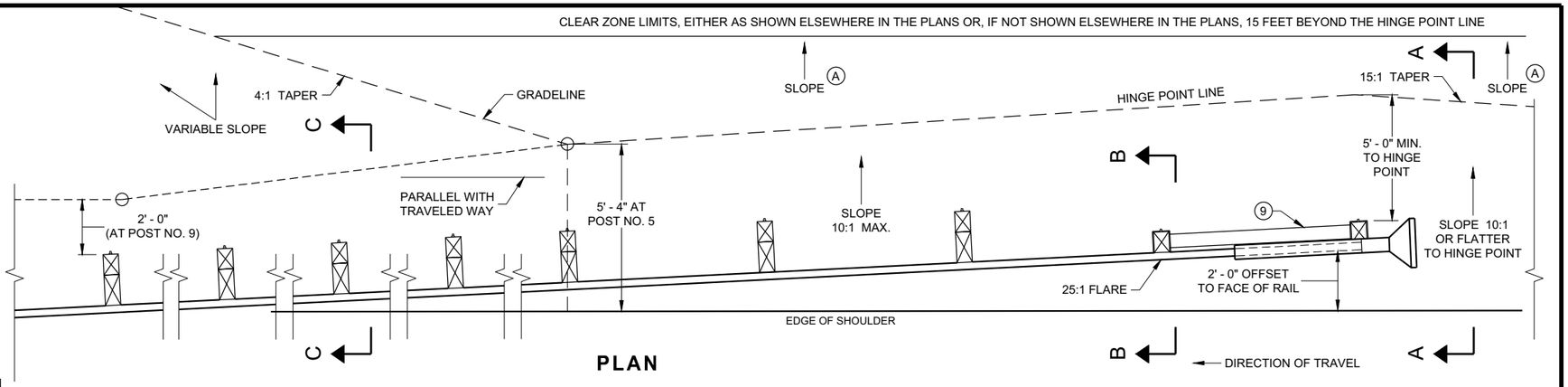
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

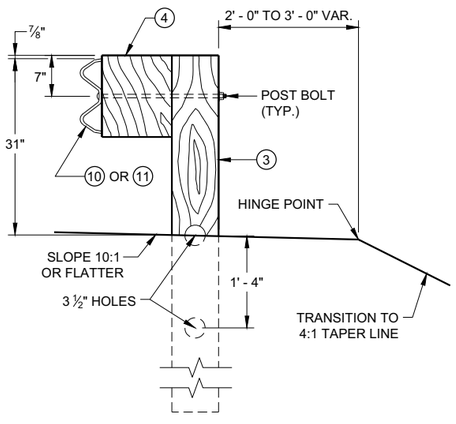
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

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

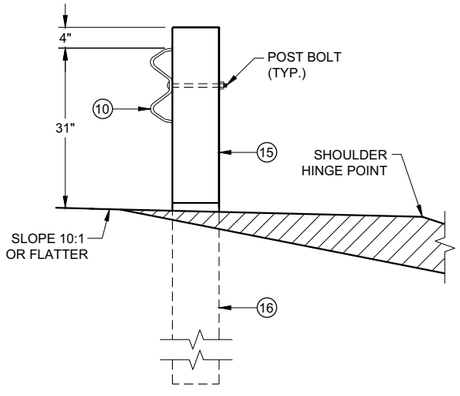


DETAIL "A" (E)

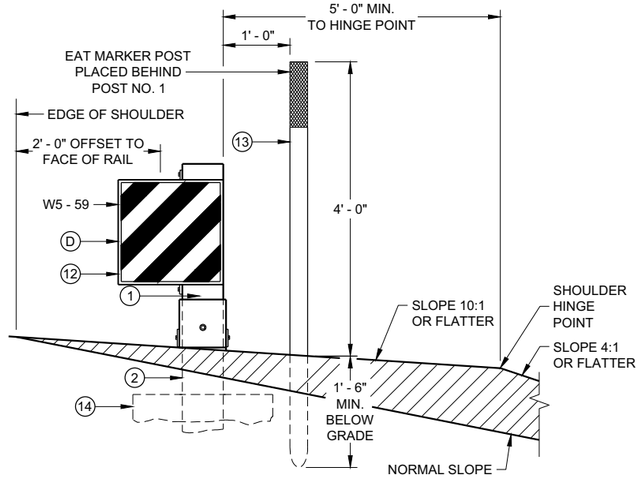




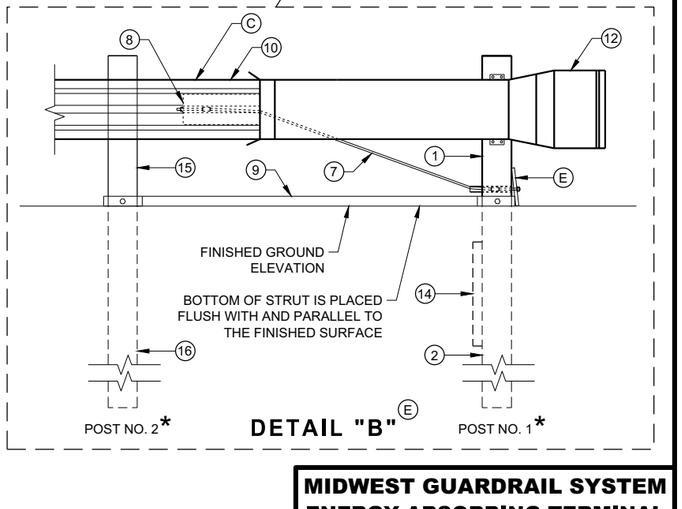
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



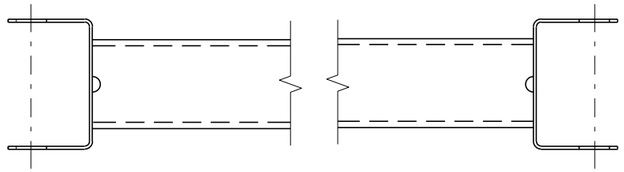
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

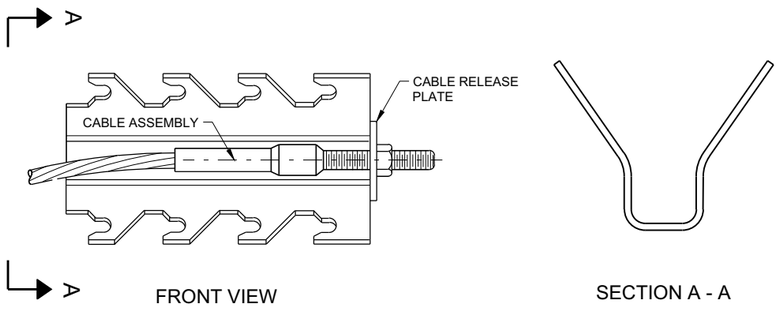
SDD 14B44 - 04a



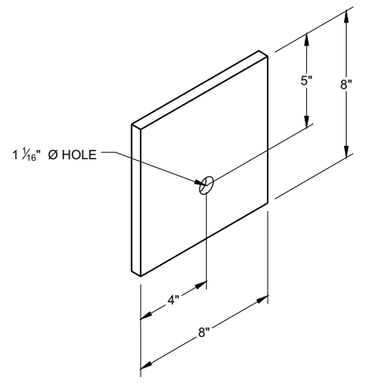
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑨ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

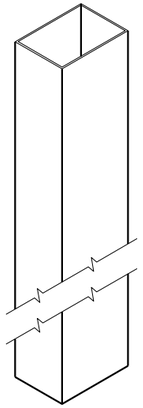
6

SDD 14B44 - 04b

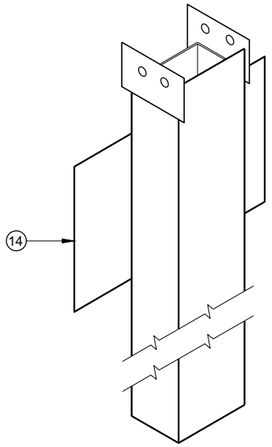
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

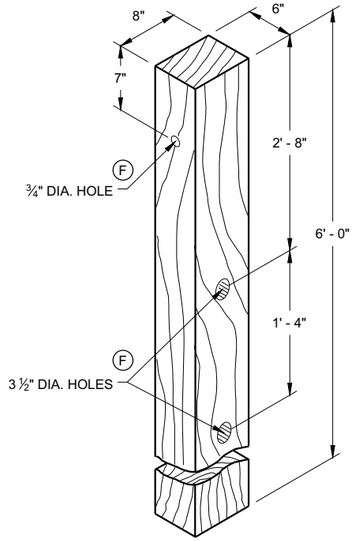
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



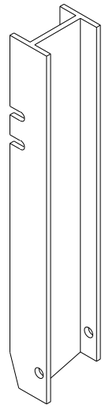
UPPER POST NO. 1 (1) (E)



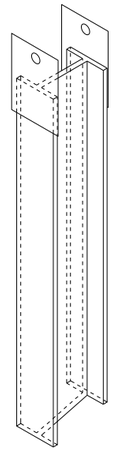
LOWER POST NO. 1 (2) (E)



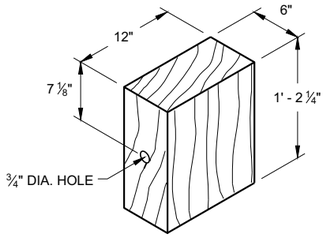
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



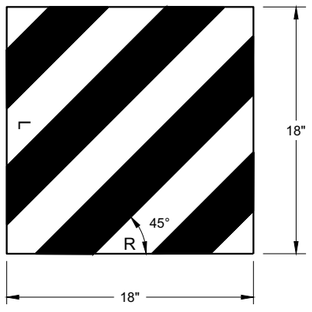
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

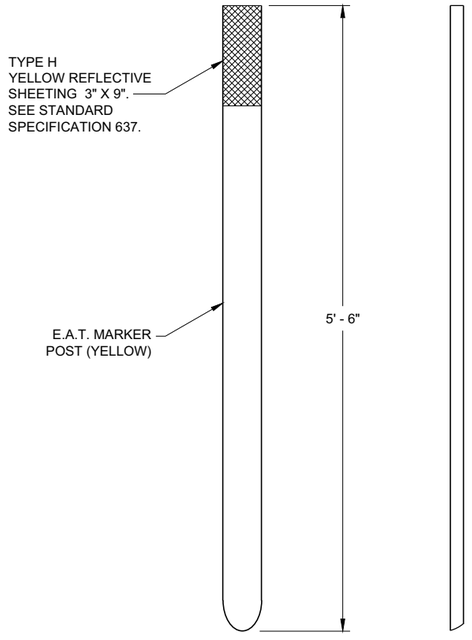


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



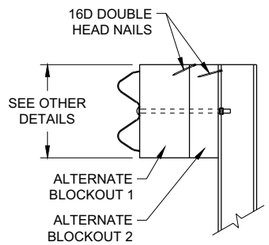
W5 - 59

REFLECTIVE SHEETING DETAIL (E)

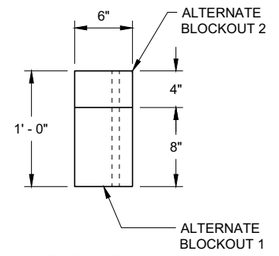


FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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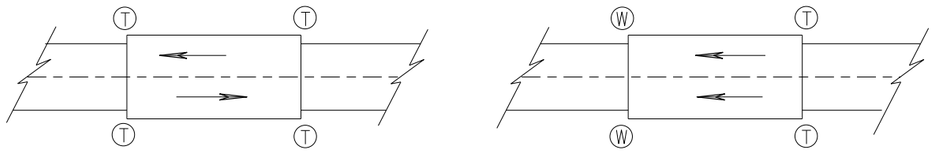
SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

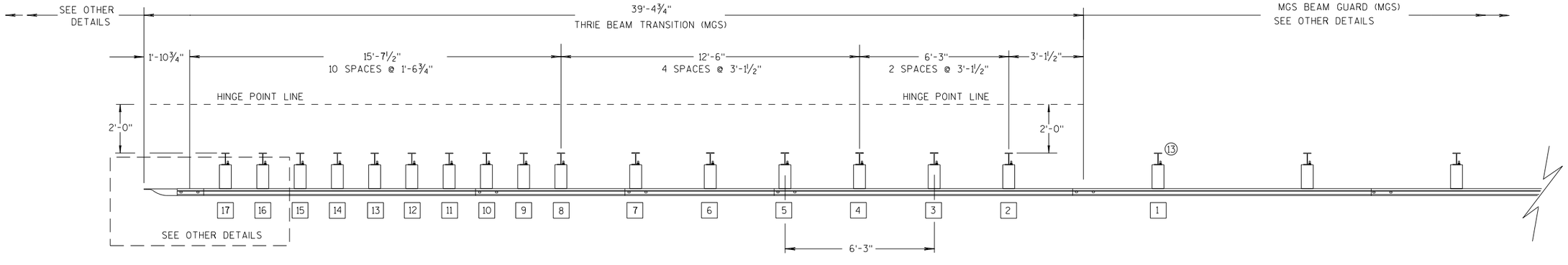
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

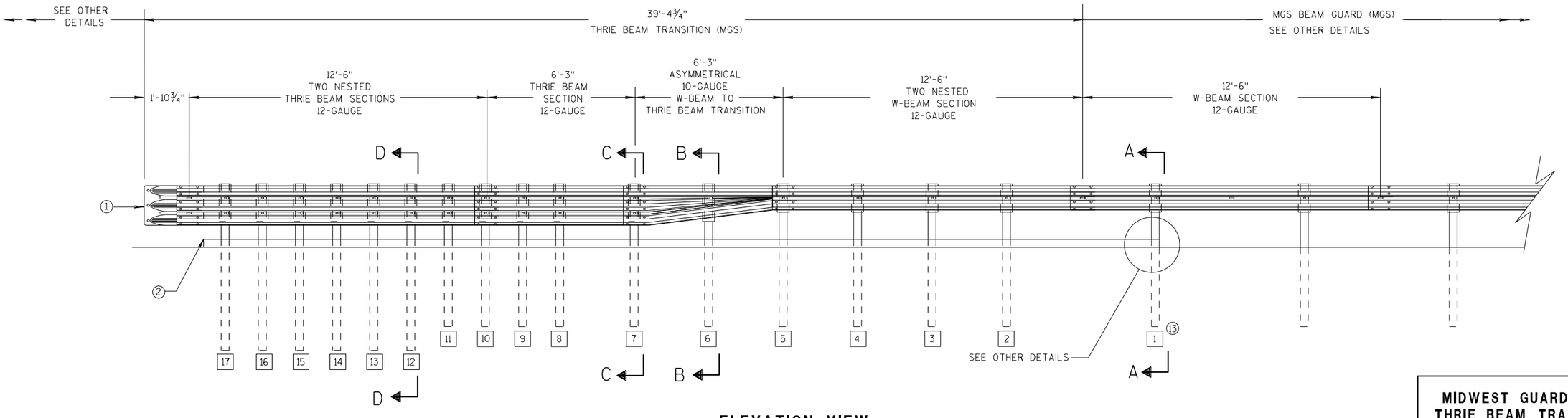
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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

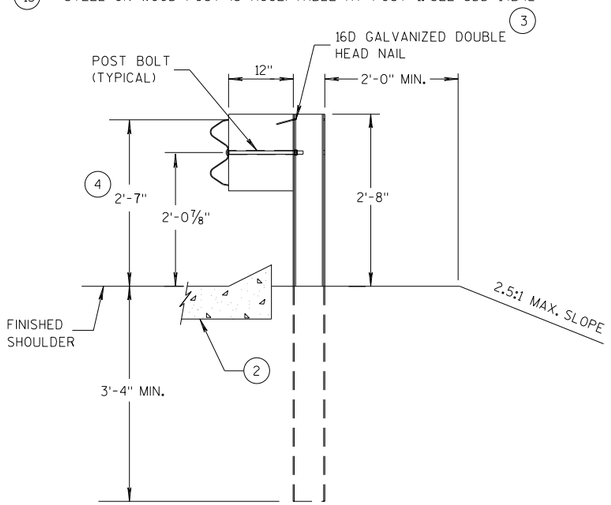
GENERAL NOTES

(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.

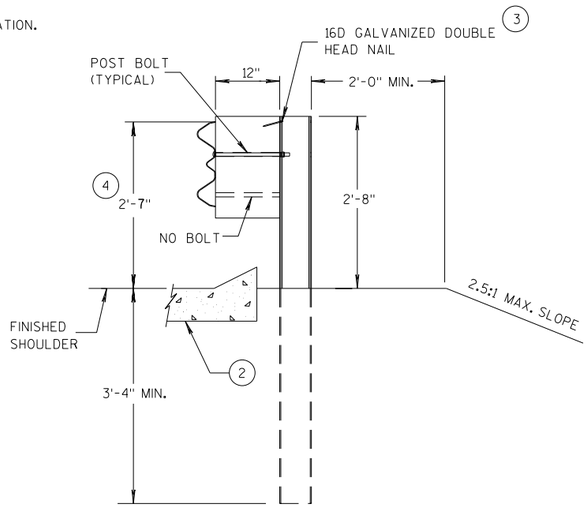
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



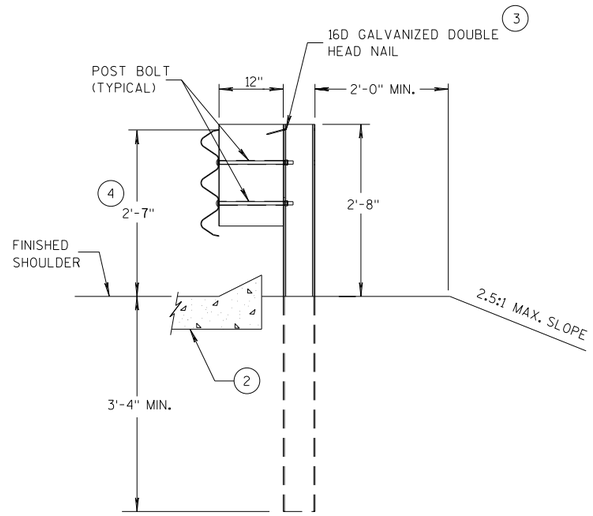
SECTION A-A (13)

POSTS 1-5



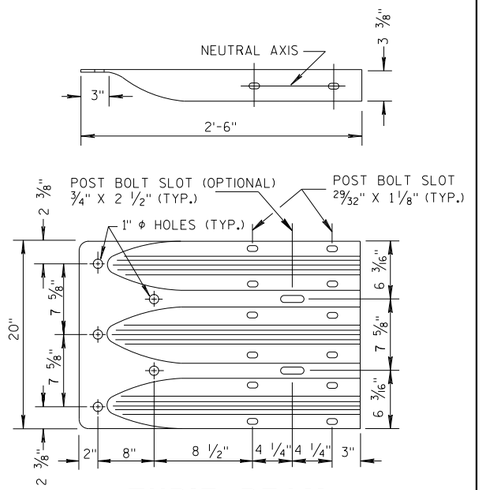
SECTION B-B

POST 6

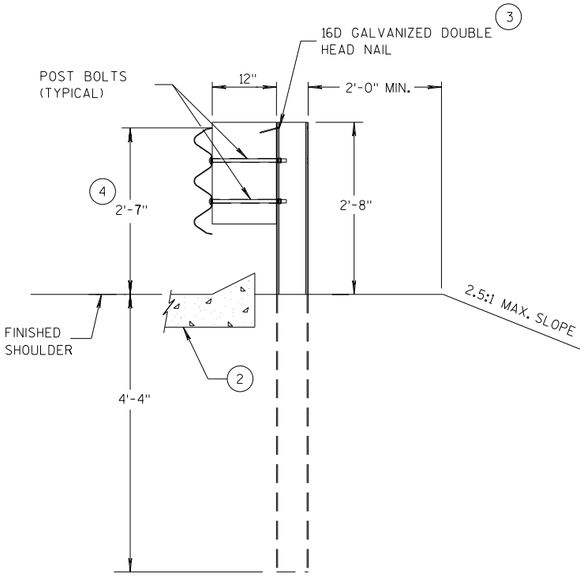


SECTION C-C

POSTS 7-11

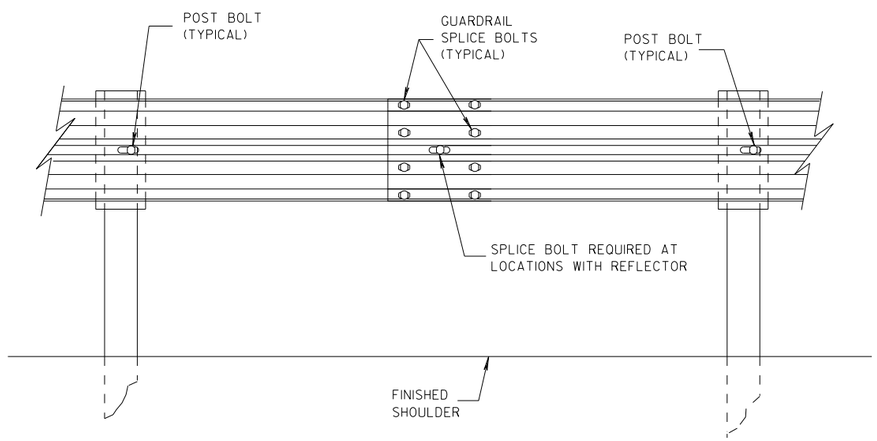


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

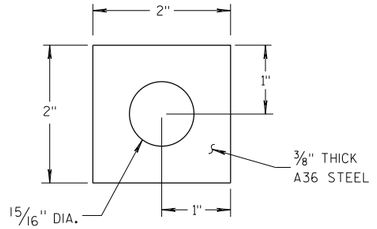
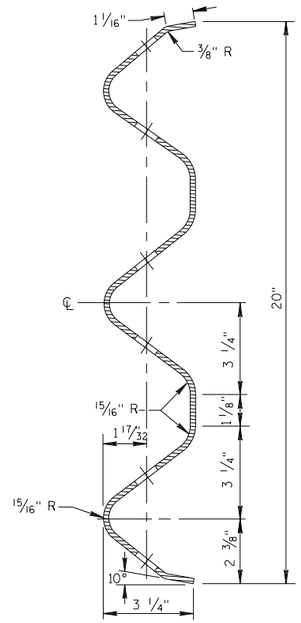


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

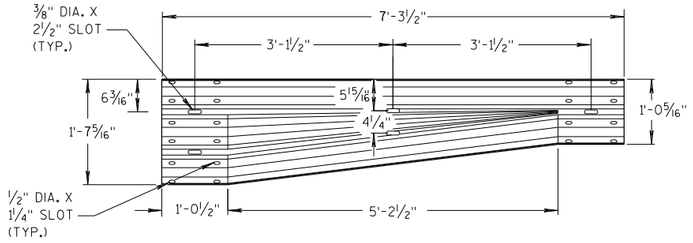
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOF

6

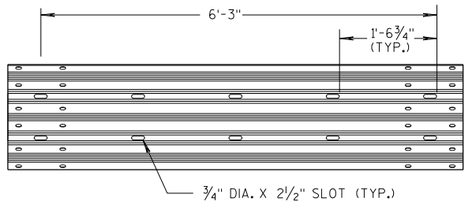
S.D.D. 14 B 45-5b

6

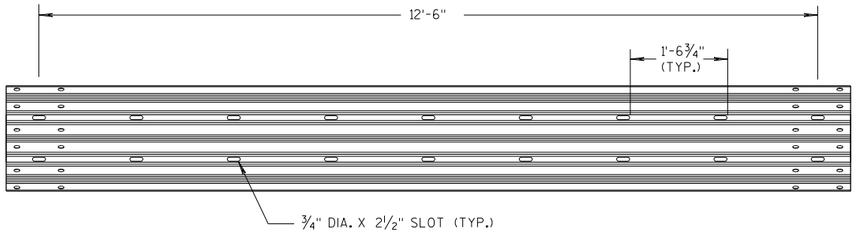
S.D.D. 14 B 45-5b



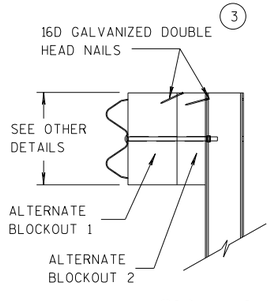
W-BEAM TO THRIE BEAM TRANSITION SECTION



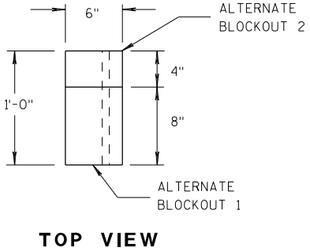
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

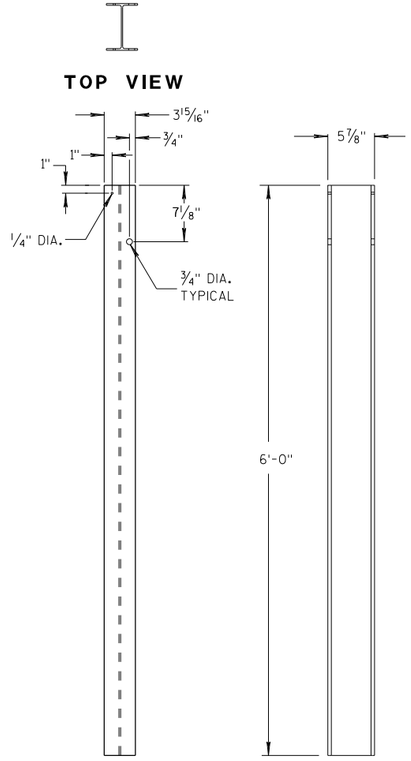


SIDE VIEW



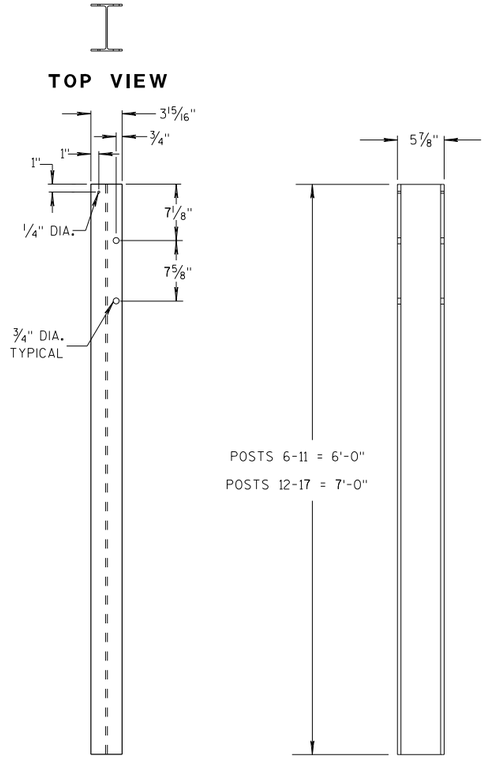
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



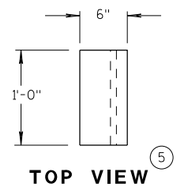
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

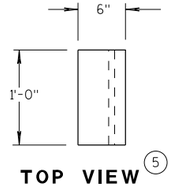


FRONT VIEW SIDE VIEW

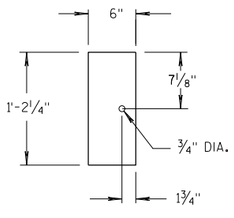
STEEL POSTS 6-17



TOP VIEW (5)

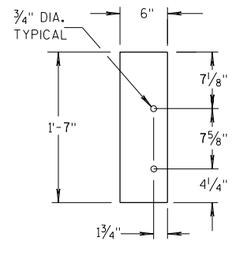


TOP VIEW (5)



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)

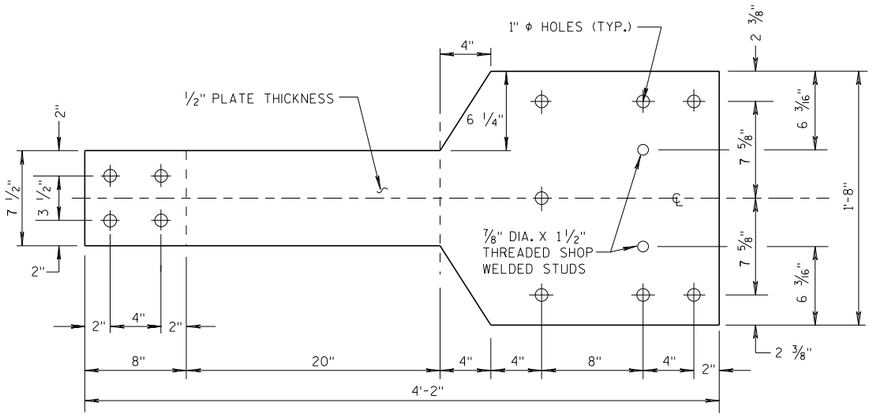
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

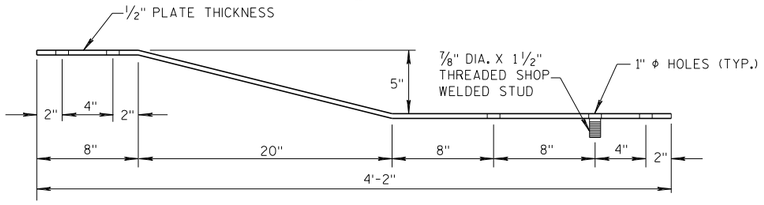
S.D.D. 14 B 45-5c

GENERAL NOTES

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

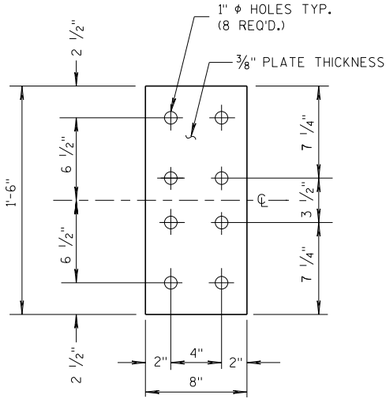


FRONT VIEW



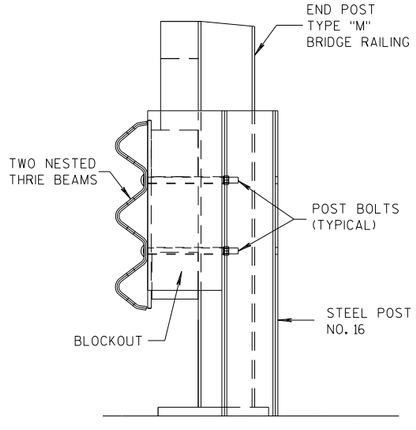
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

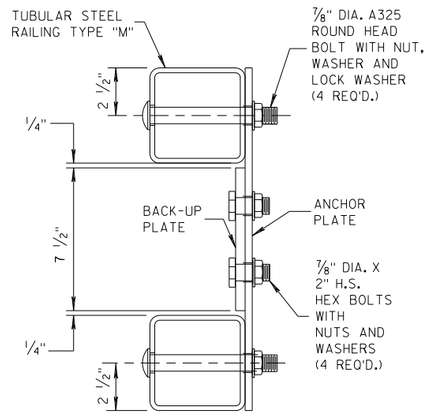


FRONT VIEW

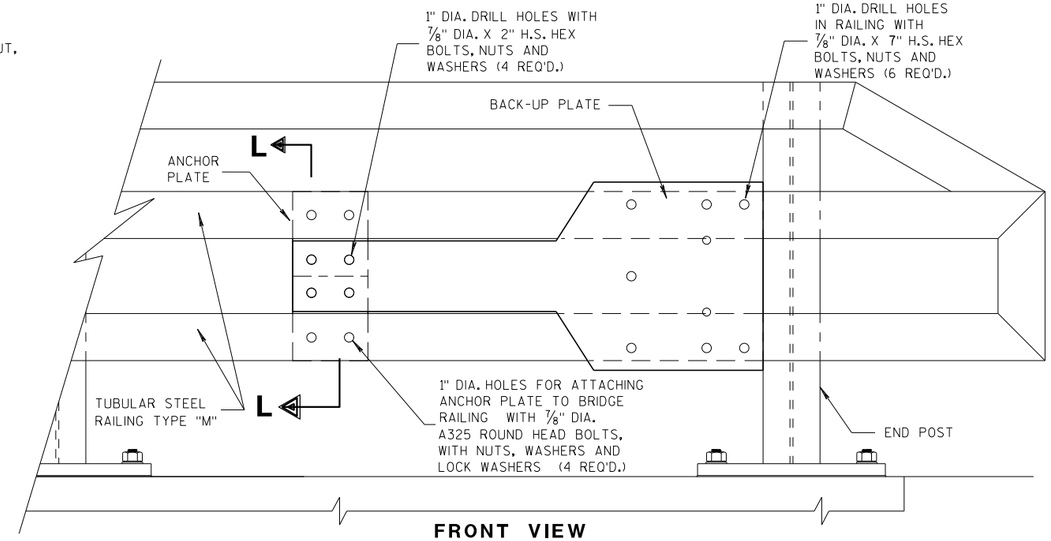
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

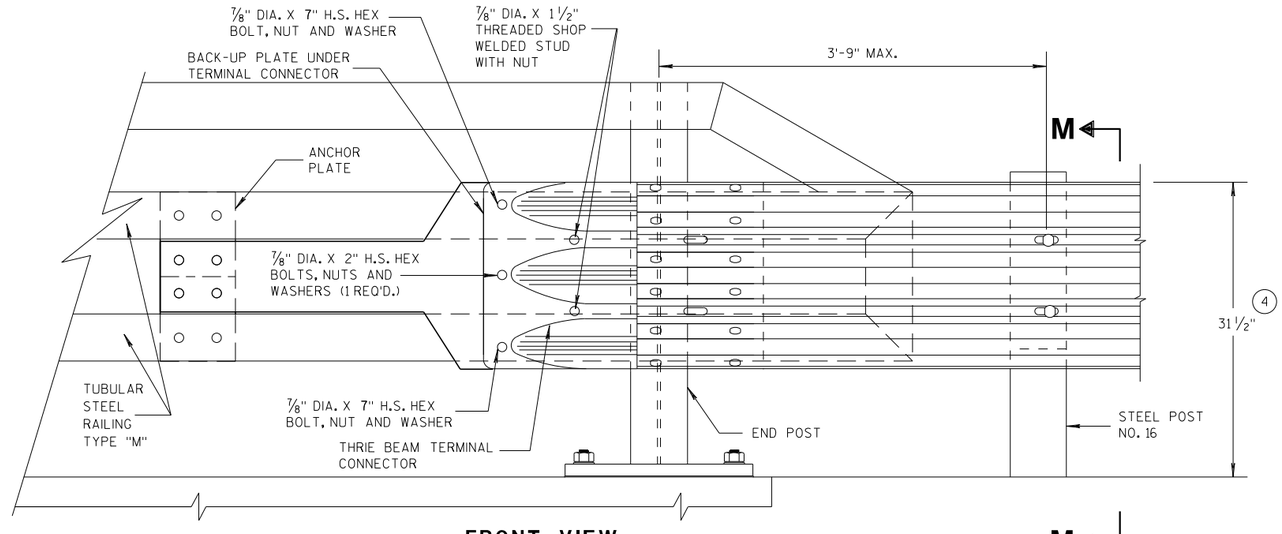


SECTION L-L

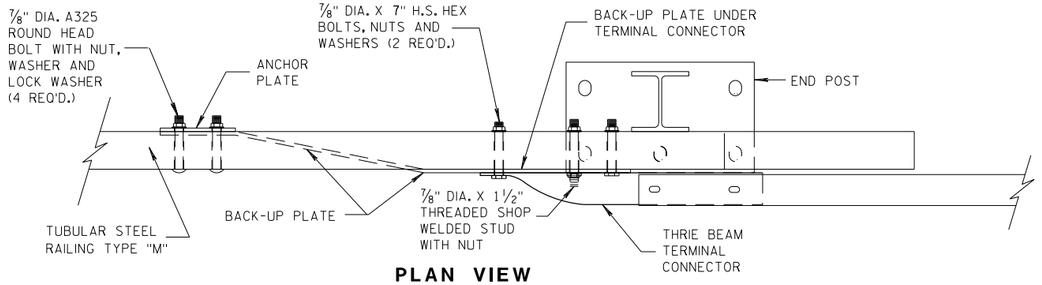


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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

6

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

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.

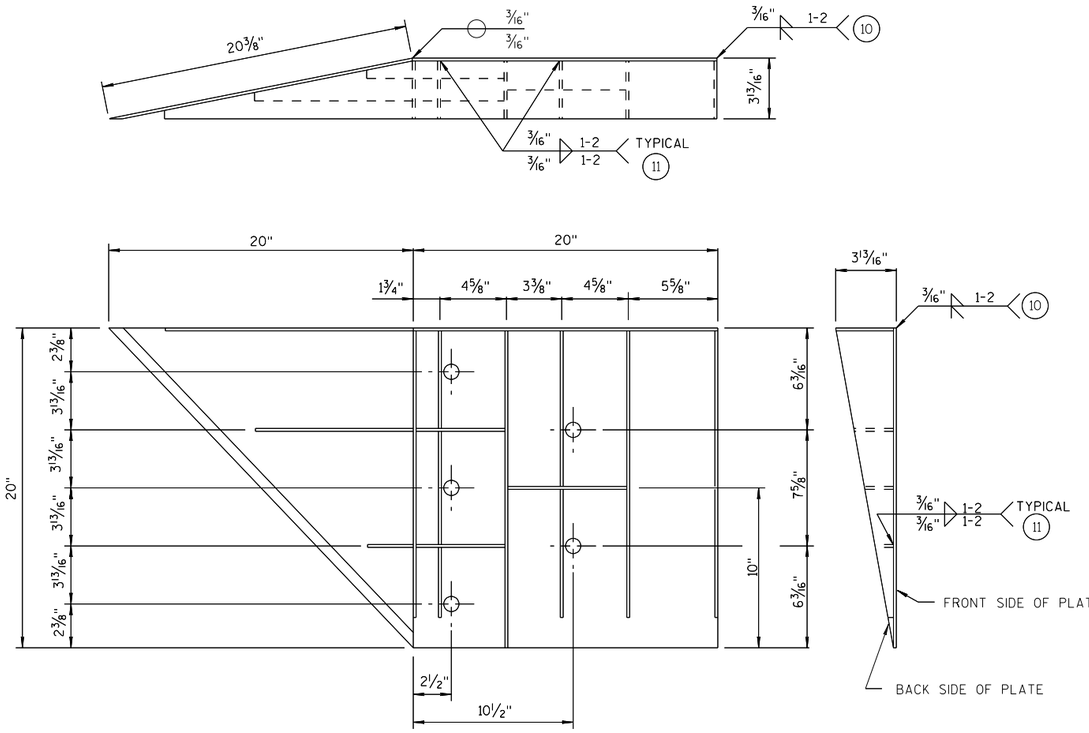
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

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)

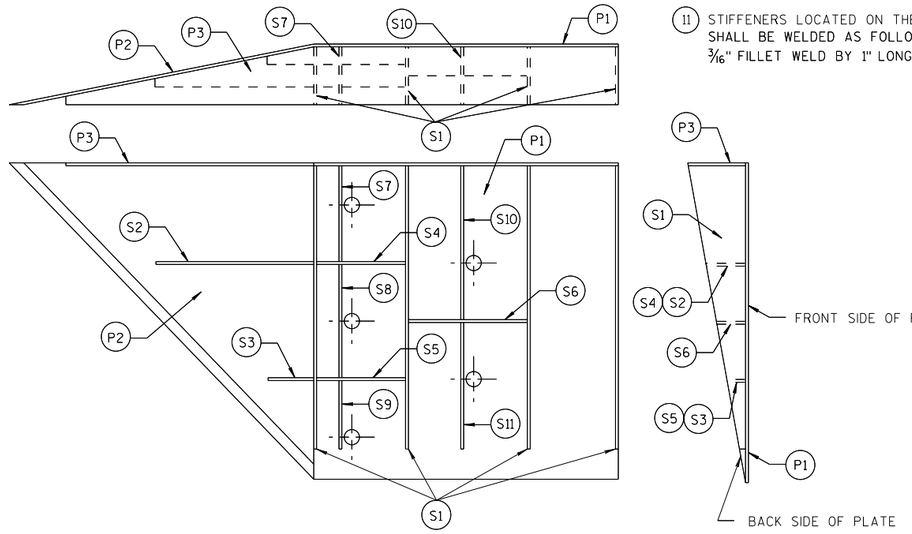


PLATE AND STIFFENER IDENTIFICATION

(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

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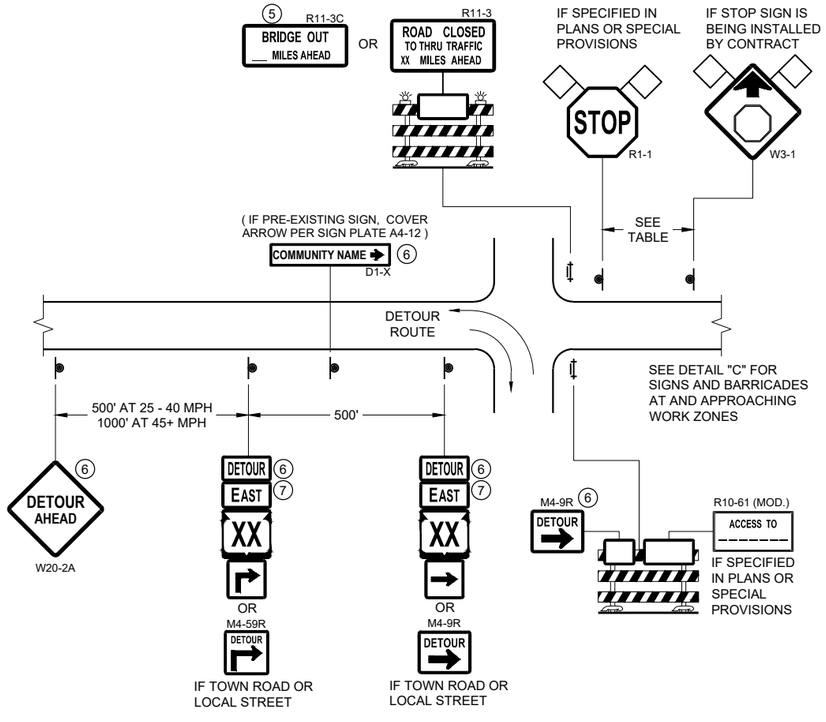
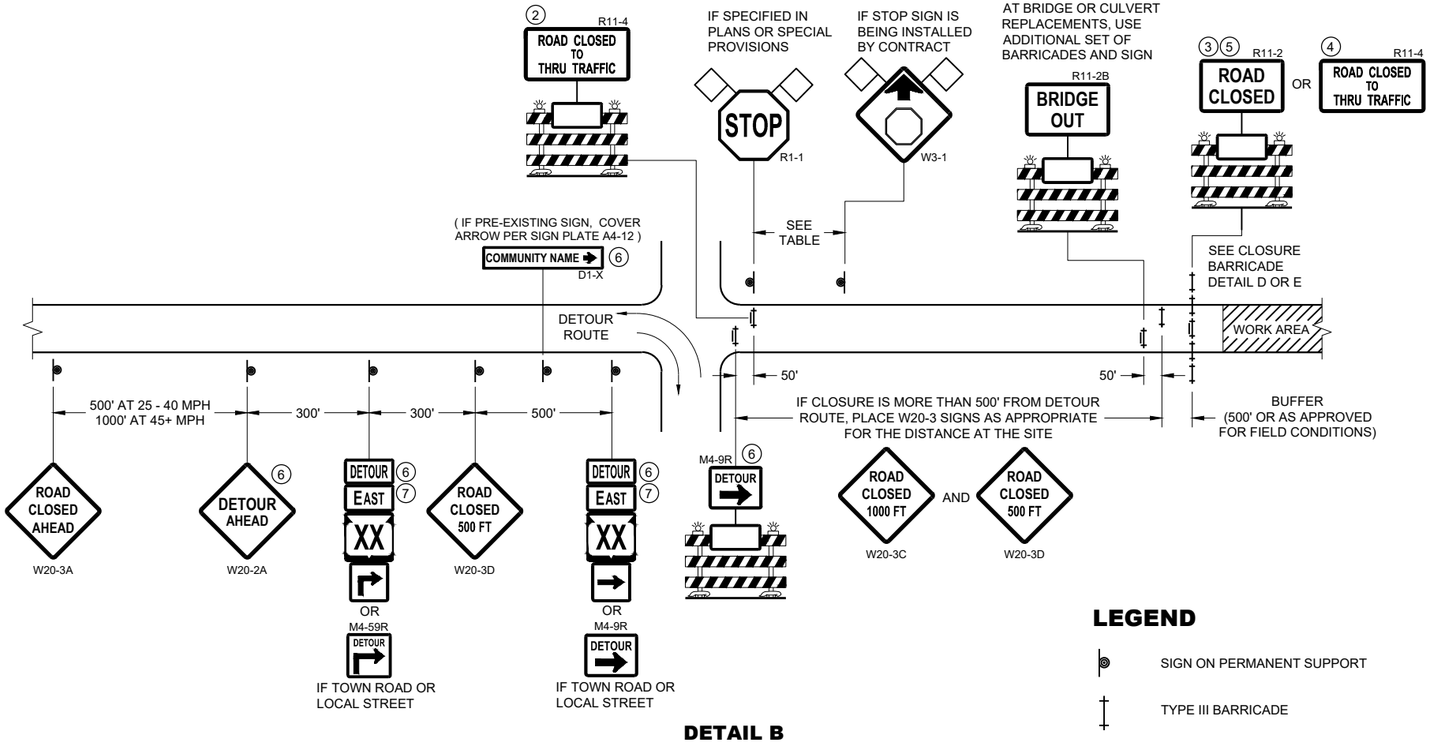
S.D.D. 14 B 45-5i



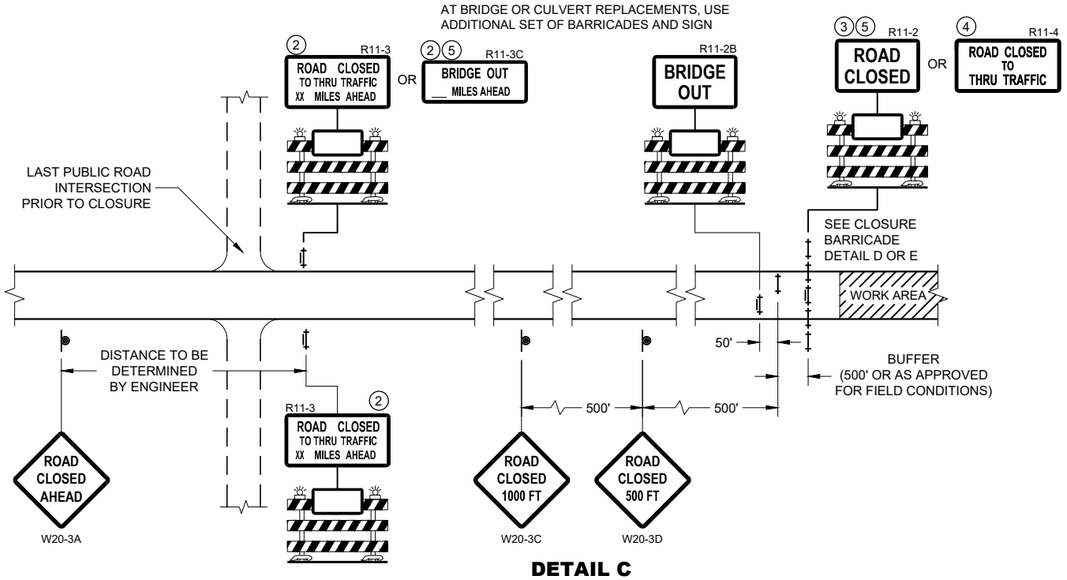
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

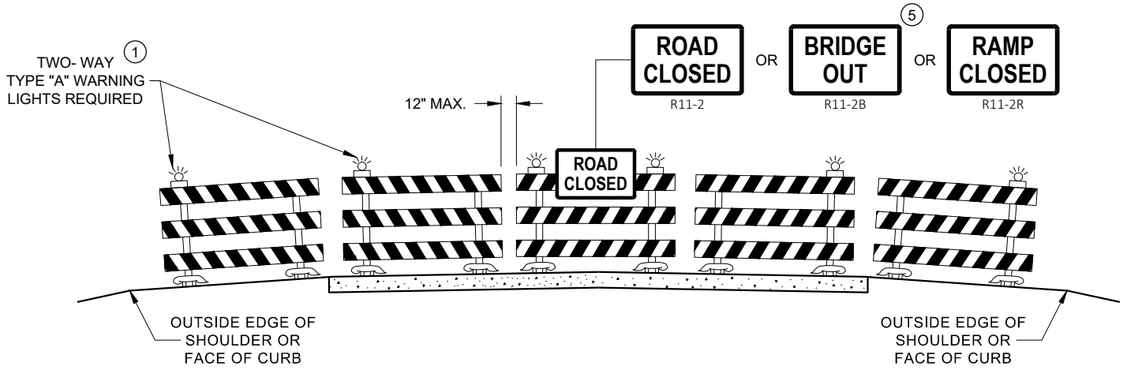
FHWA

6

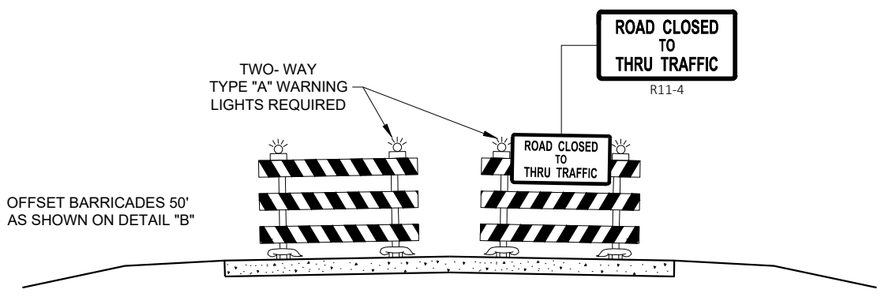
SDD 15C02 - 09a

6

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 ENGINEE
FHWA

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SDD 15C02 - 09b

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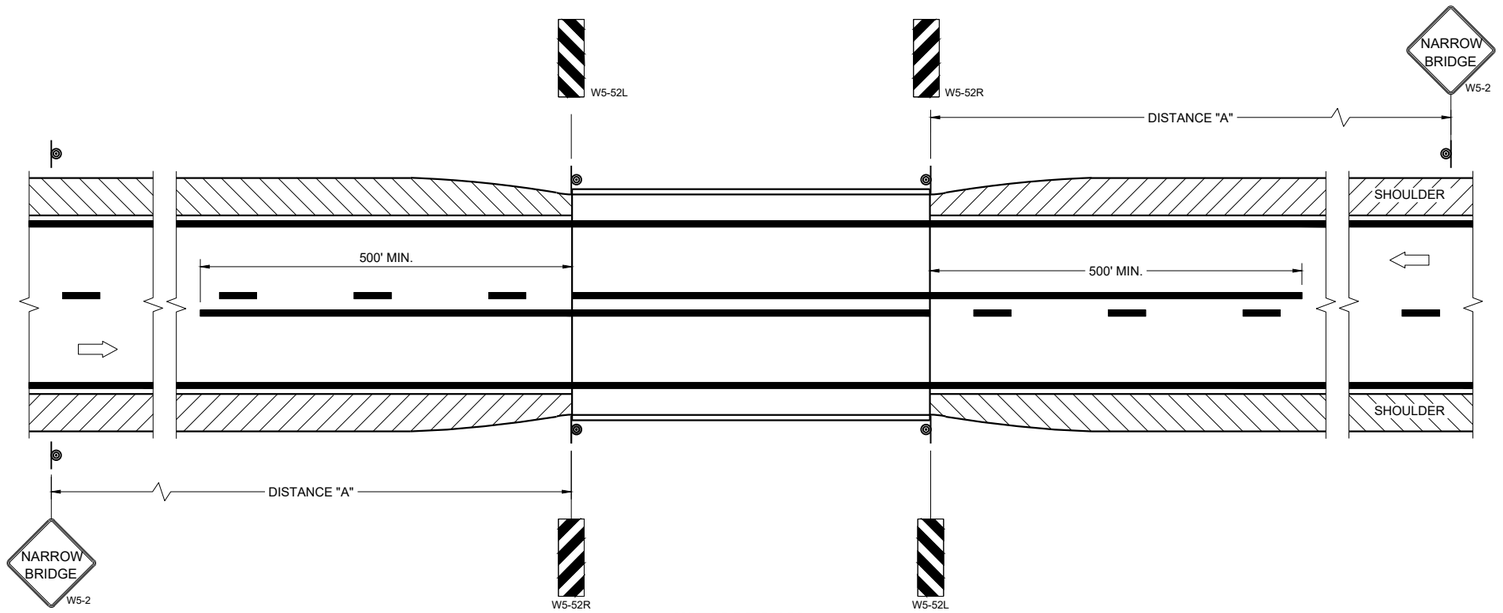
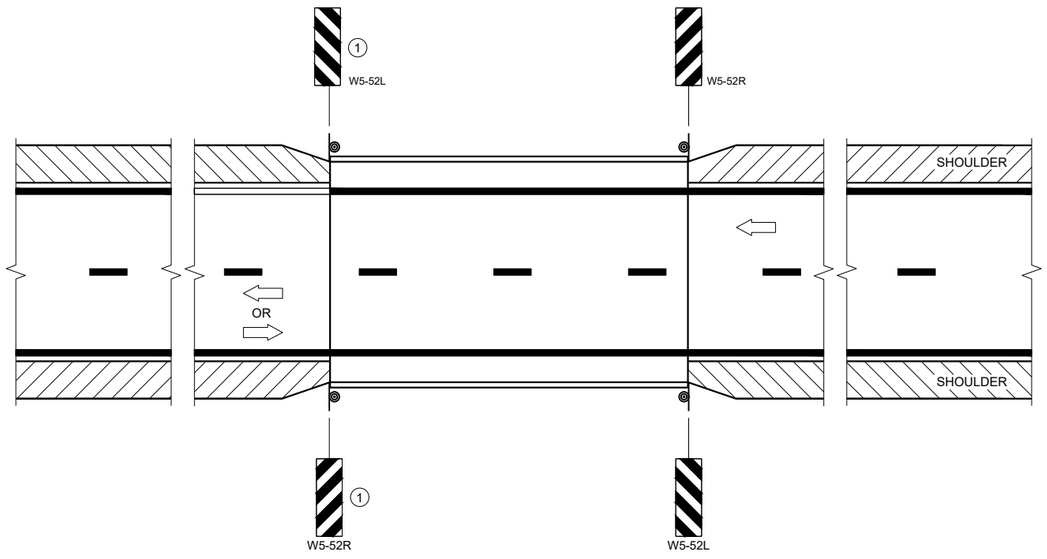
SDD 15C02 - 09b



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'

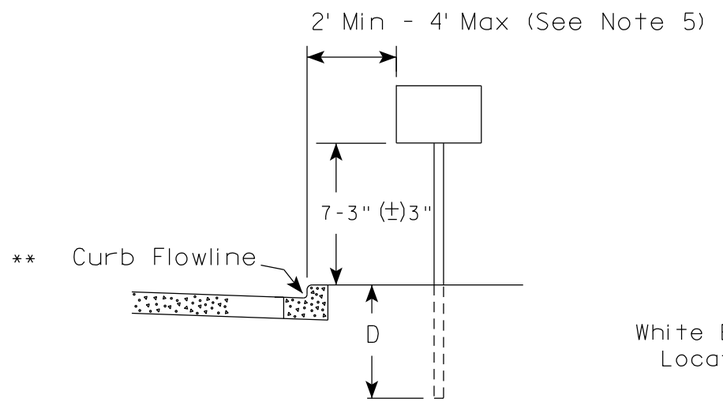
SIGNING AND MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

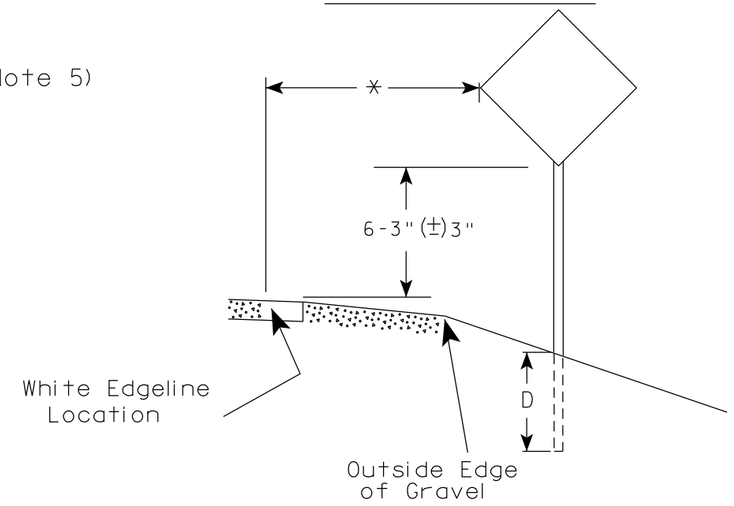
APPROVED
May 2023
DATE
/S/ Jeannie Silver
Statewide Pavement Marking Engineer
FHWA

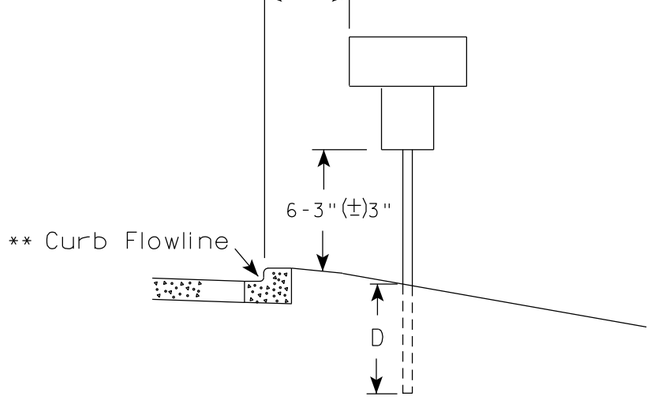
6
SDD 15C06-12

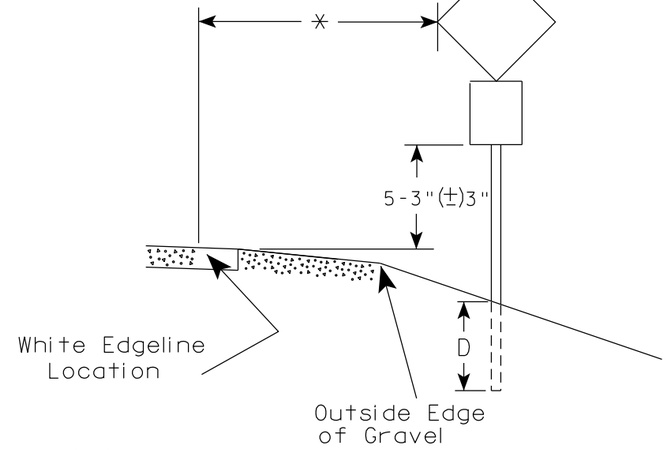
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
   The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 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.

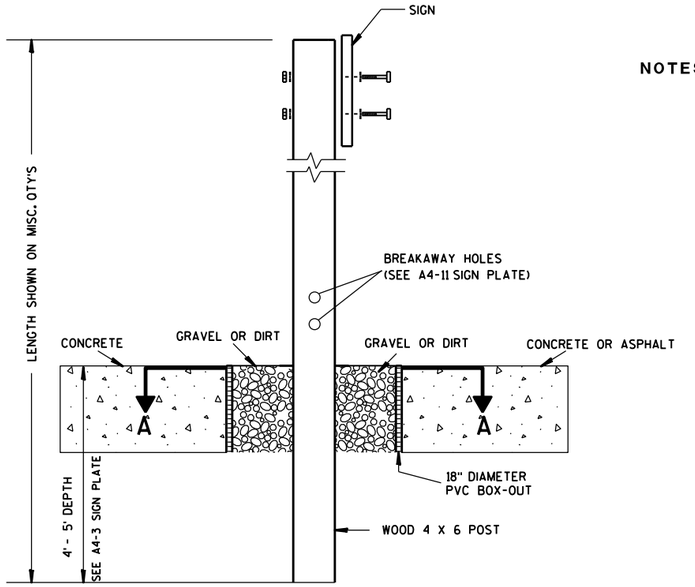
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

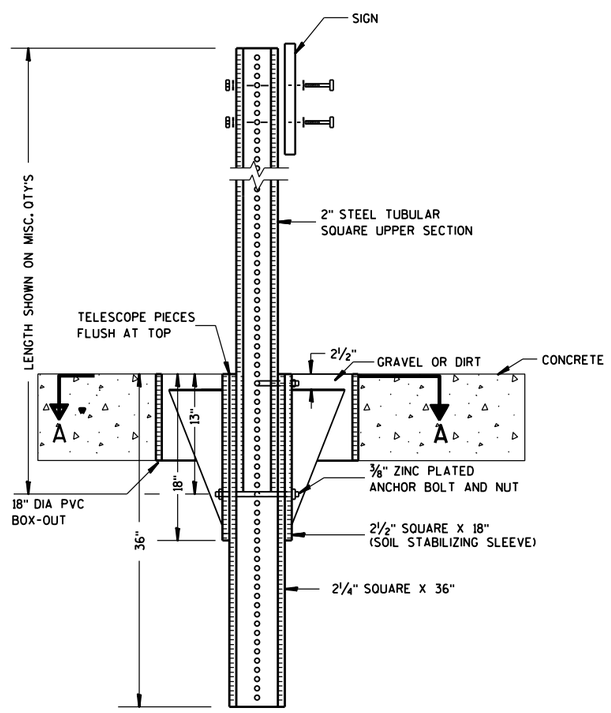
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 38	E



ELEVATION VIEW

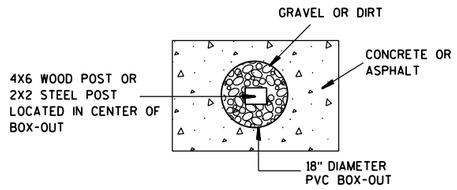
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

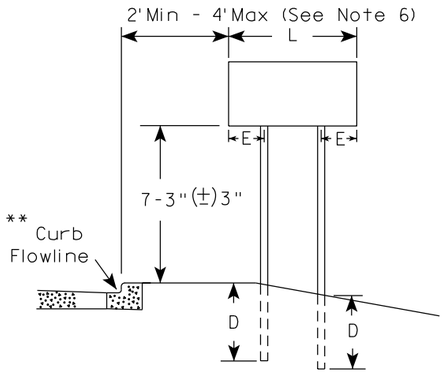
APPROVED Matthew R Rauch
for State Traffic Engineer

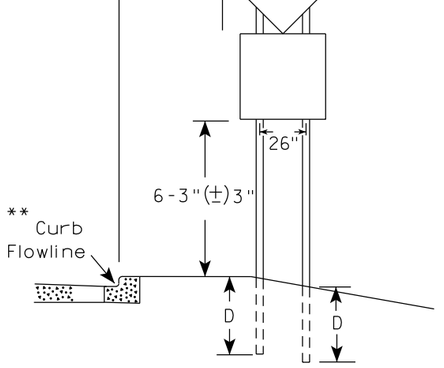
DATE 1/27/14 PLATE NO. A4-3B.1

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

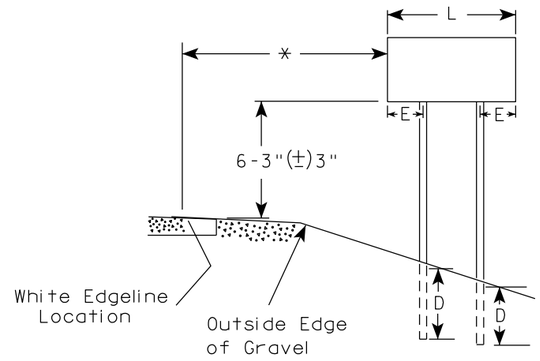
URBAN AREA

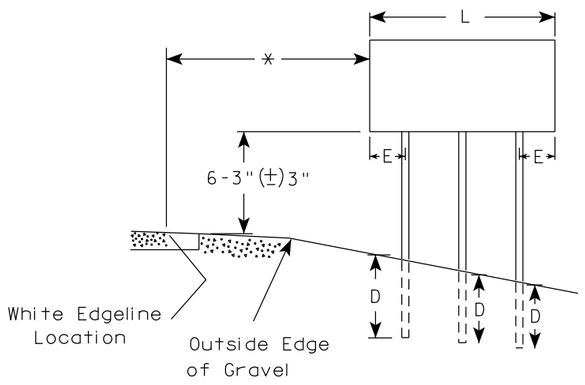


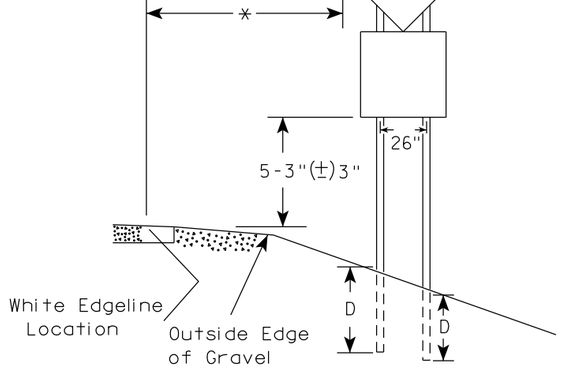


48" DIAMOND WARNING SIGN

RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN

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.

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

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

POST EMBEDMENT DEPTH

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

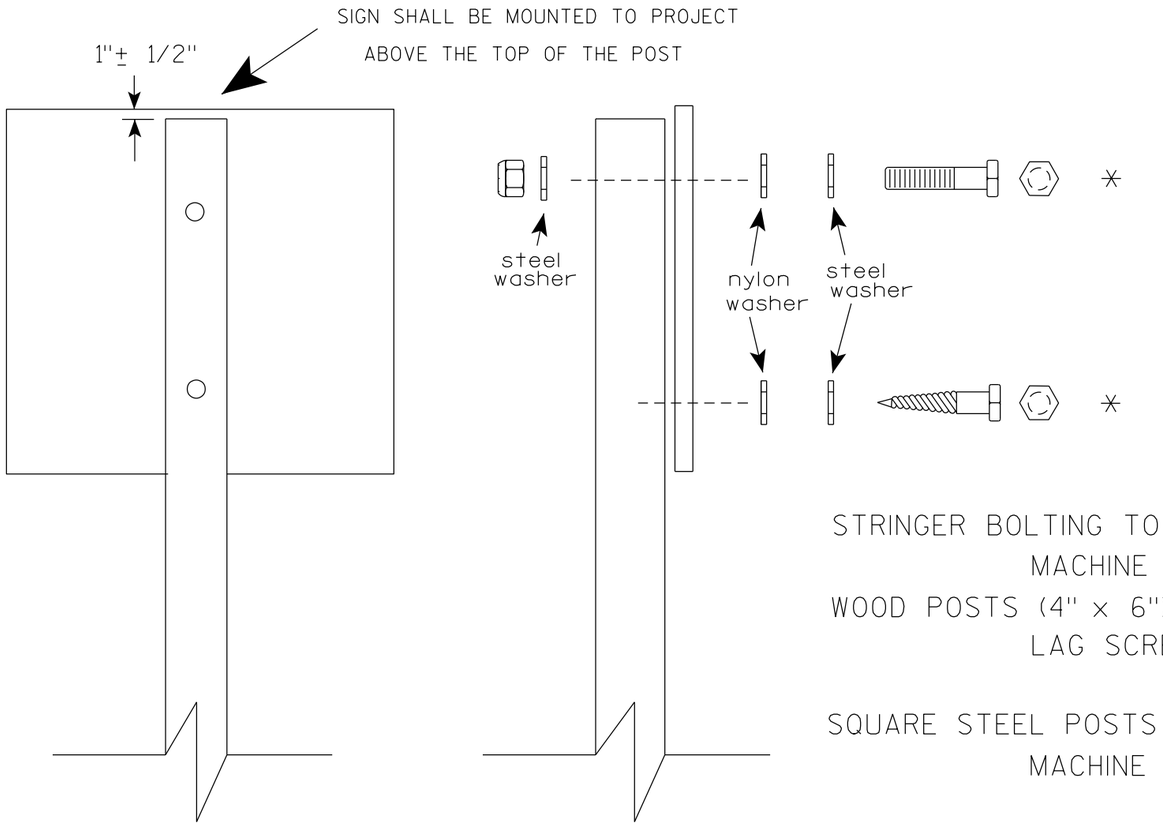
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 40	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:

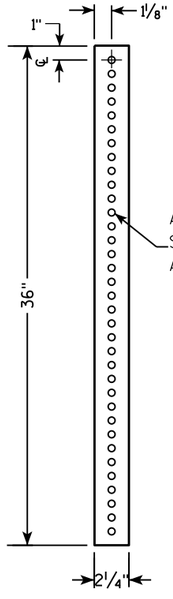
SHEET NO: 41 E

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

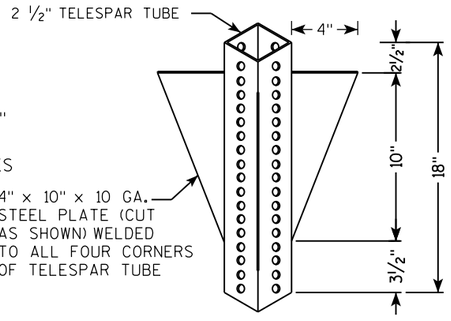
WISDOT/CADDS SHEET 42

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

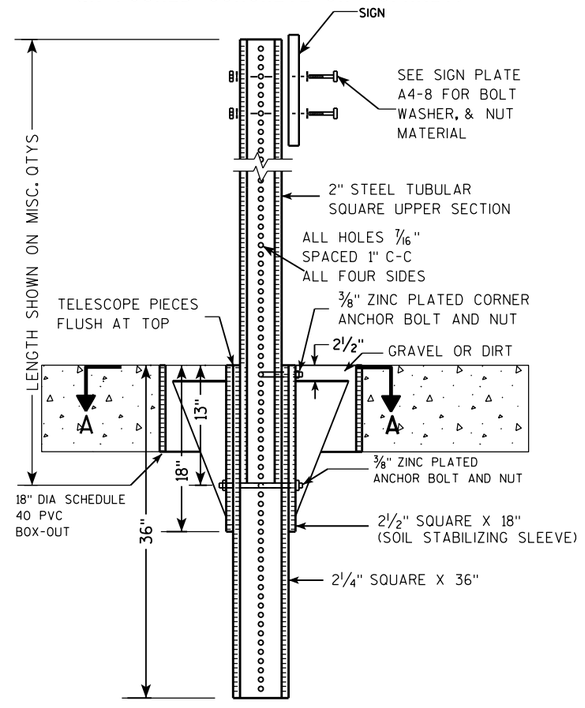
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



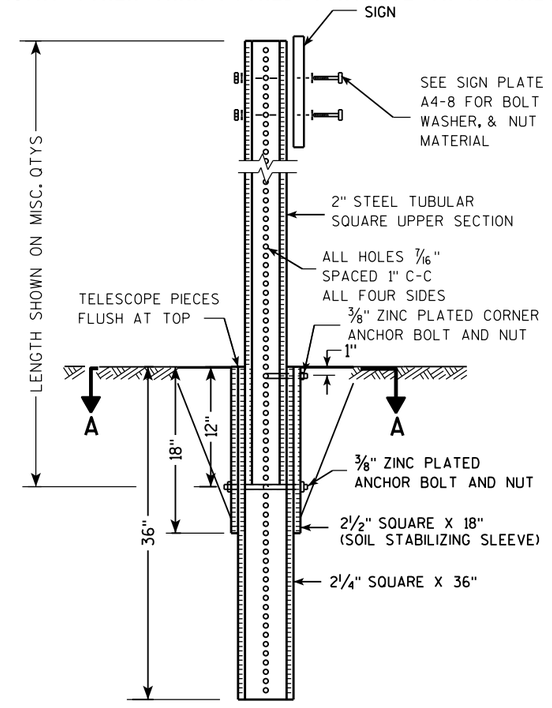
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

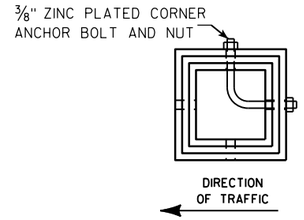


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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).

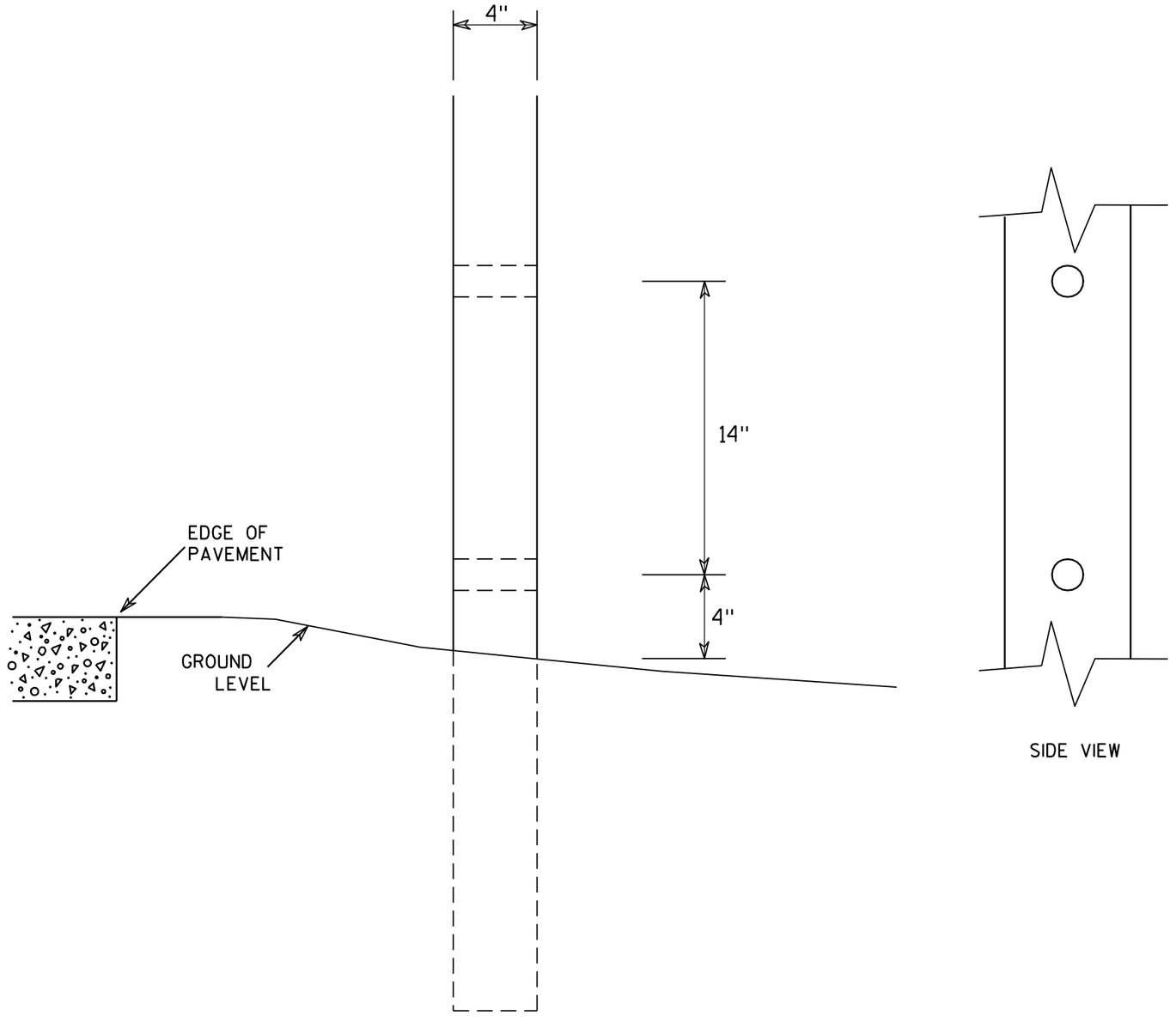
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 42 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

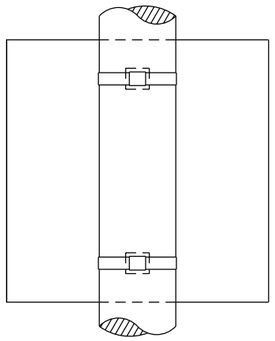
APPROVED Chester J Spang for State Traffic Engineer

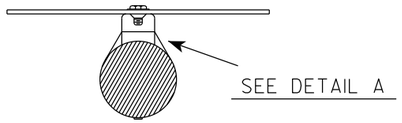
DATE 3/27/97 PLATE NO. A4-11.2

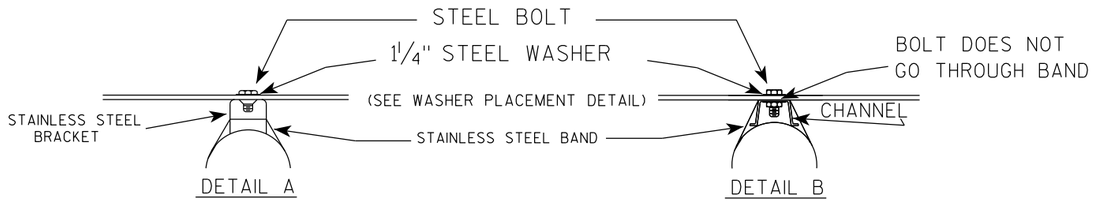
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 43	E

BANDING

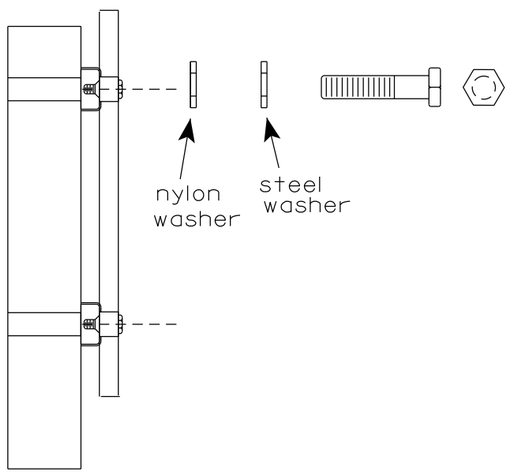
SINGLE SIGN







WASHER PLACEMENT

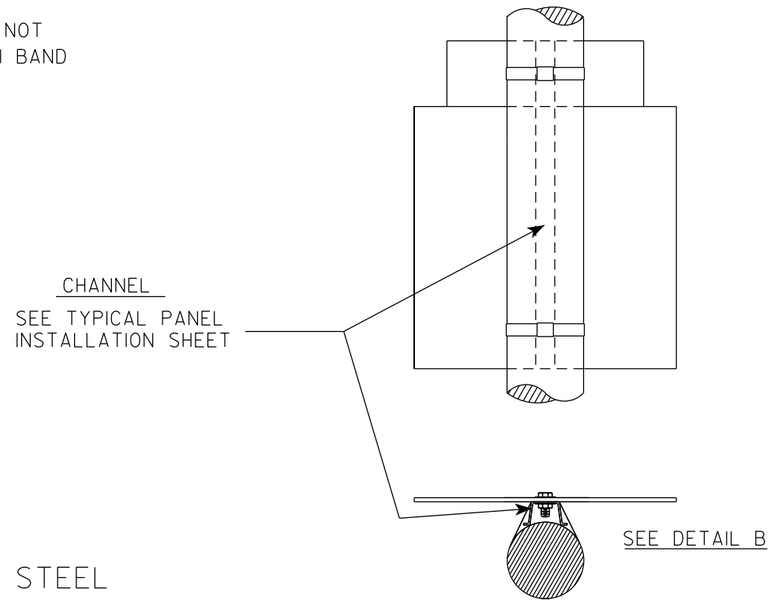


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

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

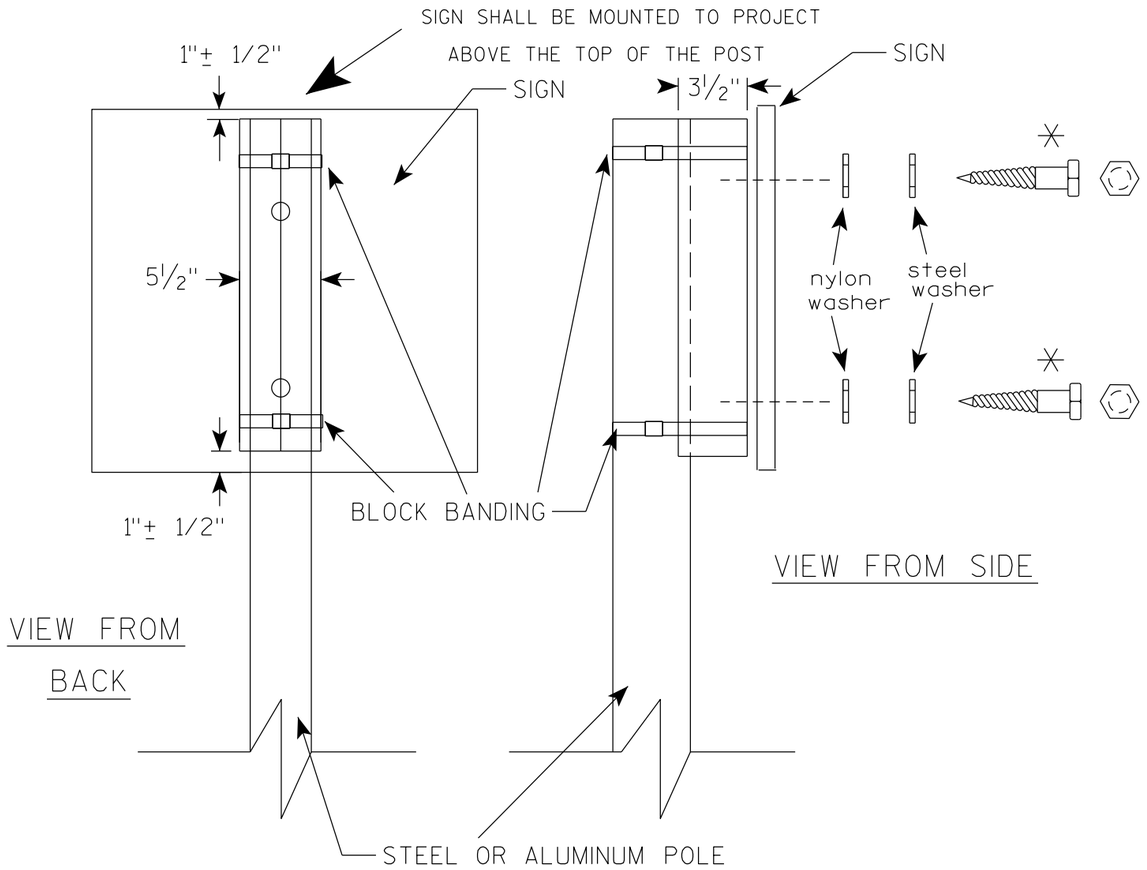
WISCONSIN DEPT OF TRANSPORTATION

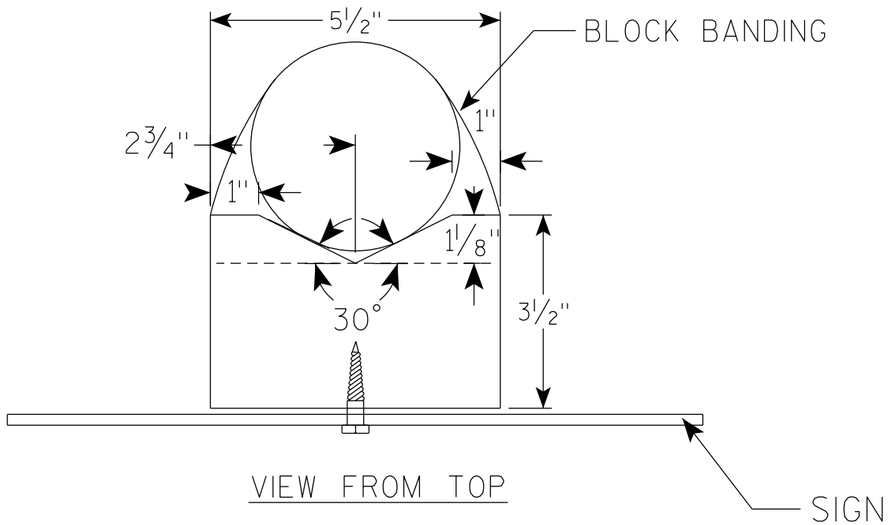
APPROVED Matthew R Rauch
for State Traffic Engineer

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

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

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





GENERAL NOTES

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

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

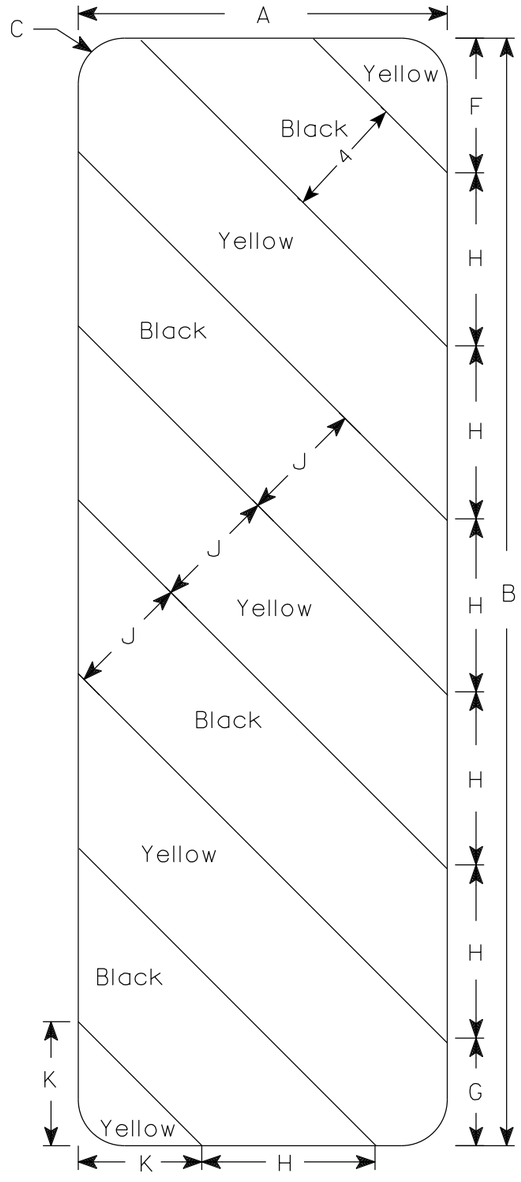
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

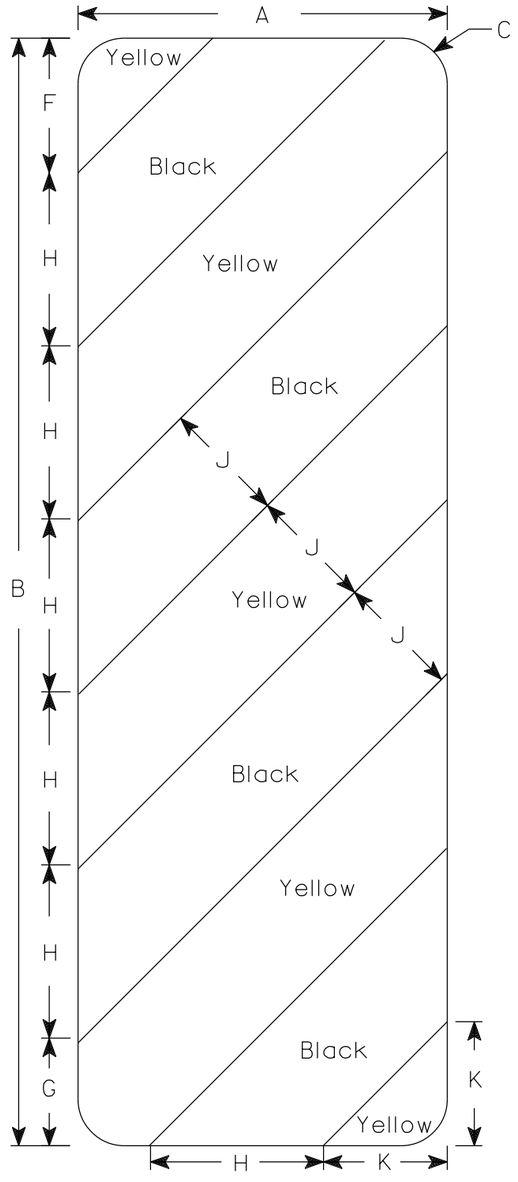
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO: 45 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

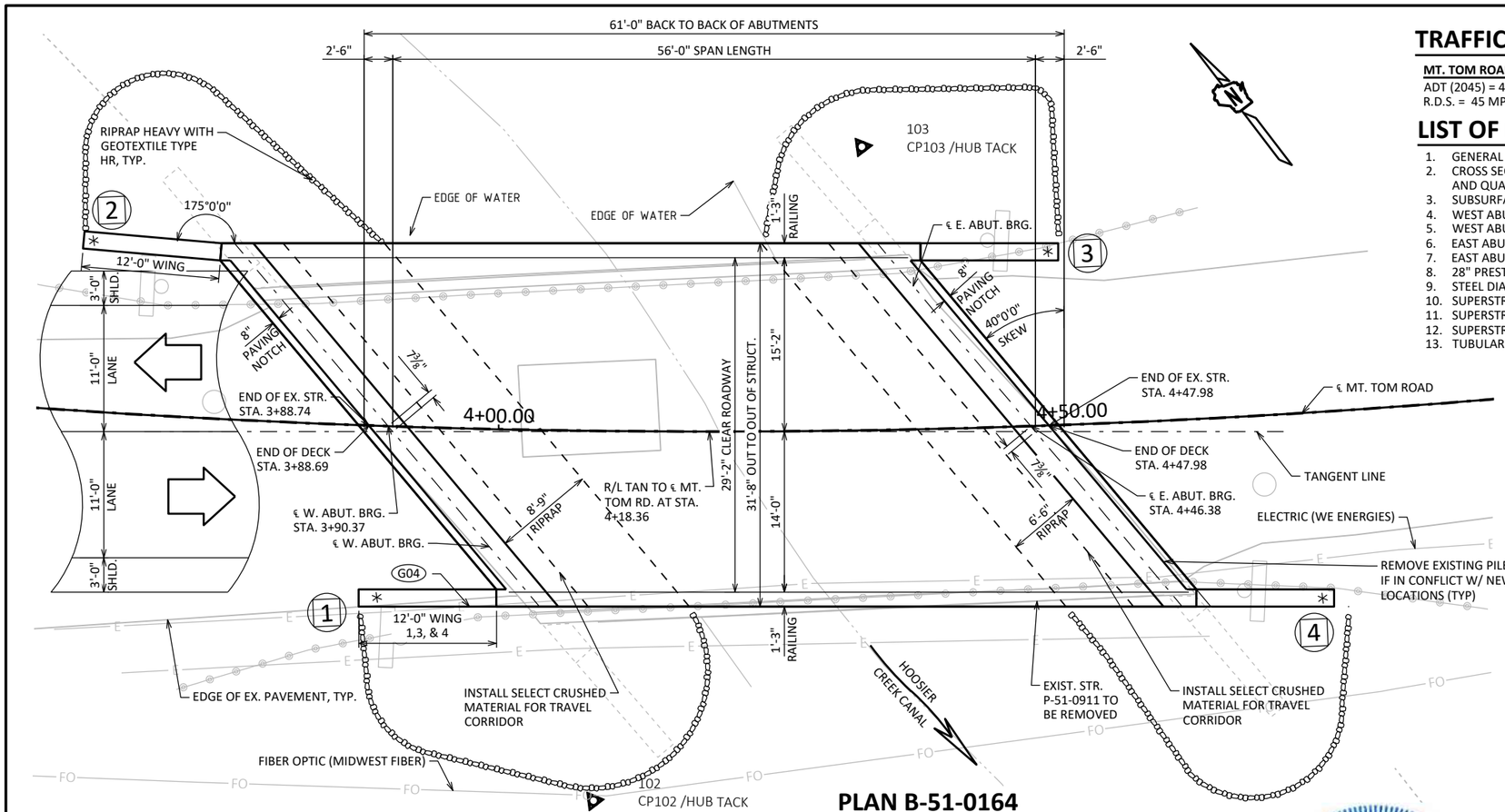
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 3/4/2024 PLATE NO. W5-52.10

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

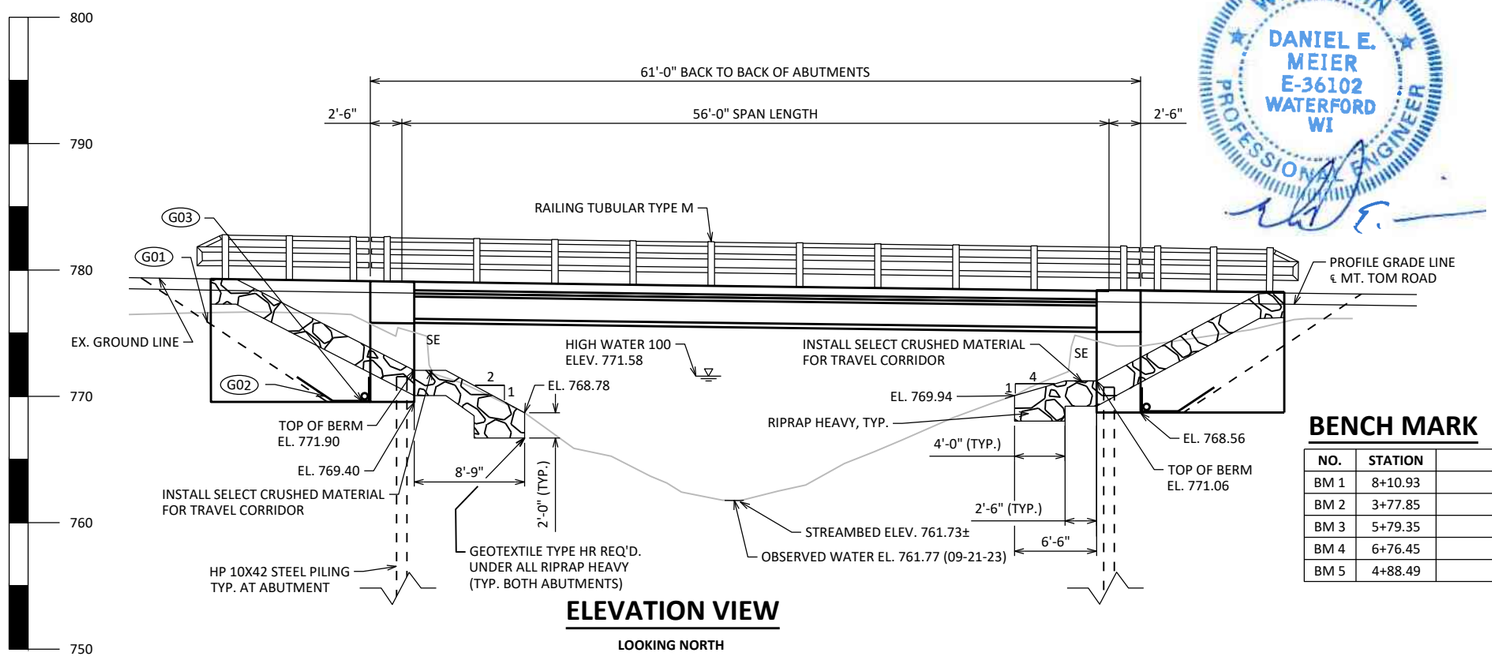
STATE PROJECT NUMBER

3834-05-71



PLAN B-51-0164

(SINGLE SPAN 28-INCH PRESTRESSED CONCRETE GIRDERS)



ELEVATION VIEW

LOOKING NORTH

TRAFFIC DATA

MT. TOM ROAD:
ADT (2045) = 460
R.D.S. = 45 MPH

LIST OF DRAWINGS:

1. GENERAL PLAN
2. CROSS SECTION, GENERAL NOTES, AND QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. 28" PRESTRESSED GIRDER DETAILS
9. STEEL DIAPHRAGMS
10. SUPERSTRUCTURE PLAN
11. SUPERSTRUCTURE SECTION
12. SUPERSTRUCTURE DETAILS
13. TUBULAR STEEL RAILING TYPE 'M'

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING: RF = 1.21
OPERATING RATING: RF = 1.57
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 210 (KIPS)

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

MATERIAL PROPERTIES:

CONCRETE MASONRY:
DECK ——— f'_c = 4,000 PSI
ALL OTHER ——— f'_c = 3,500 PSI
HIGH STRENGTH BAR STEEL
REINFORCEMENT ——— f_y = 60,000 PSI
28-INCH PRESTRESSED GIRDERS:
CONCRETE MASONRY ——— f'_c = 8,000 PSI
STRANDS: 0.5" DIA.
WITH ULTIMATE TENSILE STRENGTH OF —— f_u =270,000 PSI

HYDRAULIC DATA

100-YEAR FREQUENCY:

DESIGN Q_{100}=	1,010 C.F.S.
Q_{100}(THRU BRIDGE)=	1,010 C.F.S.
DRAINAGE AREA=	12.88 SQ. MI.
BRIDGE WATER AREA=	169.46 SQ. FT.
V_{100}=	5.96 F.P.S.
HW_{100} EL. =	771.58 FT.
OVERTOPPING=	N/A
SCOUR CRITICAL CODE=	5

2-YEAR FREQUENCY:

Q_2=	243 C.F.S.
Q_2 ELEVATION=	767.82 FT.
Q_2 VELOCITY=	3.1 F.P.S.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 125 TONS ** PER PILE AT W. ABUT AND 125 TONS ** PER PILE AT E. ABUT AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 75'-0" LONG. AT W. ABUT
ESTIMATED 70'-0" LONG. AT E. ABUT

**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.

CURVE DATA

FEATURE ON

P.I. = STA 5+76.56
Δ = 60°35'35" LT
D = 6°54'11"
T = 484.94'
L = 877.76'
R = 830.00'
S.E. = 5.8%
P.C. = STA 0+91.61
P.T. = STA 9+69.38

LEGEND

G01	BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCLUDED WITH BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-51-164". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
G02	"GEOTEXTILE TYPE DF SCHEDULE A" LIMITS. EXTEND 2'0" ABOVE BOTTOM OF ABUTMENT FOR THE ENTIRE ABUTMENT BODY LENGTH.
G03	PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED IN "ABUTMENT DETAILS" SHEET.
G04	NAME PLATE REQUIRED AND BENCH MARK CAP (WHEN SUPPLIED). FOR LOCATION SEE "ABUTMENTS" SHEET.
⊼	LOCATION OF BEAM GUARD ATTACHMENT.
(1)	INDICATES WING NUMBER.

STRUCTURE DESIGN CONTACTS:

DANIEL MEIER	262-402-5044
AARON BONK	608-261-0261

BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
BM 1	8+10.93	PK NAIL	776.6340
BM 2	3+77.85	PK NAIL	782.4480
BM 3	5+79.35	REBAR	774.2820
BM 4	6+76.45	PK NAIL	776.0720
BM 5	4+88.49	PK NAIL	777.3970

WISCONSIN DANIEL E. MEIER E-36102 WATERFORD WI PROFESSIONAL ENGINEER

NO.	DATE	REVISION	BY

LYNCH & ASSOCIATES
ENGINEERING CONSULTANTS, LLC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORATION

ACCEPTED SDR 11/11/24
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-51-0164

MT TOM RD OVER HOOSIER CREEK CANAL

COUNTY	RACINE	TOWN	BURLINGTON

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATION

DESIGNED BY	RAB	DESIGNED CK'D	DEM	DRAWN BY	RAB	PLANS CK'D	DEM

GENERAL PLAN

SHEET 1 OF 13
47

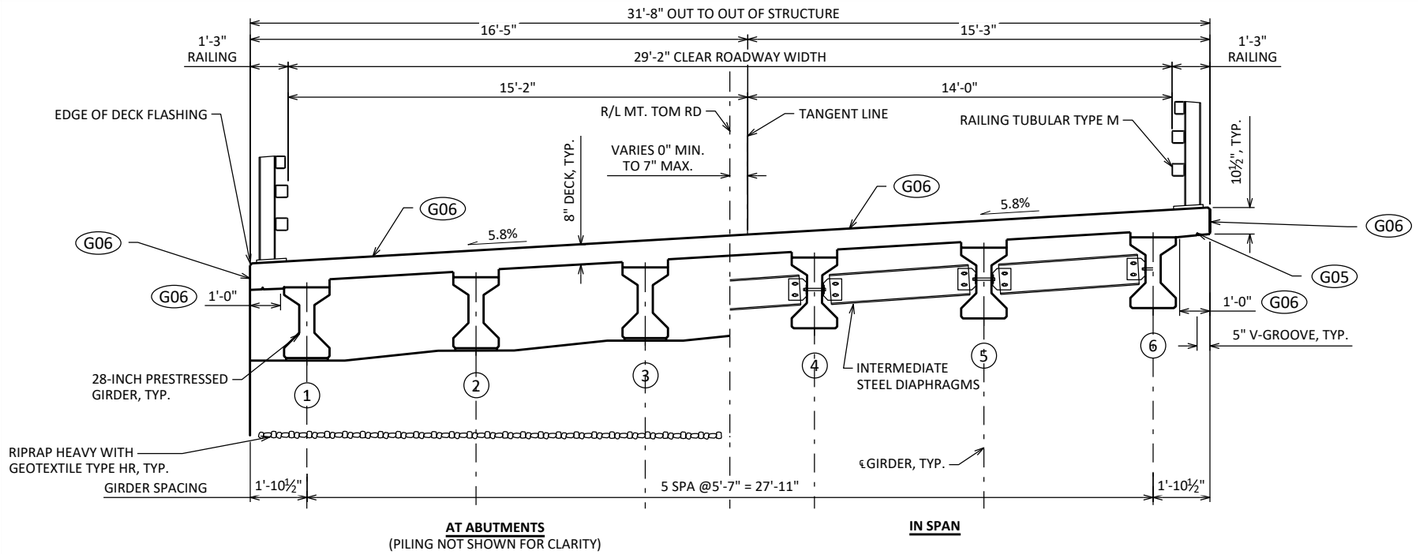
SCALE =

I.D. 3834-05-01

DATE: 9/30/2024

8

8



CROSS SECTION THRU ROADWAY

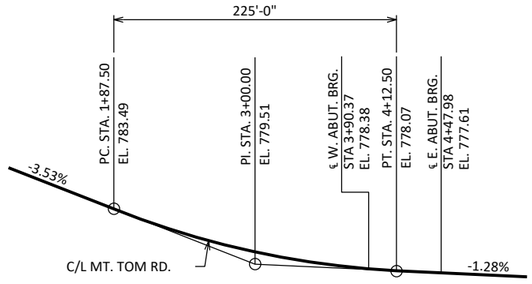
(LOOKING EAST)

LEGEND

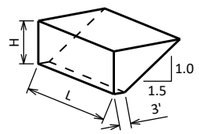
- (G05) ¾" V-GROOVE, EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM. V-GROOVE ARE REQUIRED.
- (G06) PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK, TO THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, THE END 1'-0" OF THE FRONT FACE OF ABUTMENT, AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT DIAPHRAGMS.
- (#) INDICATES GIRDER LINE DESIGNATION

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-51-0911	EACH	-	-	-	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES (B-51-0164)	EACH	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	-	124	126	250
502.0100	CONCRETE MASONRY BRIDGES	CY	70	48	48	166
502.3200	PROTECTIVE SURFACE TREATMENT	SY	221	-	-	221
503.0128	PRESTRESSED GIRDER TYPE I 28-INCH	LF	342	-	-	348
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	-	2,667	2,712	5,380
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	10,216	1,775	1,751	13,742
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	12	-	-	12
506.4000	STEEL DIAPHRAGMS (B-51-0164)	EACH	5	-	-	5
513.4061	RAILING TUBULAR TYPE M	LF	173	-	-	173
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-	10	10	20
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	-	525	490	1015
606.0300	RIPRAP HEAVY	CY	-	75	64	139
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	-	64	64	129
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	-	62	62	123
645.0120	GEOTEXTILE TYPE HR	SY	-	113	95	208
SPV.0090.01	FLASHING STAINLESS STEEL	LF	61	-	-	61
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	-	4	5	9
	NON-BID ITEMS					
	FILLER	SIZE				½", ¾"

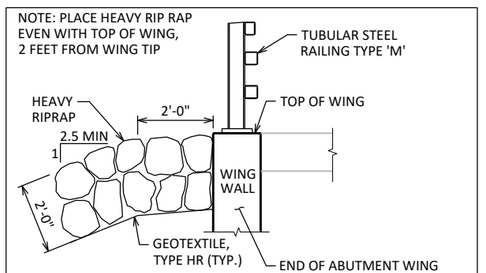


PROFILE GRADE LINE



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)



TYPICAL FILL SECTION AT WING TIPS

STATE PROJECT NUMBER

3834-05-71

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 B-51-0164" 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.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

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

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.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "28 PRESTRESSED GIRDER DETAILS" SHEET.

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.

THE EXISTING STRUCTURE P-51-0911 IS A SINGLE SPAN CONCRETE T BEAM BRIDGE WITH AN OVERALL LENGTH OF 53'-10" AND A CLEAR ROADWAY WIDTH OF 28'-10". SUPERSTRUCTURE AND ABUTMENTS SHALL BE REMOVED IN ACCORDANCE WITH THE BID ITEM "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-51-0911".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-0164

DRAWN BY RAB | PLANS CK'D DEM

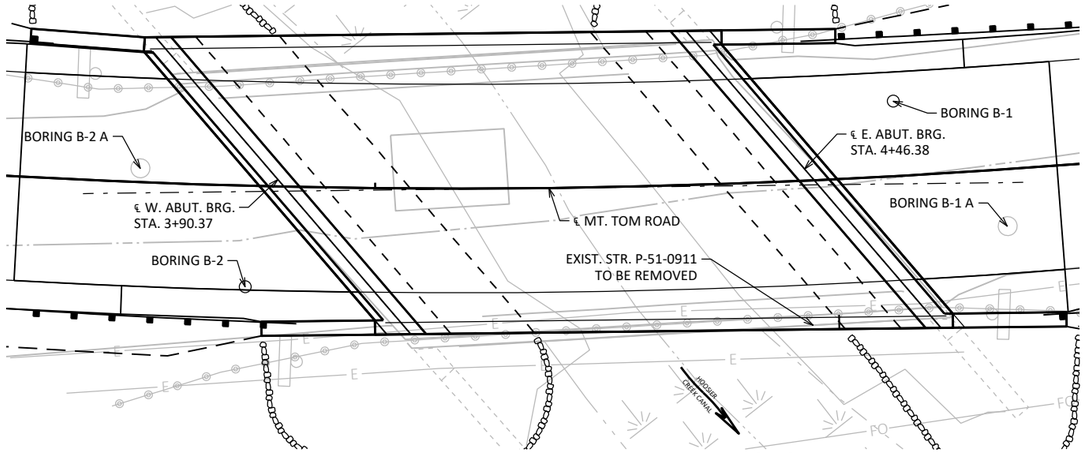
CROSS SECTION, GENERAL NOTES AND QUANTITIES

SHEET 2 OF 13
48

SCALE =

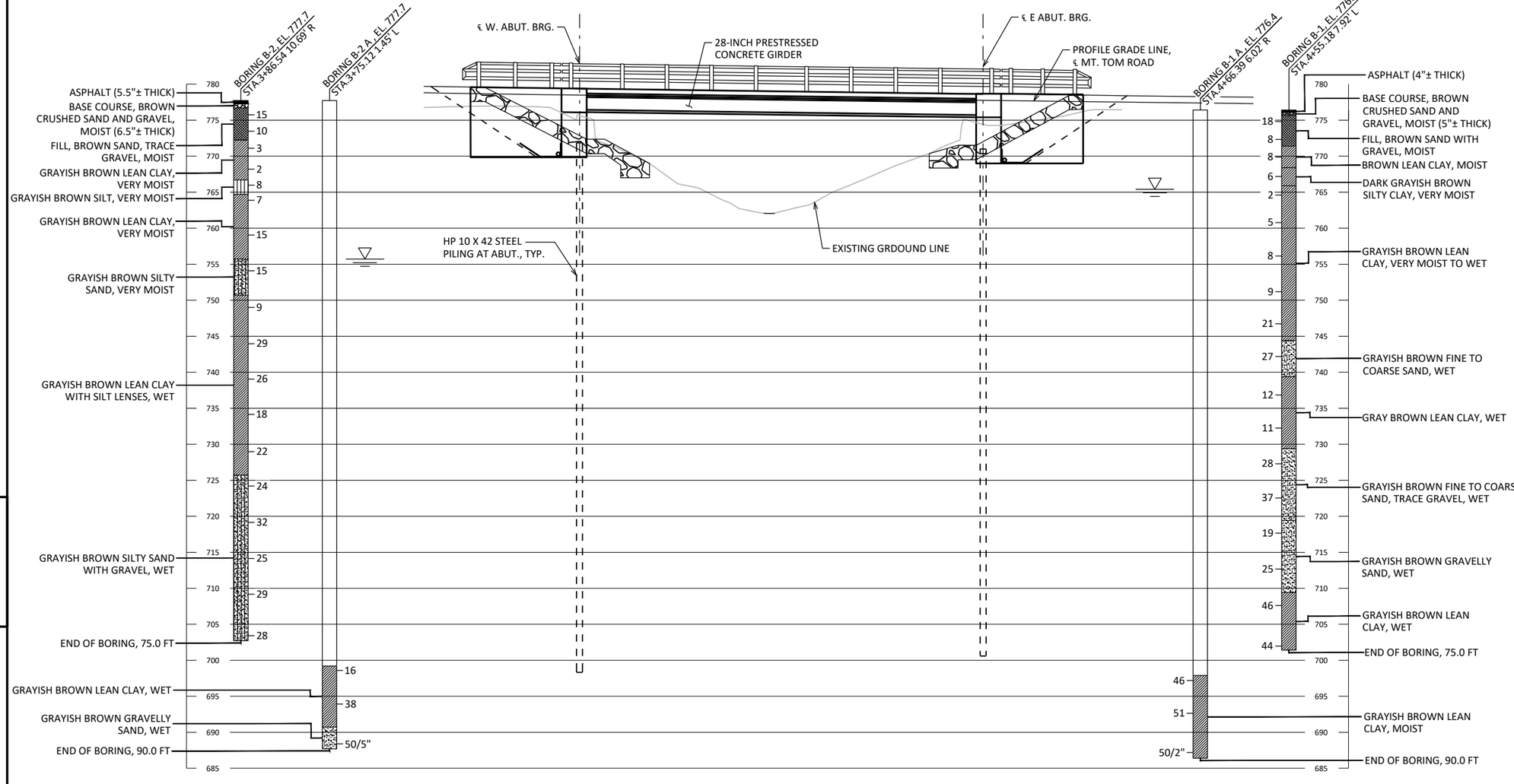
8

8



PLAN B-51-0164

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-1	8/15/23	162612.4630	527052.1350
B-1 A	10/5/23	162567.8600	527119.4560
B-2	8/15/23	162585.6930	527118.110
B-2 A	10/5/23	162629.1420	527051.136
BORINGS COMPLETED BY: PSI, Inc.			
REPORT COMPLETED BY: PSI, Inc.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91)			RACINE COUNTY



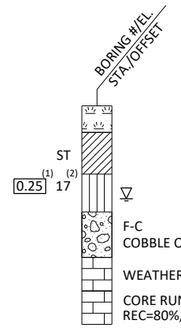
STATE PROJECT NUMBER

3834-05-71

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

AT TIME OF DRILLING
END OF DRILLING
AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-0164

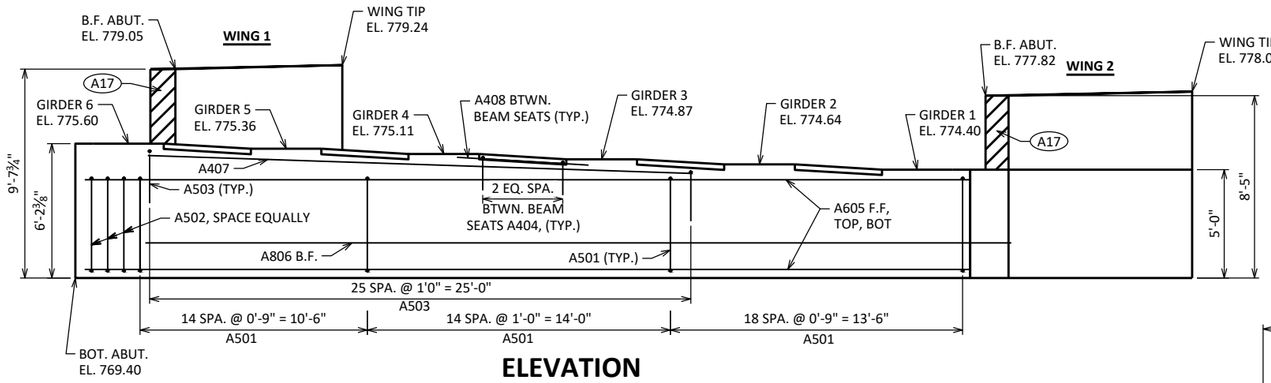
DRAWN BY RAB | PLANS CK'D DEM

SUBSURFACE EXPLORATION

SHEET 3 OF 13

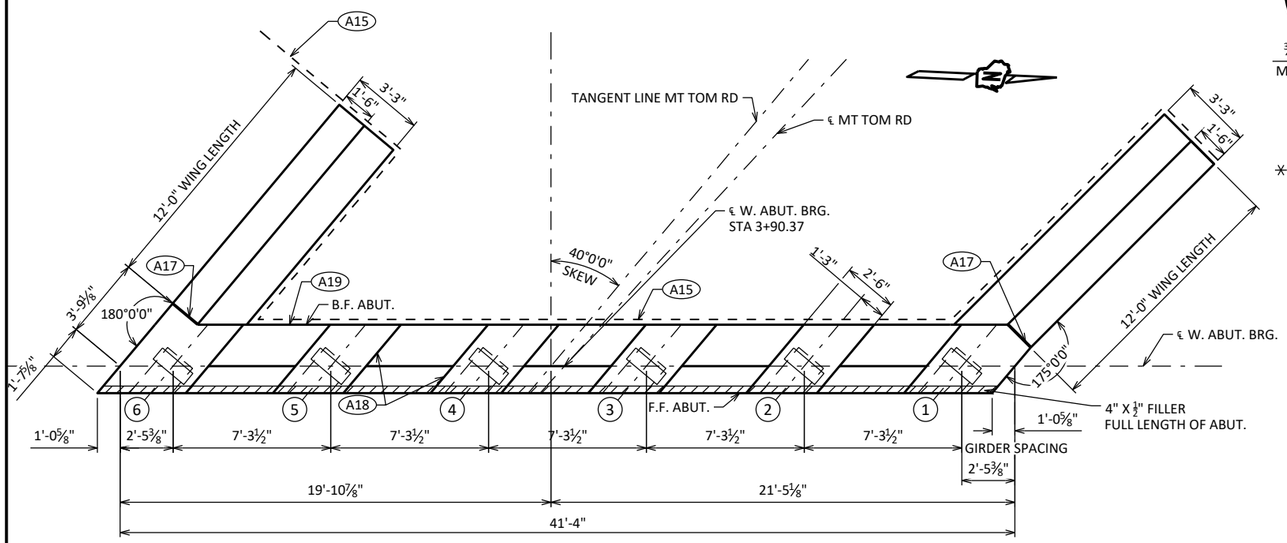
STATE PROJECT NUMBER

3834-05-71



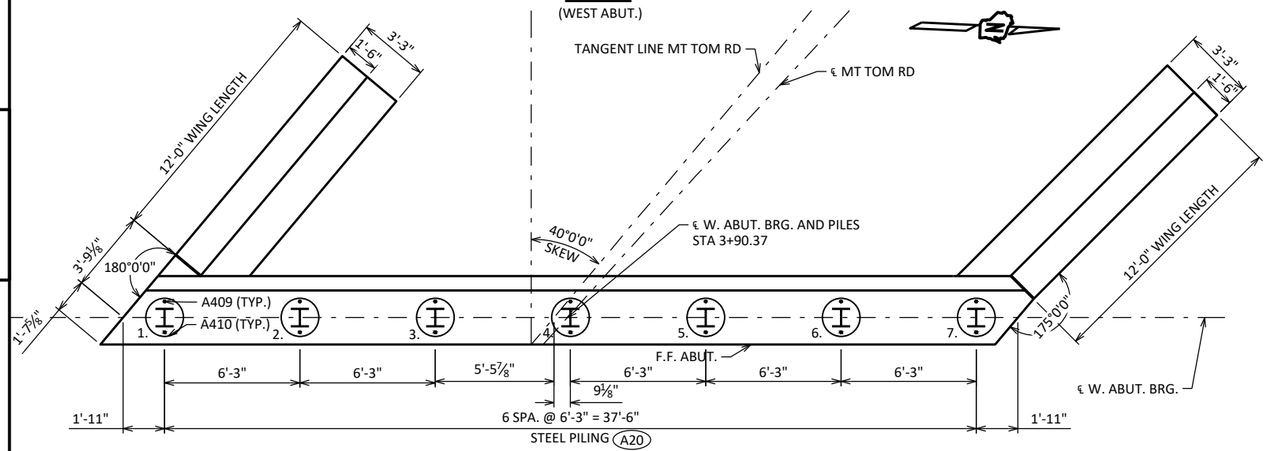
ELEVATION

(WEST ABUT.)



PLAN

(WEST ABUT.)



PILE LAYOUT

(WEST ABUT.)

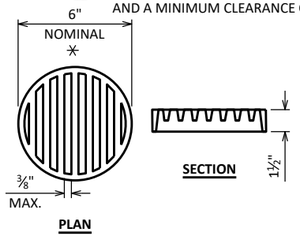
A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

A17 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.

A18 ½" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

A20 PILES MAY BE MOVED ALONG THE CENTERLINE OF BEARING TO AVOID EXISTING PILES. PILES SHALL MAINTAIN A MAXIMUM PILE SPACING OF 8'-0" AND A MINIMUM CLEARANCE OF 1'-6" FROM EXISTING PILES.

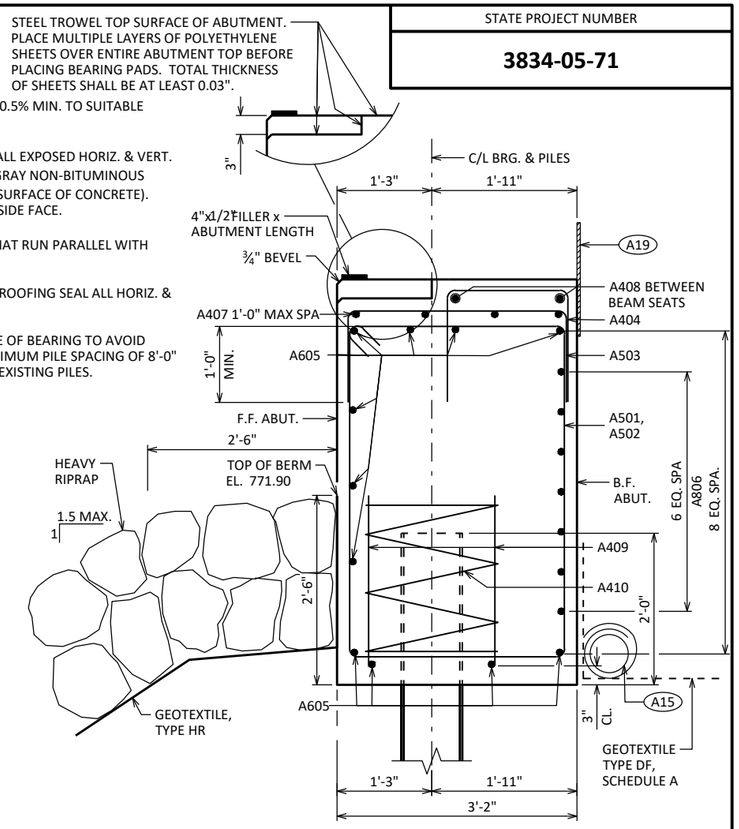


RODENT SHIELD DETAIL

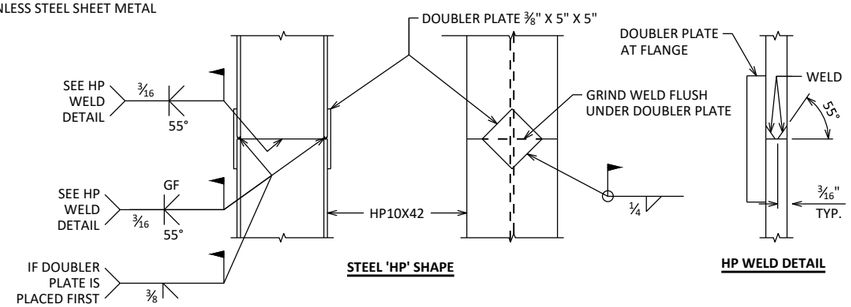
✳ DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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.



SECTION THRU BODY



'HP' PILE DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-164

DRAWN BY RAB | PLANS CK'D DEM

WEST ABUTMENT

SHEET 4 OF 13

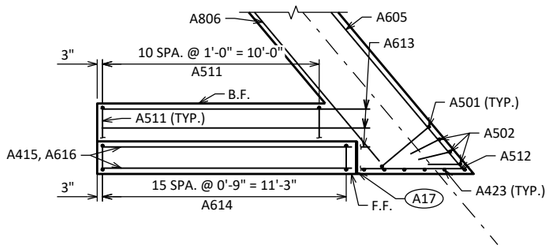
50

8

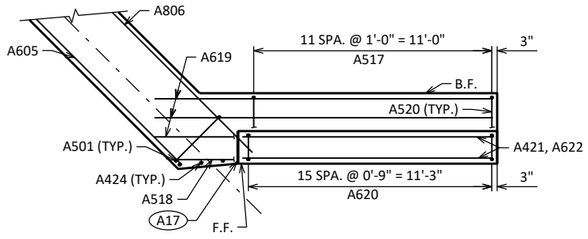
8

STATE PROJECT NUMBER

3834-05-71



WING 1 PLAN



WING 2 PLAN

A17 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 ⅜" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

A20 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

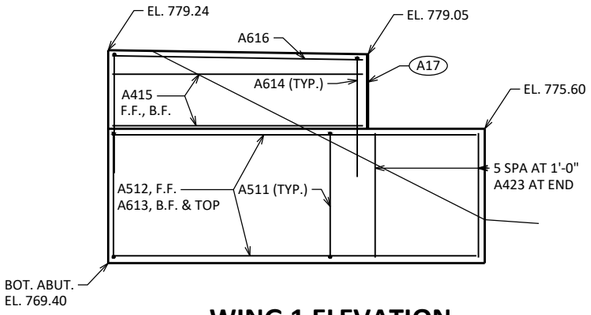
A21 OPTIONAL CONST. JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH MEMBRANE ON BACKFACE.

A22 SLOPE TO MATCH SUPERSTRUCURE. SEE SHEET 13 FOR TUBULAR STEEL RAILING TYP 'M' DETAILS.

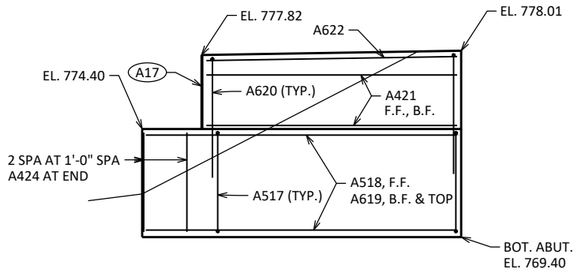
BILL OF BARS

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

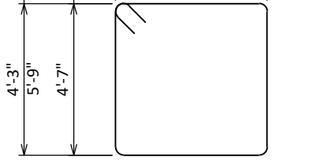
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		47	14'-10"	X		BODY – STIRRUPS
A502		3	7'-1"	X		BODY – U–BAR – CORNER
A503		26	7'-1"	X		BODY – TOP – VERT.
A404		15	4'-5"	X		BODY – TOP – VERT.
A605		11	40'-10"			BODY – F.F. TOP BOT – HORIZ.
A806		7	40'-0"			BODY – B.F. – HORIZ.
A407		4	25'-2"			BODY – TOP – HORIZ.
A408		10	6'-1"			BODY – TOP – HORIZ.
A409		14	2'-3"			BODY – PILES – VERT.
A410		7	28'-0"	X		BODY – PILES – SPIRAL
A511	X	11	18'-0"	X		WING 1 – LOWER – STIRRUPS
A512	X	7	16'-9"			WING 1 – LOWER – F.F. – HORIZ.
A613	X	9	12'-5"			WING 1 – LOWER – B.F. & TOP – HORIZ.
A614	X	16	12'-0"	X		WING 1 – UPPER – VERT.
A415	X	8	11'-7"			WING 1 – UPPER – F.F., B.F. – HORIZ.
A616	X	2	11'-7"			WING 1 – UPPER – TOP – HORIZ.
A517	X	12	15'-8"	X		WING 2 – LOWER – STIRRUPS
A518	X	6	14'-8"			WING 2 – LOWER – F.F. – HORIZ.
A619	X	8	15'-8"			WING 2 – LOWER – B.F. & TOP – HORIZ.
A620	X	16	12'-0"	X		WING 2 – UPPER – VERT.
A421	X	8	11'-7"			WING 2 – UPPER – F.F., B.F. – HORIZ.
A622	X	2	11'-7"			WING 2 – UPPER – TOP – HORIZ.
A423	X	6	5'-9"			BODY – VERT. SOUTH END
A424	X	3	4'-7"			BODY – VERT. NORTH END



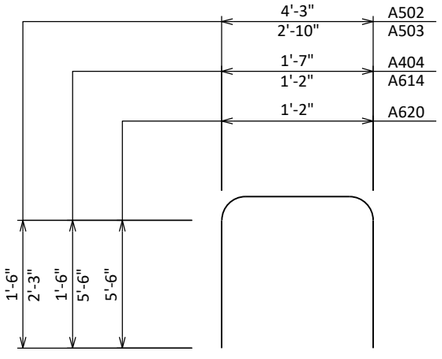
WING 1 ELEVATION



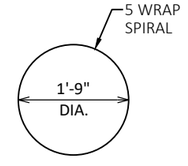
WING 2 ELEVATION



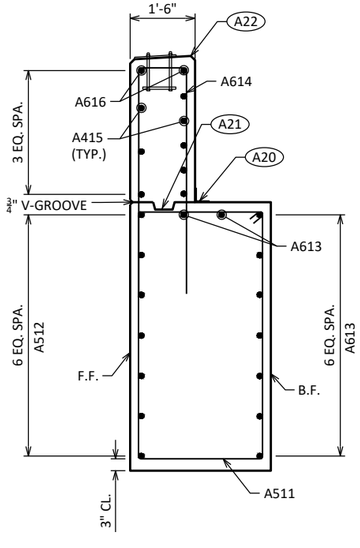
A501, A511, A517



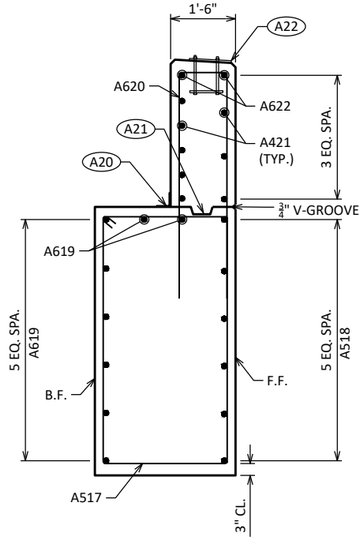
A502, A503, A404, A614, A620



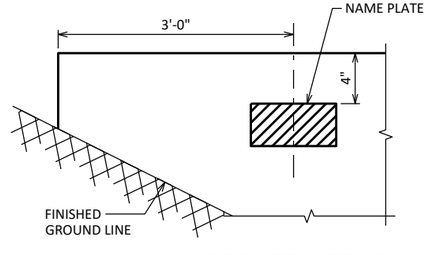
A410



WING 1 SECTION



WING 2 SECTION



NAME PLATE DETAIL

WING 1

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-164

DRAWN BY RAB | PLANS CK'D DEM

WEST ABUTMENT DETAILS

SHEET 5 OF 13

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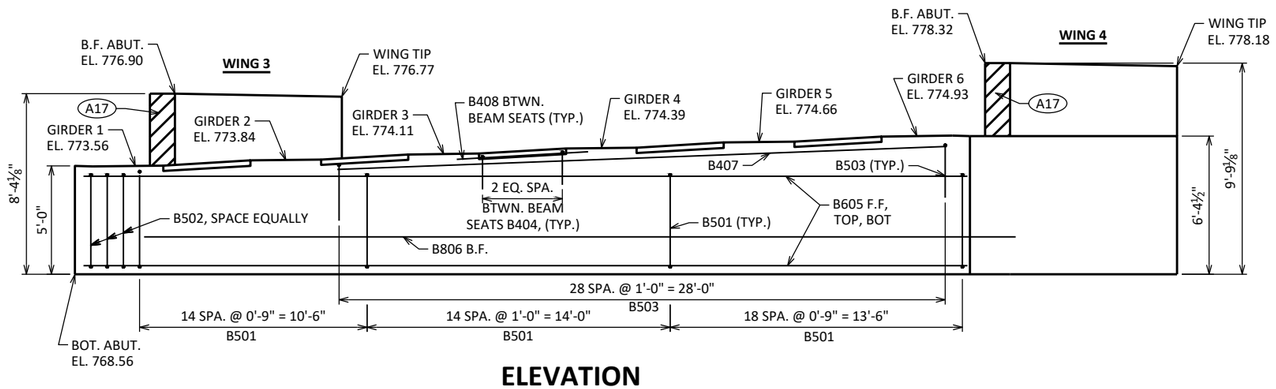
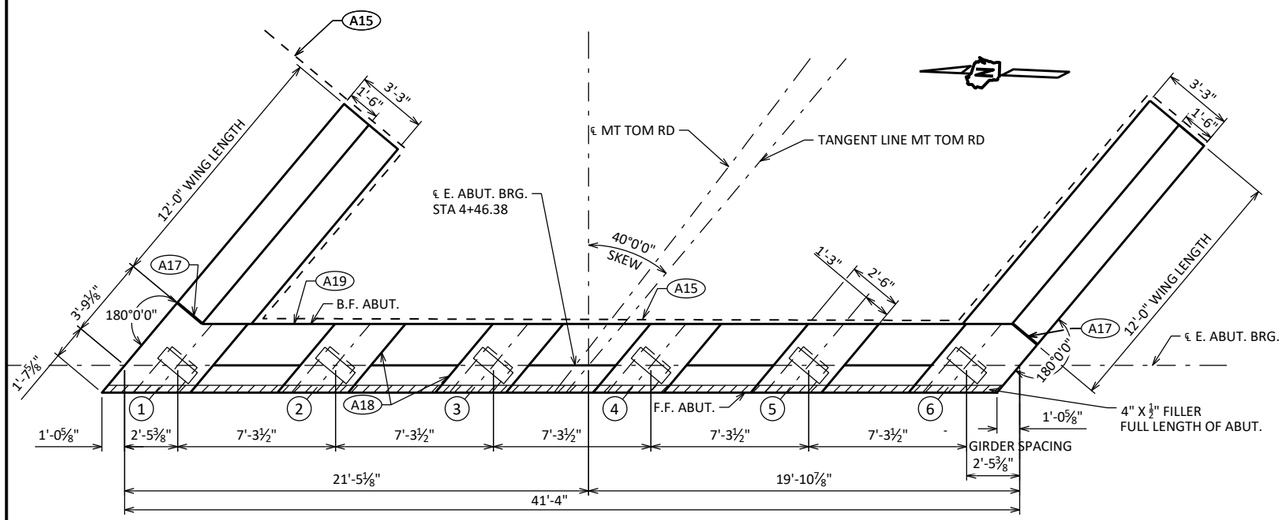
STATE PROJECT NUMBER

3834-05-71



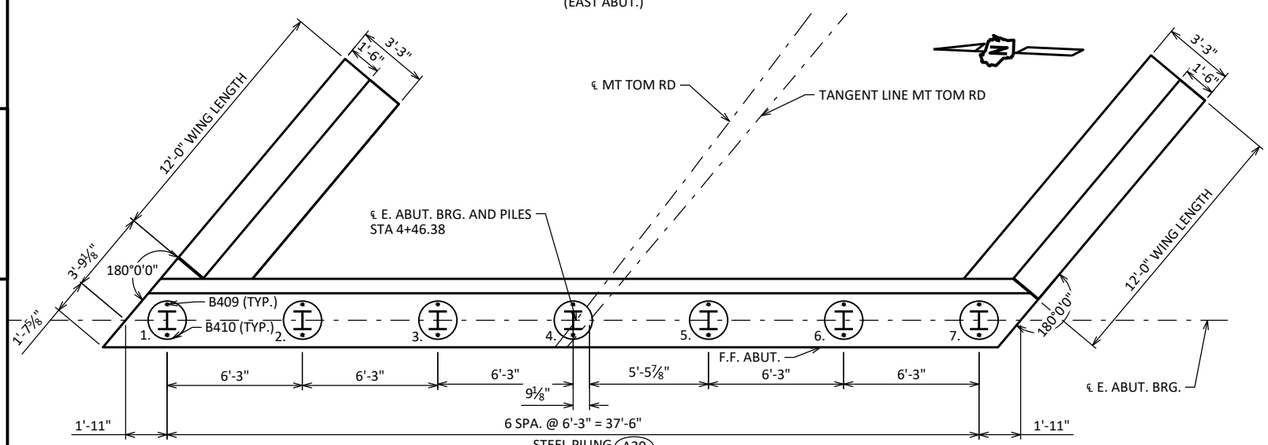
ELEVATION

(EAST ABUT.)



PLAN

(EAST ABUT.)



PILE LAYOUT

(EAST ABUT.)

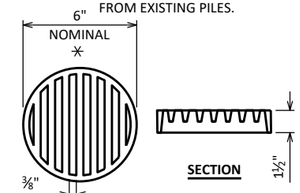
A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

A17 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.

A18 ¾" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

A20 PILES MAY BE MOVED ALONG THE CENTERLINE OF BEARING TO AVOID EXISTING PILES. PILES SHALL MAINTAIN A MAXIMUM PILE SPACING OF 8'-0" AND A MINIMUM CLEARANCE OF 1'-6" FROM EXISTING PILES.

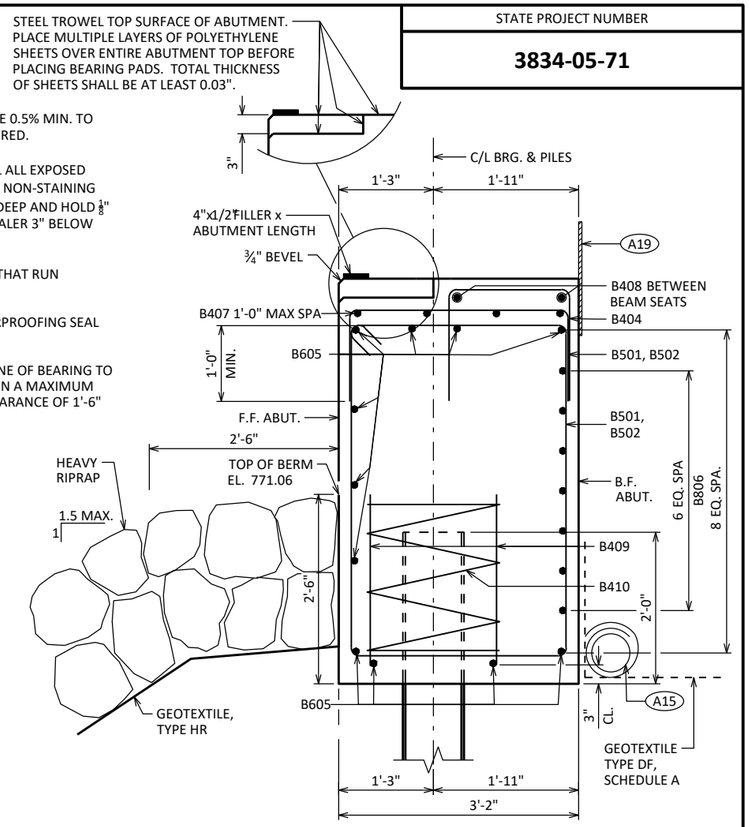


RODENT SHIELD DETAIL

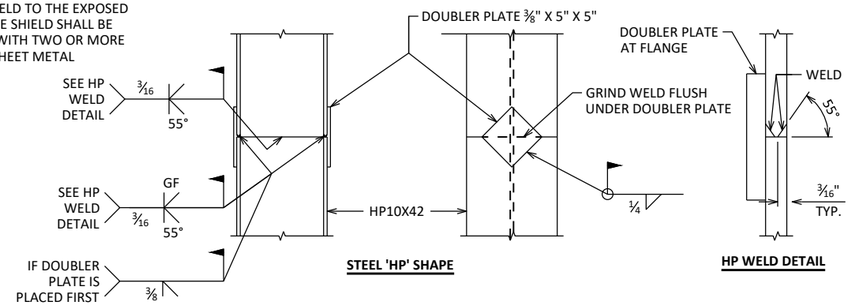
* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

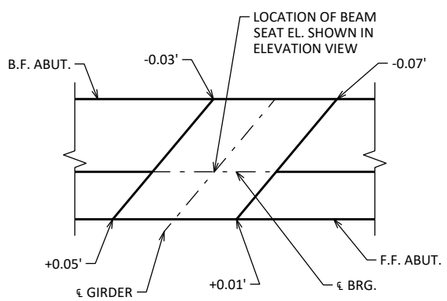
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X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



SECTION THRU BODY



'HP' PILE DETAILS



SLOPING BEAM SEAT DETAIL

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STRUCTURE B-51-164

DRAWN BY RAB | PLANS CK'D DEM

EAST ABUTMENT

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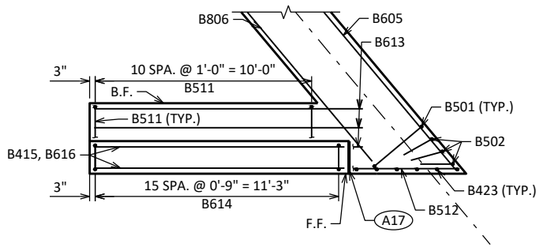
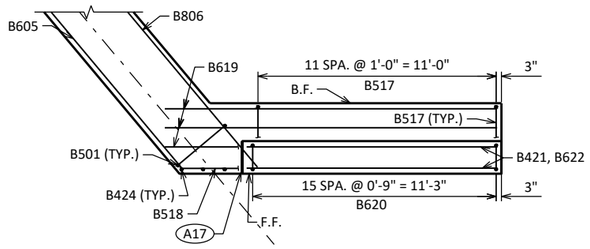


WING 3 PLAN



WING 4 PLAN

(A17) 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.

(A20) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

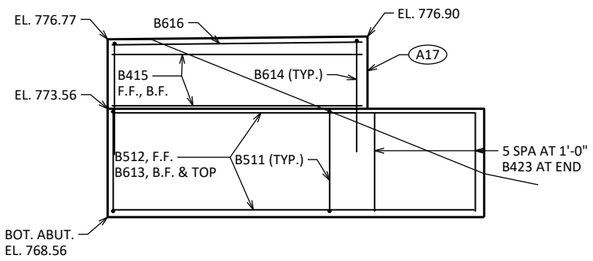
(A21) OPTIONAL CONST. JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH MEMBRANE ON BACKFACE.

(A22) SLOPE TO MATCH SUPERSTRUCURE. SEE SHEET 13 FOR TUBULAR STEEL RAILING TYP 'M' DETAILS.

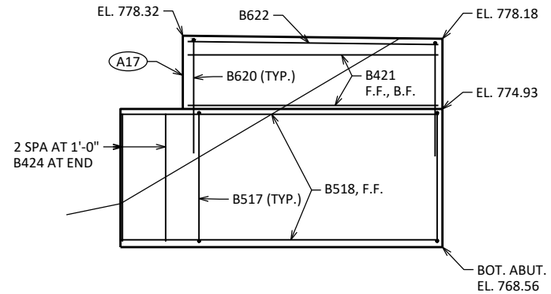
BILL OF BARS

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

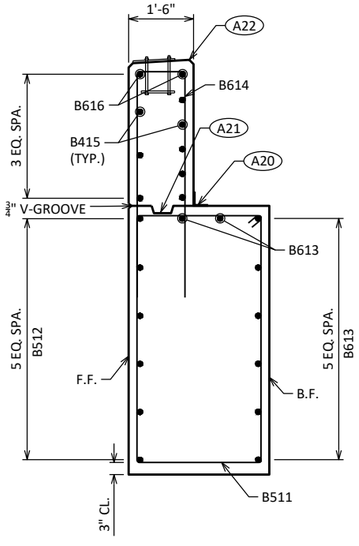
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		47	14'-10"	X		BODY – STIRRUPS
B502		3	7'-1"	X		BODY – U–BAR – CORNER
B503		29	7'-5"	X		BODY – TOP – VERT.
B404		15	4'-5"	X		BODY – TOP – VERT.
B605		11	40'-10"			BODY – F.F. TOP BOT – HORIZ.
B806		7	40'-3"			BODY – B.F. – HORIZ.
B407		4	28'-2"			BODY – TOP – HORIZ.
B408		10	6'-1"			BODY – TOP – HORIZ.
B409		14	2'-3"			BODY – PILES – VERT.
B410		7	28'-0"	X		BODY – PILES – SPIRAL
B511	X	11	15'-8"	X		WING 3 – LOWER – STIRRUPS
B512	X	6	16'-9"			WING 3 – LOWER – F.F. – HORIZ.
B613	X	8	12'-5"			WING 3 – LOWER – B.F. & TOP – HORIZ.
B614	X	16	11'-4"	X		WING 3 – UPPER – VERT.
B415	X	8	11'-7"			WING 3 – UPPER – F.F., B.F. – HORIZ.
B616	X	2	11'-7"			WING 3 – UPPER – TOP – HORIZ.
B517	X	12	18'-4"	X		WING 4 – LOWER – STIRRUPS
B518	X	7	14'-8"			WING 4 – LOWER – F.F. – HORIZ.
B619	X	9	15'-5"			WING 4 – LOWER – B.F. & TOP – HORIZ.
B620	X	16	11'-6"	X		WING 4 – UPPER – VERT.
B421	X	8	11'-7"			WING 4 – UPPER – F.F., B.F. – HORIZ.
B622	X	2	11'-7"			WING 4 – UPPER – TOP – HORIZ.
B423	X	6	4'-7"			BODY – VERT. NORTH END
B424	X	3	5'-11"			BODY – VERT. SOUTH END



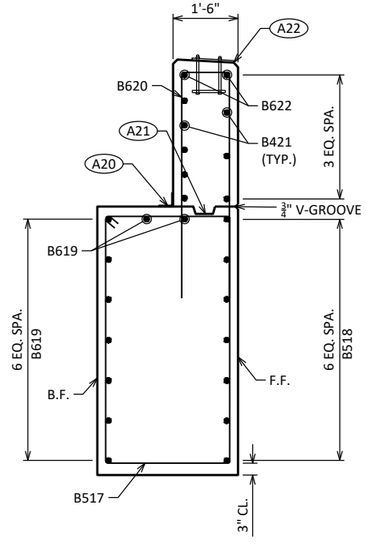
WING 3 ELEVATION



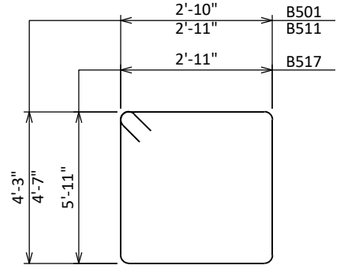
WING 4 ELEVATION



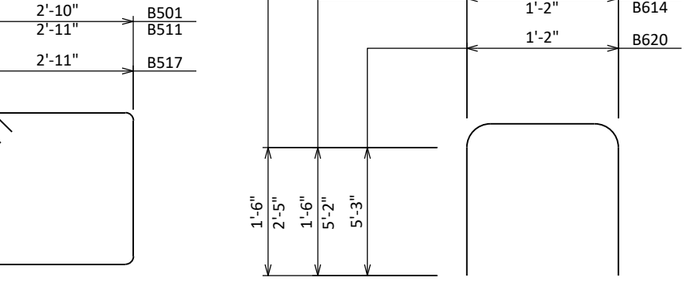
WING 3 SECTION



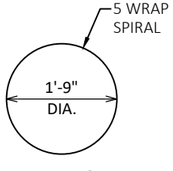
WING 4 SECTION



B501, B511, B517



B502, B503, B404, B614, B620



A410

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-164

DRAWN BY RAB | PLANS CK'D DEM

EAST ABUTMENT DETAILS

SHEET 7 OF 13

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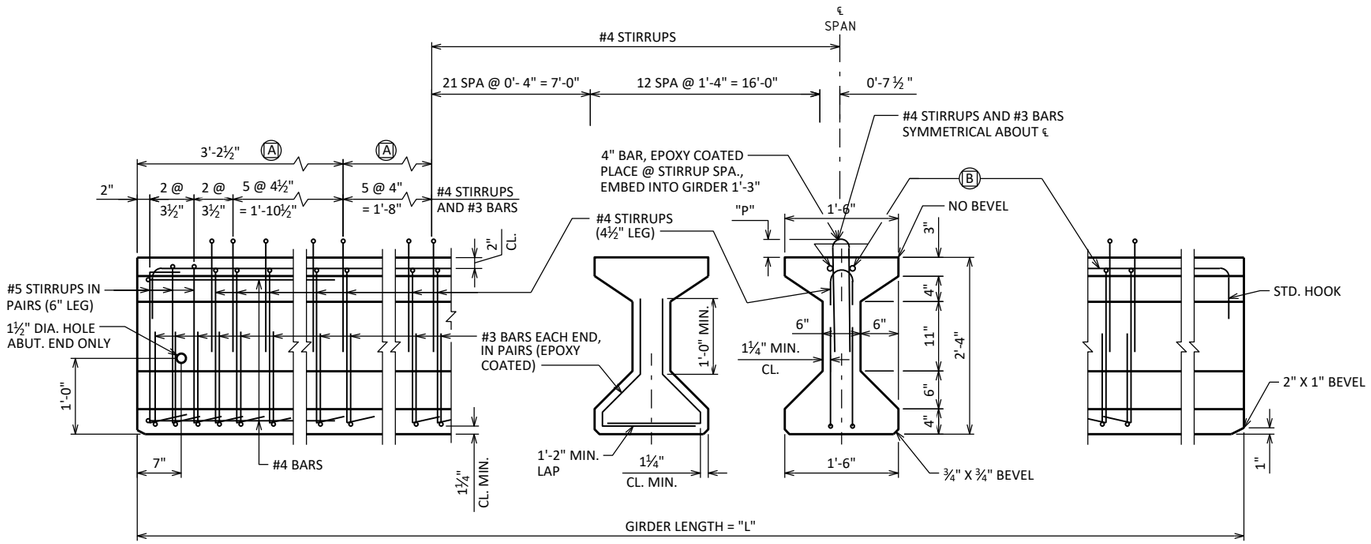
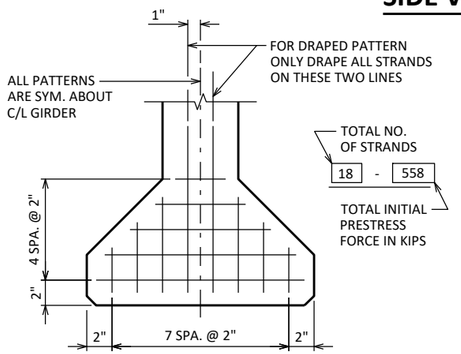


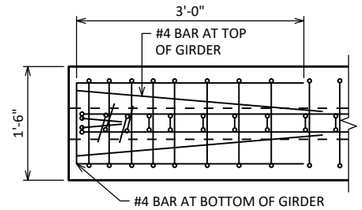
SIDE VIEW & TYPICAL SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

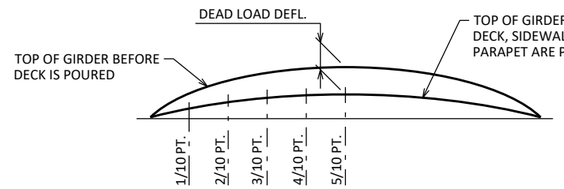
Ⓑ 2 #4 BARS, FULL LENGTH, MIN. LAP =2'-5" , STD. HOOK AT ENDS



TYP. STRAND PATTERN



TOP VIEW OF GIRDER ENDS



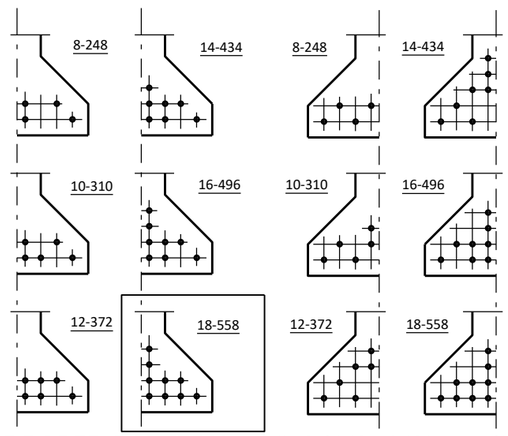
DEAD LOAD DEFLECTION DIAGRAM

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

SPAN	CAMBER (IN.) *
1	1.8

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

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

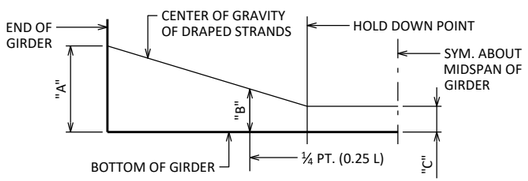


DRAPED PATTERN

0.5" DIA. STRANDS

UNDRAPED PATTERN

0.5" DIA. STRANDS



DRAPED STRAND PROFILE

DECK HAUNCH DETAIL

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

** IF 3" MINIMUM DECK EMBEDMENT OF THE TIE BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEVATION OF TOP OF GIRDERS AT C/L OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS
= HAUNCH HEIGHT "T"

NOTE: AN AVERAGE HAUNCH ('T') OF 3.63" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 2" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER OR EPOXY TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECT. 503.3.4 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

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

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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

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

PRESTRESSING STRANDS SHALL BE (0.5" DIA.) -7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

BEND EACH END OF #4 STIRRUPS 4½" AND #5 STIRRUPS 6".

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

GIRDER DATA																								
SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (P.S.I.)	"P" (IN.) 1ST ⅓ OF GIRDER	MID ⅓ OF GIRDER	END ⅓ OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✱	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✱
1	1 & 6	57'-0"	0.2	0.4	0.5	0.6	0.6	0.6	0.5	0.4	0.2	8,000	8.0	6.0	8.0	0.5	18	6,800	23.0	9.5	12.5	5.0	--------	------
1	2-5	57'-0"	0.2	0.4	0.6	0.7	0.7	0.7	0.6	0.4	0.2	8,000	8.0	6.0	8.0	0.5	18	6,800	23.0	9.5	12.5	5.0	--------	------

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STRUCTURE B-51-0164

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28" PRESTRESSED GIRDER DETAILS

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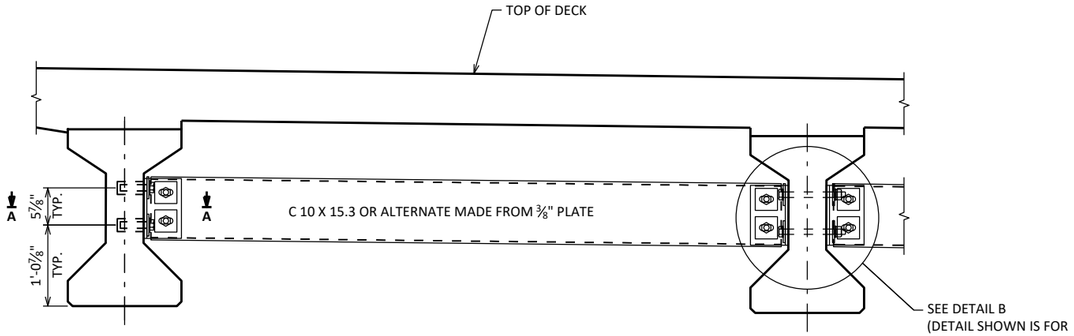


EXTERIOR GIRDER **INTERIOR GIRDER**

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-51-164", EACH.

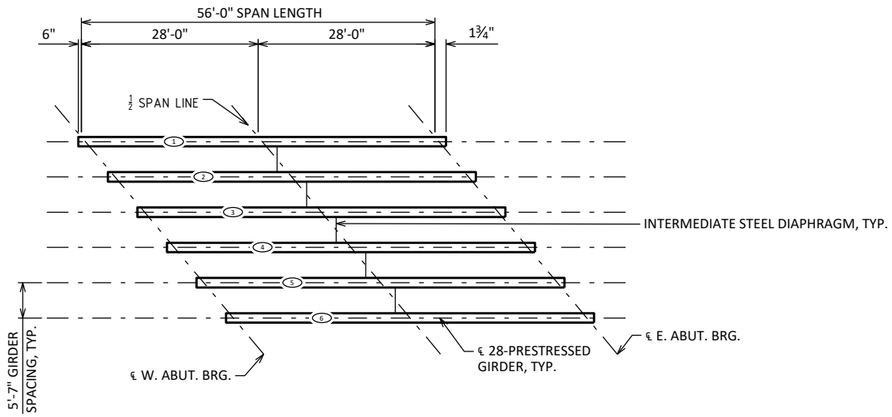
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

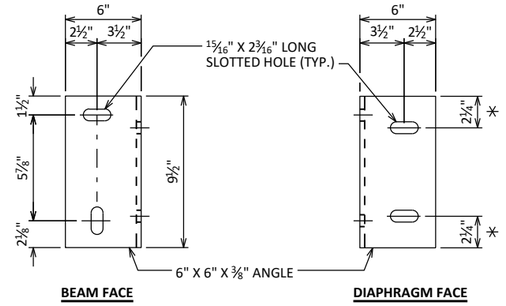
ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.

PART TRANSVERSE SECTION AT DIAPHRAGM

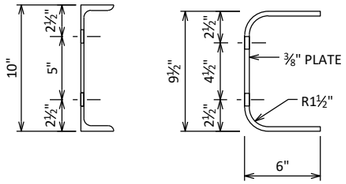


STEEL DIAPHRAGM LAYOUT PLAN



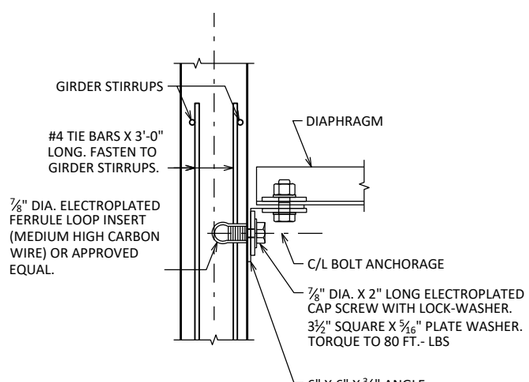
DIAPHRAGM SUPPORT

* 2½" FOR ALTERNATE PLATE DIAPHRAGM



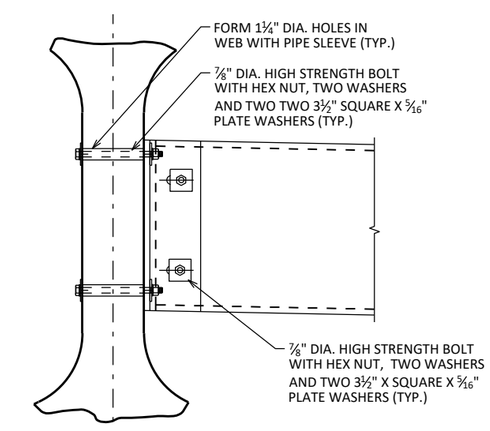
C10 X 15.3 **ALTERNATE DIAPHRAGM**

SECTION THRU DIAPHRAGM



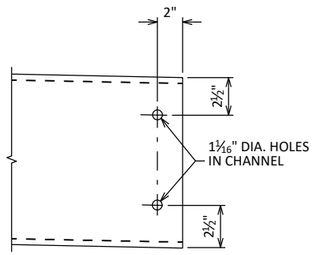
SECTION A-A

(FOR EXTERIOR ATTACHMENT)



(FOR STAGGERED DIAPHRAGM)

DETAIL B



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STATE OF WISCONSIN
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STRUCTURE B-51-164

DRAWN BY RAB | PLANS CK'D DEM

STEEL DIAPHRAGMS

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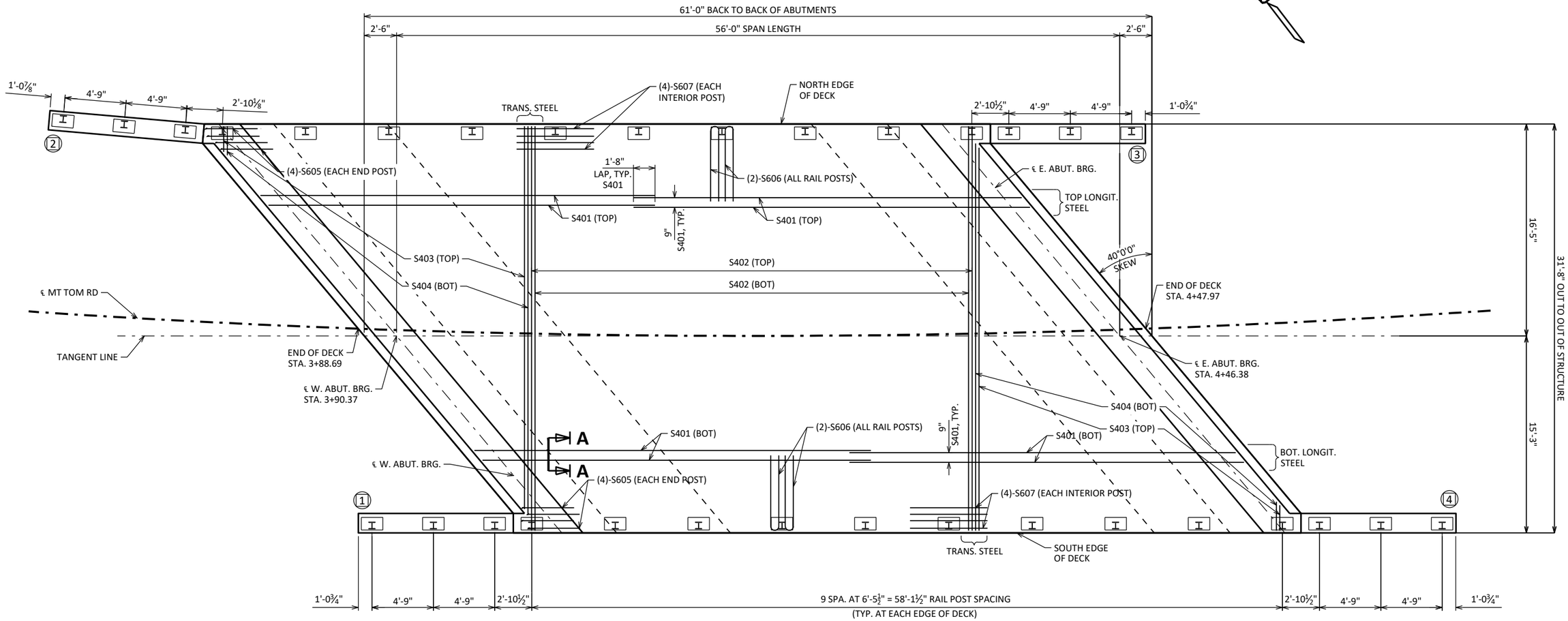
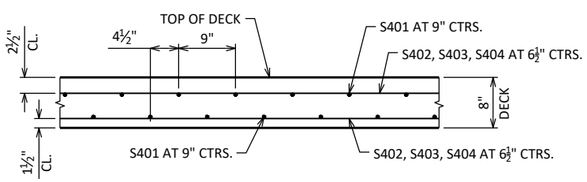


DECK PLAN SHOWING BAR REINFORCEMENT



SECTION A-A

(IN SPAN 1, BETWEEN GIRDERS)

	℄ W. ABUT BRG.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ E. ABUT. BRG.
N DECK EDGE	777.71	777.60	777.50	777.40	777.31	777.23	777.15	777.07	777.00	776.93	776.86
GIRDER 1	777.79	777.68	777.58	777.49	777.40	777.31	777.23	777.16	777.09	777.02	776.95
GIRDER 2	778.02	777.92	777.82	777.73	777.65	777.57	777.49	777.42	777.35	777.29	777.22
GIRDER 3	778.25	778.16	778.07	777.98	777.90	777.83	777.76	777.69	777.62	777.56	777.49
GIRDER 4	778.49	778.40	778.32	778.24	778.17	778.09	778.02	777.96	777.89	777.83	777.77
GIRDER 5	778.74	778.66	778.58	778.50	778.43	778.36	778.29	778.23	778.16	778.10	778.04
GIRDER 6	778.99	778.91	778.84	778.77	778.70	778.63	778.56	778.50	778.44	778.38	778.32
S DECK EDGE	779.08	779.00	778.93	778.85	778.79	778.72	778.65	778.59	778.53	778.47	778.42

TOP OF DECK ELEVATIONS

NOTE:

(1) INDICATES WING NUMBER.

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-164

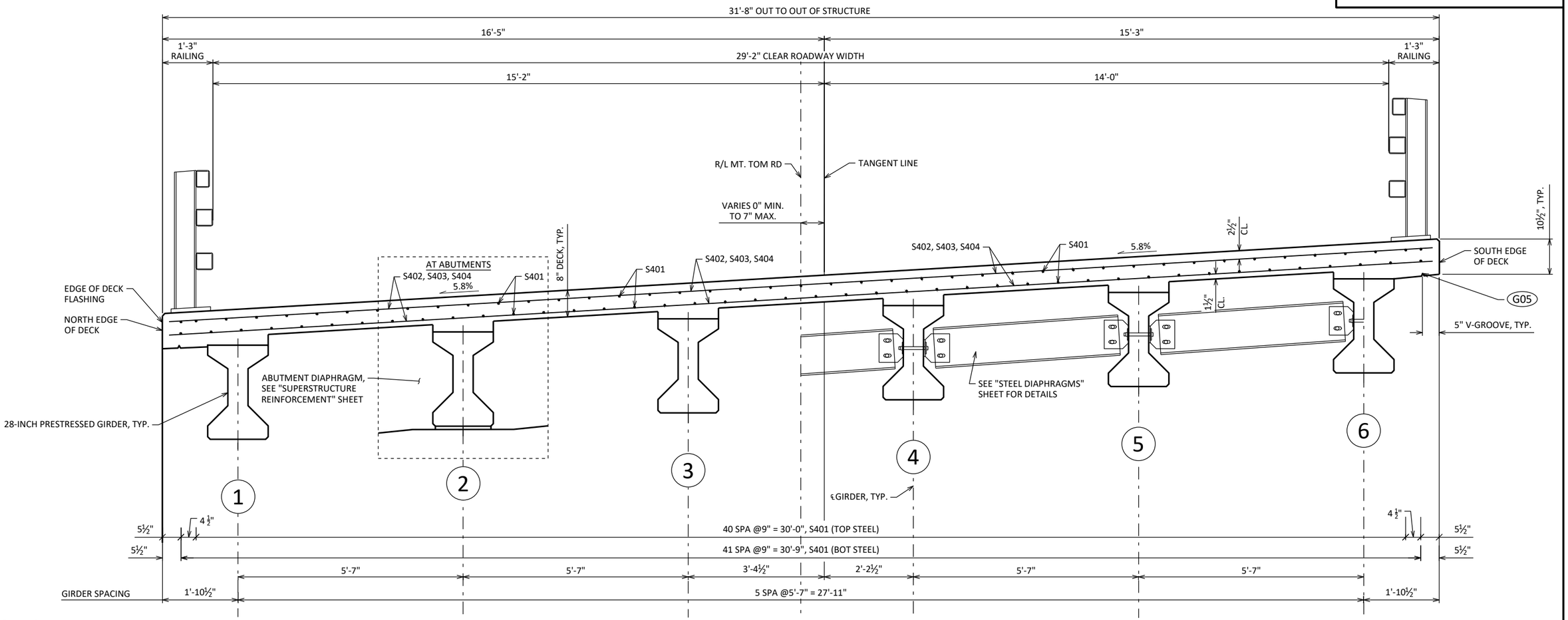
DRAWN BY RAB | PLANS CK'D DEM

SUPERSTRUCTURE PLAN

SHEET 10 OF 13

STATE PROJECT NUMBER

3834-05-71



CROSS SECTION THRU ROADWAY

(LOOKING EAST)

NOTES:

THE BID ITEM "FLASHING STAINLESS STEEL" SHALL INCLUDE PROVIDING AND INSTALLING THE STAINLESS STEEL FLASHING, SILICONE CAULK AND $\frac{3}{16}$" CONCRETE SCREWS.

FLASHING TO BE INSTALLED AFTER PROTECTIVE SURFACE TREATMENT APPLICATION.

CONCRETE SCREWS SHALL BE 410 STAINLESS STEEL.

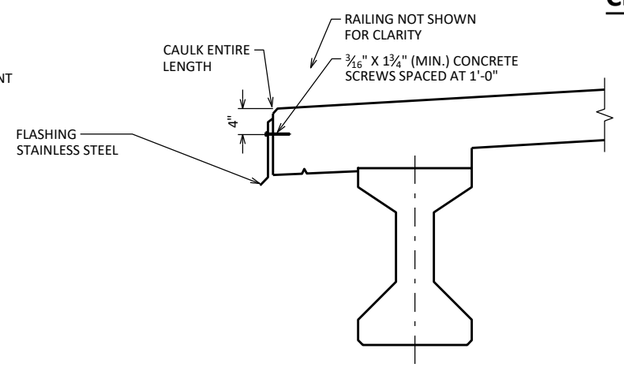
EXTEND FLASHING TO B.F. OF ABUTMENT DIAPHRAGM.

TOP OF FLASHING TO BEGIN APPROX. 1-INCH BELOW TOP OF DECK/SLAB SURFACE.

THE FLASHING IS TO BE A CONSTANT HEIGHT BASED ON THE THINNEST SLAB DEPTH OVER THE BRIDGE LENGTH.

PROVIDE 2" MINIMUM FLASHING OVERLAP, FASTEN WITH $\frac{3}{16}$" X 2" (MIN.) CONCRETE SCREWS.

CAULK SHALL BE NON-STAINING, GRAY NON-BITUMINOUS JOINT SEALER.



FLASHING DETAIL

LEGEND

G05	¾" V-GROOVE, EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM. V-GROOVE ARE REQUIRED.
#	INDICATES GIRDER LINE DESIGNATION

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DRAWN BY RAB | PLANS CK'D DEM

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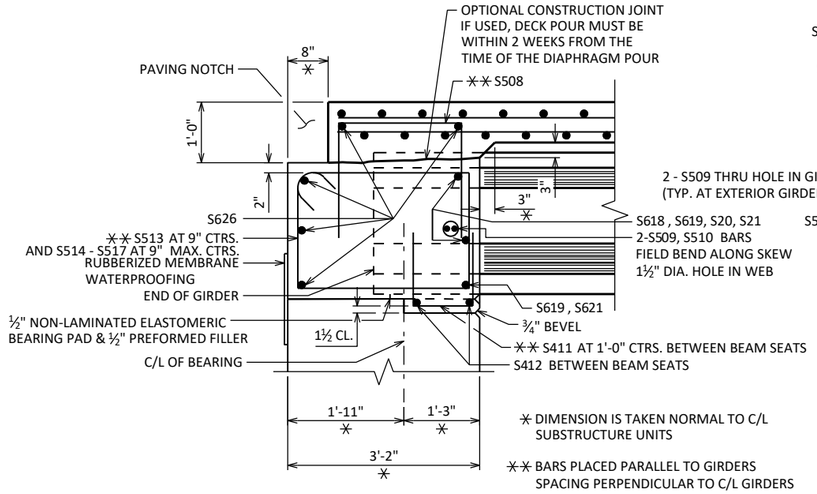
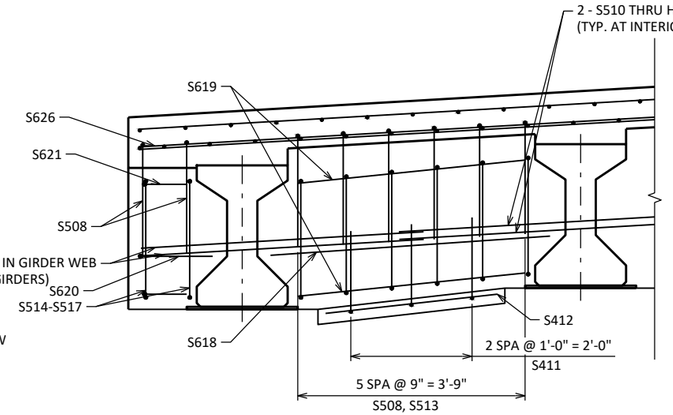


AT ABUTMENTS

PART. LONGIT. SECTION



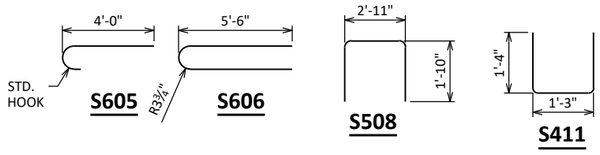
ABUTMENT DIAPHRAGM DETAILS

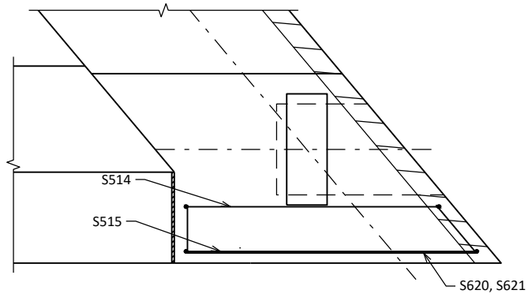
(LOOKING EAST AT EAST ABUTMENT, WEST ABUTMENT SIMILAR)

BILL OF BARS

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

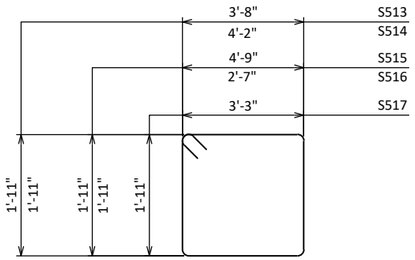
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	86	30'-5"			DECK - LONGITUDINAL
S402	X	127	31'-4"			DECK - TRANSVERSE
S403	X	88	15'-10"		X	DECK - TRANSVERSE
S404	X	88	16'-2"		X	DECK - TRANSVERSE
S605	X	16	4'-8"	X		DECK - END POSTS (LONGITUDINAL)
S606	X	40	12'-0"	X		DECK - RAIL POSTS (TRANSVERSE)
S607	X	64	6'-0"			DECK - INTERIROR POSTS (LONGITUDINAL)
S508	X	68	6'-4"	X		DIAPHRAGM - VERT. - UPPER
S509	X	8	5'-2"			DIAPHRAGM - THRU EXTERIOR GIRDER WEB
S510	X	16	6'-0"			DIAPHRAGM - THRU INTERIOR GIRDER WEB
S411	X	30	3'-9"	X		DIAPHRAGM - VERT. - BTWN BEAM SEATS
S412	X	20	3'-8"			DIAPHRAGM - BTWN BEAM SEATS
S513	X	60	11'-10"	X		DIAPHRAGM - VERT.
S514	X	2	12'-10"	X		DIAPHRAGM - VERT. - WINGS 1 & 3
S515	X	2	14'-0"	X		DIAPHRAGM - VERT. - WINGS 1 & 3
S516	X	2	9'-8"	X		DIAPHRAGM - VERT. - WINGS 2 & 4
S517	X	2	11'-0"	X		DIAPHRAGM - VERT. - WINGS 2 & 4
S618	X	10	4'-11"			DIAPHRAGM - HORIZ. - FRONT FACE
S619	X	20	6'-0"			DIAPHRAGM - HORIZ. - FRONT FACE
S620	X	2	6'-8"	X		DIAPHRAGM - HORIZ. - MID - ENDS - WINGS 1 & 3
S621	X	4	6'-0"	X		DIAPHRAGM - HORIZ. - ENDS - WINGS 1 & 3
S622	X	1	4'-7"	X		DIAPHRAGM - HORIZ. - MID - ENDS - WING 2
S623	X	2	3'-11"	X		DIAPHRAGM - HORIZ. - ENDS - WING 2
S624	X	1	4'-6"	X		DIAPHRAGM - HORIZ. - MID - ENDS - WING 4
S625	X	2	3'-10"	X		DIAPHRAGM - HORIZ. - ENDS - WING 4
S626	X	10	41'-0"			DIAPHRAGM - HORIZ. - TOP AND BACK FACE



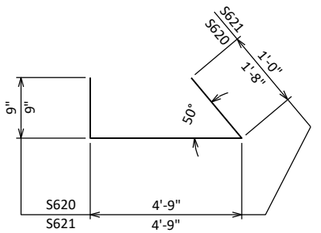


ENLARGED WING 1 PLAN

(WING 1 SHOWN, WING 3 SIMILAR)



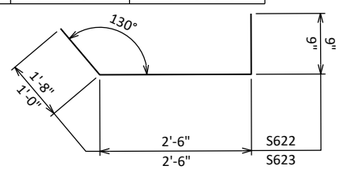
S513, S514, S515, S516, S517



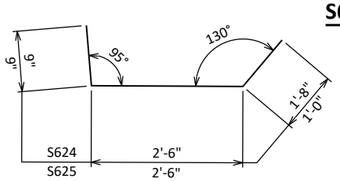
S620, S621

BAR SERIES

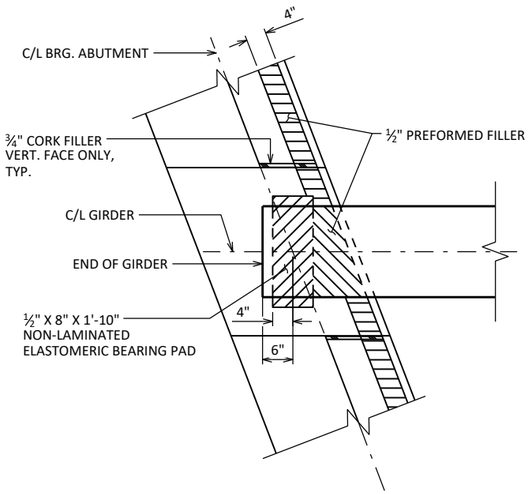
BAR MARK	NO. REQ'D.	LENGTH
S403	2 SERIES OF 44	2'-0" TO 29'-8"
S404	2 SERIES OF 44	2'-3" TO 30'-0"



S622, S623

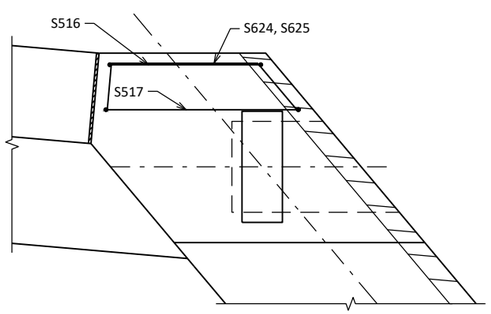


S624, S625

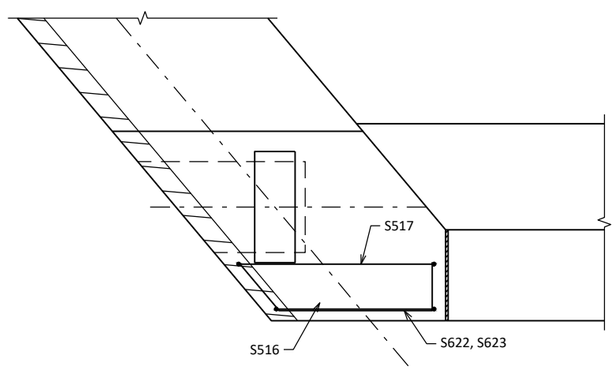


AT ABUTMENTS

BEARING PAD DETAIL



ENLARGED WING 2 PLAN



ENLARGED WING 4 PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-164

DRAWN BY RAB | PLANS CK'D DEM

SUPERSTRUCTURE REINFORCEMENT

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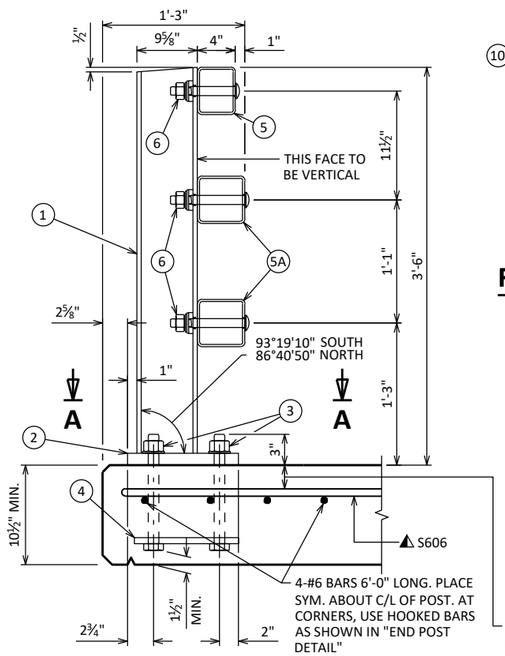
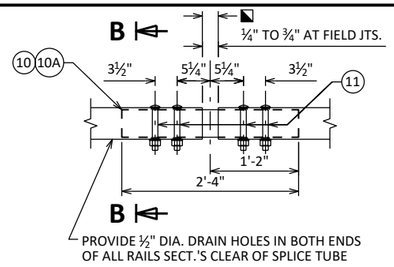
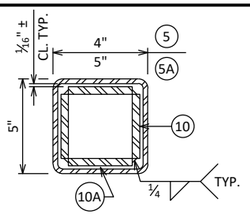


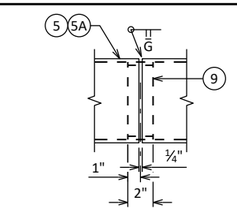
SECTION THRU RAILING ON DECK



FIELD ERECTION JOINT DETAIL

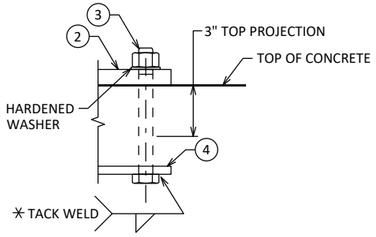


SECTION B-B

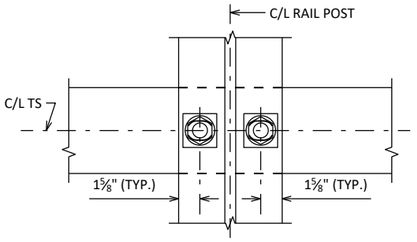


SHOP RAIL SPLICE DETAIL

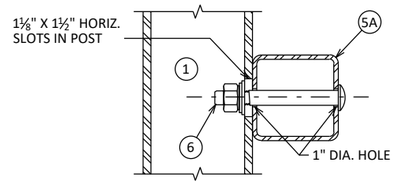
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



ANCHOR BOLTS



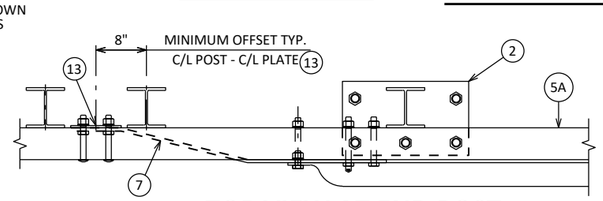
SECTION THRU POST WEB



SECTION THRU RAIL

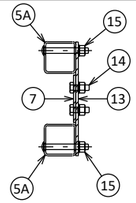
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

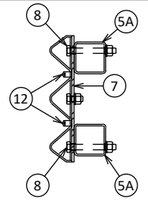


TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT



SECTION C-C



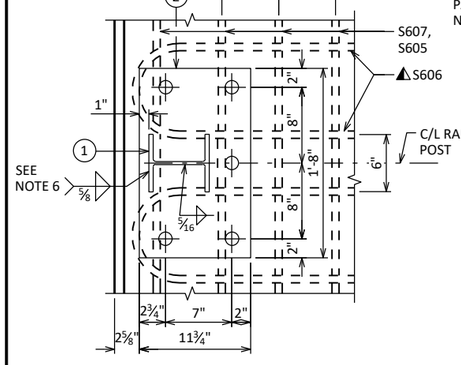
SECTION D-D

LEGEND

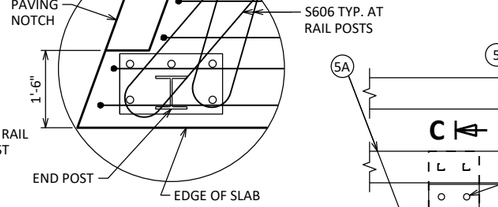
1. W6 X 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1¼" X 11¾" X 1'-8" WITH 1⁷⁄₁₆" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
3. ASTM A449 - 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 1³⁄₁₆" 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 AT FIELD JOINTS AND ¹⁵⁄₁₆" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.
12. ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
13. ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
14. ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
15. 1" DIA. HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

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

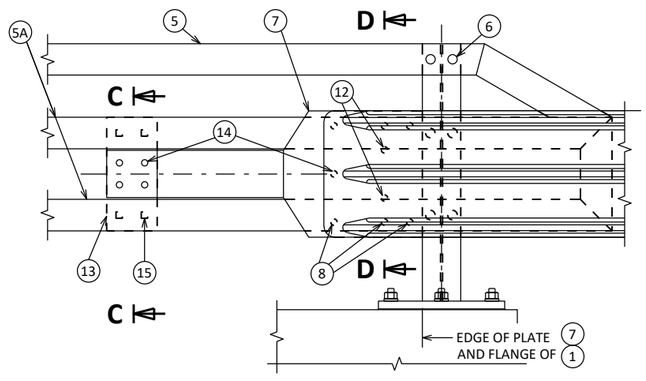


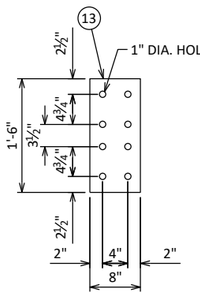
SECTION A-A



END POST DETAIL

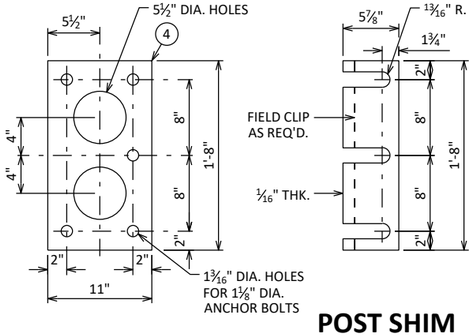
REINFORCEMENT AT CORNERS





ANCHOR PLATE

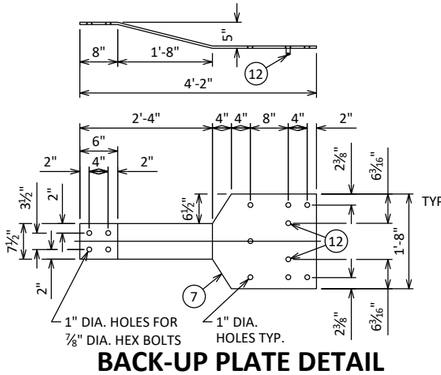
AT BEAM GUARD ATTACHMENT



ANCHOR PLATE

AT RAIL TO DECK CONNECTION

POST SHIM DETAIL

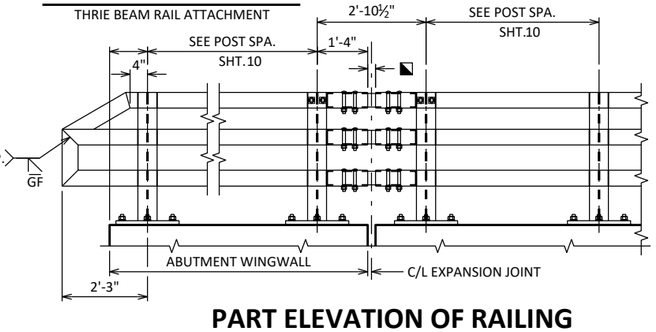


BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT

DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



PART ELEVATION OF RAILING

▲ TIE TO TOP MAT OF STEEL.

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

◥ RDWY. OPENING OR 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-51-164

DRAWN BY RAB | PLANS CK'D DEM

TUBULAR STEEL RAILING TYPE 'M'

SHEET 13 OF 13

59

8

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DIVISION 1 - MT TOM RD CL

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	EXPANDED FILL 1.00	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1		NOTE 4
1+00.31	100.31	0.00	60.99	8.91	0.00	0	0	0	0	0	0
1+87.50	187.50	87.19	57.35	9.49	0.00	191	30	0	191	0	161
2+00.00	200.00	12.50	50.35	9.60	0.00	25	4	0	216	0	182
2+27.00	227.00	27.00	23.03	9.77	9.77	37	10	5	253	5	204
2+74.32	274.32	47.32	11.98	9.98	143.02	31	17	134	284	139	84
2+76.48	276.48	2.16	11.98	9.99	146.92	1	1	12	285	151	72
3+00.00	300.00	23.52	12.18	10.15	171.38	11	9	139	296	290	-65
3+56.00	356.00	56.00	17.02	10.13	60.55	30	21	241	326	531	-297
3+73.80	373.80	17.80	20.29	9.86	25.38	12	7	28	338	559	-320
3+74.38	374.38	0.58	0.01	0.01	0.01	0	0	0	338	559	-320
4+60.52	460.52	86.14	0.02	0.01	0.00	0	0	0	338	559	-320
4+61.26	461.26	0.74	45.86	10.16	1.39	1	0	0	339	559	-319
4+62.50	462.50	1.24	48.42	10.02	1.72	2	0	0	341	559	-317
4+75.00	475.00	12.50	32.56	9.69	17.48	19	5	4	360	563	-307
5+00.00	500.00	25.00	44.34	9.55	5.31	36	9	11	396	574	-291
5+57.21	557.21	57.21	54.69	9.79	6.41	105	20	12	501	586	-218
5+58.82	558.82	1.61	53.97	9.80	6.36	3	1	0	504	586	-216
5+94.15	594.15	35.33	51.29	9.79	6.33	69	13	8	573	594	-168
6+24.98	624.98	30.83	54.71	10.04	0.18	61	11	4	634	598	-122
6+37.47	637.47	12.49	56.17	9.19	1.45	26	4	0	660	598	-100

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

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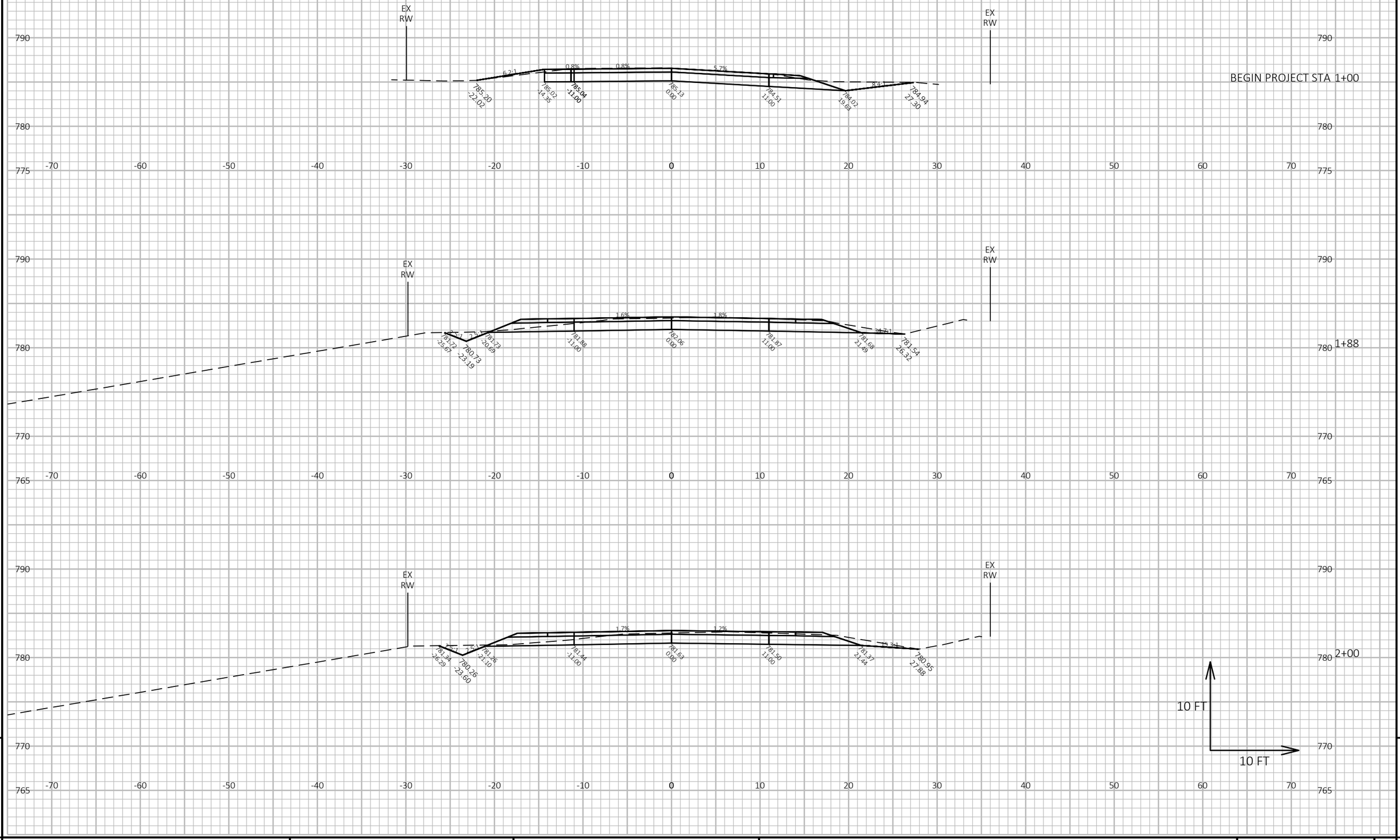
PROJECT NO: 3834-05-71 | HWY: MT TOM RD | COUNTY: RACINE | EARTHWORK DATA | SHEET 60 | E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\090101-EW.DWG
LAYOUT NAME - 01

PLOT DATE : 11/14/2024 12:32 PM PLOT BY : RYAN BODENDORFER PLOT NAME : PLOT SCALE : 1" = 1'

WISDOT/CADDS SHEET 49



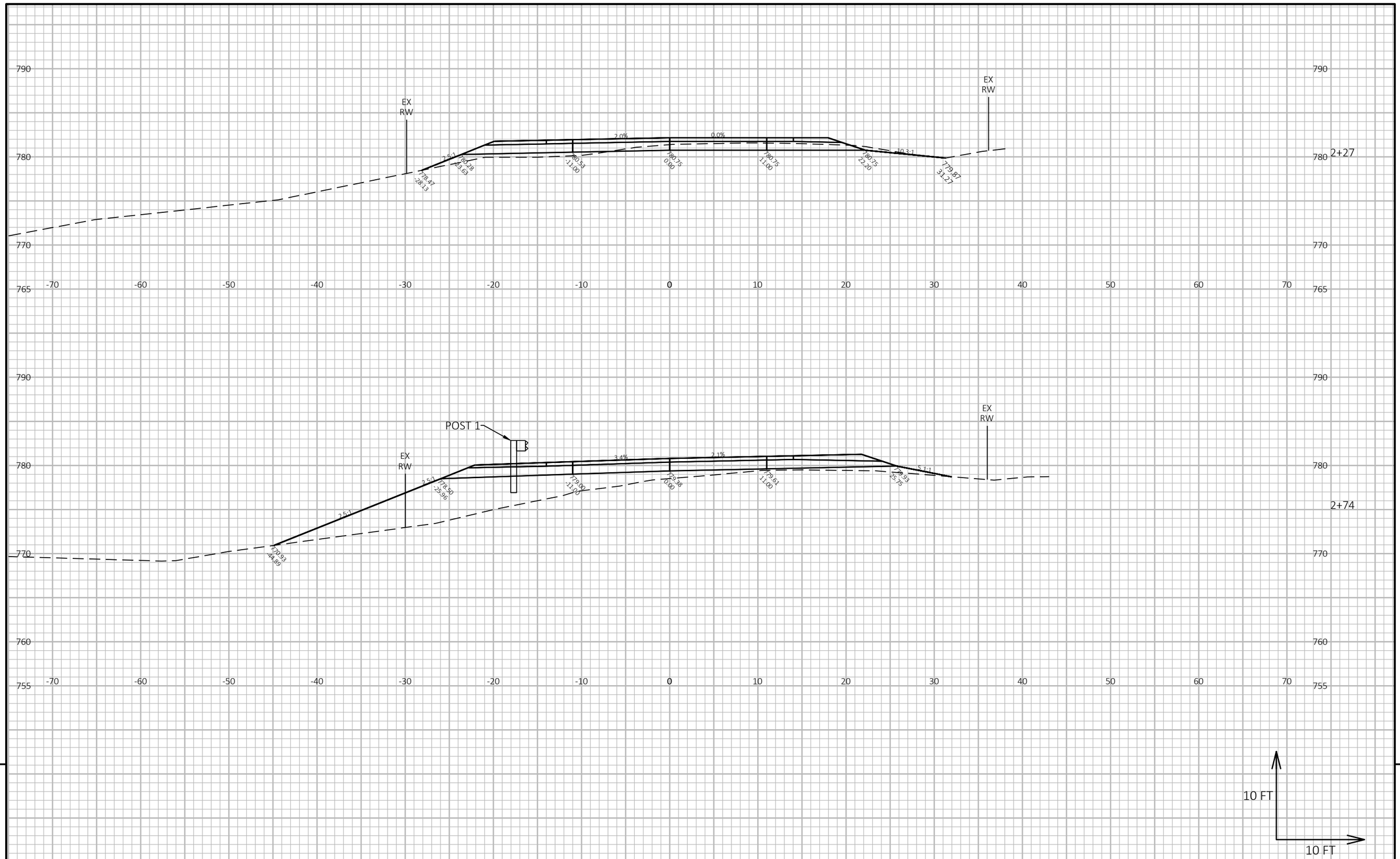
PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	CROSS SECTIONS: 09 - CROSS SECTIONS	SHEET 61 E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\090201-XS.DWG
LAYOUT NAME - 01

PLOT DATE : 11/14/2024 12:33 PM PLOT BY : RYAN BODENDORFER PLOT NAME :

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

WISDOT/CADDS SHEET 49



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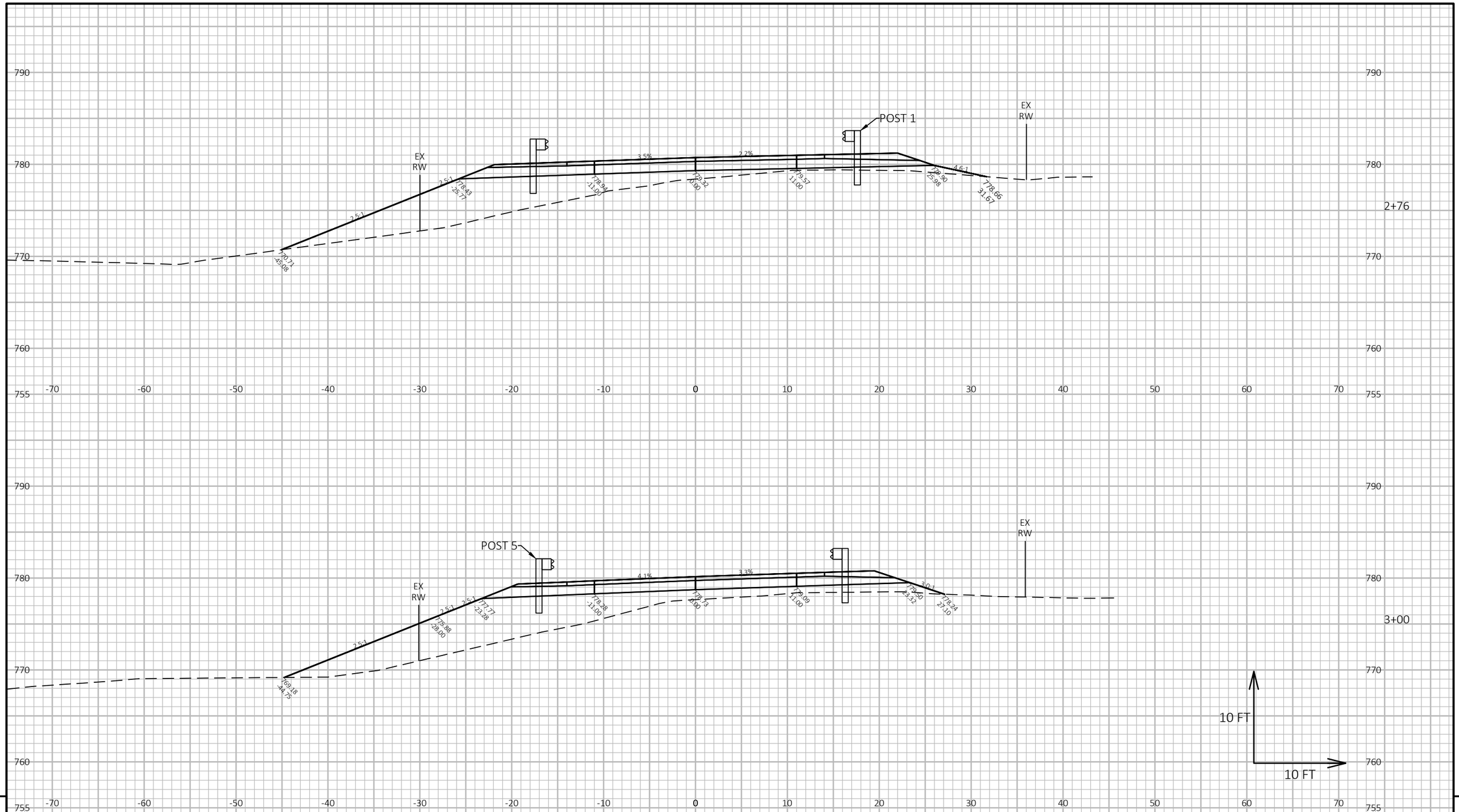
PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	CROSS SECTIONS: 09 - CROSS SECTIONS	SHEET 62	E

9

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\090201-XS.DWG
LAYOUT NAME - 02

PLOT DATE : 11/14/2024 12:33 PM PLOT BY : RYAN BODENDORFER PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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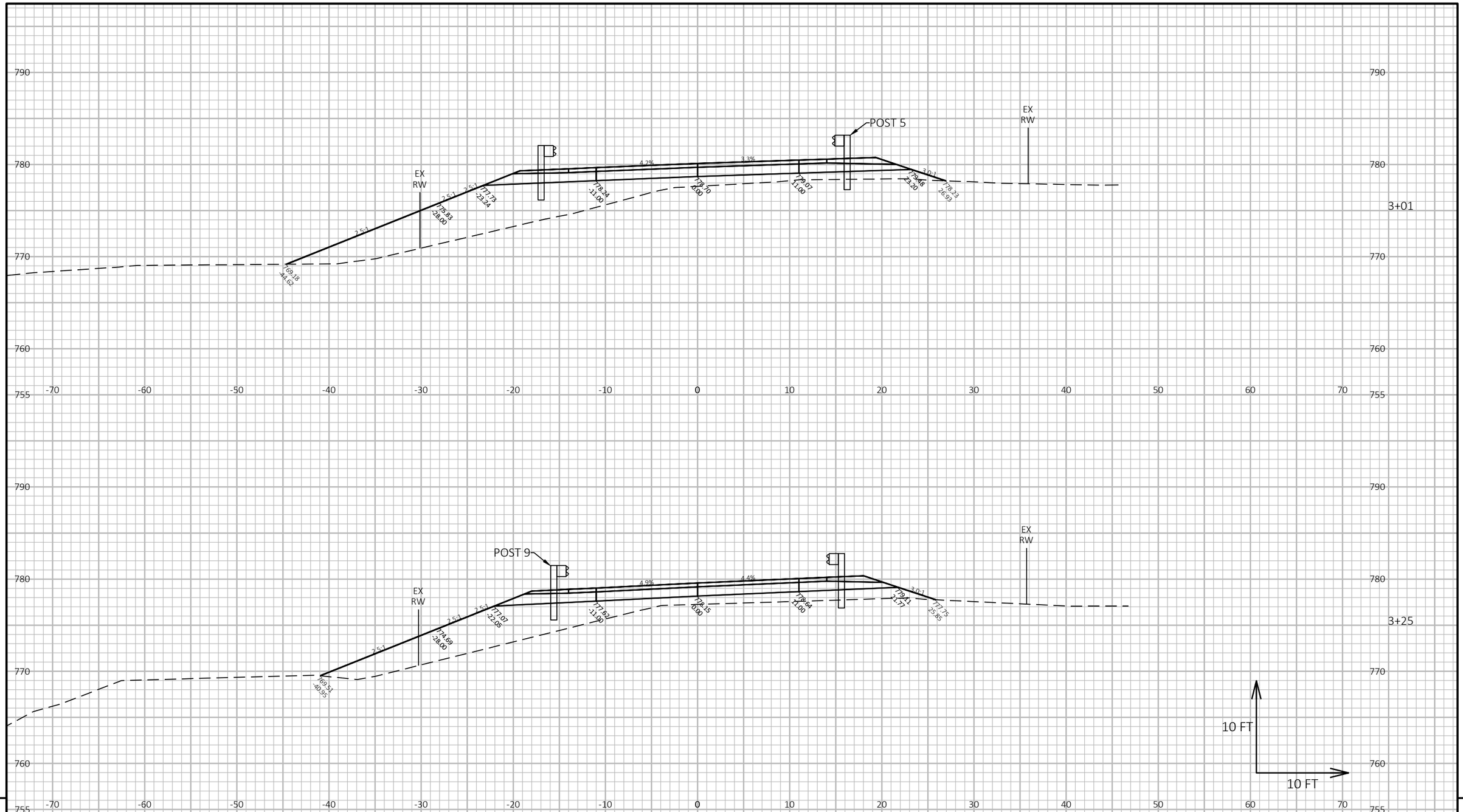
PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	CROSS SECTIONS: 09 - CROSS SECTIONS	SHEET 63	E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\090201-XS.DWG
LAYOUT NAME - 03

PLOT DATE : 11/14/2024 12:33 PM PLOT BY : RYAN BODENDORFER PLOT NAME :

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

WISDOT/CADDS SHEET 49

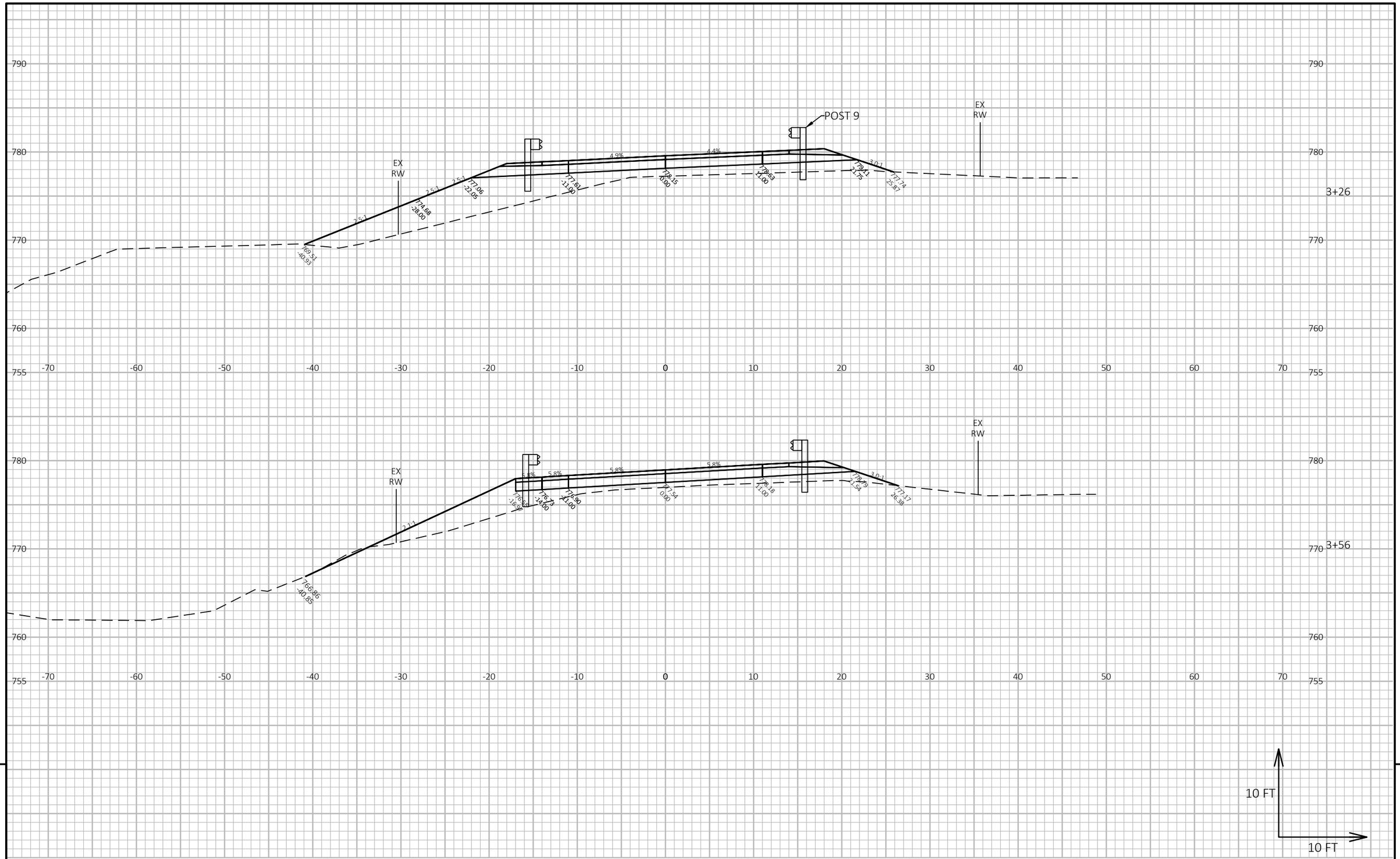


PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	CROSS SECTIONS: 09 - CROSS SECTIONS	SHEET 64 E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\090201-XS.DWG
LAYOUT NAME - 04

PLOT DATE : 11/14/2024 12:33 PM PLOT BY : RYAN BODENDORFER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	CROSS SECTIONS: 09 - CROSS SECTIONS	SHEET 65 E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\090201-XS.DWG
LAYOUT NAME - 05

PLOT DATE : 11/14/2024 12:33 PM PLOT BY : RYAN BODENDORFER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

STRUCTURE B-51-0164

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PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	CROSS SECTIONS: 09 - CROSS SECTIONS	SHEET 66	E

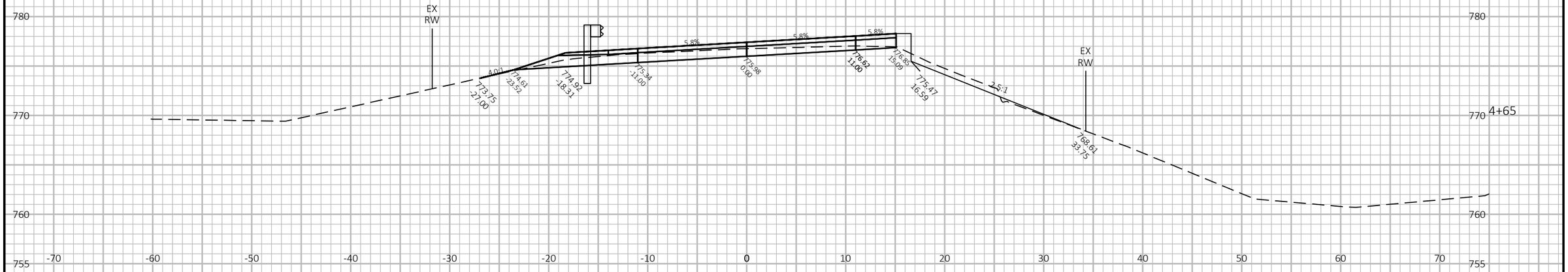
FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\090201-XS.DWG
LAYOUT NAME - 06

PLOT DATE : 11/14/2024 12:33 PM PLOT BY : RYAN BODENDORFER PLOT NAME :

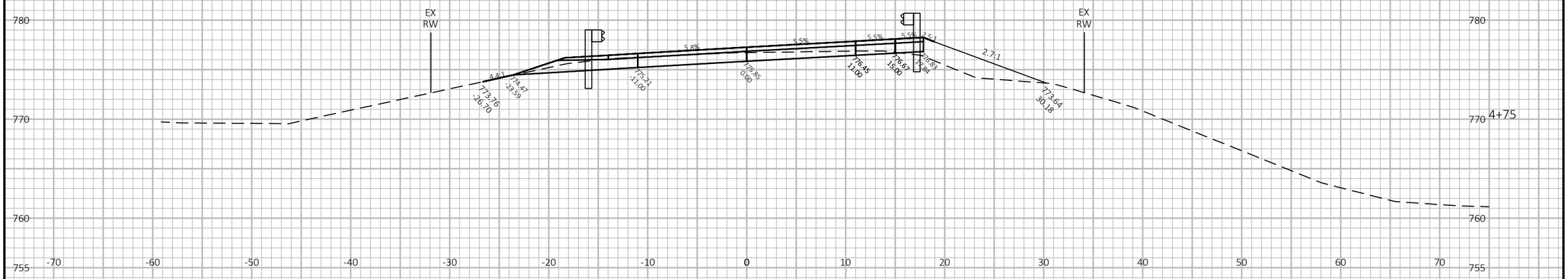
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

STRUCTURE B-51-0164



STRUCTURE B-51-0164



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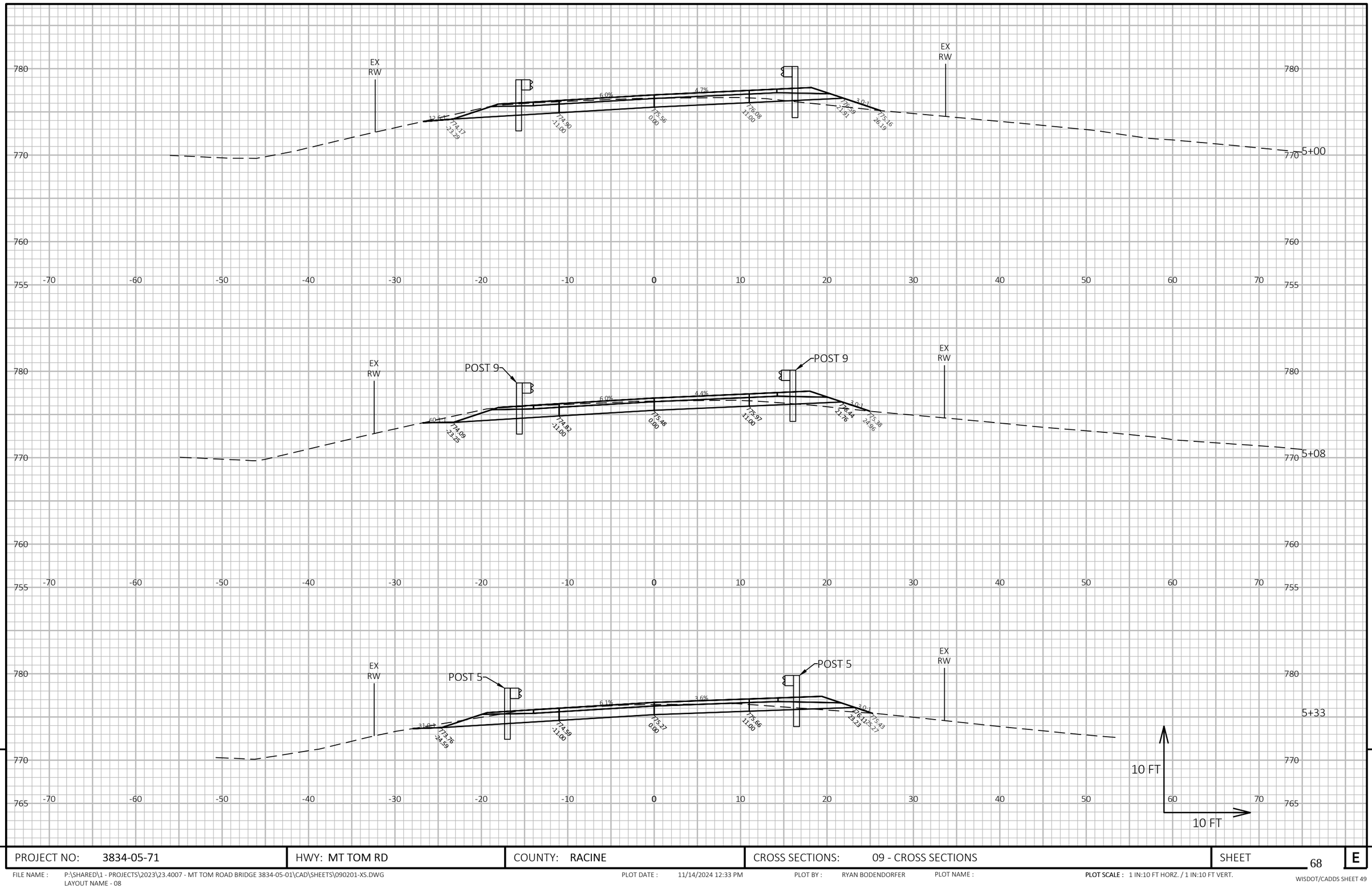
PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	CROSS SECTIONS: 09 - CROSS SECTIONS	SHEET 67	E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\090201-XS.DWG
LAYOUT NAME - 07

PLOT DATE : 11/14/2024 12:33 PM PLOT BY : RYAN BODENDORFER PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

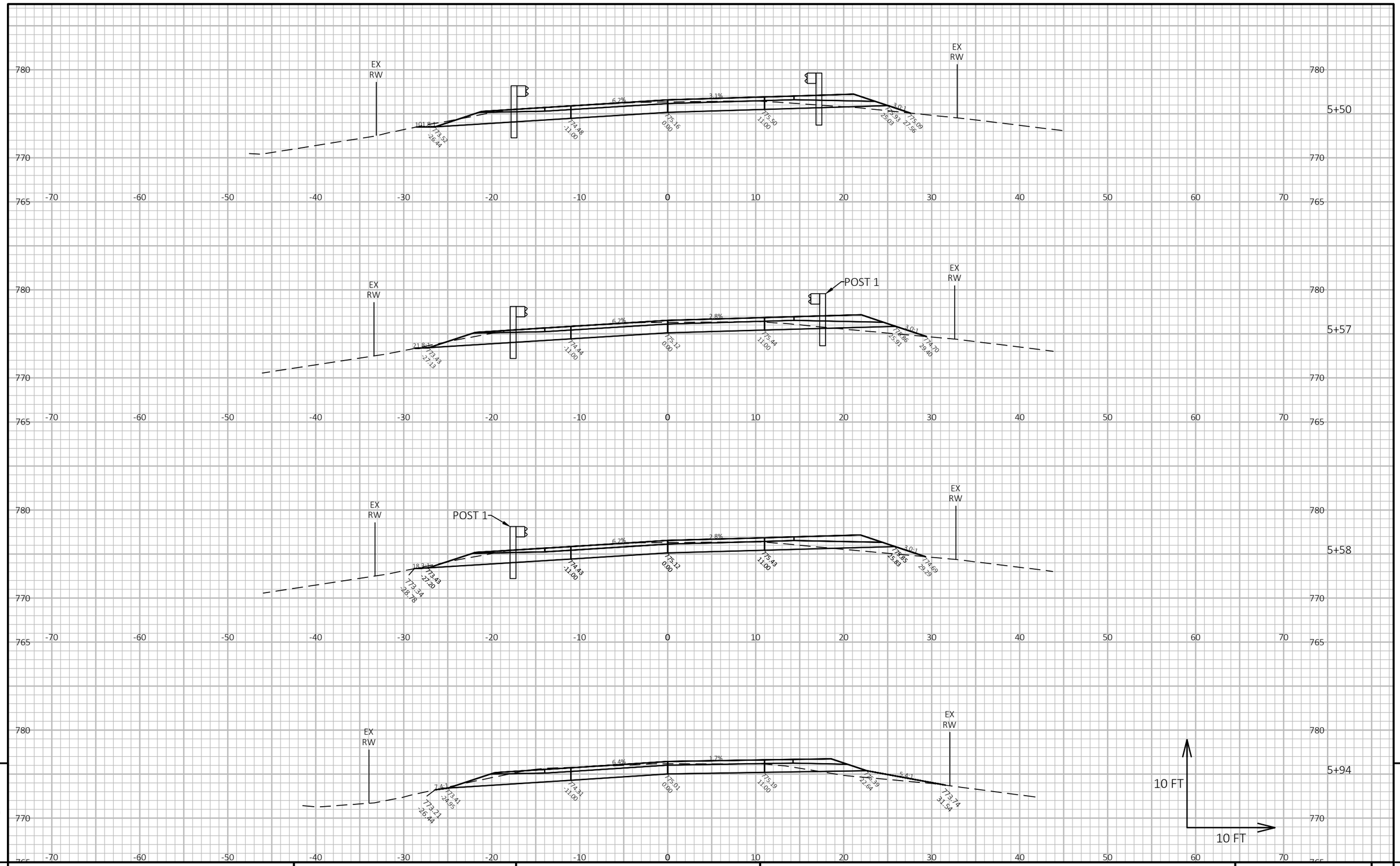


PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	CROSS SECTIONS: 09 - CROSS SECTIONS	SHEET 68	E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\090201-XS.DWG
LAYOUT NAME - 08

PLOT DATE : 11/14/2024 12:33 PM PLOT BY : RYAN BODENDORFER PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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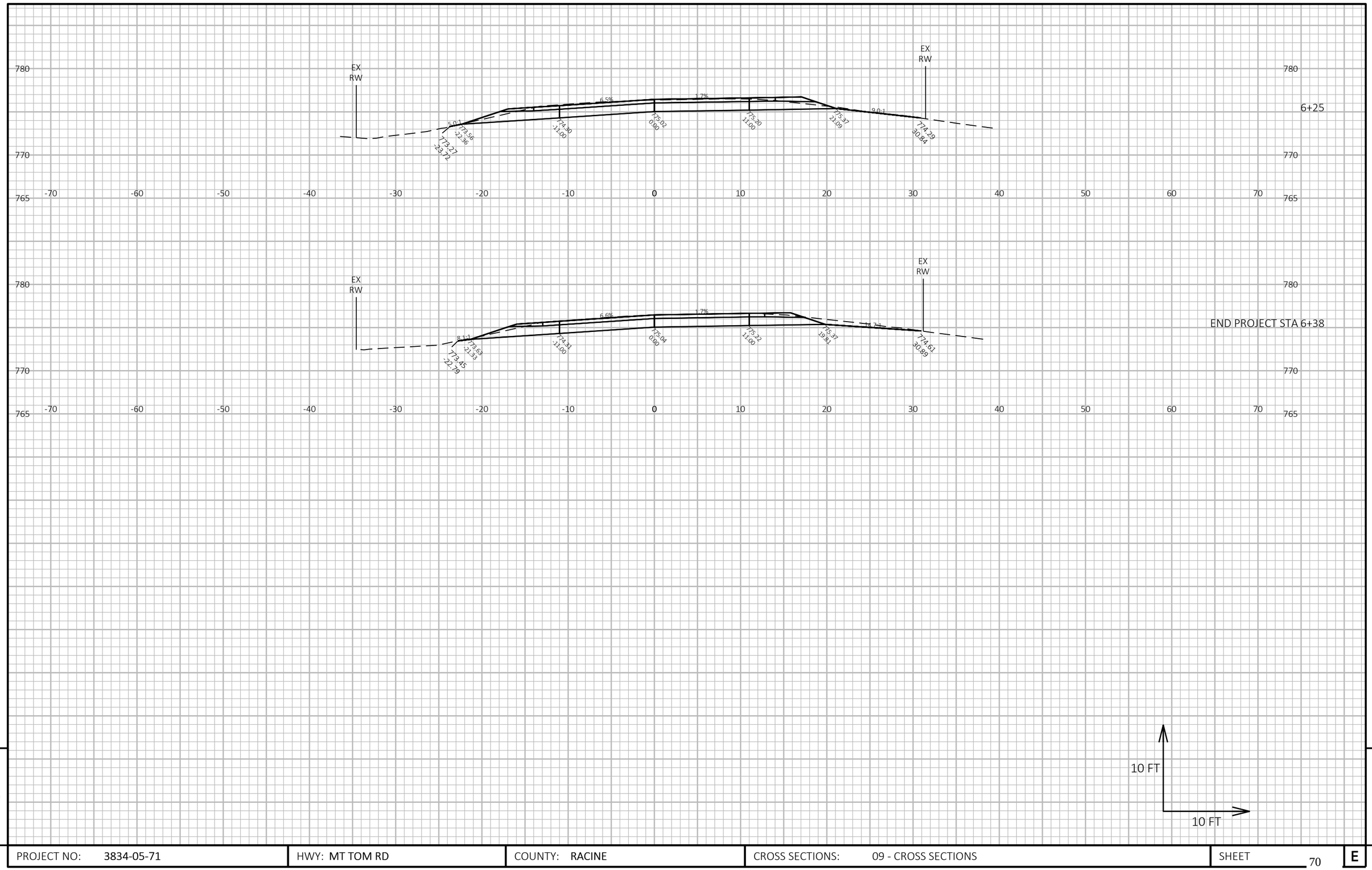
PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	CROSS SECTIONS: 09 - CROSS SECTIONS	SHEET 69	E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\090201-XS.DWG
LAYOUT NAME - 09

PLOT DATE : 11/14/2024 12:34 PM PLOT BY : RYAN BODENDORFER PLOT NAME :

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



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PROJECT NO: 3834-05-71	HWY: MT TOM RD	COUNTY: RACINE	CROSS SECTIONS: 09 - CROSS SECTIONS	SHEET 70	E

FILE NAME : P:\SHARED\1 - PROJECTS\2023\23.4007 - MT TOM ROAD BRIDGE 3834-05-01\CAD\SHEETS\090201-XS.DWG
LAYOUT NAME - 10

PLOT DATE : 11/14/2024 12:34 PM PLOT BY : RYAN BODENDORFER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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