GRE

FEBRUARY 2019

PROJECT ID: 4204-07-71

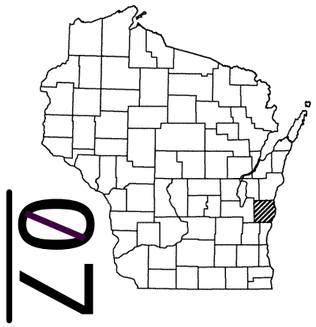
WITH: N/A

COUNTY: SHEBOYGAN

ORDER OF SHEETS

TOTAL SHEETS = 70

NO CHANGE



DESIGN DESIGNATION

A.A.D.T.	(2019)	= 1000
A.A.D.T.	(2039)	= 1300
D.H.V.	(2039)	= 111
D.D.		= 60/40
T.		= 3.8%
DESIGN SPEED		= 25 MPH
ESALS		= 110,000

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- 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

Subcontractor List
Arbor Green
Crowley Construction
Hard Rock Sawing
Moore Surveying
Northeast Asphalt
Vinton Construction
Warning Lites of Appleton

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T PLYMOUTH, WOODLAND RD

MULLET RIVER BRIDGE

LOC STR

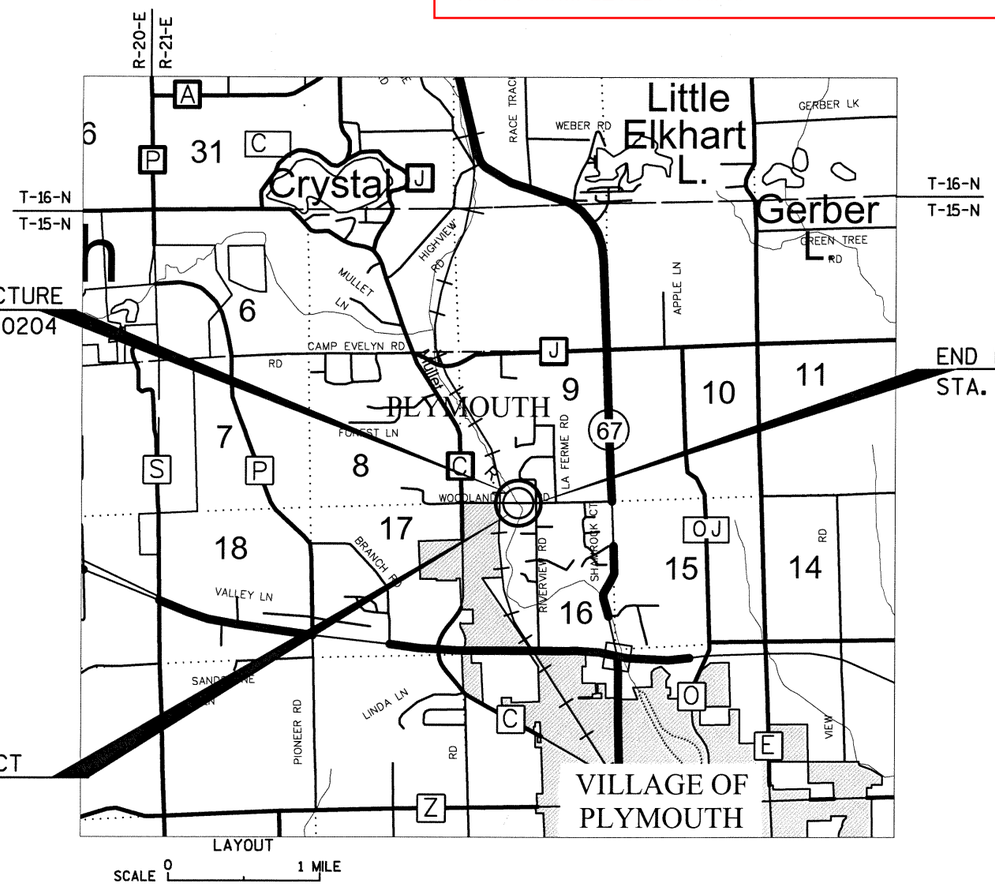
SHEBOYGAN COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4204-07-71	WISC 2019121	1

STATE PROJECT NUMBER
4204-07-71

AS-BUILT PLAN

SUPERVISOR: Dan Segerstrom
PROJECT MANAGER: Paul Zoellner
PROJECT LEADER: Cody Schulting
CONTRACTOR: Phiefer Brothers
WORK STARTED: 7/19/19
WORK COMPLETED: 9/13/19



TOTAL NET LENGTH OF CENTERLINE = 0.065 MI.

"Coordinates on this plan are referenced to the Wisconsin County Coordinate System (WCCS), Sheboygan County."

"Elevations shown on the plan are referenced to the North American Vertical Datum of 1988 (NAVD 88)."

ACCEPTED FOR COUNTY of SHEBOYGAN

9/17/2018 (Date) (Transportation Director)

ORIGINAL PLANS PREPARED BY

JEWELL associates engineers, inc.
Engineers - Architects - Surveyors

WISCONSIN ELLERY A. SCHAFFER E-41742-6 SPRING GREEN, WI PROFESSIONAL ENGINEER

9/12/18 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor: JEWELL ASSOCIATES ENGINEERS, INC.
Designer: JEWELL ASSOCIATES ENGINEERS, INC.
Management Consultant: JT ENGINEERING INC.

APPROVED FOR THE DEPARTMENT
DATE: 9/20/18
MANAGEMENT CONSULTANT SIGNATURE

E

LIST OF STANDARD ABBREVIATIONS

ABUT	Abutment	INV	Invert	SALV	Salvaged
AC	Acre	IP	Iron Pipe or Pin	SAN S	Sanitary Sewer
AGG	Aggregate	IRS	Iron Rod Set	SEC	Section
AH	Ahead	JT	Joint	SHLDR	Shoulder
<	Angle	JCT	Junction	SHR	Shrinkage
ASPH	Asphaltic	LHF	Left–Hand Forward	SW	Sidewalk
AVG	Average	L	Length of Curve	S	South
ADT	Average Daily Traffic	LIN FT or LF	Linear Foot	SQ	Square
BAD	Base Aggregate Dense	LC	Long Chord of Curve	SF or SQ FT	Square Feet
BK	Back	MH	Manhole	SY or SQ YD	Square Yard
BF	Back Face	MB	Mailbox	STD	Standard
BM	Bench Mark	ML or M/L	Match Line	SDD	Standard Detail Drawings
BR	Bridge	N	North	STH	State Trunk Highways
C or C/L	Center Line	Y	North Grid Coordinate	STA	Station
CC	Center to Center	O.A.L.	Overall Length	SS	Storm Sewer
CTH	County Trunk Highway	OD	Outside Diameter	SG	Subgrade
CR	Creek	PLE	Permanent Limited Easement	SE	Superelevation
CR	Crushed			SL or S/L	Survey Line
CY or CU YD	Cubic Yard	PT	Point	SV	Septic Vent
CP	Culvert Pipe	PC	Point of Curvature	T	Tangent
C & G	Curb and Gutter	PI	Point of Intersection	TEL	Telephone
D	Degree of Curve	PRC	Point of Reverse Curvature	TEMP	Temporary
DHV	Design Hour Volume	PT	Point of Tangency	TI	Temporary Interest
DIA	Diameter	POC	Point On Curve	TLE	Temporary Limited Easement
E	East	POT	Point on Tangent		
X	East Grid Coordinate	PVC	Polyvinyl Chloride	t	Ton
ELEC	Electric (al)	PCC	Portland Cement Concrete	T or TN	Town
EL or ELEV	Elevation	LB	Pound	TRANS	Transition
ESALS	Equivalent Single Axle Loads	PSI	Pounds Per Square Inch	TL or T/L	Transit Line
		PE	Private Entrance	T	Trucks (percent of)
EBS	Excavation Below Subgrade	R	Radius	TYP	Typical
ESTR	Existing Sign to Remain	RR	Railroad	UNCL	Unclassified
FF	Face to Face	R	Range	UG	Underground Cable
FE	Field Entrance	RL or R/L	Reference Line	USH	United States Highway
F	Fill	RP	Reference Point	VAR	Variable
FG	Finished Grade	RCCP	Reinforced Concrete Culvert Pipe	V	Velocity or Design Speed
FL or F/L	Flow Line			VERT	Vertical
FT	Foot	REQ'D	Required	VC	Vertical Curve
FTG	Footing	RES	Residence or Residential	VOL	Volume
GN	Grid North	RW	Retaining Wall	WM	Water Main
HT	Height	RT	Right	WV	Water Valve
CWT	Hundredweight	RHF	Right–Hand Forward	W	West
HYD	Hydrant	R/W	Right–of–Way	WB	Westbound
INL	Inlet	R	River	YD	Yard
ID	Inside Diameter	RD	Road		
		RDWY	Roadway		

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

TOTAL PROJECT AREA= 0.70 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.60 ACRES

GENERAL NOTES

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

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

DISTURBED AREAS SHOWN WITHIN THE RIGHT–OF–WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEED MIX NO. 20), AND EROSION MATTED AS DIRECTED BY THE ENGINEER (SEE TYPICAL FINISHED SECTIONS). AVOID PLACING FERTILIZER TYPE B NEAR WET AREAS.

SILT FENCE, TURBIDITY BARRIER, AND TEMPORARY DITCH CHECKS SHALL BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER IN THE FIELD. SILT FENCE AND TURBIDITY BARRIER SHALL BE PLACED PRIOR TO CONSTRUCTION AND IN PLACE PRIOR TO STRUCTURE REMOVAL.

FILL EXPANSION IS VARIABLE AND IS ESTIMATED AT 25%.

ADJUST DITCH GRADING AS NECESSARY TO FIT FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER.

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

THE LOCATION OF ALL PERMANENT SIGNING SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD PRIOR TO PLACEMENT.

WETLANDS ARE PRESENT IN THE PROJECT LIMITS. THE CONTRACTOR SHALL NOT OPERATE EQUIPMENT BEYOND THE SLOPE INTERCEPTS FROM STA. 10+11 – STA. 13+35, RT. AND STA. 9+75 – STA. 13+27, LT. AVOID STOCKPILING OF MATERIALS IN WETLANDS.

ASPHALTIC SURFACE QUANTITIES WERE CALCULATED USING 115 LB/SY/IN. 4–INCHES OF ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 1 3/4–INCH UPPER LAYER AND A 2 1/4–INCH LOWER LAYER.

CONTACTS

DNR LIAISON

STATE OF WISCONSIN
DNR NORTHEAST REGION HQ
2984 SHAWANO AVE
GREEN BAY, WI 54313
ATTN: JAY SCHIEFELBEIN
PHONE: (920) 360-3784
EMAIL: jeremiah.schiefelbein@wi.gov

UTILITIES

ELECTRICITY

PLYMOUTH UTILITIES
ATTN: JIM PETERSON
900 CTH PP
P.O. BOX 277
PLYMOUTH, WI 53073
OFFICE: (920) 893-1471
CELL: (920) 946-1953
EMAIL: jpeterson@plymouthutilities.com

COMMUNICATION

FRONTIER COMMUNICATIONS
ATTN: DANA GILLETT
100 COMMUNICATIONS DRIVE
SUN PRAIRIE, WI 53590
OFFICE: (608) 837-1605
CELL: (608) 512-2389
EMAIL: dana.gillett@ftr.com

CHARTER COMMUNICATIONS
ATTN: PETE KRUZELA
1320 N. MARTIN LUTHER KING JR. DRIVE
MILWAUKEE, WI 53212
OFFICE: (414) 908-1339
CELL: (414) 688-5376
EMAIL: pete.kruzela@charter.com

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

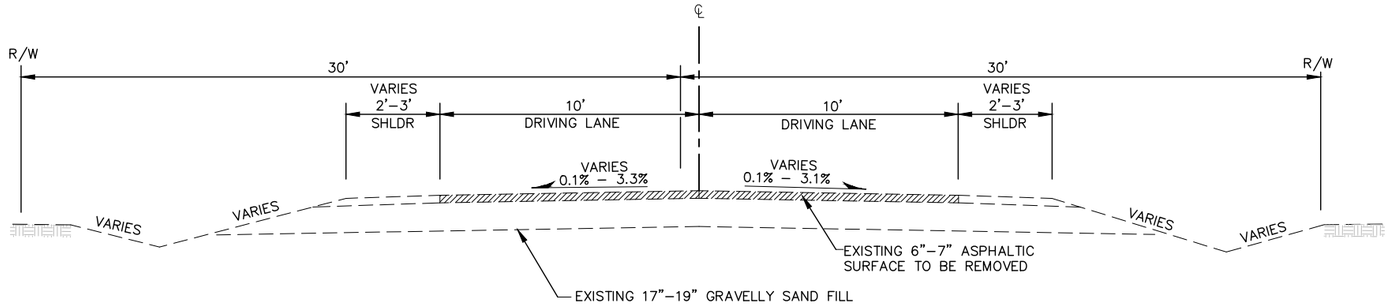
* DENOTES UTILITY IS NOT A MEMBER OF DIGGERS HOTLINE

2

PROJECT NO: 4204-07-71	HWY: WOODLAND ROAD	COUNTY: SHEBOYGAN	GENERAL NOTES, STANDARD ABBREVIATIONS, CONTACTS, UTILITIES, AND HSG CHART	SHEET 2	E

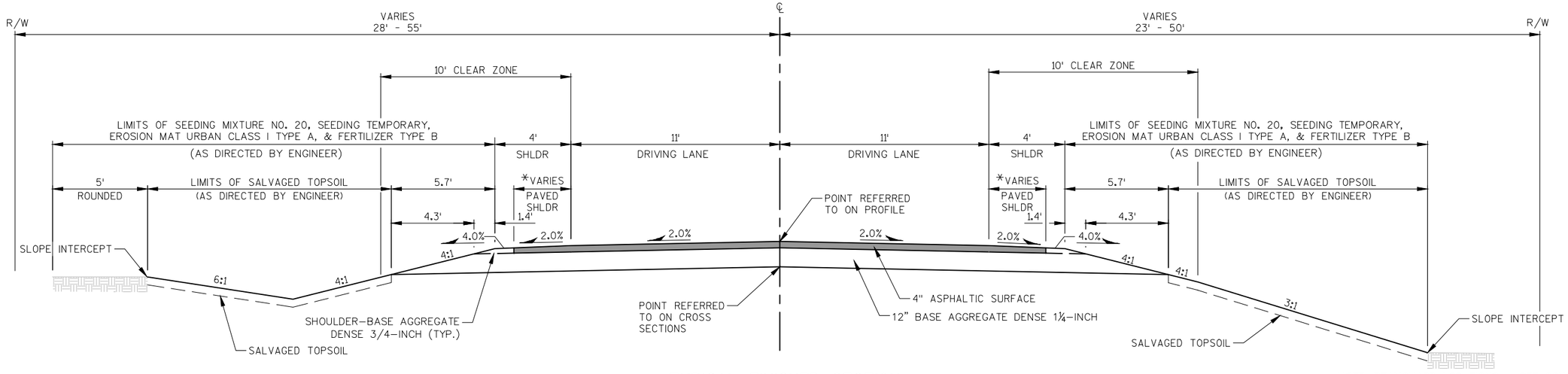
FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\SHEETSPLAN\DETAILS\GENERAL NOTES.DWG
LAYOUT : LAYOUT1
PLOT DATE : 11/28/2018
PLOT TIME : 8:24:12 AM
PLOT BY : STEPHANIE POTTER
PLOT SCALE : 1" = 1'

2



TYPICAL EXISTING SECTION

WOODLAND ROAD
(STA. 9+90 – STA. 11+35)
(STA. 11+62 – STA. 13+35)



CUT

TYPICAL FINISHED SECTION

WOODLAND ROAD
(STA. 9+90 – STA. 11+25)
(STA. 11+71 – STA. 13+35)

FILL

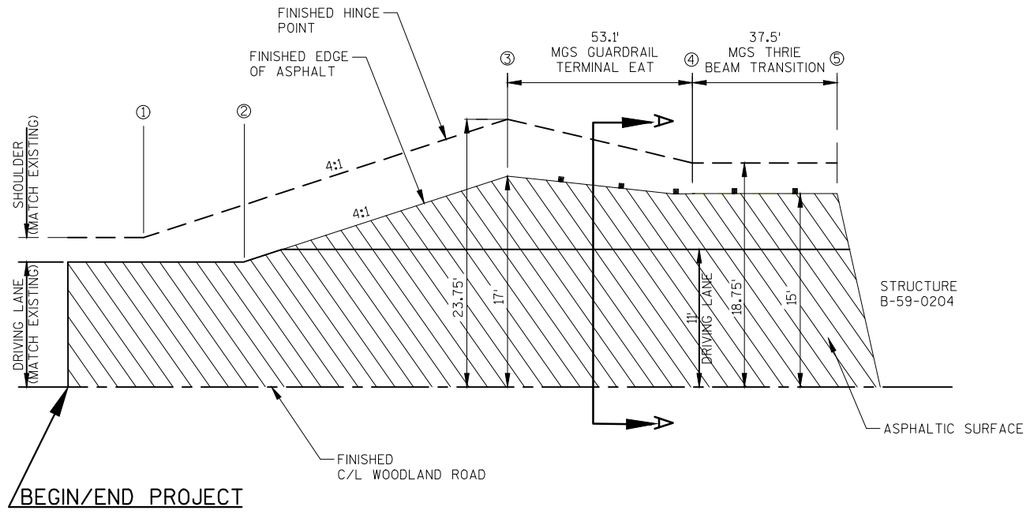
NOTE: BEAMGUARD LOCATIONS – SEE CONSTRUCTION DETAILS FOR TYPICAL FINISHED SECTION WITH GUARDRAIL (INCLUDING LOCATIONS).

* PAVED SHOULDER – 3' TYPICAL. SEE CONSTRUCTION DETAILS FOR FURTHER INFORMATION.

EXCAVATION MARSH – SEE CONSTRUCTION DETAILS FOR FURTHER INFORMATION.

PROJECT NO: 4204-07-71	HWY: WOODLAND ROAD	COUNTY: SHEBOYGAN	TYPICAL EXISTING SECTION & TYPICAL FINISHED SECTION	SHEET 3	E

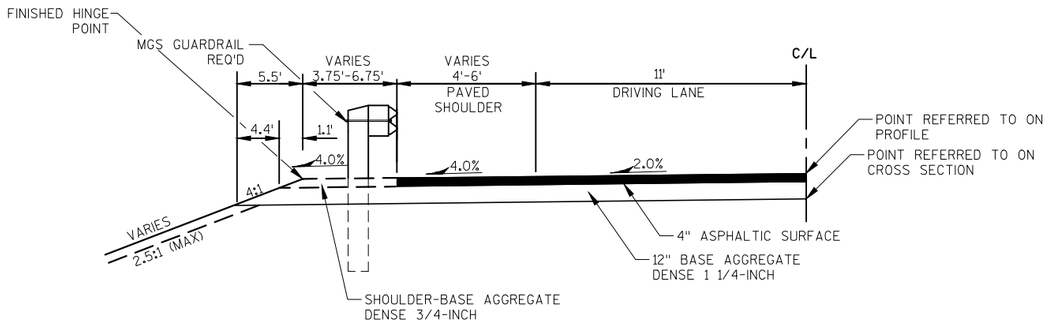
FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\SHEETSPLAN\TYPICALS\PROPOSED TYPICAL.DWG
PLOT DATE : 9/11/2018 10:52:32 AM
PLOT BY : JULIA ZEHNER
PLOT SCALE : 1" = 1'
LAYOUT : TYP.



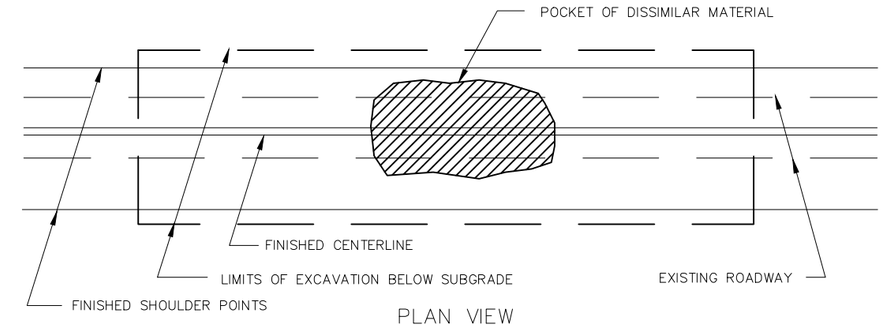
BEAMGUARD LAYOUT TABLE

QUADRANT	LOCATION	STATION ①	②	③	④	⑤
NORTHWEST	MAINLINE, LT.	9+75	9+90	10+16	10+69	11+07
NORTHEAST	MAINLINE, LT.	13+10	12+93	12+69	12+16	11+78

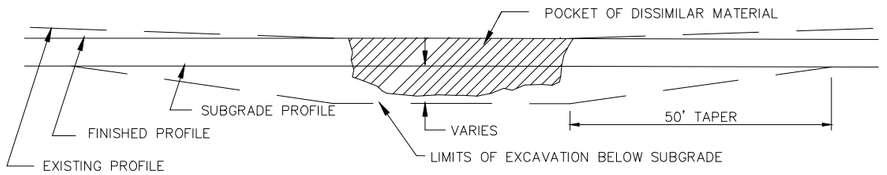
BEAMGUARD LAYOUT DETAIL



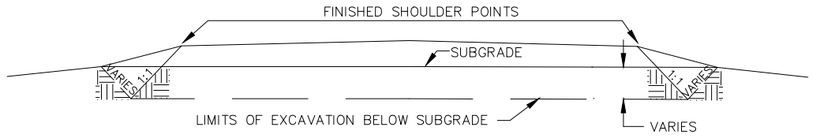
SECTION A–A



PLAN VIEW



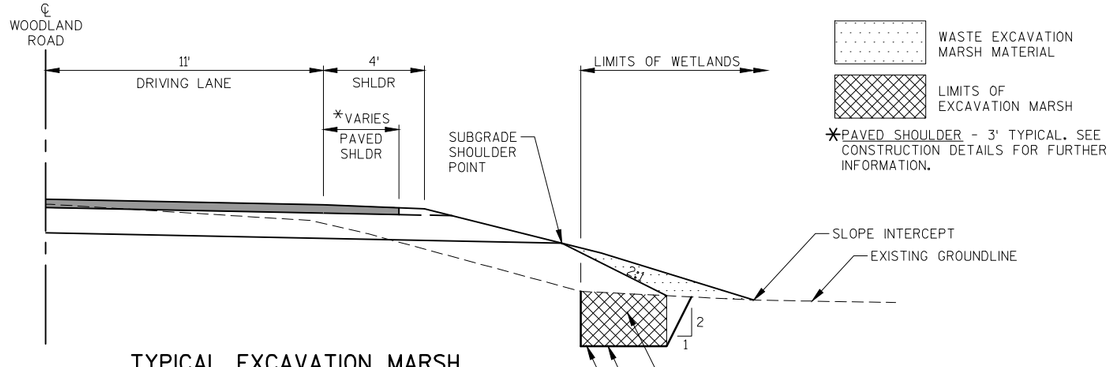
PROFILE VIEW



CROSS SECTION VIEW

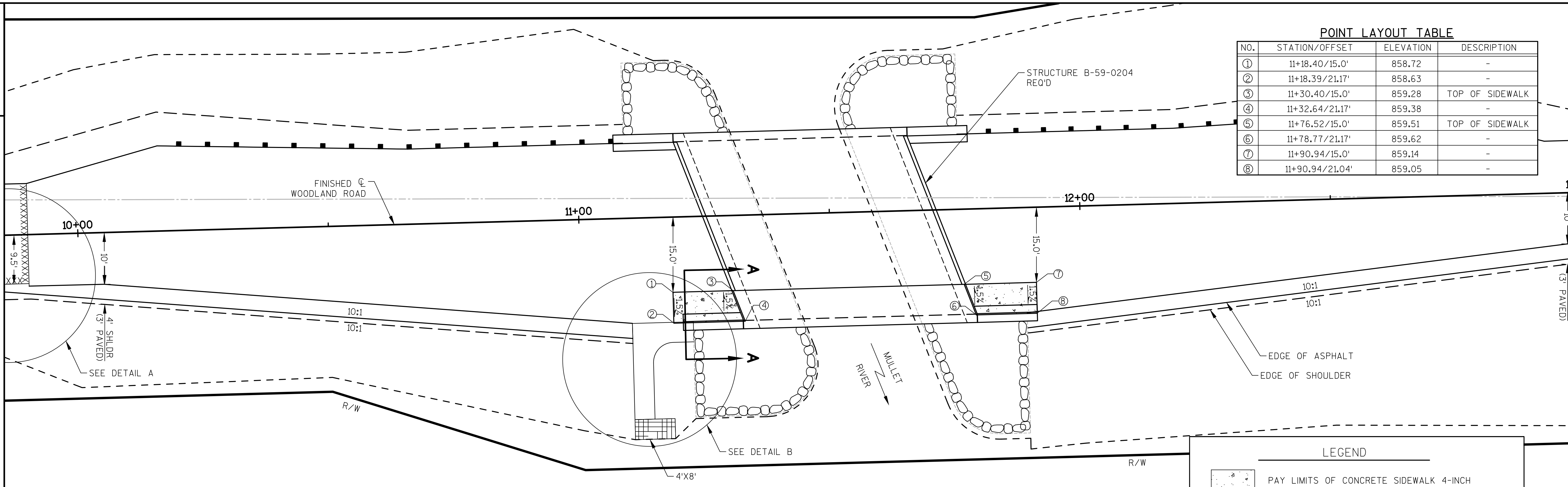
1. EXACT LOCATION OF E.B.S. (EXCAVATION BELOW SUBGRADE) SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
2. E.B.S. AREA TO BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE ENGINEER. BACKFILL MUST BE HOMOGENEOUS WITH ADJOINING FILL MATERIAL.
3. THE FILL SECTION WITHIN 100' OF THE MOUTH OF THE CUT MUST BE KEPT 2' BELOW SUBGRADE UNTIL E.B.S. IS COMPLETED. LATERAL LIMITS OF EXCAVATION SHALL BE THE SUBGRADE SHOULDER POINTS.

EXCAVATION BELOW SUBGRADE (E.B.S.)



TYPICAL EXCAVATION MARSH

(STA. 9+61 - STA. 11+22, LT.)
(STA. 10+11 - STA. 11+31, RT.)
(STA. 11+64 - STA. 13+40, RT.)
(STA. 11+69 - STA. 13+27, LT.)



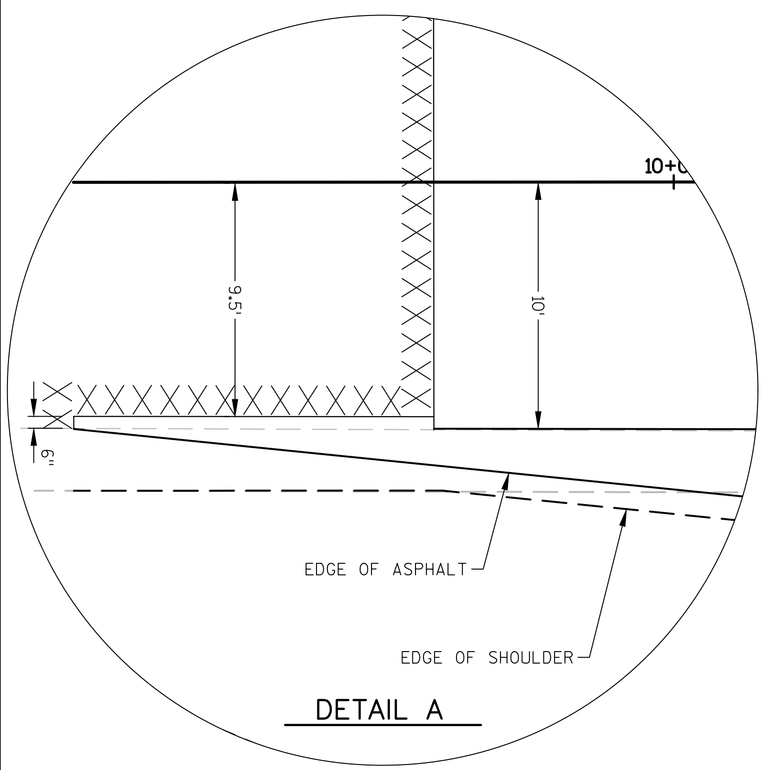
POINT LAYOUT TABLE

NO.	STATION/OFFSET	ELEVATION	DESCRIPTION
①	11+18.40/15.0'	858.72	-
②	11+18.39/21.17'	858.63	-
③	11+30.40/15.0'	859.28	TOP OF SIDEWALK
④	11+32.64/21.17'	859.38	-
⑤	11+76.52/15.0'	859.51	TOP OF SIDEWALK
⑥	11+78.77/21.17'	859.62	-
⑦	11+90.94/15.0'	859.14	-
⑧	11+90.94/21.04'	859.05	-

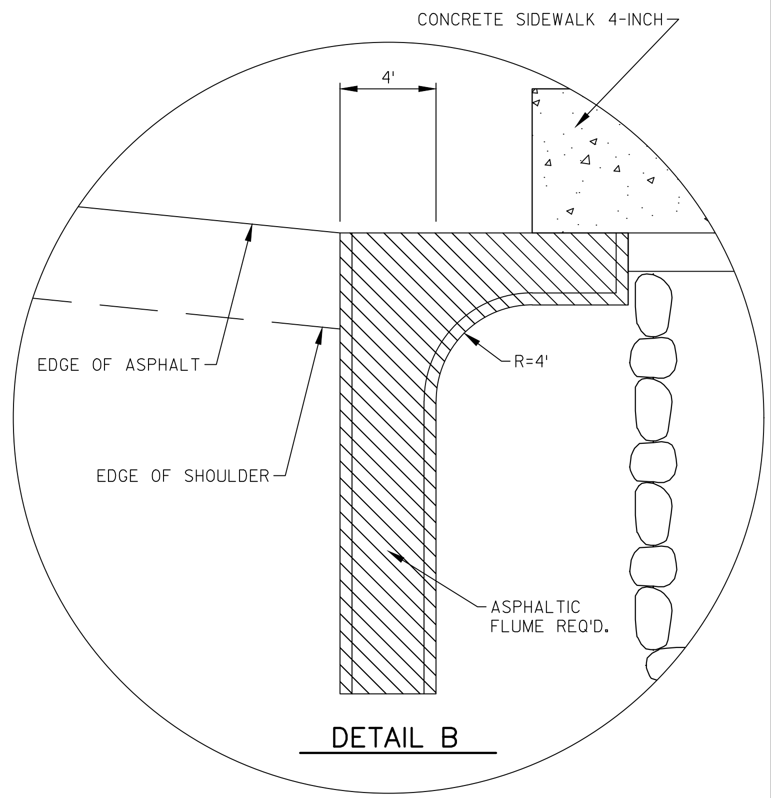
LEGEND

PAY LIMITS OF CONCRETE SIDEWALK 4-INCH

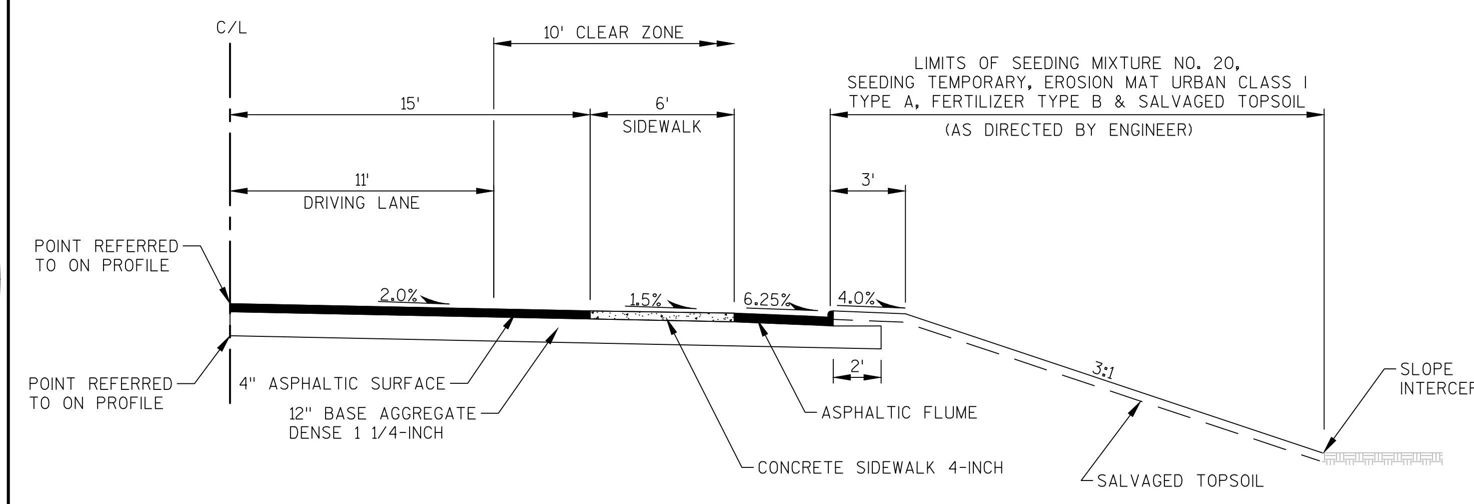
EROSION MAT URBAN CLASS I TYPE A



DETAIL A



DETAIL B



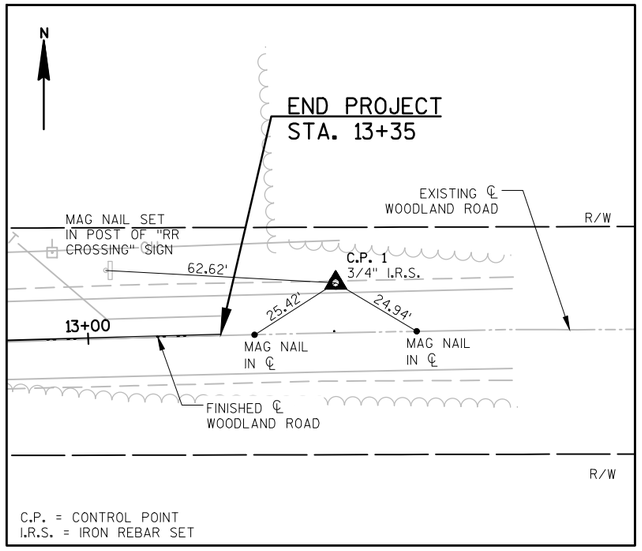
SECTION A–A

PAY LIMITS OF ASPHALTIC FLUME

PROJECT NO: 4204-07-71	HWY: WOODLAND ROAD	COUNTY: SHEBOYGAN	CONSTRUCTION DETAILS	SHEET 5	E

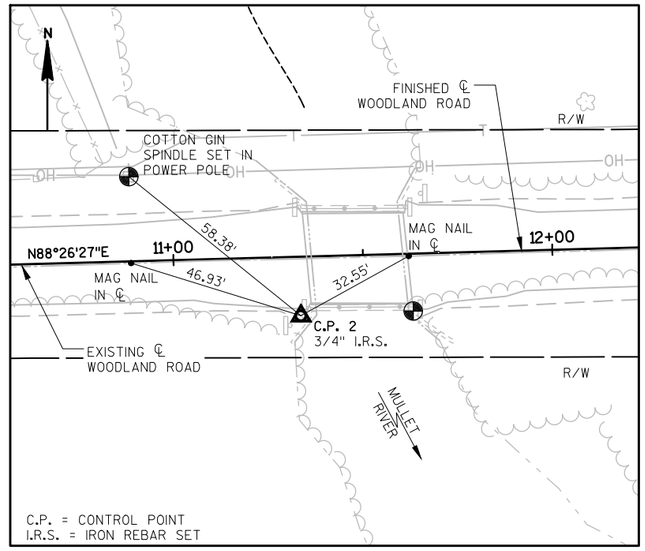
FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\SHEETSPLAN\DETAILS\CONSTRUCTION DETAILS.DWG
LAYOUT : DET1

PLOT DATE : 9/6/2018
PLOT TIME : 3:54:17 PM
PLOT BY : JULIA ZEHNER
PLOT SCALE : 1" = 1'



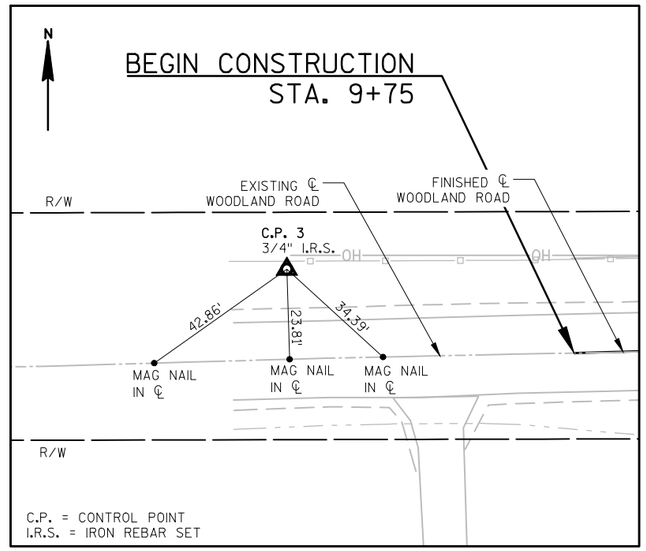
TIES TO C.P.#1

STA. 13+66; 13.00' LT.
Y = 185,964.93
X = 144,945.23



TIES TO C.P.#2

STA. 11+33.25; 15.61' RT.
Y = 185,930.08
X = 144,713.59



TIES TO C.P.#3

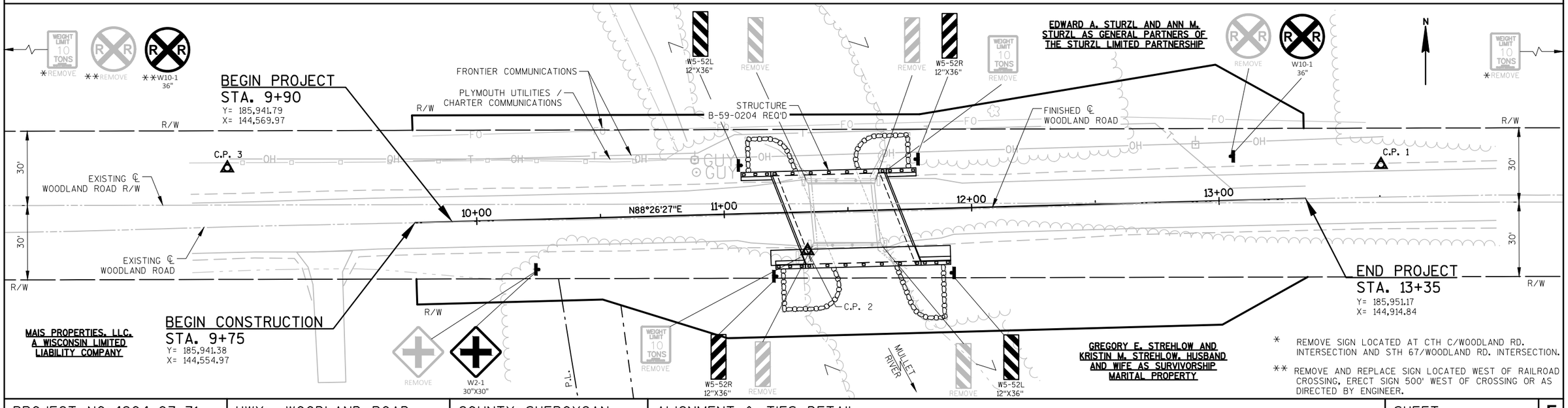
STA. 9+00; 24.2' LT.
Y = 185,963.47
X = 144,479.13

▲ CONTROL POINTS

No.	STATION	DESCRIPTION	Y	X
1	13+66	3/4" REBAR SET 13.00' LT.	185,964.93	144,945.23
2	11+33.25	3/4" REBAR SET 15.61' RT.	185,930.08	144,713.59
3	9+00	3/4" REBAR SET 24.2' LT.	185,963.47	144,479.13

MAINLINE STATION LAYOUT

STATION	Y	X	COMMENTS
9+75	185,941.38	144,554.97	BEGIN CONSTRUCTION
9+90	185,941.79	144,569.97	BEGIN PROJECT
10+00	185,942.06	144,579.96	–
10+50	185,943.42	144,629.94	–
11+00	185,944.78	144,679.92	–
11+24.67	185,945.45	144,704.59	END OF DECK
11+50	185,946.14	144,729.91	–
11+71.33	185,946.72	144,751.23	END OF DECK
12+00	185,947.50	144,779.89	–
12+50	185,948.86	144,829.87	–
13+00	185,950.22	144,879.85	–
13+35	185,951.17	144,914.84	END OF PROJECT



* REMOVE SIGN LOCATED AT CTH C/WOODLAND RD. INTERSECTION AND STH 67/WOODLAND RD. INTERSECTION.

** REMOVE AND REPLACE SIGN LOCATED WEST OF RAILROAD CROSSING, ERECT SIGN 500' WEST OF CROSSING OR AS DIRECTED BY ENGINEER.

PROJECT NO: 4204-07-71	HWY: WOODLAND ROAD	COUNTY: SHEBOYGAN	ALIGNMENT & TIES DETAIL	SHEET 6	E

FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\SHEETSPLAN\DETAILS\TIES AND ALIGN.DWG
LAYOUT : LAYOUT1
PLOT DATE : 11/28/2018
PLOT TIME : 8:30:05 AM
PLOT BY : STEPHANIE POTTER
PLOT SCALE : 1" = 1'

4204-07-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	3.000	3.000
0004	201.0205	Grubbing	STA	3.000	3.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 11+48	LS	1.000	1.000
0008	205.0100	Excavation Common	CY	330.000	330.000
0010	205.0400	Excavation Marsh	CY	350.000	350.000
0012	206.1000	Excavation for Structures Bridges (structure) 01. B-59-0204	LS	1.000	1.000
0014	208.0100	Borrow	CY	860.000	860.000
0016	210.1500	Backfill Structure Type A	TON	345.000	345.000
0018	213.0100	Finishing Roadway (project) 01. 4204-07-71	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	65.000	65.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,120.000	1,120.000
0024	312.0110	Select Crushed Material	TON	1,000.000	1,000.000
0026	455.0605	Tack Coat	GAL	55.000	55.000
0028	465.0105	Asphaltic Surface	TON	250.000	250.000
0030	465.0315	Asphaltic Flumes	SY	15.000	15.000
0032	502.0100	Concrete Masonry Bridges	CY	229.000	229.000
0034	502.3200	Protective Surface Treatment	SY	240.000	240.000
0036	505.0400	Bar Steel Reinforcement HS Structures	LB	4,750.000	4,750.000
0038	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	30,060.000	30,060.000
0040	513.7083	Railing Steel Type NY3	LF	73.000	73.000
0042	513.7084	Railing Steel Type NY4	LF	73.000	73.000
0044	516.0500	Rubberized Membrane Waterproofing	SY	16.000	16.000
0046	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	420.000	420.000
0048	602.0405	Concrete Sidewalk 4-Inch	SF	160.000	160.000
0050	606.0300	Riprap Heavy	CY	235.000	235.000
0052	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	210.000	210.000
0054	614.2500	MGS Thrie Beam Transition	LF	80.000	80.000
0056	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0058	618.0100	Maintenance And Repair of Haul Roads (project) 01. 4204-07-71	EACH	1.000	1.000
0060	619.1000	Mobilization	EACH	1.000	1.000
0062	624.0100	Water	MGAL	9.000	9.000
0064	625.0500	Salvaged Topsoil	SY	1,350.000	1,350.000
0066	627.0200	Mulching	SY	800.000	800.000
0068	628.1504	Silt Fence	LF	710.000	710.000
0070	628.1520	Silt Fence Maintenance	LF	1,420.000	1,420.000
0072	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0074	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000

4204-07-71

Line	Item	Item Description	Unit	Total	Qty
0076	628.2006	Erosion Mat Urban Class I Type A	SY	1,840.000	1,840.000
0078	628.6005	Turbidity Barriers	SY	230.000	230.000
0080	628.7504	Temporary Ditch Checks	LF	10.000	10.000
0082	629.0210	Fertilizer Type B	CWT	2.000	2.000
0084	630.0120	Seeding Mixture No. 20	LB	50.000	50.000
0086	630.0200	Seeding Temporary	LB	25.000	25.000
0088	630.0300	Seeding Borrow Pit	LB	15.000	15.000
0090	633.5100	Markers Row	EACH	12.000	12.000
0092	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0094	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	3.000	3.000
0096	637.2230	Signs Type II Reflective F	SF	32.390	32.390
0098	638.2602	Removing Signs Type II	EACH	11.000	11.000
0100	638.3000	Removing Small Sign Supports	EACH	11.000	11.000
0102	642.5001	Field Office Type B	EACH	1.000	1.000
0104	643.0420	Traffic Control Barricades Type III	DAY	1,188.000	1,188.000
0106	643.0705	Traffic Control Warning Lights Type A	DAY	1,848.000	1,848.000
0108	643.0900	Traffic Control Signs	DAY	924.000	924.000
0110	643.5000	Traffic Control	EACH	1.000	1.000
0112	645.0111	Geotextile Type DF Schedule A	SY	120.000	120.000
0114	645.0120	Geotextile Type HR	SY	335.000	335.000
0116	645.0135	Geotextile Type SR	SY	745.000	745.000
0118	646.1020	Marking Line Epoxy 4-Inch	LF	690.000	690.000
0120	646.5320	Marking Railroad Crossings Epoxy	EACH	1.000	1.000
0122	650.4500	Construction Staking Subgrade	LF	300.000	300.000
0124	650.5000	Construction Staking Base	LF	300.000	300.000
0126	650.6500	Construction Staking Structure Layout (structure) 01. B-59-0204	LS	1.000	1.000
0128	650.9910	Construction Staking Supplemental Control (project) 01. 4204-07-71	LS	1.000	1.000
0130	650.9920	Construction Staking Slope Stakes	LF	315.000	315.000
0132	690.0150	Sawing Asphalt	LF	60.000	60.000
0134	715.0502	Incentive Strength Concrete Structures	DOL	1,374.000	1,374.000
0136	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	150.000	150.000
0138	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	300.000	300.000
0140	SPV.0090	Special 01. Construction Staking Sidewalk	LF	30.000	30.000

ALL ITEMS ARE CATEGORY 010 UNLESS OTHERWISE NOTED

EARTHWORK SUMMARY

STATION - STATION	LOCATION	(1) 205.0100 EXCAVATION COMMON CUT (CY)	AVAILABLE MATERIAL (CY) (2)	205.0400 EXCAVATION MARSH (CY) (3)	REDUCED MARSH IN FILL (CY) FACTOR 0.6 (4)	EXPANDED MARSH BACKFILL (CY) FACTOR 1.5 (5)	UNEXPANDED FILL (CY)	EXPANDED FILL (CY) FACTOR 1.25 (6)	MASS ORDINATE +/- (CY) (7)	208.0100 BORROW (CY)
9+90 - 13+35	MAINLINE	330	330	350	210	525	1160	1190	-860	860
	TOTALS =	330	330	350	210	525	1160	1190		860

NOTES:
1.) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT
2.) AVAILABLE MATERIAL = CUT
3.) MARSH EXCAVATION - TO BE BACKFILLED WITH SELECT CRUSHED MATERIAL. ITEM 205.0400.
4.) REDUCED MARSH IN FILL- EXCAVATED MARSH MATERIAL IS USABLE IN FILLS OUTSIDE THE 2:1 SLOPE. MARSH IN FILL REDUCTION FACTOR = 0.6.
5.) EXPANDED MARSH BACKFILL - THIS IS TO BE FILLED WITH SELECT CRUSHED MATERIAL. MARSH BACKFILL FACTOR = 1.5. ITEM NUMBER 312.0110
6.) EXPANDED FILL FACTOR 1.25: EXPANDED FILL = (UNEXPANDED FILL - REDUCED MARSH IN FILL)*1.25
7.) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE CATEGORY. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE CATEGORY.

NOTE: EXCAVATION MARSH LIMITS INCLUDE: STA. 9+61 -STA. 11+22, LT.
STA. 10+11 - STA. 11+31, RT.
STA. 11+64 - STA. 13+40, RT.
STA. 11+69 - STA.13+27, LT.

CLEARING & GRUBBING

STATION - STATION	LOCATION	201.0105 CLEARING (STA)	201.0205 GRUBBING (STA)
10+00 - 13+00	MAINLINE	3	3
	TOTALS =	3	3

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH (TON)	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON)
9+90 - 13+35	MAINLINE	56	1053
-	UNDISTRIBUTED	9	67
	TOTALS =	65	1120

SELECT CRUSHED MATERIAL/ GEOTEXTILE TYPE SR

STATION - STATION	LOCATION	312.0110 SELECT CRUSHED MATERIAL (TON)	645.0135 GEOTEXTILE TYPE SR (SY)
9+75 - 11+22	MAINLINE, LT.	112	84
10+11 - 11+31	MAINLINE, RT.	187	140
11+64 - 13+40	MAINLINE, RT.	377	280
11+69 - 13+27	MAINLINE, LT.	324	241
	TOTALS =	1000	745

CONCRETE SIDEWALK 4-INCH

STATION - STATION	LOCATION	602.0405 (SF)
11+18 - 11+32	MAINLINE, RT	79
11+77 - 11+91	MAINLINE, RT.	81
	TOTAL =	160

MGS GUARDRAIL

STATION - STATION	LOCATION	614.2500 MGS THRIE BEAM TRANSITION (LF)	614.2610 MGS GUARDRAIL TERMINAL EAT (EACH)
10+21 - 11+12	MAINLINE, LT.	40	1
11+79 - 12+70	MAINLINE, LT.	40	1
	TOTALS =	80	2

ASPHALTIC SURFACE

STATION - STATION	LOCATION	455.0605 TACK COAT (GAL)	465.0105 ASPHALTIC SURFACE (TON)
9+90 - 13+35	MAINLINE	53	241
-	UNDISTRIBUTED	2	9
	TOTALS =	55	250

ASPHALTIC FLUMES

STATION - STATION	LOCATION	465.0315 (SY)
11+13	MAINLINE, RT	15
	TOTAL=	15

WATER

STATION - STATION	LOCATION	624.0100 (MGAL)
9+90 - 13+35	MAINLINE	9
	TOTAL =	9

MOBILIZATION EROSION CONTROL

PROJECT	628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)
4204-07-71	5	3
TOTALS =	5	3

FINISHING ITEMS

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL (SY)	627.0200 MULCHING (SY)	628.2006 EROSION MAT URBAN CLASS I TYPE A (SY)	629.0210 FERTILIZER TYPE B (CWT)	630.0120 SEEDING MIXTURE NO. 20 (LB)	630.0200 SEEDING TEMPORARY (LB)	630.0300 SEEDING BORROW PIT (LB)
9+75 - 13+35	MAINLINE	1114	-	1476	1.0	40	20	-
11+13	MAINLINE, RT	-	-	4	-	-	-	-
-	BORROW SITE	-	672	-	0.6	-	-	10
-	UNDISTRIBUTED	236	128	360	0.4	10	5	5
	TOTALS =	1350	800	1840	2.0	50	25	15

SILT FENCE

STATION - STATION	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)
9+90 - 11+25	MAINLINE, LT	150	300
10+25 - 11+25	MAINLINE, RT	105	210
11+75 - 13+35	MAINLINE, LT	165	330
11+75 - 13+25	MAINLINE, RT	150	300
	UNDISTRIBUTED	140	280
	TOTALS =	710	1420

TURBIDITY BARRIERS

STATION	LOCATION	628.6005 (SY)
11+16 - 11+48	MAINLINE	90
11+51 - 11+85	MAINLINE	99
	UNDISTRIBUTED	41
	TOTAL =	230

ALL ITEMS ARE CATEGORY 010 UNLESS OTHERWISE NOTED

TEMPORARY DITCH CHECKS

STATION	LOCATION	628.7504 (LF)
10+00	MAINLINE, RT	8
-	UNDISTRIBUTED	2
	TOTAL =	10

MARKERS ROW

POINT	STATION	LOCATION	633.5100 (EACH)
101	9+75	37.33, LT	1
102	9+75	43.33, LT	1
103	11+80	38.22, LT	1
104	13+00	55.00, LT	1
105	13+35	34.35, LT	1
106	13+35	28.35, LT	1
107	13+35	31.67, RT	1
108	13+00	50.00, RT	1
109	11+00	50.00, RT	1
110	10+50	33.00, RT	1
111	9+75	33.00, RT	1
112	9+75	22.69, RT	1
		TOTAL =	12

PERMANENT SIGNING

APPROX. STATION	LOCATION	SIGN CODE	SIGN DESCRIPTION	SIZE (INCH X INCH)	637.2230 SIGNS TYPE II REFLECTIVE F (SF)	POSTS WOOD 4X6-INCH X 634.0612 12 FT (EACH)	POSTS WOOD 4X6-INCH X 634.0616 16 FT (EACH)	638.2602 REMOVING SIGNS TYPE II (EACH)	638.3000 REMOVING SMALL SIGN SUPPORTS (EACH)
-	CTH C/WOODLAND RD	R12-1	WEIGHT LIMIT 10 TONS	-	-	-	-	1	1
-	WEST OF RR XING	W10-1	RAILROAD CROSSING	-	-	-	-	1	1
-	WEST OF RR XING	W10-1	RAILROAD CROSSING	36"	7.07	-	1	-	-
10+24	MAINLINE, RT	W2-1	CROSS ROAD	-	-	-	-	1	1
10+24	MAINLINE, RT	W2-1	CROSS ROAD	30X30	6.25	-	1	-	-
11+30	MAINLINE, RT	R12-1	WEIGHT LIMIT 10 TONS	-	-	-	-	1	1
11+33	MAINLINE, LT	W5-52L	CLEARANCE STRIPER DOWN LEFT	-	-	-	-	1	1
11+06	MAINLINE, LT	W5-52L	CLEARANCE STRIPER DOWN LEFT	12X36	3.00	1	-	-	-
11+35	MAINLINE, RT	W5-52-R	CLEARANCE STRIPER DOWN RIGHT	-	-	-	-	1	1
11+20	MAINLINE, RT	W5-52-R	CLEARANCE STRIPER DOWN RIGHT	12X36	3.00	1	-	-	-
11+62	MAINLINE, LT	W5-52-R	CLEARANCE STRIPER DOWN RIGHT	-	-	-	-	1	1
11+75	MAINLINE, LT	W5-52-R	CLEARANCE STRIPER DOWN RIGHT	12X36	3.00	1	-	-	-
11+64	MAINLINE, RT	W5-52-L	CLEARANCE STRIPER DOWN LEFT	-	-	-	-	1	1
11+90	MAINLINE, RT	W5-52-L	CLEARANCE STRIPER DOWN LEFT	12X36	3.00	1	-	-	-
11+66	MAINLINE, LT	R12-1	WEIGHT LIMIT 10 TONS	-	-	-	-	1	1
13+05	MAINLINE, LT	W10-1	RAILROAD CROSSING	-	-	-	-	1	1
13+05	MAINLINE, LT	W10-1	RAILROAD CROSSING	36"	7.07	-	1	-	-
-	STH 67/WOODLAND RD	R12-1	WEIGHT LIMIT 10 TONS	-	-	-	-	1	1
			TOTALS =		32.39	4	3	11	11

TRAFFIC CONTROL

LOCATION	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)
MAINLINE	1188	1848	924	1
TOTALS =	1188	1848	924	1

PAVEMENT MARKING

STATION - STATION	LOCATION	DESCRIPTION	646.1020 MARKING LINE EPOXY 4-INCH (LF)	646.5320 MARKING RAILROAD CROSSING EPOXY (EACH)
-	RR XING WEST OF PROJECT	RAILROAD XING	-	1
9+90 - 13+35	MAINLINE	DOUBLE YELLOW	690	-
		TOTALS =	690	1

CONSTRUCTION STAKING

		CONSTRUCTION STAKING					
STATION - STATION	LOCATION	650.4500 SUBGRADE (LF)	650.5000 BASE (LF)	*650.6500 STRUCTURE LAYOUT (B-59-0204) (LS)	650.9910 SUPPLEMENTAL CONTROL (4204-07-71) (LS)	650.9920 SLOPE STAKES (LF)	SPV.0090.01 SIDEWALK (LF)
9+75 - 13+35	MAINLINE	300	300	-	-	315	-
11+18 - 11+32	MAINLINE, RT.	-	-	-	-	-	15
11+77 - 11+91	MAINLINE, RT.	-	-	-	-	-	15
-	PROJECT	-	-	1	1	-	-
	TOTALS =	300	300	1	1	315	30

*CATEGORY 020

SAWING ASPHALT

STATION	LOCATION	690.0150 (LF)
9+75 - 9+90	MAINLINE, RT.	18
9+90	MAINLINE	21
13+35	MAINLINE	21
	TOTAL =	60

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
4204-07-00		
FEDERAL PROJECT NUMBER	4.01	2

PLAT OF RIGHT-OF-WAY REQUIRED FOR

T PLYMOUTH, WOODLAND RD

MULLET RIVER BRIDGE B-59-0204

LOCAL STREET — SHEBOYGAN COUNTY

CONSTRUCTION PROJECT NUMBER

4204-07-71

CONVENTIONAL ABBREVIATIONS

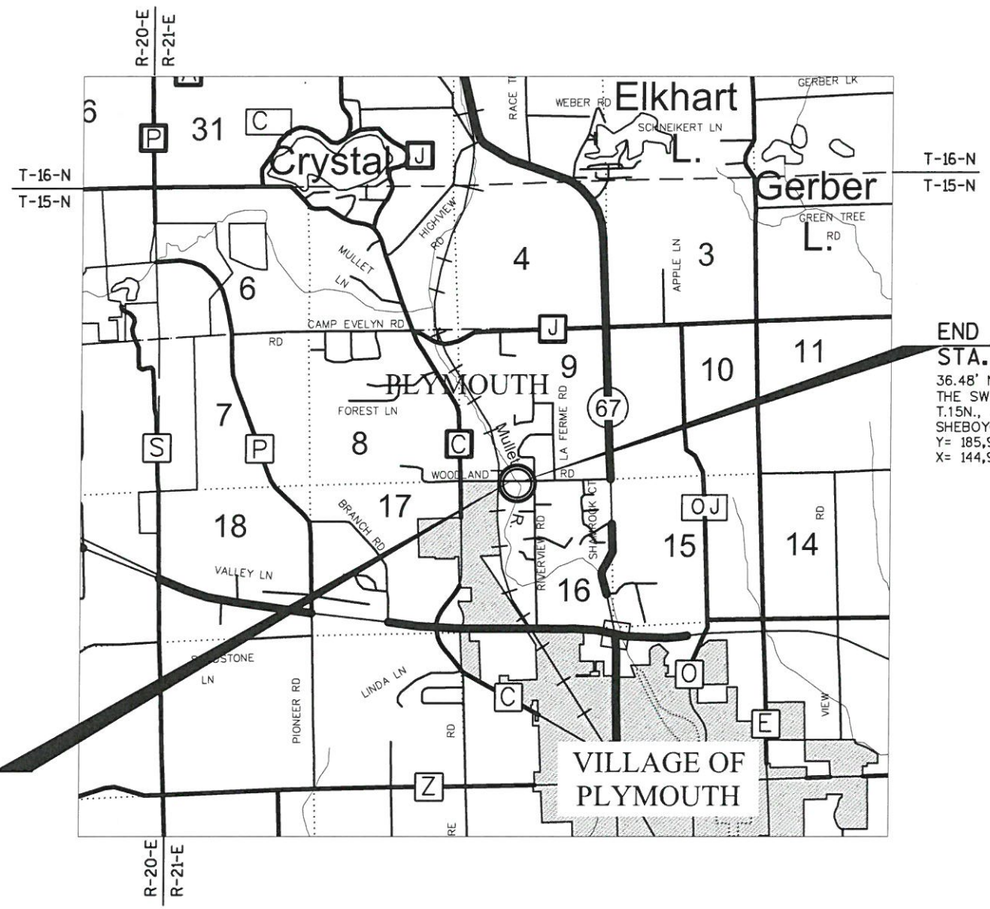
ACCESS POINT/ DRIVEWAY CONNECTION	AP	PROPERTY LINE	PL
ACCESS RIGHTS	AR	RECORDED AS	(100')
ACRES	AC.	REFERENCE LINE	R/L
AND OTHERS	ET.AL.	RELEASE OF RIGHTS	ROR
BARN	B.	REMAINING	REM.
CENTERLINE	C/L	RIGHT-OF-WAY	R/W
CERTIFIED SURVEY MAP	CSM	SECTION	SEC.
CORNER	COR.	SHED	S.
CONVEYANCE OF RIGHTS	CR	STATION	STA.
DOCUMENT	DOC.	TEMPORARY LIMITED EASEMENT	TLE
EASEMENT	EASE.	VOLUME	V.
GARAGE	G.		
HIGHWAY EASEMENT	H.E.	CURVE DATA	
HOUSE	H.	LONG CHORD	LCH
HOUSE TRAILER	H.T.	LONG CHORD BEARING	LCB
LAND CONTRACT	LC	RADIUS	R
MONUMENT	MON.	DEGREE OF CURVE	D
PAGE	P.	CENTRAL ANGLE OR DELTA	DELTA
PERMANENT LIMITED EASEMENT	PLE	LENGTH OF CURVE	L
		TANGENT	TAN

CONVENTIONAL SYMBOLS

FOUND SURVEY MONUMENT (WITH POINT NUMBER)	○ 1040	PROPOSED R/W LINE	
R/W MONUMENT	○ ● (SET)	EXISTING H.E. LINE	
R/W STANDARD	△ ▲ (SET)	PROPERTY LINE	
SIGN	SIGN	LOT & TIE LINES	
SECTION CORNER MONUMENT		SLOPE INTERCEPTS	
SECTION CORNER SYMBOL		CORPORATE LIMITS	
FEE (HATCH VARIES)		NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL)	
TEMPORARY LIMITED EASEMENT		NO ACCESS (BY ACQUISTION)	
PERMANENT LIMITED EASEMENT		NO ACCESS (BY STATUTORY AUTHORITY)	
R/W BOUNDARY POINT	RWB20	NO ACCESS (NEW HIGHWAY)	
PARCEL NUMBER	8	SECTION LINE	
UTILITY PARCEL NUMBER	62	QUARTER LINE	
SIGN NUMBER (OFF PREMISE)	21-1	SIXTEENTH LINE	
BUILDING		EXISTING CENTERLINE	
		PROPOSED REFERENCE LINE	
		PARALLEL OFFSET	
		ENCROACHMENT	E-1 TYPE
		HIGHWAY EASEMENT	

CONVENTIONAL UTILITY SYMBOLS

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



END RELOCATION ORDER

STA. 13+35

36.48' NORTH AND 2107.23' EAST OF THE SW CORNER OF SECTION 9, T.15N., R.21E., TOWN OF PLYMOUTH, SHEBOYGAN COUNTY, WI

Y= 185,951.17

X= 144,914.84

BEGIN RELOCATION ORDER

STA. 9+75

26.69' NORTH AND 1747.36' EAST OF THE SW CORNER OF SECTION 9, T.15N., R.21E., TOWN OF PLYMOUTH, SHEBOYGAN COUNTY, WI

Y= 185,941.38

X= 144,554.97

N

LAYOUT

SCALE 0 — 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.068 MI.

NOTES

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS) COORDINATES, SHEBOYGAN COUNTY, NAD 83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 MONUMENTS (TYPICALLY 3/4" X 24" REBAR) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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

JEWELL
associates engineers, inc.
Engineers - Architects - Surveyors

560 SUNRISE DRIVE
SPRING GREEN, WI 53588
PHONE : 608.588.7484
www.jewellassoc.com

I HEREBY CERTIFY THAT THIS PLAT WAS MADE FOR THE TOWN OF PLYMOUTH, SHEBOYGAN COUNTY, WISCONSIN AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WISCONSIN SCOTT D. WARNER S-2524 RICHLAND CENTER, WI 04-04-2018 LAND SURVEYOR

REVISION DATE

APPROVED FOR SHEBOYGAN COUNTY

DATE: 4/5/2018 Transportation Dir.
NAME/TITLE

R/W COURSE TABLE		
PT. TO PT.	DIRECTION	DISTANCE
101 TO 102	N01°33'33"W	6.00'
102 TO 103	N89°52'08"E	205.06'
103 TO 104	N80°28'45"E	121.17'
104 TO 105	S61°01'19"E	40.64'
105 TO 106	S01°33'33"E	6.00'
106 TO 107	S01°33'33"E	60.02'
107 TO 108	S60°47'46"W	39.51'
108 TO 109	S88°26'27"W	200.00'
109 TO 110	N72°46'53"W	52.81'
110 TO 111	S88°26'27"W	75.00'
111 TO 112	N01°33'33"W	10.31'
112 TO 101	N01°33'33"W	60.02'

COORDINATE TABLE – NEW R/W POINTS				
PT.#	STATION	OFFSET	Y	X
101	9+75.00	37.33 LT.	185978.69	144553.96
102	9+75.00	43.33 LT.	185984.69	144553.79
103	11+80.00	38.22 LT.	185985.16	144758.86
104	13+00.00	55.00 LT.	186005.20	144878.35
105	13+35.00	34.35 LT.	185985.51	144913.90
106	13+35.00	28.35' LT.	185979.51	144914.07
107	13+35.00	31.67' RT.	185919.52	144915.70
108	13+00.00	50.00 RT.	185900.24	144881.21
109	11+00.00	50.00 RT.	185894.80	144681.29
110	10+50.00	33.00 RT.	185910.43	144630.84
111	9+75.00	33.00 RT.	185908.39	144555.87
112	9+75.00	22.69 RT.	185918.69	144555.59

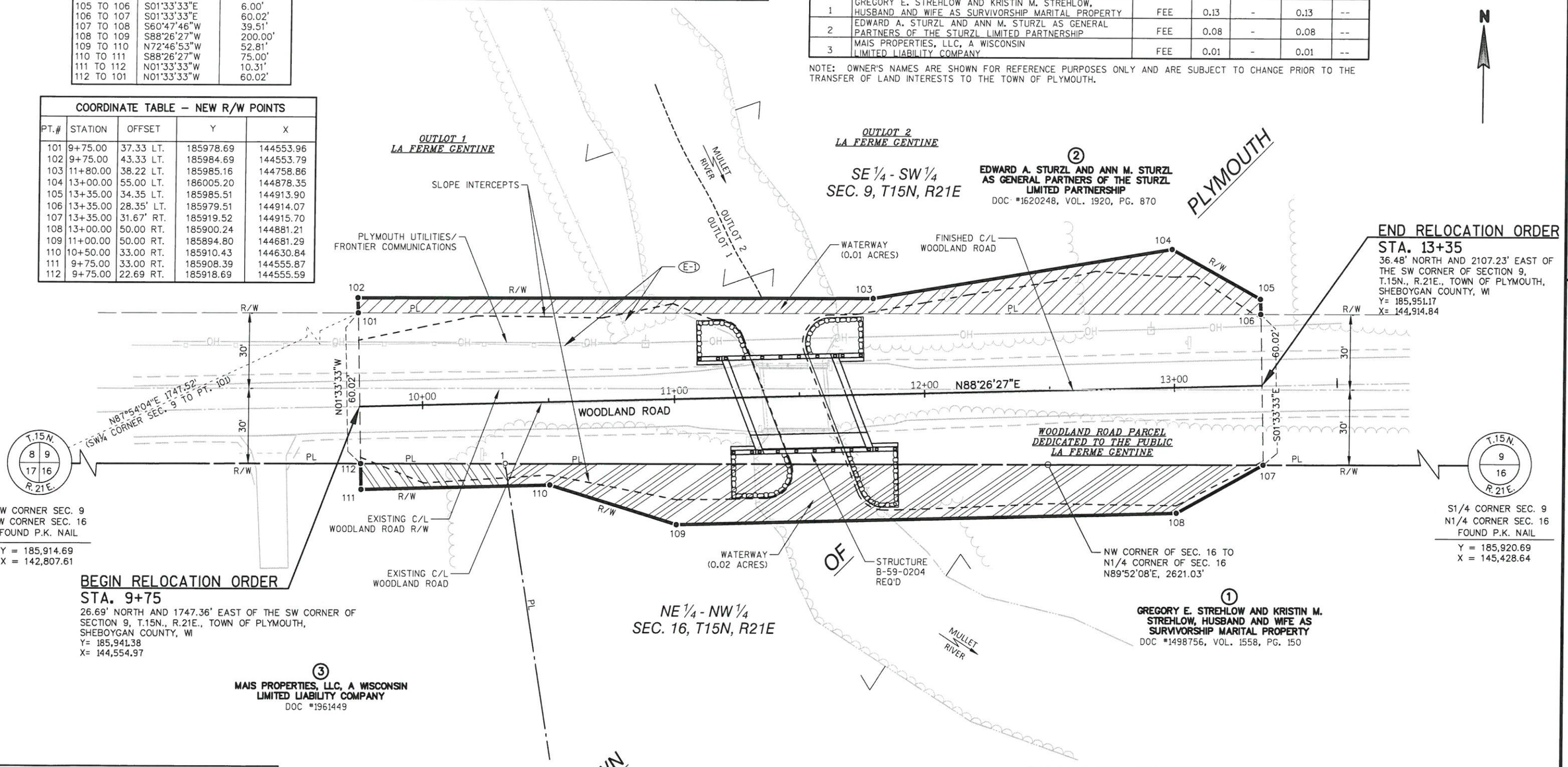
ENCROACHMENT TABLE

NUMBER	OWNER	LOCATION	ENCROACHMENT TYPE
E-1	EDWARD A. STURZL AND ANN M. STURZL AS GENERAL PARTNERS OF THE STURZL LIMITED PARTNERSHIP	STA. 9+75 – STA. 10+82, 24.7' – 34.7' LT.	FENCE

SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED	R/W ACRES REQUIRED NEW	EXISTING	TOTAL	T.L.E. ACRES REQ'D.
1	GREGORY E. STREHLOW AND KRISTIN M. STREHLOW, HUSBAND AND WIFE AS SURVIVORSHIP MARITAL PROPERTY	FEE	0.13	-	0.13	--
2	EDWARD A. STURZL AND ANN M. STURZL AS GENERAL PARTNERS OF THE STURZL LIMITED PARTNERSHIP	FEE	0.08	-	0.08	--
3	MAIS PROPERTIES, LLC, A WISCONSIN LIMITED LIABILITY COMPANY	FEE	0.01	-	0.01	--

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



NOTE:
EXISTING ℄ OF WOODLAND ROAD WAS BASED ON CENTERLINE OF EXISTING PAVEMENT.

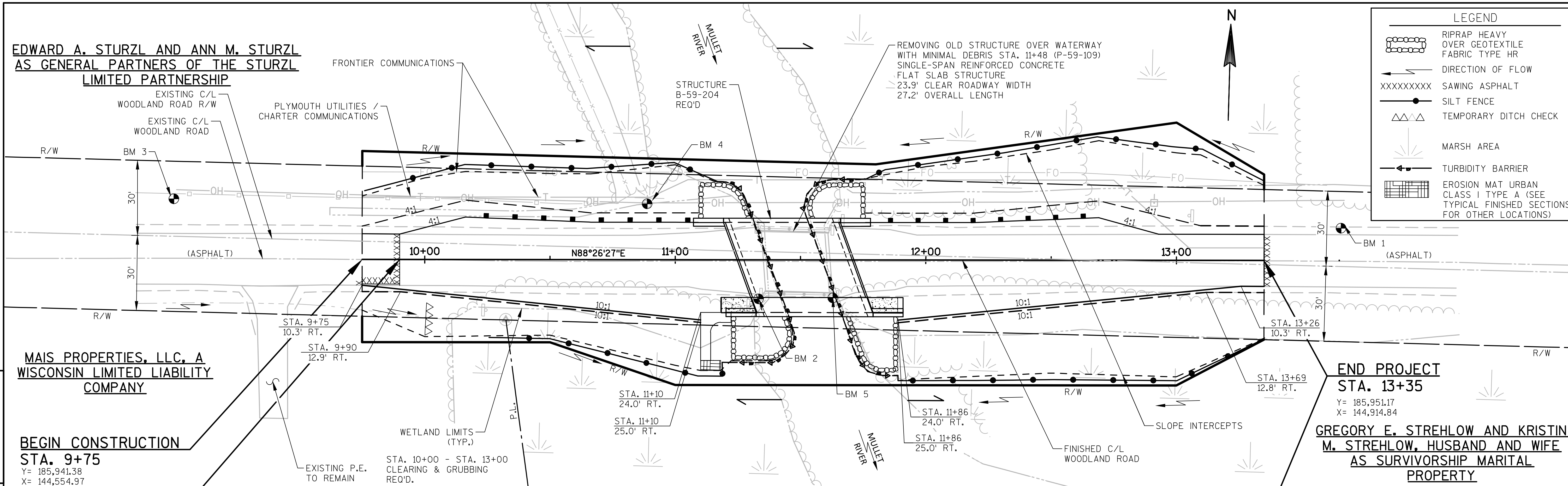
BASIS OF EXISTING RIGHT-OF-WAY FOR WOODLAND ROAD WAS BASED ON THE PLAT OF LA FERME GENTINE.

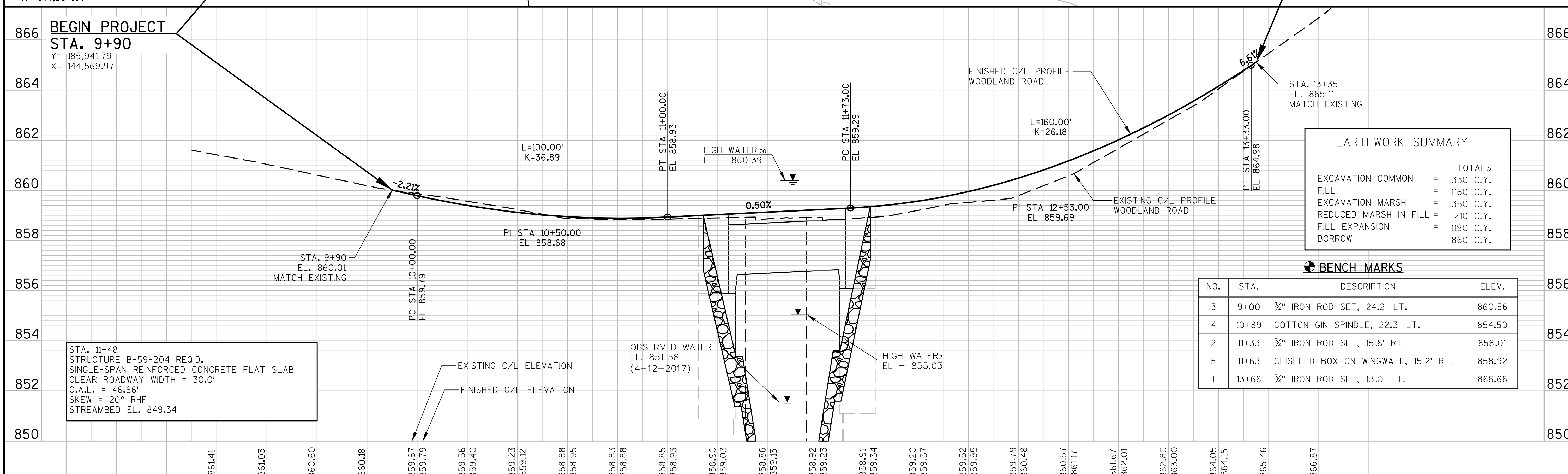
COORDINATE TABLE – FOUND SURVEY MONUMENTS					
PT.#	STATION	OFFSET	Y	X	DESCRIPTION
1	10+32.37	23.97 RT.	185918.98	144612.98	FOUND 1" ϕ IRON PIPE

REVISION DATE	DATE 4/5/2018	SCALE 1 FEET 0 20 40	HWY: WOODLAND ROAD	R/W PROJECT NUMBER: 4204-07-00	PLAT SHEET 4.02
	GRID FACTOR N/A		COUNTY: SHEBOYGAN	CONSTRUCTION PROJECT NUMBER: 4204-07-71	PS&E SHEET 12

FILE NAME : S:\Projects\W11567 Woodland Rd, Sheboygan County\RW\4204070_Plat Sheets.dwg PLOT DATE : 2/8/2018 10:51 AM PLOT BY : Scott Warner PLOT NAME : PLOT SCALE : 1:1

WISDOT/CADDS SHEET 75





EARTHWORK SUMMARY

		TOTALS
EXCAVATION COMMON	=	330 C.Y.
FILL	=	1160 C.Y.
EXCAVATION MARSH	=	350 C.Y.
REDUCED MARSH IN FILL	=	210 C.Y.
FILL EXPANSION	=	1190 C.Y.
BORROW		860 C.Y.

BENCH MARKS

NO.	STA.	DESCRIPTION	ELEV.
3	9+00	¾" IRON ROD SET, 24.2' LT.	860.56
4	10+89	COTTON GIN SPINDLE, 22.3' LT.	854.50
2	11+33	¾" IRON ROD SET, 15.6' RT.	858.01
5	11+63	CHISELED BOX ON WINGWALL, 15.2' RT.	858.92
1	13+66	¾" IRON ROD SET, 13.0' LT.	866.66

PROJECT NO: 4204-07-71 | HWY: WOODLAND ROAD | COUNTY: SHEBOYGAN | PLAN & PROFILE: MAINLINE | SHEET 13 | E

FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\SHEETSPLAN\PLAN & PROFILE SHEETS\W11567_PLAN AND PROFILE.DWG PLOT DATE : 11/28/2018 8:32:02 AM PLOT BY : STEPHANIE POTTER PLOT SCALE : 1" = 1' LAYOUT : LAYOUT1

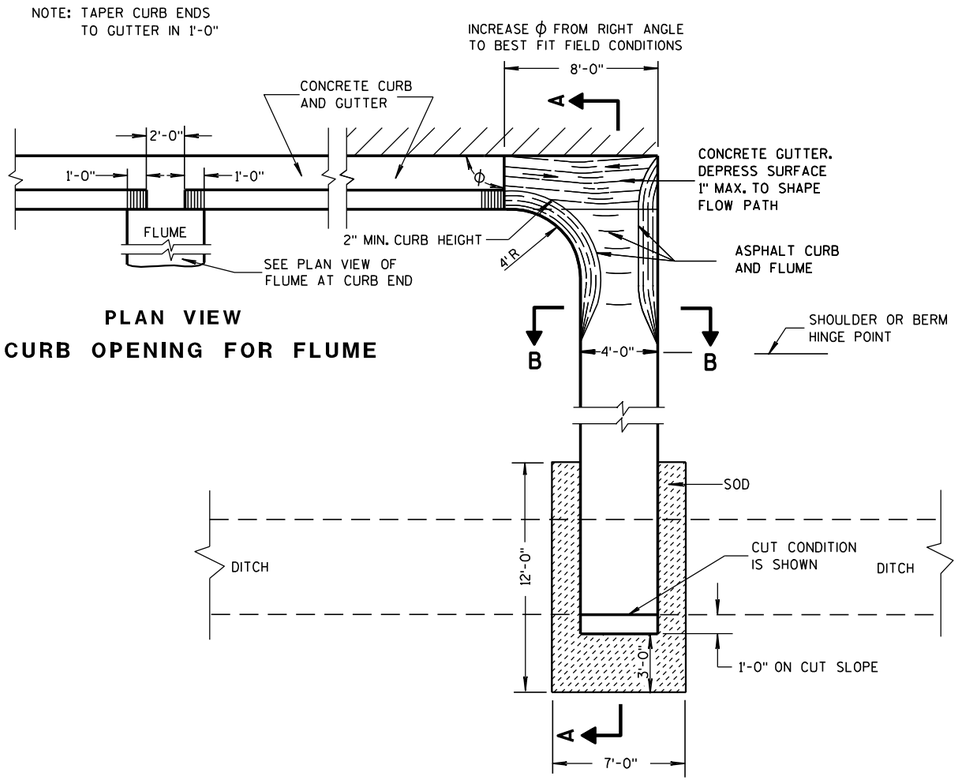
Standard Detail Drawing List

08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A01-13A	MARKER POST FOR RIGHT-OF-WAY
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C09-11A	SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD-HIGHWAY GRADE CROSSINGS
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

6

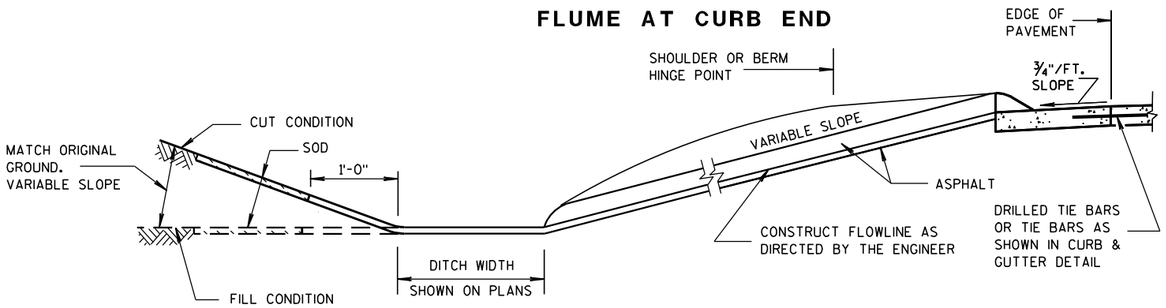
6

ASPHALTIC FLUME

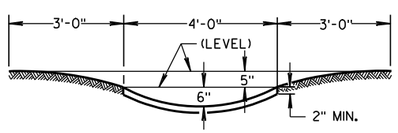


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

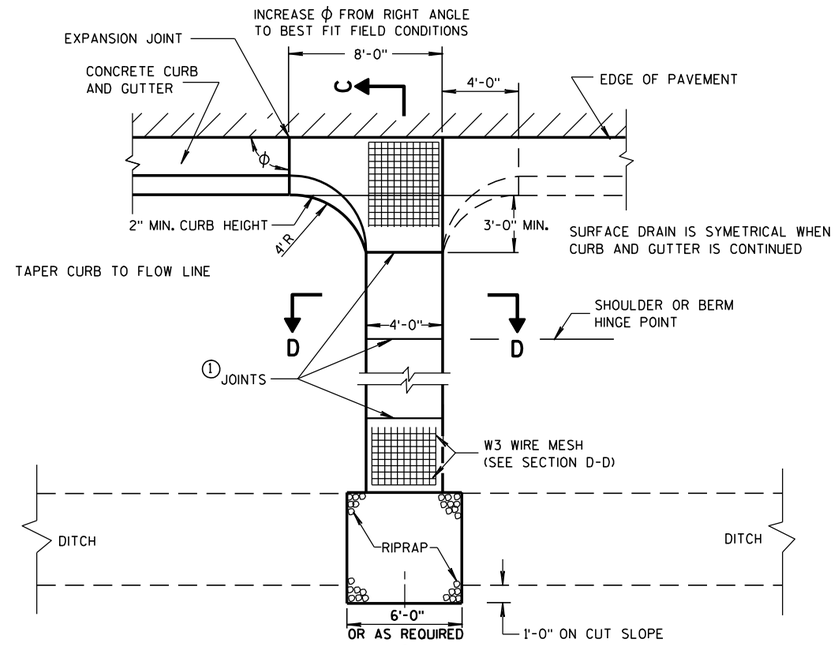
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

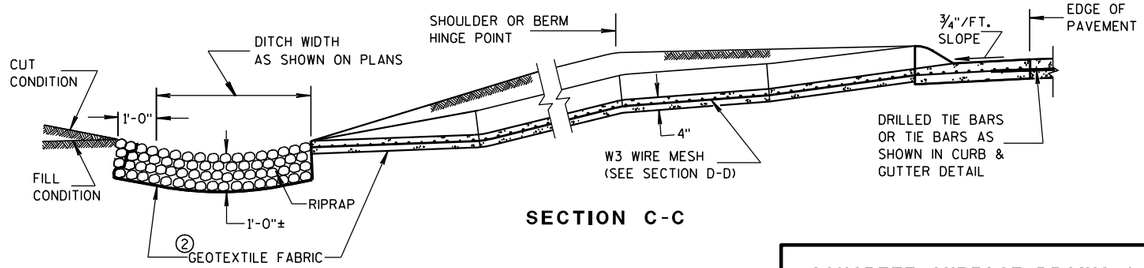
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

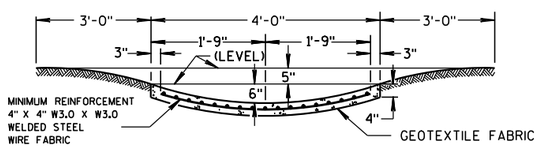
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
15
MENT

FHWA

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S.D.D. 8 D 4-5

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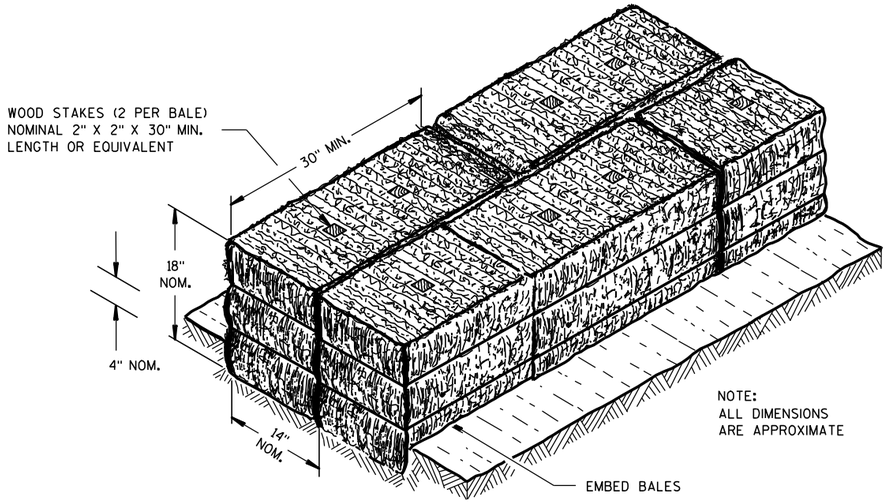
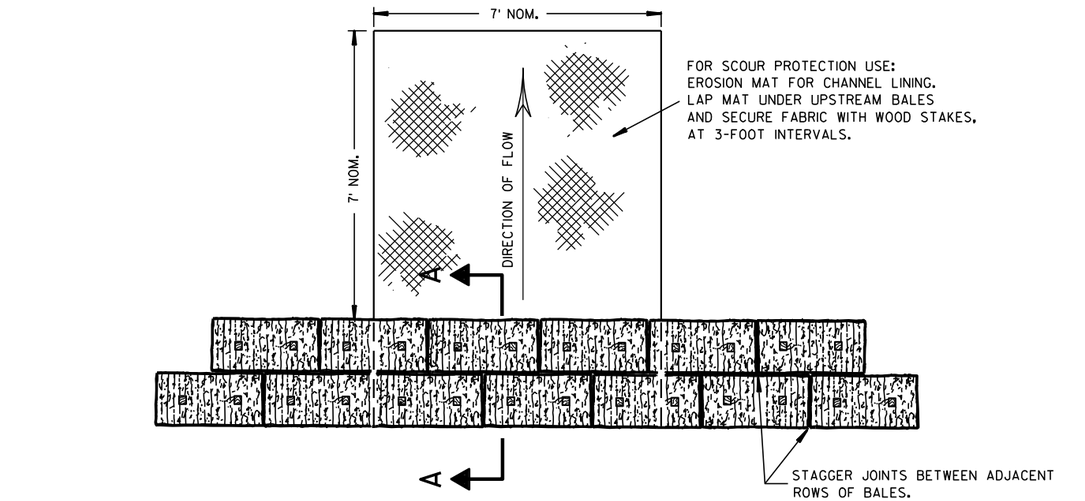
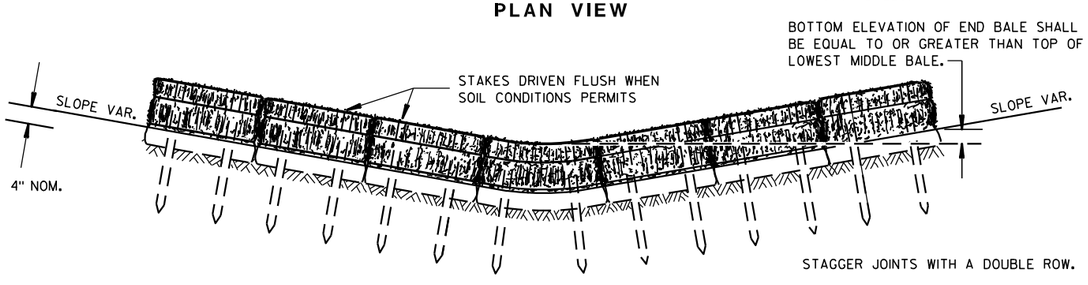
S.D.D. 8 D 4-5



SECTION A-A



PLAN VIEW



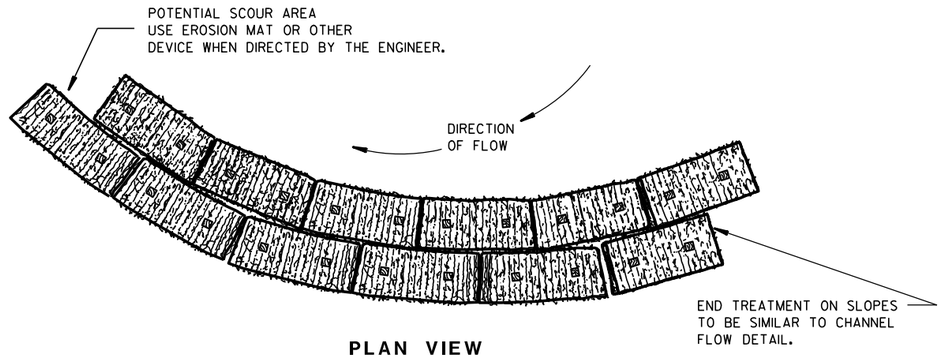
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

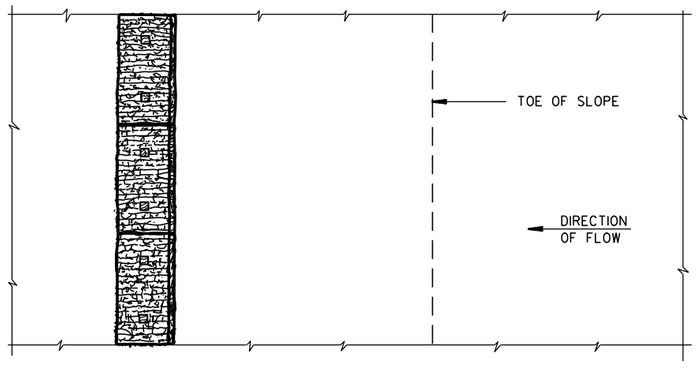
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

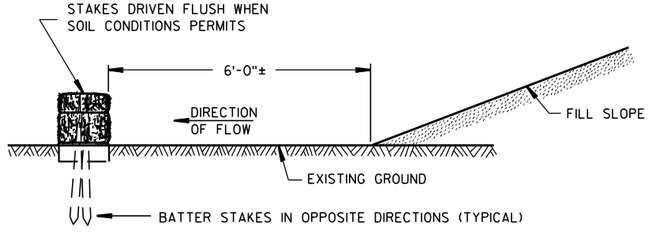


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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S.D.D. 8 E 8-3

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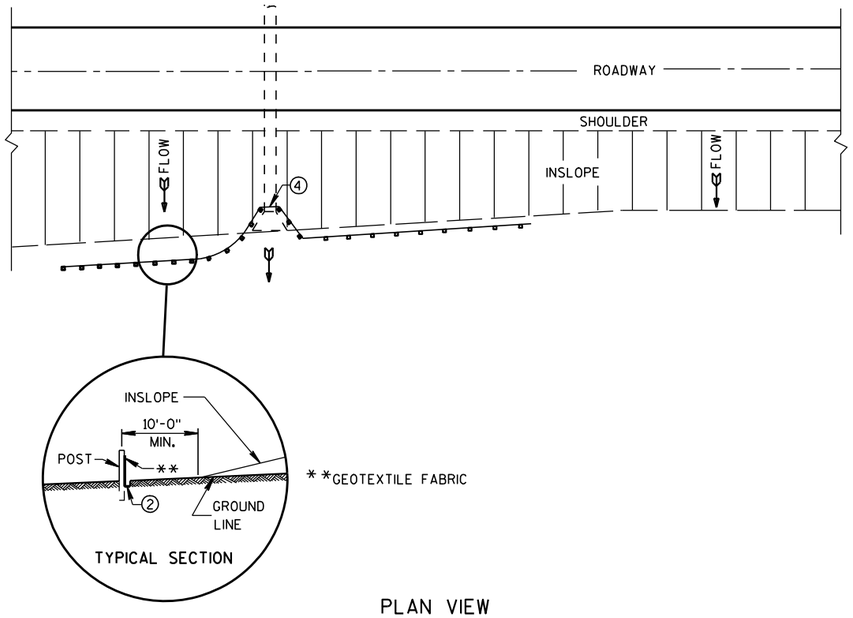
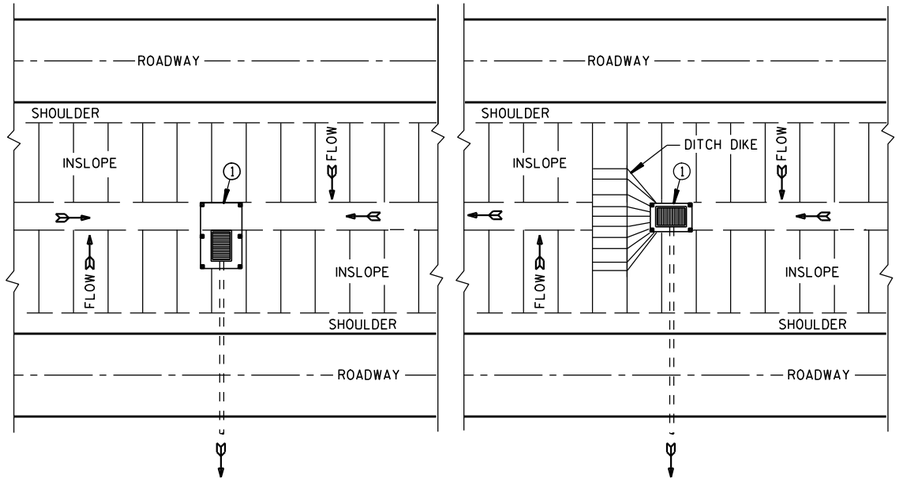
S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

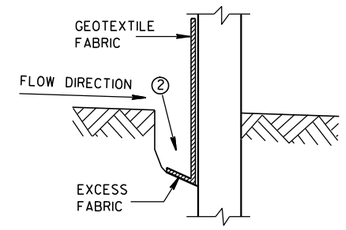
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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

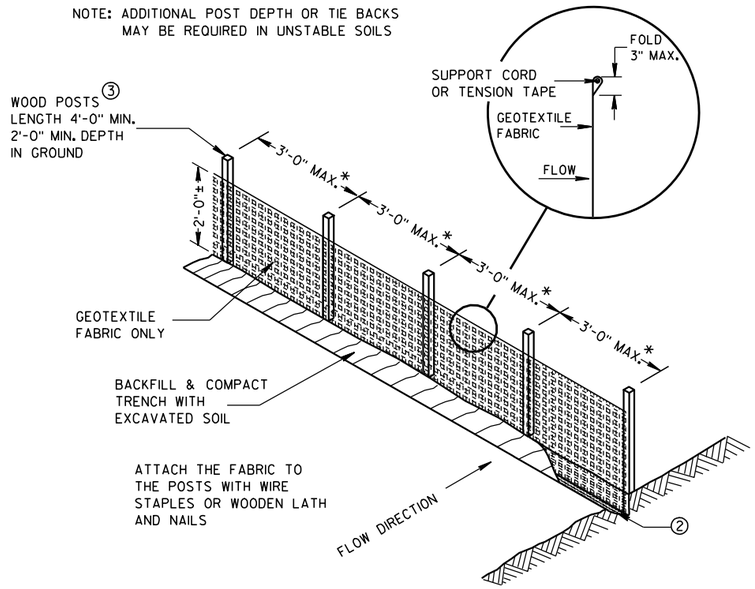
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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

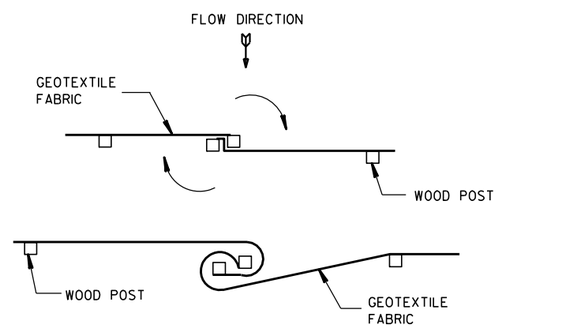
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



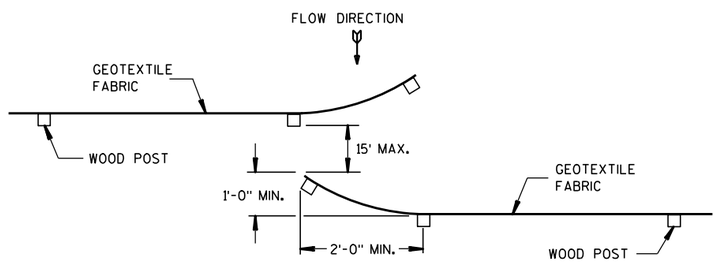
TRENCH DETAIL



SILT FENCE

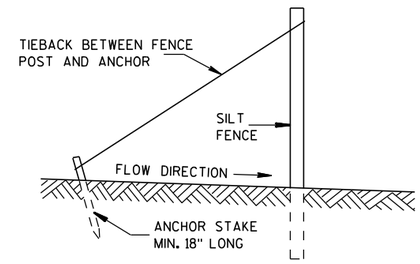


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 8 E 9-6

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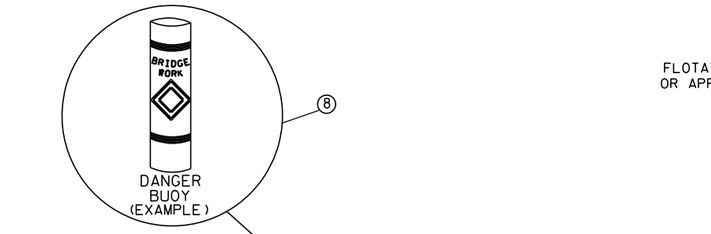
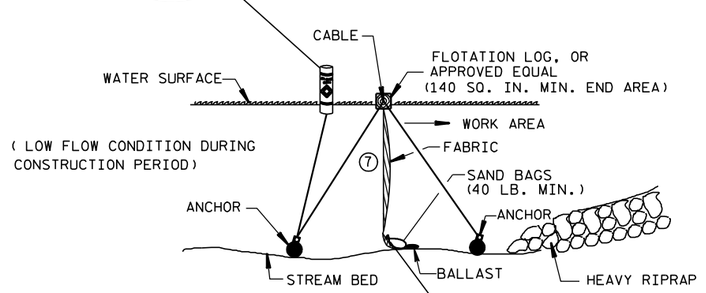
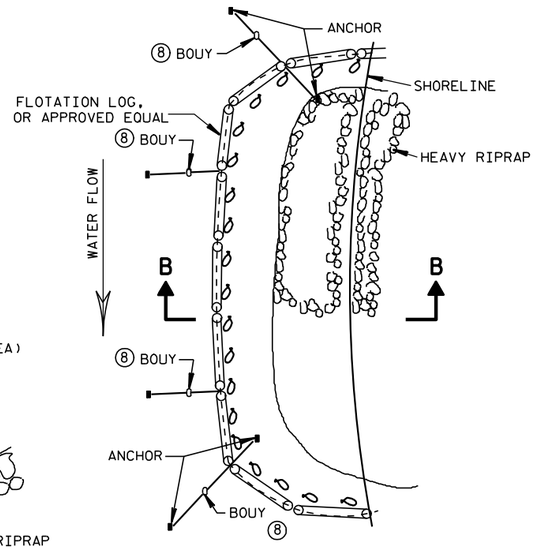
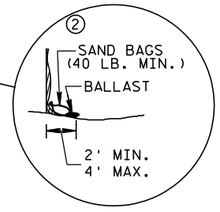
S.D.D. 8 E 9-6



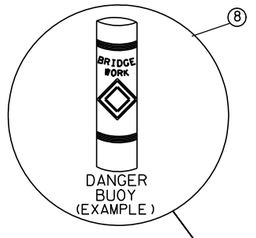


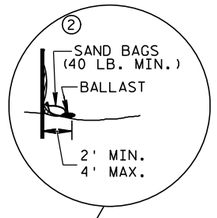


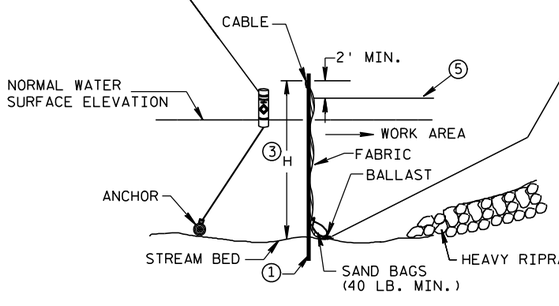
SECTION B-B



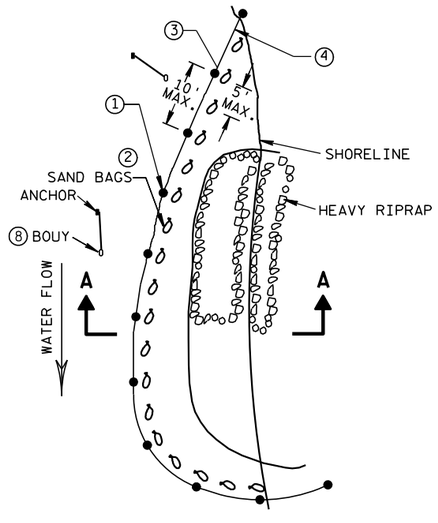
TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6







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 SANDBAGS 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 FT., POST SPACING MAY NEED TO BE DECREASED.

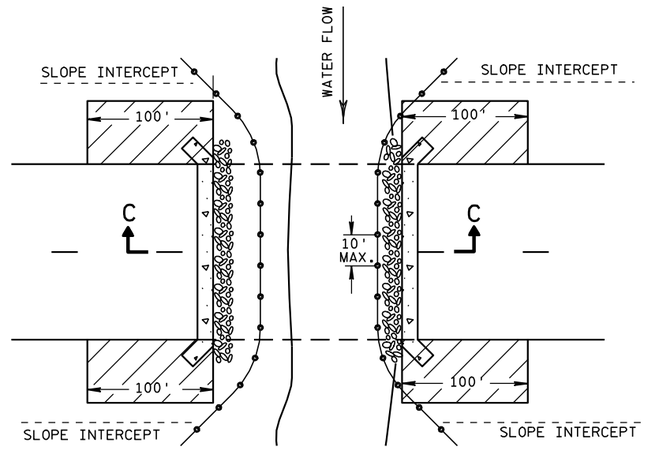
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

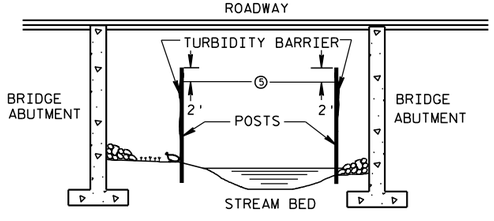
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 11-2

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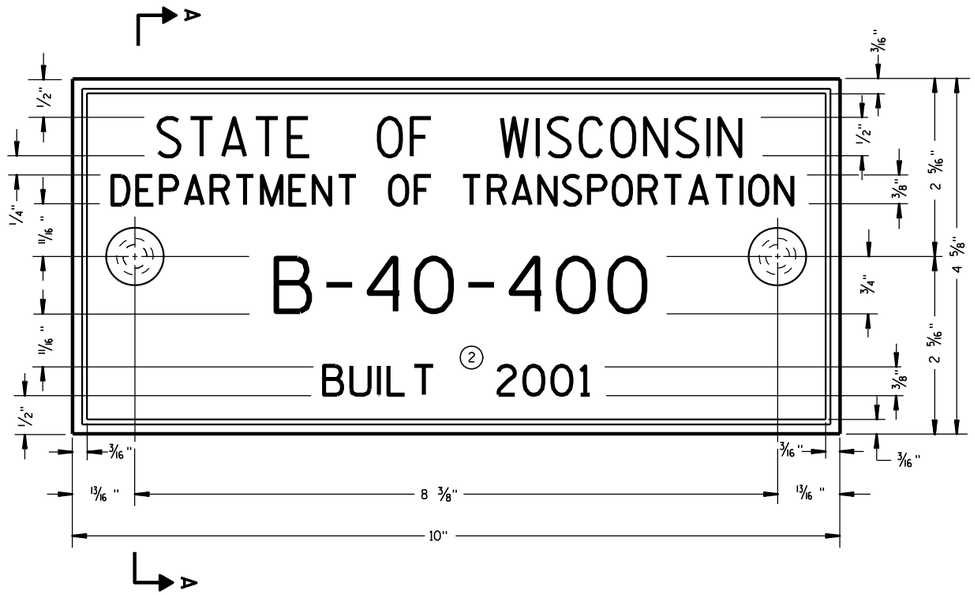
S.D.D. 8 E 11-2



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

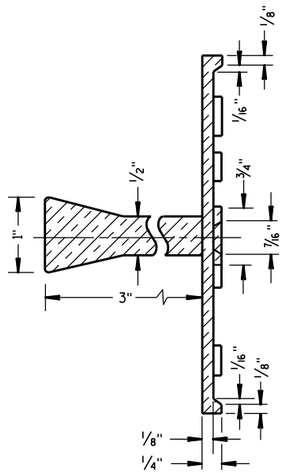
GENERAL NOTES

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

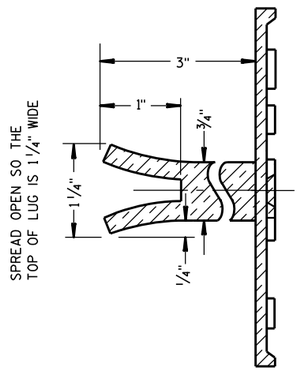
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

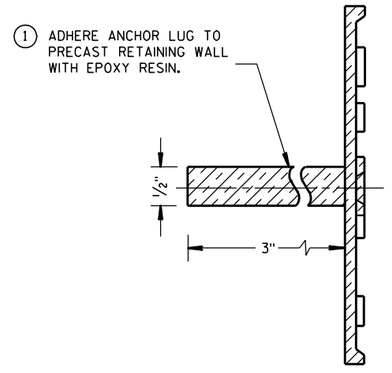
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

6

S.D.D. 12 A 3-10

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.

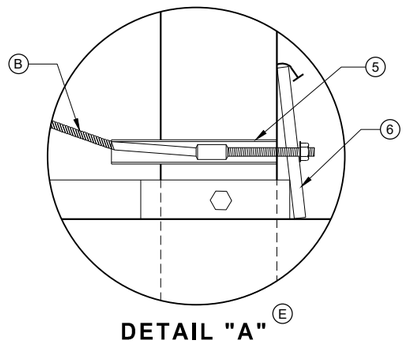
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

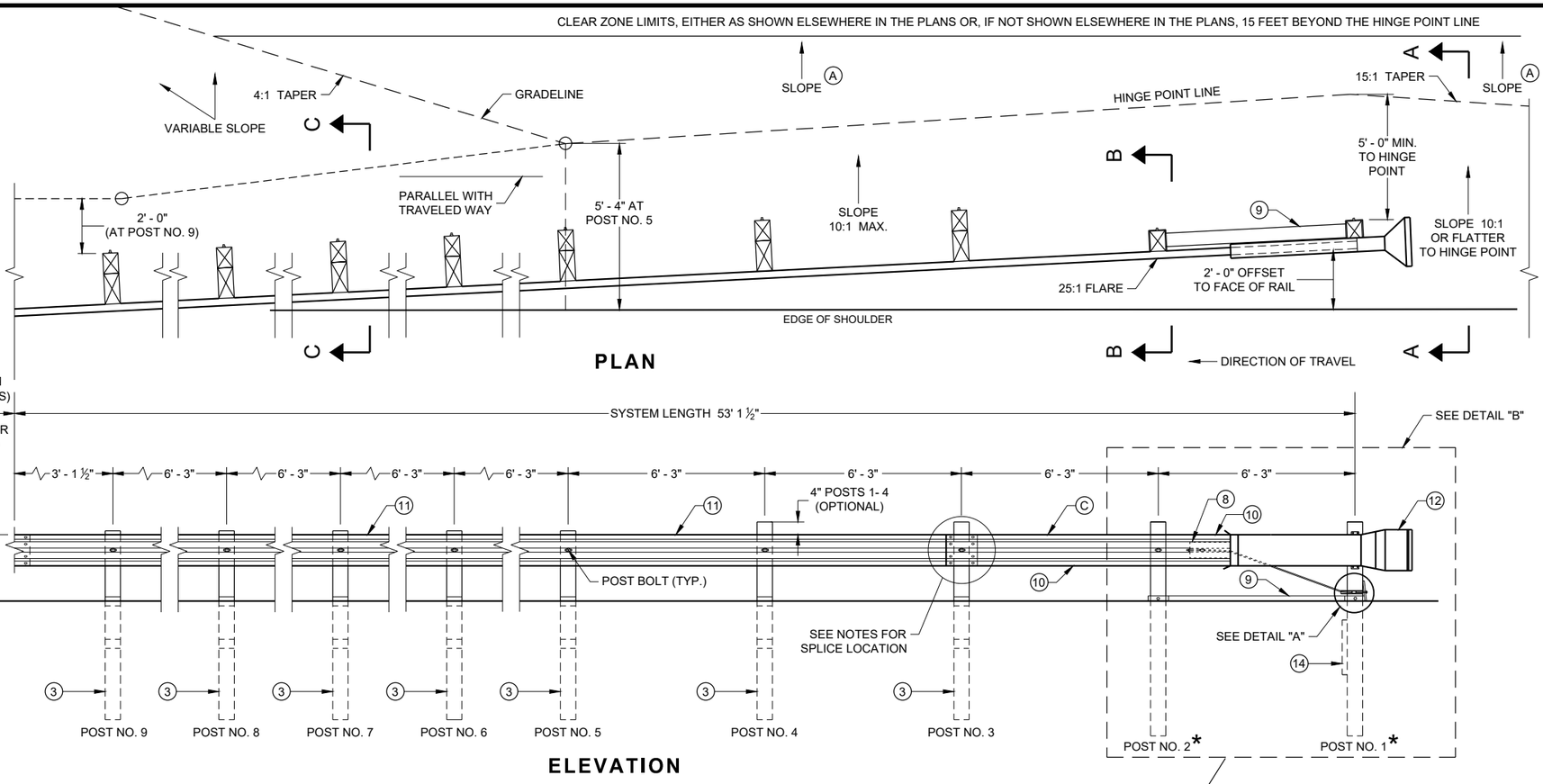
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

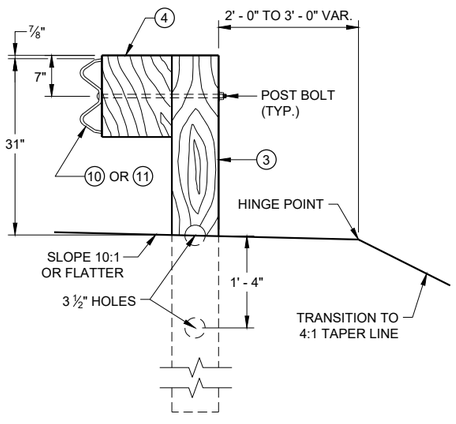
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

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.

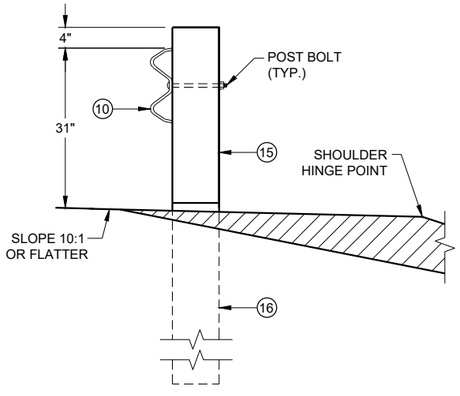


DETAIL "A" (E)

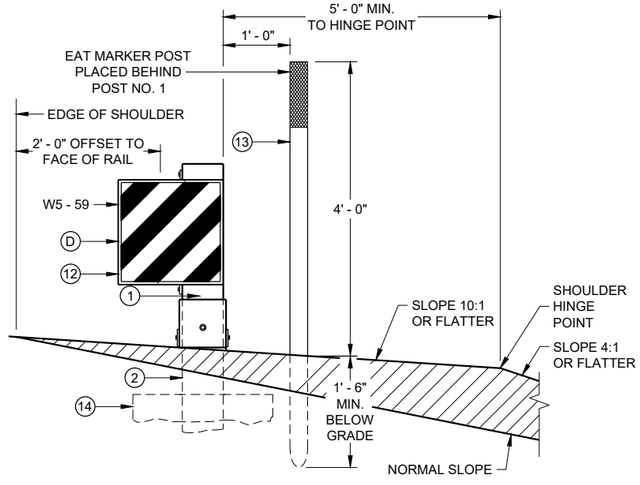




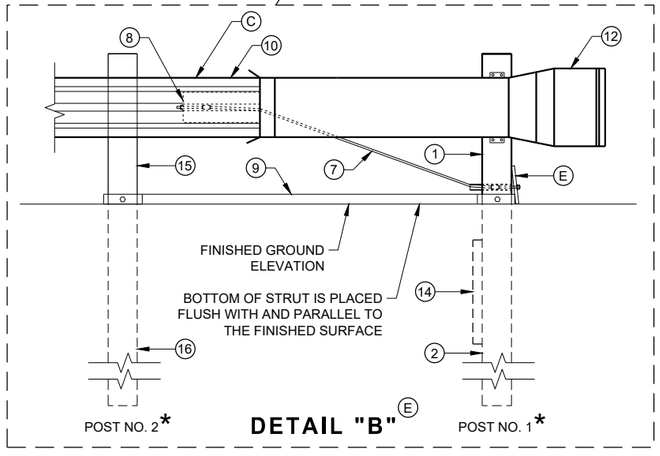
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



DETAIL "B" (E)

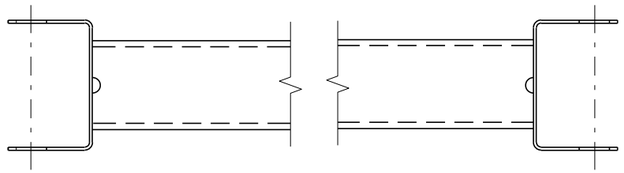
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

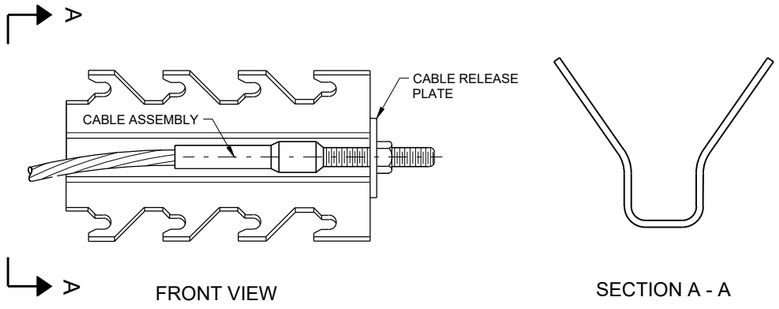
6
SDD 14B44 - 04a

BILL OF MATERIALS

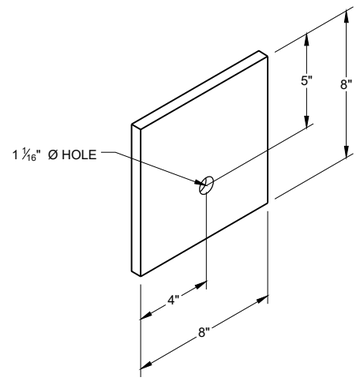
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUGACTURER'S DETAILS FOR MORE INFORMATION.
1	UPPER POST NO. 1 6" X 6" TUBE
2	LOWER POST NO. 1
3	WOOD CRT
4	WOOD BLOCKOUT
5	PIPE SLEEVE
6	BEARING PLATE
7	BCT CABLE ASSEMBLY
8	ANCHOR CABLE BOX
9	GROUND STRUT
10	PERFORATED W-BEAM RAIL 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 GROUND STRUT (9) (E)



GENERIC ANCHOR CABLE BOX (9) (E)



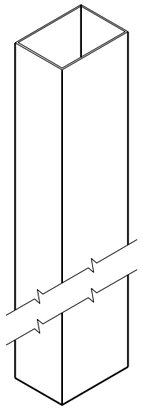
BEARING PLATE (6) (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

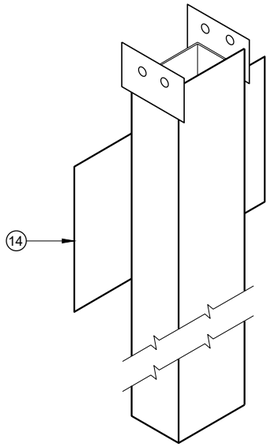
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

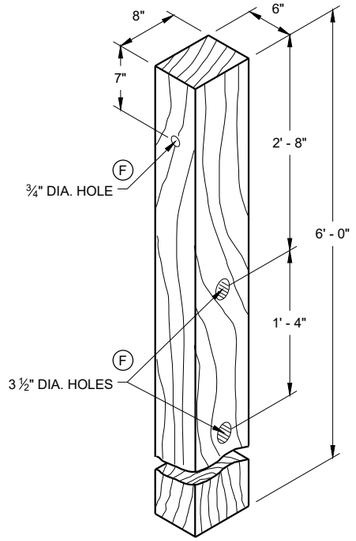
SDD 14B45 - 04b



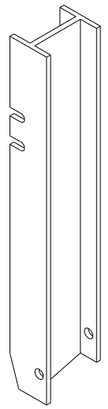
UPPER POST NO. 1 (1) (E)



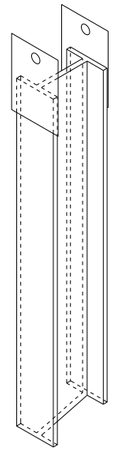
LOWER POST NO. 1 (2) (E)



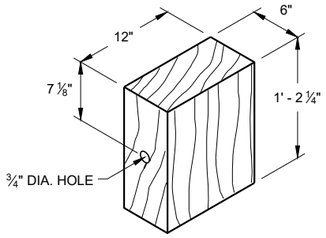
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



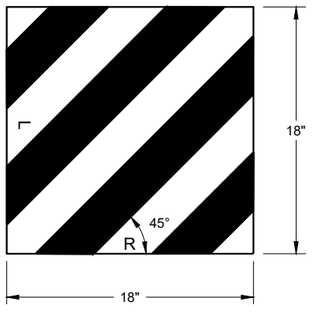
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

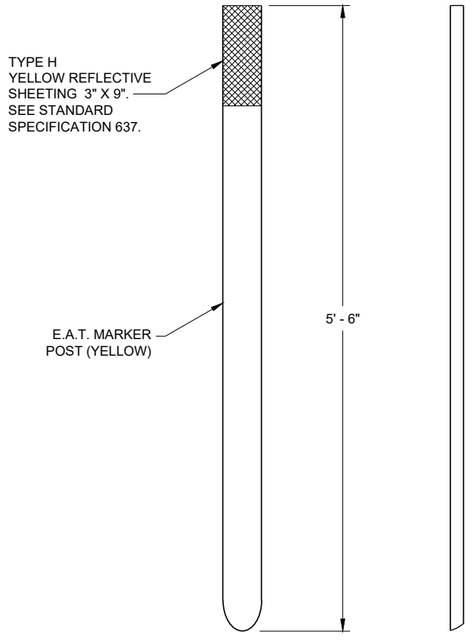


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



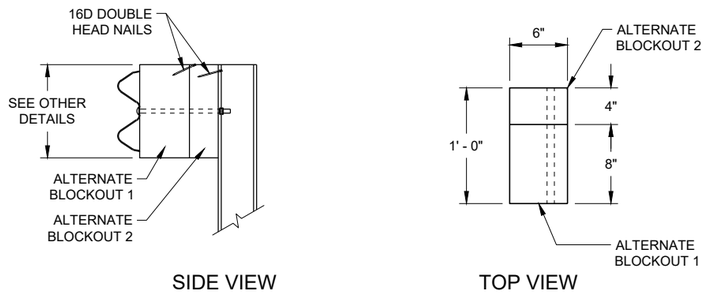
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

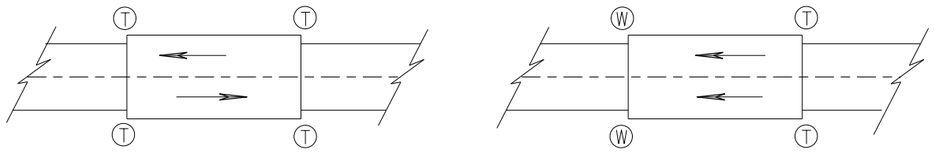
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

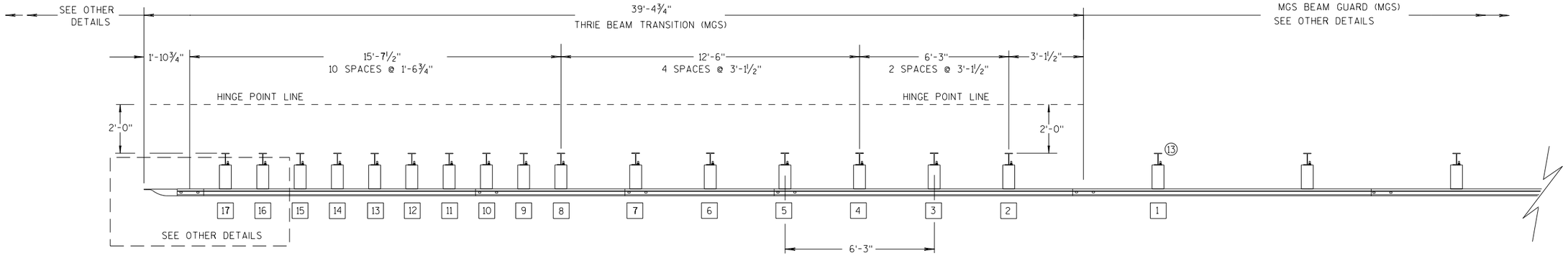
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

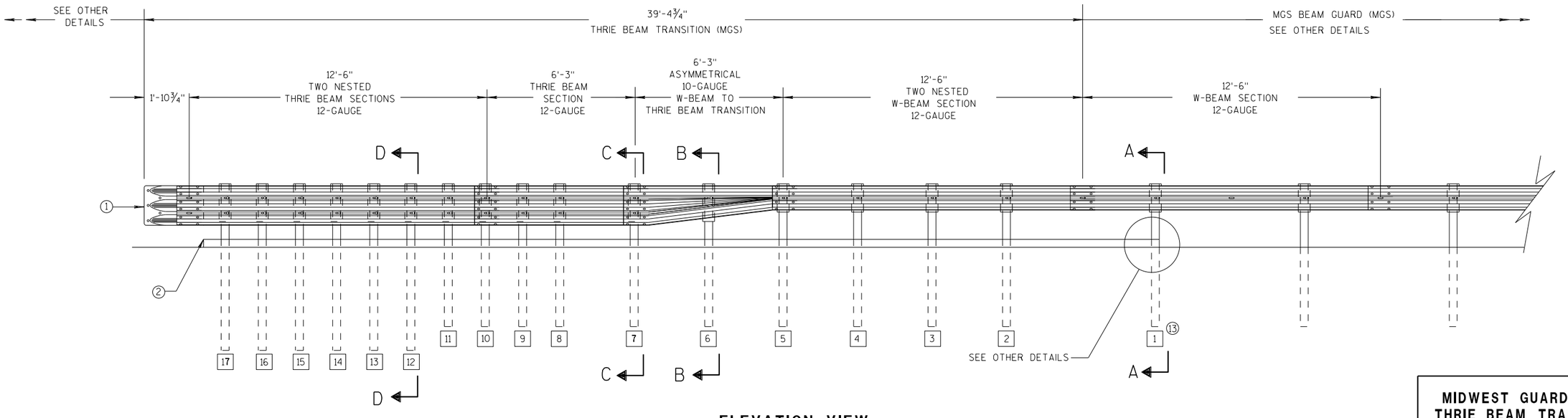
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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

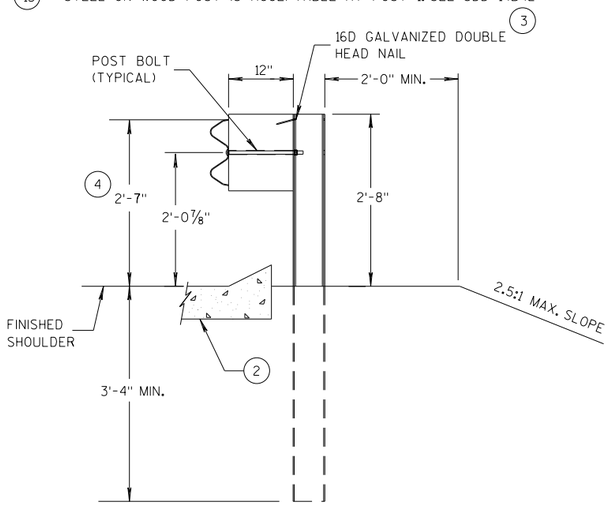
GENERAL NOTES

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

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

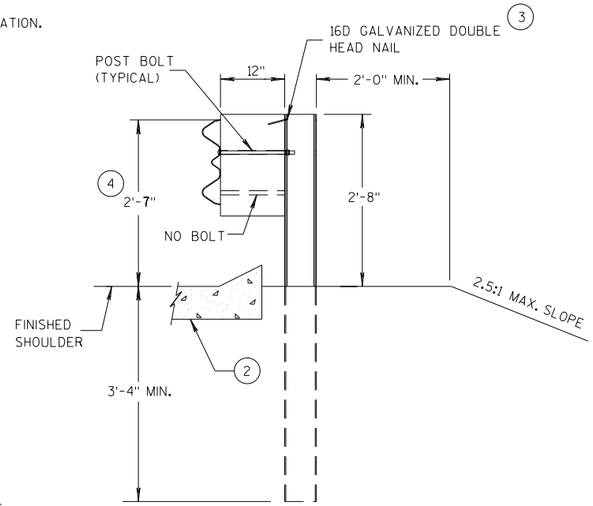
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



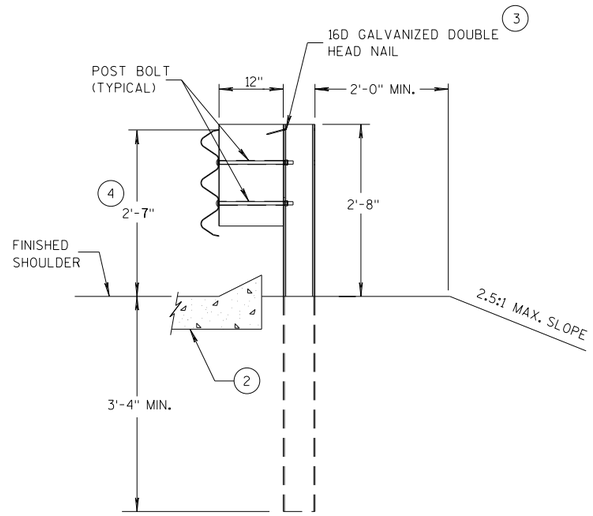
SECTION A-A (13)

POSTS 1-5



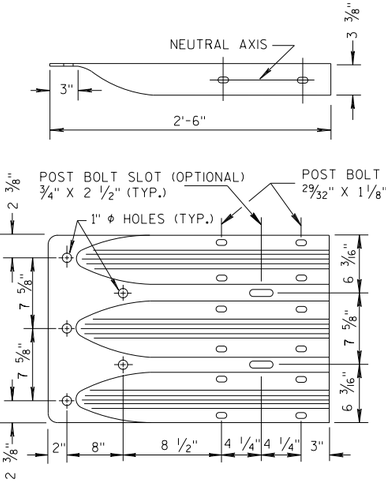
SECTION B-B

POST 6

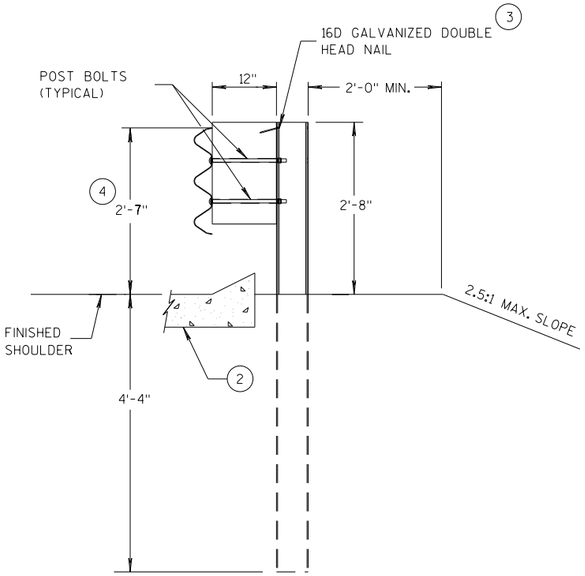


SECTION C-C

POSTS 7-11

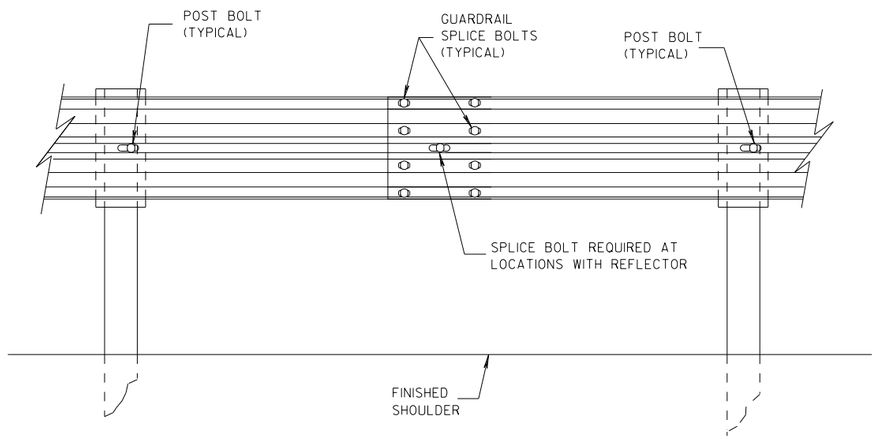


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

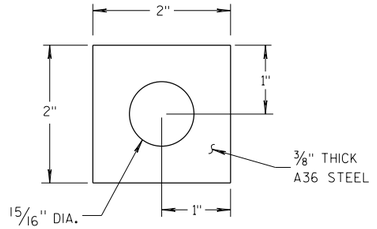
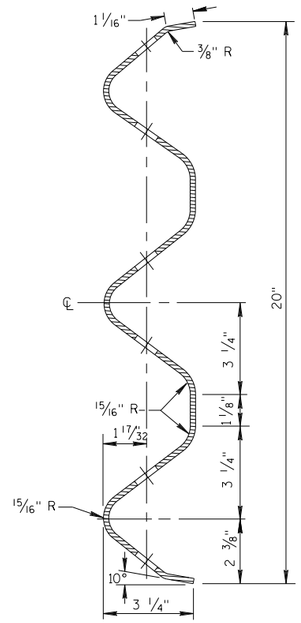


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

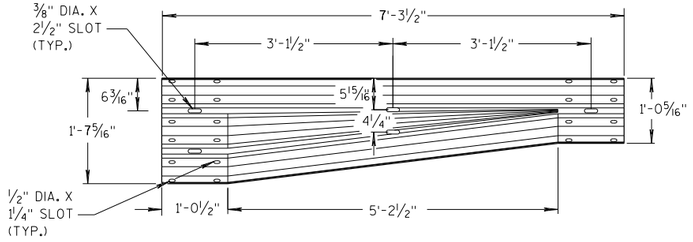
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 24

6

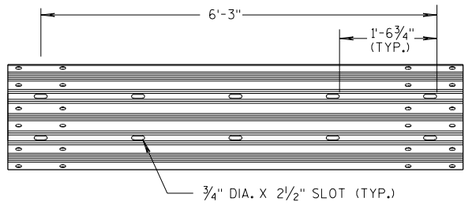
S.D.D. 14 B 45-5b

6

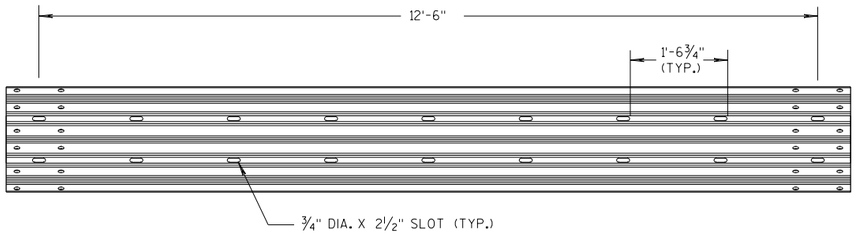
S.D.D. 14 B 45-5b



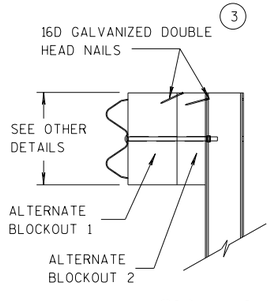
W-BEAM TO THRIE BEAM TRANSITION SECTION



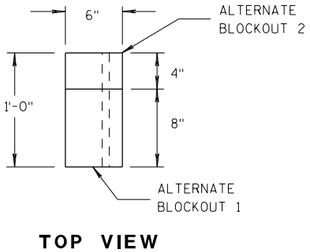
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

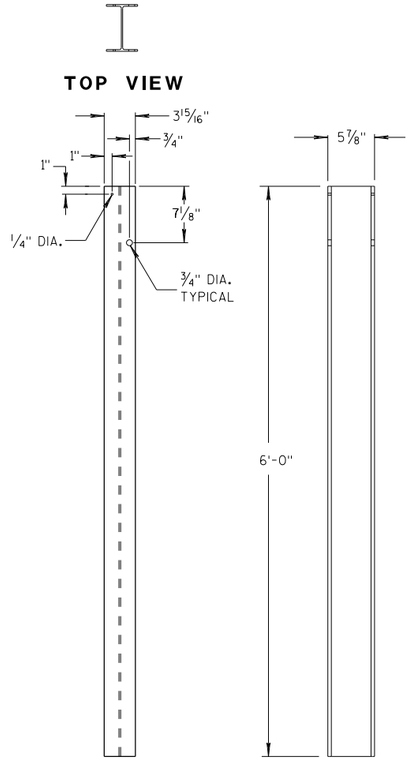


SIDE VIEW



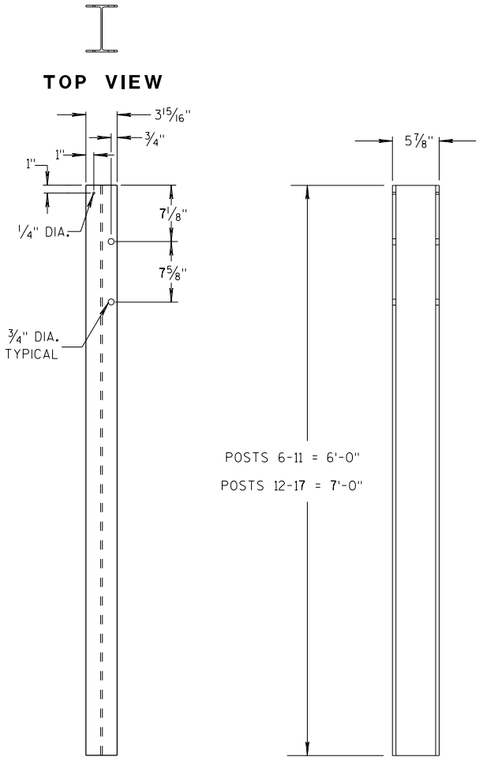
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



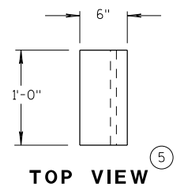
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

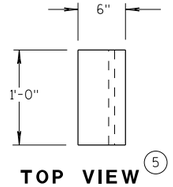


FRONT VIEW SIDE VIEW

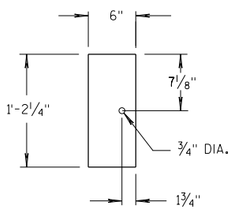
STEEL POSTS 6-17



TOP VIEW (5)

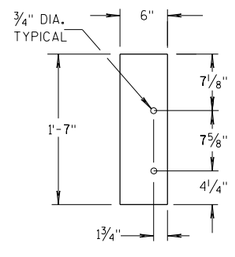


TOP VIEW (5)



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)

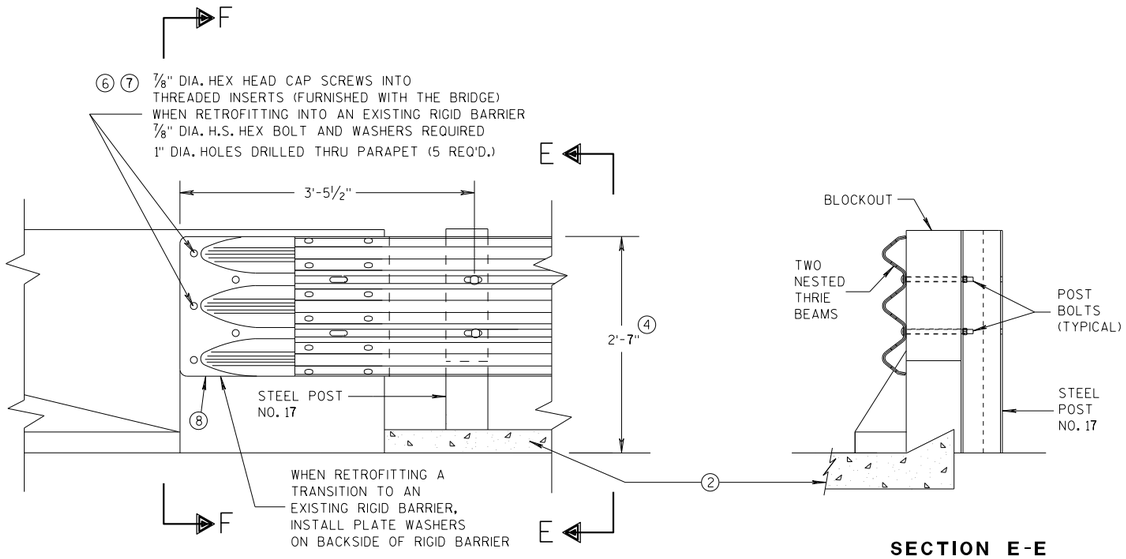
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 25

6

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

6

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



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

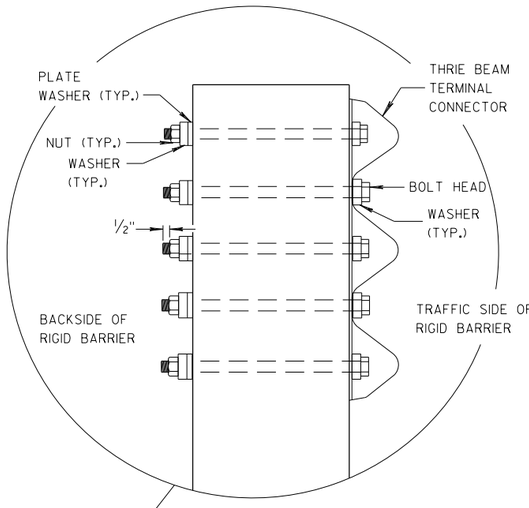
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

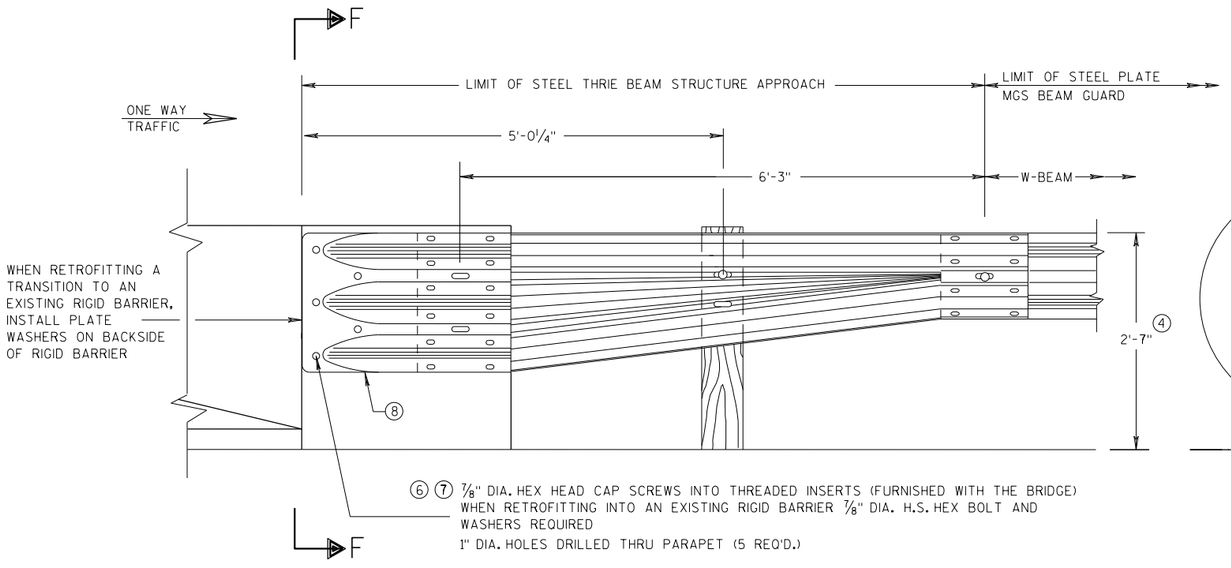
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

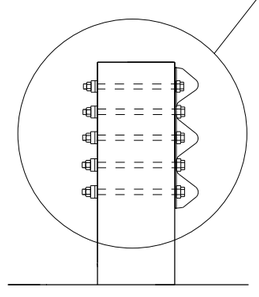
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

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

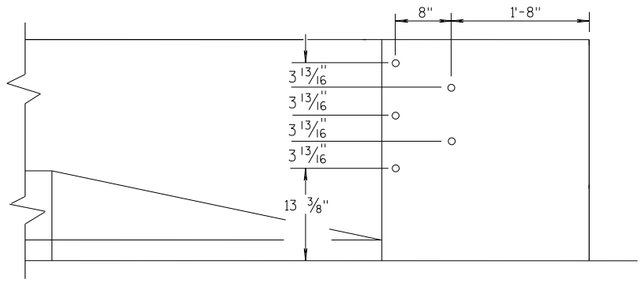




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS D[illegible] UNIT SUPERVI[illegible] — [illegible]NT
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GENERAL NOTES

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

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

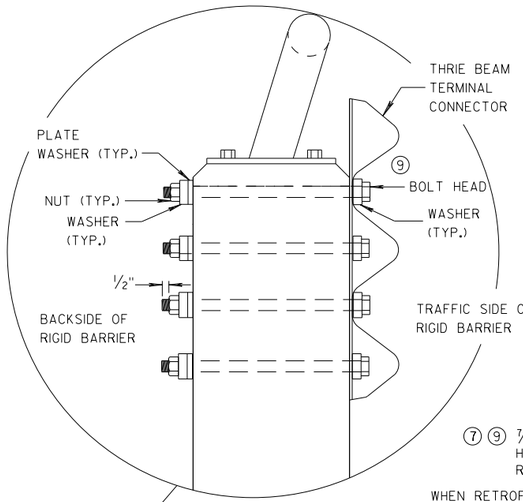
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

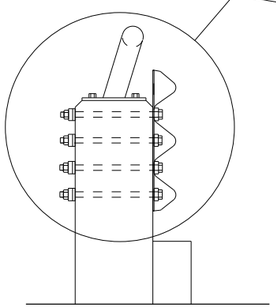
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

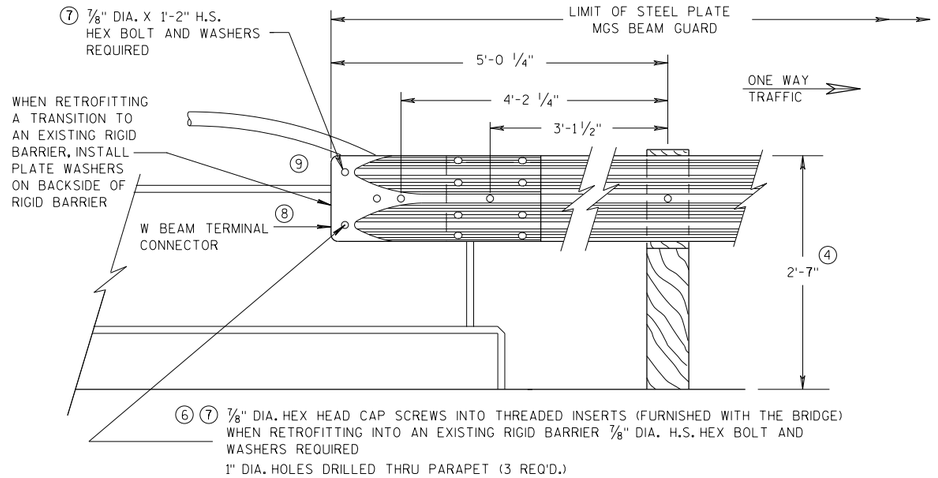
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

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





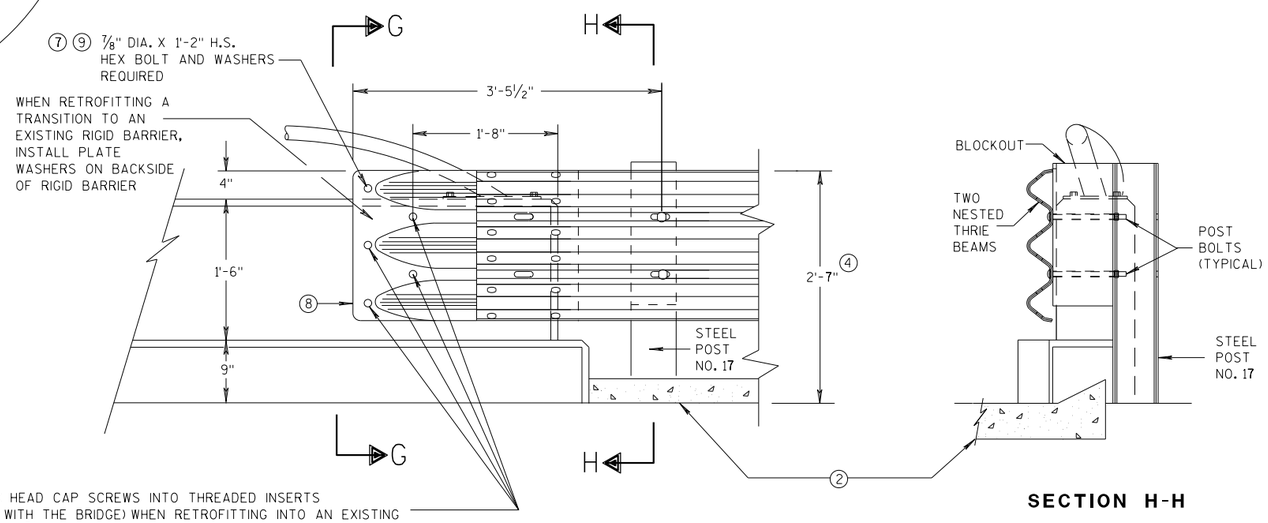
SECTION G-G



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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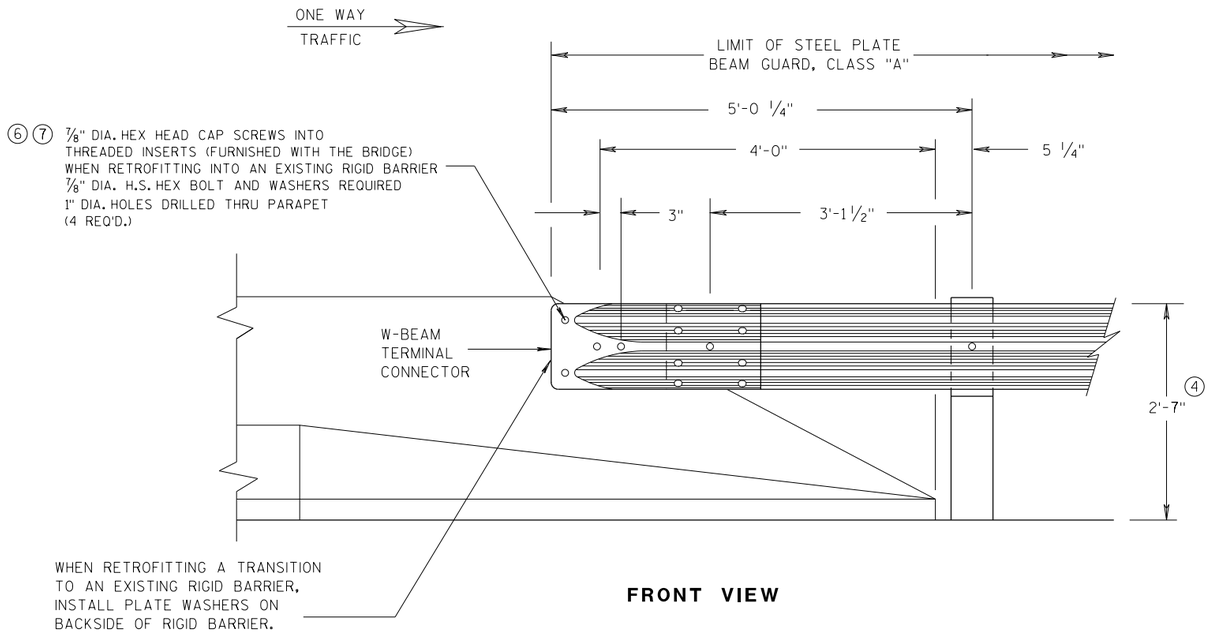


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

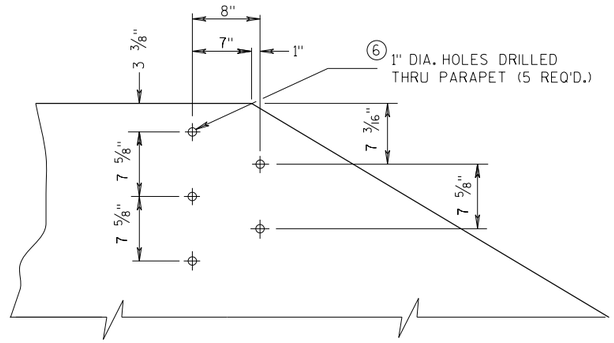
GENERAL NOTES

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

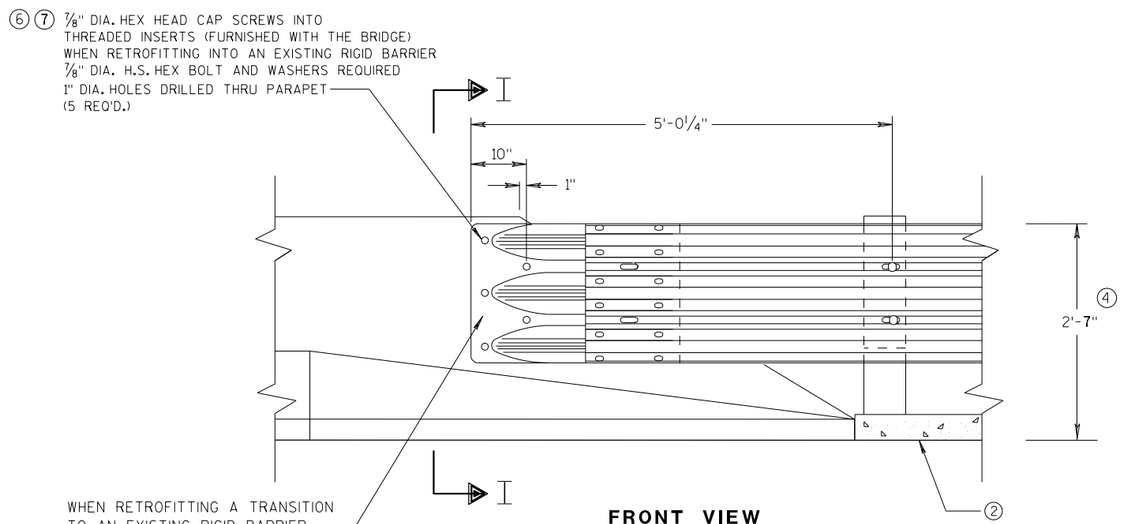
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

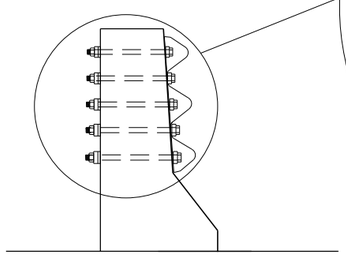
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



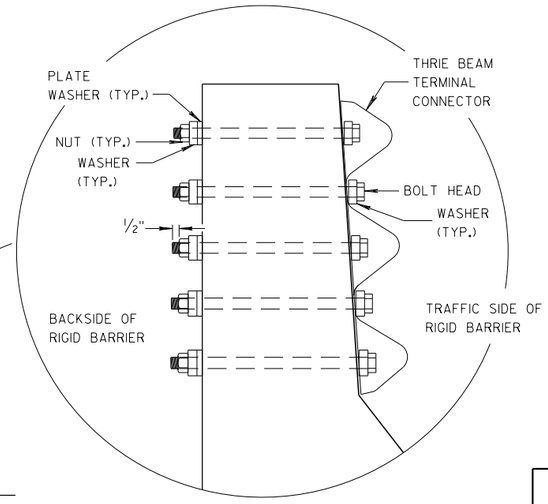
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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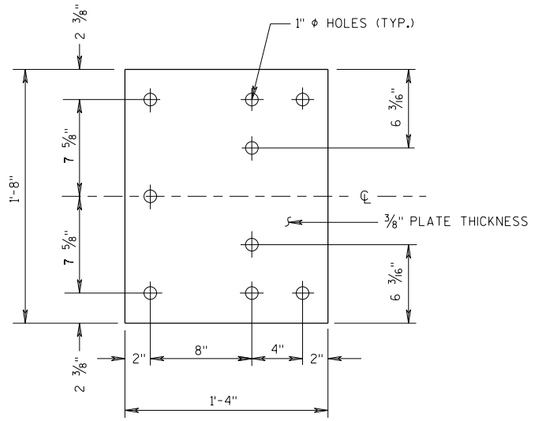
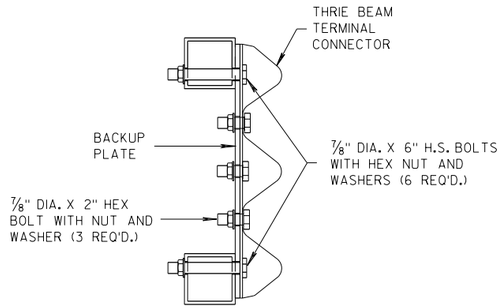
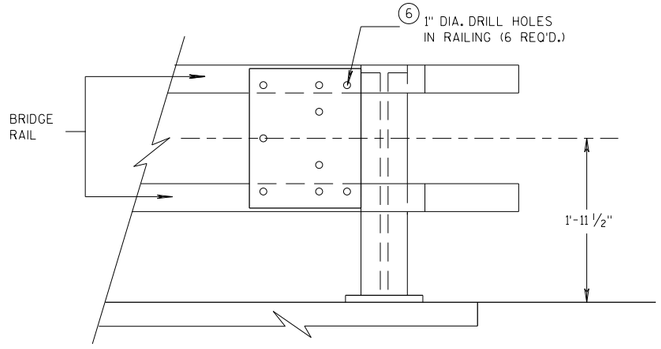


BACK-UP PLATE DETAIL



SECTION J-J

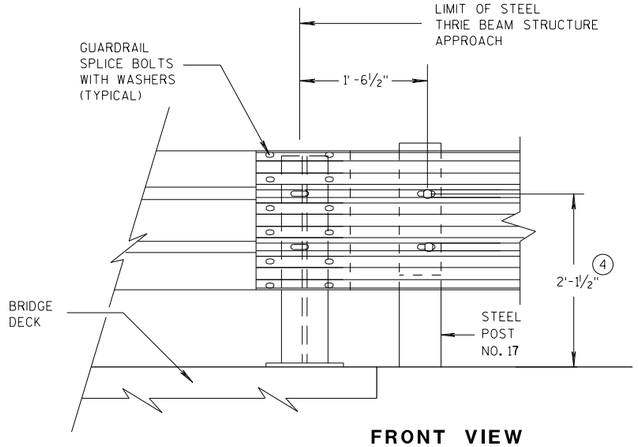


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

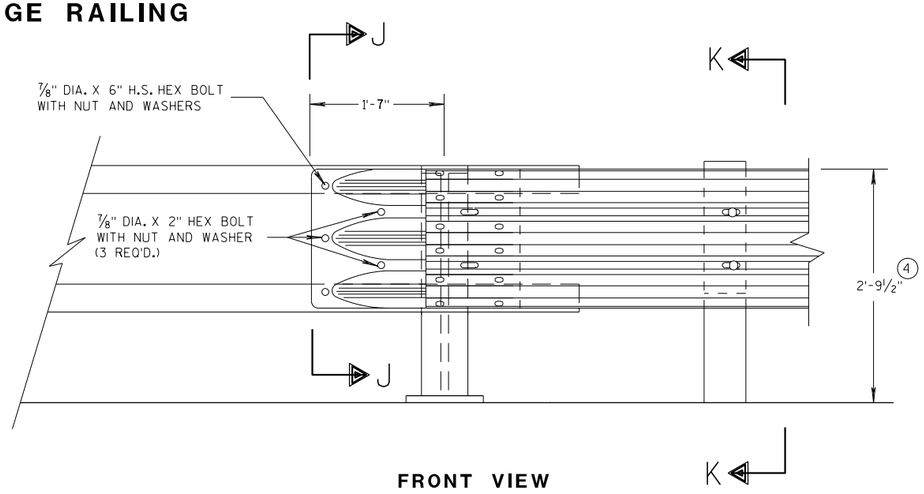
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

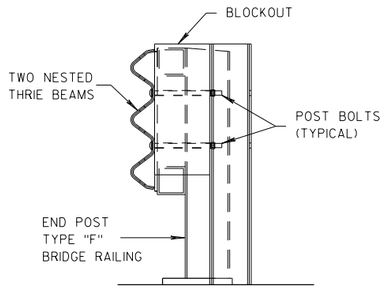


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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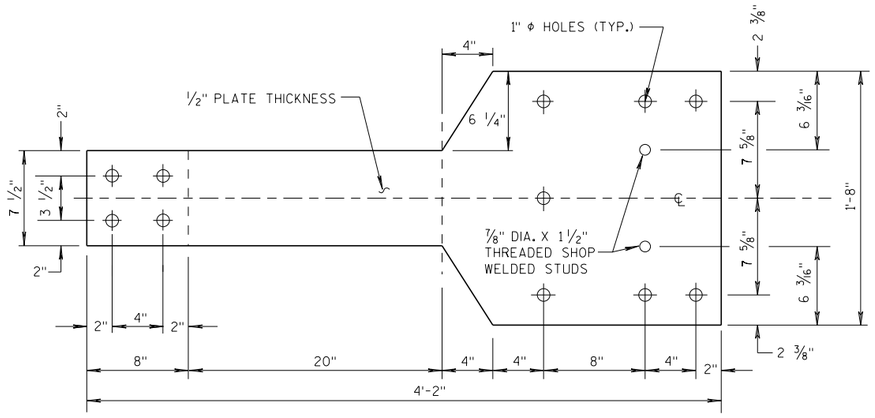
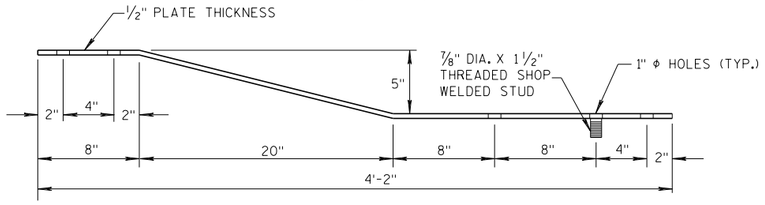
GENERAL NOTES

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

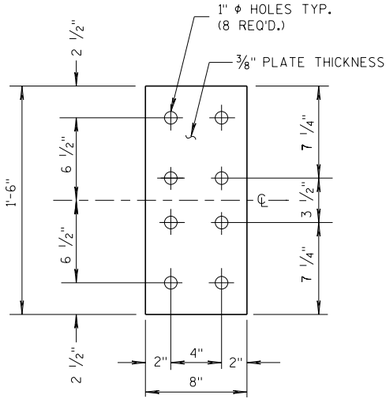


FRONT VIEW



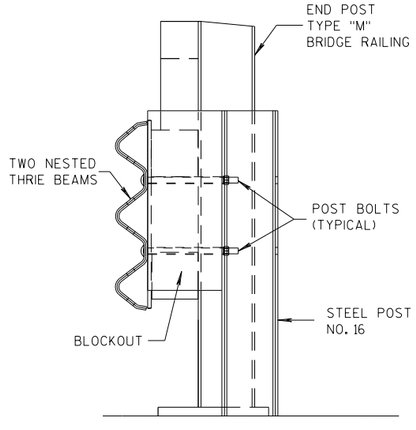
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

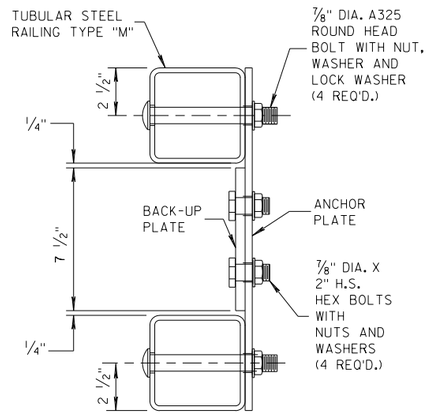


FRONT VIEW

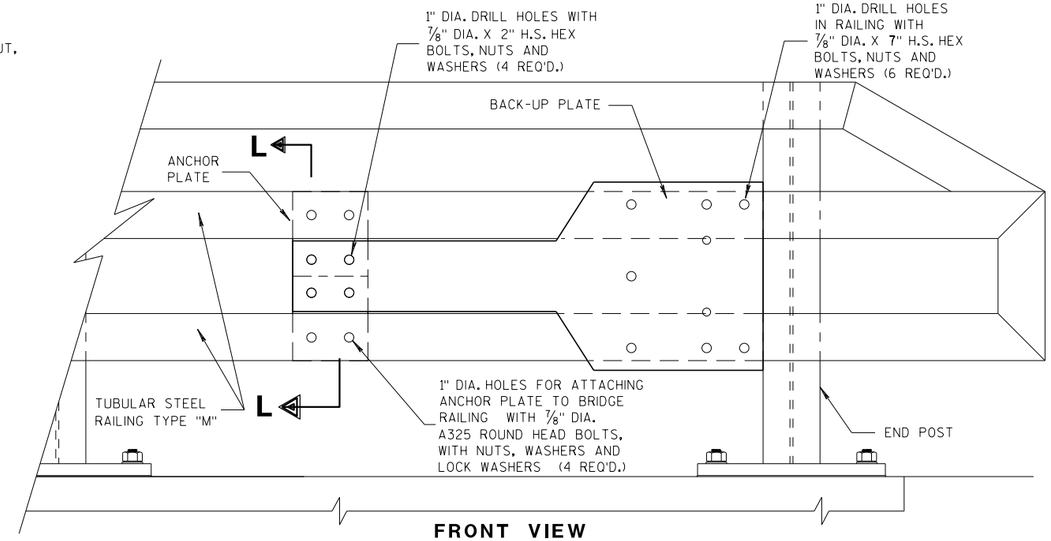
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

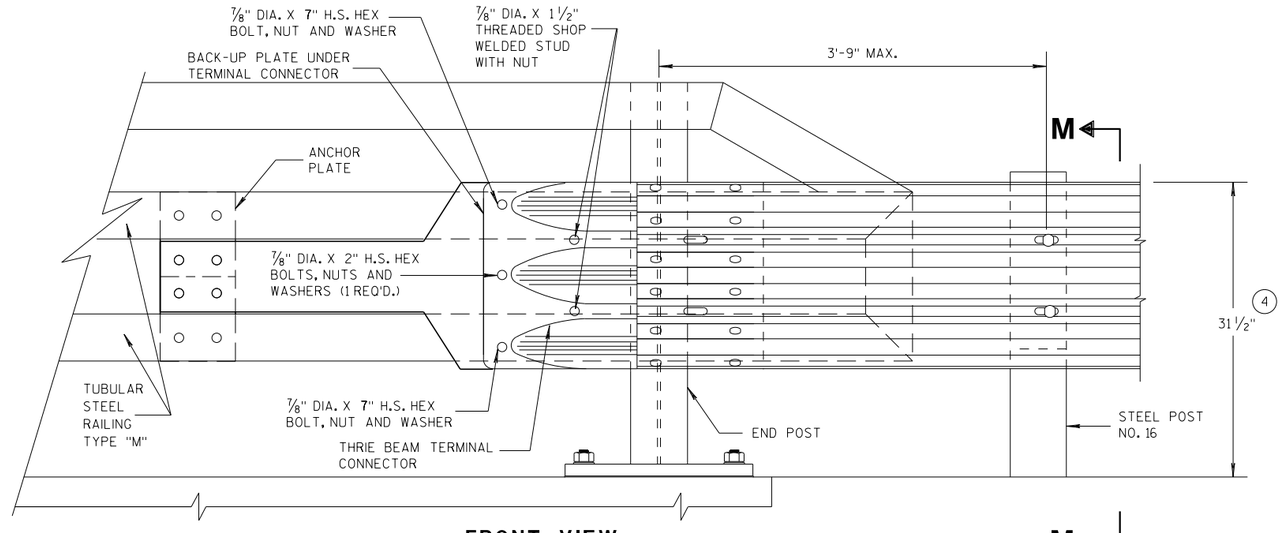


SECTION L-L

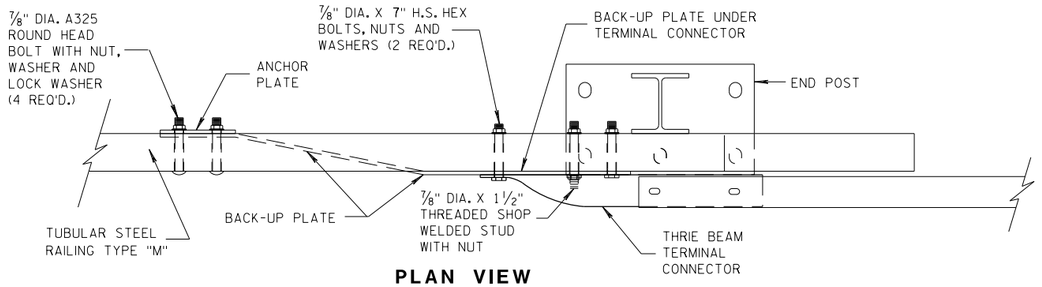


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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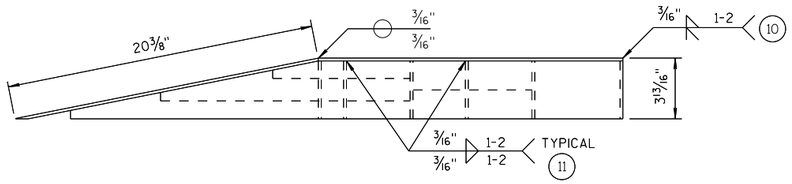

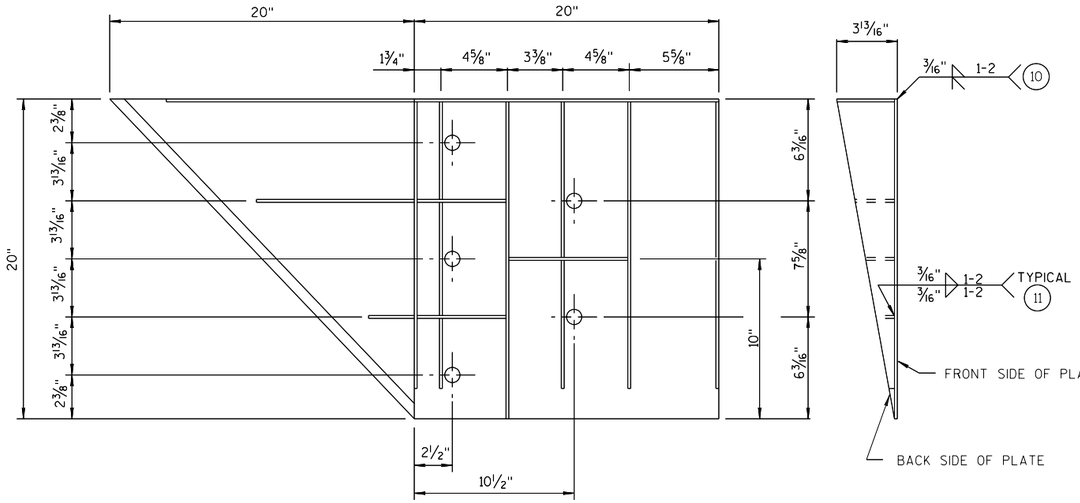

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

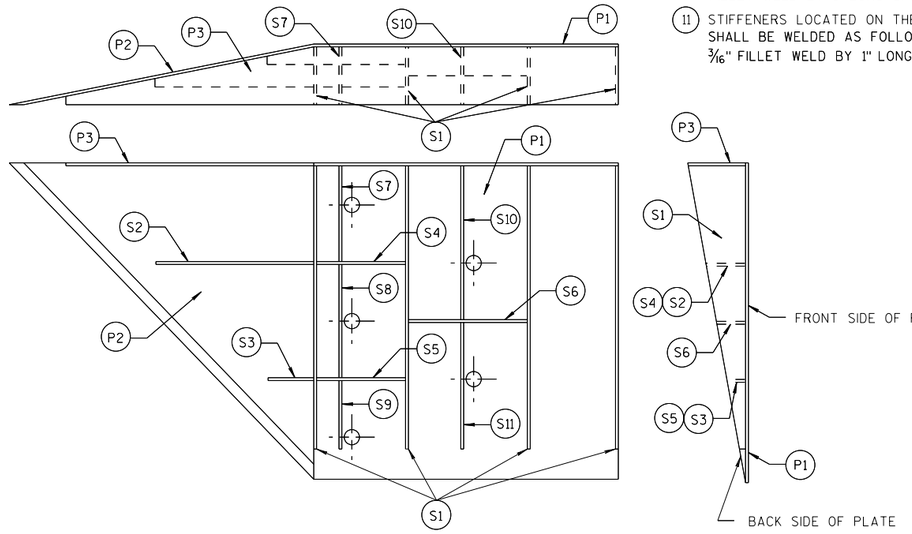

PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

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".

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)

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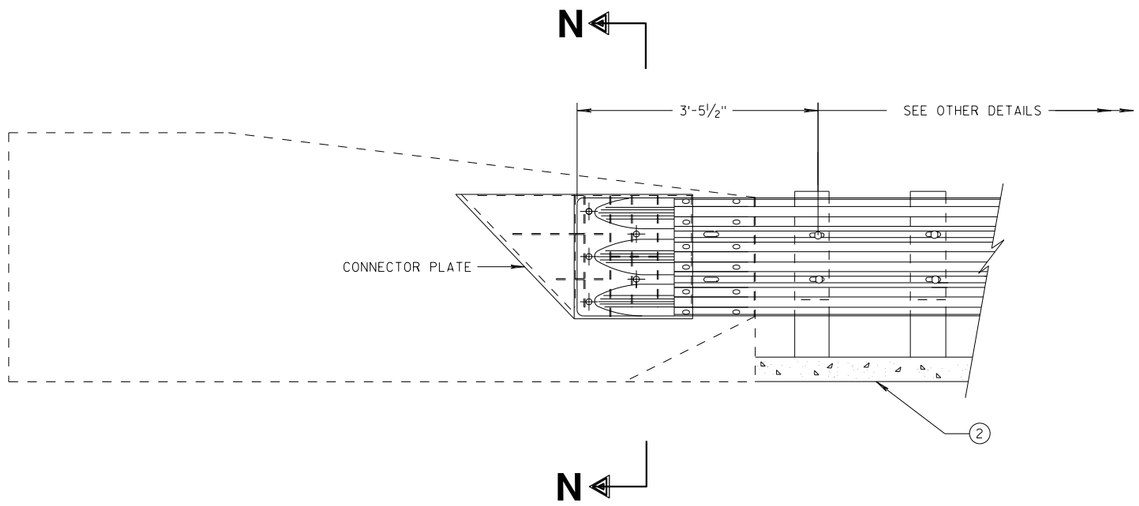
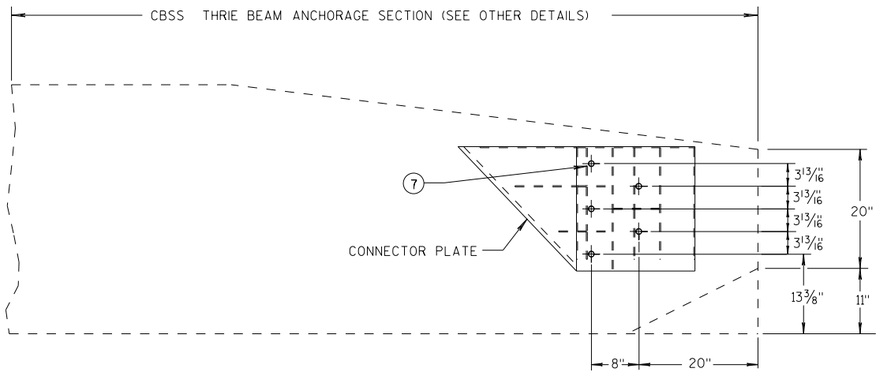


THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



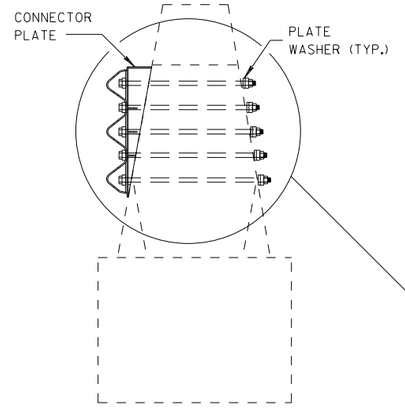
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

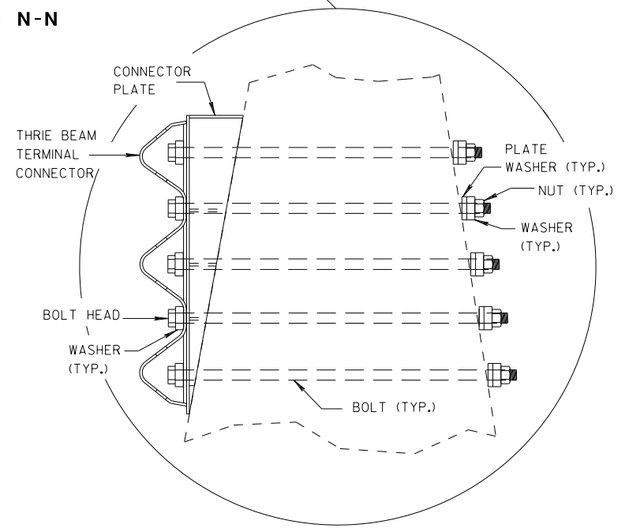
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

(7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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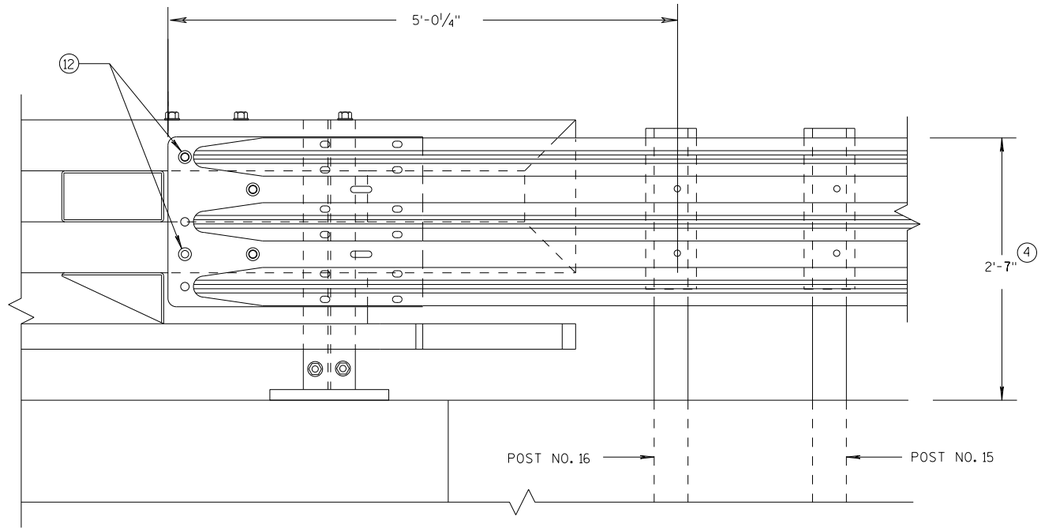
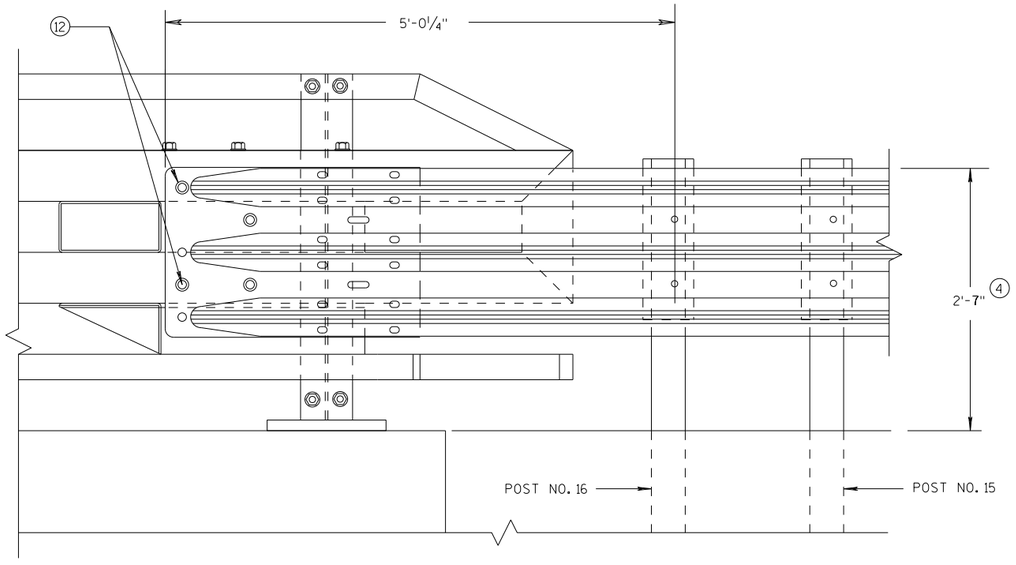


ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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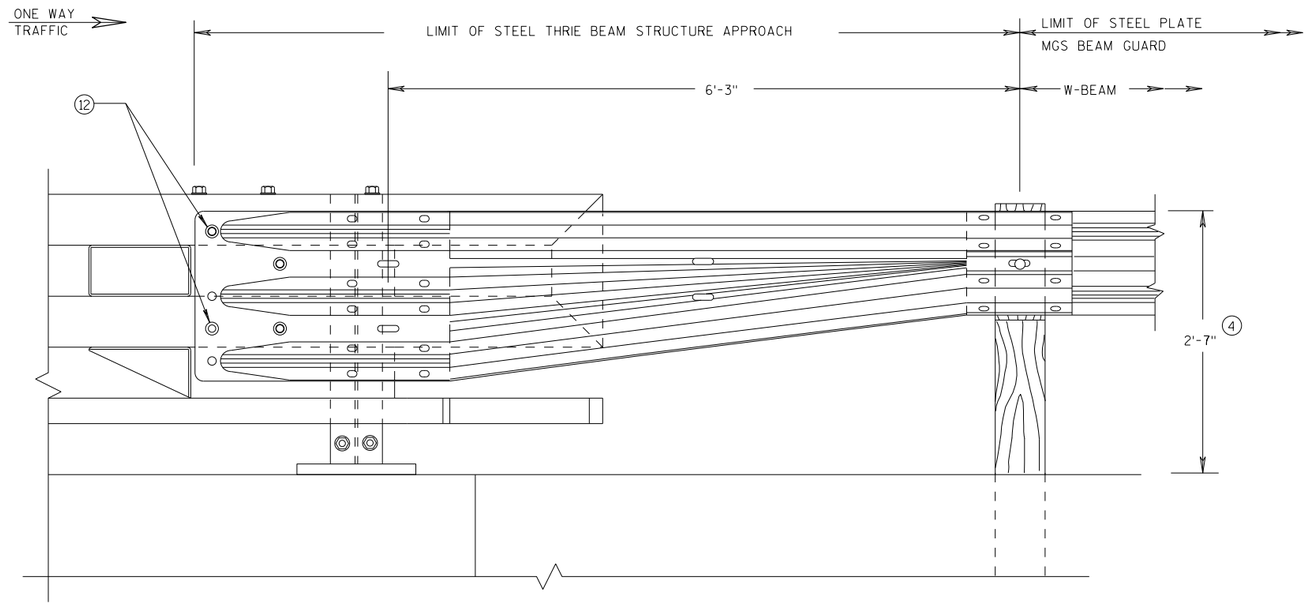


FRONT VIEW

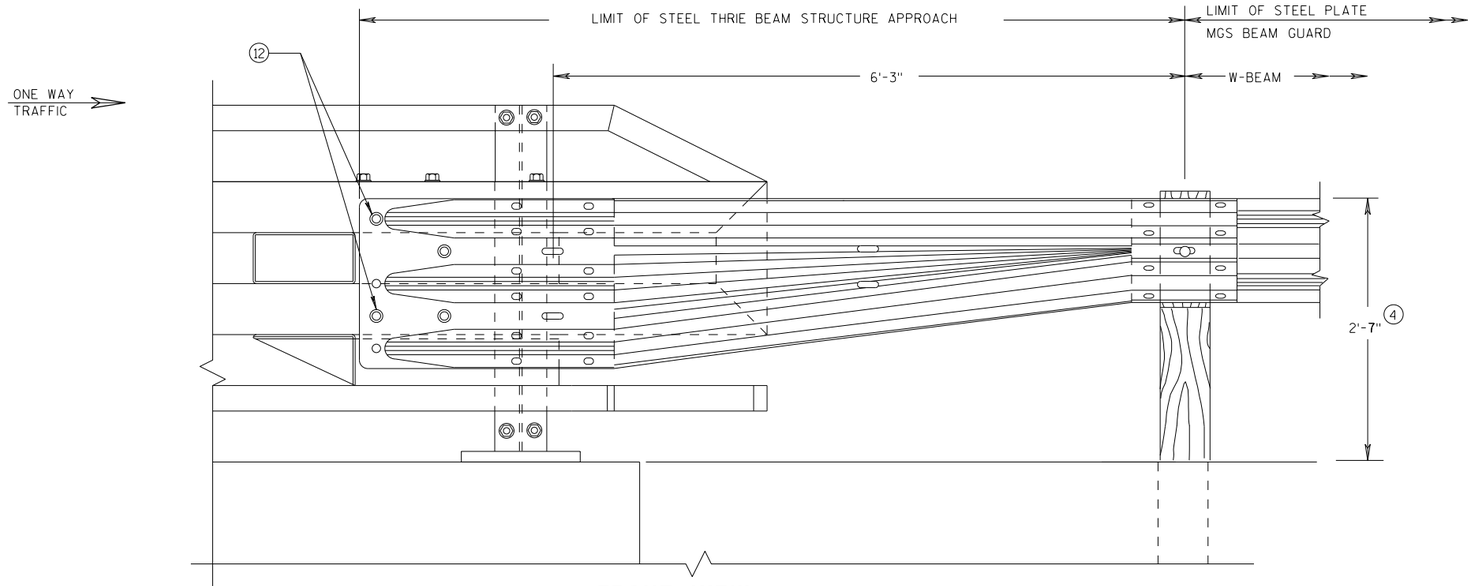
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

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

GENERAL NOTES

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

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



FRONT VIEW

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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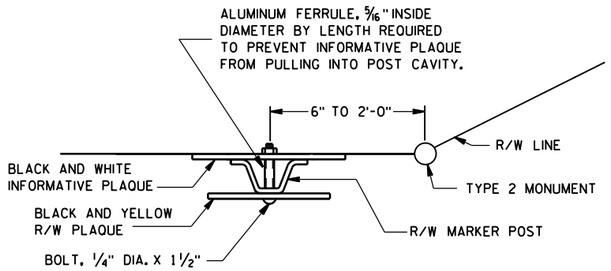
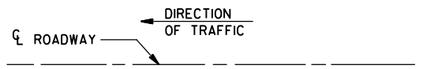
S.D.D. 14 B 45-5L

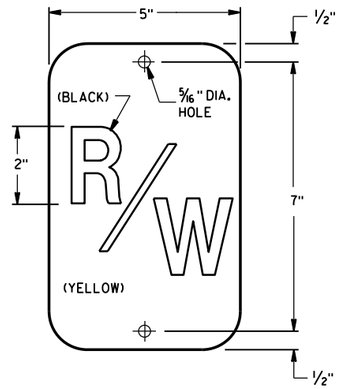
6

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



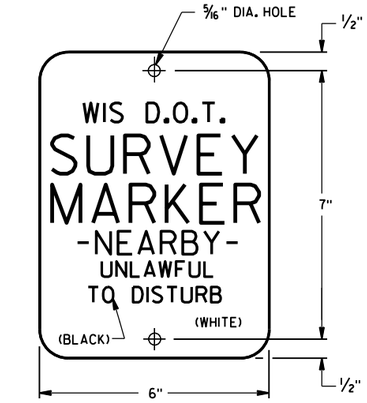


PLAN VIEW



R/W PLAQUE

THE RIGHT-OF-WAY PLAQUE AND INFORMATIVE PLAQUE WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.



INFORMATIVE PLAQUE

GENERAL NOTES

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

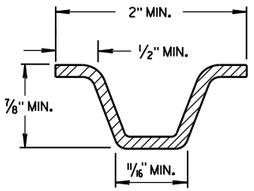
A STEEL MARKER POST FOR RIGHT-OF-WAY SHALL BE PLACED IN THE RIGHT-OF-WAY, WITH THE BACK OF THE POST ON THE LONGER RIGHT-OF-WAY TANGENT, 6 INCHES TO 24 INCHES FROM EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. R/W AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE DEPARTMENT OF TRANSPORTATION.

STEEL MARKER POSTS SHALL MEET THE MINIMUM MATERIAL REQUIREMENTS FOR STEEL DELINEATOR POSTS; EXCEPT POSTS PAINTED WITH FEDERAL YELLOW ENAMEL NEED NOT BE ZINC COATED.

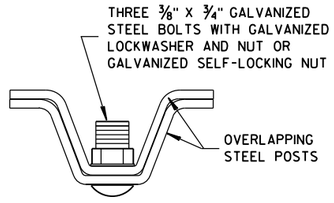
(1) IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK TO A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3'10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR.

FILL THE BORE HOLE WITH CEMENT GROUT, OR EQUIVALENT. DEPENDING ON THE STABILITY OF THE ROCK.

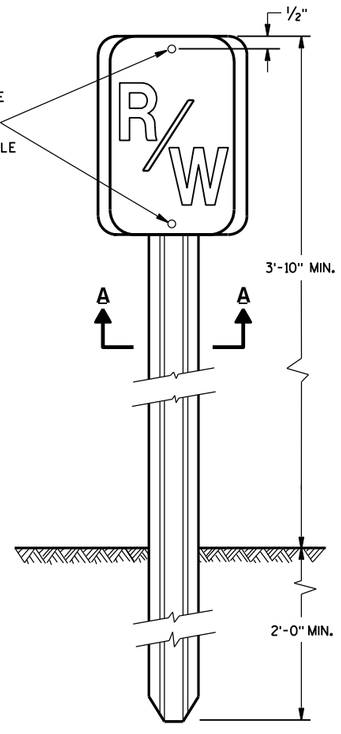


MIN. WEIGHT 1.12 LB./FT.

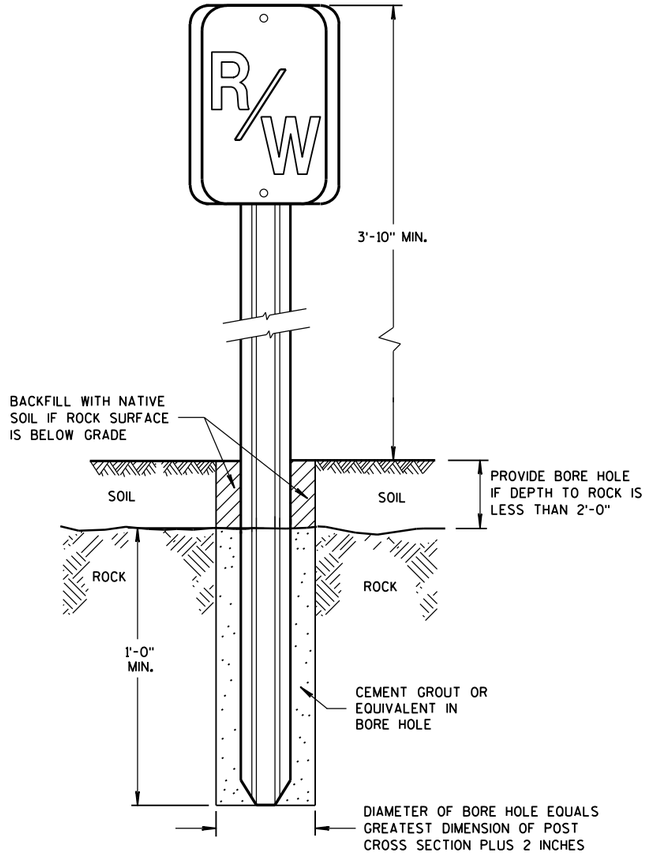
SECTION A-A



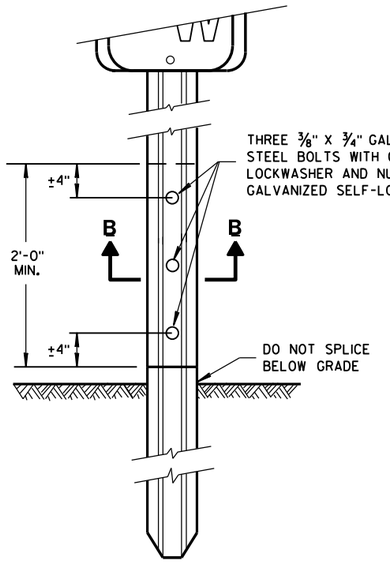
SECTION B-B



FRONT VIEW
STEEL MARKER POST



FRONT VIEW
ROCK INSTALLATION (1)



FRONT VIEW
SPLICE DETAIL

MARKER POST FOR RIGHT-OF-WAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/18/2016 — DATE
/S/ Ray Kumapayi — CHIEF SURVEYING AND MA[illegible]INEER
FHWA

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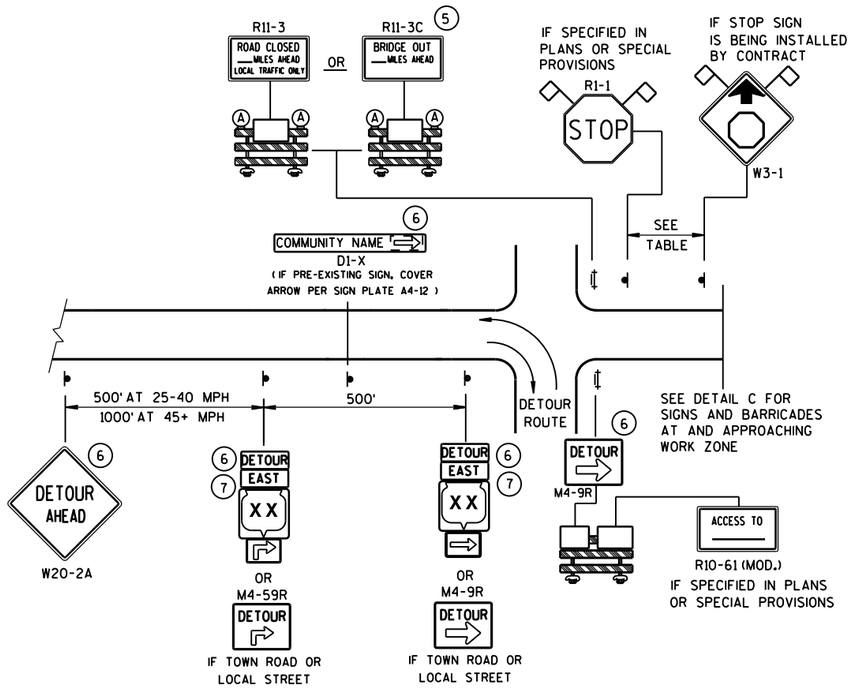
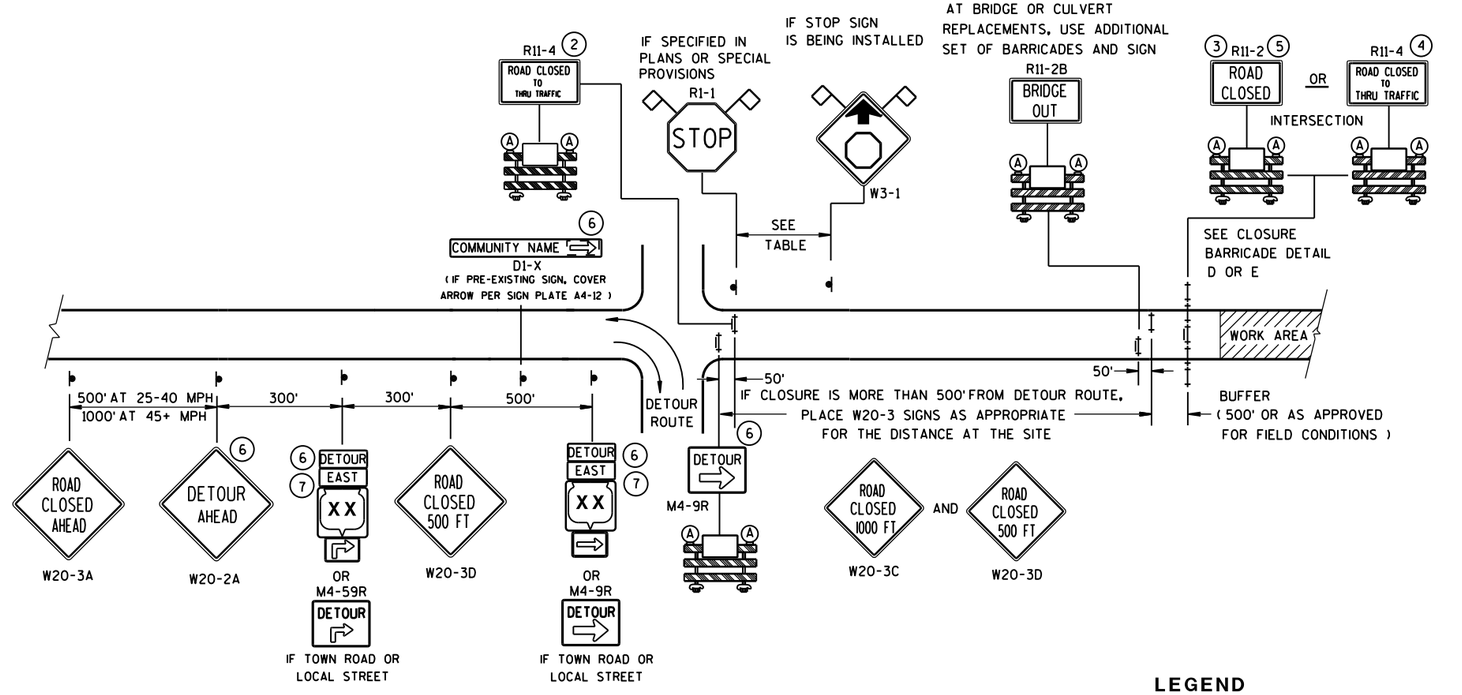
S.D.D. 15 A 1-13a



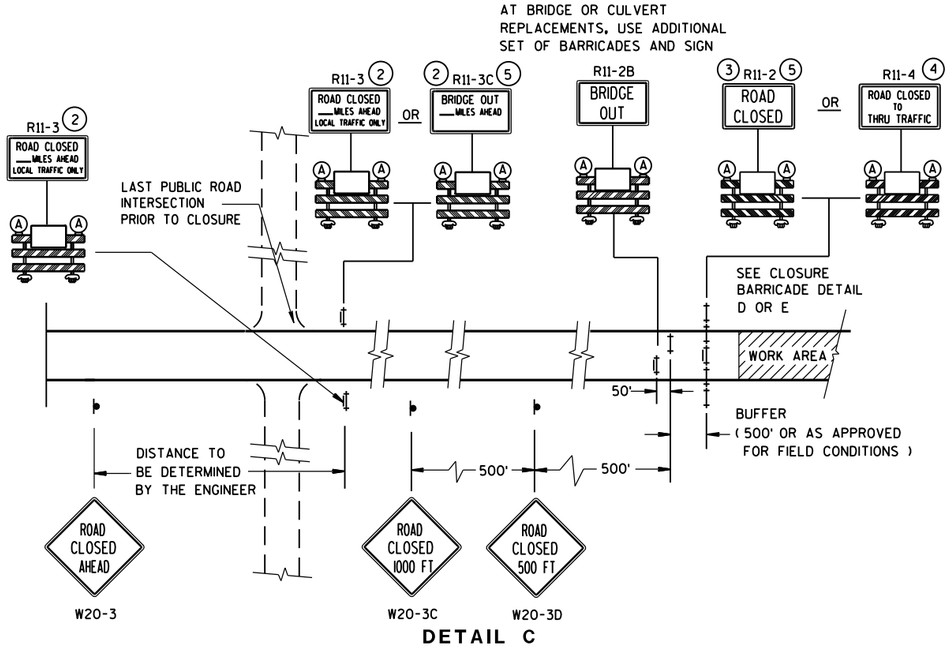
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN 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
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

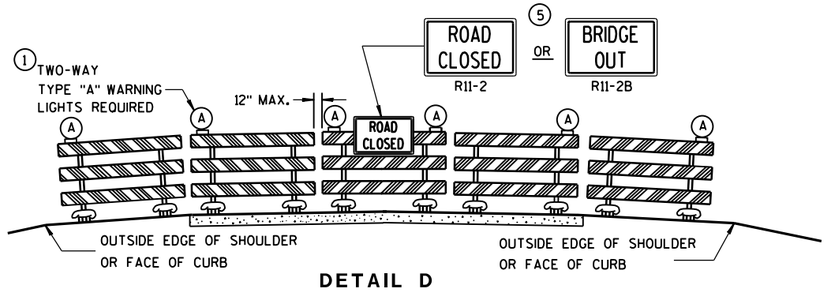
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

6

S.D.D. 15 C 2-6a

6

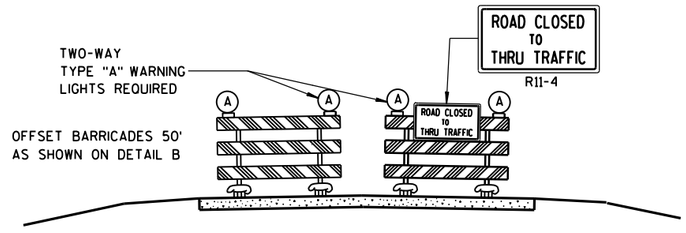
S.D.D. 15 C 2-6a



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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE 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, 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". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- 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 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 LANE 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 MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI — FHWA — FIC

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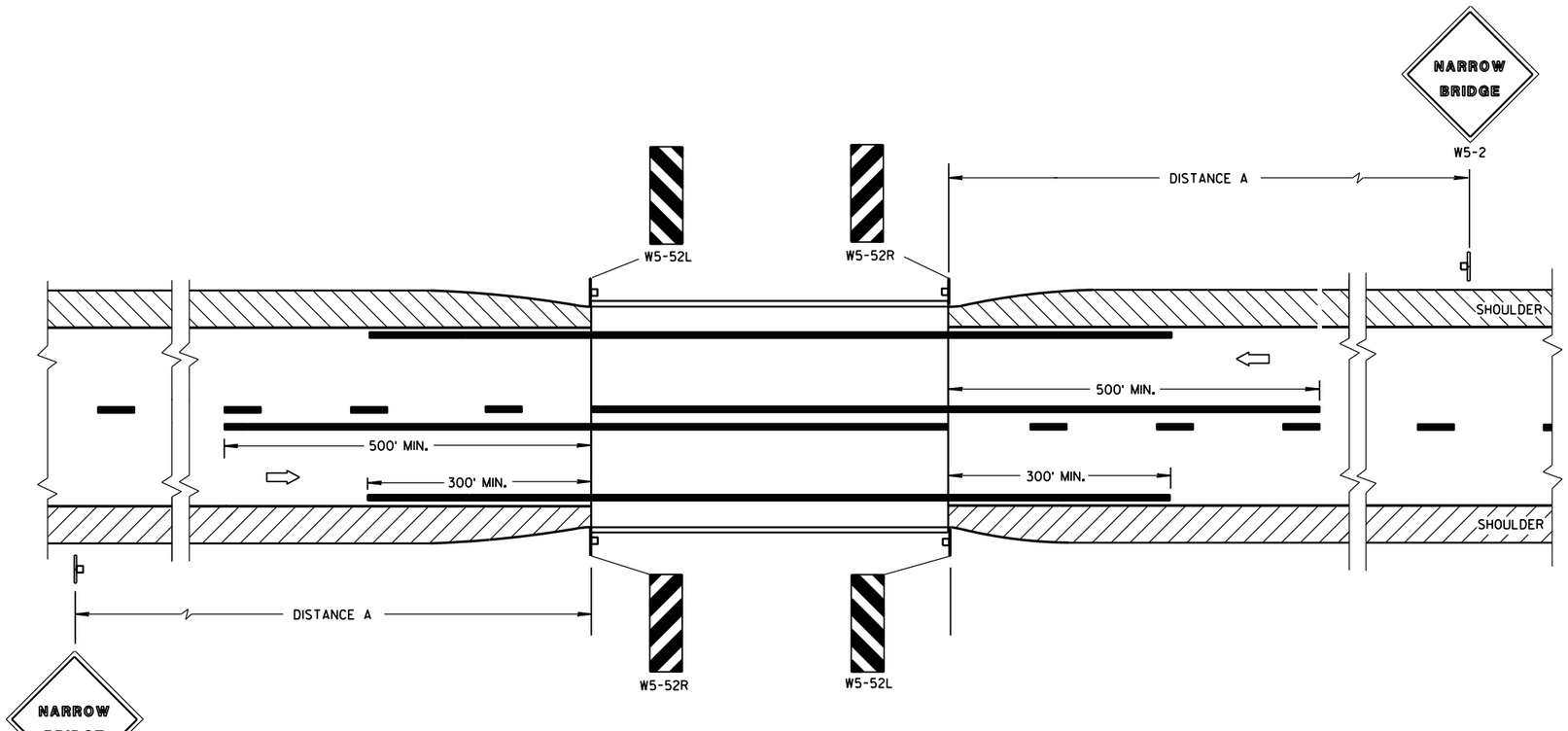
S.D.D. 15 C 2-6b



SITUATION 1

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

DISTANCE TABLE

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

GENERAL NOTES

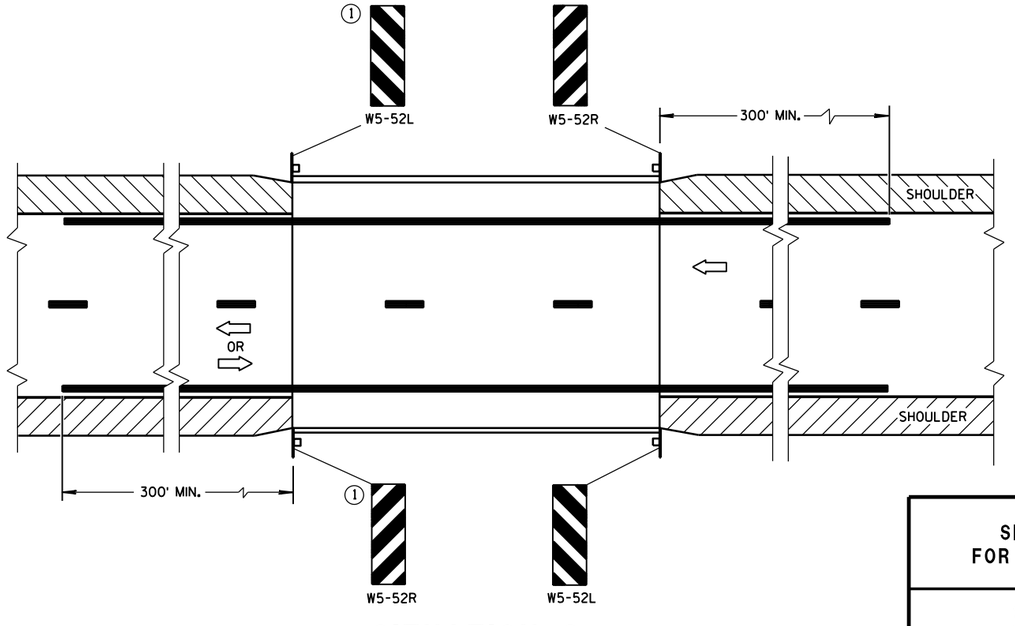
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

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

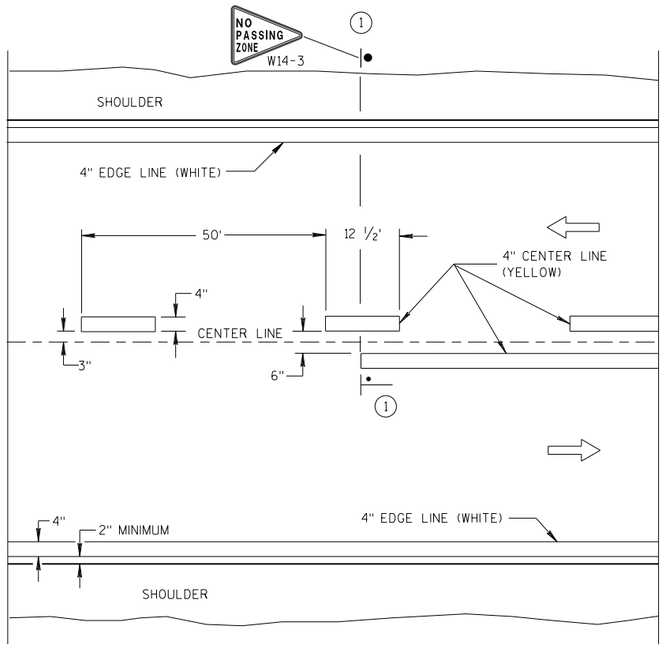
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

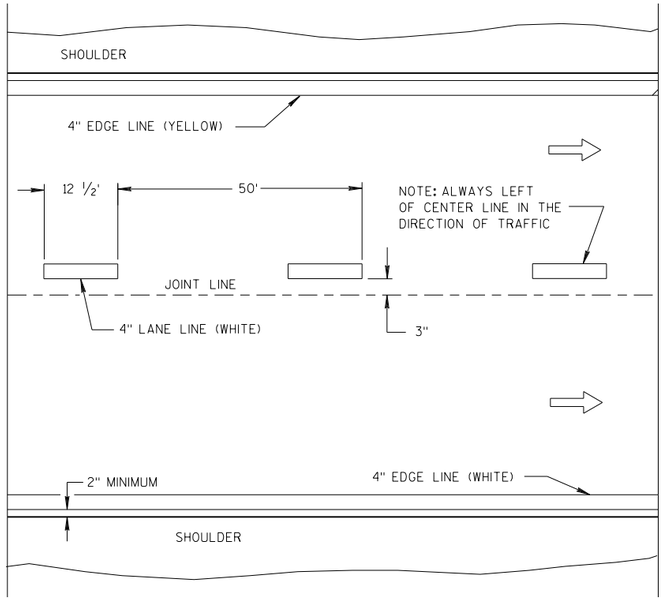
APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

6

S.D.D. 15 C 6-9

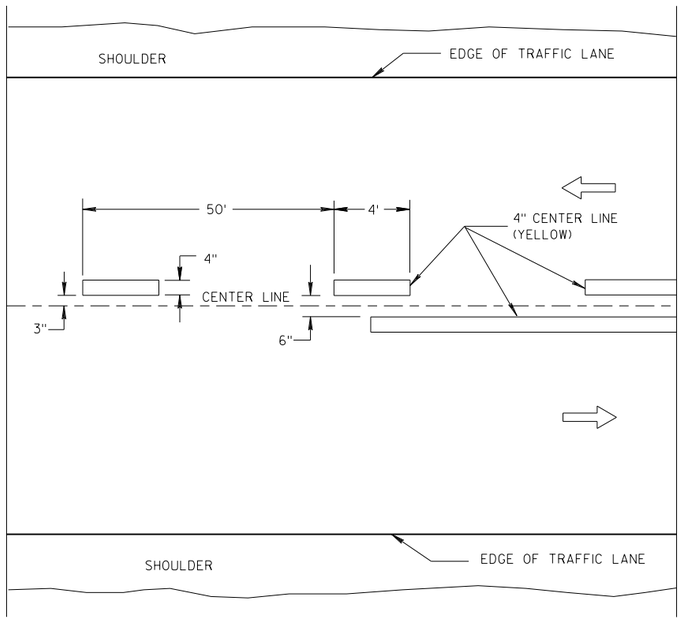


TWO WAY TRAFFIC

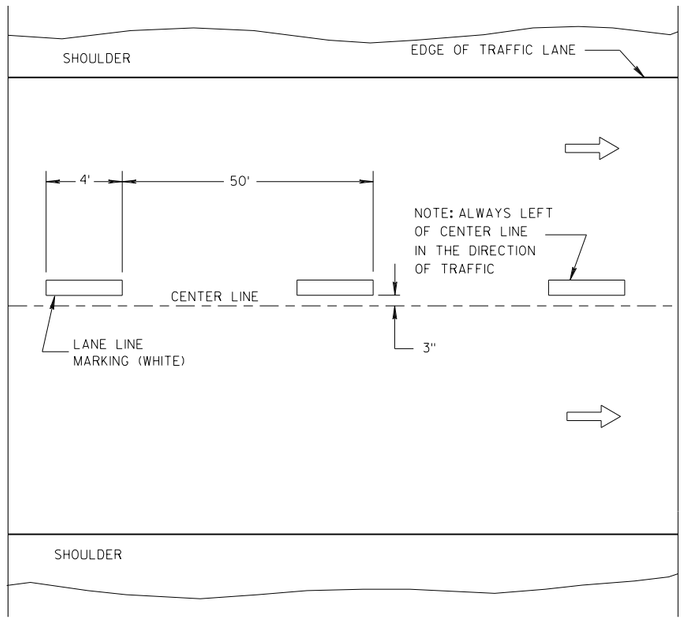


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

LEGEND

"T" MARKING

POST MOUNTED SIGN

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 — DATE

/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER

FHWA

6

S.D.D. 15 C 8-19a

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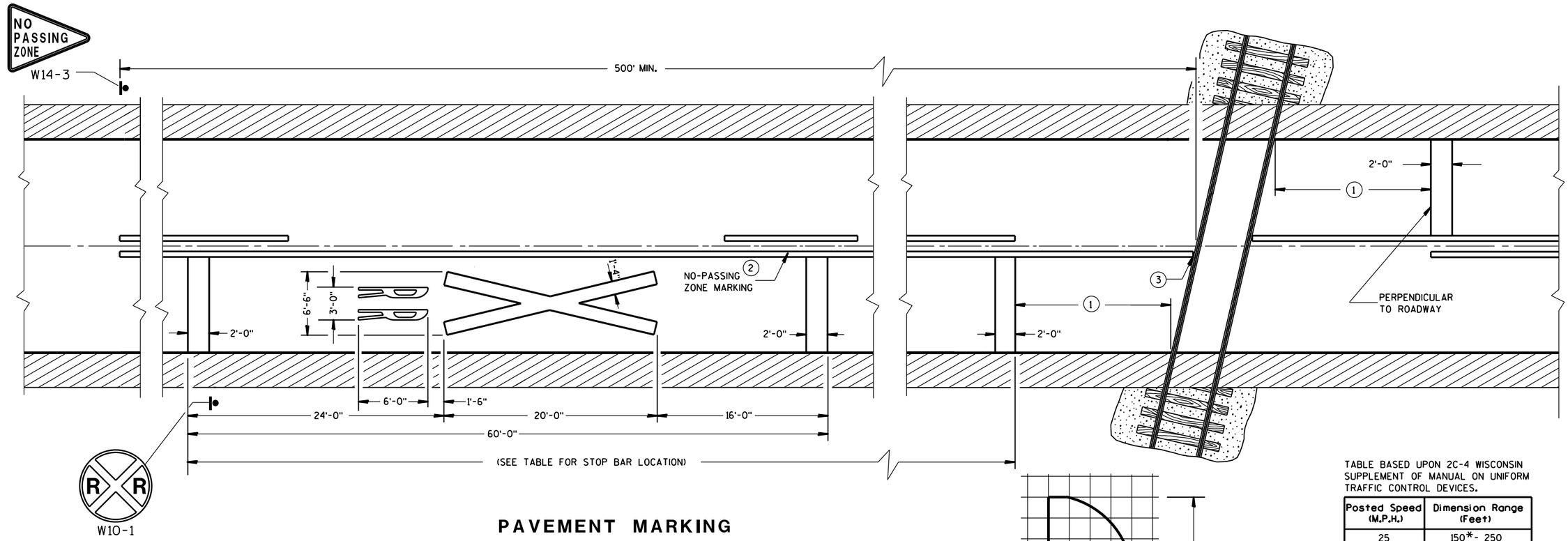
S.D.D. 15 C 8-19a



PAVEMENT MARKING

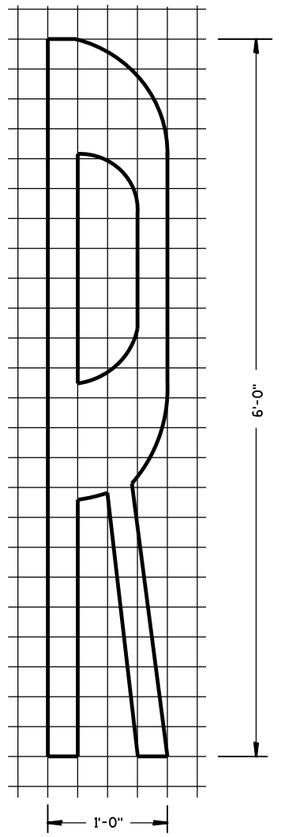


TABLE BASED UPON 2C-4 WISCONSIN SUPPLEMENT OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

Posted Speed (M.P.H.)	Dimension Range (Feet)
25	150*- 250
30	200*- 300
35	250*- 450
40	300*- 500
45	400*- 650
50	550*- 800
55	750*- 1000
60	1000*- 1250
65	1000*- 1250

* THE MINIMUM DISTANCES IN THE TABLE ARE DESIRABLE AND SHOULD BE USED. THE DISTANCES MAY BE INCREASED UP TO THE MAXIMUM TO ALLOW FOR FIELD CONDITIONS SUCH AS THE CLOSE PROXIMITY OF DRIVEWAYS, BRIDGES, SIDEROADS OR OTHER FEATURES THAT WOULD PROHIBIT THE MINIMUM DISTANCES FROM BEING USED.

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.

ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.

CENTER OR LANE LINES AND NO-PASSING ZONE MARKINGS SHOWN ON THIS DRAWING ARE REQUIRED AND PAID FOR UNDER OTHER ITEMS IN THE CONTRACT.

RETRACE EXISTING SYMBOL WHERE EXISTING SYMBOLS ARE PLACED.

(1) MINIMUM 8' FROM ANY RAILROAD WARNING DEVICES (SIGNALS, GATES, ETC.) OR 25' FROM THE NEAREST RAIL, WHICHEVER DISTANCE IS GREATER.

(2) 500' MINIMUM. MARKING LIMITS MAY BE EXTENDED AS DIRECTED BY THE ENGINEER TO MEET ADJACENT NO-PASSING ZONE MARKINGS.

(3) FOR MULTIPLE TRACK CROSSINGS, THE BARRIER LINE SHALL EXTEND TO THE NEAR RAIL OF THE FURTHEST TRACK IN THE DIRECTION OF HIGHWAY TRAVEL.

SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD-HIGHWAY GRADE CROSSINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept., 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAI[illegible]GINEER
FHWA

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S.D.D. 15 C 9-11a

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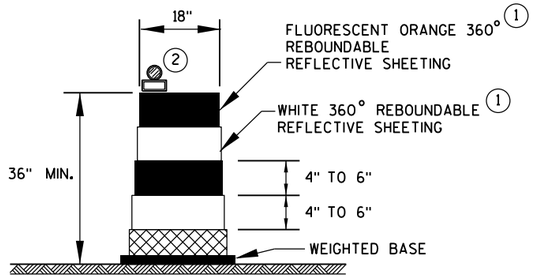
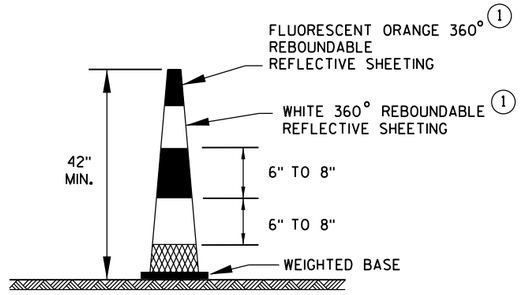
S.D.D. 15 C 9-11a



DRUM

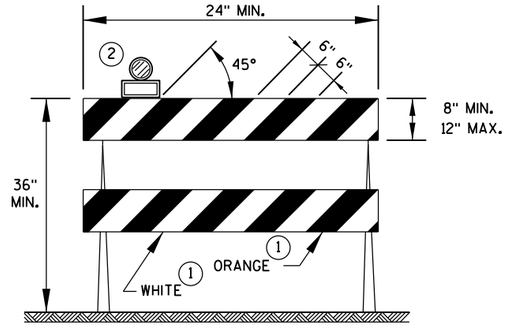


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

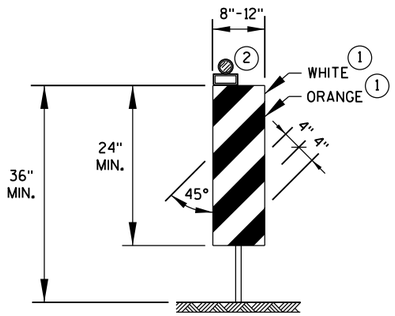
GENERAL NOTES

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



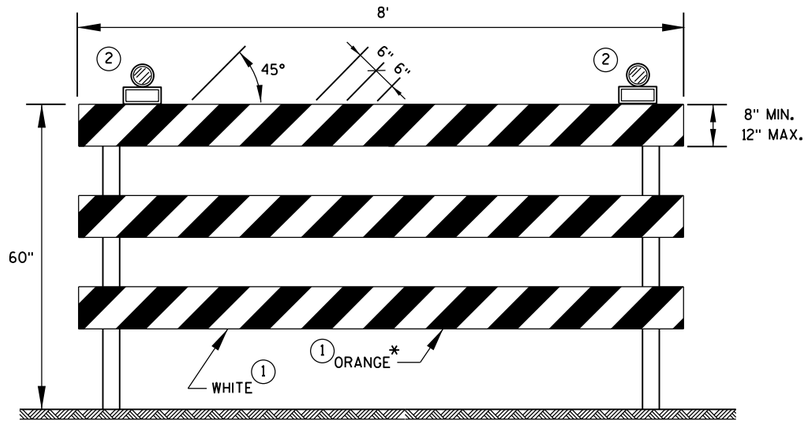
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017 — DATE

/S/ Andrew Heidtke — WORK ZONE ENG

FHWA

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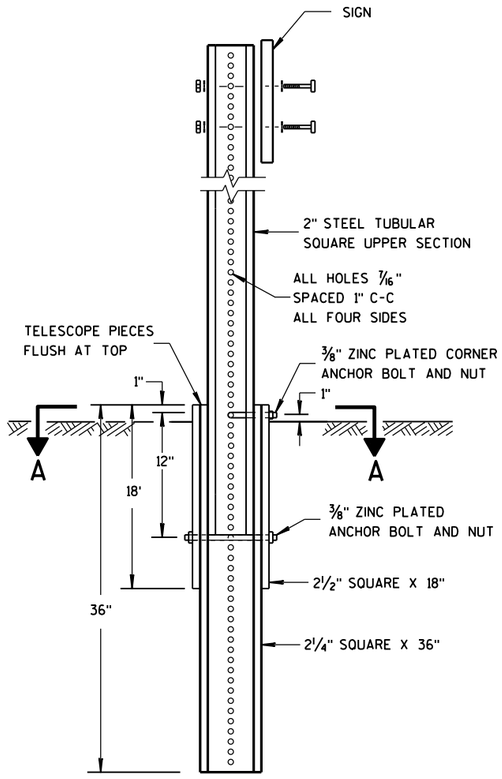
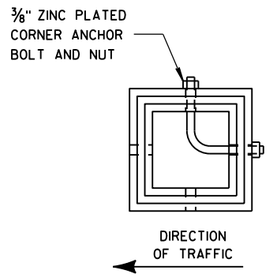
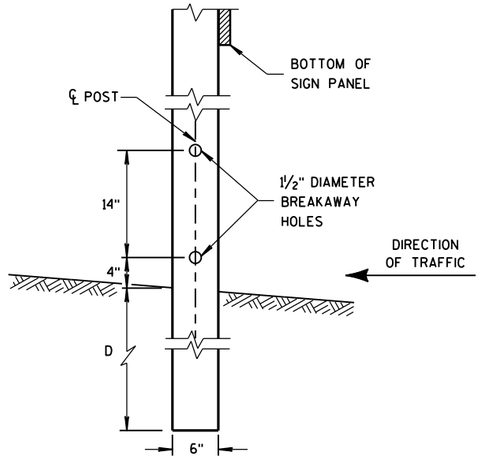
S.D.D. 15 C 11-7b



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



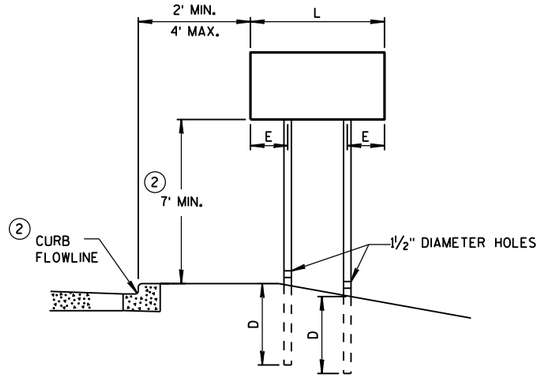
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

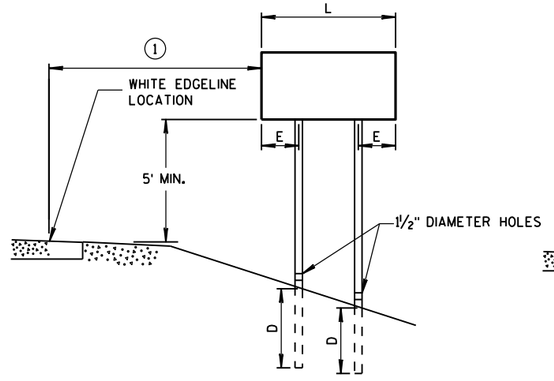
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

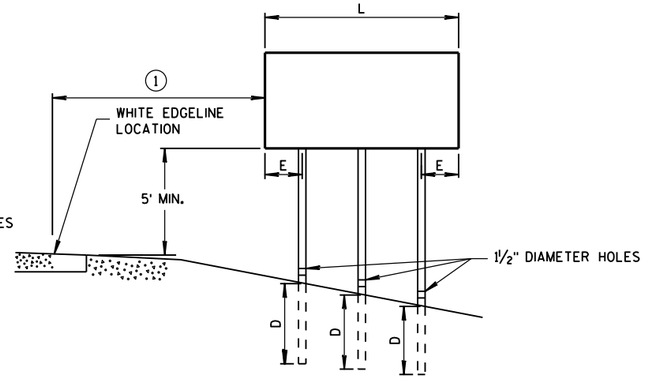
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL 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).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

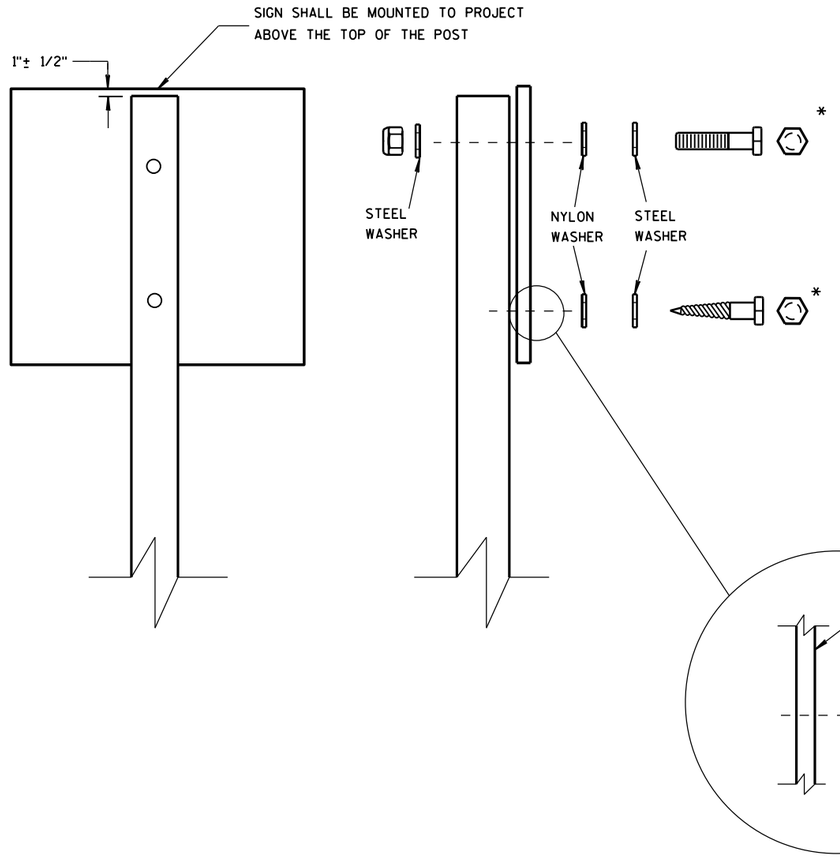
POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 15 D 38-2a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

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.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

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 FOR ALL TYPE H SIGNS

* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

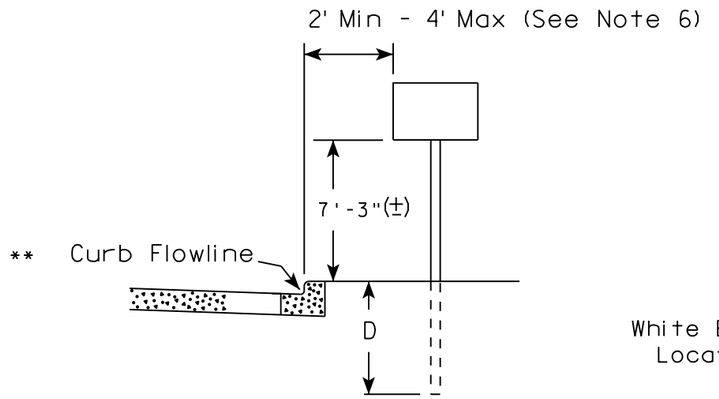
APPROVED

June 2017
DATE

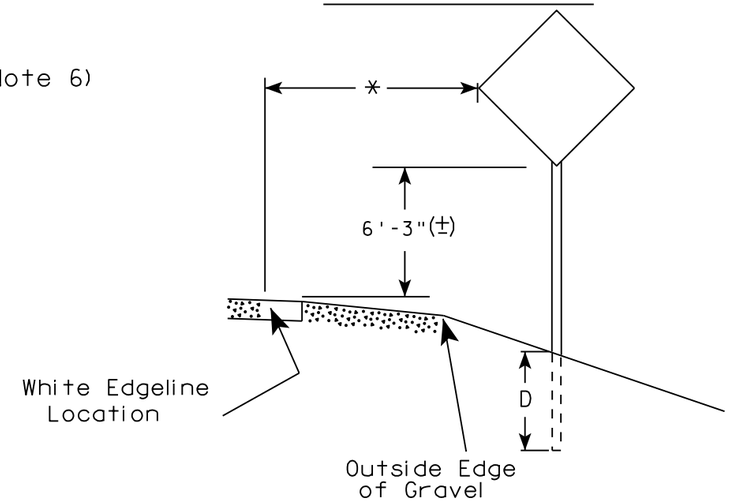
/S/ Andrew Heldtke
WORK ZONE ENG

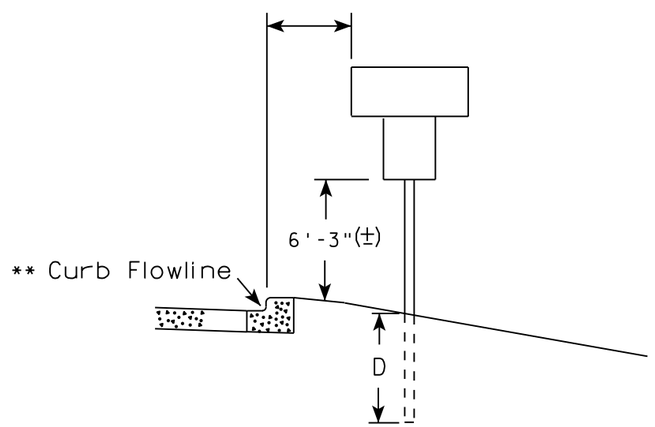
FHWA

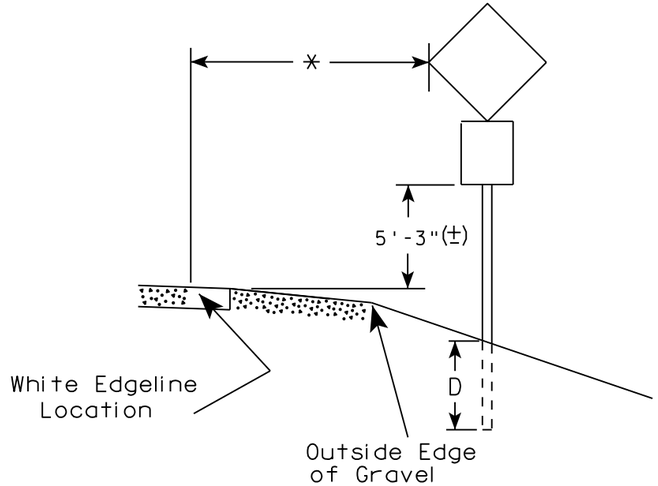
URBAN AREA



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 barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), 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" (±).

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

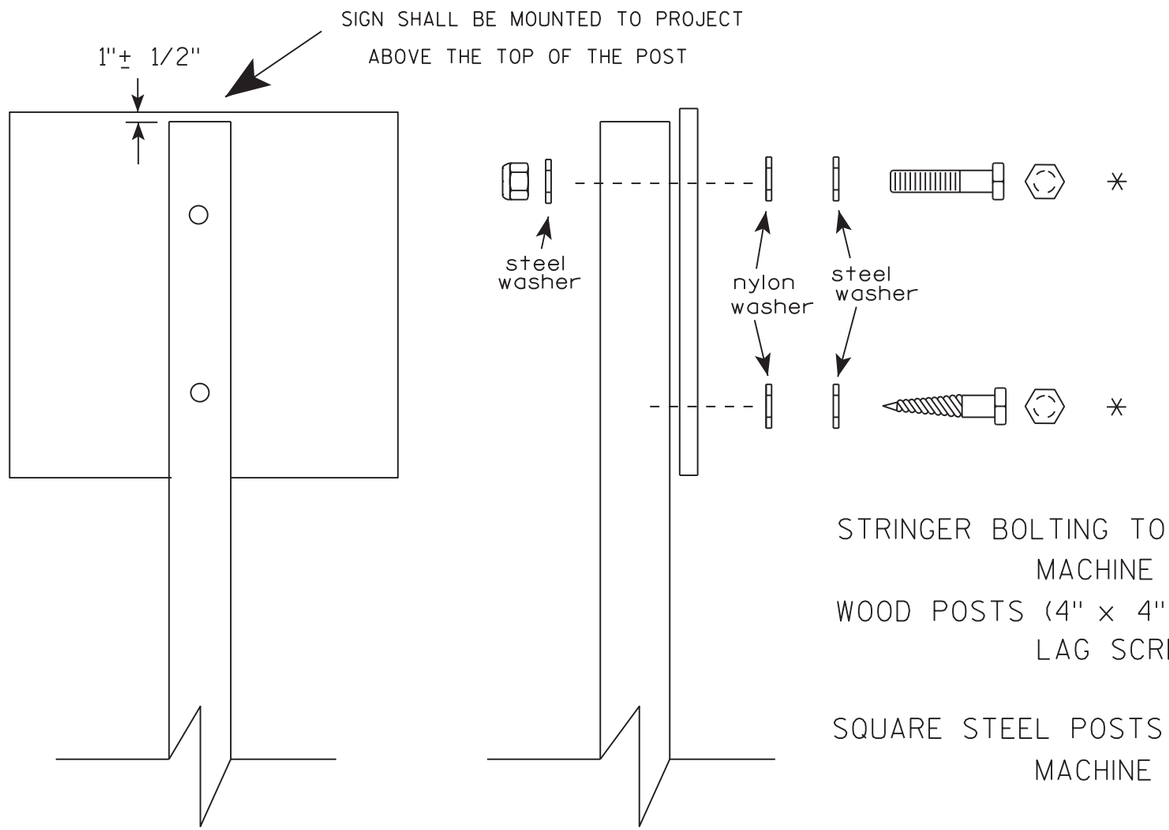
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

7

7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 44	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 4" or 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

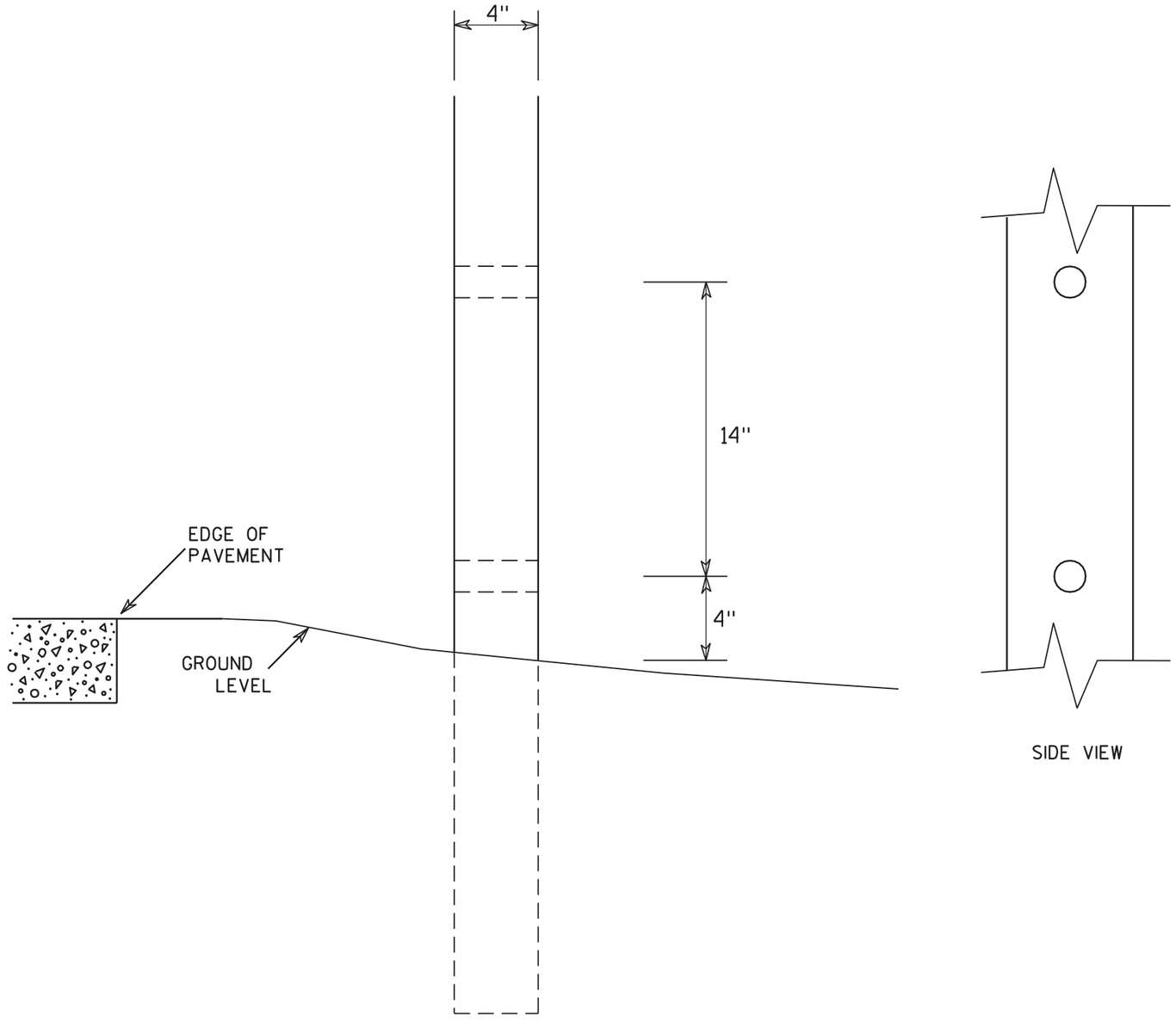
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8

PROJECT NO:

SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$



SIDE VIEW

GENERAL NOTES

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

7

7

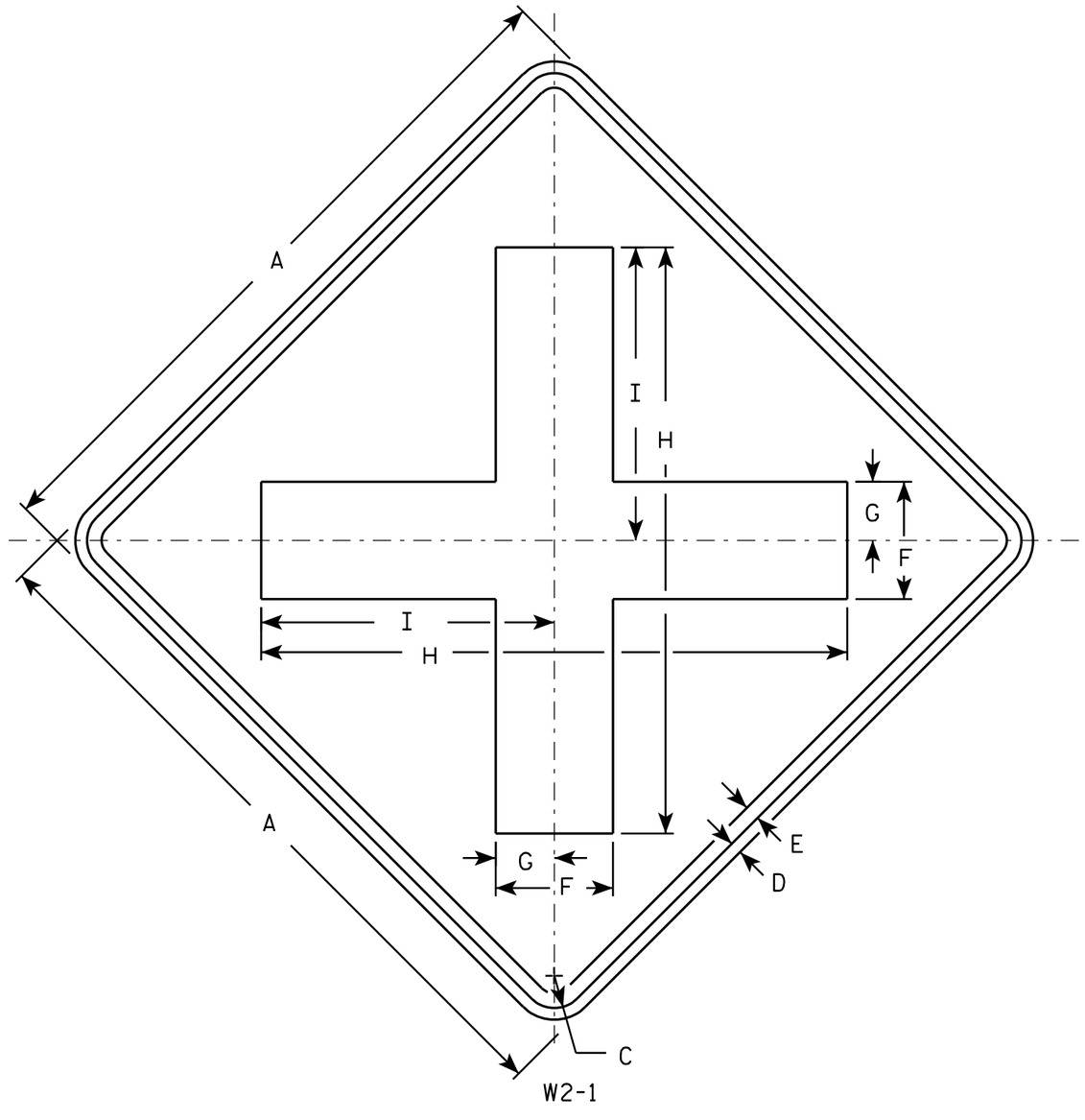
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

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

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



NOTES

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

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	24		1 1/8	3/8	1/2	4	2	20	10																		4.0
2S	30		1 3/8	1/2	5/8	5	2 1/2	25	12 1/2																		6.25
2M	30		1 3/8	1/2	5/8	5	2 1/2	25	12 1/2																		6.25
3	36		1 5/8	5/8	3/4	6	3	30	15																		9.0
4	48		2 1/4	3/4	1	8	4	40	20																		16.0
5																											

STANDARD SIGN
W2-1

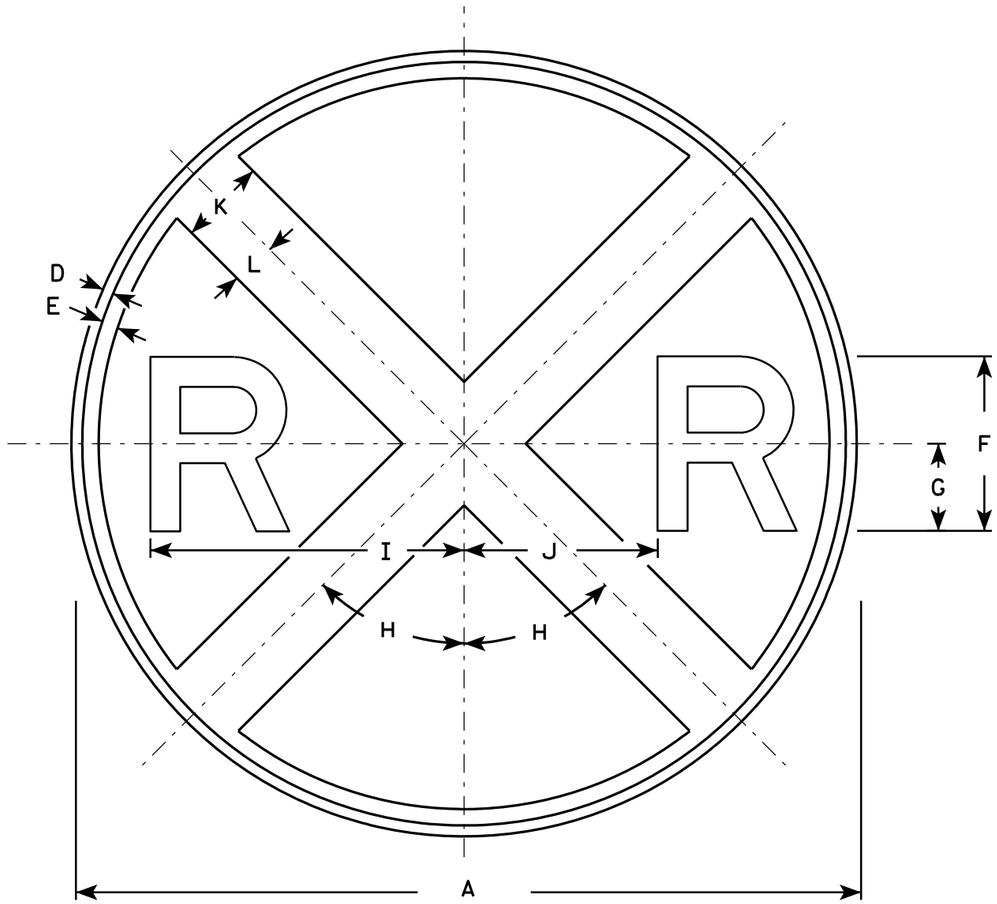
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W2-1.9

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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W21.DGN PLOT DATE : 29-MAY-2012 10:10 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 6.202372:1.000000
WISDOT/CADDS SHEET 42



W10-1

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - E

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	30			3/8	5/8	7	3 1/2	45°	12 3/8	7 1/8	3	1 1/2															4.91
2S	36			5/8	3/4	8	4	45°	14 3/8	8 5/8	4	2															7.07
2M	36			5/8	3/4	8	4	45°	14 3/8	8 5/8	4	2															7.07
3																											
4	48			3/4	1 1/4	10	5	45°	18 3/8	11 5/8	5	2 1/2															12.57
5																											

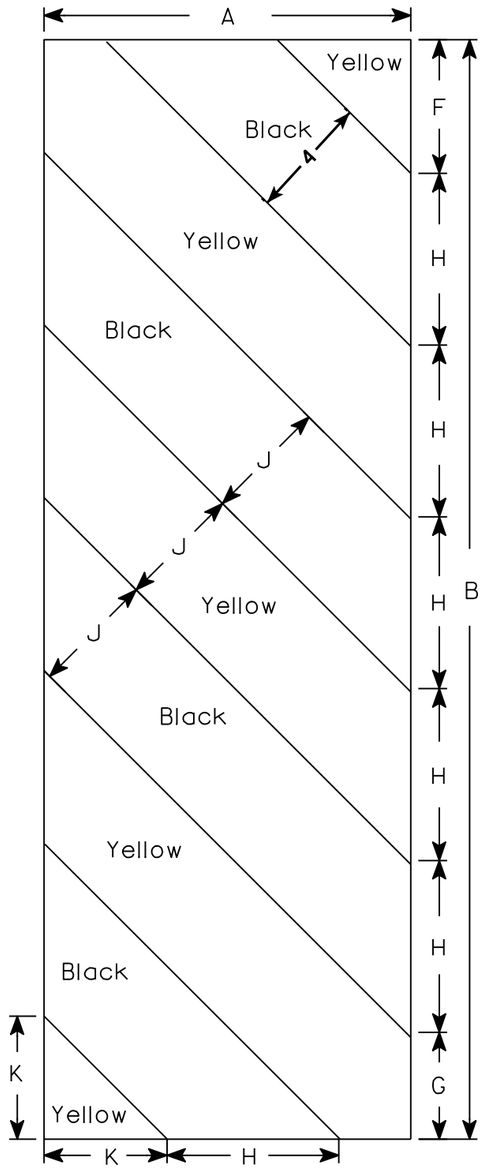
STANDARD SIGN
W10-1

WISCONSIN DEPT OF TRANSPORTATION

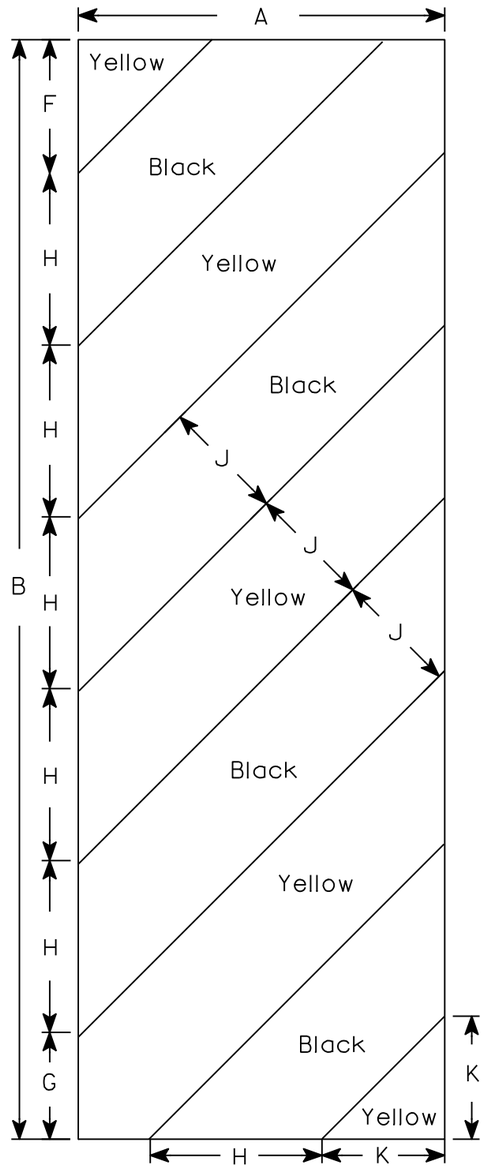
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/13/13 PLATE NO. W10-1.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 48	E



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

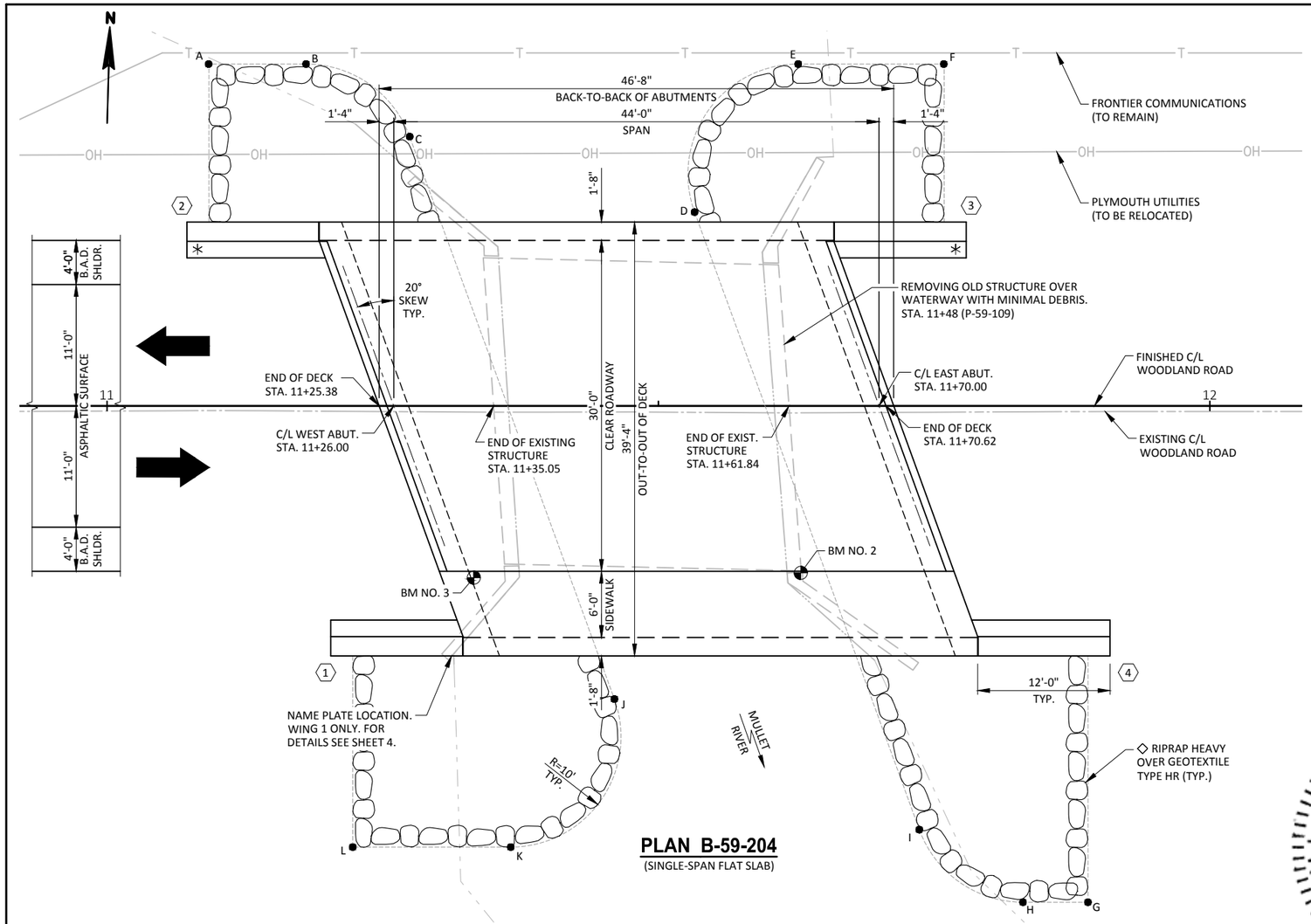
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

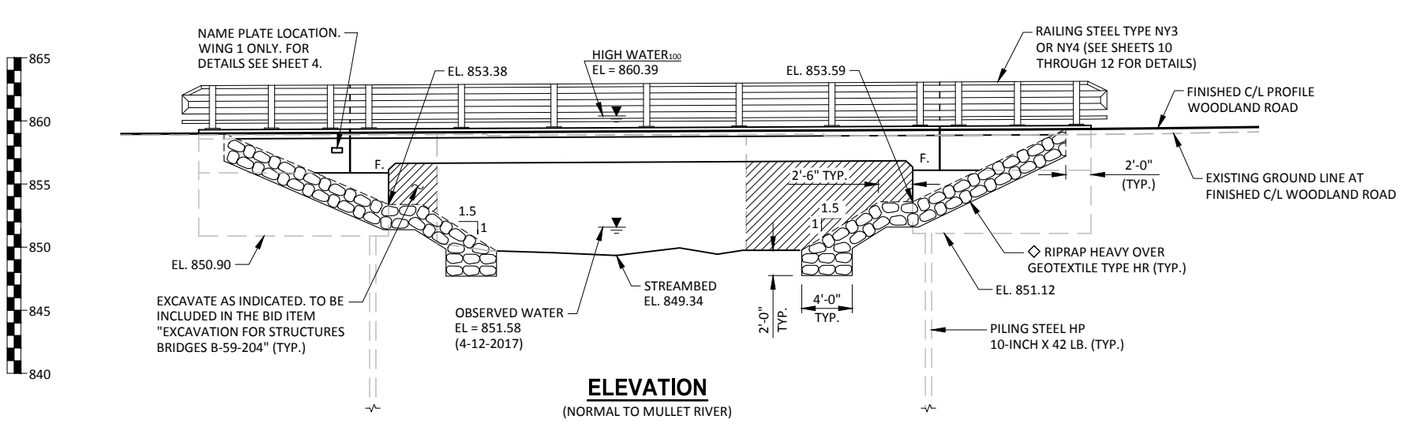
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 49 | E



PLAN B-59-204
(SINGLE-SPAN FLAT SLAB)

RIPRAP HEAVY LAYOUT

POINT	STATION	OFFSET
A	11+09	31' LT.
B	11+18	31' LT.
C	11+27	24' LT.
D	11+53	18' LT.
E	11+63	31' LT.
F	11+76	31' LT.
G	11+89	45' RT.
H	11+83	45' RT.
I	11+74	38' RT.
J	11+46	27' RT.
K	11+37	40' RT.
L	11+22	40' RT.



ELEVATION
(NORMAL TO MULLET RIVER)

STATE PROJECT NUMBER
4204-07-71

DESIGN DATA

LIVE LOAD:

DESIGN LOADING — HL-93
INVENTORY RATING FACTOR — RF=1.15
OPERATING RATING FACTOR — RF=1.48
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) — 250 KIPS

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

MATERIAL PROPERTIES:

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

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 145 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATE 35 FT PILE LENGTHS AT BOTH ABUTMENTS.

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

TRAFFIC DATA

A.D.T. (2019) — 1000
A.D.T. (2039) — 1300
DESIGN SPEED — 25 M.P.H.

HYDRAULIC DATA

100 YEAR FREQUENCY
DRAINAGE AREA — 51.4 SQ. MI.
Q_{100} TOTAL — 3,050 C.F.S.
THROUGH STRUCTURE — 2,512 C.F.S.
OVERTOPPING ROADWAY — 538 C.F.S.
VELOCITY - THROUGH STRUCTURE — 11.0 F.P.S.
WATERWAY AREA - THROUGH STRUCTURE — 228 SQ. FT.
HIGH WATER$_{100}$ ELEVATION — 860.39
SCOUR CRITICAL CODE — 5

DESIGN ROADWAY OVERFLOW
ROADWAY OVERTOPPING FREQUENCY — 20 YRS.
Q_{20} — 1,970 C.F.S
HIGH WATER$_{20}$ ELEVATION — 858.88

EROSION CONTROL
Q_2 — 700 C.F.S.
HIGH WATER$_2$ ELEVATION — 855.03
VELOCITY$_2$ — 8.47 F.P.S.

LEGEND

⬡ INDICATES WING NUMBER
✳ THRIE BEAM RAIL ATTACHMENT
◇ VOIDS IN THE RIPRAP HEAVY SHALL BE FILLED WITH 6-INCH STONE.

WISCONSIN
PATRICK T. BOLAND E-36303 SPRING GREEN WIS.
PROFESSIONAL ENGINEER
9-19-18

LIST OF DRAWINGS

DESIGN CONSULTANT
PATRICK BOLAND, PE
(608) 588-7484

BRIDGE OFFICE CONTACT
WILLIAM DREHER, PE
(608) 266-8489

NO.	DATE	REVISION	BY

JEWELL associates engineers, inc.
Engineers - Architects - Surveyors
SUNRISE DRIVE
SPRING GREEN WI
PHONE
FA 22

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR — 09/19/18
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-59-204

WOODLAND ROAD OVER MULLET RIVER

COUNTY	TOWN/~~CITY/VILLAGE~~
SHEBOYGAN	PLYMOUTH

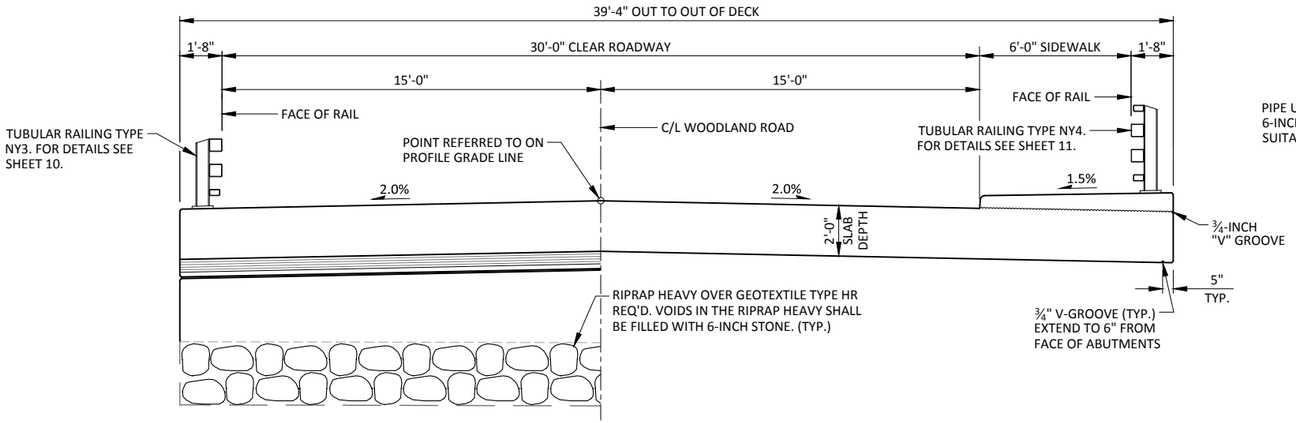
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JZ	PTB	JZ	PTB

GENERAL PLAN

SHEET 1 OF 12
50

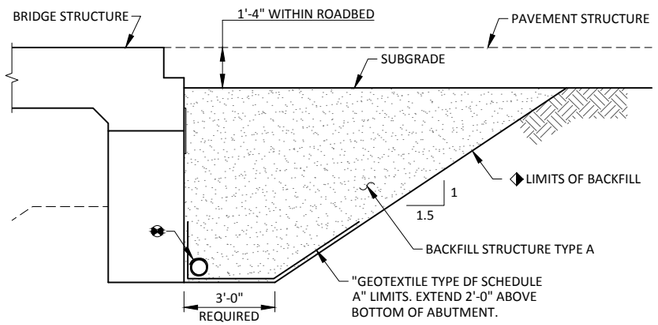
STATE PROJECT NUMBER
4204-07-71



AT ABUTMENT **IN SPAN**

PROPOSED CROSS-SECTION THROUGH ROADWAY

LOOKING EAST

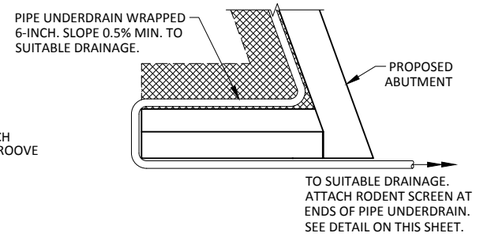


BACKFILL STRUCTURE DETAIL

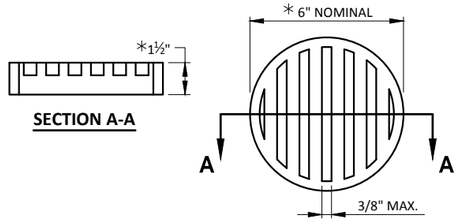
ABUTMENT BODY SHOWN - WINGWALLS SIMILAR
(TYPICAL AT BOTH ABUTMENTS)

◆ BACKFILL STRUCTURE TYPE A PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-59-204". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

◆ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPED 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET. RODENT SCREEN TO BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH."



PIPE UNDERDRAIN DETAIL



RODENT SCREEN

NOTES:

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

ORIENT SCREEN SO SLOTS ARE VERTICAL.

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

THE RODENT SCREEN 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 SCREEN TO THE EXPOSED ENDS OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD 88).

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

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

JOINT FILLER SHALL CONFORM TO A.A.S.H.T.O. DESIGNATION MI53, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M213.

THE SLOPE OF FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH GEOTEXTILE TYPE HR AND RIPRAP HEAVY TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS, OR AS DIRECTED BY THE ENGINEER IN THE FIELD. VOIDS IN THE RIPRAP HEAVY SHALL BE FILLED WITH 6-INCH STONE.

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

ANY EXCAVATION BELOW THE ABUTMENT AND ASSOCIATED ABUTMENT BEDDING MATERIALS REQUIRE THE APPROVAL OF THE ENGINEER IN THE FIELD.

APPLY PROTECTIVE SURFACE TREATMENT TO THE TOP OF THE DECK, THE FACE OF THE SIDEWALK CURB, THE TOP OF THE SIDEWALK, THE SIDES OF THE DECK AND SIDEWALK, AND TO THE EXTERIOR 12" OF THE UNDERSIDE OF THE DECK (CONCRETE MATERIAL ONLY).

ALL STATIONS AND ELEVATIONS SHOWN ARE IN FEET.

THE EXISTING STRUCTURE (P-59-109) IS A SINGLE-SPAN REINFORCED CONCRETE FLAT SLAB STRUCTURE SUPPORTED ON REINFORCED CONCRETE ABUTMENTS. THE STRUCTURE HAS A 23.9' CLEAR ROADWAY WIDTH AND IS 27.2' LONG AND SHALL BE REMOVED.

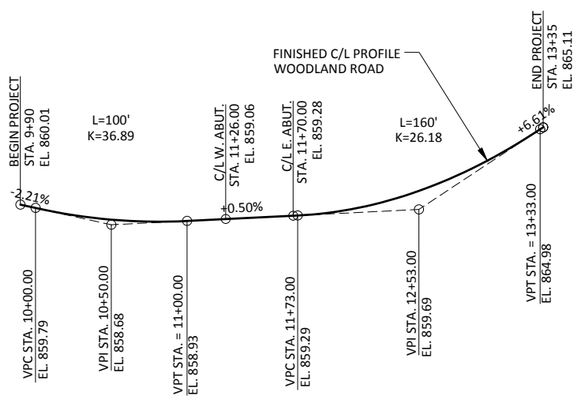
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-59-204" SHALL BE THE EXISTING GROUNDLINE.

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

BASED ON SUBSURFACE EXPLORATION, AT THE WEST ABUTMENT, IT IS LIKELY THAT DEBRIS CONSISTING OF POSSIBLE COBBLES, BOULDERS, OR WOOD DEBRIS WILL BE ENCOUNTERED IN THE OLD ROADBED FILL AT AN ELEVATION APPROXIMATELY EQUAL TO THE BOTTOM OF THE PROPOSED ABUTMENT. TO REDUCE THE PROBABILITY OF PILE DAMAGE, ANY DEBRIS ENCOUNTERED SHALL BE REMOVED UNDER THE BID ITEM "EXCAVATION FOR STRUCTURES". ANY BACKFILL REQUIRED TO RESTORE THE EXCAVATION UP TO THE BOTTOM OF ABUTMENT ELEVATION SHALL BE PAID FOR UNDER THE BID ITEM "BACKFILL STRUCTURE TYPE A" AND SHALL CONSIST OF BACKFILL STRUCTURE TYPE A OR AN APPROVED EQUAL AS APPROVED BY THE ENGINEER IN THE FIELD.

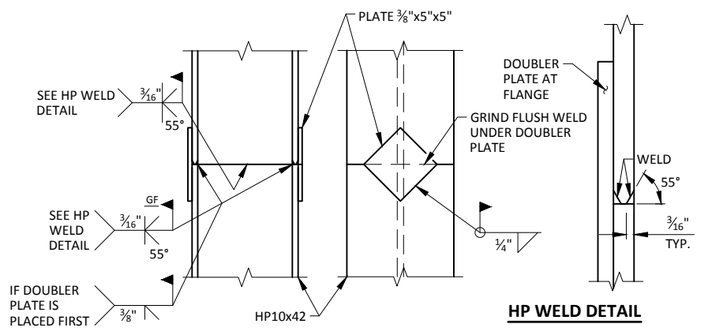
TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	W. ABUT.	SUPER.	E. ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 11+48	LS	--	--	--	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-59-204	LS	--	--	--	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	175	--	170	345
502.0100	CONCRETE MASONRY BRIDGES	CY	40	149	40	229
502.3200	PROTECTIVE SURFACE TREATMENT	SY	--	240	--	240
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,380	--	2,370	4,750
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,860	26,390	1,810	30,060
513.7083	RAILING STEEL TYPE NY3 B-59-204	LF	--	73	--	73
513.7084	RAILING STEEL TYPE NY4 B-59-204	LF	--	73	--	73
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	8	--	8	16
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	210	--	210	420
606.0300	RIPRAP HEAVY	CY	115	--	120	235
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	105	--	105	210
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	60	--	60	120
645.0120	GEOTEXTILE TYPE HR	SY	165	--	170	335
	NON-BID ITEMS					
	FILLER	SIZE	--	--	--	½"
	NAME PLATE					



PROFILE GRADE LINE

WOODLAND ROAD



HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

PILE SPLICE DETAIL

STEEL "HP" PILE MATERIAL SHALL BE ASTM A 572 GRADE 50.

NO.	DATE	REVISION	BY

STRUCTURE B-59-204

DRAWN BY JZ | PLANS CK'D. PTB

CROSS SECTION AND QUANTITIES

SHEET 2 OF 12

FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\STRUCTURE\CAD FILES\FINALS\02 CROSS SECTION AND QUANTITIES.DWG PLOT DATE : 9/17/2018 11:55:25 AM PLOT BY : BOLAND, PATRICK PLOT SCALE : 1" = 1' LAYOUT : LAYOUT1

STATE PROJECT NUMBER

□2□□□□□1

SOIL BORINGS

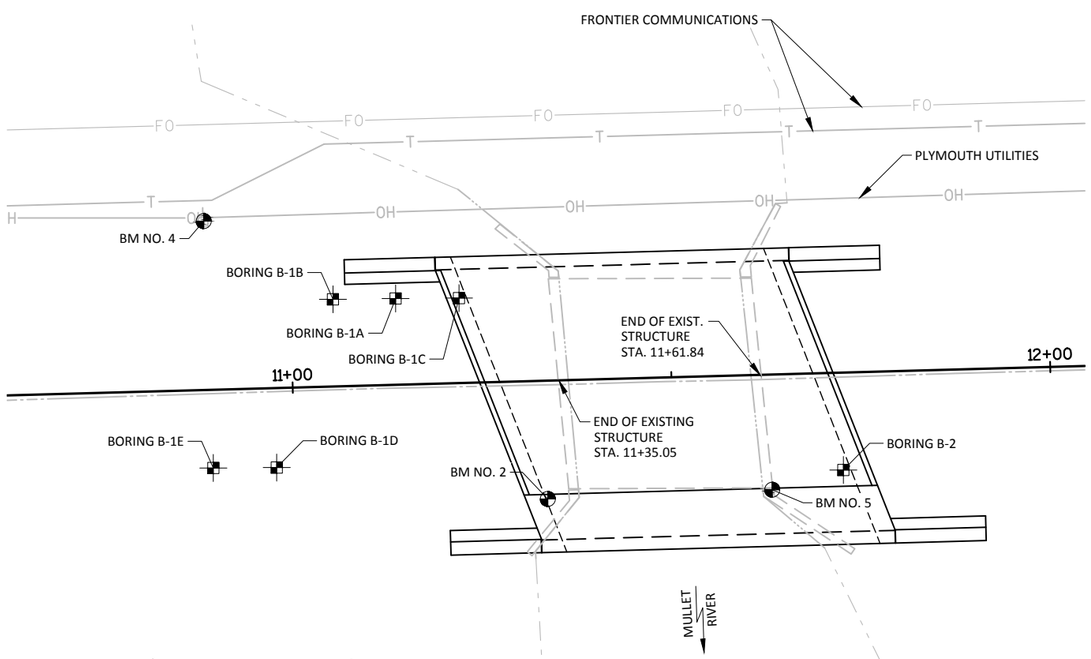
BORING NUMBER	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	07/12/17	185,933.90	144,752.60
2	07/13/17	185,934.17	144,669.44

BORINGS & REPORT COMPLETED BY: PSI
1125 W. TUCKAWAY LANE, SUITE B
MENASHA, WI 54952

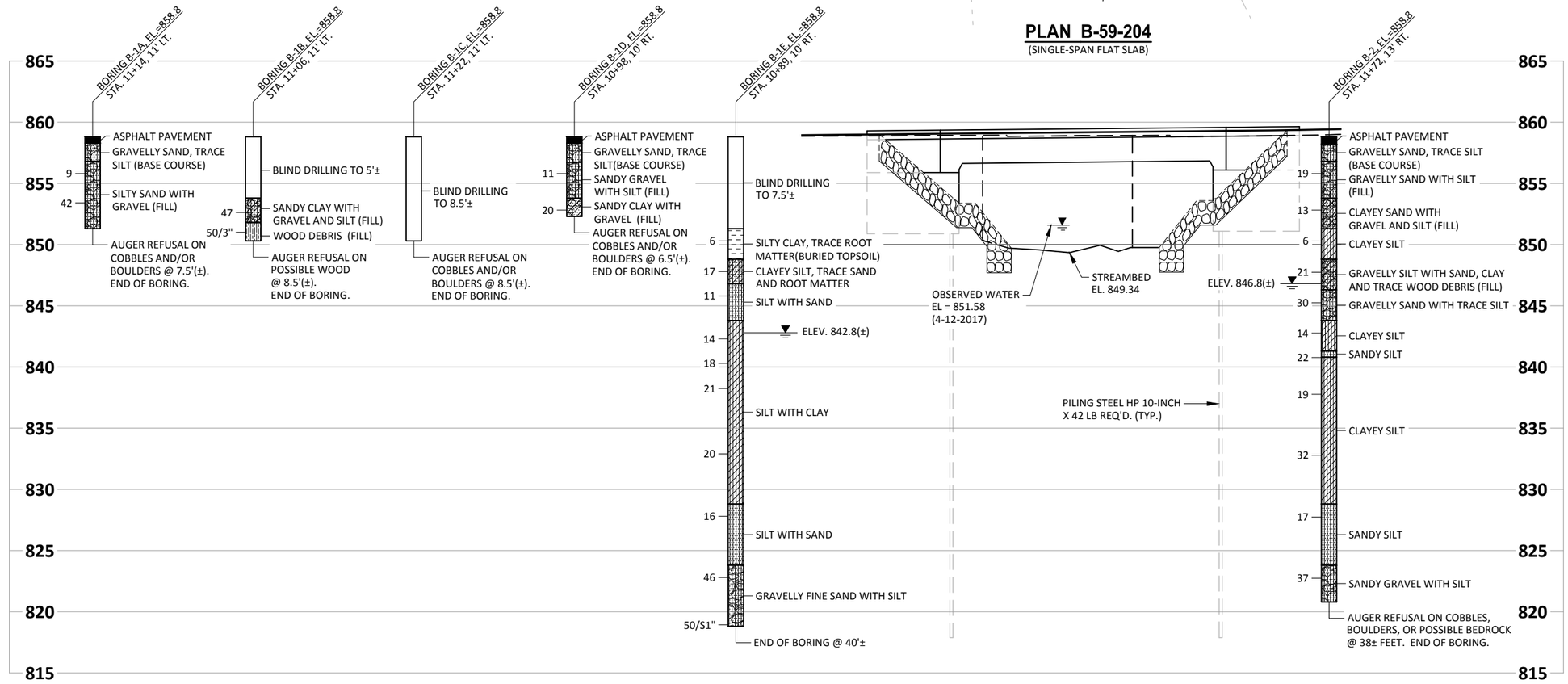
ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 145 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATE 35 FT PILE LENGTHS AT BOTH ABUTMENTS.

BASED ON SUBSURFACE EXPLORATION, AT THE WEST ABUTMENT, IT IS LIKELY THAT DEBRIS CONSISTING OF POSSIBLE COBBLES, BOULDERS, OR WOOD DEBRIS WILL BE ENCOUNTERED IN THE OLD ROADBED FILL AT AN ELEVATION APPROXIMATELY EQUAL TO THE BOTTOM OF THE PROPOSED ABUTMENT. TO REDUCE THE PROBABILITY OF PILE DAMAGE, ANY DEBRIS ENCOUNTERED SHALL BE REMOVED UNDER THE BID ITEM "EXCAVATION FOR STRUCTURES". ANY BACKFILL REQUIRED TO RESTORE THE EXCAVATION UP TO THE BOTTOM OF ABUTMENT ELEVATION SHALL BE PAID FOR UNDER THE BID ITEM "BACKFILL STRUCTURE TYPE A" AND SHALL CONSIST OF BACKFILL STRUCTURE TYPE A OR AN APPROVED EQUAL AS APPROVED BY THE ENGINEER IN THE FIELD.

N



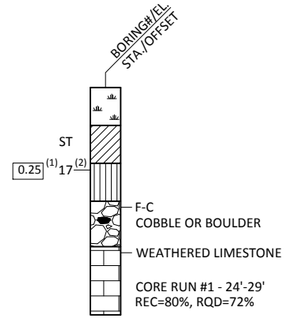
PLAN B-59-204
(SINGLE-SPAN FLAT SLAB)



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 ELEVATIONS

AT TIME OF DRILLING
END OF DRILLING
AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COURSE 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-59-204

DRAWN BY TS | PLANS CK'D. PTB

SUBSURFACE EXPLORATION

SHEET 3 OF 12

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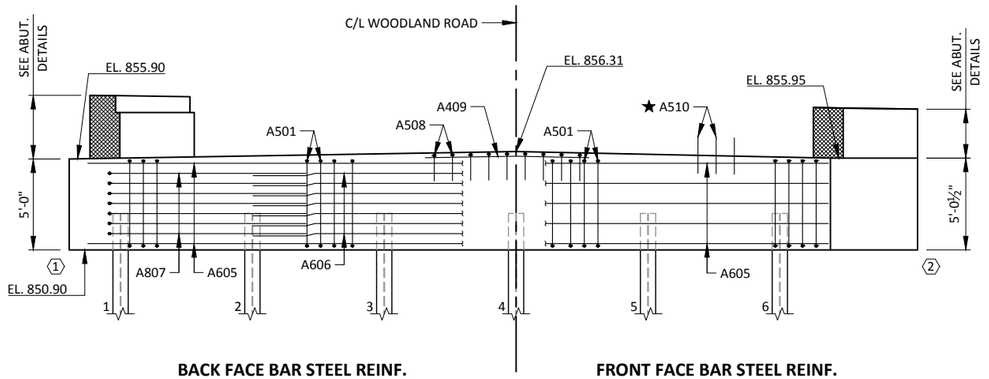
STATE PROJECT NUMBER

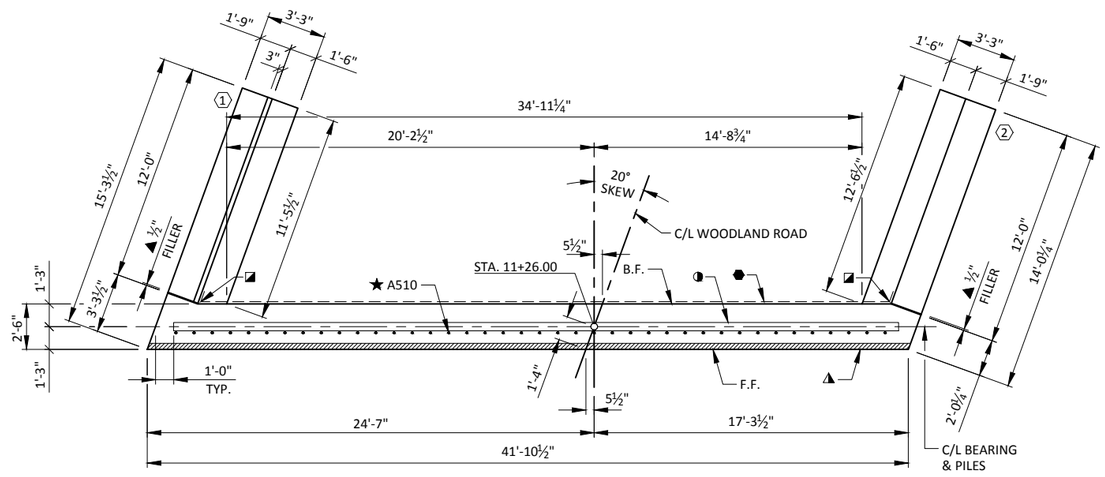
4204-07-71



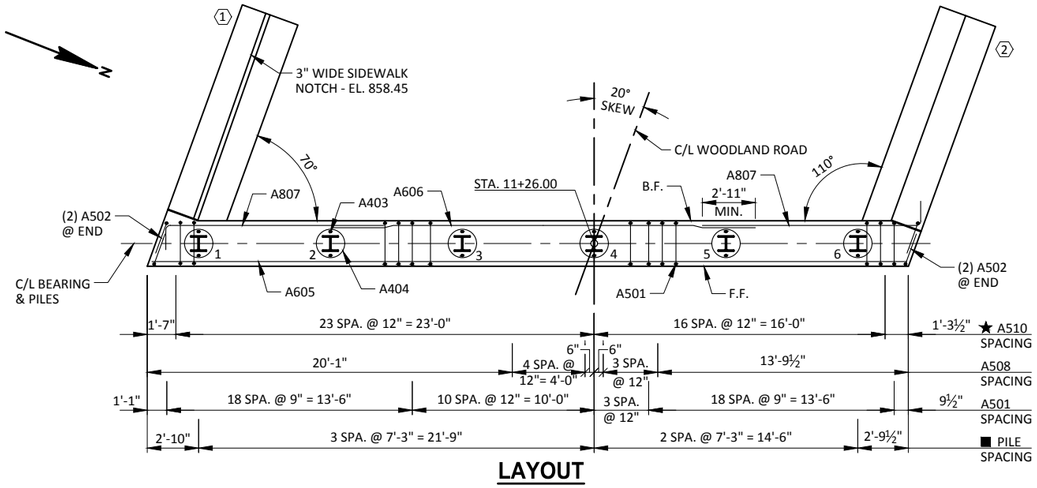
BACK FACE BAR STEEL REINF. **FRONT FACE BAR STEEL REINF.**

ELEVATION

(WEST ABUTMENT LOOKING WEST)



PLAN



LAYOUT

NOTES

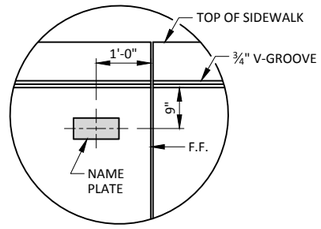
SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 5 FOR BILL OF BARS.

SEAT ELEVATIONS SHOWN IN THE ELEVATION VIEW ARE TAKEN AT THE C/L OF BEARING (NEGLECTING THE KEYED CONSTRUCTION JOINT).

SPACE REINFORCEMENT TO MISS PILING

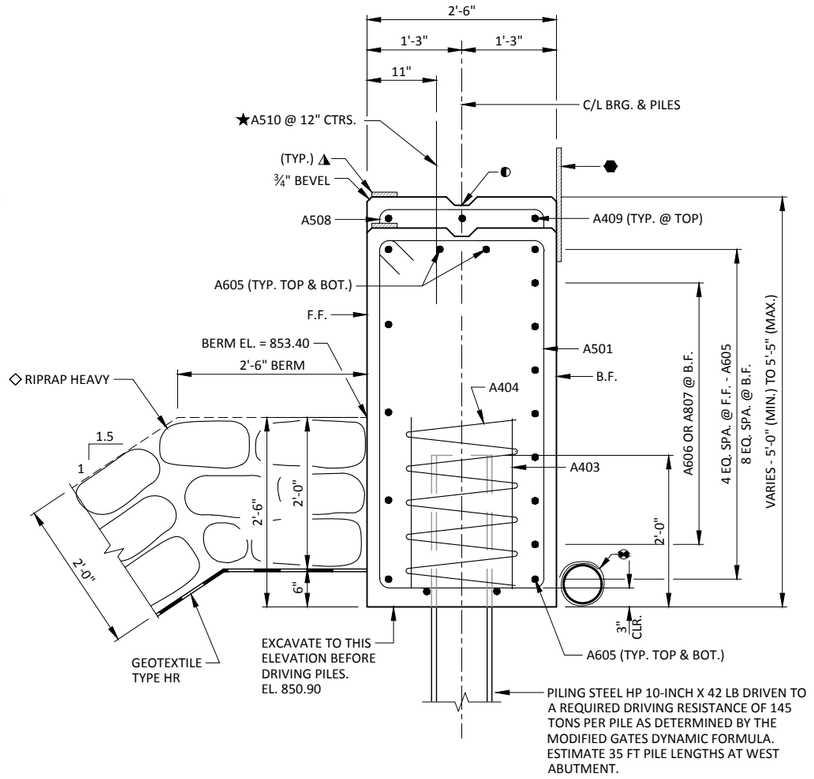
F.F. - FRONT FACE

B.F. - BACK FACE



NAME PLATE DETAIL

WING 1 ONLY



TYPICAL SECTION THROUGH ABUTMENT BODY

LEGEND

- ◑ KEYED CONSTRUCTION JOINT FORMED BY SURFACED & BEVELED 2x6.
- ◪ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING EXTEND FROM 9" BELOW BRIDGE SEAT TO 1" BELOW TOP OF WINGS.
- ⬣ 18" RUBBERIZED MEMBRANE WATERPROOFING. (HORIZONTAL)
- ▲ ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE)
- ◭ ½" x 4" PREFORMED FILLER, EXTEND FULL LENGTH OF ABUTMENTS BETWEEN EDGES OF SLAB.
- ★ A510 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE IT HAS TAKEN ITS INITIAL SET. EMBED BAR 1'-0".
- ■ PILE SPACING MEASURED AT BASE OF ABUTMENT BODY.
- ⬬ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPED 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SCREEN TO BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH."
- ◇ VOIDS IN THE RIPRAP HEAVY SHALL BE FILLED WITH 6-INCH STONE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-59-204

DRAWN BY JZ | PLANS CK'D. PTB

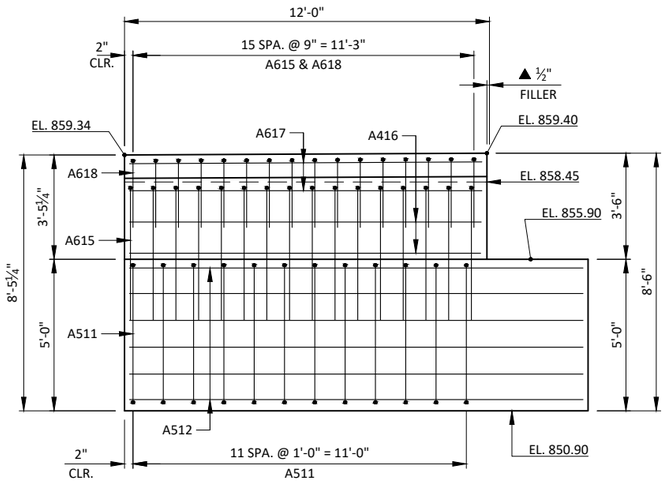
WEST ABUTMENT

SHEET 4 OF 12

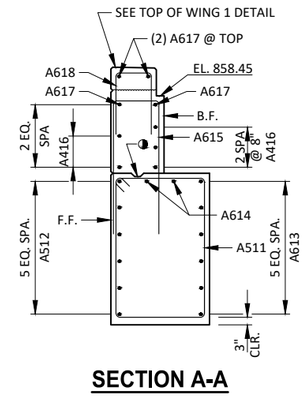
53

8

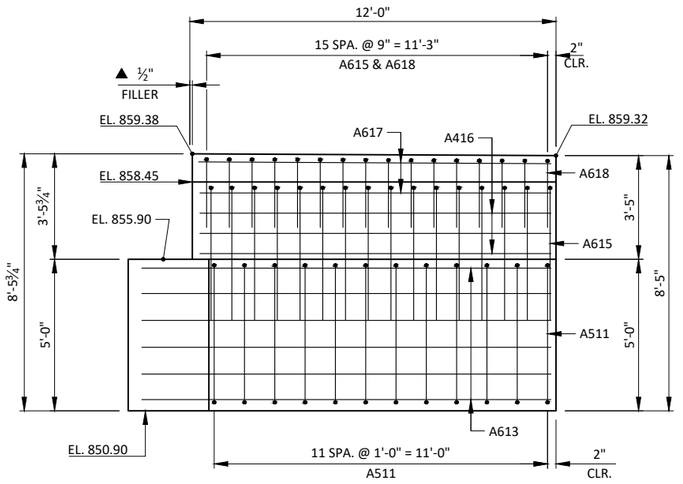
8



F.F. ELEVATION - WING 1



SECTION A-A



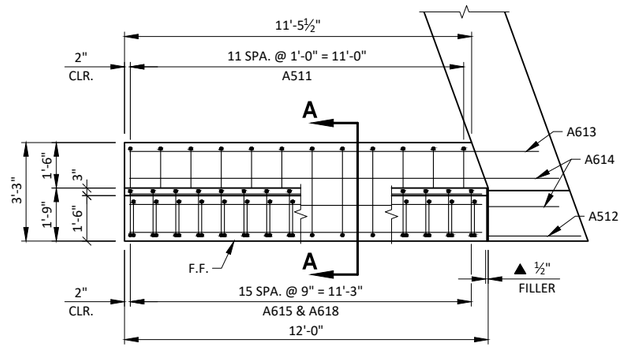
B.F. ELEVATION - WING 1

LEGEND

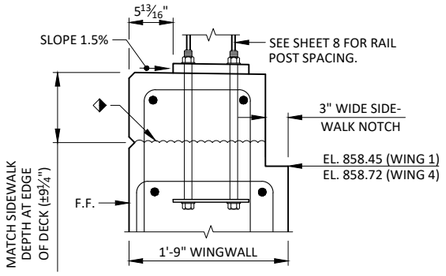
◐ OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY SURFACED & BEVELED 2x6. ¾-INCH "V" GROOVE AT FRONT FACE OF WING WALL AND HORIZONTAL 18" RUBBERIZED MEMBRANE WATERPROOFING AT BACK FACE IF CONSTRUCTION JOINT IS USED. COST IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY BRIDGES".

▲ ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE)

◈ OPTIONAL CONSTRUCTION JOINT, LEAVE ROUGH. POUR CONCRETE ABOVE THIS JOINT AFTER DECK IS IN PLACE. ¾-INCH "V" GROOVE AT FRONT FACE IF CONSTRUCTION JOINT IS USED.

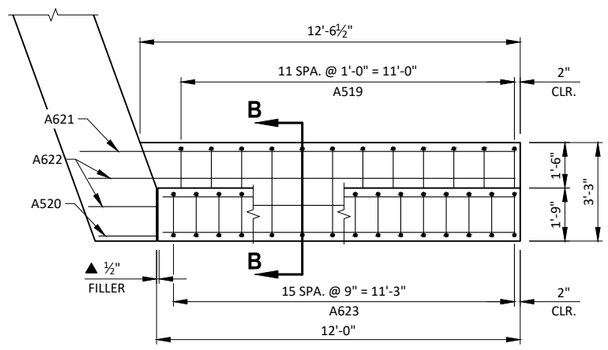


PLAN VIEW - WING 1

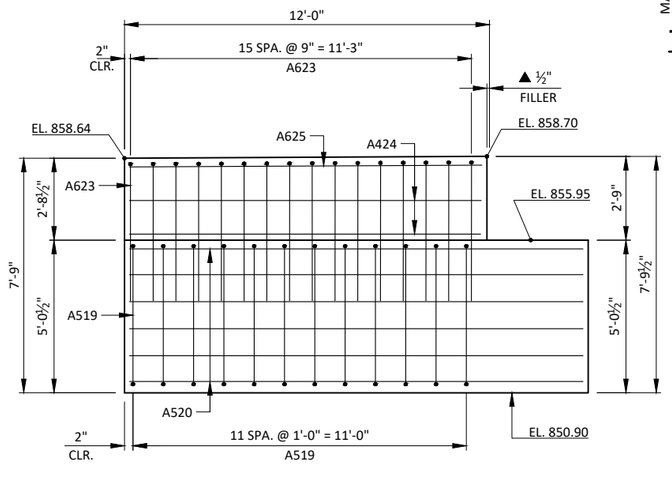


TOP OF WING DETAIL (AT SIDEWALK)

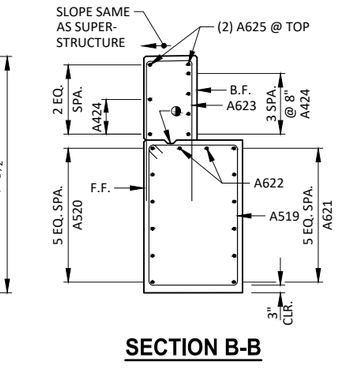
WING 1 SHOWN, WING 4 SIMILAR (SEE SHEET 7)



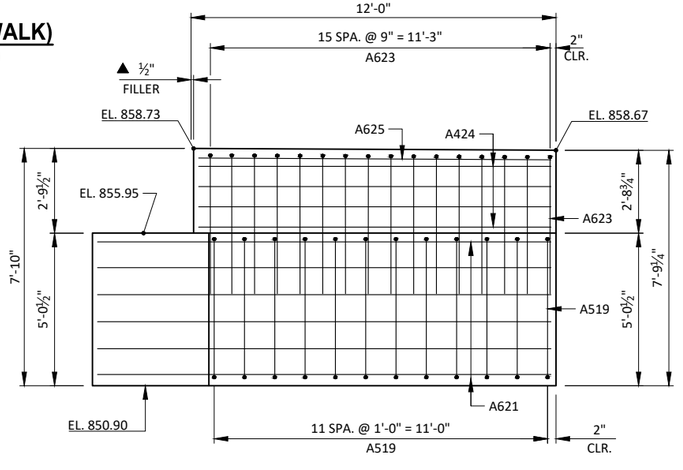
PLAN VIEW - WING 2



F.F. ELEVATION - WING 2



SECTION B-B



B.F. ELEVATION - WING 2

NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE THIS SHEET FOR BILL OF BARS.

SPACE REINFORCEMENT TO MISS PILING

F.F. - FRONT FACE

B.F. - BACK FACE

STATE PROJECT NUMBER

4204-07-71

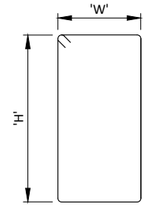
BILL OF BARS
WEST ABUTMENT

1,860 LB (COATED)
2,380 LB (UNCOATED)

BAR MARK	NO. REQ'D.	LENGTH	BENT	COAT	LOCATION
A501	50	14-0	X		BODY -VERT. - STIRRUP
A502	4	7-10	X		BODY - VERT. - STIRRUP AT ENDS
A403	12	2-3			BODY - VERT. - 2 PER PILE
A404	6	28-0	X		BODY - SPIRAL - 1 PER PILE
A605	11	41-6			BODY - HORIZ. - F.F. & TOP
A606	7	23-4			BODY - HORIZ. - B.F.
A807	14	13-2	X		BODY - HORIZ. - B.F.
A508	9	4-11	X		BODY - VERT. - TOP
A409	3	9-0			BODY - HORIZ. - TOP
A510	40	2-0		X	BODY - VERT. - DOWELS
A511	12	15-6	X	X	WING 1 - VERT. - STIRRUP
A512	6	14-10		X	WING 1- HORIZ. - F.F.
A613	6	13-6		X	WING 1 - HORIZ. - B.F.
A614	2	14-2		X	WING 1 - HORIZ. - TOP
A615	16	10-1	X	X	WING 1 - VERT. - TOP
A416	5	11-7		X	WING 1 - HORIZ. - F.F. & B.F.
A617	4	11-7		X	WING 1 - HORIZ. - TOP
A618	16	5-6	X	X	WING 1 - VERT. - SIDEWALK NOTCH
A519	12	15-6	X	X	WING 2 - VERT. - STIRRUP
A520	6	13-8		X	WING 2 - HORIZ. - F.F.
A621	6	14-5		X	WING 2 - HORIZ. - B.F.
A622	2	14-1		X	WING 2 - HORIZ. - TOP
A623	16	10-5	X	X	WING 2 - VERT. - TOP
A424	6	11-7		X	WING 2 - HORIZ. - F.F. & B.F.
A625	2	11-7		X	WING 2 - HORIZ. - TOP

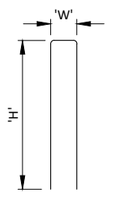
NOTES: THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



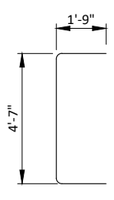
A501, A511, A519

BAR MARK	'W'	'H'
A501	2-2	4-7
A511	2-11	4-7
A519	2-11	4-7

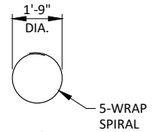


A508, A615, A618, A623

BAR MARK	'W'	'H'
A508	2-2	1-5
A615	1-5	4-7
A618	1-3	2-0
A623	1-5	4-6



A502



A404

A807

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-59-204

DRAWN BY JZ | PLANS CK'D. PTB

WEST ABUTMENT DETAILS

SHEET 5 OF 12

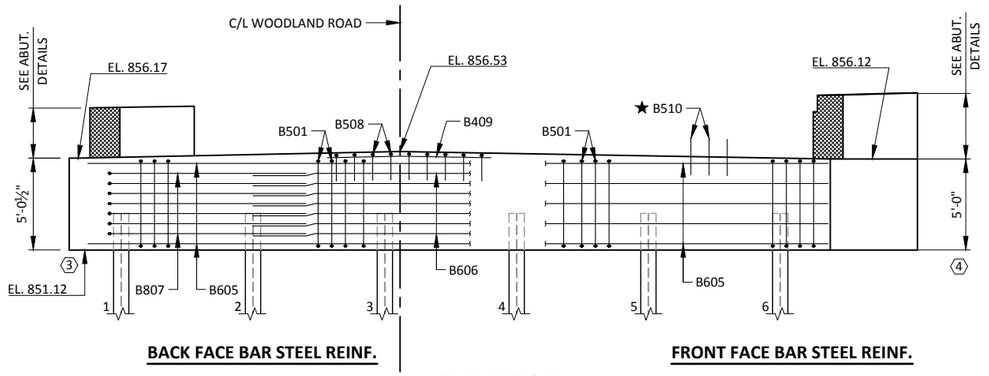
54

8

8

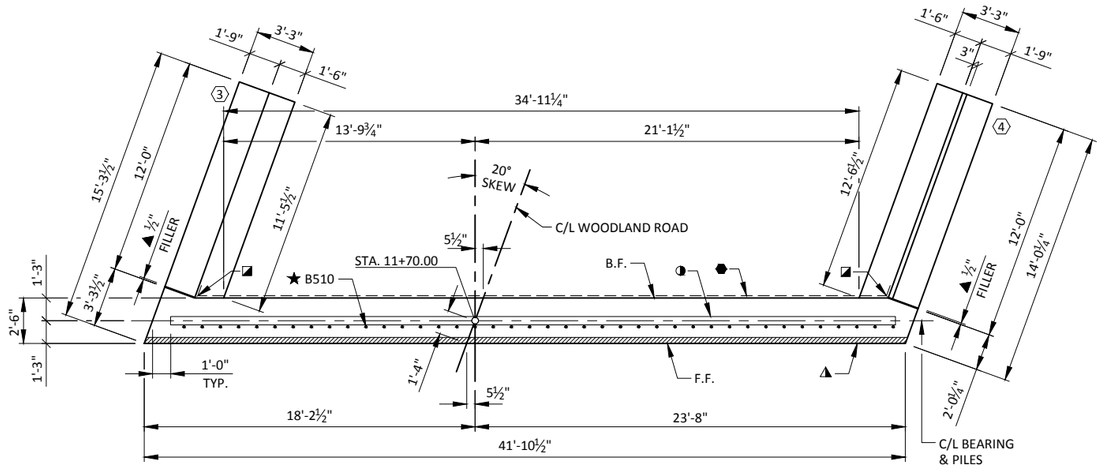
STATE PROJECT NUMBER

4204-07-71

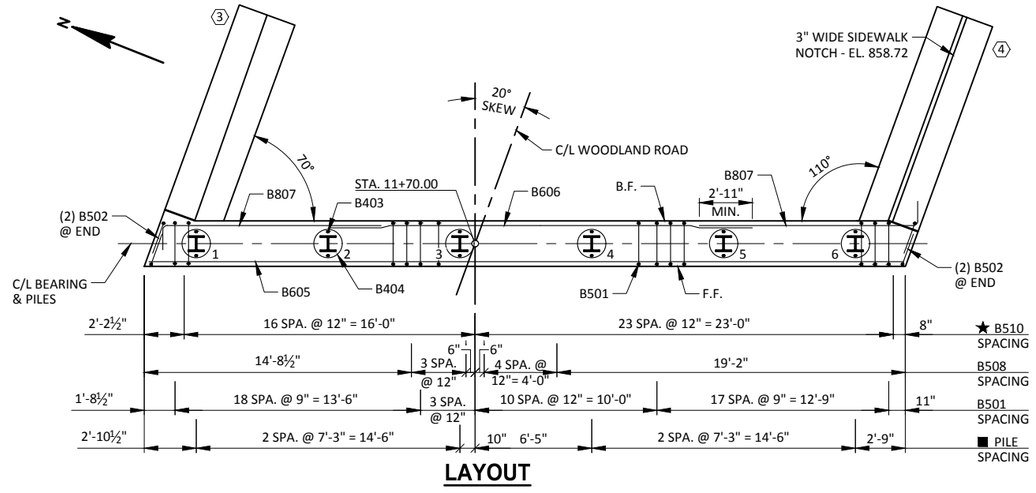


ELEVATION

(EAST ABUTMENT LOOKING EAST)



PLAN



LAYOUT

NOTES

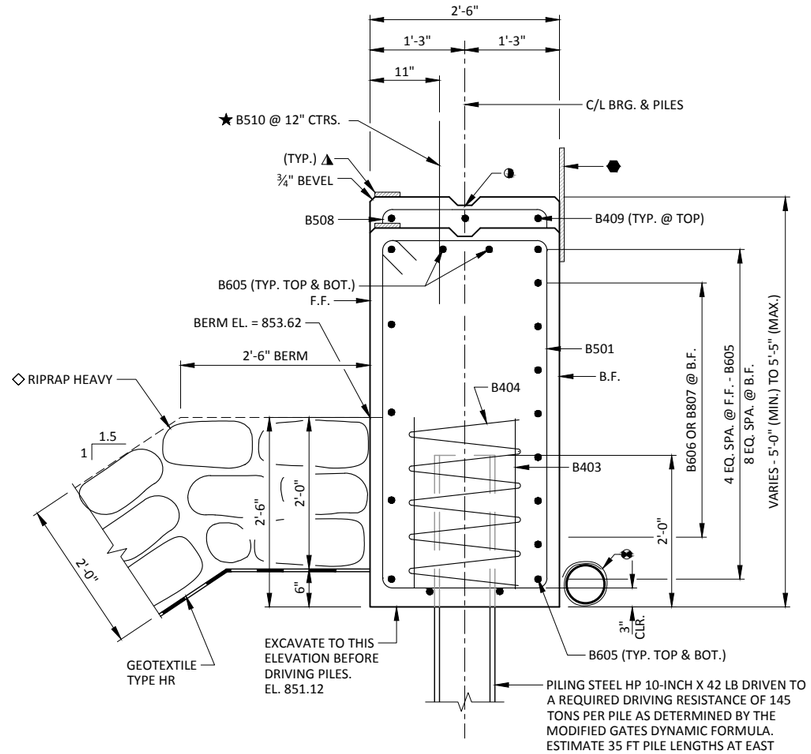
SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 7 FOR BILL OF BARS.

SEAT ELEVATIONS SHOWN IN THE ELEVATION VIEW ARE TAKEN AT THE C/L OF BEARING (NEGLECTING THE KEYED CONSTRUCTION JOINT).

SPACE REINFORCEMENT TO MISS PILING

F.F. - FRONT FACE

B.F. - BACK FACE



TYPICAL SECTION THROUGH ABUTMENT BODY

LEGEND

- ◑ KEYED CONSTRUCTION JOINT FORMED BY SURFACED & BEVELED 2x6.
- ◪ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING EXTEND FROM 9" BELOW BRIDGE SEAT TO 1" BELOW TOP OF WINGS.
- ⬣ 18" RUBBERIZED MEMBRANE WATERPROOFING. (HORIZONTAL)
- ▲ ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE)
- ◭ ½" x 4" PREFORMED FILLER, EXTEND FULL LENGTH OF ABUTMENTS BETWEEN EDGES OF SLAB.
- ★ B510 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE IT HAS TAKEN ITS INITIAL SET. EMBED BAR 1'-0".
- ■ PILE SPACING MEASURED AT BASE OF ABUTMENT BODY.
- ◓ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPED 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SCREEN TO BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH."
- ◇ VOIDS IN THE RIPRAP HEAVY SHALL BE FILLED WITH 6-INCH STONE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-59-204

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EAST ABUTMENT

SHEET 6 OF 12

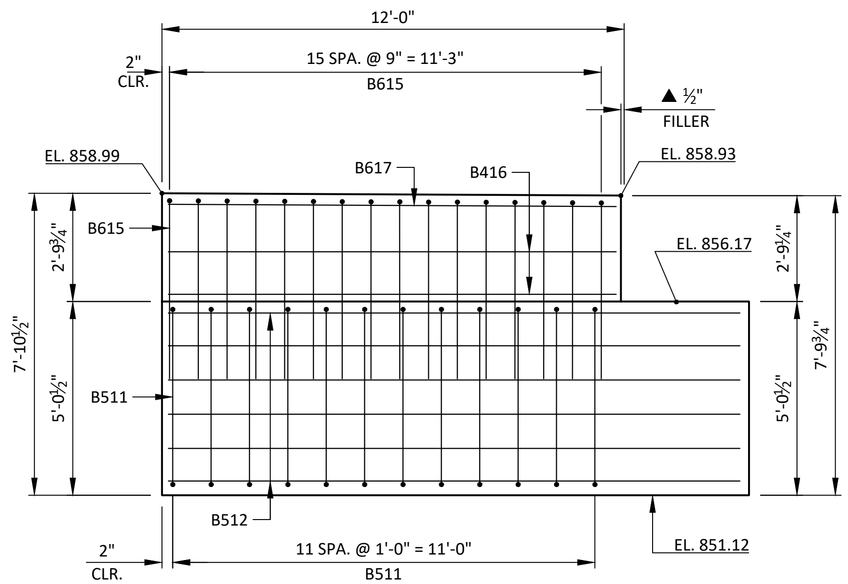
55

8

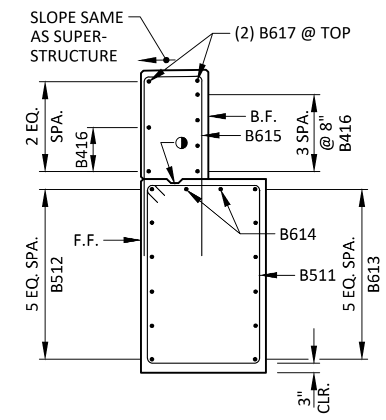
8

STATE PROJECT NUMBER

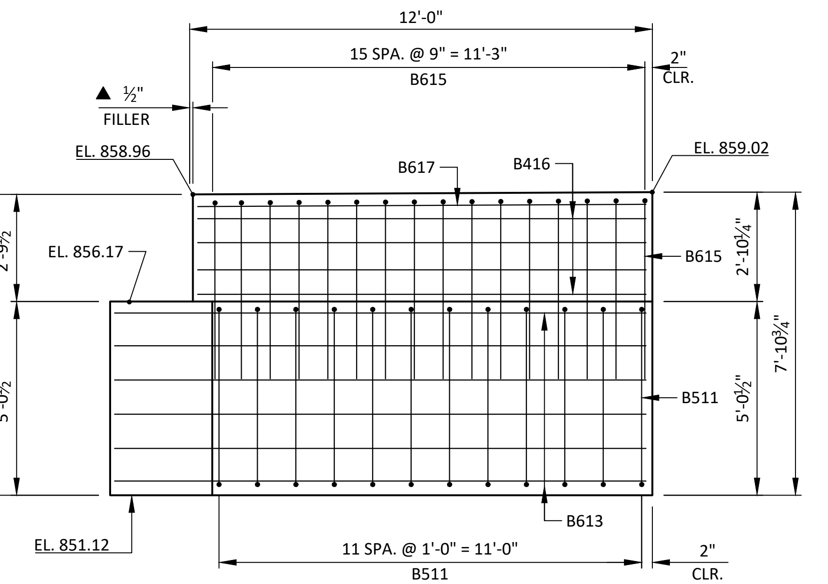
4204-07-71



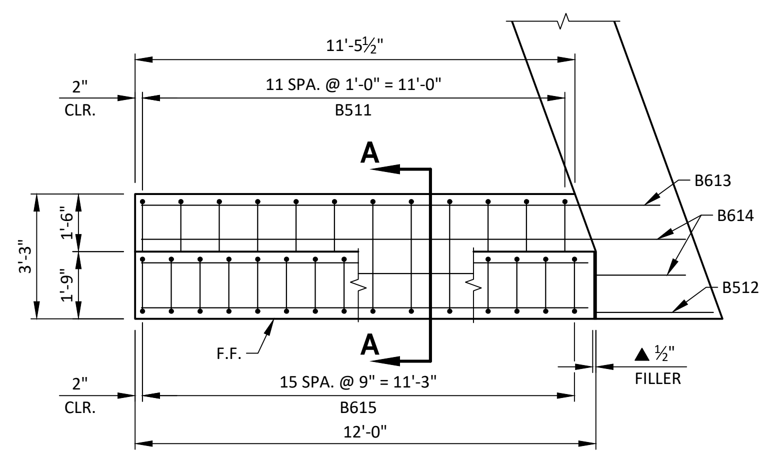
F.F. ELEVATION - WING 3



SECTION A-A



B.F. ELEVATION - WING 3



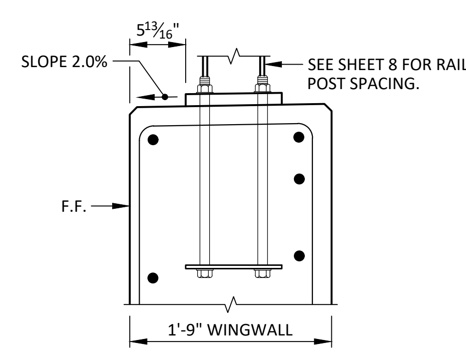
PLAN VIEW - WING 3

LEGEND

◐ OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY SURFACED & BEVELED 2x6. ¾-INCH "V" GROOVE AT FRONT FACE OF WING WALL AND HORIZONTAL 18" RUBBERIZED MEMBRANE WATERPROOFING AT BACK FACE IF CONSTRUCTION JOINT IS USED. COST IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY BRIDGES".

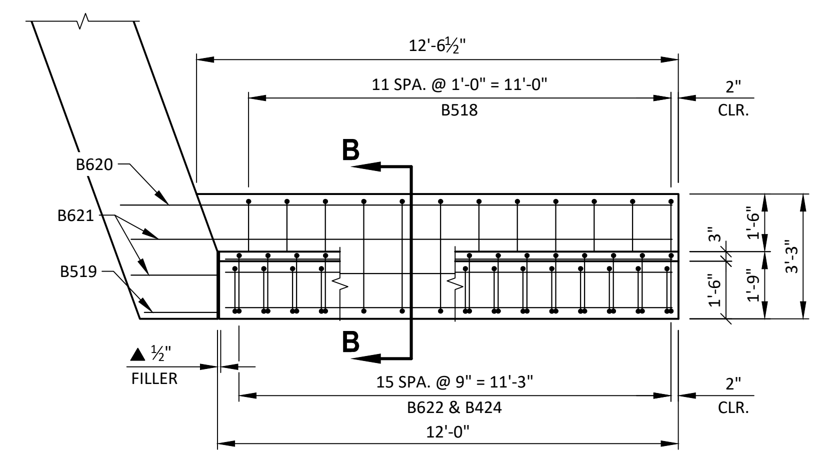
▲ ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE)

◈ OPTIONAL CONSTRUCTION JOINT, LEAVE ROUGH. POUR CONCRETE ABOVE THIS JOINT AFTER DECK IS IN PLACE. ¾-INCH "V" GROOVE AT FRONT FACE IF CONSTRUCTION JOINT IS USED.

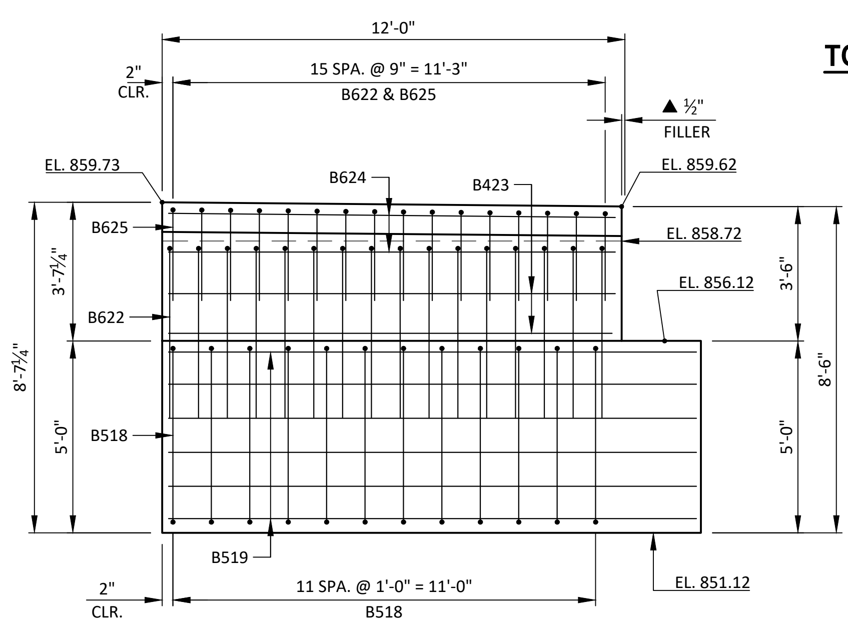


TOP OF WING DETAIL (W/O SIDEWALK)

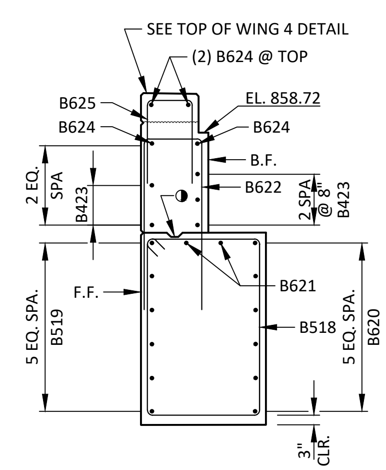
WING 3 SHOWN, WING 2 SIMILAR (SEE SHEET 5)



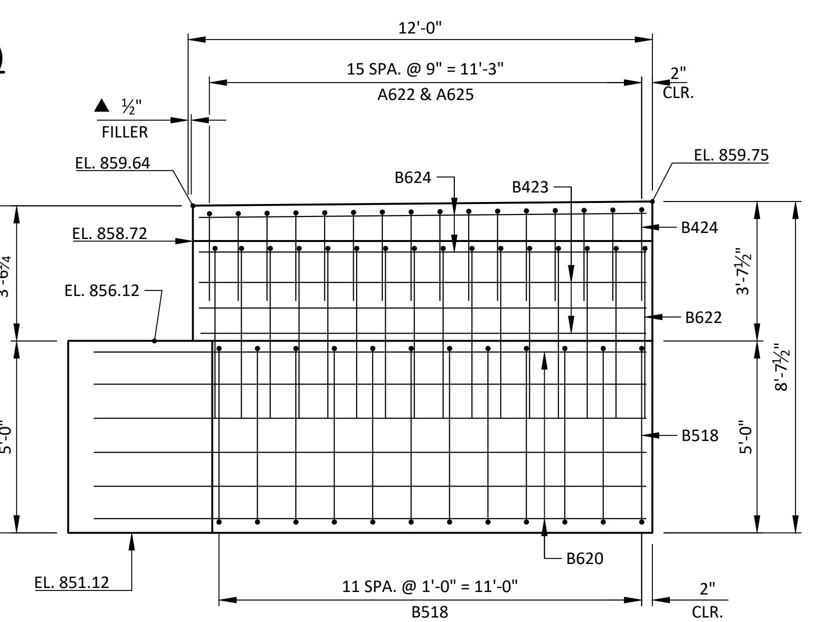
PLAN VIEW - WING 4



F.F. ELEVATION - WING 4



SECTION B-B



B.F. ELEVATION - WING 4

NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE THIS SHEET FOR BILL OF BARS.

SPACE REINFORCEMENT TO MISS PILING

F.F. - FRONT FACE

B.F. - BACK FACE

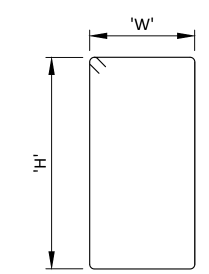
BILL OF BARS EAST ABUTMENT

1,810 LB (COATED)
2,370 LB (UNCOATED)

BAR MARK	NO. REQ'D.	LENGTH	BENT	COAT	LOCATION
B501	49	14-0	X		BODY -VERT. - STIRRUP
B502	4	7-10	X		BODY - VERT. - STIRRUP AT ENDS
B403	12	2-3			BODY - VERT. - 2 PER PILE
B404	6	28-0	X		BODY - SPIRAL - 1 PER PILE
B605	11	41-6			BODY - HORIZ. - F.F. & TOP
B606	7	23-4			BODY - HORIZ. - B.F.
B807	14	13-2	X		BODY - HORIZ. - B.F.
B508	9	4-11	X		BODY - VERT. - TOP
B409	3	9-0			BODY - HORIZ. - TOP
B510	40	2-0		X	BODY - VERT. - DOWELS
B511	12	15-6	X	X	WING 3 - VERT. - STIRRUP
B512	6	14-10		X	WING 3- HORIZ. - F.F.
B613	6	13-6		X	WING 3 - HORIZ. - B.F.
B614	2	14-2		X	WING 3 - HORIZ. - TOP
B615	16	10-5	X	X	WING 3 - VERT. - TOP
B416	6	11-7		X	WING 3 - HORIZ. - F.F. & B.F.
B617	2	11-7		X	WING 3 - HORIZ. - TOP
B518	12	15-6	X	X	WING 4 - VERT. - STIRRUP
B519	6	13-8		X	WING 4 - HORIZ. - F.F.
B620	6	14-5		X	WING 4 - HORIZ. - B.F.
B621	2	14-1		X	WING 4 - HORIZ. - TOP
B622	16	10-1	X	X	WING 4 - VERT. - TOP
B423	5	11-7		X	WING 4 - HORIZ. - F.F. & B.F.
B624	4	11-7		X	WING 4 - HORIZ. - TOP
B625	16	5-10	X	X	WING 4 - VERT. - SIDEWALK NOTCH

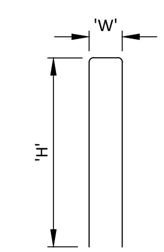
NOTES: THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



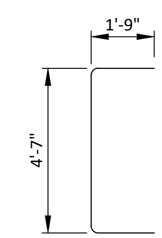
B501, B511, B518

BAR MARK	'W'	'H'
B501	2-2	4-7
B511	2-11	4-7
B518	2-11	4-7

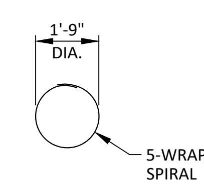


B508, B615, B622, B625

BAR MARK	'W'	'H'
B508	2-2	1-6
B615	1-5	4-8
B622	1-5	4-6
B625	1-2	2-6



B502



B404

B807

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-59-204

DRAWN BY JZ | PLANS CK'D. PTB

EAST ABUTMENT DETAILS

SHEET 7 OF 12

8

8

FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\STRUCTURE\CAD FILES\FINALS\04 ABUTMENTS.DWG PLOT DATE : 9/19/2018 8:01:30 AM PLOT BY : BOLAND, PATRICK PLOT SCALE : 1" = 1' LAYOUT : EAST WINGS

STATE PROJECT NUMBER
4204-07-71

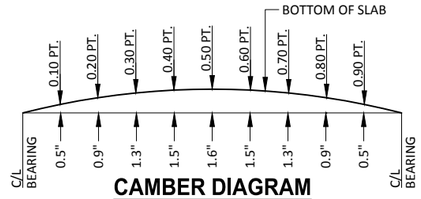
SURVEY TOP OF DECK ELEVATIONS

	W. ABUT.	0.50 PT.	E. ABUT.
NORTH EDGE OF DECK			
CENTER LINE			
SOUTH EDGE OF DECK			

PRIOR TO RELEASING SLAB FASLEWORK, TAKE TOP OF DECK ELEVATIONS AT THE C/L OF THE ABUTMENTS AND AT 0.50 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG THE EDGE OF DECK AND CENTER LINE. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

TOP OF DECK ELEVATIONS

	C/L W. ABUT.	0.10 PNT.	0.20 PNT.	0.30 PNT.	0.40 PNT.	0.50 PNT.	0.60 PNT.	0.70 PNT.	0.80 PNT.	0.90 PNT.	C/L E. ABUT.
N. EDGE	858.70	858.72	858.74	858.77	858.79	858.81	858.83	858.85	858.88	858.90	858.92
C/L	859.06	859.08	859.10	859.13	859.15	859.17	859.19	859.21	859.23	859.26	859.28
FACE CURB	858.79	858.81	858.83	858.85	858.87	858.90	858.92	858.94	858.96	858.98	859.00
S. EDGE	858.65	858.67	858.69	858.72	858.74	858.76	858.78	858.80	858.83	858.84	858.87

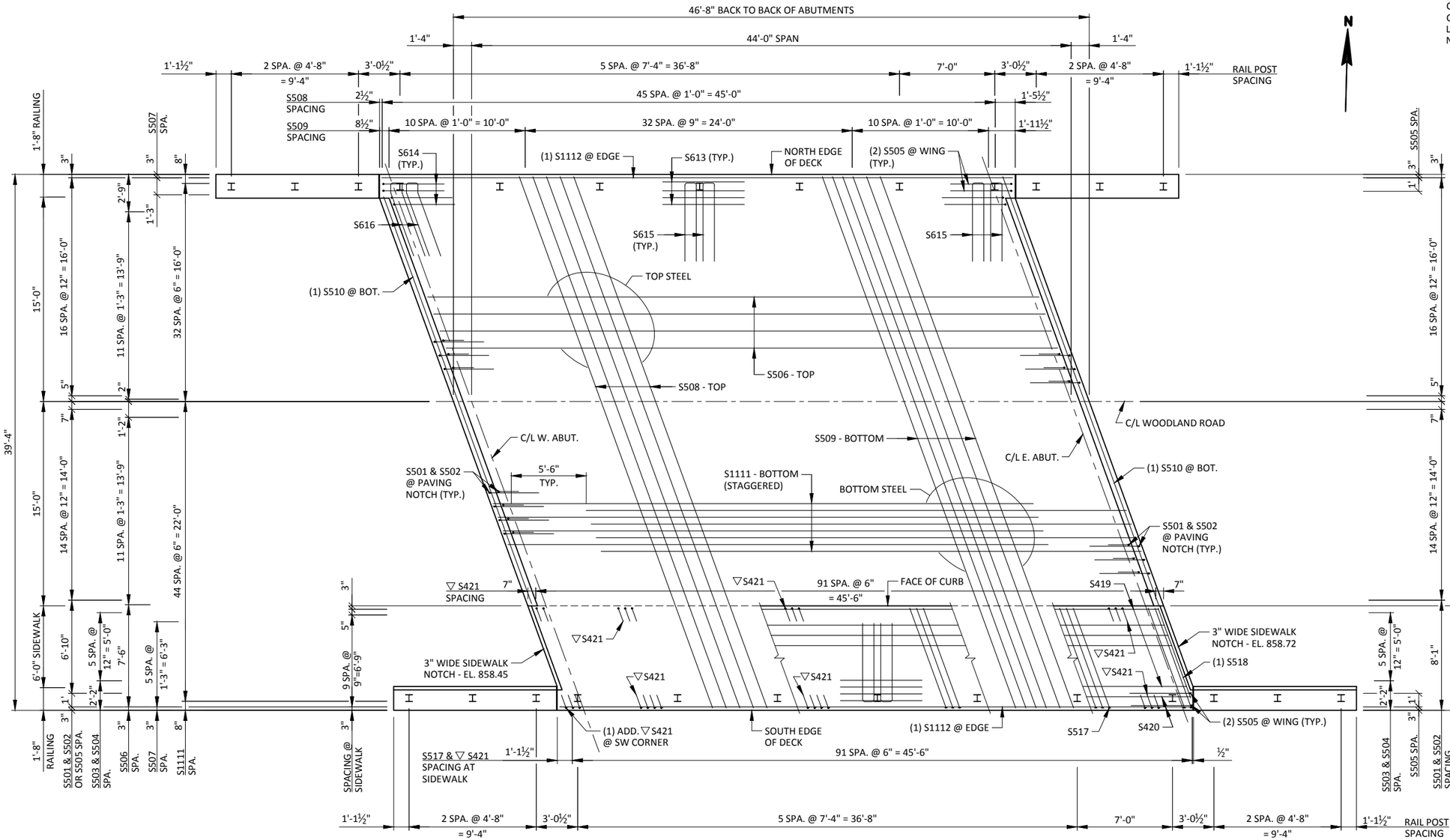


CAMBER DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPAN AS SHOWN TO PROVIDE FOR THEORETICAL DEAD LOAD DEFLECTION AND FUTURE PLASTIC FLOW. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB OR CENTER LINE FOLLOW THIS PROCEDURE:

TOP OF DECK ELEVATION AT FINAL GRADE
-SLAB THICKNESS
+CAMBER
+FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (COMPUTED BY CONTRACTOR)
=TOP OF SLAB FALSEWORK ELEVATION.



PLAN

N

LEGEND

▽ S421 SIDEWALK BARS TO BE TIED TO DECK STEEL BEFORE DECK IS POURED. SEE THIS SHEET FOR BAR LAYOUT.

NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 9 FOR BILL OF BARS.

SEE SUPERSTRUCTURE DETAIL SHEET (SHEET 9 OF 12) FOR BAR SPACINGS NOT SHOWN ON THIS SHEET.

SUPPORT ALTERNATE TOP TRANSVERSE BARS IN SLAB BY INDIVIDUAL BAR CHAIRS AT APPROX. 3'-0" CENTERS. SUPPORT BOTTOM LONGITUDINAL BARS BY CONTINUOUS BAR CHAIRS AT APPROX. 4'-0" CENTERS.

PLACE TRANSVERSE BARS PARALLEL TO THE CENTERLINE OF SUBSTRUCTURE UNITS.

THE SLAB THICKNESS DIMENSION IS MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-59-204

DRAWN BY	JZ	PLANS CK'D.	PTB

SUPERSTRUCTURE

SHEET 8 OF 12

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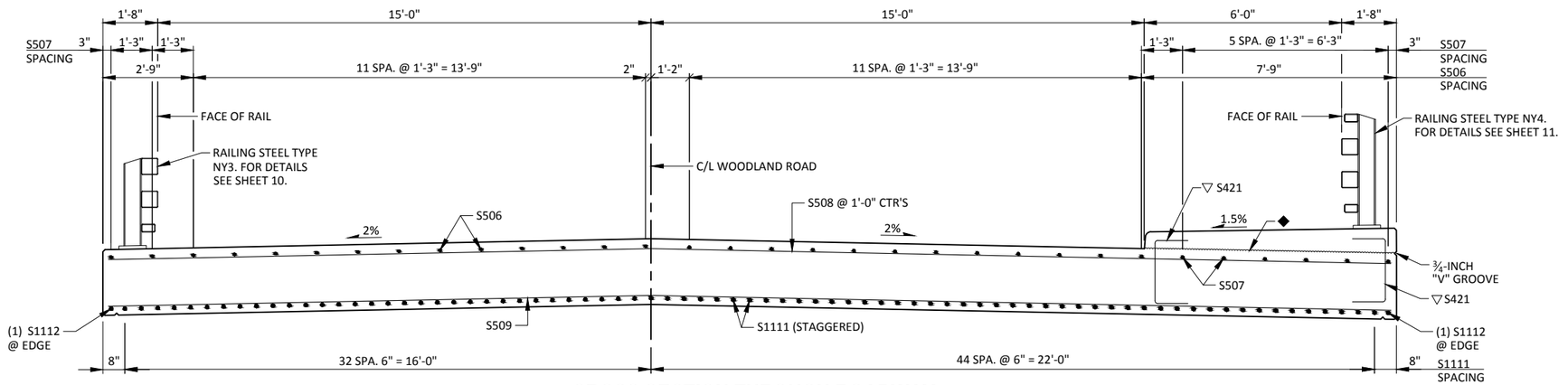
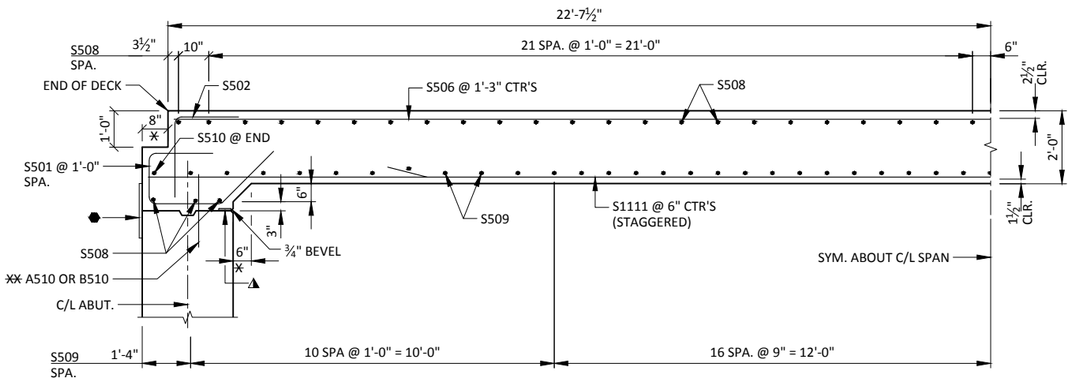
STATE PROJECT NUMBER
4204-07-71

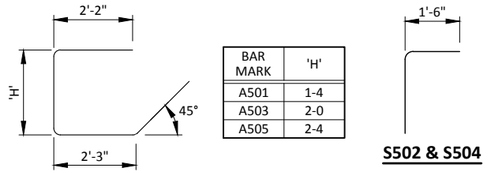


CROSS SECTION THROUGH ROADWAY

LOOKING EAST



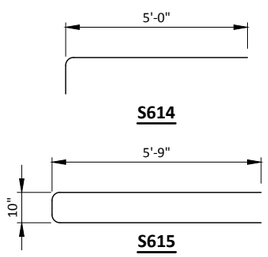
PARTIAL LONGITUDINAL SECTION THROUGH ROADWAY

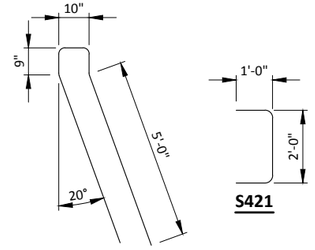


BAR MARK	'H'
A501	1-4
A503	2-0
A505	2-4

S501, S503 & S505

S502 & S504





BILL OF BARS SUPERSTRUCTURE

26,390 LB (COATED)

BAR MARK	NO. REQ'D.	LENGTH	BENT	COAT	LOCATION
S501	60	7-7	X	X	END OF DECK @ PAVING NOTCH
S502	60	3-8	X	X	END OF DECK @ PAVING NOTCH
S503	12	8-3	X	X	END OF DECK @ SIDEWALK NOTCH
S504	12	3-8	X	X	END OF DECK @ SIDEWALK NOTCH
S505	8	8-7	X	X	END OF DECK @ WINGWALLS
S506	24	44-10		X	SLAB - TOP - LONG.
S507	8	45-9		X	SLAB - TOP - LONG. @ SW NOTCH & N. EDGE
S508	52	41-6		X	SLAB - TOP - TRANS.
S509	53	41-6		X	SLAB - BOTTOM - TRANS.
S510	2	40-3		X	SLAB - BOTTOM - TRANS @ ENDS
S1111	77	39-8		X	SLAB - BOTTOM - LONG. (STAGGERED)
S1112	2	46-3		X	SLAB - BOTTOM - LONG. @ EDGES
S613	48	6-0		X	RAIL POSTS - INT. & CORNERS @ S. EDGE
S614	8	6-0	X	X	RAIL POSTS - CORNERS @ NORTH EDGE
S615	24	12-0	X	X	RAIL POSTS
S616	4	12-0	X	X	RAIL POSTS - CORNERS
S517	92	8-2	X	X	SIDEWALK - TOP - TRANS.
S518	1	7-0		X	SIDEWALK - TOP - TRANS. @ EAST END
S419	9	45-9		X	SIDEWALK - LONG.
S420	2	46-3		X	SIDEWALK - LONG. @ OUTSIDE
S421	185	3-10	X	X	SIDEWALK - STIRRUPS

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

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

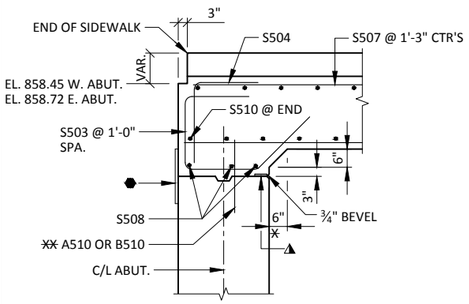
NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE THIS SHEET FOR BILL OF BARS.

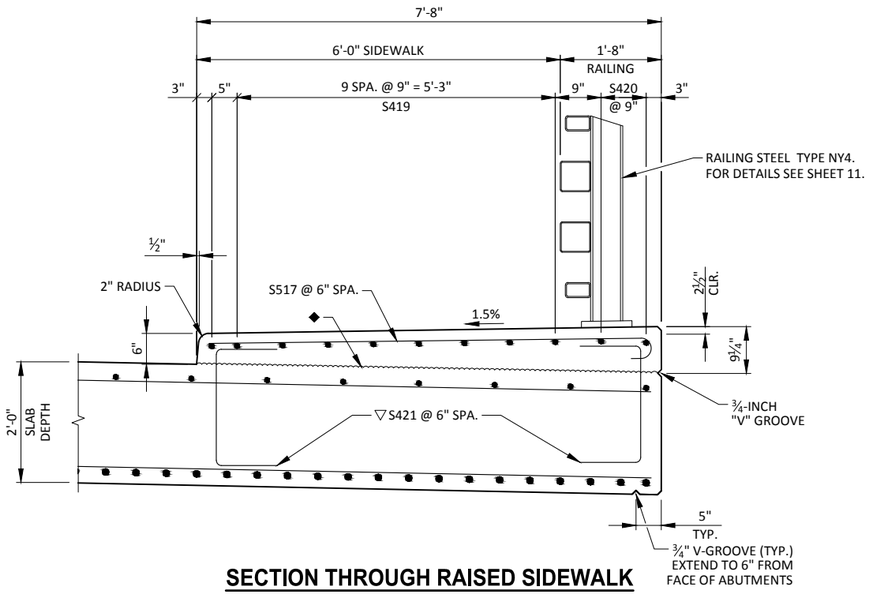
SUPPORT ALTERNATE TOP TRANSVERSE BARS IN SLAB BY INDIVIDUAL BAR CHAIRS AT APPROX. 3'-0" CENTERS. SUPPORT BOTTOM LONGITUDINAL BARS BY CONTINUOUS BAR CHAIRS AT APPROX. 4'-0" CENTERS.

PLACE TRANSVERSE BARS PARALLEL TO THE CENTERLINE OF SUBSTRUCTURE UNITS.

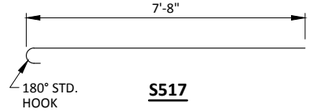
THE SLAB THICKNESS DIMENSION IS MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

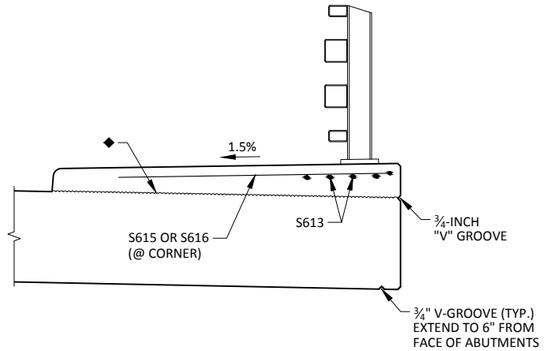


PARTIAL LONGITUDINAL SECTION AT SIDEWALK NOTCH



SECTION THROUGH RAISED SIDEWALK





SECTION THROUGH RAILING ON SIDEWALK

LEGEND

- ⬢ 18" RUBBERIZED MEMBRANE WATERPROOFING. (HORIZONTAL)
- ◮ ½" x 4" PREFORMED FILLER, EXTEND FULL LENGTH OF ABUTMENTS BETWEEN EDGES OF SLAB.
- ◆ CONSTRUCTION JOINT - STRIKE OFF AND LEAVE ROUGH. FINISH ALL AREAS THAT WILL NOT BE COVERED WITH SIDEWALK OR PARAPET AT COMPLETION. FOR SLAB PLACEMENT, MATCH BRIDGE CROSS SLOPE.
- ▽ S421 SIDEWALK BARS TO BE TIED TO DECK STEEL BEFORE DECK IS POURED. SEE SHEET 8 OF 12 FOR BAR LAYOUT.
- ∗ DIMENSION IS NORMAL TO THE C/L OF SUBSTRUCTURE UNITS.
- ∗∗ SEE SHEETS 4 OR 6 FOR PLACEMENT OF A510 OR B510 BARS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-59-204

DRAWN BY JZ | PLANS CK'D. PTB

SUPERSTRUCTURE DETAILS

SHEET 9 OF 12

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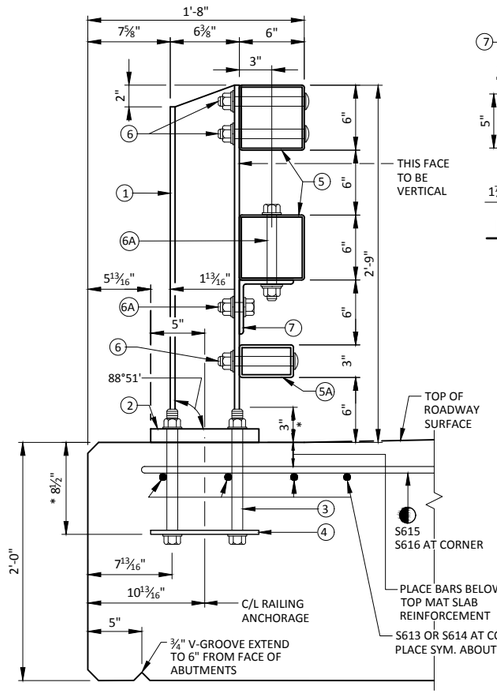
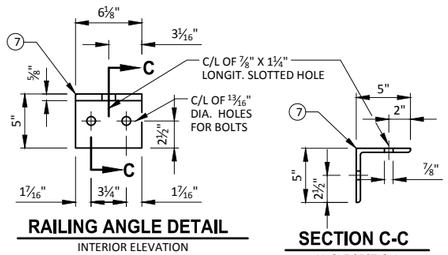
STATE PROJECT NUMBER

4204-07-71



SECTION THRU RAILING ON DECK

* NORMAL TO BASE PLATE

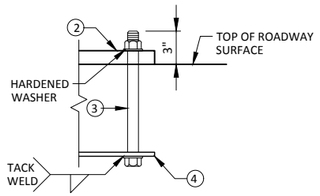


RAILING ANGLE DETAIL

INTERIOR ELEVATION

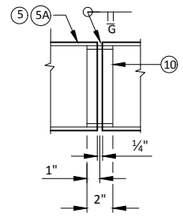
SECTION C-C

ANGLE SECTION



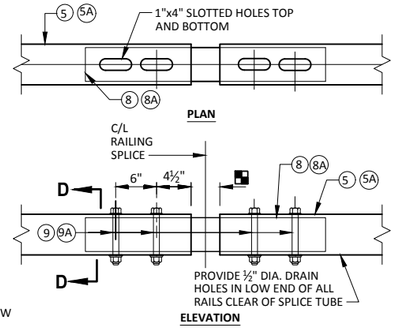
ANCHOR BOLTS

FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.

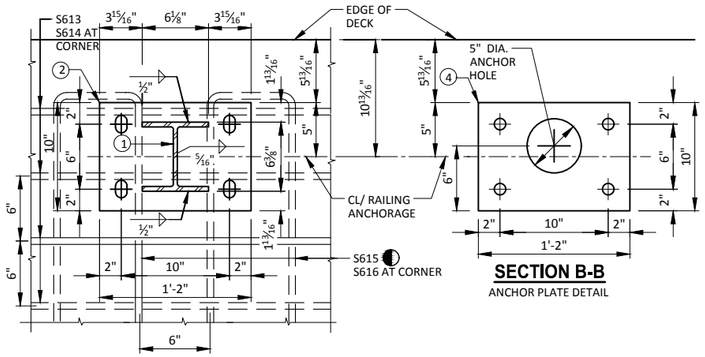


SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



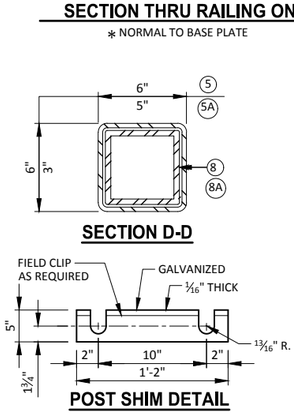
FIELD ERECTION JOINT DETAIL



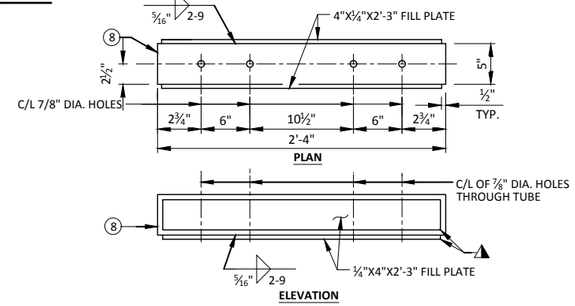
SECTION A-A

SECTION B-B

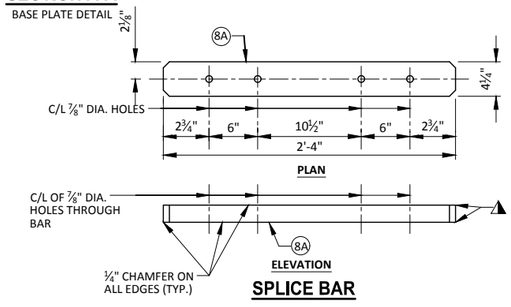
ANCHOR PLATE DETAIL



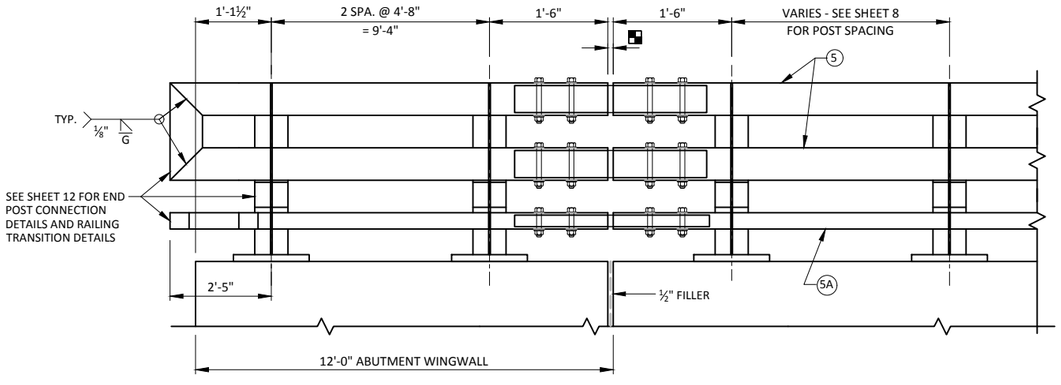
POST SHIM DETAIL



SPLICE TUBE

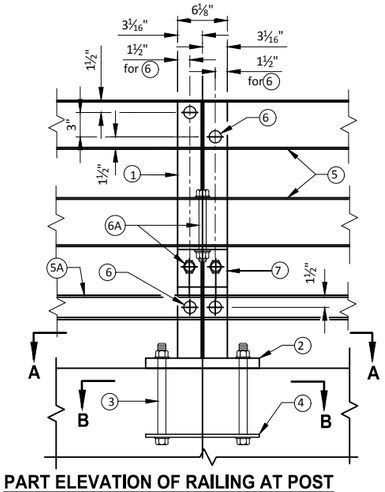


SPLICE BAR



PART ELEVATION OF RAILING

INTERIOR ELEVATION



PART ELEVATION OF RAILING AT POST

INTERIOR ELEVATION

LEGEND

(1) W6 X 25 1⅛" X 1¾" HORIZONTAL SLOTTED HOLES ON EACH SIDE OF POST FOR BOLT NO. 6 AT NO. 5. USE 1" DIA. HOLES FOR BOLT NO. 6 AT NO. 5A AND FOR BOLT NO. 6A AT NO. 7. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

(2) PLATE 1¼" X 10" X 1'-2" WITH 1¼" X 1⅞" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

(3) ASTM A449 - 1" DIA. ANCHOR BOLTS WITH HEAVY HEX NUT AND 2" O.D. HARDENED WASHER (ALL GALVANIZED). 4 REQUIRED PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. ON CONCRETE SLAB SUPERSTRUCTURES, USE 1'-3" LONG BOLT FOR SLAB THICKNESS > 16". USE 1'-9" LONG IN ABUTMENT WINGS. (AN EQUIVALENT THREADED ROD WITH HEAVY HEX NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQUIRED FOR CONSTRUCTABILITY.)

(4) ⅜" X 10" X 1'-2" ANCHOR PLATE (GALVANIZED) WITH 1⅛" DIA. HOLES FOR ANCHOR BOLTS NO. 3.

(5) TS 6 X 6 X ⅜" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6 (FRONT & BACK) & ⅞" DIA. HOLES FOR BOLT NO. 6A (TOP & BOTTOM).

(5A) TS 5 X 3 X ¼" STRUCTURAL TUBING. USE 1⅛" X 1⅜" HORIZONTAL SLOTTED HOLES FOR BOLT NO. 6 (FRONT & BACK) AND A 2" O.D. WASHER UNDER BOLT HEAD.

(6) ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT, 3⁄16" X 1¾" X 1¾" WASHER, AND SPRING LOCK WASHER (2 REQUIRED AT RAIL TO POST LOCATIONS SHOWN).

(6A) ¾" DIA. A325 BOLT WITH HEX NUT & SPRING LOCK WASHER (1 REQUIRED AT RAIL TO ANGLE & 2 REQUIRED AT ANGLE TO POST LOCATIONS SHOWN WITH 3⁄16" X 1¾" X 1¾" WASHER).

(7) L 5 X 5 X ⅝" STRUCTURAL ANGLE. ATTACH TO NO. 1 AND NO. 5 AS SHOWN.

(8) TS 5 X 5 X 5⁄16" X 2'-4" LONG SPLICE TUBE. 1 PER RAIL. USED IN NO. 5.

(8A) 4¼" X 2⅛" X 2'-4" LONG SPLICE BAR. 1 PER RAIL. USED IN NO. 5A.

(9) ¾" DIA. A325 FULLY THREADED BOLTS, 7½" LONG, WITH 2 WASHERS AND HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT. (4 REQUIRED PER SPLICE) USE 1" X 4" SLOTTED HOLES IN TOP AND BOTTOM OF NO. 5.

(9A) ¾" DIA. A325 FULLY THREADED BOLTS, 41/2" LONG, WITH 2 WASHERS AND HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT. (4 REQUIRED PER SPLICE) USE 1" X 4" SLOTTED HOLES IN TOP AND BOTTOM OF NO. 5A.

(10) SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".

ROADWAY OPENING OR 2½" MIN. FOR STRIP SEAL EXP. JOINT & ½" OPENING FOR A1 ABUTMENT. ½" AT FIXED JOINTS. SPLICES ARE REQUIRED IN ANY RAILING SPAN BETWEEN POSTS THAT CONTAINS A SUPERSTRUCTURE EXPANSION JOINT.

PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE RAILS, SPLICE TUBES AND FILL PLATES.

S615 OR S616 BARS. TIE TO TOP MAT OF STEEL.

NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE NY3 B-59-204", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.

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.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS, ANGLES, SPLICE TUBES, SPLICE BARS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS.

RAIL POST, BASE PLATES, SPLICE BAR, ANGLES AND SPLICE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED fy=50 KSI. ANCHOR PLATES & SHIMS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.

THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. CAULK AROUND PERIMETER OF NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER PLATE NO. 2 WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED. WORK THIS SHEET WITH "END POST DETAILS RAILING STEEL TYPE NY3" SHEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-59-204

DRAWN BY JZ | PLANS CK'D. PTB

RAILING STEEL TYPE NY3

SHEET 10 OF 12

59

STATE PROJECT NUMBER

4204-07-71

LEGEND

(1) W6 X 25 WITH 1⅛" X 1⅜" HORIZONTAL SLOTTED HOLES ON EACH SIDE OF POST FOR BOLT NO. 6 AT TOP TWO RAILS. USE 1" DIA. HOLES FOR BOLTS NO. 6 AT BOTTOM NO. 5A & FOR BOLT NO. 6A AT NO. 7. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

(2) PLATE 1¼" X 10" X 1'-2" WITH 1⅛" X 1 7/16" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

(3) ASTM A449 - 1" DIA. ANCHOR BOLTS WITH HEAVY HEX NUT AND 2" O.D. HARDENED WASHER (ALL GALVANIZED). 4 REQUIRED PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-5½" LONG BOLT FOR SIDEWALK. USE 1'-9" LONG IN ABUTMENT WINGS. (AN EQUIVALENT THREADED ROD WITH HEAVY HEX NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQUIRED FOR CONSTRUCTABILITY.)

(4) ⅜" X 10" X 1'-2" ANCHOR PLATE (GALVANIZED) WITH 1 1/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3.

(5) TS 6 X 6 X 3/16" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6 (FRONT & BACK) & ⅞" DIA. HOLES FOR BOLT NO. 6A (TOP & BOTTOM).

(5A) TS 5 X 3 X ¼" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6. IN TOP RAIL (FRONT & BACK). USE 1⅛" X 1⅜" HORIZONTAL SLOTTED HOLES FOR BOLT NO. 6 IN BOTTOM RAIL (FRONT & BACK) AND A 2" O.D. WASHER UNDER BOLT HEAD.

(6) ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT, 3/16" X 1¾" X 1¾" WASHER, AND SPRING LOCK WASHER (2 REQUIRED AT RAIL TO POST LOCATIONS SHOWN).

(6A) ¾" DIA. A325 BOLT WITH HEX NUT AND SPRING LOCK WASHER (1 REQUIRED AT RAIL TO ANGLE AND 2 REQUIRED AT ANGLE TO POST LOCATIONS SHOWN WITH 3/16" X 1¾" X 1¾" WASHER).

(7) L 5 X 5 X 5/16" STRUCTURAL ANGLE. ATTACH TO NO. 1 AND NO. 5 AS SHOWN.

(8) TS 5 X 5 X 5/16" X 2'-4" LONG SPLICE TUBE. 1 PER RAIL. USED IN NO. 5.

(8A) 4¼" X 2⅛" X 2'-4" LONG SPLICE BAR. 1 PER RAIL. USED IN NO. 5A.

(9) ¾" DIA. A325 FULLY THREADED BOLTS, 7½" LONG, WITH 2 WASHERS AND HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT. (4 REQUIRED PER SPLICE). USE 1" X 4" SLOTTED HOLES IN TOP AND BOTTOM OF NO. 5.

(9A) ¾" DIA. A325 FULLY THREADED BOLTS, 4½" LONG, WITH 2 WASHERS AND HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT. (4 REQUIRED PER SPLICE). USE 1" X 4" SLOTTED HOLES IN TOP AND BOTTOM OF NO. 5A.

(10) SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".

ROADWAY OPENING OR 2½" MIN. FOR STRIP SEAL EXP. JOINT & ½" OPENING FOR A1 ABUTMENT. ½" AT FIXED JOINTS. SPLICES ARE REQUIRED IN ANY RAILING SPAN BETWEEN POSTS THAT CONTAINS A SUPERSTRUCTURE EXPANSION JOINT.

PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE RAILS, SPLICE TUBES AND FILL PLATES.

S615 OR S616 BARS. TIE TO TOP MAT OF STEEL.

NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE NY4 B-59-204", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.

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.

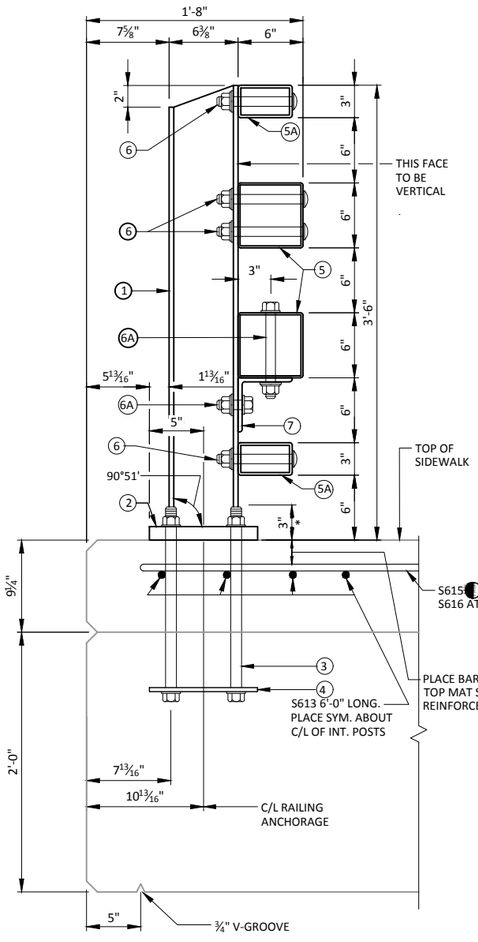
ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS, ANGLES, SPLICE TUBES, SPLICE BARS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS.

RAIL POST, BASE PLATES, SPLICE BAR, ANGLES AND SPLICE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED fy=50 KSI. ANCHOR PLATES & SHIMS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.

THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.

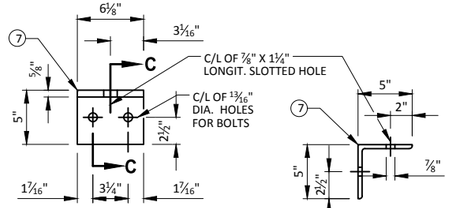
FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. CAULK AROUND PERIMETER OF NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER PLATE NO. 2 WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.



SECTION THRU RAILING ON SIDEWALK

∗NORMAL TO BASE PLATE

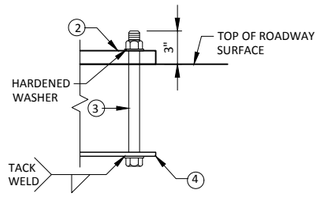


RAILING ANGLE DETAIL

INTERIOR ELEVATION

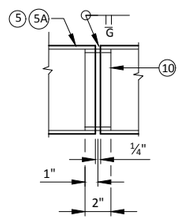
SECTION C-C

ANGLE SECTION



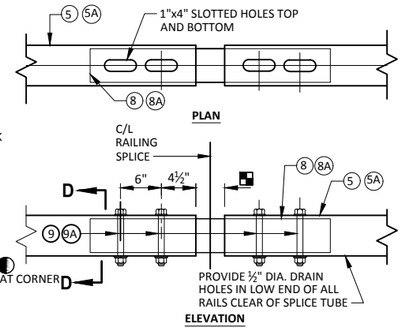
ANCHOR BOLTS

FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.

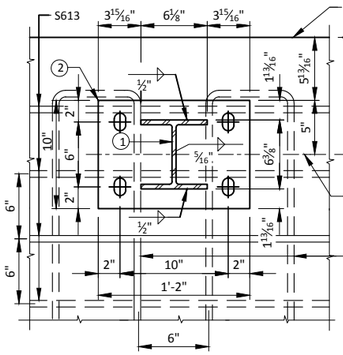


SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)

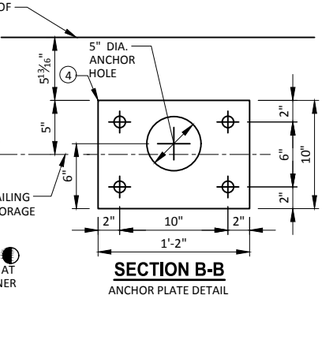


FIELD ERECTION JOINT DETAIL



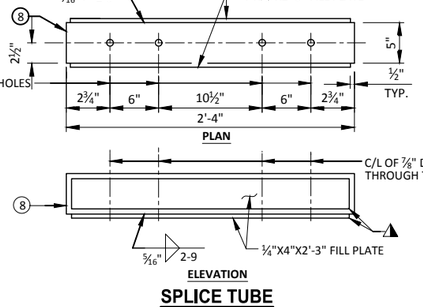
SECTION A-A

BASE PLATE DETAIL

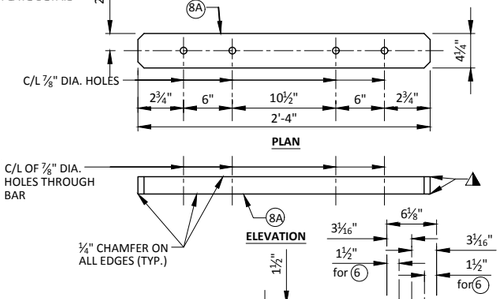


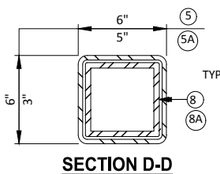
SECTION B-B

ANCHOR PLATE DETAIL

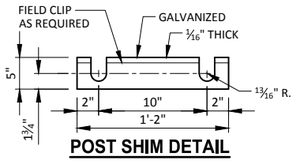


SPLICE TUBE

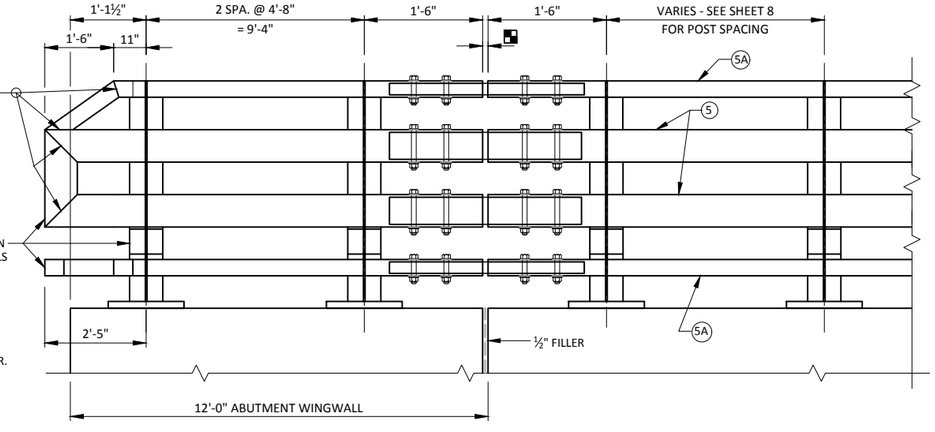




SECTION D-D

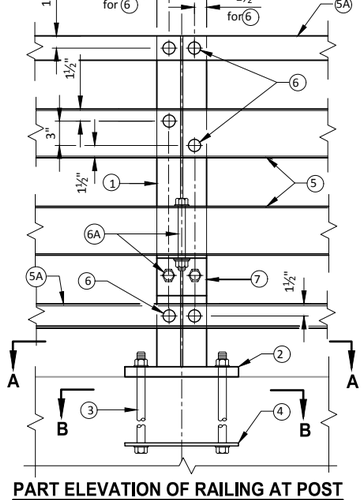


POST SHIM DETAIL



PART ELEVATION OF RAILING

INTERIOR ELEVATION



PART ELEVATION OF RAILING AT POST

INTERIOR ELEVATION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

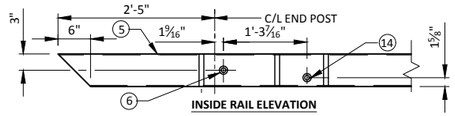
STRUCTURE B-59-204

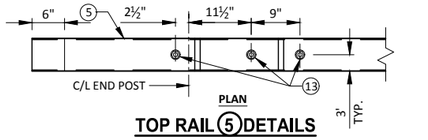
DRAWN BY JZ | PLANS CK'D. PTB

RAILING STEEL TYPE NY4

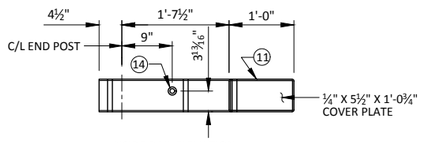
SHEET 11 OF 12

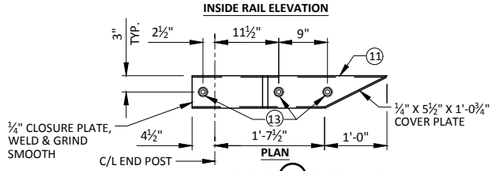
60



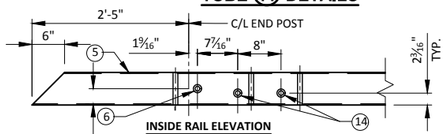


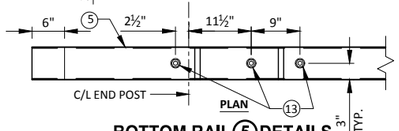
TOP RAIL (5) DETAILS



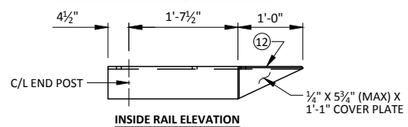


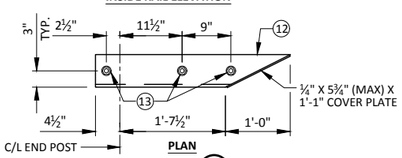
TUBE (11) DETAILS



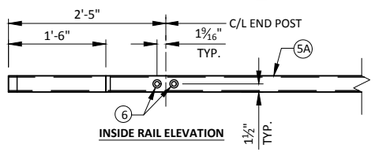


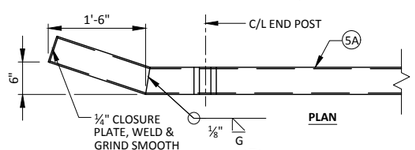
BOTTOM RAIL (5) DETAILS



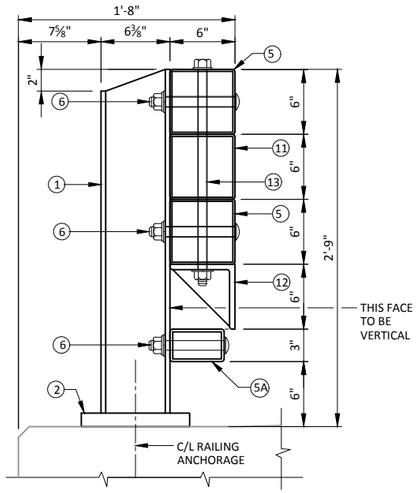


ANGLE (12) DETAILS

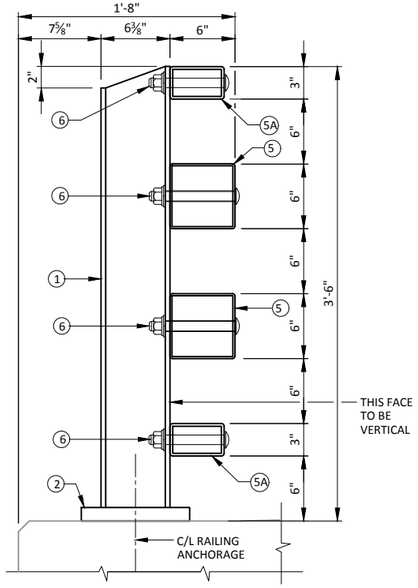




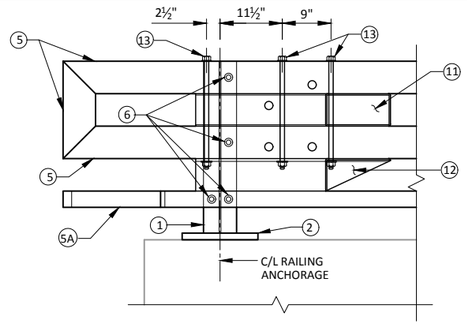
BOTTOM RAIL (5A) DETAILS



SECTION THRU NY3 RAILING END POST

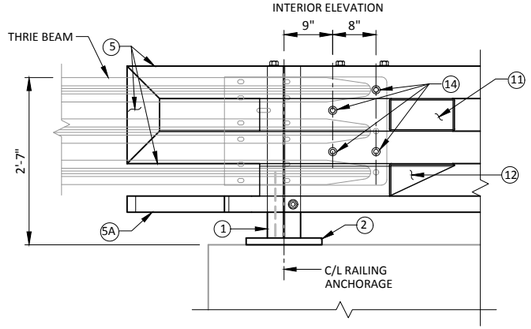


SECTION THRU NY4 RAILING END POST



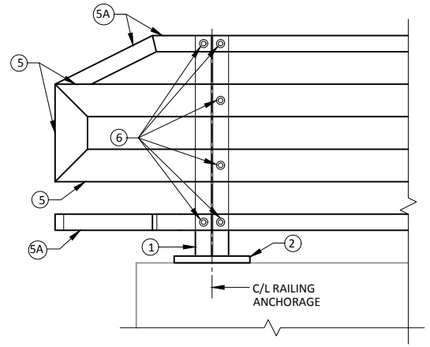
ELEVATION DETAIL AT NY3 END POST

INTERIOR ELEVATION



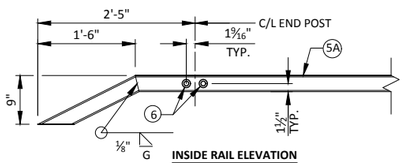
ELEVATION OF DETAIL AT NY3 END POST

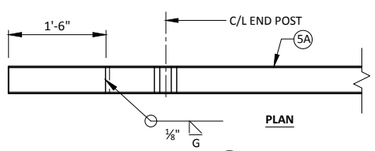
THRIE BEAM RAIL ATTACHMENT



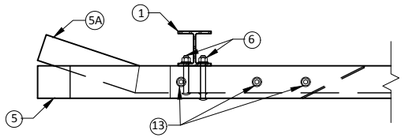
ELEVATION OF DETAIL AT NY4 END POST

INTERIOR ELEVATION

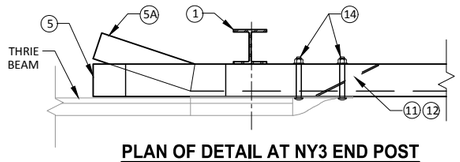




TOP RAIL (5A) DETAILS



PLAN OF DETAIL AT NY3 END POST



PLAN OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT

LEGEND

(1) W6 X 25 WITH 1⅛" X 1⅜" HORIZONTAL SLOTTED HOLES ON SIDE OF POST FOR BOLT NO. 6 AT NO. 5. USE 1" DIA. HOLE FOR BOLT NO. 6 AT NO. 5A BOTTOM RAIL. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

(2) PLATE 1¼" X 10" X 1'-2". SEE SHEET "TUBULAR STEEL RAILING NY3" OR "TUBULAR STEEL RAILING NY4" FOR MORE INFORMATION.

(5) TS 6 X 6 X ¾" STRUCTURAL TUBING. USE ⅞" DIA. HOLES IN TOP AND BOTTOM OF RAILS FOR BOLT NO. 13 AS SHOWN IN PLAN DETAILS. USE 1" DIA. HOLES IN FRONT AND BACK OF RAILS FOR BOLTS NO. 6 & NO. 14 AS SHOWN IN ELEVATION DETAILS.

(5A) TS 5 X 3 X ¼" STRUCTURAL TUBING. USE 1" DIA. HOLES FOR BOLT NO. 6 IN TOP RAIL FOR NY4 (FRONT & BACK). USE 1⅛" X 1⅜" HORIZONTAL SLOTTED HOLES FOR BOLT NO. 6 IN BOTTOM RAIL (FRONT & BACK) AND A 2" O.D. WASHER UNDER BOLT HEAD.

(6) ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT, ⅜" X 1¾" X 1¾" WASHER, AND SPRING LOCK WASHER (1 REQUIRED AT RAIL NO. 5 TO POST NO. 1 CONNECTION LOCATIONS SHOWN. 2 REQUIRED AT RAIL NO. 5A TO POST NO. 1 CONNECTION LOCATIONS SHOWN).

(11) TS 6 X 6 X ¾" STRUCTURAL TUBING. USE 1" DIA. HOLES IN FRONT AND BACK FOR BOLT NO. 14 & ⅞" DIA. HOLES IN TOP & BOTTOM FOR BOLT NO. 13.

(12) L 6 X 6 X ½" STRUCTURAL ANGLE. USE ⅞" DIA. HOLES IN TOP FLANGE FOR BOLT NO. 13.

(13) ¾" DIA. A325 FULLY THREADED BOLTS, 2 WASHERS AND A HEAVY HEX NUT, ON EACH BOLT. NUT TO BE FINGER TIGHT. 3 BOLTS AT EACH END POST.

(14) ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH HEX NUT AND ¾" X 2" X 2" WASHER FOR CONNECTION OF THRIE BEAM (4 REQUIRED)

NOTES

STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF F ASTM A500 GRADE B OR C WITH A CERTIFIED =50 KSI. STRUCTURAL ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. WORK THIS SHEET WITH "TUBULAR STEEL RAILING TYPE NY3" OR "TUBULAR STEEL RAILING TYPE NY4" SHEET.

STATE PROJECT NUMBER

4204-07-71

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-59-204

DRAWN BY JZ | PLANS CK'D. PTB

END POST DETAILS RAILING STEEL TYPE NY3 & NY4

SHEET 12 OF 12

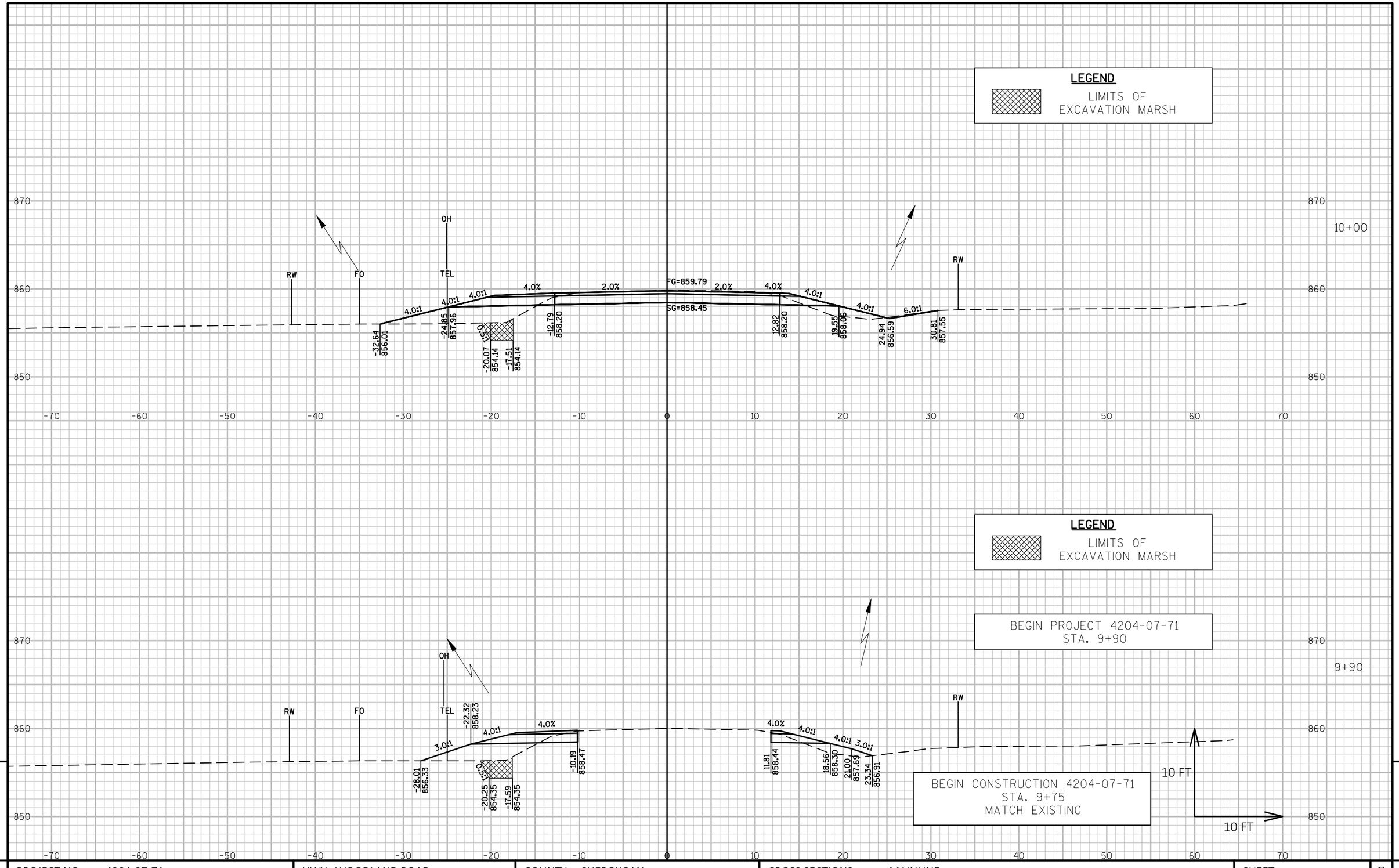
61

EARTHWORK-WOODLAND ROAD

	AREA (SF)			INCREMENTAL VOL (CY)						CUMMULATIVE VOLUME (CY)						
STATION	CUT	FILL	MARSH EX	CUT NOTE 1	FILL NOTE 2	MARSH EX	REDUCED MARSH IN FILL (0 6) NOTE 3	FILL (25%)	SELECT CRUSHED MATERIAL (1.5)	CUT 1 00 NOTE 1	FILL	MARSH EX	REDUCED MARSH IN FILL (0 6) NOTE 3	FILL (25%) NOTE 4	SELECT CRUSHED MATERIAL (1.5)	MASS ORDINATE NOTE 5
9+90	35	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
10+00	38	41	6	14	8	2	1	9	3	14	8	2	1	9	3	6
10+50	38	43	23	69	78	28	17	77	42	83	86	30	18	85	45	-2
11+00	35	83	37	66	118	59	35	103	89	149	204	89	53	188	134	-39
11+25	35	110	23	32	89	37	22	84	56	181	293	126	76	272	189	-91
11+25	0	0	0	0	0	0	0	0	0	181	293	126	76	272	189	-91
11+71	0	0	0	0	0	0	0	0	0	181	293	126	76	272	189	-91
11+71	25	118	40	0	0	0	0	0	0	181	293	126	76	272	189	-91
12+00	23	147	40	26	142	43	26	146	65	207	435	169	101	418	254	-211
12+50	20	175	43	39	298	77	46	316	116	246	733	246	148	734	369	-488
13+00	28	168	29	43	318	67	40	347	101	289	1051	313	188	1081	470	-792
13+35	35	0	29	41	109	37	22	109	56	330	1160	350	210	1190	525	-860
		COLUMN SUBTOTALS =		330	1160	350	210	1190	525							

NOTES:	
1 - CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
3 - REDUCED MARSH IN FILL	REDUCED MARSH THAT CAN BE USED IN FILL
4 - FILL (25%)	EXPANDED FILL FACTOR 1.25: FILL (25%) = (FILL-REDUCED FILL IN MARSH)*1.25
5 - MASS ORDINATE	THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE CATEGORY. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE CATEGORY.

FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\SHEETSPLAN\DETAILS\EARTHWORK.DWG
LAYOUT : LAYOUT
PLOT DATE : 9/13/2018
PLOT TIME : 11:20:47 AM
PLOT BY : STEPHANIE POTTER
PLOT SCALE : 1" = 1'

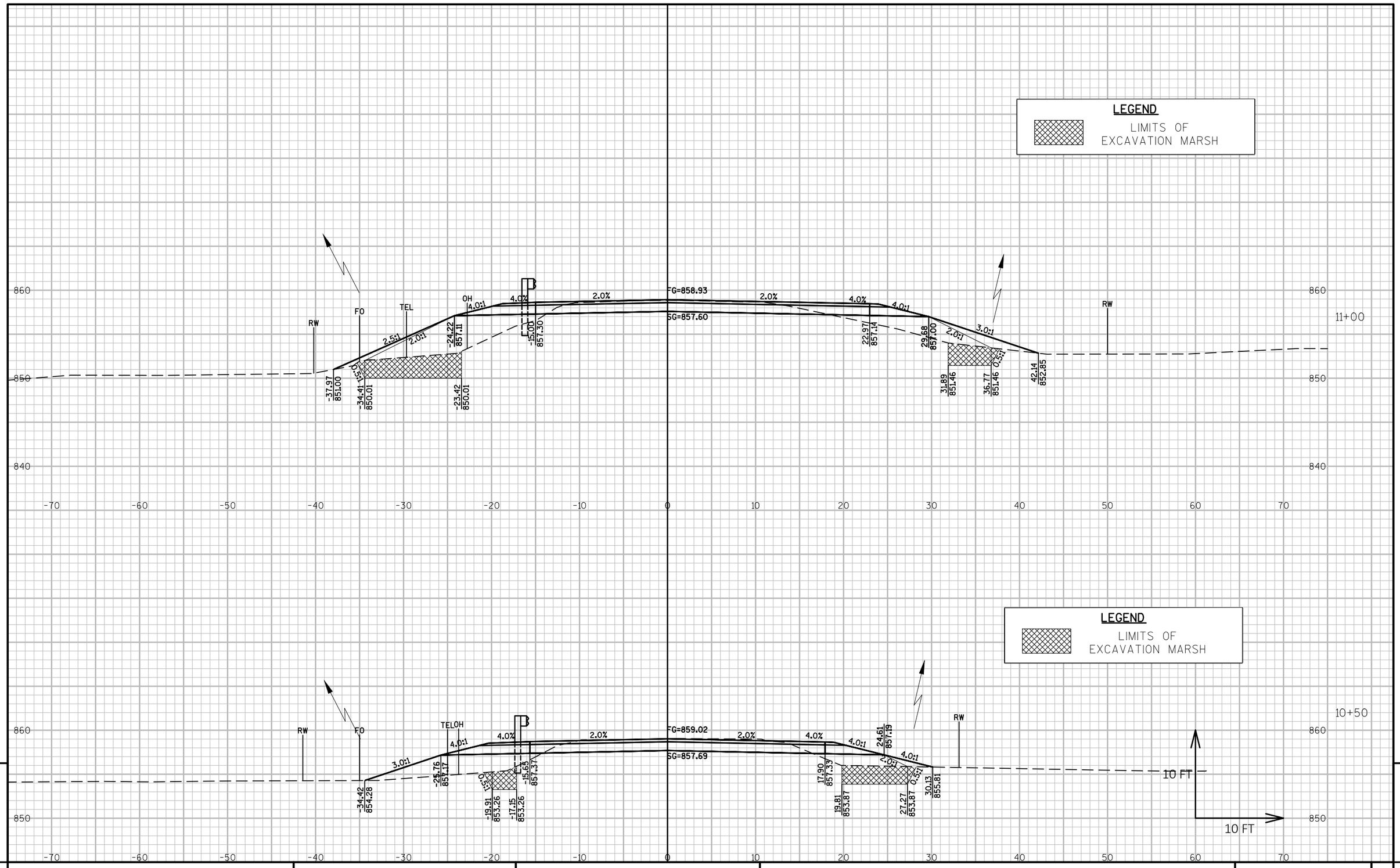


PROJECT NO: 4204-07-71	HWY: WOODLAND ROAD	COUNTY: SHEBOYGAN	CROSS SECTIONS: MAINLINE	SHEET 63	E

FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\DESIGN\CORRIDORS\CRDR - WOODLAND RD.DWG
LAYOUT NAME - WOODLAND1

PLOT DATE : 9/11/2018 3:14 PM PLOT BY : JULIA ZEHNER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

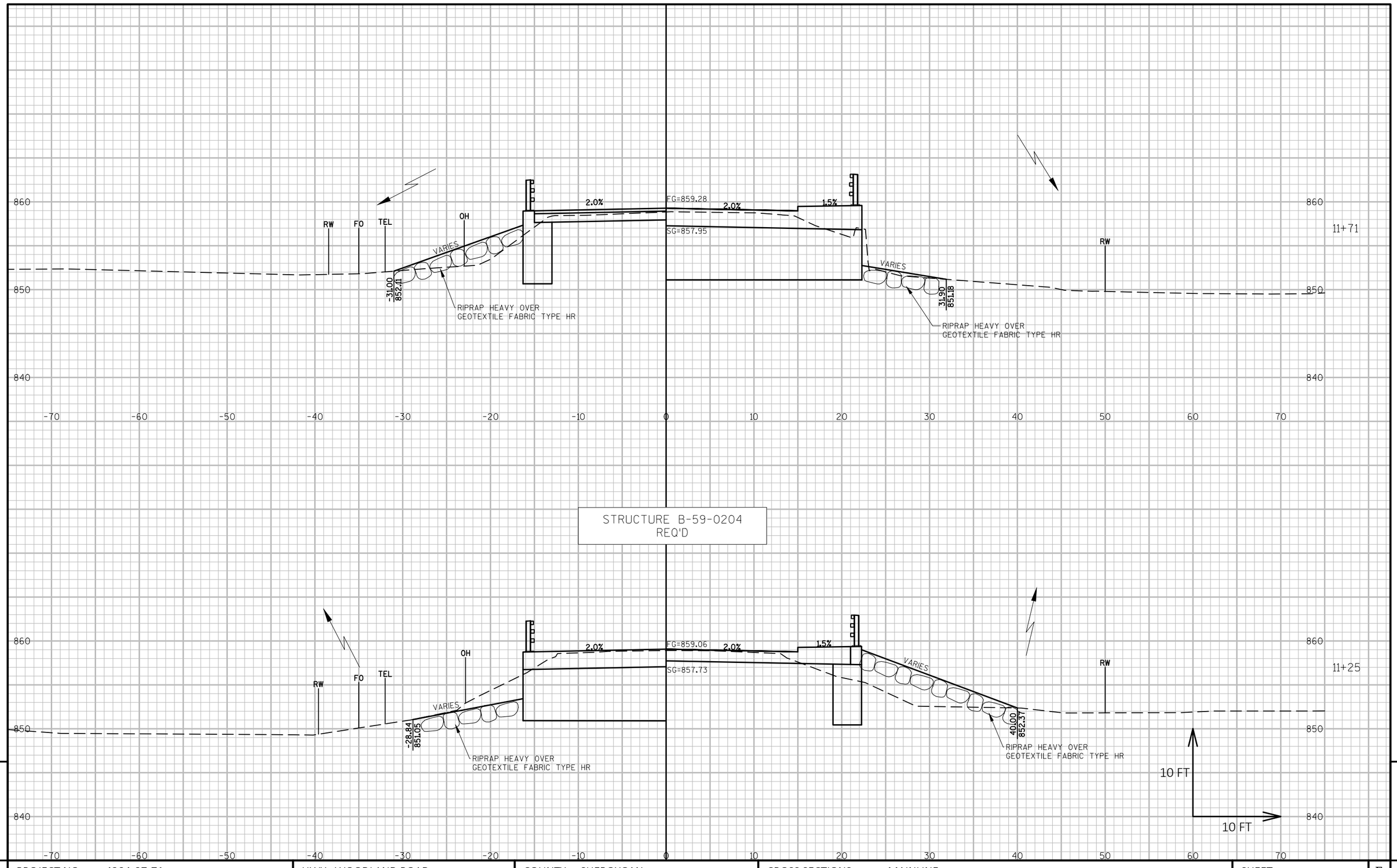


PROJECT NO: 4204-07-71	HWY: WOODLAND ROAD	COUNTY: SHEBOYGAN	CROSS SECTIONS: MAINLINE	SHEET 64	E

FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\DESIGN\CORRIDORS\CRDR - WOODLAND RD.DWG
LAYOUT NAME - WOODLAND2

PLOT DATE : 9/11/2018 3:14 PM PLOT BY : JULIA ZEHNER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



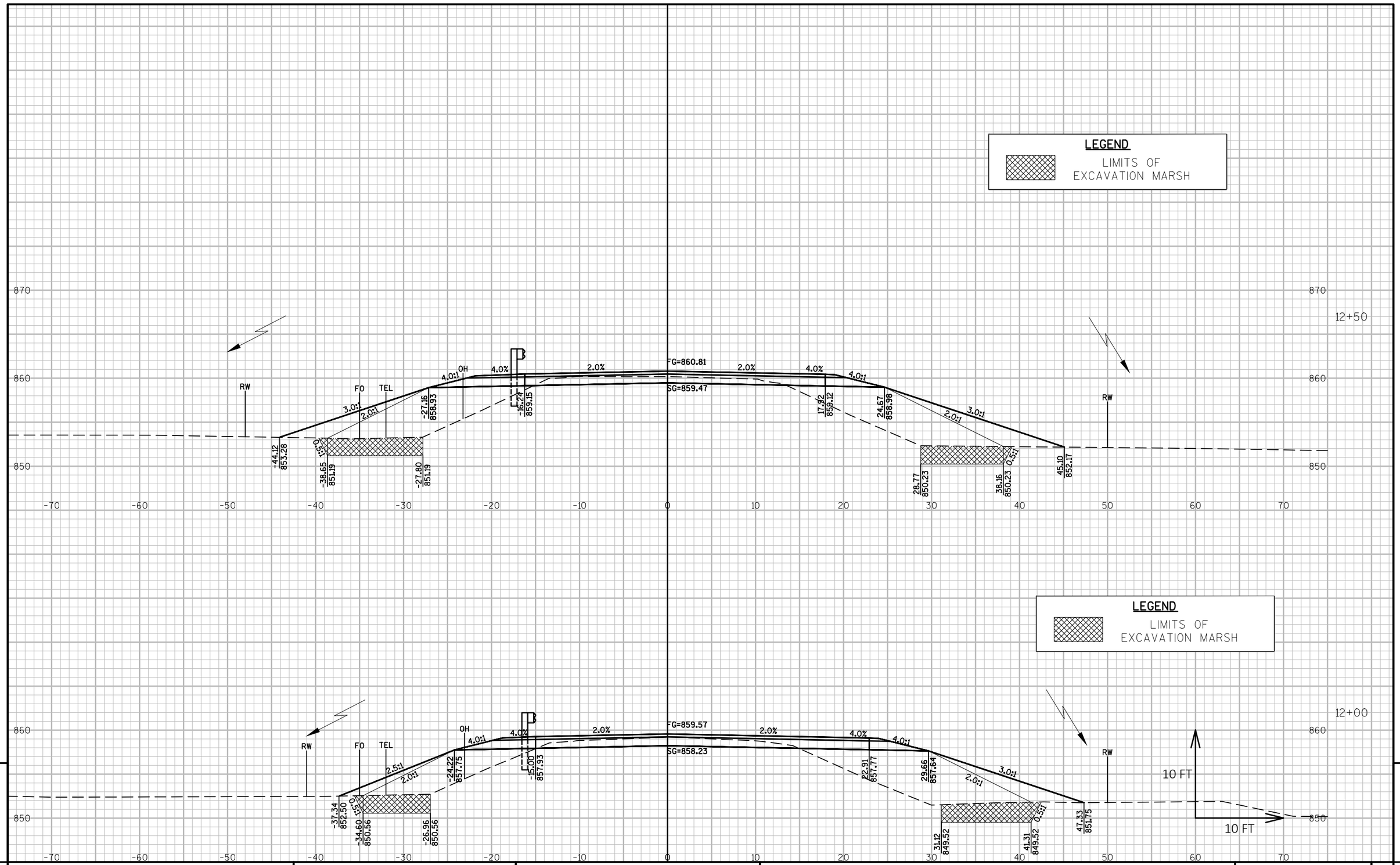
9 9

PROJECT NO: 4204-07-71	HWY: WOODLAND ROAD	COUNTY: SHEBOYGAN	CROSS SECTIONS: MAINLINE	SHEET 65	E

FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\DESIGN\CORRIDORS\CRDR - WOODLAND RD.DWG
LAYOUT NAME - WOODLAND3

PLOT DATE : 9/11/2018 3:14 PM PLOT BY : JULIA ZEHNER PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 4204-07-71	HWY: WOODLAND ROAD	COUNTY: SHEBOYGAN	CROSS SECTIONS: MAINLINE	SHEET 66	E

FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\DESIGN\CORRIDORS\CRDR - WOODLAND RD.DWG
LAYOUT NAME - WOODLAND4

PLOT DATE : 9/11/2018 3:14 PM PLOT BY : JULIA ZEHNER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

END PROJECT 4204-07-71
STA. 13+35
MATCH EXISTING

13+35

TEL
OH
RW
FO
RW

870
860
850

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

13+00

TEL
OH
RW
FO
RW
RW

FG=863.00
SG=861.67

4.0% 4.0% 2.0% 2.0% 4.0%
4.0:1 4.0:1 4.0:1
3.0:1 2.0:1 2.0:1 3.0:1
0.5:1 0.5:1

-42.95 854.09
-35.73 852.08
-29.38 852.08
-21.50 861.24
-10.40 861.46
12.92 861.41
19.67 861.28
21.00 860.95
29.95 850.88
36.47 850.88
46.57 852.42

LEGEND
LIMITS OF EXCAVATION MARSH

10 FT
10 FT

9

9

PROJECT NO: 4204-07-71	HWY: WOODLAND ROAD	COUNTY: SHEBOYGAN	CROSS SECTIONS: MAINLINE	SHEET 67	E

FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\DESIGN\CORRIDORS\CRDR - WOODLAND RD.DWG
LAYOUT NAME - WOODLAND5

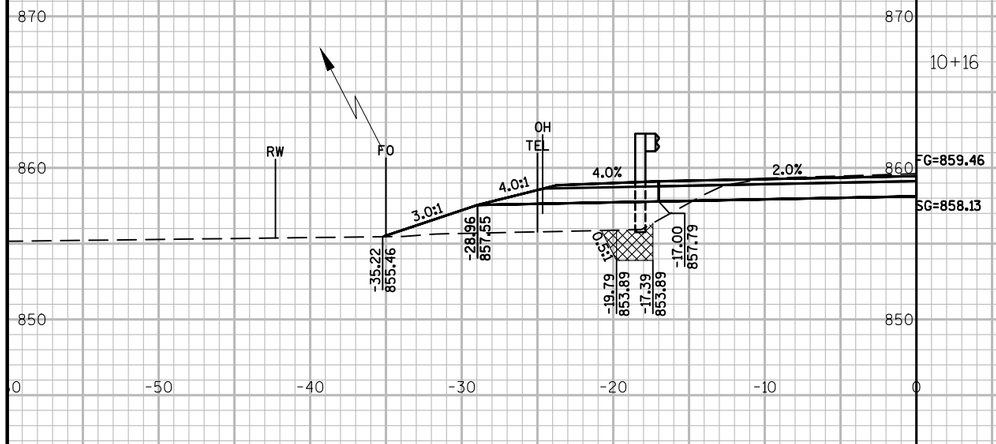
PLOT DATE : 9/11/2018 3:14 PM PLOT BY : JULIA ZEHNER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

POST 1

LEGEND

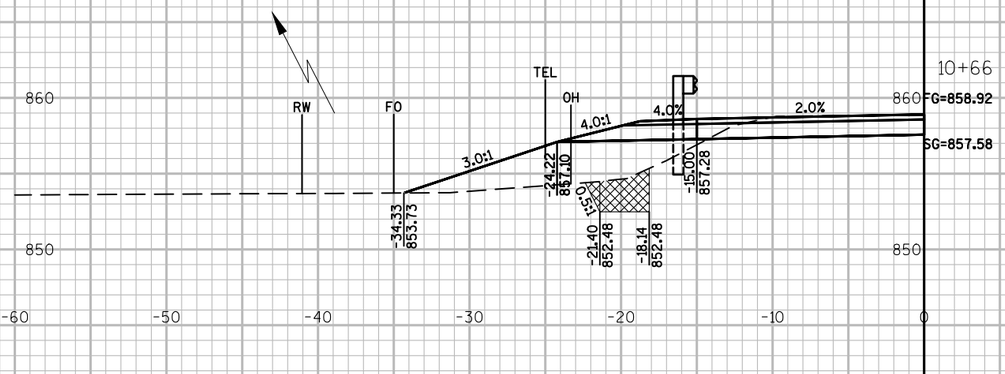
LIMITS OF EXCAVATION MARSH



POST 9

LEGEND

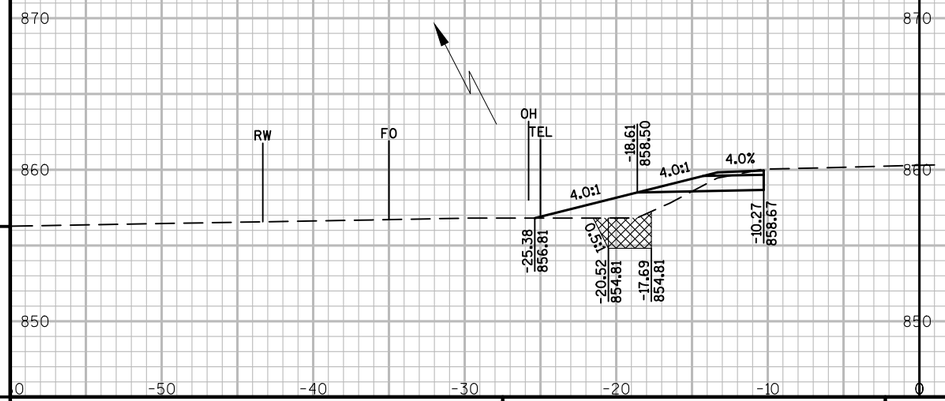
LIMITS OF EXCAVATION MARSH



END TAPER

LEGEND

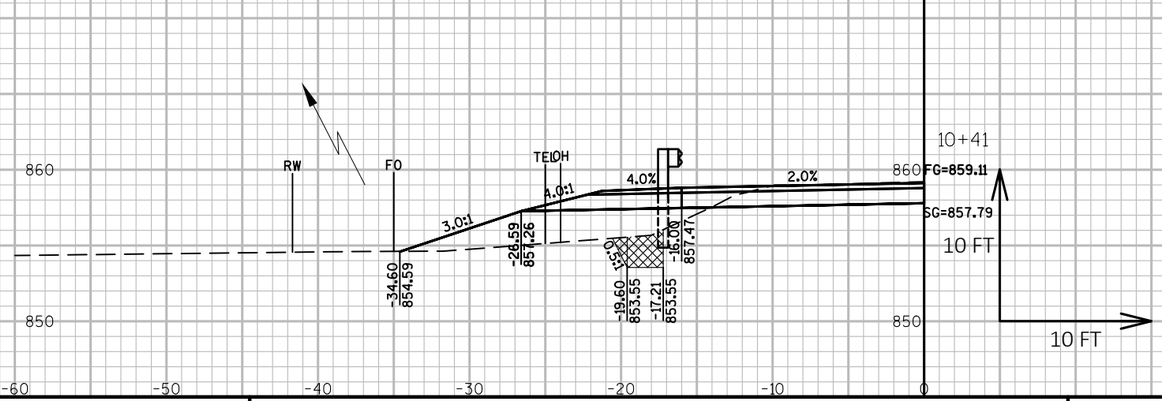
LIMITS OF EXCAVATION MARSH



POST 5

LEGEND

LIMITS OF EXCAVATION MARSH



9

9

PROJECT NO: 4204-07-71	HWY: WOODLAND ROAD	COUNTY: SHEBOYGAN	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET 68	E

FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\DESIGN\CORRIDORS\CRDR - WOODLAND RD.DWG
LAYOUT NAME - NW QUAD BEAMGUARD

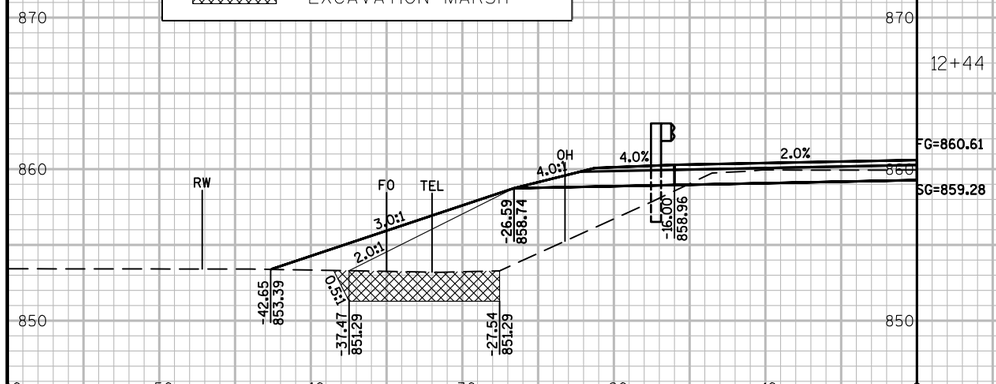
PLOT DATE : 9/11/2018 3:14 PM PLOT BY : JULIA ZEHNER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

POST 5

LEGEND

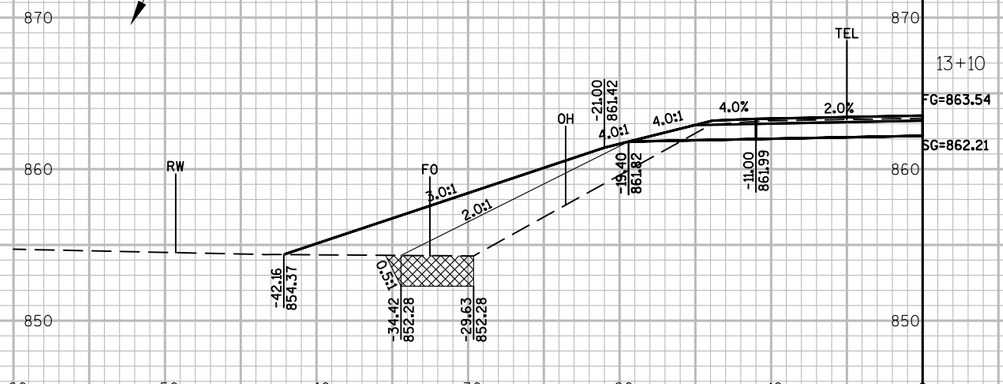
LIMITS OF EXCAVATION MARSH



END TAPER

LEGEND

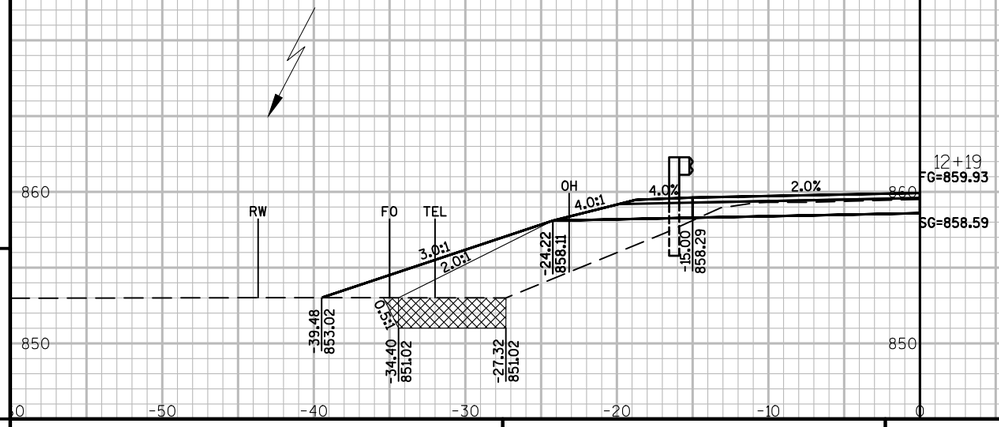
LIMITS OF EXCAVATION MARSH



POST 9

LEGEND

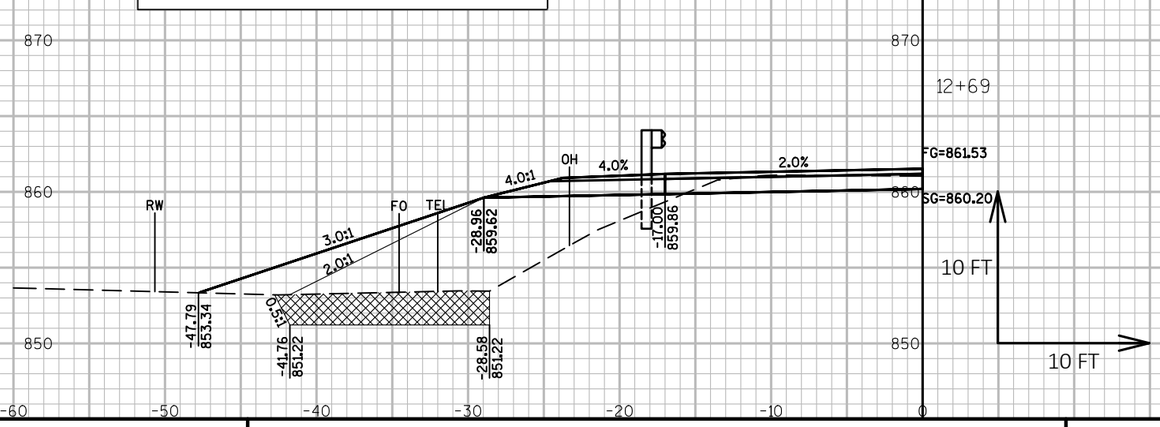
LIMITS OF EXCAVATION MARSH



POST 1

LEGEND

LIMITS OF EXCAVATION MARSH



9

9

PROJECT NO: 4204-07-71	HWY: WOODLAND ROAD	COUNTY: SHEBOYGAN	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET 69	E

FILE NAME : S:\PROJECTS\W11567 WOODLAND RD, SHEBOYGAN COUNTY\DESIGN\CORRIDORS\CRDR - WOODLAND RD.DWG
LAYOUT NAME - NE QUAD BEAMGUARD

PLOT DATE : 9/11/2018 3:14 PM PLOT BY : JULIA ZEHNER PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

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