

MAD

Dec 14, 2021

PROJECT ID: 3907-00-70

COUNTY: DODGE

ORDER OF SHEETS

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

TOTAL SHEETS = 70

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STH 16 - CTH G

(BEAVER DAM RIVER BRIDGE B-14-0222)

CTH J  
DODGE

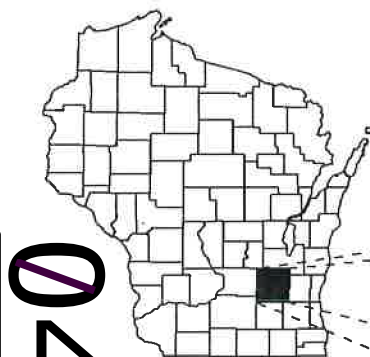
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3907-00-70	WISC 2022064	1

ACCEPTED FOR  
COUNTY \_\_\_\_\_ of  
DODGE  
DATE: 7-12-2021  
*[Signature]*  
(HIGHWAY COMMISSIONER)

ORIGINAL PLANS PREPARED BY  
**AYRES**  
AMANDA M. INMAN  
44690 OREGON WI  
PROFESSIONAL ENGINEER  
7/12/2021

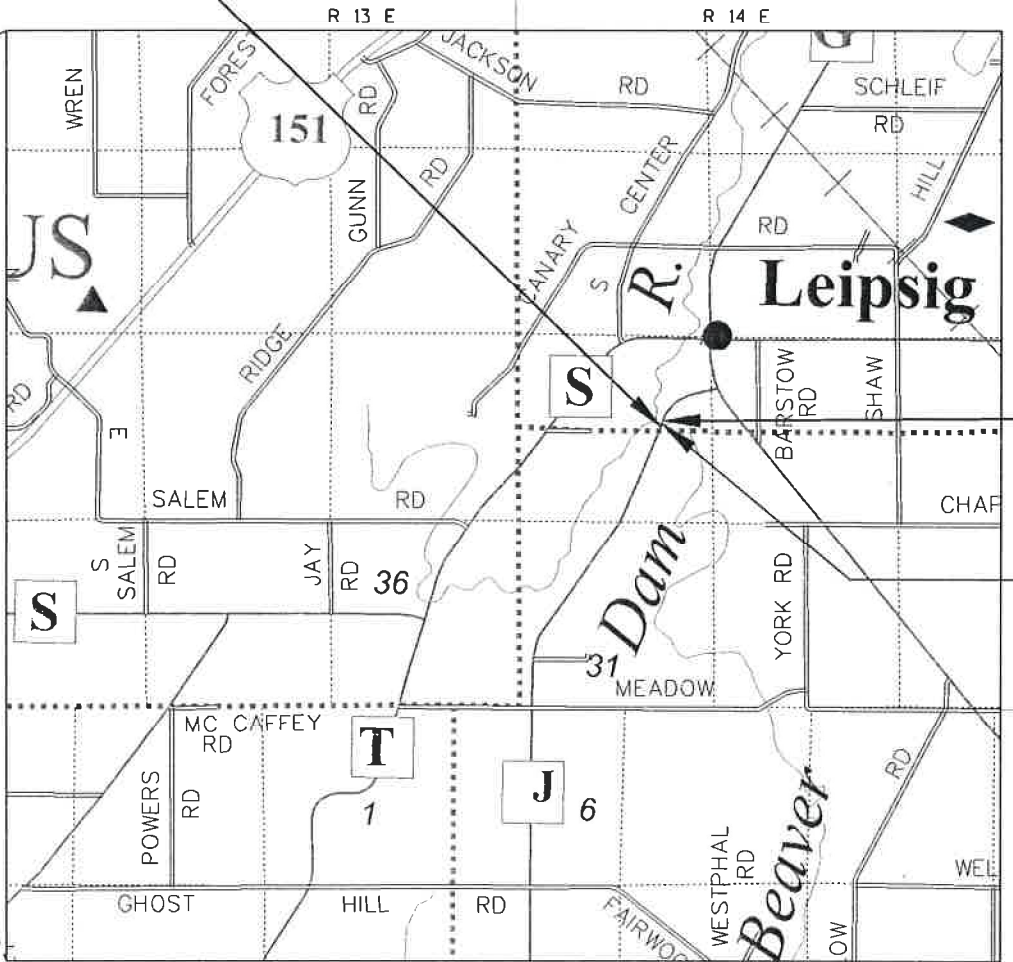
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
PREPARED BY  
Surveyor \_\_\_\_\_ AYRES ASSOCIATES  
Designer \_\_\_\_\_ AYRES ASSOCIATES  
Regional Examiner \_\_\_\_\_  
Regional Supervisor \_\_\_\_\_

APPROVED FOR THE DEPARTMENT  
DATE: 07/21/2021  
*[Signature]*  
(Signature)



BEGIN PROJECT 3907-00-70  
STA. 7+25.00  
X=838,972.429  
Y=700,173.255

STATE PROJECT NUMBER  
3907-00-70



END PROJECT 3907-00-70  
STA. 12+50.00  
X=839,179.226  
Y=700,655.728

BRIDGE STRUCTURE  
(B-14-0222)

DESIGN DESIGNATION 3907-00-70

A.A.D.T. 2022	=	460
A.A.D.T. 2042	=	510
D.H.V.	=	3.5
D.D.	=	60/40
T.	=	4.2%
DESIGN SPEED	=	55 MPH
ESALS	=	190,000

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
MARSH AREA	STORM SEWER
WOODED OR SHRUB AREA	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE



TOTAL NET LENGTH OF CENTERLINE = 0.099 MILES

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

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### GENERAL NOTES

NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT LOCATION THAT ARE NOT SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES.

A SAWED JOINT WILL BE REQUIRED WHERE NEW PAVEMENT IS TO MEET AN EXISTING PAVED SURFACE.

EXACT TRAFFIC CONTROL LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALL SIGN LOCATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.

NO TREES OR SHRUBS SHALL BE REMOVED UNLESS DESIGNATED FOR REMOVAL BY THE ENGINEER.

PROTECT FROM DAMAGE AND COMPLETE SHOULDER WORK AROUND ANY EXISTING SIGNS OR MAILBOXES THAT ARE TO REMAIN IN PLACE.

RESTORATION OF EXPOSED SLOPES AND DITCHES SHALL TAKE PLACE WITHIN 7 CALENDAR DAYS AFTER FINISHED GRADING IS COMPLETE.

WETLANDS ARE PRESENT IN THE PROJECT AREA. DO NOT DISTURB WETLANDS OUTSIDE THE PROPOSED SLOPE INTERCEPTS.

IF AN EXISTING SIGN IS TO BE REMOVED AND REPLACED WITH A NEW SIGN, DO NOT REMOVE THE EXISTING SIGN PRIOR TO INSTALLATION OF THE NEW SIGN.

THE LOCATIONS OF EROSION CONTROL ITEMS SHALL BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

HMA UNIT WEIGHT: 112 LB/SY/IN  
TACK COAT APPLICATION RATE: 0.07 GAL/SY

HMA LAYERS:  
-UPPER: 1.75-INCH (4 LT 58-28 S)  
-LOWER: 2.25-INCH (3 LT 58-28 S)

### ABBREVIATIONS

A.D.T.	AVERAGE DAILY TRAFFIC
ATMS	ARTERIAL TRAFFIC MANAGEMENT SYSTEM
BM	BENCHMARK
BOC	BACK OF CURB
BTWN	BETWEEN
C&G	CURB AND GUTTER
C.E.	COMMERCIAL ENTRANCE
CONST	CONSTRUCTION
CP	CONTROL POINT
CTR.	CENTER
D.D.	DIRECTIONAL DISTRIBUTION
D.H.T.	DESIGN HOURLY VOLUME
DMS	DYNAMIC MESSAGE SIGN
EB	EASTBOUND
EXIST	EXISTING
GALV.	GALVANIZED
HMA	HOT MIX ASPHALT
H.S.	HIGH STRENGTH
ITS	INTELLIGENT TRAFFIC SYSTEM
MAX	MAXIMUM
MIN	MINIMUM
NB	NORTHBOUND
NOR	NORMAL
PC	POINT OF CURVATURE
PCC	POINT OF COMMON CURVATURE
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVT	PAVEMENT
R/L	REFERENCE LINE
REQ'D	REQUIRED
SB	SOUTHBOUND
SYM	SYMMETRICAL
T.	PERCENT TRUCKS
TCC	TRAFFIC CONDITION CAMERA
TYP	TYPICAL
VAR	VARIABLE
WB	WESTBOUND
Wt.	WEIGHT
X-WALK	CROSS WALK

### PROJECT CONTACTS

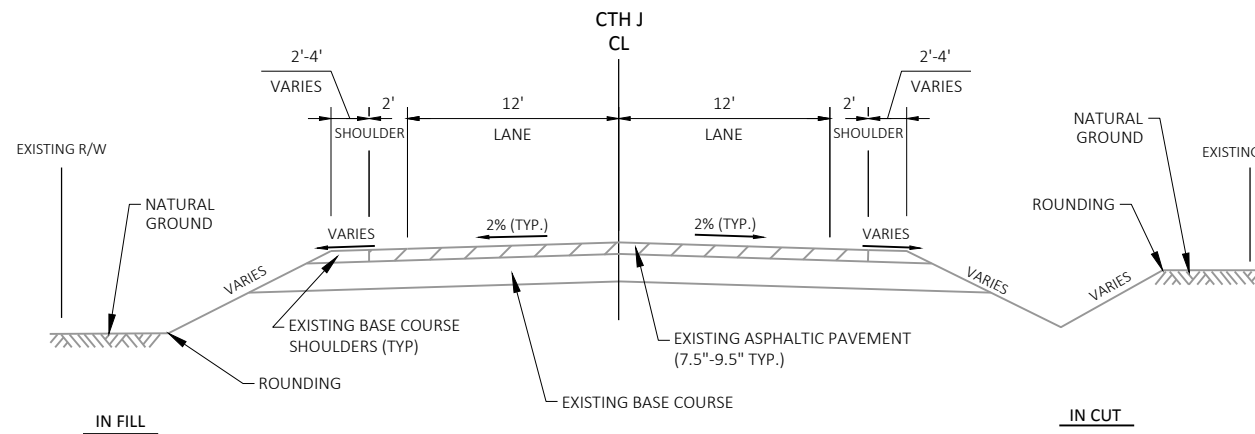
**DODGE COUNTY HIGHWAY DEPT**  
**NATHAN KEMPKE**  
 ASSISTANT COMMISSIONER  
 HIGHWAY DEPT.  
 211 E. CENTER STREET  
 JUNEAU, WI 53039-1309  
 O: (920) 386-3650  
 P: (920) 386-3655  
 E: NKEMPKE@CO.DODGE.WI.US

**WISCONSIN DEPARTMENT OF NATURAL RESOURCES**  
**ERIC HEGGELUND**  
 DNR SOUTH CENTRAL REGION HQ  
 3911 FISH HATCHERY ROAD  
 FITCHBURG, WI 53711  
 P: (608) 275-3301  
 E: ERIC.HEGGELUND@WISCONSIN.GOV

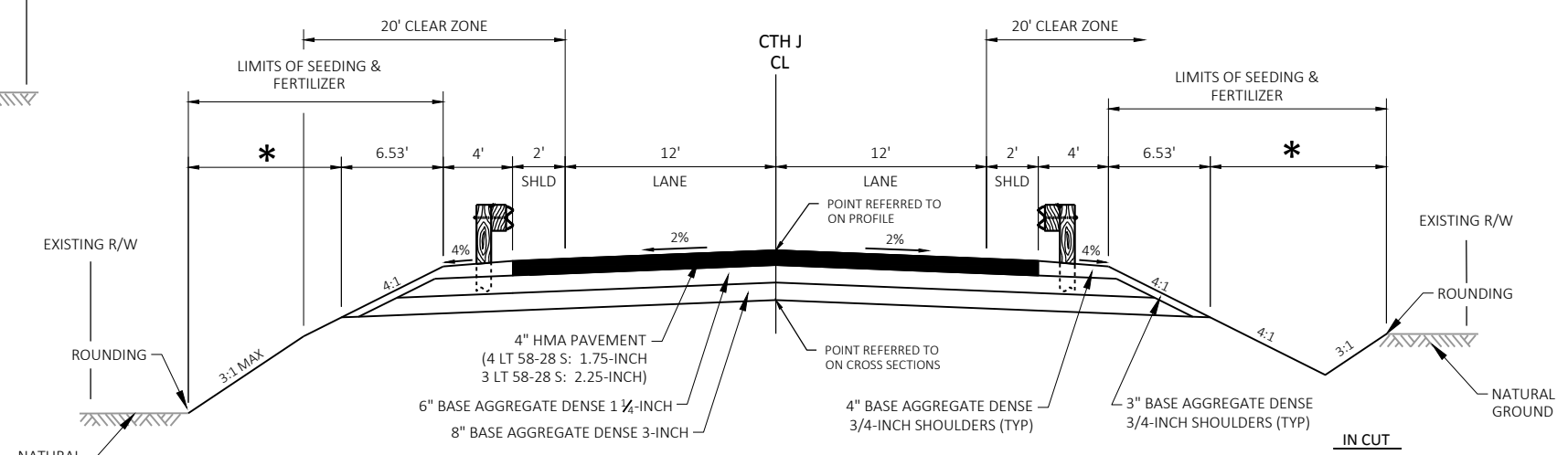
**UTILITIES**  
 NO UTILITIES IN PROJECT AREA

**DESIGNER**  
**AMANDA INMAN, PE**  
 AYRES ASSOCIATES  
 5201 EAST TERRACE DRIVE, SUITE 200  
 MADISON, WI 53718  
 P: (608) 443-1239  
 E: INMANA@AYRESASSOCIATES.COM

\*\* DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS










TYPICAL EXISTING SECTION



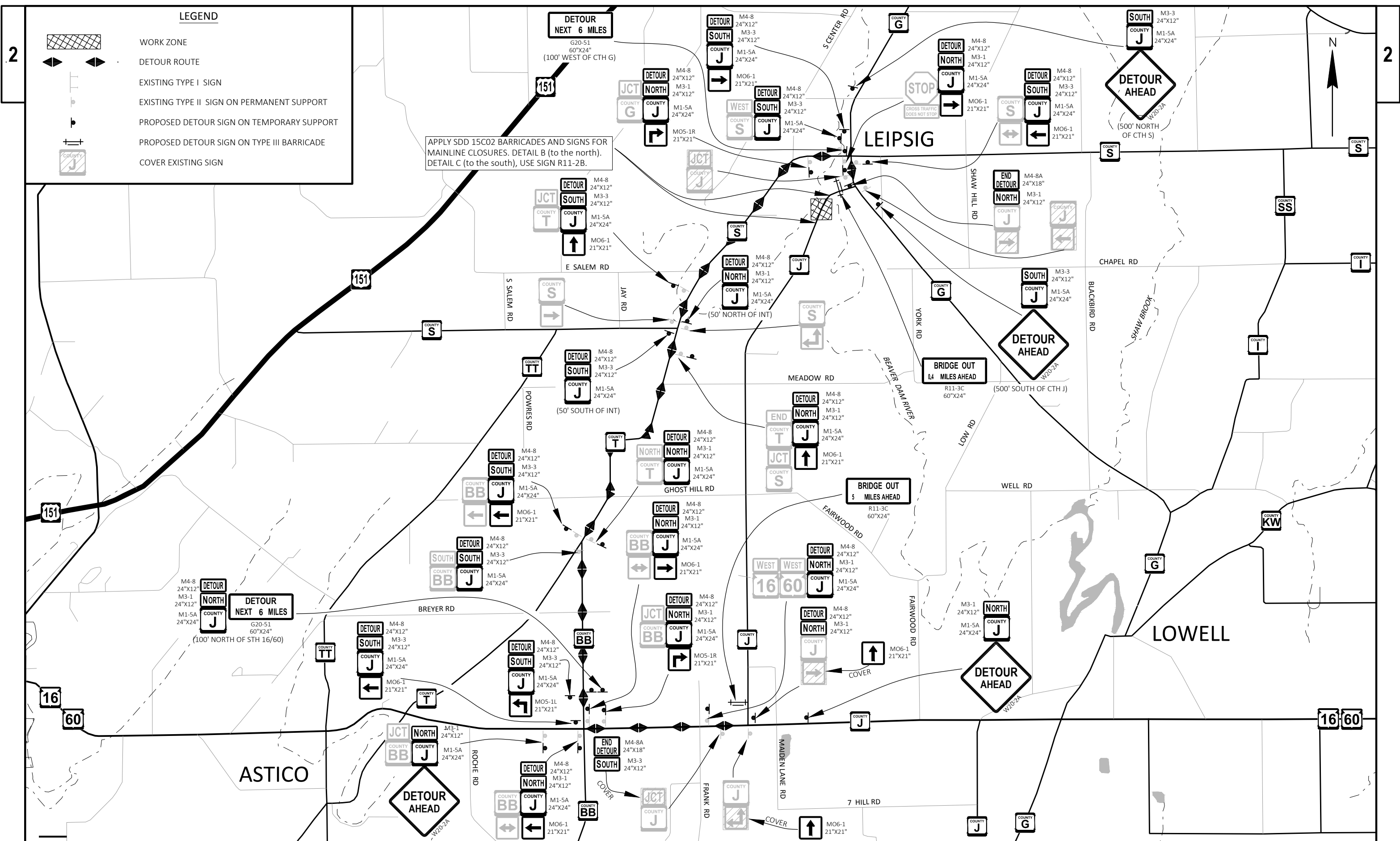
FINISHED TYPICAL SECTION  
STA. 7+25 - STA. 12+50

\* LIMITS OF SALVAGED TOPSOIL AND MULCH

LEGEND

-  WORK ZONE
-  DETOUR ROUTE
-  EXISTING TYPE I SIGN
-  EXISTING TYPE II SIGN ON PERMANENT SUPPORT
-  PROPOSED DETOUR SIGN ON TEMPORARY SUPPORT
-  PROPOSED DETOUR SIGN ON TYPE III BARRICADE
-  COVER EXISTING SIGN

APPLY SDD 15C02 BARRICADES AND SIGNS FOR MAINLINE CLOSURES. DETAIL B (to the north). DETAIL C (to the south), USE SIGN R11-2B.



PROJECT NO: 3907-00-70

HWY: CTH J

COUNTY: DODGE

DETOUR

SHEET

E

Estimate Of Quantities

3907-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	1.000	1.000
0004	201.0205	Grubbing	STA	1.000	1.000
0006	203.0250	Removing Structure Over Waterway Remove Debris (structure) 01. P-14-0087	EACH	1.000	1.000
0008	204.0165	Removing Guardrail	LF	208.000	208.000
0010	205.0100	Excavation Common	CY	420.000	420.000
0012	206.1000	Excavation for Structures Bridges (structure) 01. B-14-222	LS	1.000	1.000
0014	208.0100	Borrow	CY	437.000	437.000
0016	210.1500	Backfill Structure Type A	TON	430.000	430.000
0018	213.0100	Finishing Roadway (project) 01. 3907-00-70	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	180.000	180.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	625.000	625.000
0024	305.0130	Base Aggregate Dense 3-Inch	TON	1,020.000	1,020.000
0026	455.0605	Tack Coat	GAL	191.000	191.000
0028	460.2000	Incentive Density HMA Pavement	DOL	200.000	200.000
0030	460.5223	HMA Pavement 3 LT 58-28 S	TON	172.000	172.000
0032	460.5224	HMA Pavement 4 LT 58-28 S	TON	134.000	134.000
0034	502.0100	Concrete Masonry Bridges	CY	190.000	190.000
0036	502.3200	Protective Surface Treatment	SY	300.000	300.000
0038	502.3210	Pigmented Surface Sealer	SY	95.000	95.000
0040	503.0137	Prestressed Girder Type I 36W-Inch	LF	570.000	570.000
0042	505.0400	Bar Steel Reinforcement HS Structures	LB	4,600.000	4,600.000
0044	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	23,690.000	23,690.000
0046	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	12.000	12.000
0048	506.4000	Steel Diaphragms (structure) 01. B-14-222	EACH	10.000	10.000
0050	516.0500	Rubberized Membrane Waterproofing	SY	14.000	14.000
0052	550.0500	Pile Points	EACH	18.000	18.000
0054	550.2108	Piling CIP Concrete 10 3/4 X 0.50-Inch	LF	495.000	495.000
0056	606.0300	Riprap Heavy	CY	195.000	195.000
0058	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	160.000	160.000
0060	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0062	614.2300	MGS Guardrail 3	LF	225.000	225.000
0064	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0066	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0068	618.0100	Maintenance And Repair of Haul Roads (project) 01. 3907-00-70	EACH	1.000	1.000
0070	619.1000	Mobilization	EACH	1.000	1.000
0072	624.0100	Water	MGAL	34.000	34.000
0074	625.0500	Salvaged Topsoil	SY	1,460.000	1,460.000
0076	628.1504	Silt Fence	LF	1,200.000	1,200.000
0078	628.1520	Silt Fence Maintenance	LF	2,400.000	2,400.000
0080	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0082	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0084	628.2008	Erosion Mat Urban Class I Type B	SY	2,270.000	2,270.000
0086	628.6005	Turbidity Barriers	SY	230.000	230.000
0088	629.0210	Fertilizer Type B	CWT	2.000	2.000
0090	630.0120	Seeding Mixture No. 20	LB	90.000	90.000
0092	630.0200	Seeding Temporary	LB	90.000	90.000
0094	630.0300	Seeding Borrow Pit	LB	3.000	3.000
0096	630.0500	Seed Water	MGAL	75.000	75.000
0098	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000

Estimate Of Quantities

3907-00-70

Line	Item	Item Description	Unit	Total	Qty
0100	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0102	638.2602	Removing Signs Type II	EACH	8.000	8.000
0104	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0106	642.5001	Field Office Type B	EACH	1.000	1.000
0108	643.0420	Traffic Control Barricades Type III	DAY	1,584.000	1,584.000
0110	643.0705	Traffic Control Warning Lights Type A	DAY	2,464.000	2,464.000
0112	643.0900	Traffic Control Signs	DAY	8,976.000	8,976.000
0114	643.0920	Traffic Control Covering Signs Type II	EACH	5.000	5.000
0116	643.5000	Traffic Control	EACH	1.000	1.000
0118	645.0111	Geotextile Type DF Schedule A	SY	90.000	90.000
0120	645.0120	Geotextile Type HR	SY	375.000	375.000
0122	646.1020	Marking Line Epoxy 4-Inch	LF	1,722.000	1,722.000
0124	650.4500	Construction Staking Subgrade	LF	429.000	429.000
0126	650.5000	Construction Staking Base	LF	429.000	429.000
0128	650.6500	Construction Staking Structure Layout (structure) 01. B-14-222	LS	1.000	1.000
0130	650.9910	Construction Staking Supplemental Control (project) 01. 3907-00-70	LS	1.000	1.000
0132	650.9920	Construction Staking Slope Stakes	LF	429.000	429.000
0134	690.0150	Sawing Asphalt	LF	56.000	56.000
0136	715.0502	Incentive Strength Concrete Structures	DOL	1,140.000	1,140.000
0138	999.2000.S	Installing and Maintaining Bird Deterrent System (Station) 01. Station	EACH	1.000	1.000
0140	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0142	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

CTH J EARTHWORK SUMMARY

From/To Station	Location	Common Excavation (1) (Item 205.0100)	Unexpanded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Waste (4)	Borrow (Item 208.0100)	Comment:
		Cut		Factor 1.30				
7+25 - 12+50	CTH J	420	659	857	-437		437	

- 1) Common Excavation is the Cut. Item number 205.0100.
- 2) Expanded Fill. Factor = 1.30; Expanded Fill = Unexpanded Fill \* Fill Factor
- 3) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material on the project.
- 4) All quantities shown in CY.

CLEARING AND GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0105	201.0205
					CLEARING STA	GRUBBING STA
0010	9+00	-	10+00	CTH J	1	1
TOTAL 0010					1	1

REMOVING GUARDRAIL

CATEGORY	STATION	TO	STATION	OFFSET	204.0165	REMARKS
					REMOVING GUARDRAIL LF	
0010	9+10	-	9+58	LT	52	SW QUAD
0010	9+12	-	9+57	RT	52	SE QUAD
0010	10+43	-	10+90	LT	52	NW QUAD
0010	10+43	-	10+90	RT	52	SE QUAD
TOTAL 0010					208	

BASE AGGREGATE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	305.0130	624.0100	REMARKS
					BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	BASE AGGREGATE DENSE 3-INCH TON	WATER MGAL	
0010	7+25	-	9+52	MAINLINE	95	330	540	14	SOUTH APPROACH
0010	10+48	-	12+50	MAINLINE	85	295	480	20	NORTH APPROACH
TOTAL 0010					180	625	1,020	34	

ASPHALT

CATEGORY	STATION	TO	STATION	LOCATION	455.0605	460.5223	460.5224	REMARKS
					TACK COAT GAL	HMA PAVEMENT 3 LT 58-28 S TON	HMA PAVEMENT 4 LT 58-28 S TON	
0010	7+25	-	9+52	MAINLINE	101	91	71	SOUTH APPROACH
0010	10+48	-	12+50	MAINLINE	90	81	63	NORTH APPROACH
TOTAL 0010					191	172	134	

GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	614.2300	614.2500	614.2610	REMARKS
					MGS GUARDRAIL 3 LF	MGS THRIE BEAM TRANSITION LF	MGS GUARDRAIL TERMINAL EAT EACH	
0010	8+36	-	9+52	LT	25.0	39.4	1	SW QUAD
0010	7+74	-	9+52	RT	87.5	39.4	1	SE QUAD
0010	10+48	-	12+26	LT	87.5	39.4	1	NW QUAD
0010	10+48	-	11+64	RT	25.0	39.4	1	SE QUAD
TOTAL 0010					225	157.6	4	

- NOTES:**  
 \* TACK COAT APPLICATION RATE = 0.07 GAL/SY  
 \*\* ASSUMED HMA AT 112 LBS/SY/IN

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

**EROSION CONTROL**

CATEGORY	STATION	TO	STATION	LOCATION	625.0500 SY	628.1504 LF	628.1520 LF	628.2008 SY	628.6005 SY	629.0210 CWT	630.0120 LB	630.0200 LB	630.0300 LB	630.0500 MGAL
					625.0500 SALVAGED TOPSOIL	628.1504 SILT FENCE	628.1520 SILT FENCE MAINTENANCE	628.2008 EROSION MAT URBAN CLASS I TYPE B	628.6005 TURBIDITY BARRIERS	629.0210 FERTILIZER TYPE B	630.0120 SEEDING MIXTURE NO. 20	630.0200 SEEDING TEMPORARY	630.0300 SEEDING BORROW PIT	630.0500 SEED WATER
0010	7+25	-	9+61	MAINLINE LT	290	245	490	390	-	0.3	15	15	-	12.3
0010	7+25	-	9+61	MAINLINE RT	320	240	480	430	92	0.4	16	16	0.1	13.0
0010	10+53	-	12+50	MAINLINE LT	470	260	520	740	-	0.6	24	24	-	20.0
0010	10+53	-	12+50	MAINLINE RT	380	215	430	500	113	0.4	17	17	1.9	14.3
0010	UNDISTRIBUTED				-	240	480	210	25	0.3	18	18	1.0	15.4
TOTAL 0010					1,460	1,200	2,400	2,270	230	2.0	90	90	3.0	75.0

**SIGNS**

CATEGORY	STATION	LOCATION	634.0614 EACH	637.2230 SF	638.2602 EACH	638.3000 EACH	REMARKS
0010	SOUTH OF PROJECT		-	-	1	-	15 TON BRIDGE, 0.4 MILES AHEAD
0010	9+51	RT	-	-	1	1	R12-1: WEIGHT LIMIT 15 TONS
0010	9+51	LT	1	3	1	1	W5-52L: CLEARANCE STRIPER DOWN RIGHT
0010	9+51	RT	1	3	1	1	W5-52R: CLEARANCE STRIPER DOWN LEFT
0010	10+48	LT	1	3	1	1	W5-52R: CLEARANCE STRIPER DOWN LEFT
0010	10+48	RT	1	3	1	1	W5-52L: CLEARANCE STRIPER DOWN RIGHT
0010	10+48	LT	-	-	1	1	R12-1: WEIGHT LIMIT 15 TONS
0010	NORTH OF PROJECT		-	-	1	-	15 TON BRIDGE, 0.4 MILES AHEAD
TOTAL 0010			4	12	8	6	

**TRAFFIC CONTROL COVER SIGNS TYPE II**

CATEGORY	LOCATION	643.0920 EACH	REMARKS
0010	CTH G / CTH J	2	COUNTY J / LEFT ARROW
0010	CTH G / CTH J	2	JCT / COUNTY J
0010	CTH G / CTH J	1	RIGHT ARROW
TOTAL 0010		5	

**TRAFFIC CONTROL**

CATEGORY	LOCATION	DURATION DAYS	643.0420 NO.	643.0705 TYPE III DAY	643.0705 LIGHTS TYPE A NO.	643.0900 TRAFFIC CONTROL SIGNS DAY	643.5000 TRAFFIC CONTROL EACH	REMARKS		
0010	CTH J - N OF BRIDGE	88	7	616	10	880	2	176	-	PER SDD 15C2 - CLOSURE BARRICADES ONLY
0010	CTH J - S OF BRIDGE	88	9	792	14	1,232	7	616	-	PER SDD 15C2 - DETAIL C
0010	CTH J DETOUR	88	2	176	4	352	93	8,184	1	SEE DETOUR PLAN
TOTAL 0010				1,584		2,464		8,976	1	

TRAFFIC CONTROL PLACEMENT SUBJECT TO ENGINEER APPROVAL

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

**MARKING LINE EPOXY 4-INCH**

CATEGORY	STATION	TO	STATION	LOCATION	646.1020 MARKING LINE		REMARKS
					YELLOW	WHITE	
					LF		
0010	7+25	-	12+50	MAINLINE SB	132	-	YELLOW CENTERLINE SKIPS
0010	7+25	-	12+50	MAINLINE NB	530	-	YELLOW CENTERLINE SOLID
0010	7+25	-	12+50	MAINLINE LT	-	530	WHITE EDGELINE
0010	7+25	-	12+50	MAINLINE RT	-	530	WHITE EDGELINE
SUBTOTALS					662	1060	
TOTAL 0010					<u>1,722</u>		

PER SDD 15C6-9 SIGNING AND MARKING FOR TWO LANE BRIDGES & EXISTING MARKINGS

**STAKING**

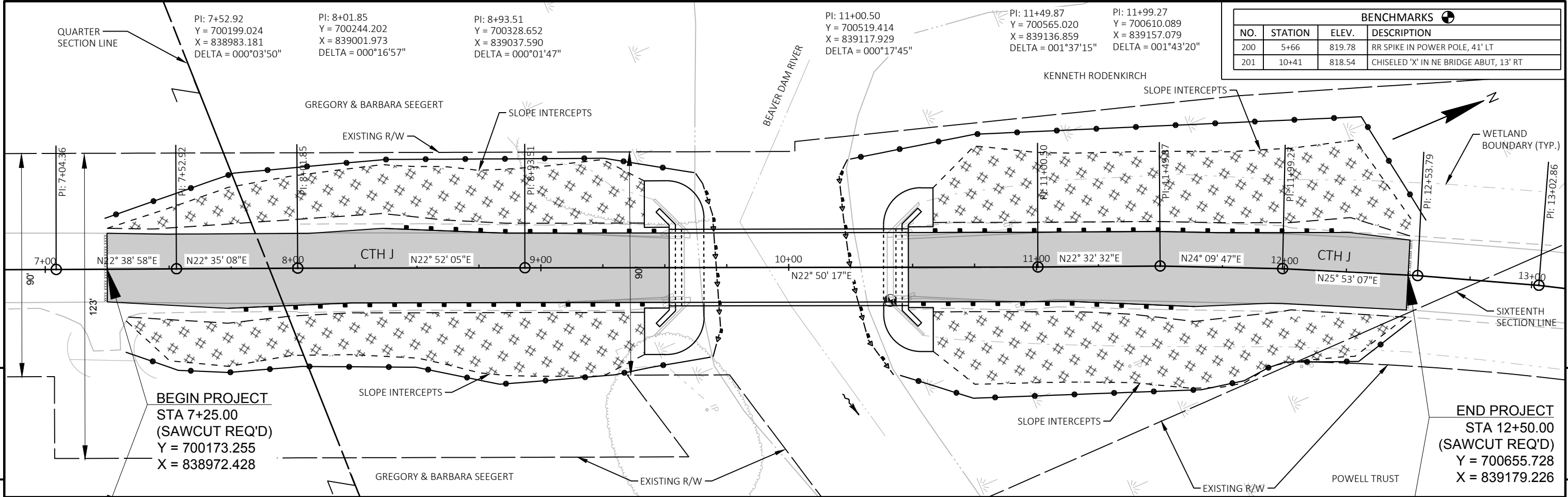
CATEGORY	STATION	TO	STATION	LOCATION	650.4500	650.5000	650.6500.01	650.9910.01	650.9920
					CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. B-14-0222) LS	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 3907-00-70) LS	CONSTRUCTION STAKING SLOPE STAKES LF
0010	7+25	-	12+50	MAINLINE	429	429	-	-	429
0010	7+25	-	12+50	PROJECT 3907-00-70	-	-	-	1	-
TOTAL 0010					<u>429</u>	<u>429</u>	<u>0</u>	<u>1</u>	<u>429</u>
0020	9+52	-	10+48	B-14-0222	-	-	1	-	-
TOTAL 0020					<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>
PROJECT TOTAL					<u>429</u>	<u>429</u>	<u>1</u>	<u>1</u>	<u>429</u>

**SAWING ASPHALT**

CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT
			LF
0010	7+25	MAINLINE	28
0010	12+50	MAINLINE	28
TOTAL 0010			<u>56</u>

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED





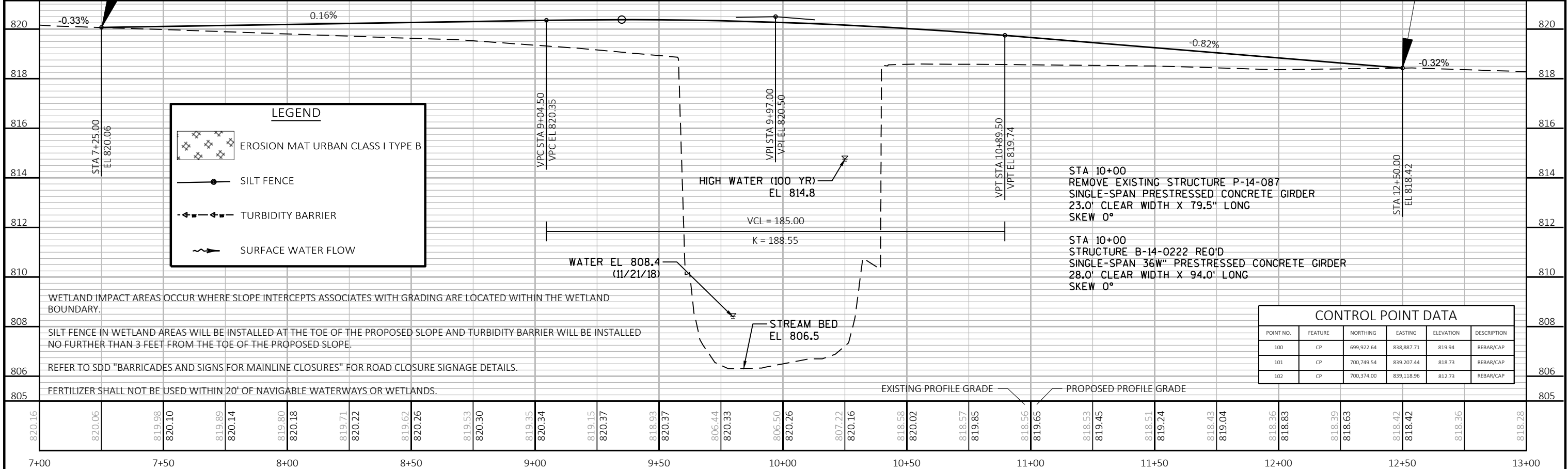
BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
200	5+66	819.78	RR SPIKE IN POWER POLE, 41' LT
201	10+41	818.54	CHISELED 'X' IN NE BRIDGE ABUT, 13' RT

5

5

**BEGIN PROJECT**  
 STA 7+25.00  
 (SAWCUT REQ'D)  
 Y = 700173.255  
 X = 838972.428

**END PROJECT**  
 STA 12+50.00  
 (SAWCUT REQ'D)  
 Y = 700655.728  
 X = 839179.226



LEGEND	
	EROSION MAT URBAN CLASS I TYPE B
	SILT FENCE
	TURBIDITY BARRIER
	SURFACE WATER FLOW

STA 10+00  
 REMOVE EXISTING STRUCTURE P-14-087  
 SINGLE-SPAN PRESTRESSED CONCRETE GIRDER  
 23.0' CLEAR WIDTH X 79.5' LONG  
 SKEW 0°

STA 10+00  
 STRUCTURE B-14-0222 REO'D  
 SINGLE-SPAN 36W" PRESTRESSED CONCRETE GIRDER  
 28.0' CLEAR WIDTH X 94.0' LONG  
 SKEW 0°

CONTROL POINT DATA					
POINT NO.	FEATURE	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	CP	699,922.64	838,887.71	819.94	REBAR/CAP
101	CP	700,749.54	839,207.44	818.73	REBAR/CAP
102	CP	700,374.00	839,118.96	812.73	REBAR/CAP

WETLAND IMPACT AREAS OCCUR WHERE SLOPE INTERCEPTS ASSOCIATES WITH GRADING ARE LOCATED WITHIN THE WETLAND BOUNDARY.

SILT FENCE IN WETLAND AREAS WILL BE INSTALLED AT THE TOE OF THE PROPOSED SLOPE AND TURBIDITY BARRIER WILL BE INSTALLED NO FURTHER THAN 3 FEET FROM THE TOE OF THE PROPOSED SLOPE.

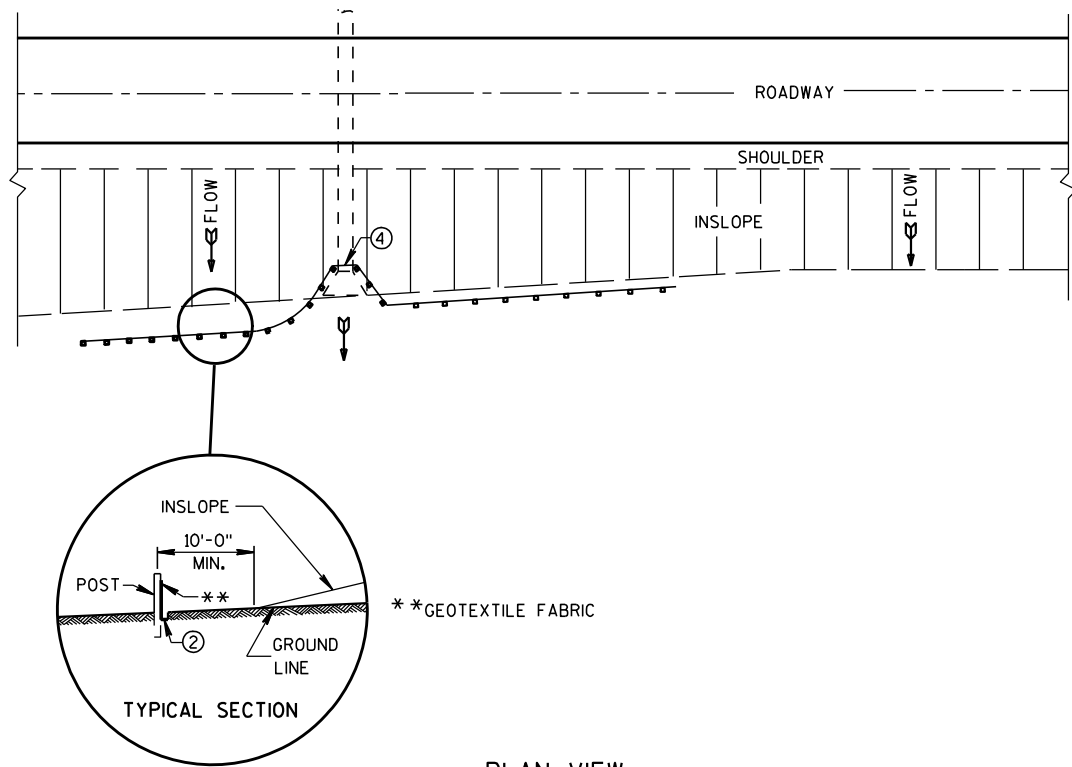
REFER TO SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" FOR ROAD CLOSURE SIGNAGE DETAILS.

FERTILIZER SHALL NOT BE USED WITHIN 20' OF NAVIGABLE WATERWAYS OR WETLANDS.

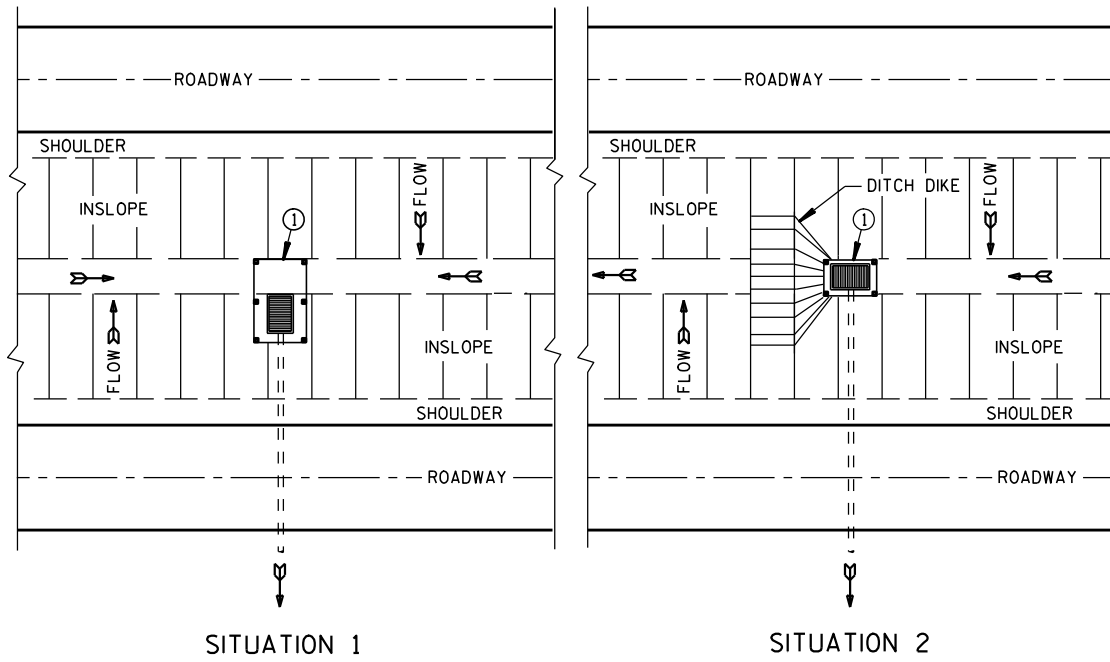
PROJECT NO:	3907-00-70	HWY:	CTH J	COUNTY:	DODGE	PLAN AND PROFILE:	MAINLINE	SHEET	E
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## Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE

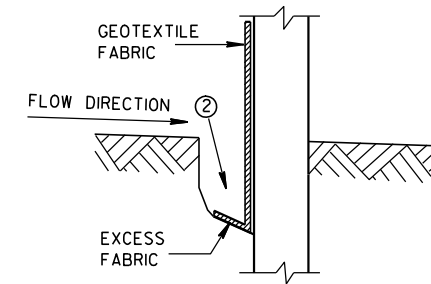


SITUATION 1 SITUATION 2  
PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

**GENERAL NOTES**

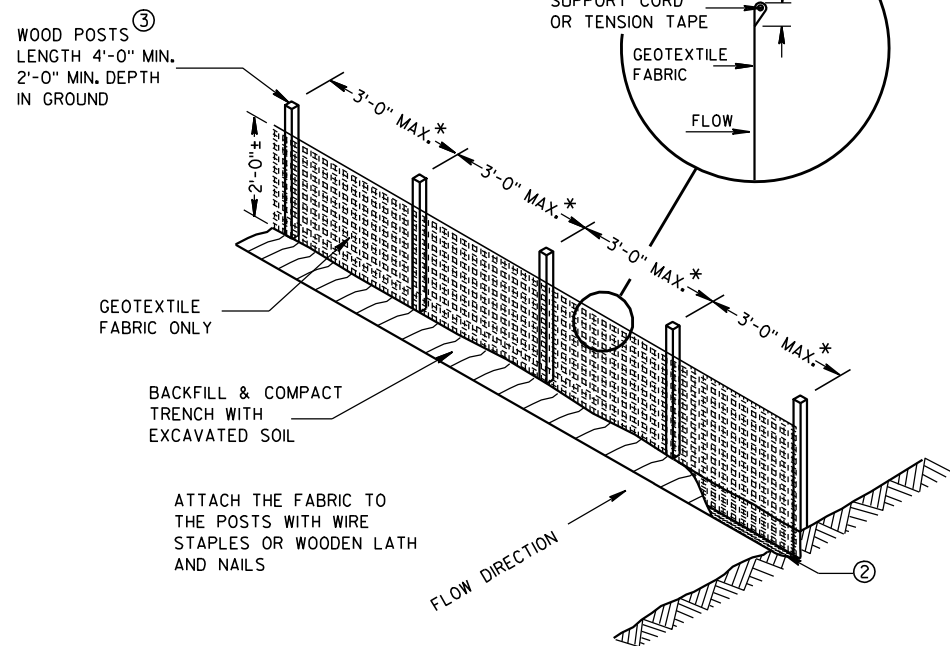
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



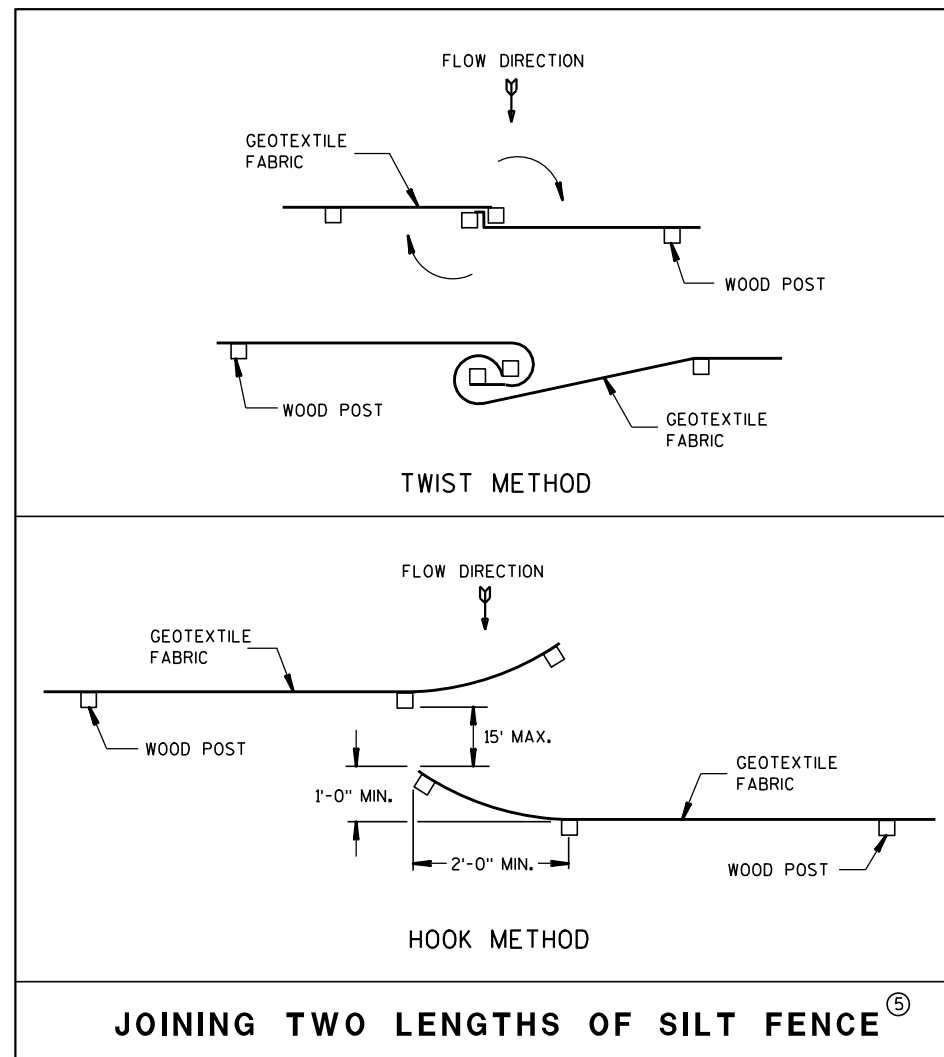
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

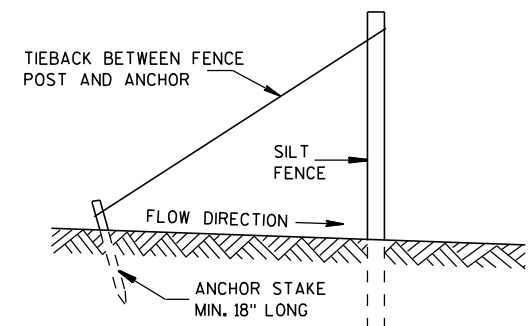


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

**SILT FENCE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

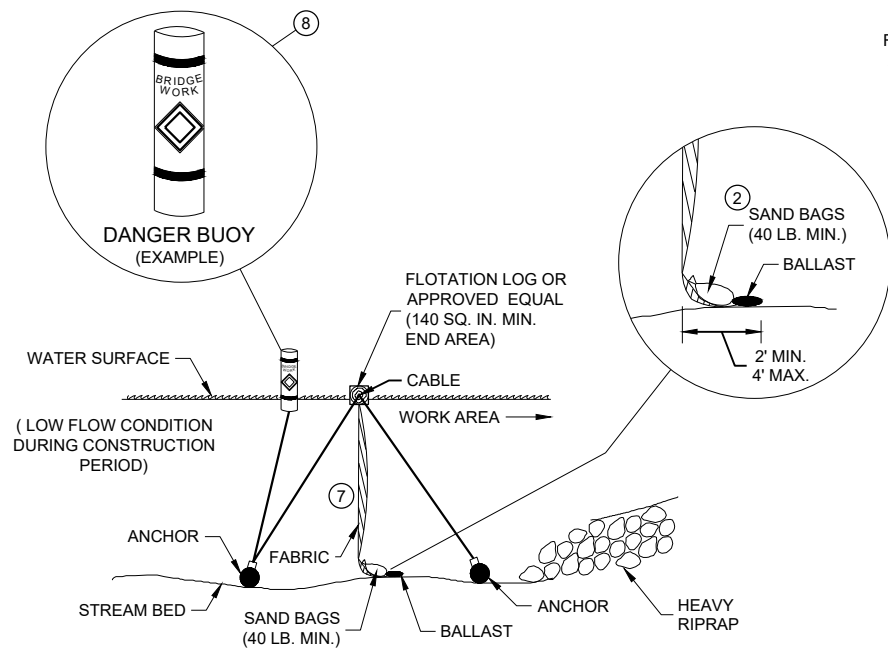
APPROVED

4-29-05

DATE

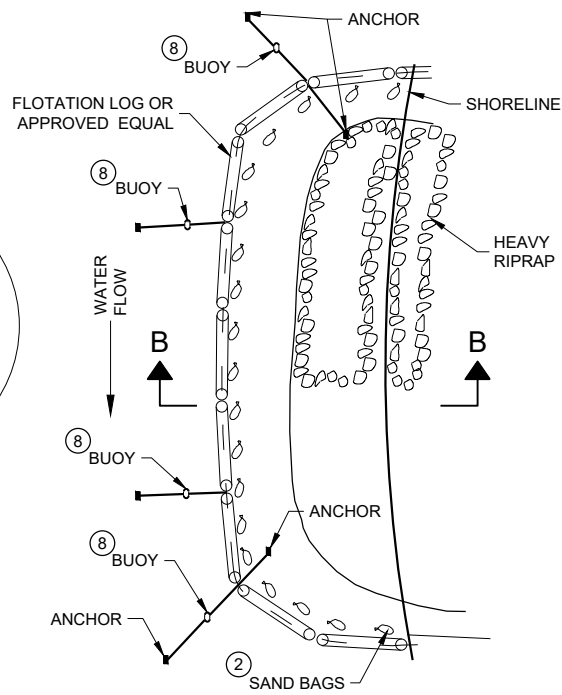
FHWA

/S/ Beth Canestra  
CHIEF ROADWAY DEVELOPMENT ENGINEER

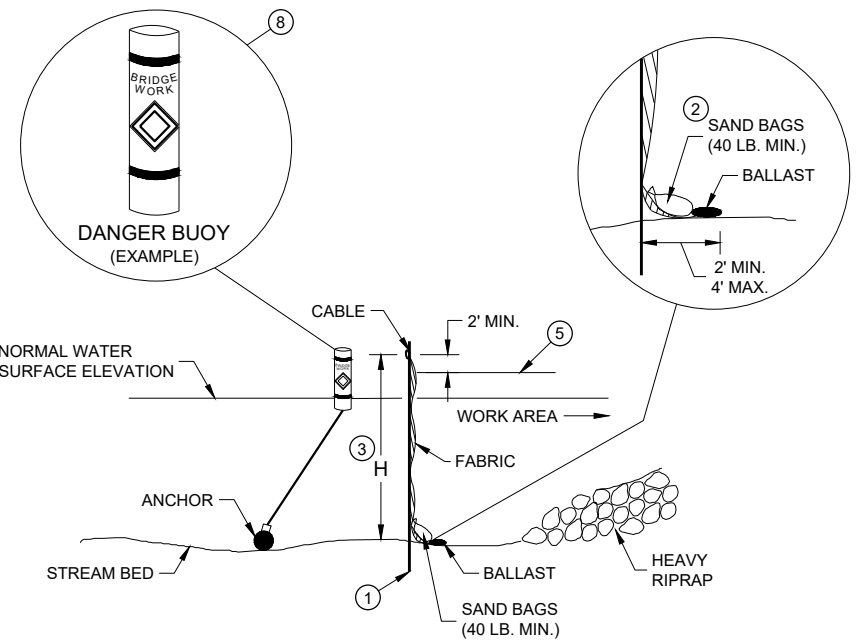


**SECTION B - B**

**TURBIDITY BARRIER - FLOAT ALTERNATIVE  
CAUTION - SEE NOTE 6**

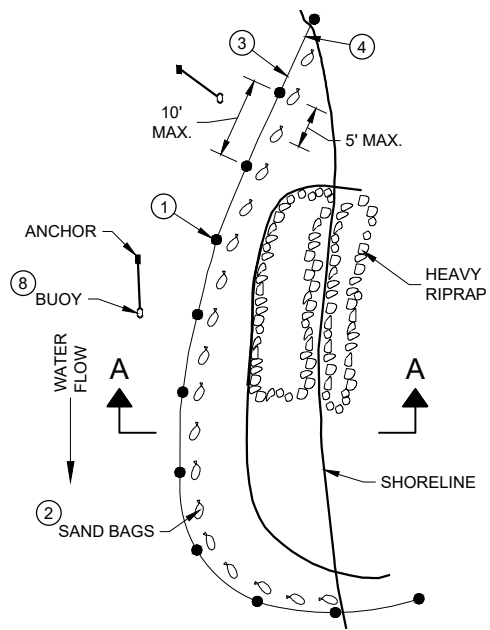


**PLAN VIEW**



**SECTION A - A**

**TURBIDITY BARRIER - STANDARD POST INSTALLATION**



**PLAN VIEW**

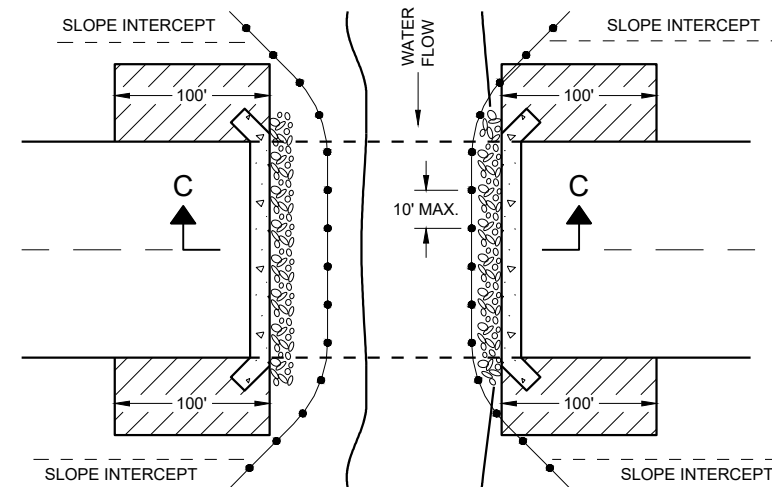
**TURBIDITY BARRIER PLACEMENT DETAILS**

**GENERAL NOTES**

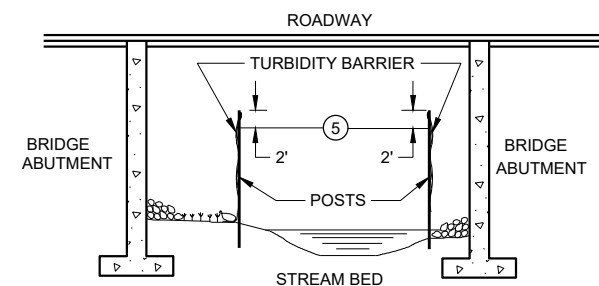
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SAND BAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT "H" EXCEEDS 8 FEET, POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



**PLAN VIEW**



**SECTION C - C**

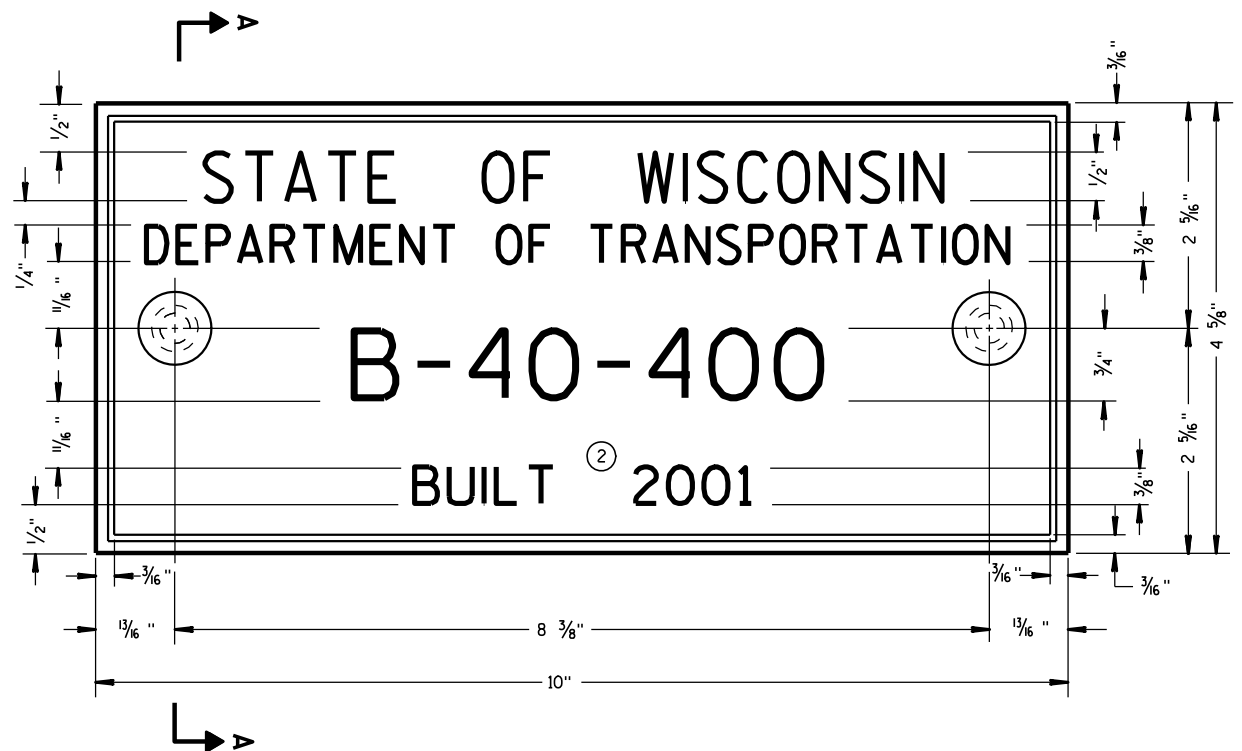
**TURBIDITY BARRIER DETAIL SHOWING  
TYPICAL PLACEMENT AT STRUCTURES**

**TURBIDITY BARRIER**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



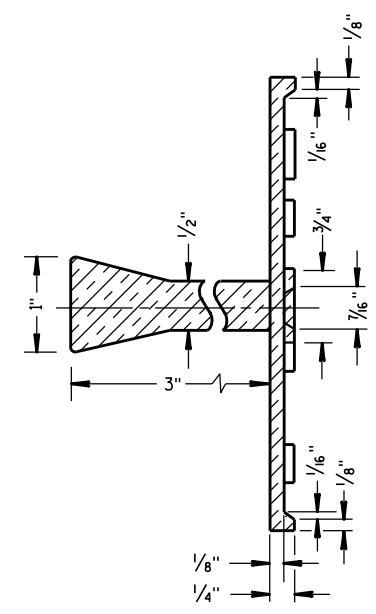
**TYPICAL NAME PLATE**  
(BRIDGES, CULVERTS, AND RETAINING WALLS)

**GENERAL NOTES**

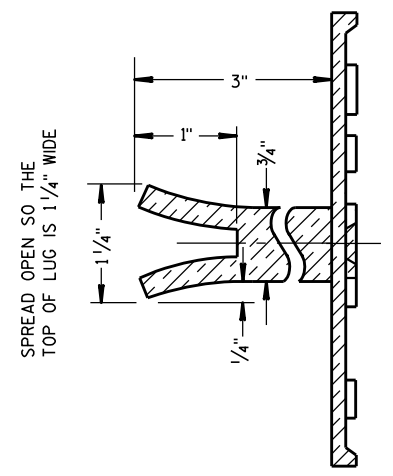
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



**SECTION A-A**



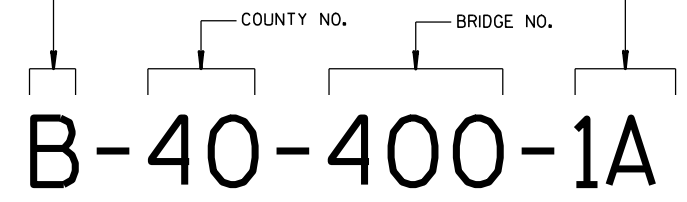
**ALTERNATE LUG**

6

6

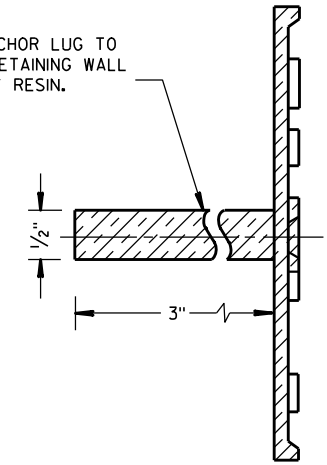
FOR MULTI-UNIT STRUCTURES  
LINE 3 ABOVE SHALL READ

- B = BRIDGE
- C = CULVERT
- R = RETAINING WALL
- UNIT NO. FOR MULTIPLE UNIT BRIDGE



**NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES**

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



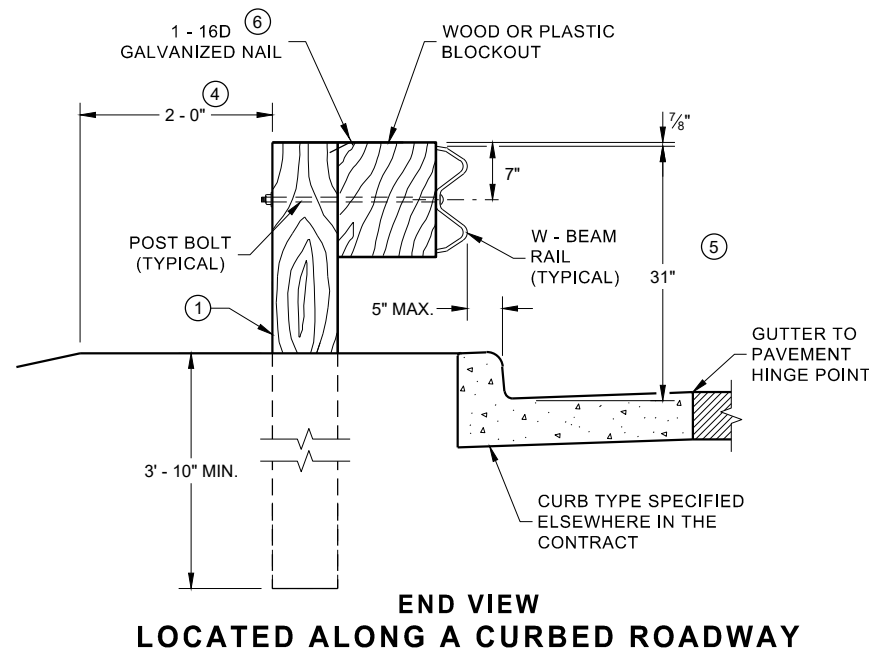
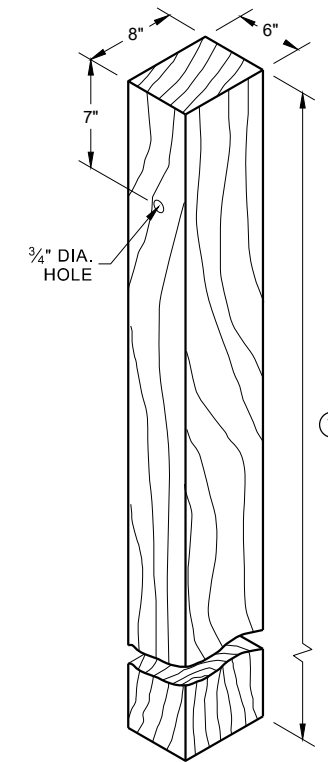
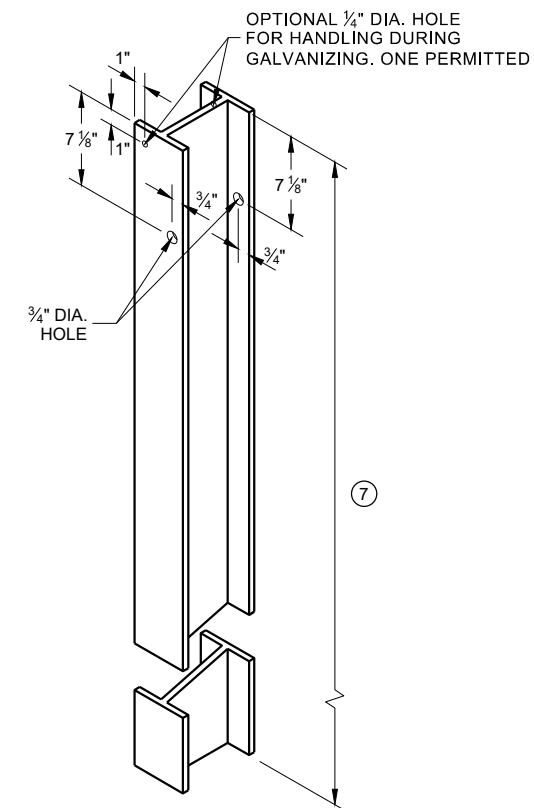
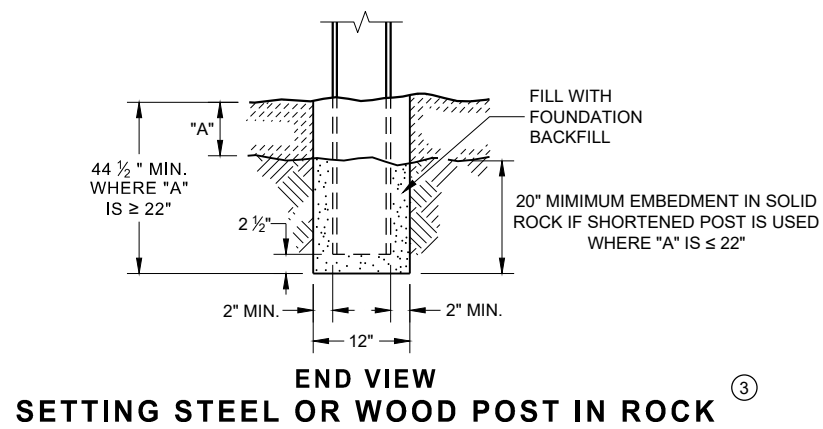
**ALTERNATE LUG**  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

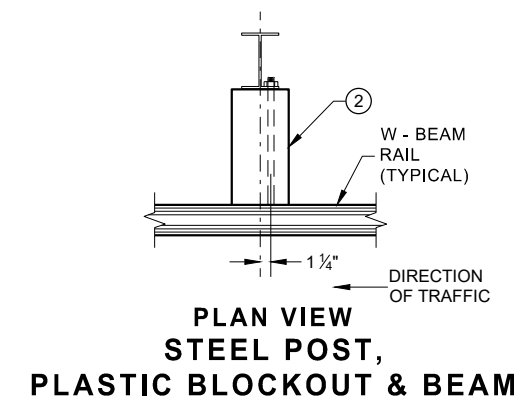
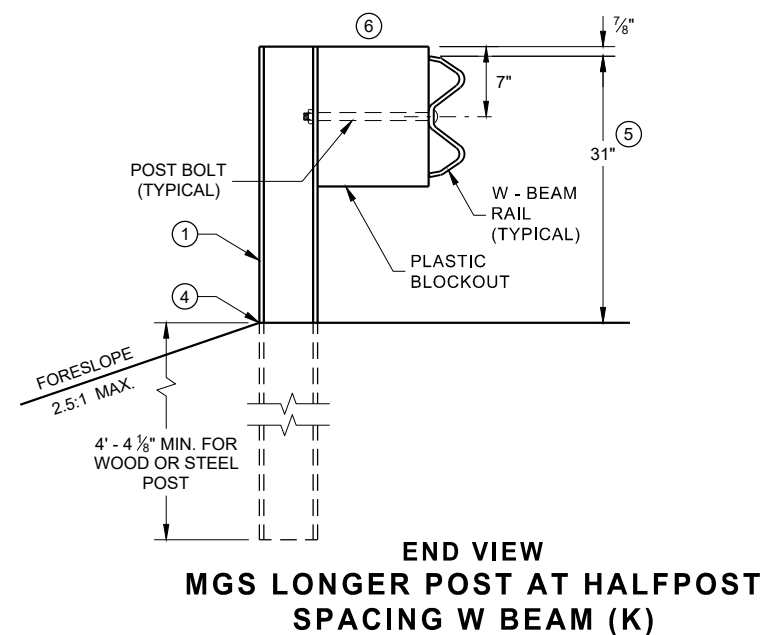
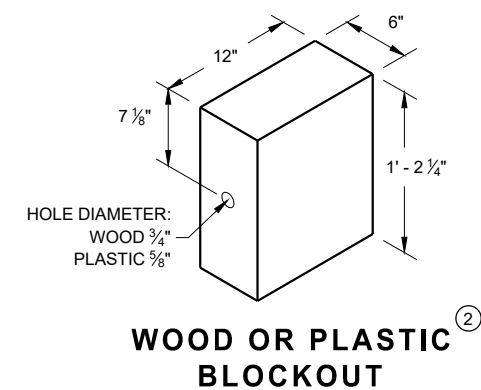
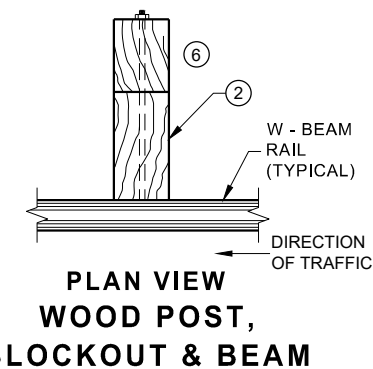
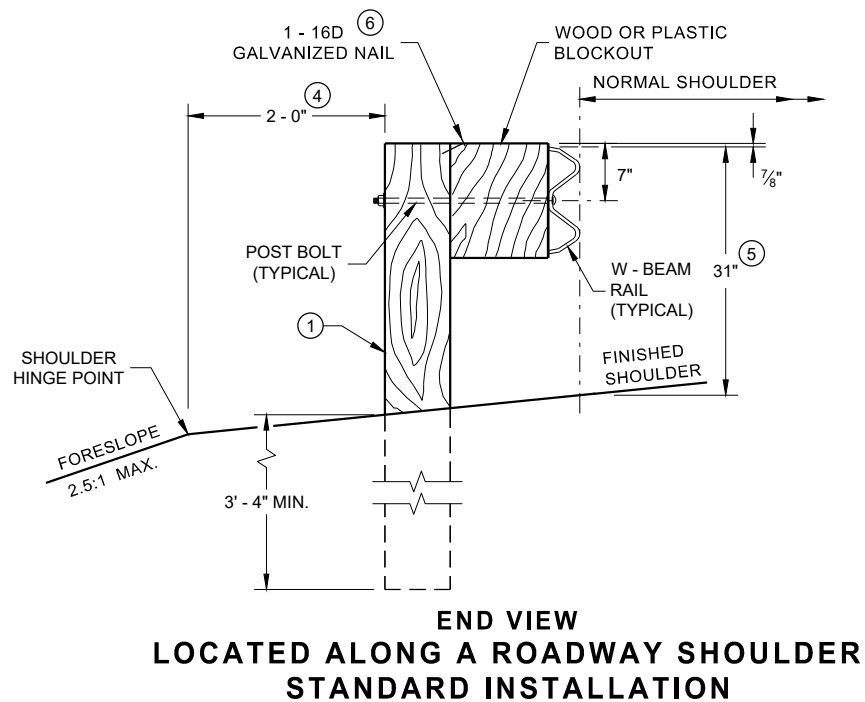
<b>NAME PLATE (STRUCTURES)</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	

- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS  $\pm 1"$ . FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0". TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



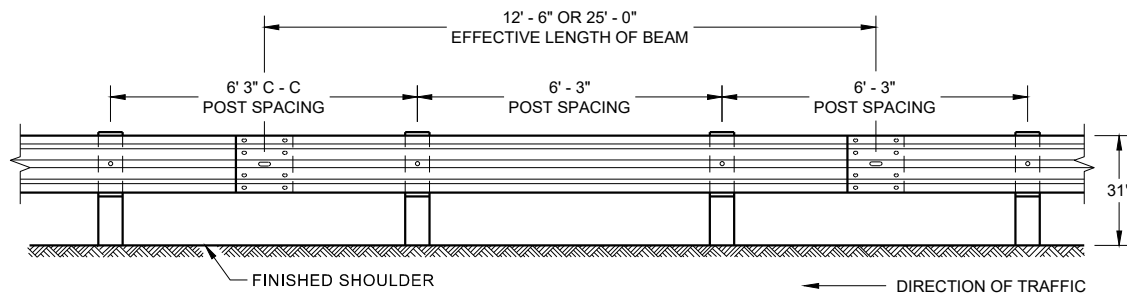
**STEEL POST & HOLE  
PUNCHING DETAIL  
(W 6 X 9)** ①

**WOOD POST  
(6" X 8") NOMINAL** ①

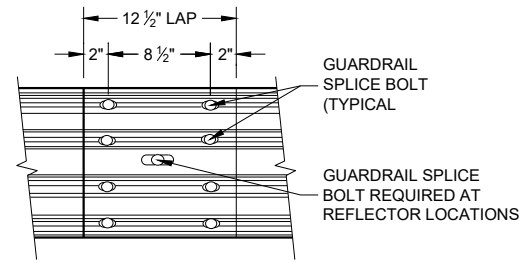


**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



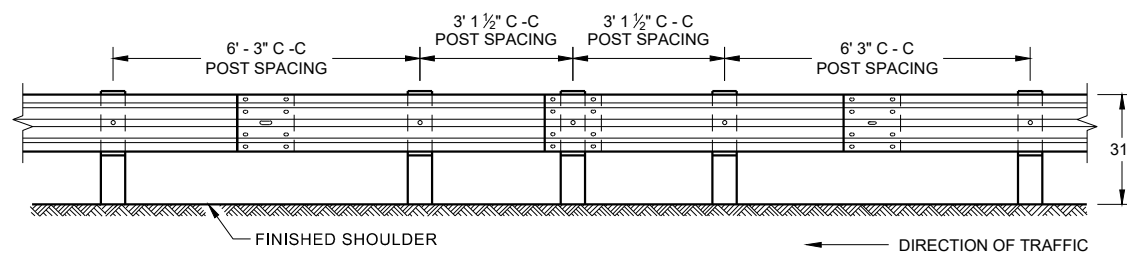
**FRONT VIEW  
POST SPACING STANDARD INSTALLATION**



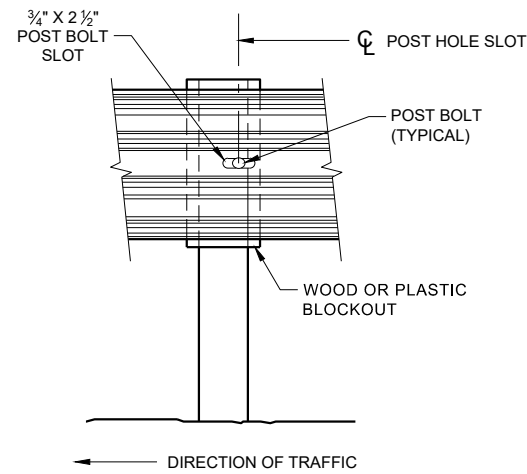
**FRONT VIEW  
MID-SPAN BEAM SPLICE**

**GENERAL NOTES**

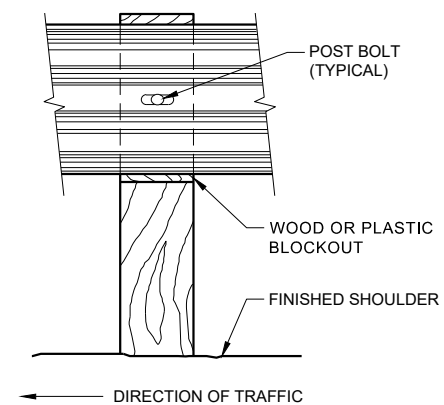
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
  - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



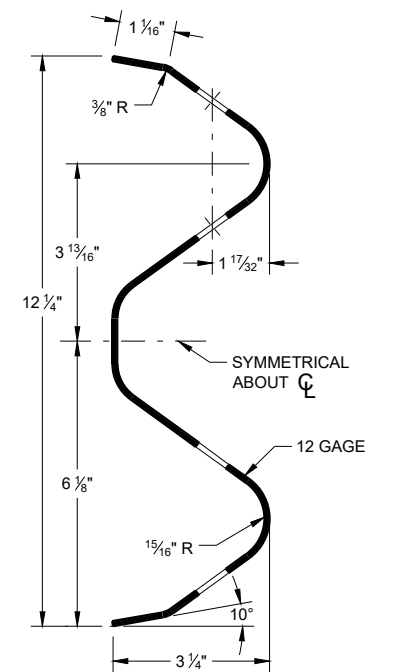
**FRONT VIEW  
HALF POST SPACING (HS) AND  
HALF POST SPACING WITH LONGER POSTS (K)**



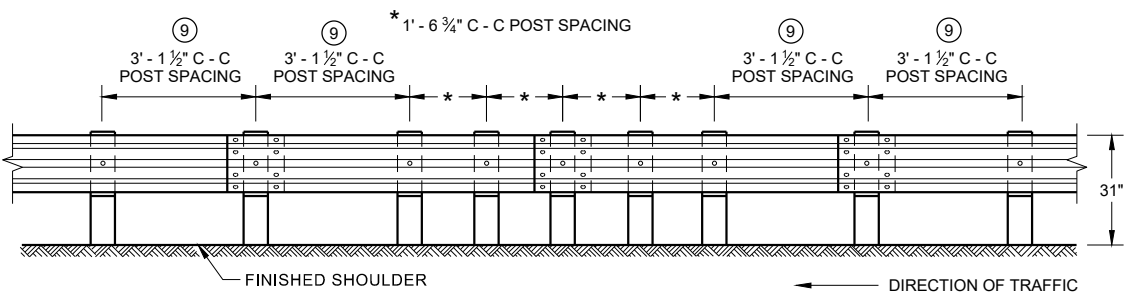
**FRONT VIEW AT STEEL POST**



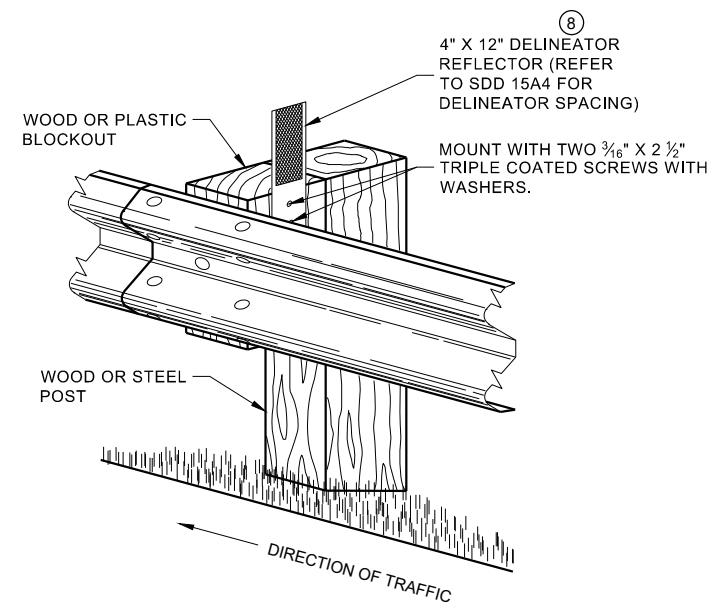
**FRONT VIEW AT WOOD POST**



**SECTION THRU W-BEAM RAIL**



**FRONT VIEW  
QUARTER POST SPACING (QS)**



**ONE SIDED REFLECTOR DETAIL  
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

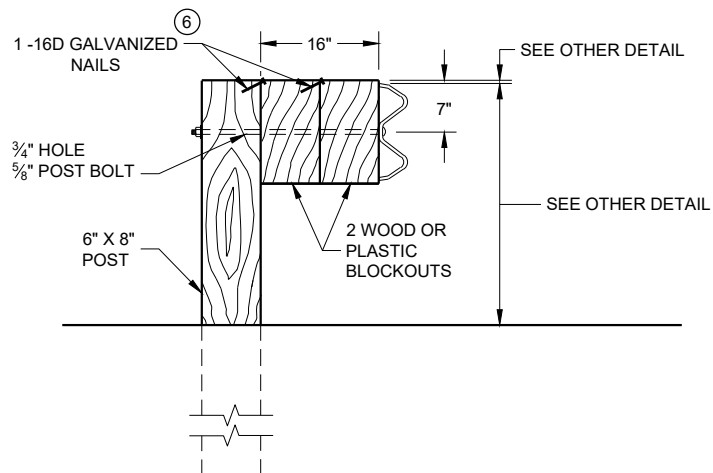
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

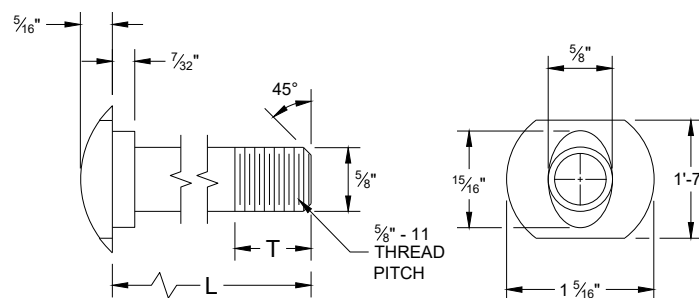


**DETAIL FOR 16" BLOCKOUT DEPTH**

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

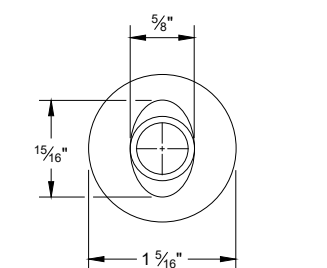
**NOTE:**

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

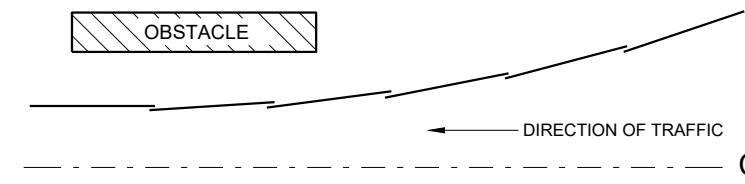


**POST BOLT TABLE**

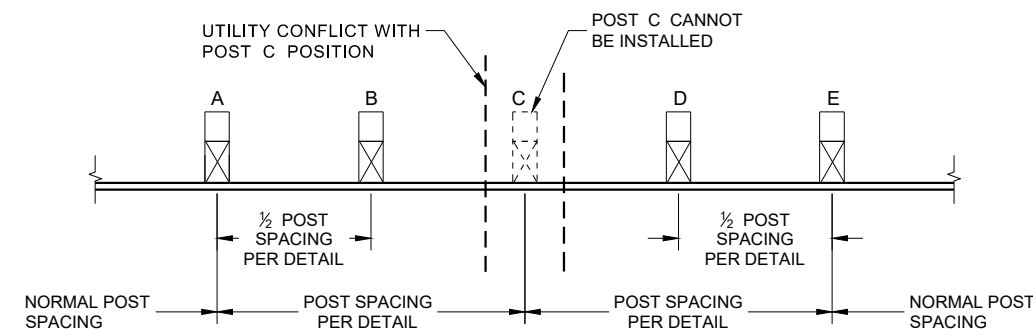
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



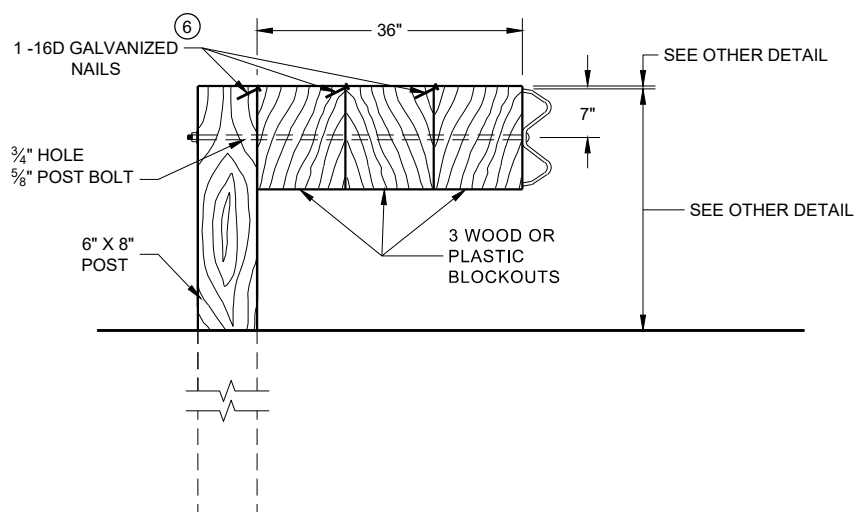
**ALTERNATE BOLT HEAD**



**PLAN VIEW  
BEAM LAPPING DETAIL**

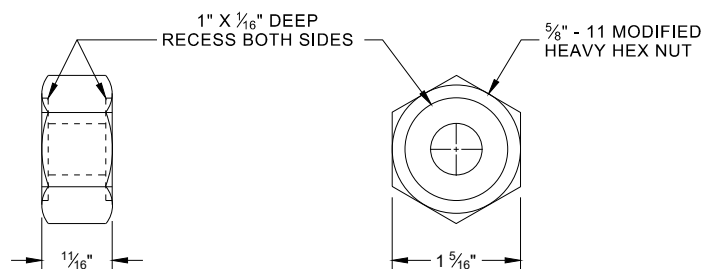


**POST DRIVING FOR CONTINUOUS  
UNDERGROUND OBSTRUCTION**

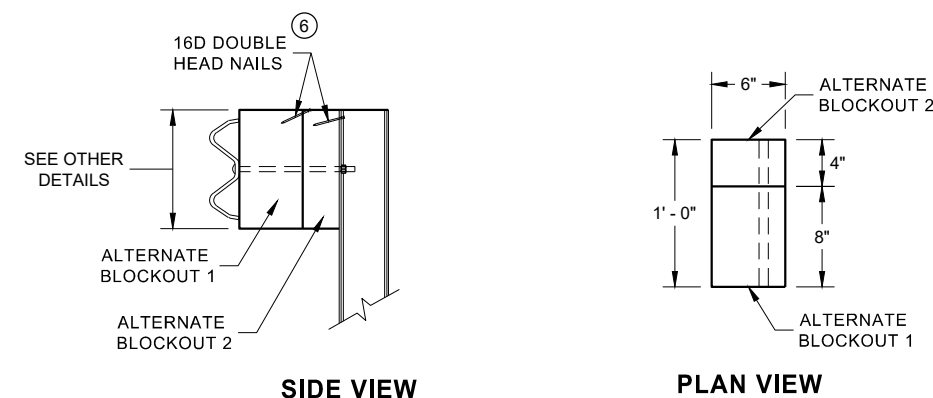


**DETAIL FOR 36" BLOCKOUT DEPTH**

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.  
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



**POST BOLT, SPLICE BOLT  
AND RECESS NUT**



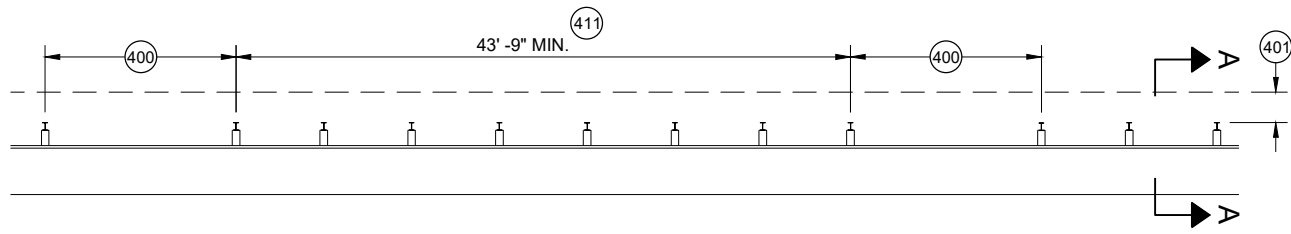
**ALTERNATE WOOD  
BLOCKOUT DETAIL**

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

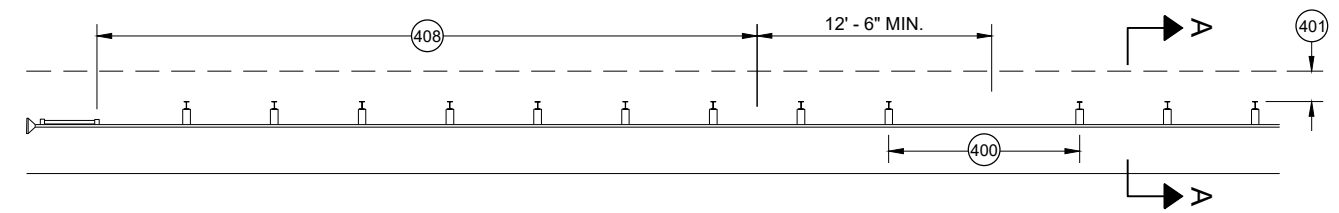
**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

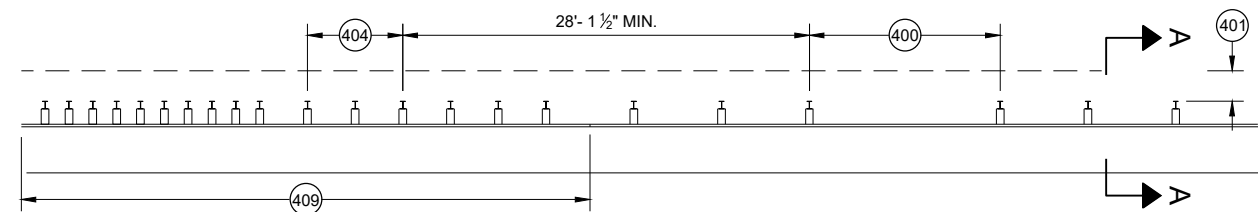




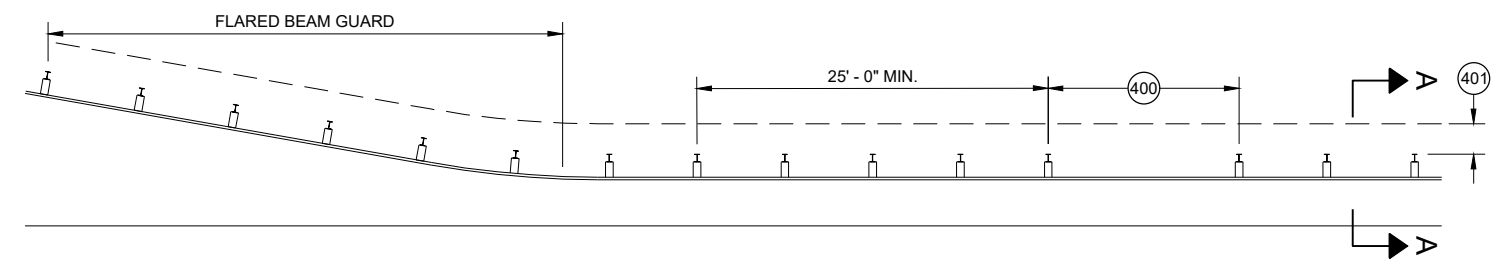
**MISSING POST IN MGS GUARDRAIL**



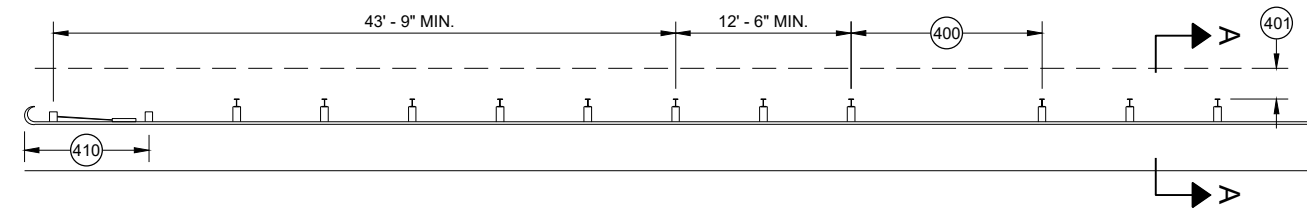
**MISSING POST IN MGS GUARDRAIL NEAR EAT**



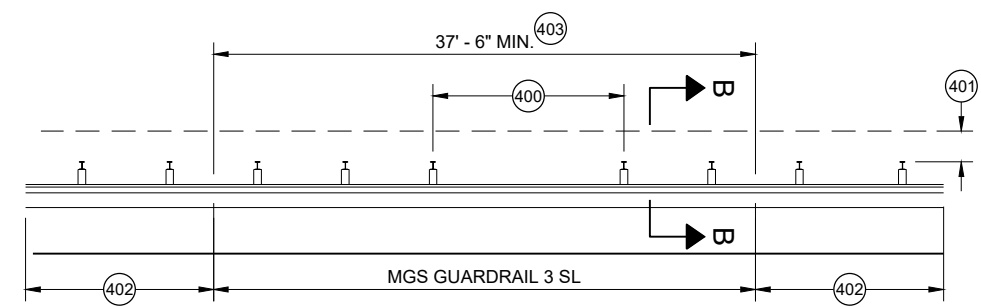
**MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION**



**MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD**

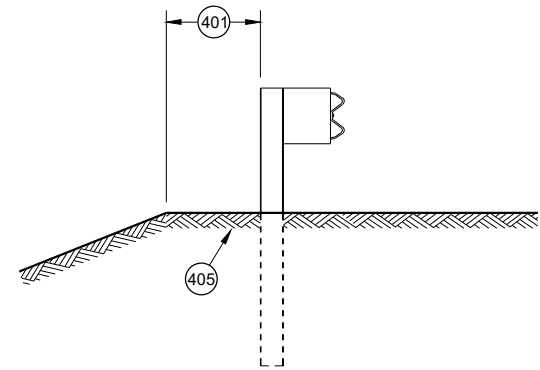


**MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL**

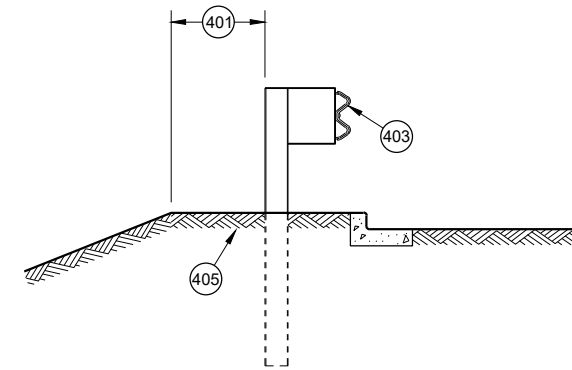


**MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)**

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



**SECTION A - A**



**SECTION B - B**

<b>MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
<small>FHWA</small>	

**GENERAL NOTES**

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE 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.

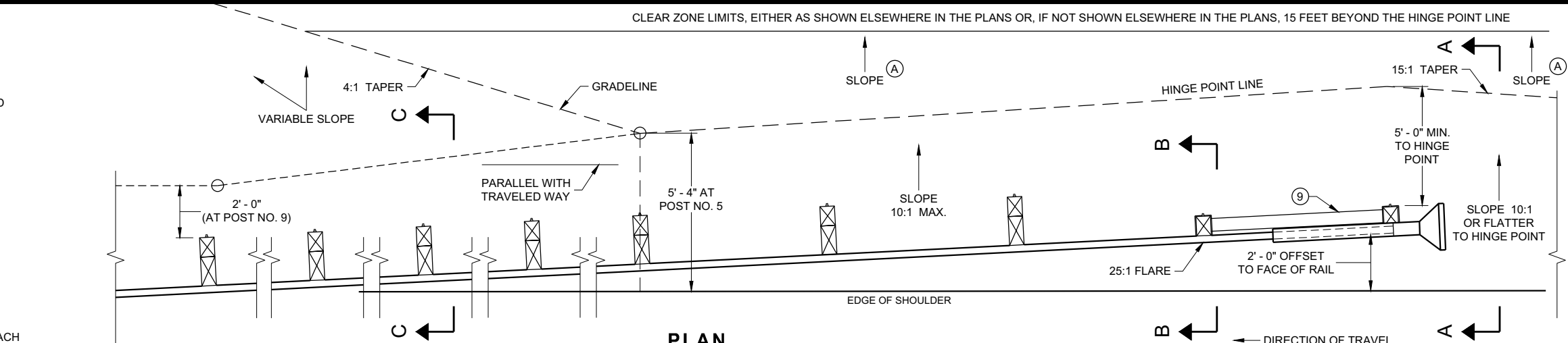
SEE SDD 14B42 FOR MORE INFORMATION.

\* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

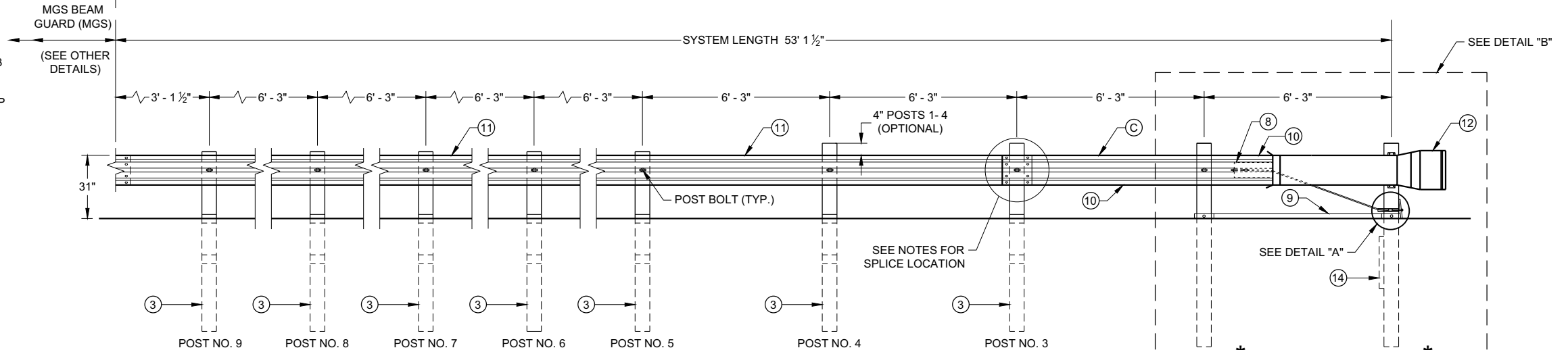
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

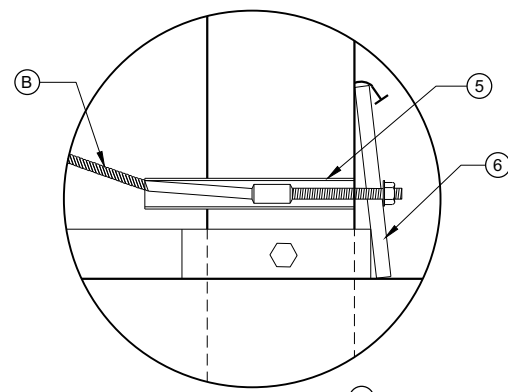
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



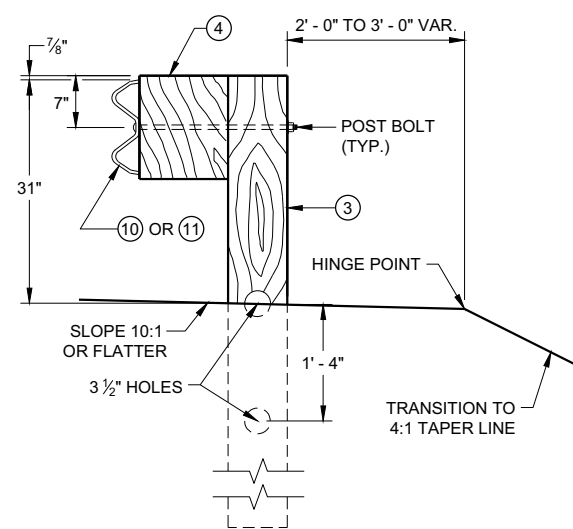
**PLAN**



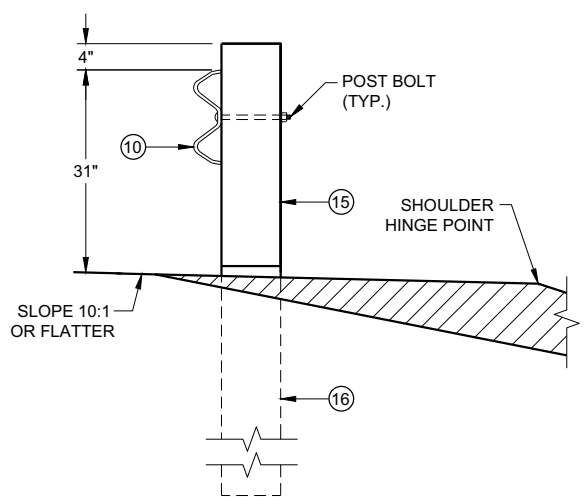
**ELEVATION**



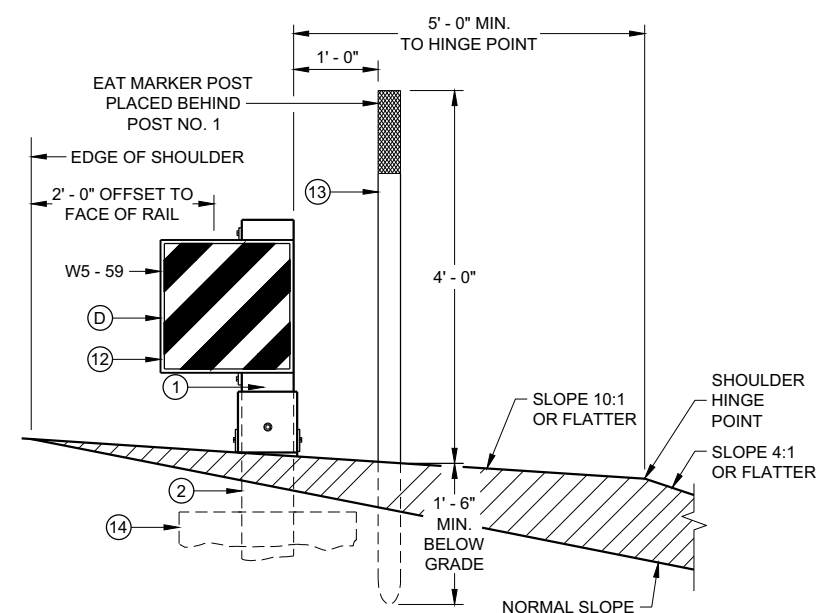
**DETAIL "A"**



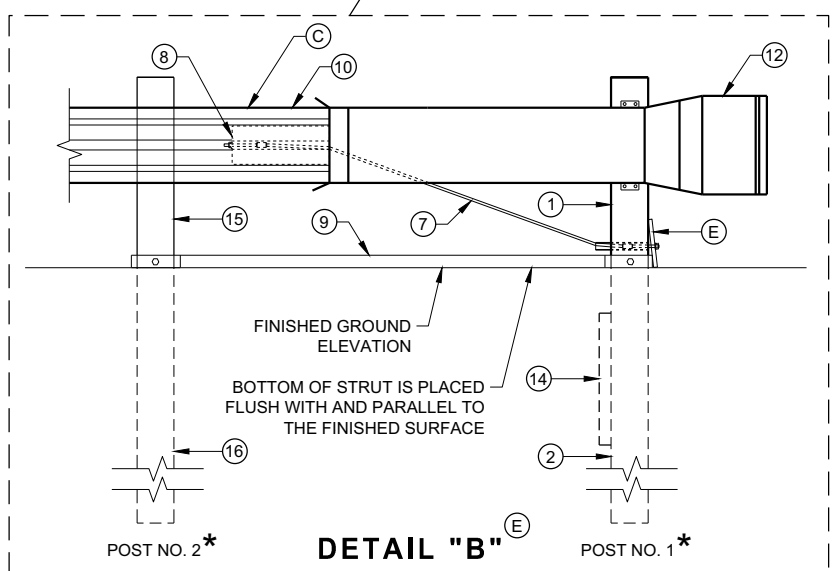
**SECTION C - C  
TYPICAL AT POST NOS. 3 - 9**



**SECTION B - B  
TYPICAL AT POST NO. 2\***



**SECTION A - A  
TYPICAL AT POST NO. 1\***



**DETAIL "B"**

**MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

6

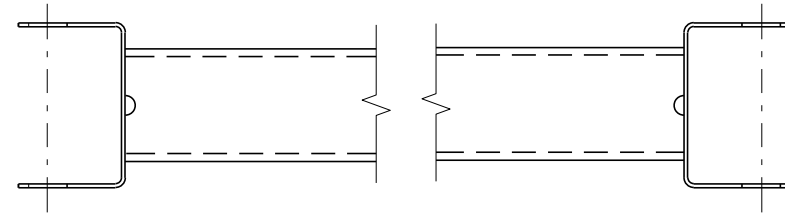
6

SDD 14B44 - 04a

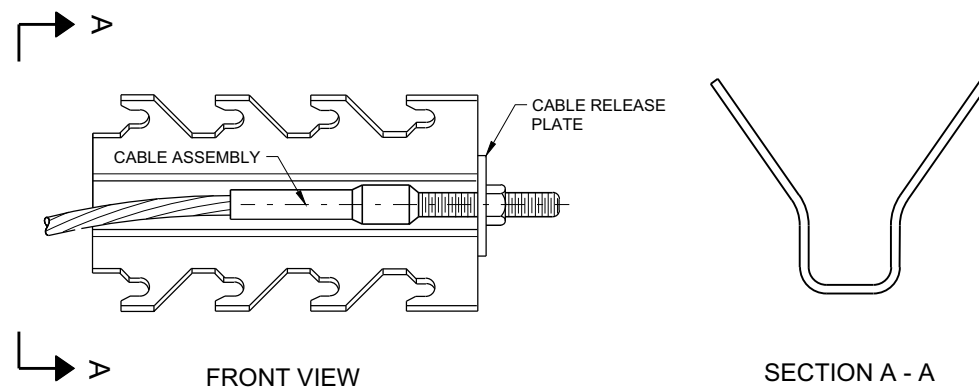
SDD 14B44 - 04a

**BILL OF MATERIALS**

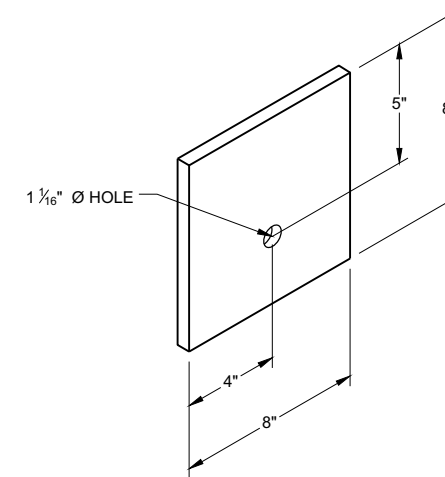
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL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



**GENERIC ANCHOR CABLE BOX** ⑨ ⑤



**BEARING PLATE** ⑥ ⑤

6

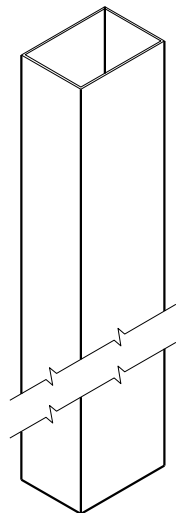
6

SDD 14B44 - 04b

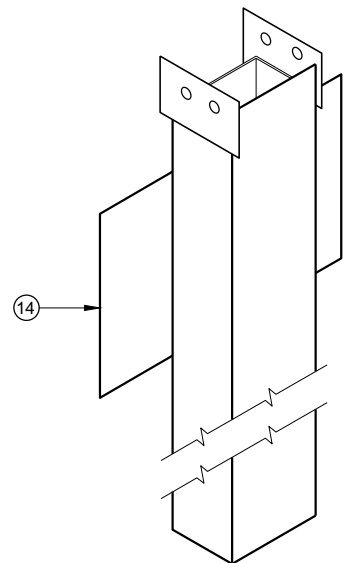
SDD 14B44 - 04b

**MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)**

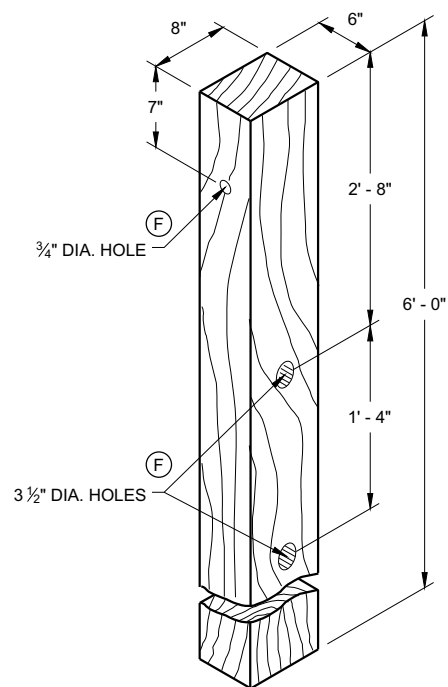
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



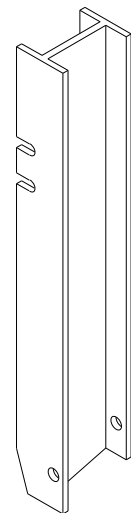
UPPER POST NO. 1 <sup>(1)</sup> (E)



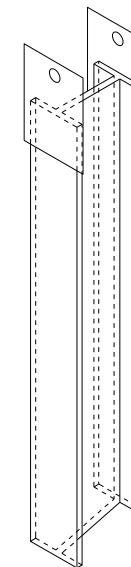
LOWER POST NO. 1 <sup>(2)</sup> (E)



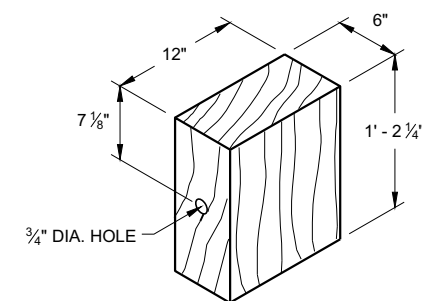
WOOD CRT POST <sup>(3)</sup> (E)  
POSTS NUMBER 3-9



UPPER POST NO. 2 <sup>(15)</sup> (E)

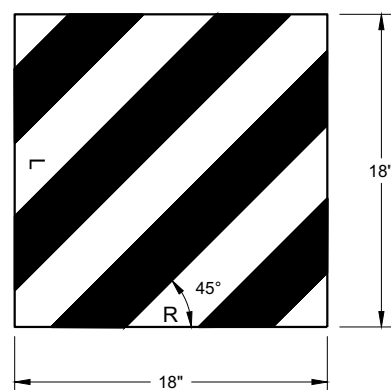


LOWER POST NO. 2 <sup>(16)</sup> (E)



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

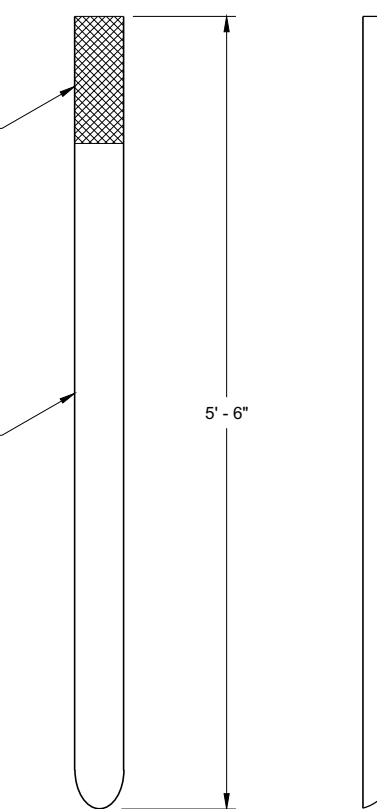
6



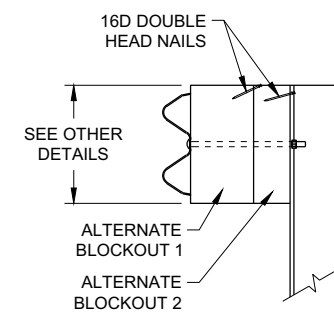
W5 - 59  
REFLECTIVE SHEETING DETAIL <sup>(E)</sup>

TYPE H  
YELLOW REFLECTIVE  
SHEETING 3" X 9".  
SEE STANDARD  
SPECIFICATION 637.

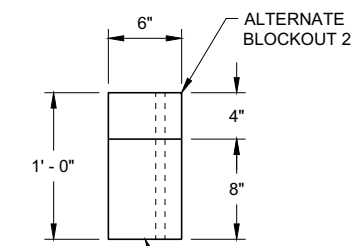
E.A.T. MARKER  
POST (YELLOW)



FRONT VIEW SIDE VIEW  
E.A.T. MARKER POST <sup>(13)</sup>



SIDE VIEW



TOP VIEW

ALTERNATE WOOD  
BLOCKOUT DETAIL

6

SDD 14B44 - 04c

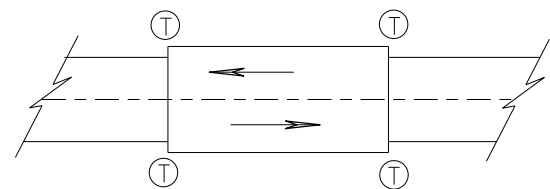
SDD 14B44 - 04c

**MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)**

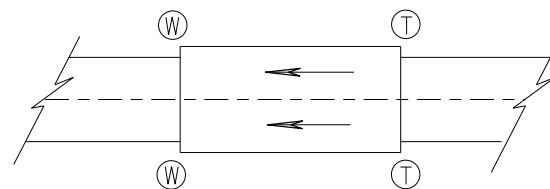
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



**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 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

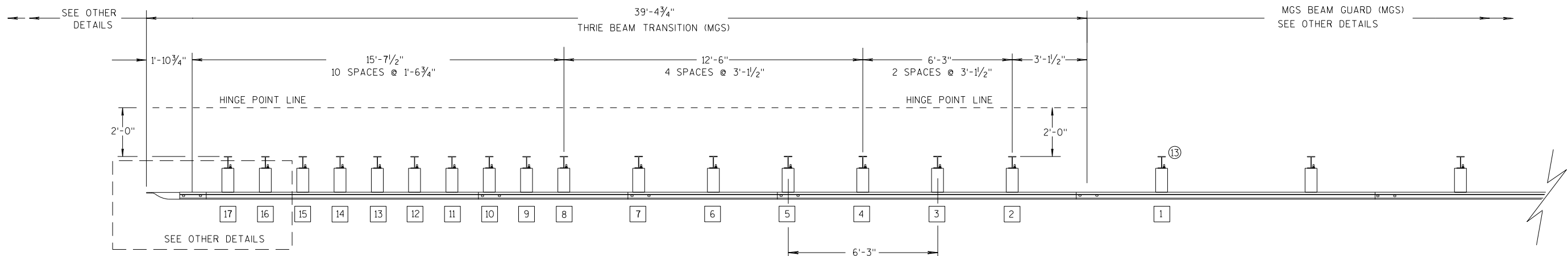
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

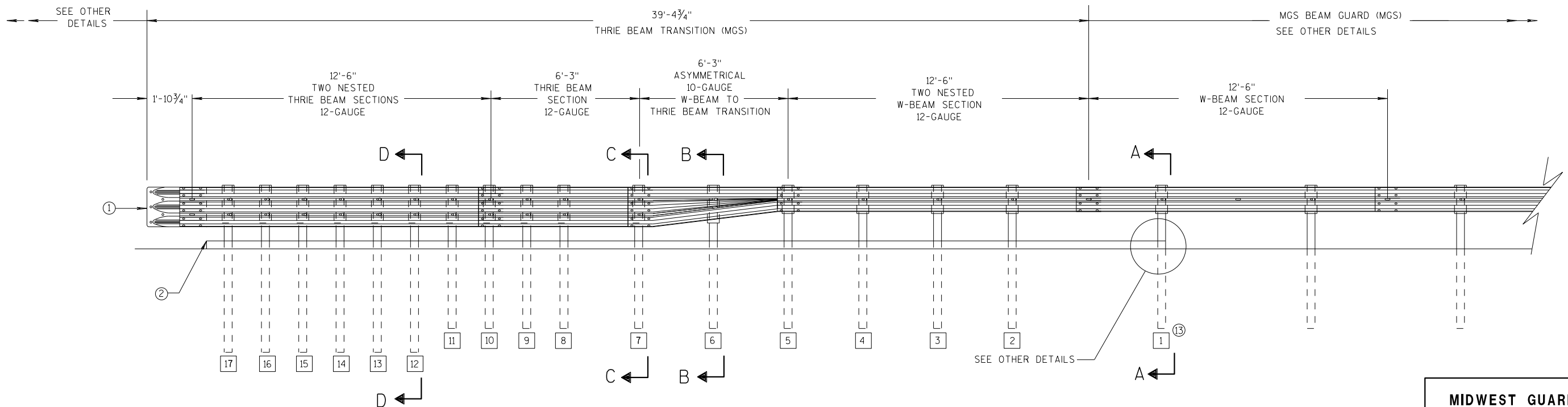
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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**

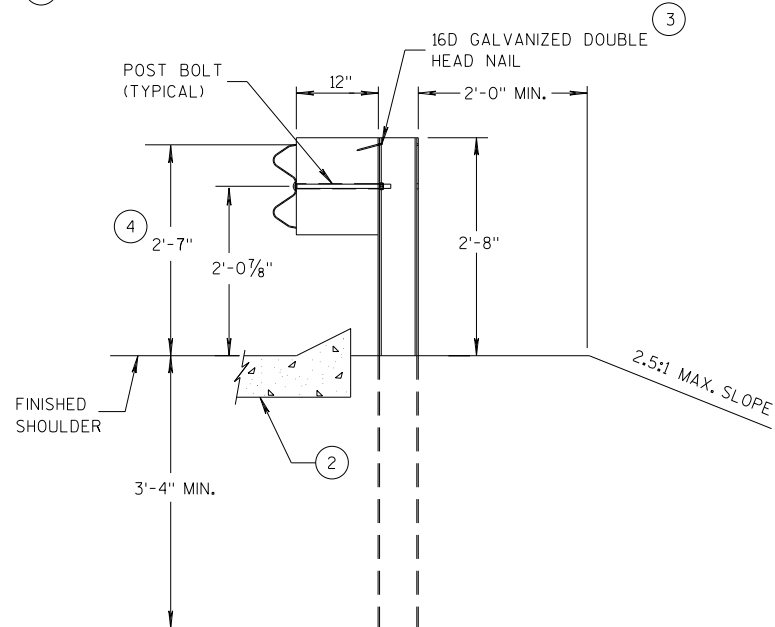
**MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION**

**MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)**

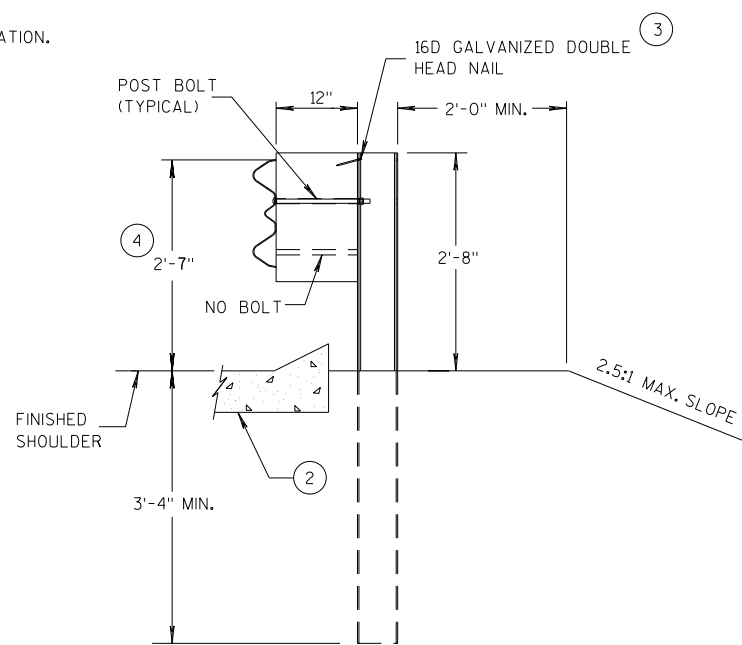
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

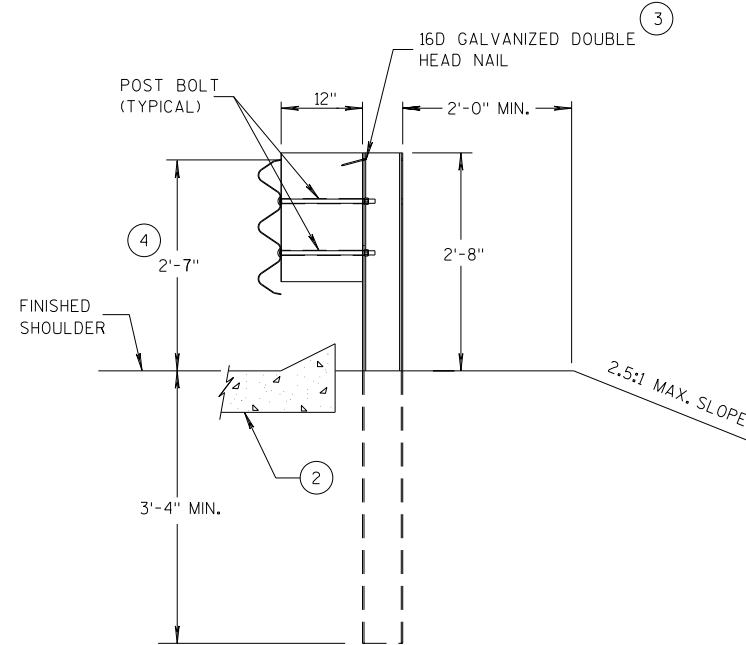
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



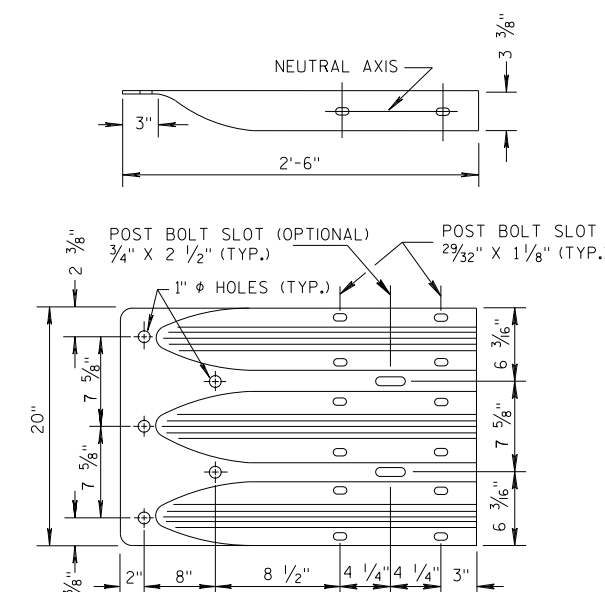
**SECTION A-A  
POSTS 1-5**



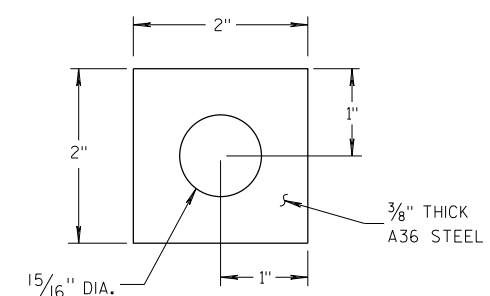
**SECTION B-B  
POST 6**



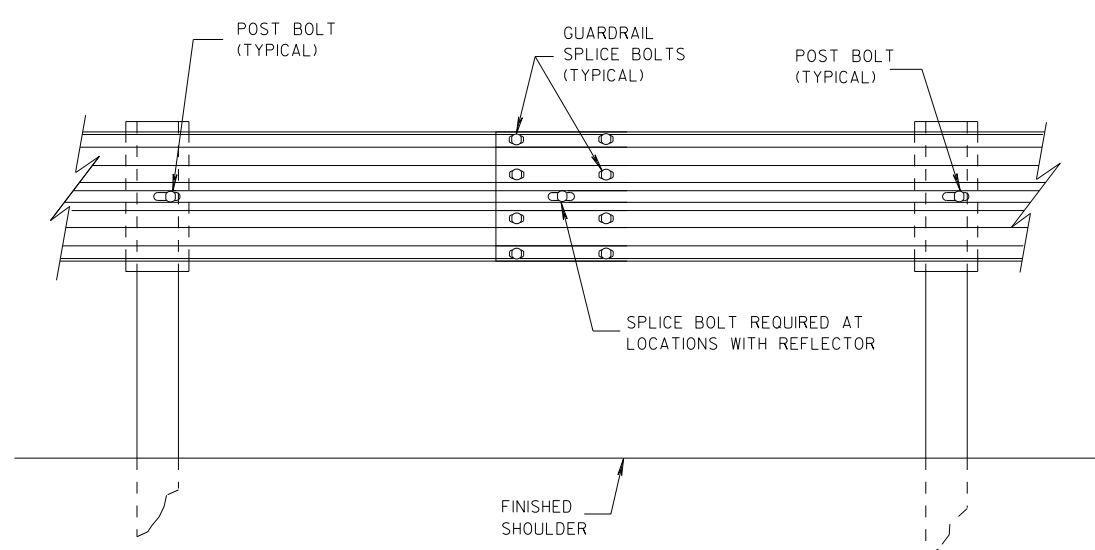
**SECTION C-C  
POSTS 7-11**



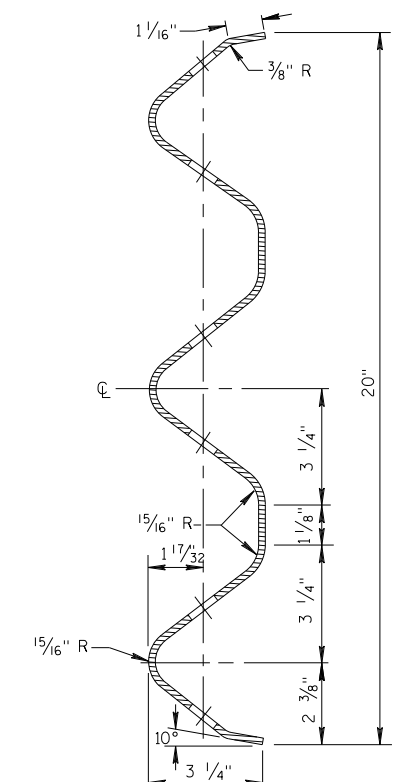
**THRIE BEAM  
TERMINAL CONNECTOR**



**PLATE WASHER DETAIL**



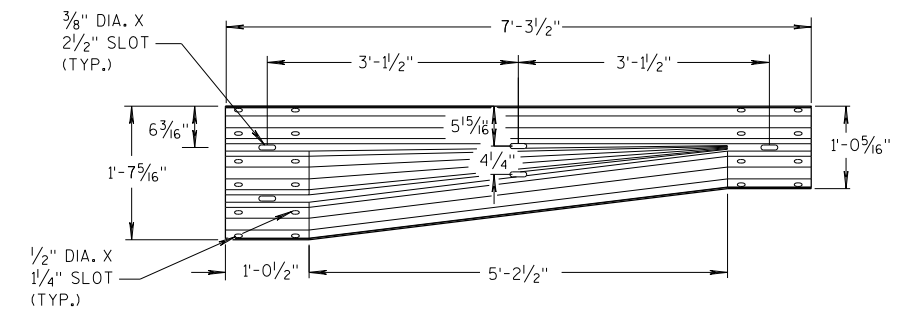
**SPLICE DETAIL**



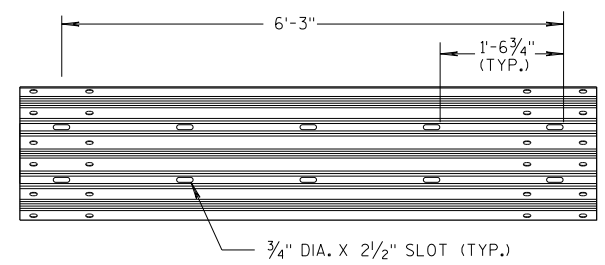
**SECTION THRU THRIE  
BEAM RAIL ELEMENT**

**MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)**

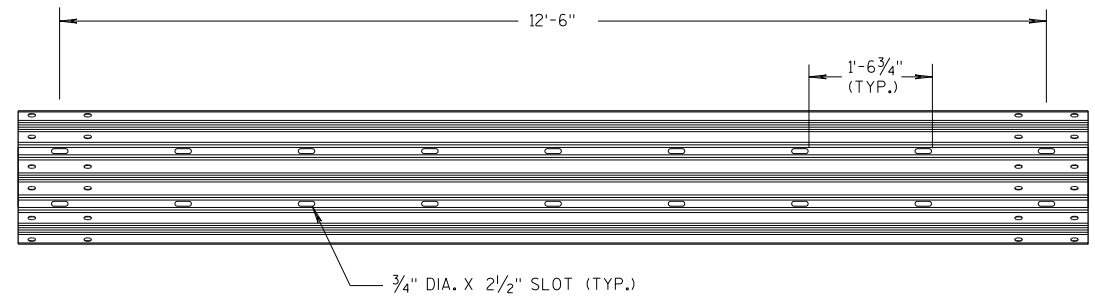
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



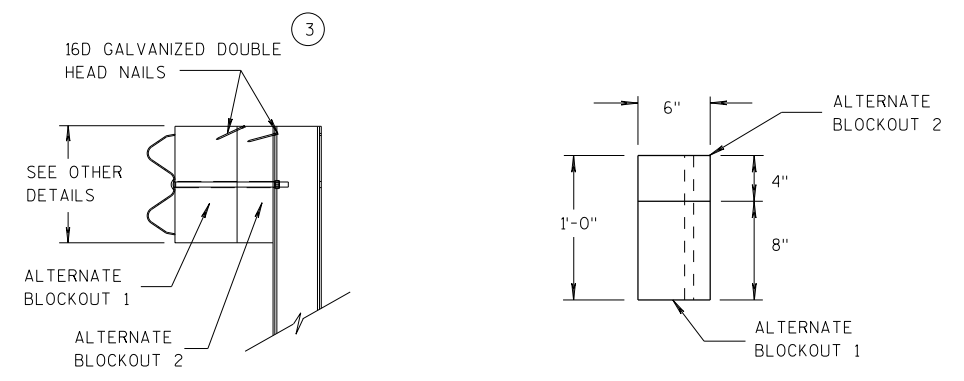
**W-BEAM TO THRIE BEAM TRANSITION SECTION**



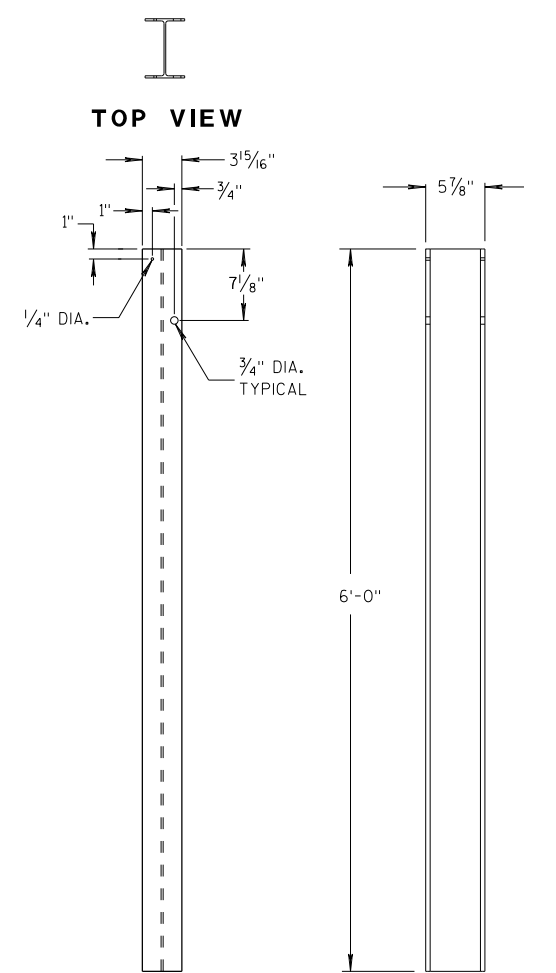
**6'-3" THRIE BEAM SECTION**



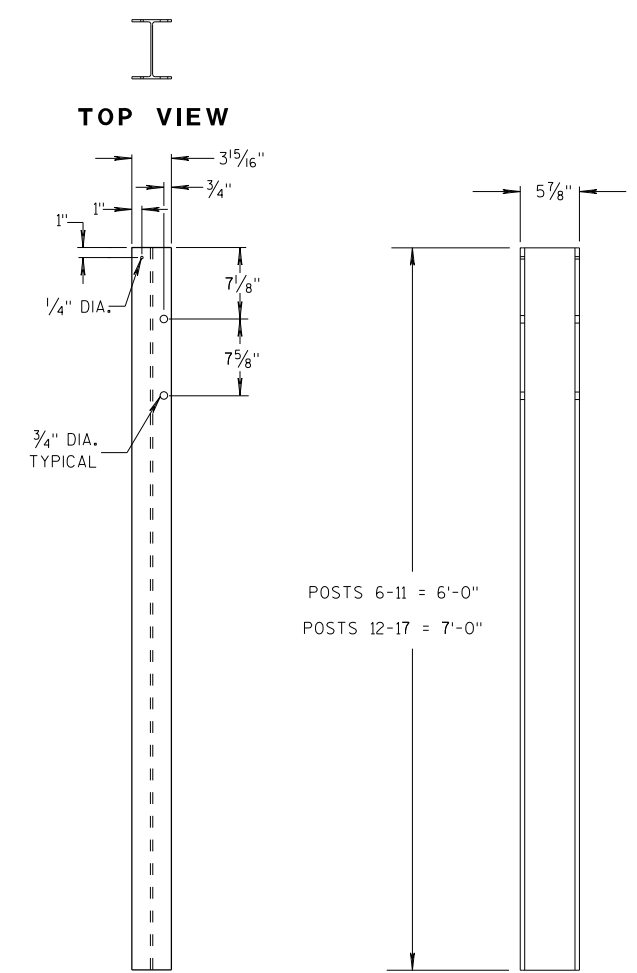
**12'-6" THRIE BEAM SECTION**



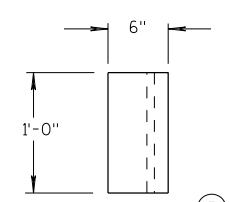
**ALTERNATE WOOD BLOCKOUT DETAIL**



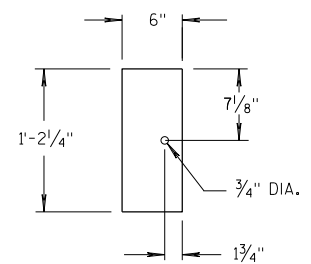
**STEEL POSTS 1-5**



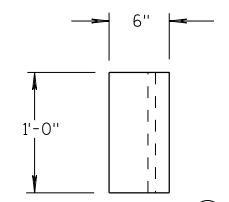
**STEEL POSTS 6-17**



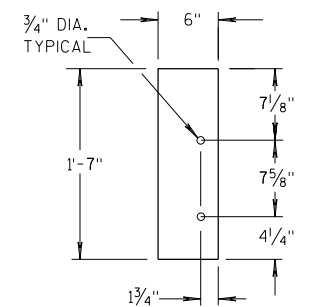
**TOP VIEW**



**FRONT VIEW  
BLOCKOUT  
POSTS 1-5**



**TOP VIEW**



**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 TRANSPORTATION

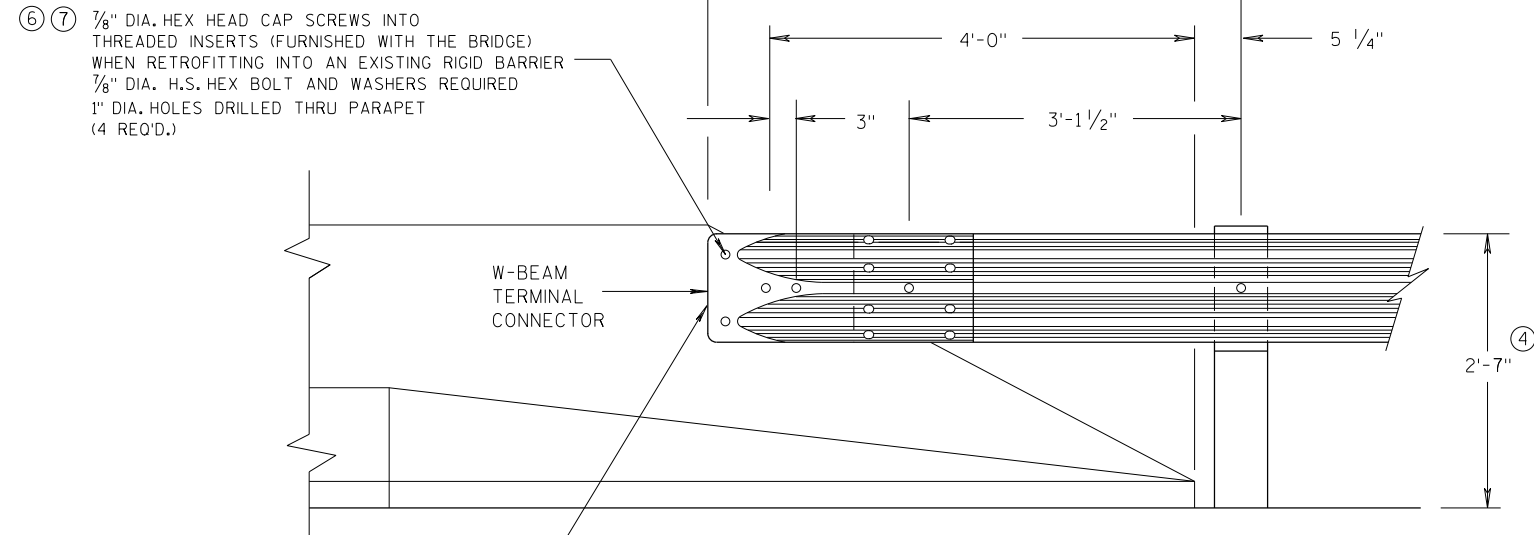
6

6

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

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

ONE WAY  
TRAFFIC



FRONT VIEW

**W BEAM CONNECTION TO  
PARAPETS WITH SLOPED ENDS**

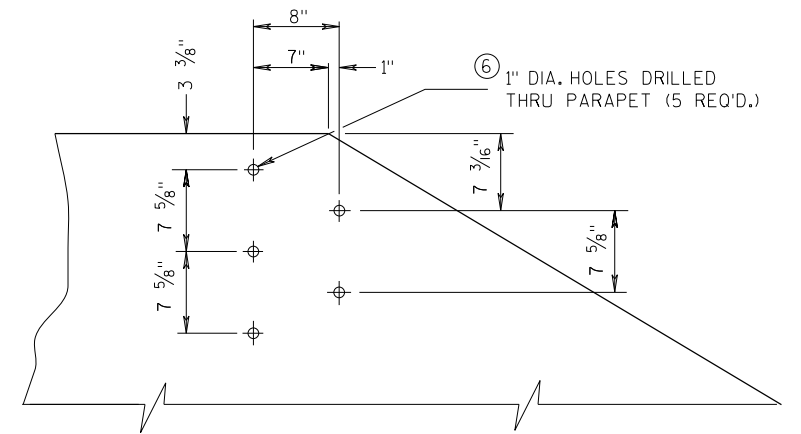
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

WHEN RETROFITTING A TRANSITION  
TO AN EXISTING RIGID BARRIER,  
INSTALL PLATE WASHERS ON  
BACKSIDE OF RIGID BARRIER.

⑥ ⑦ 7/8" DIA. HEX HEAD CAP SCREWS INTO  
THREADED INSERTS (FURNISHED WITH THE BRIDGE)  
WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER  
7/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED  
1" DIA. HOLES DRILLED THRU PARAPET  
(4 REQ'D.)

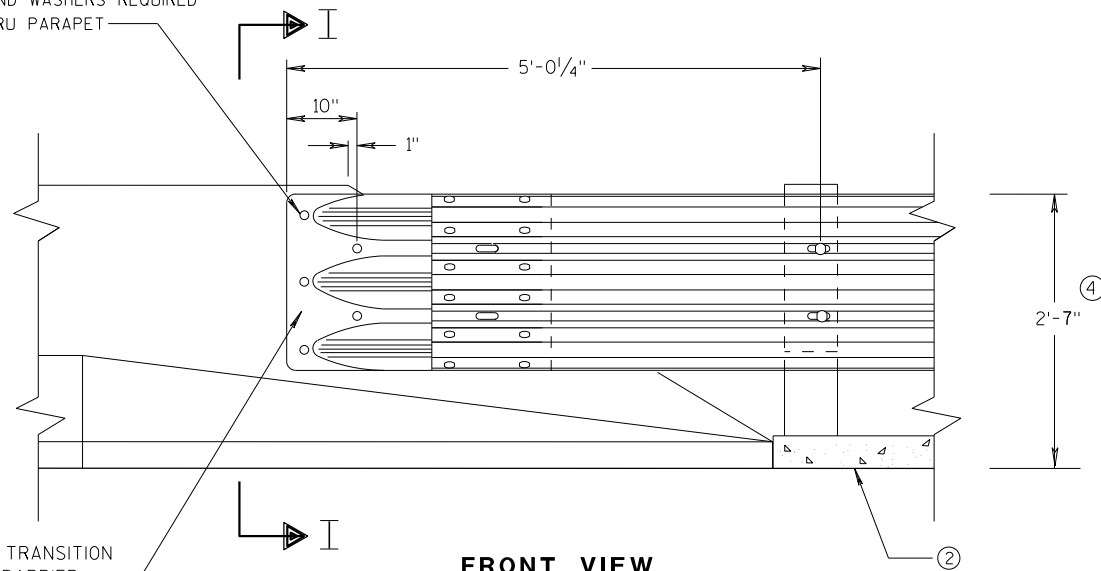
**GENERAL NOTES**

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



DRILL HOLE LOCATION AND PATTERN  
FOR THRIE BEAM CONNECTION

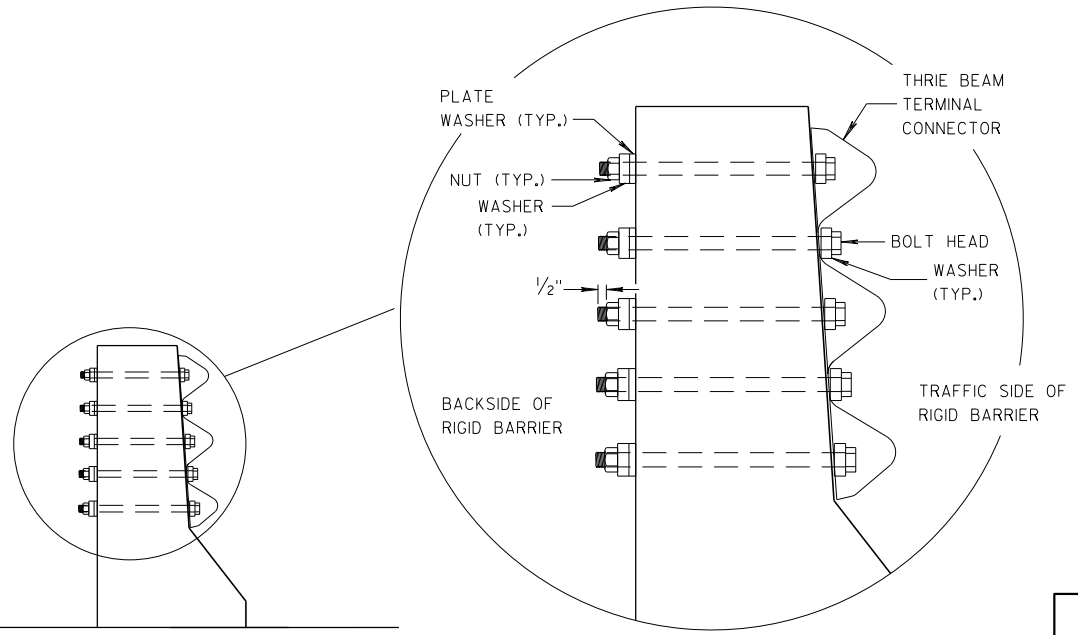
⑥ ⑦ 7/8" DIA. HEX HEAD CAP SCREWS INTO  
THREADED INSERTS (FURNISHED WITH THE BRIDGE)  
WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER  
7/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED  
1" DIA. HOLES DRILLED THRU PARAPET  
(5 REQ'D.)



FRONT VIEW

**THRIE BEAM CONNECTION TO BRIDGE  
PARAPETS WITH SLOPED ENDS**

WHEN RETROFITTING A TRANSITION  
TO AN EXISTING RIGID BARRIER,  
INSTALL PLATE WASHERS ON  
BACKSIDE OF RIGID BARRIER.



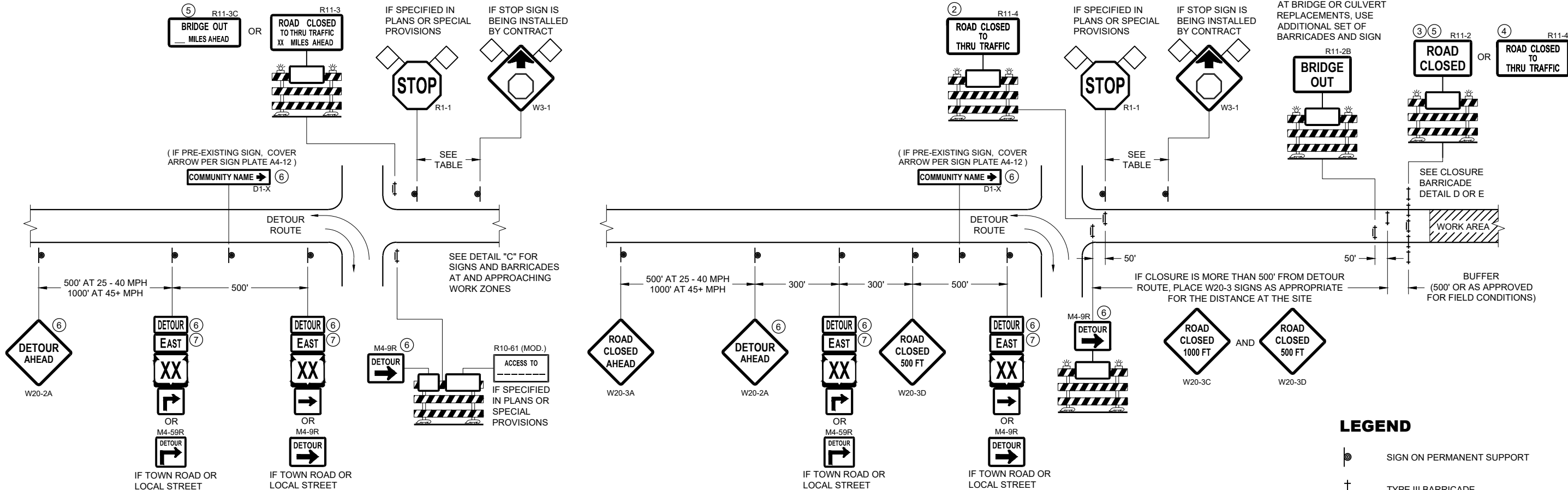
SECTION I-I

**MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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





**DETAIL A  
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

**DETAIL B  
MAINLINE CLOSURE WITH POSTED DETOUR**

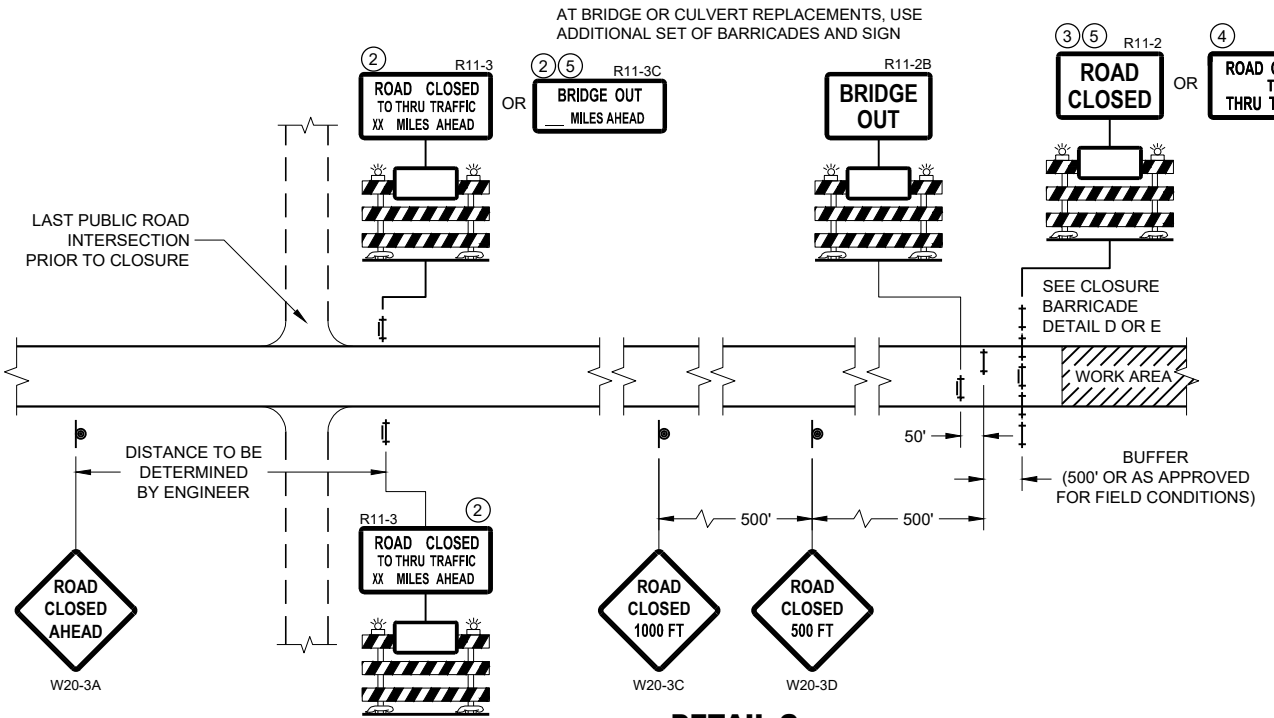
WORK ZONE LESS THAN 1/2 MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

**LEGEND**

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

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

- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1



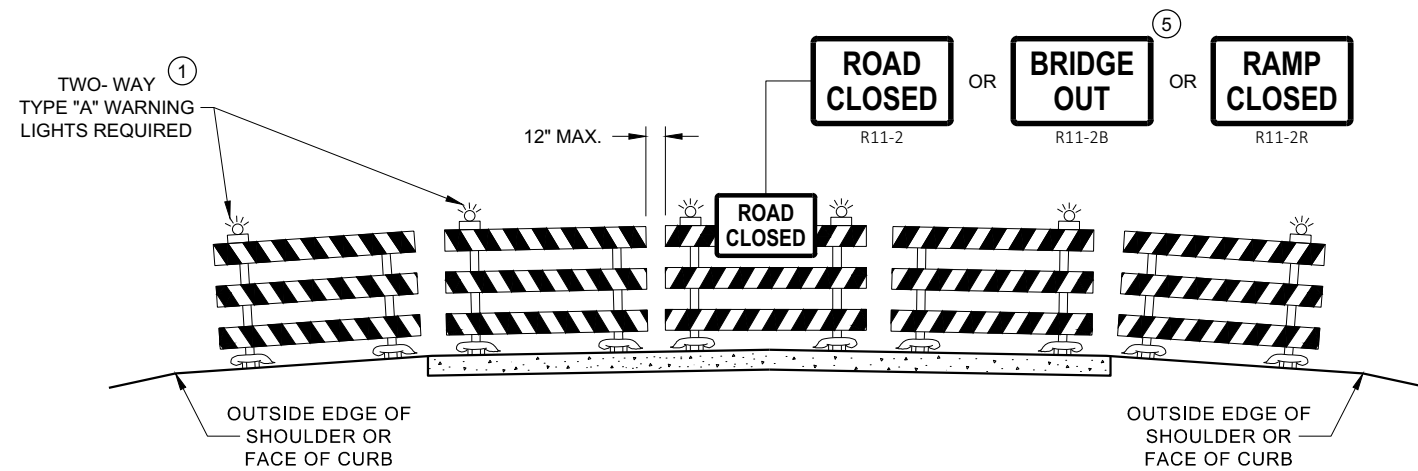
**DETAIL C  
MAINLINE CLOSURE, NO POSTED DETOUR**

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

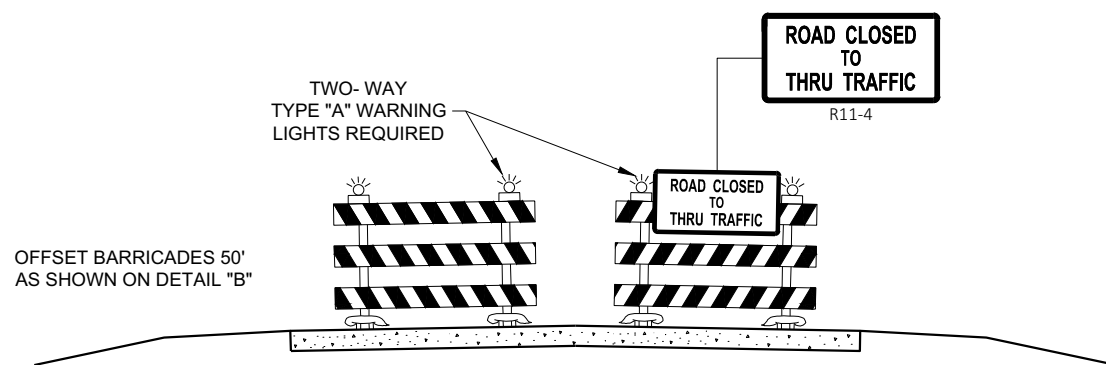
**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



**DETAIL D  
ROAD CLOSURE BARRICADE DETAIL  
APPROACH VIEW**



**DETAIL E  
LANE CLOSURE BARRICADE DETAIL  
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

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

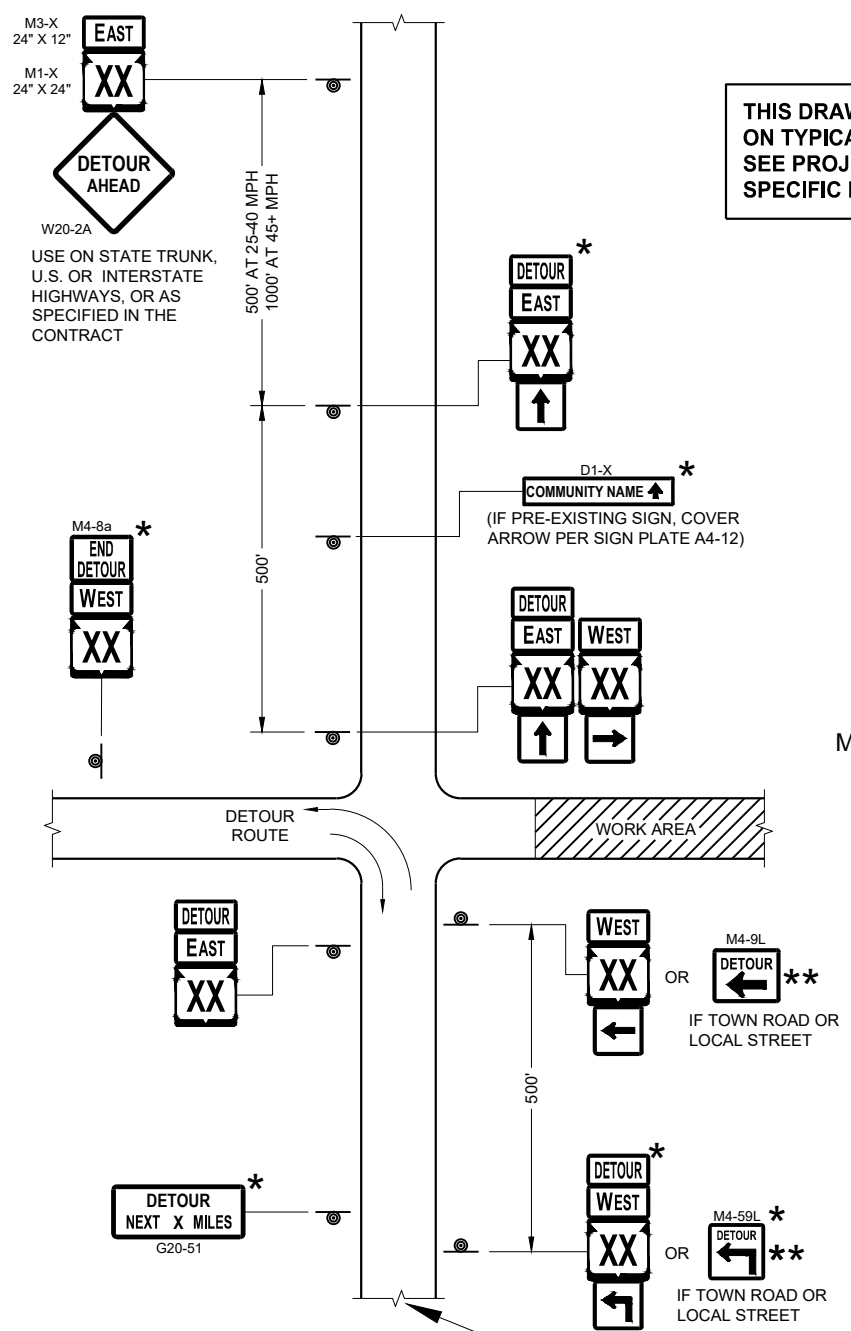
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- ③ FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- ④ FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- ⑤ FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- ⑥ INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- ⑦ "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

**BARRICADES AND SIGNS  
FOR  
VARIOUS CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



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

**LEGEND**

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

**GENERAL NOTES**

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

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

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

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

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

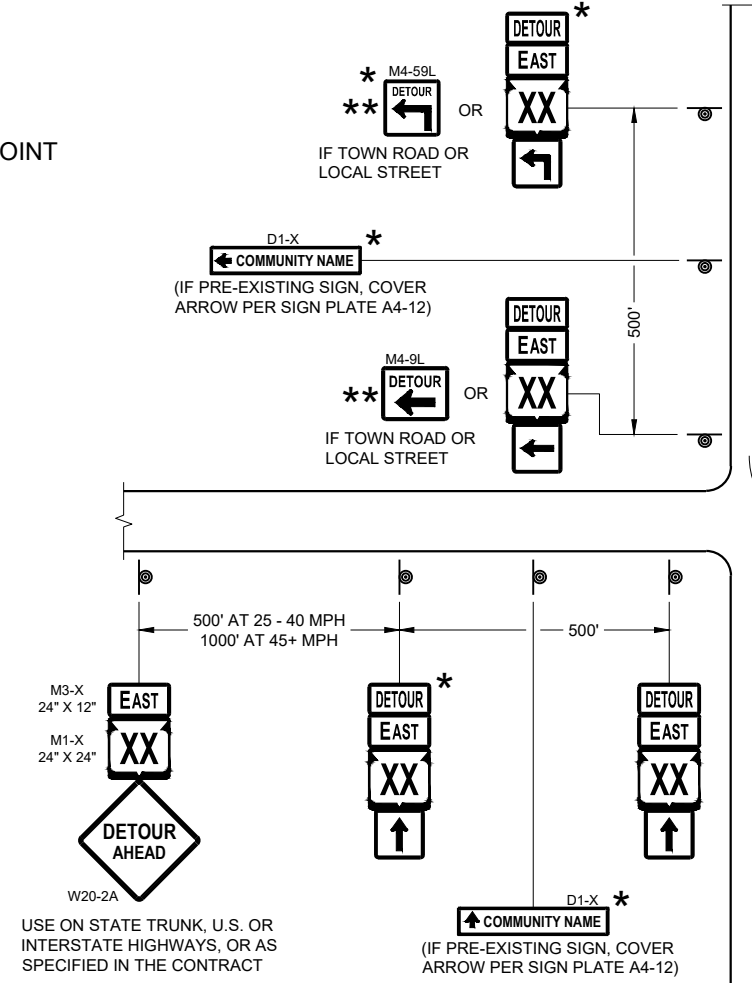
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

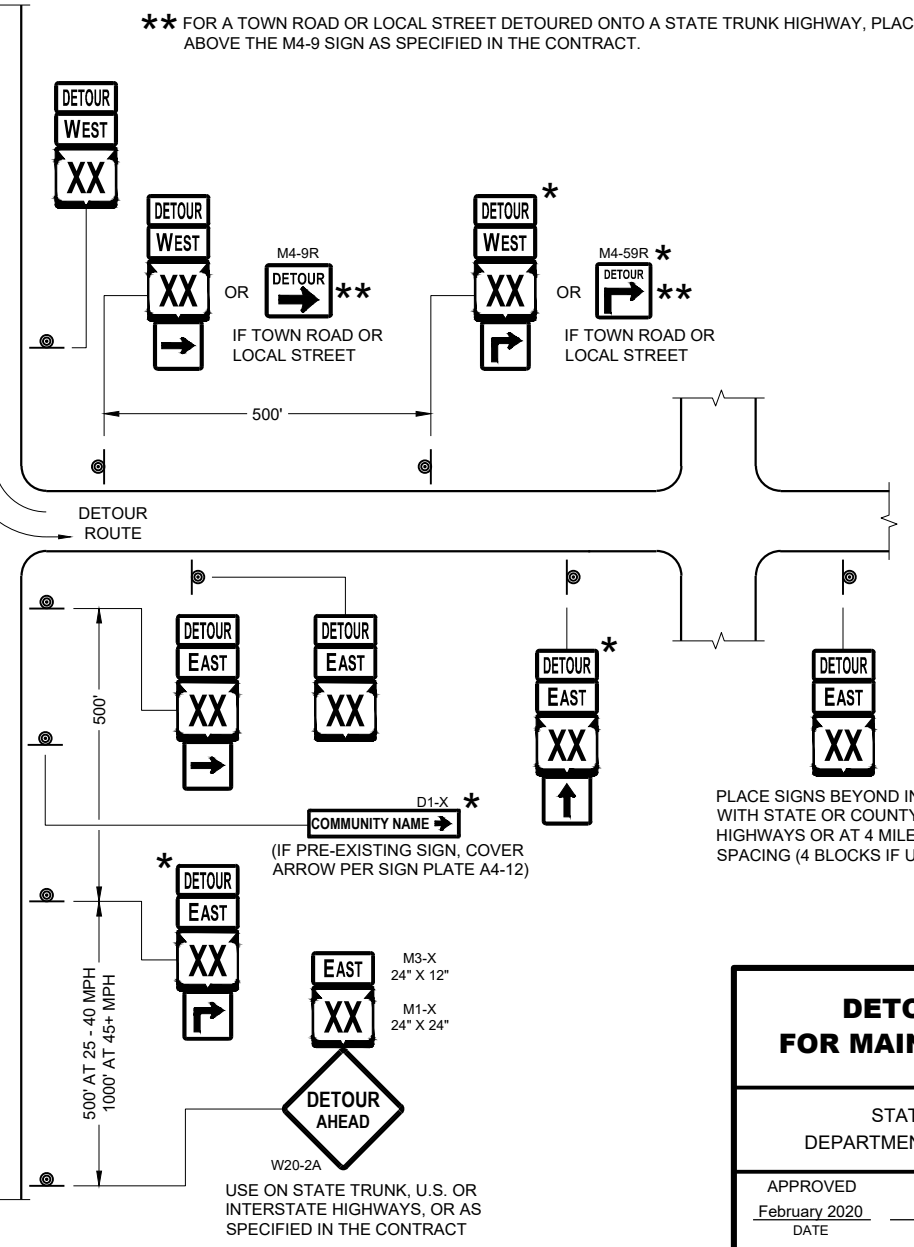
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING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

- \* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- \*\* FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

MATCH POINT



**DETAIL F  
DETOUR SIGNING**



PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA)

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

DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

### GENERAL NOTES

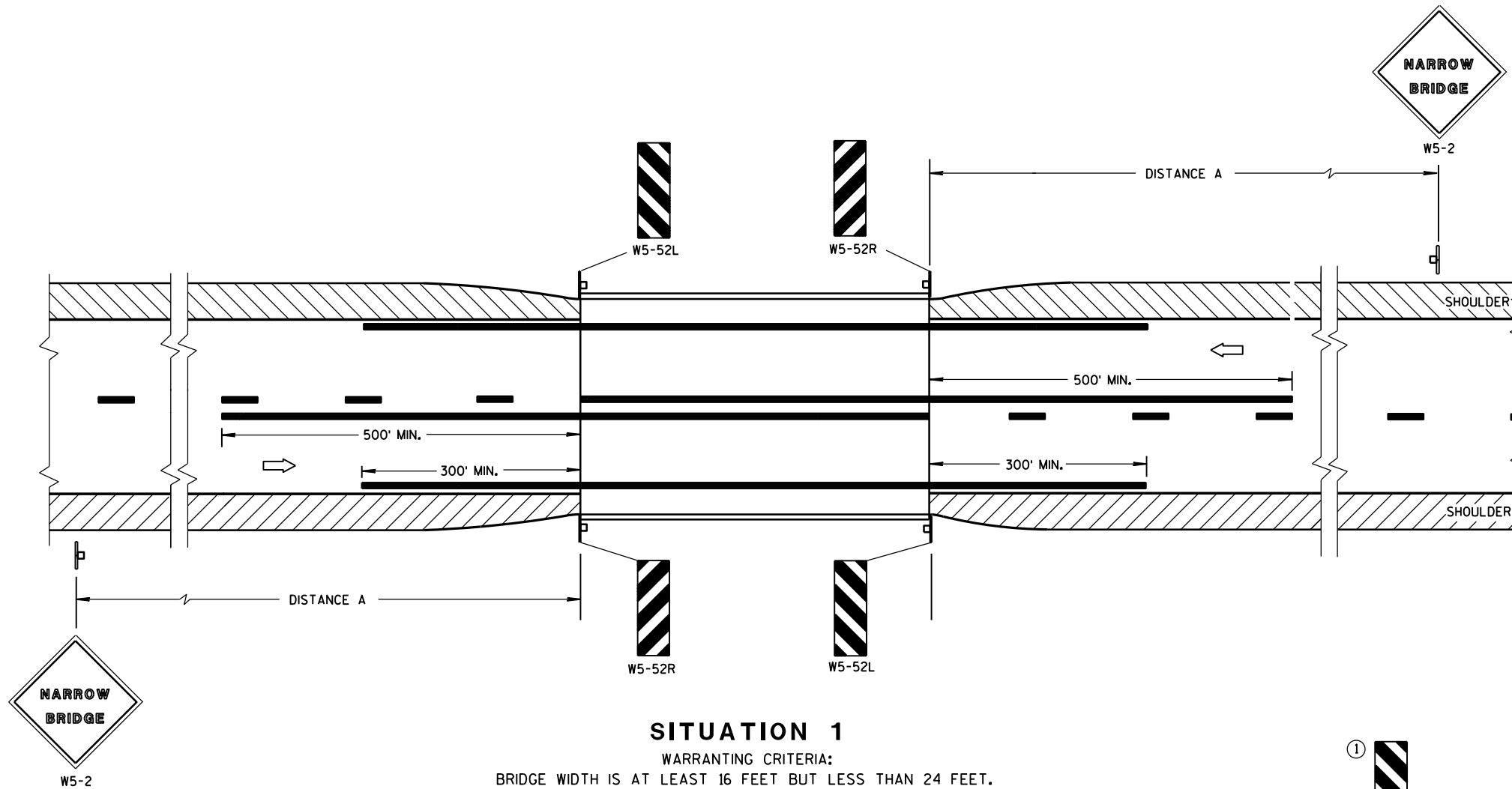
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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.

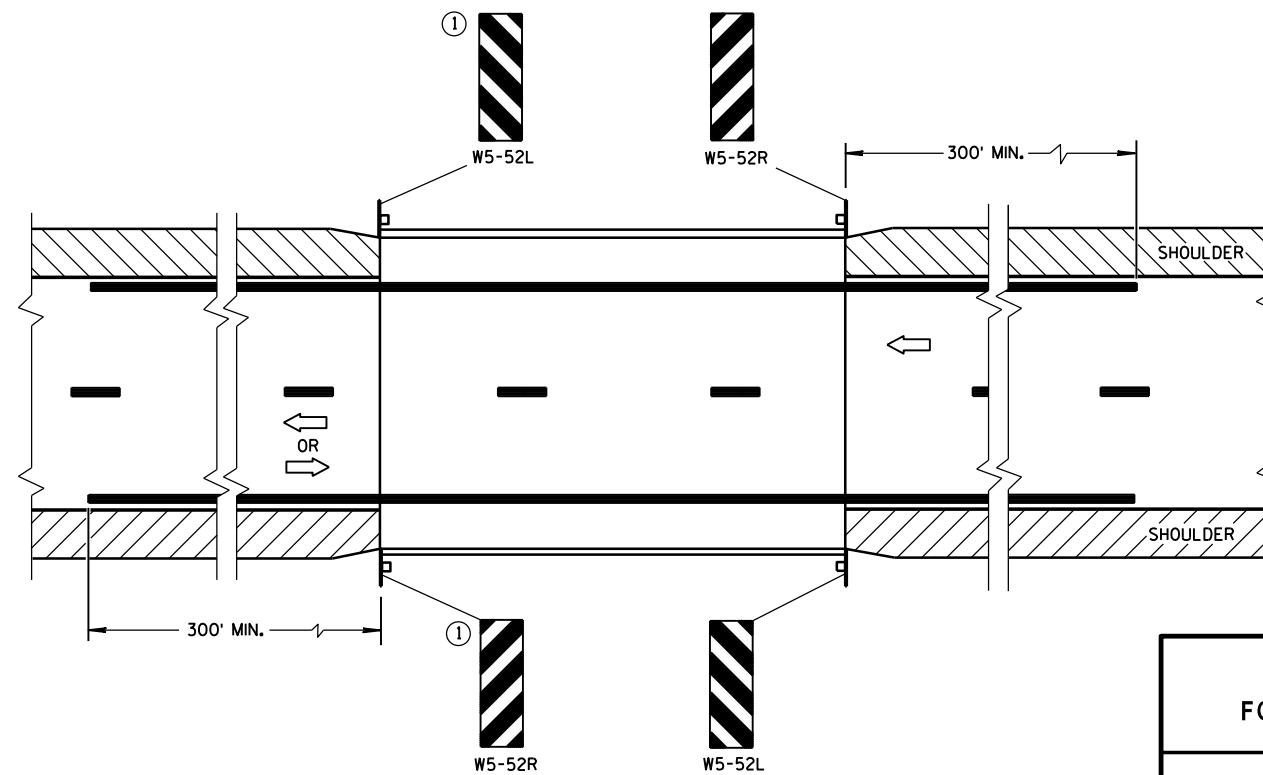
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



### SITUATION 1

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



### SITUATION 2

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

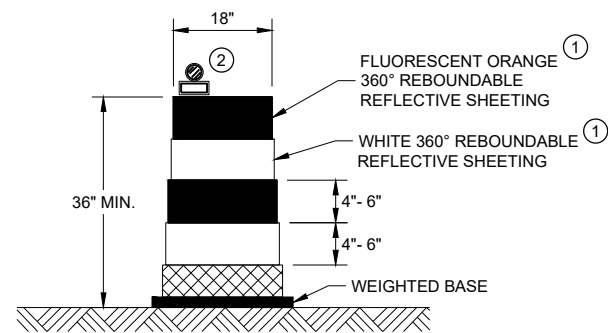
DISTANCE TABLE

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

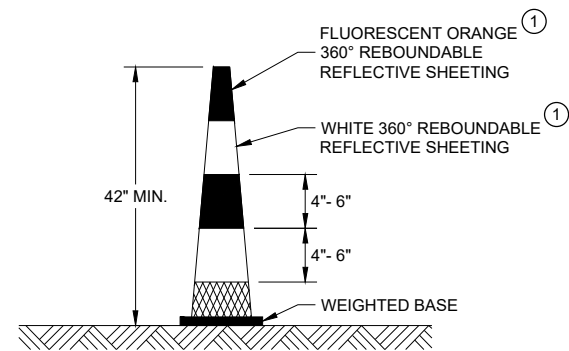
### SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

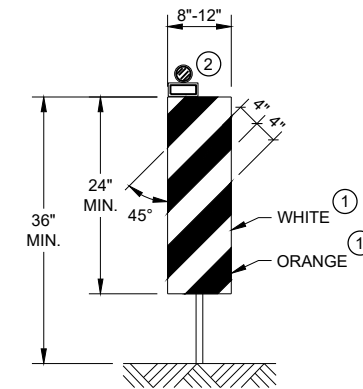


**DRUM**



**42" CONE**

DO NOT USE IN TAPERS  
 1/2 SPACING OF DRUMS

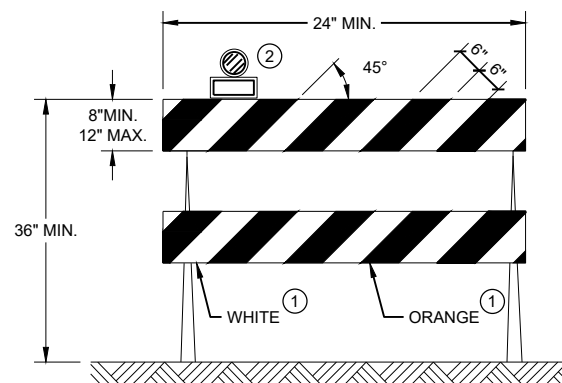


**VERTICAL PANEL**

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

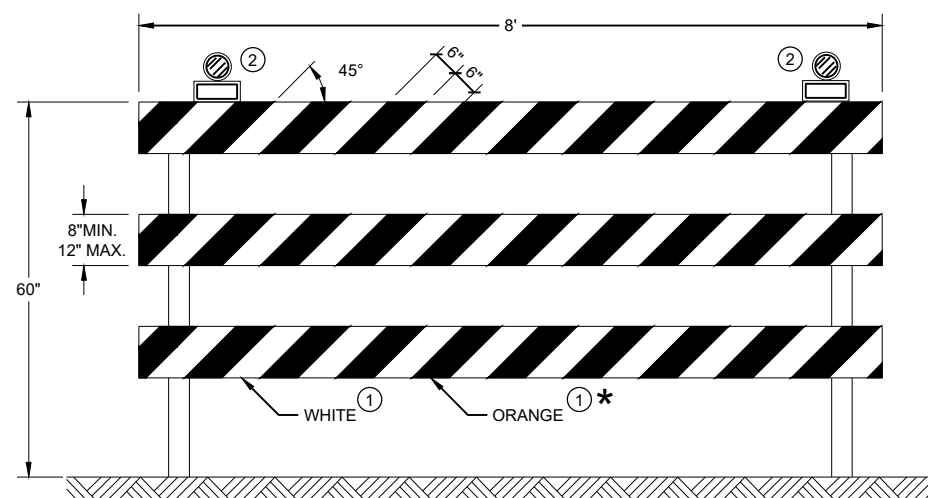
**GENERAL NOTES**

- 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 II BARRICADE**

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



**TYPE III BARRICADE**

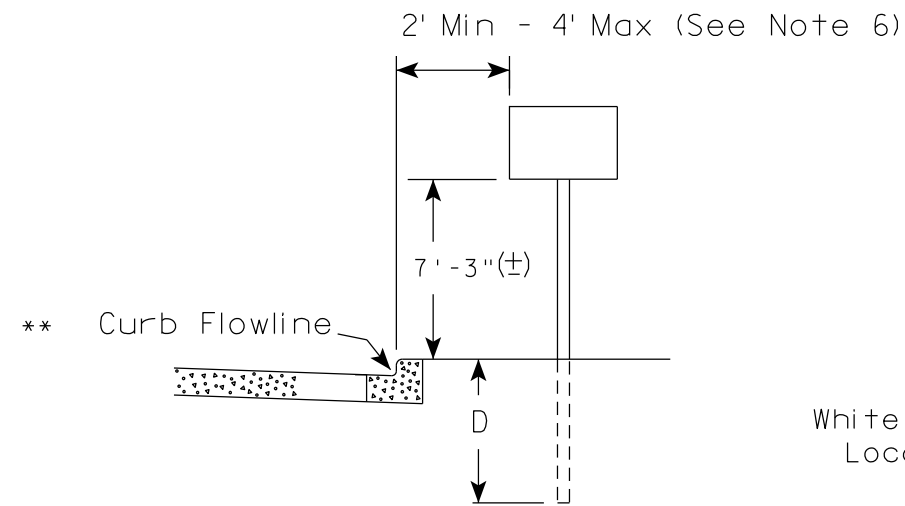
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

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

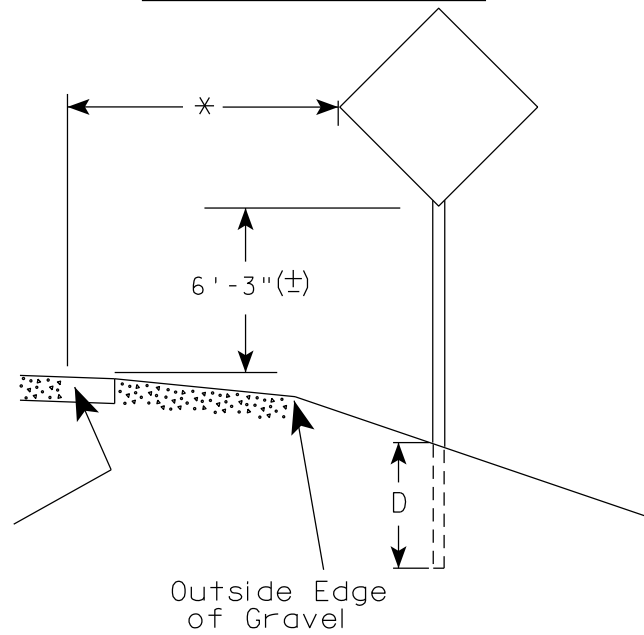
<b>CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	

URBAN AREA

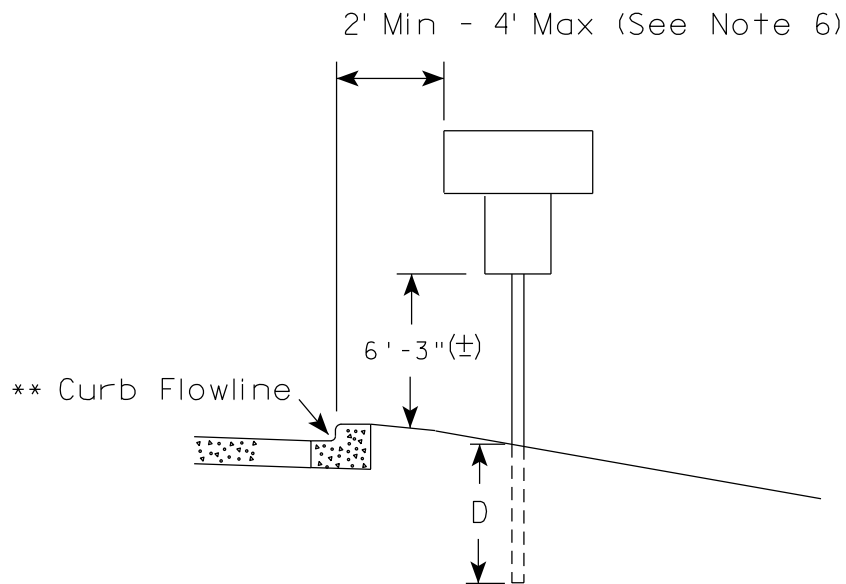
RURAL AREA (See Note 2)



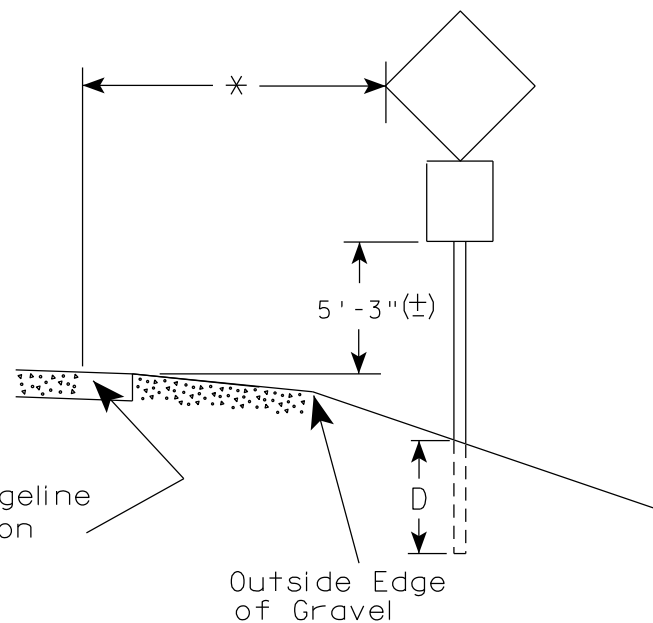
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

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

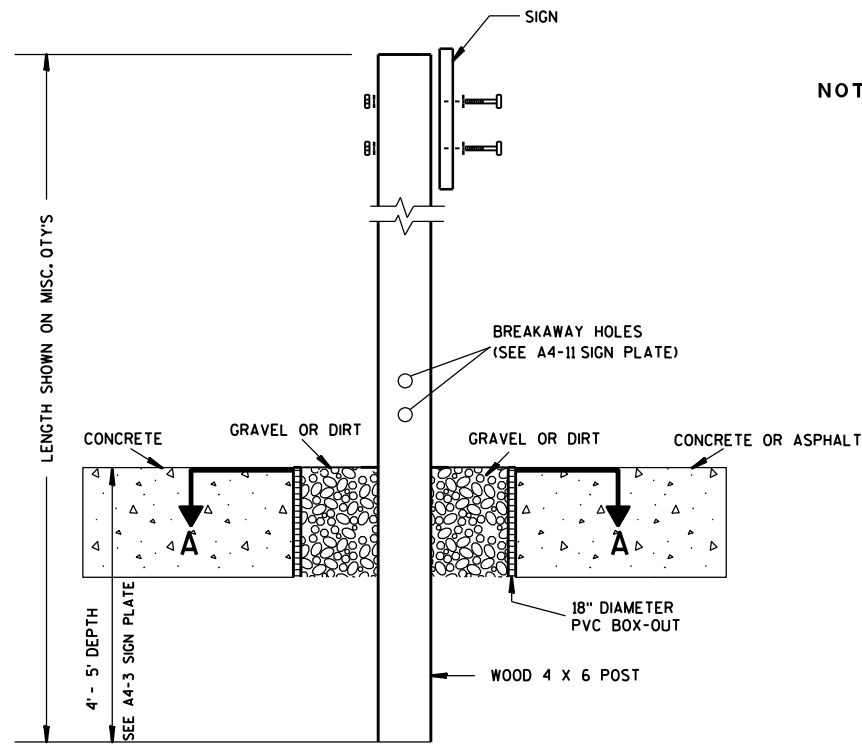
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

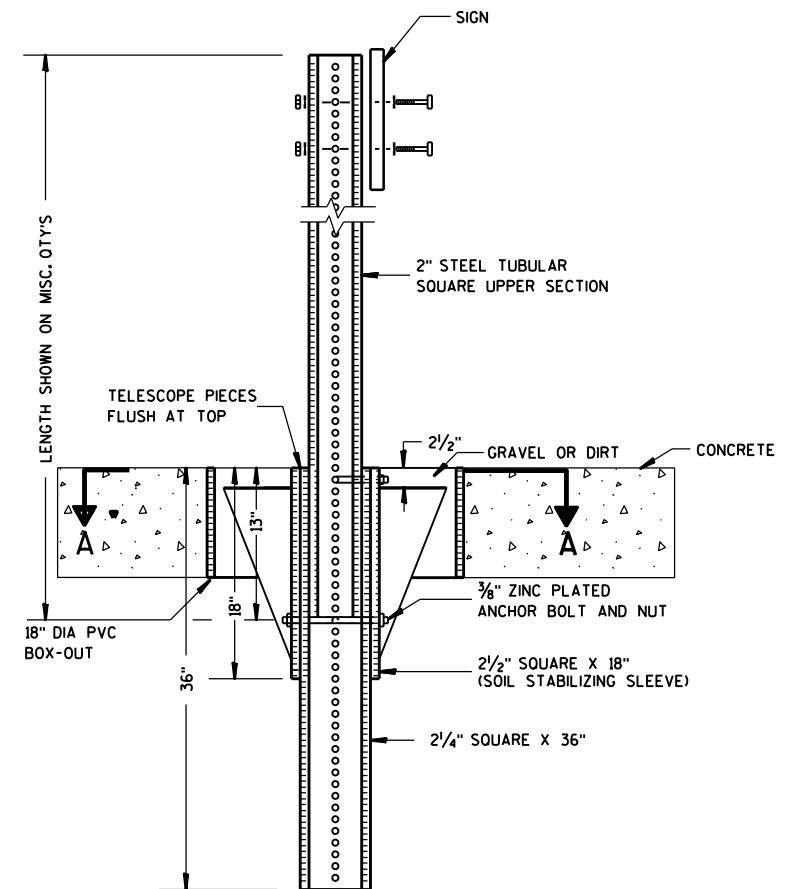
DATE 5/13/2020 PLATE NO. A4-3.22



**ELEVATION VIEW**

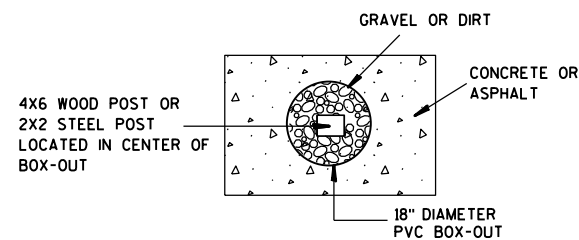
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

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



**ELEVATION VIEW**

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



**PLAN VIEW**

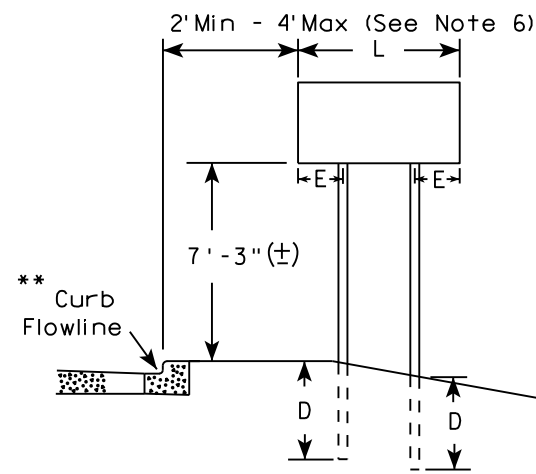
**FOR NEW CONCRETE/ ASPHALT INSTALLATIONS**

<b>SIGN POST BOX-OUTS A4-3B</b>	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
APPROVED <i>Matthew R. Rauch</i> <small>for State Traffic Engineer</small>	
<small>DATE 1/27/14</small>	<small>PLATE NO. A4-3B.1</small>

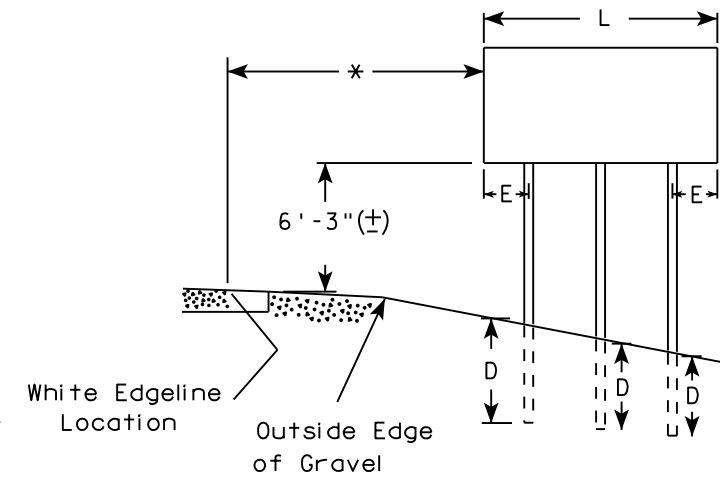
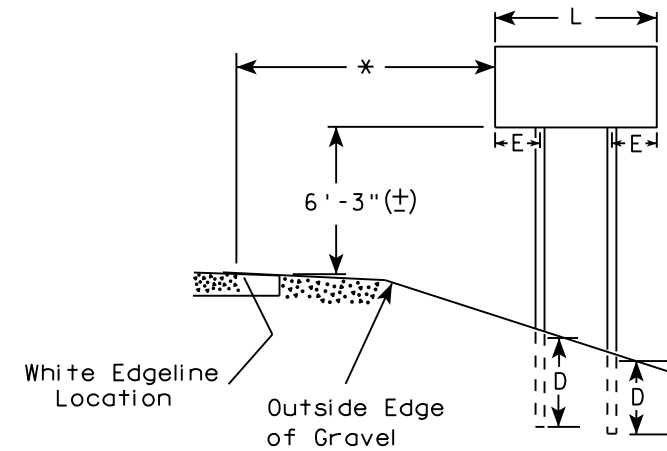
GENERAL NOTES

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

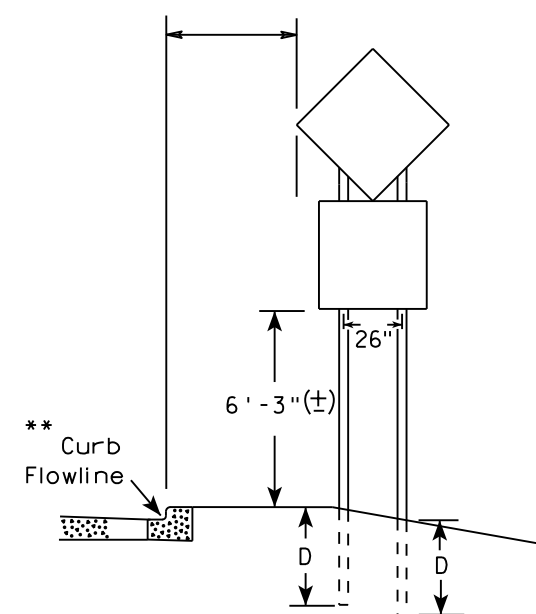
URBAN AREA



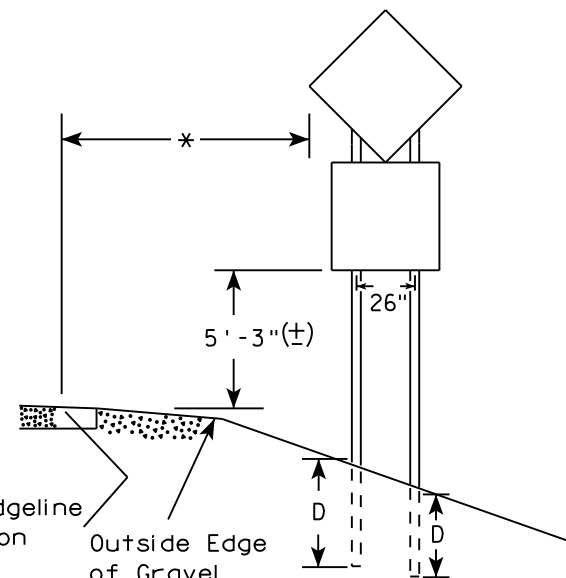
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

\*\*\*

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

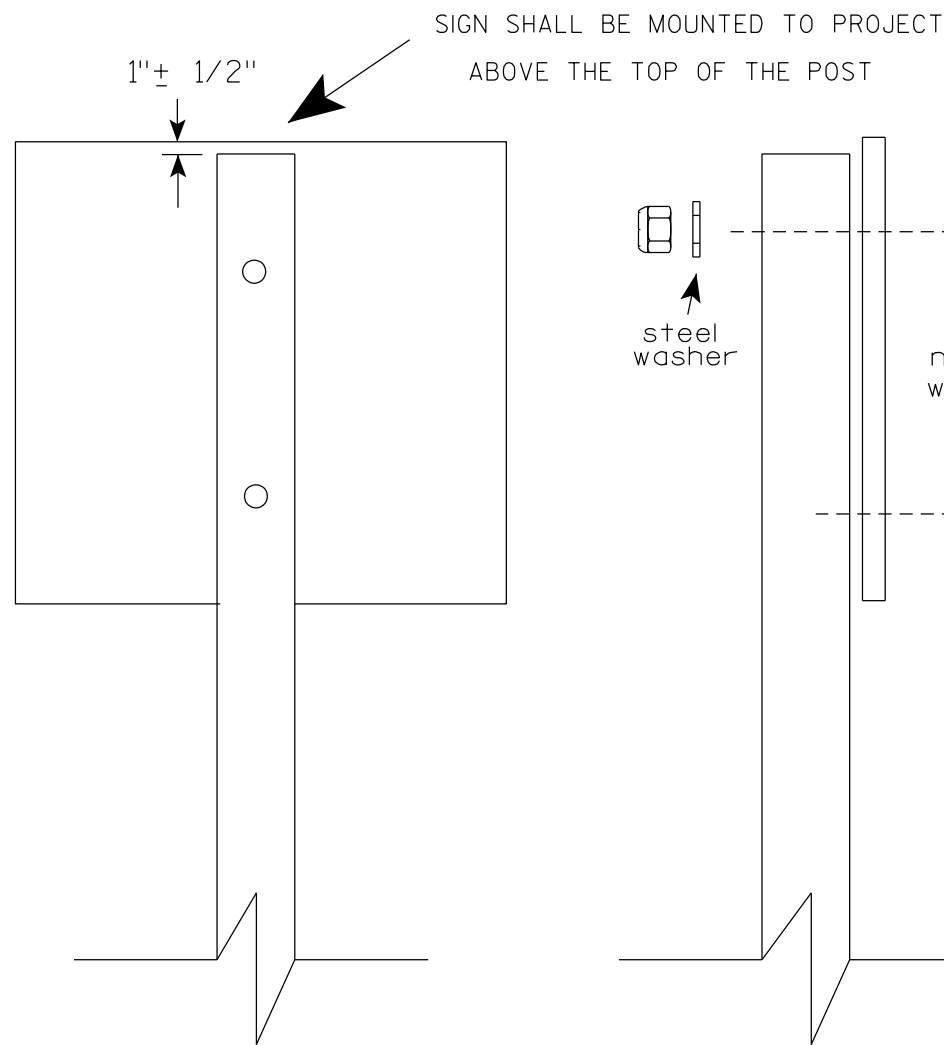
POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION  
 APPROVED *Matthew R. Rauch*  
 For State Traffic Engineer  
 DATE 8/21/17 PLATE NO. A4-4.15





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

- Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

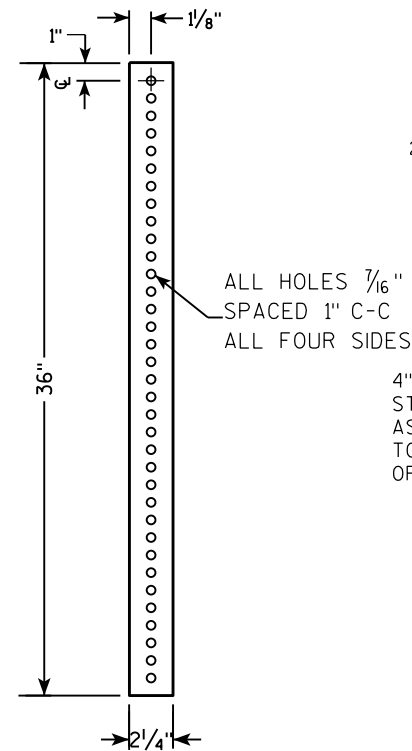
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)  
3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)  
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL  
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
- 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

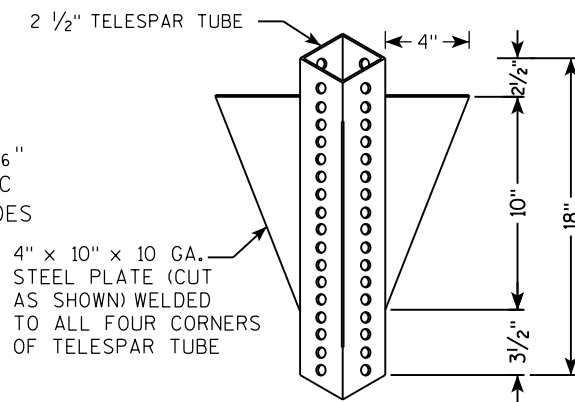
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM**

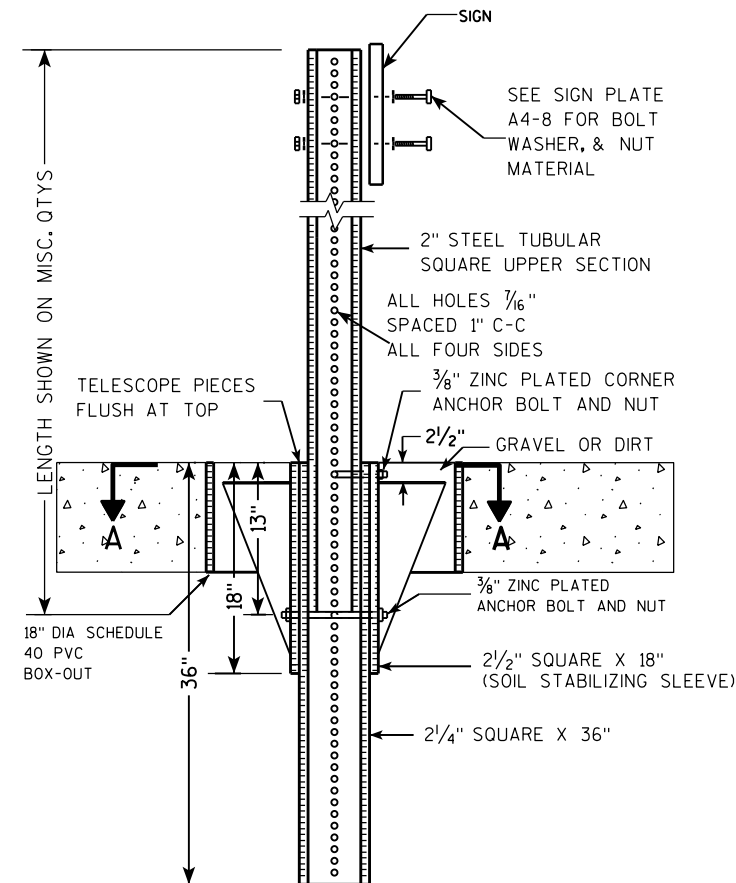
2 1/4" SQUARE  
12 GAUGE  
PERFORATED  
GALVANIZED FINISH



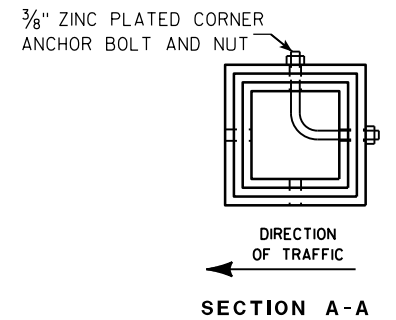
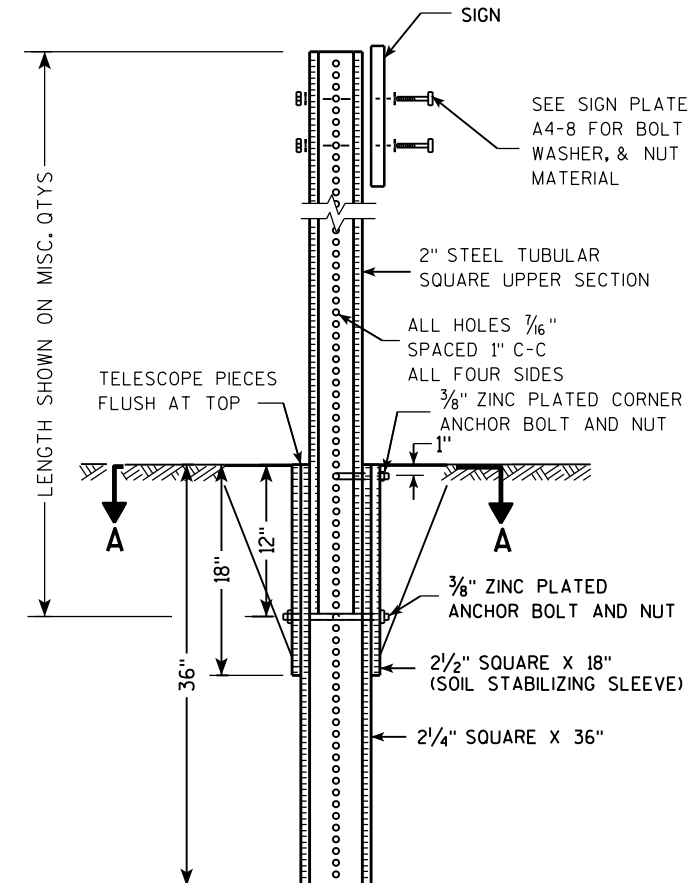
2 1/2" SQUARE  
12 GAUGE  
OMNI-DIRECTIONAL  
PERFORATED  
SOIL STABILIZING SLEEVE  
GALVANIZED FINISH



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



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



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

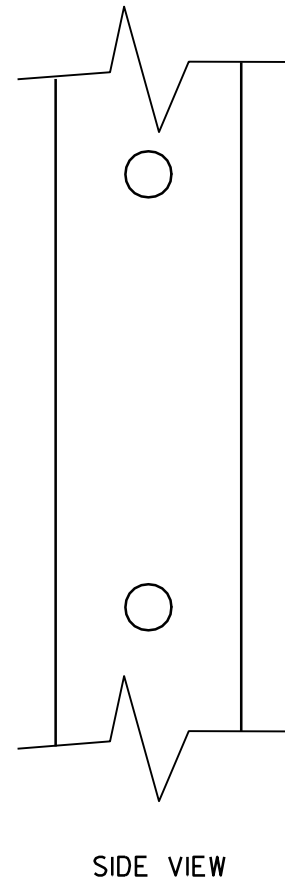
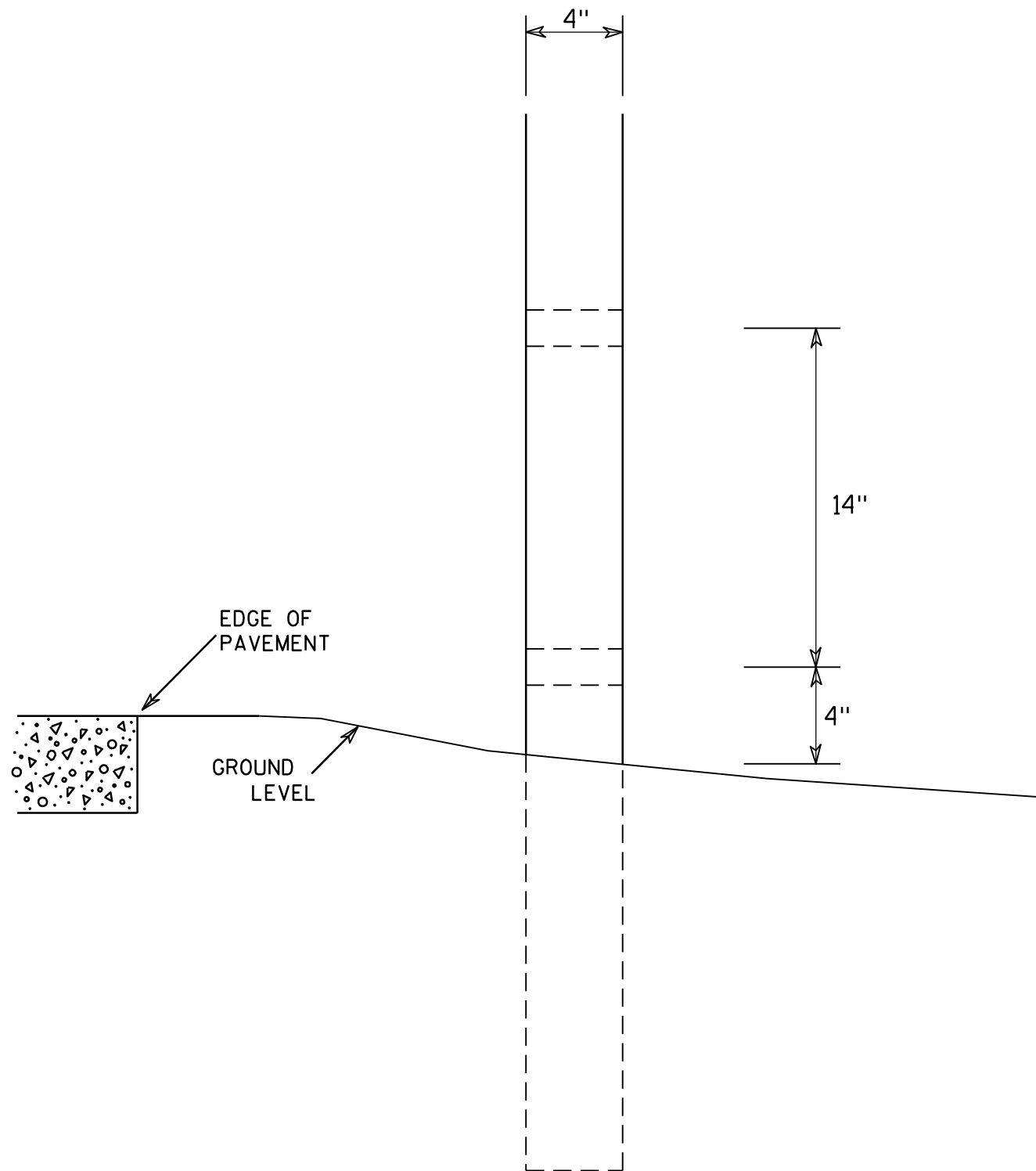
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL  
SIGN POST  
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9



GENERAL NOTES

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

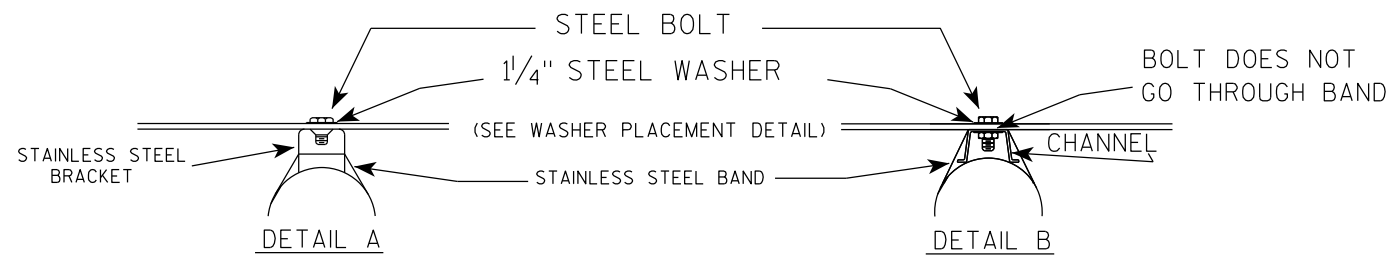
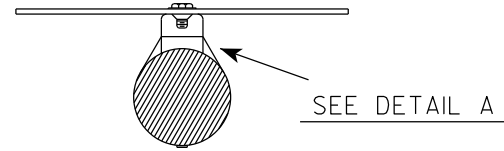
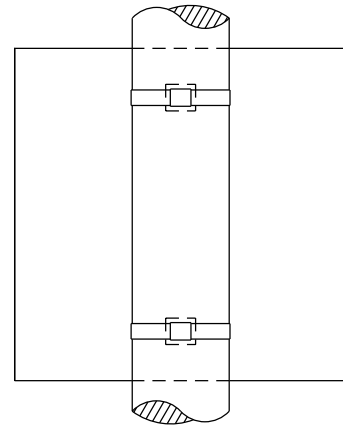
7

7

4 X 6 WOOD POST MODIFICATIONS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE 3/27/97	PLATE NO. A4-11.2

# BANDING

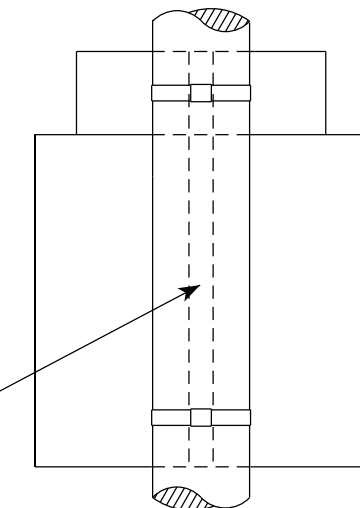
SINGLE SIGN



## GENERAL NOTES

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

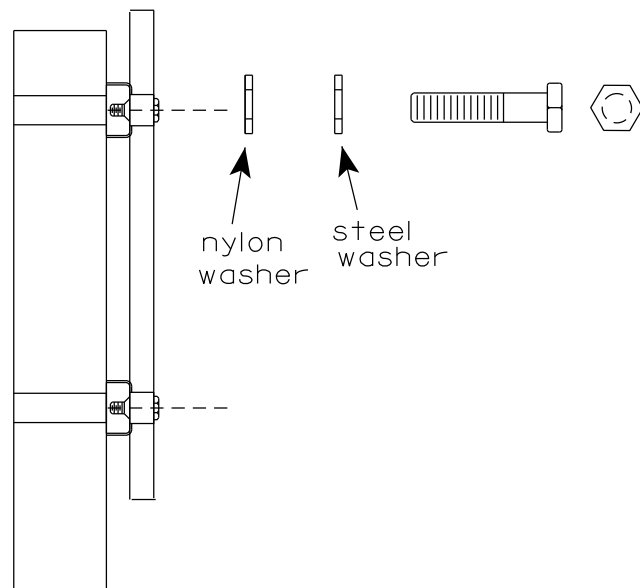
"J" ASSEMBLY



CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET

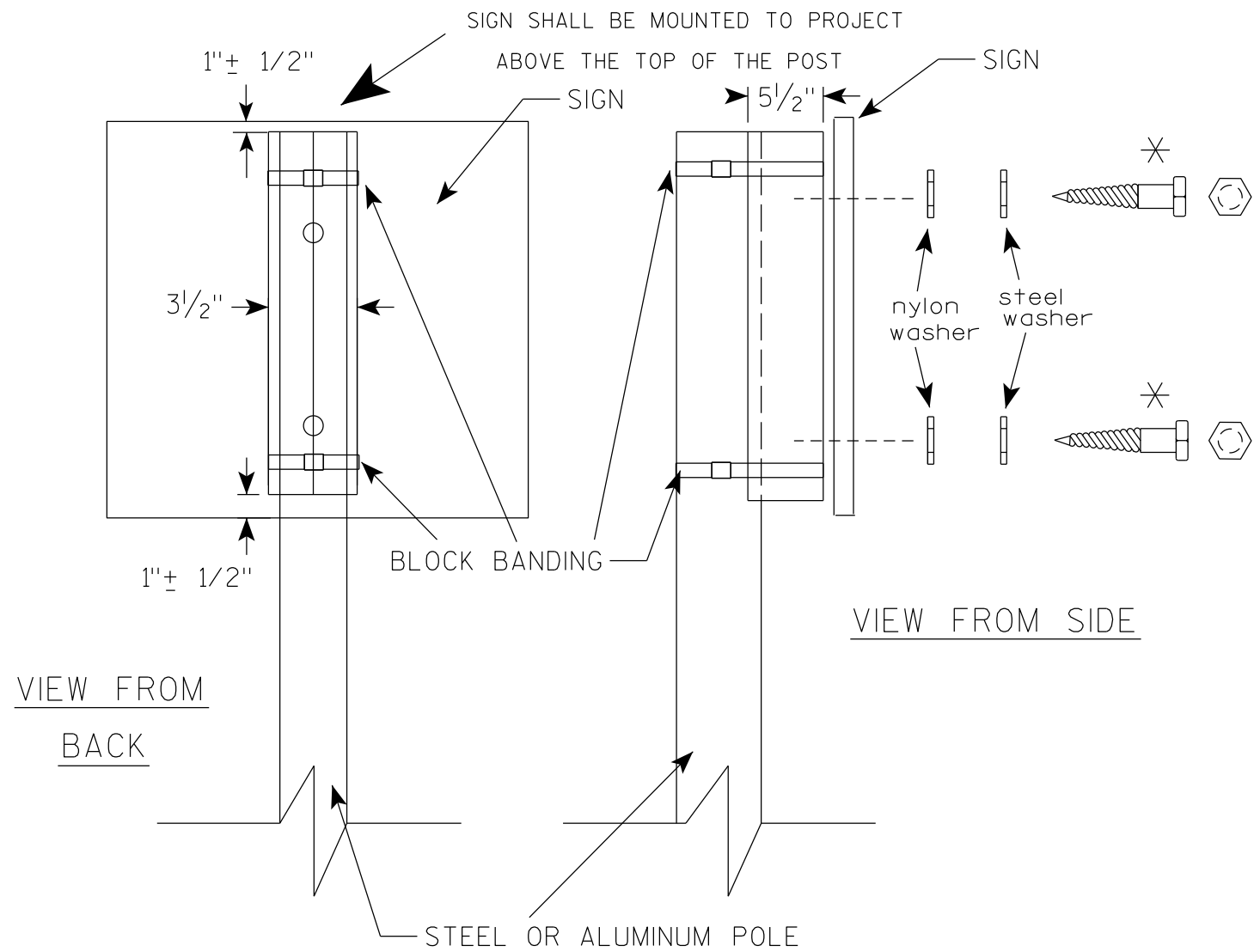


WASHER PLACEMENT



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

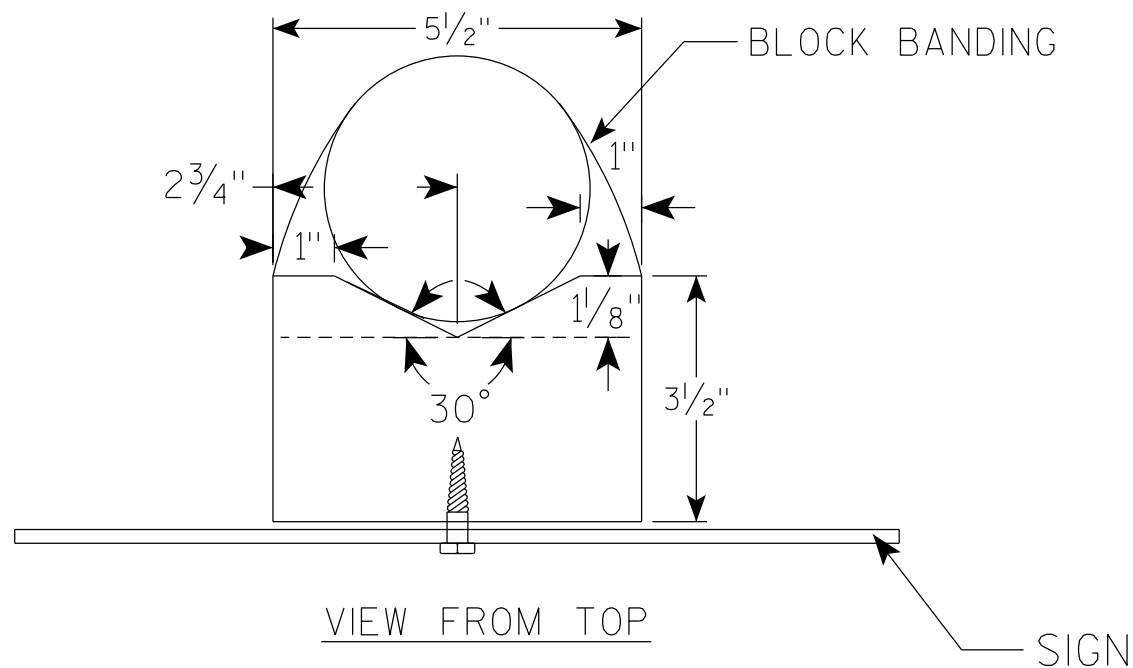
STANDARD SIGN SIGN BANDING DETAILS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 6/10/19	PLATE NO. A5-9.4



GENERAL NOTES

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

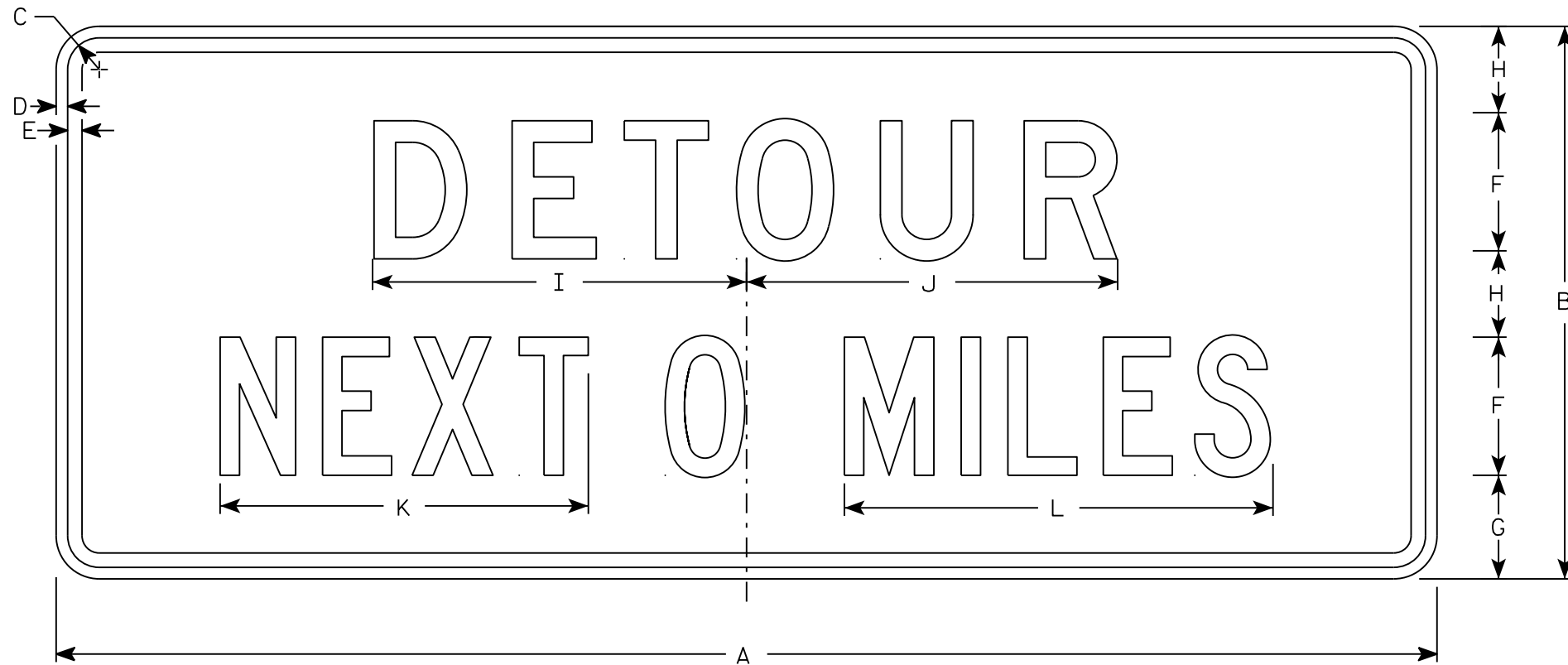
\* LAG BOLTS SHALL BE 3/8" X 2 1/2"



BLOCK BANDING DETAIL ( V-BLOCK OPTION )	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 6/10/19	PLATE NO. A5-10.2

NOTES

1. Sign is Type II - Type F Reflective
2. Color:  
Background - Orange  
Message - Black
3. Message Series - Line 1 is D and Line 2 is C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Round distance to nearest whole Mile and substitute appropriate numerals and optically adjust spacing to achieve proper balance



G20-51

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4	16 1/4	16 1/8	16	18 5/8															10
3																											
4	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4	16 1/4	16 1/8	16	18 5/8															10
5																											

STANDARD SIGN  
G20-51

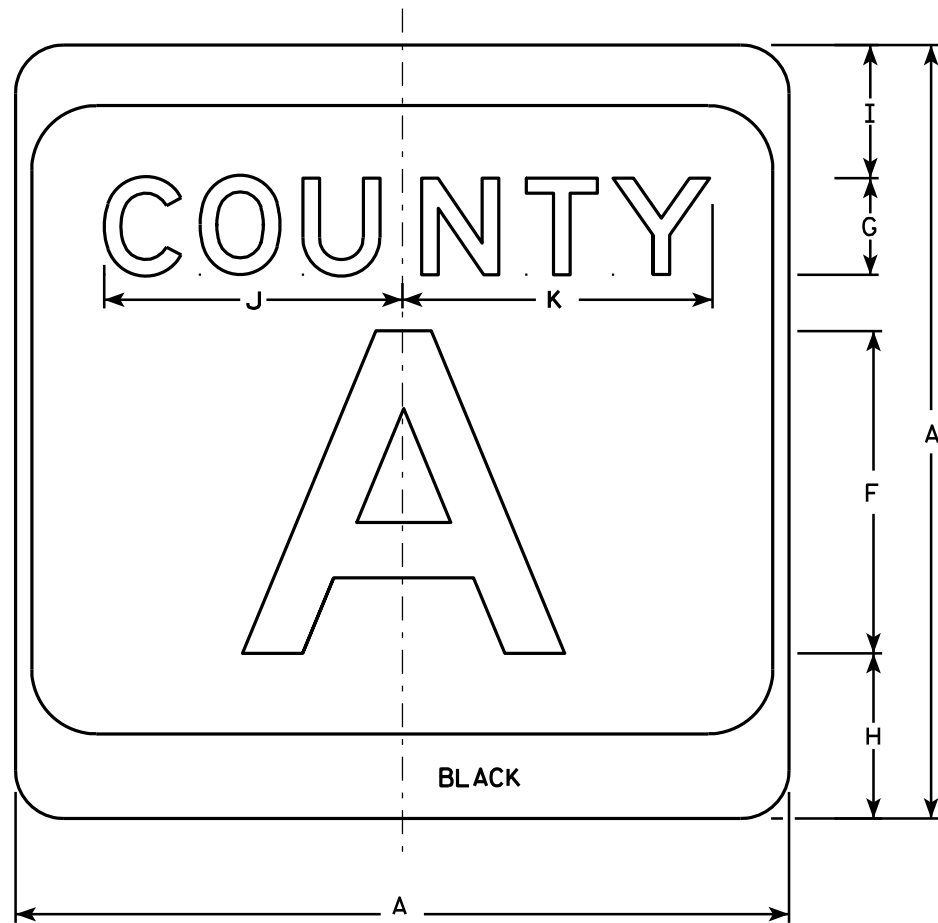
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

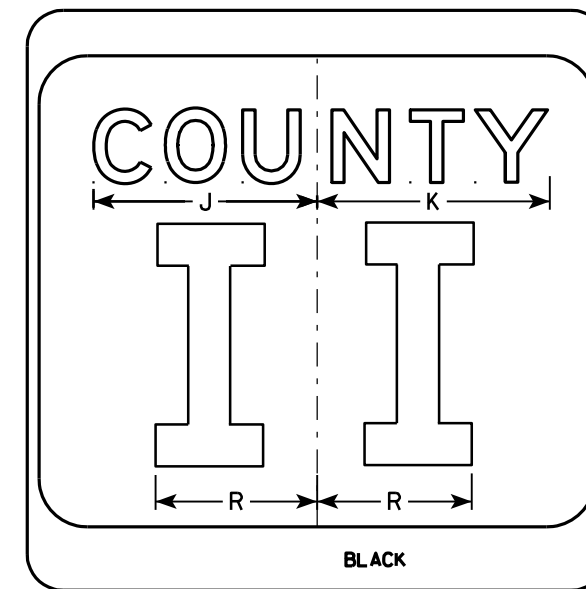
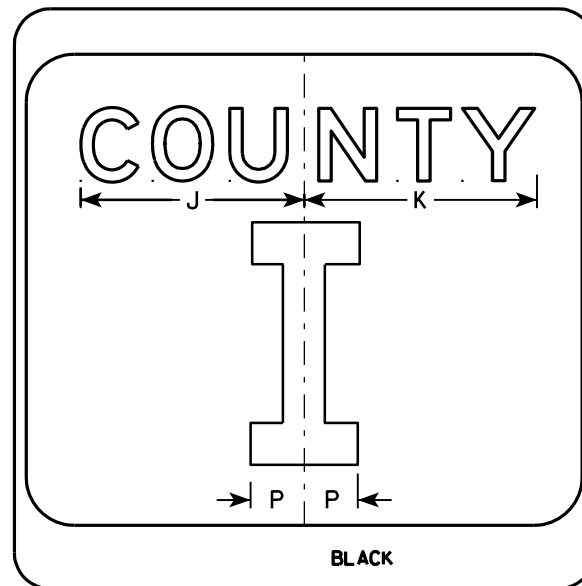
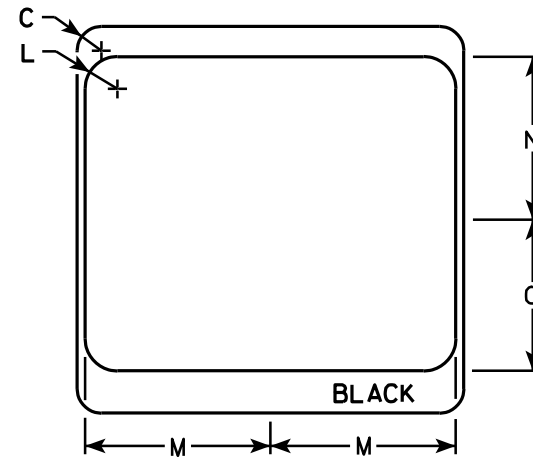
DATE 3/14/17 PLATE NO. G20-51.2

**NOTES**

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



M1-5A



7

7

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

**CTH MARKER**  
**M1-5A FOR ASSEMBLIES**

WISCONSIN DEPT OF TRANSPORTATION

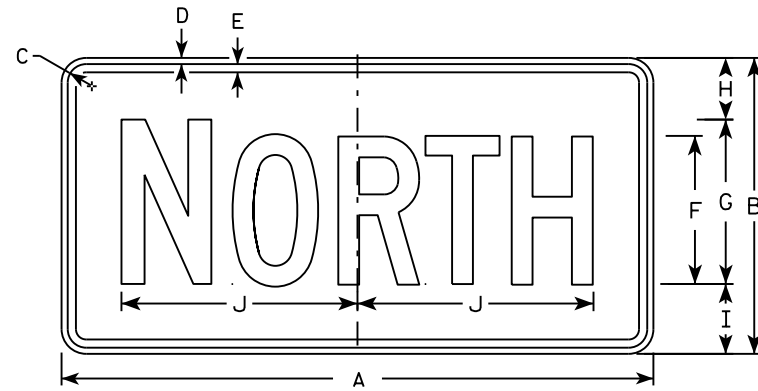
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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

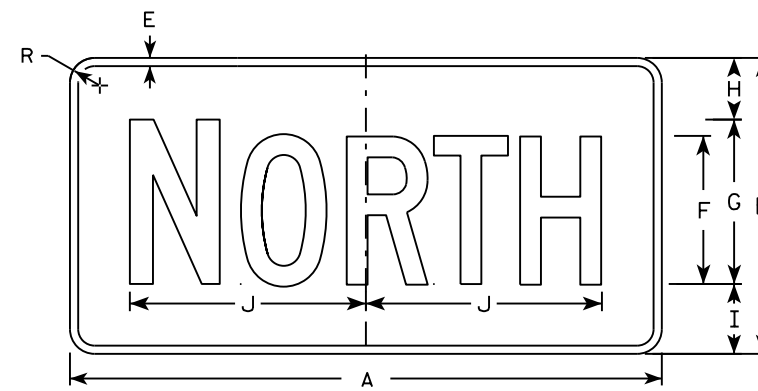
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

NOTES

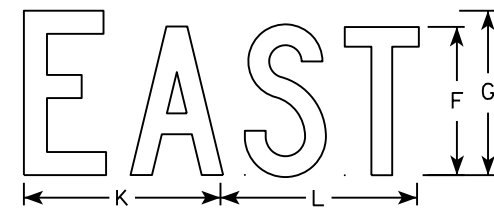
- All Signs Type II - Type H
- Color:
  - Background - See note 5
  - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4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



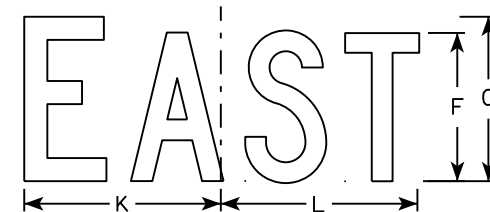
M3-1  
MM3-1  
MP3-1



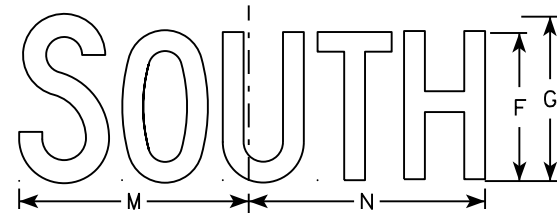
MB3-1  
MK3-1  
MN3-1



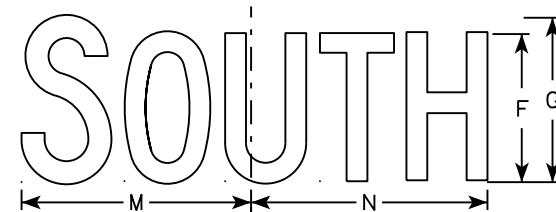
M3-2  
MM3-2  
MP3-2



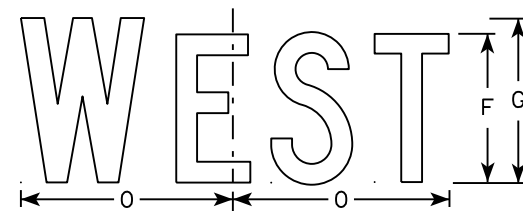
MB3-2  
MK3-2  
MN3-2



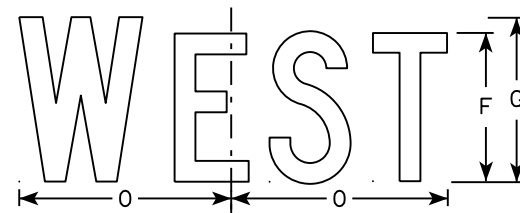
M3-3  
MM3-3  
MP3-3



MB3-3  
MK3-3  
MN3-3



M3-4  
MM3-4  
MP3-4



MB3-4  
MK3-4  
MN3-4

7

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

STANDARD SIGNS  
M3-1 thru M3-4  
SERIES

WISCONSIN DEPT OF TRANSPORTATION

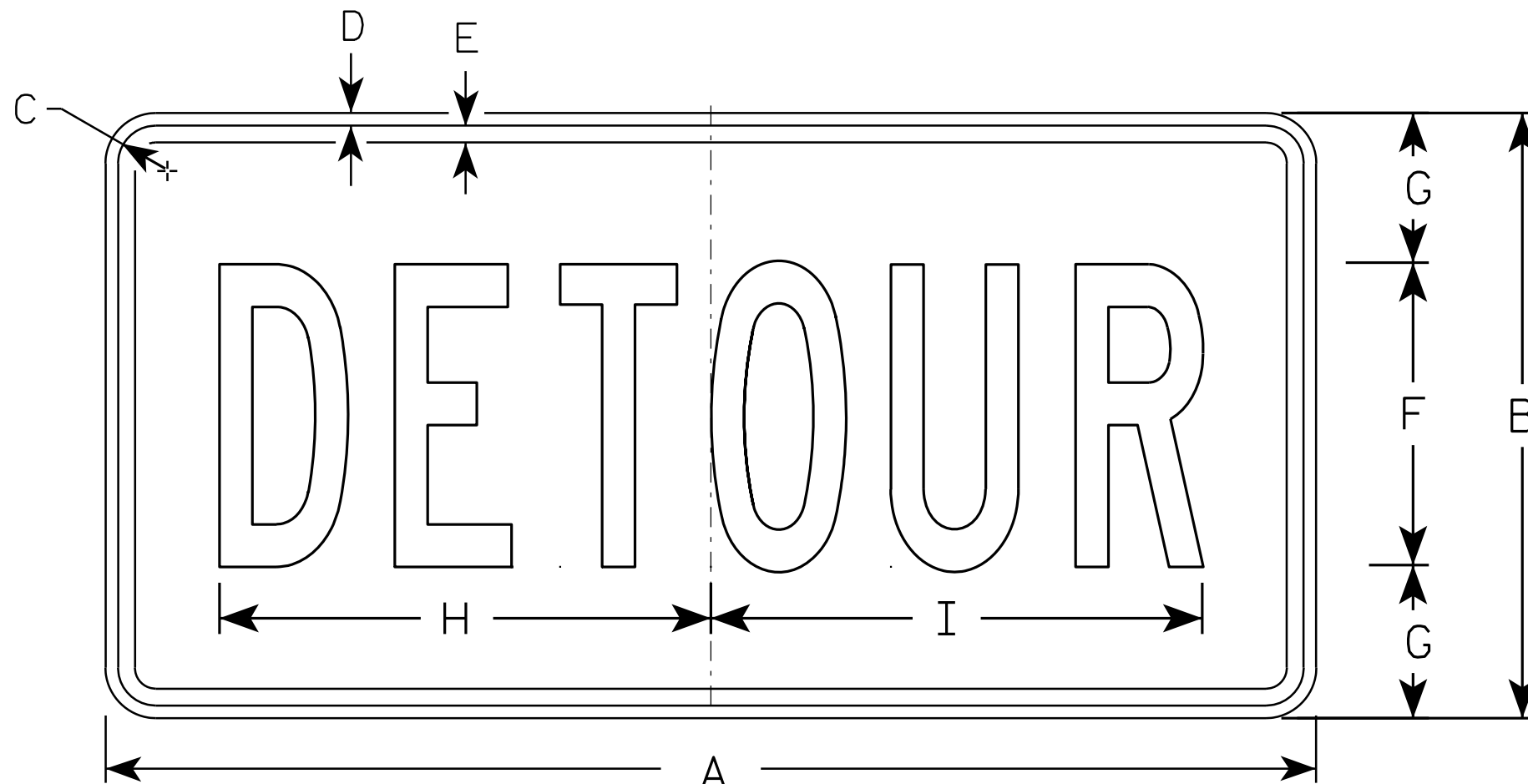
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M3-1.14



NOTES

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



M4-8

7

7

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

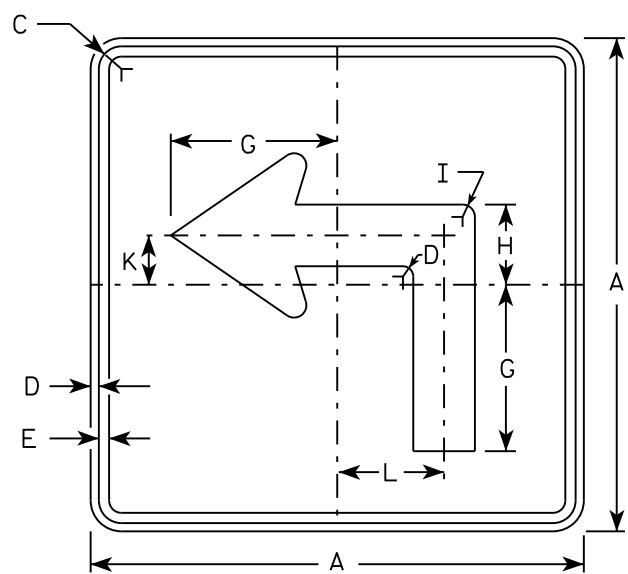
**STANDARD SIGN**  
**M4-8**

WISCONSIN DEPT OF TRANSPORTATION

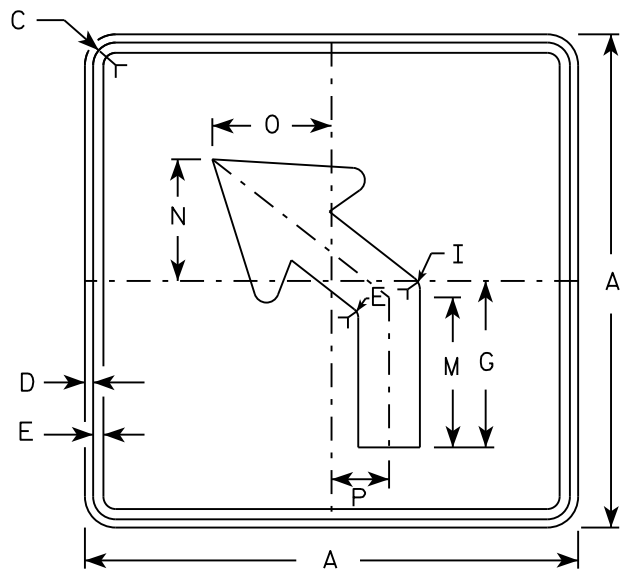
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

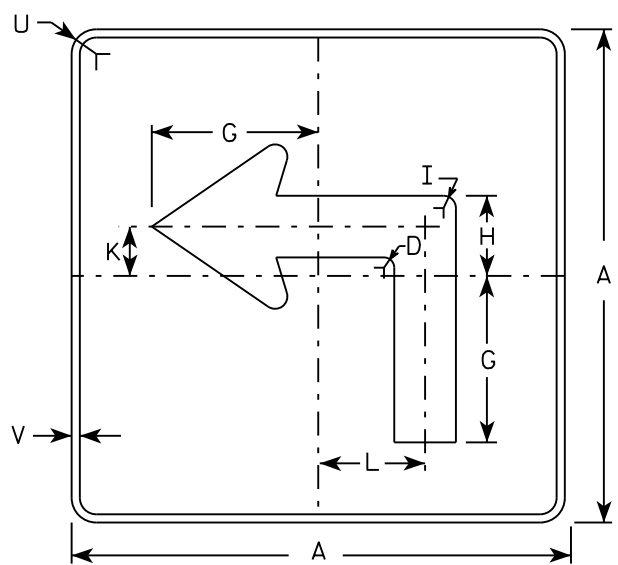
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**



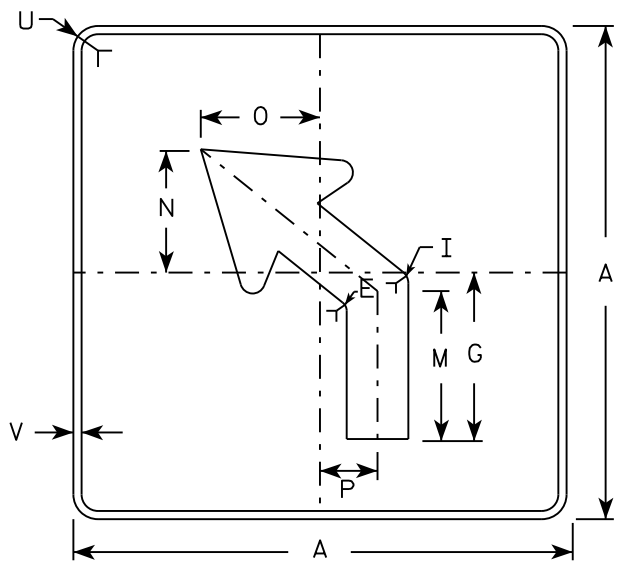
M5-1L  
MM5-1L  
M05-1L  
MP5-1L



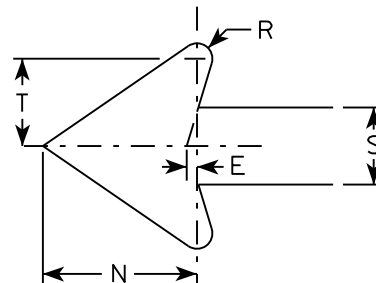
M5-2L  
MM5-2L  
M05-2L  
MP5-2L



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



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



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:  
Background - See note 4  
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- |                 |   |
|-----------------|---|
| M5-1 and M5-2   | Background - White                      |
|                 | Message - Black                         |
| MB5-1 and MB5-2 | Background - Blue                       |
|                 | Message - White                         |
| MK5-1 and MK5-2 | Background - Green                      |
|                 | Message - White                         |
| MM5-1 and MM5-2 | Background - White                      |
|                 | Message - Green                         |
| MN5-1 and MN5-2 | Background - Brown                      |
|                 | Message - White                         |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
|                 | Message - Black                         |
| MP5-1 and MP5-2 | Background - White - Type H Reflective  |
|                 | Message - Blue                          |
| MR5-1 and MR5-2 | Background - Brown                      |
|                 | Message - Yellow                        |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

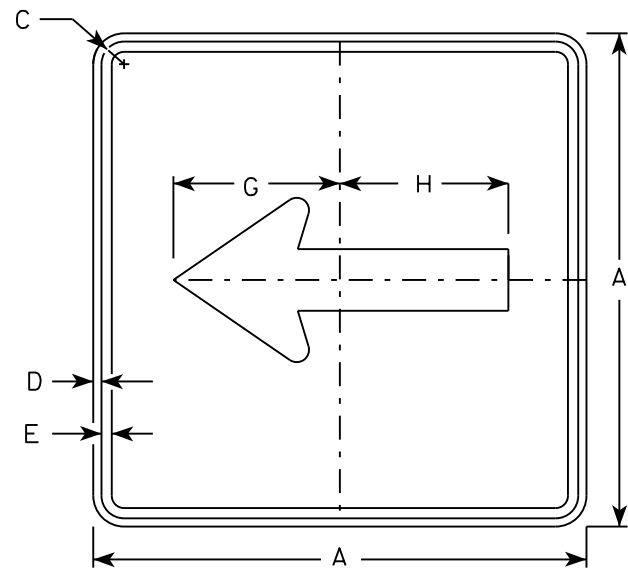
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25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

STANDARD SIGN  
M5-1 & M5-2

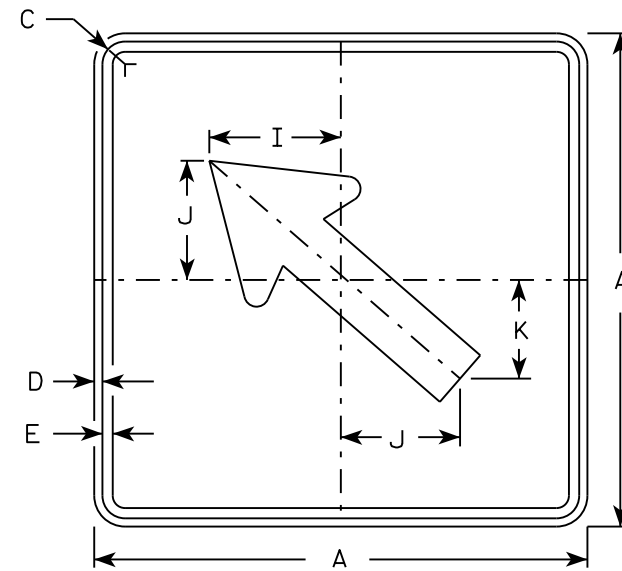
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

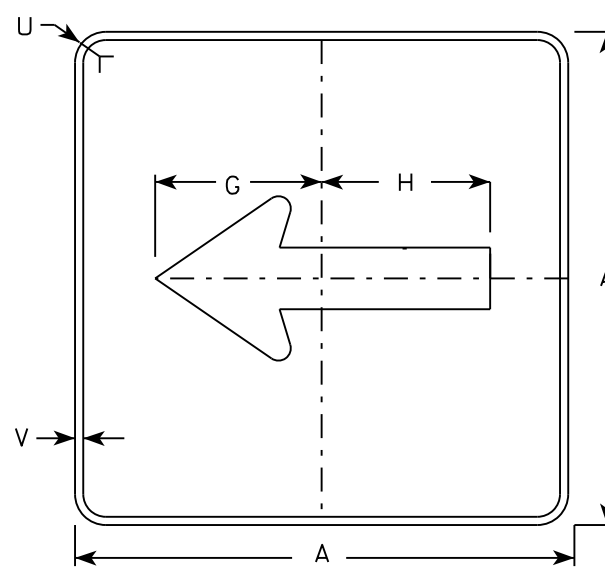
DATE 10/15/15 PLATE NO. M5-1.13



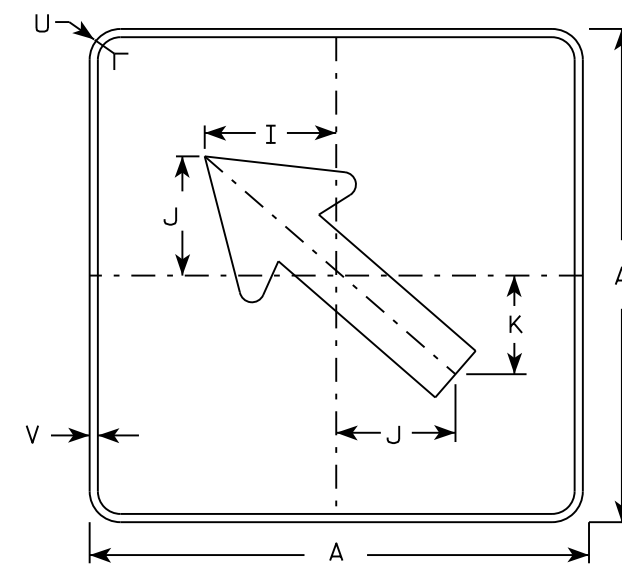
M6-1  
MM6-1  
M06-1  
MP6-1



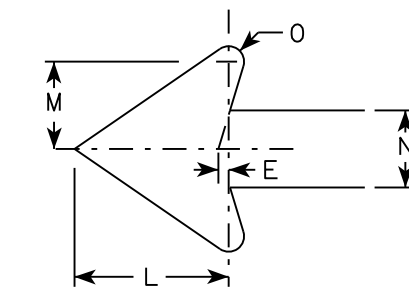
M6-2  
MM6-2  
M06-2  
MP6-2



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



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



NOTES

- Signs are Type II - Type H except as Shown
- Color:  
Background - See note 4  
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White  
Message - Black  
MB6-1 and MB6-2 Background - Blue  
Message - White  
MK6-1 and MK6-2 Background - Green  
Message - White  
MM6-1 and MM6-2 Background - White  
Message - Green  
MN6-1 and MN6-2 Background - Brown  
Message - White  
M06-1 and M06-2 Background - Orange - Type F Reflective  
Message - Black  
MP6-1 and MP6-2 Background - White  
Message - Blue  
MR6-1 and MR6-2 Background - Brown  
Message - Yellow

7

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

STANDARD SIGN  
M6-1 & M6-2  
SERIES

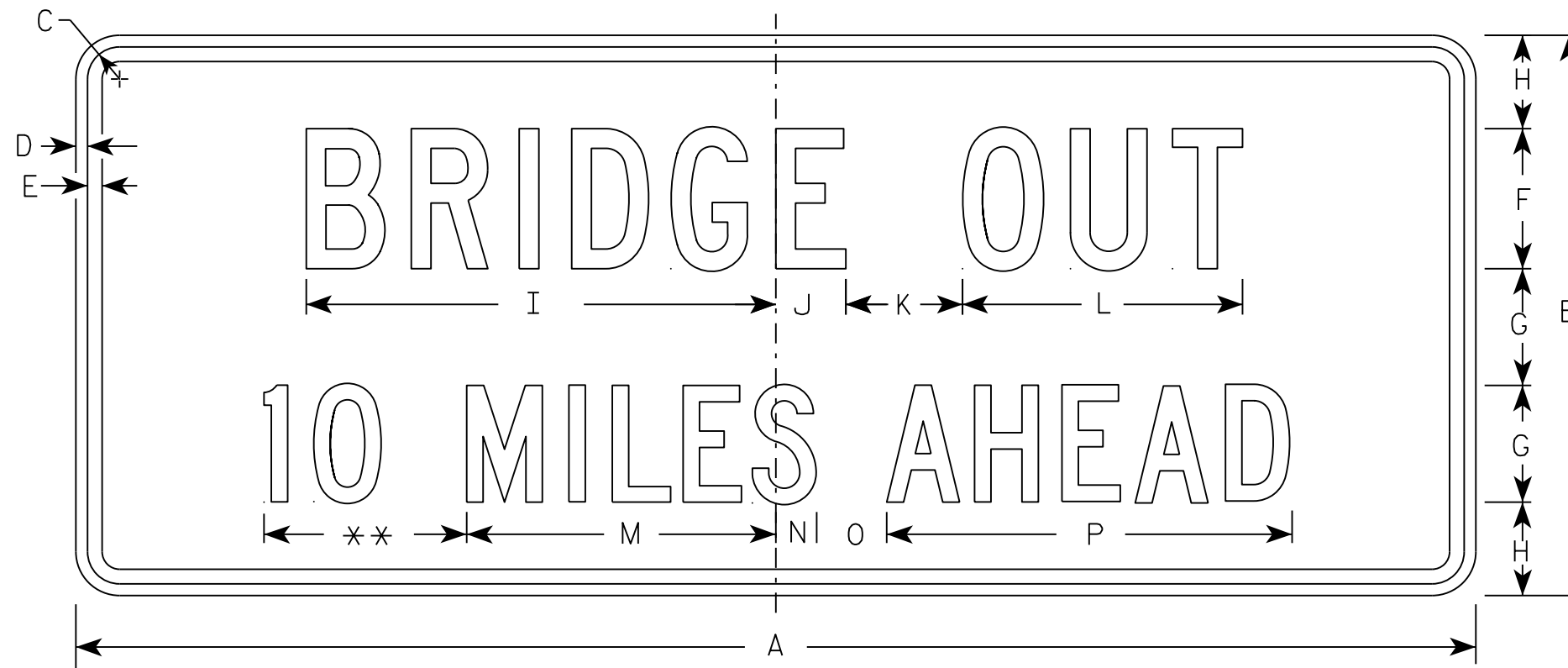
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-1.15

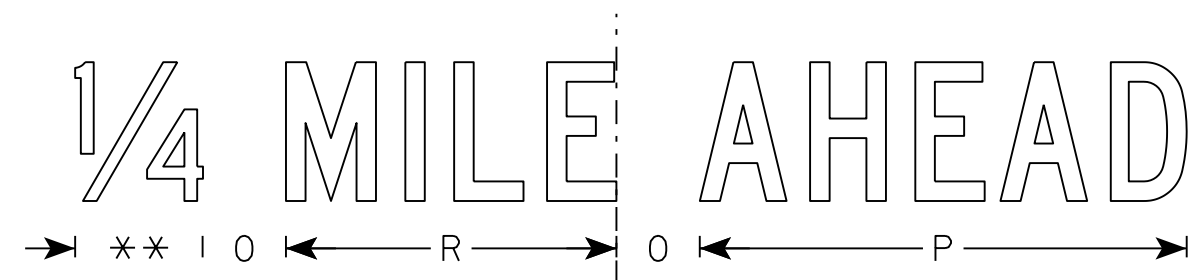
NOTES

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



R11-3C

\*\* See Note 5



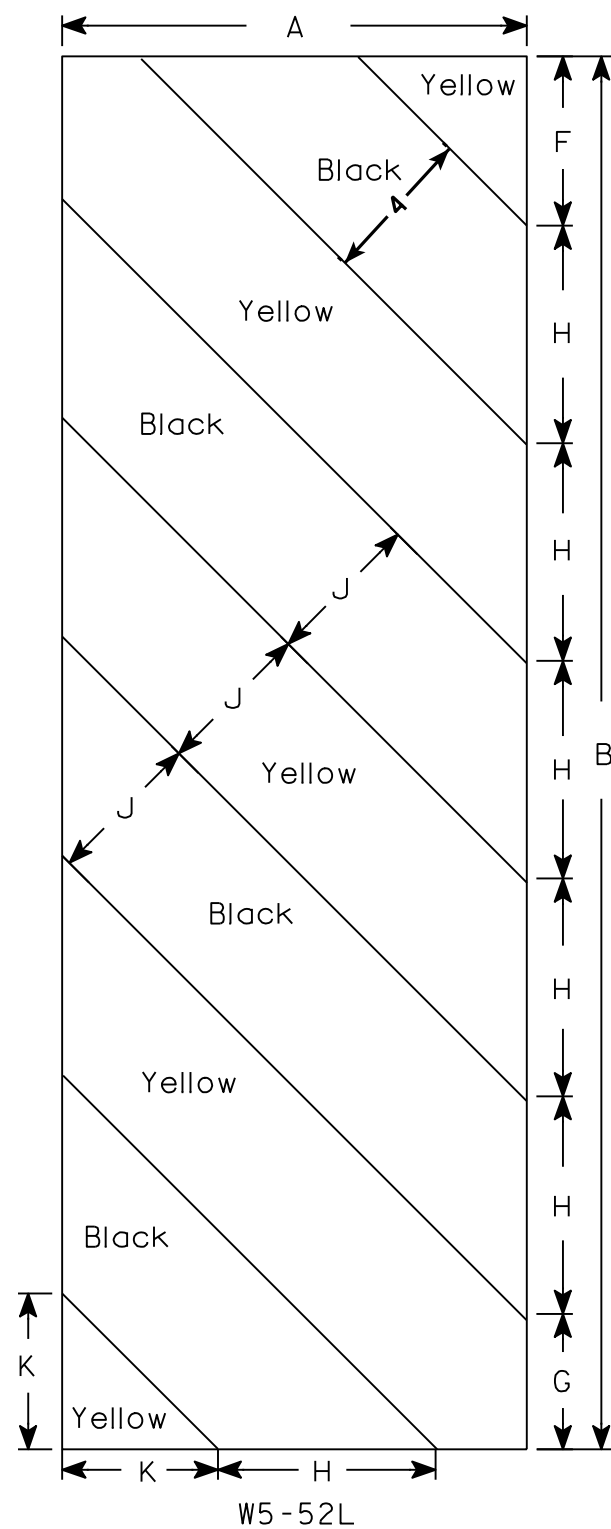
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	15	1 3/8	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4		7 1/8									3.75
2S	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
2M	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17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

STANDARD SIGN  
R11-3C

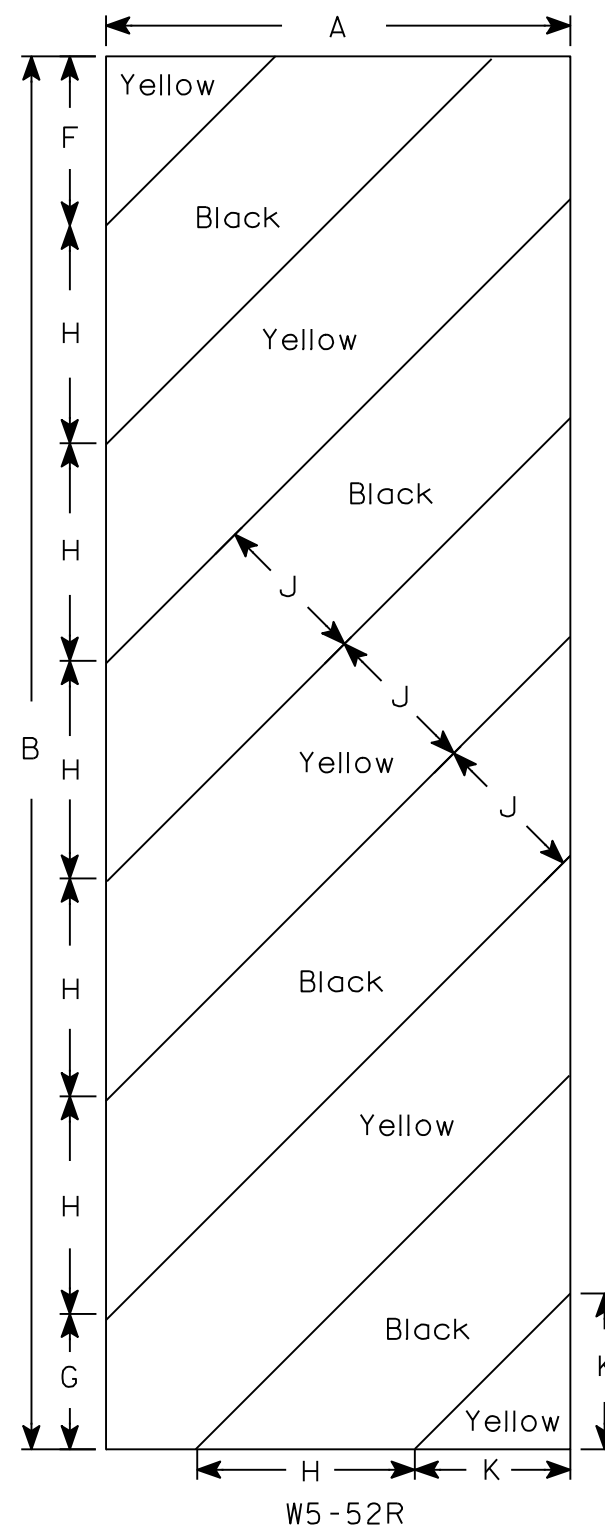
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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



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.

7

7

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																											

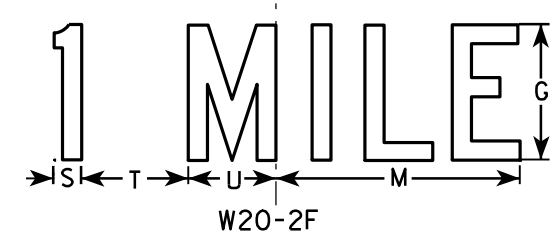
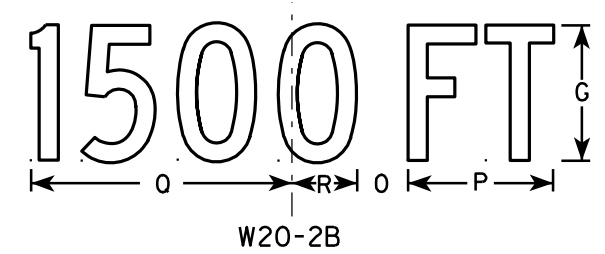
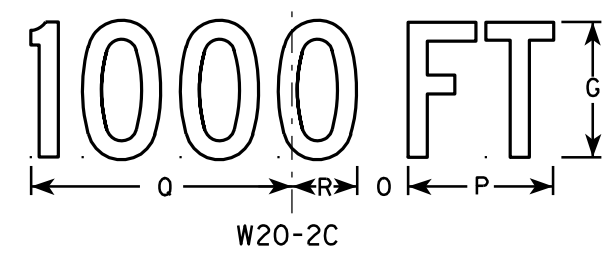
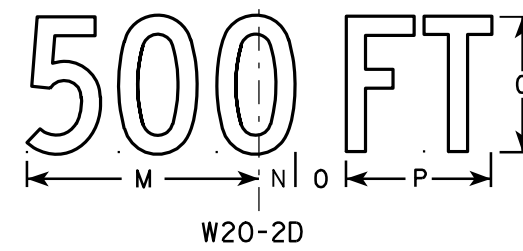
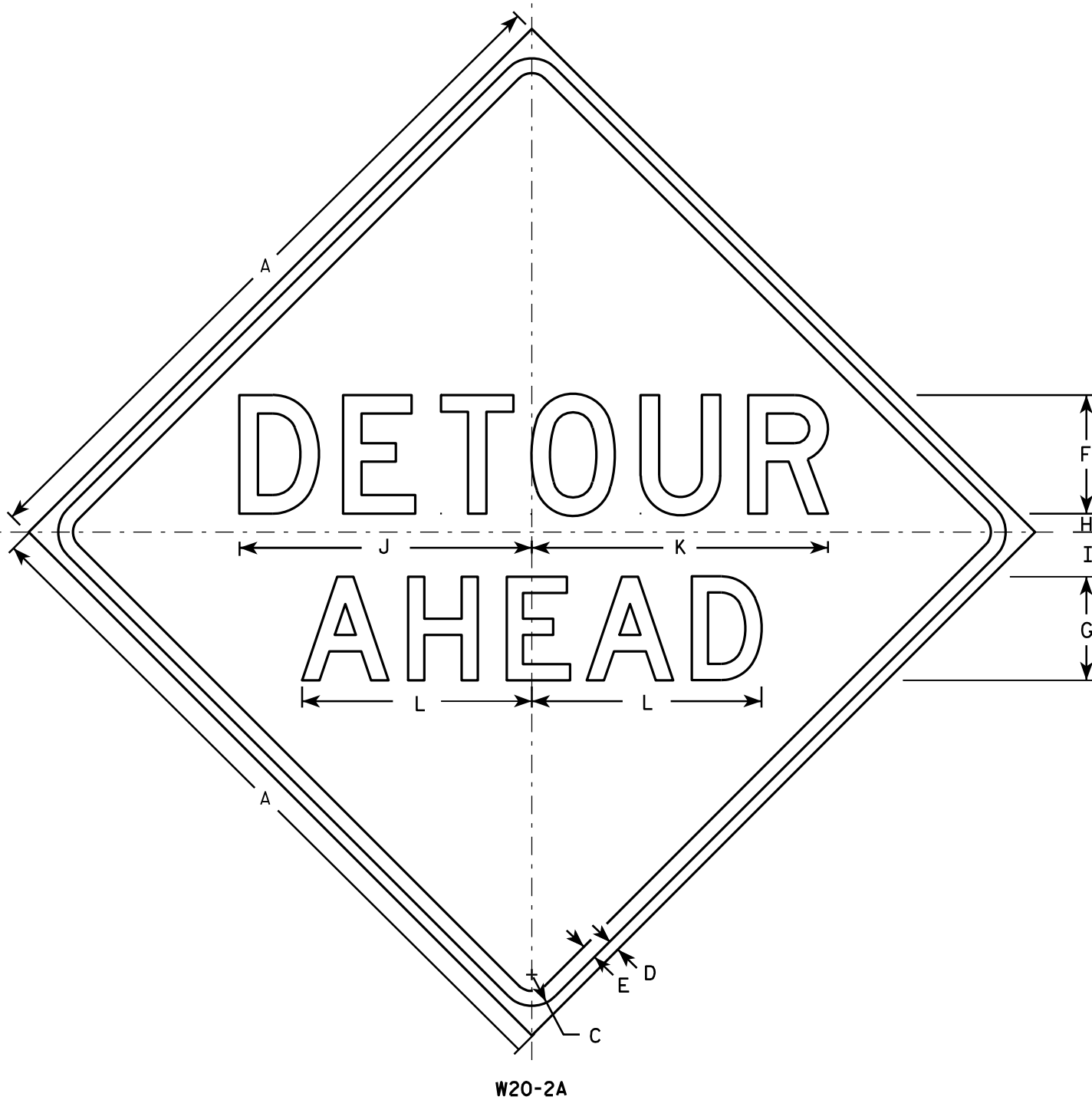
STANDARD SIGN  
W5-52L & W5-52R

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: \_\_\_\_\_ 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 - Orange  
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.  
Line 2 is Series D for AHEAD and Series C for all other distances.

7

7

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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raub*  
for State Traffic Engineer

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

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

**DESIGN DATA**

**LIVE LOAD:**

DESIGN LOADING: HL-93  
 INVENTORY RATING FACTOR: 1.11  
 OPERATING RATING FACTOR: 1.97  
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 "/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)  $f_y = 60,000$  p.s.i.

36W" PRESTRESSED GIRDER  
 CONCRETE MASONRY  $f'_c = 8,000$  p.s.i.  
 STRANDS - 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF  $= 270,000$  p.s.i.

**HYDRAULIC DATA:**

**100 YEAR FREQUENCY**

$Q_{100} = 1,610$  c.f.s.  
 VEL. = 2.44 f.p.s.  
 HW<sub>100</sub> = EL. 815.49  
 WATERWAY AREA = 660 sq. ft.  
 DRAINAGE AREA = 189 sq. mi.  
 SCOUR CRITICAL CODE = 8  
 DATUM = NAVD88 (2012)

**2 YEAR FREQUENCY**

$Q_2 = 1,020$  c.f.s.  
 VEL. = 1.85 f.p.s.  
 HW<sub>2</sub> = EL. 814.27

**FOUNDATION DATA:**

SOUTH ABUTMENT TO BE SUPPORTED ON 10 3/4"  $\phi$  x 0.50-INCH CIP CONCRETE PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS  $\pm$  PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 30'-0".

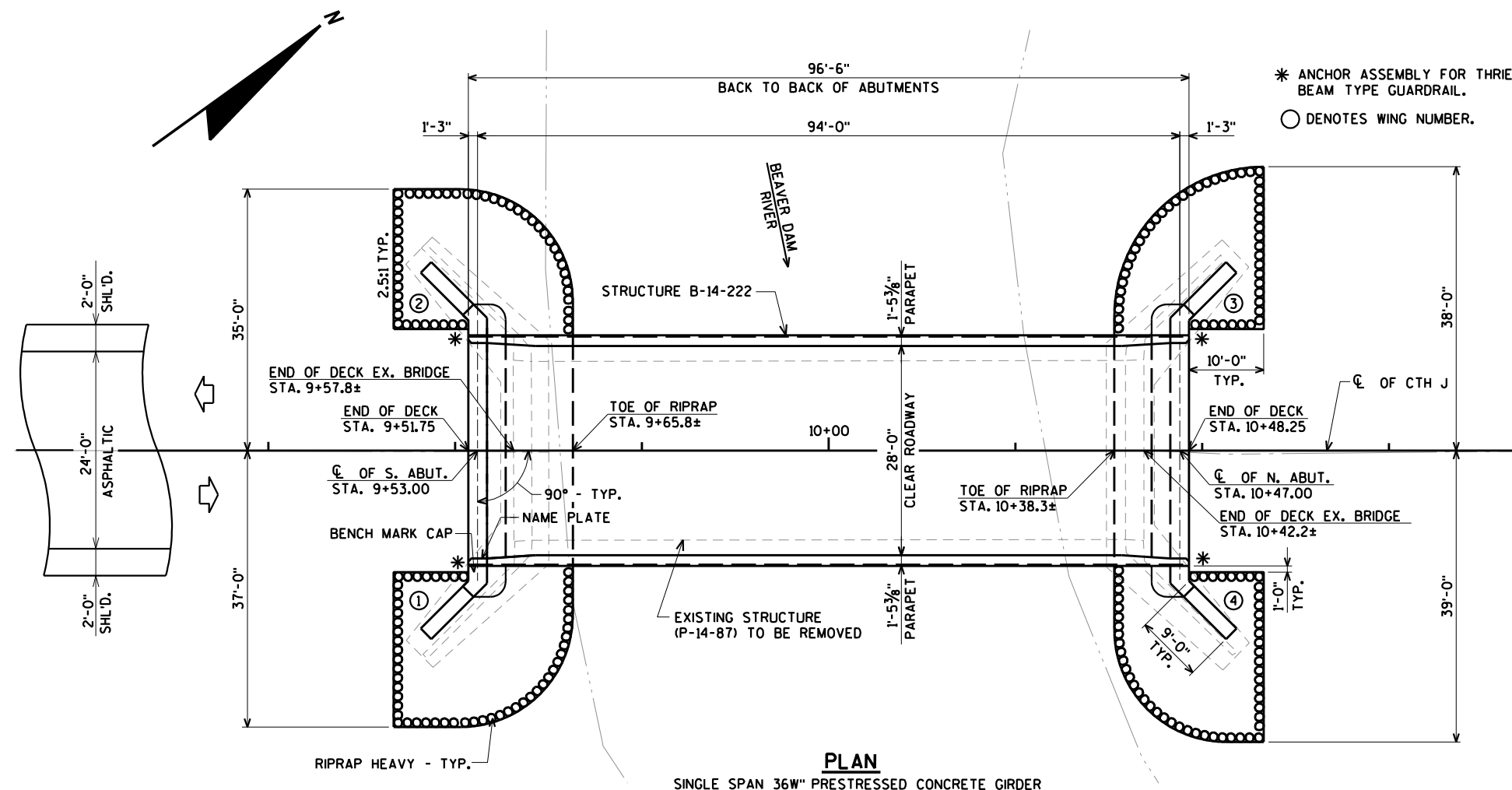
NORTH ABUTMENT TO BE SUPPORTED ON 10 3/4"  $\phi$  x 0.50-INCH CIP CONCRETE PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS  $\pm$  PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 25'-0".

\* 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:**

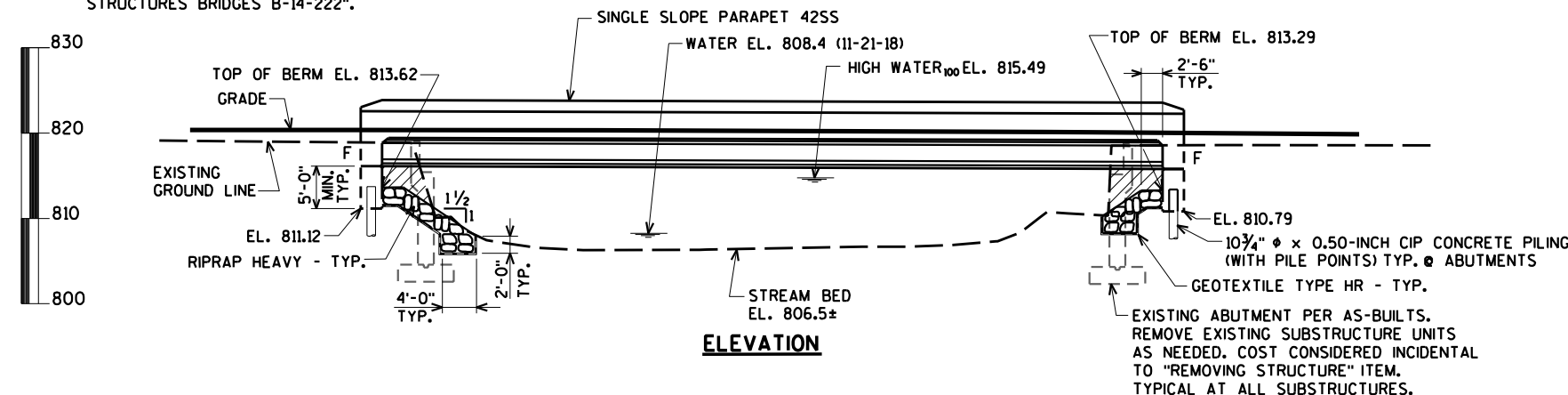
A.A.D.T. = 460 (2022)  
 A.A.D.T. = 510 (2042)  
 R.D.S. = 55 M.P.H.

FOR TYPICAL SECTION SEE SHEET 2



**PLAN**  
 SINGLE SPAN 36W" PRESTRESSED CONCRETE GIRDER

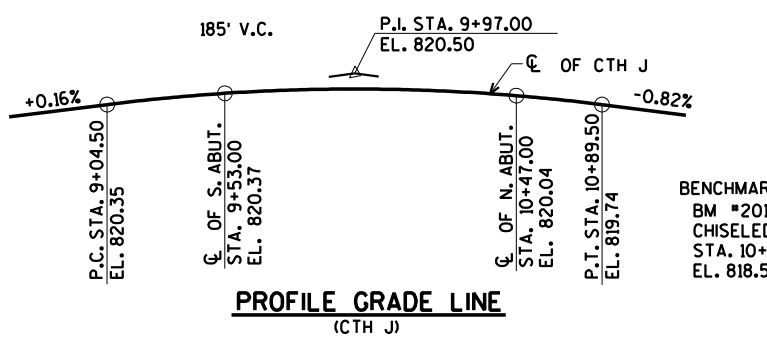
COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-14-222".



**ELEVATION**

**LIST OF DRAWINGS**

1. GENERAL PLAN
2. TYPICAL SECTION, QUANTITIES AND NOTES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT WING DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT WING DETAILS
8. ABUTMENT BILL OF BARS
9. STEEL DIAPHRAGM
10. 36W" PRESTRESSED GIRDER DETAILS
11. 36W" PRESTRESSED GIRDER DETAILS
12. SUPERSTRUCTURE
13. SUPERSTRUCTURE PLAN
14. SUPERSTRUCTURE DETAILS
15. SINGLE SLOPE PARAPET 42SS



**PROFILE GRADE LINE**  
 (CTH J)



07/29/2021

BRIDGE OFFICE CONTACT:  
 AARON BONK  
 (608)-261-0261  
 CONSULTANT CONTACT:  
 ARLEN BEAUDETTE  
 (715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY <b>AYRES</b> 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	[Signature]		SDR 08/24/21 DATE
<b>STRUCTURE B-14-222</b>			
CTH J OVER BEAVER DAM RIVER			
COUNTY	DODGE	TOWN/CITY/VILLAGE	BEAVER DAM
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	CJM	DESIGN CK'D.	JLB
DRAWN BY	ZSS/CLP	PLANS CK'D.	AEB
<b>GENERAL PLAN</b>			SHEET 1 OF 15

\$PRFNAME\$ I:\42\41-0806.00 - Dodge Co, CTH J over Beaver Dam River Structures\CAD\Final\410806\_gp.dgn  
 CHECKED BY: [ ]  
 BACK CHECKED BY: [ ]  
 CORRECTED BY: [ ]  
 DATE: [ ]  
 DATE: [ ]

**TOTAL ESTIMATED QUANTITIES**

BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER.	TOTAL
203.0250	REMOVING STRUCTURE OVER WATERWAY REMOVE DEBRIS P-14-87	EACH	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-14-222	LS	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	215	215	-----	430
502.0100	CONCRETE MASONRY BRIDGES	CY	30	30	130	190
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	300	300
502.3210	PIGMENTED SURFACE SEALER	SY	-----	-----	95	95
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	-----	-----	570	570
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,300	2,300	-----	4,600
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,500	1,500	20,690	23,690
506.2605	BEARING PADS ELASOMERIC NON-LAMINATED	EACH	-----	-----	12	12
506.4000	STEEL DIAPHRAGMS B-14-222	EACH	-----	-----	10	10
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	7	7	-----	14
550.0500	PILE POINTS	EACH	9	9	-----	18
550.2108	PILING CIP CONCRETE 10 3/4 x 0.50-INCH	LF	270	225	-----	495
606.0300	RIPRAP HEAVY	CY	110	85	-----	195
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	80	80	-----	160
614.0150	ANCHOR ASSEMBLY FOR STEEL PLATE BEAM GUARD	EACH	-----	-----	4	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	45	45	-----	90
645.0120	GEOTEXTILE TYPE HR	SY	210	165	-----	375
<b>NON-BID ITEMS</b>						
	FILLER	SIZE	-----	-----	-----	1/2" & 3/4"
	NAME PLATE					

**GENERAL NOTES**

DRAWINGS SHALL NOT BE SCALED.  
 BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.  
 THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE. JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

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

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-14-222" SHALL BE THE EXISTING GROUNDLINE.

THE EXISTING STRUCTURE, P-14-87, TO BE REMOVED, IS A SINGLE SPAN PRESTRESSED CONCRETE 'I' GIRDER BRIDGE ON CONCRETE ABUTMENTS, 84.5-FOOT LONG WITH A 23 FT. CLEAR ROADWAY WIDTH.

AT BACKFACE 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.

PROTECTIVE SURFACE TREATMENT AND PIGMENTED SURFACE SEALER IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET. EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

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

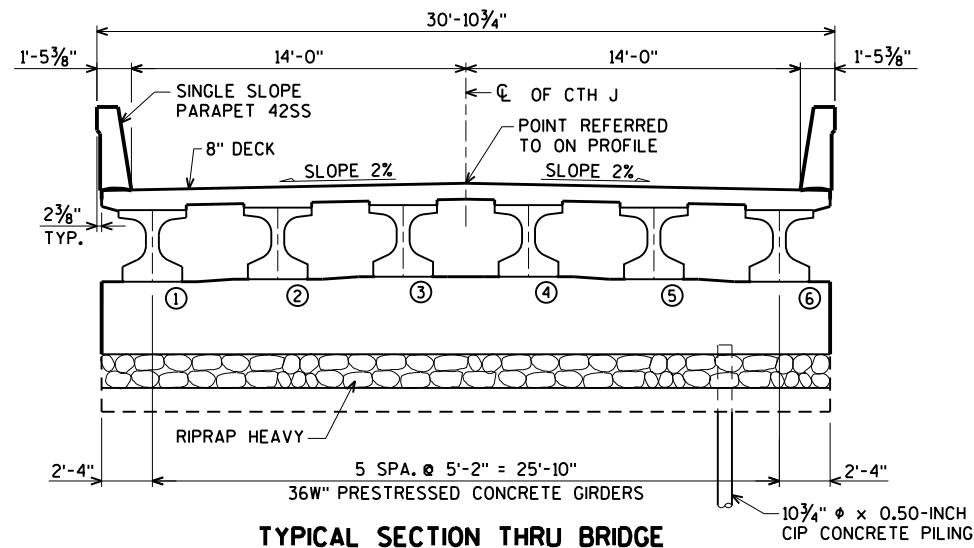
THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAILS SHEET, WHICH IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH THE CONTRACTOR WILL BE PAID.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

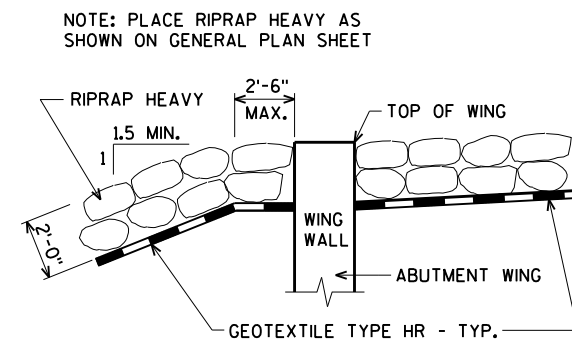
EXISTING SUBSTRUCTURE LOCATIONS ARE BASED ON AS-BUILT PLANS. REMOVE EXISTING SUBSTRUCTURES AS NEEDED TO BUILD NEW SUBSTRUCTURES. COST OF REMOVAL IS CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE" BID ITEM.

CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.2 OF THE STANDARD SPECIFICATIONS.

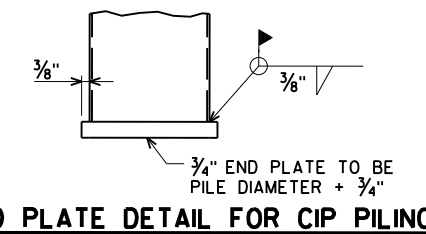
EXTENT OF BELOW GRADE SUBSTRUCTURES SHOWN ON SHEET 1 ARE BASED ON AS-BUILT PLANS. REMOVE EXISTING SUBSTRUCTURE UNITS AS NEEDED. COST OF SUBSTRUCTURE REMOVAL IS CONSIDERED INCIDENTAL TO "REMOVING STRUCTURE OVER WATERWAY REMOVE DEBRIS P-14-87" BID ITEM.



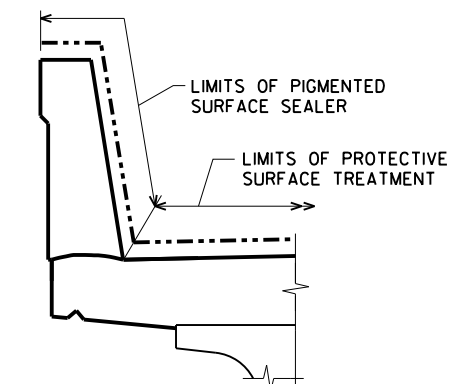
**TYPICAL SECTION THRU BRIDGE**



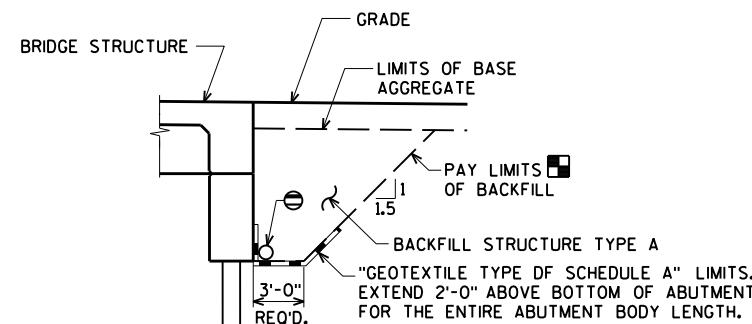
**TYPICAL FILL SECTION AT WING TIPS**



**END PLATE DETAIL FOR CIP PILING**



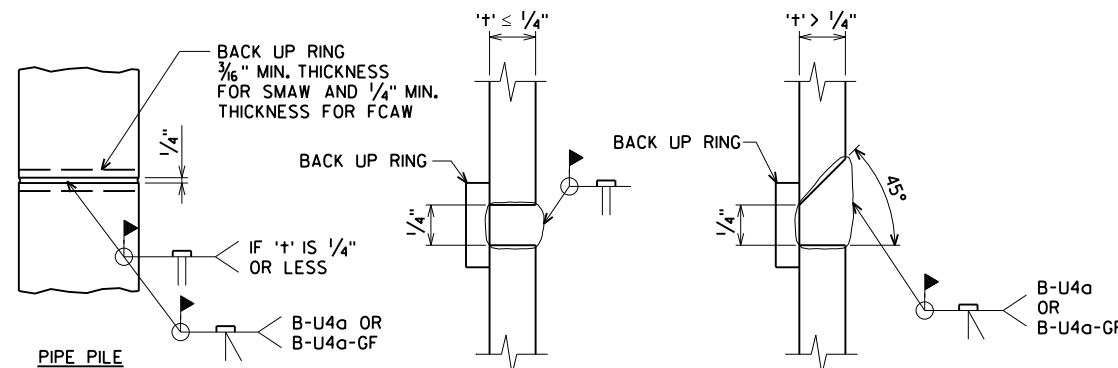
**PROTECTIVE SURFACE TREATMENT AND PIGMENTED SURFACE SEALER DETAILS**



**BACKFILL STRUCTURE LIMITS**

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

PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 8.



**PILE SPlice DETAIL**

CAST-IN-PLACE PILE SHELL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

**CIP PILE WELD DETAIL**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-14-222</b>			
DRAWN BY ZSS/CLP		PLANS CK'D. CJM	
<b>TYPICAL SECTION, QUANTITIES AND NOTES</b>			SHEET 2 OF 15

ORIGINAL PLANS PREPARED BY  
**AYRES** 3433 Oakwood Hills Parkway  
 Eau Claire, WI 54701  
 www.AyresAssociates.com

7/29/2021 PENTABLE:wisdot\_shd.tbl

8

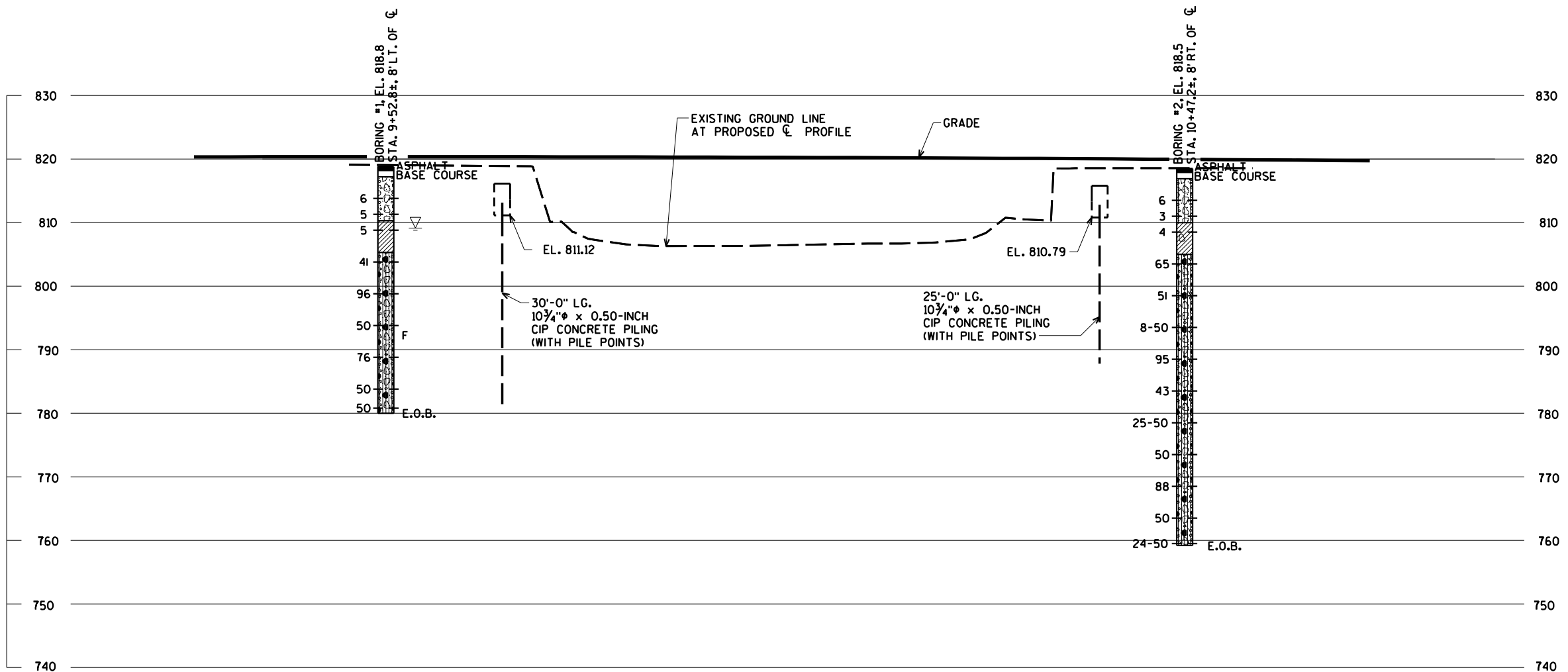
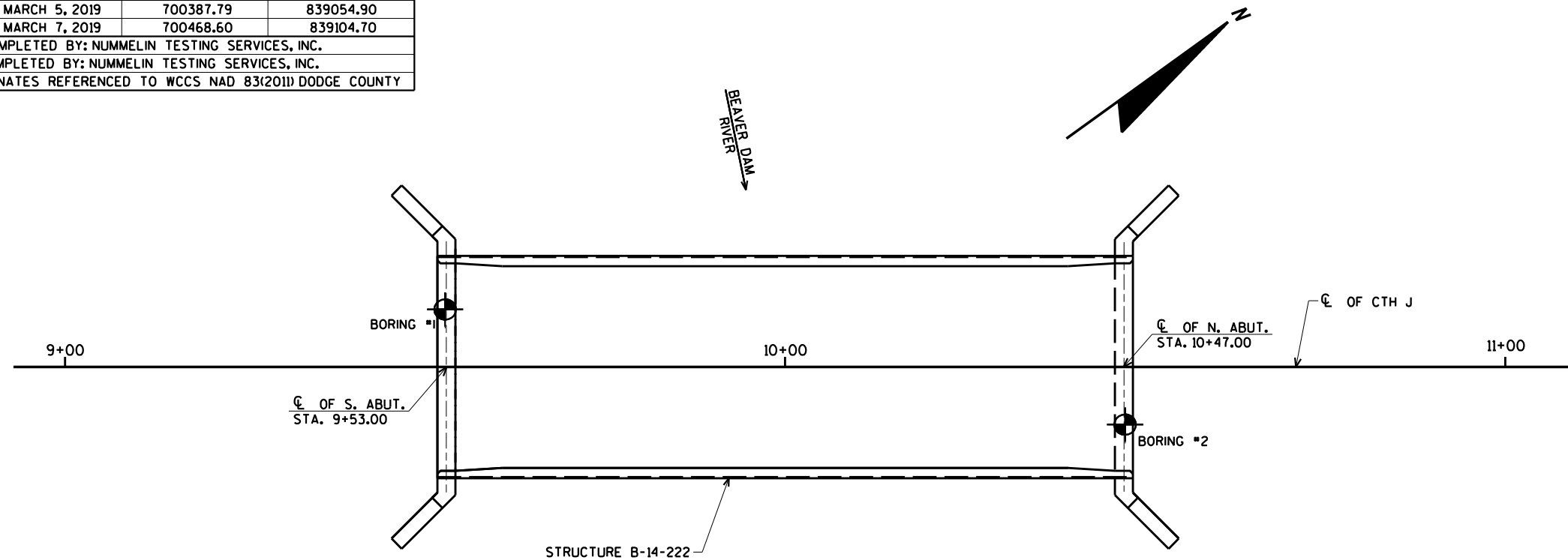
8



\$PRNAME\$ I:\42\41-0806.00 - Dodge Co. CTH J over Beaver Dam River\Structures\CADD\Final\410806 soils.dgn

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	MARCH 5, 2019	700387.79	839054.90
2	MARCH 7, 2019	700468.60	839104.70

BORINGS COMPLETED BY: NUMMELIN TESTING SERVICES, INC.  
 REPORT COMPLETED BY: NUMMELIN TESTING SERVICES, INC.  
 ALL COORDINATES REFERENCED TO WCCS NAD 83(2011) DODGE COUNTY



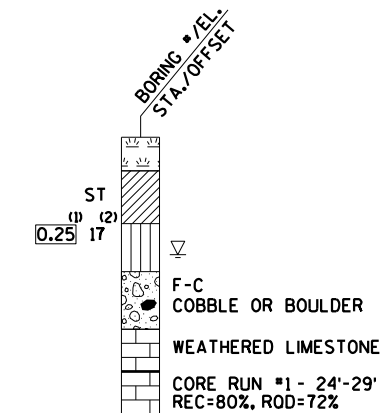
STATE PROJECT NUMBER

3907-00-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

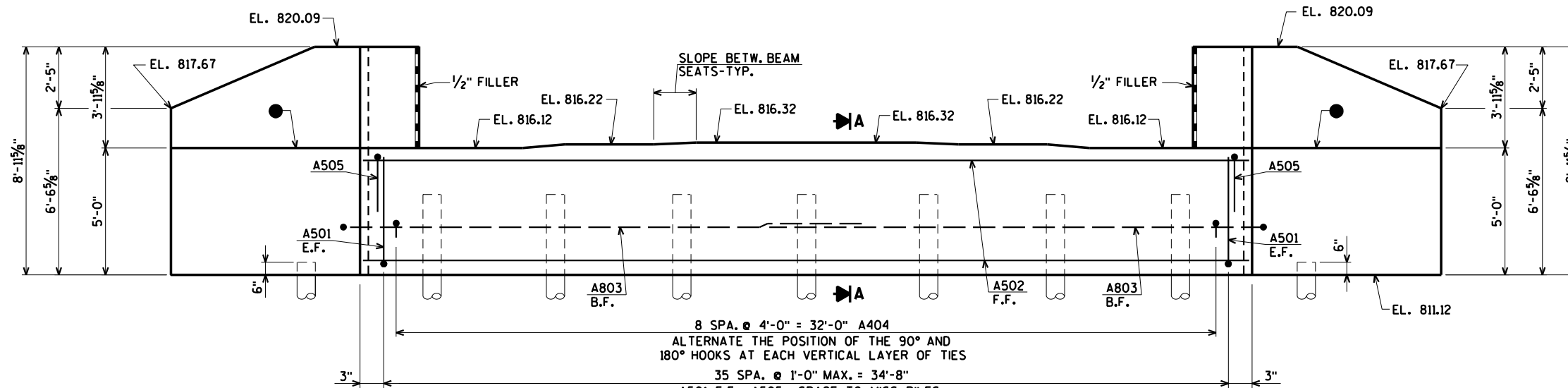
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT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

8

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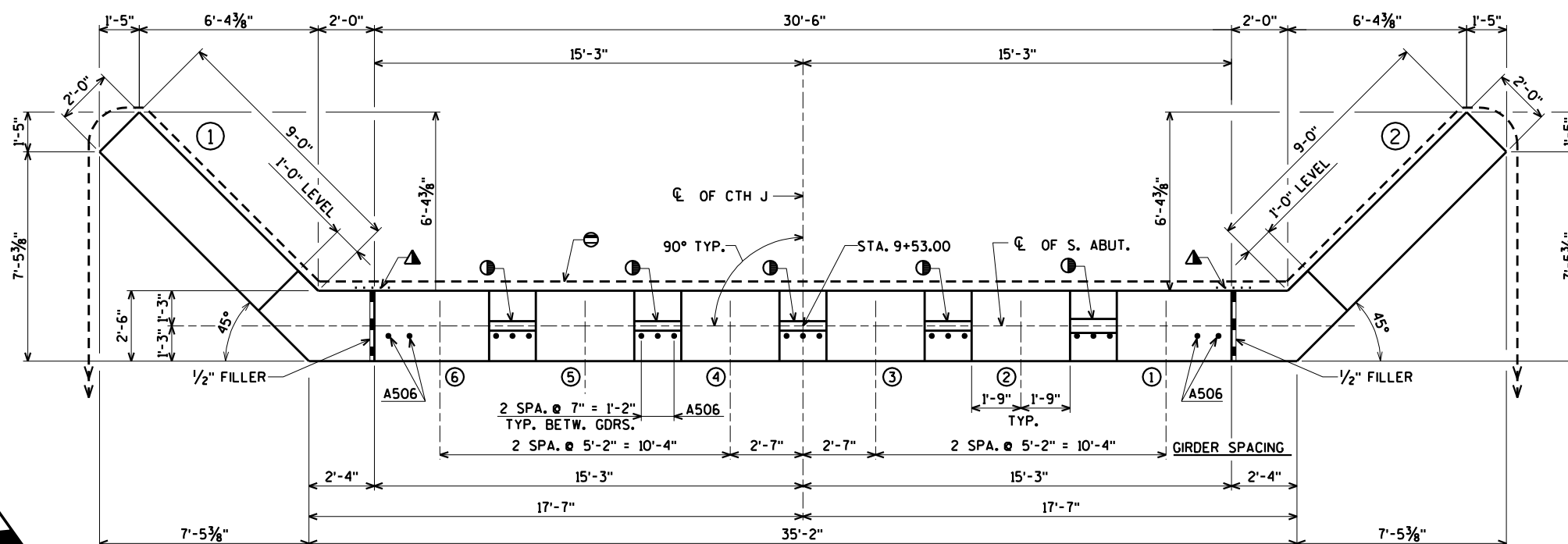
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-14-222</b>			
DRAWN BY ZSS/CLP		PLANS CKD. CJM	
<b>SUBSURFACE EXPLORATION</b>			SHEET 3 OF 15

NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).

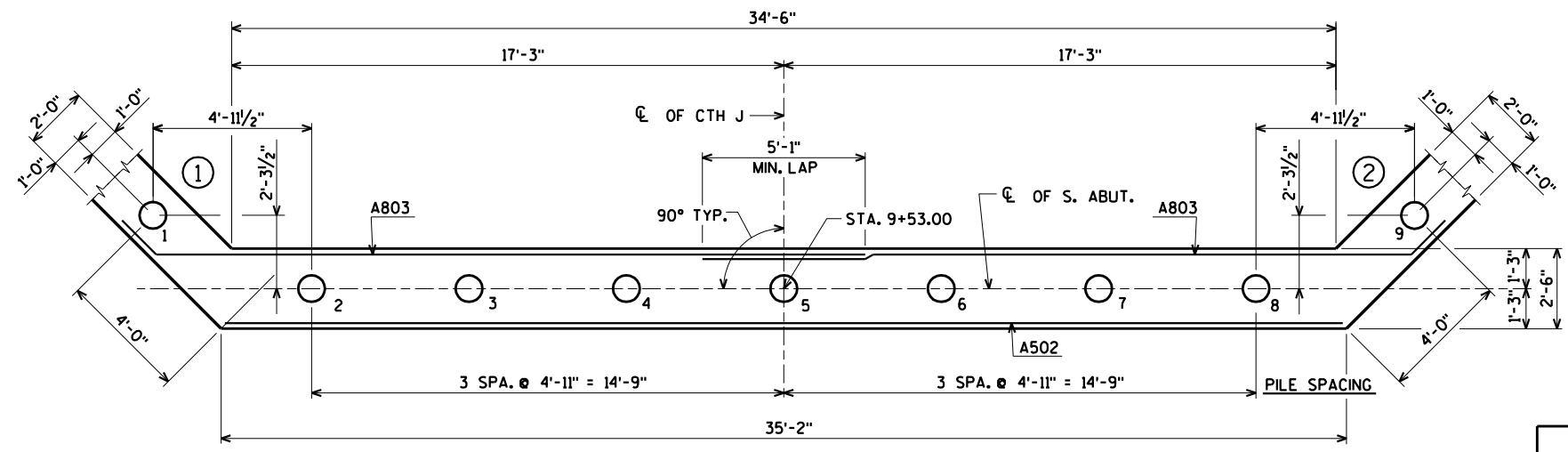


8 SPA. @ 4'-0" = 32'-0" A404  
ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES  
35 SPA. @ 1'-0" MAX. = 34'-8"  
A501 E.F., A505 SPACE TO MISS PILES

**ELEVATION**  
(LOOKING SOUTH)



**PLAN**



**PILE LAYOUT**

FOR SECTION A SEE SHEET 5.

- ⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 8. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".
- OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MANSORY BRIDGES" IF CONST. JOINT IS USED).
- ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
- ⊙ KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

FOR PILE SPLICE DETAIL SEE SHEET 2.

F.F. DENOTES FRONT FACE  
B.F. DENOTES BACK FACE  
E.F. DENOTES EACH FACE

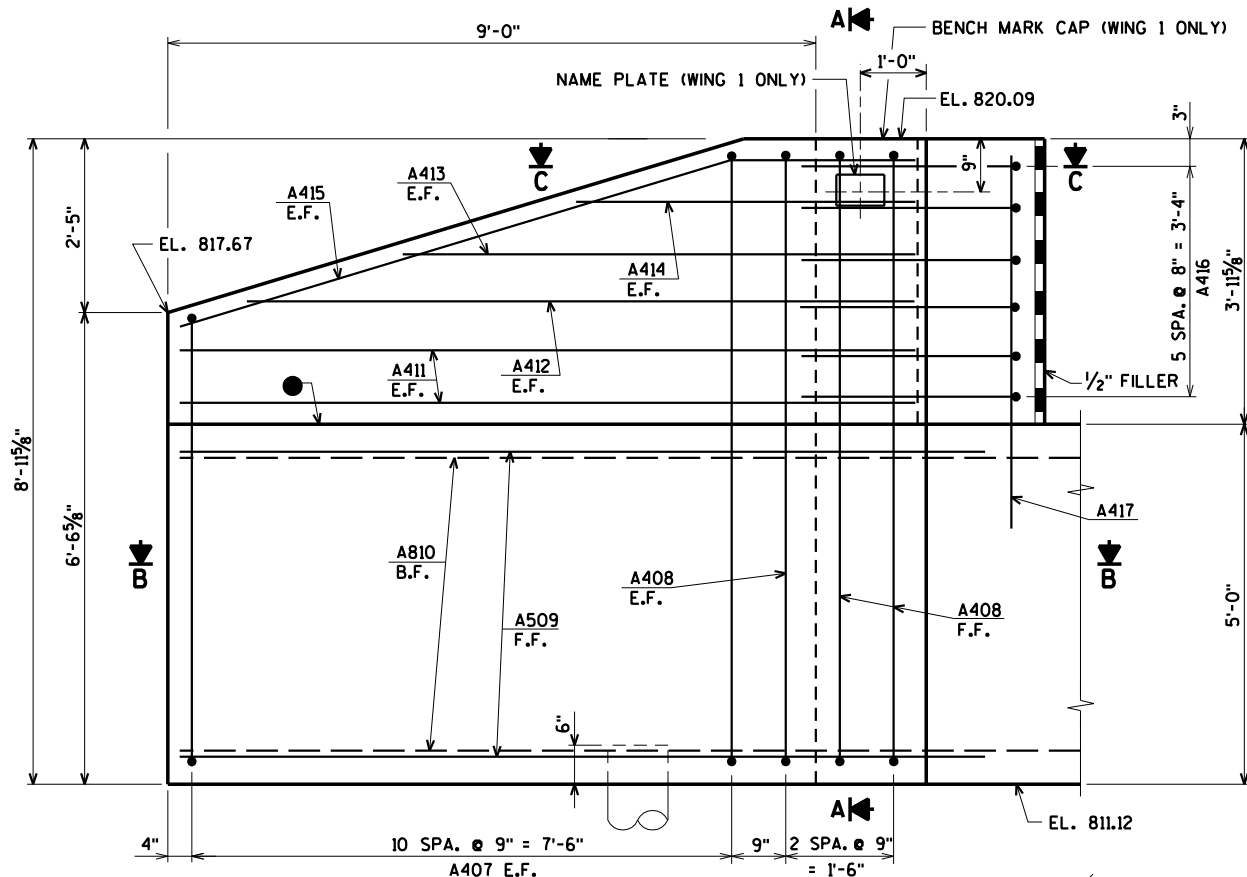
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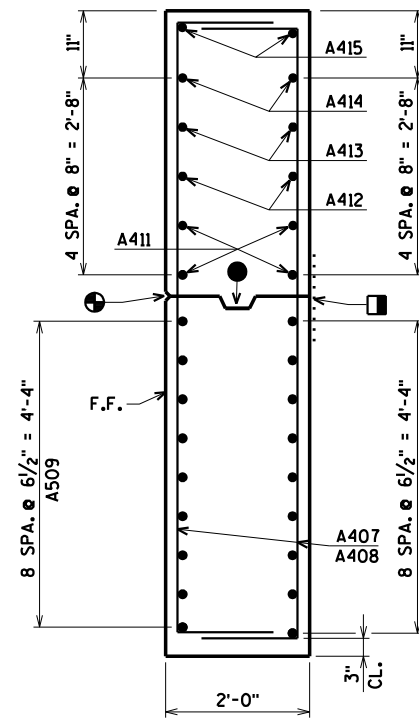
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-14-222</b>			
DRAWN BY		CLP	PLANS CK'D. CJM
<b>SOUTH ABUTMENT</b>			SHEET 4 OF 15

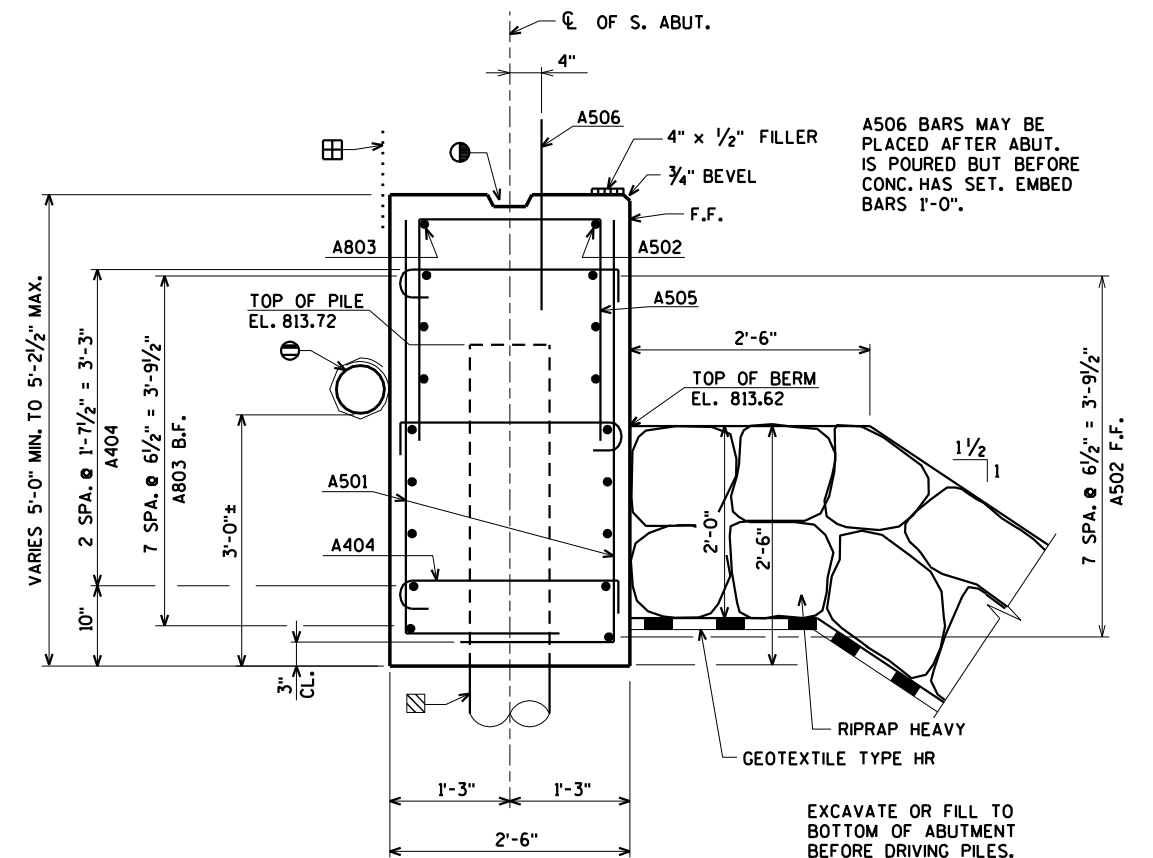
ORIGINAL PLANS PREPARED BY  
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Equi Claire, WI 54701  
www.AyresAssociates.com



**ELEVATION - WING 1**  
(WING 2 SIMILAR)



**SECTION A**



**SECTION A**

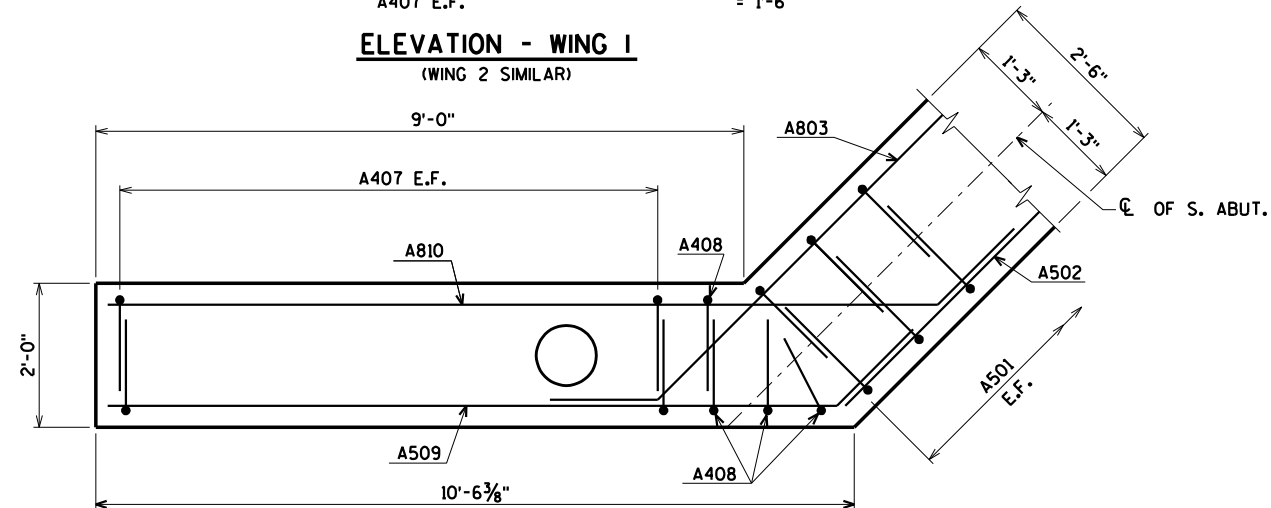
ABUTMENT TO BE SUPPORTED ON 10 3/4"  $\phi$  x 0.50" CIP CONCRETE PILING (WITH PILE POINTS) DRIVEN TO A REQ'D. DRIVING RESISTANCE OF 150 TONS PER PILE ESTIMATED LENGTH 30'-0".

FOR LOCATION OF SECTION A SEE SHEET 4.

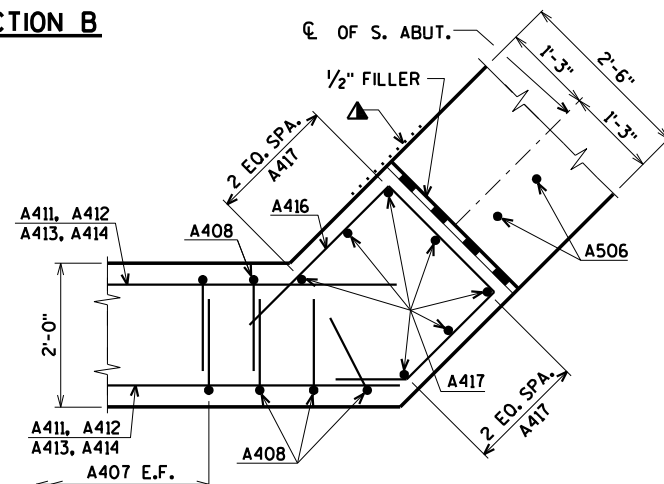
- ▣ RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES")
- OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES" IF CONST. JOINT IS USED).
- ⊕ 3/4" V-GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.
- ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
- ▣ 18" RUBBERIZED MEMBRANE WATERPROOFING BETWEEN WINGS.
- ⊙ KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
- ⊖ PIPE UNDERDRAIN WRAPPED 6-INCH, SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 8. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE  
E.F. DENOTES EACH FACE  
F.F. DENOTES FRONT FACE



**SECTION B**



**SECTION C**

4/22/2021  
PENTABLE:BRRedu\_shd\_util.tbl

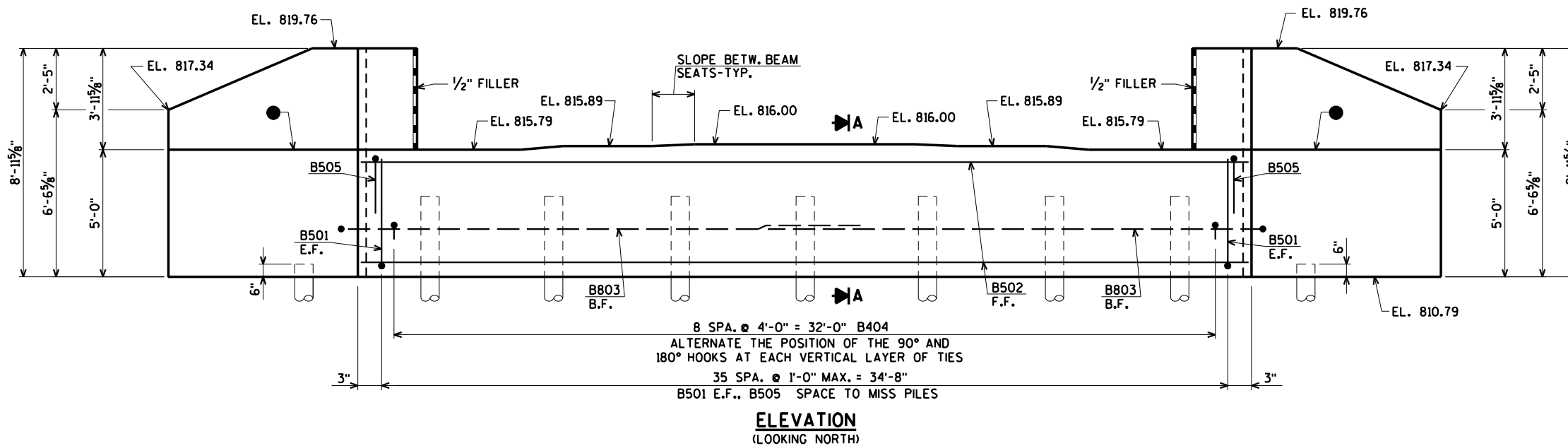
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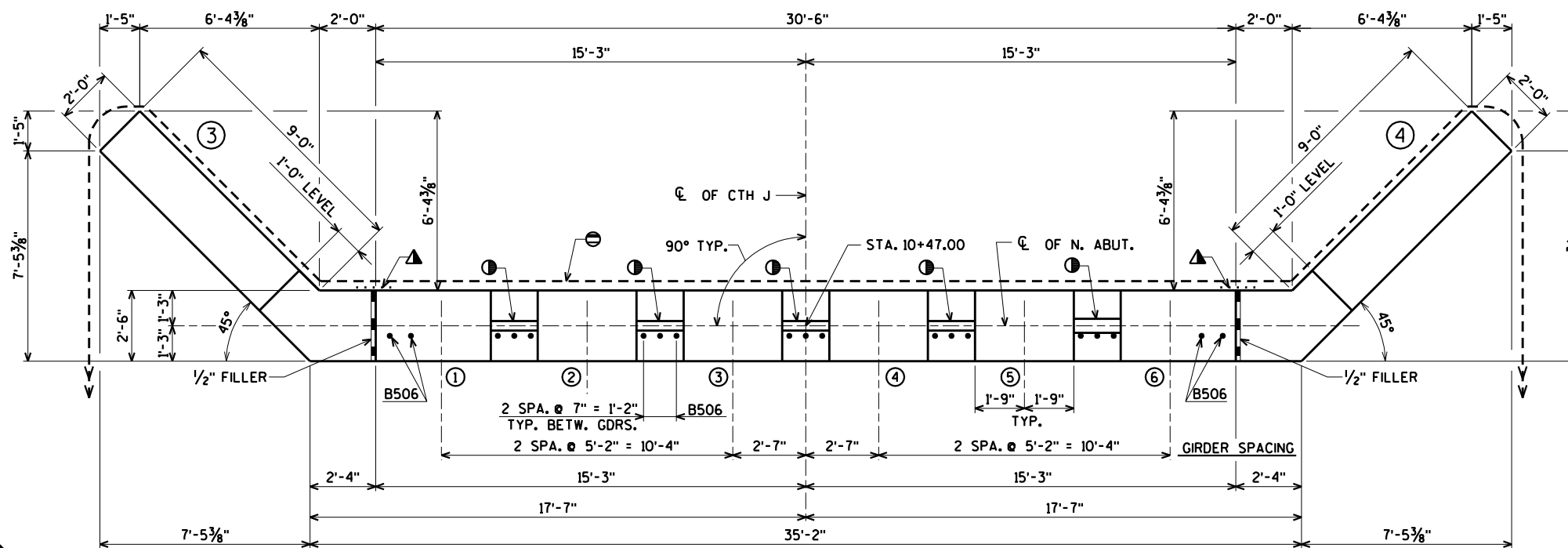
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-14-222</b>			
DRAWN BY		CLP	PLANS CK'D. CJM
<b>SOUTH ABUTMENT WING DETAILS</b>			SHEET 5 OF 15

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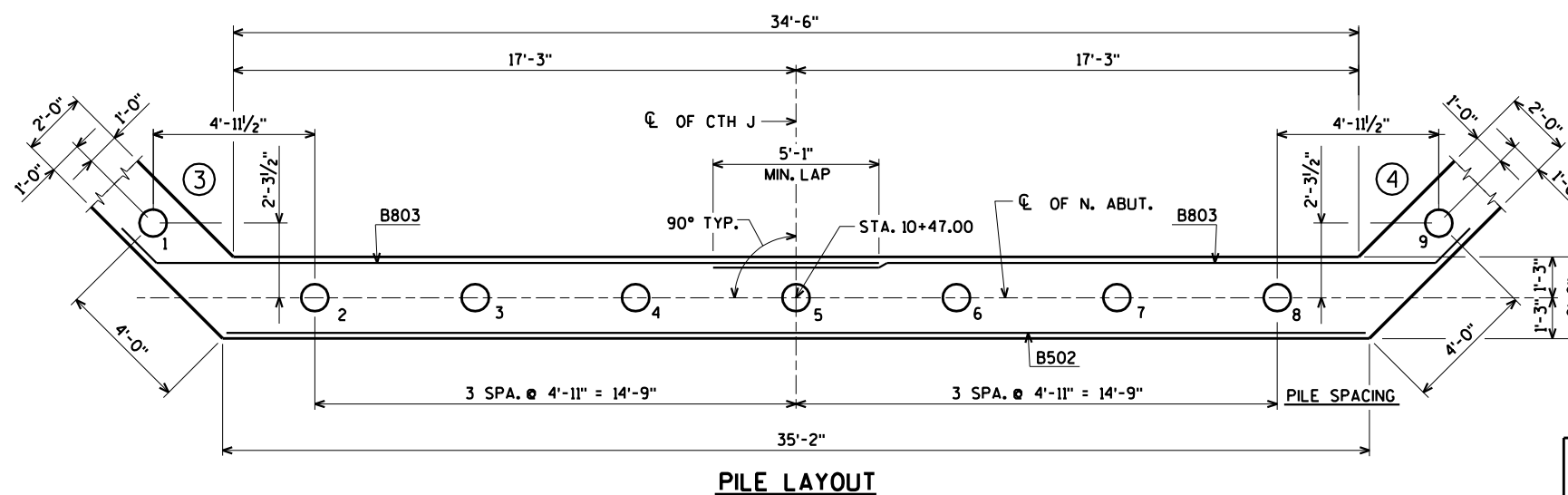
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).



**ELEVATION**  
(LOOKING NORTH)



**PLAN**



**PILE LAYOUT**

FOR SECTION A SEE SHEET 7.

● PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 8. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MANSIONRY BRIDGES" IF CONST. JOINT IS USED).

▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

● KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

FOR PILE SPLICE DETAIL SEE SHEET 2.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

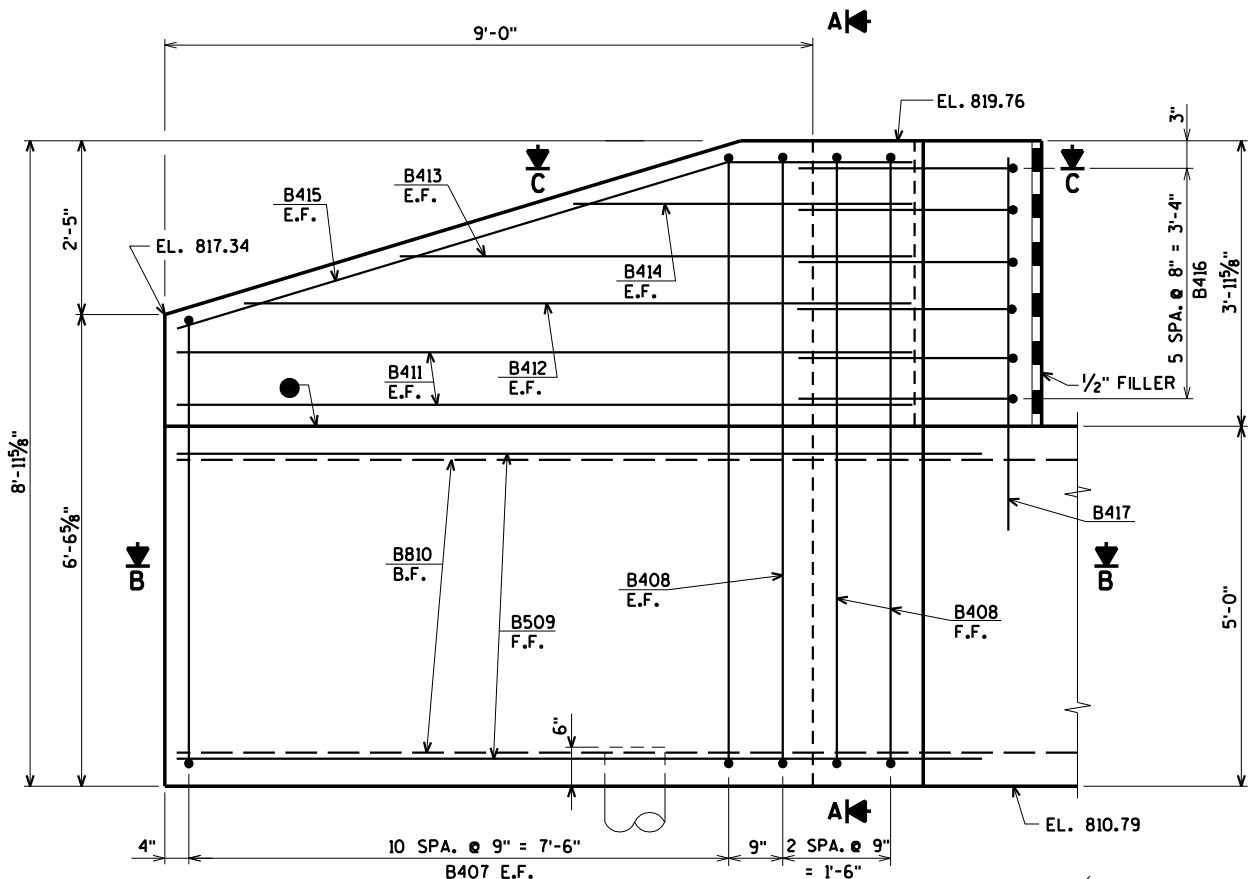
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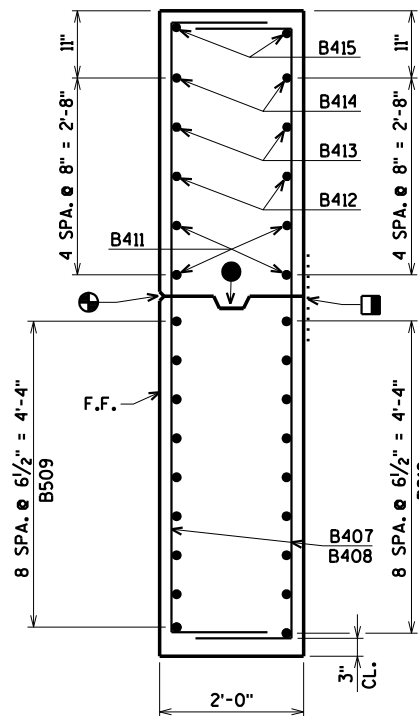
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-14-222</b>			
DRAWN BY		CLP	PLANS CK'D. CJM
<b>NORTH ABUTMENT</b>			SHEET 6 OF 15

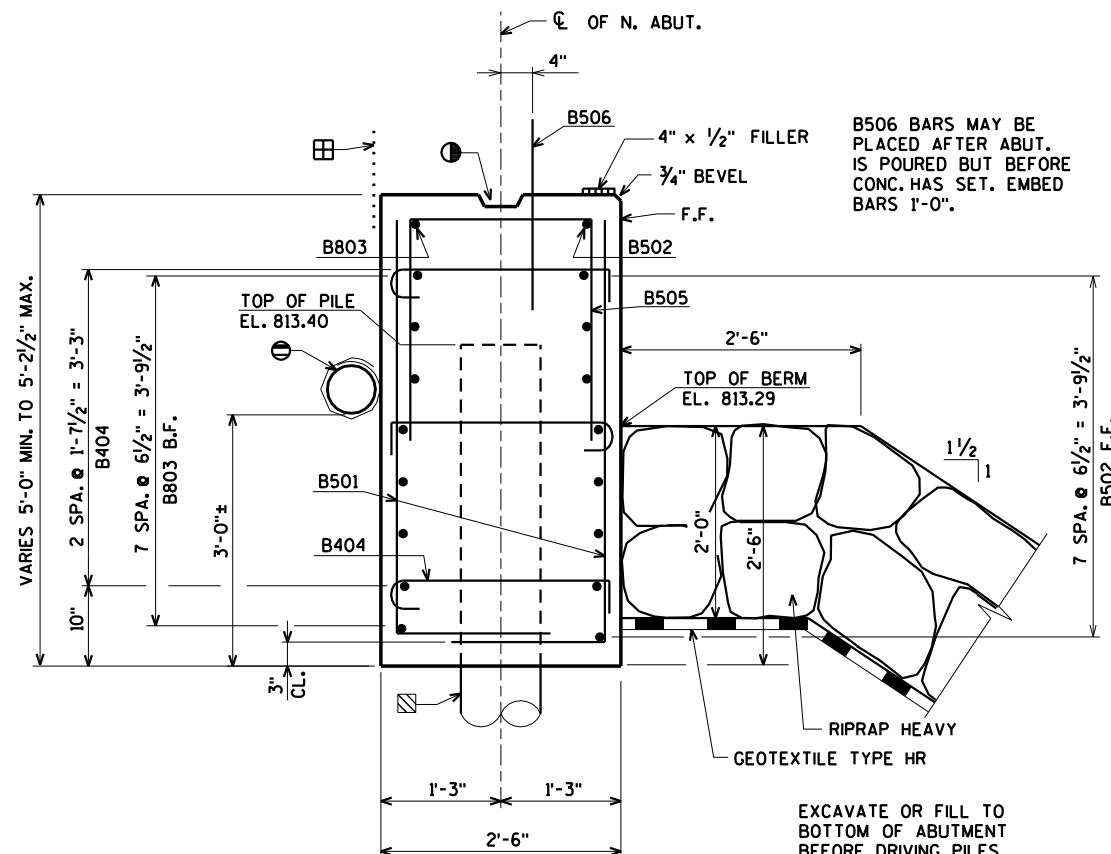
ORIGINAL PLANS PREPARED BY  
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Equi Claire, WI 54701  
www.AyresAssociates.com



**ELEVATION - WING 3**  
(WING 4 SIMILAR)



**SECTION A**



**SECTION A**

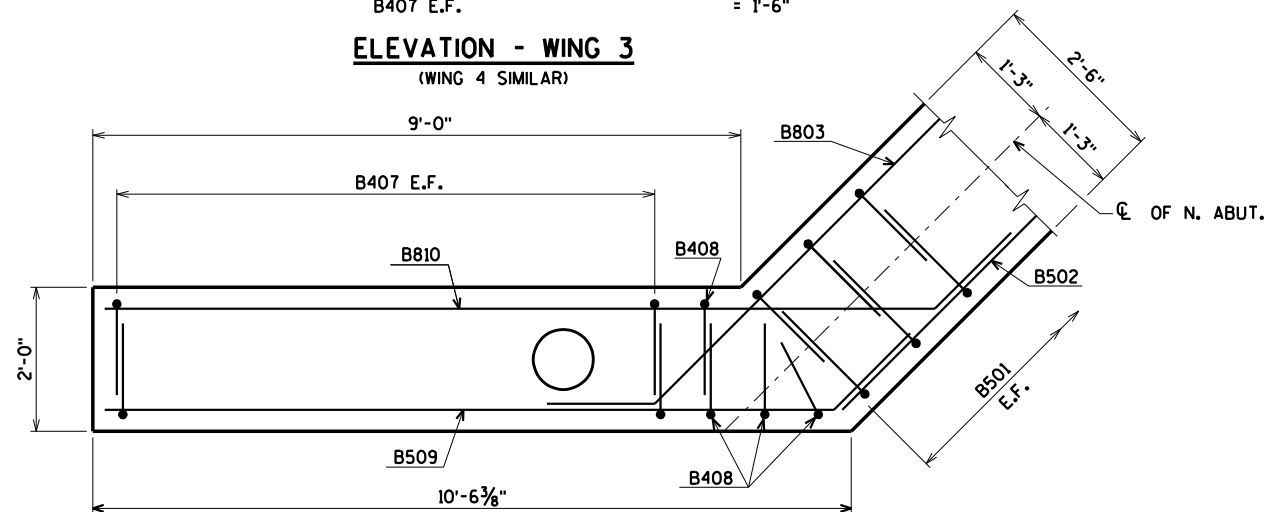
ABUTMENT TO BE SUPPORTED ON 10 3/4"  $\phi$  x 0.50" CIP CONCRETE PILING (WITH PILE POINTS) DRIVEN TO A REQ'D. DRIVING RESISTANCE OF 150 TONS PER PILE ESTIMATED LENGTH 25'-0".

FOR LOCATION OF SECTION A SEE SHEET 6.

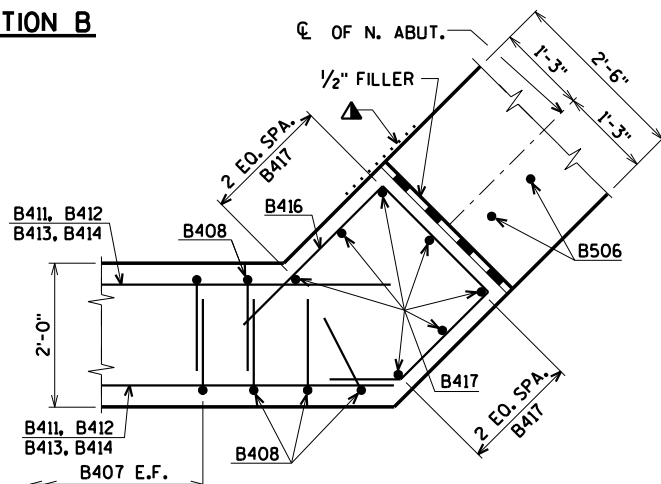
- RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES")
- OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES" IF CONST. JOINT IS USED).
- ⊕ 3/4" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.
- ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
- ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING BETWEEN WINGS.
- ⊙ KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
- ⊖ PIPE UNDERDRAIN WRAPPED 6-INCH, SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 8. RODENT SHIELD TO BE INCIDENTAL TO BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE  
E.F. DENOTES EACH FACE  
F.F. DENOTES FRONT FACE



**SECTION B**



**SECTION C**

4/22/2021 PENTABLE:BRRedu\_shd\_util.tbl

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-14-222</b>			
DRAWN BY		CLP	PLANS CK'D. CJM
<b>NORTH ABUTMENT WING DETAILS</b>			SHEET 7 OF 15

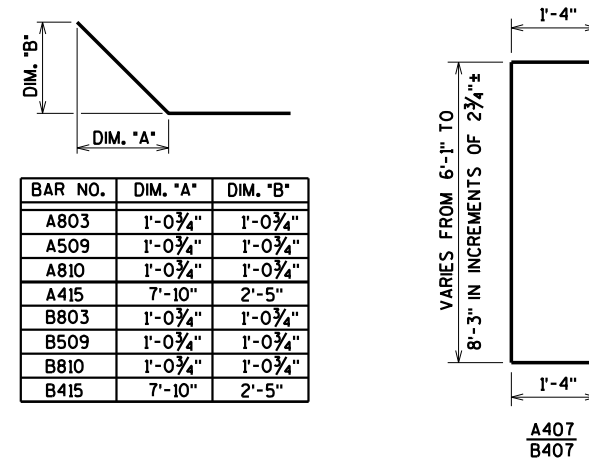
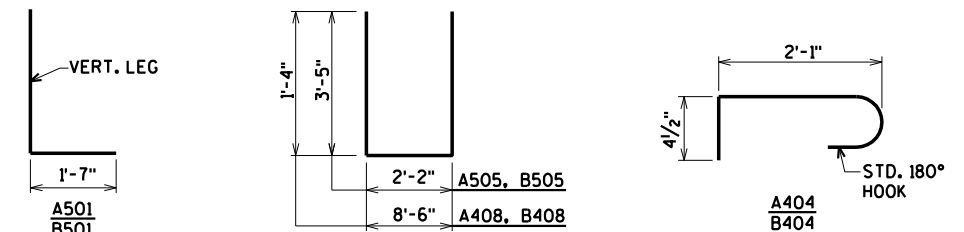
ORIGINAL PLANS PREPARED BY  
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**BILL OF BARS - SOUTH ABUTMENT**

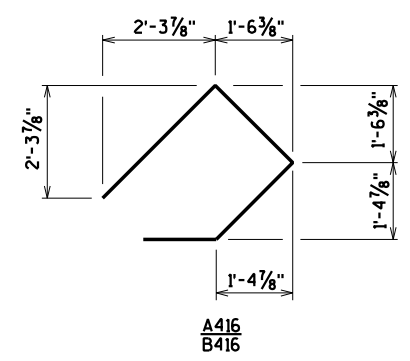
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	1,500# COATED	2,300# UNCOATED
							LOCATION	
A501		72	5-11	X			BODY VERT. E.F.	
A502		9	34-11				BODY HORIZ. F.F.	
A803		18	23-10	X			BODY HORIZ. B.F.	
A404		27	2-10	X			BODY TIES	
A505		36	8-9	X			BODY VERT. TOP	
A506	X	19	2-0				BODY DOWELS	
A407	X	44	9-8	X		⊗	WINGS 1 & 2 VERT. E.F.	
A408	X	8	11-0	X			WINGS 1 & 2 VERT. E.F.	
A509	X	18	11-7	X			WINGS 1 & 2 HORIZ. F.F.	
A810	X	18	13-5	X			WINGS 1 & 2 HORIZ. B.F.	
A411	X	8	10-3				WINGS 1 & 2 HORIZ. E.F.	
A412	X	4	9-2				WINGS 1 & 2 HORIZ. E.F.	
A413	X	4	7-0				WINGS 1 & 2 HORIZ. E.F.	
A414	X	4	4-10				WINGS 1 & 2 HORIZ. E.F.	
A415	X	4	10-4	X			WINGS 1 & 2 DIAG. E.F.	
A416	X	12	8-8	X			WINGS 1 & 2 HORIZ.	
A417	X	14	5-6				WINGS 1 & 2 VERT.	

**BILL OF BARS - NORTH ABUTMENT**

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	1,500# COATED	2,300# UNCOATED
							LOCATION	
B501		72	5-11	X			BODY VERT. E.F.	
B502		9	34-11				BODY HORIZ. F.F.	
B803		18	23-10	X			BODY HORIZ. B.F.	
B404		27	2-10	X			BODY TIES	
B505		36	8-9	X			BODY VERT. TOP	
B506	X	19	2-0				BODY DOWELS	
B407	X	44	9-8	X		⊗	WINGS 3 & 4 VERT. E.F.	
B408	X	8	11-0	X			WINGS 3 & 4 VERT. E.F.	
B509	X	18	11-7	X			WINGS 3 & 4 HORIZ. F.F.	
B810	X	18	13-5	X			WINGS 3 & 4 HORIZ. B.F.	
B411	X	8	10-3				WINGS 3 & 4 HORIZ. E.F.	
B412	X	4	9-2				WINGS 3 & 4 HORIZ. E.F.	
B413	X	4	7-0				WINGS 3 & 4 HORIZ. E.F.	
B414	X	4	4-10				WINGS 3 & 4 HORIZ. E.F.	
B415	X	4	10-4	X			WINGS 3 & 4 DIAG. E.F.	
B416	X	12	8-8	X			WINGS 3 & 4 HORIZ.	
B417	X	14	5-6				WINGS 3 & 4 VERT.	



BAR NO.	DIM. "A"	DIM. "B"
A803	1'-0 3/4"	1'-0 3/4"
A509	1'-0 3/4"	1'-0 3/4"
A810	1'-0 3/4"	1'-0 3/4"
A415	7'-10"	2'-5"
B803	1'-0 3/4"	1'-0 3/4"
B509	1'-0 3/4"	1'-0 3/4"
B810	1'-0 3/4"	1'-0 3/4"
B415	7'-10"	2'-5"



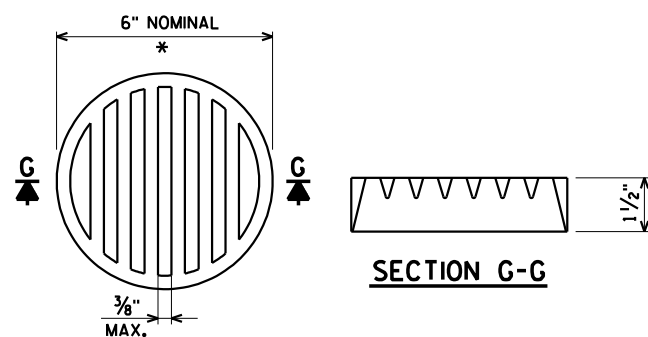
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.  
 ⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

B.F. DENOTES BACK FACE.  
 F.F. DENOTES FRONT FACE.  
 E.F. DENOTES EACH FACE.

**BAR SERIES TABLE**

BAR MARK	NO. REQ'D.	LENGTH
A407	4 SERIES OF 11	8'-7" TO 10'-9"
B407	4 SERIES OF 11	8'-7" TO 10'-9"

BUNDLE AND TAG EACH SERIES SEPARATELY.



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

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

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

**RODENT SHIELD DETAIL**

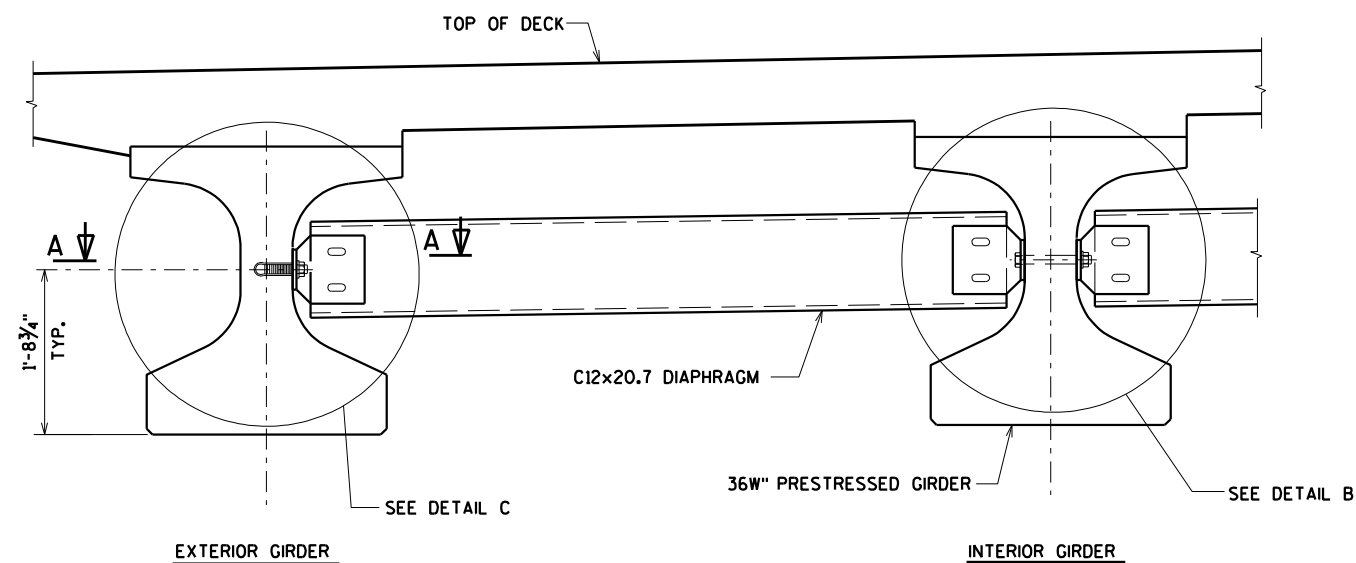
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ORIGINAL PLANS PREPARED BY  
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 Eau Claire, WI 54701  
 www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-14-222</b>			
DRAWN BY		CLP	PLANS CK'D. CJM
<b>ABUTMENT BILL OF BARS</b>			SHEET 8 OF 15



**NOTES**

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-14-222", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

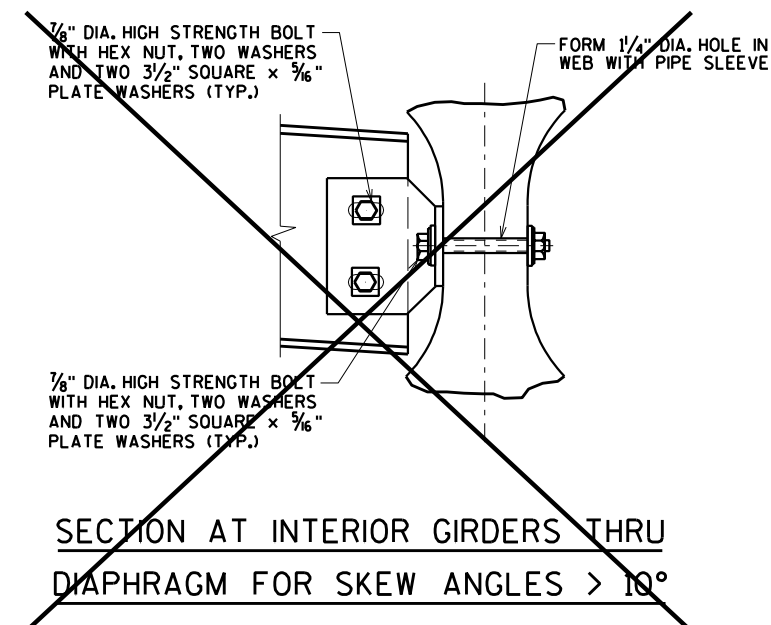
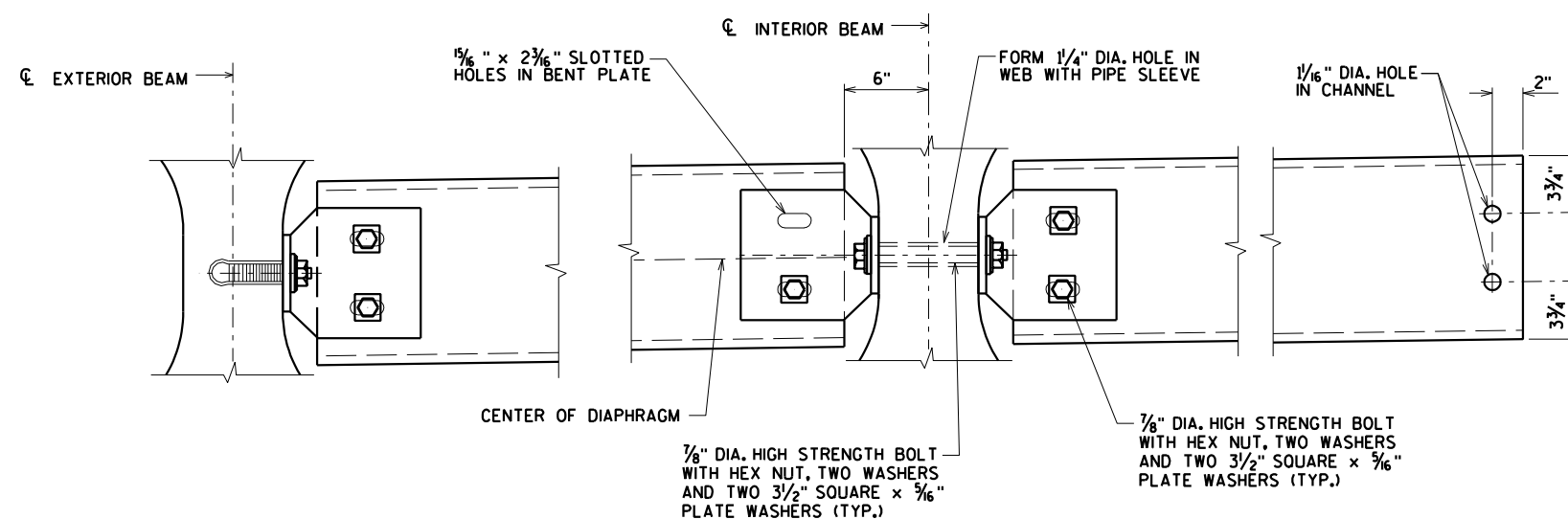
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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

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

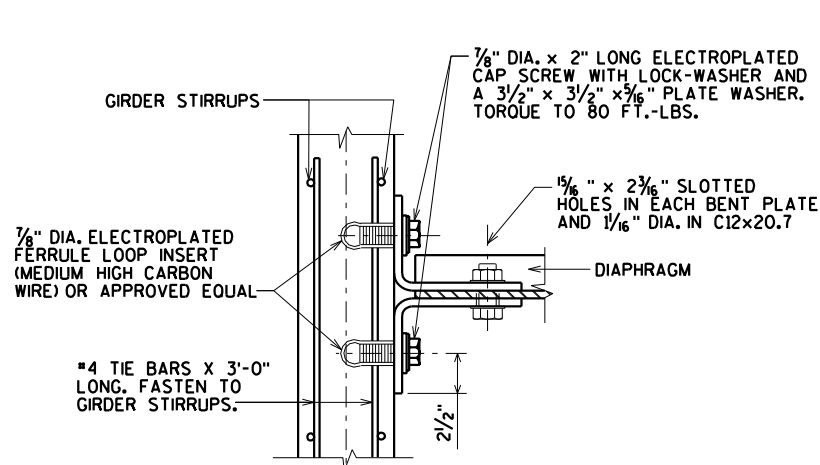
FOR DIAPHRAGM SPACING SEE SHEET 13.

**PART TRANSVERSE SECTION AT DIAPHRAGM**

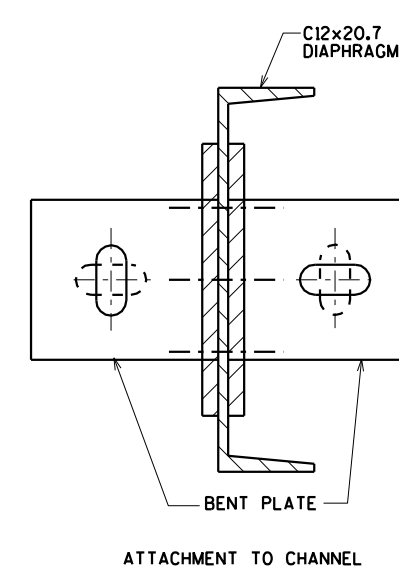
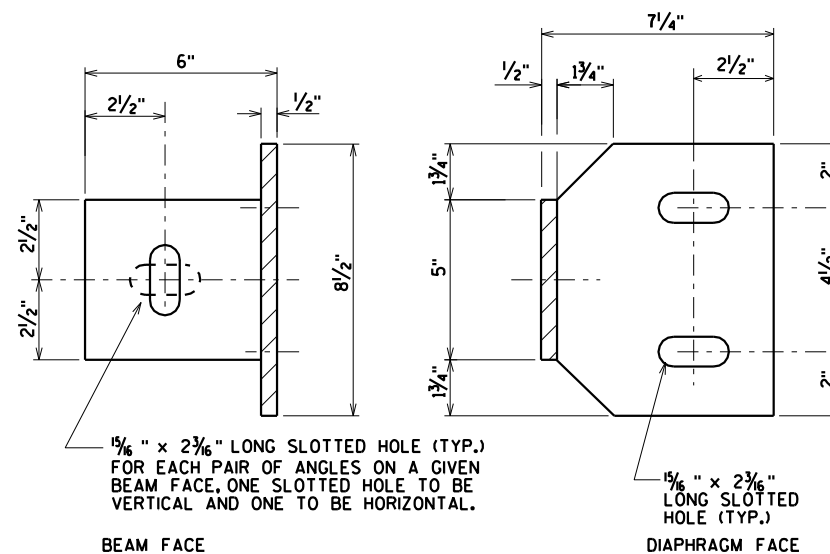


**DETAIL C**

**DETAIL B**



**SECTION A-A  
(FOR EXTERIOR ATTACHMENT)**



**ATTACHMENT TO CHANNEL**

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Eau Claire, WI 54701  
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-14-222</b>			
DRAWN BY CLP		PLANS CK'D. CJM	
<b>STEEL DIAPHRAGM</b>			SHEET 9 OF 15

8

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**NOTES**

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

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

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

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

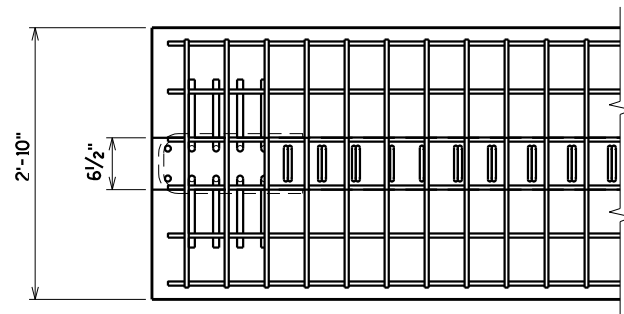
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 AND #5 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

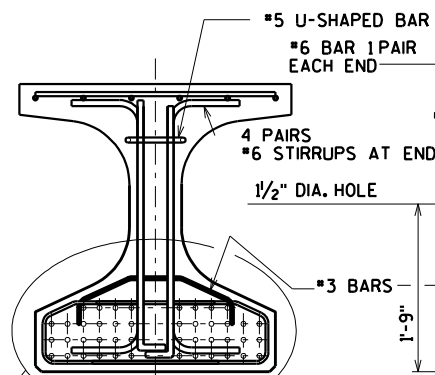
AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON ACCEPTANCE OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING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

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

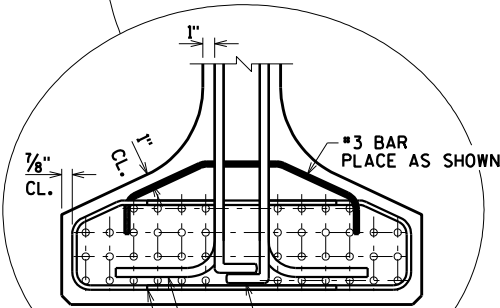
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



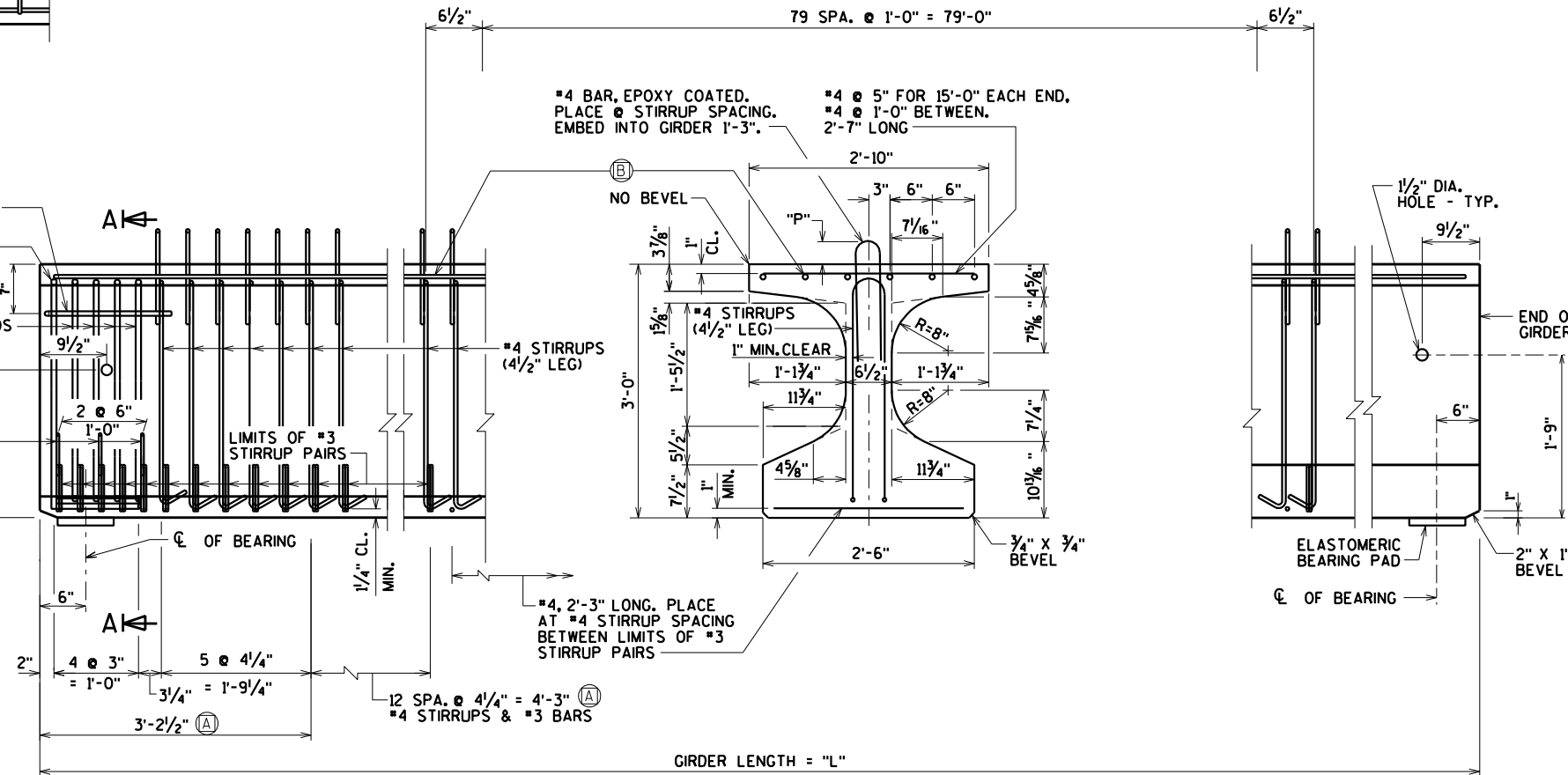
**TOP FLANGE**



**SECTION A-A**

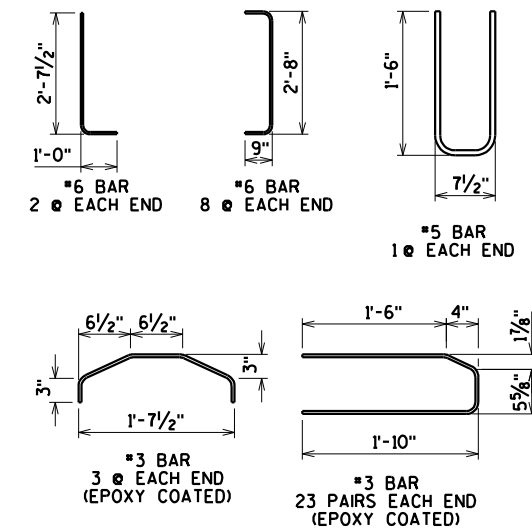


**DETAIL A  
BOTTOM FLANGE**



**SIDE VIEW & TYPICAL SECTION IN SPAN**

- (A) DETAIL TYP. AT EACH END
- (B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 2'-4"



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

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)										CONC. STRGTH. f'c (p.s.i.)	"P" 1/3 OF GIRDER	"M" 1/3 OF GIRDER	"E" 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN (IN.)					UNDRAPED PATTERN	
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	10/10						TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	"A"	"B" MIN.	"B" MAX.	"C"	TOTAL NO. OF STRANDS
1	1 & 6	95'-0"	0.6	1.1	1.6	1.9	1.9	1.9	1.6	1.1	0.6	8,000	8 1/2"	8 1/4"	8 1/2"	0.60	30	6,400	32	11	14	4		
1	2 - 5	95'-0"	0.6	1.2	1.6	1.9	2.0	1.9	1.6	1.2	0.6	8,000	8 1/2"	8 1/4"	8 1/2"	0.60	30	6,400	32	11	14	4		

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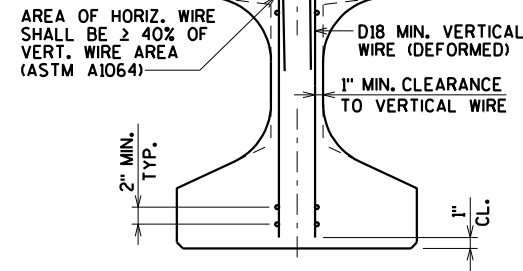
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-14-222</b>			
DRAWN BY	CLP	PLANS CK'D.	CJM
<b>36W" PRESTRESSED GIRDER DETAILS</b>			SHEET 10 OF 15

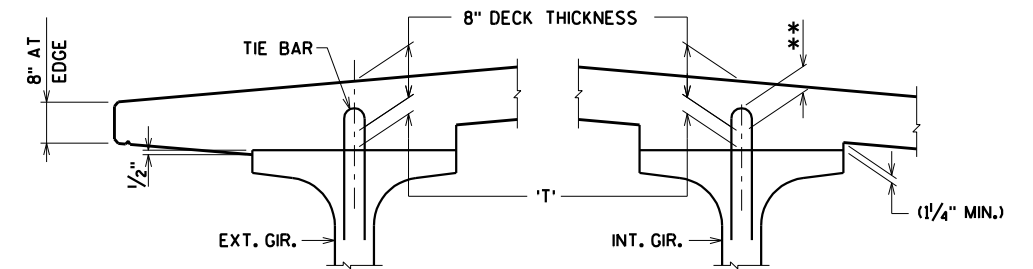


#4 BAR, EPOXY COATED. PLACE STIRRUP SPACING REQUIRED FOR NON WWF STIRRUPS. EMBED INTO GIRDER 1'-3".  
 HORIZ. WIRES SHALL BE LOCATED IN TOP AND BOT. FLANGES AND NOT IN THE WEB.



**SECTION THRU GIRDER**

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



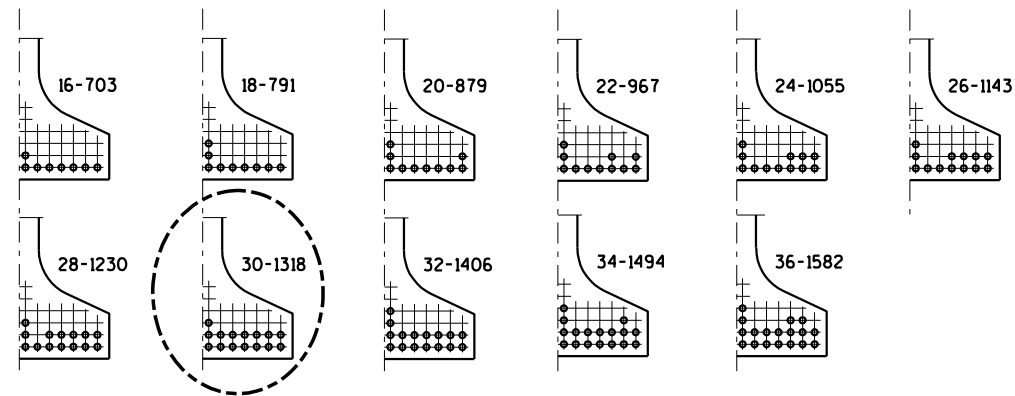
**DECK HAUNCH DETAIL**

IF 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD, NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, \*\* IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

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

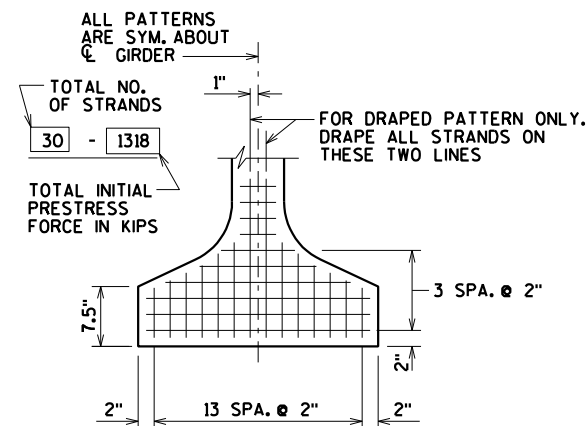
$$\begin{aligned} & \text{TOP OF DECK ELEV. AT FINAL GRADE} \\ & - \text{TOP OF GIRDER ELEVATION} \\ & + \text{DEAD LOAD DEFLECTION} \\ & - \text{DECK THICKNESS} \\ & = \text{HAUNCH HEIGHT 'T'} \end{aligned}$$

NOTE: AN AVERAGE HAUNCH ('T') OF 2 7/8" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

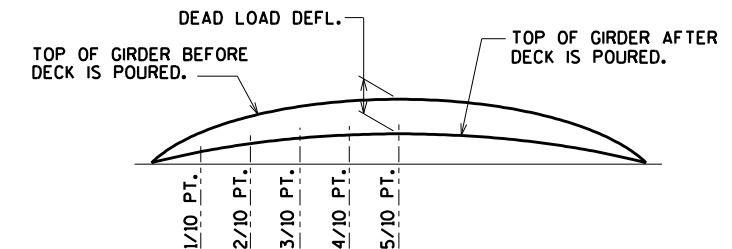


**ARRANGEMENT AT C SPAN - FOR GIRDERS WITH DRAPED STRANDS**

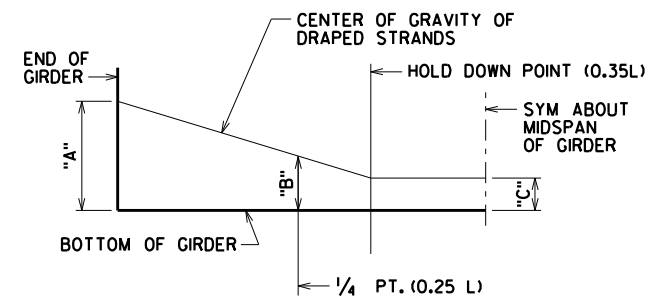
0.6" Ø STRANDS



**TYP. STRAND PATTERN**



**DEAD LOAD DEFLECTION DIAGRAM**



**DRAPED STRAND PROFILE**

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

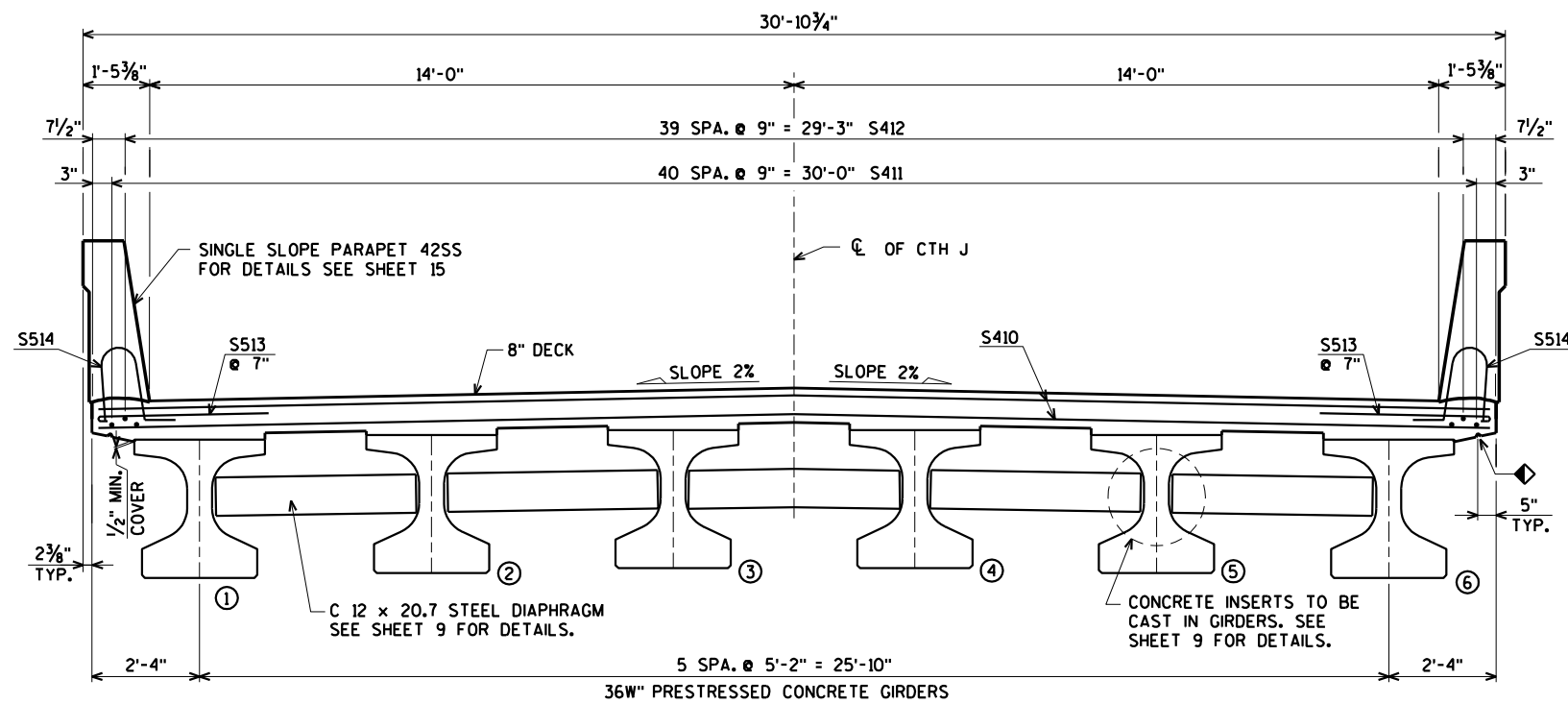
SPAN	CAMBER (IN.) *
1	3.6

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

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-14-222</b>			
DRAWN BY		CLP	PLANS CK'D. CJM
<b>36W" PRESTRESSED GIRDER DETAILS</b>			SHEET 11 OF 15

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TYPICAL SECTION THRU BRIDGE

1/4" V - GROOVE, EXTEND V - GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGMS - TYP.

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	20,690# COATED	
							LOCATION	
S501	X	48	10-3	X			DIAPH. @ ABUT. VERT.	
S502	X	24	7-11	X			DIAPH. @ ABUT. VERT.	
S503	X	48	5-5	X			DIAPH. @ ABUT. VERT.	
S604	X	10	30-2				DIAPH. @ ABUT. HORIZ.	
S605	X	40	2-11				DIAPH. @ ABUT. HORIZ. BETW. GDRS.	
S606	X	10	2-4				DIAPH. @ ABUT. HORIZ. BETW. GDRS.	
S607	X	4	0-9				DIAPH. @ ABUT. HORIZ. @ EXT. GDRS.	
S608	X	8	1-8				DIAPH. @ ABUT. HORIZ. @ EXT. GDRS.	
S509	X	24	6-0				DIAPH. @ ABUT. HORIZ. THRU GDRS.	
S410	X	331	30-2				DECK TRANS. TOP & BOT.	
S411	X	123	33-2				DECK LONG. BOT.	
S412	X	120	33-2				DECK LONG. TOP	
S513	X	332	4-3	X			DECK TRANS. TOP @ EDGE	
S514	X	238	4-5	X			DECK @ PARAPET VERT.	
S515	X	238	6-8	X			PARAPET VERT.	
S516	X	44	2-9	X			DECK @ PARAPET VERT.	
S517	X	68	4-4	X			DECK @ PARAPET VERT.	
S518	X	24	5-5	X	⊗		DECK @ PARAPET VERT.	
S519	X	20	6-5	X			DECK @ PARAPET VERT.	
S520	X	24	6-6	X			DECK @ PARAPET VERT.	
S521	X	4	25-8	X			PARAPET HORIZ. @ ENDS OF DECK	
S522	X	20	26-0	X			PARAPET HORIZ. @ ENDS OF DECK	
S523	X	8	25-8	X			PARAPET HORIZ. @ ENDS OF DECK	
S524	X	32	26-0	X			PARAPET HORIZ.	

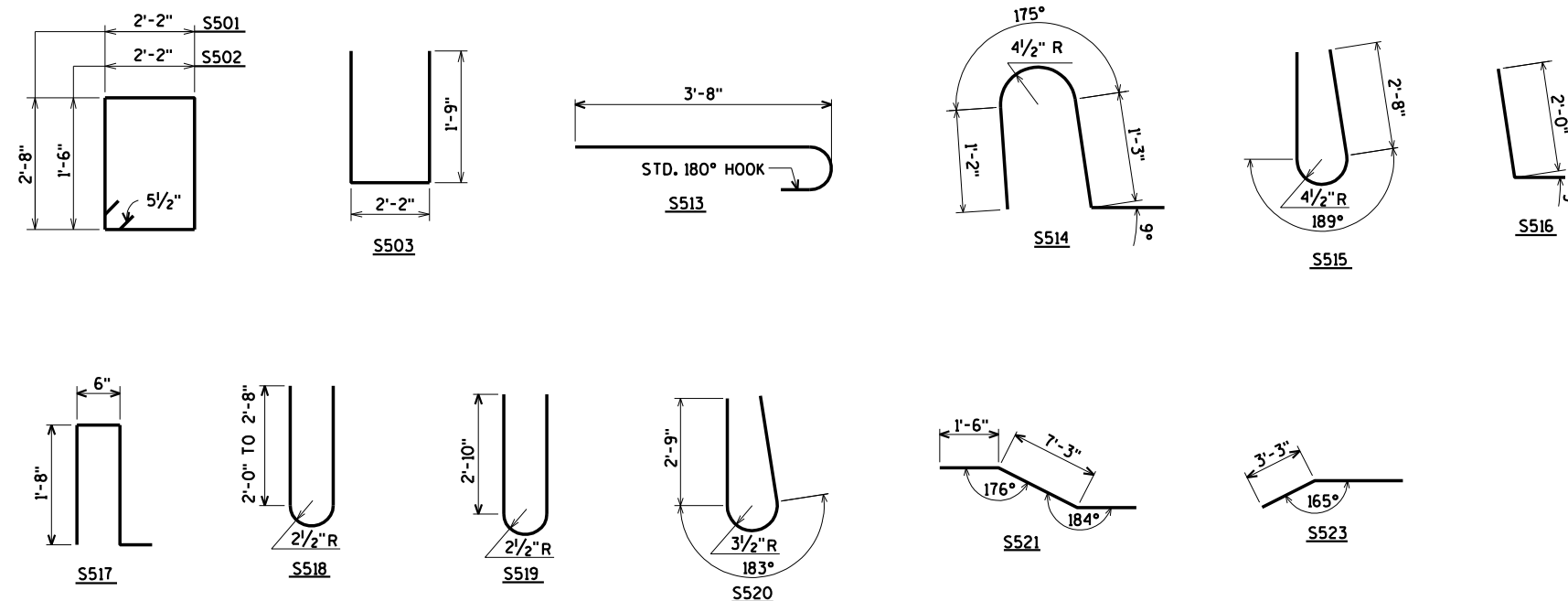
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
S518	4 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.



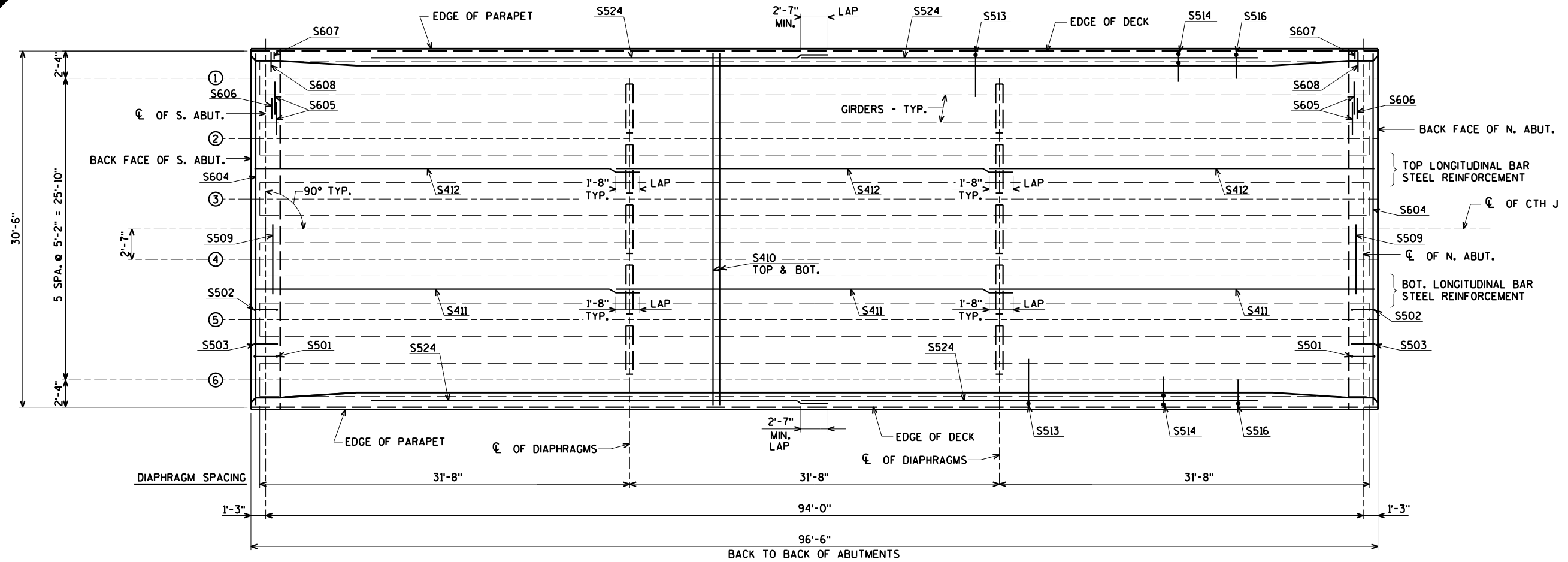
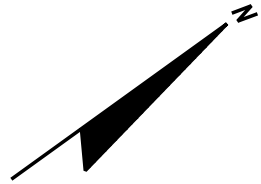
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-222			
DRAWN BY		CLP	PLANS CK'D. CJM
SUPERSTRUCTURE			SHEET 12 OF 15

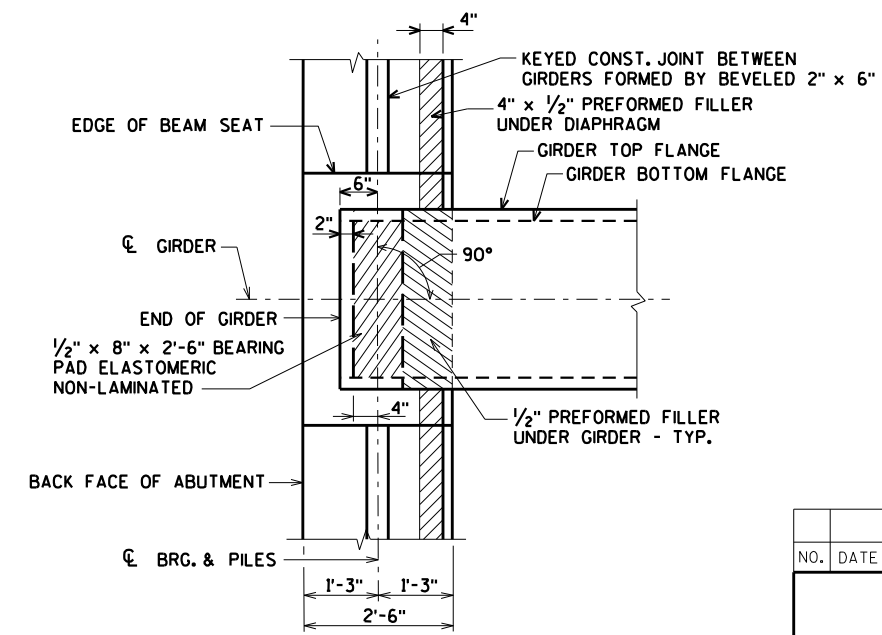
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**PLAN**

**TOP OF DECK ELEVATIONS**

	€ OF S. ABUT.	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	€ OF N. ABUT.
W. EDGE OF DECK	820.09	820.07	820.06	820.04	820.01	819.98	819.95	819.91	819.86	819.81	819.76
GIRDER 1	820.11	820.10	820.08	820.06	820.03	820.00	819.97	819.93	819.89	819.84	819.78
GIRDER 2	820.21	820.20	820.18	820.16	820.14	820.11	820.07	820.03	819.99	819.94	819.89
GIRDER 3	820.31	820.30	820.29	820.27	820.24	820.21	820.18	820.14	820.09	820.04	819.99
€ OF CTH J	820.37	820.35	820.34	820.32	820.29	820.26	820.23	820.19	820.14	820.09	820.04
GIRDER 4	820.31	820.30	820.29	820.27	820.24	820.21	820.18	820.14	820.09	820.04	819.99
GIRDER 5	820.21	820.20	820.18	820.16	820.14	820.11	820.07	820.03	819.99	819.94	819.89
GIRDER 6	820.11	820.10	820.08	820.06	820.03	820.00	819.97	819.93	819.89	819.84	819.78
E. EDGE OF DECK	820.09	820.07	820.06	820.04	820.01	819.98	819.95	819.91	819.86	819.81	819.76



**BEARING PAD DETAIL**

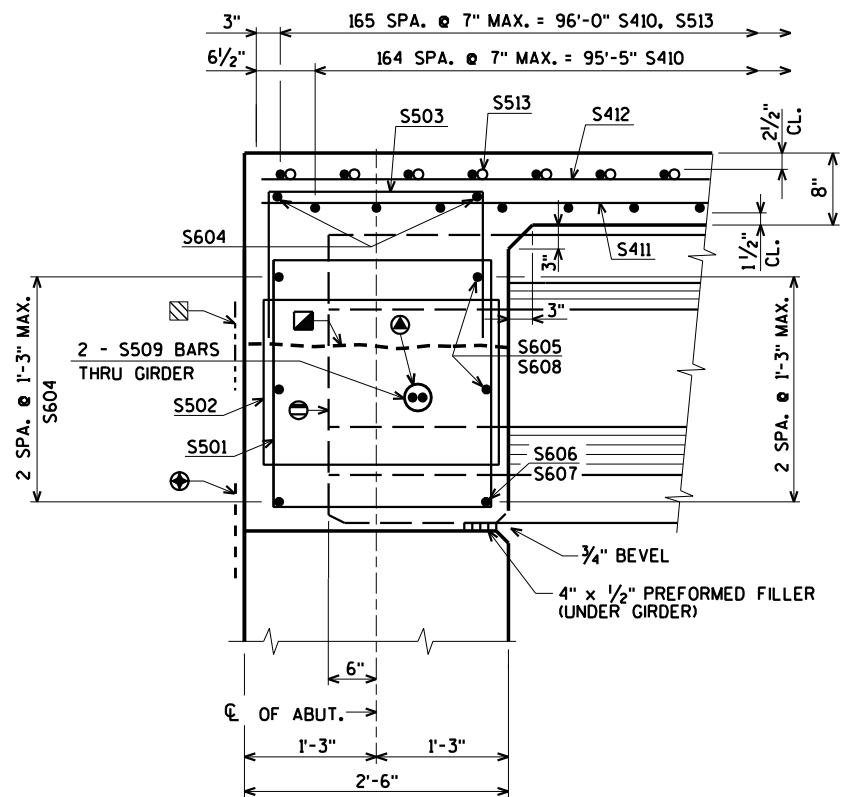
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
<b>STRUCTURE B-14-222</b>			
DRAWN BY		CLP	PLANS CK'D. CJM
<b>SUPERSTRUCTURE PLAN</b>			SHEET 13 OF 15

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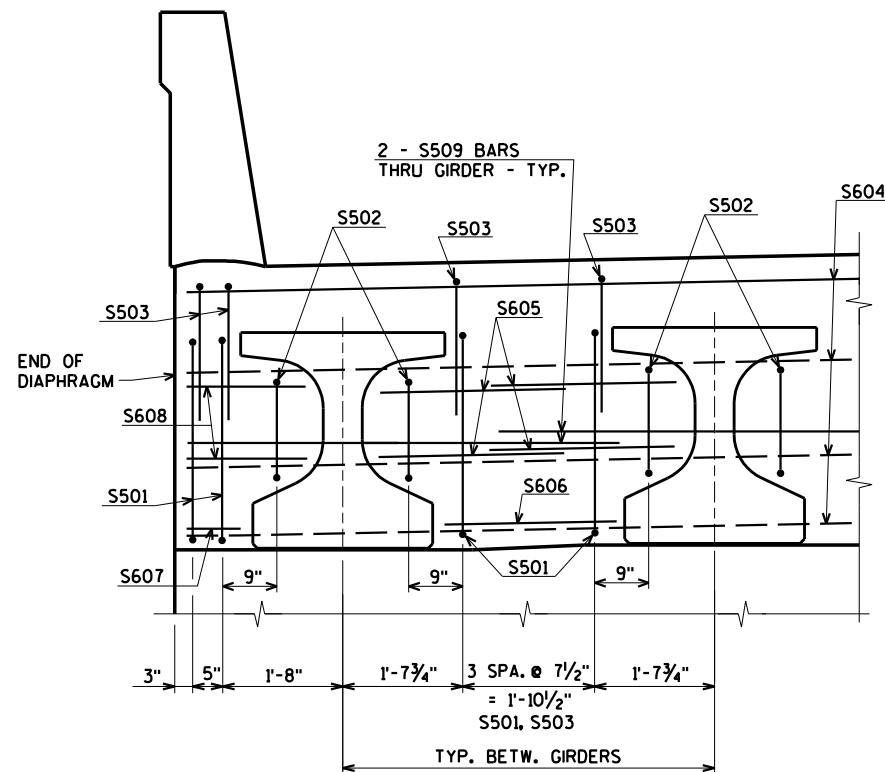
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**PART LONGITUDINAL SECTION**



**PART TRANSVERSE SECTION AT ABUTMENT DIAPHRAGM**

- ⊖ END OF GIRDER
- ⊕ 18" RUBBERIZED MEMBRANE WATERPROOFING
- ▣ OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDER. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.
- ▤ 18" RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JT. IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES"
- ⊙ 1 - 1/2" DIA. HOLE IN WEB FOR S511 BARS. PLACE S509 BARS SYM. ABOUT C OF GIRDERS.

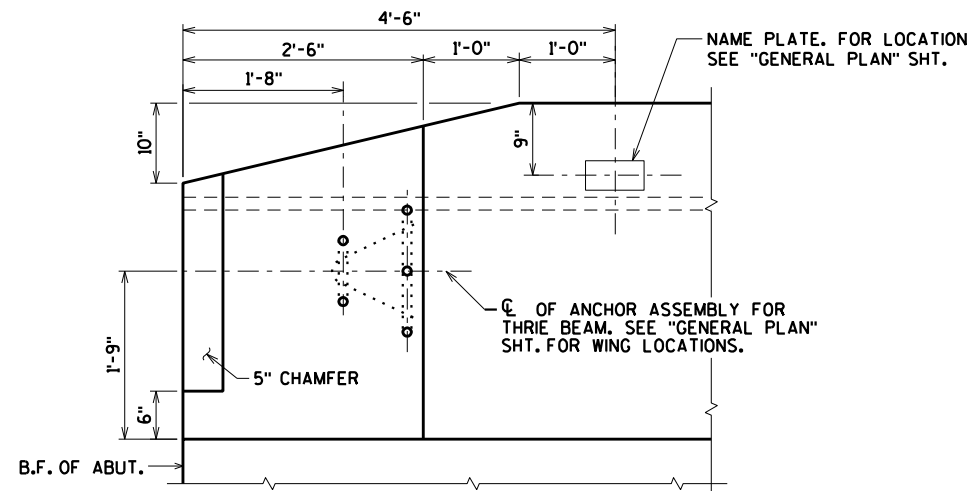
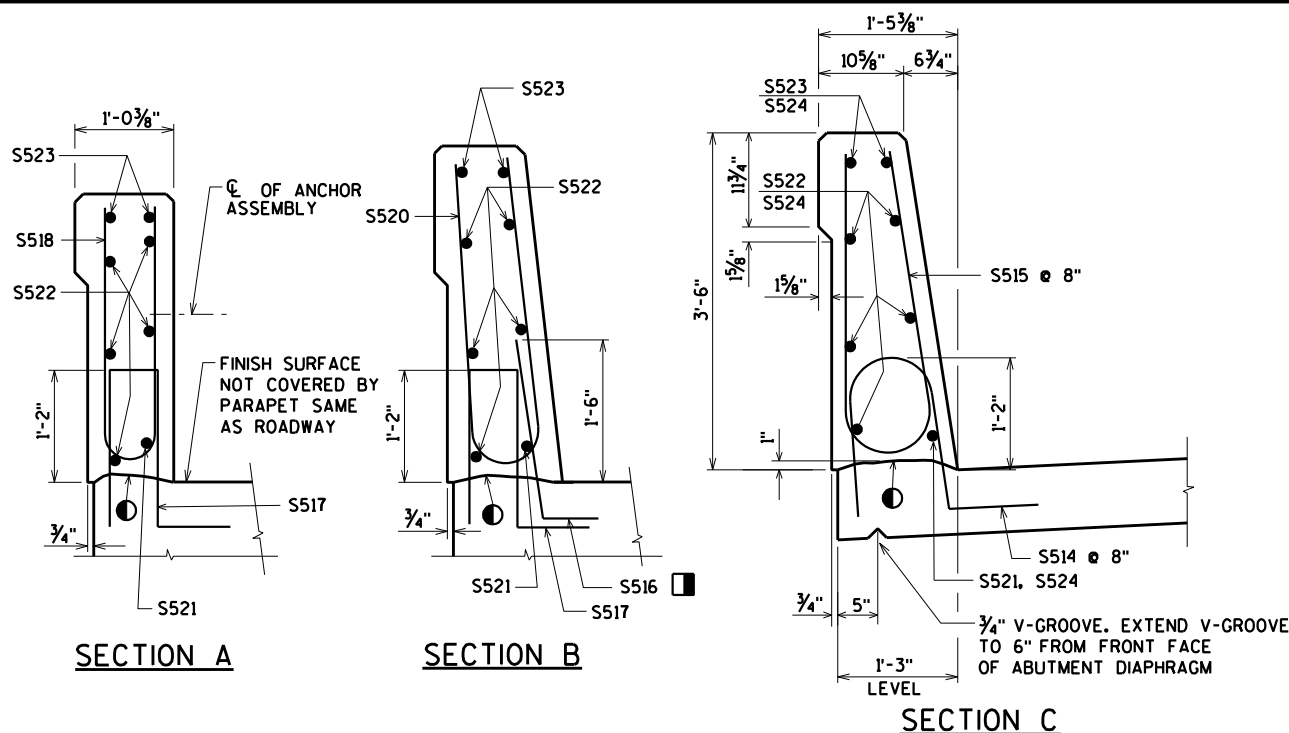
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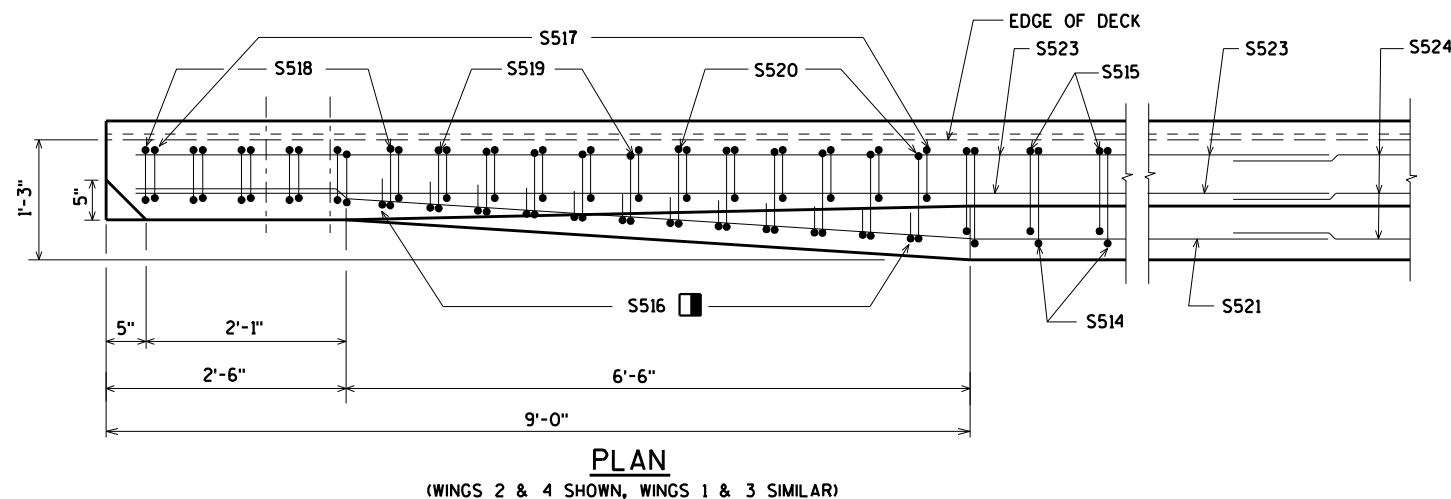
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<b>STRUCTURE B-14-222</b>			
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<b>SUPERSTRUCTURE DETAILS</b>			SHEET 14 OF 15

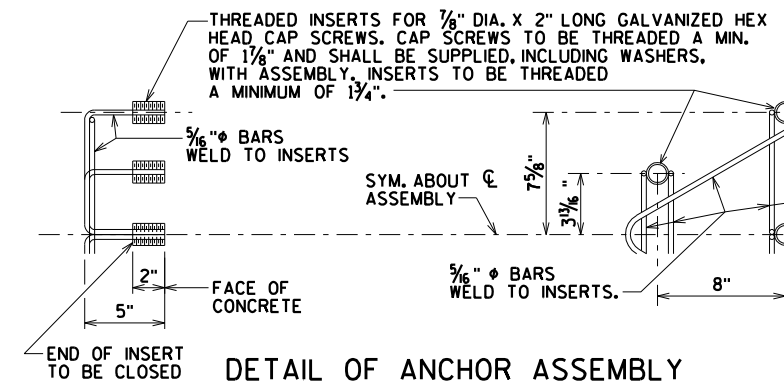
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**PARAPET END TREATMENT DETAIL**  
LOOKING AT INSIDE FACE OF PARAPET



**PLAN**  
(WINGS 2 & 4 SHOWN, WINGS 1 & 3 SIMILAR)



**DETAIL OF ANCHOR ASSEMBLY**

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

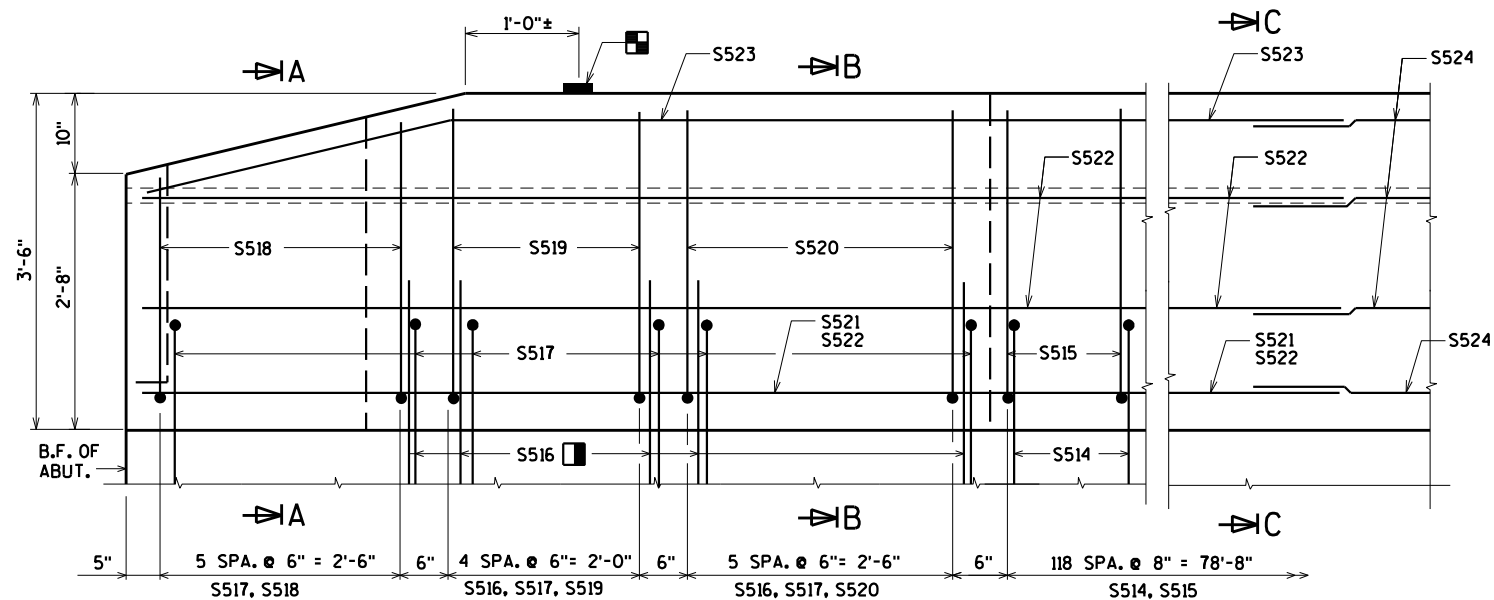
ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

■ BENCH MARK CAP - LOCATION AS SHOWN ON GENERAL PLAN SHEET

● CONST. JOINT - STRIKE OFF AS SHOWN.

■ S516 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE S516 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

LAP LONG. BARS A MIN. OF 2'-7".



**INSIDE ELEVATION**  
(WINGS 2 & 4 SHOWN, WINGS 1 & 3 SIMILAR)

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<b>STRUCTURE B-14-222</b>			
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<b>SINGLE SLOPE PARAPET 42SS</b>			SHEET 15 OF 15

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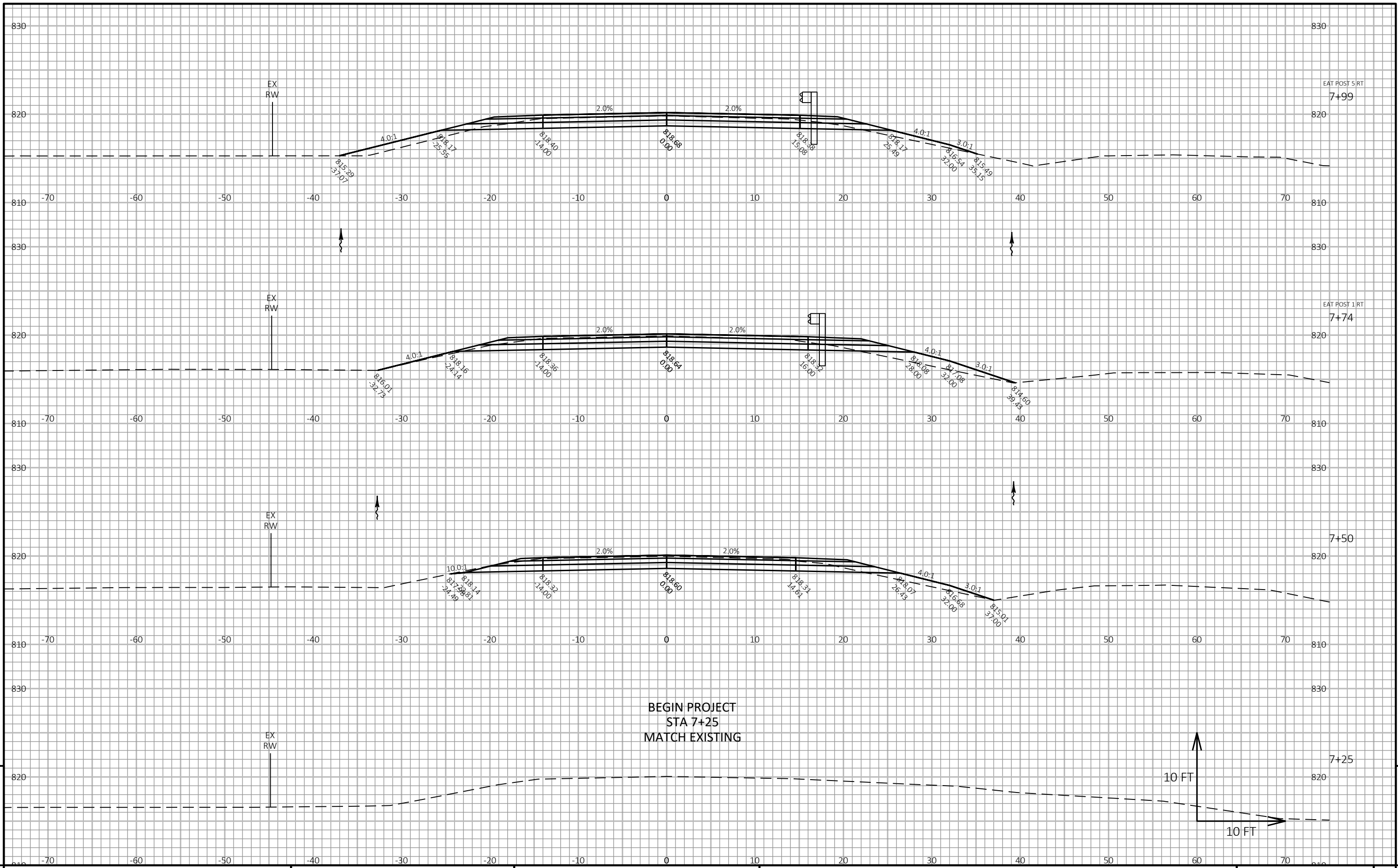
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CTH J COMPUTER EARTHWORK

Station	Distance	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut 1.00	Expanded Fill 1.30	
				Note 1	Note 2	Note 1		Note 3
7+25	--	0.00	0.00					
7+50	25	52.31	6.92	24	3	24	4	20
7+74	24	45.99	12.93	44	9	68	16	52
7+99	25	40.78	14.33	40	13	108	32	76
8+24	25	36.64	19.95	36	16	144	53	91
8+36	12	34.63	24.44	16	10	160	65	94
8+50	14	32.65	22.04	17	12	177	81	96
8+61	11	29.26	24.01	13	9	190	93	96
8+75	14	25.30	29.59	14	14	204	111	93
8+86	11	21.65	35.34	10	13	214	129	85
9+00	14	17.65	46.23	10	21	224	156	68
9+25	25	8.60	100.80	12	68	236	245	-9
NEW BRIDGE	--	--	--	--	--	--	--	--
10+75	--	8.99	122.78	--	--	--	--	--
11+00	25	18.02	86.04	13	97	248	370	-122
11+14	14	21.60	78.68	10	43	259	426	-167
11+25	11	23.61	75.29	9	31	268	467	-199
11+39	14	27.43	75.60	13	39	281	517	-236
11+50	11	30.20	77.40	12	31	293	558	-265
11+64	14	32.49	78.62	16	40	309	611	-301
11+76	12	34.97	71.87	15	33	324	654	-330
12+01	25	39.71	69.86	35	66	359	739	-381
12+26	25	46.71	63.00	40	62	399	819	-421
12+50	25	0.00	0.00	22	29	420	857	-437
				420	659			

Note 1 - Cut	Cut includes existing asphalt pavement. Assumed to be reused as fill outside the 1:1 road core.
Note 2 - Fill	Volume needed to be filled.
Note 3 - Mass Ordinate	(Cut) - (Fill * 1.30)



PROJECT NO: 3907-00-70

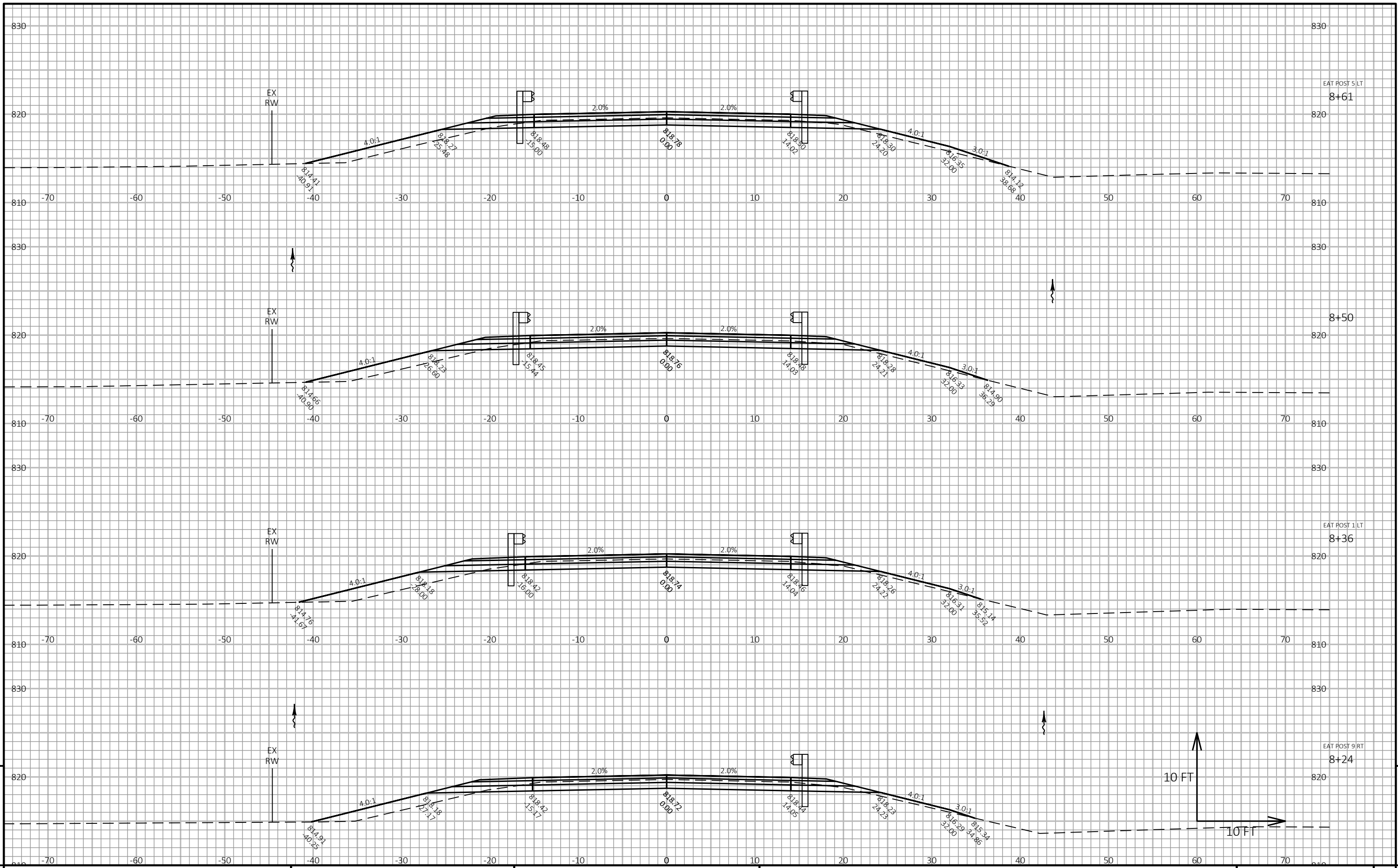
HWY: CTH J

COUNTY: DODGE

CROSS SECTIONS: CTH J

SHEET

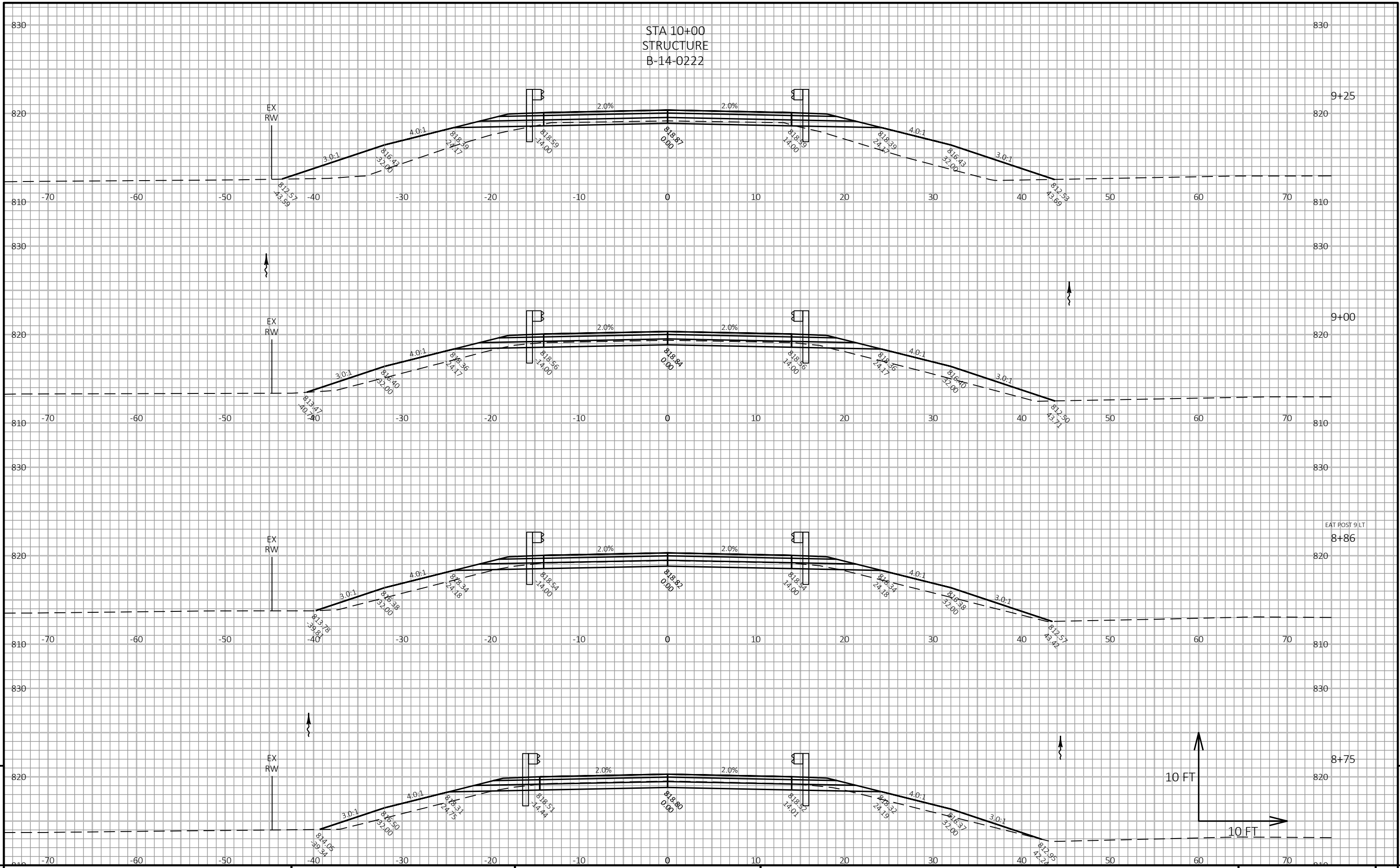
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PROJECT NO: 3907-00-70 HWY: CTH J COUNTY: DODGE CROSS SECTIONS: CTH J SHEET 9



STA 10+00  
STRUCTURE  
B-14-0222



PROJECT NO: 3907-00-70

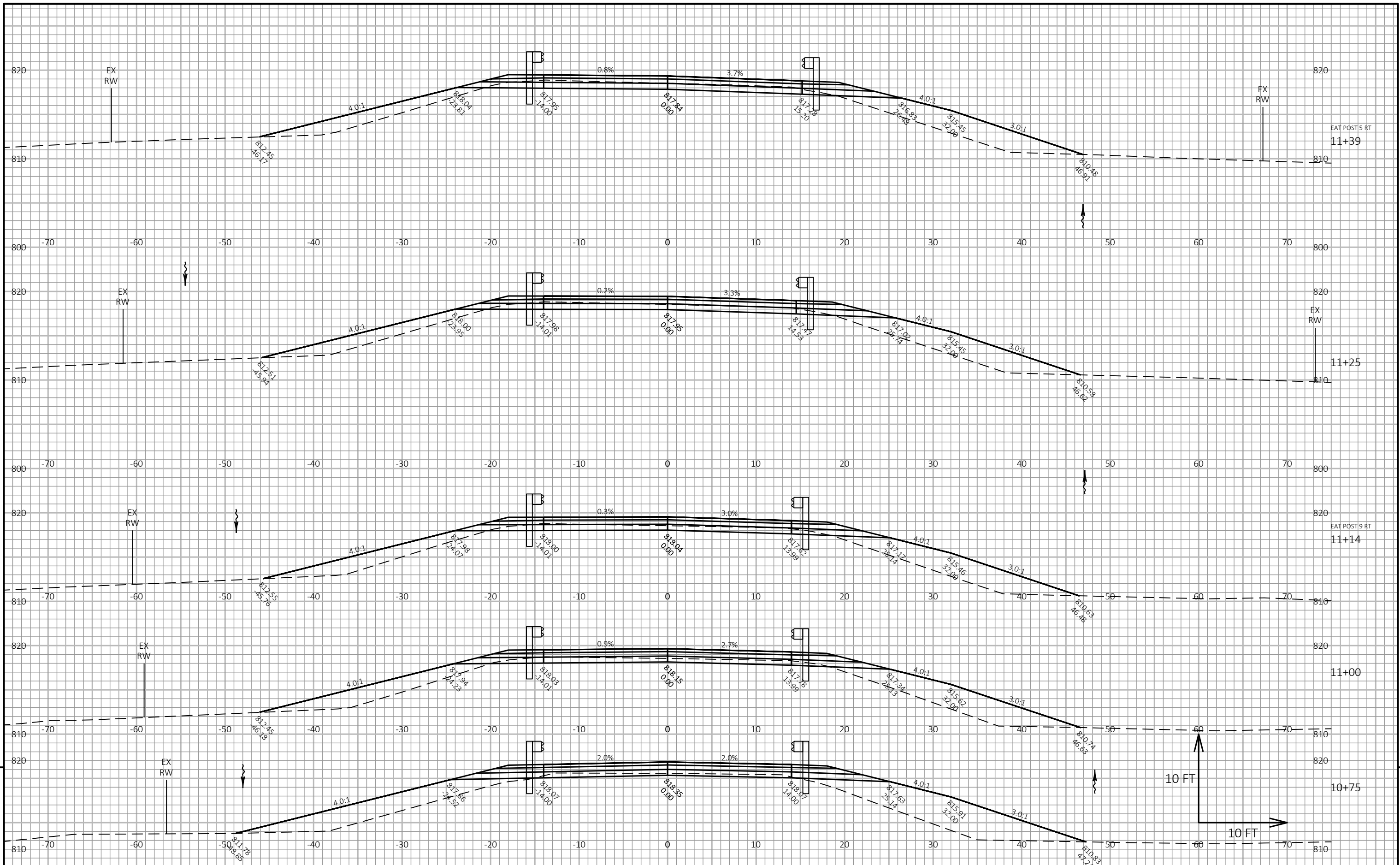
HWY: CTH J

COUNTY: DODGE

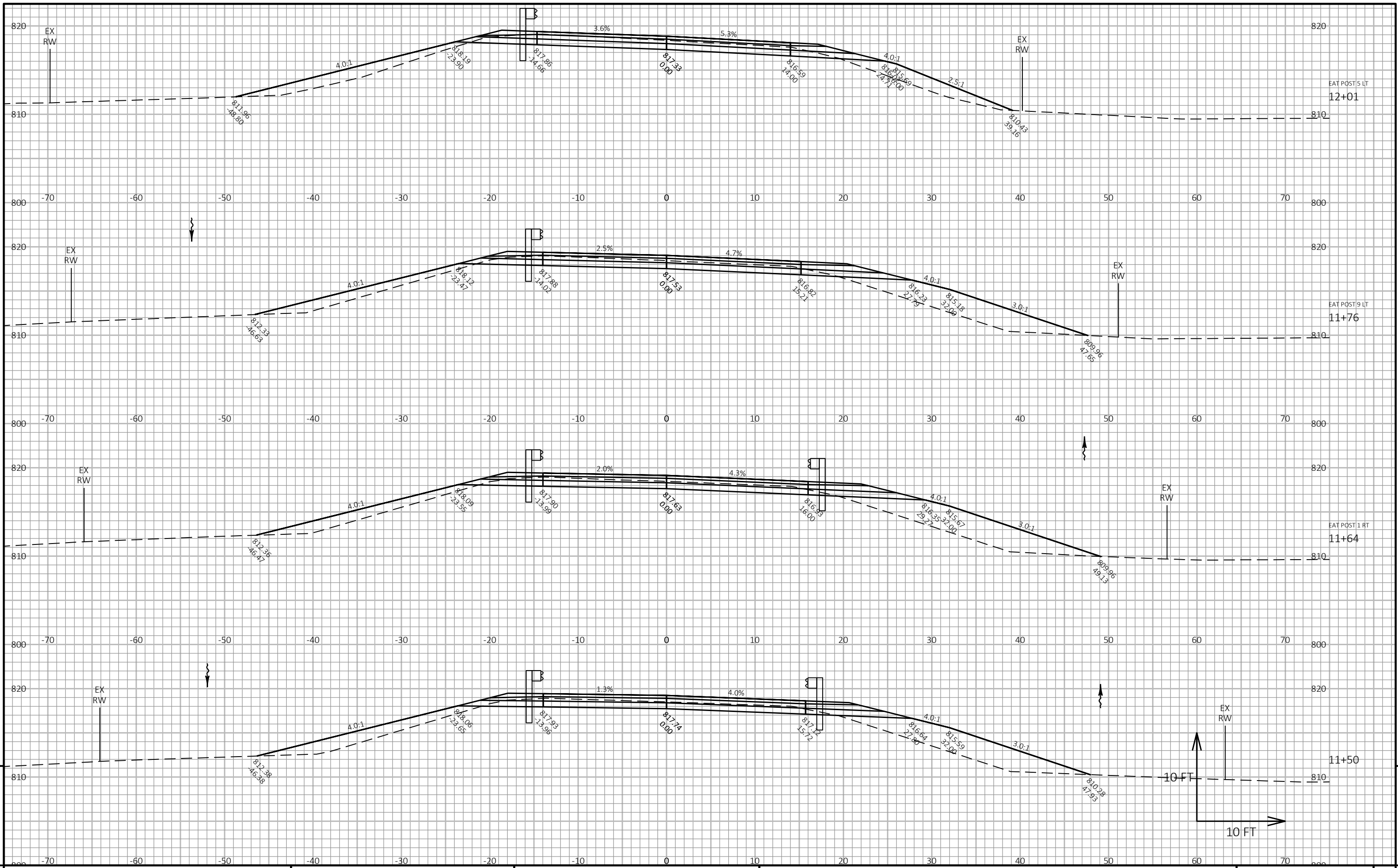
CROSS SECTIONS: CTH J

SHEET

E



PROJECT NO: 3907-00-70	HWY: CTH J	COUNTY: DODGE	CROSS SECTIONS: CTH J	SHEET E
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PROJECT NO: 3907-00-70

HWY: CTH J

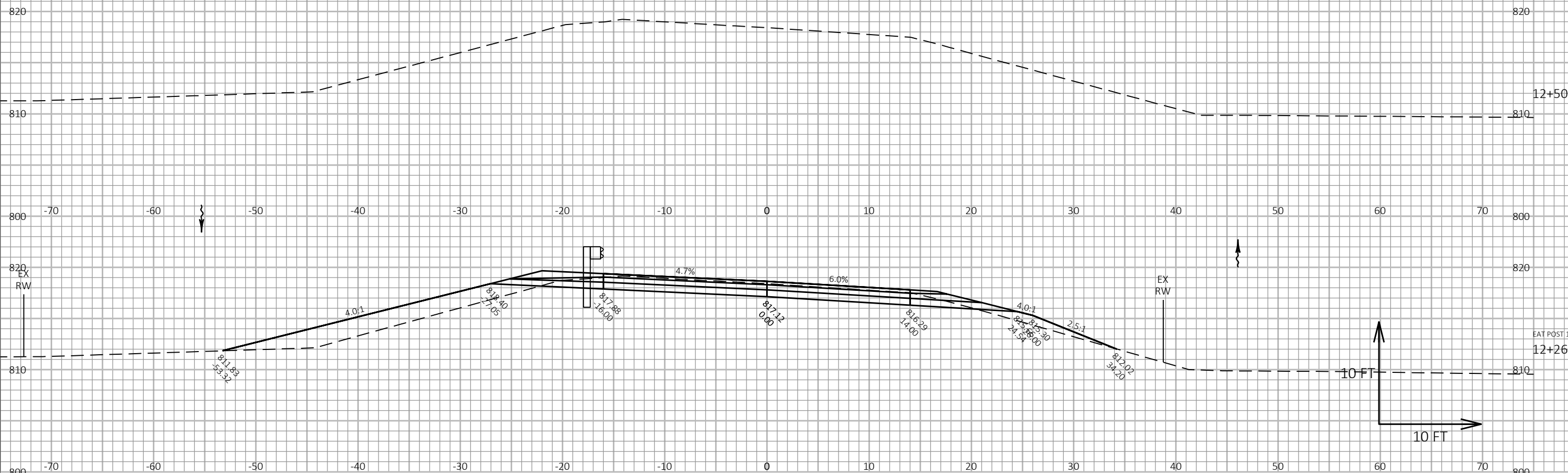
COUNTY: DODGE

CROSS SECTIONS: CTH J

SHEET

E

BEGIN PROJECT  
 STA 12+50  
 MATCH EXISTING



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PROJECT NO: 3907-00-70	HWY: CTH J	COUNTY: DODGE	CROSS SECTIONS: CTH J	SHEET	E
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FILE NAME : I:\47\410806 CTH J OVER BEAVER DAM RIVER\C3D\DESIGN\CTH J\_PROPOSED DESIGN.DWG  
 PLOT DATE : 3/9/2021 12:45 PM  
 PLOT BY : INMAN, AMANDA  
 PLOT NAME :  
 PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.  
 WISDOT/CADD SHEET 49

# Notes



## ***Wisconsin Department of Transportation***

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