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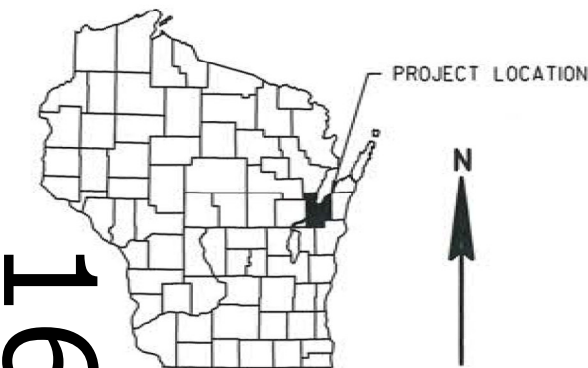
JAN 14, 2020

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections, Details, and Erosion Control
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
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 = 94

PROJECT ID: 9286-05-71
WITH: N/A



DESIGN DESIGNATION

A.A.D.T.	2019	=	1600
A.A.D.T.	2039	=	2300
D.H.V.		=	317
D.D.		=	59/41
T.		=	17.5%
DESIGN SPEED		=	40 MPH
ESALS		=	440,000

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

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

V SUAMICO, CTH J

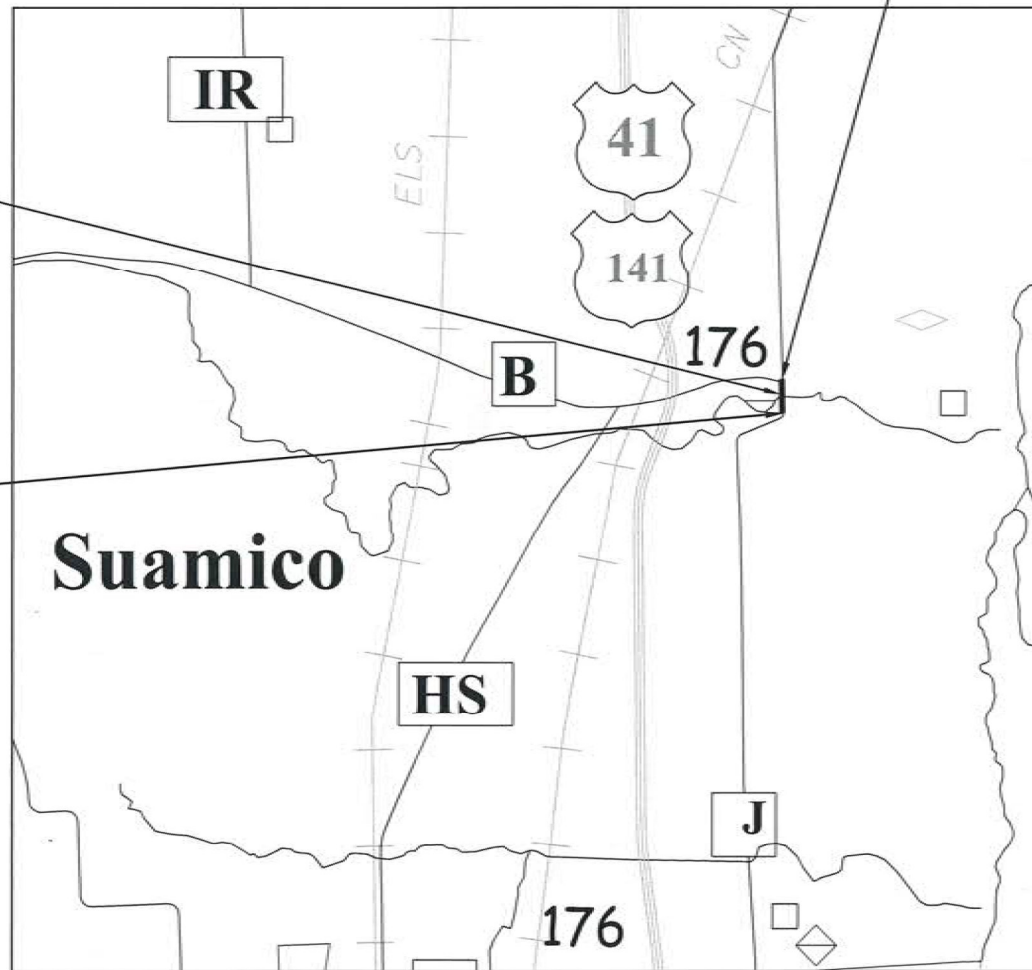
SUAMICO RIVER BRIDGE

CTH J

BROWN COUNTY

STATE PROJECT NUMBER
9286-05-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9286-05-71		



STRUCTURE B-5-443

BEGIN PROJECT
STA 101+25.00
Y= 610840.047
X= 94744.494

END PROJECT
STA 105+00.00

LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.071 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, BROWN COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ACCEPTED FOR BROWN COUNTY

Date: 7/10/19
Senior Civil Engineer
Title of Official

[Signature]
(Signature)

ORIGINAL PLANS PREPARED BY

OMNI ASSOCIATES



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	OMNI ASSOCIATES
Surveyor	OMNI ASSOCIATES
Designer	OMNI ASSOCIATES
Regional Examiner	BRIAN EDWARDS
Regional Supervisor	JAMES THOMPSON

APPROVED FOR THE DEPARTMENT
DATE: 7/16/19
[Signature]
(SIGNATURE)

E

GENERAL NOTES

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

FILL AS SHOWN ON THE PLANS PERTAINS TO EMBANKMENTS CONSTRUCTED FROM COMMON EXCAVATION. THE ALLOWANCE USED FOR EXPANDING THE FILLS TO COMPUTE THE VOLUME OF MATERIAL REQUIRED IS 25 PERCENT. ALL FILL VOLUMES SHOWN ARE THE ACTUAL VOLUMES.

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

ALL DISTURBED AREAS NOT OTHERWISE SURFACED ARE TO BE TOPSOILED, FERTILIZED, SEEDED AND EROSION MATTED. USE SEED MIX NO. 60 IN WETLAND AREAS, USE SEED MIX NO. 30 EVERYWHERE ELSE.

EROSION CONTROL DEVICES SHALL BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER IN THE FIELD. SILT FENCE SHALL BE PLACED PRIOR TO CONSTRUCTION AND IN PLACE PRIOR TO STRUCTURE REMOVAL.

THE EXACT LOCATIONS OF ALL EROSION CONTROL ITEMS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

PLAN ELEVATIONS = USGS DATUM NAVD 88 (2011)

ORDER OF "SECTION 2" SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL PLAN
- DETOUR PLAN

EROSION CONTROL NOTES

RUNOFF COEFFICIENTS FOR THIS PROJECT: EXISTING PAVEMENT 0.95, EXISTING SLOPES 0.30, NEW PAVEMENT 0.95, NEW SLOPES 0.30.

TOTAL PROJECT AREA = 1.267 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.952 ACRES

UTILITY CONTACTS

COMMUNICATIONS CHARTER COMMUNICATIONS
3520 EAST DESTINATION DRIVE
APPLETON, WI 54915
ATTN: VINCENT ALBIN
TELEPHONE: (920) 831-9249
EMAIL: vince.albin@charter.com

WATER & STORM SEWER VILLAGE OF SUAMICO
12781 VELD AVENUE
SUAMICO, WI 54313
ATTN: JOEL VANLANEN
TELEPHONE: (920) 434-8410
EMAIL: joelv@suamico.org

ELECTRIC & GAS WISCONSIN PUBLIC SERVICE CORPORATION
700 NORTH ADAMS STREET, PO BOX 19001
GREEN BAY, WI 54307-9001
ATTN: LORI BUTRY
TELEPHONE: (920) 433-1703
EMAIL: LButry@integrysgroup.com

LOCAL CONTACT (ELECTRIC): ROBERT SMITH
TELEPHONE: (920) 617-5284
EMAIL: robert.smith@wisconsinpublicservice.com

LOCAL CONTACT (GAS): JIM EIDEN
TELEPHONE: (920) 617-5231
EMAIL: james.eiden@wisconsinpublicservice.com



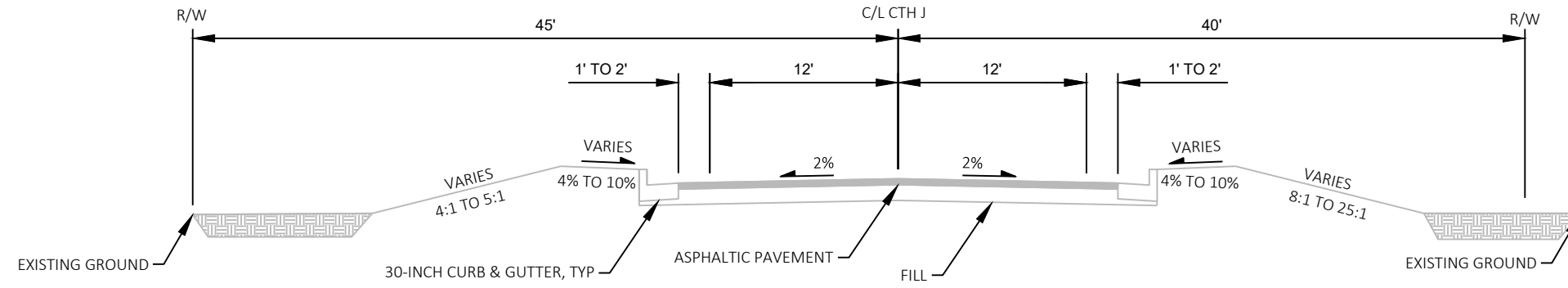
Dial **811** or (800)242-8511
www.DiggersHotline.com

** DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

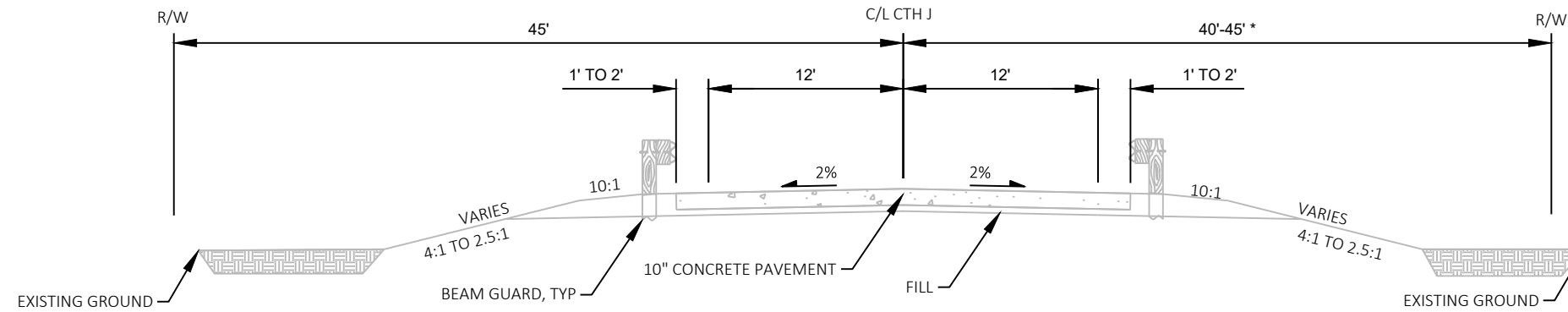
OTHER CONTACTS

BROWN COUNTY WILLIAM BERG
2198 GLENDALE AVENUE
GREEN BAY, WI 54303
TELEPHONE: (920) 662-2171
EMAIL: Berg_WR@co.brown.wi.us

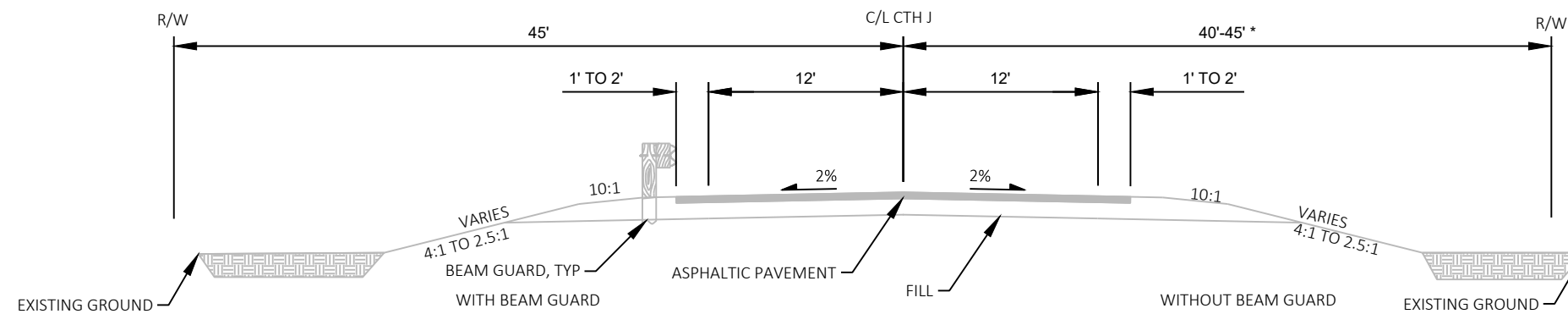
DNR LIAISON JIM DOPERALSKI
DEPARTMENT OF NATURAL RESOURCES
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
TELEPHONE: (920) 412-0165
EMAIL: james.doperalski@wisconsin.gov



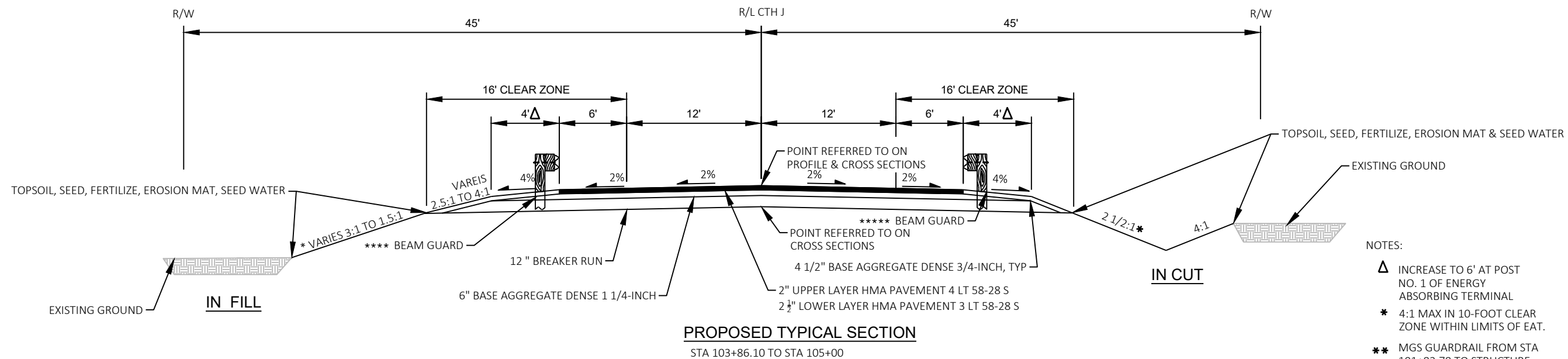
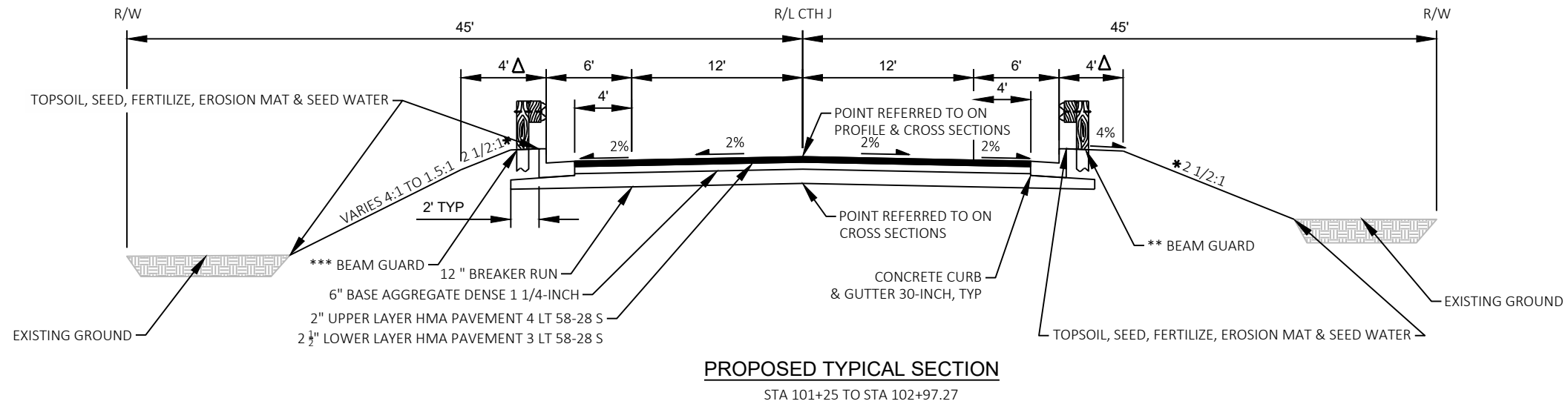
EXISTING TYPICAL SECTION
STA 101+25 TO STA 102+25



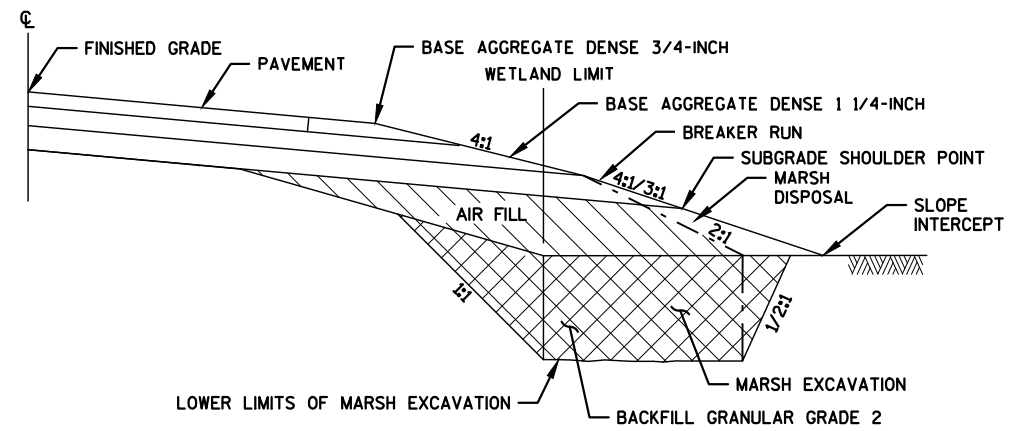
EXISTING TYPICAL SECTION
STA 102+75 TO STA 102+97 *40'
STA 103+85 TO STA 104+07 *45'



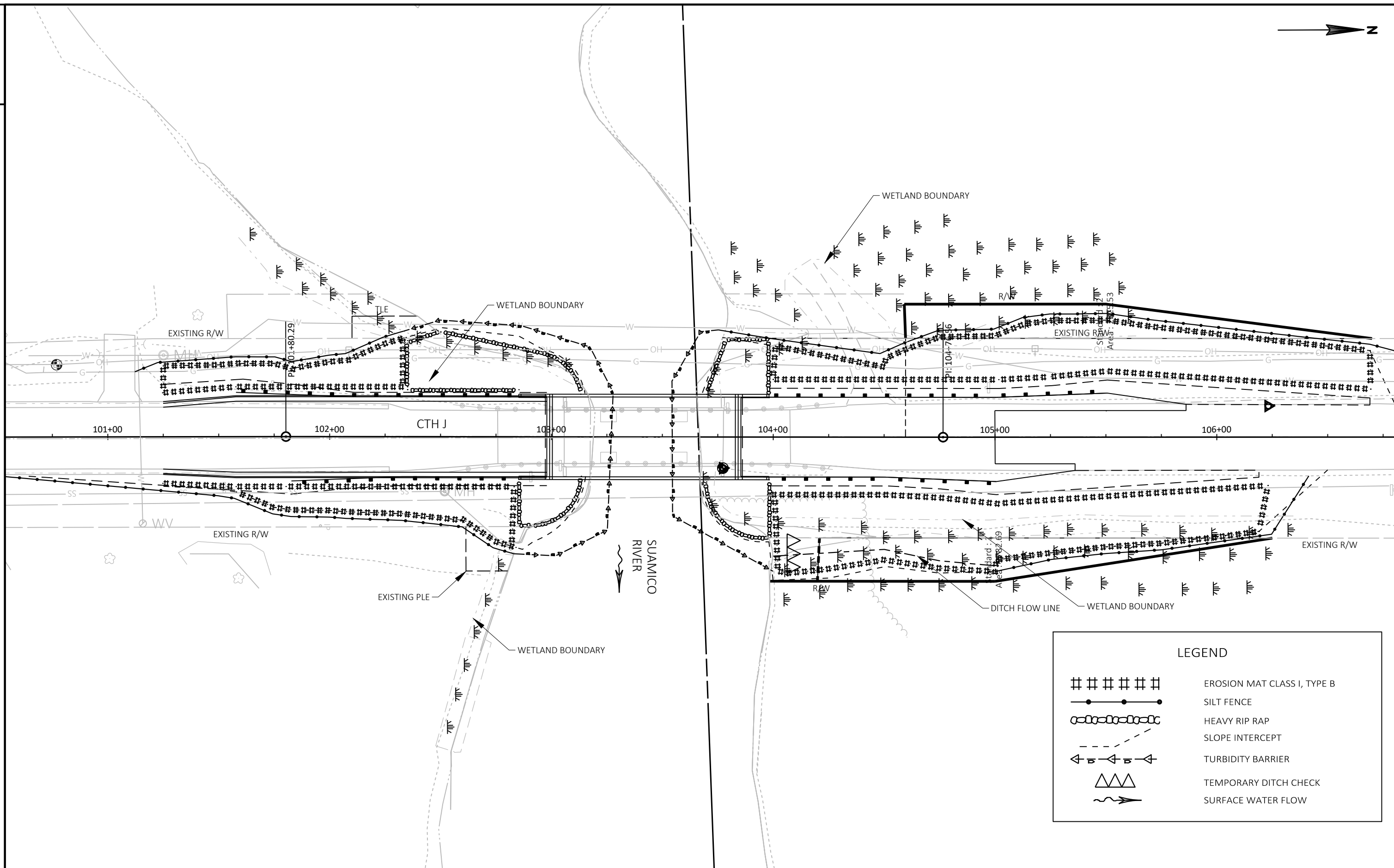
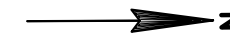
EXISTING TYPICAL SECTION
STA 102+25 TO STA 102+75 *40'
STA 104+07 TO STA 105+00 *45'



- NOTES:
- Δ INCREASE TO 6' AT POST NO. 1 OF ENERGY ABSORBING TERMINAL
 - * 4:1 MAX IN 10-FOOT CLEAR ZONE WITHIN LIMITS OF EAT.
 - ** MGS GUARDRAIL FROM STA 101+82.78 TO STRUCTURE
 - *** MGS GUARDRAIL FROM STA 101+57.83 TO STRUCTURE
 - **** MGS GAURDRAIL FROM STRUCTURE TO STA 105+50.61
 - ***** MGS GUARDRAIL FROM STRUCTURE TO STA 105+50.56

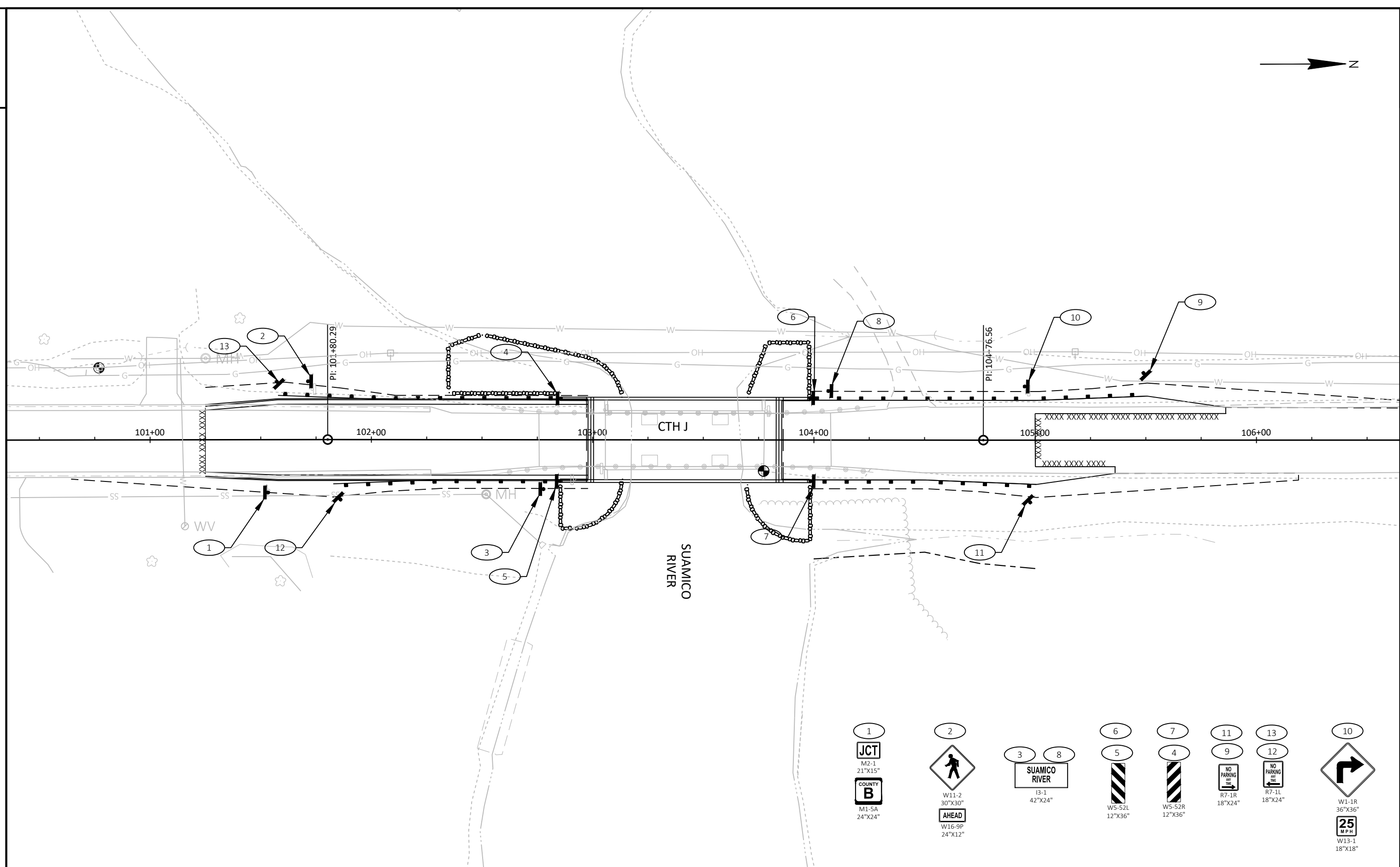


TYPICAL MARSH EXCAVATION FOR RURAL SECTION



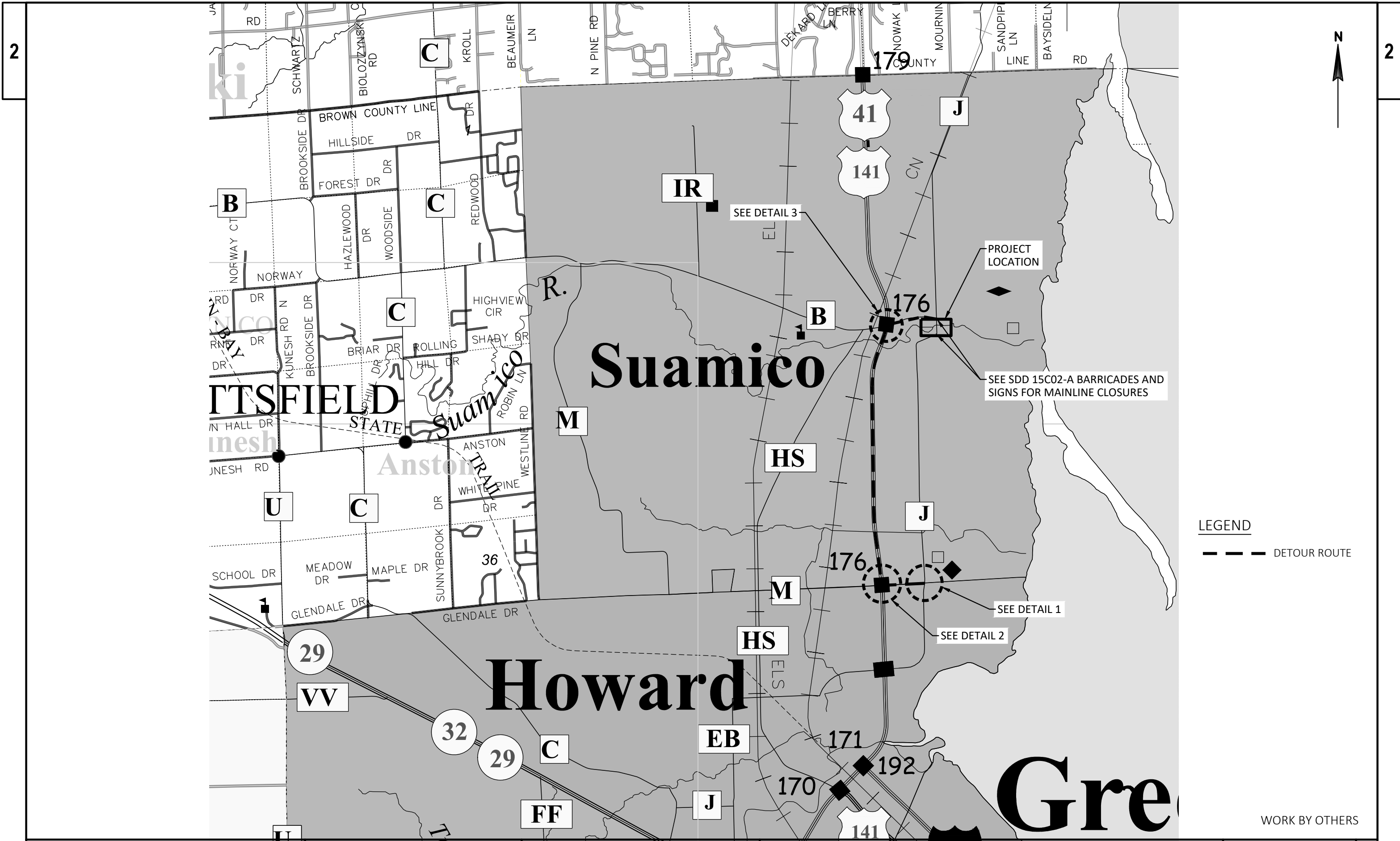
LEGEND	
	EROSION MAT CLASS I, TYPE B
	SILT FENCE
	HEAVY RIP RAP
	SLOPE INTERCEPT
	TURBIDITY BARRIER
	TEMPORARY DITCH CHECK
	SURFACE WATER FLOW

PROJECT NO: 9286-05-71	HWY: CTH J	COUNTY: BROWN	EROSION CONTROL	SHEET	E
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<p>1</p> <p>M2-1 21"X15"</p> <p>3</p> <p>COUNTY B M1-5A 24"X24"</p>	<p>2</p> <p>W11-2 30"X30"</p> <p>4</p> <p>AHEAD W16-9P 24"X12"</p>	<p>6</p> <p>SUAMICO RIVER I3-1 42"X24"</p>	<p>7</p> <p>W5-52L 12"X36"</p> <p>8</p> <p>W5-52R 12"X36"</p>	<p>11</p> <p>NO PARKING R7-1R 18"X24"</p> <p>13</p> <p>NO PARKING R7-1L 18"X24"</p>	<p>10</p> <p>W1-1R 36"X36"</p> <p>25</p> <p>25 W13-1 18"X18"</p>
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PROJECT NO: 9286-05-71	HWY: CTH J	COUNTY: BROWN	PERMANENT SIGNING	SHEET	E
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2

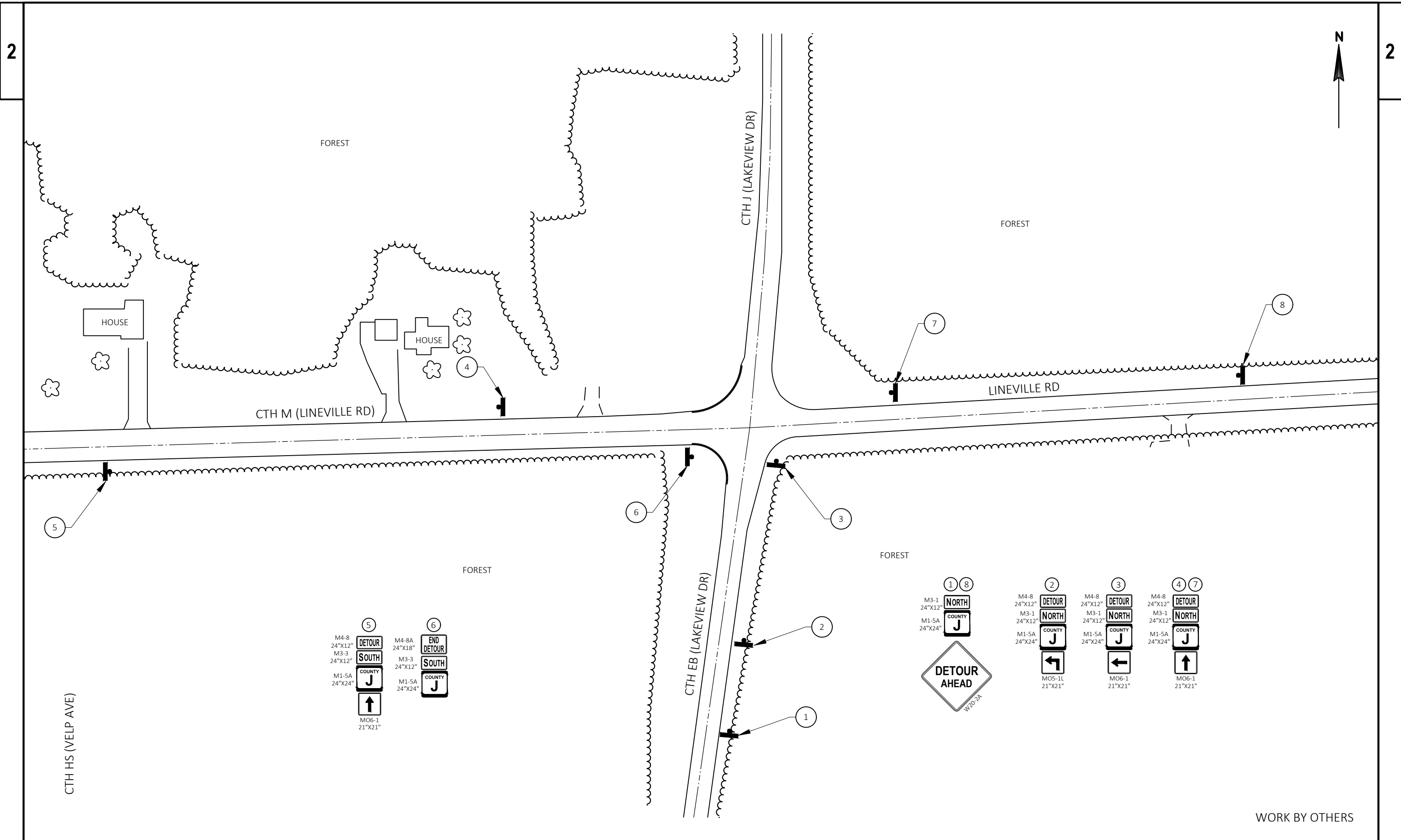
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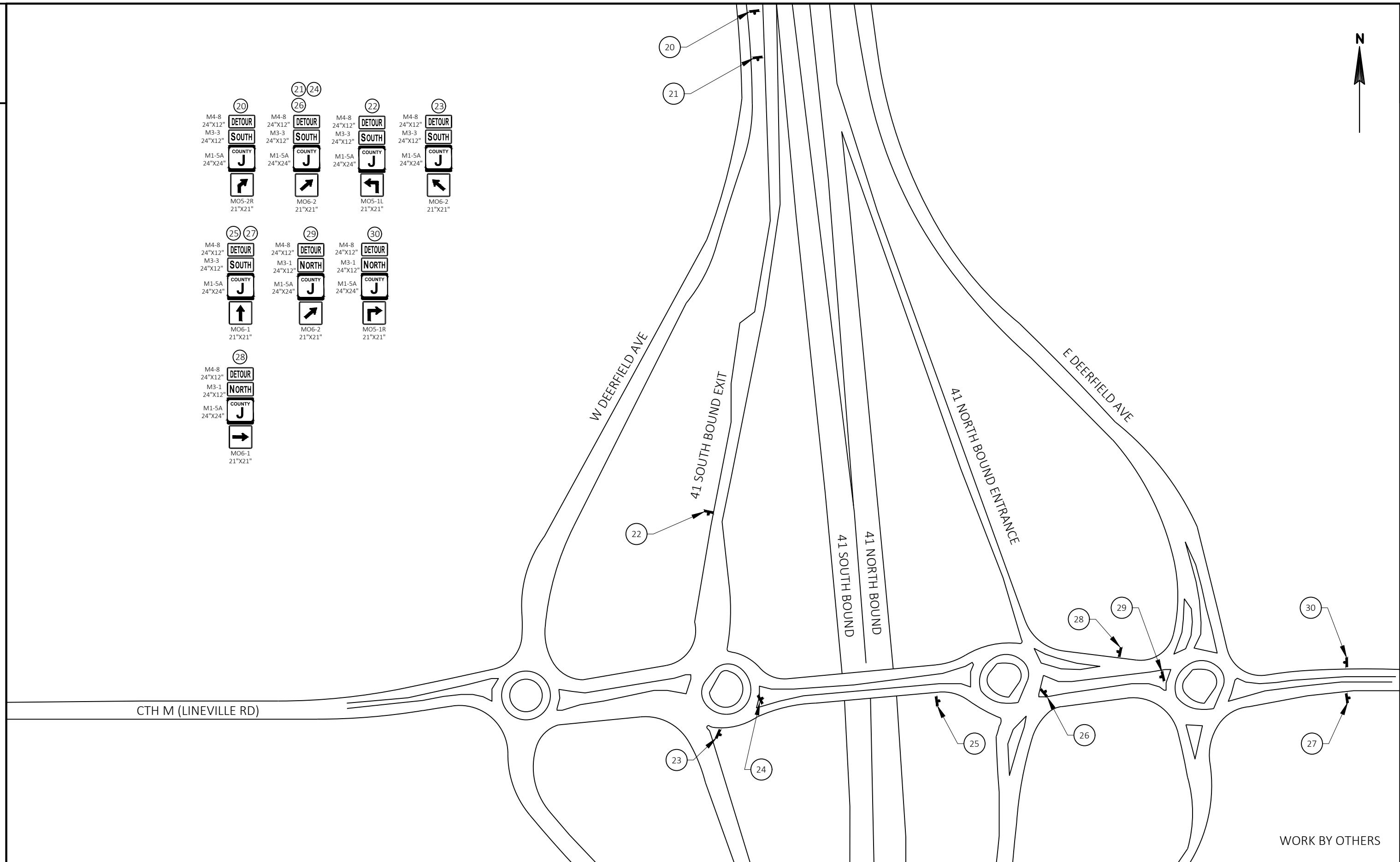
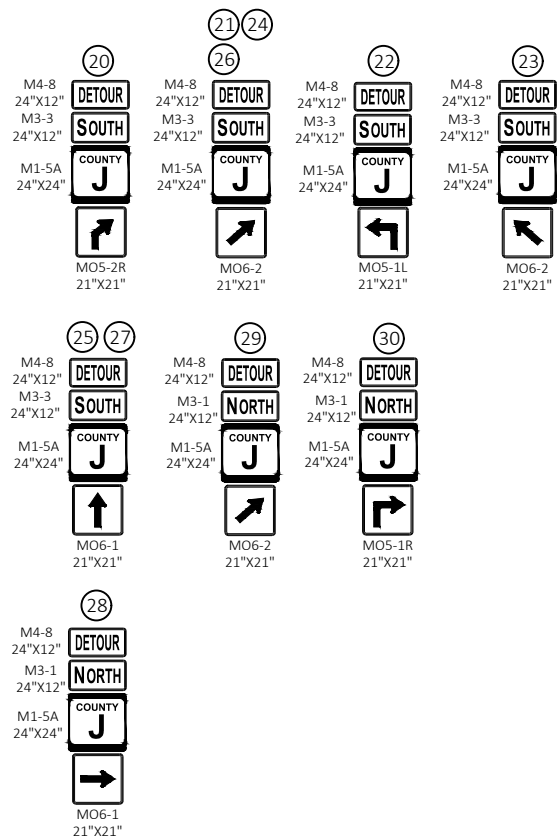
LEGEND
 - - - - - DETOUR ROUTE

WORK BY OTHERS

PROJECT NO: 9286-05-71	HWY: CTH J	COUNTY: BROWN	DETOUR PLAN	SHEET	E
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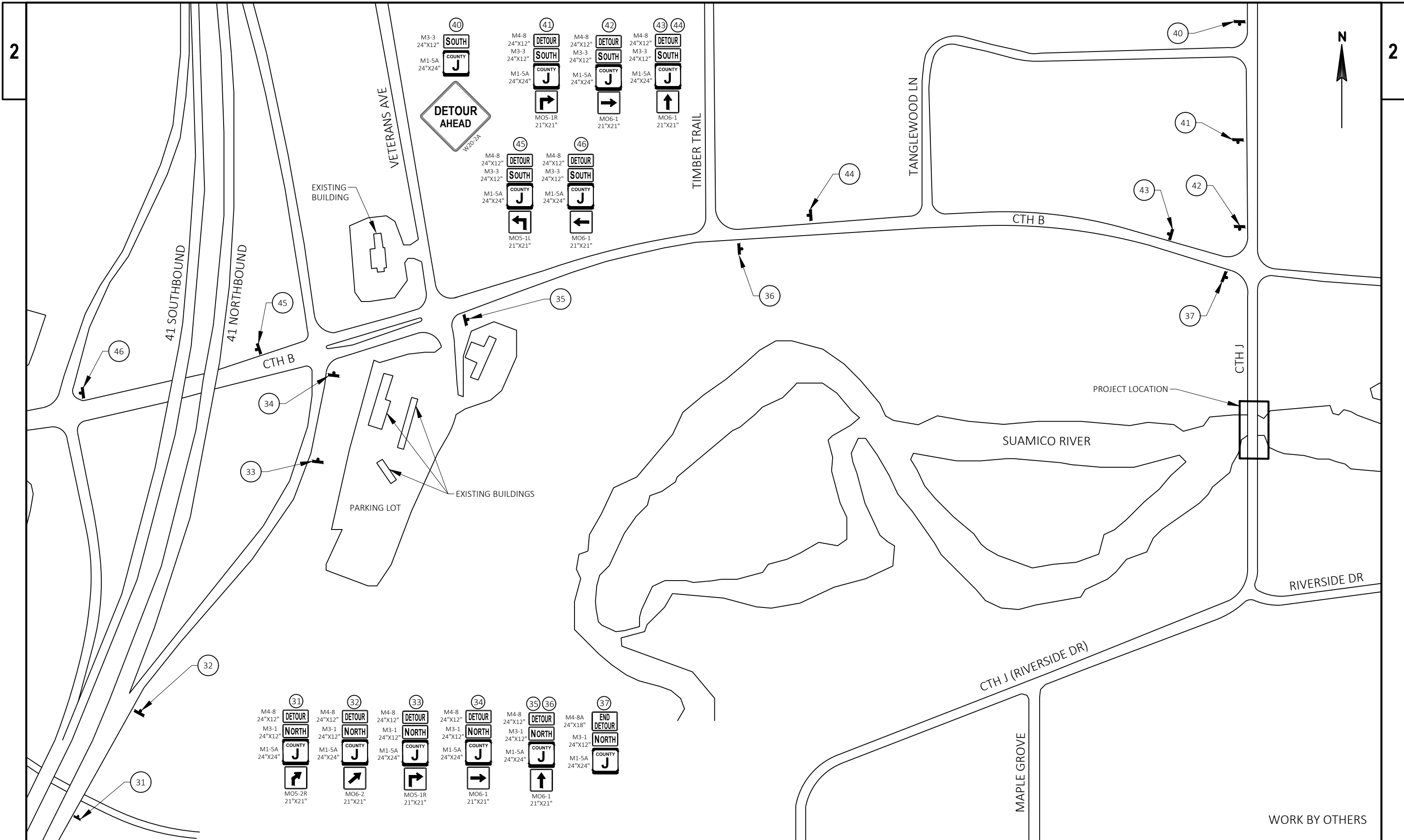


WORK BY OTHERS



WORK BY OTHERS

PROJECT NO: 9286-05-71	HWY: CTH J	COUNTY: BROWN	DETOUR PLAN DETAIL 2	SHEET	E
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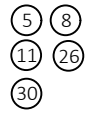




MATCH LINE

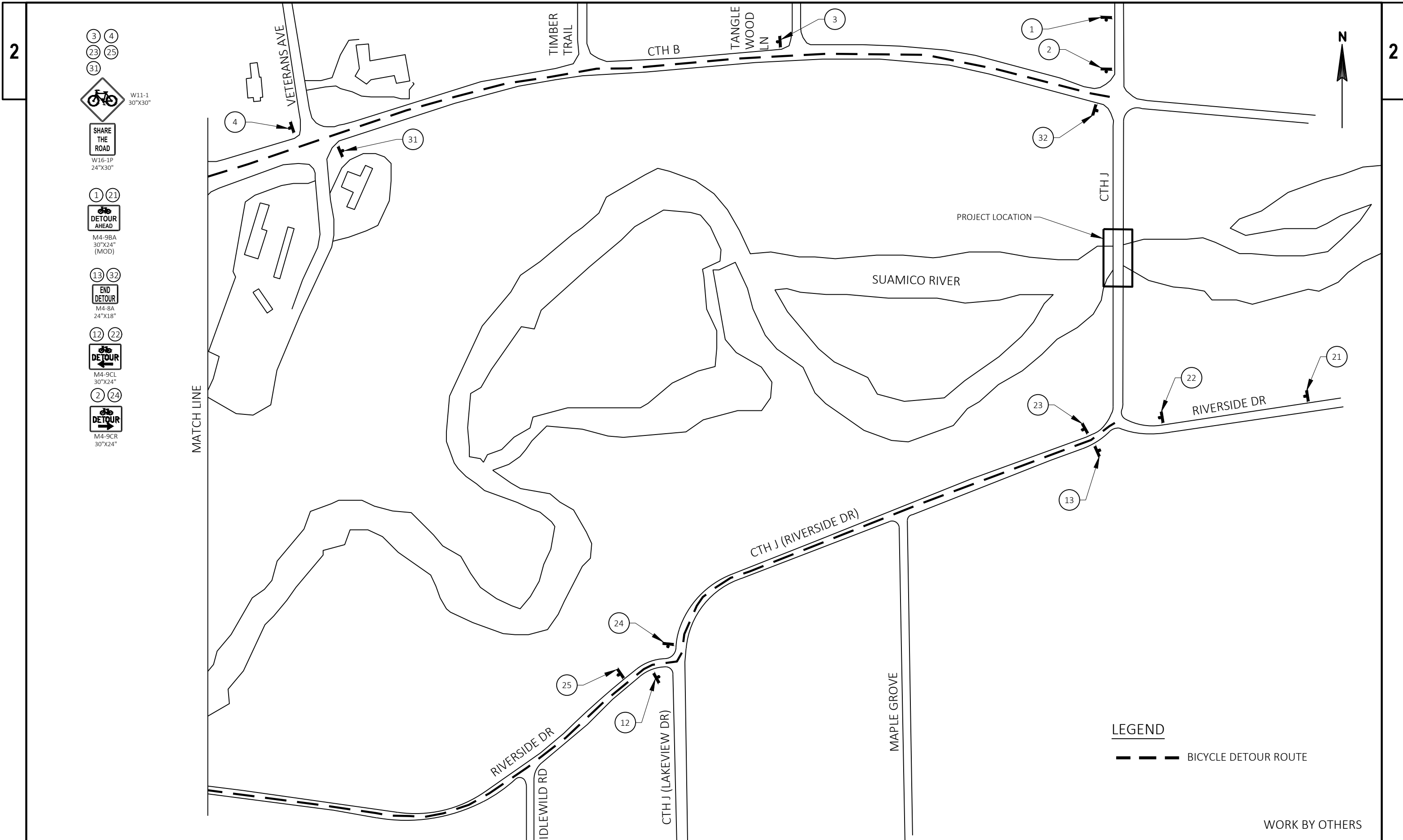


SHARE THE ROAD
W16-1P
24\"/>



LEGEND

- BICYCLE DETOUR ROUTE
- WORK BY OTHERS

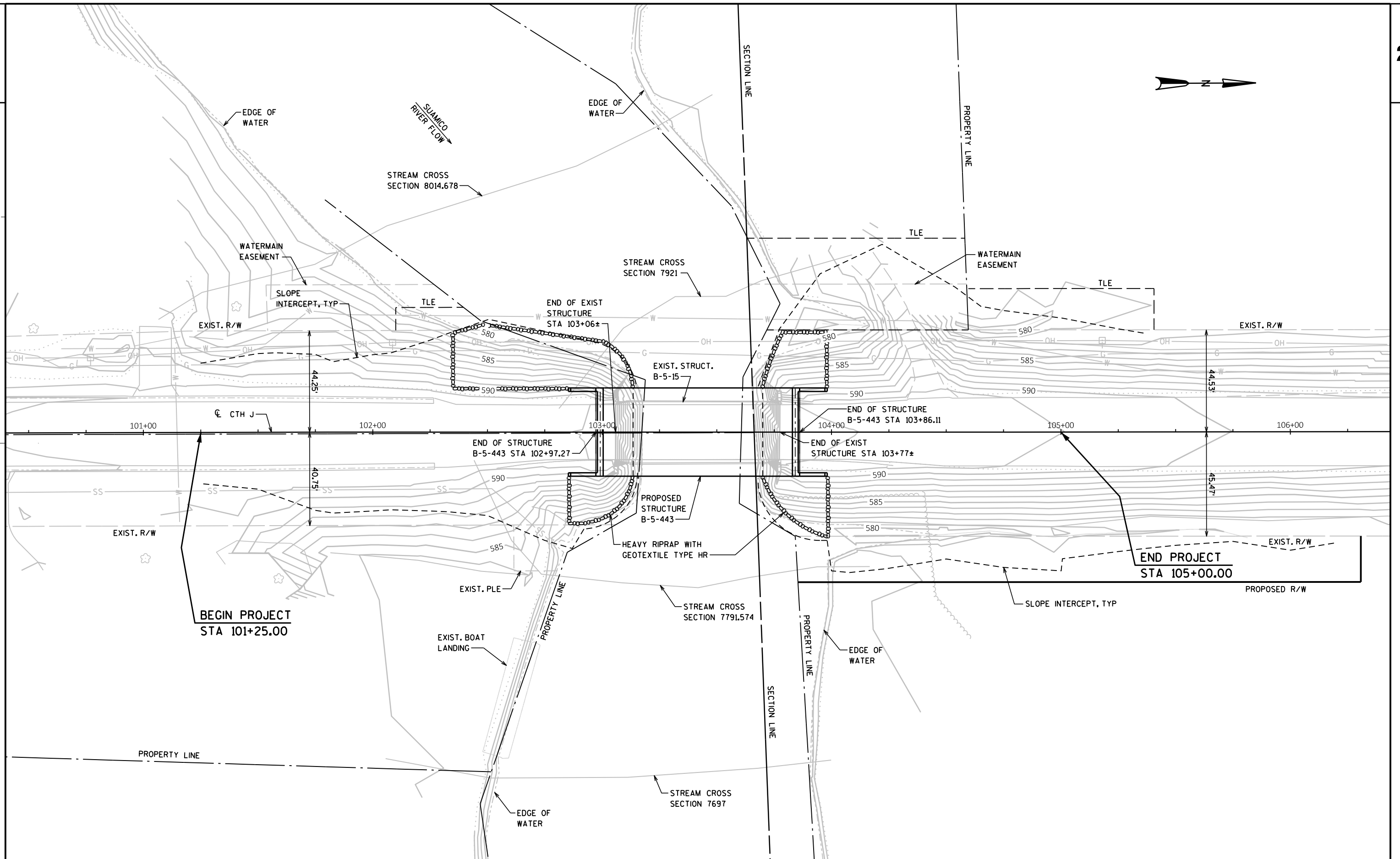


- 3 4
- 23 25
- 31
- W11-1
30"x30"
- SHARE THE ROAD
W16-1P
24"x30"
- 1 21
- DETOUR AHEAD
M4-9BA
30"x24"
(MOD)
- 13 32
- END DETOUR
M4-8A
24"x18"
- 12 22
- DETOUR
M4-9CL
30"x24"
- 2 24
- DETOUR
M4-9CR
30"x24"

LEGEND
 - - - - - BICYCLE DETOUR ROUTE

WORK BY OTHERS

PROJECT NO: 9286-05-71	HWY: CTH J	COUNTY: BROWN	DETOUR PLAN - BICYCLE	SHEET	E
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Estimate Of Quantities

9286-05-71

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	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 103+40	LS	1.000	1.000
0008	204.0100	Removing Pavement	SY	160.000	160.000
0010	204.0150	Removing Curb & Gutter	LF	202.000	202.000
0012	204.0165	Removing Guardrail	LF	200.000	200.000
0014	205.0100	Excavation Common	CY	692.000	692.000
0016	205.0400	Excavation Marsh	CY	225.000	225.000
0018	206.1000	Excavation for Structures Bridges (structure) 01. B-5-443	LS	1.000	1.000
0020	208.0100	Borrow	CY	851.000	851.000
0022	209.2100	Backfill Granular Grade 2	CY	270.000	270.000
0024	210.1500	Backfill Structure Type A	TON	340.000	340.000
0026	213.0100	Finishing Roadway (project) 01. 9286-05-71	EACH	1.000	1.000
0028	305.0110	Base Aggregate Dense 3/4-Inch	TON	180.000	180.000
0030	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	570.000	570.000
0032	311.0110	Breaker Run	TON	1,280.000	1,280.000
0034	455.0605	Tack Coat	GAL	80.000	80.000
0036	460.2000	Incentive Density HMA Pavement	DOL	190.000	190.000
0038	460.5223	HMA Pavement 3 LT 58-28 S	TON	130.000	130.000
0040	460.5224	HMA Pavement 4 LT 58-28 S	TON	170.000	170.000
0042	502.0100	Concrete Masonry Bridges	CY	213.000	213.000
0044	502.3200	Protective Surface Treatment	SY	440.000	440.000
0046	503.0137	Prestressed Girder Type I 36W-Inch	LF	430.000	430.000
0048	505.0400	Bar Steel Reinforcement HS Structures	LB	4,680.000	4,680.000
0050	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	25,870.000	25,870.000
0052	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	10.000	10.000
0054	506.4000	Steel Diaphragms (structure) 01. B-5-443	EACH	8.000	8.000
0056	513.4061	Railing Tubular Type M 01. B-5-443	LF	230.000	230.000
0058	516.0500	Rubberized Membrane Waterproofing	SY	22.000	22.000
0060	550.0500	Pile Points	EACH	16.000	16.000
0062	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	880.000	880.000
0064	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	350.000	350.000
0066	606.0300	Riprap Heavy	CY	325.000	325.000
0068	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	130.000	130.000
0070	614.2300	MGS Guardrail 3	LF	87.500	87.500
0072	614.2330	MGS Guardrail 3 K	LF	37.500	37.500
0074	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0076	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000

Estimate Of Quantities

9286-05-71

Line	Item	Item Description	Unit	Total	Qty
0078	619.1000	Mobilization	EACH	1.000	1.000
0080	624.0100	Water	MGAL	5.000	5.000
0082	625.0100	Topsoil	SY	2,100.000	2,100.000
0084	628.1504	Silt Fence	LF	1,020.000	1,020.000
0086	628.1520	Silt Fence Maintenance	LF	1,020.000	1,020.000
0088	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0090	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0092	628.2004	Erosion Mat Class I Type B	SY	2,100.000	2,100.000
0094	628.6005	Turbidity Barriers	SY	400.000	400.000
0096	628.7504	Temporary Ditch Checks	LF	32.000	32.000
0098	629.0210	Fertilizer Type B	CWT	1.320	1.320
0100	630.0130	Seeding Mixture No. 30	LB	38.000	38.000
0102	630.0160	Seeding Mixture No. 60	LB	10.000	10.000
0104	630.0200	Seeding Temporary	LB	28.000	28.000
0106	630.0500	Seed Water	MGAL	47.000	47.000
0108	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0110	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	9.000	9.000
0112	637.2210	Signs Type II Reflective H	SF	23.190	23.190
0114	637.2230	Signs Type II Reflective F	SF	24.250	24.250
0116	638.2602	Removing Signs Type II	EACH	11.000	11.000
0118	638.3000	Removing Small Sign Supports	EACH	10.000	10.000
0120	642.5001	Field Office Type B	EACH	1.000	1.000
0122	643.0420	Traffic Control Barricades Type III	DAY	1,016.000	1,016.000
0124	643.0705	Traffic Control Warning Lights Type A	DAY	2,033.000	2,033.000
0126	643.0900	Traffic Control Signs	DAY	508.000	508.000
0128	643.5000	Traffic Control	EACH	1.000	1.000
0130	645.0111	Geotextile Type DF Schedule A	SY	56.000	56.000
0132	645.0120	Geotextile Type HR	SY	480.000	480.000
0134	646.1020	Marking Line Epoxy 4-Inch	LF	1,270.000	1,270.000
0136	650.4500	Construction Staking Subgrade	LF	375.000	375.000
0138	650.5000	Construction Staking Base	LF	375.000	375.000
0140	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	350.000	350.000
0142	650.6500	Construction Staking Structure Layout (structure) 01. B-5-443	LS	1.000	1.000
0144	650.9910	Construction Staking Supplemental Control (project) 01. 9286-05-71	LS	1.000	1.000
0146	650.9920	Construction Staking Slope Stakes	LF	375.000	375.000
0148	690.0150	Sawing Asphalt	LF	180.000	180.000
0150	690.0250	Sawing Concrete	LF	5.000	5.000
0152	715.0502	Incentive Strength Concrete Structures	DOL	1,278.000	1,278.000

Estimate Of Quantities

				9286-05-71	
0154	SPV.0105	Special 01. Superstructure 3/4" Drip Edge B-5-443	LS	1.000	1.000

EARTHWORK SUMMARY - CTH J

Division	From/To Station	205.0100 Common Excavation		Available Material	205.0400 Marsh Excavation (6)	Expanded Marsh Backfill	Unexpanded Fill	Expanded Fill	Mass Ordinate +/- (14)	Waste	208.0100 Borrow	
		Cut	EBS Excavation									
CTH J	100+65/106+80	692	0	692	225	270	1,235	1,543	-851	0	851	
Grand Total		692	0	692	225	270	1,235	1,543	-851	0	851	
Total Common Exc		692										

Notes:

(6) Marsh Excavation - to be backfilled with Backfill Granular Grade 2 Item 209.2100. Note: this is designers choice. Can be backfilled with Borrow, or Cut as well, with Engineers approval

CLEARING AND GRUBBING

STATION TO STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
103+75 - 104+75	CTH J	1	1
PROJECT TOTALS		1	1

REMOVING PAVEMENT

STATION - STATION	LOCATION	204.0100 REMOVING PAVEMENT SY
102+75 - 103+05	CTH J	80
103+77 - 104+07	CTH J	80
PROJECT TOTAL		160

REMOVING CURB AND GUTTER

STATION TO STATION	DIR	LOCATION	204.0150 REMOVING CURB AND GUTTER LF
101+25 - 102+26	LT	CTH J	101
101+25 - 102+26	RT	CTH J	101
PROJECT TOTAL			202

REMOVING GUARDRAIL

STATION TO STATION	DIR	LOCATION	204.0165 REMOVING GUARDRAIL LF
102+55 - 103+05	LT	CTH J	50
102+53 - 103+05	RT	CTH J	50
103+78 - 104+27	LT	CTH J	50
103+78 - 104+27	RT	CTH J	50
PROJECT TOTAL			200

3

BASE COURSE

STATION TO STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	311.0110 BREAKER RUN TON	624.0100 WATER MGAL
CATEGORY 0010					
101+25 - 102+97	CTH J	0	270	550	2
103+86 - 105+00	CTH J	180	300	730	3
PROJECT TOTALS		180	570	1,280	5

ASPHALTIC ITEMS

STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	460.5224 HMA PAVEMENT 4 LT 58-28 S TON	460.5223 HMA PAVEMENT 3 LT 58-28 S TON
CATEGORY 0010						
101+25	-	102+97	CTH J	40	90	70
103+86	-	105+87	CTH J	40	80	60
PROJECT TOTAL				80	170	130

3

CONCRETE CURB AND GUTTER

STATION TO STATION	DIR	LOCATION	601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D LF
CATEGORY 0010			
101+25 - 102+97	LT	CTH J	175
101+25 - 102+97	RT	CTH J	175
PROJECT TOTALS			350

GUARDRAIL

STATION	TO	STATION	DIR	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2330 MGS GUARDRAIL 3K LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
CATEGORY 0010								
101+58	-	102+88	LT	CTH J	---	37.5	39.4	1
101+83	-	102+88	RT	CTH J	12.5	---	39.4	1
103+96	-	105+51	LT	CTH J	62.5	---	39.4	1
103+96	-	105+00	RT	CTH J	12.5	---	39.4	1
PROJECT TOTAL					87.5	37.5	157.6	4

RIPRAP & GEOTEXTILE

STATION TO STATION	DIR	LOCATION	606.0300 RIPRAP HEAVY CY	645.0120 GEOTEXTILE TYPE HR SY
CATEGORY 0010				
102+35 - 102+85	LT	CTH J	90	130
PROJECT TOTALS			90	130

LANDSCAPING ITEMS

STATION TO STATION	DIR	LOCATION	625.0100 TOPSOIL SY	628.2004 EROSION MAT CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIX NO. 30 LB	630.0160 SEEDING MIX NO. 60 LB	630.0200 TEMP SEEDING LB	630.0500 SEED WATER MGAL		
CATEGORY 0010											
101+25	-	102+97	LT	CTH J	140	140	0.09	3	0	2	3
101+25	-	102+97	RT	CTH J	180	180	0.11	3	0	2	4
103+86	-	105+00	LT	CTH J	670	670	0.42	12	0	9	15
103+86	-	105+00	RT	CTH J	760	760	0.48	14	0	10	17
UNDISTRIBUTED					350	350	0.22	6	10	5	8
PROJECT TOTALS					2,100	2,100	1.32	38	10	28	47

EROSION CONTROL ITEMS

STATION TO STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINT LF	628.1905 MOB. EROSION CONTROL EA	628.1910 MOB. EMERGENCY EROSION CONTROL EA	628.6005 TURBIDITY BARRIERS SY	628.7504 TEMP. DITCH CHECKS LF		
CATEGORY 0010									
100+50	-	102+97	CTH J	375	375	---	---	200	---
103+86	-	106+80	CTH J	475	475	---	---	130	16
UNDISTRIBUTED				170	170	2	1	70	16
PROJECT TOTALS				1,020	1,020	2	1	400	32

3

3

REMOVING SIGNS TYPE II AND REMOVING SMALL SIGN SUPPORTS

STATION	DIR	LOCATION	DESCRIPTION	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
CATEGORY 0010					
101+53	RT	CTH J	JCT CTH B	1	1
101+73	LT	CTH J	PEDESTRIAN CROSSING AHEAD	1	1
102+92	RT	CTH J	SUAMICO RIVER	1	1
103+05	LT	CTH J	OBJECT MARKER	1	1
103+05	RT	CTH J	OBJECT MARKER	1	1
103+78	LT	CTH J	OBJECT MARKER	1	1
103+78	RT	CTH J	OBJECT MARKER	1	1
103+86	LT	CTH J	SUAMICO RIVER	1	1
103+86	LT	CTH J	NO PARKING	1	---
104+96	LT	CTH J	25 MPH CURVE AHEAD	1	1
104+96	RT	CTH J	NO PARKING	1	1
PROJECT TOTALS				11	10

SIGNS REFLECTIVE TYPE II & POSTS WOOD

SIGN NO.	STATION	DIR	LOCATION	CODE	SIGN SIZE HORIZ X VERT IN X IN	634.0612 POSTS WOOD 4X6-INCH X 12-FT EACH	634.0616 POSTS WOOD 4X6-INCH X 16-FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	637.2230 SIGNS TYPE II REFLECTIVE F SF	COMMENT
1	101+53	RT	CTH J	M2-1	21 X 15	---	1	2.19	---	
---	101+53	RT	CTH J	M1-5A	24 X 24	---	---	4.00	---	CTH B - ON POST #1
2	101+73	LT	CTH J	W11-2	24 X 24	---	1	---	4.00	
---	101+73	LT	CTH J	W16-9P	24 X 12	---	---	---	2.00	ON POST #2
3	102+92	RT	CTH J	I3-1	42 X 24	---	1	7.00	---	SUAMICO RIVER
4	103+05	LT	CTH J	W5-52R	12 X 36	1	---	---	3.00	
5	103+05	RT	CTH J	W5-52L	12 X 36	1	---	---	3.00	
6	103+78	LT	CTH J	W5-52L	12 X 36	1	---	---	3.00	
7	103+78	RT	CTH J	W5-52R	12 X 36	1	---	---	3.00	
8	103+86	LT	CTH J	I3-1	42 X 24	---	1	7.00	---	SUAMICO RIVER
9	105+50	LT	CTH J	R7-1R	12 X 18	---	1	1.50	---	SIGN AT 30-45° SKEW
10	104+96	LT	CTH J	W1-1R	24 X 24	---	1	---	4.00	
---	104+96	LT	CTH J	W13-1	18 X 18	---	---	---	2.25	25 MPH - ON POST #10
11	104+97	RT	CTH J	R7-1R	12 X 18	---	1	0.50	---	SIGN AT 30-45° SKEW
12	101+90	RT	CTH J	R7-1L	12 X 18	---	1	0.50	---	SIGN AT 30-45° SKEW
13	101+60	LT	CTH J	R7-1L	12 X 18	---	1	0.50	---	SIGN AT 30-45° SKEW
PROJECT TOTAL						4	9	23.19	24.25	

TRAFFIC CONTROL

LOCATION	EST. SERVICE PERIOD DAYS	643.0420 BARRICADES TYPE III NO	643.0705 WARNING LIGHTS TYPE A NO	643.0900 SIGNS NO	643.5000 TRAFFIC CONTROL EACH
CATEGORY 0010					
CTH J	66	14	924	28	1,848
UNDISTRIBUTED	---		92		185
PROJECT TOTALS		1,016	2,033	508	1

MARKING LINE

STATION - STATION	LOCATION	646.1020	
		EPOXY 4-INCH (WHITE) LF	EPOXY 4-INCH (YELLOW) LF
CATEGORY 0010			
101+25 - 105+00	CTH J	520	750
PROJECT TOTALS		1,270	

CONSTRUCTION STAKING

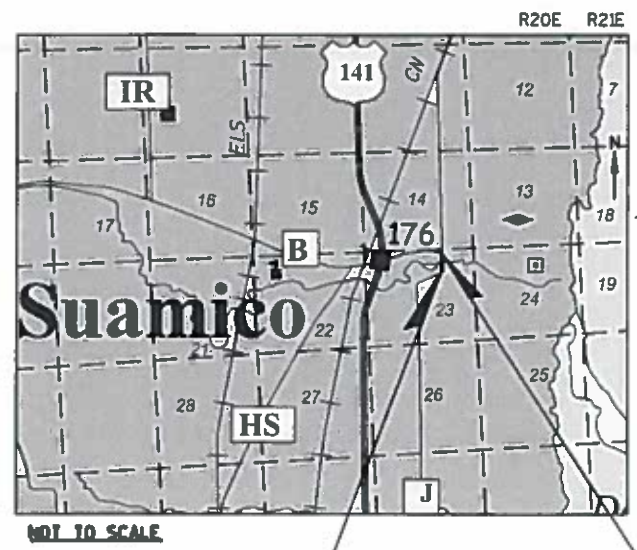
STATION TO STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.5500 CONSTRUCTION STAKING C & G LF	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
CATEGORY 0010						
101+25 - 105+00	CTH J	375	375	350	1	375
PROJECT TOTALS		375	375	350	1	375

SAW CUTTING

STATION	DIR	LOCATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
CATEGORY 0010				
101+25	R/L	CTH J	28	5
105+00	R/L	CTH J	152	0
PROJECT TOTALS			180	5

Conventional Signs and Abbreviations

	SECTION LINE	AC	ACRES	R	RADIUS
	QUARTER LINE	Δ	CENTRAL ANGLE	R.	RANGE
	TOWNSHIP AND RANGE LINE	C/L	CENTERLINE	R/L	REFERENCE LINE
	PROPOSED OR NEW CENTERLINE	COR.	CORNER	R/W	RIGHT OF WAY
	PROPOSED OR NEW R/W LINE	CTH	COUNTY TRUNK HIGHWAY	1/4 LINE	QUARTER LINE
	EXISTING R/W LINE	D	DEGREE OF CURVE	1/8 LINE	SIXTEENTH LINE
	LOT LINE	E.	EAST	S.	SOUTH
	PROPERTY LINE	L	LENGTH OF CURVE	SEC	SECTION
	COUNTY LIMITS LINE	LC	LONG CHORD	SEC LINE	SECTION LINE
	SLOPE INTERCEPTS	LCB	LONG CHORD BEARING	STH	STATE TRUNK HIGHWAY
	EXISTING MONUMENTATION	M	MILE	SF	SQUARE FEET
	FENCE	N.	NORTH	STA	STATION
	SECTION OR QUARTER CORNER	N.T.S.	NOT TO SCALE	T.	TOWN
	TELEPHONE	PC	POINT OF CURVATURE	T	TANGENT LENGTH OF CURVE
	GAS	PI	POINT OF INTERSECTION	TLE	TEMPORARY LIMITED EASEMENT
	WATER	PT	POINT OF TANGENCY	USH	UNITED STATES HIGHWAY
	ELECTRIC	P/E	PERMANENT LIMITED EASEMENT	W.	WEST
	FIBER OPTIC	P/L	PROPERTY LINE		
	SANITARY	PC LINE	PRIVATE CLAIM LINE		
	STORM SEWER				
	NO ACCESS (BY ACQUISITION)				
	NO ACCESS (BY STATUTORY AUTHORITY)				
	NO ACCESS (BY PREVIOUS PROJECT)				
	TEMPORARY LIMITED EASEMENT				
	PERMANENT LIMITED EASEMENT				
	FEE TITLE				
	RIGHT-OF-WAY MONUMENTS SET AT NEWLY ACQUIRED R/W ANGLE POINTS				
	PARCEL NUMBER				
	UTILITY PARCEL NUMBER				
	R/W POINT NUMBER				
	COMPENSABLE NON-COMPENSABLE				
	POWER POLE				
	TELEPHONE POLE				
	TELEPHONE PEDESTAL				



R/W COORDINATE TABLE

POINT #	Y	X
7	611265.30	94686.59
9	611385.23	94702.66
10	611174.43	94686.19
11	611174.92	94701.60
12	611191.90	94686.28
13	611214.77	94811.38
16	611191.29	94811.28
17	61113.15	94810.85
18	611339.85	94792.43
34	611134.69	94810.97

REVISIONS	R/W PROJECT NUMBER 9286-05-71	SHEET NUMBER 4.01	TOTAL SHEETS 1
FEDERAL PROJECT NUMBER			
PLAT OF RIGHT-OF-WAY REQUIRED FOR V SUAMICO, CTH J SUAMICO RIVER BRIDGE			
VILLAGE OF SUAMICO		BROWN COUNTY	
CONSTRUCTION PROJECT NUMBER 9286-05-71			

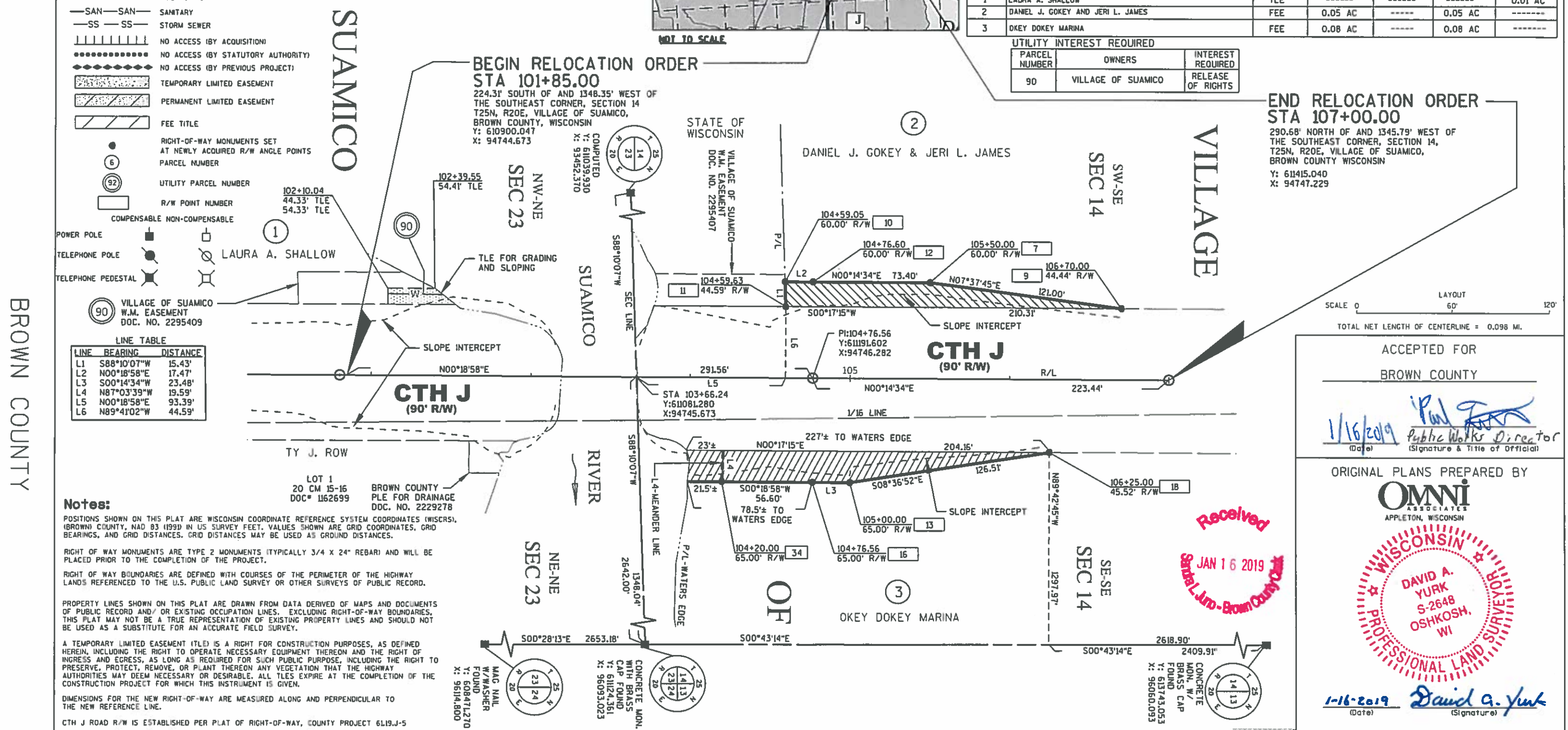
SCHEDULE OF LANDS AND INTERESTS

PARCEL NUMBER	OWNER	INTEREST REQUIRED	AREA ACRES REQUIRED			TLE AREA
			NEW	EXISTING	TOTAL	
1	LAURA A. SHALLOW	TLE	-----	-----	-----	0.01 AC
2	DANIEL J. GOKEY AND JERI L. JAMES	FEE	0.05 AC	-----	0.05 AC	-----
3	OKEY DOKEY MARINA	FEE	0.08 AC	-----	0.08 AC	-----

UTILITY INTEREST REQUIRED

PARCEL NUMBER	OWNERS	INTEREST REQUIRED
90	VILLAGE OF SUAMICO	RELEASE OF RIGHTS

"OWNERS" NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE COUNTY



LINE TABLE

LINE	BEARING	DISTANCE
L1	S88°10'07"W	15.43'
L2	N00°18'58"E	17.47'
L3	S00°14'34"W	23.48'
L4	N87°03'39"W	19.59'
L5	N00°18'58"E	93.39'
L6	N89°41'02"W	44.59'

Notes:

POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), (BROWN) COUNTY, NAD 83 (1999) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

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

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

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

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

DIMENSIONS FOR THE NEW RIGHT-OF-WAY ARE MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINE.

CTH J ROAD R/W IS ESTABLISHED PER PLAT OF RIGHT-OF-WAY, COUNTY PROJECT 6119J-5

SCALE 0 60' 120'

TOTAL NET LENGTH OF CENTERLINE = 0.098 MI.

ACCEPTED FOR
BROWN COUNTY

1/16/2019 *Paul J. ...*
Public Works Director
(Date) (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

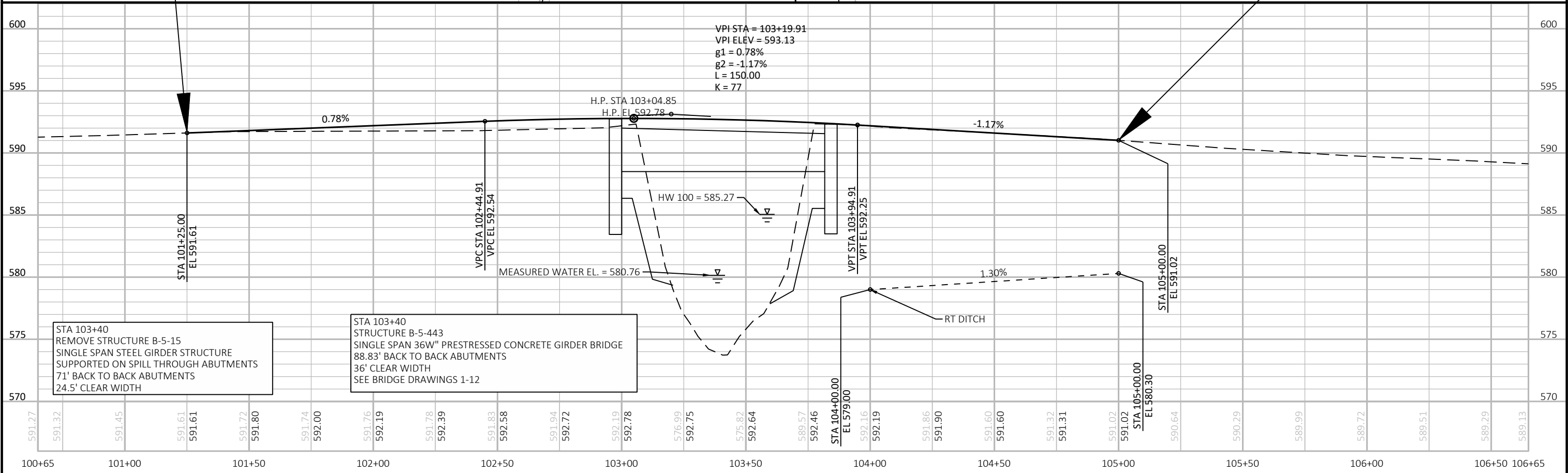
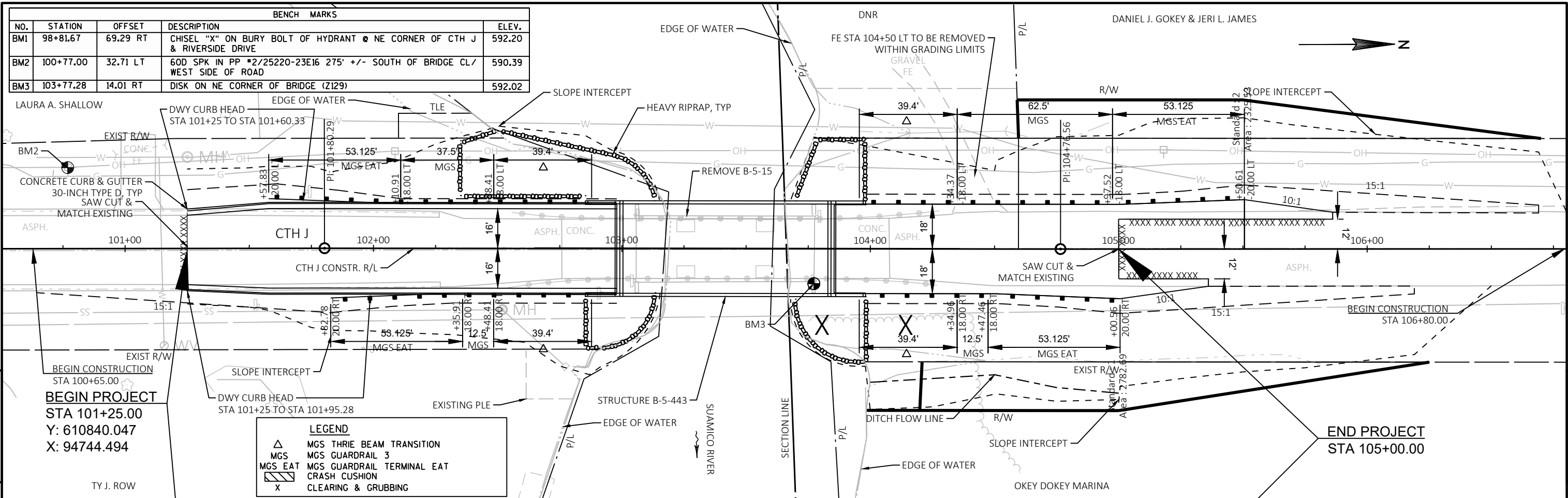
OMNI ASSOCIATES
APPLETON, WISCONSIN

WISCONSIN PROFESSIONAL LAND SURVEYOR

DAVID A. YURK
S-2648
OSHKOSH, WI

1-16-2019 *David A. Yurk*
(Date) (Signature)

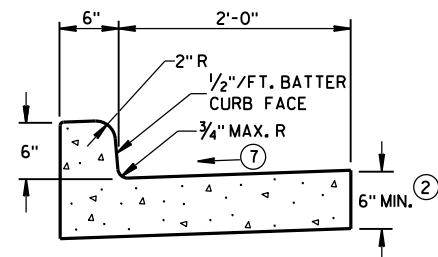
BROWN COUNTY



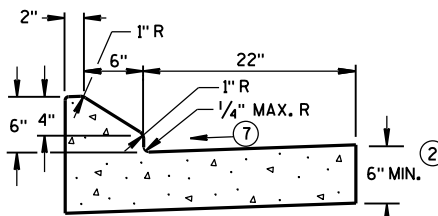
PROJECT NO: 9286-05-71	HWY: CTH J	COUNTY: BROWN	PLAN AND PROFILE: CTH J	SHEET E
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Standard Detail Drawing List

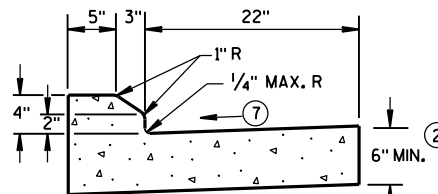
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-07C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)



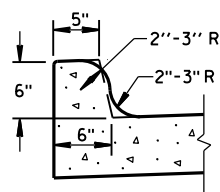
TYPES A^① & D



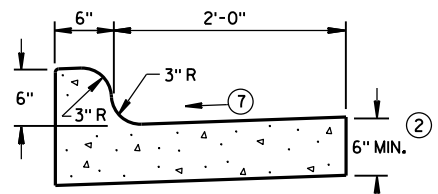
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

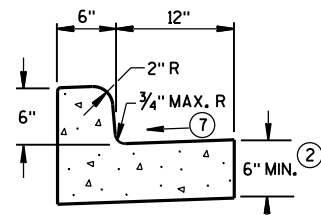


TYPES K^① & L
(OPTIONAL CURB SHAPE)



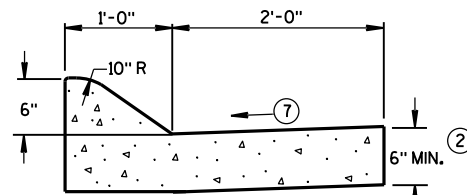
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

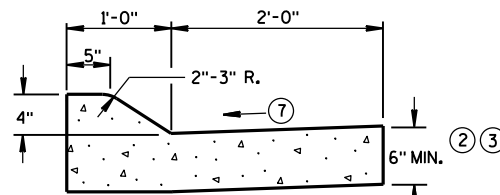


TYPES A^① & D

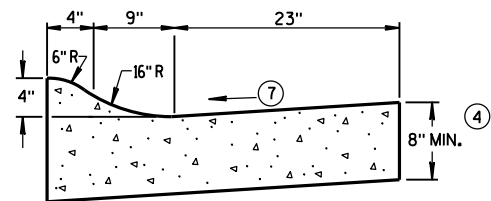
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

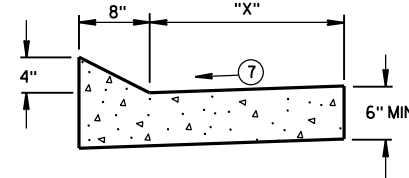


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

CONCRETE CURB & GUTTER 36"



TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

TBT & TBTT	"X"
30"	22"
36"	28"

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

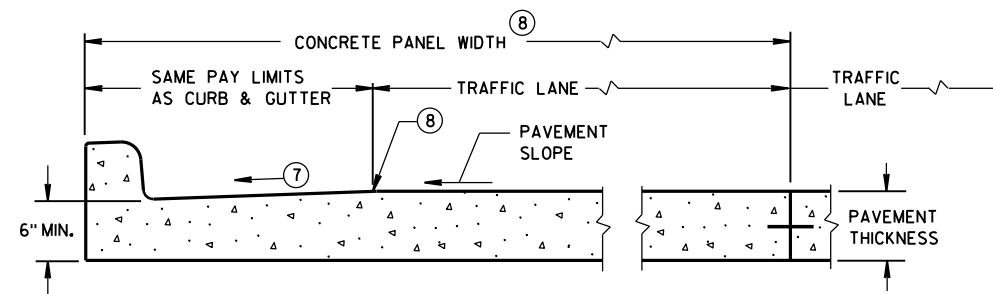
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

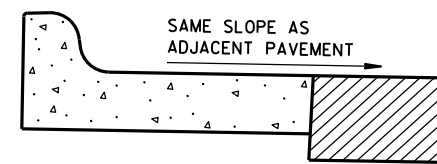
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'

* BIKE LANE IS NOT SHOWN.



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER

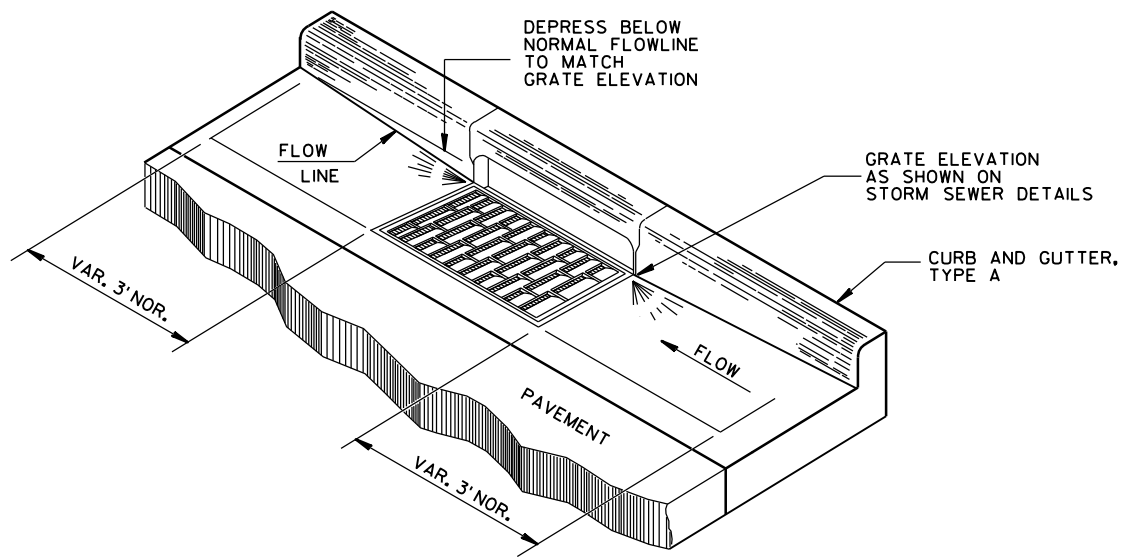


REVERSE SLOPE GUTTER^⑥

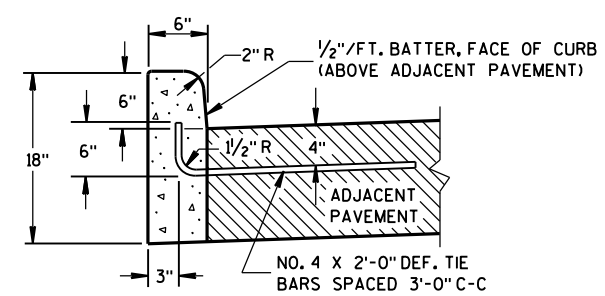
(TYPICAL FOR ALL CURB & GUTTER TYPES)

CONCRETE CURB & GUTTER

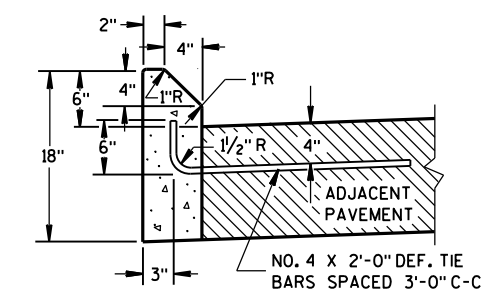
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL OF CURB AND GUTTER AT INLETS
(TYPE H INLET COVER SHOWN)



TYPES A^① & D

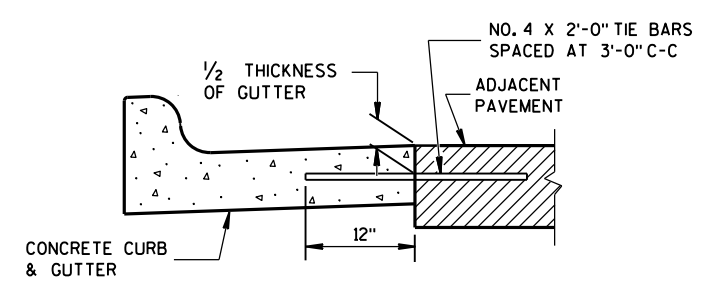


TYPES G^① & J

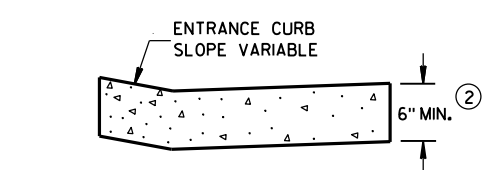
GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.
- UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
 - ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
 - ③ REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

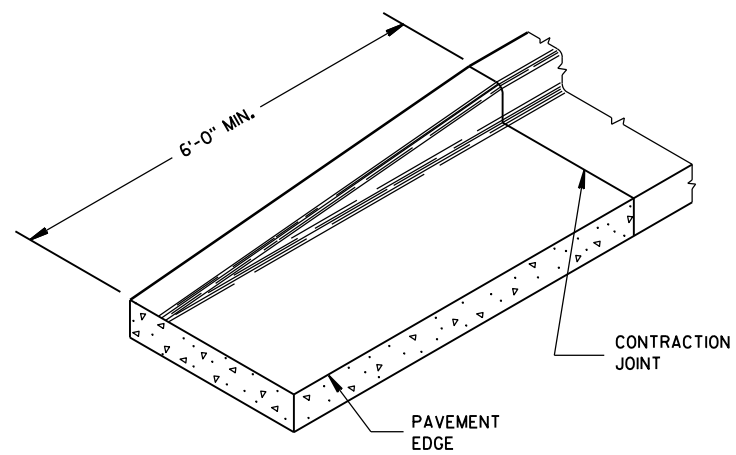
CONCRETE CURB



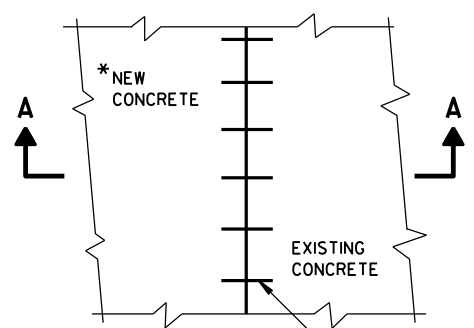
TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)



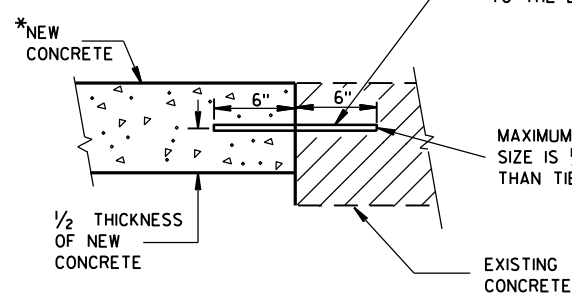
END SECTION CURB & GUTTER



PLAN VIEW

*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

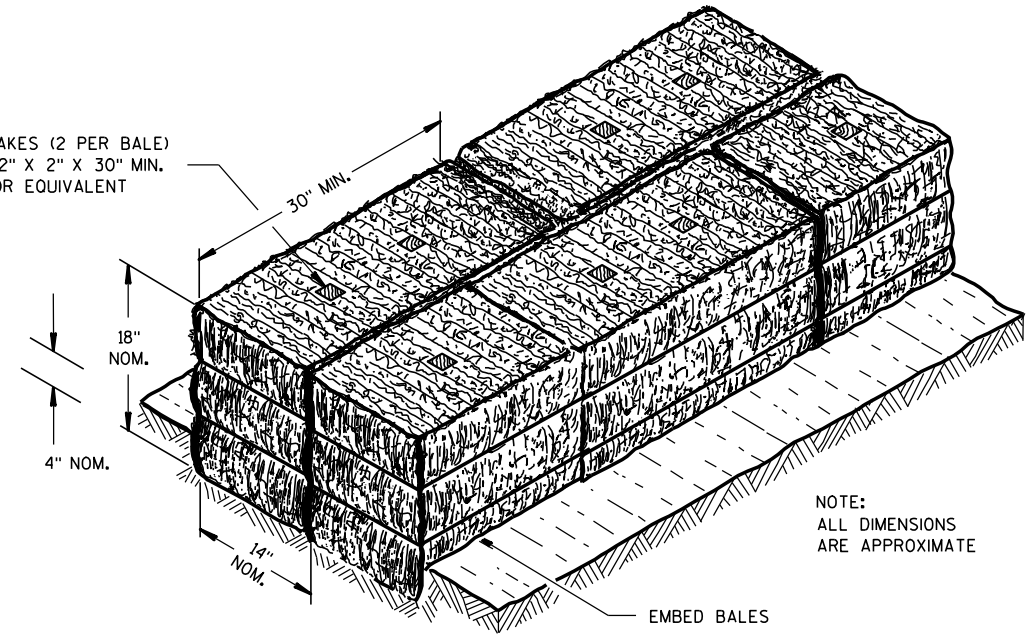
NO. 6 TIE BARS SPACED 2'-6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT.



SECTION A-A
TIE BARS DRILLED INTO EXISTING PAVEMENT

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2017 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

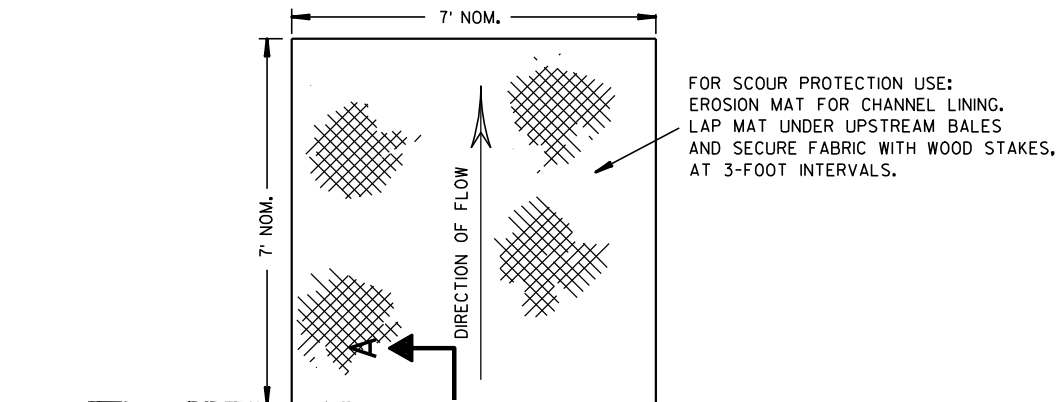
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

SECTION A-A

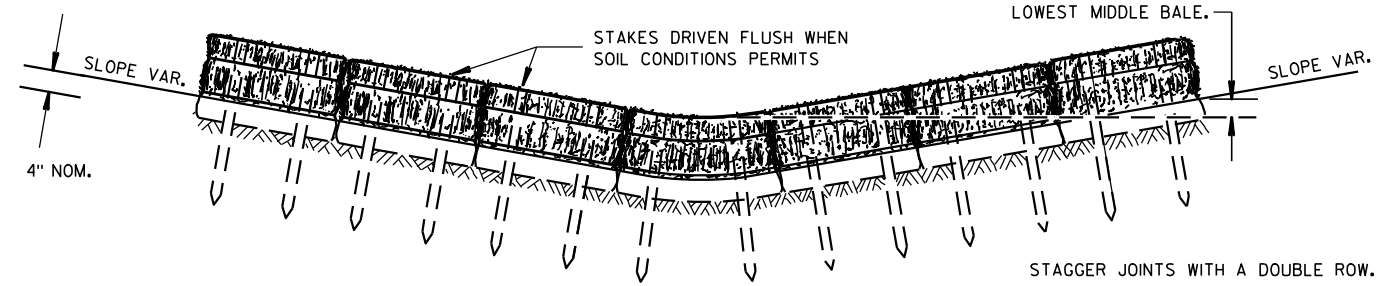


FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.

PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



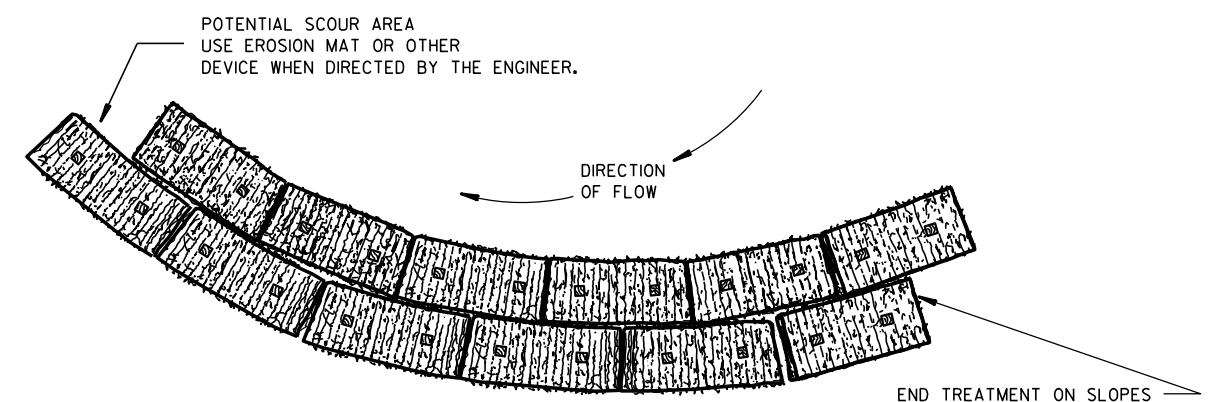
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

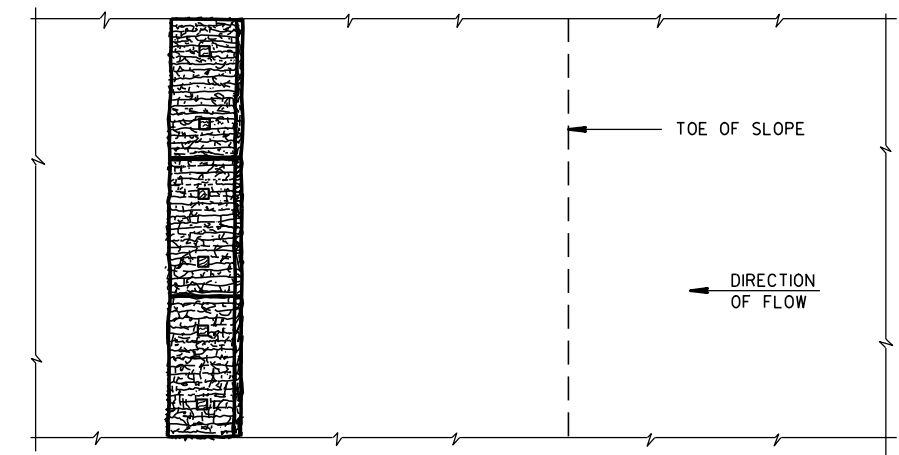
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

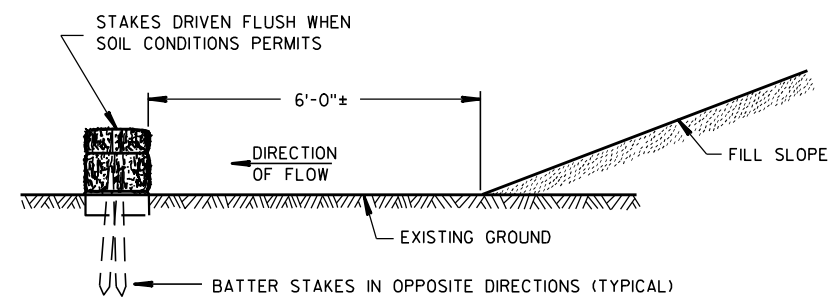


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

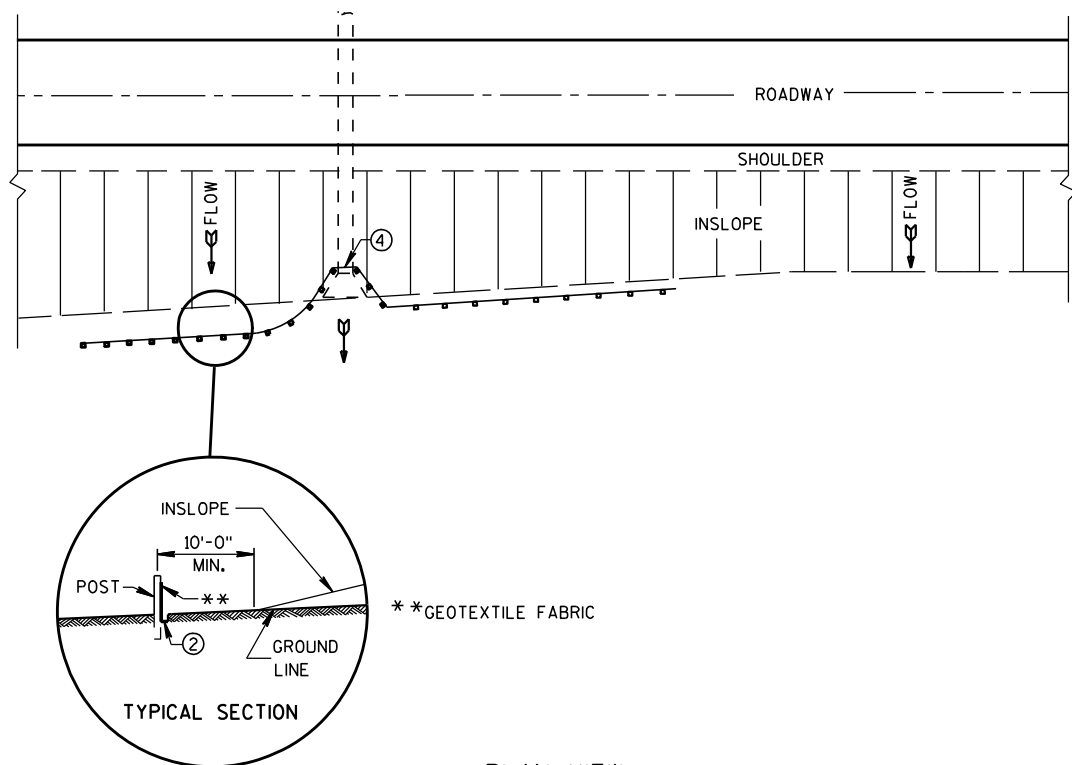
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

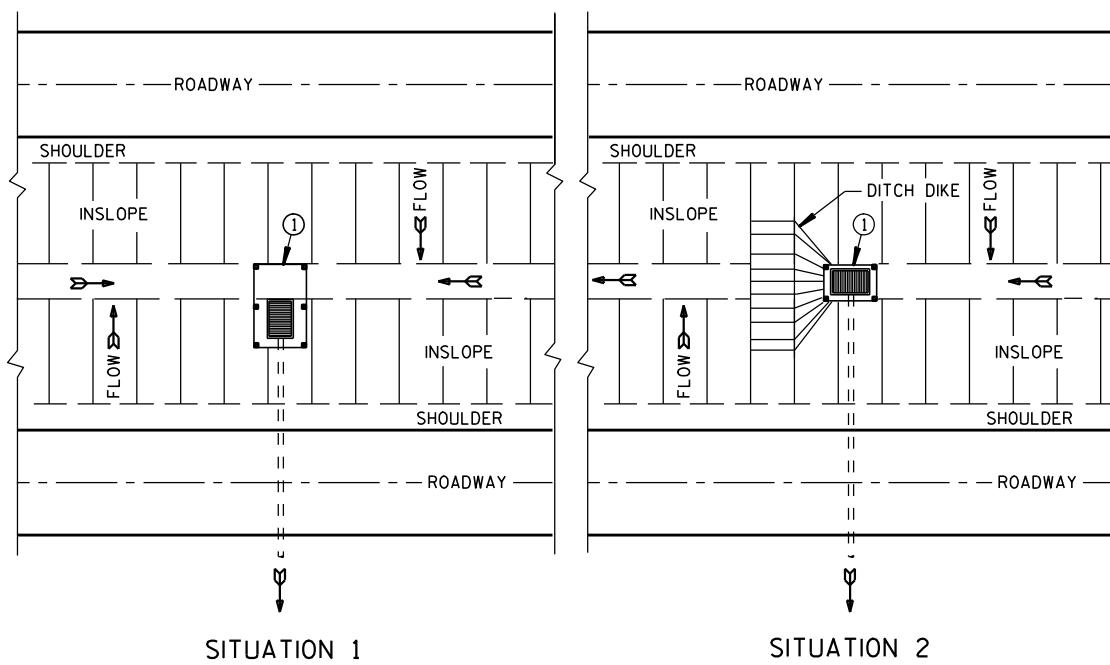
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

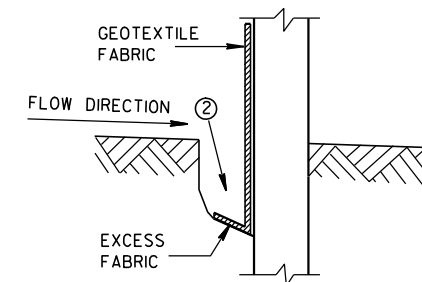


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

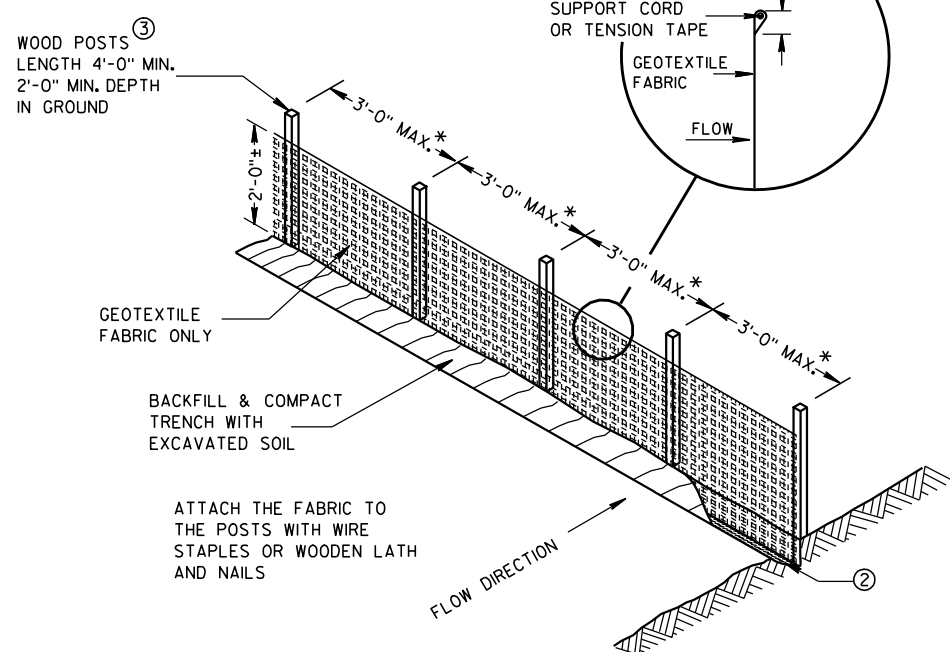
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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.

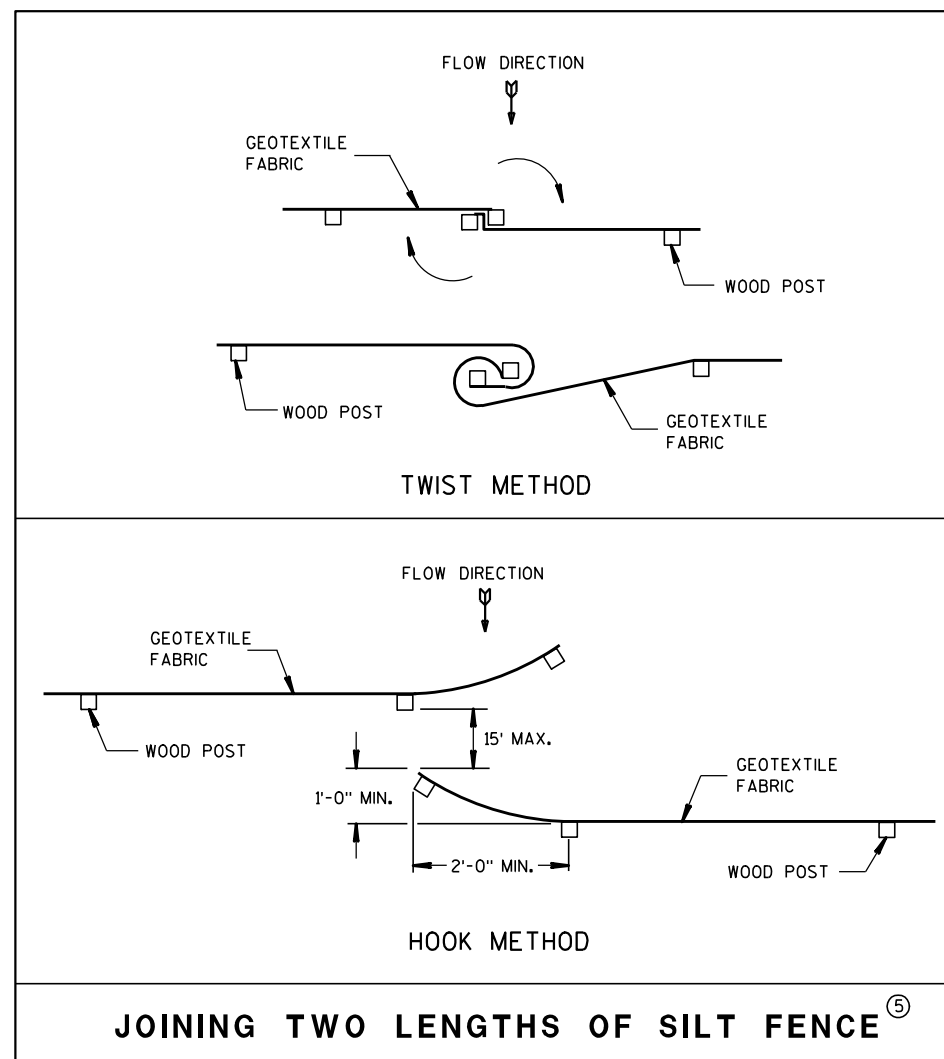


TRENCH DETAIL

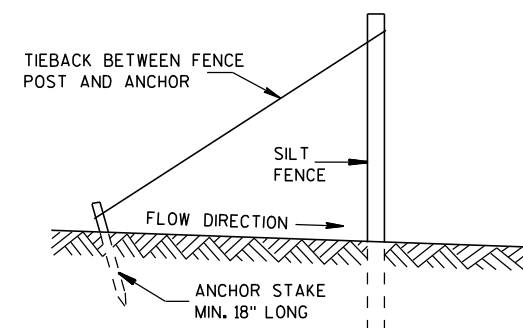
NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

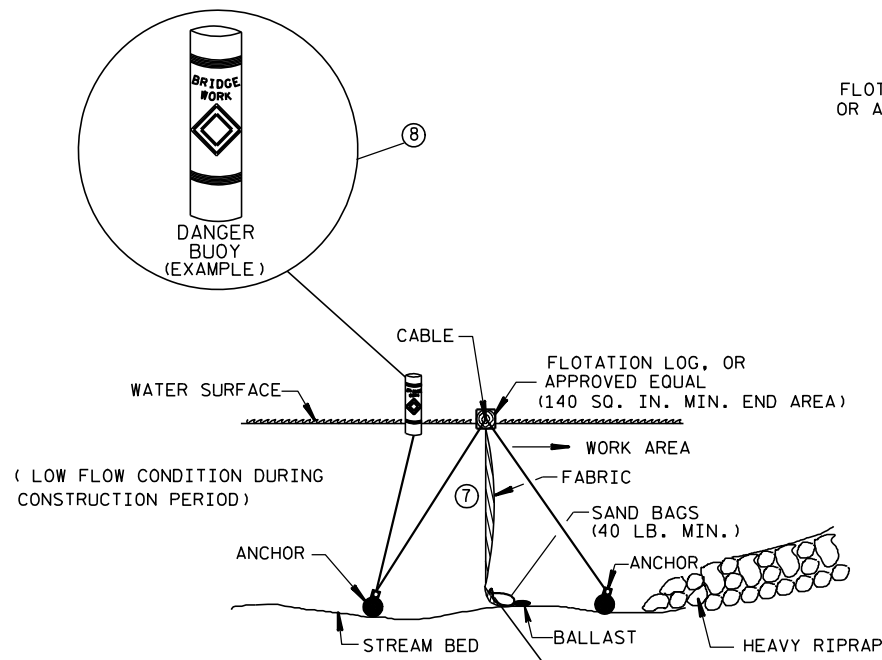
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05
DATE

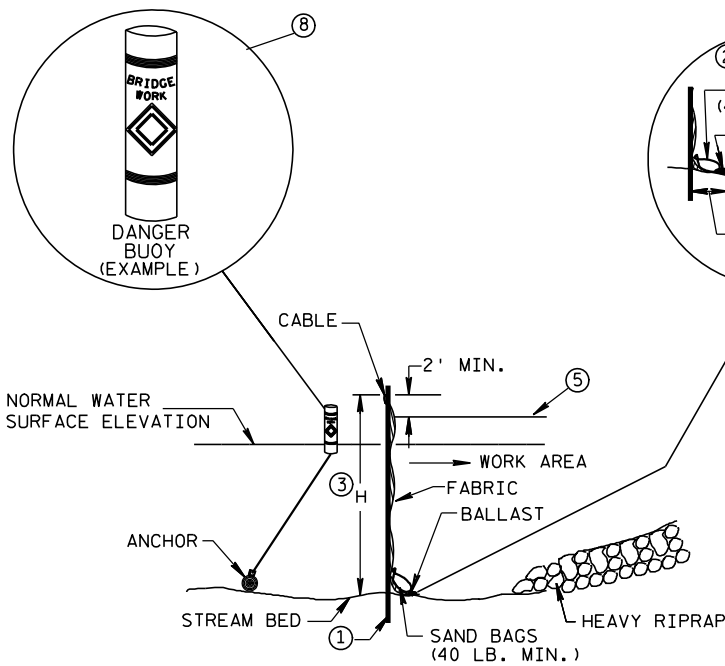
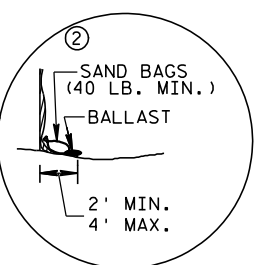
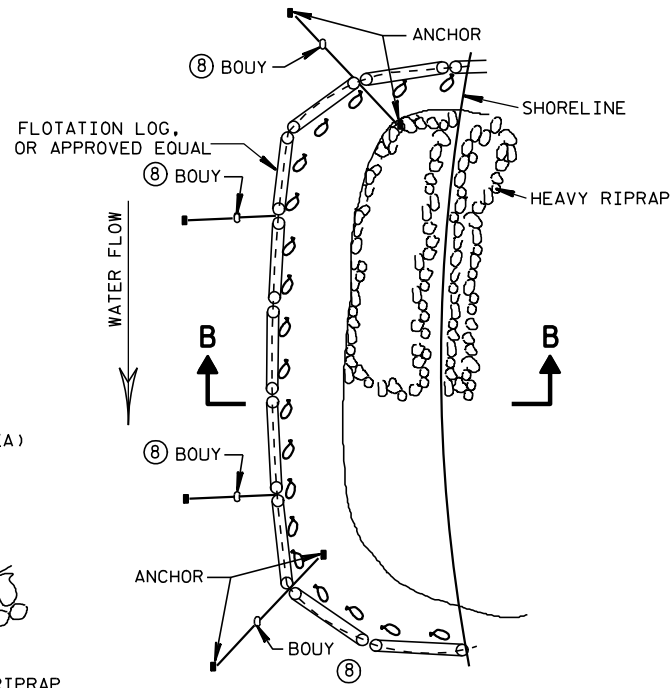
FHWA

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



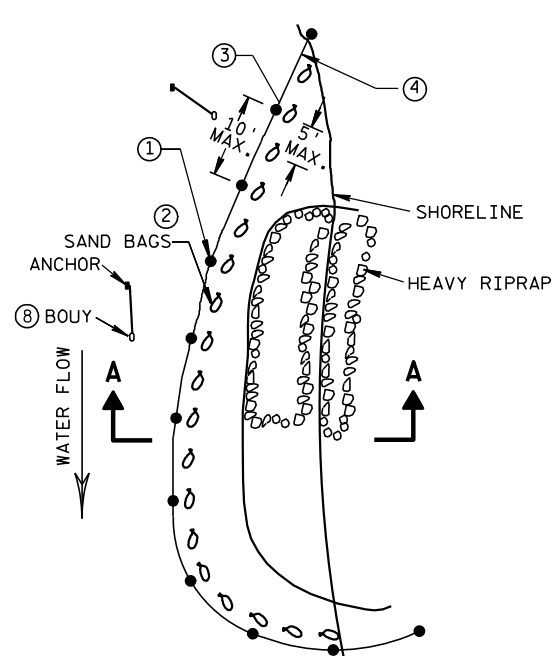
SECTION B-B

TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A

TURBIDITY BARRIER STANDARD POST INSTALLATION



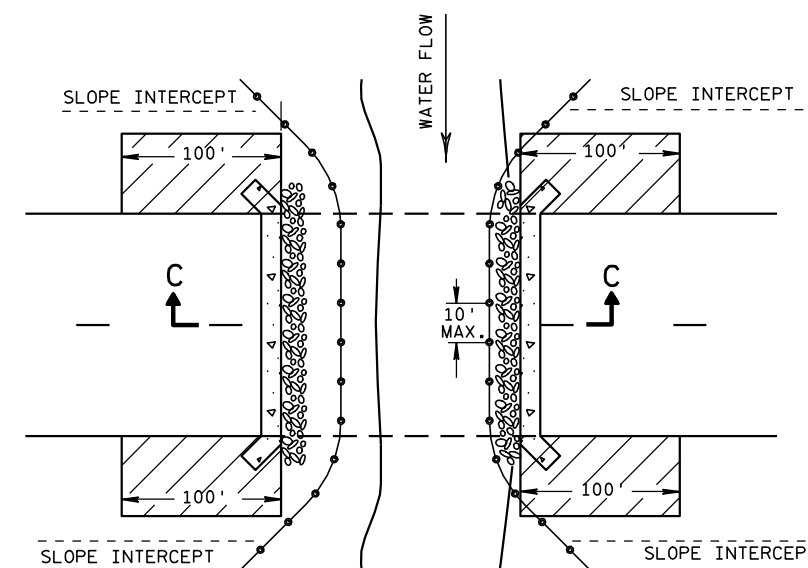
PLAN VIEW

GENERAL NOTES

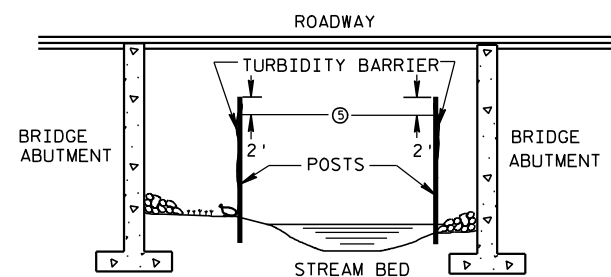
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE O2 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 BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



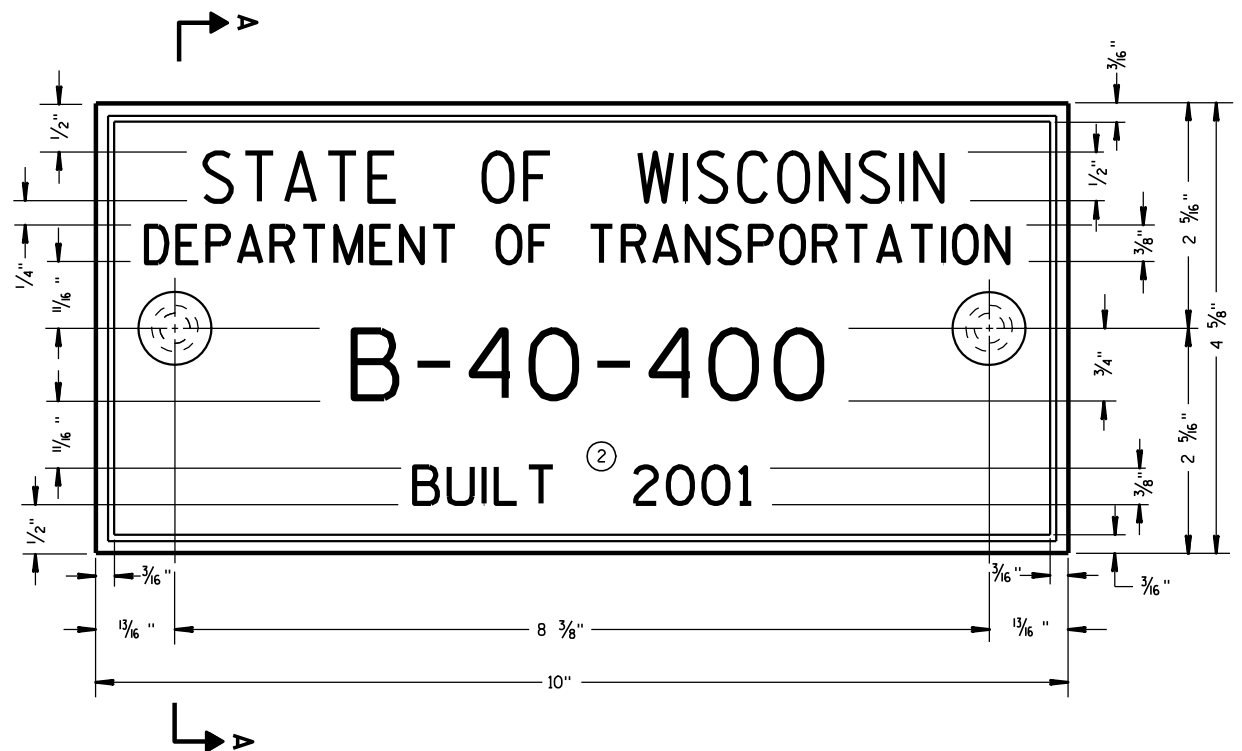
SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



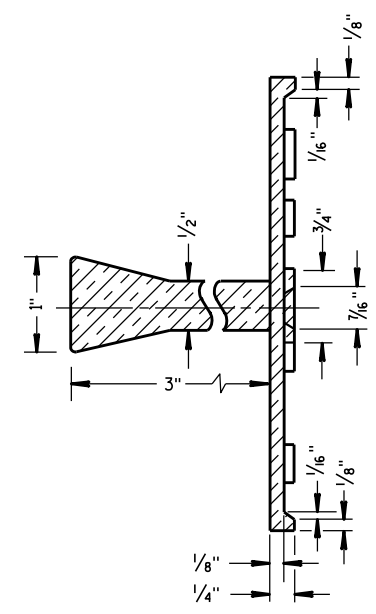
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

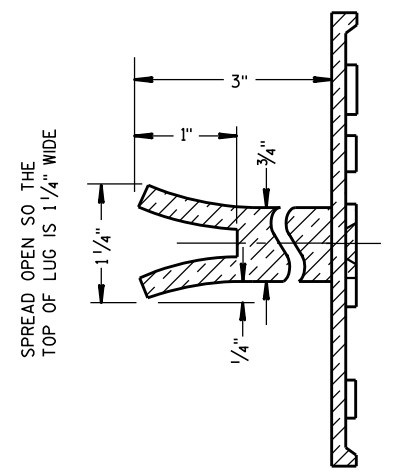
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

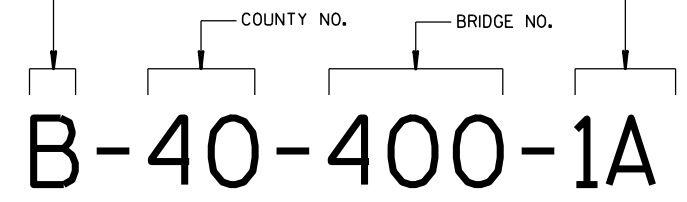
6

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

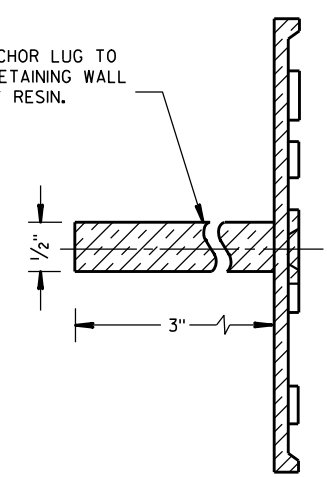
COUNTY NO. BRIDGE NO.

UNIT NO. FOR MULTIPLE
UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

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



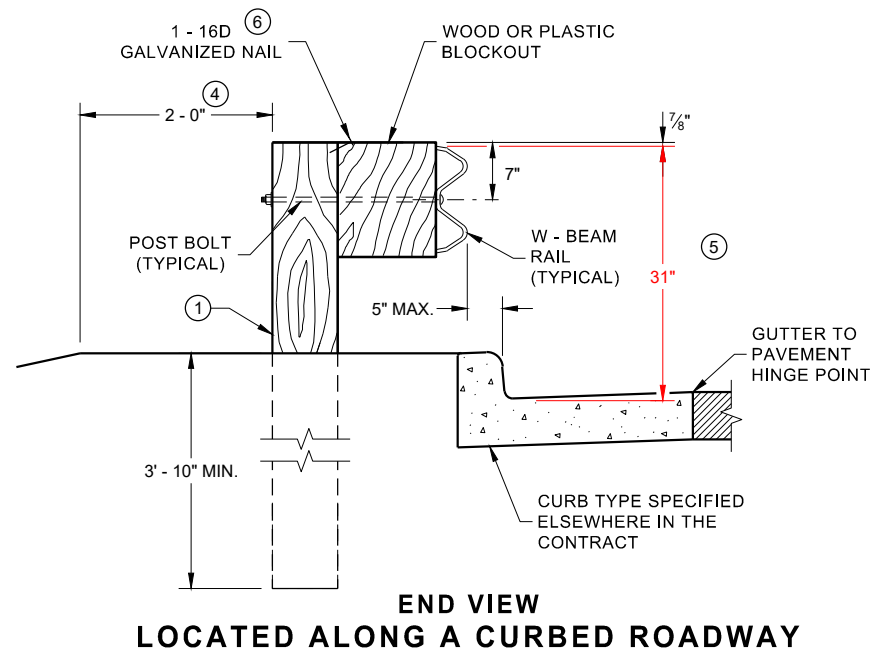
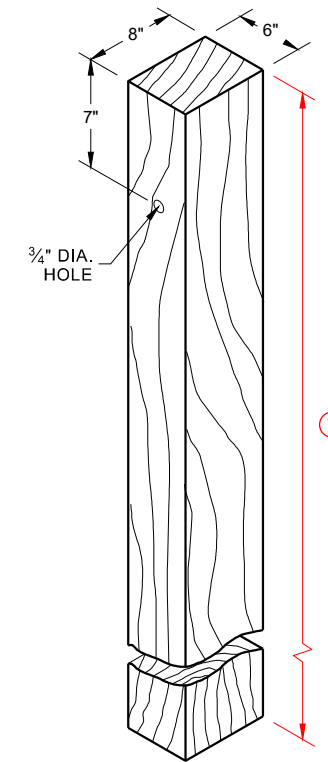
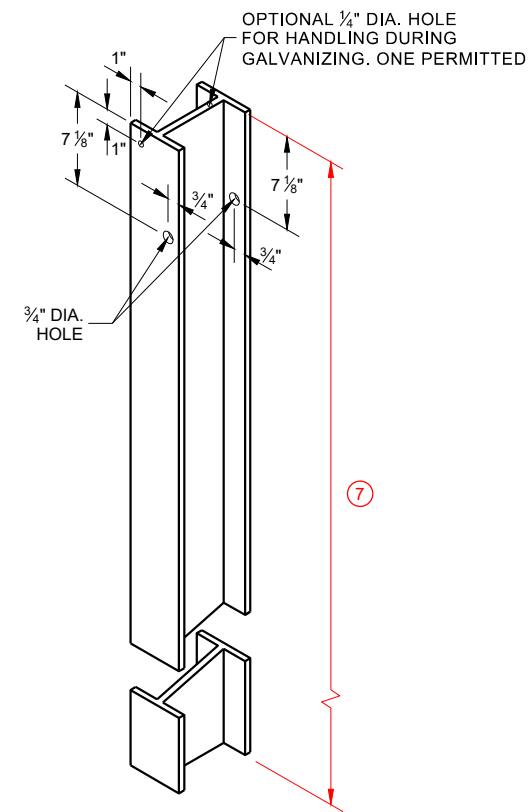
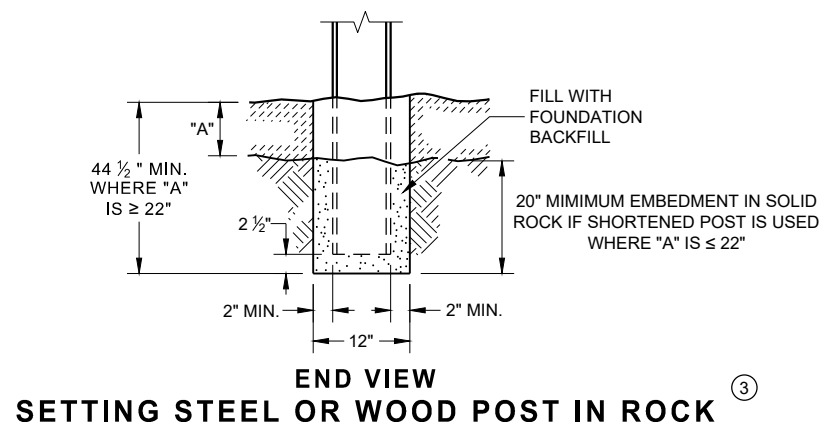
ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

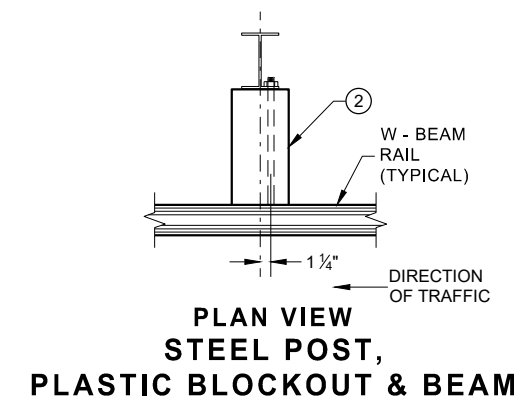
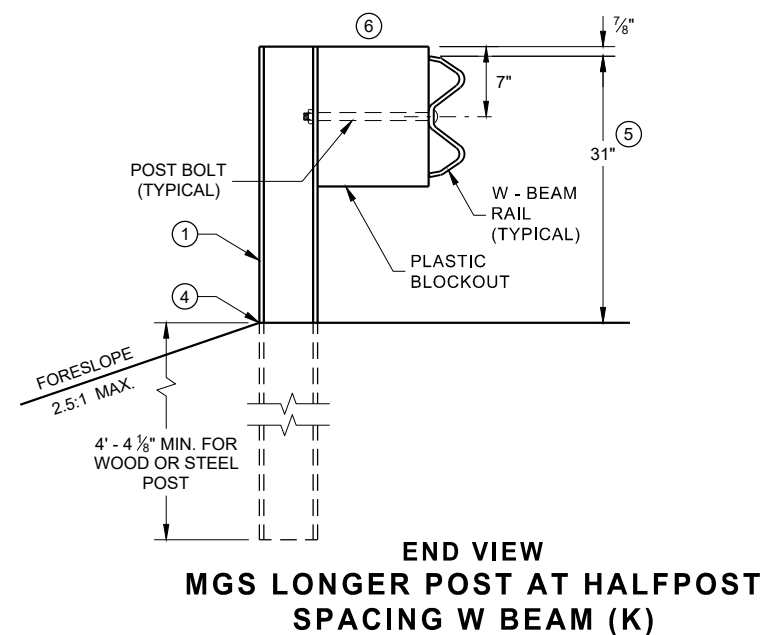
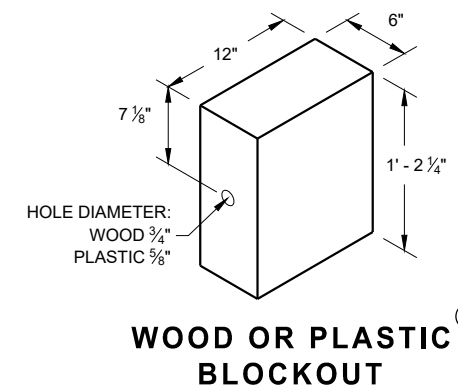
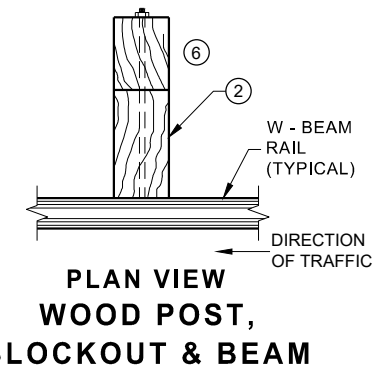
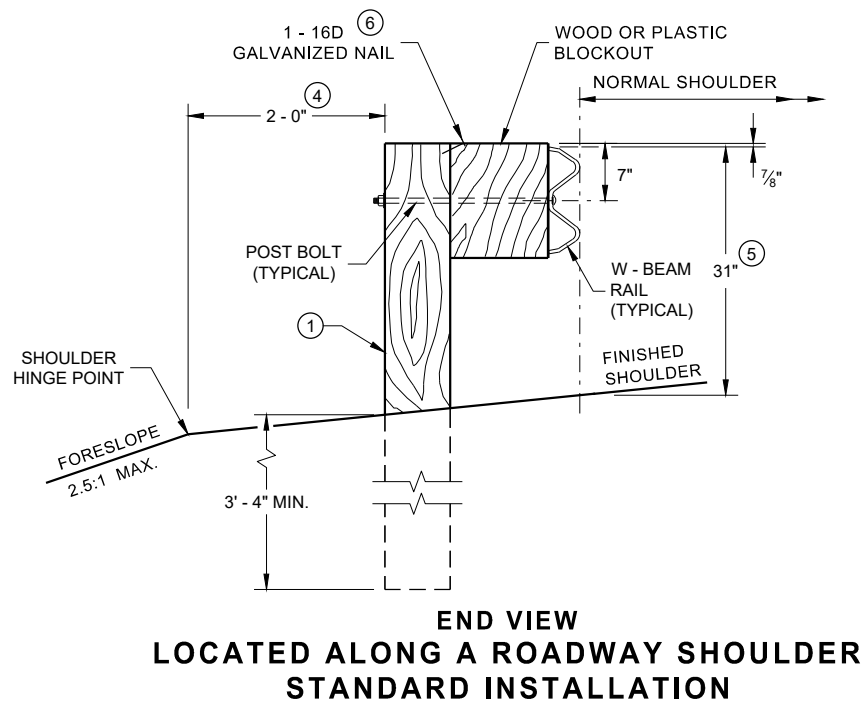
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	

- 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".



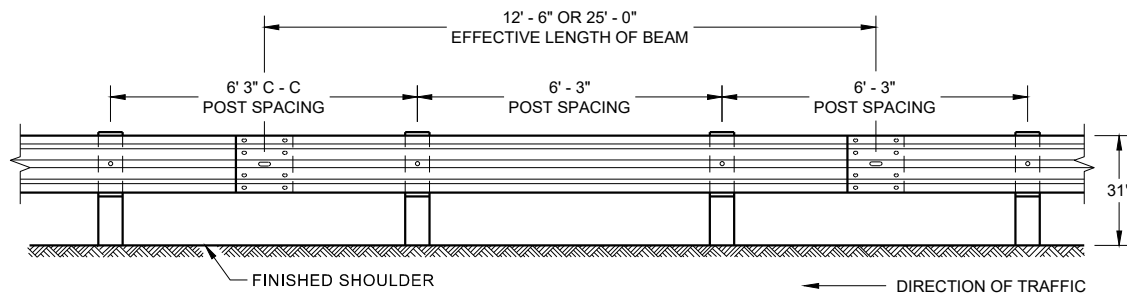
**STEEL POST & HOLE
PUNCHING DETAIL** ①
(W 6 X 9) ①

**WOOD POST
(6" X 8") NOMINAL** ①

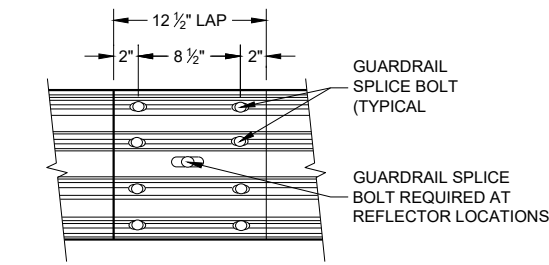


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



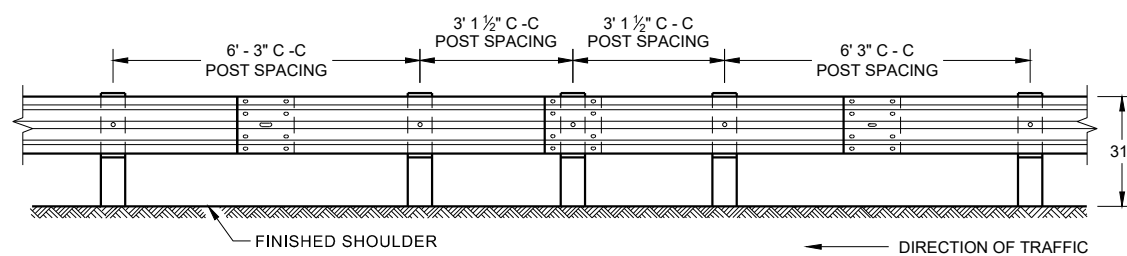
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



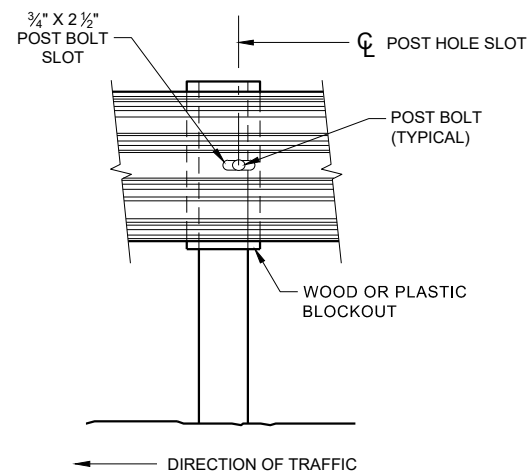
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

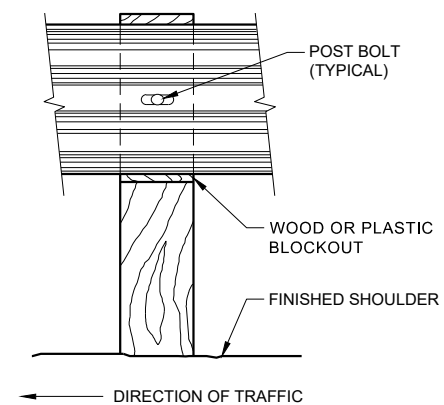
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" 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 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



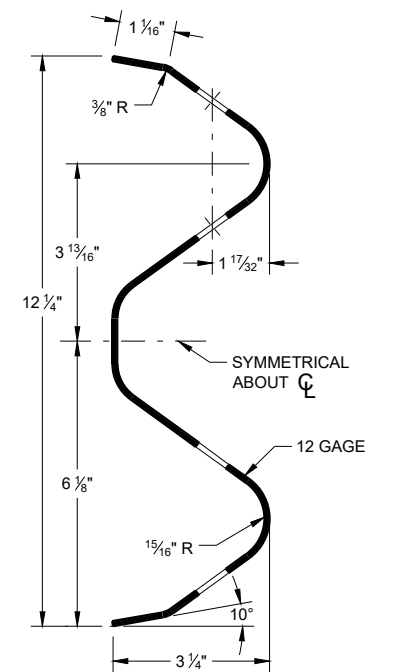
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



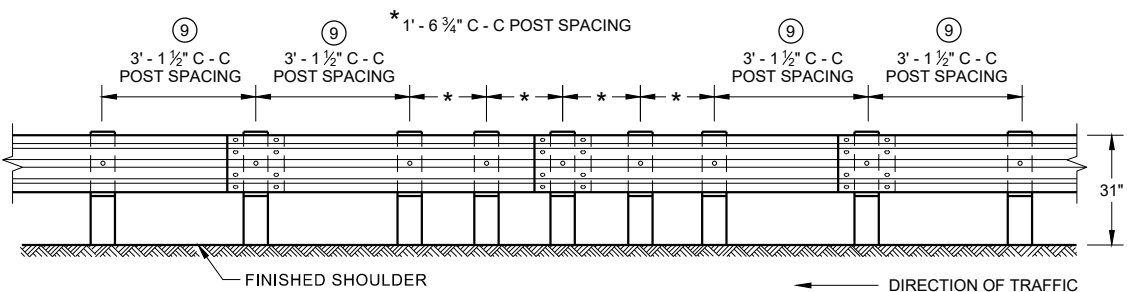
FRONT VIEW AT STEEL POST



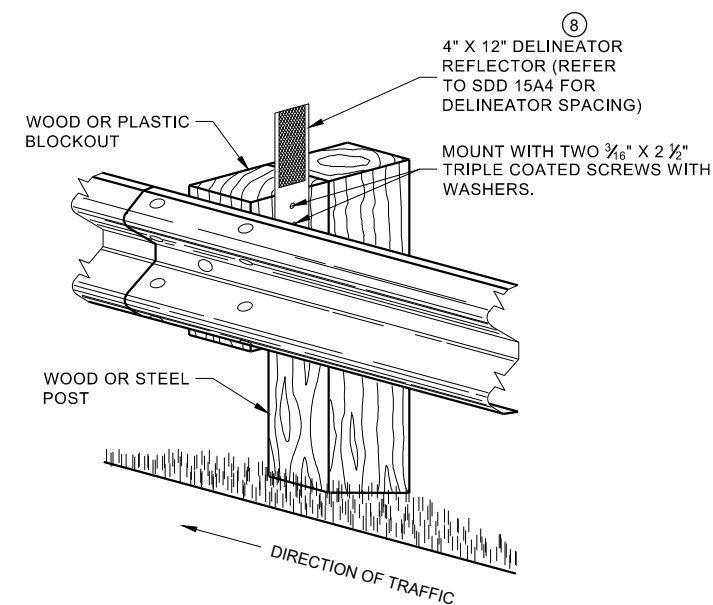
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

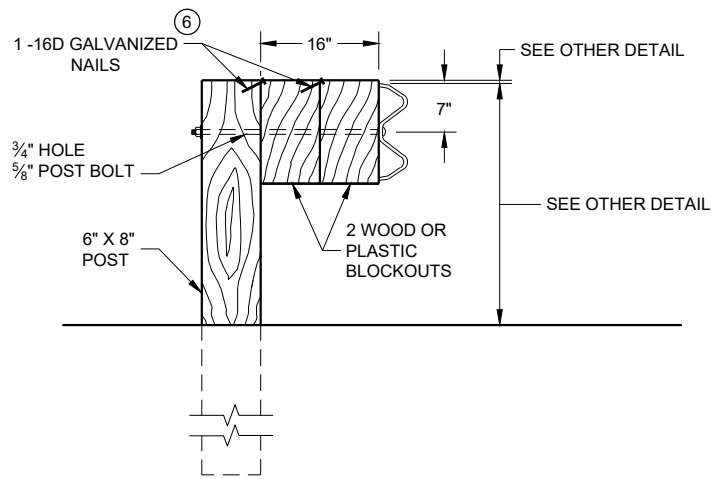
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 06b

SDD 14B42 - 06b

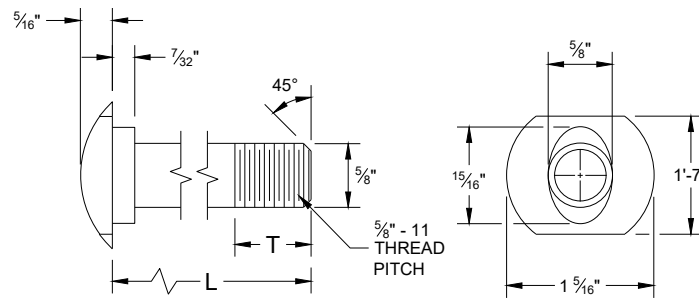


DETAIL FOR 16" BLOCKOUT DEPTH

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.

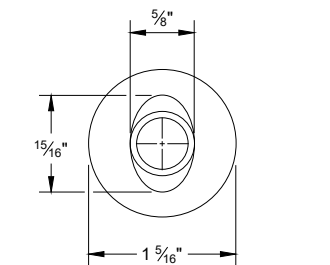
NOTE:

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.

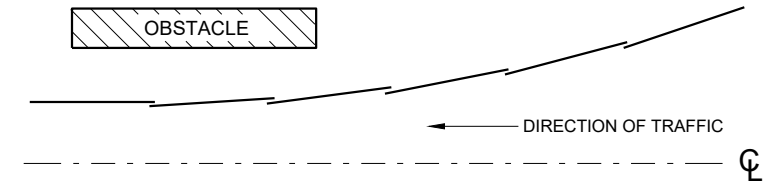


POST BOLT TABLE

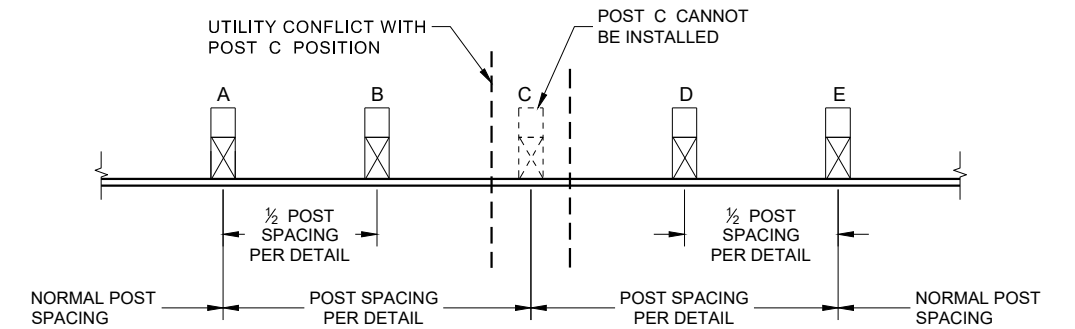
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



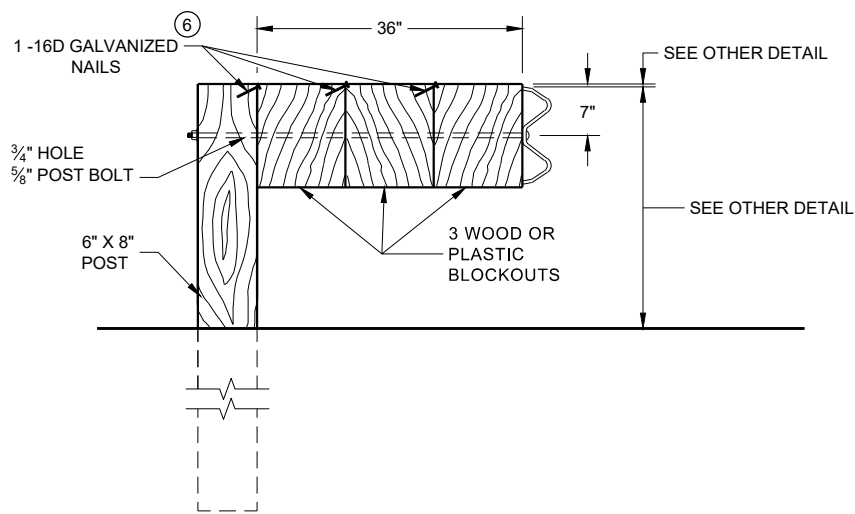
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

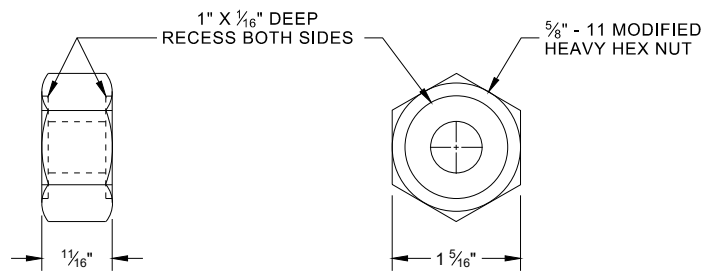


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

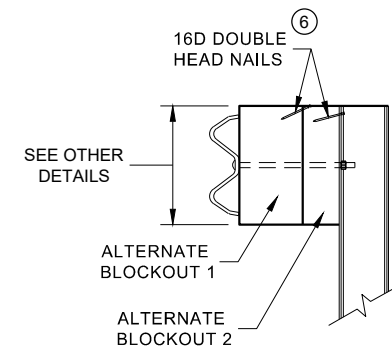


DETAIL FOR 36" BLOCKOUT DEPTH

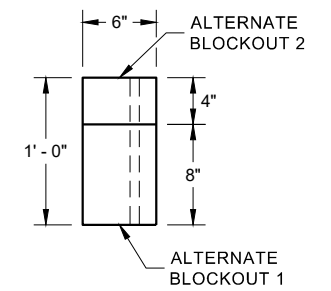
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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



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



SIDE VIEW



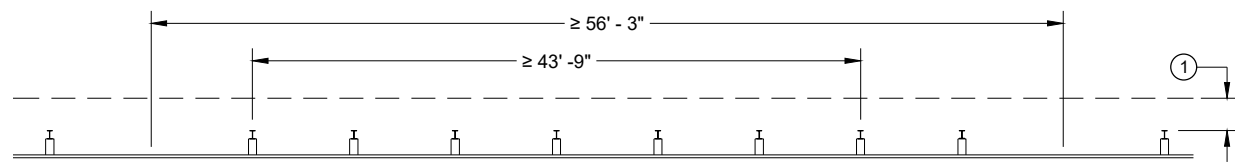
PLAN VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

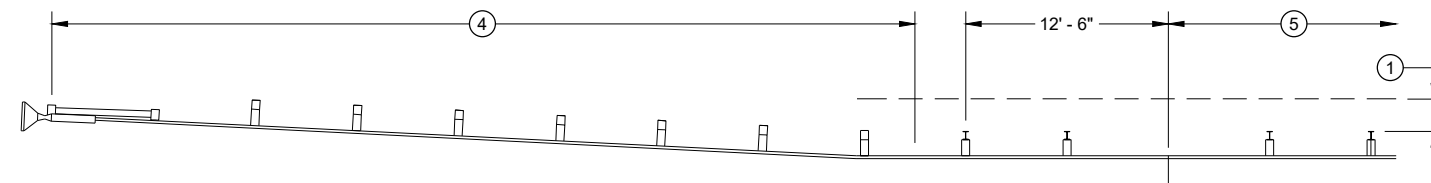
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

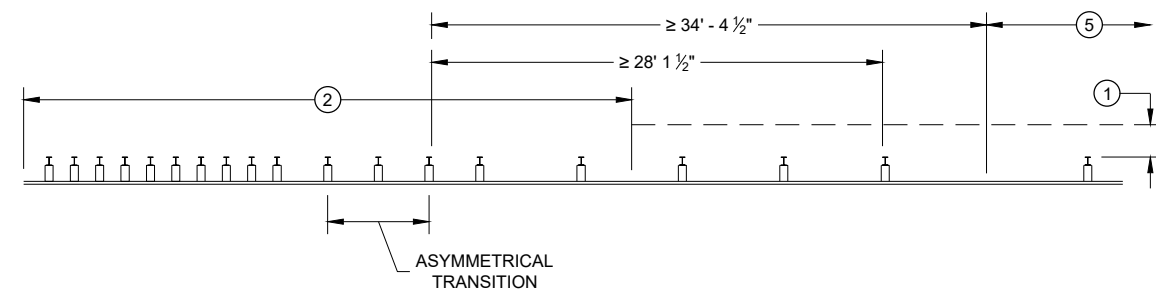
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



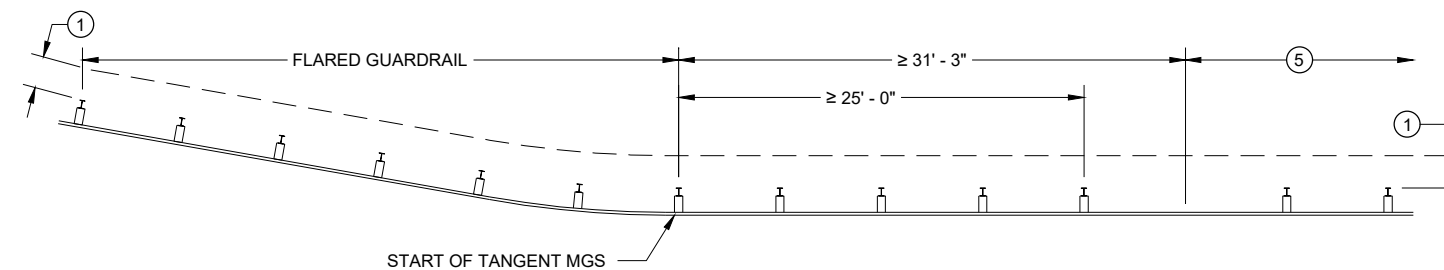
MISSING POST IN NORMAL BEAM GUARD RUN



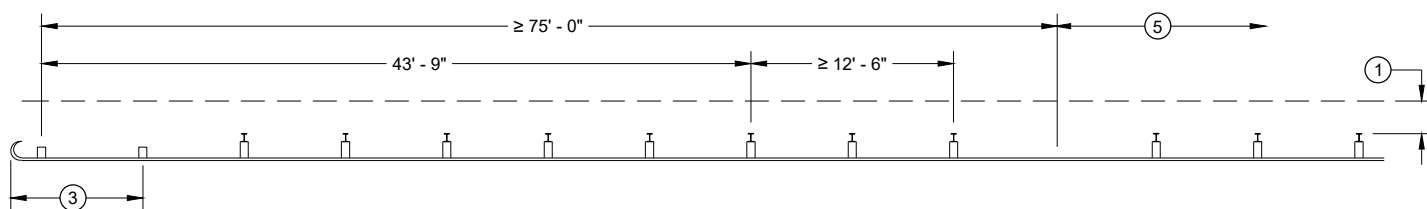
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



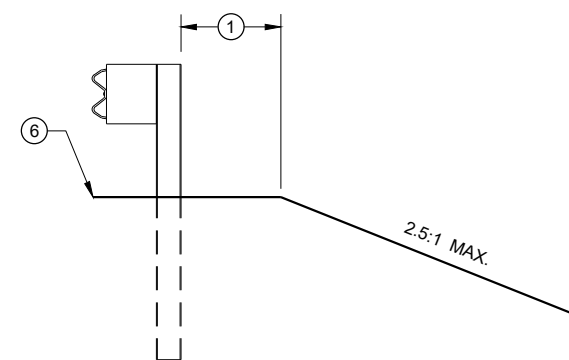
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER DESIGN.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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.

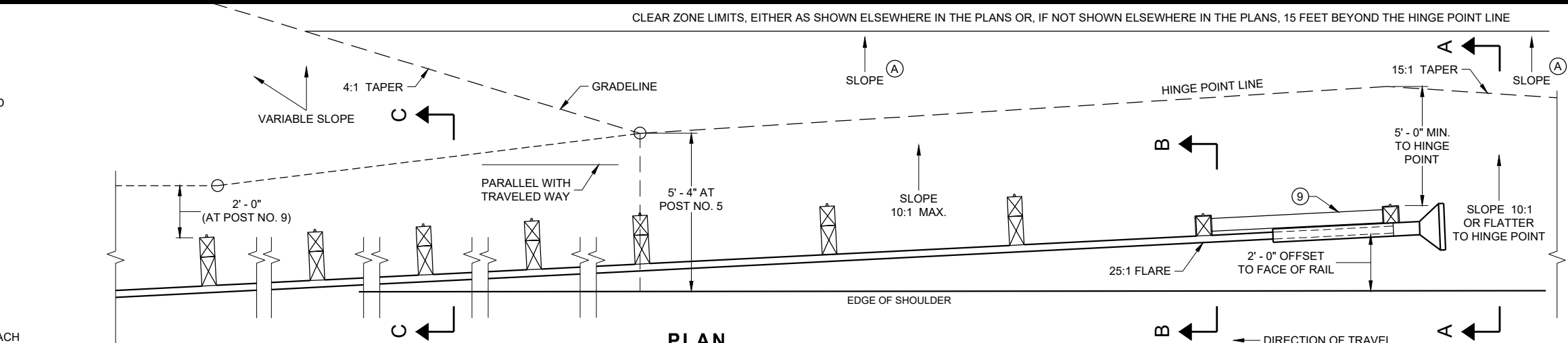
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

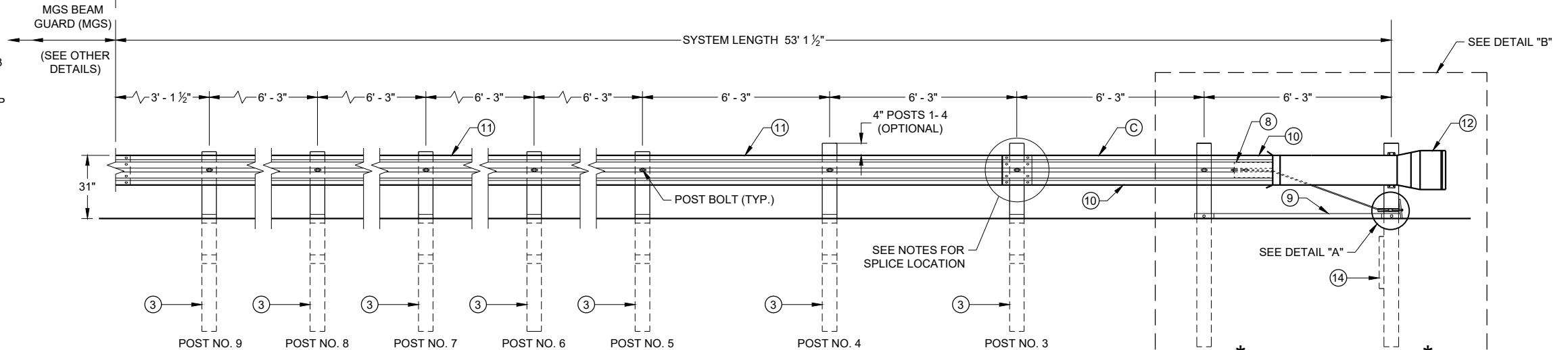
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

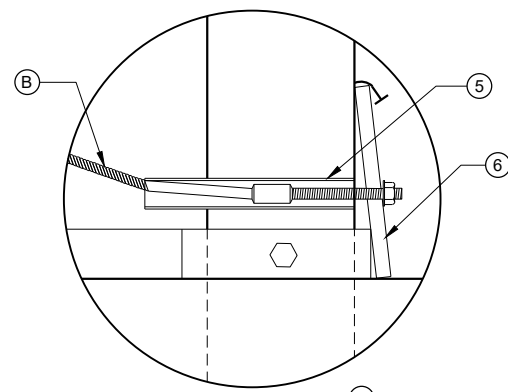
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



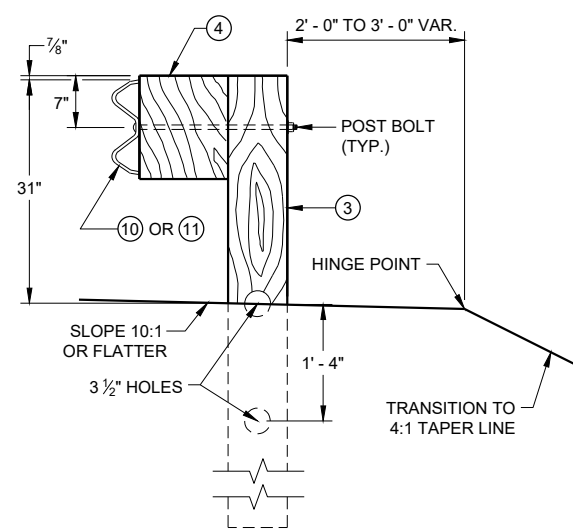
PLAN



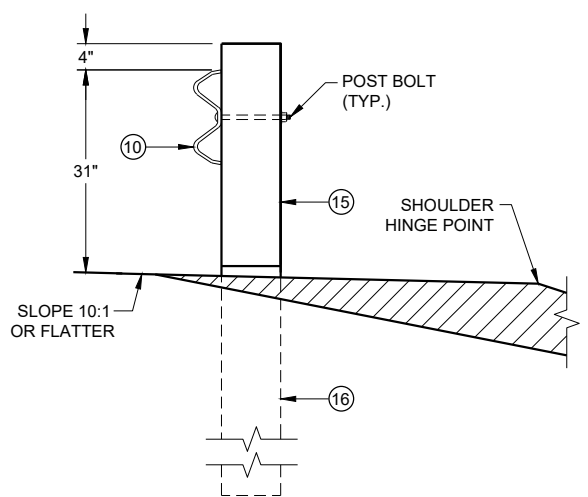
ELEVATION



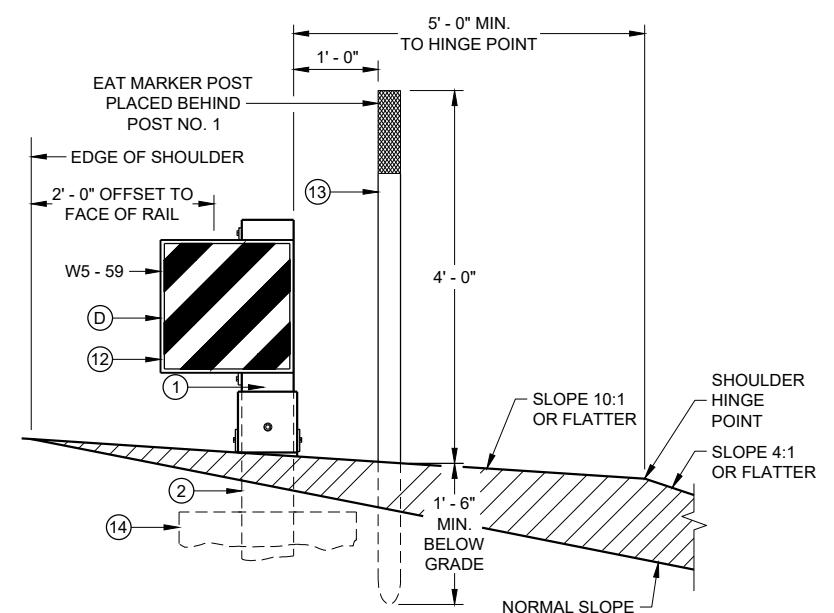
DETAIL "A"



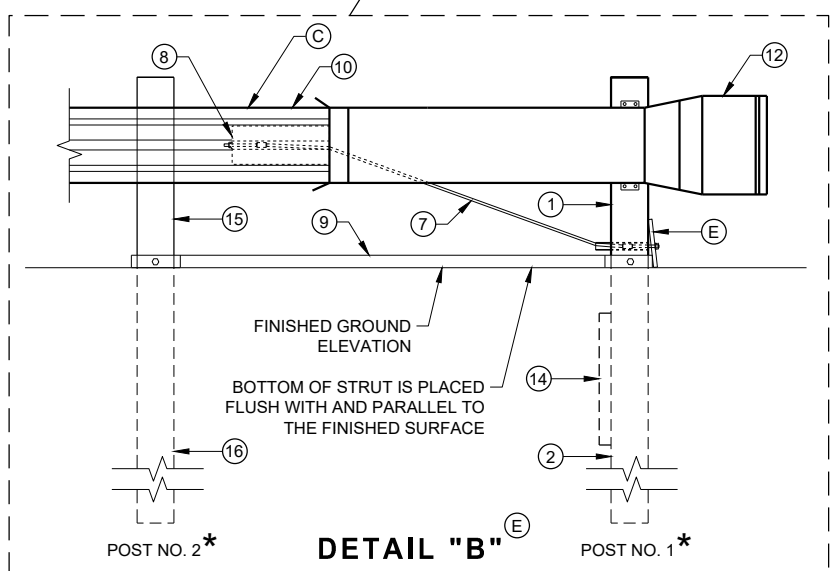
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



**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

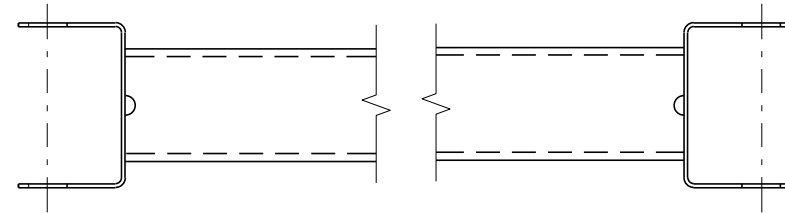
6

SDD 14B44 - 04a

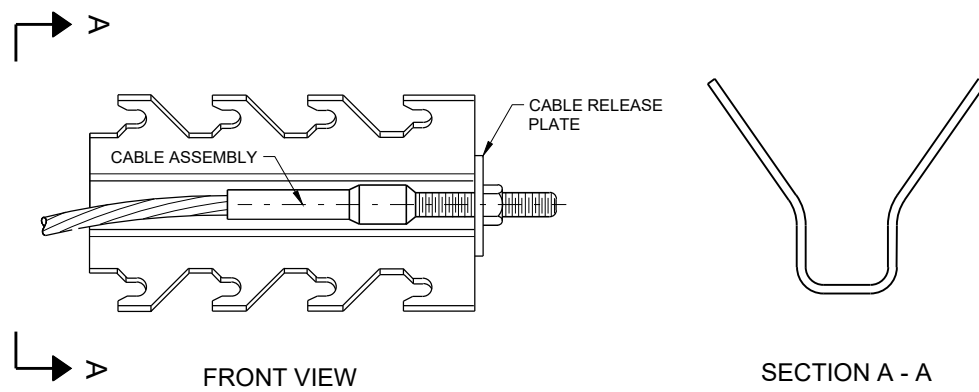
SDD 14B44 - 04a

BILL OF MATERIALS

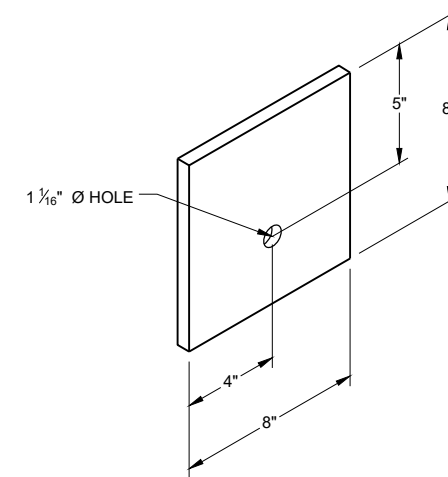
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL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



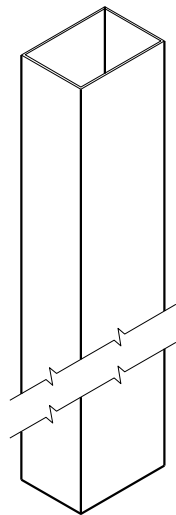
GENERIC GROUND STRUT ⑨ ⑤



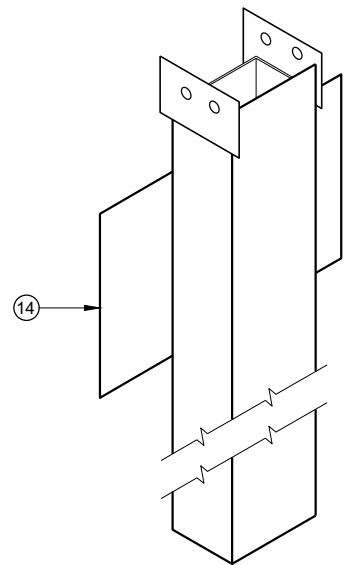
GENERIC ANCHOR CABLE BOX ⑨ ⑤



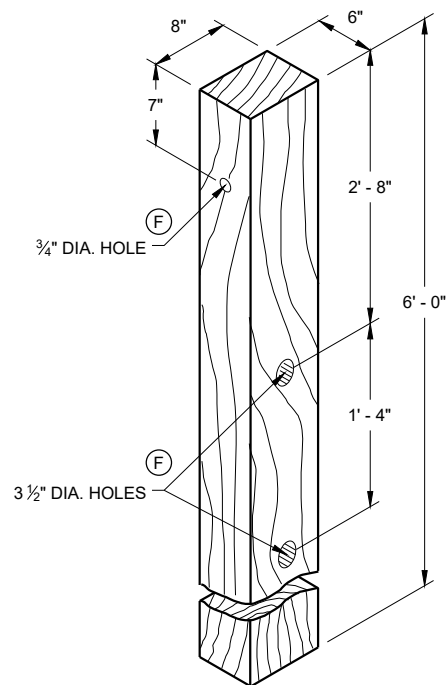
BEARING PLATE ⑥ ⑤



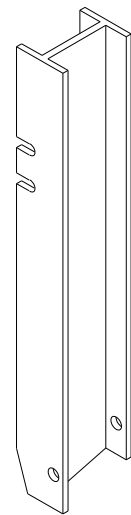
UPPER POST NO. 1 ⁽¹⁾ (E)



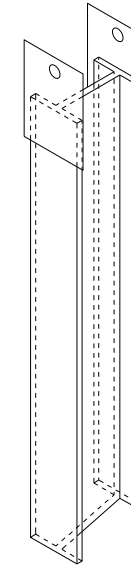
LOWER POST NO. 1 ⁽²⁾ (E)



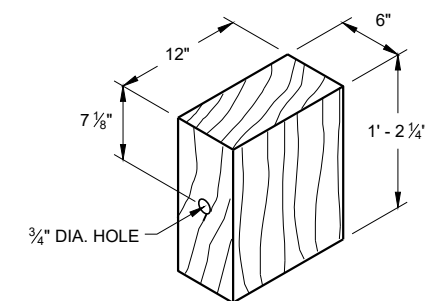
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

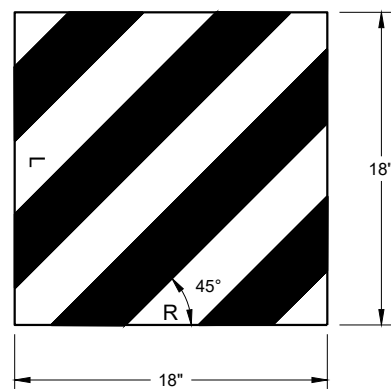


LOWER POST NO. 2 ⁽¹⁶⁾ (E)

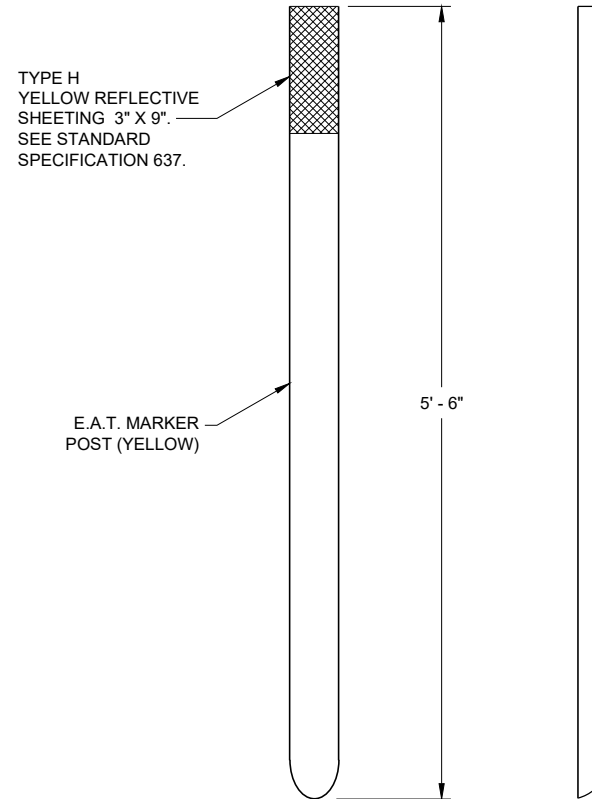


WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

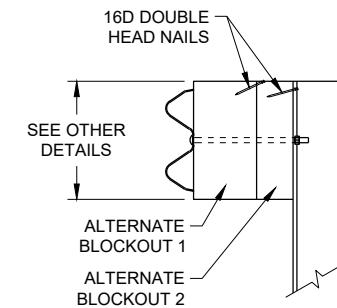
6



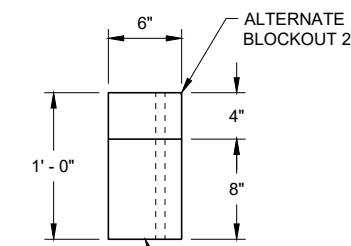
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



FRONT VIEW SIDE VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

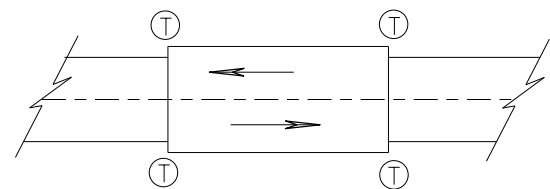
ALTERNATE WOOD BLOCKOUT DETAIL

6

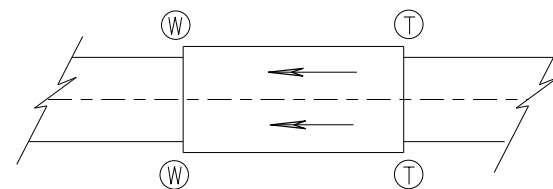
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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

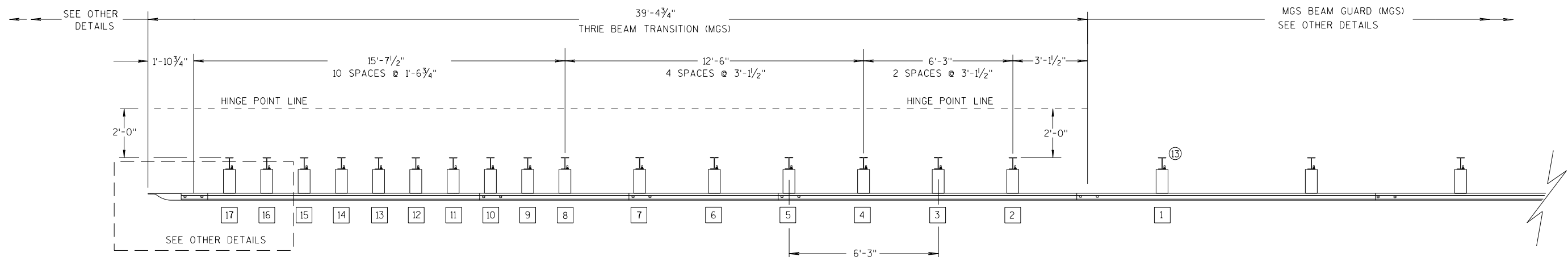
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

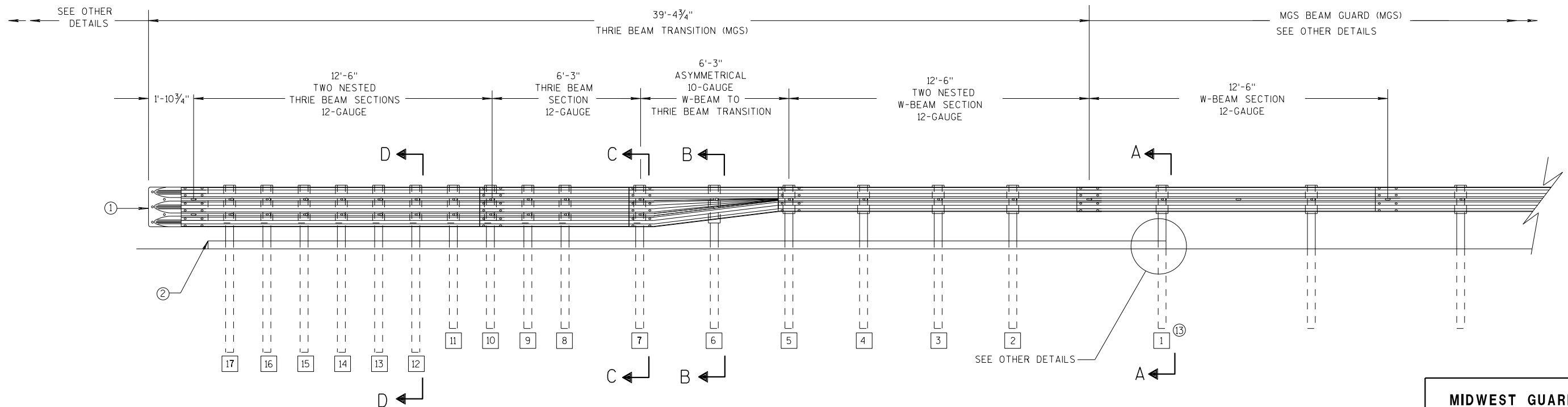
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

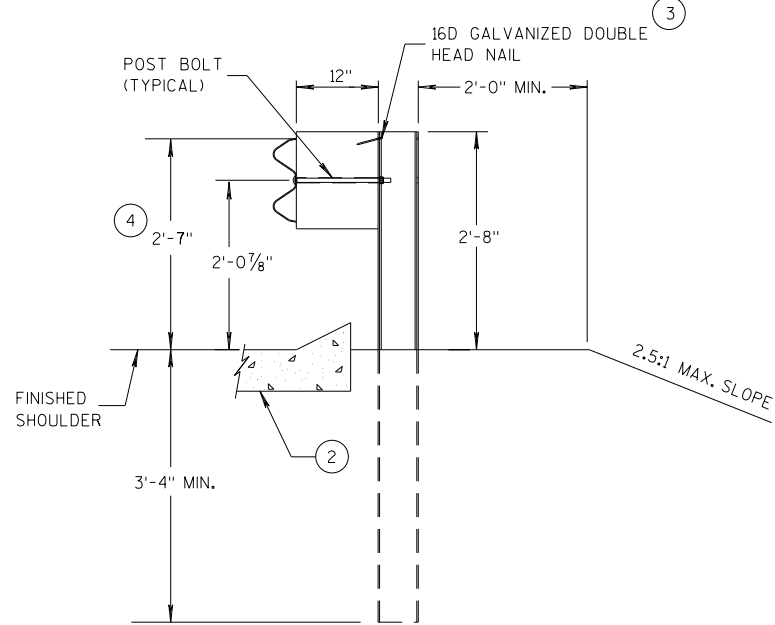
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

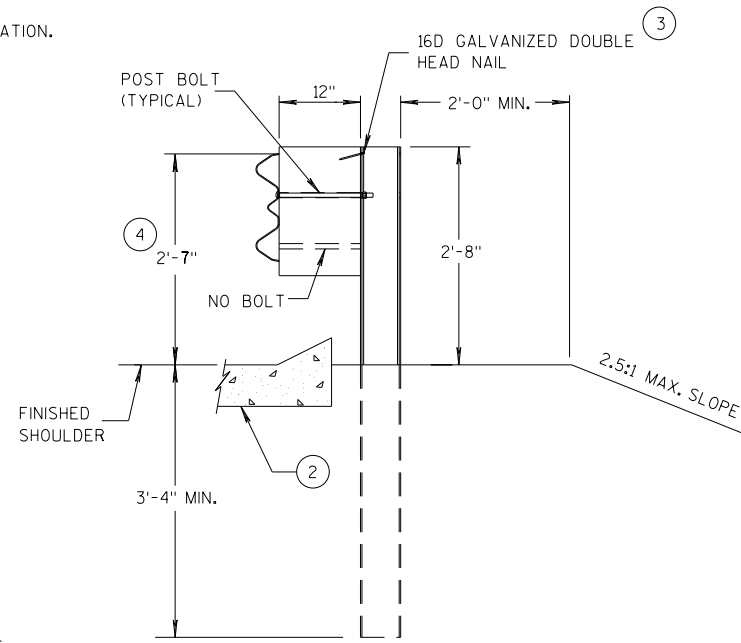
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

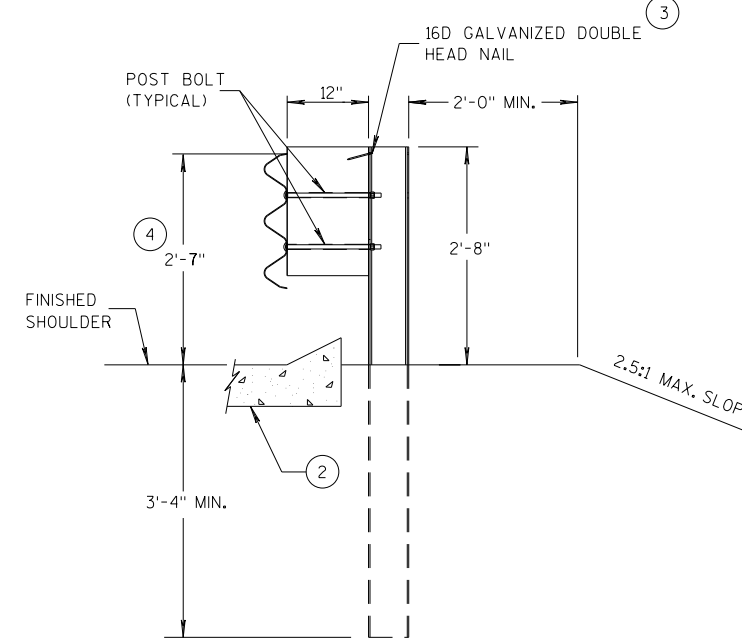
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



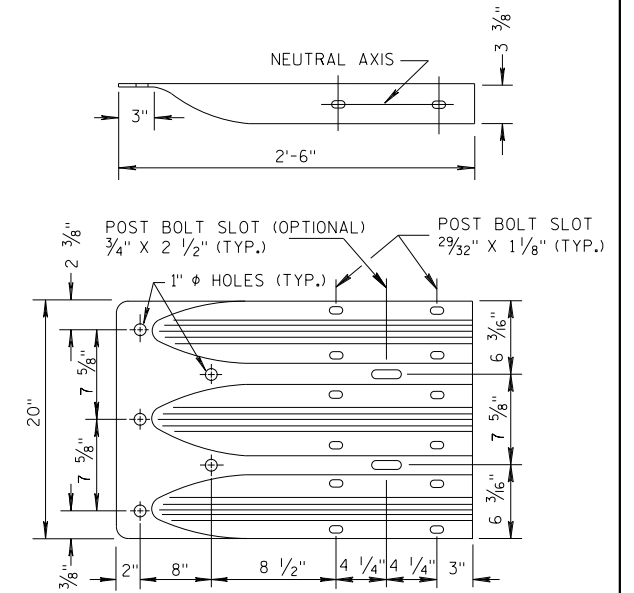
**SECTION A-A
POSTS 1-5**



**SECTION B-B
POST 6**



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



**THRIE BEAM
TERMINAL CONNECTOR**

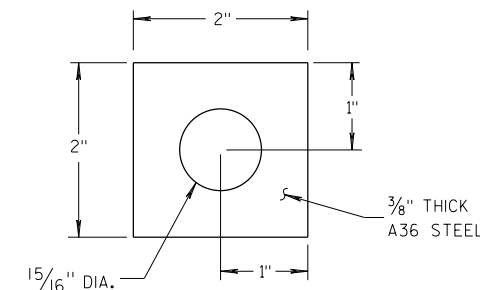
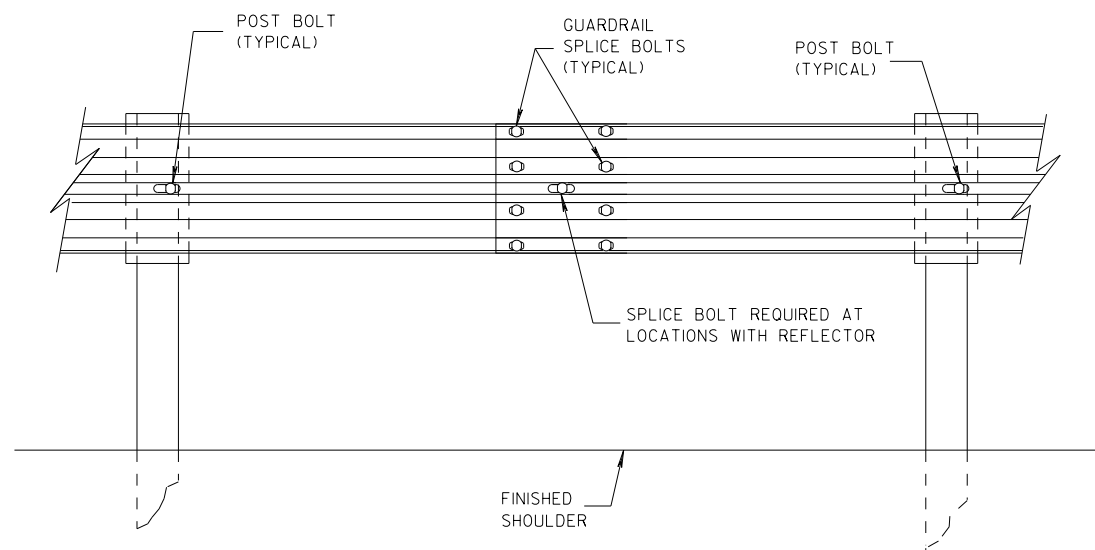
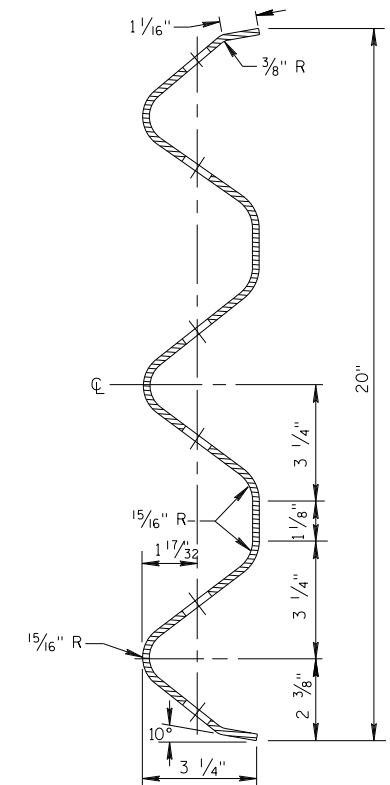


PLATE WASHER DETAIL



SPLICE DETAIL

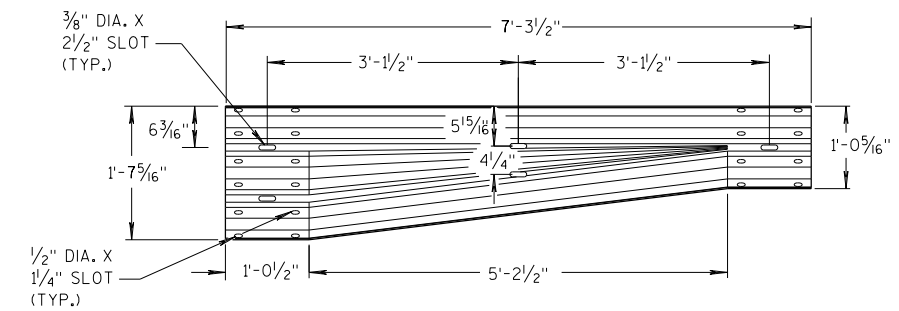


**SECTION THRU THRIE
BEAM RAIL ELEMENT**

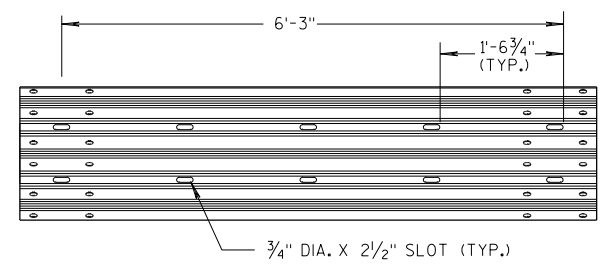
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

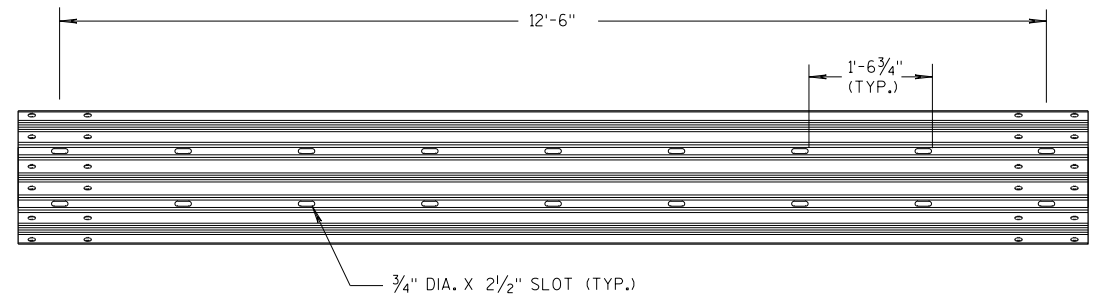
**SECTION D-D
POSTS 12-17**



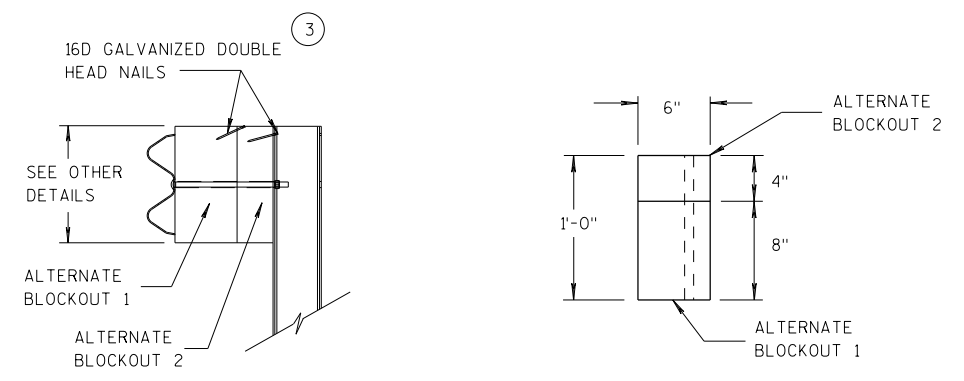
W-BEAM TO THRIE BEAM TRANSITION SECTION



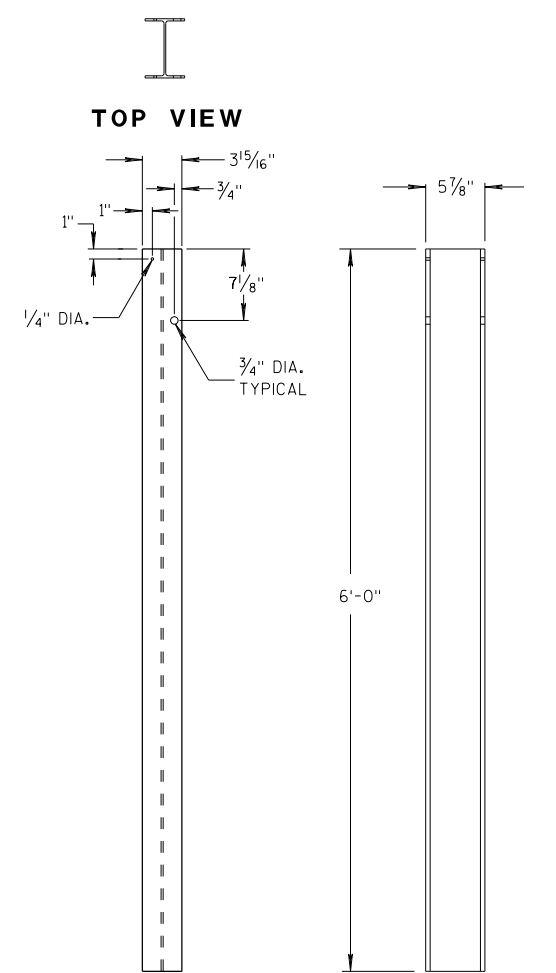
6'-3\"/>



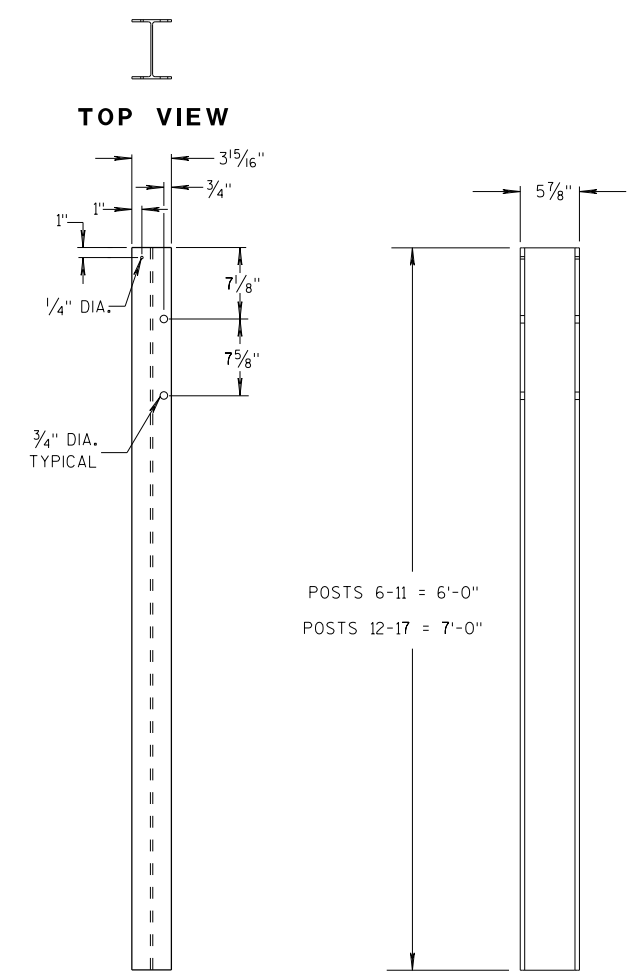
12'-6\"/>



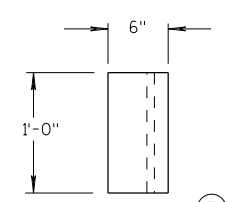
ALTERNATE WOOD BLOCKOUT DETAIL



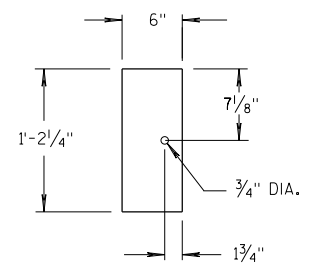
STEEL POSTS 1-5



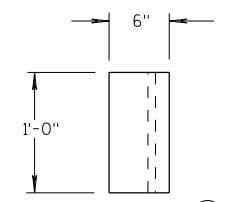
STEEL POSTS 6-17



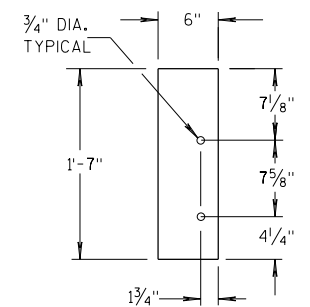
BLOCKOUT POSTS 1-5 TOP VIEW



BLOCKOUT POSTS 1-5 FRONT VIEW



BLOCKOUT POSTS 6-17 TOP VIEW



BLOCKOUT POSTS 6-17 FRONT VIEW

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

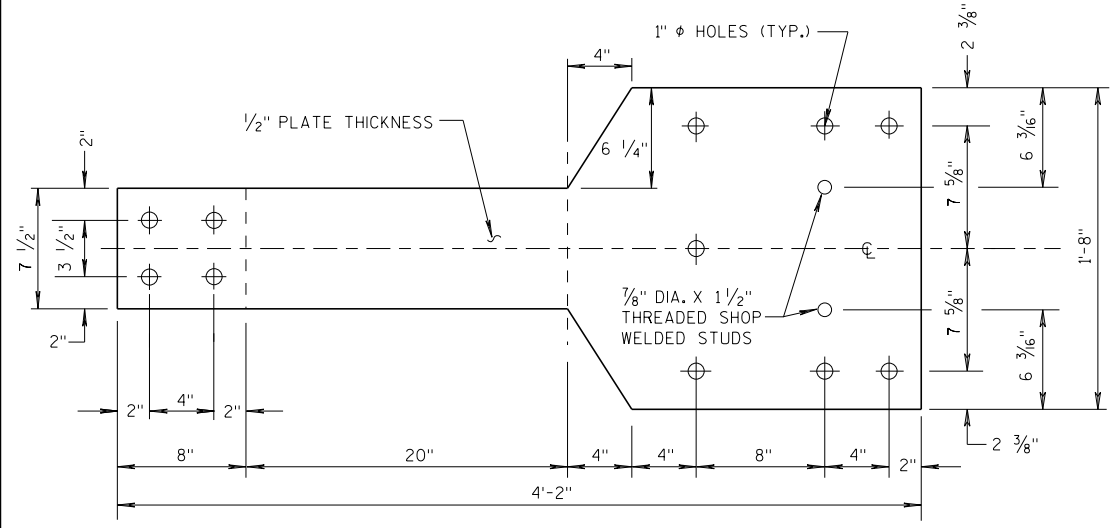
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S.D.D. 14 B 45-5c

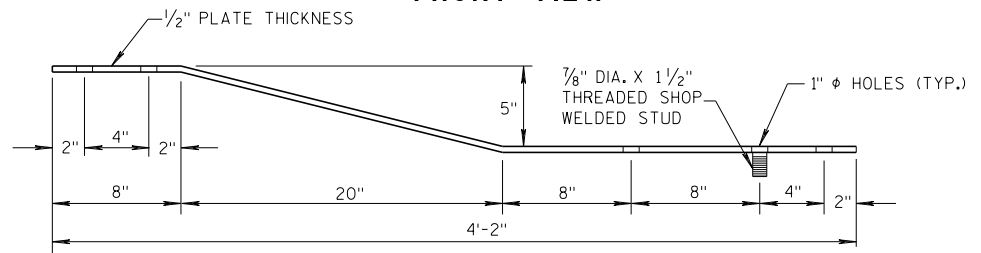
S.D.D. 14 B 45-5c

GENERAL NOTES

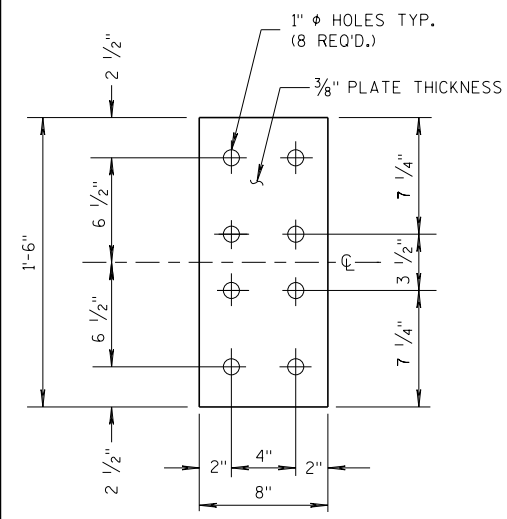
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



FRONT VIEW

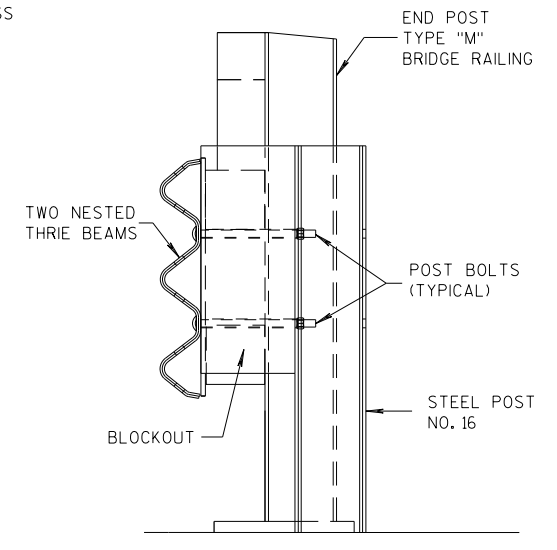


**PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"**

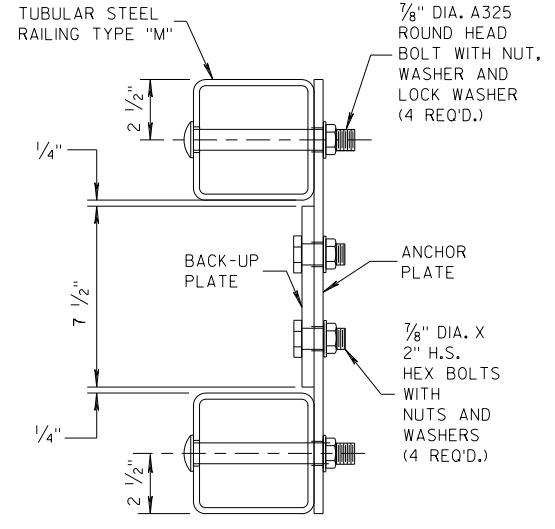


FRONT VIEW

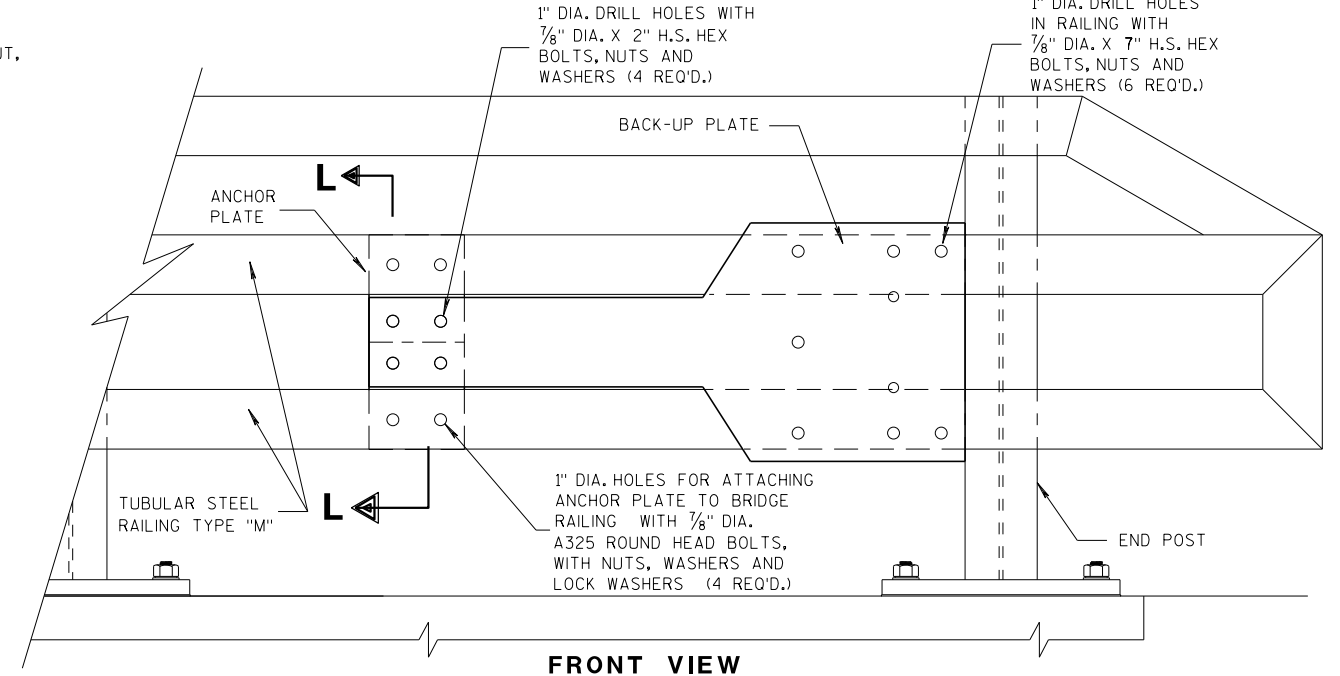
**ANCHOR
PLATE DETAIL,
TYPE "M"**



SECTION M-M

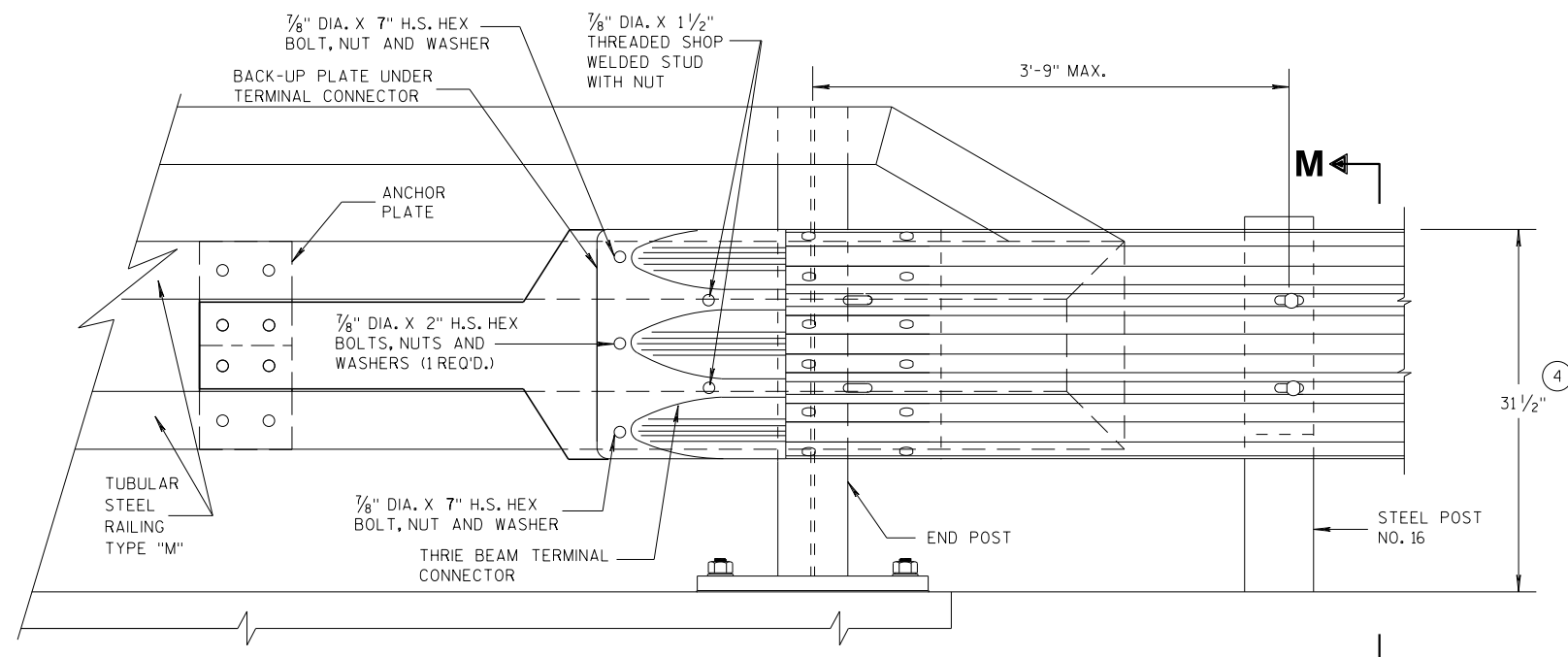


SECTION L-L

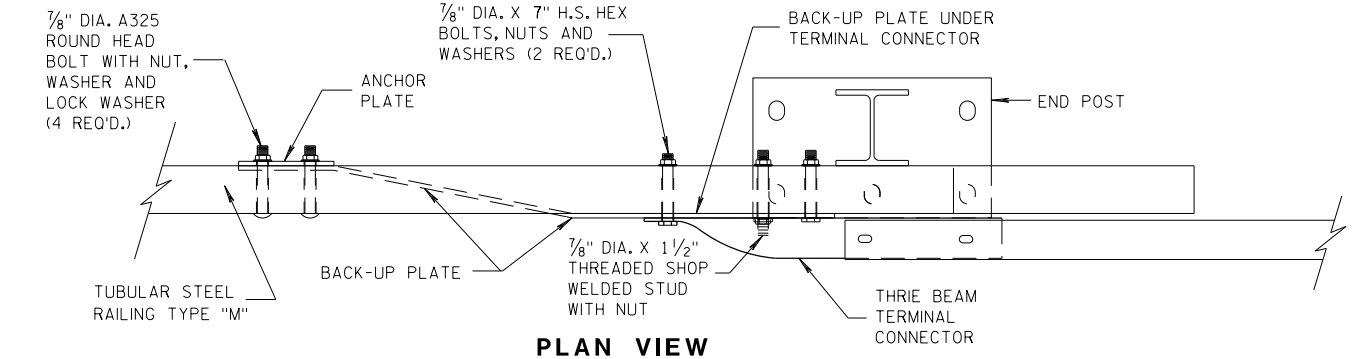


FRONT VIEW

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



FRONT VIEW



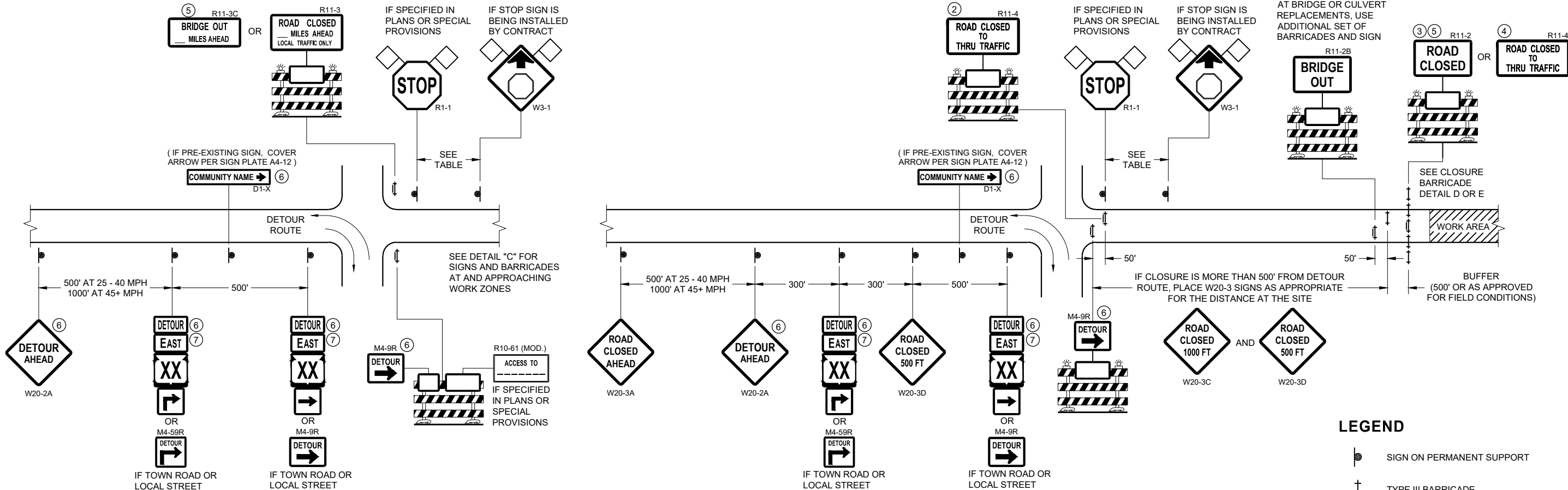
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

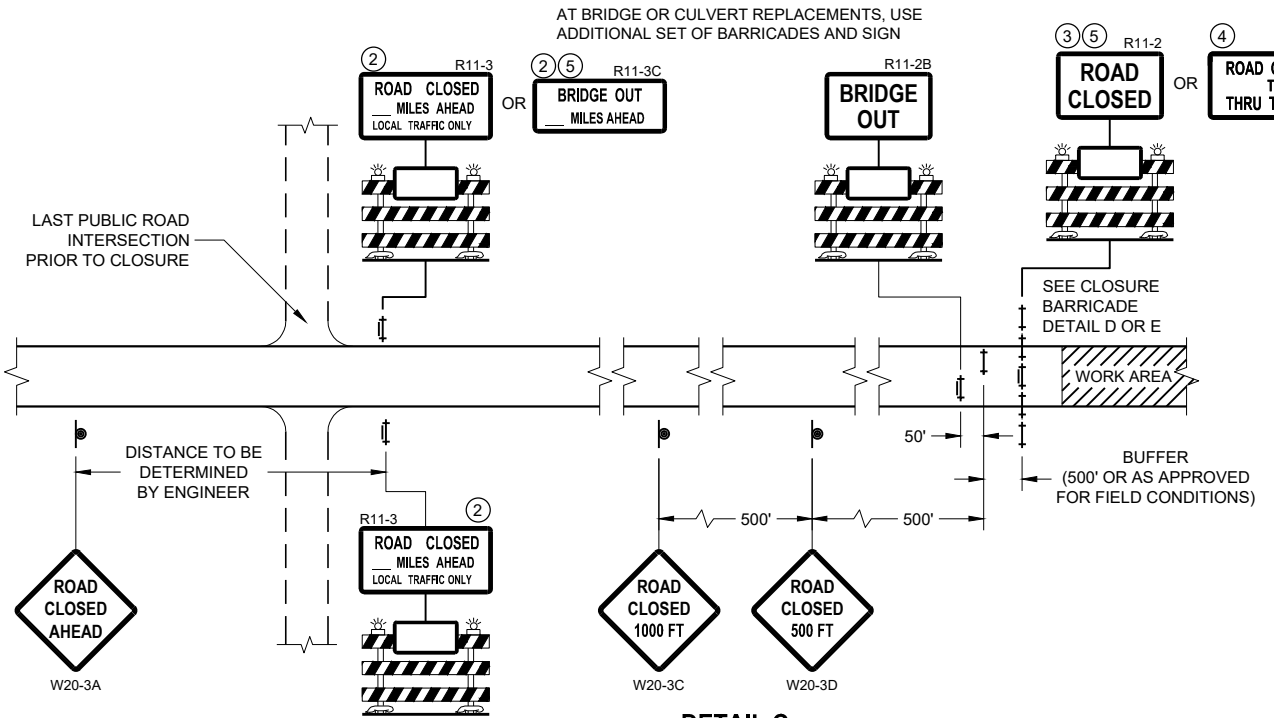
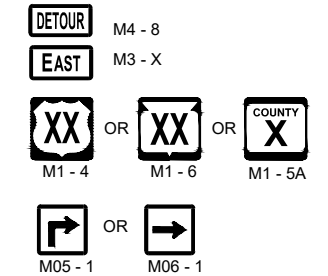


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
 WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
 DETOUR ROUTE (1000 FEET IF URBAN)

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

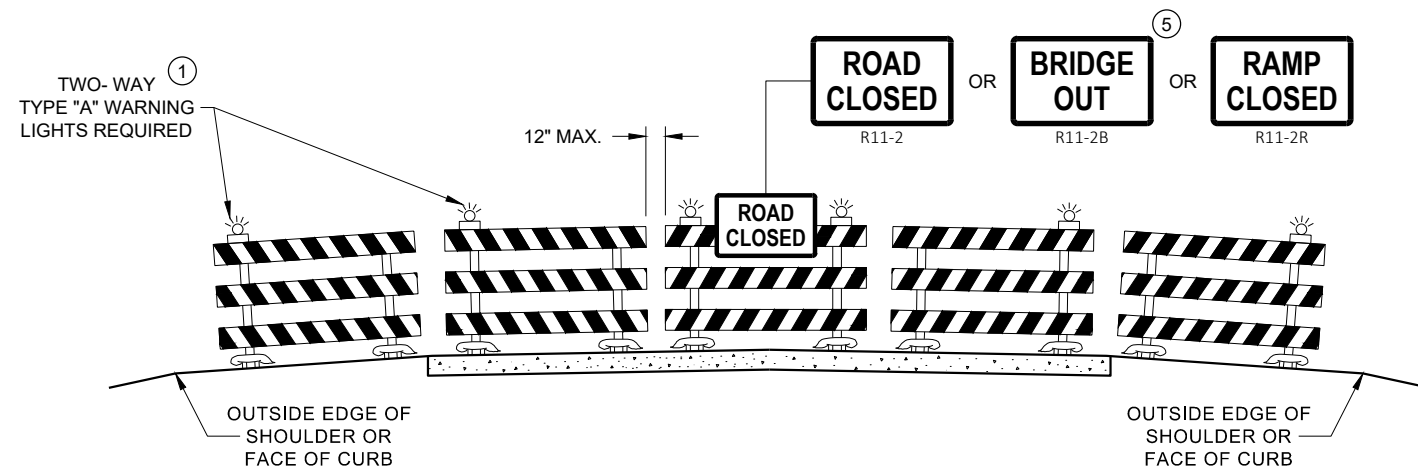
SEE SDD 15C2-SHEET "b"
 FOR GENERAL NOTES
 AND FOOTNOTES ① THROUGH ⑦

**BARRICADES AND SIGNS
 FOR MAINLINE CLOSURES**

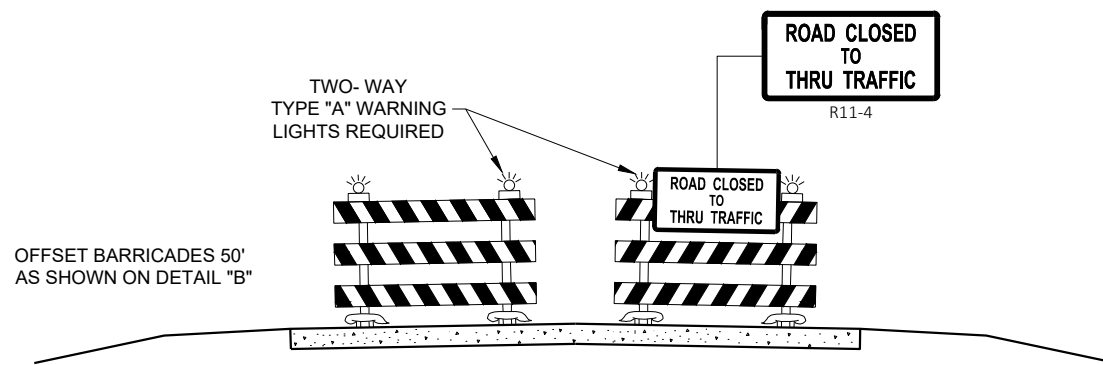
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 November 2018 /S/ Andrew Heidtke
 DATE DATE WORK ZONE ENGINEER

FHWA



**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"

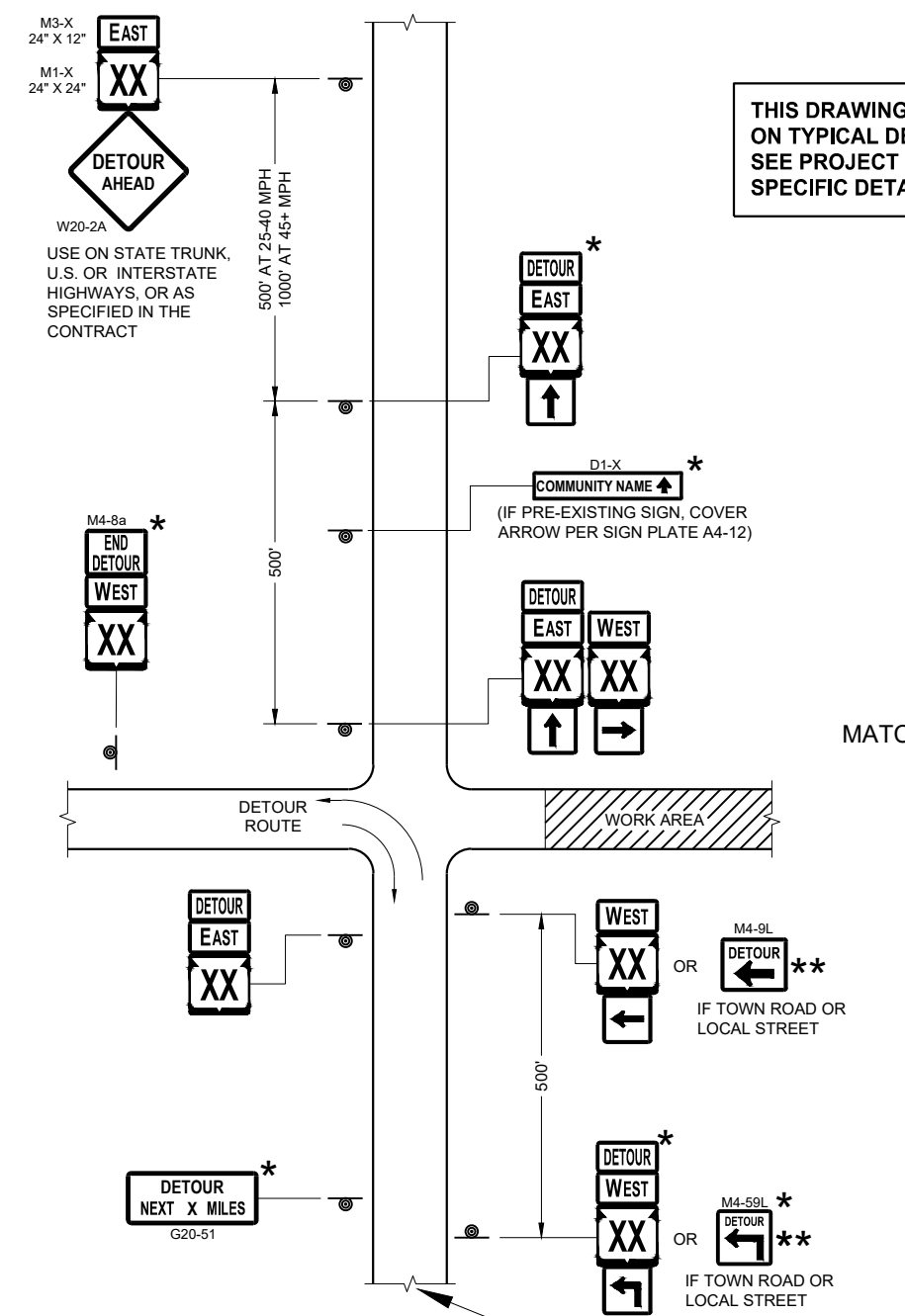
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS 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
November 2018 /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.

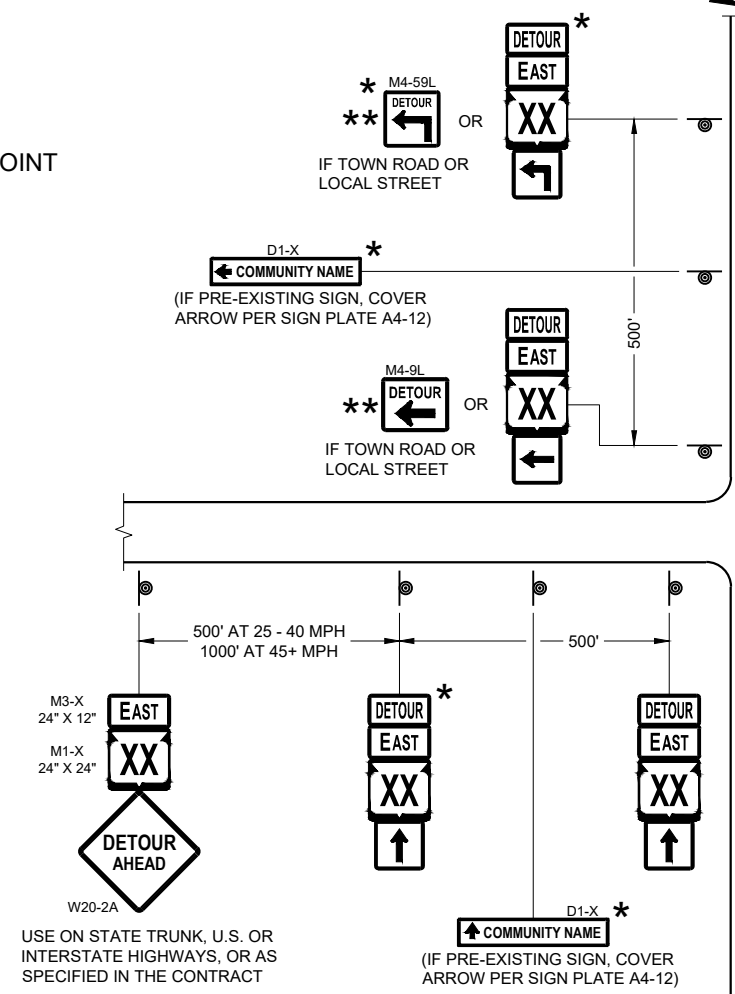
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

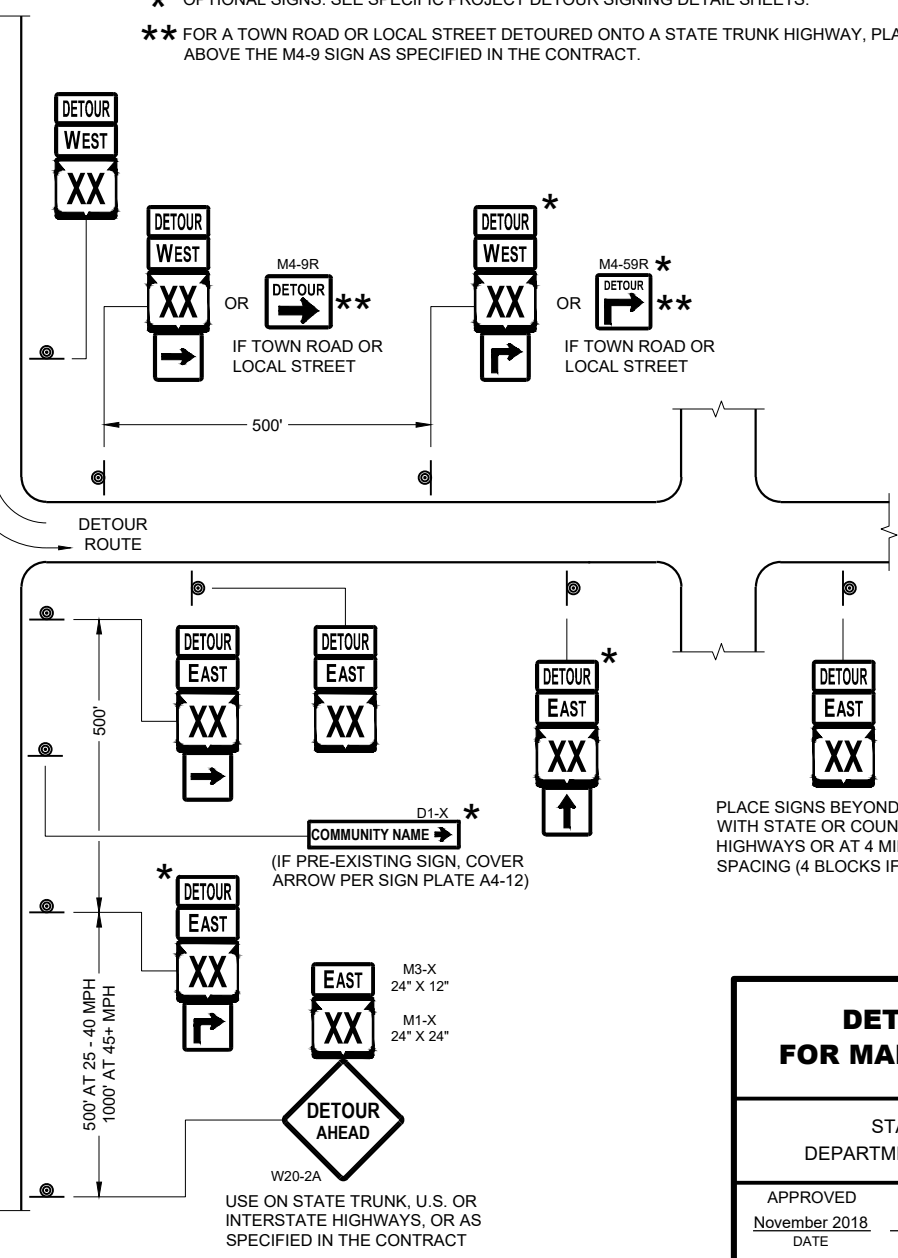
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING 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



**DETOUR SIGNING
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

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

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

GENERAL NOTES

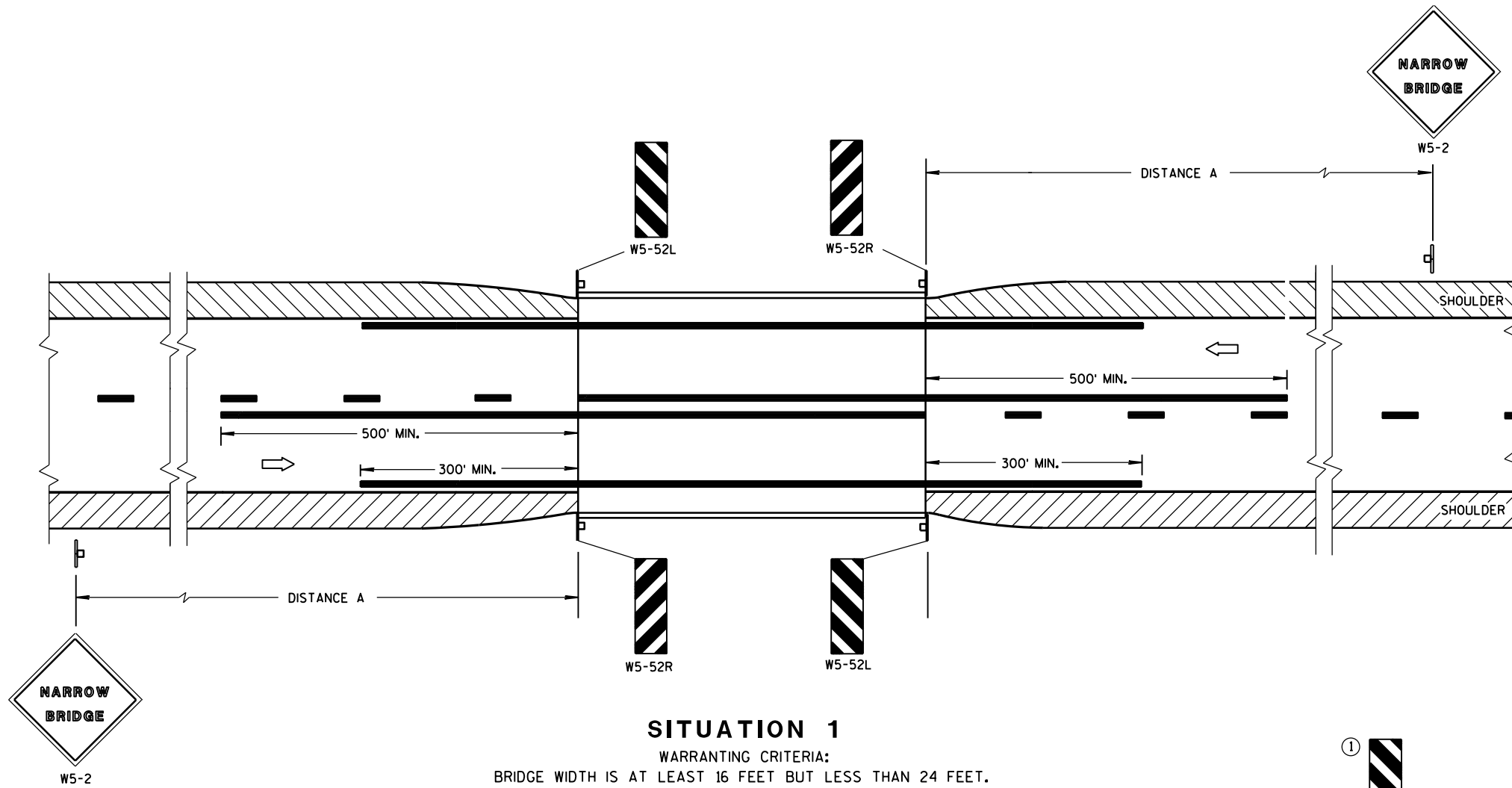
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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.

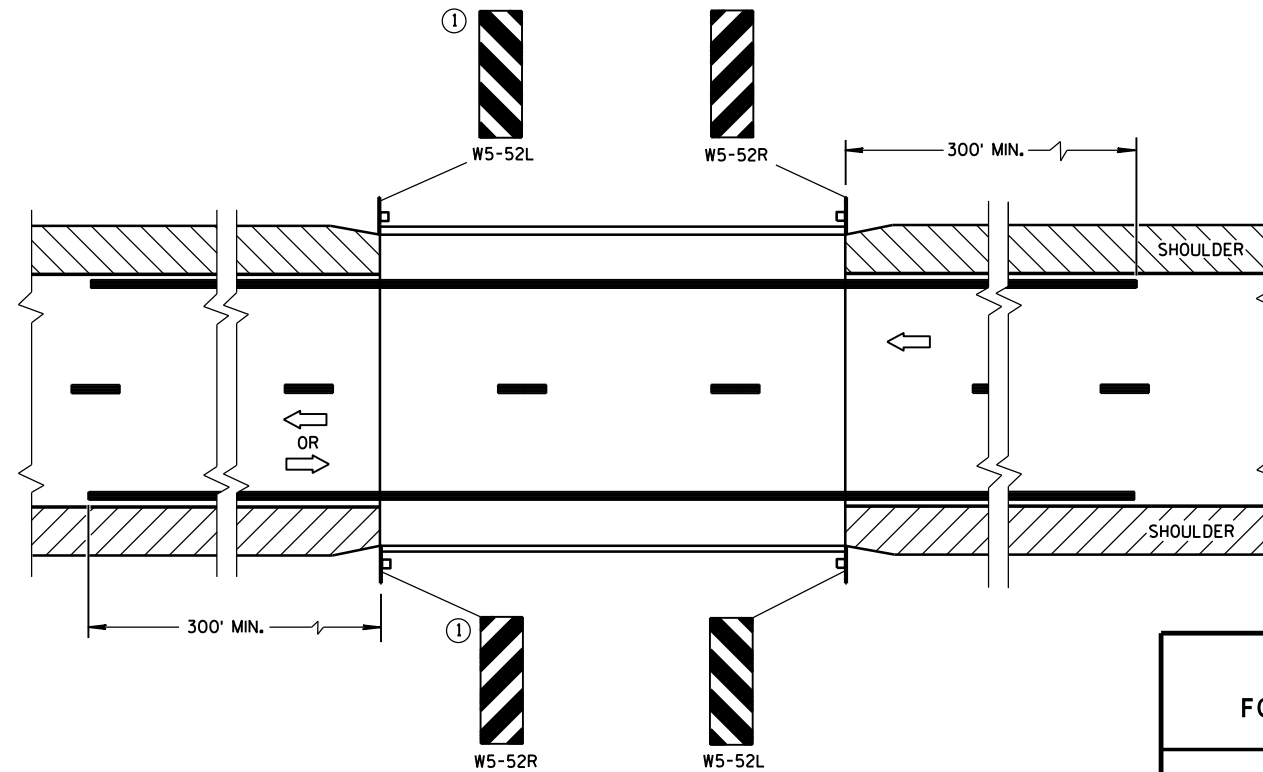
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ 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.

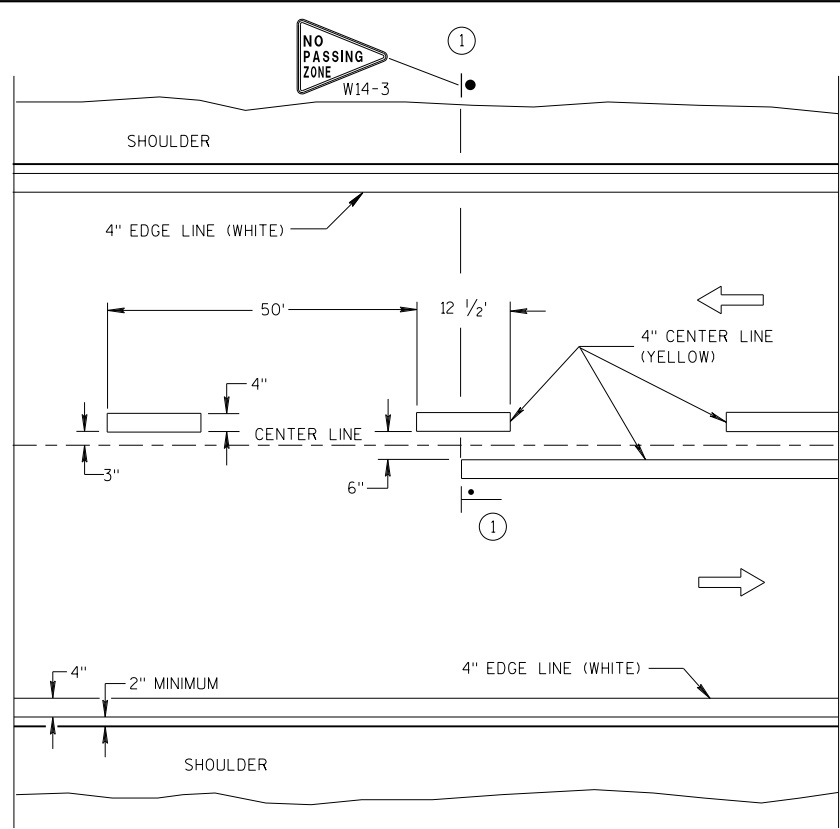
DISTANCE TABLE

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

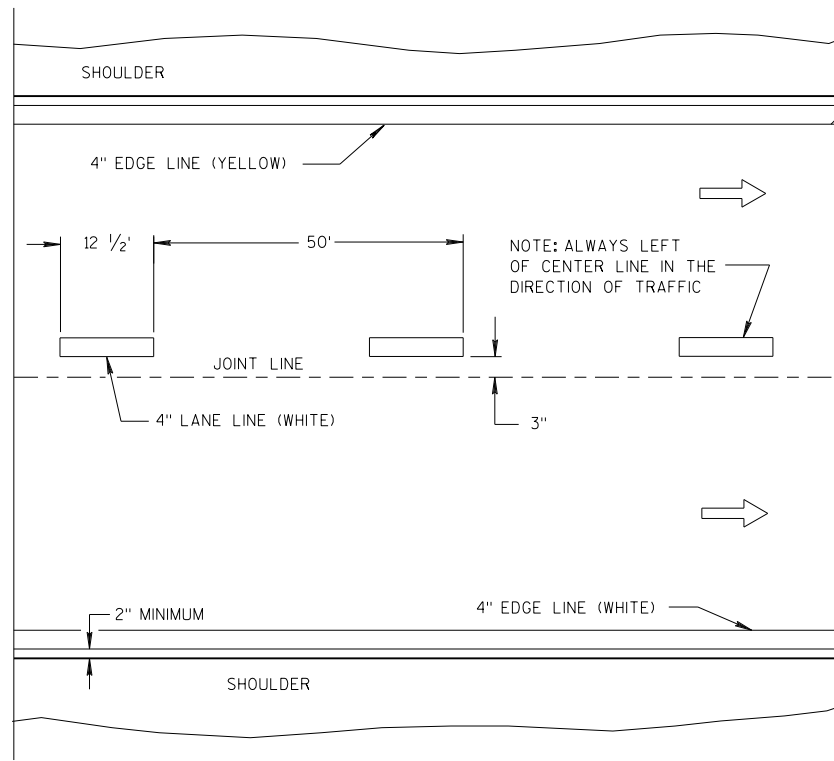
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

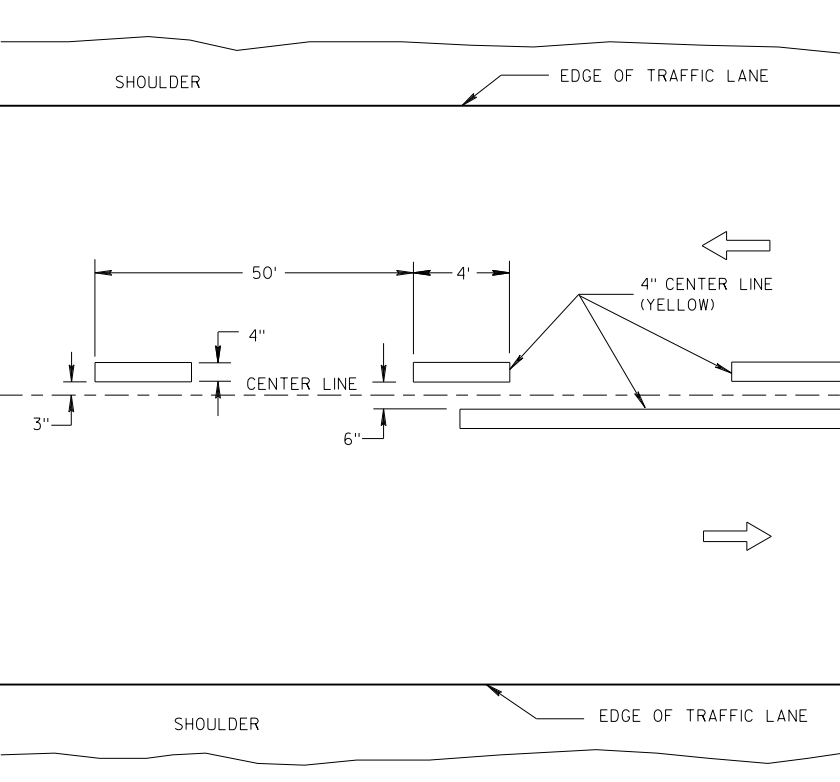


TWO WAY TRAFFIC

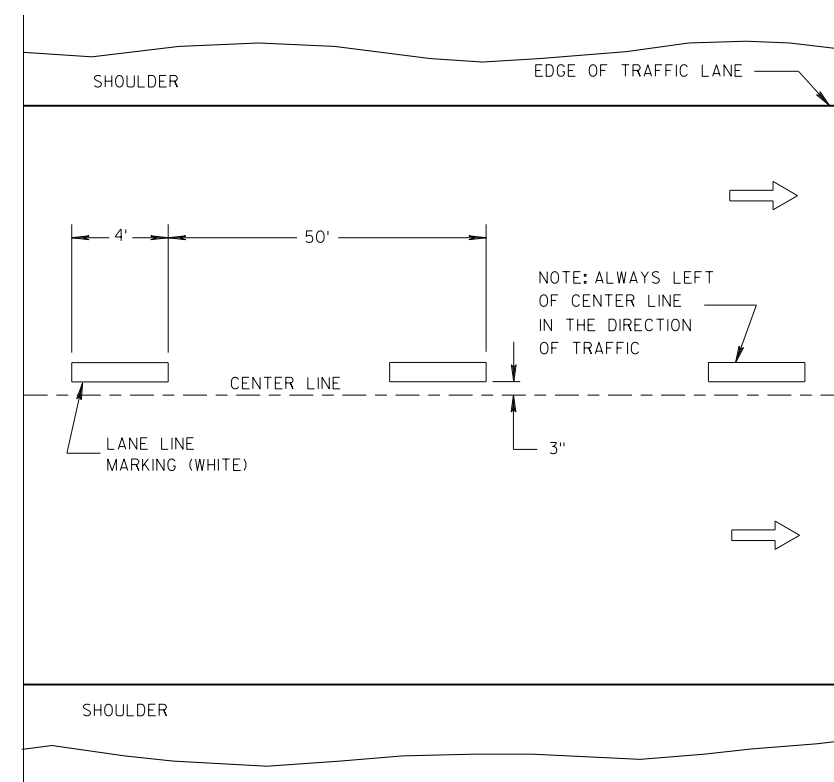


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

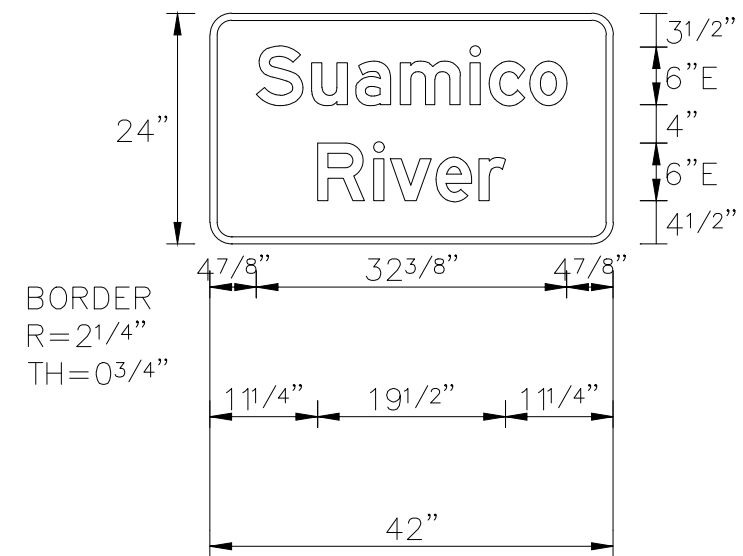
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 7/2018 /S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER
FHWA

NOTES

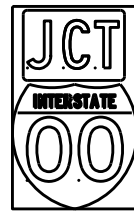
1. ALL SIGNS TYPE II - TYPE H REFLECTIVE
2. COLOR:
 BACKGROUND - GREEN
 MESSAGE - WHITE
3. MESSAGE SERIES - E



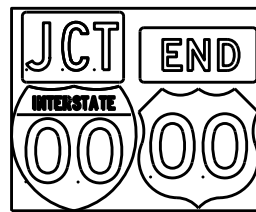
7

7

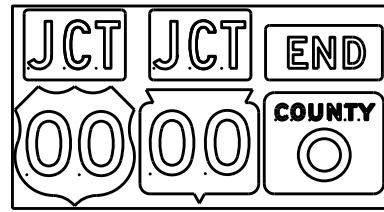
TYPICAL ASSEMBLIES



J1-1



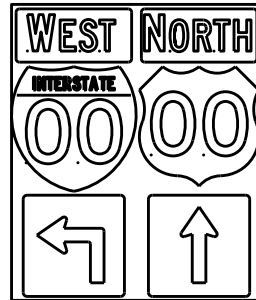
J1-2



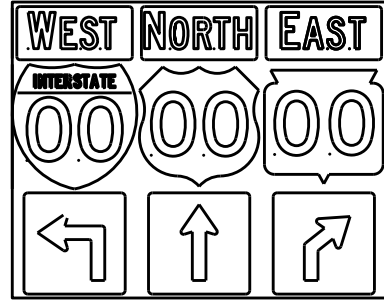
J1-3



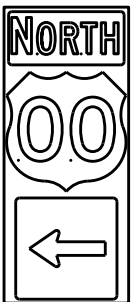
J2-1



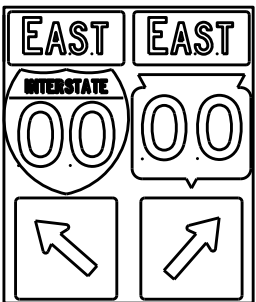
J2-2



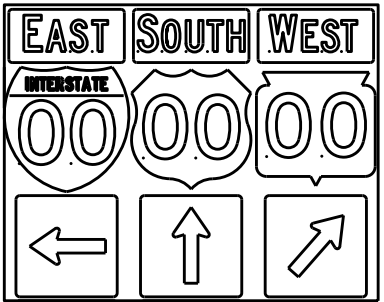
J2-3



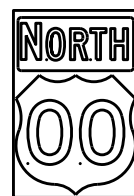
J3-1



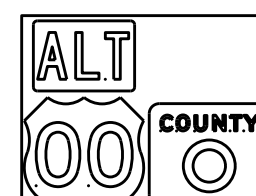
J3-2



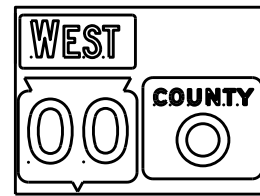
J3-3



J4-1



J4-2



J4-2



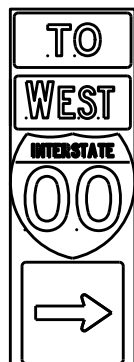
J13-1



J12-1



J32-1



J33-1



J23-1

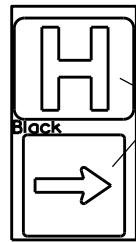


J22-1



JV

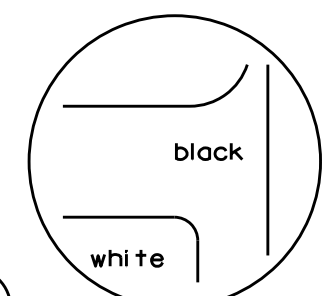
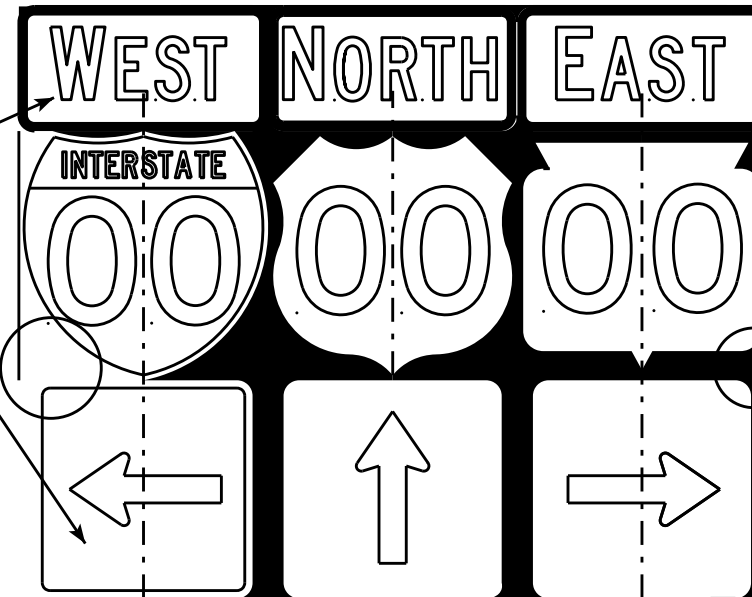
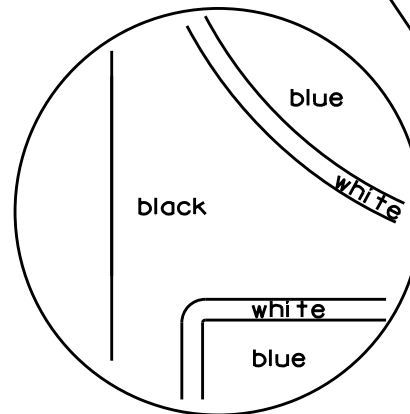
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background with interstate]



[black background]

- NOTES**
- Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
 - Color:
Background - Black Non-reflective
Message - see Note 5
 - Message Series - See Note 5
 - Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
 - The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
 - Certain marker heads require the component pieces to be the same color. As an example, all the components used with an MI-1 Interstate marker shall be blue.
 - Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
 - Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
 - Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
 - All Vertical J Assemblies are given a Sign Code of JV
 - For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

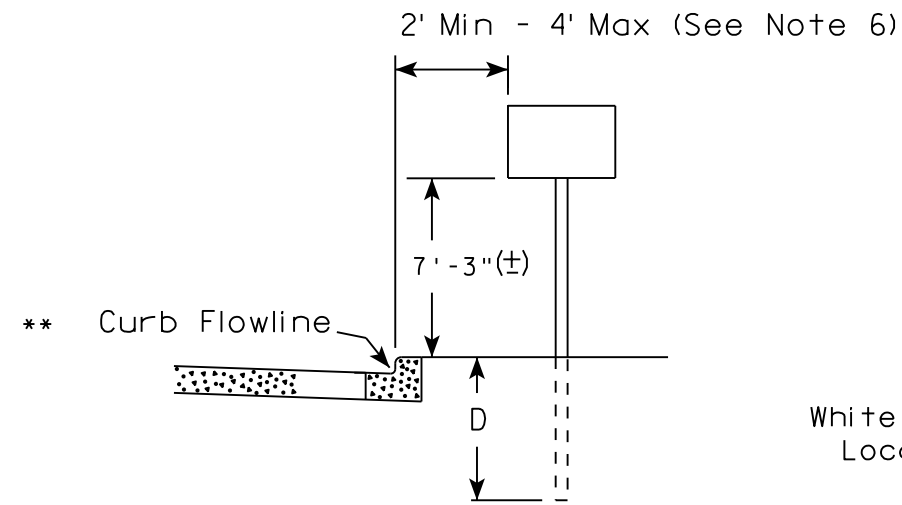
**ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES**

WISCONSIN DEPT OF TRANSPORTATION

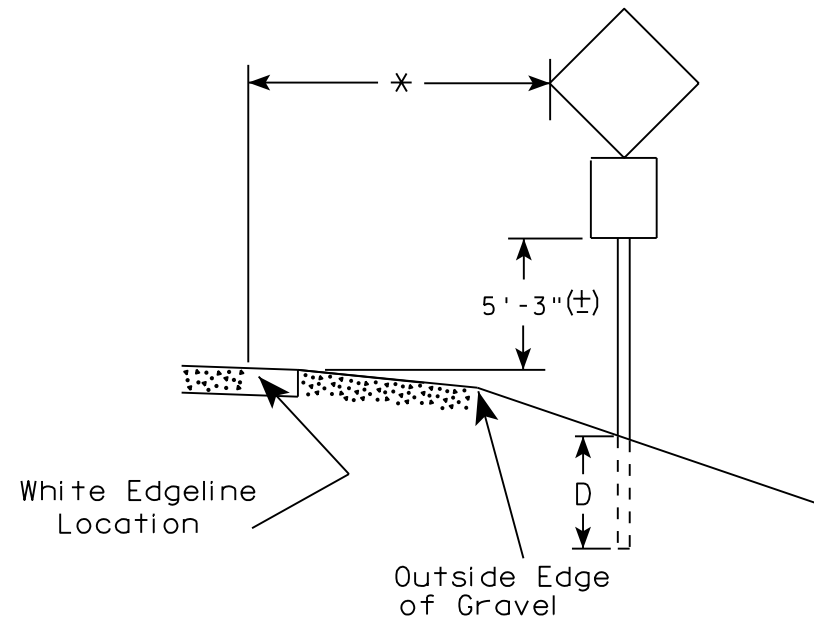
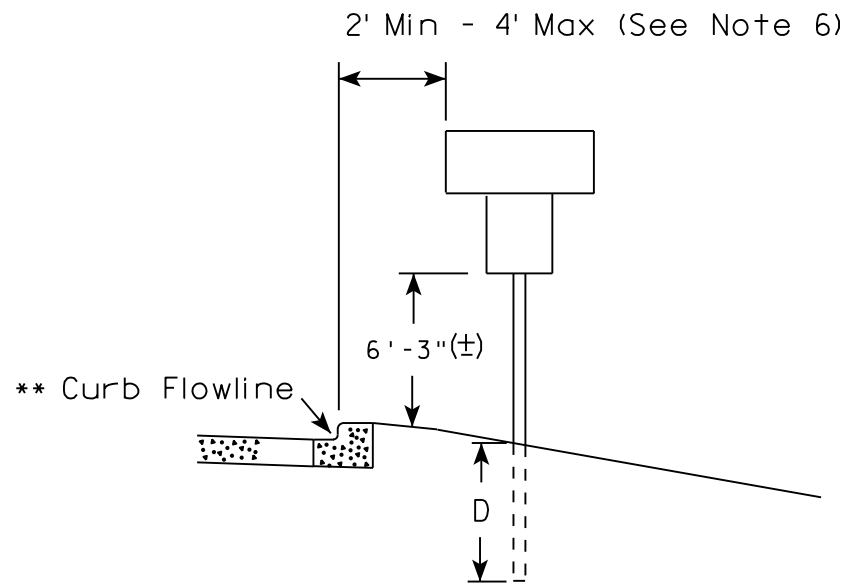
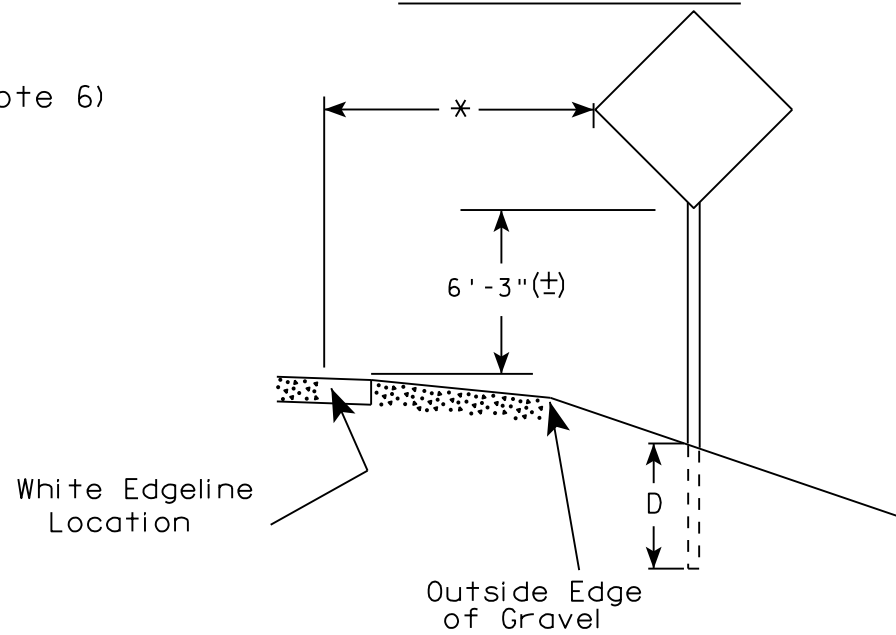
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/06/14 PLATE NO. A2-1S.8

URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

* * 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.

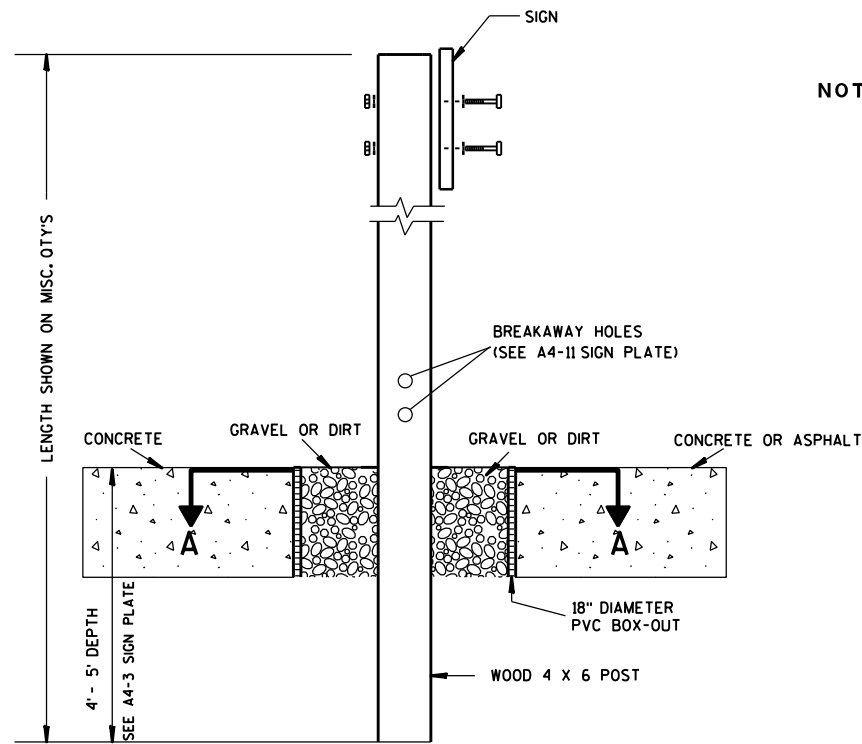
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

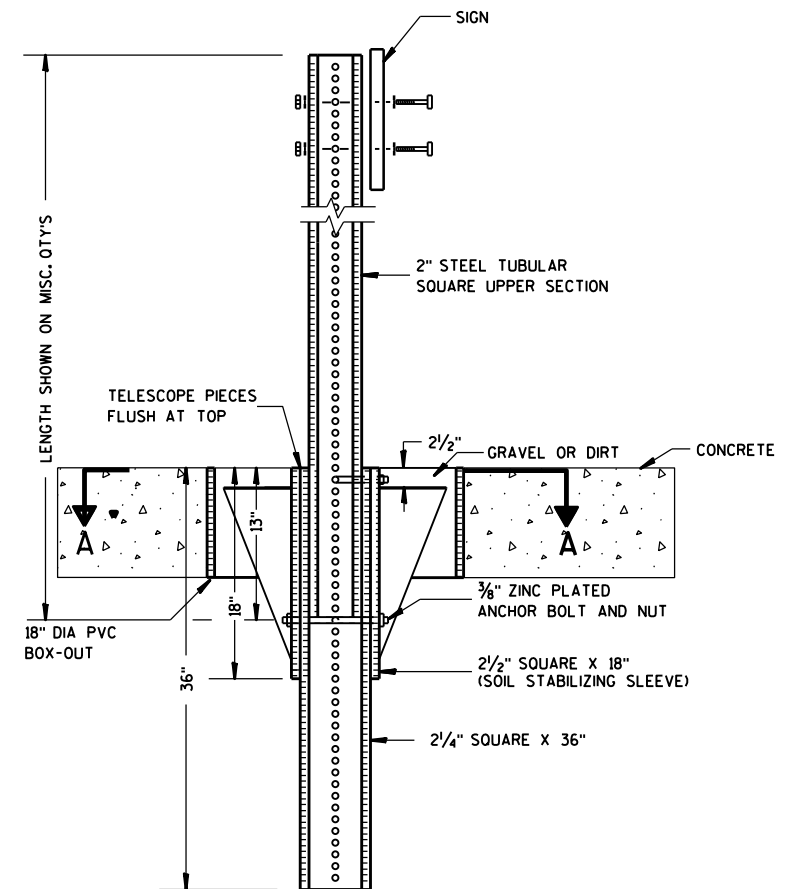
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

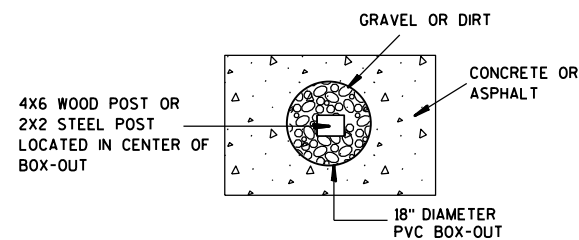
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

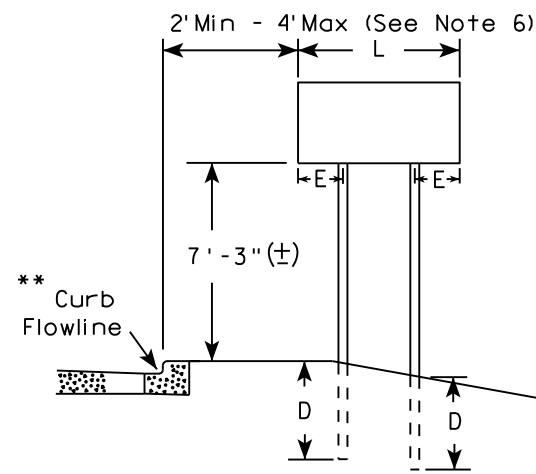
FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

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

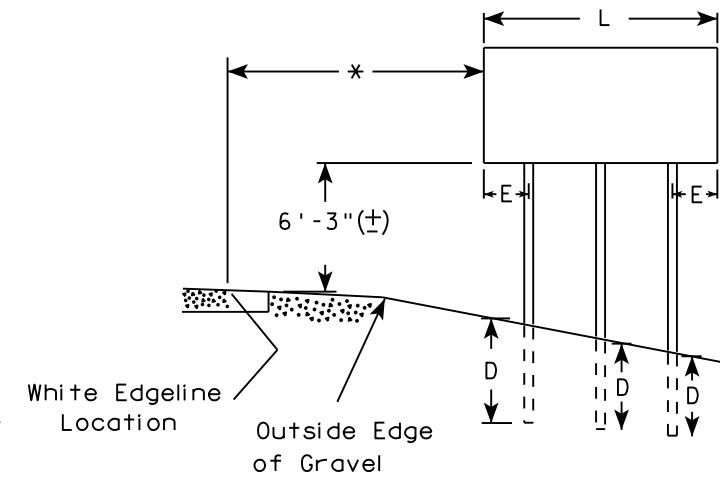
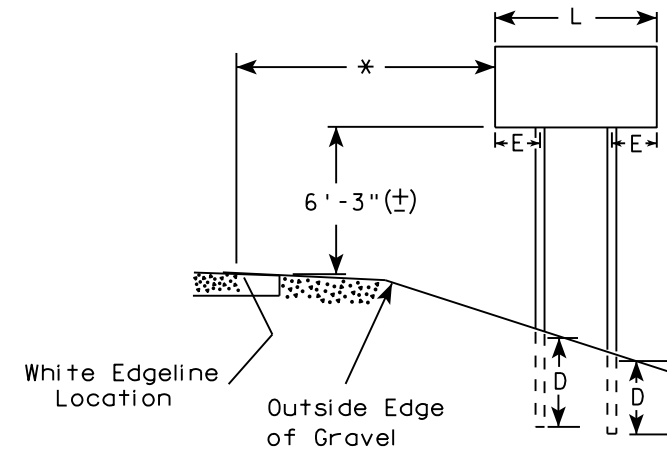
GENERAL NOTES

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" (±).

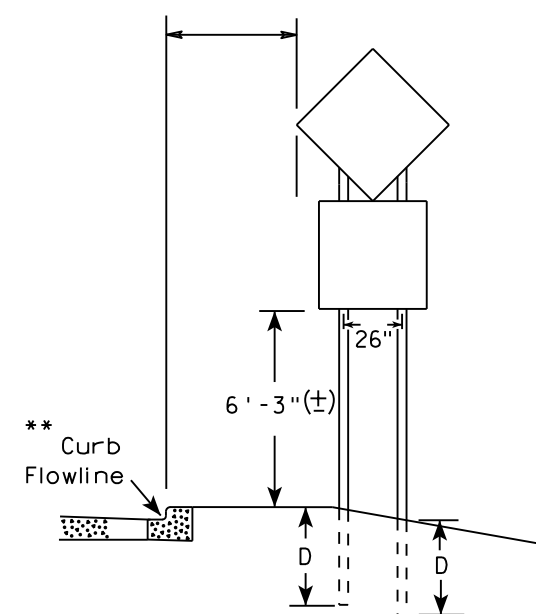
URBAN AREA



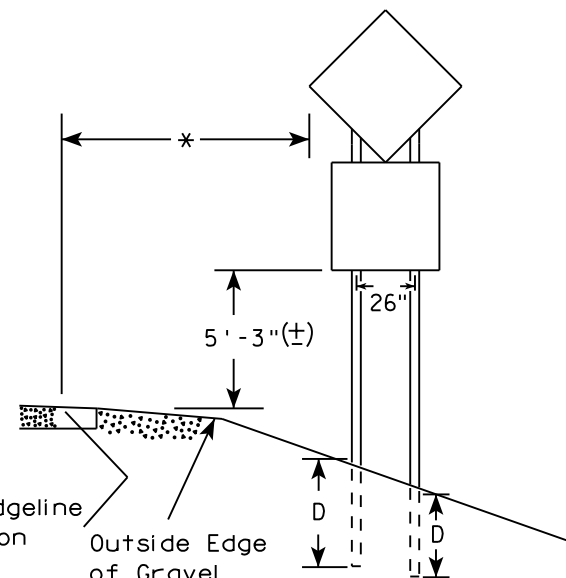
RURAL AREA (See Note 3)



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

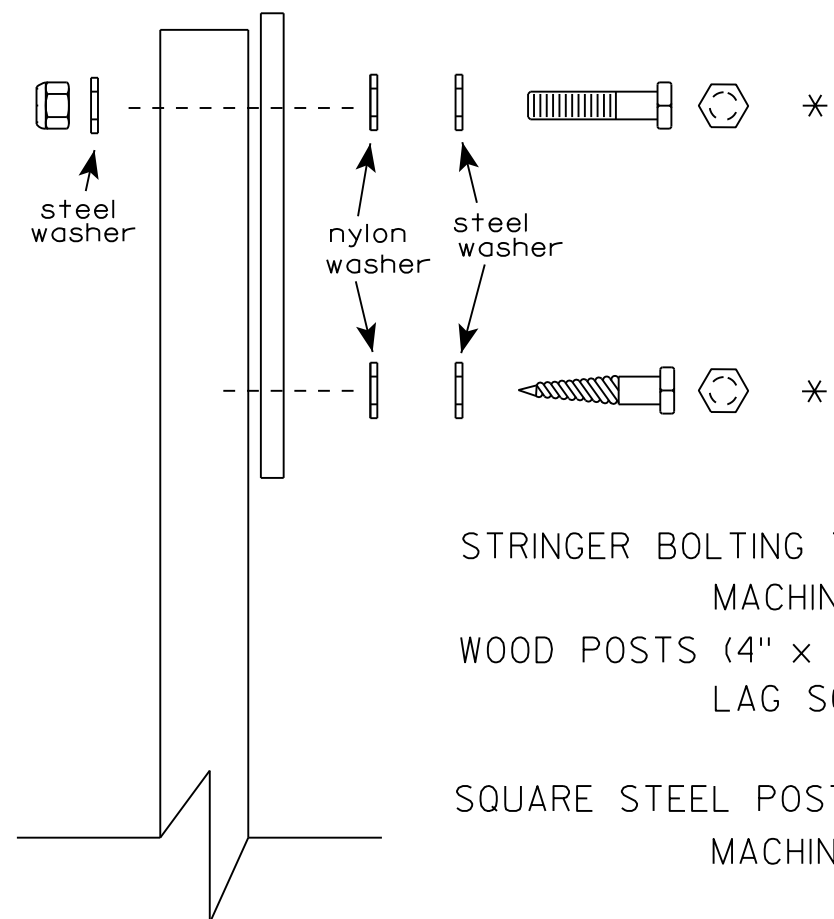
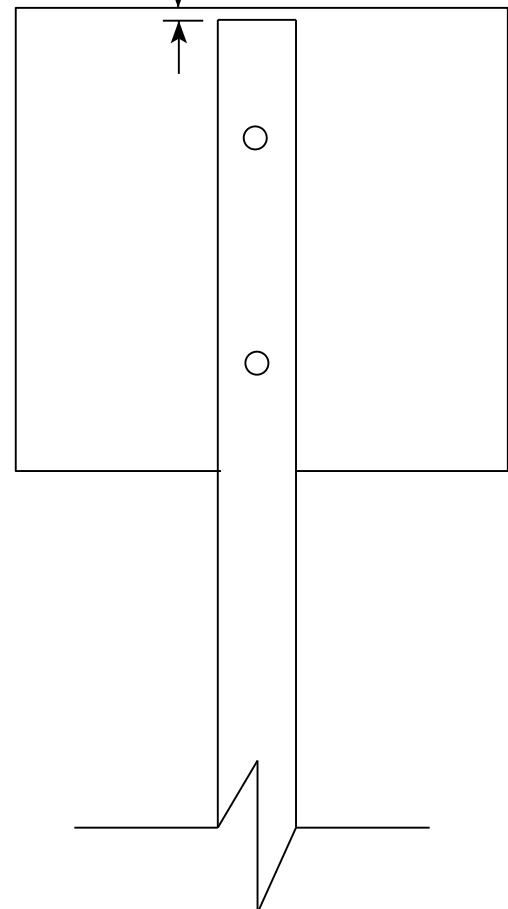
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

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

1"± 1/2"

SIGN SHALL BE MOUNTED TO PROJECT ABOVE THE TOP OF THE POST



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

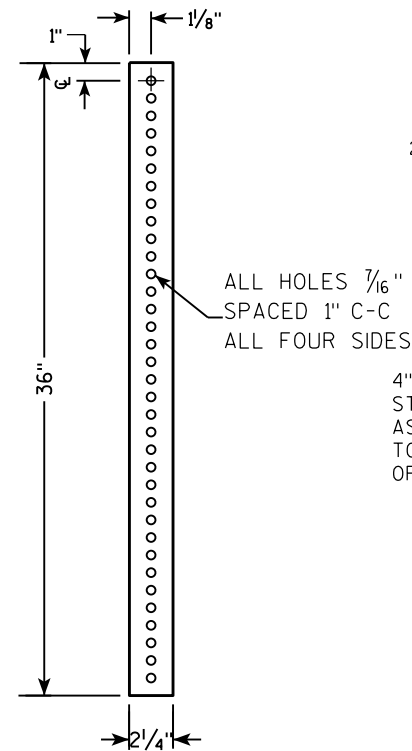
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

7

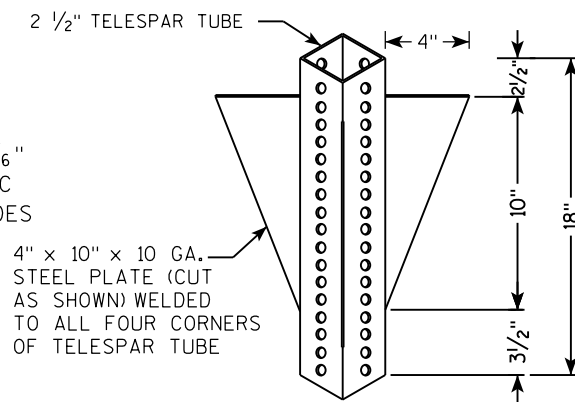
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

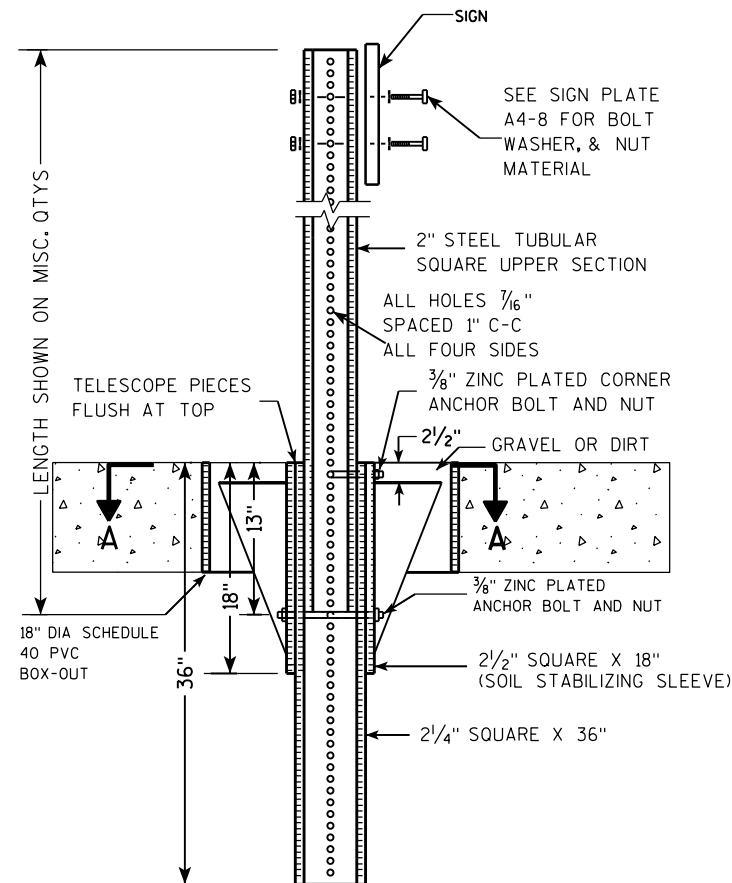
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



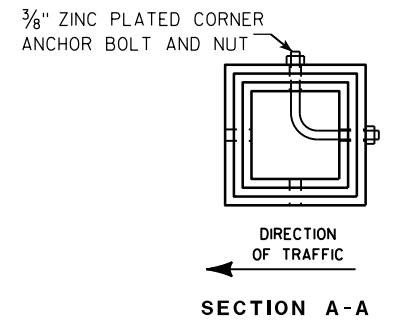
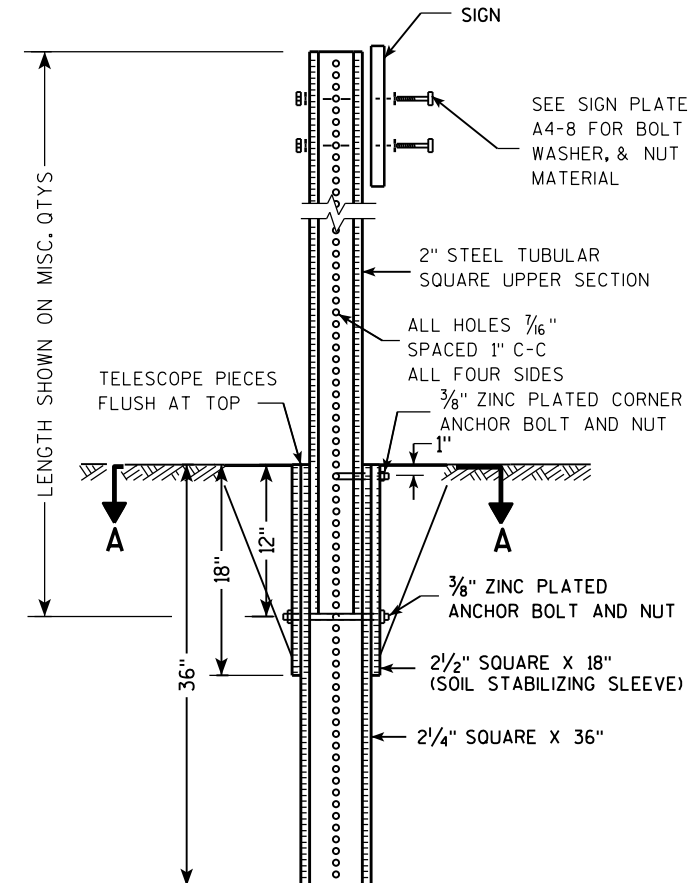
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



**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

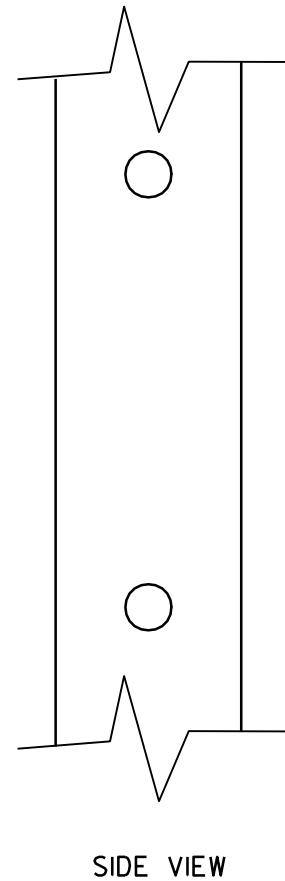
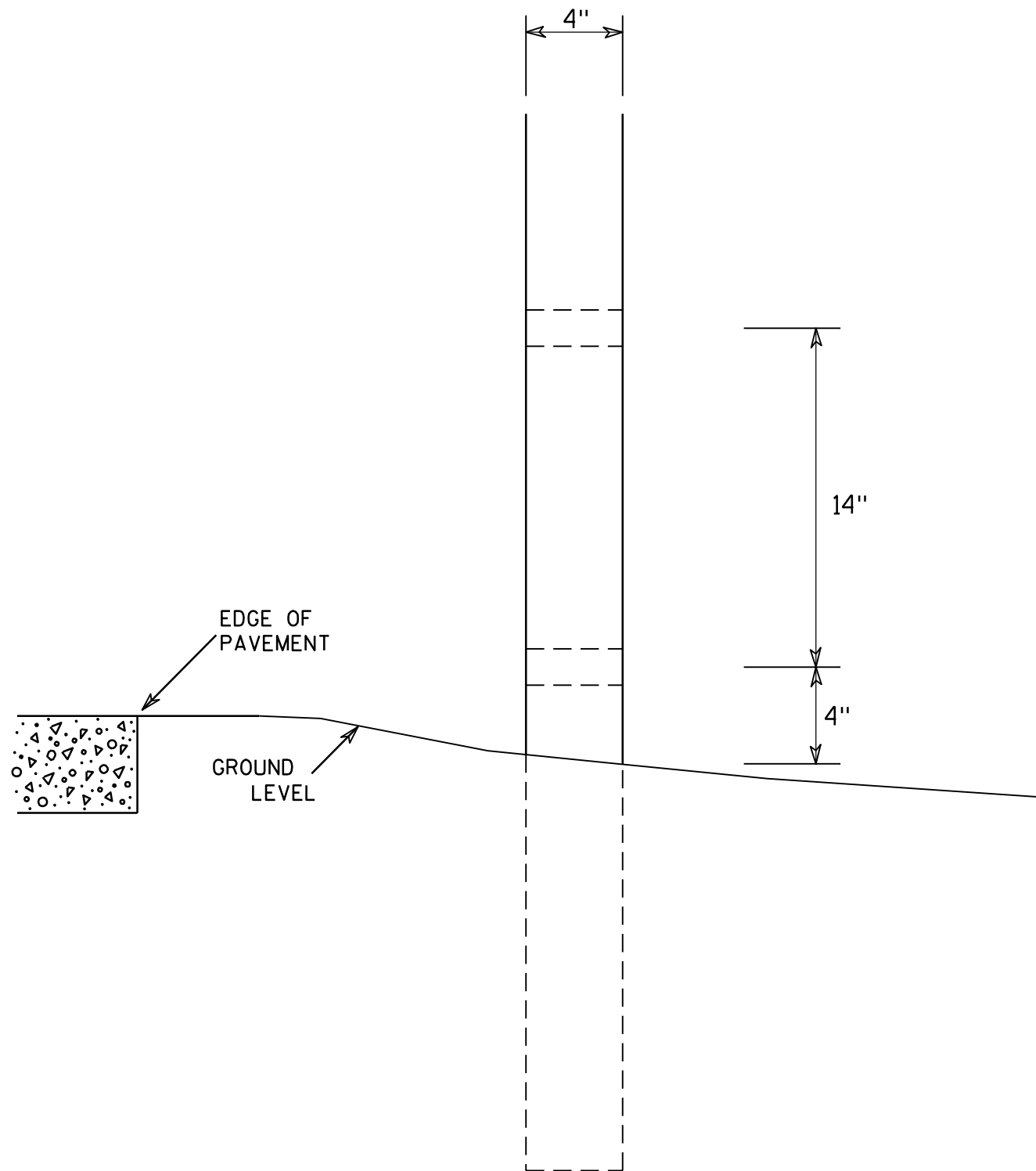
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**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.

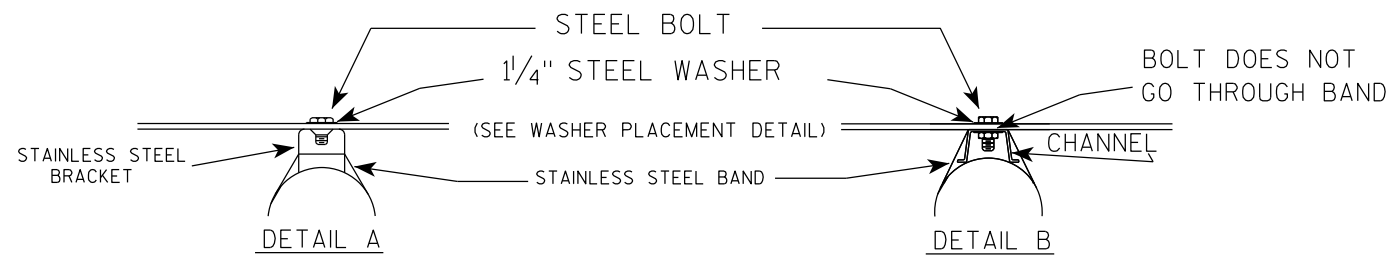
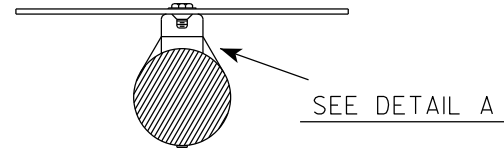
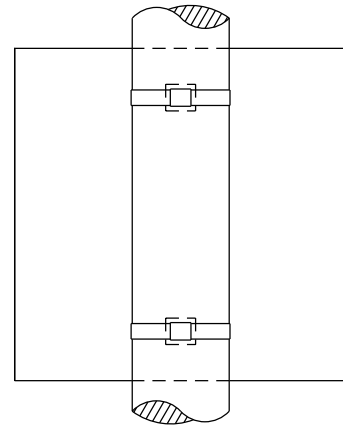
7

7

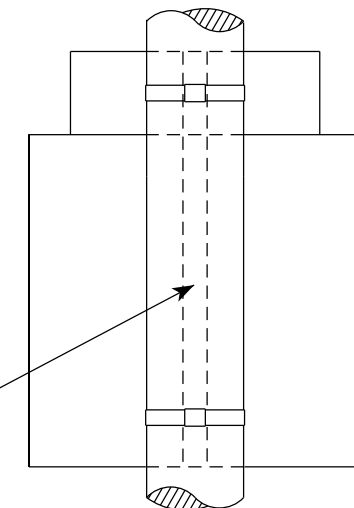
4 X 6 WOOD POST MODIFICATIONS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE 3/27/97	PLATE NO. A4-11.2

BANDING

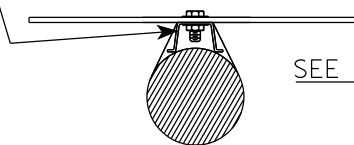
SINGLE SIGN



"J" ASSEMBLY

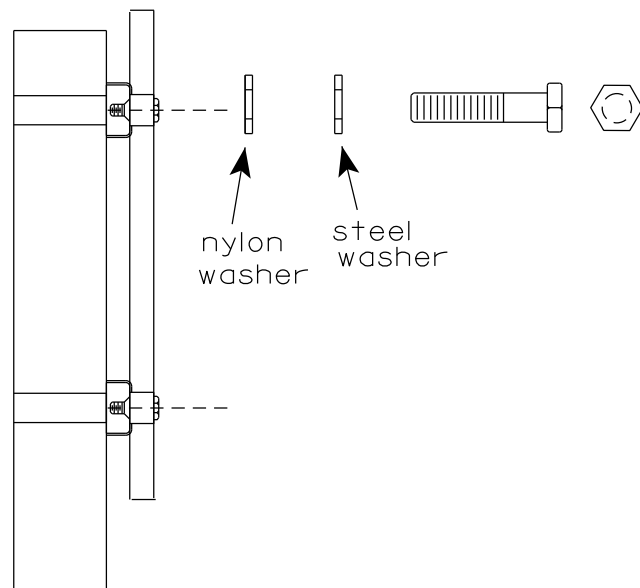


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



- 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 $\frac{3}{4}$ " 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

WASHER PLACEMENT



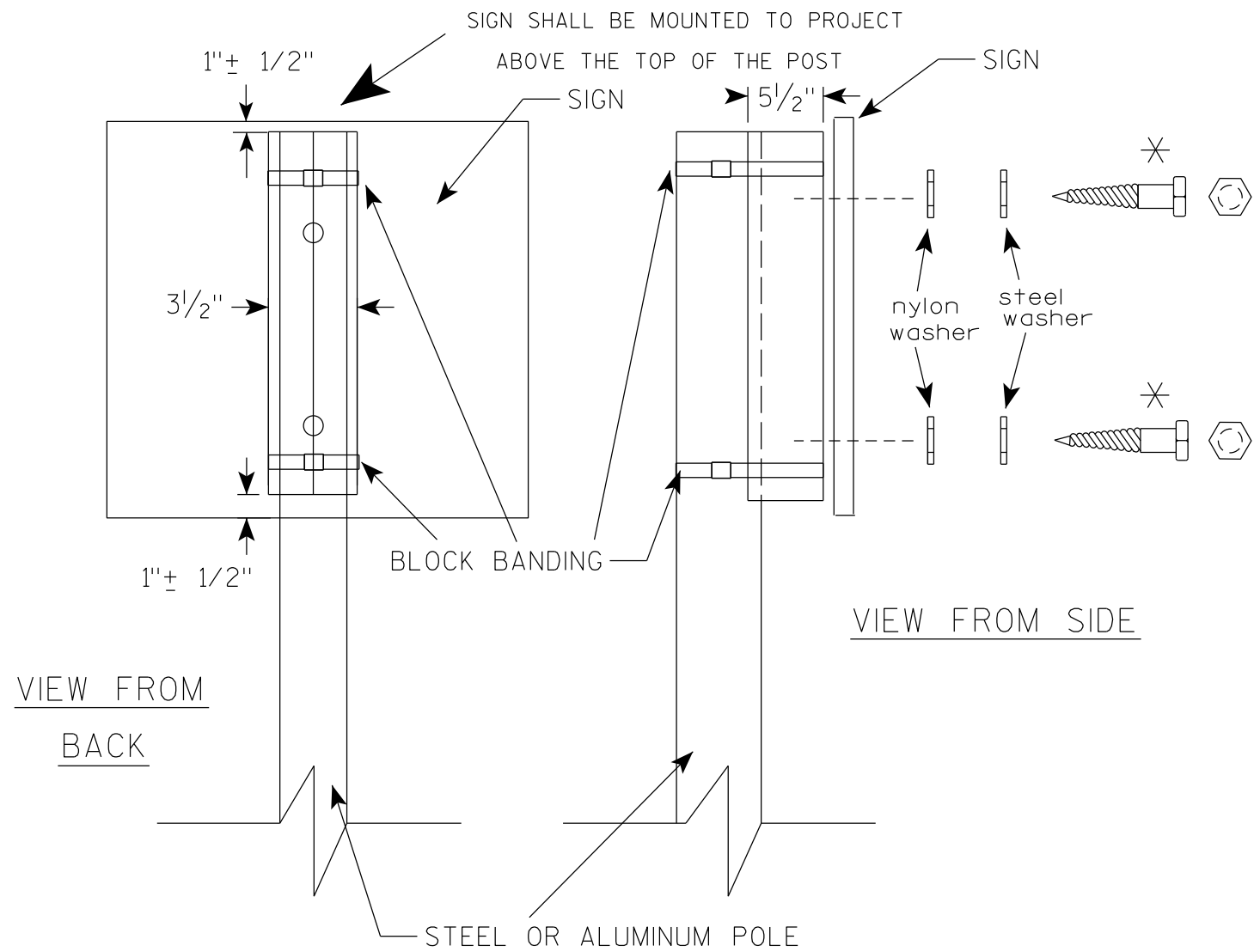
WASHERS (ALL POSTS) -
 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 1-1/4" O.D. X 3/8" I.D. X .080 NYLON
 FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

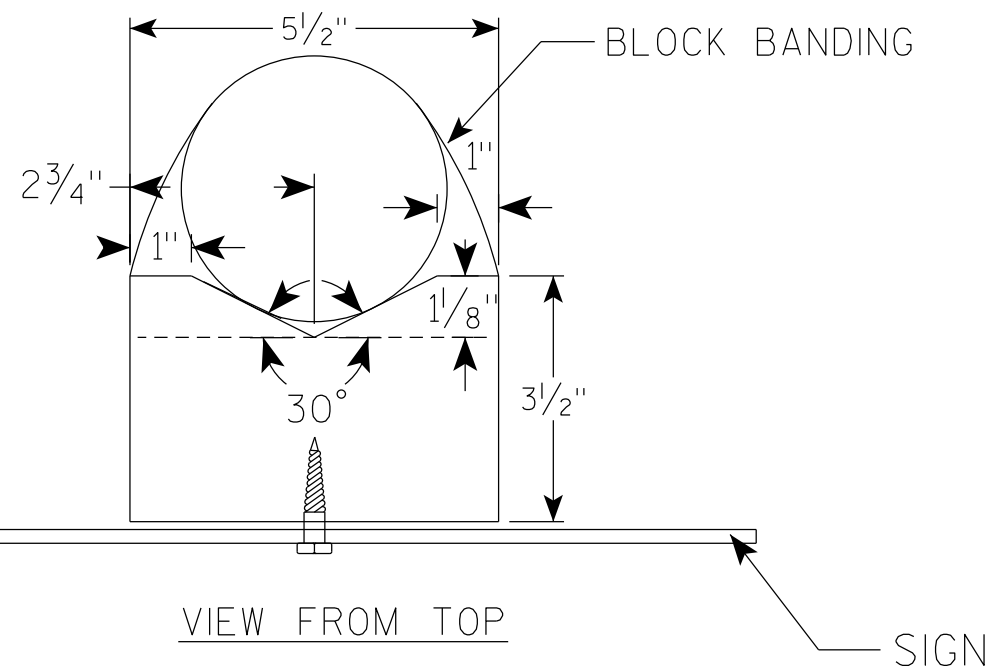
DATE 6/10/19 PLATE NO. A5-9.4



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

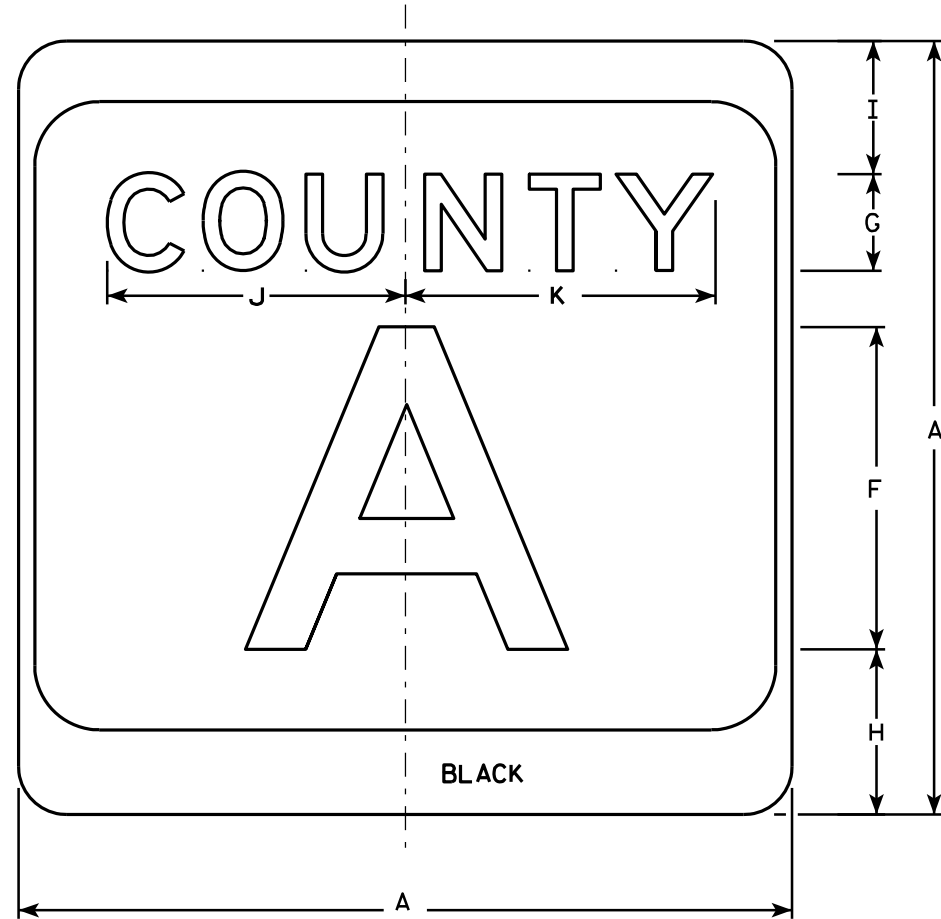
* LAG BOLTS SHALL BE 3/8" X 2 1/2"



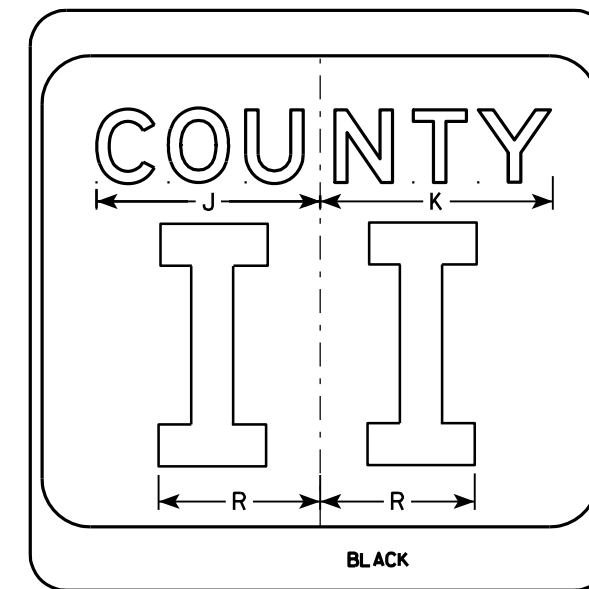
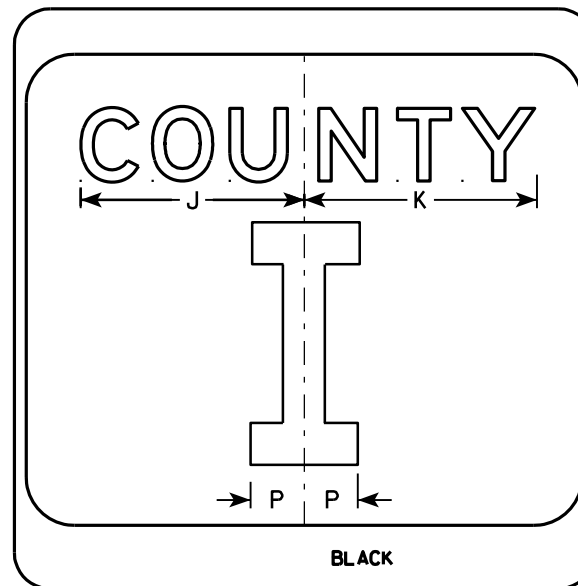
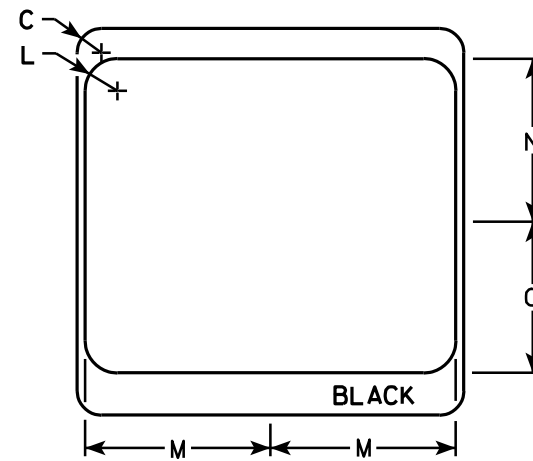
BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> for State Traffic Engineer
DATE 6/10/19	PLATE NO. A5-10.2

NOTES

1. Sign is Type II - 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

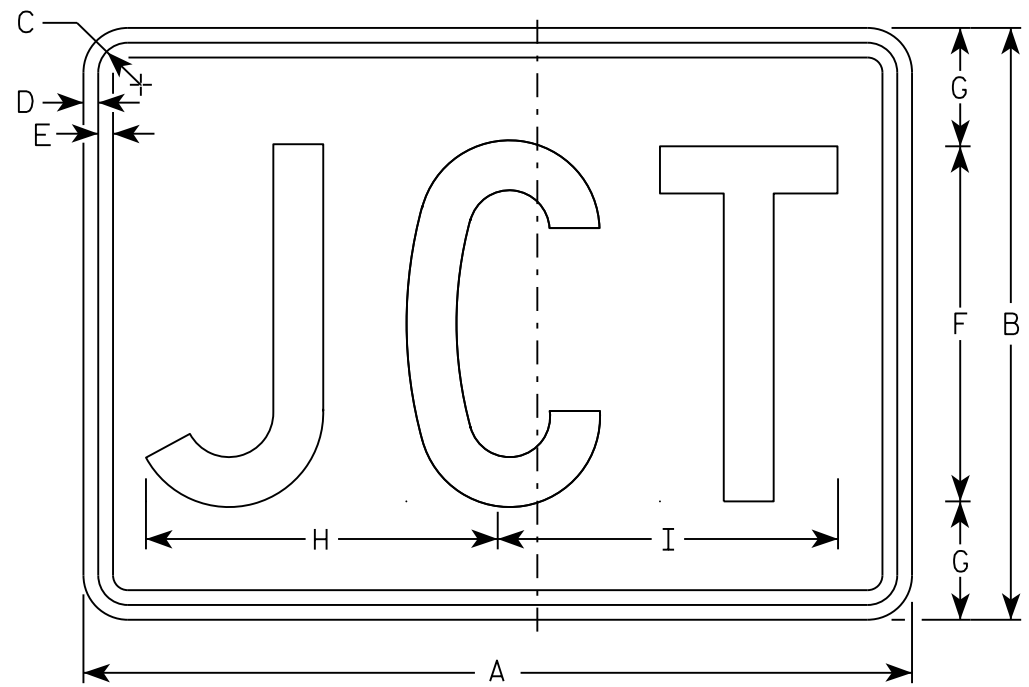
APPROVED *Matthew R. Raub*
For State Traffic Engineer

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

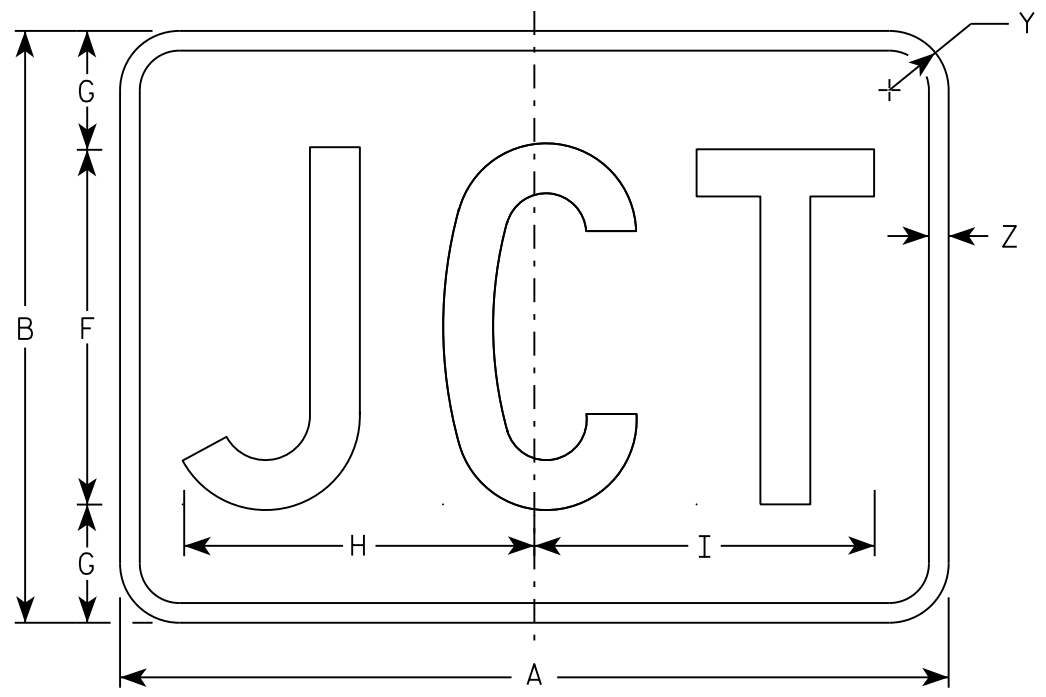
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type H
2. Color:
 - Background - See note 5
 - Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M2-1 Background - White
 Message - Black
 MB2-1 Background - Blue
 Message - White
 MK2-1 Background - Green
 Message - White
 MM2-1 Background - White
 Message - Green
 MN2-1 Background - Brown
 Message - White
 MP2-1 Background - White
 Message - Blue
 MR2-1 Background - Brown
 Message - Yellow



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

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	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN
M2-1

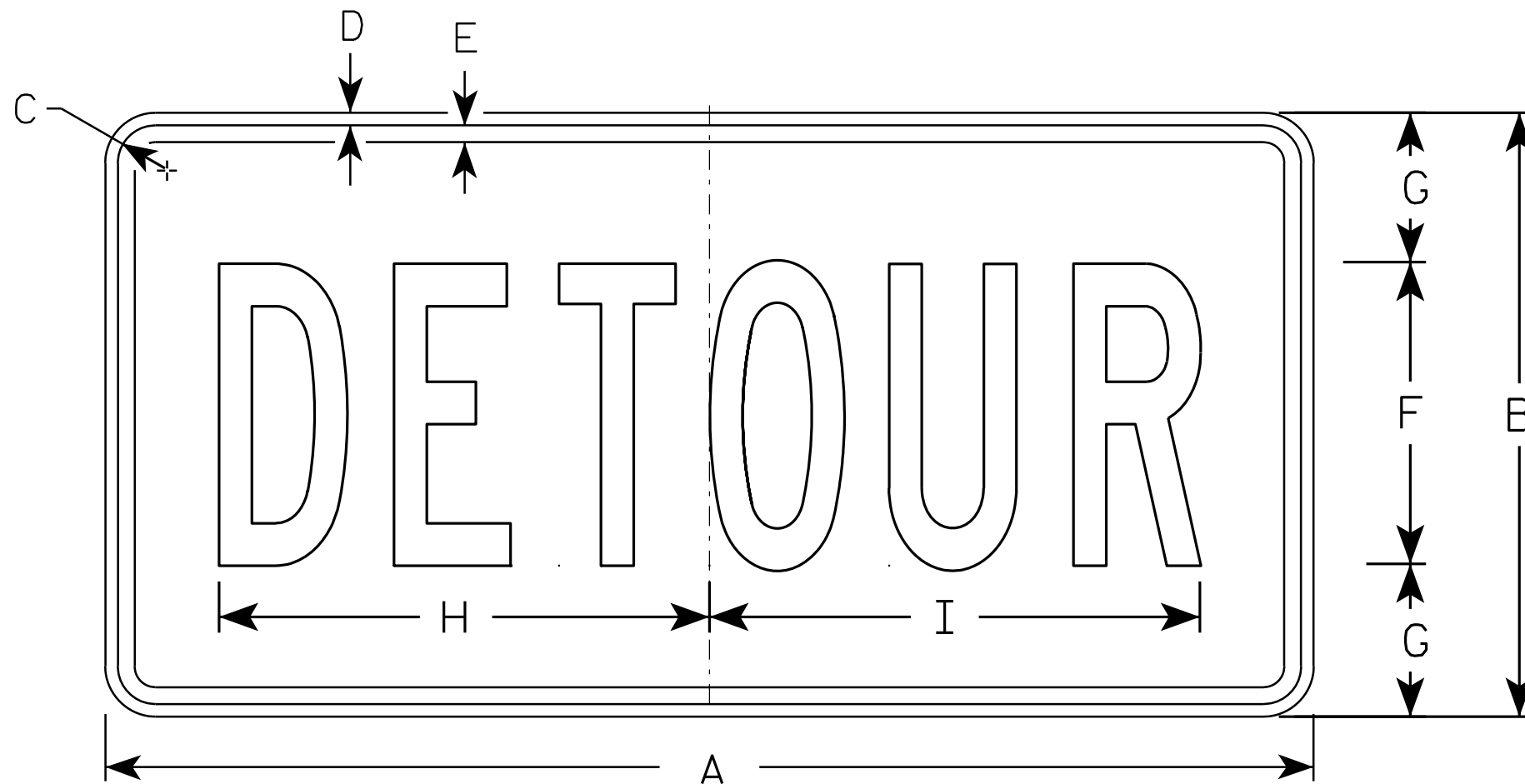
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/15/15 PLATE NO. M2-1.12

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

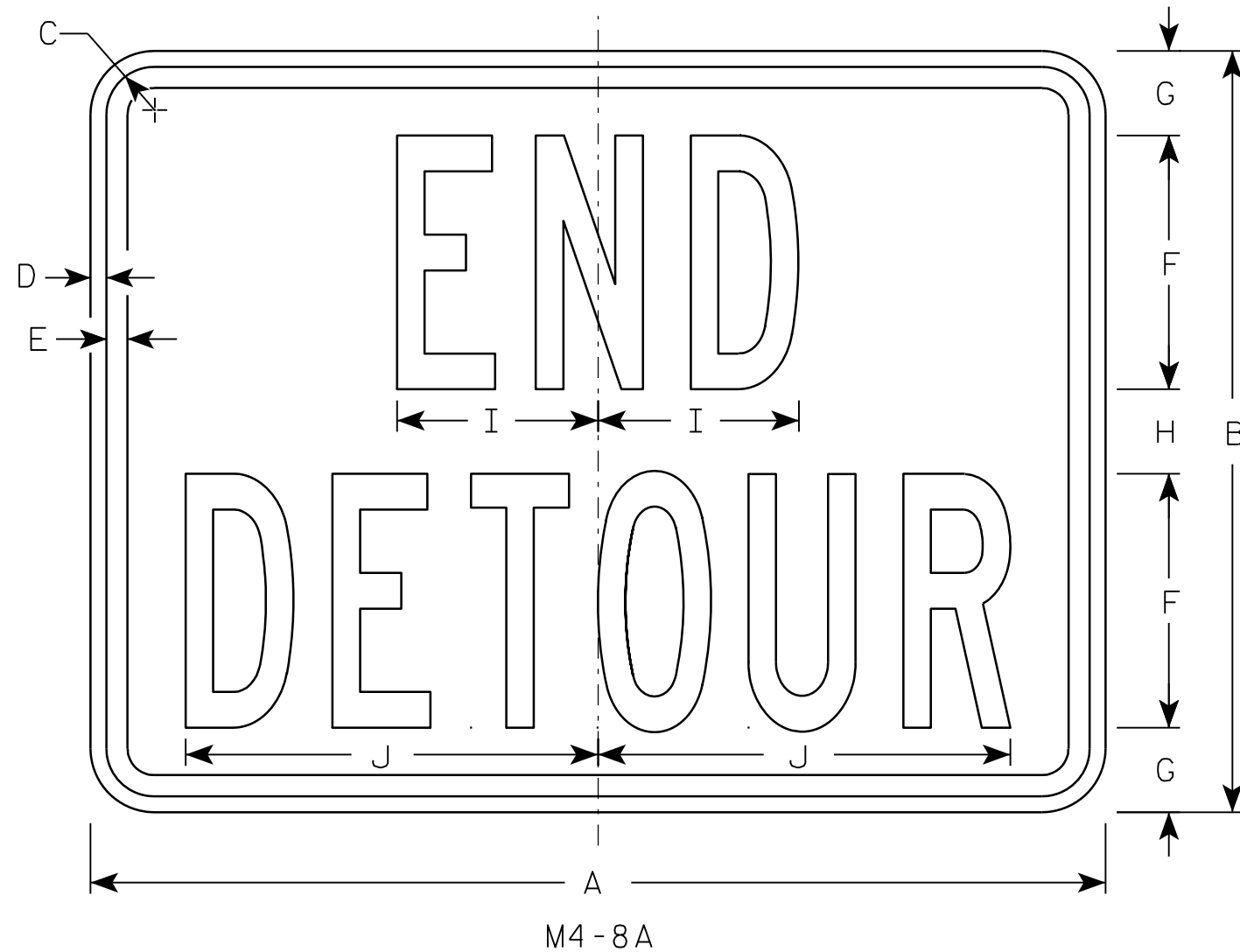
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

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.



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	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

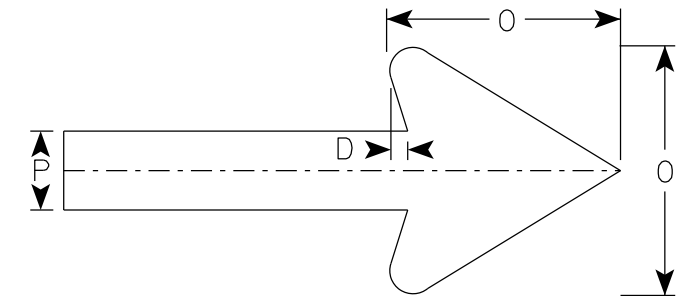
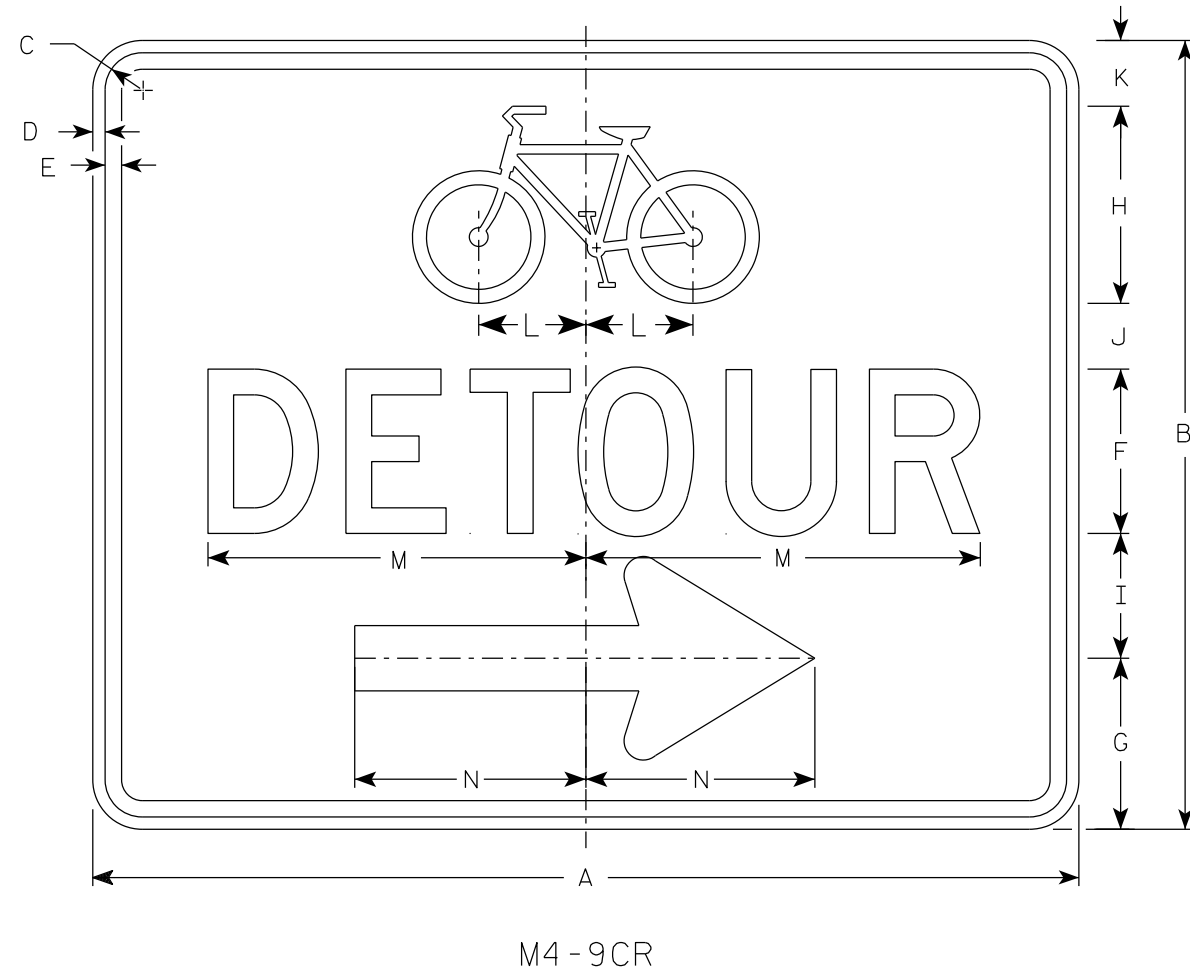
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II-Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-9CL is the same as M4-9CR except the arrow is reversed.



Arrow Detail

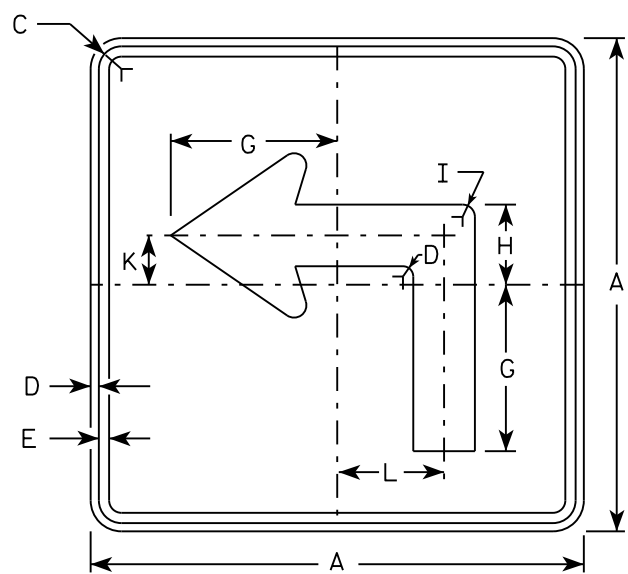
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/8	3/8	1/2	5	5 1/4	6	3 3/4	2	2	3 1/4	11 3/4	7	6	2											5.00
3																											
4																											
5																											

STANDARD SIGN
M4-9C L&R

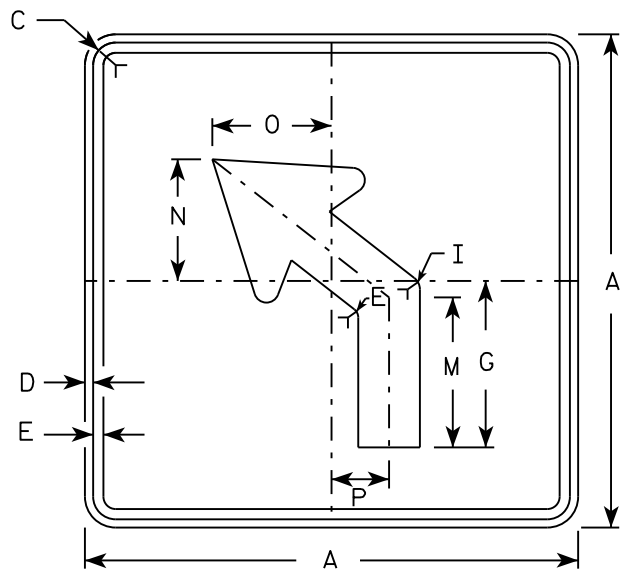
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

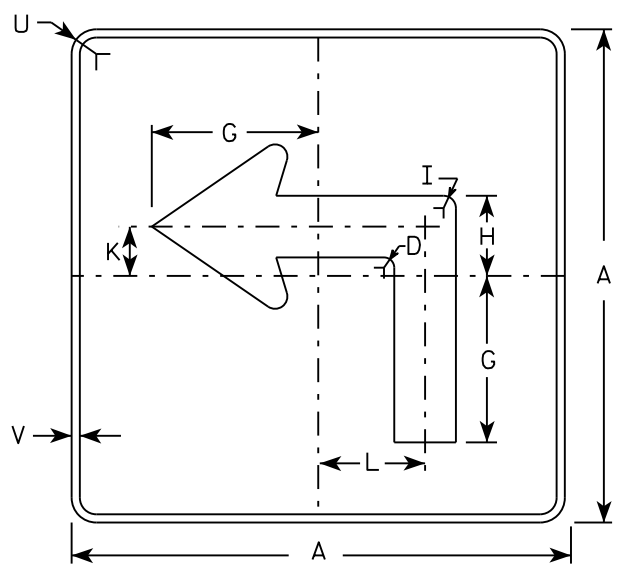
DATE 7/2/19 PLATE NO. M4-9C.1



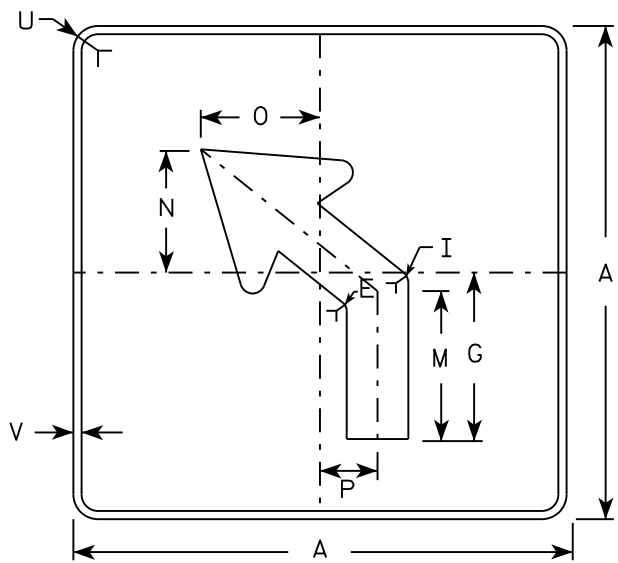
M5-1L
MM5-1L
M05-1L
MP5-1L



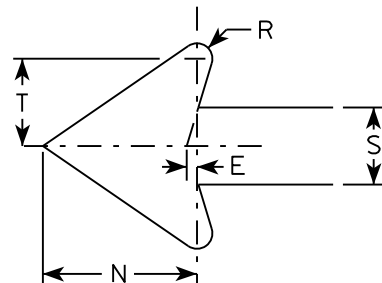
M5-2L
MM5-2L
M05-2L
MP5-2L



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.

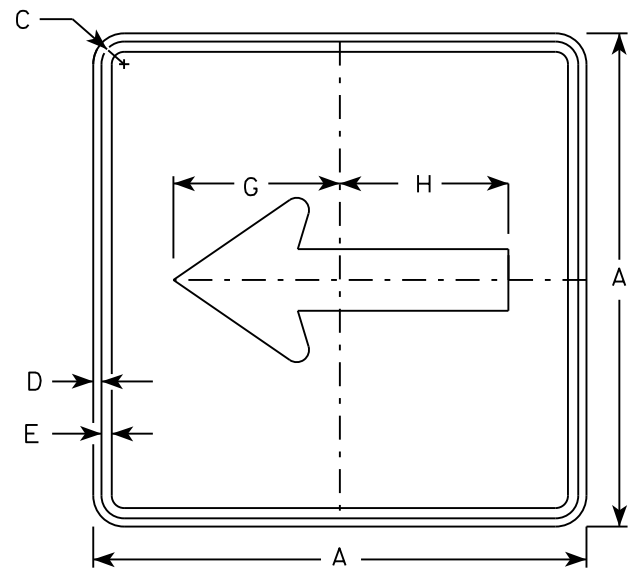
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25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

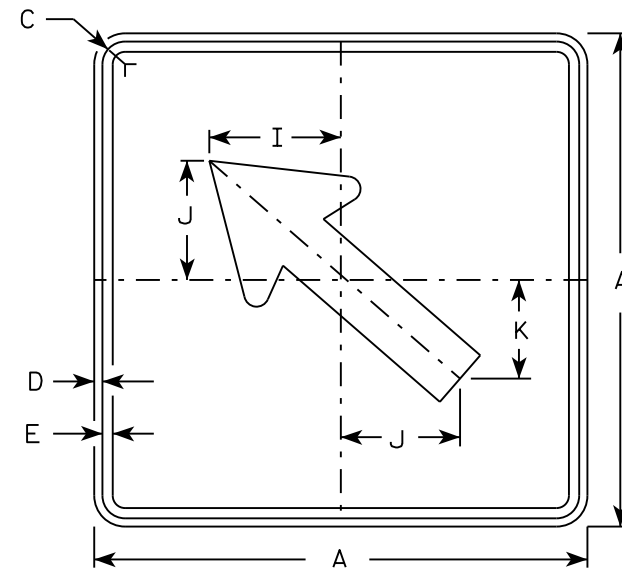
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

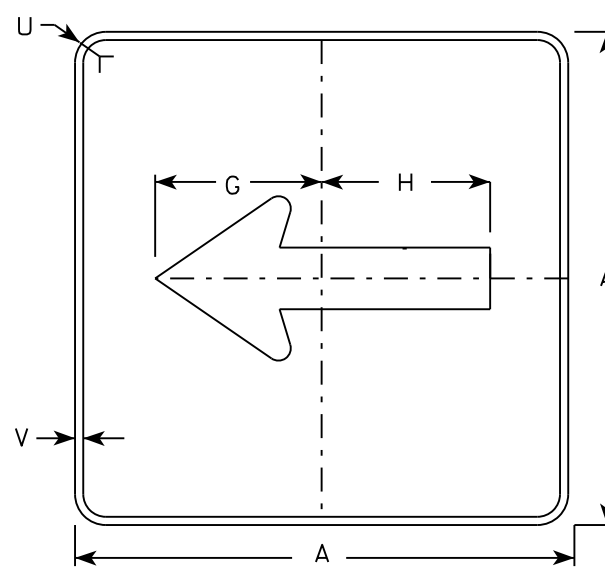
DATE 10/15/15 PLATE NO. M5-1.13



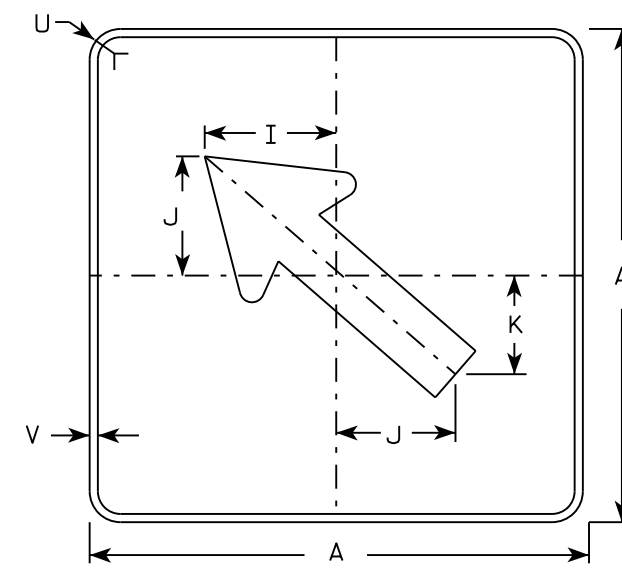
M6-1
MM6-1
M06-1
MP6-1



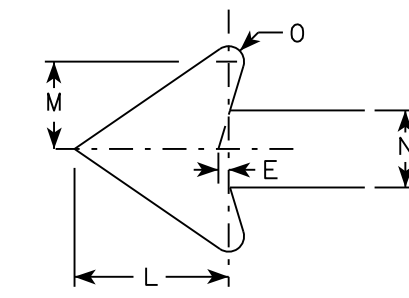
M6-2
MM6-2
M06-2
MP6-2



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

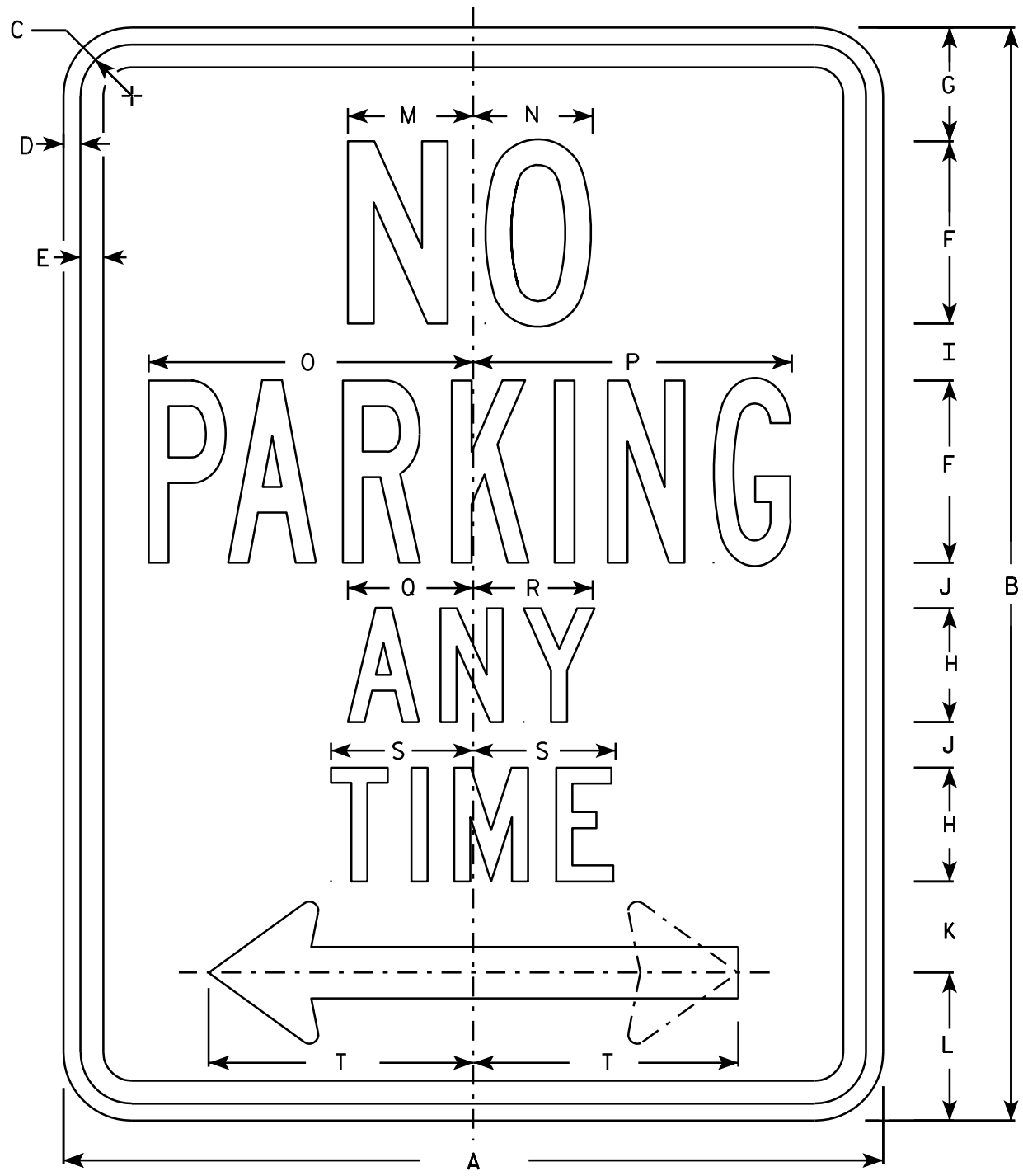
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10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

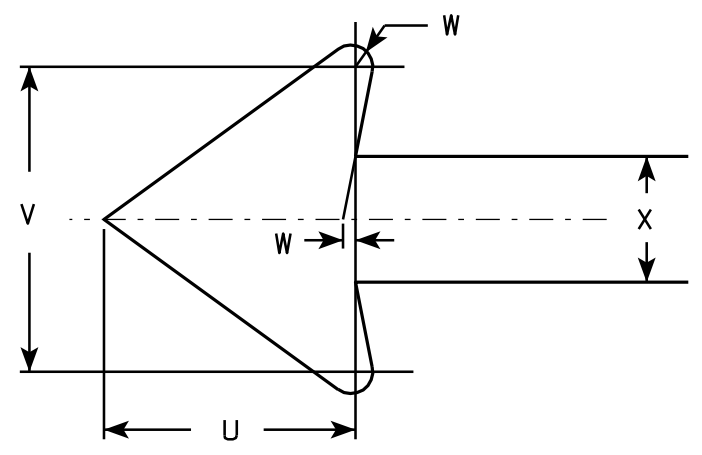
DATE 10/15/15 PLATE NO. M6-1.15



R7-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Red
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. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)



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	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

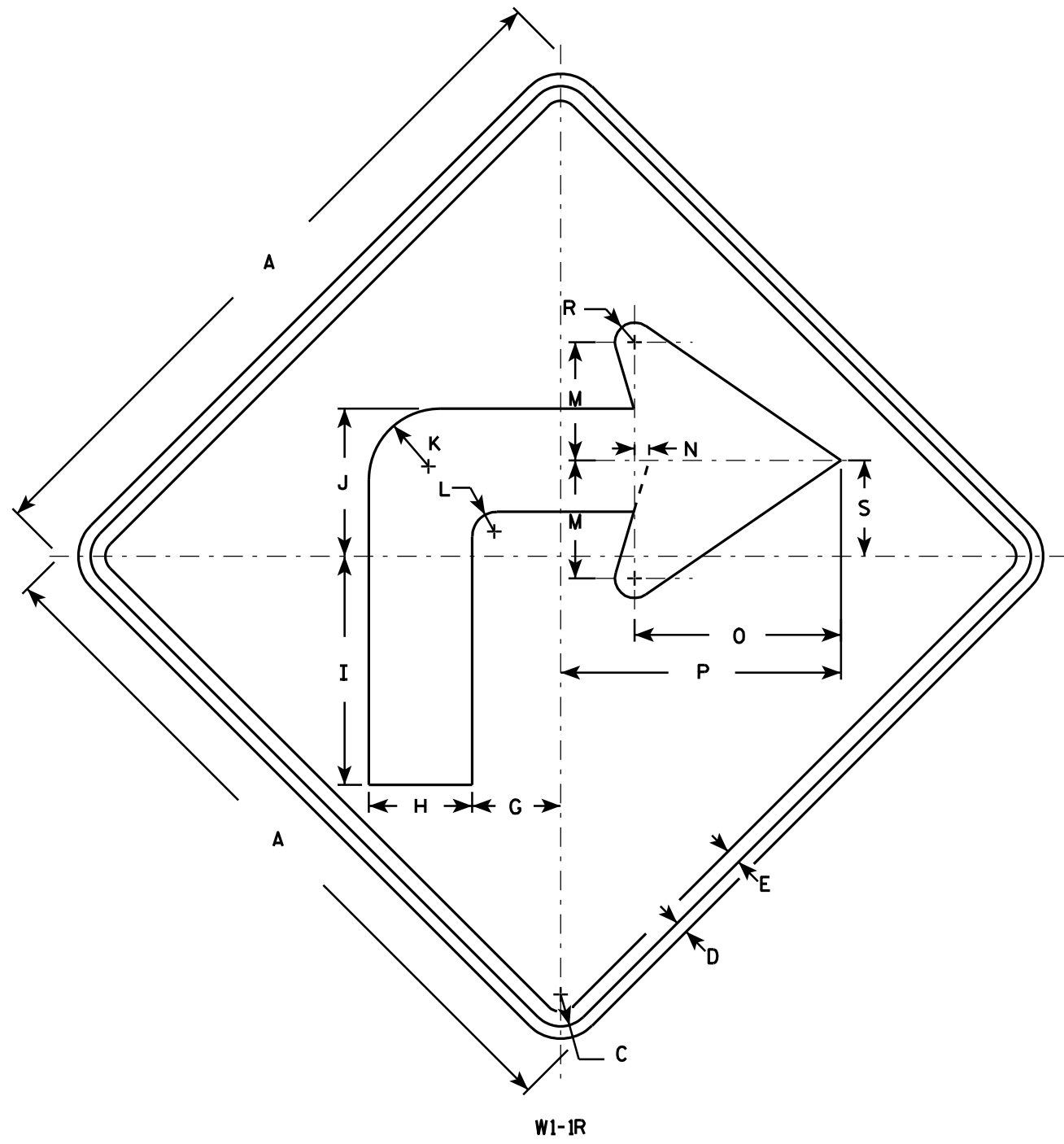
STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

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 - 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. W1-1L is the same as W1-1R except the arrow is reversed along the vertical centerline.

7

7

W1-1R

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		3	3 1/2	7 3/4	5	2 1/2	7/8	4	1/2	7	9 1/2		5/8	3 1/4								4.0
2S	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
2M	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
3	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
4	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0
5	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0

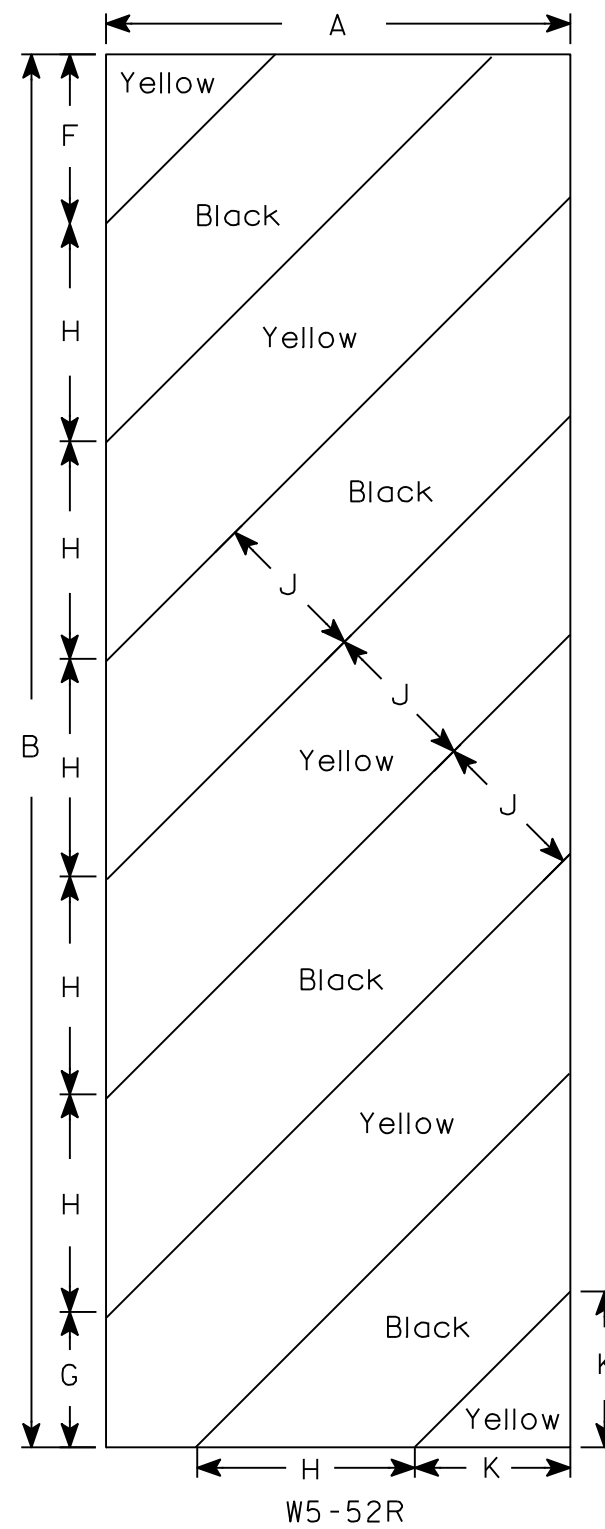
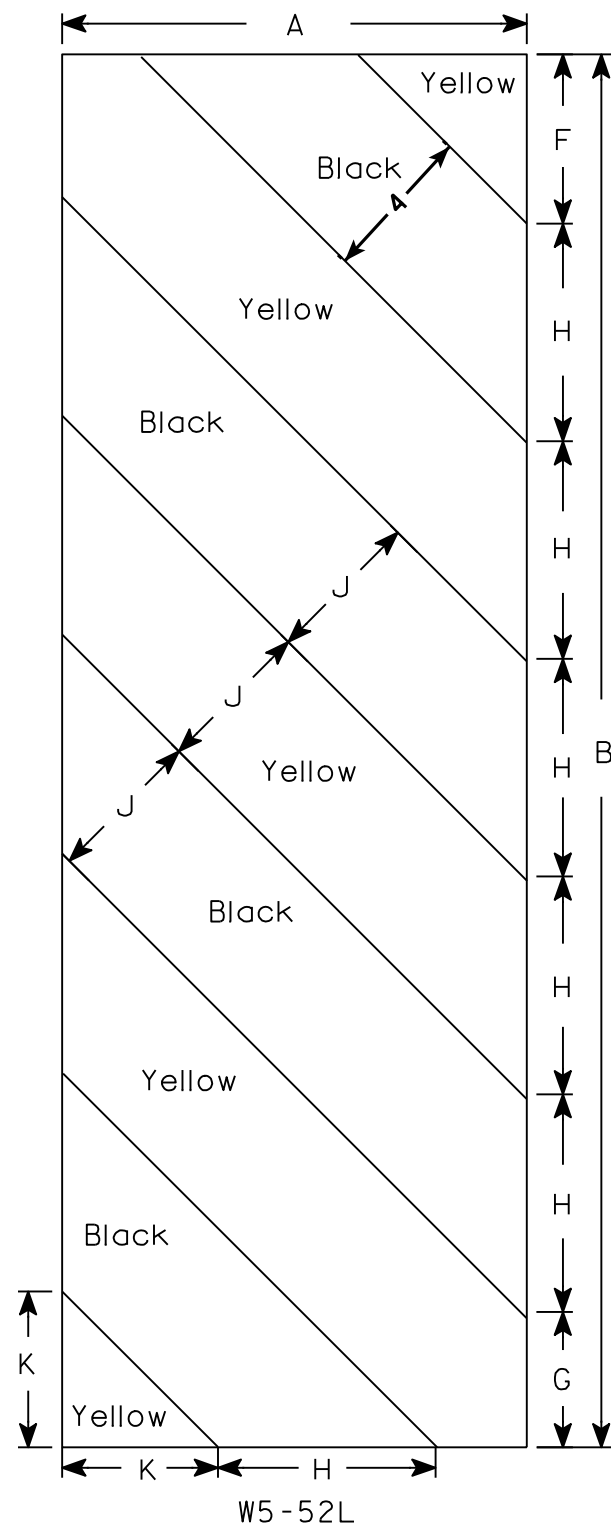
STANDARD SIGN
W1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-1.11

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 - 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																											

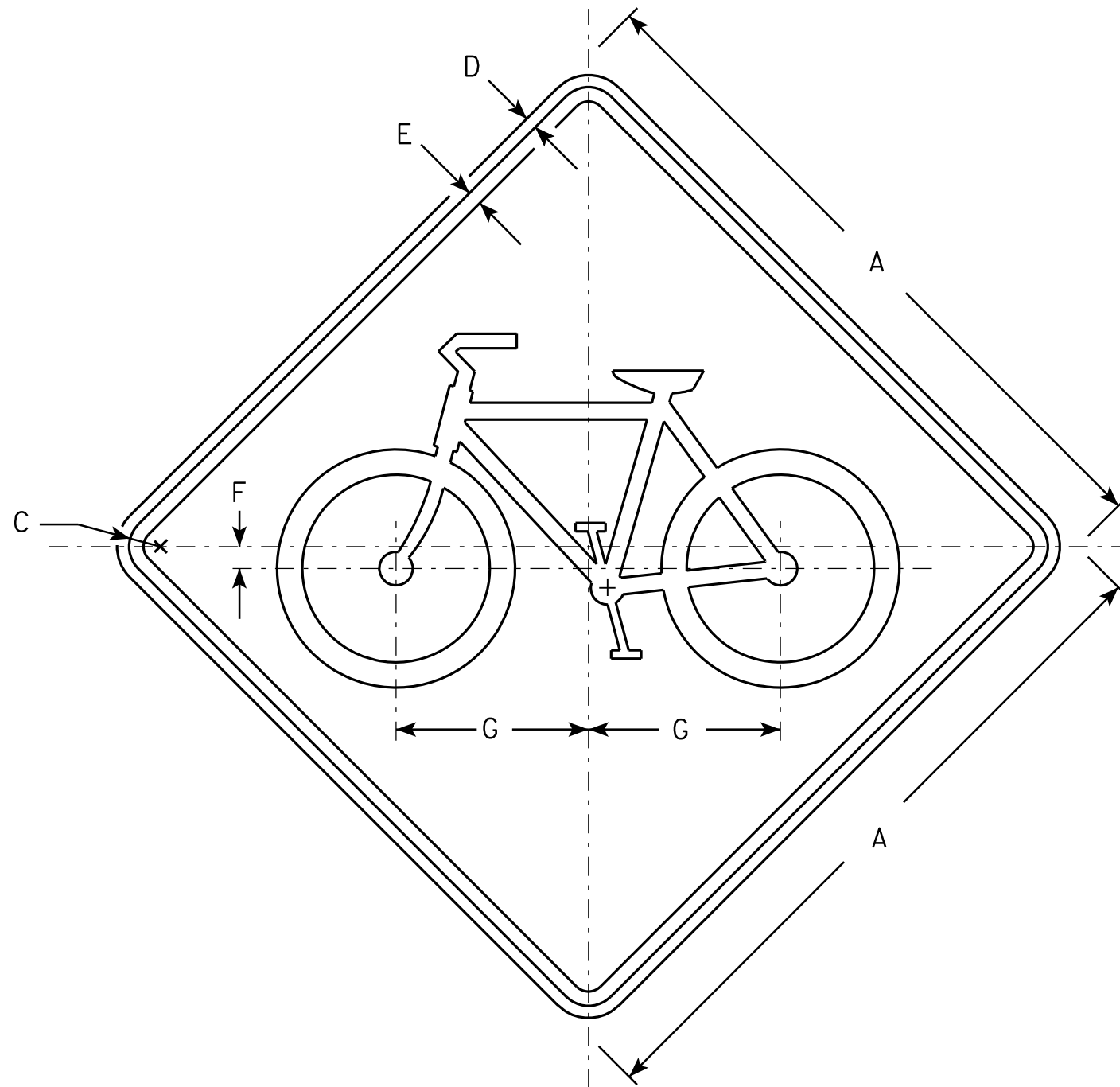
STANDARD SIGN
W5-52L & W5-52R

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



W11-1

NOTES

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

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	24		1 1/8	3/4	1/2	3/4	6 5/8																				4.0
2S	30		1 3/8	1/2	5/8	1	8 1/2																				6.25
2M	36		1 5/8	5/8	3/4	1 1/4	10																				9.0
3	36		1 5/8	5/8	3/4	1 1/4	10																				9.0
4	48		2 1/4	3/4	1	1 5/8	13 3/8																				16.0
5																											16.0

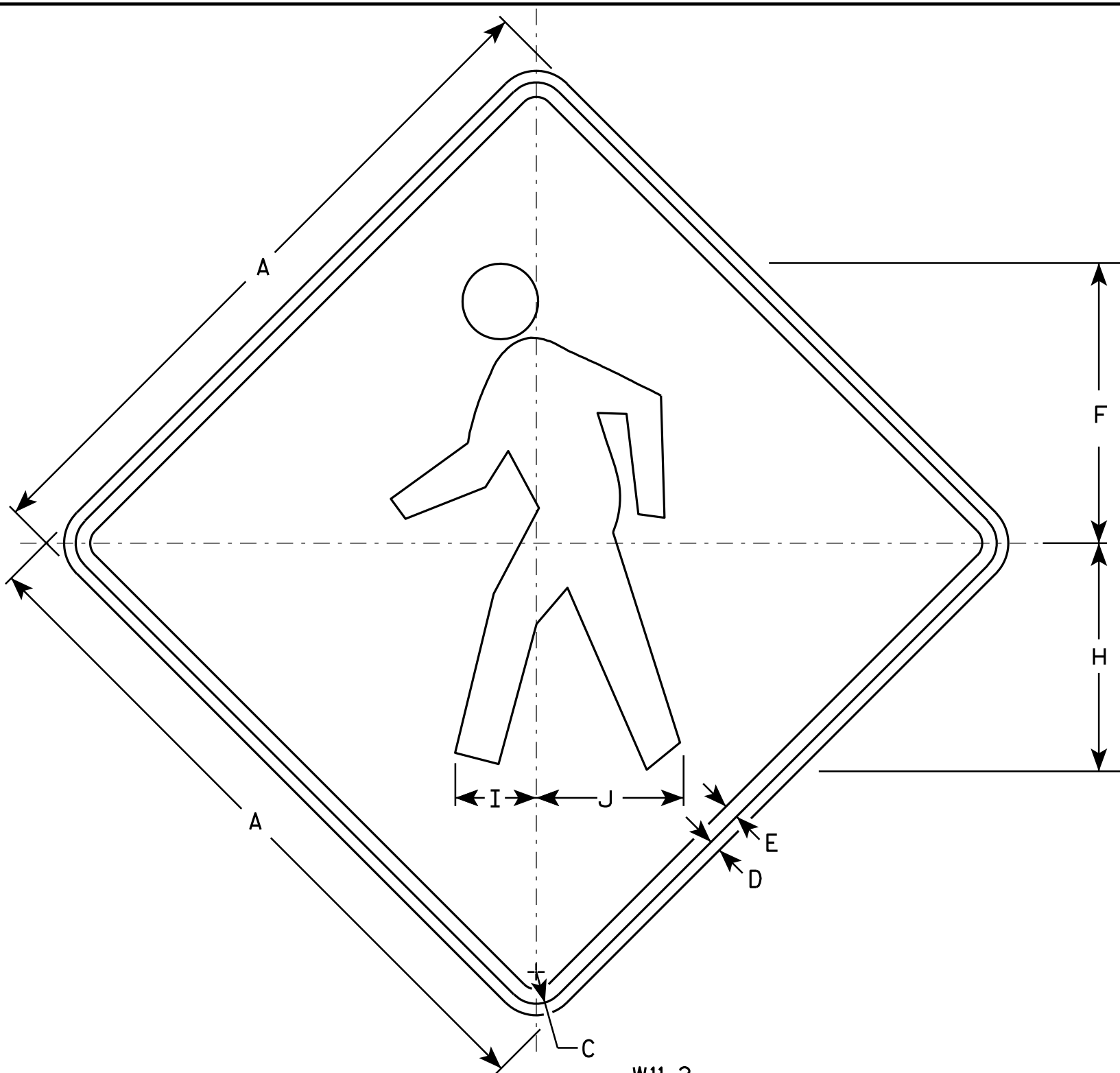
STANDARD SIGN
W11-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raush*
for State Traffic Engineer

DATE 12/21/10 PLATE NO. W11-1.9

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



W11-2

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.

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	24		1 1/8	3/8	1/2	9 3/4		7 7/8	2 7/8	5 1/8																	4.0
2S	30		1 3/8	1/2	5/8	12 1/8		9 7/8	3 1/2	6 3/8																	6.25
2M	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
3	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
4	48		2 1/4	3/4	1	19 3/8		15 3/4	5 5/8	10 1/4																	16.0
5																											

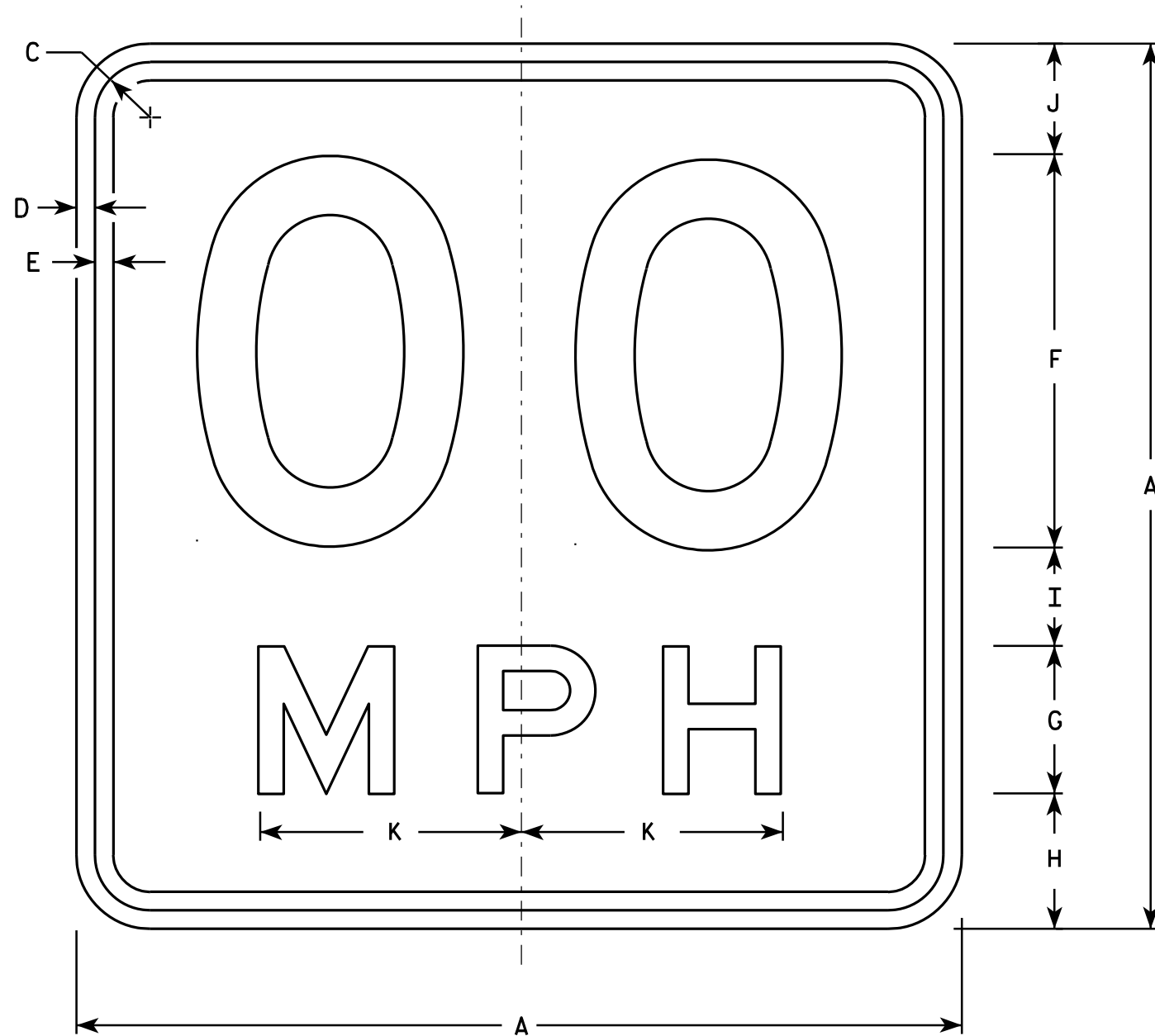
STANDARD SIGN
W11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 6/7/10 PLATE NO. W11-2.7

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 - Yellow
Message - Black
3. Message Series - See Note 6
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 and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

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	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25	
* 2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25	
* 2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25	
3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8															4.00	
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8															9.00	
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8															9.00	

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

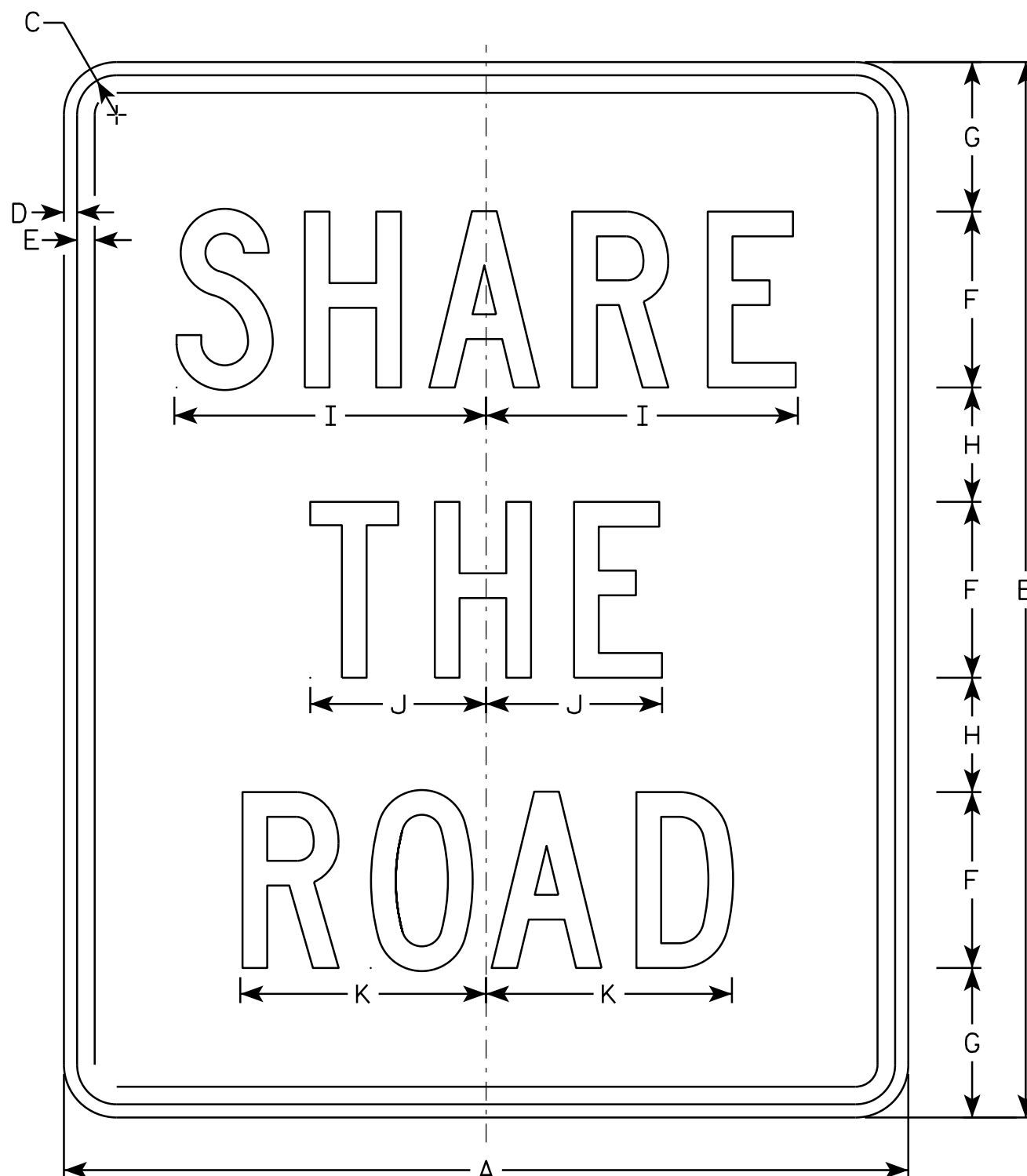
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



W16-1P

NOTES

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

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	18	24	1 1/8	3/8	1/2	4	3 3/8	2 5/8	6 5/8	3 3/4	5 3/8																3.0
2M	18	24	1 1/8	3/8	1/2	4	3 3/8	2 5/8	6 5/8	3 3/4	5 3/8																3.0
3	24	30	1 1/8	3/8	1/2	5	4 1/4	3 1/4	8 7/8	5	7																5.0
4	24	30	1 1/8	3/8	1/2	5	4 1/4	3 1/4	8 7/8	5	7																5.0
5																											

STANDARD SIGN
W16-1P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/21/11 PLATE NO. W16-1P.2

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Yellow
Message - Black
3. Message Series - C



W16-9P

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	24	12	1 1/8	3/8	3/8	5	3 1/2	3 1/8	17 3/4																		2.0
2M	30	18	1 1/8	3/8	1/2	7	5 1/2	2 3/4	24 1/2																		3.75
3	30	18	1 1/8	3/8	1/2	7	3 1/2	2 3/4	24 1/2																		3.75
4	48	24	1 3/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0
5																											

STANDARD SIGN
W16-9P

WISCONSIN DEPT OF TRANSPORTATION

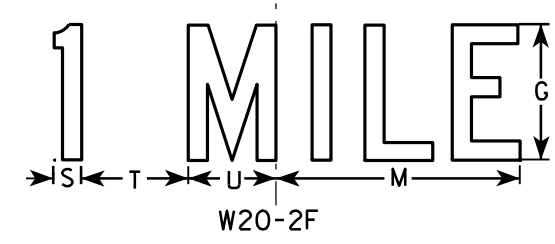
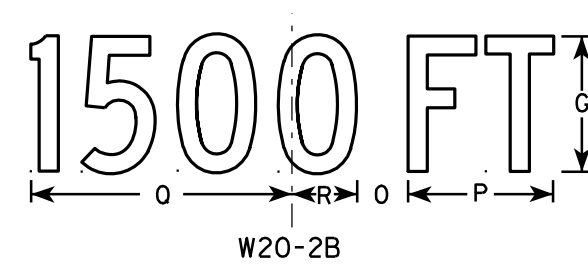
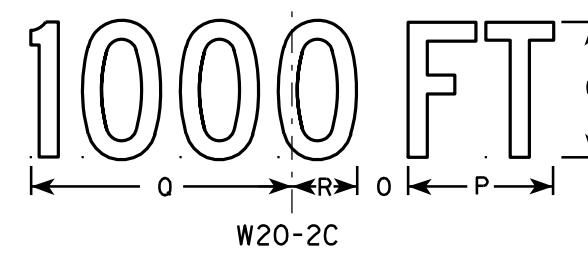
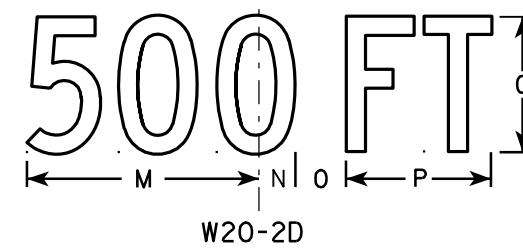
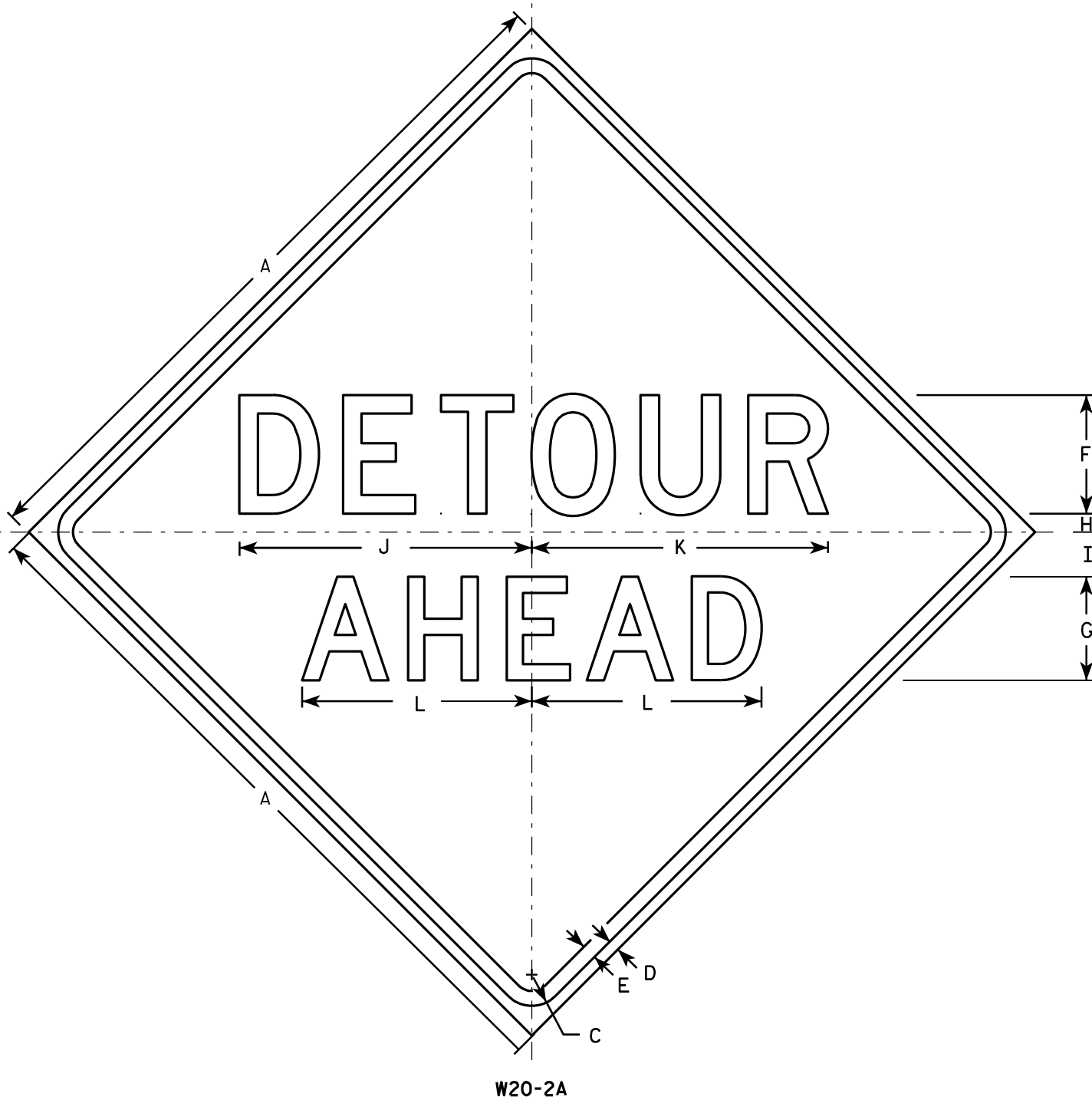
APPROVED Matthew R. Rauch
State Traffic Engineer

DATE 3/7/19 PLATE NO. W16-9P.7

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

7

7



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

STRUCTURE IS DESIGNED FOR FUTURE WEARING SURFACE OF 20"/SQ. FT.

LIVE LOAD:

DESIGN LOADING ————— HL-93
 INVENTORY RATING FACTOR ————— RF = 1.29
 OPERATING RATING FACTOR ————— RF = 1.71
 WISCONSIN STANDARD PERMIT
 VEHICLE (WIS-SPV) ————— 250 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY
 SUPERSTRUCTURE ————— f'c = 4,000 P.S.I.
 ALL OTHER ————— f'c = 3,500 P.S.I.
 HIGH STRENGTH BAR STEEL
 REINFORCEMENT, GRADE 60 ————— fy = 60,000 P.S.I.
 36W" PRESTRESSED
 GIRDERS CONCRETE MASONRY ————— f'c = 8,000 P.S.I.
 STRANDS - 0.6" DIA.
 ULTIMATE TENSILE STRENGTH ————— fy = 270,000 P.S.I.

HYDRAULIC DATA

100 YEAR FREQUENCY

Q₁₀₀ ————— 2,800 C.F.S.
 VELOCITY ————— 5.62 F.P.S.
 HIGH WATER ————— EL. 585.27 (100 YEAR)
 WATERWAY AREA ————— 498 S.F.
 DRAINAGE AREA ————— 67 SQ. MILES
 OVERTOPPING FREQUENCY = N/A
 SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

Q₂ ————— 688 C.F.S.
 VELOCITY ————— 1.52 F.P.S.
 HIGH WATER ————— EL. 584.09 (2 YEAR)

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 12 X 53 PILING. PILES SHALL BE DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS ** PER PILE AND TO A PILE TIP ELEVATION OF 545 OR LOWER. ALL PILES SHALL BE FITTED WITH PILE POINTS. ESTIMATED LENGTH = 55' AT SOUTH ABUTMENT. ESTIMATED LENGTH = 55' AT NORTH ABUTMENT.

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

TRAFFIC DATA

ADT = 1,600 (2019)
 2,300 (2039)
 RDS = 40 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. 36W" PRESTRESSED GIRDER DETAILS
9. STEEL DIAPHRAGM
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE DETAILS
12. TUBULAR STEEL RAILING TYPE 'M'

CONSULTANT CONTACT

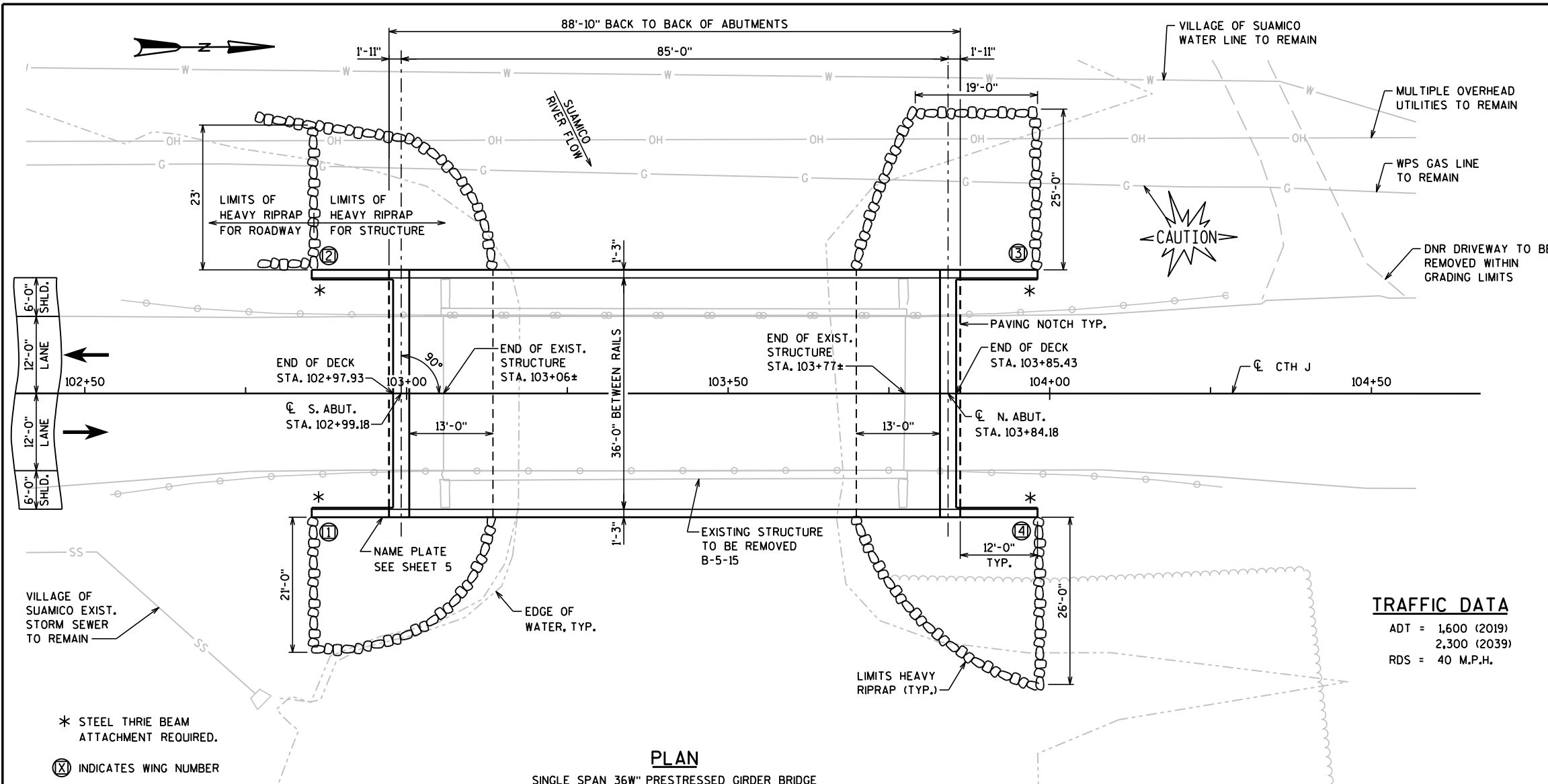
KRISTOFER OLSON
 OMNI ASSOCIATES, INC.
 (920) 735-6900

BRIDGE OFFICE CONTACT

WILLIAM DREHER
 (608) 266-8489

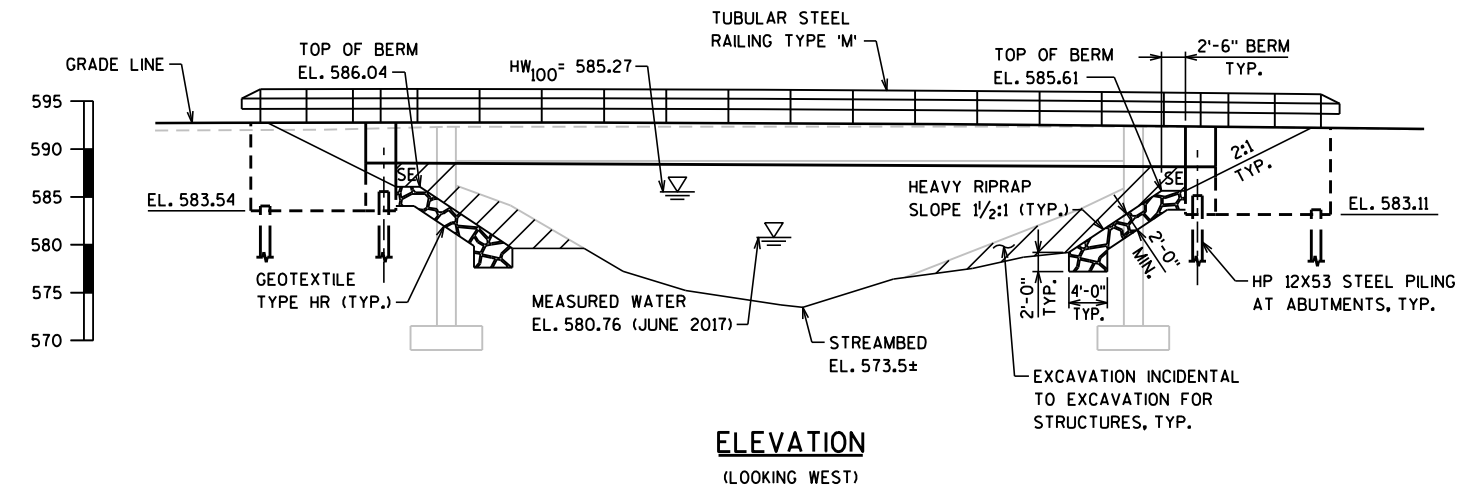


5/28/2019



PLAN

SINGLE SPAN 36W" PRESTRESSED GIRDER BRIDGE



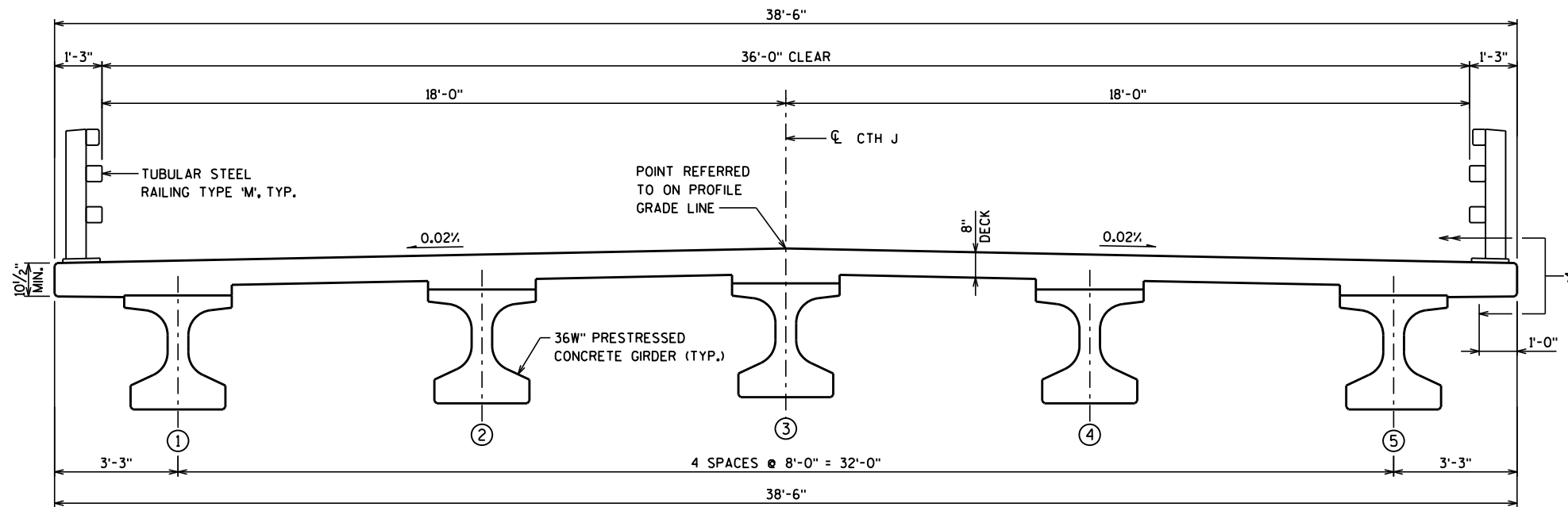
ELEVATION

(LOOKING WEST)

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
OMNI ASSOCIATES			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	William C. Dreher, Sr. 08/26/19		DATE
STRUCTURE B-5-443			
CTH J OVER SUAMICO RIVER			
COUNTY	BROWN	VILLAGE	SUAMICO
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS		LOAD HL-93
DESIGNED BY	BRE	CK'D. KRO	DRAWN BY BRE PLANS CK'D. KRO
GENERAL PLAN			SHEET 1 OF 12

8

8



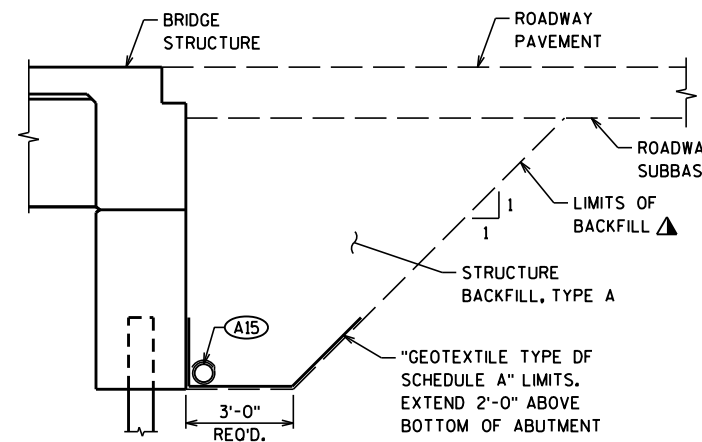
CROSS SECTION THRU ROADWAY

BENCH MARKS (NAVD 88)

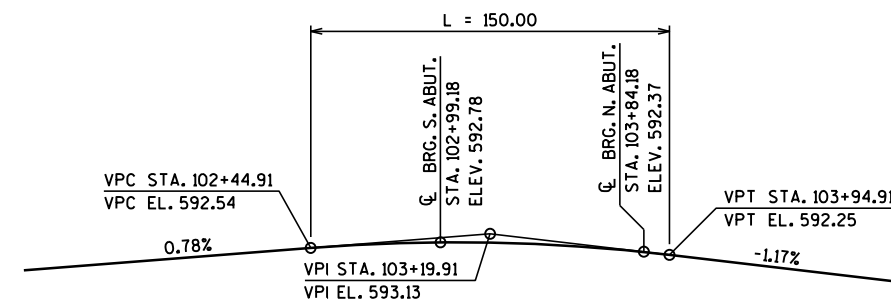
NO.	STATION	DESCRIPTION	ELEV.
BM1	98+75, 70' RT.	CHISEL 'X' ON BURY BOLT OF HYD. NE CORNER OF CTH J & RIVERSIDE DR	592.20
BM2	100+77, 33' LT.	60D SPIKE IN PP#2/2520-23E16	590.39
BM3	103+77, 14' RT.	DISK ON NE CORNER OF BRIDGE (Z129)	592.02

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	NORTH ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA 103+40	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-5-443	LS	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	-----	170	170	340
502.0100	CONCRETE MASONRY BRIDGES	CY	125	44	44	213
502.3200	PROTECTIVE SURFACE TREATMENT	SY	440	-----	-----	440
503.0137	PRESTRESSED GIRDER TYPE 136W-INCH	LF	430	-----	-----	430
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	-----	2,340	2,340	4,680
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	22,230	1,820	1,820	25,870
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	10	-----	-----	10
506.4000	STEEL DIAPHRAGMS B-5-443	EACH	8	-----	-----	8
513.4061	RAILING TUBULAR TYPE M B-5-443	LF	230	-----	-----	230
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-----	11	11	22
550.0500	PILE POINTS	EACH	-----	8	8	16
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	-----	440	440	880
606.0300	RIPRAP HEAVY	CY	-----	110	125	235
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	-----	65	65	130
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	-----	28	28	56
645.0120	GEOTEXTILE TYPE HR	SY	-----	165	184	350
SPV.0105	SUPERSTRUCTURE 3/4" DRIP EDGE B-5-443	LS	1	-----	-----	1
NON-BID ITEMS						
	FILLER	SIZE	---	---	---	1/2" & 3/4"



TYPICAL SECTION THRU ABUTMENT



PROFILE GRADE LINE

GENERAL NOTES

DRAWING SHALL NOT BE SCALED.

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

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

AT THE BACKFACE OF ABUTMENTS, ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.

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

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

THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION.

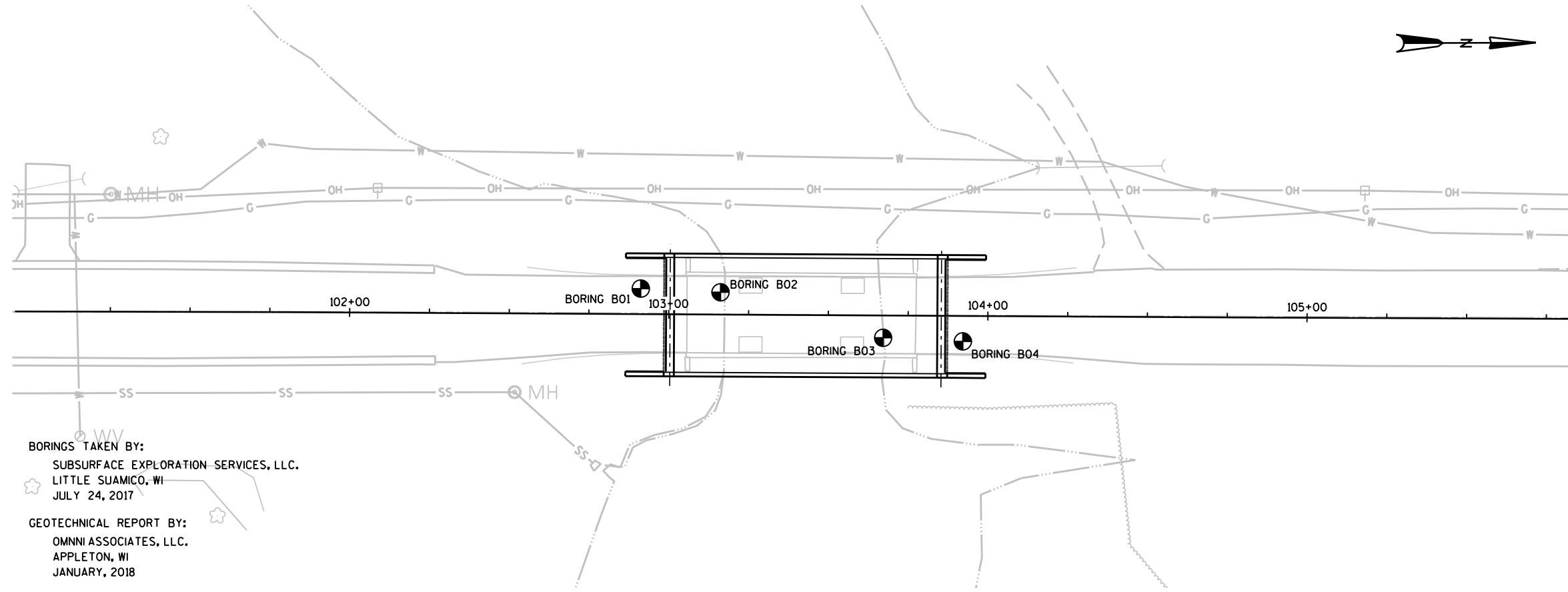
THIS BRIDGE WILL REPLACE THE EXISTING STEEL GIRDER BRIDGE SUPPORTED ON SPILL THROUGH ABUTMENTS. THE STRUCTURE WAS BUILT IN 1953.

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

☆ PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP, SIDES, EXTERIOR 1'-0" OF THE UNDERSIDE OF THE DECK, TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-5-443			
DRAWN BY		BRE	PLANS CK'D. KRO
CROSS SECTIONS & QUANTITIES			SHEET 2 OF 12



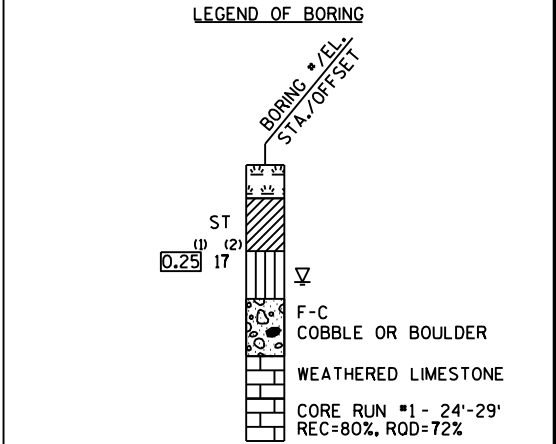
BORINGS TAKEN BY:
 SUBSURFACE EXPLORATION SERVICES, LLC.
 LITTLE SUAMICO, WI
 JULY 24, 2017

GEOTECHNICAL REPORT BY:
 OMNI ASSOCIATES, LLC.
 APPLETON, WI
 JANUARY, 2018

STATE PROJECT NUMBER
9286-05-71

MATERIAL SYMBOLS

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



⁽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

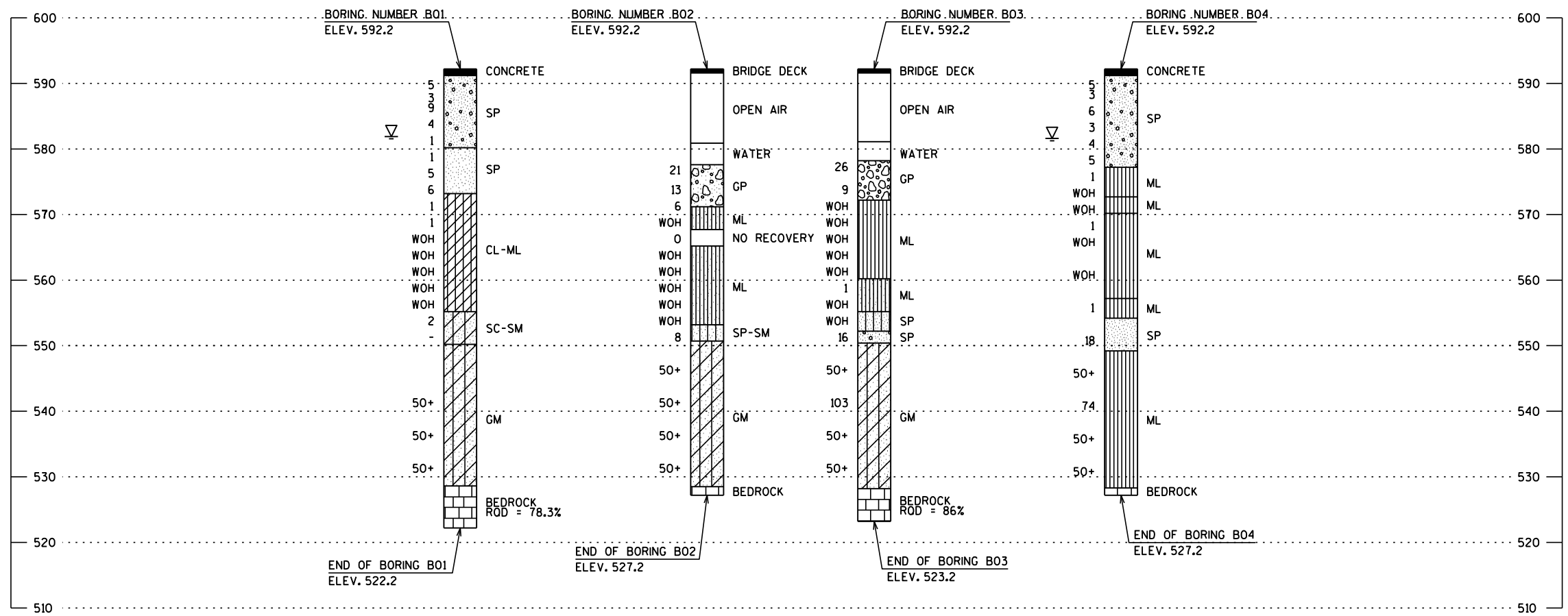
▽ AT TIME OF DRILLING
 ▽ END OF DRILLING
 ▾ AFTER DRILLING

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

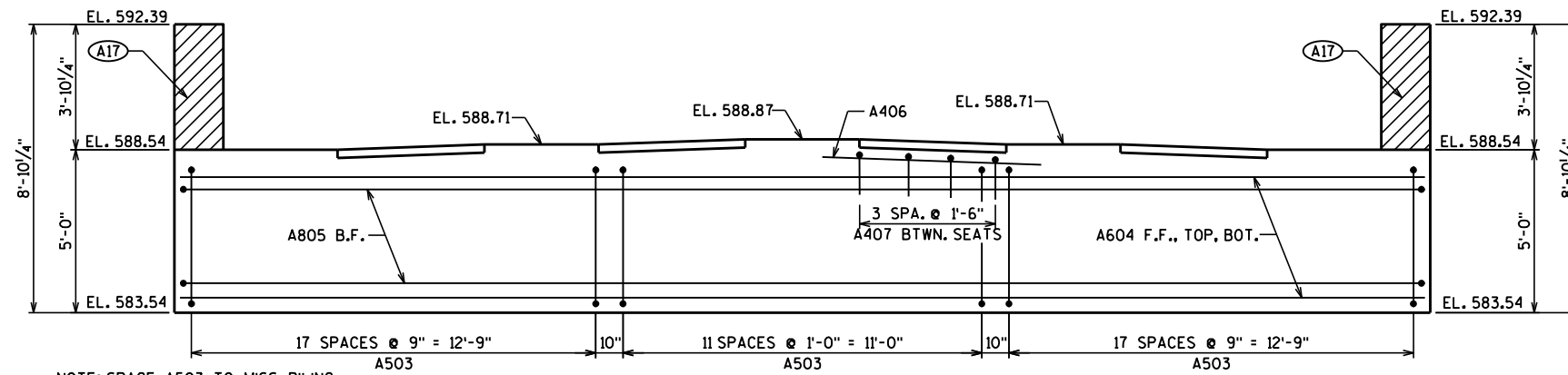
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-5-443			
DRAWN BY		BRE	PLANS CK'D. KRO
SUBSURFACE EXPLORATION		SHEET 3 OF 12	

LEGEND

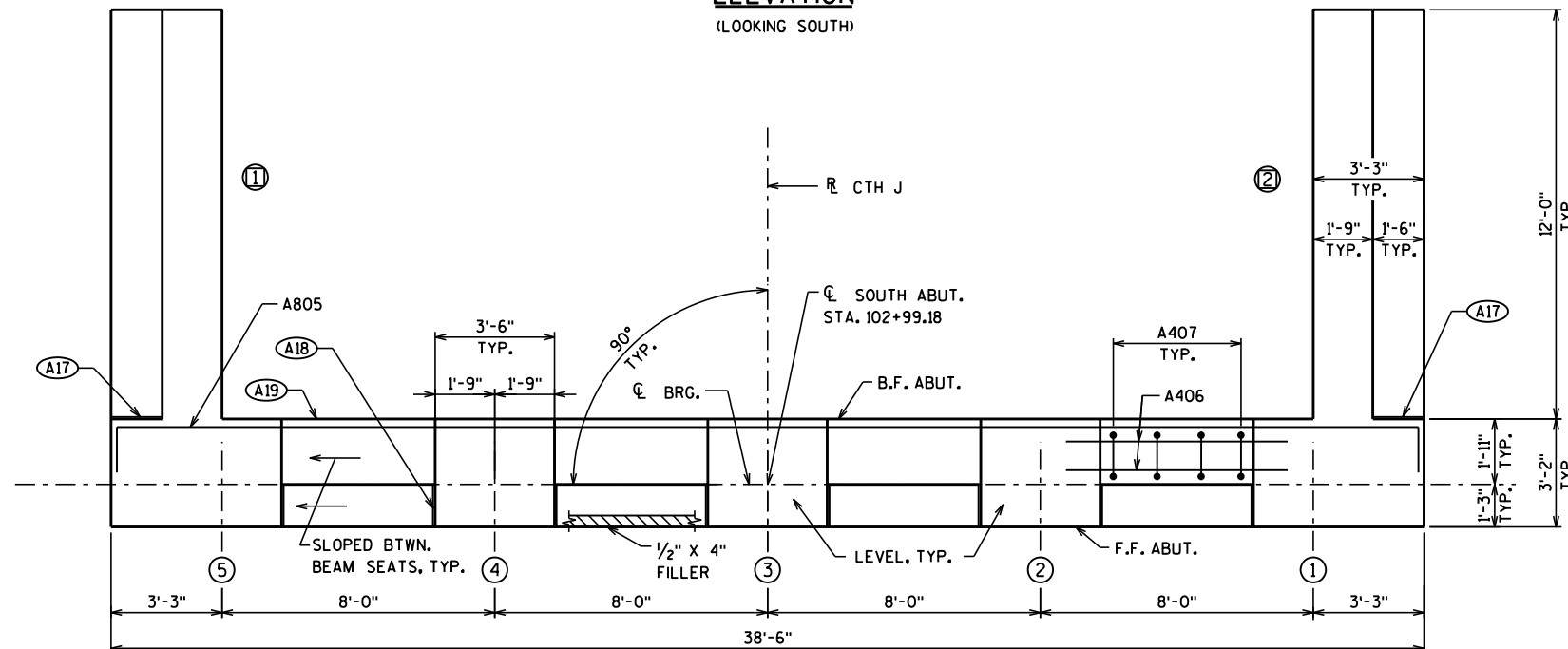
- (A07) ABUTMENTS TO BE SUPPORTED ON HP 12 X 53 STEEL PILING. PILING AT SOUTH ABUTMENT SHALL BE FITTED WITH PILE POINTS AND DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. ESTIMATED LENGTH = 55' AT THE SOUTH ABUTMENT.
- (A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO EAST SLOPES. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 5 FOR DETAILS.
- (A17) 1/2" FILLER INCLUDED IN WING LENGTH, 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).
- (A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A19) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
- (X) DENOTES WING NUMBER
- STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND/OR SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

SEE SHEET 5 FOR WINGWALL DETAILS, BILL OF BARS, PILE SPLICE DETAILS, AND BAR BENDING DIAGRAMS.

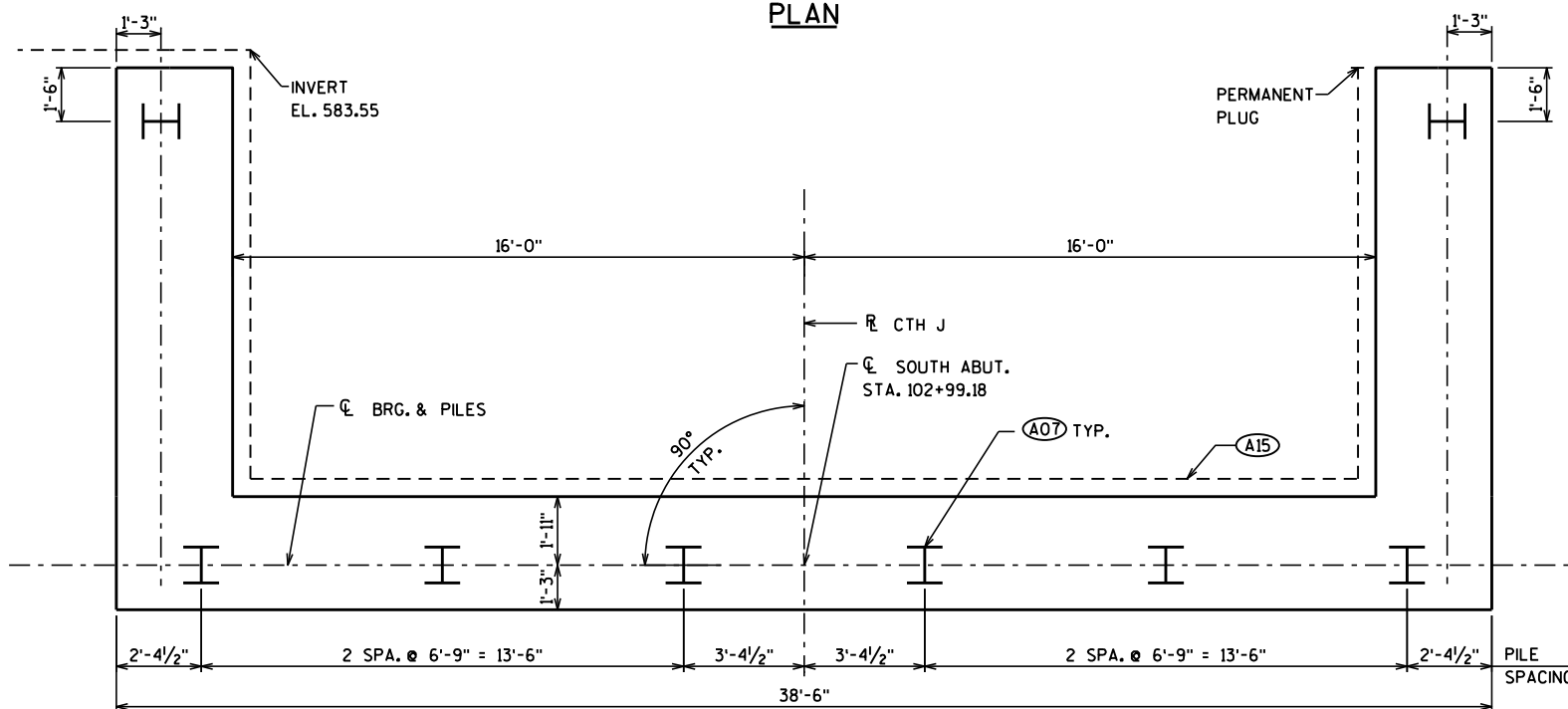


NOTE: SPACE A503 TO MISS PILING

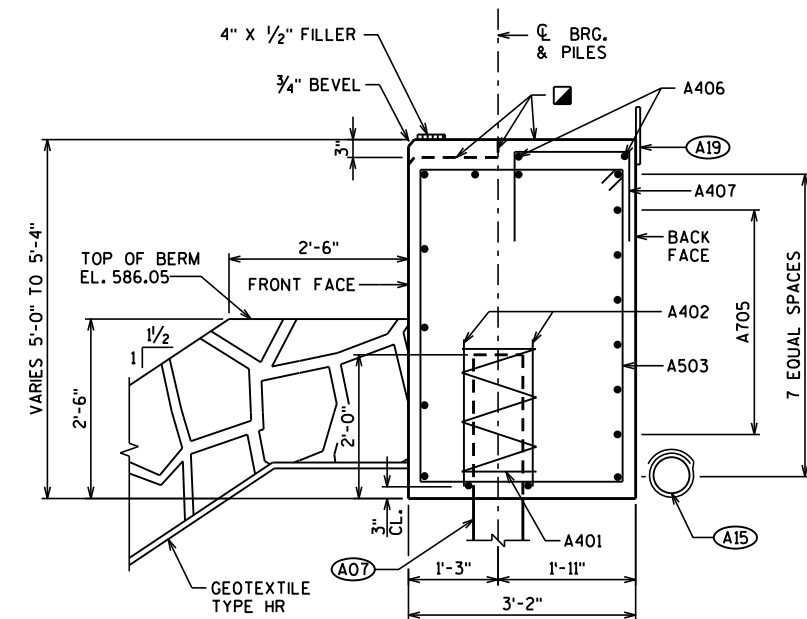
ELEVATION
(LOOKING SOUTH)



PLAN



PILE PLAN



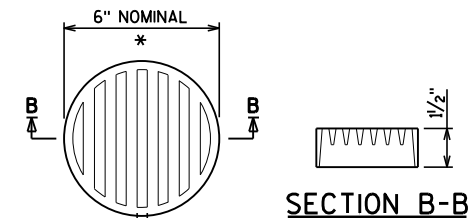
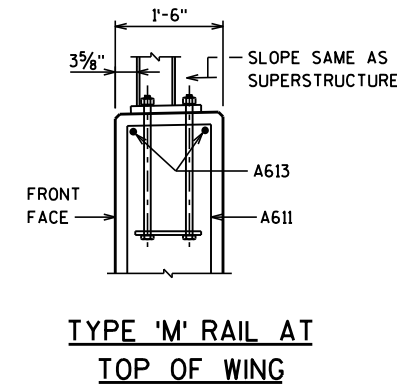
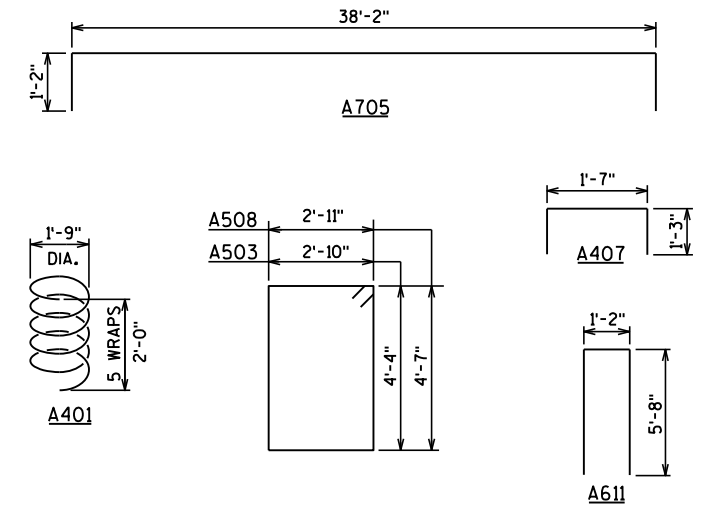
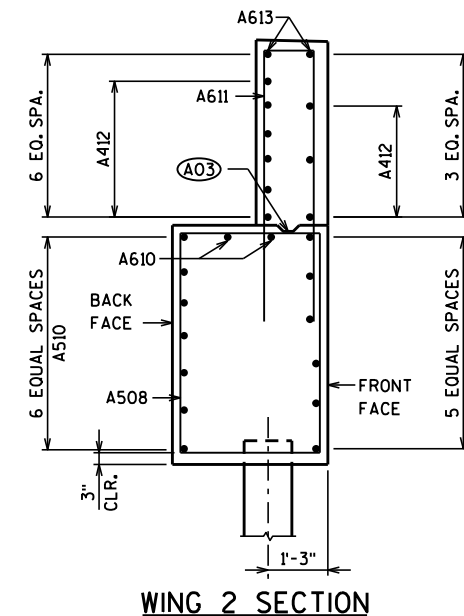
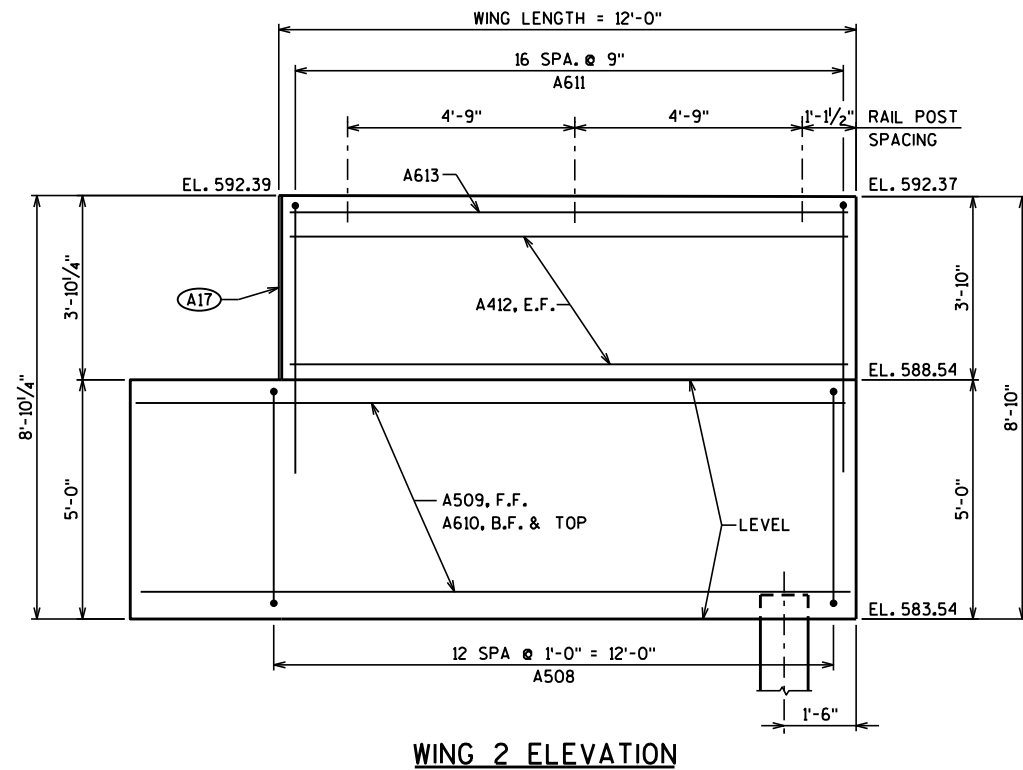
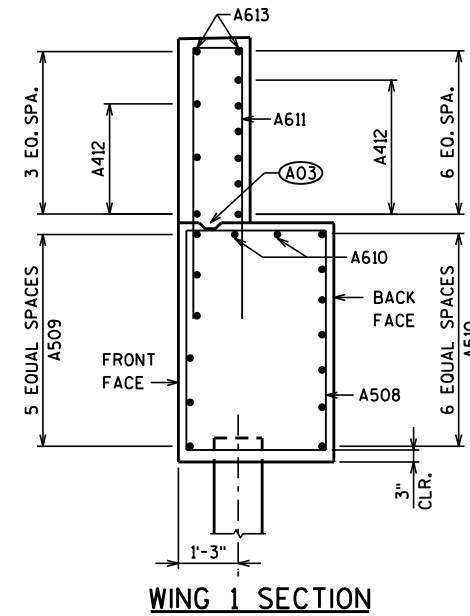
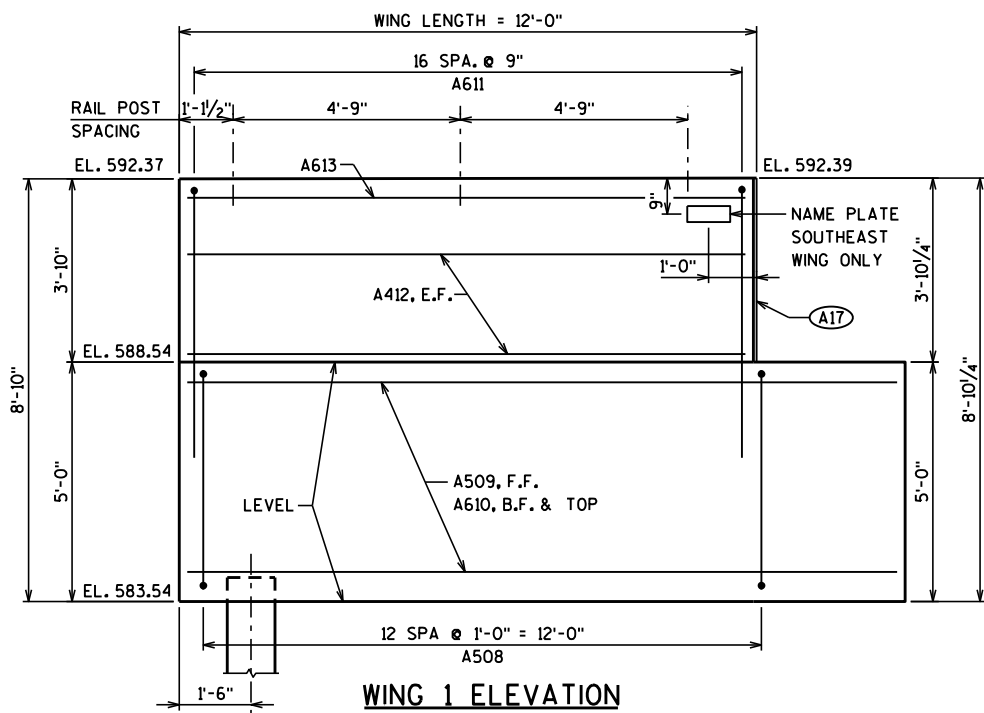
SECTION THRU BODY

HORIZ. BARS NOT OTHERWISE IDENTIFIED ARE A604 BARS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-5-443			
DRAWN BY		NRT	PLANS CK'D. BRE
SOUTH ABUTMENT		SHEET 4 OF 12	

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A401		6	28'-0"	X	BODY - ONE PER PILE
A402		12	2'-3"		BODY - TWO PER PILE
A503		48	15'-0"	X	BODY - STIRRUPS
A604		11	38'-2"		BODY - HORIZONTAL
A705		6	40'-2"	X	BODY - HORIZONTAL B.F.
A406		8	6'-6"		BODY - HORIZONTAL TOP
A407		16	3'-11"	X	BODY - VERTICAL, TOP
A508	X	26	15'-8"	X	WINGS - STIRRUPS
A509	X	12	14'-10"		WINGS - HORIZONTAL, F.F.
A510	X	18	13'-7"		WINGS - HORIZONTAL, B.F. & TOP
A611	X	34	12'-2"	X	WINGS - VERTICAL
A412	X	18	11'-8"		WINGS - HORIZONTAL
A613	X	4	11'-8"		WINGS - HORIZONTAL, TOP

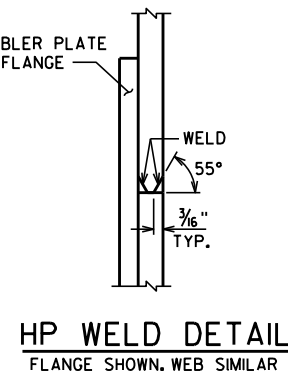
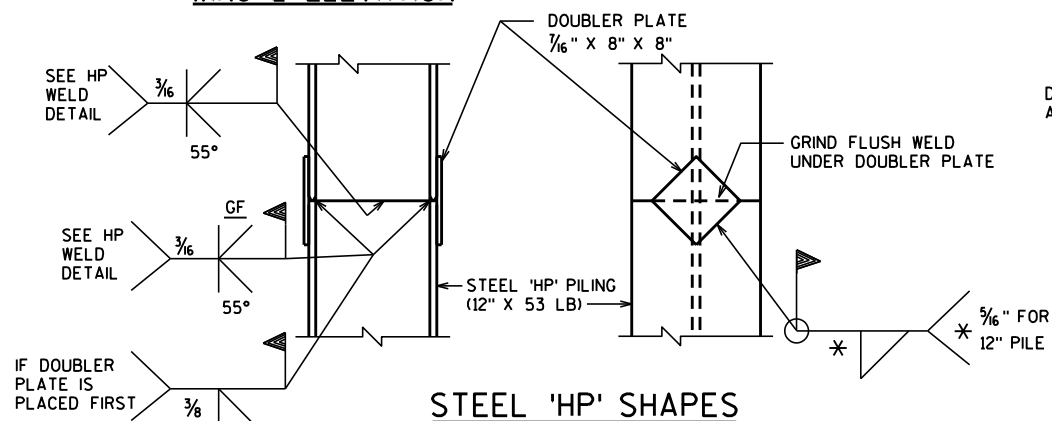


RODENT SCREEN DETAIL

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

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

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



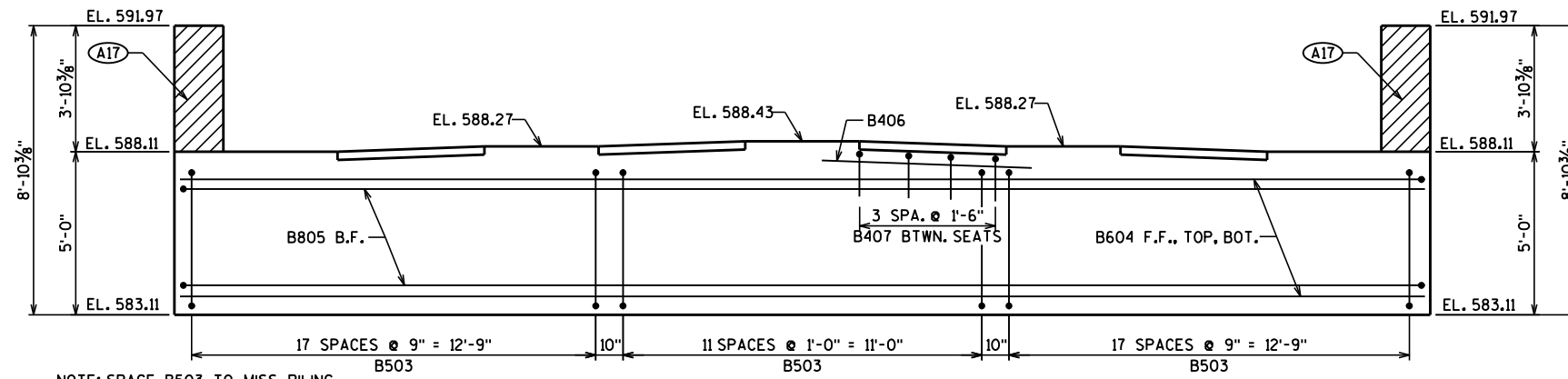
NOTES:

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" X 6". (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED.)
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).

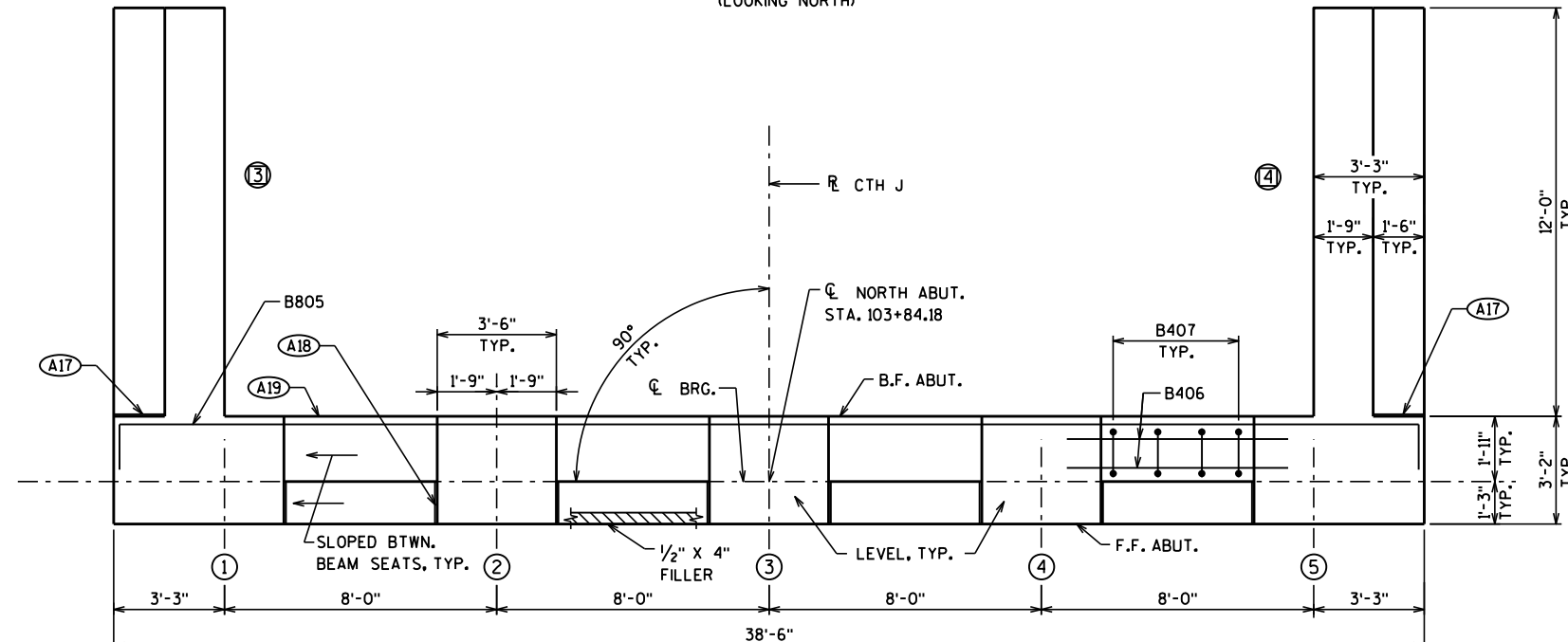
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-5-443			
DRAWN BY		NRT	PLANS BRE
SOUTH ABUTMENT DETAILS		SHEET 5 OF 12	

LEGEND

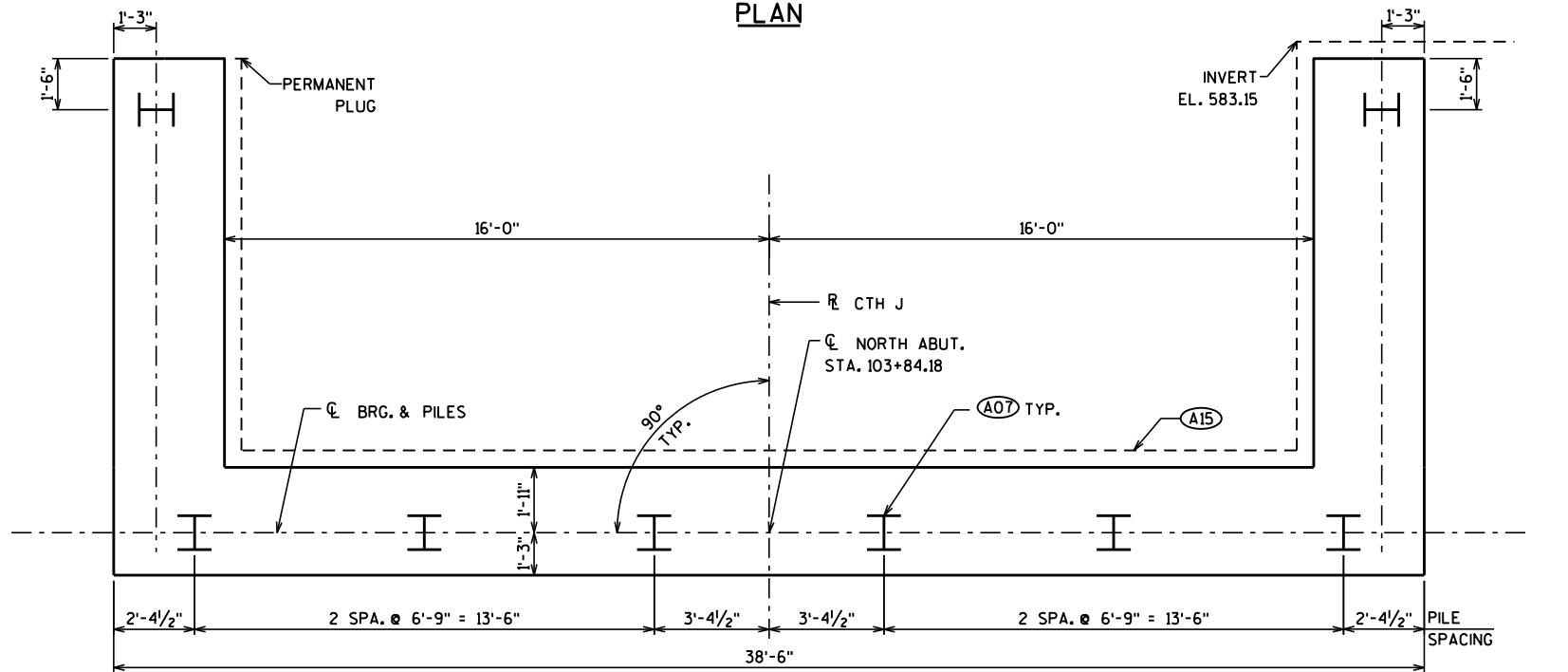
- (A07) ABUTMENTS TO BE SUPPORTED ON HP 12 X 53 STEEL PILING. PILING AT NORTH ABUTMENT SHALL BE FITTED WITH PILE POINTS AND DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. ESTIMATED LENGTH = 55' AT THE NORTH ABUTMENT.
 - (A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO EAST SLOPES. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 7 FOR DETAILS.
 - (A17) 1/2" FILLER INCLUDED IN WING LENGTH, 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).
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 - (X) DENOTES WING NUMBER
 - STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND/OR SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".
- SEE SHEET 7 FOR WINGWALL DETAILS, BILL OF BARS AND BAR BENDING DIAGRAMS. SEE SHEET 5 FOR PILE SPLICE DETAILS.



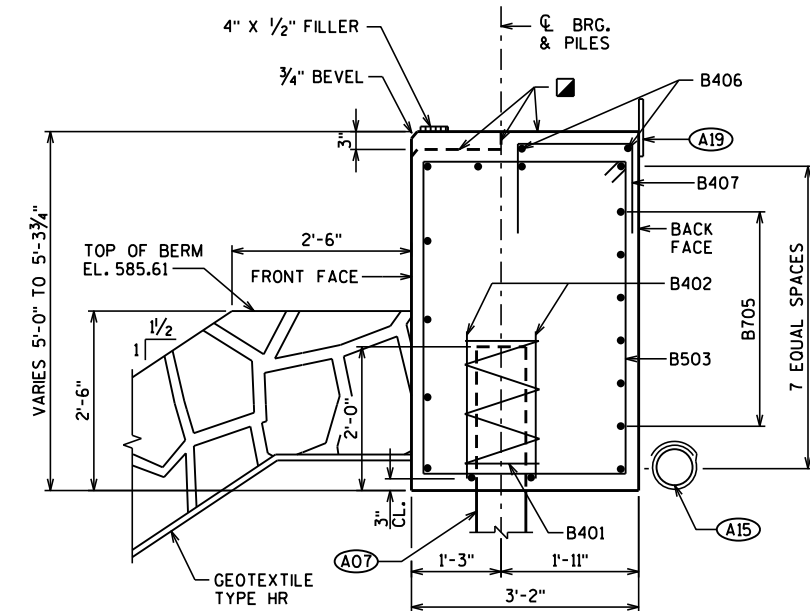
ELEVATION
(LOOKING NORTH)



PLAN



PILE PLAN



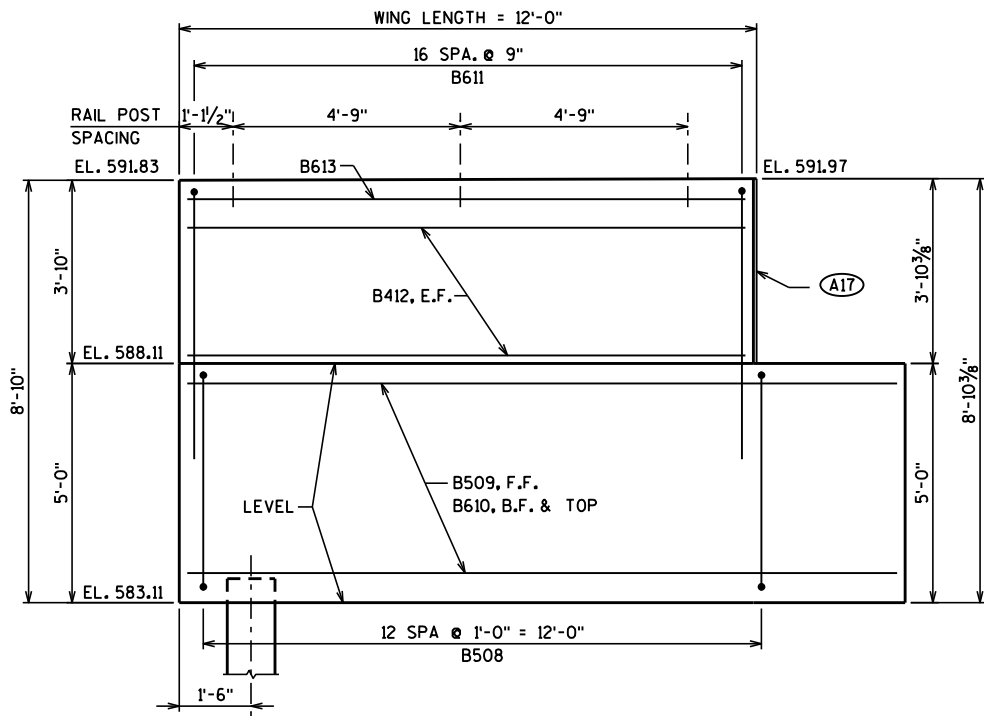
SECTION THRU BODY

HORIZ. BARS NOT OTHERWISE IDENTIFIED ARE B604 BARS

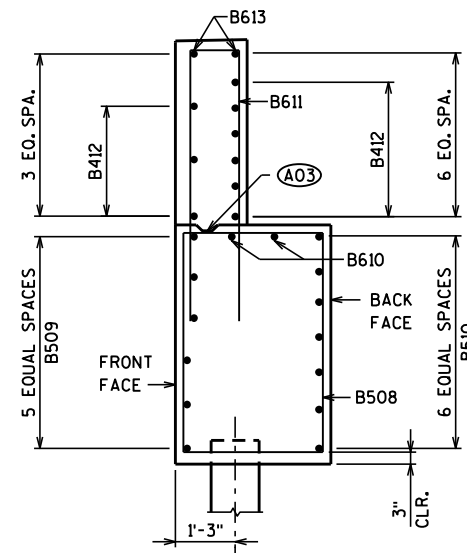
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-5-443			
DRAWN BY		NRT	PLANS CK'D. BRE
NORTH ABUTMENT			SHEET 6 OF 12

BILL OF BARS

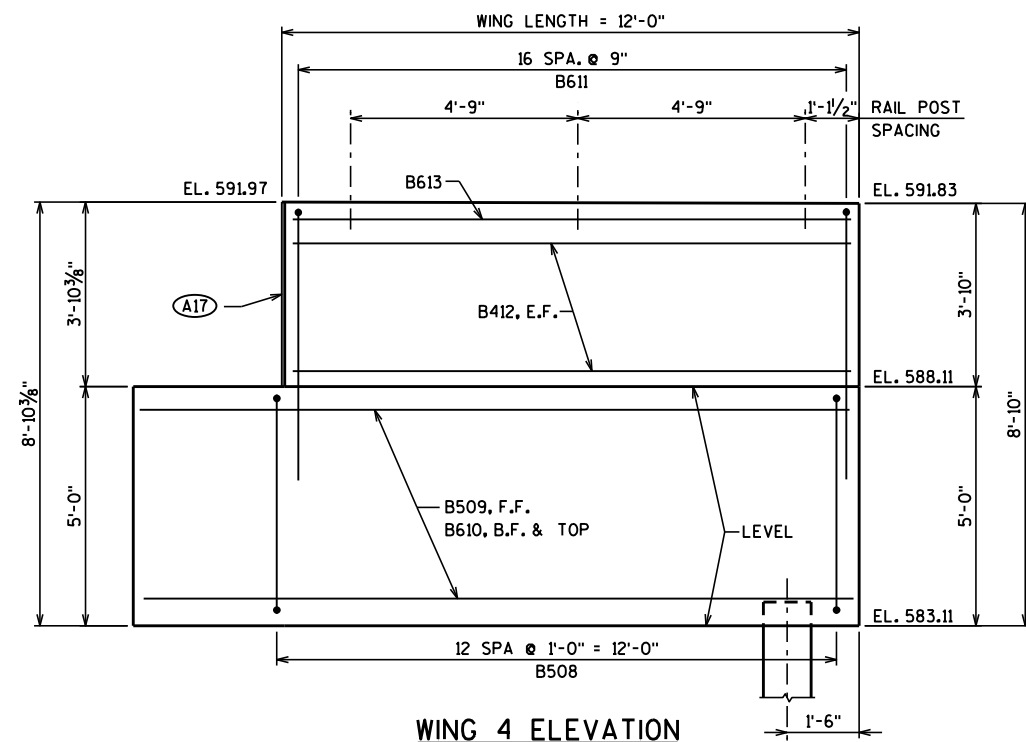
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
B401		6	28'-0"	X	BODY - ONE PER PILE
B402		12	2'-3"		BODY - TWO PER PILE
B503		48	15'-0"	X	BODY - STIRRUPS
B604		11	38'-2"		BODY - HORIZONTAL
B705		6	40'-2"	X	BODY - HORIZONTAL B.F.
B406		8	6'-6"		BODY - HORIZONTAL TOP
B407		16	3'-11"	X	BODY - VERTICAL, TOP
B508	X	26	15'-8"	X	WINGS - STIRRUPS
B509	X	12	14'-10"		WINGS - HORIZONTAL, F.F.
B510	X	18	13'-7"		WINGS - HORIZONTAL, B.F. & TOP
B611	X	34	12'-2"	X	WINGS - VERTICAL
B412	X	18	11'-8"		WINGS - HORIZONTAL
B613	X	4	11'-8"		WINGS - HORIZONTAL, TOP



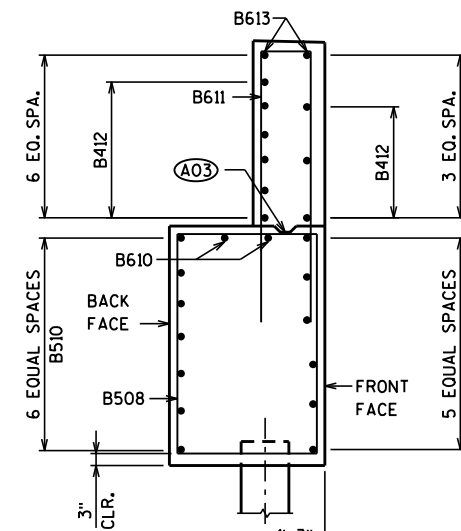
WING 3 ELEVATION



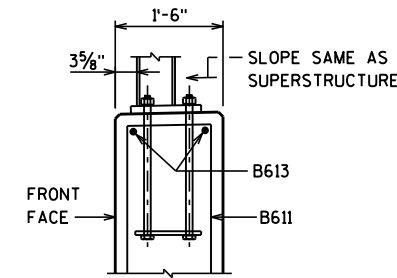
WING 3 SECTION



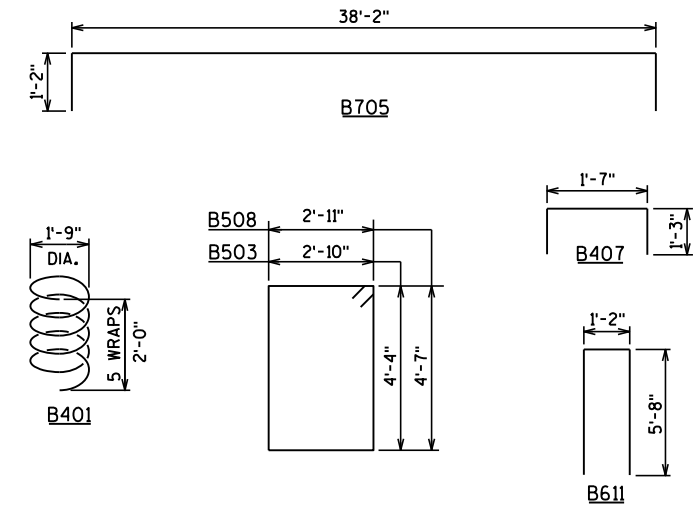
WING 4 ELEVATION



WING 4 SECTION



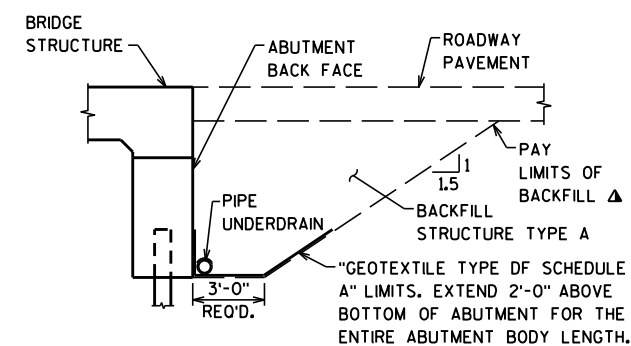
TYPE 'M' RAIL AT TOP OF WING



BAR BENDING DIAGRAMS

NOTES:

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" X 6". (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED.)
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).



TYPICAL SECTION THRU ABUTMENT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-5-443			
DRAWN BY		NRT	PLANS BRE
NORTH ABUTMENT DETAILS		SHEET 7 OF 12	

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB, 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 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 THE 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 MOST CURING HAS CEASED AND PRIOR TO APPLICATION OF THE SEALER.

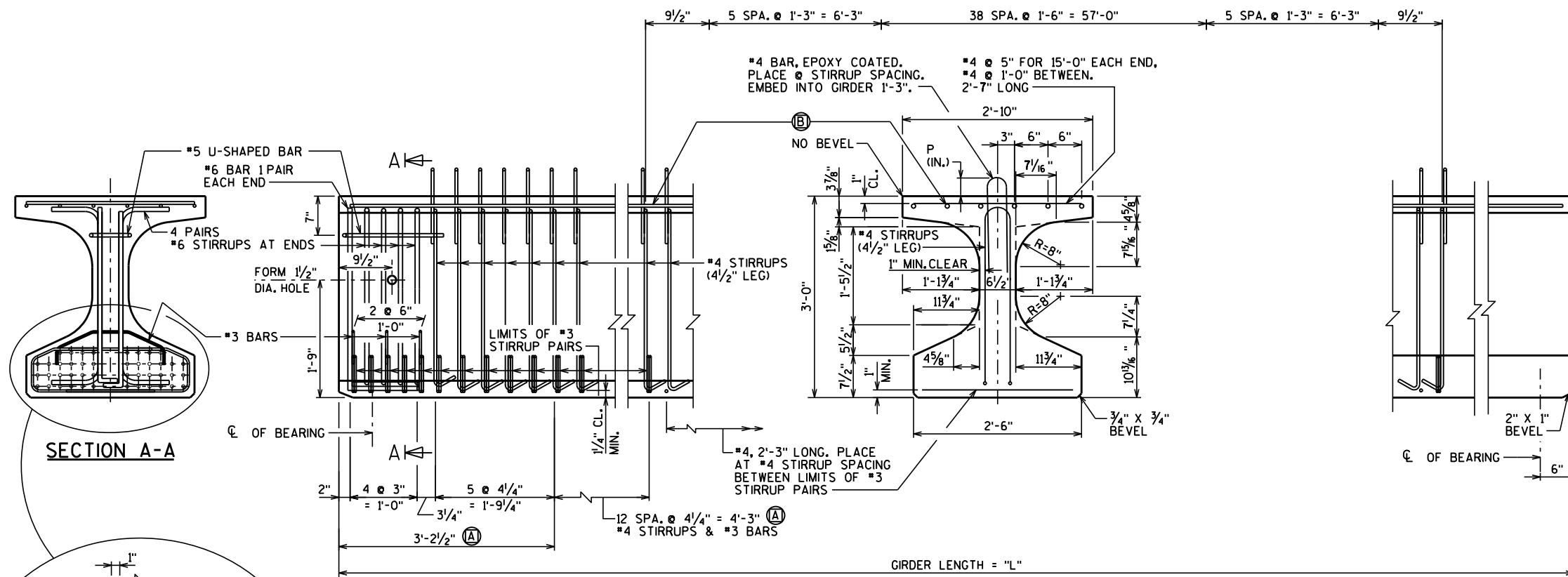
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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

AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES 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.



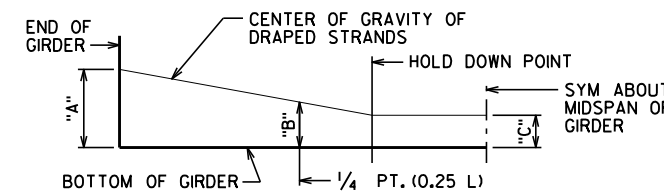
SIDE VIEW & TYPICAL SECTION IN SPAN

- (A) DETAIL TYP. AT EACH END
- (B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"

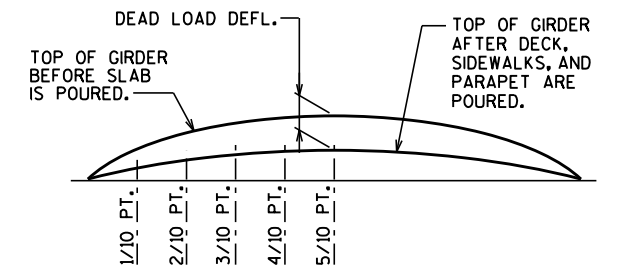
*THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	3.20

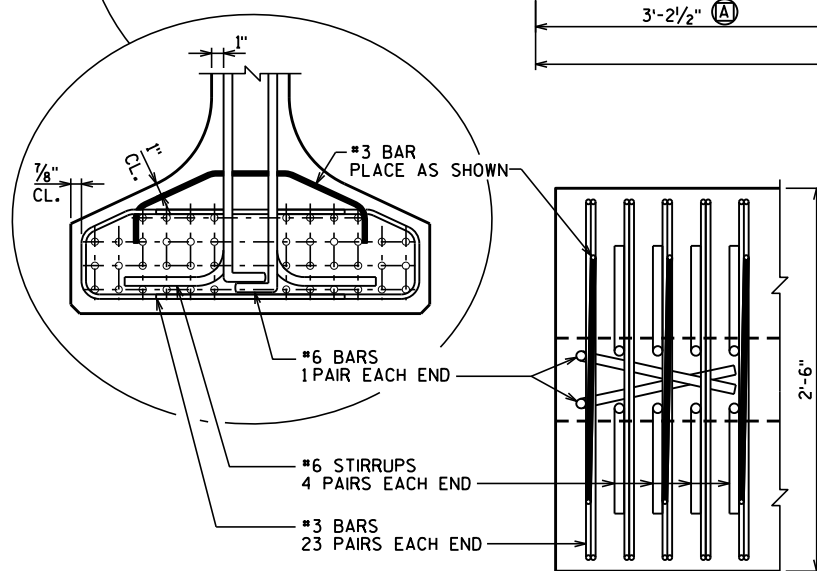
THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T'. USE ACTUAL GIRDER SHOTS. THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



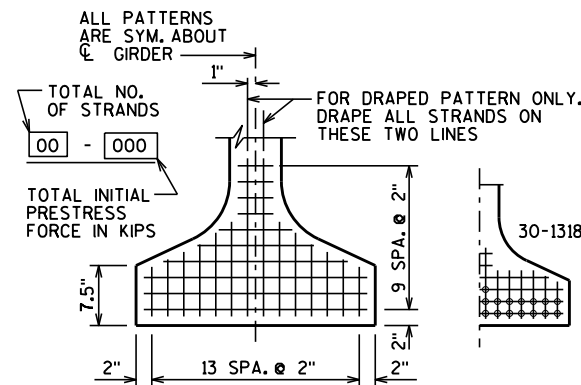
DRAPED STRAND PROFILE



DEAD LOAD DEFLECTION DIAGRAM



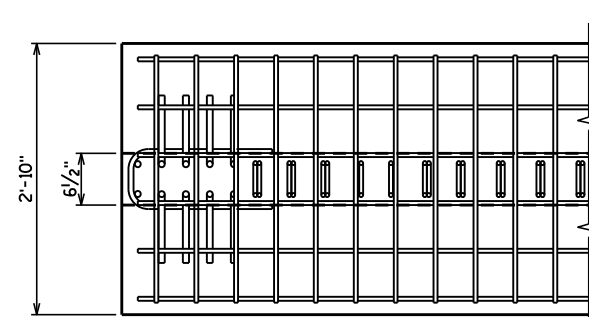
BOTTOM FLANGE



TYP. STRAND PATTERN

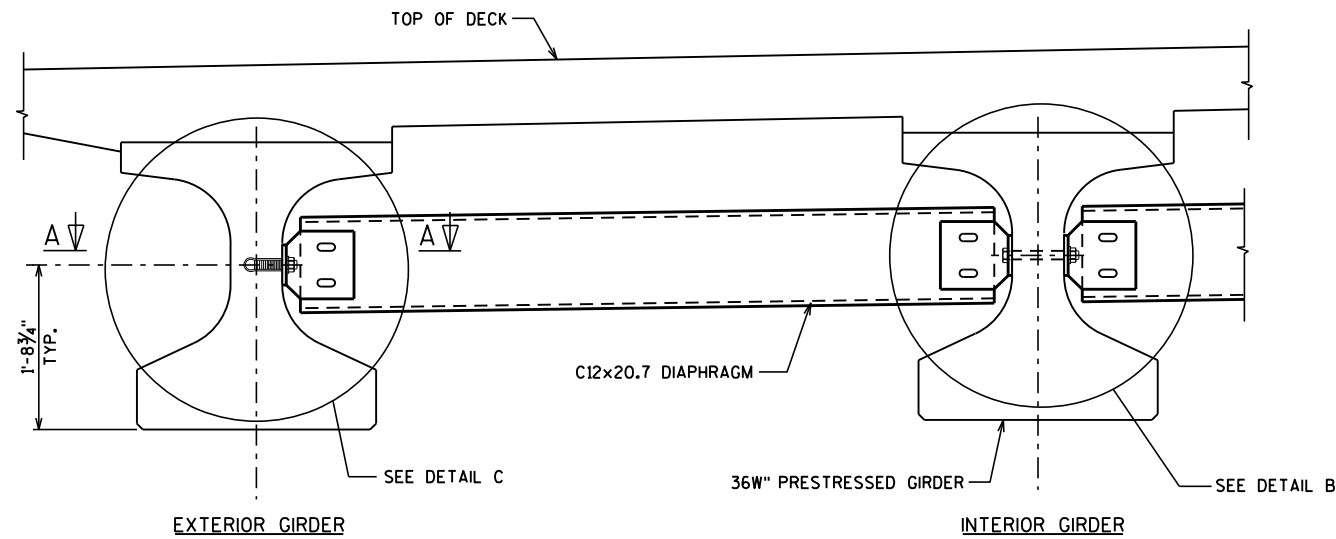
* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)								CONC. STRGTH. f'c (p.s.i.)	"P" 1ST 1/3 OF GIRDER	"M" MID 1/3 OF GIRDER	"E" END 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	TOTAL NO. OF STRANDS	f'ci (P.S.I.) *						
			"A"	"B" MIN.	"B" MAX.	"C"	TOTAL NO. OF STRANDS	f'ci (P.S.I.) *																
1	ALL	86.0'	0.50	0.97	1.34	1.57	1.65	1.57	1.34	0.97	0.50	8,000	7"	7"	7"	0.6	30	6,800	32"	11"	14"	4"	---	---

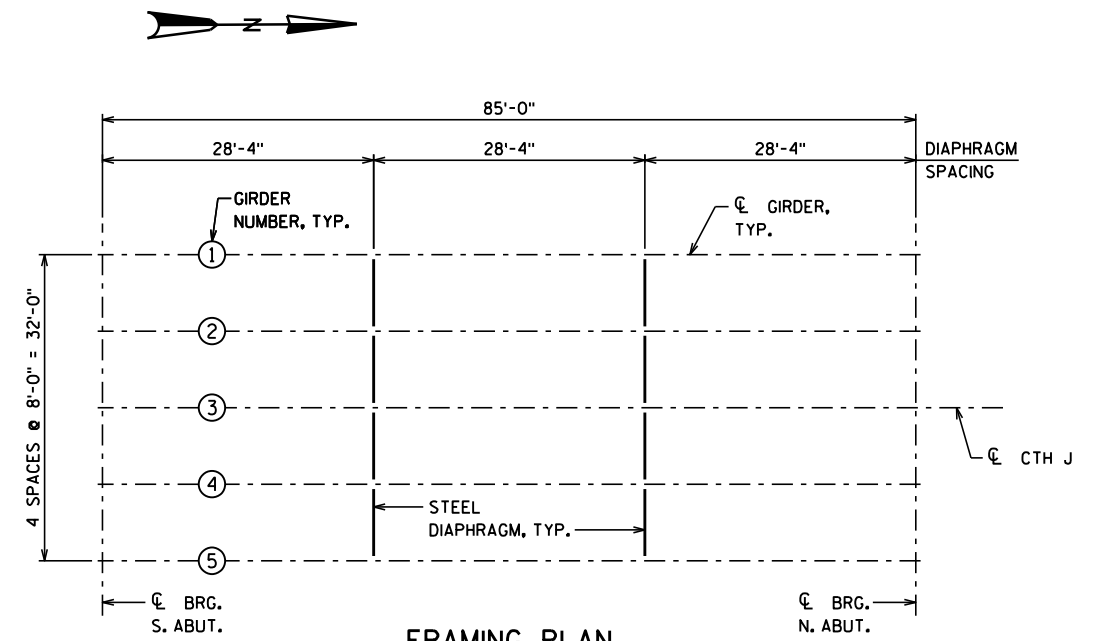


TOP FLANGE

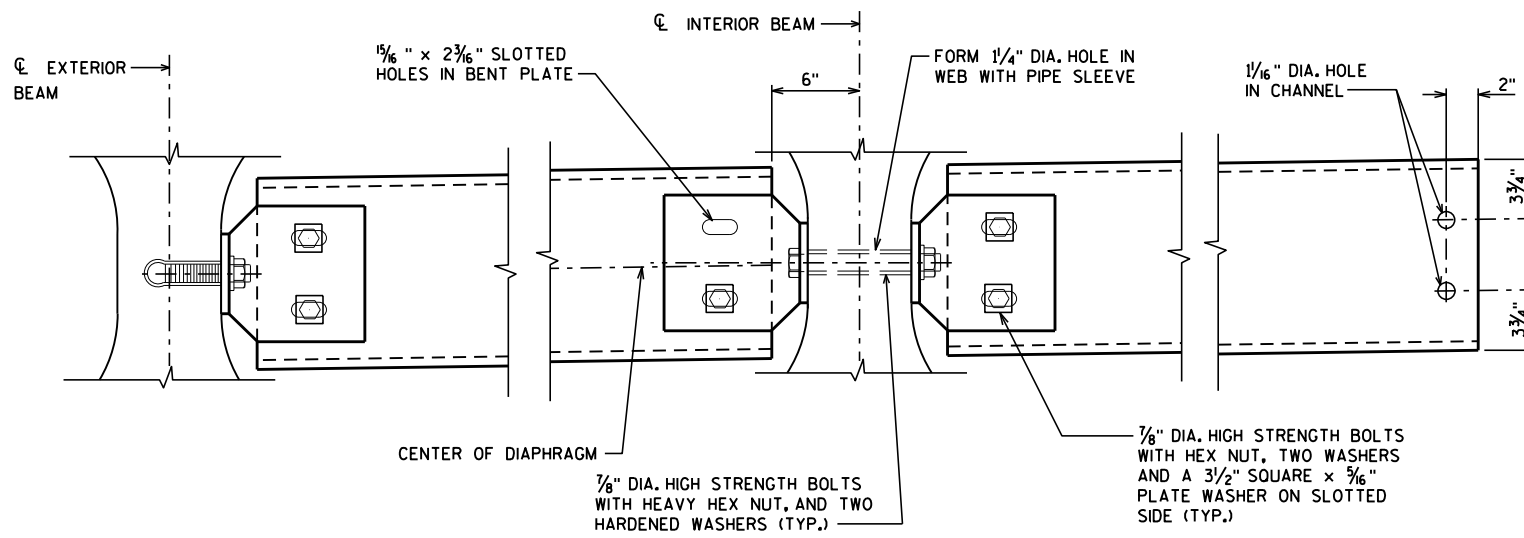
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-5-443			
DRAWN BY		BRE	PLANS CKD. KRO
36W" PRESTRESSED GIRDER DETAILS			SHEET 8 OF 12



PART TRANSVERSE SECTION AT DIAPHRAGM

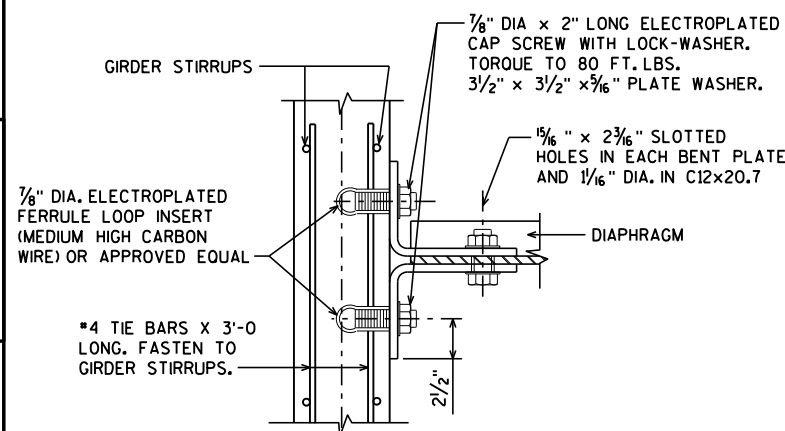


FRAMING PLAN

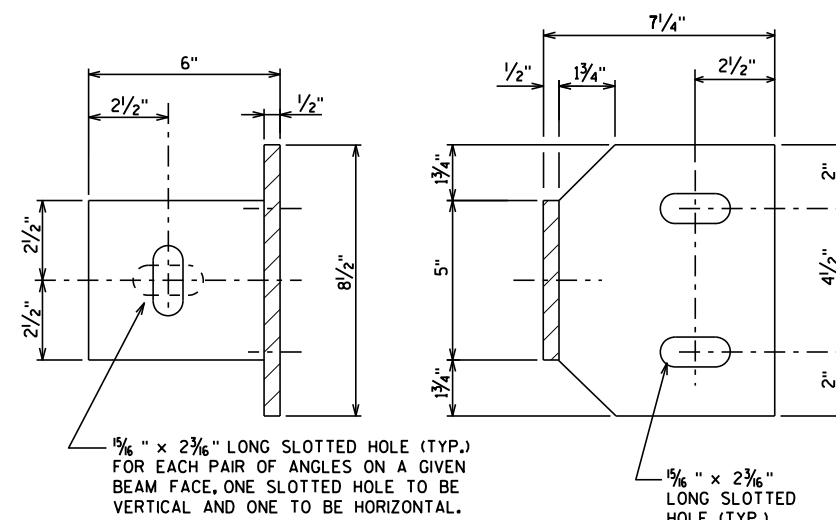


DETAIL C

DETAIL B

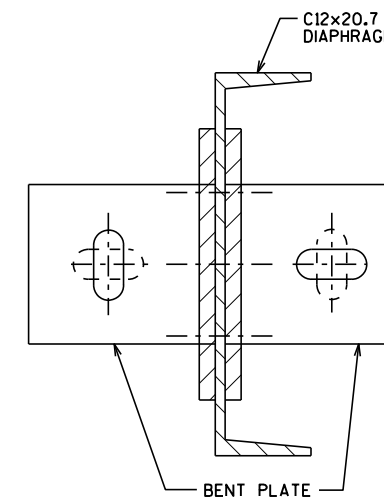


SECTION A-A
(FOR EXTERIOR ATTACHMENT)



BEAM FACE

DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-5-443", EACH.

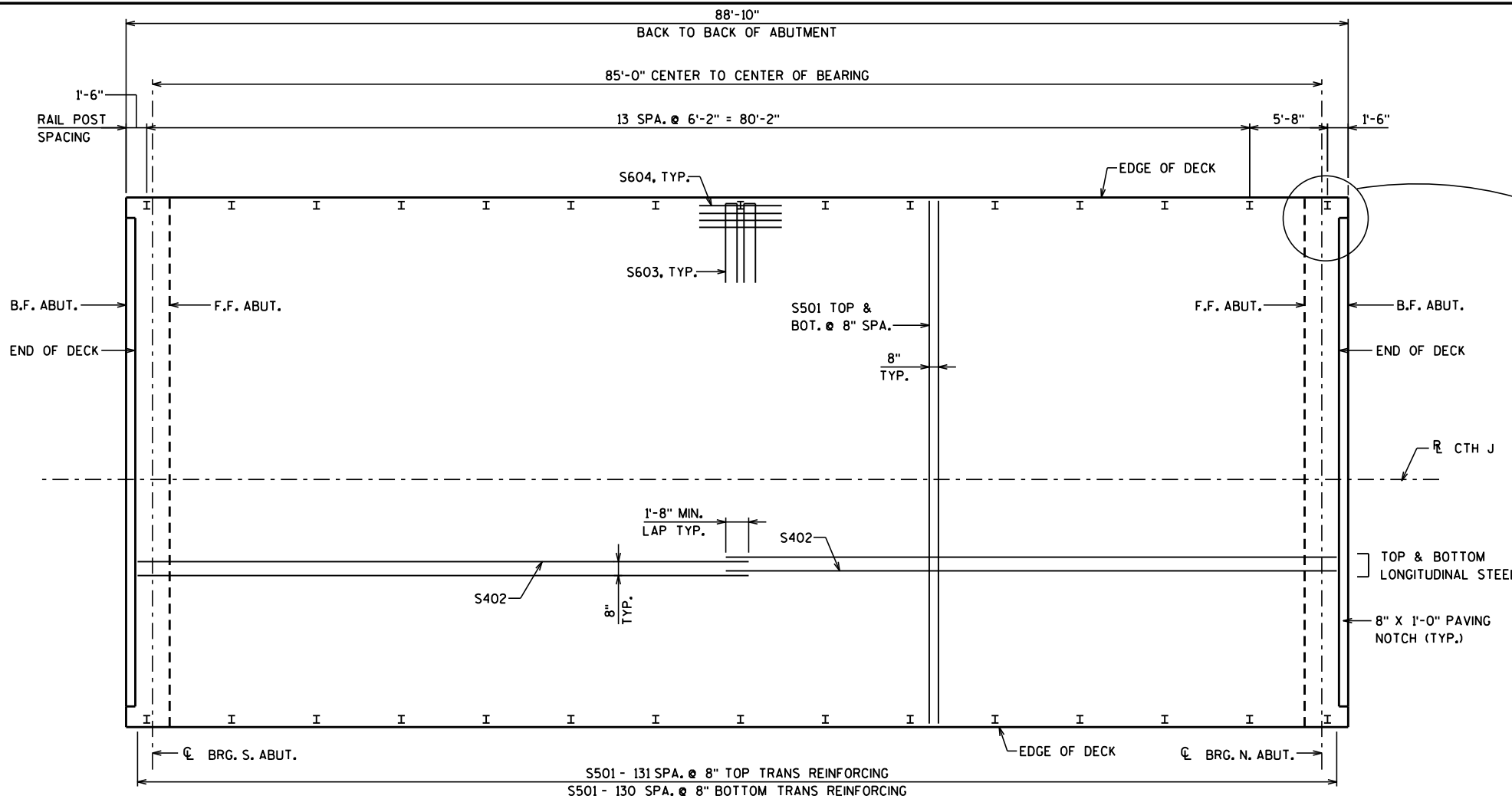
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

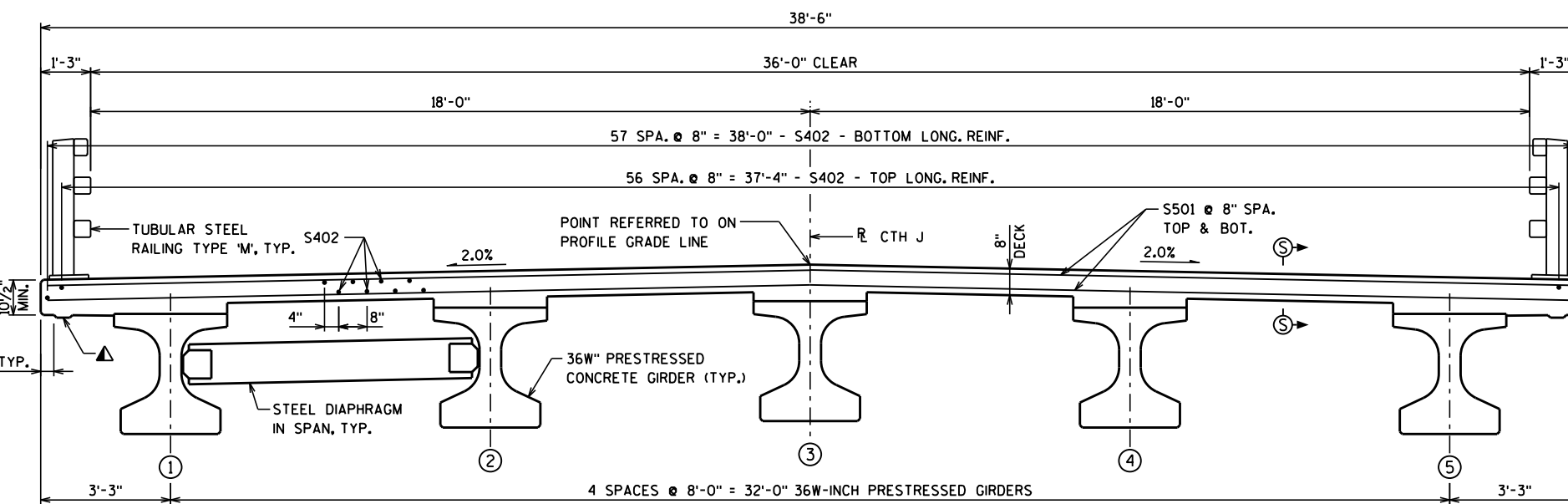
ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

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.

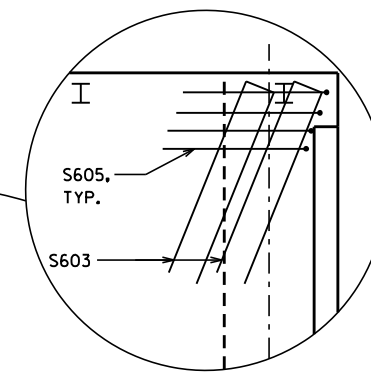
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-5-443			
DRAWN BY		BRE	PLANS CK'D. KRO
STEEL DIAPHRAGMS			SHEET 9 OF 12



SUPERSTRUCTURE PLAN



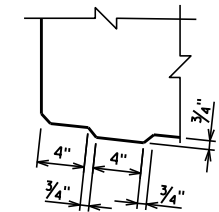
CROSS SECTION THRU ROADWAY



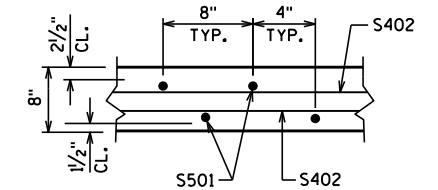
RAIL POST REINFORCEMENT AT DECK CORNERS

NOTES:

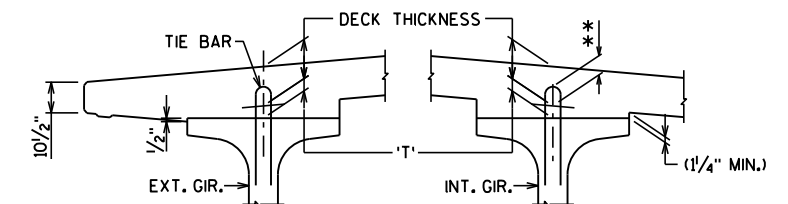
▲ 3/4" DRIP-EDGE. EXTEND DRIP-EDGE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM.



DRIP EDGE DETAIL



SECTION S-S



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 SLAB 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:

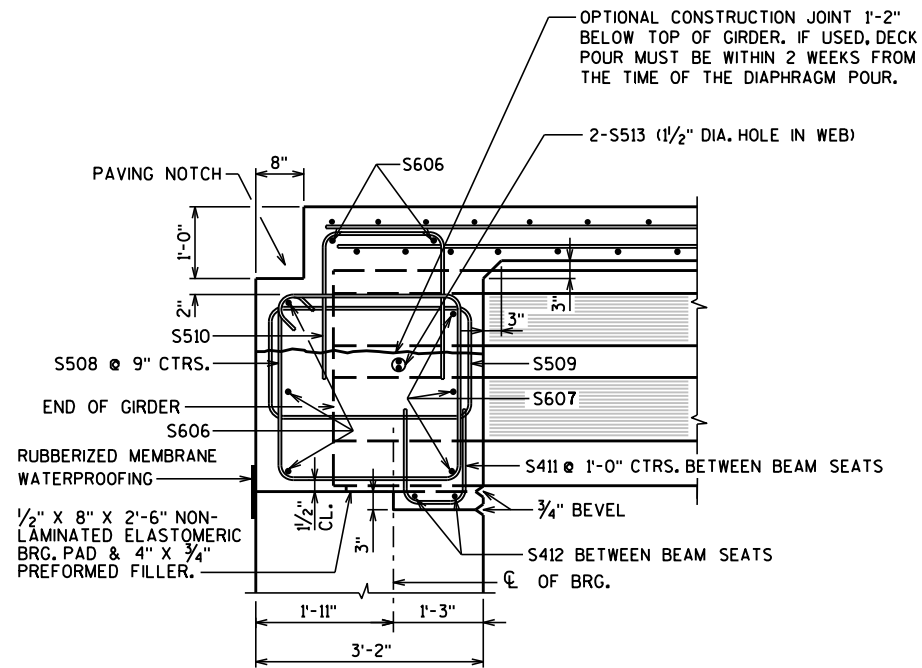
- TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
- + DEAD LOAD DEFLECTION
- DECK THICKNESS
- = HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2 3/8" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

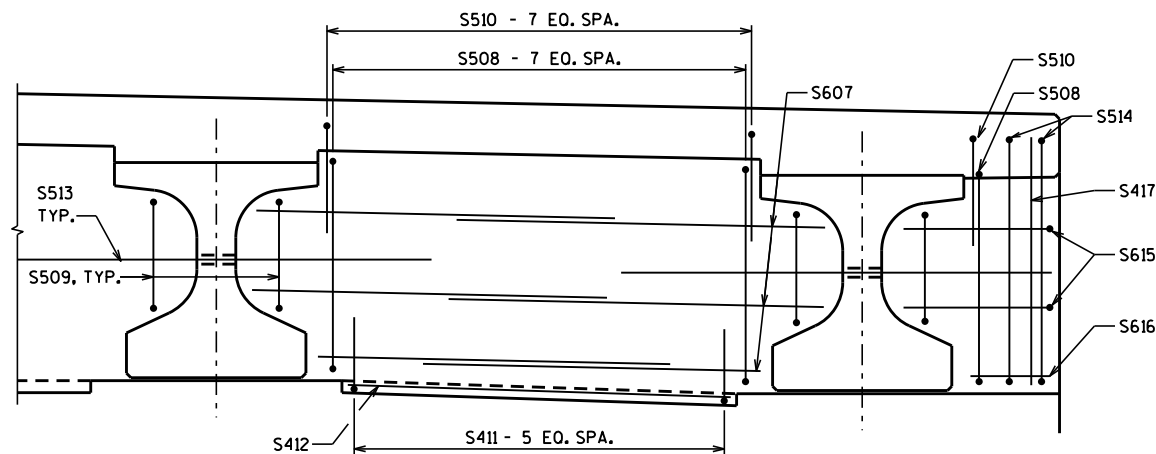
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-5-443			
DRAWN BY		NRT	PLANS CK'D. BRE
SUPERSTRUCTURE		SHEET 10 OF 12	

BILL OF BARS

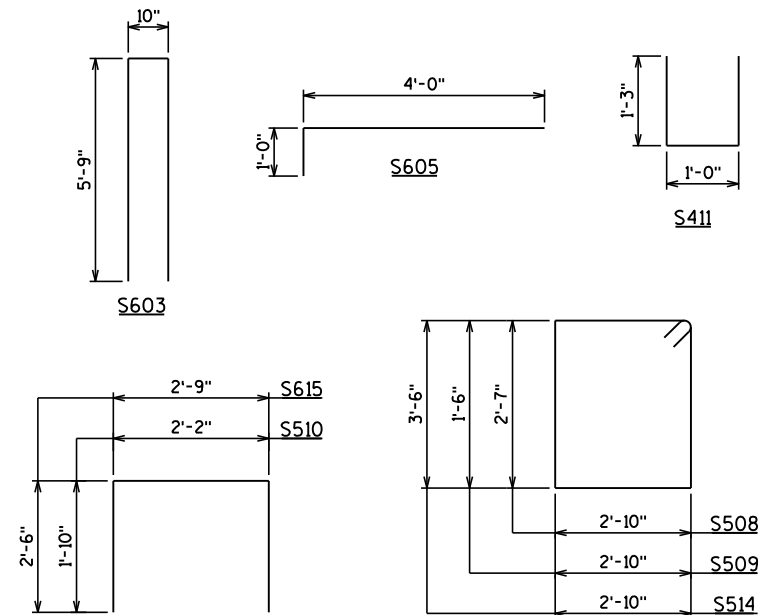
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	X	263	38'-2"		TRANS. TOP & BOT.
S402	X	230	44'-5"		LONG. TOP & BOT.
S603	X	60	12'-0"	X	AT RAIL POST
S604	X	104	6'-0"		AT INTERIOR RAIL POST
S605	X	16	4'-10"	X	AT END RAIL POST
S606	X	10	38'-2"		DIAPH. HORIZONTAL B.F., & TOP
S607	X	48	4'-8"		DIAPH. HORIZONTAL F.F.
S508	X	68	11'-6"	X	DIAPH. VERTICAL
S509	X	20	9'-4"	X	DIAPH. VERTICAL
S510	X	68	5'-7"	X	DIAPH. VERTICAL, TOP
S411	X	40	3'-4"	X	DIAPH. VERTICAL, BTW. BEAM SEAT
S412	X	16	4'-0"		DIAPH. HORIZONTAL, BTW. BEAM SEAT
S513	X	20	6'-0"		DIAPH. HORIZONTAL, THRU GIRDERS
S514	X	8	13'-4"	X	DIAPH. ENDS, VERT.
S615	X	8	7'-6"	X	DIAPH. ENDS, HORIZ.
S616	X	4	1'-8"		DIAPH. ENDS, HORIZ.
S417	X	8	3'-6"		DIAPH. ENDS, VERT.



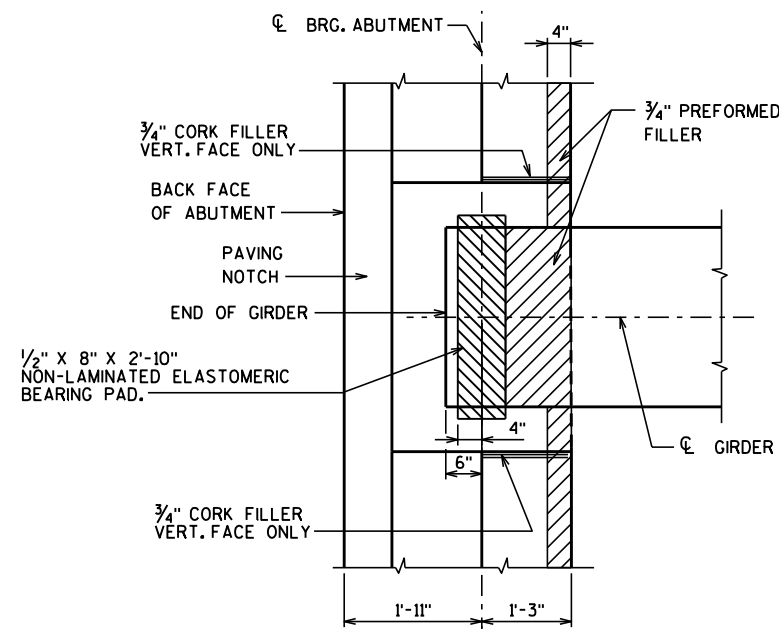
PART LONGIT. SECTION



DIAPHRAGM DETAILS AT ABUTMENT



BAR BEND DIAGRAMS



BEARING PAD DETAIL

TOP OF DECK ELEVATIONS

LOCATION	S.ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	N. ABUT.
W. EDGE	592.39	592.39	592.39	592.37	592.34	592.31	592.26	592.21	592.14	592.07	591.99
GIRDER 1	592.46	592.46	592.45	592.43	592.41	592.37	592.33	592.27	592.21	592.13	592.05
GIRDER 2	592.62	592.62	592.61	592.59	592.57	592.53	592.49	592.43	592.37	592.29	592.21
GIRDER 3	592.78	592.78	592.77	592.75	592.73	592.69	592.65	592.59	592.53	592.45	592.37
GIRDER 4	592.62	592.62	592.61	592.59	592.57	592.53	592.49	592.43	592.37	592.29	592.21
GIRDER 5	592.46	592.46	592.45	592.43	592.41	592.37	592.33	592.27	592.21	592.13	592.05
E. EDGE	592.39	592.39	592.39	592.37	592.34	592.31	592.26	592.21	592.14	592.07	591.99

NO.	DATE	REVISION	BY
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DRAWN BY		NRT	PLANS CK'D. BRE
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LEGEND

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

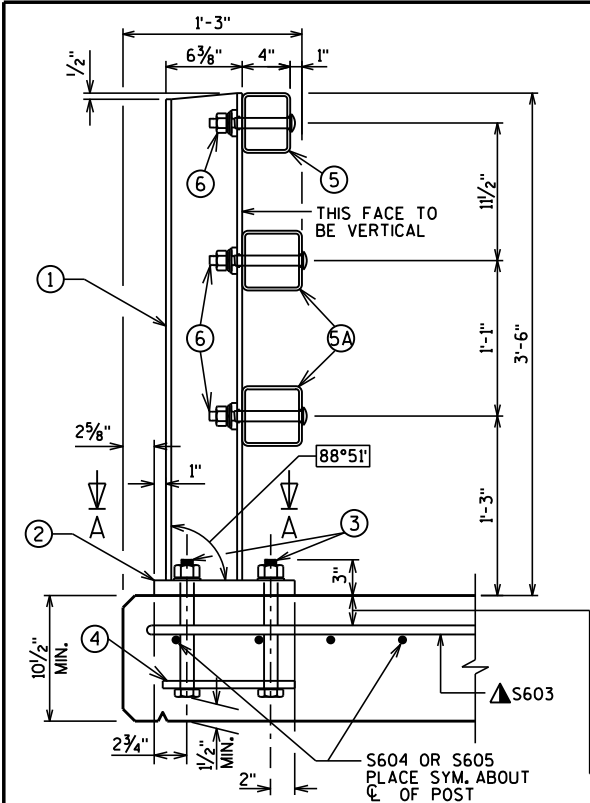
GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-5-443" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8" TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
10. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).

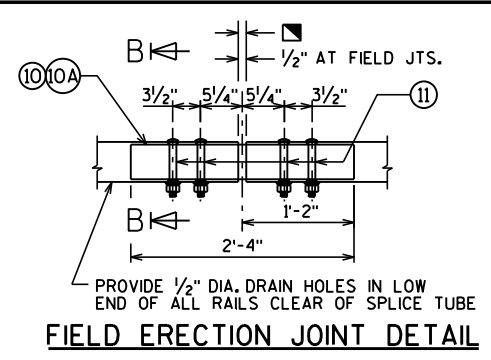
▲ TIE TO TOP MAT OF STEEL.

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

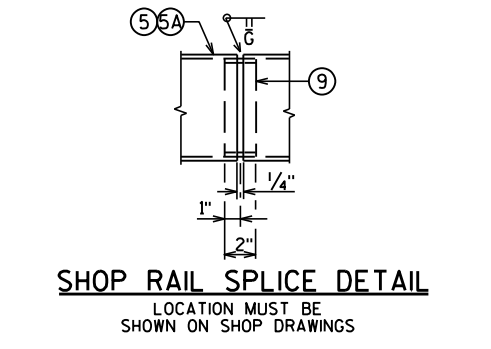
■ RDWY. OPENING OR 2 1/2" MIN. FOR STRIP SEAL EXP. JOINT & 1/2" OPENING FOR A1 ABUTMENT.



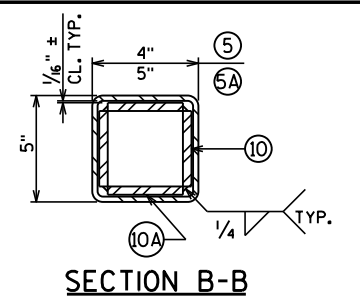
SECTION THRU RAILING ON DECK



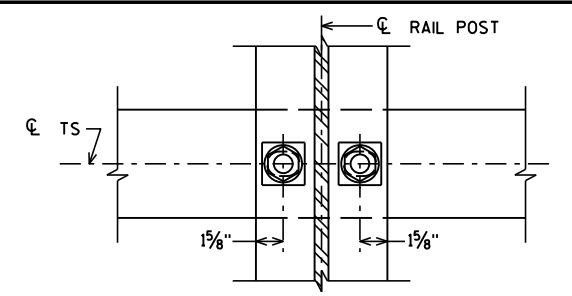
FIELD ERECTION JOINT DETAIL



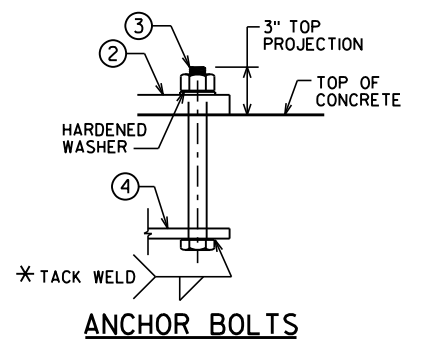
SHOP RAIL SPLICE DETAIL



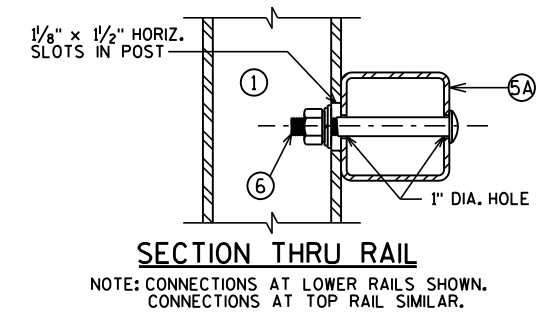
SECTION B-B



SECTION THRU POST WEB

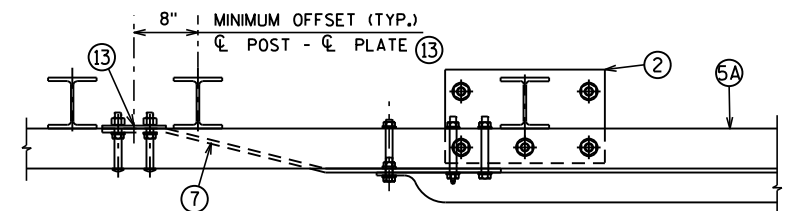


ANCHOR BOLTS

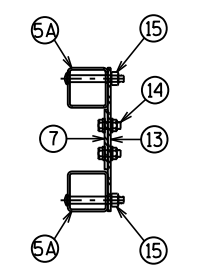


SECTION THRU RAIL

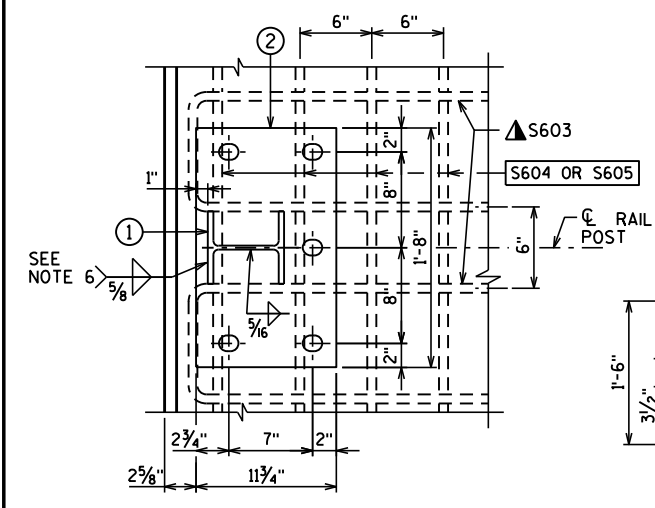
TYPICAL RAIL TO POST CONNECTIONS



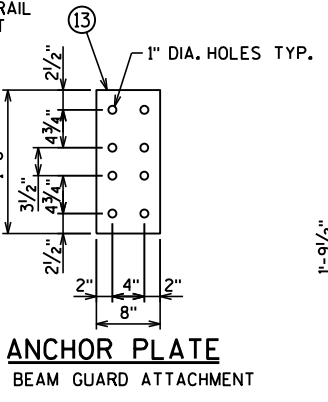
TOP VIEW AT END POST



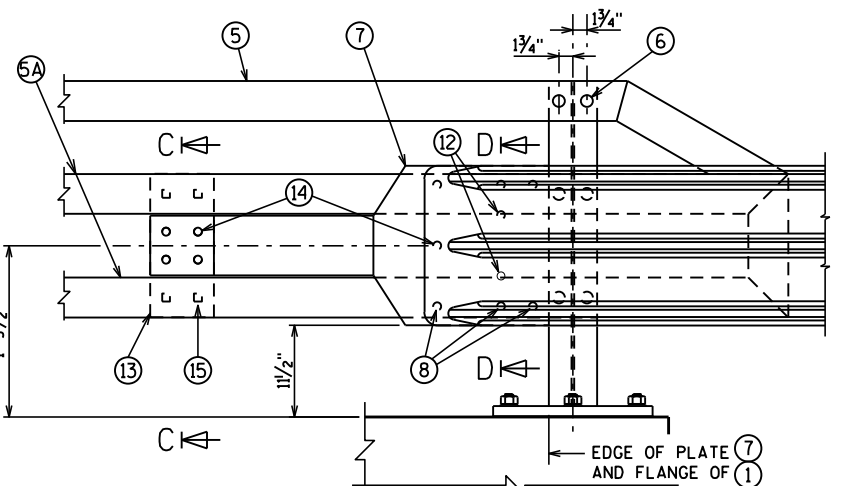
SECTION C-C



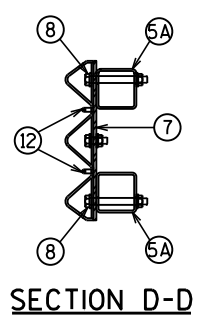
SECTION A-A



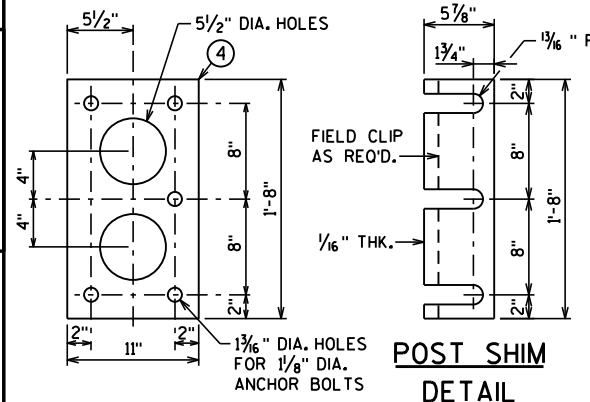
ANCHOR PLATE AT BEAM GUARD ATTACHMENT



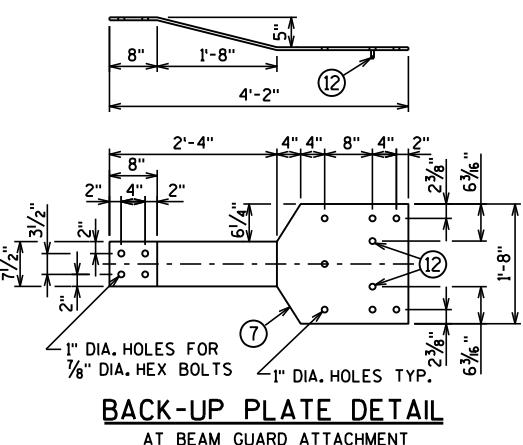
DETAIL AT END POST



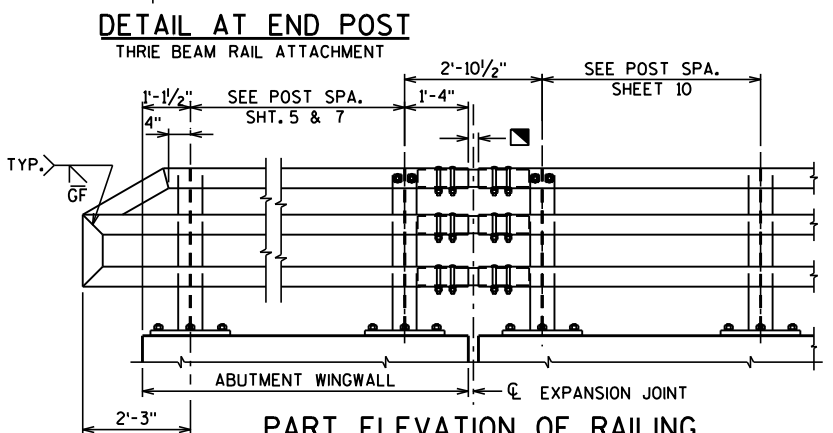
SECTION D-D



ANCHOR PLATE AT RAIL TO DECK CONNECTION



BACK-UP PLATE DETAIL AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-5-443			
		DRAWN BY	PLANS CK'D. KRO
		BRE	
TUBULAR STEEL RAILING TYPE 'M'			SHEET 12 OF 12

8

8

EARTHWORK - CTH J

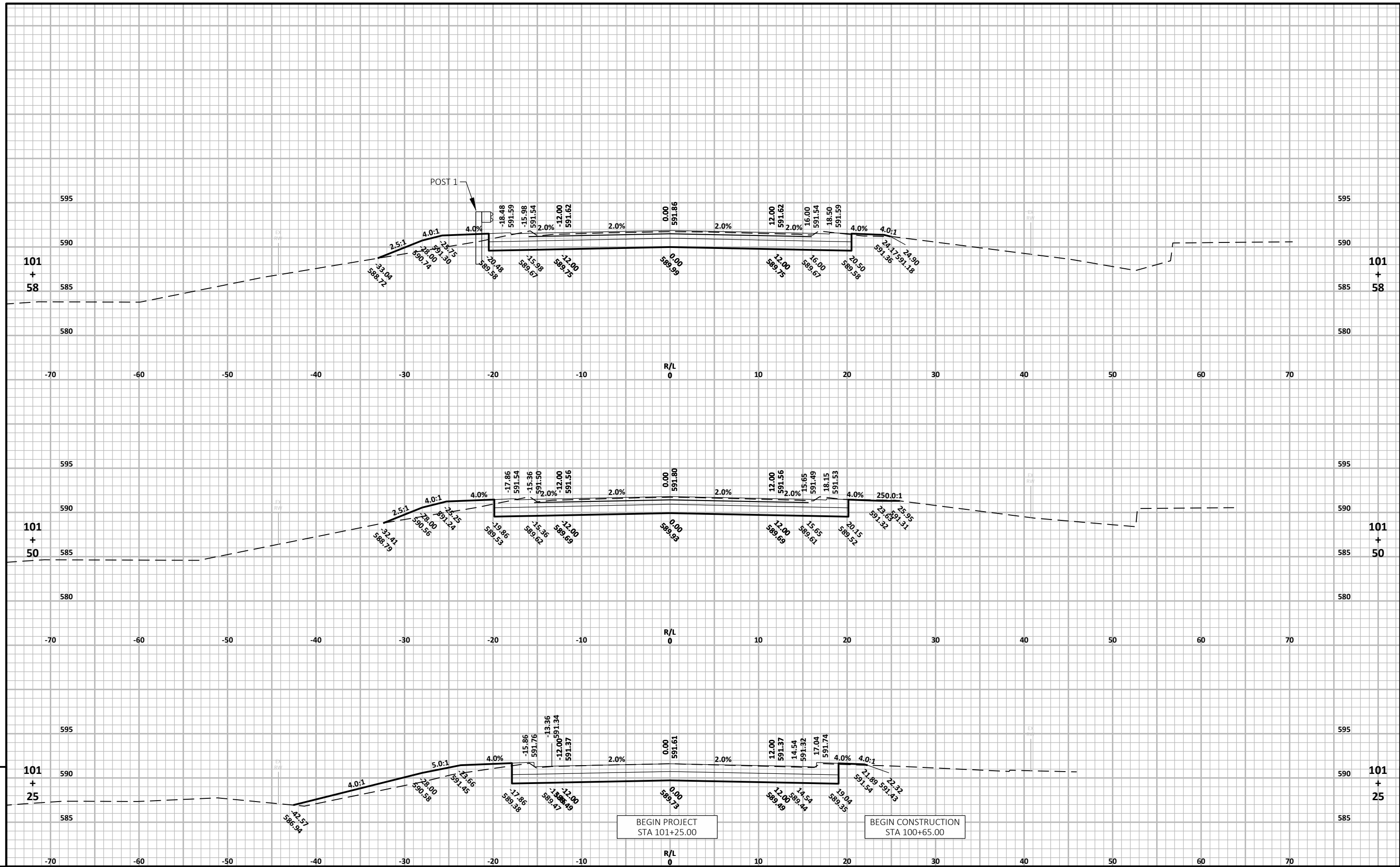
STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			
	Cut	Fill	Marsh Exc	Cut	Fill	Marsh Exc	Cut	Expanded Fill	Expanded Marsh Backfill	Mass Ordinate
				Note 1	Note 3		1.00 Note 1	1.25	1.20 Note 4	Note 8
100+65	0.00	0.00	0.00	0	0	0	0	0	0	0
101+25	69.55	2.29	0.00	77	3	0	77	3	0	74
101+50	72.17	10.14	0.00	66	6	0	143	10	0	58
101+57.83	72.16	12.01	0.00	21	3	0	164	14	0	17
101+82.78	66.92	17.00	0.00	64	13	0	228	31	0	48
102+00	63.17	21.71	0.00	41	12	0	270	47	0	26
102+07.78	61.11	21.97	0.00	18	6	0	287	54	0	10
102+32.78	48.21	50.43	0.00	51	34	0	338	96	0	9
102+50	36.40	90.24	0.00	27	45	0	365	152	0	-29
102+75	33.14	152.94	0.00	32	113	0	397	293	0	-109
102+85.27	35.39	176.02	0.00	13	63	0	410	371	0	-65
STRUCTURE B-5-443										
104+00	66.43	123.79	81.90	0	0	0	410	371	0	-65
104+25	75.21	98.20	43.40	66	103	58	476	500	70	-128
104+50.62	80.98	64.09	38.70	74	77	39	550	596	116	-150
104+75.6	74.36	105.85	37.90	72	79	35	622	694	159	-177
105+00.56	22.84	136.36	38.00	45	112	35	667	834	201	-272
105+25.63	23.90	152.92	24.50	22	134	29	688	1,002	236	-418
105+50.61	19.23	140.24	18.70	20	136	20	708	1,172	260	-567
105+75	18.52	108.89	0.00	17	113	8	725	1,312	270	-691
106+00	14.19	79.71	0.00	15	87	0	741	1,421	270	-785
106+19	14.63	54.73	0.00	10	47	0	751	1,481	270	-834
106+50	8.28	20.01	0.00	13	43	0	764	1,534	270	-874
106+69.03	8.20	8.22	0.00	6	10	0	770	1,547	270	-881
106+80	0.00	0.00	0.00	2	2	0	771	1,547	270	-881

Notes:

1 - Cut	Cut includes salvaged/Unusable Pavement material
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded Marsh Backfill	Will be backfilled with Granular Backfill (or Cut, or Borrow) Marsh Excavation assumed to be wasted.
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [Cut - Salvaged Pavt - Expanded Fill] Does not include Marsh Excavation.

9

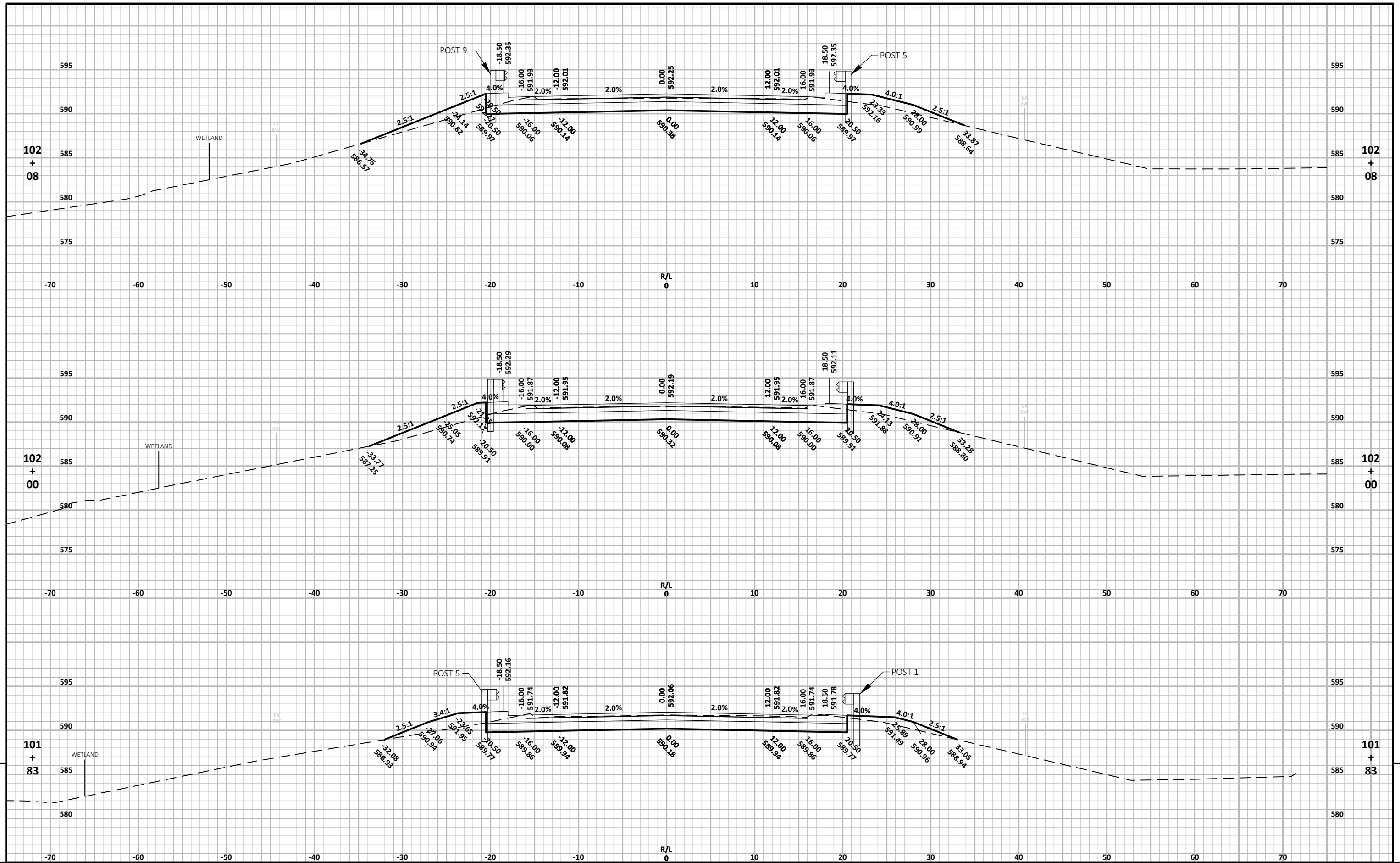
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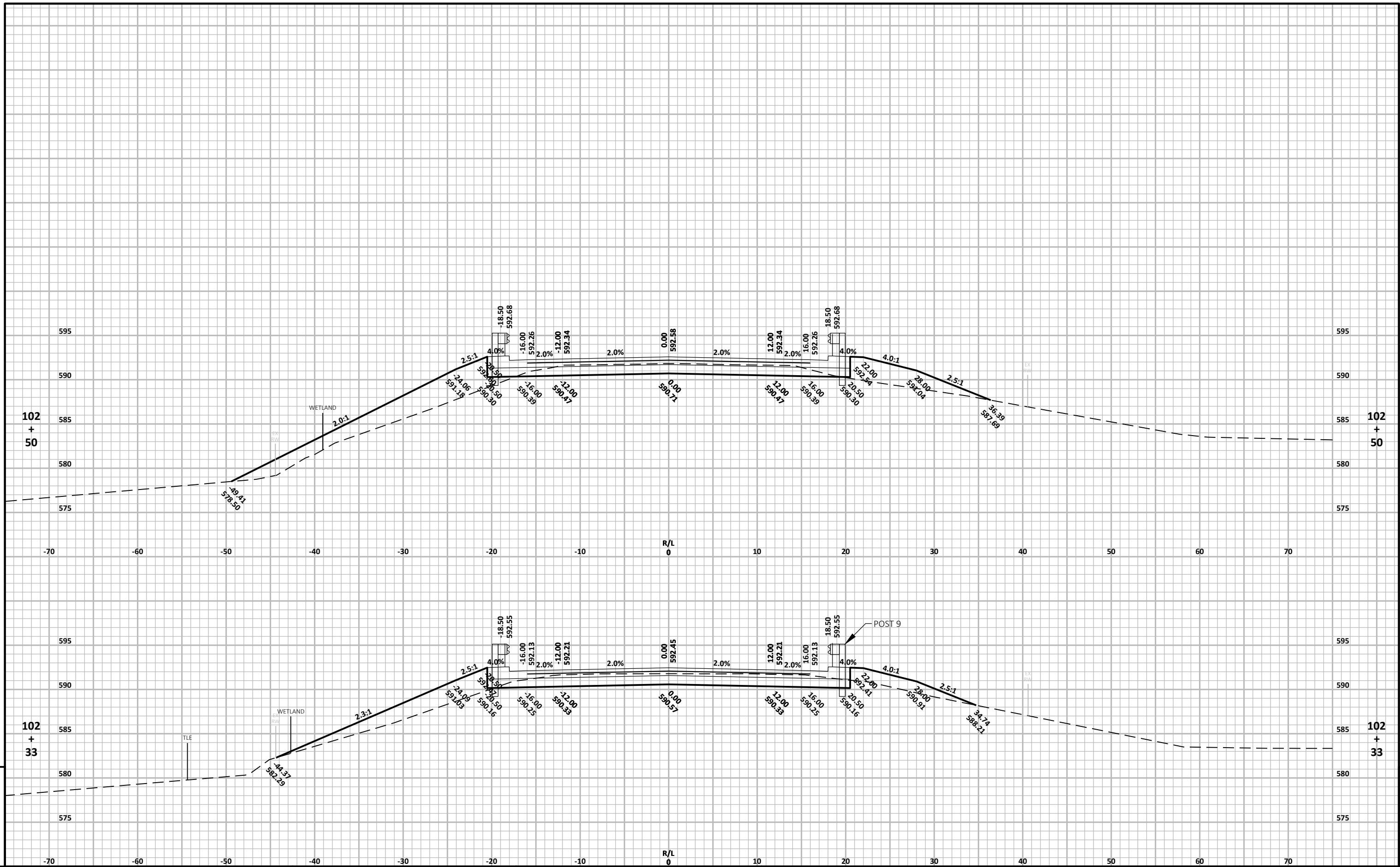
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PROJECT NO: 9286-05-71	HWY: CTH J	COUNTY: BROWN	CROSS SECTIONS: CTH J	SHEET	E
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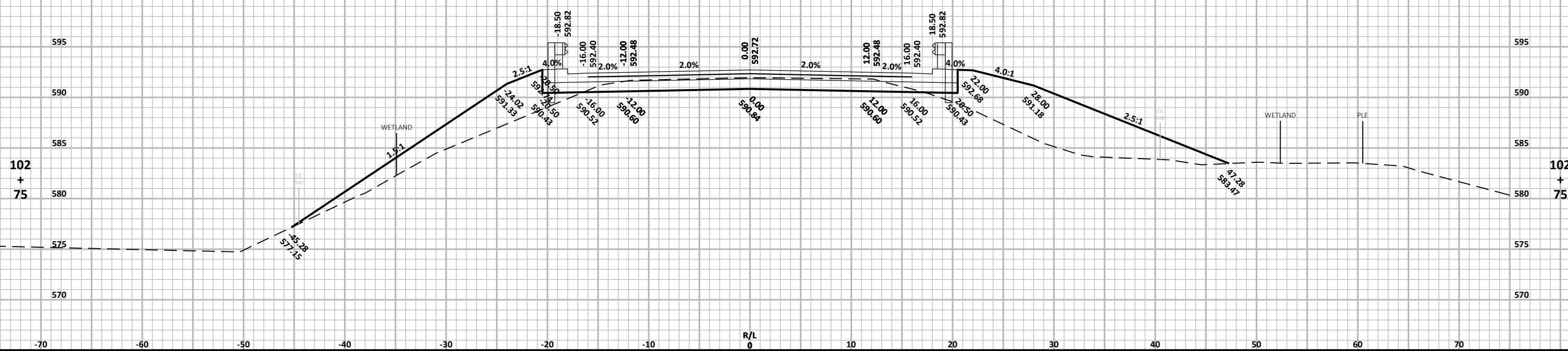
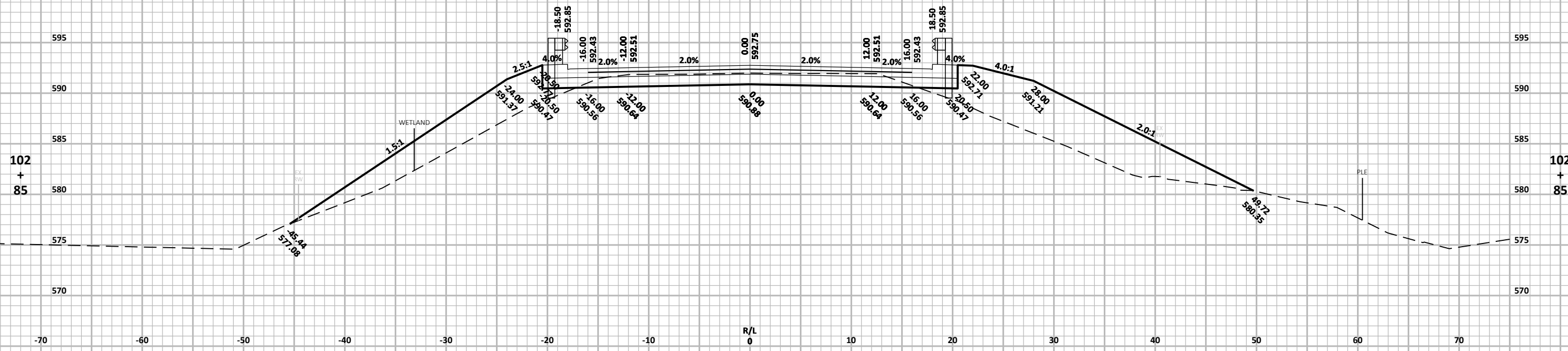


PROJECT NO: 9286-05-71 HWY: CTH J COUNTY: BROWN CROSS SECTIONS: CTH J SHEET 9



PROJECT NO: 9286-05-71 HWY: CTH J COUNTY: BROWN CROSS SECTIONS: CTH J SHEET E

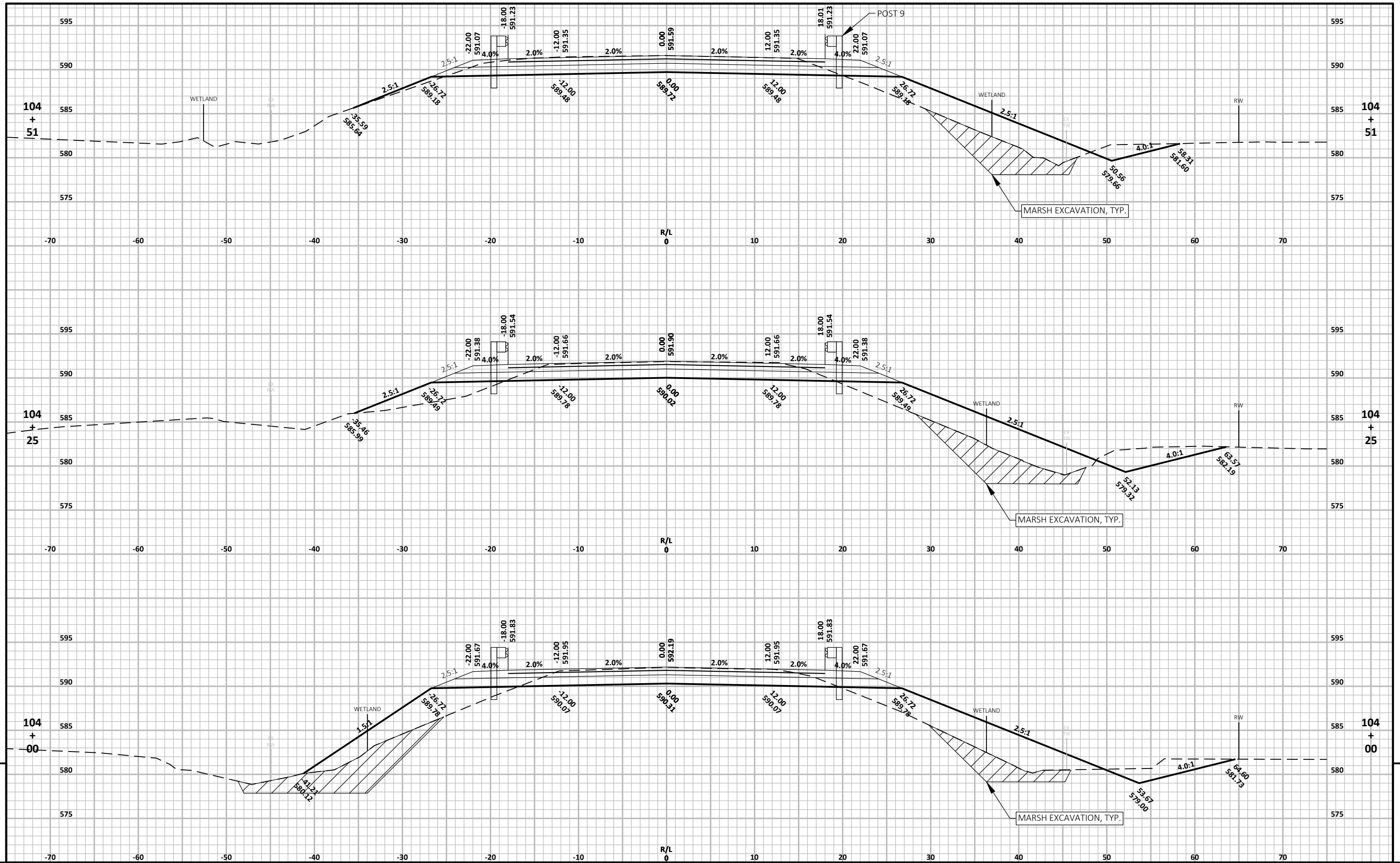
STRUCTURE B-5-443
STA 102+97.93 TO STA 103+85.43



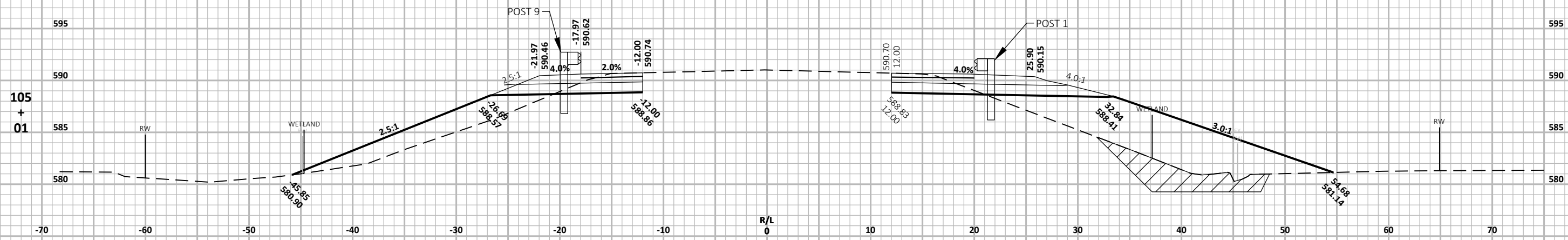
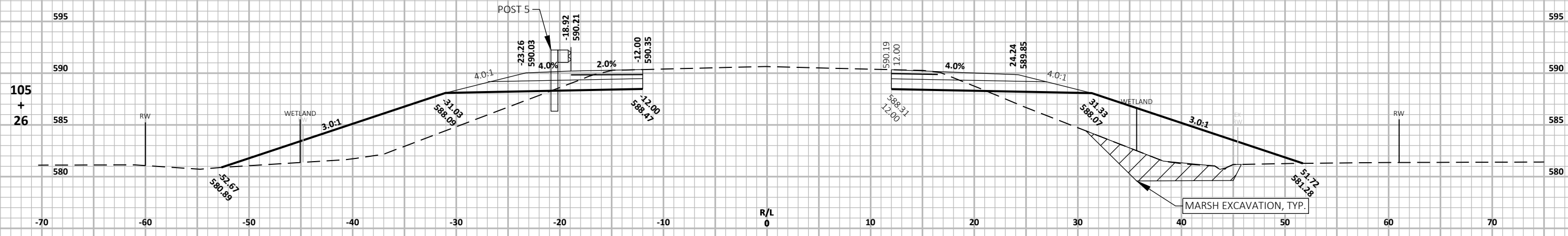
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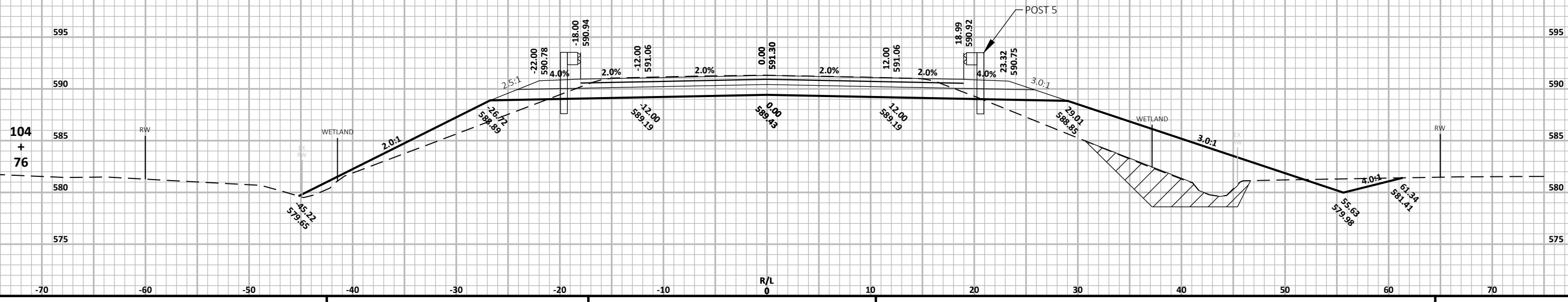
PROJECT NO: 9286-05-71 HWY: CTH J COUNTY: BROWN CROSS SECTIONS: CTH J SHEET E

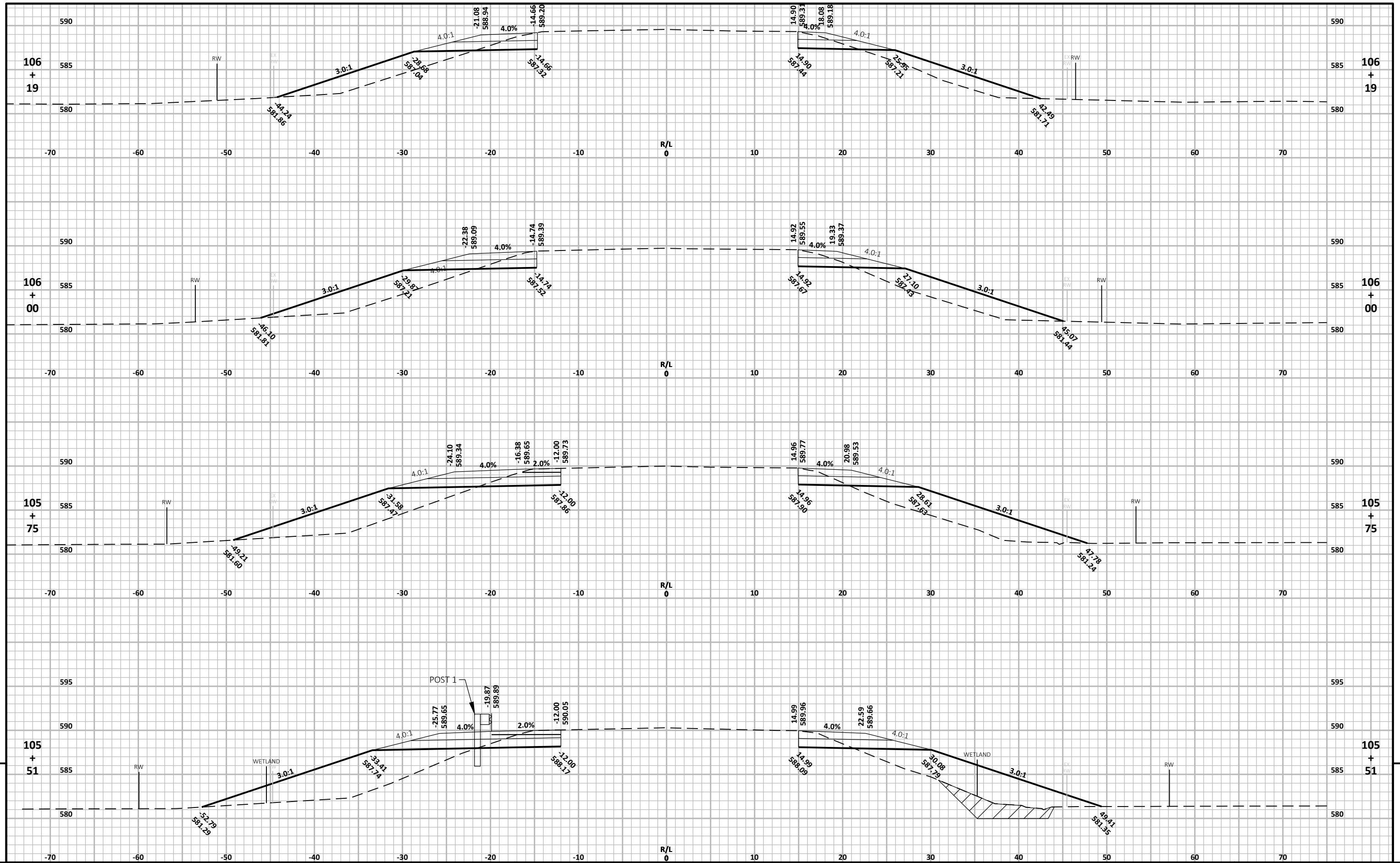


PROJECT NO: 9286-05-71 HWY: CTH J COUNTY: BROWN CROSS SECTIONS: CTH J SHEET E



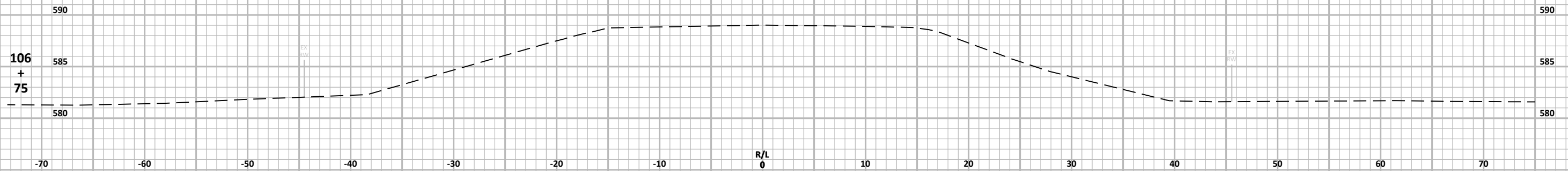
END PROJECT
STA 105+00.00





PROJECT NO: 9286-05-71 HWY: CTH J COUNTY: BROWN CROSS SECTIONS: CTH J SHEET 9

END CONSTRUCTION
STA 106+80.00



PROJECT NO: 9286-05-71

HWY: CTH J

COUNTY: BROWN

CROSS SECTIONS: CTH J

SHEET

E

Notes



Wisconsin Department of Transportation

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