GRE JULY 2020

PROJECT ID: 4665-01-71

WITH: 6500-03-71

COUNTY: OUTAGAMIE

ORDER OF SHEETS

TOTAL SHEETS = 66

07

N

DESIGN DESIGNATION 4665-01-00

A.A.D.T.	2020	=	1,180
A.A.D.T.	2040	=	3,035
D.H.V.		=	610 (2040)
D.D.		=	60/40
T.		=	8.4
DESIGN SPEED		=	45 MPH
ESALS		=	255,500

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

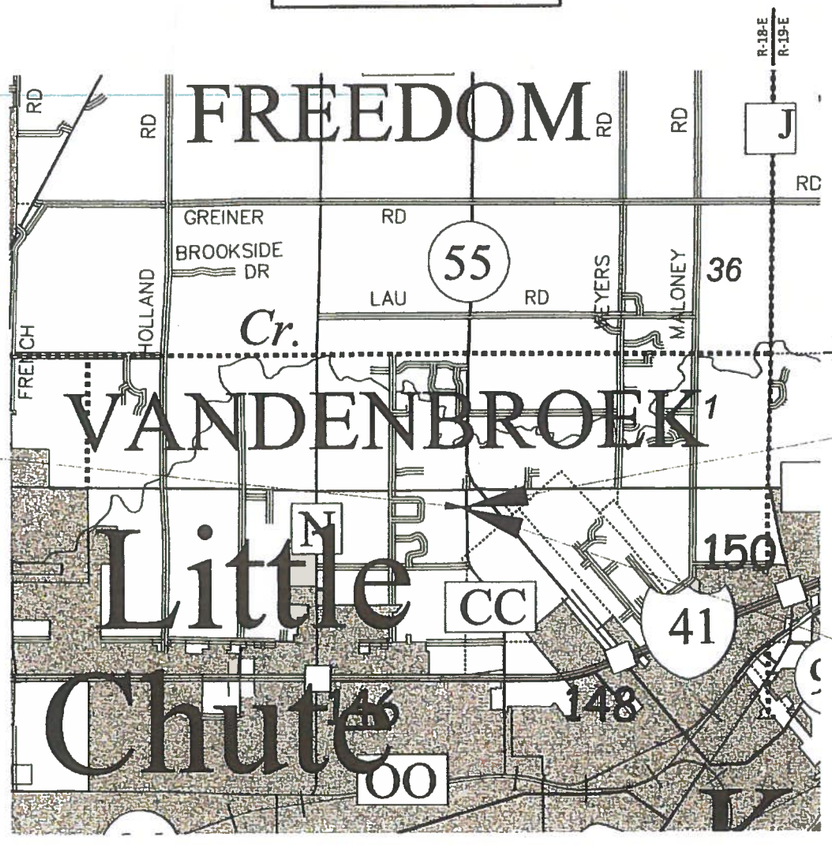
T VANDENBROEK, CTH CC

BRANCH APPLE CREEK BRIDGE

CTH CC

OUTAGAMIE COUNTY

STATE PROJECT NUMBER
4665-01-71



END PROJECT
STA 104+15.00

STRUCTURE B-44-474
STA 103+27.13 - STA 103+64.29

BEGIN PROJECT
STA 102+75.00
Y = 581,208.249
X = 857,239.186

LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.027 MI

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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4665-01-71		

ACCEPTED FOR
OUTAGAMIE COUNTY
For Dean Steingraber
DATE: 2/24/20 (Signature and Title of Official) Highway Engineer

ENGINEERING, INC
Consultant Services

WISCONSIN
MURRAY R. GLEN
36246-006
GREEN BAY, WI
PROFESSIONAL ENGINEER

DATE: 2/20/20 (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	JT ENGINEERING, INC.
Designer	JT ENGINEERING, INC.
Project Manager	BRIAN EDWARDS, PE
Regional Examiner	
Regional Supervisor	JAMES THOMPSON, PE

APPROVED FOR THE DEPARTMENT
DATE: 2/21/20 (Signature)

E

FILE NAME : X:\PROJECTS\OUTAGAMIE\190063 CTH CC BRIDGE\D:SIGN\C3D\SHEETSPLAN\46650100_010101_TI.DWG

PLOT DATE : 2/20/2020 7:57 AM PLOT BY : ERIC ADAMSKI PLOT NAME :

DIGGERS HOTLINE

Dial 811 or (800) 242-8511

www.DiggersHotline.com

UTILITY CONTACTS

AT&T WISCONSIN
COMMUNICATION LINE
MR. JOSEPH KASSAB
205 S. JEFFERSON STREET
GREEN BAY, WI 54301
TEL: (920) 433-4200
EMAIL: JK572K@ATT.COM

CHARTER COMMUNICATIONS
COMMUNICATION LINE
MR. VINCE ALBIN
3520 E. DESTINATION DRIVE
APPLETON, WI 54915
TEL: (920) 831-9249
EMAIL: VINCE.ALBIN@CHARTER.COM

WE ENERGIES
ELECTRICITY
MR. HEATH HEMAUER
800 S LYNDALE AVE
APPLETON, WI 54914
TEL: (920) 931-3210
EMAIL: HEATH.HEMAUER@WE-ENERGIES.COM

AGENCY/PROJECT CONTACT

WISCONSIN DNR LIAISON
MR. MATT SCHAEVE
NORTHEAST REGION
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
TEL: (920) 366-1544
EMAIL: MATTHEW.SCHAEVE@WISCONSIN.GOV

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 1.32 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.78 ACRES

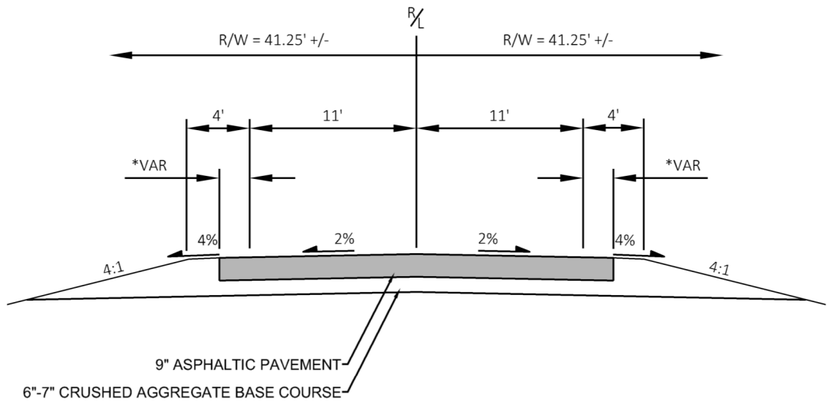
SEQUENCE OF PLANS AND DETAILS IN SECTION 2

GENERAL NOTES
TYPICAL SECTIONS
CONSTRUCTION DETAILS

GENERAL NOTES

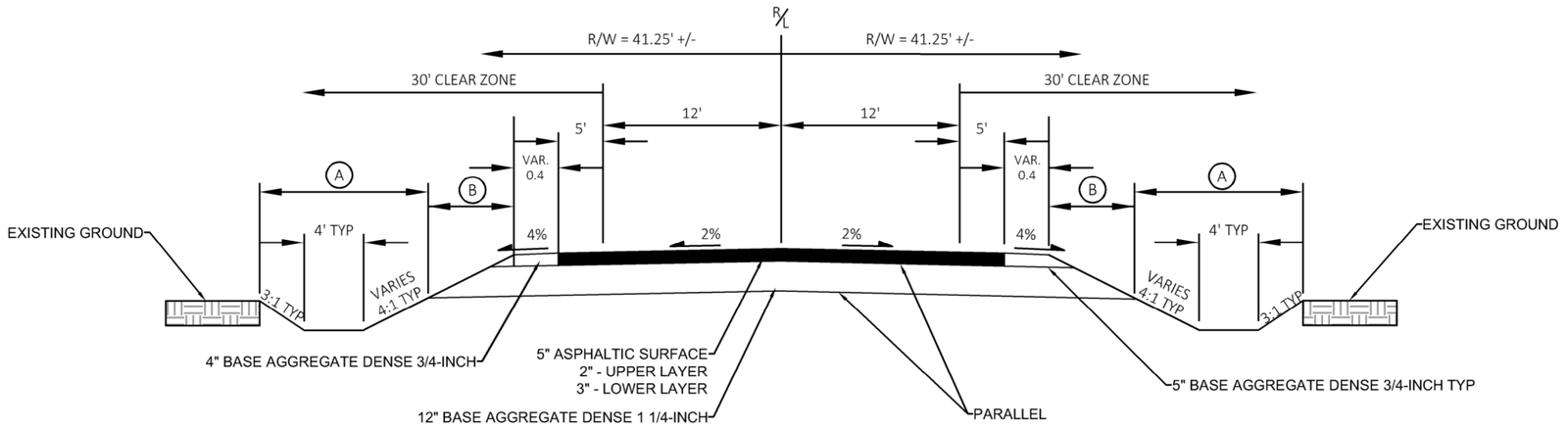
1. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. ANY LOCAL OR MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.
3. NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
4. THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.
5. DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE TOPSOILED, SEEDED, FERTILIZED, AND EROSION MAT.
6. A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING PAVEMENT AT REMOVAL LIMITS.
7. SILT FENCE IS TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, AND IN PLACE PRIOR TO BRIDGE REMOVAL.

2



TYPICAL EXISTING SECTION
CTH CC

STA 102+75 - STA 103+49
STA 103+61 - STA 104+15



(A) TOPSOIL, SEED AND FERTILIZER, EROSION MAT CLASS I, TYPE A

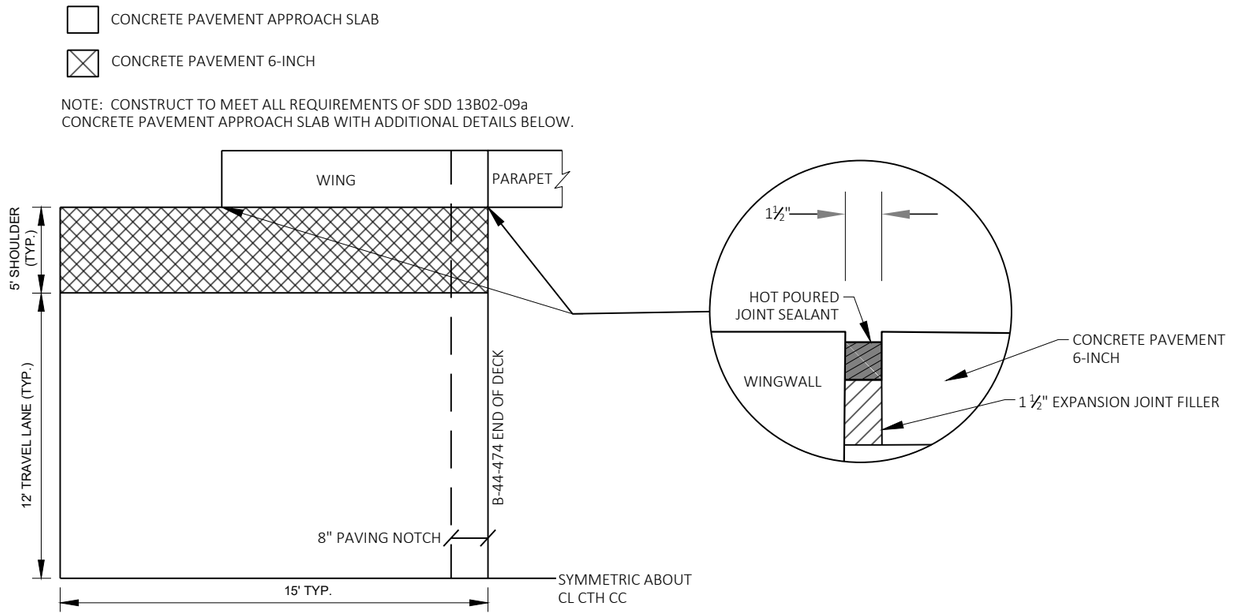
(B) SEED AND FERTILIZER, EROSION MAT CLASS I, TYPE A

FINISHED TYPICAL SECTION
CTH CC

STA 102+75 - STA 103+12.13
STA 103+79.29 - STA 104+15

PROJECT NO: 4665-01-71	HWY: CTH CC	COUNTY: OUTAGAMIE	TYPICAL SECTIONS	SHEET 3	E

2



APPROACH PAVEMENT

NORTH ABUTMENT WING 4 SHOWN
(ALL WINGS SIMILAR)

2

LEGEND

- SILT FENCE
- TURBIDITY BARRIER
- EROSION MAT CLASS I, TYPE A
- DITCH CHECK
- SURFACE WATER FLOW

N

BRANCH OF APPLE CREEK

SI

TLE

SI

101+00

102+00

103+00

104+00

105+00

CTH CC

106+00

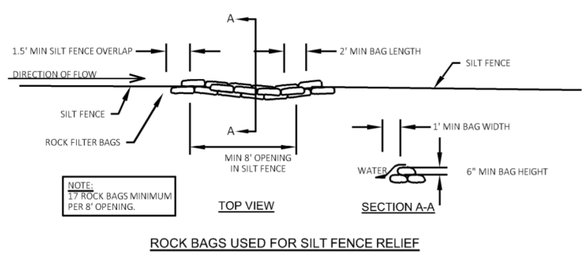
SI

SI

R/W

TLE

EXISTING R/W



ROCK BAGS USED FOR SILT FENCE RELIEF

PROJECT NO: 4665-01-71	HWY: CTH CC	COUNTY: OUTAGAMIE	EROSION CONTROL PLAN	SHEET 5	E

FILE NAME : X:\PROJECTS\OUTAGAMIE\190068 CTH CC BRIDGE\DESIGN\C3D\SHEETSPLAN\46650100_22001-EC.DWG
LAYOUT NAME - TYP

PLOT DATE : 3/5/2020 11:52 AM PLOT BY : COURTNEY CHLOPEK PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

4665-01-71

Line	Item	Item Description	Unit	Total	Qty
0002	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 103+50	LS	1.000	1.000
0006	205.0100	Excavation Common	CY	560.000	560.000
0008	206.1000	Excavation for Structures Bridges (structure) 01. B-44-474	LS	1.000	1.000
0012	208.0100	Borrow	CY	128.000	128.000
0014	210.1500	Backfill Structure Type A	TON	240.000	240.000
0016	213.0100	Finishing Roadway (project) 01. 4665-01-71	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	73.000	73.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	994.000	994.000
0024	415.0060	Concrete Pavement 6-Inch	SY	34.000	34.000
0026	415.0410	Concrete Pavement Approach Slab	SY	80.000	80.000
0028	450.4000	HMA Cold Weather Paving	TON	152.000	152.000
0030	455.0605	Tack Coat	GAL	28.000	28.000
0032	465.0105	Asphaltic Surface	TON	152.000	152.000
0034	502.0100	Concrete Masonry Bridges	CY	158.000	158.000
0036	502.3200	Protective Surface Treatment	SY	195.000	195.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	4,460.000	4,460.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	19,080.000	19,080.000
0042	513.4061	Railing Tubular Type M	LF	123.000	123.000
0044	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0046	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	720.000	720.000
0048	606.0300	Riprap Heavy	CY	170.000	170.000
0050	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	210.000	210.000
0052	614.0920	Salvaged Rail	LF	260.000	260.000
0054	614.2300	MGS Guardrail 3	LF	100.000	100.000
0056	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0058	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0060	619.1000	Mobilization	EACH	0.610	0.610
0062	624.0100	Water	MGAL	15.000	15.000
0064	625.0100	Topsoil	SY	2,860.000	2,860.000
0066	628.1504	Silt Fence	LF	460.000	460.000
0068	628.1520	Silt Fence Maintenance	LF	920.000	920.000
0070	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0072	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0074	628.2002	Erosion Mat Class I Type A	SY	2,860.000	2,860.000
0076	628.6005	Turbidity Barriers	SY	123.000	123.000
0078	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0080	628.7570	Rock Bags	EACH	50.000	50.000
0082	629.0210	Fertilizer Type B	CWT	2.000	2.000

4665-01-71

Line	Item	Item Description	Unit	Total	Qty
0084	630.0120	Seeding Mixture No. 20	LB	77.000	77.000
0086	630.0200	Seeding Temporary	LB	77.000	77.000
0088	630.0500	Seed Water	MGAL	65.000	65.000
0090	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0094	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0100	642.5001	Field Office Type B	EACH	0.610	0.610
0102	643.0420	Traffic Control Barricades Type III	DAY	1,030.000	1,030.000
0104	643.0705	Traffic Control Warning Lights Type A	DAY	2,060.000	2,060.000
0106	643.0900	Traffic Control Signs	DAY	1,030.000	1,030.000
0108	643.5000	Traffic Control	EACH	0.610	0.610
0110	645.0111	Geotextile Type DF Schedule A	SY	60.000	60.000
0112	645.0120	Geotextile Type HR	SY	320.000	320.000
0114	646.1020	Marking Line Epoxy 4-Inch	LF	1,720.000	1,720.000
0116	650.4500	Construction Staking Subgrade	LF	508.000	508.000
0118	650.5000	Construction Staking Base	LF	508.000	508.000
0120	650.6500	Construction Staking Structure Layout (structure) 01. B-44-474	LS	1.000	1.000
0124	650.9910	Construction Staking Supplemental Control (project) 01. 4665-01-71	LS	1.000	1.000
0128	650.9920	Construction Staking Slope Stakes	LF	544.000	544.000
0130	690.0150	Sawing Asphalt	LF	53.000	53.000
0132	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0134	715.0502	Incentive Strength Concrete Structures	DOL	948.000	948.000

EARTHWORK SUMMARY

Division	From/To Station	LOCATION	Common Excavation (item #205.0100)	Unusable Pavement Material (2)	Available Material (3)	Unexpanded Fill	Expanded Fill (4)	Mass Ordinate +/- (5)	Borrow (item #208.0100)	Comment:
			Cut (1)				Factor 1.35			
0010	101+00 TO 103+16	CTH CC	261	30	231	227	306	-75	75	SOUTH APPROACH
0010	103+75 TO 106+00	CTH CC	299	47	253	226	305	-53	53	NORTH APPROACH
Totals			560	77	484	453	611	-128	128	

1) Unusable Pavement is included in Cut
2) Unusable Pavement Material = Existing Asphaltic Pavement
3) Available Material = Cut - Unusable Pavement Material
4) Expanded Fill Factor = 1.35 Expanded Fill = Unexpanded Fill * Fill Factor
5) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

BASE AGGREGATE SUMMARY

CATEGORY	STATION		STATION	LOCATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	624.0100 WATER MGAL
0010	100+69	-	103+27	CTH CC	495	36	9.00
0010	103+64	-	106+14	CTH CC	499	37	6.00
				TOTAL 0010	**994**	**73**	**15.00**

HMA SUMMARY

CATEGORY	STATION		STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
0010	100+69	-	103+27	CTH CC	14	77
0010	103+64	-	106+14	CTH CC	14	75
				TOTAL 0010	**28**	**152**

GUARDRAIL SUMMARY

CATEGORY	STATION		STATION		LOCATION	614.0920 SALVAGED RAIL LF	614.2300 MGS GUARDRAIL LF	614.2500 MGS THRIE 3 BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EA
0010	102+14	-	103+19	LT	CTH CC	65.0	12.5	39.4	1
0010	101+89	-	103+19	RT	CTH CC	65.0	37.5	39.4	1
0010	103+72	-	105+03	LT	CTH CC	65.0	12.5	39.4	1
0010	103+72		104+78	RT	CTH CC	65.0	37.5	39.4	1
					TOTAL	**260.0**	**100.0**	**157.6**	**4**

CONCRETE PAVEMENT SHOULDERS & APPROACH SLABS

CATEGORY	STATION		STATION	LOCATION	460.5224 CONCRETE PAVEMENT 6-INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY
0010	103+12	-	103+27	CTH CC	17	40
0010	103+64	-	103+79	CTH CC	17	40
				TOTAL 0010	**34**	**80**

3

EROSION CONTROL SUMMARY

CATEGORY	STATION		STATION		LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATION EROSION CONTROL EACH	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL EACH	628.6005 TURBIDITY BARRIERS SY	628.7570 ROCK BAGS EA	628.7504 TEMPORARY DITCH CHECKS LF
0010	100+69	-	103+30	LT	CTH CC	63	126	5	3			10
0010	100+69	-	103+30	RT	CTH CC	261	522					10
0010	103+30	-	103+44		CTH CC					61	17	
0010	103+44	-	103+55		CTH CC					61	17	
0010	103+55	-	106+14	LT	CTH CC	19	38					10
0010	103+55		106+14	RT	CTH CC	28	56					10
0010	UNDISTRIBUTED				CTH CC	89	178				16	10
					TOTAL 0010	**460**	**920**	**5**	**3**	**123**	**50**	**50**

LANDSCAPING SUMMARY

CATEGORY	STATION		STATION		LOCATION	625.0100 TOPSOIL SY	628.2002 EROSION MAT CLASS I, TYPE A SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB
0010	100+69	-	103+30	LT	CTH CC	576	576	0.36	16	16
0010	100+69	-	103+30	RT	CTH CC	602	602	0.38	16	16
0010	103+55	-	106+14	LT	CTH CC	525	525	0.33	14	14
0010	103+55		106+14	RT	CTH CC	590	590	0.37	16	16
0010	UNDISTRIBUTED				CTH CC	567	567	0.56	15	15
					TOTAL	**2,860**	**2,860**	**2.00**	**77**	**77**

3

PERMANENT SIGNING, TYPE II

CATEGORY	STATION	LOCATION	SIGN CODE	SIZE		634.0614 POSTS WOOD 4X6 INCH X 14-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF
0010	103+16	LT	W5-52L	12X36	BRIDGE HAZARD MARKER	1	3
0010	103+16	RT	W5-52R	12X36	BRIDGE HAZARD MARKER	1	3
0010	103+75	LT	W5-52L	12X36	BRIDGE HAZARD MARKER	1	3
0010	103+75	RT	W5-52R	12X36	BRIDGE HAZARD MARKER	1	3
					TOTAL 0010	**4**	**12**

TRAFFIC CONTROL SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	APPROXIMATE SERVICE DAYS	643.5000 TRAFFIC CONTROL PROJECT EA	643.0420 BARRICADES TYPE III NO. IN SERVICE	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A NO. IN SERVICE	643.0705 WARNING LIGHTS TYPE A DAYS	643.0900 SIGNS NO. IN SERVICE	643.0900 SIGNS DAYS	REMARKS
0010	101+00	-	106+00	CTH CC	103	1	10	1,030	20	2,060	10	1,030	
				TOTAL 0010		**1**		**1,030**		**2,060**		**1,030**	

PAVEMENT MARKING SUMMARY

CATEGORY	STATION		STATION		LOCATION	646.1020 MARKING LINE EPOXY 4-INCH LF	Comments
0010	102+75	-	104+15	LT	CTH CC	630	CENTERLINE
0010	102+75	-	104+15	LT	CTH CC	1090	EDGELINES
					TOTAL	**1,720**	

3

CONSTRUCTION STAKING SUMMARY

CATEGORY	STATION		STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.6500.01 STAKING STRUCTURE B-44-474 LS	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
0010	100+69	-	106+13	CTH CC	508	508		1	544
0020	103+27.13	-	103+64.29	CTH CC			1		
				TOTAL 0010	**508**	**508**	**1**	**1**	**544**

SAWING SUMMARY

CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT LF
0010	102+75	CTH CC	26
0010	104+15	CTH CC	27
		TOTAL 0010	**53**

TRANSPORTATION PROJECT PLAT NO: 4665-01-20- 4.01

THAT PART OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 10; AND LOT 3 OF CERTIFIED SURVEY MAP NO. 6217 IN VOLUME 36 OF CERTIFIED SURVEY MAPS ON PAGE 6217 AS DOCUMENT NO. 1889901, BEING IN AND INCLUDING A PART OF GOV. LOT 3 RECORDED IN SECTION 11, ALL IN TOWN 21 NORTH, RANGE 17 EAST, OUTAGAMIE COUNTY, WISCONSIN.

RELOCATION ORDER T VANDENBROEK, CTH CC BRANCH APPLE CREEK, OUTAGAMIE COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, OUTAGAMIE COUNTY DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 83.07 AND 83.08, WISCONSIN STATUTES, OUTGAMIE COUNTY HEREBY ORDERS THAT:

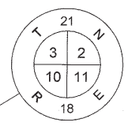
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY OUTAGAMIE COUNTY FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF OUTGAMIE COUNTY, PURSUANT TO THE PROVISIONS OF SECTION 83.07 AND 83.08, WISCONSIN STATUTES.

Document #: **2179646**
Date: **12-19-2019** Time: **03:47 PM**
Pages: 1 Fee: **$25.00**
County: **OUTAGAMIE COUNTY** State: **WI**

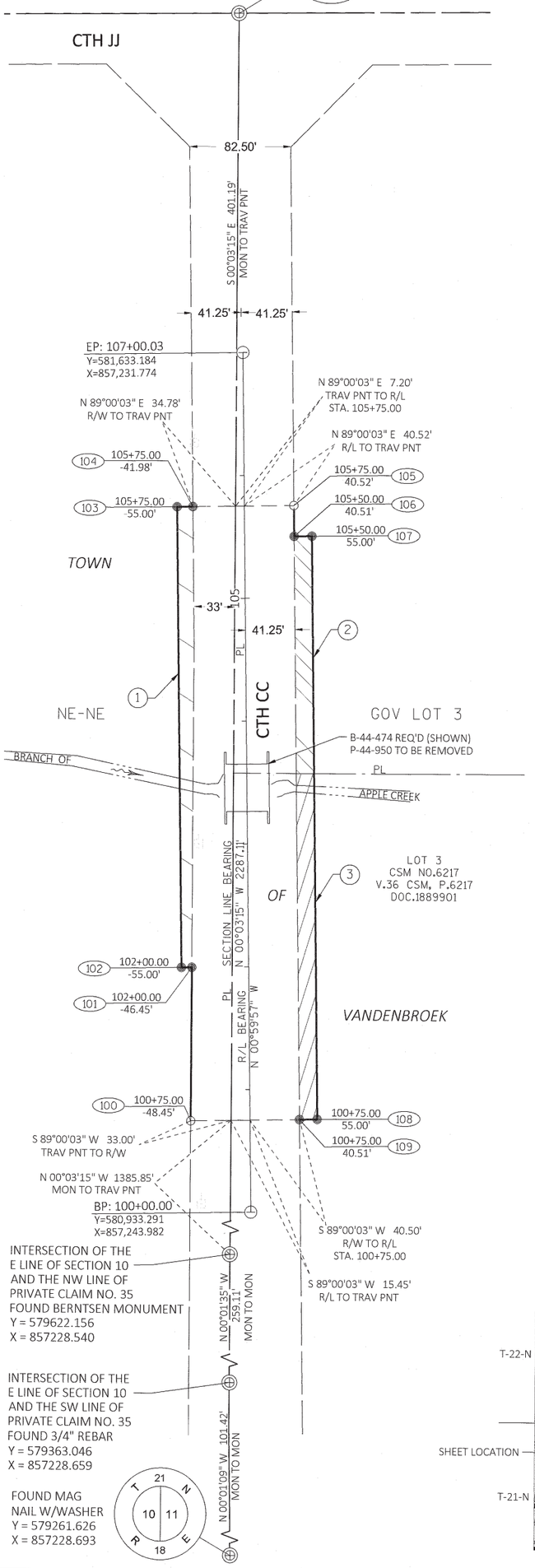
SARAH R VAN CAMP, REGISTER OF DEEDS
Returned to: FILE

Cabinet N - Page 28

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 4665-01-00-4.01



FOUND MAG NAIL W/WASHER
Y = 581909.271
X = 857226.372



NOTES:

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

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4"X24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTRACT OUTAGAMIE COUNTY HIGHWAY DEPARTMENT.

PARCEL AND UTILITY IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE SCHEDULE OF LANDS & INTERESTS REQUIRED.

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

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IN BASED ON THE FOLLOWING POINT OF REFERENCE:

EXISTING HIGHWAY RIGHT OF WAY FOR CTH CC ESTABLISHED FROM PREVIOUS PROJECT E 0-0 (19) AND TOWN OF VANDENBROEK TOWN ROAD NOTES FOR ROADS 7-1 AND 7-2 DATED MARCH 26, 1857

SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED	FEE R/W (AC), REQUIRED		
			NEW	EXISTING	TOTAL
1	JEFFREY L. & DIANE M. VANASTEN	FEE	0.099	0.380	0.479
2	LD II LLC	FEE	0.064	0.246	0.310
3	MARV/IMELD HIETPAS JT REV TR	FEE	0.094	0.348	0.442

NOTE: OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION

COURSE TABLE

COURSE	BEARING	DISTANCE
100-101	N 00°03'15" W	125.02'
101-102	S 89°00'03" W	8.61'
102-103	N 00°59'57" W	375.00'
103-104	N 89°00'03" E	13.02'
105-106	S 00°58'34" E	25.00'
106-107	N 89°00'03" E	14.49'
107-108	S 00°59'57" E	475.00'
108-109	S 89°00'03" W	14.49'

STATION & OFFSET TABLE

POINT	STATION	OFFSET	Y	X
100	100+75.00	48.45 LT	581007.434	857194.227
101	102+00.00	46.45 LT	581132.451	857194.108
102	102+00.00	55.00 LT	581132.301	857185.502
103	105+75.00	55.00 LT	581507.244	857178.963
104	105+75.00	41.60 LT	581507.471	857191.982
105	105+75.00	40.52 RT	581508.910	857274.469
106	105+50.00	40.51 RT	581483.914	857274.895
107	105+50.00	55.00 RT	581484.166	857289.382
108	100+75.00	55.00 RT	581009.239	857297.665
109	100+75.00	40.50 RT	581008.986	857283.175

CONVENTIONAL UTILITY SYMBOLS

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

CONVENTIONAL ABBREVIATIONS

ACCESS POINT/ DRIVEWAY CONNECTION	AP	RELEASE OF RIGHTS	ROR
ACCESS RIGHTS	AR	REMAINING	REM.
ACRES	AC.	RIGHT-OF-WAY	R/W
AND OTHERS	ET.AL.	SECTION	SEC.
CENTERLINE	C/L	STATION	STA.
CERTIFIED SURVEY MAP	CSM	TEMPORARY LIMITED EASEMENT	TLE
CORNER	COR.	VOLUME	V.
DOCUMENT	DOC.		
EASEMENT	EASE.		
HIGHWAY EASEMENT	H.E.		
LAND CONTRACT	LC		
MONUMENT	MON.		
PAGE	P.		
PERMANENT LIMITED EASEMENT	PLE		
PROPERTY LINE	PL		
RECORDED AS	(100')		
REFERENCE LINE	R/L		

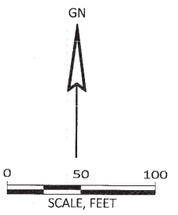
CONVENTIONAL SYMBOLS AND ABBREVIATIONS

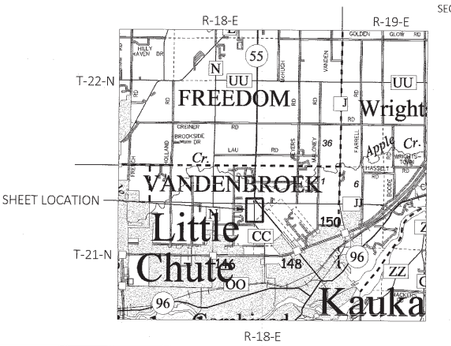
STATE, COUNTY, or TOWN LINE		ACCESS POINT/ DRIVEWAY CONNECTION	AP
SECTION LINE		ACCESS RIGHTS	AR
QUARTER LINE		ACRES	AC.
SIXTEENTH LINE		AND OTHERS	ET.AL.
PROPOSED REFERENCE LINE		CENTERLINE	C/L
PROPOSED R/W LINE		CERTIFIED SURVEY MAP	CSM
EXISTING H.E. LINE		DOCUMENT	DOC.
PROPERTY LINE		HIGHWAY EASEMENT	H.E.
EASEMENT LINE		LAND CONTRACT	LC
CORPORATE LIMITS		MONUMENT	MON.
EXISTING CENTERLINE		PAGE	P.
LOT & TIE LINES		PERMANENT LIMITED EASEMENT	PLE
UTILITIES (TELEPHONE-GAS-ELECTRIC-CABLE TV-FIBER OPTIC)	FO (TYPE)	PROPERTY LINE	PL
NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL)		RECORDED AS	(100')
NO ACCESS (BY ACQUISITION)		REFERENCE LINE	R/L
NO ACCESS (BY STATUTORY AUTHORITY)		REMAINING	REM.
FEE (HATCH VARIES)		RIGHT-OF-WAY	R/W
TEMPORARY LIMITED EASEMENT		SECTION	SEC.
PERMANENT LIMITED EASEMENT		SQUARE FEET	SQ.FT.
PARCEL NUMBER	102	STATION	STA.
UTILITY PARCEL NUMBER	92	TEMPORARY LIMITED EASEMENT	TLE
SIGN NUMBER (OFF PREMISE)	21-1	VOLUME	V.
BUILDING			
FOUND IRON PIPE/PIN	⅝" [1" UNLESS NOTED]		
R/W MONUMENT	●(SET)		
R/W STANDARD	▲(SET)		
SIGN	SIGN		
SECTION CORNER SYMBOL	SEC COR		

CURVE DATA

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE OR DELTA	DELTA
LENGTH OF CURVE	L
TANGENT	TAN

	NON COMPENSABLE	COMPENSABLE
POWER POLE	○	●
TELEPHONE POLE	⌀	⌀
TELEPHONE PEDESTAL	⌑	⌑





ENGINEERING, INC
Consulting Services
1077 CENTENNIAL CENTRE BLVD.
HOBART, WI 54155
920-468-4771

I, JAMES R. CAPPEART PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF OUTAGAMIE COUNTY I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT AND SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

SIGNATURE: James Cappeart DATE: 12/18/19
PRINT NAME: JAMES R. CAPPEART
REGISTRATION NUMBER: S-3044

WISCONSIN James R. Cappeart S-3044 Green Bay Wis. LAND SURVEYOR

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE OUTAGAMIE COUNTY

SIGNATURE: DEAN STEINGRABER DATE: 12/19/19
PRINT NAME: DEAN STEINGRABER, COMMISSIONER

FILE NAME: X:\PROJECTS\OUTAGAMIE\190068 CTH CC BRIDGE\DESIGN\C3D\RW\DWG\040101-RP.DWG
APPRAISAL PLAT DATE: DECEMBER 18, 2019
PLOT DATE: 12/18/2019 9:38 PM
PLOT BY: James Cappeart
PLOT NAME:
PLOT SCALE: 1 IN:100 FT
6240-29-00
6240 12

N

BEGIN CONSTRUCTION
STA 100+69.34

WE ENERGIES ELECTRICITY
& CHARTER COMMUNICATIONS

AT&T WI
COMMUNICATION LINE

STA. 103+45.71
STRUCTURE B-44-474 REQ'D
SINGLE SPAN CONCRETE FLAT SLAB
34'-0" CLEAR ROADWAY
0° SKEW

SI

BRANCH OF APPLE CREEK

REMOVING OLD STRUCTURE OVER WATERWAY
WITH MINIMAL DEBRIS STA. 103+50 (P-44-950)
SINGLE-SPAN REIFORCED CONCRETE FLAT SLAB STRUCTURE
33.5' CLEAR ROADWAY WIDTH
22.0' OVERALL LENGTH

WETLAND
BOUNDARY

SI

TLE
APPROXIMATE
EXISTING R/W

CABC
FE

BM 5

BM 920

BM 6

CABC
FE

STA 100+81.56

STA 101+40.87

STA 102+13.75
18.73' LT

WETLAND
BOUNDARY

STA 102+66.84
16.73' LT

STA 104+49.58
16.73' LT

STA 105+02.67
18.73' LT

STA 105+67.46

STA 106+10.07

15:1

10:1

15:1

10:1

101+00

102+00

103+00

104+00

CTH CC

105+00

106+00

CP 103

CP 105

STA 101+20.95

PROPOSED C/L
CTH CC

STA 100+69.34

STA 101+88.75
18.73' RT

STA 102+41.84
16.73' RT

STA 104+24.58
16.73' RT

STA 104+77.67
18.73' RT

STA 105+58.33

STA 106+13.80

10:1

15:1

10:1

15:1

R/W

APPROXIMATE
EXISTING R/W

END CONSTRUCTION
STA 106+13.80

BEGIN PROJECT
STA 102+75.00
Y=581,208.249
X=857,239.186
MATCH EXISTING
SAW CUT REQ'D

SI

CONCRETE PAVEMENT
APPROACH SLAB (TYP)

WETLAND
BOUNDARY

SI

WETLAND
BOUNDARY

CP 104

END PROJECT
STA 104+15.00
MATCH EXISTING
SAW CUT REQ'D

5

5

CONTROL POINTS

POINT NUMBER	NORTHING	EASTING	DESCRIPTION
103	580984.50	857243.30	MAG NAIL
104	581343.26	857320.30	MAG NAIL
105	581515.41	857233.70	MAG NAIL

BENCHMARKS

POINT NUMBER	STATION	OFFSET	ELEVATION	EASTING
5	102+51.47	40.26' L	707.18	20D NAIL IN PPOL
6	105+63.00	39.66' L	708.71	20D NAILS IN PPOL
920	103+00.42	39.73' L	705.64	RR SPIKE IN PPOL #17-09994

STA.102+75.00
EL 708.85

STA.103+15.00
EL 708.80

STA.104+15.00
EL 708.96

-0.13%

0.15%

HIGH WATER 100
EL. 705.33

HIGH WATER 2
EL. 703.25

OBSERVED WATER
EL. 699.27
(7-17-2019)

EXISTING GROUND AT R/L

PROPOSED PROFILE AT R/L

PROPOSED PROFILE ELEVATION

EXISTING GROUND ELEVATION

710

700

698

100 101 102 103 104 105 106

711.60 710.61 709.70 709.06 708.66 708.82 699.19 708.86 708.85 708.93 709.19 709.56 710.29 711.17

101+00 102+00 103+00 104+00 105+00 106+00

PROJECT NO: 4665-01-71	HWY: CTH CC	COUNTY: OUTAGAMIE	PLAN AND PROFILE: CTH CC	SHEET 13	E

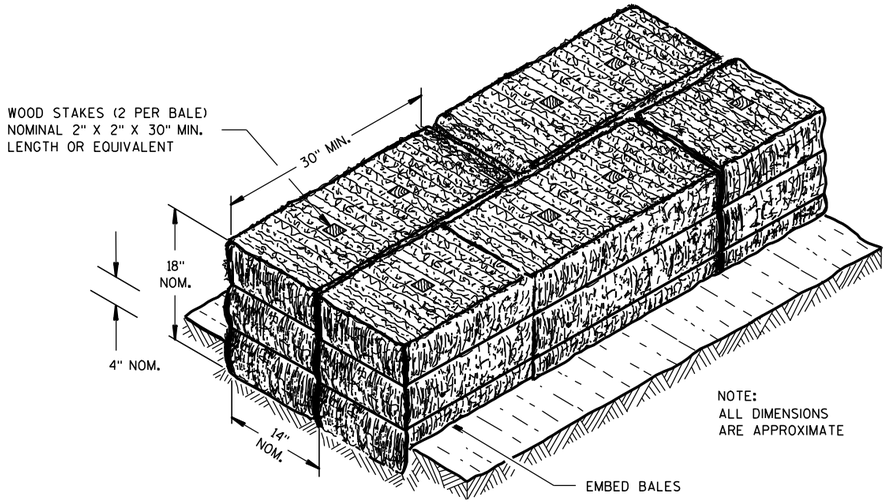
FILE NAME : X:\PROJECTS\OUTAGAMIE\190068 CTH CC BRIDGE\DESIGN\C3D\SHEETSPLAN\46650100_050101-PP.DWG
LAYOUT NAME - 050101 - (1)

PLOT DATE : 4/28/2020 4:04 PM PLOT BY : VINCE DIFRANCES PLOT NAME : PLOT SCALE : 1 IN:40 FT

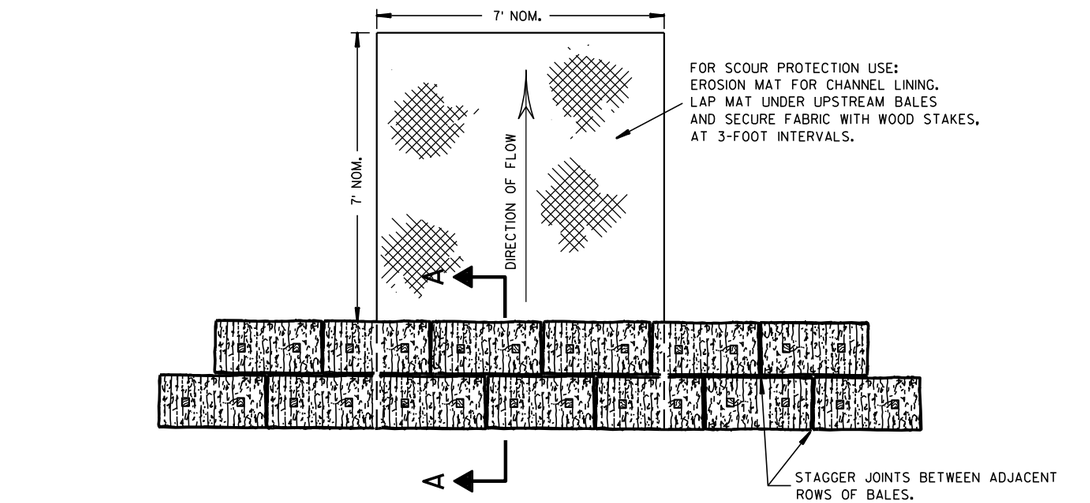
WISDOT/CADDS SHEET 44

Standard Detail Drawing List

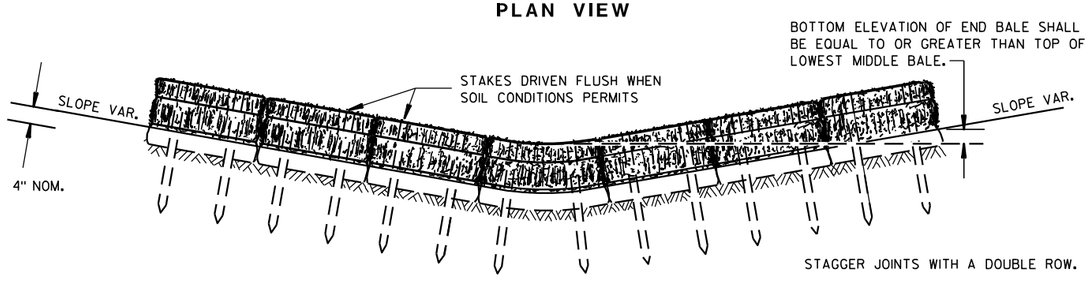
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	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)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



SECTION A-A



PLAN VIEW



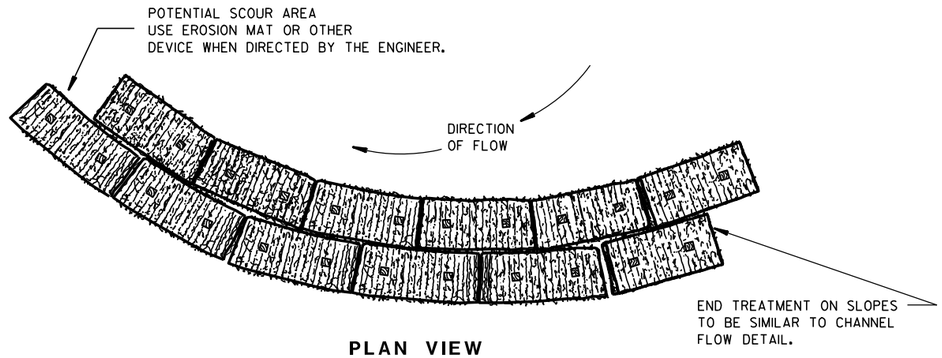
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

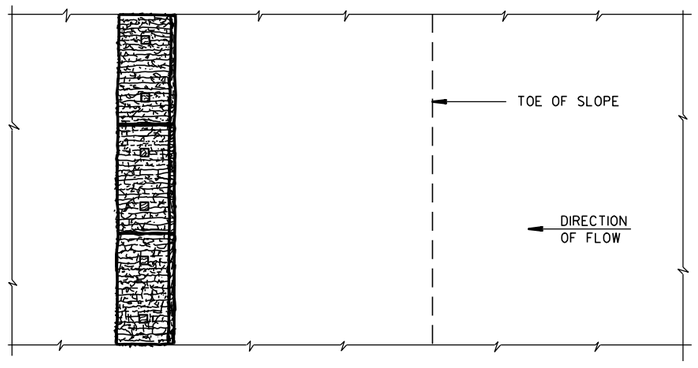
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

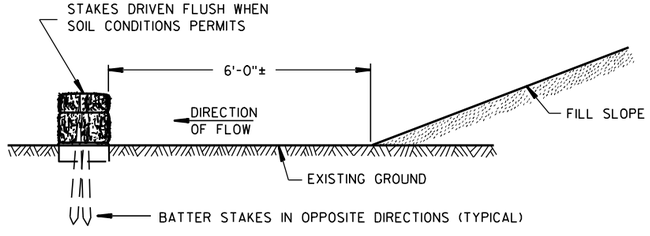


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

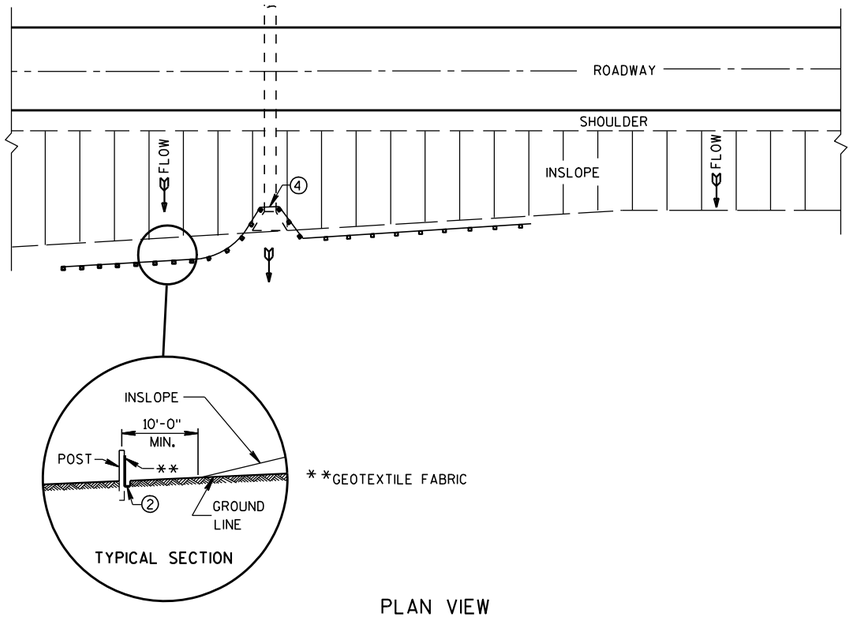
EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

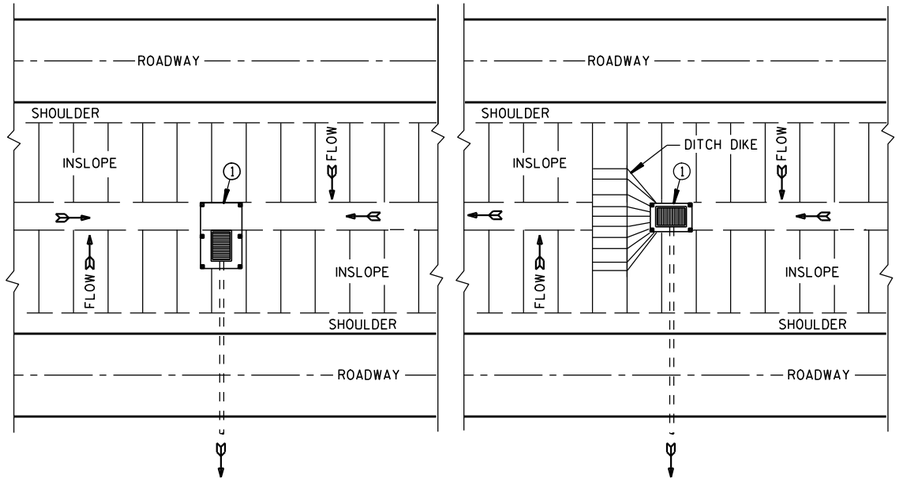
APPROVED
6/04/02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 8 E 8-3



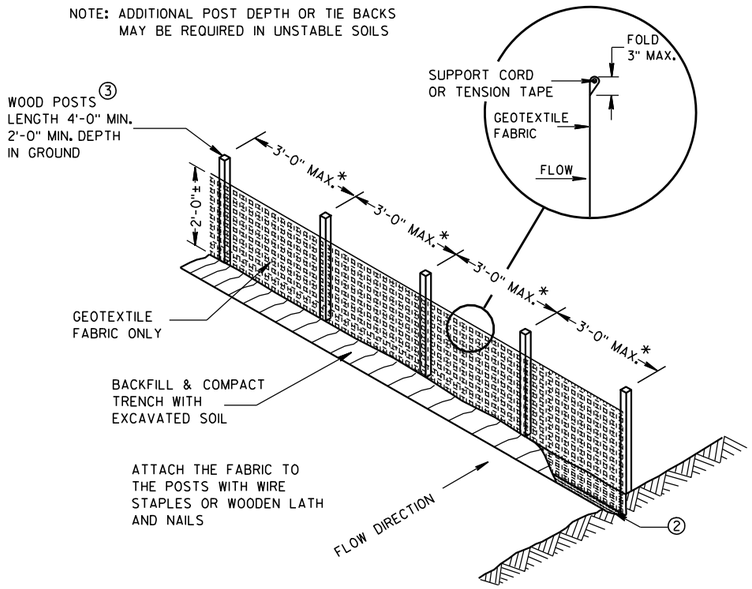
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



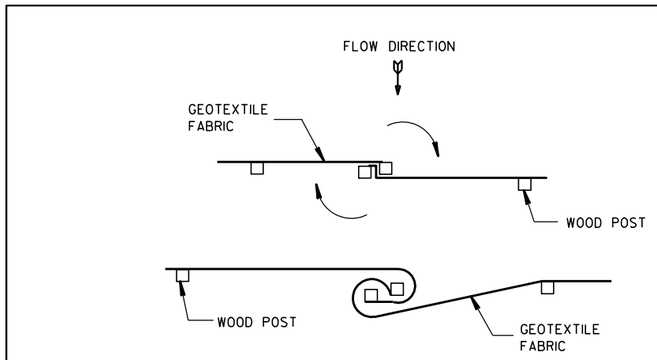
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



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

SILT FENCE

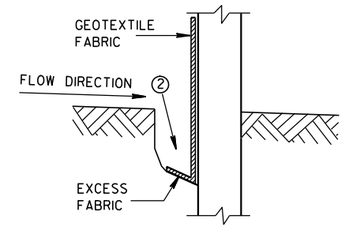


JOINING TWO LENGTHS OF SILT FENCE 5

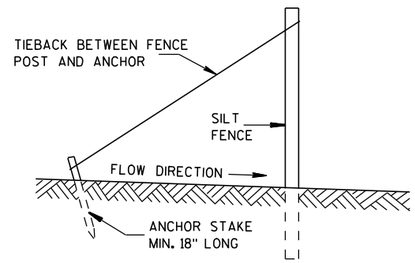
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

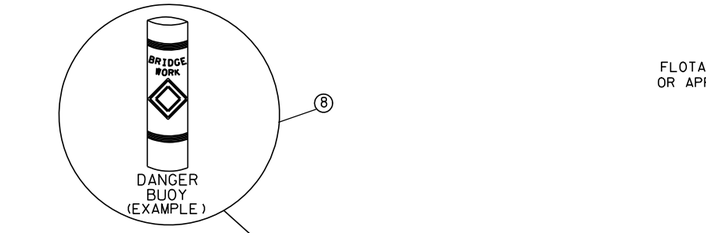
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

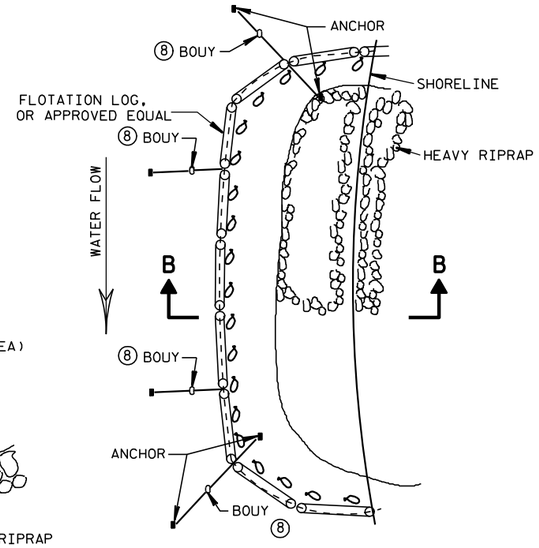
S.D.D. 8 E 9-6

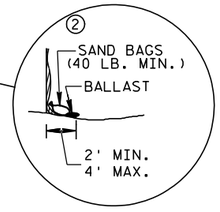
6

S.D.D. 8 E 9-6

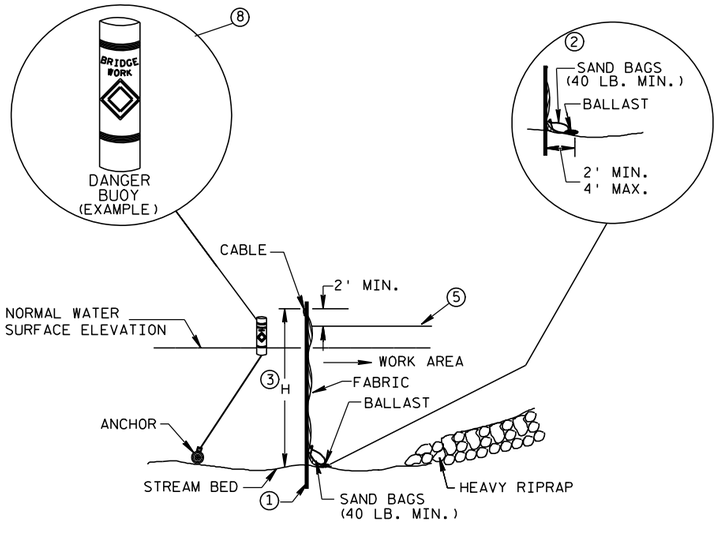


SECTION B-B

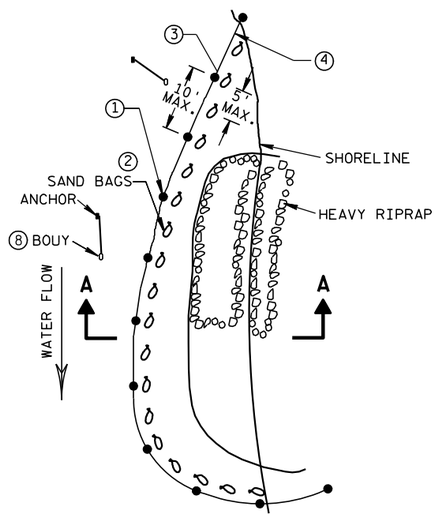




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

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

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

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

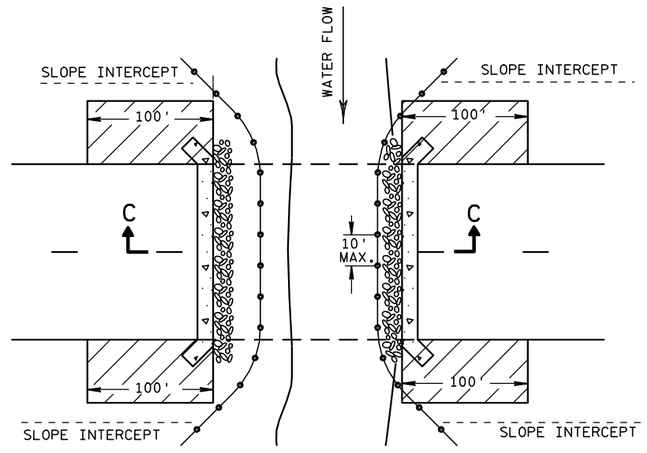
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

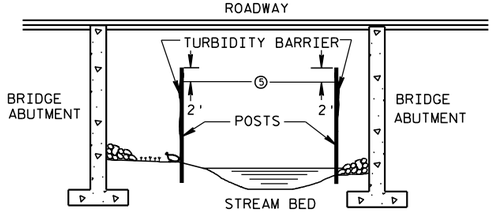
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

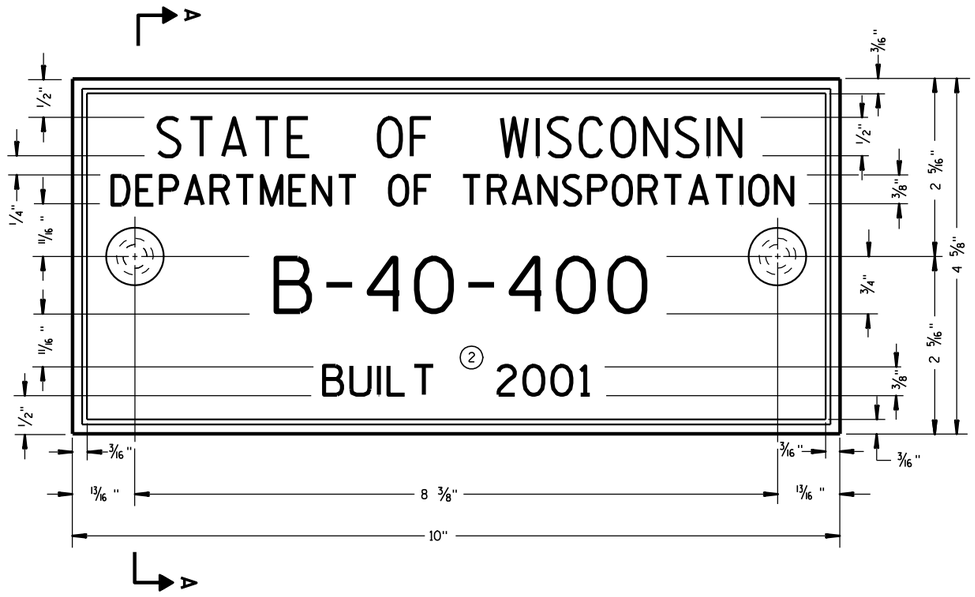
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 11-2

6

S.D.D. 8 E 11-2



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

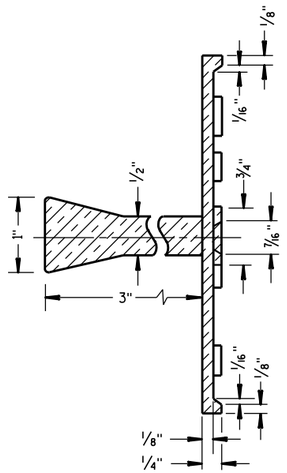
GENERAL NOTES

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.

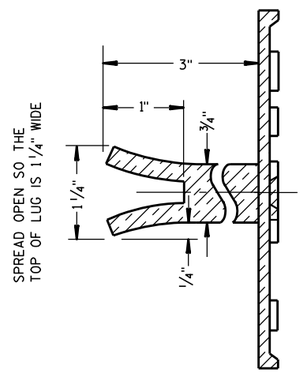
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

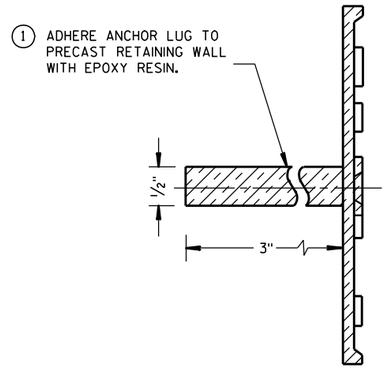
COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

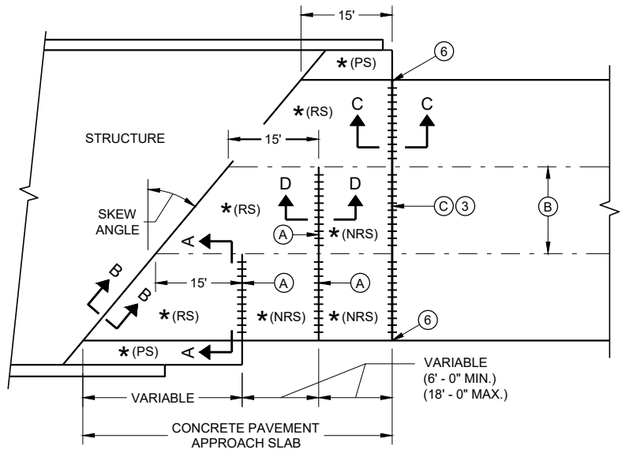
FHWA

6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10



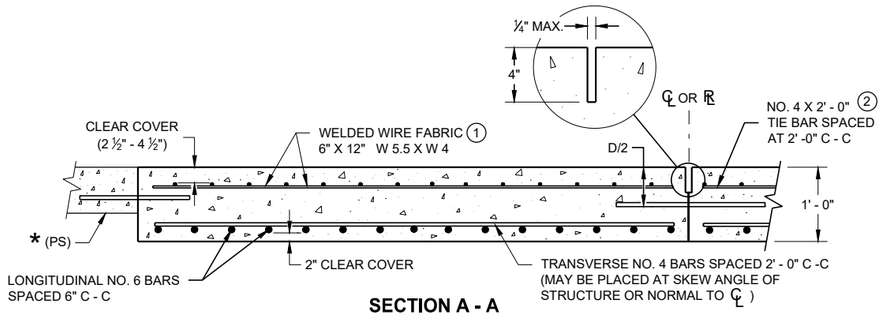
SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)

(RS) = REINFORCED CONCRETE SLAB

(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

(NRS) - NON - REINFORCED CONCRETE SLAB

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



SECTION A - A
REINFORCEMENT POSITIONING DETAIL

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

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

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

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

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

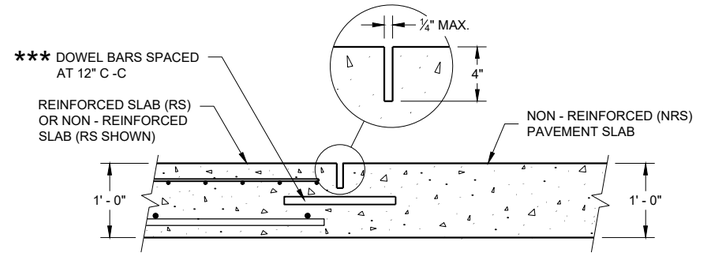
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

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

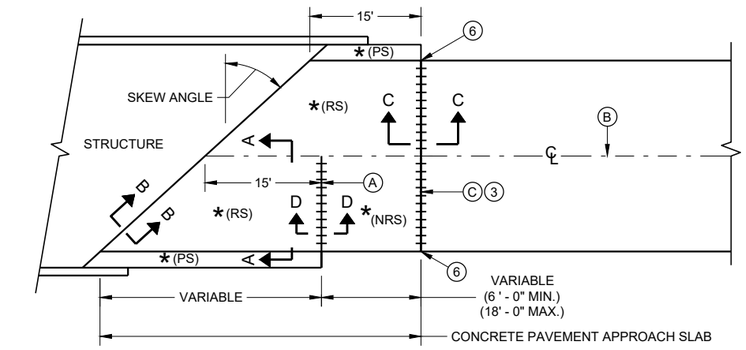
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

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

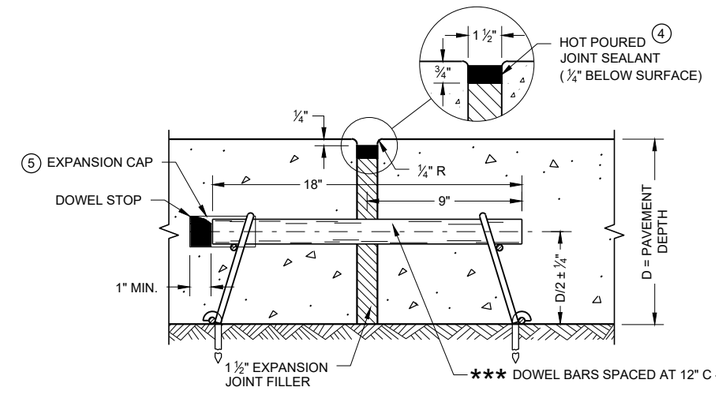


SECTION D - D
CONTRACTION JOINT



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')

SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT DETAIL

SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT

APPROACH SLAB AND ADJACENT PAVEMENT

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

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

FHWA

6

SDD 13B02 - 09a

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

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

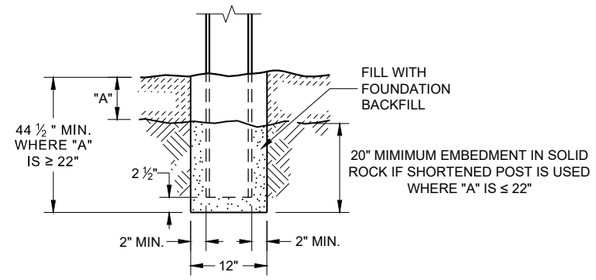
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL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

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

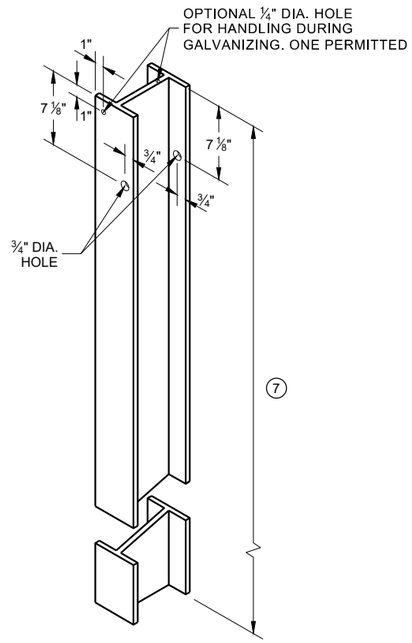
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

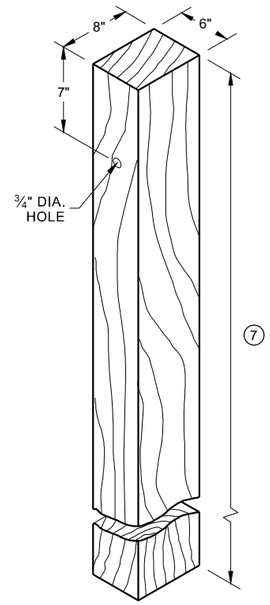
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



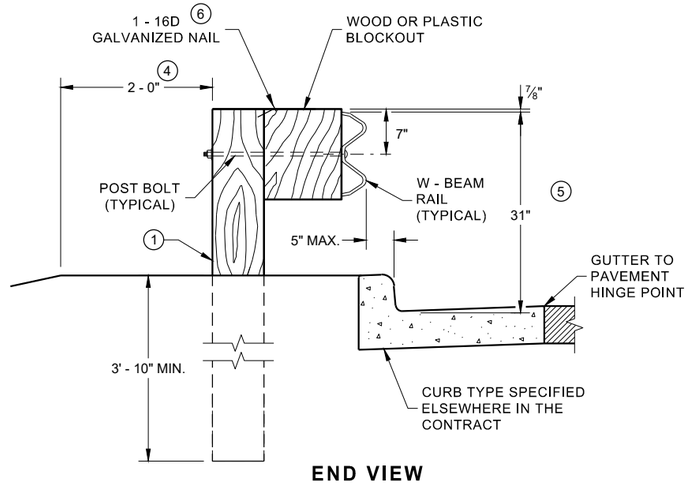
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



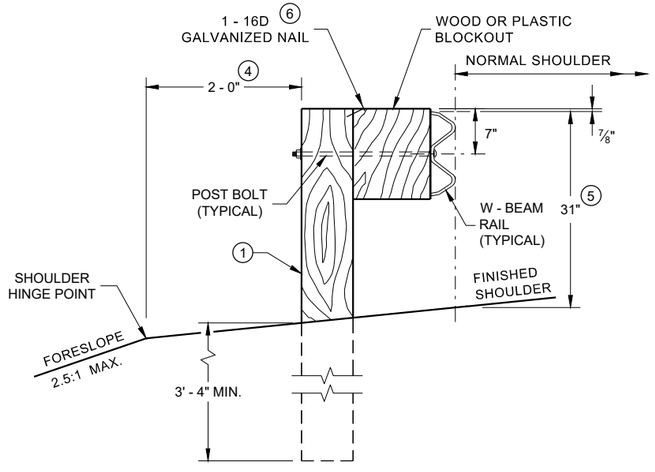
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



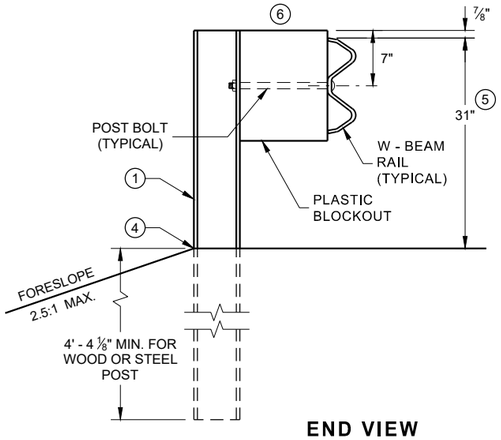
WOOD POST (6" X 8") NOMINAL (1)



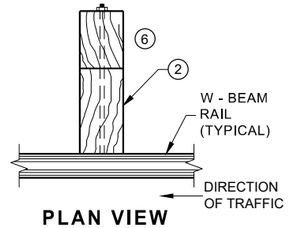
END VIEW
LOCATED ALONG A CURBED ROADWAY



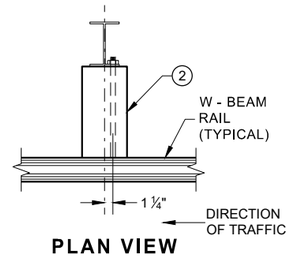
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



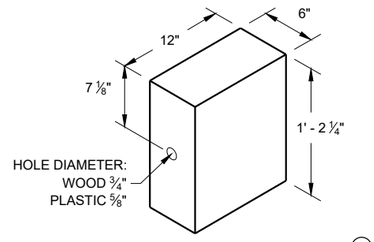
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

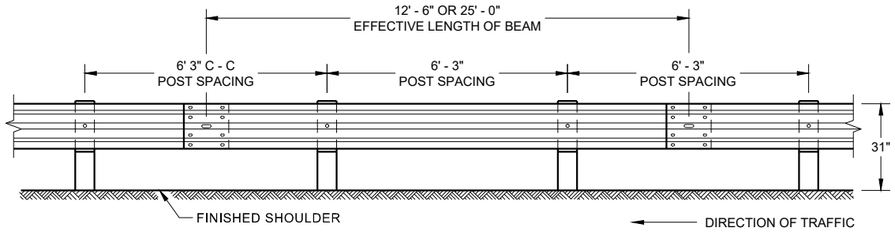
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

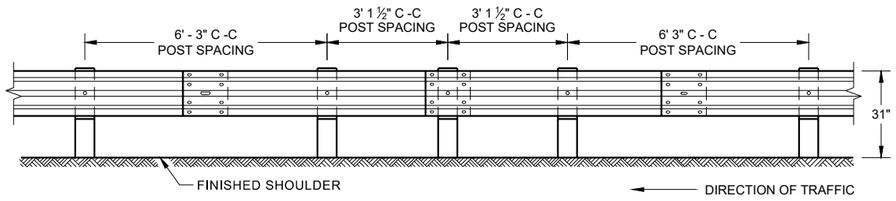
SDD 14B42 - 06a

6

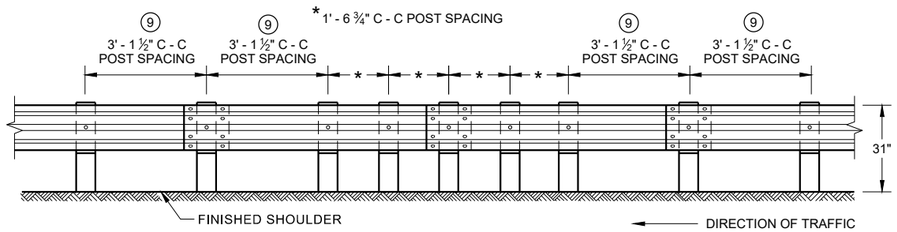
SDD 14B42 - 06a



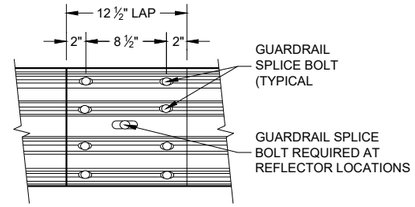
FRONT VIEW
POST SPACING STANDARD INSTALLATION



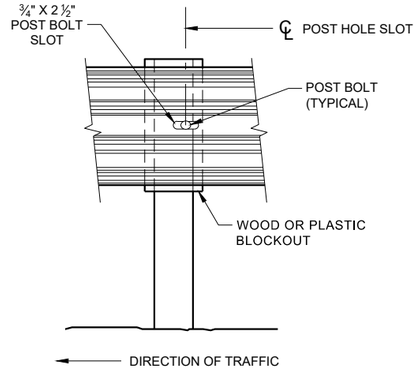
FRONT VIEW
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



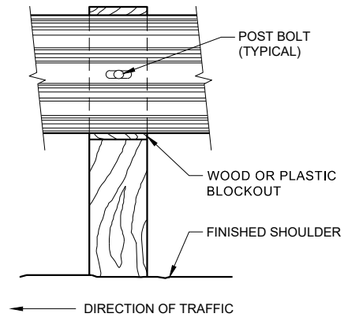
FRONT VIEW
QUARTER POST SPACING (QS)



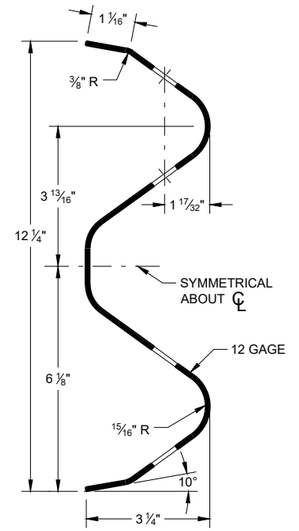
FRONT VIEW
MID-SPAN BEAM SPLICE



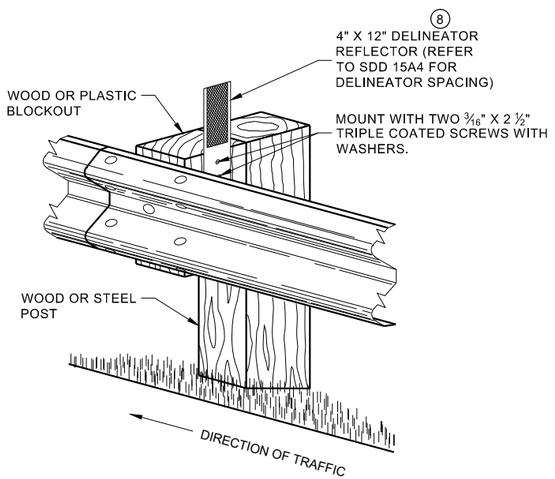
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

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

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

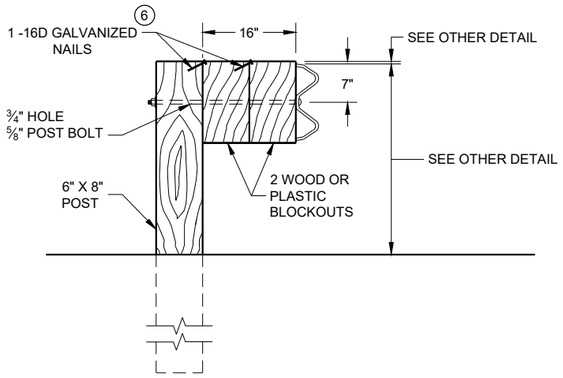
POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B42 - 06b

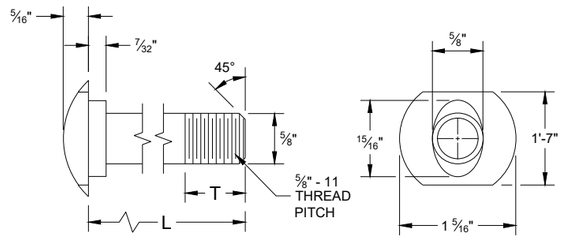


DETAIL FOR 16" BLOCKOUT DEPTH

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.

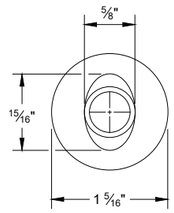
NOTE:

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

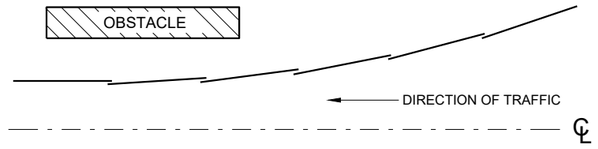


POST BOLT TABLE

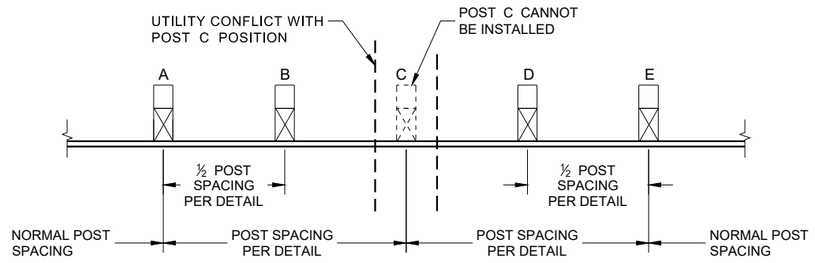
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



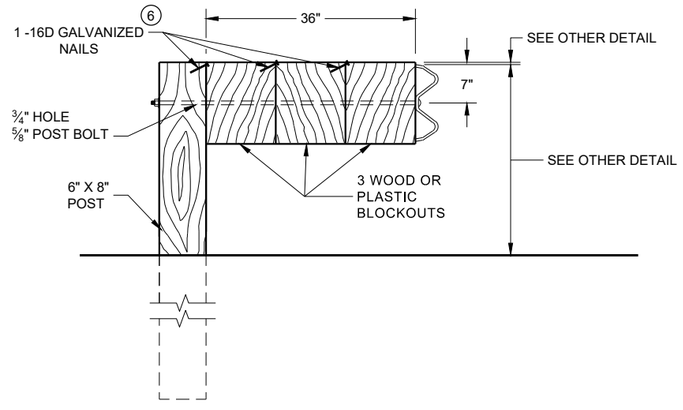
ALTERNATE BOLT HEAD



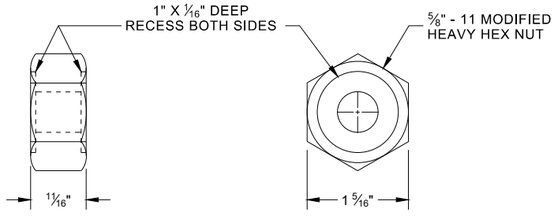
PLAN VIEW
BEAM LAPPING DETAIL



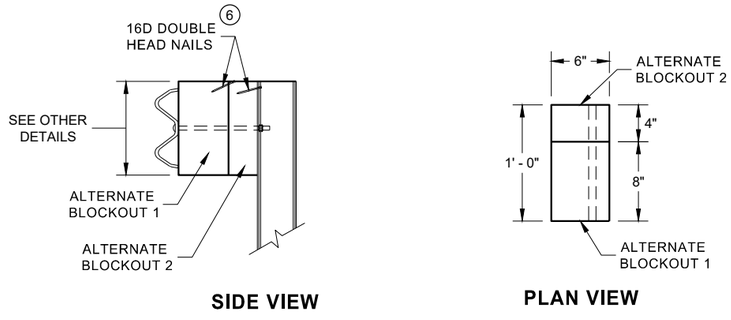
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW

PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

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

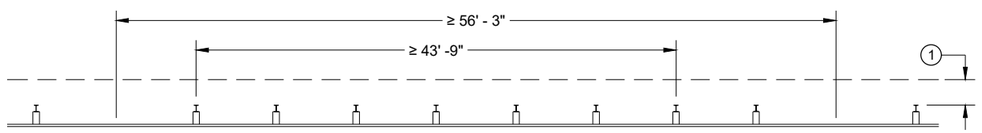
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

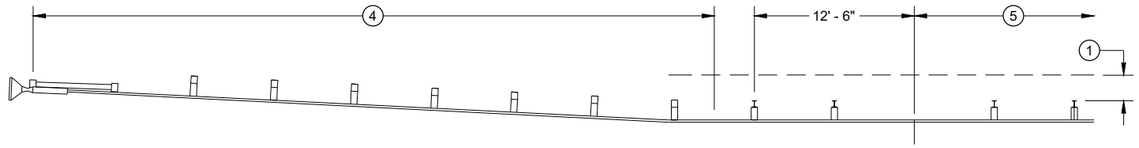
6

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

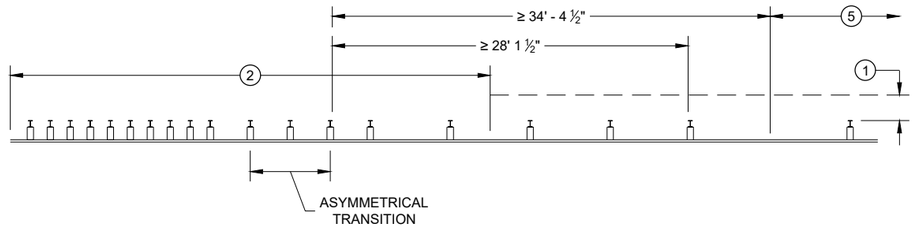
SDD 14B42 - 06c



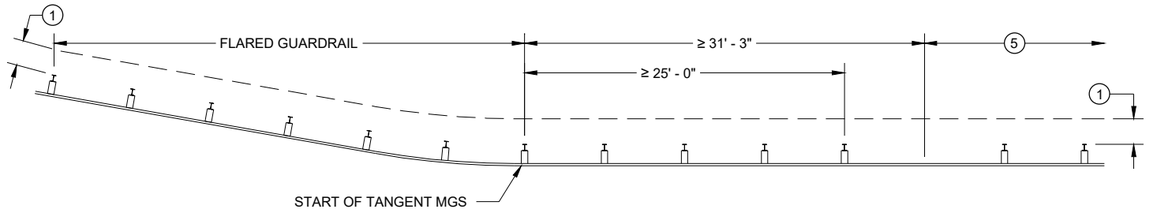
MISSING POST IN NORMAL BEAM GUARD RUN



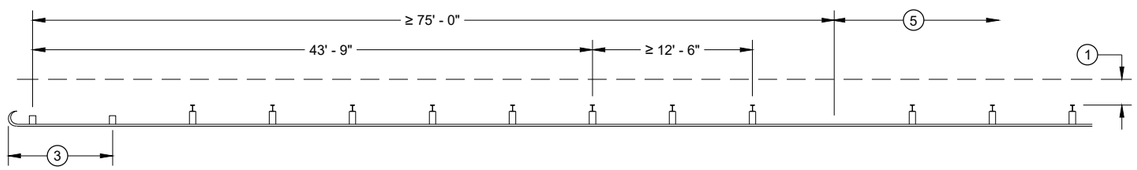
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



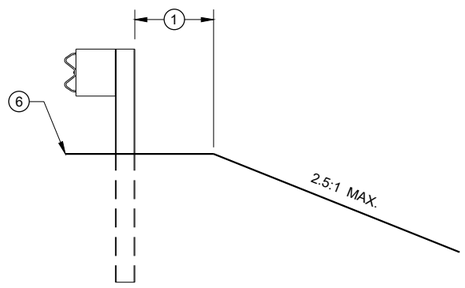
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



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 DEVE UNIT SUPERVISOR
FHWA

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SDD 14B42 - 06d

GENERAL NOTES

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

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

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

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

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

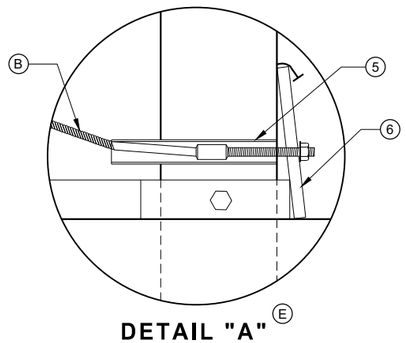
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

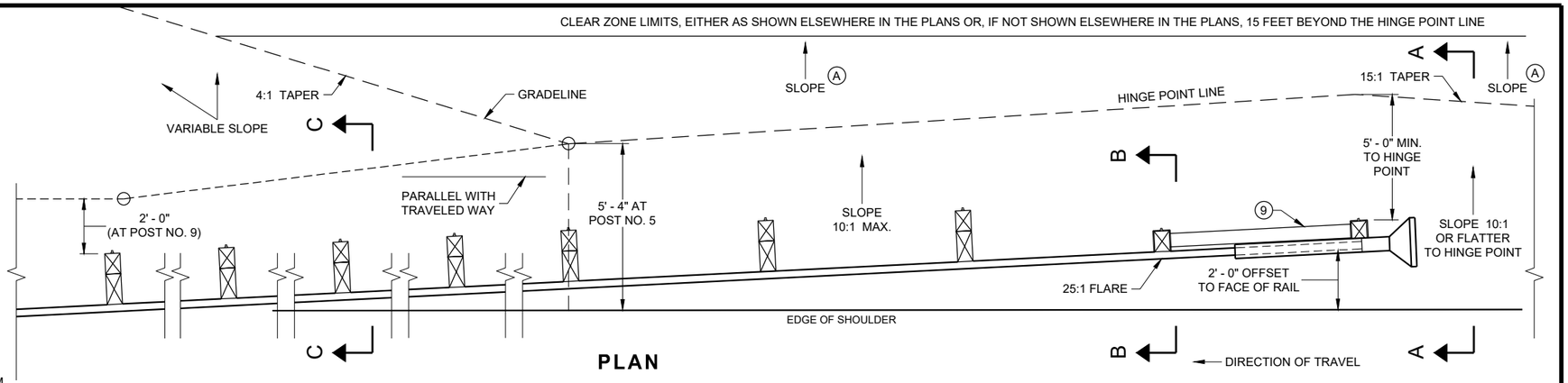
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

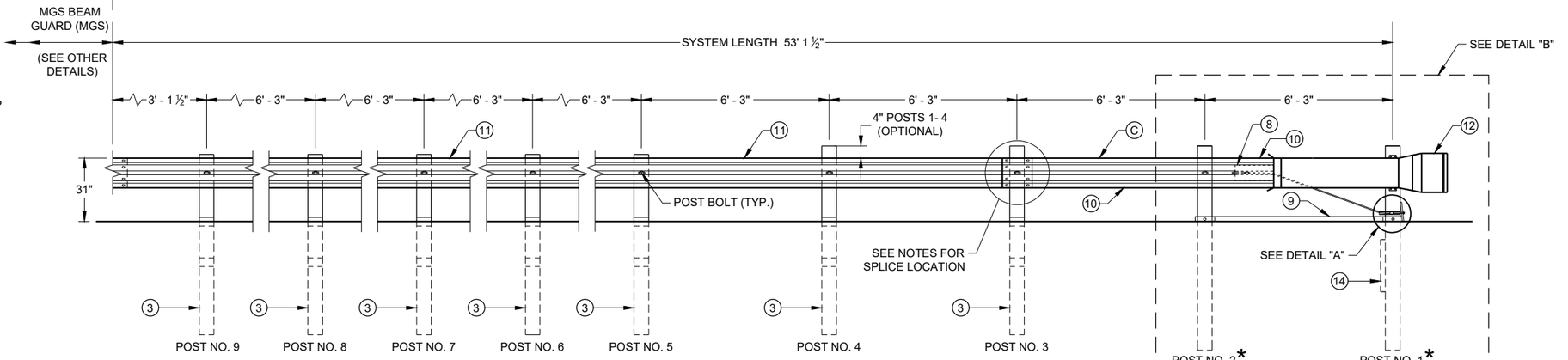
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



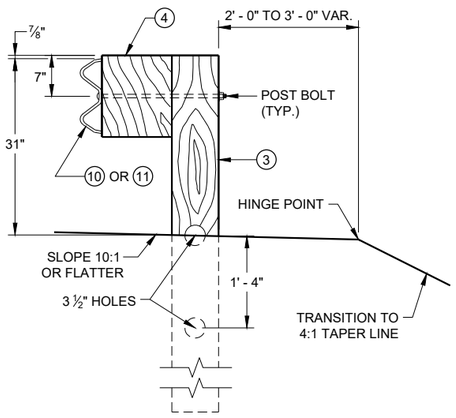
DETAIL "A" (E)



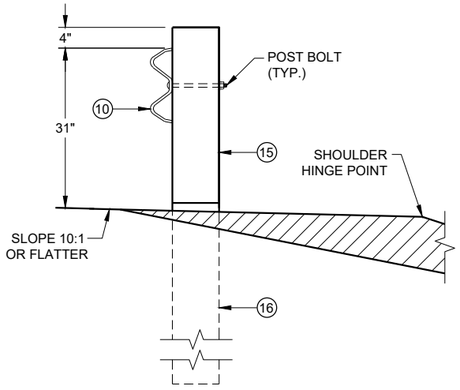
PLAN



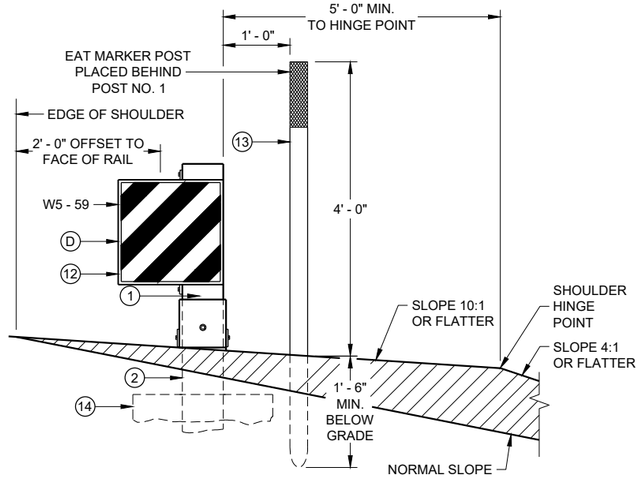
ELEVATION



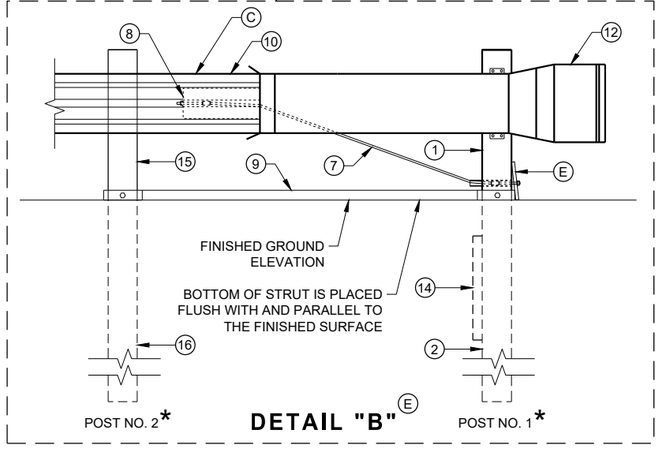
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



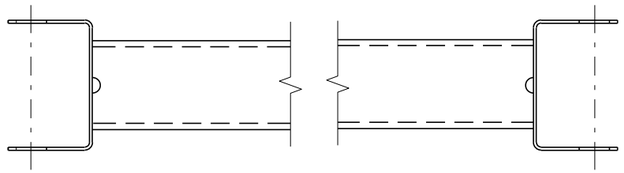
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

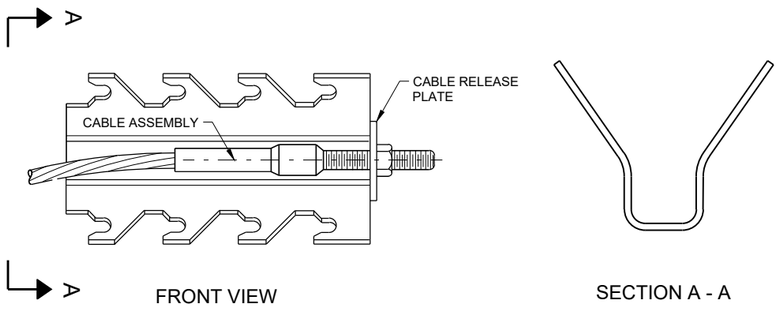
SDD 14B44 - 04a



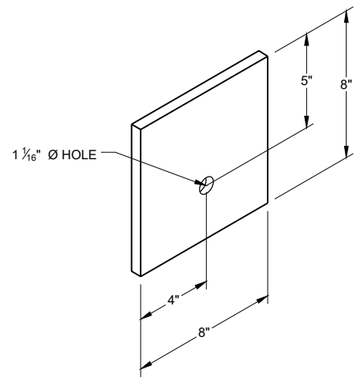
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑨ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

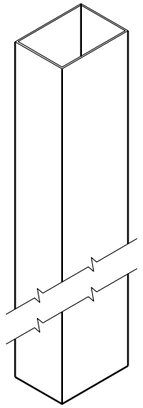
6

SDD 14B44 - 04b

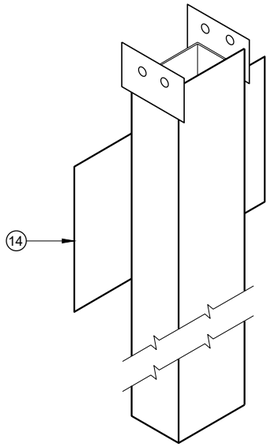
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

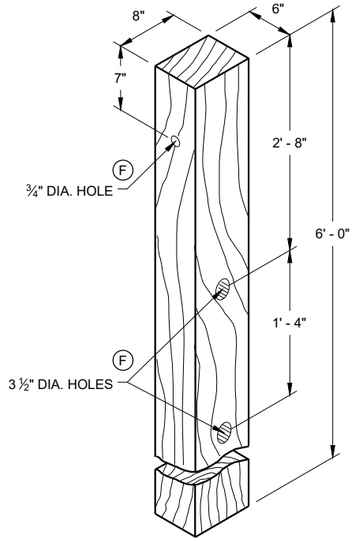
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



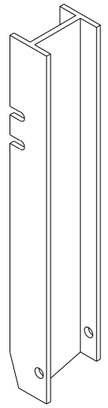
UPPER POST NO. 1 (1) (E)



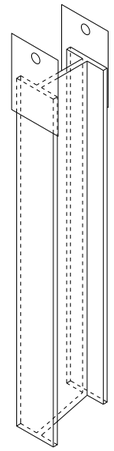
LOWER POST NO. 1 (2) (E)



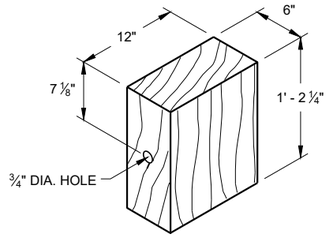
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



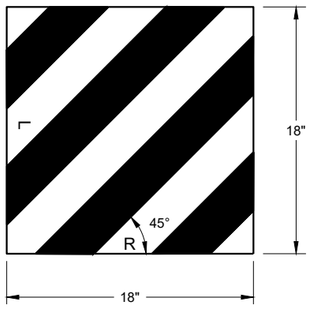
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

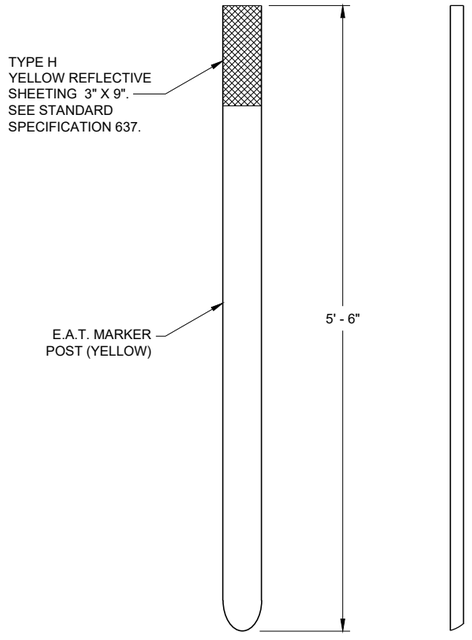


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



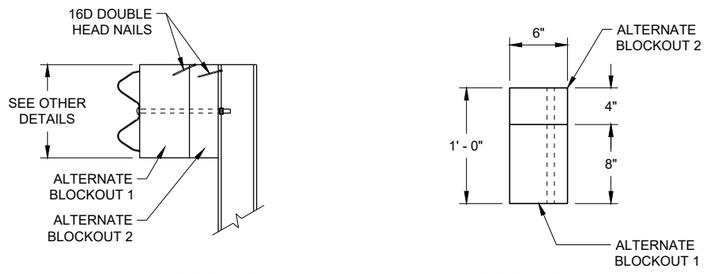
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

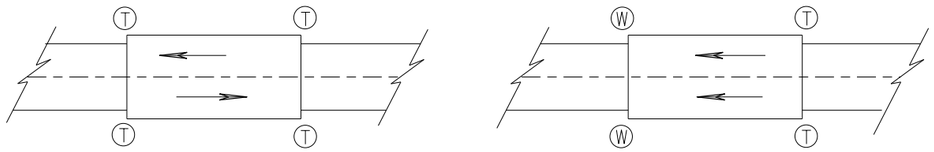
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

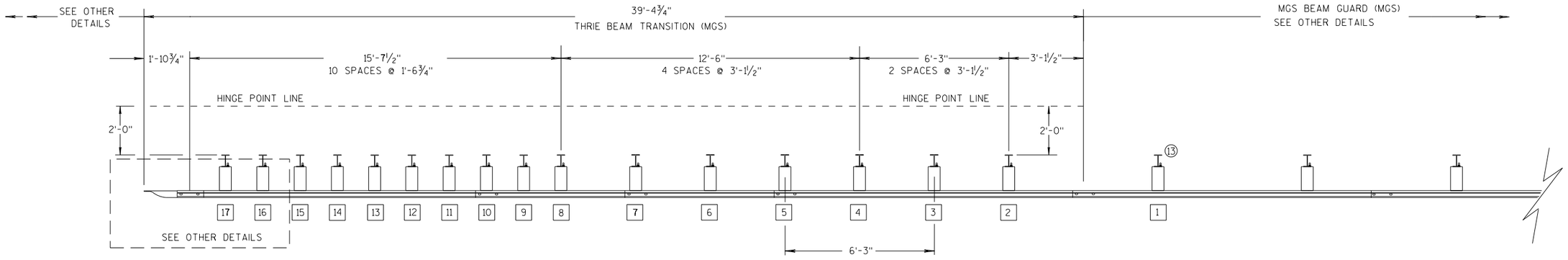
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

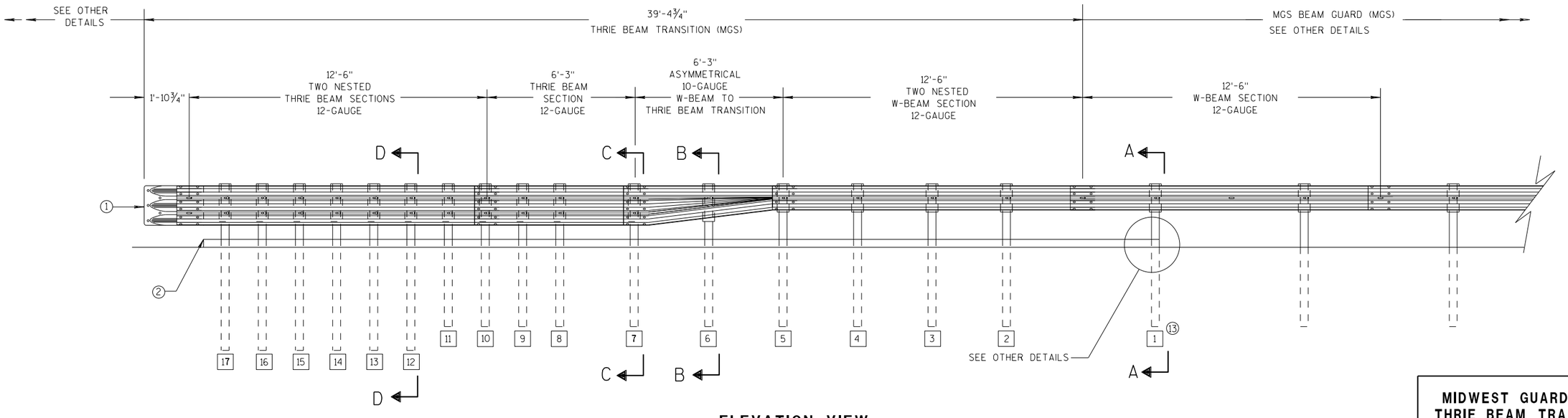
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

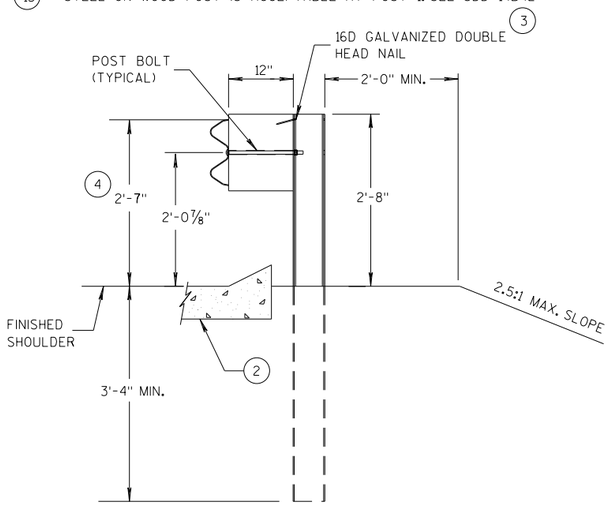
GENERAL NOTES

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

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

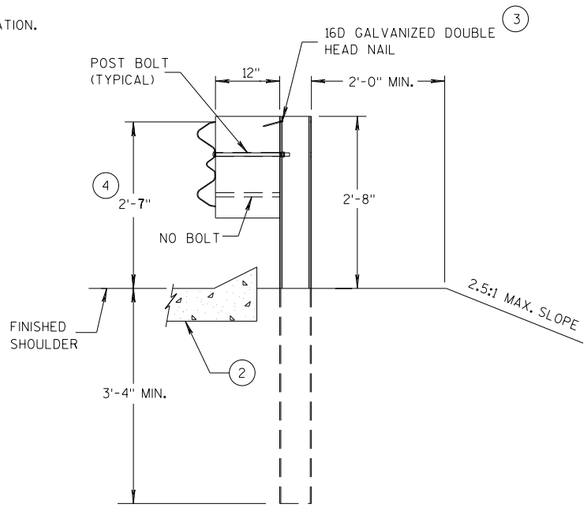
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



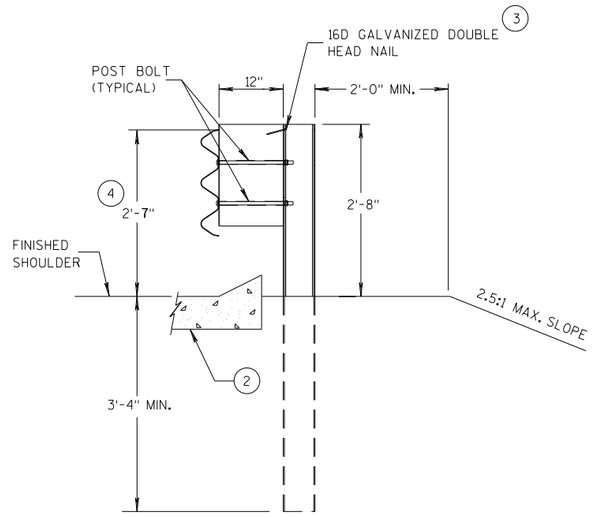
SECTION A-A (13)

POSTS 1-5



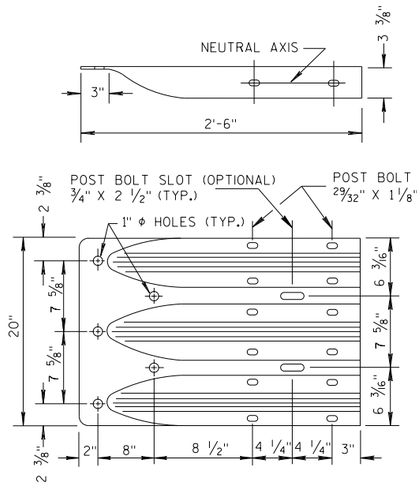
SECTION B-B

POST 6

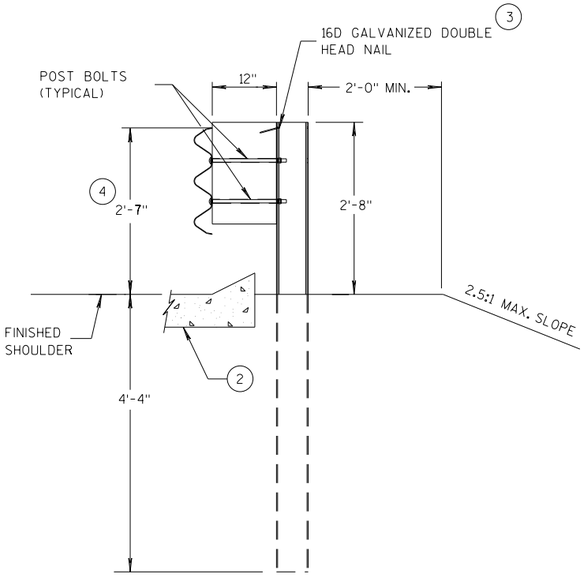


SECTION C-C

POSTS 7-11

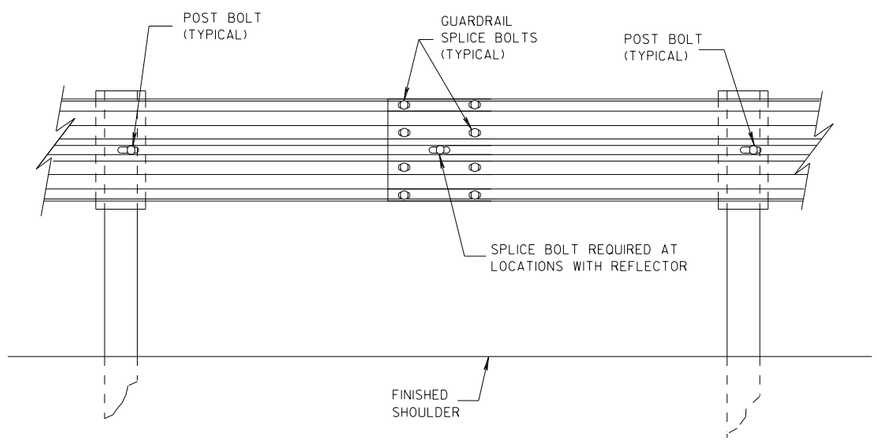


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

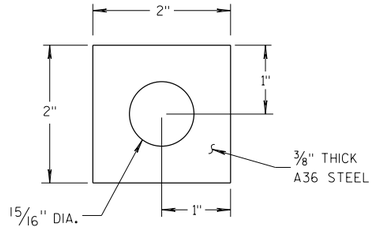
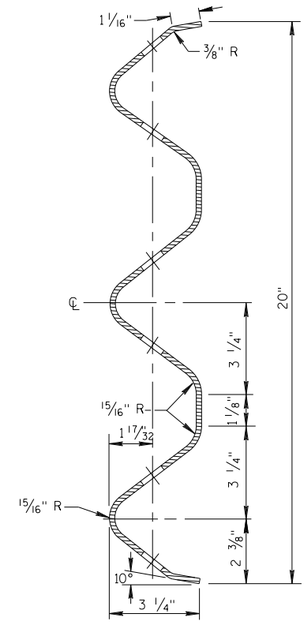


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

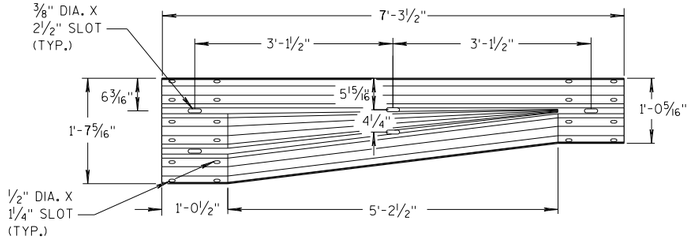
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 28

6

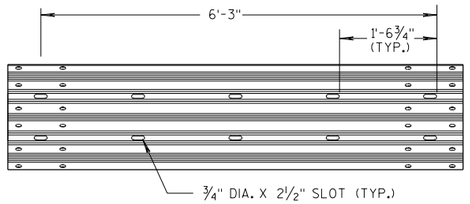
S.D.D. 14 B 45-5b

6

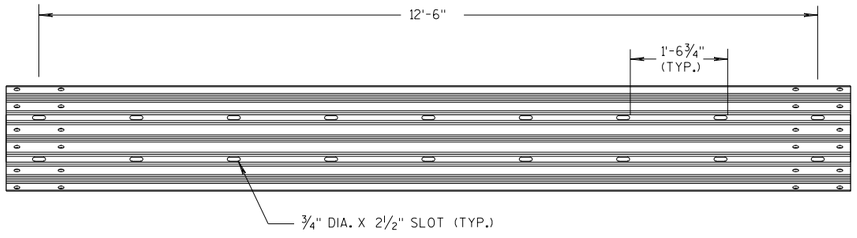
S.D.D. 14 B 45-5b



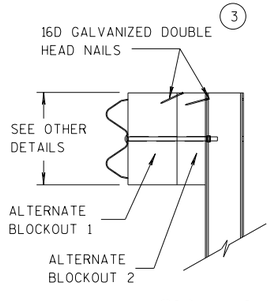
W-BEAM TO THRIE BEAM TRANSITION SECTION



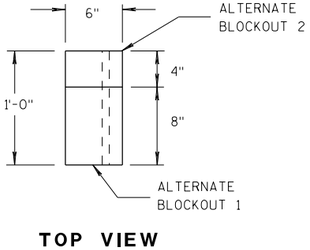
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

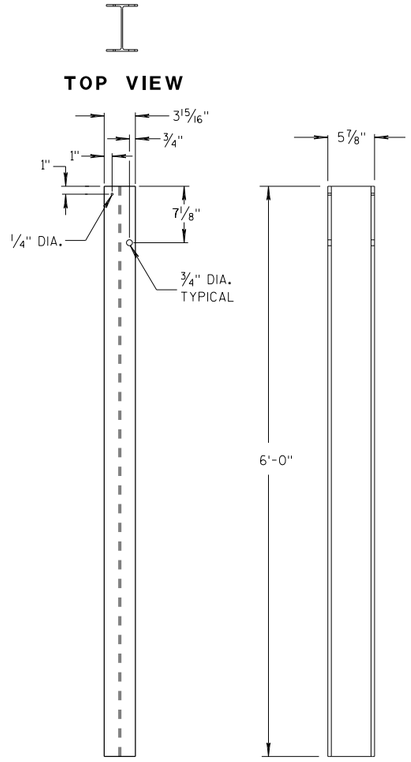


SIDE VIEW



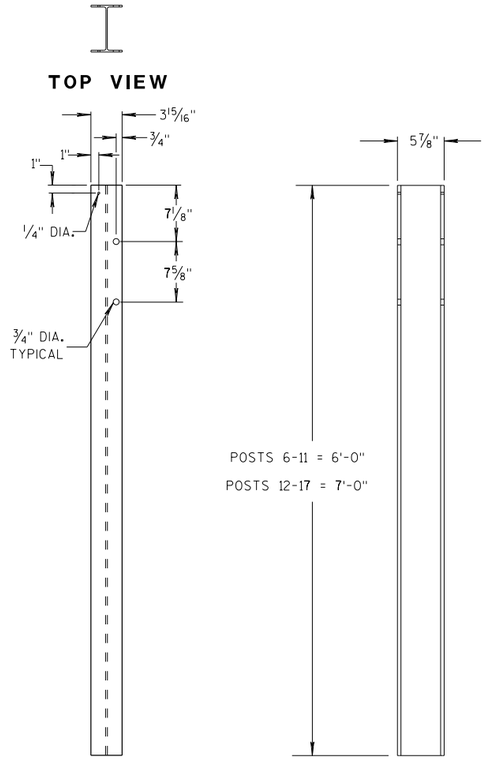
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



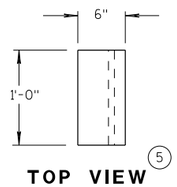
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

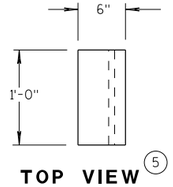


FRONT VIEW SIDE VIEW

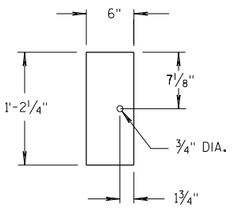
STEEL POSTS 6-17



TOP VIEW (5)

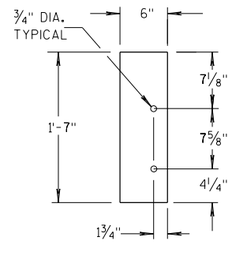


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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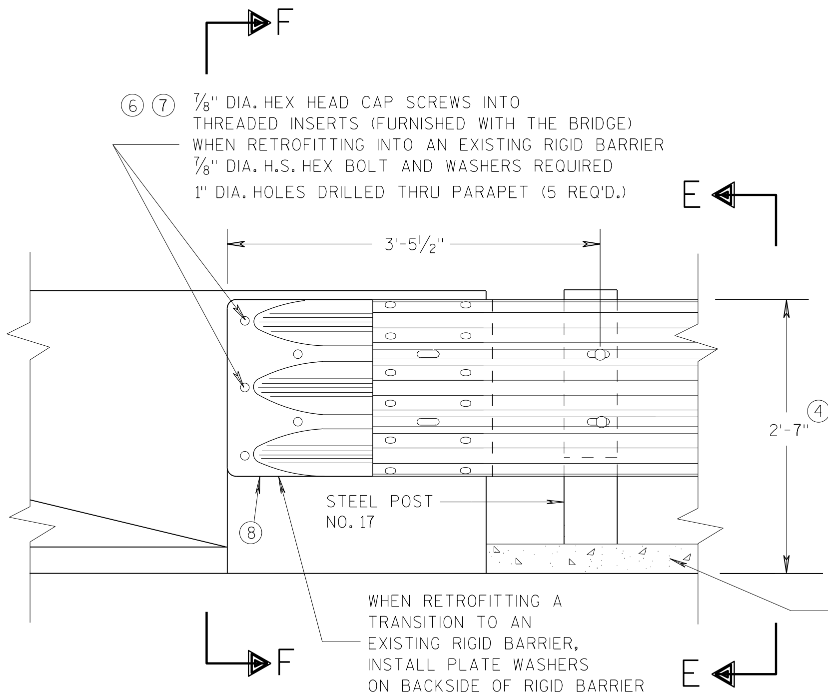
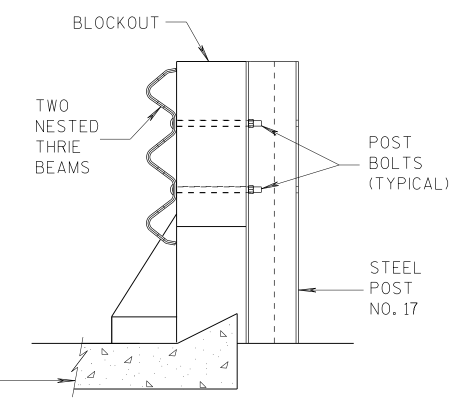
S.D.D. 14 B 45-5c



FRONT VIEW



SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

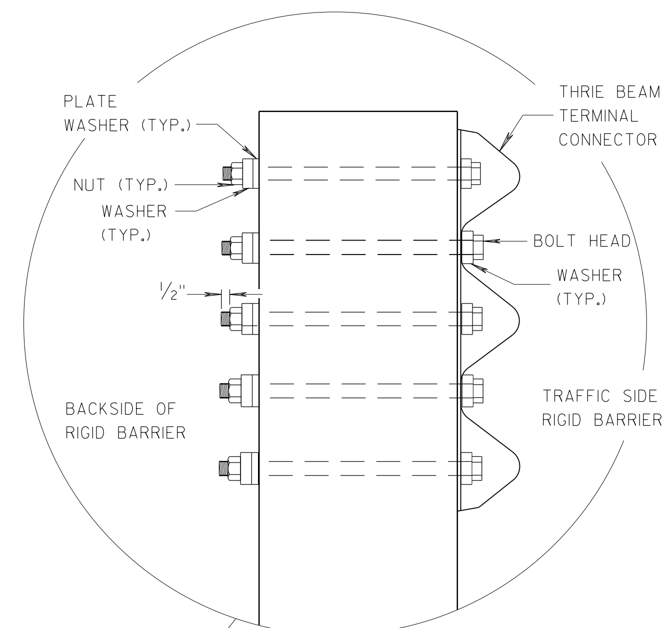
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

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

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



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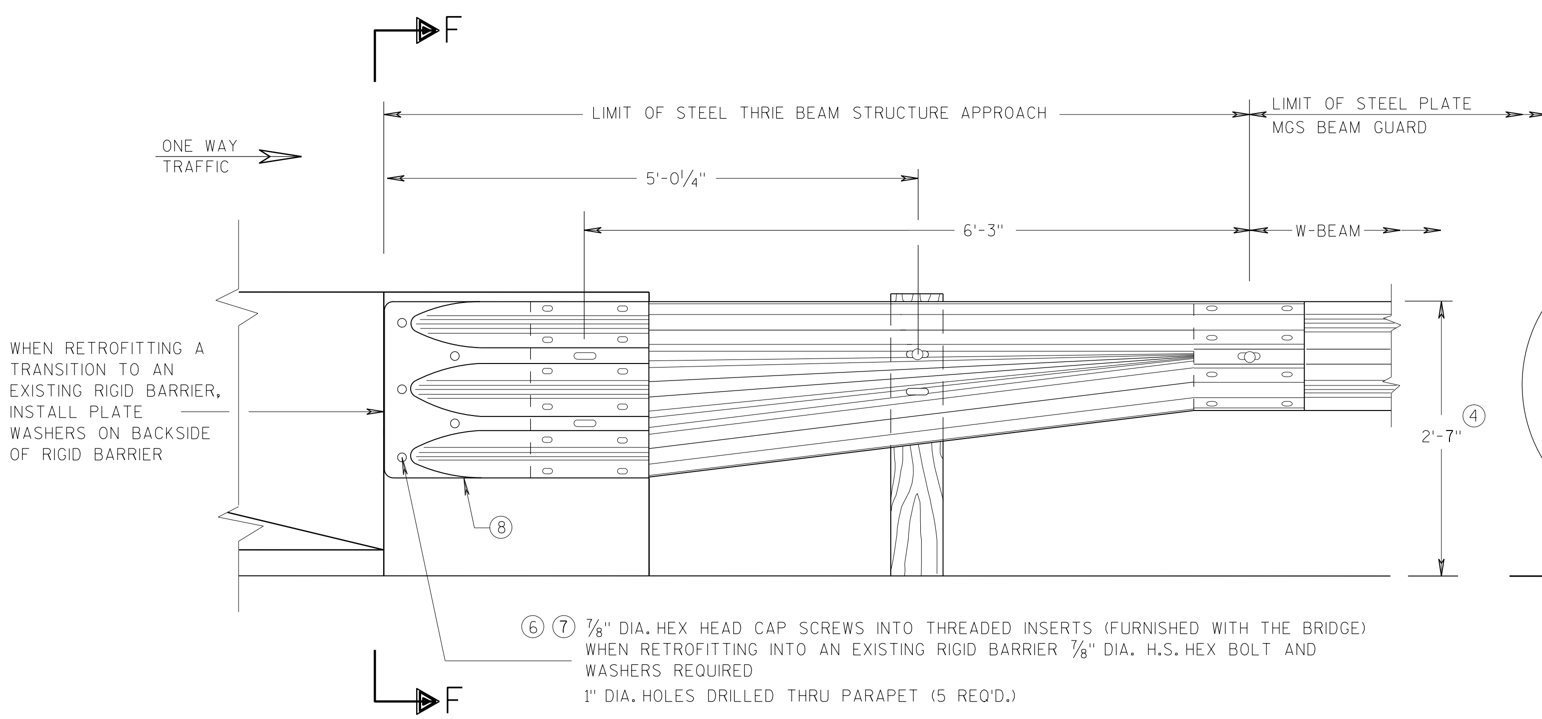
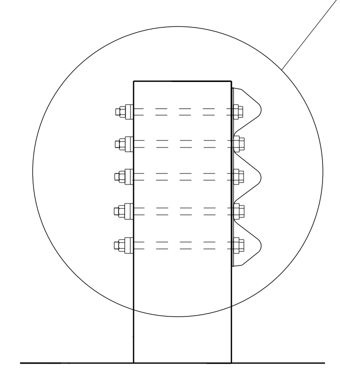
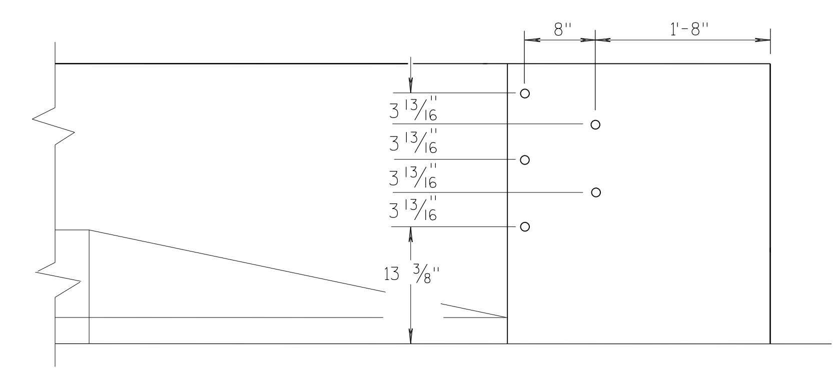




SECTION F-F



DRILL HOLE LOCATION

FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED 07/2018 DATE /S/ Rodney Taylor ROADWAY STANDARDS D[EVELOPME]NT UNIT SUPERVIS[OR] FHWA

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GENERAL NOTES

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

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

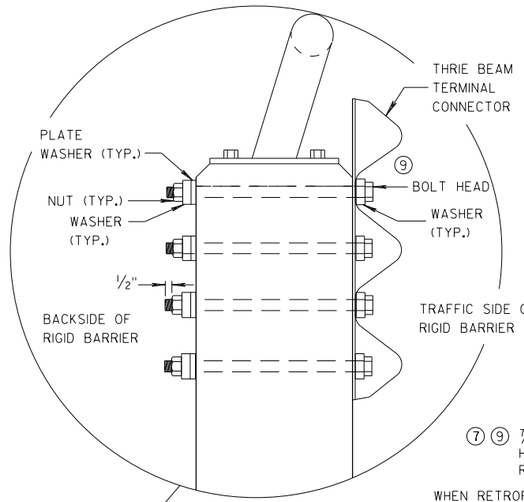
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

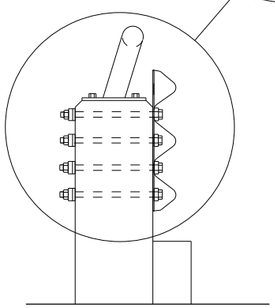
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

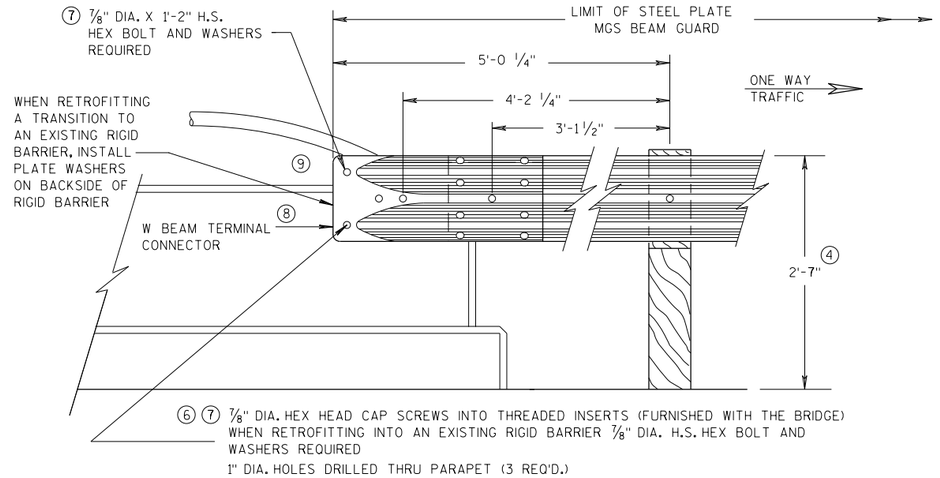
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

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





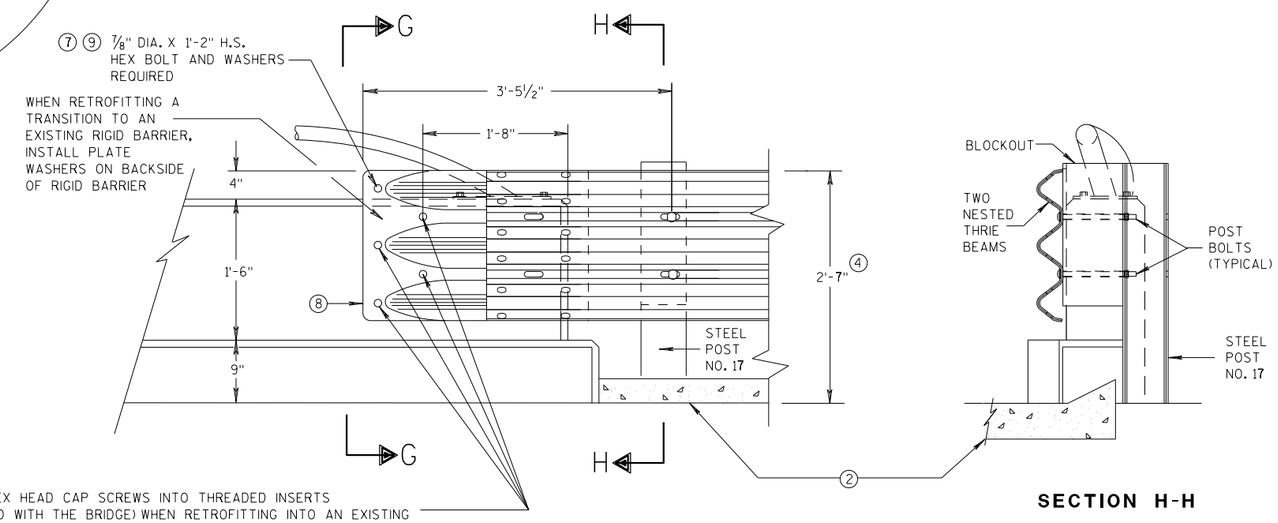
SECTION G-G



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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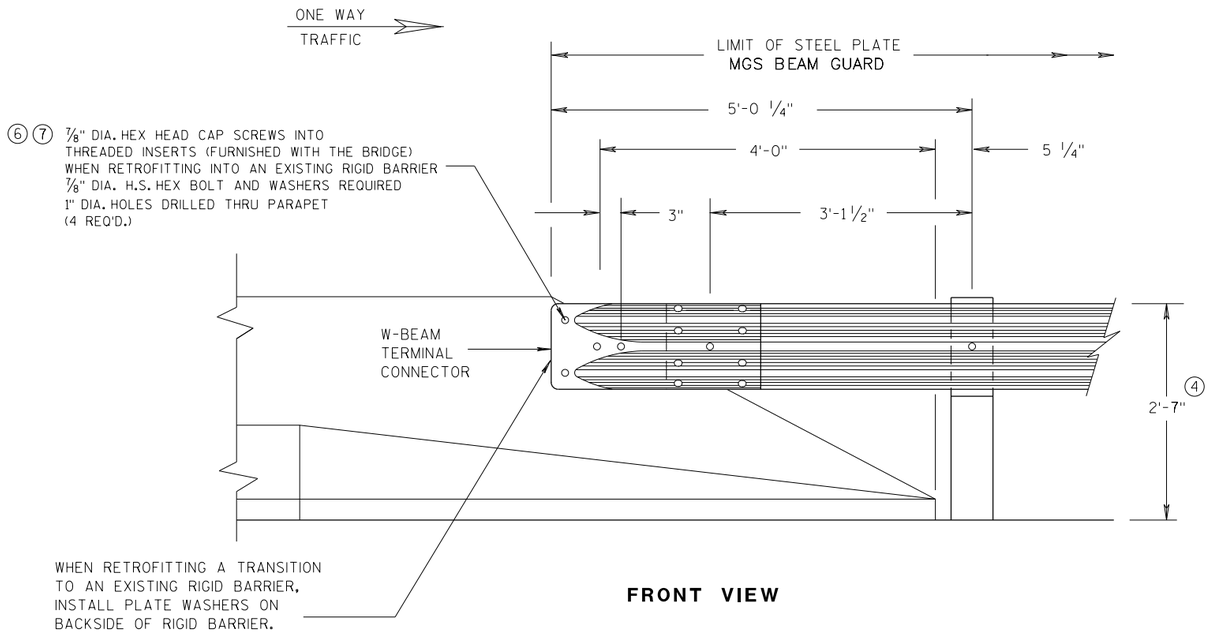


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

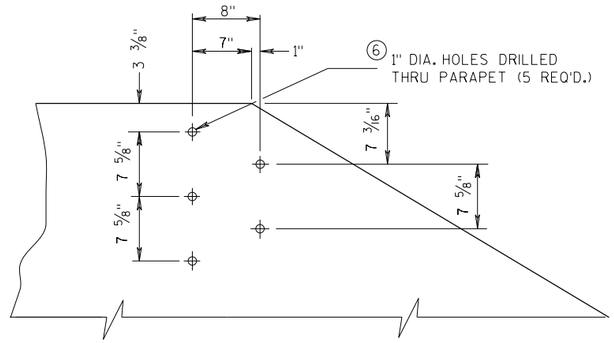
GENERAL NOTES

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

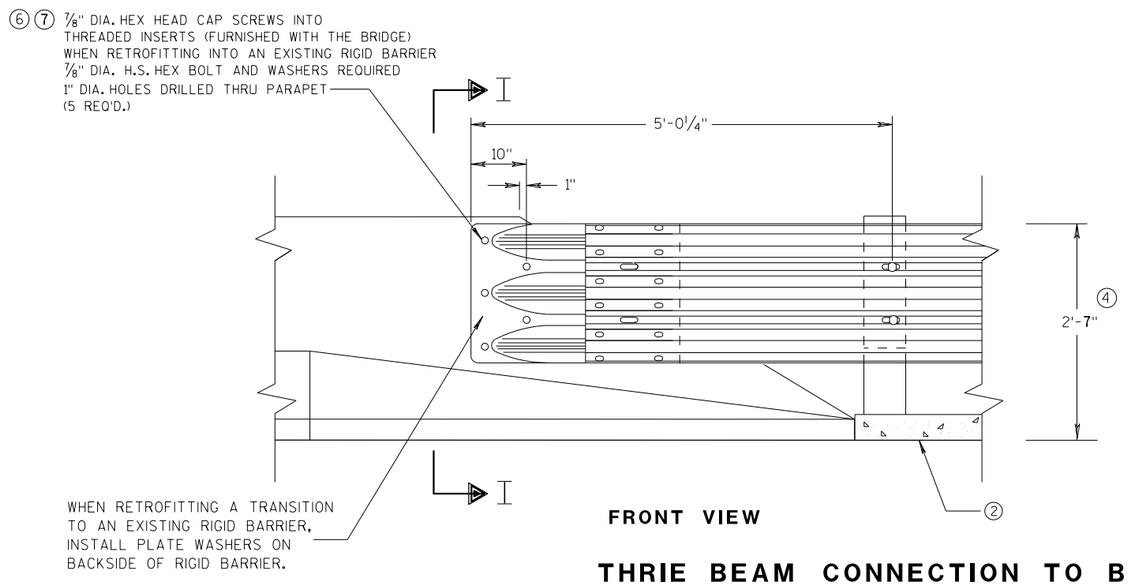
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

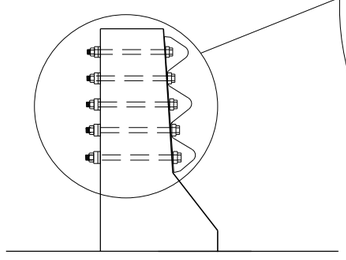
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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



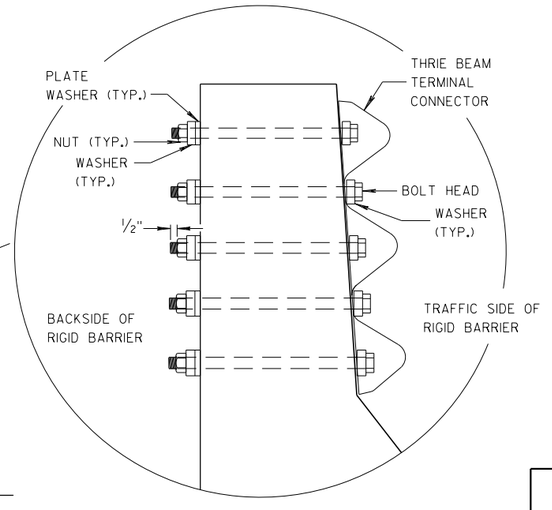
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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07/2018 — DATE
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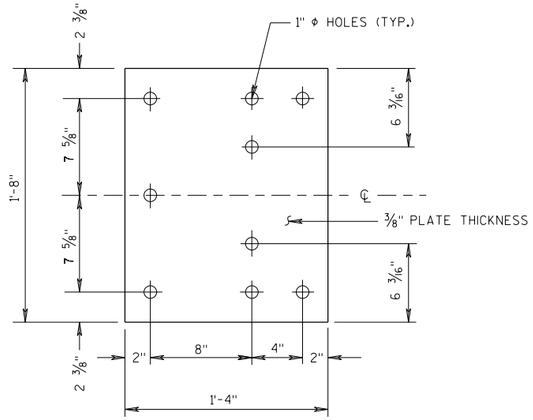
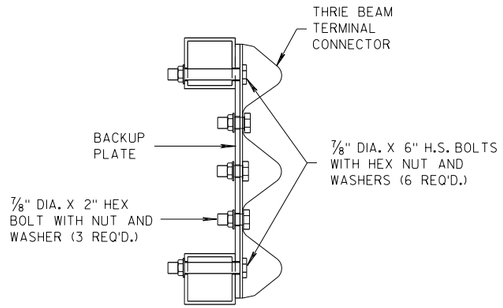
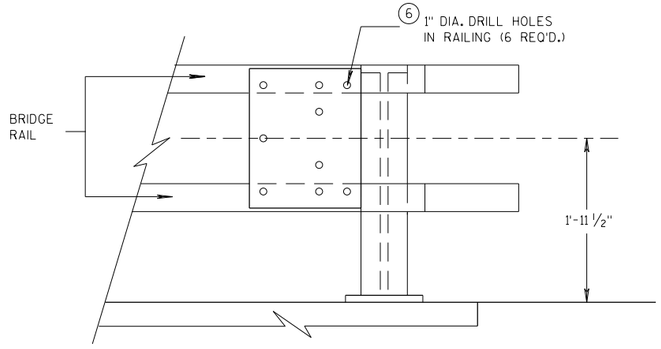


BACK-UP PLATE DETAIL



SECTION J-J

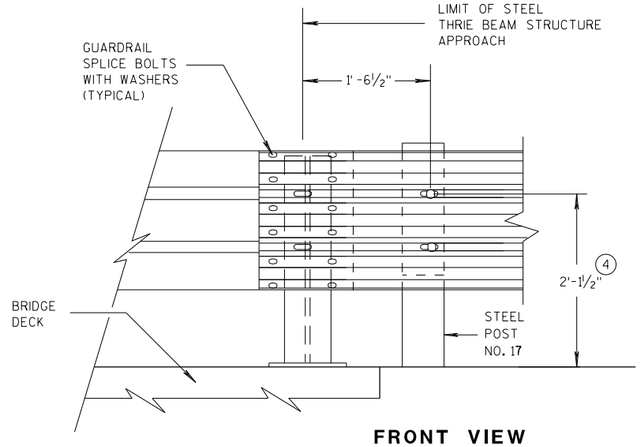


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

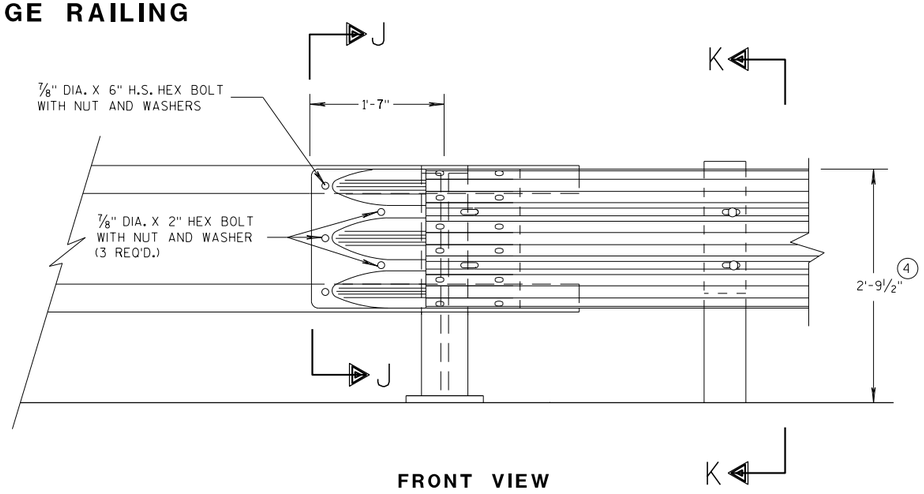
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

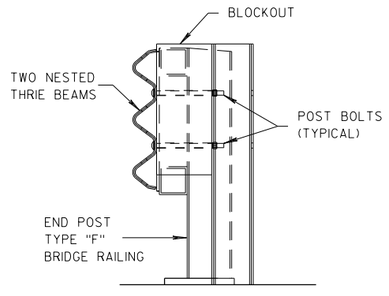


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 07/2018 — DATE
FHWA

/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

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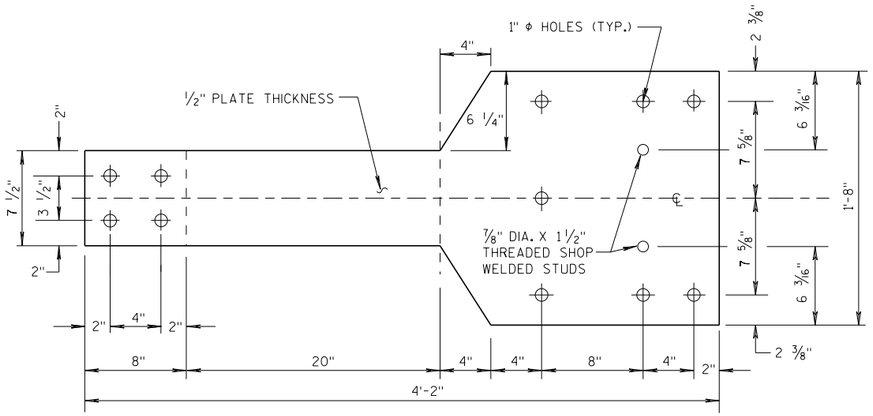
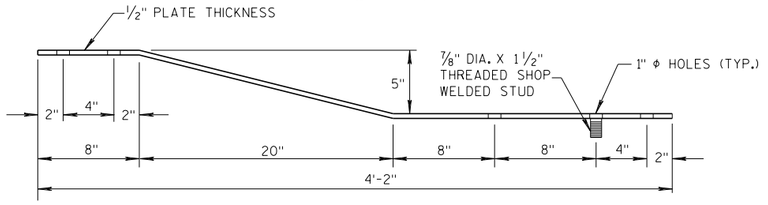
S.D.D. 14 B 45-5g

GENERAL NOTES

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

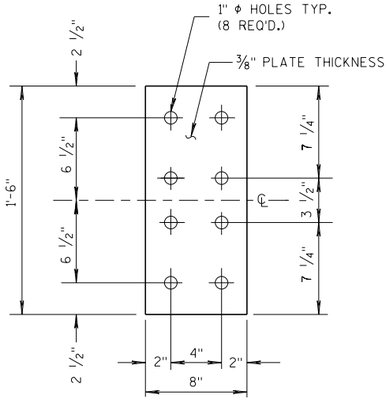


FRONT VIEW

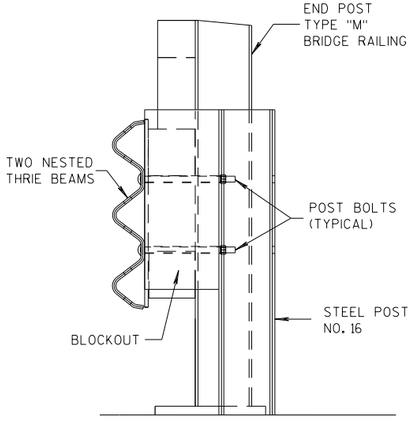


PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

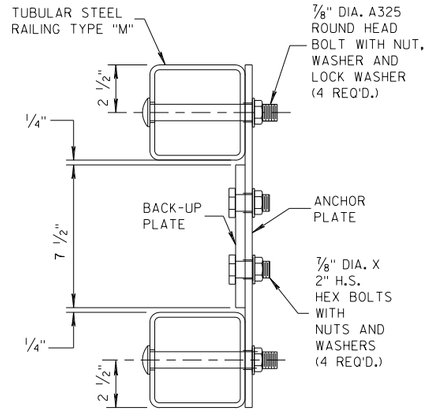


FRONT VIEW

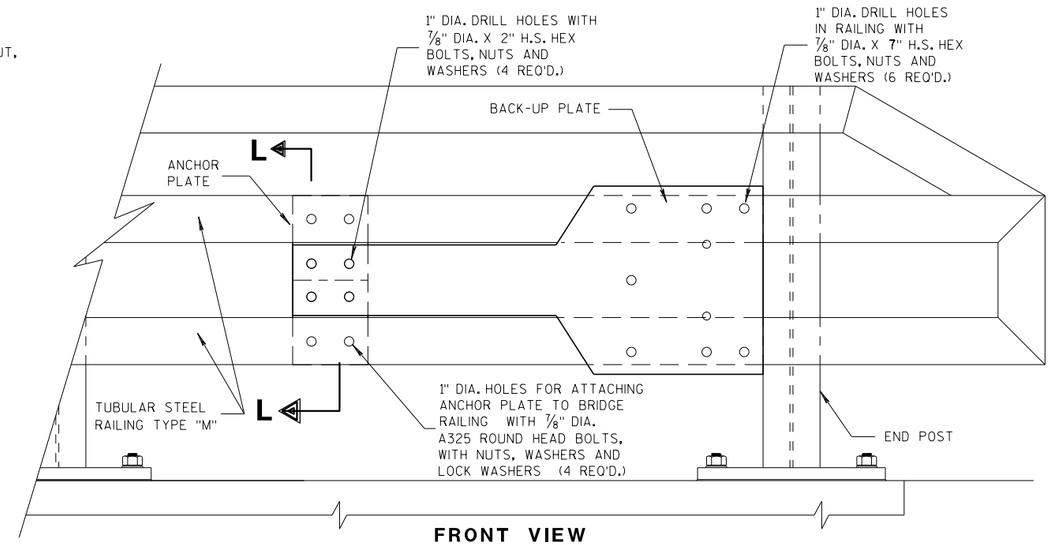


SECTION M-M

ANCHOR PLATE DETAIL, TYPE "M"

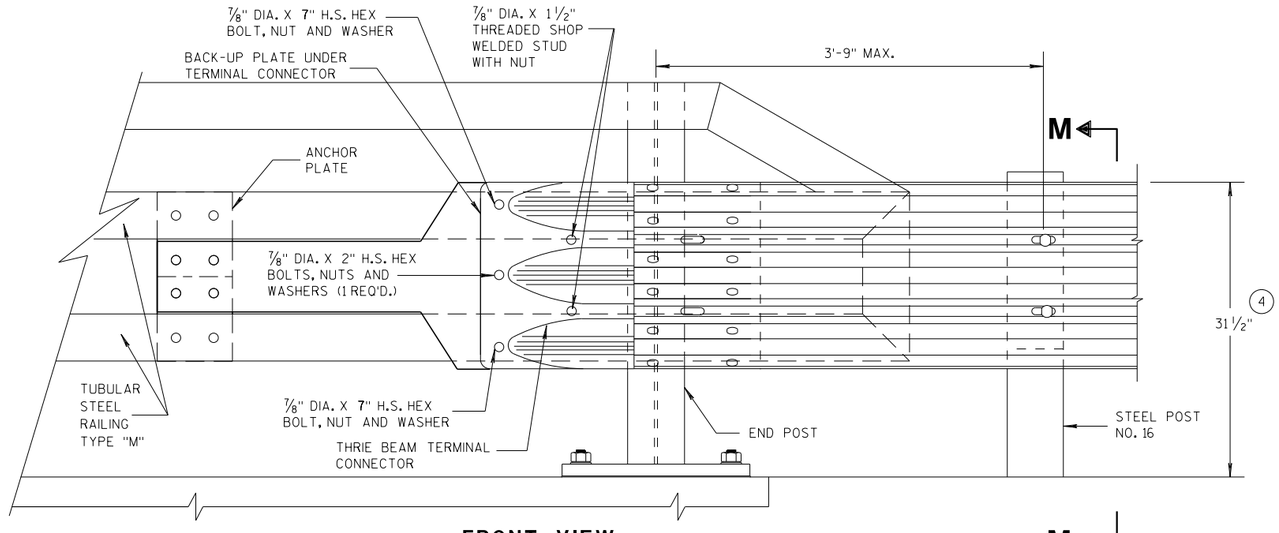


SECTION L-L

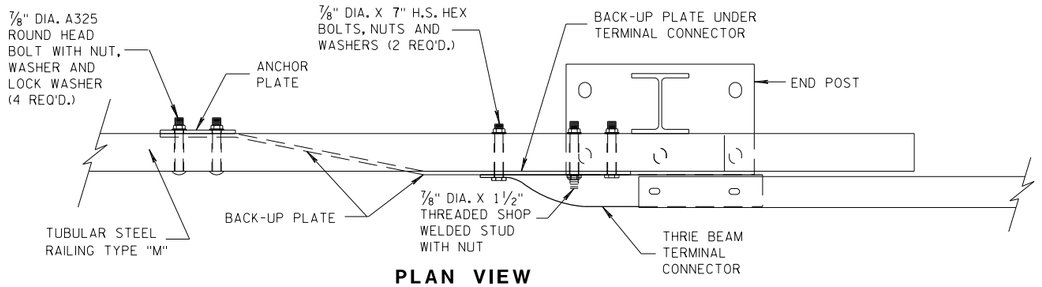


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
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GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

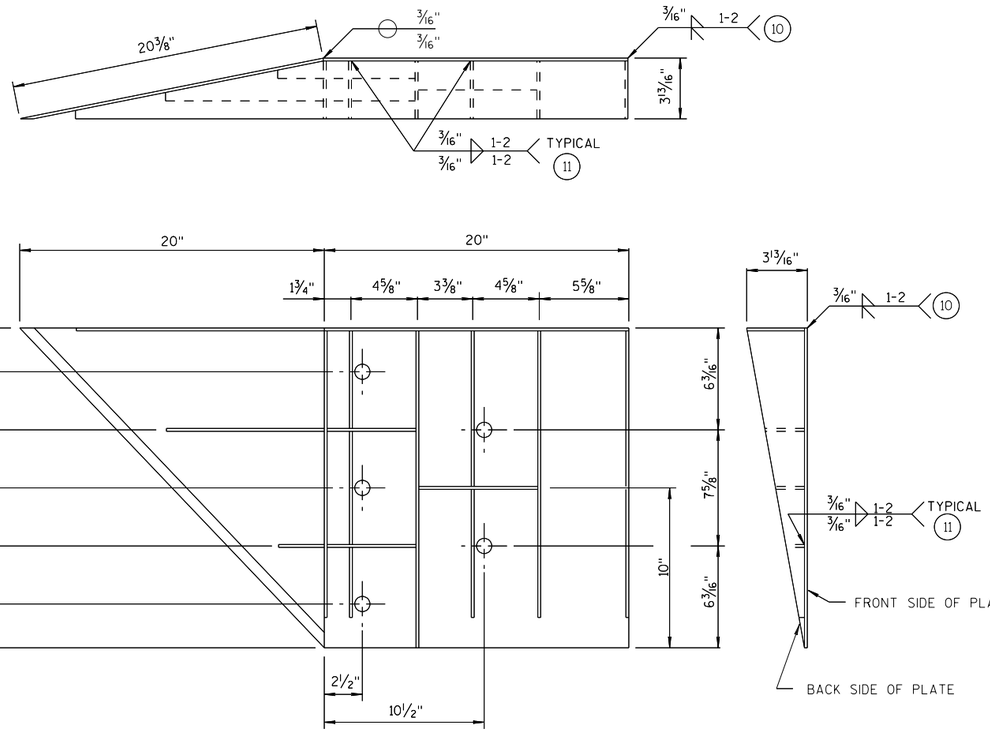
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

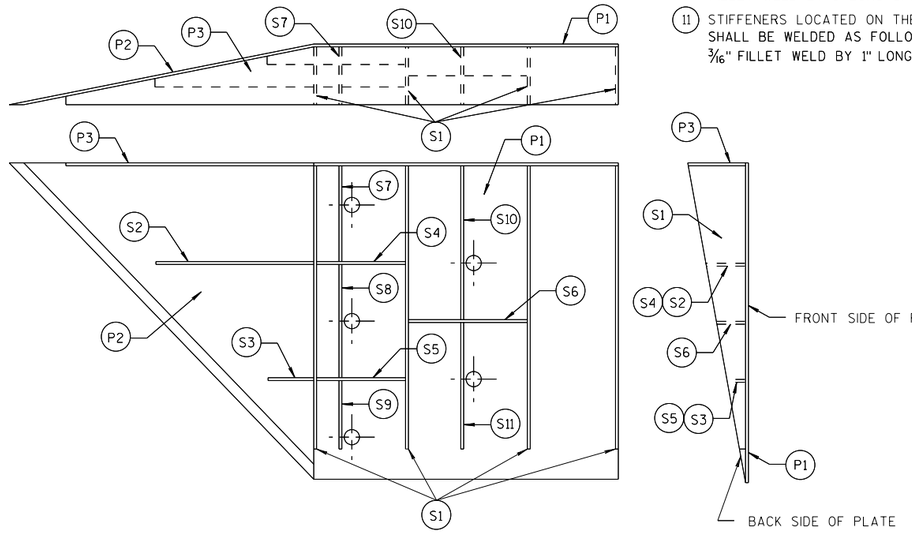


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

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

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS I
UNIT SUPERVI

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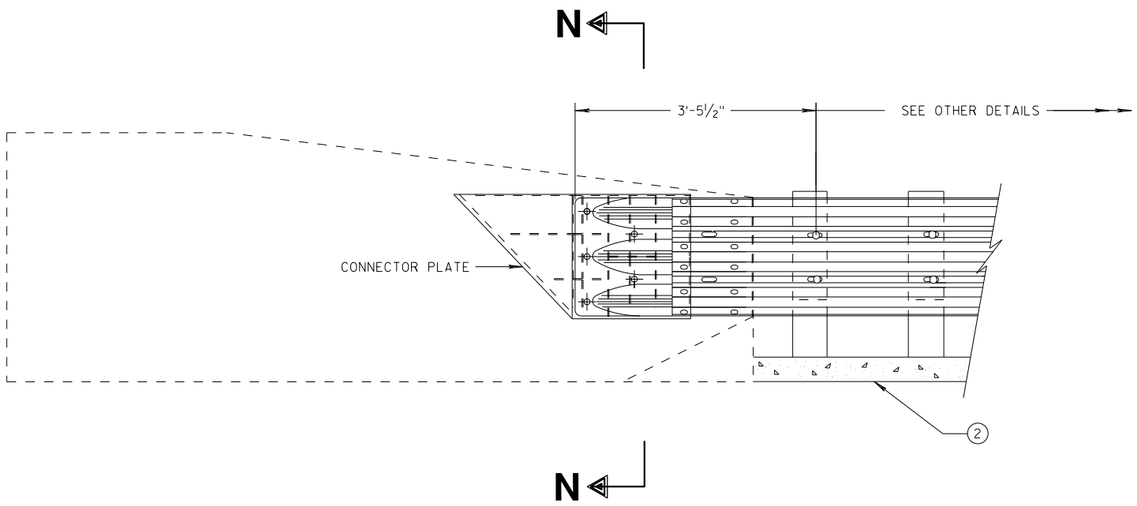
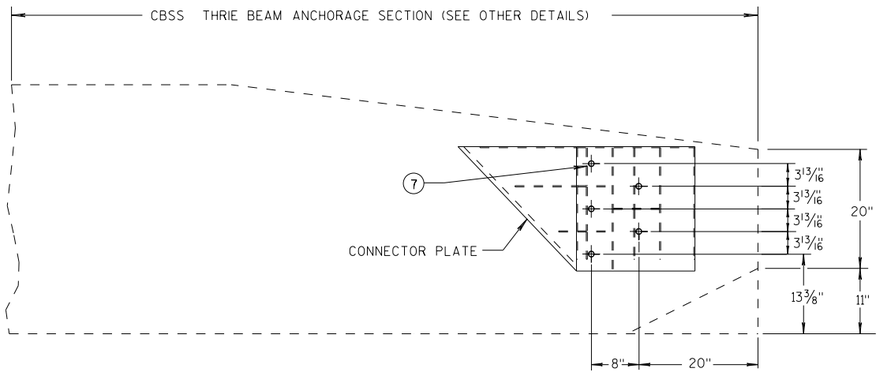
S.D.D. 14 B 45-5i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



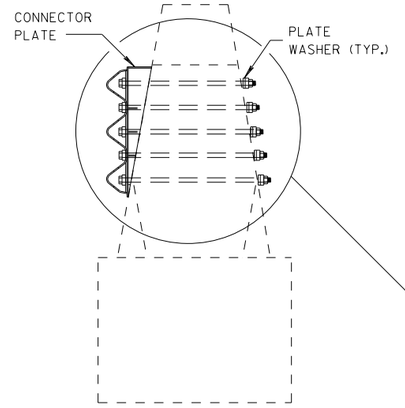
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

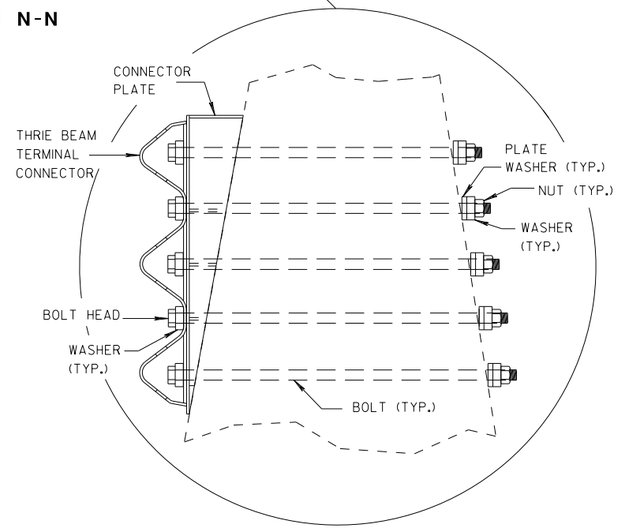
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

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



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
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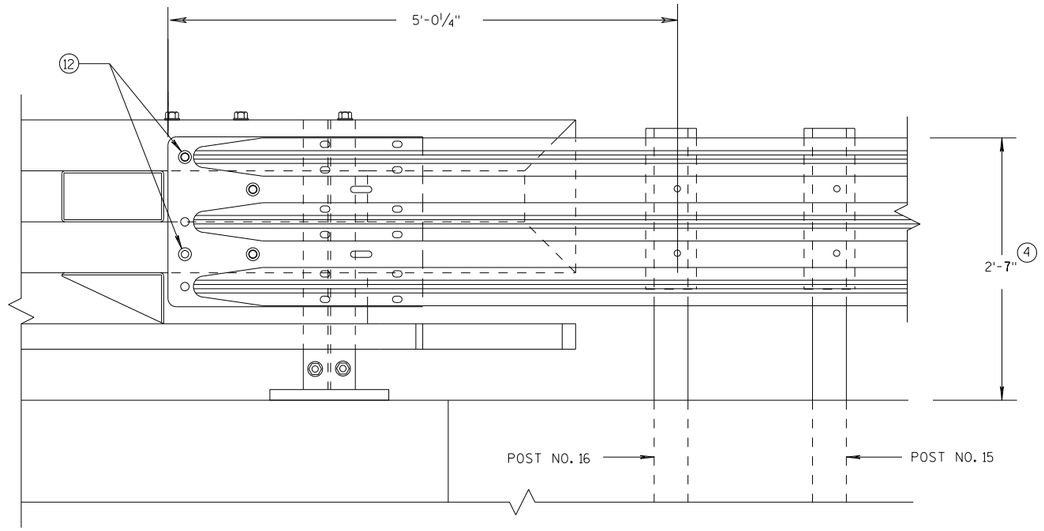
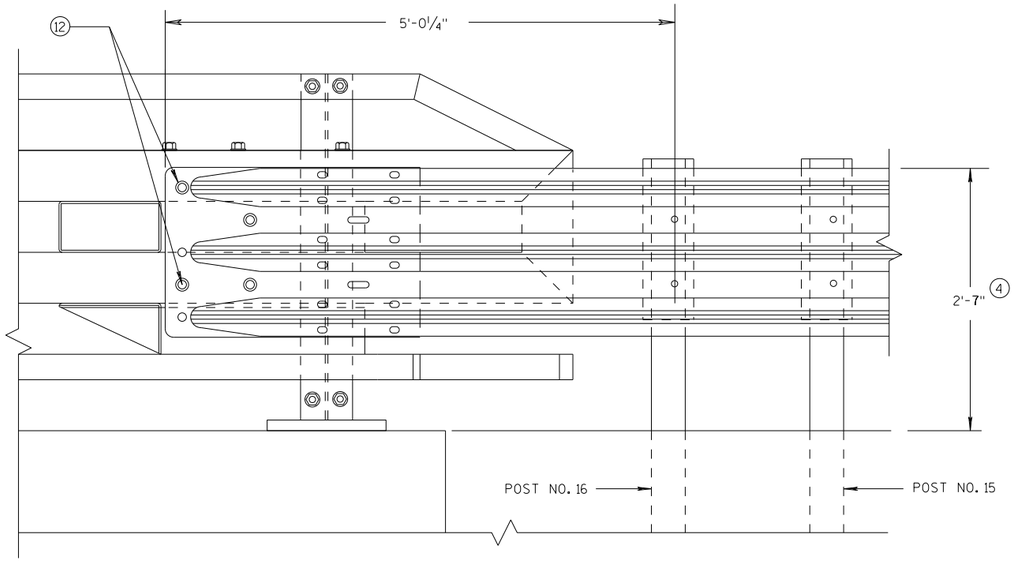
S.D.D. 14 B 45-5j



ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
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S.D.D. 14 B 45-5k

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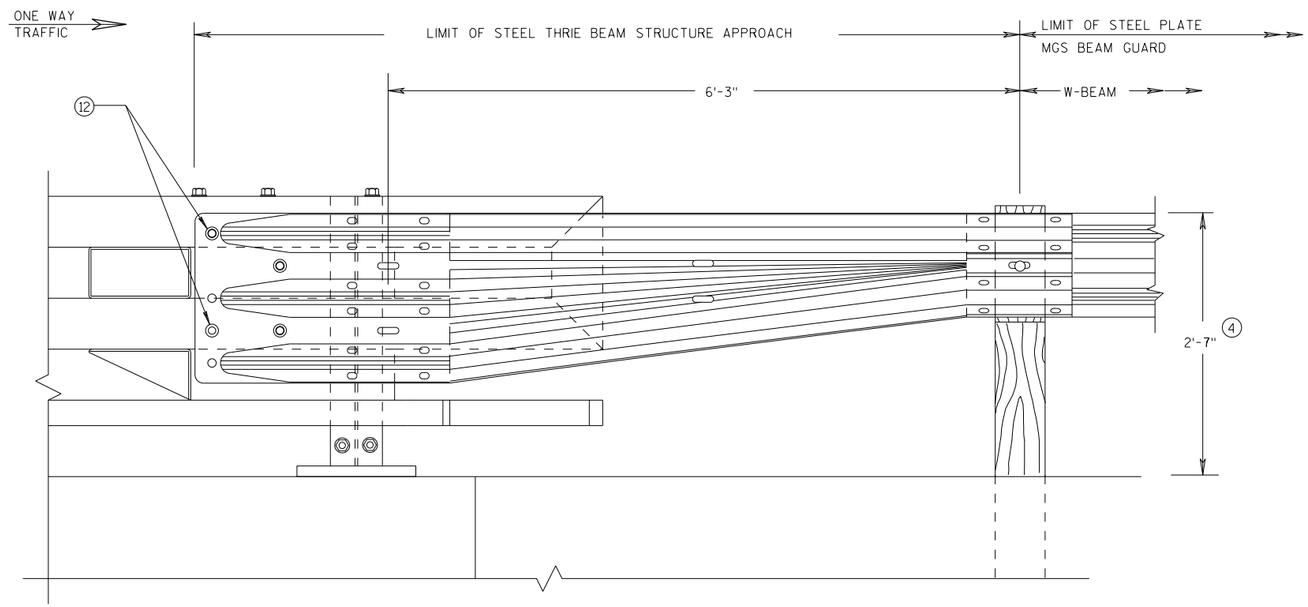
S.D.D. 14 B 45-5k



FRONT VIEW

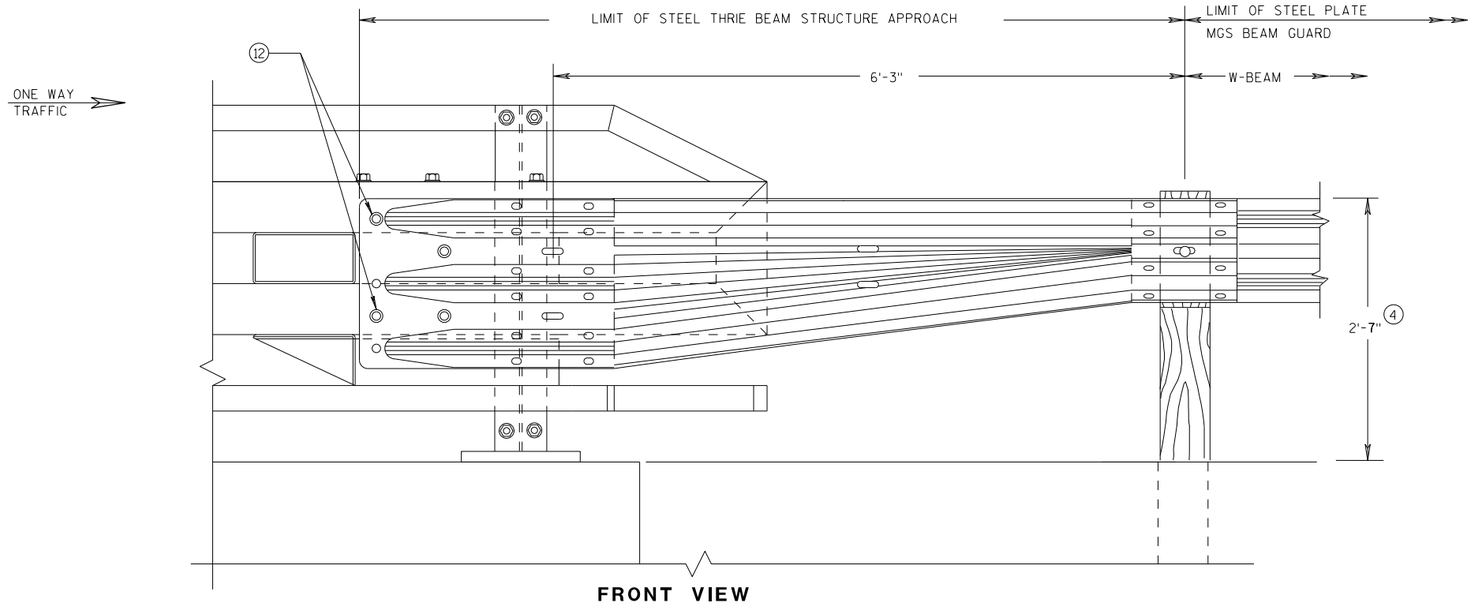
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

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

GENERAL NOTES

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

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



FRONT VIEW

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

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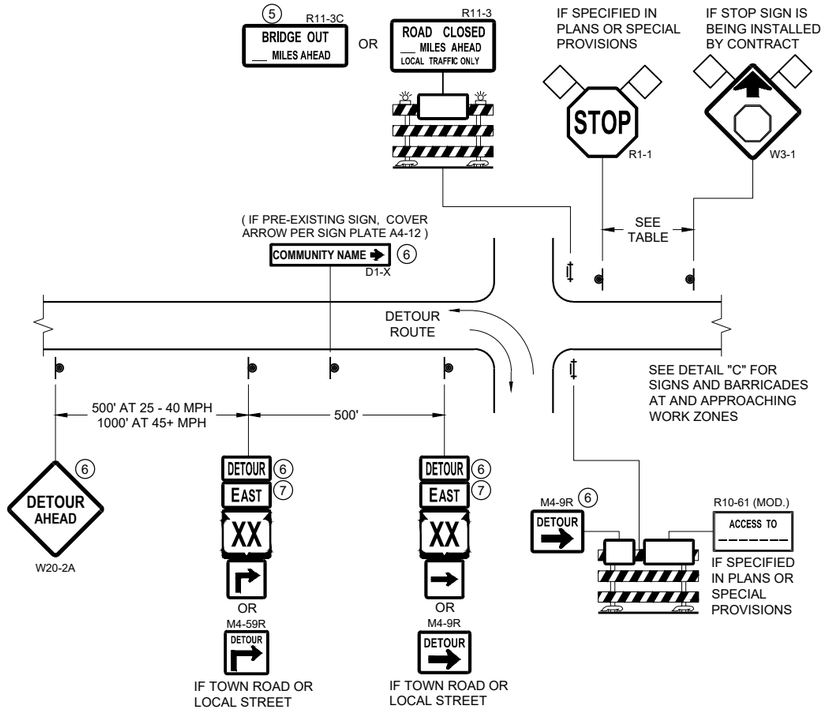
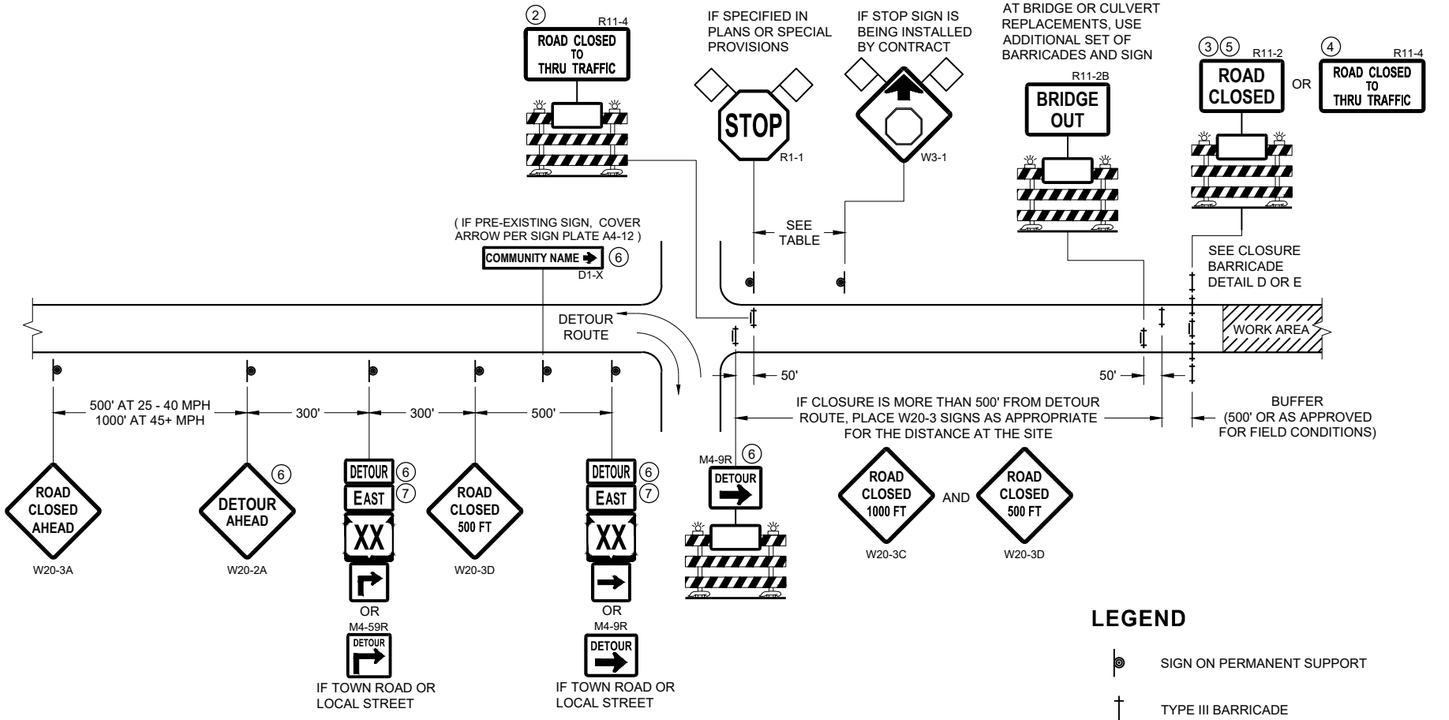
S.D.D. 14 B 45-5L



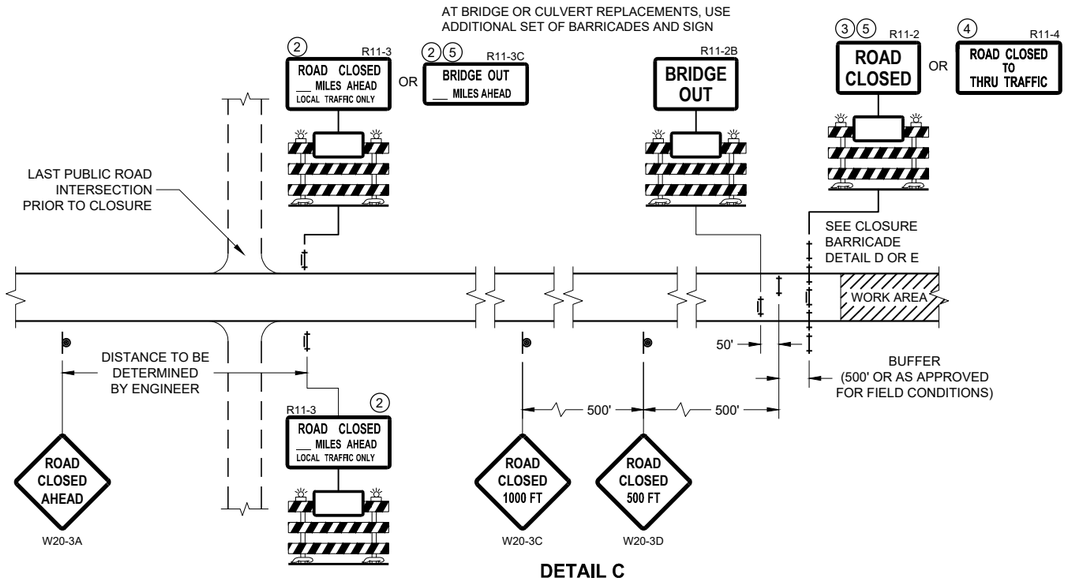


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

DETOUR M4 - 8
EAST M3 - X
XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
M05 - 1 OR M06 - 1

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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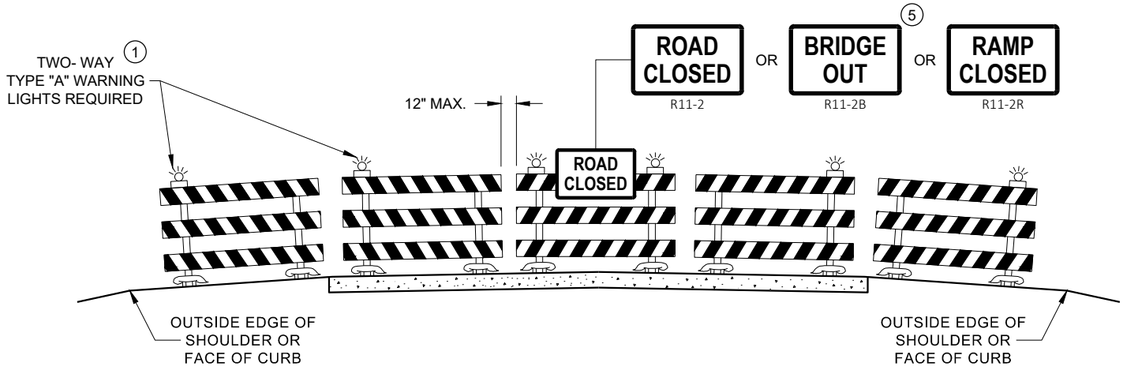
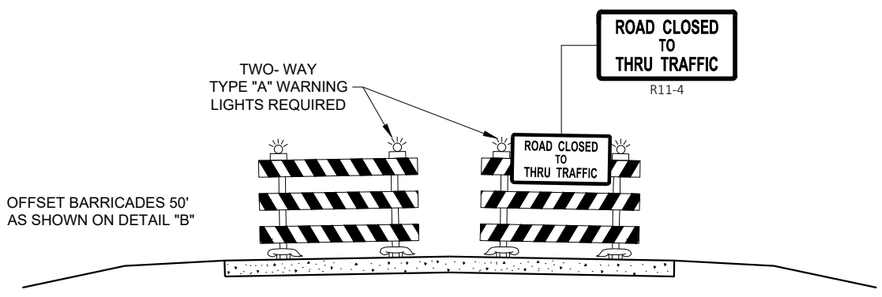
SDD 15C02 - 07a

SDD 15C02 - 07a



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
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER
FHWA

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SDD 15C02 - 07b

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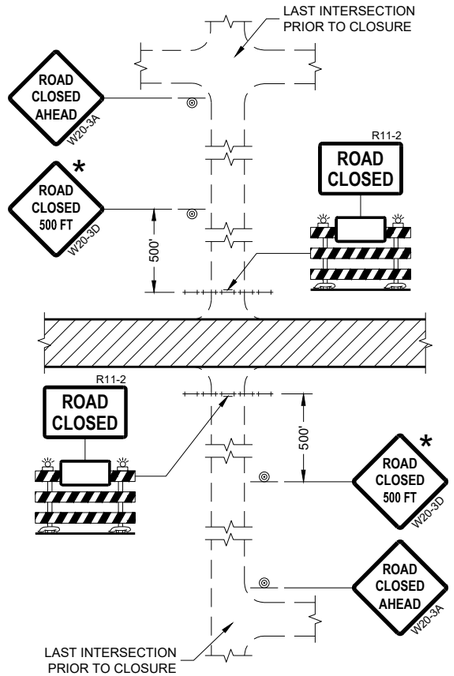
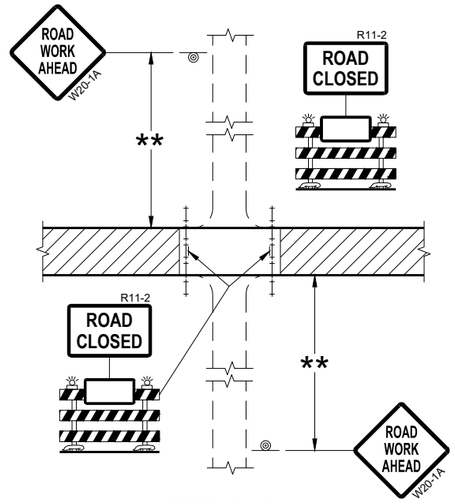
SDD 15C02 - 07b



DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)

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 (500 FEET DESIRABLE) TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS REESTABLISHED.

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

SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN 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.

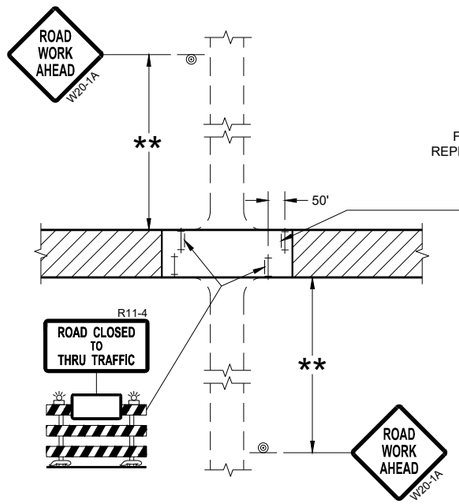
TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

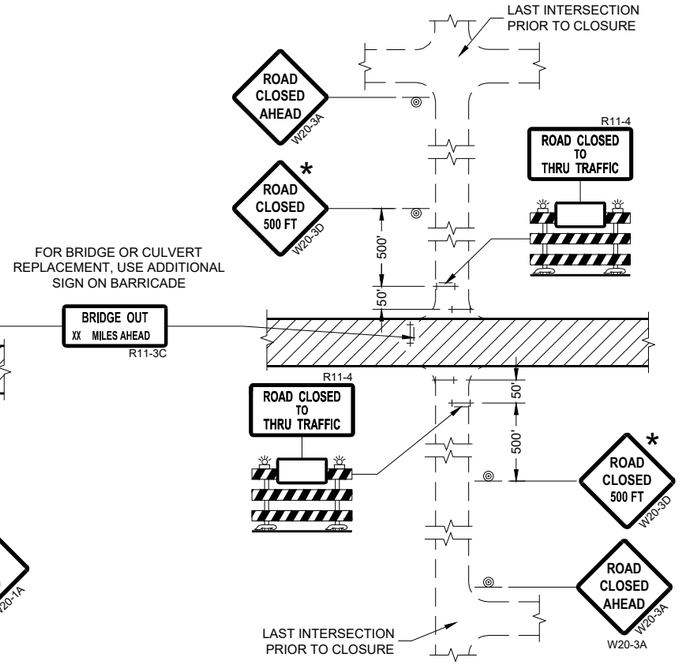
THE R11-2, R11-3, AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

* OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.

** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.





DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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SDD 15C03 - 05

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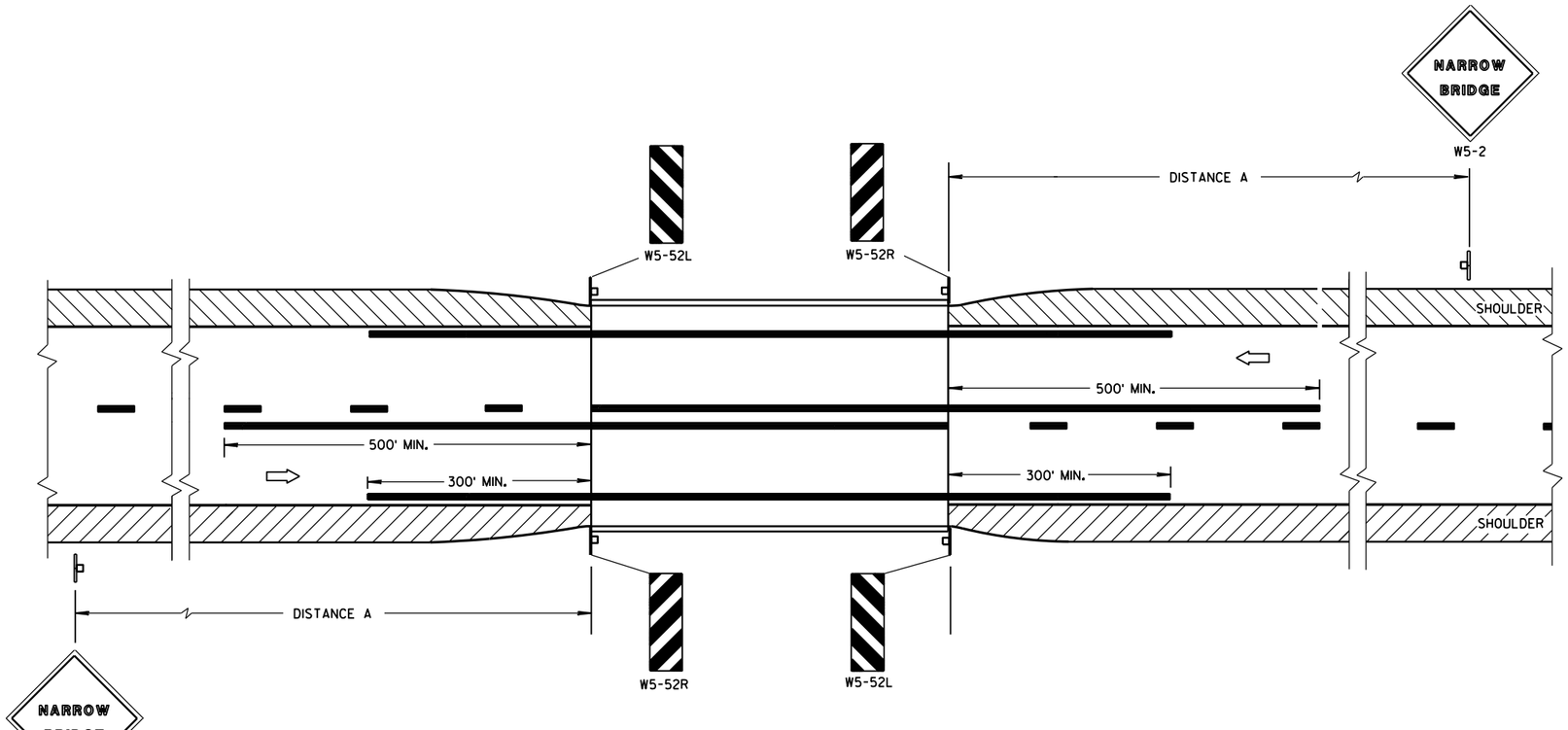
SDD 15C03 - 05



SITUATION 1

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

DISTANCE TABLE

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

GENERAL NOTES

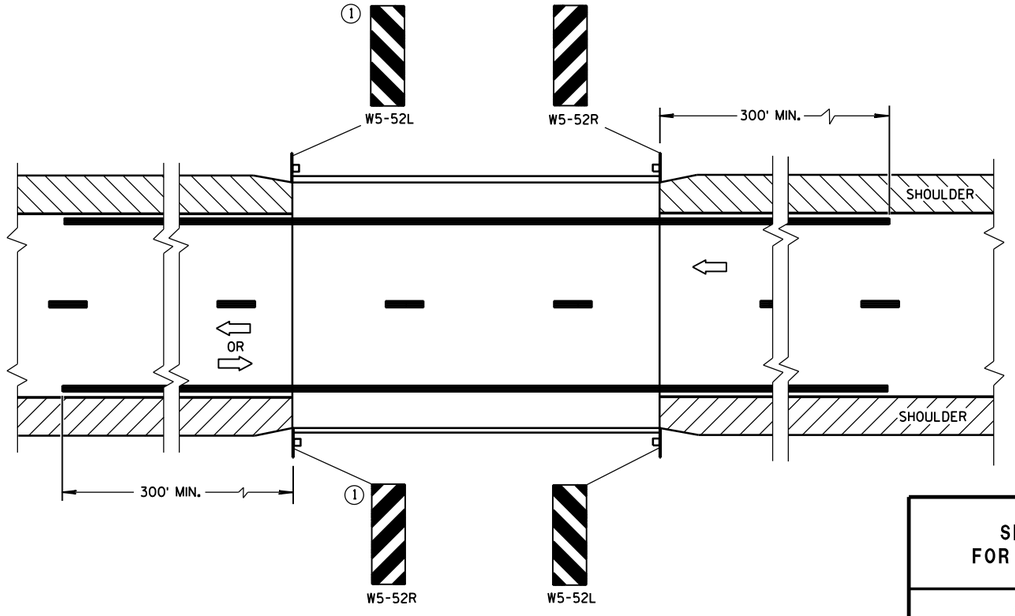
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

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

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 15 C 6-9

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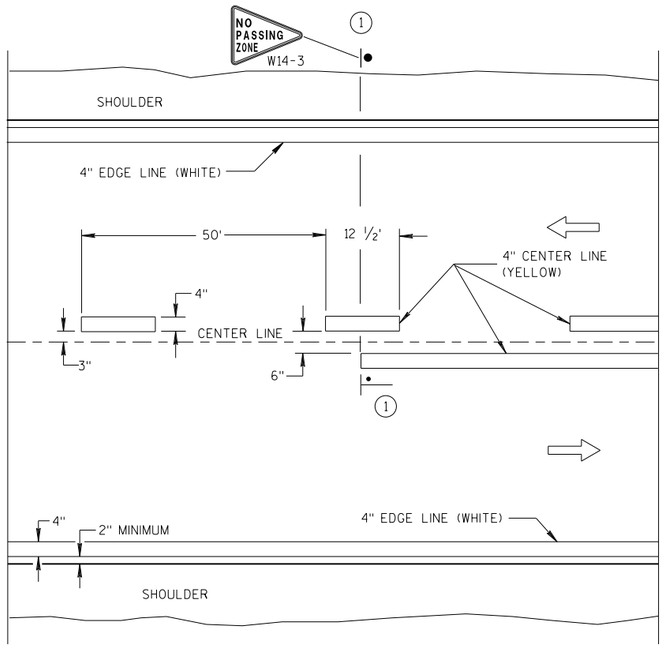
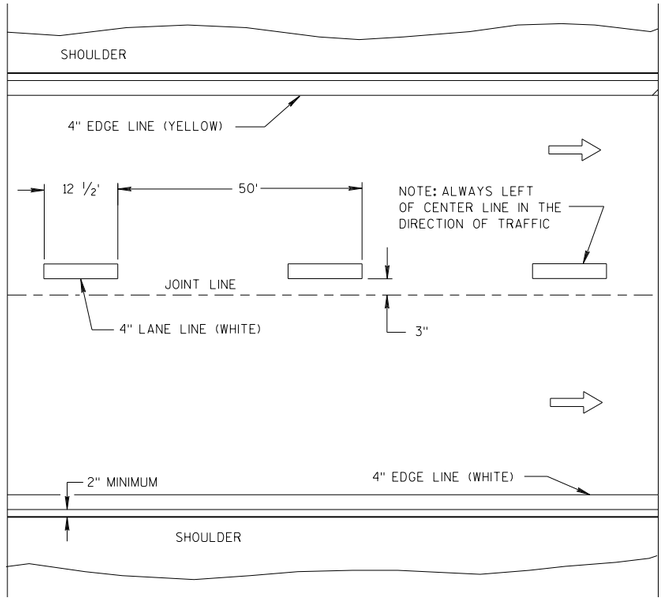
S.D.D. 15 C 6-9



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT 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.

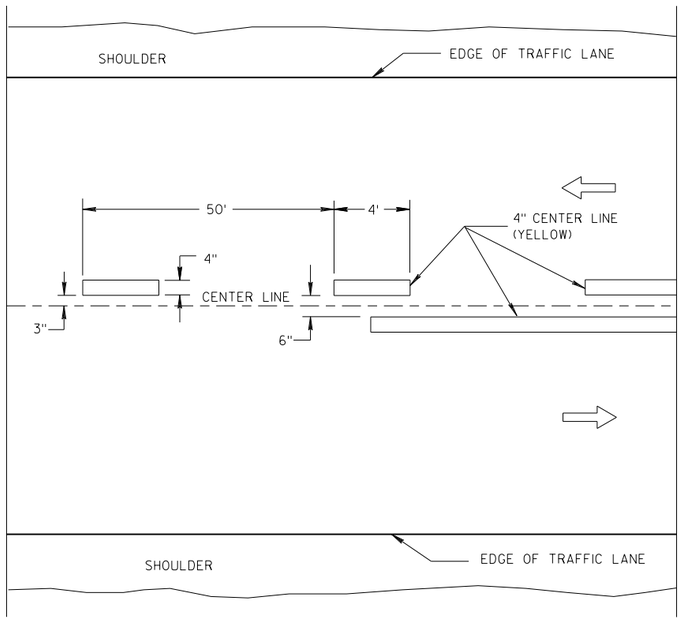
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

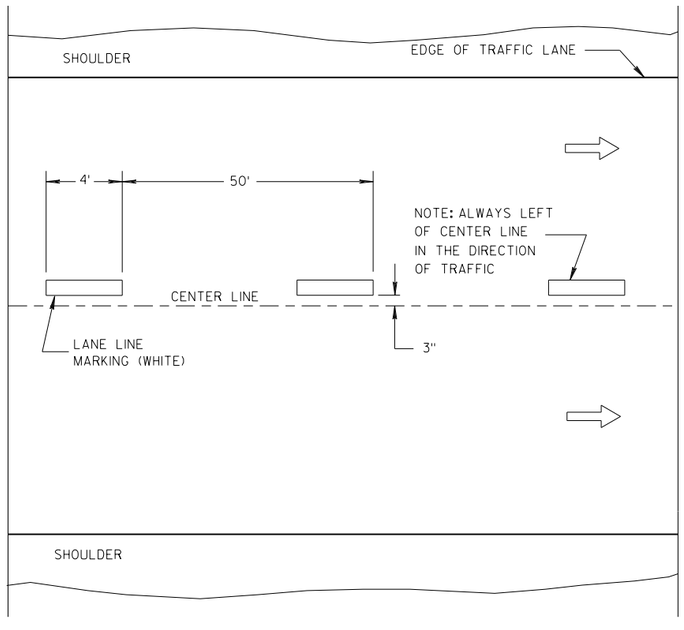
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 — DATE

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

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

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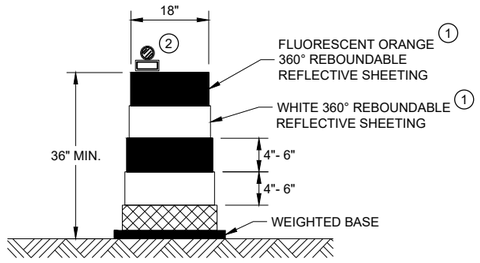
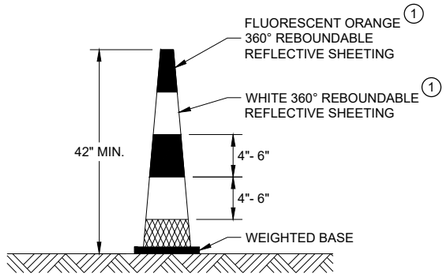
S.D.D. 15 C 8-19a

GENERAL NOTES

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

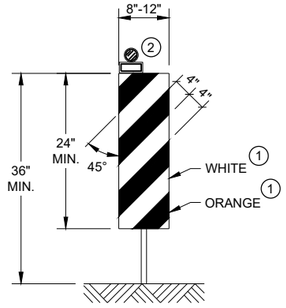


DRUM



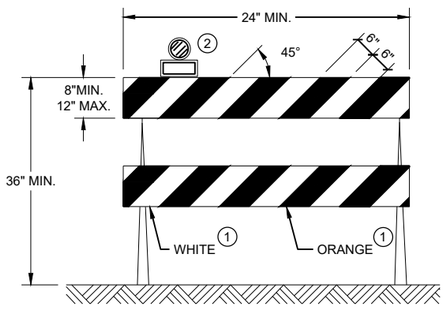
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



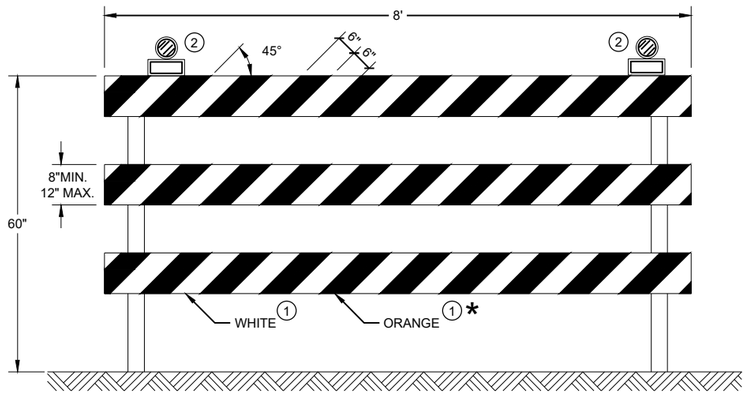
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

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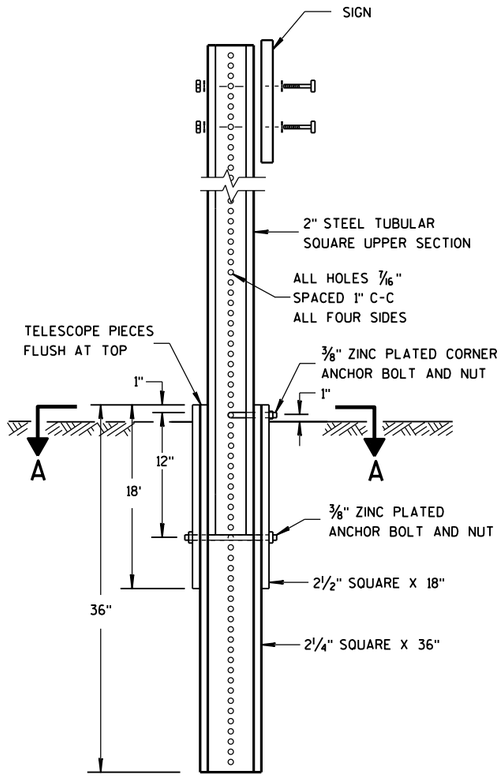
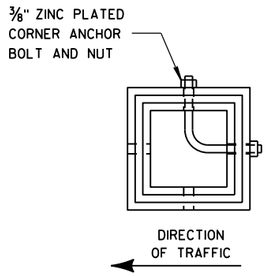
SDD 15C11 - 07b

6

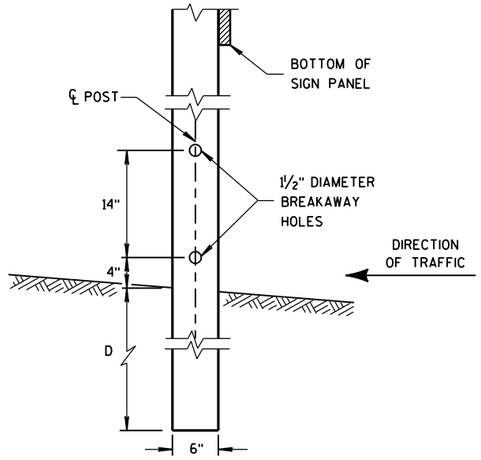
SDD 15C11 - 07b



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



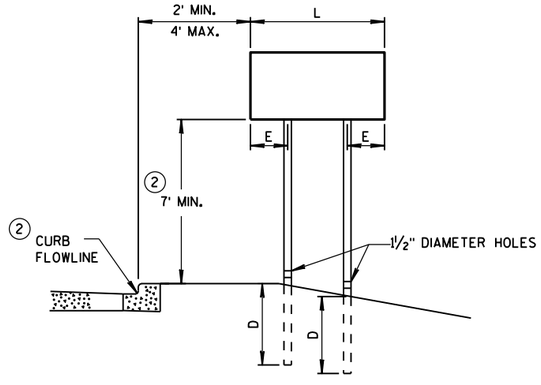
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

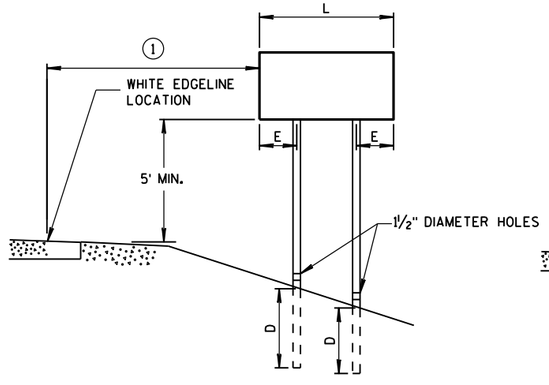
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

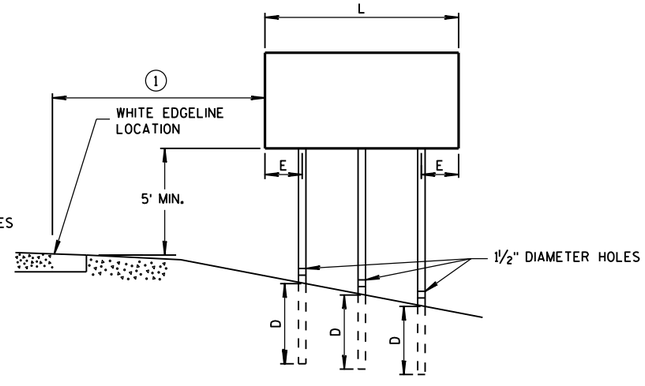
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

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



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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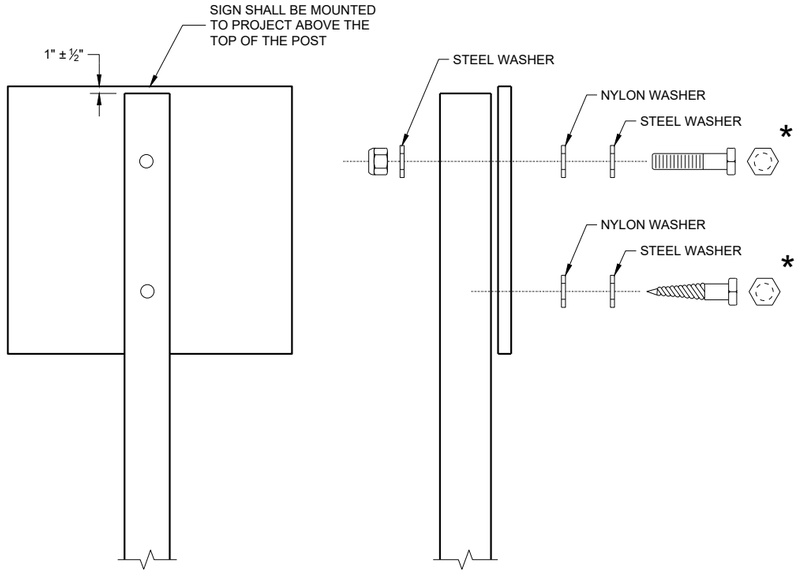
S.D.D. 15 D 38-2a
S.D.D. 15 D 38-2a



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POST (4" x 6")
LAG SCREWS - ⅜" x 3"
MACHINE BOLTS - 5/16" x 6 ½" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ⅜" x 3 ¼" LENGTH W/NUTS
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH, GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x 1/16" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

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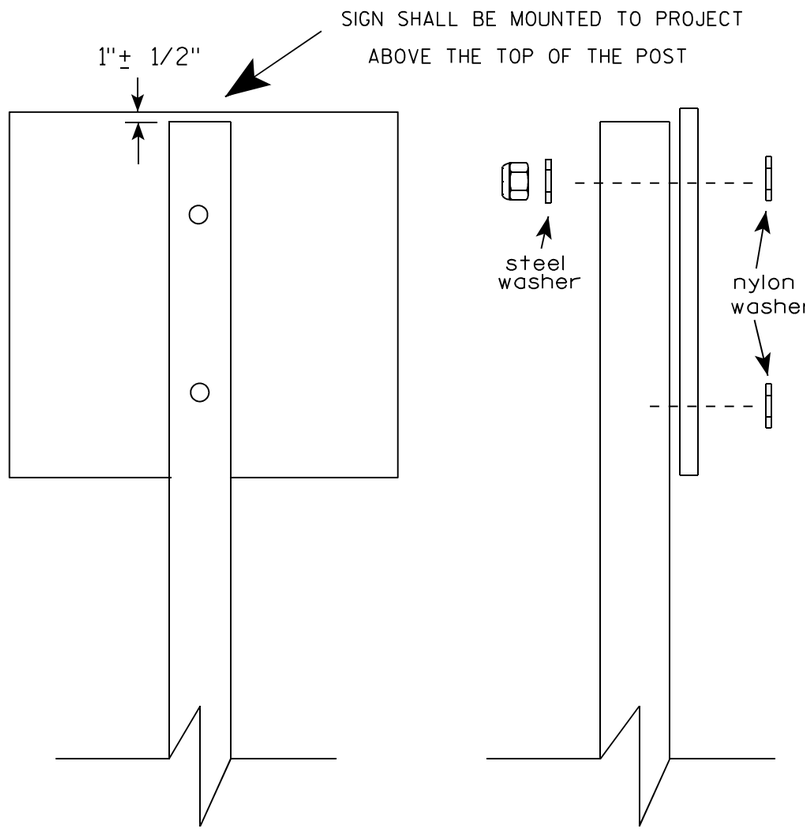
SDD 15D38 - 02b

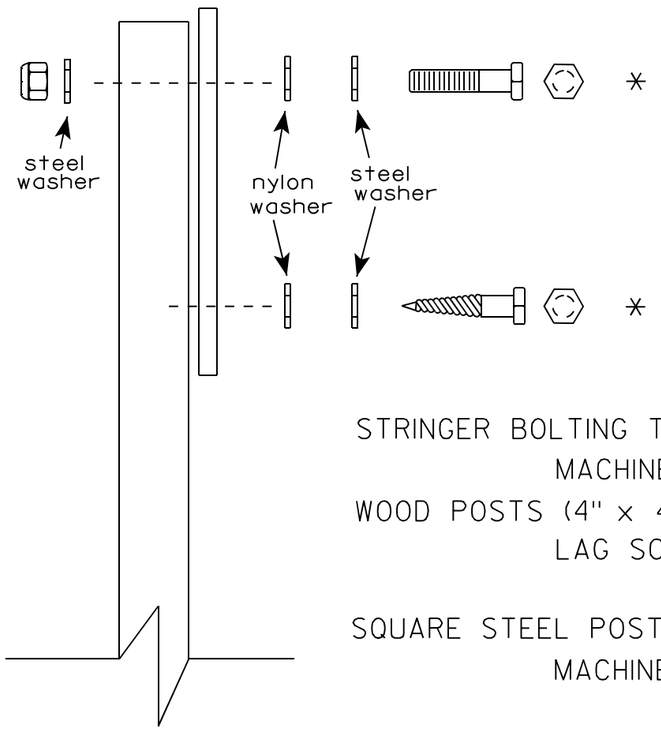
SDD15D38 - 02b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA





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

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

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

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

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

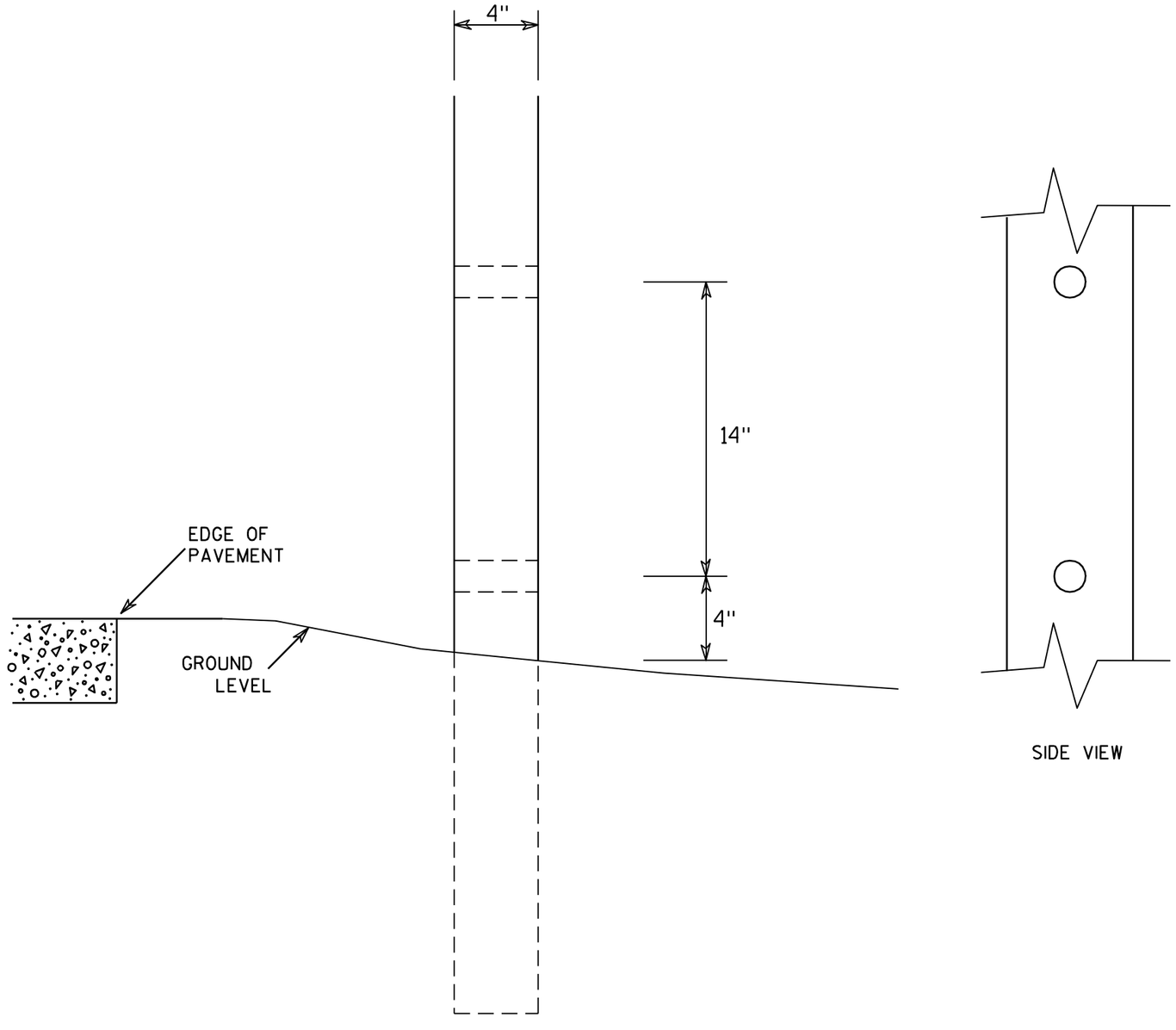
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: E



SIDE VIEW

GENERAL NOTES

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

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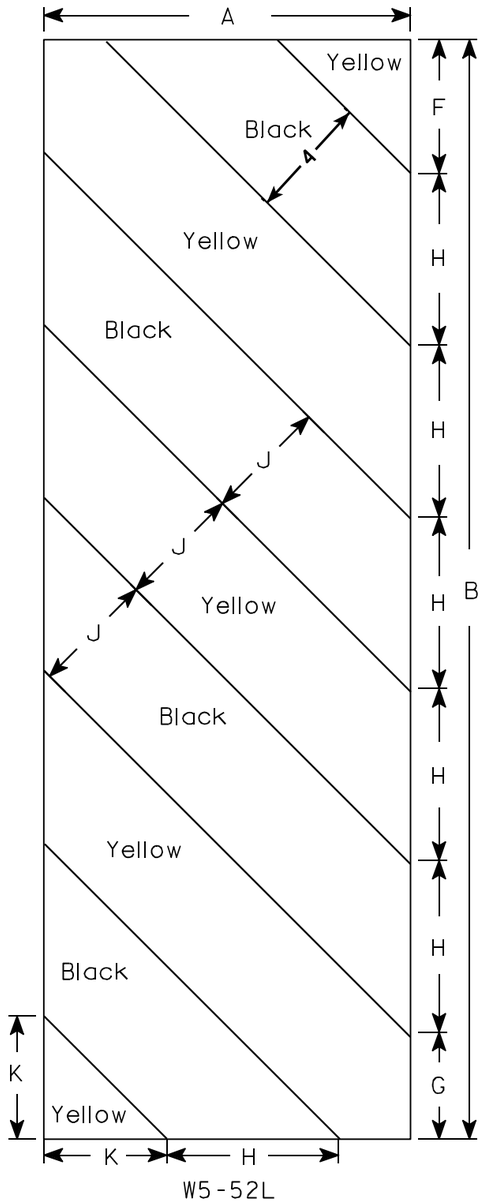
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

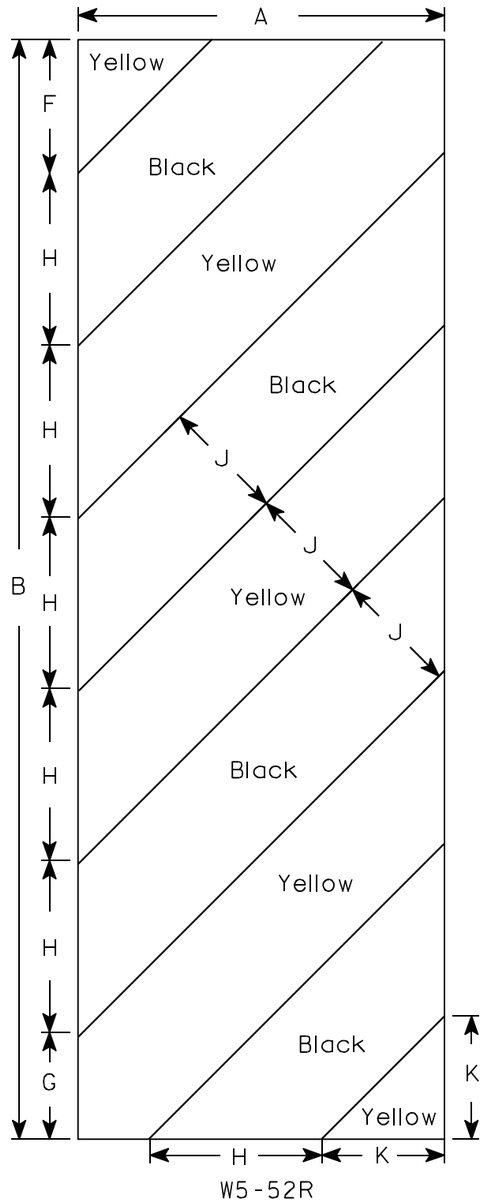
APPROVED Chester J Spang
for State Traffic Engineer

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

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



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

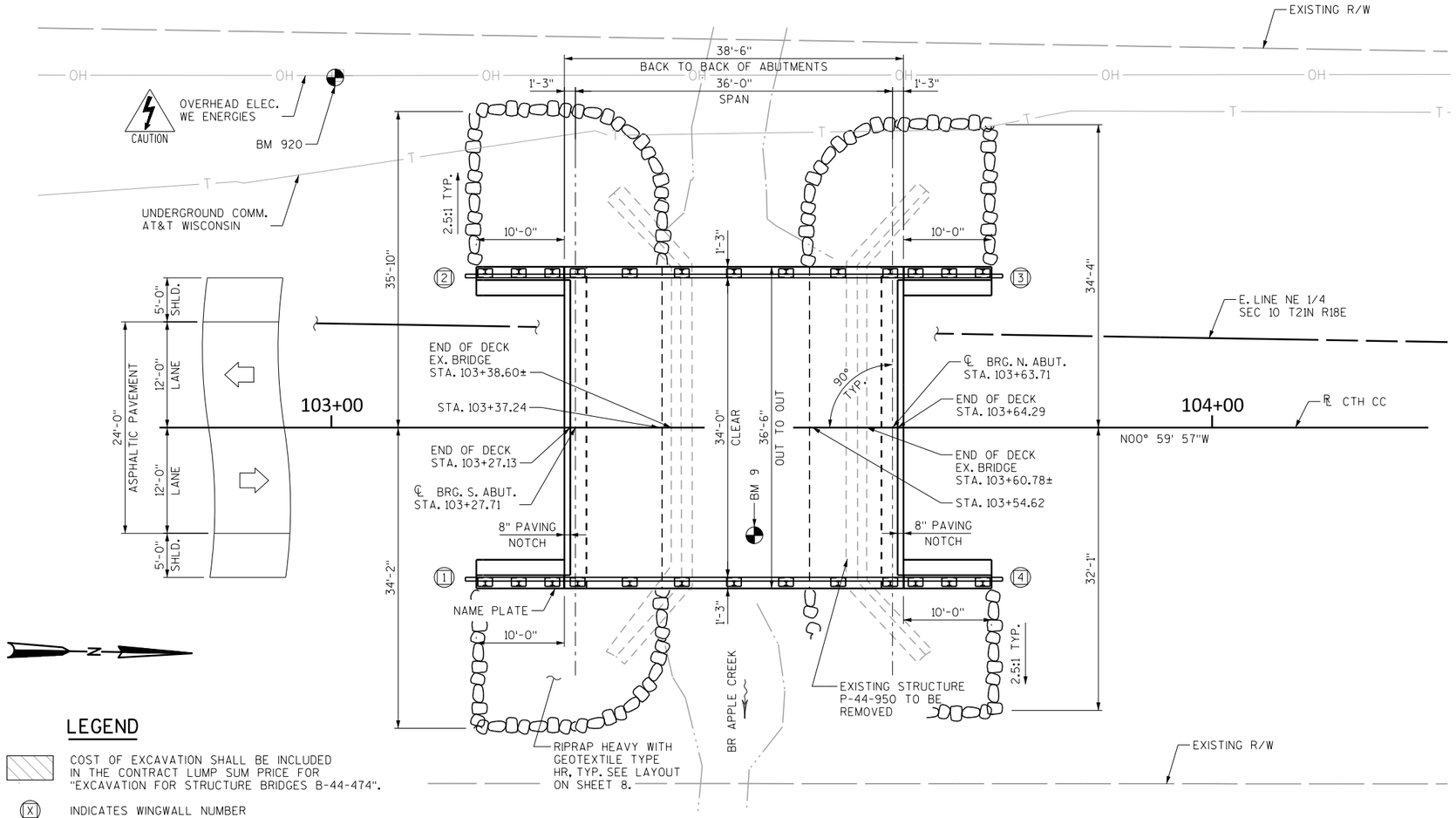
APPROVED Matthew R Rauch
for State Traffic Engineer

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

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

STATE PROJECT NUMBER

4665-01-71



LEGEND

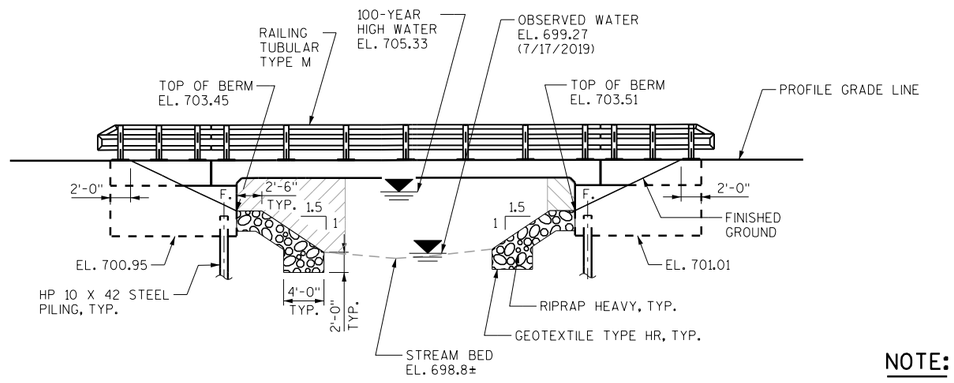
COST OF EXCAVATION SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURE BRIDGES B-44-474".

(X) INDICATES WINGWALL NUMBER

F. FIXED BEARING

PLAN

SINGLE SPAN CONCRETE FLAT SLAB



ELEVATION

LOOKING WEST

NOTE:

PROPOSED RIGHT-OF-WAY IS OFF OF THE PAGE AND IS NOT SHOWN IN ITS ENTIRETY. SEE SECTION 4 OF THE PLANS FOR PROPOSED RIGHT-OF-WAY.

DESIGN DATA

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

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES:
CONCRETE MASONRY:
SUPERSTRUCTURE.....f'c = 4,000 PSI
ALL OTHER.....f'c = 3,500 PSI
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60.....fy = 60,000 PSI

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10 x 42 AND DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.

ESTIMATED 45'-0' LONG AT SOUTH ABUTMENT.
ESTIMATED 45'-0' LONG 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.

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} = 790 C.F.S
VEL. = 5.57 F.P.S.
HW_{100} = EL. 705.33
WATERWAY AREA = 142 SQ. FT.
DRAINAGE AREA = 4.90 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

Q_2 = 240 C.F.S.
VEL. = 2.72 F.P.S.
HW_2 = EL. 703.25

TRAFFIC DATA

CTH CC
A.D.T. = 1,180 (2020)
A.D.T. = 3,035 (2040)
R.D.S. = 45 MPH

LIST OF DRAWINGS

BENCH MARK

NO.	STATION	DESCRIPTION	ELEVATION
9	103+48.03, 12.23' RT.	MAG NAIL IN DECK P-44-950	708.29
920	103+00.42, 39.73' LT.	RR SPIKE IN PPOL #17-09994	705.64

WISCONSIN
VINCENT J. DIFRANCES
E-45790
MILWAUKEE
WI
PROFESSIONAL ENGINEER
04/01/2020

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261

CONSULTANT:
VINCENT DIFRANCES, P.E. (920) 468-4771

NO.	DATE	REVISION	BY

jt ENGINEERING, INC
Consultant Services

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 04/01/20
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-44-474

CTH CC OVER BR APPLE CREEK

COUNTY: OUTAGAMIE
TOWN: VANDENBROEK

DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
VJD	FKH	VJD	FKH

GENERAL PLAN AND ELEVATION

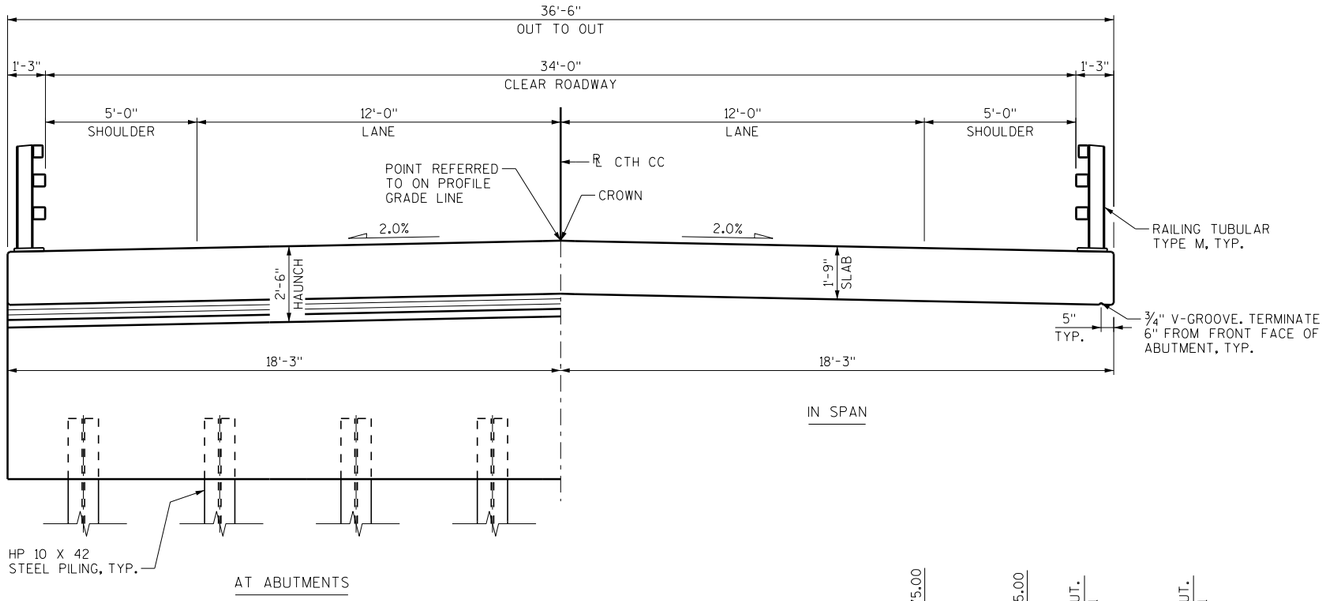
SHEET 1 OF 11
50

8

8

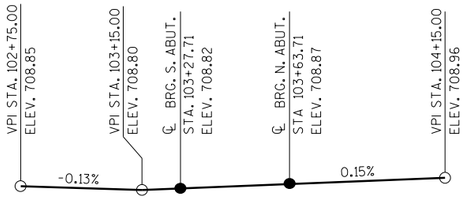
STATE PROJECT NUMBER

4665-01-71



PROPOSED SECTION THRU BRIDGE

LOOKING NORTH



PROFILE GRADE LINE - CTH CC

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NAVD 88 (2012). HORIZONTAL POSITIONS ARE WISCONSIN COUNTY COORDINATES, OUTAGAMIE COUNTY, NAD 83 (2011).

THE EXISTING STRUCTURE, P-44-950, IS A SINGLE SPAN CONCRETE FLAT SLAB STRUCTURE WITH AN OVERALL WIDTH OF 34'-6" AND AN END OF DECK TO END OF DECK LENGTH OF 22'-0". THE EXISTING STRUCTURE P-44-950 IS TO BE REMOVED.

THE UPPER LIMIT OF "EXCAVATION FOR STRUCTURES BRIDGES B-44-474" SHALL BE THE EXISTING GROUNDLINE.

FILL AND/OR EXCAVATE TO THE BOTTOM OF THE ABUTMENT ELEVATION PRIOR TO DRIVING PILES.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

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

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

THE SLOPE OF FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENTS SHOWN ON SHEET 1. RIPRAP HEAVY SHALL BE PLACED PRIOR TO THE ERECTION OF FALSEWORK.

ABUTMENT CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

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

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

PREFORMED FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M153, TYPES I, II OR III OR M213.

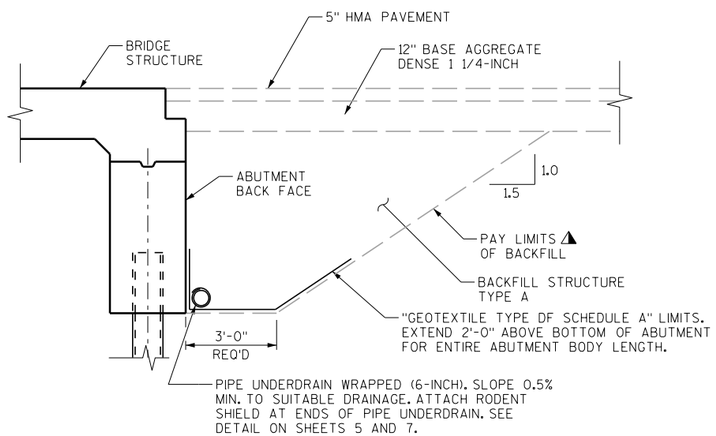
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED TO THE ENTIRE TOP OF SLAB, EXTERIOR SLAB EDGES, EXTERIOR 1'-0" OF THE UNDERSIDE OF THE SLAB, THE TOP AND EXTERIOR EXPOSED FACE OF THE WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MARKING THEIR OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEM	UNIT	S. ABUT.	N. ABUT.	SUPER	TOTAL
203.0600.S.01	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 103+45.71	LS	-	-	-	1
206.1000.01	EXCAVATION FOR STRUCTURES BRIDGES B-44-474	LS	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	120	120	-	240
502.0100	CONCRETE MASONRY BRIDGES	CY	33	33	92	158
502.3200	PROTECTIVE SURFACE TREATMENT	SY	5	5	185	195
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,230	2,230	-	4,460
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,340	1,340	16,400	19,080
513.4061	RAILING TUBULAR TYPE M	LF	23	23	77	123
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	10	-	20
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	360	360	-	720
606.0300	RIPRAP HEAVY	CY	90	80	-	170
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	105	105	-	210
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	30	30	-	60
645.0120	GEOTEXTILE TYPE HR	SY	165	155	-	320
	NON-BID ITEMS					
	PREFORMED JOINT FILLER	SIZE				1/2" & 3/4"
	NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER	SIZE				1"
	NAME PLATE	EACH				1

ALL B-44-474 BID ITEMS ARE CATEGORY 0020



STRUCTURE BACKFILL DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-474

DRAWN BY VJD | PLANS CK'D. FKH

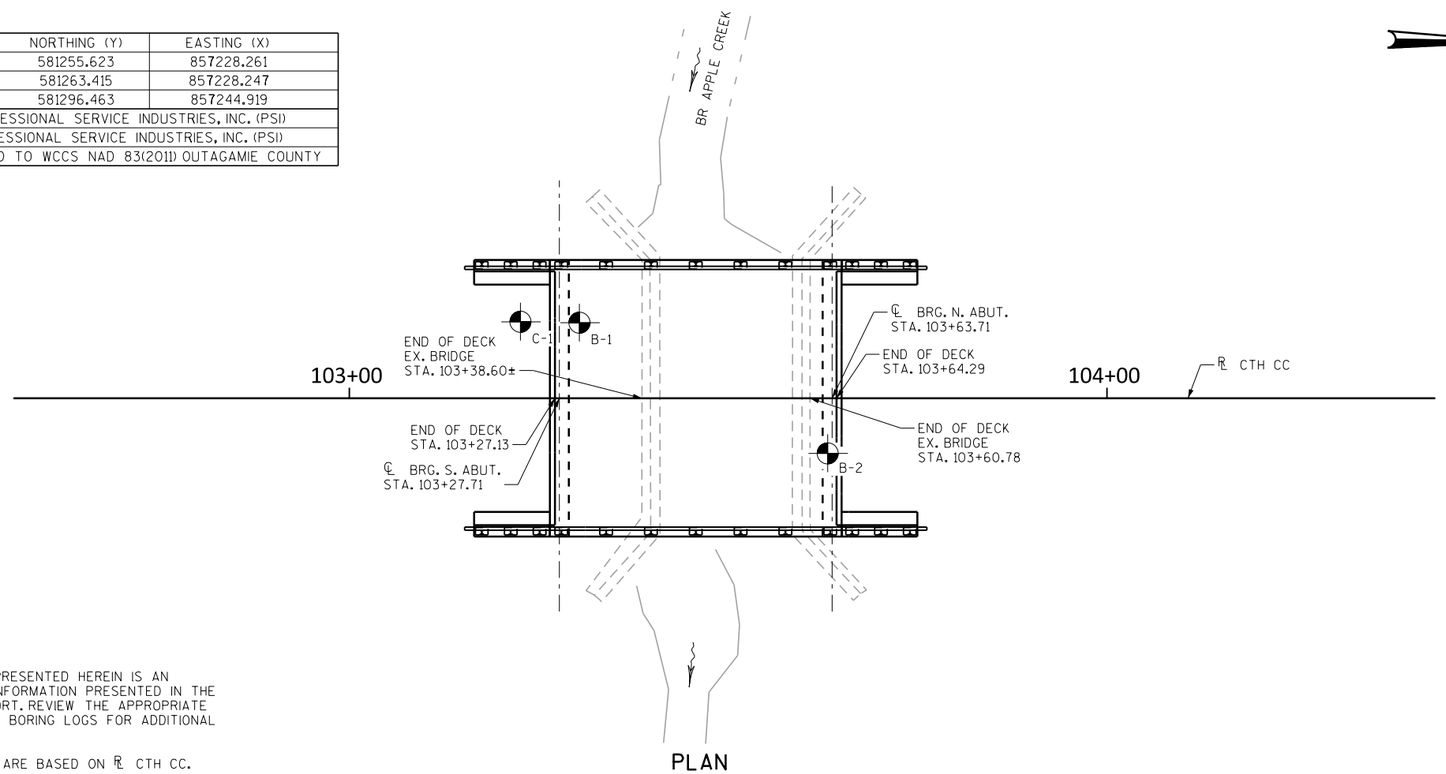
CROSS SECTION AND QUANTITIES

SHEET 2 OF 11
51

8

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
C-1	AUGUST 29, 2019	581255.623	857228.261
B-1	AUGUST 20, 2019	581263.415	857228.247
B-2	AUGUST 20, 2019	581296.463	857244.919
BORINGS COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI)			
REPORT COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI)			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2011) OUTAGAMIE COUNTY			

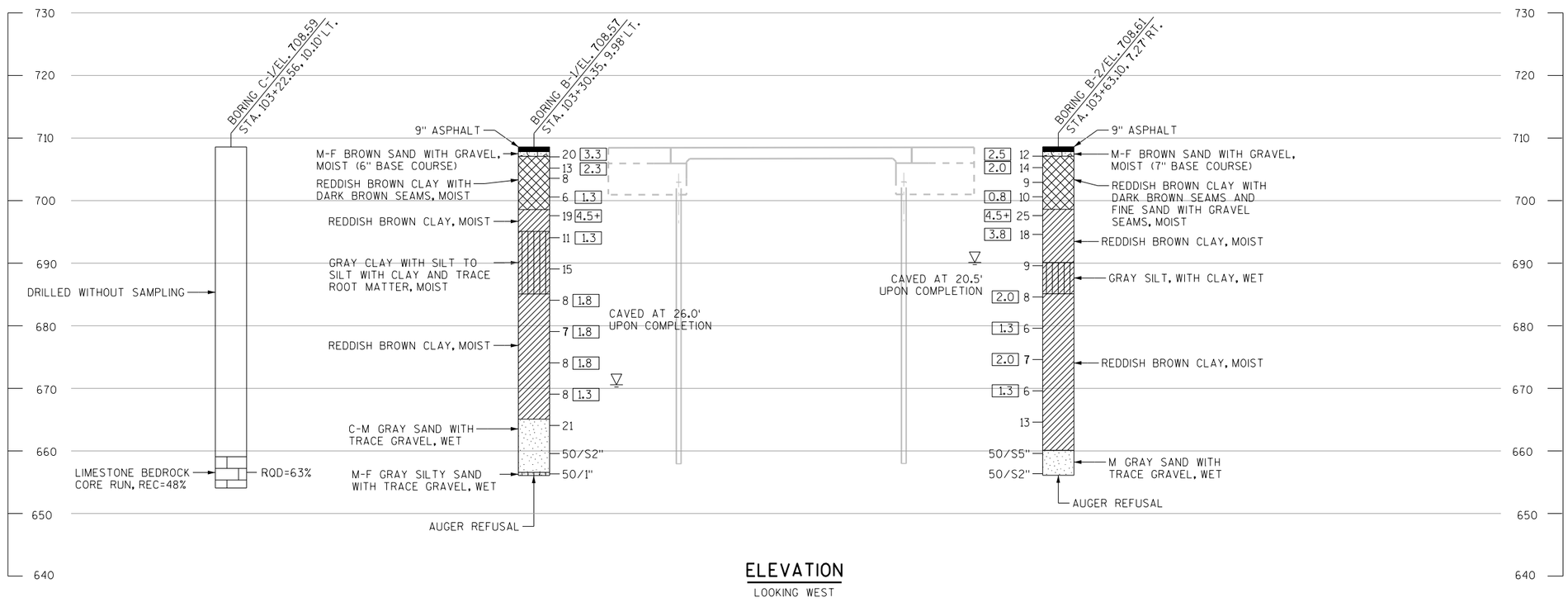


PLAN

NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

BORING STATIONS AND OFFSETS ARE BASED ON ℄ CTH CC.



ELEVATION
LOOKING WEST

8

8

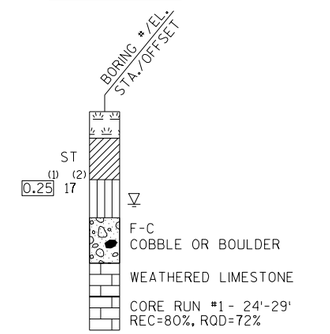
STATE PROJECT NUMBER

4665-01-71

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

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

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

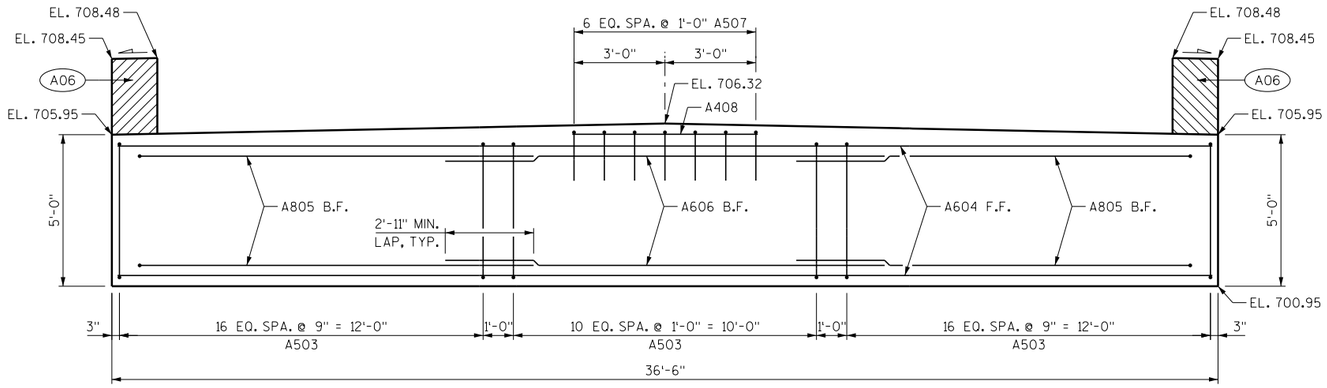
STRUCTURE B-44-474

DRAWN BY VJD | PLANS CK'D. FKH

SUBSURFACE EXPLORATION

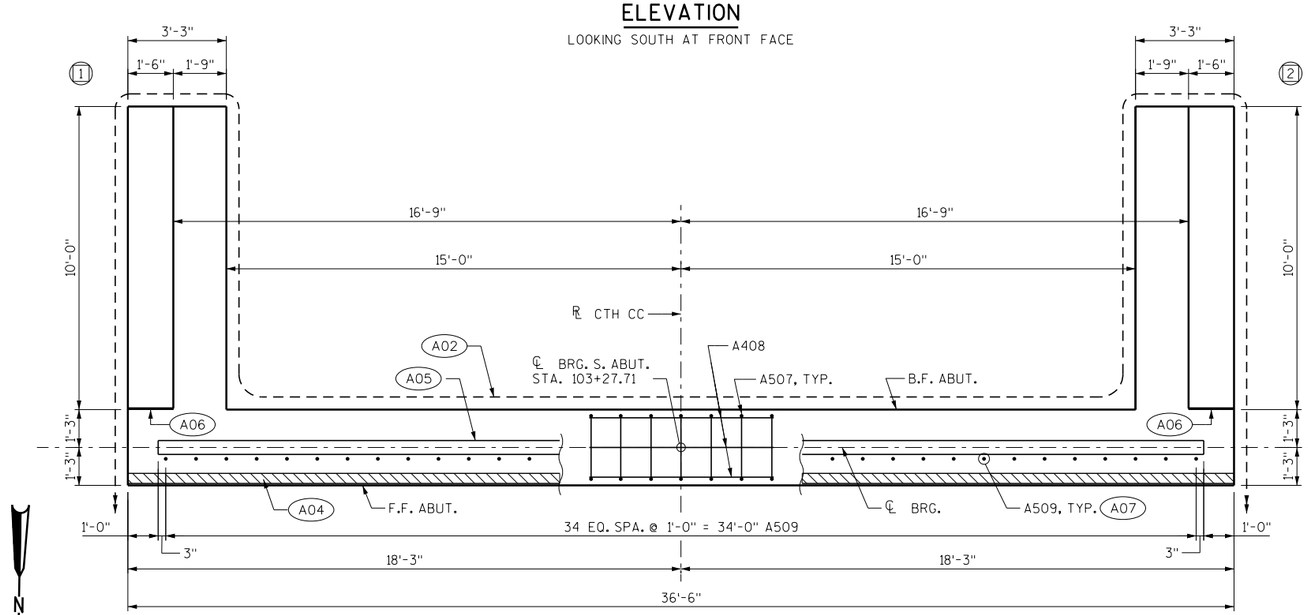
STATE PROJECT NUMBER

4665-01-71

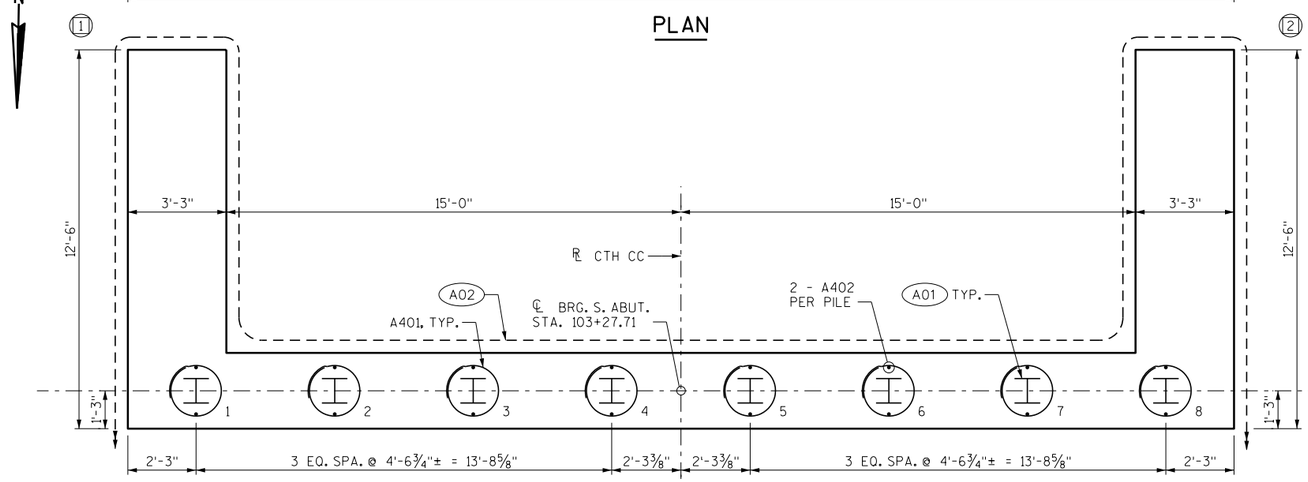


ELEVATION

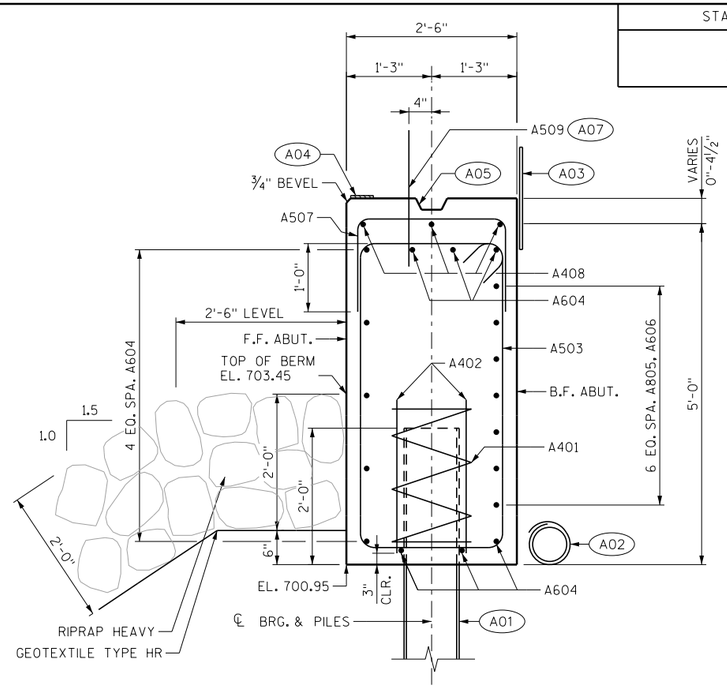
LOOKING SOUTH AT FRONT FACE



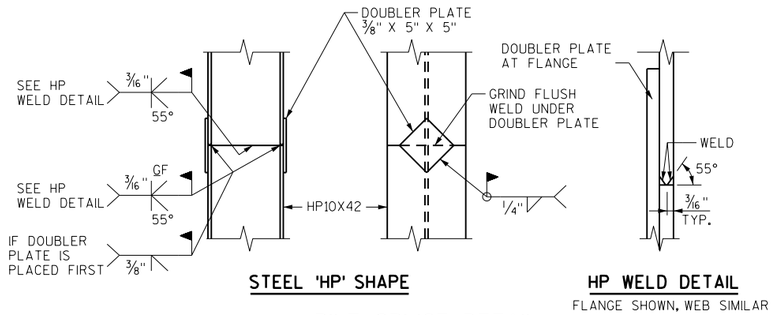
PLAN



PILE PLAN



SECTION THRU BODY



STEEL 'HP' SHAPE

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

PILE SPLICE DETAIL

LEGEND

- (A01) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING. ESETIMATED 45'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TON.
- (A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON SHEET 5.
- (A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- (A04) ¾" X 4" PREFORMED FILLER, OUT TO OUT OF ABUTMENT.
- (A05) KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6".
- (A06) ½" FILLER. EXTEND FROM SEAT TO TOP OF WING. FILLER INCLUDED IN WING LENGTH.
- (A07) BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- (X) INDICATES WINGWALL NUMBER.

F.F. = FRONT FACE B.F. = BACK FACE

NOTES

1. FOR ABUTMENT BILL OF BARS, SEE SHEET 8.
2. SPACE A503 BARS TO MISS PILE LOCATIONS.
3. CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.
4. REFER TO SHEET 8 FOR ADDITIONAL ABUTMENT DETAILS AND HEAVY RIPRAP LAYOUT AT THE SOUTH ABUTMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-474

DRAWN BY VJD | PLANS CK'D. FKH

SOUTH ABUTMENT

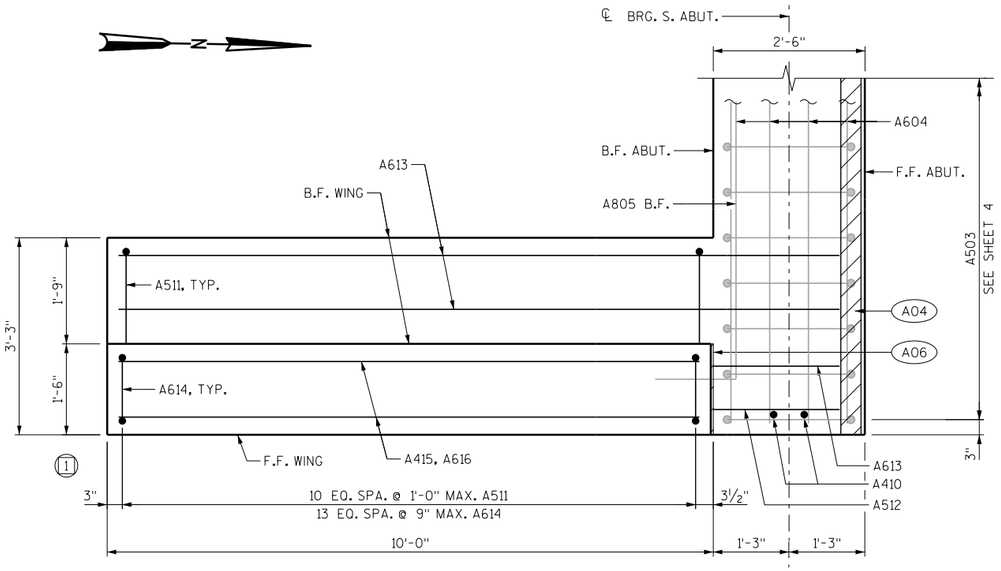
SHEET 4 OF 11
53

8

8

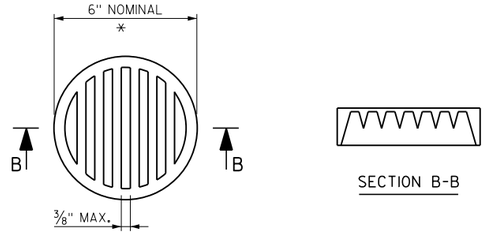
STATE PROJECT NUMBER

4665-01-71



WING PLAN

WING 1 SHOWN, WING 2 SIMILAR



SECTION B-B

RODENT SHIELD DETAIL

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

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

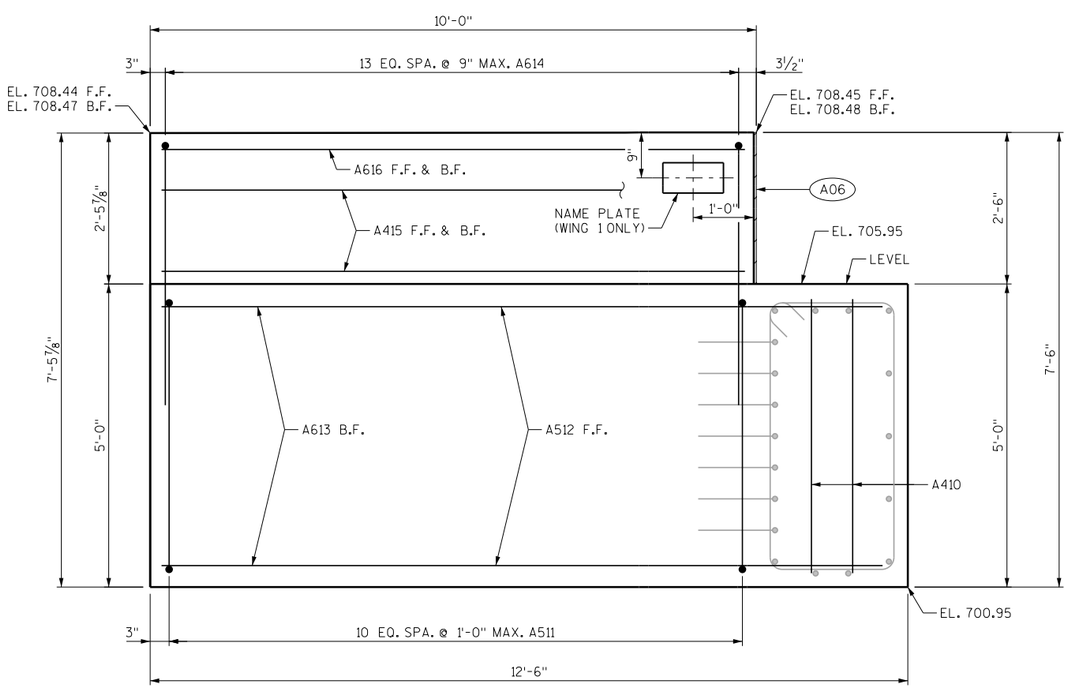
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X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

NOTES

1. FOR ABUTMENT BILL OF BARS, SEE SHEET 8.
2. FOR TYPICAL FILL SECTIONS AT WING TIPS, SEE SHEET 8.
3. SEE SHEET 11 FOR TUBULAR STEEL RAILING TYPE M ANCHOR ASSEMBLY DETAILS AND POST SPACING ON WINGS.
4. CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.
5. SHADED REINFORCEMENT SHOWN ON THIS SHEET IS DETAILED ON SHEET 4 FOR THE ABUTMENT BODY.

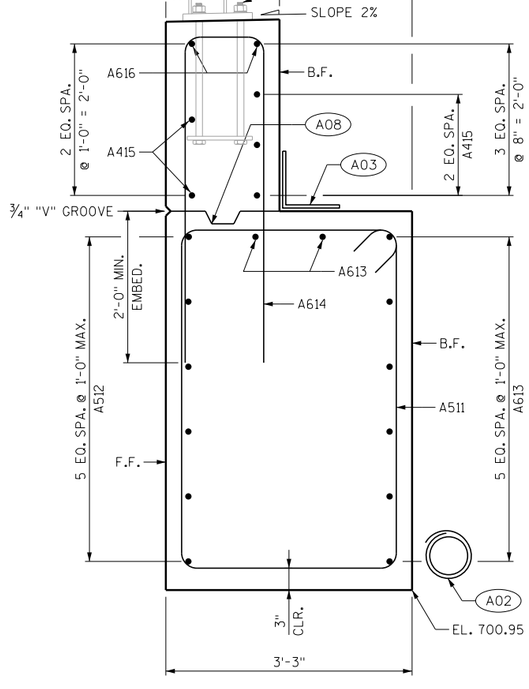
LEGEND

- (A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON THIS SHEET.
- (A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- (A04) ¾" X 4" PREFORMED FILLER, OUT TO OUT OF ABUTMENT.
- (A06) ½" FILLER. EXTEND FROM SEAT TO TOP OF WING. FILLER INCLUDED IN WING LENGTH.
- (A08) OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH MEMBRANE ON BACKFACE.
- (X) INDICATES WING WALL NUMBER.
- F.F. = FRONT FACE
- B.F. = BACK FACE



WING ELEVATION

LOOKING AT FRONT FACE
DIMENSIONS SHOWN ARE AT FRONT FACE
WING 1 SHOWN, WING 2 SIMILAR



SECTION THRU WING

WING 1 AND WING 2 SIMILAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-474

DRAWN BY VJD | PLANS CK'D. FKH

SOUTH ABUTMENT DETAILS

SHEET 5 OF 11

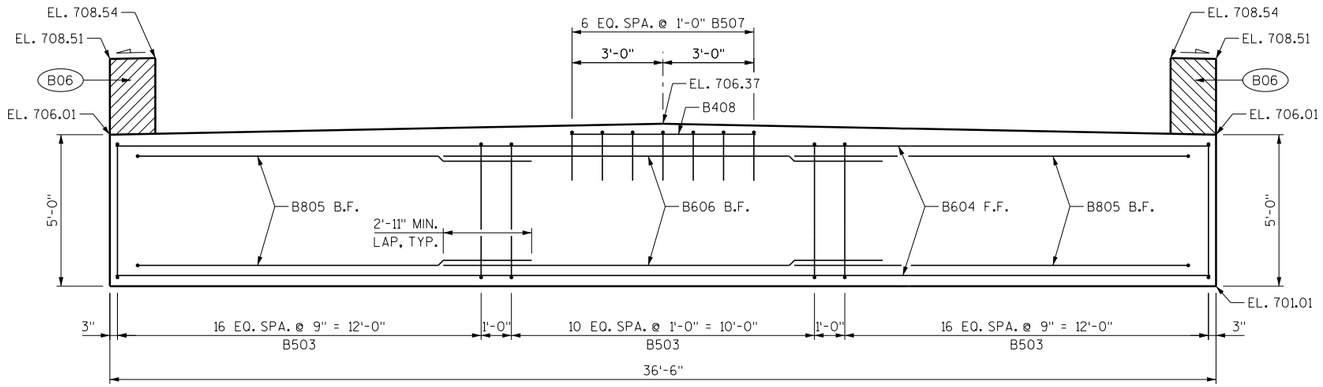
54

8

8

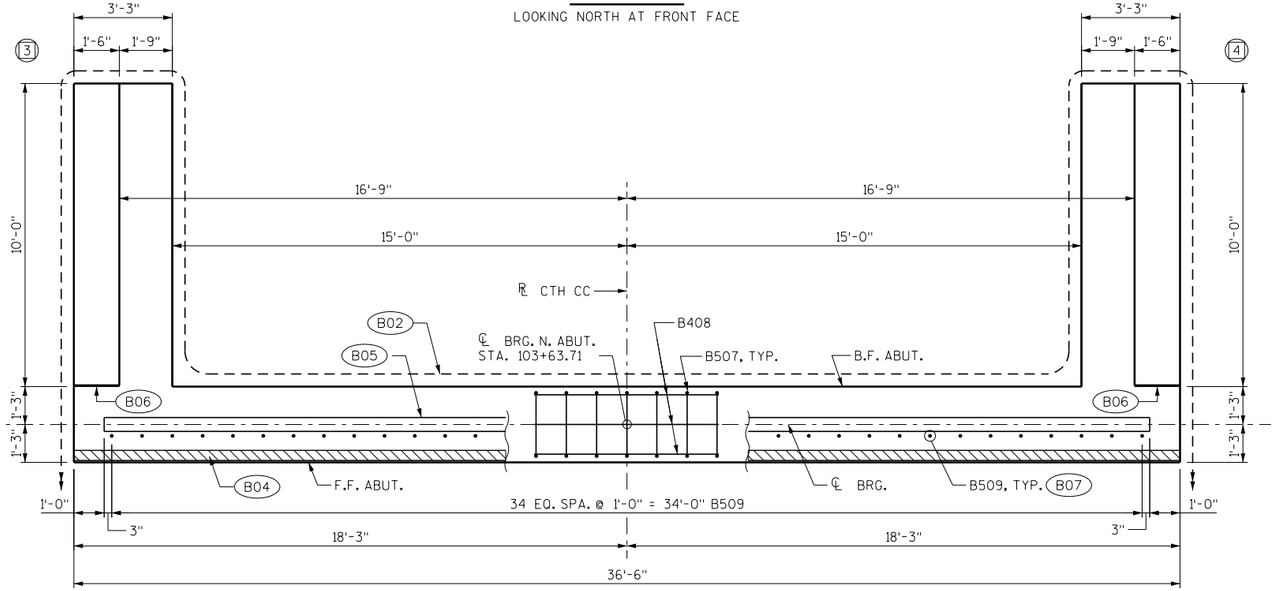
STATE PROJECT NUMBER

4665-01-71

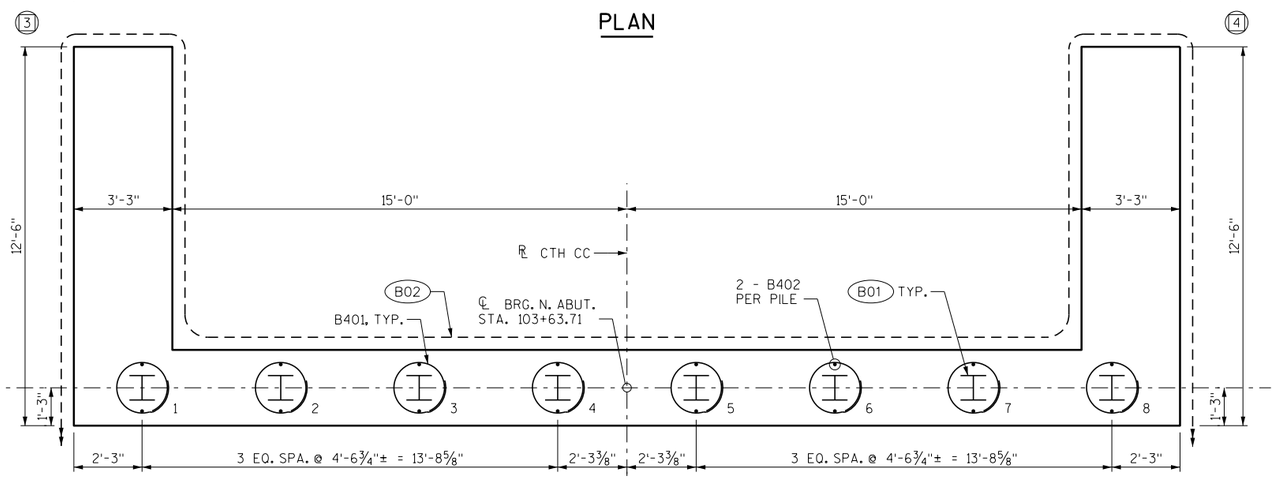


ELEVATION

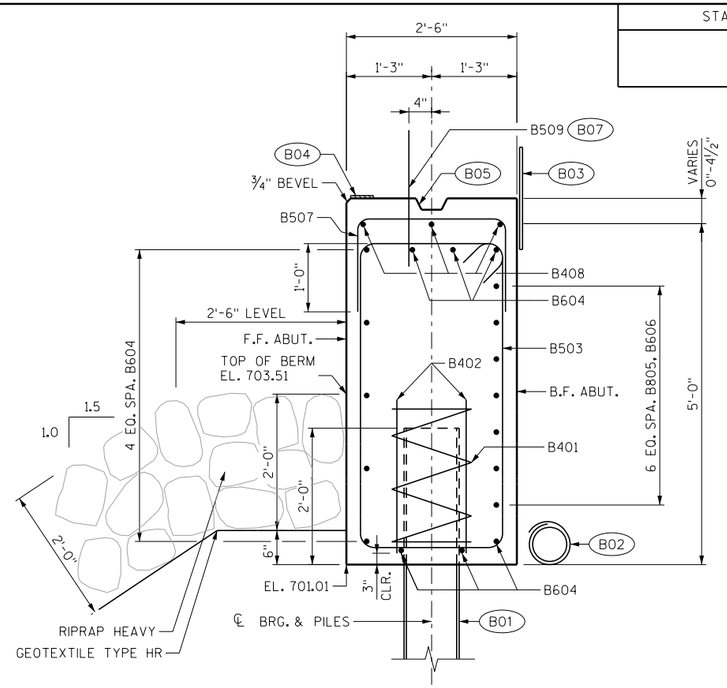
LOOKING NORTH AT FRONT FACE



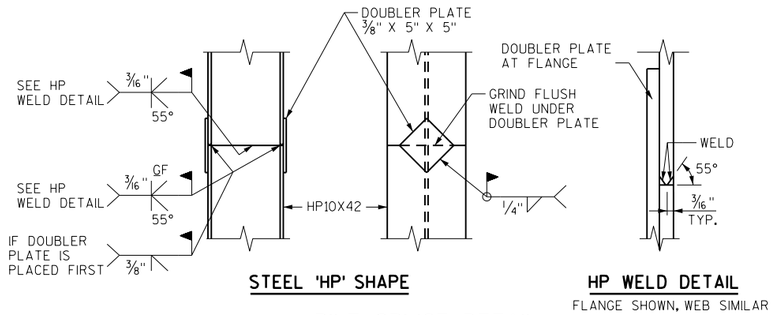
PLAN



PILE PLAN



SECTION THRU BODY



STEEL 'HP' SHAPE

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

PILE SPLICE DETAIL

LEGEND

- (B01) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING. ESETIMATED 45'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TON.
- (B02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON SHEET 7.
- (B03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- (B04) ¾" X 4" PREFORMED FILLER, CUT TO OUT OF ABUTMENT.
- (B05) KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6".
- (B06) ½" FILLER. EXTEND FROM SEAT TO TOP OF WING. FILLER INCLUDED IN WING LENGTH.
- (B07) BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- (X) INDICATES WINGWALL NUMBER.

F.F. = FRONT FACE B.F. = BACK FACE

NOTES

1. FOR ABUTMENT BILL OF BARS, SEE SHEET 8.
2. SPACE B503 BARS TO MISS PILE LOCATIONS.
3. CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.
4. REFER TO SHEET 8 FOR ADDITIONAL ABUTMENT DETAILS. AND HEAVY RIPRAP LAYOUT AT THE NORTH ABUTMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-474

DRAWN BY VJD | PLANS CK'D. FKH

NORTH ABUTMENT

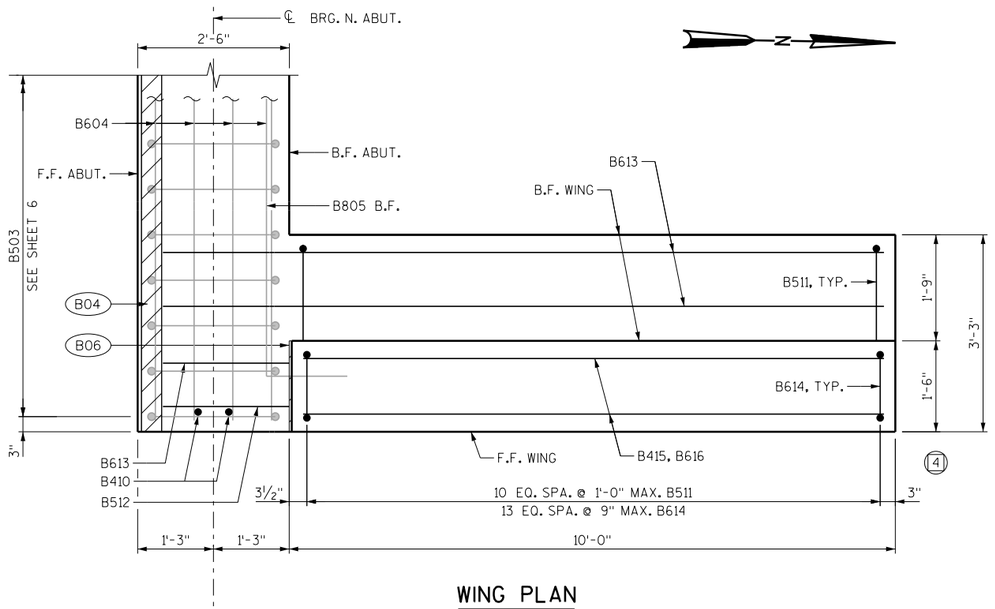
SHEET 6 OF 11
55

8

8

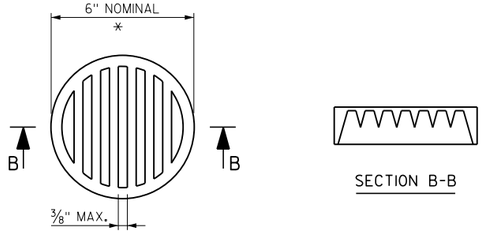
STATE PROJECT NUMBER

4665-01-71



WING PLAN

WING 4 SHOWN, WING 3 SIMILAR



SECTION B-B

RODENT SHIELD DETAIL

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NOTES

1. FOR ABUTMENT BILL OF BARS, SEE SHEET 8.
2. FOR TYPICAL FILL SECTIONS AT WING TIPS, SEE SHEET 8.
3. SEE SHEET 11 FOR TUBULAR STEEL RAILING TYPE M ANCHOR ASSEMBLY DETAILS AND POST SPACING ON WINGS.
4. CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.
5. SHADED REINFORCEMENT SHOWN ON THIS SHEET IS DETAILED ON SHEET 6.

LEGEND

- (B02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON THIS SHEET.
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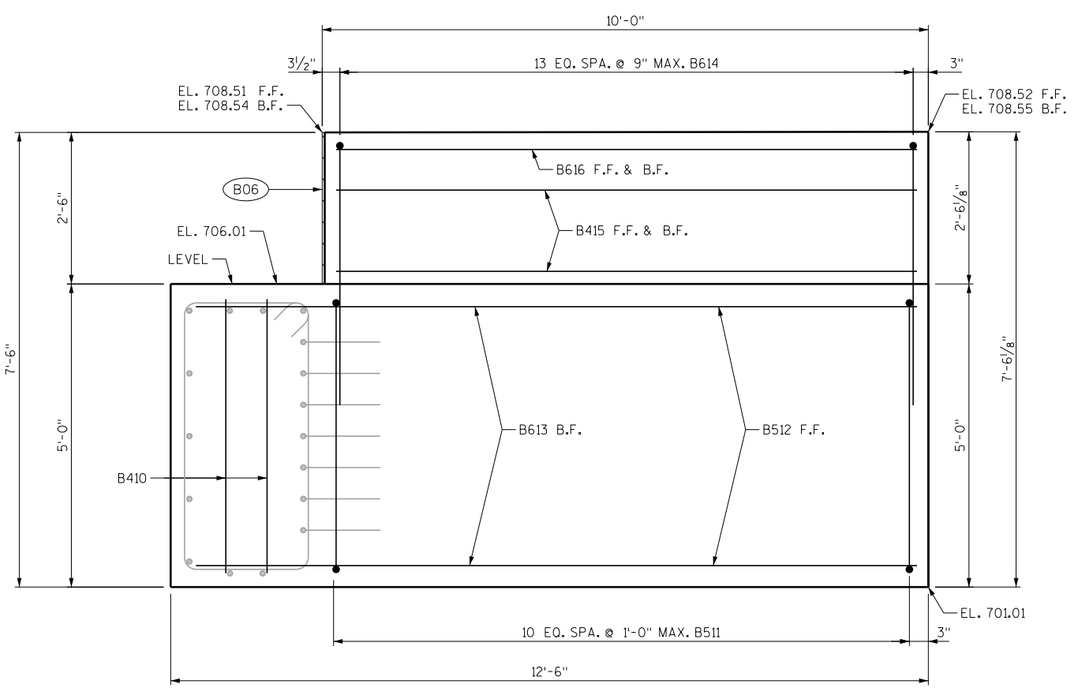
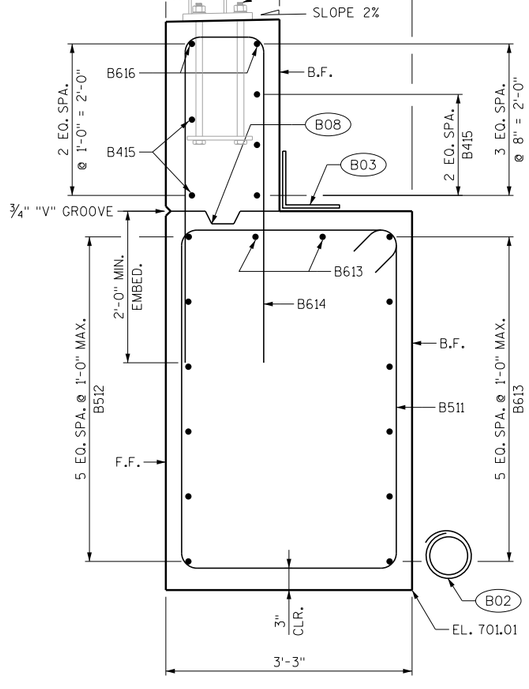


WING ELEVATION

LOOKING AT FRONT FACE
DIMENSIONS ARE AT FRONT FACE
WING 4 SHOWN, WING 3 SIMILAR



SECTION THRU WING

WING 3 AND WING 4 SIMILAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-474

DRAWN BY VJD | PLANS CK'D. FKH

NORTH ABUTMENT DETAILS

SHEET 7 OF 11

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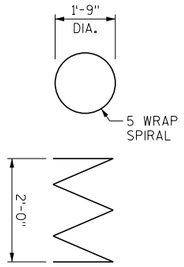
8

8

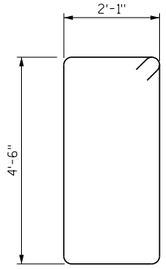
STATE PROJECT NUMBER

4665-01-71

△ APPLY PROTECTIVE SURFACE TREATMENT TO TOP AND EXPOSED FACE OF WING AND END 1'-0" OF ABUTMENT FRONT FACE.



A401, B401



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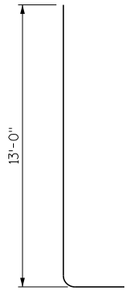
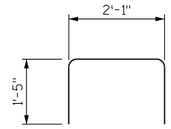
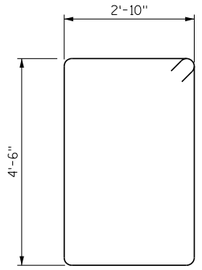


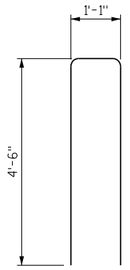
A805, B805



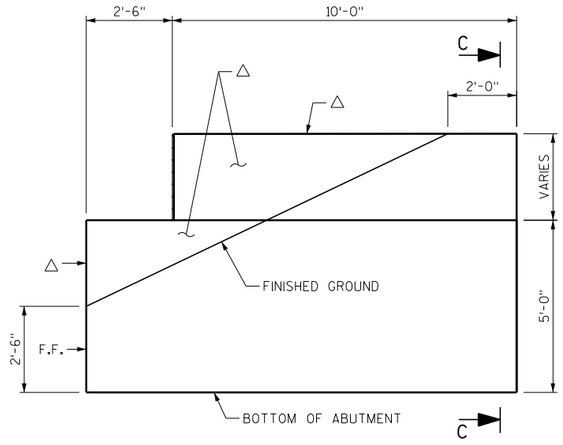
A507, B507



A511, B511



A614, B614



WING ELEVATION

LOOKING AT FRONT FACE OF WING
SHOWING LIMITS OF PROTECTIVE SURFACE TREATMENT
ALL WINGS SIMILAR

BILL OF BARS - SOUTH ABUTMENT

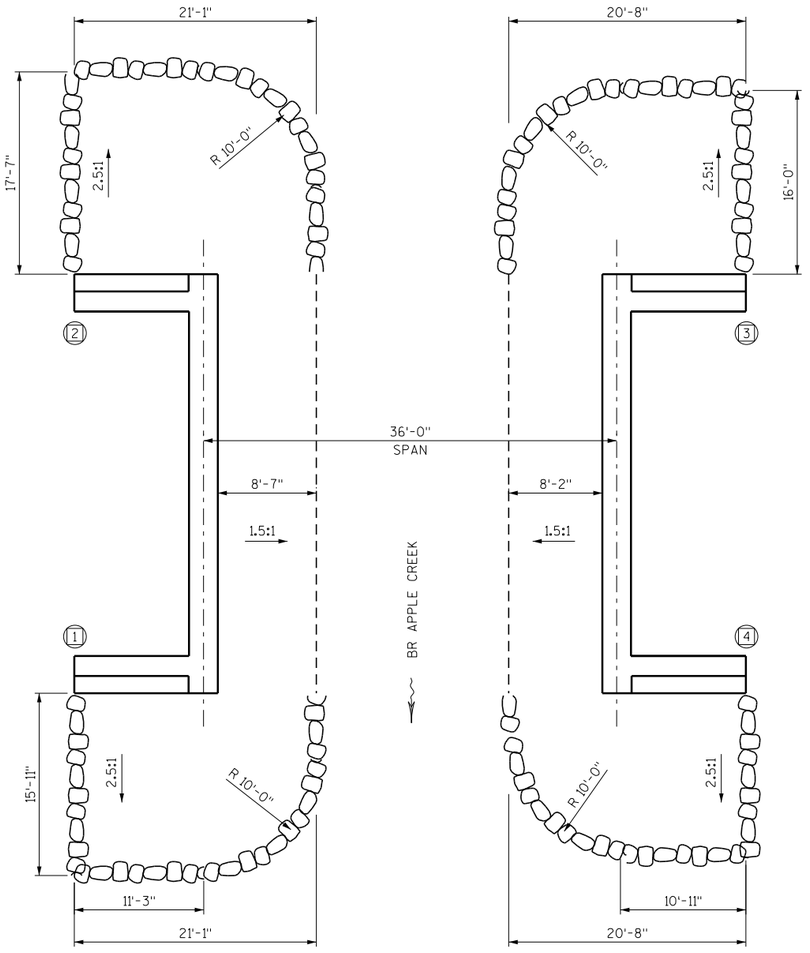
COATED: 1,340 LBS
UNCOATED: 2,230 LBS

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
A401		8	28'-0"	X		PILES - 1 PER PILE
A402		16	2'-3"			PILES - 2 PER PILE
A503		45	13'-10"	X		BODY - STIRRUP
A604		11	36'-1"			BODY - HORIZ -F.F. & B.F.
A805		14	14'-2"	X		BODY - HORIZ - B.F
A606		7	14'-6"			BODY - HORIZ - B.F
A507		7	4'-8"	X		BODY - VERT - HIGH SEAT
A408		3	6'-3"			BODY - HORIZ - HIGH SEAT
A509		35	2'-0"			BODY - VERT - DOWELS
A410	X	4	4'-7"			BODY - VERT - ENDS
A511	X	22	15'-4"	X		WINGS - BODY - STIRRUP
A512	X	12	12'-0"			WINGS - BODY - HORIZ - F.F.
A613	X	16	12'-0"			WINGS - BODY - HORIZ - B.F.
A614	X	28	9'-9"	X		WINGS - STEM - VERT
A415	X	10	9'-7"			WINGS - STEM - HORIZ - F.F. & B.F.
A616	X	4	9'-7"			WINGS - STEM - HORIZ - TOP - F.F. & B.F.

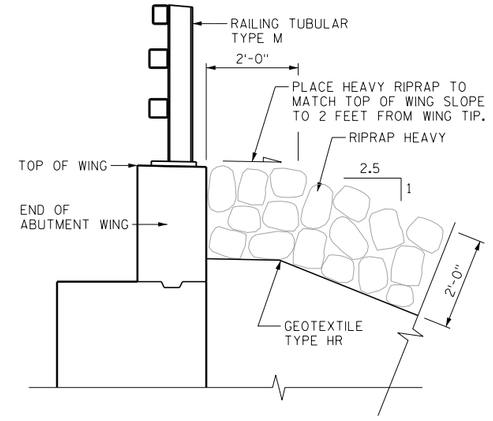
BILL OF BARS - NORTH ABUTMENT

COATED: 1,340 LBS
UNCOATED: 2,230 LBS

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
B401		8	28'-0"	X		PILES - 1 PER PILE
B402		16	2'-3"			PILES - 2 PER PILE
B503		45	13'-10"	X		BODY - STIRRUP
B604		11	36'-1"			BODY - HORIZ -F.F. & B.F.
B805		14	14'-2"	X		BODY - HORIZ - B.F
B606		7	14'-6"			BODY - HORIZ - B.F
B507		7	4'-8"	X		BODY - VERT - HIGH SEAT
B408		3	6'-3"			BODY - HORIZ - HIGH SEAT
B509		35	2'-0"			BODY - VERT - DOWELS
B410	X	4	4'-7"			BODY - VERT - ENDS
B511	X	22	15'-4"	X		WINGS - BODY - STIRRUP
B512	X	12	12'-0"			WINGS - BODY - HORIZ - F.F.
B613	X	16	12'-0"			WINGS - BODY - HORIZ - B.F.
B614	X	28	9'-9"	X		WINGS - STEM - VERT
B415	X	10	9'-7"			WINGS - STEM - HORIZ - F.F. & B.F.
B616	X	4	9'-7"			WINGS - STEM - HORIZ - TOP - F.F. & B.F.



RIPRAP LAYOUT



SECTION C-C

SECTION AT WING TIPS
ALL WINGS SIMILAR

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ABUTMENT
BILL OF BARS

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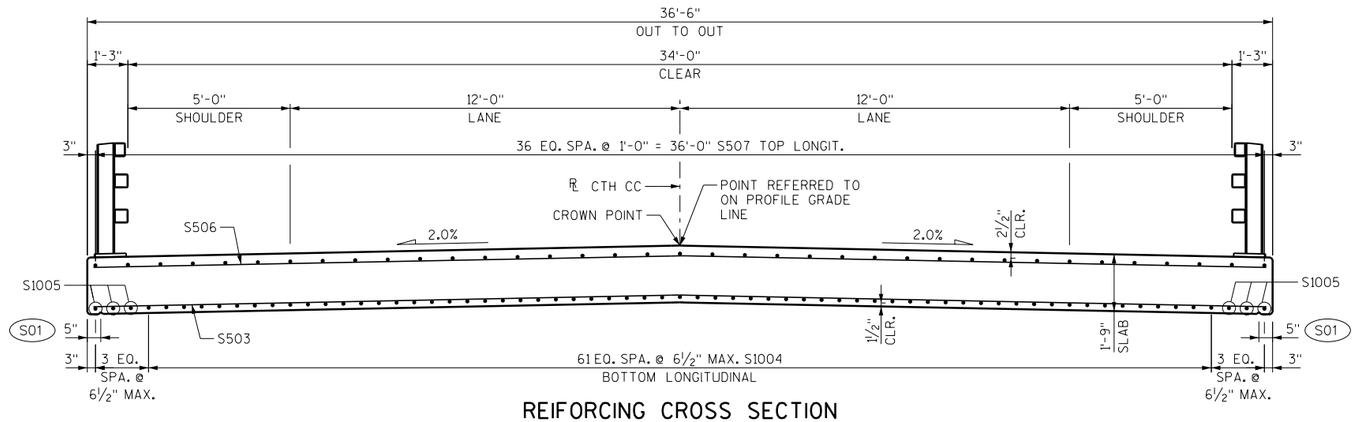
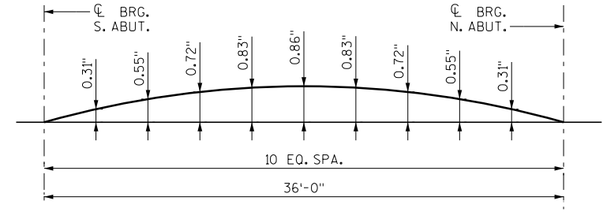
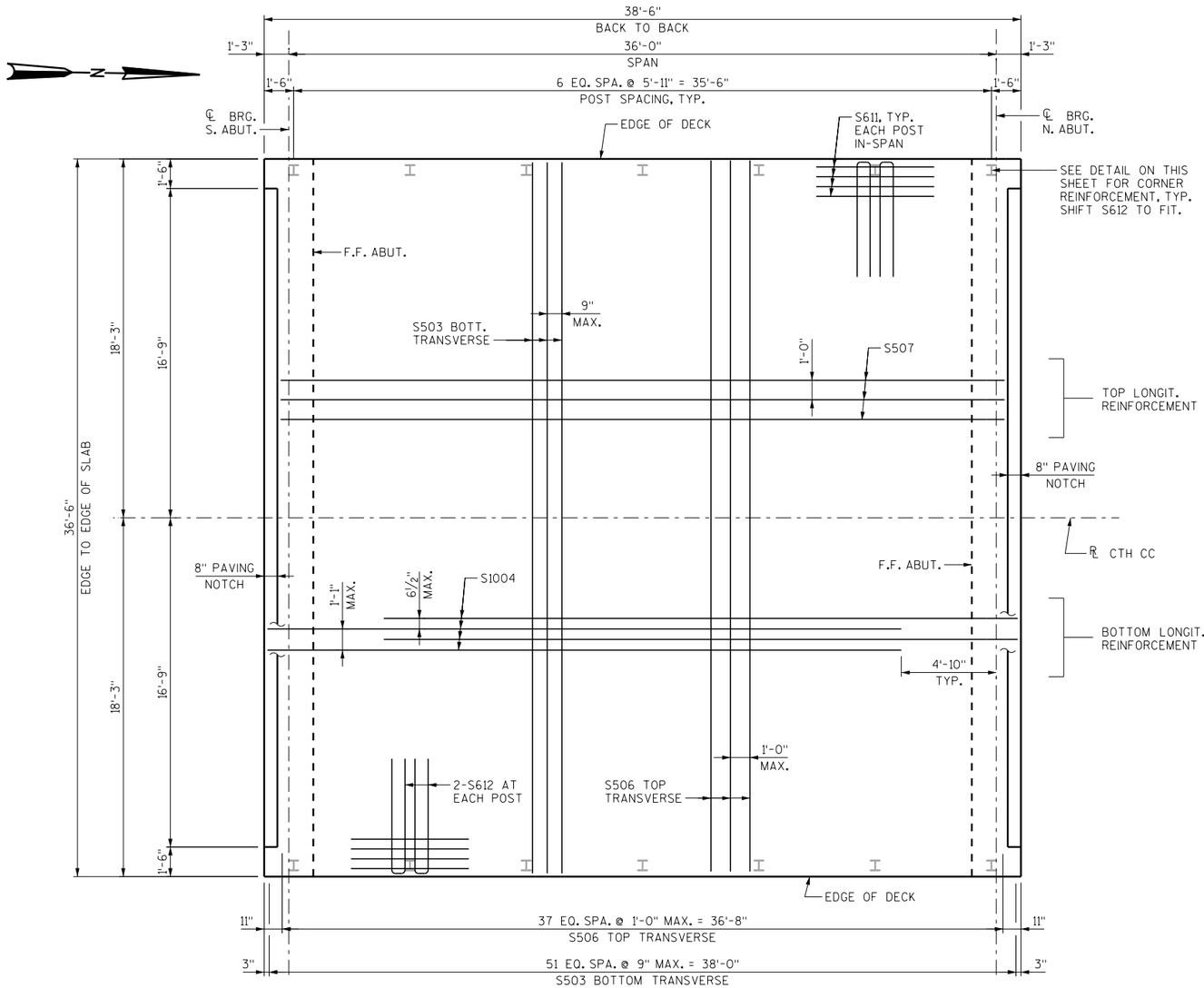


REIFORCING CROSS SECTION

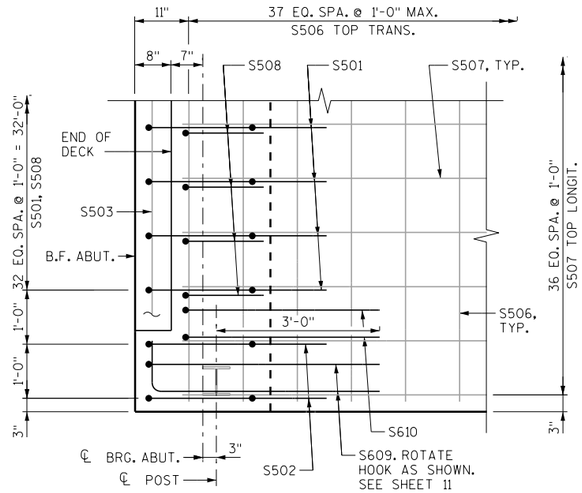


CAMBER DIAGRAM

SEE NOTES 3 AND 4



SLAB REINFORCEMENT PLAN



CORNER DETAIL

ALL CORNERS SIMILAR
S612 NOT SHOWN FOR CLARITY
SHIFT S612 AS NEEDED TO FIT
SEE NOTES 6 AND 7

NOTES

1. TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.
2. ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).
3. CAMBER SPAN AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.
4. PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS AND AT 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN OR ℄.
5. FOR SUPERSTRUCTURE BILL OF BARS, SEE SHEET 10.
6. SEE SHEET 10 FOR LONGITUDINAL SECTION THRU SLAB AND ADDITIONAL SLAB REINFORCEMENT DETAILS.
7. SEE SHEET 11 FOR ADDITIONAL REINFORCING DETAILS AT RAILING POSTS.

LEGEND

(S01) ¾" V-GROOVE. TERMINATE 6" FROM FRONT FACE OF ABUTMENT, TYP.

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SUPERSTRUCTURE

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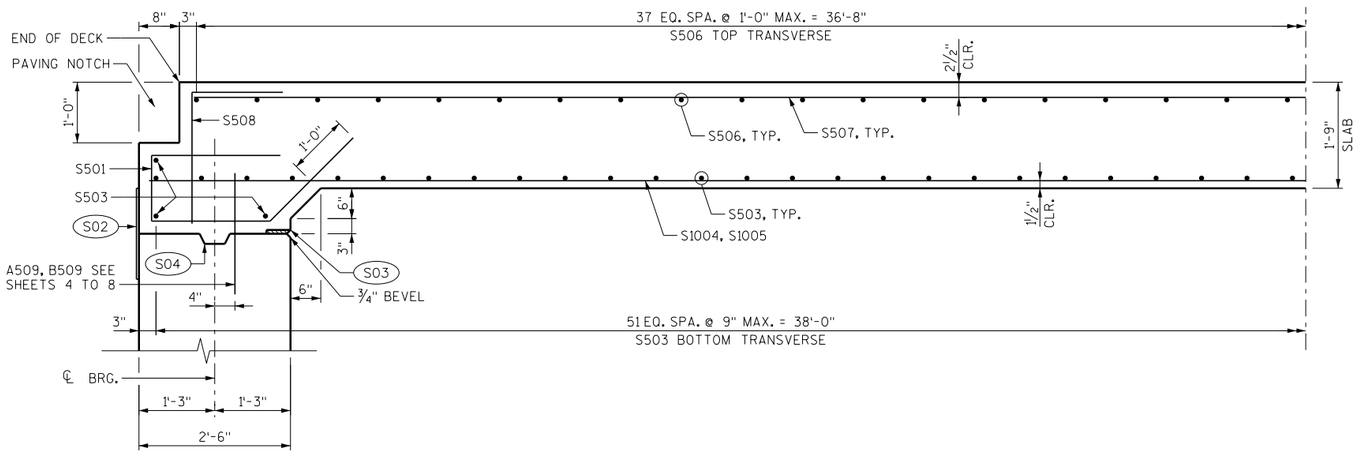


HALF LONGITUDINAL SECTION

SYMMETRICAL ABOUT MID-SPAN

LOCATION	CL BRG. S. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. N. ABUT.
WEST EDGE	708.45	708.46	708.46	708.47	708.48	708.48	708.49	708.49	708.50	708.50	708.51
CROWN	708.82	708.82	708.83	708.84	708.84	708.85	708.85	708.86	708.86	708.87	708.87
EAST EDGE	708.45	708.46	708.46	708.47	708.48	708.48	708.49	708.49	708.50	708.50	708.51

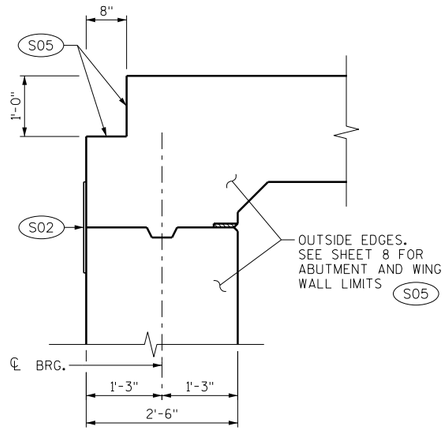
TOP OF DECK ELEVATIONS

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP

BILL OF BARS - SUPERSTRUCTURE

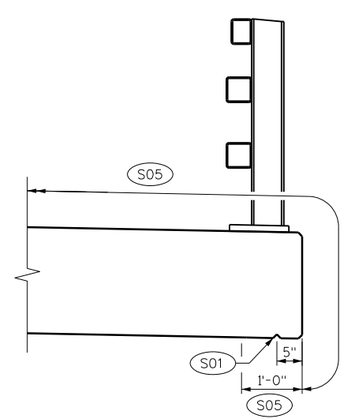
COATED: 16,400 LBS
UNCOATED: 0 LBS

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
S501	X	66	7'-1"	X		SLAB - HAUNCH - VERTICAL
S502	X	8	8'-1"	X		SLAB - HAUNCH - VERTICAL - CORNERS
S503	X	58	36'-1"			SLAB - BOTTOM - TRANSVERSE
S1004	X	62	32'-3"			SLAB - BOTTOM - LONGITUDINAL
S1005	X	6	38'-0"			SLAB - BOTTOM - LONGITUDINAL - EDGES
S506	X	38	36'-1"			SLAB - TOP - TRANSVERSE
S507	X	37	36'-9"			SLAB - TOP - LONGITUDINAL
S508	X	66	3'-6"	X		SLAB - VERTICAL - PAVING NOTCH
S609	X	8	5'-1"	X		SLAB - TOP - CORNER RAILING POSTS
S610	X	8	4'-5"	X		SLAB - TOP - CORNER RAILING POSTS
S611	X	40	6'-0"			SLAB - TOP - LONGIT - POSTS IN SPAN
S612	X	28	12'-0"	X		SLAB - TOP - TRANS - ALL POSTS



SECTION THRU END OF DECK

SHOWING PROTECTIVE SURFACE TREATMENT



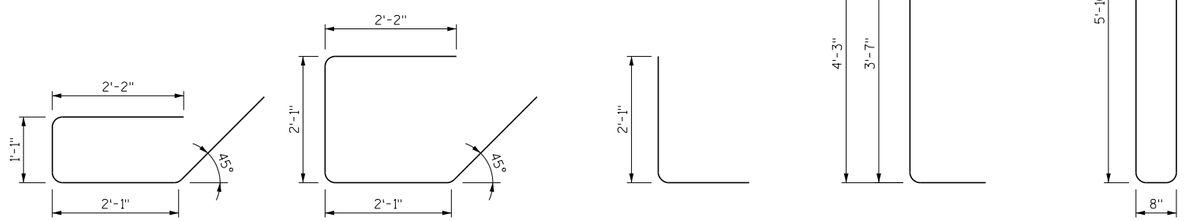
SECTION THRU EDGE OF DECK

SHOWING PROTECTIVE SURFACE TREATMENT AND V-GROOVE

LEGEND

- (S01) ¾" V-GROOVE. TERMINATE 6" FROM FRONT FACE OF ABUTMENT, TYP.
- (S02) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.
- (S03) ¾" X 4" PREFORMED FILLER, OUT TO OUT OF ABUTMENT.
- (S04) KEYED CONSTRUCTION JOINTS FORMED BY BEVELED 2" X 6".
- (S05) COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATONS.

F.F. = FRONT FACE
=
B.F. BACK FACE



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SUPERSTRUCTURE DETAILS

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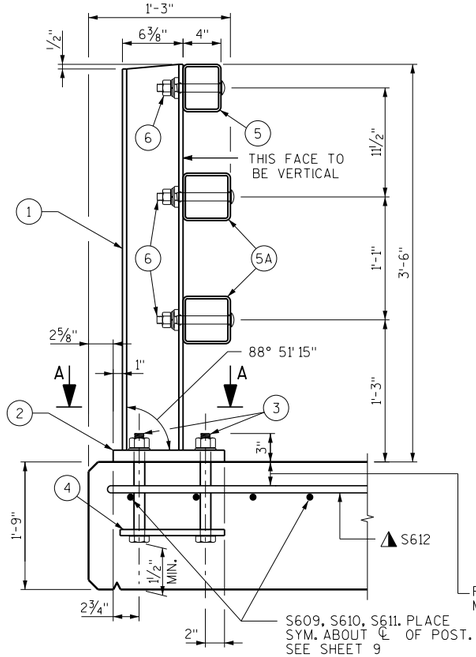
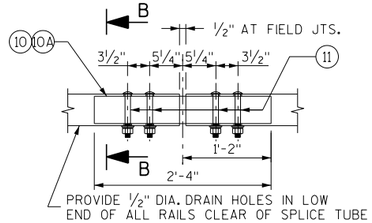
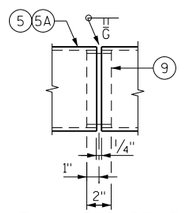


SECTION THRU RAILING ON SLAB

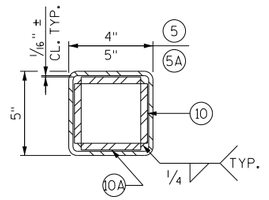


FIELD ERECTION JOINT DETAIL

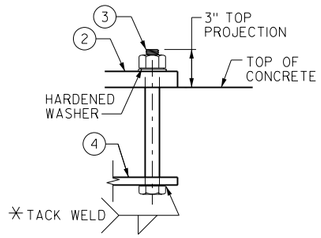


SHOP RAIL SPLICE DETAIL

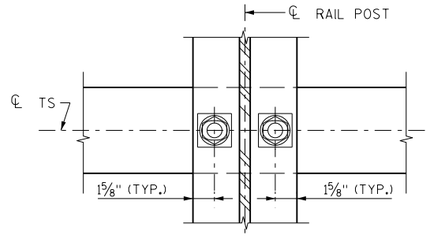
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



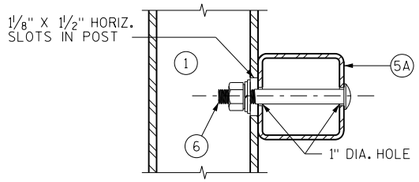
SECTION B-B



ANCHOR BOLTS



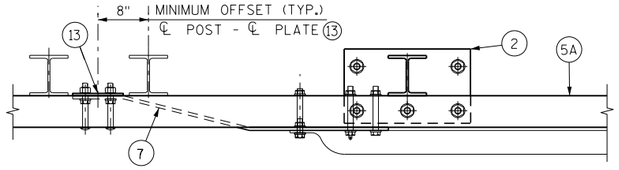
SECTION THRU POST WEB



SECTION THRU RAIL

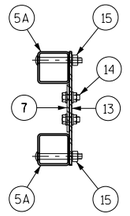
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



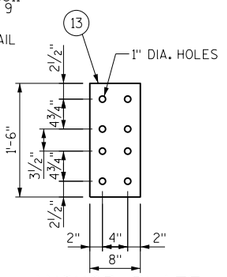
TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT



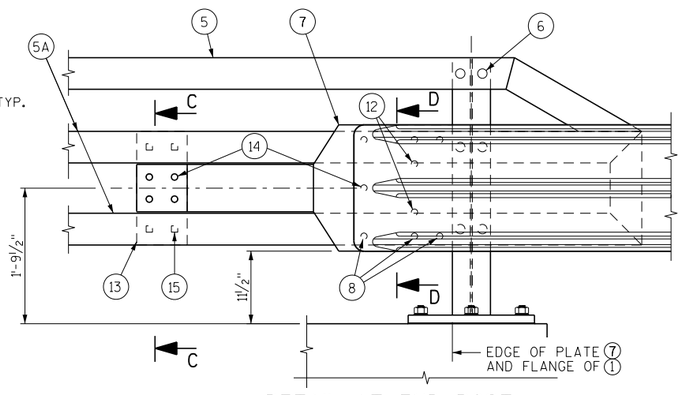
SECTION C-C

SECTION A-A



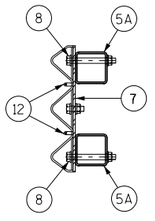
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT

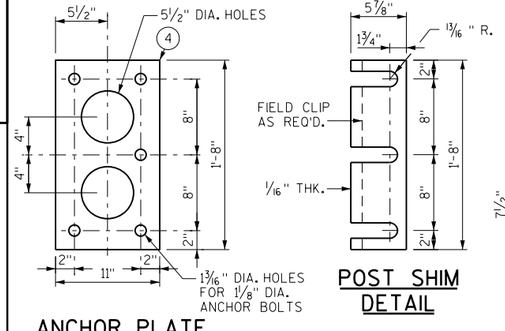


DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT



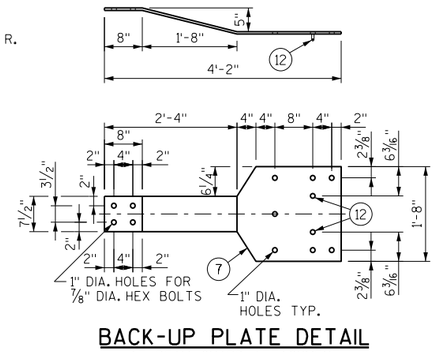
SECTION D-D



ANCHOR PLATE

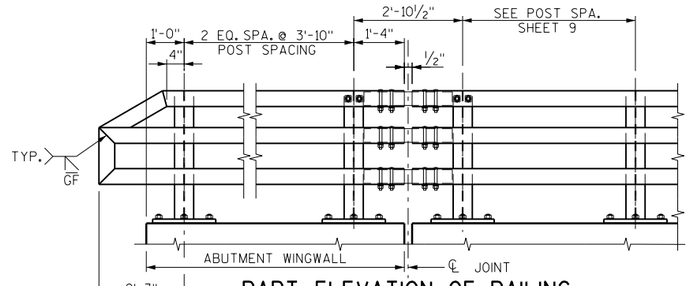
AT RAIL TO SLAB CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

LEGEND

① W6 x 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

② PLATE 1¼" x 11¾" x 1'-8" WITH 15/16" X 1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

③ ASTM A449 - 1⅛" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10¾" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)

④ ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1¾16" DIA. HOLES FOR ANCHOR BOLTS NO. 3

⑤ TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑤A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑥ ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1⅝" X 1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

⑦ ½" THK. BACK-UP PLATE WITH 2 - ⅞" X 1½" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.

⑨ SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".

⑩ ⅜" X 3⅝" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.

⑩A ⅜" X 2⅝" X 2'-4" PLATE USED IN NO. 5, ⅜" X 3⅝" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.

⑪ ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15/16" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

⑫ ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).

⑬ ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

⑭ ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).

⑮ 1" DIA. HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

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

⚠ 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.

STATE PROJECT NUMBER

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NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-474

DRAWN BY VJD | PLANS CK'D. FKH

TUBULER STEEL RAILING TYPE 'M'

SHEET 11 OF 11
60

8

FILE NAME : X:\Projects\Outagamie\190068 CTH CC Bridge\Structure\CAD\Sheets\B44474_080111_Type M.dgn
PLOT DATE : 3/30/2020 7:10:51 AM PLOT BY : vdifrances
PLOT SCALE : 2.0000 sf / in.

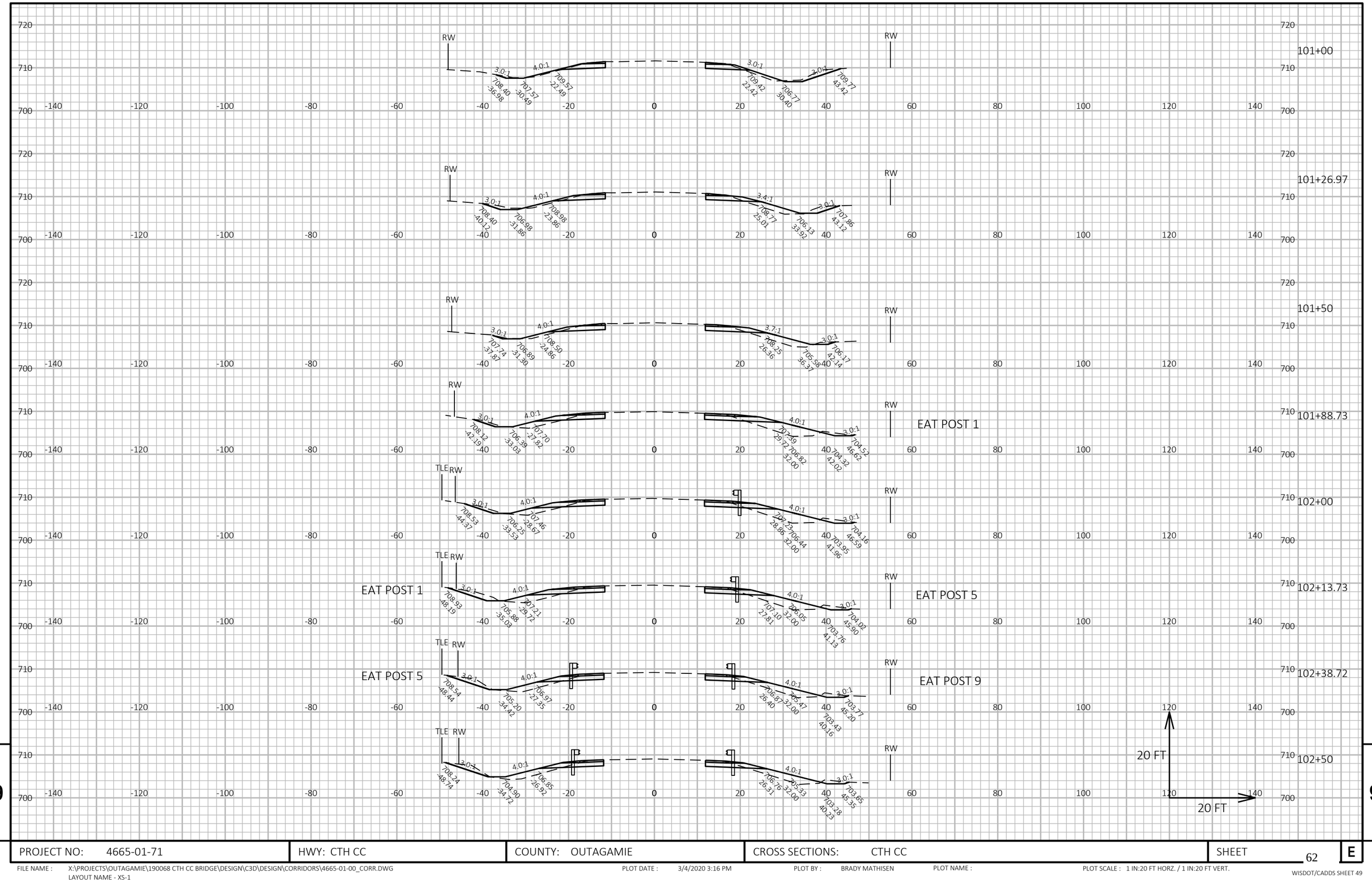
EARTHWORK - CTH CC

STATION	AREA (SF)			Incremental Vol (CY) (Un			Cumulative Vol (CY)		Mass Ordinate
	Cut	Unusable Pavement Material	Fill	Cut	Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.35	
				Note 1	Note 2	Note 3	Note 1		Note 4
101+00	28		6				0	0	0
101+27	28		15	28		11	28	15	14
101+50	22		21	22		15	50	35	28
101+89	25		36	34		40	84	90	-6
102+00	27		36	11		15	95	110	-15
102+14	33		35	15		18	110	134	-24
102+39	31		32	30		31	140	176	-36
102+50	30		34	13		14	152	194	-42
102+64	30	24.0	32	15		17	168	217	-49
103+00	57	24.0	35	59	16	45	226	277	-67
103+16	57	23.0	35	35	14	21	261	306	-75
B-44-474									
103+75	55	23.0	40	0		0	216	306	-75
104+00	55	24.0	40	51	22	37	312	356	-96
104+28	31	24.0	43	44	25	43	356	414	-135
104+50	31		40	25		34	381	460	-140
104+78	39		37	36		39	417	513	-173
105+00	42		31	33		28	450	551	-177
105+50	28		10	65		38	516	602	-164
105+61	25		4	11		3	527	606	-156
106+00	22		1	33		3	560	611	-128
				560	77	453			

Notes:	
1 - Cut	Cut includes existing asphalt and base material
2 - Unusable Pavement Material	Does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Material Volum
4 - Mass Ordinate	Cut - Unusable Pavement Material - (Fill * Fill F

9

9

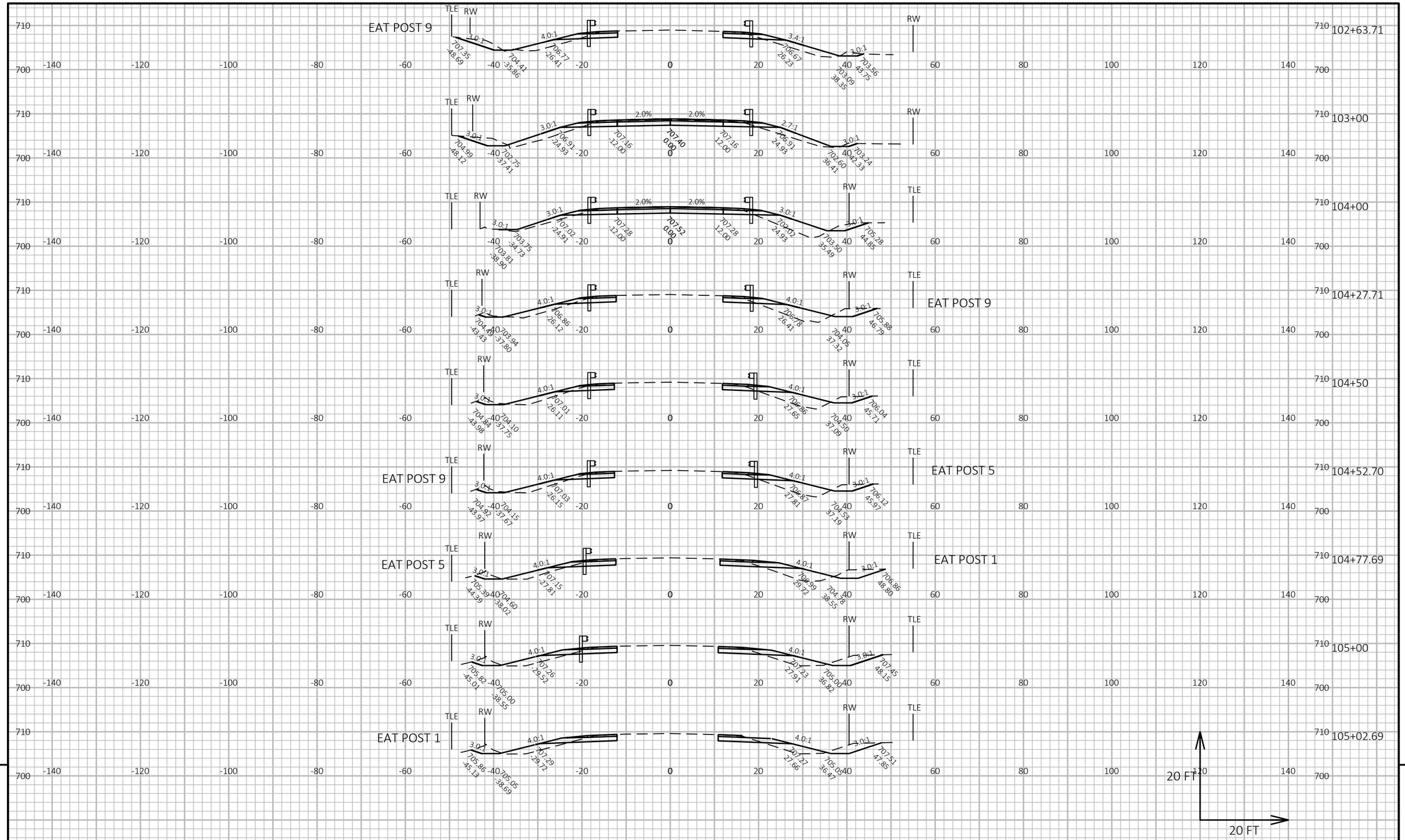


PROJECT NO: 4665-01-71	HWY: CTH CC	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH CC	SHEET 62	E

FILE NAME : X:\PROJECTS\OUTAGAMIE\190068 CTH CC BRIDGE\DESIGN\C3D\DESIGN\CORRIDORS\4665-01-00_CORR.DWG
LAYOUT NAME - XS-1

PLOT DATE : 3/4/2020 3:16 PM PLOT BY : BRADY MATHISEN PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

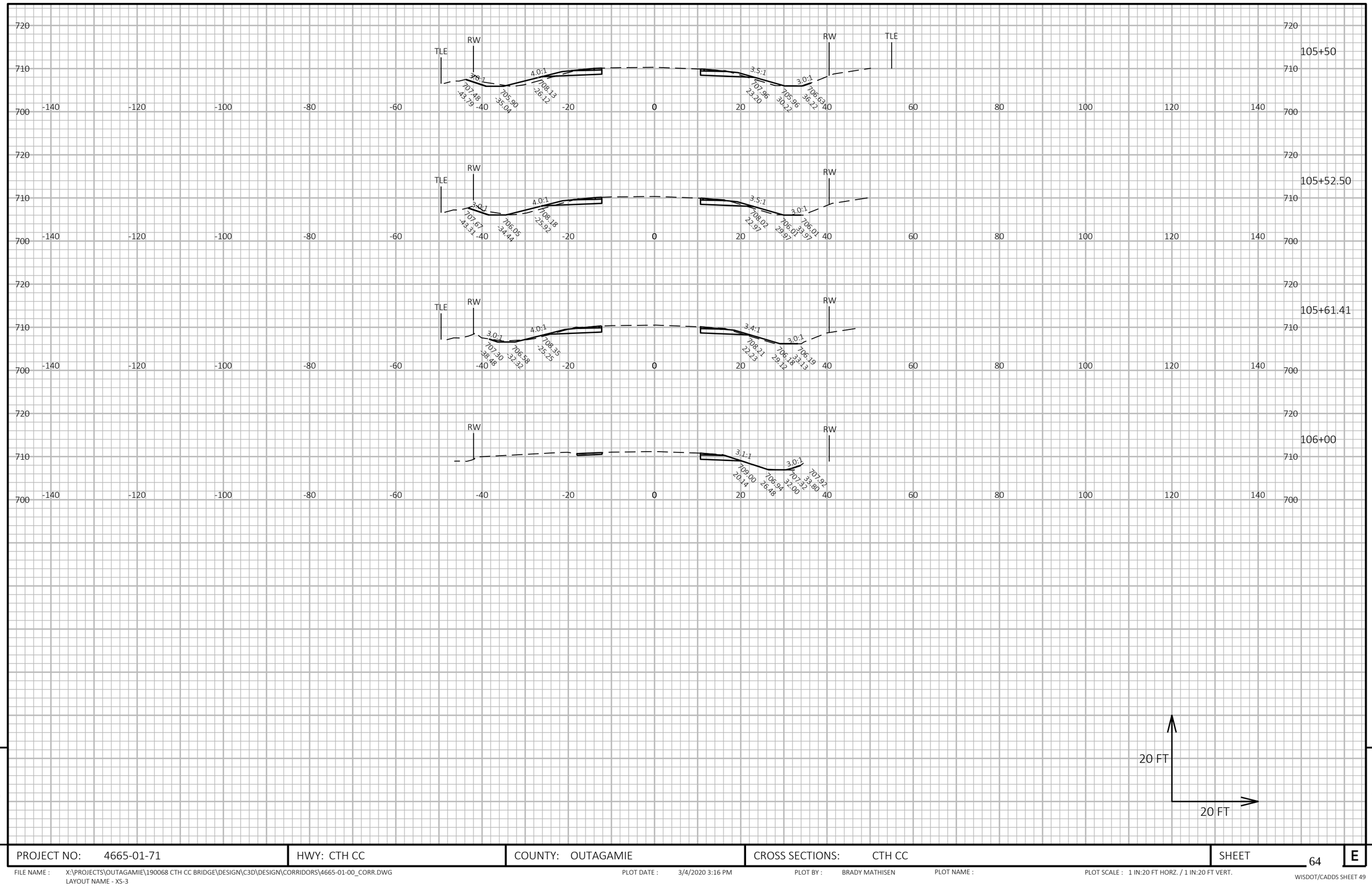


PROJECT NO: 4665-01-71	HWY: CTH CC	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH CC	SHEET 63 E

FILE NAME : X:\PROJECTS\OUTAGAMIE\190068 CTH CC BRIDGE\DESIGN\C3D\DESIGN\CORRIDORS\4665-01-00_CORR.DWG
LAYOUT NAME - XS-2

PLOT DATE : 3/4/2020 3:16 PM PLOT BY : BRADY MATHISEN PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 4665-01-71	HWY: CTH CC	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH CC	SHEET 64	E

FILE NAME : X:\PROJECTS\OUTAGAMIE\190068 CTH CC BRIDGE\DESIGN\C3D\DESIGN\CORRIDORS\4665-01-00_CORR.DWG
LAYOUT NAME - XS-3

PLOT DATE : 3/4/2020 3:16 PM PLOT BY : BRADY MATHISEN PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

GRE JULY 2020

PROJECT ID: 6500-03-71

WITH: 4665-01-71

COUNTY: OUTAGAMIE

ORDER OF SHEETS

TOTAL SHEETS = 38

07

DESIGN DESIGNATION 6500-03-00

A.A.D.T.	2020	=	450
A.A.D.T.	2040	=	1,810
D.H.V.		=	365 (2040)
D.D.		=	60/40
T.		=	6.7
DESIGN SPEED		=	45 MPH
ESALS		=	109,500

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such)
- SPECIAL DITCH
- GRADE ELEVATION
- CULVERT (Profile View)

UTILITIES

- ELECTRIC
- FIBER OPTIC
- GAS
- SANITARY SEWER
- STORM SEWER
- TELEPHONE
- WATER
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

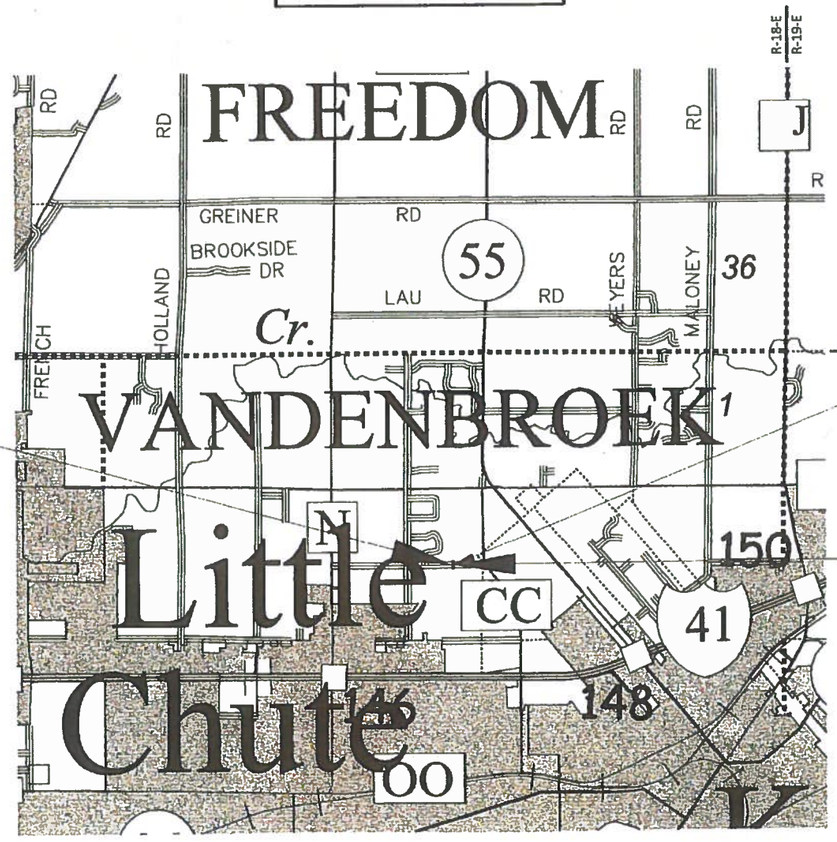
PLAN OF PROPOSED IMPROVEMENT

T VANDENBROEK, HICKORY DRIVE

BRANCH APPLE CREEK BRIDGE

LOCAL STREET
OUTAGAMIE COUNTY

STATE PROJECT NUMBER
6500-03-71



BEGIN PROJECT
STA 202+81.70
Y = 579,254.784
X = 856,165.182

STRUCTURE B-44-477
STA 203+30.07 - STA 203+66.58

END PROJECT
STA 204+11.70

LAYOUT SCALE 0 — 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.025 MI

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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6500-03-71		

ACCEPTED FOR
OUTAGAMIE COUNTY
For Dean Steingraber

DATE: 2/24/20 (Signature and Title of Official) Highway Engineer

JT ENGINEERING, INC
Consultant Services

WISCONSIN
MURRAY R. GLEN
36246-006
GREEN BAY, WI
PROFESSIONAL ENGINEER

DATE: 2/20/20 (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	JT ENGINEERING, INC.
Designer	JT ENGINEERING, INC.
Project Manager	BRIAN EDWARDS, PE
Regional Examiner	
Regional Supervisor	JAMES THOMPSON, PE

APPROVED FOR THE DEPARTMENT
DATE: 2/21/20 (Signature)

E

FILE NAME: X:\PROJECTS\OUTAGAMIE\190069 HICKORY BRIDGE\DESIGN\C3D\SHEETSPLAN\65000300_010101_TI.DWG

PLOT DATE : 2/20/2020 8:05 AM PLOT BY : ERIC ADAMSKI PLOT NAME :

DIGGERS HOTLINE

Dial 811 or (800) 242-8511

www.DiggersHotline.com

UTILITY CONTACTS

AT&T WISCONSIN
COMMUNICATION LINE
MR. JOSEPH KASSAB
205 S. JEFFERSON STREET
GREEN BAY, WI 54301
TEL: (920) 433-4200
EMAIL: JK572K@ATT.COM

AGENCY/PROJECT CONTACT

WISCONSIN DNR LIAISON
MR. MATT SCHAEVE
NORTHEAST REGION
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
TEL: (920) 366-1544
EMAIL: MATTHEW.SCHAEVE@WISCONSIN.GOV

SEQUENCE OF PLANS AND DETAILS IN SECTION 2

GENERAL NOTES
TYPICAL SECTIONS
CONSTRUCTION DETAILS

GENERAL NOTES

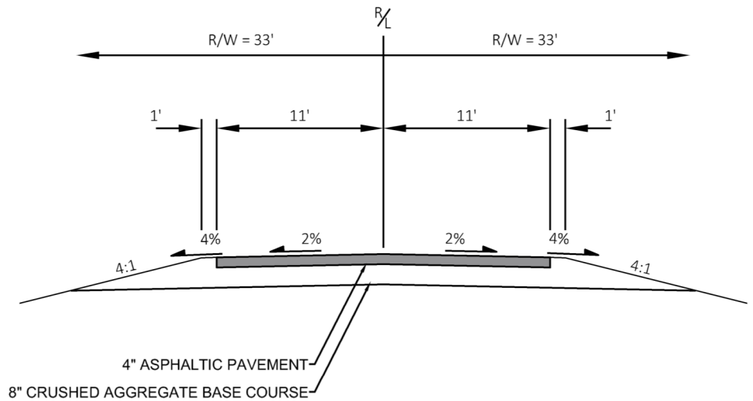
1. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. ANY LOCAL OR MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.
3. NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
4. THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.
5. DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE TOPSOILED, SEEDED, FERTILIZED, AND EROSION MAT.
6. A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING PAVEMENT AT REMOVAL LIMITS.
7. SILT FENCE IS TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, AND IN PLACE PRIOR TO BRIDGE REMOVAL.

RUNOFF COEFFICIENT TABLE

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

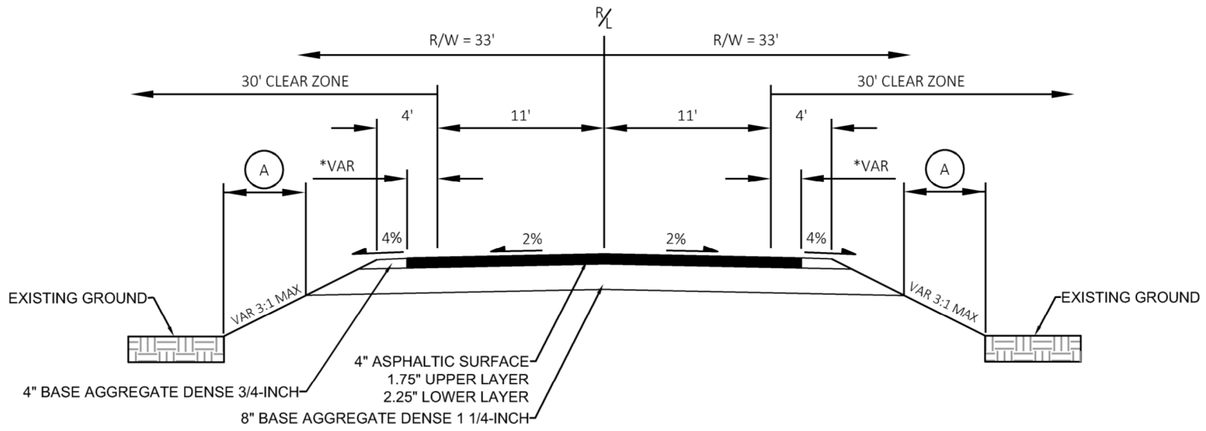
TOTAL PROJECT AREA = 0.20 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.17 ACRES

2



TYPICAL EXISTING SECTION
HICKORY DRIVE

STA 202+81.70 - STA 203+35.5
STA 203+58.5 - STA 204+11.70



(A) TOPSOIL, SEED AND FERTILIZER, EROSION MAT CLASS I, TYPE A

FINISHED TYPICAL SECTION
HICKORY DRIVE

STA 202+81.70 - STA 203+35.82
STA 203+66.58 - STA 204+11.70

PROJECT NO: 6500-03-71	HWY: HICKORY DRIVE	COUNTY: OUTAGAMIE	TYPICAL SECTIONS	SHEET 3	E

FILE NAME : X:\PROJECTS\OUTAGAMIE\190069 HICKORY BRIDGE\DESIGN\C3D\SHEETSPLAN\65000300_020301_TS.DWG
LAYOUT NAME - TYP

PLOT DATE : 2/19/2020 1:17 PM PLOT BY : COURTNEY CHLOPEK PLOT NAME : PLOT SCALE : 1 IN:10 FT

2

LEGEND

SILT FENCE
TURBIDITY BARRIER
EROSION MAT CLASS I, TYPE A

N

BRANCH OF APPLE CREEK

WETLAND BOUNDARY

TLE

SI

EXISTING R/W

202+00

HICKORY DRIVE

203+00

BORE

204+00

BORE BORE

HICKORY DRIVE

205+

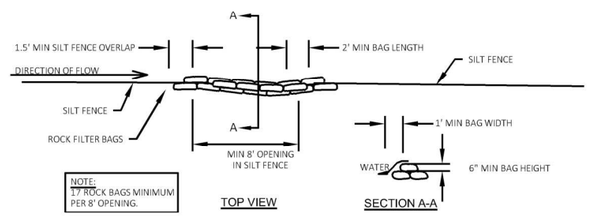
EXISTING R/W

SI

WETLAND BOUNDARY

WETLAND BOUNDARY

SI



ROCK BAGS USED FOR SILT FENCE RELIEF

PROJECT NO: 6500-03-71	HWY: HICKORY DRIVE	COUNTY: OUTAGAMIE	EROSION CONTROL PLAN	SHEET 4	E

FILE NAME : X:\PROJECTS\OUTAGAMIE\190069 HICKORY BRIDGE\DESIGN\C3D\SHEETSPLAN\65000300_022001_EC.DWG
LAYOUT NAME - TYP

PLOT DATE : 1/27/2020 2:35 PM PLOT BY : COURTNEY CHLOPEK PLOT NAME : PLOT SCALE : 1 IN:20 FT

6500-03-71

Line	Item	Item Description	Unit	Total	Qty
0004	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 02. 203+47	LS	1.000	1.000
0006	205.0100	Excavation Common	CY	124.000	124.000
0010	206.1000	Excavation for Structures Bridges (structure) 02. B-44-477	LS	1.000	1.000
0012	208.0100	Borrow	CY	63.000	63.000
0014	210.1500	Backfill Structure Type A	TON	210.000	210.000
0018	213.0100	Finishing Roadway (project) 02. 6500-03-71	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	20.000	20.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	240.000	240.000
0028	450.4000	HMA Cold Weather Paving	TON	56.000	56.000
0030	455.0605	Tack Coat	GAL	13.000	13.000
0032	465.0105	Asphaltic Surface	TON	56.000	56.000
0034	502.0100	Concrete Masonry Bridges	CY	131.000	131.000
0036	502.3200	Protective Surface Treatment	SY	160.000	160.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	3,880.000	3,880.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	15,800.000	15,800.000
0042	513.4061	Railing Tubular Type M	LF	119.000	119.000
0044	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0046	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	700.000	700.000
0048	606.0300	Riprap Heavy	CY	150.000	150.000
0050	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	190.000	190.000
0060	619.1000	Mobilization	EACH	0.390	0.390
0062	624.0100	Water	MGAL	5.000	5.000
0064	625.0100	Topsoil	SY	330.000	330.000
0066	628.1504	Silt Fence	LF	265.000	265.000
0068	628.1520	Silt Fence Maintenance	LF	530.000	530.000
0070	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0072	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0074	628.2002	Erosion Mat Class I Type A	SY	330.000	330.000
0076	628.6005	Turbidity Barriers	SY	110.000	110.000
0080	628.7570	Rock Bags	EACH	50.000	50.000
0082	629.0210	Fertilizer Type B	CWT	1.000	1.000
0084	630.0120	Seeding Mixture No. 20	LB	9.000	9.000
0086	630.0200	Seeding Temporary	LB	9.000	9.000
0088	630.0500	Seed Water	MGAL	10.000	10.000
0090	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0092	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	1.000	1.000
0094	637.2230	Signs Type II Reflective F	SF	21.000	21.000
0096	638.2602	Removing Signs Type II	EACH	7.000	7.000

6500-03-71

Line	Item	Item Description	Unit	Total	Qty
0098	638.3000	Removing Small Sign Supports	EACH	7.000	7.000
0100	642.5001	Field Office Type B	EACH	0.390	0.390
0102	643.0420	Traffic Control Barricades Type III	DAY	444.000	444.000
0104	643.0705	Traffic Control Warning Lights Type A	DAY	888.000	888.000
0106	643.0900	Traffic Control Signs	DAY	592.000	592.000
0108	643.5000	Traffic Control	EACH	0.390	0.390
0110	645.0111	Geotextile Type DF Schedule A	SY	50.000	50.000
0112	645.0120	Geotextile Type HR	SY	280.000	280.000
0116	650.4500	Construction Staking Subgrade	LF	94.000	94.000
0118	650.5000	Construction Staking Base	LF	94.000	94.000
0122	650.6500	Construction Staking Structure Layout (structure) 02. B-44-477	LS	1.000	1.000
0126	650.9910	Construction Staking Supplemental Control (project) 02. 6500-03-71	LS	1.000	1.000
0128	650.9920	Construction Staking Slope Stakes	LF	94.000	94.000
0130	690.0150	Sawing Asphalt	LF	40.000	40.000
0134	715.0502	Incentive Strength Concrete Structures	DOL	786.000	786.000

EARTHWORK SUMMARY

Division	From/To Station	LOCATION	Common Excavation (item #205.0100)	Unusable Pavement Material (2)	Available Material (3)	Unexpanded Fill	Expanded Fill (4)	Mass Ordinate +/- (5)	Borrow (item #208.0100)	Comment:
			Cut (1)				Factor 1.35			
0010	202+82 - 204+12	HICKORY DRIVE	124	25	99	120	162	-63	63	
Division 1 Totals			124	25	99	120	162	-63	63	

1) Unusable Pavement is included in Cut
2) Unusable Pavement Material = Existing Asphaltic Pavement
3) Available Material = Cut - Unusable Pavement Material
4) Expanded Fill Factor = 1.35 Expanded Fill = Unexpanded Fill * Fill Factor
5) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

BASE AGGREGATE SUMMARY

CATEGORY	STATION		STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
0010	202+82	-	203+30	HICKORY	11	121	2.5
0010	203+67	-	204+12	HICKORY	9	119	2.5
				TOTAL 0010	**20**	**240**	**5.0**

HMA SUMMARY

CATEGORY	STATION		STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
0010	202+82	-	203+30	HICKORY	7	29
0010	203+67	-	204+12	HICKORY	6	27
				TOTAL 0010	**13**	**56**

SILT FENCE

CATEGORY	STATION		STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
0010	202+82	-	203+30	HICKORY	105	210
0010	203+67	-	204+12	HICKORY	105	210
0010	UNDISTRUBUTED				55	110
				TOTAL 0010	**265**	**530**

EROSION CONTROL MOBILIZATIONS

CATEGORY	LOCATION	628.1905 MOBILIZATION EROSION CONTROL EACH	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL EACH
0010	HICKORY DRIVE	5	3
	TOTAL 0010	**5**	**3**

ROCK BAGS

CATEGORY	STATION		STATION	LOCATION	628.7570 EACH	COMMENTS
0010	202+82	-	203+30	HICKORY	17	SILT FENCE RELIEF
0010	203+67	-	204+12	HICKORY	17	SILT FENCE RELIEF
0010	UNDISTRUBUTED				16	
				TOTAL 0010	**50**	

TURBIDITY BARRIERS

CATEGORY	LOCATION	628.6005 SY
0010	B-44-477 WEST ABUTMENT	57
0010	B-44-477 EAST ABUTMENT	53
	TOTAL 0010	**110**

LANDSCAPING SUMMARY

CATEGORY	STATION		STATION	LOCATION	625.0100 TOPSOIL SY	628.2002 EROSION MAT CLASS I TYPE A SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIX NO. 20 LB	630.0200 SEEDING MIX TEMPORARY LB
0010	202+82	-	203+30	Hickory	148	148	0.1	4.0	4.0
0010	203+67	-	204+12	Hickory	110	110	0.1	3.0	3.0
0010	UNDISTRIBUTED				71	71	0.8	2.0	2.0
				TOTAL 0010	**330**	**330**	**1.0**	**9.0**	**9.0**

3

3

INSTALLATION AND REMOVAL OF PERMANENT SIGNING, TYPE II

CATEGORY	STATION	LOCATION	SIGN CODE	SIZE		634.0614 POSTS WOOD 4X6-INCH X 14-FT EACH	634.0618 POSTS WOOD 4X6-INCH X 18-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
0010	203+16	LT	W5-52L	12 x 36	OBJECT MARKER	1	---	3.00	---	---
0010	203+14	RT	W5-52R	12 x 36	OBJECT MARKER	1	---	3.00	---	---
0010	203+83	LT	W5-52R	12 x 36	OBJECT MARKER	1	---	3.00	---	---
0010	203+81	RT	W5-52L	12 x 36	OBJECT MARKER	1	---	3.00	---	---
0010	203+36	LT	W5-52L	12 x 36	OBJECT MARKER	---	---	---	1	1
0010	203+36	RT	W5-52R	12 x 36	OBJECT MARKER	---	---	---	1	1
0010	203+58	LT	W5-52R	12 x 36	OBJECT MARKER	---	---	---	1	1
0010	203+58	RT	W5-52L	12 x 36	OBJECT MARKER	---	---	---	1	1
0010	203+14	RT	R12-1	24 x 30	WEIGHT LIMIT 15 TONS	---	---	---	1	1
0010	203+83	LT	R12-1	24 x 30	WEIGHT LIMIT 15 TONS	---	---	---	1	1
0010	202+82	RT	W3-1	36 x 36	STOP AHEAD	---	1	9.00	1	1
					TOTAL 0010	**4**	**1**	**21.00**	**7**	**7**

TRAFFIC CONTROL SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	APPROXIMATE SERVICE DAYS	643.0420 BARRICADES TYPE III NO. IN SERVICE	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A NO. IN SERVICE	643.0705 WARNING LIGHTS TYPE A DAYS	643.0900 SIGNS NO. IN SERVICE	643.0900 SIGNS DAYS	643.5000 TRAFFIC CONTROL EACH
0010	202+82	-	203+30	Hickory	74	3	222	6	444	4	296	1
0010	203+67	-	204+12	Hickory	74	3	222	6	444	4	296	
				TOTAL 0010			**444**		**888**		**592**	**1**

CONSTRUCTION STAKING SUMMARY

CATEGORY	STATION		STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.6500 STRUCTURE LS	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
0010	202+82	-	203+30	Hickory	48	48	0	1	48
0010	203+67	-	204+12	Hickory	46	46	0		46
0020	203+30	-	203+67	Hickory	0	0	1		0
				TOTAL 0010	**94**	**94**	**1**	**1**	**94**

SAWING SUMMARY

CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT LF
0010	202+82	Hickory	20
0010	204+12	Hickory	20
		TOTAL 0010	**40**

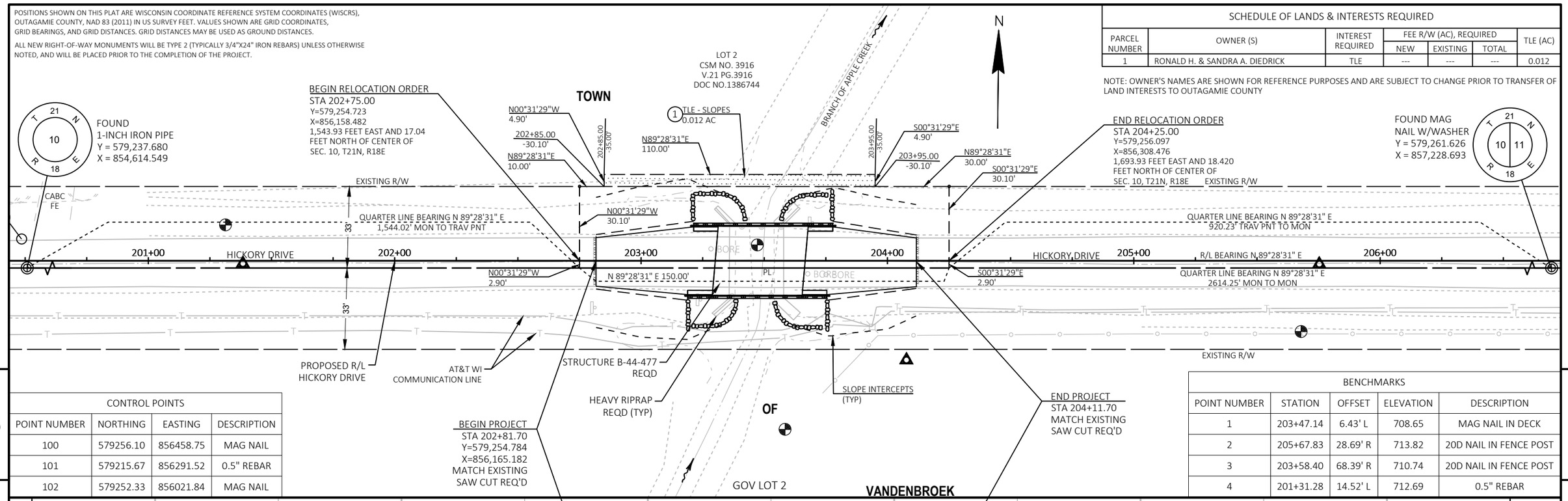
POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), OUTAGAMIE COUNTY, NAD 83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4"X24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED	FEE R/W (AC), REQUIRED			TLE (AC)
			NEW	EXISTING	TOTAL	
1	RONALD H. & SANDRA A. DIEDRICK	TLE	---	---	---	0.012

NOTE: OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO OUTAGAMIE COUNTY

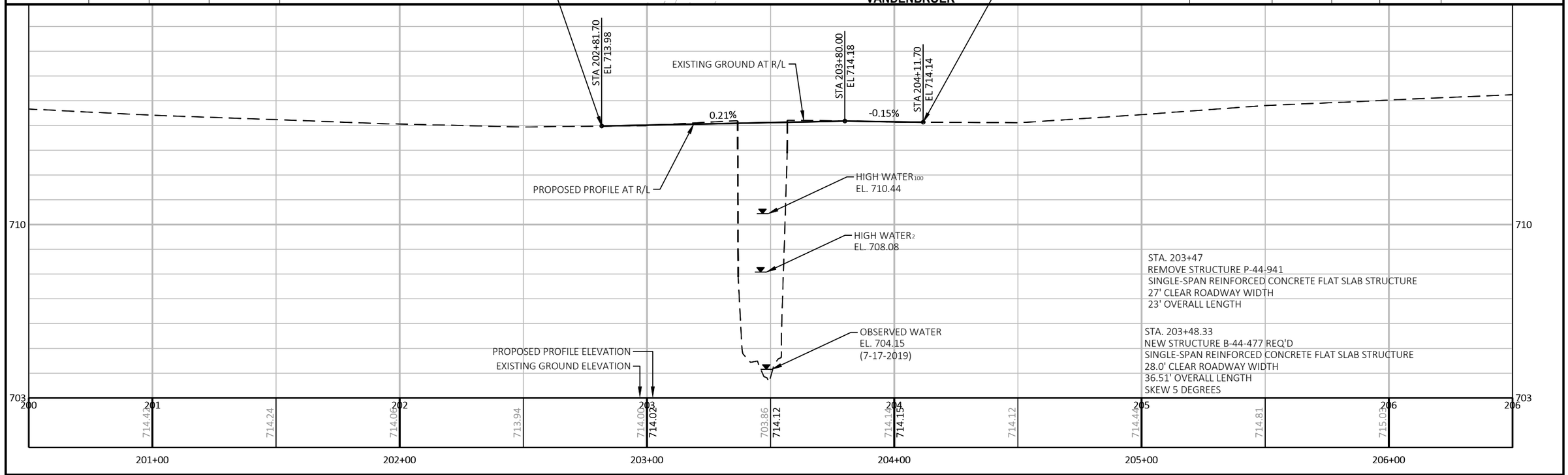


CONTROL POINTS

POINT NUMBER	NORTHING	EASTING	DESCRIPTION
100	579256.10	856458.75	MAG NAIL
101	579215.67	856291.52	0.5" REBAR
102	579252.33	856021.84	MAG NAIL

BENCHMARKS

POINT NUMBER	STATION	OFFSET	ELEVATION	DESCRIPTION
1	203+47.14	6.43' L	708.65	MAG NAIL IN DECK
2	205+67.83	28.69' R	713.82	20D NAIL IN FENCE POST
3	203+58.40	68.39' R	710.74	20D NAIL IN FENCE POST
4	201+31.28	14.52' L	712.69	0.5" REBAR

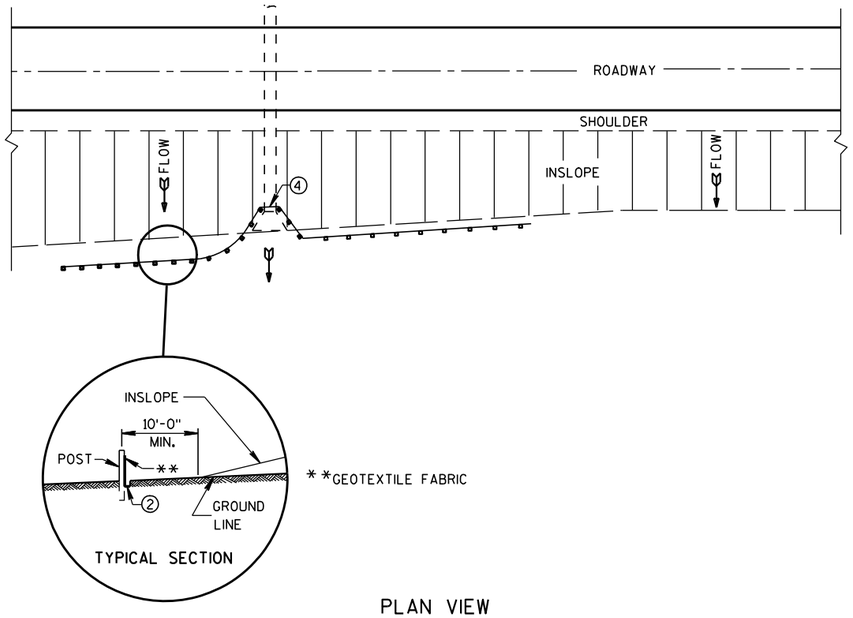


PROJECT NO: 6500-03-71	HWY: HICKORY DRIVE	COUNTY: OUTAGAMIE	PLAN AND PROFILE: HICKORY DRIVE	SHEET 10	E

FILE NAME : X:\PROJECTS\OUTAGAMIE\190069 HICKORY BRIDGE\DESIGN\C3D\SHEETSPLAN\65000300_050101-PP.DWG
LAYOUT NAME - 050101 - (1)
PLOT DATE : 3/18/2020 11:57 AM PLOT BY : BRADY MATHISEN PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

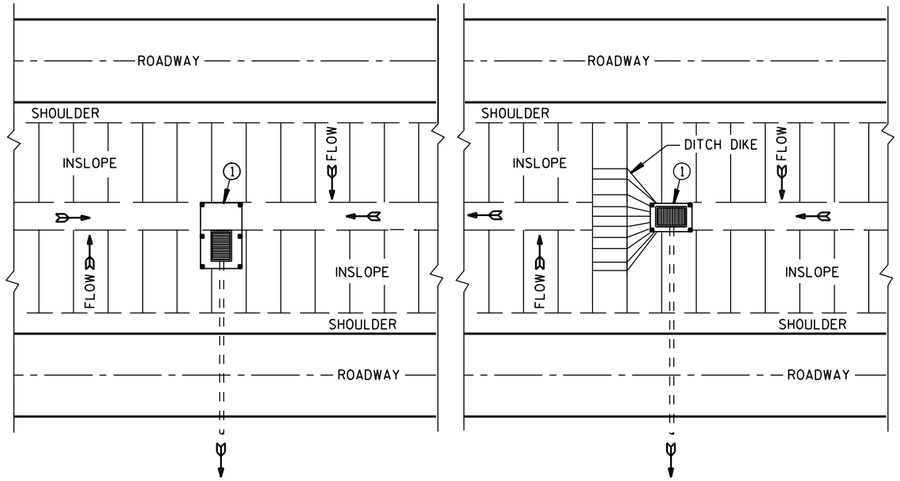
Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



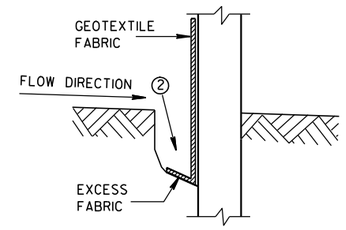
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

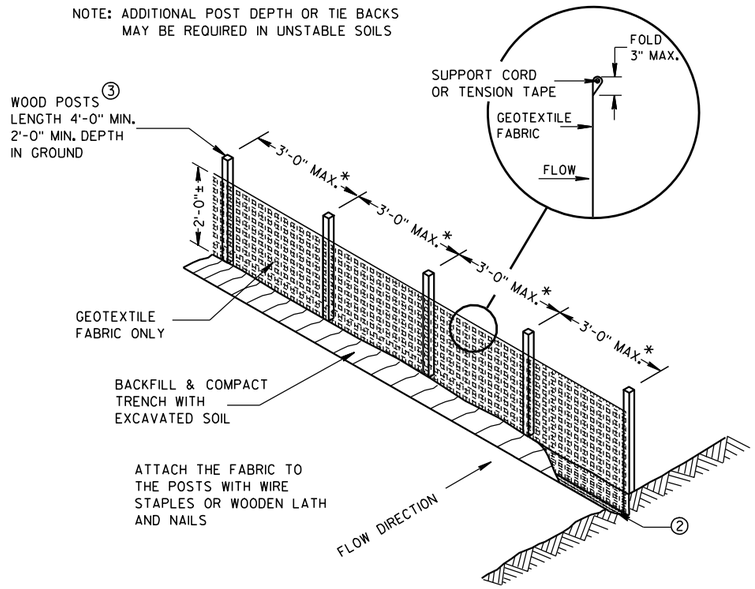
GENERAL NOTES

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

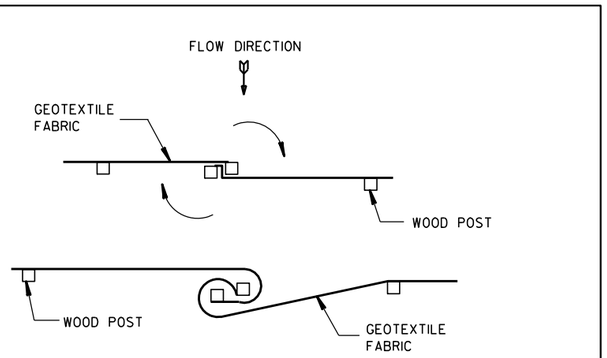
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



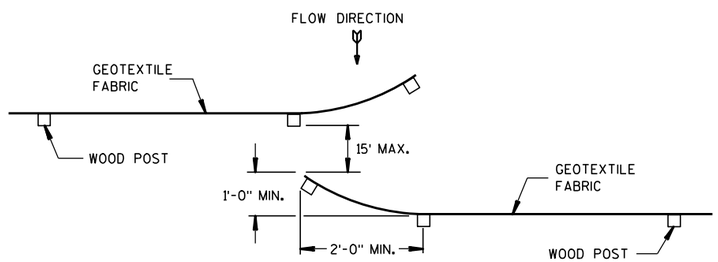
TRENCH DETAIL



SILT FENCE

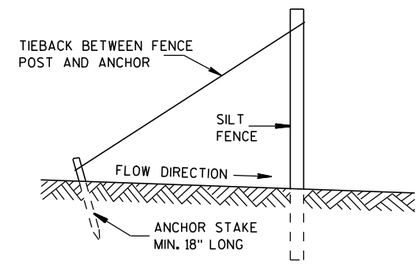


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

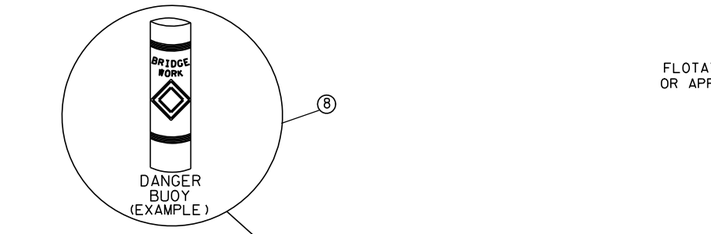
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

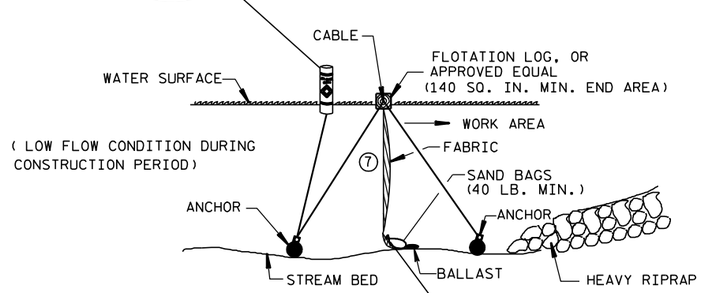
6

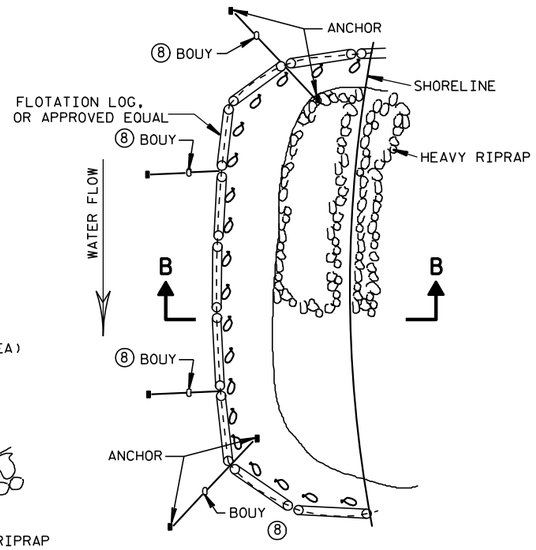
S.D.D. 8 E 9-6

6

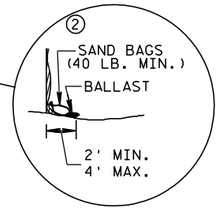
S.D.D. 8 E 9-6



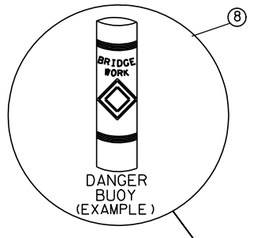


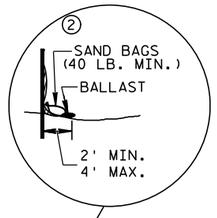


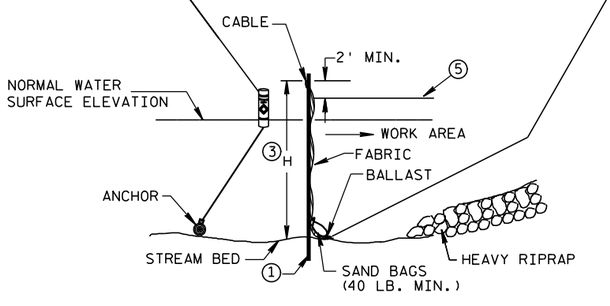
SECTION B-B



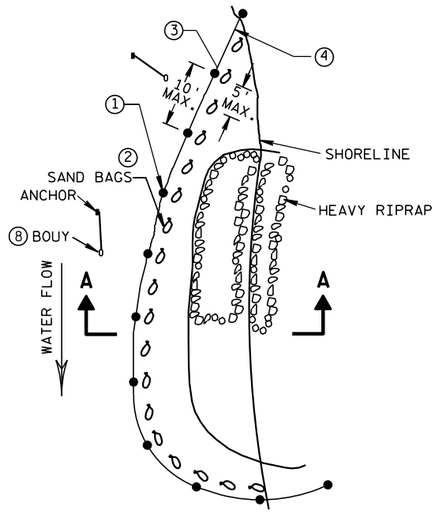
TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6







SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

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

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

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

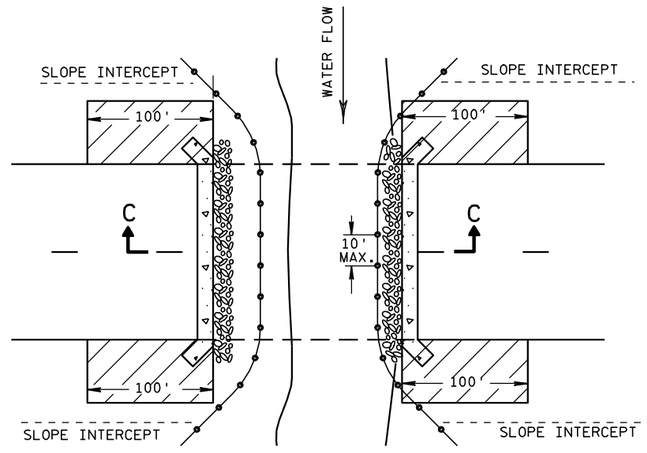
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

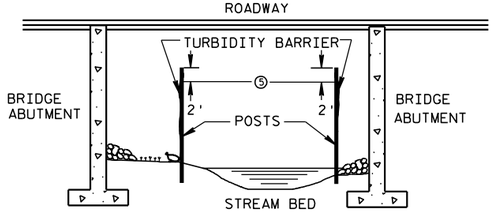
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

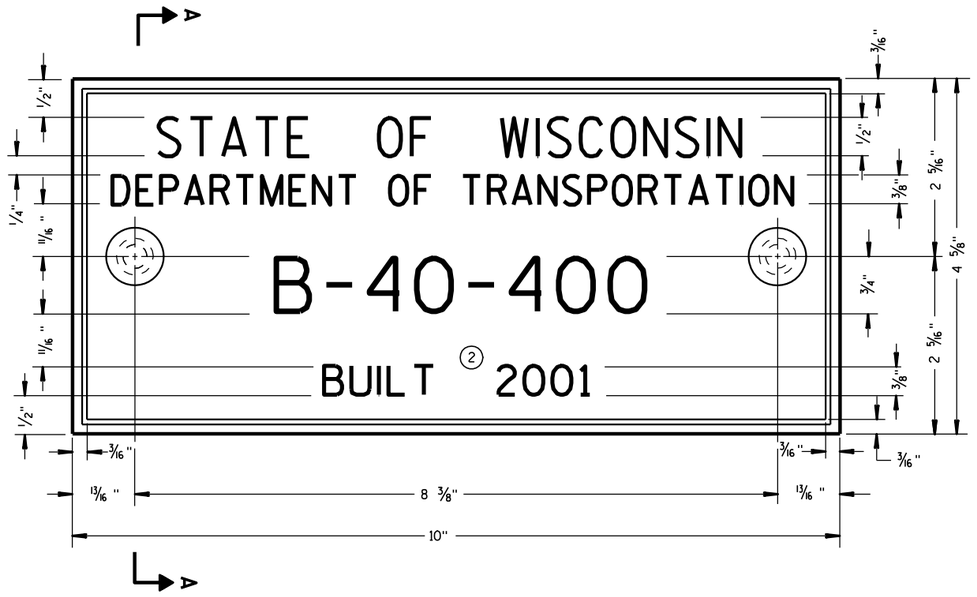
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 11-2



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION MULTI-UNIT STRUCTURES

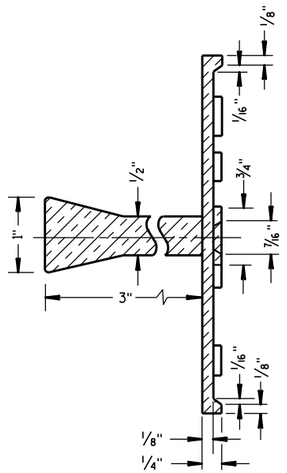
GENERAL NOTES

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

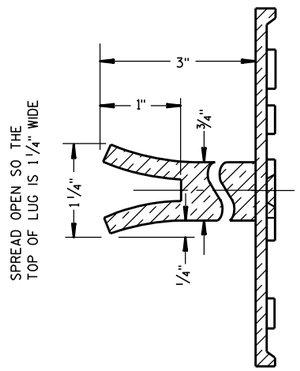
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

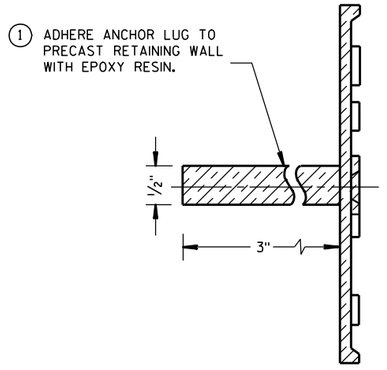
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

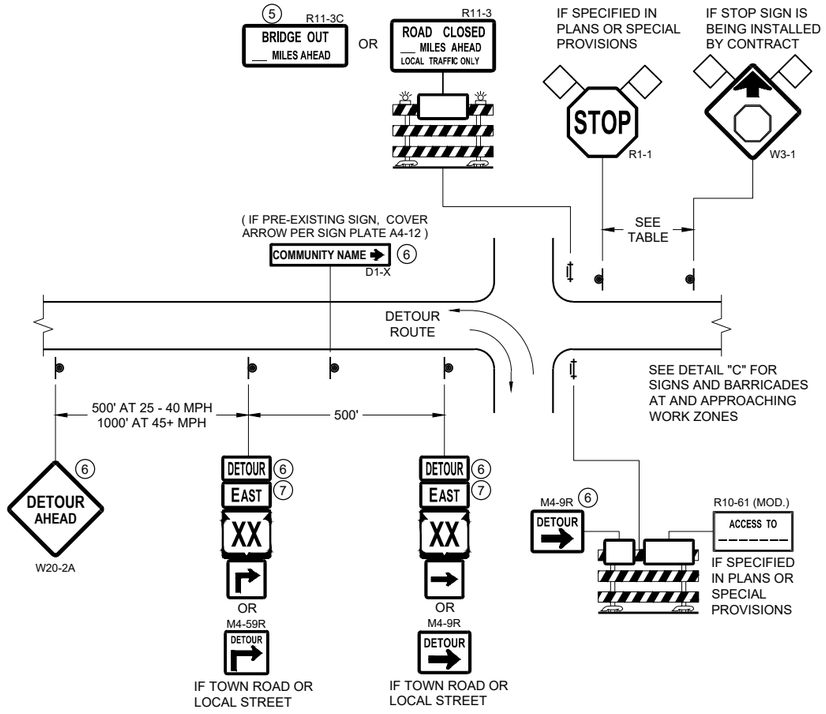
3/26/10 DATE

/S/ Scot Beck CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA

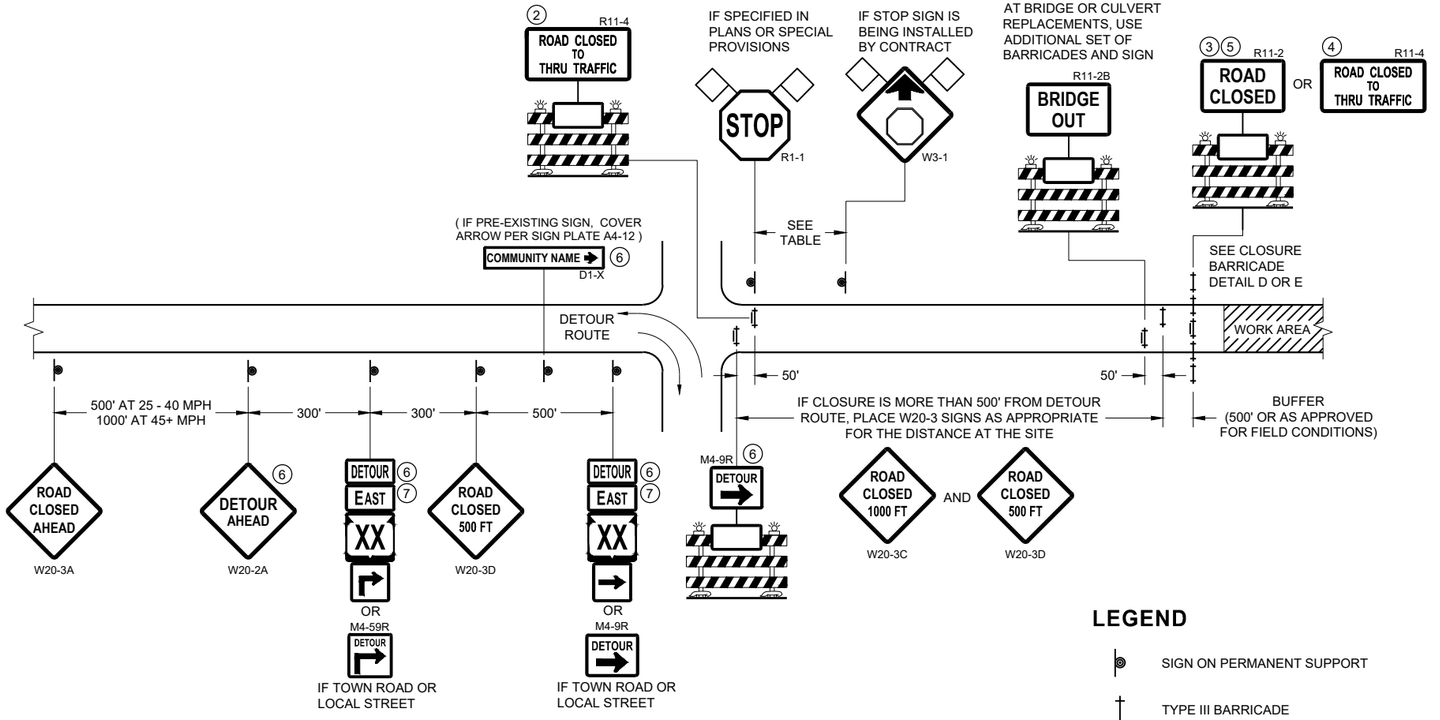
6

S.D.D. 12 A 3-10



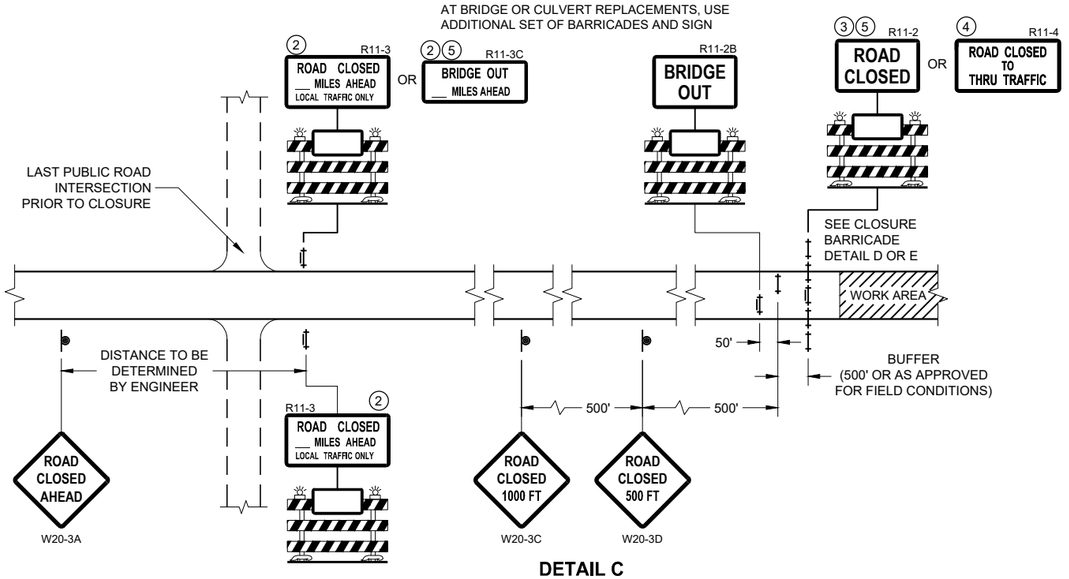
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

DETOUR M4 - 8
EAST M3 - X
XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
M05 - 1 OR M06 - 1

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

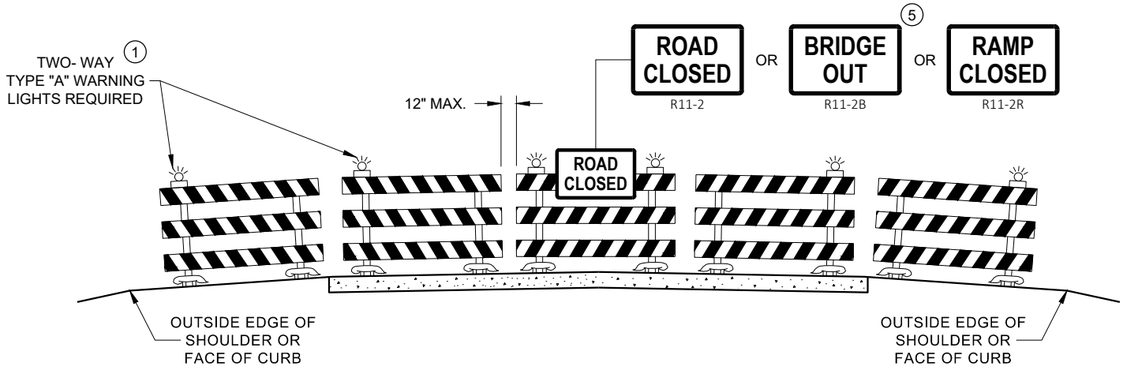
APPROVED
November 2018
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

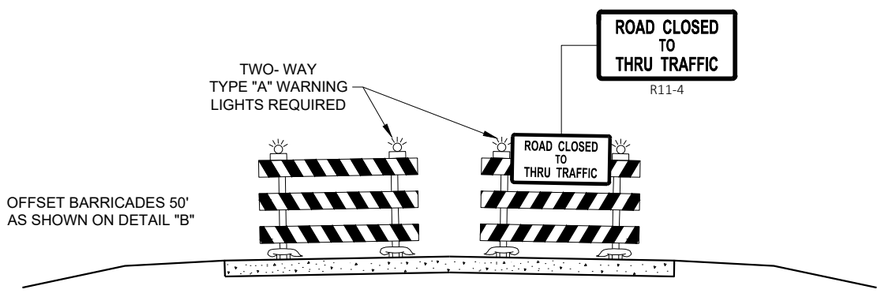
6

SDD 15C02 - 07a

SDD 15C02 - 07a



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

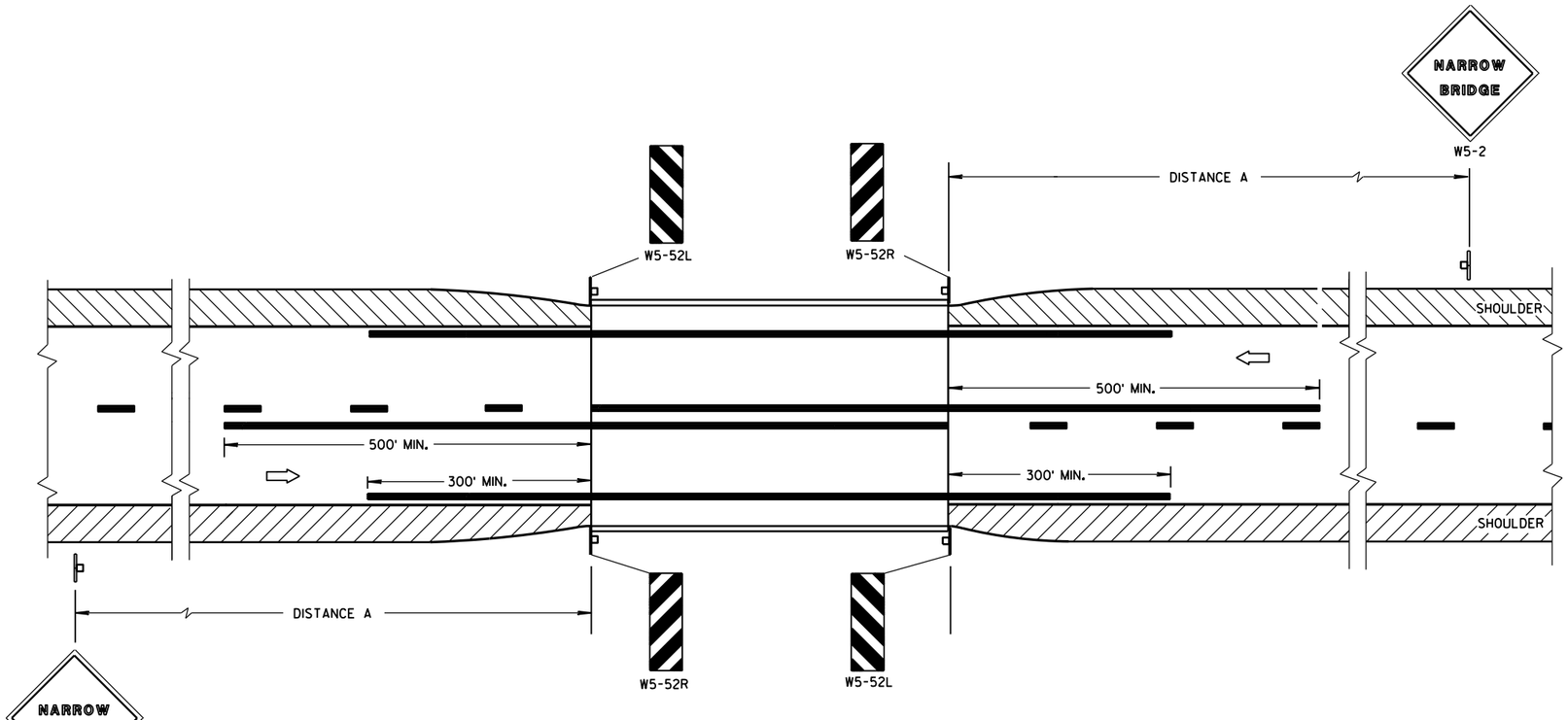
APPROVED
November 2018
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

6

SDD 15C02 - 07b

6

SDD 15C02 - 07b



SITUATION 1

WARRANTING CRITERIA:

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

DISTANCE TABLE

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

GENERAL NOTES

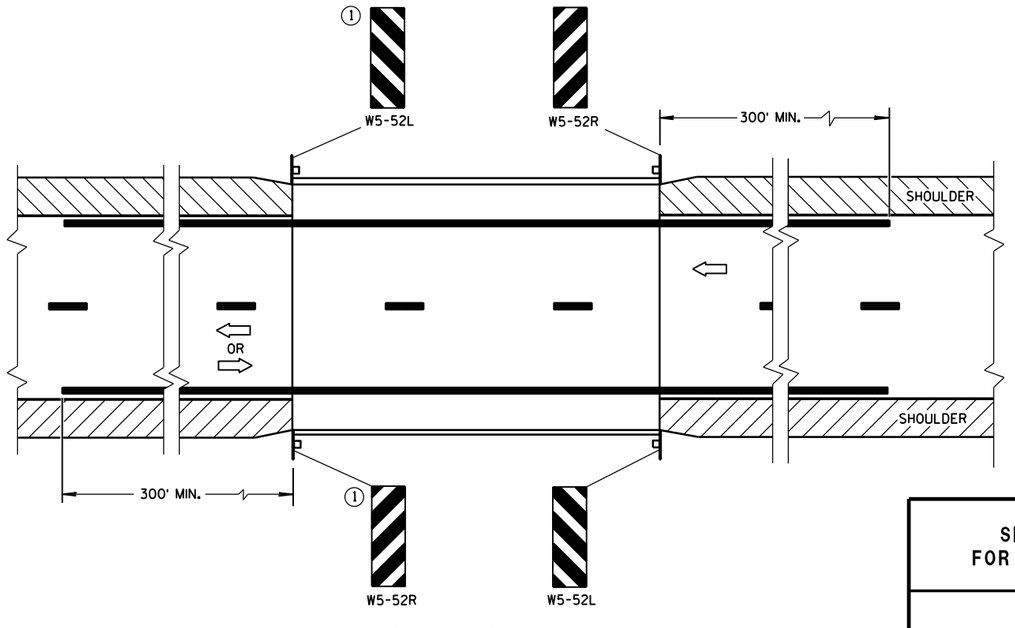
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

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

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR[illegible]EER
FHWA

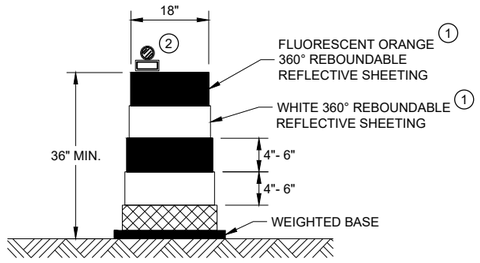
6

S.D.D. 15 C 6-9

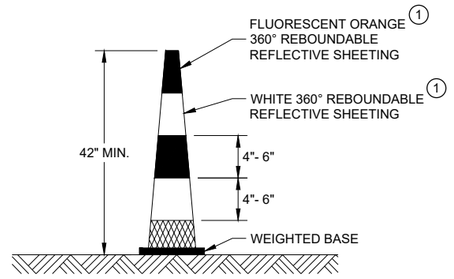
GENERAL NOTES

(1) REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

(2) LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

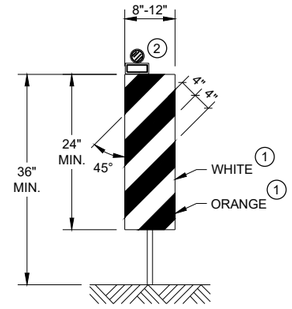


DRUM



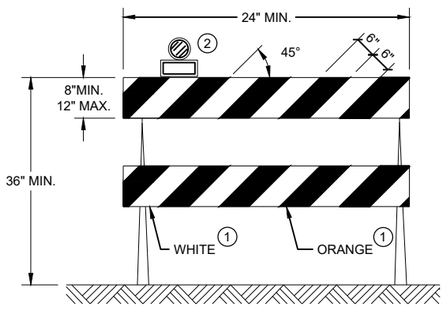
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



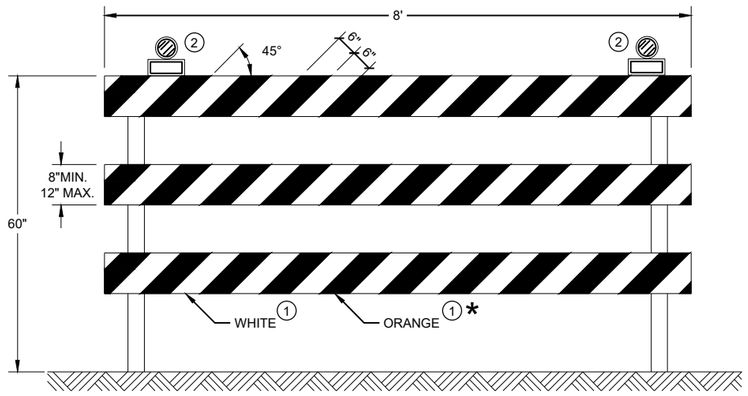
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

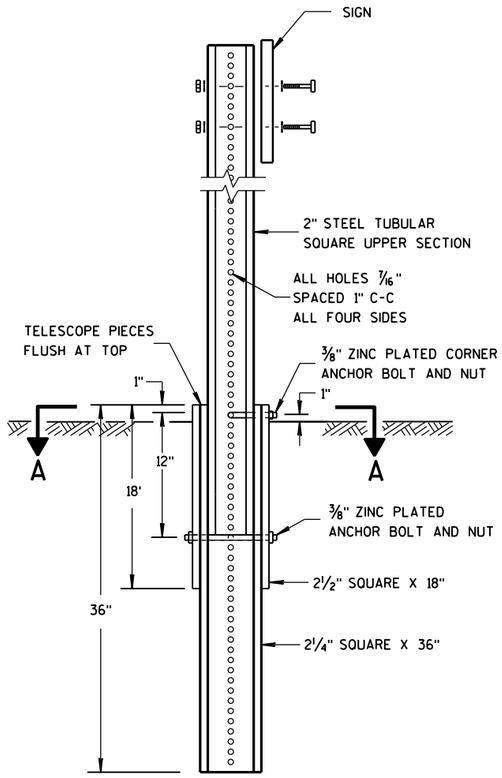
APPROVED
June 2017 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEE
FHWA

6

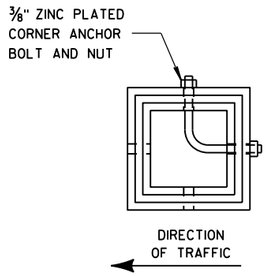
SDD 15C11 - 07b

6

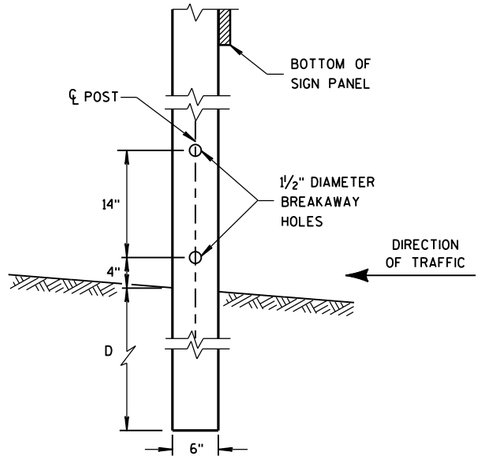
SDD 15C11 - 07b



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



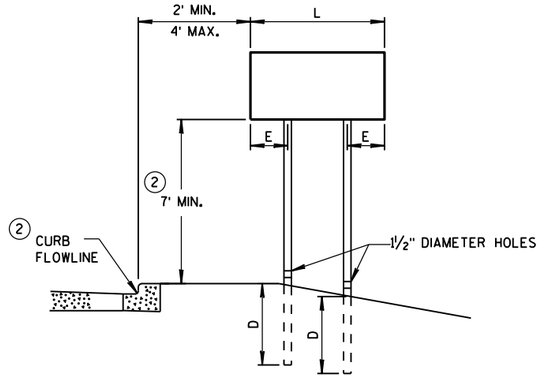
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

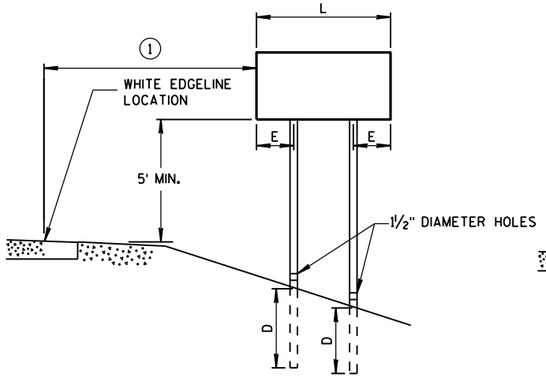
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

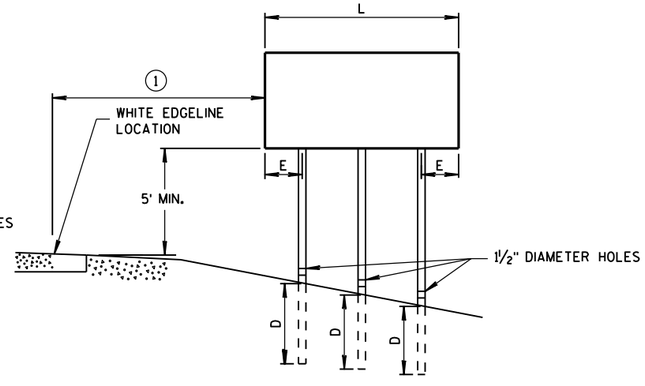
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

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



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

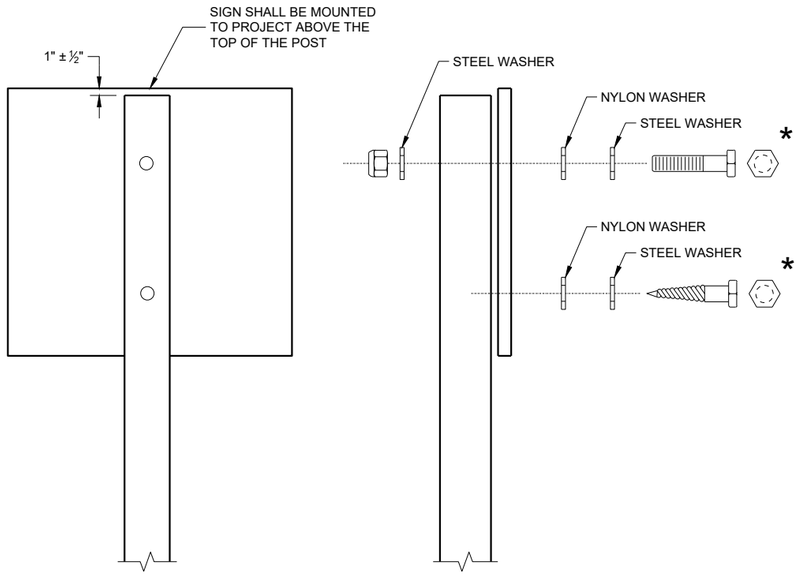
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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

6

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



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POST (4" x 6")
LAG SCREWS - ⅜" x 3"
MACHINE BOLTS - 5/16" x 6 ½" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ⅜" x 3 ¼" LENGTH W/NUTS
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH, GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x 1/16" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

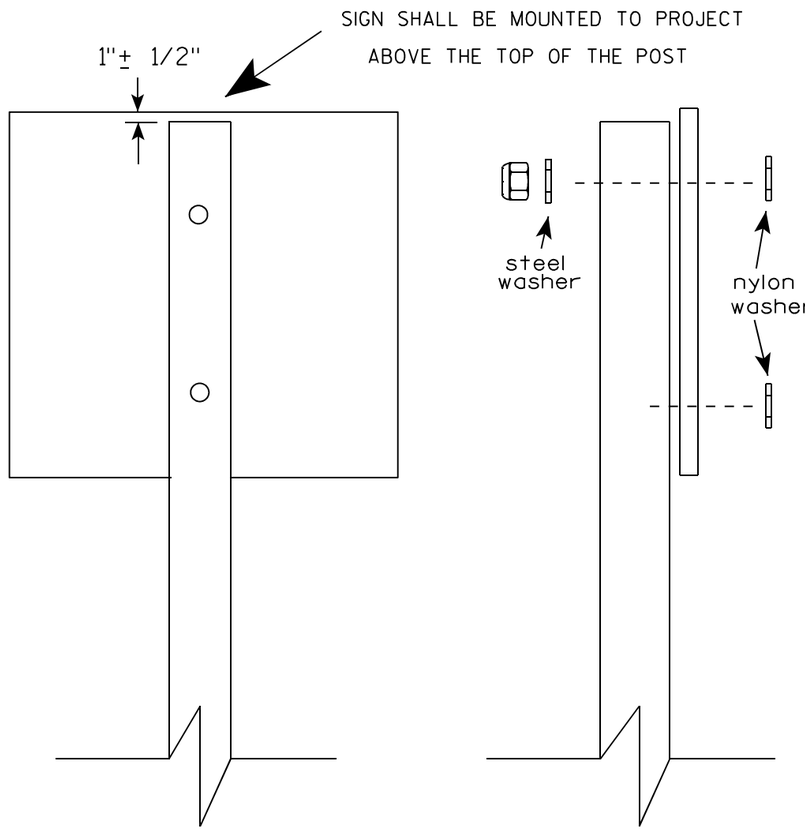
SDD 15D38 - 02b

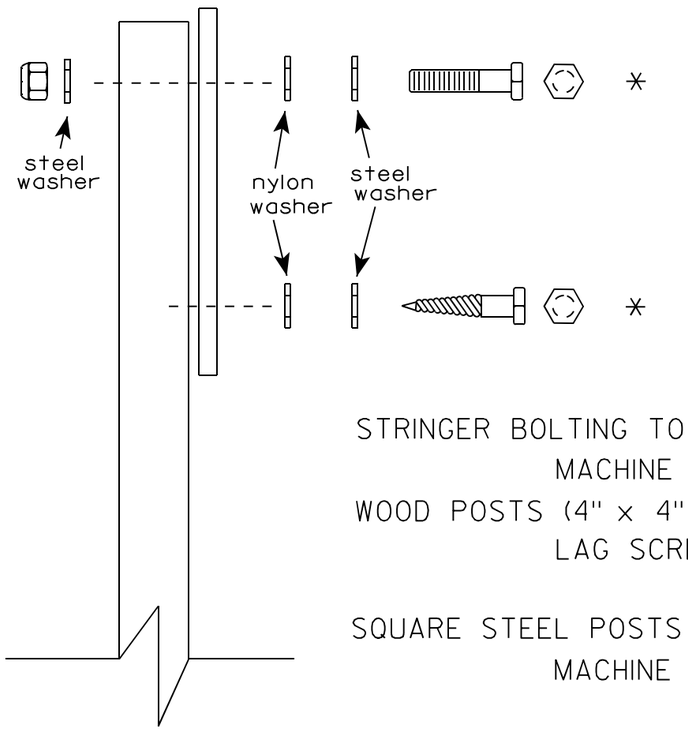
SDD15D38 - 02b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA





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

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

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

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

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

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

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

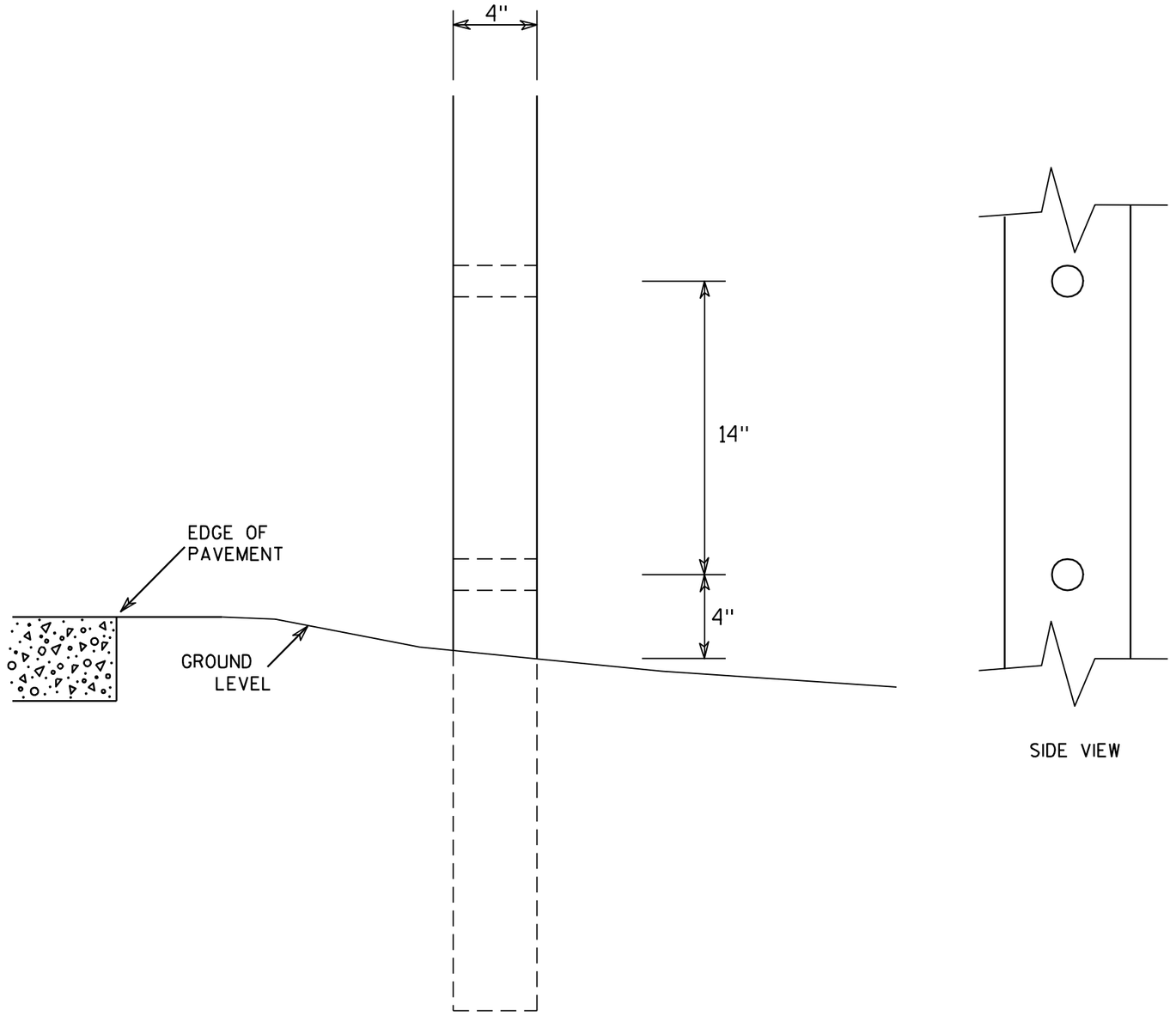
ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: SHEET NO: E



SIDE VIEW

GENERAL NOTES

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

7

7

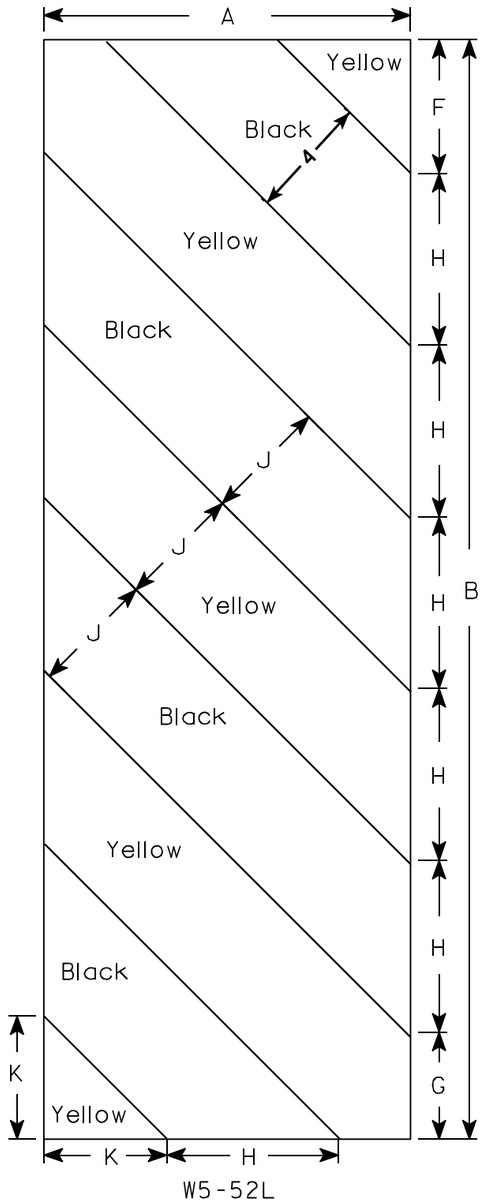
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

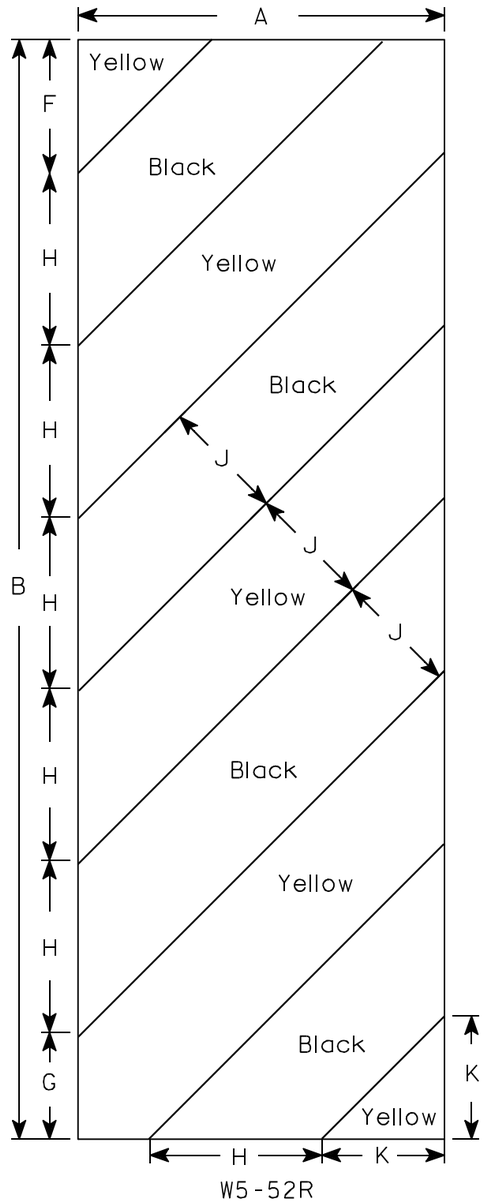
APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 22	E



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

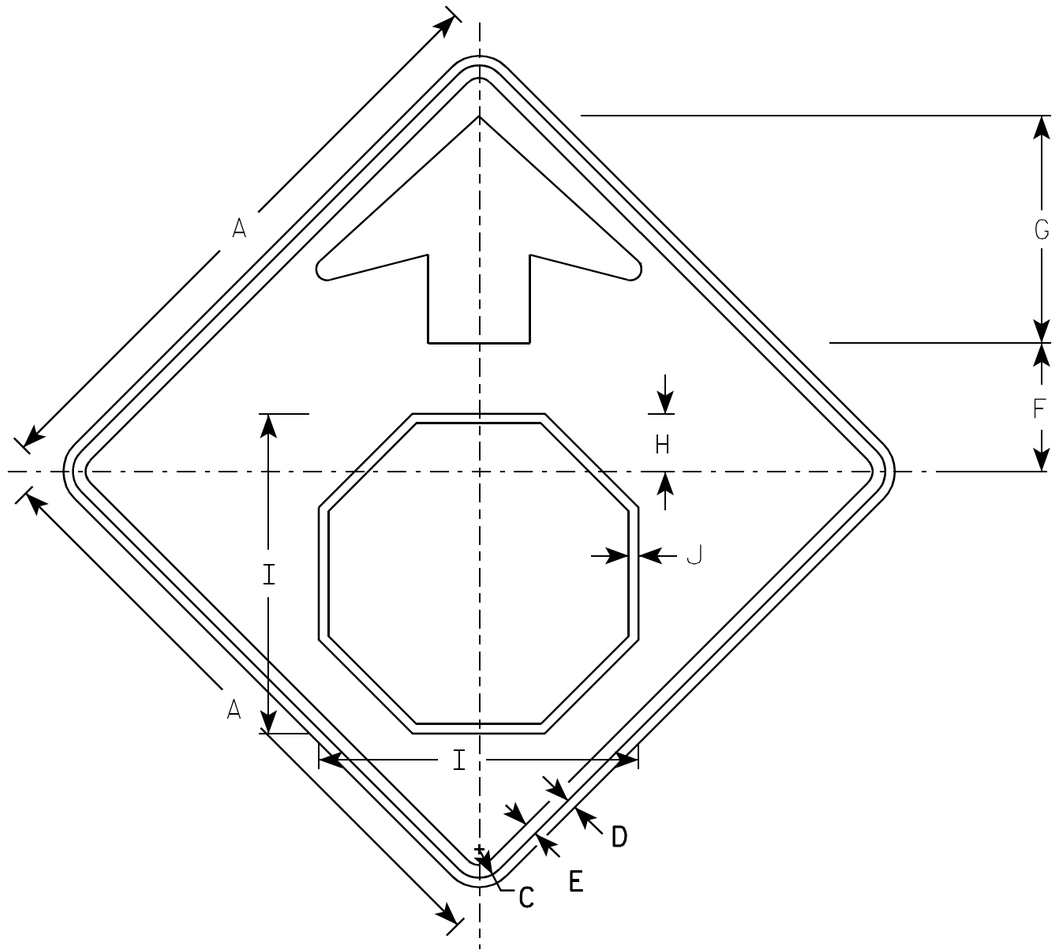
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 23	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W552.DGN PLOT DATE : 29-MAY-2012 13:03 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 4.961899:1.000000

WISDOT/CADDS SHEET 42

7

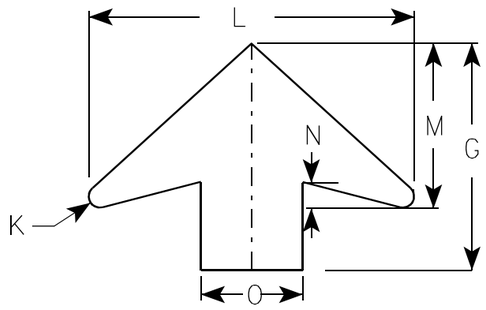
7



W3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW
   Arrow & Border - BLACK
   Stop Symbol - WHITE BORDER ON RED BACKGROUND



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	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

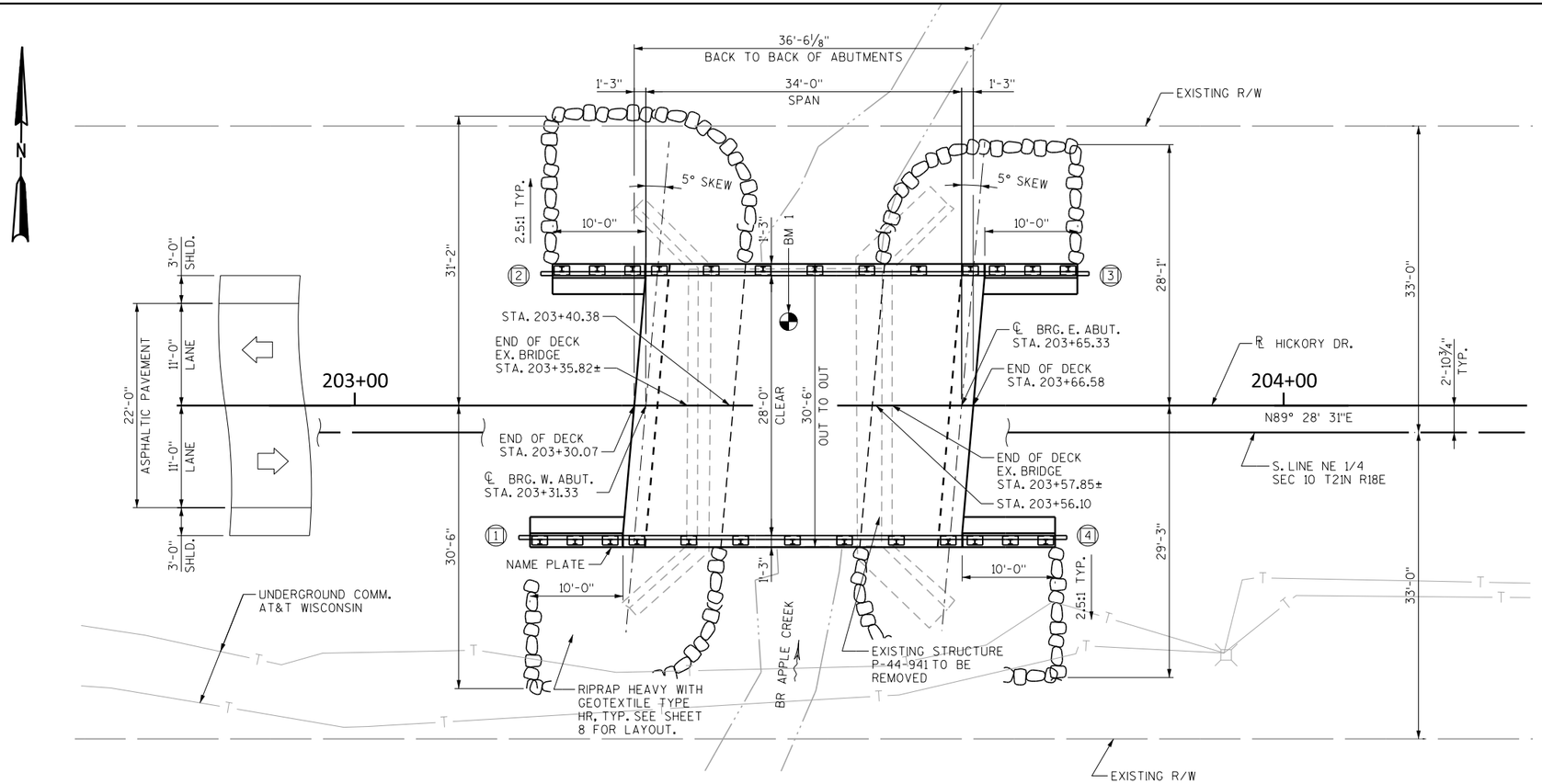
DATE 6/7/10 PLATE NO. W3-1.12

PROJECT NO:

SHEET NO: 24 E

STATE PROJECT NUMBER

6500-03-71



PLAN

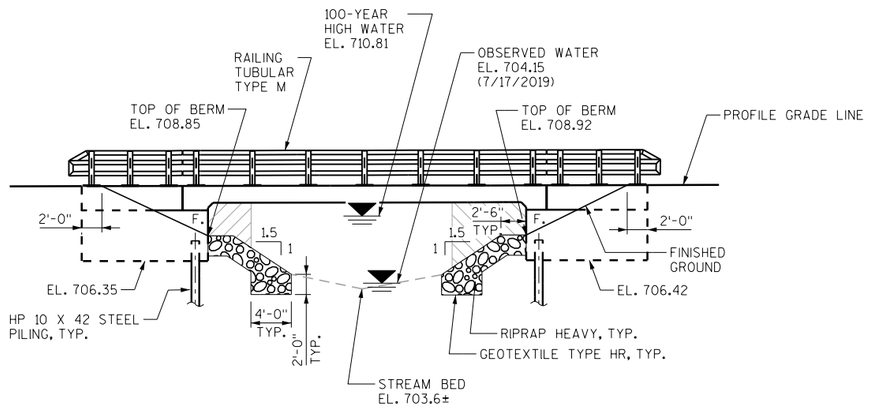
SINGLE SPAN CONCRETE FLAT SLAB

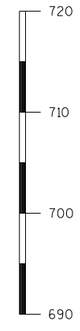
LEGEND

COST OF EXCAVATION SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURE BRIDGES B-44-477".

(X) INDICATES WINGWALL NUMBER

F. FIXED BEARING





ELEVATION

LOOKING NORTH

NOTE:

TEMPORARY LIMITED EASEMENT IS OFF OF THE PAGE AND IS NOT SHOWN FOR CLARITY. SEE SECTION 5 OF THE PLANS FOR PROPOSED TEMPORARY LIMITED EASEMENT.

DESIGN DATA

LIVE LOAD:
DESIGN LOAD: HL-93
INVENTORY RATING FACTOR = 1.15
OPERATING RATING FACTOR = 1.49
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES:
CONCRETE MASONRY:
SUPERSTRUCTURE.....f'c = 4,000 PSI
ALL OTHER.....f'c = 3,500 PSI
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60.....fy = 60,000 PSI

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10 x 42 AND DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.

ESTIMATED 50'-0" LONG AT WEST ABUTMENT.
ESTIMATED 50'-0" LONG AT EAST ABUTMENT.

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

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} = 730 C.F.S
VEL. = 5.43 F.P.S.
HW_{100} = EL. 710.81
WATERWAY AREA = 135 SQ. FT.
DRAINAGE AREA = 4.10 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

Q_2 = 220 C.F.S.
VEL. = 2.97 F.P.S.
HW_2 = EL. 708.40

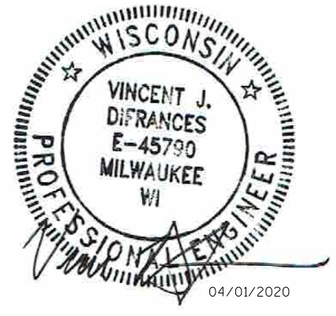
TRAFFIC DATA

HICKORY DRIVE
A.D.T. = 450 (2020)
A.D.T. = 1,810 (2040)
R.D.S. = 45 MPH

LIST OF DRAWINGS

BENCH MARK

NO.	STATION	DESCRIPTION	ELEVATION
1	203+46.69, 9.04'LT.	MAG NAIL IN DECK P-44-941	714.15



04/01/2020

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261

CONSULTANT:
VINCENT DIFRANCES, P.E. (920) 468-4771

NO.	DATE	REVISION	BY

ENGINEERING, INC
Consultant Services

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 04/01/20
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-44-477

HICKORY DRIVE OVER BR APPLE CREEK

COUNTY	TOWN
OUTAGAMIE	VANDENBROEK

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
VJD	FKH	VJD	FKH

GENERAL PLAN AND ELEVATION

SHEET 1 OF 11
25

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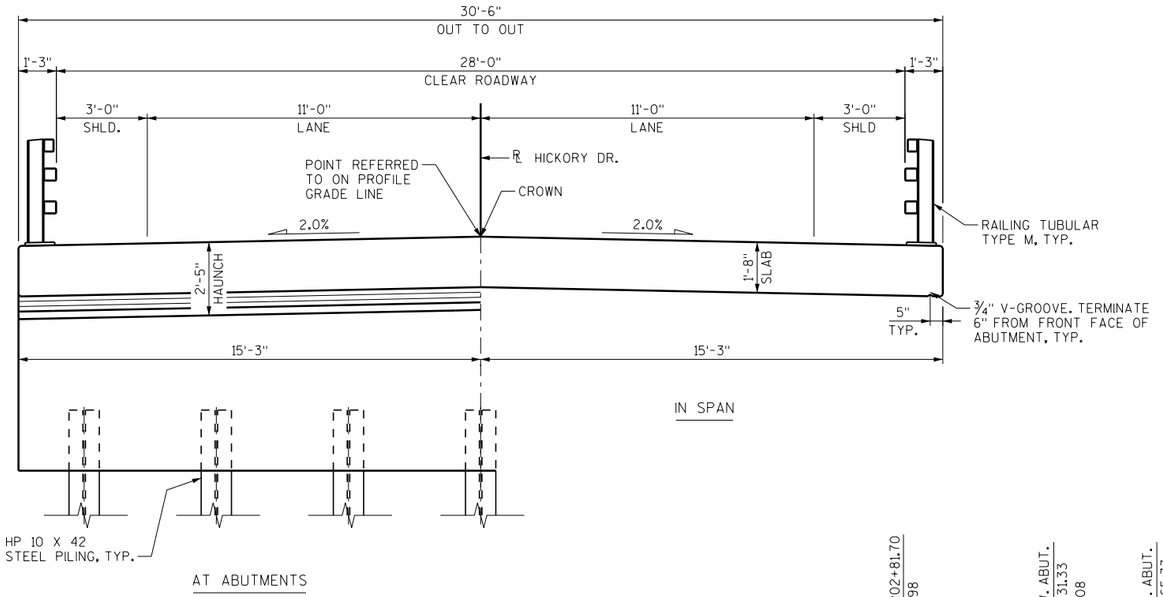
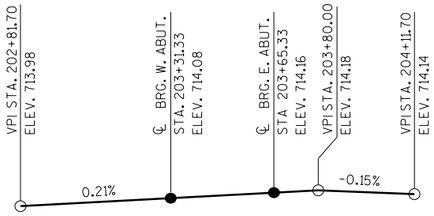
STATE PROJECT NUMBER

6500-03-71



PROPOSED SECTION THRU BRIDGE

LOOKING EAST
DIMENSIONS SHOWN ARE NORMAL TO ℄ HICKORY DRIVE



PROFILE GRADE LINE - HICKORY DRIVE

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NAVD 88 (2012). HORIZONTAL POSITIONS ARE WISCONSIN COUNTY COORDINATES, OUTAGAMIE COUNTY, NAD 83 (2011).

THE EXISTING STRUCTURE, P-44-941, IS A SINGLE SPAN CONCRETE FLAT SLAB STRUCTURE WITH A WIDTH OF 28'-0" AND AN END OF DECK TO END OF DECK LENGTH OF APPROXIMATELY 22'-7½". THE EXISTING STRUCTURE P-44-941 IS TO BE REMOVED.

THE UPPER LIMIT OF "EXCAVATION FOR STRUCTURES BRIDGES B-44-477" SHALL BE THE EXISTING GROUNDLINE.

FILL AND/OR EXCAVATE TO THE BOTTOM OF THE ABUTMENT ELEVATION PRIOR TO DRIVING PILES.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

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

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

THE SLOPE OF FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENTS SHOWN ON SHEET 1. RIPRAP HEAVY SHALL BE PLACED PRIOR TO THE ERECTION OF FALSEWORK.

ABUTMENT CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

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

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

PREFORMED FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M153, TYPES I, II OR III OR M213.

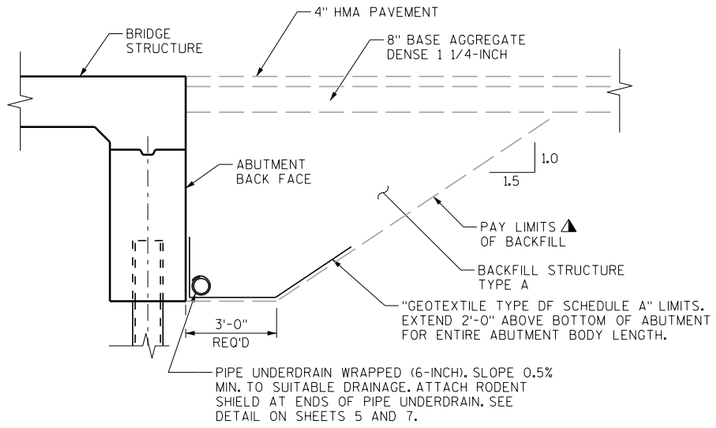
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED TO THE ENTIRE TOP OF SLAB, EXTERIOR SLAB EDGES, EXTERIOR 1'-0" OF THE UNDERSIDE OF SLAB, THE TOP AND EXTERIOR EXPOSED FACE OF THE WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MARKING THEIR OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEM	UNIT	W. ABUT.	E. ABUT.	SUPER	TOTAL
203.0600.S.02	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 203+48.33	LS	-	-	-	1
206.1000.02	EXCAVATION FOR STRUCTURES BRIDGES B-44-477	LS	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	105	105	-	210
502.0100	CONCRETE MASONRY BRIDGES	CY	30	30	71	131
502.3200	PROTECTIVE SURFACE TREATMENT	SY	5	5	150	160
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,940	1,940	-	3,880
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,340	1,340	13,120	15,800
513.4061	RAILING TUBULAR TYPE M	LF	23	23	73	119
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	10	-	20
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	350	350	-	700
606.0300	RIPRAP HEAVY	CY	80	70	-	150
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	95	95	-	190
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	25	25	-	50
645.0120	GEOTEXTILE TYPE HR	SY	145	135	-	280
	NON-BID ITEMS					
	PREFORMED JOINT FILLER	SIZE				1/2" & 3/4"
	NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER	SIZE				1"
	NAME PLATE	EACH				1

ALL B-44-477 BID ITEMS ARE CATEGORY 0020



STRUCTURE BACKFILL DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-477

DRAWN BY VJD | PLANS CK'D. FKH

CROSS SECTION AND QUANTITIES

SHEET 2 OF 11
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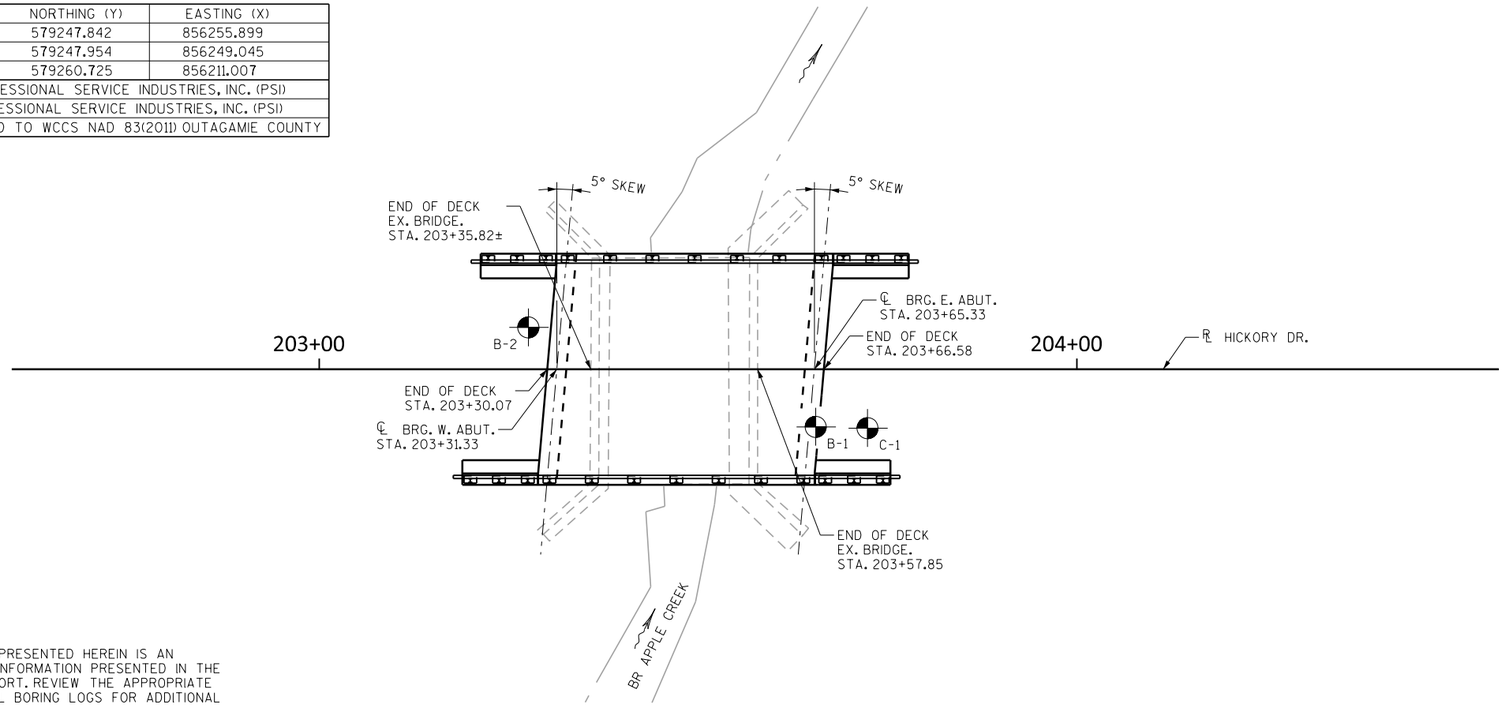
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
C-1	AUGUST 28, 2019	579247.842	856255.899
B-1	AUGUST 21, 2019	579247.954	856249.045
B-2	AUGUST 21, 2019	579260.725	856211.007
BORINGS COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI)			
REPORT COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI)			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2011) OUTAGAMIE COUNTY			

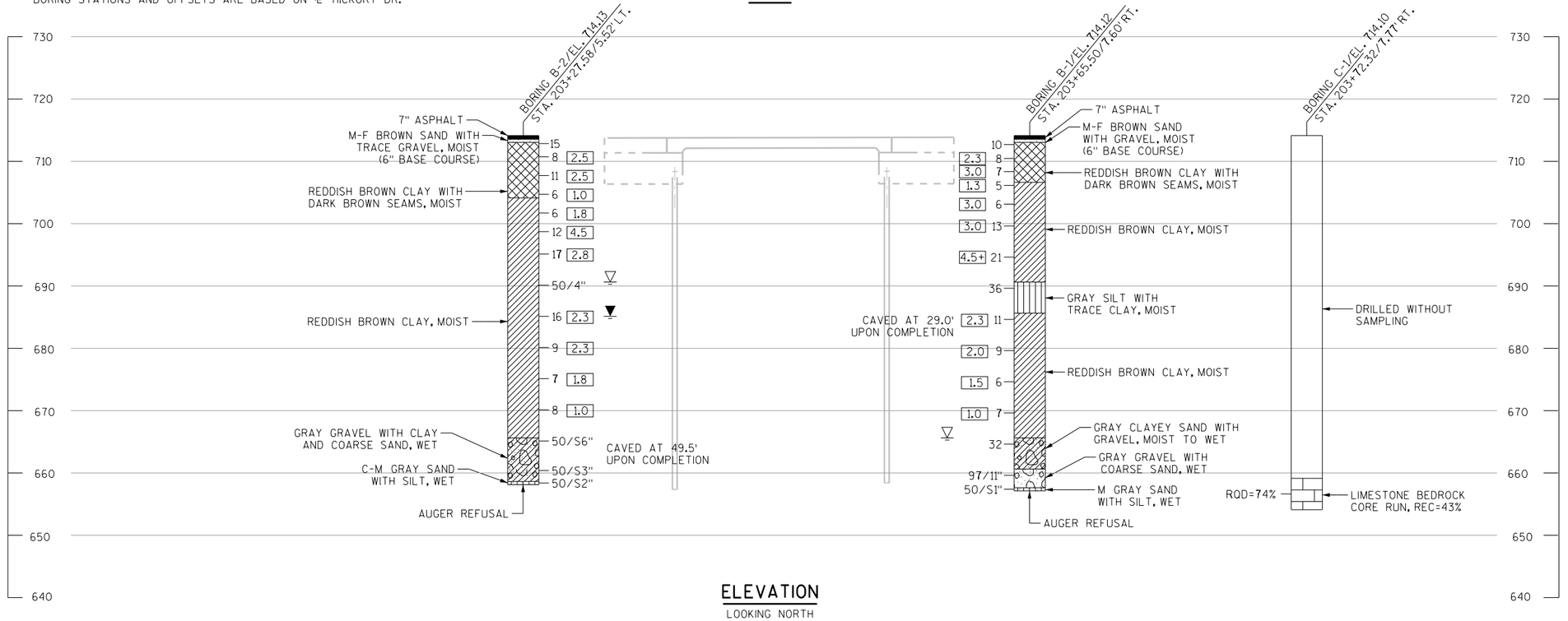


PLAN

NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

BORING STATIONS AND OFFSETS ARE BASED ON ℄ HICKORY DR.



ELEVATION
LOOKING NORTH

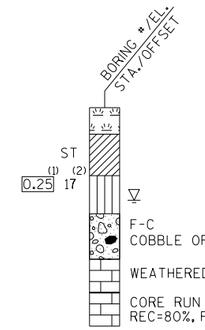
STATE PROJECT NUMBER

6500-03-71

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

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

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-44-477

DRAWN BY VJD | PLANS CK'D. FKH

SUBSURFACE EXPLORATION

SHEET 3 OF 11
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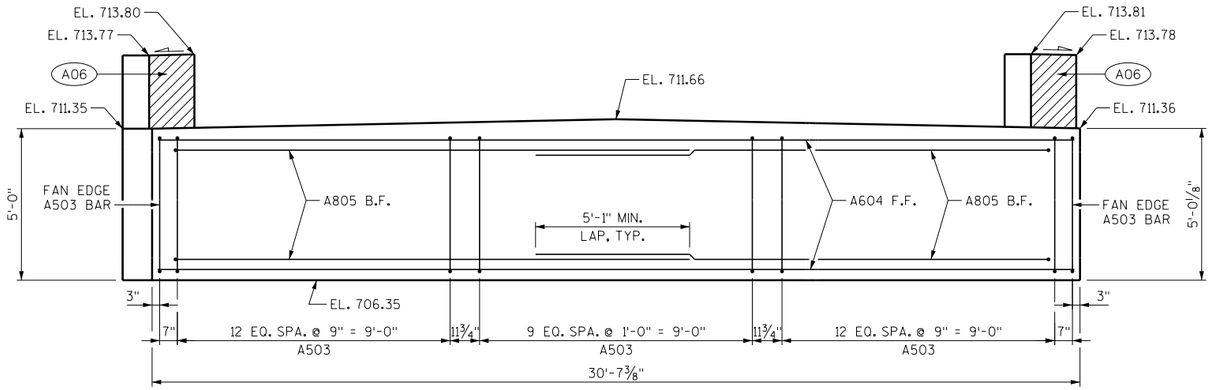
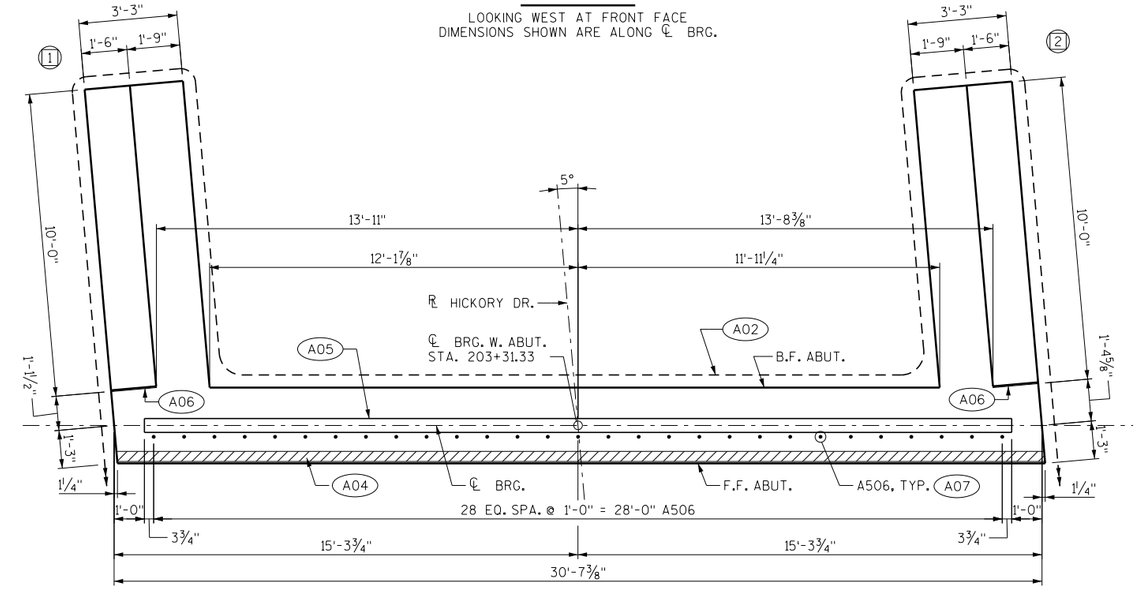
STATE PROJECT NUMBER

6500-03-71

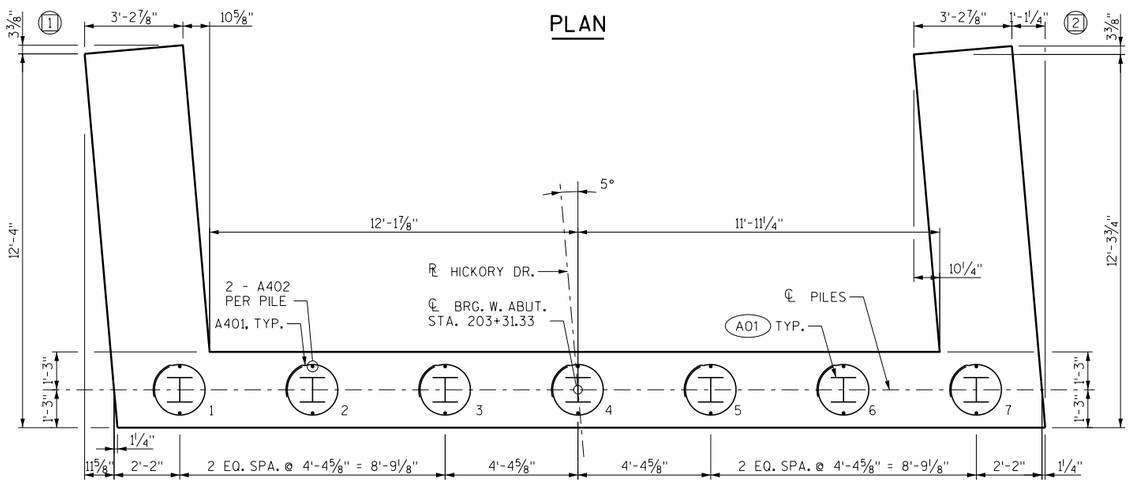


ELEVATION

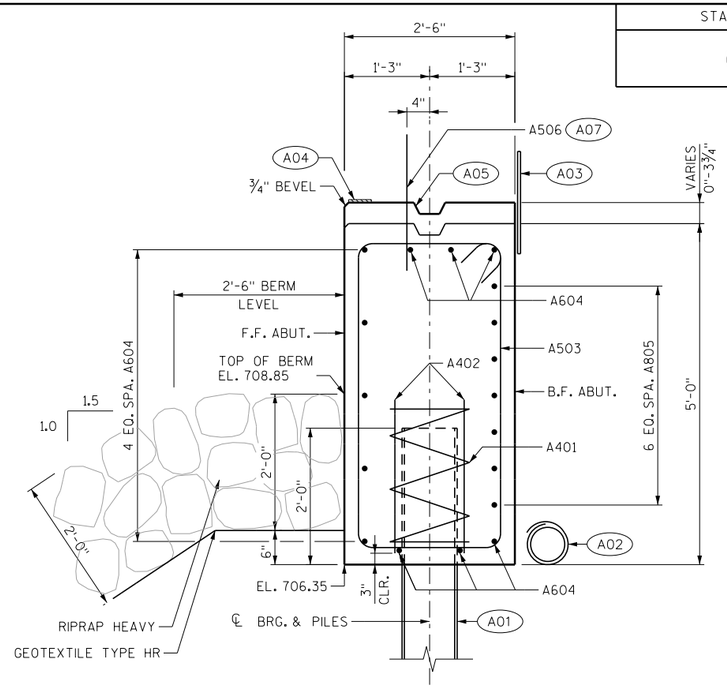
LOOKING WEST AT FRONT FACE
DIMENSIONS SHOWN ARE ALONG ℄ BRG.



PLAN

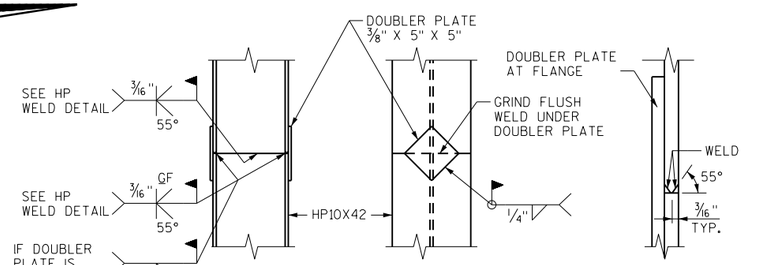


PILE PLAN



SECTION THRU BODY

DIMENSION NORMAL TO ℄ BRG.



STEEL 'HP' SHAPE

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

PILE SPLICE DETAIL

LEGEND

- (A01) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING. ESETIMATED 50'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TON.
- (A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON SHEET 5.
- (A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- (A04) ¾" X 4" PREFORMED FILLER, OUT TO OUT OF ABUTMENT.
- (A05) KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6".
- (A06) ½" FILLER. EXTEND FROM SEAT TO TOP OF WING. FILLER INCLUDED IN WING LENGTH.
- (A07) BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- (X) INDICATES WINGWALL NUMBER.

F.F. = FRONT FACE B.F. = BACK FACE

NOTES

1. FOR ABUTMENT BILL OF BARS, SEE SHEET 8.
2. SPACE A503 BARS TO MISS PILE LOCATIONS.
3. CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.
4. REFER TO SHEET 8 FOR HEAVY RIPRAP LAYOUT AT WEST ABUTMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-477

DRAWN BY VJD | PLANS CK'D. FKH

WEST ABUTMENT

SHEET 4 OF 11
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8

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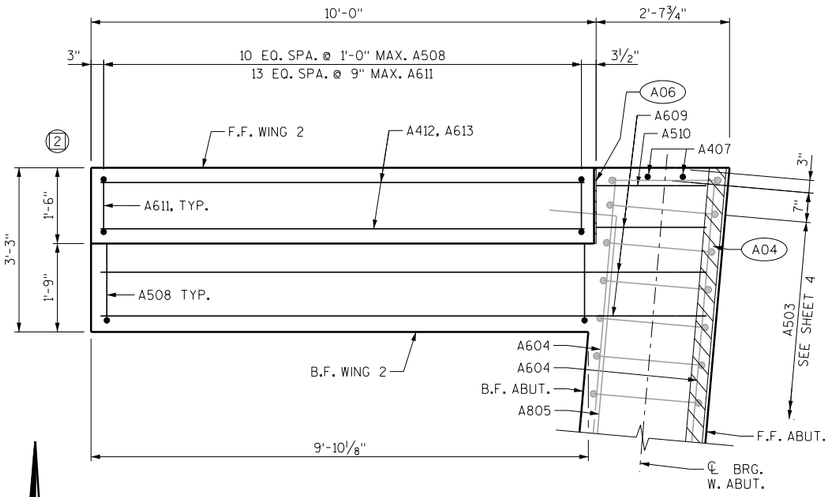
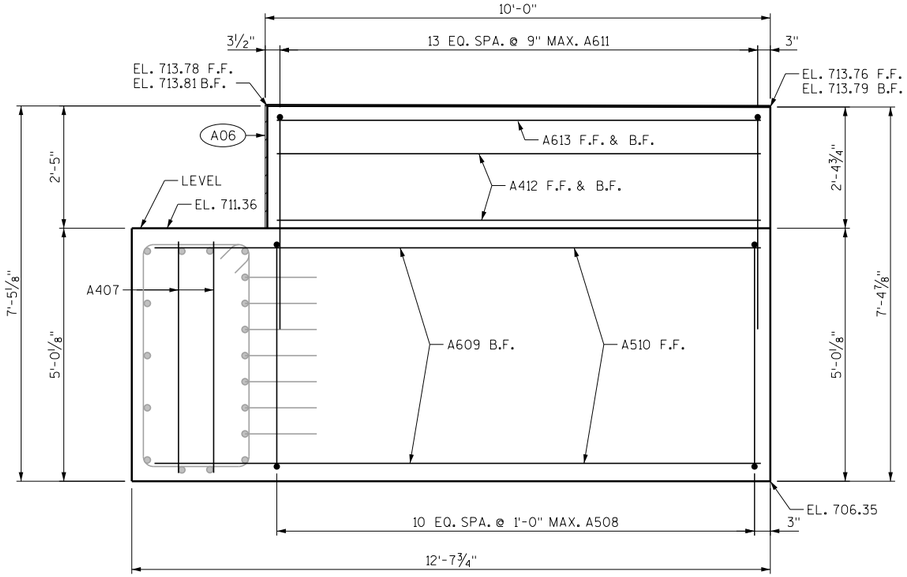
STATE PROJECT NUMBER

6500-03-71



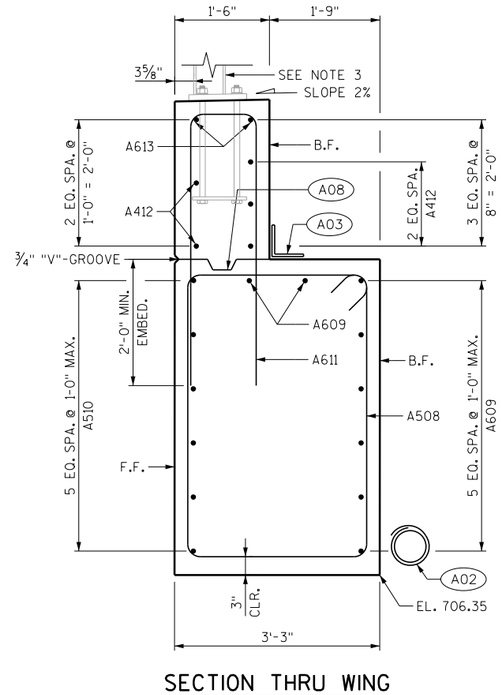
WING 2 PLAN

SHOWING REINFORCEMENT
RAILING NOT SHOWN FOR CLARITY

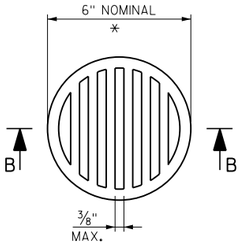


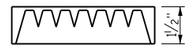
WING 2 ELEVATION

LOOKING SOUTH AT FRONT FACE
DIMENSIONS SHOWN ARE AT FRONT FACE OF WING



SECTION THRU WING





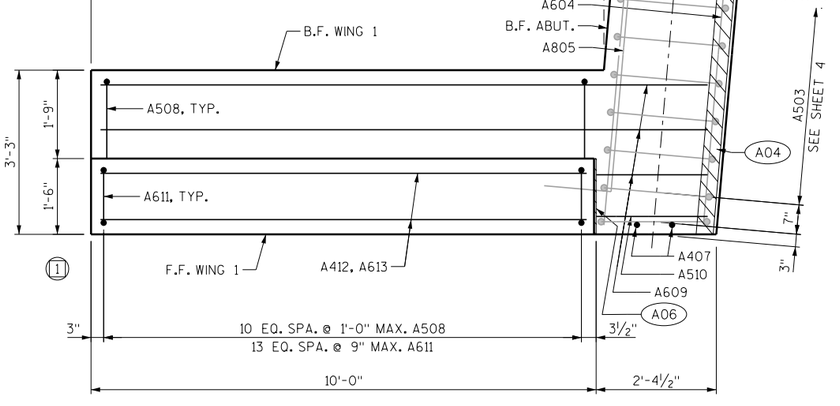
SECTION B-B

RODENT SHIELD DETAIL

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

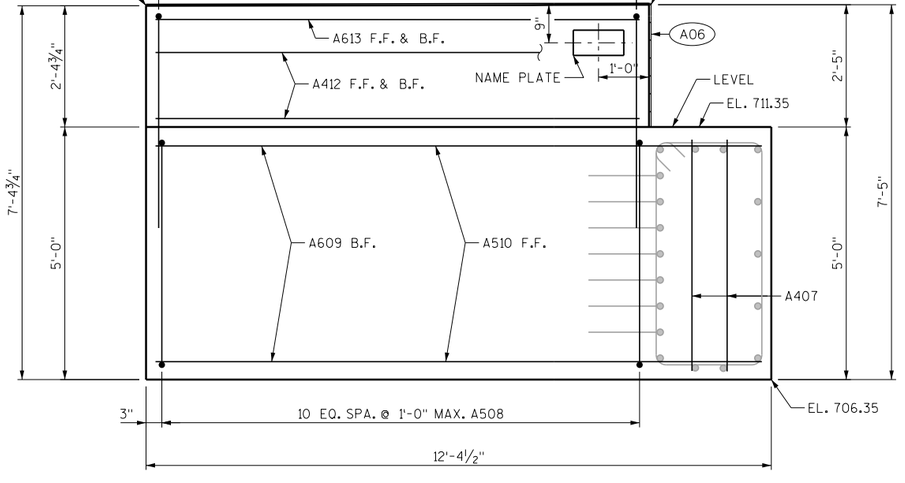
THE RODENT SHIELD, PIPE COUPLING, AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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



WING 1 PLAN

SHOWING REINFORCEMENT
RAILING NOT SHOWN FOR CLARITY



WING 1 ELEVATION

LOOKING NORTH AT FRONT FACE
DIMENSIONS SHOWN ARE AT FRONT FACE OF WING

NOTES

1. FOR ABUTMENT BILL OF BARS, SEE SHEET 8.
2. FOR TYPICAL FILL SECTIONS AT WING TIPS, SEE SHEET 8.
3. SEE SHEET 11 FOR TUBULAR STEEL RAILING TYPE M ANCHOR ASSEMBLY DETAILS AND POST SPACING ON THE WINGS.
4. CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.
5. SHADED REINFORCEMENT SHOWN ON THIS SHEET IS DETAILED ON SHEET 4 FOR THE ABUTMENT BODY.

LEGEND

- (A02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON THIS SHEET.
- (A03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- (A04) ¾" X 4" PREFORMED FILLER, CUT TO OUT OF ABUTMENT.
- (A06) ½" FILLER. EXTEND FROM SEAT TO TOP OF WING. FILLER INCLUDED IN WING LENGTH.
- (A08) OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6 KEYWAY WITH MEMBRANE ON BACKFACE.
- (X) INDICATES WINGWALL NUMBER.
- F.F. = FRONT FACE
- B.F. = BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-477

DRAWN BY VJD | PLANS CK'D. FKH

WEST ABUTMENT DETAILS

SHEET 5 OF 11
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8

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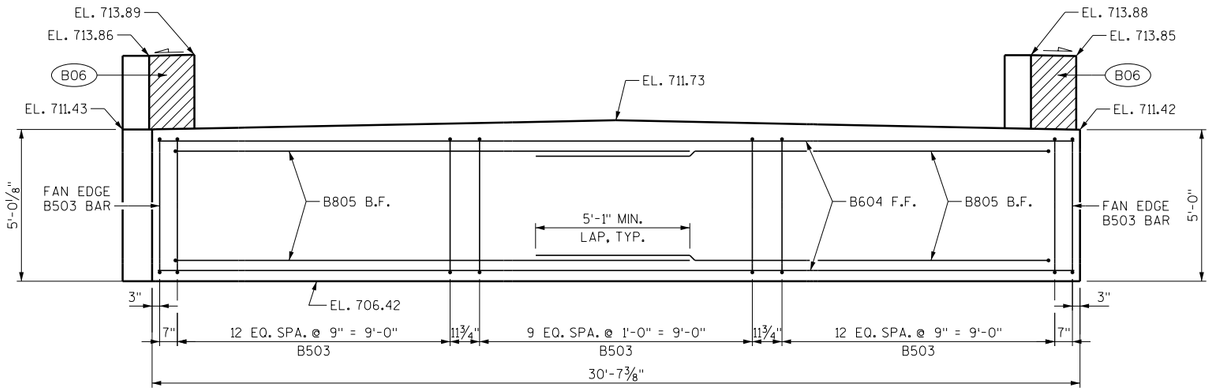
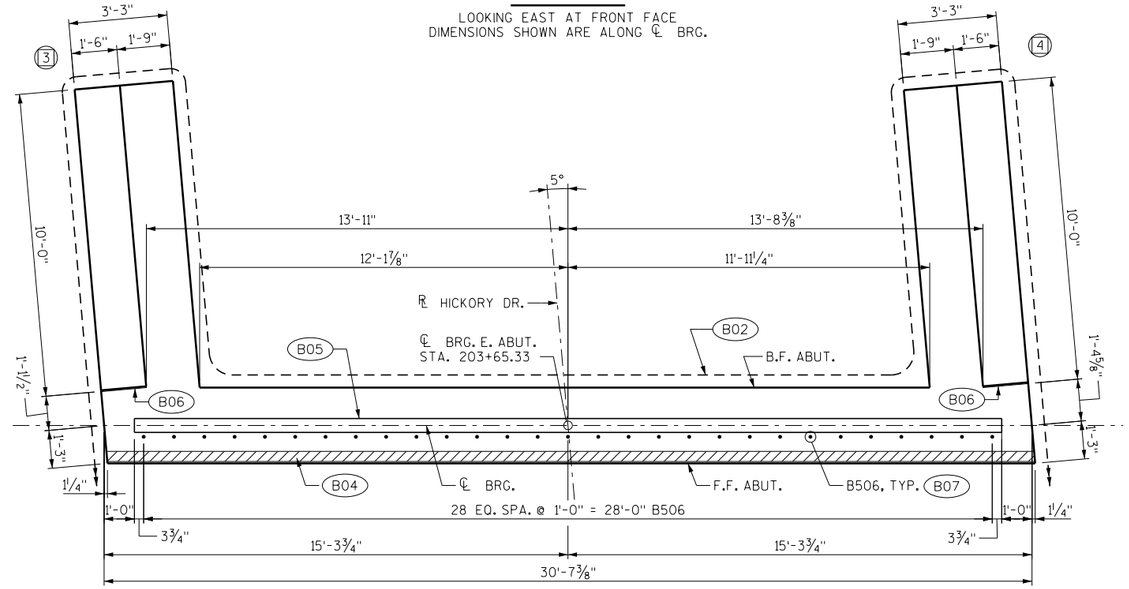
STATE PROJECT NUMBER

6500-03-71



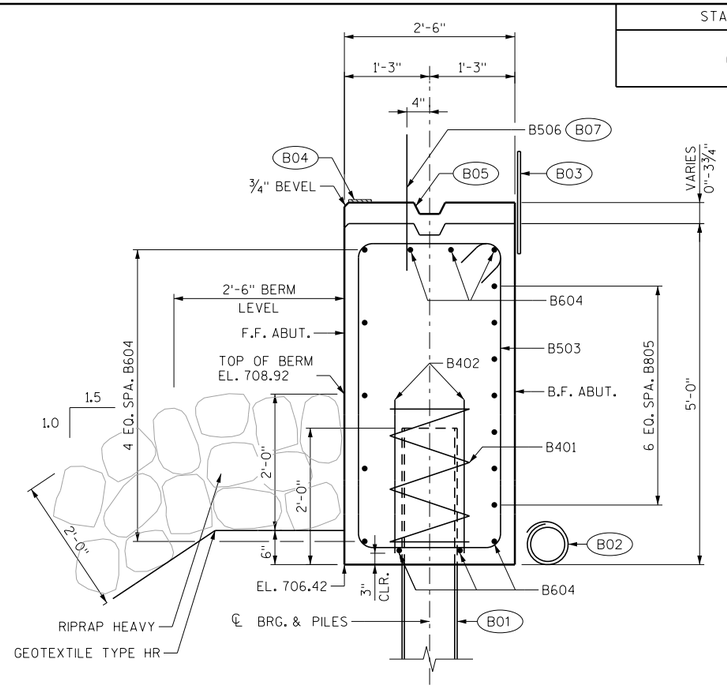
ELEVATION

LOOKING EAST AT FRONT FACE
DIMENSIONS SHOWN ARE ALONG ℄ BRG.



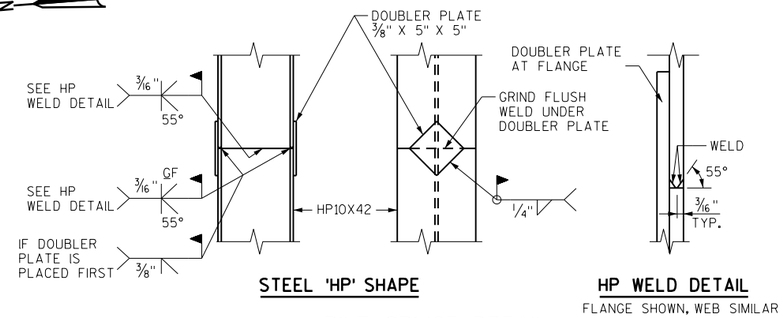
PLAN

PILE PLAN



SECTION THRU BODY

DIMENSIONS NORMAL TO ℄ BRG.



STEEL 'HP' SHAPE

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

PILE SPLICE DETAIL

LEGEND

- (B01) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING. ESETIMATED 50'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TON.
- (B02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON SHEET 7.
- (B03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- (B04) ¾" X 4" PREFORMED FILLER, OUT TO OUT OF ABUTMENT.
- (B05) KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6".
- (B06) ½" FILLER. EXTEND FROM SEAT TO TOP OF WING. FILLER INCLUDED IN WING LENGTH.
- (B07) BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- (X) INDICATES WINGWALL NUMBER.
- F.F. = FRONT FACE B.F. = BACK FACE

NOTES

1. FOR ABUTMENT BILL OF BARS, SEE SHEET 8.
2. SPACE B503 BARS TO MISS PILE LOCATIONS.
3. CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.
4. REFER TO SHEET 8 FOR HEAVY RIPRAP LAYOUT AT EAST ABUTMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-477

DRAWN BY VJD | PLANS CK'D. FKH

EAST ABUTMENT

SHEET 6 OF 11
30

8

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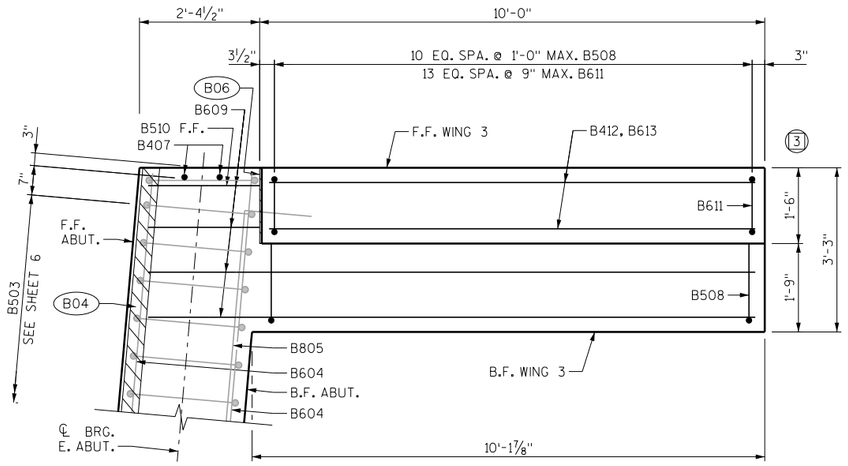
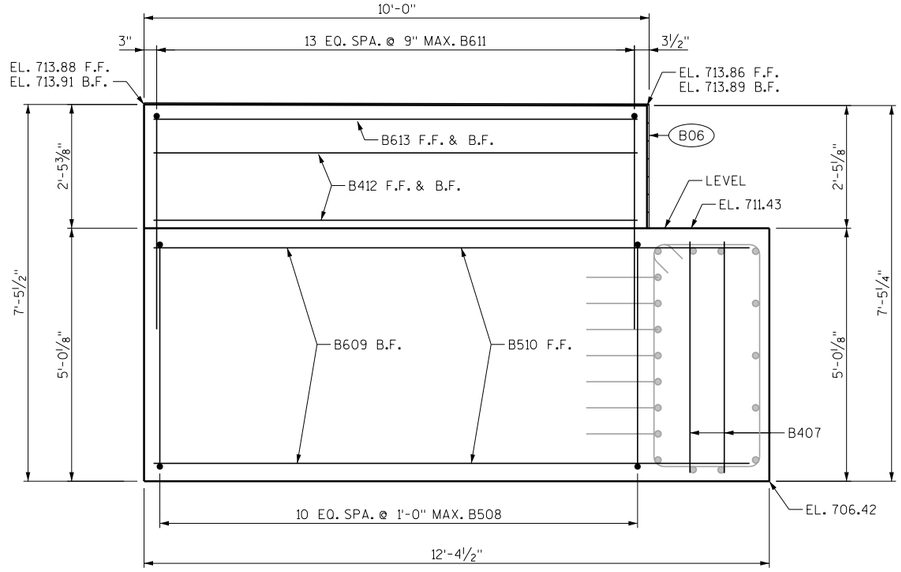
STATE PROJECT NUMBER

6500-03-71



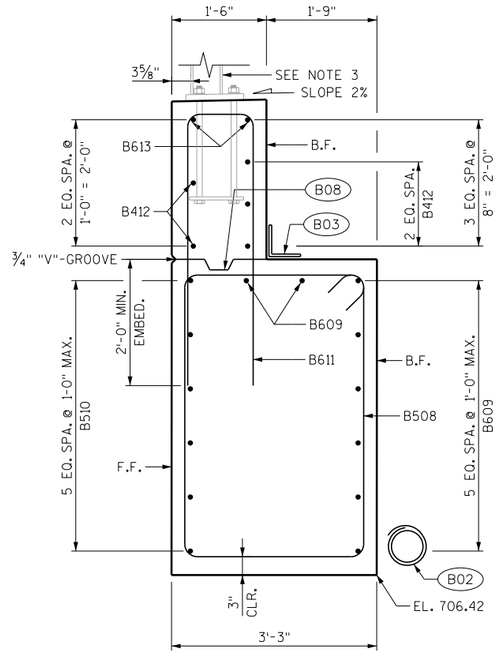
WING 3 PLAN

SHOWING REINFORCEMENT
RAILING NOT SHOWN FOR CLARITY

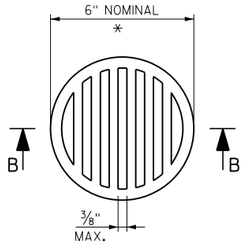


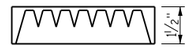
WING 3 ELEVATION

LOOKING SOUTH AT FRONT FACE
DIMENSIONS SHOWN ARE AT FRONT FACE OF WING



SECTION THRU WING





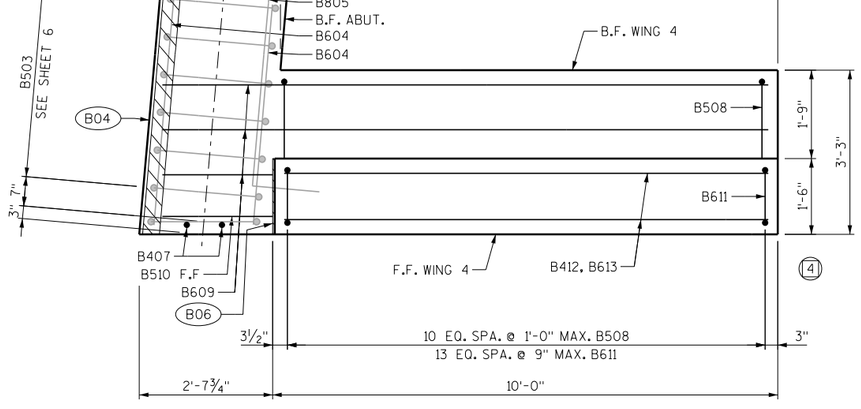
SECTION B-B

RODENT SHIELD DETAIL

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

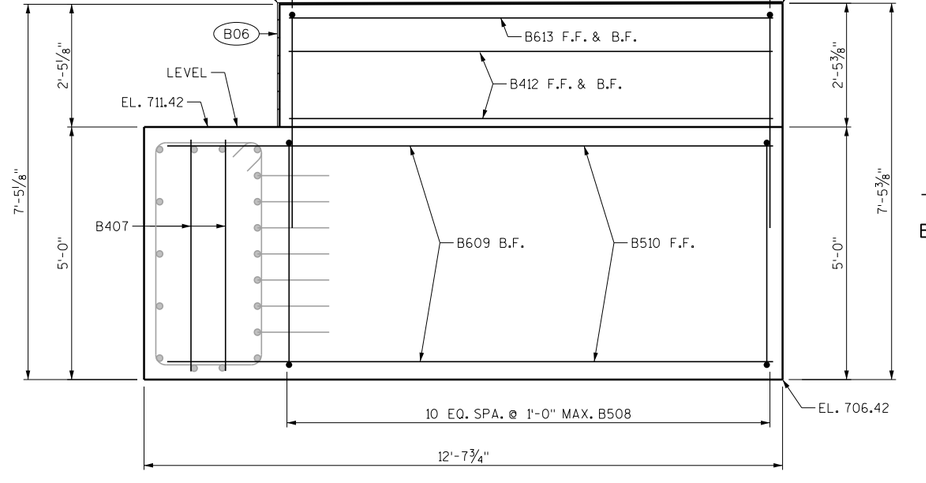
THE RODENT SHIELD, PIPE COUPLING, AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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



WING 4 PLAN

SHOWING REINFORCEMENT
RAILING NOT SHOWN FOR CLARITY



WING 4 ELEVATION

LOOKING NORTH AT FRONT FACE
DIMENSIONS SHOWN ARE AT FRONT FACE OF WING

NOTES

1. FOR ABUTMENT BILL OF BARS, SEE SHEET 8.
2. FOR TYPICAL FILL SECTIONS AT WING TIPS, SEE SHEET 8.
3. SEE SHEET 11 FOR TUBULAR STEEL RAILING TYPE M ANCHOR ASSEMBLY DETAILS AND POST SPACING ON THE WINGS.
4. CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.
5. SHADED REINFORCEMENT SHOWN ON THIS SHEET IS DETAILED ON SHEET 6 FOR THE ABUTMENT BODY.

LEGEND

- (B02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON THIS SHEET.
- (B03) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- (B04) ¾" X 4" PREFORMED FILLER, CUT TO OUT OF ABUTMENT.
- (B06) ½" FILLER. EXTEND FROM SEAT TO TOP OF WING. FILLER INCLUDED IN WING LENGTH.
- (B08) OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH MEMBRANE ON BACKFACE.
- (X) INDICATES WINGWALL NUMBER.
- F.F. = FRONT FACE
- B.F. = BACK FACE

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EAST ABUTMENT DETAILS

SHEET 7 OF 11
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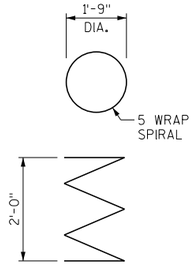
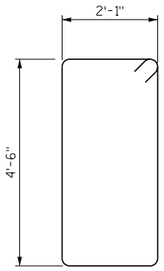
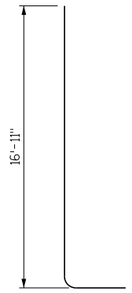
△ APPLY PROTECTIVE SURFACE TREATMENT TO TOP AND EXPOSED FACE OF WING AND END 1'-0" OF ABUTMENT FRONT FACE.



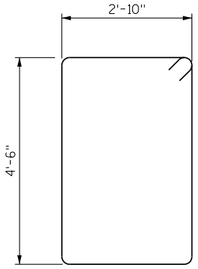
A401, B401



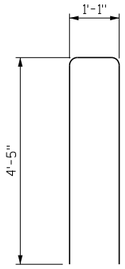
A503, B503



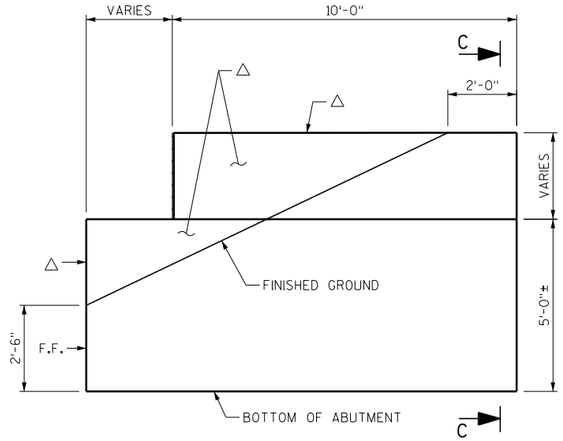
A805, B805



A508, B508



A611, B611



WING ELEVATION

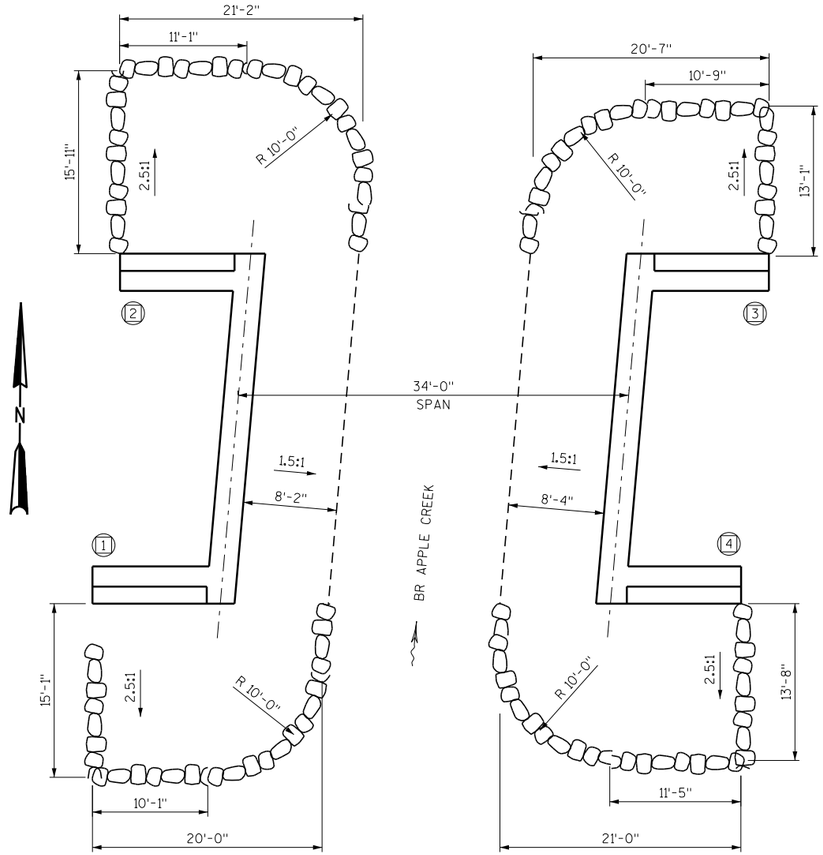
LOOKING AT FRONT FACE OF WING
SHOWING LIMITS OF PROTECTIVE SURFACE TREATMENT
ALL WINGS SIMILAR

BILL OF BARS - WEST ABUTMENT — COATED: 1,340 LBS; UNCOATED: 1,940 LBS

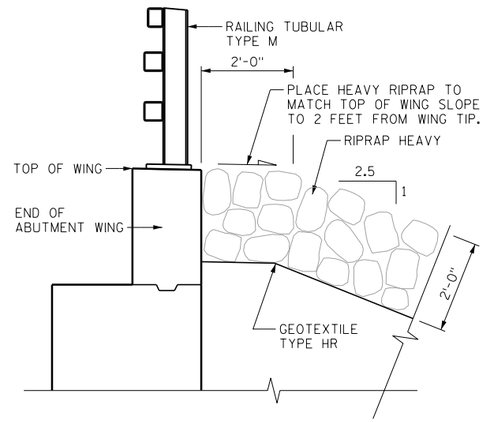
BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
A401		7	28'-0"	X		PILES - 1 PER PILE
A402		14	2'-3"			PILES - 2 PER PILE
A503		38	13'-10"	X		BODY - STIRRUP
A604		11	30'-2"			BODY - HORIZ -F.F. & B.F.
A805		14	18'-1"	X		BODY - HORIZ - B.F
A506		29	2'-0"			BODY - VERT - DOWELS
A407	X	4	4'-7"			BODY - VERT - ENDS
A508	X	22	15'-4"	X		WING - BODY - STIRRUP
A609	X	16	12'-0"			WING - BODY - HORIZ. - B.F.
A510	X	12	12'-0"			WING - BODY - HORIZ. - F.F.
A611	X	28	9'-7"	X		WING - STEM - VERT.
A412	X	10	9'-7"			WING - STEM - HORIZ. - F.F. & B.F.
A613	X	4	9'-7"			WING - STEM - HORIZ. - TOP - F.F. & B.F.

BILL OF BARS - EAST ABUTMENT — COATED: 1,340 LBS; UNCOATED: 1,940 LBS

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
B401		7	28'-0"	X		PILES - 1 PER PILE
B402		14	2'-3"			PILES - 2 PER PILE
B503		38	13'-10"	X		BODY - STIRRUP
B604		11	30'-2"			BODY - HORIZ -F.F. & B.F.
B805		14	18'-1"	X		BODY - HORIZ - B.F
B506		29	2'-0"			BODY - VERT - DOWELS
B407	X	4	4'-7"			BODY - VERT - ENDS
B508	X	22	15'-4"	X		WING - BODY - STIRRUP
B609	X	16	12'-0"			WING - BODY - HORIZ. - B.F.
B510	X	12	12'-0"			WING - BODY - HORIZ. - F.F.
B611	X	28	9'-7"	X		WING - STEM - VERT.
B412	X	10	9'-7"			WING - STEM - HORIZ. - F.F. & B.F.
B613	X	4	9'-7"			WING - STEM - HORIZ. - TOP - F.F. & B.F.



RIPRAP LAYOUT



SECTION C-C

SECTION AT WING TIPS
ALL WINGS SIMILAR

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ABUTMENT
BILL OF BARS

SHEET 8 OF 11
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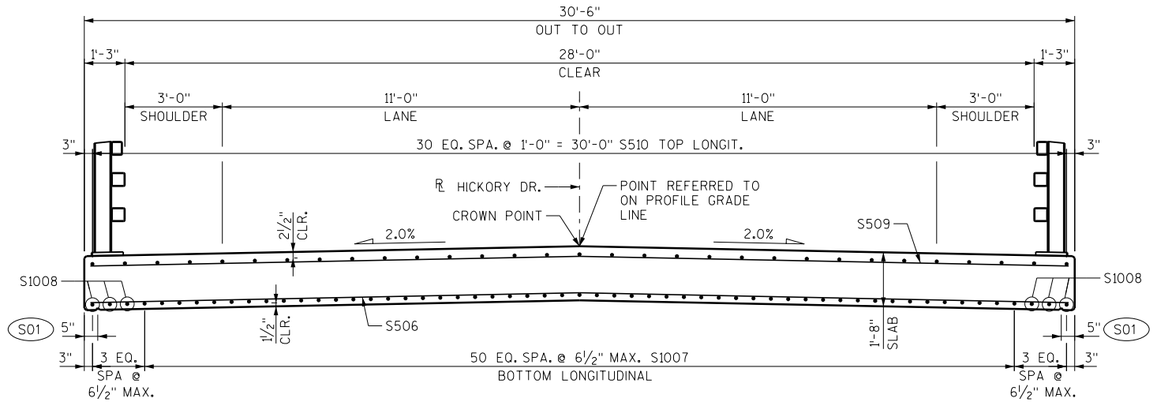
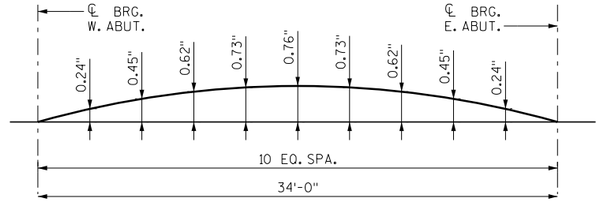


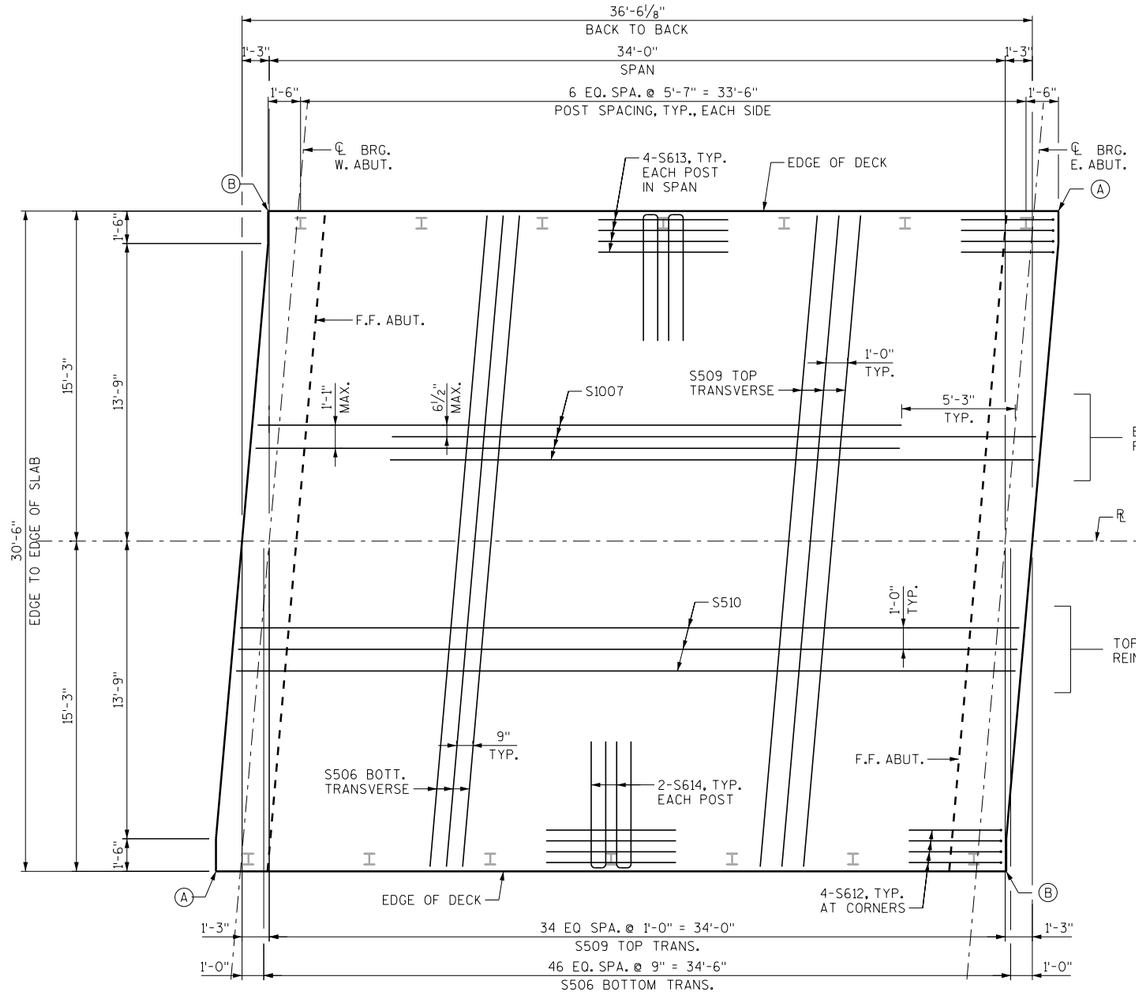
REINFORCING CROSS SECTION

DIMENSION SHOWN ARE NORMAL TO ℄ HICKORY DR.

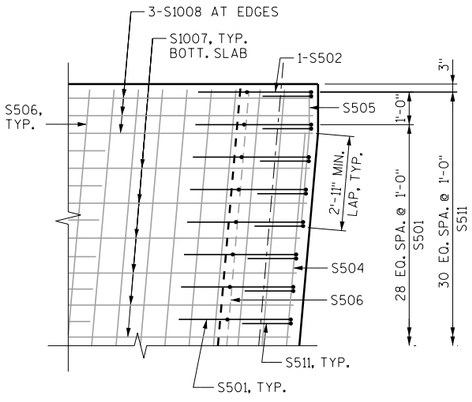


CAMBER DIAGRAM

SEE NOTES 3 AND 4

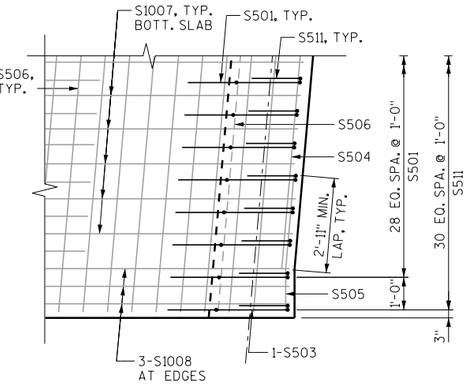


SLAB REINFORCEMENT PLAN



CORNER DETAIL (A)

SHOWING CORNER AT WING 3
WING 1 CORNER SIMILAR



CORNER DETAIL (B)

SHOWING CORNER AT WING 4
WING 2 CORNER SIMILAR

NOTES

1. TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.
2. ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).
3. CAMBER SPAN AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.
4. PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS AND AT 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF DECK AND CROWN OR ℄.
5. FOR SUPERSTRUCTURE BILL OF BARS, SEE SHEET 10.
6. SEE SHEET 10 FOR LONGITUDINAL SECTION THRU SLAB AND ADDITIONAL SLAB REINFORCEMENT DETAILS.
7. SEE SHEET 11 FOR ADDITIONAL REINFORCING DETAILS AT RAILING POSTS.

LEGEND

(S01) ¾" V-GROOVE. TERMINATE 6" FROM FRONT FACE OF ABUTMENT, TYP.

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SUPERSTRUCTURE

SHEET 9 OF 11
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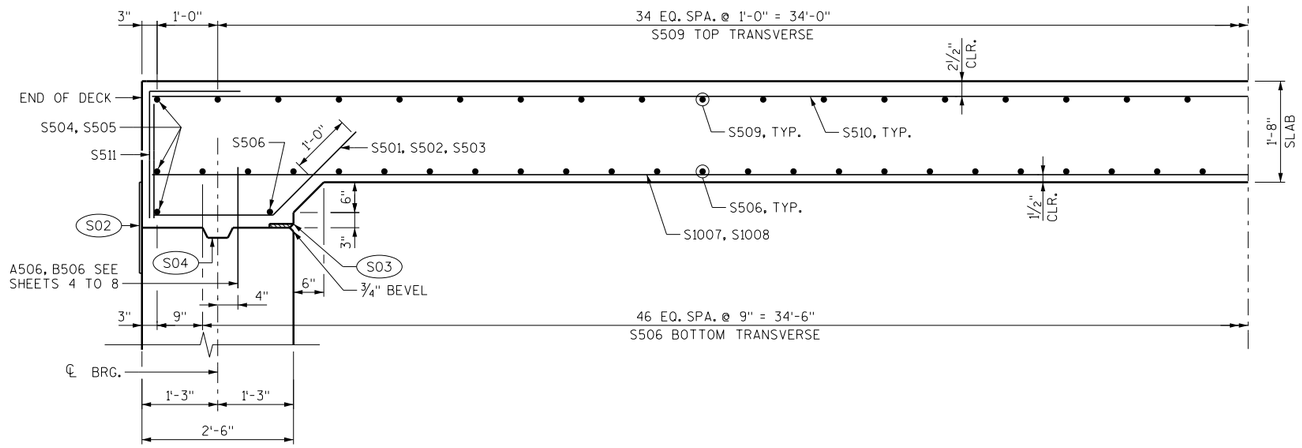


HALF LONGITUDINAL SECTION

SYMMETRICAL ABOUT MID-SPAN

BILL OF BARS - SUPERSTRUCTURE

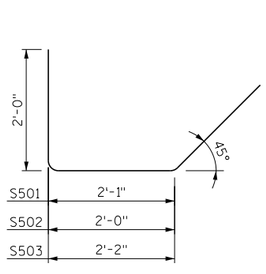
COATED: 13,120 LBS
UNCOATED: 0 LBS

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
S501	X	58	6'-0"	X		SLAB - HAUNCH - VERTICAL
S502	X	2	5'-11"	X		SLAB - HAUNCH - VERTICAL - CORNER "A"
S503	X	2	6'-1"	X		SLAB - HAUNCH - VERTICAL - CORNER "B"
S504	X	6	27'-7"			SLAB - HAUNCH - HORIZ.
S505	X	12	4'-4"	X		SLAB - HAUNCH - HORIZ. - CORNERS
S506	X	49	30'-2"			SLAB - BOTTOM - TRANS.
S1007	X	51	29'-10"			SLAB - BOTTOM - LONGIT.
S1008	X	6	36'-1"			SLAB - BOTTOM - LONGIT. - EDGES
S509	X	35	30'-2"			SLAB - TOP - TRANS.
S510	X	31	36'-1"			SLAB - TOP - LONGIT.
S511	X	62	3'-5"	X		SLAB - HAUNCH - VERTICAL
S612	X	16	5'-1"	X		SLAB - LONGIT. - CORNER POSTS
S613	X	40	6'-0"			SLAB - LONGIT. - POSTS IN SPAN
S614	X	28	12'-0"	X		SLAB - TRANS. - ALL POSTS

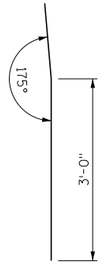
LOCATION	CL BRG. W. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. E. ABUT.
NORTH EDGE	713.78	713.79	713.80	713.80	713.81	713.82	713.82	713.83	713.84	713.85	713.85
CROWN	714.08	714.09	714.10	714.11	714.11	714.12	714.13	714.13	714.14	714.15	714.16
SOUTH EDGE	713.78	713.78	713.79	713.80	713.80	713.81	713.82	713.83	713.83	713.84	713.85

TOP OF DECK ELEVATIONS

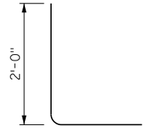
ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP



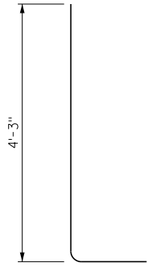
S501, S502, S503



S505

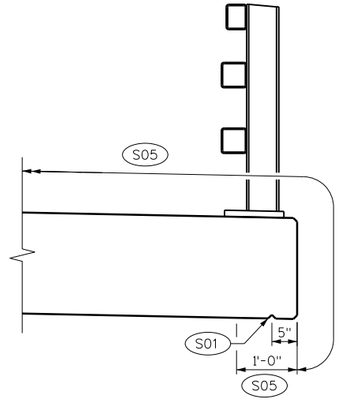


S511



S612

S614



SECTION THRU EDGE OF DECK

SHOWING PROTECTIVE SURFACE TREATMENT AND V-GROOVE

LEGEND

- (S01) ¾" V-GROOVE. TERMINATE 6" FROM FRONT FACE OF ABUTMENT, TYP.
- (S02) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.
- (S03) ¾" X 4" PREFORMED FILLER, CUT TO CUT OF ABUTMENT.
- (S04) KEYED CONSTRUCTION JOINTS FORMED BY BEVELED 2" X 6".
- (S05) COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATONS.

F.F. = FRONT FACE

B.F. = BACK FACE

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SUPERSTRUCTURE DETAILS

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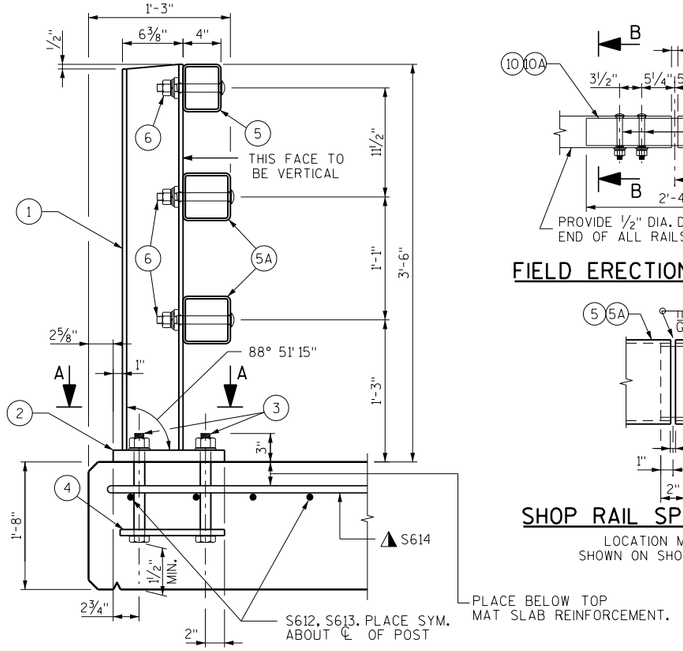
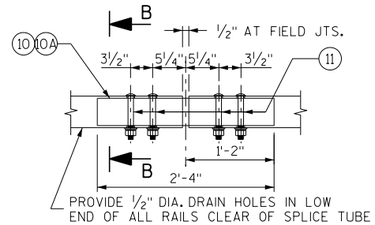
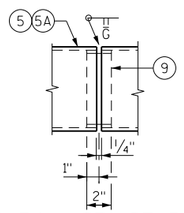


SECTION THRU RAILING ON SLAB

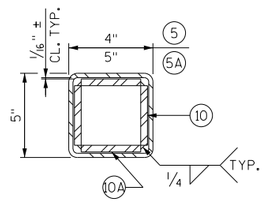


FIELD ERECTION JOINT DETAIL

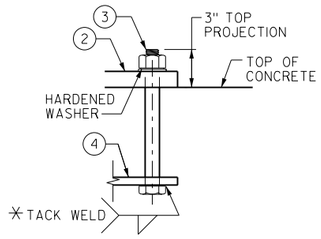


SHOP RAIL SPLICE DETAIL

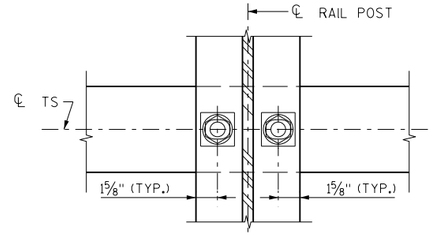
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



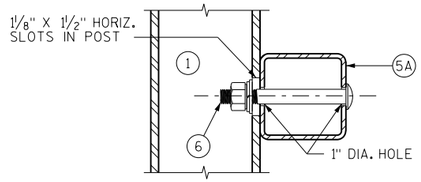
SECTION B-B



ANCHOR BOLTS



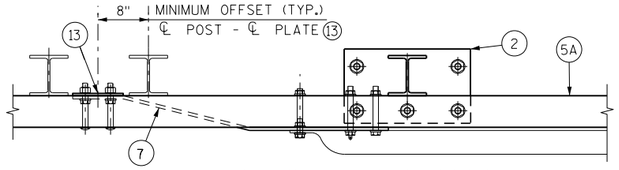
SECTION THRU POST WEB



SECTION THRU RAIL

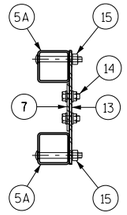
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

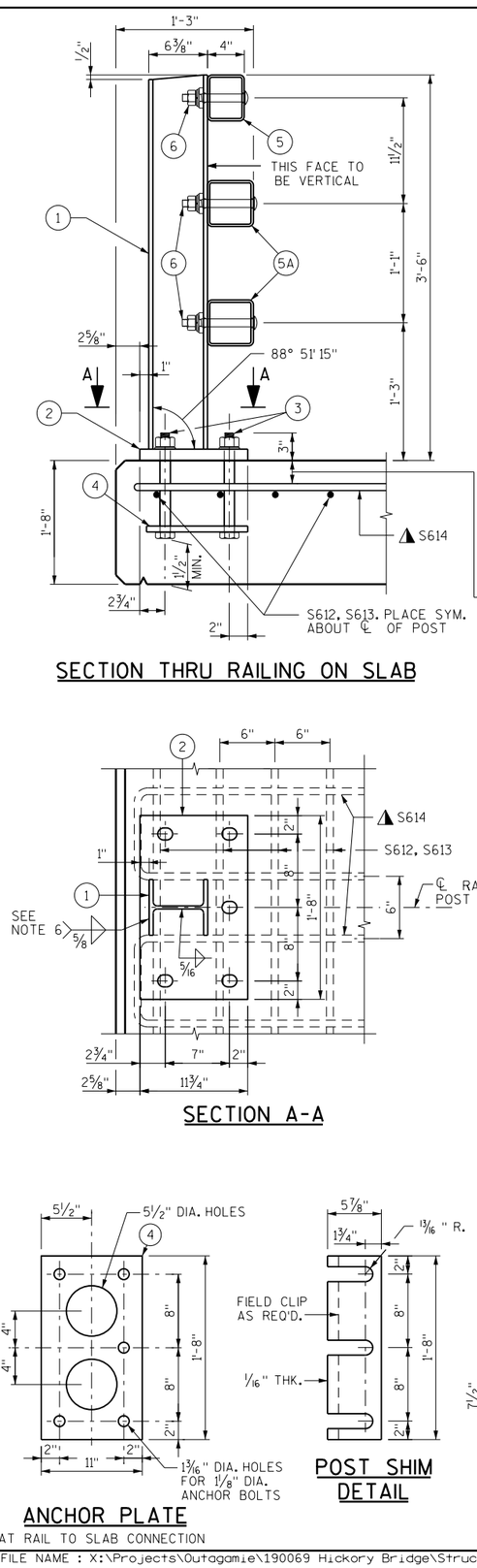


TOP VIEW AT END POST

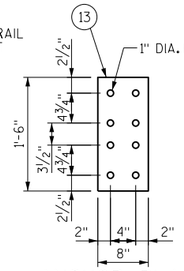
THRIE BEAM RAIL ATTACHMENT



SECTION C-C

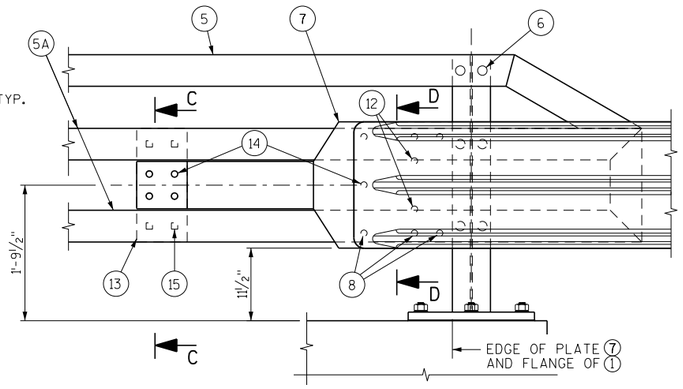


SECTION A-A



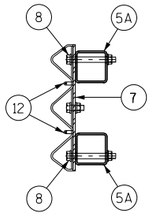
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT



DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT

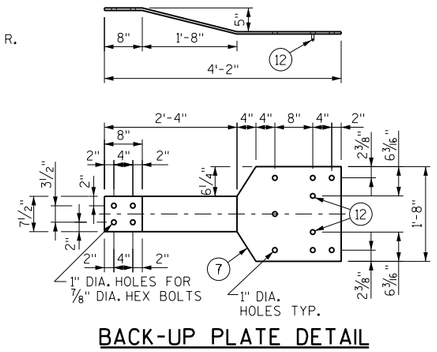


SECTION D-D

ANCHOR PLATE

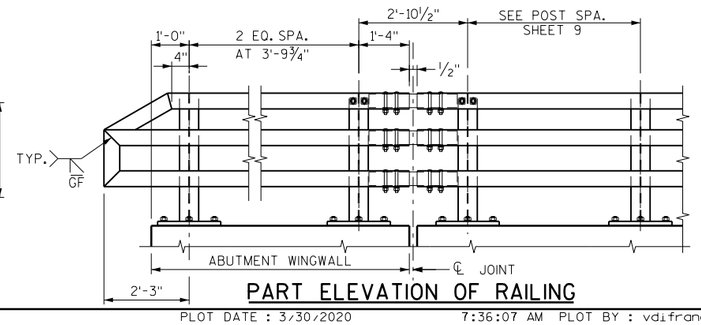
AT RAIL TO SLAB CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

STATE PROJECT NUMBER

6500-03-71

LEGEND

① W6 x 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

② PLATE 1¼" x 11¾" x 1'-8" WITH 15/16" X 1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

③ ASTM A449 - 1⅛" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10¾" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)

④ ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1¾16" DIA. HOLES FOR ANCHOR BOLTS NO. 3

⑤ TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑤A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑥ ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1⅝" X 1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

⑦ ½" THK. BACK-UP PLATE WITH 2 - ⅞" X 1½" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.

⑨ SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".

⑩ ⅜" X 3⅝" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.

⑩A ⅜" X 2⅝" X 2'-4" PLATE USED IN NO. 5, ⅜" X 3⅝" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.

⑪ ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15/16" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

⑫ ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).

⑬ ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

⑭ ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).

⑮ 1" DIA. HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

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

⚠ 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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-44-477

DRAWN BY VJD | PLANS CK'D. FKH

TUBULER STEEL RAILING TYPE 'M'

SHEET 11 OF 11
35

8

FILE NAME : X:\Projects\Outagamie\190069 Hickory Bridge\Structure\CAD\Sheets\B44477_080111_Type M.dgn
PLOT DATE : 3/30/2020 7:36:07 AM PLOT BY : vdifrances
PLOT SCALE : 2.0000 sf / in.

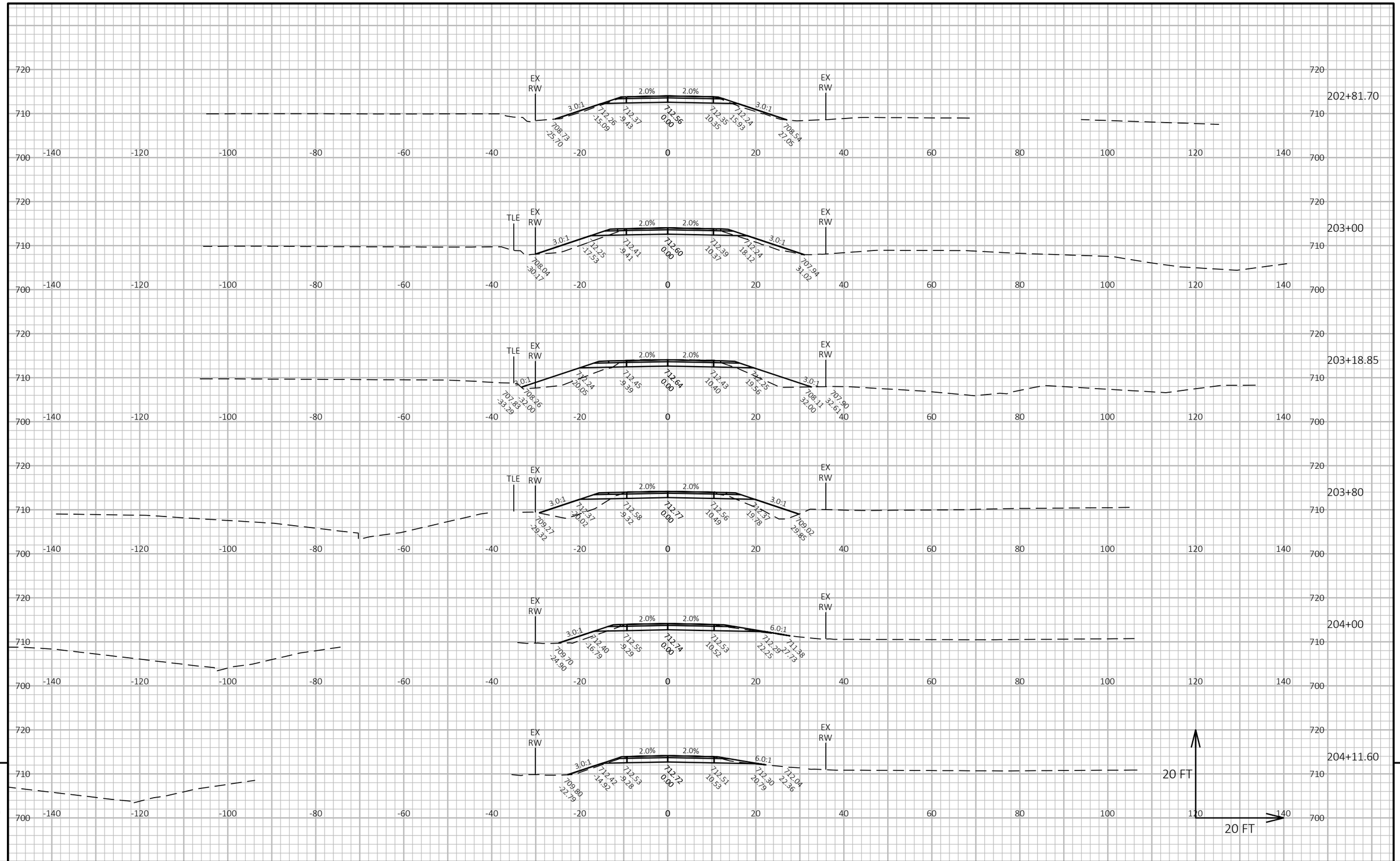
EARTHWORK - HICKORY DRIVE

STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
	Cut	Unusable Pavement Material	Fill	Cut Note 1	Unusable Pavement Material Note 2	Fill Note 3	Cut 1.00 Note 1	Expanded Fill 1.35	Mass Ordinate Note 4
202+81.70	35.2	7.3	8.3	0	0	0	0	0	0
203+00.00	34.9	7.3	25.9	24	5	12	24	16	3
203+18.85	36.2	7.3	57.0	25	5	29	49	55	-16
203+30.07 B-44-477	36.2	7.3	57.0	15	3	24	64	88	-37
203+66.58	34.6	7.3	56.0	0	0	0	64	88	-37
203+80.00	34.6	7.3	56.0	17	4	28	81	126	-62
204+00.00	38.2	7.3	9.0	27	5	24	108	158	-72
204+11.60	36.7	7.3	2.6	16	3	3	124	162	-63
				124	25	120			

Notes:	
1 - Cut	Cut includes existing asphalt and base material
2 - Unusable Pavement Materi	Does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Material Volume
4 - Mass Ordinate	Cut - Unusable Pavement Material - (Fill * Fill Factor)

9

9



PROJECT NO: 6500-03-71	HWY: HICKORY DRIVE	COUNTY: OUTAGAMIE	CROSS SECTIONS: HICKORY DRIVE	SHEET 37	E

FILE NAME : X:\PROJECTS\OUTAGAMIE\190069 HICKORY BRIDGE\DESIGN\C3D\DESIGN\CORRIDORS\6500-03-00_CORR.DWG
LAYOUT NAME - XS-1

PLOT DATE : 1/27/2020 11:00 AM PLOT BY : ANDY BLOCK PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov