EAU

DECEMBER 2019

PROJECT ID: 7367-00-70

WITH: N/A

COUNTY: JACKSON

ORDER OF SHEETS

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

TOTAL SHEETS = 44

36

N

DESIGN DESIGNATION

A.A.D.T.	(2020)	=	130
A.A.D.T.	(2040)	=	150
D.H.V.		=	20
D.D.		=	50/50
T.		=	7% ASSUMED
DESIGN SPEED		=	55 MPH
ESALS		=	15,000

CONVENTIONAL SYMBOLS

PLAN		PROFILE		UTILITIES	
CORPORATE LIMITS		GRADE LINE		ELECTRIC	E
PROPERTY LINE		ORIGINAL GROUND		FIBER OPTIC	FO
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK	GAS	G
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL	SANITARY SEWER	SAN
EXISTING RIGHT OF WAY		GRADE ELEVATION	95.36	STORM SEWER	SS
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)		TELEPHONE	T
SLOPE INTERCEPT				WATER	W
REFERENCE LINE	3.NYE8			UTILITY PEDESTAL	
EXISTING CULVERT				POWER POLE	
PROPOSED CULVERT (Box or Pipe)				TELEPHONE POLE	
COMBUSTIBLE FLUIDS	CAUTION				
MARSH AREA					
WOODED OR SHRUB AREA					

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7367-00-70	WISC 2019758	1

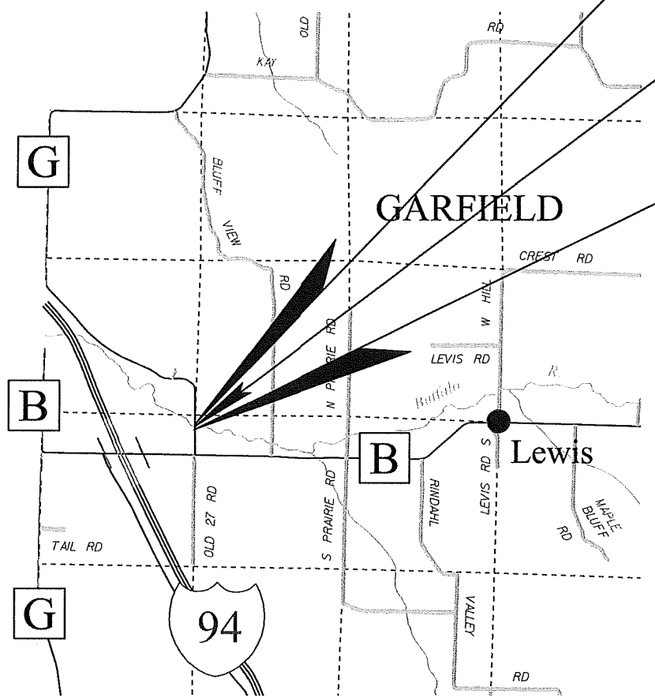
CTH B - IH94

SOUTH FORK BUFFALO RIVER BRIDGE B-27-166

CTH G

JACKSON COUNTY

STATE PROJECT NUMBER
7367-00-70



END PROJECT 7367-00-70
STA. 10+65.00
Y = 271,379.769
X = 306,976.112

STRUCTURE B-27-166
STA. 9+99.00

BEGIN PROJECT 7367-00-70
STA. 9+30.00
Y = 271,244.773
X = 306,977.114

LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.026 MI

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

ACCEPTED FOR
COUNTY OF JACKSON
Date 7-23-19 (Signature and Title of Official) Commissioner

ORIGINAL PLANS PREPARED BY

Mead & Hunt
E-36770
LA CROSSE, WI
PROFESSIONAL ENGINEER
DATE: 7/23/19 (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	MEAD & HUNT
Designer	MEAD & HUNT
Project Manager	NORTHWEST REGION
Regional Examiner	NORTHWEST REGION
Regional Supervisor	NORTHWEST REGION

APPROVED FOR THE DEPARTMENT
DATE: 8/1/19 (Signature)

E

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLANS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE IS MEASURED FOR PAVEMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

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

THE EXACT LOCATION OF EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

BEARINGS SHOWN ON THE PLANS ARE GRID BEARING TO NEAREST SECOND.

THE LOCATION OF ALL DRIVEWAYS WILL BE DETERMINED BY THE ENGINEER.

3 1/2-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 1 3/4-INCH UPPER LAYER AND A 1 3/4-INCH LOWER LAYER. ASPHALTIC SURFACE AGGREGATE SIZE TO HAVE A NOMINAL SIZE OF 12.5 mm.

SILT FENCE IS TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, AND IN PLACE PRIOR TO BRIDGE REMOVAL. SILT FENCE IN WETLAND AREAS SHALL BE PLACED AT THE SLOPE INTERCEPT TO PREVENT DISTURBANCE OF WETLANDS.

SHRINKAGE IS ESTIMATED AT 25%.

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

TEMPORARY STORAGE OF ANY EXCAVATED MATERIALS WILL NOT BE PERMITTED IN THE WETLANDS.

WETLANDS ARE PRESENT WITHIN THE PROJECT LIMITS. DO NOT OPERATE EQUIPMENT OUTSIDE THE SLOPE INTERCEPTS.

DISTURBED AREA WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE 4-INCH SALVAGED TOPSOIL, FERTILIZED, AND SEEDED.

DNR

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
WEST CENTRAL REGION
1300 W. CLAIREMONT AVE
EAU CLAIRE, WI 54701
ATTN: LEAH NICOL
PHONE: (715) 934-9014
EMAIL: LEAH.NICOL@WISCONSIN.GOV

DESIGN CONSULTANT

MEAD & HUNT, INC.
750 NORTH THIRD STREET
LA CROSSE, WI 54601
ATTN: JAY P. WHEATON, P.E.
PHONE: (608) 784-6040
MOBILE: (608) 386-0212
EMAIL: JAY.WHEATON@MEADHUNT.COM

ORDER OF SECTION 2 SHEETS

TYPICAL SECTIONS
EROSION CONTROL
TRAFFIC CONTROL

UTILITIES

** CENTURY LINK
FIBER OPTIC
835 RED IRON ROAD
BLACK RIVER FALLS, WI
ATTN: DONNA SMOTHERS
OFFICE: (715) 284-4375
MOBILE: (715) 797-4854
EMAIL: DONNA.SMOTHERS@CENTURYLINK.COM

** AT&T LEGACY
BRAD KEMPH
PHONE: (715) 254-5238
COPY ALL CORRESPONDENCE TO:
JMC ENGINEERS & ASSOCIATES
128 W. SUNSET AVENUE
APPLETON, WI 54911
ATTN: BUCK WEBB
PHONE: (608) 628-0575
EMAIL: WEKOENIG@ATT.NET

** THESE ARE MEMBERS OF DIGGERS HOTLINE

TOWN OF GARFIELD

TOWN OF GARFIELD CHAIRMAN,
W16502 COUNTY ROAD B
OSSEO, WI 54758
ATTN: STEVE DICKINSEN
PHONE: (715) 533-3360
EMAIL: SRCASFARM@GMAIL.COM

JACKSON COUNTY

JACKSON COUNTY HIGHWAY COMMISSIONER
119 HARRISON STREET
BLACK RIVER FALLS, WI 54615
ATTN: JAY BOREK
PHONE: (715) 284-0233
EMAIL: JAY.BOREK@CO.JACKSON.WI.US

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

STANDARD ABBREVIATIONS

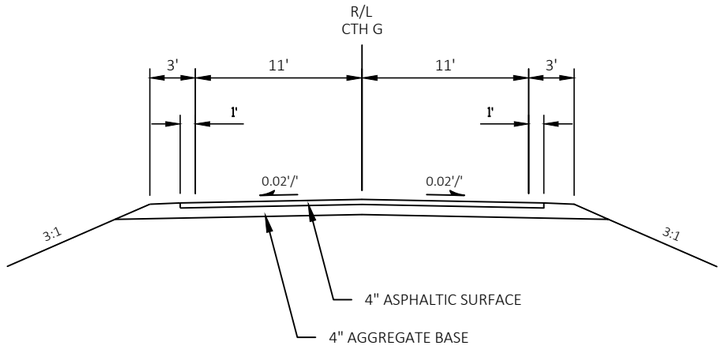
ADT	AVERAGE DAILY TRAFFIC	M/L	MAINLINE
AGG	AGGREGATE	NO	NUMBER
ASPH	ASPHALTIC	PE	PRIVATE ENTRANCE
BM	BENCH MARK	PI	POINT OF INTERSECTION
BOC	BACK OF CURB	PL	PROPERTY LINE
C&G	CURB AND GUTTER	PP	POWER POLE
CE	COMMERCIAL ENTRANCE	QTY	QUANTITY
CL	CENTERLINE	RHF	RIGHT-HAND FORWARD
COR	CORNER	RT	RIGHT
CWT	HUNDREDWEIGHT	R/L	REFERENCE LINE
CY	CUBIC YARD	R/W	RIGHT-OF-WAY
DHV	DESIGN HOURLY VOLUME	SF	SQUARE FOOT
DWY	DRIVEWAY	SHLDR	SHOULDER
EL	ELEVATION	SS	STORM SEWER
EX	EXISTING	STA	STATION
EXC	EXCAVATION	SY	SQUARE YARD
FT	FOOT	T	TRUCKS (PERCENT OF)
FTG	FOOTING	TEL	TELEPHONE
HYD	HYDRANT	TLE	TEMPORARY LIMITED EASEMENT
INV	INVERT	TYP	TYPICAL
LB	POUND	UG	UNDERGROUND CABLE
LF	LINEAR FOOT	VAR	VARIABLE
LHF	LEFT-HAND FORWARD	VC	VERTICAL CURVE
LS	LUMP SUM	VPC	VERTICAL POINT OF CURVE
LT	LEFT	VPI	VERTICAL POINT OF INTERSECTION
Mgal	MEGAGALLON	VPT	VERTICAL POINT OF TANGENCY

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											

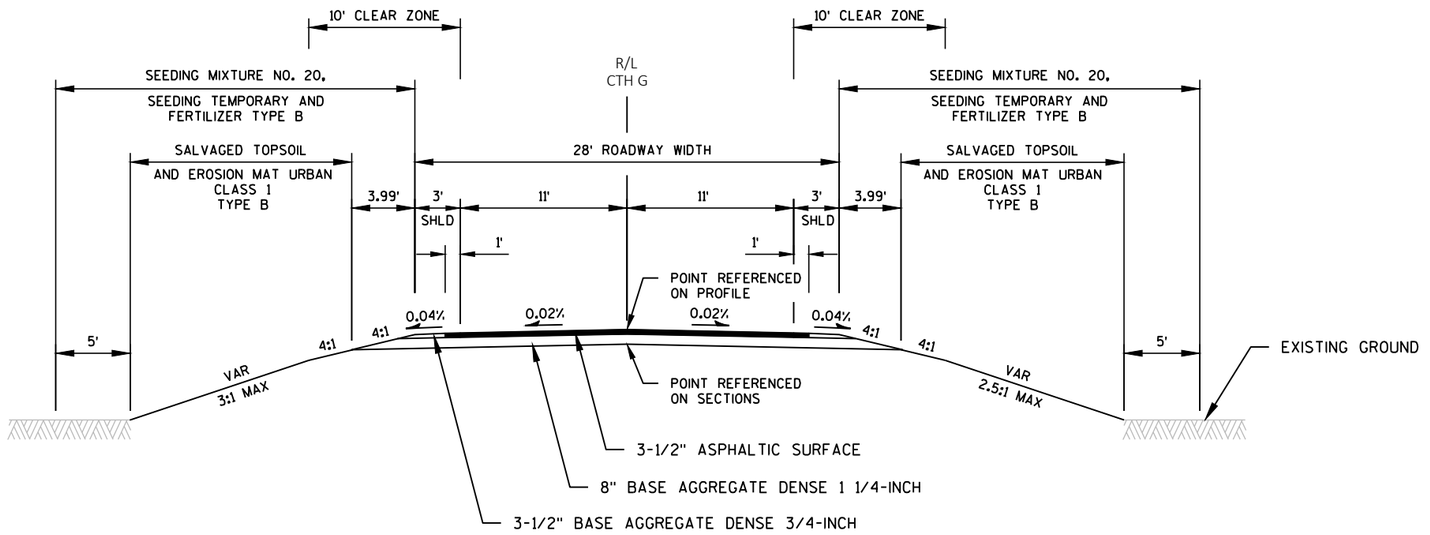
TOTAL PROJECT AREA = 0.20 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.16 ACRES

2



EXISTING TYPICAL SECTION

STA 9+30.00 TO STA 9+83.00
STA 10+16.00 TO STA 10+65.00

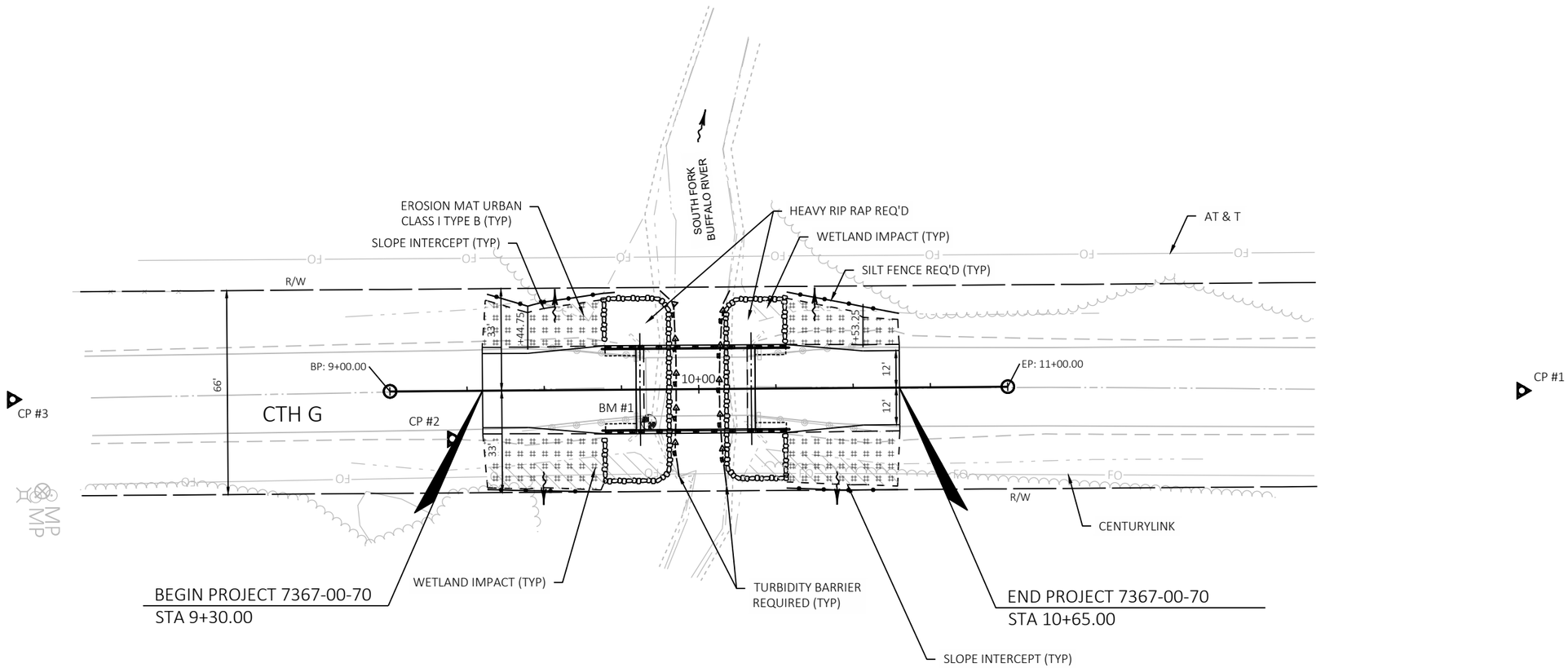


PROPOSED TYPICAL SECTION

STA 9+30.00 TO STA 9+79.75
STA 10+18.25 TO STA 10+65.00

2

N



PROJECT NO: 7367-00-70	HWY: CTH G	COUNTY: JACKSON	EROSION CONTROL	SHEET 4	E

GENERAL TRAFFIC CONTROL NOTES

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD).

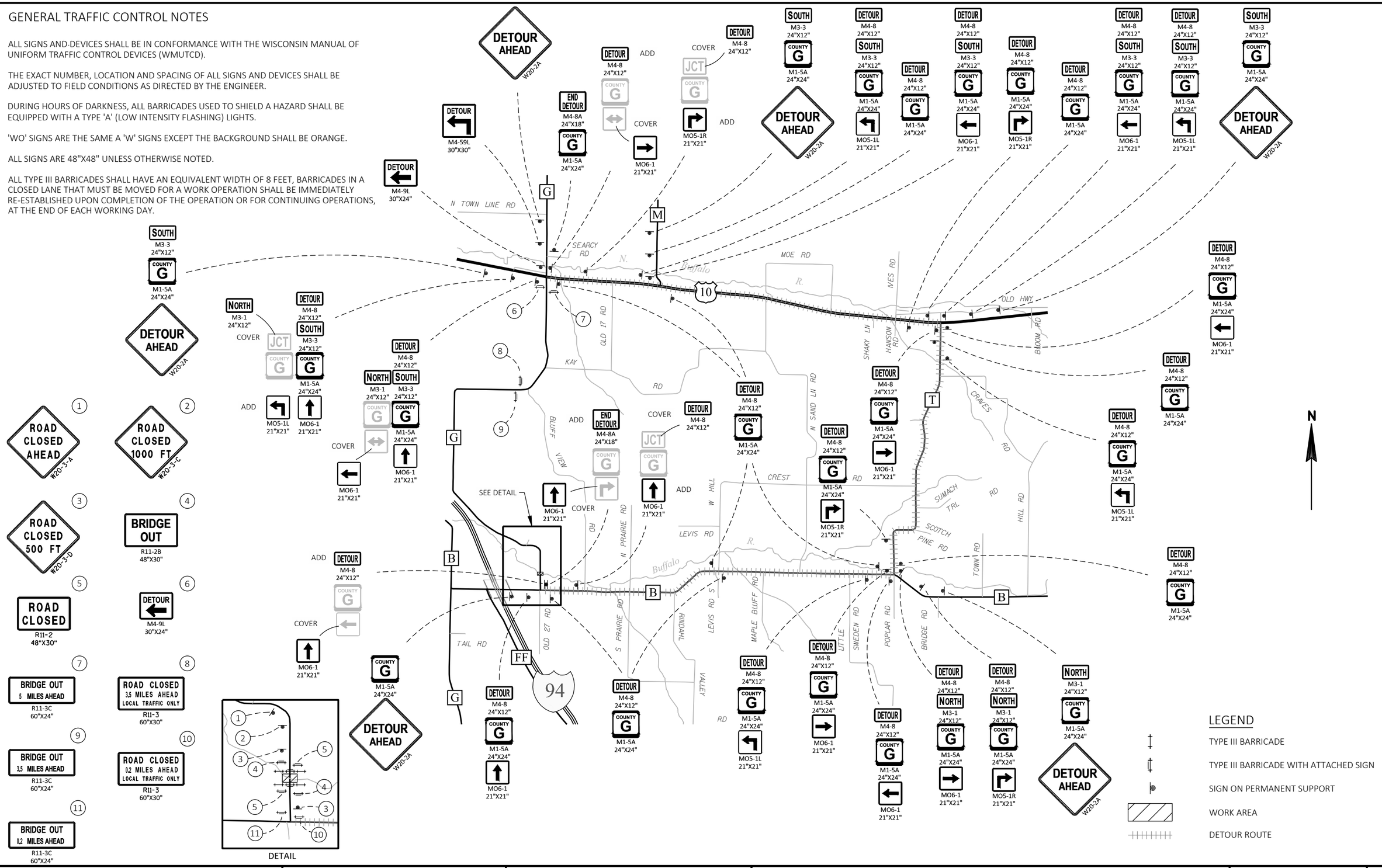
THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

DURING HOURS OF DARKNESS, ALL BARRICADES USED TO SHIELD A HAZARD SHALL BE EQUIPPED WITH A TYPE 'A' (LOW INTENSITY FLASHING) LIGHTS.

'WO' SIGNS ARE THE SAME A 'W' SIGNS EXCEPT THE BACKGROUND SHALL BE ORANGE.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

ALL TYPE III BARRICADES SHALL HAVE AN EQUIVALENT WIDTH OF 8 FEET, BARRICADES IN A CLOSED LANE 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.



PROJECT NO: 7367-00-70	HWY: CTH G	COUNTY: JACKSON	TRAFFIC CONTROL	SHEET 5	E

7367-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00	LS	1.000	1.000
0008	205.0100	Excavation Common	CY	85.000	85.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-27-166	LS	1.000	1.000
0012	210.1500	Backfill Structure Type A	TON	220.000	220.000
0014	213.0100	Finishing Roadway (project) 01. 7367-00-70	EACH	1.000	1.000
0016	305.0110	Base Aggregate Dense 3/4-Inch	TON	20.000	20.000
0018	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	180.000	180.000
0020	455.0605	Tack Coat	GAL	18.000	18.000
0022	465.0105	Asphaltic Surface	TON	60.000	60.000
0024	502.0100	Concrete Masonry Bridges	CY	128.000	128.000
0026	502.3200	Protective Surface Treatment	SY	165.000	165.000
0028	505.0400	Bar Steel Reinforcement HS Structures	LB	3,260.000	3,260.000
0030	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	17,360.000	17,360.000
0032	513.4061	Railing Tubular Type M	LF	122.000	122.000
0034	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0036	550.0500	Pile Points	EACH	8.000	8.000
0038	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	520.000	520.000
0040	606.0300	Riprap Heavy	CY	175.000	175.000
0042	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	140.000	140.000
0044	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7367-00-70	EACH	1.000	1.000
0046	619.1000	Mobilization	EACH	1.000	1.000
0048	624.0100	Water	MGAL	4.000	4.000
0050	625.0500	Salvaged Topsoil	SY	250.000	250.000
0052	628.1504	Silt Fence	LF	160.000	160.000
0054	628.1520	Silt Fence Maintenance	LF	320.000	320.000
0056	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0058	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0060	628.2008	Erosion Mat Urban Class I Type B	SY	250.000	250.000
0062	628.6005	Turbidity Barriers	SY	60.000	60.000
0064	629.0210	Fertilizer Type B	CWT	0.200	0.200
0066	630.0120	Seeding Mixture No. 20	LB	7.000	7.000
0068	630.0200	Seeding Temporary	LB	4.000	4.000
0070	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0072	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0074	638.2602	Removing Signs Type II	EACH	4.000	4.000

7367-00-70

Line	Item	Item Description	Unit	Total	Qty
0076	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0078	642.5001	Field Office Type B	EACH	1.000	1.000
0080	643.0420	Traffic Control Barricades Type III	DAY	1,136.000	1,136.000
0082	643.0705	Traffic Control Warning Lights Type A	DAY	1,988.000	1,988.000
0084	643.0900	Traffic Control Signs	DAY	8,946.000	8,946.000
0086	643.5000	Traffic Control	EACH	1.000	1.000
0088	645.0111	Geotextile Type DF Schedule A	SY	90.000	90.000
0090	645.0120	Geotextile Type HR	SY	350.000	350.000
0092	646.1020	Marking Line Epoxy 4-Inch	LF	540.000	540.000
0094	650.4500	Construction Staking Subgrade	LF	97.000	97.000
0096	650.5000	Construction Staking Base	LF	97.000	97.000
0098	650.6500	Construction Staking Structure Layout (structure) 01. B-27-166	LS	1.000	1.000
0100	650.9910	Construction Staking Supplemental Control (project) 01. 7367-00-70	LS	1.000	1.000
0102	650.9920	Construction Staking Slope Stakes	LF	97.000	97.000
0104	690.0150	Sawing Asphalt	LF	48.000	48.000
0106	715.0502	Incentive Strength Concrete Structures	DOL	768.000	768.000

3

3

CLEARING & GRUBBING

STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
9+30	-	10+65	CTH G	2	2
			TOTAL	**2**	**2**

EARTHWORK SUMMARY

FROM/TO STATION	LOCATION	205.0100 EXCAVATION COMMON CUT (1)	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL (2)	UNEXPANDED FILL	EXPANDED FILL (FACTOR 1.25)	MASS ORDINATE +/- (3)	208.0100 BORROW
9+30 - 9+97.75	CTH G	43	12	31	22	28	4	0
10+18.25 - 10+65	CTH G	42	11	31	12	15	16	0
		85					**TOTAL**	**0**

(1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED

(2) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL

(3) THE MASS ORDINATE + OR - QUANTITY CALCULATED. PLUS QUANTITY INDICATES AS EXCESS OF MATERIAL. MINUS INDICATES A SHORTAGE OF MATERIAL.

TOTAL WASTE = 20 CY

BASE AGGREGATE DENSE

STATION	TO	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
9+30	-	9+85	CTH G, LT & RT	10	90	2
10+32	-	10+75	CTH G, LT & RT	10	90	2
			TOTAL	**20**	**180**	**4**

ASPHALT SUMMARY

STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
9+30	-	9+79.75	CTH G	9	30
10+18.25	-	10+65	CTH G	9	30
			TOTAL	**18**	**60**

TACK COAT ESTIMATED AT 0.07 GAL/SY

3

3

LANDSCAPING ITEMS

STATION	TO	STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 **SEEDING TEMPORARY LB
9+00	-	10+00	CTH G	135	135	0.1	4	2
10+25	-	10+75	CTH G	115	115	0.1	3	2
			TOTAL	**250**	**250**	**0.2**	**7**	**4**

** SEEDING TEMPORARY AT HALF RATE

SILT FENCE

STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
9+30	-	9+75	CTH G, LT/RT	80	160
10+50	-	10+65	CTH G, LT/RT	80	160
			TOTAL	**160**	**320**

TURBIDITY BARRIERS

STATION	LOCATION	628.6005 TURBIDITY BARRIERS SY
9+93	CTH G	30
10+07	CTH G	30
	TOTAL	**60**

EROSION CONTROL MOBILIZATIONS

STATION	TO	STATION	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
9+30	-	10+65	CTH G	5	2
			TOTAL	**5**	**2**

3

SIGNING

STATION	LOCATION	634.0614 POSTS WOOD 4x6-INCH x 14-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	COMMENTS
9+81	CTH G LT & RT	-	-	2	2	
10+18	CTH G LT & RT	-	-	2	2	
9+68	CTH G LT & RT	2	6	-	-	W5-52L & W5-52R
10+30	CTH G LT & RT	2	6	-	-	W5-52L & W5-52R
	TOTAL	**4**	**12**	**4**	**4**	

SAWING ASPHALT

STATION	LOCATION	690.0150 SAWING ASPHALT LF
9+30	CTH G	24
10+65	CTH G	24
	TOTAL	**48**

3

TRAFFIC CONTROL ITEMS

PROJECT	TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS DAY	REMARKS
7281-00-72	16	1,136	28	1,988	126	8,946	71 DAYS
TOTAL		**1,136**		**1,988**		**8,946**	

PAVEMENT MARKING

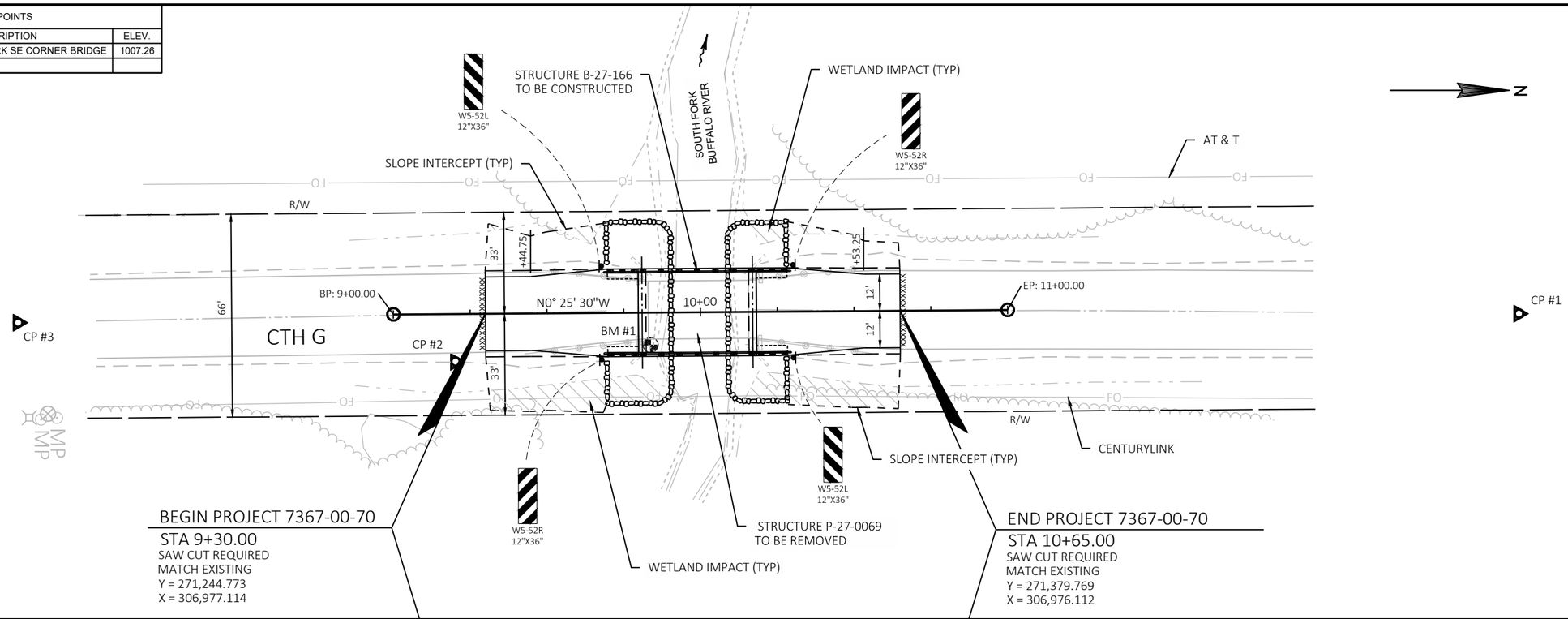
STATION	TO	STATION	LOCATION	646.1020 EXPOXY 4-INCH WHITE LF	646.1020 EXPOXY 4-INCH YELLOW LF	REMARKS
9+00	-	10+75	CTH G, LT/RT	270	-	EDGE LINE
9+00	-	10+75	CTH G	-	270	CENTER LINE (DOUBLE)
			TOTAL	**270**	**270**	

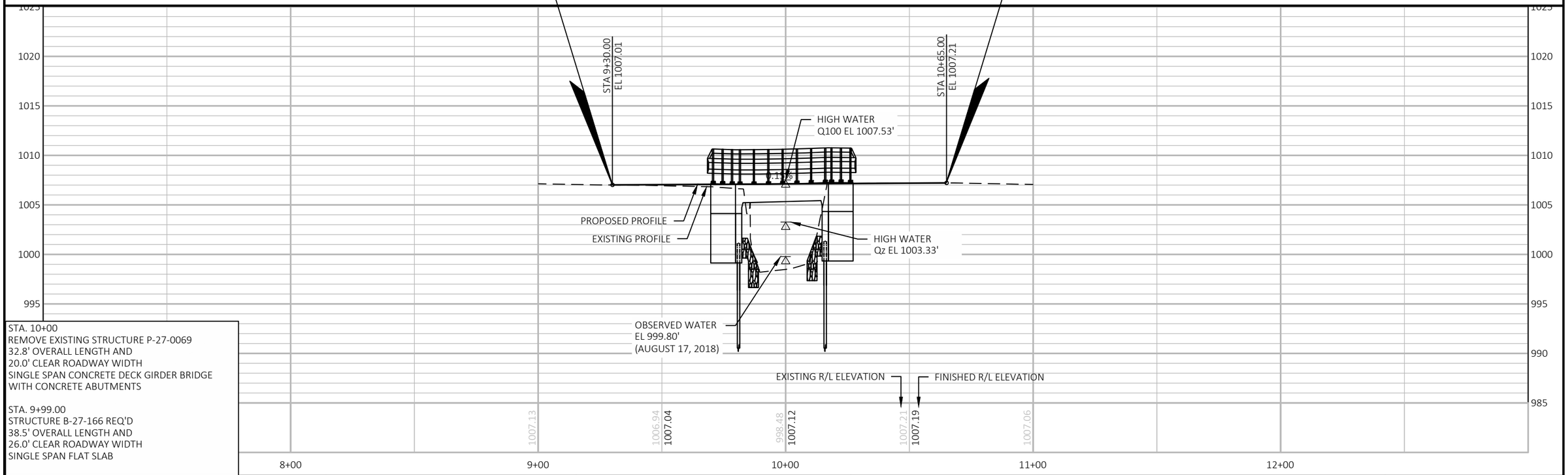
CONSTRUCTION STAKING

STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
9+30	-	9+80	CTH G	50	50	50
10+18	-	10+65	CTH G	47	47	47
			TOTAL	**97**	**97**	**97**

BENCH MARKS & CONTROL POINTS			
NO.	LOCATION	DESCRIPTION	ELEV.
BM#1	STA 9+83.7, RT 10.6'	WHITE PAINT MARK SE CORNER BRIDGE	1007.26

CONTROL POINTS			
NO.	NORTHING	EASTING	ELEV.
1	271581.219	306977.060	1006.63
2	271235.000	306992.694	1006.78
3	271092.570	306979.977	1008.29





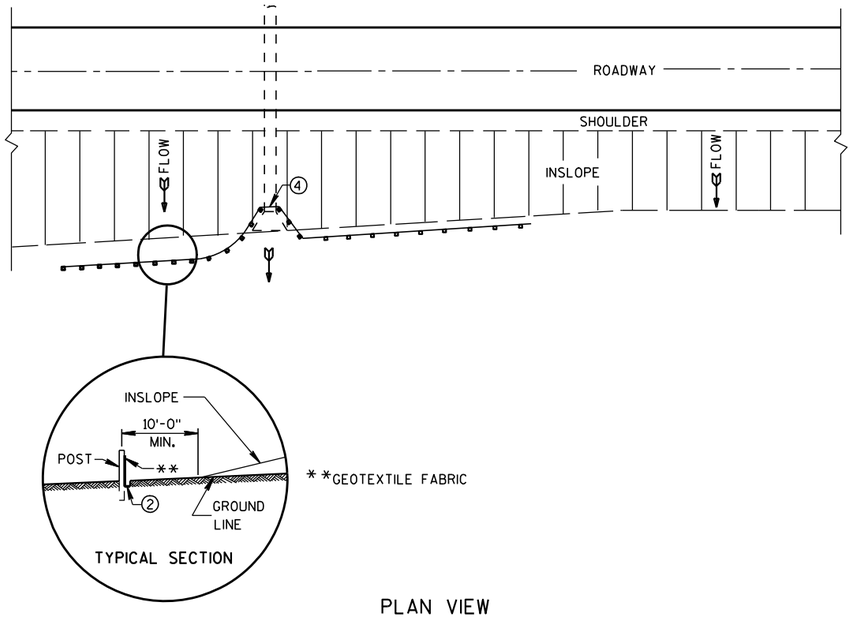
STA. 10+00
REMOVE EXISTING STRUCTURE P-27-0069
32.8' OVERALL LENGTH AND
20.0' CLEAR ROADWAY WIDTH
SINGLE SPAN CONCRETE DECK GIRDER BRIDGE
WITH CONCRETE ABUTMENTS

STA. 9+99.00
STRUCTURE B-27-166 REQ'D
38.5' OVERALL LENGTH AND
26.0' CLEAR ROADWAY WIDTH
SINGLE SPAN FLAT SLAB

PROJECT NO: 7367-00-70	HWY: CTH G	COUNTY: JACKSON	PLAN AND PROFILE: MAINLINE	SHEET 11	E

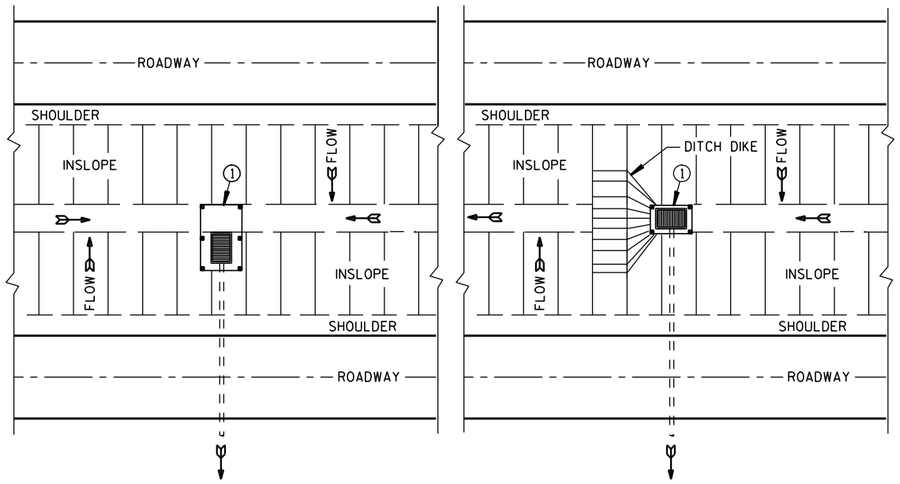
Standard Detail Drawing List

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
15C02-07C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
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



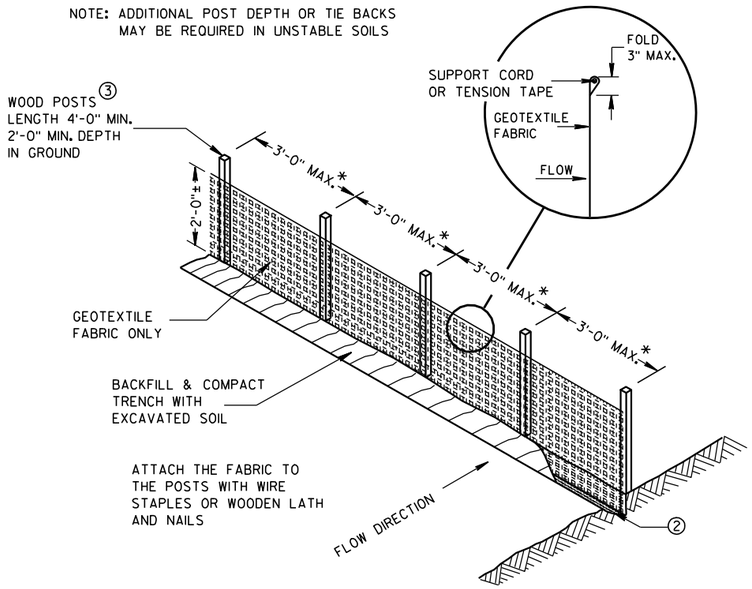
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



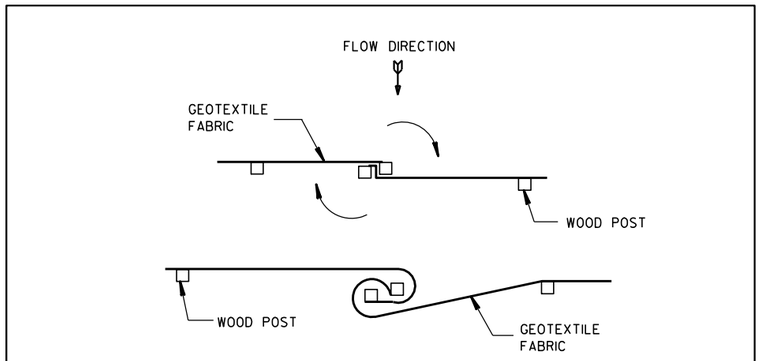
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

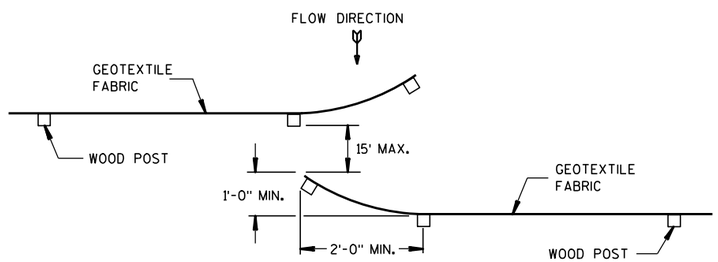


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE



TWIST METHOD



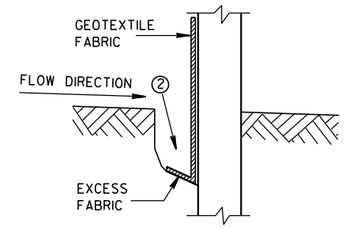
HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5

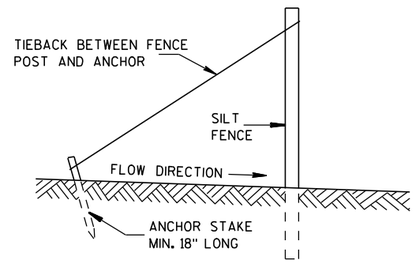
GENERAL NOTES

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)

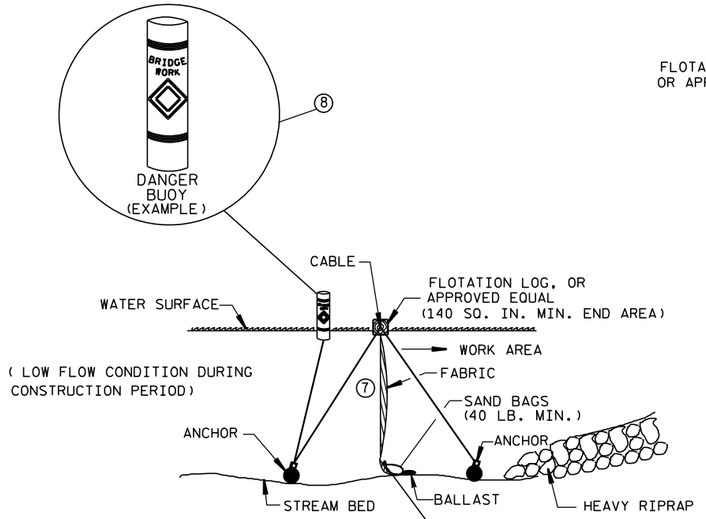
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

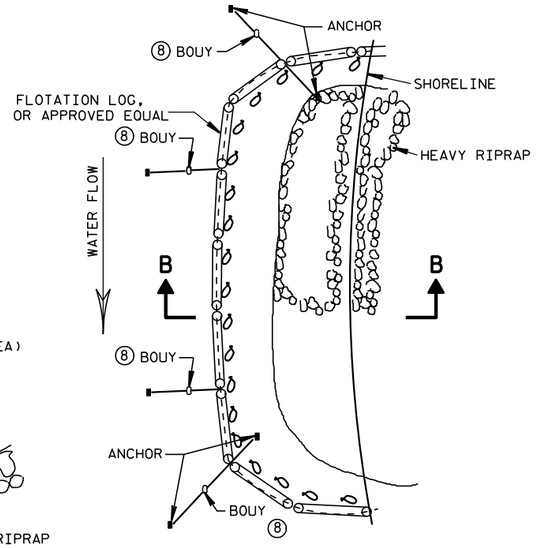
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

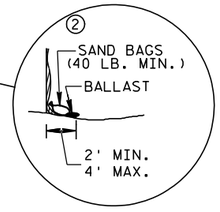
S.D.D. 8 E 9-6

S.D.D. 8 E 9-6

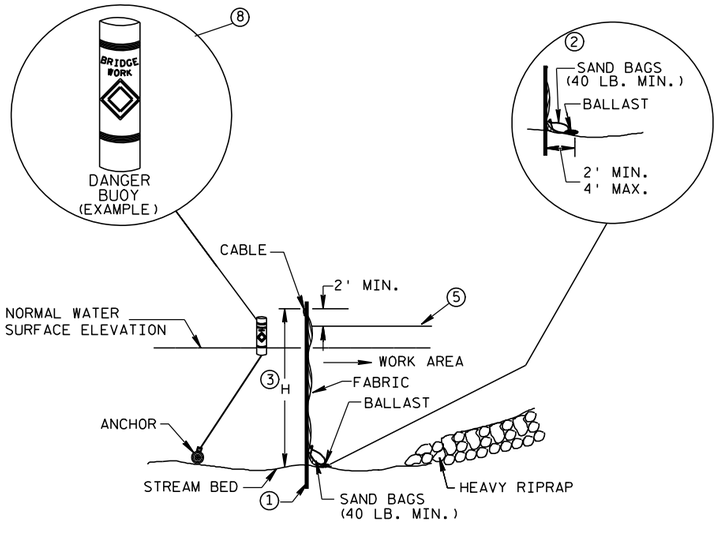


SECTION B-B

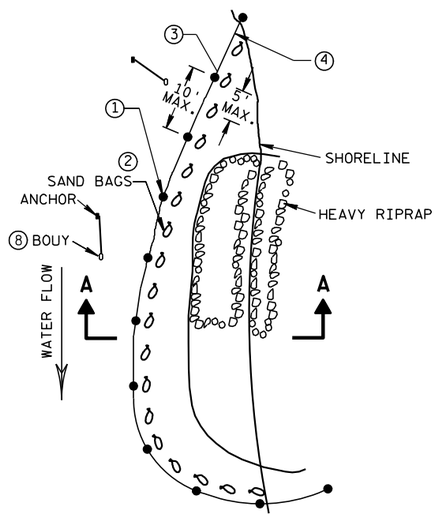




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



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.

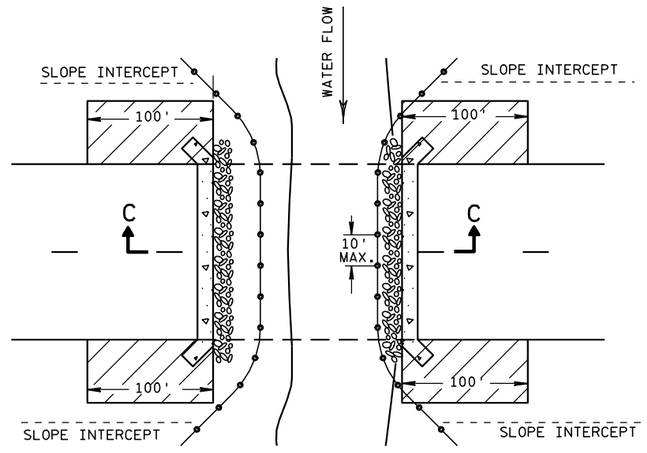
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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.

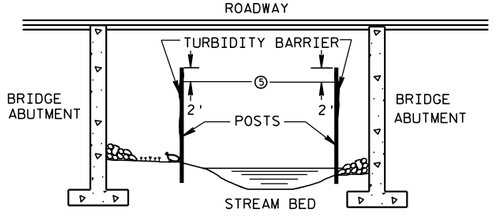
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

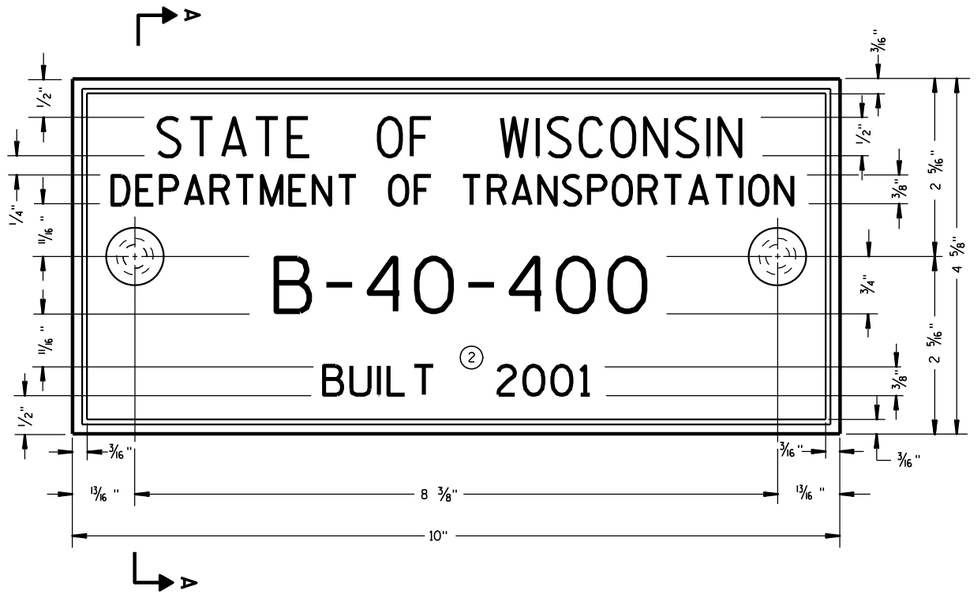
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 11-2

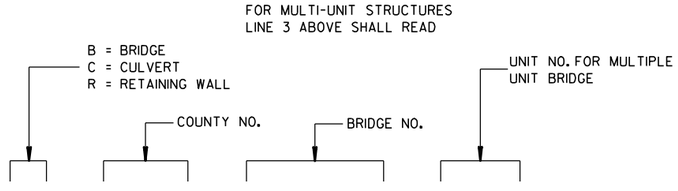
6

S.D.D. 8 E 11-2



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

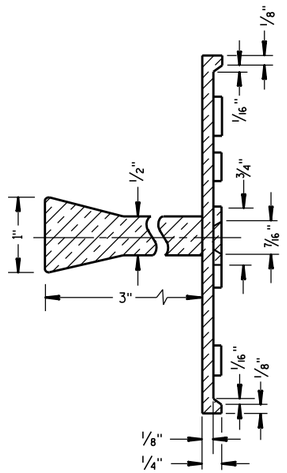
GENERAL NOTES

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

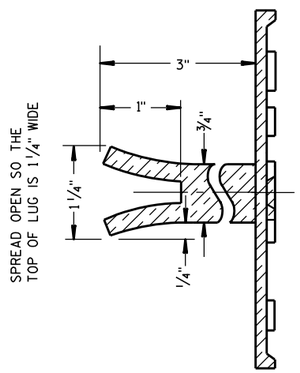
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

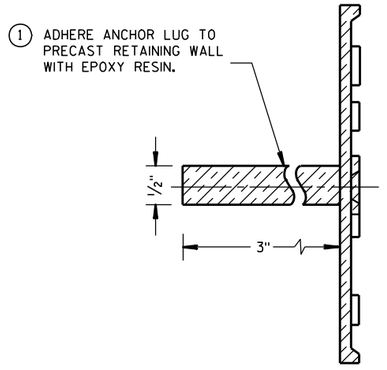
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

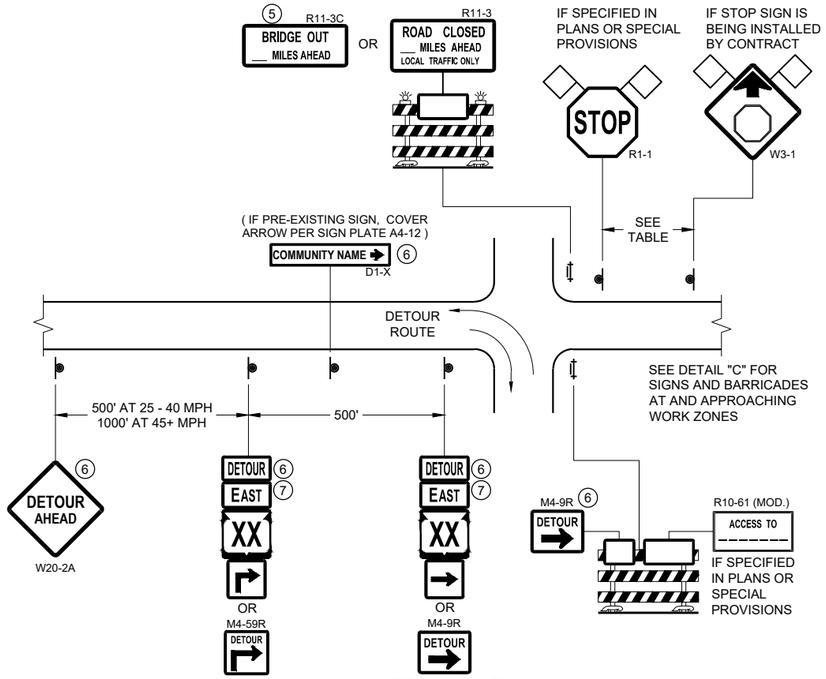
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
3/26/10 DATE	/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER
FHWA	

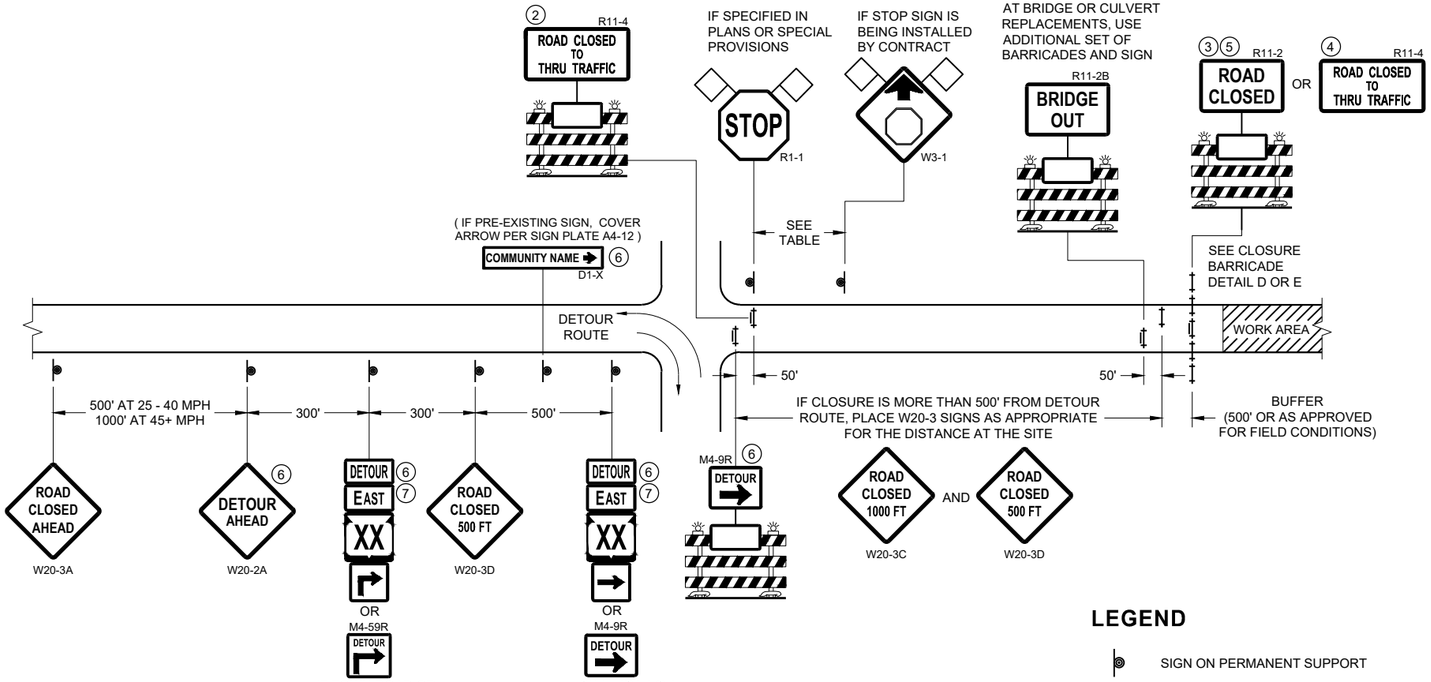
6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10





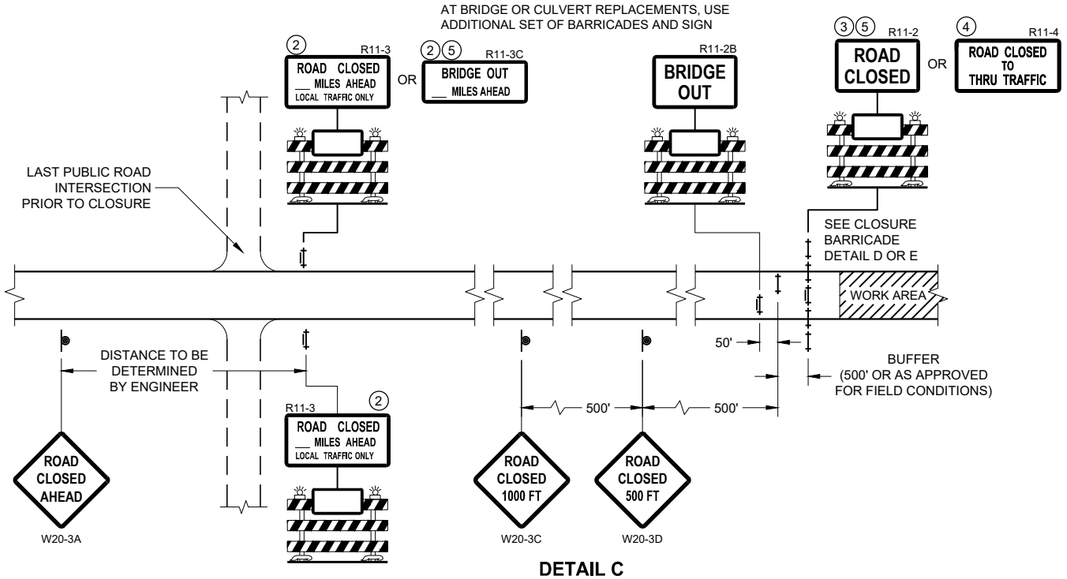
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

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



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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

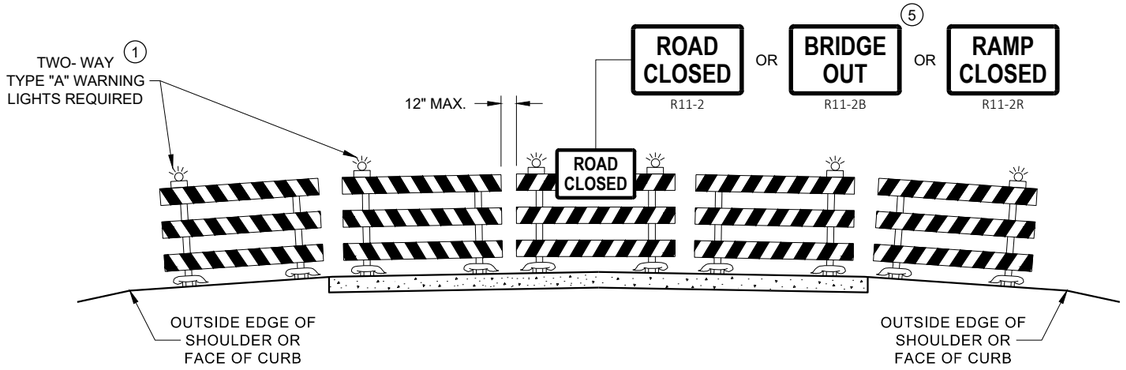
APPROVED
November 2018
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

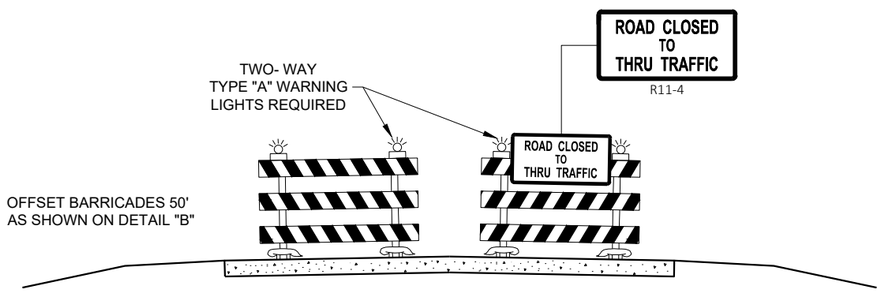
6

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 ENGINEER
FHWA

6

SDD 15C02 - 07b

6

SDD 15C02 - 07b

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M06 - 1 OR M06 - 1

GENERAL NOTES

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

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

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

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

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

M3-X 24" X 12"
M1-X 24" X 24"
DETOUR AHEAD
W20-2A
USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT

500' AT 25-40 MPH
1000' AT 45+ MPH

500'

DETOUR EAST XX *

D1-X COMMUNITY NAME *
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

M4-8a END DETOUR WEST XX *

DETOUR EAST XX / WEST XX

DETOUR ROUTE

WORK AREA

DETOUR EAST XX

WEST XX OR M4-9L DETOUR ** IF TOWN ROAD OR LOCAL STREET

500'

DETOUR NEXT X MILES * G20-51

DETOUR WEST XX * OR M4-59L DETOUR ** IF TOWN ROAD OR LOCAL STREET

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

MATCH POINT

* M4-59L DETOUR ** OR DETOUR EAST XX * IF TOWN ROAD OR LOCAL STREET

D1-X COMMUNITY NAME *
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

500'

M4-9L DETOUR ** OR DETOUR EAST XX IF TOWN ROAD OR LOCAL STREET

DETOUR WEST XX

DETOUR WEST XX OR M4-9R DETOUR ** IF TOWN ROAD OR LOCAL STREET

DETOUR WEST XX * OR M4-59R * DETOUR ** IF TOWN ROAD OR LOCAL STREET

500'

DETOUR ROUTE

500' AT 25 - 40 MPH
1000' AT 45+ MPH

500'

M3-X 24" X 12"
M1-X 24" X 24"
DETOUR AHEAD
W20-2A
USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT

DETOUR EAST XX *

D1-X COMMUNITY NAME *
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

DETOUR EAST XX

500'

DETOUR EAST XX

D1-X COMMUNITY NAME *
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

DETOUR EAST XX *

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

500' AT 25 - 40 MPH
1000' AT 45+ MPH

DETOUR EAST XX *

M3-X 24" X 12"
M1-X 24" X 24"
DETOUR AHEAD
W20-2A
USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT

DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

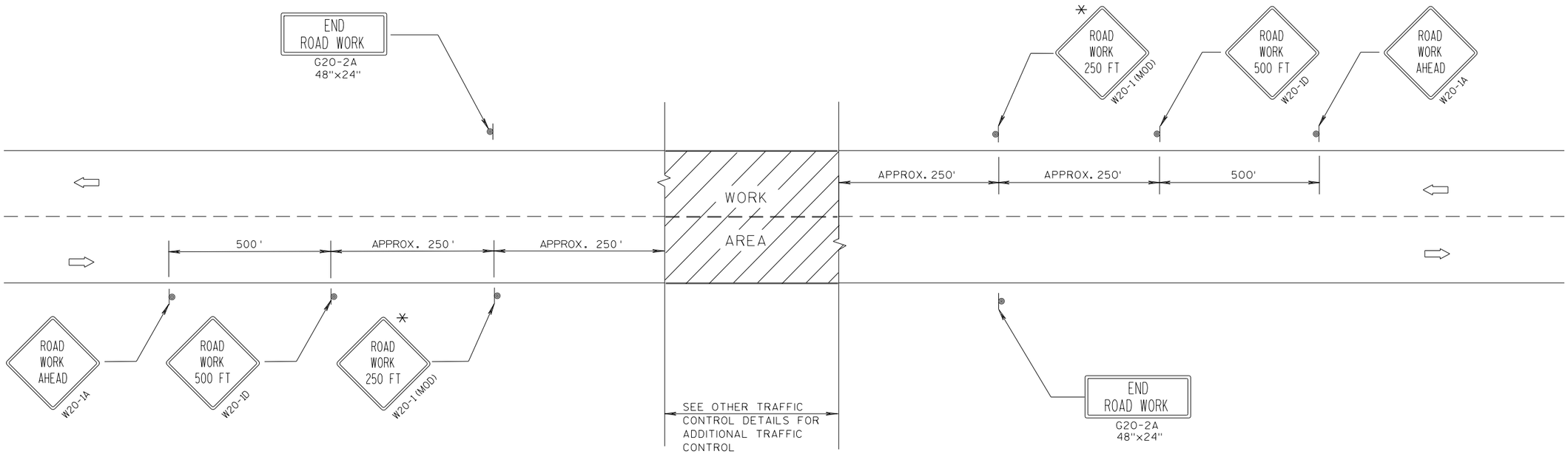
FHWA

SDD 15C02 - 07c

6

SDD 15C02 - 07c

TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

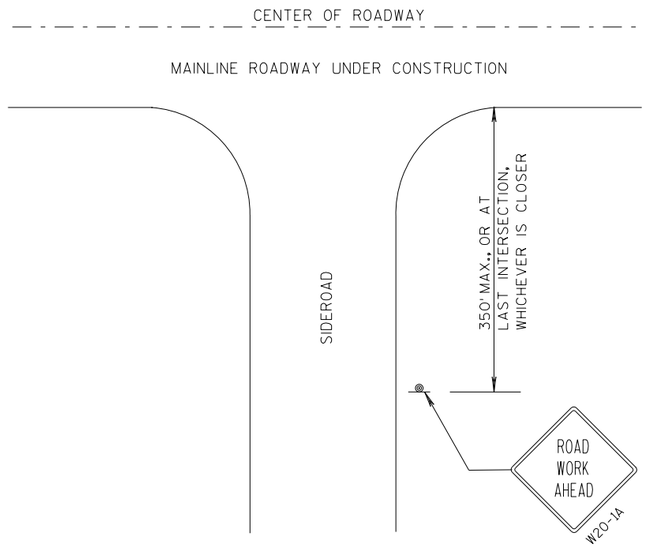
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

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

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 RE-ESTABLISHED.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

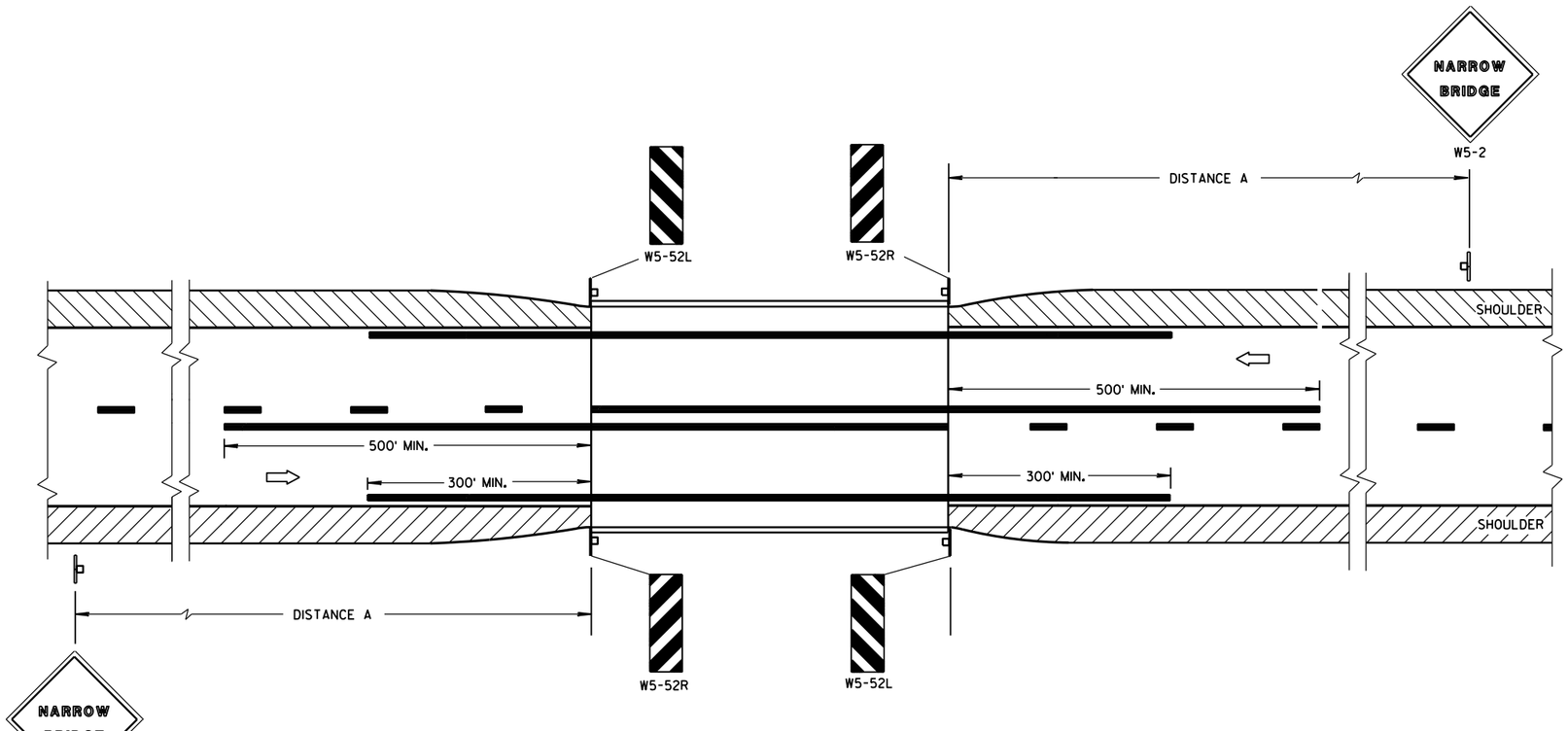
7/2018
DATE

/S/ Andrew Heldtke
WORK ZONE ENGI

FHWA

6

S.D.D. 15 C 5-5



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

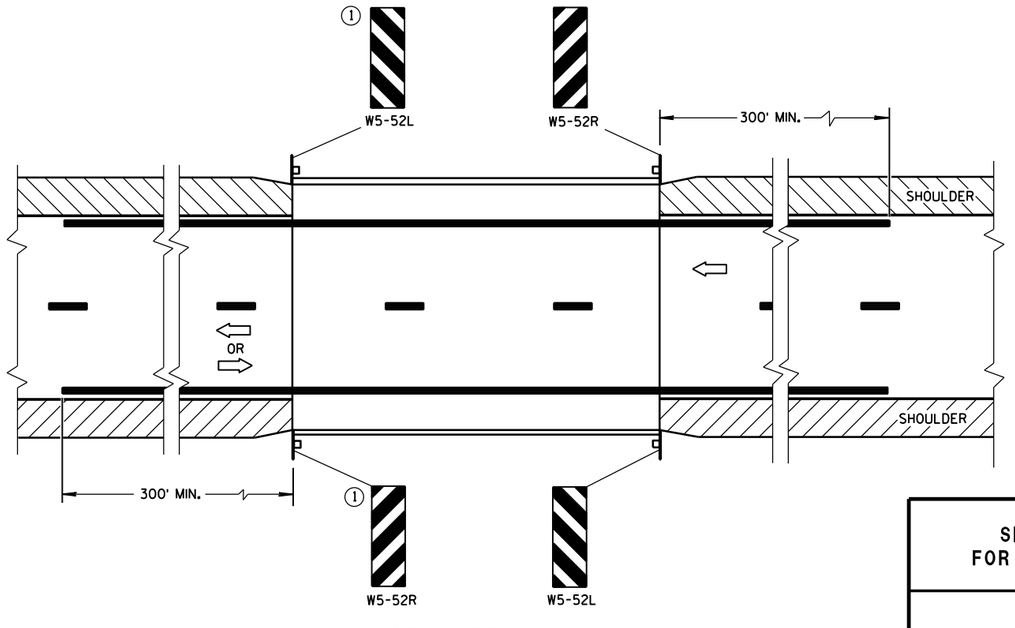
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

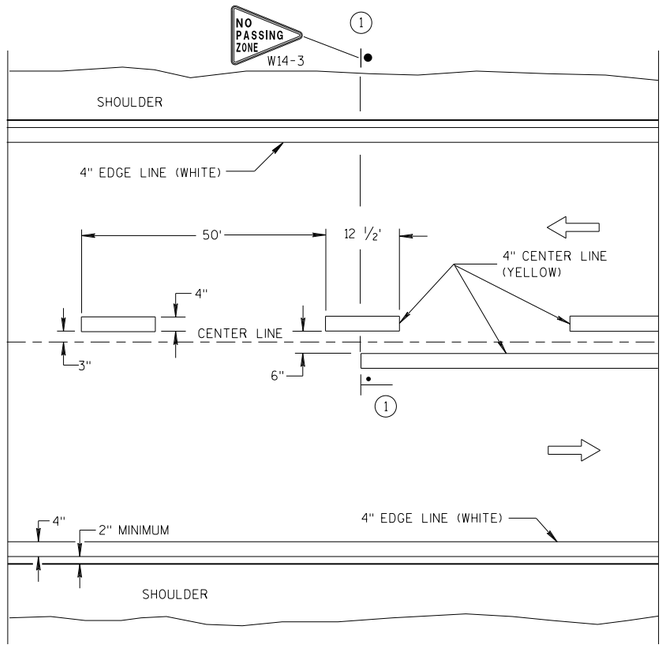
APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR 20 ...EER
FHWA

6

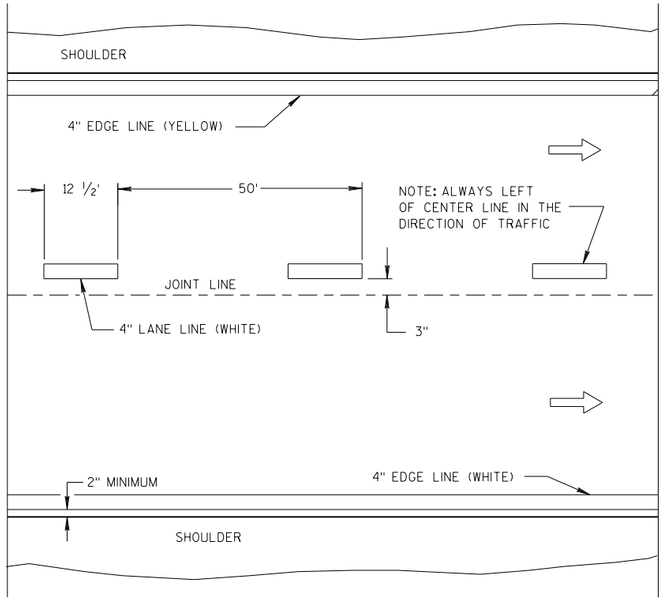
S.D.D. 15 C 6-9

6

S.D.D. 15 C 6-9



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

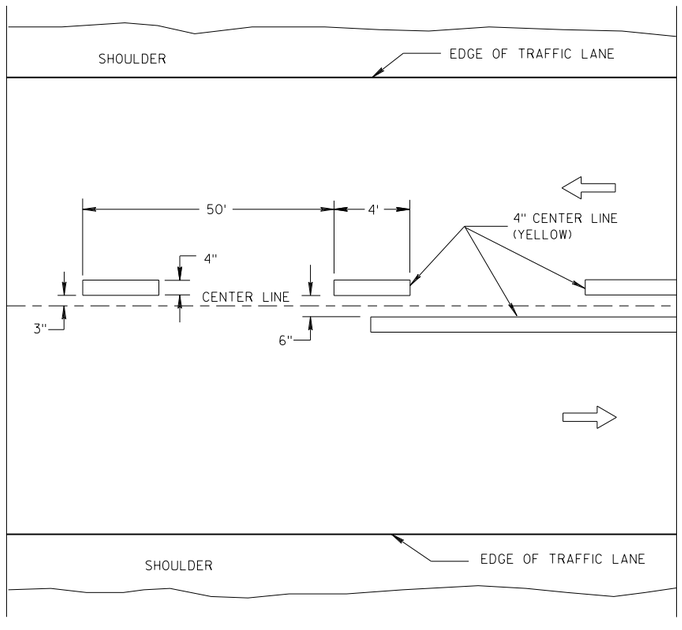
GENERAL NOTES

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

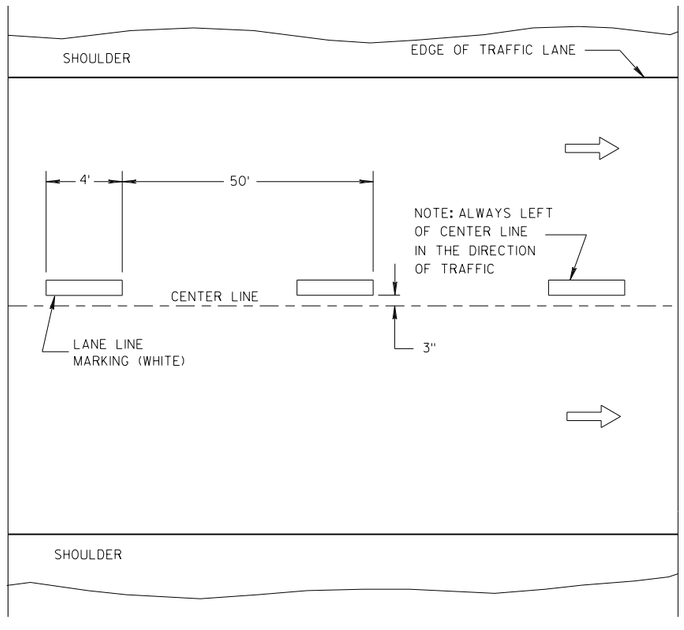
(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LEGEND

"T" MARKING

POST MOUNTED SIGN

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 — DATE

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

FHWA

6

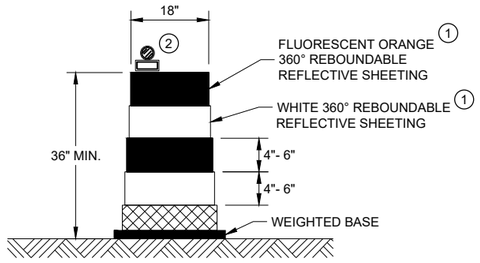
S.D.D. 15 C 8-19a

6

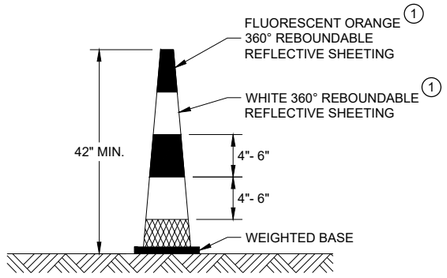
S.D.D. 15 C 8-19a

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.

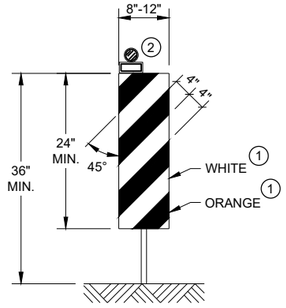


DRUM



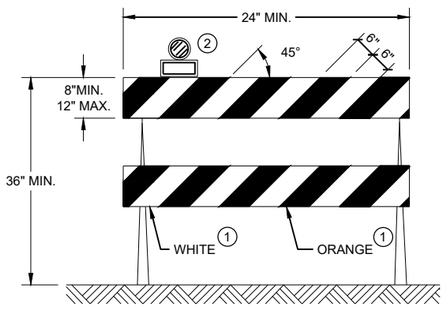
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



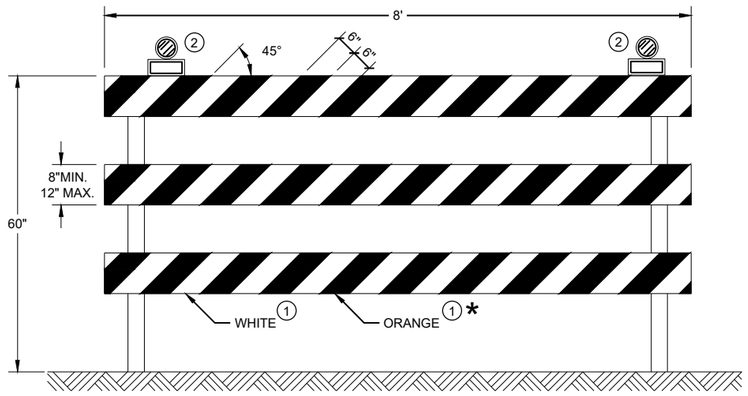
VERTICAL PANEL

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

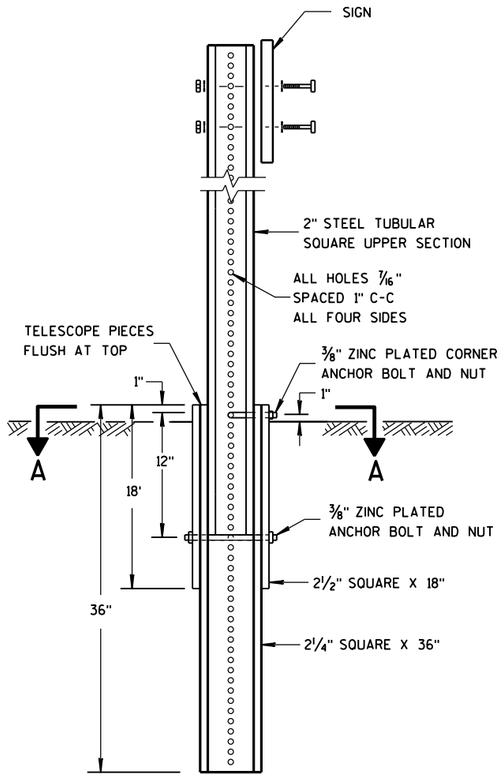
APPROVED
June 2017 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

6

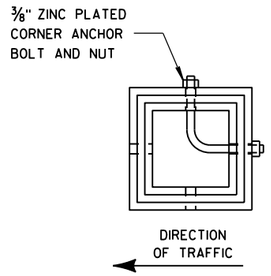
SDD 15C11 - 07b

6

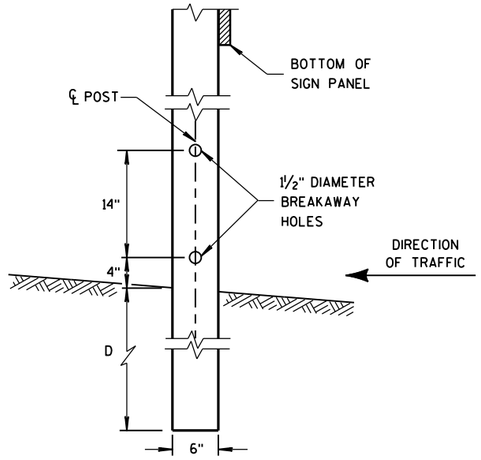
SDD 15C11 - 07b



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



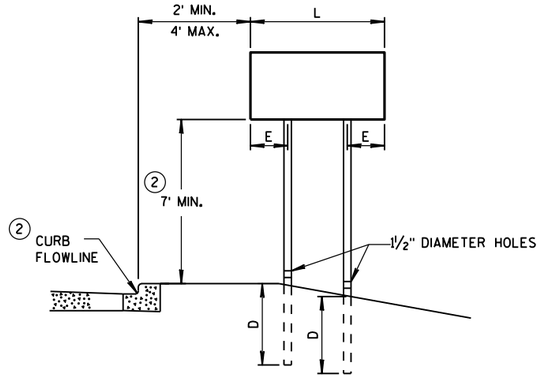
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

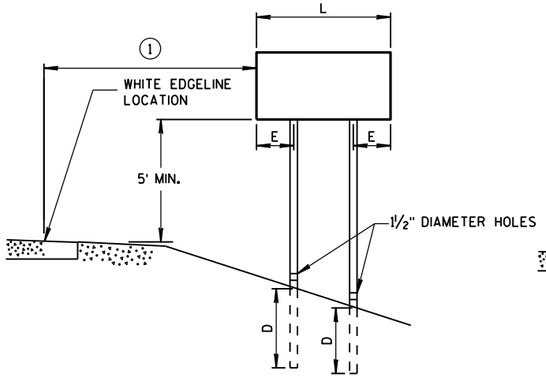
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

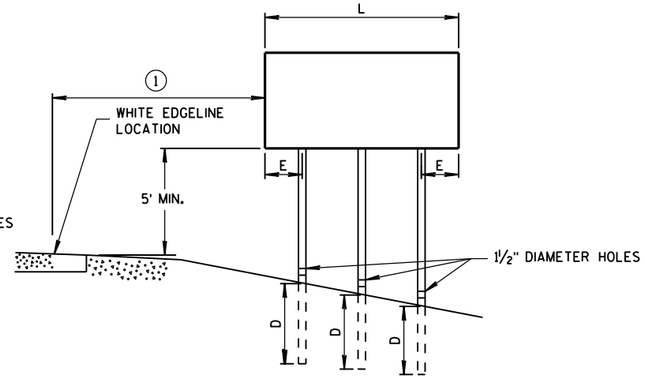
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

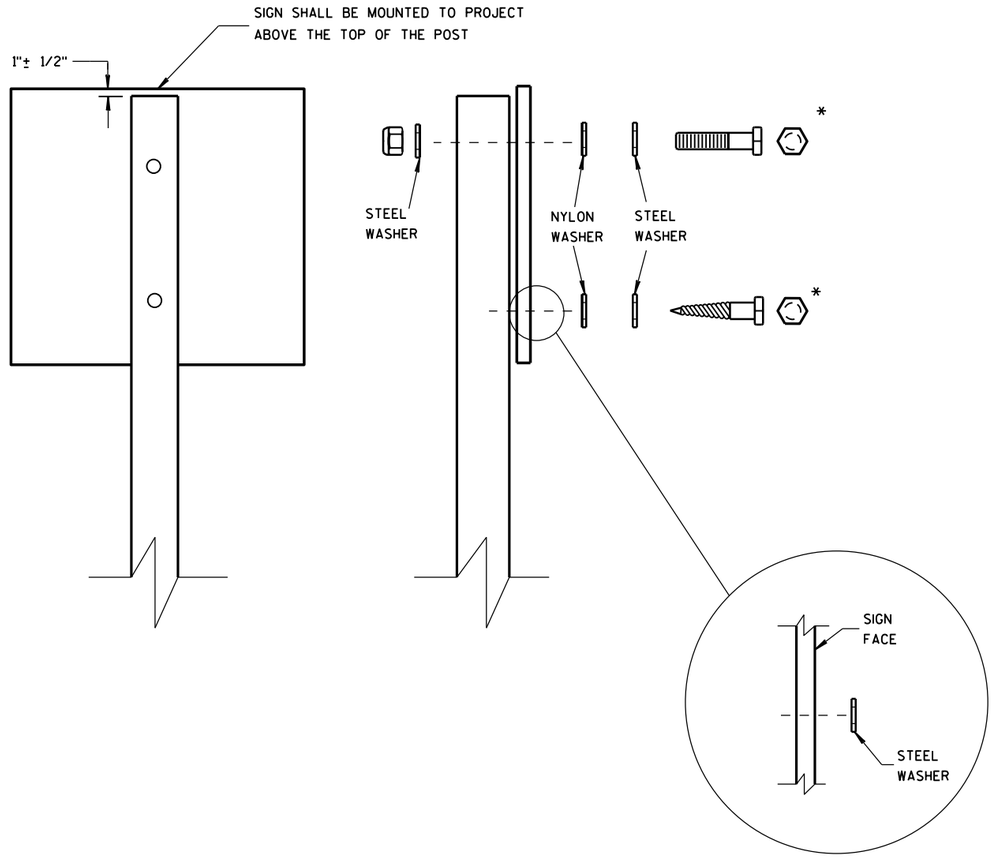
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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



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

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

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

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

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

LAG SCREWS - 3/8" X 3"

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

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

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

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

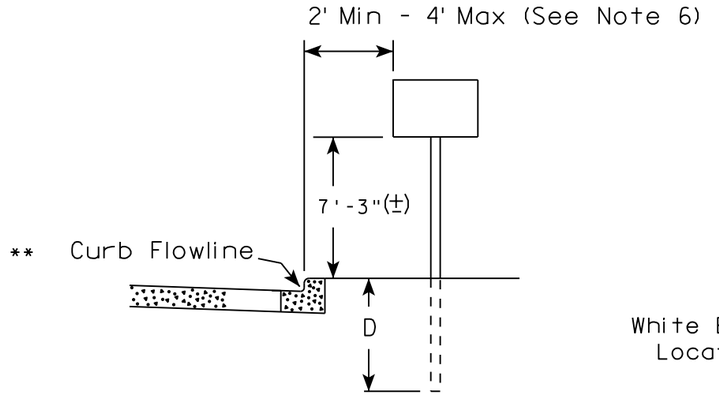
APPROVED

June 2017
DATE

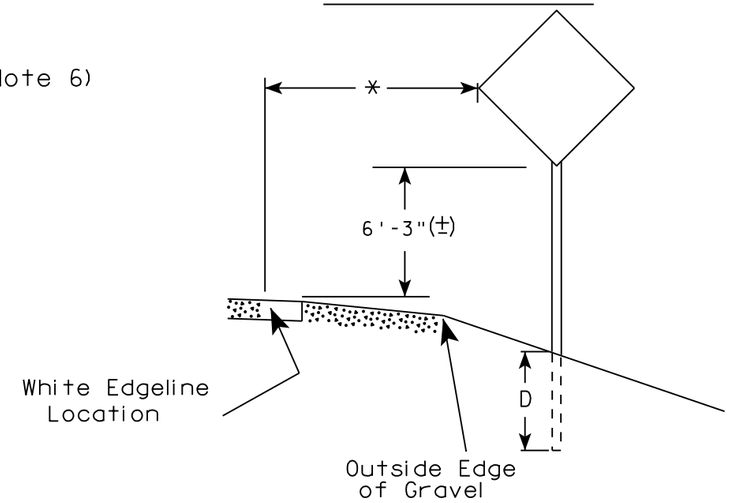
/S/ Andrew Heldtke
WORK ZONE ENG

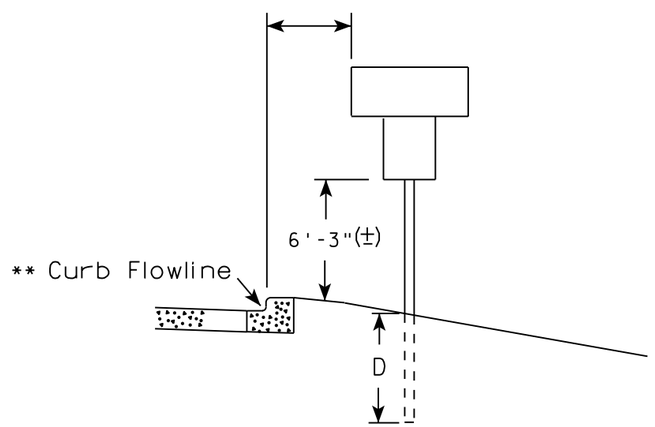
FHWA

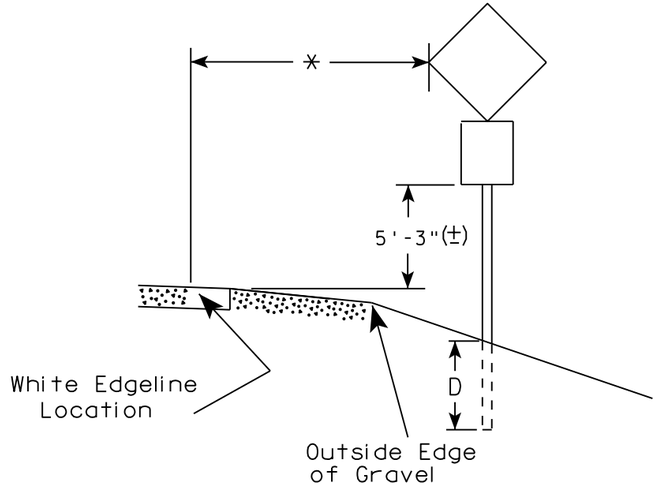
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

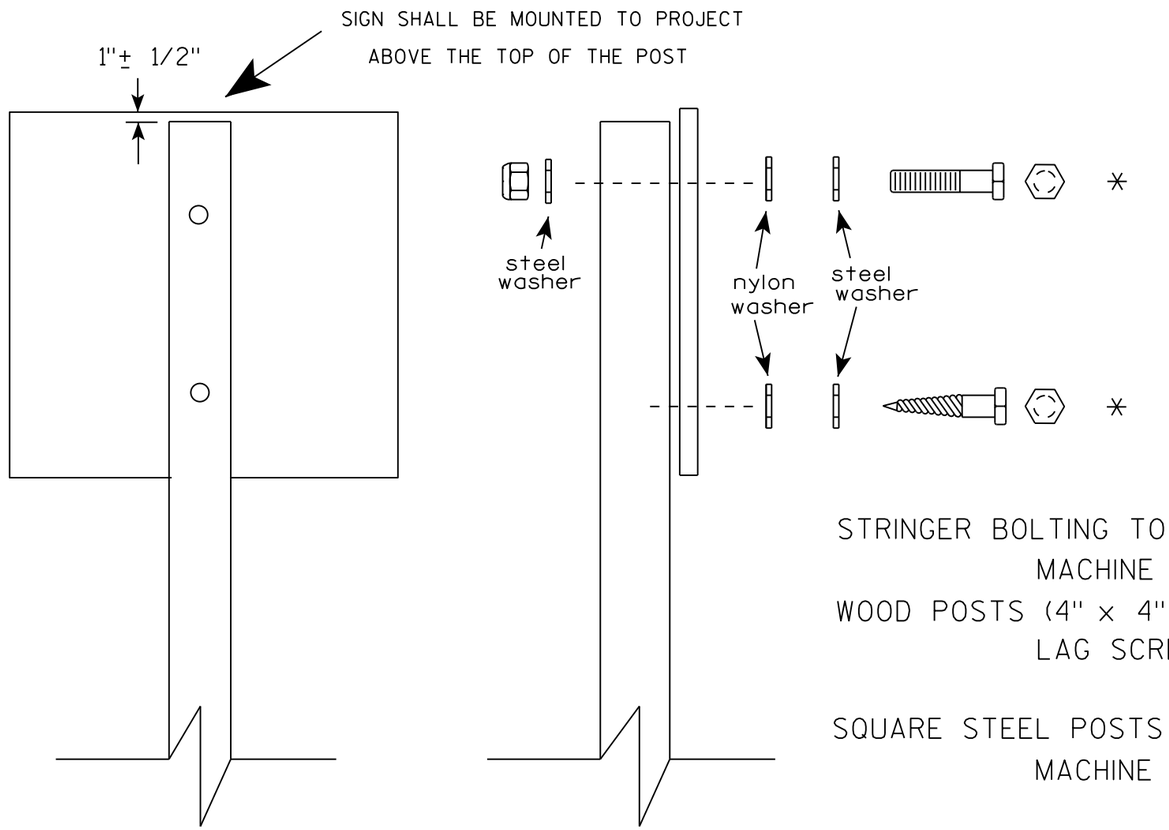
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 25	E



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

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

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

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

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

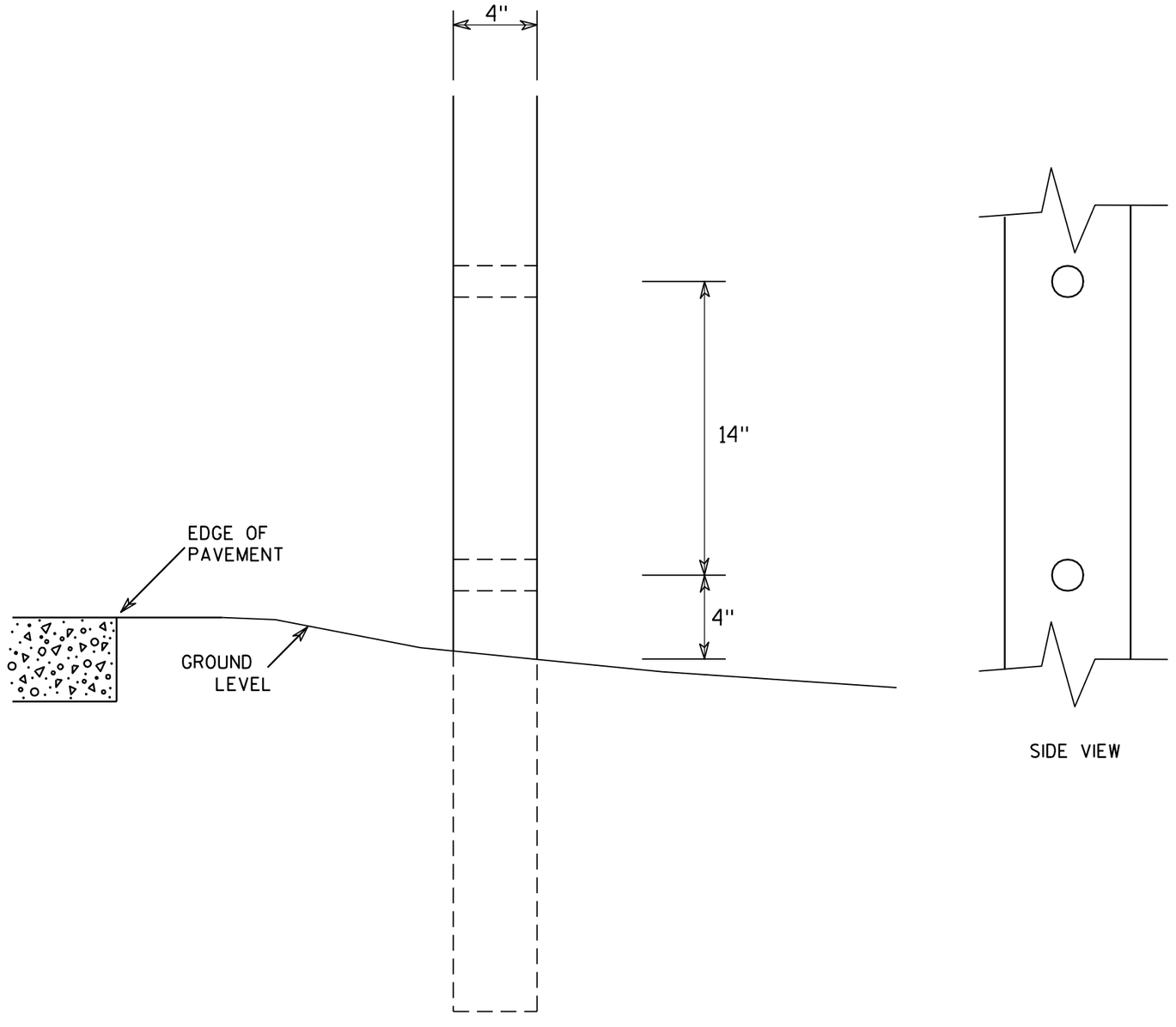
ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO: SHEET NO: E



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

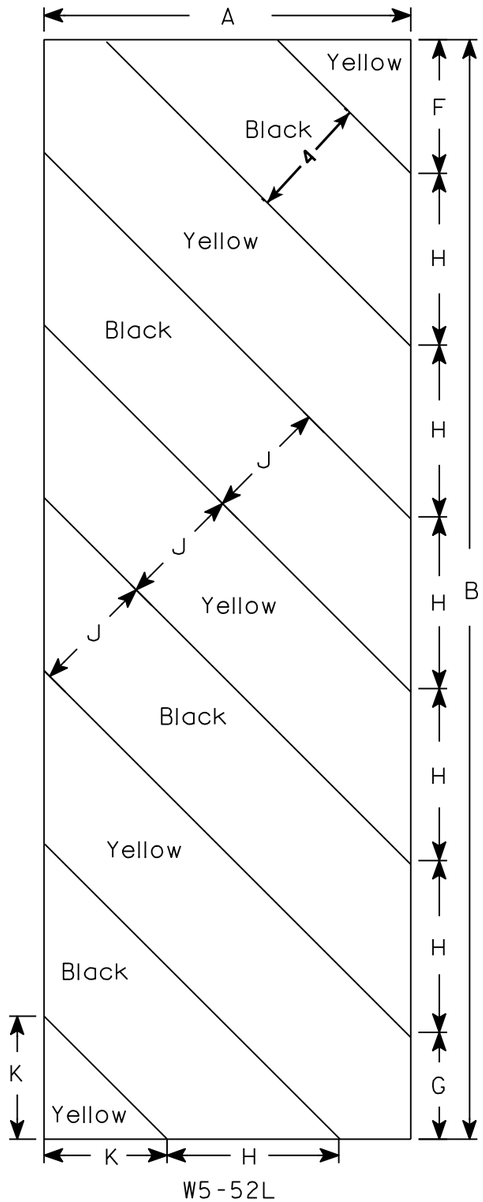
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

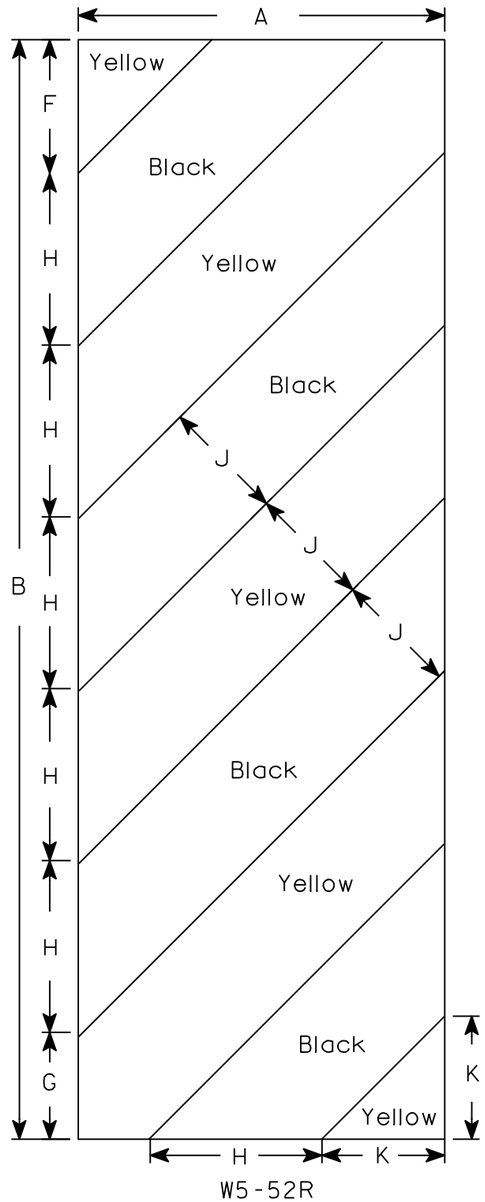
APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 27	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

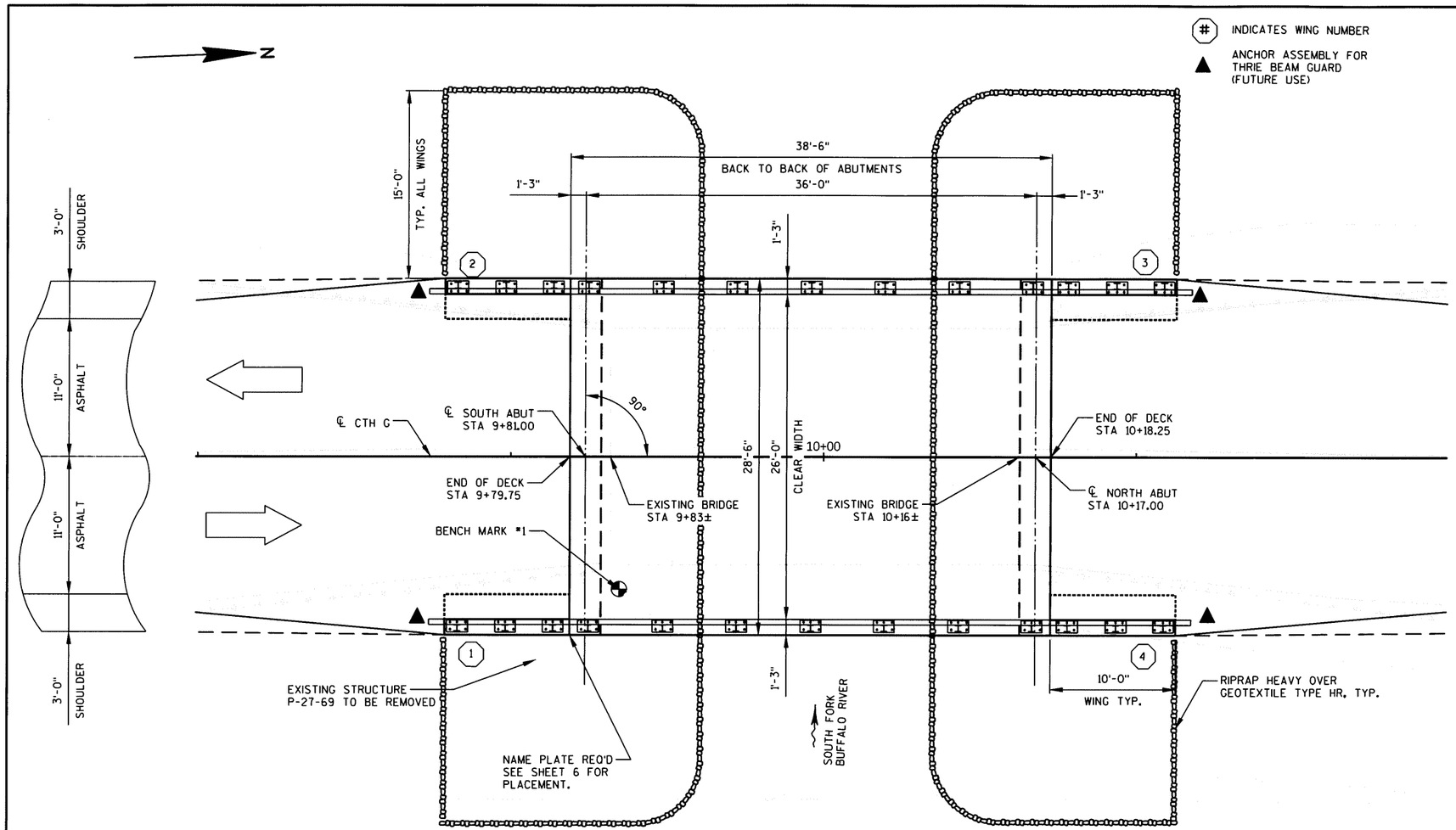
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

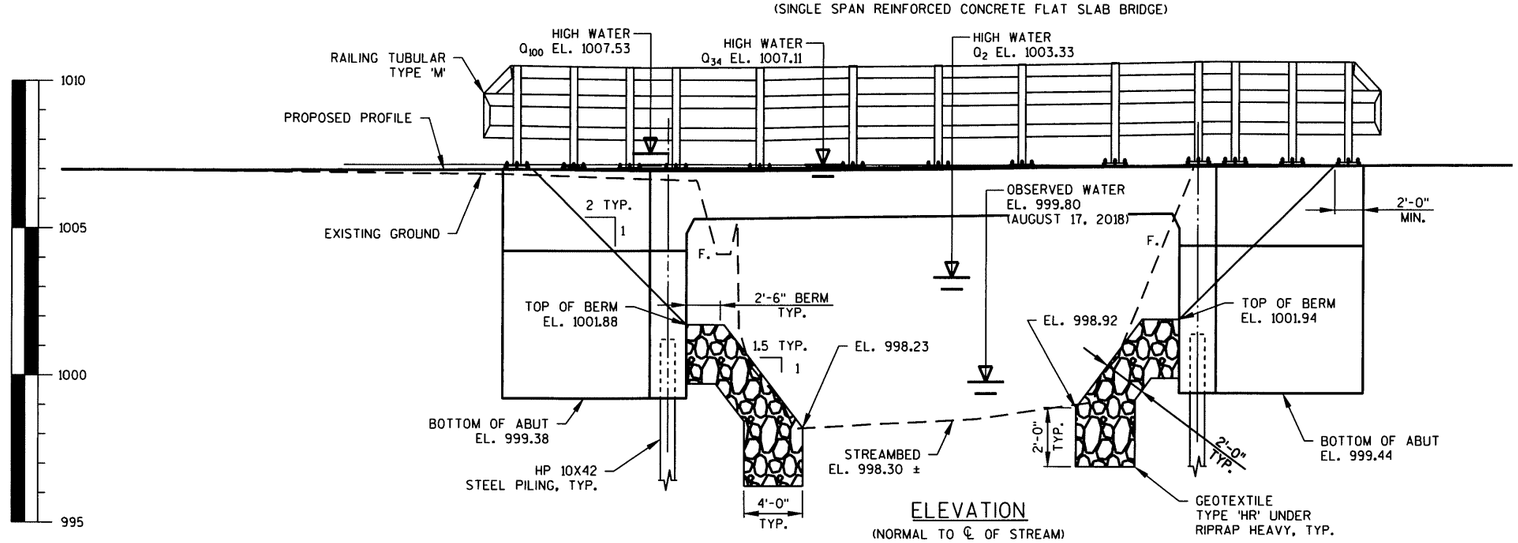
DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 28	E



PLAN

(SINGLE SPAN REINFORCED CONCRETE FLAT SLAB BRIDGE)



ELEVATION

(NORMAL TO ℄ OF STREAM)

STATE PROJECT NUMBER

7367-00-70

DESIGN DATA:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.22
OPERATING RATING FACTOR: 1.58
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 KIPS
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

MATERIAL PROPERTIES:

CONCRETE MASONRY, SUPERSTRUCTURE ——— f'c = 4,000 psi
ALL OTHER ——— f'c = 3,500 psi
HIGH STRENGTH BAR STEEL REINFORCEMENT —— fy = 60,000 psi

TRAFFIC DATA:

ADT (2018) = 125
ADT (2040) = 150
DESIGN SPEED = 55 MPH

FOUNDATION DATA:

ABUTMENTS SUPPORTED ON HP 10-INCH X 42 LB STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 150* TONS PER PILE AS REQUIRED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 65' LONG AT BOTH ABUTMENTS. PILE POINTS REQUIRED.

* 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} = 1,900 C.F.S.
VELOCITY = 8.88 F.P.S.
HW_{100} = EL. 1007.53
WATERWAY AREA = 190 SQ. FT.
DRAINAGE AREA = 22.4 SQ. MI.
SCOUR CRITICAL CODE = 5

ROAD OVERTOPPING FREQUENCY
FREQUENCY = 34 YEARS
Q_{34} = 1,513 C.F.S.
HW_{34} = EL. 1007.11

2 YEAR FREQUENCY
Q_2 = 500 C.F.S.
VELOCITY = 4.26 F.P.S.
HW_2 = EL. 1003.33

LIST OF DRAWINGS:

1 GENERAL PLAN
2 TYPICAL SECTION, GENERAL NOTES & QUANTITIES
3 GENERAL DETAILS
4 SUBSURFACE EXPLORATION
5 SOUTH ABUTMENT
6 SOUTH ABUTMENT DETAILS
7 NORTH ABUTMENT
8 NORTH ABUTMENT DETAILS
9 SUPERSTRUCTURE
10 SUPERSTRUCTURE DETAILS
11 TUBULAR STEEL RAILING TYPE 'M'

WISCONSIN MATTHEW J. BUCKLI E-39849 MADISON WI PROFESSIONAL ENGINEER
5/30/19

BRIDGE OFFICE CONTACT
WILLIAM DREHER, P.E.
TELEPHONE: (608) 266-8489

CONSULTANT CONTACT
MATTHEW BUCKLI, P.E.
TELEPHONE: (608) 443-0441

NO.	DATE	REVISION	BY

Mead & Hunt, Inc.
2440 Deming Way
Middleton, WI 53562
608.273.6380
www.meadhunt.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/19/19
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-27-166

CTH G OVER SOUTH FORK BUFFALO RIVER

COUNTY	TOWN/~~CITY/VILLAGE~~
JACKSON	GARFIELD

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
MJB	RCP	MJB	RCP

GENERAL PLAN

SHEET 1 OF 11

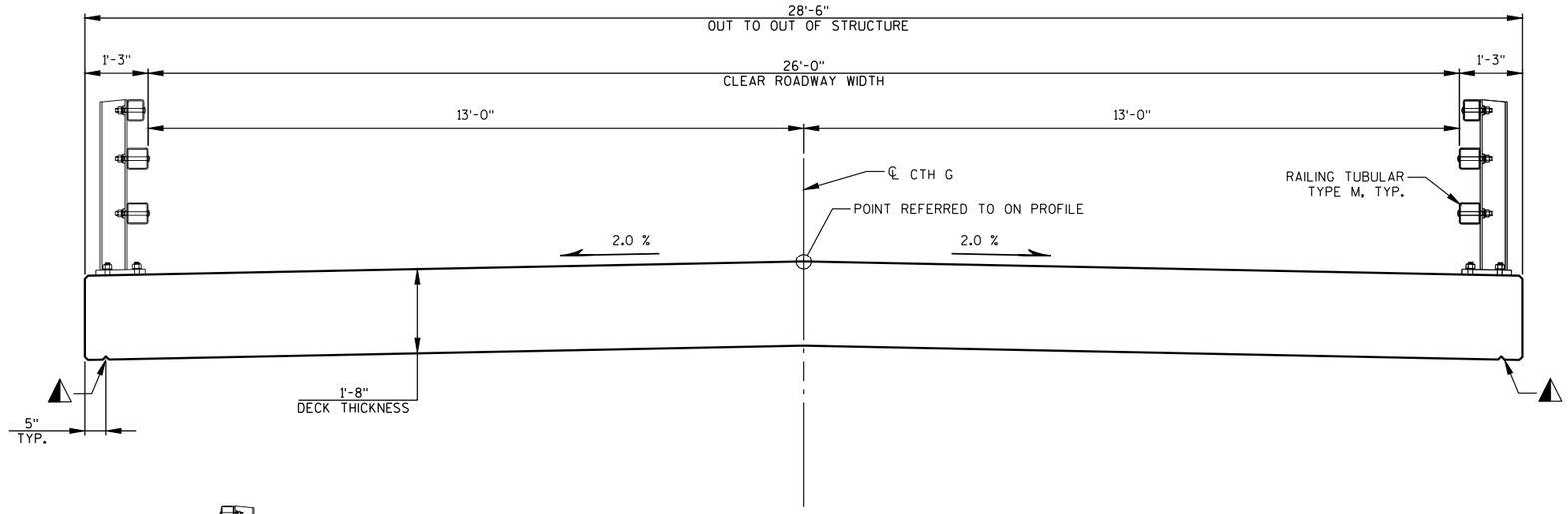
29

8

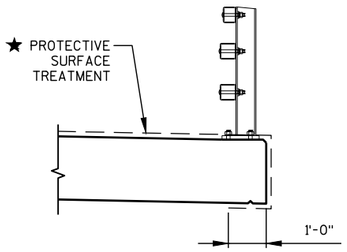
8

FILE NAME : X:±3223700±171197.01±TECH±CAD±73670000±DESIGN±STRUCTURE±080101_GP.DWG PLOT DATE : 5/29/2019 PLOT BY : MATTHEW BUCKLI PLOT SCALE :••••••••••

STATE PROJECT NUMBER
7367-00-70



CROSS SECTION THRU BRIDGE
(LOOKING NORTH)



LIMITS OF SURFACE TREATMENTS

★ COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS.

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

BENCH MARKS			
NO.	LOCATION	DESCRIPTION	ELEVATION
1	STA 9+83.7, RT 10.6'	WHITE PAINT MARK SE CORNER BRIDGE	1007.26'

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-27-166" SHALL BE THE EXISTING GROUNDLINE.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

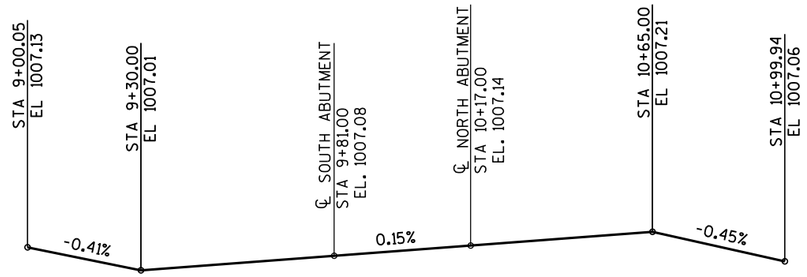
THE EXISTING STRUCTURE TO BE REMOVED IS A 31.2' LONG BY 19.2' CLEAR ROADWAY WIDTH, SINGLE SPAN CONCRETE GIRDER BRIDGE WITH FULL RETAINING ABUTMENTS (P-27-69).

ALL STATIONS AND ELEVATIONS ARE IN FEET.

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO NAVD88.

◭ ¾" V-GROOVE REO'D. EXTEND TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM.

◪ PROVIDE PILE POINTS FROM WisDOT'S CURRENT PRODUCT ACCEPTABILITY LIST (PAL).



PROFILE GRADE LINE - ℄ CTH G

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	S ABUT	N ABUT	SUPER	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00	LS	---	---	---	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-27-166	LS	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	110	110	---	220
502.0100	CONCRETE MASONRY BRIDGES	CY	28	28	72	128
502.3200	PROTECTIVE SURFACE TREATMENT	SY	10	10	145	165
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1630	1630	---	3260
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1400	1400	14560	17360
513.4061	RAILING TUBULAR TYPE M B-27-166	LF	---	---	122	122
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	6	6	---	12
◪ 550.0500	PILE POINTS	EACH	4	4	---	8
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	260	260	---	520
606.0300	RIPRAP HEAVY	CY	90	85	---	175
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	70	70	---	140
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	45	45	---	90
645.0120	GEOTEXTILE TYPE HR	SY	180	170	---	350
	NON BID ITEMS					
	FILLER	SIZE				1/2" & 3/4"

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-27-166

DRAWN BY MJB | PLANS CK'D. RCP

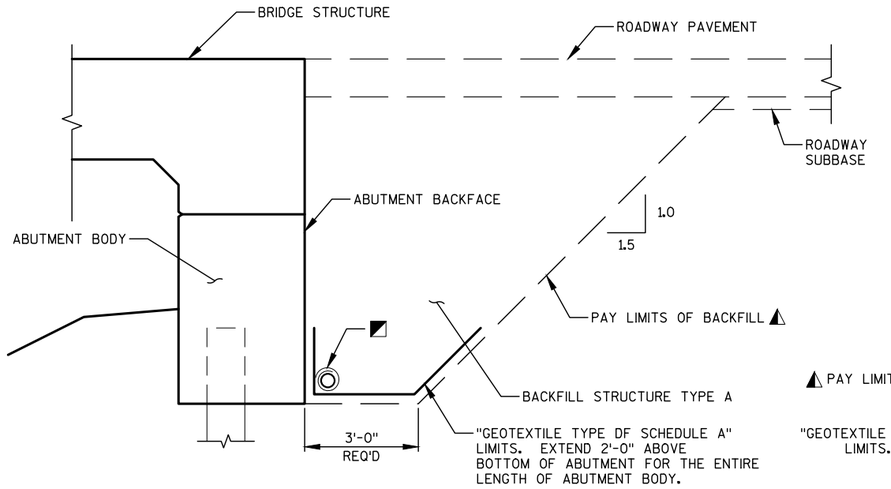
TYPICAL SECTION, GENERAL NOTES & QUANTITIES

SHEET 2 OF 11
30

FILE NAME : X:±3223700±171197.01±TECH±CAD±73670000±DESIGN±STRUCTURE±080102_TS.DWG PLOT DATE : 5/29/2019 PLOT BY : MATTHEW BUCKLI PLOT SCALE : 1 IN:1 FT

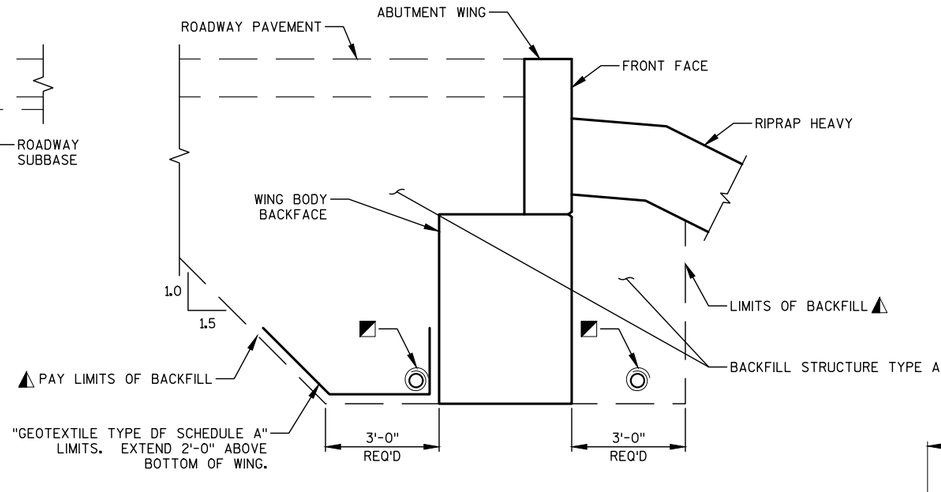
STATE PROJECT NUMBER

7367-00-70



STRUCTURE BACKFILL & PIPE UNDERDRAIN DETAIL

(TYPICAL AT BOTH ABUTMENTS)



TYPICAL SECTION THRU WING

(SHOWING STRUCTURE BACKFILL LIMITS)

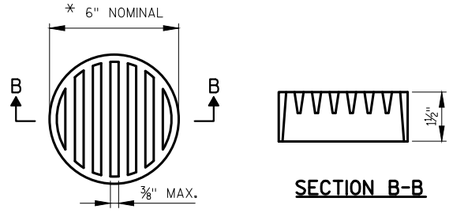
STRUCTURE BACKFILL NOTES

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

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.

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

◪ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



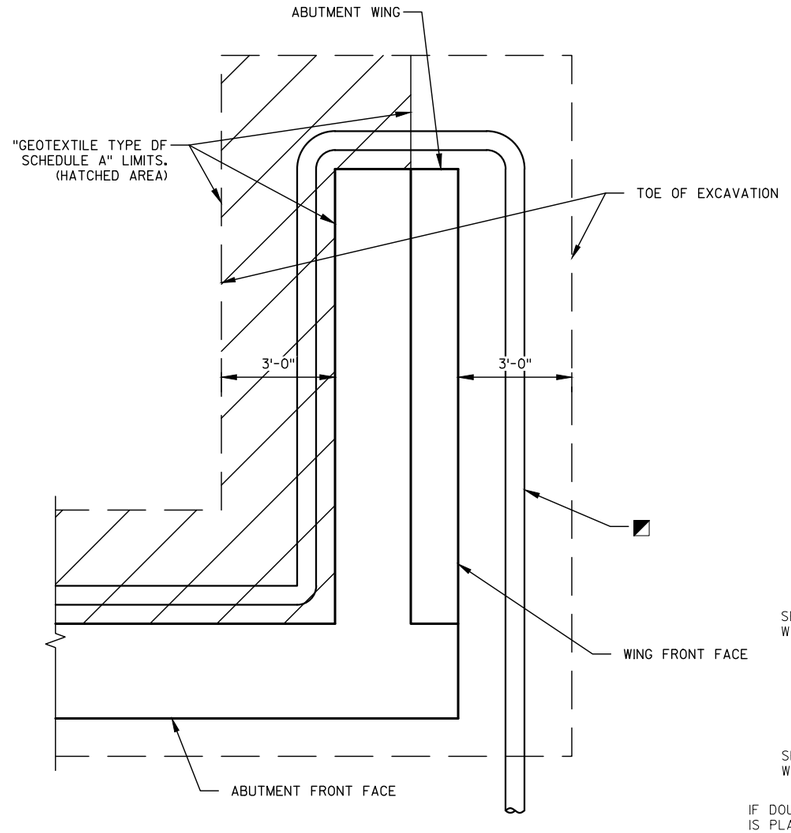
SECTION B-B

RODENT SHIELD

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

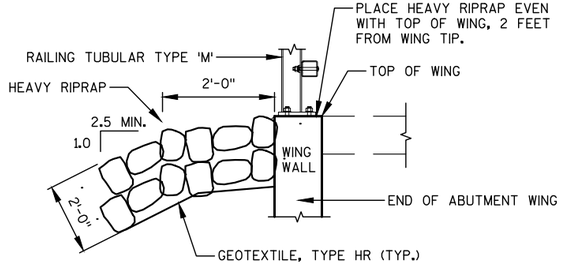
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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.

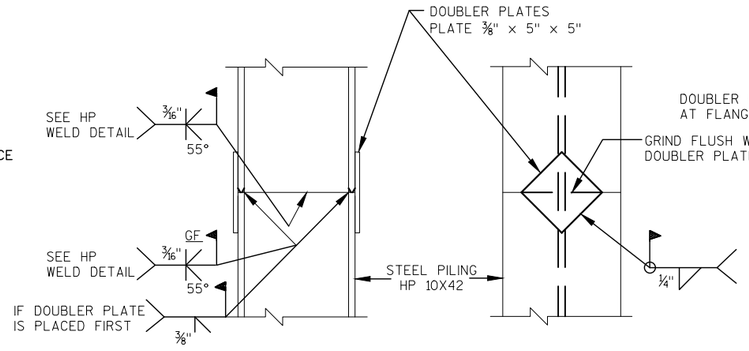


ABUTMENT PLAN WITH WING

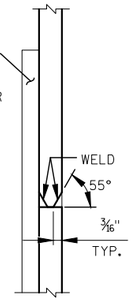
(SHOWING STRUCTURE BACKFILL LIMITS)



TYPICAL FILL SECTION AT WING TIPS



PILE SPLICE DETAILS



HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-27-166

DRAWN BY MJB | PLANS CK'D. RCP

GENERAL DETAILS

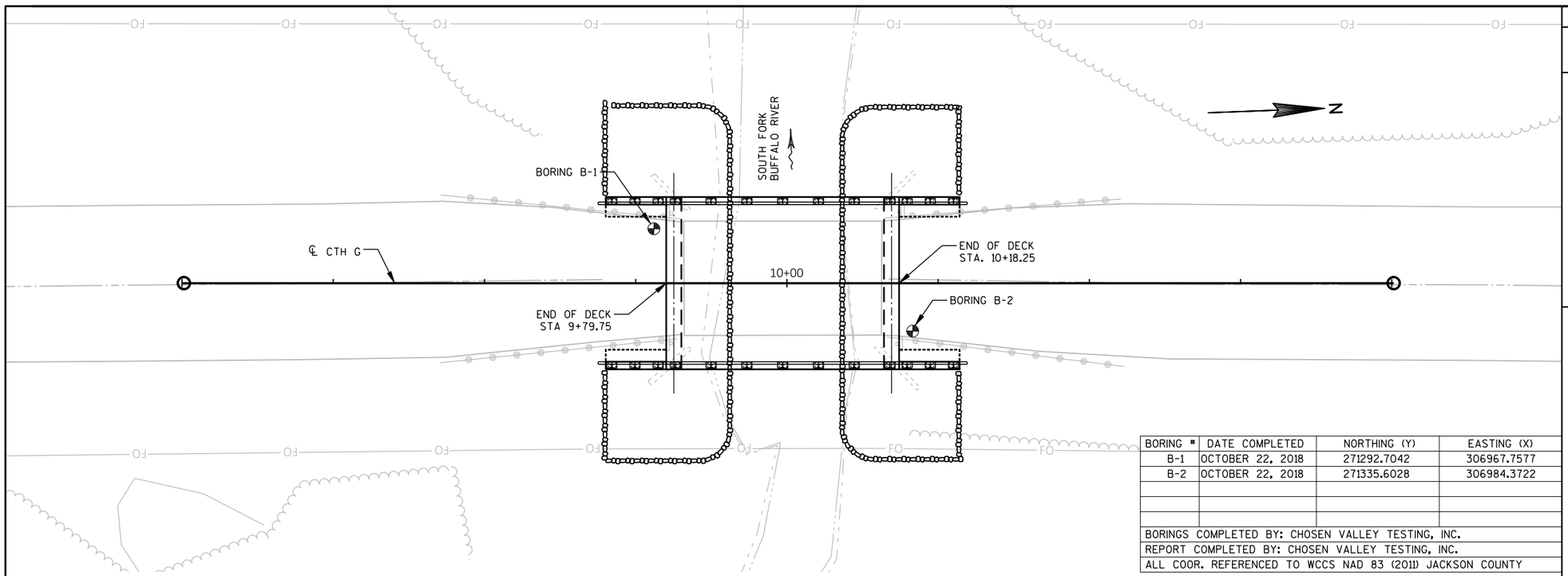
SHEET 3 OF 11

31

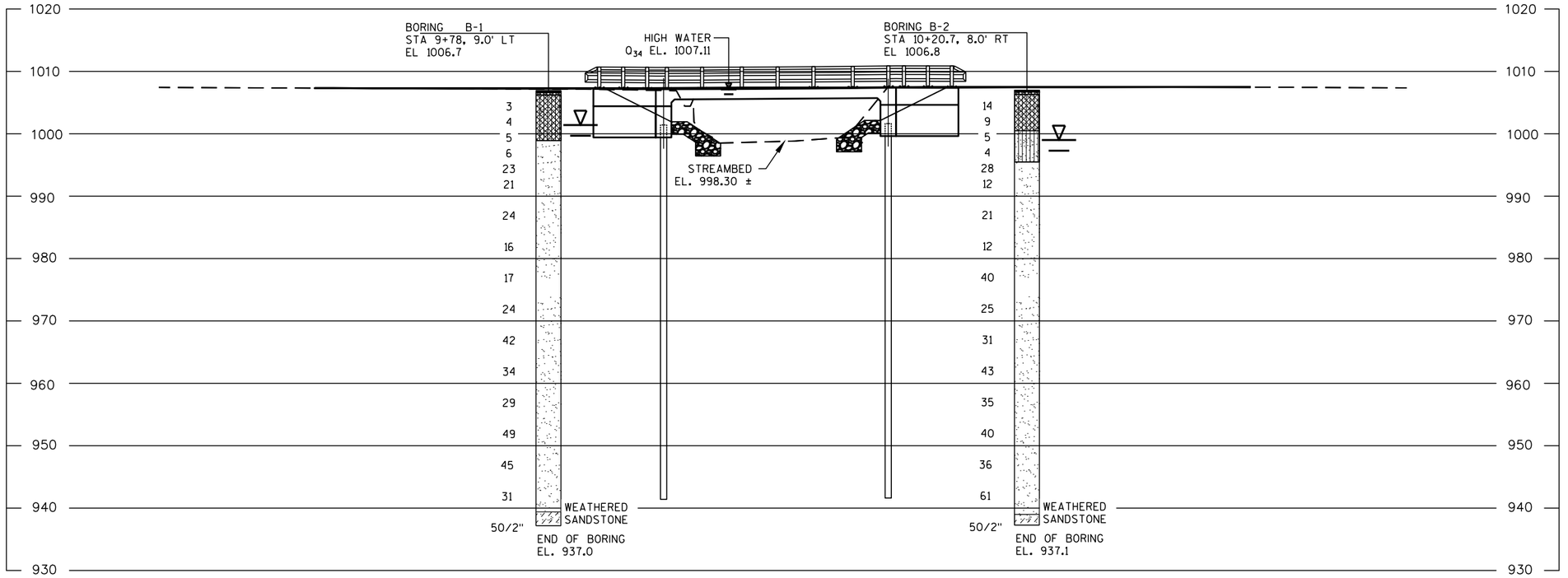
8

8

FILE NAME : X:±3223700±171197.01±TECH±CAD±73670000±DESIGN±STRUCTURE±080102_TS.DWG PLOT DATE : 5/29/2019 PLOT BY : MATTHEW BUCKLI PLOT SCALE : 1 IN:1 FT



BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-1	OCTOBER 22, 2018	271292.7042	306967.7577
B-2	OCTOBER 22, 2018	271335.6028	306984.3722
BORINGS COMPLETED BY: CHOSEN VALLEY TESTING, INC.			
REPORT COMPLETED BY: CHOSEN VALLEY TESTING, INC.			
ALL COOR. REFERENCED TO WCCS NAD 83 (2011) JACKSON COUNTY			



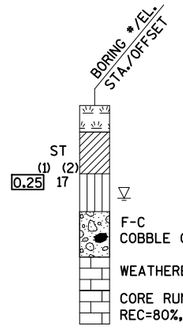
STATE PROJECT NUMBER

7367-00-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

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

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-27-166

DRAWN BY MJB | PLANS CK'D. MKG

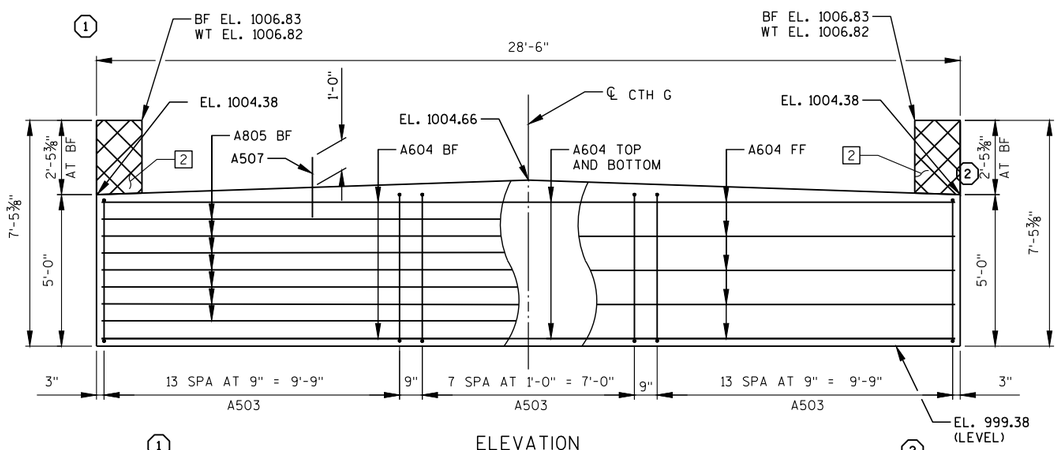
SUBSURFACE EXPLORATION

SHEET 4 OF 11

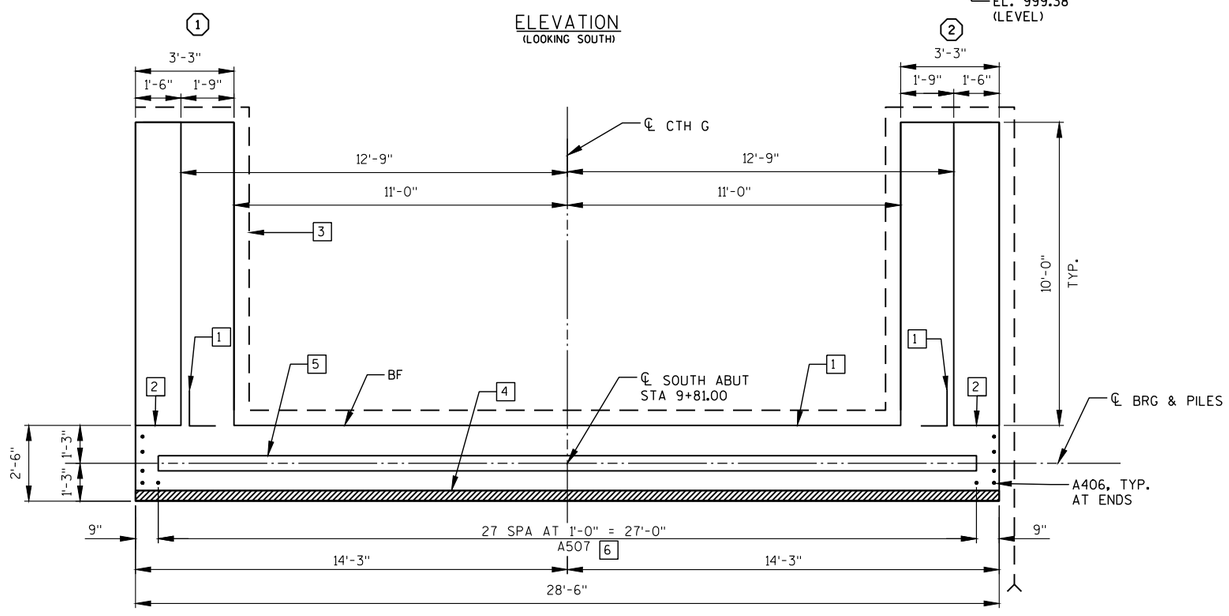
32

8

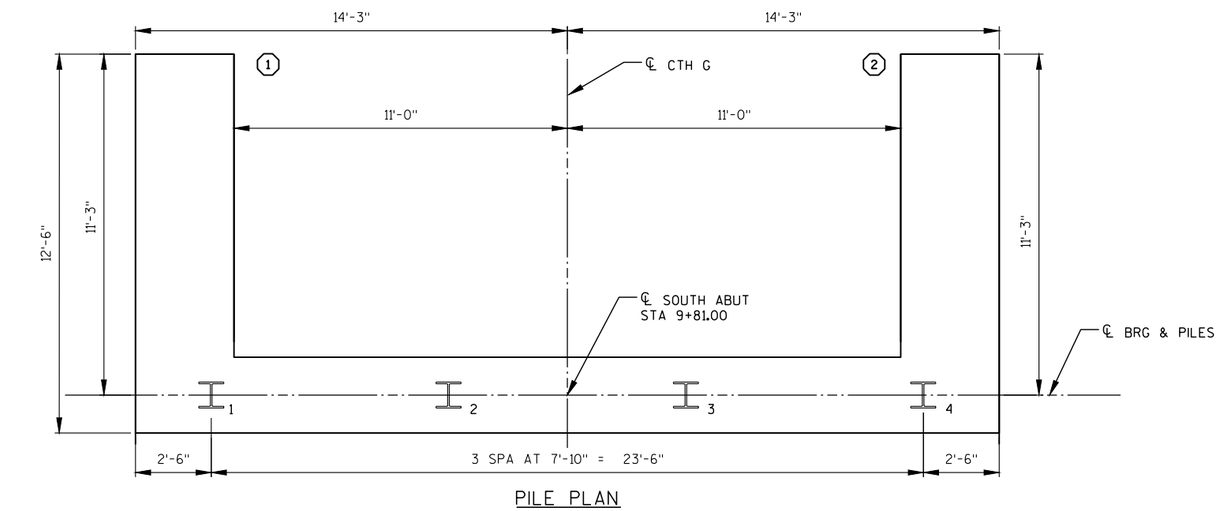
8



ELEVATION
(LOOKING SOUTH)



PLAN



PILE PLAN

NOTES:

FOR PILE SPLICE DETAILS SEE SHEET 3.

FILL/EXCAVATE TO BOTTOM OF SOUTH ABUTMENT EL 999.38 BEFORE DRIVING PILING.

SOUTH ABUTMENT TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED AT 65' LONG. PILE POINTS REQUIRED.

[1] 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

[2] ½" FILLER - TO EXTEND FROM BRIDGE SEAT TO TOP OF WINGWALL. INCLUDED IN WING LENGTH. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

[3] PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 3 FOR RODENT SHIELD DETAILS.

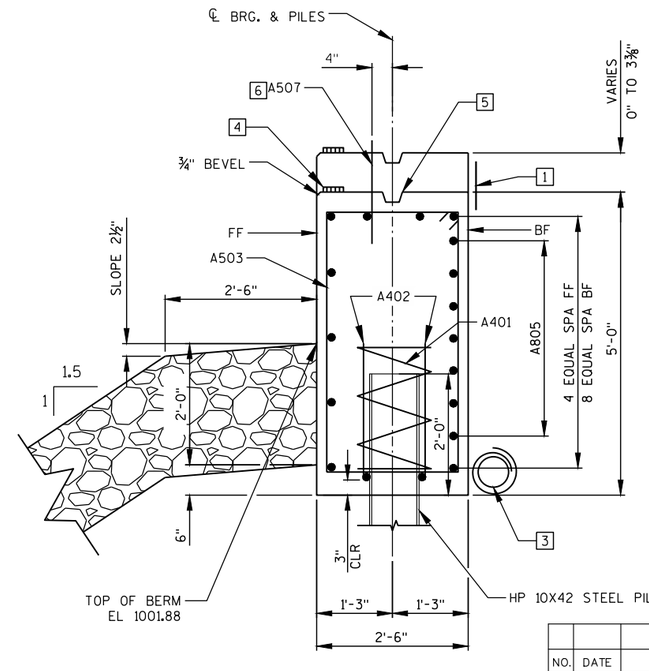
[4] 4" X ¾" FILLER LENGTH OF ABUTMENT.

[5] KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY. TERMINATE 1'-0" FROM ABUTMENT ENDS.

[6] A507 BARS. BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

(*) INDICATES WING NUMBER

FF - FRONT FACE
BF - BACK FACE
WT - WING TIP



SECTION THRU ABUTMENT BODY

ALL HORIZONTAL BARS NOT LABELED ARE A604 BARS.

STATE PROJECT NUMBER

7367-00-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-27-166

DRAWN BY MJB | PLANS CK'D. RCP

SOUTH ABUTMENT

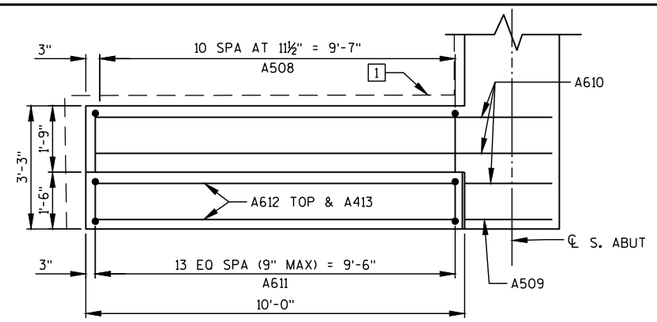
SHEET 5 OF 11
33

8

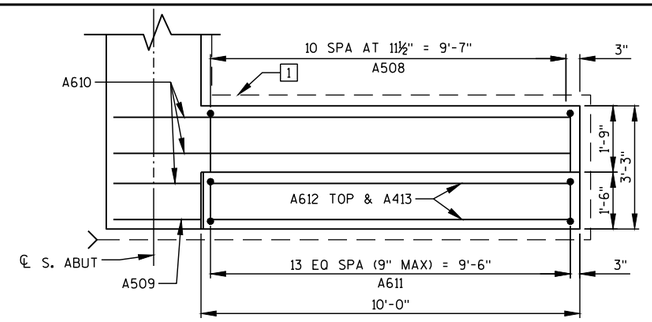
8

STATE PROJECT NUMBER

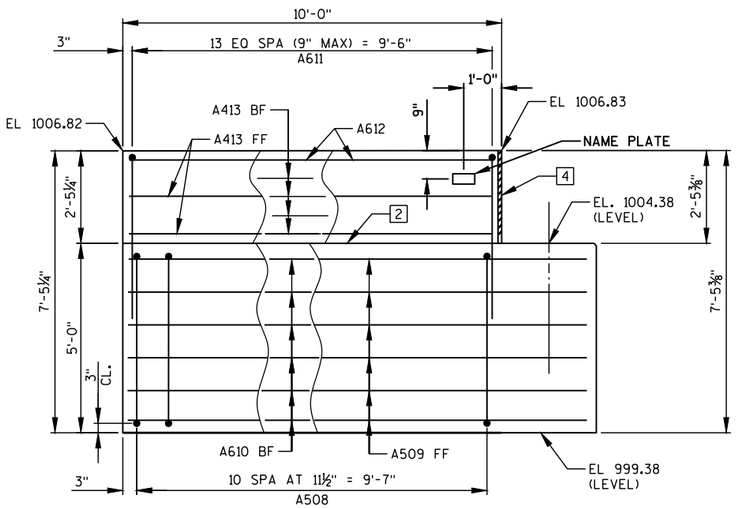
7367-00-70



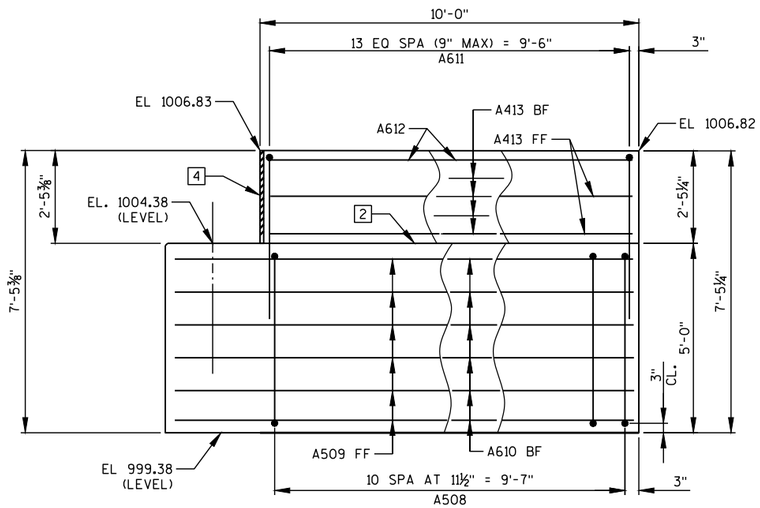
WING 1 PLAN



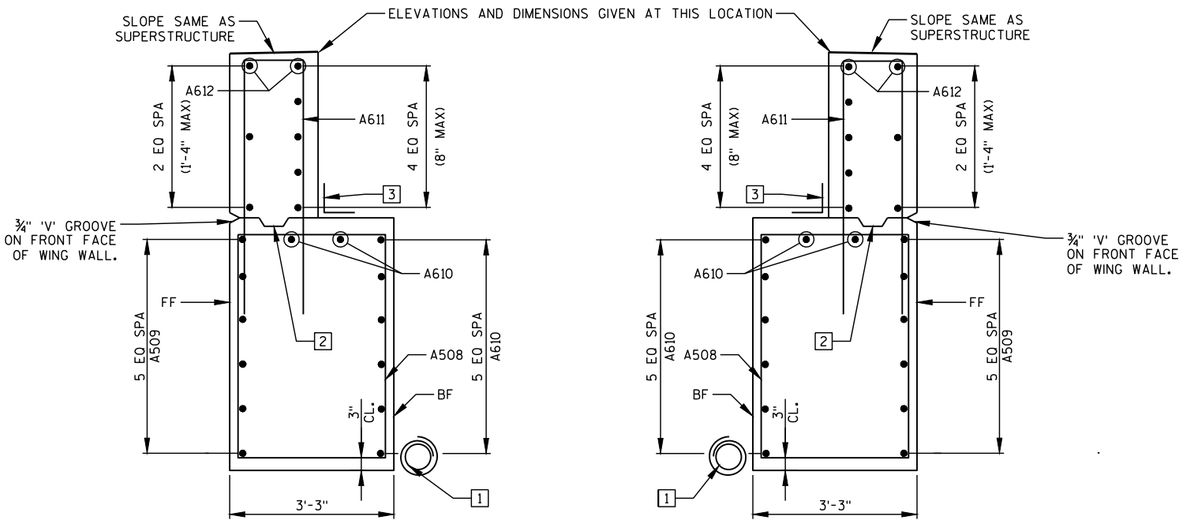
WING 2 PLAN



WING 1 ELEVATION



WING 2 ELEVATION



WING 1 SECTION

ALL HORIZONTAL BARS NOT LABELED IN WING TOP ARE A413 BARS.

WING 2 SECTION

ALL HORIZONTAL BARS NOT LABELED IN WING TOP ARE A413 BARS.

BILL OF BARS
SOUTH ABUTMENT

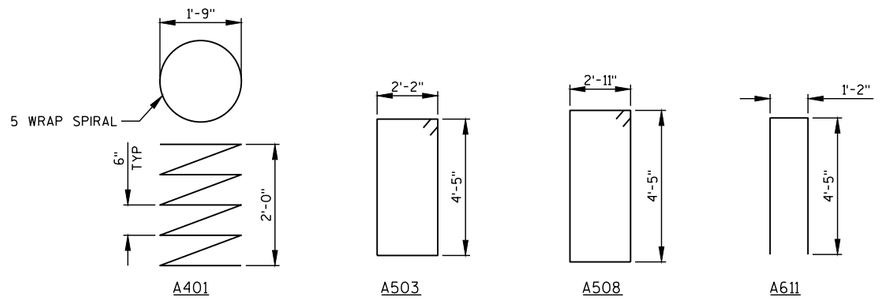
COATED= 1400 LBS.
UNCOATED= 1630 LBS.

MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH FT - IN	BENT	BAR SERIES	LOCATION	
A401		4	28 - 0	X		ABUTMENT BODY - 1 PER PILE	SPIRAL
A402		8	2 - 3			ABUTMENT BODY - 2 PER PILE	VERT
A503		36	13 - 10	X		ABUTMENT BODY - STIRRUPS	VERT
A604		11	28 - 2			ABUTMENT BODY - FF, TOP, BTM	HORIZ
A805		7	28 - 2			ABUTMENT BODY - BF	HORIZ
A406		8	4 - 7			ABUTMENT BODY - ENDS	VERT
A507	28		2 - 0			ABUTMENT BODY - DOWELS	VERT
A508	22		15 - 4	X		WING WALL BODY - STIRRUPS	VERT
A509	12		12 - 2			WING WALL BODY - FF	HORIZ
A610	16		12 - 2			WING WALL BODY - TOP & BF	HORIZ
A611	28		9 - 8			WING WALL UPPER - TIE	VERT
A612	4		9 - 7			WING WALL UPPER - TOP	HORIZ
A413	12		9 - 7			WING WALL UPPER - FF & BF	HORIZ

FF - FRONT FACE
BF - BACK FACE

BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

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



NOTES:

1. PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 3 FOR RODENT SHIELD DETAILS.
2. OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH MEMBRANE ON BACKFACE.
3. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
4. ½" FILLER, SEALER (EXTEND TO TOP OF WING)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-27-166

DRAWN BY MJB | PLANS CK'D. RCP

SOUTH ABUTMENT DETAILS

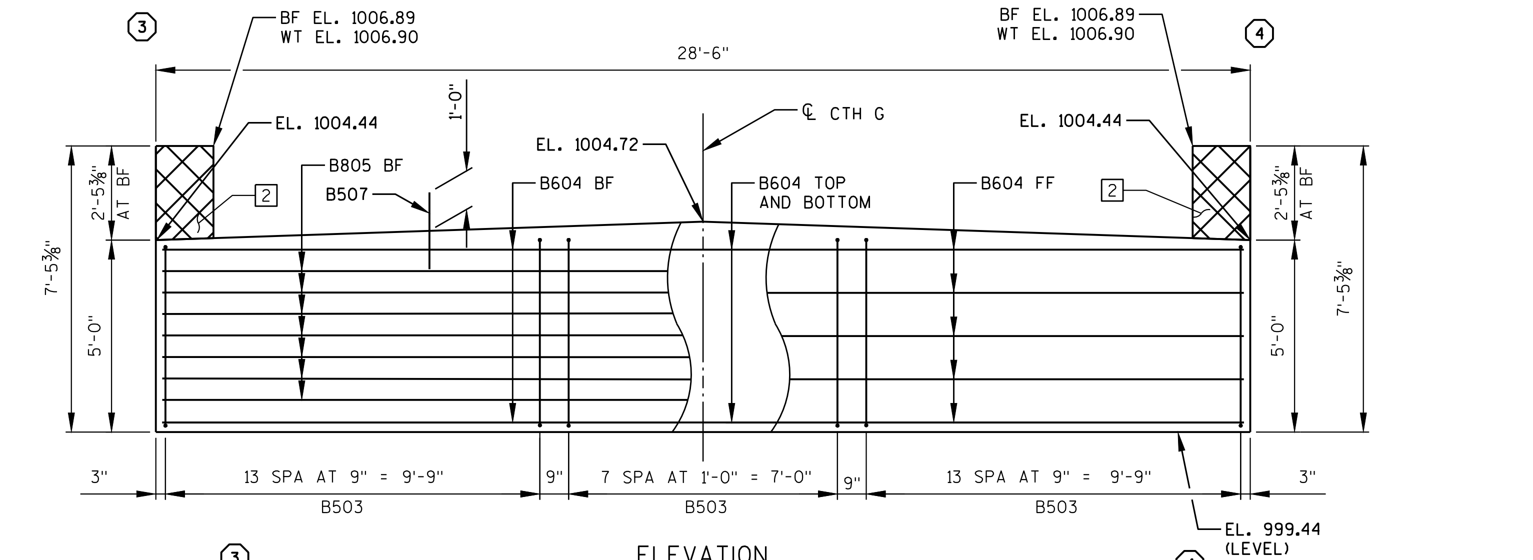
SHEET 6 OF 11
34

8

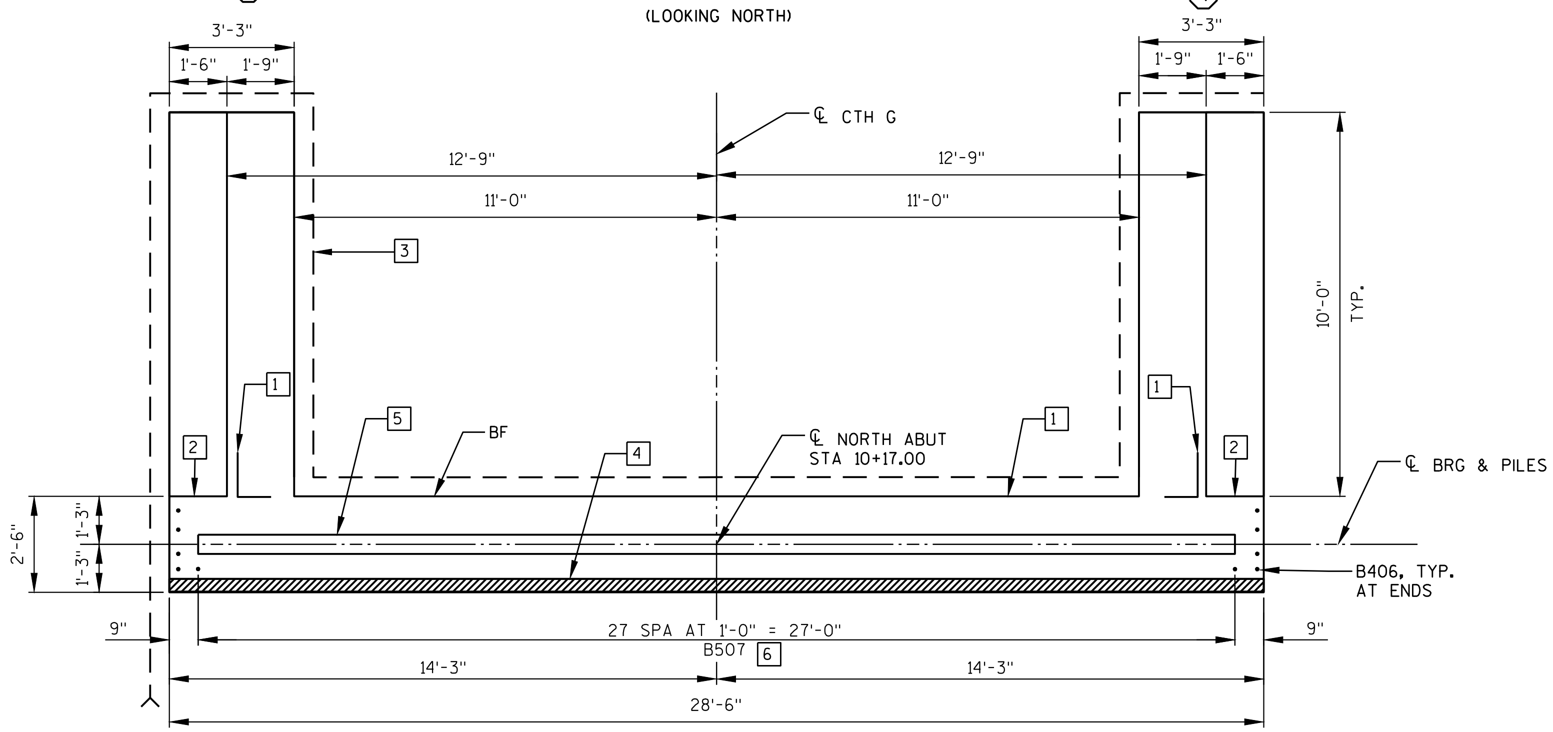
8

STATE PROJECT NUMBER

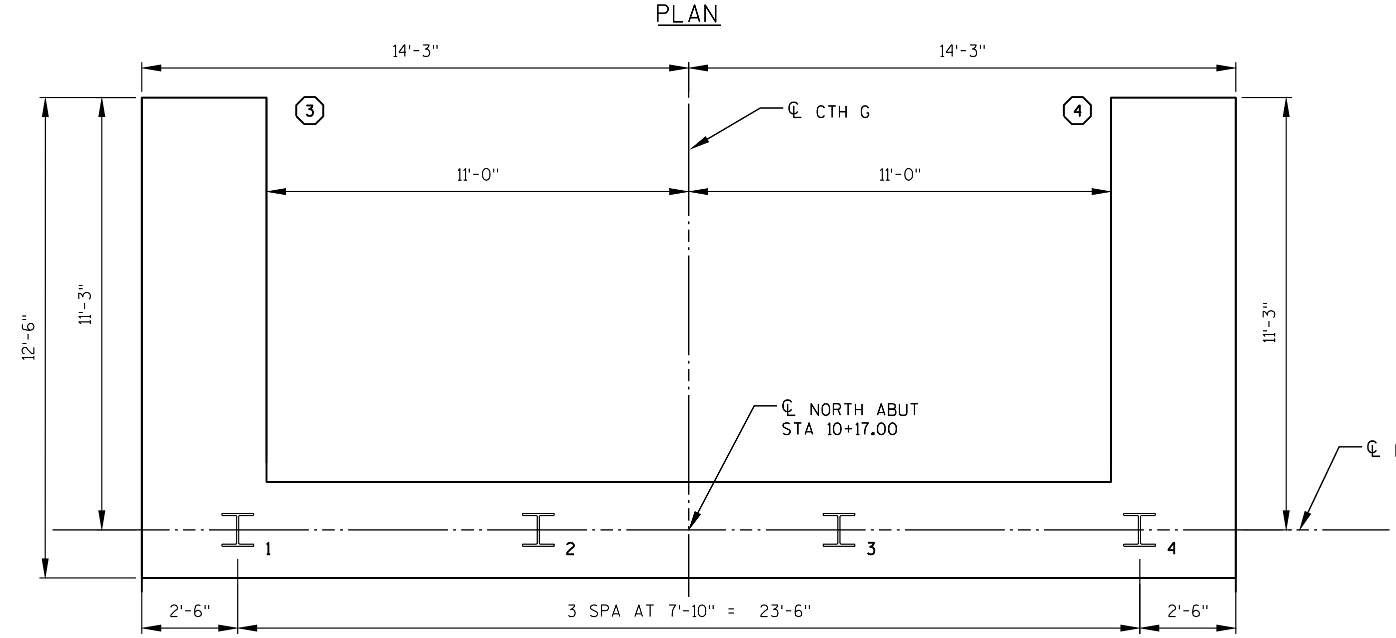
7367-00-70



ELEVATION
(LOOKING NORTH)



PLAN



PILE PLAN

NOTES:

FOR PILE SPLICE DETAILS SEE SHEET 3.

FILL/EXCAVATE TO BOTTOM OF NORTH ABUTMENT EL 999.44 BEFORE DRIVING PILING.

NORTH ABUTMENT TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED AT 65' LONG. PILE POINTS REQUIRED.

[1] 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

[2] ½" FILLER - TO EXTEND FROM BRIDGE SEAT TO TOP OF WINGWALL, INCLUDED IN WING LENGTH. SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

[3] PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 3 FOR RODENT SHIELD DETAILS.

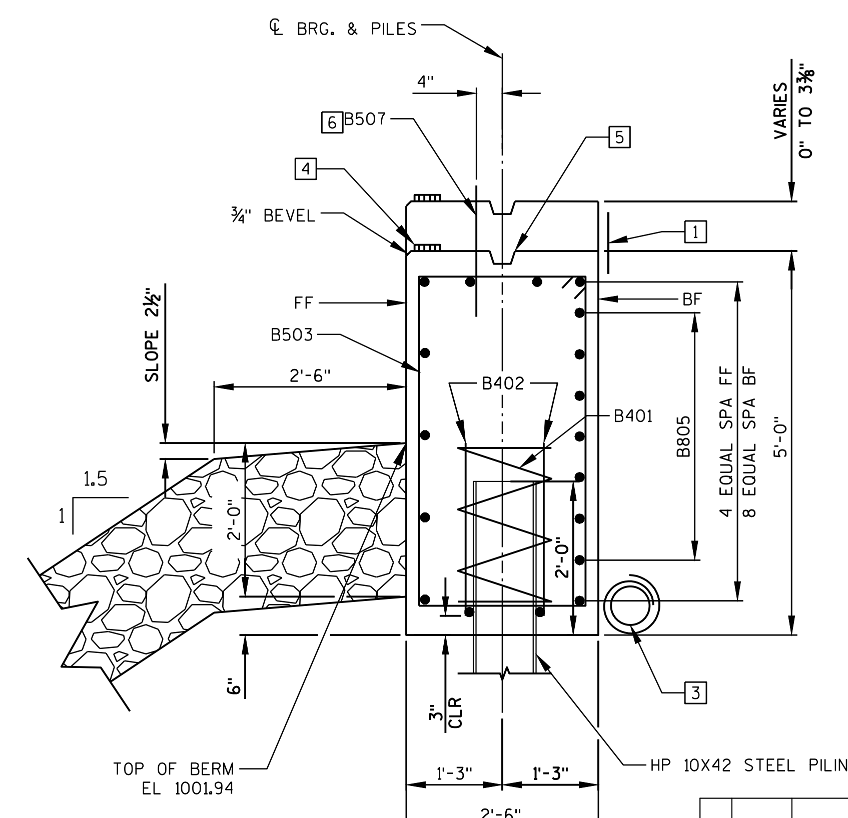
[4] 4" X ¾" FILLER LENGTH OF ABUTMENT.

[5] KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY. TERMINATE 1'-0" FROM ABUTMENT ENDS.

[6] B507 BARS. BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

(*) INDICATES WING NUMBER

FF - FRONT FACE
BF - BACK FACE
WT - WING TIP



SECTION THRU ABUTMENT BODY

ALL HORIZONTAL BARS NOT LABELED ARE B604 BARS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-27-166

DRAWN BY MJB | PLANS CK'D. RCP

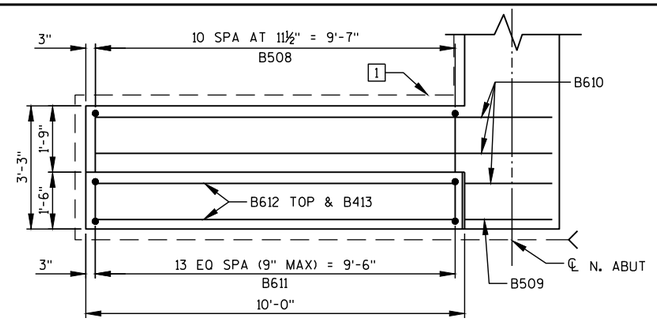
NORTH ABUTMENT

SHEET 7 OF 11

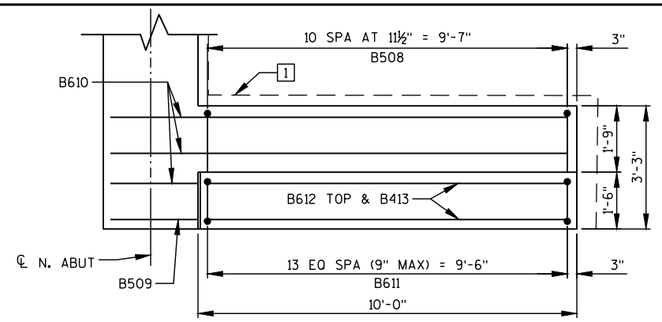
FILE NAME : X:±3223700±171197.01±TECH±CAD±73670000±DESIGN±STRUCTURE±080107_NA.DWG PLOT DATE : 5/29/2019 PLOT BY : MATTHEW BUCKLI PLOT SCALE : 1 IN:1 FT

STATE PROJECT NUMBER

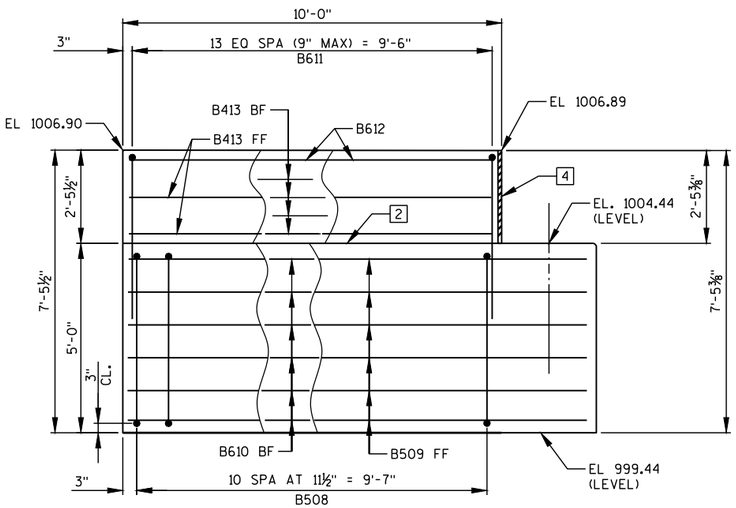
7367-00-70



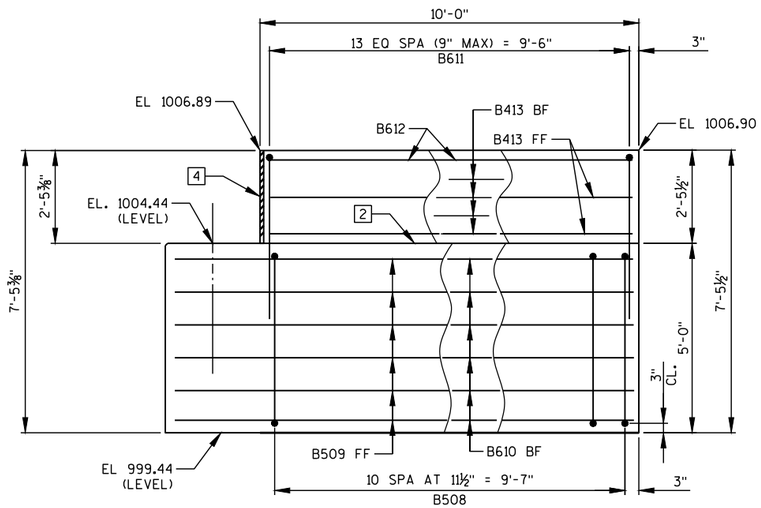
WING 3 PLAN



WING 4 PLAN



WING 3 ELEVATION



WING 4 ELEVATION

BILL OF BARS
NORTH ABUTMENT

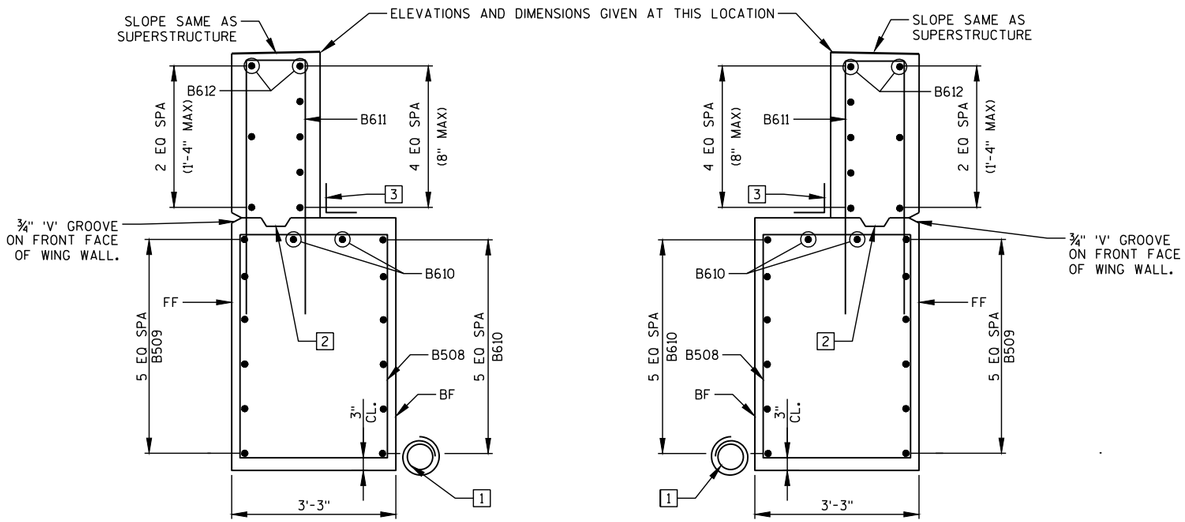
COATED= 1400 LBS.
UNCOATED= 1630 LBS.

MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH FT - IN	BENT	BAR SERIES	LOCATION	
B401		4	28 - 0	X		ABUTMENT BODY - 1 PER PILE	SPIRAL
B402		8	2 - 3			ABUTMENT BODY - 2 PER PILE	VERT
B503		36	13 - 10	X		ABUTMENT BODY - STIRRUPS	VERT
B604		11	28 - 2			ABUTMENT BODY - FF, TOP, BTM	HORIZ
B805		7	28 - 2			ABUTMENT BODY - BF	HORIZ
B406		8	4 - 7			ABUTMENT BODY - ENDS	VERT
B507	28		2 - 0			ABUTMENT BODY - DOWELS	VERT
B508	22		15 - 4	X		WING WALL BODY - STIRRUPS	VERT
B509	12		12 - 2			WING WALL BODY - FF	HORIZ
B610	16		12 - 2			WING WALL BODY - TOP & BF	HORIZ
B611	28		9 - 8			WING WALL UPPER - TIE	VERT
B612	4		9 - 7			WING WALL UPPER - TOP	HORIZ
B413	12		9 - 7			WING WALL UPPER - FF & BF	HORIZ

FF - FRONT FACE
BF - BACK FACE

BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

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

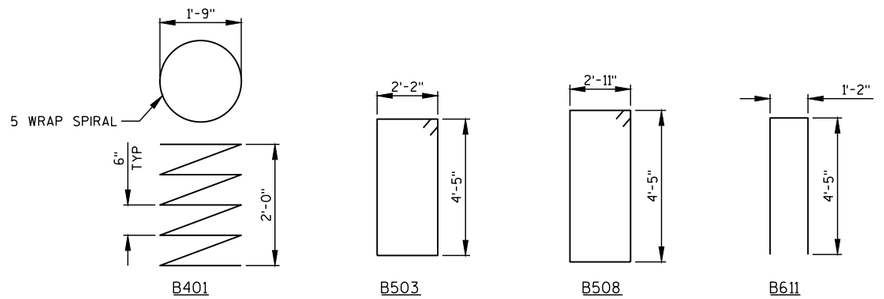


WING 3 SECTION

ALL HORIZONTAL BARS NOT LABELED IN WING TOP ARE B413 BARS.

WING 4 SECTION

ALL HORIZONTAL BARS NOT LABELED IN WING TOP ARE B413 BARS.



NOTES:

1. PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE SHEET 3 FOR RODENT SHIELD DETAILS.
2. OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH MEMBRANE ON BACKFACE.
3. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.
4. ½" FILLER, SEALER (EXTEND TO TOP OF WING)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-27-166

DRAWN BY MJB | PLANS CK'D. RCP

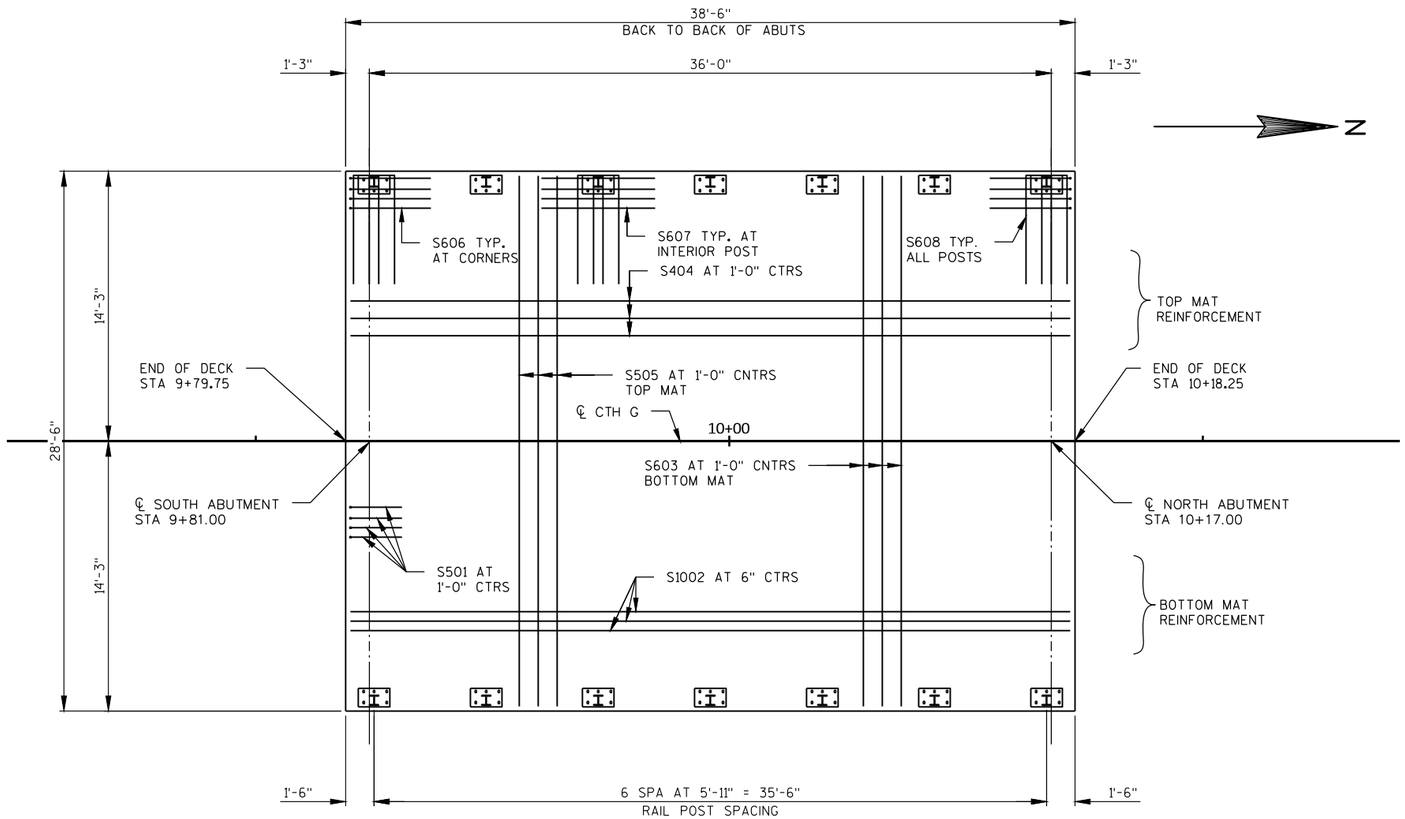
NORTH ABUTMENT DETAILS

SHEET 8 OF 11
36

8

8

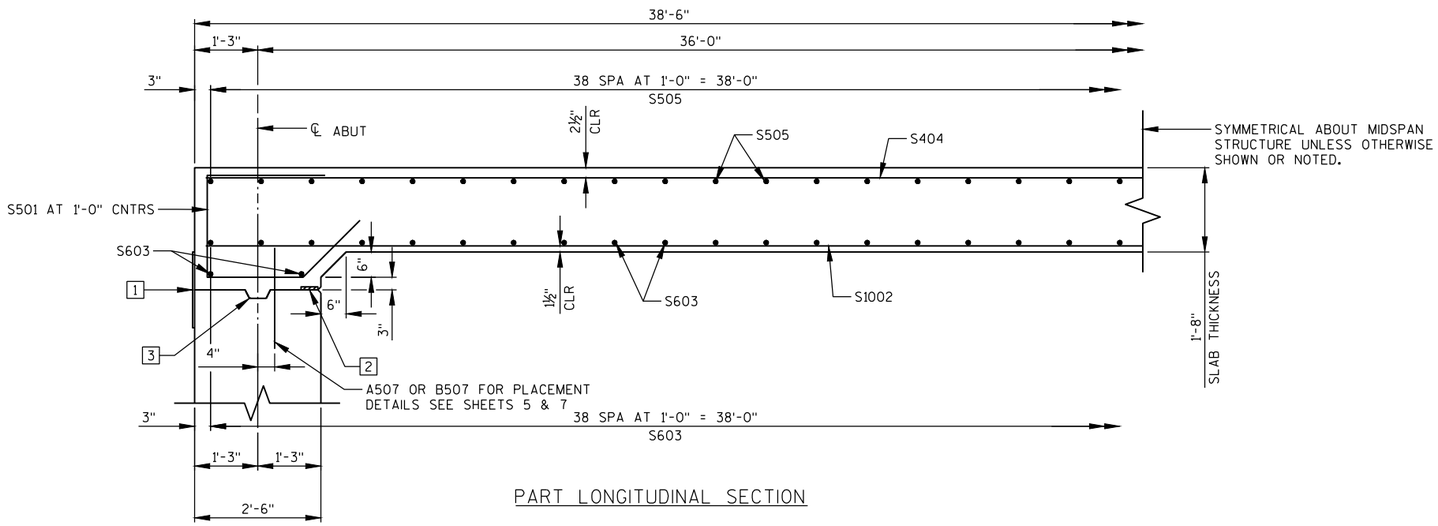
STATE PROJECT NUMBER
7367–00–70



REINFORCEMENT PLAN

TOP OF DECK ELEVATIONS

	WEST EDGE		CENTERLINE/CROWN		EAST EDGE	
SPAN PT.	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION
S. ABUT.	9+81.00	1006.80	9+81.00	1007.08	9+81.00	1006.80
0.1	9+84.60	1006.81	9+84.60	1007.09	9+84.60	1006.81
0.2	9+88.20	1006.81	9+88.20	1007.09	9+88.20	1006.81
0.3	9+91.80	1006.82	9+91.80	1007.10	9+91.80	1006.82
0.4	9+95.40	1006.83	9+95.40	1007.11	9+95.40	1006.83
0.5	9+99.00	1006.83	9+99.00	1007.11	9+99.00	1006.83
0.6	10+02.60	1006.84	10+02.60	1007.12	10+02.60	1006.84
0.7	10+06.20	1006.84	10+06.20	1007.12	10+06.20	1006.84
0.8	10+09.80	1006.85	10+09.80	1007.13	10+09.80	1006.85
0.9	10+13.40	1006.85	10+13.40	1007.13	10+13.40	1006.85
N. ABUT.	10+17.00	1006.86	10+17.00	1007.14	10+17.00	1006.86



PART LONGITUDINAL SECTION

NOTES

1. 18" RUBBERIZED MEMBRANE WATERPROOFING.
2. 4" X ¾" FILLER LENGTH OF ABUTMENT.
3. KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B–27–166

DRAWN BY MJB | PLANS CK'D. RCP

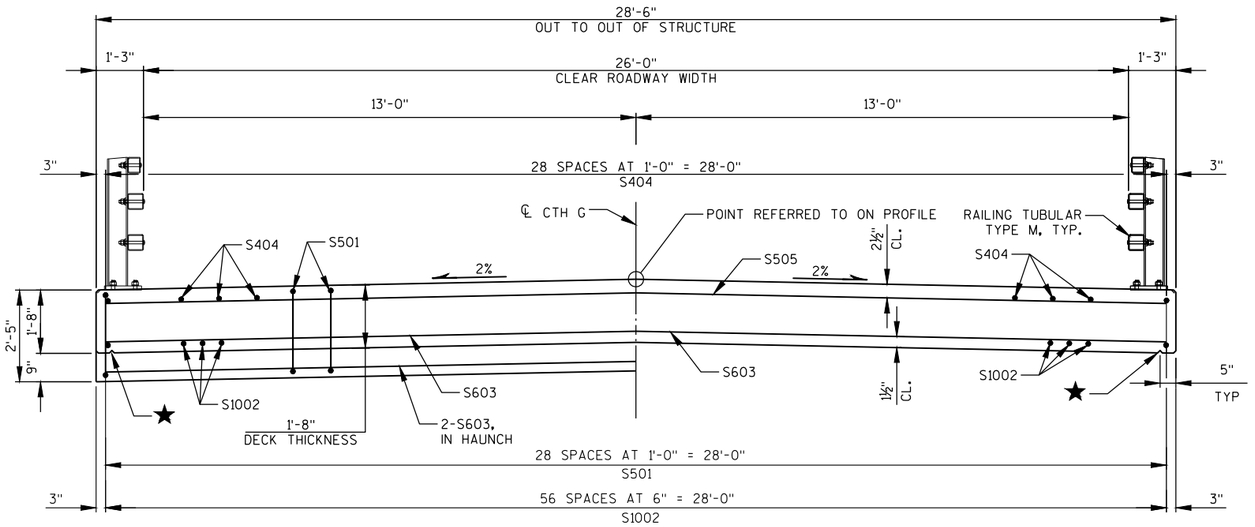
SUPERSTRUCTURE

SHEET 9 OF 11
37

8

8

STATE PROJECT NUMBER
7367-00-70



AT ABUTMENTS IN SPAN

CROSS SECTION THRU BRIDGE
(LOOKING NORTH)

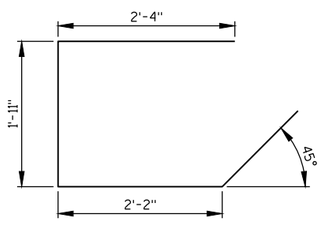
BILL OF BARS
SUPERSTRUCTURE

COATED= 14560 LBS.
UNCOATED= 0 LBS.

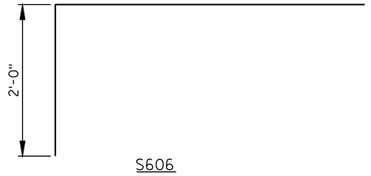
MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH FT - IN	BENT	BAR SERIES	LOCATION	
S501	58		7 - 11	X		SLAB - ABUTMENT TIES	VERT
S1002	57		38 - 2			SLAB - BOTTOM	LONGIT
S603	43		28 - 2			SLAB - BOTTOM	TRANS
S404	29		38 - 2			SLAB - TOP	LONGIT
S505	39		28 - 2			SLAB - TOP	TRANS
S606	16		6 - 0	X		RAILING ANCHORS - CORNER POSTS	LONGIT
S607	40		6 - 0			RAILING ANCHORS - INTERIOR POSTS	LONGIT
S608	28		12 - 0	X		RAILING ANCHORS	TRANS

BAR DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BARS.

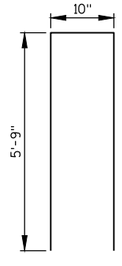
THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.



S501



S606



S608

NOTES

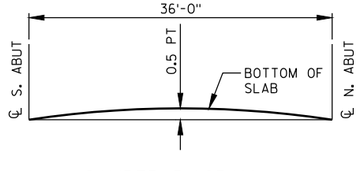
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS(+).

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN OR ℄.

★ ¾" V-GROOVE. EXTEND TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM.



CAMBER DIAGRAM

SPAN (PT)	CAMBER (IN)
℄ S ABUT	0
0.1	3/8
0.2	5/8
0.3	7/8
0.4	1
0.5	1⅛
0.6	1
0.7	7/8
0.8	5/8
0.9	3/8
℄ N ABUT	0

CAMBER SPAN AS SHOWN (USING VALUES IN TABLE) TO PROVIDE FOR DEADLOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-27-166

DRAWN BY MJB | PLANS CK'D. RCP

SUPERSTRUCTURE DETAILS

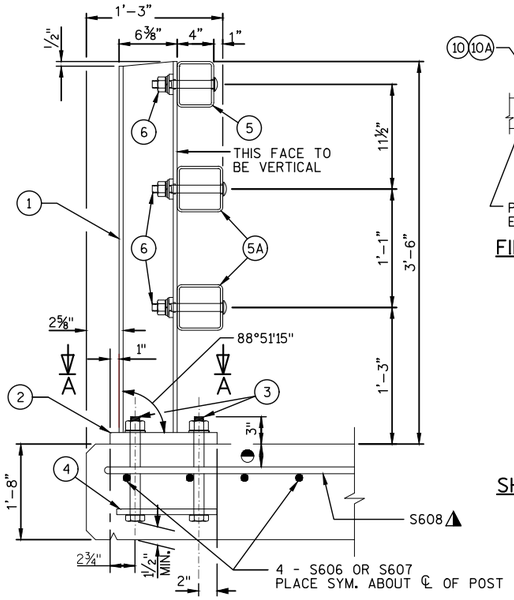
SHEET 10 OF 11
38

8

8

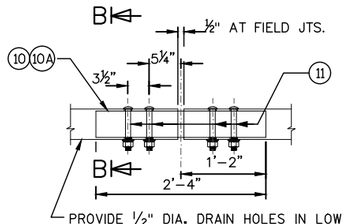
STATE PROJECT NUMBER

7367-00-70



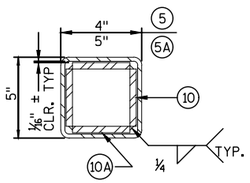
SECTION THRU RAILING ON DECK

◓ PLACE BELOW TOP MAT SLAB REINFORCEMENT

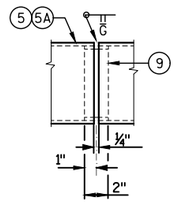


PROVIDE ½" DIA. DRAIN HOLES IN LOW END OF ALL RAILS CLEAR OF SPLICE TUBE

FIELD ERECTION JOINT DETAIL

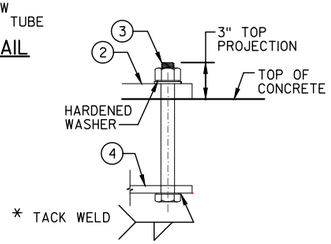


SECTION B-B



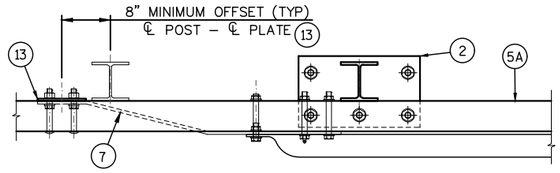
SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



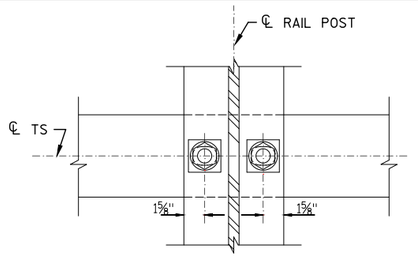
ANCHOR BOLTS

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

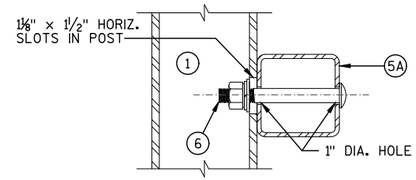


TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT



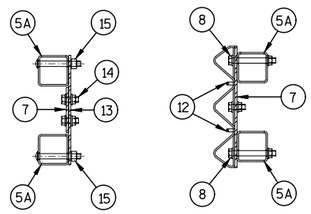
SECTION THRU POST WEB



SECTION THRU RAIL

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

TYPICAL RAIL TO POST CONNECTIONS



SECTION C-C

SECTION D-D

LEGEND

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

(2) PLATE 1¼" x 11¾" x 1'-8" WITH 1⅝" 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 WINGS AND 1'-3" LONG IN SLAB. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)

(4) ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1⅜" 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) 7/16" 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).

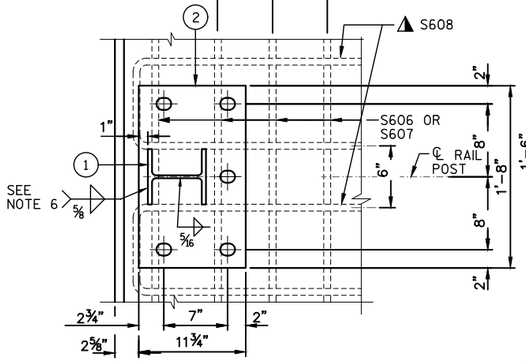
(13) ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

(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.

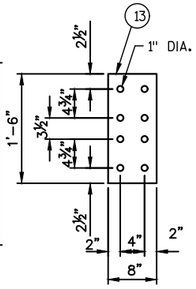
GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-27-166" 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.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
10. THIS RAILING MEETS MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) EVALUATION CRITERIA FOR TEST LEVEL 2 (TL-2).



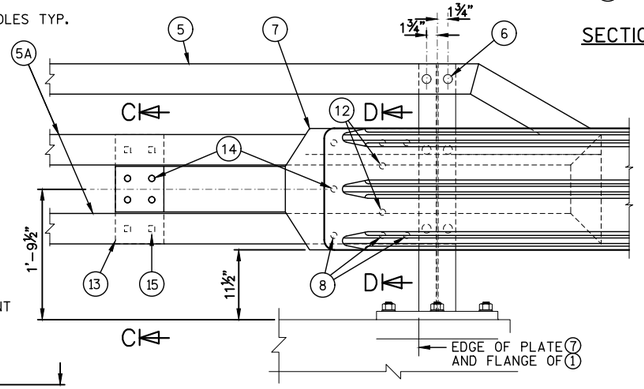
SECTION A-A

◭ TIE TO TOP MAT OF STEEL.



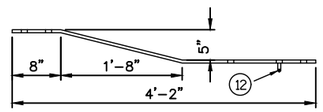
ANCHOR PLATE

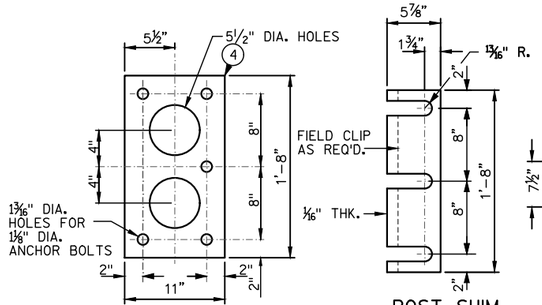
AT BEAM GUARD ATTACHMENT



DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT

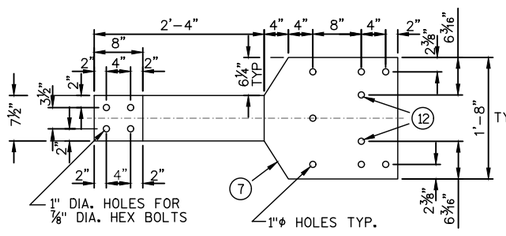




ANCHOR PLATE

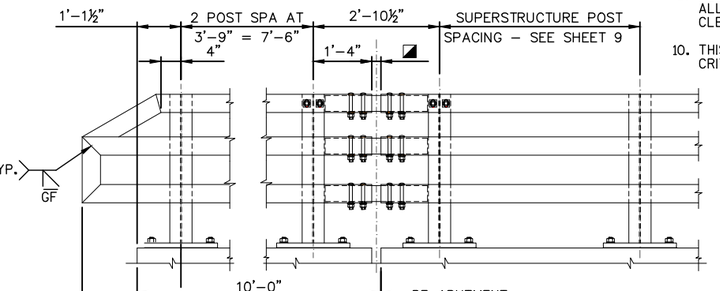
AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-27-166

DRAWN BY MJB | PLANS CK'D. RCP

TUBULAR STEEL RAILING TYPE 'M'

SHEET 11 OF 11

39

8

8

CTH G

STATION	AREA (SF) Cut	AREA (SF) Salvaged/Unusable Pavement Material	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Salvaged/Unusable Pavement Material Note 2	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Salvaged/Unusable Pavement Material	Cumulative Vol (CY) Expanded Fill 1.25	Mass Ordinate Note 4
9+30	34	8	0							
9+45	33	8	11	19	4	3	19	4	4	10
9+70	19	8	30	24	7	19	43	12	28	3
10+28	25	8	24	0	0	0	43	12	28	3
10+53	33	8	2	27	7	12	70	19	43	8
10+65	33	8	0	15	4	0	85	23	43	19
			Column Total	85	23	34				

Notes:
1 - Cut (Salvaged/Unusable Pavement Material is Included)
2 - Salvaged/Unusable Pavement Material (This does not show up in cross sections.)
3 - Fill (Does not include Unuseable Pavement volume.)
4 - The Mass Ordinate + or - quantity calculated. Plus quantity indicates as excess of material. Minus indicates a shortage of material.

No Marsh or EBS is anticipated.

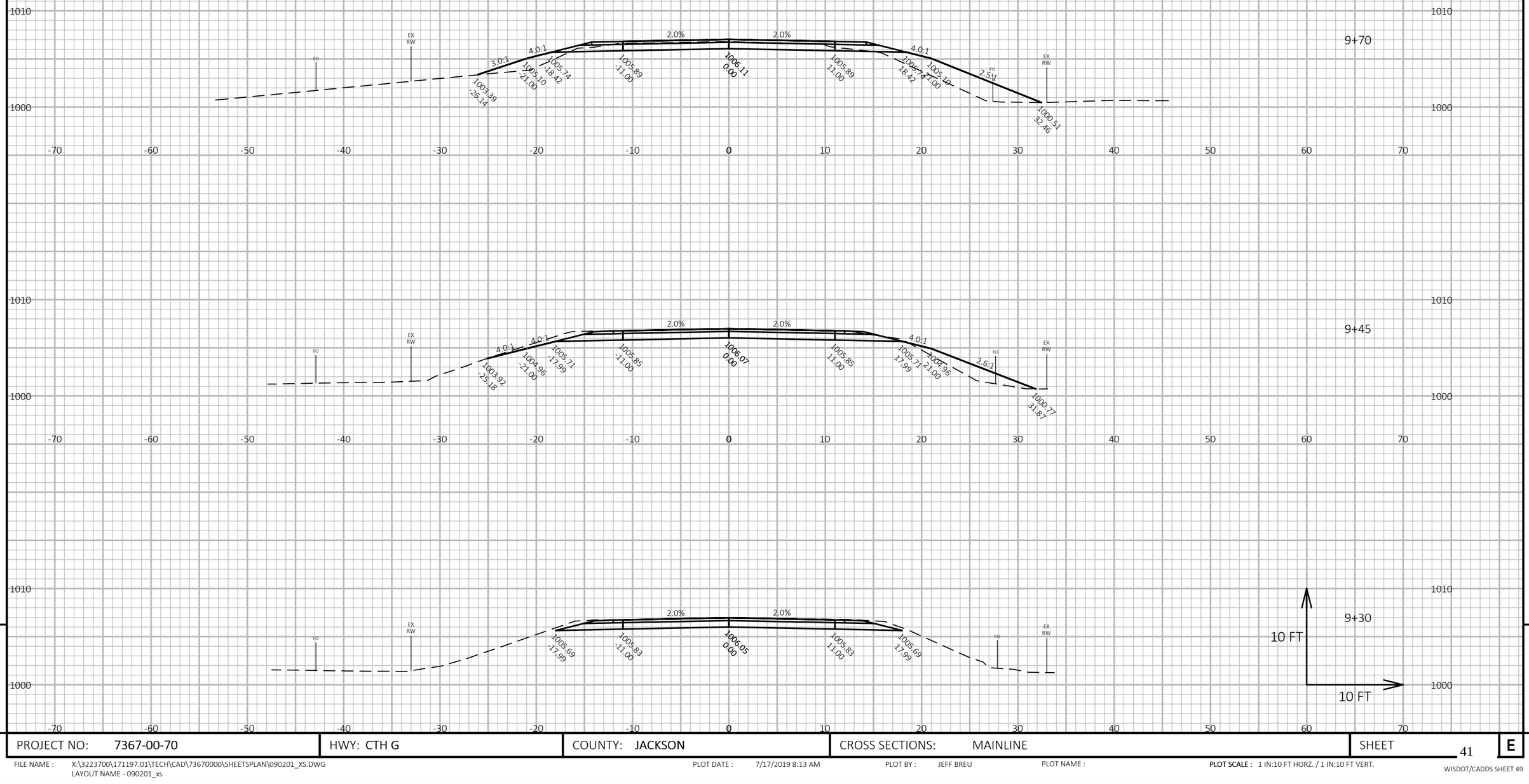
9

9

PROJECT NO: 7367-00-70	HWY: CTH G	COUNTY: JACKSON	EARTHWORK SUMMARY	SHEET NO: 40	E

FILE NE : PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : ORIGINATOR : PLOT SCALE :

BEGIN STRUCTURE B-27-166
STA 9+97.75



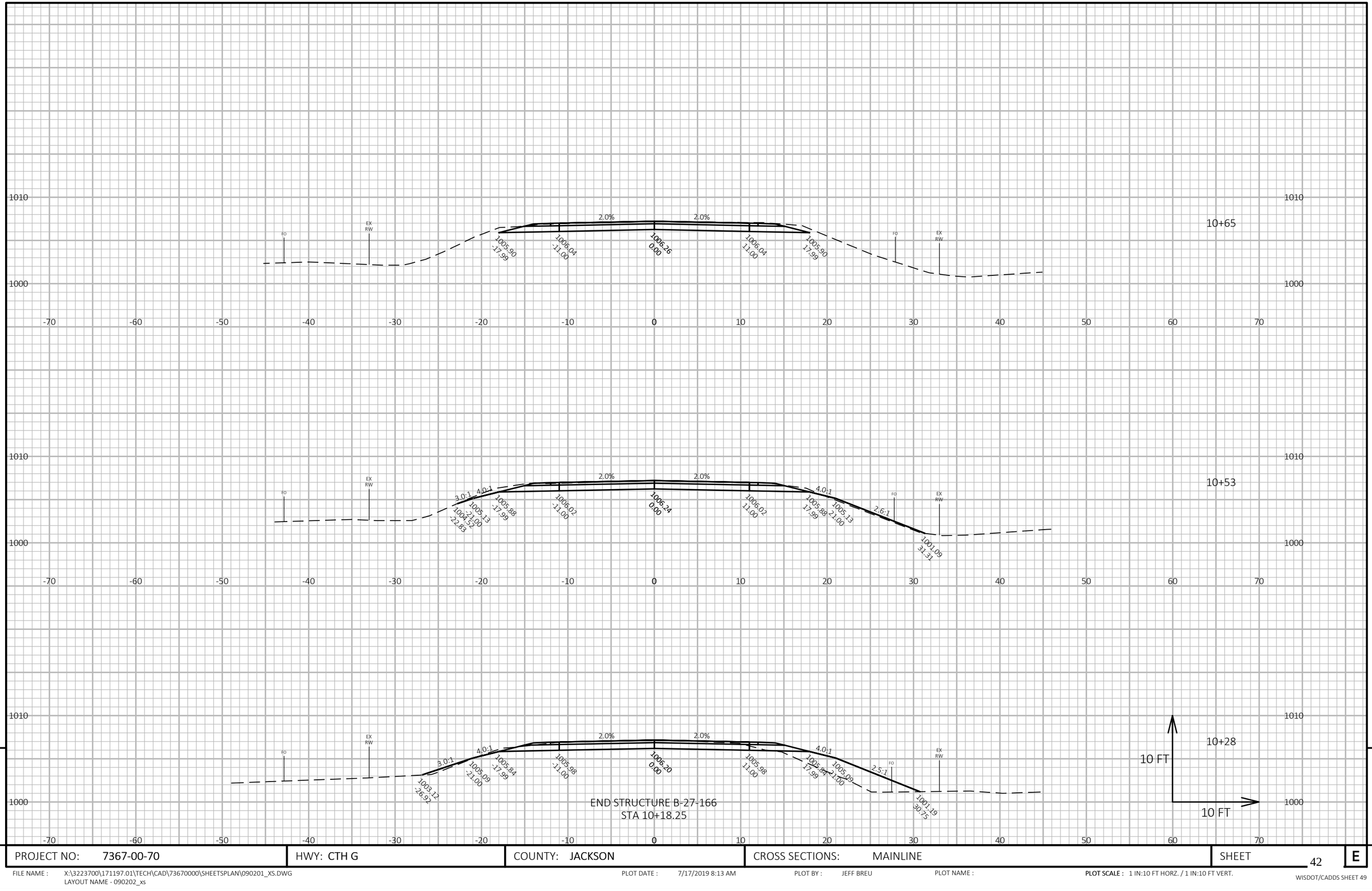
9

9

PROJECT NO: 7367-00-70	HWY: CTH G	COUNTY: JACKSON	CROSS SECTIONS: MAINLINE	SHEET 41	E

FILE NAME : X:\3223700\171197.01\TECH\CAD\73670000\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_xs

PLOT DATE : 7/17/2019 8:13 AM PLOT BY : JEFF BREU PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



PROJECT NO: 7367-00-70	HWY: CTH G	COUNTY: JACKSON	CROSS SECTIONS: MAINLINE	SHEET 42	E

FILE NAME : X:\3223700\171197.01\TECH\CAD\73670000\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090202_xs

PLOT DATE : 7/17/2019 8:13 AM

PLOT BY : JEFF BREU

PLOT NAME :

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